

Plan Name \_\_\_\_\_ Plan No. \_\_\_\_\_

Submitting Firm \_\_\_\_\_ Contact Engineer \_\_\_\_\_

Review Date \_\_\_\_\_ ESI Team \_\_\_\_\_

**ENGINEERS AND SURVEYORS INSTITUTE  
PEER REVIEW CHECKLIST  
CITY OF ALEXANDRIA**

**EROSION AND SEDIMENT CONTROL CHECKLIST (E&S)  
VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK  
(1 of 2)**

Item #	Description	OK	NO	N/A
1	Limits of clearing and grading match on all appropriate sheets			
2	Construction entrance provided with source of water and silt trap indicated			
3	Show the total disturbed area on all phases of E&S plans and grading plan			
4	Silt fence used where maximum drainage area is 1 acre or less and size of drain area is no more than 0.25 acre per 100 feet of silt fence			
5	Inlet protection provided where drain area is no greater than 1 acre			
6	Culvert inlet protection (silt fence) provided where maximum drainage area is 1 acre			
7	Culvert inlet protection (sediment trap) provided where maximum drainage area is 3 acres			
8	Maximum drainage area for diversion dike is 5 acres			
9	Silt trap computations shown with storage of 134 cubic feet per acre			
10	Pipe outlet required on silt trap of 1 to 3 acres			
11	The use of diversion dikes to break up drainage divides to support the use of silt traps shall only be allowed when maintenance of dike can be accomplished			
12	Computations provided for sediment basin – VESCH standard format			
13	Rock check dams shall be used in small open channels draining 10 acres or less			
14	Tree save areas with drip lines within 25' of limits of disturbance delineated and tree protection limits shown on the plan			
15	Show all soil stockpiling areas staging areas and temporary parking areas with adequate erosion controls and adequate sequencing. This applies to both on-site and off-site areas.			
16	Drainage areas to silt fence conform to the VESCH			
17	Outlet protection conforms to the VESCH			
18	Special instructions for the handling of any contaminated soils are included			
19	Two phased narrative description. Narrative organized to the order as outlined in the checklist of the VESCH			
20	Phase one controls complete and correct			
21	Phase two controls complete and correct			

Comments:

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**ENGINEERS AND SURVEYORS INSTITUTE  
PEER REVIEW CHECKLIST  
CITY OF ALEXANDRIA**

**ENVIRONMENTAL ISSUES CHECKLIST (EI)**  
(1 of 1)

Item #	Description	OK	NO	N/A
1	Major trees and shrubs depicted			
2	Natural and artificial watercourses, bodies of water and wetlands shown			
3	Limits of floodplains delineated			
4	Significant geological features depicted			
5	Areas of contaminated soils or materials identified			
6	Underground storage tanks located			
7	Areas located within 1000 feet of a former sanitary landfill, dump or disposal area identified			
8	Areas with the potential of generating combustible gases or other noxious gases identified			
9	Show RPA buffers			
10	A water quality impact assessment (WQIA) (major/minor) is required for any proposed development or redevelopment in the RPA or adjacent to any RPA			
11	Verification showing the issuance of all environmental permits required by law			
12	Standard City environmental notes included			
13	Tabulations of any RPA encroachments are included			
14	Tabulations of any wetland encroachments are included			
15	Mitigation described and tabulated for any RPA encroachment			

Comments:

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**ENGINEERS AND SURVEYORS INSTITUTE  
PEER REVIEW CHECKLIST  
CITY OF ALEXANDRIA**

**STORM DRAINAGE DESIGN CHECKLIST (SD)**  
(1 of 2)

Item #	Description	OK	NO	N/ A
1	Adequate storm drainage outfall with computations. Provide cross-section of off-site channel or show connection to existing storm sewer			
2	Storm drainage design honors natural drainage divides. Drainage areas denoted on divides			
3	Appropriate coefficients of runoff shown			
4	Minimum size storm sewer main is 18"			
5	Minimum size storm sewer catch basin lead is 15"			
6	All storm sewers in the public right of way shall be concrete. Minimum class IV			
7	Minimum pipe slope shall be 0.50%			
8	Minimum velocity in pipe shall be 2 fps, Maximum velocity in pipe shall be 20 fps			
9	Minimum cover for storm sewer pipe is 2 feet			
10	Concrete pipe under 36", use "n" = 0.015, Concrete pipe 36" and larger, use "n" = 0.013			
11	Design computations for closed and open systems provided			
12	All construction information (i.e. inverts, pipe size, pipe class, length and slope shall be shown on plan and/or profile)			
13	Inlet design computations provided			
14	Culvert pipe size shall be determined by hydraulic computations (provide the standard headwater/tailwater computations)			
15	The ends of any storm drainage pipe shall be provided with an appropriate appurtenance			
16	Inlet/outlet protection (Rip-rap) shall be provided. Length calculations shall be shown based on VESCH, Chapter III charts			

Comments:

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**ENGINEERS AND SURVEYORS INSTITUTE  
PEER REVIEW CHECKLIST  
CITY OF ALEXANDRIA**

## STORM DRAINAGE DESIGN CHECKLIST (SD)

(2 of 2)

17	All open channels will be in a minimum drainage easement of 15 feet			
18	Minimum grade on open channels shall be 1.0% with grass lining and 0.50% w/ armored lining			
19	The appropriate size storm sewer easement shall be provided on all storm sewers where necessary			
20	Concrete anchors must be provided on storm sewer lines with slopes of 20% or greater. A detail shall be provided on the plan with spacing requirements			
21	Wherever possible, storm sewer appurtenances should conform to design and construction standards of the Department of T&ES. Provide details of all non-standard storm sewer appurtenances sufficient for construction			
22	No quantity of design surface runoff across lots shall be erosive			
23	Quantities of runoff greater than 2cfs flowing through lots shall be collected and conveyed in a closed storm drainage system except that the Director may approve an open channel where the preservation of a natural drainage way is desirable or the use of open channel will not interfere with use of the property			
24	Lots generally shall be graded in such a manner that surface runoff does not cross more than 3 lots before it is collected in a storm sewer system. The system may be a closed conduit, open channel (swale) or a combination of both. The appropriate drainage easement shall be provide with said system			
25	Over-lot grading shall be provided. Areas shall be graded in such a manner that if a complete failure of the storm sewer system occurs, no residential or commercial building will be flooded by the 100 year storm			
26	All roof drains (down spouts) shall be connected to an existing or proposed storm sewer. All existing down spouts connected to an existing combined or sanitary sewer shall be			



Review Date	ESI Team
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## ENGINEERS AND SURVEYORS INSTITUTE PEER REVIEW CHECKLIST CITY OF ALEXANDRIA

## BEST MANAGEMENT PRACTICES (BMP) CHECKLIST

(1 of 1)

1	BMP plans and calculations shall be designed in accordance with the Northern Virginia and City of Alexandria BMP Handbook requirements			
2	The BMP plan has the pre and post development non-point source pollutant loadings with supporting documentation of all utilized coefficients and calculations			
3	BMP phosphorus removal efficiency calculations provided for the development site			
4	Calculations provided for Water Quality Volume (Calculations on worksheet A or B and worksheet C) for the development site			
5	Calculations provided for the BMP device using the appropriate worksheet in the Northern Virginia Handbook or the City of Alexandria Supplement to the Handbook			
6	BMP drainage divide map provided with 2 foot contour delineating pervious and impervious surfaces (1 foot contour map required for flat sites)			
7	BMP maintenance and operation schedule provided			
8	Standard BMP notes included			
9	A master plan provided for the overall BMP coverage if applicable			
10	Watershed and receiving body of water identified			
11	Total area of development site (parcels) listed			
12	Existing and proposed total impervious site areas listed			



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Review Date \_\_\_\_\_ ESI Team \_\_\_\_\_

## ENGINEERS AND SURVEYORS INSTITUTE PEER REVIEW CHECKLIST CITY OF ALEXANDRIA

**STREET LIGHT/SITE LIGHTING CHECKLIST (SL)**  
(1 of 1)

Item #	Description	OK	NO	N/A
1	A street lighting plan is required showing all existing and proposed lights			
2	Site lighting plan provided for on-site development including parking lot lighting			
3	A photometric lighting calculation plan shall be provided			
4	Provide the type of fixture, strength of light in lumens and the mounting height of all existing and proposed lights			
5	Manufacturer's specifications provided for private site lighting fixtures showing type of fixture, strength of light in lumens, and mounting height			

Comments:

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**ENGINEERS AND SURVEYORS INSTITUTE  
PEER REVIEW CHECKLIST  
CITY OF ALEXANDRIA**

**STREET DESIGN CHECKLIST (S)**  
(2 of 2)

17	Percent of grade for proposed streets			
18	Elevations at beginning and end of all vertical curves			
19	Length of vertical curves and PVI elevations			
20	Elevations computed every 50 feet on tangents and 25 feet on vertical curves			
21	Elevations at the centerline street intersections			
22	Elevations at curb returns			
23	Culvert and storm sewer crossings shown in street profile			
24	Top elevations shown for all manholes and curb inlets			
25	Profile shown for all street landings at intersections			
26	Pavement striping plan provided			
27	Traffic control signage and structures, street name and stop signs			
28	Road intersections designed as nearly as possible to 90 degrees.			
29	Geometry for cul-de-sac, 45 foot radius at face of curb or edge of pavement, 55 foot radius for clear zone			
30	For local subdivision and inner city streets, the travel way inside radius at an intersection shall be a minimum 25 foot radius except for alleys			
31	Direction of traffic and average daily vehicle count (VPD) shall be shown at all legs of a street intersection and at each proposed entrance to a street			
32	Driveways, entrances, exits, parking areas and sidewalks shown			
33	Show emergency vehicle easements (minimum width = 22 feet)			
34	Sight distance plan and profile for all entrances and intersections			
35	Traffic maintenance plan provided			

Comments:

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## ENGINEERS AND SURVEYORS INSTITUTE PEER REVIEW CHECKLIST CITY OF ALEXANDRIA

## TRAFFIC SIGNALIZATION CHECKLIST (TS)

(1 of 1)

Item #	Description	OK	NO	N/A
1	Specification for poles, mast arms and pole foundations provided			
2	City standard traffic control cabinets provided			
3	Signal head configuration provided for traffic signal and pedestrian crossing signals			
4	Signal phasing and sequences charts provided in compliance with Traffic Impact Study			
5	Timing charts provided			
6	Cable and conduit runs provided			
7	Interconnect cable details provided			
8	Wiring size and type specification provided			
9	Conduit size and type specification provided			

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**ENGINEERS AND SURVEYORS INSTITUTE  
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**STAGE II GENERAL REQUIREMENTS CHECKLIST (GR)**

(1 of 1)

Item #	Description	OK	NO	N/A
1	All sanitary sewer easements must be recorded prior to the plan approval			
2	Provide two benchmark locations on the plan with elevations on USC&GS datum and descriptions			
3	North arrow provided with reference to source of meridian			
4	24" X 36" sheet size			
5	All plan sheets sealed and signed by a professional engineer or licensed surveyor			
6	Name and address of the developer			
7	Scale and date of plan – no less than 1"=40'			
8	Index to plan sheets provided			
9	Key to plan sheets if more than one sheet is required to show the entire site			
10	Property lines with course and distance for each			
11	Total land area			
12	Present zoning of site and all abutting properties			
13	All easements, reservations, rights-of-way and conservation easements			
14	Deed Book and Page Nos. for all existing easements			
15	Topography with 2 foot contour interval except for the BMP drainage divide map			
16	Provide signature approval block in the lower right quadrant (see standard notes for the recommended format)			
17	A location map			
18	A complete narrative description of the proposed development			
19	List of SUP conditions provided on plans with response letter under separate cover			
20	Plan is in compliance with SUP conditions			
21	A list of all modifications and waivers of the applicable zoning regulations on cover sheet			
22	Water mains with their size and fire hydrants identified			
23	Building restriction lines, highway setback lines, zone transition lines			
24	Dimensions of front, side and rear yards			
25	Recreation areas and swimming pools depicted			
26	Standard construction notes included			
27	Completed and signed ESI Checklist included			

Comments:

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