

FOR INDEX OF SHEETS SEE SHEET 1B

CITY OF MANASSAS  
DEPARTMENT OF ENGINEERING  
PROJECT NO. T-030

PROJECT OWNER & CONSULTANT TEAM

CLIENT / OWNER

CITY OF MANASSAS  
LANCE KILBY  
PROJECT MANAGER  
8500 PUBLIC WORKS DRIVE  
MANASSAS, VA 20110  
PHONE: 703-257-8226

SUBSURFACE UTILITY

ACCUMARK, INC.  
9500 KING AIR COURT  
ASHLAND, VA 23005  
PHONE: 703-635-3060  
FAX: 703-635-3075

GEOTECHNICAL ENGINEER

SCHNABEL ENGINEERING  
1300 PICCARD DRIVE, SUITE 106  
ROCKVILLE, MD 20850  
PHONE: 301-417-2400  
FAX: 301-417-2730

ENGINEER

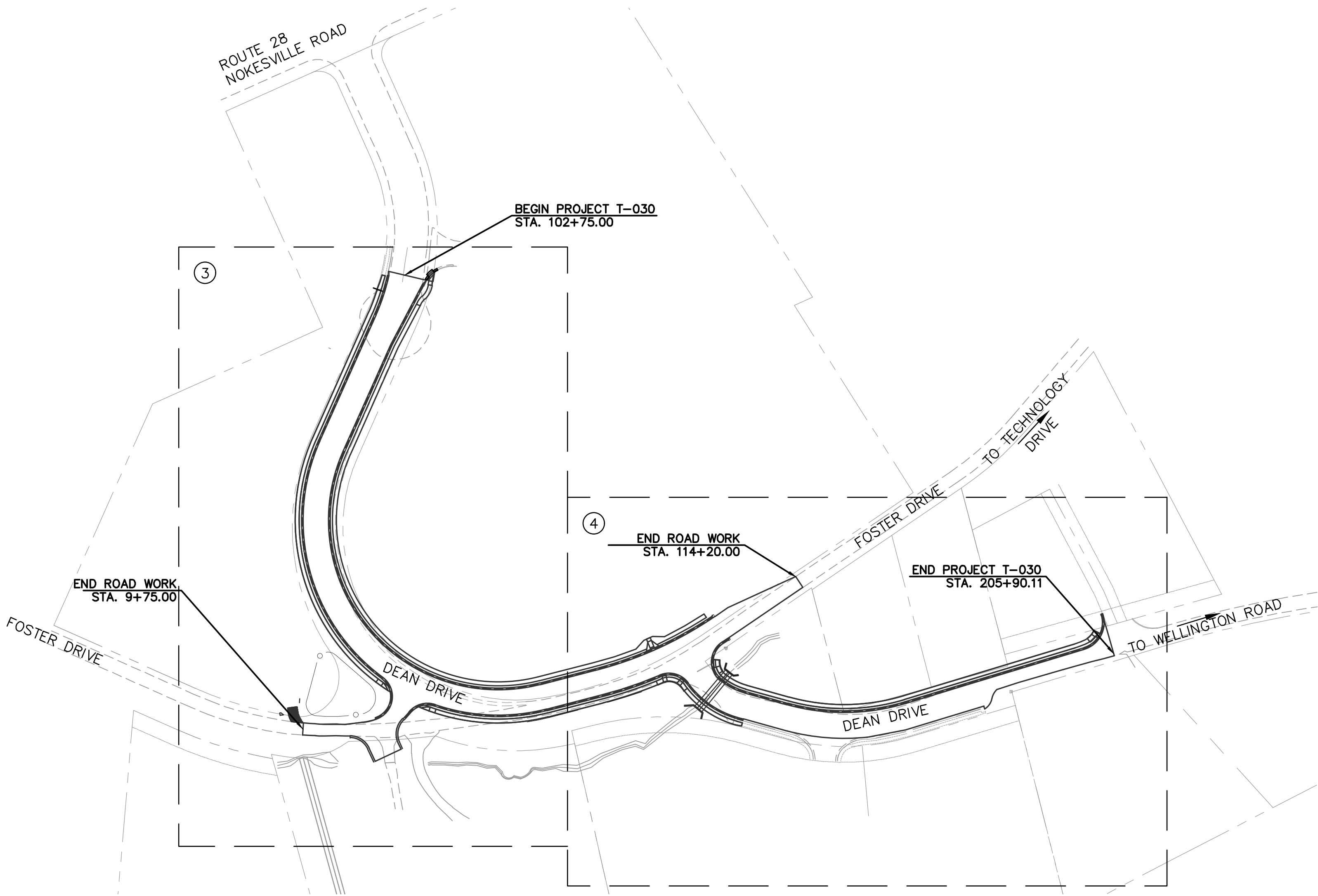
**Kimley»Horn**  
© 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
11400 COMMERCE PARK DRIVE  
SUITE 400  
RESTON, VIRGINIA 20191  
PHONE: 703-674-1300  
FAX: 703-674-1350

SURVEYOR

RICE ASSOCIATES  
10661 GASKINS WAY  
MANASSAS, VIRGINIA 20109  
PHONE: 703-968-3200  
FAX: 703-968-2705

RIGHT-OF-WAY

ERM AND ASSOCIATES  
15 MAIN STREET  
WARRENTON, VA 20186  
PHONE: 540-347-5547



PROJECT NAME:  
DEAN DRIVE EXTENDED  
  
100% DESIGN PLANS

DESIGN FEATURES RELATING TO CONSTRUCTION OR REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CITY OF MANASSAS AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING:

- CITY OF MANASSAS, DESIGN AND CONSTRUCTION STANDARDS MANUAL
- VDOT ROAD AND BRIDGE SPECIFICATIONS, DATED 2020
- VDOT ROAD AND BRIDGE STANDARDS, DATED 2016, REVISED 2019
- MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), DATED 2009
- VIRGINIA SUPPLEMENT TO THE 2009 MUTCD, DATED 2011, REVISED 2013
- VIRGINIA WORK AREA PROTECTION MANUAL, DATED 2011, REVISED 2019

AND AS AMENDED BY CONTRACT PROVISIONS.

FUNCTIONAL CLASSIFICATION

	DEAN DRIVE	FOSTER DRIVE
AADT	N/A	N/A
FUNCTIONAL CLASS.	LOCAL STREET	LOCAL STREET

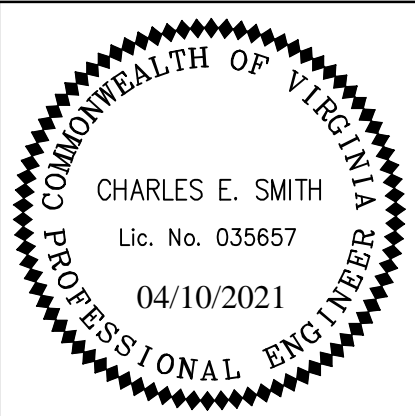
100% DESIGN SUBMITTAL



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

REVISIONS	DATE	BY	DESCRIPTION

MANASSAS PROJECT NO.:	T-030
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID.:	594000
DESIGNED BY:	MP DATE: 1/15/2020
DRAWN BY:	DB DATE: 2/18/2020
CHECKED BY:	SH DATE: 2/21/2020
APPROVED BY:	CS DATE: 5/8/2020



Kimley-Horn  
Reston, Virginia  
Civil Engineer

**Kimley»Horn**

11400 COMMERCE PARK DRIVE SUITE #400, RESTON, VA 20191  
PHONE: 703-674-1300 FAX: 703-674-1350  
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SHEET  
1 - TITLE SHEET

SCALE 1:100

### LOCATION MAP

The map displays the project location in a yellow box, located near the intersection of Godwin Dr and Nokesville Rd. The project is situated near the intersection of Godwin Dr and Nokesville Rd. The map shows the project location in a yellow box, situated near the intersection of Godwin Dr and Nokesville Rd. The map also includes a graphic scale in feet (0 to 1200) and a north arrow.

[illegible]

11400 COMMERCE PARK DRIVE SUITE #400, RESTON, VA 20191  
PHONE: 703-674-1300 FAX: 703-674-1350  
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SCALE 1:600

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DEAN DRIVE EXTENDED (T–030)

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SHEET  
1B – INDEX OF  
SHEETS

SCALE NOT TO  
SCALE

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



RIGHT OF WAY DATA SHEET

PARCEL INFORMATION			AREA						
NUMBER	LANDOWNER NAME	SHEET NUMBER	TOTAL (ACRES)	FEE TAKING (SF)	FEE REMAINDER (ACRES)	EASEMENTS (SF)			
						DRAINAGE	UTILITY	SANITARY	CONSTRUCTION
1	JEFFREY L. LEHEW FAMILY, LLC XI	3 & 4	9.59	11478	9.33	10700	4717	158	6728
2	JEFFREY L. LEHEW FAMILY, LLC XI	3	3.37	0	3.37	3209	3135	344	7480
3	CRIGGER HOLDINGS, LLC AND CROWNE HOLDINGS LLC	3	3.6	0	3.6	0	137	0	1329
4	NORTHERN VIRGINIA FAMILY SERVICE, INC.	4	5.43	1991	5.38	915	2204	0	5366
5	R.C. HOMES, INCORPORATED	4	0.47	242	0.46	0	1189	0	1828
6	R.C. HOMES, INCORPORATED	4	0.49	197	0.49	0	3079	0	1325
7	CITY OF MANASSAS	4	0.52	0	0.52	0	361	0	684

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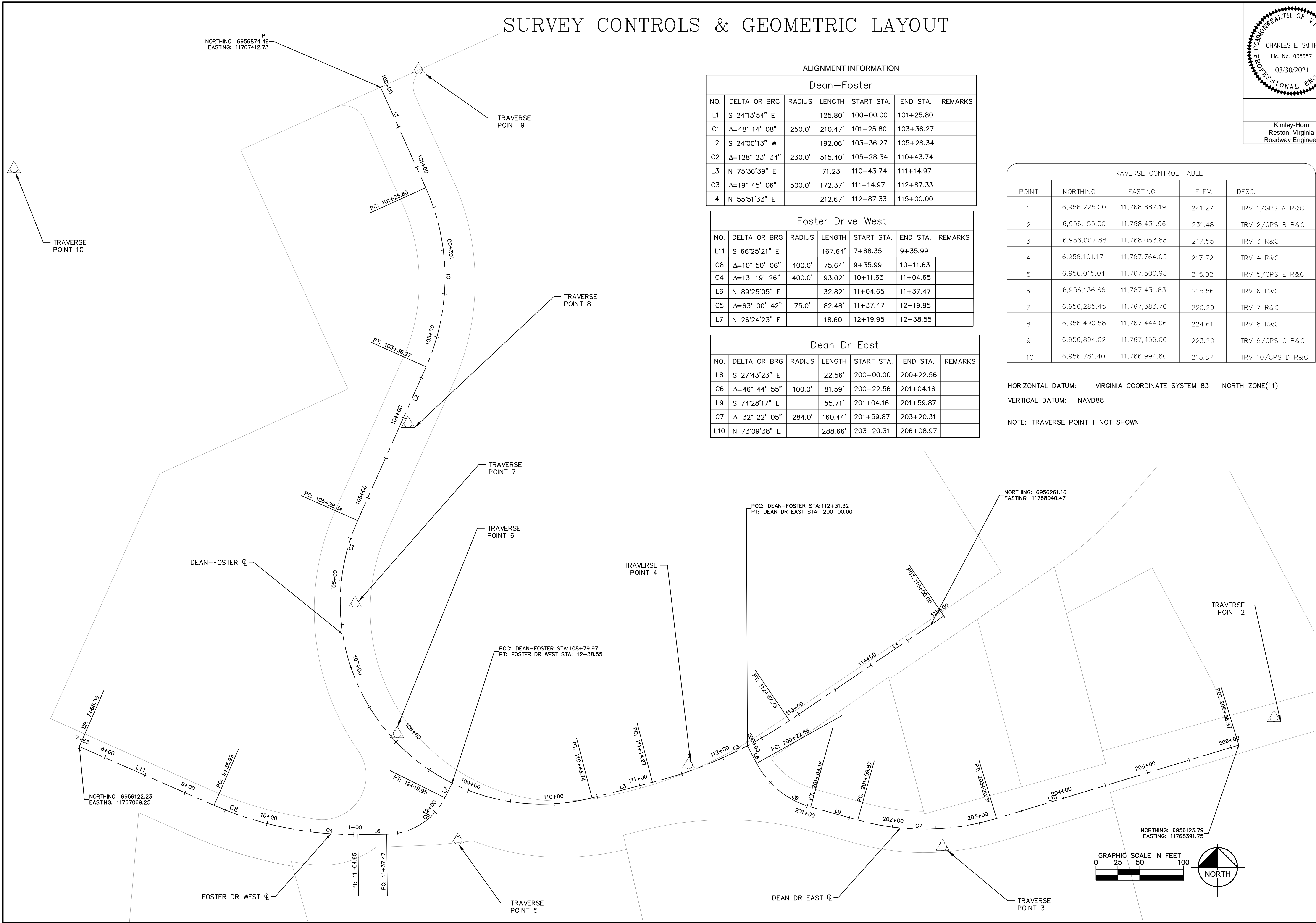
SHEET  
1C - RIGHT OF WAY  
DATA SHEET  
  
SCALE NTS

REVISIONS	
DATE	DESCRIPTION

MANASSAS PROJECT NO: T-030  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: 594000  
DESIGNED BY: MP DATE: 1/15/2020  
DRAWN BY: DB DATE: 2/18/2020  
CHECKED BY: SH DATE: 2/21/2020  
APPROVED BY: CS DATE: 5/8/2020

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





SURVEY CONTROLS & GEOMETRIC LAYOUT

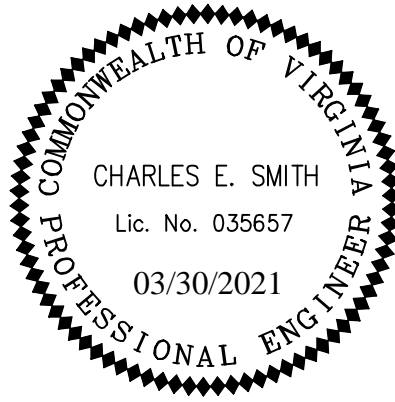
ALIGNMENT INFORMATION						
Dean-Foster						
NO.	DELTA OR BRG	RADIUS	LENGTH	START STA.	END STA.	REMARKS
L1	S 24°13'54" E		125.80'	100+00.00	101+25.80	
C1	Δ=48° 14' 08"	250.0'	210.47'	101+25.80	103+36.27	
L2	S 24°00'13" W		192.06'	103+36.27	105+28.34	
C2	Δ=128° 23' 34"	230.0'	515.40'	105+28.34	110+43.74	
L3	N 75°36'39" E		71.23'	110+43.74	111+14.97	
C3	Δ=19° 45' 06"	500.0'	172.37'	111+14.97	112+87.33	
L4	N 55°51'33" E		212.67'	112+87.33	115+00.00	

Foster Drive West						
NO.	DELTA OR BRG	RADIUS	LENGTH	START STA.	END STA.	REMARKS
L11	S 66°25'21" E		167.64'	7+68.35	9+35.99	
C8	Δ=10° 50' 06"	400.0'	75.64'	9+35.99	10+11.63	
C4	Δ=13° 19' 26"	400.0'	93.02'	10+11.63	11+04.65	
L6	N 89°25'05" E		32.82'	11+04.65	11+37.47	
C5	Δ=63° 00' 42"	75.0'	82.48'	11+37.47	12+19.95	
L7	N 26°24'23" E		18.60'	12+19.95	12+38.55	

Dean Dr East						
NO.	DELTA OR BRG	RADIUS	LENGTH	START STA.	END STA.	REMARKS
L8	S 27°43'23" E		22.56'	200+00.00	200+22.56	
C6	Δ=46° 44' 55"	100.0'	81.59'	200+22.56	201+04.16	
L9	S 74°28'17" E		55.71'	201+04.16	201+59.87	
C7	Δ=32° 22' 05"	284.0'	160.44'	201+59.87	203+20.31	
L10	N 73°09'38" E		288.66'	203+20.31	206+08.97	

TRAVERSE CONTROL TABLE				
POINT	NORTHING	EASTING	ELEV.	DESC.
1	6,956,225.00	11,768,887.19	241.27	TRV 1/GPS A R&C
2	6,956,155.00	11,768,431.96	231.48	TRV 2/GPS B R&C
3	6,956,007.88	11,768,053.88	217.55	TRV 3 R&C
4	6,956,101.17	11,767,764.05	217.72	TRV 4 R&C
5	6,956,015.04	11,767,500.93	215.02	TRV 5/GPS E R&C
6	6,956,136.66	11,767,431.63	215.56	TRV 6 R&C
7	6,956,285.45	11,767,383.70	220.29	TRV 7 R&C
8	6,956,490.58	11,767,444.06	224.61	TRV 8 R&C
9	6,956,894.02	11,767,456.00	223.20	TRV 9/GPS C R&C
10	6,956,781.40	11,766,994.60	213.87	TRV 10/GPS D R&C

HORIZONTAL DATUM: VIRGINIA COORDINATE SYSTEM 83 - NORTH ZONE(11)  
VERTICAL DATUM: NAVD88  
NOTE: TRAVERSE POINT 1 NOT SHOWN



Kimley-Horn  
Reston, Virginia  
Roadway Engineer



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

REVISIONS		DATE	BY	DESCRIPTION
NO.	DATE			
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

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SHEET  
1D - SURVEY  
CONTROLS &  
GEOMETRIC LAYOUT  
SCALE 1:50

DEAN DRIVE EXTENDED (T-030)

100% DESIGN SUBMITTAL

UNDERGROUND UTILITIES TEST HOLE INFORMATION

TH #	BASELINE NAME	STATION	OFFSET (-LEFT/+RIGHT)	UTILITY OWNER	TYPE OF UTILITY	ELEVATION AT TOP OF UTILITY (FT)	CONFLICT	REMARKS	UTILITY ADJUSTMENT REQUIRED
1	DEAN/FOSTER	103+09.13	-15.42	A	8" DIP WATER	222.54	NO	CONNECTION TO EX. 8" W/L	NO
2	DEAN/FOSTER	107.78.43	-32.30	A	ELECTRIC PVC	212.82	NO		NO
3	DEAN/FOSTER	108+30.19	-34.32	A	12" DIP FORCEMAIN 12" DIP FORCEMAIN 18" DIP FORCEMAIN	211.33 211.09 207.65	NO	EX. FORCEMAINS LOCATED BELOW PROPOSED STORM SEWER. MIN. 18" VERTICAL CLEARANCE REQUIRED.	NO
4	DEAN/FOSTER	108+31.19	-31.19	A	ELECTRIC PVC	210.93	NO	4.4' CLEARANCE BELOW STORM SEWER	NO
5	FOSTER DRIVE WEST	10+76.20	+2.86	A	24" DIP WATER	208.09	NO	PROP. SS 0.7 FT. ABOVE EX. 24" W/L. EX. 24 W/L TO BE ABANDONED UPON COMPLETION OF THE PROP. 36" W/L	NO
6	FOSTER DRIVE WEST	10+92.77	+9.20	B	1" VERIZON CABLE	210.81	YES	VERIZON CABLE TO BE RELOCATED BY OTHERS	YES
7	FOSTER DRIVE WEST	10+95.74	-1.97	A	24" DIP WATER	208.93	NO	PROP. SS 0.7 FT. ABOVE EX. 24" W/L. EX/ 24 W/L TO BE ABANDONED UPON COMPLETION OF THE PROP. 36" W/L	NO
8	DEAN/FOSTER	109+14.2	-22.58	A	ELECTRIC PVC	212.90	NO	0.2' CLEARANCE BELOW STRUCTURE 3-7	NO
9	DEAN/FOSTER	109+56.68	+34.69	C	1" TELEPHONE	212.96	NO	2.21' CLEARANCE ABOVE PROP. 36" W/L	NO
10	DEAN/FOSTER	112+02.06	+12.13	A	12" DIP FORCEMAIN 12" DIP FORCEMAIN 18" DIP FORCEMAIN	210.79 210.67 208.78	NO		NO
11	DEAN DRIVE EAST	200+19.64	+16.66	A	CONCRETE ELECTRIC DUCT	213.87	NO		NO
12	DEAN DRIVE EAST	200+51.08	+27.22	A	NO UTILITY FOUND	N/A		NO UTILITY FOUND DURING TEST HOLE	
13	DEAN DRIVE EAST	200+78.30	-31.59	A	8" DIP SANITARY SEWER	207.94	NO	ELEVATION PROVIDED IS BASED ON SURVEY INFORMATION USING THE SANITARY MANHOLE INVERT ELEVATIONS	NO
14	DEAN DRIVE EAST	200+89.53	-14.67	A	CONCRETE ELECTRIC DUCT	211.90	NO	UTILITY LOCATED NEAR PROPOSED CULVERT	NO
15	DEAN DRIVE EAST	200+87.36	-8.30	A	12" DIP FORCEMAIN	209.44	NO	UTILITY LOCATED NEAR PROPOSED CULVERT	NO
16	DEAN DRIVE EAST	200+94.69	+23.83	B	1.5" PVC TELEPHONE	215.02	NO	7.7' CLEARANCE ABOVE PROP. W/L	NO
17	DEAN DRIVE EAST	201+27.49	+10.61	A	8" DIP SANITARY SEWER	210.19	NO	ELEVATION PROVIDED IS BASED ON SURVEY INFORMATION USING THE SANITARY MANHOLE INVERT ELEVATIONS	NO
18	DEAN DRIVE EAST	201+71.11	-23.84	A	4" PVC	213.74	YES	EX. UTILITY LOCATED INSIDE PROPOSED STORM SEWER	YES
19	DEAN DRIVE EAST	201+72.14	-23.81	B	1" BLACK CABLE	213.62	YES	EX. UTILITY LOCATED INSIDE PROPOSED STORM SEWER	YES
20	DEAN DRIVE EAST	201+73.84	+14.94	A/B	4" ELECTRIC PVC 4" TELEPHONE PVC	213.40 213.30	YES	EX. UTILITIES LOCATED ABOVE PROPOSED 36" W/L	NO

TH #	BASELINE NAME	STATION	OFFSET (-LEFT/+RIGHT)	UTILITY OWNER	TYPE OF UTILITY	ELEVATION AT TOP OF UTILITY (FT)	CONFLICT	REMARKS	UTILITY ADJUSTMENT REQUIRED
21	DEAN DRIVE EAST	202+15.07	+11.1	A	8" DIP WATER	211.12	NO	LOCATION OF EX. 8" WATER SERVICE	NO
22	DEAN DRIVE EAST	204+08.62	-3.23	A	24" DIP WATER	216.26	NO	36" PROP. W/L TIE-IN LOCATION TO EX. 24" W/L	NO
23	DEAN DRIVE EAST	204+22.21	-19.42	B	1" BLACK CABLE	217.58	YES	UTILITY LOCATED INSIDE PROP. STORM SEWER. UTILITY TO BE RELOCATED BY OTHERS.	YES
24	DEAN DRIVE EAST	204+54.45	-16.87	A	CONCRETE ELECTRIC DUCT	218.81	NO	UTILITY PARALLEL TO PROP. STORM SEWER.	NO
25	DEAN DRIVE EAST	204+56.42	-18.41	C	1" TELEPHONE CABLE	219.80	YES	UTILITY LOCATED INSIDE PROP. STORM SEWER. UTILITY TO BE RELOCATED BY OTHERS.	YES
26	DEAN DRIVE EAST	200+41.83	+37.25	A	24" DIP WATER	209.26	YES	36" PROP. W/L TO REPLACE EX. 24" W/L	YES
27	DEAN DRIVE EAST	200+39.14	+33.68	C	1" TELEPHONE CABLE	213.19	YES	COMCAST CABLE TO BE RELOCATED BY OTHERS	YES
28	DEAN DRIVE EAST	203+11.62	-27.56	B	1" TELEPHONE CABLE	215.41	NO	VERIZON CABLE IS ABANDONED	NO
29	DEAN DRIVE EAST	203+18.06	-15.96	B	0.5" TELEPHONE CABLE	215.67	YES	VERIZON CABLE TO BE RELOCATED BY OTHERS	YES
30	DEAN DRIVE EAST	204+48.84	+13.31	C	0.75" TELEPHONE CABLE	222.54	NO		NO
31	DEAN DRIVE EAST	204+51.20	+18.26	C	0.75" TELEPHONE CABLE	222.22	NO		NO

UTILITY OWNERS

- A. CITY OF MANASSAS  
9027 CENTER ST.  
MANASSAS, VA 20110  
703-257-8200
- B. VERIZON  
502 E. PIEDMONT STREET  
CULPEPER, VA 22701
- C. COMCAST  
11101 UNIVERSITY BLVD  
MANASSAS, VA 20110

NOTES

1. ELEVATIONS SHOWN HEREON ARE TO THE TOP OF THE FACILITY UNLESS OTHERWISE NOTED.
2. YES OR NO IN THE CONFLICT COLUMN: NO IN THE CONFLICT COLUMN INDICATES NO DIRECT CONFLICT. HOWEVER, MINIMUM CLEARANCES MUST BE MAINTAINED.
3. YES OR NO IN THE UTILITY ADJUSTMENT COLUMN: YES INDICATES THE UTILITY WILL NEED TO BE RELOCATED BY OTHERS.

DEAN DRIVE EXTENDED (T-030)

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

REVISIONS	DESCRIPTION
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MANASSAS PROJECT NO: T-030	TBD
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CHECKED BY: SH	CS DATE: 5/8/2020
APPROVED BY: CS	

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SHEET  
1E(1) - TEST HOLES  
SUMMARY  
SCALE

TEST HOLE PLAN

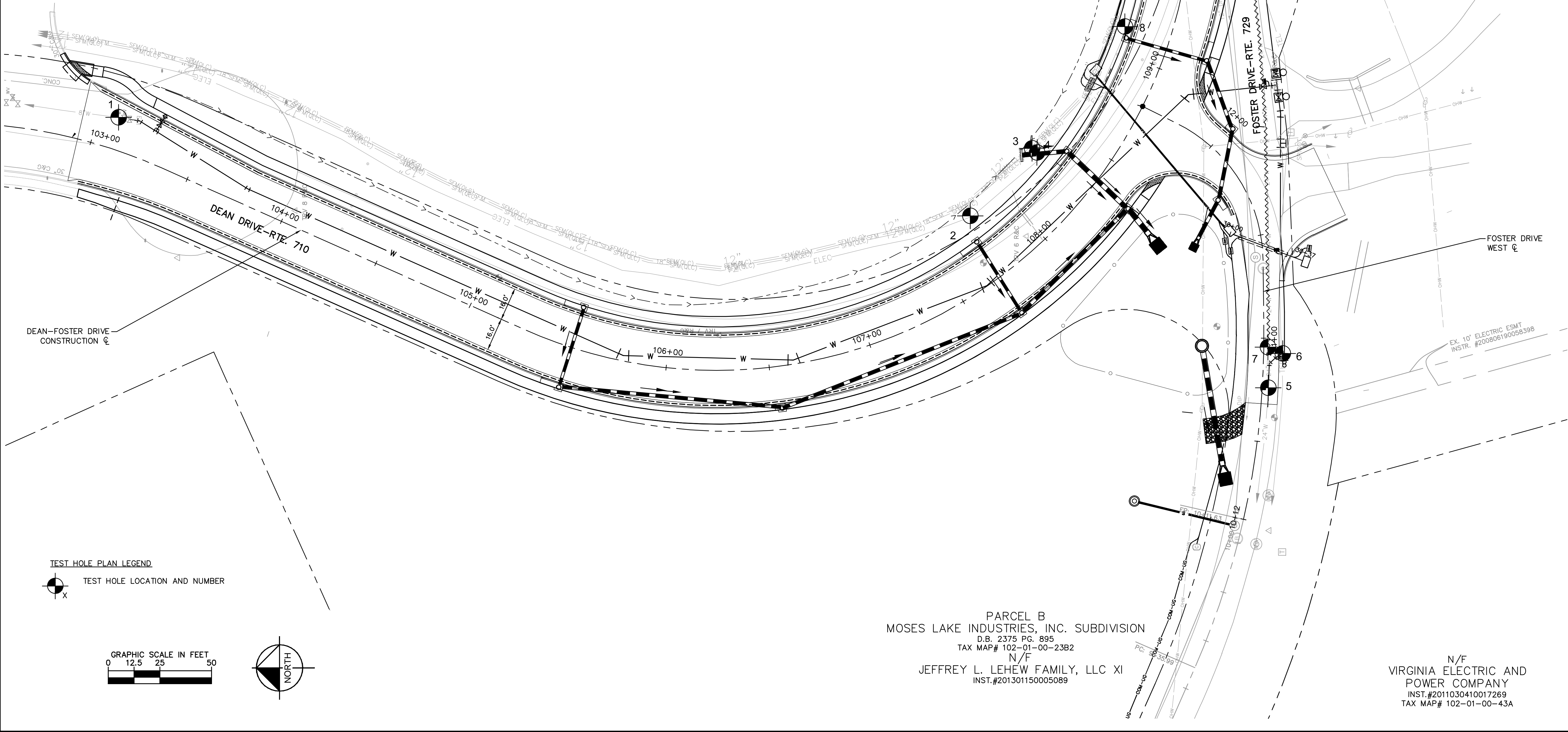
MATCHLINE STA. 110+75. SEE SHEET 1E(3)

PARCEL A  
MOSES LAKE INDUSTRIES, INC. SUBDIVISION  
D.B. 2375 PG. 895  
TAX MAP# 102-01-00-23B1  
N/F  
JEFFREY L. LEHEW FAMILY, LLC XI  
INST.#201301150005089

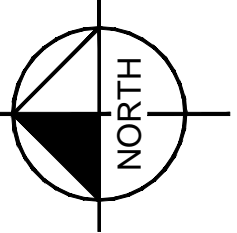
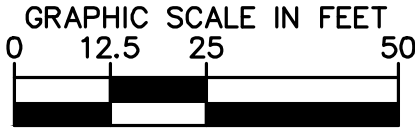
N/F  
CRIGGER HOLDINGS, LLC AND  
COWNE HOLDINGS LLC  
INST.#201201270007810  
TAX MAP# 102-01-00-45A

PARCEL B  
MOSES LAKE INDUSTRIES, INC. SUBDIVISION  
D.B. 2375 PG. 895  
TAX MAP# 102-01-00-23B2  
N/F  
JEFFREY L. LEHEW FAMILY, LLC XI  
INST.#201301150005089

N/F  
VIRGINIA ELECTRIC AND  
POWER COMPANY  
INST.#2011030410017269  
TAX MAP# 102-01-00-43A



TEST HOLE PLAN LEGEND  
TEST HOLE LOCATION AND NUMBER



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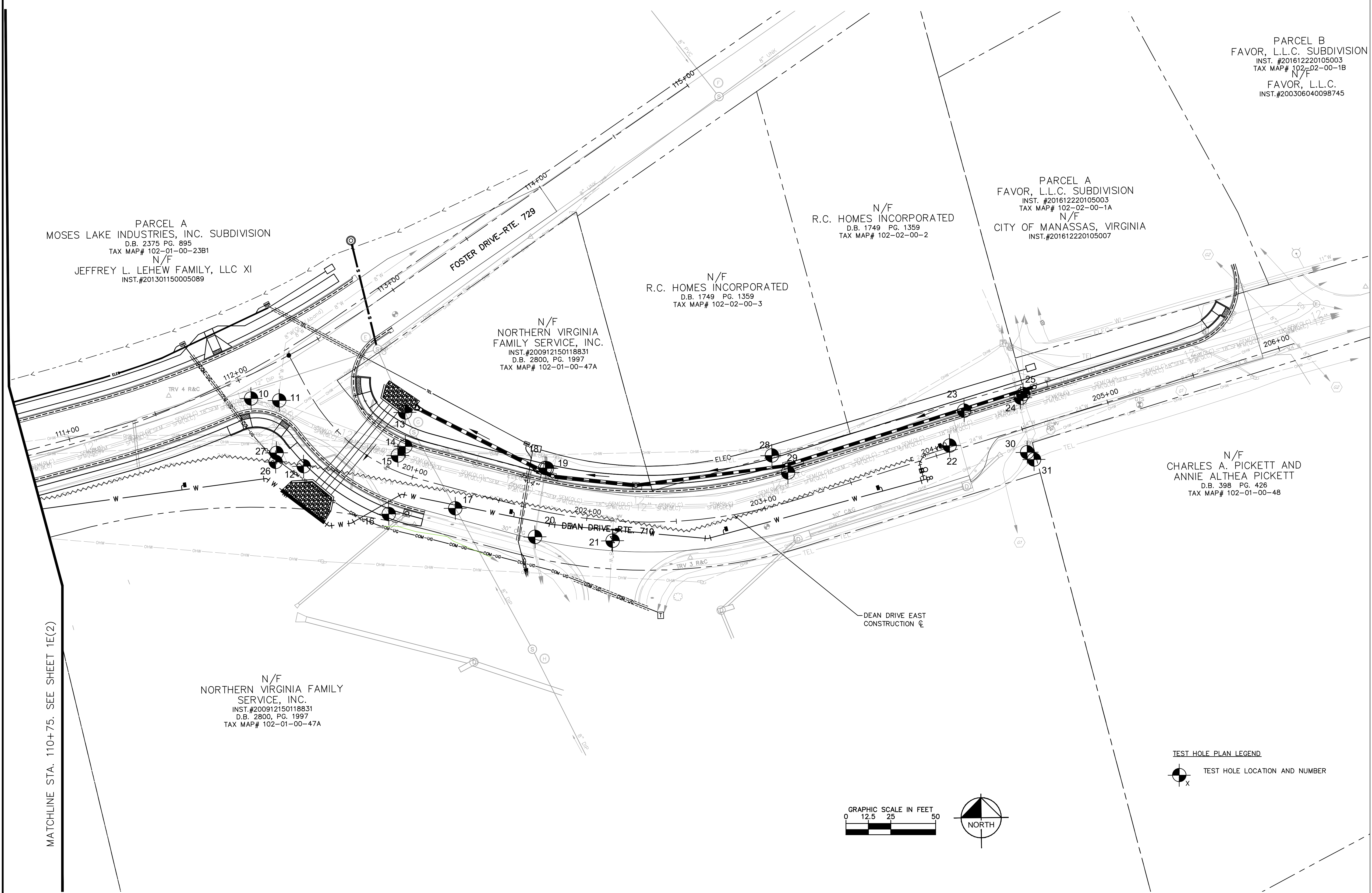
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SHEET  
1E(2) - TEST HOLE  
PLAN  
SCALE 1:25

DEAN DRIVE EXTENDED (T-030)

100% DESIGN SUBMITTAL

TEST HOLE PLAN



MATCHLINE STA. 110+75. SEE SHEET 1E(2)

PARCEL A  
MOSES LAKE INDUSTRIES, INC. SUBDIVISION  
D.B. 2375 PG. 895  
TAX MAP# 102-01-00-23B1  
N/F  
JEFFREY L. LEHEW FAMILY, LLC XI  
INST.#201301150005089

N/F  
NORTHERN VIRGINIA  
FAMILY SERVICE, INC.  
INST.#200912150118831  
D.B. 2800, PG. 1997  
TAX MAP# 102-01-00-47A

N/F  
R.C. HOMES INCORPORATED  
D.B. 1749 PG. 1359  
TAX MAP# 102-02-00-3

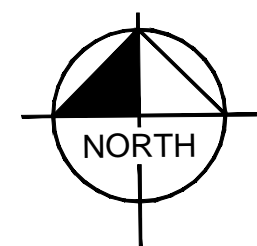
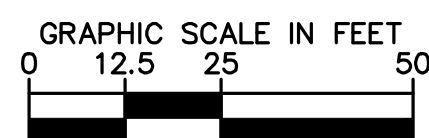
N/F  
R.C. HOMES INCORPORATED  
D.B. 1749 PG. 1359  
TAX MAP# 102-02-00-2

PARCEL A  
FAVOR, L.L.C. SUBDIVISION  
INST. #201612220105003  
TAX MAP# 102-02-00-1A  
N/F  
CITY OF MANASSAS, VIRGINIA  
INST.#201612220105007

PARCEL B  
FAVOR, L.L.C. SUBDIVISION  
INST. #201612220105003  
TAX MAP# 102-02-00-1B  
N/F  
FAVOR, L.L.C.  
INST.#200306040098745

N/F  
CHARLES A. PICKETT AND  
ANNIE ALTHEA PICKETT  
D.B. 398 PG. 426  
TAX MAP# 102-01-00-48

N/F  
NORTHERN VIRGINIA FAMILY  
SERVICE, INC.  
INST.#200912150118831  
D.B. 2800, PG. 1997  
TAX MAP# 102-01-00-47A



TEST HOLE PLAN LEGEND  
TEST HOLE LOCATION AND NUMBER



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

REVISIONS	
DATE	DESCRIPTION

MANASSAS PROJECT NO:	T-030
DATE OF PLAN ISSUE:	TBD
CONSULTANT PROJECT ID:	594000
DESIGNED BY:	MP DATE: 1/15/2020
DRAWN BY:	DB DATE: 2/18/2020
CHECKED BY:	SH DATE: 2/21/2020
APPROVED BY:	CS DATE: 5/8/2020

**Kimley»Horn**  
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PHONE: 703-674-1300 FAX: 703-674-1350  
WWW.KIMLEY-HORN.COM

SHEET  
1E(3) - TEST HOLE  
PLAN  
SCALE 1:25

DEAN DRIVE EXTENDED (T-030) 100% DESIGN SUBMITTAL

TRANSPORTATION MANAGEMENT PLAN  
AND SEQUENCE OF CONSTRUCTION (TMP/SOC)

TEMPORARY TRAFFIC CONTROL PLAN

1. TMP/SOC TYPE B PROJECT INFORMATION:

- A. IDENTIFY THE PROJECT'S TMP TYPE:  
THIS PROJECT'S TMP/SOC PLAN HAS BEEN DESIGNED IN CONFORMANCE WITH A TYPE B TMP/SOC PLAN.
- B. IDENTIFY THE WORK ZONE LOCATION, LENGTH, AND WIDTHS:  
THE PROJECT LOCATION IS SHOWN ON SHEET 1  
THE WORK ZONE AREAS HAVE BEEN DELINEATED AS SHOWN ON SHEETS 1F(2) – 1F(6).  
THE WORK ZONE LENGTHS AND WIDTHS VARY BY LOCATION.
- C. NOTE THE HOURS THE CONSTRUCTION AREA WILL BE ACTIVE:  
CONSTRUCTION AREA SHALL BE CONSIDERED ACTIVE WHEN ANY IMPACT TO TRAFFIC OCCURS (1ST CONE IN ROAD)  
CONSTRUCTION AREA HOURS HAVE THE FOLLOWING LIMITATIONS:

DAY TIME	LANE CLOSURES (NON MAJOR ARTERIALS)			
	MONDAY TO THURSDAY	FRIDAY	SATURDAY	SUNDAY
9:30AM to 3:30PM		9:30AM to 2:00PM	*NOT ALLOWED	*NOT ALLOWED
NIGHT TIME	*NOT ALLOWED	*NOT ALLOWED	10:00PM to 5:00AM	*NOT ALLOWED

\* NIGHT TIME AND WEEKEND WORK SHALL NOT BE ALLOWED UNLESS APPROVED BY CITY OF MANASSAS.  
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.

DESIGNATION OF PEAK HOUR TIMES:  
PEAK HOURS ARE 6:30AM THROUGH 9:30AM AND 3:30PM THROUGH 6:30PM.

- 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 2016; THE VIRGINIA WORK AREA PROTECTION MANUAL DATED AUGUST 2011 AND UPDATED APRIL 2019; THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), DATED 2009; THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DATED 2011 AND UPDATED 2013; AND IIM-LD-241.5 OF THE INSTRUCTIONAL AND INFORMATIONAL MEMORANDA.
- E. NOTE ANY EXISTING ENTRANCES, EXISTING INTERSECTIONS, OR EXISTING PEDESTRIAN ACCESS POINTS THAT WILL BE AFFECTED BY THE CONSTRUCTION AREA OR BY THE TRAFFIC CONTROL DEVICES:

EXISTING ENTRANCES:  
THERE ARE TWO EXISTING PRIVATE ENTRANCES WITHIN THE PROJECT LIMITS. ONE ENTRANCE IS AN ASPHALT ENTRANCE ON THE NORTH SIDE OF DEAN DRIVE EAST THAT SERVES AN ANIMAL SHELTER AND A PET BOARDING BUSINESS. THE OTHER ENTRANCE IS AN ASPHALT ENTRANCE ON THE SOUTH SIDE OF DEAN DRIVE EAST THAT IS FOR THE NORTHERN VIRGINIA FAMILY SERVICES PROPERTY. ALL ENTRANCES ARE TO REMAIN OPEN AND FUNCTIONAL DURING CONSTRUCTION. PRIOR TO WATER LINE CONSTRUCTION AND COMMENCEMENT OF PHASE 3, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS OF PROPOSED SCHEDULE AND DETOUR ROUTES FROM/TO NOKESVILLE ROAD AND WELLINGTON ROAD.

THERE ARE FOUR DRIVEWAY ENTRANCES OUTSIDE OF THE PROJECT AREA ON FOSTER DRIVE WEST THAT WILL BE IMPACTED BY CONSTRUCTION ON FOSTER DRIVE. A TEMPORARY NIGHTTIME CLOSURE OF FOSTER DRIVE IS SHOWN ON THE PHASE 1 MOT PLANS TO CONSTRUCT FULL-DEPTH PAVEMENT ON FOSTER DRIVE. DURING THIS TIME, THE CONTRACTOR IS TO COORDINATE WITH PROPERTY OWNERS TO MAINTAIN ACCESS TO PROPERTIES, AS NEEDED.

EXISTING INTERSECTIONS:  
THE DEAN DRIVE WEST AND FOSTER DRIVE WEST INTERSECTION IS TO REMAIN OPEN DURING ALL PHASES OF CONSTRUCTION. THE DEAN DRIVE EAST AND FOSTER DRIVE EAST INTERSECTION WILL BE CLOSED DURING PHASE 2 OF CONSTRUCTION. CONTRACTOR TO IMPLEMENT DETOUR ON SHEET 1F(4) DURING THIS CLOSURE.

EXISTING PEDESTRIAN ACCESS POINTS:  
THERE ARE 2 EXISTING PEDESTRIAN ACCESS POINTS WITHIN THE PROJECT LIMITS. THERE IS AN EXISTING CONCRETE SIDEWALK ON THE NORTH END OF THE PROJECT ON THE EAST AND WEST SIDE OF DEAN DRIVE. THESE EXISTING TERMINI OF THESE SIDEWALKS ARE AT THE CUL-DE-SAC ON DEAN DRIVE. AN ASPHALT TRAIL CONNECTS THE DEAN DRIVE CUL DE SAC TO FOSTER DRIVE. THIS TRAIL WILL BE CLOSED PRIOR TO THE START OF PHASE 1. THE PROJECT WILL CONSTRUCT SIDEWALK THAT WILL CONNECT DEAN DRIVE TO FOSTER DRIVE AS PART OF PHASE 1. THE OTHER EXISTING PEDESTRIAN ACCESS POINT IS AT THE NORTHERN VIRGINIA FAMILY SERVICES PROPERTY WHERE THERE IS SIDEWALK ALONG FRONTAGE. THE PROJECT WILL CONNECT TO THIS SIDEWALK HOWEVER THE NEW SIDEWALK WILL BE CLOSED UNTIL AFTER THE COMPLETION OF PHASE 2. PEDESTRIANS ARE TO BE DIVERTED AWAY FROM THE CONSTRUCTION ZONE.

- F. 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 OF MANASSAS 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 CITY OF MANASSAS OF ANY WORK REQUIRING LANE SHIFTS, LANE CLOSURES, AND/OR PHASE CHANGES A MINIMUM OF TWO WORKING DAYS 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 CITY OF MANASSAS. CONTRACTOR SHALL MAINTAIN AN APPROVED COPY OF THE TEMPORARY TRAFFIC CONTROL PLAN AT THE WORK SITE AT ALL TIMES.

COORDINATE WITH THE CITY OF MANASSAS POLICE DEPARTMENT FOR ANY LANE CLOSURES AND ANY DETOURS OF ANY NATURE.

2. THIS 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. IF THE CONTRACTOR TO DEVIATE FROM THE APPROVED TMP, A NEW OR REVISED TMP MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
3. ALL AREAS EXCAVATED BELOW THE EXISTING PAVEMENT SURFACE AND WITHIN THE CLEAR ZONE OF AN ACTIVE ROADWAY AT THE CONCLUSION OF EACH WORKDAY, SHALL BE BACKFILLED TO FORM AN APPROXIMATE 6:1 WEDGE AGAINST THE EXISTING PAVEMENT OR NEWLY CONSTRUCTED PAVEMENT SURFACE FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC.

4. EACH PHASE OF CONSTRUCTION SHALL BE COMPLETED TO THE INSTALLATION OF BASE COURSE ASPHALT PRIOR TO THE START OF THE NEXT PHASE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. 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.
6. WHERE GROUP 2 CHANNELIZING DEVICES ARE USED TO SEPARATE THE CONSTRUCTION AREA AND TRAFFIC, A MINIMUM CLEAR ZONE AREA AS DEFINED IN THE VIRGINIA WORK AREA PROTECTION MANUAL (VWAPM) IS TO BE MAINTAINED.
7. THE CONTRACTOR TO COORDINATE WITH THE CITY OF MANASSAS FOR LOCATION(S) OF THE CONSTRUCTION STAGING AREA. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AS NECESSARY.

GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL COMPLY WITH THE VIRGINIA WORK AREA PROTECTION MANUAL-APRIL 2015.
2. CONTRACTOR SHALL INSTALL PROJECT LIMIT SIGNS ON DEAN DRIVE AND FOSTER DRIVE IN ACCORDANCE WITH VWAPM TTC-53.0. THESE SIGNS ARE TO REMAIN IN PLACE FOR THE DURATION OF ALL PHASES OF CONSTRUCTION UNLESS DIRECTED BY THE CITY.
3. THE CONTRACTOR TO 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. TEMPORARY CLOSURES OF PEDESTRIAN ACCESS SHALL BE LIMITED AND ADMINISTERED AS DIRECTED BY THE CITY.
5. CONTRACTOR SHALL PROVIDE MINIMUM 11' LANES OR EXISTING LANE WIDTH IF LESS AT ALL TIMES DURING CONSTRUCTION.
6. UNLESS OTHERWISE APPROVED OR DIRECTED BY THE ENGINEER THE CONTRACTOR SHALL PLAN AND PROSECUTE THE WORK IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION ON THIS SHEET.

SEQUENCE OF CONSTRUCTION

1. CONTRACTOR SET UP ALL EROSION AND SEDIMENT CONTROL DEVICES FOR PHASE 1 PLANS ON SHEETS 3B AND 4B.
2. CONTRACTOR TO INSTALL THE 36" WATER LINE PER PLANS. FOR THE CONSTRUCTION OF THE 36" WATER LINE, CONTRACTOR SHALL USE FLAGGER OPERATIONS TO DIRECT TRAFFIC SAFELY AROUND WORK ZONE. NO OPEN TRENCHES OR BOXES SHALL REMAIN IN THE ROAD AT THE END OF EACH WORK DAY. CONTRACTOR SHALL COVER EXCAVATED AREAS OR BACKFILL WITH APPROPRIATE MATERIALS.
3. ONCE THE 36" WATERLINE IS IN PLACE, CONTRACTOR SHALL COORDINATE WITH THE CITY TO TEST AND TIE-IN TO THE EXISTING 24" WATERLINE. AFTER THE 36" LINE IS ACTIVE AND THE 24" WATER LINE IS CONNECTED, CONTRACTOR SHOULD PROCEED WITH PHASE 1 OF THE MOT PLANS CONTAINED HEREIN.
4. INSTALL ALL TRAFFIC CONTROL DEVICES PER PHASE 1, ON SHEET 1F(2). ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THIS PLAN SHOULD BE ERADICATED PER TTC 55.1.
5. CONSTRUCT PROJECT IMPROVEMENTS PER PLANS WITHIN THE PHASE 1 WORK ZONE INCLUDING THE 8" WATERLINE. CONSTRUCT FOSTER DRIVE WEST IMPROVEMENTS DURING NIGHT TIME ROAD CLOSURE CONCURRENT WITH PHASE 1 WORK.
6. INSTALL EROSION AND SEDIMENT CONTROL DEVICES FOR PHASE 2 PLANS.
7. ADJUST TRAFFIC CONTROL DEVICES TO BE SET UP FOR PHASE 2 WORK ZONE AND DETOUR PLAN SHOWN ON SHEETS 1F(3) AND 1F(4). ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THIS PLAN SHOULD BE ERADICATED PER TTC 55.1.
8. CONSTRUCT PROJECT IMPROVEMENTS PER PLANS WITHIN THE PHASE 2 WORK ZONE INCLUDING THE INSTALLATION OF THE CULVERT REPLACEMENT AND EXTENSION UNDER DEAN DRIVE EAST.
9. INSTALL EROSION AND SEDIMENT CONTROL DEVICES FOR PHASE 2 PLANS.
10. ADJUST TRAFFIC CONTROL DEVICES TO BE SET UP FOR PHASE 3 WORK ZONE AND DETOUR PLAN SHOWN ON SHEETS 1F(5) AND 1F(6). ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THIS PLAN SHOULD BE ERADICATED PER TTC 55.1.
11. CONSTRUCT PROJECT IMPROVEMENTS PER PLANS WITHIN THE PHASE 3 WORK ZONE.
12. INSTALL THE PROPOSED SIGNS AND PAVEMENT MARKINGS PER SHEET 7.
13. REMOVE ALL EROSION AND SEDIMENT CONTROL ITEMS AND TRAFFIC CONTROL DEVICES ONCE DIRECTED BY THE CITY.

PUBLIC COMMUNICATIONS PLAN

TRAFFIC OPERATIONS PLAN

1. THE CONTRACTOR SHALL UPDATE THE LANE CLOSURE ADVISORY MANAGEMENT SYSTEM (LCAMS) ONE WEEK IN ADVANCE (USUALLY THE WEDNESDAY PRIOR TO THE REQUESTED OPERATION), IN ORDER TO PLACE LANE CLOSURE INFORMATION ON THE 511 SYSTEM AND VA-TRAFFIC.

THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF MANASSAS ON THEIR PROJECTED WORK SCHEDULE TO ASSIST THE PROJECT TEAM IN DEVELOPING A PUBLIC COMMUNICATIONS PLAN.

2. THE FOLLOWING IS A LIST OF LOCAL EMERGENCY CONTACT AGENCIES:

A. VIRGINIA STATE POLICE – (703) 323-4522

B. CITY OF MANASSAS POLICE DEPARTMENT – (703) 257-8000

C. HAZ-MAT CENTER (IF SPILL INVOLVED) 911

3. PROCEDURES TO RESPOND TO TRAFFIC INCIDENTS THAT MAY OCCUR IN THE WORK ZONE:

A. CONTRACTOR TO NOTIFY MANASSAS POLICE AND CITY OF MANASSAS INSPECTOR IN CHARGE.

B. DEPENDING UPON SEVERITY OF INCIDENT, CONTRACTOR MAY HAVE TO SHUT DOWN WORK.

C. UPON ARRIVAL ON SCENE, MANASSAS POLICE WILL DETERMINE RESPONSE NECESSARY TO ALLOW TRAVELING PUBLIC AROUND INCIDENT.

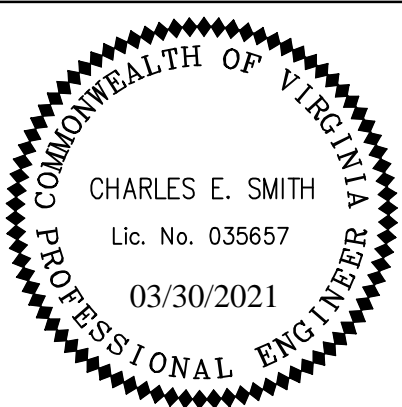
D. INSPECTOR TO NOTIFY CONSTRUCTION MANAGER OF INCIDENT AND TAKE PICTURES AS NECESSARY, ESPECIALLY PICTURES OF CONTRACTOR'S WORK ZONE TO VERIFY THE PROPER SETUP.

4. PROCESS OF NOTIFICATION OF INCIDENT TO FOLLOW IS:

CONTRACTOR TO CALL:

A. CITY OF MANASSAS INSPECTOR – TBD

B. MANASSAS POLICE DEPARTMENT (703) 257-8000



Kimley-Horn  
Reston, Virginia  
Roadway Engineer

DEAN DRIVE EXTENDED (T-030)

100% DESIGN SUBMITTAL



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

DATE	REVISIONS BY	DESCRIPTION

MANASSAS PROJECT NO.: T-030	TBD
DATE OF PLAN ISSUANCE: 594000	1/15/2020
CONSULTANT PROJECT ID: 594000	1/15/2020
DESIGNED BY: MP	DATE: 2/18/2020
DRAWN BY: DB	DATE: 2/18/2020
CHECKED BY: SH	DATE: 2/21/2020
APPROVED BY: CS	DATE: 5/8/2020

Kimley»Horn

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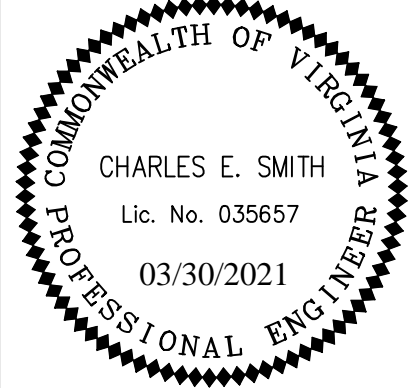
SHEET  
1F(1) – TMP-SOC  
NOTES

SCALE 1:50

MAINTENANCE OF TRAFFIC  
PHASE 1 PLAN

LEGEND

- WORK ZONE
- NIGHT-TIME CLSORE
- TRAFFIC FLOW
- BARRICADE (TYPE III)
- SIGNS
- CHANNELIZING DEVICE



Kimley-Horn  
Reston, Virginia  
Roadway Engineer



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

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DATE	REVISIONS	DESCRIPTION
	BY	

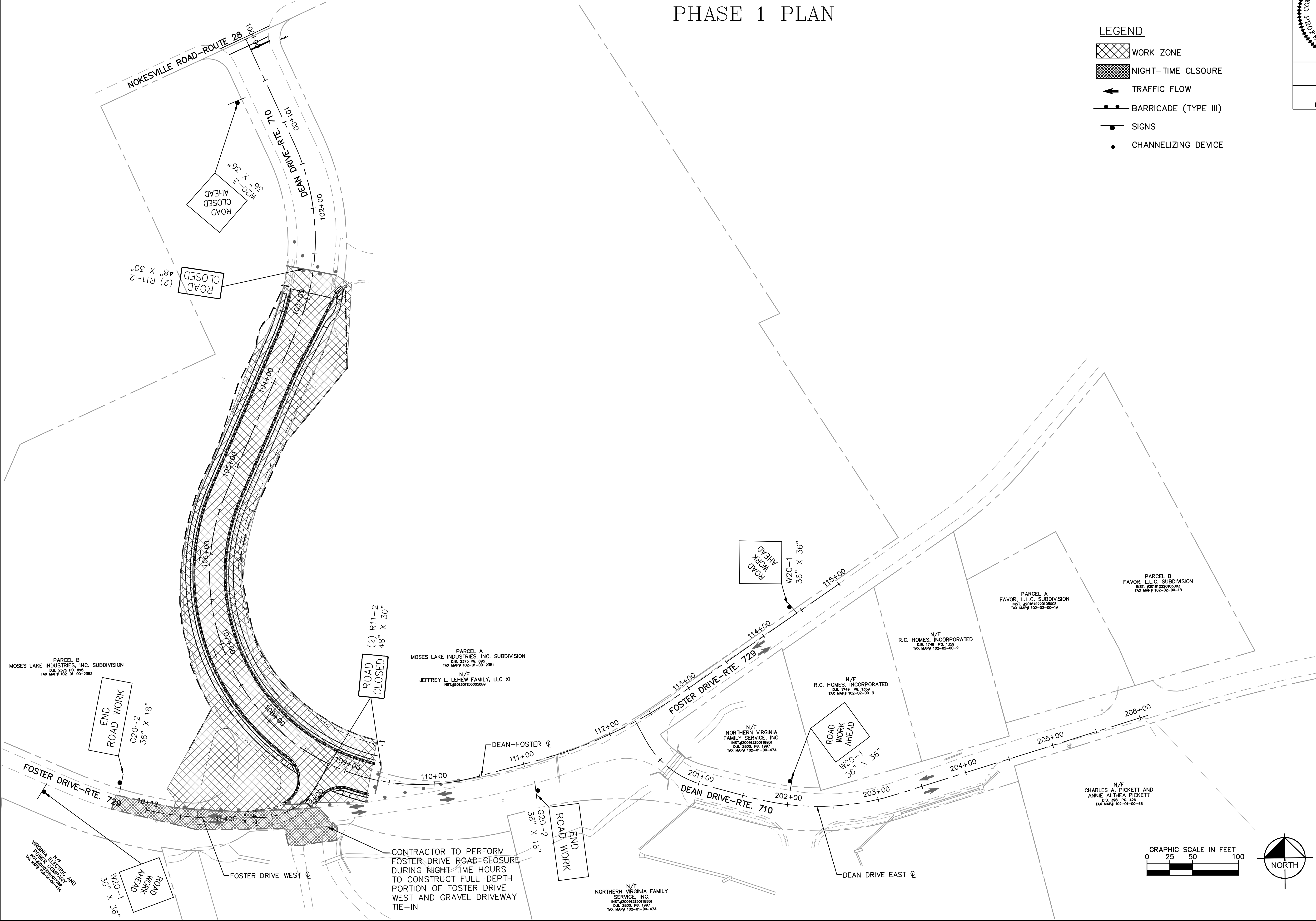
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DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	594000
DESIGNED BY:	MP DATE: 1/15/2020
DRAWN BY:	DB DATE: 2/18/2020
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SHEET  
1F(2) -  
MAINTENANCE OF  
TRAFFIC  
SCALE 1:50

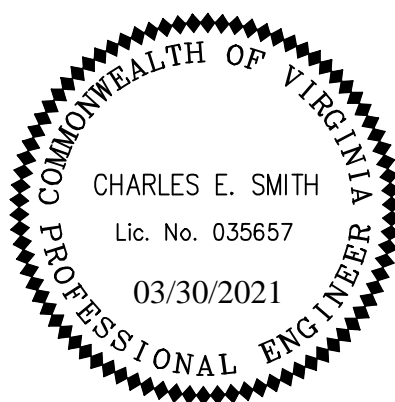
DEAN DRIVE EXTENDED (T-030)



MAINTENANCE OF TRAFFIC  
PHASE 2 PLAN

LEGEND

- WORK ZONE
- TRAFFIC FLOW
- BARRICADE (TYPE III)
- SIGNS
- CHANNELIZING DEVICE



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Reston, Virginia  
Roadway Engineer



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

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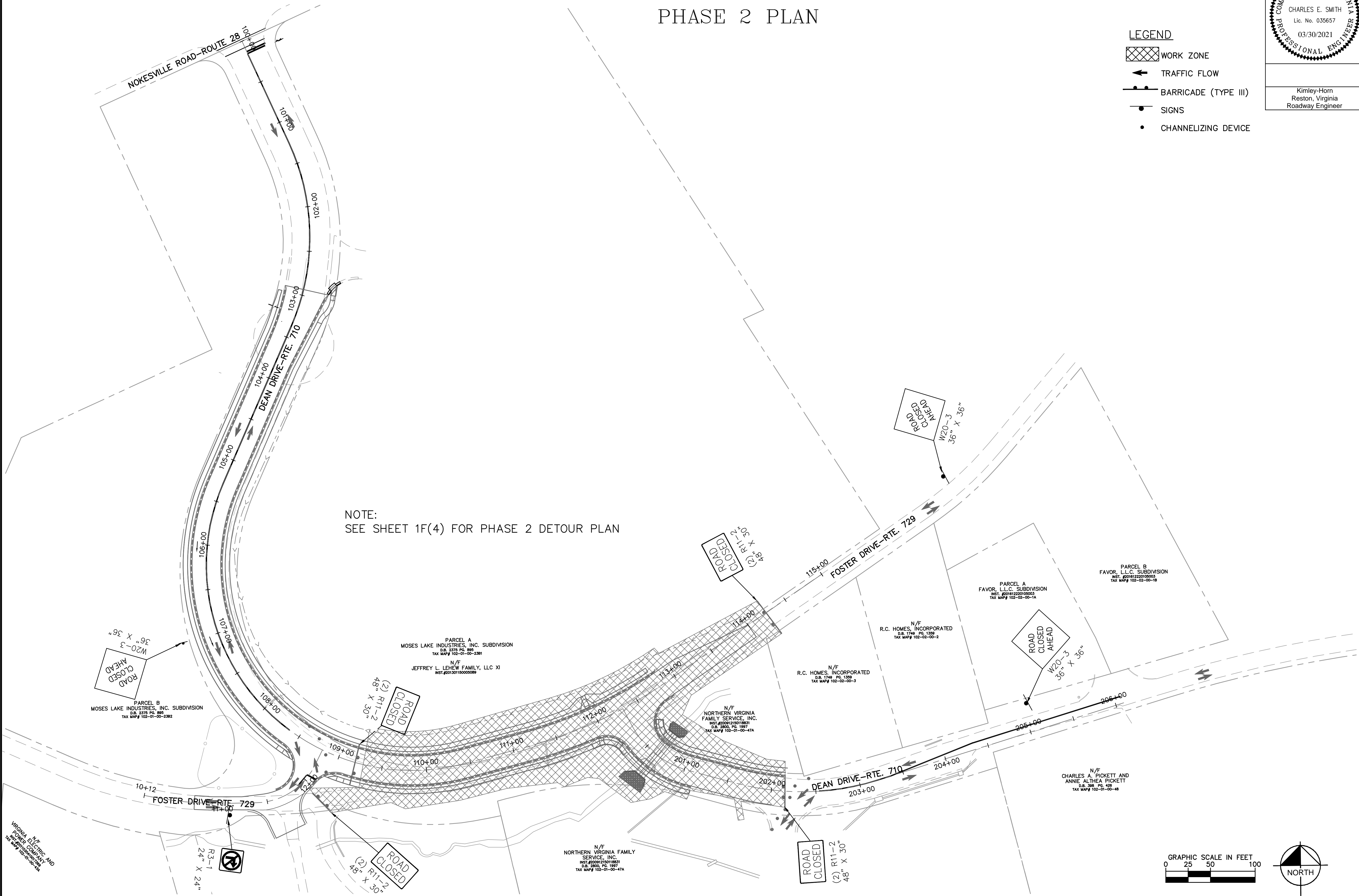
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	BY	

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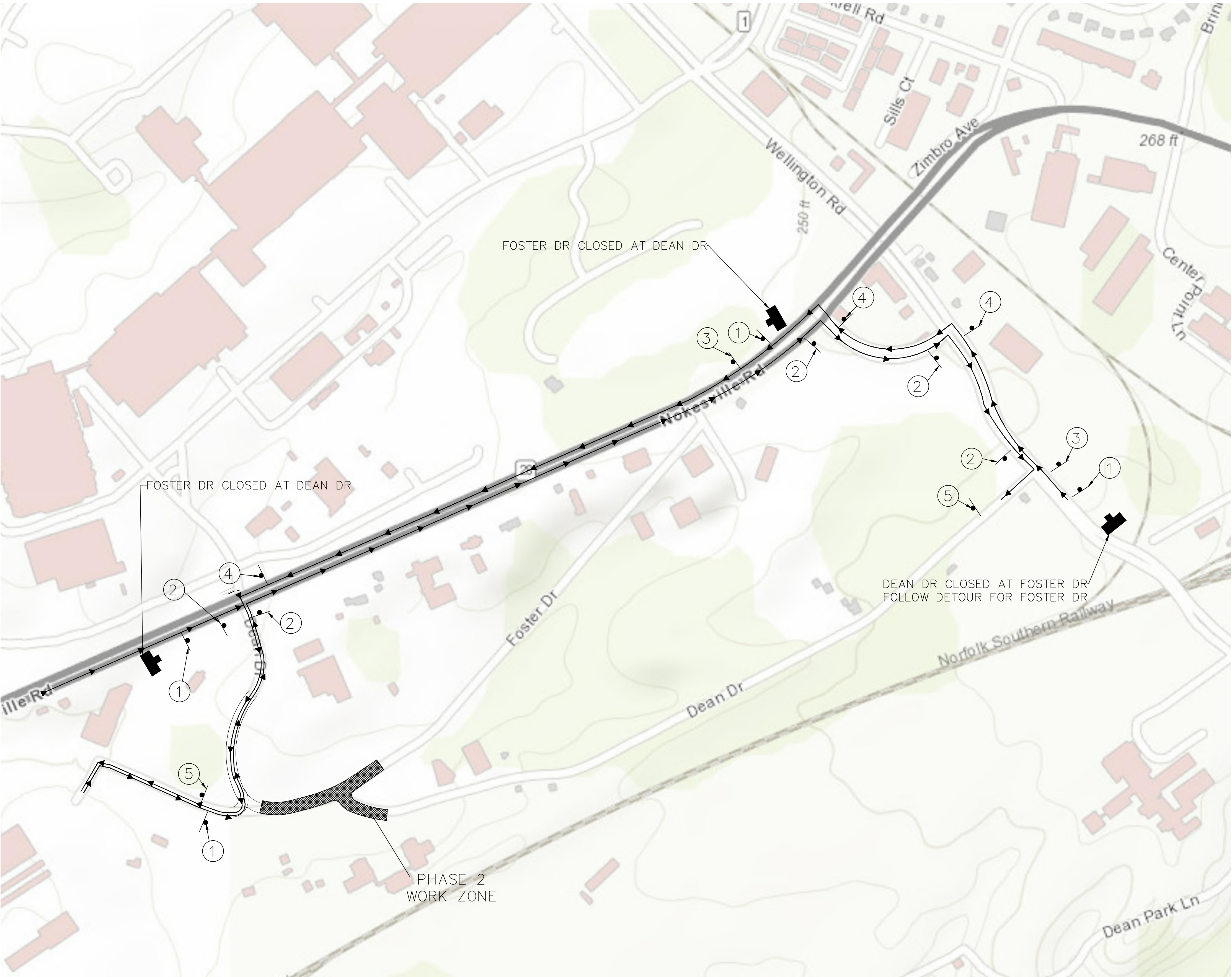
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SHEET  
1F(3) -  
MAINTENANCE OF  
TRAFFIC  
SCALE 1:50

NOTE:  
SEE SHEET 1F(4) FOR PHASE 2 DETOUR PLAN



PHASE 2 – DETOUR AND SIGNING PLAN

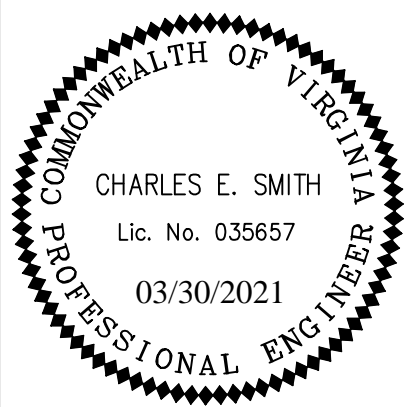
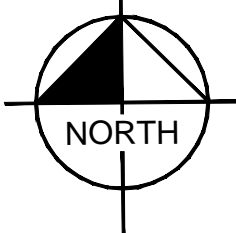


LEGEND

- PCMS
- TEMPORARY SIGN POST (NOTE: PANEL SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT ACTIVE)
- SIGN PANEL DESIGNATIONS
- DETOUR ROUTE

TEXT	STR. NUMBER	PANEL SIZE		STD. NUMBER
		W (IN.)	H (INCH)	
DETOUR AHEAD	①	48	48	W20-2
DETOUR	②	30	15	M4-8
→		21	15	M6-3
DETOUR	③	30	15	M4-8
↑		21	15	M6-3
DETOUR	④	30	15	M4-8
←		21	15	M6-3
END DETOUR	⑤	24	18	M4-8a

ALL DRIVEWAYS MUST HAVE ACCESS MAINTAINED AT ALL TIMES



Kimley-Horn  
Reston, Virginia  
Roadway Engineer

DEAN DRIVE EXTENDED (T-030)

100% DESIGN SUBMITTAL

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SHEET  
1F(4) –  
MAINTENANCE OF  
TRAFFIC DETOUR  
SCALE 1:200

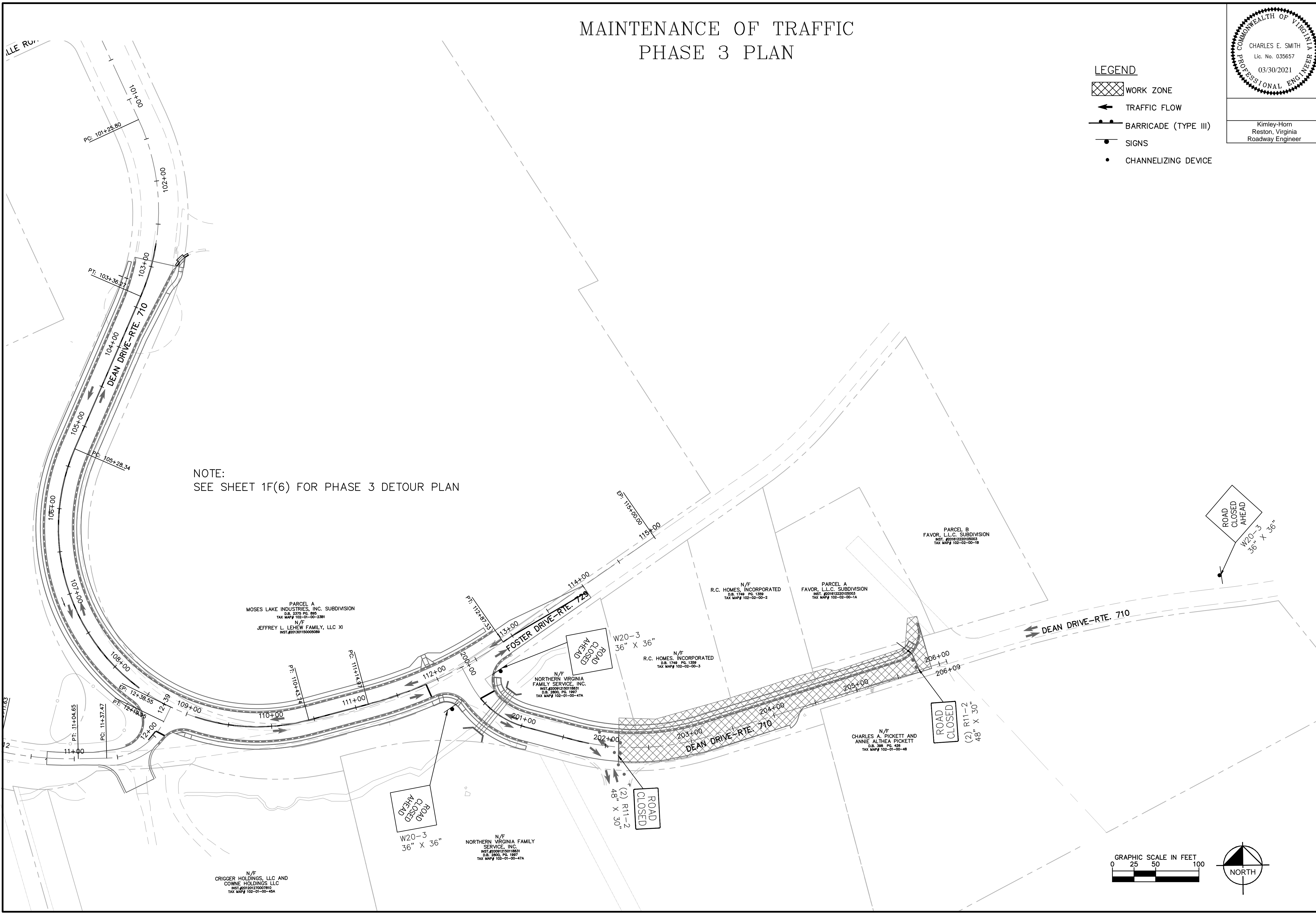
CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DRIVE  
MANASSAS, VIRGINIA 20110



REVISIONS		DATE	DESCRIPTION

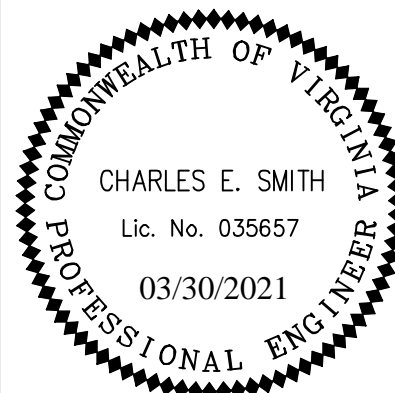
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MAINTENANCE OF TRAFFIC  
PHASE 3 PLAN

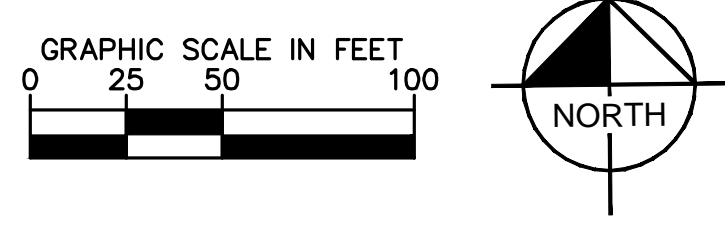


NOTE:  
SEE SHEET 1F(6) FOR PHASE 3 DETOUR PLAN

- LEGEND
- WORK ZONE
  - TRAFFIC FLOW
  - BARRICADE (TYPE III)
  - SIGNS
  - CHANNELIZING DEVICE



Kimley-Horn  
Reston, Virginia  
Roadway Engineer



DEAN DRIVE EXTENDED (T-030)

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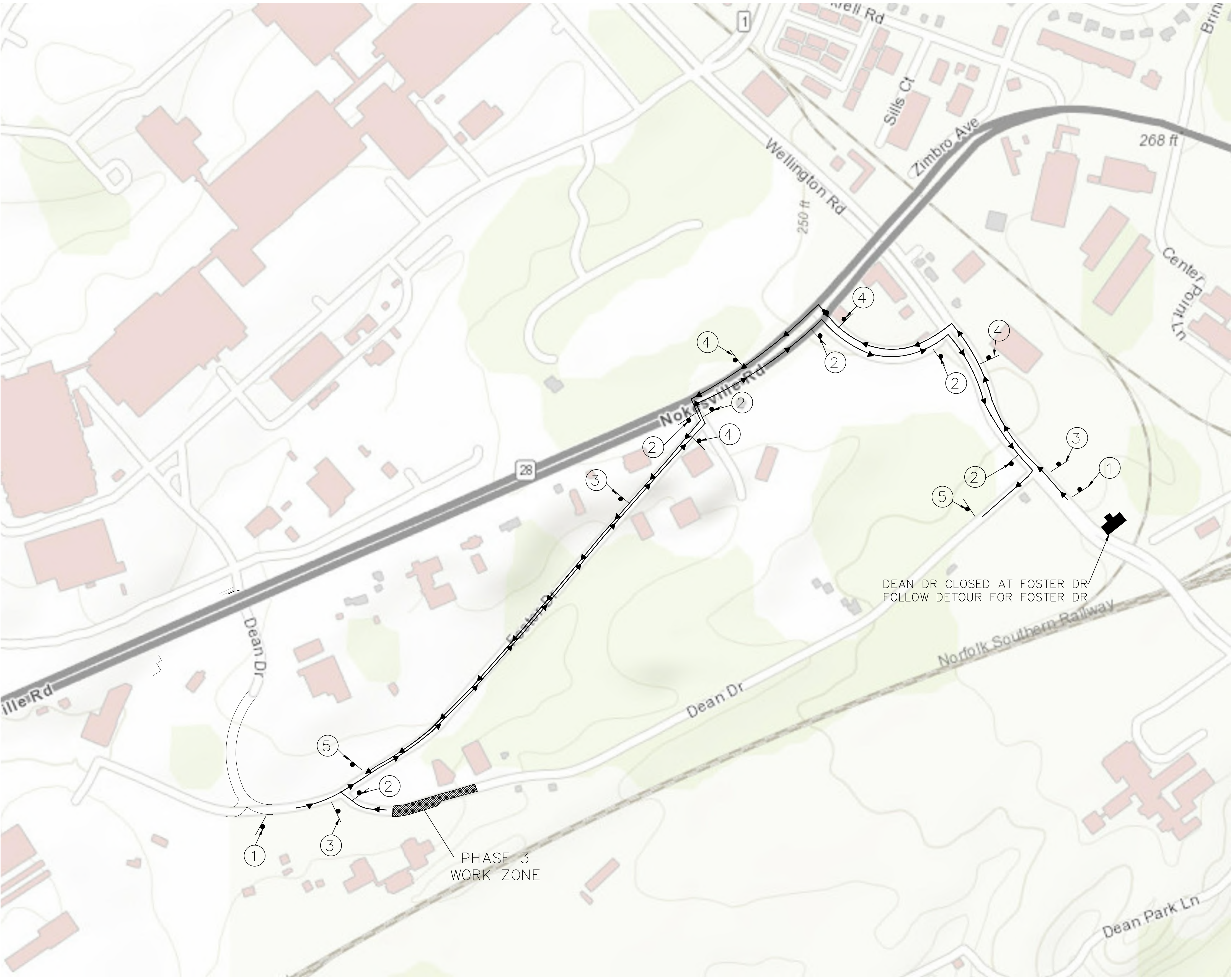
SHEET  
1F(5) -  
MAINTENANCE OF  
TRAFFIC  
SCALE 1:50

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

REVISIONS		DATE	BY	DESCRIPTION
NO.	DATE			
1	T-030			
2	TBD			
3	594000			
4	1/15/2020			
5	MP DATE: 2/18/2020			
6	DB DATE: 2/21/2020			
7	SH DATE: 5/8/2020			
8	CS DATE:			



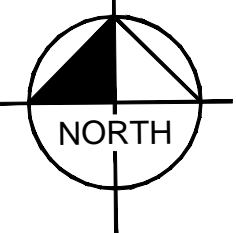
PHASE 3 – DETOUR AND SIGNING PLAN



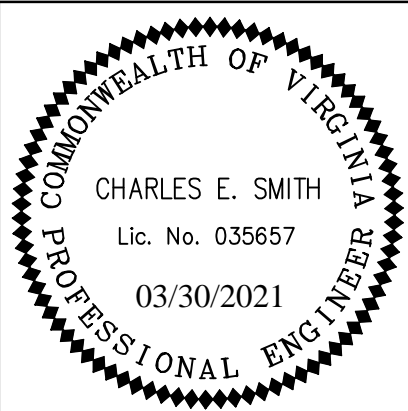
LEGEND

- TEMPORARY SIGN POST (NOTE: PANEL SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT ACTIVE)
- SIGN PANEL DESIGNATIONS
- DETOUR ROUTE

TEXT	STR. NUMBER	PANEL SIZE		STD. NUMBER
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		21	15	M6-3
DETOUR	④	30	15	M4-8
		21	15	M6-3
END DETOUR	⑤	24	18	M4-8a



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100% DESIGN SUBMITTAL

**Kimley»Horn**  
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CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DRIVE  
MANASSAS, VIRGINIA 20110



SHEET  
1F(6) –  
MAINTENANCE OF  
TRAFFIC DETOUR  
SCALE 1:200

ROADSIDE DEVELOPMENT

CORE MIX

MIX	LBS./ACRE	DESCRIPTION
1	▲	*100% CERTIFIED FINE FESCUE
2	▲ 100	100% CERTIFIED TALL FESCUE
3	▲ 100	50% CERTIFIED TALL FESCUE
	100	*50% CERTIFIED FINE FESCUE
4	▲ 100	50% ORCHARDGRASS 50% CERTIFIED KENTUCKY BLUEGRASS
5	▲ 175	100% BERMUDAGRASS
TEMPORARY		
3/1–5/16 AND 8/16–3/1	50 50	50% CERTIFIED TALL FESCUE 50% BARLEY, WINTER RYE OR WINTER WHEAT
5/16–8/16	50 50	50% FOXTAIL MILLET 50% CERTIFIED TALL FESCUE

- ▲ ALL RATES TO BE SPECIFIED BY THE DISTRICT ROADSIDE MANAGER
- \* FINE FESCUES INCLUDE CHEWINGS, CREEPING RED, HARD, SHEEP

ADDITIVES

TYPE	LBS./ACRE	DESCRIPTION
A	▲ 10	100% LOVEGRASS
B	▲ 20	100% BARLEY, WINTER RYE OR WINTER WHEAT
C	▲ 30	100% FOXTAIL MILLET
D	▲ 35	100% ANNUAL RYEGRASS
E	▲ 20	100% CROWNVETCH (LEGUME)
F	▲ 10	100% SERICEA LEPEDeza (LEGUME)
G	▲ 5	100% BIRDSFOOT TREFOIL (LEGUME)

NOTES:

APPROXIMATELY 3.14 ACRES WILL BE DISTURBED ON THIS PROJECT AND 1.29 ACRES WILL REQUIRE THE ESTABLISHMENT OF GRASSES AND/OR LEGUMES.

NOTES FOR FIELD USE ONLY:

OVERSEEDING RATES SHALL BE 100% OF THE SEED MIXTURE SUPPLIED WITHOUT FERTILIZER.

THE ENGINEER WILL REQUIRE THE CONTRACTOR TO PERFORM SUPPLEMENTAL SEEDING WHEN LESS THAN 75% UNIFORM STAND OF THE PERMANENT GRASSES SPECIFIED IN THE MIXTURES IS OBTAINED. (ANNUAL SPECIES SUCH AS, RYE AND MILLET ARE TEMPORARY VARIETIES AND REQUIRE SUPPLEMENTAL SEEDING.)

NOTES APPLY TO SCHEDULE:

LEGUME SEED SHALL BE INOCULATED WITH THE APPROPRIATE STRAIN AND RATE OF BACTERIA FOR HYDROSEEDING, USE FIVE TIMES THE DRY SEEDING RATE OF INOCULATE.

A TEMPORARY MIX OR EROSION CONTROL MULCH, AS DIRECTED BE THE ENGINEER IS TO BE USED ONLY ON AREAS THAT ARE TO BE REGRADED OR LATER DISTURBED, IF LEFT DORMANT FOR MORE THAN 15 DAYS.

EROSION CONTROL MULCH, AS DIRECTED BY THE ENGINEER IS TO BE USED ON AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN 15 DAYS BETWEEN DECEMBER 1 AND FEBRUARY 28.

EROSION CONTROL MULCH AS LISTED ON THE VDOT APPROVED PRODUCTS LIST, SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

EROSION CONTROL MULCH SHALL PROVIDE 100% COVERAGE OF ALL DENUDED AREAS.

SPRING & SUMMER AND FALL & WINTER DEFINED FOR THE PURPOSE OF DETERMINING WHETHER HULLED OR UNHULLED BERMUDA GRASS AND SERICEA LEPPEDEZA SEED IS REQUIRED.

SPRING AND SUMMER 4/1–9/15 USE HULLED SEED  
FALL AND WINTER 9/15–4/1 USE UNHULLED SEED

TYPE I MULCH (STRAW) TO BE USED ON NEWLY SEEDED AREAS ADJACENT TO ALL WATERWAYS, WETLANDS, SWAMPS, OR ANY AREA WHICH DRAINAGE FLOWS TOWARDS AREAS UNDER THE JURISDICTION O THE ENVIRONMENTAL REGULATORY AGENCIES.

TYPE I MULCH SHALL BE APPLIED TO PROVIDE A MINIMUM 90% COVERAGE.

TYPE I MULCH SHALL BE TACKED WITH FIBER MULCH AT THE RATE OF 750 LBS. PER ACRE AND/OR MULCH TACKIFIER.

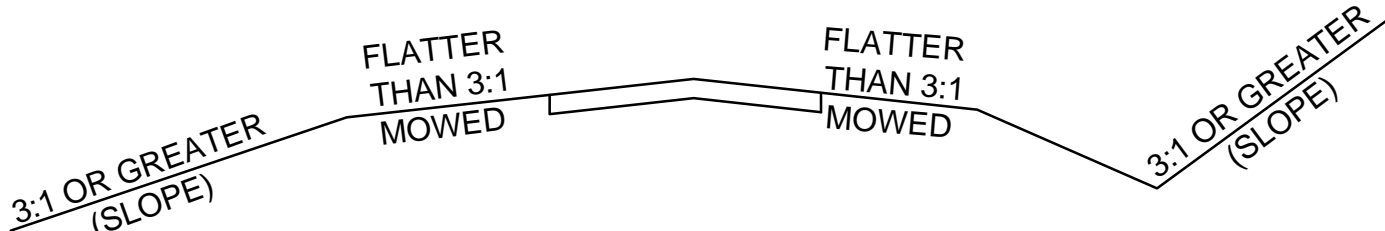
TYPE II MULCH (FIBER MULCH) MAY BE SUBSTITUTED FOR TYPE I MULCH AT THE RECOMMENDATION OF THE DISTRICT ROADSIDE MANAGER.

TYPE II MULCH SHALL BE APPLIED AT A RATE OF 1500 LBS. (NET DRY WEIGHT) PER ACRE TO PROVIDE A MINIMUM 90% COVERAGE, AND SHALL BE APPLIED IN A SEPARATE APPLICATION.

ALL TOPSOIL IS TO BE FREE OF HARD LUMPS, CLODS, ROCKS, AND FOREIGN DEBRIS AND IS TO BE HAND RAKED TO TIE INTO EXISTING LAWNS.

ALL SEED MUST BE IN CONFORMANCE WITH VDOT SEED SPECIFICATIONS FOR GRASSES & LEGUMES AND BE PROVIDED AT THE PROJECT SITE IN BAGS NOT OPENED AND LABELED FOR USE ON VDOT PROJECTS WITH A GREEN TAG CERTIFYING INSPECTION BE THE VIRGINIA CROP IMPROVEMENT ASSOCIATION.

SECTION OF SEED LOCATIONS



ROADSIDE DEVELOPMENT SUMMARY								
PROJECT NUMBERS	TOPSOIL 2" CLASS A   B	REGULAR SEED	OVER SEEDING	LIME	FERT. 10–10–10	LEGUME SEED	LEGUME OVER SEEDING	TEMPORARY SEEDING
	ACRES	LBS.	LBS.	TONS	TONS	LBS.	LBS.	LBS.
SPRING & FALL	1.29	309.6	154.8	2.6	0.32	0	0	314
SUMMER	1.29	309.6	154.8	2.6	0.32	0	0	314
LATE FALL & WINTER	1.29	309.6	154.8	2.6	0.32	0	0	314

- ⊗ DENOTES ITEM(S) TO BE PAID FOR ON THE BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH THE APPLICABLE PROVISION OF THE CURRENT ROAD AND BRIDGE SPECIFICATIONS

SEEDING SCHEDULE

CODES LISTED IN TABLE REFER TO THE LISTS OF CORE MIXES & ADDITIVES, WHICH SHOW SEED NAMES & APPLICATION RATES FOR THIS PROJECT	SLOPES SEED MIX WITH ADDITIVE	MOWED SEED MIX WITH ADDITIVE	SLOPES SEED MIX WITH ADDITIVE	MOWED SEED MIX WITH ADDITIVE	SLOPES SEED MIX WITH ADDITIVE	MOWED SEED MIX WITH ADDITIVE	SLOPES SEED MIX WITH ADDITIVE	MOWED SEED MIX WITH ADDITIVE
	SPRING MONTH & DATE		SUMMER MONTH & DATE		FALL MONTH & DATE		WINTER/DORMANT MONTH & DATE	
DEAN DRIVE	3 AC	3 AC	3 AC	3 AC	3 AC	3 AC	3 AC	3 AC

DEAN DRIVE EXTENDED (T–030)



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SHEET  
1G – ROADSIDE  
DEVELOPMENT SHEET

SCALE NTS

100% DESIGN SUBMITTAL

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

The information contained in the SWPPP General Information 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 Annual ESC and SWM Standards and Specifications.

The SWPPP General Information sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance 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 (as defined in the latest IIM 242) 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.

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 General VPDES 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(1)

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. Activity Description – EXTENSION OF DEAN DR FOR 1045 FT BETWEEN FOSTER AND NOKESVILLE ROAD. REPLACEMENT OF EXISTING DUAL CULVERTS BENEATH FOSTER DRIVE.
2. This land disturbance (construction) activity site is located in the City of Manassas and approximately 2.92 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 form) and the permit coverage letter received from DEQ shall be maintained with other SWPPP documents for this land disturbing (construction) activity.

✖✖ 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.

✖✖ 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:

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: N/A

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: N/A

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: 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.

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
LANCE KILBY	RLD	Certify the SWPPP (with date & sig.)
TBD	Certified Inspector	Sign (C-107) Inspection Form Part 1
TBD	Certified Inspector	Sign (C-107) Inspection Form Part 2

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

✖ 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.

✖✖ 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:

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.

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

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

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DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DRIVE  
MANASSAS, VIRGINIA 20110

REVISIONS	DATE	DESCRIPTION
BY		

MANASSAS PROJECT NO.: T-030	TBD
DATE OF PLAN ISSUANCE: 594000	
CONSULTANT PROJECT ID: 594000	
DESIGNED BY: MP	DATE: 1/15/2020
DRAWN BY: DB	DATE: 2/18/2020
CHECKED BY: SH	DATE: 2/21/2020
APPROVED BY: CS	DATE: 5/8/2020

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SHEET  
1H(1) – SWPPP

SCALE NTS

DEAN DRIVE EXTENDED (T-030)

# STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

## SECTION II EROSION AND SEDIMENT CONTROL

- ✱ 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.
- ✱ 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.

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 VDOT NOVA District Hydraulics Section 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:
  - a. Control the volume and velocity of stormwater runoff within the site to minimize erosion.
  - b. Control the peak flow rates, volume and velocity of stormwater discharges to minimize erosion at outlets and in downstream channels.
  - c. Minimize the amount of soil exposed.
  - d. Minimize the disturbance of steep slopes.
  - e. Minimize sediment discharge from the site.
  - f. Provide and maintain natural buffers around surface waters, direct stormwater runoff to vegetated areas and maximize stormwater infiltration, unless infeasible.
  - g. Minimize soil compaction (except in those areas where compaction is required by the contract documents) and preserve topsoil where feasible.

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

- \*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. An exception for (number) pounds of phosphorus removal has been granted for this land disturbance activity by the DEQ in its letter dated (date).

3. 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.

4. The permanent onsite SWM facilities or offsite strategies proposed to meet the water quality/quantity requirements for this land disturbance (construction) activity are listed in Section VI.

5. A description of all post-construction stormwater management measures that 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.

6. 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 VDOT NOVA District Hydraulics Section and will be made available for review upon request during normal working business hours.

## ACRONYMS

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EPA – U.S. Environmental Protection Agency  
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\* Denotes information that is to be provided/ completed by the RLD.

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100% DESIGN SUBMITTAL



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## REVISIONS

DATE	REVISIONS BY DESCRIPTION

MANASSAS PROJECT NO.:	T-030
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID.:	594000
DESIGNED BY:	MP DATE: 1/15/2020
DRAWN BY:	DB DATE: 2/18/2020
CHECKED BY:	SH DATE: 2/21/2020
APPROVED BY:	CS DATE: 5/8/2020

**Kimley»»Horn**

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SHEET  
1H(2) - SWPPP

SCALE NTS

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

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The SWPPP General Information 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 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 IV SWPPP

1. All documents related to the SWPPP for this land disturbance (construction) activity shall be maintained at the activity site and shall be readily available for review upon request during normal business 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 Special Provision 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 General Permit 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 normal business hours.

2. The SWPPP and any subsequent amendments, modifications and updates shall be 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.

✖✖ 3. For all on-site support facilities that will be 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 shall be 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 shall be 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.

✖ 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 shall be made available for review by the public upon request. Such reviews shall be at a time and publicly accessible location convenient to the VDOT and shall be scheduled during normal business 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.

✖✖ 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.

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

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

DEAN DRIVE EXTENDED (T-030)




11400 COMMERCE PARK DRIVE, SUITE #400, RESTON, VA 20191  
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SHEET  
1H(3) – SWPPP

SCALE NTS

100% DESIGN SUBMITTAL



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

REVISIONS	
DATE	DESCRIPTION
T-030	TBD
MANASSAS PROJECT NO.:	594000
DATE OF PLAN ISSUANCE:	1/15/2020
CONSULTANT PROJECT ID.:	MP DATE: 2/18/2020
DRAWN BY:	DB DATE: 2/21/2020
CHECKED BY:	SH DATE:
APPROVED BY:	CS DATE:

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

The information contained in the SWPPP General Information 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 Annual ESC and SWM Standards and Specifications.

The SWPPP General Information 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, 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 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

\* Denotes information that is to be completed by the RLD.  
( ) See note referenced by number in parentheses.

*BMP Maintenance ID Number (10)	BMP Maintenance Manual (11) SECTION	BMP Inspection Manual (11) SECTION

INSTALLED BMP INFORMATION  
(VDOT Owned/Operated)

Plan Sheet(s)	Date BMP Made Functional	Type of BMP Installed (See Table A and C )	Geographic Location (County or City)	Latitude/Longitude (1)		VA 6th Order HUC (7)	Receiving Water (2)	Name of Impaired Water (9)	Acres Treated Per BMP (3)		
				LAT	LONG				Impervious	Pervious	TOTAL

ALTERNATIVE BMP INFORMATION

Plan Sheet(s)	Date	Type of BMP Installed (See Table B)	Geographic Location (County or City) (5)	Latitude/Longitude (1) (5)		VA 6th Order HUC (5) (7)	Receiving Water (2)	Name of Impaired Water (9)	Name of Nutrient Credit Generating Entity (6)	Nutrient Credits (lbs./TP./year) Acquired (6) (12)
				LAT	LONG					
N/A	03/29/2021	PURCHASE OF NUTRIENT CREDITS	CITY OF MANASSAS	38.7509	77.4753	PL34	BROAD RUN-ROCKY BRANCH	N/A	RIVERBANKS, VA LLC	2.07

Any changes to the proposed SWM Plan or BMPs necessitated during the construction phase of the project that affects the proposed construction details or potentially affects the informationshown in the BMP Tables A and/or B shall be coordinated by the VDOT RLD with the appropriate VDOT District Hydraulics Engineer. The construction plans and the BMP Tables A and/or B are to be formally revised to reflect any authorized/ approved changes to the proposed SWM Plan and/or the proposed BMP construction details. All plan revisions shall be completed in accordance with the Road Design Manual and the Construction Division IIM-CD-2013-12.01, signed and sealed in accordance with Department's sealing and signing policy IIM-LD-243 and filed with the construction record drawings maintained in the VDOT Central Office Plan File Room (ProjectWise). Prior to submitting for termination of coverage under the VPDES General Permit For The Discharge Of Stormwater From Construction Activities, the RLD shall have the District Maintenance Division review the BMPs installed with the project (BMP Table A) for acceptance of maintenance responsibility and to obtain a Maintenance ID number for each BMP listed in BMP Table A. The RLD shall use the informationin BMP Tables A and B along with the assigned Maintenance ID number and the date that the BMP became functional as a permanent control measure (for BMPs in Table A only) to complete the LD-445D form when certifying the construction of the BMPs and submitting for termination of coverage under theVPDES General Permit For The Discharge Of Stormwater From Construction Activities.

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

- Bio-retention Basin
- Bio-retention Filter
- Constructed Stormwater Wetlands
- Extended Detention Basin
- Extended Detention Basin Enhanced
- Grassed Swale
- Infiltration Basin
- Infiltration Trench
- Manufactured Treatment Device (MTD) (8)
- Retention Basin I
- Retention Basin II
- Retention Basin III
- Sand Filter
- Vegetated Filter Strip
- Other Approved Types (List Type)
- Detention Basin

Table B: Alternative BMP Types

- Comprehensive SWM Plan (Regional) Facility
- Pollutant Loading Pro Rata Share Program
- Other Approved Options (List Type) (4)

Table C: Permanent BMP Types (BMP Clearing House)

- Sheet Flow to Vegetated Filter Strip
- Grass Channel
- Soil Compost Amendment
- Permeable Pavement (Level 1)
- Permeable Pavement (Level 2)
- Infiltration Practice (Level 1)
- Infiltration Practice (Level 2)
- Bioretention (Level 1)
- Bioretention (Level 2)
- Dry Swale (Level 1)
- Dry Swale (Level 2)
- Wet Swale (Level 1)
- Wet Swale (Level 2)
- Filtering Practice (Level 1)
- Filtering Practice (Level 2)
- Constructed Wetlands (Level 1)
- Constructed Wetlands (Level 2)
- Extended Detention Pond (Level 1)
- Extended Detention Pond (Level 2)
- Wet Pond (Level 1)
- Wet Pond (Level 2)
- Manufactured Treatment Device (MTD)(8)
- Other Approved Types (List Type)

- 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 - Y030.
  - (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 I infiltration BMP.
- (12) Nutrient credits purchased to the nearest one hundredth pound.

100% DESIGN SUBMITTAL



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

REVISIONS		DATE	DESCRIPTION
BY			

Kimley»Horn

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PHONE: 703-674-1300 FAX: 703-674-1350  
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SHEET  
1H(4) – SWPPP

SCALE NTS

DEAN DRIVE EXTENDED (T-030)

GENERAL NOTES

CITY OF MANASSAS GENERAL NOTES

The developer shall be responsible for costs incurred for the relocation of or damages to any public utilities because of construction.

All construction within existing and/or proposed R/W is to conform to the latest VDOT Standards and Specifications, the current edition of the City of Manassas Design and Construction Standards Manual (DCSM), Manual on Uniform Traffic Control Devices (MUTCD), and the Virginia Work Area Protection Manual (VWAPM), unless otherwise noted.

A smooth grade shall be maintained from the centerline of the existing road to proposed curb and gutter to preclude the forming of false gutters and/or ponding of any water on the roadway.

It is the intention of these plans that all areas shall be graded in detail so as to provide positive surface drainage and to prevent the ponding of water.

GRADING

- G-1 The grade line denotes top of finished pavement unless shown otherwise on typical sections or plans.
- G-3 Earthwork quantities on this project are based on anticipated settlement and may require adjusting during construction. Payment will be made only for quantities actually moved.
- G-4 The cost of removal of all existing concrete items located in the area to be graded, including, but not limited to the following, shall be included in the price bid for regular excavation: median, curb & gutter, sidewalks, entrances, drainage structures, pipe, etc.
- G-5 The excavation of unsuitable material as specified on these plans is based on previously conducted subsurface soil investigation. If, during construction, it is deemed necessary to change the depth more than one foot, or the limits of such excavation, such change is to be made at the direction of the Engineer and measurement and payment shall be made in accordance with Section 303 of the applicable VDOT Road and Bridge Specifications.
- G-6 The borrow material for this project shall be a minimum CBR 12.0 or as approved by the Materials Engineer.
- G-7 Material from regular excavation which is suitable for stabilization with hydraulic cement (lime) shall be placed in the top portion of the subgrade.

DRAINAGE

- 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 City of Manassas 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 RCP. 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-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.
- D-16 When CG-6 of CG-7 is specified on a radius (such as at a street intersection), the Engineer may approve a decrease in the cross slope of the gutter to facilitate proper drainage.

PAVEMENT

- P-1 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.
- P-2 Pavement Subgrades shall be evaluated by a Professional Engineer licensed in the Commonwealth of Virginia.
- P-3 Contractor to provide smooth pavement tie-in to preclude the forming of false gutters and/or the ponding of any water.

INCIDENTALS

- I-5 That portion of the right of way lying within the Clear Zone or within a minimum of 10 feet from the edge of pavement or surfacing or within the limits of construction slopes beyond 10 feet, shall be cleared and grubbed in accordance with the applicable VDOT Road and Bridge Specifications, Section 301, where sufficient right of way or construction easement is provided.

- I-8A Clearing and grubbing shall be confined to those areas needed for construction. No trees or shrubs in ungraded areas shall be cut without the permission of the Engineer.
- I-16 The "underground utilities" survey data on this project has been provided by consultant and copies are available from the City of Manassas.
- I-17 Contractor to hand dig around existing electrical PVC when placing Structure 3-7.
- I-18 All pavement markings and traffic flow arrows shown on the roadway construction plans are schematic only. The actual location and application of pavement markings shall be in accordance with Section 704 of the applicable VDOT Road and Bridge Specifications, MUTCD, sequence of construction/traffic control plans, pavement marking plan sheet 7 and as directed by the Engineer.
- I-19 If questions or problems arise during construction, please contact the City of Manassas inspector. DO NOT CONTACT ANY OUTSIDE SOURCES.
- I-20 The Official Electronic PDF Version of the plans will override the paper copies or prints of specific layers.

EROSION AND SEDIMENT CONTROL (ESC)

- E-1 Rock for Check Dams, Inlet Protection, Erosion Control Stone, and Riprap shall be in accordance with Section 203 and Section 414 of the applicable VDOT Road and Bridge Specifications.
- E-2 The following symbol is used to depict Erosion Control items in the plan assembly:
- IP-A Denotes Inlet Protection, Type A; St'd EC-6
- IP-B Denotes Inlet Protection, Type B; St'd EC-6
- IP-C Denotes Inlet Protection, Type C; St'd EC-6
- Denotes Temporary Silt Fence; St'd EC-5 Type A or B
- RCD-2 Denotes Rock Check Dam, Type II, St'd EC-4

STORMWATER MANAGEMENT

- S-4 The SWM-1 Drainage Structure (or other control structure) shall have 4" high numbers and 1" wide stripes painted at 1' intervals as shown on the Standard Drawings or detail sheets. The numbers and stripes are to be installed at the time of the initial installation of the SWM-1 Drainage Structure (or other control structure). Paint and application shall be in accordance with Section 231 and 411 of the applicable VDOT Road and Bridge Specifications and the cost is to be included in the price bid for the applicable structure.
- S-5 All SWM Basins designated for use as temporary sediment basins shall be constructed during the initial phase of earth moving activities or as specified by the plans or directed by the Engineer. During project construction, the SWM-1 Drainage Structure (or other control structure) shall be modified in accordance with the Standard Drawings or plan details in order to provide a temporary sediment basin with both a "wet" storage volume (permanent pool) and a "dry" storage volume. Sediment accumulated in the basin shall be removed when the volume of the "wet" storage (permanent pool) has been reduced by 50%. Sediment shall be disposed of in accordance with Section 106.04 of the applicable VDOT Road and Bridge Specifications. When project construction is complete to a stage where no additional sediment from the project is expected to enter the basin, as determined by the Engineer, the basin shall be cleaned out and restored to the original design elevations, the area stabilized and all temporary modifications to the SWM-1 Drainage Structure (or other control structure) removed.

GEOTECHNICAL

1. Based on the boring data collected throughout the project limits, soft and residual soils were encountered in boring SB-04 and SB-05 at a depth of 2 to 4 ft, These soils are unsuitable for support of the proposed water main, proposed culvert foundation, and proposed pavement.
2. Acceptable methods of addressing unsuitable materials beneath the water main are removal to a depth of 2 feet below the water main and replacement with crushed stone. Removal of unsuitable soils should extend at least 1 foot horizontally beyond the proposed water main alignment.
3. Pavement sections should be constructed over subgrades prepared as described in the geotechnical engineering report. Existing CBR values are below the minimum accepted CBR values for roads based on the DCSM; therefore, existing pavement subgrades should be undercut and replaced in accordance with the DCSM, as shown on Sheet 2A(1).
4. If unsuitable soils are encountered at the design bearing grade for the culvert foundation, these soils should be removed and replaced with compacted structural fill, open graded crushed stone, controlled low strength material, or concrete.

A geotechnical engineer should observe actual foundation subgrades during construction to evaluate whether subgrade soils meet the requirements recommended in the geotechnical engineering report. Concreting should take place the same day as the excavation of the footings.

Foundation subgrades needing undercut may be concreted at the elevation of undercut or backfilled to the original design subgrade elevation with an open-graded crushed stone such as No. 57 aggregate. Crushed stone should extend at least 24 inches laterally beyond the footing in all directions.

5. Where excavation of unsuitable materials is required, it should be performed in a manner to limit disturbance of the underlying suitable material. The excavation should be done under the observation of the Geotechnical Engineer to evaluate the required excavation depths.
6. All unsuitable materials should be disposed off-site at no additional cost.
7. Contractor to provide site drainage to maintain subgrades free of water and to avoid saturation and disturbance of the subgrade soils before placing compacted structural fill, pavement base course, or moisture barrier material.
8. Temporary excavation support may be required during the water main installation when sloping of the excavation sidewalls is not feasible or less economical than temporary excavation support. A licensed professional engineer should design the temporary excavation support system.
9. Groundwater may be encountered during construction. The contractor may need to provide temporary dewatering such as trenching and/or pumping from sumps to control the surface and/or groundwater during construction.

The Contractor should anticipate groundwater during culvert foundation excavation at this site. It is anticipated that pumping from sump pits outside the footing excavations can control groundwater.

ABBREVIATIONS	
ASPH.	ASPHALT
C&G	CURB AND GUTTER
CMP	CORRUGATED METAL PIPE
C.O.M.	CITY OF MANASSAS
CONC.	CONCRETE
DIP	DUCTILE IRON PIPE
EP	EDGE OF PAVEMENT
EX.	EXISTING
F.H.	FIRE HYDRANT
F.C.	FACE OF CURB
GR.	GRADE
INV.	INVERT
MH	MANHOLE
OHW	OVERHEAD WIRES
O.T.C.	OVERHEAD TELEPHONE CABLE
O.H.E.	OVERHEAD ELECTRIC
RCP	REINFORCED CONCRETE PIPE
PERM.	PERMANENT
PVC	POLYVINYL CHLORIDE PIPE
REQ'D	REQUIRED
R.O.W.	RIGHT OF WAY
SFM	SANITARY FORCE MAIN
ST'D	STANDARD
T.C.	TOP OF CURB
TRANS.	TRANSFORMER
TRV	TRAVERSE
UNK	UNKOWN
W	WATER MAIN
W/	WITH

- LEGEND
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- CENTERLINE
- EXISTING RIGHT OF WAY
- EXISTING EASEMENT
- PROPOSED RIGHT OF WAY
- PROPOSED TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED PERMANENT DRAINAGE EASEMENT
- PROPOSED UTILITY EASEMENT
- LIMITS OF DISTURBANCE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- FIRE HYDRANT
- TEE
- BEND
- CROSS
- BUTTERFLY VALVE
- GATE VALVE
- CATHODIC PROTECTION TEST STATION
- BLOW OFF VALVE
- UNDERGROUND ELECTRIC LINE
- PROPOSED DITCH

DEAN DRIVE EXTENDED (T-030)

100% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
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APPROVED BY:			

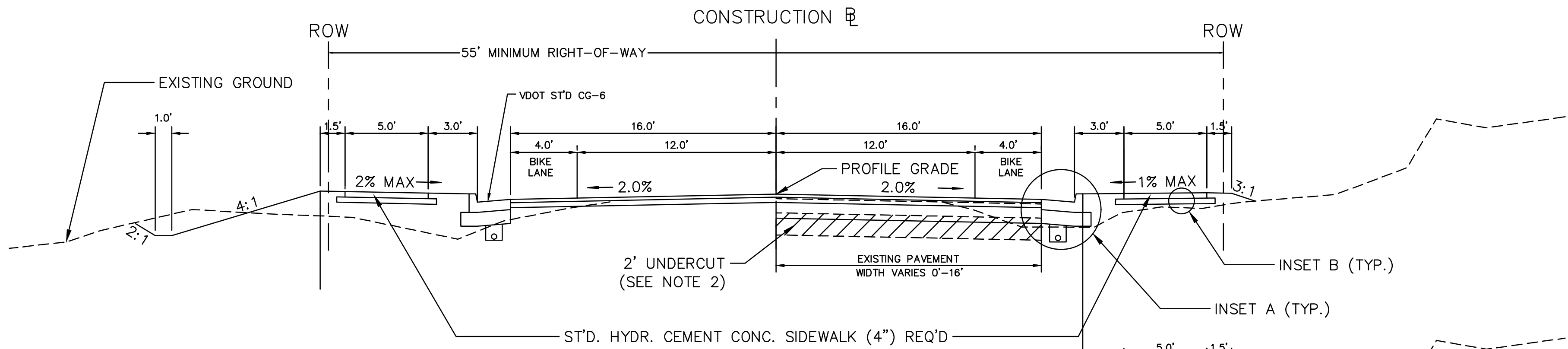
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SHEET  
2 - GENERAL NOTES

SCALE NTS

TYPICAL SECTIONS  
DEAN-FOSTER

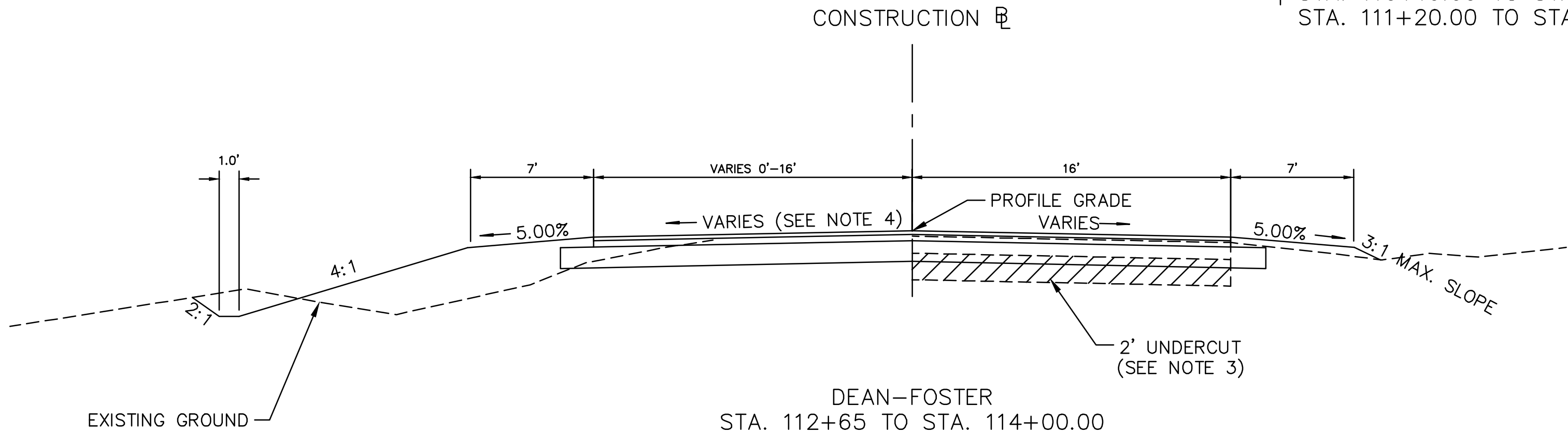


DEAN-FOSTER  
STA. 102+93 TO STA. 112+65  
\*BIKE LANES TO BE STRIPED FROM  
APPROX. STA. 100+42 TO 111+82  
SEE SIGNING AND PAVEMENT MARKING  
SHEET 7

DEAN-FOSTER  
STA. 104+50 TO STA. 106+00

DEAN-FOSTER  
STA. 109+52 TO STA. 110+19  
STA. 110+82 TO STA. 111+20  
STA. 111+63 TO STA. 111+67

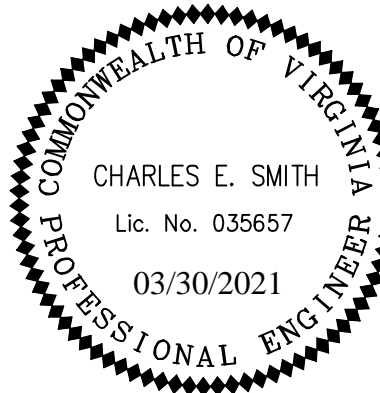
DEAN-FOSTER  
STA. 110+19.00 TO STA. 110+82.00  
STA. 111+20.00 TO STA. 111+63.00



DEAN-FOSTER  
STA. 112+65 TO STA. 114+00.00

NOTES:

- PAVEMENT SECTION BASED ON PAVEMENT CATEGORY V PER SECTION 9-400 OF LATEST REVISION TO DESIGN AND CONSTRUCTION STANDARDS MANUAL.
- AT LOCATIONS WHERE EXISTING PAVEMENT IS RECONSTRUCTED, THE EXISTING SUBGRADE SHALL BE UNDERCUT 2' AND REPLACED ONE OF THE FOLLOWING MATERIALS FOR AN ACCEPTABLE PAVEMENT SUBGRADE:  
-5.0 INCH MINIMUM CEMENT TREATED AGGREGATE, OR  
-18.0 INCH UNTREATED AGGREGATE, OR  
-24.0 INCH NON-PLASTIC SELECT MATERIAL, TYPE II, MINIMUM CBR=20
- IN THE EVENT OF UTILITY CONFLICTS, 18" OF UNTREATED AGGREGATE OR A MINIMUM 6" OF CEMENT TREATED AGGREGATE WILL BE CONSIDERED SUITABLE.
- SEE ROADWAY CROSS SECTIONS AND PROFILES FOR CROSS SLOPES.
- WHERE 2:1 SLOPES ARE PROPOSED, VDOT ST'D EC-3 SHALL BE APPLIED IMMEDIATELY FOLLOWING SEEDING FOR PROPER SLOPE STABILIZATION. SLOPE SURFACE SHALL BE SMOOTH AND FREE OF ROCKS, LUMPS OF DIRT, AND GRASS AND STICKS. DIRT SHALL BE TAMPERED PRIOR TO LAYING TOP LAYER. MAT SHALL BE PLACED FLAT ON SURFACE FOR PROPER SOIL CONTACT. DEQ MAT ANCHORING METHODS ARE PREFERRED.



Kimley-Horn  
Reston, Virginia  
Roadway Engineer



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

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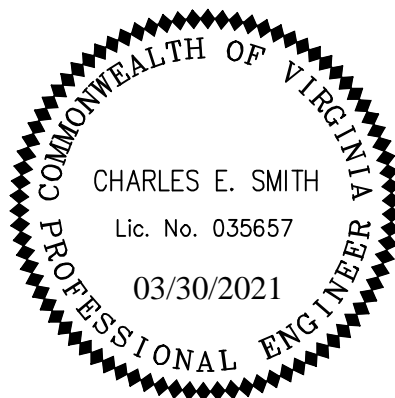
**Kimley»Horn**  
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PHONE: 703-674-1300 FAX: 703-674-1350  
WWW.KIMLEY-HORN.COM

SHEET  
2A(1) - TYPICAL  
SECTIONS -  
DEAN-FOSTER  
SCALE NTS

DEAN DRIVE EXTENDED (T-030)

100% DESIGN SUBMITTAL

TYPICAL SECTIONS  
DEAN DRIVE EAST



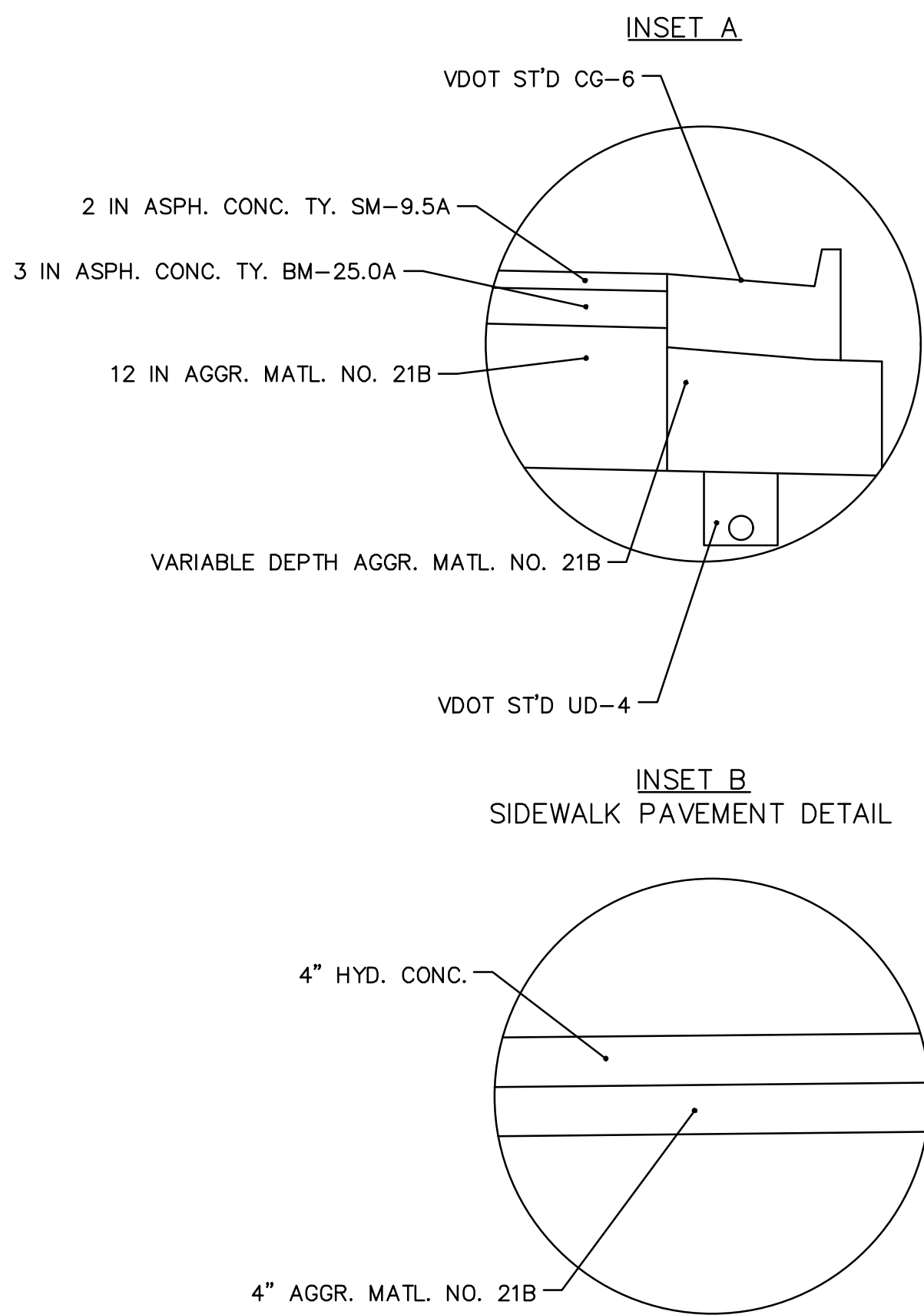
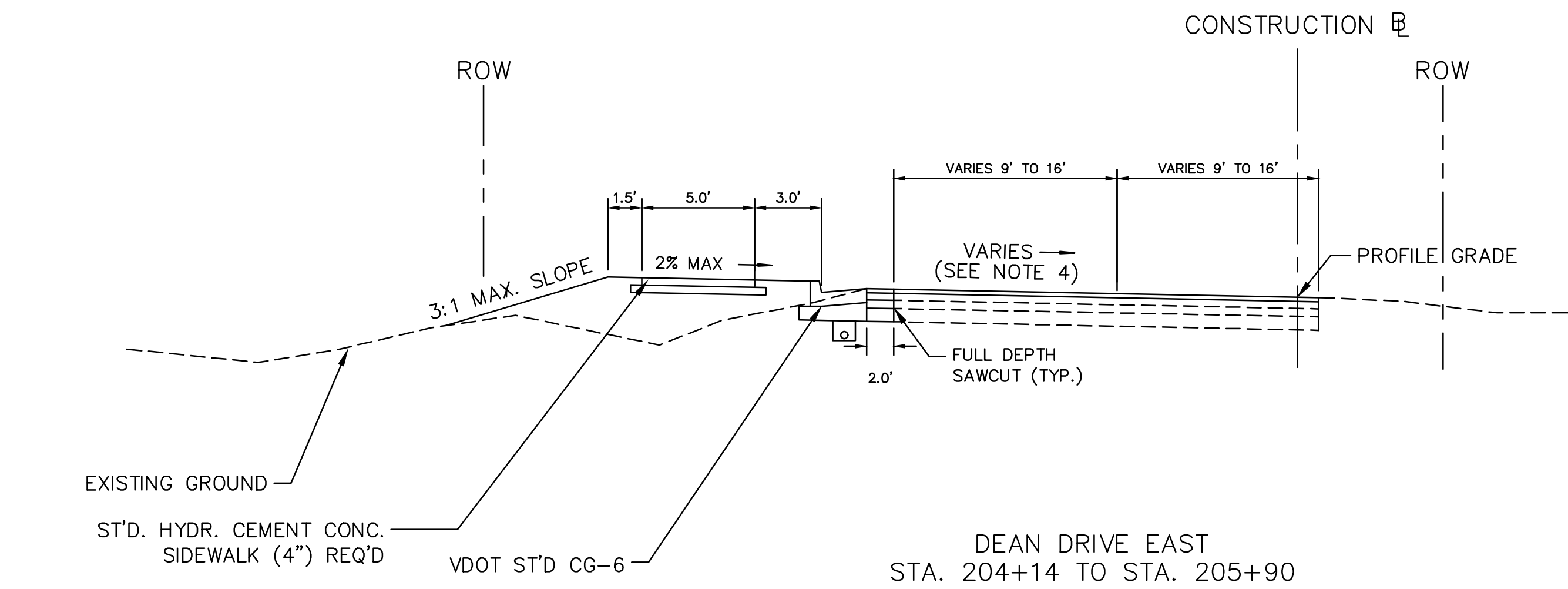
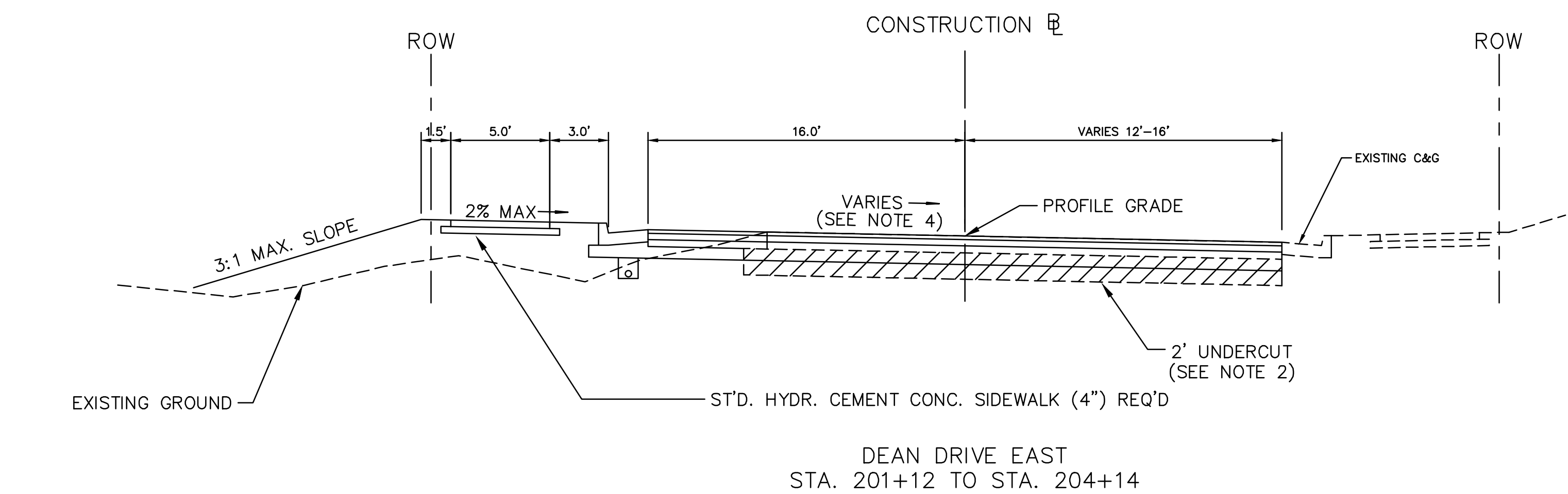
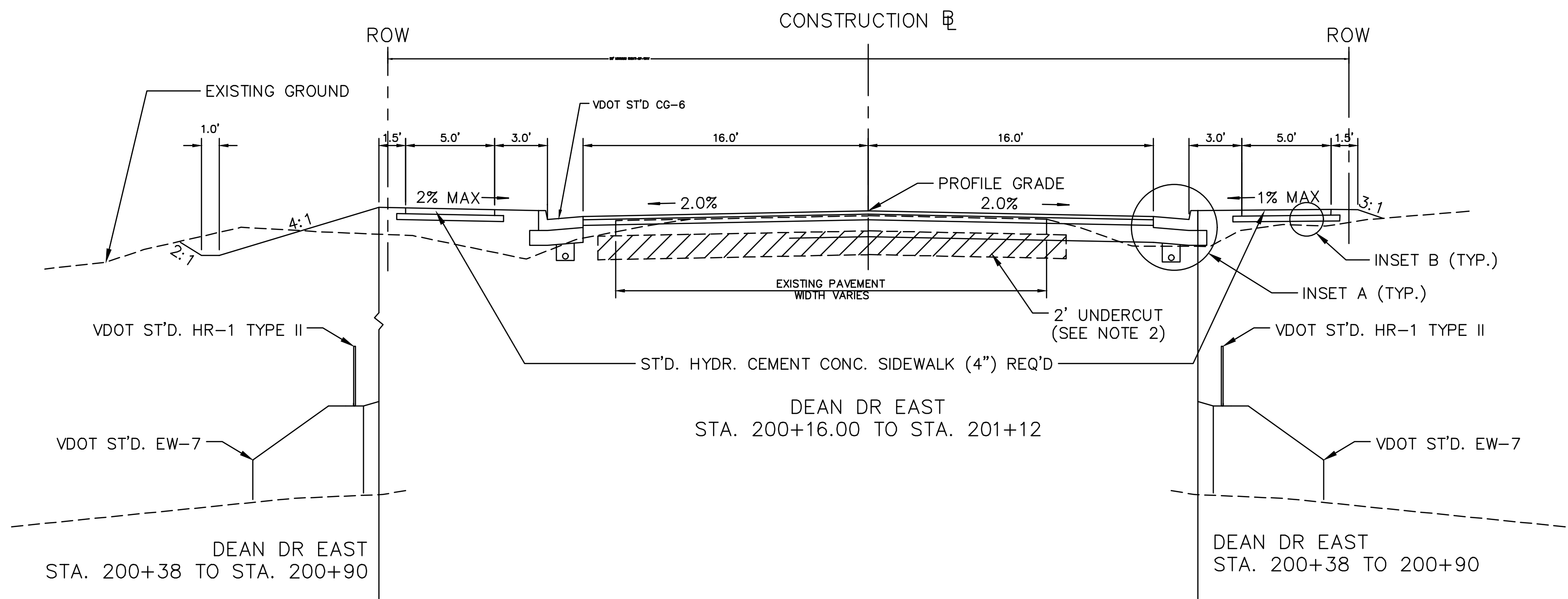
Kimley-Horn  
Reston, Virginia  
Roadway Engineer



CITY OF MANASSAS, VIRGINIA  
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MANASSAS, VIRGINIA 20110

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DEAN DRIVE EXTENDED (T-030)



NOTES:

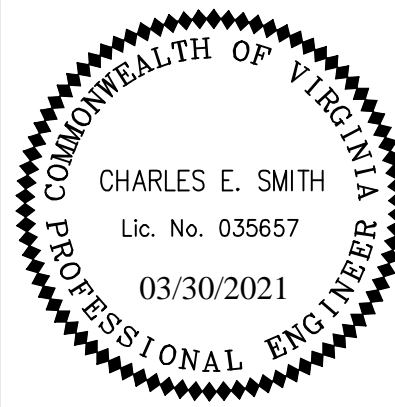
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4. SEE ROADWAY CROSS SECTIONS AND PROFILES FOR CROSS SLOPES.

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SHEET  
2A(2) - TYPICAL  
SECTIONS - DEAN  
DRIVE EAST  
SCALE NTS

TYPICAL SECTIONS  
FOSTER DRIVE WEST



Kimley-Horn  
Reston, Virginia  
Roadway Engineer



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

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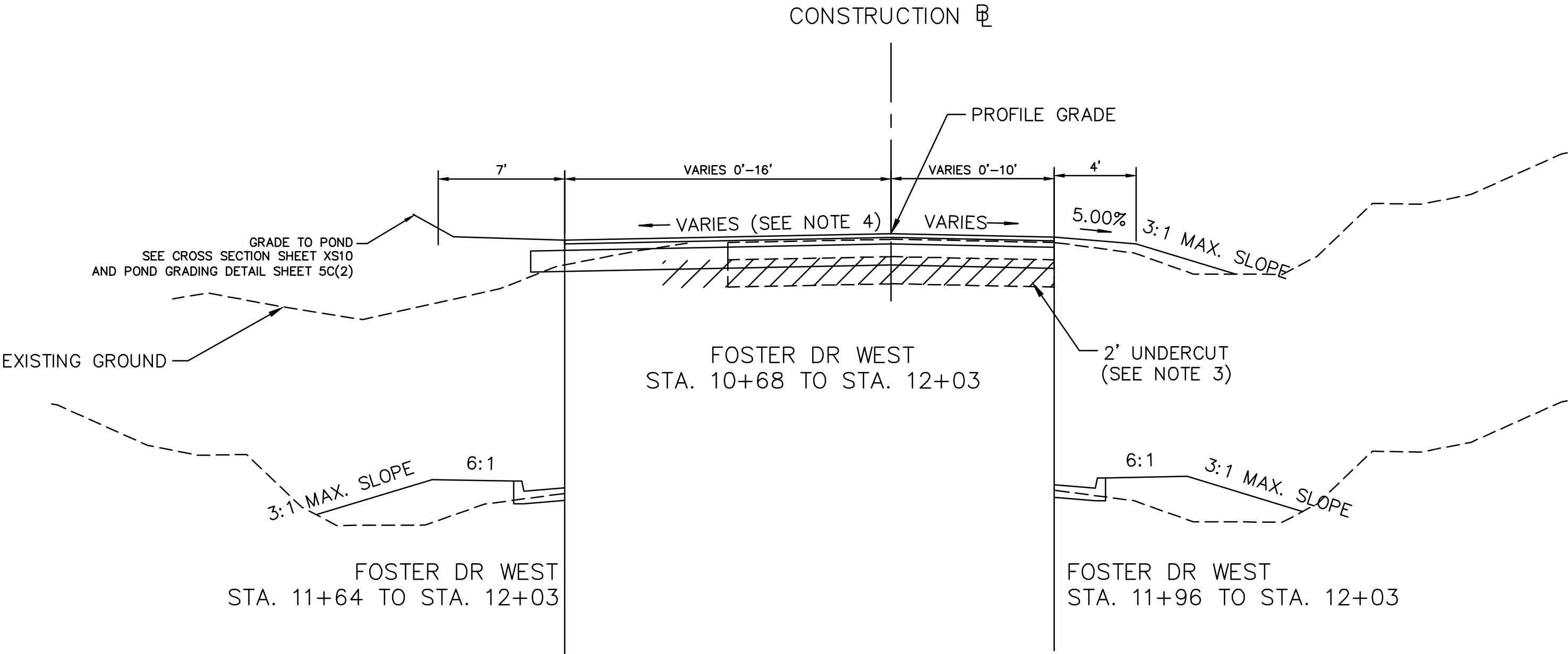
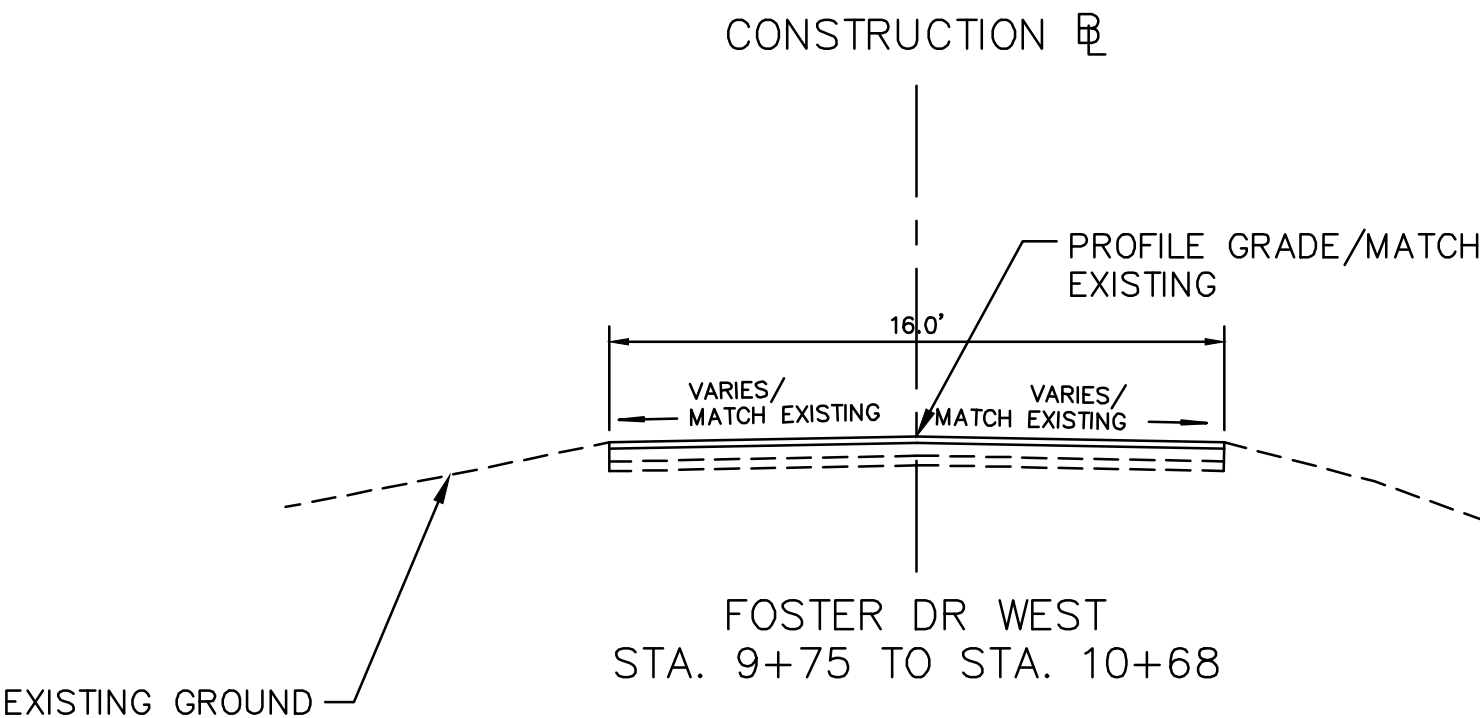
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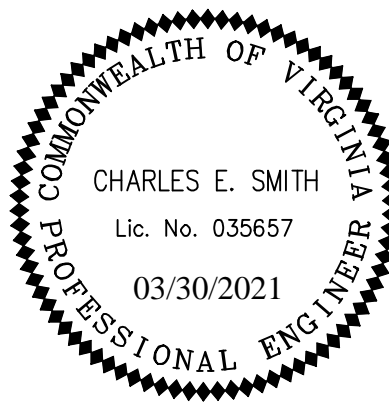
SHEET  
2A(3) - TYPICAL  
SECTIONS - FOSTER  
DRIVE WEST  
SCALE NTS



NOTES:

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- SEE ROADWAY CROSS SECTIONS AND PROFILES FOR CROSS SLOPES.

CURB RAMP DETAILS



Kimley-Horn  
Reston, Virginia  
Roadway Engineer



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MANASSAS, VIRGINIA 20110

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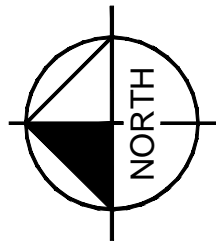
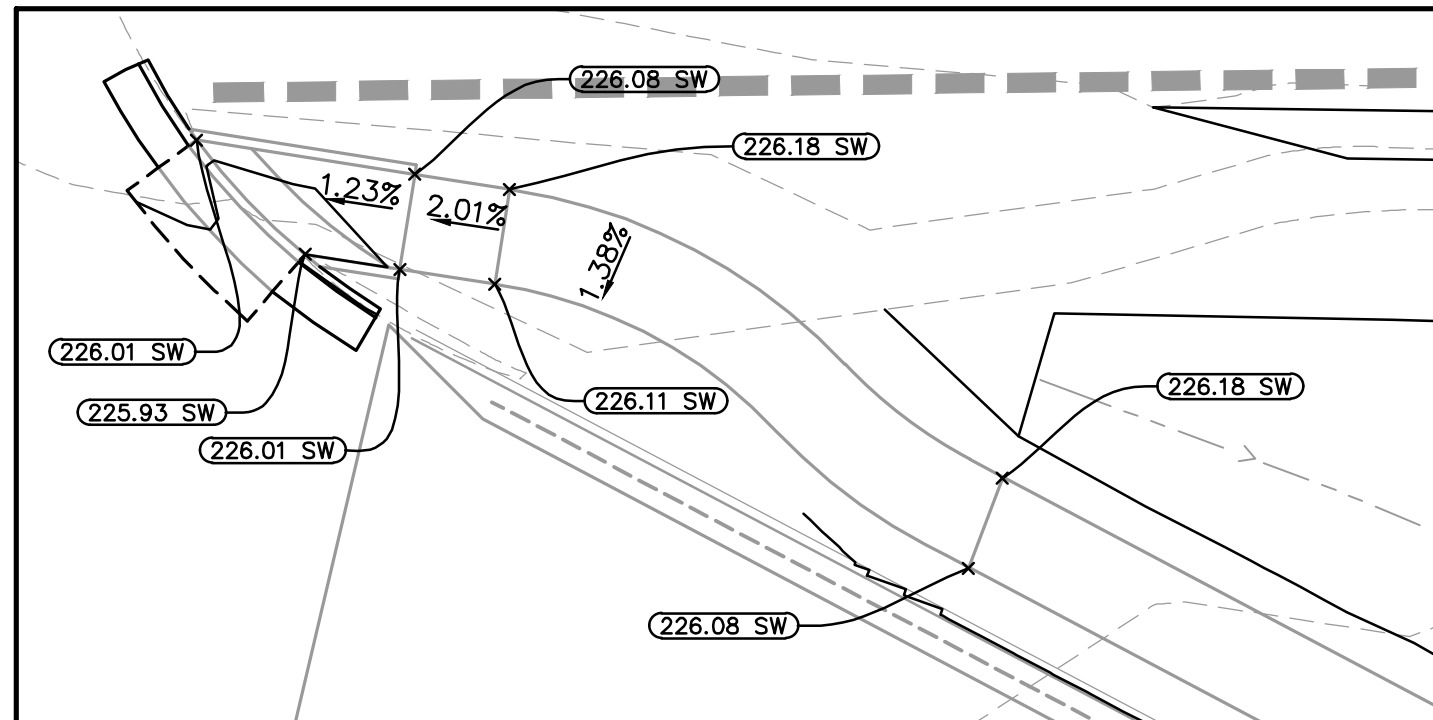
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SHEET  
2B - CURB RAMP  
DETAILS

SCALE 1:10

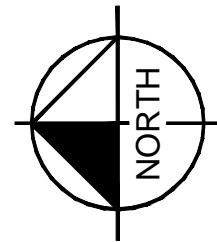
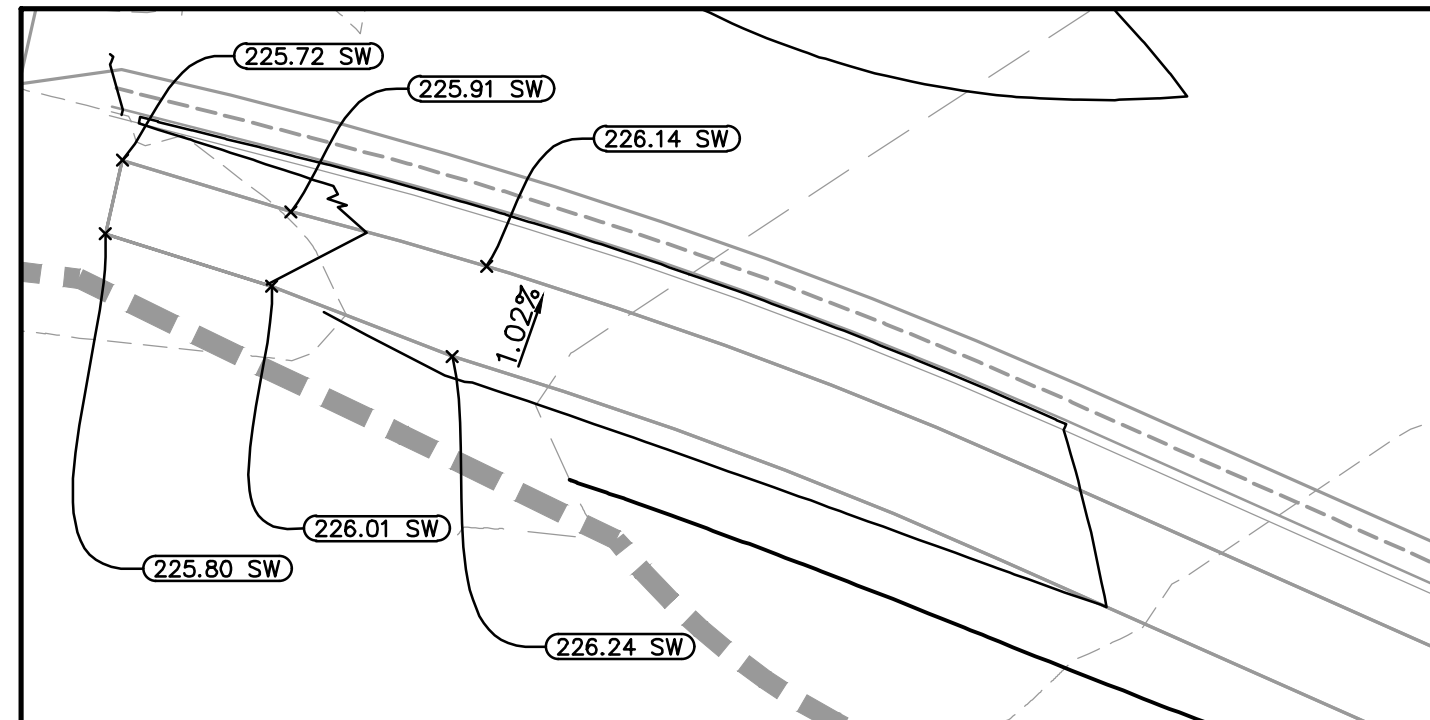
DEAN DRIVE EXTENDED (T-030)

RAMP 3-A CG-12 TYPE B



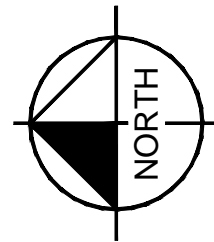
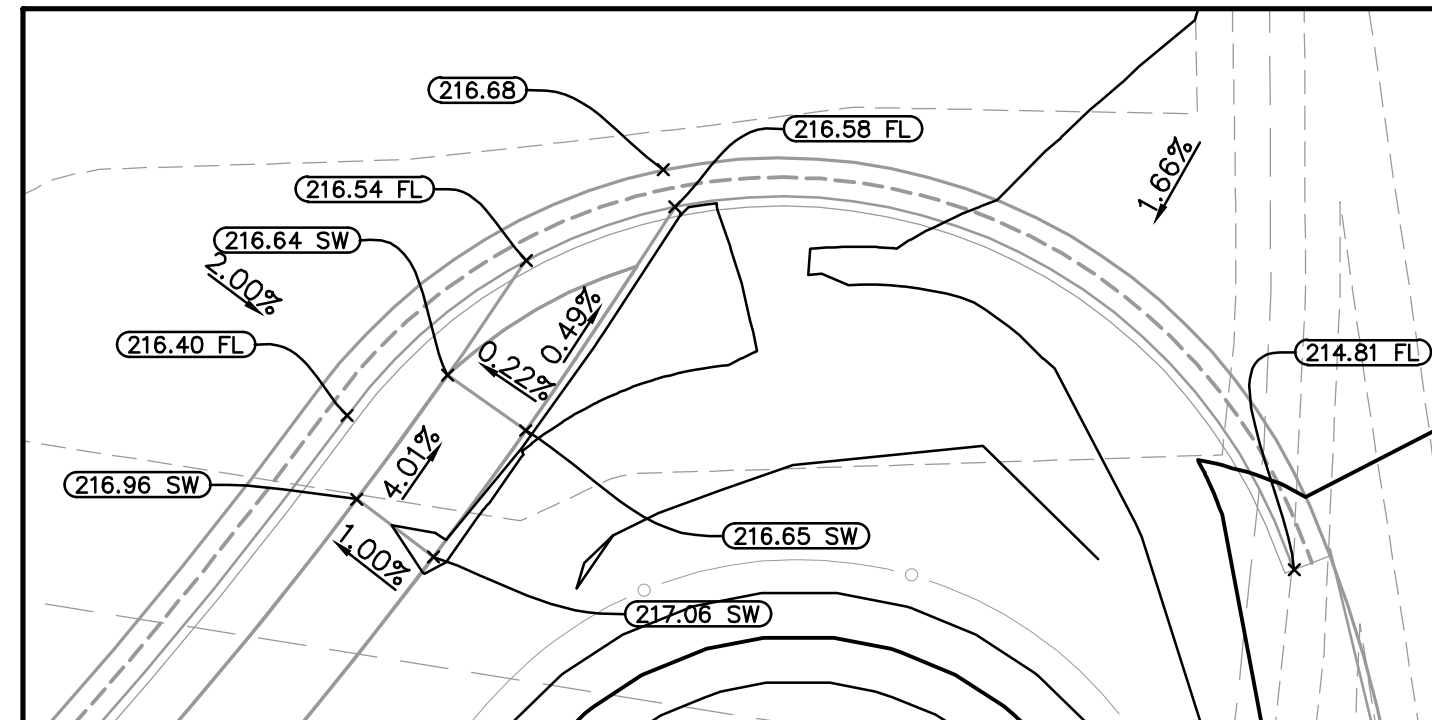
SCALE 1:10

DEAN DRIVE SIDEWALK TIE-IN



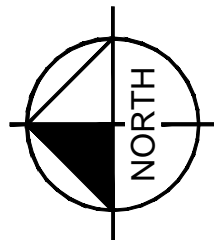
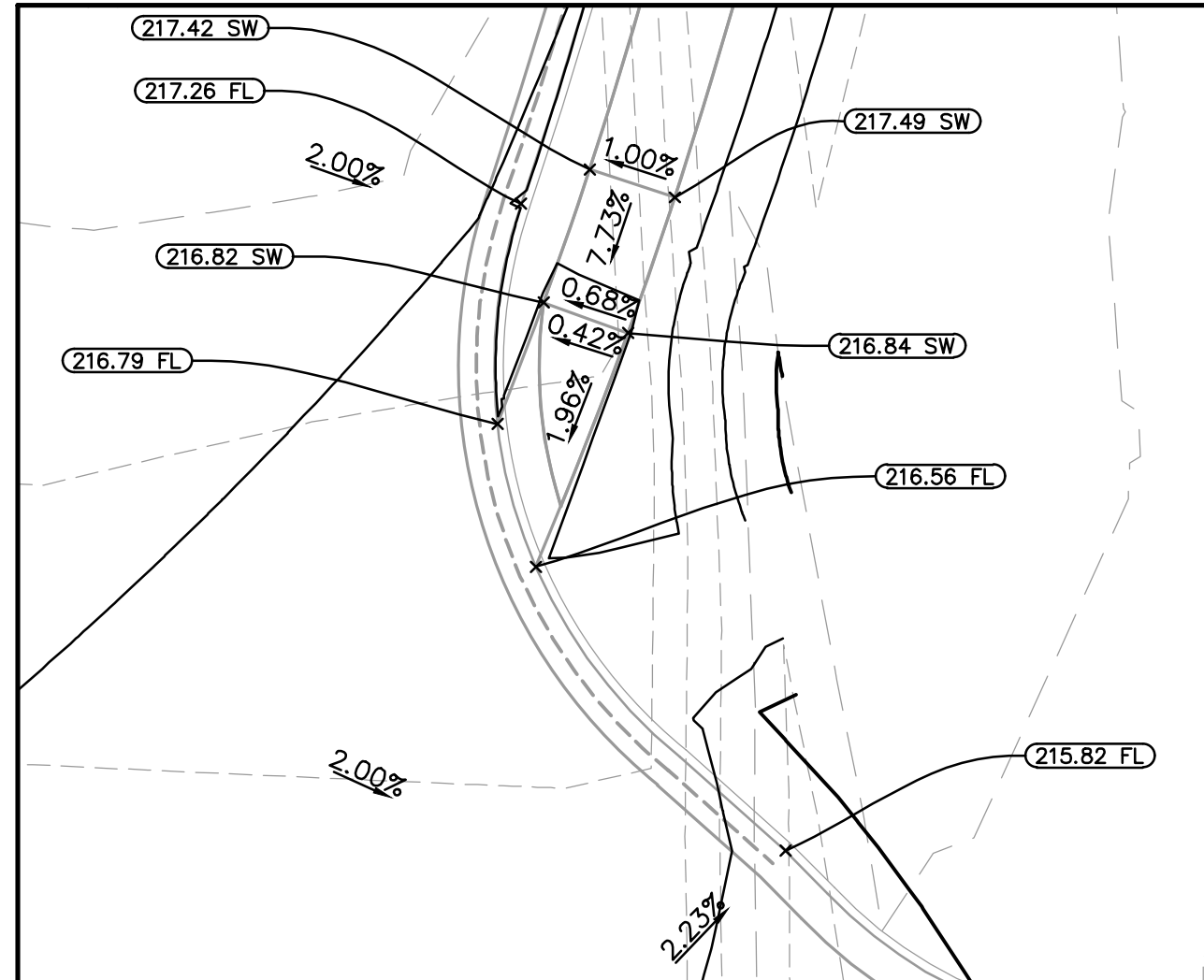
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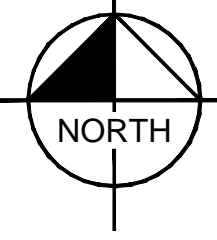
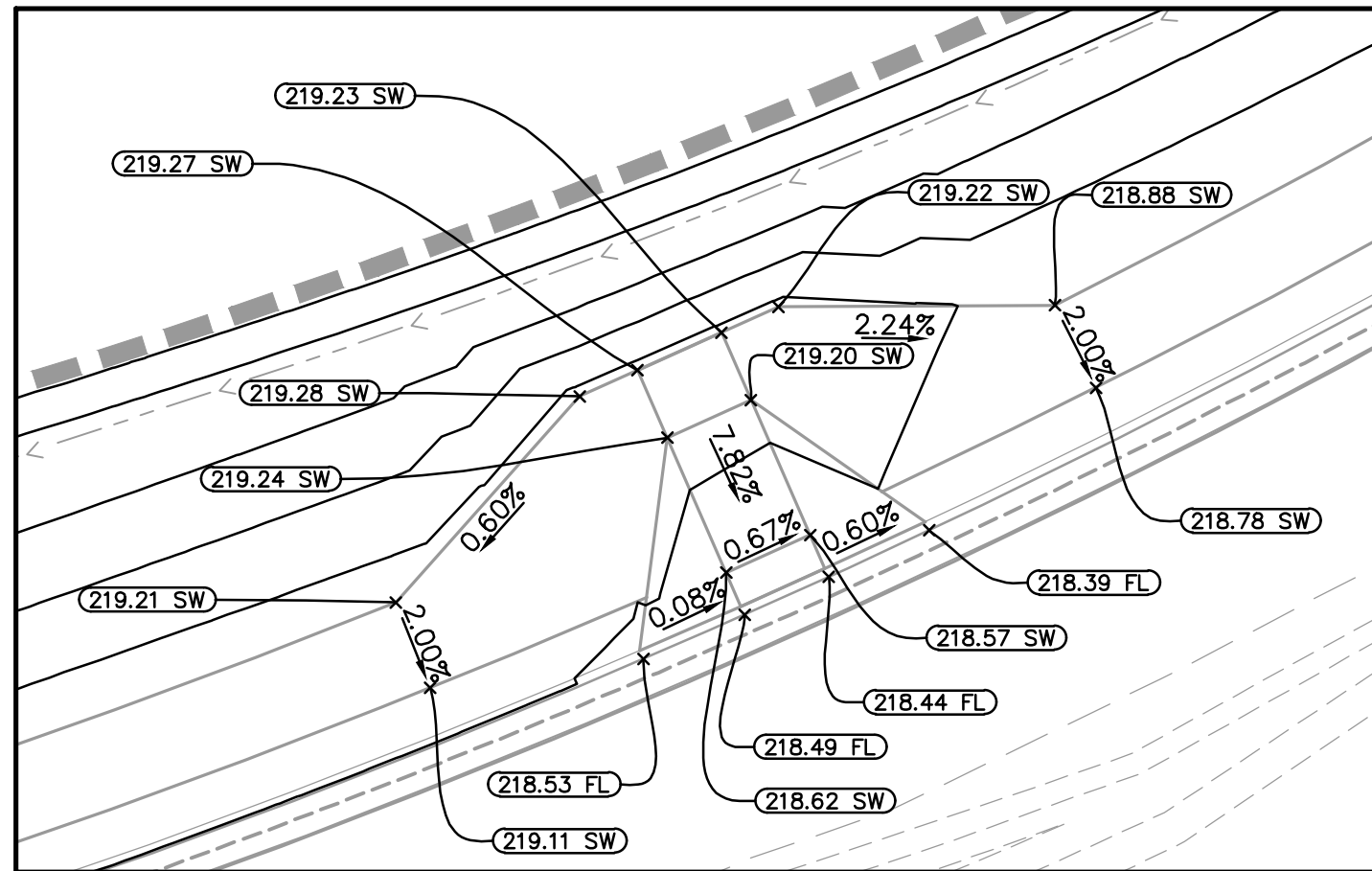
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RAMP 3-C CG-12 TYPE B



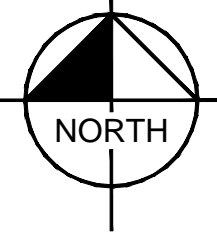
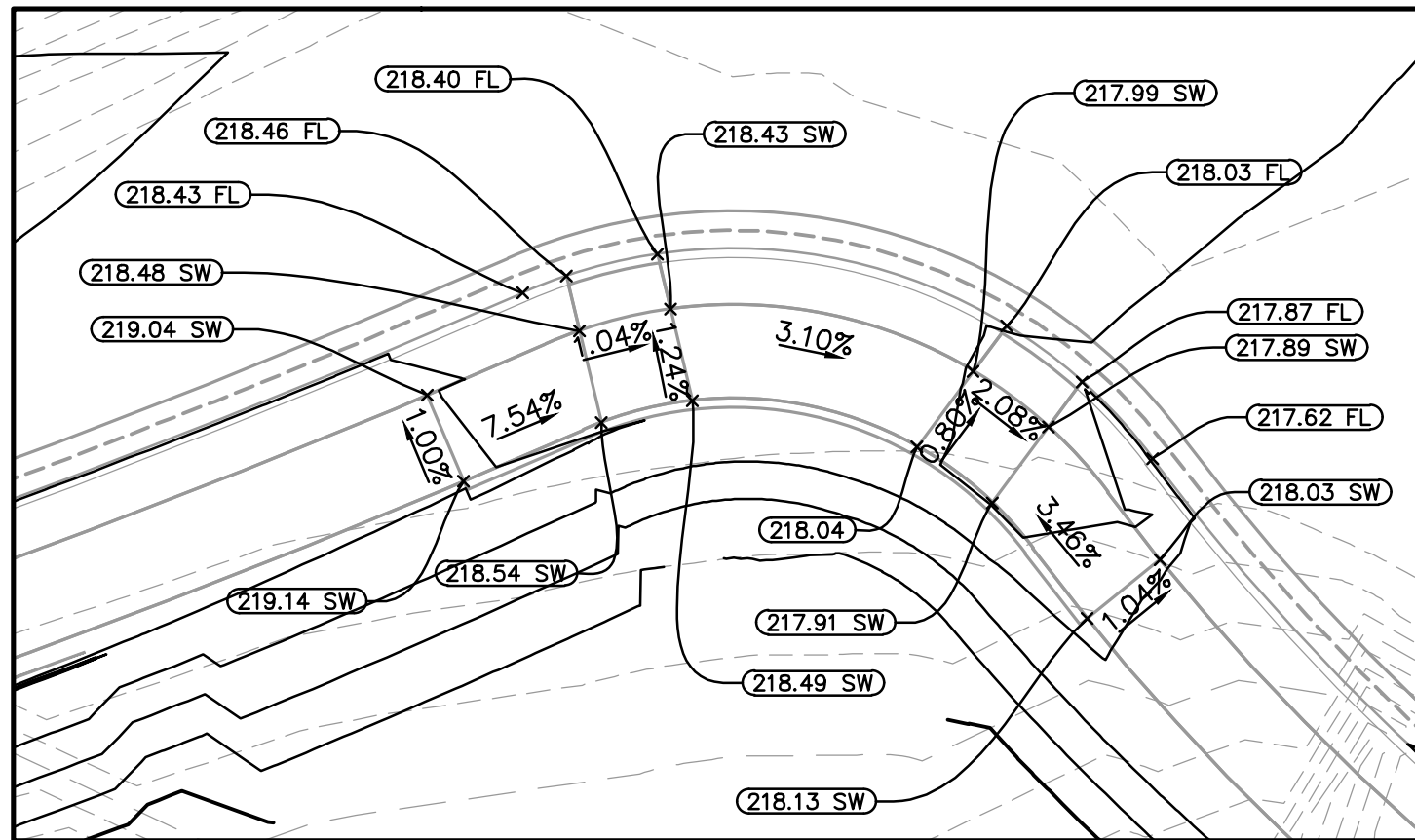
SCALE 1:10

RAMP 4-A CG-12 TYPE A



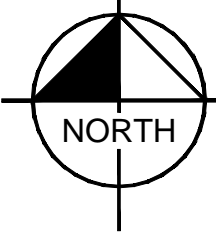
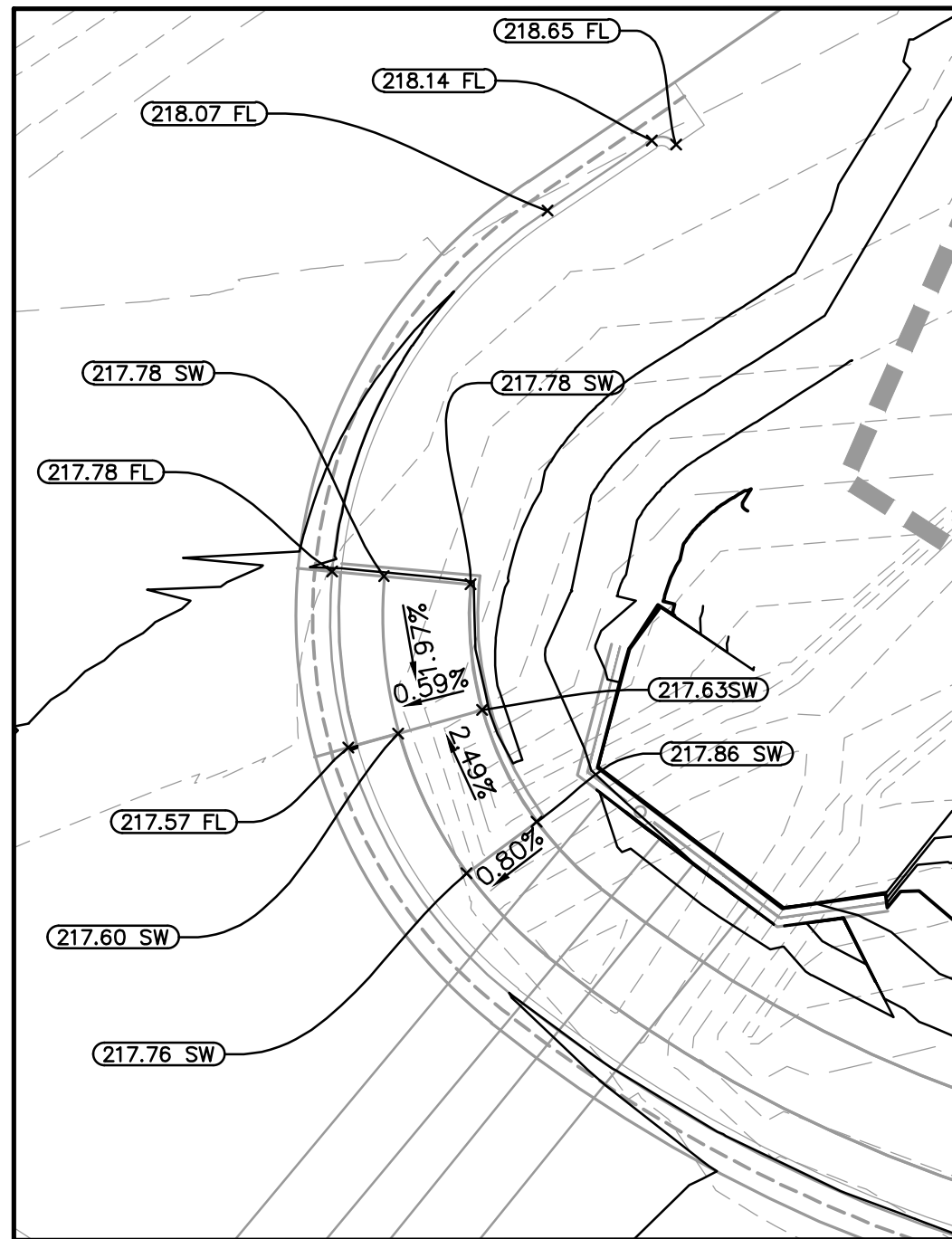
SCALE 1:10

RAMP 4-B CG-12 TYPE C



SCALE 1:10

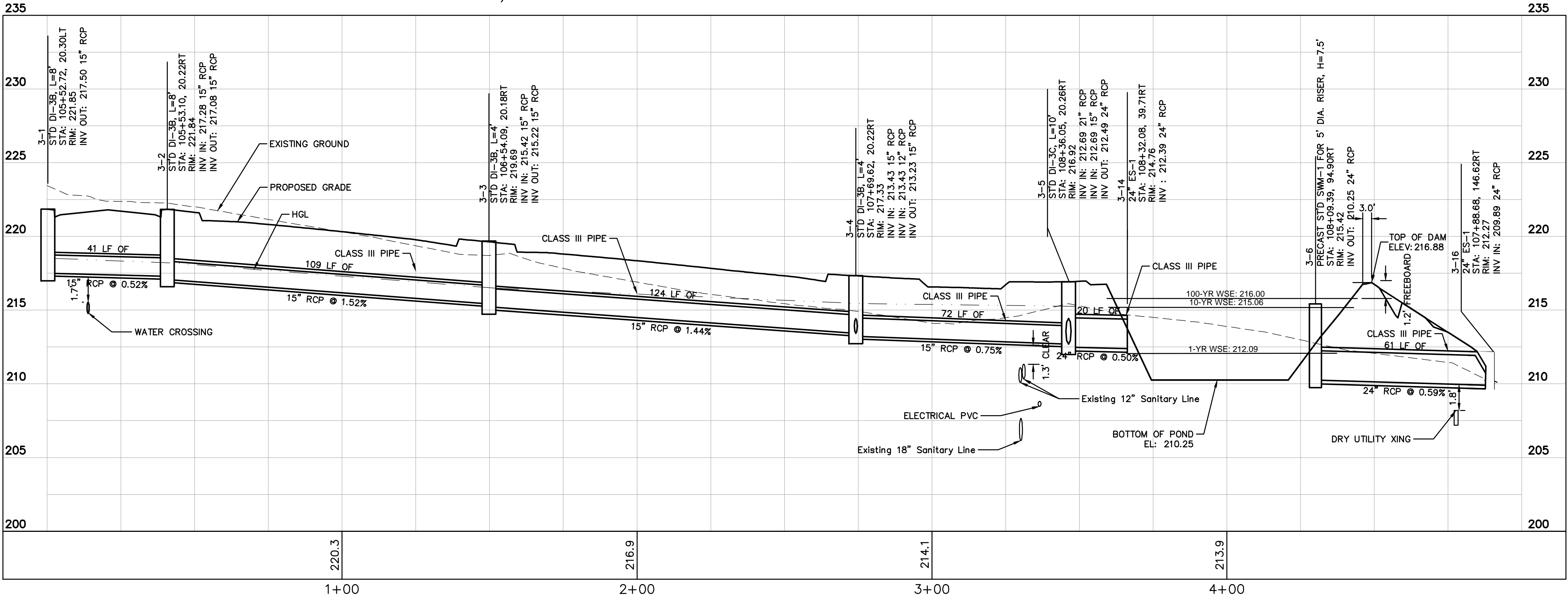
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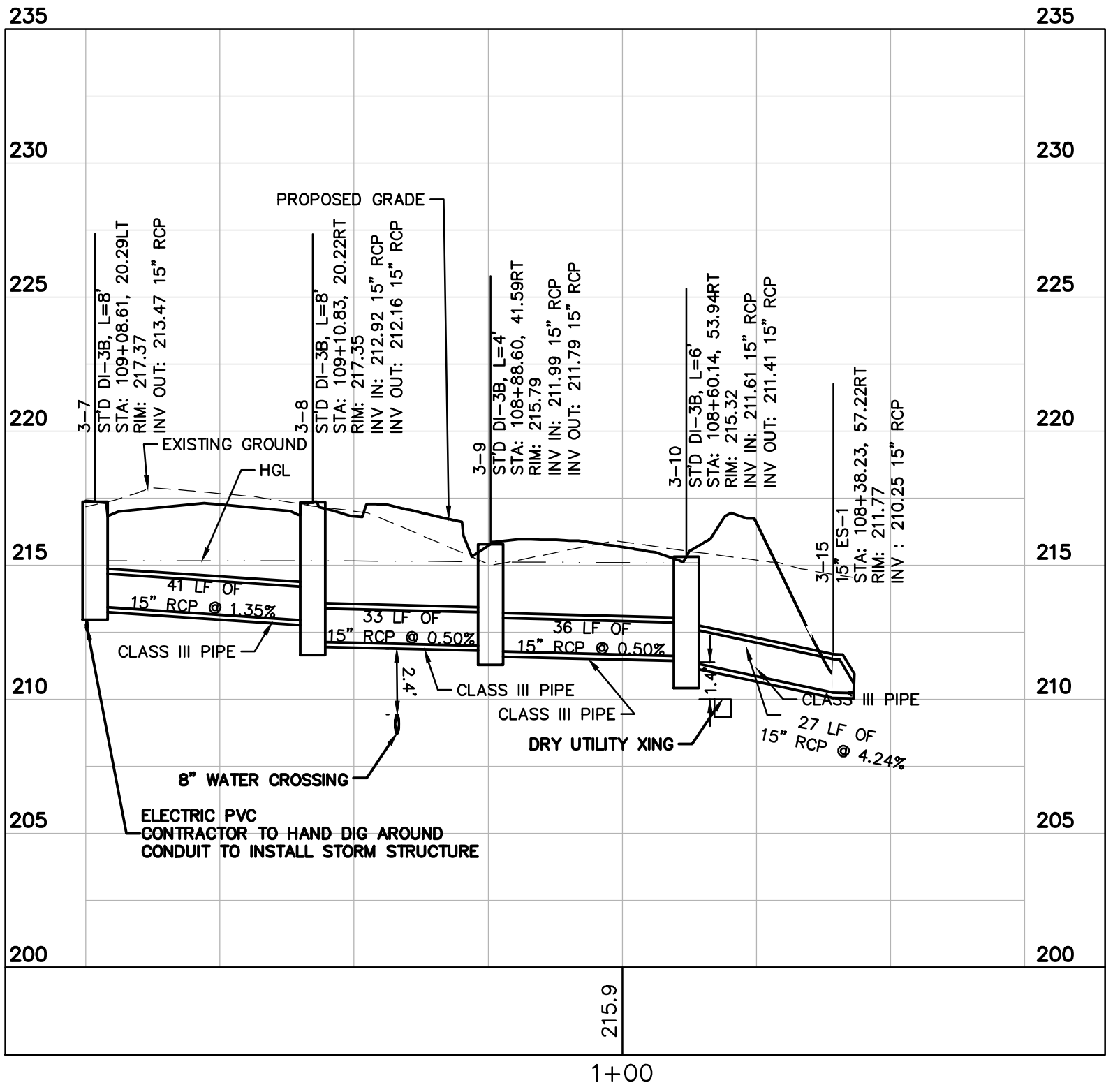
SCALE 1:10

STORM SEWER PROFILES

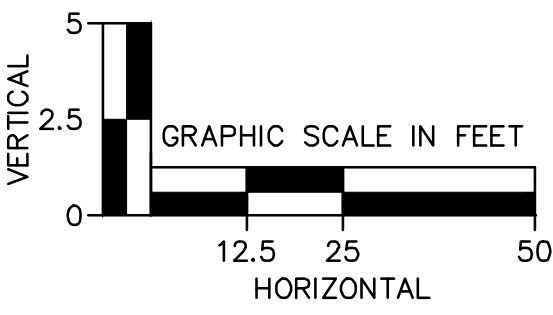
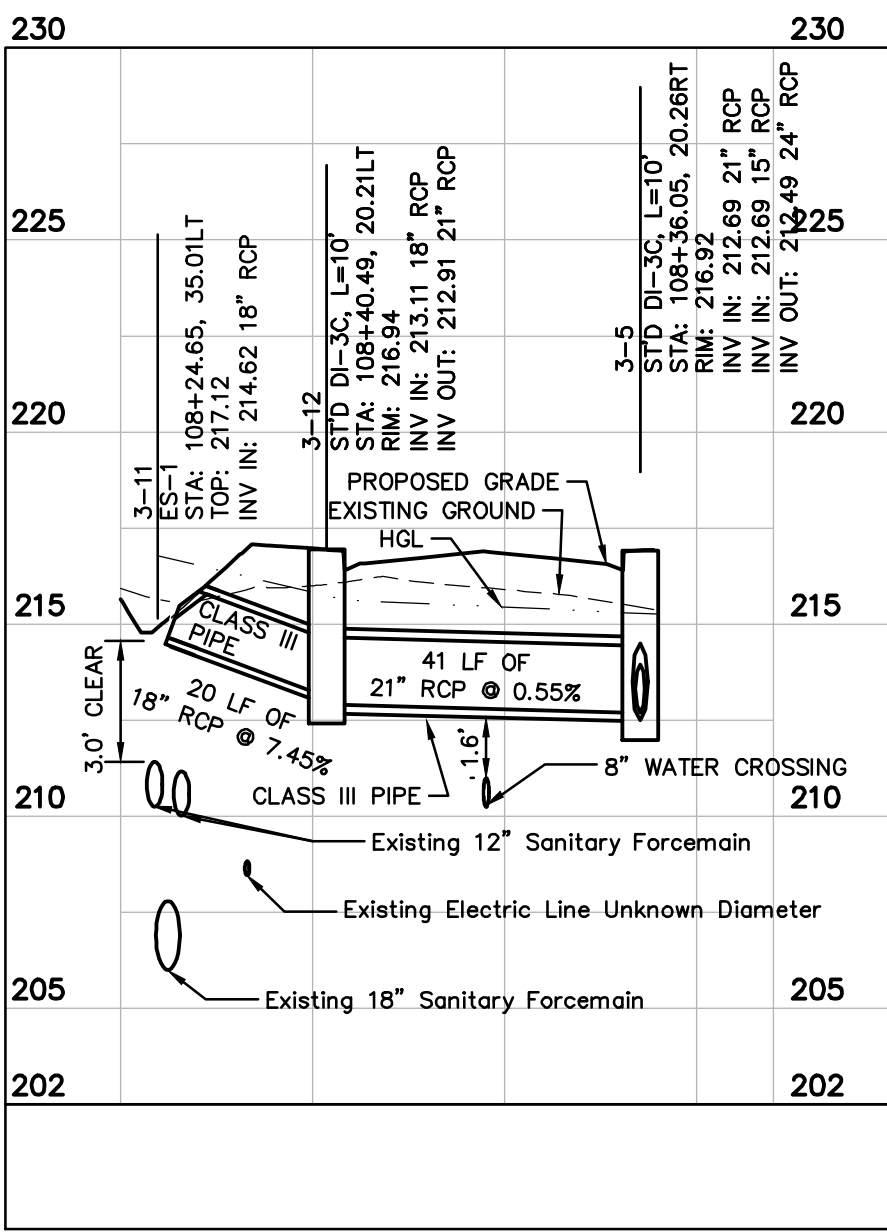
STRUCTURES 3-1 TO 3-16, DEAN DRIVE



STRUCTURES 3-7 TO 3-15,  
DEAN DRIVE



STRUCTURES 3-11 TO 3-5,  
DEAN DRIVE



Kimley-Horn  
Reston, Virginia  
Hydraulic Engineer



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DRIVE  
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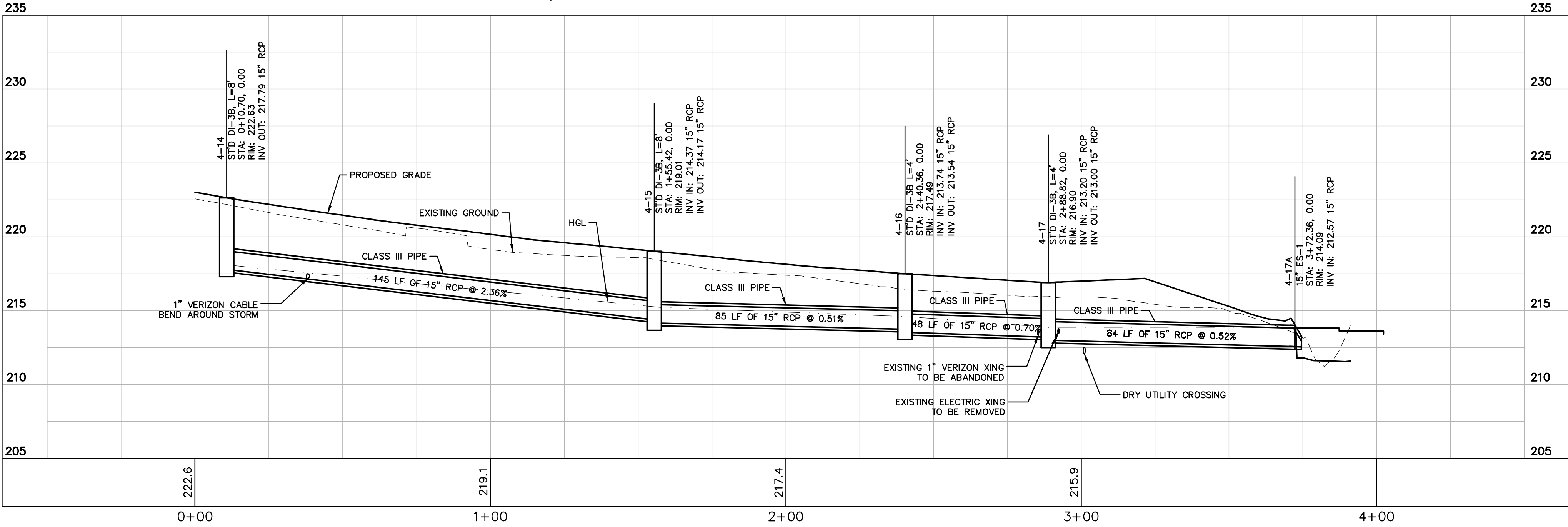
SHEET  
2C(1) - STORM  
SEWER PROFILES  
SCALE H 1:25  
V 1:5

DEAN DRIVE EXTENDED (T-030)

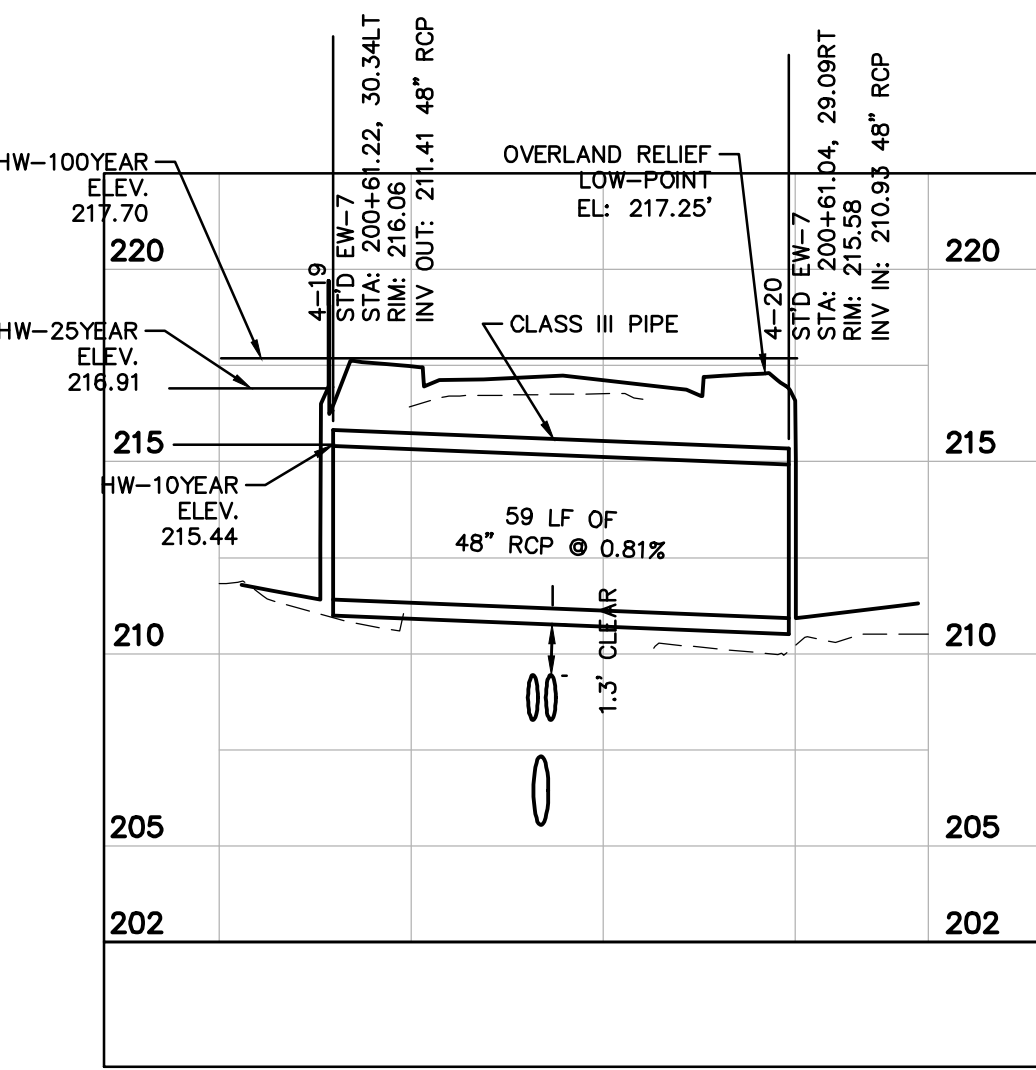
100% DESIGN SUBMITTAL

STORM SEWER PROFILES

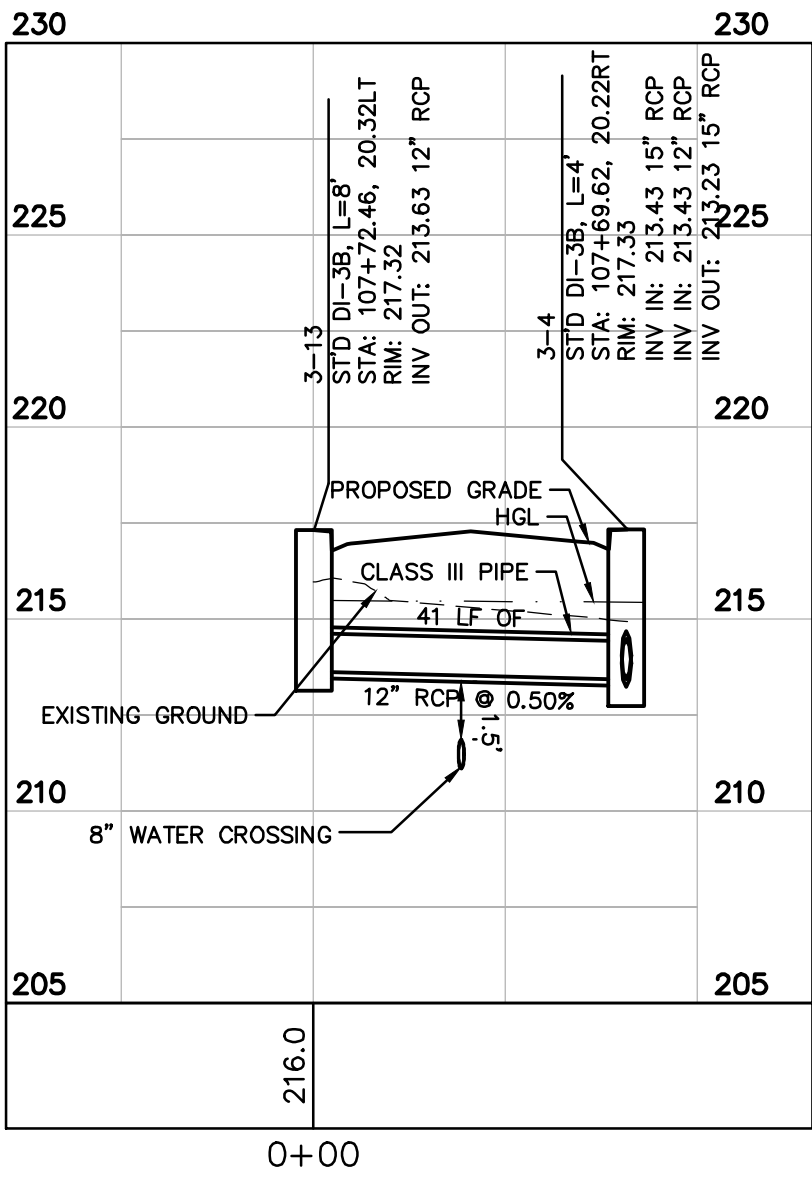
STRUCTURES 4-14 TO 4-17A, DEAN DRIVE EAST



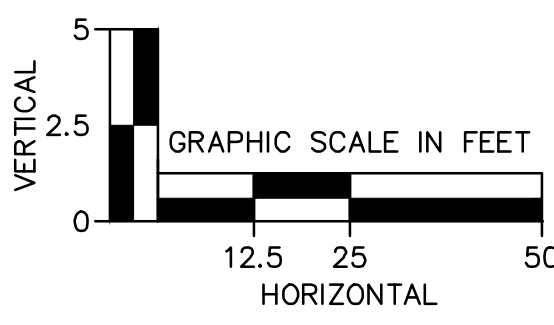
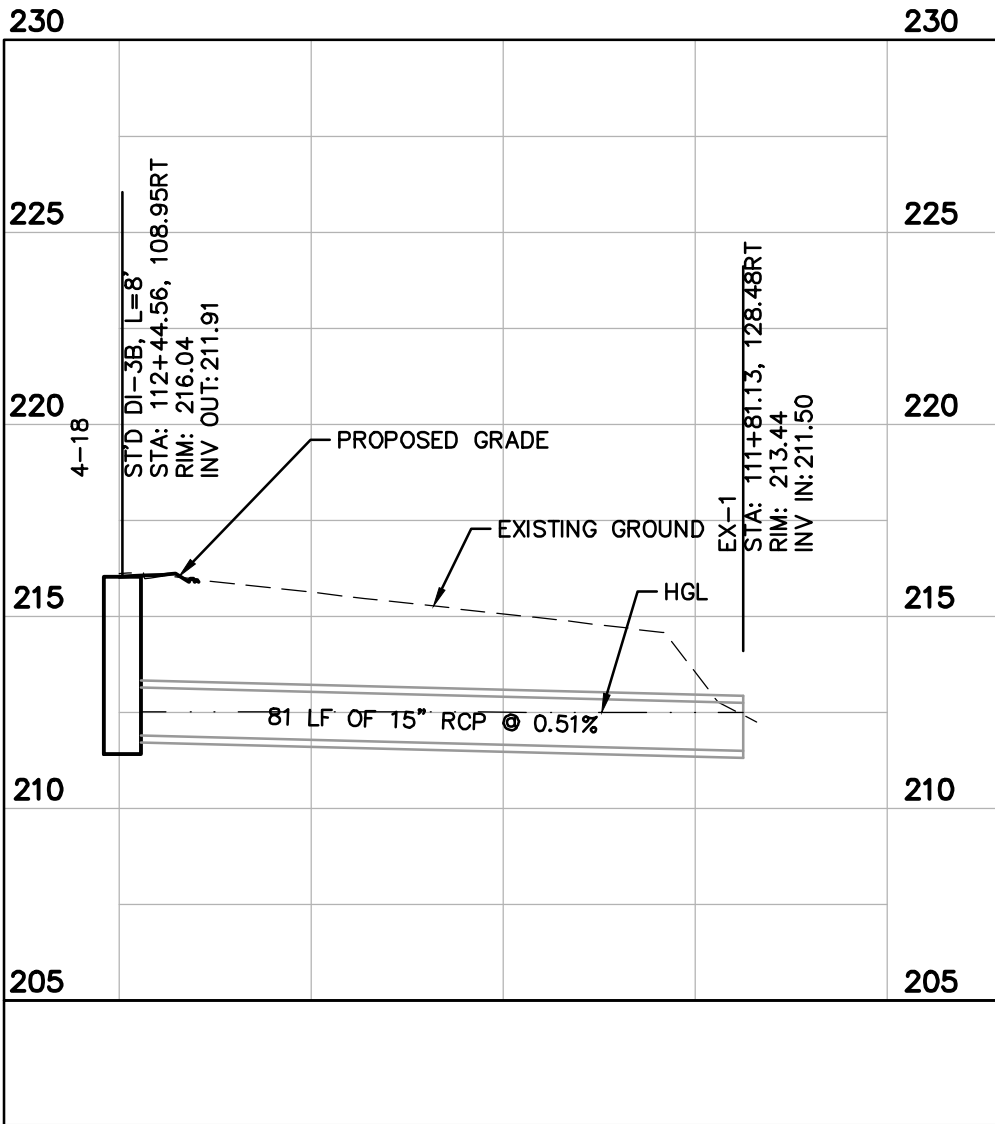
PROPOSED 48" RCP DUAL BARREL CULVERT REPLACEMENT



STRUCTURES 3-13 TO 3-4, DEAN DRIVE



STRUCTURES 4-18 TO EX-1, DEAN DRIVE EAST



Kimley-Horn  
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Hydraulic Engineer

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SHEET  
2C(2) - 1 STORM  
SEWER PROFILES  
SCALE H 1:25  
V 1:5