

CITY OF ALEXANDRIA, VIRGINIA



ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

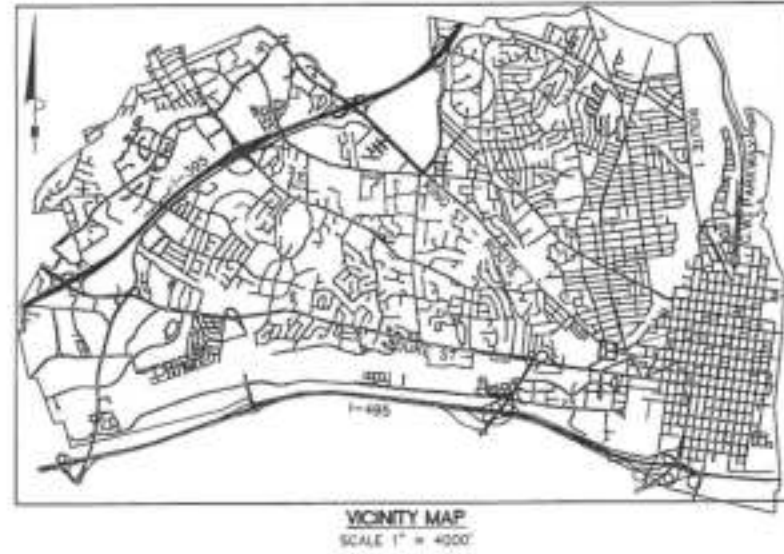


CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

FINAL DESIGN

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

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PROJECT DESCRIPTION
THIS ACCESS TO TRANSIT INTERSECTION IMPROVEMENT PROJECT INCLUDES ENHANCED PEDESTRIAN SIGNALS, BIKE LANES, STRIPING, SIGNING, AND CURB RELOCATION.

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

APPROVED: _____ DATE: _____
DIRECTOR

RECOMMENDED FOR APPROVAL: _____ DATE: _____
DEPUTY DIRECTOR OF OPERATIONS

RECOMMENDED FOR APPROVAL: _____ DATE: _____
DEPUTY DIRECTOR OF INFRASTRUCTURE & ENVIRONMENTAL QUALITY

RECOMMENDED FOR APPROVAL: _____ DATE: _____
DEPUTY DIRECTOR OF RIGHT-OF-WAY & DEVELOPMENT SERVICES

RECOMMENDED FOR APPROVAL: _____ DATE: _____
DEPUTY DIRECTOR OF TRANSPORTATION

DEPARTMENT OF PROJECT IMPLEMENTATION

APPROVED: _____ DATE: 01/30/23
DIRECTOR

RECOMMENDED FOR APPROVAL: _____ DATE: 1/30/2023
DIVISION CHIEF

DATE	REVISIONS BY	DESCRIPTION

ALEXANDRIA PROJECT NO.: 16030314
DATE OF PLAN ISSUANCE: 12/21/22
CONSULTANT PROJECT ID: 2515760
DESIGNED BY: JOT DATE: 07/25/23
DRAWN BY: JOT DATE: 07/25/23
CHECKED BY: MWL DATE: 08/29/23
APPROVED BY: MWL DATE: 08/29/23



COVER SHEET

SHEET
1 of 19
SCALE NONE



STORMCRETE OPERATION AND MAINTENANCE:

REGULAR INSPECTION

REGULAR INSPECTION OF THE STORMCRETE SYSTEM IS CRITICAL TO DEVELOPING A SITE SPECIFIC MAINTENANCE PROGRAM. INSPECTION SHOULD BE PERFORMED SEVERAL TIMES IN THE FIRST FEW MONTHS AND THEN 2-4 TIMES PER YEAR DEPENDING UPON THE INTENSITY OF USE. SURFACES SHOULD BE INSPECTED FOR ANY DEFICIENCIES AND ACCUMULATED SEDIMENT. PERIMETER SHOULD BE INSPECTED FOR EROSION AND POSSIBLE RUN-ON SITUATIONS. INSPECTION LOGS SHOULD BE KEPT.

ROUTINE MAINTENANCE

AS MENTIONED ABOVE, EVEN WITH THE ADVANTAGES OF THE STORMCRETE SYSTEM, ALL POROUS SURFACES REQUIRE SOME MAINTENANCE TO PRESERVE PERMEABILITY AND SERVICE LIFE. A MINIMUM AMOUNT OF PLANNING AND REGULAR MAINTENANCE IS MORE EFFECTIVE THAN SURFACE REHABILITATION OR REPLACEMENT. SURFACES SHOULD BE VACUUMED AT LEAST 2 TIMES PER YEAR. MORE MAY BE NECESSARY BASED ON SITE CONDITIONS. WELL MAINTAINED REGENERATIVE AIR VACUUM SWEEPING EQUIPMENT IS RECOMMENDED. OPERATOR EXPERIENCE AND TRAINING ON BOTH EQUIPMENT AND POROUS SURFACES IS ESSENTIAL.

REHABILITATION, REPAIRS, AND REPLACEMENT

SMALL AREAS OF CLOGGING CAN BE REHABILITATED USING FOCUSED VACUUM AND WATER PRESSURE. IF IN-SITU REHABILITATION IS NOT SUCCESSFUL, THE STORMCRETE UNIT CAN BE REMOVED FOR ADDITIONAL REHAB TECHNIQUES (SOAKING, AIR OR WATER PRESSURE APPLIED FROM THE UNDERSIDE OF UNIT, LIGHT VIBRATION / PERCUSSION, ETC.). IN THE EVENT OF WIDE-SPREAD CLOGGING, DAMAGE, OR SPILL THE UNIT CAN BE REMOVED AND REPLACED IN ALMOST ANY WEATHER, ANY TIME OF THE YEAR.

WATER MAINTENANCE / SNOW REMOVAL

WATER OPERATIONS OF POROUS SURFACES DIFFER SLIGHTLY FROM TRADITIONAL IMPERVIOUS PAVEMENT. FLOW EDGES SHOULD BE WELL MAINTAINED AND EQUIPPED WITH SHOES. WHERE POSSIBLE, FLOW PASSES SHOULD BE MADE AT A 45-DEGREE ANGLE TO THE SLAB JOINTS. SAND SHOULD NOT BE APPLIED TO STORMCRETE SURFACES. THE MINIMUM AMOUNT OF SAND SHOULD BE USED DUE TO THE STORMCRETE FUNCTION OF THE STORMCRETE SYSTEM. DUE TO THE LOW WATER TO CEMENT RATIO IN POROUS CONCRETE, STORMCRETE TENDS TO BE RESISTANT TO DEICING CHEMICALS. AGAIN, CONTRACTOR TRAINING IS CRITICAL TO THE LONGEVITY OF THE STORMCRETE SYSTEM.

IN COLD WEATHER CLIMATES, POROUS SURFACES ARE PARTICULARLY SENSITIVE TO SEDIMENT BUILDUP. AS AN INTEGRAL PART OF THE SMS, THE LONGEVITY AND EFFECTIVENESS OF THIS SIGNIFICANT CAPITAL INVESTMENT IS DIRECTLY RELATED TO ITS CARE AND MAINTENANCE.

STORMWATER NOTES:

- 1. PER STATE REGULATIONS, WHEN THE PROJECT IS COMPLETE, AN AS-BUILT PLAN AND BMP CERTIFICATION WILL BE REQUIRED FOR THE PERVIOUS SIDEWALK (SPW).

SOURCE INSPECTION REQUIREMENTS:

1. SOURCE INSPECTIONS THAT ARE NECESSARY FOR ALL PROJECTS AND PERFORMED BY VDOT THROUGH PLANT QUALITY ASSURANCE PROGRAMS ARE IDENTIFIED IN TABLE 1 BELOW. THESE INSPECTIONS ARE PERFORMED BY THE STRUCTURES SECTIONS, CENTRAL OFFICE'S PHYSICAL TESTING LABORATORY OR THE DISTRICTS MATERIALS SECTIONS. STRUCTURAL STEEL AND METAL POLES MUST BE FABRICATED IN A SHOP CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) AND PRE-STRESSED CONCRETE ELEMENTS MUST BE FABRICATED IN A SHOP CERTIFIED BY THE PRE-STRESSED CONCRETE INSTITUTE (PCI). THESE MATERIALS ARE INSPECTED TO AASHTO DESIGN SPECIFICATIONS AND CODES BASED UPON THE CERTIFICATION LEVEL REQUIRED FOR THE SCOPE OF WORK. THESE SHOP INSPECTIONS ARE PROVIDED BY AN INSPECTION AGENCY USING CERTIFIED INSPECTORS UNDER CONTRACT TO VDOT. INSPECTION FEES ARE CHARGED TO THE PROJECT. LAMINATED BEARING PADS ARE TESTED IN THE CENTRAL OFFICE PHYSICAL LAB. THE TESTING IS ALSO CHARGED TO THE PROJECT. PLANT QA PROGRAMS HANDLED BY THE DISTRICT MATERIALS SECTIONS FOR ASPHALT AND GENERAL MIX AGGREGATE ARE PERFORMED ON A SYSTEM BASIS AND THERE IS A TESTING COST CHARGED TO THE PROJECT.

THE QA PROGRAMS FOR PRECAST CONCRETE, CONCRETE PIPE, METAL PIPE, PLASTIC PIPE AND MISCELLANEOUS SUPPLIES ARE HANDLED BY THE CENTRAL OFFICE QA SECTION AND THERE IS NO CHARGE TO THE PROJECT FOR THIS INSPECTION.

THE CONTRACTOR/FABRICATOR SHALL BE REQUIRED TO COORDINATE FABRICATION SCHEDULES AND DURATION WITH THE DEPARTMENT AND QA INSPECTION AGENCY ASSIGNED.

Table 1 - Testing of Materials by the Department for Off-Site Plant QA Programs

Item	Responsibility
Pre-stressed Concrete Structural Elements ¹ (beams, girders (AASHTO and Bulb-T), and piles)	C. O. Materials - Structures Section
Structural Steel Elements ¹ (beams and girders)	C. O. Materials - Structures Section
Metal Traffic Signal poles, Light poles and Arms ¹	Central Office Materials - Structures Section
Laminated Bridge Bearing Pads	C.O. Materials - Physical Lab
Precast Concrete Structures ¹	C.O. Materials - Quality Assurance Section - Approved list #34
Pipe (concrete, steel, aluminum and high density polyethylene) for culverts, storm drains and underdrains ¹	C.O. Materials - Quality Assurance Section - Approved list #25, #26 and #42
Asphalt Concrete QA program ²	District Materials Section
Aggregate CMA QA program ²	District Materials Section
Hydraulic Cement Concrete Mix Designs	District Materials Section
Hydraulic Cement Concrete Plant and Truck Inspections	National Ready Mix Concrete Association (NRMCA) Plant and Truck Certification required

¹ Structural Steel, Metal Poles, and Pre-stressed Concrete Elements must either have a Quality Assurance inspection performed at the fabrication site by AISC certified inspector or PCI level II inspector according to VDOT specifications. VDOT has inspection agencies around the United States. VDOT structures section will evaluate all over 100 fabrication locations around the United States. VDOT structures section will evaluate for this service and pass the inspection cost on to the project. The structures section is staffed with professional staff to assist with all fabrication Requests For Information (RFI) and decisions related to structural welding and pre-stressed concrete orders.

² C.O. - Central Office Materials

³ Asphalt Concrete, Aggregate, Precast Concrete Structures and Pipe are assigned to the plant unless a QA program. There is a testing charge associated with the asphalt and aggregate programs for Independent Agencies and suppliers. The plant must be informed that this local project will be tested exactly the same as a VDOT project.

WHERE POSSIBLE, VDOT WILL INCORPORATE OTHER PLANT INSPECTIONS NOT CONTAINED IN TABLE 1 WITHIN THEIR NORMAL PLANT APPROVAL INSPECTION SCHEDULE. THESE INSPECTIONS ARE NOT CHARGED DIRECTLY TO THE PROJECT BUDGET. HOWEVER, WHEN PROJECT REQUIREMENTS NECESSITATE ADDITIONAL PLANT INSPECTIONS, RESOURCES NECESSARY TO PERFORM THOSE INSPECTIONS MAY BE CHARGED TO THE PROJECT BUDGET.

TREE PRESERVATION NOTES:

- VEGETATION DESIGNATED FOR PROTECTION AND/OR PRESERVATION SHALL CONTINUOUSLY RECEIVE AN ENHANCED LEVEL OF MAINTENANCE THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
 - MAINTENANCE SHALL BE PRO-ACTIVE.
 - MAINTENANCE OPERATIONS SHALL AGGRESSIVELY MONITOR THE HEALTH, GROWTH AND HOOR OF VEGETATION AND PRESCRIBE SELECTIVE PRUNING, REMOVAL OF VOLUNTEER AND /OR INVASIVE SPECIES, WATERING, FERTILIZATION AND INSTALLATION OF MULCH/TOP DRESSING.
 - WHEN PRESERVED VEGETATION IS LOCATED ON CITY PROPERTY, MAINTENANCE SHALL BE PERFORMED TO THE SATISFACTION OF THE CITY.
- AREAS DESIGNATED FOR PROTECTION AND/OR PRESERVATION OF VEGETATION SHALL NOT BE ENTERED OR UTILIZED (APPROVED MAINTENANCE PROCEDURES AND WATERING EXCEPTED) THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD. PROHIBITED ITEMS/ ACTIVITIES INCLUDE, BUT ARE NOT LIMITED TO:
 - MODIFYING SITE TOPOGRAPHY IN A MANNER THAT DIRECTLY OR INDIRECTLY ALTERS EXISTING SITE DRAINAGE WITHIN PROTECTION ZONE INCLUDING TRENCHING OR GRADING OPERATION AND PLACING, STORING OR STOCKPILING SOIL OR CONSTRUCTION RELATED SUPPLIES.
 - TILLING AND STORING VEGETATION OR INDIANATE MATERIALS WITHIN OR IN CLOSE PROXIMITY.
 - OPERATING MACHINERY OR EQUIPMENT, INCLUDING VEHICLE/EQUIPMENT PARKING OR STORAGE.
 - TEMPORARY OR PERMANENT UTILITY CONSTRUCTION, PAVING OR IMPERVIOUS SURFACE INSTALLATION.
 - DISPOSAL OF DEBRIS OR CHEMICALS. W. TEMPORARY FACILITIES OR OCCUPATION BY WORK FORCE.
 - STORAGE OF CONSTRUCTION MATERIALS OR WASTE.



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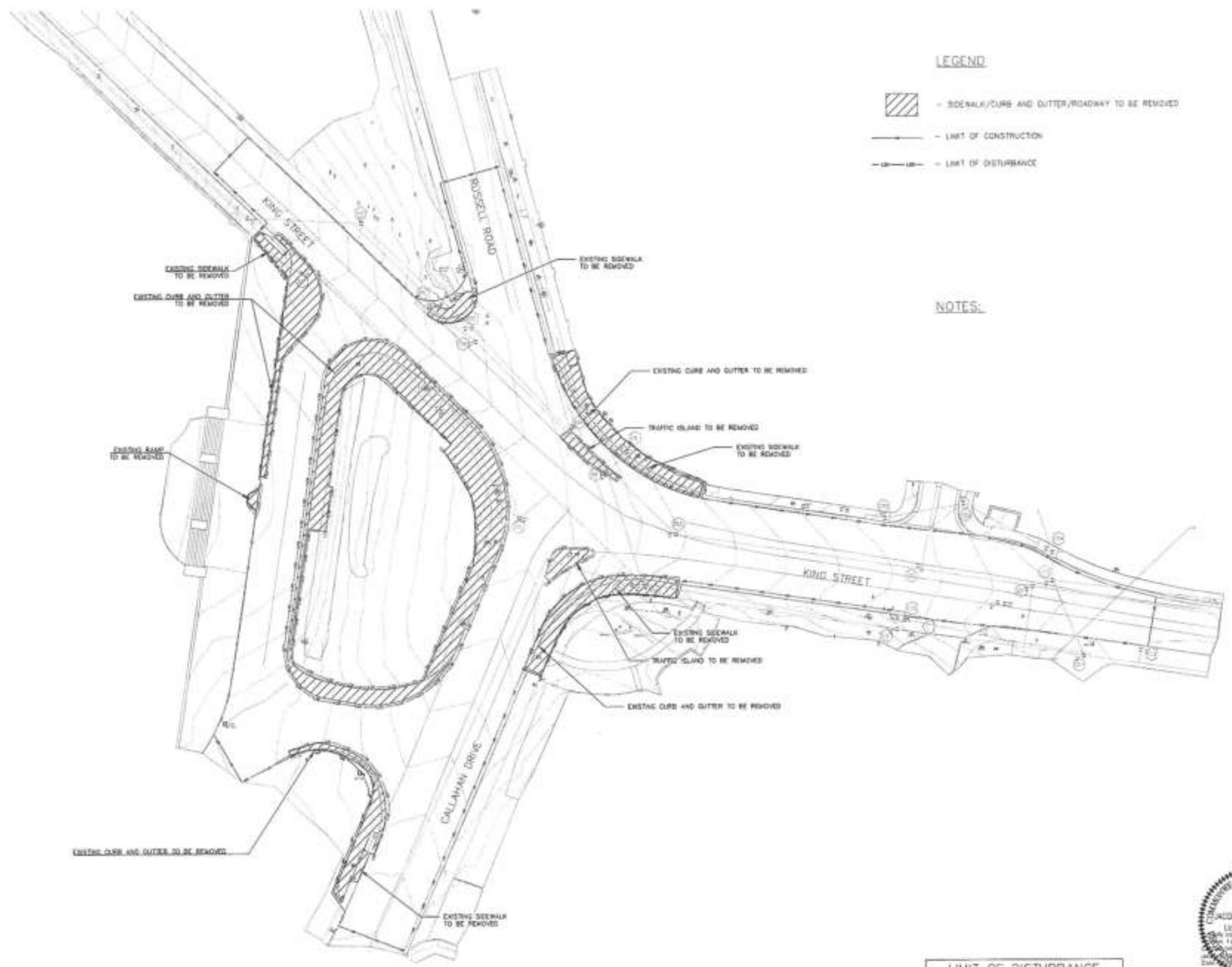
DATE	REVISIONS	DESCRIPTION

ALEXANDRIA PROJECT NO.: 1803004
DATE OF PLAN ISSUANCE: 10/24/22
CONSULTANT PROJECT ID: 2515708
DESIGNED BY: YOT DATE: 07/25/22
DRAWN BY: YOT DATE: 07/25/22
CHECKED BY: MBR DATE: 08/30/22
APPROVED BY: MBR DATE: 08/31/22



GENERAL NOTES





LEGEND

- SIDEWALK/CURB AND GUTTER/ROADWAY TO BE REMOVED
- LIMIT OF CONSTRUCTION
- LIMIT OF DISTURBANCE

NOTES:

LIMIT OF DISTURBANCE	
LOD WITHOUT MILLING	11,541 SQ. FT.
LOD WITH MILLING	63,430 SQ. FT.



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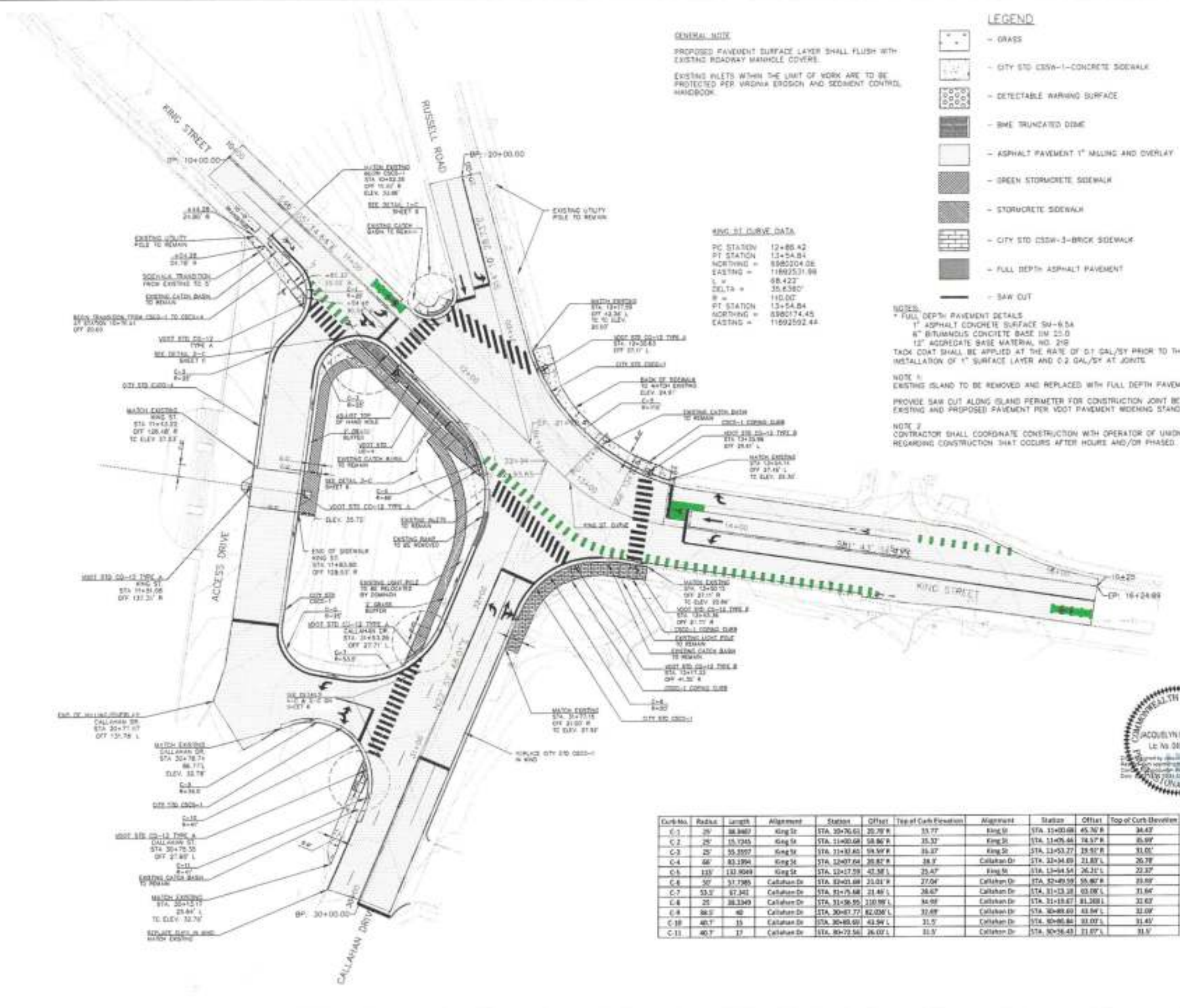
DATE	REVISIONS BY	DESCRIPTION

STV
 CONSULTANT PROJECT NO.: 1033034
 DATE OF PLAN ISSUANCE: 05/23/22
 CONSULTANT PROJECT ID: 2015700
 DESIGNED BY: JOT DATE: 07/29/22
 DRAWN BY: JMB DATE: 07/29/22
 CHECKED BY: JMB DATE: 08/20/22
 APPROVED BY: JMB DATE: 08/23/22

DEMOLITION
 PLAN

SHEET
 04 of 20
 SCALE 1" = 30'

FINAL DESIGN



GENERAL NOTE
 PROPOSED PAVEMENT SURFACE LAYER SHALL FLUSH WITH EXISTING ROADWAY MANHOLE COVERS.
 EXISTING INLETS WITHIN THE LIMIT OF WORK ARE TO BE PROTECTED PER VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

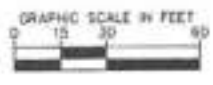
KING ST CURVE DATA
 PC STATION = 12+85.42
 PT STATION = 13+54.84
 NORTHING = 8982104.08
 EASTING = 11892531.88
 L = 68.422'
 DELTA = 35.6380°
 R = 110.00'
 PT STATION = 13+54.84
 NORTHING = 8982174.45
 EASTING = 11892592.44

- LEGEND**
- GRASS
 - CITY STD CSW-1-CONCRETE SIDEWALK
 - DETECTABLE WARNING SURFACE
 - SWE TRUNCATED DOME
 - ASPHALT PAVEMENT 1" MILLING AND OVERLAY
 - GREEN STORMCRETE SIDEWALK
 - STORMCRETE SIDEWALK
 - CITY STD CSW-3-BRICK SIDEWALK
 - FULL DEPTH ASPHALT PAVEMENT
 - SAW CUT

NOTES:
 * FULL DEPTH PAVEMENT DETAILS:
 1" ASPHALT CONCRETE SURFACE SM-6.5A
 8" BITUMINOUS CONCRETE BASE SM 25.0
 12" AGGREGATE BASE MATERIAL NO. 210
 TACK COAT SHALL BE APPLIED AT THE RATE OF 0.1 GAL/SY PRIOR TO THE INSTALLATION OF 1" SURFACE LAYER AND 0.2 GAL/SY AT JOINTS.

NOTE 1:
 EXISTING ISLAND TO BE REMOVED AND REPLACED WITH FULL DEPTH PAVEMENT.
 PROVIDE SAW CUT ALONG ISLAND PERIMETER FOR CONSTRUCTION JOINT BETWEEN EXISTING AND PROPOSED PAVEMENT PER VDOT PAVEMENT WORKING STANDARD WP-2.

NOTE 2:
 CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH OPERATOR OF UNION STATION REGARDING CONSTRUCTION THAT OCCURS AFTER HOURS AND/OR PHASED.



Curb No.	Radius	Length	Alignment	Station	Offset	Top of Curb Elevation	Alignment	Station	Offset	Top of Curb Elevation
C-1	25'	88.860'	King St	STA. 30+76.00	25.75' R	33.77'	King St	STA. 15+00.00	45.70' R	34.42'
C-2	25'	15.725'	King St	STA. 11+00.00	15.80' R	35.32'	King St	STA. 11+05.44	14.57' R	35.99'
C-3	25'	35.350'	King St	STA. 11+32.65	19.50' R	35.32'	King St	STA. 11+53.77	18.50' R	31.00'
C-4	66'	83.194'	King St	STA. 12+07.64	25.82' R	38.9'	Callahan Dr	STA. 12+34.09	21.83' L	26.78'
C-5	133'	132.969'	King St	STA. 12+17.59	42.38' L	25.47'	King St	STA. 13+44.54	26.21' L	22.32'
C-6	50'	31.795'	Callahan Dr	STA. 82+01.68	23.01' R	27.04'	Callahan Dr	STA. 82+49.59	55.80' R	25.50'
C-7	53.5'	87.340'	Callahan Dr	STA. 81+75.68	21.48' L	28.62'	Callahan Dr	STA. 81+13.28	63.08' L	21.84'
C-8	25'	88.334'	Callahan Dr	STA. 81+58.95	210.96' L	34.98'	Callahan Dr	STA. 81+18.67	81.388' L	22.62'
C-9	88.5'	40'	Callahan Dr	STA. 20+87.77	82.05' L	32.68'	Callahan Dr	STA. 20+88.60	43.94' L	32.00'
C-10	40.7'	35'	Callahan Dr	STA. 20+88.60	43.94' L	31.5'	Callahan Dr	STA. 20+88.60	33.02' L	31.45'
C-11	40.7'	17'	Callahan Dr	STA. 20+72.56	26.02' L	31.5'	Callahan Dr	STA. 20+38.43	11.02' L	31.5'



ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET
 ALEXANDRIA, VIRGINIA 22314

REVISIONS

DATE	BY	DESCRIPTION



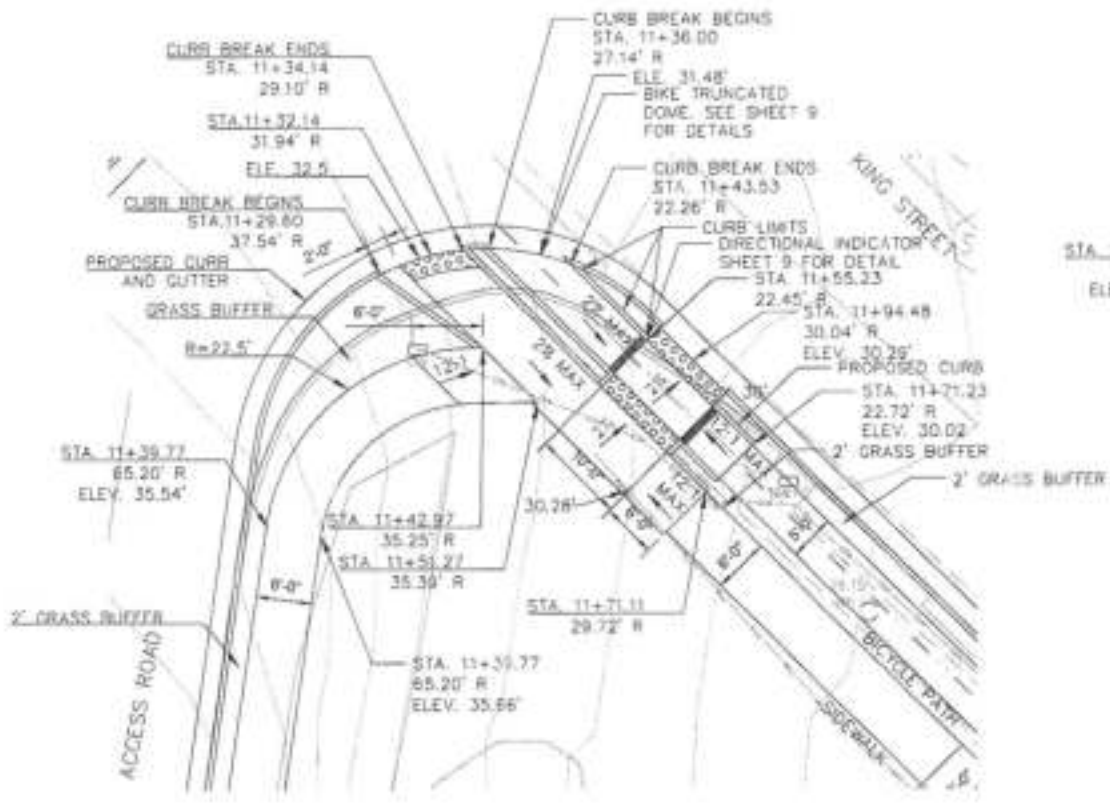
SITE PLAN

SHEET
 05 of 19
 SCALE 1" = 30'

FINAL DESIGN



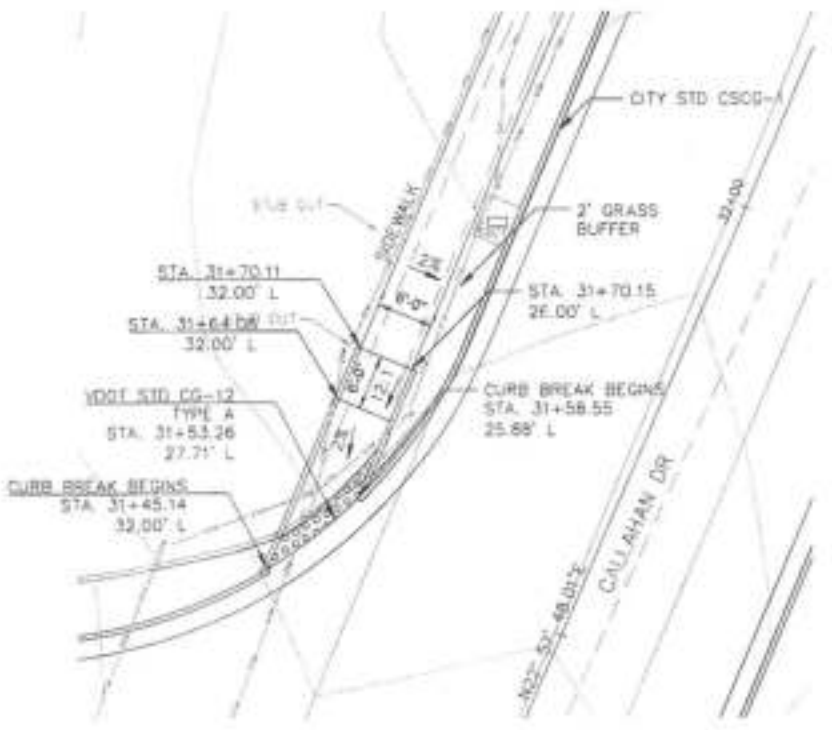
DETAIL 1-C



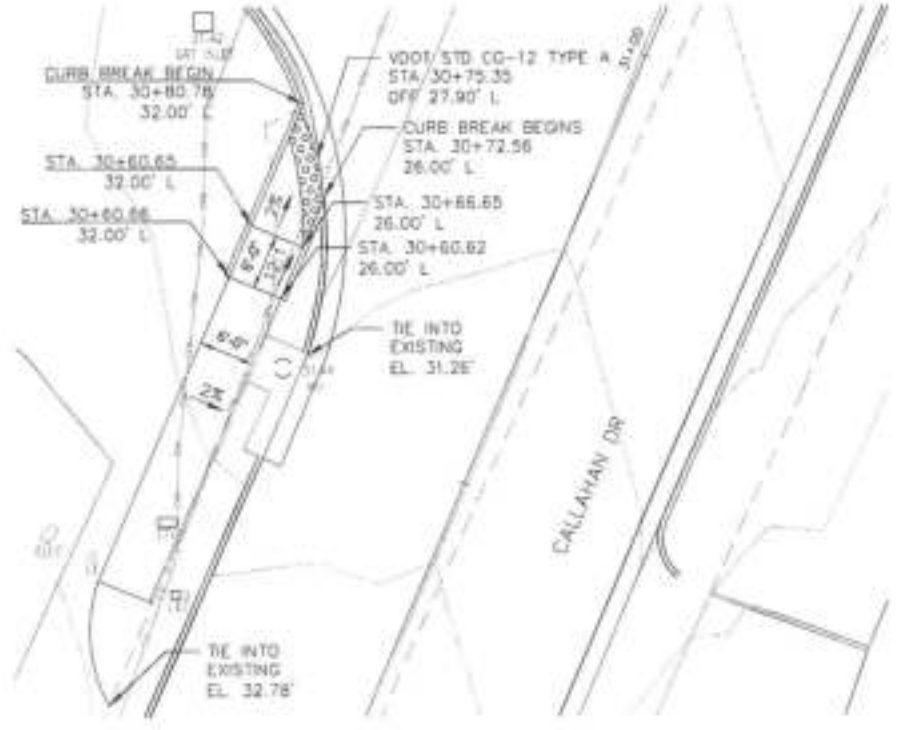
DETAIL 2-C



DETAIL 3-C



DETAIL 4-C



DETAIL 5-C



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CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

REVISIONS	DATE	BY	DESCRIPTION

STV
ALEXANDRIA PROJECT NO.: 1033014
DATE OF PLAN ISSUANCE: 10/24/22
CONSULTANT PROJECT ID.: 2515700
DESIGNED BY: JLT DATE: 07/25/22
DRAWN BY: JLT DATE: 07/25/22
CHECKED BY: MRL DATE: 08/20/22
APPROVED BY: MRL DATE: 08/20/22

CURB AND RAMP DETAILS

SHEET
06 of 19
SCALE 1"=10'

FINAL DESIGN

GENERAL NOTES:

1. THE DETECTABLE WARNING SHALL BE PROVIDED BY TRUNCATED DOMES.
2. DETECTABLE WARNING SHALL BE FROM THE ANTIWHEEL APPROVED LIST FOR DETECTABLE WARNING SURFACES. PRODUCTS NOT LISTED SHALL MEET THE REQUIREMENTS OF THE SPECIFICATION FOR CG-12 DETECTABLE WARNING SURFACE AND SHALL BE SUBMITTED TO THE STRUCTURES AND SPECIAL DESIGN SECTION FOR APPROVAL.
3. SLOPING SIDES OF CURB RAMP MAY BE PROVIDED VERTICALLY WITH RAMP FLOOR OR BY USING PERMISSIBLE CONSTRUCTION WITH REQUIRED SLOPE.
4. RAMP FLOOR & PRECAST HOLES MAY BE PROVIDED FOR DOWEL BARS TO BE CAST IN PLACE AFTER PLACEMENT OF PRECAST RAMP FLOOR. PRECAST CONCRETE SHALL BE CLASS 2-A.
5. REQUIRED BARS ARE TO BE NO. 2 & 3 PLACES VERTICALLY TO CENTER ALONG BOTH SIDES OF THE RAMP FLOOR TO DEPTH OF RAMP FLOOR THROUGH CONCRETE COVER IS:
6. CURB & CURB AND GUTTER SLOPE TRANSITIONS EQUIVALENT TO CURB RAMP ARE INDICATED IN PAYMENT FOR CURB & GUTTER.
7. CURB RAMP ARE TO BE LOCATED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. THEY ARE TO BE PROVIDED AT INTERSECTIONS WHEREVER AN ACCESSIBLE ROUTE WITHIN THE RIGHT OF WAY OF A HIGHWAY FACILITY CROSSES A CURB REGARDSLESS OF WHETHER SIDEWALK IS EXISTING, PROPOSED, OR NONEXISTENT. THEY MUST BE LOCATED WITHIN FLOORING DRIVEWAY AS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER AND SHALL NOT BE LOCATED BEHIND VEHICLE STOP LOCUS, EXCEPT WHERE INDICATED OTHERWISE ON PLAN. ACCESSIBLE ROUTE THROUGH A CONTIGUOUS UNPAVED SIDEWALK, FAN AND RAMP MUST MAINTAIN PATH CONNECTING ALL ACCESSIBLE ELEMENTS OF A FACILITY THAT CAN BE APPROACHED, ENTERED AND USED BY PEDESTRIANS.
8. RAMP MAY BE PLACED ON FRONT OR TANGENTIAL SECTION PROVIDED THAT THE CURB OPENING IS PLACED WITHIN THE LIMITS OF THE CROSSWALK AND THAT THE CENTERLINE OF RAMP CONNECTION OF THE CURB OPENING IS PERPENDICULAR TO THE CURB.
9. THICK CONCRETE SIDEWALK IS 2" THICK. WHEN THE EXISTING PAVEMENT ACCOMMODATE THE MINIMUM REQUIREMENTS OF ANTICIPATED HEAVY TRUCK TRAFFIC, REFER TO STANDARD CG-13 CONCRETE DRIVEWAY HEAVY TRUCK TRAFFIC FOR CONCRETE DESIGN.
10. WHEN CURB RAMP ARE USED IN CONNECTION WITH A NAMED USE PATH, THE MINIMUM WIDTH SHALL BE THE WIDTH OF THE NAMED USE PATH.
11. WHEN ONLY ONE CURB RAMP IS PROVIDED FOR TWO CROSSINGS (DIAGONAL), A 2' x 2' SQUARE AREA SHALL BE PROVIDED TO MAINTAIN A WALKWAY AND THE CENTERLINE OF THIS AREA SHALL BE THE CENTERLINE OF THE 2' x 2' LANDING AREA WITHIN THE GUTTER RAIL.
12. ALL CURBS WHERE CURB RAMP INTERSECT A ROAD, SECTION OF CURB AT ENTRANCE OR STREET CONNECTIONS THE DETECTABLE WARNING SURFACE SHALL HAVE A FACTORY RADIUS OR BE FILED ACCORDING TO REQUIREMENTS OF THE MANUFACTURER TO MATCH THE BACK OF CURB.

NOTE: COMPONENTS OF CURB RAMP CONSIST OF THE FOLLOWING:
 SIDEWALK ELEMENT SIDEWALK DEPTH IN ASHES AREA IN SQUARE FEET
 CURB WITH REQUIRED CG-12 OR CG-13 IN LINEAR FEET
 RAMP WITH REQUIRED CG-12 OR CG-13 IN LINEAR FEET
 EACH OF THE ABOVE ITEMS IS A SEPARATE PAY ITEM AND SHOULD BE QUANTIFIED FOR EACH CURB RAMP.

DETECTABLE WARNING DETAIL
 DETECTABLE WARNING DETAIL
 TRUNCATED DOME DETAIL
 DETECTABLE WARNING DETAIL

CG-12 DETECTABLE WARNING SURFACE (GENERAL NOTES)
 VIRGINIA DEPARTMENT OF TRANSPORTATION
 SPECIFICATION REFERENCE: 203, 202

NOTE: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 3.

THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.

ROADWAY SLOPE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	15	15
1	15	15
2	15	15
3	15	15
4	15	15
5	15	15
6	15	15
7	15	15
8	15	15
9	15	15
10	15	15

CG-12 DETECTABLE WARNING SURFACE TYPE B (PARALLEL) APPLICATION
 VIRGINIA DEPARTMENT OF TRANSPORTATION
 SPECIFICATION REFERENCE: 203, 202

NOTE: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 3.

THIS DESIGN IS TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDER SIDEWALK LANDING AT THE TOP OF CURB RAMP. MINIMUM CURB RAMP LENGTH IS 15 FEET FOR NEW CONSTRUCTION.

CG-12 DETECTABLE WARNING SURFACE TYPE A (PERPENDICULAR) APPLICATION
 VIRGINIA DEPARTMENT OF TRANSPORTATION
 SPECIFICATION REFERENCE: 203, 202

NOTE: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 3.

THE SELECTION OF CURB TYPE AND THE CONFIGURATION OF THE BUFFER STRIP MUST BE MADE TO MEET EXISTING FIELD CONDITIONS AND ROADWAY REQUIREMENTS PROVIDING THE DIMENSIONS AND SLOPES ARE AS NOTED.

THIS COMBINED (PARALLEL & PERPENDICULAR) DESIGN CAN BE USED WITH ADJOINING BUFFER STRIP LANDING AT BOTTOM OF THE SLOPING SIDE WITH 2' x 2' MIN. DIMENSIONS. THE SQUARE PERPENDICULAR RUN TO THE STREET CAN BE PROTECTED BY A LANDSCAPED TERRACE OR CONNECTED TO THE SIDEWALK WITH A WALKWAY SURFACE.

ROADWAY SLOPE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	15	15
1	15	15
2	15	15
3	15	15
4	15	15
5	15	15
6	15	15
7	15	15
8	15	15
9	15	15
10	15	15

CG-12 DETECTABLE WARNING SURFACE TYPE C (PARALLEL & PERPENDICULAR) APPLICATION
 VIRGINIA DEPARTMENT OF TRANSPORTATION
 SPECIFICATION REFERENCE: 203, 202



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ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

FINAL DESIGN

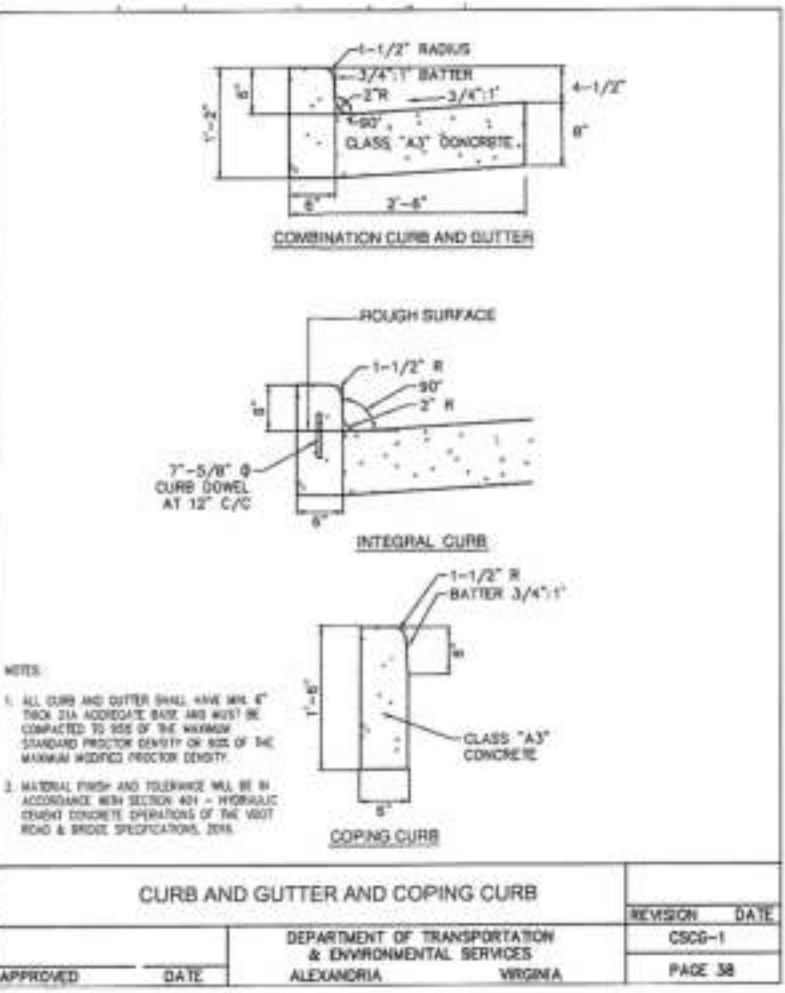
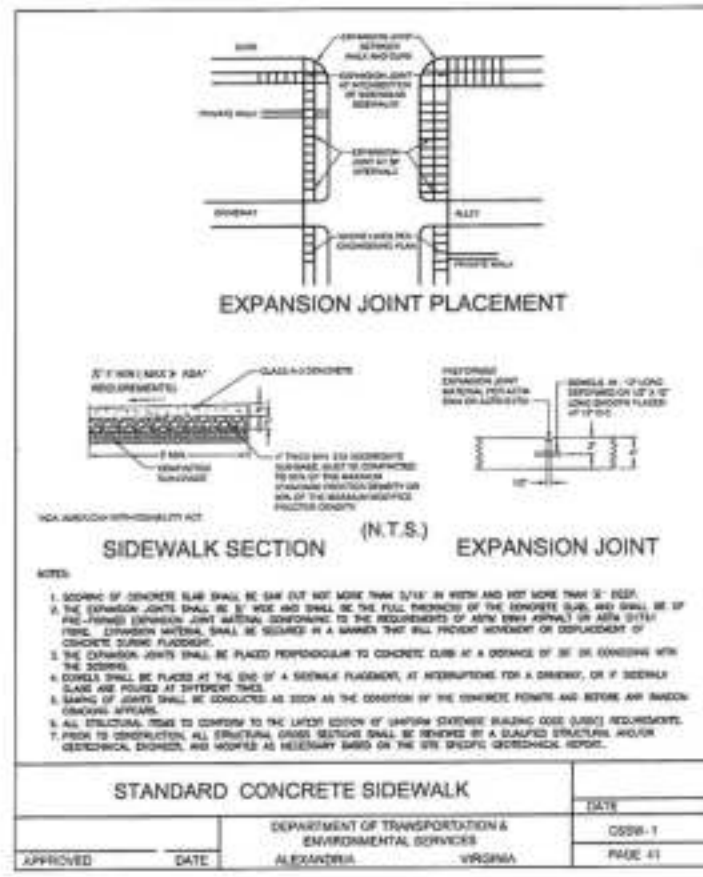
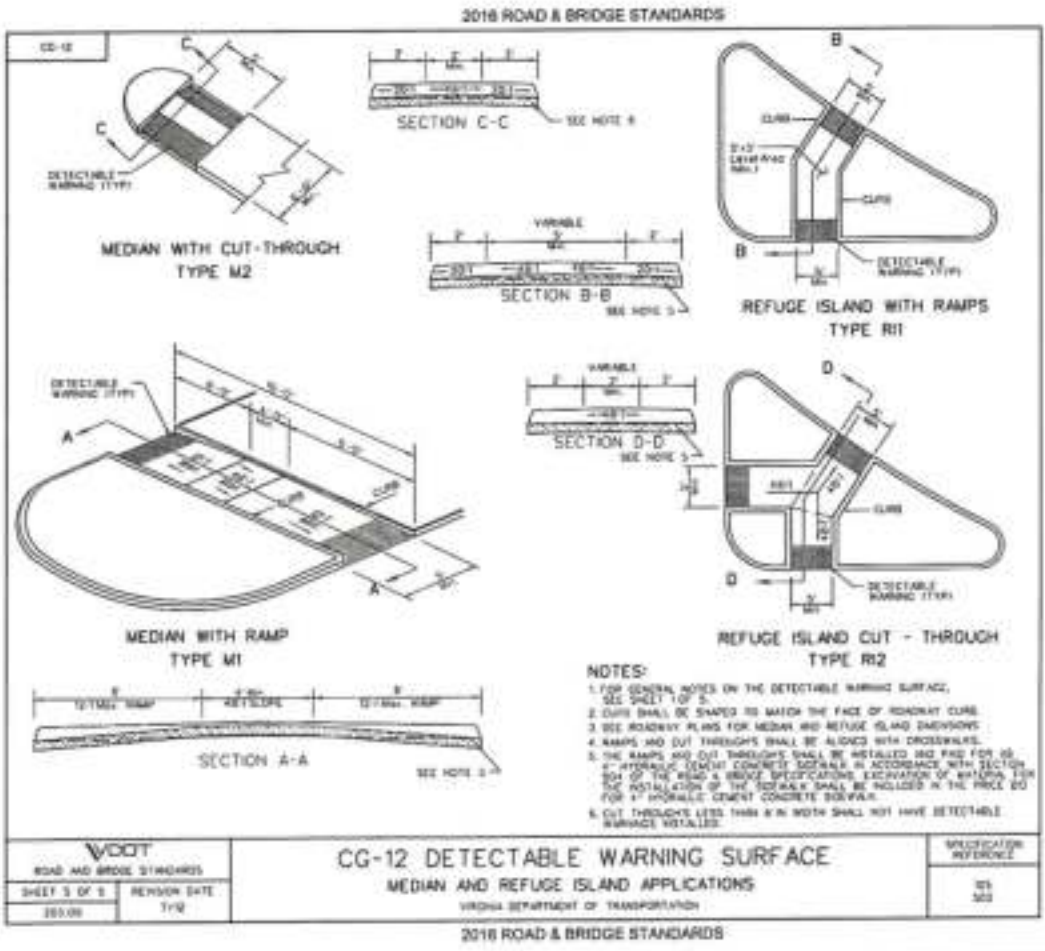
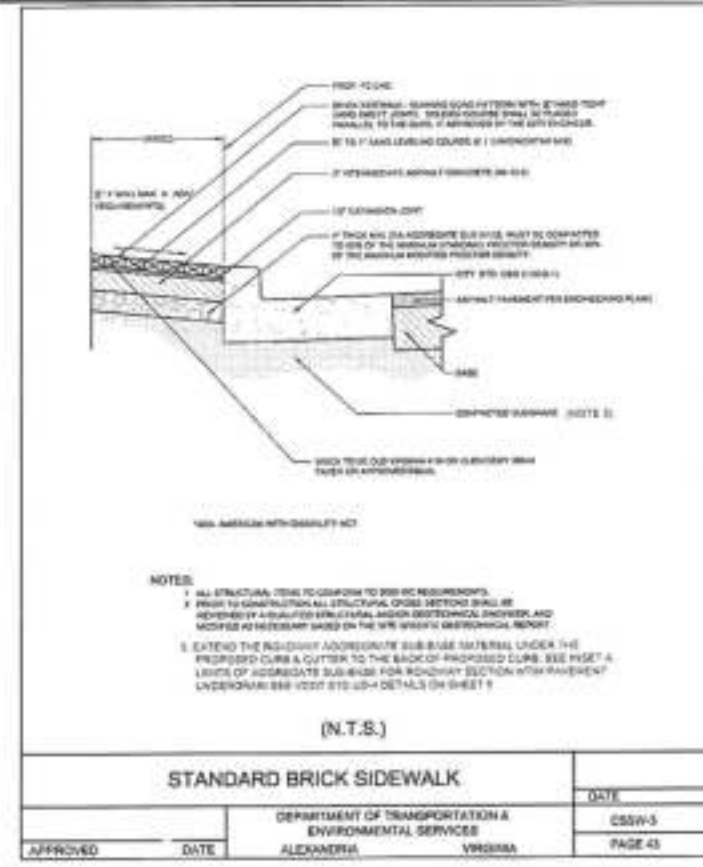
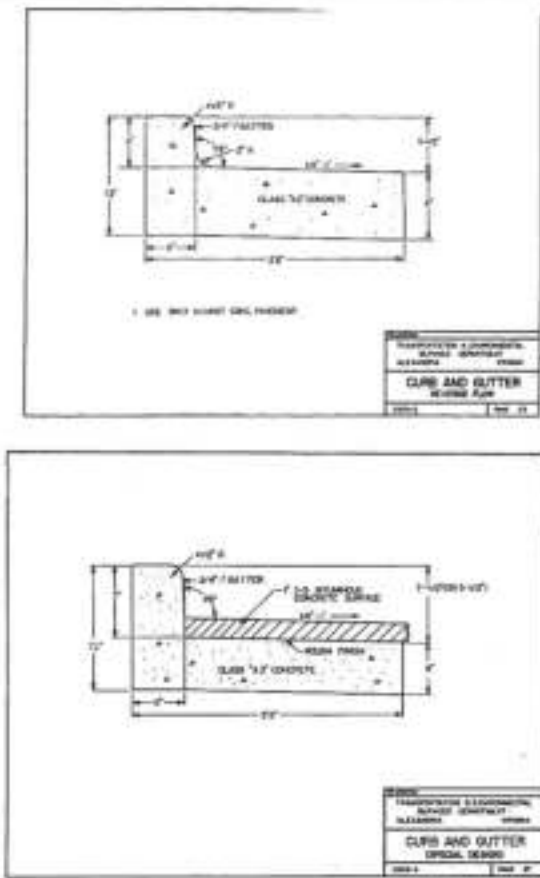
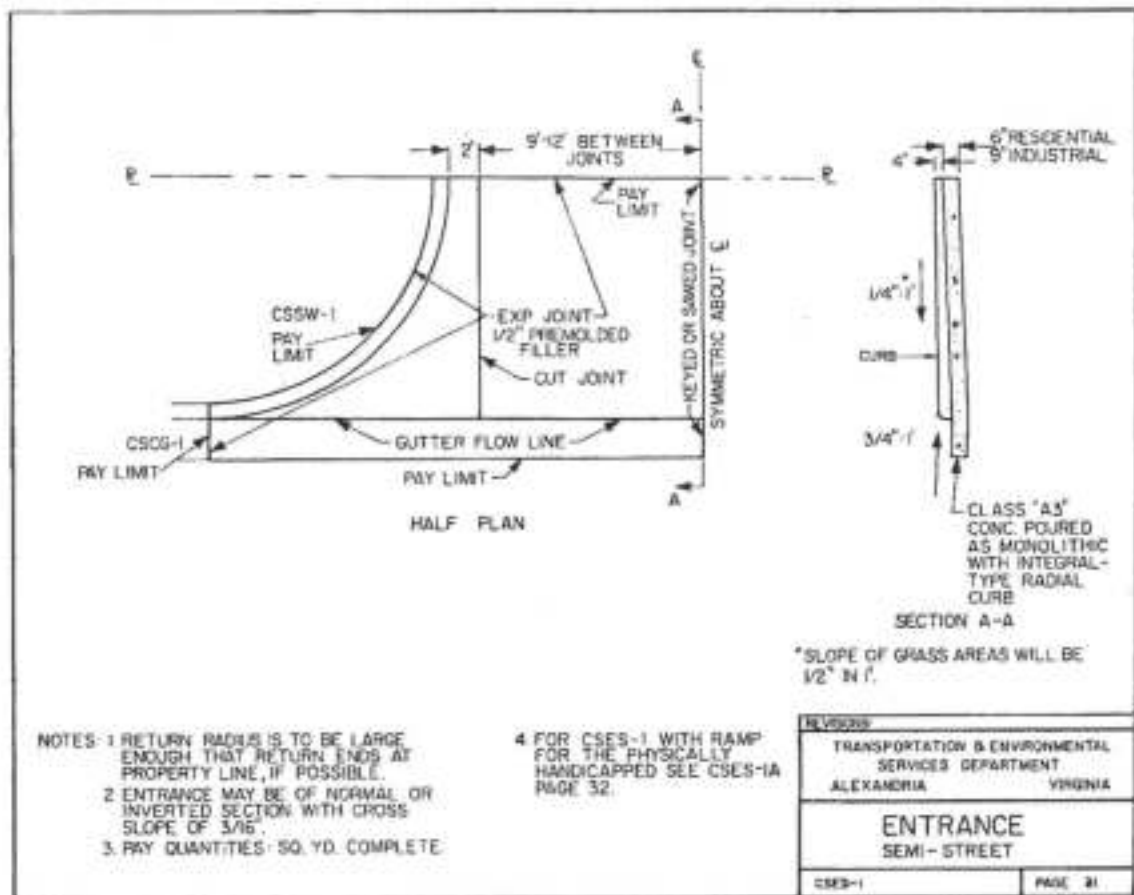
REVISIONS	DATE	DESCRIPTION

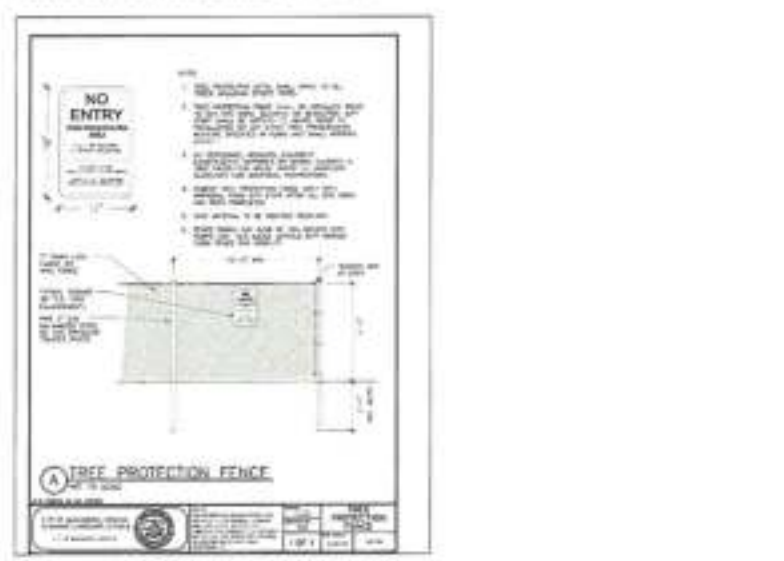
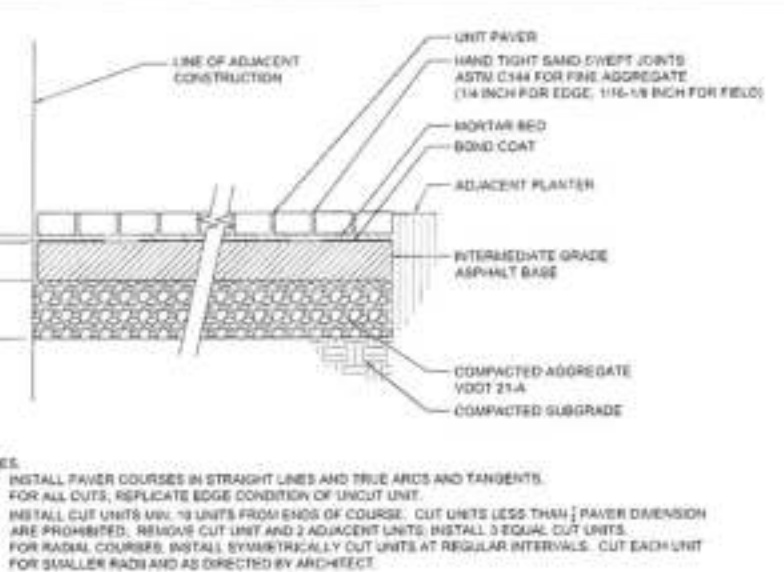
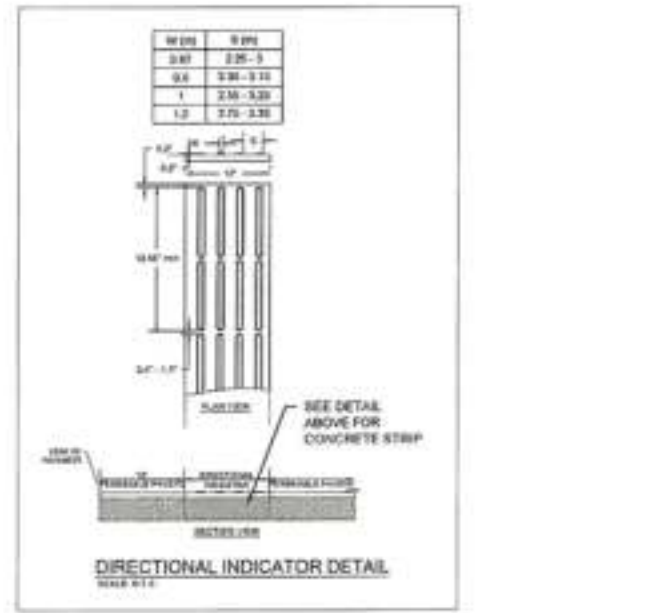
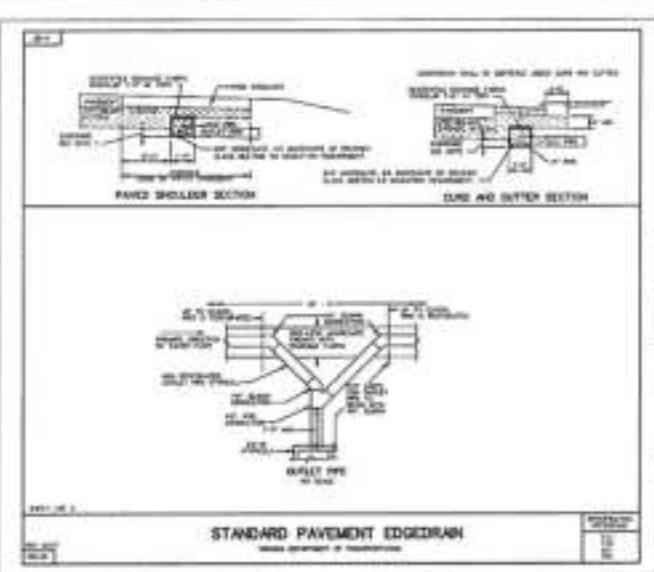
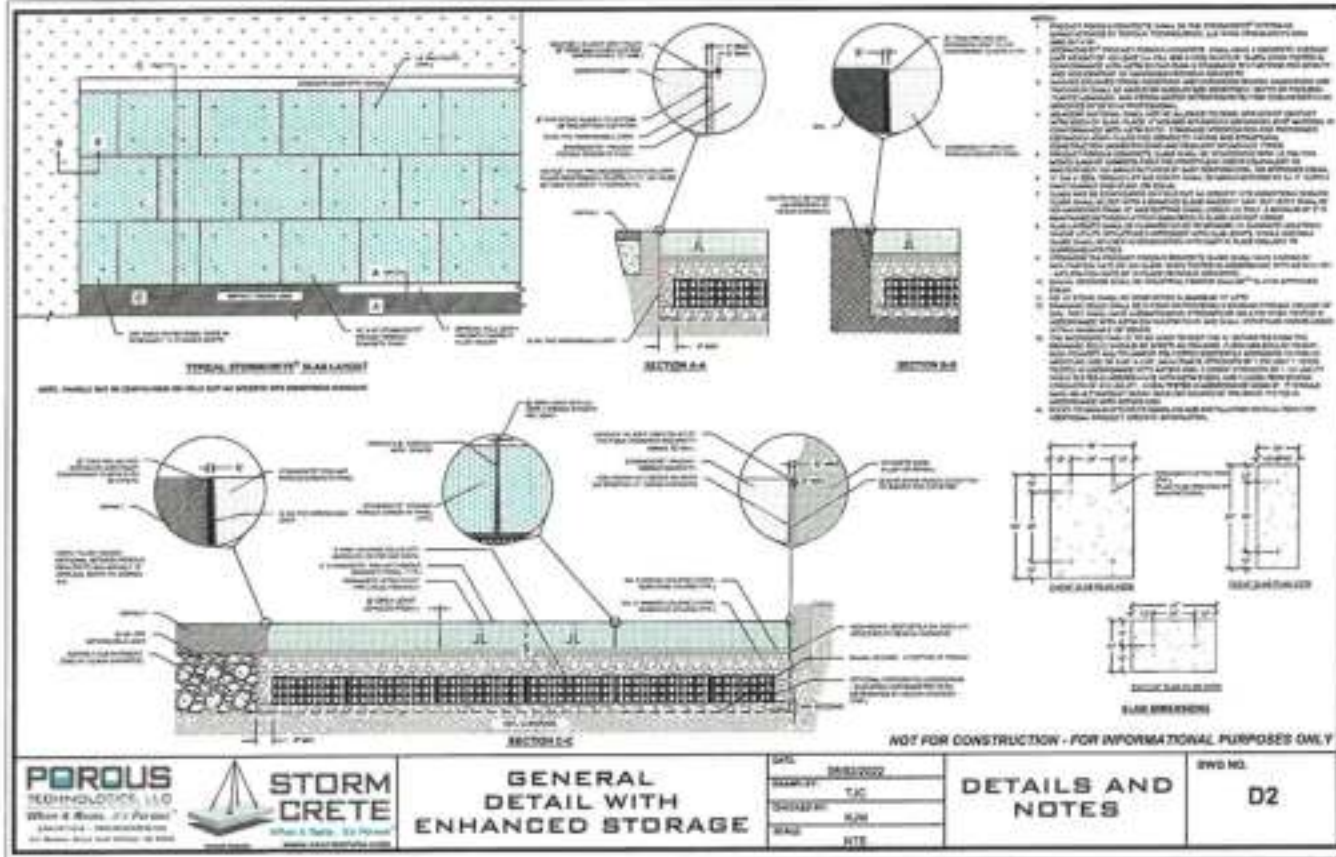
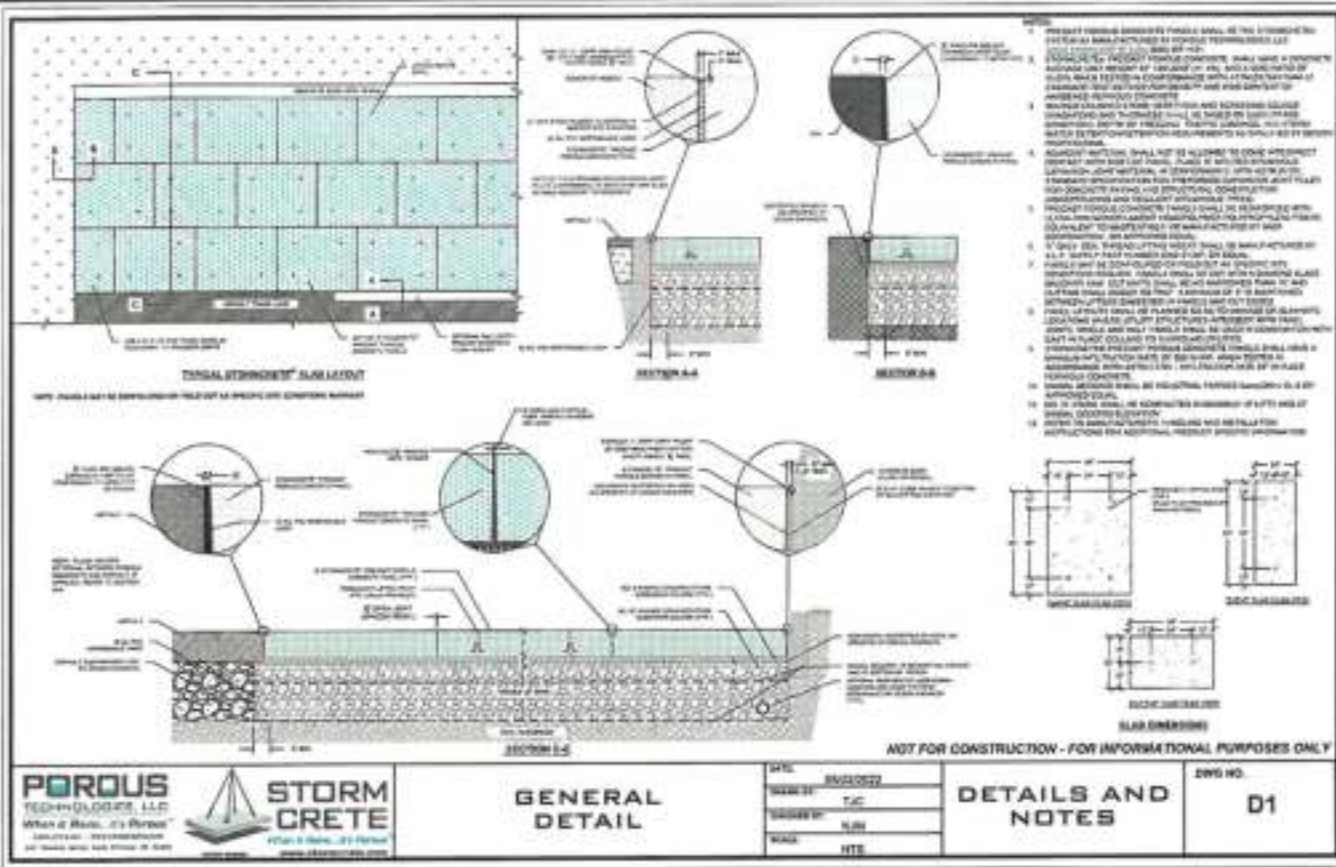
ALEXANDRIA PROJECT NO.: 1603004	DATE OF PLAN ISSUANCE: 05/24/22
CONSULTANT PROJECT NO.: 20151002	DESIGNED BY: YOT DATE: 07/20/22
DRAWN BY: YOT DATE: 07/20/22	CHECKED BY: MMB DATE: 08/20/22
APPROVED BY: MMB DATE: 08/23/22	



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 SCALE: N.T.S.

SHEET 07 of 19





FINAL DESIGN

CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

DATE	REVISIONS	DESCRIPTION
10/24/22	TAC	ISSUE FOR PERMIT
11/01/22	NJM	REVISED FOR PERMIT
11/21/22	HTS	REVISED FOR PERMIT

STV
STV CONSULTANTS, LLC
10000 Old Dominion Blvd, Suite 1000, Fairfax, VA 22030
www.stv.com

DETAILS - 3

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09 of 19
SCALE: N.T.S.

SWC Virginia Runoff Reduction Method for Development (Complete Worksheet) - Version 1.0

© 2011 BMP Standards and Specifications © 2013 Draft BMP Standards and Specifications

Project Name: **ACCESS TO TRANSIT, KING / CALLAHAN / RUSSELL**
 Date: **8/11/2018**

Site Information
 Post-Development Project (Treatment Volume and Loads)
 Enter Total Disturbed Area (acres) → **0.10**

Check:
 BMP Design Specifications (4/11/2013 Draft SWC & Specs)
 Linear project?
 Land cover array entered correctly?
 Total disturbed area entered?

Pre-Development Land Cover (acres)

	A	B	C	D	E	Total
Forest/Open Space (acres) - undisturbed					0.00	0.00
Managed Turf (acres) - disturbed, graded					0.00	0.00
Impervious (acres)					0.10	0.10
Total					0.10	0.10

Post-Development Land Cover (acres)

	A	B	C	D	E	Total
Forest/Open Space (acres) - undisturbed					0.00	0.00
Managed Turf (acres) - disturbed, graded					0.00	0.00
Impervious (acres)					0.10	0.10
Total					0.10	0.10

Runoff Coefficients (Rc)

	A	B	C	D	E
Forest/Open Space	0.00	0.00	0.00	0.00	0.00
Managed Turf	0.00	0.00	0.00	0.00	0.00
Impervious	0.80	0.80	0.80	0.80	0.80

Land Cover Summary - PRE REDEVELOPMENT

Land Cover Summary Pre	Disturb	Undisturb
Forest/Open Space (acres)	0.00	0.00
Managed Turf (acres)	0.00	0.00
Impervious (acres)	0.10	0.00
Total Disturb (acres)	0.10	0.00
Total Undisturb (acres)	0.00	0.10
Total (acres)	0.10	0.10

Land Cover Summary - POST DEVELOPMENT

Land Cover Summary Post	Disturb	Undisturb
Forest/Open Space (acres)	0.00	0.00
Managed Turf (acres)	0.00	0.00
Impervious (acres)	0.10	0.00
Total Disturb (acres)	0.10	0.00
Total Undisturb (acres)	0.00	0.10
Total (acres)	0.10	0.10

Treatment Volume and Nutrient Load

Pre-Development	Post-Development
Pre-Development Treatment Volume (ac-ft)	0.00
Post-Development Treatment Volume (ac-ft)	0.00
Pre-Development TP Load (lb/yr)	0.00
Post-Development TP Load (lb/yr)	0.00
Pre-Development Nitrogen Load (lb/yr)	0.00
Post-Development Nitrogen Load (lb/yr)	0.00

TP Load Reduction Required for Site Area: **0.00**

Nitrogen Loads (Informational Purposes Only)

Pre-Development TP Load (lb/yr)	Post-Development TP Load (lb/yr)	Post-Development Nitrogen Load (lb/yr)
0.00	0.00	0.00

Site Results (Water Quality Compliance)

Area Checks

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK
IMPERVIOUS COVER (ac)	0.07	0.00	0.00	0.00	0.00	OK
IMPERVIOUS COVER TREATED (ac)	0.07	0.00	0.00	0.00	0.00	OK
MANAGED TURF AREA (ac)	0.00	0.00	0.00	0.00	0.00	OK
MANAGED TURF AREA TREATED (ac)	0.00	0.00	0.00	0.00	0.00	OK
AREA CHECK	OK	OK	OK	OK	OK	

Site Treatment Volume (ft³)

0.00

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft ³)	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00
TP LOAD REMAINING (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00

Total Phosphorus

	LINEAR PROJECT
FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	0.00
TP LOAD REDUCTION REQUIRED (lb/yr)	0.00
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.00
TP LOAD REMAINING (lb/yr)	0.00
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr)	0.00

Total Nitrogen (For Informational Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	0.00
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	0.00

EXISTING STORM SEWER INVERTS

S71	RW ELEV. 33.45	INV. 12°W	30.95	INV. 12°OUT	30.95
S72	RW ELEV. 30.34	INV. 12°W	27.04	INV. 12°OUT	27.22
S73	RW ELEV. 28.34	INV. 12°W	24.44	INV. TWIN 12°OUT	24.52
S74	RW ELEV. 24.43	INV. TWIN 12°W NW	22.13	INV. 15°W NE	21.99
S75	RW ELEV. 26.32	INV. 12°W	23.62	INV. 15°OUT	23.29
S76	RW ELEV. 24.08	INV. 15°OUT	22.06		
S77	RW ELEV. 23.87	INV. 24°W	18.22	INV. 24°OUT	18.36
S78	RW ELEV. 23.59	INV. 24°W W	18.24	INV. 30°W NW	16.83
S79	RW ELEV. 18.94	INV. 36°W	13.16	INV. 18°OUT	12.94
S735	RW ELEV. 18.77	INV. 18°OUT	12.49		
S711	RW ELEV. 16.27	INV. 18°W	6.76	INV. 18°W NW	6.76
S712	RW ELEV. 16.80	INV. 18°OUT	16.14		
S713	RW ELEV. 18.58	INV. 15°W N	15.53	INV. 15°OUT	13.98
S714	RW ELEV. 16.02	INV. 12°W N	13.42	INV. 15°W NW	12.00
S715	RW ELEV. 15.85	INV. 15°W N	5.04	INV. 12°W E	5.22
S716	RW ELEV. 15.09	INV. 12°OUT	12.45		
S51	RW ELEV. 18.24	INV. 10°W W	9.24	INV. 10°W S	9.28
S52	RW ELEV. 18.34	INV. 10°W W	13.64	INV. 10°W NW	14.39
S53	RW ELEV. 23.14	INV. 30°W	25.38	INV. 10°OUT	15.58
S54	RW ELEV. 25.55	INV. 10°W N	16.23	INV. 10°W NW	16.63
S55	RW ELEV. 28.15	INV. 10°W	23.05	INV. 10°OUT	21.37
S56	RW ELEV. 33.55	INV. 30°W	25.87	INV. 10°OUT	25.86
S57	RW ELEV. 35.62	INV. 10°W	31.42	INV. 10°OUT	29.02

10-YEAR STORM SEWER DESIGN

STRUCTURE INFORMATION	DRAINAGE AREA, RUNOFF & FLOW INFORMATION										PIPE INFORMATION					MANHOLE INFORMATION				REMARKS			
	UPPER (L) (ft)	LOWER (ft)	STRUCTURE TYPE	DRAIN AREA (ACRES)	RUN-OFF COEFF	EQ	RAET	RAMPILL	RAE	INTENSITY (IN/HR)	Q (CFS)	Q (MGD)	LENGTH (FT)	SLOPE (%)	QA	MATERIAL	CAPACITY (CFS)	VELOCITY (FPS)	UPPER (ft)		LOWER (ft)	US STR. (ft)	DEPTH OF COVER (ft)
1	44.44	44.44	24" Dia. Box	0.04	0.70	0.45	0.45	5.0	8.00	4.00	4.00	16.00	0.80	12	RCP	3.00	8.12	20.90	25.58	26.18	1.78	2.06	

FINAL DESIGN

CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET
 ALEXANDRIA, VIRGINIA 22314

ALEXANDRIA PROJECT NO.: 16033134
 DATE OF PLAN ISSUANCE: 10/23/22
 CONSULTANT PROJECT ID: 2510705
 DESIGNED BY: YOT DATE: 07/25/22
 DRAWN BY: YOT DATE: 07/25/22
 CHECKED BY: BMM DATE: 08/03/22
 APPROVED BY: BMM DATE: 08/03/22

STV
 STV CONSULTANTS, INC.
 1000 COMMONWEALTH BLVD., SUITE 200
 ALEXANDRIA, VA 22304
 (703) 746-1000

SWM CALCULATIONS

SHEET
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 SCALE N.T.S.

IN WITNESS WHEREOF, I have duly executed this Affidavit as of the 27 day of July, 2018.

RLP Investments, I.C.
a Virginia limited liability company

By: Ronald Pembelton
Name: Ronald Pembelton
Title: Manager

COMMONWEALTH OF VIRGINIA,

City/County of Annalia, to-wit:

Sworn to and subscribed before me this 27 day of July, 2018, the undersigned Notary Public for and in the jurisdiction aforesaid, by Ronald Pembelton, the Manager of RLP Investments, LC, a Virginia limited liability company.

Elizabeth Schell
Notary Public



My commission expires: 08/31/2020
Registration No.: 291762

Acquirer: City of Alexandria, VA

Name of Project: Access to Transit: King Callahan/Russell Intersection Improvements Project

HUC Code: 02070010

Phosphorus offsets: 0.15

Nitrogen offsets: 2.35

EXHIBIT B

BILL OF SALE

THIS BILL OF SALE is made as of the 27 day of July, 2018, by RLP Investments, LC, a Virginia limited liability company ("Seller") and City of Alexandria, VA, ("Purchaser").

Seller and Purchaser have entered into that certain Agreement for Purchase and Sale of Nutrient Offset Credits dated June 25, 2018, (the "Purchase Agreement"), the terms of which are incorporated herein by reference and made a part hereof, with respect to the sale by Seller and the purchase by Purchaser of nutrient offset credits generated by Seller's Kinsale Nutrient Bank located in Westmoreland County, Virginia.

In consideration of the payment of the Purchase Price \$2,400.00 and (as defined in the Purchase Agreement) and other good and valuable consideration, the receipt and sufficiency of which are mutually acknowledged, Seller hereby sells, transfers, assigns, conveys, delivers, and sets over to Purchaser, its successors or assigns the following nutrient offset credits (as defined in the Purchase Agreement):

Phosphorus: 0.15 lbs. and

Nitrogen: 2.35 lbs.

Project: Access to Transit: King/Callahan/Russell Intersection Improvements Project

VSMP Permit #: _____

WITNESS the following authorized signature:

RLP Investments, LC,
a Virginia limited liability company

By: Ronald Pembelton
Name: Ronald Pembelton
Title: Manager

FINAL DESIGN



CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

REVISIONS	DATE	BY	DESCRIPTION

ALEXANDRIA PROJECT NO.: 180335A	DATE OF PLAN ISSUANCE: 10/26/22
CONSULTANT PROJECT ID: 210100	DESIGNED BY: STJ DATE: 07/25/22
DRAWN BY: MML DATE: 07/25/22	CHECKED BY: MML DATE: 08/25/22
APPROVED BY: MML DATE: 08/25/22	



SWM CALCULATIONS

SHEET
11 of 19
SCALE N.T.S.



Department of Project Implementation
301 King Street Suite 3200
Alexandria, Virginia 22314

Phone: 703.746.4045
Fax: 703.838.4299

www.alexandriava.gov

September 4, 2018

Ms. Melanie Mason
Watershed Management Planner
Stormwater Management
Transportation & Environmental Services
City of Alexandria, VA
2900 Business Center Drive
Alexandria, VA 22314

Re: Access to Transit:
King / Callahan / Russell Intersection Improvement
DPI Project No.1603034
Water Quality Improvement Fund (WQIF)

Dear Ms. Mason:


This letter is to request approval for the above referenced project to provide a monetary contribution to the Water Quality Improvement Fund (WQIF) in lieu of providing onsite stormwater management treatment facilities to the entire area.

The project is located at the intersection of King Street / Callahan Drive / Russell Road. The total impervious area is 0.26 Acres. Due to site constraints, only 0.06 Acres will be treated by Permeable Concrete Sidewalk.

Per Memorandum To Industry 04-08, the rate of the fee is \$2.00/SF of impervious area not treated by a BMP, (8,712 SF). This results in a WQIF fee of Seventeen Thousand Four Hundred Twenty-four Dollars (\$17,424.00), for the King / Callahan / Russell Intersection Improvement Project.

If you have any questions, I can be reached on 703.746.4631.

Sincerely,


Reginald M. Arno, P.E.
Civil Engineer IV.

cc: Mitchell Bernstein, P.E., Director, City of Alexandria, DPI
Daphne Kott, P.E., CCM, Design Division Chief, City of Alexandria, DPI
Jesse Maines, MPA, Division Chief, City of Alexandria, T&ES Stormwater Management

Project Description

Development or Redevelopment

Drainage Area	Impervious	Pervious	Total
Site Area	0.26		0.26
On-Site Treated	0.06		0.06
Off-Site Treated			
Total Treated			0.06
Any On-Site Disconnected by a Vegetated Buffer (25 ft)	0.00		
Total On-Site Treated or Disconnected			0.06

Water Treatment on site

BMP Type	Area treated by BMP (acres)	Impervious area treated by BMP (acres)	BMP efficiency (%)
Permeable Pavement	0.06	0.06	55%

Miscellaneous

Total WQV treated: yes no
Detention on site: yes no

Project is within which watershed? Cameron Run

Project discharges to which body of water? Potomac River

ENVIRONMENTAL SITE ASSESSMENT

1. THERE ARE NO TIDAL WETLANDS, TIDAL SHORES, TRIBUTARY STREAMS, FLOODPLAINS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS, HIGHLY ERODIABLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES, STREAMS, OR WETLANDS LOCATED ON THE SITE. FURTHER, THERE ARE NO WETLAND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT. ADDITIONALLY, THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS OR AREAS OF SOIL OR GROUNDWATER CONTAMINATION ON THE SITE.
2. THE CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, OFFICE OF ENVIRONMENTAL QUALITY MUST BE NOTIFIED IF UNUSUAL OR UNANTICIPATED CONTAMINATION OR UNDERGROUND STORAGE TANKS, DRUMS, AND CONTAINERS ARE ENCOUNTERED AT THE SITE. IF THERE IS ANY DOUBT ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, THE ALEXANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK OR CONTAINER'S REMOVAL, ITS CONTENTS, ANY SOIL CONTAMINATION AND RELEASES TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE, AND CITY REGULATIONS.
3. ALL WELLS TO BE DEMOLISHED IN THIS PROJECT, INCLUDING MONITORING WELLS MUST BE CLOSED IN ACCORDANCE WITH VIRGINIA STATE WATER CONTROL BOARD (VSWCB) REQUIREMENTS. CONTACT ENVIRONMENTAL HEALTH SPECIALIST AND COORDINATE WITH THE ALEXANDRIA HEALTH DEPARTMENT AT 703-838-4400 EXT 267/255.
4. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE 11, CHAPTER 5, WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS:
 - MONDAY THROUGH FRIDAY FROM 7 AM TO 6 PM AND
 - SATURDAYS FROM 9 AM TO 6 PM.
 - NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS.

PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:

- MONDAY THROUGH FRIDAY FROM 9 AM TO 6 PM AND
- SATURDAYS FROM 10 AM TO 4 PM.

FINAL DESIGN



CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

DATE	REVISIONS BY	DESCRIPTION

ALEXANDRIA PROJECT NO.: 1603034
DATE OF PLAN ISSUANCE: 10/24/22
CONSULTANT PROJECT ID: 251310
DESIGNED BY: JOT DATE: 07/23/22
DRAWN BY: MWS DATE: 07/25/22
CHECKED BY: MWS DATE: 08/25/22
APPROVED BY: MWS DATE: 08/21/22

STV
STV GROUP, INC.
10000 WOODBURN ROAD
ALEXANDRIA, VA 22304
TEL: 703.838.4400
WWW.STVGROUP.COM

SWM CALCULATIONS

SHEET
11A of 19
SCALE N.T.S.

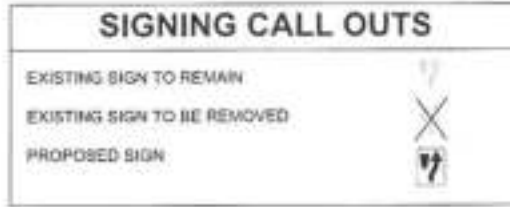
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PAVEMENT MARKING LEGEND:

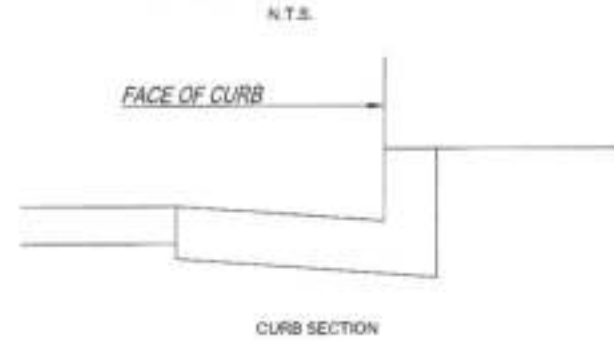
- ① 4" SOLID WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ② 4" DASHED WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING (2' LINE, 4' SKIP)
- ③ 4" SOLID YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ④ 4" DASHED YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE (2' LINE, 4' SKIP)
- ⑤ 4" DASHED WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE (10' LINE, 30' SKIP)
- ⑥ 4" DOUBLE BROKEN YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE (2' LINE, 4' SKIP)
- ⑦ 4" DOUBLE SOLID YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ⑧ 4" DOUBLE BROKEN YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE (10' LINE, 30' SKIP)
- ⑨ 6" SOLID WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ⑩ 6" DASHED WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING (2' LINE, 4' SKIP)
- ⑪ 6" SOLID YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ⑫ 6" DASHED YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE (2' LINE, 4' SKIP)
- ⑬ 6" DASHED WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE (10' LINE, 30' SKIP)
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- ⑮ 6" DOUBLE SOLID YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ⑯ 6" DOUBLE BROKEN YELLOW REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE (10' LINE, 30' SKIP)
- ⑰ 12" SOLID WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ⑱ 24" SOLID WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING LINE
- ⑲ SOLID WHITE STRIPES 45 DEGREES FROM THE EDGE OF PAVEMENT, 5' DISTANCE TO CENTER OF LINES, TYP.
- ⑳ SOLID YELLOW STRIPES 45 DEGREES FROM THE EDGE OF PAVEMENT, 5' DISTANCE TO CENTER OF LINES, TYP.
- ㉑ WHITE BICYCLE LANE PERMANENT PREFORMED PAVEMENT MARKING SYMBOL
- ㉒ WHITE SHARED BICYCLE LANE PERMANENT PREFORMED PAVEMENT MARKING SYMBOL
- ㉓ WHITE ARROW PERMANENT PREFORMED PAVEMENT MARKING SYMBOL
- ㉔ "ONLY" TEXT WHITE PERMANENT PREFORMED PAVEMENT MARKING SYMBOL
- ㉕ 10' WIDE HIGH VISIBILITY CROSSWALK WITH 2' WIDE STRIPES AND 2' SPACING.
- ㉖ 15' WIDE HIGH VISIBILITY CROSSWALK WITH 2' WIDE STRIPES AND 2' SPACING.
- ㉗ 20' WIDE HIGH VISIBILITY CROSSWALK WITH 2' WIDE STRIPES AND 2' SPACING.
- ㉘ GREEN BIKE LANE COLORIZED COATING
- ㉙ ERADICATION OF EXISTING PAVEMENT MARKING
- ㉚ "WAIT HERE" TEXT WHITE PERMANENT PREFORMED PAVEMENT MARKING SYMBOL
- ㉛ SPEED HUMP WHITE PERMANENT PREFORMED PAVEMENT MARKING SYMBOL

SIGNING LEGEND:

- | | | |
|-----------------|-----------------|---|
| EXISTING | PROPOSED | |
| | | GROUND MOUNTED SINGLE SIGN POST STRUCTURE |
| | | GROUND MOUNTED MULTIPLE-SIGN POST STRUCTURE |



PAVEMENT MARKING SYMBOL DETAILS:



NOTE: LATERAL PAVEMENT MARKING DIMENSIONS ON THE PLANS ARE MEASURED FROM THE FACE OF CURB AND INCLUDE THE GUTTER PAN



CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

FINAL DESIGN

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

DATE	REVISIONS DESCRIPTION

ALEXANDRIA PROJECT NO. 1603034	DATE OF PLAN ISSUANCE: 10/21/22
CONSULTANT PROJECT ID: 2515101	DESIGNED BY: TRC DATE: 07/19/22
DRAWN BY: JEL DATE: 07/19/22	CHECKED BY: JEL DATE: 08/29/22
APPROVED BY: JEL DATE: 08/29/22	

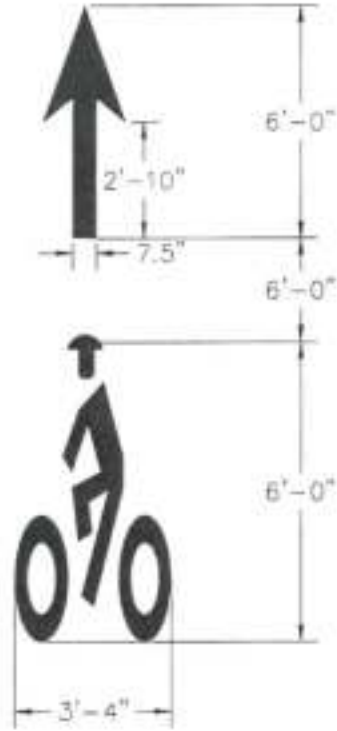


MARKING DETAILS - 1

SHEET
12 of 19
SCALE N.T.S.

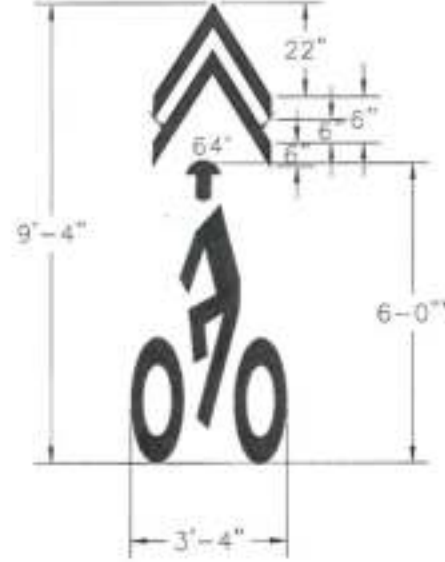
BIKE LANE MARKING SYMBOL DETAILS:

N.T.S.



SHARED LANE BIKE MARKING SYMBOL:

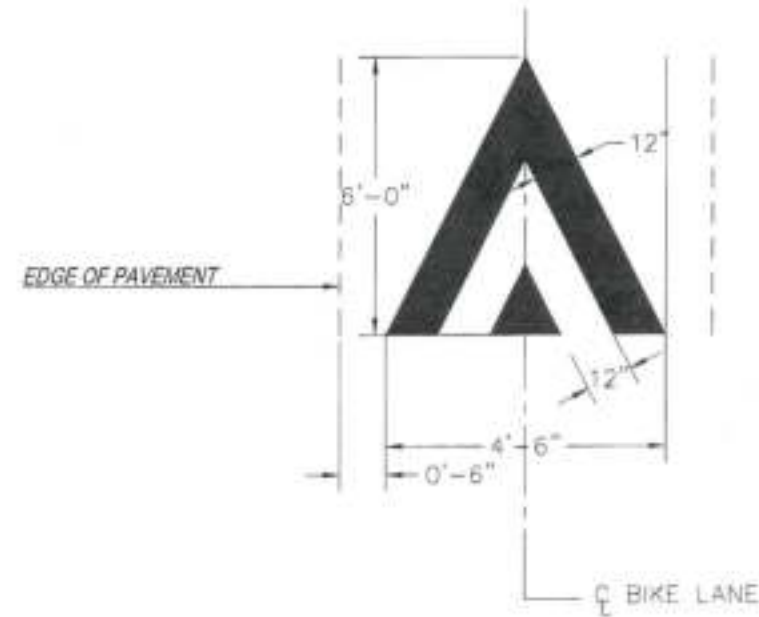
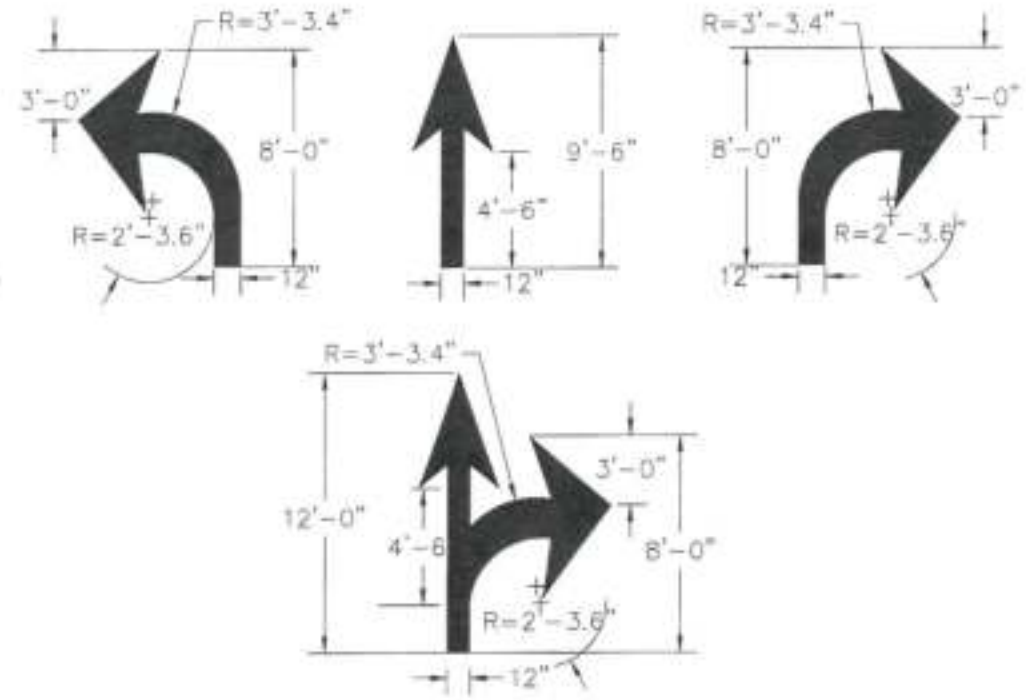
N.T.S.



PAVEMENT MARKING ARROWS & WORD SYMBOLS:

N.T.S.

NOTE: FOR ARROW AND TEXT PAVEMENT MARKING SYMBOLS PLEASE REFER TO THE 2008 MUTCD FIGURE 3B-24 FOR ADDITIONAL INFORMATION



FINAL DESIGN



CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

DATE	REVISIONS BY	DESCRIPTION

ALEXANDRIA PROJECT NO.: 1810314
DATE OF PLAN ISSUANCE: 10/21/22
CONSULTANT PROJECT ID: 3553700
DESIGNED BY: INC. DATE: 07/19/22
DRAWN BY: INC. DATE: 07/19/22
CHECKED BY: EL. DATE: 08/20/22
APPROVED BY: EL. DATE: 08/19/22


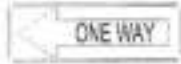
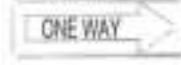






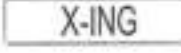




MARKING DETAILS - 2

SHEET
13 of 19
SCALE N.T.S.

SIGN SCHEDULE

N.T.S.

SIGN NO.	SIGN FACE	PANEL SIZE		STANDARD NUMBER	PANEL SIZE S.F.	QUANTITY
		WIDTH	HEIGHT			
1	INTENTIONALLY LEFT BLANK					
2		36"	36"	R1-1	9	2
3		54"	18"	RS-1L	6.75	1
4		54"	18"	RS-1R	6.75	1
5		36"	36"	RS-1	9	2
6		36"	36"	W11-2	9	1
7		30"	24"	R3-17	5	1
8		36"	30"	R4-4	7.5	1

SIGN NO.	SIGN FACE	PANEL SIZE		STANDARD NUMBER	PANEL SIZE S.F.	QUANTITY
		WIDTH	HEIGHT			
9		12"	18"	R3-7	1.5	2
10		36"	36"	W11-15	9	1
11		24"	12"	W11-15P MOD	2	1
12		24"	8"	R3-17bP	1.33	1
13		24"	30"	R10-11	5	1
14		24"	24"	R3-1	4	1
15		12"	18"	R3-7	1.5	1

I:\projects\2515700\2515730_0001180_CAD Models and Sheets\4_CAD Transportation\Traffic\Signs_Pavement Markings\Sign_Calendar_Traffic.dwg, 10/28/2022 10:54:05 AM, cursor: 1,1



CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

REVISIONS	DATE	BY	DESCRIPTION



SIGN SCHEDULE

SHEET
14 of 19
SCALE N.T.S.

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

FINAL DESIGN

ALEXANDRIA PROJECT NO.: 1603034
DATE OF PLAN ISSUANCE: 10/21/22
CONSULTANT PROJECT NO.: 2515730
DESIGNED BY: JRE DATE: 07/29/22
DRAWN BY: JRE DATE: 07/29/22
CHECKED BY: JAL DATE: 08/26/22
APPROVED BY: JAL DATE: 08/27/22



ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

FINAL DESIGN



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET
 ALEXANDRIA, VIRGINIA 22314

REVISIONS	DATE	BY	DESCRIPTION



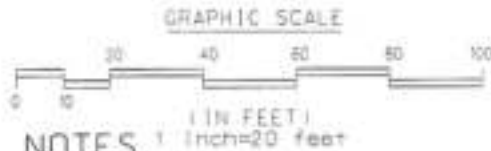
SIGNING AND MARKING PLAN

SHEET
 15 of 19
 SCALE 1" = 30'

ALEXANDRIA PROJECT NO. 160033A
 DATE OF PLAN ISSUANCE: 10/21/22
 CONSULTANT PROJECT ID: 2515100
 DESIGNED BY: TRC DATE: 07/28/22
 DRAWN BY: TRC DATE: 07/28/22
 CHECKED BY: AS DATE: 08/20/22
 APPROVED BY: AS DATE: 08/21/22

CONDUIT RUNS

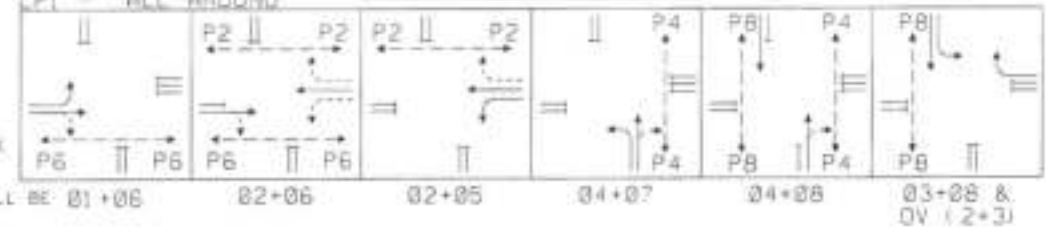
- 2 - 1" CONDUIT (M) TRENCHED
- 1 - 1" CONDUIT (NO. 14 AWG) - LOOP DETECTION
- 3 - 1" CONDUIT TRENCHED
- 4 - 1" CONDUIT (NO. 14 AWG) - APS PUSHBUTTON
- 4 - 1" CONDUIT (NO. 14 AWG) - PEDESTRIAN SIGNAL
- 1 - No. 8 AWG, EGC
- 4 - 1" CONDUIT BORED
- 3 - 1" CONDUIT (NO. 14 AWG) - APS PUSHBUTTON
- 3 - 1" CONDUIT (NO. 14 AWG) - PEDESTRIAN SIGNAL
- 2 - 1" CONDUIT (NO. 14 AWG) (S) - LOOP DETECTION
- 1 - No. 8 AWG, EGC
- 3 - 1" CONDUIT
- 7 - 1" CONDUIT (NO. 14 AWG) - SIGNAL HEAD
- 1 - 1" CONDUIT (NO. 14 AWG) - EXISTING SIGNAL HEAD
- 1 - No. 8 AWG, EGC
- 3 - 1" EXISTING CONDUIT
- 7 - 1" CONDUIT (NO. 14 AWG) - SIGNAL HEAD
- 7 - 1" CONDUIT (NO. 14 AWG) - EXISTING SIGNAL HEAD
- 1 - No. 8 AWG, EGC
- 3 - 1" CONDUIT TRENCHED
- 3 - 1" CONDUIT (NO. 14 AWG) - APS PUSHBUTTON
- 4 - 1" CONDUIT (NO. 14 AWG) - PEDESTRIAN SIGNAL
- 2 - 1" CONDUIT (NO. 14 AWG) (S) - LOOP DETECTION
- 1 - No. 8 AWG, EGC
- 3 - 1" CONDUIT (M) TRENCHED
- 1 - 1" CONDUIT (NO. 14 AWG) - LOOP DETECTION
- 4 - 1" CONDUIT BORED
- 7 - 1" CONDUIT (NO. 14 AWG) - SIGNAL HEAD
- 7 - 1" CONDUIT (NO. 14 AWG) - EXISTING SIGNAL HEAD
- 3 - 1" CONDUIT (NO. 14 AWG) - APS PUSHBUTTON
- 4 - 1" CONDUIT (NO. 14 AWG) - PEDESTRIAN SIGNAL
- 2 - 1" CONDUIT (NO. 14 AWG) (S) - LOOP DETECTION
- 1 - No. 8 AWG, EGC
- 3 - 1" EXISTING CONDUIT
- 7 - 1" CONDUIT (NO. 14 AWG) - EXISTING SIGNAL HEAD
- 1 - No. 8 AWG, EGC
- 3 - 1" CONDUIT
- 4 - 1" CONDUIT (NO. 14 AWG) - EXISTING SIGNAL HEAD
- 1 - No. 8 AWG, EGC
- 3 - 1" CONDUIT TRENCHED (EMPTY) WITH PULL TAPE (FOR FUTURE USE)
- 7 - 1" CONDUIT TRENCHED
- 2 - 1" CONDUIT (NO. 14 AWG) (S) - LOOP DETECTION
- 1 - No. 8 AWG, EGC
- 4 - 1" CONDUIT BORED
- 3 - 1" CONDUIT (NO. 14 AWG) - APS PUSHBUTTON
- 4 - 1" CONDUIT (NO. 14 AWG) - PEDESTRIAN SIGNAL
- 2 - 1" CONDUIT (NO. 14 AWG) (S) - LOOP DETECTION
- 1 - No. 8 AWG, EGC
- 3 - 1" CONDUIT TRENCHED
- 3 - 1" CONDUIT (NO. 14 AWG) - APS PUSHBUTTON
- 4 - 1" CONDUIT (NO. 14 AWG) - PEDESTRIAN SIGNAL
- 2 - 1" CONDUIT (NO. 14 AWG) (S) - LOOP DETECTION
- 1 - No. 8 AWG, EGC
- 3 - 1" CONDUIT TRENCHED
- 1 - POWER SUPPLY (TO BE INSTALLED BY OTHERS)
- 3 - 1" CONDUIT TRENCHED
- 1 - No. 6 AWG - ELECTRICAL SERVICE
- 4 - 1" CONDUIT TRENCHED
- 3 - 1" CONDUIT (NO. 14 AWG) - SIGNAL HEAD
- 3 - 1" CONDUIT (NO. 14 AWG) - EXISTING SIGNAL HEAD
- 4 - 1" CONDUIT (NO. 14 AWG) - APS PUSHBUTTON
- 4 - 1" CONDUIT (NO. 14 AWG) - PEDESTRIAN SIGNAL
- 2 - 1" CONDUIT (NO. 14 AWG) (S) - LOOP DETECTION
- 1 - No. 8 AWG, EGC
- 1 - 1" CONDUIT (SPACE)
- 1 - 1" CONDUIT (GROUND)
- 1 - No. 8 AWG, EGC
- 1 - 1" CONDUIT TRENCHED FOR GROUNDING ELECTRODE CONDUCTOR (SEE NOTE 10)



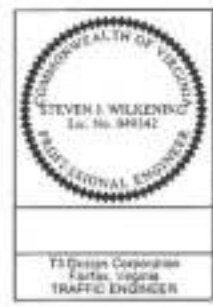
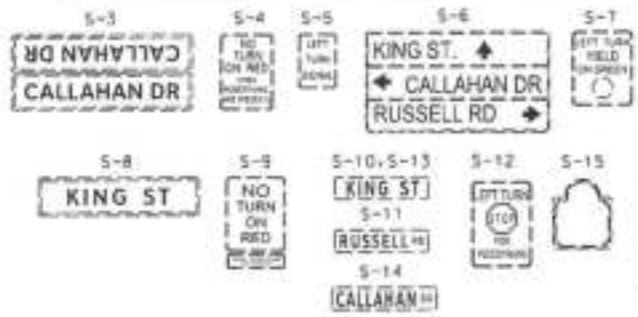
NOTES

- 1) PEDESTRIAN HEADS AND PUSH BUTTONS SHALL BE BLACK ALUMINUM IN COLOR.
- 2) EGGRATE VISORS AND PERMANENT DOOR HARDWARE SHALL BE INCLUDED WITH PEDESTRIAN SIGNAL HOUSING.
- 3) EXISTING CONTROLLER IS TO BE REPLACED.
- 4) APPROXIMATE PROPOSED FIBER LOCATION. CITY FORCES WILL INSTALL THE COMMUNICATION CONNECTION TO EXISTING FIBER INFRASTRUCTURE IN A FUTURE PROJECT.
- 5) EXISTING LOOP DETECTORS SHALL BE ABANDONED IN PLACE.
- 6) POWER SERVICE CONNECTION SHALL BE COORDINATED WITH DOMINION POWER.
- 7) PEDESTRIAN SIGNAL HOUSING SHALL BE A MCCAIN 16" ALUMINUM BLACK HOUSING W/ ALUMINUM BLACK DOOR AND VANTAGE VISOR, OR EQUIVALENT APPROVED PRODUCT.
- 8) THE CONTRACTOR SHALL COMPLY WITH EQUIPMENT SPECIAL PROVISIONS AND SPECIFICATIONS TO BE INCLUDED IN PROJECT BID DOCUMENTS.
- 9) IM) DENOTES METAL CONDUIT (S) DENOTES SHIELDED CABLE EGC DENOTES EQUIPMENT GROUNDING CONDUCTOR
- 10) THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING THE GROUNDING ELECTRODE CONDUCTOR PER TABLE 250.66 IN THE NEC. A #6 AWG WIRE IS ASSUMED FOR ESTIMATING PURPOSES ONLY.
- 11) THE CONTRACTOR SHALL INSTALL 1,100 LB PULL TAPE IN ALL CONDUITS FOR FUTURE USE BY THE CITY OF ALEXANDRIA.

PHASING DIAGRAM



EXISTING SIGNS TO REMAIN



CONSTRUCTION DETAILS

- 1) INSTALL PEDESTRIAN POLE WITH ACCESSIBLE PEDESTRIAN PUSHBUTTON AND SIGNAL.
- 2) INSTALL JUNCTION BOX, SHALL BE JB-S2 UNLESS NOTED.
- 3) USE EXISTING SIGNAL POLE, INSTALL SIGNAL HEADS ON MAIN ARM AND SIGNAL POLE.
- 4) INSTALL PROPOSED CABINET FOUNDATION, UPS, CONTROLLER, AND HARDWARE.
- 5) REMOVE EXISTING JUNCTION BOX, CAP AND ABANDON EXISTING CONDUIT.
- 6) REUSE EXISTING JUNCTION BOX, TIE-IN PROPOSED CONDUIT, ADJUST LID AND COLLAR TO PROPOSED GRADE AS NECESSARY.
- 7) REMOVE EXISTING PEDESTRIAN SIGNAL AND POLE, CAP AND ABANDON EXISTING CONDUIT.
- 8) REMOVE EXISTING CABINET AND FOUNDATION.
- 9) USE EXISTING SIGNAL POLE.
- 10) INSTALL LOOP DETECTOR.

CLEARANCE CHART

R/W	CLEARANCE		NEXT PHASE
	1	2	
G	Y	R	R
G	G	G	G
YG	Y	R	R
G	Y	R	R/G
G	G	G	YG/G
YG/G	Y/G	G	G
YG	Y/Y	R	R
R/G	R/Y	R	R
R/G	R/G	R	G
WALK	FDW	DW	DW
WALK	WALK	WALK	WALK

SIGNAL POLE LEGEND

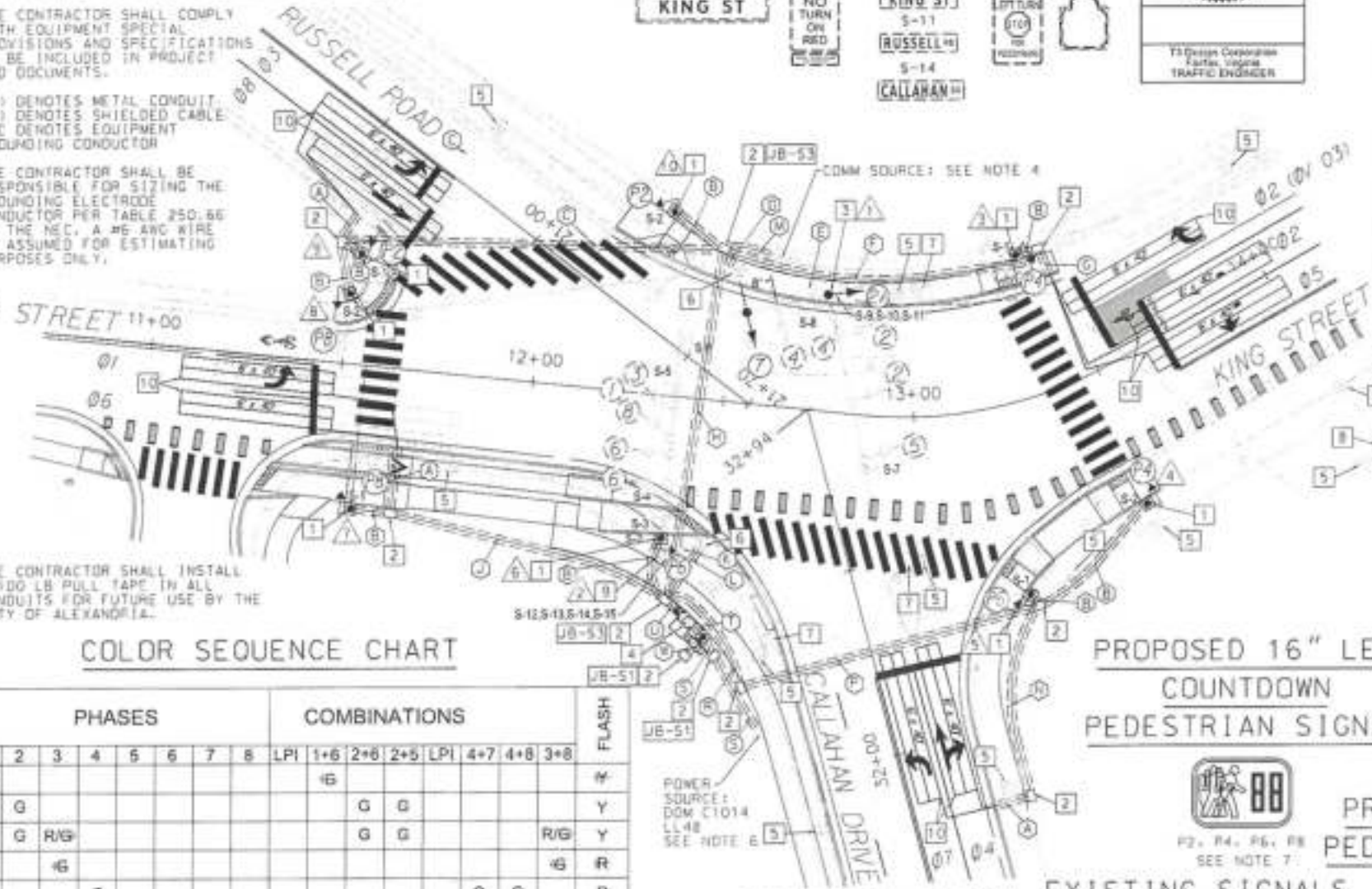
POLE #	STA	OFFSET
1	12+74.18	-30.46
2	12+38.18	41.32
3	13+42.20	-36.64
4	13+46.88	37.08
5	13+20.54	49.80
6	12+37.66	37.24
7	11+56.24	37.77
8	11+50.57	-18.50
9	20+66.47	30.25
10	21+24.09	-27.86

COLOR SEQUENCE CHART

SIGNAL	PHASES								COMBINATIONS								FLASH
	1	2	3	4	5	6	7	8	LPI	1+6	2+6	2+5	LPI	4+7	4+8	3+8	
1	YG												YG				Y
2		G											G	G			Y
2A		G	R/G										G	G		R/G	Y
3			YG													YG	R
4				G									G	G			R
5					YG/G	G							G	YG/G			Y
6						G							G	G			Y
7							YG								YG		R
8								G						G	G		R
P2	DW	W	DW	DW	DW	DW	DW	DW	W	DW	W	W	DW	DW	DW	DW	BLANK
P4	DW	DW	DW	W	DW	DW	DW	DW	DW	DW	DW	W	W	W	DW	DW	BLANK
P6	DW	DW	DW	DW	DW	W	DW	DW	W	W	W	DW	DW	DW	DW	DW	BLANK
P8	DW	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	W	DW	W	W	DW	BLANK

APS MESSAGE TABLE

PUSHBUTTON QUADRANT	SPEECH FB INFORMATION MESSAGE	AUDIBLE WALK INDICATION
P2 (NW) P2 (SW)	WAIT TO CROSS RUSSELL RD AT KING ST	PERCUSSIVE TONE
P4 (NE) P4 (SE)	WAIT TO CROSS KING ST AT CALLAHAN DR	PERCUSSIVE TONE
P6 (NE) P6 (SE)	WAIT TO CROSS CALLAHAN DR AT KING ST	PERCUSSIVE TONE
P8 (NW) P8 (SW)	WAIT TO CROSS KING ST AT RUSSELL RD	PERCUSSIVE TONE

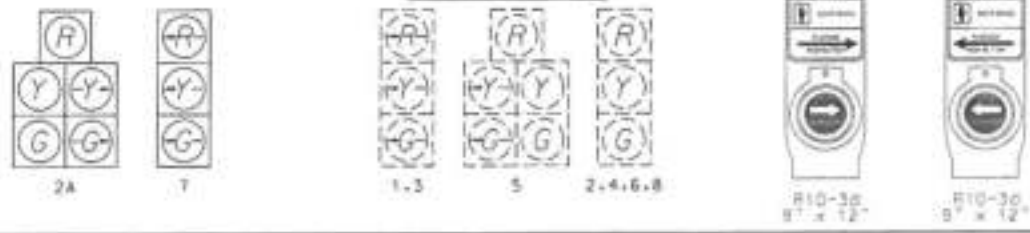


PROPOSED 16" LED COUNTDOWN PEDESTRIAN SIGNAL

PROPOSED ACCESSIBLE PEDESTRIAN PUSHBUTTON

PROPOSED SIGNAL

EXISTING SIGNALS TO REMAIN



FINAL DESIGN



CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

DATE	BY	DESCRIPTION

PROJECT TITLE KING/CALLAHAN/RUSSELL FINAL DESIGN

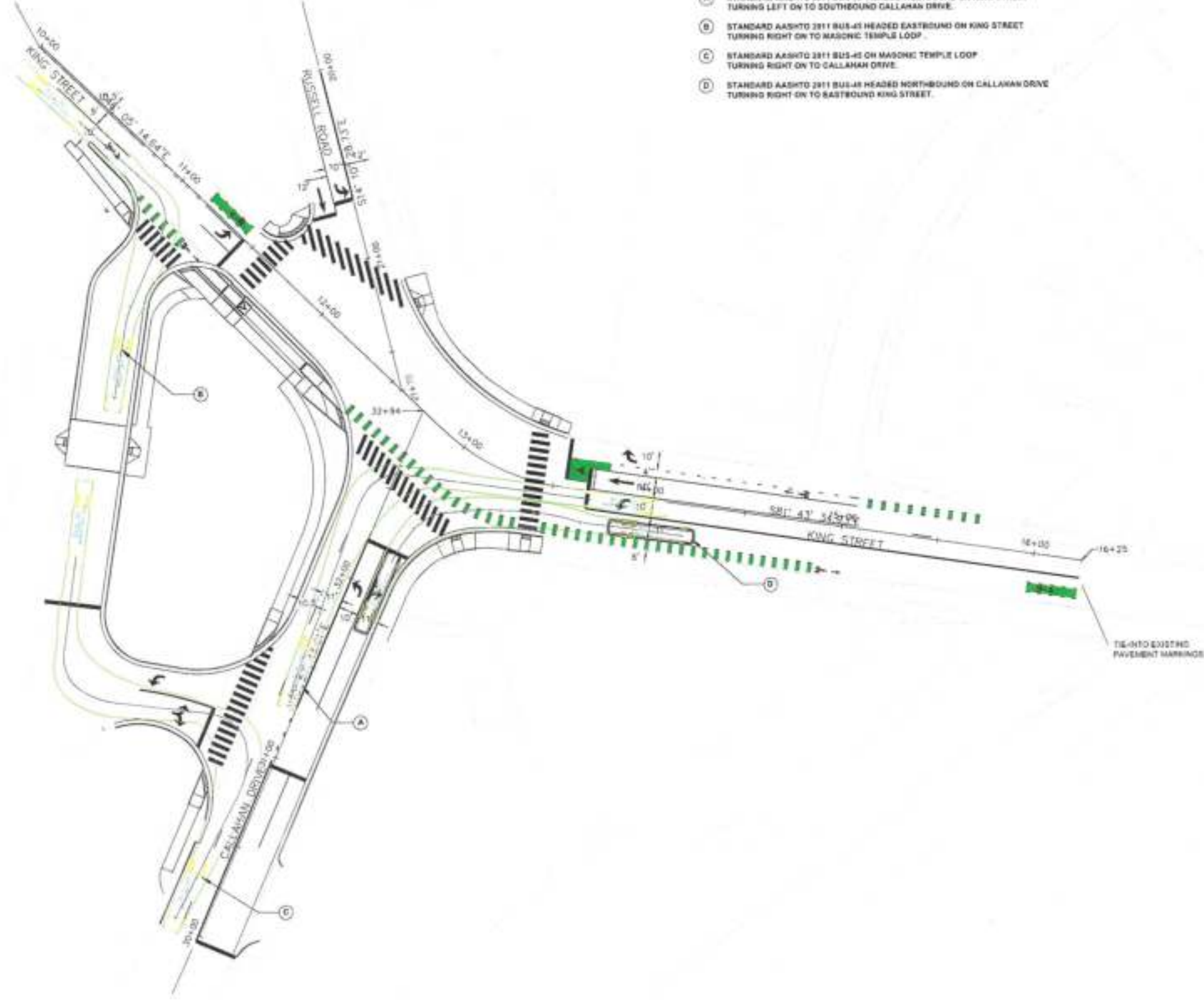


TRAFFIC SIGNAL PLAN

SHEET 16 of 19 SCALE 1"=20'

LEGEND

-  STANDARD AASHTO 2011 BUS-45
-  TIRE PATH
-  VEHICLE BODY PATH



MOVEMENT DESCRIPTION:

- A STANDARD AASHTO 2011 BUS-45 HEADED WESTBOUND ON KING STREET TURNING LEFT ON TO SOUTHBOUND CALLAHAN DRIVE.
- B STANDARD AASHTO 2011 BUS-45 HEADED EASTBOUND ON KING STREET TURNING RIGHT ON TO MADONE TEMPLE LOOP.
- C STANDARD AASHTO 2011 BUS-45 ON MADONE TEMPLE LOOP TURNING RIGHT ON TO CALLAHAN DRIVE.
- D STANDARD AASHTO 2011 BUS-45 HEADED NORTHBOUND ON CALLAHAN DRIVE TURNING RIGHT ON TO EASTBOUND KING STREET.



STV Inc.
 Professional Engineers
 10000 Lee Road, Suite 200
 Fairfax, VA 22031

AUTOTURN EXHIBIT

SHEET
 17 of 19
 SCALE 1" = 30'

REVISIONS	DATE	DESCRIPTION

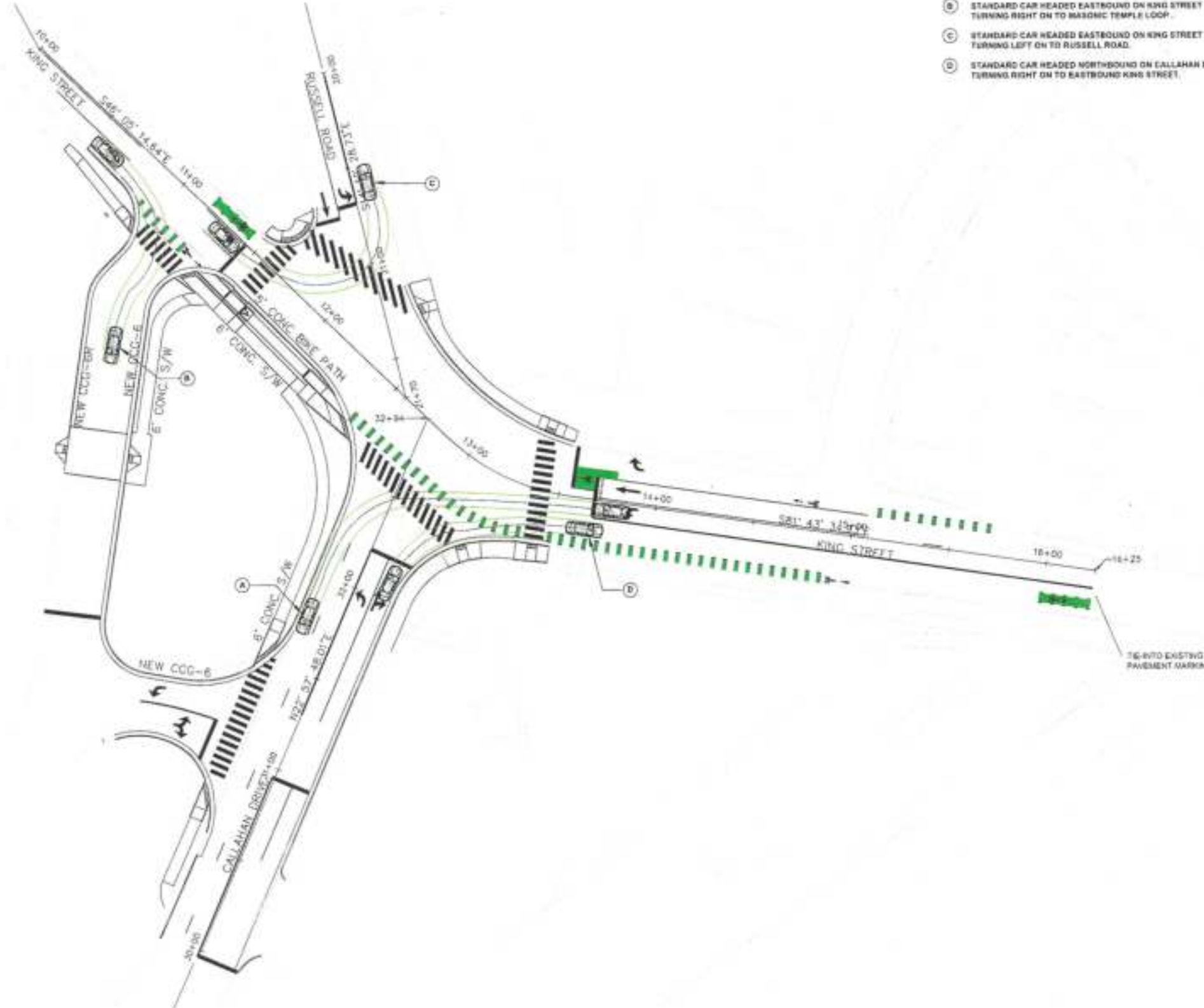
ALEXANDRIA PROJECT NO.: 1603011A
 DATE OF PLAN ISSUANCE: 10/21/22
 CONSULTANT PROJECT #: 210700
 DESIGNED BY: TRC DATE: 07/23/22
 DRAWN BY: TRC DATE: 07/29/22
 CHECKED BY: AS DATE: 08/26/22
 APPROVED BY: AS DATE: 09/01/22

FINAL DESIGN



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET
 ALEXANDRIA, VIRGINIA 22314

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT



MOVEMENT DESCRIPTION:

- (A) STANDARD CAR HEADED WESTBOUND ON KING STREET TURNING LEFT ON TO SOUTHBOUND CALLAHAN DRIVE.
- (B) STANDARD CAR HEADED EASTBOUND ON KING STREET TURNING RIGHT ON TO MASONIC TEMPLE LOOP.
- (C) STANDARD CAR HEADED EASTBOUND ON KING STREET TURNING LEFT ON TO RUSSELL ROAD.
- (D) STANDARD CAR HEADED NORTHBOUND ON CALLAHAN DRIVE TURNING RIGHT ON TO EASTBOUND KING STREET.



CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET
 ALEXANDRIA, VIRGINIA 22314

ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

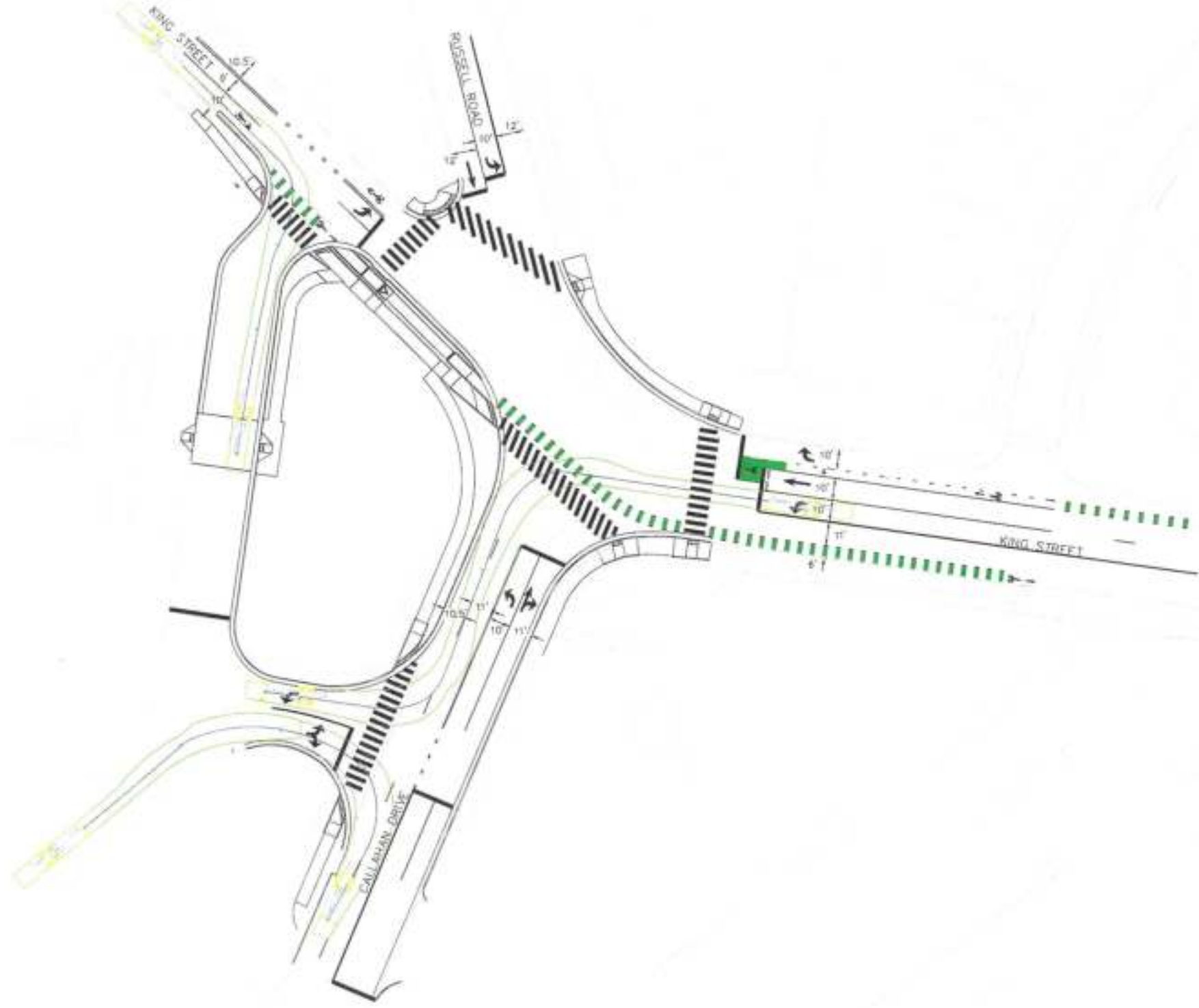
FINAL DESIGN

REVISIONS	DATE	BY	DESCRIPTION

ALEXANDRIA PROJECT NO. 1803011
 DATE OF PLAN ISSUANCE: 10/21/22
 CONSULTANT PROJECT ID: 2515700
 DESIGNED BY: JEL DATE: 07/19/22
 DRAWN BY: JEL DATE: 07/19/22
 CHECKED BY: JEL DATE: 08/29/22
 APPROVED BY: JEL DATE: 08/29/22



AUTOTURN EXHIBIT



ACCESS TO TRANSIT: KING/CALLAHAN/RUSSELL INTERSECTION IMPROVEMENTS PROJECT

FINAL DESIGN

ALEXANDRIA PROJECT NO.: 1920034	DATE OF PLAN REVISION: 10/21/22	REVISIONS
CONSULTANT PROJECT ID: 2019100	DESIGNED BY: JMC DATE: 07/19/22	DATE
DRAWN BY: JEL DATE: 07/19/22	CHECKED BY: JEL DATE: 08/23/22	BY
APPROVED BY: JEL DATE: 08/23/22		DESCRIPTION

STV Inc.
 CONSULTANTS
 10000 Old Dominion Blvd., Suite 100
 Fairfax, VA 22030
 (703) 261-1000

**AUTOTURN EXHIBIT
 AFD TOWER 203**

CITY OF ALEXANDRIA, VIRGINIA
 DEPARTMENT OF PROJECT IMPLEMENTATION
 301 KING STREET
 ALEXANDRIA, VIRGINIA 22314



SHEET
 1 of 1
 SCALE 1" = 30'

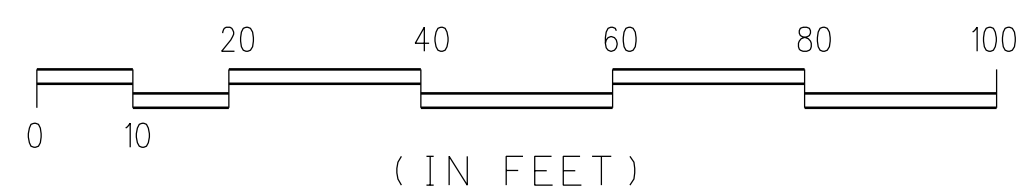
CONDUIT RUNS

- (A) 2 - 1" CONDUIT (M) TRENCHED
2 - 1 CONDUCTOR (No. 14 AWG) - LOOP DETECTION
- (B) 1 - 3" CONDUIT TRENCHED
1 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
1 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
1 - No. 8 AWG, EGC
- (C) 1 - 4" CONDUIT BORED
2 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
2 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
2 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
- (D) 1 - 3" CONDUIT
2 - 7 CONDUCTOR (No. 14 AWG) - SIGNAL HEAD
3 - 7 CONDUCTOR (No. 14 AWG) - EXISTING SIGNAL HEAD
1 - No. 8 AWG, EGC
- (E) 1 - 3" EXISTING CONDUIT
2 - 7 CONDUCTOR (No. 14 AWG) - SIGNAL HEAD
1 - 7 CONDUCTOR (No. 14 AWG) - EXISTING SIGNAL HEAD
1 - No. 8 AWG, EGC
- (F) 1 - 3" CONDUIT TRENCHED
1 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
1 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
3 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
- (G) 3 - 1" CONDUIT (M) TRENCHED
3 - 1 CONDUCTOR (No. 14 AWG) - LOOP DETECTION
- (H) 1 - 4" CONDUIT BORED
2 - 7 CONDUCTOR (No. 14 AWG) - SIGNAL HEAD
2 - 7 CONDUCTOR (No. 14 AWG) - EXISTING SIGNAL HEAD
4 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
4 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
1 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
- (J) 1 - 3" CONDUIT TRENCHED
1 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
1 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
2 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
- (K) 1 - 3" EXISTING CONDUIT
4 - 7 CONDUCTOR (No. 14 AWG) - EXISTING SIGNAL HEAD
1 - No. 8 AWG, EGC
- (L) 1 - 3" CONDUIT
4 - 7 CONDUCTOR (No. 14 AWG) - EXISTING SIGNAL HEAD
1 - No. 8 AWG, EGC
- (M) 1 - 3" CONDUIT TRENCHED (EMPTY) WITH PULL TAPE (FOR FUTURE USE)
- (N) 1 - 3" CONDUIT TRENCHED
2 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
- (P) 1 - 4" CONDUIT BORED
2 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
2 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
2 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
- (R) 1 - 3" CONDUIT TRENCHED
2 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
2 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
2 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
- (S) 1 - 3" CONDUIT TRENCHED
1 - POWER SUPPLY (TO BE INSTALLED BY OTHERS)
- (T) 1 - 2" CONDUIT TRENCHED
3 - No. 6 AWG - ELECTRICAL SERVICE
- (U) 2 - 4" CONDUIT TRENCHED
2 - 7 CONDUCTOR (No. 14 AWG) - SIGNAL HEAD
7 - 7 CONDUCTOR (No. 14 AWG) - EXISTING SIGNAL HEAD
8 - 3 CONDUCTOR (No. 14 AWG) - APS PUSHBUTTON
8 - 4 CONDUCTOR (No. 14 AWG) - PEDESTRIAN SIGNAL
9 - 2 CONDUCTOR (No. 14 AWG) (S) - LOOP DETECTION
1 - No. 8 AWG, EGC
2 - 2" CONDUIT (SPACE)
1 - 1" CONDUIT (GROUND)
1 - No. 8 AWG, EGC
- (W) 1 - 2" CONDUIT TRENCHED FOR GROUNDING ELECTRODE CONDUCTOR (SEE NOTE 10)

APS MESSAGE TABLE

PUSHBUTTON (QUADRANT)	SPEECH PB INFORMATION MESSAGE	AUDIBLE WALK INDICATION
P2(N/E) P2(N/W)	WAIT TO CROSS RUSSELL RD AT KING ST	PERCUSSIVE TONE
P4(N/E) P4(S/E)	WAIT TO CROSS KING ST AT CALLAHAN DR	PERCUSSIVE TONE
P6(S/E) P6(S/W)	WAIT TO CROSS CALLAHAN DR AT KING ST	PERCUSSIVE TONE
P8(N/W) P8(S/W)	WAIT TO CROSS KING ST AT RUSSELL RD	PERCUSSIVE TONE

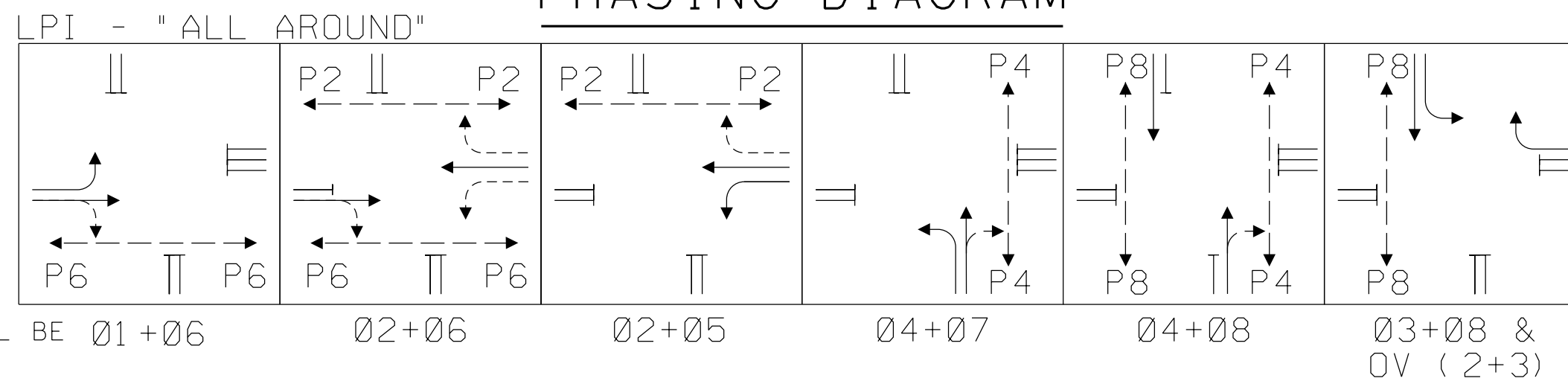
GRAPHIC SCALE



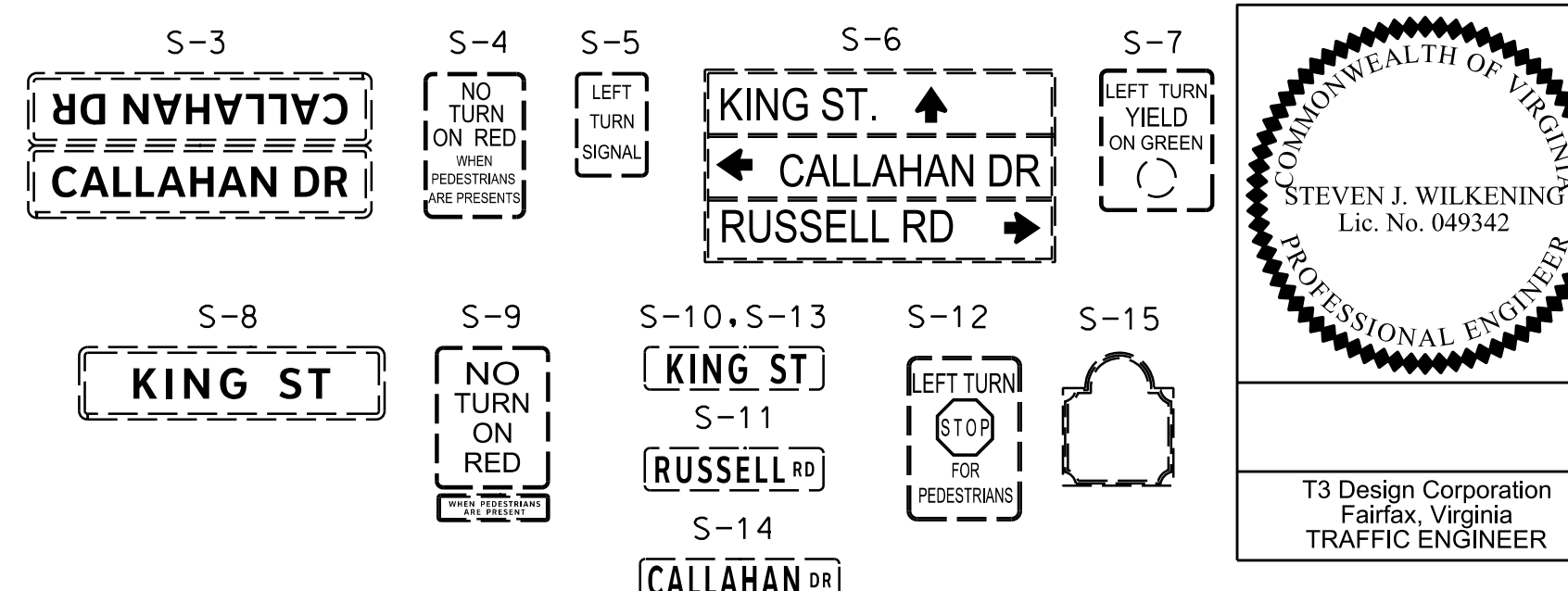
NOTES

- 1) PEDESTRIAN HEADS AND PUSH BUTTONS SHALL BE BLACK ALUMINUM IN COLOR.
- 2) EGGRATE VISORS AND PERMANENT DOOR HARDWARE SHALL BE Ø1+Ø6 INCLUDED WITH PEDESTRIAN SIGNAL HOUSING.
- 3) EXISTING CONTROLLER IS TO BE REPLACED.
- 4) APPROXIMATE PROPOSED FIBER LOCATION. CITY FORCES WILL INSTALL THE COMMUNICATION CONNECTION TO EXISTING FIBER INFRASTRUCTURE IN A FUTURE PROJECT.
- 5) EXISTING LOOP DETECTORS SHALL BE ABANDONED IN PLACE.
- 6) POWER SERVICE CONNECTION SHALL BE COORDINATED WITH DOMINION POWER.
- 7) PEDESTRIAN SIGNAL HOUSING SHALL BE A MCCAIN 16" ALUMINUM BLACK HOUSING W/ ALUMINUM BLACK DOOR AND VANTAGE VISOR, OR EQUIVALENT APPROVED PRODUCT.
- 8) THE CONTRACTOR SHALL COMPLY WITH EQUIPMENT SPECIAL PROVISIONS AND SPECIFICATIONS TO BE INCLUDED IN PROJECT BID DOCUMENTS.
- 9) (M) DENOTES METAL CONDUIT (S) DENOTES SHIELDED CABLE EGC DENOTES EQUIPMENT GROUNDING CONDUCTOR
- 10) THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING THE GROUNDING ELECTRODE CONDUCTOR PER TABLE 250.66 IN THE NEC. A #6 AWG WIRE IS ASSUMED FOR ESTIMATING PURPOSES ONLY.
- 11) THE CONTRACTOR SHALL INSTALL 1,100 LB PULL TAPE IN ALL CONDUITS FOR FUTURE USE BY THE CITY OF ALEXANDRIA.

PHASING DIAGRAM



EXISTING SIGNS TO REMAIN



CONSTRUCTION DETAILS

- 1) INSTALL PEDESTRIAN POLE WITH ACCESSIBLE PEDESTRIAN PUSHBUTTON AND SIGNAL.
- 2) INSTALL JUNCTION BOX. SHALL BE JB-S2 UNLESS NOTED.
- 3) USE EXISTING SIGNAL POLE. INSTALL SIGNAL HEADS ON MAST ARM AND SIGNAL POLE.
- 4) INSTALL PROPOSED CABINET FOUNDATION, UPS, CONTROLLER, AND HARDWARE
- 5) REMOVE EXISTING JUNCTION BOX. CAP AND ABANDON EXISTING CONDUIT.
- 6) REUSE EXISTING JUNCTION BOX. TIE-IN PROPOSED CONDUIT. ADJUST LID AND COLLAR TO PROPOSED GRADE AS NECESSARY.
- 7) REMOVE EXISTING PEDESTRIAN SIGNAL AND POLE, CAP AND ABANDON EXISTING CONDUIT.
- 8) REMOVE EXISTING CABINET AND FOUNDATION.
- 9) USE EXISTING SIGNAL POLE.
- 10) INSTALL LOOP DETECTOR.

CLEARANCE CHART

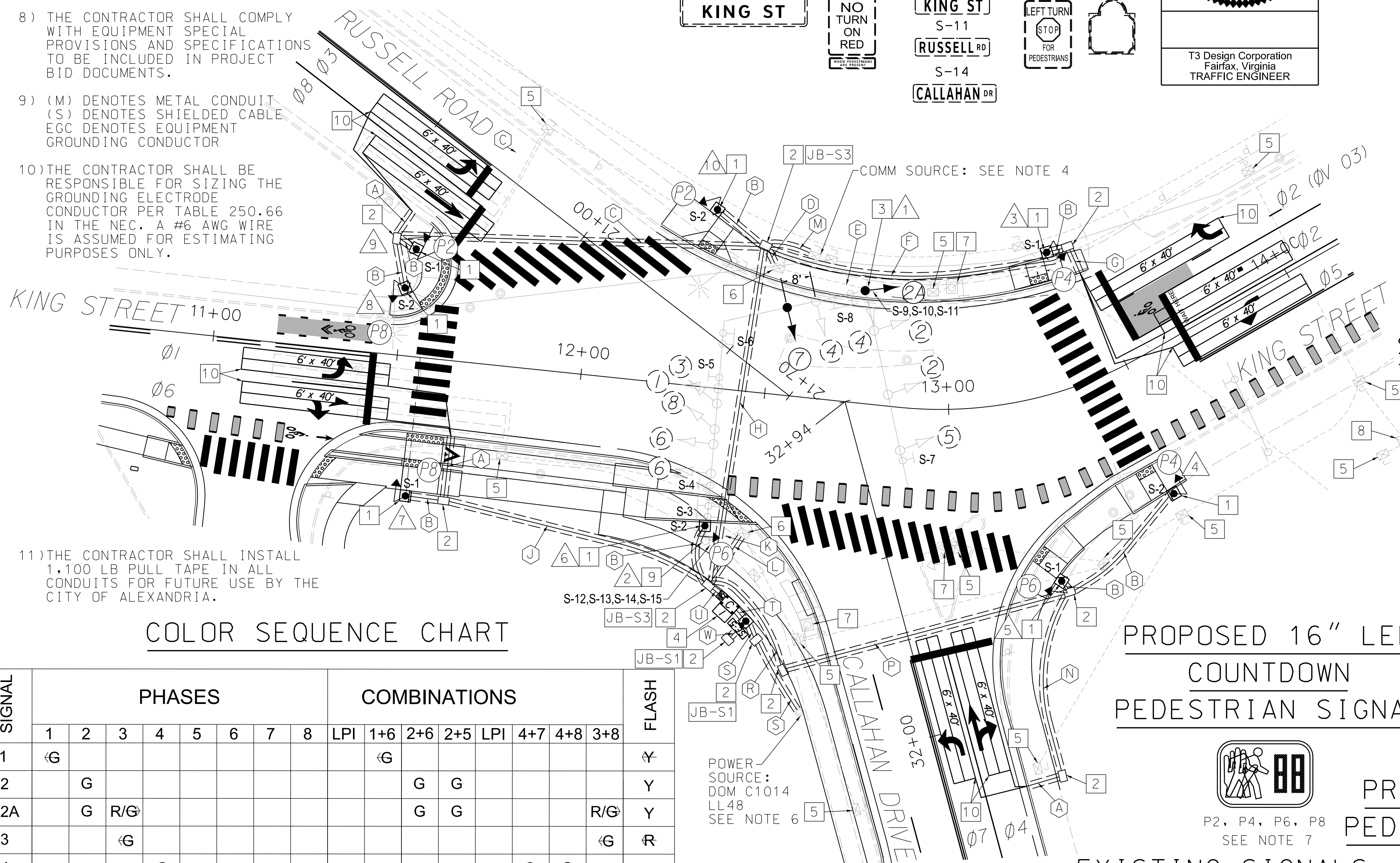
R/W	CLEARANCE 1	CLEARANCE 2	NEXT PHASE
G	Y	R	R
G	G	G	G
G	Y	R	R
G	G	G	G
G	Y	R	R/G
G	G	G	G/G
G/G	Y/G	R	G
G/G	Y/Y	R	R
R/G	R/Y	R	R
R/G	R/G	R/G	R/G
WALK	FDW	DW	DW
WALK	WALK	WALK	WALK

SIGNAL POLE LEGEND

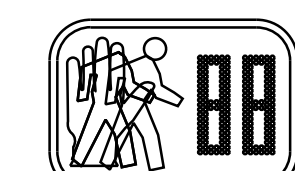
POLE #	STA	OFFSET
1	12+74.18	-30.46'
2	12+38.18	41.39'
3	13+42.20	-36.64'
4	13+46.98	37.08'
5	13+20.54	49.86'
6	12+37.66	37.24'
7	11+56.24	37.77'
8	11+50.57	-18.50'
9	20+66.47	30.25'
10	21+24.09	-27.86'

COLOR SEQUENCE CHART

SIGNAL	PHASES								COMBINATIONS							FLASH	
	1	2	3	4	5	6	7	8	LPI	1+6	2+6	2+5	LPI	4+7	4+8		3+8
1	G								G								Y
2		G								G	G						Y
2A		G	R/G							G	G					R/G	Y
3			G											G	G		R
4				G									G	G			R
5					G/G	G				G	G/G						Y
6						G				G	G						Y
7							G						G	G			R
8								G						G	G		R
P2	DW	W	DW	DW	DW	DW	DW	DW	W	DW	W	W	DW	DW	DW	DW	BLANK
P4	DW	DW	DW	W	DW	DW	DW	DW	DW	DW	DW	W	W	W	DW	DW	BLANK
P6	DW	DW	DW	DW	DW	W	DW	DW	W	W	W	DW	DW	DW	DW	DW	BLANK
P8	DW	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	W	DW	W	W	W	BLANK

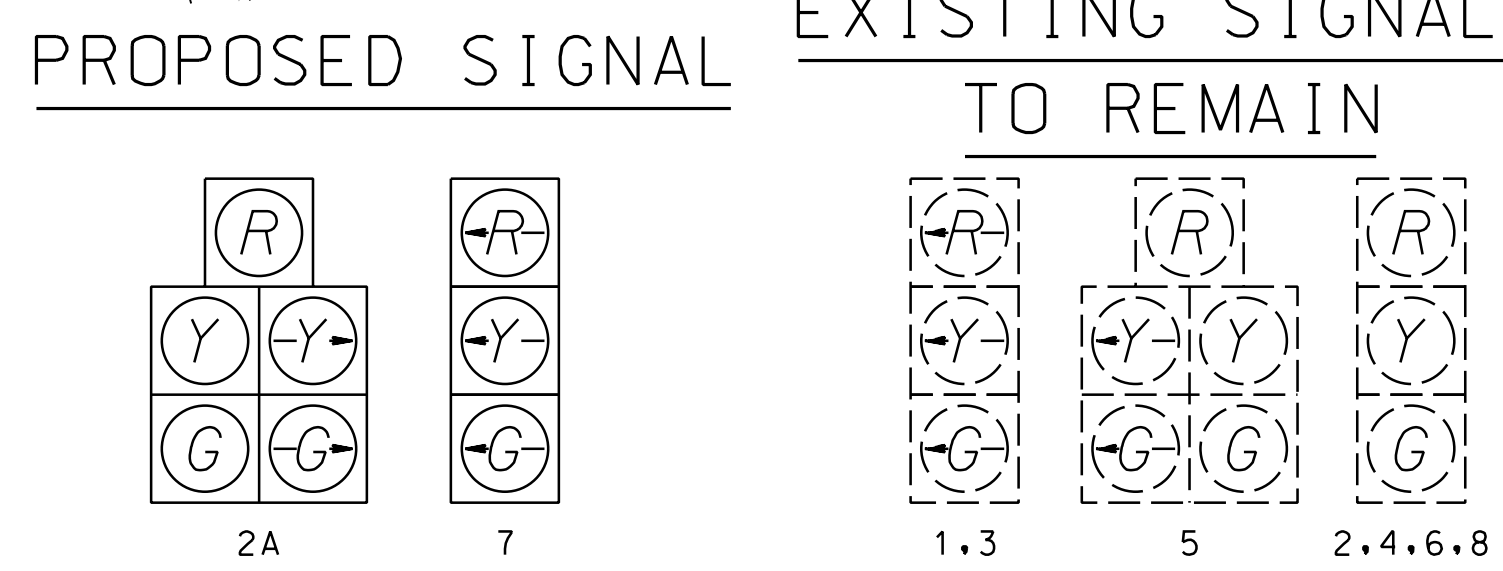
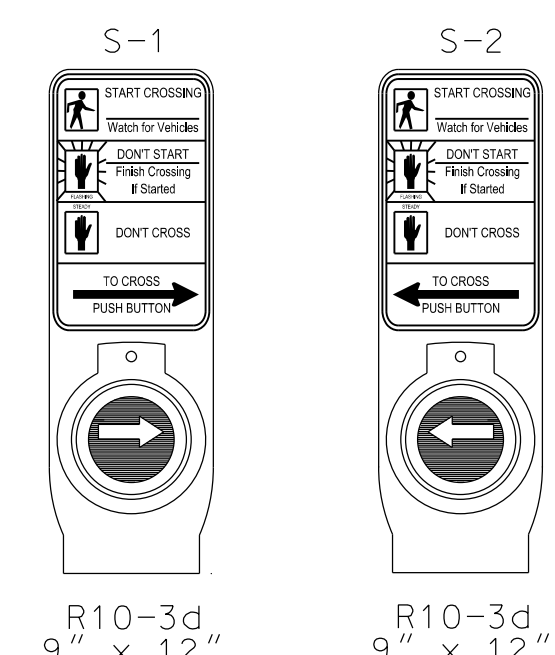


PROPOSED 16" LED COUNTDOWN PEDESTRIAN SIGNAL



P2, P4, P6, P8 SEE NOTE 7

PROPOSED ACCESSIBLE PEDESTRIAN PUSHBUTTON



FINAL DESIGN



CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF PROJECT IMPLEMENTATION
301 KING STREET
ALEXANDRIA, VIRGINIA 22314

REVISIONS	DESCRIPTION

ALEXANDRIA PROJECT NO.: 1603034
DATE OF PLAN ISSUANCE: 8/6/2018
CONSULTANT PROJECT ID.: 2515700
DESIGNED BY: LHT DATE: 7/29/2022
DRAWN BY: LHT DATE: 7/29/2022
CHECKED BY: SWJ DATE: 7/29/2022
APPROVED BY: _____ DATE: _____



TRAFFIC SIGNAL PLAN

PROJECT TITLE KING/CALLAHAN/RUSSELL FINAL DESIGN