

TOWN OF PURCELLVILLE 21ST & 23RD STREET STREETScape IMPROVEMENTS: PHASE II

TOWN OF PURCELLVILLE
LOUDOUN COUNTY, VA

VDOT PROJECT NUMBER - EN06-286-125, C502
FEDERAL PROJECT NUMBER - TEA-5A01(552)
UPC NUMBER - 105472

ROADWAY/LOCATION	FUNCTIONAL CLASSIFICATION	2011 ADT	%T	V MPH
21st STREET FROM: 23rd STREET TO: ROUTE 7 (HARRY BYRD HWY)	URBAN MINOR ARTERIAL	2,300	1%	30.

UTILITY CONTACT LIST

TELEPHONE
VERIZON COMMUNICATIONS

ELECTRIC
DOMINION VIRGINIA POWER

WATER & SEWER
TOWN OF PURCELLVILLE
540-338-7421

CABLE
COMCAST

MISS UTILITY OF VIRGINIA



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AFFECTED PROPERTIES

PIN # 488-37-4373

PROJECT OWNER & CONSULTANT

CLIENT / OWNER

TOWN OF PURCELLVILLE
ALEX VANEAS, CPM
DIRECTOR OF PUBLIC WORKS
221 S. NURSERY AVENUE
PURCELLVILLE VA 20132
PHONE: 540-338-7421

CIVIL ENGINEER

Kimley»Horn

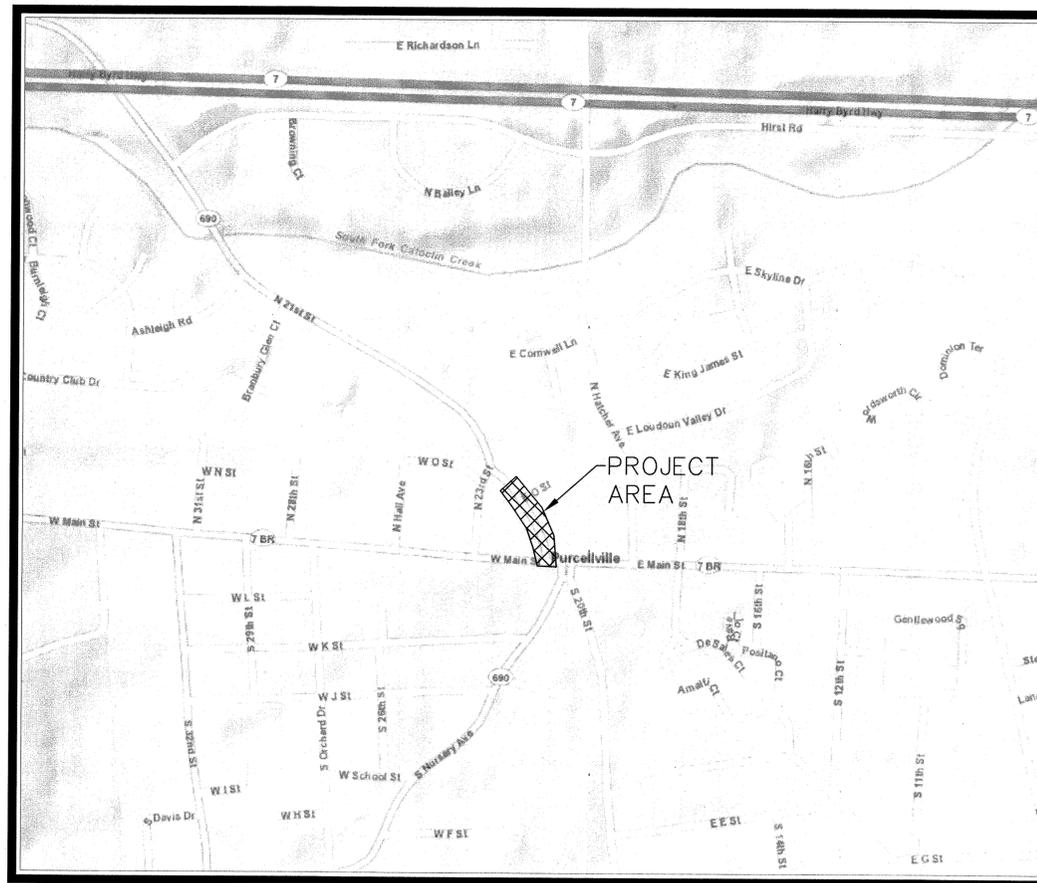
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SURVEYOR

RICE AND ASSOCIATES, INC.
10625 GASKINS WAY
MANASSAS, VA 20109
(703) 968-3200

V.D.O.T.

MR. JAMES ZELLER P.E.
4975 ALLIANCE DRIVE
FAIRFAX, VA 22030
800-367-7623



PROJECT LOCATION MAP

SCALE: 1"=500'



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APPROVAL	
<i>[Signature]</i>	<i>[Signature]</i>
TOWN OF PURCELLVILLE DIRECTOR OF PUBLIC WORKS	DATE
*APPROVAL OF THESE PLANS WILL EXPIRE FIVE (5) YEARS FROM THE DATE OF PLANNING APPROVAL	

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DATE	06/19/2014
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DRAWN BY	KTB
CHECKED BY	KVH

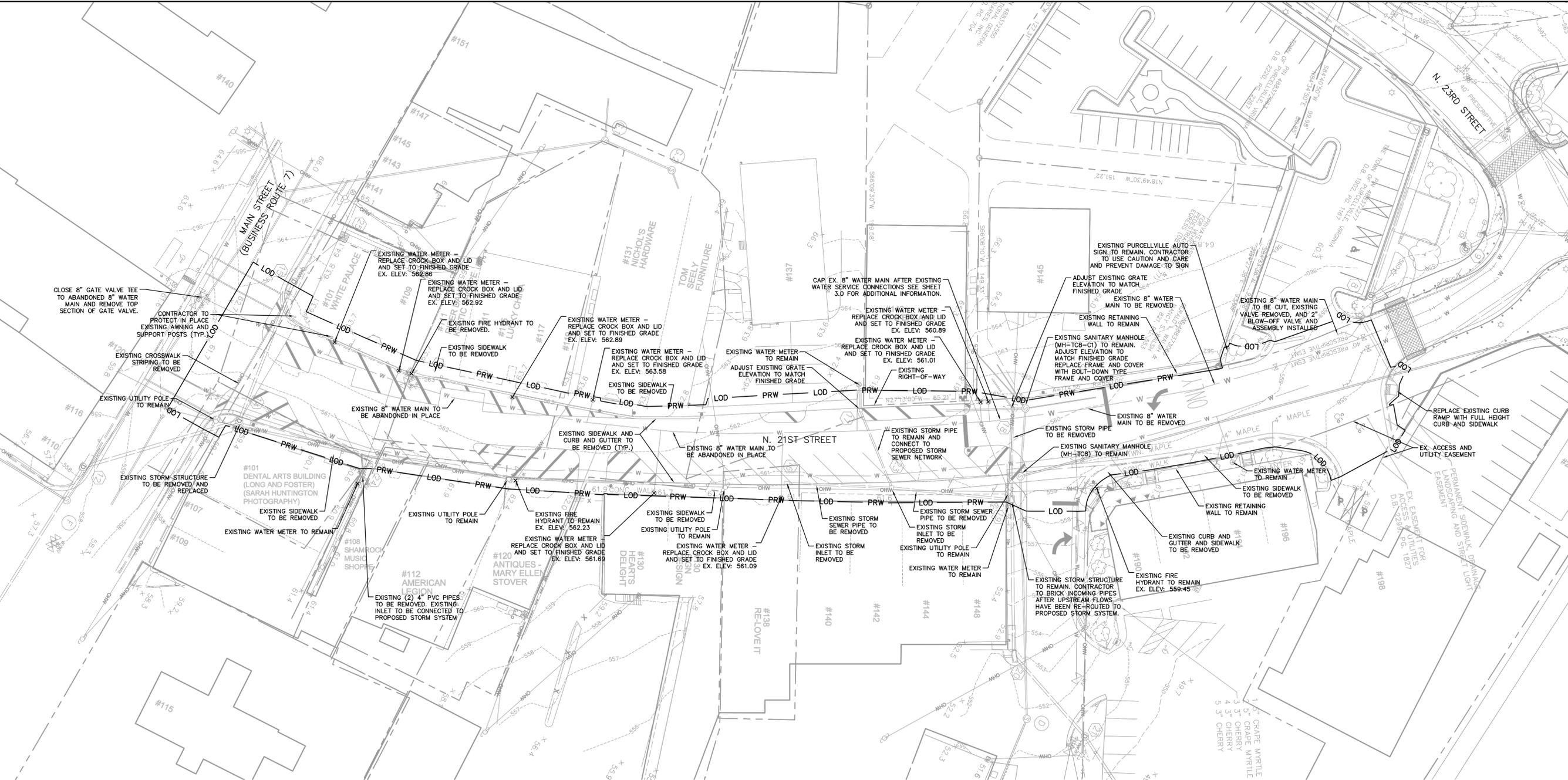
COVER SHEET

**21ST & 23RD STREETScape
IMPROVEMENTS - PHASE II**
PREPARED FOR
TOWN OF PURCELLVILLE
PURCELLVILLE, VIRGINIA

SHEET NUMBER
1.0

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EXISTING SANITARY SEWER DESCRIPTIONS

MH-TC8 SSMH
RIM = 559.42
INV. IN = 548.64 - 8" TERRA-COTTA FROM STR. B
INV. IN = 549.78 - 8" DIP FROM STR. E
INV. OUT = 548.49 - 8" TERRA-COTTA TO STR. D

MH-TC8-C1 SSMH
RIM = 560.21
INV. IN = 555.51 - 4" DIP-FROM SOUTH WEST
INV. IN = 555.51 - 4" PVC-FROM SOUTH WEST
INV. IN = 555.66 - 4" TERRA-COTTA (ORIGIN UNKNOWN) FROM NORTHWEST
INV. IN = 551.21 - 8" DIP (ORIGIN UNKNOWN) FROM SOUTHEAST
INV. OUT = 551.12 - 8" DIP TO STR. C

EXISTING STORM SEWER DESCRIPTIONS

12 CDI
RIM = 558.27
INV. IN = 554.07 - 12"x18" ELLIPTICAL CMP FROM
INV. OUT = 554.17 - 15" RCP TO STR. 13
(STRUCTURE IS SURCHARGED)

14 CDI
RIM = 559.49
INV. IN = 556.34 - 15" RCP FROM STR. 15
INV. OUT = 556.29 - 12"x18" ELLIPTICAL CMP TO S

15 CDI
RIM = 563.28
INV. IN = 559.78 - 12" RCP FROM STR. 25
INV. OUT = 559.58 - 15" RCP TO STR. 14

16 GI
RIM = 560.43
INV. IN = 558.93 - (2) 4" PVC FROM SOUTH (ORIG
INV. OUT = 558.65 - 10" DIP TO STR. 23

17 GI
RIM = 561.20
INV. IN = 560.10 - 8" PVC FROM ROOF DRAIN
INV. OUT = 559.75 - 10" DIP TO STR. 23

18 GI
RIM = 559.72
INV. IN = 558.47 - 6" PVC FROM ROOF DRAIN
INV. OUT = 558.42 - 12" CMP TO STR. 19 (PIPE C

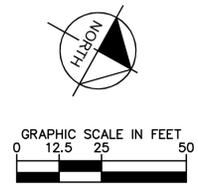
19 SDMH
RIM = 559.72
INV. IN = 556.41 - 8" METAL FROM STR. 18 (PIPE
INV. IN = 555.37 - 12" DIP FROM STR. 23
INV. OUT = 555.32 - 15" DIP TO STR. 20 (PIPE C

20 SDMH
RIM = 552.96
INV. IN = 551.96 - 8" TERRA COTTA FROM ROOF D
INV. IN = 550.86 - 12" RCP END SECTION FROM S
INV. IN = 550.11 - 15" CMP FROM STR. 19
INV. OUT = 549.81 - 15" CMP TO STR. 21

LEGEND	
	EXISTING OVERHEAD WIRE
	EXISTING PROPERTY LINE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	LIMITS OF DISTURBANCE
	LIMITS OF DISTURBANCE/PERSCRPTIVE RIGHT OF WAY

NOTES:

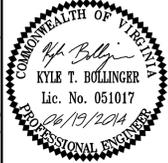
- ALL EXISTING DOORWAYS, STEPS, WINDOWS, ETC. SHALL NOT BE DISTURBED DURING PROJECT CONSTRUCTION.
- REFER TO SHEET 5.0 FOR ADDITIONAL INFORMATION ABOUT EXISTING SIGN REMOVAL AND RE-INSTALLATION.
- ADJUST PROPOSED AND EXISTING WATER SERVICES, SANITARY SEWER, STORM SEWER, UTILITY, AND ANY OTHER FRAMES, COVERS, LIDS, AND TOPS TO NEW FINISHED GRADE. THIS SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND INCLUDED IN THE BASE BID PRICE.
- ALL STORM PIPE TO BE ABANDONED IN PLACE SHALL BE PLUGGED/CAPPED PER VDOT STANDARD PP-1. THIS SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND INCLUDED IN THE BASE BID PRICE.
- REFER TO SEQUENCE OF CONSTRUCTION PLANS, SHEETS 8.0 - 8.6, FOR THE ORDER OF THE DEMOLITION.



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NO.	REVISIONS	DATE	BY

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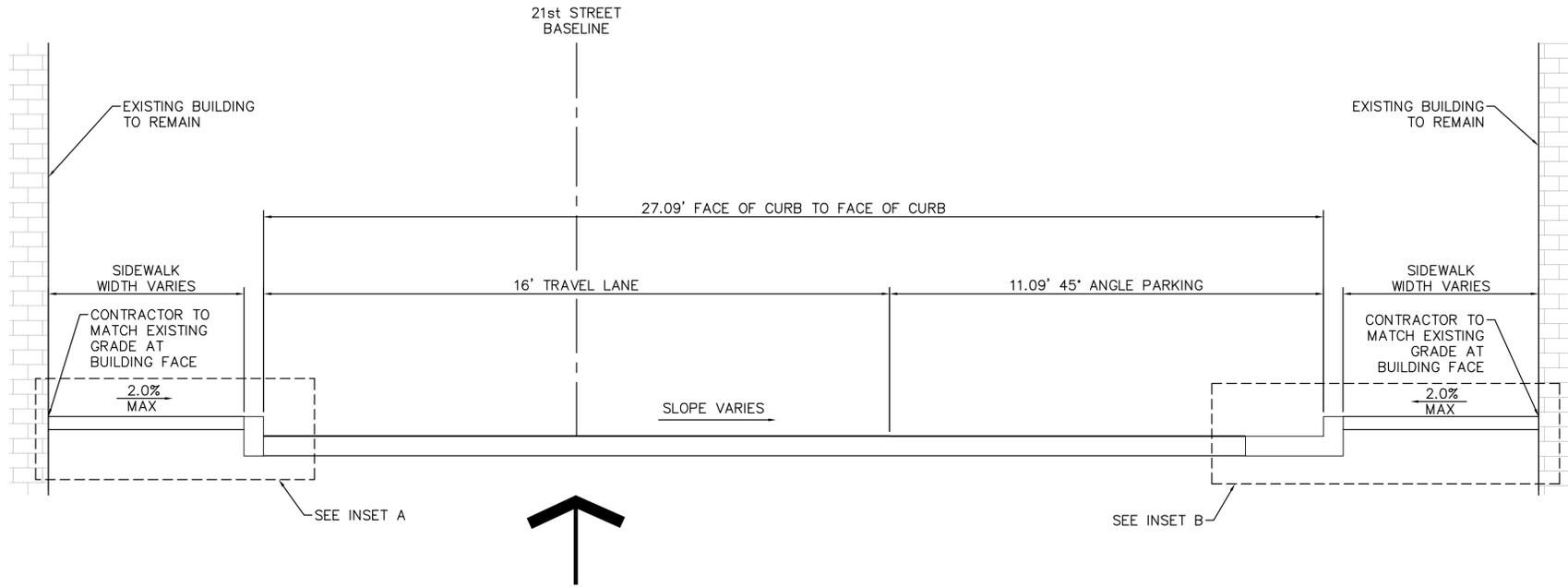
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**EXISTING
CONDITIONS AND
DEMOLITION PLAN**

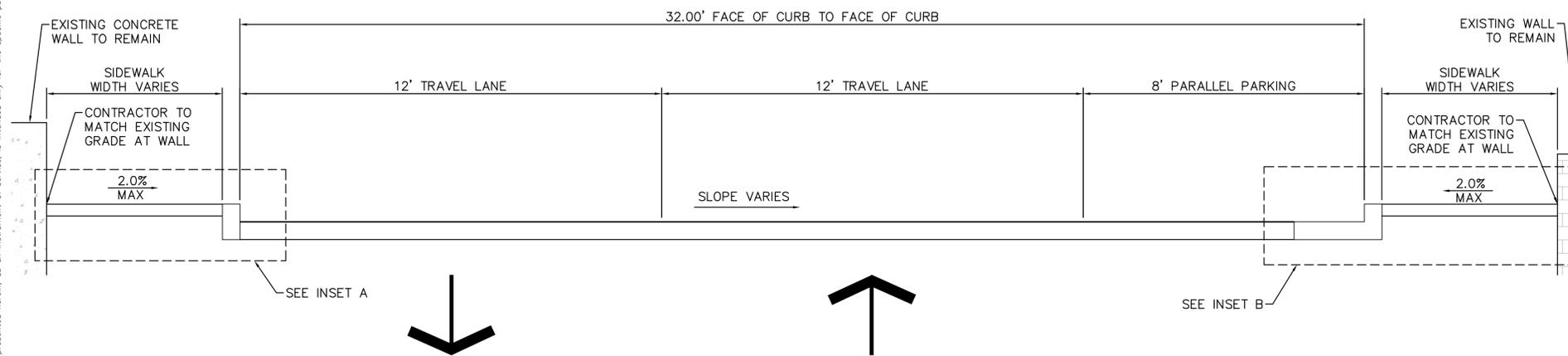
21ST & 23RD STREETSCAPE
IMPROVEMENTS - PHASE II
PREPARED FOR
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SHEET NUMBER
1.2

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STA. 10+45.00 TO STA. 14+45.00
21ST STREET ONE WAY
 SCALE: N.T.S.

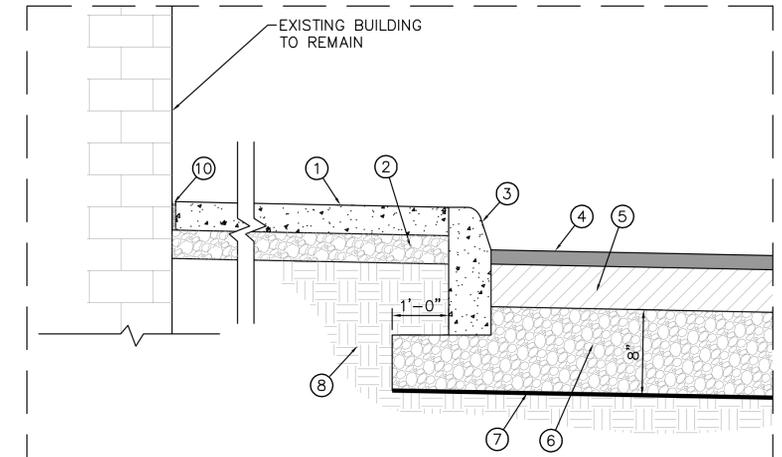


STA. 14+45.00 TO STA. 16+75.00
21ST STREET TWO WAY
 SCALE: N.T.S.

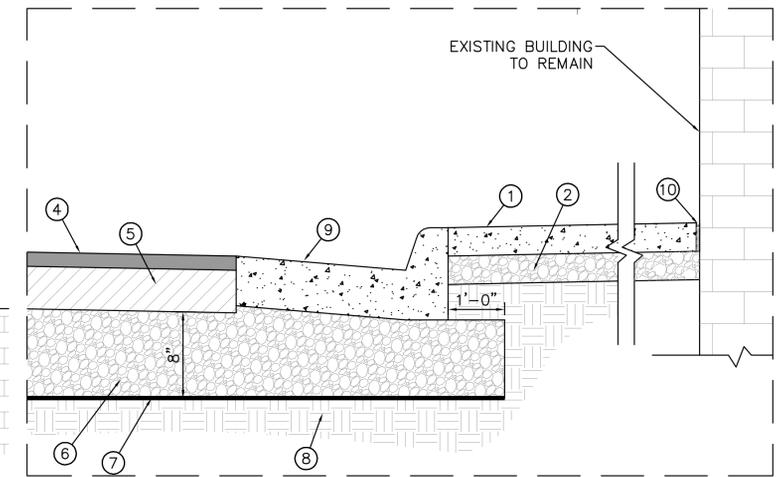
- *VDOT GEOGRID REQUIREMENTS**
1. JUNCTION EFFICIENCY MUST BE EQUAL TO OR GREATER THAN 93%
 2. APERTURE STABILITY MUST BE EQUAL TO OR GREATER THAN 3.0 KG-CM/DEG95.0KG-CM
 3. RADIAL STIFFNESS AT LOW STRAIN MUST BE EQUAL TO OR GREATER THAN 15,430 LB/FT AT 0.5% STRAIN

TYPICAL SECTIONS KEY NOTES

- 1 4" HYDRAULIC CEMENT CONCRETE SIDEWALK, 3500 PSI WITH 6x6 - 10/10 WELDED WIRE MESH OR FIBERGLASS REINFORCEMENT
- 2 4" AGGREGATE BASE MATERIAL TYPE 1, NO. 21B
- 3 VDOT STANDARD CURB CG-2
- 4 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SM-9.5A SUPERPAVE @ 220 LBS/SY (SEE NOTE)
- 5 4" ASPHALT BASE COURSE, TYPE BM-25.0A (SEE NOTE)
- 6 8" AGGREGATE BASE MATERIAL TYPE 1, NO. 21B - COMPACTED TO OPTIMUM DENSITY (SEE NOTE)
- 7 VDOT APPROVED GEOGRID FABRIC. SEE REQUIREMENTS ON THIS PAGE.
- 8 COMPACTED SUBGRADE - COMPACTED TO 95% OF OPTIMUM DENSITY
- 9 VDOT STANDARD CURB AND GUTTER CG-6
- 10 EXPANSION JOINT, 1" JOINT WITH POLYETHYLENE EXPANSION JOINT SEALANT, COLOR TO MATCH ADJACENT PAVEMENT



INSET A
N.T.S.



INSET B
N.T.S.

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COMMONWEALTH OF VIRGINIA
 KYLE T. BOLLINGER
 Lic. No. 051017
 06/19/2014
 PROFESSIONAL ENGINEER

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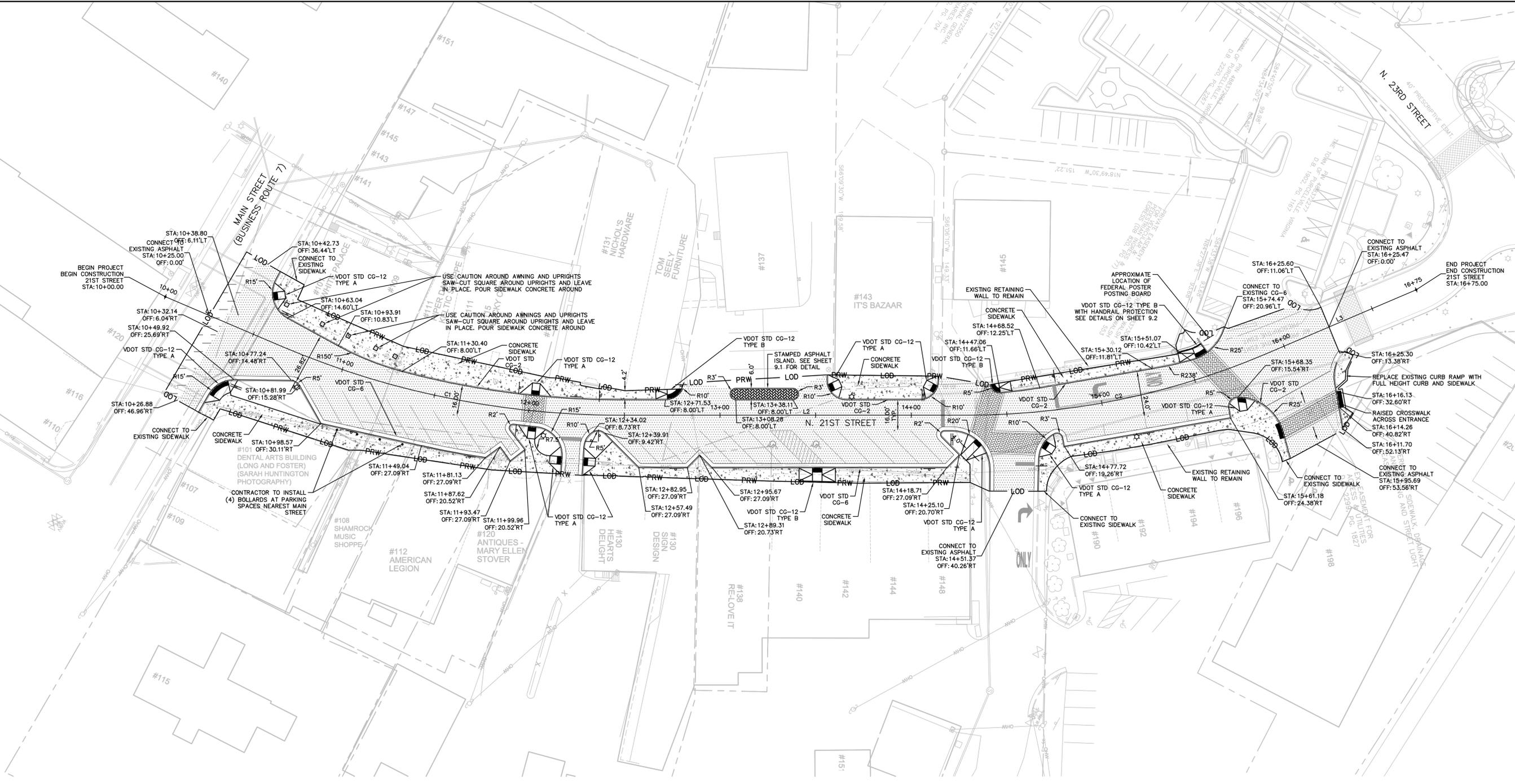
TYPICAL SECTIONS

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 IMPROVEMENTS - PHASE II
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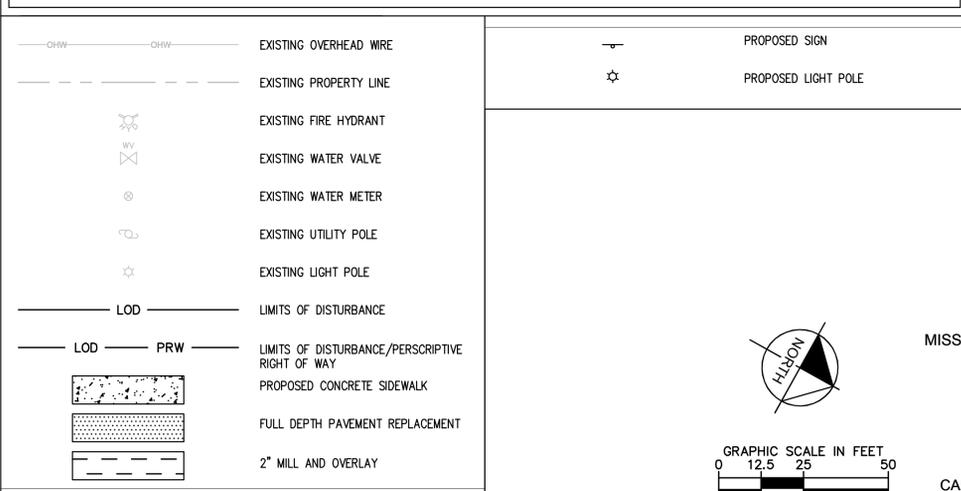


**ALIGNMENT DATA
21ST BASELINE**

SEGMENT NUMBER	BEGINNING STATION	ENDING STATION	PI STATION	DELTA	DEGREE	RADIUS (FT)	TANGENT (FT)	LENGTH (FT)	BEGINNING COORDINATES NORTHING	BEGINNING COORDINATES EASTING	ENDING COORDINATES NORTHING	ENDING COORDINATES EASTING	AZIMUTH
L1	10+00.00	10+66.21	11+57.75	22'59"46"	12°43'56.62"	450.00	91.54	180.61	7097958.58	11705555.49	7098024.42	11705548.46	353°54'33"
C1	10+66.21	12+46.83	11+57.75	22'59"46"	12°43'56.62"	450.00	91.54	180.61	7098024.42	11705548.46	7098195.43	11705494.25	353°54'33" 330°54'47"
L2	12+46.83	14+28.91	13+37.87	23'01'38"	14°19'26.20"	400.00	81.48	160.76	7098195.43	11705405.73	7098354.55	11705405.73	330°54'47"
C2	14+28.91	15+89.67	15+10.39	23'01'38"	14°19'26.20"	400.00	81.48	160.76	7098354.55	11705405.73	7098475.79	11705301.82	330°54'47" 307°53'09"
L3	15+89.67	16+75.00	16+32.33	23'01'38"	14°19'26.20"	400.00	81.48	160.76	7098475.79	11705301.82	7098528.19	11705234.47	307°53'09"

- NOTES:**
- ALL DIMENSIONS AND RADI ARE MEASURED FROM FACE OF CURB UNLESS OTHERWISE NOTED.
 - SEE SHEET 3.0 FOR ADDITIONAL INFORMATION ABOUT PROPOSED UTILITIES.
 - SEE SHEET 5.0 FOR ADDITIONAL INFORMATION ABOUT SIGNING AND STRIPING.
 - SEE SHEET 6.0 THROUGH 6.3 FOR ADDITIONAL INFORMATION ABOUT GRADING AND HARDSCAPE.

LEGEND



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GRAPHIC SCALE IN FEET
0 12.5 25 50

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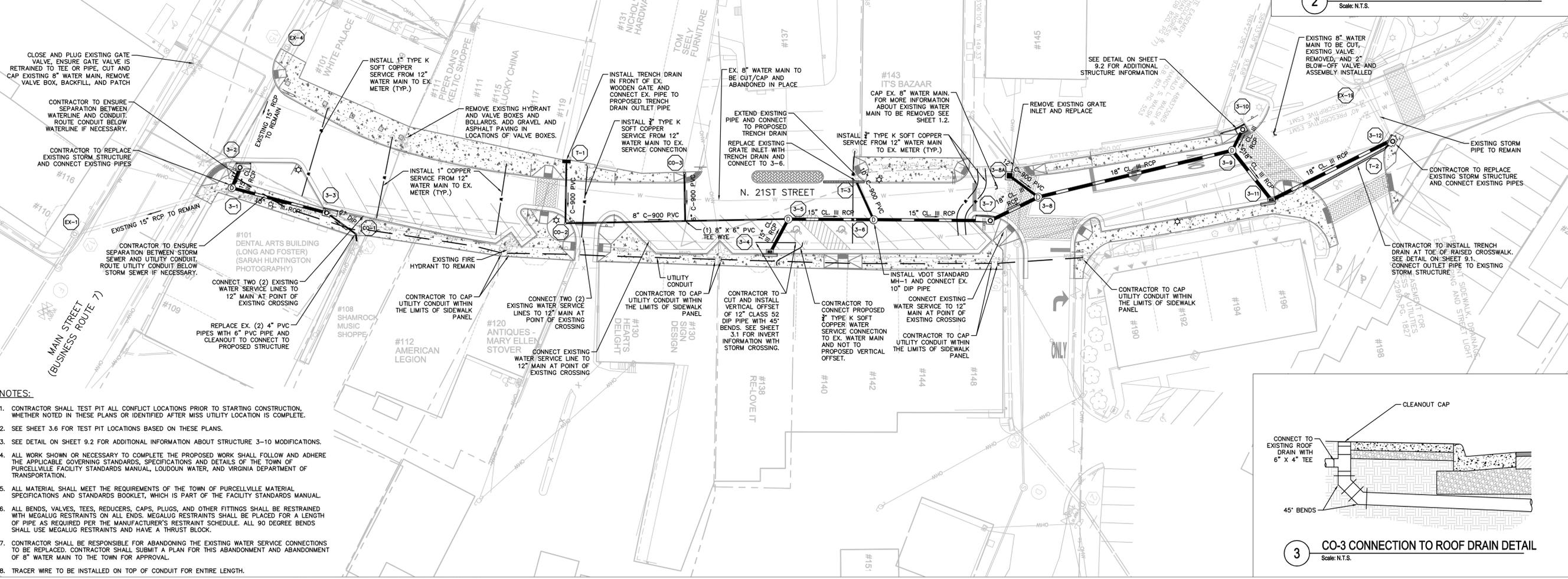
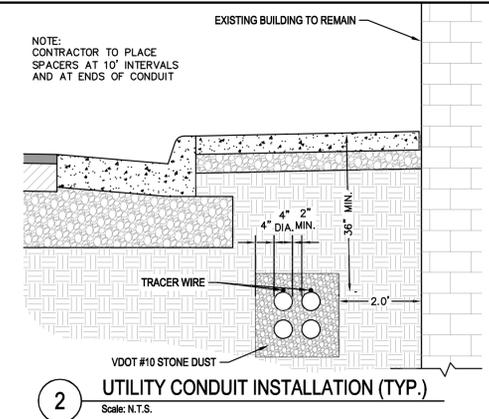
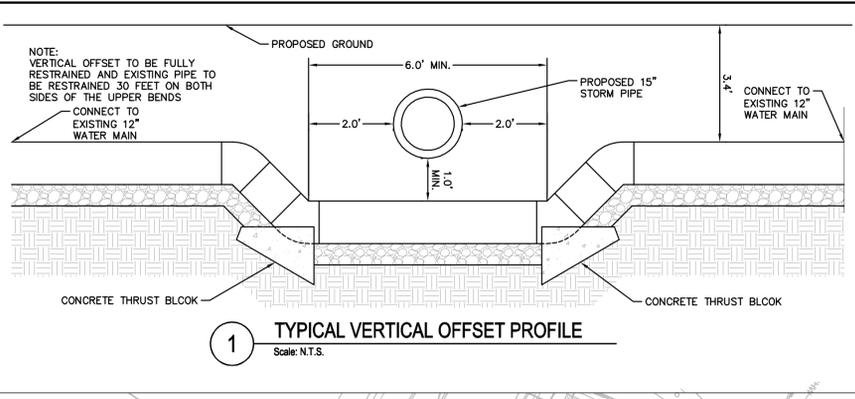
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ROADWAY PLAN

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
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SHEET NUMBER
2.0

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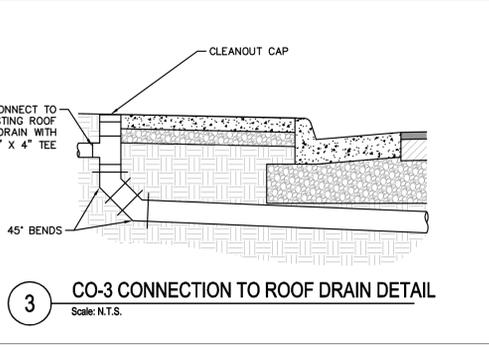


- NOTES:**
- CONTRACTOR SHALL TEST PIT ALL CONFLICT LOCATIONS PRIOR TO STARTING CONSTRUCTION, WHETHER NOTED IN THESE PLANS OR IDENTIFIED AFTER MISS UTILITY LOCATION IS COMPLETE.
 - SEE SHEET 3.6 FOR TEST PIT LOCATIONS BASED ON THESE PLANS.
 - SEE DETAIL ON SHEET 9.2 FOR ADDITIONAL INFORMATION ABOUT STRUCTURE 3-10 MODIFICATIONS.
 - ALL WORK SHOWN OR NECESSARY TO COMPLETE THE PROPOSED WORK SHALL FOLLOW AND ADHERE TO THE APPLICABLE GOVERNING STANDARDS, SPECIFICATIONS AND DETAILS OF THE TOWN OF PURCELLVILLE FACILITY STANDARDS MANUAL, LOUDOUN WATER, AND VIRGINIA DEPARTMENT OF TRANSPORTATION.
 - ALL MATERIAL SHALL MEET THE REQUIREMENTS OF THE TOWN OF PURCELLVILLE MATERIAL SPECIFICATIONS AND STANDARDS BOOKLET, WHICH IS PART OF THE FACILITY STANDARDS MANUAL.
 - ALL BENDS, VALVES, TEES, REDUCERS, CAPS, PLUGS, AND OTHER FITTINGS SHALL BE RESTRAINED WITH MEGALUG RESTRAINTS ON ALL ENDS. MEGALUG RESTRAINTS SHALL BE PLACED FOR A LENGTH OF PIPE AS REQUIRED PER THE MANUFACTURER'S RESTRAINT SCHEDULE. ALL 90 DEGREE BENDS SHALL USE MEGALUG RESTRAINTS AND HAVE A THRUST BLOCK.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ABANDONING THE EXISTING WATER SERVICE CONNECTIONS TO BE REPLACED. CONTRACTOR SHALL SUBMIT A PLAN FOR THIS ABANDONMENT AND ABANDONMENT OF 8" WATER MAIN TO THE TOWN FOR APPROVAL.
 - TRACER WIRE TO BE INSTALLED ON TOP OF CONDUIT FOR ENTIRE LENGTH.

DRAINAGE DESCRIPTIONS

LEGEND	
	EXISTING OVERHEAD WIRE
	EXISTING PROPERTY LINE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	PROPOSED LIGHT POLE
	PROPOSED WATERLINE

<p>3-1 EX-1 82"-15" EXISTING STORM PIPE REQ'D (TO REMAIN) @ 2.72% (1.6 COVER) INV. IN=556.29' INV. OUT=554.07'</p> <p>3-1 1 VDOT STD. MH-1 REQ'D. RIM=559.37 H=3.08' INV. IN(15" FROM 3-3)=556.40 INV. IN(18" FROM 3-2)=556.34 INV. OUT(15" TO EX-1)=556.29 IS-1 REQ'D.</p> <p>3-2 3-1 11"-15" CL. III RCP REQ'D @ 4.33% (1.3 COVER) INV. IN=556.81' INV. OUT=556.34'</p> <p>3-2 1 VDOT STD. DI-3B L=6' REQ'D. RIM=559.75 H=2.94' INV. IN(15" FROM EX-4)=556.81 INV. OUT(15" TO 3-1)=556.81 IS-1 REQ'D.</p> <p>EX-4 3-2 64"-EX. 15" RCP TO REMAIN @ 4.33% (1.1 COVER) INV. IN=559.58' INV. OUT=556.81'</p> <p>3-3 3-1 49"-15" CL. III RCP REQ'D @ 1.00% (1.5 COVER) INV. IN=556.89' INV. OUT=556.40'</p> <p>3-3 1 VDOT STD. DI-3B L=6' REQ'D. RIM=560.23 H=3.34' INV. IN(6" FROM CO-1)=557.51 INV. OUT(15" TO 3-1)=556.89 IS-1 REQ'D.</p> <p>CO-1 3-3 18"-6" DIP REQ'D @ 1.00% (2.2 COVER) INV. IN=557.69' INV. OUT=557.51'</p> <p>CO-1 1 CLEANOUT REQ'D. RIM=558.24 H=3.52' INV. OUT(6" TO 3-3)=557.69</p>	<p>T-1 1 TRENCH DRAIN REQ'D. CONNECTION TO EXISTING 4" PVC DRAIN PIPE TO BE FIELD CUT/CORED RIM=563.63 H=3.33' L=3.5' INV. OUT(8" TO CO-2)=560.30</p> <p>T-1 CO-2 31"-8" C-900 PVC REQ'D @ 1.43% (1.4 COVER) INV. IN=560.30' INV. OUT=559.85'</p> <p>CO-2 1 CLEANOUT REQ'D. RIM=562.44 H=2.58' INV. IN(8" FROM T-1)=559.85 INV. OUT(6" TO 3-5)=559.85</p> <p>CO-2 3-5 111"-8" C-900 PVC REQ'D @ 1.43% (1.4 COVER) INV. IN=559.85' INV. OUT=558.26'</p> <p>3-4 1 VDOT STD. DI-2C L=8' REQ'D. RIM=560.90 H=2.94' INV. OUT(15" TO 3-5)=557.96 IS-1 REQ'D.</p> <p>3-4 3-5 19"-15" CL. III RCP REQ'D @ 1.00% (1.1 COVER) INV. IN=557.96' INV. OUT=557.76'</p> <p>3-4 3-5 1 VDOT STD. MH-1 REQ'D. RIM=561.12 H=3.56' INV. IN(8" FROM CO-2)=558.26 INV. IN(15" FROM 3-4)=557.76 INV. OUT(15" TO 3-6)=557.57 IS-1 REQ'D.</p> <p>3-5 3-6 43"-15" CL. III RCP REQ'D @ 1.00% (2.1 COVER) INV. IN=557.57' INV. OUT=557.14'</p> <p>T-3 1 TRENCH DRAIN REQ'D. CONNECT TO EXISTING PIPES RIM=561.45 H=2.83' L=20.4' INV. OUT(10" TO 3-6)=558.62'</p>	<p>T-3 3-6 21"-10" C-900 PVC @ 0.50% (1.7 COVER) INV. IN=558.62' INV. OUT=558.51'</p> <p>3-6 3-6 1 VDOT STD. MH-1 REQ'D. RIM=561.06 H=4.12' INV. IN(15" FROM 3-5)=557.14 INV. IN(10" FROM T-3)=558.51 INV. OUT(15" TO 3-7)=556.94 IS-1 REQ'D.</p> <p>3-6 3-7 58"-15" CL. III RCP REQ'D @ 1.00% (2.4 COVER) INV. IN=556.94' INV. OUT=556.36'</p> <p>3-7 3-7 1 VDOT STD. DI-3B L=8' REQ'D. RIM=560.70 H=4.54' INV. IN(15" FROM 3-6)=556.36 INV. OUT(18" TO 3-8)=556.16 IS-1 REQ'D.</p> <p>3-7 3-8 27"-18" CL. III RCP REQ'D @ 1.00% (2.3 COVER) INV. IN=556.16' INV. OUT=555.89'</p> <p>3-7 3-8 1 VDOT STD. MH-1 REQ'D. RIM=560.09 H=4.39' INV. IN(18" FROM 3-7)=555.89 INV. IN(12" FROM 3-8)=555.97 INV. OUT(18" TO 3-9)=555.69 IS-1 REQ'D.</p> <p>3-8A 3-8 18"-12" C-900 PVC REQ'D @ 1.00% (3.0 COVER) INV. IN=556.15' INV. OUT=555.97'</p> <p>3-8A 3-8 1 VDOT STD. DI-1 WITH BICYCLE SAFE GRATE REQ'D. RIM=560.15 H=4.34' INV. IN(6" FROM 13)=558.47 INV. OUT(12" TO 3-8)=556.15 IS-1 REQ'D.</p> <p>3-8 3-9 100"-18" CL. III RCP REQ'D @ 1.00% (2.5 COVER) INV. IN=555.69' INV. OUT=554.70'</p>	<p>3-9 1 VDOT STD. MH-1 REQ'D. RIM=559.16 H=4.66' INV. IN(18" FROM 3-8)=554.70 INV. IN(15" FROM 3-10)=554.70 INV. OUT(18" TO 3-11)=554.49 IS-1 REQ'D.</p> <p>3-10 1 MODIFIED VDOT STD. DI-3C L=4' REQ'D. RIM=559.30 H=4.49' INV. OUT(15" TO 3-9)=554.81 IS-1 REQ'D.</p> <p>3-10 3-9 12"-15" CL. III RCP REQ'D @ 1.00% (3.0 COVER) INV. IN=554.81' INV. OUT=554.70'</p> <p>3-9 3-11 31"-18" CL. III RCP REQ'D @ 1.00% (2.2 COVER) INV. IN=554.49' INV. OUT=554.18'</p> <p>3-11 1 VDOT STD. DI-2B L=6' REQ'D. RIM=558.06 H=4.07' INV. IN(18" FROM 3-11)=554.18 INV. OUT(18" TO 3-12)=553.98 IS-1 REQ'D.</p> <p>3-11 3-12 67"-18" CL. III RCP REQ'D @ 1.01% (2.4 COVER) INV. IN=553.98' INV. OUT=553.31'</p> <p>3-11 3-12 VDOT STD. DI-3A L=4' RIM=558.48 H=5.37' INV. IN(18" FROM 3-11)=553.31 INV. IN(18" FROM EX-19)=553.31 INV. IN(6" FROM T-2)=554.89 INV. OUT(24")=553.11 IS-1 REQ'D.</p> <p>T-2 3-12 6"-6" C-900 PVC REQ'D @ 2.00% (2.3 COVER) INV. IN=555.00' INV. OUT=554.89'</p> <p>T-2 3-12 1 TRENCH DRAIN REQ'D. RIM=557.83 H=2.83' L=42' INV. OUT(6" TO 3-12)=555.00</p>
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COMMONWEALTH OF VIRGINIA
KYLE T. BOLLINGER
Lic. No. 051017
PROFESSIONAL ENGINEER

REVISIONS

No.	DATE	BY

UTILITY PLAN

KHA PROJECT 110280031
DATE 06/19/2014
SCALE AS SHOWN
DESIGNED BY KTB
DRAWN BY KTB
CHECKED BY KVB

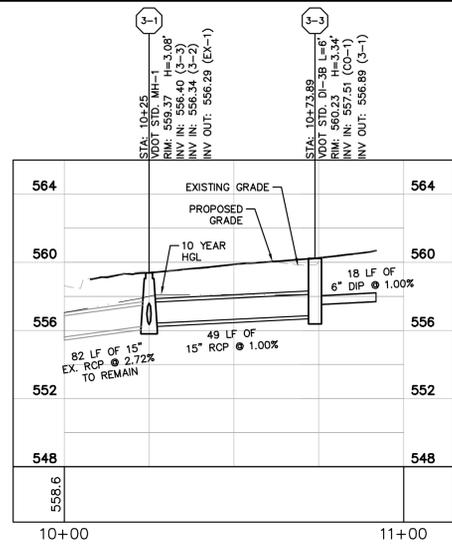
21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA

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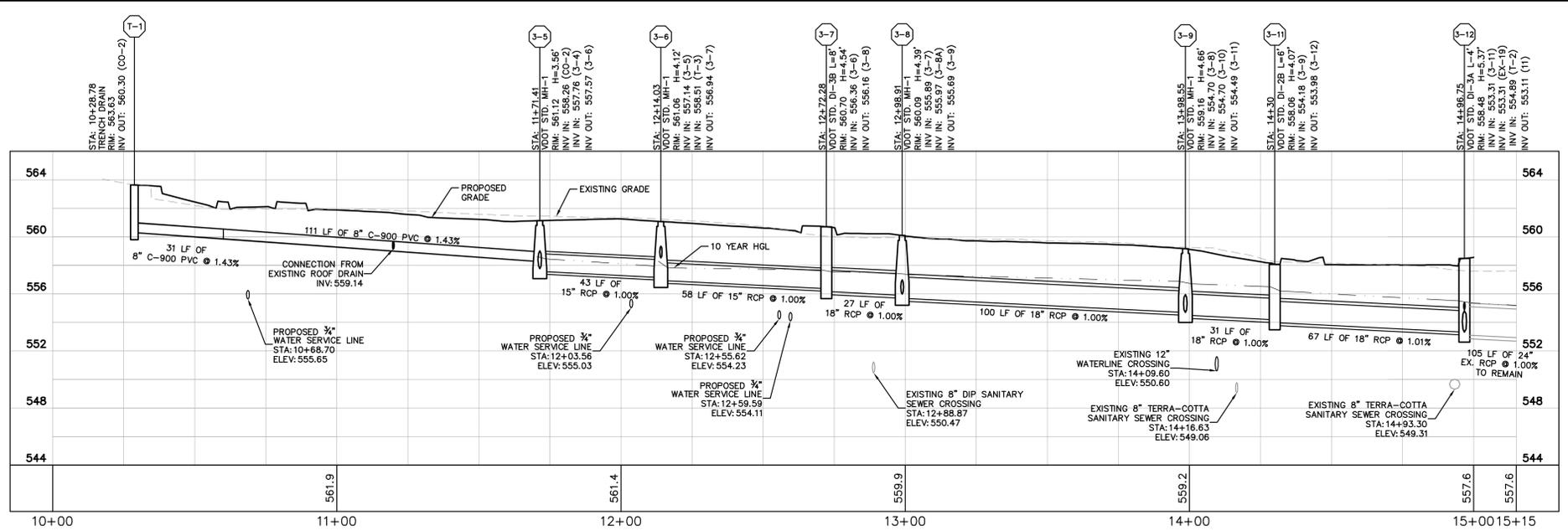
SHEET NUMBER
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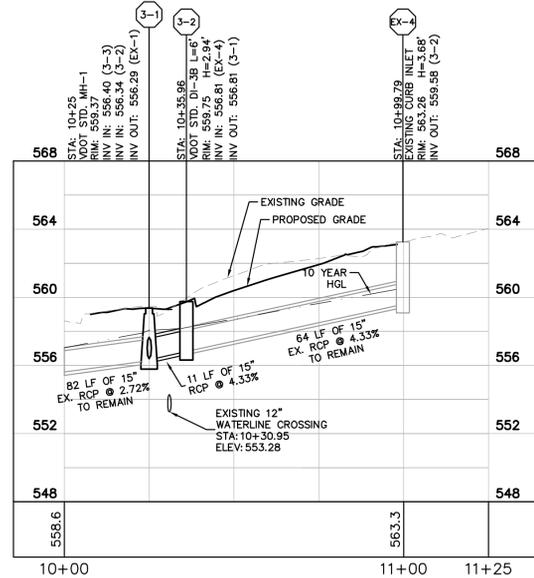
STRUCTURE 3-3 TO STRUCTURE 3-1 PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



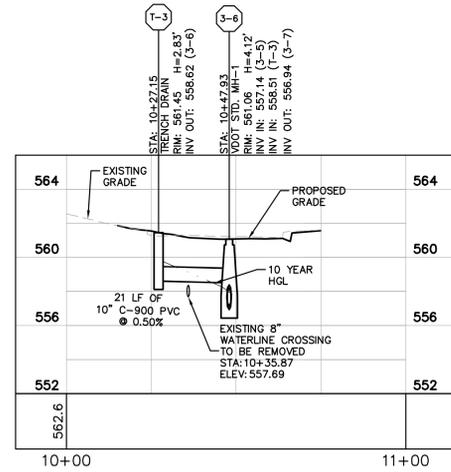
STRUCTURE T-1 TO STRUCTURE 3-12 PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



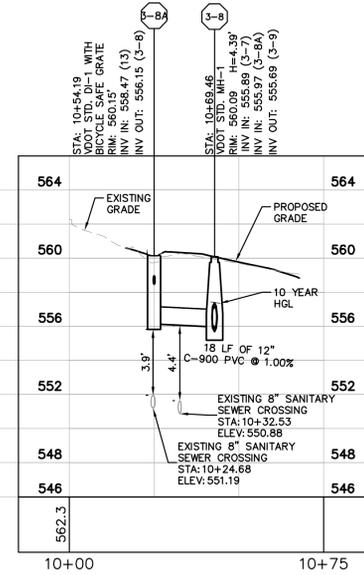
STRUCTURE EX-4 TO STRUCTURE 3-1 PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



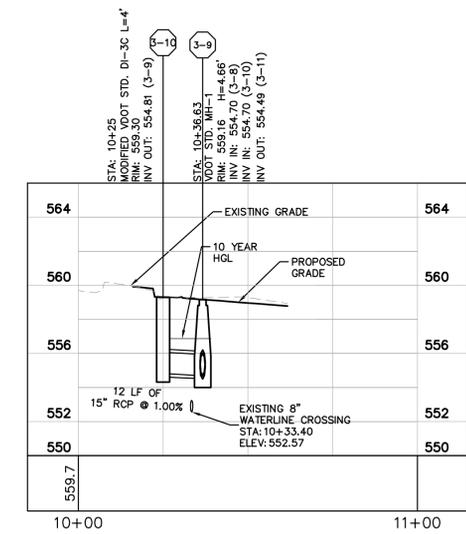
STRUCTURE T-3 TO STRUCTURE 3-6 PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



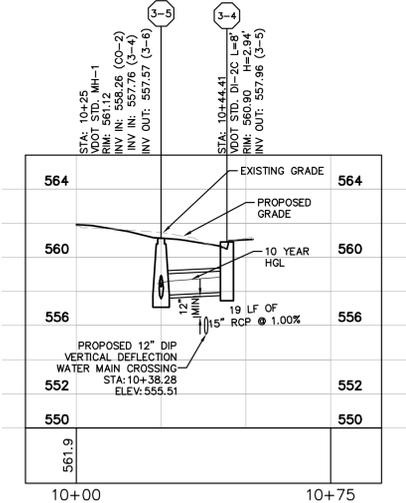
STRUCTURE 3-8A TO STRUCTURE 3-8 PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



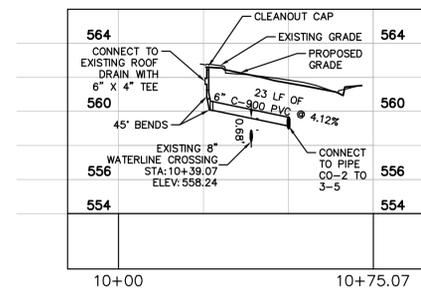
STRUCTURE 3-10 TO STRUCTURE 3-9 PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



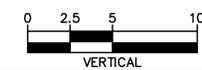
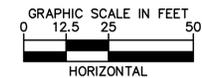
STRUCTURE 3-5 TO STRUCTURE 3-4 PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



EXISTING ROOF DRAIN TO TEE CONNECTION PROFILE

HORIZONTAL SCALE: 1"=25' VERTICAL SCALE: 1"=5'
PROFILE STATIONING ALONG CENTERLINE OF STORM SEWER PIPE



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COMMONWEALTH OF VIRGINIA

Kyle T. Bollinger
KYLE T. BOLLINGER
Lic. No. 051017
2/19/2014
PROFESSIONAL ENGINEER

KHA PROJECT 110280031	DATE 06/19/2014	SCALE AS SHOWN	DESIGNED BY KTB	DRAWN BY KTB	CHECKED BY KVH
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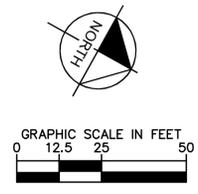
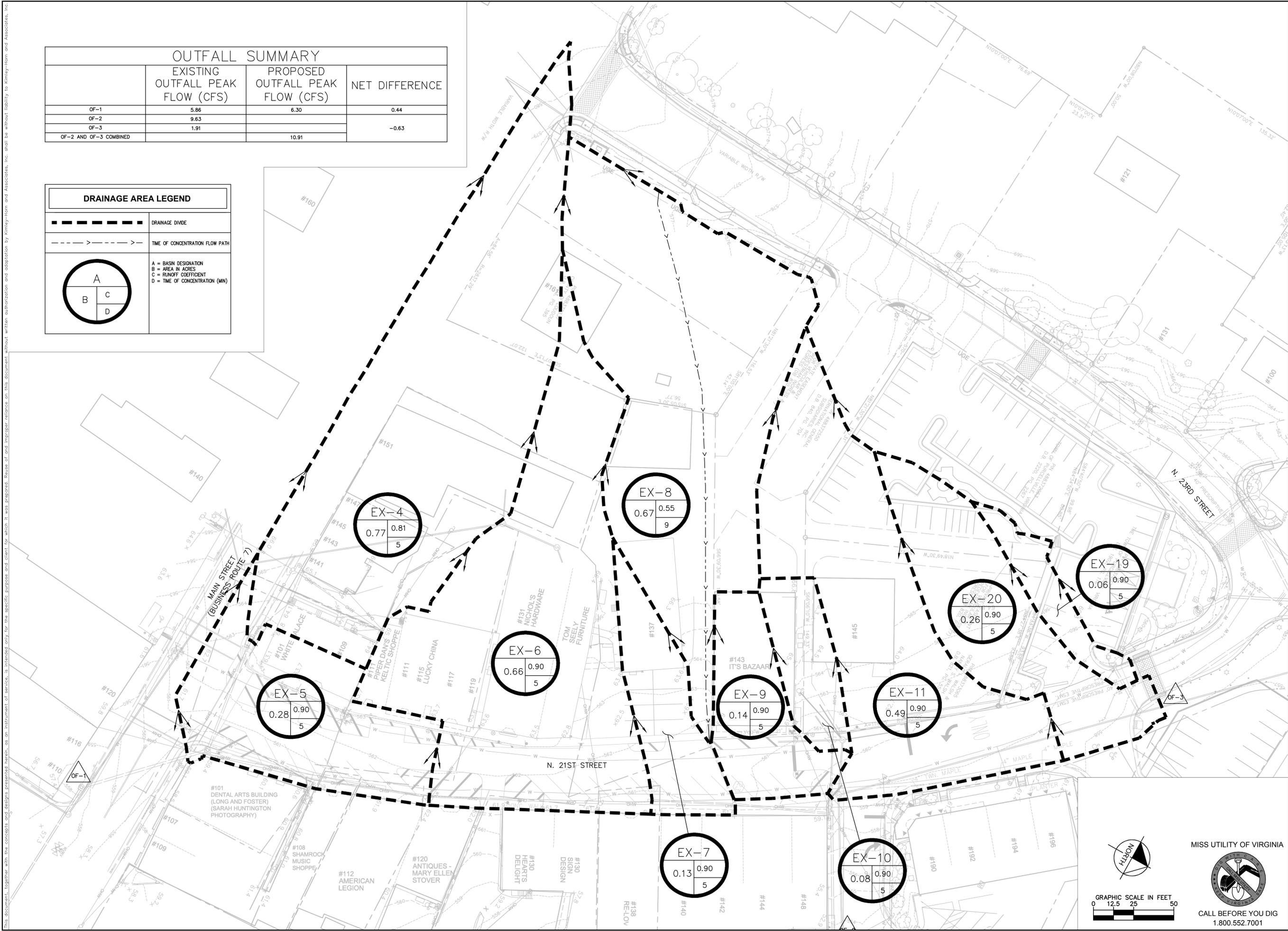
STORM SEWER PROFILES

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA

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OUTFALL SUMMARY			
	EXISTING OUTFALL PEAK FLOW (CFS)	PROPOSED OUTFALL PEAK FLOW (CFS)	NET DIFFERENCE
OF-1	5.86	6.30	0.44
OF-2	9.63		
OF-3	1.91		-0.63
OF-2 AND OF-3 COMBINED		10.91	

DRAINAGE AREA LEGEND	
	DRAINAGE DIVIDE
	TIME OF CONCENTRATION FLOW PATH
	A = BASIN DESIGNATION B = AREA IN ACRES C = RUNOFF COEFFICIENT D = TIME OF CONCENTRATION (MIN)



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Kimley Horn

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COMMONWEALTH OF VIRGINIA

Kyle T. Bollinger

KYLE T. BOLLINGER
Lic. No. 051017
06/19/2014
PROFESSIONAL ENGINEER

KHA PROJECT	110280031
DATE	06/19/2014
SCALE	AS SHOWN
DESIGNED BY	KTB
DRAWN BY	KTB
CHECKED BY	KVH

**PRE-DEVELOPMENT
DRAINAGE AREA MAP**

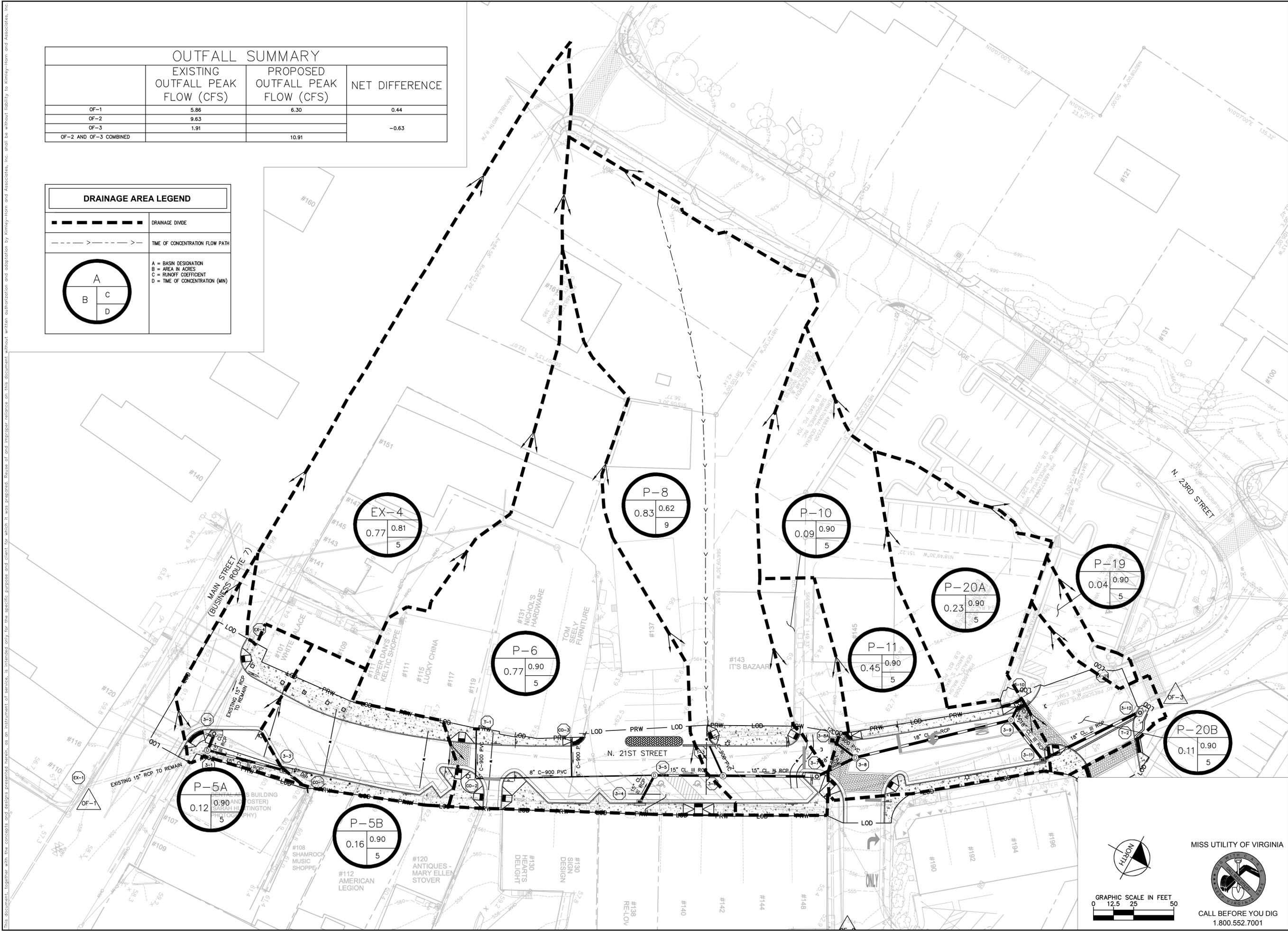
21ST & 23RD STREETSCAPE
IMPROVEMENTS - PHASE II
PREPARED FOR
TOWN OF PURCELLVILLE
VIRGINIA

SHEET NUMBER
3.2

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OUTFALL SUMMARY			
	EXISTING OUTFALL PEAK FLOW (CFS)	PROPOSED OUTFALL PEAK FLOW (CFS)	NET DIFFERENCE
OF-1	5.86	6.30	0.44
OF-2	9.63		
OF-3	1.91		
OF-2 AND OF-3 COMBINED		10.91	-0.63

DRAINAGE AREA LEGEND	
	DRAINAGE DIVIDE
	TIME OF CONCENTRATION FLOW PATH
	A = BASIN DESIGNATION B = AREA IN ACRES C = RUNOFF COEFFICIENT D = TIME OF CONCENTRATION (MIN)



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	KHA PROJECT 110280031 DATE 06/19/2014 SCALE AS SHOWN DESIGNED BY KTB DRAWN BY KTB CHECKED BY KVB
	POST-DEVELOPMENT DRAINAGE AREA MAP
	21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA

SHEET NUMBER
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PROJECT DESCRIPTION

THE 21ST AND 23RD STREETSCAPE IMPROVEMENTS - PHASE 2 PROJECT CONSIST OF VARIOUS ROADWAY IMPROVEMENTS THAT IMPACT APPROXIMATELY 675 LINEAR FEET OF ROADWAY ALONG 21ST STREET...

EXISTING SITE DRAINAGE CONDITIONS

THE EXISTING DRAINAGE SYSTEM LOCATED ALONG 21ST STREET CONSISTS OF SHEET FLOW AND SHALLOW CONCENTRATED FLOW. CURRENTLY, 21ST STREET IS COMPRISED OF CURB AND GUTTER ALONG BOTH SIDES OF THE ROADWAY...

CURRENTLY, THERE ARE THREE TOTAL STORM INLET SYSTEMS THAT DRAIN 21ST STREET. A STORM INLET SYSTEM IS LOCATED ALONG MAIN STREET AND COLLECTS APPROXIMATELY 140 LINEAR FEET OF ROADWAY DRAINAGE...

PROPOSED DRAINAGE IMPROVEMENTS

THE PROPOSED DRAINAGE IMPROVEMENTS FOR THIS PROJECT CONSIST OF REPLACING THE EXISTING STORM SEWER NETWORK ALONG 21ST STREET. CURB REPLACEMENT IS PROPOSED FOR THE ENTIRE DRIVE AISLE AND PARKING ALONG 21ST STREET...

THERE WILL BE TWO STORM INLET SYSTEMS CONSTRUCTED TO DRAIN 21ST STREET, MAINTAINING THE NORTH/SOUTH DRAINAGE DIVIDE LOCATED APPROXIMATELY 150 FEET NORTH OF THE INTERSECTION OF 21ST STREET AND MAIN STREET...

PERMANENT STABILIZATION

ALL CONSTRUCTION ACTIVITIES WITHIN THE LIMITS OF DISTURBANCE ARE PROPOSED TO BE BOTH TEMPORARILY AND PERMANENTLY STABILIZED. PERMANENT STABILIZATION WILL BE ACHIEVED BY A COMBINATION OF ASPHALT PAVING, CONCRETE SIDEWALKS, AND LANDSCAPE AREAS...

SEE SHEETS 4.0 THROUGH 4.2 FOR ADDITIONAL INFORMATION ABOUT STABILIZATION MEASURES FOR THIS PROJECT.

STORMWATER MANAGEMENT REQUIREMENTS

THE PROPOSED DRAINAGE IMPROVEMENTS ARE DESIGNED TO ENHANCE THE STORMWATER COLLECTION SYSTEM WITHIN THE DESIGN AREA. THE EXISTING DEVELOPMENT WITHIN THE LIMITS OF DISTURBANCE IS A DENSE DOWNTOWN WHICH DOES NOT PROVIDE THE AREA REQUIRED FOR MEASURES THAT ADDRESS STORMWATER QUALITY AND QUANTITY...



Drainage Area Runoff Coefficients for Rational Method

Table with columns for Surface Type, Runoff Coefficients (0.90 to 0.20), Total Area, and Weighted Rational Factor. Includes rows for EX-4 through EX-20.

Use the high end of each range for conditions that would speed up surface flow such as steep (>5% Slope) and/or bare surfaces. Use the low end of each range for conditions that would slow down surface flow such as flat (<2% Slope) and/or highly vegetated surfaces.

PRE-DEVELOPMENT DRAINAGE AREAS



Drainage Area Runoff Coefficients for Rational Method

Table with columns for Surface Type, Runoff Coefficients (0.90 to 0.20), Total Area, and Weighted Rational Factor. Includes rows for EX-4, P-5A, P-5B, P-6, P-8, P-10, P-11, EX-19, P-20A, and P-20B.

Use the high end of each range for conditions that would speed up surface flow such as steep (>5% Slope) and/or bare surfaces. Use the low end of each range for conditions that would slow down surface flow such as flat (<2% Slope) and/or highly vegetated surfaces.

POST-DEVELOPMENT DRAINAGE AREAS



Time of Concentration Calculations for Rational Method

Table with columns for Factors of Flow Time, Drainage Basin, and Total Time of Concentration. Includes rows for EX-4 through EX-20.

Seeleye Equation: Tc = 0.225L^0.42 S^-0.19 C^1.0. TR-55 Equation: S = 0.004V^1.87 on unpaved surfaces (C = 0.30) and S = 0.0025V^1.87 on paved surfaces (C = 0.90).

PRE-DEVELOPMENT TIME OF CONCENTRATION



Time of Concentration Calculations for Rational Method

Table with columns for Factors of Flow Time, Drainage Basin, and Total Time of Concentration. Includes rows for EX-4, P-5A, P-5B, P-6, P-8, P-10, P-11, EX-19, P-20A, and P-20B.

Seeleye Equation: Tc = 0.225L^0.42 S^-0.19 C^1.0. TR-55 Equation: S = 0.004V^1.87 on unpaved surfaces (C = 0.30) and S = 0.0025V^1.87 on paved surfaces (C = 0.90).

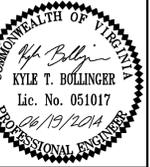
POST-DEVELOPMENT TIME OF CONCENTRATION

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KHA PROJECT 110280031, DATE 06/19/2014, SCALE AS SHOWN, DESIGNED BY KTB, DRAWN BY KTB, CHECKED BY KVB.

STORMWATER DESIGN NARRATIVE AND CALCULATIONS

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA

SHEET NUMBER 3.4

Table with columns for REVISIONS, No., and DATE.



Kimley-Horn
and Associates, Inc.

Project Name: **Purcellville 21st & 23rd Streetscape Improvements - Phase II**

KHA Project No.: 110280031
Date: 6/19/2014

Electronic File: \\kimley-horn.com\MD_NVA\NVA_LALP110280031_Purcellville21stStreetProduction\SWM\21st Street Spread Calcs_Complete.xls\Spread Calculations

On Grade Input

Inlet #	Structure Type	Suggested Length	Inlet Length	Travel Lane Width	Has Gutter? (Yes/No)	Gutter Width	Allowable Spread	Total Area	C	Cross Slope	Localized Depression	Gutter Slope	Long Slope	Bypass Inlet	Spread i = 4.00 in/hr	Spread Exceeded
3-2	DI-3B	7.00	6	16	Yes	2	6.17	0.12	0.90	9.00%	2	0.0833	6.50%	-	1.48	No
3-7	DI-3B	9.00	8	16	Yes	2	10.00	0.83	0.62	4.00%	2	0.0833	1.00%	-	5.35	No

Sump Input

Curb Height (in)	6
------------------	---

Inlet #	Structure Type	Suggested Length	Inlet Length	2 x Design Length	Travel Lane Width	Has Gutter?	Gutter Width	Allowable Spread	First Side Area	First Side C	First Side Upstream Inlet	First Side Longitudinal Slope	Other Side Area	Other Side C	Other Side Upstream Inlet	Other Side Longitudinal Slope	Roadway Cross Slope	Localized Depression	Gutter Slope	Throat Opening	Spread i = 4.00 in/hr	Storm Check	Spread Exceeded	Overflow Remaining 4 in/hr	Overflow Remaining 6 in/hr
3-3	DI-2B	5.00	6	12.0	35	Yes	2	6.17	0.08	0.90	-	2.00%	0.08	0.90	-	2.00%	9.00%	2	8.33%	0.458	1.59	Check	No	0.000	0.00
3-4	DI-2C	8.00	8	16.0	35	Yes	2	17.00	0.38	0.90	-	1.00%	0.39	0.90	-	1.00%	2.50%	2	8.33%	0.458	8.84	Check	No	0.000	0.00
3-9	DI-2B	7.00	6	12.0	20	Yes	2	12.00	0.22	0.90	-	2.00%	0.23	0.90	-	2.00%	2.00%	2	8.33%	0.458	8.76	Check	No	0.000	0.00
EX-20	DI-3A	7.00	4	8.0	12	Yes	2	8.00	0.13	0.90	-	4.00%	0.13	0.90	-	1.00%	3.00%	2	8.33%	0.458	4.74	Check	No	0.000	0.00

POST-DEVELOPMENT SPREAD CALCULATIONS INPUT PARAMETERS

Appendix 9B-1 LD-204 Stormwater Inlet Computations

INLET		STATION	DRAINAGE AREA (AC)	C	CA	sum CA	I (IN/HR)	Q INCR (CFS)	Q ₀ CARRYOVER (CFS)	Q _T GUTTER FLOW (CFS)	S _G GUTTER SLOPE (FT/FT)	S _X CROSS SLOPE (FT/FT)	T _G SPREAD (FT)	W (FT)	W/T	S _w (FT/FT)	S _w /S _x	E ₀	a = 12W(S _w - S _x)H-Local Depression	S _w = a/(12W)	S ₀ = S _w + S _w (E ₀) (FT/FT)	COMPUTED LENGTH, L _T (FT)	L _T SPECIFIED LENGTH (FT)	L/L _T	E	Q ₀ INTERCEPTED (CFS)	Q ₀ CARRYOVER (CFS)	d (FT)	h (FT)	d/h	T _G SPREAD @ SAG (FT)	REMARKS		
NUMBER	TYPE																																	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)		
INLETS - ON GRADE																																		
3-2	DI-3B	6	0.12	0.90	0.108	0.108	4.0	0.432	0.000	0.432	0.0650	0.0900	1.48	2	1.35	0.0833	0.93	1.00	1.84	0.077	0.167	7	6	0.86	0.97	0.42	0.013							Bypass to: -
3-7	DI-3B	8	0.83	0.62	0.515	0.515	4.0	2.058	0.000	2.058	0.0100	0.0400	5.35	2	0.37	0.0833	2.08	0.79	3.04	0.127	0.140	9	8	0.89	0.98	2.02	0.039							Bypass to: -
INLETS - IN SAG																																		
3-3	DI-2B	6	0.08	0.90	0.072	0.072	4.0	0.288	0.000	0.288	0.0200	0.0900	1.59	2	1.26	0.0833	0.93	1.00	1.84	0.077	0.167	4.91	6	1.22	1.00	0.29	0.000							12Throat for 50% blockage
3-4	DI-2C	8	0.38	0.90	0.342	0.342	4.0	1.368	0.000	1.368	0.0100	0.0250	8.84	2	0.23	0.0833	3.33	0.82	3.40	0.142	0.142	9.12	8	0.88	0.98	1.37	0.000	0.221	0.458	0.483	8.840			16Throat for 50% blockage
3-4	DI-2B	6	0.22	0.90	0.198	0.198	4.0	0.792	0.000	0.792	0.0200	0.0200	8.76	2	0.23	0.0833	4.17	0.98	3.52	0.147	0.164	7.95	6	0.75	0.92	0.79	0.001							12Throat for 50% blockage
3-9	DI-2B	6	0.23	0.90	0.207	0.207	4.0	0.828	0.000	0.828	0.0200	0.0200	8.76	2	0.23	0.0833	4.17	0.98	3.52	0.147	0.163	8.15	6	0.74	0.91	0.82	0.004	0.175	0.458	0.383	8.763			12Throat for 50% blockage
EX-20	DI-3A	4	0.13	0.90	0.117	0.117	4.0	0.468	0.000	0.468	0.0400	0.0300	4.74	2	0.42	0.0833	2.78	1.00	3.28	0.137	0.167	7.41	4	0.54	0.75	0.40	0.067	0.142	0.458	0.310	4.736			8Throat for 50% blockage
EX-20	DI-3A	4	0.13	0.90	0.117	0.117	4.0	0.468	0.000	0.468	0.0100	0.0300	4.74	2	0.42	0.0833	2.78	1.00	3.28	0.137	0.166	5.01	4	0.80	0.94	0.47	0.000							12Throat for 50% blockage

POST-DEVELOPMENT SPREAD CALCULATIONS

Label	Start Node	Invert (Upstream) (ft)	Stop Node	Invert (Downstream) (ft)	Length (Unified) (ft)	Diameter (in)	Material	Slope (ft/ft)	Upstream Inlet C	Conduit Shape	Manning's n	Upstream CA (acres)	System CA (acres)	System Intensity (in/hr)	Flow (Link) (ft ³ /s)	Capacity (Full Flow) (ft ³ /s)	Velocity (Average) (ft/s)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Cover (Start) (ft)	Cover (Stop) (ft)
3-1 to EX-1	3-1	556.29	OF-1	554.07	84.0	15.0	CHP	0.026	(N/A)	Circular Pipe	0.024	0.945	0.945	6.692	6.37	5.69	5.19	559.37	558.27	557.90	555.09	1.83	2.95
3-10 to 3-9	3-10	554.81	3-9	554.70	12.0	15.0	Concrete	0.009	0.900	Circular Pipe	0.013	0.207	0.207	1.41	6.18	1.15	5.93	559.30	559.16	556.87	556.87	3.24	3.21
3-11 to 3-12	3-11	553.98	3-12	553.31	68.0	18.0	Concrete	0.010	0.900	Circular Pipe	0.013	1.901	1.901	5.473	10.49	5.93	5.93	558.06	558.48	556.19	555.51	2.58	3.67
3-12 to 3-12	3-12	553.11	3-12	552.07	104.6	24.0	Concrete	0.010	0.900	Circular Pipe	0.013	2.036	2.036	5.420	11.12	22.56	3.54	558.48	556.91	555.36	555.11	3.37	2.84
3-2 to 3-1	3-2	556.81	3-1	556.34	12.0	15.0	Concrete	0.039	0.900	Circular Pipe	0.013	0.801	0.801	6.720	5.43	12.78	4.42	559.90	559.37	558.17	558.09	1.84	1.78
3-3 to 3-1	3-3	556.89	3-1	556.40	48.0	15.0	Concrete	0.010	0.900	Circular Pipe	0.013	0.144	0.144	6.750	0.98	6.53	3.83	560.23	559.37	558.10	558.09	2.09	1.72
3-4 to 3-5	3-4	557.96	3-5	556.85	20.0	15.0	Concrete	0.056	0.900	Circular Pipe	0.013	0.693	0.693	6.750	4.72	15.22	10.93	560.90	561.00	558.84	558.61	1.69	2.90
3-5 to 3-6	3-5	557.57	3-6	557.14	44.0	15.0	Concrete	0.010	(N/A)	Circular Pipe	0.013	0.693	0.693	6.742	4.71	6.39	5.69	561.00	560.98	558.45	557.94	2.18	2.59
3-6 to 3-7	3-6	556.94	3-7	556.36	60.0	15.0	Concrete	0.010	(N/A)	Circular Pipe	0.013	0.693	0.693	6.706	4.88	5.66	5.66	560.98	560.70	557.82	557.67	2.79	3.09
3-7 to 3-8	3-7	556.16	3-8	555.89	28.0	18.0	Concrete	0.010	0.620	Circular Pipe	0.013	1.208	1.208	5.638	6.86	10.31	6.25	560.70	560.09	557.53	557.44	3.04	2.70
3-8 to 3-9	3-8	555.69	3-9	554.70	100.0	18.0	Concrete	0.010	(N/A)	Circular Pipe	0.013	1.289	1.289	5.617	7.30	10.45	4.13	560.09	559.16	557.35	556.87	2.90	2.96
3-9 to 3-11	3-9	554.49	3-11	554.18	32.0	18.0	Concrete	0.010	(N/A)	Circular Pipe	0.013	1.496	1.496	5.505	8.30	10.34	4.70	559.16	558.06	556.70	556.50	3.17	2.38
CO-2 to 3-5	CO-2	559.23	3-5	556.85	116.0	6.0	PVC	0.021	(N/A)	Circular Pipe	0.010	0.000	0.000	6.750	0.00	1.04	0.00	562.54	561.00	559.23	558.61	2.81	3.65
EX-4 to 3-2	EX-4	559.58	3-2	556.81	64.0	15.0	Concrete	0.043	0.900	Circular Pipe	0.013	0.693	0.693	6.750	4.72	13.44	9.98	563.28	559.90	560.46	558.28	2.45	1.84
EX-8 to 3-6	EX-8	559.75	3-6	558.27	24.0	10.0	Steel	0.062	0.900	Circular Pipe	0.013	0.000	0.000	6.750	0.00	5.44	0.00	561.20	560.98	559.75	558.27	0.62	1.88
EX-10 to 3-8	3-8A	558.29	3-8	557.49	16.0	12.0	PVC	0.050	0.900	Circular Pipe	0.010	0.081	0.081	6.750	0.55	10.36	7.00	559.72	560.09	558.60	557.66	0.43	1.60
EX-19 to 3-12	EX-19	553.64	3-12	553.31	33.3	18.0	Concrete	0.010	0.900	Circular Pipe	0.013	0.036	0.036	6.750	0.24	10.46	0.14	558.50	558.48	555.51	555.51	3.36	3.67
T-1 to CO-2	T-1	559.80	CO-2	559.23	28.0	6.0	PVC	0.020	(N/A)	Circular Pipe	0.010	0.000	0.000	6.750	0.00	1.04	0.00	563.63	562.54	559.80	559.23	3.33	2.81

POST-DEVELOPMENT HYDRAULIC GRADE LINE COMPUTATIONS

NOTE: COMPUTATIONS ARE TAKEN FROM BENTLEY STORMCAD v8i MODELING SOFTWARE

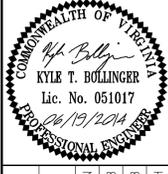
Worksheet for Inlet 3-8

Project Description	
Solve For	Spread
Input Data	
Discharge	1.41 ft ³ /s
Gutter Width	1.00 ft
Gutter Cross Slope	0.33 ft/ft
Road Cross Slope	0.33 ft/ft
Curb Opening Length	4.80 ft
Opening Height	0.46 ft
Curb Throat Type	Horizontal
Local Depression	0.00 in
Local Depression Width	0.00 ft
Throat Incline Angle	90.00 degrees
Results	
Spread	0.73 ft
Depth	0.24 ft
Gutter Depression	0.00 ft
Total Depression	0.00 ft

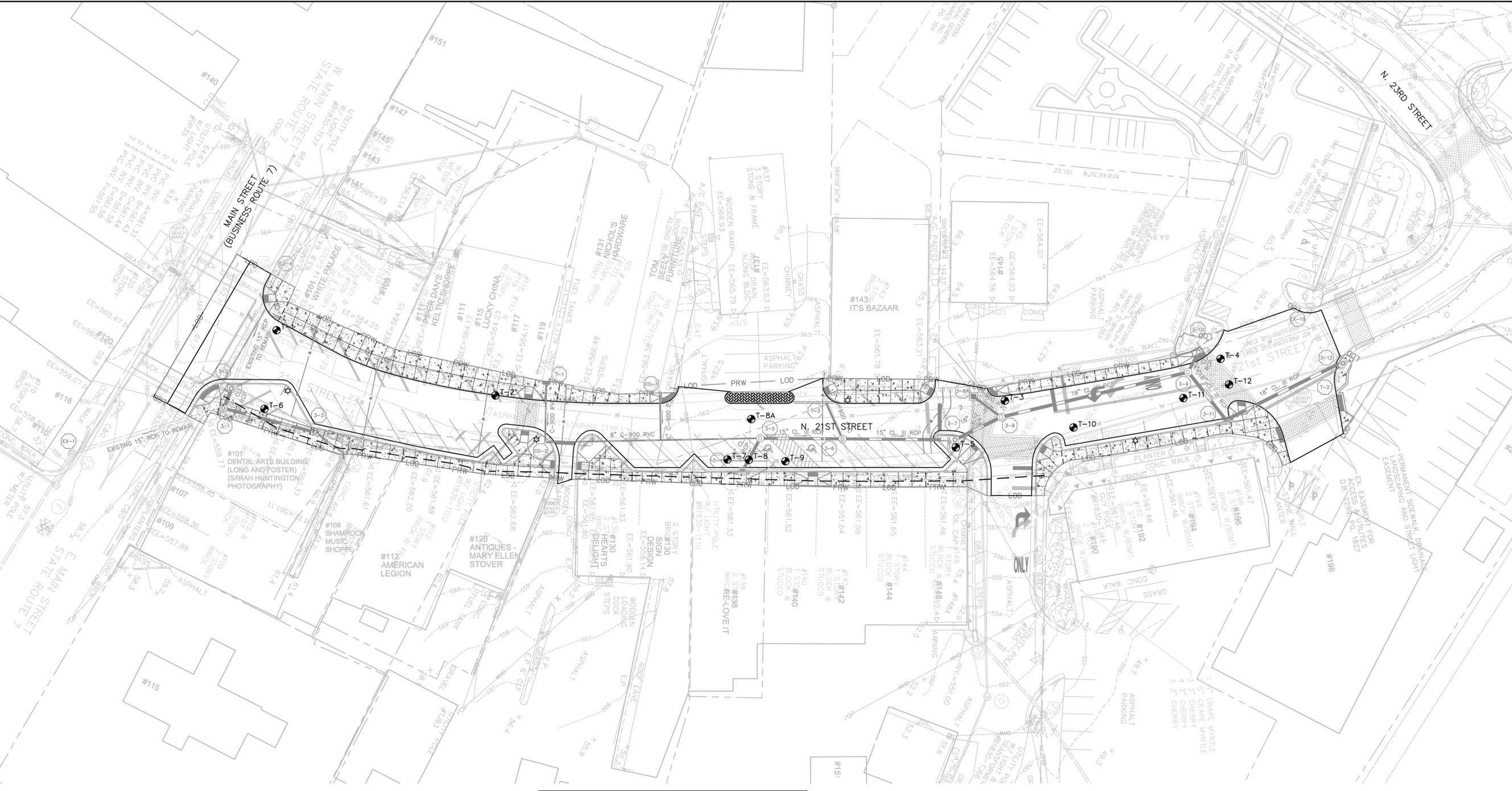
INLET 3-10 SPREAD CALCULATIONS

NO.	REVISIONS	DATE	BY

Kimley-Horn
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- NOTES:**
1. CONTRACTOR SHALL CONDUCT TEST PIT EXCAVATIONS PRIOR TO STARTING CONSTRUCTION.
 2. THIS PLAN DOES NOT GUARANTEE THE ACCURACY OF THE TEST PIT LOCATIONS.
 3. REFERENCE PROJECT SPECIFICATIONS FOR TEST PIT INFORMATION.

FOR REFERENCE ONLY

LEGEND	
	EXISTING OVERHEAD WIRE
	EXISTING PROPERTY LINE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	LIMITS OF DISTURBANCE
	LIMITS OF DISTURBANCE/PERSCRPTIVE RIGHT OF WAY
	PROPOSED CONCRETE SIDEWALK
	PROPOSED SIGN
	PROPOSED LIGHT POLE
	TEST PIT LOCATION

TEST PIT LOCATIONS			
Point #	Northing	Easting	DESCRIPTION
T-1	7098021.33	11705538.78	8" WATER - 2.91' COVER
T-2	7098136.77	11705513.09	8" WATER - 2.56' COVER
T-3	7098368.63	11705387.13	8" WATER - 3.03' COVER
T-4	7098455.75	11705313.96	8" WATER - 3.13' COVER
T-5	7098358.16	11705420.57	12" WATER - 4.21' COVER
T-6	7098035.59	11705577.27	12" WATER - 5.05' COVER
T-7	7098257.82	11705483.53	12" WATER - 3.41' COVER
T-8	7098267.57	11705478.25	1" WATER - 3.31' COVER
T-8A	7098258.47	11705459.31	8" WATER AT SERVICE - 2.80' COVER
T-9	7098284.48	11705469.70	12" WATER - 3.40' COVER
T-10	7098406.44	11705381.97	12" WATER - 4.06' COVER
T-11	7098448.81	11705341.07	12" WATER AT SERVICE - 3.81' COVER
T-12	7098466.06	11705323.38	12" WATER - 3.63' COVER

GRAPHIC SCALE IN FEET
0 12.5 25 50

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REVISIONS

No.	DATE	BY

TEST PIT LOCATIONS

KHA PROJECT 110280031
DATE 06/19/2014
SCALE AS SHOWN
DESIGNED BY KTB
DRAWN BY KTB
CHECKED BY KVB

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
PREPARED FOR TOWN OF PURCELLVILLE
VIRGINIA

SHEET NUMBER
36

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APPLICABLE MINIMUM STANDARDS FROM VESCH

3.07	STORM DRAIN INLET PROTECTION
3.31	TEMPORARY SEEDING
3.32	PERMANENT SEEDING

NOTE:
THE LOUDOUN COUNTY EROSION AND SEDIMENT CONTROL ENGINEER SHALL HAVE AUTHORITY TO ADD OR DELETE EROSION AND SEDIMENT CONTROLS AS NEEDED IN THE FIELD, AS SITE CONDITIONS WARRANT.

NOTE:
SEE SHEET 4.2 FOR GENERAL NOTES AND EROSION AND SEDIMENT CONTROL NARRATIVE.

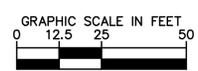
EROSION CONTROL LEGEND
(SEE DETAIL SHEETS AND GENERAL NOTES FOR ADDITIONAL INFORMATION)

	EXISTING OVERHEAD WIRE
	EXISTING PROPERTY LINE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	LIMITS OF DISTURBANCE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	CURB INLET PROTECTION
	DROP INLET PROTECTION

MISS UTILITY OF VIRGINIA



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 KYLE T. BOLLINGER
 Lic. No. 051017
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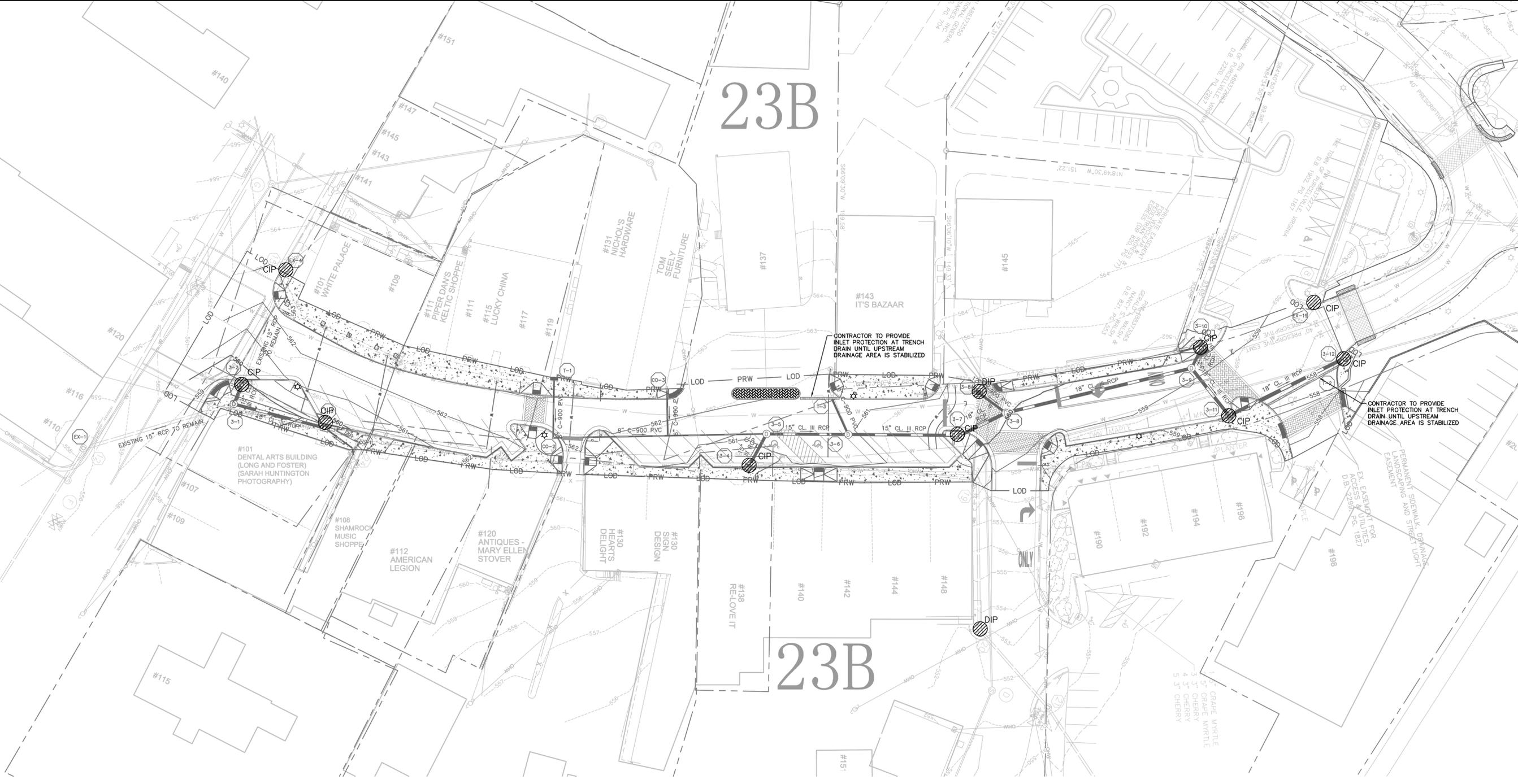
KHA PROJECT	110280031
DATE	06/19/2014
SCALE AS SHOWN	DESIGNED BY KTB
DRAWN BY	KTB
CHECKED BY	KVB

**EROSION AND
SEDIMENT CONTROL
PLAN PHASE I**

21ST & 23RD STREETSCAPE
IMPROVEMENTS - PHASE II
PREPARED FOR
TOWN OF PURCELLVILLE
VIRGINIA

SHEET NUMBER
4.0

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APPLICABLE MINIMUM STANDARDS FROM VESCH.
 3.07 STORM DRAIN INLET PROTECTION
 3.31 TEMPORARY SEEDING
 3.32 PERMANENT SEEDING

NOTE:
 THE LOUDOUN COUNTY EROSION AND SEDIMENT CONTROL ENGINEER SHALL HAVE AUTHORITY TO ADD OR DELETE EROSION AND SEDIMENT CONTROLS AS NEEDED IN THE FIELD, AS SITE CONDITIONS WARRANT.

NOTE:
 SEE SHEET 4.2 FOR GENERAL NOTES AND EROSION AND SEDIMENT CONTROL NARRATIVE.

EROSION CONTROL LEGEND			
(SEE DETAIL SHEETS AND GENERAL NOTES FOR ADDITIONAL INFORMATION)			
	EXISTING OVERHEAD WIRE		PROPOSED MAJOR CONTOUR
	EXISTING PROPERTY LINE		PROPOSED MINOR CONTOUR
	EXISTING FIRE HYDRANT		CURB INLET PROTECTION
	EXISTING WATER VALVE		DROP INLET PROTECTION
	EXISTING WATER METER		
	EXISTING UTILITY POLE		
	EXISTING LIGHT POLE		
	LIMITS OF DISTURBANCE		
	LIMITS OF DISTURBANCE/PERSCRPTIVE RIGHT OF WAY		
	PROPOSED CONCRETE SIDEWALK		
	EXISTING MAJOR CONTOUR		
	EXISTING MINOR CONTOUR		

GRAPHIC SCALE IN FEET
0 12.5 25 50

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No.	REVISIONS	DATE	BY

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KHA PROJECT	110280031
DATE	06/19/2014
SCALE AS SHOWN	DESIGNED BY KTB
DRAWN BY	KTB
CHECKED BY	KVB

EROSION AND SEDIMENT CONTROL PLAN PHASE II

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
 PREPARED FOR
TOWN OF PURCELLVILLE
 VIRGINIA

SHEET NUMBER
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SPECIES	SEEDING RATE		NORTH ^a				SOUTH ^b				PLANT CHARACTERISTICS
	Acre	1000 ft ²	3/1 to 4/30	5/1 to 8/15	8/15 to 11/1	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15			
OATS (<i>Avena sativa</i>)	3 bu. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	-	-	X	-	-	Use spring varieties (e.g., Noble).		
RYE ^c (<i>Secale cereale</i>)	2 bu. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.		
GERMAN MILLET (<i>Setaria italica</i>)	50 lbs.	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.		
ANNUAL RYEGRASS ^d (<i>Lolium multi-florum</i>)	60 lbs.	1 1/2 lbs.	X	-	X	X	-	X	May be added in mixes. Will mow out of most stands.		
WEeping LOVEGRASS (<i>Eragrostis curvula</i>)	15 lbs.	5 1/2 ozs.	-	X	-	-	X	-	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.		
KOREAN LESPEDEZA ^e (<i>Lespedeza stipulacea</i>)	25 lbs.	approx. 1 1/2 lbs.	X	X	-	X	X	-	Warm season annual legume. Tolerates acid soils. May be added to mixes.		

^a Northern Piedmont and Mountain region. See Plates 3.22-1 and 3.22-2.
^b Southern Piedmont and Coastal Plain.
^c May be used as a cover crop with spring seeding.
^d May be used as a cover crop with fall seeding.
X May be planted between these dates.
- May not be planted between these dates.

1 TEMPORARY SEEDING

SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK

Seeding Rates	Lime and Fertilizer	Seeding Procedure	Mulching	Maintenance
-50/50 Mix Tall Fescue and Kentucky 31 -Seasonal Nurse Crop*	- 110 LBS/Ac - 20 LBS/Ac	Contractor shall submit topsoil sample for analysis by an accredited soil lab and provide lime and/or fertilizer as recommended. Certified seed will be used for all permanent seeding. Certified seed must be inspected by the Virginia Crop Improvement Association or the certifying agency in other states. Apply seed uniformly with a broadcast seeder, drill, culti-packer seeder, or hydroseeder on a firm, friable seedbed. Seeding depth should be 1/4 to 1/2 inch	1-1/2 to 2 tons straw per acre or 1500 LBS wood fiber per acre or 43,560 SF Jute mat per acre or 4 to 6 tons Corn Stalks or Wood chips per acre Mulch immediately after seeding is complete. Apply at a uniform rate completely covering the seeded area at a density of 50% - 75%	Irrigate, repair, replace, and reseed as necessary to firmly establish healthy grass.
* Use seasonal nurse crop in accordance with seeding dates as stated below: February, March through April Annual Rye May 1st through August Fertilized Millet September, October through November 15th Annual Rye November 16th through January Winter Rye ** May through October, used hulled seed. All other seeding periods, use unhulled seed.				
Topsoil Import of topsoil is required for semi permanent and permanent seeding if: 1. Existing soil contains less than 25% fine grained materials (silt and clay). 2. Existing soil porosity prevents adequate root penetration. 3. Existing soil contains concentrations of toxic elements. Composition of topsoil: 1. 35% minimum of fine grained materials 2. 1.5% minimum of organic materials Topsoil shall be placed at four (4) inch depth minimum				

5 PERMANENT SEEDING

EROSION AND SEDIMENT CONTROL NARRATIVE

PHASE I

- THE CERTIFIED RESPONSIBLE LAND DISTURBER (CRLD) MUST ATTEND THE PRE-CONSTRUCTION MEETING.
- AFTER LAND DISTURBANCE PERMIT IS ISSUED, INSTALL PERIMETER EROSION CONTROLS IDENTIFIED ON PHASE I EROSION AND SEDIMENT CONTROL PLANS (INLET PROTECTION)
- ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- INSTALLATION, MAINTENANCE AND REMOVAL OF EROSION CONTROL MEASURES SHALL BE PER THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).

PHASE II

- CONTRACTOR TO CONSTRUCT PROJECT IN ACCORDANCE WITH SEQUENCE OF CONSTRUCTION PLANS AS SHOWN ON SHEETS 8.0 THROUGH 8.6 AND PER TOWN OF PURCELLVILLE DIRECTION.

PROJECT DESCRIPTION

THE 21ST STREET STREETScape IMPROVEMENTS PROJECT CONSIST OF VARIOUS ROADWAY IMPROVEMENTS THAT IMPACT APPROXIMATELY 675 LINEAR FEET OR ROADWAY. THE TOTAL DISTURBED PROJECT AREA IS APPROXIMATELY 0.75± ACRES WITH 0.01± ACRES OF PERVIOUS (GREEN) AREA. THIS PROJECT INCLUDES IMPROVEMENTS TO SIDEWALKS, CROSSWALKS, ADA ACCESS AND OTHER PEDESTRIAN ORIENTED ELEMENTS OF THE STREETScape.

EXISTING SITE CONDITIONS

THE EXISTING DRAINAGE SYSTEM LOCATED ALONG 21ST STREET CONSISTS OF SHEET FLOW AND SHALLOW CONCENTRATED FLOW. CURRENTLY, 21ST STREET IS COMPRISED OF SIDEWALK ALONG BOTH SIDES OF THE ROADWAY. THE SITE IS LOCATED IN THE DOWNTOWN HISTORIC DISTRICT OF THE TOWN OF PURCELLVILLE, VIRGINIA THEREFORE THE MAJORITY OF THE SITE IS DEVELOPED AND CONSISTING OF ASPHALT ROADS, SIDEWALKS AND PARKING AREAS. CURRENTLY, THERE ARE THREE STORM INLET SYSTEMS THAT DRAIN 21ST STREET. A STORM INLET SYSTEM IS LOCATED ALONG MAIN STREET AND COLLECTS APPROXIMATELY 140 LINEAR FEET OF ROADWAY DRAINAGE AND SHEET FLOW FROM ADJACENT PROPERTIES AND FLOWS SOUTH TO THE COLLECTION INLETS. THIS STORM SYSTEM THEN FLOWS EAST ON MAIN STREET. A SECOND STORM INLET SYSTEM STARTS NEAR THE INTERSECTION OF 21ST STREET AND EAST O STREET AND COLLECTS SHEET FLOW FROM ADJACENT PROPERTIES AND THE ROADWAY. THIS STORM SYSTEM DRAINS THROUGH A COLLECTION SYSTEM FOLLOWING O STREET. THE THIRD INLET SYSTEM IS LOCATED AT THE ENTRANCE TO THE RAISED PEDESTRIAN PLAZA AND COLLECTS SHEET FLOW FROM ADJACENT PROPERTIES AND THE ROADWAY. THIS STORM SYSTEM DRAINS NORTH TO INTO AN EXISTING SYSTEM ALONG 23RD STREET.

ADJACENT PROPERTIES

THIS PROJECT IS LOCATED IN THE DOWNTOWN HISTORIC DISTRICT OF PURCELLVILLE, VIRGINIA. THE ADJACENT PROPERTIES ARE A MIX OF BUSINESS AND RESIDENTIAL PROPERTIES. THE W&O TRAIL IS LOCATED JUST NORTH OF THE PROJECT AREA.

OFF-SITE AREAS

NO OFF-SITE AREAS ARE PROPOSED WITHIN THESE PLANS OR AS PART OF THIS PROJECT. ANY OFF-SITE STAGING, STORAGE, BORROW, OR WASTE AREAS TO BE USED BY THE CONTRACTOR, SHALL BE SUBMITTED FOR APPROVAL BY THE CONTRACTOR DIRECTLY TO THE LOUDOUN COUNTY EROSION AND SEDIMENT CONTROL ENGINEER.

SOILS

ACCORDING TO THE NATURAL RESOURCE CONSERVATION SERVICE MAP THE SOILS ON SITE ARE ALL SILT LOAM VARIATIONS. PLEASE SEE THIS SHEET FOR SOIL DATA TABLE.

CRITICAL EROSION AREAS

NO CRITICAL AREAS ARE LOCATED ON THIS SITE.

EROSION AND SEDIMENT CONTROL MEASURES

- INLET PROTECTION WILL BE USED AT ALL EXISTING AND PROPOSED STORM SEWER INLETS TO REDUCE THE AMOUNT OF SEDIMENT CARRIED INTO THE STORM SEWER SYSTEM.
- THE SITE WILL BE STABILIZED BY THE ULTIMATE DEVELOPMENT ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 4VACS0-30 EROSION AND SEDIMENT CONTROL REGULATIONS.
- TEMPORARY STABILIZATION WILL BE USED IN ACCORDANCE WITH THE SEEDING CHART SHOWN ON SHEET 4.2 OF THE CONSTRUCTION DOCUMENTS.
- DUE TO SAFETY AND CONSTRUCTABILITY REASONS AND LOCATION OF EXISTING INLETS WHERE GRAVEL AND BLOCKS CANNOT BE USED, CONTRACTOR TO REQUEST APPROVAL FROM LOUDOUN COUNTY EROSION AND SEDIMENT CONTROL ENGINEER FOR THE USE OF E&S CONTROL ITEMS THAT VARY FROM STANDARD VESCH AND DETAILED ITEMS.

CONSTRUCTION SCHEDULE

A SEQUENCE OF CONSTRUCTION IS PROVIDED ON SHEETS 8.0 TO 8.6 WITH GENERAL NOTES.

MAINTENANCE SCHEDULE

EROSION CONTROL MEASURES WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE STABILIZED IMMEDIATELY FOLLOWING FINISH GRADING. AREAS SHALL BE PERMANENTLY STABILIZED BY PAVEMENT OR PERMANENT SEEDING AS SHOWN ON THE CONSTRUCTION PLANS. SEEDING SHALL BE DONE ACCORDING TO STANDARD AND SPECIFICATION 3.32. PERMANENT SEEDING, OF THE VESCH AND MULCH (STRAW OR FIBER) WILL BE APPLIED.

CONTRACTOR SHALL APPLY TOPSOIL AS REQUIRED BY THE PROJECT SPECIFICATIONS PRIOR TO PERMANENT SEEDING.

MAINTENANCE

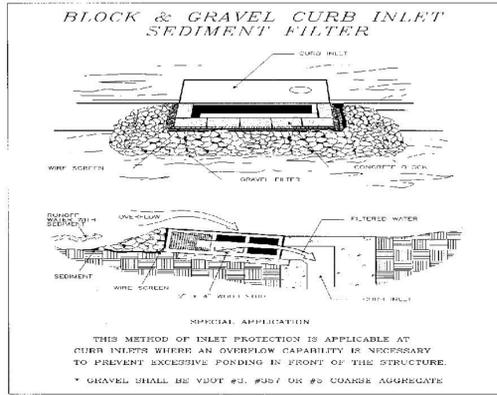
INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES AT THE CLOSE OF EACH WORKDAY AND AFTER EACH SIGNIFICANT RAIN STORM. MAKE NECESSARY REPAIRS OR CLEAN UP IMMEDIATELY TO MAINTAIN THE EFFECTIVENESS OF THE MEASURES. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.

STORMWATER RUNOFF CONSIDERATIONS

THE PROPOSED DEVELOPMENT WILL NOT INCREASE THE OVERALL RUNOFF FROM THE PROJECT SITE. THE PROJECT WILL REPLACE THE EXISTING STORMWATER FACILITIES.

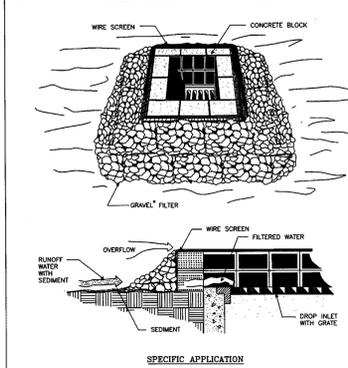
CALCULATIONS

SEE SHEETS 3.4 AND 3.5 FOR STORMWATER MANAGEMENT CALCULATIONS.



SPECIAL APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.
* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER



SPECIAL APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.
* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

2 CURB INLET PROTECTION

SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK

3 DROP INLET PROTECTION

SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK



6 SOIL MAP

SCALE: N.T.S.

SOIL DATA	MAPPING UNIT NUMBER, NAME, SLOPE, FLOODING POTENTIAL, HYDROLOGIC GROUP	SOIL CHARACTERISTICS	GENERAL DEVELOPMENT CENTRAL WATER AND SEWER	CONVENTIONAL SEPTIC TANK DRAIN FIELDS	AGRICULTURAL FORESTRY AND HORTICULTURAL
			DEPTH TO ROCK		USDA LAND USE CAPABILITY CLASS
23B PURCELLVILLE SILT LOAM, (2-7X) (B)	VERY DEEP, WELL DRAINED YELLOWISH-RED SILTY TO LOAMY SOIL ON UNULATING AND GENTLY SLOPING UPLANDS; DEVELOPED IN RESIDUUM WEATHERED FROM MIXED GRANITE GNEISS AND METADIABASE ROCK	1 - GOOD POTENTIAL	1 - GOOD POTENTIAL	1 - GOOD POTENTIAL	1 - PRIME FARMLAND
			DEPTH TO HARD BEDROCK IS GENERALLY GREATER THAN 6'		2E

4 SOIL DATA

VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS MINIMUM STANDARDS

MS-1 SOIL STABILIZATION. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS, BUT LESS THAN ONE YEAR. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-3 PERMANENT STABILIZATION. PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS: UNIFORM MATURE ENOUGH TO SURVIVE WILL INHIBIT EROSIONS

MS-7 CUT AND FILL SLOPES DESIGN & CONSTRUCTION. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8 CONCENTRATED RUNOFF DOWN SLOPES. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.

MS-9 SLOPE MAINTENANCE. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED

MS-10 STORM SEWER INLET PROTECTION. ALL STORM SEWER INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE STORMWATER CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED/TREATED TO REMOVE SEDIMENT.

MS-11 STORMWATER CONVEYANCE PROTECTION. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND THE RECEIVING CHANNEL.

MS-16 UNDERGROUND UTILITY LINE INSTALLATION. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
MORE THAN 300 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS COMPLY WITH APPLICABLE SAFETY REGULATIONS

MS-17 VEHICULAR SEDIMENT TRACKING. BEFORE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

MS-18 REMOVAL OF TEMPORARY MEASURES. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

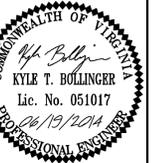
MS-19 STORMWATER MANAGEMENT. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION, AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:
CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE, OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED:
NATURAL CHANNELS - USE 2-YEAR STORM EVENT
MANMADE CHANNELS - USE 2- AND 10-YEAR STORM EVENT
PIPE AND PIPE SYSTEMS - USE 10-YEAR STORM EVENT
IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL PROVIDE CHANNEL, PIPE, OR PIPE SYSTEM IMPROVEMENT OR PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, SITE DESIGN, STORMWATER DETENTION, OR OTHER MEASURES THAT IS SATISFACTORY TO THE PROGRAM AUTHORITY TO PREVENT DOWNSTREAM EROSION.
PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS
IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT AS A WHOLE SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT.
ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER THAT MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE

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KHA PROJECT 110280031
DATE 06/19/2014
SCALE AS SHOWN
DESIGNED BY KTB
DRAWN BY KTB
CHECKED BY KVB

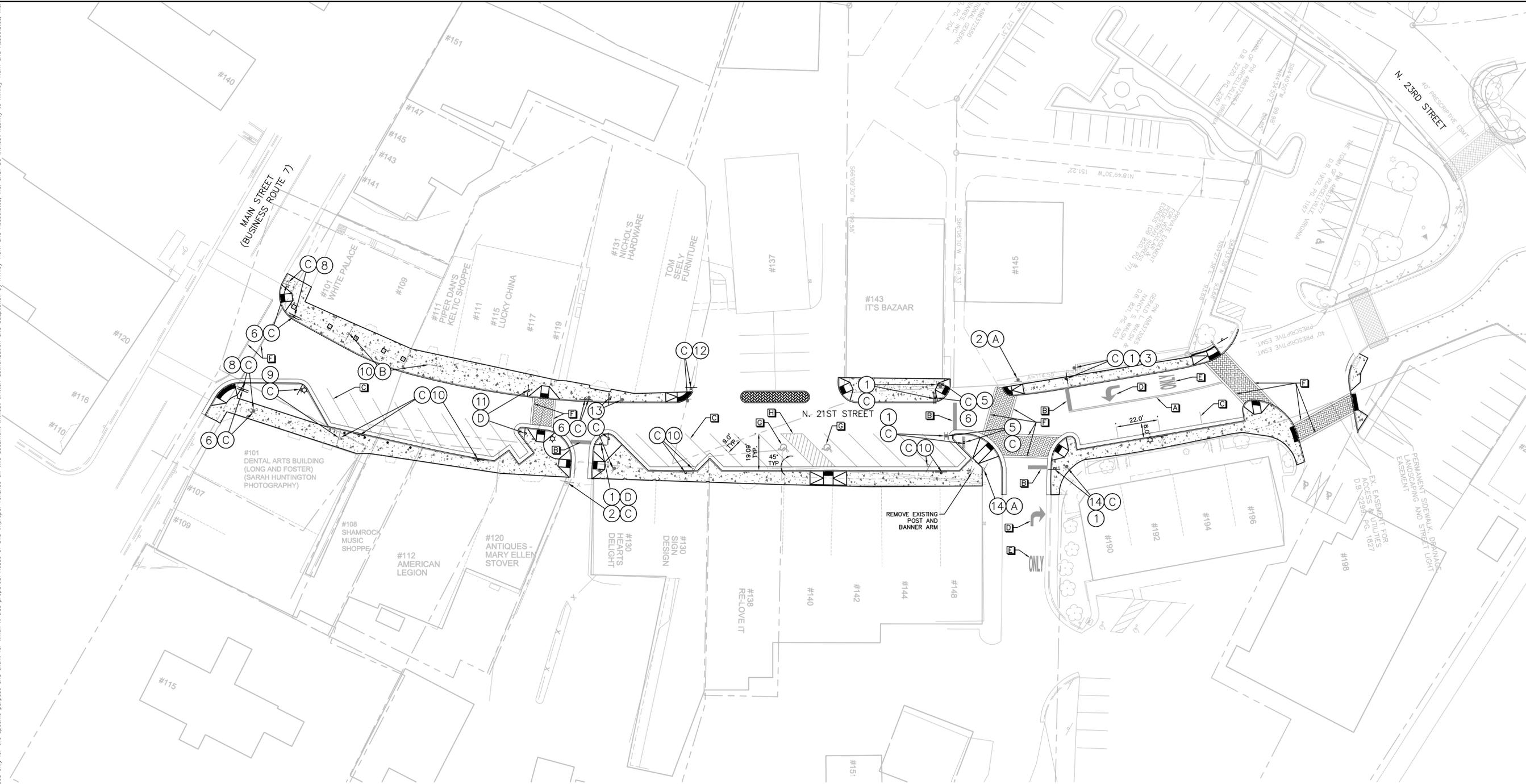
EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS
21ST & 23RD STREETScape IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA

SHEET NUMBER

4.2

REVISIONS DATE BY

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- SIGNING AND STRIPING NOTES**
- ALL PROPOSED SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF EACH OF THE FOLLOWING MANUALS, OR THE MOST RECENT REVISION THEREOF:
 - A. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
 - B. THE VIRGINIA SUPPLEMENT TO THE MUTCD
 - C. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS
 - D. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.
 - ALL PAVEMENT MARKINGS SHALL BE TYPE B, CLASS 1, UNLESS OTHERWISE NOTED.
 - PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO AVOID CONFLICT WITH UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS, AND TO COMPLY WITH STANDARDS REFERENCED IN NOTE 1 ABOVE.
 - ANY EXISTING PAVEMENT MARKINGS THAT WILL CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
 - LIMITS SHOWN ON PROPOSED MARKINGS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO ENSURE THAT PROPOSED PAVEMENT MARKINGS CONTINUE UNTIL EXISTING PAVEMENT MARKINGS CAN BE MATCHED.
 - STOP LINES, IF REQUIRED BY THE ENGINEER, SHALL BE A MINIMUM OF 4 FEET IN ADVANCE OF THE CROSSWALK. IN THE ABSENCE OF A MARKED CROSSWALK, THE STOP LINE SHALL BE A MINIMUM OF 4 FEET AND A MAXIMUM OF 50 FEET IN ADVANCE OF THE NEAREST EDGE OF THE INTERSECTING ROADWAY. STOP LINES SHALL BE 24 INCHES IN WIDTH. ARROWS SHALL BE IN ACCORDANCE WITH THE FEDERAL MUTCD. SPACING BETWEEN DOUBLE SOLID YELLOW LINES SHALL BE 4 INCHES.
 - EXISTING SIGNS TO BE REMOVED SHALL BE RETURNED TO THE TOWN OF PURCELLVILLE OR AS OTHERWISE DIRECTED BY THE ENGINEER.
 - ALL EXISTING SIGNS TO BE RELOCATED SHALL BE VERIFIED TO MATCH CURRENT MUTCD SIZING REQUIREMENTS. ALL SIGNS FAILING TO MEET SIZING REQUIREMENTS SHALL BE RETURNED TO THE TOWN OF PURCELLVILLE AND NEW SIGNS SHALL BE INSTALLED.
 - ALL ARROWS FOR RELOCATED AND NEW SIGNS ARE POINT AT THE SIDE THE SIGN IS FACING.

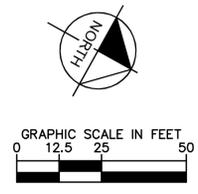
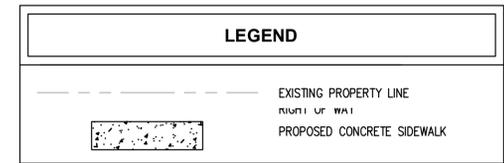
SIGNS LEGEND

SIGN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SIGN														STREET NAME
MUTCD REFR.	R1-1	R3-2	R3-5	R4-7B	R5-1	R6-1R	R6-7	R6-1L	R2-1	---	W11-2	R3-1	W6-3 W6-5p	D3-SERIES
SIGN SIZE	30" x 30"	24" x 24"	30" x 36"	24" x 30"	30" x 30"	36" x 12"	24" x 30"	36" x 12"	24" x 30"	12" x 30"	30" x 30"	24" x 24"	24" x 30" 36" x 12"	12" x VARIES

- (A) EXISTING SIGN TO REMAIN
- (B) REMOVE EXISTING SIGN - SEE NOTE 7
- (C) RELOCATION OF EXISTING SIGN
- (D) PLACE NEW SIGN

PAVEMENT MARKING LEGEND

- (A) TYPE B, CLASS 1, YELLOW, 4" WIDTH, DOUBLE LINE, 4" SPACING
- (B) TYPE B, CLASS 1, WHITE, 24" WIDTH
- (C) TYPE B, CLASS 1, WHITE, 4" WIDTH
- (D) TYPE B, CLASS 1, WHITE, ELONGATED ARROW
- (E) TYPE B, CLASS 1, WHITE, ELONGATED 'ONLY'
- (F) TYPE B, CLASS 1, WHITE, 12" WIDTH
- (G) TYPE B, CLASS 1, WHITE, 4" WIDTH ACCESSIBLE PARKING SYMBOL
- (H) TYPE B, CLASS 1, WHITE, 4" WIDTH, 45° ANGLE, 3.0" SPACING



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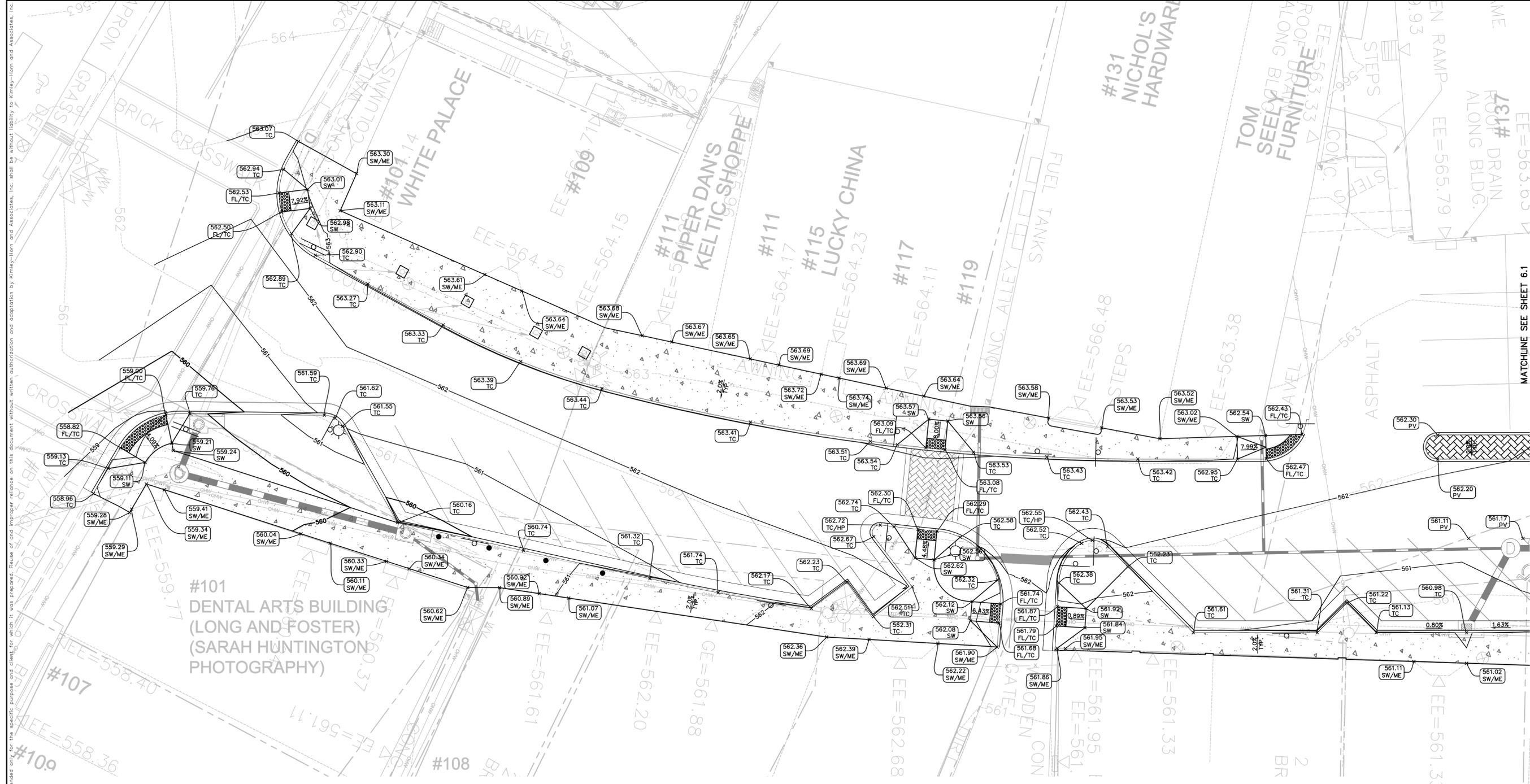
Kyle T. Bollinger
KYLE T. BOLLINGER
 Lic. No. 051017
 PROFESSIONAL ENGINEER

KHA PROJECT	110280031
DATE	06/19/2014
SCALE	AS SHOWN
DESIGNED BY	KTB
DRAWN BY	KTB
CHECKED BY	KVB

SIGNING AND STRIPING PLAN

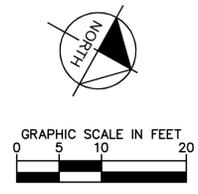
21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
 PREPARED FOR
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 VIRGINIA

SHEET NUMBER
5.0



NOTES:
 1. CONTRACTOR IS TO MAINTAIN EXISTING THRESHOLD ELEVATIONS AT ALL ENTRANCES.

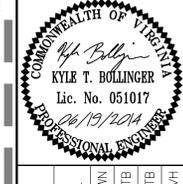
GRADING KEY NOTES:
 EP - EDGE OF PAVEMENT
 FG - FINISHED GROUND
 FL - FLOW LINE
 HP - HIGH POINT
 LP - LOW POINT
 ME - MATCH EXISTING
 PV - PAVEMENT
 RIM - RIM
 SW - SIDEWALK
 TC - TOP OF CURB
 TW - TOP OF WALL



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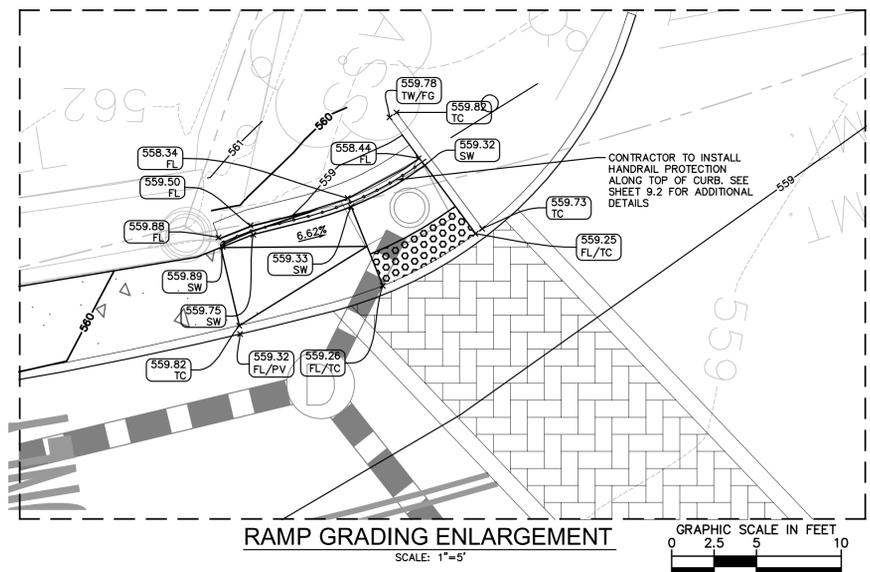
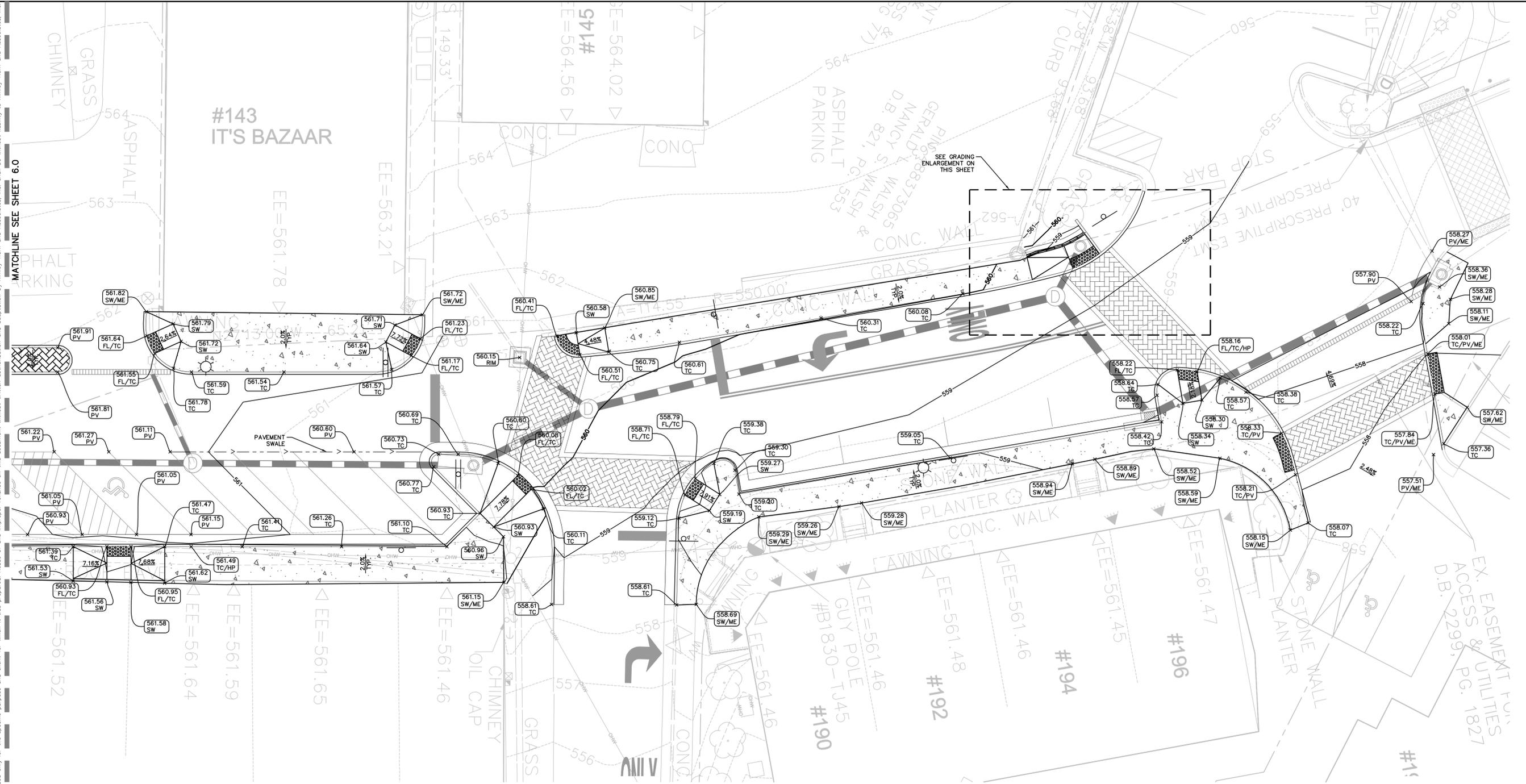
DETAIL GRADING PLAN

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
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MATCHLINE SEE SHEET 6.0

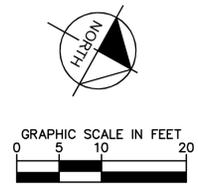


NOTES:

1. CONTRACTOR IS TO MAINTAIN EXISTING THRESHOLD ELEVATIONS AT ALL ENTRANCES.
2. REFER TO CONSTRUCTION DETAILS AND ISOMETRIC VIEW ON SHEET 9.2 FOR ADDITIONAL INFORMATION ABOUT RAMP GRADING ENLARGEMENT

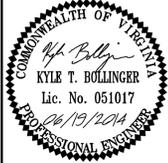
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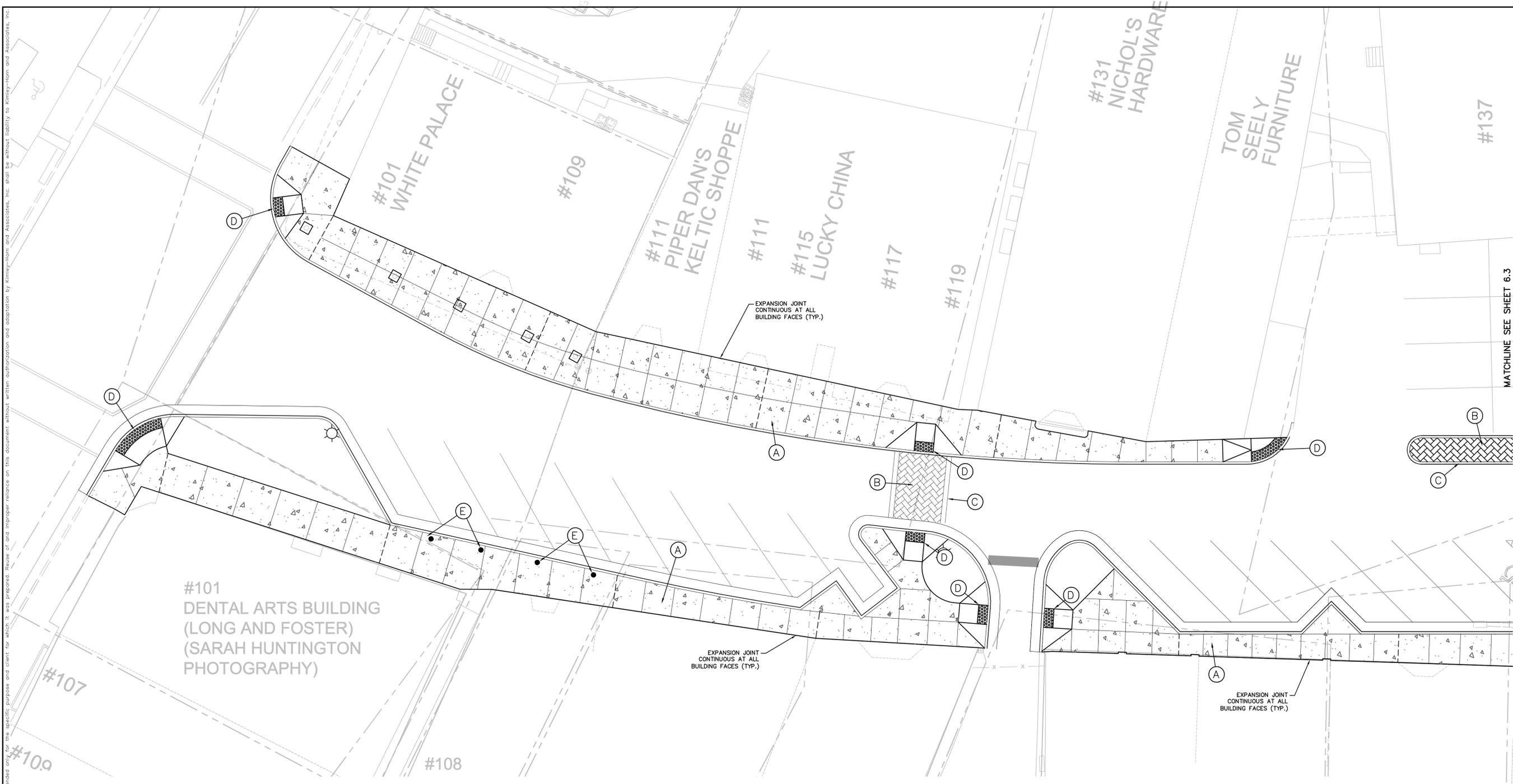
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DETAIL GRADING PLAN

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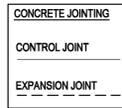
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6.1

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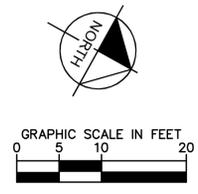


HARDSCAPE SCHEDULE

KEY	TYPE	SIZE (NOMINAL)	COLOR	FINISH / TYPE	PATTERN	MANUFACTURER	DETAIL REF.
A	CONCRETE SIDEWALK	-	-	LT. BROOM	-	-	-
B	CROSSWALK - STAMPED ASPHALT	-	BRICK RED	BRICK PATTERN	HERRINGBONE	-	-
C	CROSSWALK - STRIPE	-	-	-	-	-	REF. SHT. 5.0
D	DETECTABLE WARNING SURFACE	-	GRAY	-	-	-	-
E	BOLLARD	-	BLACK	VEHICULAR BOLLARD	-	-	-



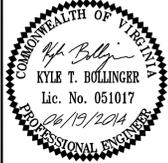
- NOTES:
 1. EXPANSION JOINTS NOT SHOWN WHERE PAVER APPLICATION OCCURS.
 2. SEE SHEET 9.1 FOR JOINT DETAILS.



MATCHLINE SEE SHEET 6.3

NO.	REVISIONS	BY	DATE

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KHA PROJECT	110280031
DATE	06/19/2014
SCALE	AS SHOWN
DESIGNED BY	KTB
DRAWN BY	KTB
CHECKED BY	KVH

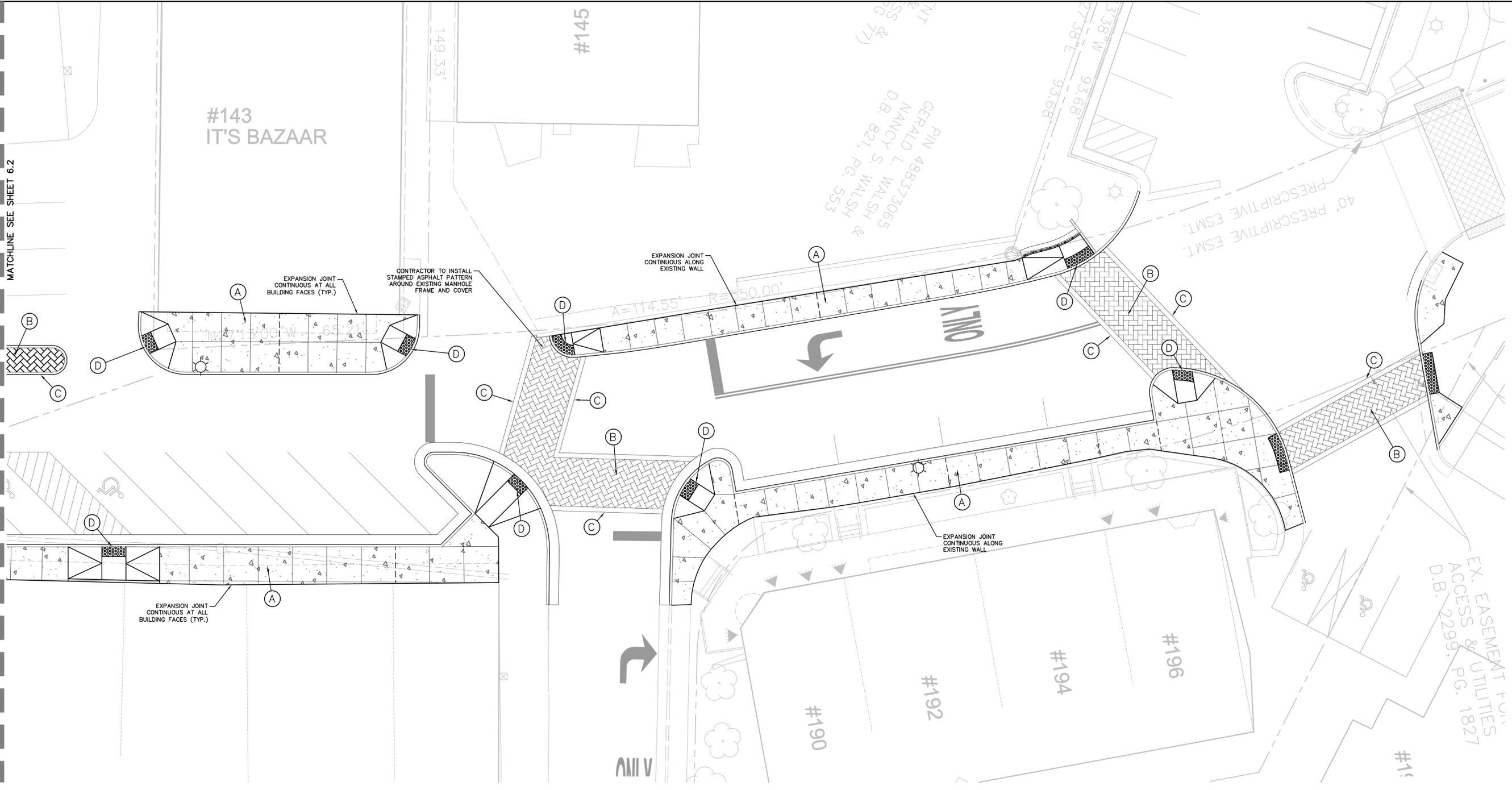
HARDSCAPE AND JOINTING PLAN

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
 PREPARED FOR
TOWN OF PURCELLVILLE
 VIRGINIA

SHEET NUMBER
6.2

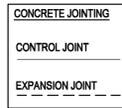
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MATCHLINE SEE SHEET 6.2

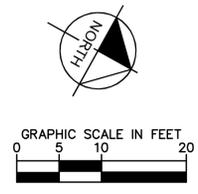


HARDSCAPE SCHEDULE

KEY	TYPE	SIZE (NOMINAL)	COLOR	FINISH / TYPE	PATTERN	MANUFACTURER	DETAIL REF.
A	CONCRETE SIDEWALK	-	-	LT. BROOM	-	-	-
B	CROSSWALK - STAMPED ASPHALT	-	BRICK RED	BRICK PATTERN	HERRINGBONE	-	-
C	CROSSWALK - STRIPE	-	-	-	-	-	REF. SHT. 5.0
D	DETECTABLE WARNING SURFACE	-	GRAY	-	-	-	-
E	BOLLARD	-	BLACK	VEHICULAR BOLLARD	-	-	-



- NOTES:
 1. EXPANSION JOINTS NOT SHOWN WHERE PAVER APPLICATION OCCURS.
 2. SEE SHEET 9.1 FOR JOINT DETAILS.



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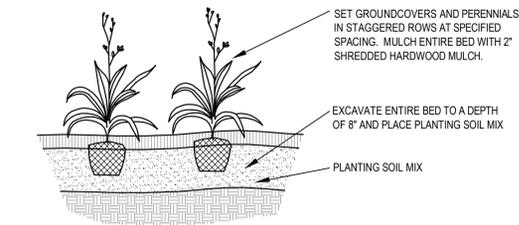


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DATE	06/19/2014
SCALE	AS SHOWN
DESIGNED BY	KTB
DRAWN BY	KTB
CHECKED BY	KVH

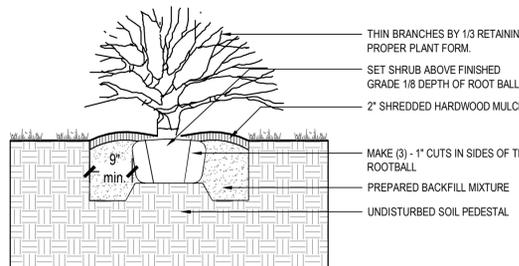
HARDSCAPE AND JOINTING PLAN

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
 PREPARED FOR TOWN OF PURCELLVILLE
 VIRGINIA
 SHEET NUMBER **6.3**

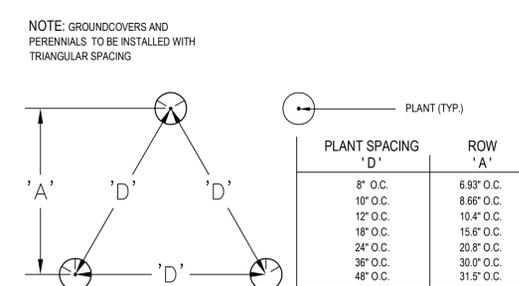
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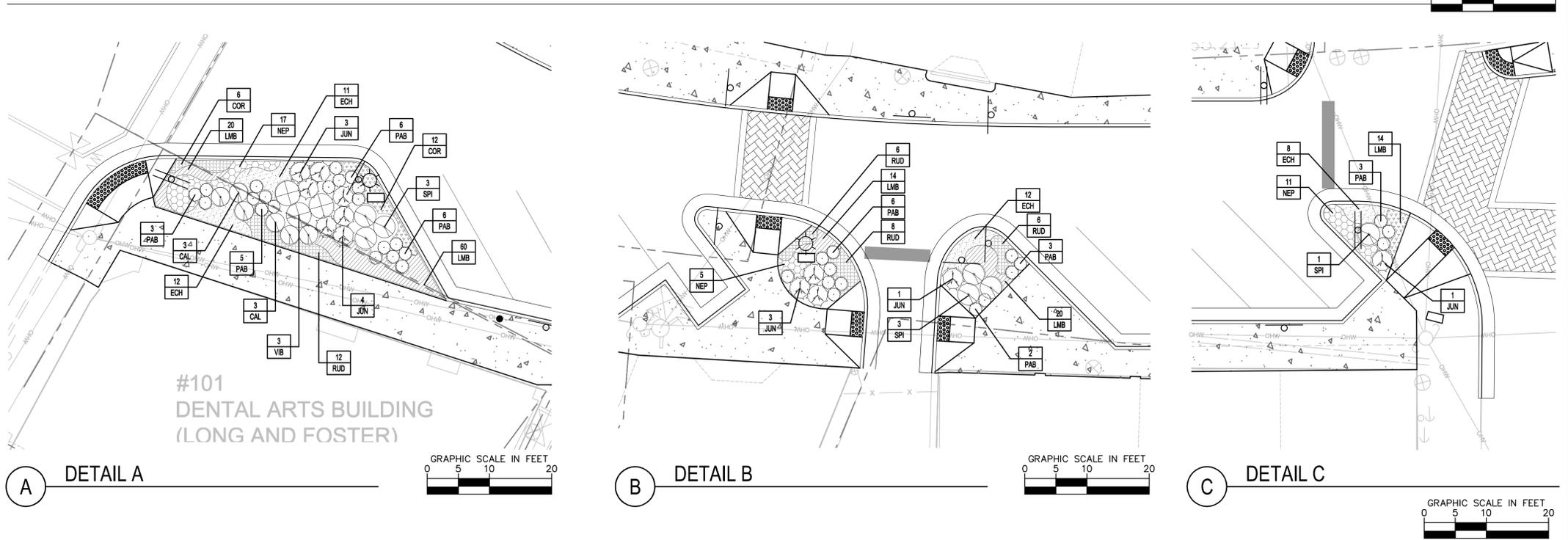
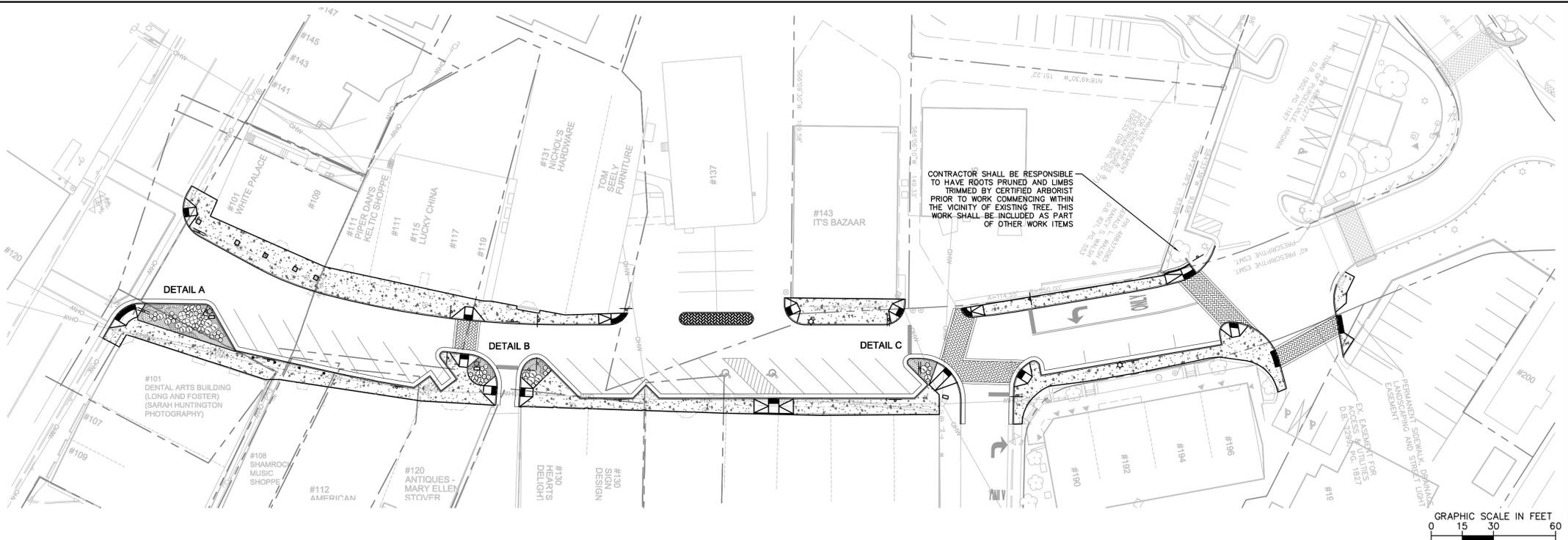
1 GROUNDCOVER PLANTING
N.T.S.



2 TYP. B&B SHRUB PLANTING
N.T.S.



3 GROUNDCOVER SPACING
N.T.S.



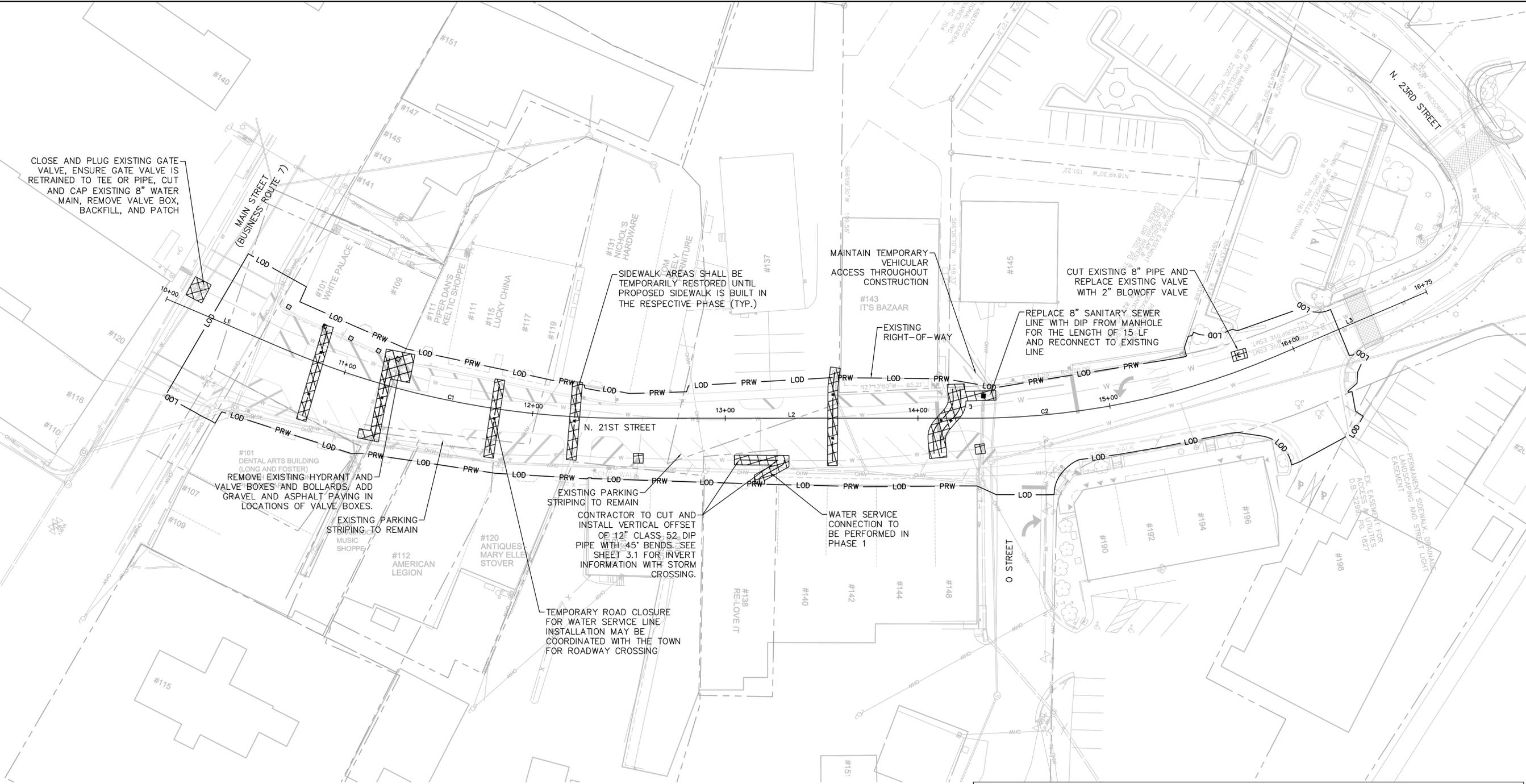
MASTER PLANT SCHEDULE

KEY	QTY.	BOTANICAL / COMMON NAME	SIZE	ROOT	COMMENTS	KEY	QTY.	BOTANICAL / COMMON NAME	SIZE	ROOT	COMMENTS
SHRUBS / GRASSES						PERENNIALS / GROUNDCOVERS					
CAL	6	<i>Calamagrostis x acutiflora</i> 'Karl Foerster' Karl Foerster Feather Reed Grass	3 Gal.	Cont.	Mature, well rooted	COR	18	<i>Coreopsis verticillata</i> 'Zagreb' Coreopsis	1 Qt.	Cont.	18" o.c. Full, dense
JUN	12	<i>Juniperus horizontalis</i> 'Wiltoni' Blue Rug Juniper	3 Gal.	Cont.	Mature, well rooted	ECH	43	<i>Echinacea purpurea</i> 'Ruby Star' Coneflower	1 Gal.	Cont.	18" o.c. Full, dense
PAB	35	<i>Pennisetum alopecuroides</i> 'Little Bunny' Little Bunny Fountain Grass	1 Gal.	Cont.	Mature, well rooted	LMB	128	<i>Liriope muscari</i> 'Big Blue' Lilyturf	1 Qt.	Cont.	12" o.c. Full, dense
SPI	7	<i>Spiraea japonica</i> 'Anthony Waterer' Anthony Waterer Spirea	24" ht.	Cont.	Full, dense	NEP	33	<i>Nepeta x 'Walker's Low'</i> Catmint	1 Gal.	Cont.	18" o.c. Full, dense
VIB	3	<i>Viburnum x juddii</i> Judd Viburnum	36" ht.	B&B	Full, dense	RUD	32	<i>Rudbeckia fulgida</i> 'Goldsturm' Black Eyed Susan	1 Gal.	Cont.	18" o.c. Full, dense



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CLOSE AND PLUG EXISTING GATE VALVE, ENSURE GATE VALVE IS RETRAINED TO TEE OR PIPE, CUT AND CAP EXISTING 8" WATER MAIN, REMOVE VALVE BOX, BACKFILL, AND PATCH

REMOVE EXISTING HYDRANT AND VALVE BOXES AND BOLLARDS, ADD GRAVEL AND ASPHALT PAVING IN LOCATIONS OF VALVE BOXES.

SIDEWALK AREAS SHALL BE TEMPORARILY RESTORED UNTIL PROPOSED SIDEWALK IS BUILT IN THE RESPECTIVE PHASE (TYP.)

MAINTAIN TEMPORARY VEHICULAR ACCESS THROUGHOUT CONSTRUCTION

CUT EXISTING 8" PIPE AND REPLACE EXISTING VALVE WITH 2" BLOWOFF VALVE

REPLACE 8" SANITARY SEWER LINE WITH DIP FROM MANHOLE FOR THE LENGTH OF 15 LF AND RECONNECT TO EXISTING LINE

EXISTING PARKING STRIPING TO REMAIN

CONTRACTOR TO CUT AND INSTALL VERTICAL OFFSET OF 12" CLASS 52 DIP PIPE WITH 45° BENDS. SEE SHEET 3.1 FOR INVERT INFORMATION WITH STORM CROSSING.

WATER SERVICE CONNECTION TO BE PERFORMED IN PHASE 1

EXISTING PARKING STRIPING TO REMAIN

TEMPORARY ROAD CLOSURE FOR WATER SERVICE LINE INSTALLATION MAY BE COORDINATED WITH THE TOWN FOR ROADWAY CROSSING

PHASE 1: SEQUENCE OF CONSTRUCTION

- INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON SHEET 4.0 AND AS DIRECTED BY LOUDOUN COUNTY E&S INSPECTOR AND TOWN OF PURCELLVILLE.
- ALL CUT AND REMOVED VEHICULAR PAVEMENT SHALL BE MADE PASSABLE AT THE END OF WORKING HOURS. CONTRACTOR MAY UTILIZE COMPACTED 21B GRAVEL, STEEL PLATES, OR OTHER METHODS DEEMED ACCEPTABLE BY THE TOWN OF PURCELLVILLE FOR TEMPORARY USE UNTIL SUCH TIME IT IS PATCHED LATER IN THIS PHASE. ALL PEDESTRIAN SIDEWALK AREAS DISTURBED BY WORK PERFORMED SHALL BE MADE PASSABLE AT THE END OF WORKING HOURS AND COMPLY WITH ALL ADA GUIDELINES UNTIL IT IS RESTORED IN THE RESPECTIVE PHASE. ALL TEMPORARY MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL CONSTRUCTION IS COMPLETE.
- ALL CONSTRUCTION OPERATIONS SHALL BE DONE WITHIN ALLOWABLE WORKING HOURS. ROAD SHALL REMAIN OPEN AT ALL TIMES AND AT LEAST ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. ANY SPECIFIC LOCATIONS, SUCH AS CROSSINGS, WHERE CONTRACTOR BELIEVES IT MAY NEED TO TEMPORARILY CLOSE ANY ROADWAY OR ENTRANCES TO INSTALL THE WORK SHALL SUBMIT THE REQUEST IN WRITING TO THE TOWN FOR APPROVAL AT LEAST ONE WEEK PRIOR TO THAT WORK TAKING PLACE WITH A DETAILED PLAN AND SCHEDULE FOR THE CLOSURE, INCLUDING DETOUR AND SIGNAGE TO BE USED. THE APPROVAL IS AT THE FULL DISCRETION OF THE TOWN AND CONTRACTOR TO ANTICIPATE MAINTAINING AT LEAST ONE LANE OF TRAFFIC AT ALL TIMES
- CONTRACTOR MUST PATCH/REPAIR ALL AREAS AND TRENCHES OF WORK COMPLETED IN PHASE 1 PRIOR TO MOVING TO PHASE 2 PER DETAIL 7 ON SHEET 9.1.

NOTES:

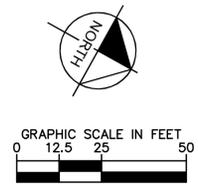
- SIGN AND MARK THE PROJECT VICINITY FOR CONSTRUCTION IN ACCORDANCE WITH THE CURRENT MUTCD, VIRGINIA WORK AREA PROTECTION MANUAL, AND THESE PLANS.
- MAINTAIN 10' MINIMUM LANE WIDTHS IN EACH DIRECTION PLUS TURN LANES AND ENTRANCE ACCESS TO PARCELS AT ALL TIMES.
- FOR GENERAL TRAFFIC MANAGEMENT NOTES, SEE SHEET 8.0.
- FOR CONSTRUCTION OF TYPICAL SECTIONS, SEE SHEET 8.0. FOR ADDITIONAL CONSTRUCTION DETAILS, SEE SHEET 9.1.
- CONTRACTOR SHALL HAVE PLATFORMS, PLATES, RAMPS OR OTHER METHODS AVAILABLE AT ALL TIMES AT THE LOCATION OF THE WORK TO ENSURE EMERGENCY VEHICLES AND PERSONNEL CAN ACCESS ROADWAYS, ENTRANCES, DOORS, ALLEYS, AND OTHER ACCESS POINTS AT ALL TIMES.
- CONTRACTOR SHALL BE IN DAILY COMMUNICATION WITH EACH TENANT AND/OR BUSINESS OF WORK TAKING PLACE THAT WILL BE IMPACTING THEM AS WORK COMMENCES THROUGH EACH SUB-PHASE
- CONTRACTOR SHALL PROVIDE A SCHEDULE OF WHEN WATER LINE OUTAGES WILL OCCUR TO THE TOWN FOR APPROVAL. CONTRACTOR SHALL NOTIFY AFFECTED PROPERTIES WITH A MINIMUM OF 48 NOTICE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ABANDONING THE EXISTING WATER SERVICE CONNECTIONS TO BE REPLACED. CONTRACTOR SHALL SUBMIT A PLAN FOR THIS ABANDONMENT TO THE TOWN FOR APPROVAL.

HOURS: ALLOWABLE WORKING HOURS IN MAIN STREET SHALL BE LIMITED TO 10 PM TO 5 AM. ALL OTHER WORK SHALL BE DONE WITHIN THE ALLOWABLE WORKING HOURS FROM 10 PM TO 7 AM. SEE NOTE 3 IN THE SEQUENCE OF CONSTRUCTION ON THIS SHEET

LEGEND

	EXISTING OVERHEAD WIRE		WORK AREA
	EXISTING PROPERTY LINE		CONSTRUCTION PHASE DELINEATION
	EXISTING FIRE HYDRANT		PROPOSED SIGN
	EXISTING WATER VALVE		PROPOSED LIGHT POLE
	EXISTING WATER METER		4" CONDUIT AND TRACER WIRE
	EXISTING UTILITY POLE		
	EXISTING LIGHT POLE		
	LIMITS OF DISTURBANCE		
	LIMITS OF DISTURBANCE/PERSCRIPTIVE RIGHT OF WAY		
	PROPOSED CONCRETE SIDEWALK		

NOTE: PEDESTRIAN ACCESS TO ALL BUILDING AND BUSINESS ENTRANCES SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION DURING THEIR OPERATING HOURS PLUS ONE HOUR BEFORE AND AFTER.

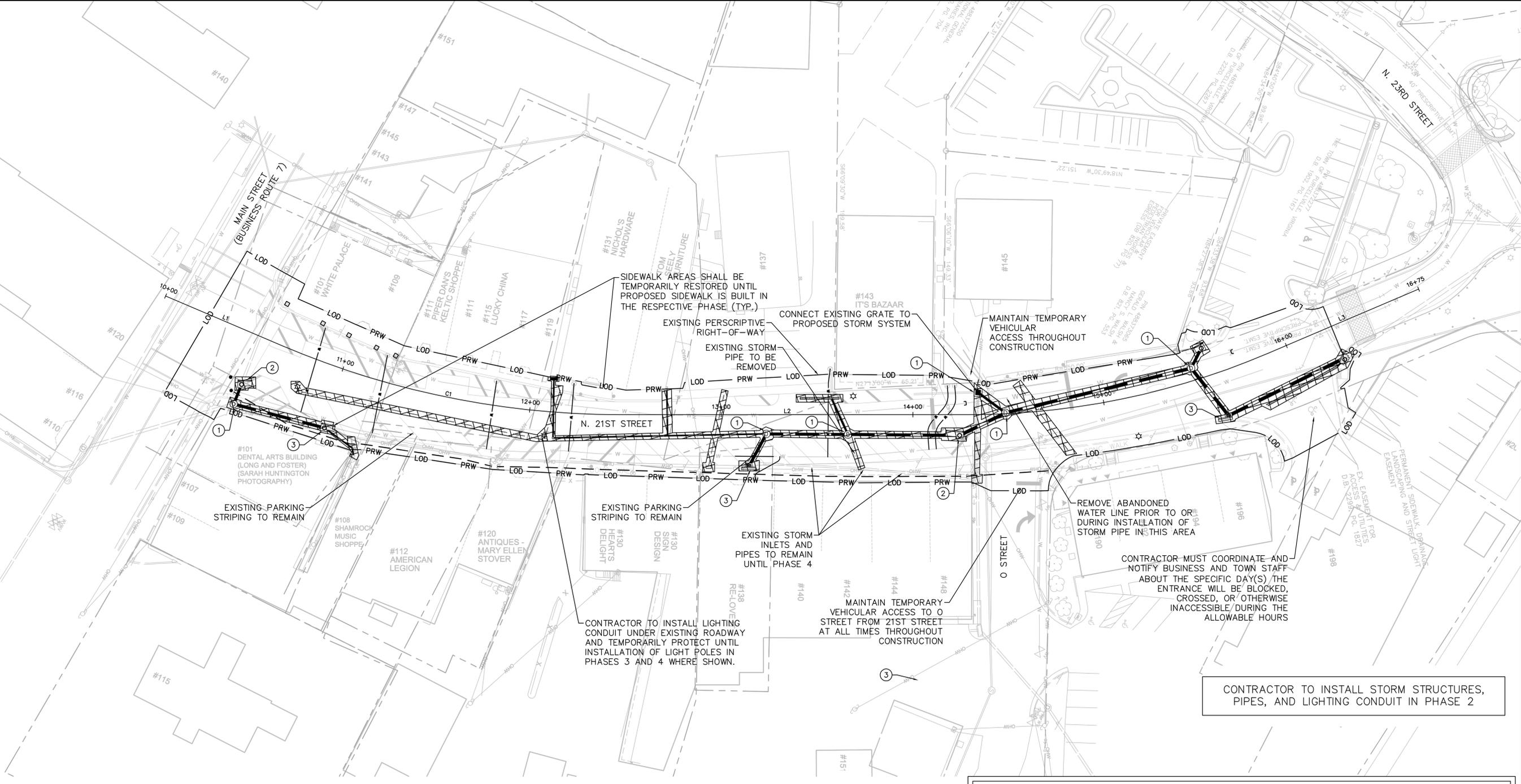


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<p>KHA PROJECT 110280031</p> <p>DATE 06/19/2014</p> <p>SCALE AS SHOWN</p> <p>DESIGNED BY KTB</p> <p>DRAWN BY KTB</p> <p>CHECKED BY KVB</p>	<p>SEQUENCE OF CONSTRUCTION - PHASE 1</p>
<p>21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE</p> <p style="text-align: right;">VIRGINIA</p>	<p>SHEET NUMBER</p> <p>8.1</p>
<p>NO. _____</p> <p>REVISIONS _____</p> <p>DATE _____</p>	

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PHASE 2: SEQUENCE OF CONSTRUCTION

- INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON SHEET 4.0 AND AS DIRECTED BY LOUDOUN COUNTY E&S INSPECTOR AND TOWN OF PURCELLVILLE.
- INSTALL ALL PROPOSED STRUCTURES AND STORM PIPE CONNECTIONS. ALL PROPOSED INSTALLED STRUCTURE RIMS ARE TO BE SET AT EXISTING GRADE AND MODIFIED TO FINISHED GRADE AT APPROPRIATE LATER PHASE. SEE PHASES 3-5 FOR ADDITIONAL INFORMATION.
- CONTRACTOR TO PHASE CONSTRUCTION AS APPROPRIATE TO MINIMIZE IMPACTS TO EXISTING BUSINESSES.
- ALL CUT AND REMOVED VEHICULAR PAVEMENT SHALL BE MADE PASSABLE AT THE END OF WORKING HOURS. CONTRACTOR MAY UTILIZE COMPACTED 21B GRAVEL, STEEL PLATES, OR OTHER METHODS DEEMED ACCEPTABLE BY THE TOWN OF PURCELLVILLE FOR TEMPORARY USE UNTIL SUCH TIME IT IS PATCHED LATER IN THIS PHASE. ALL PEDESTRIAN SIDEWALK AREAS DISTURBED BY WORK PERFORMED SHALL BE MADE PASSABLE AT THE END OF WORKING HOURS AND COMPLY WITH ALL ADA GUIDELINES UNTIL IT IS RESTORED IN THE RESPECTIVE PHASE. ALL TEMPORARY MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL CONSTRUCTION IS COMPLETE.
- BEGIN PHASE 2 WITH THE DEMOLITION OF THE EXISTING WATER LINE, FOLLOWED BY THE INSTALLATION OF STORM PIPES AND STRUCTURES. CONTRACTOR TO INSTALL PROPOSED LIGHTING CONDUIT IN CONJUNCTION WITH STORM PIPES.
- ALL CONSTRUCTION OPERATIONS SHALL BE DONE WITHIN ALLOWABLE WORKING HOURS. ROAD SHALL REMAIN OPEN AT ALL TIMES AND AT LEAST ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. ANY SPECIFIC LOCATIONS, SUCH AS CROSSINGS, WHERE CONTRACTOR BELIEVES IT MAY NEED TO TEMPORARILY CLOSE ANY ROADWAY OR ENTRANCES TO INSTALL THE WORK SHALL SUBMIT THE REQUEST IN WRITING TO THE TOWN FOR APPROVAL AT LEAST ONE WEEK PRIOR TO THAT WORK TAKING PLACE WITH A DETAILED PLAN AND SCHEDULE FOR THE CLOSURE, INCLUDING DETOUR AND SIGNAGE TO BE USED. THE APPROVAL IS AT THE FULL DISCRETION OF THE TOWN AND CONTRACTOR TO ANTICIPATE MAINTAINING AT LEAST ONE LANE OF TRAFFIC AT ALL TIMES
- CONTRACTOR MUST PATCH/REPAIR ALL AREAS AND TRENCHES OF WORK COMPLETED IN PHASE 2 PRIOR TO MOVING TO PHASE 3 PER DETAIL 7 ON SHEET 9.1.

NOTES:

- SIGN AND MARK THE PROJECT VICINITY FOR CONSTRUCTION IN ACCORDANCE WITH THE CURRENT MUTCD, VIRGINIA WORK AREA PROTECTION MANUAL, AND THESE PLANS.
- MAINTAIN 10' MINIMUM LANE WIDTHS IN EACH DIRECTION PLUS TURN LANES AND ENTRANCE ACCESS TO PARCELS AT ALL TIMES.
- FOR GENERAL TRAFFIC MANAGEMENT NOTES, SEE SHEET 8.0.
- FOR CONSTRUCTION OF TYPICAL SECTIONS, SEE SHEET 8.0. FOR ADDITIONAL CONSTRUCTION DETAILS, SEE SHEET 9.1.
- CONTRACTOR SHALL HAVE PLATFORMS, PLATES, RAMPS OR OTHER METHODS AVAILABLE AT ALL TIMES AT THE LOCATION OF THE WORK TO ENSURE EMERGENCY VEHICLES AND PERSONNEL CAN ACCESS ROADWAYS, ENTRANCES, DOORS, ALLEYS, AND OTHER ACCESS POINTS AT ALL TIMES.
- CONTRACTOR SHALL BE IN DAILY COMMUNICATION WITH EACH TENANT AND/OR BUSINESS OF WORK TAKING PLACE THAT WILL BE IMPACTING THEM AS WORK COMMENCES THROUGH EACH SUB-PHASE

HOURS: ALLOWABLE WORKING HOURS ARE FROM 10 PM TO 10 AM. SEE NOTE 6 IN THE SEQUENCE OF CONSTRUCTION ON THIS SHEET

CONTRACTOR TO INSTALL STORM STRUCTURES, PIPES, AND LIGHTING CONDUIT IN PHASE 2

LEGEND	
— OHW —	EXISTING OVERHEAD WIRE
- - - - -	EXISTING PROPERTY LINE
⊗	EXISTING FIRE HYDRANT
⊕	EXISTING WATER VALVE
⊙	EXISTING WATER METER
⊛	EXISTING UTILITY POLE
⊛	EXISTING LIGHT POLE
— LOD —	LIMITS OF DISTURBANCE
— LOD — PRW —	LIMITS OF DISTURBANCE/PERSPECTIVE RIGHT OF WAY
[Pattern]	PROPOSED CONCRETE SIDEWALK
[Pattern]	WORK AREA
[Pattern]	CONSTRUCTION PHASE DELINEATION
+	PROPOSED SIGN
*	PROPOSED LIGHT POLE
---	4" CONDUIT AND TRACER WIRE
①	TOP TO BE SET TO EXISTING GRADE DURING THIS PHASE AND SET TO FINAL GRADE FOLLOWING THAT RESPECTIVE WORK'S PHASE
②	INLET TO NOT BE INSTALLED DURING THIS PHASE. CONTRACTOR TO PROVIDE TEMPORARY SOLID FLAT TOP, STEEL PLATE, OR OTHER MEANS TO PROTECT AND BURY BOTTOM PORTION OF STRUCTURE UNTIL PHASE 4 WHEN CURB IS INSTALLED AND INLET TOP CAN BE SET
③	INLET TOP MAY BE INSTALLED DURING THIS PHASE TO FINAL GRADE, BUT CONTRACTOR MUST PROTECT INLET AND PATCH AROUND AND MAKE PARKING SPOT AND SIDEWALK SAFE AND USABLE AROUND INLET

NOTE: PEDESTRIAN ACCESS TO ALL BUILDING AND BUSINESS ENTRANCES SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION DURING THEIR OPERATING HOURS PLUS ONE HOUR BEFORE AND AFTER.

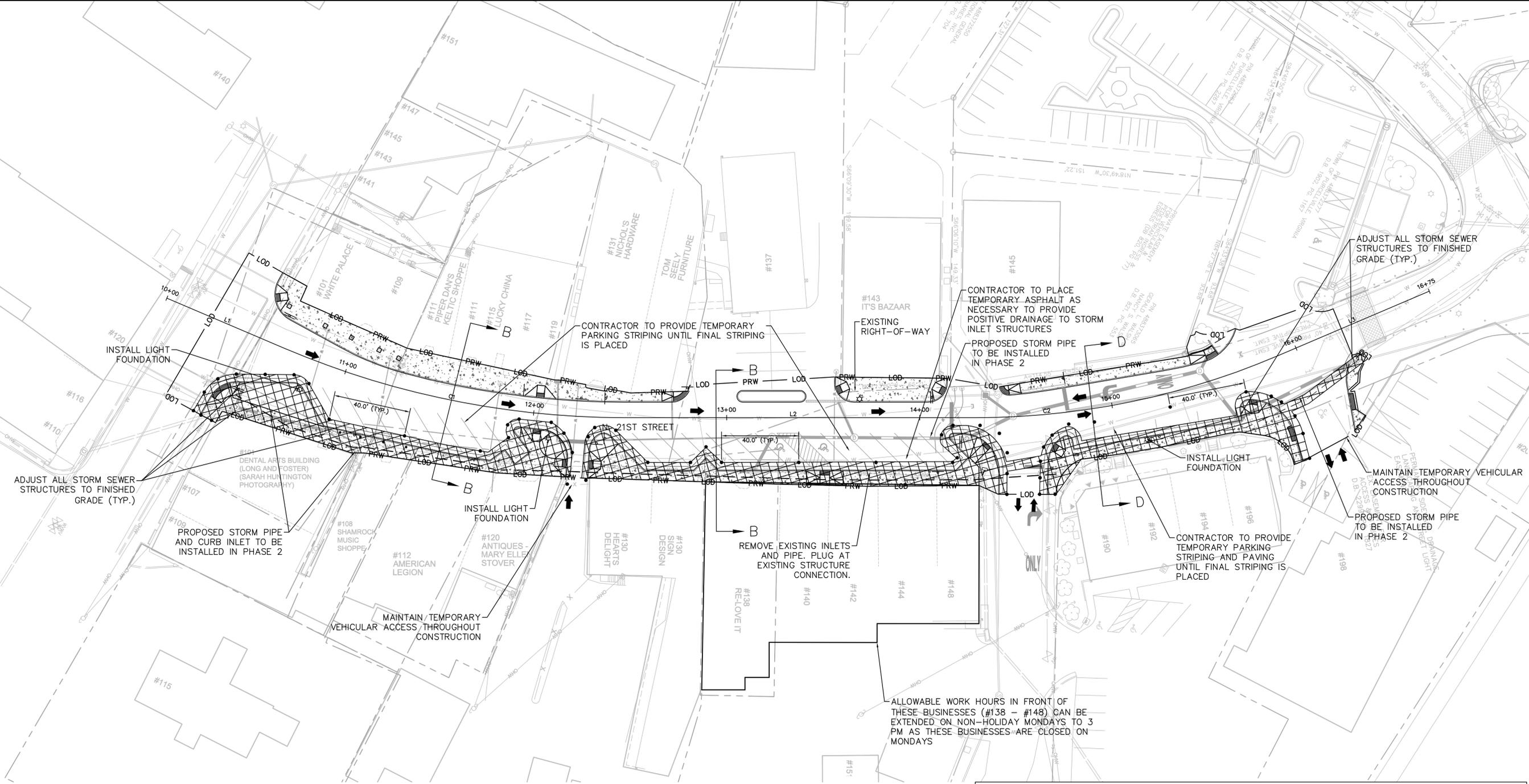
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GRAPHIC SCALE IN FEET

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<p>SEQUENCE OF CONSTRUCTION - PHASE 2</p>	<p>21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA</p>						
<p>KHA PROJECT 110280031 DATE 06/19/2014 SCALE AS SHOWN DESIGNED BY KTB DRAWN BY KTB CHECKED BY KVB</p>	<p>SHEET NUMBER 8.2</p>						
<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	BY	DATE				<p>DATE</p>
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PHASE 4: SEQUENCE OF CONSTRUCTION

1. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON SHEET 4.0 AND AS DIRECTED BY LOUDOUN COUNTY E&S INSPECTOR AND TOWN OF PURCELLVILLE.
2. CONTRACTOR TO PROVIDE TEMPORARY ROAD AND PARKING STRIPING AS SHOWN TO PROVIDE MAXIMIZE STREET PARKING.
3. CONTRACTOR TO PHASE CONSTRUCTION AS APPROPRIATE TO MINIMIZE IMPACTS TO EXISTING BUSINESSES. INSTALL CONCRETE CURB, CONCRETE SIDEWALK, SIDEWALK RAMPS, SIGNS, ELECTRICAL CONDUIT AND BLANK CONDUIT, AND LIGHT POLES AND FOOTINGS, ALONG EAST SIDE OF N. 21ST STREET AS SHOWN. ALL PEDESTRIAN SIDEWALK AREAS DISTURBED BY WORK PERFORMED SHALL BE MADE PASSABLE AT THE END OF WORKING HOURS AND COMPLY WITH ALL ADA GUIDELINES UNTIL IT IS RESTORED. ALL TEMPORARY MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL CONSTRUCTION IS COMPLETE.
4. CONTRACTOR MUST PROVIDE SAFE, TRAVERSABLE, AND ADA COMPLIANT SURFACE/PLATFORM (SUCH AS PLYWOOD OR STEEL PLATES - NO GRAVEL ALLOWED) AND MUST MAINTAIN ACCESSIBILITY TO ALL ENTRANCES AND TRANSITION SAFELY TO ADJACENT SURFACE (SIDEWALK, ROADWAY, ETC.)
5. TEMPORARY CLOSURES OF EXISTING PARKING SPACES MAY BE ALLOWED FOR CONSTRUCTION OF NEW CURB DURING ALLOWABLE WORKING HOURS. CONTRACTOR WILL BE REQUIRED TO PROVIDE TEMPORARY TRAFFIC CHANNELIZATION AND SIGNAGE PER DIRECTION OF TOWN OF PURCELLVILLE.

NOTES:

1. SIGN AND MARK THE PROJECT VICINITY FOR CONSTRUCTION IN ACCORDANCE WITH THE CURRENT MUTCD, VIRGINIA WORK AREA PROTECTION MANUAL, AND THESE PLANS.
2. MAINTAIN 10' MINIMUM LANE WIDTHS IN EACH DIRECTION PLUS TURN LANES AND ENTRANCE ACCESS TO PARCELS AT ALL TIMES.
3. FOR GENERAL TRAFFIC MANAGEMENT NOTES, SEE SHEET 8.0.
4. FOR CONSTRUCTION OF TYPICAL SECTIONS, SEE SHEET 8.0.
5. CONTRACTOR TO ENSURE THAT NO PAVEMENTS OR STRUCTURES ADJACENT TO PROPOSED CUTS ARE UNDERMINED. CONTRACTOR SHALL PROVIDE TEMPORARY MEASURES AS NEEDED OR DIRECTED BY TOWN INSPECTOR TO PROVIDE A SAFE TRANSITION BETWEEN THE INTERIM AREAS OF CONSTRUCTION.
6. CONTRACTOR SHALL HAVE PLATFORMS, PLATES, RAMPS OR OTHER METHODS AVAILABLE AT ALL TIMES AT THE LOCATION OF THE WORK TO ENSURE EMERGENCY VEHICLES AND PERSONNEL CAN ACCESS ROADWAYS, ENTRANCES, DOORS, ALLEYS, AND OTHER ACCESS POINTS AT ALL TIMES.
7. CONTRACTOR SHALL BE IN DAILY COMMUNICATION WITH EACH TENANT AND/OR BUSINESS OF WORK TAKING PLACE THAT WILL BE IMPACTING THEM AS WORK COMMENCES THROUGH PHASE 4
8. CONSTRUCTION CONES AND/OR BARRELS SHALL BE LEFT ALONG CURB LINE UNTIL THE ROADWAY PHASE IS COMPLETE
9. SIDEWALK DETOUR SIGNS ARE TO BE IN PLACE ANY TIME SIDEWALK IS BLOCKED DURING PHASE 4.

HOURS: ALLOWABLE WORKING HOURS ARE FROM 10 PM TO 10 AM.

LEGEND

	EXISTING OVERHEAD WIRE		WORK AREA
	EXISTING PROPERTY LINE		CONSTRUCTION PHASE DELINEATION
	EXISTING FIRE HYDRANT		PROPOSED SIGN
	EXISTING WATER VALVE		PROPOSED LIGHT POLE
	EXISTING WATER METER		CHANNELIZING DEVICE (DRUM)
	EXISTING UTILITY POLE		
	EXISTING LIGHT POLE		
	LIMITS OF DISTURBANCE		
	LIMITS OF DISTURBANCE/PERScriptive RIGHT OF WAY		
	PROPOSED CONCRETE SIDEWALK		

NOTE: PEDESTRIAN ACCESS TO ALL BUILDING AND BUSINESS ENTRANCES SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION DURING THEIR OPERATING HOURS PLUS ONE HOUR BEFORE AND AFTER.

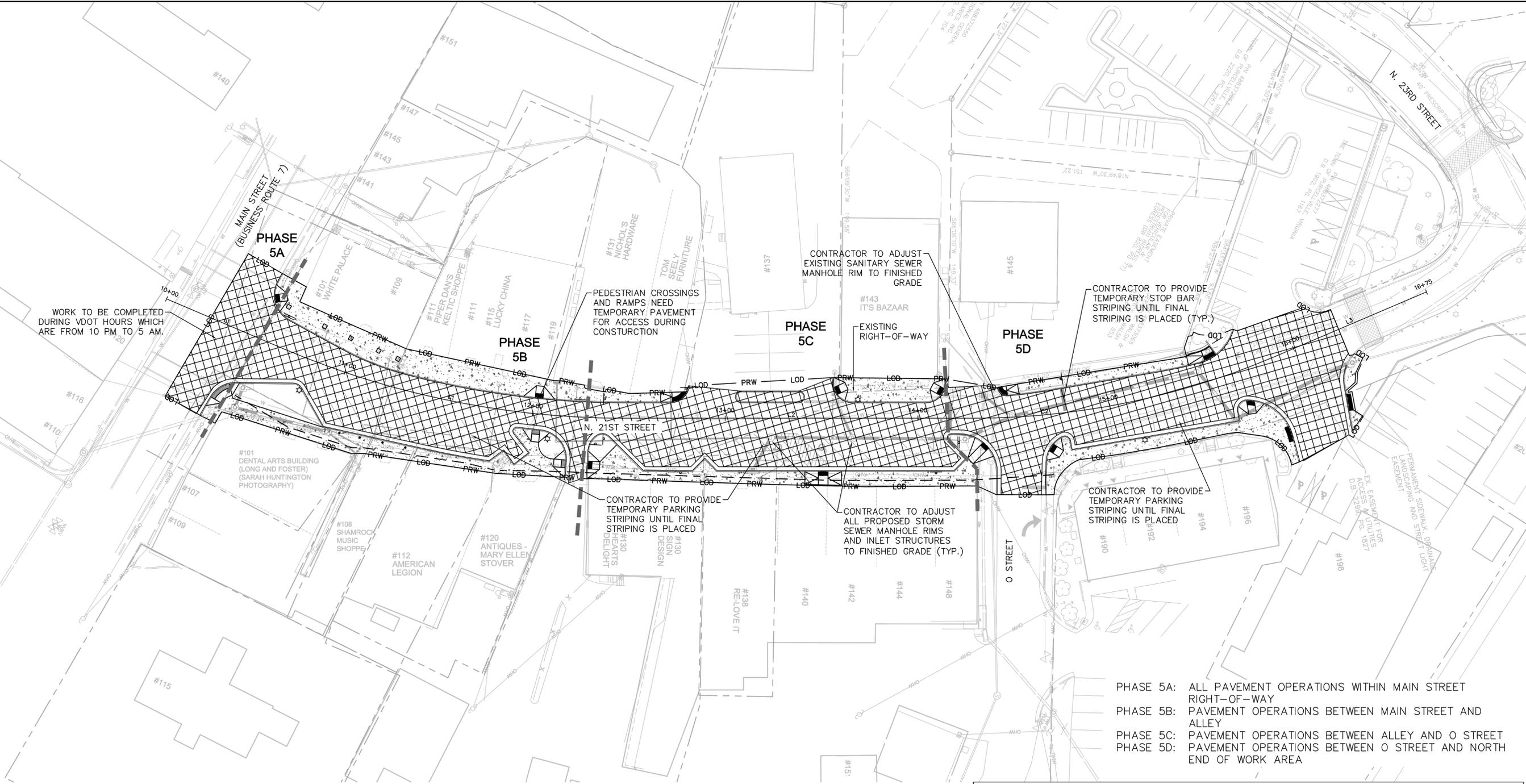
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GRAPHIC SCALE IN FEET
0 12.5 25 50

<p>Kimley Horn</p> <p>© 2014 KIMLEY-HORN AND ASSOCIATES, INC. 11400 COMMERCE PARK DRIVE, SUITE 400, RESTON, VA 20191 PHONE: 703-674-1300 FAX: 703-674-1350 WWW.KIMLEY-HORN.COM</p>	<p>COMMONWEALTH OF VIRGINIA</p> <p><i>Kyle T. Bollinger</i> KYLE T. BOLLINGER Lic. No. 051017 PROFESSIONAL ENGINEER</p>						
<p>KHA PROJECT 110280031</p> <p>DATE 06/19/2014</p> <p>SCALE AS SHOWN</p> <p>DESIGNED BY KTB</p> <p>DRAWN BY KTB</p> <p>CHECKED BY KVB</p>	<p>SEQUENCE OF CONSTRUCTION - PHASE 4</p> <p>21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA</p> <p>SHEET NUMBER 8.4</p>						
	<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>No.</th> <th>BY</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	BY	DATE			
No.	BY	DATE					

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WORK TO BE COMPLETED DURING VDOT HOURS WHICH ARE FROM 10 PM TO 5 AM.

- PHASE 5: SEQUENCE OF CONSTRUCTION**
- INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON SHEET 4.0 AND AS DIRECTED BY LOUDOUN COUNTY E&S INSPECTOR AND TOWN OF PURCELLVILLE.
 - PHASE 5A ROADWAY PAVING OPERATIONS SHALL TAKE PLACE DURING ALLOWABLE VDOT HOURS. OTHER ROADWAY PAVING/MILL OPERATIONS SHALL BE DONE AT NIGHT BETWEEN THE ALLOWABLE WORKING HOURS. CONTRACTOR SHALL HAVE ROAD OPEN TO TRAFFIC FROM 7 AM TO 10 PM, REQUIRING ALL DEMOLISHED/INSTALLED PAVEMENT TO BE TRAVERSABLE AT THE END OF NIGHT WORK CONSTRUCTION.
 - THROUGH TEMPORARY ROAD CLOSURES BETWEEN MAIN STREET AND O STREET AS NECESSARY:
 - GRADE AND BOX OUT FOR INSTALLATION OF 21ST STREET PAVEMENT.
 - PLACE PROPOSED HOT MIX ASPHALT PAVING SECTION UP TO THE TOP OF THE BASE COURSE.
 - THROUGH TEMPORARY LANE CLOSURES BETWEEN O STREET AND THE NORTH END OF THE WORK AREA AS NECESSARY:
 - GRADE AND BOX OUT FOR INSTALLATION OF 21ST STREET PAVEMENT.
 - PLACE PROPOSED HOT MIX ASPHALT PAVING SECTION UP TO THE TOP OF THE BASE COURSE.
 - TEMPORARY NIGHT ROAD CLOSURES BETWEEN MAIN STREET AND O STREET MAY BE NECESSARY. CONTRACTOR TO PROVIDE THE TOWN WITH ALTERNATE ROUTING AND CLOSURES. ALL TEMPORARY ROAD CLOSURES MAY ONLY OCCUR AT NIGHT BETWEEN 10 PM AND 5 AM FROM MONDAY TO THURSDAY. CONTRACTOR TO PROVIDE DETAILED PLAN AND SCHEDULE FOR ALL TEMPORARY ROAD CLOSURES AS WELL AS DETOUR SIGNAGE.

- NOTES:**
- SIGN AND MARK THE PROJECT VICINITY FOR CONSTRUCTION IN ACCORDANCE WITH THE CURRENT MUTCD, VIRGINIA WORK AREA PROTECTION MANUAL, AND THESE PLANS.
 - MAINTAIN 10' MINIMUM LANE WIDTHS IN EACH DIRECTION PLUS TURN LANES AND ENTRANCE ACCESS TO PARCELS AT ALL TIMES.
 - FOR GENERAL TRAFFIC MANAGEMENT NOTES, SEE SHEET 8.0.
 - FOR CONSTRUCTION OF TYPICAL SECTIONS, SEE SHEET 8.0.
 - CONTRACTOR TO ENSURE THAT NO PAVEMENTS OR STRUCTURES ADJACENT TO PROPOSED CUTS ARE UNDERMINED. CONTRACTOR SHALL PROVIDE TEMPORARY MEASURES AS NEEDED OR DIRECTED BY TOWN INSPECTOR TO PROVIDE A SAFE TRANSITION BETWEEN THE INTERIM AREAS OF CONSTRUCTION.
 - CONTRACTOR SHALL HAVE PLATFORMS, PLATES, RAMPS OR OTHER METHODS AVAILABLE AT ALL TIMES AT THE LOCATION OF THE WORK TO ENSURE EMERGENCY VEHICLES AND PERSONNEL CAN ACCESS ROADWAYS, ENTRANCES, DOORS, ALLEYS, AND OTHER ACCESS POINTS AT ALL TIMES.
 - CONTRACTOR SHALL BE IN DAILY COMMUNICATION WITH EACH TENANT AND/OR BUSINESS OF WORK TAKING PLACE THAT WILL BE IMPACTING THEM AS WORK COMMENCES THROUGH EACH SUB-PHASE.
 - DURING EACH SUB-PHASE, VEHICULAR TRAFFIC WILL BE ALLOWED TO DRIVE ON 21B GRAVEL IN THE ROADWAY AS THE ROADWAY IS BEING CONSTRUCTED. WORK WITHIN EACH SUB-PHASE MUST BE COMPLETED WITHIN 10 DAYS. IF WORK CANNOT BE COMPLETE, EXPOSED GRAVEL ROAD MUST BE PAVED BEFORE WORK CAN CONTINUE TO FINISH THE PHASE. CONTRACTOR MUST PROVIDE ROUGH ROAD (W8-8) SIGNS AS DIRECTED BY TOWN OF PURCELLVILLE INSPECTOR.
 - CONTRACTOR SHALL TAPER GRAVEL AT ALL LOCATIONS ADJACENT TO CURB, CURB/GUTTER, HANDICAP RAMPS, ENTRANCES, OTHER PAVEMENT, AND AT ALL LOCATIONS UNTIL BASE PAVEMENT IS INSTALLED.
 - AFTER BASE PAVEMENT INSTALLATION, CONTRACTOR SHALL INSTALL TAPERS AT ALL PAVEMENT TIE-IN LOCATIONS AND UTILIZE TEMPORARY CONSTRUCTION SIGNS FOR BUMP, AND SHALL INSTALL TEMPORARY ASPHALT 'SNOWCONES' AROUND ALL VALVE BOXES, FRAME AND COVERS, DRAINAGE STRUCTURES, AND OTHER ELEMENTS UNTIL SURFACE PAVEMENT IS INSTALLED. THIS SHALL BE INCLUDED IN THE COST OF OTHER ITEMS.

HOURS: PHASE 5A ALLOWABLE WORKING HOURS ARE FROM 10 PM TO 5 AM. PHASE 5B-5D ALLOWABLE WORKING HOURS ARE FROM 10 PM TO 7 AM. SEE NOTES 2 AND 5 IN THE SEQUENCE OF CONSTRUCTION ON THIS SHEET

- PHASE 5A: ALL PAVEMENT OPERATIONS WITHIN MAIN STREET RIGHT-OF-WAY
- PHASE 5B: PAVEMENT OPERATIONS BETWEEN MAIN STREET AND ALLEY
- PHASE 5C: PAVEMENT OPERATIONS BETWEEN ALLEY AND O STREET
- PHASE 5D: PAVEMENT OPERATIONS BETWEEN O STREET AND NORTH END OF WORK AREA

LEGEND

	EXISTING OVERHEAD WIRE		WORK AREA
	EXISTING PROPERTY LINE		CONSTRUCTION PHASE DELINEATION
	EXISTING FIRE HYDRANT		PROPOSED SIGN
	EXISTING WATER VALVE		PROPOSED LIGHT POLE
	EXISTING WATER METER		CHANNELIZING DEVICE (DRUM)
	EXISTING UTILITY POLE		
	EXISTING LIGHT POLE		
	LIMITS OF DISTURBANCE		
	LIMITS OF DISTURBANCE/PREScriptive RIGHT OF WAY		
	PROPOSED CONCRETE SIDEWALK		

NOTE: PEDESTRIAN ACCESS TO ALL BUILDING AND BUSINESS ENTRANCES SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION DURING THEIR OPERATING HOURS PLUS ONE HOUR BEFORE AND AFTER.

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GRAPHIC SCALE IN FEET
0 12.5 25 50

NO.	REVISIONS	DATE

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COMMONWEALTH OF VIRGINIA
KYLE T. BOLLINGER
Lic. No. 051017
PROFESSIONAL ENGINEER

KHA PROJECT	110280031
DATE	06/19/2014
SCALE	AS SHOWN
DESIGNED BY	KTB
DRAWN BY	KTB
CHECKED BY	KVB

SEQUENCE OF CONSTRUCTION - PHASE 5

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
PREPARED FOR
TOWN OF PURCELLVILLE
VIRGINIA

SHEET NUMBER
8.5

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CG-12 DETECTABLE WARNING SURFACE (GENERAL NOTES)

GENERAL NOTES:

1. THE DETECTABLE WARNING SHALL BE PROVIDED BY TRUNCATED DOMES.
2. DETECTABLE WARNING SHALL BE CLASS A-B CONCRETE CLASS A-B PRECAST WITH SLP RESISTANT INTEGRAL SURFACE COVERING THE FULL WIDTH OF THE RAMP FLOOR BY 2'-0" IN LENGTH IN THE DIRECTION OF TRAVEL. OTHER TYPES OF MATERIAL WITH THE TRUNCATED DOMES DETECTABLE WARNING MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
3. SLOPING SIDES OF CURB RAMP MAY BE PROVIDED MONUMENTICALLY WITH RAMP FLOOR OR BY USING PERMISSIBLE CONSTRUCTION JOINT WITH REQUIRED BARS.
4. RAMP FLOOR PRECAST HOLES MUST BE PROVIDED FOR DOWEL BARS SO THAT ADJOINING FLOOR SIDES CAN BE CAST TO PLACE AFTER PLACEMENT OF PRECAST RAMP FLOOR. PRECAST CONCRETE SHALL BE CLASS A-B.
5. DETECTABLE DOMES ARE TO BE NO. 10 BY PLACED CENTER TO CENTER ALONG BOTH SIDES OF THE RAMP FLOOR. MINIMUM DEPTH OF RAMP FLOOR, MINIMUM CONCRETE COVER: 1/2".
6. CURB & GUTTER OR OTHER SLOPE TRANSITIONS ADJACENT TO CURB RAMPS ARE TO BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THEY ARE TO BE PROVIDED AT INTERSECTIONS WHENEVER AN ACCESSIBLE ROUTE WITHIN THE RIGHT OF WAY OF A HIGHWAY FACILITY OR HIGHWAY RIGHT-OF-WAY IS TO BE PROVIDED FOR THE TRAVEL AND ACCESSIBLE ROUTE IS TO BE LOCATED BEHIND VEHICLE STOP LINES EXCEPT JOINT JOINTS FOR TRUCK TRAILERS. ACCESSIBLE ROUTE APPROVED BY THE ENGINEER. CONTIGUOUS ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.
7. RAMPS MAY BE PLACED ON RADIAL OR TANGENTIAL SECTIONS PROVIDED THAT THE CURB OPENING IS KEPT WITHIN THE LIMITS OF THE CROSSWALK AND THAT THE SLOPE AT THE CORNER OF THE CURB OPENING IS AT X:X, SAME AS TOP OF CURB.
8. TYPICAL CONCRETE SIDEWALK IS 4" THICK WHEN THE ENTRANCE RAMP CANNOT ACCOMMODATE THE TURNING REQUIREMENTS OF ANTICIPATED HEAVY TRUCK TRAFFIC, REFER TO STANDARD CIVIL COMMERCIAL ENTRANCE HEAVY TRUCK TRAFFIC FOR CONCRETE DETAIL.
9. WHEN CURB RAMPS ARE USED IN CONNECTION WITH A SHARED USE PATH, THE MINIMUM WIDTH SHALL BE THE WIDTH OF THE SHARED USE PATH.
10. WHEN ONLY ONE CURB RAMP IS PROVIDED FOR TWO CROSSINGS (DIAGONAL, A-B, OR TANGENTIAL), THE TRANSITION CROSSWALK SHALL BE 4'-4" WIDE.
11. ALL CASES WHERE CURB RAMPS INTERSECT A RADIAL SECTION OF CROSSWALK, THE DETECTABLE WARNING SURFACE SHALL BE FIELD MODIFIED AS RECOMMENDED BY THE MANUFACTURER TO MATCH THE BACK OF CURB.

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 2 REVISION DATE 7/11
303.05

CG-12 DETECTABLE WARNING SURFACE (GENERAL NOTES)
SHEET 1 OF 2 REVISION DATE 7/11
303.05

VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 7/11
303.05

CG-12 DETECTABLE WARNING SURFACE TYPE A (PERPENDICULAR) APPLICATION

VDOT ROAD AND BRIDGE STANDARDS
SHEET 3 OF 3 REVISION DATE 7/11
303.05

CG-12 DETECTABLE WARNING SURFACE TYPE B (PARALLEL) APPLICATION

VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 7/11
303.05

CG-12 DETECTABLE WARNING SURFACE TYPE B (PARALLEL) APPLICATION

VDOT ROAD AND BRIDGE STANDARDS
SHEET 3 OF 3 REVISION DATE 7/11
303.05

CONCRETE GRAVITY RETAINING WALL - LEVEL BACKFILL

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 1 REVISION DATE 4/01/1

HEIGHT OF WALL IN FEET	THICKNESS AT TOP IN FEET	THICKNESS AT BASE IN FEET	COMPRESSION AT TOP LBS. PER SQ. FT.	COMPRESSION AT BASE LBS. PER SQ. FT.	AREA OF SECTION SQ. FT.
2	1'-0"	4'-0"	627	2,633	
3	1'-2 1/2"	3'-8 1/2"	1,009	3,933	
4	1'-5 1/2"	3'-5 1/2"	1,569	5,833	
5	2'-0"	3'-2 1/2"	1,709	8,133	
6	2'-4 1/2"	2'-9 1/2"	2,049	10,833	
7	2'-9 1/2"	2'-6 1/2"	2,365	13,833	
8	3'-2 1/2"	2'-3 1/2"	2,720	17,433	
9	3'-7 1/2"	2'-0 1/2"	3,024	21,333	
10	4'-2 1/2"	1'-7 1/2"	3,326	25,633	
11	4'-7 1/2"	1'-4 1/2"	3,718	30,333	
12	5'-2 1/2"	1'-1 1/2"	4,050	35,433	
13	5'-7 1/2"	1'-0"	4,381	40,933	
14	6'-2 1/2"	0'-8 1/2"	4,712	46,833	
15	6'-7 1/2"	0'-6 1/2"	5,043	53,133	

STANDARD CURB DROP INLET

12" - 24" PIPE: MAXIMUM DEPTH (H) = 9'

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 2 REVISION DATE 10/4/03

STANDARD CURB DROP INLET
SHEET 1 OF 2 REVISION DATE 10/4/03

VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 10/4/03

STANDARD CURB DROP INLET

12" - 30" PIPE: MAXIMUM DEPTH (H) = 8'

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 2 REVISION DATE 05/10

STANDARD CURB DROP INLET
SHEET 1 OF 2 REVISION DATE 05/10

VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 05/10

MANHOLE FOR 12" - 48" PIPE CULVERTS

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 5 REVISION DATE 106.01

MANHOLE FOR 12" - 48" PIPE CULVERTS
SHEET 1 OF 5 REVISION DATE 106.01

CONCRETE PIPE HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD

DIAMETER INCHES	AREA SQ. FT.	MAXIMUM HEIGHT OF COVER IN FEET					DIAMETER INCHES
		NONREINFORCED CONCRETE (MINIMUM COVER IN FEET)	REINFORCED CONCRETE CLASS II	REINFORCED CONCRETE CLASS III	REINFORCED CONCRETE CLASS IV	REINFORCED CONCRETE CLASS V	
12	0.8	14'	18'	22'	25'	12	
15	1.2	14'	18'	22'	25'	15	
18	1.8	14'	18'	22'	25'	18	
21	2.4	14'	18'	22'	25'	21	
24	3.1	14'	18'	22'	25'	24	
27	4.0	14'	18'	22'	25'	27	
30	4.9	14'	18'	22'	25'	30	
33	5.9	14'	18'	22'	25'	33	
36	7.1	14'	18'	22'	25'	36	
42	9.6	14'	18'	22'	25'	42	
48	12.6	14'	18'	22'	25'	48	
54	15.9	14'	18'	22'	25'	54	
60	19.6	14'	18'	22'	25'	60	
66	23.8	14'	18'	22'	25'	66	
72	28.3	14'	18'	22'	25'	72	
78	33.2	14'	18'	22'	25'	78	
84	38.5	14'	18'	22'	25'	84	
90	44.4	14'	18'	22'	25'	90	
96	50.3	14'	18'	22'	25'	96	
102	56.7	14'	18'	22'	25'	102	
108	63.6	14'	18'	22'	25'	108	

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 5 REVISION DATE 107.05

CONCRETE PIPE HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD
SHEET 1 OF 5 REVISION DATE 107.05

STANDARD METHOD OF SHAPING MANHOLE & INLET INVERTS

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 1 REVISION DATE 105.08

STANDARD METHOD OF SHAPING MANHOLE & INLET INVERTS
SHEET 1 OF 1 REVISION DATE 105.08

VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 105.08

STANDARD 6" CURB

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 1 REVISION DATE 201.01

STANDARD 6" CURB
SHEET 1 OF 1 REVISION DATE 201.01

VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 201.01

COMBINATION 6" CURB AND GUTTER

VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 1 REVISION DATE 201.03

COMBINATION 6" CURB AND GUTTER
SHEET 1 OF 1 REVISION DATE 201.03

VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 201.03

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VDOT ROAD AND BRIDGE STANDARDS
SHEET 1 OF 1 REVISION DATE 201.03

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VDOT ROAD AND BRIDGE STANDARDS
SHEET 2 OF 2 REVISION DATE 201.03

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COMMONWEALTH OF VIRGINIA
KYLE T. BOLLINGER
Lic. No. 051017
PROFESSIONAL ENGINEER

CONSTRUCTION DETAILS

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
PREPARED FOR TOWN OF PURCELLVILLE
PURCELLVILLE, VIRGINIA

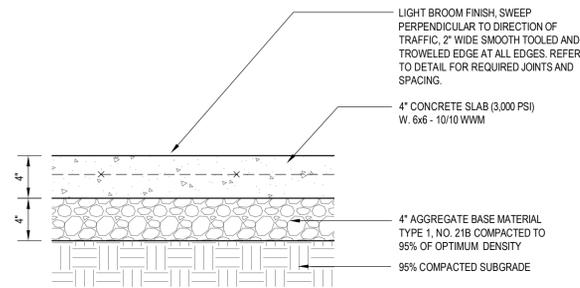
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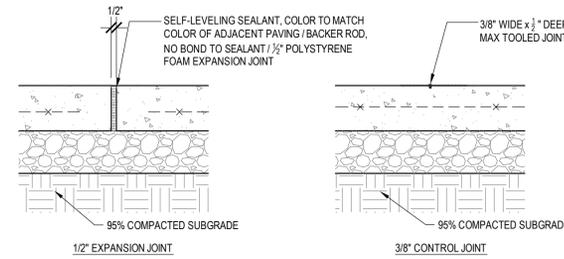
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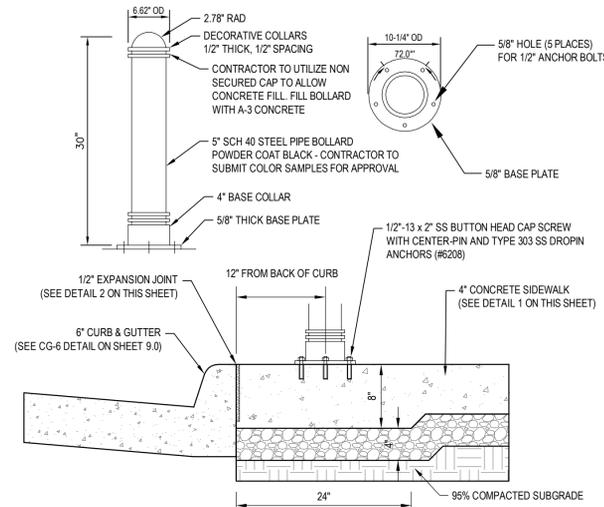


1 CONCRETE WALK
Scale: 1 1/2"=1'-0"

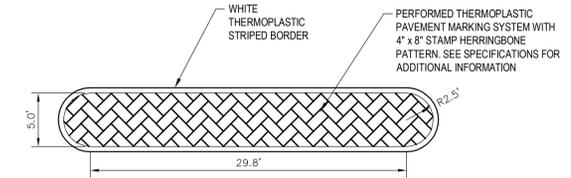


NOTES:
 1. EXPANSION JOINTS SHALL BE PROVIDED @ 50' INTERVALS MAX. AND AT MEETING OF ALL PAVEMENTS, WALLS, STEPS, VERTICAL SURFACES, BACKS OF CURB, SIGN POSTS, LIGHT POLES, ETC...
 2. 1/4" RADIUS ON ALL TOOLED EDGES.
 3. EXPANSION JOINTS RECESSED 1/4" BELOW FINISH GRADE OF WALK.

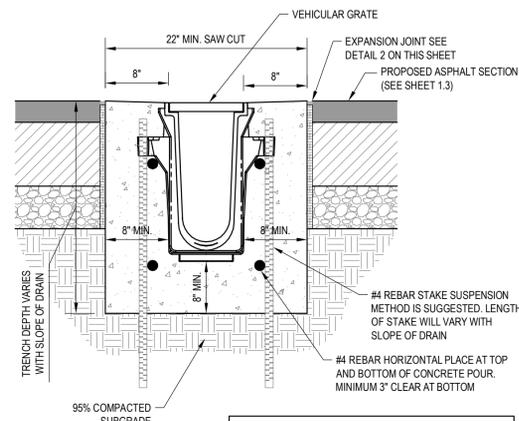
2 CONCRETE PAVING JOINTS
Scale: 1 1/2"=1'-0"



3 NON-LIGHT BOLLARD
Scale: NTS

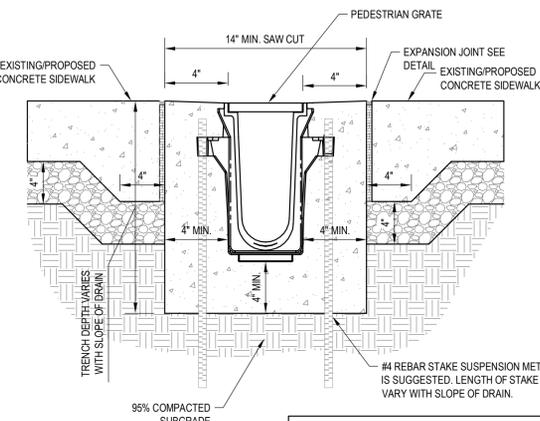


4 PEDESTRIAN STAMPED ASPHALT ISLAND
Scale: 1 1/2"=1'-0"



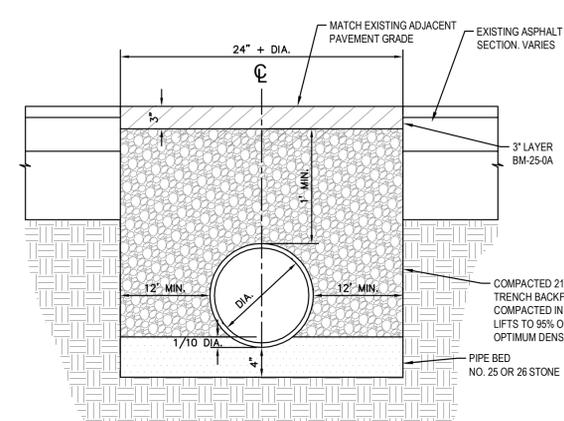
NOTE:
 CHANNELS TO BE INSTALLED WITH BLANK GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR (COVER HOLES WITH TAPE)
 SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 6" OF CONCRETE OR THICKNESS OF THE CONCRETE SLAB WITH A MINIMUM OF 3,500 P.S.I. AVOID FULL LOAD TRAFFIC FOR 28 DAYS OR UNTIL CONCRETE HAS COMPLETELY HARDENED.

5 ROADWAY TRENCH DRAIN DETAIL
Scale: N.T.S.



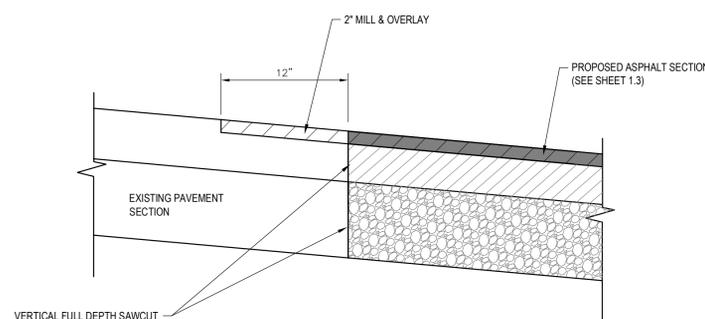
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 SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 4" OF CONCRETE OR THICKNESS OF THE CONCRETE SLAB WITH A MINIMUM OF 3,500 P.S.I. AVOID FULL LOAD TRAFFIC FOR 28 DAYS OR UNTIL CONCRETE HAS COMPLETELY HARDENED.

6 SIDEWALK TRENCH DRAIN DETAIL
Scale: N.T.S.



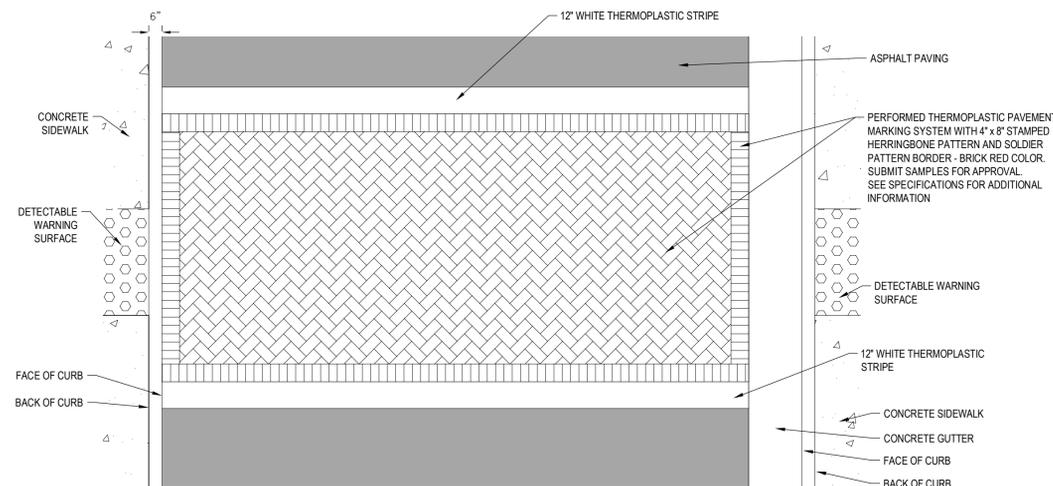
NOTE:
 FOR USE BETWEEN PHASE 1 AND PHASE 4 OF THE SEQUENCE OF CONSTRUCTION

7 TEMPORARY PAVEMENT TRENCH REPAIR DETAIL
(IN FULL DEPTH ROADWAY RECONSTRUCTION SECTIONS)
Scale: N.T.S.



*THICKNESS ASSUMED BASED ON MILLING 2" OF EXISTING SURFACE COURSE. IF EXISTING SURFACE COURSE IS THICKER, ADJUST PROPOSED BASE COURSE THICKNESS TO COMPENSATE.

8 FULL DEPTH PAVING CONNECTION TO EX. ASPHALT
Scale: 1 1/2"=1'-0"



9 STAMPED ASPHALT CROSSWALK - PLAN VIEW
Scale: NTS

NO.	REVISIONS	DATE	BY

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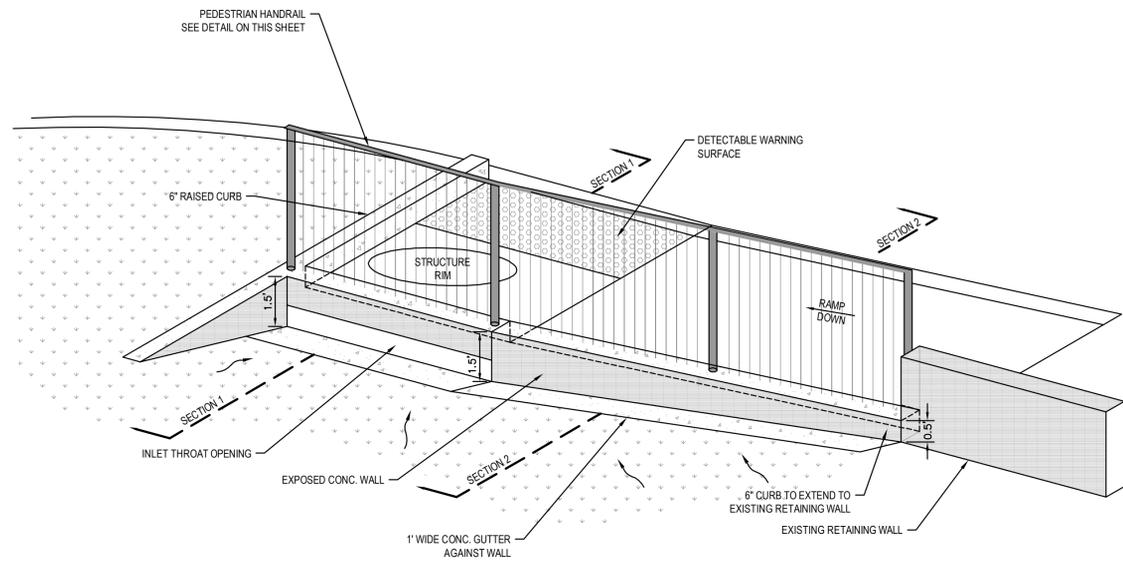
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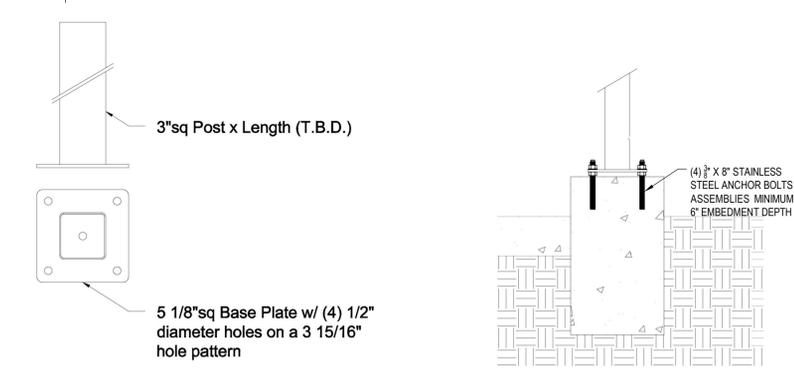
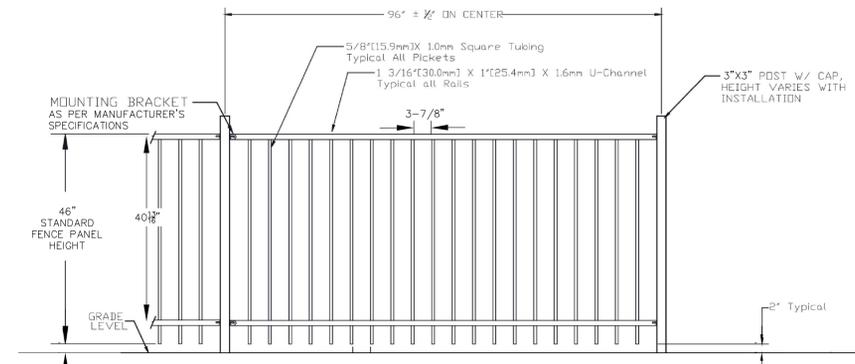
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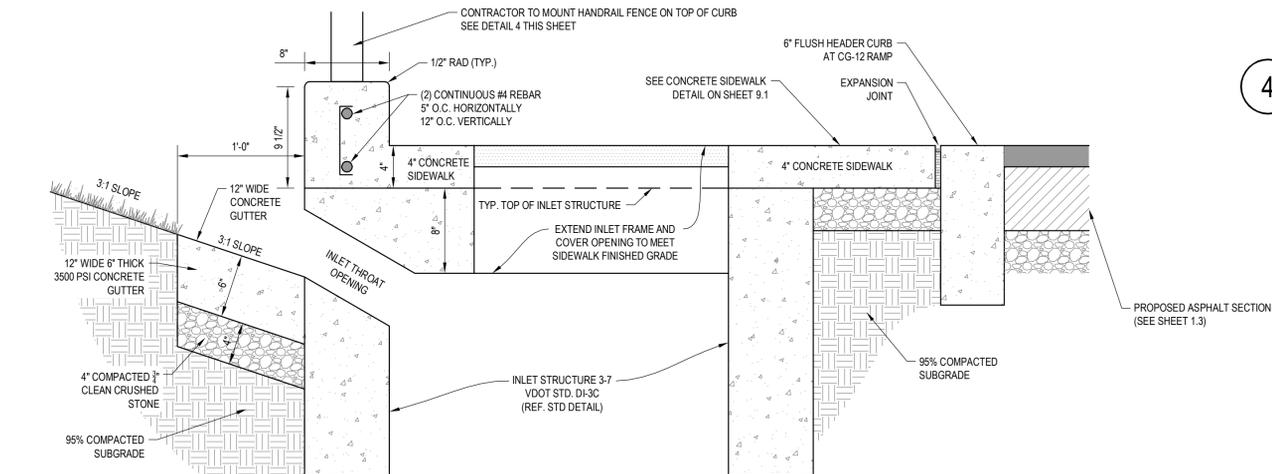
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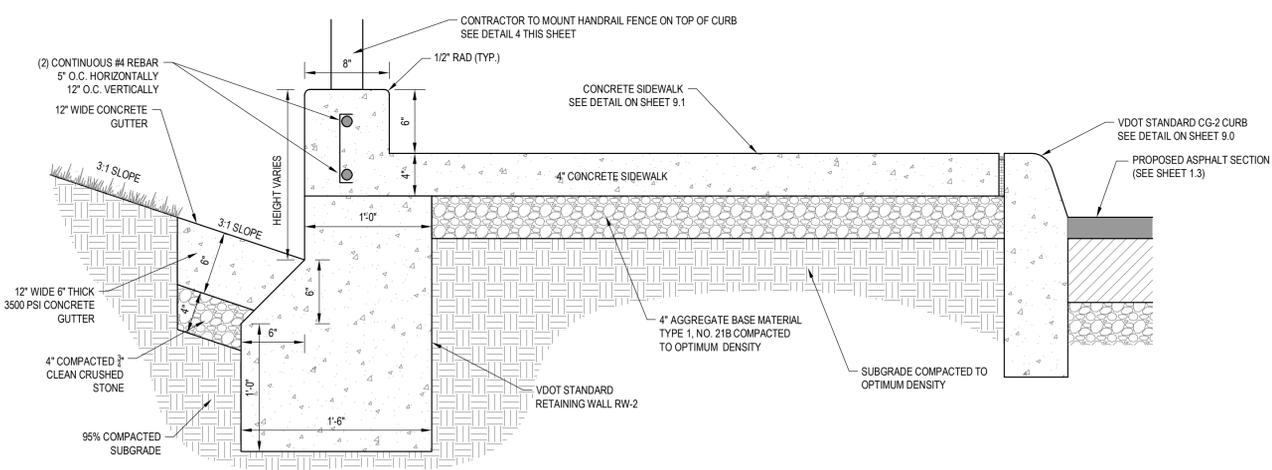
1 INLET 3-10 ISOMETRIC VIEW
Scale: N.T.S.



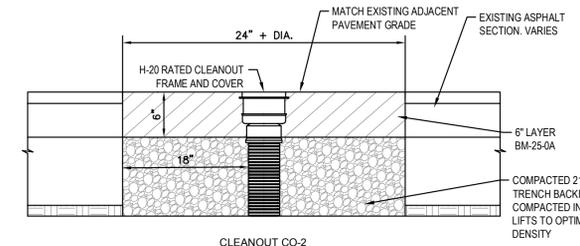
4 PEDESTRIAN HANDRAIL
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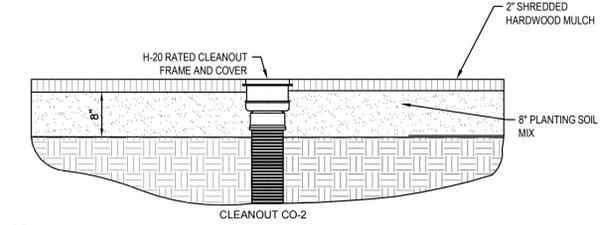
2 INLET 3-10 DETAIL SECTION 1
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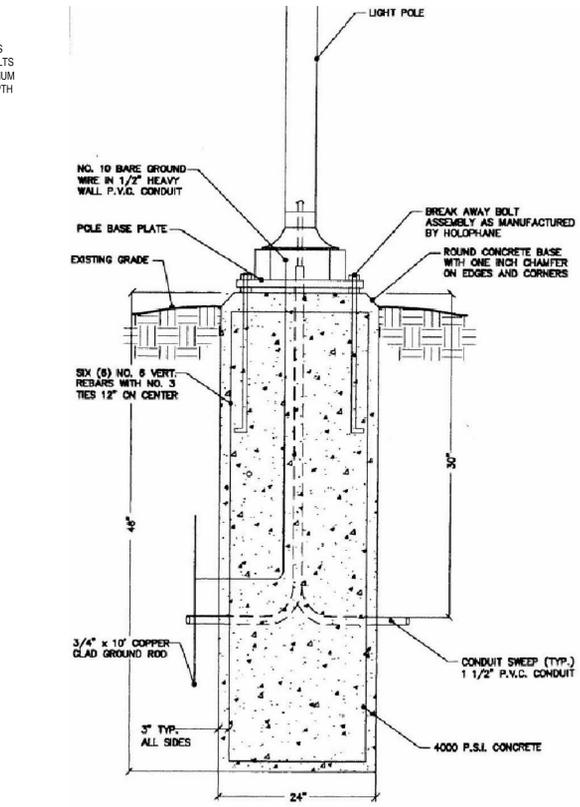
3 INLET 3-10 DETAIL SECTION 2
Scale: 1 1/2\"/>



5 STORM SEWER CLEAN-OUT - PHASE I
Scale: N.T.S.



6 STORM SEWER CLEAN-OUT - PHASE III
Scale: N.T.S.



7 STORM SEWER CLEAN-OUT - SIDEWALK
Scale: N.T.S.



NO.	REVISIONS	DATE	BY

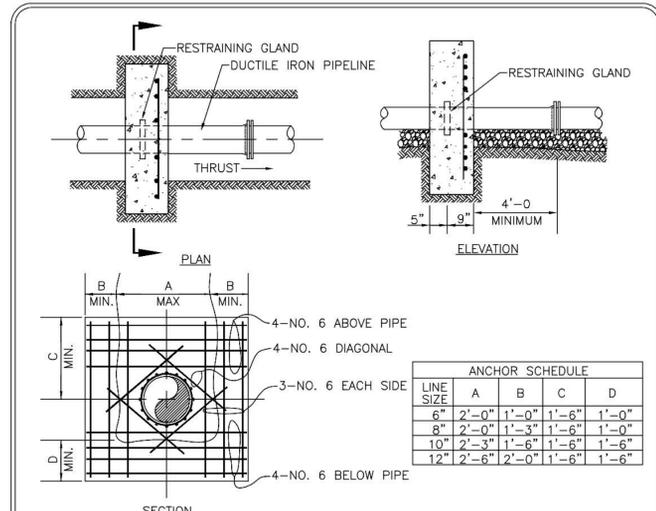
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COMMONWEALTH OF VIRGINIA
KYLE T. BOLLINGER
Lic. No. 051017
PROFESSIONAL ENGINEER

KHA PROJECT	110280031
DATE	06/19/2014
SCALE	AS SHOWN
DESIGNED BY	KTB
DRAWN BY	KTB
CHECKED BY	KVH

CONSTRUCTION DETAILS

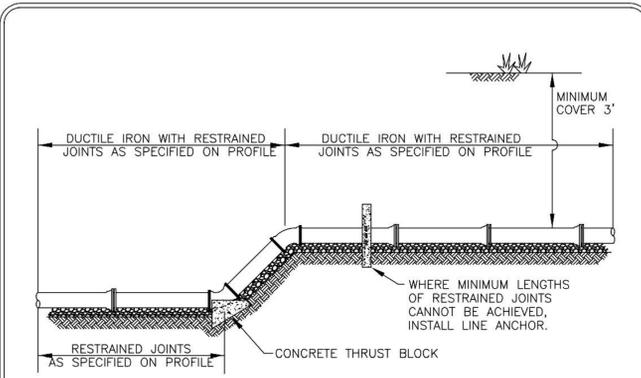
21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA



ANCHOR SCHEDULE				
LINE SIZE	A	B	C	D
6"	2'-0"	1'-0"	1'-6"	1'-0"
8"	2'-0"	1'-3"	1'-6"	1'-0"
10"	2'-3"	1'-6"	1'-6"	1'-6"
12"	2'-6"	2'-0"	1'-6"	1'-6"

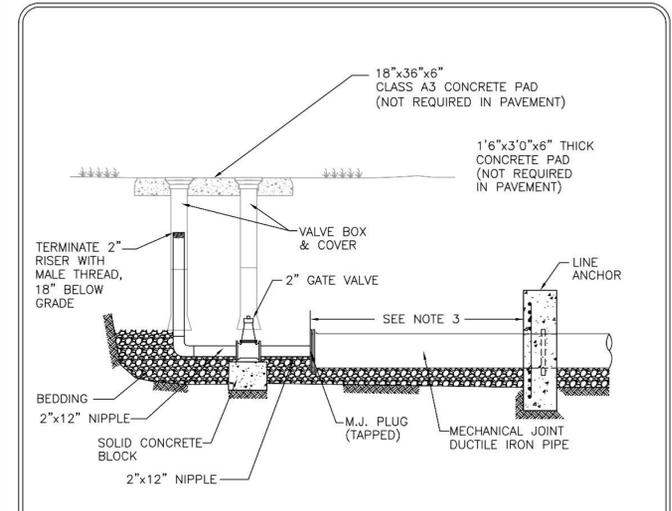
- NOTES:
- DIMENSIONS "B" & "D" ARE MINIMUM VALUES FOR BEARING IN UNDISTURBED EARTH. BEARING AREA IS BASED ON 150 PSI TEST PRESSURE & A SOIL BEARING OF 2500 PSF. INCREASE BLOCKING DIMENSIONS AS REQUIRED IN SOILS WITH LOWER BEARING VALUES.
 - MAINTAIN MINIMUM 1.5" CLEARANCE BETWEEN PIPE AND REBAR.
 - CONCRETE TO BE CLASS A3 (3000 PSI).
 - ANCHOR MUST BE MONOLITHIC (SINGLE POUR).
 - PRIOR TO BACKFILL FORMS MUST BE STRIPPED AND BLOCKING INSPECTED.
 - ALL MATERIALS MUST CONFORM TO LOUDOUN WATER'S APPROVED MATERIALS LIST.

APR. 2010 LINE ANCHOR G-9



- NOTES:
- THE MINIMUM DIMENSIONS ARE APPLICABLE FOR PIPE 12" AND SMALLER, AND A TEST PRESSURE OF 150 PSI. FOR LARGER PIPE OR HIGHER TEST PRESSURE, DIMENSIONS SHALL BE REVIEWED AND APPROVED BY LOUDOUN WATER.
 - EACH INSTALLATION WITH LESS THAN 3' COVER SHALL BE REVIEWED & APPROVED BY LOUDOUN WATER.
 - RESTRAIN ALL JOINTS FOR THE SPECIFIED DIMENSIONS IN BOTH DIRECTIONS FROM THE BENDS. BENDS SHALL BE RESTRAINED TO THE ADJACENT PIECES OF PIPE. JOINT TYPES SHALL BE ONE OF THE FOLLOWING:
 - 1.6" & LARGER
 - A) APPROVED RESTRAINED JOINT PIPING SYSTEM AND APPROVED RESTRAINING GLAND AT FITTINGS.
 - 1.2" & SMALLER
 - A) RESTRAINED JOINT PIPING SYSTEM SPECIFIED FOR THE PARTICULAR INSTALLATION.
 - B) FIELD LOK @ GASKET IN PUSH-ON JOINTS.
 - C) AMERICAN FASTGRIP @ IN PUSH-ON JOINTS.
 - D) APPROVED RESTRAINING GLAND AT FITTINGS.

APR. 2013 RESTRAINT OF VERTICAL OFFSET G-11



- NOTES:
- ALL 2" PIPE AND ELBOW TO BE DUCTILE IRON WITH N.P.T. THREADS AND FUSION BONDED EPOXY COATING.
 - WHERE PLANS DO NOT SPECIFY A MAINLINE VALVE WITHIN 50 FEET, OR WHERE A SERVICE CONNECTION OCCURS DOWNSTREAM OF NEAREST MAINLINE VALVE, PROVIDE MAINLINE VALVE UPSTREAM OF DEAD END ANCHOR. LOCATE VALVE PER NOTE 3 BELOW.
 - 4' TO ANCHOR ON LINE 12" & SMALLER. 8' TO ANCHOR ON LINE 16" & LARGER.
 - ALL MATERIALS MUST CONFORM TO APPLICABLE SECTIONS OF LOUDOUN WATER'S APPROVED MATERIALS LIST.

APR. 2010 TEMPORARY BLOW-OFF W-2

PP-1

NOTES:

- BACKFILL IS TO BE EITHER FLOWABLE BACKFILL OR FINE AGGREGATE AS PER THE SPECIFICATIONS AND IS TO BE PAID AS CUBIC YARDS OF FLOWABLE BACKFILL.
- FOR PLACEMENT OF STRUCTURES, SEE ROADWAY PLAN SHEETS.
- CONCRETE BRICK MAY BE USED IN LIEU OF CLAY BRICK JUMBO BRICK WILL BE PERMITTED.
- PRECAST NOTES:
 - CONCRETE TO BE 4000 P. S. I. MIN. COMPRESSIVE STRENGTH.
 - CONCRETE AND REINFORCING STEEL SHALL BE IN ACCORDANCE WITH AASHTO M170.
 - DETAIL SHOWN FOR PRECAST PLUG IS REPRESENTATIVE ONLY. OTHER MANUFACTURER'S DESIGN WILL BE ACCEPTABLE UPON APPROVAL BY THE ENGINEER.

QUANTITIES		
PIPE SIZE	CULYDS BACKFILL PER LINEAR FOOT	CULYDS CONG. PER EACH CONG. PLUG
12"	0.029	0.13
15"	0.045	0.29
18"	0.065	0.49
24"	0.105	0.90
30"	0.155	1.36
36"	0.215	1.94
42"	0.285	2.63
48"	0.365	3.44
54"	0.455	4.37
60"	0.555	5.41
66"	0.665	6.57
72"	0.785	7.84
78"	0.915	9.22
84"	1.055	10.71
90"	1.205	12.31
96"	1.365	14.02
102"	1.535	15.84
108"	1.715	17.77
114"	1.905	19.81
120"	2.105	21.96
126"	2.315	24.22

VDOT ROAD AND BRIDGE STANDARDS SHEET 1 OF 1 REVISION DATE 107.23

DETAILS FOR BACKFILLING ABANDONED CULVERTS SPECIFICATION REFERENCE VIRGINIA DEPARTMENT OF TRANSPORTATION

NO.	REVISIONS	DATE	BY

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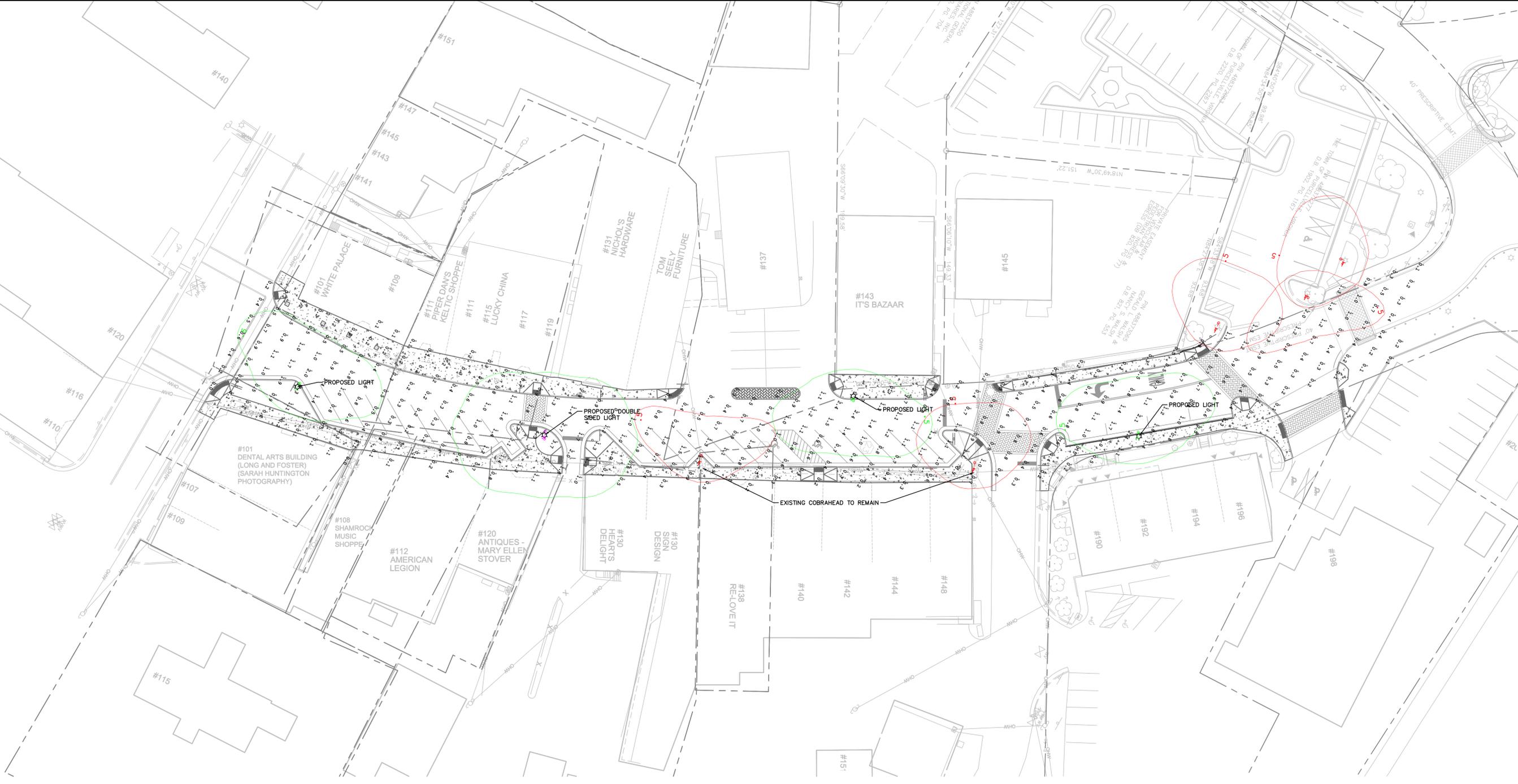
21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA

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Luminaire Schedule									
Project: Purcellville 21st Streetscape (64197) MAV v3									
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	Lum. Lumens	LLF	Description	Arm	BUG Rating
	3	A	SINGLE	N.A.	5272	0.850	DMS50-65W49LED4K-ES-LE3F (LC @ 20')	2	B1-U0-G1
	3	Existi	SINGLE	N.A.	3659	0.850	DMS50-90W49LED4K-LE4F (LC @ 20')	2	B1-U0-G1
	2	Existi	SINGLE	N.A.	3533	0.850	DMS50-40W49LED4K-LE3F (LC @ 20')	2	B1-U0-G1
	1	B	BACK-BACK	N.A.	5272	0.850	DMS50-65W49LED4K-ES-LE3F (LC @ 20')	2	B1-U0-G1

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ROADWAY	Illuminance	Fc	0.76	4.3	0.0	N.A.	N.A.



GRAPHIC SCALE IN FEET
0 12.5 25 50



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DATE: _____ BY: _____
REVISIONS: _____ NO. _____



KHA PROJECT: 110280031
DATE: 05/23/2014
SCALE: AS SHOWN
DESIGNED BY: KTB
DRAWN BY: KTB
CHECKED BY: KVB

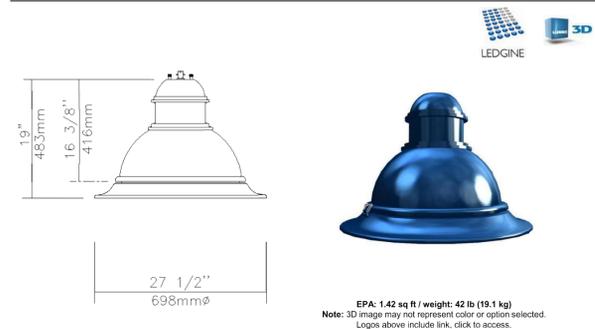
**LIGHTING LAYOUT
AND PHOTOMETRIC
PLAN**

**21ST & 23RD STREETSCAPE
IMPROVEMENTS PHASE II
PREPARED FOR
TOWN OF PURCELLVILLE**

VIRGINIA
SHEET NUMBER
10.0

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Purcellville 21st Streetscape (64197)



Description of Components:

Hood: A die cast A360.1 aluminum dome complete with a cast-in technical ring with latch and hinge. The mechanism shall offer toolfree access to the inside of the luminaire. An embedded memory-retentive gasket shall ensure weatherproofing.

Housing: In a round shape, this housing is made of cast 356 aluminum, c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8-16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degree increments.

Light Engine: LEDgine composed of 5 main components: **Lens / LED lamp / Optical System / Heat Sink / Driver**. Electrical components are RoHS compliant.

Lens: Made of soda-lime clear tempered glass lens, mechanically assembled and sealed onto the lower part of the heat sink.

Lamp: (Included). Lamp type Philips Lumileds Luxeon R. Composed of 48 high-performance white LEDs, 55w lamp wattage. Color temperature of 4000 Kelvin nominal, 70 CRI. Operating lifespan based on TM21 extrapolation to get results after which 50% of LEDs still emits over 70% (L70) of its original lumen output. Use of metal core board insures greater heat transfer and longer lifespan of the light engine. The LED circuit board is included with a connector, (no connection wire required for ease of replacement).

Optical System: (LE3F), IES type III (asymmetrical). Composed of high-performance optical grade PMMA acrylic refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumen and a perfect lighting uniformity. Optical system is rated IP66. Performance shall be tested per LM63 and LM79 and TM15 (IESNA) certifying its photometric performance. Street side indicated. Dark Sky compliant with 0% uplight and U0 per IESNA TM15.

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Purcellville 21st Streetscape (64197)



Wiring: Gauge (#14) TEW/AWM 1015 or 1230 wires, 6" (152mm) minimum exceeding top of the bracket.

Hardware: All exposed screws shall be stainless steel with Ceramic primer-seal basecoat to reduce seizing of the parts. All seals and sealing devices are made and/or lined with EPDM and/or silicone.

Finish: Color to be black textured RAL9005TX (BKTX) and in accordance with the AAMA 2603 standard. Application of a polyester powdercoat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D 2244 standard, as well as luster retention in keeping with the ASTM D 523 standard and humidity proof in accordance with the ASTM-D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM-B117 standard.

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

Vibration Resistance: The DMS50 meets the ANSI C136.31, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100 000 cycles by an independent lab)

Mechanical resistance: In order to ensure the mechanical resistance of the poles, the reflected area should be calculated according to AASHTO standards and resists to a wind of 140 km/hr.

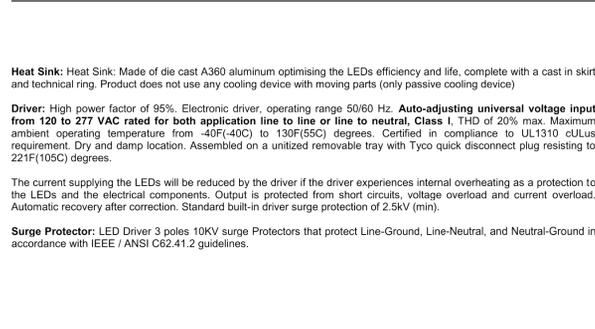
Web site information details: Click on any specific information details you need.

[Paint finish](#) / [Warranties](#) / [Installation pictures](#) / [ISO 9001-2008 Certification](#) / [ISO 14001-2004 Certification](#) / [CSA Pole Certification](#)

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Purcellville 21st Streetscape (64197)



Heat Sink: Heat Sink: Made of die cast A360 aluminum optimising the LEDs efficiency and life, complete with a cast in sink and technical ring. Product does not use any cooling device with moving parts (only passive cooling device)

Driver: High power factor of 95%, Electronic driver, operating range 50/60 Hz. **Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral. Class 1 THD of 20% max.** Maximum ambient operating temperature from -40F(-40C) to 130F(55C) degrees. Certified in compliance to UL1310 cULus requirement. Dry and damp location. Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221F(105C) degrees.

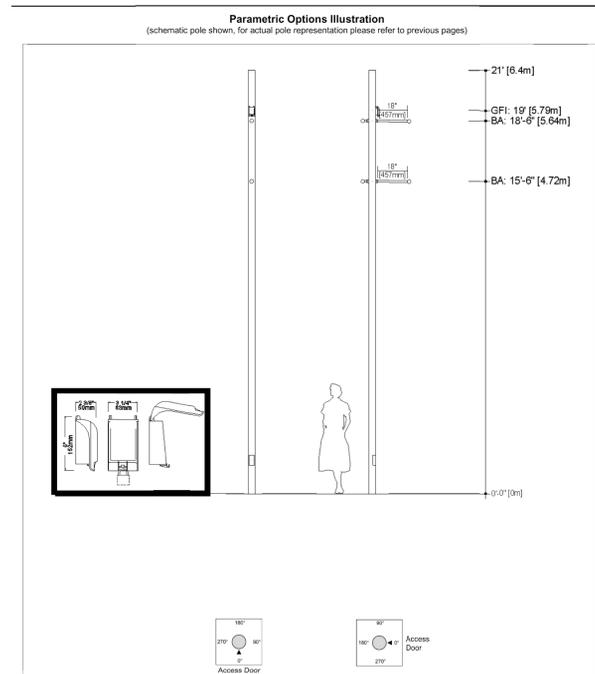
The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 2.5kV (min).

Surge Protector: LED Driver 3 poles 10kV surge Protectors that protect Line-Ground, Line-Neutral, and Neutral-Ground in accordance with IEEE / ANSI C62.41.2 guidelines.

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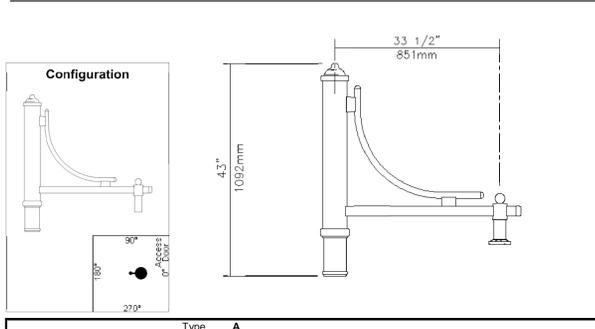
Purcellville 21st Streetscape (64197)



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Purcellville 21st Streetscape (64197)



Configuration: Made of aluminum tubing 6061-T6, 2" x 2" (51mm x 51mm), welded.

Decorative Element: Made of cast 356 aluminum, 1.5/8"(42mm) outside diameter, welded.

Adaptor: Made of cast 356 aluminum, welded.

Central Adaptor: Made of aluminum 6061-T6, 5" (127mm) outside diameter. Complete with a cast 356 aluminum fitter that slip-fits 9" (229mm) over a 4" (102mm) outside diameter pole tenon. Mechanically assembled using two sets of four set screws at 90 degrees around the bracket.

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Purcellville 21st Streetscape (64197)

LED light engine technical information for DMS50 DMS55 RN20 RN30 with flat lens

LED - Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (±7-550K)

System (LED + driver) rated life = 100,000 hrs¹

Lamp	Typical delivered lumens	Typical system efficacy ² (lm)	Typical current @ 120V (A)	Typical current @ 208V (A)	Typical current @ 240V (A)	Typical current @ 277V (A)	LED current (mA)	LED equivalent ³	Luminaire efficacy (lm/W)	IESNA rating
35W32LED4K-R-LE3F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	81-100-01
35W32LED4K-R-LE3F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	81-100-01
35W32LED4K-R-LE4F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	81-100-01
35W32LED4K-R-LE3F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	82-100-01
35W32LED4K-R-LE3F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	82-100-01
35W32LED4K-R-LE3F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	82-100-01
35W32LED4K-R-LE4F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	82-100-01
35W32LED4K-R-LE3F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	83-100-01
35W48LED4K-R-LE3F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	82-100-01
35W48LED4K-R-LE3F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	82-100-01
35W48LED4K-R-LE4F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	83-100-01
35W48LED4K-R-LE3F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	83-100-01
80W48LED4K-R-LE3F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	82-100-02
80W48LED4K-R-LE3F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	82-100-02
80W48LED4K-R-LE4F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	82-100-02
80W48LED4K-R-LE3F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	83-100-02
70W48LED4K-R-LE3F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	82-100-01
70W48LED4K-R-LE3F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	83-100-01
70W48LED4K-R-LE4F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	82-100-01
70W48LED4K-R-LE3F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	83-100-01
110W48LED4K-R-LE3F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
110W48LED4K-R-LE3F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
110W48LED4K-R-LE4F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
110W48LED4K-R-LE3F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
90W90LED4K-R-LE3F	8900	90	0.78	0.43	0.40	0.34	350	150-175	98.9	82-100-02
90W90LED4K-R-LE3F	8900	90	0.78	0.43	0.40	0.34	350	150-175	98.9	82-100-02
90W90LED4K-R-LE4F	8900	90	0.78	0.43	0.40	0.34	350	150-175	98.9	83-100-02
90W90LED4K-R-LE3F	8900	90	0.78	0.43	0.40	0.34	350	150-175	98.9	83-100-02
135W90LED4K-R-LE3F	12600	128	1.15	0.61	0.58	0.5	530	250-320	98.4	83-100-02
135W90LED4K-R-LE3F	12600	128	1.15	0.61	0.58	0.5	530	250-320	98.4	83-100-02
135W90LED4K-R-LE4F	12600	128	1.15	0.61	0.58	0.5	530	250-320	98.4	83-100-02
135W90LED4K-R-LE3F	12600	128	1.15	0.61	0.58	0.5	530	250-320	98.4	84-100-02

¹ L70 = 100,000 hrs (at ambient temperature = 25°C and forward current = 700 mA)

² System wattage includes the lamp and the LED driver.

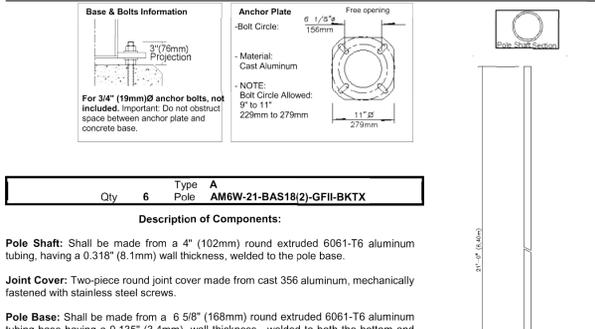
³ Efficacy values should always be confirmed by a photometric layout.

Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

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Purcellville 21st Streetscape (64197)



Base & Bolts Information: For 3/4" (19mm) anchor bolts, not included. Important: Do not obstruct space between anchor plate and concrete base.

Anchor Plate: - Bolt Circle: 8 1/8" (156mm) - Material: Cast Aluminum - NOTE: Bolt Circle Allowed: 8" to 11" (229mm to 279mm)

Description of Components:

Pole Shaft: Shall be made from a 4" (102mm) round extruded 6061-T6 aluminum tubing, having a 0.318" (8.1mm) wall thickness, welded to the pole base.

Joint Cover: Two-piece round joint cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Base: Shall be made from a 6 5/8" (168mm) round extruded 6061-T6 aluminum tubing base having a 0.135" (3.4mm) wall thickness, welded to both the bottom and top of the anchor plate.

Maintenance Opening: The pole shall have a 4 1/2" x 10" (114mm x 254mm) maintenance opening centered 21" (533mm) from the bottom of the anchor plate, complete with a weatherproof embossed aluminum cover and a copper ground lug.

Base Cover: Two piece round base cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Options: (BA) Single, upper and lower arms (2), fixed standard type, made of steel tubing, 1 1/16" (27mm) outside diameter, mechanically assembled to the pole, complete with a standard cast aluminum decorative ball. - (GF1) Duplex receptacle, WVR Weather Resistant, 120 volts, ground fault interrupter, complete with an in-use weatherproof aluminum painted cover. Possibility of padlock (Padlock not included), 15 amp., NEMA 5-15R.

Note: A tenon will be provided when the luminaire or bracket does not fit directly on pole shaft. Tenon not shown on the drawing.

IMPORTANT: Philips Lumec strongly recommends the installation of the complete lighting assembly with all of its accessories upon the anchoring of the pole. This will ensure that the structural integrity of the product is maintained throughout its lifetime.

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Purcellville 21st Streetscape (64197)

LED light engine technical information for DMS50 DMS55 RN20 RN30 with flat lens

LED - Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (±7-550K)

System (LED + driver) rated life = 100,000 hrs¹

Lamp	Typical delivered lumens	Typical system efficacy ² (lm)	Typical current @ 120V (A)	Typical current @ 208V (A)	Typical current @ 240V (A)	Typical current @ 277V (A)	LED current (mA)	LED equivalent ³	Luminaire efficacy (lm/W)	IESNA rating
35W32LED4K-R-LE3F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	81-100-01
35W32LED4K-R-LE3F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	81-100-01
35W32LED4K-R-LE4F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	81-100-01
35W32LED4K-R-LE3F	3500	36	0.29	0.17	0.16	0.15	350	70-100	97.2	82-100-01
35W32LED4K-R-LE3F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	82-100-01
35W32LED4K-R-LE3F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	82-100-01
35W32LED4K-R-LE4F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	82-100-01
35W32LED4K-R-LE3F	5000	53	0.40	0.23	0.21	0.19	530	100-150	94.3	83-100-01
35W48LED4K-R-LE3F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	82-100-01
35W48LED4K-R-LE3F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	82-100-01
35W48LED4K-R-LE4F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	83-100-01
35W48LED4K-R-LE3F	3300	55	0.38	0.22	0.23	0.21	350	100-150	96.4	83-100-01
80W48LED4K-R-LE3F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	82-100-02
80W48LED4K-R-LE3F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	82-100-02
80W48LED4K-R-LE4F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	82-100-02
80W48LED4K-R-LE3F	7600	79	0.63	0.36	0.34	0.31	530	150-175	96.2	83-100-02
70W48LED4K-R-LE3F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	82-100-01
70W48LED4K-R-LE3F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	83-100-01
70W48LED4K-R-LE4F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	82-100-01
70W48LED4K-R-LE3F	7000	71	0.58	0.34	0.32	0.3	350	100-150	98.6	83-100-01
110W48LED4K-R-LE3F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
110W48LED4K-R-LE3F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
110W48LED4K-R-LE4F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
110W48LED4K-R-LE3F	10100	103	0.8	0.46	0.42	0.38	530	175-200	98.1	83-100-02
90W90LED4K-R-LE3F	8900	90	0.78	0.43	0.40	0.34	350	150-175	98.9	82-100-02
90W90LED4K-R-LE3F	8900	90	0.78	0.43	0.40	0.34	350	150-175		

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Purcellville 21st Streetscape (64197)

LEDgine

19" 483mm
16 3/8" 416mm
27 1/2" 698mm

EPA: 1.42 sq ft / weight: 42 lb (19.1 kg)
Note: 3D image may not represent color or option selected. Logos above include link, click to access.

Qty	Type	Double
2	Luminaire	DMS50-55W48LED4K-R-LE3F-120-BKTX

Description of Components:

Hood: A die cast A360.1 aluminum dome complete with a cast-in technical ring with latch and hinge. The mechanism shall offer roofless access to the inside of the luminaire. An embedded memory-retentive gasket shall ensure weatherproofing.

Housing: In a round shape, this housing is made of cast 356 aluminum, c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8-16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degree increments.

Light Engine: LEDgine composed of 5 main components: **Lens / LED lamp / Optical System / Heat Sink / Driver**. Electrical components are RoHS compliant.

Lens: Made of soda-lime clear tempered glass lens, mechanically assembled and sealed onto the lower part of the heat sink.

Lamp: (Included), LED type Philips Lumileds LUXEON R. Composed of 48 high-performance white LEDs, 55w lamp wattage. Color temperature of 4000 Kelvin nominal, 70 CRI. Operating lifespan based on TM21 extrapolation to get results after which 50% of LEDs still emits over 70% (L70) of its original lumen output. Use of metal core board insures greater heat transfer and longer lifespan of the light engine. The LED circuit board is included with a connector, (no connection wire required for ease of replacement).

Optical System: (LE3F), IES type III (asymmetrical). Composed of high-performance optical grade PMMA acrylic refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. Optical system is rated IP66. Performance shall be tested per LM-63 and LM-79 and TM-15 (IESNA) certifying its photometric performance. Street side indicated. Dark Sky compliant with 0% uplight and U0 per IESNA TM-15.

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Purcellville 21st Streetscape (64197)

Miscellaneous

Description of Components:

Wiring: Gauge (#14) TEW/AWM 1015 or 1230 wires, 6" (152mm) minimum exceeding top of the bracket.

Hardware: All exposed screws shall be stainless steel with Ceramic primer-seal basecoat to reduce seizing of the parts. All seals and sealing devices are made and/or lined with EPDM and/or silicone.

Finish: Color to be black textured RAL9005TX (BKTX) and in accordance with the AAMA 2603 standard. Application of a polyester powdercoat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D 2244 standard, as well as luster retention in keeping with the ASTM D 523 standard and humidity proof in accordance with the ASTM-D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM-B117 standard.

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

Vibration Resistance: The DMS50 meets the ANSI C136.31, American National Standard for Roadway Luminaire Vibration specifications for Bridgeloop applications. (Tested for 3G over 100 000 cycles by an independent lab)

Mechanical resistance: In order to ensure the mechanical resistance of the poles, the reflected area should be calculated according to AASHTO standards and resists to a wind of 140 km/hr.

Web site information details: Click on any specific information details you need:

[Paint finish](#) / [Warranties](#) / [Installation pictures](#) / [ISO 9001-2008 Certification](#) / [ISO 14001-2004 Certification](#) / [CSA Pole Certification](#)

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Purcellville 21st Streetscape (64197)

Heat Sink: Heat Sink: Made of die cast A360 aluminum optimising the LEDs efficiency and life, complete with a cast in skirt and technical ring. Product does not use any cooling device with moving parts (only passive cooling device)

Driver: High power factor of 95%. Electronic driver, operating range 50/60 Hz. **Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class 1, THD of 20% max.** Maximum ambient operating temperature from -40F(-40C) to 130F(55C) degrees. Certified in compliance to UL1310 cULus requirement. Dry and damp location. Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221F(105C) degrees.

The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 2.5kV (min).

Surge Protector: LED Driver 3 poles 10kV surge Protectors that protect Line-Ground, Line-Neutral, and Neutral-Ground in accordance with IEEE / ANSI C62.41.2 guidelines.

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Purcellville 21st Streetscape (64197)

Parametric Options Illustration
(schematic pole shown, for actual pole representation please refer to previous pages)

21' [6.4m]
GF1: 19' [5.79m]
BA: 18'-6" [5.64m]
BA: 15'-6" [4.72m]
6'-0" [1.8m]

Access Door

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Purcellville 21st Streetscape (64197)

Configuration

33 1/2" 851mm
1092mm
4.3"
30°
180°
270°
90°
180°
270°

Qty	Type	Double
1	Bracket	CRI-2-BKTX

Description of Components:

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Purcellville 21st Streetscape (64197)

LED light engine technical information for DMS50 DMS55 RH20 RN30 TR20 AT50 with flat lens
LED = Philips Lumileds Luxeon R, CR - 70, CCT - 4000K (+/- 150K)

Lamp	Typical delivered lumens	Typical system voltage ¹ (V)	Typical current @ 120V (A)	Typical current @ 208V (A)	Typical current @ 240V (A)	Typical current @ 277V (A)	LED current (mA)	LED equivalent ² (lm)	Luminaire Efficiency Rating (lm/W)	BOD rating
35W32LED4K-R-LE3F	3678	35	0.29	0.17	0.16	0.15	350	70-100	105.1	B1-U0-G1
35W32LED4K-R-LE3F	3859	35	0.29	0.17	0.16	0.15	350	70-100	110.2	B1-U0-G1
35W32LED4K-R-LE3F	3578	35	0.29	0.17	0.16	0.15	350	70-100	102.2	B1-U0-G1
35W32LED4K-R-LE3F	3502	35	0.29	0.17	0.16	0.15	350	70-100	101.5	B2-U0-G1
35W32LED4K-R-LE3F	5141	52	0.40	0.23	0.21	0.19	530	100-150	98.9	B1-U0-G1
35W32LED4K-R-LE3F	5404	52	0.40	0.23	0.21	0.19	530	100-150	103.9	B2-U0-G1
35W32LED4K-R-LE3F	5002	52	0.40	0.23	0.21	0.19	530	100-150	96.2	B1-U0-G1
35W32LED4K-R-LE3F	4966	52	0.40	0.23	0.21	0.19	530	100-150	95.5	B3-U0-G1
35W48LED4K-R-LE3F	5301	55	0.38	0.22	0.23	0.21	350	100-150	96.4	B1-U0-G1
35W48LED4K-R-LE3F	5566	55	0.38	0.22	0.23	0.21	350	100-150	101.2	B2-U0-G1
35W48LED4K-R-LE3F	5158	55	0.38	0.22	0.23	0.21	350	100-150	93.8	B1-U0-G1
35W48LED4K-R-LE3F	5120	55	0.38	0.22	0.23	0.21	350	100-150	93.1	B3-U0-G1
30W48LED4K-R-LE3F	7424	79	0.63	0.36	0.34	0.31	530	150-175	94.3	B2-U0-G2
30W48LED4K-R-LE3F	7833	79	0.63	0.36	0.34	0.31	530	150-175	99.2	B2-U0-G2
30W48LED4K-R-LE3F	7252	79	0.63	0.36	0.34	0.31	530	150-175	91.8	B2-U0-G2
30W48LED4K-R-LE3F	7200	79	0.63	0.36	0.34	0.31	530	150-175	91.1	B3-U0-G2
30W48LED4K-R-LE3F	7478	71	0.58	0.34	0.32	0.3	350	100-150	105.9	B2-U0-G1
30W48LED4K-R-LE3F	7849	71	0.58	0.34	0.32	0.3	350	100-150	110.6	B2-U0-G2
30W48LED4K-R-LE3F	7276	71	0.58	0.34	0.32	0.3	350	100-150	102.5	B2-U0-G2
30W48LED4K-R-LE3F	7223	71	0.58	0.34	0.32	0.3	350	100-150	101.7	B3-U0-G1
110W48LED4K-R-LE3F	10545	103	0.8	0.46	0.42	0.38	530	175-200	102.6	B2-U0-G2
110W48LED4K-R-LE3F	11097	103	0.8	0.46	0.42	0.38	530	175-200	107.7	B3-U0-G2
110W48LED4K-R-LE3F	10279	103	0.8	0.46	0.42	0.38	530	175-200	99.8	B2-U0-G2
110W48LED4K-R-LE3F	10206	103	0.8	0.46	0.42	0.38	530	175-200	99.1	B3-U0-G1
30W80LED4K-R-LE3F	9163	87	0.78	0.43	0.40	0.34	350	150-175	105.3	B2-U0-G2
30W80LED4K-R-LE3F	9626	87	0.78	0.43	0.40	0.34	350	150-175	110.8	B3-U0-G2
30W80LED4K-R-LE3F	8935	87	0.78	0.43	0.40	0.34	350	150-175	102.5	B2-U0-G2
30W80LED4K-R-LE3F	8851	87	0.78	0.43	0.40	0.34	350	150-175	101.7	B3-U0-G2
135W80LED4K-R-LE3F	12884	129	1.15	0.61	0.58	0.5	530	250-320	100.0	B3-U0-G2
135W80LED4K-R-LE3F	13544	129	1.15	0.61	0.58	0.5	530	250-320	105.0	B3-U0-G2
135W80LED4K-R-LE3F	12545	129	1.15	0.61	0.58	0.5	530	250-320	97.2	B3-U0-G2
135W80LED4K-R-LE3F	12454	129	1.15	0.61	0.58	0.5	530	250-320	96.5	B4-U0-G2

¹ L70 = 100,000 hrs (at ambient temperature = 25°C and forward current = 700 mA)
² System voltage includes the lamp and the LED driver.
Equivalence should always be confirmed by a photometric layout.
Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

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Purcellville 21st Streetscape (64197)

Base & Bolts Information

3 (7.6mm) Projection
For 3/4" (19mm) anchor bolts, not included. Important: Do not obstruct space between anchor plate and concrete base.

Anchor Plate
Bolt Circle: 1 1/8" 156mm
Free opening
Thickness: 3/4" (19mm)
NOTE: Bolt Circle Allowed: 9" to 11" 229mm to 279mm

21'-0" (6.4m)
11" 279mm
11" 279mm

Qty	Type	Double
1	Pole	SM6N-21-BAS18(2)-GFII-BKTX

Description of Components:

Pole Shaft: Shall be made from a 4" (102mm) round high tensile carbon steel tubing, having a 0.188" (4.8mm) wall thickness, welded to the pole base.

Joint Cover: Two-piece round joint cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Base: Shall be made from a 6 5/8" (168mm) round high tensile carbon steel tubing base having a 0.180" (4.6mm) wall thickness, welded to both the bottom and top of the anchor plate.

Maintenance Opening: The pole shall have a 4 1/2" x 10" (114mm x 254mm) maintenance opening centered 21" (533mm) from the bottom of the anchor plate, complete with a weatherproof embossed aluminum cover and a copper ground lug.

Base Cover: Two piece round base cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Options: (BA) Single, upper and lower arms (2), fixed standard type, made of steel tubing, 1 1/16" (27mm) outside diameter, mechanically assembled to the pole, complete with a standard cast aluminum decorative ball. (GF) Duplex receptacle, WR Weather Resistant, 120 volts, ground fault interrupter, complete with an in-use weatherproof aluminum painted cover. Possibility of padlock (Padlock not included). 15 amp., NEMA 5-15R.

Note: A tenon will be provided when the luminaire or bracket does not fit directly on pole shaft. Tenon not shown on the drawing.

IMPORTANT: Philips Lumec strongly recommends the installation of the complete lighting assembly with all of its accessories upon the anchoring of the pole. This will ensure that the structural integrity of the product is maintained throughout its lifetime.

Pole Weight: 166 lbs (75.5 kg)

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Miscellaneous

Description of Components:

Wiring: Gauge (#14) TEW/AWM 1015 or 1230 wires, 6" (152mm) minimum exceeding top of the bracket.

Hardware: All exposed screws shall be stainless steel with Ceramic primer-seal basecoat to reduce seizing of the parts. All seals and sealing devices are made and/or lined with EPDM and/or silicone.

Finish: Color to be black textured RAL9005TX (BKTX) and in accordance with the AAMA 2603 standard. Application of a polyester powdercoat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D 2244 standard, as well as luster retention in keeping with the ASTM D 523 standard and humidity proof in accordance with the ASTM-D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM-B117 standard.

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

Vibration Resistance: The DMS50 meets the ANSI C136.31, American National Standard for Roadway Luminaire Vibration specifications for Bridgeloop applications. (Tested for 3G over 100 000 cycles by an independent lab)

Mechanical resistance: In order to ensure the mechanical resistance of the poles, the reflected area should be calculated according to AASHTO standards and resists to a wind of 140 km/hr.

Web site information details: Click on any specific information details you need:

[Paint finish](#) / [Warranties](#) / [Installation pictures](#) / [ISO 9001-2008 Certification](#) / [ISO 14001-2004 Certification](#) / [CSA Pole Certification](#)

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NO.	REVISIONS	DATE	BY

Kimley»Horn

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COMMONWEALTH OF VIRGINIA
JEFFREY C. SALLÉE JR.
Lic. No. 047144
05/23/14
PROFESSIONAL ENGINEER

KHA PROJECT
110280031

DATE
05/23/2014

SCALE AS SHOWN

DESIGNED BY BSL

DRAWN BY BSL

CHECKED BY JCS

**DOUBLE LAMP
LIGHTING DETAILS**

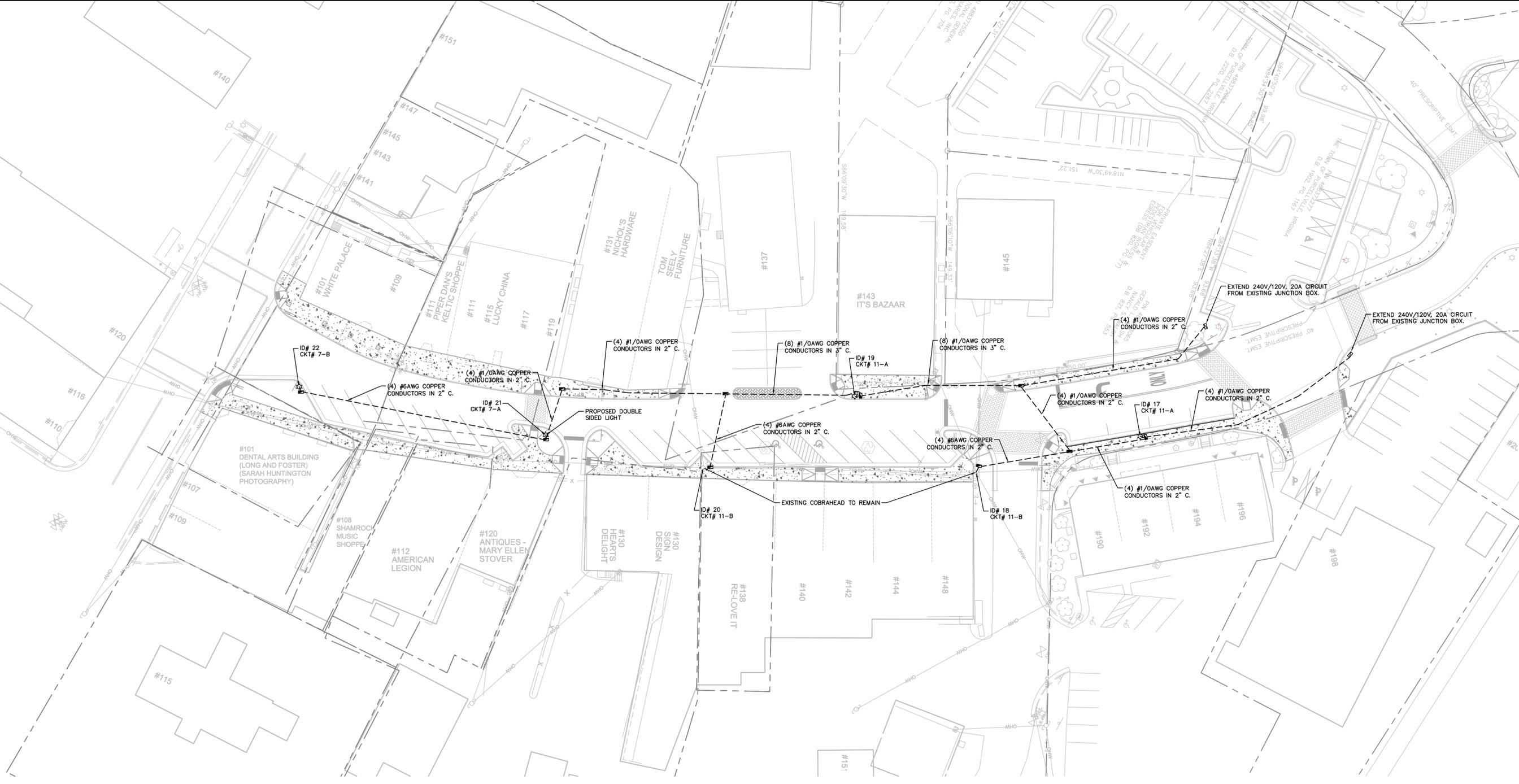
21ST & 23RD STREETSCAPE
IMPROVEMENTS PHASE II
PREPARED FOR
TOWN OF PURCELLVILLE
PURCELLVILLE VIRGINIA

SHEET NUMBER
10.2

MISS UTILITY OF VIRGINIA

CALL BEFORE YOU DIG
1.800.552.7001

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GENERAL NOTE:
 PROVIDE SCHEDULE 80 PVC FOR ALL CONDUIT CROSSING ROADWAYS.
 FOR ALL OTHER CONDUIT, PROVIDE SCHEDULE 40 PVC.

MISS UTILITY OF VIRGINIA



CALL BEFORE YOU DIG
1.800.552.7001

GRAPHIC SCALE IN FEET
0 12.5 25 50



<p>21ST & 23RD STREETSCAPE IMPROVEMENTS PHASE II PREPARED FOR TOWN OF PURCELLVILLE VIRGINIA</p> <p style="text-align: right;">SHEET NUMBER 11.0</p>	<p style="text-align: center;">Kimley»Horn</p> <p style="font-size: small; text-align: center;">© 2014 KIMLEY-HORN AND ASSOCIATES, INC. 11400 COMMERCE PARK DRIVE, SUITE 400, RESTON, VA 20191 PHONE: 703-674-1300 FAX: 703-674-1350 WWW.KIMLEY-HORN.COM</p> <div style="text-align: center;">  <p>JEFFREY C. SALLEE, JR. Lic. No. 047144 05/23/14 PROFESSIONAL ENGINEER</p> </div> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <td>KHA PROJECT</td> <td>110280031</td> </tr> <tr> <td>DATE</td> <td>05/23/2014</td> </tr> <tr> <td>SCALE</td> <td>AS SHOWN</td> </tr> <tr> <td>DESIGNED BY</td> <td>JCS</td> </tr> <tr> <td>DRAWN BY</td> <td>JCS</td> </tr> <tr> <td>CHECKED BY</td> <td>BSL</td> </tr> </table>	KHA PROJECT	110280031	DATE	05/23/2014	SCALE	AS SHOWN	DESIGNED BY	JCS	DRAWN BY	JCS	CHECKED BY	BSL
KHA PROJECT	110280031												
DATE	05/23/2014												
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DESIGNED BY	JCS												
DRAWN BY	JCS												
CHECKED BY	BSL												
<p>ELECTRICAL SITE PLAN</p>	<p>ADDENDUM 1</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <th>No.</th> <th>REVISIONS</th> <th>DATE</th> <th>BY</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	REVISIONS	DATE	BY								
No.	REVISIONS	DATE	BY										

GENERAL NOTES:

1. ALL LIGHTING FIXTURES SHALL BE PROVIDED WITH AND CONNECTED TO A GROUND ROD ADJACENT TO POLE.
2. ALL CONDUCTORS INSTALLED IN THE LIGHT POLES AND RECEPTACLES SHALL BE #10AWG AND SPLICED TO THE BRANCH CIRCUIT IN ADJACENT JUNCTION BOX.

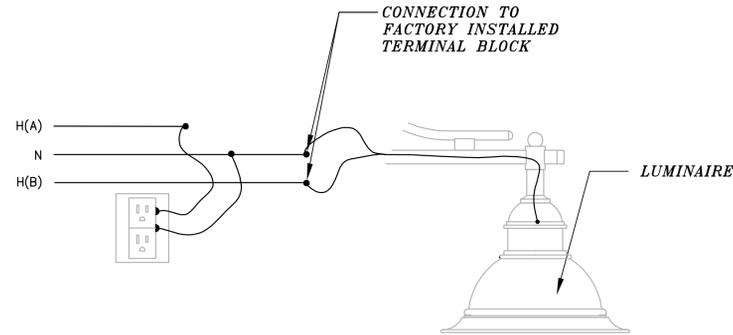
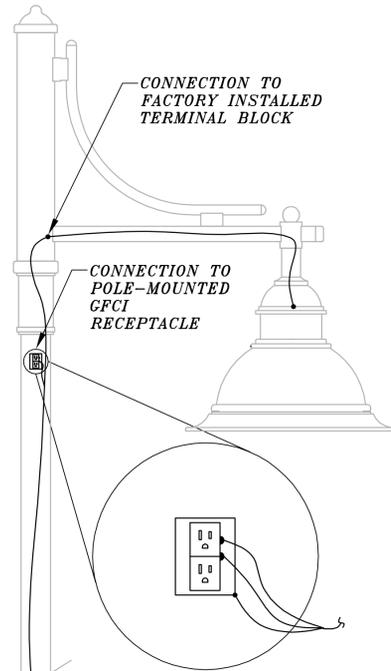
CONTROL CENTER PANELBOARD SCHEDULE

EXISTING 100 A. MAIN CIRCUIT BREAKER, 120/240 V., 1 PHASE, 3 WIRE, 14 KAIC MINIMUM,

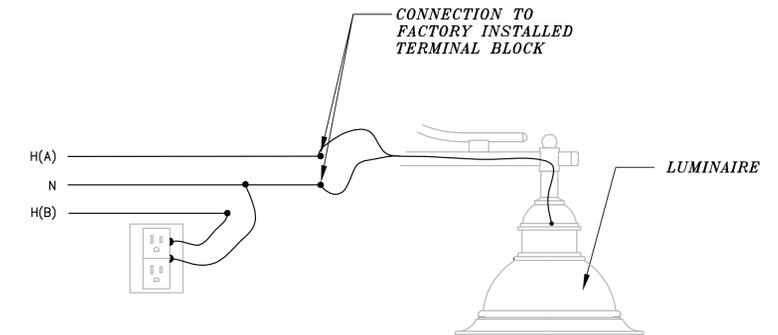
LOAD SERVED	LOAD (AMPS)		BKR. TRIP	WIRE SIZE	CKT. NO.	PHASE		CKT. NO.	WIRE SIZE	BKR. TRIP	LOAD (AMPS)		LOAD SERVED
	A	B				A	B				A	B	
PHOTOELECTRIC CONTROL	-	-	15	10	1	~	~	2	6	20	9.5	9.5	3, 5, 7, 9
2, 4, 6, 8, 10, 16	14.3	14.3	20	4	3	~	~	4	4	20	14.3	14.3	1, 11, 12, 13, 14, 15, (1) FUTURE
					5	~	~	6					
					7	~	~	8					
19, 22 *	4.8	4.8	20	1/0	9	~	~	10	10	15	-	-	TVSS
					11	~	~	12					
17, 18, 20, 21 *	6.6	6.6	20	1/0	13	~	~						
TOTAL	25.7	25.7									23.8	23.8	TOTAL

TOTAL CONNECTED AMPS A: 49.5 B: 49.5

* PROPOSED CIRCUITS TO BE CONNECTED DURING THIS PHASE. MAKE CONNECTIONS TO THE CONTACTOR AND CIRCUIT BREAKER FOR PROPOSED CIRCUITS USING EXISTING #1/0AWG CONDUCTORS COILED IN ADJACENT JUNCTION BOX.



SUBSCRIPT "B"
NOT TO SCALE

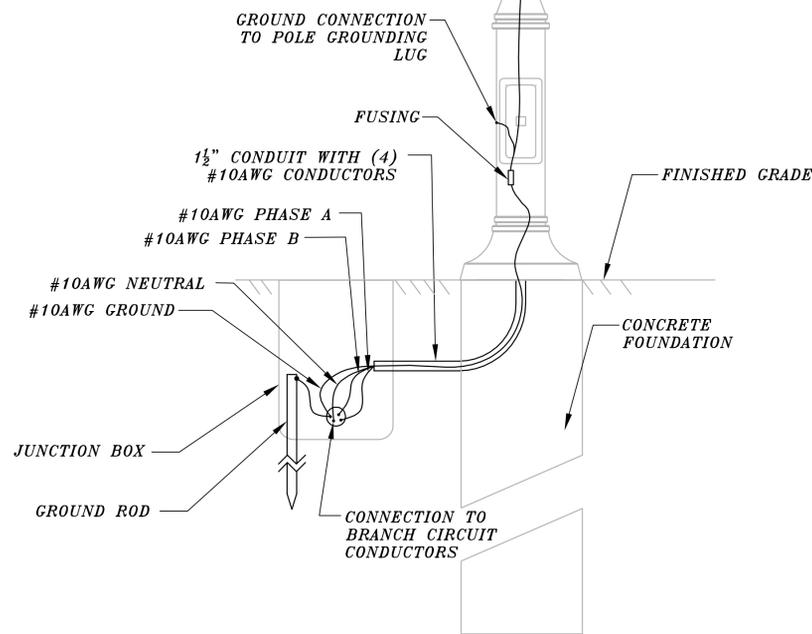


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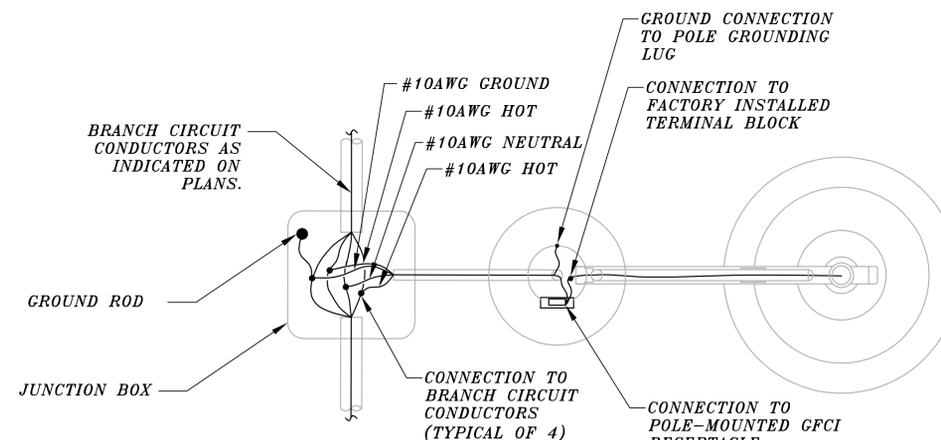
LUMINAIRE/RECEPTACLE WIRING PLAN DETAIL

NOT TO SCALE

*FOR THE LIGHT POLE WITH TWO LUMINAIRES, WIRE BOTH LUMINAIRES TO THE 'B' PHASE.



JUNCTION BOX WIRING ELEVATION DETAIL
NOT TO SCALE



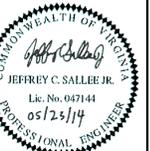
JUNCTION BOX WIRING PLAN DETAIL
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DATE 05/23/2014
SCALE AS SHOWN
DESIGNED BY JCS
DRAWN BY BSL
CHECKED BY JCS

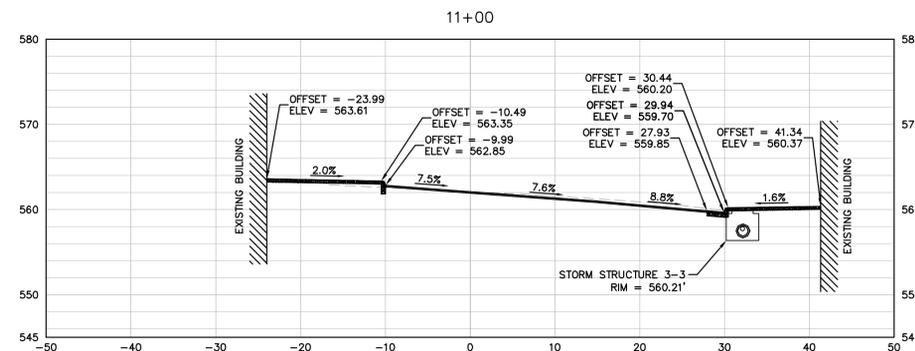
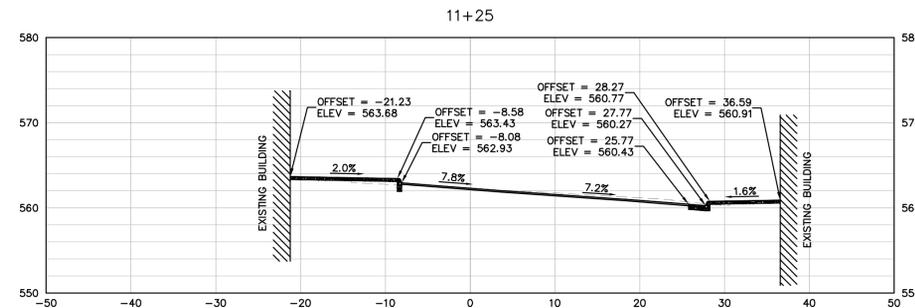
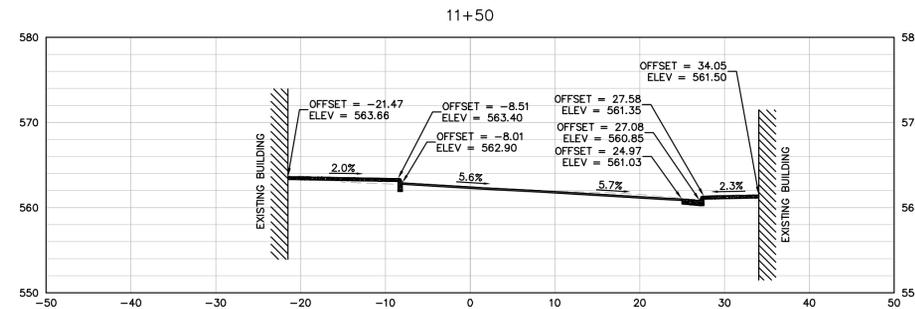
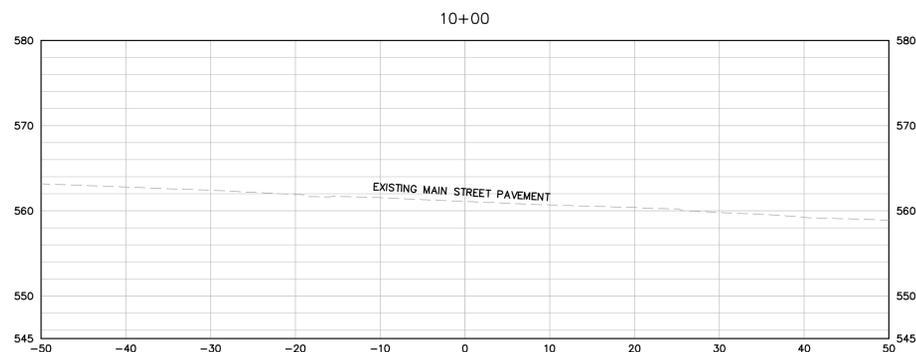
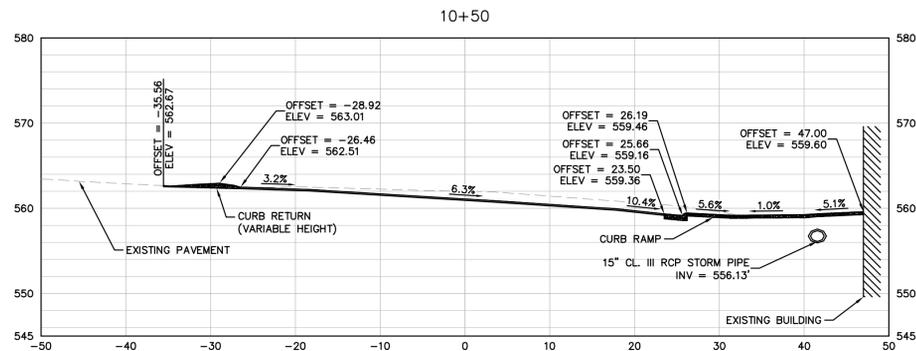
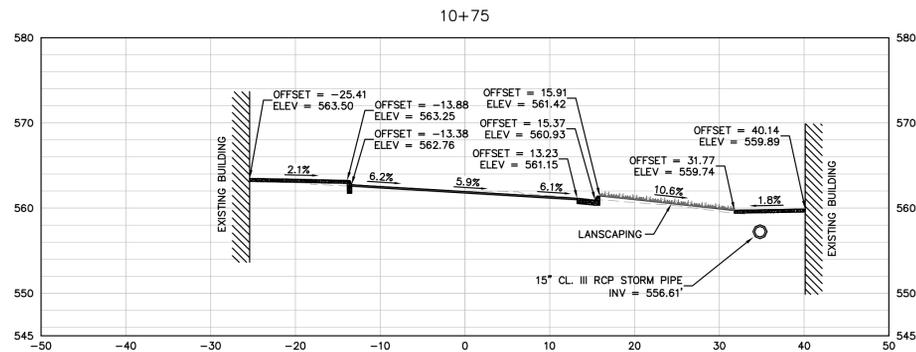
ELECTRICAL DETAILS

21ST & 23RD STREETSCAPE IMPROVEMENTS PHASE II
PREPARED FOR TOWN OF PURCELLVILLE
VIRGINIA

SHEET NUMBER
11.1

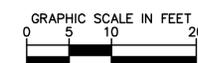
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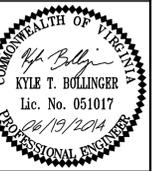
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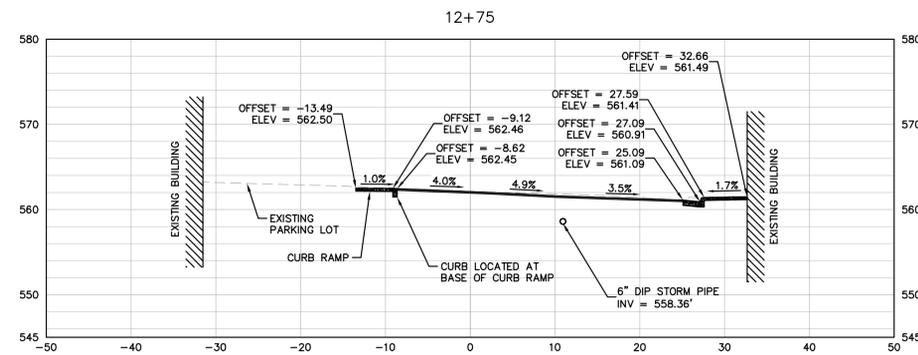
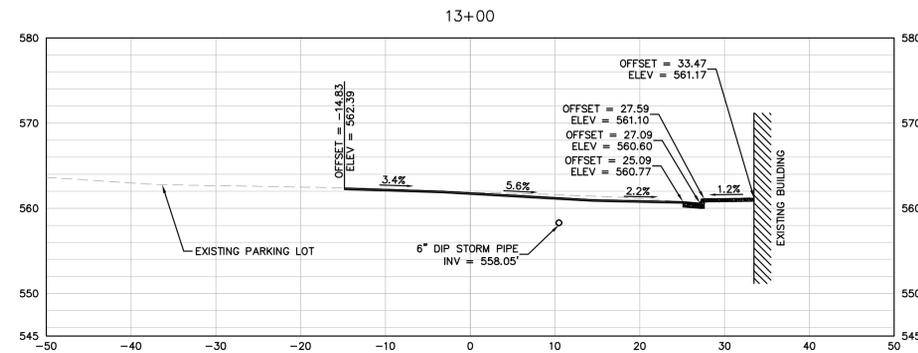
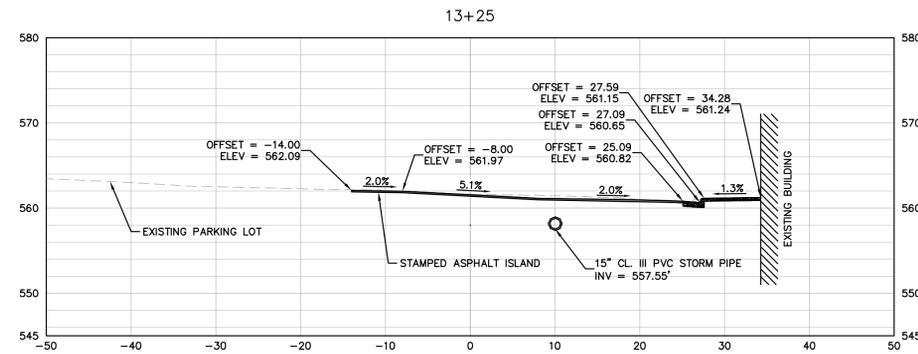
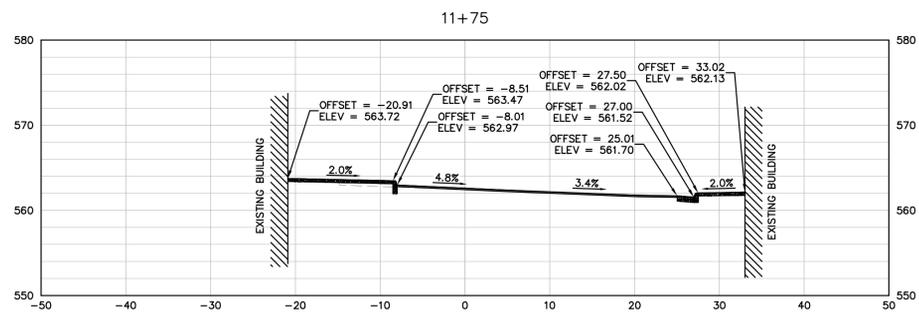
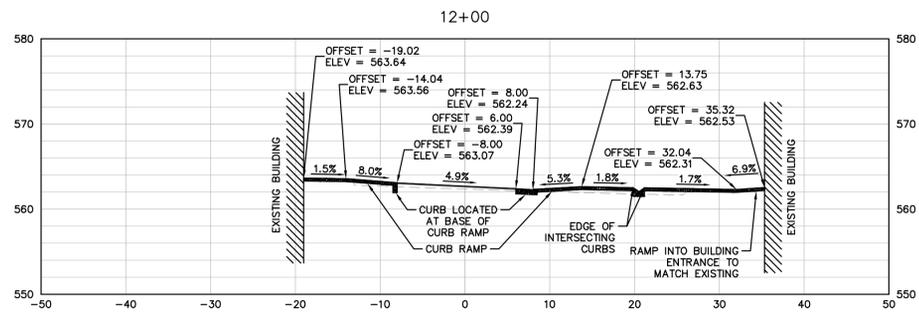
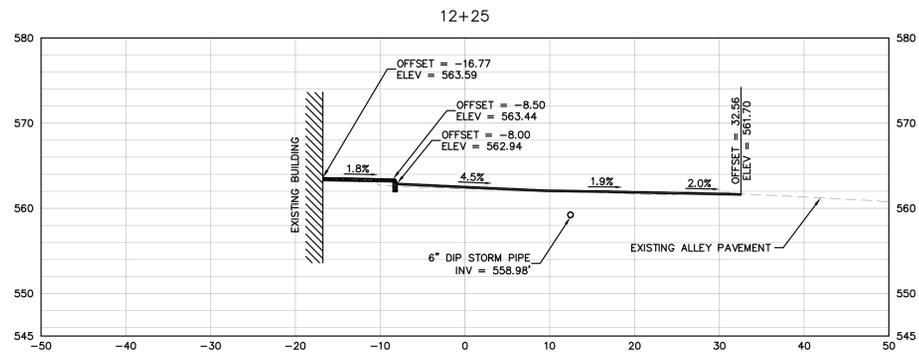
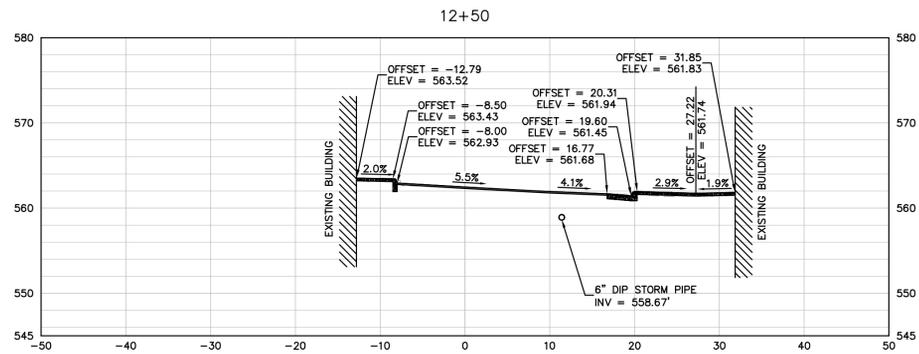
KHA PROJECT 110280031	DATE 06/19/2014	SCALE AS SHOWN	DESIGNED BY KTB	DRAWN BY KTB	CHECKED BY KVH
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ROADWAY CROSS SECTIONS

21ST & 23RD STREETSCAPE IMPROVEMENTS - PHASE II
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TOWN OF PURCELLVILLE
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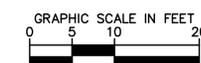
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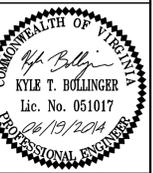


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 Lic. No. 051017
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 PROFESSIONAL ENGINEER

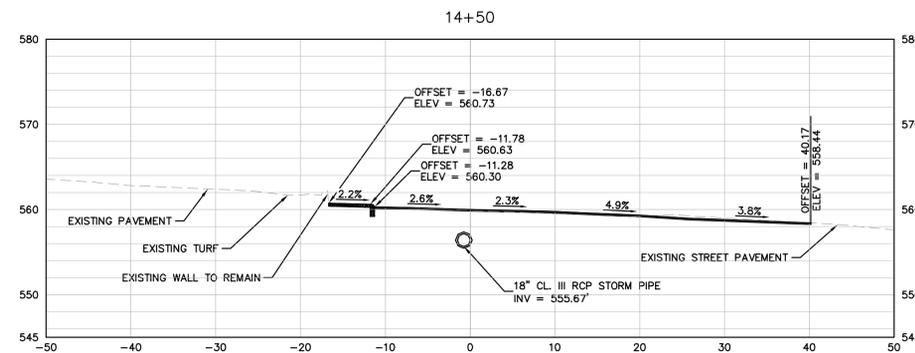
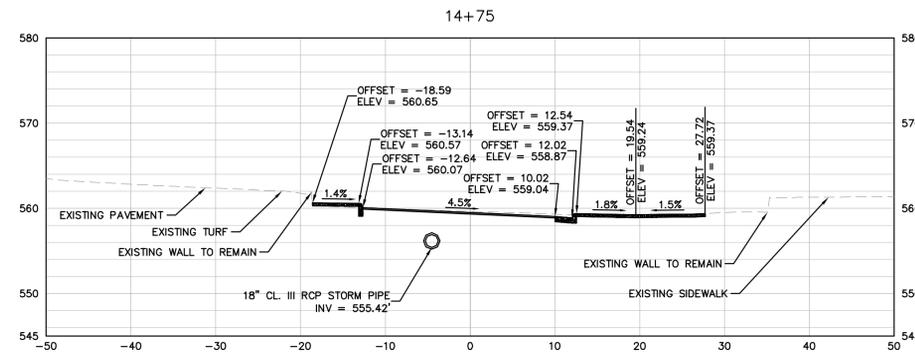
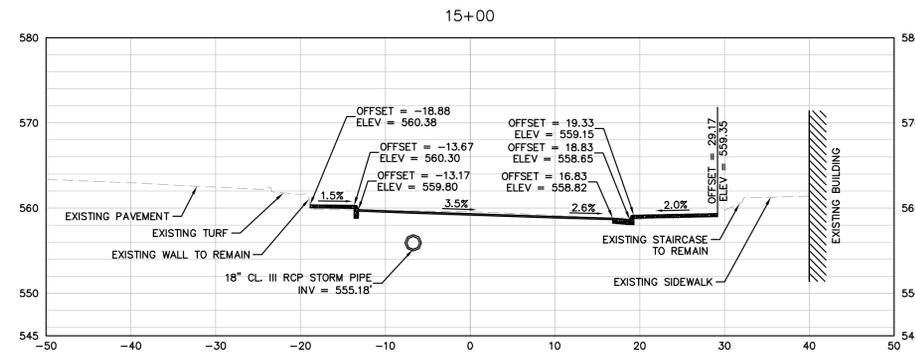
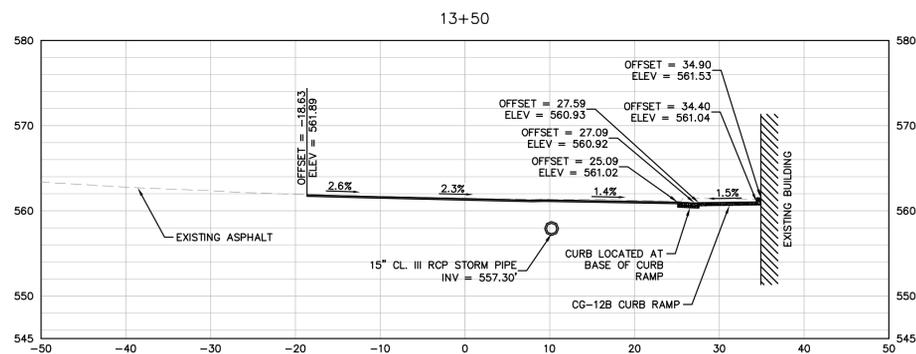
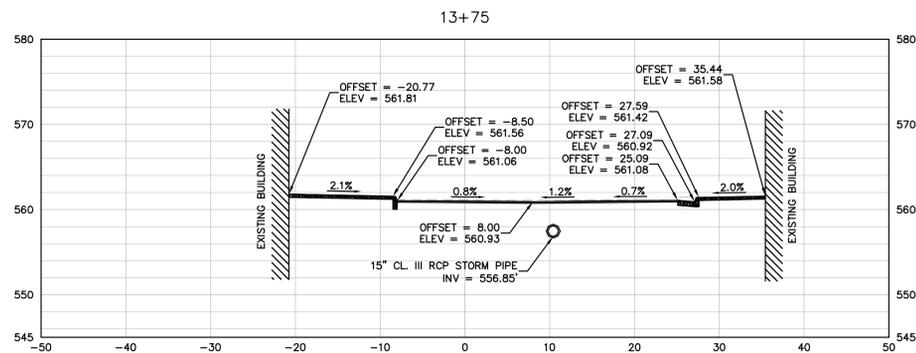
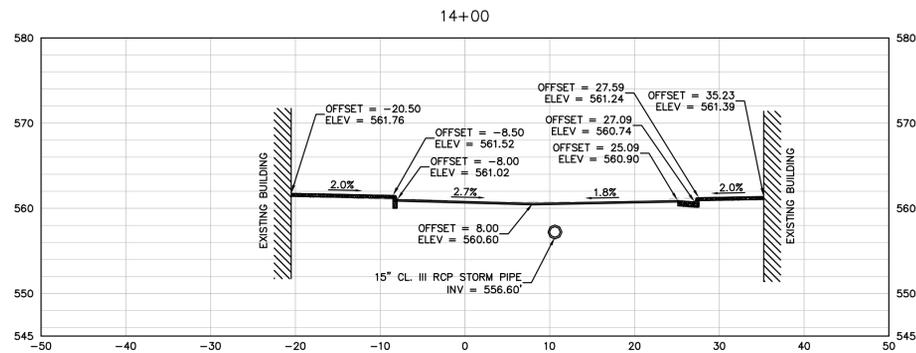
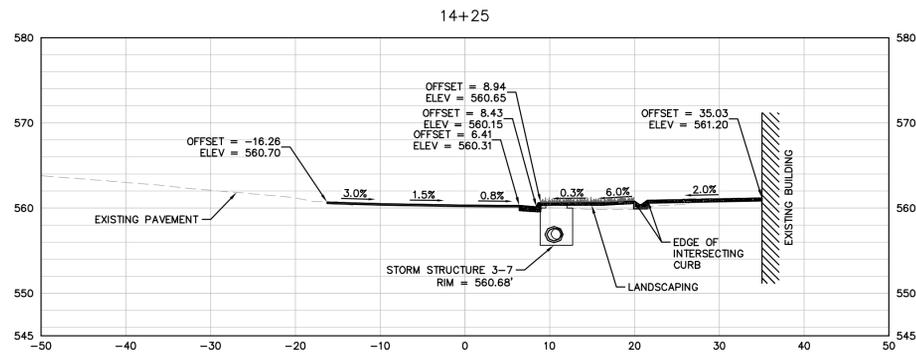
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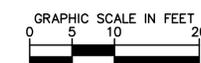
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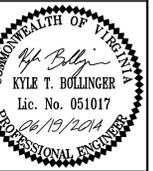
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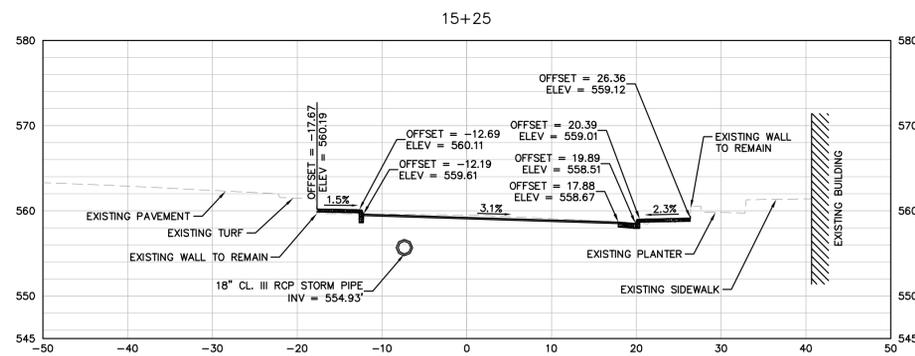
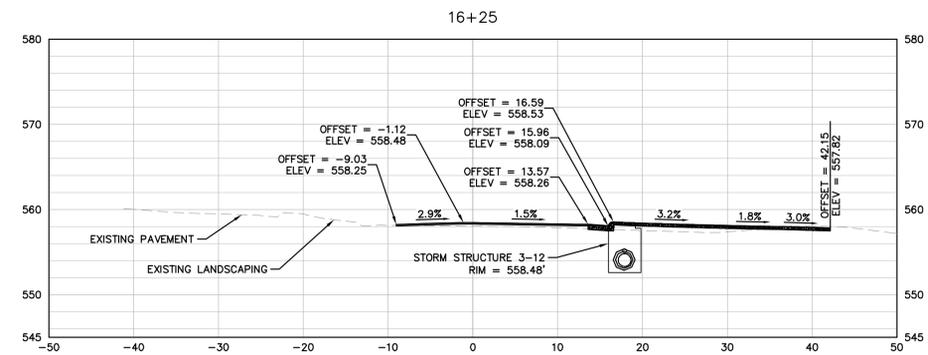
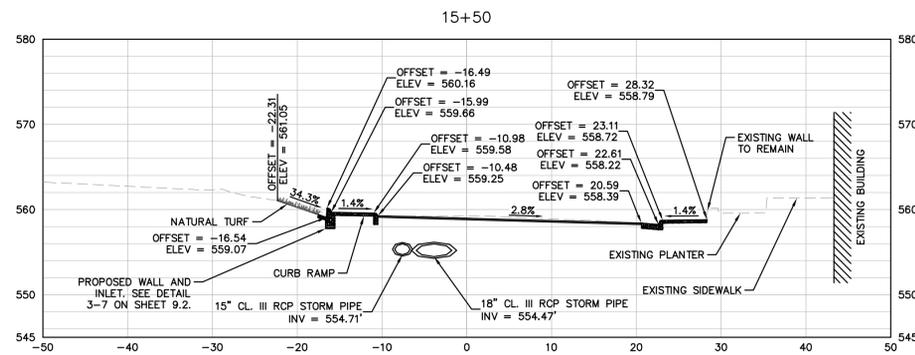
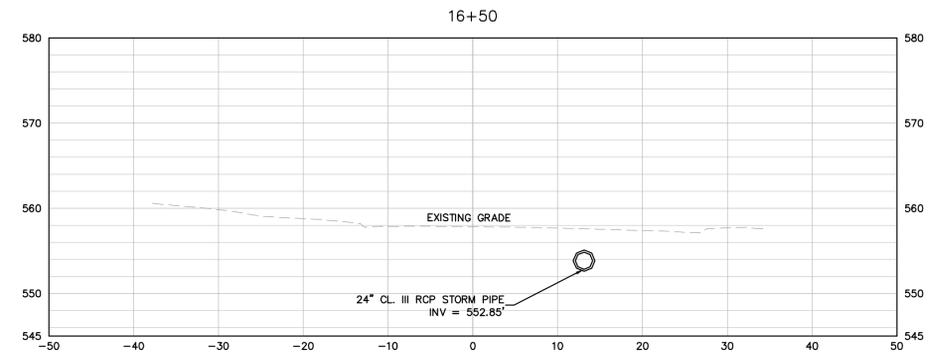
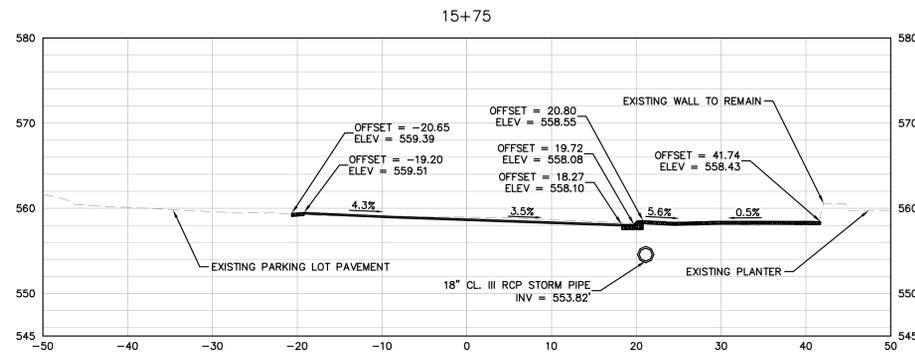
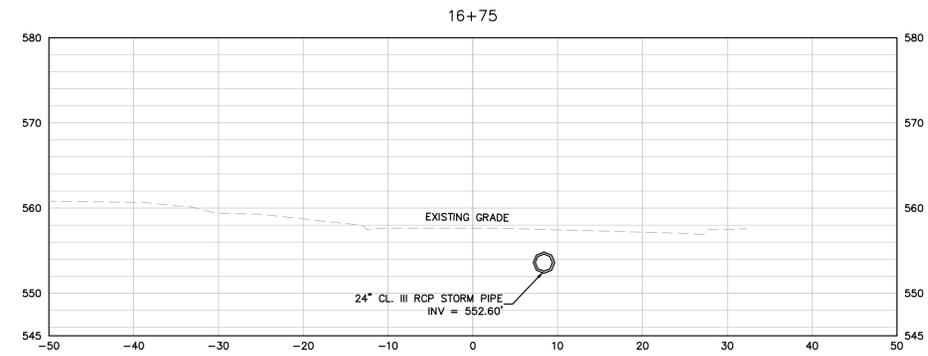
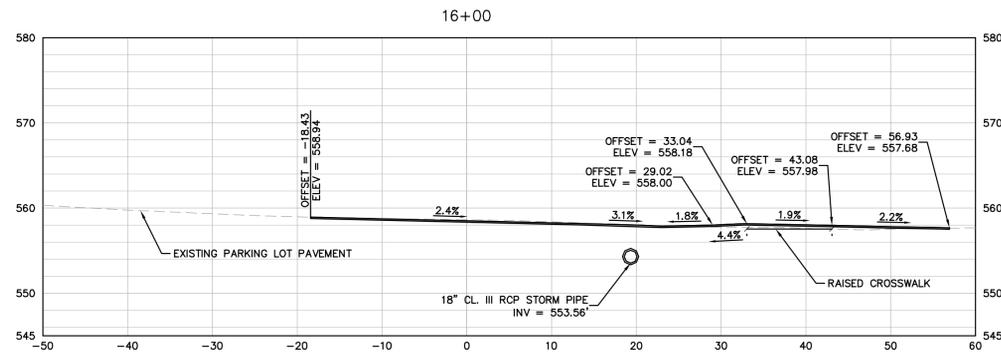
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DATE	06/19/2014
SCALE	AS SHOWN
DESIGNED BY	KTB
DRAWN BY	KTB
CHECKED BY	KVH

ROADWAY CROSS SECTIONS

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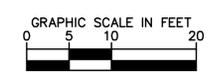
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 Lic. No. 051017
 PROFESSIONAL ENGINEER

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