CITY OF ALEXANDRIA
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

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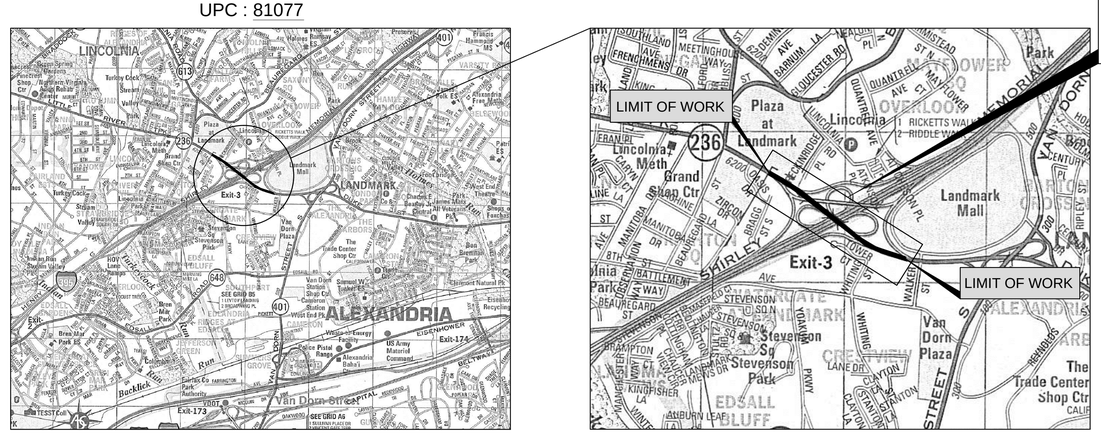
CITYWIDE SIDEWALK CONNECTIONS
DUKE STREET PEDESTRIAN IMPROVEMENTS

STATE PROJECT # 0236-100-139, P101, M501
CITY PROJECT # 09-118
FEBRUARY, 2014

UPC : 81077



LOCATION MAP

SOURCE: ADC MAP, NORTHERN VIRGINIA
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90% PLANS
NOT FOR CONSTRUCTION

RK&K
RUMMEL, KLEPPER & KAHL, LLP
ENGINEERS | CONSTRUCTION MANAGERS | PLANNERS | SCIENTISTS
RESPONSIVE PEOPLE • CREATIVE SOLUTIONS
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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SVCS.
APPROVED X DATE: DIRECTOR
RECOMMENDED FOR APPROVAL X DATE: DEPUTY DIRECTOR OF OPERATIONS
RECOMMENDED FOR APPROVAL X DATE: DEPUTY DIRECTOR OF INFRASTRUCTURE & ENVIRONMENT
RECOMMENDED FOR APPROVAL X DATE: DEPUTY DIRECTOR OF TRANSPORTATION
DEPARTMENT OF PROJECT IMPLEMENTATION
APPROVED X DATE: DIRECTOR

GENERAL

1. ALL CONSTRUCTION METHODS AND MATERIAL SHALL CONFORM WITH THESE DRAWINGS, PROJECT SPECIFICATIONS, AND WITH ALL CURRENT APPLICABLE CODES AND THE LATEST REVISIONS OF THE FOLLOWING REFERENCE DOCUMENTS:
   - (A) VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS
   - (B) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
   - (C) VIRGINIA WORK AREA PROTECTION MANUAL
   - (D) VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)
   - (E) VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) DRAINAGE MANUAL
   - (F) VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE STANDARDS
   - (G) CITY OF ALEXANDRIA DESIGN AND CONSTRUCTION STANDARDS
2. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND LICENSES AND KEEP COPIES OF THE SAME ON SITE DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL REVIEW THE SITE FOR THIS PROJECT PRIOR TO WORK.
4. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES FOUND SHALL BE CALLED TO THE ATTENTION OF THE CITY OF ALEXANDRIA AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
5. ALL INFORMATION SHOWN ON THESE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL REPORT IMMEDIATELY TO CITY OF ALEXANDRIA ANY CONDITIONS CONFLICTING WITH THE DRAWINGS. FIELD MODIFICATIONS TO THE DRAWINGS SHALL NOT BE MADE WITHOUT THE CONSENT OF CITY OF ALEXANDRIA.
6. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE, FREE FROM TRASH AND DEBRIS.
7. THE CONTRACTOR SHALL KEEP AND MAINTAIN A SET OF APPROVED PROJECT PLANS AND SPECIFICATIONS ON THE SITE AT ALL TIMES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, PAVEMENT MARKINGS, SIGNS, ETC. THAT MUST BE CUT OR REMOVED, OR THAT ARE DAMAGED DURING CONSTRUCTION.
9. THE APPLICANT SHALL BE RESPONSIBLE FOR REPAIRS TO THE ADJACENT CURB, GUTTER, AND RIGHT-OF-WAY, IF DAMAGED DURING CONSTRUCTION ACTIVITY.
10. THE CONTRACTOR SHALL BE AWARE OF THE LEBANON UNION (LINCOLNIA) CEMETERY IN THE PROJECT AREA. THE CEMETERY IS REGISTERED WITH THE VIRGINIA DEPARTMENT OF HISTORIC RESOURCES AS SITE 44AX100. IF ANY ARCHAEOLOGY ARTIFACTS ARE ENCOUNTERED DURING CONSTRUCTION, CONTRACTOR SHALL STOP WORK AND CONTACT THE CITY OF ALEXANDRIA ARCHAEOLOGY DEPARTMENT AT 703-746-4399.
11. THE ROUTE 236 CONSTRUCTION BASELINE WAS DEVELOPED SPECIFICALLY FOR THIS PROJECT AND IS NOT A VDOT BASELINE.

UTILITIES

1. PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING ANY AND ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST OR CROSS THROUGH THE AREA OF CONSTRUCTION WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. BEFORE DIGGING, TO AVOID THE UTILITIES, THE CONTRACTOR SHALL CALL MISS UTILITY OF VIRGINIA" AT 1-800-552-7001. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS SOLE EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
2. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE, NONEXISTENCE, SIZE, TYPE, LOCATION, ALIGNMENT, OR DEPTH OF ANY OR ALL UNDERGROUND UTILITIES OR OTHER FACILITIES. WHERE SURFACE FEATURES (MANHOLES, CATCH BASINS, VALVES, ETC.) ARE UNAVAILABLE OR INCONCLUSIVE, INFORMATION SHOWN MAY BE FROM UTILTY OWNER'S RECORDS AND/OR ELECTRONIC LINE TRACING, THE RELIABILITY OF WHICH IS UNCERTAIN. THE CONTRACTOR SHALL PERFORM TEST EXCAVATION OR OTHER REINVESTIGATION AS NECESSARY TO VERIFY LOCATION AND CLEARANCES.
3. STATE LAW MANDATES THE NOTIFICATION OF UTILITY OWNERS 48 HOURS IN ADVANCE OF EXCAVATION. FOR LOCATION OF UTILITIES CALL:

UTILITY OWNERS	TELEPHONE
DOMINION VIRGINIA POWER	888-667-3000
VERIZON COMMUNICATIONS	888-826-2355
COMCAST	888-683-1000
WASHINGTON GAS	703-750-1000
PEPCO	202-833-7500
VIRGINIA AMERICAN WATER "	703-491-2136
SANITARY SEWER - CITY OF ALEXANDRIA	703-746-4488

4. CONTRACTOR SHALL CONFORM TO THE OVERHEAD HIGH VOLTAGE ACT" (EFFECTIVE JULY 1, 2003) AND SHALL CONTACT THE NECESSARY AUTHORITIES PRIOR TO START OF CONSTRUCTION.

COORDINATION

1. CONSTRUCTION WILL TAKE PLACE ADJACENT TO ONGOING TRAFFIC OPERATIONS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH CITY OF ALEXANDRIA.
2. THE CONTRCTOR SHALL SUBMIT A SCHEDULE FOR CONSTRUCTION TO THE CITY OF ALEXANDRIA IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

CONSTRUCTION NOTES

1. ALL CLEARING, GRUBBING, GRADING, AND PAVING SHALL BE PERFORMED IN ACCORDANCE WITH VDOT SPECIFICATIONS AND STANDARDS.
2. EXISTING VEGETATION SURROUNDING THE CONSTRUCTION AREA SHALL REMAIN IN A NATURAL STATE. TREES NEAR THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH DETAILS AND NOTES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN.
3. THE CONTRACTOR SHALL STRIP TOPSOIL AND ANY ORGANIC LADEN SOIL AND STORE FOR USE IN BACKFILLING AND LANDSCAPING FOR SITE RESTORATION. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY EXCESS SOIL AFTER RESTORATION OF THE SITE.
4. WHEN MATERIALS WHICH ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADES, OR ROADWAY PURPOSES OCCUR WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO EXCAVATE SUCH MATERIAL BELOW THE GRADE SHOWN ON THE PLANS. THE AREAS SO EXCAVATED SHALL BE BACKFILLED WITH APPROVED SUITABLE SELECT FILL MATERIAL.
5. ALL UNPAVED SURFACES SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM PAVED AREAS AND TOWARD DRAINAGE STRUCTURES.
6. ALL DISTURBED AREAS SHALL BE PREPARED, SEEDED, AND MULCHED.
7. DISTURBED AREAS WITHIN THE PROJECT LIMITS THAT WILL REMAIN INACTIVE FOR A PERIOD OF 14 CALENDAR DAYS OR LONGER SHALL BE TEMPORARILY STABILIZED WITH SEED AND STRAW, MULCH, OR OTHER ACCEPTABLE GROUNDCOVER.
8. THE CONTRACTOR IS REQUIRED TO NOTIFY CITY OF ALEXANDRIA THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION AND SPECIFICALLY REQUEST INSPECTION BEFORE BEGINNING:
   - A. INSTALLATION OF SILTATION AND EROSION CONTROL MEASURES
   - B. CLEARING AND GRUBBING
   - C. EARTHWORK
   - D. BACKFILL OF ANY STORM DRAINAGE PIPE, CULVERTS, INLET, AND OTHER UTILTIES
   - E. INSTALLATION OF ANY UNDERGROUND UTILITY, INCLUDING STORM PIPES, CULVERT & INLETS
   - F. BEFORE PLACING SUBBASE, BASE OR PAVING SURFACE
   - G. INSTALLATION OF ANY FORMS
   - H. PLACING OF ANY CONCRETE
   - I. BACKFILL OF ANY FOUNDATIONS OR WALLS.
9. WHERE STANDARD SLOPE ROUNDOFFS WOULD DAMAGE TREES, BUSHES, OR OTHER DESIRABLE VEGETATION THEY SHALL BE OMITTED WHEN SO ORDERED BY CITY OF ALEXANDRIA.

MAINTENANCE OF TRAFFIC NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEVELOPMENT OF A TRAFFIC CONTROL PLAN WHICH MUST BE APPROVED BY THE CITY OF ALEXANDRIA AND/ OR VDOT.
2. THE CONTRACTOR SHALL OBTAIN A VDOT RIGHT-OF-WAY PERMIT PRIOR TO COMMENCEMENT.
3. ALL WORK AREA (AND THE LIMITS THEREOF) AND LANE CLOSURES SHALL BE IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL, 2011 EDITION (INCLUDING ALL CURRENT REVISIONS), AND THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION AND SHALL BE DIRECTED OR APPROVED BY THE CITY OF ALEXANDRIA.

LABELS

STATION → +83.33
OFFSET → 48.2' RT.
ELEVATION → 200.00'

ABBREVIATIONS

AC	ACRE	LF	LINEAR FEET
A/C	AIR CONDITIONING	LG	LONG
ADDL	ADDITIONAL	LP	LOW POINT
ALUM	ALUMNIUM	MB	MAILBOX
APPROX	APPROXIMATE(LY)	MH	MANHOLE
ARND	AROUND	MAX	MAXIMUM
ASPH	ASPHALT	MIN	MINIMUM
BC	BOTTOM OF CURB	MISC	MISCELLANEOUS
BIT	BITUMINOUS	MON	MONUMENT
BM	BENCHMARK	NO	NUMBER
BOT	BOTTOM	NTS	NOT TO SCALE
BRK	BRICK	OC	ON CENTER
BTWN	BETWEEN	OD	OUTSIDE DIAMETER
BW	BOTTOM OF WALL	OE	OVERHEAD ELECTRIC
CB	CATCH BASIN	PCC	POINT OF COMPOUND CURVATURE
CCFR	CENTRIGUALLY CAST FIBERGLASS REINFORCED	PG	PAGE
		PL	PROPERTY LINE
CCTV	CLOSED CIRCUIT TELEVISION	POC	POINT OF CURVATURE
CFS	CUBIC FEET PER SECOND	POT	POINT OF TANGENCY
CIP	CAST IRON PIPE	PP	POWER POLE
CJ	CONTRACTION JOINT	PROP	PROPOSED
CL	CENTERLINE	PSI	POUNDS PER SQUARE INCH
CLF	CHAIN LINK FENCE	PVC	POLYVINYL CHLORIDE
CLR	CLEAR	QTY	QUANTITY
CM	CONCRETE MONUMENT	R/W	RIGHT-OF-WAY
CMP	CORRUGATED METAL PIPE	RAD	RADIUS
CMV	CONCRETE MASONRY UNIT(S)	RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE	REIF	REINFORCE(D, ING)
C.O.	CLEANOUT	REQ'D	REQUIRED
COMM	COMMUNCATIONS	S	SLOPE
CONT	CONTINUOUS	SAN	SANITARY SEWER
CS	COMBINED SEWER	SD	STORM DRAIN
CTR	CENTER(ED)	SEG	SEGMENT
D	DRAIN	SF	SEDIMENT FENCE
DI	DUCTILE IRON	SPEC	SPECIFICATION, SPECIFIED
DIA	DIAMETER	SR/S.R.	STATE ROUTE
DIAG	DIAGONAL	SS	SANITARY SEWER
DIP	DUCTILE IRON PIPE	ST	STREET
DWG	DRAWING	STA	STATION
DL(S)	DOWEL(S)	STD	STANDARD
EA	EACH	STL	STEEL
EF	EACH FACE	STRUC	STRUCTURE(S, URAL)
EJ	EXPANSION JOINT	SQ	SQUARE
EL	ELEVATION	T	THICKNESS
EM	ELECTRICAL MANHOLE	T&B	TOP & BOTTOM
EOP	EDGE OF PAVFEMENT	TC	TOP OF CURB
EW	EACH WAY	TW	TOP OF WALL
EX/EXIST	EXISTING	TYP	TYPICAL
FH	FIRE HYDRANT	UNO	UNLESS NOTED OTHERWISE
FM	FORCE MAIN	UT	UNDERGROUND TELEPOHONE
FT	FEET/FOOT	VCP	VITRIFIED CLAY PIPE
FTG	FOOTING	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
G	NATURAL GAS		
GALV	GAS VALVE	W	WATER
GV	GALVANIZED	W/	WITH
IN	INCH	WL	WATER LEVEL
INV	INVERT	W.M.	WATER METER
ID	INSIDE DIAMETER	WRPD	WRAPPED
JC	JUNCTION CHAMBER	WS	WATER SURFACE
		W.V.	WATER VALVE

LEGEND

	PROPERTY LINE	—TEL—	TELEPHONE LINE
—X—X—	EX. FENCE	—GAS—	GAS LINE
	TREE	—E—	ELECTRIC LINE
	EVERGREEN	—W—	WATER LINE
	UTILITY POLE	J	EXISTING JUNCTION BOX
	LIGHT POLE		
	GAS VALVE		
	EX. SIGN		
	TRAVERSE POINT		
	MANHOLE		
	GUY		
	GRATE INLET		
	TELEPHONE POLE		
	GAS METER		
	EDGE OF CONCRETE		
—250—	EX. CONTOUR LINE		
	PROP. STORM DRAIN PIPE		
	PROP. INLET		
B-1	TEST BORING (SEE SPECIFICATIONS FOR TEST BORING LOGS)		

REVISIONS

GENERAL NOTES & ABBREVIATIONS

Scale: N/A Project: 09-118 Sheet: 2 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

FILE NAME: \\balanc03\2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\gDH-N001_Duke.dwg LAYOUT NAME: PLAN PLOTTED: Thursday, February 27, 2014 - 9:33am

General Notes

1. 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 THERETO:
   A. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009.
   B. THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011.
   C. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, 2007.
   D. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS, 2008.

2. ALL PAVEMENT MARKINGS SHALL BE WHITE TYPE B, CLASS I.

3. 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.

4. ANY EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.

5. DISTANCE BETWEEN CROSSWALK AND YIELD LINE PAVEMENT MARKINGS SHALL BE NO LESS THAN 25 FEET.

6. EXISTING SIGNS ARE TO BE RETAINED UNLESS OTHERWISE NOTED.

7. RECTANGULAR RAPID FLASH BEACONS (RRFBs), POLE AND PEDESTAL BASE SHALL BE APPROVED BY THE CITY.

8. THE YELLOW INDICATIONS IN EACH RRFB SHALL FLASH IN A RAPIDLY ALTERNATING "WIG-WAG" (LEFT LIGHT ON, THEN RIGHT LIGHT ON) FLASHING SEQUENCE AND SHALL FLASH IN UNISON.

9. EACH RRFB SHALL CONSIST OF TWO $7\frac{1}{4}$" X 3" RECTANGULAR-SHAPED YELLOW VEHICLE INDICATIONS, AND TWO $1\frac{1}{2}$" X $3\frac{5}{8}$" SIDE-MOUNTED PEDESTRIAN INDICATIONS, EACH WITH AN LED-ARRAY BASED LIGHT SOURCE. SIDE-MOUNTED PEDESTRIAN INDICATIONS WILL FLASH CONCURRENTLY WITH FRONT-MOUNTED VEHICLE INDICATIONS.

10. EACH OF THE TWO YELLOW INDICATIONS SHALL HAVE 70 TO 80 PERIODS OF FLASHING PER MINUTE AND SHALL HAVE ALTERNATING BUT APPROXIMATELY EQUAL PERIODS OF RAPID PULSING LIGHT EMISSIONS AND DARK OPERATION. DURING EACH OF ITS 70 TO 80 FLASHING PERIODS PER MINUTE, ONE OF THE YELLOW INDICATIONS SHALL EMIT TWO RAPID PULSES OF LIGHT AND THE OTHER YELLOW INDICATION SHALL EMIT THREE RAPID PULSES OF LIGHT.

11. THE RAPID FLASH RATE OF EACH INDICATION, AS APPLIED OVER THE FULL ON-OFF SEQUENCE OF A FLASHING PERIOD OF THE INDICATION, SHALL NOT BE BETWEEN 5 AND 30 FLASHES PER SECOND, TO AVOID FREQUENCIES THAT MIGHT CAUSE SEIZURES.

12. THE DURATION OF A PREDETERMINED PERIOD OF OPERATION OF THE RRFBs FOLLOWING EACH ACTUATION SHALL BE BASED ON THE MUTCD PROCEDURES FOR TIMING OF PEDESTRIAN CLEARANCE TIMES FOR PEDESTRIAN SIGNALS. TIMING FOR 'WIG-WAG' FLASHING PATTERN SHALL BE A MAXIMUM OF 15 SECONDS.

13. EACH RRFB SHALL BE ACTIVATED BY AN ADA COMPLIANT PEDESTRIAN PUSHBUTTON. THE PEDESTRIAN INDICATION SHALL BE DIRECTED AT AND VISIBLE TO PEDESTRIANS IN THE CROSSWALK, AND IT SHALL FLASH CONCURRENTLY WITH THE VEHICLE INDICATIONS TO GIVE CONFIRMATION THAT THE RRFB IS IN OPERATION. PUSHBUTTON WILL PROVIDE A TWO-TONE AUDIBLE CONFIRMATION.

14. EACH RRFB WILL UTILIZE A SOLAR-ASSISTED BATTERY-POWERED SYSTEM AND WILL NOT REQUIRE A SEPARATE POWER SOURCE.

15. EACH RRFB SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.

16. EACH RRFB PUSHBUTTON SHALL BE ORIENTATED SO THAT IT IS ACCESSIBLE FROM THE SIDEWALK OR CURB RAMP.

17. W11-2 AND W16-7p WARNING SIGNS SHALL BE ON FLUORESCENT YELLOW AND GREEN BACKGROUND.

18. CONTENTS OF EXISTING JUNCTION BOX TO BE MODIFIED SHALL BE MAINTAINED THROUGHOUT ALL STAGES OF CONSTRUCTION. SEE PLAN SHEET 11 OF 24.

REMOVE AND DISPOSE OF SIGN STRUCTURE
WILL BE MEASURED IN UNITS OF EACH AND PAID FOR AT THE CONTRACT UNTT PRICE PER EACH, WHICH PRICE SHALL BE FULL COMPENSATION FOR REMOVAL AND DISPOSAL OF SIGN PANELS, POSTS AND FOUNDATIONS TO AT LEAST TWO FEET BELOW EXISTING GROUND LINE, BACKFILLING AND RESTORATION (TOPSOILING AND SEEDING), AND FOR ALL MATERIALS, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

PAY ITEM	PAY UNIT
REMOVE AND DISPOSE SIGN STRUCTURE	EACH

PAVEMENT MARKING YIELD ARROW 36"
THIS WORK SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNTIL PRICE PER EACH. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING 36" YIELD ARROW IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET. THIS PRICE SHALL INCLUDE THE PAVEMENT MARKING MATERIAL SURFACE PREPARATION, QUALITY CONTROL TEST, DAILY LOG, GUARDING DEVICES, PRIMER/ADHESIVE, AND GLASS BEADS, AND ALL MATERIALS, EQUIPMENT, TOOLS AND LABOR NECESSARY TO COMPLETE THE WORK

PAY ITEM	PAY UNIT
PAVEMENT MARKING YIELD ARROW 36"	EACH

RECTANGULAR RAPID FLASH BEACON
THIS WORK SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE OF EACH. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING PEDESTRIAN ACTUATED RECTANGULAR RAPID FLASH BEACON (RRFB) AT THE LOCATION INDICATED ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER. RRFB SHALL INCLUDE THE COST OF A SINGLE SIDED RRFB, 55-WATT SOLAR PANEL, CONTROLLER, WIRELESS TRANSMITTER, AND PUSHBUTTON WITH ALL NECESSARY EQUIPMENT, POLE, PEDESTAL BASE, FOUNDATION, PAINT AND ALL MATERIALS, EQUIPMENT, TOOLS AND LABOR NECESSARY TO COMPLETE THE WORK.

PAY ITEM	PAY UNIT
RECTANGULAR RAPID FLASHING BEACON (RRFB)	EACH

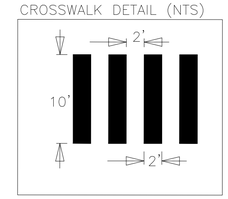
MODIFY EXISTING JUNCTION BOX
WILL BE MEASURED IN UNITS OF EACH AND PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, WHICH PRICE SHALL BE FULL COMPENSATION FOR MODIFYING EXISTING JUNCTION BOX TO ADJUST FRAME AND COVER TO BE FLUSH WITH PROPOSED SIDEWALK. THIS PRICE SHALL INCLUDE FILLING VOIDS CREATED WITH HYDRAULIC CONCRETE, BACKFILLING, DISPOSAL, AND ALL LABOR, TOOLS, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

PAY ITEM	PAY UNIT
MODIFY EXISTING JUNCTION BOX	EACH

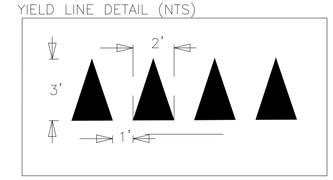
Signing Legend

DESCRIPTION	SYMBOL
RECTANGULAR RAPID FLASH BEACON (RRFB)	
SIGN POST	
EXISTING SIGN POST	

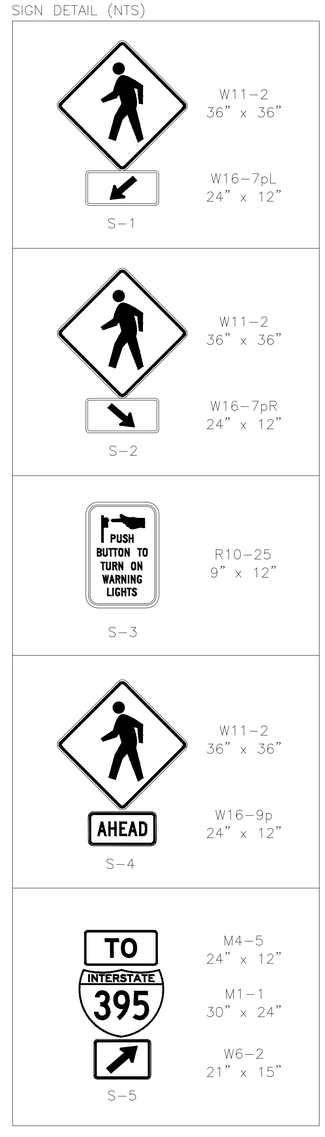
CROSSWALK DETAIL (NTS)



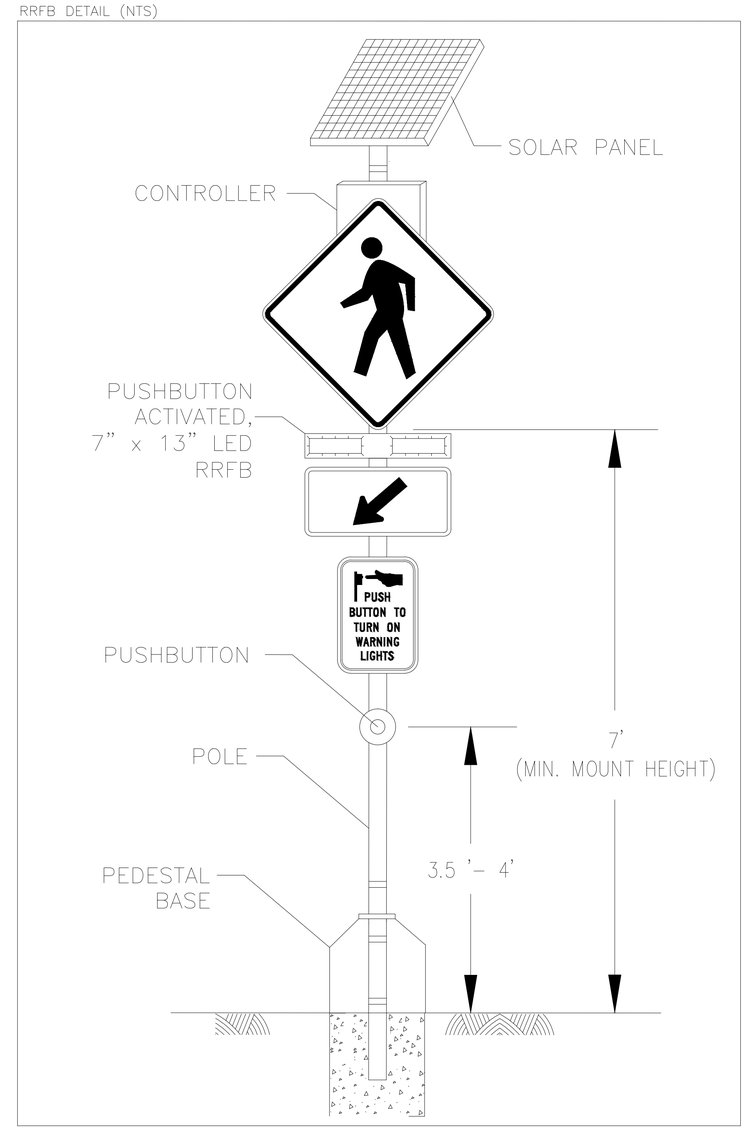
YIELD LINE DETAIL (NTS)



SIGN DETAIL (NTS)



RRFB DETAIL (NTS)



90% PLANS
NOT FOR CONSTRUCTION

REVISIONS

Signing & Marking Plan Sheet 1

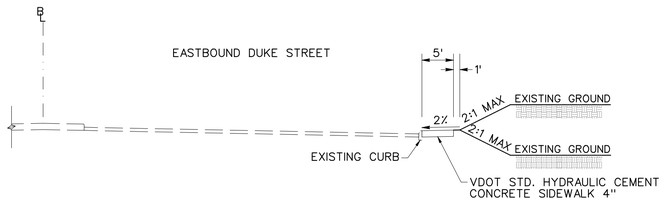
Scale: N/A Project: 09-118 Sheet: 3 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

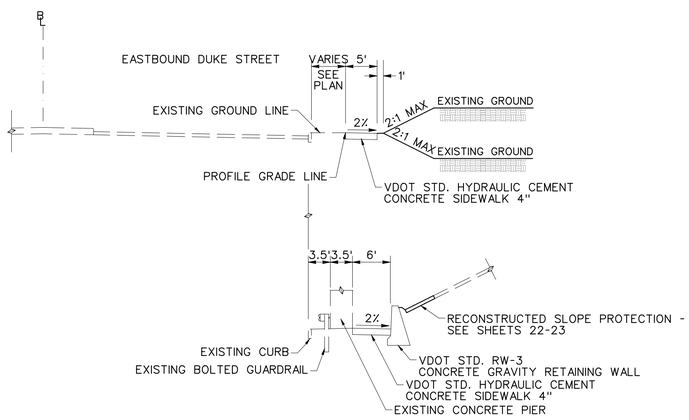
Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

NOTE: SAW CUTS ARE INCIDENTAL TO THE CURB ITEMS.

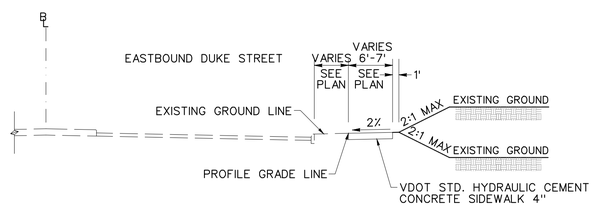


DUKE ST – SECTION 1
STA. 116+80 TO STA. 117+17
STA. 119+75 TO STA. 126+21

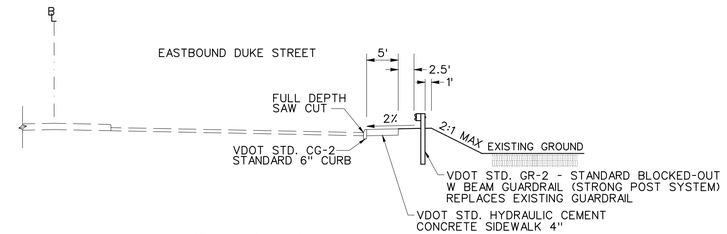


STA. 108+08 TO STA. 109+20

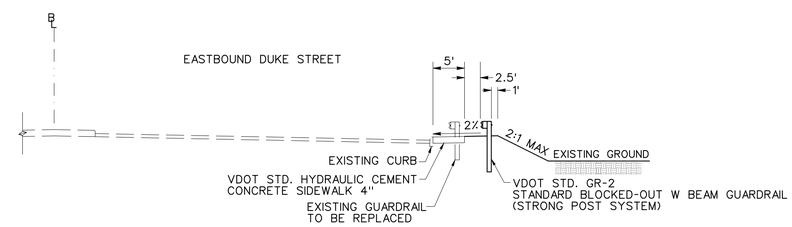
DUKE ST – SECTION 2
STA. 104+46 TO STA. 110+12



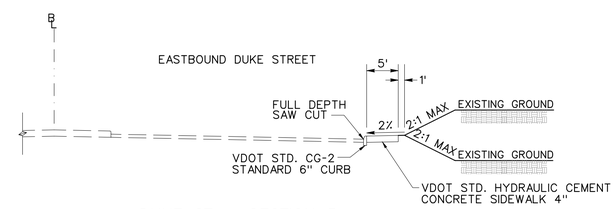
DUKE ST – SECTION 6
STA. 102+49 TO STA. 104+44



DUKE ST – SECTION 3
STA. 110+12 TO STA. 111+92



DUKE ST – SECTION 4
STA. 115+20 TO STA. 116+80



DUKE ST – SECTION 5
STA. 117+14 TO STA. 119+75

REVISIONS

Typical Sections

Scale: NTS Project: 09-118 Sheet: 4 of 24

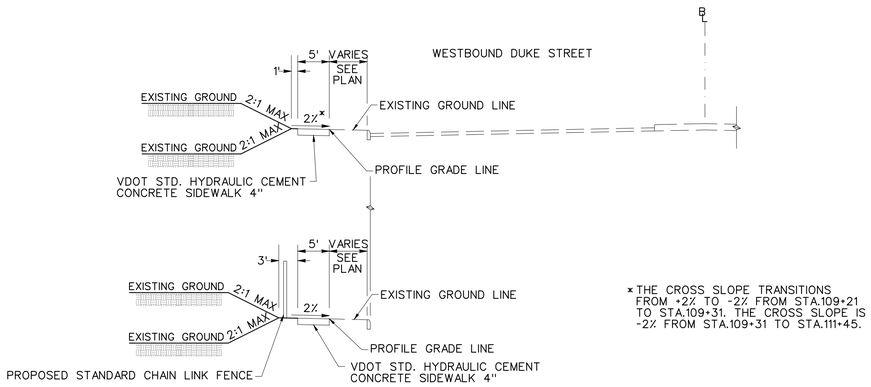
Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\balsnv03\v2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pff-X001_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 12:19am

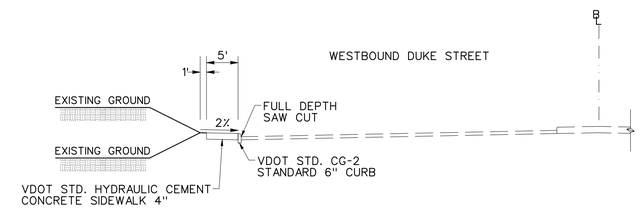
NOTE: SAW CUTS ARE INCIDENTAL TO THE CURB ITEMS.



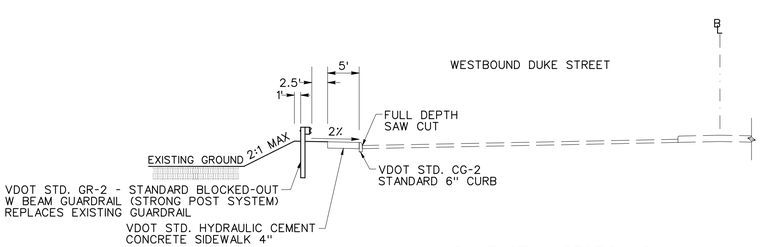
* THE CROSS SLOPE TRANSITIONS FROM +2% TO -2% FROM STA.109+21 TO STA.109+31. THE CROSS SLOPE IS -2% FROM STA.109+31 TO STA.111+45.

STA. 105+64 TO STA. 106+91

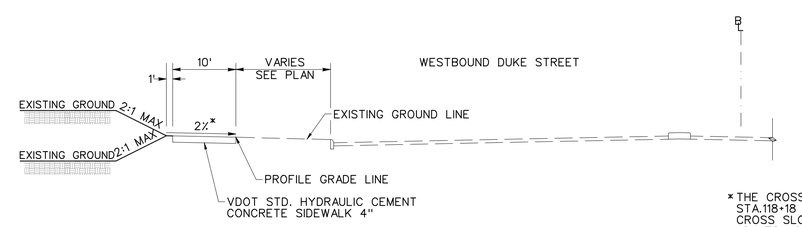
DUKE ST – SECTION 7
STA. 105+64 TO STA. 111+45



DUKE ST – SECTION 9
STA. 116+98 TO STA. 118+24



DUKE ST – SECTION 8
STA. 111+57 TO STA. 112+38
STA. 115+67 TO STA. 116+98



* THE CROSS SLOPE IS -2% FROM STA.118+18 TO STA.119+72. THE CROSS SLOPE TRANSITIONS FROM -2% TO +2% FROM STA.119+72 TO STA.119+82.

DUKE ST – SECTION 10
STA. 118+18 TO STA. 126+34

REVISIONS

Typical Sections

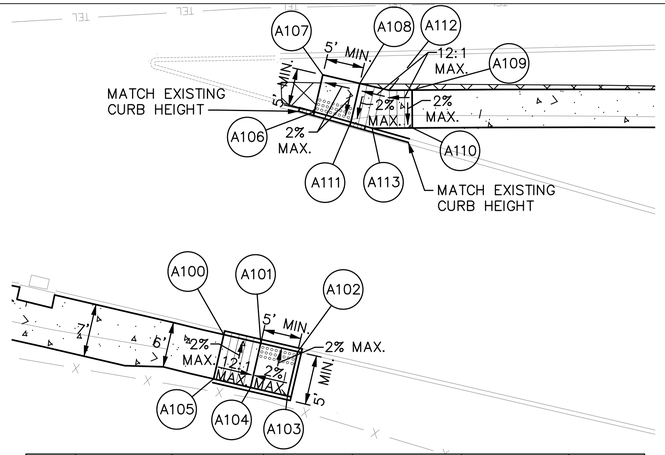
Scale: NTS Project: 09-118 Sheet: 5 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

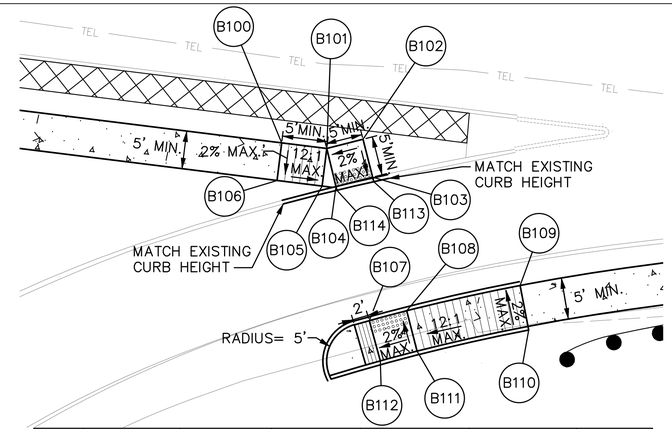
CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\balsrv03\2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pltf-X002_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Tuesday, February 25, 2014 - 10:21pm



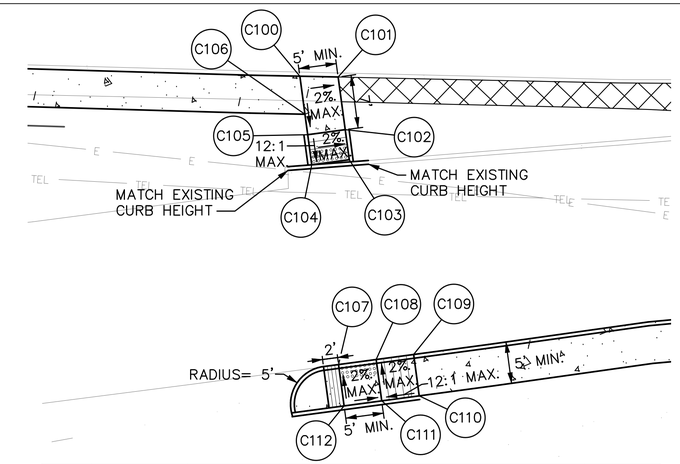
POINT	BASELINE	STATION	OFFSET	NORTH	EAST	ELEVATION
A100	ROUTE 236	104+33.70	78.99' RT	6983474.37	11870174.78	247.65
A101	ROUTE 236	104+38.68	80.19' RT	6983470.88	11870178.35	247.25
A102	ROUTE 236	104+43.67	81.38' RT	6983467.38	11870181.93	247.35
A103	ROUTE 236	104+42.20	87.21' RT	6983463.09	11870117.73	247.45
A104	ROUTE 236	104+37.21	86.01' RT	6983466.59	11870174.16	247.35
A105	ROUTE 236	104+32.22	84.81' RT	6983470.09	11870170.58	247.75
A106	ROUTE 236	104+46.30	49.75' RT	6983493.27	11870200.28	248.18
A107	ROUTE 236	104+47.51	44.89' RT	6983496.84	11870203.77	248.21
A108	ROUTE 236	104+52.44	46.07' RT	4983493.34	11870207.35	248.31
A109	ROUTE 236	104+59.43	47.00' RT	6983489.01	11870212.79	248.85
A110	ROUTE 236	104+59.44	52.00' RT	6983484.72	11870210.22	248.75
A111	ROUTE 236	104+51.18	51.17' RT	6983489.59	11870203.68	248.21
A112	ROUTE 236	104+56.35	47.00' RT	6983490.57	11870210.18	248.62
A113	ROUTE 236	104+54.05	52.00' RT	6983487.44	11870205.67	248.45

DETAIL A
PEDESTRIAN RAMP



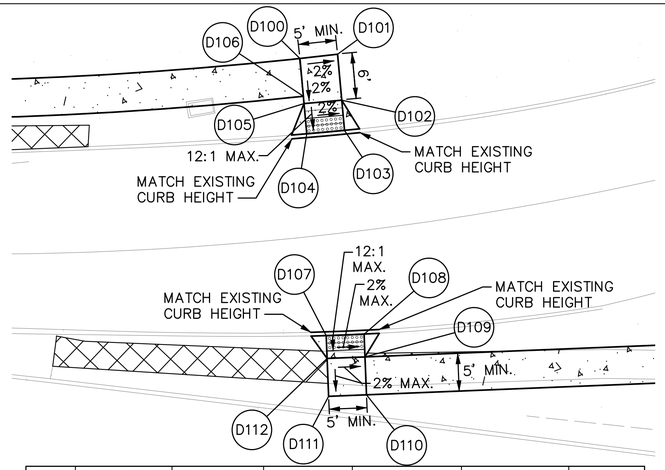
POINT	BASELINE	STATION	OFFSET	NORTH	EAST	ELEVATION
B100	ROUTE 236	109+99.36	49.70' RT	6983176.35	11870644.72	245.02
B101	ROUTE 236	110+05.36	49.71' RT	6983172.62	11870649.42	244.60
B102	ROUTE 236	110+09.96	47.92' RT	6983171.17	11870654.13	244.70
B103	ROUTE 236	110+11.83	52.73' RT	6983166.24	11870652.62	244.60
B104	ROUTE 236	110+07.18	54.54' RT	6983167.70	11870647.84	244.50
B105	ROUTE 236	110+05.35	54.71' RT	6983168.70	11870646.31	244.50
B106	ROUTE 236	109+99.35	54.70' RT	6983172.44	11870641.61	244.92
B107	ROUTE 236	110+13.89	72.04' RT	6983149.82	11870642.24	243.37
B108	ROUTE 236	110+18.62	70.14' RT	6983148.37	11870647.13	243.63
B109	ROUTE 236	110+33.03	65.01' RT	6983143.45	11870661.61	244.95
B110	ROUTE 236	110+34.57	69.77' RT	6983138.76	11870659.86	245.05
B111	ROUTE 236	110+20.44	74.80' RT	6983143.59	11870645.66	243.69
B112	ROUTE 236	110+15.80	76.66' RT	6983145.01	11870640.87	243.59
B113	ROUTE 236	110+12.05	53.29' RT	6983165.66	11870652.44	244.70
B114	ROUTE 236	110+07.36	55.01' RT	6983167.22	11870647.69	244.50

DETAIL B
PEDESTRIAN RAMP



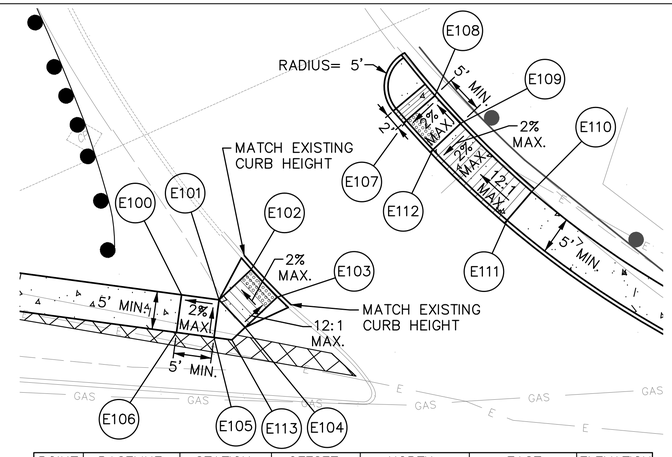
POINT	BASELINE	STATION	OFFSET	NORTH	EAST	ELEVATION
C100	ROUTE 236	117+09.89	41.94' RT	6982745.38	11871214.15	246.26
C101	ROUTE 236	117+14.85	41.88' RT	6982742.66	11871218.41	246.11
C102	ROUTE 236	117+15.98	48.79' RT	6982736.24	11871215.59	246.07
C103	ROUTE 236	117+16.62	52.74' RT	6982732.58	11871213.98	245.73
C104	ROUTE 236	117+11.82	53.56' RT	6982734.59	11871209.40	245.85
C105	ROUTE 236	117+11.17	49.62' RT	6982738.25	11871211.01	246.17
C106	ROUTE 236	117+10.72	46.93' RT	6982740.75	11871212.11	246.20
C107	ROUTE 236	117+16.16	80.29' RT	6982709.78	11871198.51	244.72
C108	ROUTE 236	117+20.91	79.47' RT	6982707.77	11871203.09	244.61
C109	ROUTE 236	117+25.65	78.66' RT	6982705.76	11871207.66	245.01
C110	ROUTE 236	117+26.42	83.60' RT	6982701.18	11871205.65	245.11
C111	ROUTE 236	117+21.68	84.40' RT	6982703.19	11871201.07	244.71
C112	ROUTE 236	117+16.95	85.22' RT	6982705.20	11871196.50	244.81

DETAIL C
PEDESTRIAN RAMP



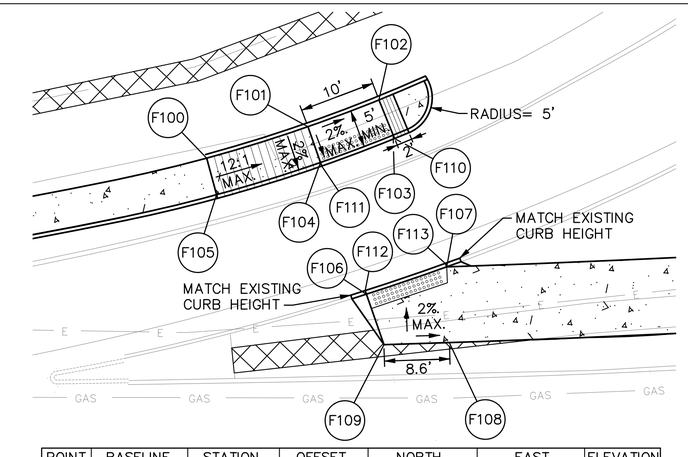
POINT	BASELINE	STATION	OFFSET	NORTH	EAST	ELEVATION
D100	ROUTE 236	108+41.00	86.17' LT	6983381.47	11870604.40	245.90
D101	ROUTE 236	108+45.74	87.31' LT	6983379.36	11870608.93	245.84
D102	ROUTE 236	108+46.96	81.36' LT	6983373.91	11870606.25	245.72
D103	ROUTE 236	108+47.76	77.44' LT	6983370.32	11870604.48	245.70
D104	ROUTE 236	108+42.99	76.42' LT	6983372.53	11870599.99	245.78
D105	ROUTE 236	108+42.19	80.33' LT	6983376.12	11870601.76	245.80
D106	ROUTE 236	108+42.00	81.28' LT	6983376.99	11870602.19	245.80
D107	ROUTE 236	108+48.54	50.26' LT	6983348.45	11870588.32	247.08
D108	ROUTE 236	108+53.39	51.05' LT	6983346.02	11870592.69	247.07
D109	ROUTE 236	108+53.87	48.08' LT	6983343.39	11870591.23	246.82
D110	ROUTE 236	108+54.65	43.14' LT	6983339.02	11870588.80	246.72
D111	ROUTE 236	108+49.78	42.35' LT	6983341.44	11870584.43	246.73
D112	ROUTE 236	108+49.00	47.28' LT	6983345.81	11870586.86	246.83

DETAIL D
PEDESTRIAN RAMP



POINT	BASELINE	STATION	OFFSET	NORTH	EAST	ELEVATION
E100	ROUTE 236	111+31.93	56.26' LT	6983177.15	11870814.42	247.78
E101	ROUTE 236	111+36.93	56.20' LT	6983174.01	11870818.31	247.88
E102	ROUTE 236	111+40.63	60.68' LT	6983175.22	11870824.00	247.38
E103	ROUTE 236	111+44.49	57.50' LT	6983170.33	11870825.04	247.53
E104	ROUTE 236	111+40.78	53.02' LT	6983169.12	11870819.35	247.98
E105	ROUTE 236	111+36.87	51.20' LT	6983170.12	11870815.16	247.98
E106	ROUTE 236	111+31.87	51.26' LT	6983173.27	11870811.28	247.81
E107	ROUTE 236	111+58.57	82.71' LT	6983181.35	11870851.73	245.50
E108	ROUTE 236	111+61.91	86.43' LT	6983182.20	11870856.66	245.70
E109	ROUTE 236	111+65.70	83.16' LT	6983177.29	11870857.60	245.80
E110	ROUTE 236	111+76.13	75.42' LT	6983164.74	11870860.98	246.92
E111	ROUTE 236	111+73.37	71.25' LT	6983163.19	11870856.22	246.82
E112	ROUTE 236	111+62.51	79.31' LT	6983176.24	11870852.71	245.74
E113	ROUTE 236	111+39.25	51.18' LT	6983168.62	11870817.02	247.98

DETAIL E
PEDESTRIAN RAMP



POINT	BASELINE	STATION	OFFSET	NORTH	EAST	ELEVATION
F100	ROUTE 236	117+96.63	70.63' LT	6982794.90	11871346.92	239.35
F101	ROUTE 236	118+10.55	74.61' LT	6982791.48	11871360.49	238.18
F102	ROUTE 236	118+20.34	77.97' LT	6982789.62	11871370.31	237.98
F103	ROUTE 236	118+22.19	73.30' LT	6982784.68	11871369.51	237.89
F104	ROUTE 236	118+12.18	69.86' LT	6982786.59	11871359.44	238.12
F105	ROUTE 236	117+97.94	65.79' LT	6982790.10	11871345.52	239.25
F106	ROUTE 236	118+18.11	52.38' LT	6982768.60	11871355.56	239.48
F107	ROUTE 236	118+29.10	55.76' LT	6982766.16	11871366.50	239.28
F108	ROUTE 236	118+29.18	45.76' LT	6982757.45	11871361.59	239.48
F109	ROUTE 236	118+20.35	45.69' LT	6982761.71	11871354.08	239.54
F110	ROUTE 236	118+22.36	72.83' LT	6982784.19	11871369.42	237.64
F111	ROUTE 236	118+12.34	69.39' LT	6982786.10	11871359.33	238.12
F112	ROUTE 236	118+17.95	52.86' LT	6982769.09	11871355.67	239.48
F113	ROUTE 236	118+28.93	56.24' LT	6982766.65	11871366.60	239.11

DETAIL F
PEDESTRIAN RAMP

REVISIONS

Detail
Sheet 1

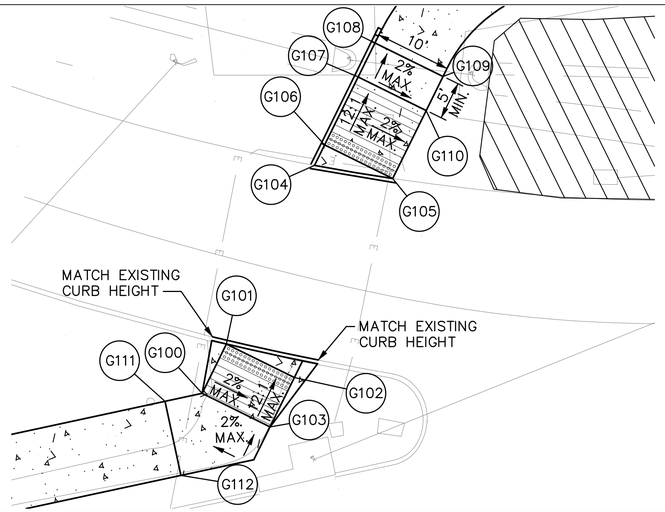
Scale: 1"=10' Project: 09-118 Sheet: 6 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\balsrv03\v2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pHD-0001_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 2:44pm



POINT	BASELINE	STATION	OFFSET	NORTH	EAST	ELEVATION
G100	ROUTE 236	122+25.89	68.35' LT	6982619.80	11871721.58	226.60
G101	ROUTE 236	122+30.64	73.98' LT	6982623.69	11871727.71	225.91
G102	ROUTE 236	122+38.66	67.65' LT	6982615.24	11871733.06	225.80
G103	ROUTE 236	122+33.91	62.04' LT	6982611.36	11871726.93	226.40
G104	ROUTE 236	122+48.06	94.28' LT	6982637.76	11871749.90	Match Existing
G105	ROUTE 236	122+58.14	90.19' LT	6982630.92	11871757.80	Match Existing (223.50)
G106	ROUTE 236	122+50.08	96.60' LT	6982639.37	11871752.45	223.70
G107	ROUTE 236	122+56.83	104.28' LT	6982644.72	11871760.90	223.08
G108	ROUTE 236	122+60.22	108.11' LT	6982647.40	11871765.12	222.98
G109	ROUTE 236	122+68.29	101.66' LT	6982638.96	11871770.47	222.78
G110	ROUTE 236	122+64.89	97.85' LT	6982636.28	11871766.25	222.88
G111	ROUTE 236	122+20.71	68.40' LT	6982621.45	11871716.86	226.70
G112	ROUTE 236	122+20.62	58.40' LT	6982612.01	11871713.56	226.50

DETAIL G
PEDESTRIAN RAMP

REVISIONS

Detail Sheet 2

Scale: 1"=10' Project: 09-118 Sheet: 7 of 24

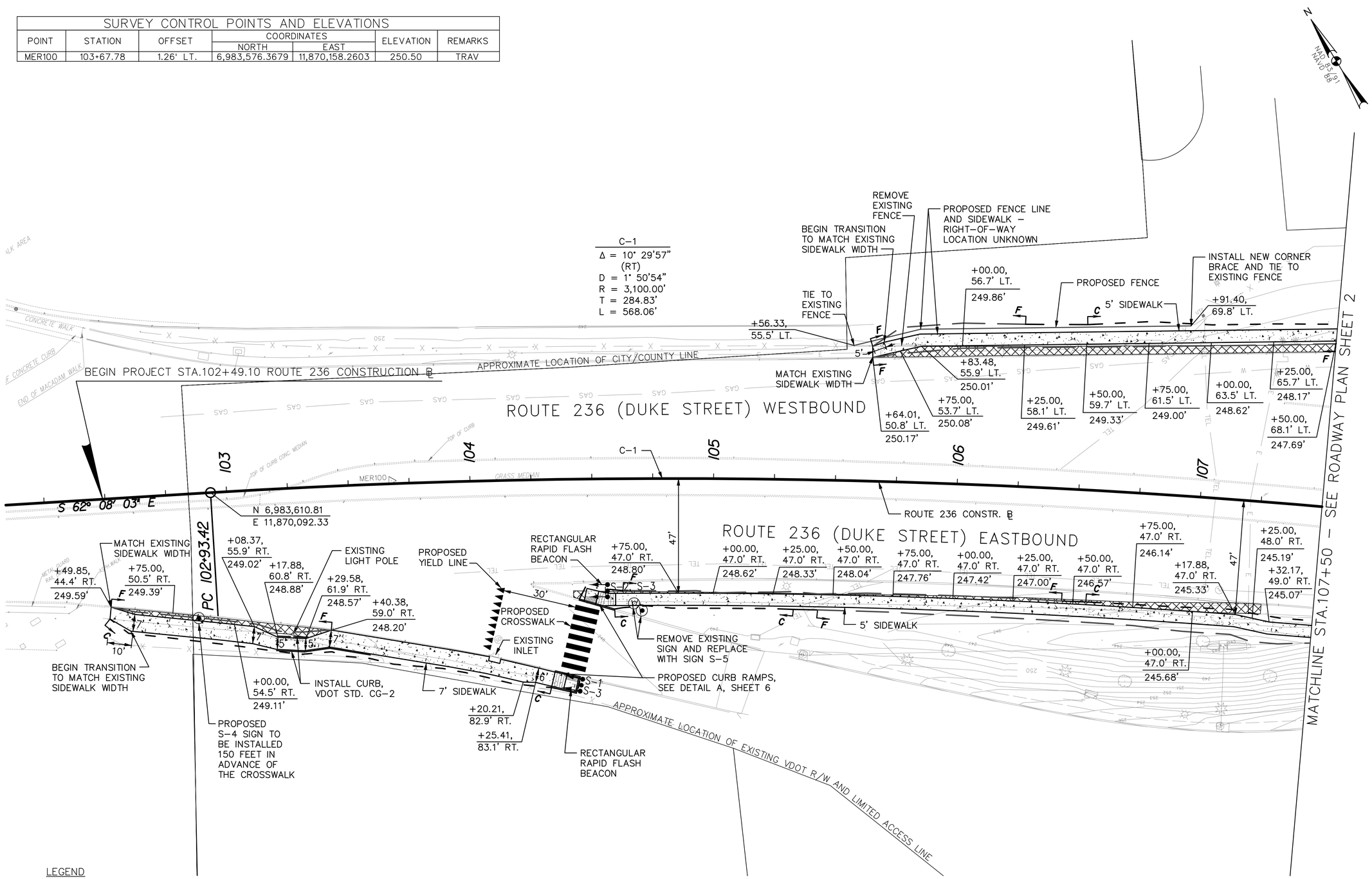
Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\balsrv03\2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pHD-D002_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 2:49pm

SURVEY CONTROL POINTS AND ELEVATIONS						
POINT	STATION	OFFSET	COORDINATES		ELEVATION	REMARKS
			NORTH	EAST		
MER100	103+67.78	1.26' LT.	6,983,576.3679	11,870,158.2603	250.50	TRAV



90% PLANS
NOT FOR CONSTRUCTION

REVISIONS

Roadway Plan
Sheet 1

Scale: 1"=20' Project: 09-118 Sheet: 8 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

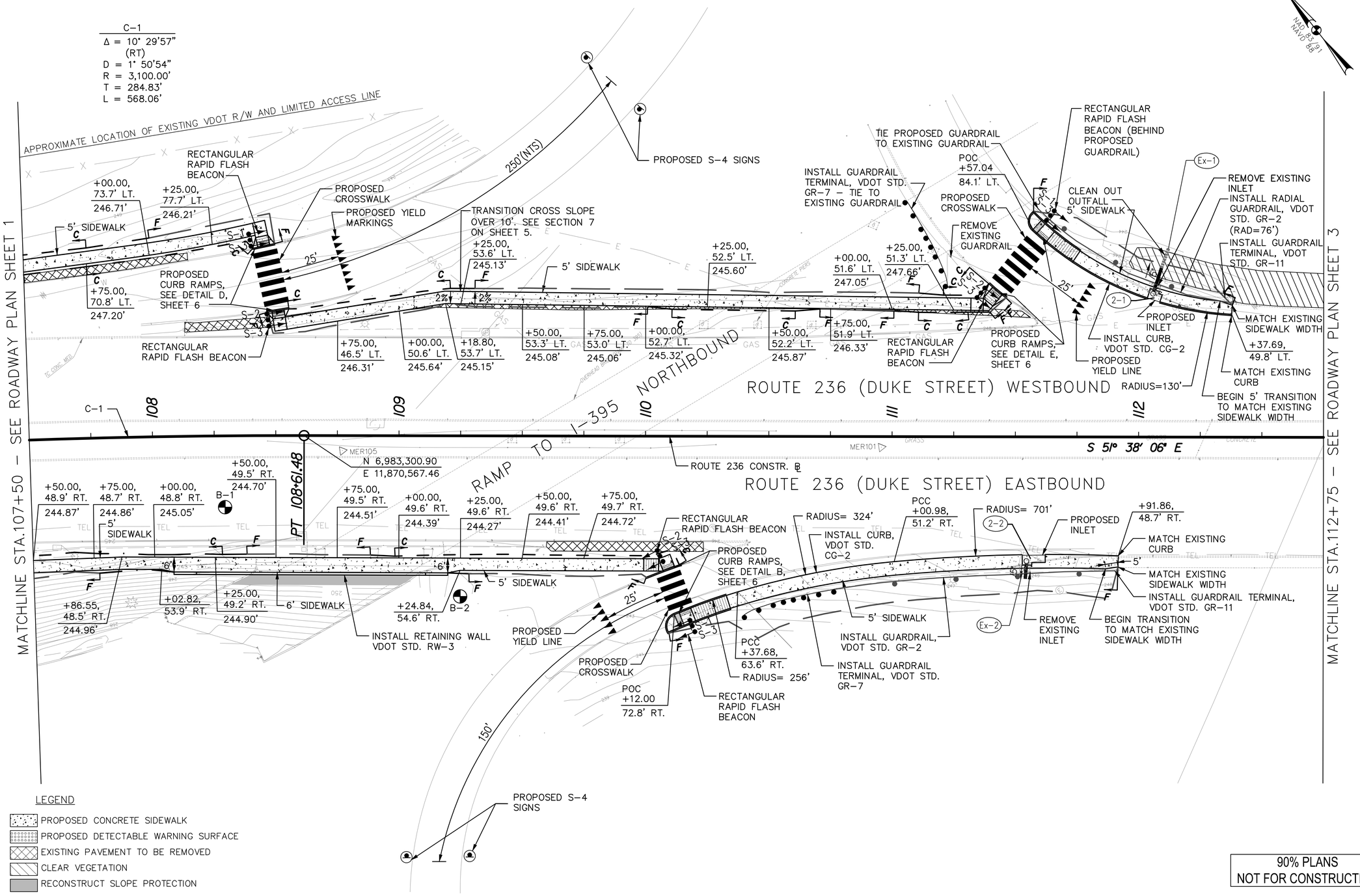
Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\balsn03\v2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\phID-P001_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 2:51pm

SURVEY CONTROL POINTS AND ELEVATIONS						
POINT	STATION	OFFSET	COORDINATES		ELEVATION	REMARKS
			NORTH	EAST		
MER101	110+95.65	4.32' RT.	6,983,152.1728	11,870,748.3819	248.65	TRAV
MER105	108+77.03	6.09' RT.	6,983,286.4779	11,870,575.8662	245.78	TRAV

BORING TARGET DATA					
TARGET	BASELINE	STATION	OFFSET	NORTHING	EASTING
B-1	ROUTE 236	108+29.21	28.95' RT	6,983,297.91	11,870,524.32
B-2	ROUTE 236	109+24.91	65.16' RT	6,983,210.44	11,870,576.75



LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED DETECTABLE WARNING SURFACE
- EXISTING PAVEMENT TO BE REMOVED
- CLEAR VEGETATION
- RECONSTRUCT SLOPE PROTECTION

90% PLANS
NOT FOR CONSTRUCTION

REVISIONS

Roadway Plan
Sheet 2

Scale: 1"=20' Project: 09-118 Sheet: 9 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

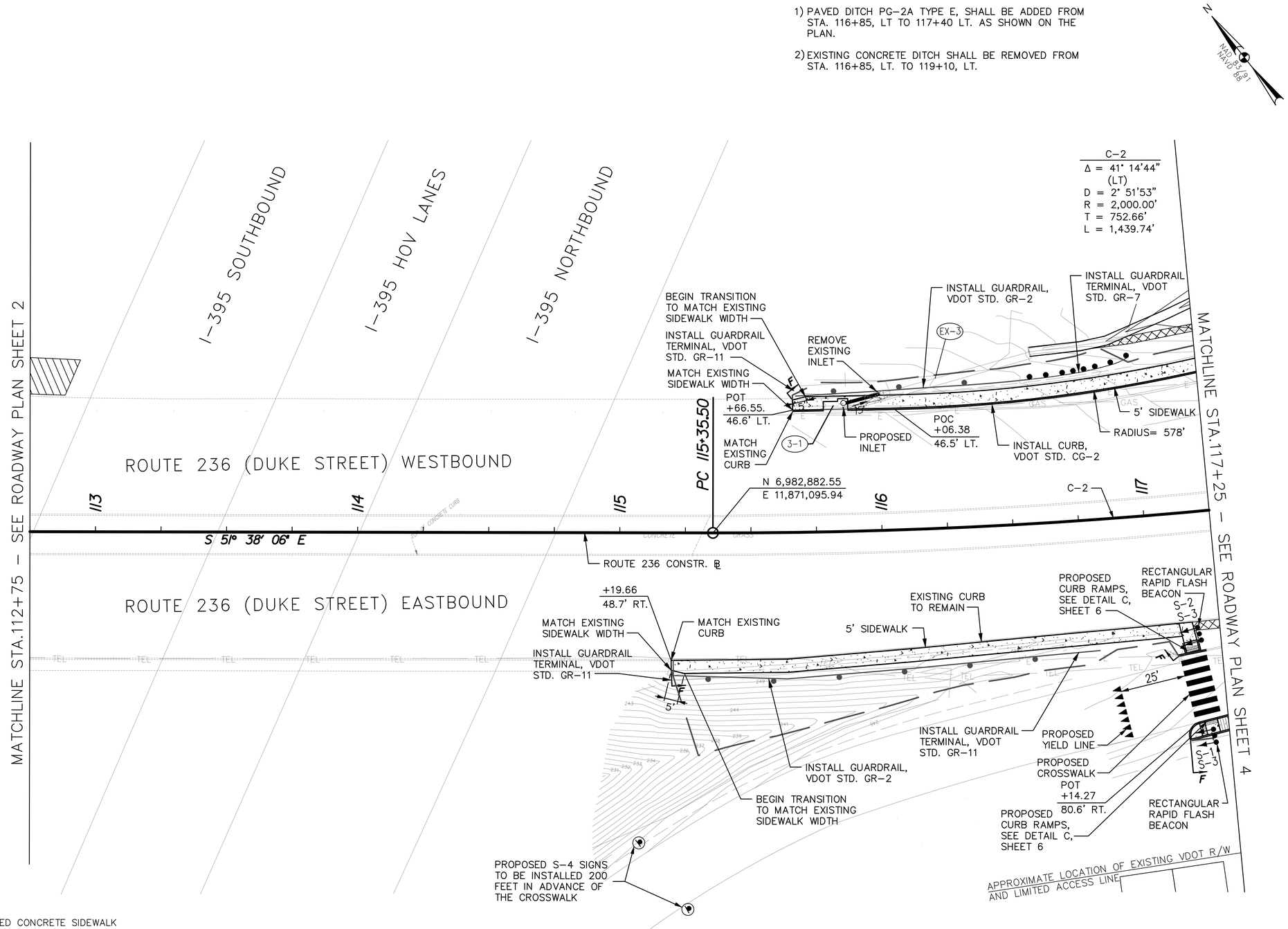
CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\bdsinc03\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pH0-P002_Duke.dwg LAYOUT NAME: Layout2 PLOTTED: Thursday, February 27, 2014 - 3:16pm

NOTES:

1) PAVED DITCH PG-2A TYPE E, SHALL BE ADDED FROM STA. 116+85, LT TO 117+40 LT. AS SHOWN ON THE PLAN.

2) EXISTING CONCRETE DITCH SHALL BE REMOVED FROM STA. 116+85, LT. TO 119+10, LT.



LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED DETECTABLE WARNING SURFACE
- EXISTING PAVEMENT TO BE REMOVED
- CLEAR VEGETATION

90% PLANS
NOT FOR CONSTRUCTION

REVISIONS

Roadway Plan
Sheet 3

Scale: 1"=20' Project: 09-118 Sheet: 10 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

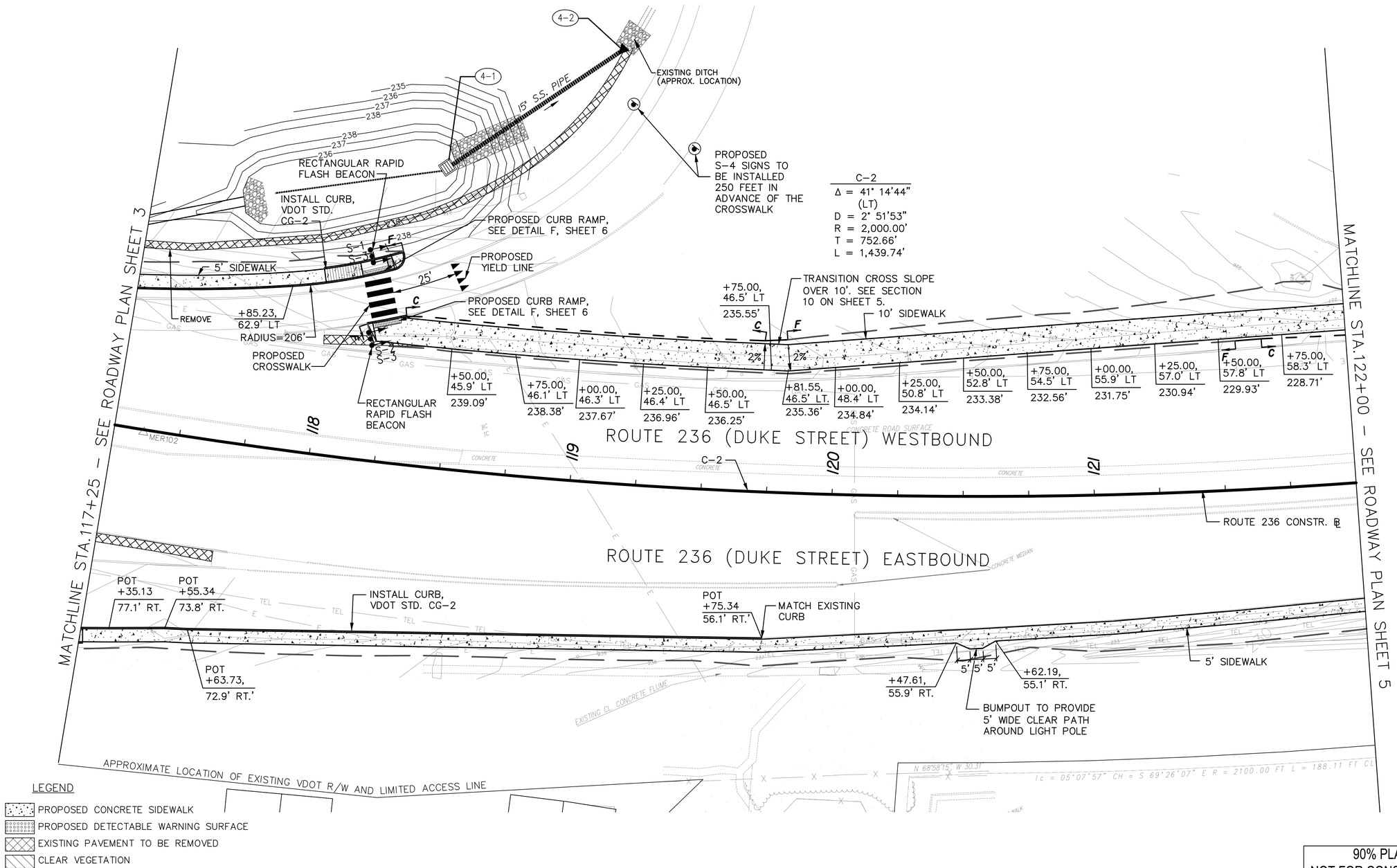
FILE NAME: \\balsrv03\v2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pHD-P003_Duke.dwg LAYOUT NAME: Layout3 PLOTTED: Thursday, February 27, 2014 - 3:01pm

SURVEY CONTROL POINTS AND ELEVATIONS						
POINT	STATION	OFFSET	COORDINATES		ELEVATION	REMARKS
			NORTH	EAST		
MER102	117+36.28	0.94' RT.	6,982,765.2496	11,871,258.8371	244.49	TRAV

NOTES:

1) PAVED DITCH PG-2A TYPE E, SHALL BE ADDED FROM STA. 116+85, LT TO 117+40 LT. AS SHOWN ON THE PLAN.

2) EXISTING CONCRETE DITCH SHALL BE REMOVED FROM STA. 116+85, LT. TO 119+10, LT.



LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED DETECTABLE WARNING SURFACE
- EXISTING PAVEMENT TO BE REMOVED
- CLEAR VEGETATION

90% PLANS
NOT FOR CONSTRUCTION

REVISIONS

Roadway Plan
Sheet 4

Scale: 1"=20' Project: 09-118 Sheet: 11 of 24

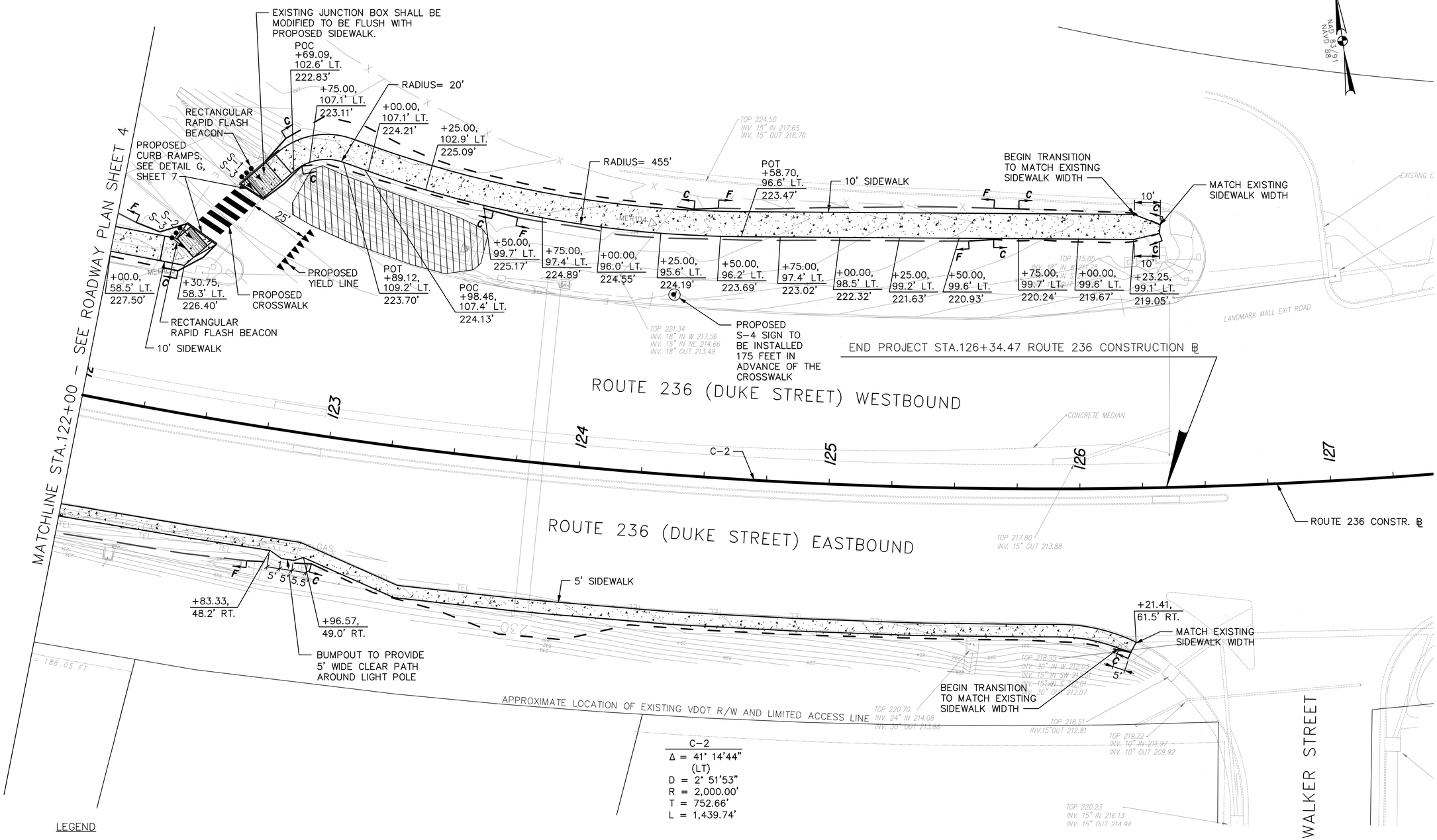
Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\balsrv03\v2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pHD-P004_Duke.dwg LAYOUT NAME: Layout4 PLOTTED: Thursday, February 27, 2014 - 3:30pm

SURVEY CONTROL POINTS AND ELEVATIONS						
POINT	STATION	OFFSET	COORDINATES		ELEVATION	REMARKS
			NORTH	EAST		
MER103	122+27.82	61.40' LT.	6,982,612.6196	11,871,721.1347	227.37	TRAV
MER104	124+21.08	99.38' LT.	6,982,598.7481	11,871,909.8895	224.52	TRAV



C-2
Δ = 41° 14'44" (LT)
D = 2° 51'53"
R = 2,000.00'
T = 752.66'
L = 1,439.74'

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED DETECTABLE WARNING SURFACE
- EXISTING PAVEMENT TO BE REMOVED
- CLEAR VEGETATION

90% PLANS
NOT FOR CONSTRUCTION

REVISIONS

Roadway Plan
Sheet 5

Scale: 1"=20' Project: 09-118 Sheet: 12 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

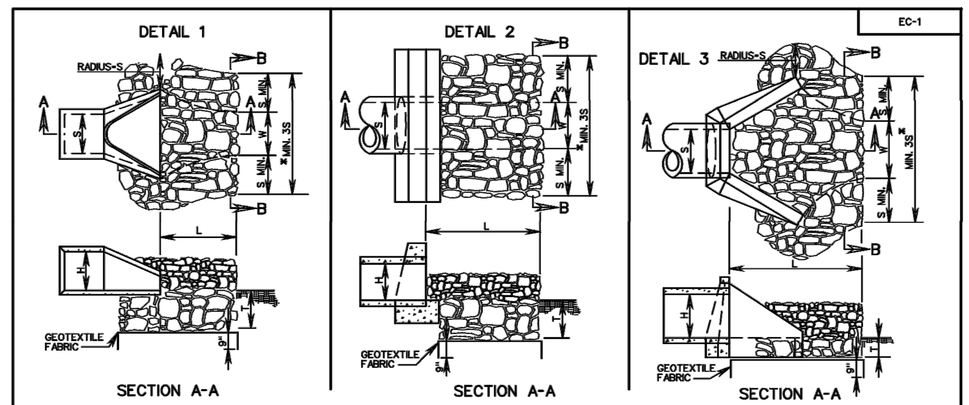
FILE NAME: \\balanv03\v2010\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\phID-P005_Duke.dwg LAYOUT NAME: Layout5 PLOTTED: Thursday, February 27, 2014 - 3:12pm

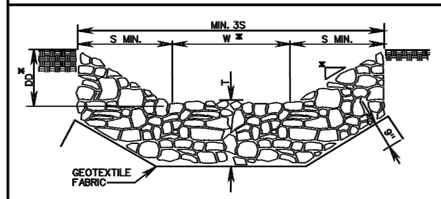
DRAINAGE DESCRIPTIONS

2-1	1 St'd DI-3B Req'd. L=4', H=3.8', Inv. 244.3
2-1 — Ex-1	18' - 15" Storm Sewer Pipe (3' Cover) Inv. (in) 244.3, Inv. (out) 243.2
Ex-1	Connect To Existing 15" Pipe Inv. 243.2 (Based on Record Drawing) To Be Cleaned Out Field Verification needed
2-2	1 St'd DI-3B Req'd. L=8', H=4.0', Inv. 245.4
2-2 — Ex-2	6.2' - 15" Storm Sewer Pipe (3' Cover) Inv. (in) 245.4, Inv. (out) 245.17
Ex-2	Connect To Existing Flume Inv. 245.17 (Based on Record Drawing) Field Verification needed
3-1	1 St'd DI-3B Req'd. L=8', H=4.0', Inv. 242.9
3-1 — Ex-3	73' - 15" Storm Sewer Pipe (3' Cover) Inv. (in) 242.9, Inv. (out) 241.2
Ex-3	Connect To Existing 15" Pipe Inv. 241.2
4-1	1 St'd DI-1A Req'd. H=7.0', Inv. 230.0
4-1 — 4-2	82' - 15" Storm Sewer Pipe (3' Cover) Inv. (in) 230.0, Inv. (out) 229.0
4-2	1 St'd 15" ES-1 Req'd. Inv. 229.0 Installation Type A Req'd. EC-1, Class I Req'd. Type A Installation Req'd.

STANDARD PAVED DITCHES, PG-2A TYPE E

STATION		SIDE
FROM	TO	
116+60	117+60	LEFT





SECTION B-B

TYPE OF OUTLET PROTECTION MATERIAL		MAXIMUM OUTLET VELOCITY (FOR DESIGN STORM)	MINIMUM "T" (INCHES)
CLASS A1	CLASS A1 DRY RIPRAP	8 fps	18
CLASS I	CLASS I DRY RIPRAP	14 fps	24
CLASS II	CLASS II DRY RIPRAP	19 fps	36

NOTES:

1. FOR MULTIPLE LINE INSTALLATIONS, DIMENSION S IS TO GOVERN THE PROTECTION OUTSIDE THE CHANNEL WIDTH (W).
2. ON ANY INSTALLATION REQUIRING CULVERT OUTLET PROTECTION WHERE NO ENDWALL OR ENDSECTION IS SPECIFIED ON THE PLANS, CONSTRUCTION IS TO BE IN ACCORDANCE WITH DETAIL 2 SHOWN ABOVE.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDER CLASS A1, I, AND II MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS.
4. S - DIAMETER OF CIRCULAR CULVERT OR SPAN FOR BOX, ELLIPTICAL OR ARCH CULVERT.
   H - DIAMETER OF CIRCULAR CULVERT OR RISE/HEIGHT FOR BOX, ELLIPTICAL OR ARCH CULVERT.
* USE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL OR MATCH EXISTING DITCH OR NATURAL GROUND.

OUTLET PROTECTION MINUMUM LENGTH (L)	
TYPE A INSTALLATION	3H
TYPE B INSTALLATION	5H

SPECIFICATION REFERENCE
204 245 303 414

CULVERT OUTLET PROTECTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

REVISION DATE	SHEET 1 OF 1
	113.01

REVISIONS

Drainage Descriptions

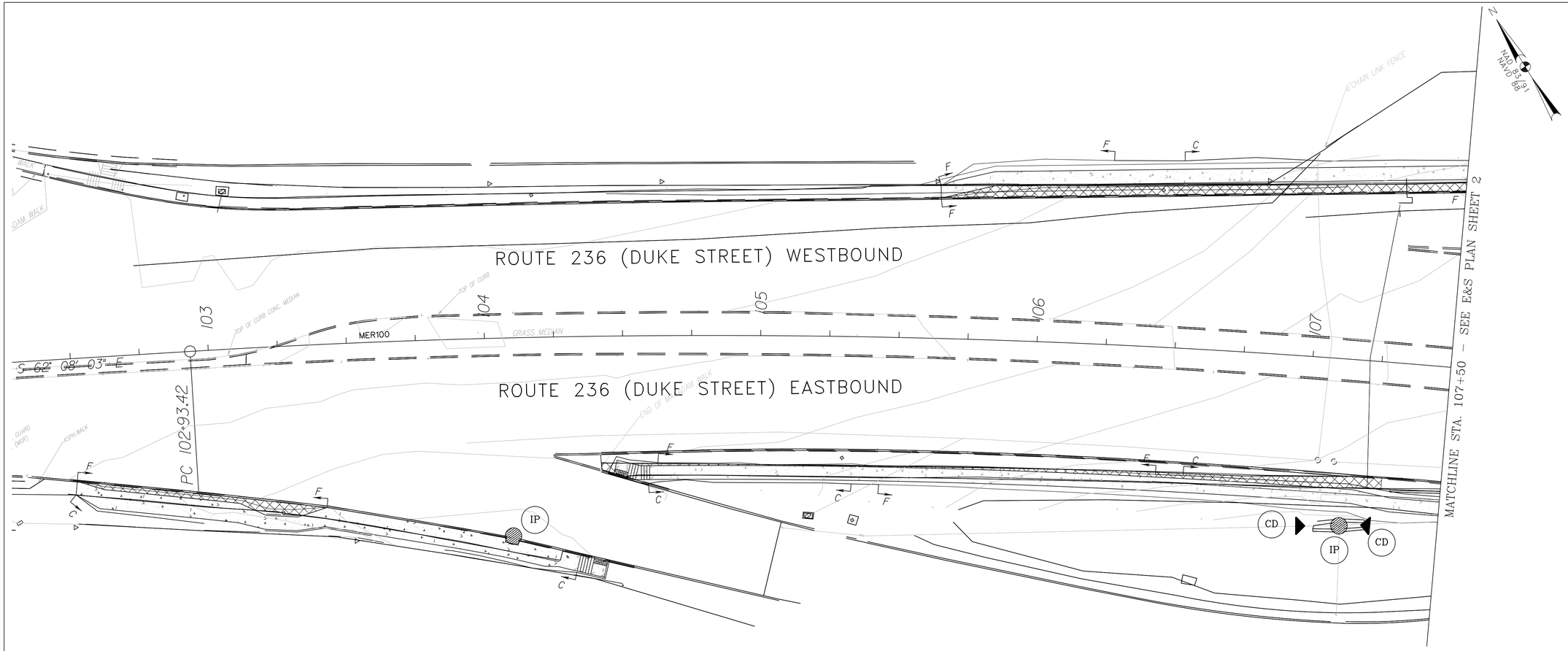
Scale: N/A Project: 09-118 Sheet: 13 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\task5_Duke-395\CADD\SHEETS\13-pD0-0001_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 10:03am



PLAN SCALE: 1"=20'

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. TEMPORARY SILT FENCE HAS BEEN SHOWN ALONG THE PROPOSED IMPROVEMENT EDGES WHERE ADJACENT PROPERTIES ARE AT ELEVATIONS CLOSE TO THE PROPOSED GRADE. THE CONTRACTOR SHALL USE THIS PRACTICE AS NECESSARY AND AS DIRECTED BY THE ENGINEER OR INSPECTOR TO ENSURE THAT NO UNFILTERED STORM DRAIN RUNOFF EXITS THE SITE.
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GENERAL EROSION AND SEDIMENT CONTROL NOTES (CONTINUED)

8. IF ADDITIONAL EROSION CONTROL DEVICES ARE FOUND TO BE NECESSARY DURING CONSTRUCTION, THE ADDITIONAL DEVICES SHALL BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER OR INSPECTOR.
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LEGEND:

CD	▶	DENOTES CHECK DAM
IP		INLET PROTECTION
CIP		CULVERT INLET PROTECTION
SF	——x——	SILT FENCE

REVISIONS

Erosion & Sediment Control Plan, Sheet 1

Scale: 1"=20' Project: 09-118 Sheet: 14 of 24

Transportation & Environmental Services
Engineering & Design Division
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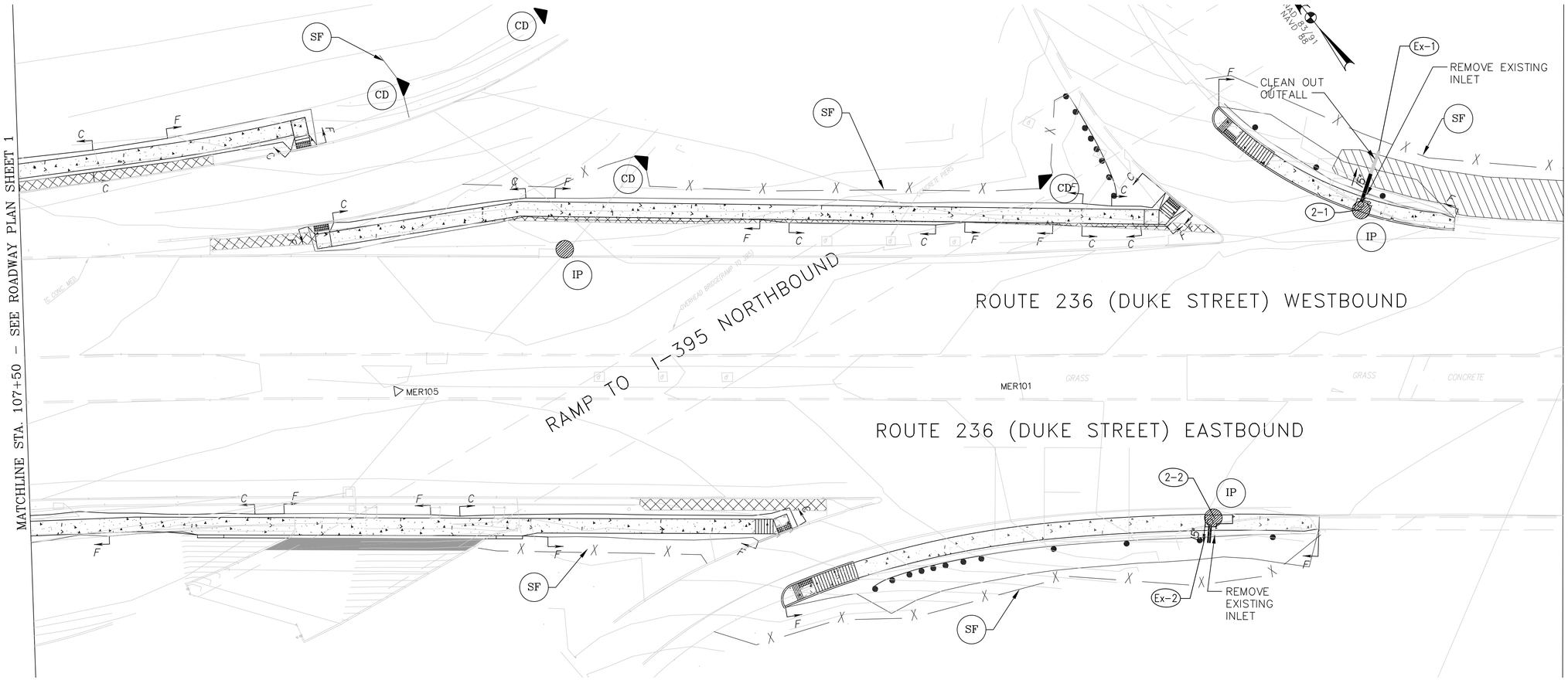
Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\14-pES-0001_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 – 10:04am



PLAN SCALE: 1"=20'

GENERAL EROSION AND SEDIMENT CONTROL NOTES

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GENERAL EROSION AND SEDIMENT CONTROL NOTES (CONTINUED)

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LEGEND:

CD	▶	DENOTES CHECK DAM
IP	▨	INLET PROTECTION
CIP	▨	CULVERT INLET PROTECTION
SF	——x——	SILT FENCE

REVISIONS

Erosion & Sediment Control Plan, Sheet 2

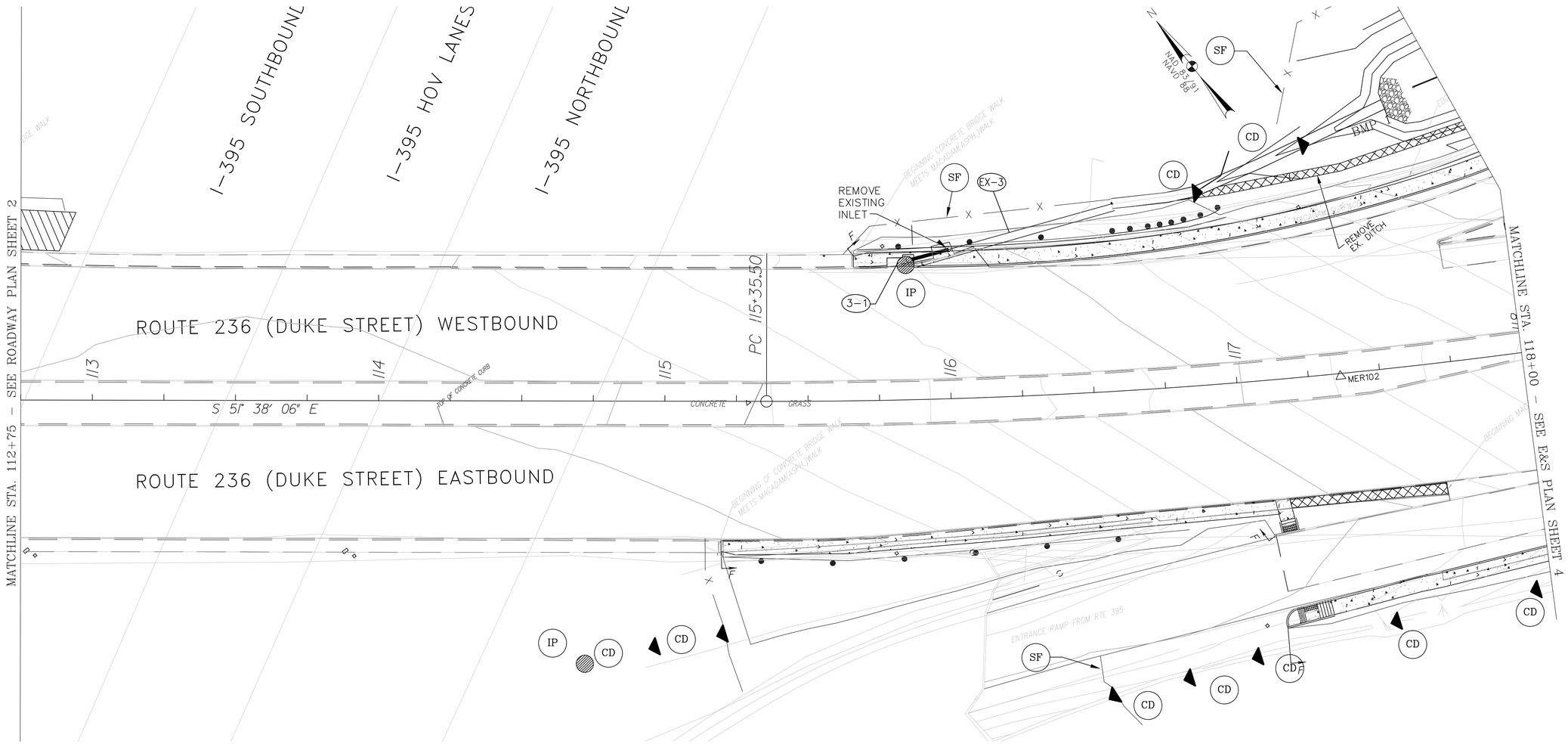
Scale: 1"=20' Project: 09-118 Sheet: 15 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\15-pES-0002_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 – 10:05am



PLAN SCALE: 1"=20'

GENERAL EROSION AND SEDIMENT CONTROL NOTES

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GENERAL EROSION AND SEDIMENT CONTROL NOTES (CONTINUED)

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LEGEND:

CD	▶	DENOTES CHECK DAM
IP	◍	INLET PROTECTION
CIP	▨	CULVERT INLET PROTECTION
SF	——x——	SILT FENCE

REVISIONS

Erosion & Sediment Control Plan, Sheet 3

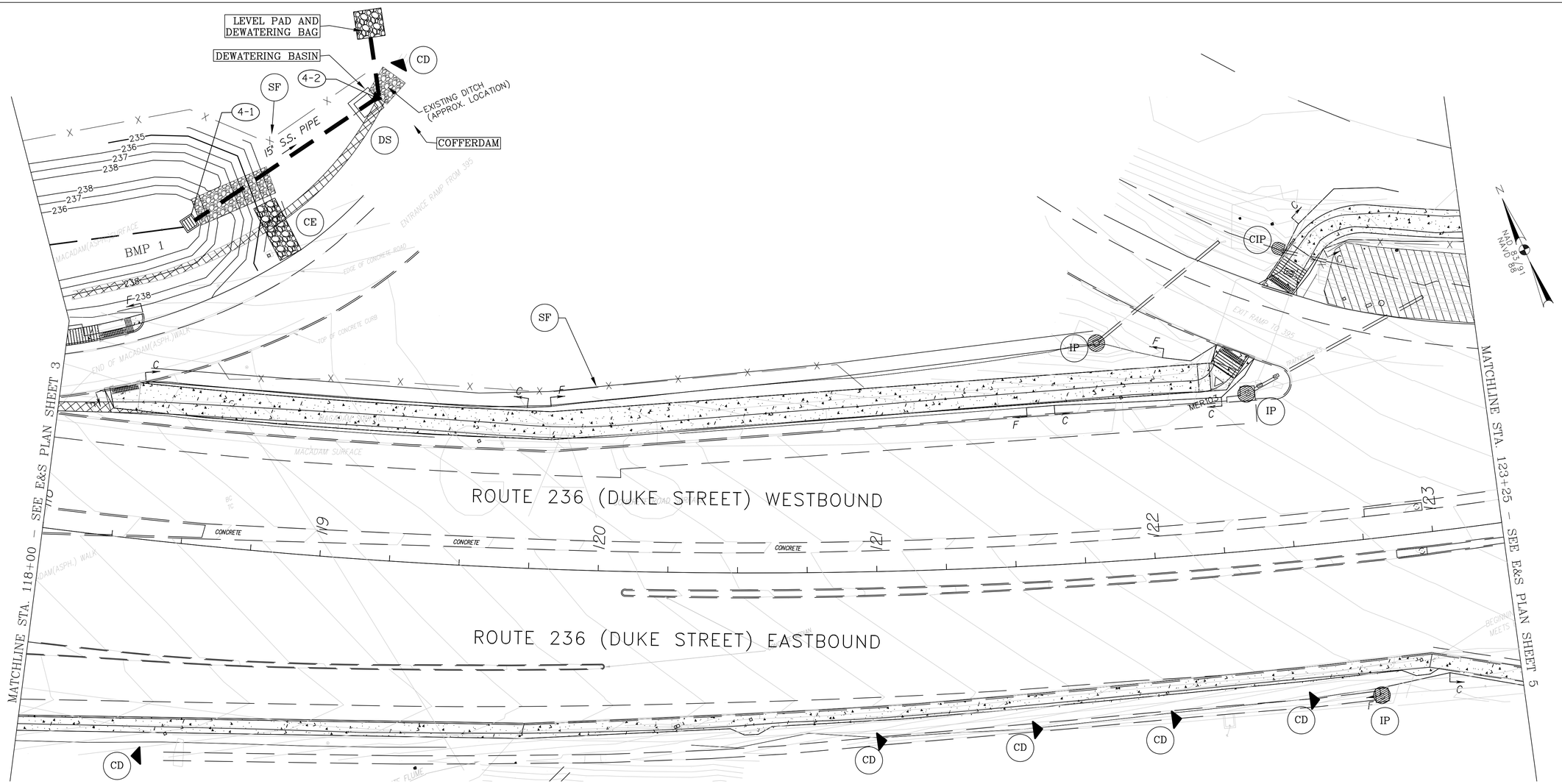
Scale: 1"=20' Project: 09-118 Sheet: 16 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvement

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\16-rpES-0003_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 2:19pm



PLAN SCALE: 1"=20'

GENERAL EROSION AND SEDIMENT CONTROL NOTES

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GENERAL EROSION AND SEDIMENT CONTROL NOTES (CONTINUED)

8. LEVEL PAD, DEWATERING BAG AND PUMP INCIDENTAL TO THE COST OF THE DEWATERING BASIN.
9. ALL RUNOFF THAT ACCUMULATES WITHIN EXCAVATED AREAS SHALL BE PUMPED TO A PORTABLE SEDIMENT TANK OR DEWATERING BASIN PRIOR TO DISCHARGE INTO THE STORM DRAIN SYSTEM.
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LEGEND:

CD	DENOTES CHECK DAM	DS	DEWATERING STRUCTURE		LEVEL PAD AND DEWATERING BAG
IP	INLET PROTECTION	SF	SILT FENCE		PUMP HOSE
CIP	CULVERT INLET PROTECTION	CE	CONSTRUCTION ENTRANCE		

REVISIONS

Erosion & Sediment Control Plan, Sheet 4

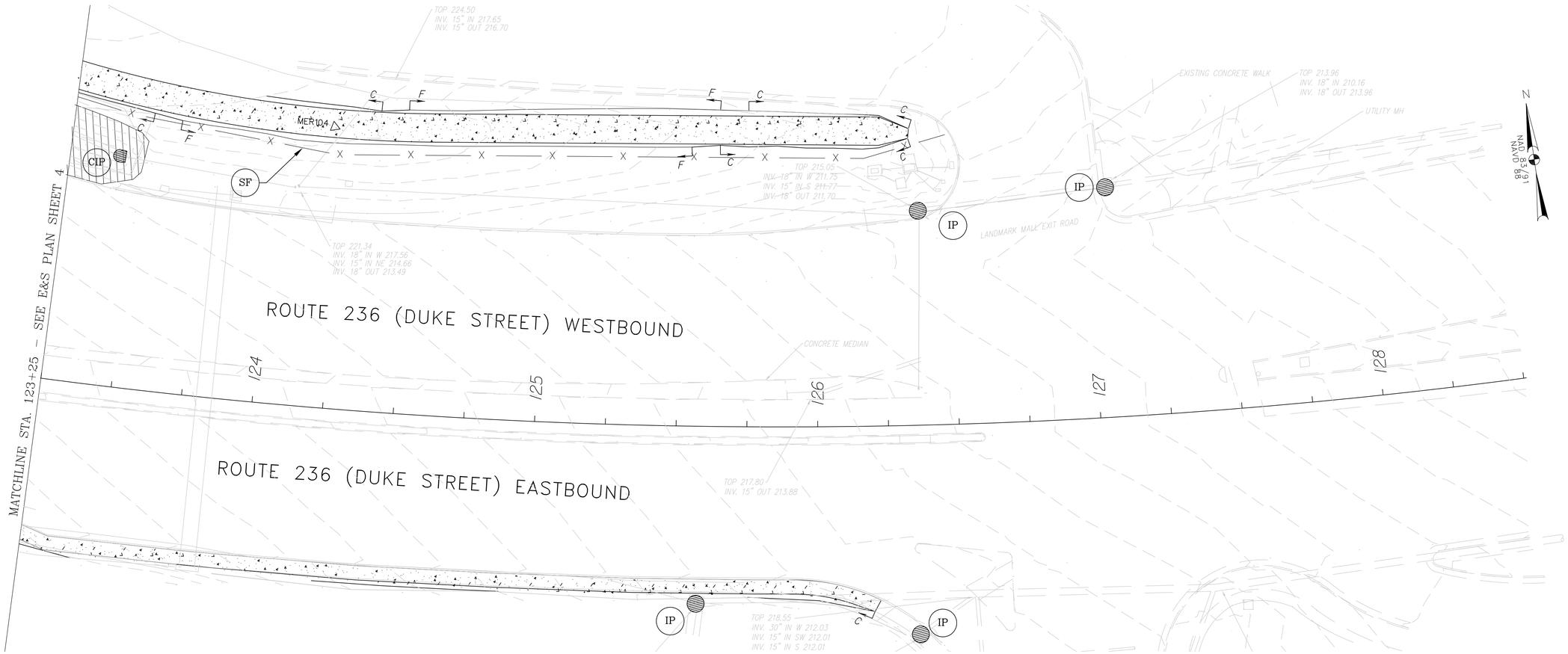
Scale: 1"=20' Project: 09-118 Sheet: 17 of 24

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\17-pES-0004_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 – 10:09am



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LEGEND:

CD	▶	DENOTES CHECK DAM
IP		INLET PROTECTION
CIP		CULVERT INLET PROTECTION
SF	——x——	SILT FENCE

REVISIONS

Erosion & Sediment Control Plan, Sheet 5

Scale: 1"=20' Project: 09-118 Sheet: 18 of 24

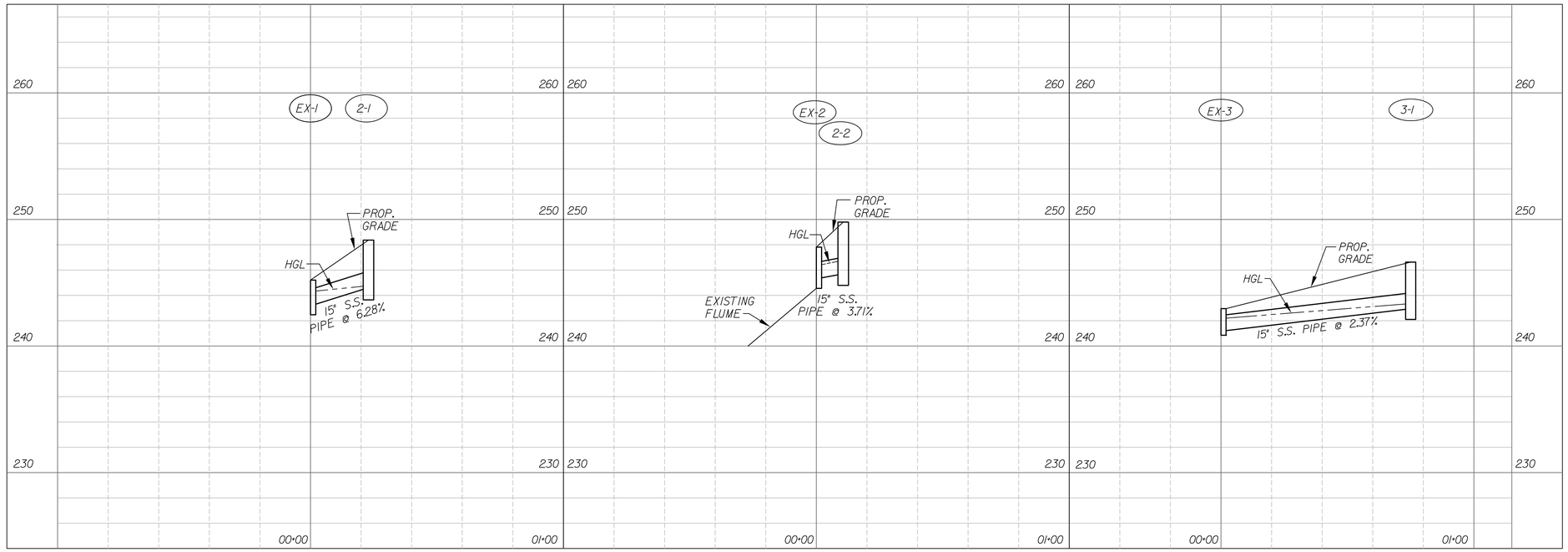
Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

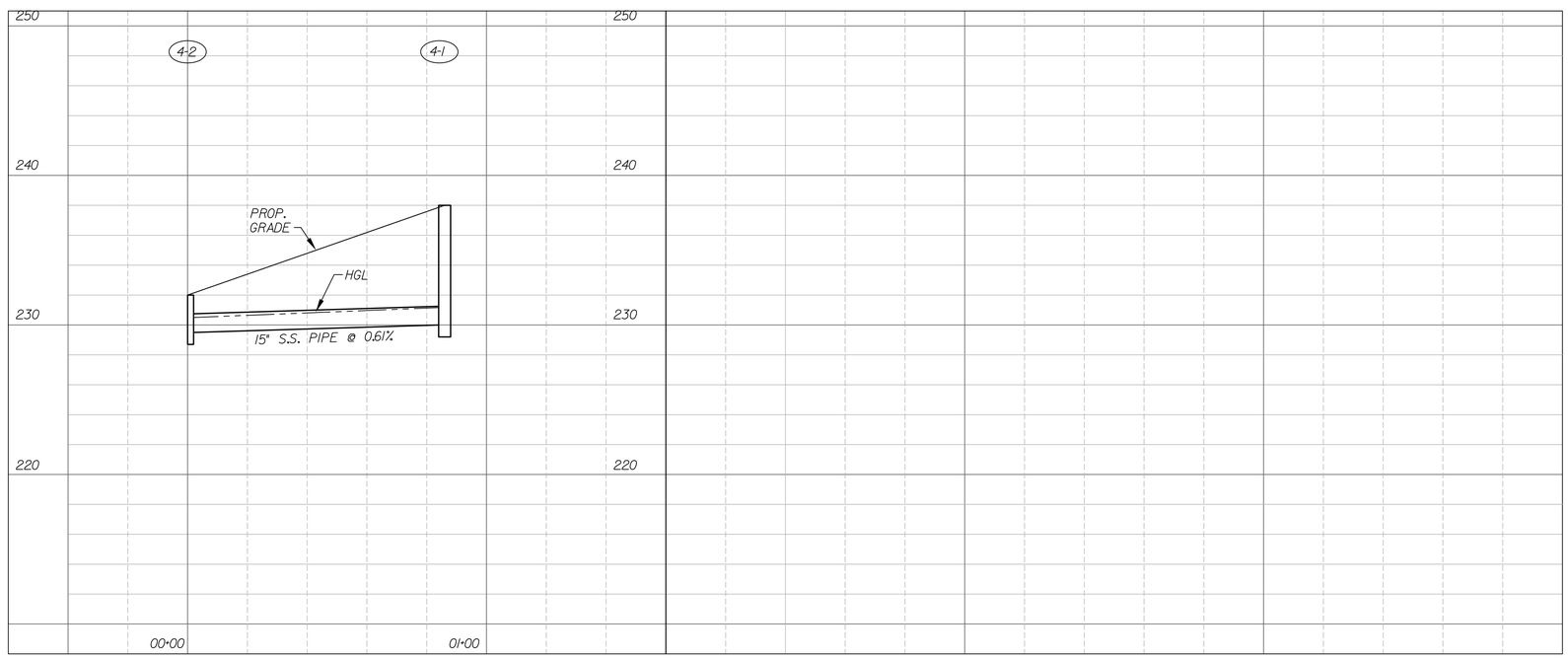
Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\18-ES-0005_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 – 10:10am

STORM SEWER PROFILES





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

SCALE
0 25' 50'

Notes:

1) S.S. PIPE DENOTES STORM SEWER PIPE.

2) STORM SEWER PIPES SHOWN ON THE PROFILE ARE REPRESENTED BY THEIR INNER DIAMETER DIMENSION, AND DO NOT INCLUDE WALL THICKNESSES.

3) ONLY EXISTING UTILITIES, AT THE TIME OF THE SURVEY, ARE SHOWN ON THE STORM SEWER PIPE PROFILES. THESE PROFILES DO NOT REFLECT EITHER PLANNED RE-LOCATION OF UTILITIES OR PROPOSED UTILITIES. THE CONTRACTOR IS ALSO DIRECTED TO ANY UTILITY PLANS THAT MAY EXIST AS PART OF THIS PLAN ASSEMBLY.

4) HGL DENOTES HYDRAULIC GRADE LINE.

5) POST-CONSTRUCTION PIPE INSTALLATION INSPECTIONS TO BE PROVIDED PER SECTION 302.03 (0) OF VDOT 2007 SUPPLEMENT ROAD & BRIDGE SPECIFICATIONS.

REVISIONS

Sheet: 19 of 24

Project: 09-118

Scale:

Transportation & Environmental Services
Engineering & Design Division
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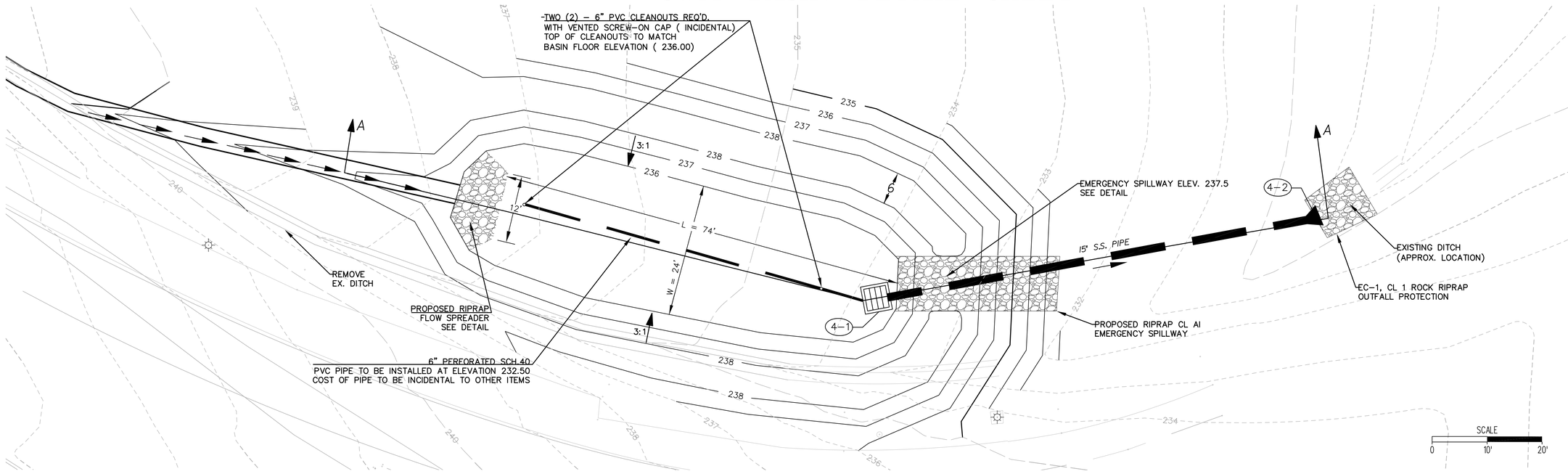
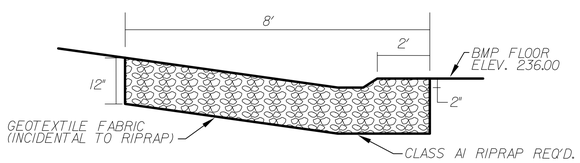
Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\19-pSD-0001_Duke.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 10:11am

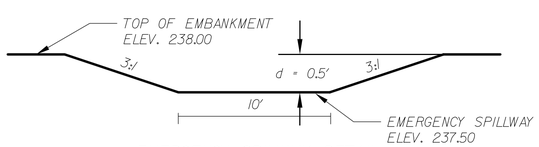
SWM BASIN DETAIL SHEET





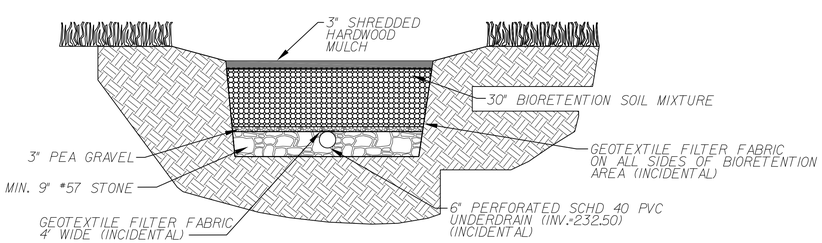
RIPRAP FLOW SPREADER DETAIL

N.T.S.



EMERGENCY SPILLWAY DETAIL

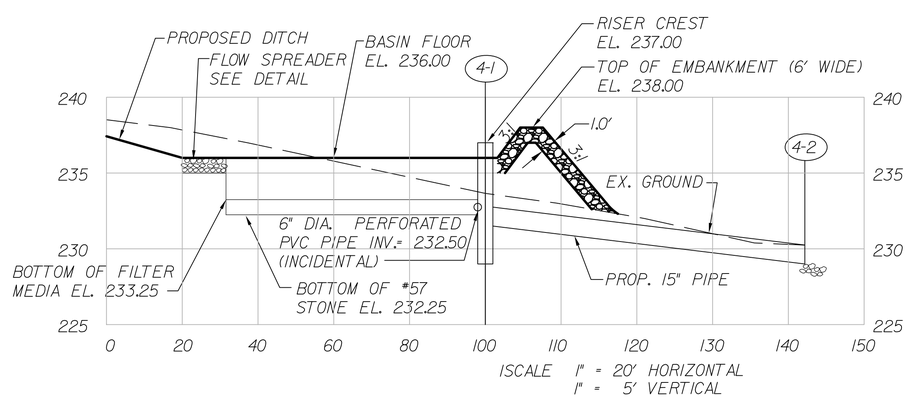
N.T.S.

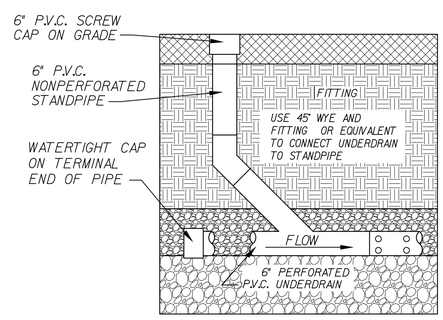


BMP TYPICAL SECTION

N.T.S.

SECTION A-A





DETAIL: 6" P.V.C. CLEANOUT

N.T.S.

NOTES:

1. FILTER MEDIA COMPOSITION TO CONTAIN:
85%-88% SAND, 8%-12% SOIL FINES, 3%-5% ORGANIC MATTER IN THE FORM OF LEAF COMPOST.
THE VOLUME OF FILTER MEDIA BASED ON 110% OF THE PLAN VOLUME, TO ACCOUNT FOR SETTLING OR COMPACTION.

2. MULCH LAYER:
USE AGED, SHREDDED HARDWOOD BARK MULCH.
LAY A 2 TO 3 INCH LAYER ON THE SURFACE OF THE FILTER BED.

3. GEOTEXTILE/LINER:
USE A NON-WOVEN GEOTEXTILE FABRIC WITH A FLOW RATE OF > 110 GAL./MIN./SQ. FT..
(E.G., GEOTEX 351 OR EQUIVALENT)

4. UNDERDRAINS AND CLEANOUTS:
USE 6" RIGID SCHEDULE 40PVC PIPE, WITH 3/8-INCH PERFORATIONS AT 6 INCHES ON CENTER.

STORMWATER MANAGEMENT BASIN SUMMARY

	6" PERFORATED SCHEDULE 40 PVC PIPE	6" NON-PERFORATED SCHEDULE 40 PVC PIPE	MULCH	BIORETENTION SOIL MIXTURE	WASHED PEA GRAVEL	NO. 57 STONE	DRY RIPRAP CLASS IA
	LF	LF	SY	CY	TONS	TONS	TONS
Bioretention Basin	65.0	12.0	190.0	158.0	22.4	93.0	30.3
TOTALS	**65.0**	**12.0**	**190.0**	**158.0**	**22.4**	**93.0**	**30.3**

REVISIONS

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Scale: AS SHOWN Project: 09-118

Transportation & Environmental Services
Engineering & Design Division
P.O. Box 178 Alexandria, Va. 22313

Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\20-BioretentionDetail1.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 – 10:12am

SWM BASIN DETAIL SHEET

PLANTING NOTES:

SEE PLANTING SUMMARY FOR SPECIFIC PLANT SPECIES.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL WORK COVERED UNDER THESE PLANS.

2. LANDSCAPE CONTRACTOR SHALL REFER TO THE STANDARD LANDSCAPE SPECIFICATIONS FOR THE STATE OF VIRGINIA FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL ABIDE BY ITS CONTENTS; HOWEVER ANY NOTES OR SPECIFICATIONS ON PLANS SHALL SUPERSEDE THOSE OUTLINED IN THE SPECIFICATIONS MANUAL (COPIES ARE AVAILABLE FOR A FEE FROM THE VIRGINIA CHAPTER OF THE AMERICAN SOCIETY OF THE LANDSCAPE ARCHITECTS, VIRGINIA NURSERYMEN'S ASSOCIATION, INC. AND THE VIRGINIA SOCIETY OF LANDSCAPE DESIGNERS).

3. ALL PLANT MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS AND STANDARDS DESCRIBED IN THE CURRENT ISSUE OF "THE AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN , 1250 I STREET N.W. , SUITE 500, WASHINGTON, D.C. 20005.

4. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ANY ONSITE UTILITIES (CALL MISS UTILITY 1-800-552-7001 BEFORE ANY EXCAVATION).

5. PLANTS WILL BE PREPARED FOR SHIPMENT IN A MANNER THAT WILL NOT CAUSE DAMAGE TO THE BARK, BUDS, BRANCHES, STEMS OR OVERALL SHAPE OF THE STOCK. CONTAINER GROWN PLANTS WILL BE TRANSPORTED IN THE CONTAINERS IN WHICH THEY HAVE BEEN GROWN.

6. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE UNIFORMLY BRANCHED AND HAVE A VIGOROUS ROOT SYSTEM. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE FROM DEFECTS, DECAY, DISEASES, INSECT PEST EGGS, AND ALL FORMS OF INFESTATION. ALL PLANT MATERIAL SHALL BE FRESH, FREE FROM TRANSPLANT SHOCK OR VISIBLE WILT. PLANTS DEEMED UNHEALTHY WILL NOT BE ACCEPTED.

7. ALL CONTAINER STOCK SHALL HAVE PROPAGATED IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL. CONTAINER STOCK WITH POORLY DEVELOPED ROOT SYSTEMS WILL NOT BE ACCEPTED.

8. PLANTS NOT INSTALLED ON THE DAY OF ARRIVAL ON SITE SHALL BE STORED AND PROTECTED BY THE CONTRACTOR. OUTSIDE STORAGE AREAS WILL BE SHADED AND PROTECTED FROM THE WIND AND SUN. PLANTS STORED ON SITE SHALL BE PROTECTED FROM ANY DRYING AT ALL TIMES BY COVERING THE BALLS OR ROOTS WITH MOIST SAWDUST, WET BURLAP, WOOD CHIPS, SHREDDED BARK, PEAT MOSS, OR OTHER SIMILAR MULCHING MATERIAL.

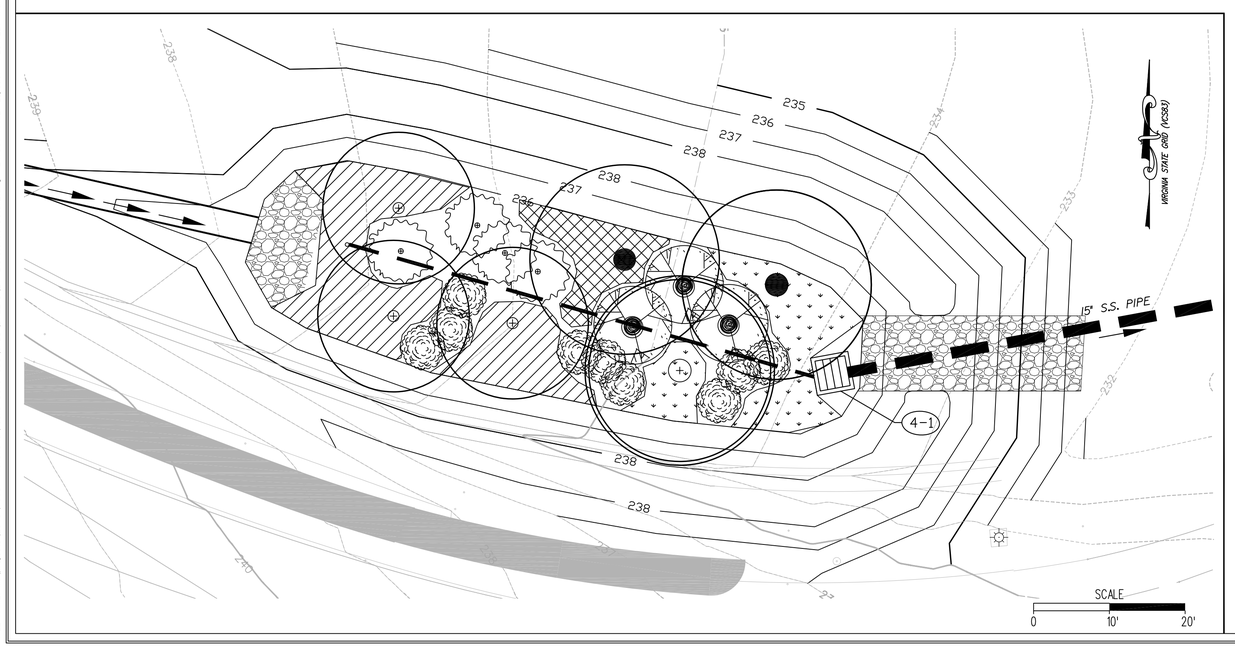
9. NO PLANTING SHALL OCCUR WHEN THE SOIL IS FROZEN.

10. THE CONTRACTOR SHALL MAINTAIN A ONE (1) CALENDAR YEAR 80% CARE AND REPLACEMENT WARRANTY FOR ALL PLANTINGS. THE PERIOD OF CARE AND REPLACEMENT SHALL BEGIN AFTER INSPECTION AND APPROVAL OF THE COMPLETE INSTALLATION OF ALL PLANTS AND CONTINUE FOR ONE CALENDAR YEAR.

11. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF TRASH AND DEBRIS WITHIN LIMITS OF THE PLANTING ON A DAILY BASIS.

12. THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION ENGINEER 24 HOURS PRIOR TO BACKFILLING THE BIORETENTION BASIN AND REQUEST AN INSPECTION AND APPROVAL OF THE UNDERDRAIN INSTALLATION AND THE SOIL MIX.

13. THE BIORETENTION PLANTING AREAS SHALL BE COVERED WITH HEAVY STRAW MULCH TO BE DEPTH OF 4" IMMEDIATELY AFTER PLANTING. COST OF MULCH SHALL BE INCIDENTAL TO OTHER ITEMS.



BIORETENTION PLANTING SPECIFICATIONS:

1. ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT FROM THE SOURCE TO THE JOB SITE AND UNTIL PLANTED.

2. WALLS OF PLANTING PIT SHALL BE DUG SO THAT THEY ARE VERTICAL.

3. THE DIAMETER OF THE PLANTING PIT MUST BE A MINIMUM OF SIX INCHES (6") LARGER THAN THE DIAMETER OF THE BALL OF THE TREE.

4. THE PLANTING PIT SHALL BE DEEP ENOUGH TO ALLOW $1/8$ OF THE OVERALL DIMENSIONS OF THE ROOT BALL TO BE ABOVE GRADE. LOOSE SOIL AT THE BOTTOM OF THE BIT SHALL BE TAMPED BY HAND.

5. FERTILIZER IS TO BE PLACED AT THE BOTTOM OF THE PIT.

6. THE PLANT SHALL BE REMOVED FROM THE CONTAINER AND PLACED IN THE PLANTING PIT BY LIFTING AND CARRYING THE PLANT BY ITS BALL (NEVER LIFT BY BRANCHES OR TRUNK).

7. SET THE PLANT STRAIGHT AND IN THE CENTER OF THE PIT SO THAT APPROXIMATELY $1/8$ OF THE DIAMETER OF THE ROOT BALL IS ABOVE THE FINAL GRADE.

8. MAKE SURE PLANT REMAINS STRAIGHT DURING BACKFILLING PROCEDURE.

9. NEVER COVER THE TOP OF THE BALL WITH SOIL. MOUND SOIL AROUND THE EXPOSED BALL.

10. TREES SHALL BE BRACED BY USING 2" BY 2" WHITE OAK STAKES. STAKES SHALL BE PLACED PARALLEL TO WALKWAYS AND BUILDINGS. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL UTILIZING HOSE AND WIRE. THE TREE WILL BE BRACED TO THE STAKES.

11. BECAUSE OF THE HIGH LEVELS OF NUTRIENTS IN STORMWATER RUNOFF TO BE TREATED, BIORETENTION BASIN PLANTS SHOULD NOT REQUIRE CHEMICAL FERTILIZATION.

12. THE FOLLOWING MINIMUM QUANTITIES OF WATER SHALL BE USED TO WATER EACH PLANT UNLESS OTHERWISE DIRECTED BY THE ENGINEER: TREES (H-10' OR LESS) - 6 GALLONS, SHRUBS (1-2' HEIGHT) - 1 GALLON AND HERBACEOUS VEGETATION - 0.25 GALLON. QUANTITY OF WATER SHALL BE INCIDENTAL TO THE COST OF PLANTING QUANTITIES.

PLANTING SUMMARY

NAME	SCIENTIFIC NAME	QUANTITY	UNIT	SIZE	COMMENTS
River Birch	*Betula nigra*	1	EA	2.0" Cal.	
Black Gum	*Nyssa sylvatica*	3	EA	2.0" Cal.	
Green Ash	*Fraxinus pennsylvanica*	2	EA	1.5" Cal.	
American Beautyberry	*Callicarpa americana*	9	EA	3'	
Black Chokeberry	*Aronia (Photinia) melanocarpa*	5	EA	4'	
Blackhaw viburnum	*Viburnum prunifolium*	3	EA	4'	
Red fescue	*Festuca rubra*	275	EA	Plug	Plant 1' on Center
Virginia Wild Rye	*Elymus virginicus*	463	EA	Plug	Plant 1' on Center
Tussock Sedge	*Carex stricta*	134	EA	Plug	Plant 1' on Center

LEGEND

BLACK GUM
RIVER BIRCH
GREEN ASH
BEAUTYBERRY
BLACKHAW
BLACK CHOKEBERRY
RED FESCUE
VIRGINIA WILD RYE
TUSSOCK SEDGE

REVISIONS

Scale: 1"=20' Project: 09-118 Sheet: 21 of 24

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Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: M:\projects\2010\10037_Alexandria\Task5_Duke-395\CADD\SHEETS\21-BioretentionDetail2.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, February 27, 2014 - 10:13am

GENERAL NOTES:

SPECIFICATIONS:

CONSTRUCTION: VIRGINIA DEPT. OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, 2007

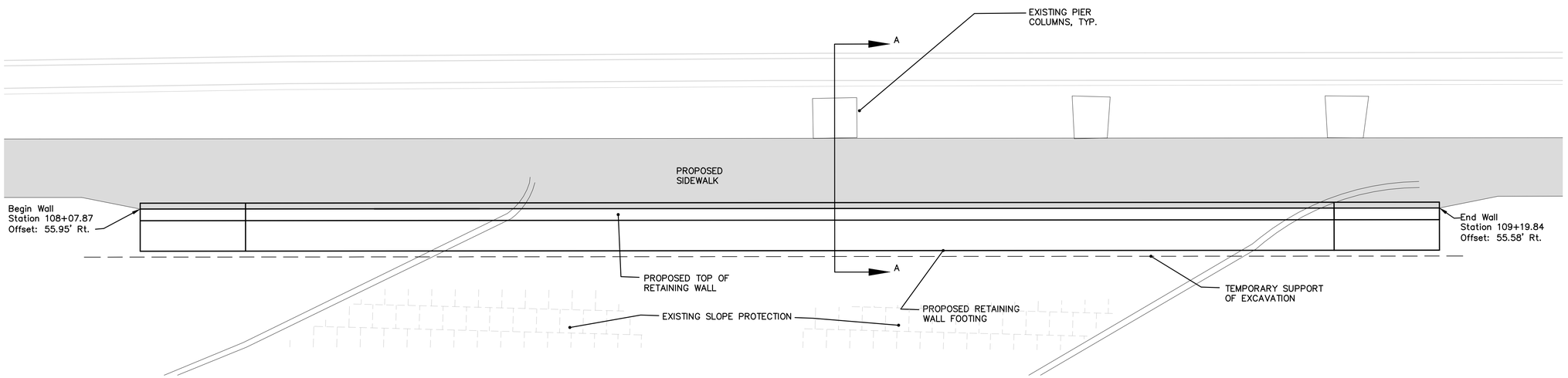
DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, 2012; AND VDOT MODIFICATIONS.

STANDARDS: VIRGINIA DEPT. OF TRANSPORTATION ROAD AND BRIDGE STANDARDS, 2008

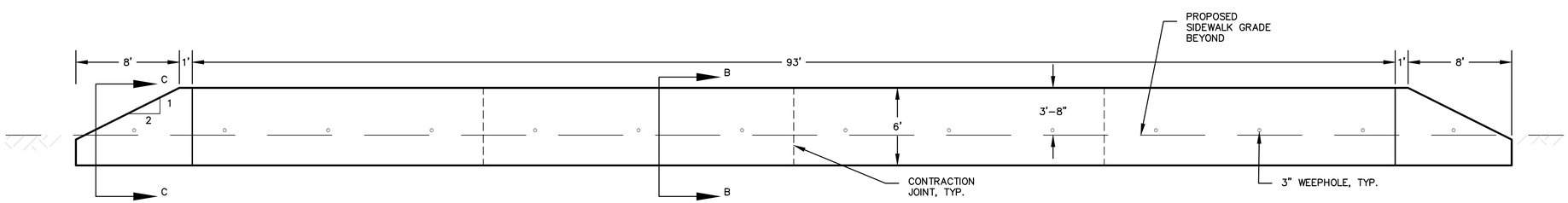
RETAINING WALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH VDOT RW-3 STANDARD. FOR SPACING AND DETAILS OF EXPANSION AND CONTRACTION JOINTS AND WEEPHOLES, REFER TO VDOT RW-3 STANDARD.

FOR PORTION OF EXISTING CONCRETE SLOPE PROTECTION TO BE REMOVED, DEMOLITION SHALL BE DONE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATION, SECTION 413 AND VDOT SPECIAL PROVISION SS41301-0609.

TEMPORARY SUPPORT OF EXCAVATION TO BE DESIGNED BY CONTRACTOR. FEASIBLE OPTIONS INCLUDE SOIL NAILS OR SHEET PILING.



PLAN VIEW



ELEVATION VIEW

5 0 5 10
SCALE IN FEET

REVISIONS

RETAINING WALL
GENERAL PLAN AND
ELEVATION

Scale: 1" = 5'

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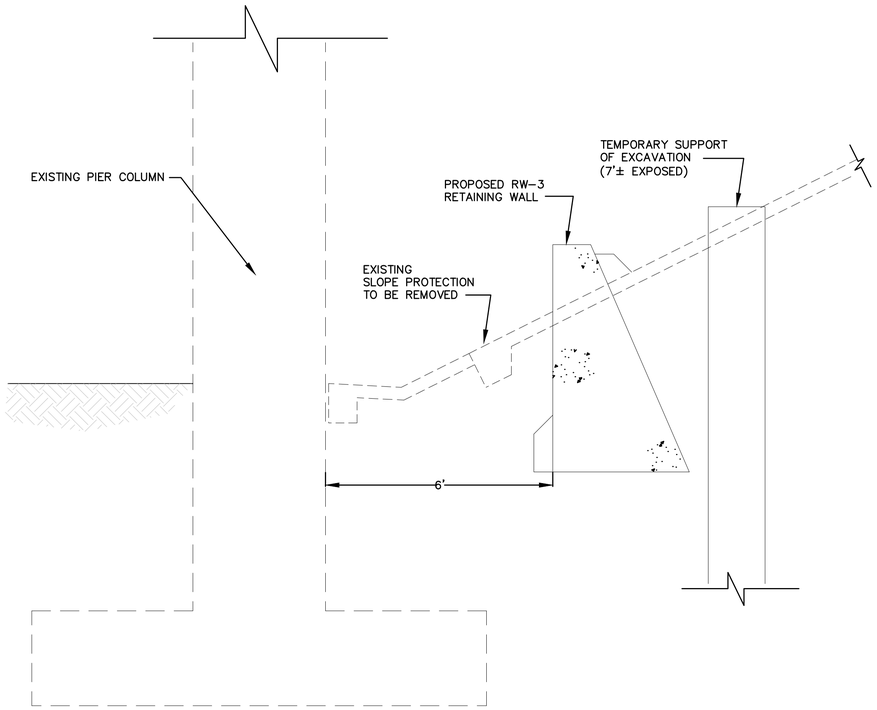
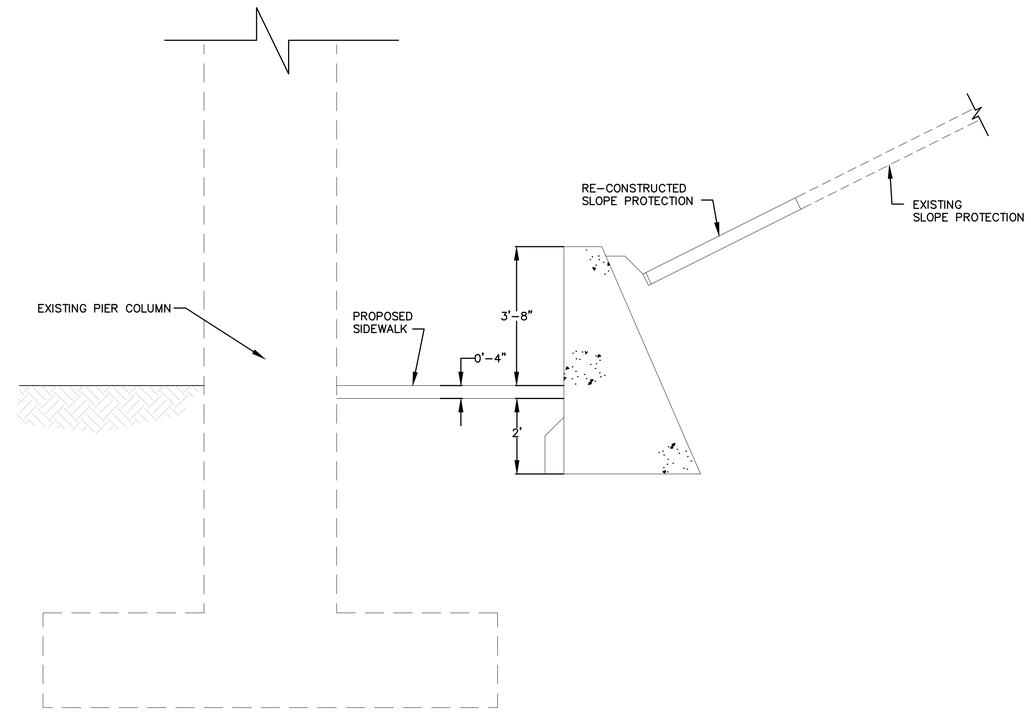
Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

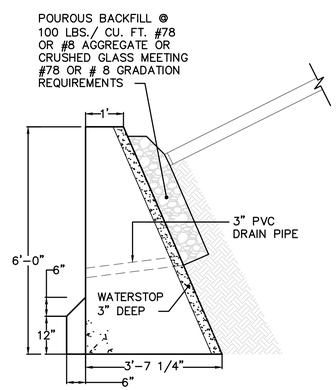
FILE NAME: B:\2010\10037_Alexandria\Task 5_Duke-395\C400\Structures\SHEET FILE.dwg LAYOUT NAME: Layout1 PLOTTED: Tuesday, February 25, 2014 - 10:09am



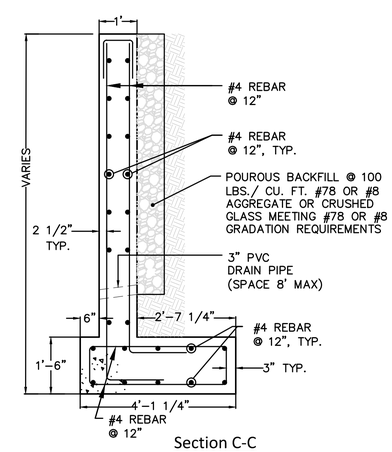
Section A-A @ During Construction



Finished Section A-A



Section B-B



Section C-C

2'-6" LAP SPLICE OF VERTICAL
STEEL IS ACCEPTABLE IN WALL

SECTION VIEW

2 0 2 4
SCALE IN FEET

REVISIONS

RETAINING WALL
TYPICAL SECTIONS
AND DETAILS

Scale: 1" = 2' Project: 09-118 Sheet: 23 of 24

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Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: B:\2010\10037_Alexandria\Task 5_Duke-395\CADD\Structures\SHEET FILE.dwg LAYOUT NAME: Details PLOTTED: Tuesday, February 25, 2014 - 10:54am

		PRELIMINARY				EARTHWORK				MAINTENANCE OF TRAFFIC								
		MOBILIZATION	CONSTRUCTION SURVEYING (MIN.-PLAN)	CLEARING AND GRUBBING	PROGRESS SCHEDULE BASELINE	REGULAR EXCAVATION	BORROW EXCAVATION	NS TEST EXCAVATION (UTILITY TEST HOLE IN PAVED AREA)	NS TEST EXCAVATION (UTILITY TEST HOLE IN UNPAVED AREA)	IMPACT ATTEN. SER. TYPE II-8	AGGREGATE MATERIAL NO. 21B	TYPE III BARRICADE 8'	CONSTRUCTION SIGNS	GROUP 2 CHANNELIZING DEVICES	PORT. CHANGEABLE MESS. SIGN	ELECTRONIC ARROW	WARNING LIGHT TY. B	TRAF. BARR. SER. CONC. DOUBLE FACE
PLAN SHEET	UNIT	LS	LS	LS	LS	CY	CY	EA	EA	EA	TON	EA	SF	DAY	HR	HR	DAY	LF
8		N/A	N/A	N/A	N/A	43	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9		N/A	N/A	N/A	N/A	95	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10		N/A	N/A	N/A	N/A	15	163	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11		N/A	N/A	N/A	N/A	271	466	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12		N/A	N/A	N/A	N/A	135	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14		N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15		N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16		N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17		N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18		N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TOTAL	1	1	1	1	559	774	10	10	1	100	4	518.5	300	600	600	30	550

		DRAINAGE									EROSION AND SEDIMENT CONTROL							INCIDENTAL								PROTECTIVE				STRUCTURES				
		STORM SEWER PIPE 15"	EC-1, RIPRAP (CLASS I)	15" END SECTION ES-1 OR 2	DROP INLET DI-1	DROP INLET DI-3B, L=4'	DROP INLET DI-3B, L=8'	PAVED DITCH PG-2A	POST INSTALLATION INSPECTION	NS REMOVE EXISTING DROP INLET	SILT FENCE	CHECK DAM, ROCK TY.11	CONSTRUCTION ENTRANCE	INLET PROTECTION, TYPE A	INLET PROTECTION, TYPE B	DEWATERING BASIN	SILTATION CONTROL EXCAVATION	RADIAL CURB CG-2	STD. CURB CG-2	HYDRAULIC CEMENT CONCRETE SIDEWALK 4"	CG-12 DETECTABLE WARNING SURFACE	GUARDRAIL GR-2 8' POST	GUARDRAIL TERMINAL GR-7 (NCHRP 350)	GUARDRAIL TERMINAL GR-11	RAD. GUARDRAIL GR-2	FENCE FE-CL	CORNER BRACE UNIT FE-CL	DEMOLITION OF PAVEMENT (REMOVAL OF SIDEWALK)	NS REMOVE EXISTING FENCE	RETAINING WALL EXCAVATION	RETAINING WALL RW-3	CONCRETE CLASS A3	REINFORCING STEEL	CONCRETE SLAB SLOPE PROTECTION 4"
PLAN SHEET	UNIT	LF	TON	EA	EA	EA	EA	SY	LF	EA	LF	EA	EA	EA	EA	EA	LF	LF	LF	SY	SY	LF	EA	EA	LF	LF	EA	SY	LF	CY	CY	CY	LB	SY
8																			92	414	2					139	1	136	141					
9		24				1	1		24	2								209	155	532	7	102	2	2	76			101		127.8	49.7	6.9	690	39
10		20					1		20	1								8	191	205	2	215	1	3				13						
11		82	6.7	1	1			340	82									79	334	743	5							98						
12																			42	697	7													
14												2		1	1		21																	
15											675	4			3		131																	
16											173	9		1	1		52																	
17											488	6	1	2		1	115																	
18											440			2	2		115																	
	TOTAL	126	6.7	1	1	1	2	340	126	3	1776	21	1	6	7	1	434	296	814	2591	23	317	3	5	76	139	1	348	141	127.8	49.7	6.9	690	39

		STRUCTURES			LANDSCAPING					TRAFFIC CONTROL & SAFETY ITEMS							
		POROUS BACKFILL	TEMPORARY SUPPORT OF EXCAVATION	DEMOLISH EXISTING 4" SLOPE PROTECTION	TOPSOIL CLASS B 2"	REGULAR SEED	OVERSEEDING	FERTILIZER (10-20-10)	LIME	RECTANGULAR RAPID FLASH BEACON (RRFB)	TYPE B, CLASS I PAVE. LINE MARKING 24"	PAVEMENT MARKING YIELD ARROW 36"	SIGN PANEL	CONCRETE FOUNDATION STP-1	SIGN POST STP-1, 2 1/2"	NS MODIFY EXISTING JUNCTION BOX
PLAN SHEET	UNIT	CY	LS	LS	CY	LB	LB	TON	TON	EA	LF	EA	SF	EA	LF	EA
8					18	14	9	.02	.25	2	70	9	43.7	2	24	
9		10.3	1	1	30	21	13	.04	.44	6	160	18	114.5	4	48	
10					24	18	11	.02	.34	2	60	7	45.5	2	24	
11					28	19	12	.04	.40	2	40	4	45.5	2	24	
12					18	14	9	.02	.25	2	50	7	34.5	1	12	1
14																
15																
16																
17																
18																
	TOTAL	10.3	1	1	118	86	54	0.13	1.67	14	380	45	283.7	11	132	1

REVISIONS

SUMMARY OF QUANTITIES

Scale: N/A Project: 09-118 Sheet: 24 of 24

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Duke Street Pedestrian Improvements

CITY OF ALEXANDRIA VIRGINIA

FILE NAME: \\bdlnx03\2010\10037_Alexandria\Task 5_Duke-395\CADD\Plans\pSG-0001_Duke.dwg LAYOUT NAME: PLAN PLOTTED: Thursday, February 27, 2014 - 2:31pm