



County of Fairfax, Virginia

January 7, 2016

STAFF REPORT

SPECIAL EXCEPTION SE 2015-MV-019

MOUNT VERNON DISTRICT



APPLICANT: Charles County Sand & Gravel Company, Inc.

PRESENT ZONING: I-6, Heavy Industrial District

PARCEL: 107-4 ((1)) 62A part

ACREAGE: 5.23 acres

FAR: 0.007 FAR (1,595 square feet)

PLAN MAP: Alternative Uses

SE CATEGORY: Heavy Industrial Use (Category 5)

PROPOSAL: To permit a heavy industrial use (concrete batching plant) and an accessory maintenance/office building

STAFF RECOMMENDATIONS:

Staff recommends approval of SE 2015-MV-019, subject to the approval of the proposed development conditions contained in Appendix 1 of the staff report.

Staff recommends approval of a modification of Sects. 13-303 and 13-304 of the Zoning Ordinance for the transitional screening and barrier requirements to that shown on the SE Plat.

It should be noted that it is not the intent of staff to recommend that the Board of Supervisors, in adopting any conditions, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

It should be further noted that the content of this report reflects the analysis and recommendation of staff; it does not reflect the position of the Board of Supervisors.

Mary Ann Tsai, AICP

The approval of this application does not interfere with, abrogate or annul any easement, covenants, or other agreements between parties, as they may apply to the property subject to this application.

For information, contact the Zoning Evaluation Division, Department of Planning and Zoning, 12055 Government Center Parkway, Suite 801, Fairfax, Virginia 22035-5505, (703) 324-1290.



Americans with Disabilities Act (ADA): Reasonable accommodation is available upon 48 hours advance notice. For additional information on ADA call (703) 324-1334 or TTY 711 (Virginia Relay Center).

Special Exception

SE 2015-MV-019



Applicant: CHARLES COUNTY SAND & GRAVEL COMPANY, INC.

Accepted: 05/15/2015

Proposed: CONCRETE BATCHING PLANT

Area: 5.23 AC OF LAND; DISTRICT - MOUNT VERNON

Zoning Dist Sect: 05-0604

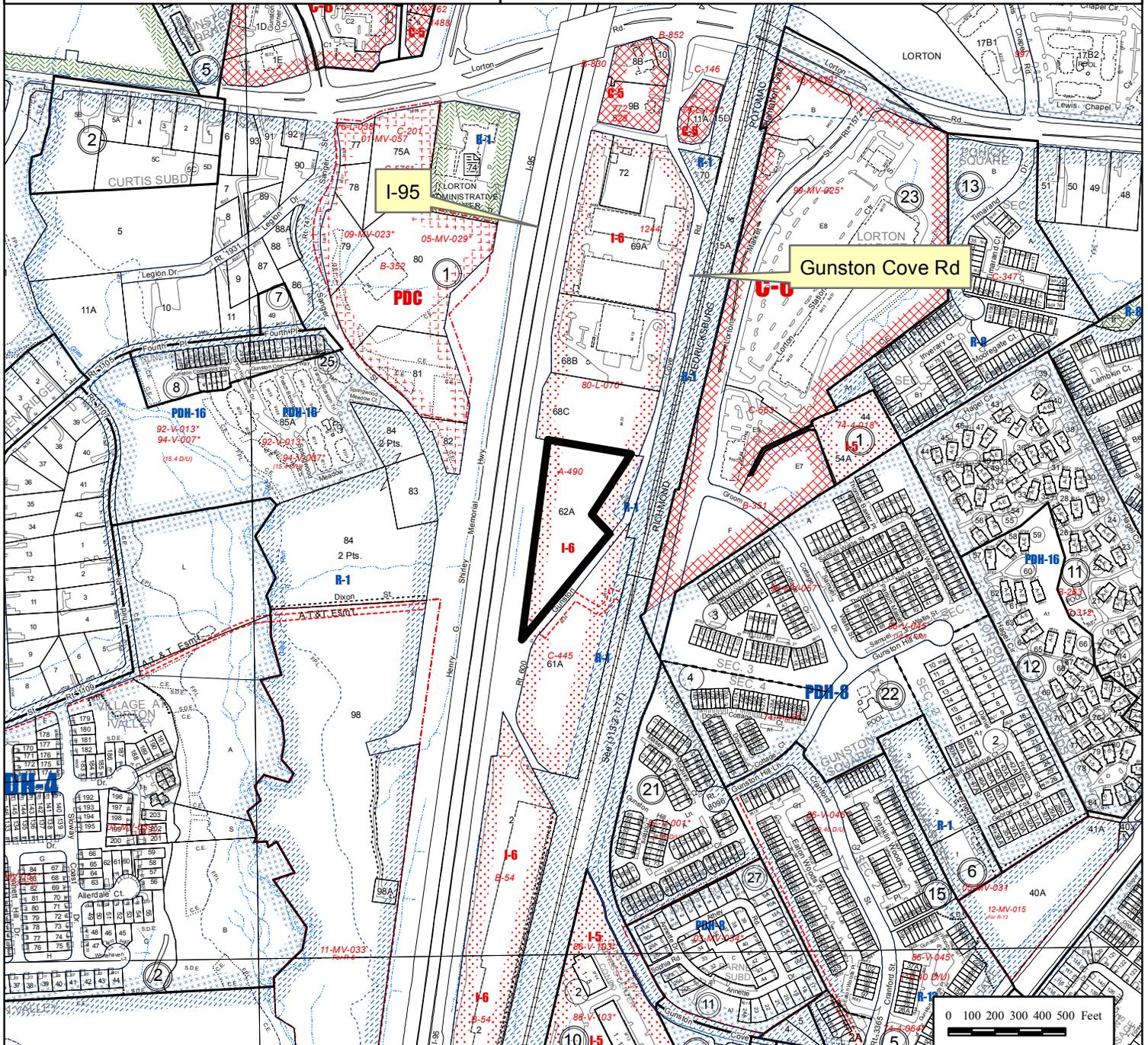
Located: 9520 GUNSTON COVE ROAD, LORTON, VA 22079

Zoning: I-6

Plan Area: 4,

Overlay Dist:

Map Ref Num: 107-4- /01/ /0062A (part)

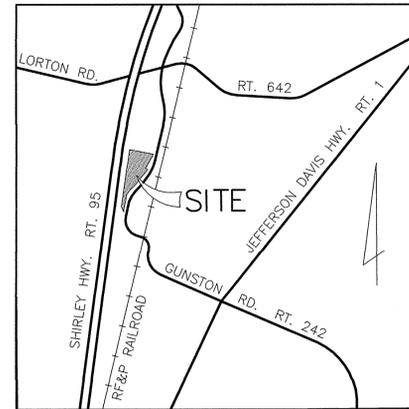


GUNSTON COVE ROAD

Mount Vernon District Fairfax County, Virginia

Special Exception Plat SE 2015-MV-019

GUNSTON COVE ROAD
 SPECIAL EXCEPTION PLAT
 SE 2015-MV-019
 MOUNT VERNON DISTRICT
 FAIRFAX COUNTY, VIRGINIA



VICINITY MAP
 SCALE : 1"= 2,000'

Applicant:

Charles County Sand & Gravel Company, Inc.
 2410 Evergreen Road, Suite 201
 Gambrills, MD 21054

Sheet Index

1. COVER SHEET
2. NOTES AND TABULATION
3. SPECIAL EXCEPTION PLAT
4. EXISTING VEGETATION MAP
5. STORMWATER MANAGEMENT PLAN
6. STORMWATER MANAGEMENT DETAILS
7. LANDSCAPE AND SCREENING PLAN
8. PRELIMINARY TREE PRESERVATION PLAN AND DETAILS
9. CONCRETE PLANT DETAILS

SEAL



KEY PLAN

SCALE NORTH

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| 2 | 8/20/15 | JMC | ADDRESS STAFF COMMENTS |
|-----|---------|-----|------------------------|
| 1 | 7/15/15 | JMC | ADDRESS STAFF COMMENTS |
| No. | DATE | BY | Description |

REVISIONS

DRAWN BY LNM
 APPROVED BY JMC
 CHECKED BY JMC
 DATE MARCH 2015

TITLE
COVER SHEET

PROJECT NO. # M-10858

NOTES:

- THE PROPERTY THAT IS THE SUBJECT OF THIS SPECIAL EXCEPTION PLAT IS IDENTIFIED ON THE FAIRFAX COUNTY ZONING MAP AS 107-4 ((1)) 62A (PART) AND IS ZONED I-6.
- THE TOTAL LAND AREA OF THIS SPECIAL EXCEPTION APPLICATION IS APPROXIMATELY 5.23 ± ACRES.
- THIS SPECIAL EXCEPTION PLAT ACCOMPANIES AN APPLICATION TO PERMIT A CONCRETE BATCH PLANT ON THE PROPERTY.
- THE BOUNDARY INFORMATION SHOWN HEREON IS FROM A FIELD SURVEY BY DEWBERRY CONSULTANTS LLC.
- THE TOPOGRAPHY SHOWN HEREON IS AT A CONTOUR INTERVAL OF TWO (2) FEET FROM A FIELD SURVEY PERFORMED BY DEWBERRY CONSULTANTS LLC IN DECEMBER 2014.
- A STATEMENT WHICH CONFIRMS THE OWNERSHIP OF THE SUBJECT PROPERTY AND THE NATURE OF THE APPLICANT'S INTEREST IN SAME IS PRESENTED IN A SEPARATE DOCUMENT.
- PUBLIC WATER AND SEWER ARE CURRENTLY AVAILABLE IN PROXIMITY TO THE SITE AND WILL BE EXTENDED ON SITE TO SERVE THE PROPOSED DEVELOPMENT PROGRAM.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES LOCATED ON THE SUBJECT PROPERTY.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITY EASEMENTS HAVING A WIDTH OF TWENTY-FIVE (25) FEET OR MORE LOCATED ON THE SUBJECT PROPERTY.
- THERE IS NO FLOODPLAIN, ENVIRONMENTAL QUALITY CORRIDOR (EQC), OR RESOURCE PROTECTION AREA (RPA) ON THE SUBJECT PROPERTY.
- STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMPs) FOR THE PROPOSED DEVELOPMENT PROGRAM HAVE BEEN PROVIDED AS SHOWN ON THE GRAPHIC.
- A GRAPHIC DEPICTION OF THE ANGLE OF BULK PLANE IS PRESENTED ON THIS SHEET.
- AT THIS TIME, IT IS ANTICIPATED THAT DEVELOPMENT OF THIS PROJECT WILL COMMENCE AS SOON AS ALL NECESSARY APPROVALS AND PERMITS ARE OBTAINED.
- PARKING SPACES FOR THE PROPOSED DEVELOPMENT PROGRAM ON THE SUBJECT PROPERTY WILL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN ARTICLE 11 OF THE ZONING ORDINANCE. IN ADDITION, THE APPLICANT RESERVES THE RIGHT TO INCREASE OR DECREASE THE NUMBER OR PARKING SPACES AS REPRESENTED IN THE TABULATION SO LONG AS THE RESULTING NUMBER OF SPACES SATISFIES THE MINIMUM NUMBER PRESCRIBED BY THE ZONING ORDINANCE AND/OR THE AMOUNT OF OPEN SPACE AND THE MINIMUM DISTANCES TO THE PERIPHERAL LOT LINES ARE NOT DIMINISHED.
- THE LIMITS OF CLEARING AND GRADING SHOWN HEREON ARE SUBJECT TO MINOR MODIFICATIONS WITH FINAL ENGINEERING AND DESIGN.
- THE PROPOSED BUILDING PROGRAM PROPOSES AN ABOVE-GROUND FUEL STORAGE TANK LOCATED ON THE PROPERTY TO SERVE TRUCKS UTILIZING THE CONCRETE BATCHING PLANT, AND AS SUCH, WILL GENERATE, UTILIZE, STORE, TREAT AND/OR DISPOSE OF HAZARDOUS OR TOXIC SUBSTANCE AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PARTS 116.4, 302.4 AND 355; ANY HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1 - VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND/OR ANY PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280. TO THE BEST OF OUR KNOWLEDGE AND UNDERSTANDING, ALL SUCH SUBSTANCES THAT ARE UTILIZED, STORED AND/OR DISPOSED OF IN CONJUNCTION WITH THE PROPOSED BUILDING PROGRAM AND/OR THE MAINTENANCE OF THE BUILDING PROGRAM AND GROUNDS WILL BE IN ACCORDANCE WITH SAID REGULATIONS.
- ILLUMINATION OF ANY PROPOSED BUILDING MOUNTED SIGN WILL BE IN CONFORMANCE WITH THE PERFORMANCE STANDARDS FOR OUTDOOR LIGHTING AS SET FORTH IN PART 9 OF ARTICLE 14 OF THE ZONING ORDINANCE.
- IT IS ANTICIPATED THAT BUILDING MOUNTED LIGHTS WILL BE PROPOSED ON THE SHOP/OFFICE AND THE SILO. ALL OUTDOOR LIGHTING WILL BE IN CONFORMANCE WITH THE PERFORMANCE STANDARDS FOR OUTDOOR LIGHTING AS SET FORTH IN PART 9 OF ARTICLE 14 OF THE ZONING ORDINANCE.
- THERE ARE NO TRAILS REQUIRED BY THE COMPREHENSIVE PLAN WITHIN THE LIMITS OF THIS APPLICATION.
- TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT OF THE SUBJECT PROPERTY CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES, REGULATIONS AND ADOPTED STANDARDS.

TABULATION:

| | |
|--|-----------------------|
| LAND AREA | 5.23± AC |
| EXISTING ZONING..... | I-6 |
| MAXIMUM BUILDING HEIGHT ALLOWED..... | 75 FT. |
| PROPOSED BUILDING HEIGHT..... | 40.5 FT. |
| MAXIMUM FAR ALLOWED..... | 0.50 |
| PROPOSED FAR..... | 0.007 |
| PARKING SPACES REQUIRED/PROVIDED..... | 22 |
| (MANUFACTURING ESTABLISHMENT RATE OF 1 SP PER 1 EMPLOYEE + 1 SP PER COMPANY VEHICLE AND PIECE OF MOBILE EQUIPMENT) | |
| 10 EMPLOYEES + 12 TRUCKS | |
| OPEN SPACE REQUIRED/PROPOSED | |
| REQUIRED..... | 0.52± AC (10%) |
| PROPOSED..... | 1.66± AC (APPROX 31%) |



Dewberry Consultants LLC
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031-4666
703.849.0100
703.849.0118 fax
www.dewberry.com

August 19, 2015

Mr. Keith Cline, Director UFMD
Forest Conservation Branch, DPWES
Fairfax County Department of Public Works and Environmental Services
12055 Government Center Parkway
Suite 518
Fairfax VA 22035

RE: Tax Map 107-4 ((1)) 62A (part)

- Request for a Modification of the Transitional Screening Yard requirement
- Request for a Modification of the Barrier Requirement on the eastern and western property lines
- Request for a Waiver of the Barrier Requirement on the 50' portion of the north-eastern property line adjacent to the R-1 portion of 107-4 ((1)) 62A

Dear Mr. Cline:

The purpose of this letter is to request a modification of the Transitional Screening Yard and Barrier Requirement as provided for in the provisions set forth in Sect. 13-305 of the Zoning Ordinance. A Transitional Screening Yard 3 is required along the eastern property boundary and part of the western property boundary (690') according to the matrix in Article 13 of the Zoning Ordinance. The remaining portion of the western property boundary (195') requires a Transitional Screening Yard 1.

Eastern Property Line: A modification of the transitional screening and barrier requirement is requested along the eastern property boundary, adjacent to the R-1 parcel, pursuant to Par. 5 of Sect. 13-305 of the Zoning Ordinance. The parcels along Gunston Cove Road between Interstate 95 and the CSX Railroad are recommended industrial uses in the Comprehensive Plan. The R-1 zoned parcel between the proposed SWM dry pond and Gunston Cove Road is residue from the railroad and not large enough to be developed as an R-1 use. In addition, this 0.29 ± AC piece of land is part of Tax Map 107-4 ((1)) 62A and is owned by the Applicant. The Applicant does not propose to clear the existing vegetation from the R-1 portion of the parcel which will add an additional visual buffer between the proposed use and Gunston Cove Road. The anticipated planting restriction easement and storm drain easement(s), and existing overhead and underground utilities preclude planting of the full complement of trees and shrubs. The Landscape and Screening Plan which is part of this application illustrates the proposed evergreen planting and 6' solid wood fence provided between the proposed dry pond and the property boundary.

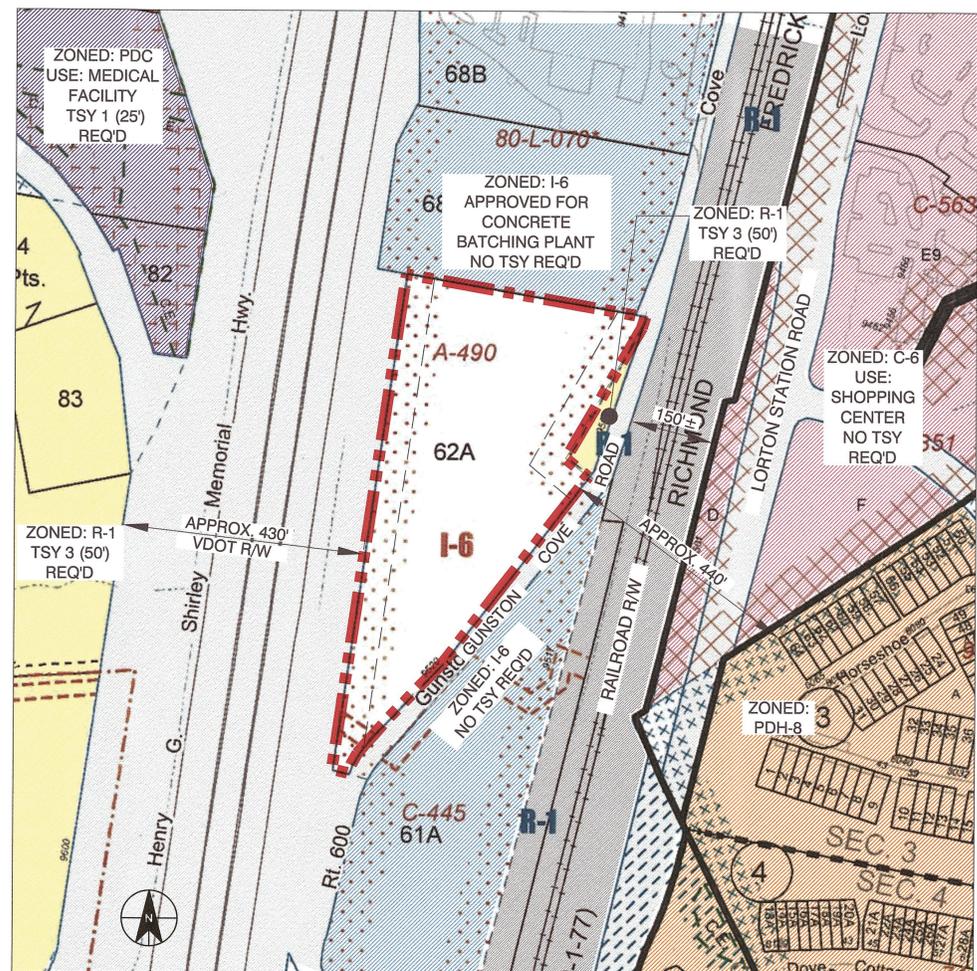
North-Eastern Property Line: Similarly, there is a 50' portion of the property which adjoins the R-1 portion of Parcel 107-4 ((1)) 62A north of the proposed entrance from Gunston Cove Road. A mixture of evergreen and deciduous trees and evergreen shrubs is proposed between the entrance and the property line. No barrier is proposed. The nearest residential use east of Gunston Cove Road is approximately 440' from the site entrance and includes the R/W for Gunston Cove Road, 150' wide railroad R/W which contains existing vegetation, R/W for Lorton Station Road, and a portion of the C-6 zoned shopping center.

Western Property Line: A modification of the transitional screening and barrier requirement is requested along the western property boundary pursuant to Par. 3 and Par. 11 of Sect. 13-305 of the Zoning Ordinance. The Applicant proposes an undisturbed 50' buffer of existing vegetation adjacent to Interstate 95 to serve as the required screening between the proposed heavy industrial use and the R-1 zoned residential and PDC zoned Lorton Healthplex located approximately 430'± across the Interstate highway. An existing barbed wire fence, approximately 42" high, is proposed to remain between the buffer and Interstate 95, and a 6' ht. chain link fence is proposed between the buffer and the proposed concrete batch plant.

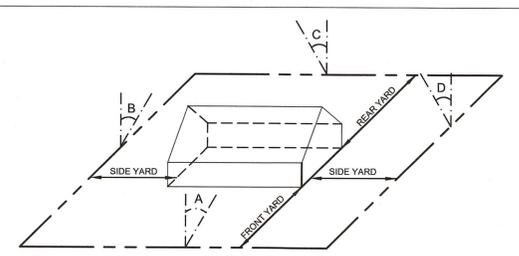
We trust that this statement is sufficient to support our request for a modification of the transitional screening and barrier requirements for the development program proposed for the subject property. Should you have any questions or the need for additional information, please contact me at 703-849-0144 or jcena@dewberry.com.

Sincerely,

Janice M. Cena, PLA, CA
Senior Landscape Architect
ISA Certified Arborist



ZONING/LAND USE MAP



FRONT YARD : 1 A 45° WITH A BUILDING HEIGHT OF 75', THE FRONT YARD = 75' BUT NOT LESS THAN 40'

SIDE YARD : 1 B NO REQUIREMENT

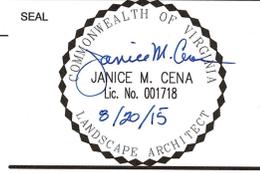
REAR YARD : 1 C NO REQUIREMENT

ANGLE OF BULK PLANE FOR I-6 DISTRICT
MINIMUM REQUIRED YARD FOR BUILDING WITH 75' HEIGHT



Dewberry Consultants LLC
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

GUNSTON COVE ROAD
SPECIAL EXCEPTION PLAT
SE 2015-MV-019
MOUNT VERNON DISTRICT
FAIRFAX COUNTY, VIRGINIA



SCALE NORTH

| No. | DATE | BY | Description |
|-----|---------|-----|------------------------|
| 2 | 8/20/15 | JMC | ADDRESS STAFF COMMENTS |
| 1 | 7/15/15 | JMC | ADDRESS STAFF COMMENTS |

DRAWN BY LNM
APPROVED BY JMC
CHECKED BY JMC
DATE MARCH 2015

NOTES AND TABULATION

PROJECT NO. # M-10858

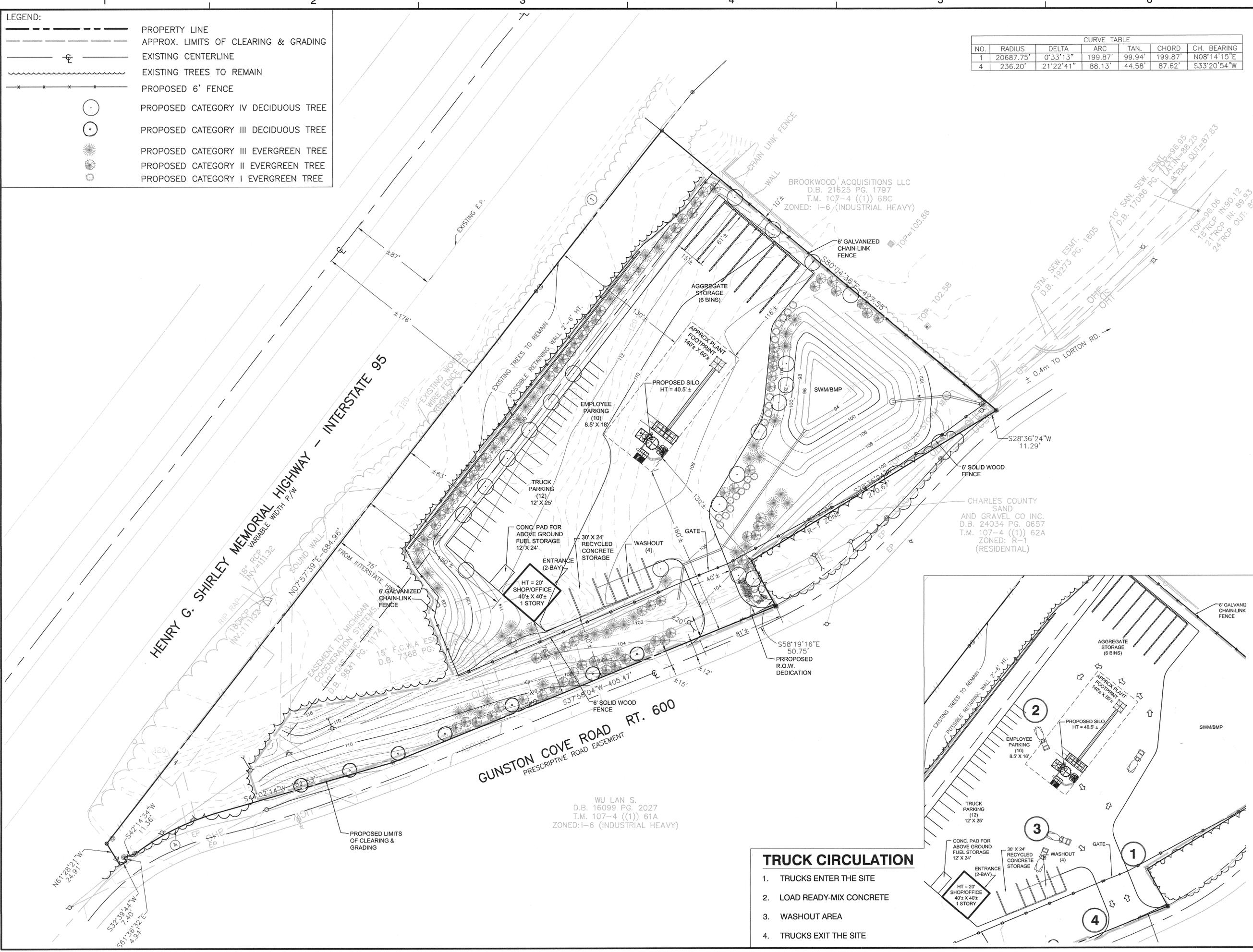
G:\PROJECT\8520 Gunston Cove Road\Sheets\2- Notes.dwg
Wed, Aug 19 2015 3:25:39pm

| CURVE TABLE | | | | | | |
|-------------|-----------|-----------|---------|--------|---------|-------------|
| NO. | RADIUS | DELTA | ARC | TAN. | CHORD | CH. BEARING |
| 1 | 20687.75' | 0°33'13" | 199.87' | 99.94' | 199.87' | N08°14'15"E |
| 4 | 236.20' | 21°22'41" | 88.13' | 44.58' | 87.62' | S33°20'54"W |

LEGEND:

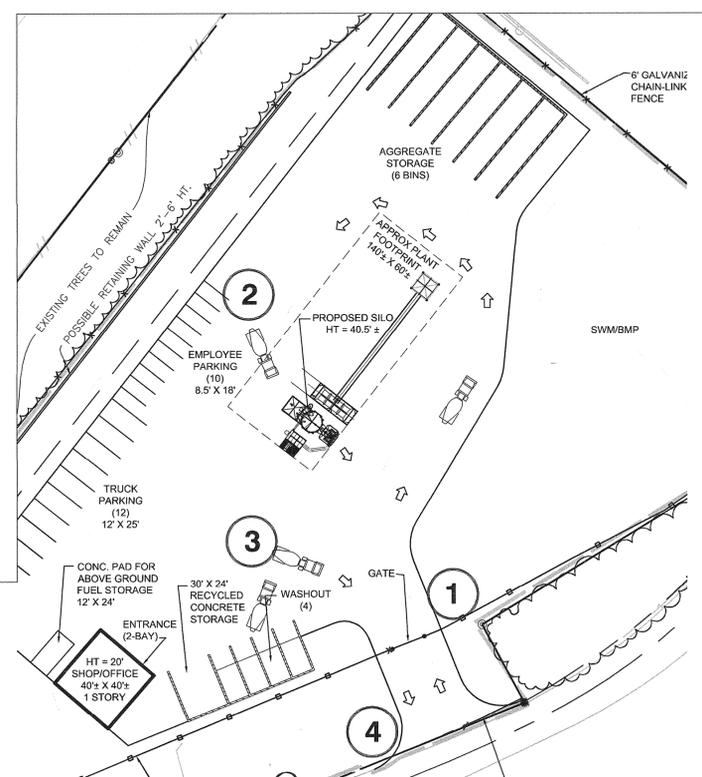
- PROPERTY LINE
- APPROX. LIMITS OF CLEARING & GRADING
- EXISTING CENTERLINE
- EXISTING TREES TO REMAIN
- PROPOSED 6' FENCE
- PROPOSED CATEGORY IV DECIDUOUS TREE
- PROPOSED CATEGORY III DECIDUOUS TREE
- PROPOSED CATEGORY III EVERGREEN TREE
- PROPOSED CATEGORY II EVERGREEN TREE
- PROPOSED CATEGORY I EVERGREEN TREE

E
D
C
B
A



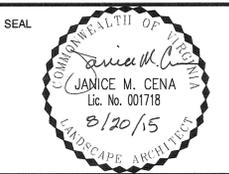
TRUCK CIRCULATION

- TRUCKS ENTER THE SITE
- LOAD READY-MIX CONCRETE
- WASHOUT AREA
- TRUCKS EXIT THE SITE



**GUNSTON COVE ROAD
 SPECIAL EXCEPTION PLAT
 SE 2015-MV-019**

MOUNT VERNON DISTRICT
 FAIRFAX COUNTY, VIRGINIA



KEY PLAN

SCALE NORTH

SCALE IN FEET
 1" = 40'
 1 INCH

VCS-83

| No. | DATE | BY | Description |
|-----|---------|-----|------------------------|
| 2 | 8/20/15 | JMC | ADDRESS STAFF COMMENTS |
| 1 | 7/15/15 | JMC | ADDRESS STAFF COMMENTS |

REVISIONS

DRAWN BY LNM
 APPROVED BY JMC
 CHECKED BY JMC
 DATE MARCH 2015

TITLE
SPECIAL EXCEPTION PLAT

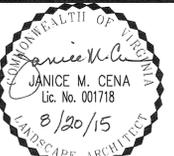
PROJECT NO. # M-10858

3

**GUNSTON COVE ROAD
 SPECIAL EXCEPTION PLAT
 SE 2015-MV-019**

MOUNT VERNON DISTRICT
 FAIRFAX COUNTY, VIRGINIA

SEAL



KEY PLAN

SCALE NORTH
 SCALE IN FEET
 1" = 40'
 1 INCH

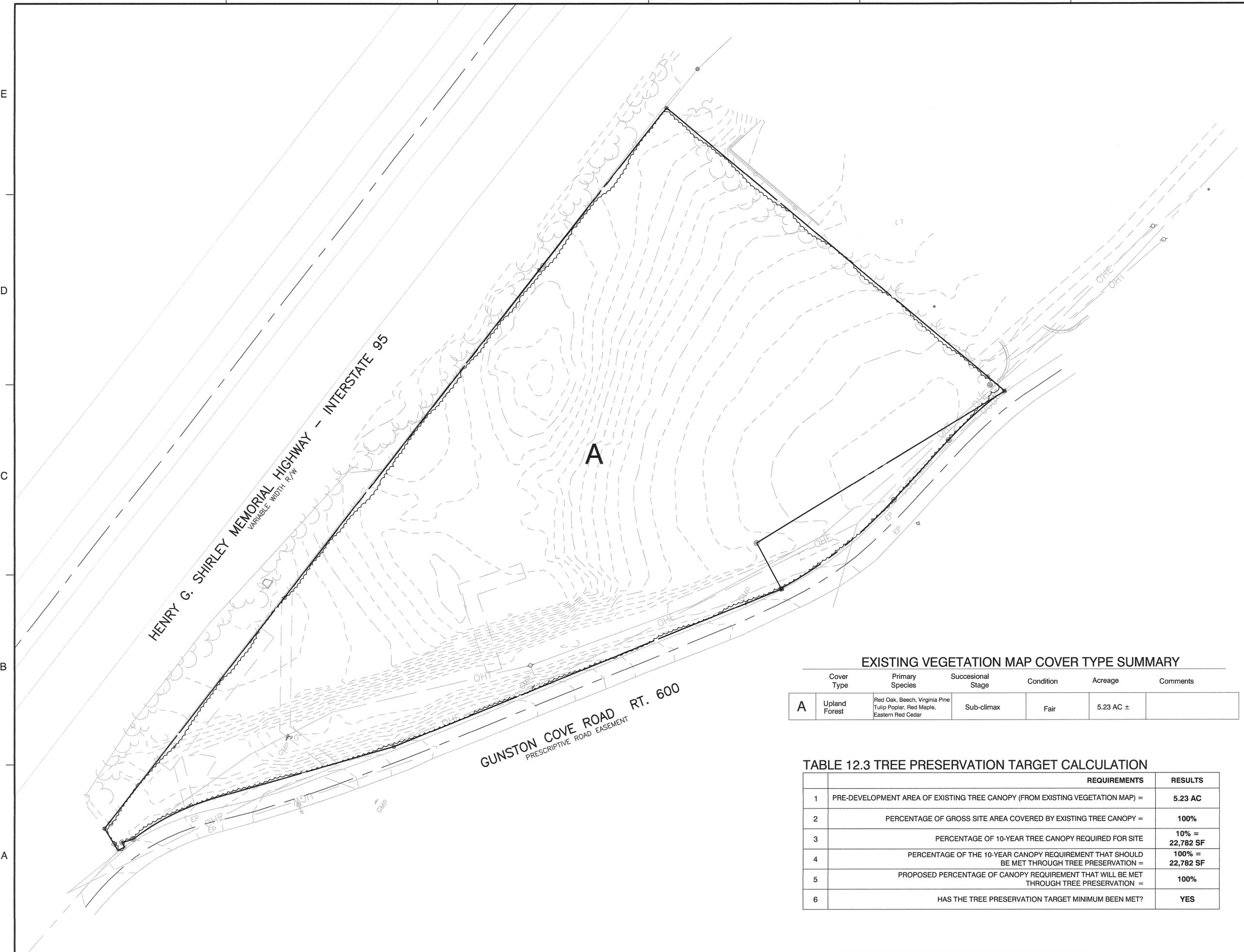
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| DRAWN BY | LNLM |
| APPROVED BY | JMC |
| CHECKED BY | JMC |
| DATE | MARCH 2015 |

TITLE
**EXISTING
 VEGETATION MAP**

PROJECT NO. # M-10858



EXISTING VEGETATION MAP COVER TYPE SUMMARY

| Cover Type | Primary Species | Successional Stage | Condition | Acreage | Comments |
|------------------------|--|--------------------|-----------|-----------|----------|
| A Upland Forest | Red Oak, Beech, Virginia Pine Tulip Poplar, Red Maple, Eastern Red Cedar | Sub-climax | Fair | 5.23 AC ± | |

TABLE 12.3 TREE PRESERVATION TARGET CALCULATION

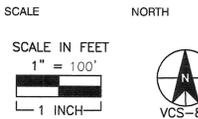
| | REQUIREMENTS | RESULTS |
|---|---|-----------------------------|
| 1 | PRE-DEVELOPMENT AREA OF EXISTING TREE CANOPY (FROM EXISTING VEGETATION MAP) = | 5.23 AC |
| 2 | PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY = | 100% |
| 3 | PERCENTAGE OF 10-YEAR TREE CANOPY REQUIRED FOR SITE | 10% = 22,782 SF |
| 4 | PERCENTAGE OF THE 10-YEAR CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION = | 100% = 22,782 SF |
| 5 | PROPOSED PERCENTAGE OF CANOPY REQUIREMENT THAT WILL BE MET THROUGH TREE PRESERVATION = | 100% |
| 6 | HAS THE TREE PRESERVATION TARGET MINIMUM BEEN MET? | YES |

**GUNSTON COVE ROAD
 SPECIAL EXCEPTION PLAT**

MOUNT VERNON DISTRICT
 FAIRFAX COUNTY, VIRGINIA



KEY PLAN

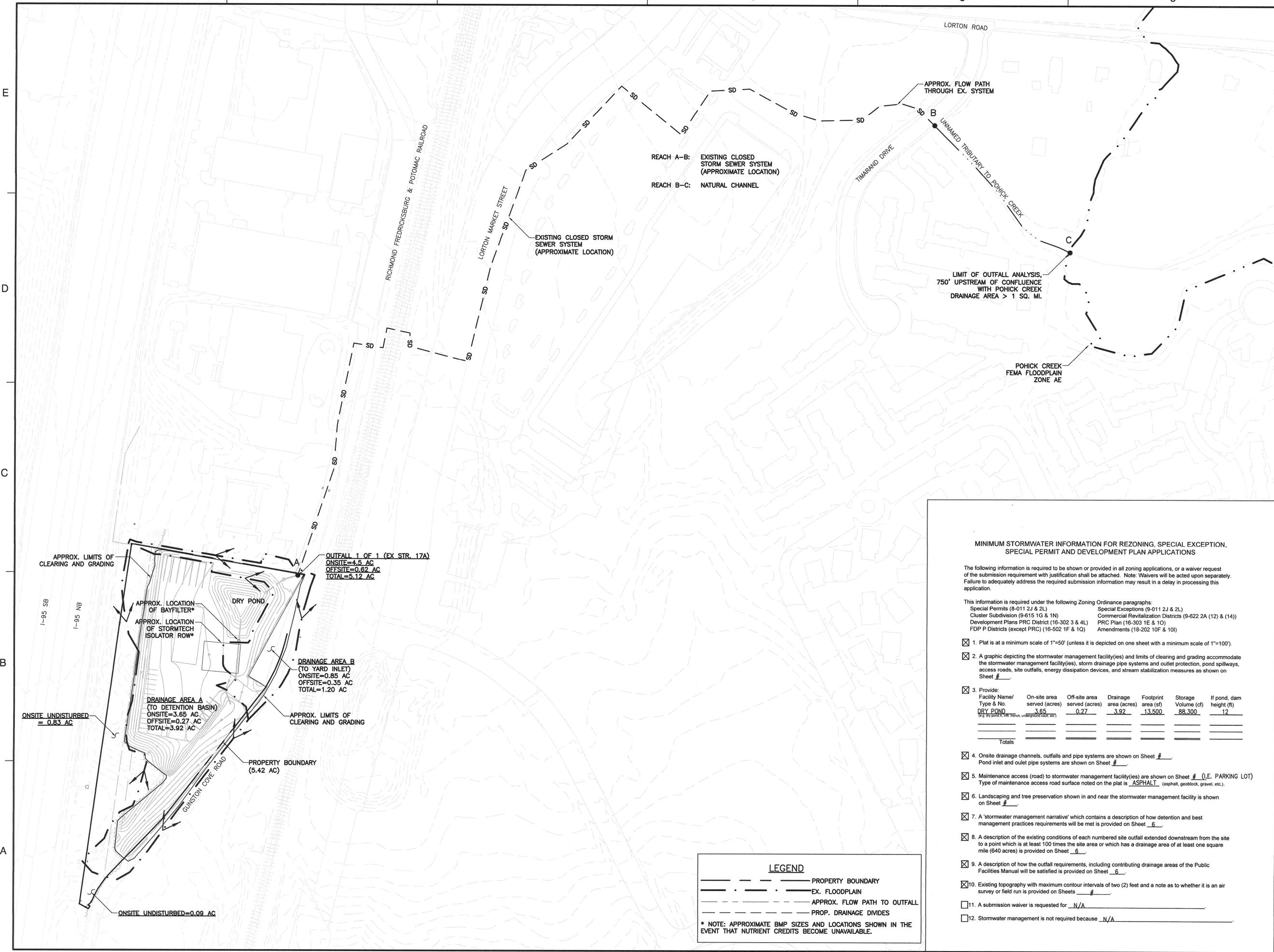


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DRAWN BY: RAN
 APPROVED BY: SCC
 CHECKED BY: SCC
 DATE: MARCH 2015

TITLE
**STORMWATER
 MANAGEMENT
 PLAN**

PROJECT NO. # M-10858



REACH A-B: EXISTING CLOSED STORM SEWER SYSTEM (APPROXIMATE LOCATION)
 REACH B-C: NATURAL CHANNEL

EXISTING CLOSED STORM SEWER SYSTEM (APPROXIMATE LOCATION)

LIMIT OF OUTFALL ANALYSIS, 750' UPSTREAM OF CONFLUENCE WITH POHICK CREEK DRAINAGE AREA > 1 SQ. MI.

POHICK CREEK FEMA FLOODPLAIN ZONE AE

MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:
 Special Permits (8-011 2J & 2L) Special Exceptions (9-011 2J & 2L)
 Cluster Subdivision (9-615 1G & 1N) Commercial Revitalization Districts (9-622 2A (12) & (14))
 Development Plans PRC District (16-302 3 & 4L) PRC Plan (16-303 1E & 1O)
 FDP P Districts (except PRC) (16-502 1F & 1Q) Amendments (18-202 10F & 10I)

- 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').
- 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet # _____.
- 3. Provide:

| Facility Name/Type & No. | On-site area served (acres) | Off-site area served (acres) | Drainage area (acres) | Footprint area (sf) | Storage Volume (cf) | If pond, dam height (ft) |
|--------------------------|-----------------------------|------------------------------|-----------------------|---------------------|---------------------|--------------------------|
| DRY POND | 3.65 | 0.27 | 3.92 | 13,500 | 88,300 | 12 |
| Totals | _____ | _____ | _____ | _____ | _____ | _____ |
- 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet # _____.
 Pond inlet and outlet pipe systems are shown on Sheet # _____.
- 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet # _____. (I.E. PARKING LOT)
 Type of maintenance access road surface noted on the plat is ASPHALT (asphalt, geoblock, gravel, etc.).
- 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet # _____.
 A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet # _____.
 A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet # _____.
 A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet # _____.
 Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets # _____.
- 11. A submission waiver is requested for N/A _____.
- 12. Stormwater management is not required because N/A _____.

LEGEND

- _____ PROPERTY BOUNDARY
- _____ EX. FLOODPLAIN
- _____ APPROX. FLOW PATH TO OUTFALL
- _____ PROP. DRAINAGE DIVIDES

* NOTE: APPROXIMATE BMP SIZES AND LOCATIONS SHOWN IN THE EVENT THAT NUTRIENT CREDITS BECOME UNAVAILABLE.

G:\PROJECT\9220 Gunston Cove Road\Preliminary Engineering\SWM\CAD\SHEETS\SWM PLAN.dwg
 Wed, Aug 19 2015 - 5:04:53pm

STORMWATER MANAGEMENT NARRATIVE

THE STORMWATER MANAGEMENT PLAN FOR THIS SPECIAL EXCEPTION APPLICATION HAS BEEN PREPARED IN ACCORDANCE WITH THE FAIRFAX COUNTY STORMWATER MANAGEMENT ORDINANCE AND PUBLIC FACILITIES MANUAL.

I. SITE AREA

THE SITE AREA EVALUATED FOR WATER QUALITY AND WATER QUANTITY IS 5.42 AC. THE SITE BOUNDARY IS CALLED OUT ON SHEET 5.

II. WATER QUALITY

THE VIRGINIA RUNOFF REDUCTION METHOD AS DESCRIBED IN SECTION 124-4-2 OF THE FAIRFAX COUNTY STORMWATER MANAGEMENT ORDINANCE WAS USED TO EVALUATE WATER QUALITY FOR THIS SITE. THE PHOSPHOROUS LOAD REDUCTION REQUIRED WAS DETERMINED TO BE 3.25 LB/YR PER THE 2013 VRRM NEW DEVELOPMENT SPREADSHEET (VER. 2.8, JUNE 2014). OFFSITE NUTRIENT CREDITS WILL BE PURCHASED TO SATISFY THE POLLUTANT REMOVAL AS PERMITTED UNDER SECTION 124-4-5(A)(3) OF THE ORDINANCE. NUTRIENT CREDITS ARE AVAILABLE FROM THE ELK RUN NUTRIENT BANK, ADMINISTERED BY RESOURCE ENVIRONMENTAL SERVICES, WHICH IS LOCATED IN THE ADJACENT HUC CODE (02070010). CREDITS WILL BE PURCHASED PRIOR TO SITE PLAN APPROVAL.

IN THE EVENT THAT NUTRIENT CREDITS ARE NOT AVAILABLE, WATER QUALITY WILL BE SATISFIED BY A STORMTECH ISOLATOR ROW SYSTEM IN SERIES WITH A BAYFILTER. APPROXIMATE SIZES AND LOCATIONS OF POSSIBLE BMPs ARE PROVIDED ON SHEET 5. THIS COMBINATION OF PROPRIETARY BMPs SATISFIES 98% OF THE TOTAL PHOSPHOROUS REMOVAL REQUIREMENT, WHICH IS THE MAXIMUM EXTENT POSSIBLE GIVEN IN SITU SOILS AND PROPOSED GRADING.

III. WATER QUANTITY

A. DESCRIPTION OF OUTFALL

THE DISTURBED PORTION OF THE SITE OUTFALLS TO AN EXISTING STORM SEWER SYSTEM WHICH OUTFALLS TO AN UNNAMED TRIBUTARY TO POHICK CREEK.

B. CHANNEL & FLOOD PROTECTION

CHANNEL PROTECTION PER SWMO 124-4-4B1 WILL BE SATISFIED THROUGH THE 1-YEAR ENERGY BALANCE TO BRING SITE HYDROLOGY BACK TO A FORESTED CONDITION, SEE THIS SHEET FOR PRELIMINARY COMPUTATIONS.

FLOOD PROTECTION PER SWMO 124-4-4 WILL BE SATISFIED BY VERIFYING THE ADEQUACY OF THE NATURAL AND MANMADE SYSTEMS TO THE POINT WHERE FLOW ENTERS THE POHICK CREEK FLOODPLAIN, SEE EXTENT OF REVIEW, SHEET 5. AT THE POINT WHERE DRAINAGE LEAVES THE SITE, IT ENTERS AN EXISTING STORM SEWER SYSTEM, PER APPROVED PLAN FOR COMMONWEALTH CONSTRUCTION MANAGEMENT, INC. (5430-SP-003-2). THE EXISTING SYSTEM IS DESIGNED FOR 9.95 CFS TO EXISTING STR. 17A. THE NATURAL CHANNEL BETWEEN POINTS B AND C ON SHEET 5 WILL BE EVALUATED FOR 2-YEAR CAPACITY AT SITE PLAN. IF ANY SYSTEM IS DETERMINED INADEQUATE, IT SHALL BE MADE ADEQUATE WITH OFFSITE CHANNEL IMPROVEMENTS AND/OR ONSITE DETENTION AS APPROPRIATE. OUTFALL COMPUTATIONS FOR THE ABOVE-REFERENCED PLAN DEMONSTRATE ADEQUACY TO THE EXTENT OF REVIEW. BASED ON 5430-SP-003-2, NO OUTFALL INADEQUACIES ARE ANTICIPATED.

C. DETENTION

A DRY DETENTION BASIN WILL PROVIDE WATER QUANTITY CONTROL FOR THE 2- AND 10-YEAR 24-HOUR STORMS, AS WELL AS THE 1-YEAR ENERGY BALANCE.

IV. MAINTENANCE OF DETENTION BASIN

REGULAR INSPECTIONS ARE REQUIRED TO ENSURE STRUCTURAL INTEGRITY OF DAM AND THE EFFICIENCY OF STRUCTURES WITHIN THE BASIN. IT IS ALSO NECESSARY TO ENSURE ORIFICES AND WEIRS ARE NOT BLOCKED BY DEBRIS AND CAN FUNCTION NORMALLY AFTER A RAINFALL EVENT. MAINTENANCE IS REQUIRED, WHEN:

- SEDIMENT OR DEBRIS ACCUMULATION INTERFERES WITH CAPACITY OR FUNCTION OF THE PRINCIPLE SPILLWAY
- TREES OR SHRUBS GROW ON EMBANKMENT
- THE EMBANKMENT BECOMES DENUDE
- ANY DAMAGE OCCURS TO THE DAM OR STORMWATER STRUCTURES
- ANIMAL BURROWS ARE PRESENT ON DAM
- STANDING WATER REMAINS 72 HOURS AFTER RAINFALL EVENT

V. DISCLAIMER

THE TYPE, SIZE AND LOCATION OF SWM FACILITIE(S) REFLECTED ON THIS PLAN IS PRELIMINARY AND SUBJECT TO ADJUSTMENT AT FINAL ENGINEERING AND SITE PLAN.

**Virginia Runoff Reduction Method New Development Worksheet - v2.8 - June 2014
To be used w/ DRAFT 2013 BMP Standards and Specifications**

Site Data

| |
|---------------------------------|
| Project Name: Gunston Cove Road |
| Date: February 23, 2015 |

data input cells
calculation cells
constant values

1. Post-Development Project & Land Cover Information

Constants

| | |
|--|------|
| Annual Rainfall (inches) | 43 |
| Target Rainfall Event (inches) | 1.00 |
| Phosphorus EMC (mg/L) | 0.26 |
| Target Phosphorus Target Load (lb/acre/yr) | 0.41 |
| Pj | 0.90 |

Nitrogen EMC (mg/L) 1.86

Land Cover (acres)

| | A soils | B Soils | C Soils | D Soils | Totals |
|---|---------|---------|---------|-------------|--------|
| Forest/Open Space (acres) - undisturbed, protected forest/open space or reforested land | 0.00 | 0.00 | 0.00 | 1.25 | 1.25 |
| Managed Turf (acres) - disturbed, graded for yards or other turf to be mowed/managed | 0.00 | 0.00 | 0.00 | 2.32 | 2.32 |
| Impervious Cover (acres) | 0.00 | 0.00 | 0.00 | 1.85 | 1.85 |
| Total | | | | 5.42 | |

Rv Coefficients

| | A soils | B Soils | C Soils | D Soils |
|-------------------|---------|---------|---------|---------|
| Forest/Open Space | 0.02 | 0.03 | 0.04 | 0.05 |
| Managed Turf | 0.15 | 0.20 | 0.22 | 0.25 |
| Impervious Cover | 0.95 | 0.95 | 0.95 | 0.95 |

Land Cover Summary

| | |
|--|-------|
| Forest/Open Space Cover (acres) | 1.25 |
| Weighted Rv(forest) | 0.05 |
| % Forest | 23% |
| Managed Turf Cover (acres) | 2.32 |
| Weighted Rv(turf) | 0.25 |
| % Managed Turf | 43% |
| Impervious Cover (acres) | 1.85 |
| Rv(impervious) | 0.95 |
| % Impervious | 34% |
| Total Site Area (acres) | 5.42 |
| Site Rv | 0.44 |
| Post-Development Treatment Volume (acre-ft) | 0.20 |
| Post-Development Treatment Volume (cubic feet) | 8,712 |
| Post-Development Load (TP) (lb/yr) | 5.47 |
| Total Load (TP) Reduction Required (lb/yr) | 3.25 |
| Post-Development Load (TN) (lb/yr) | 39.16 |

**Water Quantity Compliance
1-year Energy Balance¹**

$IF \cdot Q_{pre} \cdot RV_{pre} < Q_{dev} \cdot RV_{dev}$

Computed By: RAN Date: 4/6/2015
Checked By: SCC Date: 4/6/2015

| OUTFALL | PRE-DEVELOPED | | | | | | DEVELOPED | | | | | | | |
|---------|---------------|----|----|-------------------|------------------|--|-----------|------|----|-------------------|-------------------------------|-------------------------------------|-----|------|
| | DA | CN | Tc | RV _{pre} | Q _{pre} | IF*Q _{pre} *RV _{pre} | DA | Tc | CN | RV _{dev} | Q _{dev} ² | Q _{dev} *RV _{dev} | | |
| Detn | 4.28 | 77 | 15 | min watershed-in | 0.82 | 3.90 | 3.18 | 4.36 | 5 | 89 | min watershed-in | 1.56 | 1.9 | 2.96 |

Variables:

- CN Weighted curve number²
- DA On-site drainage area
- IF Improvement factor (0.8 for sites larger than 1 ac, 0.9 for sites equal to or less than 1 ac, 1.0 for off-site areas)
- Q_{pre} Pre-development discharge for the 1-year 24-hour design storm^{4,5}
- Q_{dev} Developed discharge for the 1-year 24-hour design storm with runoff reduction measures^{4,5}
- RV_{pre} Runoff volume of the pre-development condition (Eqn. 15)^{3,5}
- RV_{dev} Runoff volume of the developed condition with runoff reduction measures (Eqn. 15)^{3,5}
- Tc Time of concentration

Notes:

- 1) 1-year energy balance was performed in accordance with Fairfax County Stormwater Management Ordinance.
- 2) Site soils consist of Hydrologic Soil Groups D.
- 3) Variables computed using respective equations in *Virginia Runoff Reduction Method Users Guide v.2.5*.
- 4) Discharges computed using HEC-1.
- 5) Rainfall depth (P) used for the 1-year 24-hour storm is 2.62".
- 6) Improvement factor = 1 because existing land cover condition is forest.
- 7) Maximum allowable release rate from proposed dry pond will be 1.6 cfs.



Date: July 13, 2015
To: Taryn Somoza
Dewberry
8401 Arlington Blvd.
Fairfax, VA 22031-4666

From: Cara Conder
Credit Sales Coordinator
Resource Environmental Solutions

Subject: Potomac Watershed- Nutrient Credit Availability

Project Reference: Gunston Cove Road Special Exception Plat; 3.50 Credits Requested; HUC 02070010

This letter is to confirm the availability of 3.50 authorized nutrient credits ("Nutrient Credits") from one or more of Resource Environmental Solutions' ("RES") [pending or approved] Potomac nutrient bank facilities for use by permit applicants within the Potomac watershed, including HUC 02070010, to compensate for nutrient loadings in excess of state or local regulations, as per Virginia Code § 62.1-44.15:35 and § 62.1-44.19:14 and Virginia Administrative Code 9 VAC 25-820-10 et seq. These Nutrient Credits are generated and managed under the terms of the Banking Instruments known as the Elk Run Nutrient Reduction Implementation Plan ("NRIP"), the Revised Holy Cross Abbey NRIP and/or the Midland NRIP.

Please feel free to contact me if you have any questions.

Sincerely,

Cara S. Conder
Resource Environmental Solutions
919-209-1052

10555 Red Run Blvd.
Suite 130
Owings Mills, MD
21117

412 N. 4th St. Suite 300
Baton Rouge, LA
70802

1307 Broad Street
Clemens, SC
29620

1514 South Church Street
Suite 103
Charlotte, NC
28203

5020 Montrose Blvd.
Suite 550
Houston, TX
77006

1200 Camellia Blvd.
Suite 220
Lafayette, LA
70508

137 1/2 East Main Street
Suite 210
Oak Hill, WV
25901

389 Southpointe Blvd.
Plaza II, Suite 405
Caronsburg, PA
15317

302 Jefferson Street
Suite 110
Raleigh, NC
27605

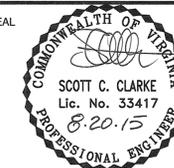
7 East 2nd St.
Suite 208
Richmond, VA
23224



Dewberry Consultants LLC
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

GUNSTON COVE ROAD
SPECIAL EXCEPTION PLAT
 MOUNT VERNON DISTRICT
 FAIRFAX COUNTY, VIRGINIA

SEAL



KEY PLAN

SCALE NORTH

SCALE IN FEET



VCS-83

| No. | DATE | BY | Description |
|-----|------|----|-------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

REVISIONS

DRAWN BY: RAN
APPROVED BY: SCC
CHECKED BY: SCC
DATE: MARCH 2015

TITLE
**STORMWATER
MANAGEMENT
NARRATIVE &
COMPUTATIONS**

PROJECT NO. # M-10858

6

SHEET NO. 6 OF 9

**GUNSTON COVE ROAD
SPECIAL EXCEPTION PLAT
SE 2015-MV-019**

MOUNT VERNON DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL



KEY PLAN

SCALE NORTH

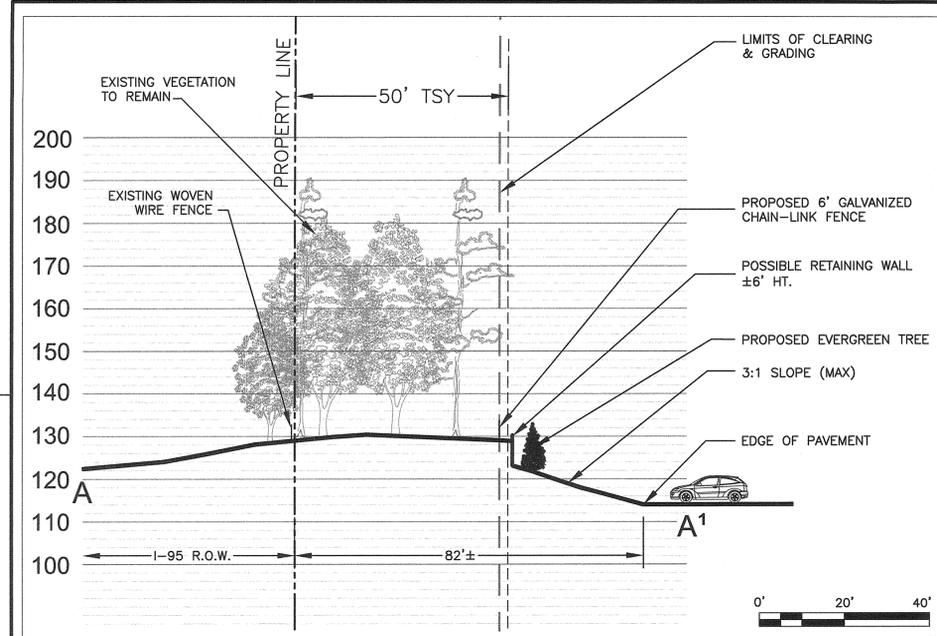


| No. | DATE | BY | Description |
|-----|---------|-----|------------------------|
| 2 | 8/20/15 | JMC | ADDRESS STAFF COMMENTS |
| 1 | 7/15/15 | JMC | ADDRESS STAFF COMMENTS |

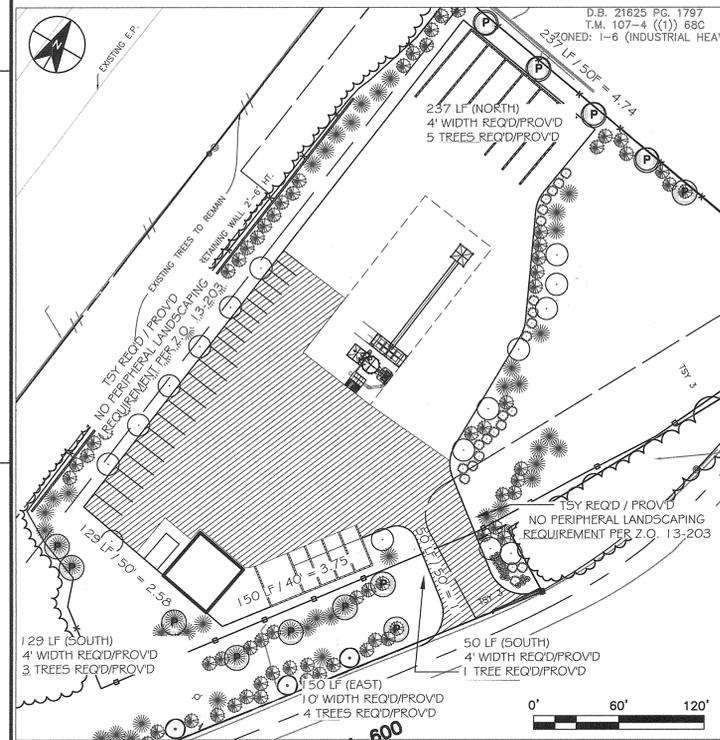
REVISIONS
DRAWN BY LNM
APPROVED BY JMC
CHECKED BY JMC
DATE MARCH 2015

**LANDSCAPE
AND SCREENING
PLAN**

PROJECT NO. # M-10858



CROSS SECTION A-A1



PERIPHERAL PARKING LOT LANDSCAPING

LEGEND:

- CATEGORY IV DECIDUOUS TREE
- CATEGORY III DECIDUOUS TREE
- CATEGORY III EVERGREEN TREE
- CATEGORY II EVERGREEN TREE
- CATEGORY I EVERGREEN TREE
- EVERGREEN SHRUB
- PROPOSED 6' GALVANIZED CHAIN-LINK FENCE
- PROPOSED 6' SOLID WOOD FENCE
- AREA COUNTED AS PARKING LOT AREA
- TREE COUNTED TOWARD INTERIOR PARKING LOT LANDSCAPING CALCULATIONS
- TREE TO BE COUNTED TOWARD PERIPHERAL PARKING LOT LANDSCAPING REQUIREMENTS

**INTERIOR PARKING LOT
LANDSCAPING CALCULATIONS:**

| | |
|--|-----------|
| Area to be Counted = | 32,222 SF |
| Interior Landscaping Required (5%) = | 1,611 SF |
| Total Shade Tree Canopy Provided (9 Cat. IV deciduous trees @ 200 SF ea.) = | 1,800 SF |
| Total Area Required = | 1,611 SF |
| Total Area Provided = | 1,800 SF |

TSY 1 REQUIRED: 195 LF

| Required | Provided |
|----------------------------------|--|
| - 25' width | - 50'± width |
| - 75% canopy coverage = 3,656 sf | - Buffer of existing trees to remain undisturbed |
| - 3 shrubs/10' = 59 shrubs | - 0 shrubs |
| - Barrier D, E, or F | - 6' galvanized chain-link fence |

TSY 3 REQUIRED: 690 LF

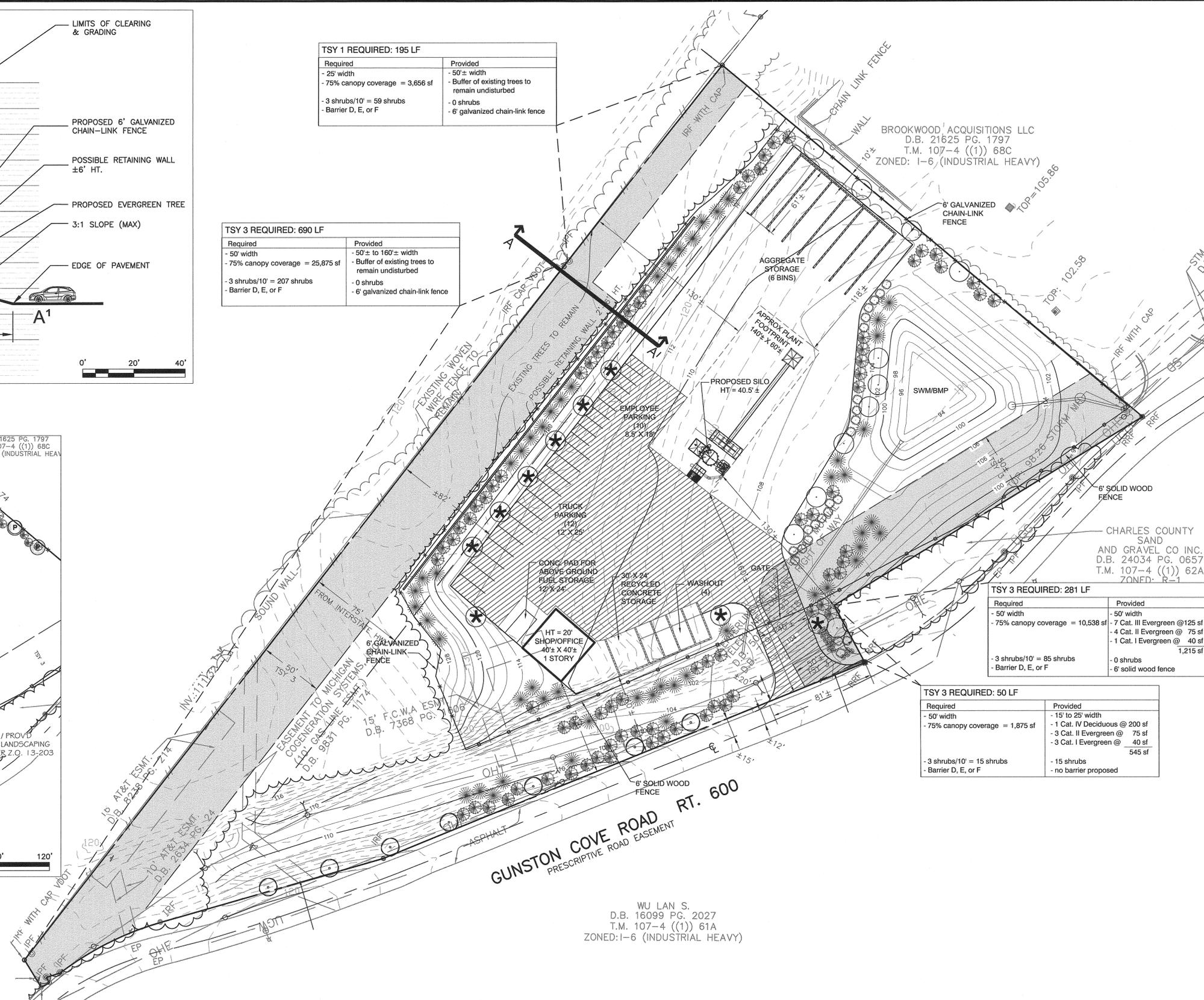
| Required | Provided |
|-----------------------------------|--|
| - 50' width | - 50'± to 160'± width |
| - 75% canopy coverage = 25,875 sf | - Buffer of existing trees to remain undisturbed |
| - 3 shrubs/10' = 207 shrubs | - 0 shrubs |
| - Barrier D, E, or F | - 6' galvanized chain-link fence |

TSY 3 REQUIRED: 281 LF

| Required | Provided |
|-----------------------------------|---------------------------------|
| - 50' width | - 50' width |
| - 75% canopy coverage = 10,538 sf | - 7 Cat. III Evergreen @ 125 sf |
| | - 4 Cat. II Evergreen @ 75 sf |
| | - 1 Cat. I Evergreen @ 40 sf |
| | 1,215 sf |
| - 3 shrubs/10' = 85 shrubs | - 0 shrubs |
| - Barrier D, E, or F | - 6' solid wood fence |

TSY 3 REQUIRED: 50 LF

| Required | Provided |
|----------------------------------|--------------------------------|
| - 50' width | - 15' to 25' width |
| - 75% canopy coverage = 1,875 sf | - 1 Cat. IV Deciduous @ 200 sf |
| | - 3 Cat. II Evergreen @ 75 sf |
| | - 3 Cat. I Evergreen @ 40 sf |
| | 545 sf |
| - 3 shrubs/10' = 15 shrubs | - 15 shrubs |
| - Barrier D, E, or F | - no barrier proposed |



**GUNSTON COVE ROAD RT. 600
PRESCRIPTIVE ROAD EASEMENT**

WU LAN S.
D.B. 16099 PG. 2027
T.M. 107-4 ((1)) 61A
ZONED: I-6 (INDUSTRIAL HEAVY)

CHARLES COUNTY
SAND
AND GRAVEL CO INC.
D.B. 24034 PG. 0657
T.M. 107-4 ((1)) 62A
ZONED: R-1

BROOKWOOD ACQUISITIONS LLC
D.B. 21625 PG. 1797
T.M. 107-4 ((1)) 68C
ZONED: I-6 (INDUSTRIAL HEAVY)

TREE PRESERVATION NARRATIVE:

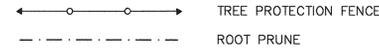
PRE-CONSTRUCTION REQUIREMENTS/TREATMENTS:

- THE SERVICES OF A CERTIFIED ARBORIST SHALL BE OBTAINED TO ENSURE THE PROPER IMPLEMENTATION OF THE TREE PRESERVATION PLAN AND CONFORMANCE WITH THE TREE PRESERVATION PROFFERS, AND IS HERETO REFERRED TO AS THE 'PROJECT ARBORIST'.
- ALL WORK SHALL MEET OR EXCEED INDUSTRY STANDARDS AS MOST RECENTLY PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), OR THE TREE CARE INDUSTRY ASSOCIATION (TCIA). IF THESE STANDARDS DO NOT COVER A PRESCRIBED TREATMENT, THE WORK SHALL MEET THE STANDARDS APPROVED BY URBAN FOREST MANAGEMENT (UFM).
- THE LIMITS OF CLEARING AND GRADING SHALL BE CONFORMED TO AS SHOWN ON THE PLAN, SUBJECT TO ALLOWANCES FOR THE INSTALLATION OF FENCES, UTILITIES, AND/OR TRAILS, WHICH SHALL BE LOCATED IN THE LEAST DISRUPTIVE MANNER NECESSARY AS DETERMINED BY THE UFM.
- ROOT PRUNING SHALL BE COMPLETED IN A SINGLE OPERATION WHERE INDICATED ON THIS PLAN. TRENCHES SHALL BE A MINIMUM 18 INCHES DEEP AND BACKFILLED IMMEDIATELY. IF TREE PROTECTION/SILT FENCE IS TO BE INSTALLED AT THE LIMITS, THE ROOT PRUNING TRENCH MAY BE USED FOR TREE PROTECTION/SILT FENCE INSTALLATION. THE ROOT PRUNING SHALL BE CONDUCTED WITH THE SUPERVISION OF A CERTIFIED ARBORIST, AND UFM SHALL BE INFORMED WHEN ALL ROOT PRUNING AND TREE PROTECTION FENCE INSTALLATION IS COMPLETE.
- THE INSTALLATION OF ALL TREE PROTECTION FENCING SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE PROJECT ARBORIST, AND SHALL BE ACCOMPLISHED IN A MANNER THAT DOES NOT HARM EXISTING VEGETATION TO BE PRESERVED. AT LEAST TEN (10) DAYS PRIOR TO THE COMMENCEMENT OF ANY CLEARING AND GRADING ACTIVITIES ADJACENT TO THE TREE PRESERVATION DEVICES, THE UFM SHALL BE NOTIFIED AND GIVEN THE OPPORTUNITY TO INSPECT THE SITE TO ENSURE THAT ALL TREE PROTECTION DEVICES HAVE BEEN CORRECTLY INSTALLED. IF IT IS DETERMINED THAT THE FENCING HAS NOT BEEN INSTALLED CORRECTLY, GRADING OR CONSTRUCTION ACTIVITIES SHALL NOT OCCUR UNTIL THE FENCING IS INSTALLED CORRECTLY, AS DETERMINED BY THE UFM. (SEE TREE PROTECTION FENCE DETAIL)
- WOOD CHIPS OR OTHER SUITABLE MATERIAL SHALL BE PLACED IN THE FORESTED TREE PRESERVATION AREAS 3 TO 4 INCHES DEEP WITHIN 5 FEET OF AREAS DISTURBED BY TRENCHING. ANY VARIETY OF HARDWOOD OR PINE MULCH CAN BE USED IN ADDITION TO ANY MULCH THAT HAS BEEN CHIPPED ONSITE FROM UNSAVED TREES OR DEAD LIMBS. ALL MULCH MUST BE PLACED BY HAND.
- TREES LOCATED OUTSIDE THE LIMITS OF CLEARING AND WITHIN AREAS DESIGNATED TO BE PRESERVED THAT HAVE BEEN IDENTIFIED ON THIS PLAN AS "DEAD", "POOR CONDITION" OR "POTENTIAL HAZARD" SHALL BE EVALUATED BY URBAN FOREST MANAGEMENT DIVISION (UFMD) STAFF, IN CONSULTATION WITH THE PROJECT ARBORIST, PRIOR TO OR DURING THE PRE-CONSTRUCTION WALK-THROUGH FOR REMOVAL DURING THE DEVELOPMENT SITE'S INITIAL LAND CLEARING OPERATIONS.
- DURING ANY CLEARING OR TREE/VEGETATION REMOVAL IN AREAS ADJACENT TO THE TREE PRESERVATION AREAS AND ALL RECOMMENDED TREATMENTS, THE PROJECT ARBORIST SHALL BE PRESENT TO MONITOR THE PROCESS AND ENSURE THAT THE ACTIVITIES ARE CONDUCTED AS PROFFERED AND AS APPROVED BY THE URBAN FOREST MANAGEMENT DIVISION.
- ALL FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION OF THE PROPOSED PHASE/PROJECT. FENCING SHALL NOT BE REMOVED OR RELOCATED WITHOUT THE CONSENT OF THE DIRECTOR UPON COMPLETION OF CONSTRUCTION.
- "TREE PRESERVATION AREA" SIGNS ARE TO BE SECURED TO THE TREE PROTECTION FENCING NO MORE THAN 50- FEET APART. SIGNS SHALL BE RE-SECURED AS NEEDED THROUGHOUT CONSTRUCTION.
- THE TREE PROTECTION SIGNS SHOULD BE POSTED IN ENGLISH AND SPANISH, AND READ "TREE PROTECTION ZONE - KEEP OUT - OFF LIMITS TO CONSTRUCTION EQUIPMENT, MATERIALS AND WORKERS" AND IN SPANISH "ZONA DE PROTECCION DEL ARBOL - PROHIBIDO ENTRAR" (SEE TREE PRESERVATION SIGN DETAIL)
- HEAVY EQUIPMENT, VEHICULAR TRAFFIC, AND STOCKPILING OF MATERIALS SHALL NOT BE PERMITTED OUTSIDE THE LCG. ALL TREES TO BE PLANTED OUTSIDE OF THE LIMITS OF CLEARING AND GRADING SHALL BE PLANTED BY HAND AT THE END OF E&S PHASE II. NO MACHINERY IS PERMITTED BEYOND THE LIMITS OF CLEARING AND GRADING. ACCESS TO THESE AREAS SHALL BE FROM INSIDE THE LIMITS OF CLEARING AND GRADING CLOSEST TO THE PROPOSED TREES. CONTRACTOR SHALL COORDINATE WITH THE COUNTY INSPECTOR TO REMOVE ENOUGH TREE PROTECTION FENCE SO THAT THESE AREAS CAN BE ACCESSED FOR PLANTING.

DURING CONSTRUCTION REQUIREMENTS/ TREATMENTS:

- UNDER NO CIRCUMSTANCES IS TRESPASS TO OCCUR WITHIN THE TREE PRESERVATION AREA WITHOUT THE CONSENT OF THE DIRECTOR. SHOULD DAMAGE OCCUR, EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO HAVE A LICENSED ARBORIST ATTEMPT TO RESOLVE THE PROBLEM AS SOON AS POSSIBLE.
- SHOULD ENTRY BE AUTHORIZED BY THE DIRECTOR, 3-4" OF MULCH SHALL BE PLACED WITHIN THE WORK AREA PRIOR TO ENTRY AND SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.
- ALL REQUIRED PRUNING, BRACING, AND/ OR CABLING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A300-2000 PRUNING STANDARDS.
- TREES TO BE REMOVED SHALL NOT BE FELLED, PUSHED, OR PULLED INTO THE TREE PRESERVATION AREA. TREES ON THE EDGE OF THE LIMITS OF CLEARING AND GRADING THAT NEED TO BE REMOVED SHALL BE CUT DOWN BY HAND WITH A CHAIN SAW. REMAINING STUMPS INSIDE AND OUTSIDE THE LIMITS OF CLEARING AND GRADING SHALL BE GROUND DOWN 12" DEEP FROM THE SOIL SURFACE WITH A STUMP GRINDER.
- REMOVAL OF INDIVIDUAL TREES OR TREE PRESERVATION AREAS SHOWN ON THE APPROVED PLAN TO BE PRESERVED MUST BE PRE-APPROVED BY DIRECTOR.
- NO TOXIC MATERIALS SHALL BE STORED WITHIN 100 FEET OF VEGETATION TO BE RETAINED.

LEGEND



TREE PRESERVATION AREA

KEEP OUT

ZONA DE PROTECCION DEL ARBOL

NO ENTRAR

SPECIFICATIONS:

- DIMENSIONS: LENGTH=17 INCHES
WIDTH=11 INCHES

- BACKGROUND/TEXT COLOR: RED/WHITE OR YELLOW/BLACK

- MINIMUM LETTER SIZE: LARGE TEXT = 0.60"
SMALL TEXT = 0.28"

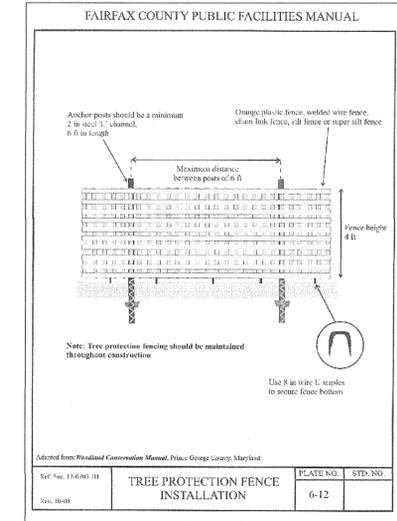
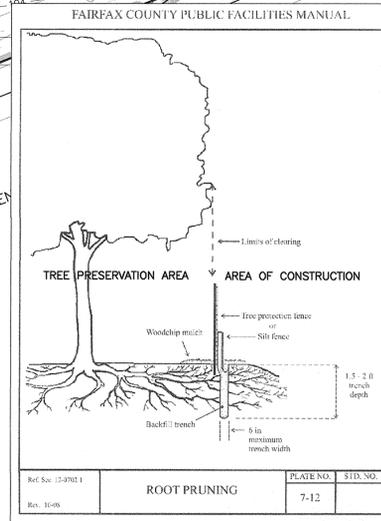
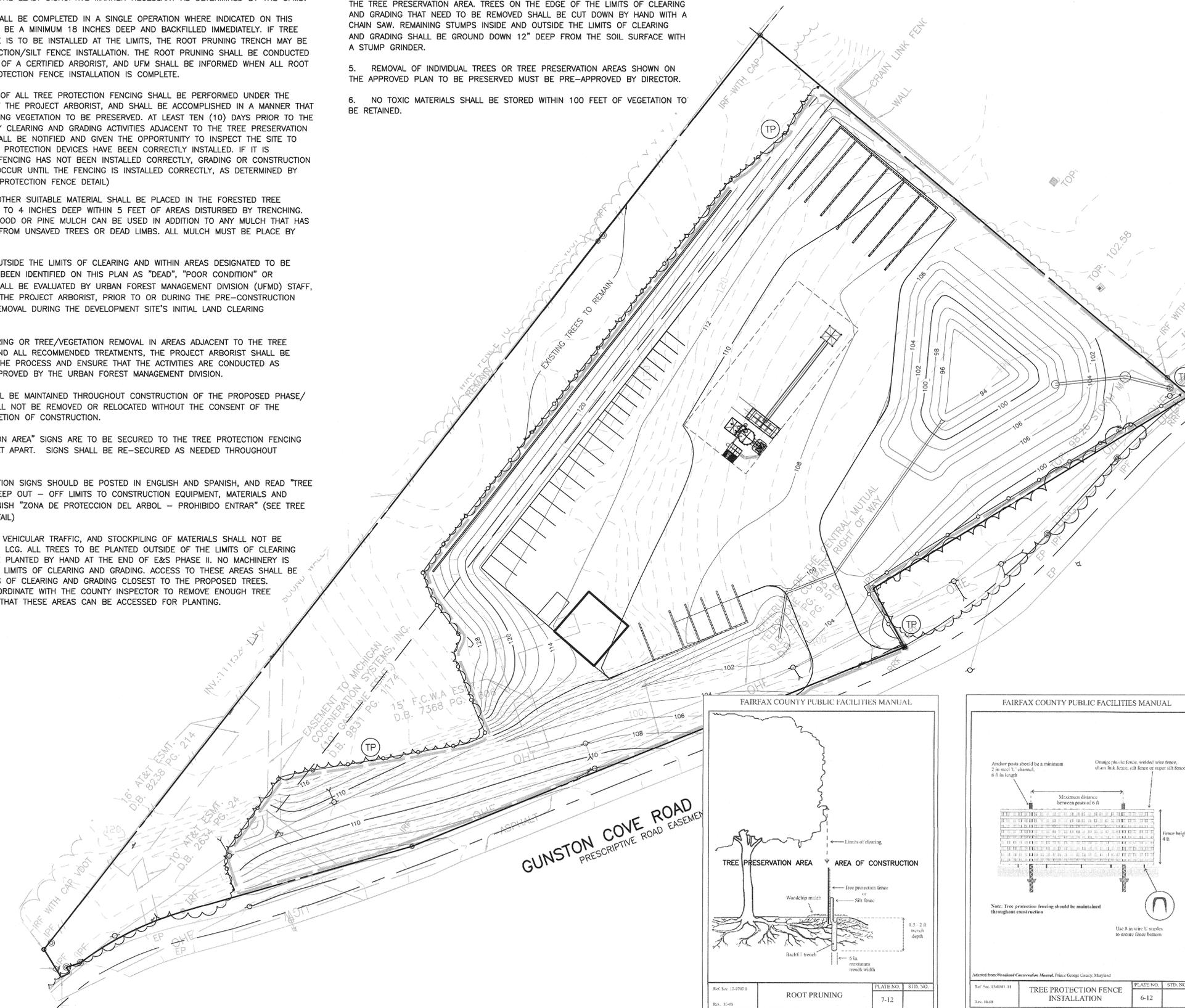
- LETTERS ARE ALWAYS TO BE IN CAPITALS AND ALWAYS BOLD.

- TREE PRESERVATION AREA SIGN TO BE POSTED IN ENGLISH AND SPANISH

TREE PRESERVATION SIGN DETAIL

10-YEAR TREE CANOPY CALCULATIONS

| Table 12.10 10-year Tree Canopy Calculation Worksheet | |
|---|--|
| A. Tree Preservation Target and Statement | |
| SEE SHEET 4 | |
| B. Tree Canopy Requirement | |
| B1 | Identify gross site area = 227,819 SF |
| B2 | Subtract area dedicated to parks, road frontage, and |
| B3 | Subtract area of exemptions = 0 |
| B4 | Adjusted gross site area (B1-B2) = 227,819 SF |
| B5 | Identify site's zoning and/or use = L-6 |
| B6 | Percentage of 10-year tree canopy required = 10% |
| B7 | Area of 10-year tree canopy required (B4 x B6) = 22,782 SF |
| B8 | Modification of 10-year Tree Canopy Requirements requested? NO |
| B9 | If B8 is yes, then list plan sheet where modification request is located |
| C. Tree Preservation | |
| C1 | Tree Preservation Target Area = 22,782 SF |
| C2 | Total canopy area meeting standards of 12-0400 = 60,332 SF |
| C3 | C2 x 1.25 = 75,415 SF |
| C4 | Total canopy area provided by unique or valuable forest or woodland communities = 0 |
| C5 | C4 x 1.5 = 0 |
| C6 | Total of canopy area provided by "Heritage," "Memorial," "Specimen," or "Street" trees = 0 |
| C7 | C6 x 1.5 to 3.0 = 0 |
| C8 | Canopy of trees within Resource Protection Areas and 100-year floodplains = 0 |
| C9 | C8 x 1.0 = 0 |
| C10 | Total of C3, C5, C7 and C9 = 75,415 SF |
| D. Tree Planting | |
| D1 | Area of canopy to be met through tree planting (B7-C10) = 0 |
| D2 | Area of canopy planted for air quality benefits = 0 |
| D3 | x 1.5 = 0 |
| D4 | Area of canopy planted for energy conservation = 0 |
| D5 | x 1.5 = 0 |
| D6 | Area of canopy planted for water quality benefits = 0 |
| D7 | x 1.25 = 0 |
| D8 | Area of canopy planted for wildlife benefits = 0 |
| D9 | x 1.5 = 0 |
| D10 | Area of canopy provided by native trees = 0 |
| D11 | x 1.5 = 0 |
| D12 | Area of canopy provided by improved cultivars and varieties = 0 |
| D13 | x 1.5 = 0 |
| D14 | Area of canopy provided through tree seedlings = 0 |
| D15 | x 1.0 = 0 |
| D16 | Area of canopy provided through native shrubs or woody seed mix = 0 |
| D17 | x 1.0 = 0 |
| D18 | Percentage of D14 represented by D15 = NA |
| D19 | Area of canopy provided with no multipliers = 17,920 SF |
| D20 | Total of canopy area provided through tree planting = 17,920 SF |
| D21 | Is an offsite planting relief requested? NO |
| D22 | Tree Bank or Tree Fund? NO |
| D23 | Canopy area to be requested to be provided through offsite banking or tree fund = 0 |
| D24 | Amount to be deposited into the Tree Preservation and Planting Fund = \$0.00 |
| E. Total of 10-year Tree Canopy Provided | |
| E1 | Total of canopy area provided through tree preservation (C10) = 75,415 SF |
| E2 | Total of canopy area provided through tree planting (D17) = 17,920 SF |
| E3 | Total of canopy area provided through offsite mechanism (D19) = 0 SF |
| E4 | Total of 10-year Tree Canopy Provided = 93,335 SF |



Dewberry Consultants LLC
8401 ARLINGTON BLVD.
FAIRFAX, VA 22031
703.849.0100 (PHONE)
703.849.0518 (FAX)

GUNSTON COVE ROAD
SPECIAL EXCEPTION PLAT
SE 2015-MV-019
 MOUNT VERNON DISTRICT
 FAIRFAX COUNTY, VIRGINIA



KEY PLAN

SCALE NORTH

SCALE IN FEET
1" = 40'

VCS-83

| No. | DATE | BY | Description |
|-----|---------|-----|------------------------|
| 2 | 8/20/15 | JMC | ADDRESS STAFF COMMENTS |
| 1 | 7/15/15 | JMC | ADDRESS STAFF COMMENTS |

REVISIONS

DRAWN BY: LNM

APPROVED BY: JMC

CHECKED BY: JMC

DATE: MARCH 2015

TITLE

PRELIMINARY TREE PRESERVATION PLAN AND DETAILS

PROJECT NO. # M-10858

GUNSTON COVE ROAD
SPECIAL EXCEPTION PLAT
SE 2015-MV-019
 MOUNT VERNON DISTRICT
 FAIRFAX COUNTY, VIRGINIA



KEY PLAN

SCALE NORTH
 SCALE IN FEET
 1" = 1 INCH
 VCS-83

| No. | DATE | BY | Description |
|-----|---------|-----|------------------------|
| 2 | 8/20/15 | JMC | ADDRESS STAFF COMMENTS |
| 1 | 7/15/15 | JMC | ADDRESS STAFF COMMENTS |

REVISIONS

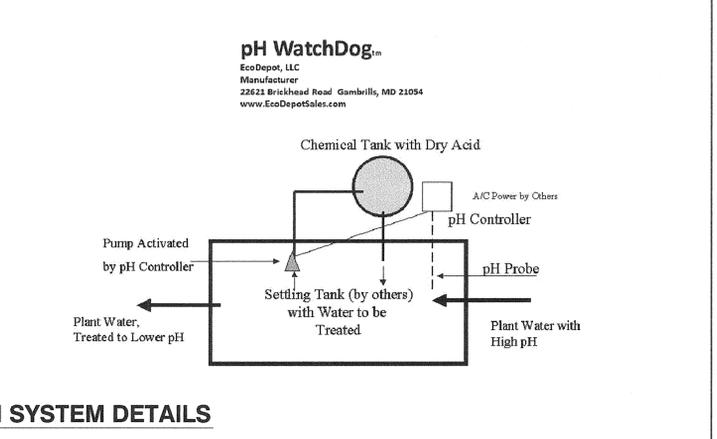
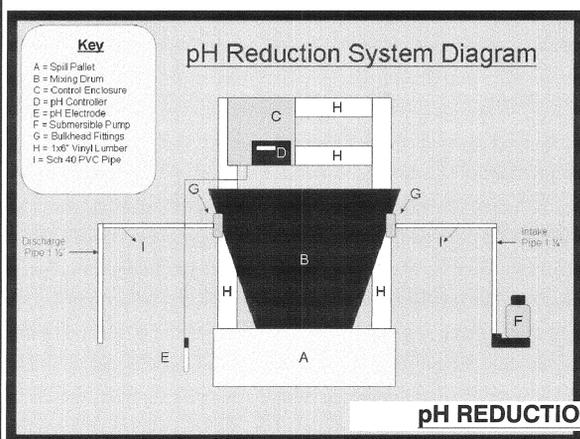
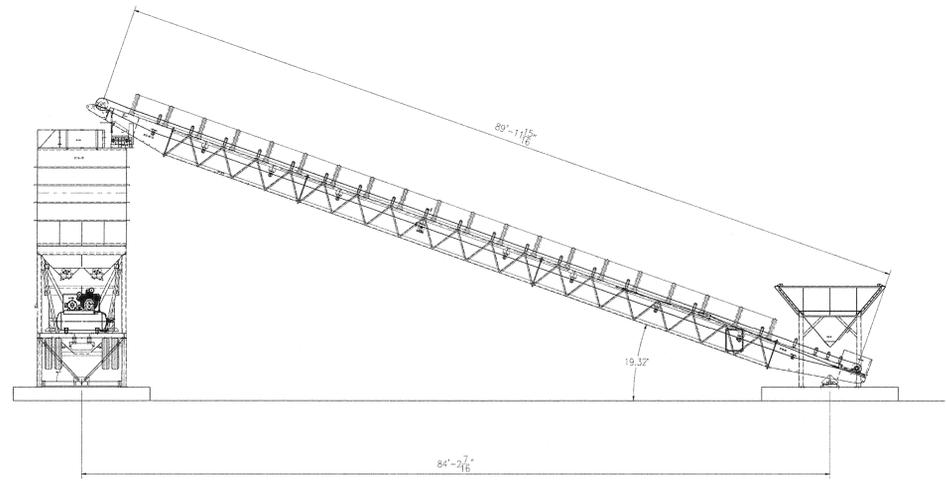
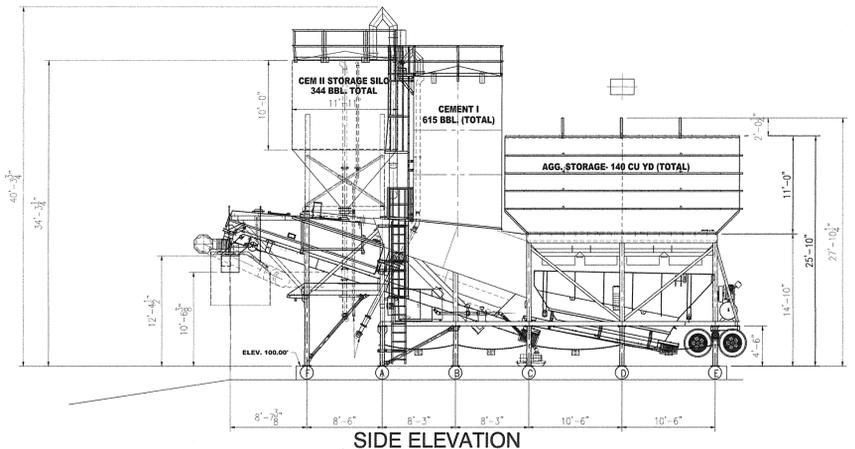
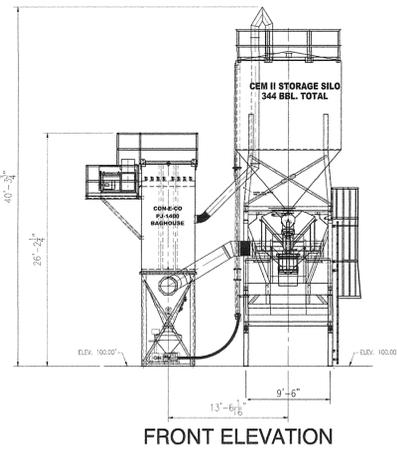
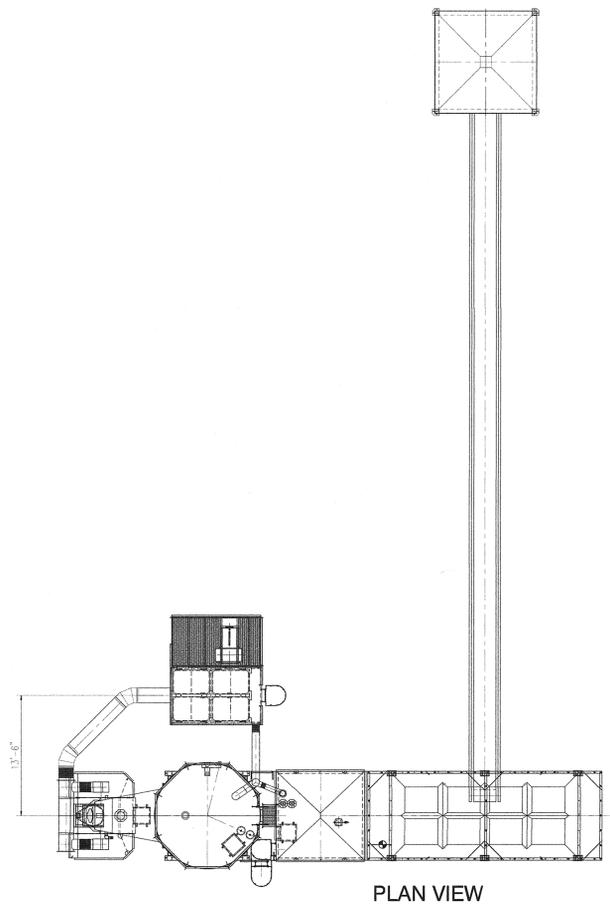
DRAWN BY: LNM
 APPROVED BY: JMC
 CHECKED BY: JMC
 DATE: MARCH 2015

TITLE
CONCRETE PLANT DETAILS

PROJECT NO. # M-10858

9

SHEET NO. 9 OF 9



pH REDUCTION SYSTEM DETAILS

DESCRIPTION OF THE APPLICATION

The applicant, Charles County Sand and Gravel Company, Inc., requests special exception (SE) approval to permit a heavy industrial use (concrete batching plant) with a silo 40.5 feet in height and accessory maintenance and office uses on the subject property located off Gunston Cove Road in Lorton. The subject property contains 5.33 acres and is split zoned I-6, Heavy Industrial and R-1, Residential, One Dwelling Unit per Acre, as shown in Figure 1. The special exception application request is limited to the I-6 portion of the 5.23-acre the property; the R-1 portion of the property is not a part of the application.



Figure 1: Subject property and surrounding area, Source: Fairfax County Aerial Photography

Development of the site also includes six aggregate storage bins, a truck washout area, a recycled concrete storage area, an above-ground fuel storage tank, and a truck parking area. The hours of operation are proposed to be 24 hours a day, Monday through Saturday with 10 employees including the concrete mixing truck drivers.

MODIFICATIONS

The applicant requests the following modifications of the Zoning Ordinance:

- Modification of Sects. 13-303 and 13-304 of the Zoning Ordinance for the transitional screening and barrier requirements to that shown on the SE Plat.

A reduction of the SE Plat is provided at the front of this staff report. Staff's proposed development conditions, the applicant's statement of justification and affidavit are provided as Appendices 1-3, respectively.

LOCATION AND CHARACTER

As shown in Figure 1, the subject property is located on the west side of Gunston Cove Road, south of its intersection with Lorton Road. The property is undeveloped and contains 5.33 acres and is split zoned I-6 and R-1. The property to the north is zoned I-6 and was approved in 2005 for a concrete batching plant, but the use was never established and the special exception approval has expired. To the east is the CSX railroad corridor (formerly known as the Richmond Fredricksburg Potomac Railroad corridor), to the south is property zoned I-6, and to the west is Interstate 95.

BACKGROUND

The property is not subject to any proffered conditions, special permit, or special exception approvals.

COMPREHENSIVE PLAN

Pages 92 through 94 of the Fairfax County Comprehensive Plan, 2013 Edition Area IV, Lower Potomac Planning District, LP2-Lorton-South Route 1 Community Planning Sector, amended through October 28, 2014, provide guidance for the subject property, as follows:

Land Unit F

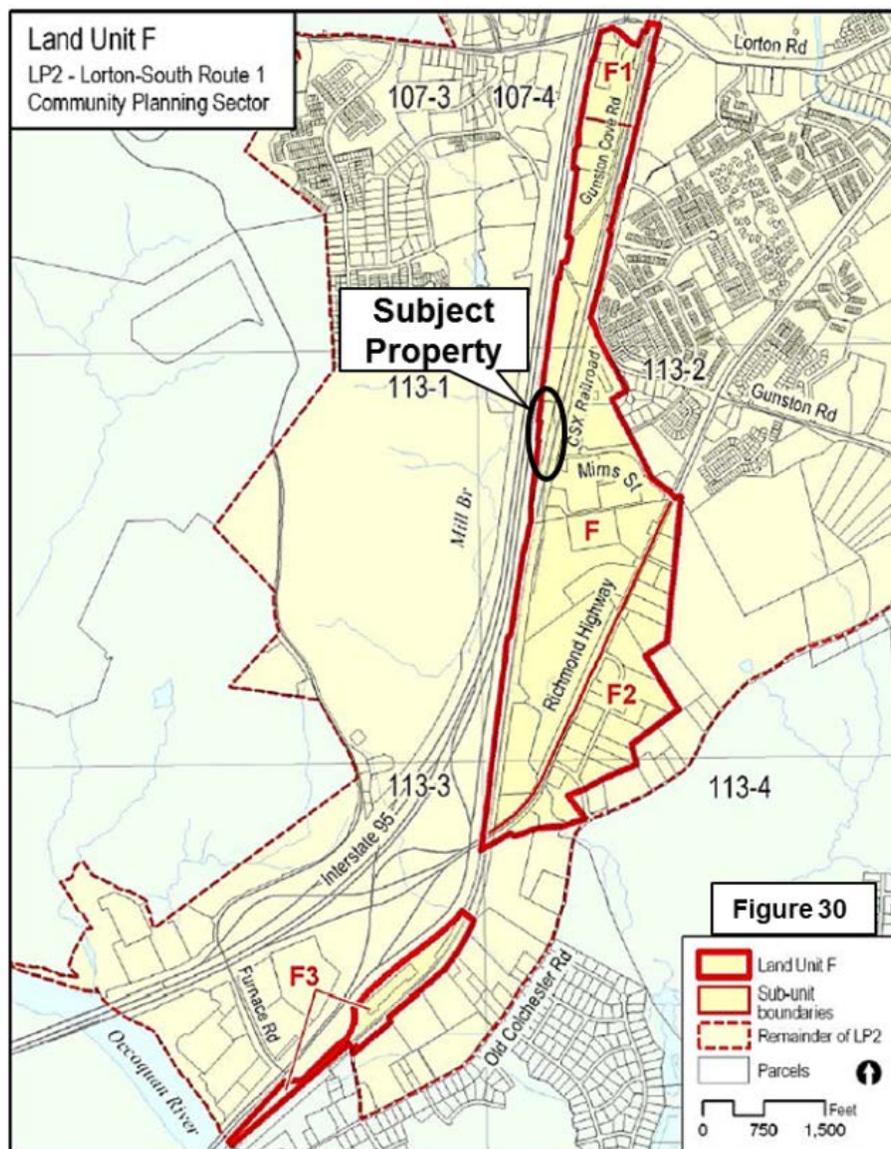
Land Unit F includes established and developing industrial uses adjacent to the CSX Railroad tracks and continues south of Mims Street to Hassett Street, incorporating properties fronting on both sides of Richmond Highway (see Figure 30). Existing uses include storage yards, warehouse/wholesale activities, a concrete batching plant and a metals recycling facility.

Future industrial development should complement the goals and objectives of the Lorton Plan, especially those with respect to upgrading the image of Lorton. Uses envisioned for this area include industrial/flex space uses, retail and other related business and employment uses. Industrial development should be of a type appropriate to specific sites in the areas; i.e., rail-using industries adjacent to rail siding tracks, vehicular-oriented industrial parks proximate to Route 1. Industrial uses adjacent to residential and other non-industrial uses should be enclosed, effectively

buffered and set back to minimize use conflicts. Maximum FARs should not exceed .35. Intensities and uses should generally transition down from the railroad tracks to Richmond Highway. Further expansion of industrial uses beyond the planned designation should not be allowed.

The area on the west side of Richmond Highway south of Mims Street is planned as a mixed industrial/office park developed as a single architectural whole to avoid the appearance of strip development. The total area should be consolidated and access to Richmond Highway should be limited by use of a service drive to a signalized intersection at Giles Run Road.

Strip development, free-standing retail uses, and/or automobile-oriented uses should not be allowed.



SPECIAL EXCEPTION PLAT ANALYSIS

The Special Exception Plat entitled “Gunston Cove Road,” was submitted by Dewberry Consultants LLC and consists of six sheets dated March 2015 and revised through August 20, 2015, and is reviewed below.

Site Layout

As shown in Figure 2, development of the site consists of a concrete batching plant with a silo 40.5 feet in height. An accessory office and driver’s room are located in the concrete batching plant for use by the plant manager and concrete mixing truck drivers. Six aggregate storage bins used to store aggregate materials, such as rock, sand, and gravel, which are used to make concrete and are located in the northwest area of the site. An overhead conveyor is located between the concrete batching plant and the aggregate storage bins and is used to transfer aggregate materials from the aggregate storage bins to the concrete batching plant.

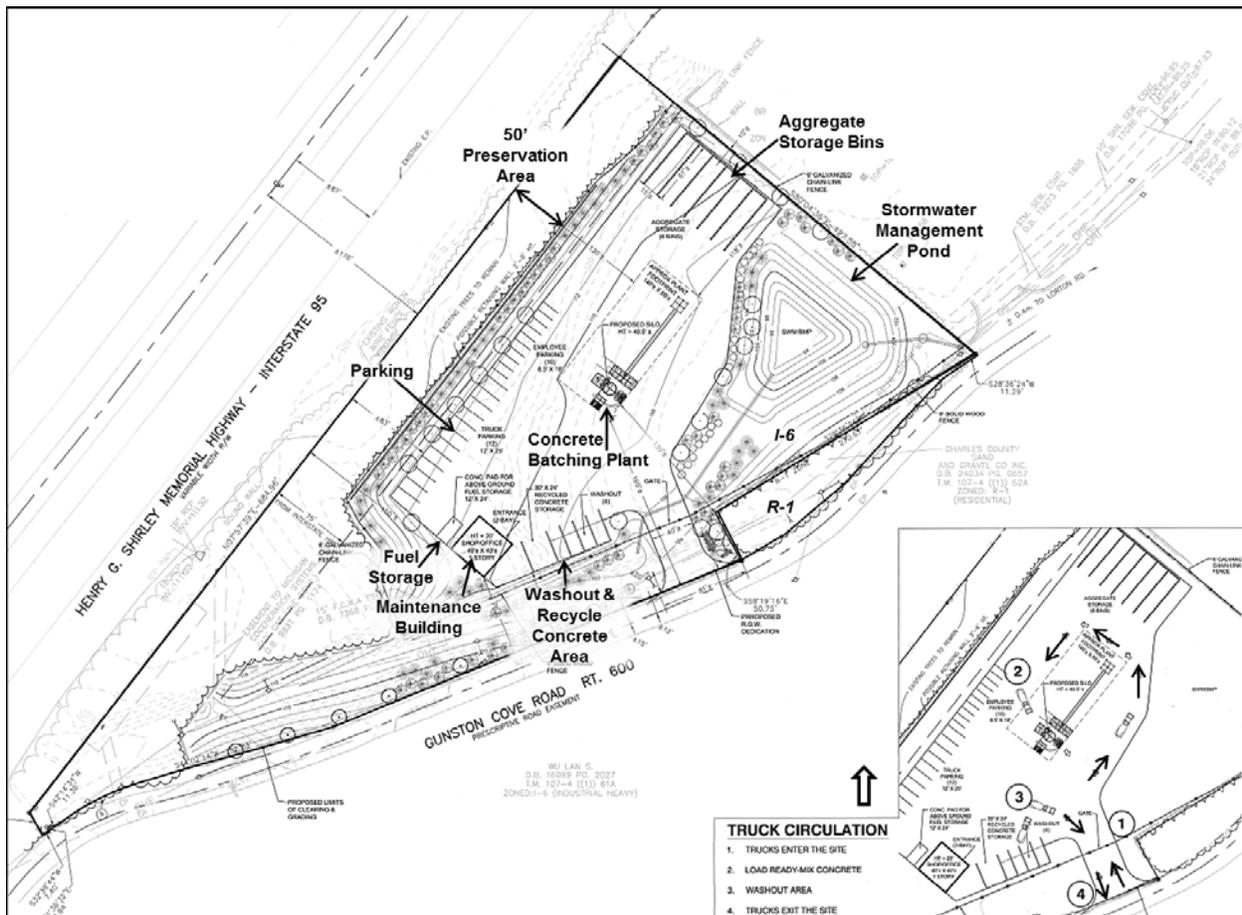


Figure 2: Site Layout, Source: SE Plat, Sheet 3

An accessory one-story, 1,600-square foot shop/office (maintenance) building with two service bays is located in the southeast area of the site. The maintenance building is

intended for storage of materials and equipment associated with the concrete batching plant and for the repair of on-site equipment and concrete mixing trucks. Truck repairs may include fixing flat tires, lights, and small mechanical repairs to the mixer drums. Adjacent to the maintenance building is a 288-square foot area for an above-ground fuel storage tank to serve the concrete mixing trucks that utilize the concrete batching plant.

A truck washout area is located adjacent to the site's entrance. The truck washout area is used to wash dust and debris from the concrete trucks before they leave the site. Adjacent to the truck washout area is a 720-square foot area for recycled concrete.

Access and Parking

Access to the site is provided off Gunston Cove Road, a public road, which has become a dead end road since the bridge at the southern end of the road washed out several years ago and there are no plans to repair the bridge. On-site circulation from Gunston Cove Road, involves concrete mixing trucks turning right into the site and proceeding in a counterclockwise direction to the concrete batching plant to be loaded. After a truck is loaded, it then proceeds to the washout area and exits the site, as shown in Figure 2. A total of 22 parking spaces is provided for both employee and concrete truck parking. No loading space is required.

Landscaping and Open Space

The subject property currently is undeveloped and covered with upland forest vegetation, which consists of Red Oak, Beech, Virginia Pine, Tulip Poplar, Red Maple, and Eastern Red Cedar species that are in fair condition. Ten percent of the existing tree canopy or 22,782 square feet will be preserved to meet the 10-year tree canopy requirement in the Public Facilities Manual (PFM). A total of 93,335 square feet of tree canopy is provided consisting of 75,415 square feet of tree preservation and 17,920 square feet of tree plantings.

To meet the interior parking lot landscaping requirement in the Zoning Ordinance and PFM, 5 percent or 1,611 square feet of the total area of the parking lot area is required to be provided. Interior parking lot landscaping consisting of 1,800 square feet and landscaped with nine Category IV deciduous trees is provided to meet the requirement.

No transitional screening is required along the northern property line; however, deciduous and evergreen trees are proposed. Along the eastern property line, a 50-foot setback is proposed adjacent to an R-1 area that will remain undeveloped.

Landscaping consisting of deciduous and evergreen trees are proposed in the northeast area of the site and along the site's Gunston Cove Road frontage with existing vegetation to remain. In the southern area of the site, no land disturbing activity is proposed and the existing vegetation is proposed to remain. Along the western property line, a 50-foot wide tree preservation area is provided and will serve as a transitional screening area to I-95 to the west. Additional landscaping consisting of Category III and II evergreen trees are proposed for additional screening. The applicant

is requesting modifications of the transitional screening and barrier requirements, which is discussed in more detail in the Modifications section of this report.

Approximately 31 percent or 1.66 acres is provided as open space, which exceeds the 10 percent or 0.52 acre requirement.

Stormwater Management

The phosphorous load reduction required is 3.25 pounds per year. Off-site nutrient credits are proposed to be purchased to satisfy the water quality requirement and 3.50 nutrient credits are available from the Resource Environmental Solutions Potomac nutrient facilities. In the event that nutrient credits are not available, water quality will be satisfied by a stormtech isolator row with bayfilter. These best management practice facilities satisfy 98 percent of the total phosphorous removal requirement.

The disturbed portion of the site outfalls to an existing storm sewer system that outfalls to an unnamed tributary to the Pohick Creek. Channel protection will be satisfied through the one-year energy balance (keeps pre-development the same by reducing peak flow rate if volume increases) to bring the site's hydrology back to a forested condition. A dry detention basin will provide water quantity control for the 2 and 10-year 24-hour storms and the 1-year energy balance.

ANALYSIS

Land Use Analysis (Appendix 4)

The subject property is located in Land Unit F in the LP2 Lorton-South Route 1 Community Planning Sector of the Comprehensive Plan. The Comprehensive Plan indicates that the Lorton-South Route 1 planning area is a southern "gateway" to Fairfax County and the National Capital Area. Areas of particular attention are identified and include the I-95/Lorton Road interchange area, which is approximately 3,000 feet from the subject property. Future development in the gateway areas are recommended to be located, designed, accessed, buffered, and screened, where necessary, to help further the attainment of the County's "gateway" concept. While this Planning Sector is part of the southern "gateway," industrial uses are not precluded from the Planning Sector. The Planning Sector also includes land use recommendations for industrial uses and identifies two areas for industrial uses; one of the two industrial areas includes Land Unit F, and states:

The second industrial area is adjacent to the CSX Railroad tracks to the west and continues south of Mims Street to Hassett Street, incorporating properties fronting on both sides of Richmond Highway. This area contains outdoor storage yards, warehouse activities, a concrete batching plant and a metals recycling center. A portion of the area remains undeveloped and provides an opportunity for future industrial uses. Infill,

redevelopment and new development in this area should be industrial flex/office and related commercial uses at a floor area ratio up to .35 which are compatible with the overall land use objectives of the Lorton Plan and which will promote an improvement in the image of Lorton.

As stated in the land use recommendations for industrial uses and in the recommendations for Land Unit F, a portion of the area remains undeveloped and provides an opportunity for future industrial uses. Both recommendations acknowledge existing outdoor storage yards, warehouse activities, a concrete batching plant, and a metals recycling facility in the industrial area and in the land unit. Both recommendations envision industrial and other related uses up to a maximum floor area ratio (FAR) not to exceed 0.35 and the concrete batching plant is proposed at a 0.007 FAR, which is below the maximum recommended FAR.

Further guidance is provided in the Land Unit F recommendations that industrial development should be of a type appropriate to specific sites and should be enclosed, effectively buffered, and set back to minimize use conflicts. Such recommendations support the southern “gateway” recommendations to locate, design, access, buffer, and screen future development and further support the land use objectives for the Planning Sector to provide access into the core of large parcels of industrial use so that these operations are shielded from view and to locate heavy industrial uses away from the roadways and add extensive landscaping, screening and/or buffering at the roadway edges.

To address the above land unit, southern “gateway,” and land use objective recommendations in the Comprehensive Plan, the concrete batching plant is proposed off Gunston Cove Road, which provides access from Lorton Road into a core area of parcels zoned and developed with industrial uses. Such industrial development includes vehicle repair, storage, and metal fabrication. The concrete batching plant is set back from roadways by approximately 130 feet from both Gunston Cove Road and I-95. Buffering along the site’s I-95 frontage is provided with the retention of an existing chain link fence and a 50-foot wide tree preservation area. Additional plantings are proposed to screen the use and consist of deciduous and evergreen trees and a 6-foot high galvanized chain-link fence along the western boundary that is part of a proposed security fence that surrounds the use. To screen and buffer the use from view along the site’s Gunston Cove Road frontage, a 6-foot high solid wood fence is proposed with a 50-foot wide transitional screening area along the site’s northeastern property line with landscaping plantings consisting of Category III and Category IV deciduous trees and Category I, II, and III evergreen trees. Such landscaping also is provided along 150 feet of the site’s northwestern property line to screen the use from view.

In addition to the buffers provided by the landscaping, transitional screening yards, and fencing, noise buffers are proposed to mitigate noise associated with the concrete batching plant. Such noise buffers include using “white noise” backup alarms on trucks instead of the normal “beep beep” alarms that are typical of heavy vehicles; a quieter concrete batching plant dust collector; and fabricated buffer shields around the dust

collector. To the extent feasible, parts of the concrete batching plant operations are enclosed, such as the maintenance building.

While the entire Planning Sector is a southern “gateway,” industrial uses such as the proposed concrete batching plant are appropriate in certain locations. For example, in 2005, the Board of Supervisors approved a concrete batching plant with a silo up to 75 feet in height on property directly to the north of the subject property. Such property also is zoned I-6, located within Land Unit F, and subject to the same Comprehensive Plan recommendations. Surrounding uses are developed with industrial uses such as an outdoor storage yard and warehouse activities.

In accordance with the Comprehensive Plan recommendations discussed above, the proposed use is located in an area developed, zoned, and planned for industrial uses; buffered and shielded from view with noise mitigation buffers provided; and set back and located away from the roadway edges of Gunston Cove Road and I-95. Such site design elements address the Planning Sector land use objectives, land use recommendations for industrial uses, and the Land Unit F recommendations. The site design also contributes to developing a positive image for the Lorton-South Route 1 area in an effort to further the attainment of the County’s “gateway” concept.

Environmental Analysis (Appendix 5)

The Environmental Element of the Policy Plan of the Comprehensive Plan provides objectives that encourage energy and water conservation and other green building practices with new and redevelopment projects.

As an industrial use, the proposed development does not fall clearly within a designated classification where conventional green building practices can be readily applied. In an effort to address the Comprehensive Plan’s guidance on green building practices, staff recommends that the applicant incorporate into the office building use of low-emitting adhesives, sealants, low-volatile organic compounds (VOC) products, and low-fume paints/coatings to improve air quality, energy-efficient toilets, and lighting systems. Staff has proposed a development condition to address this issue.

It is noted that the applicant participates in the National Ready Mixed Concrete Associations’ (NRMCA) Green-Star Certification Program, a collaborative program with the U.S. Environmental Protection Agency, which recognizes businesses within the ready mix concrete industry that have achieved or are actively working towards environmental excellence and/or a demonstrable reduction of environmental impacts, following the principles of sustainability. The applicant’s Hollywood and Queenstown, Maryland concrete plants have obtained the Green-Star certification and are continuously audited by inspectors to ensure continued compliance. The applicant indicated that the proposed concrete batching will be designed and operated under this program. Appendix 2G provides additional information on the Green Star program.

Transportation Analysis (Appendix 6)

The applicant has addressed the Fairfax County Department of Transportation (FCDOT) and the Virginia Department of Transportation's (VDOT) comments to adequately show the on-site truck circulation and 15-foot right-of-way dedication from the centerline of Gunston Cove Road.

FCDOT notes that the level of service at the intersection of Lorton Road and Gunston Cove Road is C in the A.M. peak hour and D in the P.M. peak hour and recommends that trucks from the site should avoid the peak hours. In response, the applicant indicates that because the design of the concrete batching plant only permits one truck to be loaded at any one time, the time between trucks exiting the site is approximately 10 minutes; therefore, no more than six trucks per hour are anticipated. At the intersection of Gunston Cove Road and Lorton Road, the traffic signal cycle is timed at approximately four minutes per full cycle. No more than one truck is anticipated to approach the intersection of Gunston Cove Road and Lorton Road for every two traffic signal cycles, which minimizes the impact of the trucks generated by the proposed use on the intersection.

While neither FCDOT nor VDOT indicated an issue with truck traffic on Lorton Road from this application, community interest in such a restriction was expressed and FCDOT summarized the process for such a restriction in Appendix 6. A through truck restriction is a separate process through the Board of Supervisors and the Commonwealth Transportation Board (CTB) and additional information is available at: <http://www.virginiadot.org/programs/resources/TTRGUIDELINE101603.pdf>

Urban Forest Management Analysis (Appendix 7)

To address invasive species management, monitoring practices for tree preservation, and use of only 14-gauge welded wire fencing or super silt fencing, staff has proposed development conditions on these issues. All other staff comments have been addressed.

Transitional Screening 3, a 50-foot wide transitional screening area, is required along the eastern property line, adjacent to the R-1 area and along the western property line. The applicant is requesting modifications of the transitional screening and barrier requirements and is discussed in more detail in the Modifications section of this report.

Stormwater Analysis (Appendix 8)

There are no resource protection or floodplain areas on-site. To address phosphorous removal, the applicant provided a letter from Resource Environmental Solutions, a nutrient credit provider, confirming the availability of nutrient credits. In the event that nutrient credits are not available during the site plan review, the applicant proposes to provide an onsite best management practice facility consisting of a stormtech isolator row with bayfilter to address the water quality requirement.

To address stormwater detention, the applicant is proposing an on-site detention facility with an 83,000 cubic feet storage capacity to meet the 2- and 10-year, 24-hour storm event requirement. A narrative and a summary of computations to demonstrate how the concentrated stormwater flow will be released into a stormwater conveyance system is not required at the time of zoning approval; however, will be required along with the details of the hydrological and hydraulic computations during site plan review.

Park Authority Analysis (Appendix 9)

The subject property contains a Virginia Department of Historic Resources site, identified as 44FX1107 in the southern tip of site, which is a Native American site of unknown temporal period (no diagnostic artifacts). While no land disturbing activities are proposed in this area, the Park Authority recommends that the applicant conduct a Phase I archaeological study and any needed follow-up studies in areas of the site that may be disturbed. Staff has proposed a development condition to address this issue.

ZONING ORDINANCE PROVISIONS

Staff review of the applicable Zoning Ordinance provisions is based on Sect. 9-006 of the Zoning Ordinance, General Standards, which provides that all such uses shall satisfy the general standards for special exception uses. In addition to the general special exception standards, special exception uses must satisfy specific use standards and any applicable additional standards. The proposed concrete batching plant is a Category 5 special exception use and the following is an analysis of the use standards, followed by the Additional Standards for Heavy Industrial Uses and General Standards.

Standards for all Category 5 Uses (Sect. 9-503)

Standard 1: Except as qualified in the following Sections, all uses shall comply with the lot size and bulk regulations of the zoning district in which located.

The subject property is located in the I-6 District. The table below provides the lot size and bulk regulations for the I-6 District.

| Lot Size/Bulk Regulations | I-6 District Requirements | Proposed Development |
|----------------------------------|--|--|
| Minimum Lot Area | 20,000 square feet | 5.23 acres |
| Minimum Lot Width | 100 feet | 876.16± feet |
| Maximum Building Height | 75 feet | 40.5 feet |
| Minimum Yards | Front: 45° angle of bulk plan, but not less than 40 feet Side: No requirement Rear: No requirement | Front Yard: 60± feet Side Yard: 10± feet Rear Yard: 83± feet |
| Maximum FAR | 0.50 | 0.007 |

Table 1: I-6 District Lot Size and Bulk Regulations, Source: Fairfax County Zoning Ordinance, Article 5

Standard 2: All uses shall comply with the performance standards specified for the zoning district in which located, including the submission of a sports illumination plan or photometric plan as may be required by Part 9 of Article 14.

The application is subject to the performance standards in Article 14. A sports illumination plan and photometric plan are not required with this application.

Standard 3: Before establishment, all uses, including modifications or alterations to existing uses, shall be subject to the provisions of Article 17, Site Plans.

The application is subject to Article 17.

Additional Standards for Heavy Industrial Uses (Sect. 9-511)

Additional Standard 1: Each applicant for a heavy industrial use shall provide with his application an evaluation of his proposed use, by a person or firm qualified to make such evaluations, indicating how the use can be made to comply with the applicable performance standards in Article 14.

The performance standards in Article 14 include standards for air pollution, fire and explosive hazards, liquid and solid waste, noise standards, and outdoor lighting standards, among other performance standards. The application is subject to the performance standards in Article 14. The applicant retained several consultants, one of which specializes in noise impacts. The consultants' analysis is provided in Appendices 2A, 2D, 2E, and 2F and discussed in the General Standards section of this report.

An above-ground fuel storage tank is proposed to serve trucks utilizing the concrete batching plant, and as applicable, is subject to Title 40, Code of Federal Regulations, Parts 116.4, 302.4, and 355; the Virginia Department of Environmental Quality Hazardous Waste Management Regulations; any petroleum products as defined in Title 40, Code of Federal Regulations, Part 280, and any other applicable regulations.

Building mounted lights are proposed and are subject to the Outdoor Lighting Standards in Article 14 of the Zoning Ordinance.

Additional Standard 2: The Board may, in approving a special exception for a heavy industrial use, establish additional yard requirements, landscaping and screening and other standards that, in the opinion of the Board, will affect compatibility with the surrounding community.

The surrounding area is developed and planned for industrial uses. The proposed use meets the minimum yard requirements for the I-6 District, as shown in Table 1. An existing 50-foot wide vegetated area along the western property line is proposed to remain and additional landscaping is proposed to further buffer the western area of the site. Along the southern property line, existing vegetation also is proposed to remain. Landscaping is provided along the site's Gunston Cove Road frontage and in the

northeast area between the concrete batching plant and the stormwater management pond to screen the batching plant from Gunston Cove Road. The R-1 area is intended to remain undeveloped and provides an additional buffer and screening to the proposed use. The applicant is requesting a modification of the transitional screening requirement along the R-1 area and along the western property line, which is discussed in more detail in the Modifications section of this report.

General Standards (Sect. 9-006)

In addition to the standards for all Category 5 uses, all proposed special exception uses also need to satisfy the following special exception general standards. The following provides an analysis of the general standards.

General Standard 1: The proposed use at the specified location shall be in harmony with the adopted comprehensive plan.

As previously discussed in the Land Use section, the proposed use is in harmony with the adopted Comprehensive Plan.

General Standard 2: The proposed use shall be in harmony with the general purpose and intent of the applicable zoning district regulations.

The subject property is located in the I-6 District, which is the only zoning district that permits heavy industrial uses, such as the proposed concrete batching plant, with special exception approval. The purpose and intent of the I-6 District is to provide areas for heavy industrial activities with minimum performance standards where the uses may require that some noise, vibration and other environmental pollutants must be tolerated, and where the traffic to and from the district may be intensive. This district is intended for use by the largest manufacturing operations, heavy equipment, construction and fuel yards, major transportation terminals and other basic industrial activities required in an urban economy.

As stated above, the Zoning Ordinance permits some noise to be tolerated with heavy industrial activities. To address noise impacts from the proposed use, the applicant hired Phoenix Noise & Vibration, an acoustical consultant, to perform a noise impact analysis with respect to neighboring residential properties. A copy of the noise impact analysis is provided as Appendix 2F. The consultant's analysis included noise measurements of the proposed plant equipment, computerized noise modeling, and analysis of expected plant noise with the County's noise regulations. In summary, the noise analysis concluded that the concrete batching plant will contain multiple noise sources that generate high levels of noise; however, most of the noise sources operate for short periods of time and the noise analysis states that it is unlikely that all potential noise sources from the use will operate simultaneously. If that occurs, the consultant indicated that noise levels from the concrete batching plant, as measured at neighboring residential structures, should not exceed the applicable County noise regulations. The subject property is approximately 410 to 500 feet away from the nearest residential

property and is adjacent to the CSX railroad corridor and Lorton Market Street. The consultant's analysis notes that these are two significant noise sources and the residential properties are exposed to noise levels much higher than those expected from the concrete batching plant. The proposed use will have to be in conformance with Article 14 of the Zoning Ordinance and cannot exceed the County's noise standards. Staff has proposed a development condition to address this issue.

In addition, the applicant indicates use of "white noise" backup alarms on its trucks instead of the normal "beep beep" alarms that are typical of heavy vehicles. These backup alarms are designed to direct sound to the back of the moving vehicle instead of a general all-encompassing alarm that could be heard from the surrounding area. Staff has proposed a development condition for use of the "white noise" backup alarms on the applicant's trucks.

To address environmental impact from the proposed use, the applicant indicated use of a quieter dust collector and a fabricated buffer shield around the collector to mitigate its noise. Another environmental practice proposed is to recycle unused concrete and an area for such concrete is provided on-site. A truck washout area also is included to wash debris and dust from the trucks before leaving the site. The washout area includes a system to address discharge waters with high pH levels (alkaline). Such waste water is confined in a holding area where the pH of the water is determined; high pH water is piped into a storage tank and neutralized.

As stated above, the purpose and intent of the I-6 District is to provide areas for heavy industrial activities where the traffic to and from the district may be intensive. According to the applicant's traffic analysis, the proposed use generates approximately 94 total average daily trips, which includes 37 truck trips and 10 employee vehicle trips. FCDOT and VDOT did not indicate that the truck traffic generated as being intensive.

The I-6 District provides areas for heavy industrial activities and recognizes that such uses may include some noise, environmental pollutants, and traffic that may be intensive. The applicant has provided mitigations for such impacts. In staff's opinion with the proposed development conditions, the proposed use is in harmony with the general purpose and intent of the I-6 District.

General Standard 3: The proposed use shall be such that it will be harmonious with and will not adversely affect the use or development of neighboring properties in accordance with the applicable zoning district regulations and the adopted comprehensive plan. The location, size and height of buildings, structures, walls and fences, and the nature and extent of screening, buffering and landscaping shall be such that the use will not hinder or discourage the appropriate development and use of adjacent or nearby land and/or buildings or impair the value thereof.

As previously discussed in the Land Use section, the subject property is located in an area that the Comprehensive Plan identifies as an area for industrial uses. The subject property is zoned I-6, which permits heavy industrial uses, such as the proposed

concrete batching plant with special exception approval. Neighboring properties are zoned I-6 and developed with industrial uses.

In response to community concern on potential impacts from the proposed use to residential properties to the east of the CSX railroad corridor, which are approximately 410 to 500 feet away, the applicant has made several site design and operational changes. To minimize the potential visibility of the concrete batching plant silo, the applicant initially proposed a taller height, but in response to community concerns, reduced the height to 40.5 feet. The maximum building height permitted in the I-6 District is 75 feet.

In addition, the applicant hired a consultant specializing in visual impact surveys to conduct a balloon fly at the site and to analyze the visual impact of the proposed 40.5-foot high concrete batching plant silo on nearby residences. A red balloon, measuring five feet in diameter, was raised in the proposed location of the concrete batching plant and aerial photographs were taken at various vantage points, as shown in Appendix 2D. The photographs demonstrate that the balloon was not visible from the vantage points. To address community concerns about visual impact, upon the recommendation of the applicant's consultant, the applicant is proposing to paint the concrete batching plant Dunes/Desert Tan from the CON-E-Co custom colors, as shown in the color palate in Appendix 2E. This shade of brown is intended to blend well in the summer and winter months. In addition, the maintenance building is proposed to be painted tan to blend with the surrounding trees and foliage. To further minimize the industrial appearance of the concrete batching plant, the applicant proposes to utilize solid shields over the majority of the mechanical components of the plant to minimize its industrial appearance.

Landscaping consisting of Category I through IV deciduous and evergreen trees and evergreen shrubs are proposed to screen the use. A buffer consisting of a solid 6-foot high wooden fence is proposed along the site's Gunston Cove Road frontage, adjacent to the R-1 area. Additional landscaping is provided along the northern property line and along the eastern property line to screen the use. Along the southern and western property lines, existing vegetation is proposed to remain with additional landscaping provided. With the proposed development conditions, the use is not anticipated to hinder or discourage the appropriate development and use of adjacent or nearby land and/or buildings or impair the value thereof.

General Standard 4: The proposed use shall be such that pedestrian and vehicular traffic associated with such use will not be hazardous or conflict with the existing and anticipated traffic in the neighborhood.

Limited or no pedestrian traffic is anticipated with the proposed use. The applicant conducted a traffic analysis to evaluate the anticipated traffic from the proposed use. According to the applicant's traffic analysis, the use generates approximately 94 total average daily trips, which includes 37 truck trips and 10 employee vehicle trips. The applicant's traffic analysis indicates that the proposed use is anticipated to generate

11 AM peak hour and 12 PM peak hour trips, based upon the Institute of Transportation Engineers (ITE) 9th Edition rates. However, because the design of the concrete batching plant only permits one truck to be loaded at any one time, the time between trucks exiting the site is approximately 10 minutes; therefore, no more than six trucks per hour are anticipated. At the intersection of Gunston Cove Road and Lorton Road, the traffic signal cycle is timed at approximately four minutes per full cycle. No more than one truck is anticipated to approach the intersection of Gunston Cove Road and Lorton Road for every two traffic signal cycles, which minimizes the impact of the trucks generated by the proposed use on the intersection. The applicant anticipates that drivers using the proposed concrete batching plant will primarily serve customers in Fairfax and Prince William Counties.

The Virginia Department of Motor Vehicles' guidelines indicate that with a permit for vehicles mixing concrete in transit, at a project site, or for transporting necessary components to produce concrete immediately upon arrival at a project site, the maximum gross weight allowed for concrete trucks is 70,000 pounds with a minimum axle space of 22 feet. A five percent extension of the gross weight is permitted with an overload permit or up to 73,500 pounds. The applicant ordered six new concrete mixer trucks whose weight and load will be within the federal and state weight limits. The applicant's purchase order, truck design, and weight calculations are provided as Appendix 2C.

In addition and as previously discussed, the applicant indicated the use of "white noise" backup alarms on its trucks instead of the normal "beep beep" alarms that are typical of heavy vehicles. These backup alarms are designed to direct sound to the back of the moving vehicle instead of a general all-encompassing alarm that could be heard from the surrounding area. Staff has proposed a development condition for use of the "white noise" backup alarms on the applicant's concrete mixing trucks. With the proposed development conditions, pedestrian and vehicular traffic associated with the use is not anticipated to be hazardous or conflict with the existing and anticipated traffic in the area.

General Standard 5: In addition to the standards which may be set forth in this Article for a particular category or use, the Board shall require landscaping and screening in accordance with the provisions of Article 13.

As previously discussed, landscaping consisting of Category I through IV deciduous and evergreen trees and evergreen shrubs are proposed to screen the use. Peripheral parking lot landscaping is provided along the northern property line along with Category II evergreen trees and a Category IV deciduous tree. A 50-foot wide transitional screening yard is provided along the northeastern property line, adjacent to the R-1 area. The R-1 area is not intended to be cleared and the existing vegetation from the R-1 area provides an additional landscape buffer between the proposed use and Gunston Cove Road. In addition, between the 50-foot wide transitional screening yard and Gunston Cove Road, adjacent to the R-1 area, the applicant is proposing to provide a 6-foot high solid wood fence to further screen the use from Gunston Cove

Road. Landscaping also is provided along the site's southeastern property line to screen the use from Gunston Cove Road. Existing vegetation is proposed to remain in the southern area of the site. An existing 50-foot wide vegetated area along the western property line is proposed to remain with additional landscaping and peripheral parking lot landscaping provided to further buffer the western area of the site.

General Standard 6: Open space shall be provided in an amount equivalent to that specified for the zoning district in which the proposed use is located.

The I-6 District requires that 10 percent of the gross area shall be landscaped open space. The applicant is providing 31 percent (1.66 acres) and meets the open space requirement.

General Standard 7: Adequate utility, drainage, parking, loading and other necessary facilities to serve the proposed use shall be provided. Parking and loading requirements shall be in accordance with the provisions of Article 11.

Adequate utility, drainage, and parking are available and provided to serve the proposed development. Water and sanitary service are available in proximity to the site and will be extended to serve the proposed use.

General Standard 8: Signs shall be regulated by the provisions of Article 12; however, the Board may impose more strict requirements for a given use than those set forth in this Ordinance.

A building mounted sign is proposed and is subject to Article 12 of the Zoning Ordinance.

MODIFICATIONS

Modification of Sects. 13-303 and 13-304 of the Zoning Ordinance for the transitional screening and barrier requirements to that shown on the SE Plat

The subject property is split zoned I-6 and R-1 and the application area is limited to the I-6 portion of the site. Since a portion of the site is zoned R-1, Transitional Screening 3 is required adjacent to the R-1 area and such screening consists of an unbroken strip of open space a minimum of 50 feet wide and planted with a mixture of large evergreen and large deciduous trees and medium evergreen shrubs, as described in Sect. 13-303 of the Zoning Ordinance.

Along the eastern property line, adjacent to the area zoned R-1, the applicant requests a modification of the transitional screening planting requirements due to the location of storm drain easements and existing overhead and underground utilities; the applicant is not able to provide the full planting requirement. The applicant is providing the required 50-foot wide transitional screening width and does not intend to develop the R-1 portion

of the parcel, which would remain vegetated and would provide an additional buffer. A wood fence is proposed between the dry pond and the R-1 area to buffer and screening for the proposed use.

Along the northeastern property line, north of the site's entrance, the applicant requests a modification of the 50-foot wide transitional screening width and planting requirement in favor of a 15 to 25-foot wide transitional screening width with a mixture of evergreen and deciduous trees and evergreen shrubs. The applicant also requests a modification of the barrier requirement in this same area. A barrier would impede the sight distance from the site's entrance.

Along the western property line, Transitional Screening 3 and Barrier D, E, or F are required. As previously discussed, Transitional Screening 3 consists of an unbroken strip of open space a minimum of 50 feet wide and planted with a mixture of large evergreen and large deciduous trees and medium evergreen shrubs, as described in Sect. 13-303 of the Zoning Ordinance. Barrier D consists of a 42 to 48-inch chain link fence; Barrier E consists of a 6-foot wall, brick or architectural block; and Barrier F consists of a 6-foot high solid wood or otherwise architecturally solid fence. The applicant requests a modification of the transitional screening planting requirement in favor of retaining existing vegetation 50 feet in width. Peripheral parking lot landscaping is proposed along the western property line to screening the parking area, which also serves as an additional screening in the western area of the site. A 6-foot high galvanized chain-link fence is proposed in lieu of the barrier requirement. Staff does not object to the requested modifications.

CONCLUSIONS AND RECOMMENDATIONS

Staff Conclusions

The concrete batching plant is proposed in an area zoned for heavy industrial uses and developed with such uses. The Comprehensive Plan identifies the LP2-Lorton-South Route 1 Community Planning Sector as a southern "gateway" area, but does not preclude the development of industrial uses; guidance is provided for industrial uses and two industrial areas are specifically identified in the Planning Sector. The concrete batching plant is proposed on property located in one of the two recognized industrial areas. To address community concerns, the applicant hired several consultants to perform visual, noise, and transportation studies to better evaluate the potential impact of the proposed development on the surrounding area. As discussed, several mitigation measures are proposed and reflected as development conditions.

The proposed site layout, landscaping, screening, buffering, and noise mitigation measures address the Comprehensive Plan recommendations. In staff's opinion, the proposed concrete batching plant is in harmony with the Comprehensive Plan and in conformance with the applicable Zoning Ordinance provisions with the staff proposed development conditions contained in Appendix 1 of the staff report.

Staff Recommendations

Staff recommends approval of SE 2015-MV-019, subject to the approval of the proposed development conditions contained in Appendix 1 of the staff report.

Staff recommends approval of a modification of Sects. 13-303 and 13-304 of the Zoning Ordinance for the transitional screening and barrier requirements to that shown on the SE Plat.

It should be noted that it is not the intent of staff to recommend that the Board, in adopting any conditions proffered by the owner, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

It should be further noted that the content of this report reflects the analysis and recommendations of staff; it does not reflect the position of the Board of Supervisors.

APPENDICES

1. Proposed Development Conditions
2. Statement of Justification
- 2A. Traffic Analysis
- 2B. Distance Analysis
- 2C. Purchase Order and Truck Design
- 2D. Balloon Test
- 2E. Color Palate
- 2F. Noise Impact Analysis
- 2G. Green Star Certification Program
3. Affidavit
4. Land Use Memorandum
5. Environmental Review Memorandum
6. Transportation Memorandums
7. Urban Forest Management Division Memorandum
8. Stormwater Management Memorandum
9. Park Authority Memorandum
10. Glossary

PROPOSED DEVELOPMENT CONDITIONS**SE 2015-MV-019****January 7, 2016**

If it is the intent of the Board of Supervisors to approve SE 2015-MV-019 located at Tax Map 107-4 ((1)) 62A part, to allow a heavy industrial use (concrete batching plant) pursuant to Sects. 5-604 and 9-511 of the Zoning Ordinance, staff recommends that the Board of Supervisors condition its approval by requiring conformance with the following development conditions:

1. This Special Exception is granted for and runs with the land indicated in this application and is not transferrable to other land.
2. This Special Exception is granted only for the purpose(s), structure(s) and/or use(s) indicated on the Special Exception Plat approved with the application, as qualified by these development conditions.
3. A copy of the Non-Residential Use Permit (Non-RUP) shall be posted in a conspicuous place on the property of the use and be made available to all departments of the County of Fairfax during the hours of operation of the permitted use.
4. This Special Exception is subject to the provisions of Article 17 of the Zoning Ordinance, as may be determined by the Director, Department of Public Works and Environmental Services (DPWES). Any plan submitted pursuant to this Special Exception shall be in substantial conformance with the approved Special Exception Plat entitled "Gunston Cove Road," was submitted by Dewberry Consultants LLC and consists of six sheets dated March 2015 and revised through August 20, 2015, and these conditions.
5. The site plan for the concrete batching plant shall include both the I-6 and R-1 portions of the subject property.
6. The applicant shall dedicate at no cost and conveyance in fee simple with no encumbrances to the Board of Supervisors right-of-way up to 15 feet from the center line of Gunston Cove Road for tax map 107-4 ((1)) 62A part (including both the R-1 and I-6 portions of the property) prior to site plan approval. The applicant retains density credit as may be permitted in Par. 4 of Sect. 2-308 of the Zoning Ordinance.
7. The hours of operation are permitted to be 24-hours a day, Monday through Saturday.
8. No vehicle major service work shall be permitted on the subject property.

9. The concrete batching plant shall be a maximum of 40.5 feet in height.
10. The concrete batching plant silo and shop/office building shall be painted a shade of brown to mitigate the visual impact and blend with surrounding trees and foliage.
11. To the extent feasible, solid surfaces of the concrete mixing plant shall be shielded with fabricated buffer shields or similar shields to mitigate plant noise. Areas where such shields shall be placed and a demonstration of noise mitigation shall be provided to the Department of Public Works and Environmental Services (DPWES) at the time of site plan submission.
12. The outdoor storage of aggregate material shall be located on a concrete slab and enclosed on three sides.
13. A dust collector system shall be used to reduce dust to and from the concrete batching plant. The applicant shall demonstrate the mitigation of dust and noise from the dust collector at the time of site plan submission to the Department of Public Works and Environmental Services at the time of site plan submission.
14. Prior to the issuance of a Non-Residential Use Permit (Non-RUP) for the concrete batching plant, a truck washout area shall be installed in the area shown on the Special Exception Plat. All trucks leaving the property shall be rinsed in the washout area. The washout system shall include a system to treat and dispose of wastewater to address discharge waters with high pH levels.
15. White noise backup alarms designed to direct sound specifically to the back of the truck shall be installed on the applicant's concrete mixing trucks and shall be used instead of backup alarms that produce a "beep, beep" sound.
16. Concrete mixing trucks shall be parked on-site at all times and not on Gunston Cove Road.
17. The maximum number of employees and company vehicles (concrete mixing trucks) shall be coordinated to ensure compliance with the parking requirements in Article 11 of the Zoning Ordinance.
18. The above-ground fuel storage tank shall be subject to applicable Federal, State, and County regulations for hazardous and/or toxic substances that generate, utilize, store, treat, and/or are disposed of as set forth in applicable federal, state, and local regulations.
19. To the extent feasible, the applicant shall use building materials that have been produced or manufactured within 500 miles of the subject property and shall provide proof of installation and invoice receipts, with manufacturer's data

showing the production or manufacturing location to the Chief of the Environment and Development Review Branch in the Department of Planning and Zoning prior to the issuance of a Non-Residential Use Permit (Non-RUP).

20. The applicant shall install only LED or fluorescent lamps in all interior building lighting fixtures. The applicant shall provide a maximum lighting power allowance of 1.25 watts/square foot (code maximum is 1.5 watts/square foot for retail area and 0.9 watts/per square foot for the service department area). The applicant shall provide proof of installation, energy usage calculations and manufacturers' product data to the Chief of the Environment and Development Review Branch in the Department of Planning and Zoning prior to Non-RUP.
21. The applicant shall use low-emitting materials for all adhesives, sealants, paints, coatings, flooring systems, composite wood, and agrifiber products, as well as furniture and furnishings if available. Low-emitting is defined according to the following table (again written for the specific case):

| | |
|-----------------------------------|----------------------------|
| • Application | (VOC Limit g/L less water) |
| • Carpet Adhesive | 50 |
| • Rubber floor adhesive | 60 |
| • Ceramic tile adhesive | 65 |
| • Anti-corrosive/ anti-rust paint | 250 |
| • Clear wood finishes | 350 |

Prior to final construction bond release, the LEED-AP, who is also a professional engineer or licensed architect, shall submit a certification statement including supporting documentation confirming that the green building elements listed above have been incorporated into the design and construction of the building. Concurrence and acceptance of the certification statement by the Chief of the Environment and Development Review Branch in the Department of Planning and Zoning shall be provided to the LEED-AP prior to final construction bond release.

22. The applicant shall install motion sensor faucets and flush valves and ultralow-flow plumbing fixtures that have a maximum water usage as listed below.

Prior to final construction bond release, the LEED-AP, who is also a professional engineer or licensed architect, shall submit a certification statement including supporting documentation as detailed below, confirming that the green building elements listed below have been incorporated into the design and construction of the building. Concurrence and acceptance of the certification statement by the Chief of the Environment and Development Review Branch in the Department of Planning and Zoning shall be provided to the LEED-AP prior to final construction bond release.

- Water Closet (gallons per flush, gpf) 1.28

- Urinal (gpf) 0.5
- Showerheads (gallons per minute, gpm*) 2.0
- Lavatory faucets (gpm**) 1.5
- Kitchen and janitor sink faucets 2.20
- Interior metering faucets 0.25

* When measured at a flowing water pressure of 80 pounds per square inch (psi).

** When measured at a flowing water pressure of 60 pounds per square inch (psi).

23. The applicant shall demonstrate to the Chief of the Environment and Development Review Branch in the Department of Planning and Zoning that the concrete batching plant has been designed and could qualify as part of the National Ready Mix Concrete Associations' Green Star Certification Program prior to issuance of the Non-RUP.
24. The landscape plan to be submitted at the time of site plan submission for approval by the Urban Forest Management Division and shall include an invasive species control narrative for specific control measures of undesirable plant species found within the existing trees to remain areas along the northern, western, and eastern property lines. All reasonable efforts shall be made to lessen the impacts of crowding and shading by invasive plant species such as *Pueraria montana* var. *lobata*-kudzu vine within the 10-year tree canopy credit areas and existing trees to remain and shall include but not limited to the following language:
- A. Any application of environmentally sensitive approved herbicides shall be applied by a Virginia Department of Agriculture and Consumer Services-Office of Pesticide Services-Commercial Certified Applicator or Registered Technician.
- B. Kudzu Vines: Remove from trees by cutting all vines at ground level. Vines shall be cut again several feet up the trunk. Pull ground vines a few feet from the base of the tree to slow regrowth up the tree trunk. Remove ground vines 3-4 times per year and applying a systemic herbicide. Retreatment will be necessary for complete eradication. Employing a combination of methods often yields the best results and may reduce potential impacts to native plants, animals and people.

Chemical

Two of the more widely used systemic herbicides are glyphosate and triclopyr. Triclopyr comes in two forms – triclopyr amine (e.g., Garlon® 3A, Brush-B-Gone®, Brush Killer®) and triclopyr ester (e.g., Garlon® 4, Pathfinder®, and Vinex®). The amine and ester forms are very different products with specific uses, hazards and precautions. For this reason, whichever is used shall only be used by trained and certified applicators who

are familiar with this hazard and know the precautions that need to be taken when using it.

- C. Tree of Heaven: Elimination of tree of heaven requires diligence, due to its abundant seed production, high seed germination rate, and vegetative reproduction. Follow-up monitoring and treatment when needed shall be an integral part of any serious ailanthus management program. Regardless of method selected, treated areas shall be rechecked one or more times a year and any new suckers or seedlings treated (cut, sprayed or pulled) as soon as possible, especially before they are able to rebuild root reserves. Establishing a thick cover of trees (non-invasive and preferably native) or grass sod will help shade out and discourage establishment of ailanthus seedlings. Targeting large female trees for control will help reduce spread of ailanthus by seed.

Chemical

The most effective method of ailanthus control is through the use of herbicides, which may be applied as a foliar (to the leaves), basal bark, cut stump, or hack and squirt treatment. While it is relatively easy to kill the above ground portion of tree of heaven, you need to kill or seriously damage the root system to prevent or limit stump sprouting and root suckering.

- D. Invasive species control shall be conducted until bond release.
25. Tree Preservation Fencing. All trees shown to be preserved on the Tree Preservation Plan shall be protected by tree protection fencing during the period of construction. Tree protection fencing in the form of four (4) foot high, fourteen (14) gauge welded wire attached to six (6) foot steel posts driven eighteen (18) inches into the ground and placed no further than ten (10) feet apart, or super silt fence to the extent that required trenching for super silt fence does not sever or wound compression roots which can lead to structural failure and/or uprooting of trees, shall be erected at the limits of clearing and grading as shown on the SE Plat.
26. A Phase I archaeological study shall be conducted at least 30 days prior to any land disturbing activities on the subject property for the areas of the property that are to undergo ground disturbing activities and previously were unsurveyed. If significant sites are found, a Phase II study shall be undertaken to determine eligibility for inclusion into the National Register of Historic Places. If sites are found eligible, avoidance or a Phase III data recovery shall be undertaken.

This approval, contingent on the above noted conditions, shall not relieve the applicant from compliance with the provisions of any applicable ordinances, regulations, or adopted standards. The applicant shall be responsible for obtaining the Non-RUP through established procedures, and this Special Exception shall not be valid until this has been accomplished.

The approval of this special exception does not interfere with, abrogate or annul any easement, covenants, or other agreements between parties, as they may apply to the property subject to this application.

Pursuant to Section 9-015 of the Zoning Ordinance, this Special Exceptions shall automatically expire, without notice, thirty (30) months after the date of approval. The Board of Supervisors may grant additional time to establish the use or to commence construction if a written request for additional time is filed with the Zoning Administrator prior to the date of expiration of the Special Exception. The request must specify the amount of additional time requested, the basis for the amount of time requested, and an explanation of why additional time is required.

SPECIAL EXCEPTION TO PERMIT
A CONCRETE BATCHING PLANT WITH
ACCESSORY MAINTENANCE FACILITY AND OFFICE
PURSUANT TO SECTION 5-604 OF THE ZONING ORDINANCE

STATEMENT OF JUSTIFICATION

Revised August 11, 2015

Charles County Sand & Gravel Company, Inc., a Maryland corporation, (the “Applicant”) seeks approval of a Special Exception (“SE”) to permit construction of a concrete batching plant with accessory maintenance and office uses. The 5.23 acre portion of the parcel identified on the Fairfax County Tax Map as #107-4((1))-62A (the “Property”) with a street address of 9520 Gunston Cove Road, Lorton, Virginia, is located in the Mt. Vernon District and is zoned I-6, Heavy Industrial. Section 5-601 of the Zoning Ordinance states the purpose and intent of the I-6 Heavy Industrial District is as follows:

“The I-6 District is established to provide areas for heavy industrial activities with minimum performance standards where the uses may require that some noise, vibration and other environmental pollutants must be tolerated, and where the traffic to and from the district may be intensive. The district is intended for use by the largest manufacturing operations, heavy equipment, construction and fuel yards, major transportation terminals and other basic industrial activities required in an urban economy.”

The Applicant plans to develop the concrete batching plant with accessory maintenance and office facilities as a Category 5 Special Exception Use under Section 5-604 of the Zoning Ordinance on approximately 5.23 acres of the Property consistent with the Special Exception Plat prepared by Dewberry dated April 6, 2015 (the “SE Plat”). The SE Plat illustrates an office of approximately 1,600 square feet, a concrete plant of approximately 8,400 square feet, an aggregate storage area, a washout area, and a truck parking area. The proposed use complies with required setbacks and buffer yard requirements and locates on-site all required storm water management and best management practices detention facilities. The Property is served by public sewer and water facilities and abuts a paved public road, State Route 600, Gunston Cove Road.

The Property and proposed use are well-located to meet the purpose and intent of the heavy industrial uses of the I-6 District. As a dead-end public road providing access from Lorton Road to nonresidential uses via a signalized intersection, Gunston Cove Road carries very little traffic. See attached intersection analysis by Wells and Associates. The Property abuts I-95 on the west and is located across Gunston Cove Road from the RF&P Railroad, a major rail line carrying substantial rail traffic on a daily basis. The Property abuts similarly zoned properties that have been developed or are approved for development of I-6 uses. No residentially used properties are located on the portion of Gunston Cove Road from Lorton to the existing cul-de-sac of Route 600.

The SE Plat indicates there are no floodplain, environmental quality or resource protection areas on the Property. An above-ground fuel storage tank will be located on the Property to serve trucks utilizing the concrete batching plant and, with the exception of the fuel storage tanks, the proposed development of the Property will not generate, utilize, store, treat or dispose of any hazardous or toxic substances as set forth in Title 40, Code of Federal Regulation Parts 116.4, 302.4 and 355; any hazardous waste as set forth in Virginia Department of Environmental Quality Hazardous Waste Management Regulations; and/or petroleum products as defined in Title 40, Code of Federal Regulations. All such substances on the Property will be utilized, stored and/or disposed of in accordance with said regulations.

The proposed concrete batching plant with accessory maintenance and office facility will operate Monday through Saturday on a continuous basis as necessary to meet construction schedules and will employ up to ten workers on site. With the exception of Sunday, the plant will be operational 24/7 to serve concrete trucks using the concrete batching plant on the Property. The office building will be constructed of concrete block and will be painted tan. The enclosed traffic assessment indicates approximately 94 total average daily trips will be added to state highways (including 37 trucks (in and out) and 10 employee vehicles (in and out)). The number of trips forecast to result from the proposed development of the Property falls far below the 5,000 trips per day threshold established in the state regulations as requiring a detailed traffic impact study. The Applicant anticipates drivers using the proposed facility will primarily serve customers in Northern Virginia communities in Fairfax County and Prince William County via Lorton Road and adjacent I-95 that is readily accessible at existing ramps at the I-95/Lorton Road grade-separated interchange.

The proposed concrete batching plant with accessory maintenance and office facilities meets the purpose and intent of the Heavy Industrial District Zoning Regulations. The proposed use is particularly well-suited upon the Property due to its location between I-95 and the major north/south rail line of the RF&P Railroad with no trips on Gunston Cove Road through any residential neighborhood.

The Applicant has enclosed an intersection analysis by Wells and Associates that concludes the cycle of the lights at the intersection of Gunston Cove Road and Lorton Road are timed at approximately four minutes per full cycle. The amount of time involved in a concrete mixer from start to finish of its loading process is roughly ten minutes, a period of time called "Load to Gate." Based upon the enclosed report the number of trucks stacking on Gunston Cove Road at the light to turn onto Lorton Road will not be an issue since at no time will more than one truck go through two full cycles of the light. The average estimated time required for a truck to leave a plant, deliver concrete, and return to a plant is approximately two (2) hours, a period of time that addresses any concerns about trucks stacking on Lorton Road.

The Applicant is aware of concerns raised by some area residents about truck traffic on Lorton Road from other industrial use applications. The Applicant has addressed such concerns by ordering six (6) new state of the art mixers specifically designed to carry a full ten (10) Cubic Yard load on Interstate 95 and be within the state and federal weight limits. The purchase order and truck design have been attached for review and indicate delivery is expected in the fourth quarter of 2015.

The Applicant is aware of other general community concerns about industrial uses such as noise and visual impacts. In an attempt to address such concerns the Applicant has made design and operational modifications to the proposed plant and the components utilized in day to day operations. The county code limits the maximum elevation of a plant to seventy five (75) vertical feet for the highest component of an operation. The Applicant has taken into consideration the view of the Property from area residential properties, some of which are within 500 LF of the Property, and made modifications to limit the visual exposure from nearby properties. The proposed plant has a maximum elevation of forty and a half (40.5) vertical feet and has been designed to utilize solid shields over the majority of the mechanical components to reduce the

industrial appearance. The Applicant hired Digital Design & Imaging Service, Inc. to prepare an analysis of the proposed elevations from the surrounding residential properties, by performing a balloon test. A red balloon, measuring five (5) feet in diameter was raised at the proposed location of the plant on the Property and aerial photos were taken at various vantage points throughout the neighborhood to ensure visual impacts, if any, would be minimal. The attached pictures demonstrate the balloon was not visible from any of the vantage points at an elevation above the third floors of the nearby townhome community. The Applicant also requested its consultant to provide guidance on the best color to paint the proposed plant and components to allow it to blend with the surrounding trees and foliage. The consultant instructed that a shade of brown would blend well in both the summer and winter months, so the Applicant has specified that the plant will be CON-E-CO Desert Tan, a shade of brown. See attached color palate sheet for reference. The Property will be secured by a six (6) foot tall chain link security fence on three sides. Along the frontage of the Property facing Gunston Cove Road and nearby residential properties the Applicant has proposed a six (6) foot tall wood slatted fence to add additional buffering. Additionally, the county landscape requirements have been met and, where possible, exceeded to add additional buffering.

Industrial uses often generate concerns about noise, a concern the Applicant does not take lightly. The Applicant hired Phoenix Noise & Vibration to perform a complete acoustic study for the Property. In an effort to ensure the sounds generated from the proposed operation would be equivalent to the test locations, the Applicant made sure that the existing locations studied were home to similar equipment and machinery. The enclosed sound study provides supporting data demonstrating the proposed operation will meet the Fairfax County noise standards and have little to no impact on nearby residential uses. The Applicant plans to use a quieter dust collector and a fabricated buffer shield around the collector that will substantially mitigate its noise. The Applicant will also use “White Noise” backup alarms on its trucks instead of the normal “beep beep” alarms that are a staple of the construction industry. These backup alarms are designed to direct sound specifically to the back of the moving equipment, instead of a general all-encompassing alarm that can be heard from the surrounding area. As stated earlier, the Applicant has incorporated solid surfaces over the majority of the plant mechanical components which will increase sound mitigation. All of these modifications are in line with both OSHA and MSHA regulations and are allowed for use in our industry.

The National Ready Mixed Concrete Association (NRMCA) hosts a program called “GREENSTAR” which promotes the design and use of concrete plants in an environmentally proactive manner. This program has a very strict set of required guidelines for design and day to day activities. The Applicant has attached this list and an overview of the program. The plant will be designed and operated under this program and additionally will work to utilize materials and components that are in line with LEED building techniques.

Chaney Enterprises carries an operational quality and community commitment reputation that is unrivaled in our industry which is exemplified by our relationships with MDE, MSHA, VADEQ, and the local jurisdictions in which we operate on a daily basis. It is the goal of our company to become a part of every community we enter and be a company a local jurisdiction can be proud to say they are associated with. Chaney Enterprises annually donates ten (10) percent of its net profits back to the communities it serves. Chaney Enterprises has been awarded the Alliance for Workplace Excellence award 2010 – 2015, and we continue to be an innovator from all aspects of the concrete industry.

The proposed use is a fiscally positive use that requires few governmental services, generates few vehicle trips and will be good neighbors. The proposed use is consistent with goals of the Comprehensive Plan and should prove to be an appropriate use of the Property.

**WELLS + ASSOCIATES****MEMORANDUM**

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To: Lou Ann Hutchins
Fairfax County Department of Transportation

From: William F. Johnson, P.E.
Luke Lam

Re: SE 2015-MV-019; Charles County Sand and Gravel Company, Inc.

Subject: Gunston Cove Road/Lorton Road

Date: August 14, 2015

The purpose of this memorandum is to provide additional information and traffic analysis to County staff in conjunction with the above referenced application. Specifically, this memorandum seeks to address the current operation of the Gunston Cove Road/Lorton Road intersection and the impact of the proposed use on the same.

Charles County Sand and Gravel Company, Inc. proposes to develop a 5.23 acre property located at Tax Map 107-4 ((1)) 62A (9520 Gunston Cove Road) with a concrete batching plant. The site is zoned I-6 (Heavy Industrial) and is located east of Interstate 95 and south of Lorton Road. Access to the site is provided along Gunston Cove Road which itself is accessed via Lorton Road (Route 642) at the I-95 interchange.

The intersection of Gunston Cove Road and Lorton Road operates under signal control. Intersection peak hour traffic and signal timing data were provided from VDOT and indicate that the signal operates at a 200-second cycle length during the weekday AM peak period and a 220-second cycle length during the weekday PM peak period. Furthermore, a significant portion of the signal cycle is allocated to the Lorton Road mainline movements (approximately 60%) and operates in tandem with the adjacent entrance to the Amtrak auto-train station. Accordingly, delays experienced at the Gunston Cove Road approach originate from the fact that the Lorton Road signal is optimized to give priority to through traffic along the Lorton Road corridor.

A copy of the intersection volume and signal timing sheets as provided from VDOT is included as Attachment I. Based on the volume data and the signal timing parameters, the Gunston Cove Road side street movements operate near capacity (LOS "E") during the peak hours as shown on the level of service summary table in Attachment II. The intersection operates at overall LOS "E" during the AM peak hour and LOS "D" during the PM peak hour based on the analysis.



WELLS + ASSOCIATES

MEMORANDUM

The VDOT traffic counts show that approximately 3,428 vehicles and 3,086 vehicles travel through the Gunston Cove Road/Lorton Road intersection during the AM and PM peak hours, respectively. Of those vehicles, approximately 80 and 86 exit Gunston Cove Road on to Lorton Road during the AM and PM peak hours, respectively.

In a letter to Michelle Guthrie, FCDOT, dated February 16, 2015, Wells + Associates provided a trip generation analysis of the subject application. As stated therein, the development is anticipated to generate approximately 11 AM peak hour and 12 PM peak hour trips upon completion based on the Institute of Transportation Engineers (ITE), 9th Edition rates. It should be noted that, given the site’s zoning of I-6 (Heavy Industrial), a number of trips may be anticipated to be generated should the site redevelop with a permitted by-right use (i.e., without the need for a Special Exception). According to the ITE trip rates associated with an “Industrial Park,” the subject site could generate 43 AM peak hour, 45 PM peak hour, and 320 daily trips (without the need for a SE).

Of the site generated hourly trips summarized above, and as elaborated later in this document, a maximum of 6 trucks per hour are anticipated to exit the site on to Gunston Cove Road. As summarized in Table 1 below, the peak hour trips anticipated to be generated by the proposed development would comprise less than 1% of the total traffic traveling through the subject intersection and less than 5% of the traffic exiting Gunston Cove Road during the peak hours.

**Table 1
Gunston Cove Road/Lorton Road
Intersection Volume Summary**

| | AM Peak Hour | PM Peak Hour |
|---|---------------|---------------|
| Total Intersection Volume, vph | 3086 | 3183 |
| Volume Exiting Gunston Cove Road, vph | 130 | 138 |
| Forecasted Exiting Site Trips, vph | 6 | 6 |
| % Site Trips to Total Intersection | <1% | <1% |
| % Site Trips Exiting Gunston Cove Road | 5% | 4% |

The total future traffic forecasts with development of the proposed new a concrete batching plant were developed for the forecast year of 2018. These forecasts were based on the baseline traffic volumes from VDOT traffic counts, an annual estimated growth rate of 1% per year along Lorton Road, and the peak hour site trip assignments. An analysis was performed with these total future traffic forecasts as summarized in Attachment II. Under future traffic conditions, overall intersection delays would increase by less than one second. Therefore, as the analysis



WELLS + ASSOCIATES

MEMORANDUM

demonstrates, the presence of the proposed development would result in no appreciable impact on the surrounding roadway network.

Based on information from the Applicant, the amount of time that is involved in a concrete mixer from start to finish of its loading process is approximately ten minutes. This duration is called "Load to Gate." Because the design of the site would only permit one truck to be loaded at any one time, the minimum headway between successive trucks exiting the site is approximately ten minutes. Therefore, no more than six trucks per hour are anticipated to exit the site and approach the Lorton Road/Gunston Cove Road intersection during peak site operations. As a result, no more than one truck will approach the intersection for every two signal cycles at peak thus minimizing the impact of site generated trucks on intersection operations.

Based on data provided by the National Ready Mixed Concrete Association (NRMCA), the average time that it takes a truck to leave the plant, deliver the concrete, and return to the plant is approximately two (2) hours roundtrip. This variation in timing will further distribute site generated truck traffic, thus minimizing any impacts associated with trucks on Lorton Road.

In conclusion, the proposed development is anticipated to add minimal traffic to the roadway network and would not constitute a significant impact to the operation of the Gunston Cove Road/Lorton Road intersection.

Please feel free to contact Will Johnson at 703.365.9262 or wjohnson@mjwells.com if you have any questions or require additional information related to this analysis.

Attachments: a/s

Attachment I

VDOT Volume and Signal Timing Data
Lorton Road/Gunston Cove Road

Volume

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

8/6/2015

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Volume (vph) | 572 | 1278 | 100 | 52 | 562 | 496 | 40 | 44 | 40 | 74 | 46 | 124 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 572 | 1278 | 100 | 52 | 562 | 496 | 40 | 44 | 40 | 74 | 46 | 124 |
| Shared Lane Traffic (%) | | | | | | | | | | 20% | | |
| Lane Group Flow (vph) | 572 | 1278 | 100 | 52 | 562 | 496 | 40 | 84 | 0 | 59 | 61 | 124 |
| Intersection Summary | | | | | | | | | | | | |

Timings

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

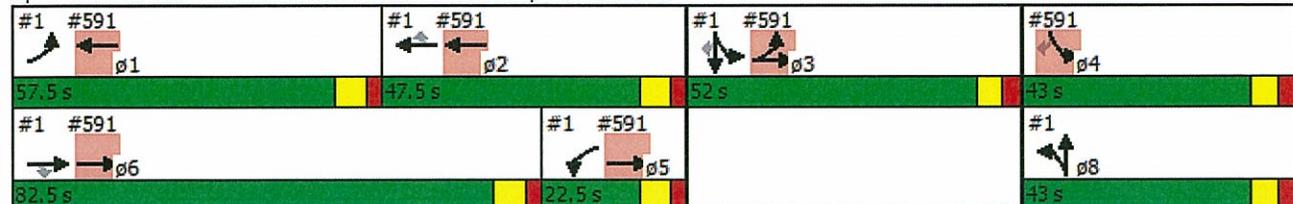
8/6/2015

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR | ø4 |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 572 | 1278 | 100 | 52 | 562 | 496 | 40 | 44 | 74 | 46 | 124 | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | Split | NA | Perm | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | 3 | 3 | | 4 |
| Permitted Phases | | | 6 | | | 2 | | | | | 3 | |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 2 | 8 | 8 | 3 | 3 | 3 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 20.0 | 20.0 | 5.0 | 20.0 | 20.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 12.5 | 35.5 | 35.5 | 12.5 | 39.5 | 39.5 | 17.0 | 17.0 | 52.0 | 52.0 | 52.0 | 43.0 |
| Total Split (s) | 57.5 | 82.5 | 82.5 | 22.5 | 47.5 | 47.5 | 43.0 | 43.0 | 52.0 | 52.0 | 52.0 | 43.0 |
| Total Split (%) | 28.8% | 41.3% | 41.3% | 11.3% | 23.8% | 23.8% | 21.5% | 21.5% | 26.0% | 26.0% | 26.0% | 22% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Lead/Lag | Lead | Lead | Lead | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | Min | Min | None | Min | Min | None | None | None | None | None | None |
| Act Effect Green (s) | 35.9 | 54.8 | 54.8 | 14.1 | 33.0 | 33.0 | 13.4 | 13.4 | 17.1 | 17.1 | 17.1 | 17.1 |
| Actuated g/C Ratio | 0.28 | 0.42 | 0.42 | 0.11 | 0.26 | 0.26 | 0.10 | 0.10 | 0.13 | 0.13 | 0.13 | 0.13 |
| v/c Ratio | 0.60 | 0.59 | 0.16 | 0.32 | 0.44 | 0.65 | 0.26 | 0.49 | 0.26 | 0.29 | 0.37 | 0.37 |
| Control Delay | 44.3 | 29.9 | 4.8 | 53.7 | 30.9 | 23.9 | 64.3 | 57.3 | 58.5 | 59.5 | 8.4 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.3 | 29.9 | 4.8 | 53.7 | 31.2 | 25.3 | 64.3 | 57.3 | 58.5 | 59.5 | 8.4 | 8.4 |
| LOS | D | C | A | D | C | C | E | E | E | E | A | A |
| Approach Delay | | 32.8 | | | 29.6 | | | 59.6 | | 33.3 | | |
| Approach LOS | | C | | | C | | | E | | C | | |

Intersection Summary

| | |
|---|------------------------|
| Cycle Length: 200 | |
| Actuated Cycle Length: 129.4 | |
| Natural Cycle: 150 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.65 | |
| Intersection Signal Delay: 32.8 | Intersection LOS: C |
| Intersection Capacity Utilization 73.7% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd



Volume

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

8/6/2015

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Volume (vph) | 400 | 806 | 60 | 48 | 1184 | 272 | 56 | 46 | 30 | 100 | 20 | 64 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 400 | 806 | 60 | 48 | 1184 | 272 | 56 | 46 | 30 | 100 | 20 | 64 |
| Shared Lane Traffic (%) | | | | | | | | | | 40% | | |
| Lane Group Flow (vph) | 400 | 806 | 60 | 48 | 1184 | 272 | 56 | 76 | 0 | 60 | 60 | 64 |
| Intersection Summary | | | | | | | | | | | | |

Timings

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

8/6/2015

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR | ø4 |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 400 | 806 | 60 | 48 | 1184 | 272 | 56 | 46 | 100 | 20 | 64 | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | Split | NA | Perm | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | 3 | 3 | | 4 |
| Permitted Phases | | | 6 | | | 2 | | | | | 3 | |
| Detector Phase | 1 | 6 | 6 | 5 | 2 | 2 | 8 | 8 | 3 | 3 | 3 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 20.0 | 20.0 | 5.0 | 20.0 | 20.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 12.5 | 35.5 | 35.5 | 12.5 | 39.5 | 39.5 | 43.0 | 43.0 | 52.0 | 52.0 | 52.0 | 43.0 |
| Total Split (s) | 57.5 | 97.5 | 97.5 | 27.5 | 67.5 | 67.5 | 43.0 | 43.0 | 52.0 | 52.0 | 52.0 | 43.0 |
| Total Split (%) | 26.1% | 44.3% | 44.3% | 12.5% | 30.7% | 30.7% | 19.5% | 19.5% | 23.6% | 23.6% | 23.6% | 20% |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Lead/Lag | Lead | Lead | Lead | Lag | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | Min | Min | None | Min | Min | None | None | None | None | None | None |
| Act Effct Green (s) | 34.8 | 36.9 | 36.9 | 56.1 | 58.1 | 58.1 | 13.7 | 13.7 | 15.6 | 15.6 | 15.6 | |
| Actuated g/C Ratio | 0.23 | 0.24 | 0.24 | 0.37 | 0.38 | 0.38 | 0.09 | 0.09 | 0.10 | 0.10 | 0.10 | |
| v/c Ratio | 0.50 | 0.65 | 0.15 | 0.09 | 0.61 | 0.39 | 0.41 | 0.52 | 0.34 | 0.36 | 0.23 | |
| Control Delay | 53.9 | 54.8 | 2.8 | 24.0 | 30.0 | 19.1 | 78.8 | 70.6 | 72.5 | 73.1 | 1.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 53.9 | 54.8 | 2.8 | 24.0 | 30.5 | 20.1 | 78.8 | 70.6 | 72.5 | 73.1 | 1.9 | |
| LOS | D | D | A | C | C | C | E | E | E | E | A | |
| Approach Delay | | 52.1 | | | 28.4 | | | 74.1 | | 48.1 | | |
| Approach LOS | | D | | | C | | | E | | D | | |

Intersection Summary

Cycle Length: 220

Actuated Cycle Length: 151.7

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 41.2

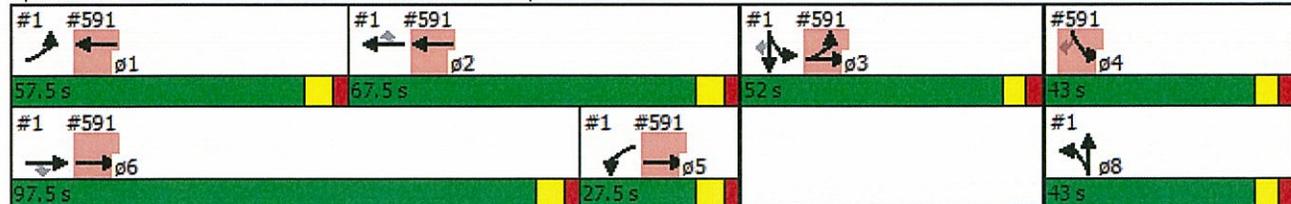
Intersection LOS: D

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd



Attachment II

Intersection Analysis

Table II-1
 Gunston Cove Road Intersection Analysis
 Intersection Levels of Service Summary (1) (2)

| Intersection | Operating Condition | Approach/ Movement | 2015 Existing | | 2018 Background | | 2018 Total Future | |
|--|---------------------|-----------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|
| | | | AM | PM | AM | PM | AM | PM |
| I Gunston Cove Road/I-95NB Ramps/Lorton Road | Signal | EBL | D (41.0) | D (51.2) | D (41.4) | D (51.4) | D (41.6) | D (51.5) |
| | | EBT | C (28.5) | D (52.5) | C (28.4) | D (52.8) | C (28.6) | D (53.0) |
| | | EBR | C (21.9) | D (43.8) | C (21.5) | D (43.8) | C (21.7) | D (43.9) |
| | | WBL | D (43.1) | C (20.6) | D (44.5) | C (21.3) | D (44.6) | C (21.4) |
| | | WBT | C (28.6) | C (27.5) | C (29.4) | C (28.8) | C (29.5) | C (28.9) |
| | | WBR | F (196.5) | D (36.0) | F (197.5) | D (35.1) | F (198.4) | D (35.1) |
| | | NBL | D (54.1) | E (67.6) | D (54.8) | E (68.4) | D (54.8) | E (68.5) |
| | | NBTR | E (56.6) | E (68.8) | E (57.2) | E (69.8) | E (57.5) | E (69.9) |
| | | SBL | D (50.5) | E (64.2) | D (51.1) | E (65.1) | D (51.4) | E (65.2) |
| | | SBLT | D (50.9) | E (64.4) | D (51.5) | E (65.3) | D (51.8) | E (65.5) |
| | | SBR | <u>D (48.9)</u> | <u>E (61.2)</u> | <u>D (49.4)</u> | <u>E (61.9)</u> | <u>D (49.6)</u> | <u>E (62.1)</u> |
| | | Overall | E (57.5) | D (41.9) | E (57.8) | D (42.5) | E (58.1) | D (42.7) |

Notes (1) Numbers in parentheses () represent delay at signalized intersections in seconds per vehicle.

(2) Roadway names in bold are considered north/south for purposes of this analysis

HCM Signalized Intersection Capacity Analysis

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

7/14/2015

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume (vph) | 572 | 1278 | 100 | 52 | 562 | 496 | 40 | 44 | 40 | 74 | 46 | 124 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 2% | | | 0% | | | -3% | |
| Total Lost time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | | 0.95 | 0.95 | 1.00 |
| Flt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.93 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (prot) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1483 | | 1706 | 1576 | 1607 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (perm) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1483 | | 1706 | 1576 | 1607 |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 572 | 1278 | 100 | 52 | 562 | 496 | 40 | 44 | 40 | 74 | 46 | 124 |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 369 | 0 | 18 | 0 | 0 | 0 | 107 |
| Lane Group Flow (vph) | 572 | 1278 | 43 | 52 | 562 | 127 | 40 | 66 | 0 | 59 | 61 | 17 |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | | Split | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | | 3 | 3 | |
| Permitted Phases | | | 6 | | | 2 | | | | | | 3 |
| Actuated Green, G (s) | 35.9 | 54.8 | 54.8 | 14.1 | 33.0 | 33.0 | 13.4 | 13.4 | | 17.2 | 17.2 | 17.2 |
| Effective Green, g (s) | 35.9 | 54.8 | 54.8 | 14.1 | 33.0 | 33.0 | 13.4 | 13.4 | | 17.2 | 17.2 | 17.2 |
| Actuated g/C Ratio | 0.28 | 0.43 | 0.43 | 0.11 | 0.26 | 0.26 | 0.10 | 0.10 | | 0.13 | 0.13 | 0.13 |
| Clearance Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Vehicle Extension (s) | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 968 | 2190 | 584 | 164 | 1292 | 402 | 158 | 154 | | 228 | 210 | 215 |
| v/s Ratio Prot | 0.16 | c0.25 | | 0.03 | c0.11 | | 0.03 | c0.04 | | 0.03 | c0.04 | |
| v/s Ratio Perm | | | 0.03 | | | 0.08 | | | | | | 0.01 |
| v/c Ratio | 0.59 | 0.58 | 0.07 | 0.32 | 0.43 | 0.32 | 0.25 | 0.43 | | 0.26 | 0.29 | 0.08 |
| Uniform Delay, d1 | 40.0 | 28.1 | 21.8 | 52.8 | 40.0 | 38.6 | 52.9 | 54.0 | | 49.9 | 50.2 | 48.7 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.80 | 0.71 | 5.08 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.0 | 0.4 | 0.1 | 1.1 | 0.2 | 0.4 | 1.2 | 2.6 | | 0.6 | 0.8 | 0.2 |
| Delay (s) | 41.0 | 28.5 | 21.9 | 43.1 | 28.6 | 196.5 | 54.1 | 56.6 | | 50.5 | 50.9 | 48.9 |
| Level of Service | D | C | C | D | C | F | D | E | | D | D | D |
| Approach Delay (s) | | 31.8 | | | 104.3 | | | 55.8 | | | 49.8 | |
| Approach LOS | | C | | | F | | | E | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 57.5 | | | | | | | | | E |
| HCM 2000 Volume to Capacity ratio | | | 0.50 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 128.5 | | | | | | | 29.0 | | |
| Intersection Capacity Utilization | | | 73.7% | | | | | | | | | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis
 1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

7/14/2015

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume (vph) | 400 | 806 | 60 | 48 | 1184 | 272 | 56 | 46 | 30 | 100 | 20 | 64 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 2% | | | 0% | | | -3% | |
| Total Lost time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | | 0.95 | 0.95 | 1.00 |
| Flt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.97 | 1.00 |
| Satd. Flow (prot) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1502 | | 1706 | 1647 | 1607 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.97 | 1.00 |
| Satd. Flow (perm) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1502 | | 1706 | 1647 | 1607 |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 400 | 806 | 60 | 48 | 1184 | 272 | 56 | 46 | 30 | 100 | 20 | 64 |
| RTOR Reduction (vph) | 0 | 0 | 45 | 0 | 0 | 95 | 0 | 12 | 0 | 0 | 0 | 57 |
| Lane Group Flow (vph) | 400 | 806 | 15 | 48 | 1184 | 177 | 56 | 64 | 0 | 60 | 60 | 7 |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | | Split | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | | 3 | 3 | |
| Permitted Phases | | | 6 | | | 2 | | | | | | 3 |
| Actuated Green, G (s) | 34.8 | 36.8 | 36.8 | 56.1 | 58.1 | 58.1 | 13.7 | 13.7 | | 15.6 | 15.6 | 15.6 |
| Effective Green, g (s) | 34.8 | 36.8 | 36.8 | 56.1 | 58.1 | 58.1 | 13.7 | 13.7 | | 15.6 | 15.6 | 15.6 |
| Actuated g/C Ratio | 0.23 | 0.24 | 0.24 | 0.37 | 0.38 | 0.38 | 0.09 | 0.09 | | 0.10 | 0.10 | 0.10 |
| Clearance Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Vehicle Extension (s) | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 797 | 1250 | 333 | 557 | 1934 | 602 | 137 | 136 | | 176 | 169 | 165 |
| v/s Ratio Prot | 0.12 | c0.16 | | 0.03 | c0.24 | | 0.04 | c0.04 | | 0.04 | c0.04 | |
| v/s Ratio Perm | | | 0.01 | | | 0.11 | | | | | | 0.00 |
| v/c Ratio | 0.50 | 0.64 | 0.04 | 0.09 | 0.61 | 0.29 | 0.41 | 0.47 | | 0.34 | 0.36 | 0.04 |
| Uniform Delay, d1 | 50.7 | 51.3 | 43.7 | 30.9 | 37.5 | 32.3 | 64.9 | 65.3 | | 63.0 | 63.1 | 61.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.66 | 0.72 | 1.11 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.6 | 1.2 | 0.1 | 0.1 | 0.6 | 0.3 | 2.7 | 3.5 | | 1.2 | 1.3 | 0.1 |
| Delay (s) | 51.2 | 52.5 | 43.8 | 20.6 | 27.5 | 36.0 | 67.6 | 68.8 | | 64.2 | 64.4 | 61.2 |
| Level of Service | D | D | D | C | C | D | E | E | | E | E | E |
| Approach Delay (s) | | 51.7 | | | 28.8 | | | 68.3 | | | 63.2 | |
| Approach LOS | | D | | | C | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 41.9 | HCM 2000 Level of Service | | | | D | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.58 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 151.2 | Sum of lost time (s) | | | | 29.0 | | | | |
| Intersection Capacity Utilization | | | 62.6% | ICU Level of Service | | | | B | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

8/6/2015

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume (vph) | 589 | 1317 | 100 | 52 | 579 | 511 | 40 | 44 | 40 | 76 | 46 | 128 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 2% | | | 0% | | | -3% | |
| Total Lost time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | | 0.95 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.93 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (prot) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1483 | | 1706 | 1578 | 1607 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (perm) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1483 | | 1706 | 1578 | 1607 |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 589 | 1317 | 100 | 52 | 579 | 511 | 40 | 44 | 40 | 76 | 46 | 128 |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 379 | 0 | 18 | 0 | 0 | 0 | 111 |
| Lane Group Flow (vph) | 589 | 1317 | 43 | 52 | 579 | 132 | 40 | 66 | 0 | 60 | 62 | 17 |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | | Split | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | | 3 | 3 | |
| Permitted Phases | | | 6 | | | 2 | | | | | | 3 |
| Actuated Green, G (s) | 36.6 | 56.3 | 56.3 | 13.7 | 33.4 | 33.4 | 13.4 | 13.4 | | 17.3 | 17.3 | 17.3 |
| Effective Green, g (s) | 36.6 | 56.3 | 56.3 | 13.7 | 33.4 | 33.4 | 13.4 | 13.4 | | 17.3 | 17.3 | 17.3 |
| Actuated g/C Ratio | 0.28 | 0.43 | 0.43 | 0.11 | 0.26 | 0.26 | 0.10 | 0.10 | | 0.13 | 0.13 | 0.13 |
| Clearance Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Vehicle Extension (s) | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 978 | 2229 | 595 | 158 | 1296 | 403 | 156 | 153 | | 227 | 210 | 214 |
| v/s Ratio Prot | 0.17 | c0.26 | | 0.03 | c0.12 | | 0.03 | c0.04 | | 0.04 | c0.04 | |
| v/s Ratio Perm | | | 0.03 | | | 0.08 | | | | | | 0.01 |
| v/c Ratio | 0.60 | 0.59 | 0.07 | 0.33 | 0.45 | 0.33 | 0.26 | 0.43 | | 0.26 | 0.30 | 0.08 |
| Uniform Delay, d1 | 40.3 | 27.9 | 21.4 | 53.7 | 40.4 | 39.0 | 53.6 | 54.6 | | 50.5 | 50.7 | 49.2 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.81 | 0.72 | 5.05 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.1 | 0.4 | 0.1 | 1.2 | 0.2 | 0.5 | 1.2 | 2.7 | | 0.6 | 0.8 | 0.2 |
| Delay (s) | 41.4 | 28.4 | 21.5 | 44.5 | 29.4 | 197.5 | 54.8 | 57.2 | | 51.1 | 51.5 | 49.4 |
| Level of Service | D | C | C | D | C | F | D | E | | D | D | D |
| Approach Delay (s) | | 31.8 | | | 105.3 | | | 56.4 | | | 50.3 | |
| Approach LOS | | C | | | F | | | E | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 57.8 | | | | | | | | | HCM 2000 Level of Service E |
| HCM 2000 Volume to Capacity ratio | | | 0.51 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 129.7 | | | | | | | 29.0 | | Sum of lost time (s) |
| Intersection Capacity Utilization | | | 75.1% | | | | | | | | | ICU Level of Service D |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

7/14/2015

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume (vph) | 412 | 830 | 60 | 48 | 1220 | 280 | 56 | 46 | 30 | 103 | 20 | 66 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 2% | | | 0% | | | -3% | |
| Total Lost time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | | 0.95 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.97 | 1.00 |
| Satd. Flow (prot) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1502 | | 1706 | 1649 | 1607 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.97 | 1.00 |
| Satd. Flow (perm) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1502 | | 1706 | 1649 | 1607 |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 412 | 830 | 60 | 48 | 1220 | 280 | 56 | 46 | 30 | 103 | 20 | 66 |
| RTOR Reduction (vph) | 0 | 0 | 45 | 0 | 0 | 96 | 0 | 12 | 0 | 0 | 0 | 59 |
| Lane Group Flow (vph) | 412 | 830 | 15 | 48 | 1220 | 184 | 56 | 64 | 0 | 61 | 62 | 7 |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | | Split | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | | 3 | 3 | |
| Permitted Phases | | | 6 | | | 2 | | | | | | 3 |
| Actuated Green, G (s) | 35.8 | 37.8 | 37.8 | 56.6 | 58.6 | 58.6 | 13.7 | 13.7 | | 15.6 | 15.6 | 15.6 |
| Effective Green, g (s) | 35.8 | 37.8 | 37.8 | 56.6 | 58.6 | 58.6 | 13.7 | 13.7 | | 15.6 | 15.6 | 15.6 |
| Actuated g/C Ratio | 0.23 | 0.25 | 0.25 | 0.37 | 0.38 | 0.38 | 0.09 | 0.09 | | 0.10 | 0.10 | 0.10 |
| Clearance Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Vehicle Extension (s) | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 812 | 1271 | 339 | 556 | 1931 | 601 | 136 | 134 | | 174 | 168 | 164 |
| v/s Ratio Prot | 0.12 | c0.16 | | 0.03 | c0.24 | | 0.04 | c0.04 | | 0.04 | c0.04 | |
| v/s Ratio Perm | | | 0.01 | | | 0.12 | | | | | | 0.00 |
| v/c Ratio | 0.51 | 0.65 | 0.04 | 0.09 | 0.63 | 0.31 | 0.41 | 0.48 | | 0.35 | 0.37 | 0.04 |
| Uniform Delay, d1 | 50.8 | 51.6 | 43.7 | 31.2 | 38.3 | 32.9 | 65.7 | 66.1 | | 63.8 | 64.0 | 61.8 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.68 | 0.74 | 1.06 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.6 | 1.2 | 0.1 | 0.1 | 0.7 | 0.3 | 2.8 | 3.6 | | 1.2 | 1.4 | 0.1 |
| Delay (s) | 51.4 | 52.8 | 43.8 | 21.3 | 28.8 | 35.1 | 68.4 | 69.8 | | 65.1 | 65.3 | 61.9 |
| Level of Service | D | D | D | C | C | D | E | E | | E | E | E |
| Approach Delay (s) | | 51.9 | | | 29.7 | | | 69.2 | | | 64.0 | |
| Approach LOS | | D | | | C | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 42.5 | | | | HCM 2000 Level of Service | | | | D | |
| HCM 2000 Volume to Capacity ratio | | | 0.60 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 152.7 | | | | Sum of lost time (s) | | | 29.0 | | |
| Intersection Capacity Utilization | | | 63.7% | | | | ICU Level of Service | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

8/6/2015

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  | |
| Volume (vph) | 589 | 1317 | 103 | 55 | 579 | 511 | 42 | 45 | 43 | 76 | 46 | 128 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Grade (%) | | -2% | | | 2% | | | 0% | | | -3% | | |
| Total Lost time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | | 0.95 | 0.95 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.93 | | 1.00 | 1.00 | 0.85 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.99 | 1.00 | |
| Satd. Flow (prot) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1480 | | 1706 | 1578 | 1607 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.99 | 1.00 | |
| Satd. Flow (perm) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1480 | | 1706 | 1578 | 1607 | |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Adj. Flow (vph) | 589 | 1317 | 103 | 55 | 579 | 511 | 42 | 45 | 43 | 76 | 46 | 128 | |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 380 | 0 | 19 | 0 | 0 | 0 | 111 | |
| Lane Group Flow (vph) | 589 | 1317 | 46 | 55 | 579 | 131 | 42 | 69 | 0 | 60 | 62 | 17 | |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | | Split | NA | Perm | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | | 3 | 3 | | |
| Permitted Phases | | | 6 | | | 2 | | | | | | 3 | |
| Actuated Green, G (s) | 36.7 | 56.4 | 56.4 | 13.8 | 33.5 | 33.5 | 13.7 | 13.7 | | 17.3 | 17.3 | 17.3 | |
| Effective Green, g (s) | 36.7 | 56.4 | 56.4 | 13.8 | 33.5 | 33.5 | 13.7 | 13.7 | | 17.3 | 17.3 | 17.3 | |
| Actuated g/C Ratio | 0.28 | 0.43 | 0.43 | 0.11 | 0.26 | 0.26 | 0.11 | 0.11 | | 0.13 | 0.13 | 0.13 | |
| Clearance Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | |
| Vehicle Extension (s) | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 977 | 2224 | 593 | 159 | 1295 | 403 | 159 | 155 | | 226 | 209 | 213 | |
| v/s Ratio Prot | 0.17 | c0.26 | | 0.04 | c0.12 | | 0.03 | c0.05 | | 0.04 | c0.04 | | |
| v/s Ratio Perm | | | 0.03 | | | 0.08 | | | | | | 0.01 | |
| v/c Ratio | 0.60 | 0.59 | 0.08 | 0.35 | 0.45 | 0.33 | 0.26 | 0.45 | | 0.27 | 0.30 | 0.08 | |
| Uniform Delay, d1 | 40.4 | 28.1 | 21.6 | 54.0 | 40.6 | 39.2 | 53.6 | 54.7 | | 50.7 | 51.0 | 49.5 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.80 | 0.72 | 5.05 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.1 | 0.4 | 0.1 | 1.3 | 0.2 | 0.5 | 1.2 | 2.8 | | 0.6 | 0.8 | 0.2 | |
| Delay (s) | 41.6 | 28.6 | 21.7 | 44.6 | 29.5 | 198.4 | 54.8 | 57.5 | | 51.4 | 51.8 | 49.6 | |
| Level of Service | D | C | C | D | C | F | D | E | | D | D | D | |
| Approach Delay (s) | | 32.0 | | | 105.6 | | | 56.6 | | | 50.6 | | |
| Approach LOS | | C | | | F | | | E | | | D | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 58.1 | | | | | | | | | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | | | 0.51 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.2 | | | | | | | | | Sum of lost time (s) | 29.0 |
| Intersection Capacity Utilization | | | 75.1% | | | | | | | | | ICU Level of Service | D |
| Analysis Period (min) | | | 15 | | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | | |

HCM Signalized Intersection Capacity Analysis

1: Gunston Cove Rd/I-95 NB Ramps & Lorton Rd

8/6/2015

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume (vph) | 412 | 830 | 63 | 51 | 1220 | 280 | 58 | 47 | 33 | 103 | 20 | 66 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Grade (%) | | -2% | | | 2% | | | 0% | | | -3% | |
| Total Lost time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | | 0.95 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.97 | 1.00 |
| Satd. Flow (prot) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1498 | | 1706 | 1649 | 1607 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 0.97 | 1.00 |
| Satd. Flow (perm) | 3467 | 5136 | 1371 | 1502 | 5034 | 1567 | 1517 | 1498 | | 1706 | 1649 | 1607 |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 412 | 830 | 63 | 51 | 1220 | 280 | 58 | 47 | 33 | 103 | 20 | 66 |
| RTOR Reduction (vph) | 0 | 0 | 47 | 0 | 0 | 96 | 0 | 13 | 0 | 0 | 0 | 59 |
| Lane Group Flow (vph) | 412 | 830 | 16 | 51 | 1220 | 184 | 58 | 67 | 0 | 61 | 62 | 7 |
| Heavy Vehicles (%) | 2% | 2% | 19% | 19% | 2% | 2% | 19% | 19% | 19% | 2% | 19% | 2% |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Split | NA | | Split | NA | Perm |
| Protected Phases | 1 | 6 | | 5 | 2 | | 8 | 8 | | 3 | 3 | |
| Permitted Phases | | | 6 | | | 2 | | | | | | 3 |
| Actuated Green, G (s) | 35.8 | 37.8 | 37.8 | 56.6 | 58.6 | 58.6 | 14.0 | 14.0 | | 15.6 | 15.6 | 15.6 |
| Effective Green, g (s) | 35.8 | 37.8 | 37.8 | 56.6 | 58.6 | 58.6 | 14.0 | 14.0 | | 15.6 | 15.6 | 15.6 |
| Actuated g/C Ratio | 0.23 | 0.25 | 0.25 | 0.37 | 0.38 | 0.38 | 0.09 | 0.09 | | 0.10 | 0.10 | 0.10 |
| Clearance Time (s) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Vehicle Extension (s) | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 811 | 1268 | 338 | 555 | 1928 | 600 | 138 | 137 | | 173 | 168 | 163 |
| v/s Ratio Prot | 0.12 | c0.16 | | 0.03 | c0.24 | | 0.04 | c0.04 | | 0.04 | c0.04 | |
| v/s Ratio Perm | | | 0.01 | | | 0.12 | | | | | | 0.00 |
| v/c Ratio | 0.51 | 0.65 | 0.05 | 0.09 | 0.63 | 0.31 | 0.42 | 0.49 | | 0.35 | 0.37 | 0.04 |
| Uniform Delay, d1 | 50.9 | 51.7 | 43.9 | 31.4 | 38.4 | 33.0 | 65.7 | 66.1 | | 64.0 | 64.1 | 62.0 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.68 | 0.73 | 1.05 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.6 | 1.2 | 0.1 | 0.1 | 0.7 | 0.3 | 2.8 | 3.7 | | 1.2 | 1.4 | 0.1 |
| Delay (s) | 51.5 | 53.0 | 43.9 | 21.4 | 28.9 | 35.1 | 68.5 | 69.9 | | 65.2 | 65.5 | 62.1 |
| Level of Service | D | D | D | C | C | D | E | E | | E | E | E |
| Approach Delay (s) | | 52.1 | | | 29.7 | | | 69.3 | | | 64.2 | |
| Approach LOS | | D | | | C | | | E | | | E | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 42.7 | | | | HCM 2000 Level of Service | | | | D | |
| HCM 2000 Volume to Capacity ratio | | | 0.60 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 153.0 | | | | Sum of lost time (s) | | | 29.0 | | |
| Intersection Capacity Utilization | | | 63.7% | | | | ICU Level of Service | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

SURVEY SPONSORED BY THE
BUSINESS ADMINISTRATION COMMITTEE OF:



NRMCA
NATIONAL READY MIXED
CONCRETE ASSOCIATION

900 SPRING STREET, SILVER SPRING, MD 20910
www.nrmca.org

Company Size Analysis

| | Under 100,000 Cubic Yds. | 100,000 to 299,999 Cubic Yds. | 300,000 to 500,000 Cubic Yds. | Over 500,000 Cubic Yds. | Average NRMCA Member | Lowest Quartile | Upper Quartile |
|---------------------------------|-----------------------------|-------------------------------------|-------------------------------------|----------------------------|----------------------------|--------------------|----------------|
| 1 COMPANY DEMOGRAPHICS | | | | | | | |
| 2 | 3 | 6 | 10 | 24 | 12 | 13 | 8 |
| 3 | 50,545 | 190,798 | 386,012 | 1,168,871 | 504,620 | 494,427 | 387,681 |
| 4 | 18,692 | 34,286 | 38,063 | 48,716 | 43,566 | 38,407 | 48,109 |
| 5 | 18 | 51 | 87 | 213 | 102 | 108 | 78 |
| 6 | 2,839 | 3,745 | 4,421 | 5,494 | 4,969 | 4,574 | 4,971 |
| 7 | 129 | 114 | 104 | 104 | 112 | 114 | 105 |
| 8 | 3 | 6 | 6 | 12 | 7 | 5 | 7 |
| 9 | 1 | 3 | 5 | 7 | 4 | 4 | 2 |
| 10 | 27 | 27 | 26 | 25 | 26 | 26 | 26 |
| 11 | 103 | 118 | 111 | 114 | 113 | 113 | 112 |
| 12 | 481 | 602 | 642 | 668 | 605 | 572 | 607 |
| 13 | 22,168 | 71,228 | 145,043 | 392,946 | 175,458 | 185,299 | 132,635 |
| 14 | 2.3 | 2.7 | 2.7 | 3.0 | 2.9 | 2.7 | 2.9 |
| 15 | \$0.83 | \$0.95 | \$0.93 | \$0.89 | \$0.90 | \$0.87 | \$0.98 |
| 16 | 0.20 | 0.23 | 0.21 | 0.24 | 0.24 | 0.29 | 0.21 |
| 17 | \$1.03 | \$1.18 | \$1.15 | \$1.13 | \$1.14 | \$1.16 | \$1.19 |
| 18 EMPLOYEE PRODUCTIVITY | | | | | | | |
| 19 | 20 | 60 | 112 | 303 | 138 | 156 | 107 |
| 20 | 24 | 69 | 129 | 343 | 157 | 174 | 124 |
| 21 | 1 | 2 | 3 | 10 | 5 | 5 | 3 |
| 22 | 5 | 18 | 31 | 89 | 40 | 50 | 37 |
| 23 | 19 | 51 | 98 | 253 | 117 | 124 | 87 |
| 24 | 24 | 69 | 129 | 343 | 157 | 174 | 124 |
| 25 | 2,479 | 3,171 | 3,442 | 3,861 | 3,668 | 3,164 | 3,631 |
| 26 | \$206,062 | \$252,961 | \$255,335 | \$292,972 | \$279,551 | \$239,729 | \$308,320 |
| 27 | 12 | 15 | 19 | 19 | 16 | 16 | 15 |

Region analysis

| | Northeastern MidAtlantic Region | South- eastern Region | North Central Region | South Central Region | Great Lakes Region | Rocky Mountain Region | Pacific Northwest Region | Pacific Southwest Region | Average NRMCA Member | Lowest Quartile | Upper Quartile |
|--|---------------------------------------|-----------------------------|----------------------------|----------------------------|--------------------------|-----------------------------|--------------------------------|--------------------------------|----------------------------|--------------------|-------------------|
| 1 REGIONAL DEMOGRAPHICS | | | | | | | | | | | |
| 2 Number of ready mixed concrete plants | 7 | 22 | 15 | 14 | 9 | 5 | 10 | 10 | 12 | 13 | 8 |
| 3 Cubic yards of ready mixed concrete sold | 280,138 | 703,380 | 475,494 | 757,512 | 392,435 | 226,995 | 500,179 | 690,333 | 504,620 | 494,427 | 387,681 |
| 4 Cubic yards per plant sold | 41,306 | 31,708 | 32,668 | 53,953 | 42,858 | 47,395 | 51,647 | 70,489 | 43,566 | 38,407 | 48,109 |
| 5 Number of ready mixed concrete truck mixers | 69 | 150 | 117 | 116 | 90 | 46 | 110 | 118 | 102 | 108 | 78 |
| 6 Cubic yards per truck mixer | 4,075 | 4,695 | 4,072 | 6,538 | 4,350 | 4,969 | 4,559 | 5,833 | 4,969 | 4,574 | 4,971 |
| 7 Average age of truck mixer fleet (months) | 123 | 102 | 116 | 105 | 120 | 110 | 110 | 108 | 112 | 114 | 105 |
| 8 Number of aggregate hauling trucks | 4 | 6 | 17 | 5 | 2 | 6 | 30 | 6 | 7 | 5 | 7 |
| 9 Number of cement hauling trucks | 5 | 5 | 5 | 6 | 3 | 1 | 2 | 7 | 4 | 4 | 2 |
| 10 Distance per roundtrip (miles) | 27 | 25 | 30 | 24 | 22 | 32 | 24 | 29 | 26 | 26 | 26 |
| 11 Time per roundtrip (minutes) | 122 | 118 | 99 | 98 | 108 | 113 | 115 | 116 | 113 | 113 | 112 |
| 12 Total roundtrips | 559 | 667 | 597 | 638 | 621 | 479 | 586 | 649 | 605 | 572 | 607 |
| 13 Total number of concrete truck drivers' hours | 100,643 | 307,533 | 150,813 | 227,087 | 135,391 | 68,268 | 150,990 | 211,298 | 175,458 | 185,299 | 132,635 |
| 14 Delivered cubic yards per hour | 2.8 | 2.3 | 3.2 | 3.3 | 2.9 | 3.3 | 3.3 | 3.3 | 2.9 | 2.7 | 2.9 |
| 15 Variable delivery cost per minute | \$1.05 | \$0.65 | \$1.03 | \$0.81 | \$1.05 | \$0.99 | \$1.23 | \$1.12 | \$0.90 | \$0.87 | \$0.98 |
| 16 Fixed delivery cost per minute | 0.26 | 0.21 | 0.26 | 0.28 | 0.22 | 0.24 | 0.30 | 0.22 | 0.24 | 0.29 | 0.21 |
| 17 Total delivery cost per minute | \$1.30 | \$0.86 | \$1.28 | \$1.09 | \$1.27 | \$1.23 | \$1.53 | \$1.34 | \$1.14 | \$1.16 | \$1.19 |

18 EMPLOYEE PRODUCTIVITY

| | | | | | | | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 19 Number of production employees | 82 | 213 | 154 | 170 | 112 | 57 | 153 | 168 | 138 | 156 | 107 |
| 20 Total number of employees | 95 | 246 | 180 | 189 | 125 | 64 | 179 | 185 | 157 | 174 | 124 |
| 21 Number of outside sales representatives | 2 | 11 | 4 | 4 | 3 | 1 | 3 | 7 | 5 | 5 | 3 |
| 22 Number of union employees | 29 | 17 | 79 | 6 | 69 | 12 | 77 | 77 | 40 | 50 | 37 |
| 23 Number of non-union employees | 66 | 229 | 101 | 183 | 55 | 52 | 102 | 109 | 117 | 124 | 87 |
| 24 Total union and non-union employees | 95 | 246 | 180 | 189 | 125 | 64 | 179 | 185 | 157 | 174 | 124 |
| 25 Cubic yards per production employee | 3,401 | 3,308 | 3,096 | 4,458 | 3,515 | 3,996 | 3,278 | 4,117 | 3,668 | 3,164 | 3,631 |
| 26 Sales per total number of employees | \$290,933 | \$245,076 | \$233,635 | \$320,911 | \$248,400 | \$319,473 | \$315,217 | \$304,799 | \$279,551 | \$239,729 | \$308,320 |
| 27 Pieces of equipment per mechanic | 14 | 20 | 21 | 20 | 15 | 11 | 16 | 15 | 16 | 16 | 15 |

NEW VEHICLE PURCHASE ORDER

Potomac Truck Center, Inc.
3371 Kenilworth Ave, Bladensburg, MD 20781
Phone: 301-864-2000 Fax: 301-277-7211
www.BPTRUCKGROUP.com



Salesman: **CURT WAGNER** Date: **July 8, 2015**

Customer Information

Customer: **CHANEY ENTERPRISES L. P.** Tax Status: **Non-Exempt**
Address: **2410 EVERGREEN ROAD, SUITE 201**
City: **GAMBRILS** State: **MD** Zip: **21054**

| Truck Information | | Trade Information | | | | |
|-------------------|---------------|-------------------|------|-------|---------------|------------|
| Year | 2016 | Year | Make | Model | Serial Number | Value (\$) |
| Make | Mack | | | | | \$0.00 |
| Model | GU813 | | | | | \$0.00 |
| VIN # | 0 | | | | | \$0.00 |
| New/Used | New | | | | | \$0.00 |
| Stock/Order | Qty: 6 | Total: | | | | \$0 |

Truck Pricing

| | |
|-------------------------------|-------|
| Base Selling Price | _____ |
| F.R.E.T. | _____ |
| Tax Rate: 6% | _____ |
| Title Tax | _____ |
| Title Fee | _____ |
| Lien Fee | _____ |
| Tag Fee | _____ |
| Sub-Total | _____ |
| Extended Warranties | _____ |
| Total Sale Price | _____ |
| Total Price 6 Vehicles | _____ |
| Less Trades | _____ |
| Less Trade Tax Exemption | _____ |
| Less Deposit | _____ |
| Total Due at Delivery | _____ |

Extended Warranties

| Description | Cost (\$) |
|--|---------------|
| ALLISON EXT. WARRANTY (MIXER W/RETARDER) | \$0.00 |
| | \$0.00 |
| | \$0.00 |
| | \$0.00 |
| Total: | \$0.00 |

I have been informed of the availability of extended warranty plans applicable to the vehicle(s) I am intending to purchase.

I accept the extended warranties as stated

I decline the extended warranties at this time.

Signed: _____

Comments and Details

Specifications per quote reference # _____

Terms of Delivery

Estimated Delivery Date: _____ BUILD DATES WILL BE THE WEEK OF: _____

Payment Terms: _____

See attached Terms and Conditions

Acceptance

| | | | |
|---|--|--|--|
| Purchaser CHANEY ENTERPRISES L. P. Date: _____ Name of Corp., Partnership or Owner: _____ By: _____ Signature of Officer, Partner, or Owner: _____ Title: _____ | | Distributor Potomac Truck Center, Inc. Date: _____ Distributor: _____ Authorized Signature: _____ Title: _____ | |
|---|--|--|--|

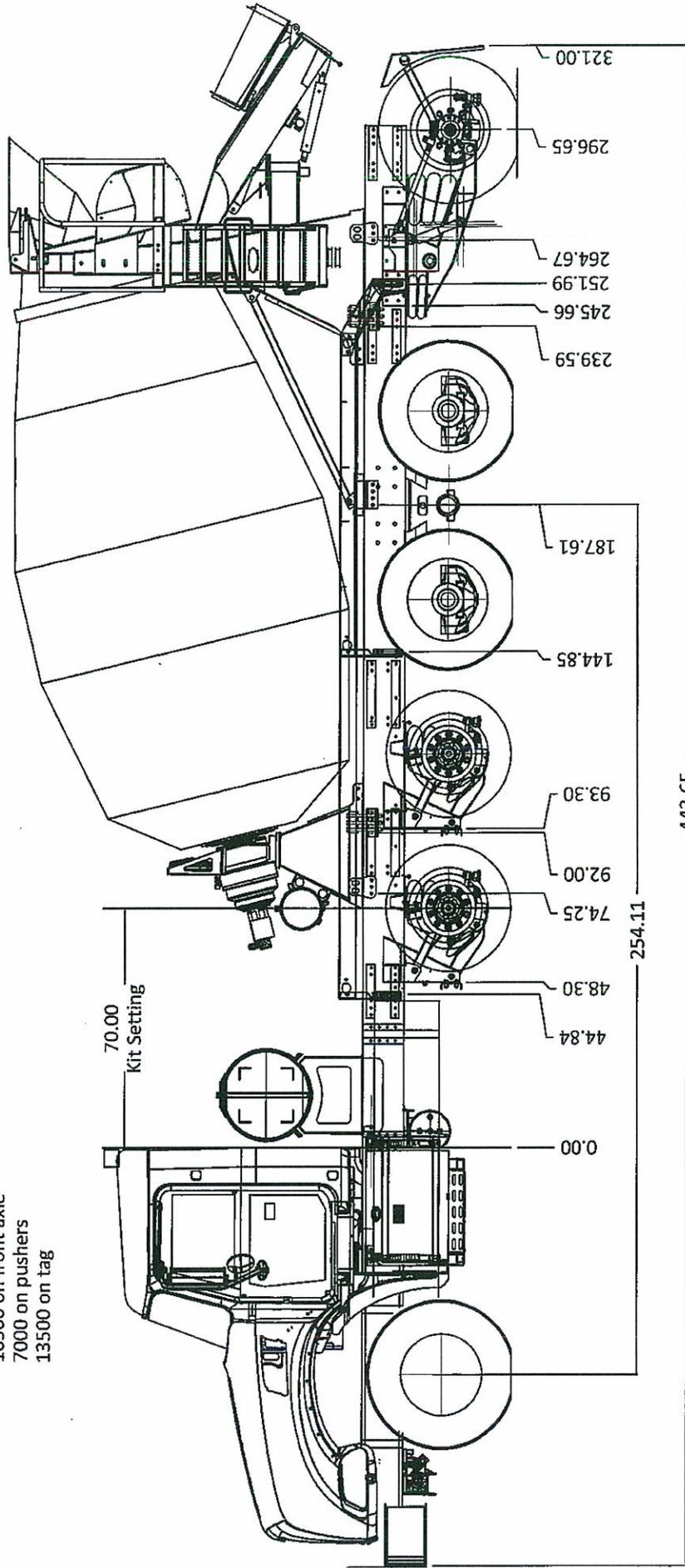
VA FEDERAL

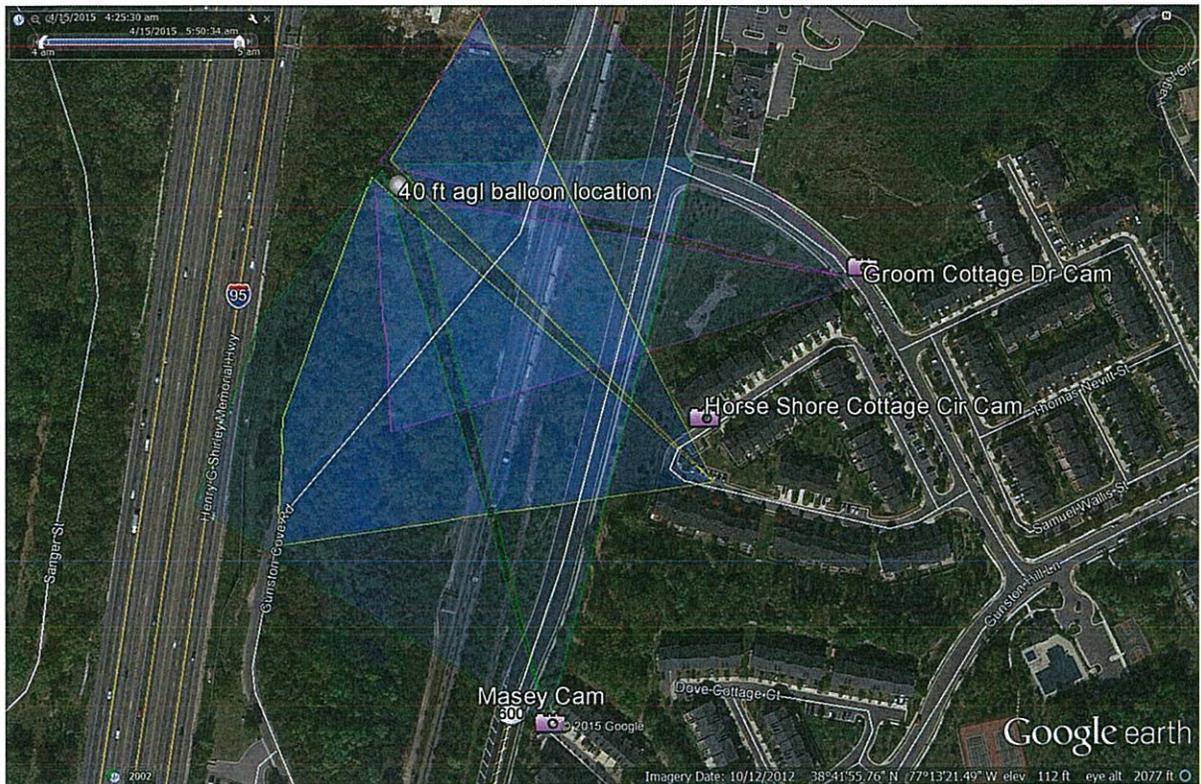
- ALLOWED 71500 ON 6 AXLES
- 40103 LB PAYLOAD = 10.02 YDS
- 5 1/2 YDS PROP TAG AXLE
- 7 1/2 YDS PROP PUSHER AXLES

VA STATE + COUNTY

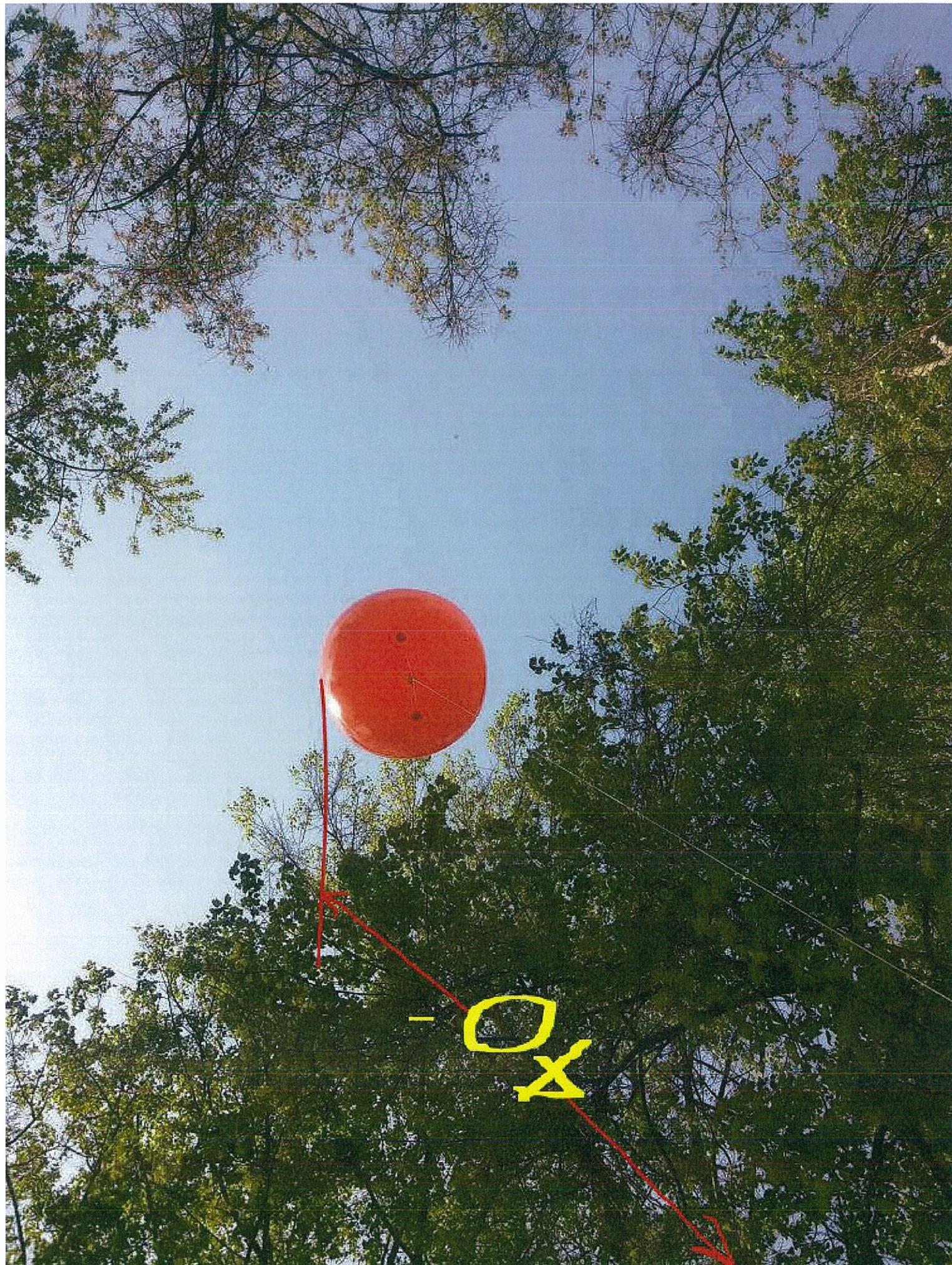
- WITH 5% OVERLOAD + VA CONCRETE HAULER PERMIT
- ALLOWED 73.5K W/4 AXLES ON 22' WHEEL BASE
- 42103 LB PAYLOAD = 10.52 YDS
- 6 1/2 YARDS PROP TAG
- PUSHER AXLES NOT NEEDED STATE + COUNTY

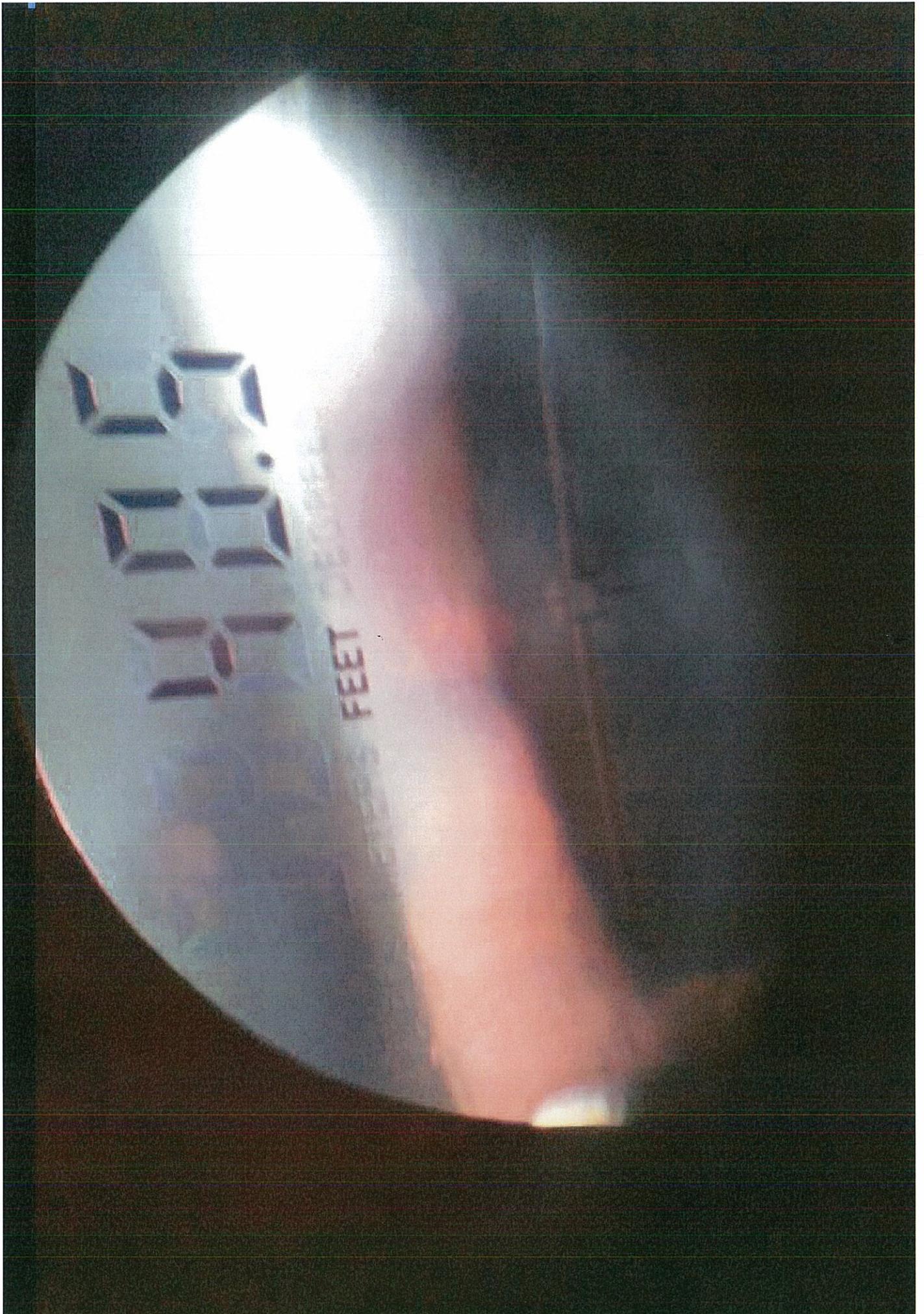
16500 on front axle
 7000 on pushers
 13500 on tag

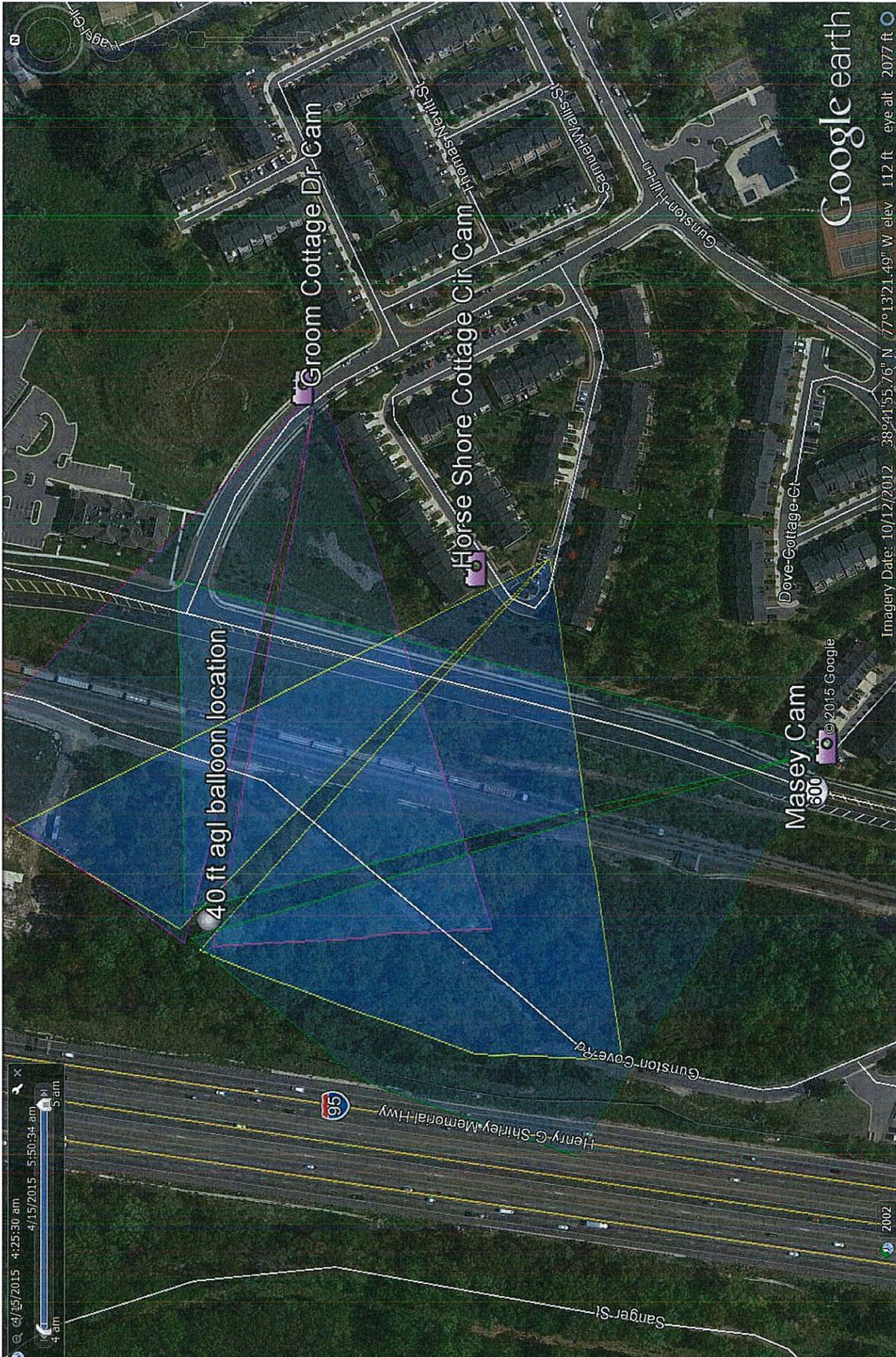




Overview map indicating the client specified vantage points DDIS used when conducting and documenting a preliminary Balloon Test at 9520 Gunston Cove Road.







40 ft agl balloon location

Groom Cottage Dr-Cam

Horse Shore Cottage Cir Cam

Masey Cam

© 2015 Google

Google earth

Imagery Date: 10/12/2012 38°41'55.76" N 77°13'21.49" W elev 112 ft eye alt 2077 ft

4/15/2015 4:25:30 am
4/15/2015 5:50:34 am
4 am 5 am

95

Henry G-Shirley Memorial Hwy

Gunston Cove Rd

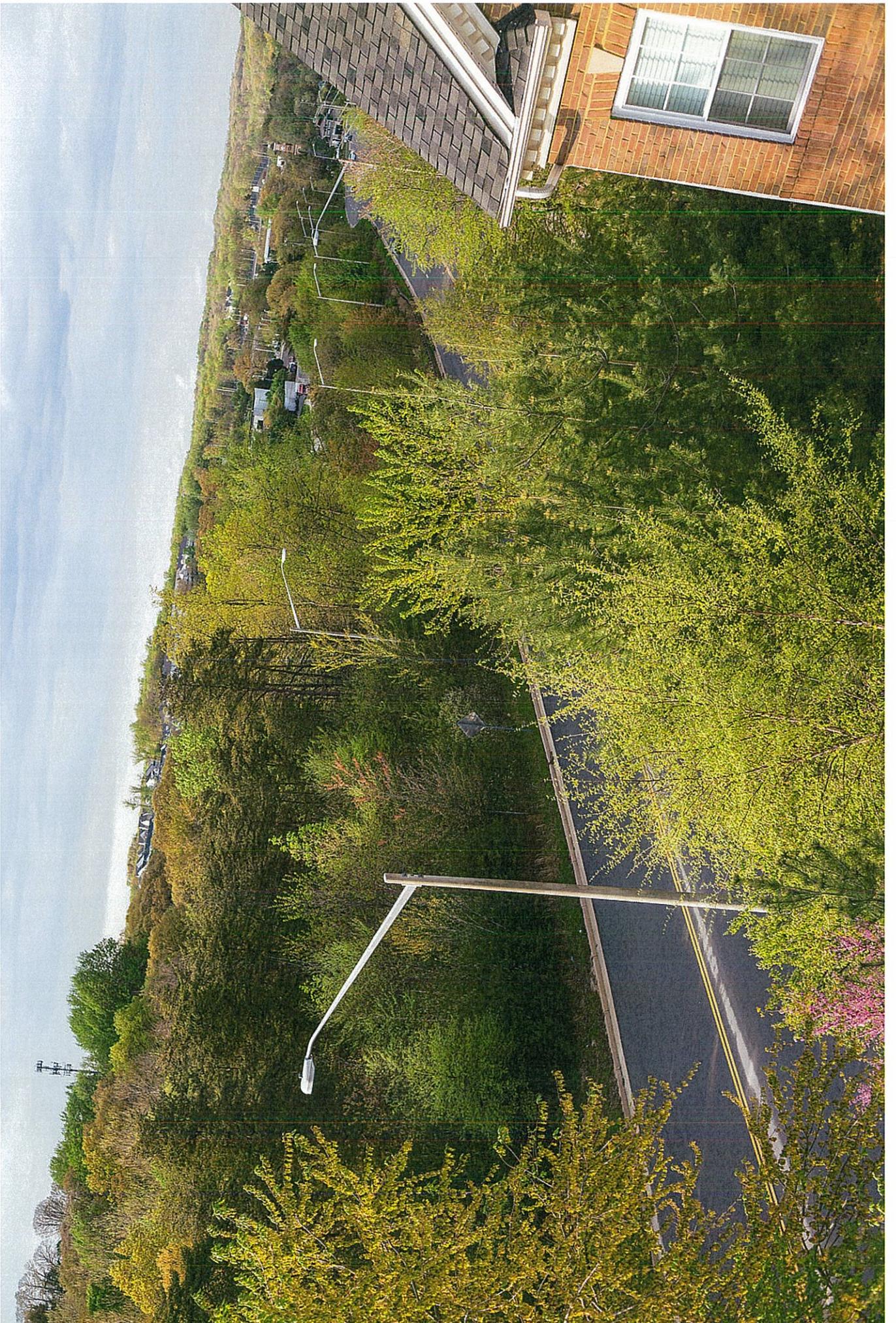
Gunston Hill Ln

Samuel Wallis St

Thomas Nellis St

Dove Cottage Ct

2002











An Oshkosh Corporation Company



AkzoNobel
Tomorrow's Answers Today

Con-E-Co Custom Colors



901 White
FLNA40568



White
FLNA40734



White
FLNA4002



Cemex-Mexico
FLNA40805 (L)



Masco White
FLNA40729



International White
FLNA60658



Cream Corn Yellow
FLNA10744



John Deere Yellow
FLNA10843



Chaney Yellow
FLNA10068



Caterpillar Yellow
FLNA10562



Parchment
FLNA40839



Light Stone
FLNA40417



MTM Tan
FLNA1539



Sierra Madre
FLNA80357



Gieger Tan
FLNA80351



Dunes/Desert Tan
FLNA80001



Kinetic Khaki
FLNA60622



Burnco Lt. Gray 428
FLNA70511



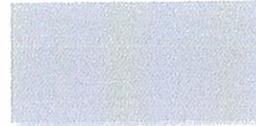
Silver/Gray
FLNA70407



MTM Gray
FLNA7210



Show Gray
FLNA70506



Con-E-Co Gray
FLNA70505



International Gray
FLNA70526



Battleship Gray
FLNA70375



Gieger Gray
FLNA70377



Burnco Dk. Gray 424
FLNA70510



Morgan Green
FLNA60716



Boral Green
FLNA60707



Concreta Dominica Blue
FLNA51085

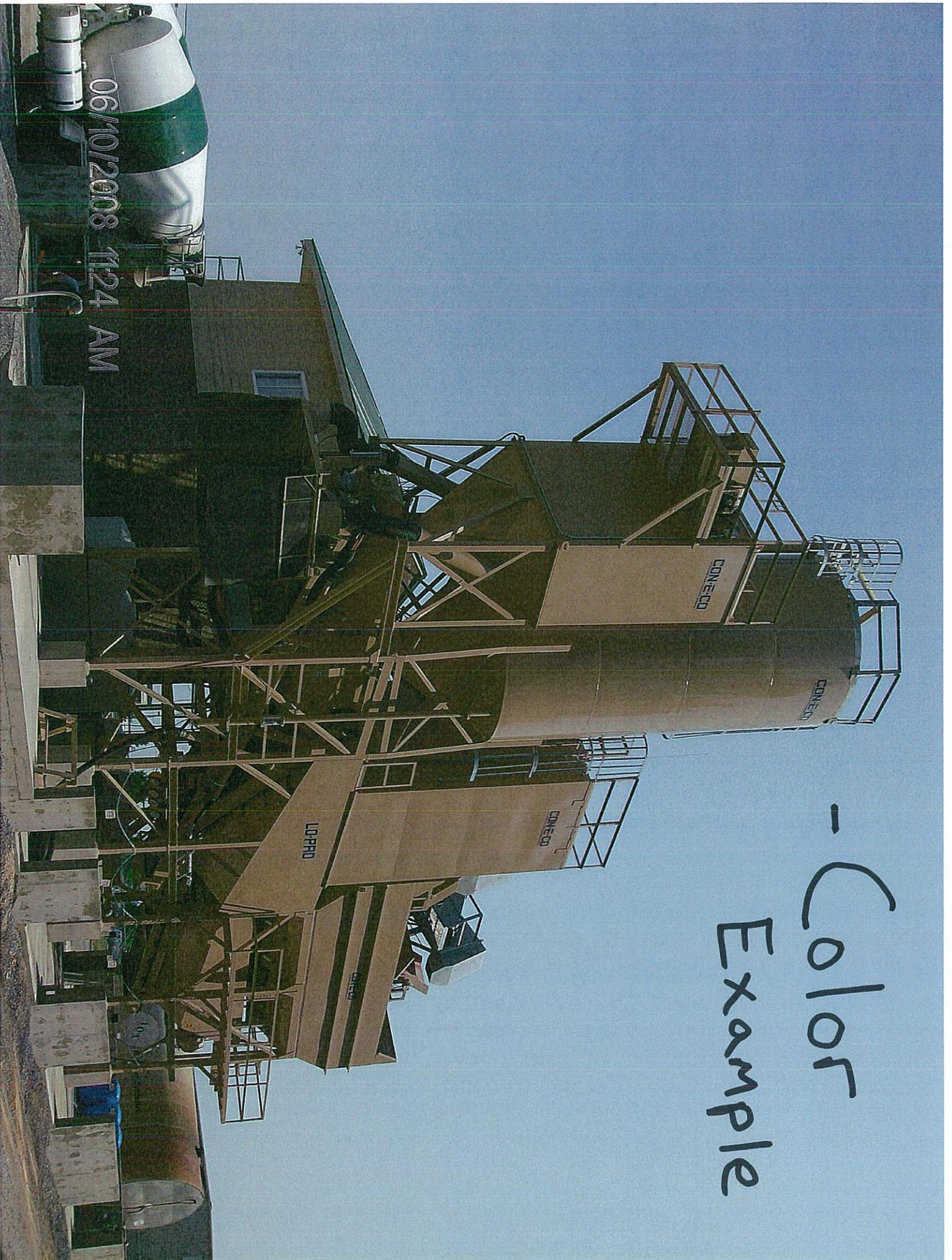


Burnco Red 485
FLNA31121

Additional information can be provided by the
AKZO NOBEL Color Help Line at 1-800-618-1010

Con-E-Co uses Autocoat BT LV650
for all of their OEM units.

- Color
Example





Phoenix Noise & Vibration, LLC
5216 Chairmans Court, Suite 107
Frederick, Maryland 21703
301.846.4227 (phone)
301.846.4355 (fax)
www.phoenixnv.com

30 June 2015

Gunston Cove Ready Mix Concrete Plant Noise Impact Analysis

For: Chaney Enterprises

By: Scott Harvey, P.E.

EXECUTIVE SUMMARY

Phoenix Noise & Vibration has conducted an analysis of potential noise impact upon neighboring residential properties from the proposed ready mix concrete plant in Lorton, Virginia. This analysis included noise measurements of proposed plant equipment, computerized noise modeling, and analysis of expected plant noise according to the Fairfax County noise limits.

The proposed ready mix concrete plant will contain multiple noise sources which generate relatively high levels of noise; however most of these noise sources will only operate for short periods of time and it is unlikely that all potential noise sources will operate simultaneously. Recommendations are made herein to control noise including the use of white noise back up warning devices and a silencer on the dust collector. Under typical expected plant operating conditions, noise levels generated by the plant may be audible; however with the recommended noise control devices, even with all equipment in simultaneous operation, plant noise levels, as measured at neighboring residential structures, should not exceed applicable Fairfax County noise level regulations.

It should be noted that the site is separated from the nearest residential properties by the CSX/AMTRAK railway and Lorton Market Street, two significant noise sources. Currently the residential site is exposed to noise levels much higher than those expected from the ready mix concrete plant.

NOISE TERMINOLOGY

Ambient Noise

A site's ambient noise is the combined noise level generated by all the noise sources which typically contribute to that site's noise environment. Depending upon the location of the site, the ambient noise may include roadway traffic, birds, insects, agricultural equipment, etc. Ambient noise and the level associated with that ambient noise can vary significantly depending upon the site.

Background Noise

The total noise of all sources other than the particular sound that is of interest.

dB vs. dBA

While the standard unit of measurement for sound is the decibel (dB), discussions of noise impacting the human ear use "dBA." The "A" refers to a frequency weighting network used to simulate the human ear's unequal sensitivity to different frequencies. The A-weighted noise level is therefore more representative of a human's perception of a noise environment than the unweighted overall noise level in dB and is currently used in most all environmental noise studies.

Ldn

The day-night average noise level, or Ldn, is the equivalent sound pressure level (average over a 24-hour period) obtained by adding 10 dB to sound pressure levels measured from 10:00 p.m. to 7:00 a.m. This 10 dB "penalty" accounts for the added sensitivity caused by noise generated during the nighttime hours. The Ldn is not a measurement of the instantaneous noise level.

The Ldn is sometimes referred to as the "DNL," however both terms represent the same quantity. The Ldn is NOT a measurement of the instantaneous noise level. It is very possible to have several short term events (tractor trailer, emergency vehicle siren, car horn, etc.) which generate a relatively high noise level (e.g. 85 dBA) during a given time period, yet have a more moderate overall Ldn value (e.g. 65 dBA Ldn).

Leq

The equivalent continuous noise level, or Leq, is the noise level averaged over a given time period. The Leq does not include any penalties or adjustments. The Leq could represent the noise level over 5 minutes, one hour, the daytime (7:00 AM to 10:00 PM) or nighttime (10:00 PM to 7:00 AM) hours, etc.

L90 and L10

A statistical rating of the noise level over a defined measurement time period. L90 is defined as the noise level which is exceeded 90% of the measurement time. Likewise, L10 is the noise level exceeded 10% of the time. L90 is generally accepted as the background noise level of the measurement location or the noise level without additional short term noise sources present.

Summing Noise Levels

Noise levels from multiple sources do not add arithmetically; i.e. when two noise sources generate 60 dB individually, they do not produce 120 dB when combined. Noise levels are measured using a logarithmic scale; therefore they must be summed logarithmically. In the decibel scale, two identical, non-coherent noise sources with the same noise level produce a 3 dB increase above when only one of those sources is heard (i.e. two dump trucks which generate 80 dB each individually generate 83 dB when running simultaneously).

Similarly, two different noise sources with a difference of 10 dB in their individual levels results in no measureable increase in noise when they are combined. Put another way, the quieter noise source does not increase the overall noise generated by the louder source; i.e. adding a 70 dB water pump into an environment where the noise level is already 90 does not increase the noise level in the immediate surrounding area any further above 90 dB.

NOISE REGULATIONS

Applicable portions of the Fairfax County Code of Ordinances, Chapter 18. –“Noise” have been reprinted here to indicate the design limits of the proposed ready mix concrete plant.

Article 4 – Noises Prohibited

Section 108-4-1 Specific Prohibitions

(f) Loading or unloading trucks in the outdoors within one hundred (100) yards of a residence between the hours of 9 p.m. and 6 a.m. the following day.

Section 108-4-4. –Maximum permissible sound pressure levels.

(a) It shall be unlawful for any person to operate, or permit to be operated, any stationary noise source in such a manner as to create a sound pressure level which exceeds the limits set forth in the table following title “Maximum Sound Pressure Levels” when measured at the property boundary of the noise source or at any point within any other property affected by the noise. When a noise source can be identified and its noise measured in more than one zoning district classification, the limits of the most restrictive classification shall apply.

Table 1 Maximum Sound Pressure Levels

| Frequency, Hz | dBA | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| dB Limit | 55 | 70 | 69 | 64 | 59 | 53 | 47 | 42 | 38 | 35 |

Table 1 indicates that noise levels generated by plant operations and equipment must not exceed 55 dBA¹ at any time as measured at neighboring residential property lines. These are instantaneous noise levels occurring at any given time, not the noise level averaged over some time period.

The ordinance also includes a restriction on a frequency basis which is listed in the table. Noise levels at each frequency band must not exceed those listed in the table. Interpretation of this limit is somewhat difficult by the lay user and therefore is not regularly used by Fairfax County officials in qualifying noise impact. The primary criteria for noise impact analysis is the overall dBA reading.

SITE DESCRIPTION & PLANT OPERATION

The proposed ready mix concrete plant will be located along Gunston Cove Road in Lorton Virginia approximately 0.4 miles south of its intersection with Lorton Road (property line shown in red in Figure 1). The proposed property is separated from the nearest residential development

¹ For further explanation of this term, see “Noise Terminology” on Page 2.

by the CSX/Amtrak railway and Lorton Market Street. The distance from the residential properties is approximately 145 yards. Based upon this distance the project is not governed by Section 108-4-1 Specific Prohibitions Paragraph (f) of the Noise Ordinance.

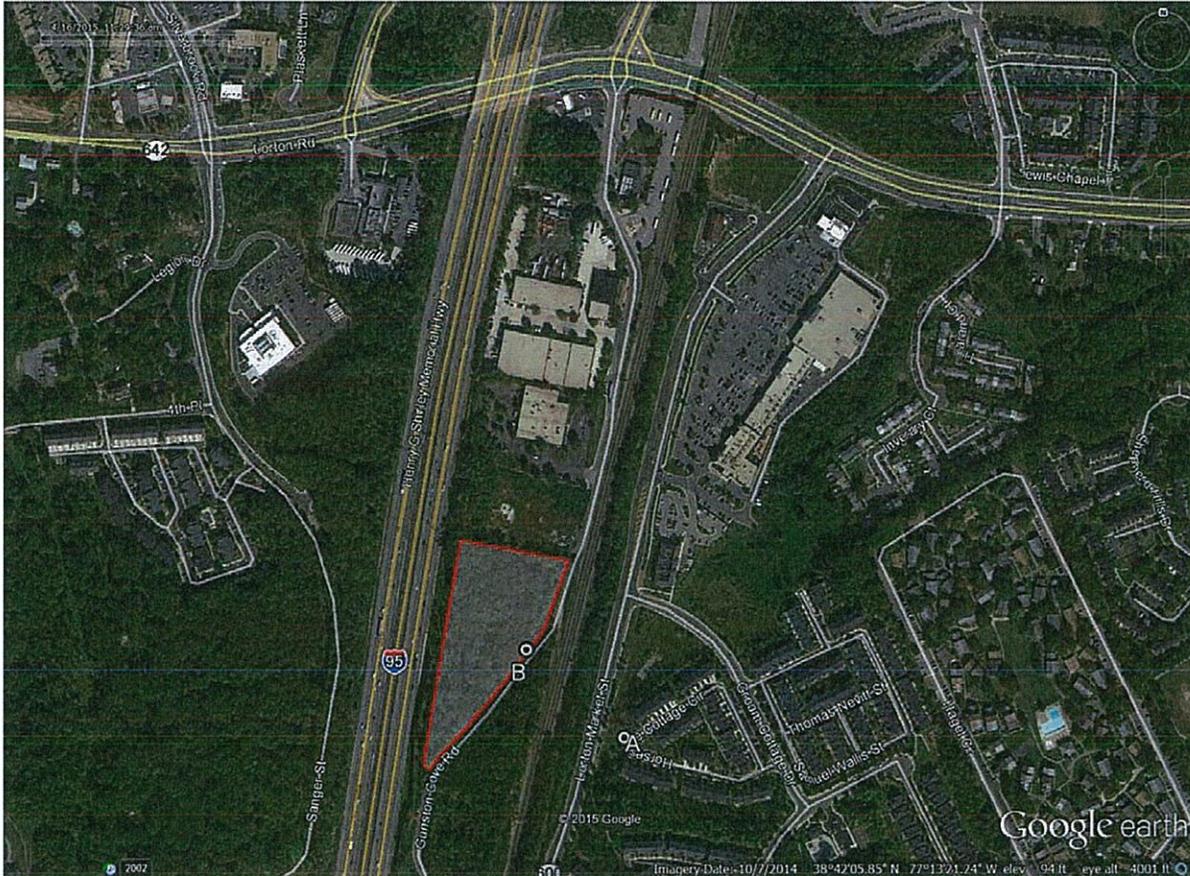


Figure 1 - Satellite image showing property bounds

MEASUREMENTS

On April 16 2015, Phoenix Noise & Vibration visited the Gunston Cove Road site to collect the current transportation noise exposure at the residential development closest to the proposed site. Again on April 29 a visit was made to the existing DC Village ready mix concrete plant in Washington, DC to measure noise levels generated by existing plant operations and plant equipment. Noise measurements were made using Type 1 sound level meters which meet ANSI S1.4 standards and were calibrated prior to the survey, traceable to the National Institute of Standards and Technology (NIST).

The concrete equipment used at the DC Village plant is generally the same type to be used at Gunston Cove. The single variation will be that the concrete mixer trucks used at DC Village include older, louder trucks whereas the proposed trucks at Gunston Cove will be newer, quieter units. The visit to the Gunston Cove site included measurement of a newer truck which did

exhibit lower noise levels than the older trucks. This truck was outfitted with a traditional “beep, beep, beep” backup warning device which was measured at Position B in the Horseshoe Cottage development.

Another option at Gunston Cove is the use of white noise backup warning devices rather than the traditional “beep, beep, beep” type of warning device. These white noise units prove less bothersome and quieter than the traditional type. Measurements were made of both types at the DC Village plant.

During the measurement surveys, several plant noise sources were identified as having the greatest potential to generate high noise levels at relatively long distances. These noise sources are presented in Table 2, along with the noise level generated by each source and the distance from the source to the measurement location.

Table 2: Potential plant noise sources with highest expected noise levels.

| Category | Noise Source | Source # | Noise Level (dBA) | At a Distance of # (feet) From Source |
|-----------------|--|----------|-------------------|---------------------------------------|
| Plant Operation | Cement truck blower | 1 | 88 | 25 |
| | Cement truck blower with shroud | 2 | 83 | 25 |
| | Dust collector w/ old concrete mixer revving | 3 | 90 | 25 |
| | Dust collector w/ new concrete mixer revving | 4 | 86 | 25 |
| | New concrete mixer revving alone | 5 | 78 | 25 |
| | Dust collector alone | 6 | 81 | 54 |
| | Dust collector with silencer | 6a | 64 | 54 |
| Loader | Passby | 7 | 76 | 30 |
| Back-Up Beepers | Traditional “beeping” alarm | 8 | 85 | 25 |
| | White noise alarm | 9 | 79 | 25 |

Table 2 does not include all noise sources associated with operation of the plant, mixer, and loader, only those sources which generate the highest individual noise levels. The 9 noise sources shown in Table 2 are those included in this analysis.

Table 2 also does not include noise from dump truck gates slamming after dumping materials, which was measured during the on-site surveys. Although the duration of this action is very short (less than one second), it is capable of generating a relatively high noise level. Since noise from dump truck gates slamming is relatively high, this noise source would have a significant impact on the plant’s noise level for that brief period of time when it occurs. Given the expected infrequent occurrence of this event and its short duration, noise from dump truck gates slamming has not been included in this analysis; however it is highly recommended that this action be prohibited on the site.

The visit to the Gunston Cove site also provided the opportunity to measure the noise level from various transportation sources near the existing townhomes of Horseshoe Cottage Circle. This was carried out to provide a reference for current noise impact upon these residences the closest

to the ready mix plant property. Measurements were made at location B as shown in Figure 1. Results are presented in Table 3.

Table 3 - Comparative measurements of current noise sources at Horseshore Cottage Circle

| Source | Noise Level, dBA |
|---|------------------|
| Freight train locomotive | 83 dBA |
| Freight train cars | 73 dBA |
| Passenger train | 71 to 78 dBA |
| Heavy truck (18 wheels) on Lorton Market Street | 61 dBA |
| Motorcycle on Lorton Market Street | 79 dBA |

COMPUTERIZE NOISE MODELING

A computer model was developed using CadnaA to represent the future ready mix concrete plant site and its surroundings. CadnaA is a three dimensional noise propagation model capable of calculating the combined noise level from multiple sources at select points or as noise contours throughout entire areas while accounting for factors such as topography, ground absorption, reflections, significant structures, etc. The computer model includes site and surrounding topography, existing structures surrounding the site and the future on site structures.

Data for each noise source shown in Table 2 was entered into the model, including the anticipated location on the future site and the height above ground. Each noise source was calibrated in the computer model using the on-site noise measurements. Noise source locations are shown on enclosed Drawing 1.

FUTURE PLANT NOISE LEVELS

The computer model calculated the noise levels generated by the plant throughout the surrounding areas under two operating conditions:

- “Worst Case” – all possible noise sources operating simultaneously (unlikely)
- Typical Operating Condition (majority of the time)

Noise levels for each case are presented on enclosed Drawings 2 and 3, respectively. These represent potential instantaneous noise levels occurring for any given moment in time, not the site’s noise level when averaged over an extended period of time. To control excessive noise the model included the dust collector with a silencer (see attached cut sheet) and the use of white noise backup warning devices.

The noise levels shown on Drawings 1 and 2 are a result of only ready mix concrete plant operations. These noise levels do not account for noise from the area's other potential noise sources, such as Lorton Market Street, Interstate 495, and the railway.

“Worst Case” Operating Condition

The “worst case” operating condition shown on Drawing 1, has been accounted for to simulate the highest noise level generated by the plant at one instantaneous moment. This is the condition when all sources are operating simultaneously and with a white noise backup warning device operating very close to Gunston Road. Under this scenario, Drawing 1 indicates that plant noise levels are generally below 55 dBA (the daytime limit) at the closest residential properties.

Typical Operating Condition

Drawing 2 represents a more typical plant operating condition and one which is likely to occur more frequently and for longer periods of time. This is the same condition as the “Worst Case” but without the backup warning device.

Note that under this condition more typical of the plant's operation, plant noise levels are generally below 50 dBA and in compliance with the standard.

OTHER BACKGROUND NOISE

Other than the proposed ready mix concrete plant, the area includes many other sources of noise that will contribute to the area's typical background noise² level at any period of time. The most significant noise sources include Lorton Market Street and the railway. By comparison to levels measured on the Horseshoe Creek site listed in Table 3, noise levels from the proposed ready mix plant will be far lower than frequent events such as large trucks on Lorton Market Street or freight and passenger trains on the railway.

To further put plant noise (as measured at neighboring residences) in perspective, enclosed Table 4 includes examples of noise levels generated by common sources. Note that at a distance of three feet, the noise level from a person speaking in a normal speaking voice is approximately 65 dBA.

² For further explanation of this term, see “Noise Terminology” on Page 2.

CONCLUSIONS

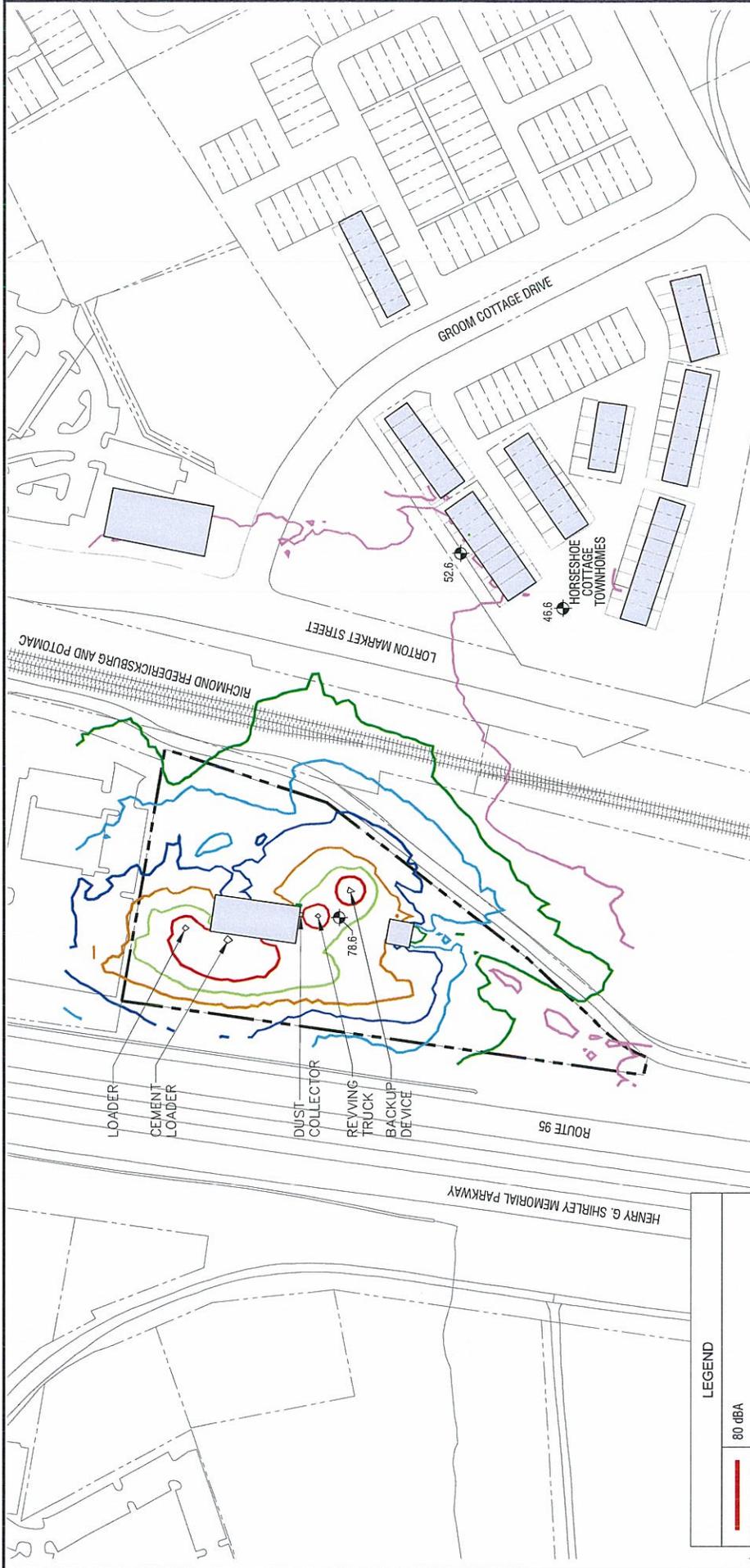
While noise resulting from plant operations may be heard at neighboring residential properties, it will comply with Fairfax County overall noise limit of 55 dBA when measured at residential property lines. Noise levels resulting from typical daily plant operations (occurring throughout the majority of operating hours) will generally be below the limit as measured at residential property lines.

In order to maintain this level of noise control the following items are recommended:

- White noise backup warning devices
- Silencers on dust collector
- Limit equipment speed on site to 15 mph

Even when operating under the “worst case” scenario, plant noise will generally be below the Fairfax County noise ordinance limit at surrounding residential property lines.

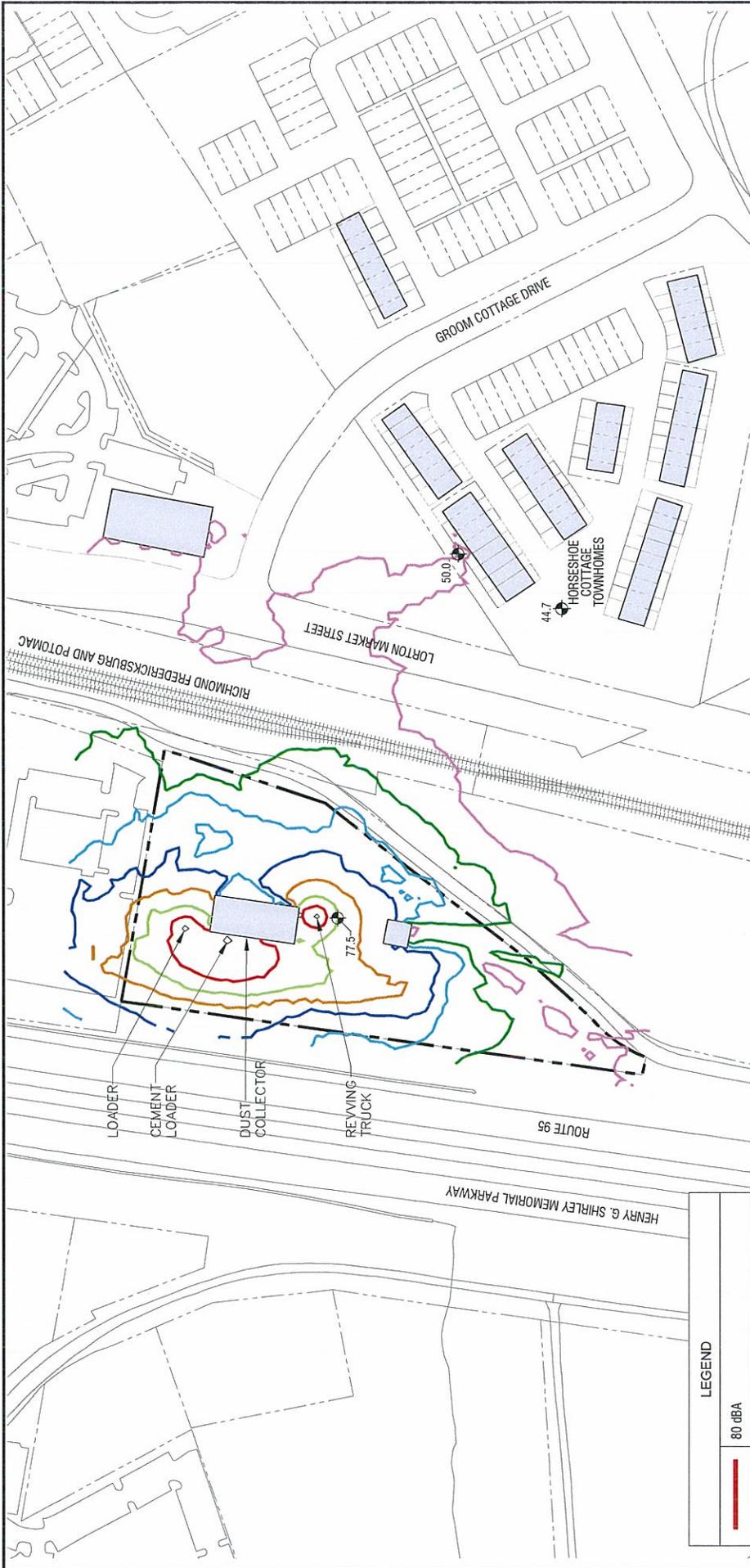
Appendix



GUNSTON COVE
CONCRETE PLANT
GROUND LEVEL NOISE CONTOURS
ALL EQUIPMENT ON
 DWG. No. 1 PRJ. No. CHET1501 DATE JUN-29-2015
 SCALE 1 NOT TO SCALE DRAWN BY WCC

| LEGEND | |
|--------|-------------------------------|
| | 80 dBA |
| | 75 dBA |
| | 70 dBA |
| | 65 dBA |
| | 60 dBA |
| | 55 dBA |
| | 50 dBA |
| | NOISE ANALYSIS LOCATION (dBA) |
| | # |

ROUTE 95
 HENRY G. SHIRLEY MEMORIAL PARKWAY
 LOADER
 CEMENT LOADER
 DUST COLLECTOR
 REWINDING TRUCK BACKUP DEVICE
 78.6
 46.6
 52.6
 HORSESHOE COTTAGE TOWNHOMES
 LORTON MARKET STREET
 RICHMOND FREDRICKSBURG AND POTOMAC



| LEGEND | |
|-------------------|-------------------------------|
| [Red line] | 80 dBA |
| [Green line] | 75 dBA |
| [Orange line] | 70 dBA |
| [Blue line] | 65 dBA |
| [Light Blue line] | 60 dBA |
| [Dark Green line] | 55 dBA |
| [Pink line] | 50 dBA |
| [Symbol] | NOISE ANALYSIS LOCATION (dBA) |
| [Symbol] | # |

PHOENIX
noise & vibration
5216 Chammans Court Suite 107
Frederick, MD 21703
301-546-4227

GUNSTON COVE
CONCRETE PLANT
GROUND LEVEL NOISE CONTOURS
ALL EQUIPMENT ON - NO BACKUP

DWG. No. 2
PRL. No. CHE1501
SCALE NOT TO SCALE

DATE JUN-29-2015
DRAWN BY WCC





Acoustic Calculation

329-15-1643 #1-004

VAW Systems Ltd.
1300 Inkster Boulevard
Winnipeg, MB R2X 1P5

Phone: (204) 697-7770
Fax: (204) 697-7789

Project Name:
Customer: Chicago Blower Corporation
Frank Pedota

Quote Date: Jun 15, 2015
Valid Until: Aug 14, 2015
Quoted By: Frank Pedota, Chicago Blower Corporation

Silencer Information

System Tag:
Silencer Tag:
Quantity: 1
Model: 14VRDS-S31
Flow Rate: 5835 cfm @ 0.075 lb/ft3
Silencer Face Velocity: 3042 fpm
Pressure Drop: 0.82 in WG
Noise Criterion: 85 dBA @ Position 1 - 3 ft from Silencer Discharge

| Sound Level Calculation | | | | | | | | | |
|--------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Description | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | Awt |
| Fan Lw | 96 | 95 | 100 | 104 | 102 | 98 | 95 | 90 | 106 |
| Power Split | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | |
| End Reflection | -9 | -5 | -2 | 0 | 0 | 0 | 0 | 0 | |
| Directivity | 1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | |
| Divergence - Outdoors | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 | |
| Net Un-Silenced Lp | 78 | 82 | 91 | 97 | 96 | 92 | 89 | 84 | 100 |
| DIL | -3 | -6 | -10 | -16 | -23 | -26 | -22 | -17 | |
| Net Silenced Lp | 75 | 76 | 81 | 81 | 73 | 66 | 67 | 67 | 81 |
| Sil GN (Lp) | 54 | 51 | 48 | 47 | 48 | 51 | 50 | 47 | 56 |
| Net Lp | 75 | 76 | 81 | 81 | 73 | 66 | 68 | 68 | 81 |

Silencer Information

Silencer Tag: 14VRDS-S31

Model: 1

Quantity: 137 lbs

Unit Weight: 0.82 in wg

Fan Information

System Tag: 5835 cfm @ 0.075 lb/ft³

Flow Rate: 70 °F

Ambient Temp: 70 °F

Operating Temp: Single Width

Fan Width: 85 dBA

Noise Criterion: 1 (0° from Silencer Opening)

Required: 3 ft

Position No.: Outdoors

Distance: 63 125 250 500 1k 2k 4k 8k

Location: 96 95 100 104 102 98 95 90

Frequency: 3 6 10 16 23 26 22 17

Fan LW: DIL

DIL

Silencer Construction

- HRS 14 Ga Casing
- GALV Internals
- 2in HRS Flange - Fan Connection
- 2in HRS Flange - System Connection
- Acoustic Media with Fiberglass Cloth Media Protection
- VAW's standard construction methods will be used, which may include caulking and stitch welding.

Exterior Coating System

Coat 1: Interlac 789 DTM Industrial Enamel (2-4 mils)

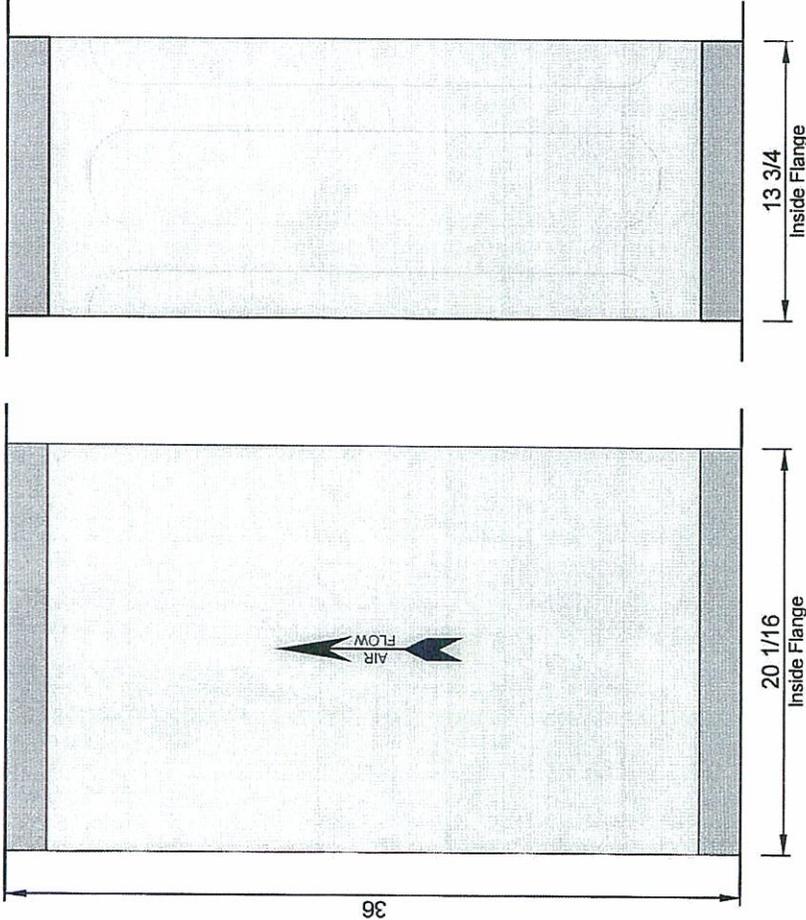
Color:

Interior Coating System

Coat 1: VAW Standard Primer

Color: VAW Gray

The Internal Coating System only covers the flange mating surfaces and the exposed internal hot rolled steel surfaces.



The silencer selection is based on the input fan sound data provided by the fan manufacturer. It does not take into consideration other factors which may contribute to the over all sound level. This may include noise from the motor, casing, duct, or other equipment. Pressure drop does not take into account system intake or discharge losses. The silencer construction is valid for temperatures equal to or less than 500 °F (260 °C). The coating is valid for temperatures equal to or less than 200 °F (93 °C).

Unless Otherwise Specified:
 -Dimensions are in inches.
 -Dimensions shown are nominal. For information on manufacturing tolerances contact VAW Systems Ltd.

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VAW Systems NOISE CONTROL
 1300 Inkster Boulevard, Winnipeg, Manitoba, Canada www.vawsystems.com
 CUSTOMER Chicago Blower Corporation
 PROJECT
 DRAWING TITLE RDS - Rectangular Discharge Silencer
 General Design & Performance
 DATE 15-Jun-2015
 DRAWN BY Frank Pedraza
 MODEL No. 14VRDS-S31
 SCALE NTS
 SIZE A DWG NO. 329-15-1643 #1-004 REV A SHT 1 of 1

| REV | DESCRIPTION | DATE ISSUED | BY | APR. BY | REVISIONS |
|-----|-------------|-------------|----|---------|-----------|
| A | FIRST ISSUE | 15-Jun-2015 | FP | | |

NRMCA GREEN-STAR CERTIFICATION PROGRAM

Developed by

**NRMCA
Operations, Environmental and Safety Committee
Environmental Task Group**

Version 1.1

Published - 21 April 2010

Effective - 1 July 2010



In collaboration with the US Environmental Protection Agency



Components of Green-Star Program

- 1. Executive Summary - Pg 3**
- 2. Definitions - Pg. 4**
- 3. Introduction - Pg. 5**
- 4. Green-Star Certification Program - Pg. 5**
- 5. Green-Star Requirements / Components - Pg. 5**
- 6. NRMCA Accredited Green-Star Auditor Requirements - Pg. 7**
- 7. EMS Required Components – Pg. 9**
- 8. Document Revision – Pg. 13**

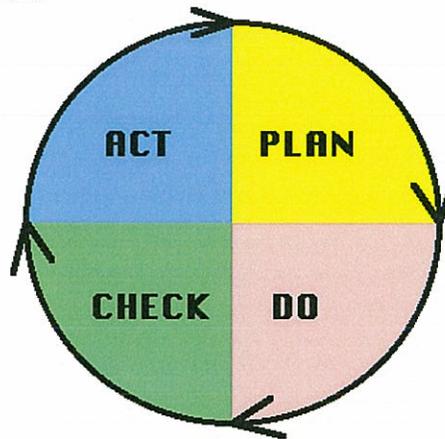
Attachments

- A. Green-Star Process Flowchart – Pg. 14**
- B. NRMCA Accredited Green-Star Auditor Application – Pg. 15**
- C. NRMCA Green-Star Certification Application – Pg. 17**
- D. NRMCA Green-Star Sample Certificate – Pg. 20**
- E. 10 Guiding Principles of Environmental Stewardship – Pg. 21**

1. Executive Summary

The Green-Star Program has been created to provide the ready mixed concrete industry with an “industry specific” program that focuses on the unique operational characteristics of the industry, and which may serve to fill the gap between industry efforts and other Environmental Management Systems (EMS)-based certification programs (e.g. ISO 14001, etc.). While it is not meant to take the place of such programs, it can serve as an effective alternative to these programs due to its enhanced accessibility to the concrete industry.

The Green-Star Program utilizes a company’s existing EMS based on the Plan-Do-Check-Act model of continual improvement.



The Green-Star Program will recognize those facilities with an Environmental Management System. Some potential Green-Star benefits include:

- Favored Status – Customers favor doing business with organizations that are known to be protective of the environment.
- Increased Profits – Organizations will attain savings through its efforts in pollution prevention and waste reduction.
- Improved Efficiency – Sound, consistent environmental management methods will improve profits.
- Community Goodwill – An Organizations stand on environmental policy and action may be the most important factor in achieving and maintaining the community’s goodwill.
- Reduction of Liability and Risk – An Organization is less apt to have environmental problems by using a pro-active EMS that documents results and has continual improvement.

The NRMCA encourages all companies to take a closer look at the Green-Star Program and its existing Environmental Management System and start the process of becoming Green-Star Certified.

2. Definitions

Company Official – A person who has financial and operational responsibility over the management of the concrete plant and for planning and directing the plant environmental personnel and taking corrective action when necessary (i.e., Corporate Officer, Owner, President & Vice-President).

Continual Improvement – Process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization's environmental policy.

EMS – Environmental Management System. Part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.

Environmental Policy – Statement by the organization of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives and targets.

Gap Analysis – An establishment of a baseline to identify gaps in the Environmental Management System from which to start the process of continual improvement.

NPDES – National Pollutant Discharge Elimination System

Pollution Prevention – The use of processes, practices, materials or products that avoid, reduce or control pollution, which may include recycling, treatment, process changes, control mechanisms, efficient use of resources and material substitution.

Process Water – Any water which comes in direct contact with any raw materials, finished products, byproducts or wastes. This includes any water that is used in the production of concrete.

RCRA – Resource Conservation and Recovery Act of 1976. RCRA established controls for the handling and disposal of solid wastes and hazardous wastes.

SPCC – Spill Prevention Control and Countermeasures. A plan required by EPA to manage fuel and liquid chemical stores.

Storm Water – storm water runoff, snow melt runoff and drainage.

Title III of SARA – The Emergency Planning and Community Right-to-Know Act

3. Introduction

The Green-Star Program of the National Ready Mixed Concrete Association has been designed by the Environmental Task Group of the Operations, Environment and Safety Committee (NRMCA-OES) as a means to support the efforts of the ready mixed concrete industry towards environmental excellence, through the recognition of the use of Environmental Management Systems (EMS) as a tool for environmental benchmarking and continual improvement, and as a means to recognize those who adhere to essential principals of the environmental and sustainability movement of our industry.

Finally, the Green-Star Program will serve as a useful mechanism to recognize those within the industry who have achieved or are actively working towards environmental excellence and/or a demonstrable reduction of environmental impacts, following the principals of sustainability as well as providing a formal opportunity for the recognition of those companies through a rigorous, structured certification process capable of withstanding third-party oversight. The foundation of the Green-Star program was created in collaboration with the Environmental Protection Agency's (EPA) Green Highways Partnership and the 10 Guiding Principles of Environmental Stewardship found in Attachment E.

4.0 Green-Star Certification Program

- 4.1 The Green-Star Program is a Certification Program, in that individual concrete plants will be certified by NRMCA as being in conformance with the requirements and standards of the criteria of the Green-Star Program.
- 4.2 The certification will be made on a two-year basis, and will be valid for two years.
- 4.3 The certification will be required to be renewed bi-annually, with the date of certification effective on the application date.
- 4.4 Certifications will be made on a plant-by-plant basis (i.e., concrete facilities will be Green-Star Certified, not concrete companies, company divisions, corporate personnel, etc).
- 4.5 Certification applications and renewals will be made on forms provided by NRMCA or a facsimile thereof.

5.0 Green-Star Requirements / Components

- 5.1 The Key Components of the Green-Star Program are as follows:
 - A. A concrete plant facility must have implemented an EMS that satisfies the EMS criteria of this document.

- B. The EMS must have been in place and have had completed a minimum of one (1) complete cycle of at least 3 (three) months in cycle duration after the initial environmental baseline (Gap Analysis) has been completed (although longer durations, of at least 6 (six) months, are strongly advised).
- C. The following components must be part of the EMS implemented by an applicant concrete plant facility:
 - 1. An environmental policy statement.
 - 2. A program for continual improvement in key environmental areas of concern to the concrete industry, as described in this document.
 - 3. A self-evaluation program to gauge regulatory compliance level and environmental operational status. Use of a regular documented audit program, either by the facility itself or through a third-party auditing program, is preferential.
 - 4. The development of measurable goals (where appropriate) to be used as performance benchmarks against which the performance of the concrete facility will be evaluated.
 - 5. A comprehensive environmental training program, with an emphasis on appropriate NRMCA training courses or equivalent.
 - 6. A demonstration of adequate staffing and management commitment with which to implement and support the EMS at the concrete plant facility.
 - 7. A public outreach program, with which the facility can interact with the community on issues of environmental relevance to a degree deemed appropriate to the facility in question.
- D. Green-Star certification is available for the entire ready mixed concrete industry. Certified plants may be NRMCA members or non-members.
- E. Initial applications for Green-Star certification must be reviewed and certified by an NRMCA-approved Green-Star Auditor, and can be submitted by either the Green-Star Auditor or the facility itself; however no applications will be approved (and no concrete facility can become certified) without prior Green-Star Auditor certification.
- F. Renewal applications for Green-Star Certification must be reviewed and receive a current certification by an NRMCA-approved Green-Star Auditor, and can be submitted by either the Green-Star Auditor or the facility itself; however no applications will be approved (and no concrete facility can become certified) without prior Green-Star Auditor certification.

- G. Green-Star facilities that are part of an acquisition, merger or divestiture will continue to hold Green-Star status until the 2-year cycle ends, at that time the facility will need to reapply for Green-Star status.

6.0 NRMCA Accredited Green-Star Auditor Requirements

In order to become Green-Star certified, all applications for submittal (and the underlying EMS program) for each individual concrete plant facility must receive prior review and certification by an approved NRMCA Accredited Green-Star Auditor, with a current registration from NRMCA, who meets the following criteria.

Accredited Green-Star Auditor status can only be given to individuals, not to facilities or companies. In order to become a registered NRMCA Accredited Green-Star Auditor, each applicant for Auditor accreditation must meet the following criteria:

- 6.1 Application for Green-Star Auditor accreditation must be submitted to NRMCA, and approved. Until NRMCA approves an application for Green-Star Auditor accreditation, no individual can certify any application for certification under the Green-Star program. Renewal applications must be made on a 3 (three) year basis, on forms provided by NRMCA. Approved NRMCA Green-Star auditors will receive an individual number for certification tracking.
- 6.2 Auditors must meet the following criteria:
 - A. Must have completed the NRMCA Environmental Course and passed the certification exam. Equivalent training may be considered by NRMCA on a case-by-case basis but must include the subjects of the NRMCA Environmental Course (Environmental Management Overview, Water Quality Regulations and Permitting, Water Quality Management, SARA/Hazardous Materials, Materials Storage to include SPCC and admixtures, RCRA, Vehicle Repair Shops, Returned Concrete and Solids Management, Total Company Environmental Commitment, Environmental Auditing and EMS Systems, Air Quality Management, Noise and Plant Aesthetics).
 - B. Educational / Work Experience Requirements:
 - 1. Must have a college degree issued by an appropriate degree-granting institute of higher learning in an appropriate field of study (e.g., engineering, construction management, a field of scientific study, etc.). If a potential applicant lacks a college degree, the applicant must have had a minimum of 2 (two) years documented work experience in the field of environmental management in the ready mixed concrete industry to take the place of the college degree. This requirement of 2 (two) years work experience is in addition to the 3 (three) years indicated below (i.e., an applicant

- without a college degree is required to have a total of 5 (five) total years of appropriate work experience in the field of environmental management in the ready mixed concrete industry).
2. Must have a minimum of 3 (three) years direct (and documented) work experience in the field of environmental management in the ready mixed concrete industry. This means that an applicant with a college degree is required to have a total of 3 (three) years work experience, an applicant without a college degree must have a total of 5 (five) years work experience.
- 6.3 Applicants with suitable years of work experience in other concrete manufacturing industries (e.g., the precast industry, concrete block industry), similarly consultants will be considered by NRMCA on a case-by-case basis, and however a majority of their work must be in the construction materials industries.
 - 6.4 Prior to Certification, each applicant for NRMCA Accredited Green-Star Auditor status must participate in an NRMCA Green-Star Auditor Training Session, to be held in a manner, time and location at the discretion of NRMCA staff, during which the basic fundamentals of the Green-Star program will be reviewed, as well as any current developments relevant to the Green-Star program.
 - 6.5 Upon certification, Green-Star Auditors will be required to attend at a least one (1-hour) NRMCA webinar/training course dealing with Green-Star or EMS issues per calendar year and/or participate in the annual Green-Star Auditors Forum to be held at ConcreteWorks starting 1 January 2011. NRMCA Staff will track this annual requirement on a calendar year basis.
 - 6.5.1 Green-Star Auditors failing to meet these criteria will be decertified and will need to re-apply again in the future. A new Green-Star Auditor number will be issued.
 - 6.6 NRMCA reserves the right to reject any applicant for Green-Star Auditor accreditation at its own discretion for failure to possess the necessary qualifications, for engaging in any activity which would be considered to be a contravention of the requirements of an accredited auditor as described herein, or for having provided services in a manner not in accordance with the high professional and ethical standards expected to be possessed by an NRMCA Accredited Green-Star Auditor (as deemed by NRMCA's Environmental Task Group).
 - 6.7 Accredited Green-Star Auditors may be "private" auditors, providing services only to one concrete company in particular, or may be "public" auditors, providing services to whoever may be interested in the retention of said auditor.
 - 6.8 NRMCA does not deny or condone the provision of Accredited Green-Star Auditor services for compensation.

- 6.9 An accurate and complete listing of NRMCA Accredited Green-Star Auditors, both private and public, will be displayed on NRMCA's website, unless specifically requested otherwise by an Accredited Auditor.
- 6.10 In the event that a person does not meet the criteria of a Green-Star auditor, they will be asked to work on application/experience deficiencies and reapply. A person can formally challenge the NRMCA by taking their case to the NRMCA Environmental Task Group and the NRMCA Executive Committee for Green-Star Auditor certification.

7.0 EMS Required Components

In order to become Green-Star Certified, a concrete facility must have implemented, and utilize a current Environmental Management System (EMS) at the time of certification. While NRMCA has no formal guidelines on what the format of an EMS must be, it must be appropriate to the scale and complexity of the facility in question, and it must address the key EMS components outlined below (at a minimum).

The EMS of a concrete facility under consideration for Green-Star Certification must have been implemented in its entirety for a minimum of one (1) full cycle, of a minimum time period of 3 (three) months after the initial environmental baseline (Gap Analysis) has been completed (but longer durations, of at least 6 (six) months minimum are strongly advised). A Gap Analysis is used to identify any initial regulatory or operational environmental deficiencies, housekeeping issues, creation of metrics for tracking environmental performance, training deficiencies and creation of a public outreach program, with which the facility can interact with the community on issues of environmental relevance. The concept of a "cycle" is that an EMS is a continual, cyclical process (based on a continual "Plan-Do-Check-Act" model), serving to:

- A. Provide a means for planning facility efforts including an evaluation of environmental aspect (activities or processes) and resultant environmental impacts (including the methodology used in determining which aspects/impacts that will be addressed) and the establishment of measurable performance goals at the beginning of the EMS cycle ("Plan");
- B. Implement measures, practices and activities in an effort to meet these goals through the duration of the EMS cycle ("Do");
- C. Evaluate measurable performance levels specific to these identified goals at the end of the EMS cycle ("Check");
- D. Reassess facility activities in light of performance levels achieved, and the re-evaluation of environmental impacts and the establishment of new measurable performance goals to the beginning of the next EMS cycle ("Act").

The EMS does not “end”, but continues immediately on from one EMS cycle to the next. The EMS must be current at the time of certification, and from initial EMS inception should remain in continual usage. Any lapse in EMS utilization may lead to the loss of Green-Star certification (requiring new application upon certification of a current EMS after completion of one cycle).

In order to receive Green-Star Certification, the EMS of a concrete plant facility must be reviewed and certified by an NRMCA Accredited Green-Star Auditor, as having met the minimum conditions and requirements of the EMS as outlined below.

NRMCA will randomly review 5% of the Green-Star facilities to ensure that EMS systems are in place and operating correctly. NRMCA reserves the right to revoke a facility’s Green-Star certification. The plant will be asked to correct deficiencies and re-apply for Green-Star certification. A facility that has been decertified as a Green-Star plant can take their case (challenge) to the NRMCA Environmental Task Group and challenge the Green-Star decertification decision.

Key EMS Components:

1. The EMS must include an environmental policy statement developed and implemented by the concrete facility. The environmental policy should demonstrate the facility’s commitment to:
 - a. Continual improvement;
 - b. Pollution prevention; and,
 - c. Compliance with regulations (Federal, State and Local) and routine review.
2. The EMS must include a program for continual improvement in key environmental areas of concern to the concrete industry, as described in this document. This program for continual improvement must begin and end across one EMS cycle, at which point it must begin again.
 - a. This program for continual improvement must include:
 - i. An identification of key environmental aspects (activities or processes, the “cause”), and resultant environmental impacts (the “effects”) including but not limited to:
 1. Water Quality Management (process water discharges, stormwater discharges, water conservation, reuse and recycling)
 2. Air Quality Management (airborne process emissions, airborne fugitive emissions, vehicular emissions)
 3. Hazardous Materials Management (petroleum and chemical use, fuel consumption, petroleum and chemical spill / leak prevention, SPCC)
 4. Solid Material Management (returned concrete management, concrete fines, stone and sand)

5. Community Issues (noise and aesthetic conditions)
6. Sustainability (energy conservation, recycling efforts, pervious concrete)
 - ii. Measures to quantitatively (where appropriate) document current performance levels of the facility's environmental aspects present at the start of the EMS cycle;
 - iii. The identification of measurable goals (where appropriate) designed to provide a greater level of performance at the end of the EMS cycle than at the starting point of the current EMS;
 - iv. A description of a program to attempt to meet those goals by the end of the EMS cycle (i.e., an identification of specific practices and activities that will be attempted to meet the stated goals);
 - v. A means to quantitatively measure (where appropriate) and document performance levels present at the end of the EMS cycle. Should a concrete facility have failed to meet the goals stated at the beginning of the EMS cycle, an evaluation of why the goals were not met, and the setting of new goals is required.
3. A self-evaluation program to gauge regulatory compliance level and environmental operational status. Use of a regular documented audit program, either by the facility itself or through a third-party auditing program, is preferential. While any comprehensive, documented, regular self-evaluation or audit procedure, protocol or documentation is acceptable; it must be deemed satisfactory to the Accredited Auditor. Said self-evaluation or auditing procedure must be:
 - a. Comprehensive (i.e., covering all areas of environmental compliance pertinent and specific to the ready mixed concrete industry),
 - b. Objective (i.e., the self-inspection procedure should be performed by someone lacking a clear, direct subjective interest in the results of the procedure);
 - c. Regular (should occur at least once per EMS cycle),
 - d. And documented. (*Note: The results of this audit program does not need to be reviewed with either the Green-Star Accredited Auditor or NRMCA; however the audit protocol or documentation used, and a signed acknowledgement by a company official that the auditing protocol is being followed as described, must be provided to the Accredited Auditor.*)
4. The development of measurable goals to be used as performance benchmarks against which the performance of the concrete facility will be evaluated, as well as the identification of results obtained with which to measure performance against the identified goals. These goals and results must be documented, on a cycle-per-cycle basis, in the EMS.
5. A comprehensive environmental training program for key personnel, with an emphasis on appropriate NRMCA training courses or equivalent for appropriate personnel. This would include, but not be limited to:

- a. NRMCA Environmental Certification Course
- b. NRMCA Plant Manager's Certification Course
- c. Certified Driver Professional (CDP) Course
- d. Company-specific environmental training, to be conducted on a regular basis
- e. Facility-specific environmental training, to be conducted on a regular basis

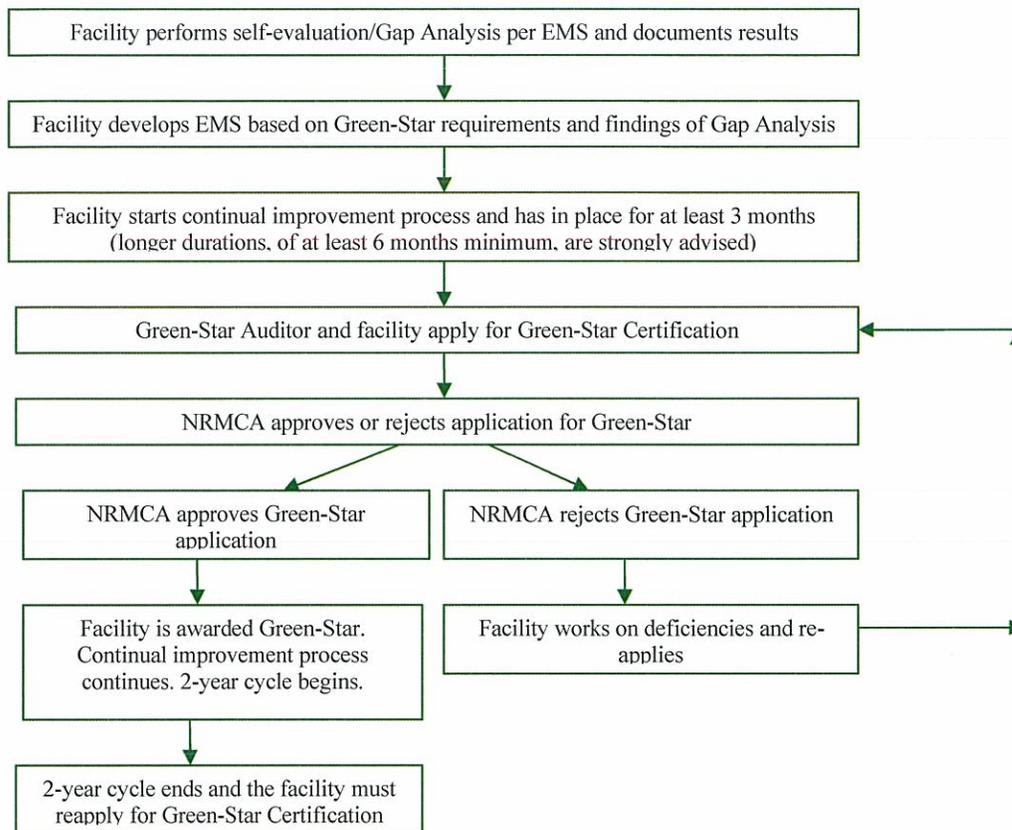
A discussion of measures employed as part of this training to gauge understanding and comprehension should be included (e.g., written testing, oral testing, performance evaluations, etc.).

6. A demonstration of adequate staffing and management commitment with which to implement and support the EMS at the concrete plant facility. This must include an identification of the key personnel directly involved with the EMS program at the concrete plant facility, as well as their specific duties and responsibilities, as well as a statement confirming the commitment (including personnel and funding as appropriate) on the part of corporate management to the implementation and maintenance of the EMS program.
 7. A public outreach program, with which the facility can interact with the community on issues of environmental relevance to a degree deemed appropriate to the facility in question. Examples include newsletters, websites and community day events.
 - 8.* List your Ready Mixed Concrete Environmental Best Industry Practices not included under section 2 above.
 - 9.* List any other carbon footprint voluntary reductions (i.e., using biodiesel, using low-sulfur diesel in plant boilers, buying wind and solar power, tree planting, etc.)
- * = **Items 8 and 9 are benchmarking items only and will not factor into Green-Star Certification at this time.**

8 Document Revision

| Revision | Summary of changes made | Issued by |
|----------|---|------------------------|
| 1 | Initial issue | Ayers – Feb. 1, 2008 |
| 1.1 | Add document revision page, formalize plant audit strategy, add language for GS Auditor annual professional development/GS Auditors Forum | Ayers – April 21, 2010 |
| | | |
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| | | |

Attachment A: NRMCA Green-Star Application Flowchart



Attachment B:

NRMCA Accredited Green-Star Auditor Application

- Initial Application
- Renewal Application. NRMCA Green-Star Auditor Number: _____

Name of Applicant: _____
Company: _____
Address: _____
Telephone: _____ Fax: _____ E-Mail: _____
Website: _____
Date of Application: _____
Applicants **MUST** have completed the following requirements:

- NRMCA Training Courses:*** Must have completed the NRMCA Environmental Course and passed the certification exam. Equivalent training may be considered by NRMCA on a case-by-case basis.
 - Date & Location of NRMCA Environmental Course:
 - List Date of Green-Star Auditor Webinar:
 - Equivalent Training (Describe in Detail & Include a Copy of Course Syllabus):

- College Degree***—Must have a four-year college degree issued by an appropriate degree-granting institute of higher learning in an appropriate field of study (e.g., engineering, construction management, a field of scientific study, etc.). If a potential applicant lacks a college degree, the applicant must have had a minimum of 2 (two) years documented work experience in the field of environmental management in the ready mixed concrete industry to take the place of the college degree. This requirement of 2 years work experience is in addition to the 3 (three) years indicated below (i.e., an applicant without a college degree is required to have a total of 5 (five) total years of appropriate work experience in the field of environmental management in the ready mixed concrete industry). This means that an applicant with a college degree is required to have a total of 3 years work experience, an applicant without a college degree must have a total of 5 years work experience).

College Degree: College/ University: _____
Degree: _____
Year: _____



A copy of your transcript, diploma, or graduation certificate indicating receipt of a 4-year degree in an appropriate field must accompany this application.

 **Work Experience:** Either 3 (three) years work experience in the field of environmental management in the ready mixed concrete industry (for those with an appropriate college degree as indicated above), or a 5 (five) years work experience in the field of environmental management in the ready mixed concrete industry (for those lacking an appropriate college degree) is required.

Applicants with suitable years of work experience in other concrete manufacturing industries (e.g., the precast industry, concrete block industry), similarly consultants will be considered by NRMCA on a case-by-case basis, and however a majority of their work must be in the construction materials industries.

Describe in detail – 3 years for those with a college degree, and 5 years for those lacking a college degree - including companies worked for, job title, dates, duties and responsibilities:

I hereby certify that I understand the requirements for the NRMCA Accredited Green-Star Auditor and that I meet said requirements. I understand that I will carry out the duties and responsibilities of an NRMCA Accredited Green-Star Auditor in a manner consistent with high professional and ethical standards. I further understand that any actions related to the NRMCA Green-Star program that are deemed by NRMCA to be contrary to the high professional and ethical standards expected of a Accredited Green-Star Auditor may result in the automatic revocation of my NRMCA Green-Star Auditor accreditation.

Signed: _____
Printed Name: _____
Date: _____

Attachment C:

NRMCA Green-Star Certification Application

Date of Application: _____

- Initial Application
- Renewal Application

THIS APPLICATION HAS BEEN SUBMITTED ON BEHALF OF THE FOLLOWING NRMCA MEMBER FACILITY:

Applicant Facility: _____
 Applicant Company: _____
 Facility Address: _____
 Telephone: _____ Fax: _____ E-Mail: _____
 Website: _____

THIS APPLICATION HAS BEEN APPROVED BY THE FOLLOWING NRMCA ACCREDITED GREEN-STAR AUDITOR:

NRMCA Accredited Green-Star Auditor: _____
 NRMCA Green Star Auditor Number: _____
 Company: _____
 Address: _____
 Telephone: _____ Fax: _____ E-Mail: _____
 Website: _____

I, as an NRMCA Accredited Green-Star Auditor, have visited this facility and confirm it meets all of the following Green-Star requirements:

- This facility is an NRMCA member facility in good standing, as proven by inspection of current year membership confirmation. **(do not check for non-NRMCA members)**
- This facility has an EMS that contains all of the following components (provide description where indicated):
 - The EMS must include an environmental policy statement that includes a documented policy regarding continual improvement, pollution prevention, and compliance with all applicable environmental regulations and rules.
 - The EMS must include a program for continual improvement in key environmental areas of concern to the concrete industry, as described in this document. This program for continual improvement must begin and end across one EMS cycle, at which point it must



begin again. This program for continual improvement must include an identification of key environmental aspects and impacts, including, but not limited to:

- Water Quality Management (process water discharges, stormwater discharges, water conservation, reuse and recycling)
- Air Quality Management (airborne process emissions, airborne fugitive emissions, vehicular emissions)
- Hazardous Materials Management (petroleum and chemical use, fuel consumption, petroleum and chemical spill / leak prevention, SPCC)
- Solid Material Management (returned concrete management, concrete fines, stone and sand)
- Community Issues (noise and aesthetic conditions)
- Sustainability (energy conservation, recycling efforts, pervious concrete).
- Describe the program for continual improvement as presented in the EMS, including length of each cycle, and dates of cycles completed as of the date of the application (MUST be a minimum of one cycle of 3 months after the initial environmental baseline (Gap Analysis) has been completed (although longer durations, of at least 6 months, are strongly advised).:
- Measures to document current performance levels present at the start of the EMS cycle (quantitatively where appropriate). Describe:
- The identification of measurable goals (where appropriate) designed to provide a greater level of performance at the end of the EMS cycle than at present; Describe:
- A description of a program to meet those goals by the end of the EMS cycle (i.e., an identification of specific practices and activities that will be attempted to meet the stated goals); Describe:
- A means to measure and document performance levels present at the end of the EMS cycle, and a process to identify the results obtained and whether the stated goals have or have not been met (and if not, an attempt to explain why the goals were not met). Describe:
- A self-evaluation program to gauge regulatory compliance level and environmental operational status. Use of a regular documented audit program, either by the facility itself or through a third-party auditing program, is preferential. While any comprehensive, documented, regular self-evaluation or audit procedure, protocol or documentation is acceptable; it must be deemed satisfactory to the Accredited Auditor. Said self-evaluation or auditing procedure must be comprehensive, regular, and documented.
Describe Self-Evaluation Program:
- A comprehensive environmental training program for key personnel, with an emphasis on appropriate NRMCA training courses or equivalent for appropriate personnel. This would include, but not be limited to:
 - NRMCA Environmental Certification Course
 - NRMCA Plant Manager's Certification Course
 - Certified Driver Professional (CDP) Course
 - Company-specific environmental training, to be conducted on a regular basis
 - Facility-specific environmental training, to be conducted on a regular basis

- A discussion of measures employed as part of this training to gauge understanding and comprehension should be included (e.g., written testing, oral testing, performance evaluations, etc.).

Describe the facilities environmental training program. Describe:

- A demonstration of adequate staffing and management commitment with which to implement and support the EMS at the concrete plant facility. This must include an identification of the key personnel directly involved with the EMS program at the concrete plant facility, as well as their specific duties and responsibilities, as well as a statement confirming the commitment (including personnel and funding as appropriate) on the part of corporate management to the implementation and maintenance of the EMS program.

Describe the facilities program for staffing and management commitment:

- A public outreach program, with which the facility can interact with the community on issues of environmental relevance to a degree deemed appropriate to the facility in question.
- *List of Ready Mixed Concrete Environmental Best Industry Practices that have not been described elsewhere.
- *List of any other carbon footprint voluntary reductions (i.e., using biodiesel, using low-sulfur diesel in plant boilers, buying wind and solar power, tree planting, etc.)

* = **Benchmarking items only and will not factor into Green-Star Certification at this time.**

Certifications:

Company Official

On behalf of the applicant facility, and as a company representative of the applicant facility company, I hereby certify that the statements made in this application are true, accurate and complete, and that this facility meets the requirements for NRMCA Green-Star Certification. This facility will be maintained in conformance to the requirements of the NRMCA Green-Star Certification for the duration that it is valid.

Signed: _____

Printed Name: _____

Date: _____

NRMCA Accredited Green-Star Auditor

As the NRMCA Accredited Green-Star Auditor who has reviewed the requirements of the Green-Star program and the EMS program of the applicant facility, I hereby certify that the statements made in this application are true, accurate and complete, and that this facility meets the requirements for NRMCA Green-Star Certification.

Signed: _____

Printed Name: _____

NRMCA Green-Star Auditor Number: _____

Date: _____





**Certificate of Conformance for Ready Mixed Concrete
Facilities**

THIS IS TO CERTIFY THAT

South Avenue Plant, Anywhere, CO

ABC Ready Mixed Concrete Company, Inc.

Has been audited and the Environmental Management System has been reviewed by the undersigned accredited Green-Star auditor for conformance with the requirements of the *NRMCA Green-Star* program.



William C. Norman

Signature of Accredited NRMCA Green-Star Auditor

January 05, 2009

Certification Date

January 05, 2011

Certification Expiration

This company will maintain these facilities in compliance with the *NRMCA Green-Star* requirements and will correct promptly any deficiencies which develop.

R.M. Producer

Signature of Company Official

President

Title of Company Official

NOTICE: The NRMCA Green-Star certification indicates that an Environmental Management System for the concrete facility is in place and that it satisfactorily meets the criteria for a means for continual improvement of environmental best management practices. This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Green-Star program. The reproduction or misuse of this certificate may result in legal action.

Plant ID #:000001

© 2007

Certification ID #: 0001



Attachment E: 10 Guiding Principles of Environmental Stewardship¹

1. Top Management Commitment: Make top management commitments to improve environmental performance through policies and programs.
2. Compliance Assurance: Implement environmental auditing, assessment and improvement programs to identify and correct current and potential compliance problems and work to improve overall environmental performance.
3. Enabling Systems: Develop and foster implementation of environmental management systems (EMS) which provide a framework for ensuring day-to-day environmental compliance.
4. Measurement and Continual Improvement: Develop measures of environmental performance to demonstrate adherence to these Principles. Periodically assess the programs toward meeting the organizations environmental goals and tie results to actions in improving environmental performance.
5. Public Communications: Voluntarily make available to the public, information on the organizations environmental performance relative to these Principles (i.e., website).
6. Industry Leadership: Work with other companies to improve industry wide environmental compliance and overall environmental performance.
7. Community Environmental Stewardship: Promote and give support to environmental stewardship and sustainable development in the community in which the facility resides.
8. Awareness & Outreach: Work cooperatively to ensure that increased awareness is achieved through proactive outreach and community initiatives (i.e., website).
9. Training and Development: Key environmental training requirements are identified and programs developed and supported by top management.
10. Research and Demonstration: Conduct development initiatives and solutions that drive environmental performance excellence and share lessons learned. The Ready Mixed Concrete Research and Education Foundation will support environmental initiatives.

¹ 10 Guiding Principles above are summarized only

SPECIAL EXCEPTION AFFIDAVIT

DATE: December 7, 2015
 (enter date affidavit is notarized)

129765

I, Michael A. Banzhaf, do hereby state that I am an
 (enter name of applicant or authorized agent)

(check one) applicant
 applicant's authorized agent listed in Par. 1(a) below

in Application No.(s): SE 2015-MV-019
 (enter County-assigned application number(s), e.g. SE 88-V-001)

and that, to the best of my knowledge and belief, the following information is true:

1(a). The following constitutes a listing of the names and addresses of all **APPLICANTS, TITLE OWNERS, CONTRACT PURCHASERS, and LESSEES** of the land described in the application,* and, if any of the foregoing is a **TRUSTEE,**** each **BENEFICIARY** of such trust, and all **ATTORNEYS** and **REAL ESTATE BROKERS**, and all **AGENTS** who have acted on behalf of any of the foregoing with respect to the application:

(NOTE: All relationships to the application listed above in **BOLD** print are to be disclosed. Multiple relationships may be listed together, e.g., **Attorney/Agent, Contract Purchaser/Lessee, Applicant/Title Owner**, etc. For a multiparcel application, list the Tax Map Number(s) of the parcel(s) for each owner(s) in the Relationship column.)

| NAME (enter first name, middle initial, and last name) | ADDRESS (enter number, street, city, state, and zip code) | RELATIONSHIP(S) (enter applicable relationships listed in BOLD above) |
|--|--|---|
| Charles County Sand and Gravel Company, Inc. Agent: F. Hall Chaney, III Kyle Murray | 2410 Evergreen Road, Suite 201 Gambrills, MD 21054 | Title Owner / Applicant / Developer (Tax Map 107-4-((01)), Parcel 0062A) |
| Dewberry Consultants LLC Agents: Jack Vega Janice M. Cena Scott Clarke | 8401 Arlington Boulevard Fairfax, VA 22031 | Engineers / Agent for Applicant |
| M.J. Wells & Associates, Inc. Agents: Robin L. Antonucci William F. Johnson Kevin R. Fellin Brian J. Horan Luke Lam | 1420 Spring Hill Road, Suite 610 McLean, VA 22102 | Transportation Consultants / Agent for Applicant |

(check if applicable) There are more relationships to be listed and Par. 1(a) is continued on a "Special Exception Attachment to Par. 1(a)" form.

* In the case of a condominium, the title owner, contract purchaser, or lessee of 10% or more of the units in the condominium.

** List as follows: Name of trustee, Trustee for (name of trust, if applicable), for the benefit of: (state name of each beneficiary).

Special Exception Attachment to Par. 1(a)

129765

DATE: December 7, 2015
(enter date affidavit is notarized)

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number (s))

(NOTE: All relationships to the application are to be disclosed. Multiple relationships may be listed together, e.g., **Attorney/Agent, Contract Purchaser/Lessee, Applicant/Title Owner**, etc. For a multiparcel application, list the Tax Map Number(s) of the parcel (s) for each owner(s) in the Relationship column.)

NAME

(enter first name, middle initial, and last name)

ADDRESS

(enter number, street, city, state, and zip code)

RELATIONSHIP(S)

(enter applicable relationships listed in **BOLD** above)

Reed Smith LLP

Agents: · Michael A. Banzhaf, Esq.
· Benjamin F. Tompkins, Esq.
· Grayson P. Hanes, Esq.
· Sarah L. Buzby, Esq.

3110 Fairview Park Drive, Suite 1400
Falls Church, VA 22042

Attorneys / Agent for Applicant

(check if applicable)

There are more relationships to be listed and Par. 1(a) is continued further on a "Special Exception Attachment to Par. 1(a)" form.

SPECIAL EXCEPTION AFFIDAVIT

DATE: December 7, 2015
(enter date affidavit is notarized)

129765

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number(s))

1(b). The following constitutes a listing*** of the SHAREHOLDERS of all corporations disclosed in this affidavit who own 10% or more of any class of stock issued by said corporation, and where such corporation has 10 or less shareholders, a listing of all of the shareholders:

(NOTE: Include SOLE PROPRIETORSHIPS, LIMITED LIABILITY COMPANIES, and REAL ESTATE INVESTMENT TRUSTS herein.)

CORPORATION INFORMATION

NAME & ADDRESS OF CORPORATION: (enter complete name and number, street, city, state, and zip code)
Charles County Sand and Gravel Company, Inc.
2410 Evergreen Road
Suite 201
Gambrills, Maryland 21054

DESCRIPTION OF CORPORATION: (check one statement)

- [X] There are 10 or less shareholders, and all of the shareholders are listed below.
[] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF SHAREHOLDERS: (enter first name, middle initial and last name)

Donna C. Bunn, Trustee, RG Trust under FHC/SSC Dynasty Trust Francis H. Chaney, II
MMC Insurance Trust for the benefit of Katharine Flanders
Rebekah C. Lare Mark D. Olson and Donna C. Bunn, F. Hall Chaney, III
Donna C. Bunn, Trustee, DCB Trust under Trustees, RHC Delaware Trust II for the William F. Childs, IV
MMC Insurance Trust for the benefit of benefit of Richard H. Chaney
Donna C. Bunn

(check if applicable) [X] There is more corporation information and Par. 1(b) is continued on a "Special Exception Affidavit Attachment 1(b)" form.

*** All listings which include partnerships, corporations, or trusts, to include the names of beneficiaries, must be broken down successively until: (a) only individual persons are listed or (b) the listing for a corporation having more than 10 shareholders has no shareholder owning 10% or more of any class of stock. In the case of an APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land that is a partnership, corporation, or trust, such successive breakdown must include a listing and further breakdown of all of its partners, of its shareholders as required above, and of beneficiaries of any trusts. Such successive breakdown must also include breakdowns of any partnership, corporation, or trust owning 10% or more of the APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land. Limited liability companies and real estate investment trusts and their equivalents are treated as corporations, with members being deemed the equivalent of shareholders; managing members shall also be listed. Use footnote numbers to designate partnerships or corporations, which have further listings on an attachment page, and reference the same footnote numbers on the attachment page.

Special Exception Attachment to Par. 1(b)

DATE: December 7, 2015
(enter date affidavit is notarized)

129765

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number (s))

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

Dewberry Consultants LLC
8401 Arlington Boulevard
Fairfax, VA 22031

DESCRIPTION OF CORPORATION: (check one statement)

- There are 10 or less shareholders, and all of the shareholders are listed below.
- There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
- There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

The Dewberry Companies LC, Member
James L. Beight, Member
Dennis M. Couture, Member

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

M.J. Wells & Associates, Inc.
1420 Spring Hill Road, Suite 600
McLean, VA 22102

DESCRIPTION OF CORPORATION: (check one statement)

- There are 10 or less shareholders, and all of the shareholders are listed below.
- There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
- There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

M.J. Wells & Associates, Inc. Employee
Stock Ownership Trust. All employees are
eligible plan participants; however, no one
employee owns more than 10% of any class
of stock.

(check if applicable) There is more corporation information and Par. 1(b) is continued further on a "Special Exception Attachment to Par. 1(b)" form.

Special Exception Attachment to Par. 1(b)

DATE: December 7, 2015
(enter date affidavit is notarized)

129765

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number (s))

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

The Dewberry Companies LC
8401 Arlington Boulevard
Fairfax, Virginia 22031

DESCRIPTION OF CORPORATION: (check one statement)

- There are 10 or less shareholders, and all of the shareholders are listed below.
- There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
- There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

| | |
|-----------------------------|---|
| Members: Barry K. Dewberry; | Michael S. Dewberry Credit Shelter Trust |
| Karen S. Grand Pre; | u/a/d 11/23/05 (f/b/o Michael S. Dewberry |
| Thomas L. Dewberry; | II, Katie Anne Dewberry, John M. |
| | Dewberry and one other minor children of |
| | Michael S. Dewberry |

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

FHC/SSC Dynasty Trust
2410 Evergreen Road, Suite 201
Gambrills, MD 21054

DESCRIPTION OF CORPORATION: (check one statement)

- There are 10 or less shareholders, and all of the shareholders are listed below.
- There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
- There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

| | |
|--|---|
| Administrative Trustees - Katharine Flanders, F. Hall Chaney, III, John Seek | Distribution Trustees - Katharine Flanders, F. Hall Chaney, III, Blair Selby, Primary Beneficiary - Susan S. Chaney |
|--|---|

(check if applicable) There is more corporation information and Par. 1(b) is continued further on a "Special Exception Attachment to Par. 1(b)" form.

SPECIAL EXCEPTION AFFIDAVIT

DATE: December 7, 2015
(enter date affidavit is notarized)

129765

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number(s))

1(c). The following constitutes a listing*** of all of the PARTNERS, both GENERAL and LIMITED, in any partnership disclosed in this affidavit:

PARTNERSHIP INFORMATION

PARTNERSHIP NAME & ADDRESS: (enter complete name, and number, street, city, state, and zip code)
REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, VA 22042

(check if applicable) [X] The above-listed partnership has no limited partners

NAMES AND TITLE OF THE PARTNERS (enter first name, middle initial, last name, and title, e.g. General Partner, Limited Partner, or General and Limited Partner)

- List of partner names and titles including: Abbott, Kevin C.; Abdalla, Tarek F.; Alexander, Eric L.; Alfieri, Paul M.; Allen, Thomas L.; Andrews, Alexander T.; Armao, Joseph P.; Arnold, Roy W.; Atallah, Ana (NMI); Baker, Scott D.; Barber, William James Gresham; Bartfeld, Arnold L.; Begley, Sara A.; Beiersdorf, Oliver K.; Beilke, Michele J.; Berman, Patricia Dondanville; Bernstein, Leonard A.; Bettino, Diane A.; Bhattacharyya, Gautam (NMI); Bickham, J. David; Binder, Justus (NMI); Binis, Barbara R.; Birt, Steven James; Blasier, Peter C.; Bolden, A. Scott; Bonessa, Dennis R.; Booker, Daniel I.; Boranian, Steven J.; Borg, Christopher (NMI); Boutcher, David J.; Bovich, John P.; Box, M. Tamara; Bradley, Patrick E.; Brennan, James C.; Brocklesby, Nicholas (NMI); Broughton, Kenneth E.; Brown, Bryan K.; Brown, Charles A.; Brown, Claude (NMI); Brown, Jon M.; Brown, Michael K.; Burke, Carol M.; Cadwell, Kevin E.; Cameron, Douglas E.

(check if applicable) [X] There is more partnership information and Par. 1(c) is continued on a "Special Exception Affidavit Attachment to Par. 1(c)" form.

*** All listings which include partnerships, corporations, or trusts, to include the names of beneficiaries, must be broken down successively until: (a) only individual persons are listed or (b) the listing for a corporation having more than 10 shareholders has no shareholder owning 10% or more of any class of stock. In the case of an APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land that is a partnership, corporation, or trust, such successive breakdown must include a listing and further breakdown of all of its partners, of its shareholders as required above, and of beneficiaries of any trusts. Such successive breakdown must also include breakdowns of any partnership, corporation, or trust owning 10% or more of the APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land. Limited liability companies and real estate investment trusts and their equivalents are treated as corporations, with members being deemed the equivalent of shareholders; managing members shall also be listed. Use footnote numbers to designate partnerships or corporations, which have further listings on an attachment page, and reference the same footnote numbers on the attachment page.

Special Exception Attachment to Par. 1(c)DATE: December 7, 2015
(enter date affidavit is notarized)

129765

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number (s))**PARTNERSHIP NAME & ADDRESS:** (enter complete name & number, street, city, state & zip code)REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, VA 22042(check if applicable) The above-listed partnership has no limited partners.**NAMES AND TITLES OF THE PARTNERS:** (enter first name, middle initial, last name, and title, e.g.,
General Partner, Limited Partner, or General and Limited Partner)

| | | |
|------------------------------|----------------------------|---------------------------------|
| Campos, Lorraine M. (Former) | Francis, Jr., Ronald L. | Ho, Delpha (NMI) |
| Carder, Elizabeth B. | Frank, Ronald W. | Hofmeister, Jr., Daniel J. |
| Cardozo, Raymond A. | Freeman, Lynne P. (Former) | Hooper, John P. |
| Cassidy, Peter J. | Frenier, Diane M. | Horrigan, Courtney C. |
| Charot, Benoit (NMI) | Fritton, Karl A. | Houston, Marsha A. |
| Cheung, Janet Bo Chun | Gallo, Frank J. | Howes, Dwight A. |
| Clark, II, Peter S. | Gasparetti, Lorenzo E. | Hryck, David M. |
| Cobetto, Jack B. | Geist, Melissa A. | Hultquist, James T. |
| Cody, Daniel A. | Gentile, Jr. Pasquale D. | Husar, Linda S. |
| Cohen, David R. | Gordon, Vincent R. | Iino, John M. |
| Colman, Abraham J. | Graumlich, Betty S. | Ince, Thomas A. |
| Conner, Walter T. | Greenblatt, Lewis B. | Innamorato, Don A. |
| Cooper, Steven (NMI) | Green-Kelly, Diane | Jaskot, Paul J. |
| Couste, Marina (NMI) | Grellet, Luc J. | Jeffcott, Robin B. |
| Dakessian, Mardiros H. | Grignon, Margaret A. | Jenkinson, Andrew P. |
| Davies, Colleen T. | Grimes, David M. | Johnson, Gary C. |
| Davis, James M. | Gross, Dodi Walker | Jones, Tyree P. |
| Dentice, Nathan P. W. | Gunn, Richard M. | Jong, Denise (NMI) |
| Dermody, Debra H. | Gwynne, Kurt F. | Karides, Constantine (NMI) |
| DiFiore, Gerard S. | Hackett, Mary J. | Katsambas, Panagiotis (NMI) |
| Dilling, Robert M. | Hagan, John F., Jr. | Kaufman, Marc S. |
| Dillon, Lee Ann | Halbreich, David M. | Kaung, Alexander Wai Ming |
| DiNome, John A. | Hansson, Leigh T. | Kirk, Dusty Elias |
| Drew, Jeffery R. | Hardin, Julie A. | Kirkpatrick, Stephen A. |
| Dubelier, Eric A. | Hardy, Peter A. | Klett, Dr. Alexander R., LL. M. |
| Duronio, Carolyn D. | Hartley, Simon P. | Korenblatt, Jeffrey S. |
| Ellis, Peter M. | Hartman, Ronald G. | Kozlov, Herbert F. |
| Ellison, John N. | Hasselmann, Scot T. | Kramer, Ann V. |
| Enochs, Craig R. | Hatfield, Jacqueline A. | Krebs-Markrich, Julia |
| Eskilson, James R. | Hawley, Terence N. | Kugler, Stefan L. |
| Estrada, Edward J. | Healy, Christopher W. | Kwuon, Janet H. |
| Evagora, Kyriacos (NMI) | Heffler, Curt L. | Lackert, Clark W. |
| Falkner, Robert P. | Hemming, Seth M. | Lackner, Marc A. |
| Fawcett, David B. | Hewetson, Charles M. | Lai, Ivy (NMI) |
| Ferak, Tracy G. | Hill, Robert J. | Lasher, Lori L. |
| Fogel, Paul D. | Hill, Thomas E. | Lee, Michael P. |
| Fosh, Michael John | Hirsch, Austin L. | Leiderman, Harvey L. |
| Fox, Caspar L. | Hitt, Leo N. | |

(check if applicable) There is more partnership information and Par. 1(c) is continued further on a
"Special Exception Attachment to Par. 1(c)" form.

Special Exception Attachment to Par. 1(c)DATE: December 7, 2015
(enter date affidavit is notarized)

179765

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number (s))**PARTNERSHIP NAME & ADDRESS:** (enter complete name & number, street, city, state & zip code)REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, VA 22042(check if applicable) The above-listed partnership has no limited partners.**NAMES AND TITLES OF THE PARTNERS:** (enter first name, middle initial, last name, and title, e.g., **General Partner, Limited Partner, or General and Limited Partner**)

| | | |
|---------------------------|---------------------------------|----------------------------|
| Li, Lianjun (NMI) | O'Neil, Mark T. | Rymer, Philip R. |
| Loepere, Carol C. | O'Neil, Michael (NMI) | Samant, Prajakt K. |
| Lo Vallo, Michael A. | Paisley, Belinda L. | Sanders, James L. |
| Lowenstein, Michael E. | Parker, Roger J. | Sanders, Michael (NMI) |
| Lyons, III, Stephen M. | Patterson, Lorin E. | Schaffer, Eric A. |
| MacElhone, Isabelle (NMI) | Pearman, Scott A. | Scheve, Stephen E. |
| Mahone, Glenn R. | Peck, Jr., Daniel F. | Schlecker, David M. |
| Maiden, Todd O. | Pedretti, Mark G. | Schlesinger, Matthew J. |
| Maira, Thomas G. | Pepper, Michael Ross David | Schmarak, Bradley S. |
| Martin, James C. | Petersen, Matthew J. | Schryber, John W. |
| Martini, John D. | Peterson, Kurt C. | Scott, Michael T. |
| McAllister, David J. | Phillips, Robert D. | Seaman, Charles H. |
| McCarroll, James C. | Phillips, Robert N. | Sedlack, Joseph M. |
| McConnell, Stephen J. | Pierre, Yvan-Claude J. (Former) | Sessa, Stephen E. |
| McDavid, George E. | Pike, Jonathan R. | Shanus, Stuart A. |
| McGarrigle, Thomas J. | Poe, Alexandra (NMI) | Sharma, Asha Rani |
| McNair, James E. | Pollack, Michael B. | Shaw, Nicholas J. |
| Melodia, Mark S. | Powell, David C. | Shay-Byrne, Olivia |
| Mercadante, James A. | Pryor, Gregor J. | Sher, Lawrence S. |
| Metro, Joseph W. | Quenby, Georgia M. | Short, Carolyn P. |
| Miller, Edward S. | Radley, Lawrence J. | Shugrue, John D. |
| Miller, Jesse L. | Rammelt, David A. | Siev, Jordan W. |
| Miller, Steven A. | Rawles, Douglas C. | Simons, Robert P. |
| Min, Catharina Y. | Raymond, Peter D. | s'Jacob, Oliver P. |
| Miner, Brian C. | Reid, Graham M. | Skrein, Stephen P. |
| Minniti, Cindy Schmitt | Reinke, Donald C. | Smersfelt, Kenneth N. |
| Mitchell, Jonah D. | Richthammer, Dr. Etienne (NMI) | Smith, John Lynn |
| Moberg, Marilyn A. | Roche, Brian D. | Smith, Robert M. |
| Mok, Kar Chung | Rogan, Edward G. | Snyder Bagnell, Nicolle R. |
| Moller, Charlotte (NMI) | Rosen, Barry S. | Sollie, Kyle O. |
| Morrison, Alexander David | Rosenbaum, Joseph I. (Former) | Solomon, Jonathan (NMI) |
| Munsch, Martha Hartle | Rosenberg, Carolyn H. | Sorensen, Anker (NMI) |
| Napolitano, Perry A. | Roth, Robert A. | Spafford, Richard A. |
| Nelson, Jack R. | Rowan, Vincent B. | Speed, Nicholas P. |
| Nicholas, Robert A. | Rubenstein, Donald P. | Springer, Claudia Z. |
| O'Brien, Kathyleen A. | Rudnicki, Leah T. | Stanley, David E. |
| O'Donoghue, Cynthia (NMI) | Ryan, Catherine S. | Stephenson, Leon (NMI) |
| | Rydstrom, Kirsten R. | Stewart, II, George L. |
| | | Stimpson, Barry P. |

(check if applicable) There is more partnership information and Par. 1(c) is continued further on a "Special Exception Attachment to Par. 1(c)" form.

Special Exception Attachment to Par. 1(c)

DATE: December 7, 2015
(enter date affidavit is notarized)

129765

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number (s))

PARTNERSHIP NAME & ADDRESS: (enter complete name & number, street, city, state & zip code)

REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, VA 22042

(check if applicable) The above-listed partnership has no limited partners.

NAMES AND TITLES OF THE PARTNERS: (enter first name, middle initial, last name, and title, e.g., **General Partner, Limited Partner, or General and Limited Partner**)

- | | |
|-------------------------|-------------------------------|
| Suddath, Thomas H. | Young, Michael J. |
| Suleman, Sakil A. | Yu, Cheuk Lun Desmond |
| Suss, Philipp T. | Yuffee, Michael A. |
| Swinburn, Richard G. | Zaman, Peter O. |
| Tandler, James R. | Zoeller, Lee A. |
| Tashman, Matthew E. | Zurzolo, Tracy L. |
| Taylor, Andrew D. | |
| Taylor, Philip M. | Added as of August 19, 2015: |
| Teare, Peter A. | Bishop, Martin J. |
| Temple, Mark D. | Chassman, Peter J. |
| Terras, Alexander (NMI) | Huenermann, Rolf (NMI) |
| Thallner, Jr., Karl A. | Juergens, Andreas (NMI) |
| Theodorou, Demetris C. | Kammel, Volker (NMI) |
| Thomas, Alexander Y. | Meissner, Martin (NMI) |
| Thompson, Gary S. | Raven, Ricky A. |
| Tompkins, Benjamin F. | |
| Toms, Jason M. | Added as of December 7, 2015: |
| Turner, Paul B. | Moll, Stephen L. |
| Vishneski, John S. | Reck, Belynda S. |
| Vitsas, John L. | |
| Von Waldow, Arnd N. | |
| Watt, Christopher B. | |
| Watterson, Kim M. | |
| Weiss, David E. | |
| Weissman, David L. | |
| Weissman, Sonja S. | |
| Weller, Charles G. | |
| Wells, Kristin I. | |
| Wilkins, Robert A. | |
| Wilkinson, James F. | |
| Wolff, Sarah R. | |
| Wong, Patrick Ho Yin | |
| Wood, Douglas J. | |
| Yam, Perry (NMI) | |
| Yan, Betty (NMI) | |
| Yan, Jay J. | |
| Yoo, Thomas J. | |

(check if applicable) There is more partnership information and Par. 1(c) is continued further on a "Special Exception Attachment to Par. 1(c)" form.

SPECIAL EXCEPTION AFFIDAVIT

DATE: December 7, 2015
(enter date affidavit is notarized)

129165

for Application No. (s): SE 2015-MV-019
(enter County-assigned application number(s))

1(d). One of the following boxes **must** be checked:

In addition to the names listed in Paragraphs 1(a), 1(b), and 1(c) above, the following is a listing of any and all other individuals who own in the aggregate (directly and as a shareholder, partner, and beneficiary of a trust) 10% or more of the **APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE*** of the land:

Other than the names listed in Paragraphs 1(a), 1(b), and 1(c) above, no individual owns in the aggregate (directly and as a shareholder, partner, and beneficiary of a trust) 10% or more of the **APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE*** of the land.

2. That no member of the Fairfax County Board of Supervisors, Planning Commission, or any member of his or her immediate household owns or has any financial interest in the subject land either individually, by ownership of stock in a corporation owning such land, or through an interest in a partnership owning such land.

EXCEPT AS FOLLOWS: (**NOTE:** If answer is none, enter "NONE" on the line below.)
NONE.

(check if applicable) There are more interests to be listed and Par. 2 is continued on a "Special Exception Attachment to Par. 2" form.

Application No.(s): SE 2015-MV-019
(county-assigned application number(s), to be entered by County Staff)

SPECIAL EXCEPTION AFFIDAVIT

129765

DATE: December 7, 2015
(enter date affidavit is notarized)

3. That within the twelve-month period prior to the public hearing of this application, no member of the Fairfax County Board of Supervisors, Planning Commission, or any member of his or her immediate household, either directly or by way of partnership in which any of them is a partner, employee, agent, or attorney, or through a partner of any of them, or through a corporation in which any of them is an officer, director, employee, agent, or attorney or holds 10% or more of the outstanding bonds or shares of stock of a particular class, has, or has had any business or financial relationship, other than any ordinary depositor or customer relationship with or by a retail establishment, public utility, or bank, including any gift or donation having a value of more than \$100, singularly or in the aggregate, with any of those listed in Par. 1 above.

EXCEPT AS FOLLOWS: (NOTE: If answer is none, enter "NONE" on line below.)

John C. Ulfelder, a member of the Fairfax County Planning Commission, was previously represented by Grayson P. Hanes of Reed Smith LLP in an unrelated legal matter.

NOTE: Business or financial relationships of the type described in this paragraph that arise after the filing of this application and before each public hearing must be disclosed prior to the public hearings. See Par. 4 below.)

(check if applicable) [] There are more disclosures to be listed and Par. 3 is continued on a "Special Exception Attachment to Par. 3" form.

4. That the information contained in this affidavit is complete, that all partnerships, corporations, and trusts owning 10% or more of the APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land have been listed and broken down, and that prior to each and every public hearing on this matter, I will reexamine this affidavit and provide any changed or supplemental information, including business or financial relationships of the type described in Paragraph 3 above, that arise on or after the date of this application.

WITNESS the following signature:

Michael Banzhaf

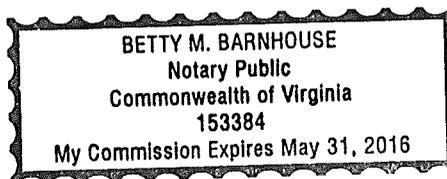
(check one) [] Applicant [x] Applicant's Authorized Agent

Michael A. Banzhaf, Esq.
(type or print first name, middle initial, last name, and & title of signee)

Subscribed and sworn to before me this 7th day of December 2015, in the State/Comm. of Virginia, County/City of Fairfax.

Betty M. Barnhouse
Notary Public

My commission expires: May 31, 2016





County of Fairfax, Virginia

MEMORANDUM

DATE: August 3, 2015

TO: Barbara C. Berlin, AICP, Director
Zoning Evaluation Division, DPZ

FROM: Denise M. James, Chief *DMJames*
Environment and Development Review Branch, DPZ

SUBJECT: Land Use Analysis: SE 2015-MV-019,
Charles County Sand & Gravel Company, Inc.

The memorandum, prepared by Brenda Cho, includes citations from the Comprehensive Plan (Plan) that provide guidance for the evaluation of the Special Exception (SE) application dated March 2015, as revised through July 15, 2015. The extent to which the application conforms to the applicable guidance contained in the Plan is noted.

DESCRIPTION OF THE APPLICATION

The applicant proposes a Special Exception (SE) application for a new 8,600 square foot concrete batching plant with 1,600 square feet of accessory maintenance and office uses on Tax Map Parcel 107-4 ((1)) 62A pt. The 5.23 acre site is located at 9520 Gunston Cove Road, and the vacant site is located off Gunston Cove Road between I-95 and CSX Railroad tracks. The Floor Area Ratio will be .007, and the site is zoned I-6 Heavy Industrial District.

COMPREHENSIVE PLAN CITATIONS:

Fairfax County Comprehensive Plan, 2013 Edition, Area IV, Lower Potomac Planning District, Amended through October 28, 2014, LP2-Lorton-South Route 1 Community Planning Sector, Pages 92 – 94:

“LAND UNIT F

Land Unit F includes established and developing industrial uses adjacent to the CSX Railroad tracks and continues south of Mims Street to Hassett Street, incorporating properties fronting on both sides of Richmond Highway (see Figure 30). Existing uses include storage yards, warehouse/wholesale activities, a concrete batching plant and a metals recycling facility.

Future industrial development should complement the goals and objectives of the Lorton Plan, especially those with respect to upgrading the image of Lorton. Uses envisioned for this area include industrial/flex space uses, retail and other related business and employment uses. Industrial development should be of a type appropriate to specific sites in the areas; i.e., rail-using industries adjacent to rail siding tracks, vehicular-oriented industrial parks proximate to Route 1. Industrial uses adjacent to residential and other non-industrial uses should be enclosed, effectively buffered and set back to minimize use conflicts. Maximum FARs should not exceed .35. Intensities and uses should generally transition down from the railroad tracks to Richmond Highway. Further expansion of industrial uses beyond the planned designation should not be allowed.

The area on the west side of Richmond Highway south of Mims Street is planned as a mixed industrial/office park developed as a single architectural whole to avoid the appearance of strip development. The total area should be consolidated and access to Richmond Highway should be limited by use of a service drive to a signalized intersection at Giles Run Road.

Strip development, free-standing retail uses, and/or automobile-oriented uses should not be allowed.”

COMPREHENSIVE PLAN MAP: Alternative Uses

LAND USE ANALYSIS

A Special Exception application is proposed for a new concrete batching plant with accessory maintenance and office uses. The 5.23 acre application site is currently undeveloped, and the applicant proposes an 8,400 square foot plant area and a shop/office measuring approximately 1,600 square feet. Associated uses are also proposed on site, including parking and storage areas. Ingress/egress movement to the site is proposed with a single access point along Gunston Cove Road, and a dry stormwater pond is proposed at the northeast corner of the site along Gunston Cove Road. Landscaping and chain link fencing are proposed along the periphery of the site.

The application site is located in Land Unit F within the LP2 Lorton-South Route 1 Community Planning Sector. The Comprehensive Plan notes that the broader planning area is a “gateway” to Fairfax County and National Capital Area, particularly along the I-95 Corridor and Richmond Highway. Existing industrial (and some commercial) zoning districts and uses encompass most of the land area immediately east of I-95 between Lorton Road to Richmond Highway, and the Plan notes the following regarding the sector’s industrial areas:

The second industrial area is adjacent to the CSX Railroad tracks to the west and continues south of Mims Street to Hassett Street, incorporating properties fronting on both sides of Richmond Highway. This area contains outdoor storage yards, warehouse activities, a concrete batching plant and a metals recycling center. A portion of the area remains undeveloped and provides an opportunity for future industrial uses. Infill, redevelopment and new

development in this area should be industrial flex/office and related commercial uses at a floor area ratio up to .35 which are compatible with the overall land use objectives of the Lorton Plan and which will promote an improvement in the image of Lorton.

The Plan acknowledges existing industrial development in Land Unit F and anticipates future industrial development in the existing industrial area, which is primarily zoned I-6 Heavy Industrial District. By-right development permitted in the I-6 Heavy Industrial District include bus or railroad terminals, heavy public utility uses, junk yards, lumber yards, new vehicle storage, and recycling centers. Existing uses along Gunston Cove Road near the application site include vehicle repair, storage and metal fabrication, and the uses are separated from nearby residential uses by the CSX Railroad tracks. In the Policy Plan, the Board of Supervisors' Goals note that "Fairfax County should continue to encourage the development of appropriately scaled and clustered commercial and industrial facilities to meet the need for convenient access to needed goods and services and to employment opportunities." The proposed concrete batching plant will be located in an area that is already zoned and developed with industrial uses; however, any new industrial uses should meet related objectives identified in the sector's Plan language.

Land use objectives for industrial uses in the planning sector include providing access into the core of large parcels of industrial use as well as locating heavy industrial uses away from the roadways with extensive landscaping, screening and/or buffering at the roadway edges. The proposed concrete batching plant will be set back approximately 130 feet from both the Gunston Cove Road and I-95 frontages, and the applicant proposes to plant deciduous and evergreen trees around the site, particularly to screen the use from vehicular traffic along I-95 and Gunston Cove Road. Approximately 50 feet in width of tree preservation is also proposed along the I-95 frontage. A cross section on Sheet 7 of the latest plat revised through July 15, 2015 depicts how both the existing canopy and grade changes (including a possible retaining wall up to six feet in height) will help screen the use. Additional screening instead of the proposed chain link fence, such as an architecturally solid barrier (i.e. wood fence), around the site may help minimize any further visual, noise or air impacts from the use, as well as more trees.

CONCLUSION

A concrete batching plant and accessory uses are proposed on an undeveloped 5.23 acre site off Gunston Cove Road between I-95 and CSX Railroad tracks. The site is zoned I-6 Heavy Industrial District and is located near existing industrial uses along Gunston Cove Road. The applicant proposes to situate the concrete plant in the middle of the site with deciduous trees and fencing to help screen the use. Additional landscaping and an architecturally solid fence are recommended to further buffer the use from view. Staff believes that the application is in harmony with the land use recommendations of the Comprehensive Plan for the subject property.

DMJ:BJC



County of Fairfax, Virginia

MEMORANDUM

DATE: September 29, 2015

TO: Barbara C. Berlin, Director
Zoning Evaluation Division, DPZ

FROM: Denise M. James, Chief *DM James*
Environment and Development Review Branch, DPZ

SUBJECT: ENVIRONMENTAL ASSESSMENT for: SE 2015-MV-019
Charles County Sand and Gravel Company

This memorandum, prepared by John R. Bell, includes citations from the Comprehensive Plan that provide guidance for the evaluation of the above referenced special exception plat as revised through August 20, 2015. Possible solutions to remedy identified environmental impacts are suggested. Other solutions may be acceptable, provided that they achieve the desired degree of mitigation and are also compatible with Plan policies.

COMPREHENSIVE PLAN CITATIONS:

The Comprehensive Plan is the basis for the evaluation of this application. The assessment of the proposal for conformity with the environmental recommendations of the Comprehensive Plan is guided by the following citations from the Plan:

The Fairfax County Comprehensive Plan, 2013 Edition, Policy Plan, Environment, as amended through July 1, 2014, page 19-21 states:

“Objective 13: Design and construct buildings and associated landscapes to use energy and water resources efficiently and to minimize short- and long-term negative impacts on the environment and building occupants.

Policy b. Within the Tysons Corner Urban Center, Suburban Centers, Community Business Centers, Industrial Areas and Transit Station Areas as identified on the Concept Map for Future Development, unless otherwise recommended in the applicable area plan, ensure that zoning proposals for nonresidential development or zoning proposals for multifamily residential development incorporate green building practices sufficient to attain certification through the LEED-NC or LEED-CS program or an equivalent program specifically incorporating multiple green building concepts, where applicable...”

The Fairfax County Comprehensive Plan, 2013 Edition, Policy Plan, Environment, as amended through July 1, 2014, page 11 states:

- “Objective 4: Minimize human exposure to unhealthful levels of transportation generated noise.
- Policy a. Regulate new development to ensure that people are protected from unhealthful levels of transportation noise.
- Policy b. Reduce noise impacts in areas of existing development.”

The Fairfax County Comprehensive Plan, 2013 Edition, Policy Plan, Environment, as amended through July 1, 2014, page 8 states:

- “Objective 2: Prevent and reduce pollution of surface and groundwater resources. Protect and restore the ecological integrity of streams in Fairfax County.
- Policy k. For new development and redevelopment, apply better site design and low impact development (LID) techniques such as those described below, and pursue commitments to reduce stormwater runoff volumes and peak flows, to increase groundwater recharge, and to increase preservation of undisturbed areas. In order to minimize the impacts that new development and redevelopment projects may have on the county’s streams, some or all of the following practices should be considered...”

ENVIRONMENTAL ANALYSIS:

This section characterizes the environmental concerns raised by an evaluation of this site and the proposed land use. Solutions are suggested to remedy the concerns that have been identified by staff. There may be other acceptable solutions.

Green Building

The Comprehensive Plan provides guidance recommending the application of green building measures for new development and redevelopment. The proposed development is located within an area designated as a suburban center, which is one of the areas noted for development using green building measures. Concrete batching facilities are not well-suited for green building development as they typically include very few occupied structures. Staff is not aware of any concrete batching facilities which have been designated as green building certified. The applicant has indicated that they will use low-emitting adhesives, sealants, low-volatile organic compounds (VOC) products and low-fume paints/coatings. The applicant will also seek to enhance resource efficiency through use of ultralow-flow plumbing fixtures and energy efficient lighting systems. Staff feels that the proposed measures as reflected in the draft proposed development conditions satisfy the Comprehensive Plan guidance on this issue.

Noise

The proposed use has the potential to generate noise levels which may be louder than other sources from the surrounding area. The Policy Plan section of the Comprehensive Plan provides no specific guidance for stationary noise sources. However, the use would be subject to the noise limitations of the Fairfax County Zoning Ordinance. The use of the property as a concrete batching facility would be subject to those limitations and may require mitigation measures to ensure that the noise limits set forth in the Zoning Ordinance are not exceeded. Noise in excess of the limits set forth in the Zoning Ordinance would be subject to enforcement measures as determined by the Zoning Enforcement Branch of the Department of Planning and Zoning. It is also noted, however, the application property is subject to noise impacts due to its location between a major highway (I-95) and railroad tracks.

Stormwater Management

The applicant has proposed an onsite stormwater detention facility to address stormwater detention and water quality requirements which will be subject to further review at the time of site plan submission. There are no outstanding concerns.

DMJ: JRB





County of Fairfax, Virginia

MEMORANDUM

DATE: July 29, 2015

TO: Barbara Berlin, Director
Zoning Evaluation Division
Department of Planning and Zoning

FROM: Michael A. Davis, Acting Chief 
Site Analysis Section
Department of Transportation

FILE: 3-5 (SE 2015-MV-019)

SUBJECT: Transportation Impact

REFERENCE: SE 2015-MV-019 Charles County Sand & Gravel Company, Inc.
Land Identification Map: 104-4 ((1)) 62A

Transmitted herewith are the comments from the Department of Transportation with respect to the referenced application. These comments are based on the plat made available to this office dated April 6, 2015, and revised through July 15, 2015. The applicant proposes a concrete batching plant with accessory uses including a 1,600 square foot office, an aggregate storage area, a washout area and a truck parking area. Typical hours of operation will be 24 hours a day every day except for Sundays. The trip generation during a typical weekday is estimated at 94 weekday trips with 11 a.m. peak hour trips and 12 p.m. peak hour trips. Only company trucks will be used to deliver concrete.

- On-site circulation of trucks is not adequately shown.
- Trees to the south of the entrance at Gunston Cove Road should not block sight distance to the south for exiting vehicles.
- Level of service (LOS) at Lorton Road and Gunston Cove Road is C in the a.m. peak hour and D in the p.m. peak hour. As much as possible, trucks from the site should avoid peak hours at the intersection.
- The question of restricting truck traffic on Lorton Road has arisen. There are guidelines adopted by the Commonwealth Transportation Board (CTB) for considering requests to restrict through trucks on primary and secondary highways. The local governing body must hold a public hearing and make a formal request. The CTB shall act within nine months. There are four criteria which pertain. Three out of the four must be met.

Barbara Berlin, Director

July 29, 2015

Page 2 of 2

- a. Reasonable alternate routing is provided.
- b. Truck traffic on the proposed route for restriction is not compatible with the affected area due to safety issues, accidents, engineering, and other traffic engineering issues.
- c. The roadway is residential in nature.
- d. The roadway must be functionally classified as either a local or collector.

MAD/LAH/lah

cc: Mary Ann Tsai, DPZ



DEPARTMENT OF TRANSPORTATION

4975 Alliance Drive
Fairfax, VA 22030

Charlie Kilpatrick
COMMISSIONER

June 17, 2015

To: Ms. Barbara Berlin
Director, Zoning Evaluation Division

From: Noreen H. Maloney
Virginia Department of Transportation – Land Development Section

Subject: SE 2015-MV-019; Gunston Cove Road

All submittals subsequent to the first submittal shall provide a response letter to the previous VDOT comments. Submittals without comment response letters are considered incomplete and will be returned without review.

This office has reviewed the subject application and offers the following comments.

- The applicant should dedicate 15 feet of right of way along Gunston Cove Road from the centerline to the property line.
- The proposed trees along Gunston Cove Road should be relocated outside the line of sight.



County of Fairfax, Virginia

MEMORANDUM

DATE: September 14, 2015

TO: Mary Ann Tsai, Staff Coordinator
Zoning Evaluation Division, DPZ

FROM: Linda Barfield, Urban Forester II
Forest Conservation Branch, DPWES 

SUBJECT: Gunston Cove Road-SE 2015-MV-019-Lot 62A-CC Sand & Gravel

The following comments are based on a review of the resubmission of the Special Exception Plat stamped "Received, Department of Planning and Zoning, August 24, 2015".

Specific Comments:

1. **Comment:** It is unclear when and how the invasive species and noxious weeds within the areas of existing trees to remain will be managed. Monitoring has also not been addressed.

Recommendation: Clearly describe the invasive species management and monitoring practices in the tree preservation narrative.

2. **Comment:** The tree protection fencing installation diagram shows tree protection fence material as being orange plastic fence. This will not afford an adequate level of protection to preserve the existing trees at this site.

Recommendation: The detail should be revised to show only 14 gauge welded wire fence or super silt fence.

I can be reached at 703-324-1770 if you have any questions or concerns.

lb/

UFMDID #: 201602

cc: DPZ File





County of Fairfax, Virginia

MEMORANDUM

DATE: July 16, 2015

TO: Mary Ann Tsai, Staff Coordinator
Zoning Evaluation Division
Department of Planning and Zoning

FROM: Mohan Bastakoti, P.E., Senior Engineer III 
South Branch
Site Development and Inspections Division
Department of Public Works and Environmental Services

SUBJECT: Application # SE 2015-MV-019 (Charles County Sand and Gravel); LDS
Project # 6441-ZONA-001-1, Tax Map #107-4-01-0062A; Mount Vernon
District

We have reviewed the subject application and offer the following stormwater management comments:

Chesapeake Bay Preservation Ordinance (CBPO)

There are no Resource Protection Areas present on this site.

Floodplain

There is no regulated floodplain on this site.

Downstream Drainage Complaints

There is no storm water complaint on file within the property.

Drainage Diversion

During the development, the natural drainage divide shall be honored. If natural drainage divides cannot be honored, a drainage diversion justification narrative must be provided. The increase and decrease in discharge rates, volumes, and durations of concentrated and non-concentrated Stormwater runoff leaving a development site due to the diverted flow shall not have an adverse impact (e.g., soil erosion; sedimentation; yard, dwelling, building, or private structure flooding; duration of ponding water; inadequate overland relief) on adjacent or downstream properties. (PFM 6-0202.2A)



Water Quality Control

Water quality controls must be satisfied for this development (PFM 6-0401.2). The applicant has provided a nutrient credit availability letter on the SE plat and also shown the location of onsite alternative BMP(Bay filter) on SE plat in case if the nutrient credits become unavailable during site plan review. VRRM computations were also provided. This will satisfy the water quality information required at this stage.

Stormwater Detention

Unless waived by the Director, the postdevelopment peak flow for the 2-year 24-hour storm event shall be released at a rate that is equal to or less than the predevelopment peak flow rate from the 2-year 24-hour storm event and the postdevelopment peak flow for the 10-year 24-hour storm event shall be released at a rate that is less than or equal to the predevelopment peak flow rate from the 10-year 24-hour storm event. SWMO 124-4-4.D.

The applicant has proposed onsite detention facility of 83,000 cubic feet storage capacity to meet the above requirements. The details of the hydrologic and hydraulic computations should be provided and reviewed during site plan review.

Water Quantity Control

The applicant shall provide a narrative and a summary of computations to demonstrate how the concentrated stormwater flow will be released into a stormwater conveyance system and shall meet criteria (1), (2) or (3) of 124-4-4B, where applicable, from the point of discharge to a point to the limits of analysis in Section 124-4-4(b)(5) as demonstrated by use of acceptable hydrologic and hydraulic methodologies.

The applicant shall provide a narrative and a summary of computations to demonstrate how the concentrated stormwater flow shall be released into a stormwater conveyance system and shall meet criteria subsections (1), (2), or (3) of 124-4-4C, where applicable, from the point of discharge to a point to the limits of analysis in Section 124-4-4(c)(5) as demonstrated by use of acceptable hydrologic and hydraulic methodologies.

The details of the hydrological and hydraulic computations will be reviewed during site plan review.

Downstream Drainage System

According to the applicant there will be a concentrated outfall from the proposed pond. The applicant has also shown the point of confluence and extent of review. The applicant has agreed to provide energy balance.

The details of the hydrologic and hydraulic computations should be provided during site plan review.

Mary Ann Tsai, Staff Coordinator
Application # SE 2015-MV-019 (Charles County Sand and Gravel)
Page 3 of 3

cc: Don Demetrius, Chief, Watershed Projects Evaluation Branch, SPD, DPWES
Fred Rose, Chief, Watershed Planning & Assessment Branch, SPD, DPWES
Bijan Sistani, Chief, Central Branch, SDID, DPWES
Zoning Application File



FAIRFAX COUNTY PARK AUTHORITY

M E M O R A N D U M

TO: Barbara Berlin, AICP, Director
Zoning Evaluation Division
Department of Planning and Zoning

FROM: Sandy Stallman, AICP, Manager
Park Planning Branch, PDD *AD for SS*

DATE: June 24, 2015

SUBJECT: SE 2015-MV-019, Gunston Cove Road (Charles County Sand and Gravel)
Tax Map Number: 107-4 ((1)) 62A

BACKGROUND

The Park Authority staff has reviewed the proposed Development Plan dated June 04, 2015 for the above referenced application. The Development Plan shows a proposed concrete batching plant with accessory maintenance and office buildings on a 5.23 acre site zoned I-6, heavy industrial. The subject site is within the Lower Potomac Planning District and Mt. Vernon Supervisory District.

COMPREHENSIVE PLAN GUIDANCE

The County Comprehensive Plan includes both general and specific guidance regarding parks and resources. The Policy Plan describes the need to mitigate adverse impacts to park and recreation facilities caused by growth and development; it also offers a variety of ways to offset those impacts, including contributions, land dedication, development of facilities, and others (Parks and Recreation, Objective 6, p.8). Resource protection is addressed in multiple objectives, focusing on protection, preservation, and sustainability of resources (Parks and Recreation Objectives 2 and 5, p.5-7).

The Lower Potomac Planning District in the Area IV Plan text explains the extensive heritage and cultural resources in the area. It recommends that heritage resources be considered at the earliest planning stages of development, continuation of dedication of undeveloped land as open space to preserve heritage resources and preserve significant resources (Area IV, Lower Potomac Planning District, District-Wide Recommendations, Heritage Resources, pp. 11-17). Great Communities Park Comprehensive Plan echoes recommendations in the Countywide Comprehensive Plan.

ANALYSIS AND RECOMMENDATIONS

Cultural Resources Impact:

The parcel was subjected to archival review. The project parcel contains one known site, VDHR 44FX1107. The Park Authority recommends the known site undergo Phase II archaeological testing in order to determine county significance and whether the site is eligible for inclusion onto the National Register of Historic Places. If the site is found eligible, avoidance or Phase III data recovery is recommended. The remainder of the parcel has moderate to high potential to contain additional significant resources. Therefore, a Phase I archaeological study is recommended for the areas of the parcels that are to undergo ground disturbing activities and are previously unsurveyed. If significant sites are found, a Phase II study should be undertaken to determine eligibility for inclusion into the National Register of Historic Places. If sites are found eligible, avoidance or a Phase III data recovery is recommended.

At the completion of any cultural resource studies, the Park Authority requests that the applicant provide two copies (one hard copy, one digital copy) of the archaeology report as well as field notes, photographs, and artifacts to the Park Authority's Resource Management Division (Attention: Liz Crowell) within 30 days of completion of the study. Materials can be sent to 2855 Annandale Road Falls Church, VA 20110 for review and concurrence. For artifact catalogues, please include the database in Access™ format, as well as digital photography, architectural assessments, including line drawings. If any archaeological, architectural or other sites are found during cultural resources assessments, the applicant should update files at VDHR, using the VCRIS system.

SUMMARY OF RECOMMENDATIONS

This section summarizes the recommendations included in the preceding analysis section.

- Conduct a Phase I archaeological study and any needed follow up studies in areas of the parcel to be disturbed.
- Conduct a Phase II archaeological study and any follow up measures if needed for the known site 44FX1107.

Please note the Park Authority would like to review and comment on development conditions related to park and recreation issues. We request that draft and final development conditions be submitted to the assigned reviewer noted below for review and comment prior to completion of the staff report and prior to final Board of Supervisors approval.

FCPA Reviewer: Laura Featherstone/Andrea Dorlester
DPZ Coordinator: Mary Ann Tsai

Copy: Cindy Walsh, Director, Resource Management Division
Liz Crowell, Manager, Cultural Resource Management & Protection Section
Mary Ann Tsai, DPZ Coordinator
Chron File
File Copy

GLOSSARY

This Glossary is provided to assist the public in understanding the staff evaluation and analysis of development proposals. It should not be construed as representing legal definitions. Refer to the Fairfax County Zoning Ordinance, Comprehensive Plan or Public Facilities Manual for additional information.

ABANDONMENT: Refers to road or street abandonment, an action taken by the Board of Supervisors, usually through the public hearing process, to abolish the public's right-of-passage over a road or road right-of way. Upon abandonment, the right-of-way automatically reverts to the underlying fee owners. If the fee to the owner is unknown, Virginia law presumes that fee to the roadbed rests with the adjacent property owners if there is no evidence to the contrary.

ACCESSORY DWELLING UNIT (OR APARTMENT): A secondary dwelling unit established in conjunction with and clearly subordinate to a single family detached dwelling unit. An accessory dwelling unit may be allowed if a special permit is granted by the Board of Zoning Appeals (BZA). Refer to Sect. 8-918 of the Zoning Ordinance.

AFFORDABLE DWELLING UNIT (ADU) DEVELOPMENT: Residential development to assist in the provision of affordable housing for persons of low and moderate income in accordance with the affordable dwelling unit program and in accordance with Zoning Ordinance regulations. Residential development which provides affordable dwelling units may result in a density bonus (see below) permitting the construction of additional housing units. See Part 8 of Article 2 of the Zoning Ordinance.

AGRICULTURAL AND FORESTAL DISTRICTS: A land use classification created under Chapter 114 or 115 of the Fairfax County Code for the purpose of qualifying landowners who wish to retain their property for agricultural or forestal use for use/value taxation pursuant to Chapter 58 of the Fairfax County Code.

BARRIER: A wall, fence, earthen berm, or plant materials which may be used to provide a physical separation between land uses. Refer to Article 13 of the Zoning Ordinance for specific barrier requirements.

BEST MANAGEMENT PRACTICES (BMPs): Stormwater management techniques or land use practices that are determined to be the most effective, practicable means of preventing and/or reducing the amount of pollution generated by nonpoint sources in order to improve water quality.

BUFFER: Graduated mix of land uses, building heights or intensities designed to mitigate potential conflicts between different types or intensities of land uses; may also provide for a transition between uses. A landscaped buffer may be an area of open, undeveloped land and may include a combination of fences, walls, berms, open space and/or landscape plantings. A buffer is not necessarily coincident with transitional screening.

CHESAPEAKE BAY PRESERVATION ORDINANCE: Regulations which the State has mandated must be adopted to protect the Chesapeake Bay and its tributaries. These regulations must be incorporated into the comprehensive plans, zoning ordinances and subdivision ordinances of the affected localities. Refer to Chesapeake Bay Preservation Act, Va. Code Section 10.1-2100 et seq and VR 173-02-01, Chesapeake Bay Preservation Area Designation and Management Regulations.

CLUSTER DEVELOPMENT: Residential development in which the lots are clustered on a portion of a site so that significant environmental/historical/cultural resources may be preserved or recreational amenities provided. While smaller lot sizes are permitted in a cluster subdivision to preserve open space, the overall density cannot exceed that permitted by the applicable zoning district. See Sect. 2-421 and Sect. 9-615 of the Zoning Ordinance.

COUNTY 2232 REVIEW PROCESS: A public hearing process pursuant to Sect. 15.2-2232 (Formerly Sect. 15.1-456) of the Virginia Code which is used to determine if a proposed public facility not shown on the adopted Comprehensive Plan is in substantial accord with the plan. Specifically, this process is used to determine if the general or approximate location, character and extent of a proposed facility is in substantial accord with the Plan.

dba: The momentary magnitude of sound weighted to approximate the sensitivity of the human ear to certain frequencies; the dBA value describes a sound at a given instant, a maximum sound level or a steady state value. See also Ldn.

DENSITY: Number of dwelling units (du) divided by the gross acreage (ac) of a site being developed in residential use; or, the number of dwelling units per acre (du/ac) except in the PRC District when density refers to the number of persons per acre.

DENSITY BONUS: An increase in the density otherwise allowed in a given zoning district which may be granted under specific provisions of the Zoning Ordinance when a developer provides excess open space, recreation facilities, or affordable dwelling units (ADUs), etc.

DEVELOPMENT CONDITIONS: Terms or conditions imposed on a development by the Board of Supervisors (BOS) or the Board of Zoning Appeals (BZA) in connection with approval of a special exception, special permit or variance application or rezoning application in a "P" district. Conditions may be imposed to mitigate adverse impacts associated with a development as well as secure compliance with the Zoning Ordinance and/or conformance with the Comprehensive Plan. For example, development conditions may regulate hours of operation, number of employees, height of buildings, and intensity of development.

DEVELOPMENT PLAN: A graphic representation which depicts the nature and character of the development proposed for a specific land area: information such as topography, location and size of proposed structures, location of streets trails, utilities, and storm drainage are generally included on a development plan. A development plan is a submission requirement for rezoning to the PRC District. A **GENERALIZED DEVELOPMENT PLAN (GDP)** is a submission requirement for a rezoning application for all conventional zoning districts other than a P District. A development plan submitted in connection with a special exception (SE) or special permit (SP) is generally referred to as an SE or SP plat. A **CONCEPTUAL DEVELOPMENT PLAN (CDP)** is a submission requirement when filing a rezoning application for a P District other than the PRC District; a CDP characterizes in a general way the planned development of the site. A **FINAL DEVELOPMENT PLAN (FDP)** is a submission requirement following the approval of a conceptual development plan and rezoning application for a P District other than the PRC District; an FDP further details the planned development of the site. See Article 16 of the Zoning Ordinance.

EASEMENT: A right to or interest in property owned by another for a specific and limited purpose. Examples: access easement, utility easement, construction easement, etc. Easements may be for public or private purposes.

ENVIRONMENTAL QUALITY CORRIDORS (EQCs): An open space system designed to link and preserve natural resource areas, provide passive recreation and protect wildlife habitat. The system includes stream valleys, steep slopes and wetlands. For a complete definition of EQCs, refer to the Environmental section of the Policy Plan for Fairfax County contained in Vol. 1 of the Comprehensive Plan.

ERODIBLE SOILS: Soils that wash away easily, especially under conditions where stormwater runoff is inadequately controlled. Silt and sediment are washed into nearby streams, thereby degrading water quality.

FLOODPLAIN: Those land areas in and adjacent to streams and watercourses subject to periodic flooding; usually associated with environmental quality corridors. The 100 year floodplain drains 70 acres or more of land and has a one percent chance of flood occurrence in any given year.

FLOOR AREA RATIO (FAR): An expression of the amount of development intensity (typically, non-residential uses) on a specific parcel of land. FAR is determined by dividing the total square footage of gross floor area of buildings on a site by the total square footage of the site itself.

FUNCTIONAL CLASSIFICATION: A system for classifying roads in terms of the character of service that individual facilities are providing or are intended to provide, ranging from travel mobility to land access. Roadway system functional classification elements include Freeways or Expressways which are limited access highways, Other Principal (or Major) Arterials, Minor Arterials, Collector Streets, and Local Streets. Principal arterials are designed to accommodate travel; access to adjacent properties is discouraged. Minor arterials are designed to serve both through traffic and local trips. Collector roads and streets link local streets and properties with the arterial network. Local streets provide access to adjacent properties.

GEOTECHNICAL REVIEW: An engineering study of the geology and soils of a site which is submitted to determine the suitability of a site for development and recommends construction techniques designed to overcome development on problem soils, e.g., marine clay soils.

HYDROCARBON RUNOFF: Petroleum products, such as motor oil, gasoline or transmission fluid deposited by motor vehicles which are carried into the local storm sewer system with the stormwater runoff, and ultimately, into receiving streams; a major source of non-point source pollution. An oil-grit separator is a common hydrocarbon runoff reduction method.

IMPERVIOUS SURFACE: Any land area covered by buildings or paved with a hard surface such that water cannot seep through the surface into the ground.

INFILL: Development on vacant or underutilized sites within an area which is already mostly developed in an established development pattern or neighborhood.

INTENSITY: The magnitude of development usually measured in such terms as density, floor area ratio, building height, percentage of impervious surface, traffic generation, etc. Intensity is also based on a comparison of the development proposal against environmental constraints or other conditions which determine the carrying capacity of a specific land area to accommodate development without adverse impacts.

Ldn: Day night average sound level. It is the twenty-four hour average sound level expressed in A-weighted decibels; the measurement assigns a "penalty" to night time noise to account for night time sensitivity. Ldn represents the total noise environment which varies over time and correlates with the effects of noise on the public health, safety and welfare.

LEVEL OF SERVICE (LOS): An estimate of the effectiveness of a roadway to carry traffic, usually under anticipated peak traffic conditions. Level of Service efficiency is generally characterized by the letters A through F, with LOS-A describing free flow traffic conditions and LOS-F describing jammed or grid-lock conditions.

MARINE CLAY SOILS: Soils that occur in widespread areas of the County generally east of Interstate 95. Because of the abundance of shrink-swell clays in these soils, they tend to be highly unstable. Many areas of slope failure are evident on natural slopes. Construction on these soils may initiate or accelerate slope movement or slope failure. The shrink-swell soils can cause movement in structures, even in areas of flat topography, from dry to wet seasons resulting in cracked foundations, etc. Also known as slippage soils.

OPEN SPACE: That portion of a site which generally is not covered by buildings, streets, or parking areas. Open space is intended to provide light and air; open space may function as a buffer between land uses or for scenic, environmental, or recreational purposes.

OPEN SPACE EASEMENT: An easement usually granted to the Board of Supervisors which preserves a tract of land in open space for some public benefit in perpetuity or for a specified period of time. Open space easements may be accepted by the Board of Supervisors, upon request of the land owner, after evaluation under criteria established by the Board. See Open Space Land Act, Code of Virginia, Sections 10.1-1700, et seq.

P DISTRICT: A "P" district refers to land that is planned and/or developed as a Planned Development Housing (PDH) District, a Planned Development Commercial (PDC) District or a Planned Residential Community (PRC) District. The PDH, PDC and PRC Zoning Districts are established to encourage innovative and creative design for land development; to provide ample and efficient use of open space; to promote a balance in the mix of land uses, housing types, and intensity of development; and to allow maximum flexibility in order to achieve excellence in physical, social and economic planning and development of a site. Refer to Articles 6 and 16 of the Zoning Ordinance.

PROFFER: A written condition, which, when offered voluntarily by a property owner and accepted by the Board of Supervisors in a rezoning action, becomes a legally binding condition which is in addition to the zoning district regulations applicable to a specific property. Proffers are submitted and signed by an owner prior to the Board of Supervisors public hearing on a rezoning application and run with the land. Once accepted by the Board, proffers may be modified only by a proffered condition amendment (PCA) application or other zoning action of the Board and the hearing process required for a rezoning application applies. See Sect. 15.2-2303 (formerly 15.1-491) of the Code of Virginia.

PUBLIC FACILITIES MANUAL (PFM): A technical text approved by the Board of Supervisors containing guidelines and standards which govern the design and construction of site improvements incorporating applicable Federal, State and County Codes, specific standards of the Virginia Department of Transportation and the County's Department of Public Works and Environmental Services.

RESOURCE MANAGEMENT AREA (RMA): That component of the Chesapeake Bay Preservation Area comprised of lands that, if improperly used or developed, have a potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. See Fairfax County Code, Ch. 118, Chesapeake Bay Preservation Ordinance.

RESOURCE PROTECTION AREA (RPA): That component of the Chesapeake Bay Preservation Area comprised of lands at or near the shoreline or water's edge that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation of the quality of state waters. In their natural condition, these lands provide for the removal, reduction or assimilation of sediments from runoff entering the Bay and its tributaries, and minimize the adverse effects of human activities on state waters and aquatic resources. New development is generally discouraged in an RPA. See Fairfax County Code, Ch. 118, Chesapeake Bay Preservation Ordinance.

SITE PLAN: A detailed engineering plan, to scale, depicting the development of a parcel of land and containing all information required by Article 17 of the Zoning Ordinance. Generally, submission of a site plan to DPWES for review and approval is required for all residential, commercial and industrial development except for development of single family detached dwellings. The site plan is required to assure that development complies with the Zoning Ordinance.

SPECIAL EXCEPTION (SE) / SPECIAL PERMIT (SP): Uses, which by their nature, can have an undue impact upon or can be incompatible with other land uses and therefore need a site specific review. After review, such uses may be allowed to locate within given designated zoning districts if appropriate and only under special controls, limitations, and regulations. A special exception is subject to public hearings by the Planning Commission and Board of Supervisors with approval by the Board of Supervisors; a special permit requires a public hearing and approval by the Board of Zoning Appeals. Unlike proffers which are voluntary, the Board of Supervisors or BZA may impose reasonable conditions to assure, for example, compatibility and safety. See Article 8, Special Permits and Article 9, Special Exceptions, of the Zoning Ordinance.

STORMWATER MANAGEMENT: Engineering practices that are incorporated into the design of a development in order to mitigate or abate adverse water quantity and water quality impacts resulting from development. Stormwater management systems are designed to slow down or retain runoff to re-create, as nearly as possible, the pre-development flow conditions.

SUBDIVISION PLAT: The engineering plan for a subdivision of land submitted to DPWES for review and approved pursuant to Chapter 101 of the County Code.

TRANSPORTATION DEMAND MANAGEMENT (TDM): Actions taken to reduce single occupant vehicle automobile trips or actions taken to manage or reduce overall transportation demand in a particular area.

TRANSPORTATION SYSTEM MANAGEMENT (TSM) PROGRAMS: This term is used to describe a full spectrum of actions that may be applied to improve the overall efficiency of the transportation network. TSM programs usually consist of low-cost alternatives to major capital expenditures, and may include parking management measures, ridesharing programs, flexible or staggered work hours, transit promotion or operational improvements to the existing roadway system. TSM includes Transportation Demand Management (TDM) measures as well as H.O.V. use and other strategies associated with the operation of the street and transit systems.

URBAN DESIGN: An aspect of urban or suburban planning that focuses on creating a desirable environment in which to live, work and play. A well-designed urban or suburban environment demonstrates the four generally accepted principles of design: clearly identifiable function for the area; easily understood order; distinctive identity; and visual appeal.

VACATION: Refers to vacation of street or road as an action taken by the Board of Supervisors in order to abolish the public's right-of-passage over a road or road right-of-way dedicated by a plat of subdivision. Upon vacation, title to the road right-of-way transfers by operation of law to the owner(s) of the adjacent properties within the subdivision from whence the road/road right-of-way originated.

VARIANCE: An application to the Board of Zoning Appeals which seeks relief from a specific zoning regulation such as lot width, building height, or minimum yard requirements, among others. A variance may only be granted by the Board of Zoning Appeals through the public hearing process and upon a finding by the BZA that the variance application meets the required Standards for a Variance set forth in Sect. 18-404 of the Zoning Ordinance.

WETLANDS: Land characterized by wetness for a portion of the growing season. Wetlands are generally delineated on the basis of physical characteristics such as soil properties indicative of wetness, the presence of vegetation with an affinity for water, and the presence or evidence of surface wetness or soil saturation. Wetland environments provide water quality improvement benefits and are ecologically valuable. Development activity in wetlands is subject to permitting processes administered by the U.S. Army Corps of Engineers

TIDAL WETLANDS: Vegetated and nonvegetated wetlands as defined in Chapter 116 Wetlands Ordinance of the Fairfax County Code: includes tidal shores and tidally influenced embayments, creeks, and tributaries to the Occoquan and Potomac Rivers. Development activity in tidal wetlands may require approval from the Fairfax County Wetlands Board.

Abbreviations Commonly Used in Staff Reports

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| A&F | Agricultural & Forestal District | PDH | Planned Development Housing |
| ADU | Affordable Dwelling Unit | PFM | Public Facilities Manual |
| ARB | Architectural Review Board | PRC | Planned Residential Community |
| BMP | Best Management Practices | RC | Residential-Conservation |
| BOS | Board of Supervisors | RE | Residential Estate |
| BZA | Board of Zoning Appeals | RMA | Resource Management Area |
| COG | Council of Governments | RPA | Resource Protection Area |
| CBC | Community Business Center | RUP | Residential Use Permit |
| CDP | Conceptual Development Plan | RZ | Rezoning |
| CRD | Commercial Revitalization District | SE | Special Exception |
| DOT | Department of Transportation | SEA | Special Exception Amendment |
| DP | Development Plan | SP | Special Permit |
| DPWES | Department of Public Works and Environmental Services | TDM | Transportation Demand Management |
| DPZ | Department of Planning and Zoning | TMA | Transportation Management Association |
| DU/AC | Dwelling Units Per Acre | TSA | Transit Station Area |
| EQC | Environmental Quality Corridor | TSM | Transportation System Management |
| FAR | Floor Area Ratio | UP & DD | Utilities Planning and Design Division, DPWES |
| FDP | Final Development Plan | VC | Variance |
| GDP | Generalized Development Plan | VDOT | Virginia Dept. of Transportation |
| GFA | Gross Floor Area | VPD | Vehicles Per Day |
| HC | Highway Corridor Overlay District | VPH | Vehicles per Hour |
| HCD | Housing and Community Development | WMATA | Washington Metropolitan Area Transit Authority |
| LOS | Level of Service | WS | Water Supply Protection Overlay District |
| Non-RUP | Non-Residential Use Permit | ZAD | Zoning Administration Division, DPZ |
| OSDS | Office of Site Development Services, DPWES | ZED | Zoning Evaluation Division, DPZ |
| PCA | Proffered Condition Amendment | ZPRB | Zoning Permit Review Branch |
| PD | Planning Division | | |
| PDC | Planned Development Commercial | | |