

# TOWN OF HAYMARKET PLANNING COMMISSION

# REGULAR MEETING ~ AGENDA ~

Emily Lockhart, Town Planner http://www.townofhaymarket.org/

15000 Washington Street, Suite 100 Haymarket, VA 20169

Monday, November 16, 2020

 $7:00~\mathrm{PM}$ 

Council Chambers

- I. Call To Order
- II. Pledge of Allegiance
- III. Moment of Silence
- IV. Citizen's Time
- V. Crossroads Village Concept Presentation
- VI. Minute Approval
  - 1. Planning Commission Public Hearing/Regular Meeting Sep 21, 2020 7:00 PM
- VII. Agenda Items
  - 1. QBE Special Use Permit Residential Condos
  - 2. Van Metre Site Plan Review
  - 3. One Mile Review Lightner Road
- VIII. New Business
  - 1. McDonald's Site Plan, 2Nd Drive-Thru Informational
  - 2. Zoning Text Amendment Discussion
- IX. Old Business
- X. ARB Updates
- XI. Town Council Updates
- XII. Adjournment



# TOWN OF HAYMARKET PLANNING COMMISSION

# PUBLIC HEARING/REGULAR MEETING ~ MINUTES ~

Emily Lockhart, Town Planner http://www.townofhaymarket.org/

15000 Washington Street, Suite 100 Haymarket, VA 20169

Monday, September 21, 2020

7:00 PM

Council Chambers

A Public Hearing/Regular Meeting of the Planning Commission of the Town of Haymarket, VA, was held this evening in the Council Chambers, commencing at 7:00 PM.

Chairman Matt Caudle called the meeting to order.

## I. Call To Order

Due to the COV-ID 19 pandemic and Governor Northam's executive order on social distancing, Commissioner Aayush Kharel attended this evening's meeting via Zoom meeting from his home.

### 1. Zoom Invite -

Https://Us02web.Zoom.Us/J/84205609560?Pwd=AEpLOEhvUWIDdFVEM3IzenpGYUtuUT09
Chairman Matt Caudle: Present, Commissioner Aayush Kharel: Present, Councilman Bob Weir: Present, Commissioner Robert Hallet: Present, Commissioner Jackie Walker: Present, Commissioner Alexander Beyene: Present, Commissioner Thomas Utz: Absent.

# II. Pledge of Allegiance

Chairman Matt Caudle invited everyone to stand for the Pledge of Allegiance followed by a moment of silence.

After the moment of silence, Chairman Caudle stated that the Van Metre site plan will be moved to the first item on agenda items for the sake of time for the representatives.

# **III. Public Hearing Notice and Public Comment**

## 1. Public Hearing Notice 1 - SUP 6611 Jefferson Street

Chairman Caudle opened the public hearing for the SUP application to consider a religious assembly at 6611 Jefferson Street. Mr. Caudle opened the floor for public comment. Mr. Jerry Kennedy, the property owner, addressed the Planning Commission requesting the application be approved with recommendation to move forward to the Town Council. He stated that the building served as a church for a long time. He shared that the church would occupy the basement of the building which was used by the Haymarket Food Pantry and that the church would have very little impact on the building since it has a small congregation. He also stated that because the church operates at off hours, such as Wednesday and Saturday evenings and Sunday mornings, it would have minimal effect on the other businesses occupying the building. There were no other citizens wishing to address the Planning Commission on this subject. At this time, Chairman Caudle closed this Public Hearing.

## 2. Public Hearing Notice 2 - Proffer Amendment 14600 Washington Street

Chairman Caudle opened the Public Hearing for the Proffer Amendment application for 14600 Washington Street. Mr. Caudle opened the floor for public comment.

Jim Payne, owner of A Dog's Day Out located at 6680 Fayette Street, stated that he thinks the lease with PWC Parks and Rec should be ironed out prior to considering the application. Justin Brandel, 67 Sycamore Park Drive, expressed his safety concerns of excessive traffic onto Bleight Drive.

At this time, Town Planner Emily Lockhart and Town Manager Chris Coon read the emails submitted to the Town on this subject. The following are the names, addresses and a short comment on the topic.

Jim McGuire asked that the Commission to deny the application.

Nick Pulire, 6740 Bleight Drive, asked that the Commission to deny the application. Ronald Phillips, Sr., 6700 Sycamore Park Drive, asked that the Commission to deny the application.

Joseph ManGoong, 6744 Bleight Drive, asked that the Commission to deny the application. Greg and Yvette Teriie, Dogwood Park Lane, asked that the Commission to deny the application.

Dave O'Mara, 6717 Sycamore Park Drive, asked that the Commission to deny the application. Cathy Pasanello, 6895 Track Court, asked that the Commission to deny the application. Julian Pulire, 6740 Bleight Drive, asked that the Commission to deny the application. Dionel Zapata, 6736 Bleight Drive, asked that the Commission to deny the application. Debbie Dallesandro, 14947 Madison Ct., asked that the Commission to deny the application. James and Maureen Carroll, asked that the Commission to deny the application. John Tuell, asked that the Commission to deny the application. William Wallace, 14808 Cypress Park Lane, asked that the Commission to deny the application. Larry Schultz, 6732 Bleight Drive, asked that the Commission to deny the application.

Chairman Caudle closed the public hearing after Ms. Lockhart read the entirety of emails read into the record.

At this time Dottie Leonard, 14801 Washington Street, stated that she did not have the opportunity to speak on the subject of the SUP application for religious assembly. Chairman Caudle allowed Ms. Leonard to speak on the SUP public hearing even though that public hearing was already closed. Ms. Leonard spoke in favor of the SUP application. Ms. Leonard also commented on the Proffer Amendment application. She spoke in favor to approve the proffer amendment application as presented.

\*\*\*\* All email correspondence are attached at the end of the minute record \*\*\*\*\*

# IV. Public Hearing Adjournment

1. Motion to adjourn the public hearing.

Chairman Caudle asked for a motion to adjourn the public hearing. Commissioner Hallet moved to adjourn the public hearing with a second by Councilman Weir. The motion carried.

RESULT: ADOPTED [UNANIMOUS]

AYES: Caudle, Kharel, Weir, Hallet, Walker, Beyene

**ABSENT:** Thomas Utz

## V. Citizens Time

Chairman Caudle opened the floor for Citizen's Time. There were no citizens wishing to address the Planning Commission at this time.

# VI. Agenda Items

1. Van Metre Site Plan: 14850, 14860 Washington St, 6701 Hunting Path Rd

Chairman Caudle invited the representatives from Van Metre to give their site plan presentation. Town Planner Emily Lockhart gave a brief report on the Van Metre project for 14850, 14860 Washington Street and 6701 Hunting Path. Ms. Lockhart shared that Van Metre received SUP approval for 38 town homes on this property from the Town Council earlier in the year and is present at this evening's meeting to present the site plans of the project to the Planning Commission. Ms. Lockhart stated that this is the opportunity for the Planning Commission to see the plans and ask questions.

At this time, Deborah Harrover from Van Metre gave the site plan presentation to the Planning Commission.

There were questions on tying in the sidewalk from Longstreet Commons to the development. Ms. Harrover stated that they would be tying into the Longstreet Commons development. There were also questions on approved SUP. Commissioner Beyenne stated that he would like to go on record with his concerns on the amount of vehicles per day that the study indicated. Ms. Harrover responded that the engineer did not give the correct estimate. Ms. Harrover stated that she would give the correct estimate once she receives them from the engineer.

With no further questions, Chairman Caudle thanked the representatives for their presentation. Ms. Lockhart stated that she would send any questions to the representatives before their next site plan presentation in October or November.

There was no action taken at this time.

## 2. Consideration of SUP: 6611 Jefferson Street

The Planning Commission considered the Special Use Permit application for 6611 Jefferson Street. There was a short discussion on the Town Planners recommendation.

Councilman Weir moved that the Planning Commission to forward SUP #2020-003 to the Town Council for Public Hearing with the following recommended conditions: 1). The applicant must provide a Certificate of Occupancy for the space to determine the maximum allowable parishioners in the space. This shall be provided by the applicant prior to the religious assembly operating; 2). The applicant provides a parking plan prior to the publication of the agenda on which the Town Council hearing for the SUP appears. Commissioner Beyenne seconded the motion. The motion carried by a roll call vote.

RESULT: ADOPTED [UNANIMOUS]

MOVER: Bob Weir, Councilman

**SECONDER:** Alexander Beyene, Commissioner

AYES: Caudle, Kharel, Weir, Hallet, Walker, Beyene

**ABSENT:** Thomas Utz

## 3. Consideration of Proffer Amendment: 14600 Washington Street

Town Planner Emily Lockhart gave a brief history on the Proffer Amendment application that went before a joint public hearing with the Town Council on June 29, 2020. Ms. Lockhart shared that the application request changed from 4.51 acres to 0 acres. Ms. Lockhart explained that once the change was discovered, the public hearing was re-advertised with the correct acreage change. Ms. Lockhart stated that the applicant submitted updated documents and gave updated information in regards to the proffered land and its use. Town Planner Lockhart stated that the applicant was present to answer any questions. Chairman Caudle invited the applicant to the podium.

Connor Leake, president of Haymarket Properties Group, stated that he would like to give the power point presentation since there the Planning Commission has new members. There was a short recess with the attempt to get the Power Point presentation could be accessed on the screen. Mr. Leake introduced Keith Lowery, a partner of Haymarket Properties Group prior to giving a vocal presentation until the Power Point was being accessed on the screen. Mr. Leake shared how Haymarket Properties Group, HPG, acquired the property and in 2014 did a boundary line adjustment to bring the entire property into the Town. He continued to state that the property was then re-zoned from residential to B-1. He also stated that at that time, HPG entered into a 10 year proffer agreement with Prince William Parks and Rec in which they would have use of the recreational fields. Mr. Leake stated that the end of the 10 years, HPG could market the property for one year at fair market value that is not the same price of what the County is paying. He continued to state that if no one comes into an agreement during that time, HPG would have the right to develop the property. He stated that HPG would like to tie the proffer in direct correlation with the lease. Mr. Leake stated that they would like to amend the proffer to allow development where the front ball fields currently sit and if the County would like to extend the lease in 2024, they would consider having a conversation at the time. At the end of his presentation, Mr. Leake answered questions from the Planning Commission. Chairman Caudle clarified that HPG would develop the front portion of the property leaving the back portion near Dogwood Park Lane undeveloped and would remain ball fields. Mr. Leake confirmed that the plan is better detailed in the General Development Plan that was submitted and that HPG also has a concurrent Special Use Permit application submitted to the Town. Mr. Leake also shared information of an email conversation with Prince William Parks and Rec on the subject of the back portion of the property. Commissioner Beyenne questioned why Parks and Rec did not share that information with the Town Planner when she had a conversation with them. There was a discussion on subject on the back portion of the property and the proffer amendment statement submitted on June 24th. Commissioner Beyenne questioned the current lease with Parks and Recreation and the terms of lease. There was a lengthy discussion on the proffer amendment application that was submitted. Councilman Weir shared that he was part of

a recent conversation between the Town and Seth Hendler-Voss from Parks and Rec on the County's intended use of the ball fields. Chairman Caudle read an email from Mr. Hendler-Voss of Parks and Rec dated April 2018 into the record regarding the use of the ball fields. Mr. Caudle asked Mr. Leake if he had received any recent communication with Mr Hendler-Voss. Mr. Leake stated that he received information from Mr. Hendler-Voss in regards to the proposed GDP and the intent of the ball fields. Town Planner Lockhart stated that she could reach out to Mr. Hendler-Voss for written documentation on the conversation with the Town. Commissioner Beyenne also read a recent email into the record from Mr. Hendler-Voss dated July 15, 2020. The emails read by Mr. Caudle and Mr. Bevenne will be attached to the minutes. There was a lengthy discussion on the emails provided and the Town's conversation with Parks and Rec regarding land use and the future plans of any ball fields in the Haymarket area. Mr. Lowery stated that HPG was not invited to the conversation. Ms. Lockhart stated that since this was a discussion between the Town Attorney and HPG's attorney, she felt that the Town Attorney should be invited to the next meeting to discuss the subject further. Councilman Weir stated that the Commission needs to address the application at hand, which is the amendment to the proffer that was established in 2013 which eliminates the first paragraph of the proffer. A discussion followed.

Since there were several questions on the application and in particular the lease agreement with Prince William County Parks and Rec, there was a suggestion to invite the representative from Parks and Rec to the next meeting along with the Town Attorney. Town Manager Coon stated that he will invite the Town Attorney to next meeting to answer questions of the Planning Commission.

Councilman Weir moved to defer for consideration of the rezoning #20130528 and associated SUP 2020-002 until our next regularly scheduled meeting on October 19, 2020. This motion failed for a lack of a second.

4. Motion: A Resolution to promote the health, safety or general welfare of the Public Councilman Weir moved to approve the following resolution. The motion was seconded by Commissioner Beyenne. A discussion followed. There was a 5 minute recess for the resolution to be distributed and reviewed by all Planning Commission members. After the recess, Chairman Caudle stated that he wanted to go on record that the Commission was voting on something that they don't have total clarity on asked for a roll call vote after the review of the resolution from the Planning Commission. The motion carried by a roll call vote.

Whereas, the Haymarket Planning Commission is empowered to review land use applications to ensure the health, safety or general welfare of the public, and

Whereas, the enumeration of particular powers by the Charter of the Town of Haymarket shall not be deemed to be exclusive, and in addition to the powers enumerated therein or implied thereby, or appropriate to the exercise of such powers, it is intended that the Haymarket Planning Commission shall have and may exercise all powers which, under the constitution and laws of this state, it would be competent for the Charter specifically to enumerate, and

Whereas, for the purpose of promoting the health, safety or general welfare of the public and of further accomplishing the objectives of Code of Virginia, § 15.2-2200, chapter 58 was adopted as the zoning ordinance of the town, and

Whereas, a portion of the police power of the commonwealth has been delegated to the town, to be exercised reasonably in determining the manner of its development. The state legislature has left much discretion to the town in making such determinations, relying on the local governing body's knowledge of local conditions and the needs of its individual communities. Public necessity, health, safety, convenience, general welfare, and good zoning practice provide guiding factors for the council in its quest to exercise its legislative mandate in formulating a reasonable policy of town planning for the general good and welfare, and

Whereas, the Virginia Code a zoning ordinance may include provisions for the granting of special exceptions and the governing body of any city, county or town may reserve unto itself the right to issue such special exceptions, and

Whereas the Supreme Court of Virginia has consistently held the exercise of that power to be a legislative, rather than an administrative act. A fortiori, the decision of the legislative body, when framing its zoning ordinance, to place certain uses in the special exception or conditional use category, is a legislative action (Board of Supervisors of Fairfax County v. The Southland Corporation, 224 Va. 514; 297 S.E.2d 718; 1982), and

Whereas, the Haymarket Planning Commission has reviewed a proposed proffer amendment to REZ #201030528, and

Whereas, in the proffer amendment statement dated June 1, 2020, the Applicant amended the proffered acreage for park preservation from 4.51 to 2.06 acres, and

Whereas, in the proffer amendment statement dated June 24, 2020, the Applicant amended the proffered acreage for park preservation from 4.51 to 0 acres, and

Whereas, the current deed of lease for use of the park acreage entered into between Haymarket Properties Group, LLC and the Board of County Supervisors of Prince William County, Virginia will not expire until at least August 13, 2023, and

Whereas, the proffers dated August 1, 2013 provided that the recreational fields will be maintained for recreational field use so long as a public or private partner is willing to enter into a commercially reasonable form of lease agreement at a fair market price, and

Whereas, the Applicant intends to terminate the recreational use as early as August 13, 2023, and

Whereas, upon information and belief, the Applicant has not entered into a contract to sell the Project, and

Whereas, the Prince William County Parks and Recreation Department asserts that it is currently making use of all of the proffered fields, desires to continue such use and is lacking in additional park acreage in the western portion of Prince William County, and

Whereas, the Applicant has not fully complied with the conditions of the 2013 proffer statement, and

Whereas, the Planning Commission finds that each of the foregoing grounds can be deemed severable, and

Whereas, as a matter of good zoning practice the approval the proposed amendment to REZ#20130528 would not serve the health, safety or general welfare of the public;

NOW, THEREFORE, BE IT RESOLVED by the Haymarket Planning Commission, that in order to promote the health, safety or general welfare of the public, it is recommended that proposed proffer amendment to REZ#20130528 be denied.

RESULT: ADOPTED [5 TO 1]

AYES: Kharel, Weir, Hallet, Walker, Beyene

NAYS: Matt Caudle ABSENT: Thomas Utz

## 5. QBE SUP Application 30 Condos: 14600 Washington Street

Councilman Weir moved that the Planning Commission defer consideration of SUP #2020-002 to a date uncertain pending final action by the Town Council on the proffer amendment to REZ20130528. Commissioner Beyenne seconded the motion. Chairman

Caudle asked for the written draft to the motion. There was a discussion on the date of the meeting.

Councilman Weir amended the motion that the Planning Commission defer consideration of SUP #2020-002 to the meeting on November 16, 2020 pending final action by the Town Council on the proffer amendment to REZ20130528. Commissioner Hallet seconded the amended motion. There was a question from Town Staff if the Town Council did not take final action at their November meeting. The discussion continued on the subject. The motion carried by a roll call vote.

RESULT: ADOPTED [UNANIMOUS]

MOVER: Bob Weir, Councilman

**SECONDER:** Robert Hallet, Commissioner

AYES: Caudle, Kharel, Weir, Hallet, Walker, Beyene

**ABSENT:** Thomas Utz

# VII. Minute Approval

1. Planning Commission - Regular Meeting - Aug 17, 2020 7:00 PM

Councilman Weir moved to approve the minutes from August 17, 2020. Commissioner Hallet seconded the motion. The motion carried.

RESULT: ACCEPTED [UNANIMOUS]

AYES: Caudle, Kharel, Weir, Hallet, Walker, Beyene

ABSENT: Thomas Utz

## VIII. New Business

Town Planner Emily Lockhart updated the Planning Commission on the Jefferson Street project.

## IX. Old Business

Town Planner Emily Lockhart stated that she would be available to the Planning Commission on the Van Metre first submission of the site plan that was presented earlier in the evening. She also stated to send her any concerns or questions that she could forward to Van Metre so that they can address them at the October meeting.

Ms. Lockhart also shared that staff was to meet with the representative from VDOT regarding the replacement of the crosswalks from the recent paving on Washington Street.

Lastly Ms. Lockhart shared that she was preparing notices of violation to several properties in Town.

# X. ARB Updates

Commissioner Kharel gave the ARB updates. He stated that there was a discussion of the Town obtaining a Virginia LOVE sign to bring more people into Town, how it would be utilized and involving more people in the Town. He also shared the ARB will be looking at the Town gateway and monument signs.

# XI. Town Council Updates

Councilman Weir gave the Town Council updates. He shared that the Planning Commission will probably be amending the zoning ordinance in the near future.

# XII. Adjournment

With no further business before the Planning Commission, Councilman Weir moved to adjourn with a second by Commissioner Hallet. The motion carried.

# Minutes Acceptance: Minutes of Sep 21, 2020 7:00 PM (Minute Approval)

# 1. Motion to Adjourn

RESULT: ADOPTED [UNANIMOUS]

MOVER: Bob Weir, Councilman

SECONDER: Robert Hallet, Commissioner

AYES: Caudle, Kharel, Weir, Hallet, Walker, Beyene

ABSENT: Thomas Utz

Submitted:	Approved:	17
Kim Henry, Clerk of the Council	Matt Caudle, Chairperson	



## Emily K. Lockhart

Town Planner and Zoning Administrator

## **MEMORANDUM**

TO: Planning Commission FROM: Emily K. Lockhart

DATE: October 15, 2020

SUBJECT: Robinson Village Site Plan

## Background:

Van Metre Homes, has applied for their final site plan for the Robinson Village Development. Van Metre previously received approval for the Special Use Permit to permit 38 Town Houses in the B-1 Zoning district. The site plan was presented to the Planning Commission at the September meeting for review.

The Town Engineer and Town Planner have reviewed the site plan and provided two rounds of comments for the applicant, which the applicant has addressed. We are awaiting all final outside agency approvals.

At this time, I recommend the Planning Commission conditionally approve the Robinson Village Site Plan, with the condition that all outside agencies approvals be received and all outstanding comments be addressed adequately prior to final signature and approval by the Town Zoning Administrator.

Motion: "I move the Planning Commission to conditionally approve the Robinson Village Site Plan, with the following conditions; all outside agencies approvals must be received and all outstanding Town Engineer and Town Planner comments must be adequately addressed prior to the approval signature from the Town Zoning Administrator."

Or other motion.

# The Engineering Groupe

13580 Groupe Dr., Suite 200 Woodbridge, VA 22192 (703) 670-0985 [phone] (703) 670-7769 [fax]

# LETTER OF TRANSMITTAL

TO: Ms. Emily Lockhart

Town of Haymarket

15000 Washington Street

Suite 100

Haymarket, VA 20169

DATE: September 8, 2020

RE: Robinson Village

Site Plan

2nd Submission

County/Town

Plan #:

Please accept the enclosed plan for 2nd submission review. If you have questions or comments, please do not hesitate to contact our office.

Sending Via:

**Hand Delivered** 

As Indicated:

For Submission to the Town

Nine (9) blackline copies of the Site Plan for Robinson Village dated July 2020, last signed 9-4-20, sheets 1-41 of 41, drawing number SP-393.

One (1) CD containing pfd files of the Site plan

Nine (9) copies of the Comments/Comment Response Letter dated 9-8-20, 9 pages (one copy stapled to each plan set.

cc: Derek DiDonato

E-File

By:

Chris Ferrara, L.S.B.

Project Manager

# The Engineering Groupe

September 9, 2020

Ms. Emily Lockhart Town of Haymarket 15000 Washington Street Suite 100 Haymarket, VA 20169

RE: Robinson Village Final Site Plan

2<sup>nd</sup> Submission

Dear Ms. Lockhart:

Please find enclosed nine (9) copies of the above referenced plan for 2<sup>nd</sup> submission review. Comments dated August 16, 2020 are addressed below.

Comment Reference Comment

1. 58-2.4.3.c.4 Add boundary information on sheet 8.

Response: Boundary information was added on sheet 8A.

2. 58-2.4.3.d Label present use and zoning of subject parcel and all contiguous or abutting properties.

Response: The present use and zoning of subject parcels and all contiguous or abutting properties were added. See sheet 7-8.

3. 58-2.4.3.e a. Provide list or label individual townhouse lot sizes to verify no lot is less than 1,500 sf.

Response: Individual townhouse lot sizes were provided. See sheet 8A.

b. Provide lot dimensions to verify frontage and yards.

Response: Lot dimensions were provided. See sheet 8A.

c. Summarize buffer requirements in zoning tabulations on sheet 2.

Response: The buffer summarization is provided on the Landscape Plan, Sheet 34.

4. 58-2.4.3.f.1 Indicate type and direction of flow for all storm drainage within 50' of property line.

Response: Type and direction of flow was indicated for all storm drainage within 50' of property line. See sheet 6.

5. 58-2.4.3.f.3 Indicate presence or lack thereof for RPA on the site.

Response: Lack of RPA on this site was indicated. See sheet 2, note 8 under construction notes.

6. 58-2.4.3.f.5 Clarify note 32 on sheet 1 or add a site specific note to indicate presence of cemeteries or other historic sites on the parcel or lack thereof.

Response: Note 32 was removed on sheet 1. A site specific note was added to indicate presence of cemeteries or other historic sites on the parcel or lack thereof. See sheet 2, note 11 under construction notes.

7. 58-2.4.3.g Show yards, setbacks, and buffers in plan view.

Response: Yards, setbacks and buffers were added. See sheet 8A.

8. 58-2.4.3.i Ensure all existing easements are labeled. There appears to be an unlabeled easement outside of the 10' utility/temporary construction easement on the west side of the site. Temporary construction easement location does not match plat. Clarify whether ROW is being dedicated along frontage. Plan appears to be creating a new parcel for the existing permanent pedestrian access and landscaping easement on Washington St.

Response: All existing easements are labeled. The unlabeled easement was clarified. ROW will be dedicated. See sheet 6.

9. 58-2.4.3.j.1 Provide lot tabulation including individual lots and open spaces.

Response: Tabulation has been provided. See sheet 8A.

10. 58-2.4.3.j.4 Provide frontage length at the setback line.

Response: Frontage length at the setback line has been provided. See sheet 8A.

11. 58-2.4.3.q Provide route number for Hunting Path Road on the plans.

Response: Route number for Hunting Path Road was added on the plans.

12. 58-2.4.3.u Clarify what is being proposed to be done with the existing culvert to the existing storm inlet structure in Hunting Path Road. Verify adequacy to handle drainage and freeboard to FF of townhouse if not being removed.

Response: Existing culvert will be removed and storm structure to be bricked. Drainage area to existing culvert was reduced.

13. 58-2.4.3.u Verify all pipe lengths and inverts match between profiles and storm comps.

Response: All pipe lengths and inverts match between profiles and storm comps.

• Length of pipe from structure 17 to 16 does not match.

Response: Length of pipe was corrected.

• Invert in to structure 15 from structure 16 is labeled incorrectly in profile.

Response: Invert was labeled correctly.

• Drainage areas to structures 13 and 12 appear to be reversed.

Response: Drainage areas to structures 13 and 12 were corrected.

14. 58-2.4.3.v Verify finished floor elevations of structures on adjacent property to west in proximity to the 100-year overland relief WSE.

Response: As discussed in a conference call with Town Staff and Developer, it was agreed that an additional drainage structure be added in the rear of Lot 35 to provide additional insurance for 100% clogging of inlets. The additional inlet has been added and additional computations provided to show a 100 year storm event water surface elevation at 50% clogging does not encroach onto the adjoining property.

15. 58-2.4.3.v Provide ditch and overland relief cross sections showing water surface elevations at sections A, B and C. Drainage area and C factor to structure 19 in overland relief computations do not match storm computations.

Response: Ditch and overland relief cross sections showing water surface elevations hav3e been provided. See sheet 14. Drainage area and C factor to structure 19 in overland relief computations were corrected.

16. 58-2.4.3.w Provide detail grading for curb ramps to demonstrate accessibility.

Response: Detail grading for curb ramps were provided. See sheet 8.

17. 58-2.4.3.y Verify consistency between sediment basin comps and detail:

• Sediment basin wet storage calculation line 4 is incorrect.

Response: Wet storage calculation was corrected, sheet 18.

Clarify invert out elevation for sediment basin.

Response: Invert out elevation for sediment basin was corrected.

• Top of embankment elevation in detail does not match computations.

Response: Top of embankment elevation in detail was corrected.

• Q referenced in calculation line 16 is incorrect.

Response: Q referenced in calculation line 16 was corrected.

18. 58-2.4.3.hh Provide plat, draft deed(s) and stormwater management agreement.

Response: To be provided under separate cover.

19. 58-17.4.2 Identify existing mature landscape vegetation to be saved by name, quantity, and size.

Response: As discussed with Town Staff and Developer, the existing trees are to be removed along Hunting Path Road and to be replaced. See Landscape Plan sheets for replacement details and sizes.

20. 58-17.15.a Provide additional tree protection fencing for trees to be preserved along Hunting Path Road. Tree protection should be installed in Phase I E&S and maintained through Phase 2 for any trees to be preserved.

Response: No trees will be preserved along Hunting Path Road.

21. 58-18.9.f Specify Belden Brick color Regimental Red for sidewalks along Washington Street.

Response: Belden Brick color Regimental Red for sidewalks was specified. See sheet 3.

22. 58-18.10.b Photometric plan should include a narrative outlining specifications and responsible parties for operation and maintenance.

Response: The requested clarification is provided, see Sheet 36A.

23. 58-20.4.h Provide road width dimensions on fire lane plan.

Response: Road width dimensions were provided. See sheet 32.

24. General Clarify intent of dashed parking lot in southwest corner of site. Is this intended to be built with the current plan or with a future phase? Identify material.

Response: A discussed with Town Staff and Developer, the dashed parking area may be used for temporary parking during the development phase of the residential portion of the site and may be a gravel surface. With final development of this parcel it will be an asphalt parking area for use by the end user.

25. General Existing entrance pavement is called out to be removed on sheet 6, however is shown in the grading plans as existing pavement. Clarify.

Response: It will be removed. The site plan shows all existing improvements on the site.

26. General Sheet 34 did not print correctly and was not able to be reviewed. Provide updated sheet with landscaping and buffer calculations.

Response: This plan submission provides this plan sheet.

27. General Provide copies of all required environmental permits.

Response: Environmental permits will be provided under separate cover.

28. General Provide copy of Health Department well permit.

Response: The Developer will provide the Town with the required permit under separate cover.

29. General Provide documentation of comments and approvals from outside agencies.

Response: Outside approvals will be provided when obtained.

30. DCSM 710.06 Retaining walls shall require a structural design certified by a professional engineer to be submitted for plan review approval and issuance of a building permit by the County.

Response: Note 7 was revised to comply with requirement. See sheet 7 and 8.

Recommendation Provide a digital copy of second submission in addition to paper copies to facilitate review.

Response: A digital copy of the plan set is provided with this plan submission.

If you have any questions or comments, please do not hesitate to contact our office.

Very truly yours,

THE ENGINEERING GROUPE, INC.

Chris Ferrara, L.S.B. Project Manager

CF/cwc

cc:

Derek DiDonato

E-File

G:\PROJECT\Smith Property-Haymarket\CORRESP\ENGINEERING\2nd submission items\9-8-20 Emily Lockhart Rsp Ltr.docx



Town of Haymarket 15000 Washington Street, #100 Haymarket, VA 20169 703-753-2600

Kathryn M. McDaniel, P.E. TOWN ENGINEER

# **MEMORANDUM**

TO:

Emily Lockhart, Town Planner and Zoning Administrator

Chriss Coon, Business Manager

FROM:

Katie McDaniel, Town Engineer

DATE:

August 18, 2020

SUBJECT:

Robinson Village Final Site Plan Engineering Review Comments

Per your request, I have reviewed the Robinson Village Final Site Plan. I used the Haymarket Zoning and Subdivision Ordinance, Site Plan Checklist and Town Code in order to review this site plan. The plan has been disapproved until the following comments are addressed.

Comment	Reference	Comment
1.	58-2.4.3.c.4	Add boundary information on sheet 8.
2.	58-2.4.3.d	Label present use and zoning of subject parcel and all contiguous or abutting properties.
3.	58-2.4.3.e	<ul> <li>a. Provide list or label individual townhouse lot sizes to verify no lot is less than 1,500 sf.</li> <li>b. Provide lot dimensions to verify frontage and yards.</li> <li>c. Summarize buffer requirements in zoning tabulations on sheet 2.</li> </ul>
4.	58-2.4.3.f.1	Indicate type and direction of flow for all storm drainage within 50' of property line.
5.	58-2.4.3.f.3	Indicate presence or lack thereof for RPA on the site.
6.	58-2.4.3.f.5	Clarify note 32 on sheet 1 or add a site specific note to indicate presence of cemeteries or other historic sites on the parcel or lack thereof.
7.	58-2.4.3.g	Show yards, setbacks, and buffers in plan view.
8.	58-2.4.3.i	Ensure all existing easements are labeled. There appears to be an unlabeled easement outside of the 10' utility/temporary construction easement on the west side of the site. Temporary construction easement location does not match plat. Clarify whether ROW is being dedicated along frontage. Plan appears to be creating a new parcel for the existing permanent pedestrian access and landscaping easement on Washington St.

9.	58-2.4.3.j.1	Provide lot tabulation including individual lots and open spaces.
10.	58-2.4.3.j.4	Provide frontage length at the setback line.
11.	58-2.4.3.q	Provide route number for Hunting Path Road on the plans.
12.	58-2.4.3.u	Clarify what is being proposed to be done with the existing culvert to the existing storm inlet structure in Hunting Path Road. Verify adequacy to handle drainage and freeboard to FF of townhouse if not being removed.
13.	58-2.4.3.u	<ul> <li>Verify all pipe lengths and inverts match between profiles and storm comps.</li> <li>Length of pipe from structure 17 to 16 does not match.</li> <li>Invert in to structure 15 from structure 16 is labeled incorrectly in profile.</li> <li>Drainage areas to structures 13 and 12 appear to be reversed.</li> </ul>
14.	58-2.4.3.v	Verify finished floor elevations of structures on adjacent property to west in proximity to the 100-year overland relief WSE.
15.	58-2.4.3.v	Provide ditch and overland relief cross sections showing water surface elevations at sections A, B and C. Drainage area and C factor to structure 19 in overland relief computations do not match storm computations.
16.	58-2.4.3.w	Provide detail grading for curb ramps to demonstrate accessibility.
17.	58-2.4.3.y	<ul> <li>Verify consistency between sediment basin comps and detail:</li> <li>Sediment basin wet storage calculation line 4 is incorrect.</li> <li>Clarify invert out elevation for sediment basin.</li> <li>Top of embankment elevation in detail does not match computations.</li> <li>Q referenced in calculation line 16 is incorrect.</li> </ul>
18.	58-2.4.3.hh	Provide plat, draft deed(s) and stormwater management agreement.
19.	58-17.4.2	Identify existing mature landscape vegetation to be saved by name, quantity, and size.
20.	58-17.15.a	Provide additional tree protection fencing for trees to be preserved along Hunting Path Road. Tree protection should be installed in Phase I E&S and maintained through Phase 2 for any trees to be preserved.
21.	58-18.9.f	Specify Belden Brick color Regimental Red for sidewalks along Washington Street.
22.	58-18.10.b	Photometric plan should include a narrative outlining specifications and responsible parties for operation and maintenance.
23.	58-20.4.h	Provide road width dimensions on fire lane plan.

24.	General	Clarify intent of dashed parking lot in southwest corner of site. Is this intended to be built with the current plan or with a future phase? Identify material.
25.	General	Existing entrance pavement is called out to be removed on sheet 6, however is shown in the grading plans as existing pavement.  Clarify.
26.	General	Sheet 34 did not print correctly and was not able to be reviewed. Provide updated sheet with landscaping and buffer calculations.
27.	General	Provide copies of all required environmental permits.
28.	General	Provide copy of Health Department well permit.
29.	General	Provide documentation of comments and approvals from outside agencies.
30.	DCSM 710.06	Retaining walls shall require a structural design certified by a professional engineer to be submitted for plan review approval and issuance of a building permit by the County.
Recommend	ation	Provide a digital copy of second submission in addition to paper copies to facilitate review.

Please let me know if you have any additional questions regarding these comments. I can be reached at  $\underline{kmcdaniel@townofhaymarket.org}$ .

			VICINITY MAP
OFNIED AL NIOTEO			
GENERAL NOTES  1. This site has been addressed by the Brince William County Mapping Office as: 6701 HUNTING PATH RD. 14860 & 14850 WASHINGTON ST	LEGEND	SURVEY AND TOPOGRAPHIC INFORMATION	
This site has been addressed by the Prince William County Mapping Office as: 6701 HUNTING PATH RD., 14860 & 14850 WASHINGTON ST.  (addresses for subdivision lots shall appear on the approved plat for recordation).  Addresses assigned are for the layout of individual businesses or dwelling units and are for exterior doors as shown on this plan only.	EXISTING INTERMEDIATE CONTOUR ————————————————————————————————————	1. Horizontal and vertical control surveys were performed by  The ENGINEERING GROUPE, Inc. in 2019  (Year)	
2. Addresses assigned are for the layout of individual businesses or dwelling units and are for exterior doors as shown on this plan only. Any deviation in design or layout will require that a revised plan be submitted to the Office of Mapping for re—addressing. It is the responsibility of the developer to inform the County Office of Mapping before a change in layout occurs and to submit complete and accurate information for re—addressing. Prince William County does not assume any responsibility where re—addressing is required even	EXISTING INDEX CONTOUR  PROPOSED CONTOUR	<ol> <li>All elevations must be referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).</li> </ol>	
though tenants have already occupied a portion of the building.  3. Methods and materials used in the construction of the improvements herein shall conform to the current County construction standards	EXISTING EDGE OF PAVEMENT  EX. E/P  PROPOSED UTILITY POLE  PROPOSED UTILITY POLE	3. Source of topographic mapping is <u>THE ENGINEERING GROUPE</u> , dated <u>APRIL 2020</u> .	
and specifications and/or current VDOT standards and specifications.	EXISTING CURB AND GUTTER  EX. C & G  PROPOSED WATERLINE W/ TEE  W	4. Boundary survey was performed by THE ENGINEERING GROUPE	The state of the s
<ol> <li>The contractor or developer is required to notify the Town of Haymarket in writing three (3) days prior to the beginning of the construction and specifically request inspection before beginning ——         A. Installation of approved erosion control devices.         B. Clearing and Grading     </li> </ol>	PROPOSED CURB AND GUTTER  CG-6  EXISTING FIRE HYDRANT  PROPOSED FIRE HYDRANT  FIG. 6	5. The application of the professional's seal and signature as required by Section 1.14 of the STATE BOARD OF ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS AND CERTIFIED LANDSCAPE ARCHITECTS RULES AND REGULATIONS	1 St. Corr. Rel Vo
B. Clearing and Grading C. Subgrade excavation. D. Installing storm sewers or culverts. E. Setting curb and gutter forms.	TRANSITION FROM CG-6 TO CG-6R $\frac{\text{CG-6}}{\text{CG-6R}}$ EXISTING WATER VALVE	shall be evidence that: the boundary data is correct to the best of the land surveyor's knowledge, and complies with the minimum standards and	SITE
F. Placing curb and gutter. G. Placing other concrete. H. Placing gravel base.	PROPOSED TELEPHONE LINE ————————————————————————————————————	procedures of the said Board; the topographic information is accurate to within one—half of the contour interval, as shown. Application of the seal and signature indicates acceptance of responsibility for the work shown	
I. Placing any bituminous surfacing.  *J. Installing water mains outside the Service Authority's boundaries.  *K. Installing sanitary sewer outside the Service Authority's boundaries.	EXISTING STORM SEWER  EX. 375 mm (15") RCP PROPOSED STORM SEWER  EX. 375 mm (15") RCP PROPOSED REDUCER PROPOSED REDUCER PROPOSED REDUCER		Marity Con Critique St.
5. Measures to control erosion and siltation, including detention ponds serving as silt basins during construction, must be provided prior to issuance of the site development permit. The approval of these plans in no way relieves the developer or his agent of the	PROPOSED STORM SEWER  EXISTING SANITARY SEWER  THOM OSED REDUCEN  STOP SIGN  HANDICAP RAMP (CG-12)		PROAD RUN
responsibilities contained in the Virginia Erosion and Sediment Control Handbook.  6. A permit must be obtained from the Office of the Resident Engineer, Virginia Department of Transportation (VDOT), Town of Haymarket,	PROPOSED SANITARY SEWER  DENOTES LOCATION OF STD VDOT  CG-12 AND/OR JURISDICTIONAL	SOILS MAP	
prior to c <del>onstru</del> ction in existing State right-of-way, (703) 366-1900.	EXISTING ELECTRIC SERVICE  PROPOSED ELECTRIC SERVICE  E  PARKING INDICATOR INDICATES THE NUMBER OF TYPICAL PARKING SPACES		SCALE: 1" = 2000'
7. Approval of this plan does not guarantee issuance of an entrance permit by VDOT when such permit is required under State law.  8. The exact location of all guard rails will be determined by VDOT personnel. "A joint inspection will be held with the Developer, County	EXISTING GAS LINE ————————————————————————————————————	SE HEATHCOTT	
Representatives, and Representatives, of the Virginia Department of Transportation (VDOT) to determine if and where guard rail and/or paved ditches will be needed. The developer will be responsible for providing guardrail and paved ditches as determined by this joint inspection." Refer to Virginia Department of Transportation (VDOT) Guard Rail and Paved Ditch Specifications.	PROPOSED GAS LINE  ———————————————————————————————————	SC // PLANT I	
9. An approved set of plans and all applicable permits must be available at the construction site. Also, a representative of the developer must be available at all times.	EASEMENT LINE VEHICLES PER DAY COUNT 100 VPD	SITE	Sheet List Table
10. Warning signs, markers, barricades or flagmen should be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).	CENTERLINE PROPOSED BUILDING ENTRANCE  LIMITS OF CLEARING AND GRADING ————————————————————————————————————		Sheet Number Sheet Title
11. All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.  12. All pavement sections on the approved plans are based on a minimum CBR value of 10. CBR tests are to be performed by the	EXISTING SPOT ELEVATION  12.0  PROPOSED STREET LIGHT  PROPOSED STREET LIGHT	55 48 48 740 A	1 COVER SHEET 2 NOTES DETAILS AND TYPICAL SECTIONS
engineer and submitted to the Town of Haymarket for review prior to placement of base material. CBR values less than 10 will require submittal of revised pavement section.  13. All roadside ditches at grades of more than 5% shall be paved with coment concrete to the limits indicated on the plans and as	PROPOSED SPOT ELEVATION  12.5  PROPOSED STREET NAME SIGN  PROPOSED SANITARY LATERAL CLEANOUT  PROPOSED SANITARY LATERAL CLEANOUT		3 NOTES DETAILS AND TYPICAL SECTIONS 4 SUP CONDITIONS AND ANALYSIS
13. All roadside ditches at grades of more than 5% shall be paved with cement concrete to the limits indicated on the plans and as required at the field inspection.  14. All corings shall be capped and piped to the pagreet storm sower manholes or curb inlet. The pipe shall be minimum 150 mm (6")	EXISTING TREE  EXISTING TREE  FROPOSED SANITARY LATERAL CLEANOUT  SANITARY MANHOLE IDENTIFIER  100 12		5 OVERALL PLAN 6 EXISTING CONDITIONS & DEMOLITION PLAN
<ul><li>14. All springs shall be capped and piped to the nearest storm sewer manholes or curb inlet. The pipe shall be minimum 150 mm (6") diameter and conform to VDOT standard SB-1.</li><li>15. All standard street name signs, traffic control devices, and street lights shall be installed by the developer when the first building unit</li></ul>	PROPOSED TREE  OAK  STORM DRAIN STRUCTURE IDENTIFIER  18	100 p. 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 GRADING PLAN
is occupied.  16. Construction debris shall be containerized in accordance with the Virginia Litter Control Act; no less than one litter receptacle shall be		SPOS CROSSING	8 GRADING PLAN  8A GEOMETRIC PLAN
provided at the construction site  17. The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets, and		Ply Op.	9 PLAN & PROFILE — WASHINGTON STREET STATE ROUTE 55  10 SIGHT DISTANCE PROFILE
it is the contractor snall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets, and it is the contractors responsibility to clean streets, allay dust, and to take whatever measures are necessary to insure that the streets are maintained in a clean, mud and dust free condition at all times.		SCALE: 1" = 1000'	11 WATERLINE PROFILES
18. * Notification shall be given to the appropriate utility Company (Service Authority, Virginia—American Water Company, or Dale Service Corporation) prior to construction of water and/or sanitary sewer lines. Information should also be obtained from the appropriate authority concerning permits, cut sheets, and connections to existing lines.		SOILS DATA	12 SANITARY SEWER PROFILES  13 STORM SEWER PROFILES  44 STORM SEWER PROFILES
19. All sanitary sewers and water mains and appurtenances shall be constructed in accordance with the current standards and specifications of the Town of Haymarket and/or the Service Authority.	THIS PLAN COMPLIES WITH THE NEW PRINCE WILLIAM COUNTY	SOILS SYMBOL SOILS NAME ERODIBILITY SLOPE RANGE	14 STORM SEWER COMPUTATIONS  15 PWCSA INFORMATION SHEET
20. The developer and/or contractor shall be responsible to supply all utility companies with copies of plans that have been approved by Town of Haymarket and advising them that all grading shall conform to the approved plans, and further that the utility companies shall	SERVICE AUTHORITY UTILITY STANDARDS MANUAL, WHICH WENT INTO EFFECT ON SEPTEMBER 3, 2019. ALL UTILITY PERMITS ISSUED	☑ 5C ARCOLA-NESTORIA COMPLEX SEVERE 7% - 15%   ☑ 35B MANASSAS SILT MODERATE 2% to 7%	16 SANITARY SEWER COMPUTATIONS 17 EROSION & SEDIMENT CONTROL NOTES AND DETAILS
be responsible for honoring these plans and the finished grades in the installation of their utility lines.  21. Contractors shall notify operators who maintain underground utility lines in the area of proposed excavating or blasting at least two (2)	AFTER THIS DATE MUST COMPLY WITH THE CONSTRUCTION CRITERIA IN THE NEW MANUAL, INCLUDING ANY REVISIONS WHICH HAVE BEEN ISSUED.	SOILS SYMBOL PERMEABILITY DEPTH TEXTURE	18 EROSION & SEDIMENT CONTROL NOTES AND DETAILS 19 EROSION & SEDIMENT CONTROL PLAN — PHASE 1
working days, but not more than ten (10) working days, prior to commencement of excavation or demolition. Names and telephone numbers of the operators underground utility lines in Prince William County appear below. These numbers shall also be used to serve in an emergency condition.	DATE ACTION	22-28 VERY GRAVELLY LOAM, VERY GRAVELLY SILT LOAM, EXTREMELY GRAVELLY SILT LOAM 28 WEATHERED BEDROCK	20 EROSION & SEDIMENT CONTROL PLAN — PHASE 2 21 BMP MAP
* Washington Gas Light Co. Virginia Power Co.  Northern Virginia Electric Co-op  MISS UTILITY 811  (After hours-Emergency (703) 335-7990		☑ 5C     MODERATE THROUGHOUT     0-9     SILT LOAM       9-22     SILT LOAM, GRAVELLY SILTY CLAY LOAM, GRAVELLY SILT LOAM	22 PRE DEVELOPMENT DRAINAGE DIVIDES  23 POST DEVELOPMENT DRAINAGE DIVIDES
Columbia Gas of Virginia Virginia—American Water (703) 491—2136 Continental Telephone of VA Colonial Pipeline Co.  Dale Service Corporation (703) 494—4161 Colonial Pipeline Co.		22−28 VERY GRAVELLY LOAM, VERY GRAVELLY SILT LOAM, EXTREMELY GRAVELLY SILT LOAM  35B  28 WEATHERED BEDROCK	24 POLLUTION PREVENTION PLAN
Transcontinental Gas Pipe Line Corp.  22. The location of existing utilities shown in these plans are taken from existing records. It shall be the contractors responsibility to		MODERATE TO 0-10 SILT LOAM MODERATELY RAPID 10-43 SILT LOAM, SILTY CLAY LOAM, CLAY LOAM	25 SWM COMPS & DETAILS 26 SWM COMPS & DETAILS
verify the exact horizontal and vertical location of all existing utilities as needed prior to construction. The contractor shall inform the engineer of any conflicts arising from his existing utility verification and the proposed construction.		43-60 VERY SHALY SILT LOAM	27 SWM COMPS & DETAILS 28 SWM COMPS, DETAILS & NARRATIVE
23. The developer will be responsible for any damage to the existing streets and utilities which occurs as a result of his construction project within or contiguous to the existing right—of—way.			29 VRRM COMPUTATIONS 30 SWM CHECKLIST
24. All utilities placed under existing streets shall be bored or jacked.  25. When grading is proposed within easements of utilities, letters of permission from all involved companies must be provided to the Town			31 FIRE HYDRANT COVERAGE PLAN 32 FIRE LANE PLAN
of Haymarket prior to issuance of grading and/or site development permits.  26. The developer will be responsible for the relocation of any utilities which is required as a result of his project. The relocation should be		REVISIONS	33 LANDSCAPE PLAN
done prior to construction.  27. Before burning, blasting, transportation or storage of explosives in the Town of Haymarket, a permit shall be obtained from the Fire			34 LANDSCAPE PLAN 35 LANDSCAPE NOTES & DETAILS
Marshal's Office, (703) 792—6360.  28. Fire and Rescue Services must be notified immediately (792—6810) in the event that unusual items such as tanks, cylinders,			36 PHOTOMETRIC PLAN 36A PHOTOMETRIC PLAN
unidentified containers, etc. which could contain potentially hazardous materials are discovered or observed. All activities must cease and not be resumed until authorization to proceed is given by the Fire Marshal's Office.			37 UNIT PRICE LIST 38 SPECIAL USE PERMIT PLAN
29. All walkways outside of the right—of—way limits will be maintained by the homeowners association.  30. Maintenance of the Storm Drainage or Storm Water Management facilities located therein shall be privately maintained.			39 SPECIAL USE PERMIT PLAN
31. If units shown on this plan will be occupied in phases, a phasing plan must be approved by the engineering inspection branch prior to the issuance of any occupancy permits. (Detached single family subdivision exempt.)	REVIEWED BY: APPROVED BY:	DATE DESIGNER NO. DESCRIPTION	40 SPECIAL USE PERMIT PLAN 41 SPECIAL USE PERMIT PLAN
32. Roof top mechanical equipment, if any, must be enclosed within a wall or similar screening barrier, designed in harmony with the building.	THIS PLAN HAS BEEN REVIEWED AND HAS BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE	$T \cap W N \cap F$	HAYMARKET
33. Individual sign permits will be required from the Town of Haymarket for all free standing and facade signs prior to erecting the signs.	REQUIREMENTS OF THE TOWN OF HAYMARKET. THE DEVELOPER IS HEREBY AUTHORIZED TO OBTAIN ALL NECESSARY LAND DEVELOPMENT PERMITS, SUBJECT TO ALL DESIGNS, PROCEDURES, MATERIALS AND WORKMANSHIP BEING IN COMPLIANCE WITH LAWFUL REQUIREMENTS. IF NOT BONDED OR PERMITTED (IF	TH OF SER	
34. For SUP statement and proffers analysis, see sheet(s)4of41  35. For waivers see sheet(s)N/A _ ofN/A	APPLICABLE) WITHIN FIVE (5) YEARS OF THE AUTHORIZED DATE OR LAWFULLY EXTENDED, THIS AUTHORIZATION WILL EXPIRE. A VALID AGREEMENT AND BOND WITH THE TOWN OF HAYMARKET MUST BE MAINTAINED TO ASSURE PLAN AND PERMIT VALIDITY.	Project Name:	R SHEET  Project Number:
36. Anticipated sewage flows: 390 GPD/UNIT x 38 X 4 (PEAK FACTOR) = 59,280 GPD		DENAR H. C. ANTELO Lic. No. 38680  9/4/2020  Subdivision or Site Plan Name:  Market N	PWCSA Plan Number: SA2020-0188
37. Anticipated fire flows: 2500 GPM © 20 PSI  38. Distance to nearest existing school or proposed school site: 0.63 MILES TO TYLER ELEMENTARY SCHOOL	BOND ESTIMATE	ROBINSON VILLAGE –	Plan Type: — Revision Number: <b>O</b>
39. All utilities existing and proposed must be located underground in accordance with applicable town standards.	DOND ENTINATE	Magisterial District:  TOWN OF HAYMARKET  Present Zonin B-1	JULY, 2020
	Bond Estimate	PROFESSIONAL SEAL & SIGNATURE  Owner:  Address, Including Zip (  VAN METRE HOMES AT UPLAND VILLAGE LLC 990)	Code & Telephone No.  D MAIN ST., SUITE 500, FAIRFAX, VA 22031 (703)425-2614
	TOTAL CONSTRUCTION COST \$1,108,708.25 \$62,350.25	THESE PLANS ARE IN CONFORMANCE WITH PRINCE WILLIAM COUNTY  Developer:  SAME AS OWNER  Address, Including Zip C  SAME AS OWNER	
	ADMINISTRATIVE COST \$50,000.00 INFLATION COST (3%) \$33,261.25	STANDARDS AND ORDINANCES. ANY DEVIATION OR CHANGE IN THESE  Name, Address & Telephone No. of Engineer Architect or Surveyor certifying Plan:  17635 OFFICE BLACE SU	GROUPE, INC. ITE 101 WOODBRIDGE, VA 22192 (703) 670-0985
	TOTAL PERFORMANCE BOND AMOUNT \$1,191,969.50 EROSION AND SEDIMENT ESCROW \$76,216.80	DIRECTOR OF PLANNING PRIOR TO  Parcel Identification Number: 7298-90-7006; 7397-99-8684; 7397-09	
		Related Plans Tracking Numbers (Including Rez. & S.U.P.):	. 2.22 Importious riou. 2.02 rio. Divil Storage/Acre. 14/A CI/ Uc.
		SUP-2019-004	

Revised: June 1997 Sheet 1 of 41

SSAR- DATE OF APPROVAL: \_\_\_\_

SSAR- DATE OF APPROVAL: \_\_\_\_\_N/A
 DESIGN WAIVER -DATE OF APPROVAL: \_\_\_\_\_N/A
 OTHER\_\_N/A \_\_\_\_ DATE OF APPROVAL: \_\_\_\_\_N/A

2. SSAR CONNECTIVITY SUMMARY (PROVIDE A CHECK MARK X WHERE APPLICABLE OR WRITE N/A):

CONNECTIONS IN MULTIPLE DIRECTIONS (FIRST CONNECTION MUST BE TO A VDOT MAINTAINED ROAD, THE SECOND CONNECTION MAY EITHER BE TO A VDOT ROAD OR TO A STUB OUT)

STUB OUT CONNECTION (THE PROP. RIGHT OF WAY TERMINATES AT PARCEL ABUTTING THE DEVELOPMENT AND CONSISTS OF A SHORT SEGMENT THAT IS INTENDED TO SERVE CURRENT AND FUTURE DEVELOPMENT; THE APPLICANT MUST VERIFY THAT CONNECTION WITH A FUTURE STREET IS FEASIBLE)

3. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE CURRENT EDITIONS OF AND LATEST REVISIONS TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS AND STANDARDS, THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER APPLICABLE STATE, FEDERAL OR LOCAL REGULATIONS. IN CASE OF A DISCREPANCY OR CONFLICT BETWEEN THE STANDARDS OR SPECIFICATIONS AND REGULATIONS, THE MOST STRINGENT SHALL GOVERN.

4. METHODS AND MATERIALS USED SHALL CONFORM TO CURRENT COUNTY/TOWN AND VDOT STANDARDS AND SPECIFICATIONS.

5. ALL UTILITIES, INCLUDING ALL POLES, ARE TO BE RELOCATED AT THE DEVELOPER'S EXPENSE, PRIOR TO CONSTRUCTION.

6. OPEN CUTTING OF PAVED OR SURFACE TREATED ROADS IS NOT PERMITTED. ALL UTILITIES WHICH WILL BE PLACED UNDER EXISTING STREETS ARE TO BE BORED OR JACKED. ANY EXCEPTIONS, DUE TO EXTENUATING CIRCUMSTANCES, ARE TO BE ADDRESSED AT THE PERMIT STAGE.

ANY TYPE OF REVERSE CURB (SPILL CURB, CG-6R, ETC.) AND TRANSITION TO THESE CURBS SHALL NOT BE USED WITHIN THE PUBLIC RIGHT OF WAY.

THE DEVELOPER IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS AND UTILITIES WHICH OCCUR AS A RESULT OF PROJECT CONSTRUCTION WITHIN OR CONTIGUOUS TO EXISTING RIGHT OF WAY.

9. A SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE PROPOSED EDGE OF PAVEMENT TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER IN THE ROADWAY.

10. STANDARD GUARDRAILS AND/OR HANDRAILS SHALL BE INSTALLED AT HAZARDOUS LOCATIONS AS DESIGNATED DURING FIELD REVIEW BY THE COUNTY/TOWN INSPECTOR OR VDOT.

11. THE DEVELOPER IS RESPONSIBLE FOR ALL TRAFFIC CONTROL. THE DEVELOPER SHALL SUBMIT A SIGNING, STRIPING AND/OR SIGNALIZATION PLAN TO THE VDOT LAND DEVELOPMENT SECTION PRIOR TO PERMIT APPLICATION. THE DEVELOPER SHALL NOT COMMENCE CONSTRUCTION OF ANY PAVEMENT COURSE WITHOUT AN APPROVED STRIPING PLAN.

12. PAVEMENT DESIGN SHALL BE PROVIDED IN ACCORDANCE WITH THE PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA. FOR PRIMARY ROADS AND INTERSTATE HIGHWAYS WHERE TRUCK TRAFFIC EXCEEDS 5%, PAVEMENT DESIGN SHALL BE PROVIDED IN ACCORDANCE WITH AASHTO GUIDELINES. TYPICAL PAVEMENT SECTIONS SHALL DEPICT THE TOP 6" OF THE SUBGRADE IMMEDIATELY UNDER THE PAVEMENT STRUCTURE COMPACTED TO 100% OF THE THEORETICAL MAXIMUM DRY DENSITY.

13. ASPHALT PAVEMENT WIDENING SHALL CONFORM TO VDOT STANDARD WP-2.

14. ALL RIGHT OF WAY DEDICATED TO PUBLIC USE SHALL BE CLEAR AND UNENCUMBERED.

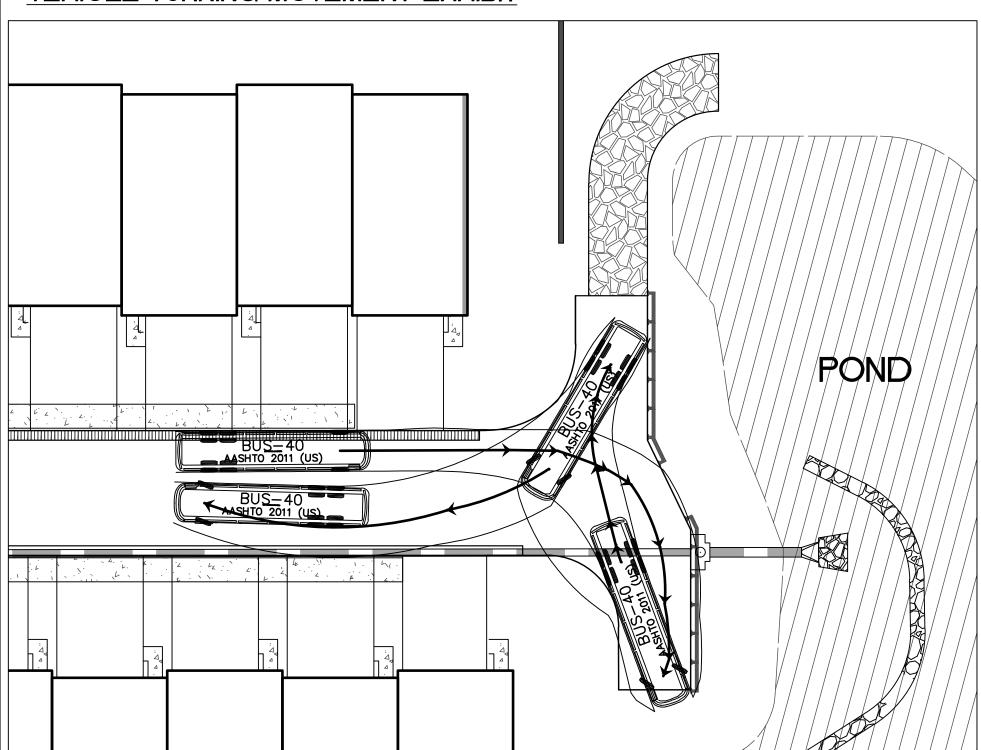
15. FLOWERS, SHRUBS, TREES, AND IRRIGATION SHALL NOT BE PLACED WITHIN STATE MAINTAINED RIGHT OF WAY LIMITS WITHOUT AN APPROVED SET OF PLANS AND AN APPROVED PLANTING AGREEMENT. NO IRRIGATION (SPRINKLER) SYSTEMS, BRICK COLUMNS, END WALLS, AND/OR BRICK MAILBOXES WILL BE CONSTRUCTED OR INSTALLED WITHIN STATE MAINTAINED RIGHT OF WAY LIMITS WITHOUT A PERMIT. ANY OF THE ABOVE ITEMS FOUND IN THE RIGHT OF WAY WITHOUT A PERMIT WILL BE REMOVED, AND ALL COSTS OF THE REMOVAL WILL BE BORNE BY THE OWNER AND/OR DEVELOPER.

16. THE COUNTY/TOWN SHALL OBTAIN A PERMIT FOR ALL SIDEWALKS/CROSSWALKS WITHIN THE RIGHT OF WAY THAT DO NOT QUALIFY FOR VDOT MAINTENANCE.

17. TRAFFIC CONTROL DEVICES OR ADVISORY SIGNS, SUCH AS MULTIWAY STOPS, SPEED LIMITS, WATCH FOR CHILDREN PEDESTRIAN TRAFFIC ETC., SHALL NOT BE INSTALLED UNLESS SPECIFICALLY SHOWN ON THESE PLANS OR A VDOT APPROVED PLAN REVISION. SPEED STUDY CERTIFIED BY PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR VDOT APPROVAL PRIOR TO THE STREET ACCEPTANCE FOR ANY ROAD TO BE POSTED OTHER THAN THE STATUTORY SPEED LIMIT. SHOULD UNAPPROVED SIGNS BE NOTED AT THE TIME OF VDOT INSPECTION, THE ROAD ACCEPTANCE PROCESS SHALL BE TERMINATED IMMEDIATELY AND NOT RECOMMENCED UNTIL A DETERMINATION IS MADE REGARDING THE APPROVAL OF ANY ADDITIONAL SIGNS. IMMEDIATE REMOVAL OF SUCH SIGNS SHALL NOT NEGATE THE NEED FOR THE SUBMISSION OF A REVISION.

18. DURING CONSTRUCTION, THE MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE REQUIREMENTS IN THE MOST RECENT VERSION OF THE VIRGINIA WORK AREA PROTECTION MANUAL AND THE MUTCD.

# VEHICLE TURNING MOVEMENT EXHIBIT



# CONSTRUCTION NOTES:

DAMAGE TO ANY EXISTING ENTRANCES, CURB AND GUTTER, SIDEWALK OR PAVEMENT WITHIN STATE RIGHT-OF-WAY NOT PROPOSED TO BE DISTURBED WITH THIS DEVELOPMENT WILL BE THE RESPONSIBILITY OF THE DEVELOPER TO REPAIR TO THE SATISFACTION OF THE AFFECTED PARTIES.

2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPORT ANY UNDERGROUND UTILITIES LOCATED BY MISS UTILITY, THAT ARE NOT REFLECTED ON THIS PLAN AT SUCH TIME AS THESE UTILITIES ARE MARKED IN THE

3. TEMPORARY CHEMICAL TOILETS MUST BE PROVIDED WITH A RATIO OF ONE TOILET PER THIRTY WORKERS.

4. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND/OR DIMENSIONS ON THE SITE.

5. THE ENGINEERING GROUPE DOES NOT CERTIFY AS TO THE LOCATION OR EXISTENCE OF ANY UNDERGROUND UTILITIES NOR AS TO SOIL OR GROUND CONDITIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR DEVELOPER TO HAVE ADEQUATE SOILS AND FOUNDATION TESTING PERFORMED TO DETERMINE THAT THE SUPPORT VALUES ARE ADEQUATE FOR THE STANDARDS SHOWN ON THIS PLAN.

6. IF PRECAST STRUCTURES ARE TO BE USED IN LIEU OF VDOT STANDARD STRUCTURES SPECIFIED ON THESE PLANS, WRITTEN APPROVAL OF THE SHOP DRAWINGS BY THE DESIGN ENGINEER SHOULD BE OBTAINED PRIOR TO ORDERING FROM MANUFACTURER AND INSTALLATION TO INSURE THERE ARE NO DESIGN CONFLICTS.

7. CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF AND CONFORMING TO OSHA RULES AND REGULATIONS AS THEY APPLY TO CONSTRUCTION PROCEDURES ON THIS SITE.

8. THERE ARE NO RESOURCE PROTECTION AREA OR FLOOD HAZARD AREAS ON THIS SITE PER PRINCE WILLIAM COUNTY GIS COUNTY MAPPER.

9. THE SOIL SURVEY OF PRINCE WILLIAM COUNTY WAS UTILIZED IN DETERMINING EXISTING SOILS CONDITIONS. NO SUBSURFACE INVESTIGATION HAS BEEN PERFORMED BY THE ENGINEERING GROUPE, INC. TO ATTEST TO THE SOIL CONDITIONS AND TO THE PRESENCE OF TOXIC AND CONTAMINATED WASTE.

10. ALL CONSTRUCTION INVOLVING PROBLEM SOILS MUST BE PERFORMED UNDER THE FULL-TIME INSPECTION OF A PROFESSIONAL GEOTECHNICAL ENGINEER.

11. ANY EXISTING CEMETERIES, GRAVESITES AND/OR HISTORIC SITES FOUND ON THIS SITE SHALL BE PRESERVED IN ACCORDANCE WITH COUNTY AND STATE REGULATIONS. THERE ARE NO KNOWN CEMETERIES ON THIS SITE.

12. PRIOR TO ANY CLEARING & GRADING ON SLOPES 25% OR GREATER, ALL SURFACE DRAINAGE WILL BE ROUTED AWAY FROM THE AREA TO BE GRADED.

13. ALL FILL MATERIALS AND THEIR SUBGRADE WILL BE APPROVED BY THE SOILS ENGINEER FOR THIS SITE.

14. STORM WATER MANAGEMENT, AND BEST MANAGEMENT PRACTICES FACILITIES AND SYSTEMS TO WILL BE PRIVATELY MAINTAINED. THE TOWN SHALL NOT BE RESPONSIBLE FOR REPAVING OR RESURFACING PAVED AREAS OR MAINTAINING LANDSCAPING WITHIN EASEMENTS. THE FEE TITLE OWNER SHALL BE RESPONSIBLE FOR GRASS MOWING WITH REASONABLE FREQUENCY, IF APPLICABLE, AND FOR THE REMOVAL OF DEBRIS AND OTHER MATTER THAT HAS IMPEDED OR THREATENS TO IMPEDE THE FREE FLOW OF STORM WATER.

15. THE FEE TITLE OWNER SHALL NOTIFY THE TOWN OF HAYMARKET OF ANY DEFECTS WITH THE STRUCTURES. PIPES AND FENCING WITHIN THE EASEMENT, OF ANY DEBRIS OR OTHER MATTER WHICH IS BEYOND THE ABILITY OF THE OWNER TO REMOVE, AND OF ANY EXCESSIVE FLOODING, SEDIMENTATION OR SOIL EROSION WITHIN THE AREA OF EASEMENT.

16. ALL EXISTING & PROPOSED UTILITIES SHALL BE INSTALLED UNDERGROUND IN ACCORDANCE WITH APPLICABLE TOWN ORDINANCES.

17. A COPY OF THE MOST CURRENT APPROVED PLANS AND PLATS MUST BE LOCATED ONSITE, DURING CONSTRUCTION.

18. THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATES MAPS (MAP NUMBERS 51153C-0067D AND 51153C-0059D) SHOWS THE PROPERTIES ARE IN ZONE X, WHICH ARE OUTSIDE THE LIMITS OF THE 100-YEAR FLOODPLAIN.

19. WETLAND LOCATIONS PROVIDED BY WETLAND STUDIES AND SOLUTIONS, INC. PER JOINT PERMIT APPLICATION DATED JUNE 4, 2020. APPLICABLE PERMITS REQUIRED PRIOR TO LAND DISTURBANCE

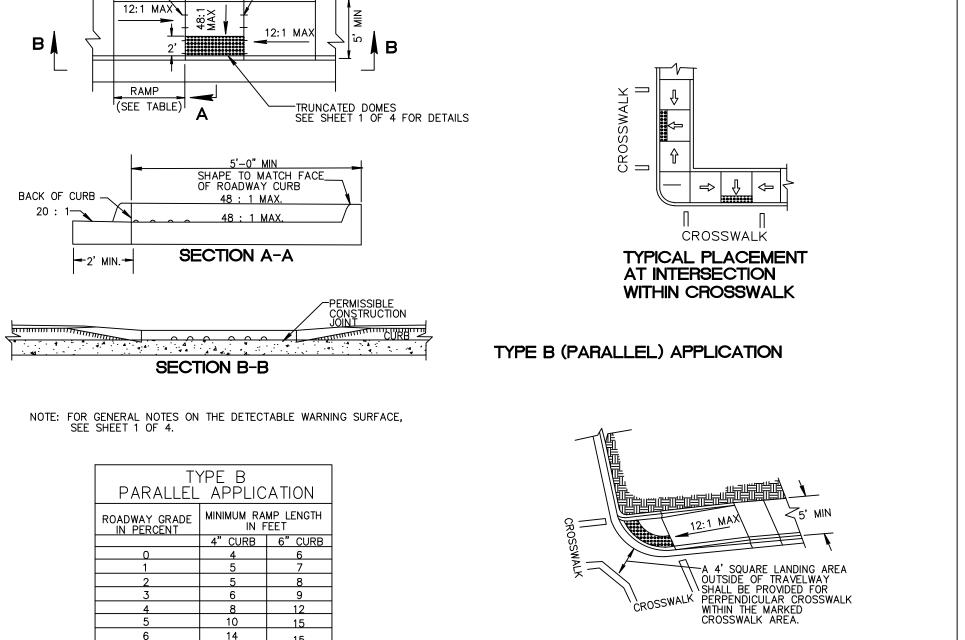
# **INSERTABLE SHEET A59**

CG-12

SHEET 3 OF 4

REV. 7/05

203.06



CG-12 DETECTABLE WARNING SURFACE

TYPE B (PARALLEL) APPLICATION

VIRGINIA DEPARTMENT OF TRANSPORTATION

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

SPECIFICATION REFERENCE

# **GENERAL NOTES**

1. ALL CONSTRUCTION SHALL CONFORM TO EXISTING STATE AND TOWN CODES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE AWARE OF ALL APPLICABLE STANDARDS AND SPECIFICATIONS AS WELL AS REQUIRED METHODS OF CONSTRUCTION.

2. THE CONTRACTOR OR THEIR AGENT FOR CONTRACTOR SHALL BE RESPONSIBLE DETERMINING THE EXACT LOCATION OF ANY EXISTING UNDERGROUND UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. UTILITIES SHOWN HEREON ARE BASED ON AVAILABLE INFORMATION. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER ANY UTILITIES OTHER THAN THOSE SHOWN ON THESE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICES. ANY DAMAGES WHICH OCCUR BY FAILURE TO LOCATE OR PRESERVE THESE UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. A TITLE REPORT WAS FURNISHED FOR THIS PROPERTY AND USED IN PREPARATION AN ALTA FOR THE PROPERTY PREPARED BY THE ENGINEERING GROUPE, INC. DATED JANUARY 28, 2019.

4. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND TOWN ORDINANCES.

5. CONSTRUCTION SHOULD BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE. SEDIMENT TRAPPING MEASURES, SUCH AS SILT FENCES, SHALL BE INSTALLED AND MADE FUNCTIONAL BEFORE ANY LAND DISTURBING ACTIVITY BEGINS.

6. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED IN GOOD WORKING CONDITION AT ALL TIMES DURING CONSTRUCTION. REMOVAL OF SAID CONTROLS SHALL BE AUTHORIZED BY A TOWN INSPECTOR BUT, AT THE LEAST, SHALL NOT BE REMOVED UNTIL PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL DENUDED AREAS.

7. PERMANENT AND TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 14 DAYS.

8. PRIOR TO DEVELOPMENT, THE LIMITS OF CLEARING SHALL BE CLEARLY MARKED WITH PROTECTIVE BARRIERS. IN PARTICULAR, BARRIERS SHALL BE INSTALLED FIVE (5) FEET OUTSIDE THE DRIPLINE OF ANY TREE OR STAND OF TREES TO BE PRESERVED. THE BARRIERS SHALL REMAIN IN PLACE THROUGH ALL PHASES OF CONSTRUCTION. THE STORAGE OF EQUIPMENT, MATERIALS, DEBRIS OR FILL SHALL NOT BE ALLOWED WITHIN THE AREA PROTECTED BY THE BARRIER.

9. ENGINEERED FILL AND BACKFILL SHALL BE APPROVED SELECT MATERIALS AND SHALL THROUGHOUT. EACH LAYER OF ENGINEERED FILL SHALL BE COMPACTED AT OPTIMUM MOISTURE, PLUS OR MINUS TWO PERCENT, TO A DENSITY OF NOT LESS THAN 95 PERCENT IN ACCORDANCE WITH A.S.T.M. D-698.

THE VPD COUNTS SHOWN ON THIS PLAN ARE BASED UPON THE RATES FOR SINGLE FAMILY ATTACHED UNITS PER THE PRINCE WILLIAM COUNTY DESIGN AND CONSTRUCTION STANDARDS MANUAL:

SINGLE FAMILY ATTACHED:

8.7 TRIPS PER DAY X 38 UNITS = 331 VPD

DAYCARE(AS PROVIDED BY ROSS-FRANCE DATED 9/2/20) PARCEL 3:

RETAIL (PARCEL 1):

737.99 TRIPS PER 1000 SQ.FT. X 2500 SQ.FT = 1845 VPD

TOTAL TRIPS: 2870 VPD

# NOTICE TO CONTRACTORS AND OWNERS

14.58 TRIPS PER 1000 SQ.FT. X 47.62 = 694 VPD

IF THE CONTRACTOR/OWNER DETERMINES THAT AN ERROR, DISCREPANCY, OMISSION, ETC. EXISTS ON THE SITE PLAN, THE CONTRACTOR /OWNER SHALL NOTIFY THE ENGINEER PRIOR TO PRECASTING, STAKEOUT, INSTALLATION OR CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THE SITE PLAN. THE ENGINEER WILL REVIEW THE PLANS AND PROVIDE A CLARIFICATION OR AN ADDENDUM AS PROMPTLY AS POSSIBLE.

# STORMWATER CONSTRUCTION INSPECTION NOTE

INSPECTIONS ARE NEEDED DURING CONSTRUCTION TO ENSURE THAT THE FACILITIES ARE BUILT IN ACCORDANCE WITH THE APPROVED PLANS AND DESIGN SPECIFICATIONS. THE DEVELOPER/OWNER SHALL PROVIDE FOR PERIODIC INSPECTIONS OF THE FACILITY DURING CONSTRUCTION. DETAILED INSPECTION CHECKLISTS SHALL BE USED THAT INCLUDE SIGN-OFFS BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA AT CRITICAL STAGES OF CONSTRUCTION, TO ENSURE THAT THE CONTRACTOR'S INTERPRETATION OF THE PLAN IS CONSISTENT WITH THE DESIGNER'S INTENT. THE ACTUAL INSPECTIONS MAY BE PERFORMED BY AN INDIVIDUAL UNDER THE DIRECT SUPERVISION OF THE LICENSED PROFESSIONAL

# STORMWATER AS-BUILT CERTIFICATION NOTE

AFTER THE FACILITY HAS BEEN CONSTRUCTED, THE DEVELOPER SHALL HAVE AN AS-BUILT CERTIFICATION CONDUCTED BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA AND SUBMITTED TO THE TOWN ALONG WITH THE AS-BUILT CHECKLIST AND AS-BUILT PLAN. THE AS-BUILT CERTIFICATION VERIFIES THAT THE FACILITY WAS INSTALLED AS DESIGNED AND APPROVED.

# SITE TABULATIONS:

PARCEL GPINS. ..7298-90-7006 (1.00 AC.) 7297-99-8684 (3.94 AC.) 7397-09-0978 (2.16 AC.) SUP AREA. ..±4.75 AC

EXISTING ZONE. ..B-1 (WITH SUP 2019-0004)

PROPOSED USE.. TOWNHOUSE MAXIMUM DENSITY. ..8 DU/AC, 38 LOTS (4.75 AC X 8 DU/AC=38 LOTS)

TOTAL LOTS SHOWN. .38 TOTAL (30 FRONT LOAD, 8 REAR LOAD-LOTS 27-34)

PARKING REQUIRED. ..86 SPACES (2.25 SP/DU)

PARKING PROVIDED. ..97 SPACES (76 GARAGES/DRIVEWAYS, 21 SURFACE)

9/4/2020

ENGINEERING GROUPE PROJECT STATUS

09/02/20 REVISED PER TOWN COMMENTS

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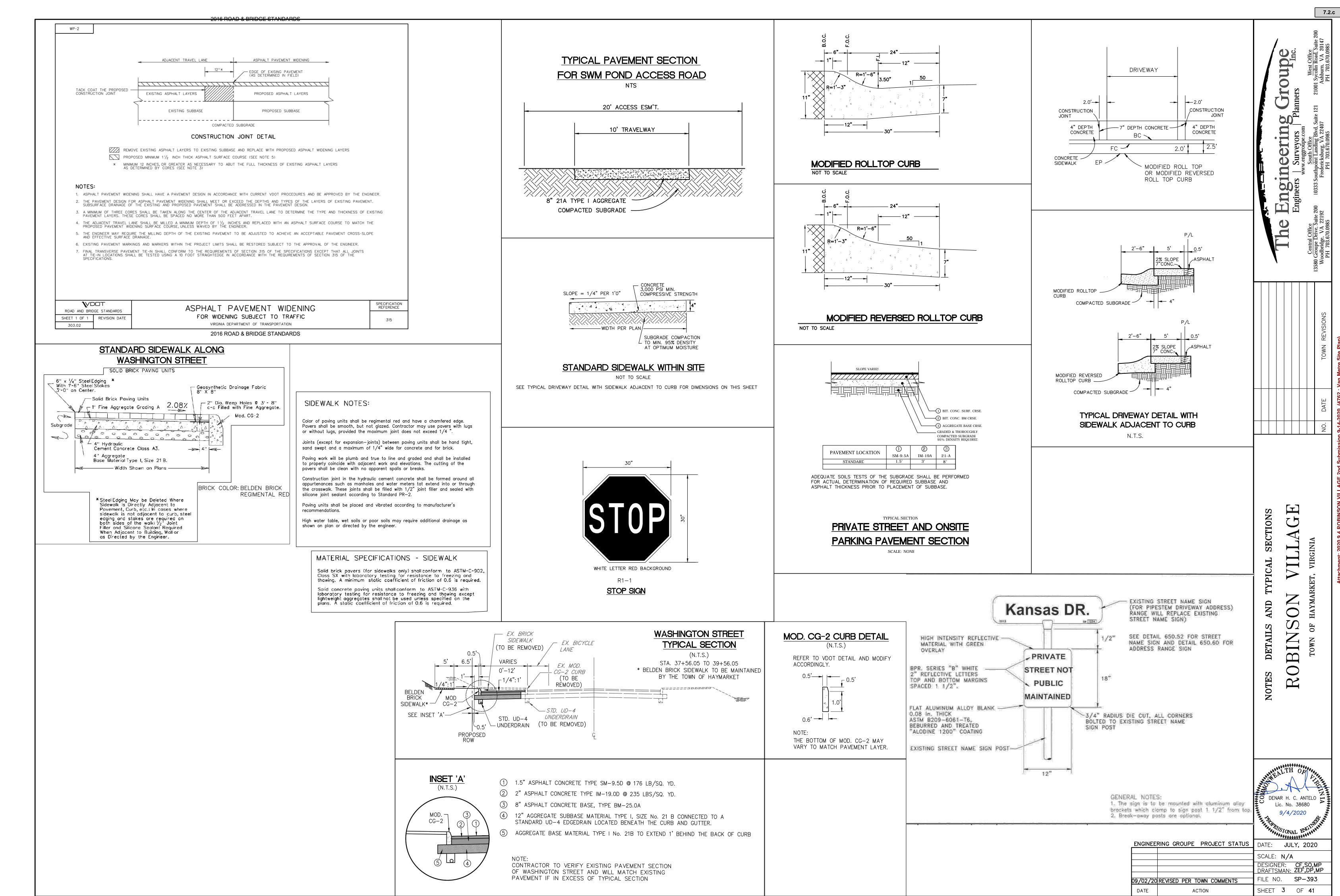
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DATE: JULY, 2020

SCALE: N/A DESIGNER: **CF,SO,MP** DRAFTSMAN: **ZEF,DP,MP** FILE NO. **SP-393** SHEET 2 OF 41



# 1. LANDUSE

- 1.1 Development shall be in substantial accord with the Generalized Development and Special Use Permit Plan ("SUP") entitled "Smith Property at Haymarket" prepared by The Engineering Groupe and last revised January 2, 2020 (4 sheets) (the "GDP") with the size, construction details and locations of buildings, roadways and other features being approximate subject to final engineering at site plan and with the color, construction materials and appearance of structures being subject to the issuance of certificates of appropriateness by the Town of Haymarket ("Town") Architectural Review Board (ARB) at advertised public meetings.
- 1.2 Residential Development on the Property under the SUP shall not exceed 38 townhouse units in the location generally shown on the GDP.
- 1.3 Townhouse dwellings shall be a combination of 20'-wide rear load units (8) and 24'-wide front load units (30), all with 2-car integral garages.
- 1.4 Development of the Property shall be in substantial conformity with the GDP. Precise locations of roads, lot lines, lot widths and depths, utility lines, and other features generally depicted on the GDP will be determined at the time of site or subdivision plan approval.
- 1.5 The Property shall be developed as a single-unified development to include a common architectural theme as specifically approved through certificates of appropriateness by the ARB and integrated vehicular and pedestrian access ways as depicted on the GDP and finalized through site plan approval.

# 2. ARCHITECTURAL DESIGN, SIGNAGE AND LANDSCAPING

2.1 The Applicant will use best efforts to ensure that the height of townhouse units will not exceed 40-feet as measured from the finished grade. To the extent final grading results in height, as measured from the finished grade over 40 feet, then the applicable side yard setback shall be increased by .5 feet for every foot over 40 feet. Architectural details of the townhouse units will be determined through the issuance of certificates of appropriateness issued by the ARB.

# 3. STORMWATER MANAGEMENT

- 3.1 Storm water management for the Property shall employ best management practices ("BMP").
- 3.2 Storm water management shall be designed as part of the site plan for he proposed townhouses as approved by the Town.
- 3.3 Storm water management facilities shall be maintained by the appropriate owners' associations provided below.

# 4. CREATION OF HOMEOWNERS' ASSOCIATION

- 4.1 The residential townhouses shall be made subject a homeowners' association ("HOA") that shall be created and be made responsible for the maintenance and repair of common areas, including common open space that may be established in accordance with the requirements of the Town zoning ordinance. The HOA shall be granted such other responsibilities, duties and powers as a customary for such associations, or as may be required to affect the purposes for which the HOA is created. Such HOA shall also be granted sufficient powers that may be necessary, by regular dues, special dues or assessments, to raise revenue sufficient to perform the duties assigned hereby, or by the documents creating the association.
- 4.2 The HOA documents shall prohibit the use or conversion of garages for living space, of for the primary purpose of storage of anything other than parked vehicles.
- 4.3 The covenants, conditions and restrictions of the HOA shall be subject to review and approval of the Zoning Administrator prior to recordation thereof, to ensure conformance of the requirements of these proffers.

# 5. PARKS AND RECREATION

- 5.1 The Applicant shall make a contribution for park purposes in the amount of \$3,792 per residential townhouse unit, payable upon the issuance of an occupancy permit for each such unit.
- 5.2 The Applicant shall provide a "Tot Lot" equipped with playground equipment in the area shown on the GDP.

# 6. PUBLIC SAFETY

- 6.1 The Applicant shall make a contribution for public safety purposes in the amount of \$280.00 per residential townhouse unit payable upon the issuance of an occupancy permi for each such unit.
- The Applicant will install two streetlights to be located along Hunting Path Road.

# 7. TRANSPORTATION

- 7.1 The Applicant will construct a 5-foot wide concrete sidewalk along the western edge of the property, on the east side of Hunting Path Road.
- 7.2 The Applicant will construct a 5-foot wide concrete sidewalk from Hunting Path Road east along the southern portion of the tot lot to connect to the interior sidewalk network.
- 7.3 The Applicant shall make a contribution for transportation purposes in the amount of \$3,799 per townhouse unit, payable upon issuance of an occupancy permit for each such townhouse unit.
- 7.4 The Applicant will construct a right turn lane and taper along the frontage of the site as shown on the GDP subject to review and approval by VDOT.
- 7.5 The Applicant will construct separate right and left turn exit lanes.

# 8. FIRE AND RESCUE

8.1 The Applicant shall make a contribution for fire and rescue purposes in the amount of \$974 per townhouse unit, payable upon the issuance of an occupancy permit for each unit

# 9. TOWN ADMINISTRATION

9.1 The Applicant shall make a contribution for Town administration in the amount of \$171 per townhouse unit, payable upon the issuance of an occupancy building permit for each unit.

# 10. SCHOOLS

10.1 The Applicant shall make a contribution for schools in the amount of \$10,300 per residential townhouse unit, payable upon the issuance of an occupancy permit for each unit.

# MODIFICATION REQUESTS

January 9, 2020

# 1. Modification Request:

Request an increase from 40 percent of the gross parcel area may be covered by townhouse structures to 44 percent.

# Sec. 58-8.5 - Area regulations.

(d) For lots containing or intended to contain a permitted use, except townhouses and small lot detached single-family dwellings, not more than 30 percent of the gross lot area may be covered by buildings, including accessory structures. For lots designed as part of a townhouse development or of small lot detached single-family dwellings, not more than 40 percent of the gross parcel area may be covered by townhouse structures or small lot detached single-family dwellings and their accessory structures. In computing the total coverage on any lot or development, an area of 400 square feet per required parking areas and travel ways shall be included as part of such coverage unless private garage facilities are otherwise provided on such lot.

# 2. Modification Request:

Request a decrease from the 25'Transparent Screen requirement as shown in the table below to a variable width to be determined at site plan.

# Sec. 58-17.11 - Screening and buffer yard matrix.

Land Use	Adjacent District												
	R-1	R-2	B-1	B-2	I-1	C-1							
Industrial	40' OS	40' OS	40' OS	40' OS	25' SS	25' OS							
Commercial	30' SS	25' SS	10' OS	10' OS	30' OS	15' SS							
Residential	X	X	25'TS	20' TS	40" OS	30' TS							

# PROFFER ANALYSIS ROBINSON VILLAGE - HAYMARKET SUP #2019-004 April 15, 2020

PROFFER ANALYSIS ROBINSON VILLAGE - HAYMARKET SUP#2019-004	Proffer/SU P condition number	Proffer/SUP condition	<u>Trigger</u>	<u>Analysis</u>	Plan & Sheet Number	Under Construction and/or completion date	Receipt Number	<u>&amp; page</u> number
and Use		Development shall be in substantial accord with the Generalized Development and Special Use Permit Plan ("SUP") entitled "Smith Property at Haymarket" prepared by The Engineering Groupe and last revised January 2, 2020 (4 sheets) (the "GDP") with the size, construction details and locations of buildings, roadways and other features being approximate subject to final engineering at site plan and with the color, construction materials and appearance of structures being subject to the issuance of certificates of appropriateness by the Town of Haymarket ("Town") Architectural Review Board (ARB) at advertised public meetings.		The Site Plan is in substantial conformation with the SUP.	7–8			
and Use	1.2	Residential Development on the Property under the SUP shall not exceed 38 townhouse units in the location generally shown on the GDP.		Thirty eight townhomes are being proposed with this Site Plan and are in general conformance with the layout shown on the SUP.	7–8			
and Use		Townhouse dwellings shall be a combination of 20'-wide rear load units (8) and 24'-wide front load units (30) all with 2-car integral garages.		Lots 27 through 34 are the rear load garage units which front on Hunting Path Road, the remaining 30 lots are 24 feet wide. All townhomes have 2 car garages.  This Site Plan is in substantial conformance with the SUP Plan.	7			
Land Use		Development of the Property shall be in substantial conformity with the GDP. Precise locations of roads, lot lines, lot widths and depths, utility lines, and other features generally depicted on the GDP will be determined at the time of site or subdivision plan approval.		This Site Plan is in substantial conformance with the SOP Plan.	7–8			
Land Use		The Property shall be developed as a single-unified development to include a common architectural theme as specifically approved through certificates of appropriateness by the ARB and integrated vehicular and pedestrian access ways as depicted on the GDP and finalized through site plan approval.		This Site Plan is in substantial conformance with the SUP Plan.	7–8			
Architectural Design, Signage and Landscaping		The applicant will use best efforts to ensure that the height of townhouse units will not exceed 40-feet as measured from the finished grade. To the extent final grading results in height, as measured from the finished grade over 40 feet, then the applicable side yard setback shall be increased by 5 feet for every foot over 40 feet. Architectural details of the townhouse units will be determined through the issuance of certificates of appropriateness issued by the ARB.		It is understood that the height of the proposed townhomes will not exceed 40 feet in height.				
Stormwater Management	3.1	Stormwater management for the Property shall employ best management practices ("BMP").		BMP's are being provided as part of the Stormwater Management (SWM) for this project.	25-28			
Stormwater Management	3.2	Stormwater management shall be designed as part of the site plan for the proposed townhouses as approved by the Town.		Stormwater Management design and computations are part of the Robinson Village Site Plan.	25–28			
Stormwater Management	3.3	Stormwater management facilities shall be maintained by the appropriate owners associations provided below.		The SWM facility is to be maintained by the HOA.				
Creation of Homeowners' Association		The residential townhouses shall be made subject to a homeowners' association ("HOA") that shall be created and be made responsible for the maintenance and repair of common areas, including common open space that may be established in accordance with the requirements of the Town zoning ordinance. The HOA shall be granted such other responsibilities, duties and powers as a customary for such associations, or as may be required to affect the purposes for which the HOA is created. Such HOA shall also be granted sufficient powers that may be necessary, by regular dues, special dues or assessments, to raise revenue sufficient to perform the duties assigned hereby, or by the documents creating the association.		An HOA is being created for the Townhomes shown on this Site Plan.				
Creation of Homeowners' Association	4.2	The HOA documents shall prohibit the use or conversion of garages for living space, or for the primary purpose of storage of anything other than parked vehicles.		The HOA documents will provide the restriction on conversion of garages for living space or a use primarily for storage other than for parked vehicles.				
Creation of Homeowners' Association	4.3	The covenants, conditions and restrictions of the HOA shall be subject to review and approval of the Zoning Administrator prior to recordation thereof, to ensure conformance of the requirements of these proffers.		This is understood.				
Parks and Recreation	•	The Applicant shall make a contribution for park purposes in the amount of \$3,792 per residential townhouse unit, payable upon the issuance of an occupancy permit for each such unit.		It is understood that the stated contribution amount for park purposes will be paid at time of issuance of an occupancy permit for each lot.				
Parks and Recreation	5.2	The Applicant shall provide a "Tot Lot" equipped with playground equipment in the area shown on the GDP.		A tot lot is being proposed with this Site Plan as generally shown on the SUP plan.	7			
Public Safety	6.1	amount of \$280.00 per residential townhouse unit payable upon the issuance of an occupancy permit for each such unit.	Occupancy Permit Issuance	It is understood that the stated contribution amount for public safety purposes will be paid at time of issuance of an occupancy permit for each lot.				
Public Safety	6.2	The Applicant will install two streetlights to be located along Hunting Path Road.		Two streetlights along Hunting Path Road are being proposed with this Site Plan.				
Transportation		The Applicant will construct a 5-foot wide concrete sidewalk along the western edge of the property, on the east side of Hunting Path Road.		A five foot concrete sidewalk along Hunting Path Road and along the western edge of the property is being proposed with this Site Plan.	7			
Transportation	7.2	The Applicant will construct a 5-foot wide concrete sidewalk from Hunting Path Road east along the southern portion of the tot lot to connect to the interior sidewalk network.		A five foot concrete sidewalk as described in this condition is being proposed with this Site Plan.	7			
Transportation		amount of \$3,799 per townhouse unit, payable upon issuance of an	Occupancy Permit Issuance	It is understood that the stated contribution amount for transportation purposes will be paid at time of issuance of an occupancy permit for each lot.				
Transportation	7.4	The Applicant will construct a right turn lane and taper along the frontage of the site as shown on the GDP subject to review and approval by VDOT.		A right turn lane and taper is being proposed on Washington Street for this site's entrance.	8-9			
Transportation	7.5	The Applicant will construct separate right and left turn exit lanes.		Separate right and left turn lane exist lanes onto Washington Street are proposed with this Site Plan.	8-9			
Fire & Rescue		amount of \$974 per townhouse unit, payable upon the issuance of an occupancy permit for each unit.	Occupancy Permit Issuance	It is understood that the stated contribution amount for fire and rescue purposes will be paid at time of issuance of an occupancy permit for each lot.				
Town Administration		amount of \$171 per townhouse unit, payable upon the issuance of an occupancy building permit for each unit.	Issuance	It is understood that the stated contribution amount for Town administration will be paid at time of issuance of an occupancy permit for each lot.				
Schools	10.1	The Applicant shall make a contribution for schools in the amount of \$10,300 per residential townhouse unit, payable upon the issuance of an occupancy permit for each unit.		It is understood that the stated contribution amount for schools will be paid at time of issuance of an occupancy permit for each lot.				

ENGINEERING GROUPE PROJECT STATUS

DATE: JULY, 2020

SCALE: N/A

DESIGNER: CF,SO,MF

SCALE: N/A

DESIGNER: CF,SO,MP
DRAFTSMAN: ZEF,DP,MP

O9/02/20 REVISED PER TOWN COMMENTS

DATE

ACTION

SCALE: N/A

DESIGNER: CF,SO,MP
DRAFTSMAN: ZEF,DP,MP

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G:\PROJECT\Smith Property-Haymarket\ENG\DWG\00-K8500 PROFFERS- Packet Pg. 23

# CP NUTRIENT BANK

# HUC: 02070011

Applicant: Robinson

c/o The Engineering Groupe, Inc.

**RE: Nutrient Offset Availability** 

Ronald Green, (Broker)

Date: July 30, 2020

Project Reference: Robinson, 6701 Hunting Path Road, Haymarket, VA – 14600 Washington Street, Haymarket, VA – 14850 Washington Street, Haymarket, VA

Attention: Chris Ferrara, L.S.B.

This letter is to confirm the availability of authorized nonpoint nutrient offsets at our CP Nutrient Bank project located in Westmoreland County. The CP Nutrient Bank project has received operational status through the Chesapeake Bay Watershed Nutrient Exchange Program (Virginia Code 62.1-44.19:14 et seq.) of the Virginia Department of Environmental Quality. CP Nutrient Bank currently has 40.88 pounds of phosphorus offsets and 640.17 pounds of nitrogen offsets available for transfer in the approved service area in the Potomac River watershed.

These offsets were certified pursuant to the Chesapeake Bay Nutrient Exchange Program by Virginia Department of Environmental Quality and the Virginia Department of Conservation and Recreation to be used as compensation for state or local permit water quality requirements. These offsets have been generated and are transferable according to 10.1-603.8:1 of the code of Virginia.

Per your request, the project would like to purchase 2.48 lbs/yr of phosphorus credits or 38.84 lbs,/yr. of nitrogen credits. CP Nutrient Bank upon execution of a credit purchase agreement and payment shall transfer those credits to the project owner. The 2.48 phosphorus credits or 38.84 nitrogen credits shall be available for a period of 45 days from the date of this letter.

If we can provide further assistance please do not hesitate to contact me at 804-908-4171

Ronald Green, (Broker)

# CP NUTRIENT BANK

HUC: 020700H

Re: Credit Pricing Letter

Date: July 30, 2020

Applicant: Robinson

c/o The Engineering Groupe

Attention: Chris Ferrara, L.S.B.

Project Reference: Robinson, 6701 Hunting Path Road, Haymarket, VA – 14600 Washington Street, Haymarket, VA – 14850 Washington Street, Haymarket, VA

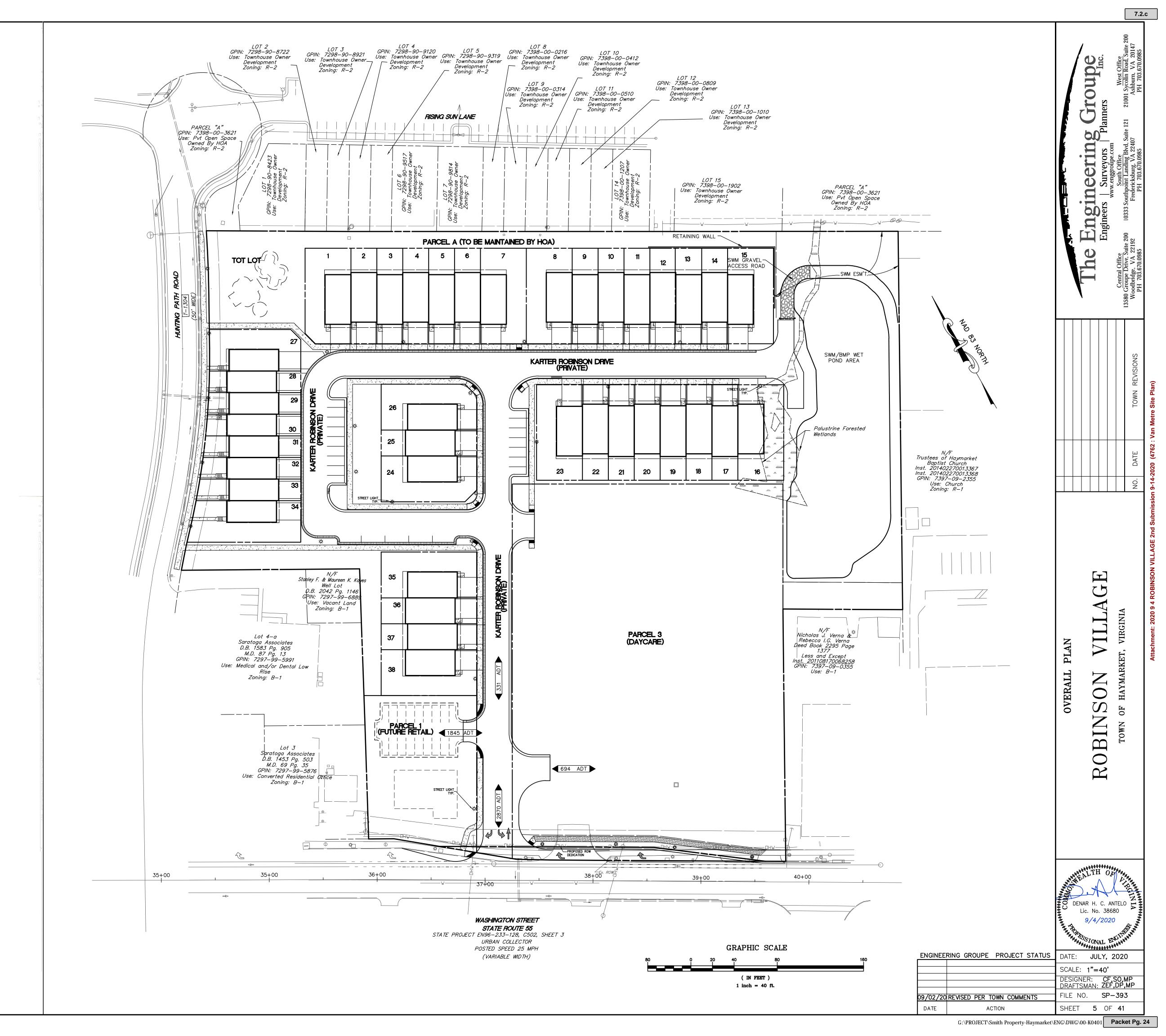
Mr. Ferrara,

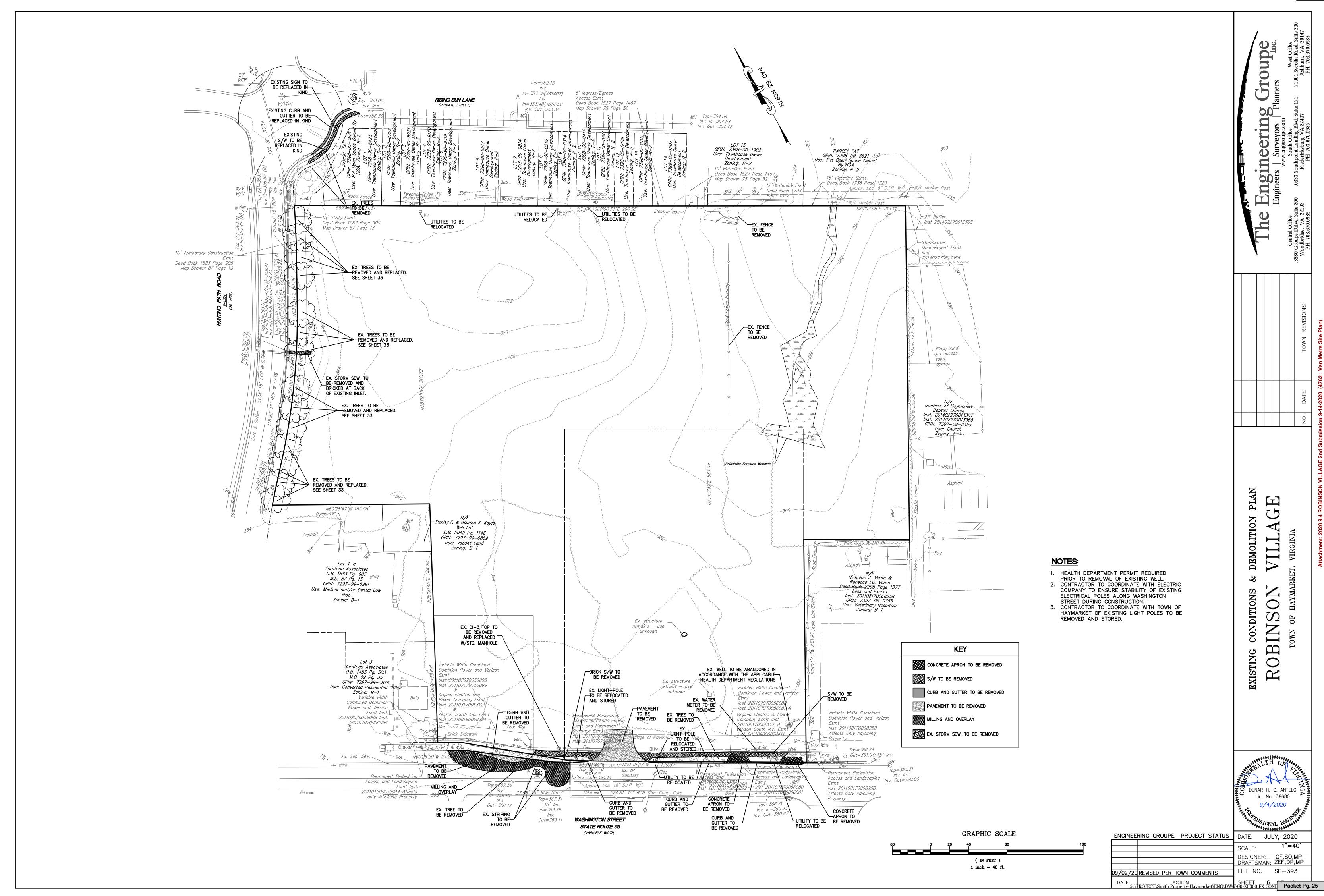
Pursuant to your request to obtain <u>2.48</u> phosphorus credits for the above referenced project, CP Nutrient Bank has the available credits necessary for this project. A price of \$<u>13,750.00</u> per credit for a total of \$<u>34,100.00</u> will be required to purchase the nutrient credits.

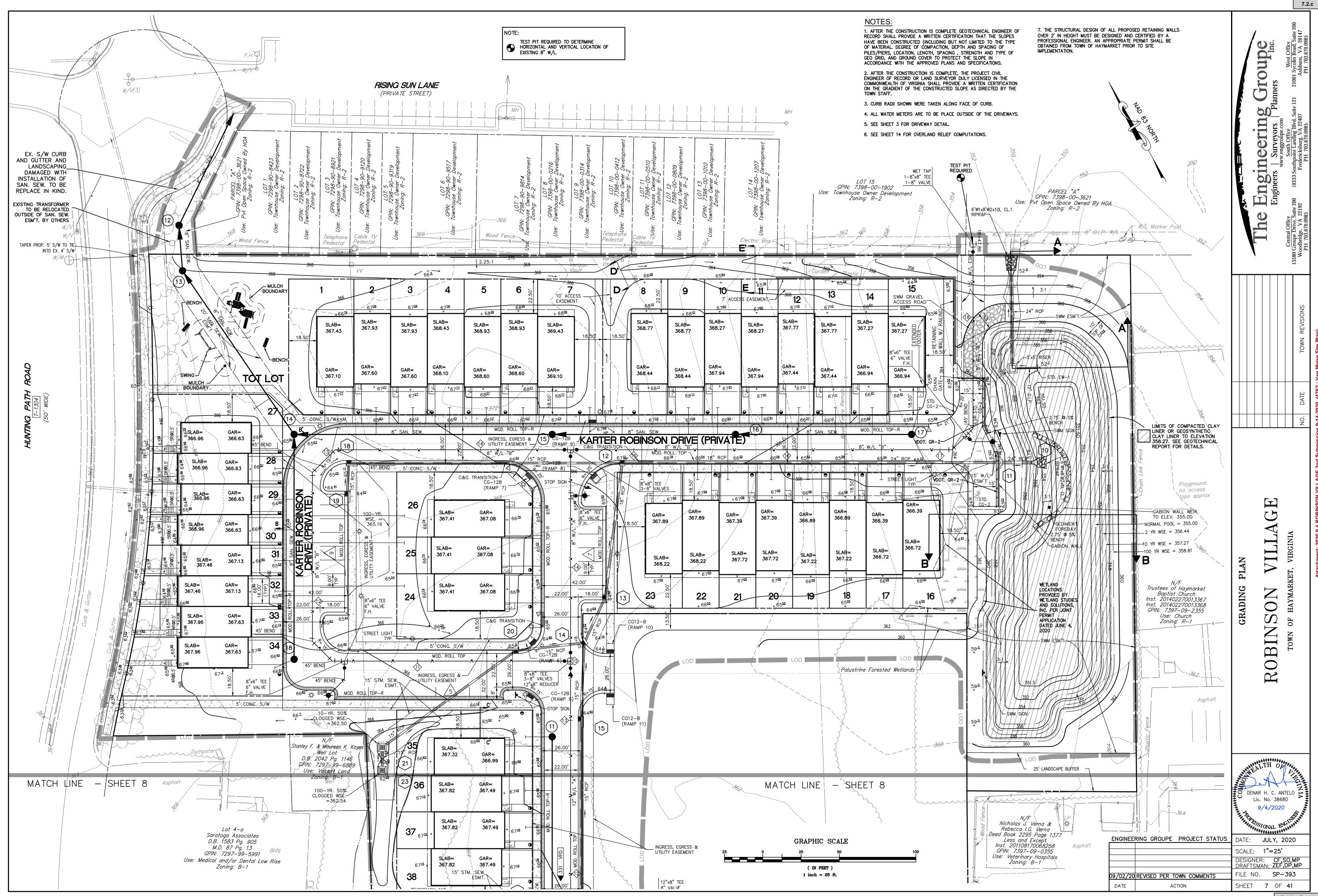
This price shall be available for a period of  $\underline{45}$  days from the date of this letter.

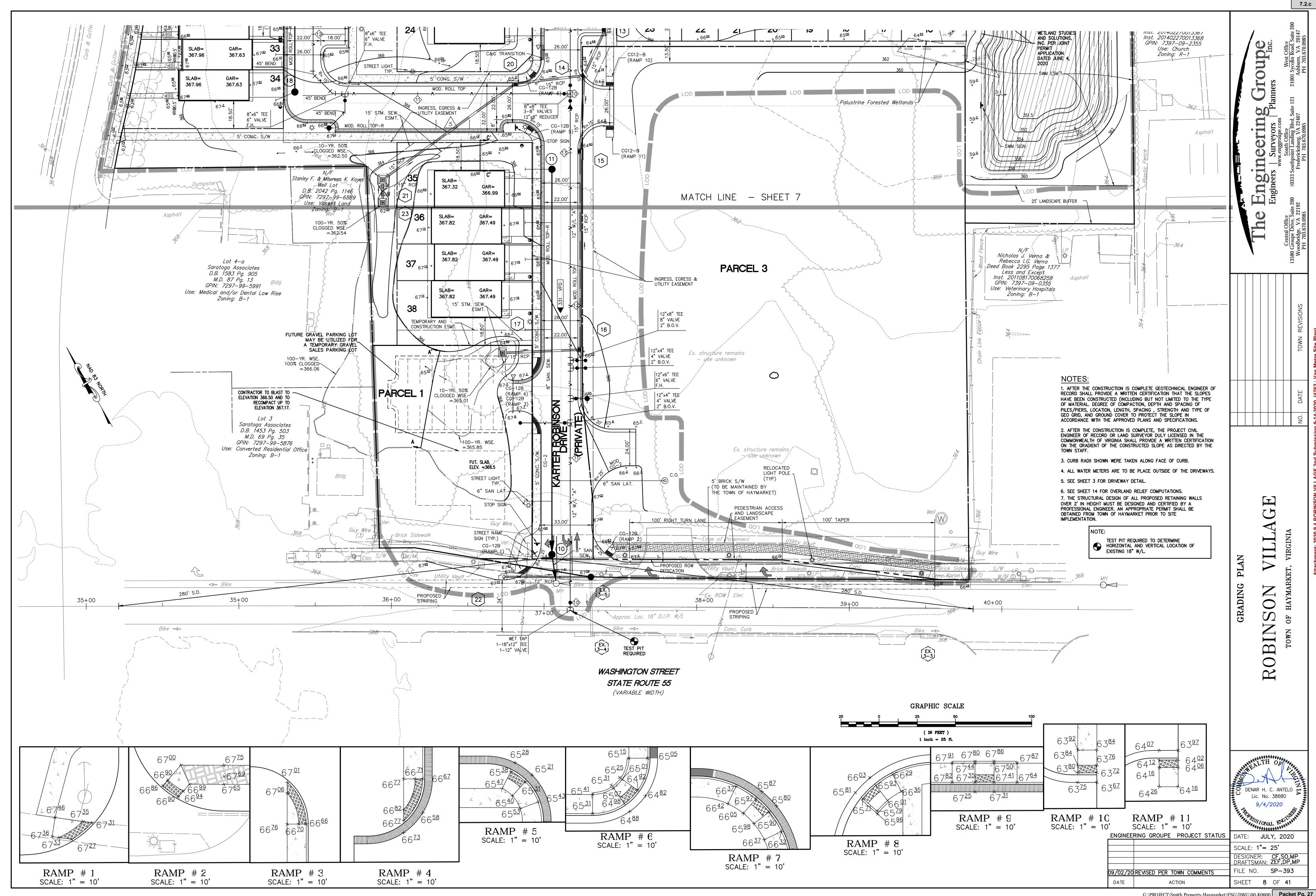
Let me know if this is acceptable and I will forward a credit purchase agreement for this transfer.

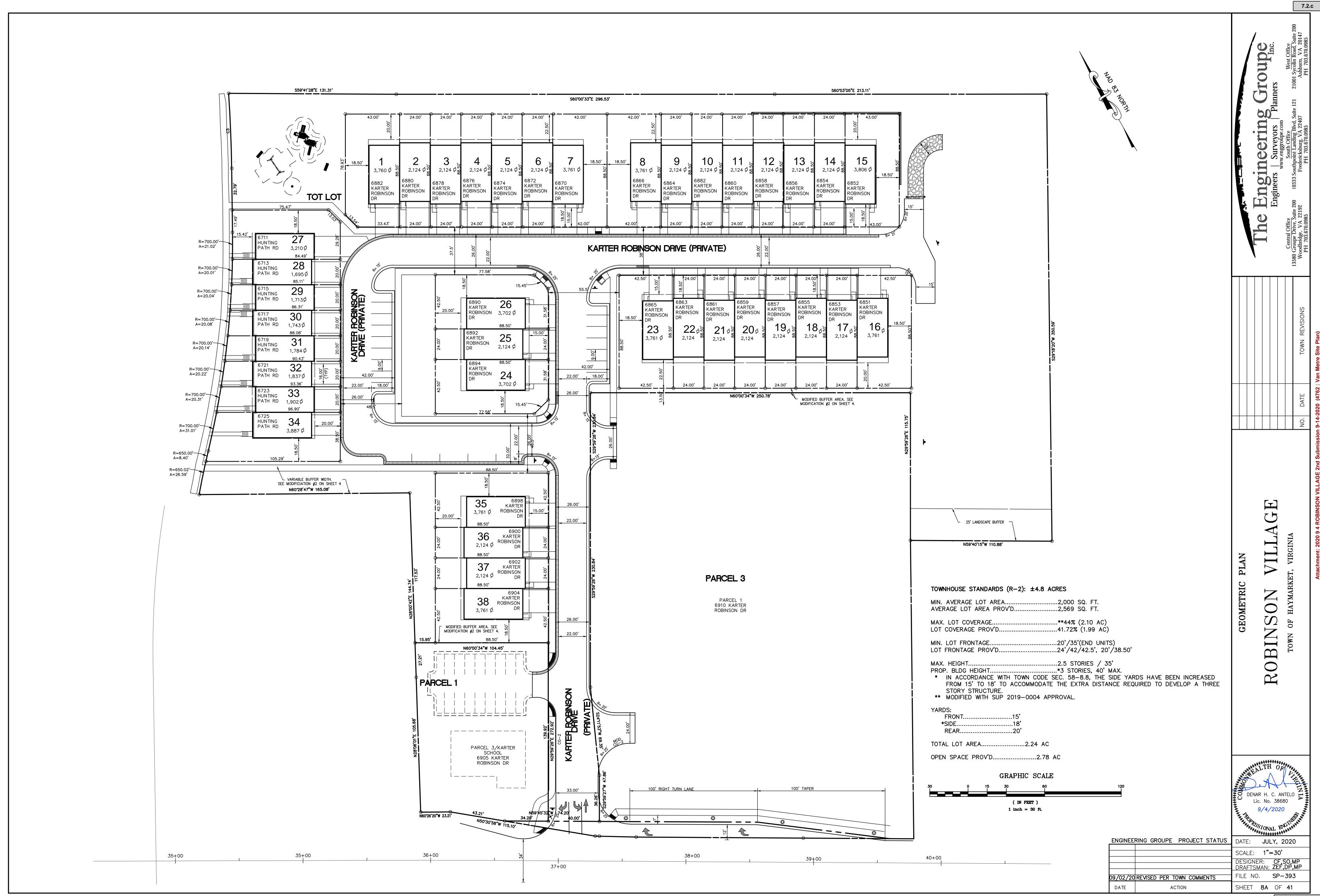


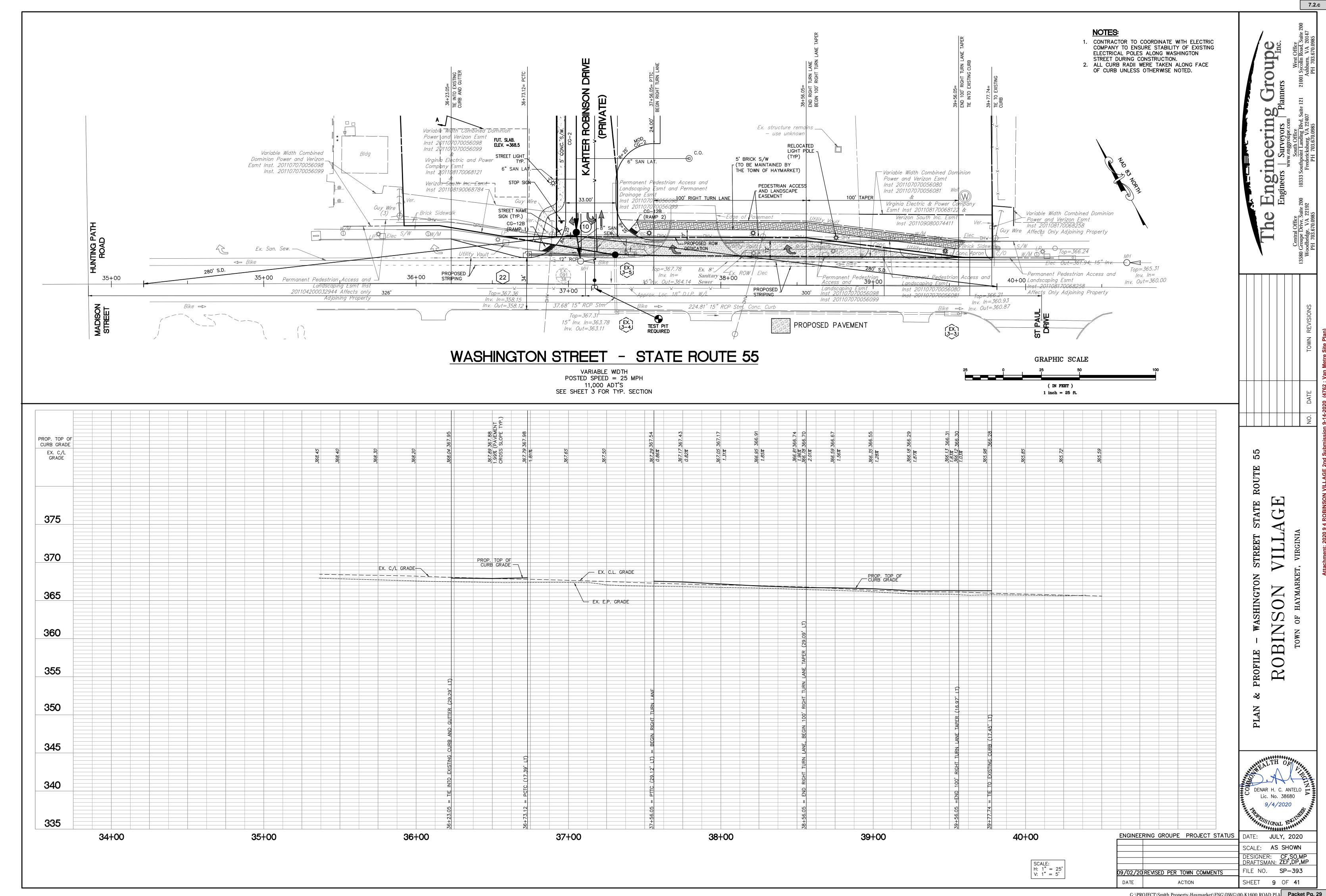












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ENGINEERING GROUPE PROJECT STATUS DATE: JULY, 2020

280

275

270

265

260

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SIGHT DISTANCE

WASHINGTON STREET

25 MPH POSTED SPEED 37+01

37

PROP. GRADE @ \_/ LINE OF SIGHT

3.5' HEIGHT OF EYE

280' S.D.

38

3.5' HEIGHT OF OBJECT

39

40

280' S.D.

36

280

275

270

265

\_\_260

\_\_255

3.5' HEIGHT\_

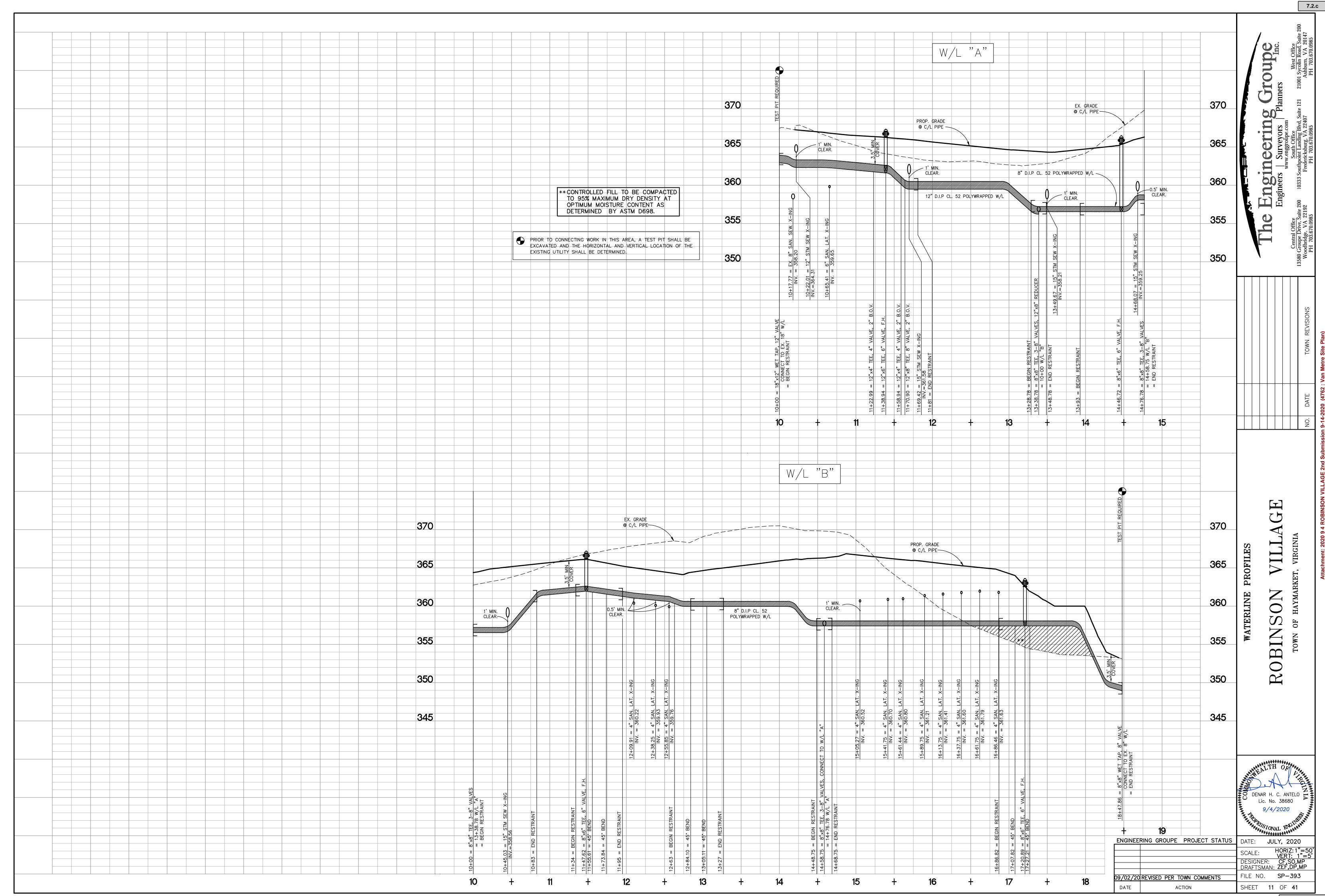
34

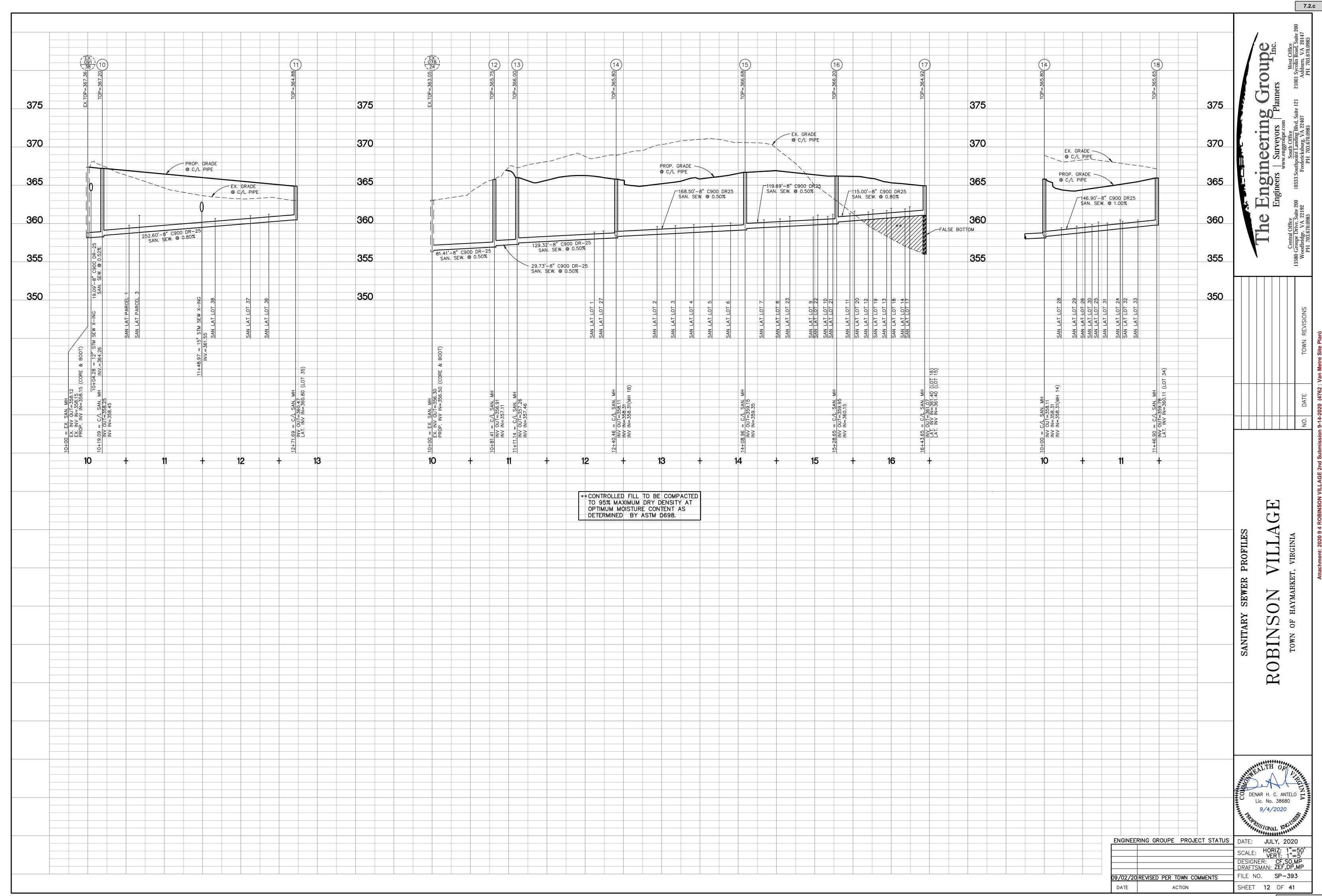
EX. GRADE @

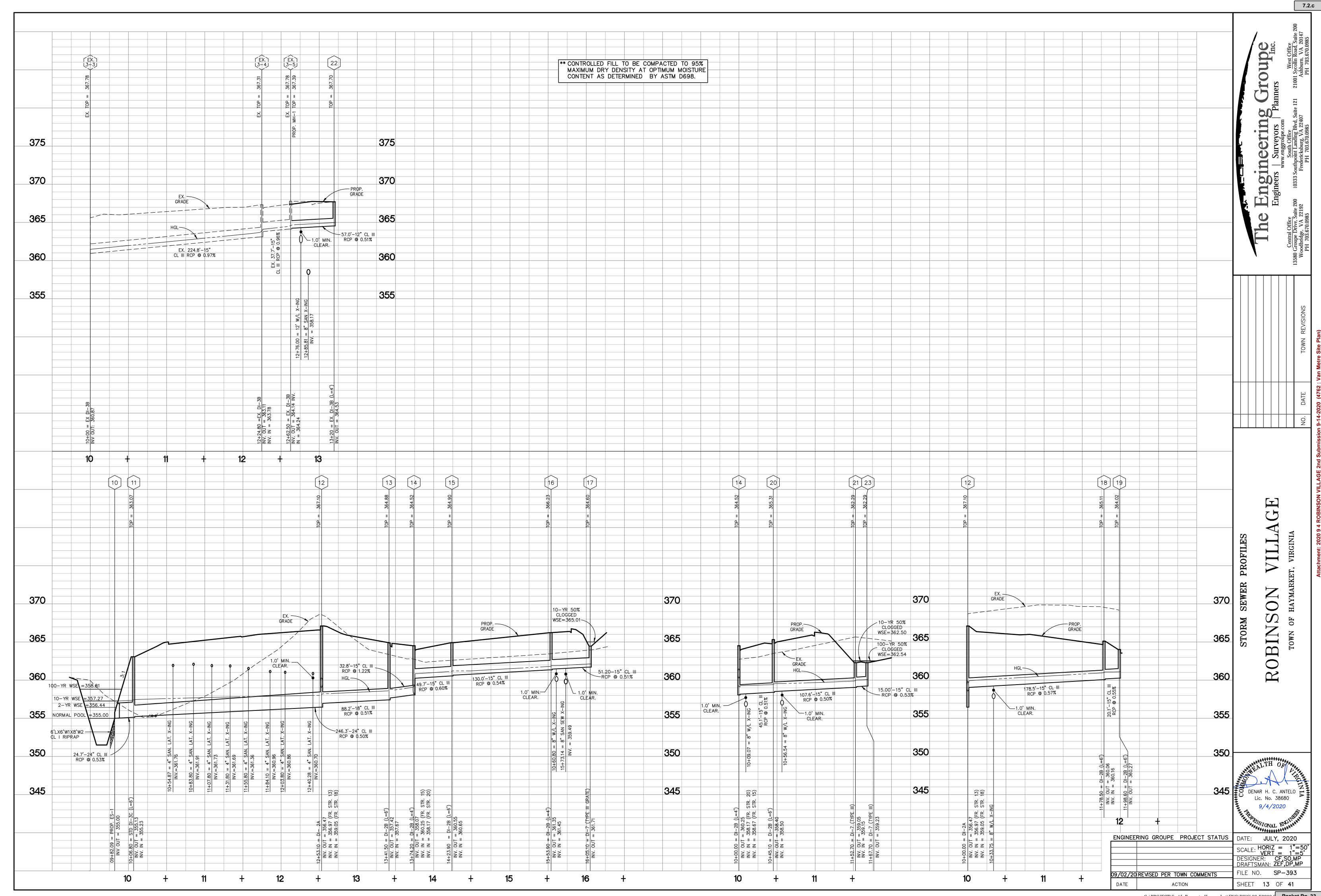
LINE OF SIGHT

35

SCALE: 1"=50' FILE NO. SP-393 09/02/20 REVISED PER TOWN COMMENTS ACTION







Start Node	Stop Node	Upstream Inlet Area (acres)	Upstream Inlet C	INCRE. CA (acres)	ACCUM. CA (acres)	Upstream Inlet Tc (min)	Upstream Intensity (in/h)	System Flow (ft³/s)	Invert (Upstream) (ft)	Invert (Downstream) (ft)	Length (ft)	Slope (%)	Section Size (in)	Capacity (Full Flow) (ft³/s)	Velocity (Average) (ft/s)	Time (Pipe Flow) (min)	System Flow Time (min)	Flow / Capacity (Full) (%)
17	16	0.22	0.80	0.18	0.18	5.00	6.41	1.14	361.71	361.45	51.20	0.51	15 inch	4.60	3.11	0.28	5.00	25.30
16	15	0.03	0.80	0.02	0.20	5.00	6.34	1.28	361.35	360.65	130.00	0.54	15 inch	4.74	3.28	0.66	5.28	27.60
15	14	0.21	0.80	0.17	0.37	5.00	6.18	2.29	360.55	360.25	49.70	0.60	15 inch	5.02	4.00	0.21	5.94	46.70
21	20	0.10	0.70	0.07	0.56	5.00	6.41	3.62	359.05	358.50	107.60	0.51	15 inch	4.62	4.17	0.43	5.00	80.20
23	21	0.70	0.70	0.49	0.49	0.00	6.41	3.17	359.23	359.15	15.00	0.53	15 inch	4.72	4.12	0.06	0.00	68.70
20	14	0.12	0.77	0.09	0.65	5.00	6.30	4.15	358.40	358.17	45.10	0.51	15 inch	4.61	4.25	0.18	5.43	91.90
14	13	0.07	0.85	0.06	1.08	5.00	6.13	6.67	358.07	357.67	32.70	1.22	15 inch	7.13	6.60	0.08	6.14	95.70
13	12	0.15	0.79	0.12	1.20	5.00	6.11	7.38	357.42	356.97	88.40	0.51	18 inch	7.50	4.84	0.30	6.23	98.40
19	18	0.50	0.75	0.38	0.38	5.00	6.41	2.42	360.27	360.16	20.10	0.55	15 inch	4.78	3.91	0.09	5.00	51.90
18	12	0.34	0.82	0.28	0.65	5.00	6.39	4.21	360.06	359.05	178.50	0.57	15 inch	4.86	4.46	0.67	5.09	88.70
12	11	0.09	0.79	0.07	1.92	5.00	6.03	11.70	356.47	355.23	246.30	0.50	24 inch	16.05	5.58	0.74	6.53	74.60
11	10	0.59	0.83	0.49	2.41	5.00	5.85	14.24	355.13	355.00	24.70	0.53	24 inch	16.41	4.53	0.08	7.27	88.70
22	EX 3-5	0.18	0.84	0.15	0.15	5.00	6.41	0.98	364.53	364.24	57.00	0.51	12 inch	2.48	3.03	0.31	5.00	39.30
EX 3-5	EX 3-4	(N/A)	(N/A)	(N/A)	0.15	0.00	6.33	0.97	364.14	363.78	37.70	0.96	15 inch	6.17	3.72	0.17	5.31	15.60
EX 3-4	EX 3-3	0.41	0.58	0.24	0.39	5.00	6.29	2.47	363.11	360.93	224.80	0.97	15 inch	6.22	4.86	0.77	5.48	39.70

# HYDRAULIC GRADE LINE COMPUTATIONS

Label	Hydraulic Grade Line (Out) (ft)	Section Size (Catalog Conduit) (inch)	Flow (Total Out) (ft³/s)	Length (Ft.)	Friction Slope (%)	Friction Loss (%)	Velocity (Out Node) (ft/s)	Contraction Loss (AASHTO) (ft)	Upstream Rational Flow (ft³/s)	Upstream Structure Velocity (In- Governing) (ft/s)	QiVi	Expansion Loss (AASHTO) (ft)	Bend Angle (Calculated) (degrees)	Bend Loss (AASHTO) (ft)	Unadjusted Headloss (AASHTO) (ft)	Adjusted Headloss (AASHTO) (ft)	Headloss (ft)		Elevation (Rim) (ft)
EX 3-3	361.72		3.98			0.00	5.61	0.00		3.04	0.00	0.00		0.00	0.00	0.00	0.00	361.72	366.21
EX-11 TO EX 3-3	361.72	15 inch	2.47	224.80	0.95	212.66	3.04		1.54	3.99	6.14		1.78				2.02	363.74	
EX 3-4	363.74		2.47			0.00	3.99	0.06		3.72	0.00	0.14		0.27	0.47	0.31	0.31	364.05	367.31
EX-12 TO EX 3-4	364.11	15 inch	0.97	37.70	0.90	34.01	3.72		0.00	3.00	0.00		88.92				0.42	364.53	
EX 3-5	364.53		0.97			0.00	3.00	0.03		3.17	0.00	0.06		0.12	0.22	0.11	0.11	364.64	367.39
22 TO EX 3-5	364.65	12 inch	0.98	57.00	0.51	29.13	3.17		0.98	3.02	2.96		89.08				0.31	364.96	
22	364.96		0.98			0.00	3.02	0.04		3.02	0.00	0.00		0.00	0.04	0.02	0.02	364.98	367.98
10			14.18			0.00			14.18										355.00
11-10	357.27	24 inch		24.70	0.40	9.78	4.53		14.24	3.72	4.53		0.00				0.10	357.37	
11	357.37		14.24			0.00	4.53	0.08	14.24		3.72	0.08		0.00	0.16	0.10	0.10	357.47	363.07
12-11	357.47	24 inch		246.30	0.26	64.04	3.72		11.70	4.68	4.50		0.09				0.54	358.01	
12	358.01		11.70			0.00	4.50	0.08	11.70		4.68	0.12		0.23	0.43	0.21	0.21	358.22	367.10
18-12	359.88	15 inch		178.50	0.57	101.92	4.86		4.21	2.52	4.46		0.09				1.08	360.96	
18	360.96		4.21			0.00	4.46	0.08	4.21		2.52	0.03		0.07	0.18	0.12	0.12	361.08	365.11
19-18	361.08	15 inch		20.10	0.21	4.16	2.52		2.42	2.84	2.84		87.02				0.01	361.09	
19	361.09		2.42			0.00	2.84	0.03	2.42		2.84	0.00		0.00	0.03	0.02	0.02	361.11	364.02
13-12	358.22	18 inch		88.20	0.49	43.31	4.68		7.38	5.51	40.66		82.74				0.42	358.64	
13	358.64		7.38			0.00	4.80	0.09	7.38		0.00	0.17		0.10	0.36	0.23	0.23	358.87	364.88
14-13	358.87	15 inch		32.80	1.06	34.80	5.51		6.67	3.62	24.15		17.64				0.24	359.11	
14	359.11		6.67			0.00	6.12	0.15	6.67		0.00	0.07		0.11	0.33	0.16	0.16	359.27	364.52
20-14	359.27	15 inch		45.10	0.39	17.63	3.62		4.15	3.33	13.82		58.52				0.15	359.42	
20	359.42		4.15			0.00	3.87	0.06	4.15		0.00	0.06		0.06	0.18	0.12	0.12	359.54	365.31
21-20	359.54	15 inch		107.60	0.41	44.55	3.33		3.62	3.42	12.38		29.22				0.35	359.88	
21	359.88		3.62			0.00	4.16	0.07	3.62		0.00	0.06		0.10	0.23	0.15	0.15	360.03	362.29
21-23	360.03	15 inch		15.00	0.36	5.46	3.42		3.17	3.66	11.60		54.11				0.03	360.06	
23	360.06		3.17			0.00	3.66	0.05	3.17		0.00	0.00		0.00	0.05	0.03	0.03	360.09	362.29
15-14	360.84	15 inch		49.70	0.60	29.97	4.00		2.29	2.37	5.43		22.17				0.31	361.16	
15	361.16		2.29			0.00	3.89	0.06	2.29		0.00	0.03		0.00	0.09	0.06	0.06	361.22	364.9
16-15	361.22	15 inch		130.00	0.51	65.78	2.37		1.28	2.81	3.60		2.65				0.58	361.8	
16	361.80		1.28			0.00	3.25	0.04	1.28		0.00	0.04		0.08	0.17	0.11	0.11	361.91	366.82
17-16	361.91	15 inch		51.20	0.50	25.50	2.81		1.14	3.11	3.55		87.61				0.23	362.13	
17	362.13		1.14				3.11	0.00	1.14		0.00	0.00		0.00	0.00	0.00	0.00	362.13	364.86

# OVERLAND RELIEF COMPUTATIONS

	100-YEAR OVERLAND RELIEF COMPUTATIONS - TRIANGULAR WEIR FLOW, Q=4.28*C*TAN(THETA/2)*(H+K)^(5/2)													
LOCATION	STRUCTURE	TOTAL AREA	"C"	Ī	Q (100)=CIA	С	LEFT DIST.	LEFT ELEV.	RIGHT DIST.	RIGHT ELEV.	WEIR ELEV.	THETA		
A-A'	17	0.22	0.80	8.64	1.52	0.57	22.02	366.00	16.71	366.00	365.60	177.59		
B-B'	19	0.50	0.75	8.64	3.24	0.57	19.62	365.25	44.85	365.63	364.95	178.26		
C C'	21	0.90	0.70	0 61	6.26	0.57	10.00	266 10	10.00	266.65	265 50	160 55		

	Cross Section for A-A		Cross Section for B-B		Cross Section for C-C
Project Description		Project Description		Project Description	
Solve For He	adwater Elevation	Solve For Headw	ater Elevation	Solve For He	adwater Elevation
Input Data		Input Data		Input Data	
Discharge	1.52 ft³/s	Discharge	3.24 ft³/s	Discharge	6.36 ft³/s
Headwater Elevation	365.78 ft	Headwater Elevation	365.16 ft	Headwater Elevation	366.06 ft
Crest Elevation	365.60 ft	Crest Elevation	364.95 ft	Crest Elevation	365.50 ft
Tailwater Elevation	365.60 ft	Tailwater Elevation	364.95 ft	Tailwater Elevation	365.50 ft
Coefficient of Discharge	0.57	Coefficient of Discharge	0.57	Coefficient of Discharge	0.57
Angle	177.59 degrees	Angle	178.26 degrees	Angle	169.55 degrees
Cross Section Image		Cross Section Image		Cross Section Image	

# GRATE INLET HEADWATER COMPUTATIONS

INLET NUMBER	Inlet	Curb Opening Length (ft)	Drainage Area (acres)	С	CA (acres)	SUM CA (acres)	l (in/h)	Q INCR (ft³/s)	Qb, CARRY- OVER (ft³/s)	Qt, GUTTER FLOW (ft³/s)	S, GUTTER SLOPE (%)	Sx, CROSS SLOPE (%)	T, SPREAD (ft)	W (ft)	Sw (%)	E (%)	Qi, INTER- CEPTED FLOW (ft³/s)	Qb, BYPASSED FLOW (ft³/s)	Gutter Depth (in)	Bypass Target
11	DI-3C	6	0.59	0.83	0.49		4.00	1.96	0.00	1.96		3.33		0.00			1.96	0.00	2.76	
LEFT	DI-3C	6	0.58	0.83	0.48		4.00	1.93	0.00	1.93	1.35	3.33	8.41	0.00	0.00		1.93	0.00	2.76	
RIGHT	DI-3C	6	0.01	0.83	0.01	0.45	4.00	0.03	0.00	0.03	0.90	3.33	2.08	0.00	0.00		0.03	0.00	0.24	
18	DI-2B	6	0.34	0.82	0.28	0.28	4.00	1.12	0.00	1.12	1.20	1.50	7.90	2.00	2.00	82.00	0.92	0.20	1.60	
19	DI-2B	6	0.50	0.75	0.38	0.38	4.00	1.51	0.00	1.51	1.70	2.00	7.00	2.00	2.00	79.50	1.20	0.31	1.70	
13	DI-2B	6	0.09	0.79	0.07	0.07	4.00	0.29	0.00	0.29	1.10	1.00	5.80	2.00	2.00	99.40	0.28	0.00	0.90	14
14	DI-2B	4	0.07	0.85	0.06	0.07	4.00	0.24	0.05	0.29	1.00	2.00	4.20	2.00	2.00	94.50	0.28	0.02	1.00	
20	DI-2B	6	0.12	0.77	0.09	0.09	4.00	0.37	0.00	0.37	1.00	1.80	4.90	2.00	2.00	98.80	0.37	0.00	1.10	14
15	DI-2B	6	0.21	0.80	0.17	0.17	4.00	0.68	0.00	0.68	1.00	1.80	6.10	2.00	2.00	93.10	0.63	0.05	1.40	14
16	DI-2B	4	0.03	0.80	0.02	0.02	4.00	0.10	0.00	0.10	1.00	1.48	3.00	2.00	2.00	100.00	0.10	0.00	0.70	15
22	DI-2B	4	0.18	0.84	0.15	0.15	4.00	0.61	0.00	0.61	0.50	2.00	6.30			86.10	0.52	0.08	1.50	
EX 3-4	DI-3B	4	0.41	0.58	0.24	0.24	4.00	0.96	0.00	0.96	0.70	3.94	4.60			78.20	0.75	0.21	2.20	EX 3-3
EX 3-3	DI-3B	4	0.46	0.56	0.26	0.31	4.00	1.04	0.21	1.25	0.40	2.00	8.60			65.00	0.81	0.44	2.10	

# GRATE INLET HEADWATER COMPUTATIONS

	GRATE HEADWATER COMPUTATIONS - 10 YR. 50% CAPACITY													
		DRAINAGE				10-YR		INLET	INLET	DEPTH OF	DEPTH OF	DEPTH OF	TOP OF	10 YR. HWE @
STR		AREA			Tc	INTENSITY	Q INCR	PERIMETER	AREA	WATER (WEIR)	WATER (ORIFICE)	WATER	STR	50 % CLOGGED
NUMBER	STR. TYPE	(AC)	С	CA	(Mins)	(IN/HR)	(CFS)	(FT)	(SQFT)	(FT)	(FT)	(FT)	(FT)	(FT)
17	DI-7	0.22	0.80	0.18	5.00	6.41	1.13	12.80	6.00	0.15	0.00	0.15	364.86	365.01
21	DI-7	0.40	0.70	0.28	5.00	6.41	1.79	12.80	6.00	0.21	0.01	0.21	362.29	362.50
23	DI-7	0.40	0.70	0.28	5.00	6.41	1.79	12.80	6.00	0.21	0.01	0.21	362.29	362.50
INLE	TS ARE ASSU	MED TO BE 5	0% CLOG	GED						•				

					GRATE	E HEADWATE	ER COMPL	JTATIONS - 10	00 YR. 50	0% CAPACITY				
		DRAINAGE				10-YR		INLET	INLET	DEPTH OF	DEPTH OF	DEPTH OF	TOP OF	100 YR. HWE @
STR		AREA			Tc	INTENSITY	Q INCR	PERIMETER	AREA	WATER (WEIR)	WATER (ORIFICE)	WATER	STR	50 % CLOGGED
NUMBER	STR. TYPE	(AC)	С	CA	(Mins)	(IN/HR)	(CFS)	(FT)	(SQFT)	(FT)	(FT)	(FT)	(FT)	(FT)
21	DI-7	0.40	0.70	0.28	5.00	8.64	2.42	12.80	6.00	0.25	0.02	0.25	362.29	362.54
23	DI-7	0.40	0.70	0.28	5.00	8.64	2.42	12.80	6.00	0.25	0.02	0.25	362.29	362.54
INLE	TS ARE ASSU	MED TO BE 5	n% CLOG	GED			•							

# OUTLET PROTECTION COMPUTATIONS

				COLVERTOOT	LET PROTECTIO	IN KOAD AN	ID BRIDGE 31D EC-1
STR.	PIPE	10-Yr Outlet	MAXIMUM	O.P.	Hydraulic	Installation	PLAN DESCRIPTION
#	DIA.(IN)	Velocity (FPS)	VELOCITY	Class	opening (SQFT)	Туре	
10	24	4.53	6.00	EC-3 TYPE B	3.14	Type A	4.0 Sq. Yds. EC-3 TYPE B REQ'D w/ Type A Installatio
SWM 1	24	6.06	8.00	EC-1 CL A1	3.14	Type A	4.0 Sq. Yds. EC-1 CL A1 REQ'D w/ Type A Installation
Rip Rap Di	imensions Ba	sed on Type of	Installation				CLASS OF OUTLET PRTOECTION
STR.	Installation	Length	Width (W1)	Width (W2)			EC-3 TYPE B - MAXIMUM VELOCITY IS 6 FPS
#	Туре	(FT)	(FT)	(FT)			EC-1 CL A1 - MAXIMUM VELOCITY IS 8 FPS
10	Type A	6.00	6.00	8.00			EC-1 CL I - MAXIMUM VELOCITY IS 10 FPS
SWM 1	Type A	6.00	6.00	8.00			EC-1 CL II - MAXIMUM VELOCITY IS 19 FPS
	•	•			•		OUTLET PROTECTION MATERIAL
Гуре А - 3	H Length & 3	S Width	Hydraulic openi	ng less than 7 sq	uare feet		STD EC-3 Type B
Гуре В - 5	H Length & 3	S Width	Hydraulic openi	ng greater than o	r equal to 7 square	e feet	Class A1 - Class A1 Dry Riprap, T=18"
							Class I - Class I Dry Riprap, T=24"
H = Height	of Culvert						Class II- Class II Dry Riprap, T=36"
S = Span							
•	ar pipe H = S						

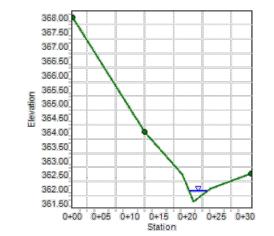
# DITCH COMPUTATIONS

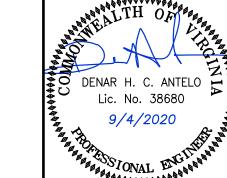
		DESIG	IN FOR G	RASS-LINED DIVERSION	DIKE			3 VE	ND CTO	D84	10 VE	AD CTO	DR4	DD I	DESIGN		
GRASS					PERMISSIBLE	n Malus	(-1 T.	2-YE/	AR STO	KIVI	10-16	AR STO	KIVI	DITCH	CIDE CLODEC	REMARKS	
SWALE	AREA	FACTOR	SLOPE	LINING	VELOCITY	n Value	Тс	ı	ı Q v		ı	QD		DEPTH	SIDE SLOPES	REIVIARKS	
	(ACRES)		%		(FT/S)		(MIN)	(IN/HR)	(CFS)	(FT/S)	(IN/HR)	(CFS)	(FT)	(FT)	(H:V)		
D-D'	0.26	0.49	2.00	GRASS-LEGUME MIX	4.00	0.030	5	4.86	0.63	1.82	6.41	0.83	0.30	N.A	N.A	IRREGULAR	
E-E'	0.43	0.49	2.50	GRASS-LEGUME MIX	4.00	0.030	5	4.86	1.04	2.25	6.41	1.38	0.35	N.A	N.A	IRREGULAR	



	Cross Section for DE	)-10YR		Cross Section for E	E-10YR
Project Description			Project Description		
Friction Method	Manning Formula		Friction Method	Manning Formula	
Solve For	Normal Depth		Solve For	Normal Depth	
Input Data			Input Data		
Channel Slope	0.02000	ft/ft	Channel Slope	0.02500	ft/ft
Normal Depth	0.30	ft	Normal Depth	0.35	ft
Discharge	0.83	ft³/s	Discharge	1.38	ft³/s
Cross Section Image			Cross Section Image		







SHEET 14 OF 41

ENGINEERING GROUPE PROJECT STATUS DATE: JULY, 2020 SCALE: N/A 09/02/20 REVISED PER TOWN COMMENTS FILE NO. **SP-393** 

G:\PROJECT\Smith Property-Haymarket\ENG\DWG\00-K3500 ST Packet Pg. 34

VILLA

COMPUTATIONS

ROBINSON

Project Plan Name:	Robinson Village	Maximum static water pressure in the proposed w	vater system:	69 8 nsi		(Bas	sed on AWWA M22 Manu	al Second Edition)			00
Prince William County Plan Number:	N/A	Minimum static water pressure in the proposed wa	ater system:	69.8 psi 62.4 psi	}	(Dai	occionitivi vittiviiii vitana	u, second Edition,		1 Methods and materials used in the construction of water mains, sanitary sewer mains, force	uite 20
Engineering Firm:	The Engineering Groupe Inc.	Information above is provided from the hydraulic mode	l with applied maximum day water (	demands.		Building Identifier:				mains and appurtenances shall be in conformance with the current Prince William County	UDE Inc. West Office
Project Location:	Town of Haymarket					Multi-Dwelling Residential or Non-Resid	lential	High Deman	d (e.g. Non-Residential)	Service Authority (Service Authority) Utility Standards Manual (USM) and the Virginia Department of Health Regulations.	in Rogin
		Available Fire Flow:		gpm	j	J			,		We Sycoli
Pressure Zone:	Haymarket	Lowest Residual Pressure during a fire flow scena Information above is provided from the hydraulic mode		40.9 <b>`</b> psi		Maximum static water pressure at the me (Obtained from hydraulic study at the meter l			60 <b></b> psi	2 Acceptance of these plans by the Service Authority will in no way relieve the owner from complying with the methods, policies or requirements stated in the Service Authority's USM.	170 ITS
High Hydraulic Grade Line (ft):	535	Are residential fire sprinkler systems proposed?	i wini appiroa maaimami aay anayii	No	]	( Octamous) one response states states at the motor to				complying with the methods, policies of requirements stated in the Service Admontly's OSM.	ner Z
Low Hydraulic Grade Line (ft):	515					TT	Fixture V		Subtotal		Plan 121
Sewer Shed:	Little Bull Run	High Hydraulic Grade Line		535 feet	_   F	Fixture or Appliance Toilet (tank)	(at 60 ps	i) Fixtures	Fixture Value	3 Service Authority has Local Review Authority for water mains up to and including 18-inch and sanitary sewer mains up to and including 24-inch. Utilities outside the Service Authority's	
	& North Branch	Lowest Finished Floor Elevation proposed within	the development	366.96 feet 73 psi		Toilet (tank) Toilet (flush valve)	35	0	0	Local Review Authority, including low pressure force mains systems, are subject to the review,	rrs room
Local Facility Charge:	Little Bull Run	‡Estimated highest static pressure at the finished flo	oor elevation	psi	1	Urinal (wall or stall)	16	0	0	approval and permitting process of either the Virginia Department of Health Office of Drinking  Water or Department of Environmental Quality. It is the Professional Engineer's responsibility	eyo oupe
Master Plan Utility Adjustment Applicable:	No	Low Hydraulic Grade Line		515 feet		Urinal (flush valve) Bidet	35		0	to submit all necessary applications and plans and to secure all applicable plan approvals and	urv engga outh
		Highest Finished Floor Elevation proposed within	_	369.43 feet	i	Shower (single head)	2.5	0	0	permits from the different governing authorities.	www.s
		‡Estimated lowest static pressure at the finished flo	oor elevation	63 psi	1	Sink / Faucet (Lavatory) Kitchen Sink	1.5		0		rs v s Sou
WATER MAIN	GRAVITY SANITARY SEWER MAIN	Estimates are made with an assumed high and low hyd	raulic grade line and do not take ir	nto account the effects of friction		Utility Sink	4		0	4 Trees, fences, monuments, signs, entrance features, sheds, decks, overhanging canopies, or	neer neer 1
Size: Length: Material:	Size: Length: Material:	loss or water booster pumps in the water system. Actua				Dishwasher	2	0	0	permanent structures shall not be placed in easements dedicated to the Service Authority without written permission from the Service Authority.	Engine
8-inch 986 DIP  12-inch 339 DIP	8-inch 963 C-900 10-inch 0	International Residential Code P2903.3 Minimum the building entrance for either public or private was	= '		i i	Bathtub Clothes Washer	8		0	without whiten permission from the Service Atthorns.	i i
16-inch 0	12-inch 0		<b>,</b> (	,-	]	Cioules washer				5 The contractor shall notify the Service Authority Inspection Manager at least two (2) business	fice re. Sui
18-inch 0	16-inch 0	International Residential Code P2903.3.1 Ma	-	- ` `		Hose Connections (with 50 ft of hose)				days, but not more than ten (10) business days, prior to the commencement of demolition,	ral Office e Drive,
Total Length 1325 Feet	Total Length 963 Feet	kPa). When main pressure exceeds 80 psi (551 k 1003 shall be installed on the domestic water bran				1/2 in. 5/8 in.	5			excavation or blasting in areas with underground water mains, sanitary sewer mains, and/or force mains.	Cent
				rT.	i	3/4 in.	12	0	0		86 6
LOW PRESSURE FORCE MAIN	PUMP STATION FORCE MAIN	Note: The professional engineer is responsible to accor	unt for the effects of friction loss on t	the delivery pressure at the finished		Miscellaneous				6 All subdivision will require an address listing approved by the Prince William County Mapping Office. The address listing must be presented to the Service Authority at the time the utility	135
	Size: Length: Material: 4-inch 0		lumbing appurtenances. The Servic	ce Authority requires calculations to	1	Miscellaneous Bedpan washers	10	0	0	permit is issued. Forms are available at the Service Authority. (Fax copies are not acceptable.)	<u> </u>
		size the private service lines when delivery pressures ar	e 45 psi or less and the service line	is in excess of 70 feet.		Drinking fountains	2	0	0		
2-inch 0 2.5-inch 0	6-inch 0 8-inch 0				<u> </u>	Dental units	2		0	7 Low pressure sewer force main systems are subject to the review and requirements of the	
3-inch 0	12-inch 0	The hydraulic design and all finished flo	1 7	oplicable plumbing code for press	1					Virginia Department of Environmental Quality.	
Total Length 0 Feet	Total Length 0 Feet	without a water booster pump or press	ure reducing device.		•	Combined Fixture Value Demand (gpm) from AWWA Curve			0 0	8 The developer is responsible for all costs associated with damages to or relocation of water	
Total Deligni U Feet	Total Leligui U Feet	The use of private water booster pump	s and/or pressure reducing device	ces are required for the following		Pressure Adjustment Factor			gpm	8 The developer is responsible for all costs associated with damages to or relocation of water mains, sanitary sewer mains, force mains or service lines caused by the construction of this	
	•	lots to comply with applicable plumbing	_	1	].	Adjusted demand (gpm)			gpm	project.	
Total Number of 4-inch or 6-inch proposed valves:  Total Number of 8-inch or 12-inch proposed valves:	5 Each 9 Each	Lot# or Elev. @ High Low	Estimated Estimated Privat	te Pres. Red.	1	Irrigation Demand (gpm) that will occur s Water demand for equipment will occur :	•		0 gpm 0 gpm 0 gpm 0 gpm gpm	9 The contractor shall coordinate all relocation of water mains, sanitary sewer mains and/or force	
Total Number of 16-inch or 24-inch proposed valves:	O Each	Building ID Finished Hydraulic Hydrau Floor Grade Line Grade L	lic High Pres. Low Pres. Water ine (psi) (psi) Booster	r Device		Total estimated peak flow	Silitutaticously with homital v	vater use	$\frac{0}{0}$ gpm	mains with the Service Authority's Field Inspector. Water or sanitary sewer system shutdowns	
	9 Each	(ft) (ft)	Neede			D ' LAWWA M. C'		5/0 I 1 D ''' D' 1	_	will not be executed without the prior approval of the Service Authority Field Inspector. The	
Total Number of Proposed Manholes: Total Number of Proposed Fire Hydrants:	Tools	535 515 535 515	<del>-</del>	-		Required AWWA Meter Size		5/8-Inch Positive Displa	cement Meter	Field Inspector shall require the contractor to submit a relocation work plan for Service  Authority acceptance prior to the commencement of the relocation work. The work plan will	
Total Number of Proposed Residential Meter Crocks to be Installed:	- 38 Fach	333 313								detail how the work will be done and the manpower, materials, and equipment that will be at	
Total Number of 5/8"x 3/4" Residential Meters to be Certified:	38 Each	į			į					the site to perform the work.	
										10 The Service Authority does not guarantee the availability or construction of utilities that are	
T-4-1Di4	Quantities Previously Net Increase				i					proposed by another entity even if those utilities are shown as existing in this plan set. If	
Pipe Quantity  Total Project Quantities Proposed	Approved & Permitted	MULTI-DV	<u> VELLING METI</u>	ER SCHEDULE						needed utilities shown as existing are not available or do not exist, it is the developer's responsibility to acquiring the necessary rights and permits to install on-site and off-site water	
Summary By This Plan	by Plan #					<sup>1</sup> Peak			<sup>4</sup> Non-Binding	and sanitary sewer utilities to provide the desired service.	
WATER MAIN INSPECTION 1325		Building Building Identifier Address	Meter Use		umber of elling Units	Demand   2&3 ERU   Meter	`	rved for (Reserved for Future Use)	re Estimated Availability Fee	11 Existing unused water service lines shall be exposed at the connection point on the	
WATER MAIN AS-BUILT 1325			112001 000	Tittodak 1, pc 2 m		#N/A	Tute		/ / / / / / / / / / / / / / / / / / / /	water main and shall be cut and terminated (e.g. crimped) as directed by the Service	
SANITARY SEWER / FORCE MAIN INSP. 963						#N/A #N/A				Authority Field Inspector.	
SANITARY SEWER/FORCE MAIN AS-BUILT 963					1	#N/A #N/A				12 Existing unused laterals or sanitary service lines shall be cut and capped at the	7 1
THE CANAL CONTRACT TO A CONTRA						#N/A				connection point to the sanitary sewer main or force main as directed by the Service	
TV SANITARY SEWER MAIN INPECTION 963					-	#N/A #N/A	/			Authority Field Inspector.	3E7
Minimum water main inspection fee applies for water quantities less than 100 feet:	:: No					#N/A				13 When an existing water service line, lateral, of sanitary service line will be reused as	
Minimum sanitary sewer / force main inspection fee applies for quantities less than	an 100 linear feet	NOTES: 1 A fixture unit list and meter sizing co	alculations shall be provided in the plan	set for each proposed meter in accordance	co with the current	#N/A   4WW 4 M22 standard	/			part of a new development, the Service Authority shall inspect the existing service line to insure that it is acceptable and meets current Service Authority material	
	in two intent teet.	•	•	of dwelling units associated with the meter						specifications. Any defects or out-of-date materials shall be repaired or replaced to	
Minimum as-built fee applies when total as-built cost are less than \$1000.00:	No		•		, i	e VI: Availability Fees of the Customer Handbook.				the satisfaction of the Service Authority to ensure the service line is water tight	AT.
Notes:		4 The Availability Fee is not the total f	ee due. New connections may be subject	to the following fees: meter, meter installa	ation, sewer and/or	water inspection, application and Local Facility ch	arges. See the Customer Handbook	t for additional information.		before the existing service line is placed back in service.	$\mathbb{R}$
		NON	-RESIDENTIAL	METER SCHEDU	IIF						FO]
		14014	TODEITIAL		Max Month	<sup>2</sup> Peak	<u> </u>		<sup>4</sup> Non-Binding		$\left  \begin{array}{ccc} \mathbf{S} & \mathbf{S} \\ \mathbf{S} & \mathbf{S} \end{array} \right $
		Building		Con	nsumption	Demand <sup>3</sup> ERU Meter	`	erved for (Reserved for Futi	ire Estimated		
		Building Identifier Address	Meter Use	Account Type (	Gallons)	(GPM) Purchase Size	Meter Type Futu	re Use) Use)	Availability Fee		
											M M
The profile shall call out the station restraint is to start and the station restr	raint is and for each fitting										
reducer, and dead end.	and is one for cacif fitting,										
Pina Matariali	DID DOLLARIS A										4
Pipe Material:  ML - Inorganic s	DIP - POLYWRAP silts, very fine sands, rock flour,									Engineer's Seal & Signature	
<b>■</b>	ne sands (backfilled using native										
Safety Factor: (1.5 to 1 is typical)	•			be reported. The purchased number of E water consumption does not need to be rep		ed on the estimated maximum month consumption, b	but shall not be less than the allocat	ed number of ERUs			
(1.5 to 115 typical)	1.5	1		water consumption does not need to be rep set for each proposed meter in accordanc	I	AWWA M22 standard.					
Trench Type: (Type 4 is typical for the Service Authority back)	xfill requirements) Type 3	1	·	e allocation with the meter size as defined		•	G-4 C	- f., _11			
Test Pressure: (100 psi plus them max static pressure, but no l	less than 200 psi) 200 psi	4 The Availability Fee is not the total f	ee aue. New connections may be subject	to the jottowing fees: meter, meter installe	anon, sewer and/or	water inspection, application and Local Facility ch	arges. See the Customer Handbool	z jor aadstional information.			~ P P P P P P P P P P P P P P P P P P P
, , , sacrio	F		DATA CENTE	ER METER SCHE	חווב						REALTH OF SER
The undersigned Engineer and /or firm, on behalf of itself and its successors, does	es hereby assume full	<b>\</b>	DATA CENTE			2 <sub>D</sub> .	•		<sup>4</sup> Non-Binding	SA Service Authority	
liability and responsibility for the accuracy of the calculations, selections made, or	-	Building			Max Month nsumption	<sup>2</sup> Peak Demand <sup>3</sup> ERU Meter	M	leter Flow Rate (gpm	o l	Service Authority Prince William County	DENAR H. C. ANTELO
in this information sheet and agrees to hold harmless the Service Authority from a	-	Building Identifier Address	Meter Use	Account Type	(GPD)			facturer Minimum Maxim	Availability Fee		Lic. No. 38680 9/4/2020
The undersigned Engineer and/or firm agrees that the Prince William County Servi										Water & Sanitary Sewer Information Sheet	
the right to use these plans and electronic files for the preparation of as-built reco	ords, as necessary. The									Sheet effective as of September 1, 2019	SESSIONAL ENGINEERS
Engineer and/or firm further agrees that the right to use the plans and electronic firm	files shall be provided									ENGINEERING GROUPE PROJECT STATUS	DATE: <b>JULY, 2020</b>
without cost to the Service Authority.											SCALE: N/A
Signature:		TO TES.	• •	•	i	consumption, but shall not be less than the allocated	d number of ERUs associated with 1	he meter size.			DESIGNER: <b>CF,SO,MI</b> DRAFTSMAN: <b>ZEF,DP,M</b>
Denar H. C. Antelo		<u>~</u>		set for each proposed meter in accordance allocation with the meter size as defined	•					09/02/20 REVISED PER TOWN COMMENTS	FILE NO. SP-393
(Type or Print)		_				water inspection, application and Local Facility ch	g 4 G . II # 1				SHEET 15 OF 41

COMPUTATIONS

ENGINEERING GROUPE PROJECT STATUS DATE: JULY, 2020

	SCALE: 1"=25'
	DESIGNER: <b>CF,SO,M</b> F DRAFTSMAN: <b>ZEF,DP,M</b>
20 REVISED PER TOWN COMMENTS	FILE NO. SP-393
ACTION	SHEET 16 OF 41

PRO	JECT:	]	ROBINS	SON VILLAC	GE	-			SAN	TARY SEV	VER DESIG	N									PWCSA	A USE ONL	Y
FROM MH	TO MH	UNITS OR AREA	FLOW/	AVG. FLOW INCREMENT	AVG. FLOW TOTAL	PEAK FACTOR	Q TOTAL GPD	PIPE SIZE(IN)	SLOPE %	ACTUAL VEL.(FPS)	FULL FLOW VEL.(FPS)	CAPACITY GPD	q/Qf %	d/D	LENGTH	FALL FT	MH INV DROP FT.	INVERT UPPER	INVERT LOWER	DATE LINE TESTED	DATE LINE PASSED TEST	MH ID	DATE MH PASSED VAC. TEST
11	10	6*	*	5,940	5,940	4	23,760	8	0.80%	1.39	3.10	698,706.21	3.40%	12%	252.60	2.02		360.47	358.45	TESTED	TABBED TEST	110	TASSED VAC. TEST
10	EX 091/38	0	350	0	5,940	4	23,760	8	0.52%	1.13	2.51	565,500.02	4.20%	12%	19.09	0.10	0.20	358.25	358.15				
10	1.1	44	2.50	2.050	2.050	4	17.100		1.000/		2.45	#04 #0# 0#	4.050/	00/	146.00	4.47		250 50	250.24				
18	14	11	350	3,850	3,850	4	15,400	8	1.00%	1.21	3.46	781,597.85	1.97%	8%	146.90	1.47		359.78	358.31				
17	16	10	350	3,500	3,500	4	14,000	8	0.80%	1.08	3.10	698,844.55	2.00%	8%	115.00	0.92		361.07	360.15				
16	15	6	350	2,100	5,600	4	22,400	8	0.50%	1.10	2.45	553,200.14	4.05%	12%	119.69	0.60	0.20	359.95	359.35				
15	14	7	350	2,450	8,050	4	32,200	8	0.50%	1.31	2.44	551,664.81	5.84%	16%	168.50	0.84	0.20	359.15	358.31				
14	13	0	350	0	11,900	4	47,600	8	0.50%	1.42	2.45	553,935.78	8.59%	18%	129.32	0.65		358.11	357.46				
13	12	0	350	0	11,900	4	47,600	8	0.50%	1.42	2.46	554,988.22	8.58%	18%	29.73	0.15	0.20	357.26	357.11				
12	EX 078/24	0	350	0	11,900	4	47,600	8	0.50%	1.42	2.46	554,483.52	8.58%	18%	81.41	0.41	0.20	356.91	356.50				
		*4 TOWNHO	USES x 3:	↓ 50 GPD = 1400. I	⊥ PARCELS 1 AN	D 3 WERE C	L CALCULATEI	USING A I	LOW/UNI	Г OF <b>2000</b> GPD													
		7	PARCEL :	1: 0.32 AC. x 2000																			

					RO	BINSON LA'	TERAL SC		E									PWCSA	USE ONLY
<u> </u>		•		•	TOTAL	1ST 2ND	•	GROUND	BF OR SLAB	DISTANCE	DISTANCE	Difference	Difference	Difference	EJECTOR	SLOPE OF		+	
UNIT	STATION	INVERT	CROWN ELEV.	LATERAL LENGTH	RISER	RISER RISER	LAT ELEV. @	ELEV. @	FLOOR	TO 1ST	TO 2ND	Ground Elev.	Basement Elev.	Basement Elev.	PUMP	LATERAL			STUB INSTALLED
NO.		@ MAIN			HGT.	HGT. HGT.	END	LAT. END	ELEVATION		RISER START	Lat. End	Lat. End	Crown	REQUIRED	(%)	LATERAL MATERIAL	DATEINSTALLED	
1	1 TO 10	253 FEET OF	SAN. @ 0.80%	LOW END INV.= 358.45	1101	MATERIAL: DR-	-25 C 900 - PVC		SIZE = 8''					21 01111	TITE CITE	(,,,			,, 01 01010
PARCEL 3	0+48	358.84	359.50	74.00	0.0	0.0	361.05	366.9		N/A						2.08%	DR-25 C900 - PVC		
PARCEL 1	0+35	358.73	359.40	18.00	0.0	0.0	359.77	367.1		N/A						2.08%	DR-25 C900 - PVC		
38	01+48	359.63	360.30	17.50	0.0	0.0	360.66	366.8	367.82	N/A		6.09	7.16	7.52	NO	2.08%	DR-25 C900 - PVC		
37	01+94	360.00	360.66	17.50	0.0	0.0	361.03	366.6	367.82	N/A		5.60	6.79	7.16	NO	2.08%	DR-25 C900 - PVC		
36	02+18	360.19	360.86	17.50	0.0	0.0	361.22	366.5	367.82	N/A		5.29	6.60	6.96	NO	2.08%	DR-25 C900 - PVC		
35	02+53	360.80	360.80	17.50	0.0	0.0	361.16	366.2	367.32	N/A		5.00	6.16	6.52	NO	2.08%	DR-25 C900 - PVC		
	7 TO 16	115 FEET OF	SAN. @ 0.80%	LOW END INV.= 360.15		MATERIAL: DR-		0 0 0 0 2	SIZE = 8"	1011		2.00	0.10	0.02	1.0	2.007.0	Ditie court i i c	<u> </u>	
11	0+17	360.29	360.96	17.50	0.0	0.0	361.32	367.1	368.27	N/A		5.79	6.95	7.31	NO	2.08%	DR-25 C900 - PVC		
20	0+23	360.34	361.00	29.50	0.0	0.0	361.62	366.6	367.72	N/A		4.94	6.10	6.72	NO	2.08%	DR-25 C900 - PVC		
12	0+41	360.48	361.15	17.50	0.0	0.0	361.51	366.7	367.77	N/A		5.23	6.26	6.62	NO	2.08%	DR-25 C900 - PVC		
19	0+47	360.53	361.20	29.50	0.0	0.0	361.81	366.2	367.22	N/A		4.38	5.41	6.02	NO	2.08%	DR-25 C900 - PVC		
13	0+65	360.67	361.34	17.50	0.0	0.0	361.70	366.6	367.77	N/A		4.92	6.07	6.43	NO	2.08%	DR-25 C900 - PVC		
18	0+05	360.72	361.39	29.50	0.0	0.0	362.00	366.1	367.22	N/A		4.97	5.22	5.83	NO	2.08%	DR-25 C900 - PVC		
14	0+89	360.86	361.53	17.50	0.0	0.0	361.90	366.3	367.27	N/A		4.35	5.37	5.74	NO	2.08%	DR-25 C900 - PVC		
17	0+95	360.91	361.58	29.50	0.0	0.0	362.19	365.7	366.72	N/A		3.51	4.53	5.14	NO	2.08%	DR-25 C900 - PVC		
15	01+15	361.40	361.40	18.29	0.0	0.0	361.78	366.1	367.27	N/A		4.31	5.49	5.87	NO	2.08%	DR-25 C900 - PVC		
16	01+15	361.40	361.40	33.01	0.0	0.0	362.09	365.4	366.72	N/A		3.26	4.63	5.32	NO	2.08%	DR-25 C900 - PVC		
	6 TO 15	120 FEET OF	SAN. @ 0.50%	LOW END INV.= 359.35	1 0.0	MATERIAL: DR-		303.4	SIZE = 8"	1024		3.20	4.05	5.52	110	2.0070	DR23 C700 -1 VC		!
7	0+25	359.47	360.14	17.50	0.0	0.0	360.50	367.8	369.43	N/A		7.30	8.93	9.29	NO	2.08%	DR-25 C900 - PVC		
8	0+25	359.58	360.25	17.50	0.0	0.0	360.61	367.7	368.77	N/A		7.11	8.16	8.52	NO	2.08%	DR-25 C900 - PVC		
23	0+40	359.64	360.31	29.50	0.0	0.0	360.92	367.7	368.22	N/A		6.25	7.30	7.91	NO	2.08%	DR-25 C900 - PVC		
9	0+89	359.80	360.46	17.50	0.0	0.0	360.83	367.6	368.77	N/A		6.77	7.94	8.31	NO	2.08%	DR-25 C900 - PVC		
22	0+95	359.83	360.49	29.50	0.0	0.0	361.11	367.1	368.22	N/A		5.94	7.11	7.73	NO	2.08%	DR-25 C900 - PVC		
10	01+08	359.89	360.56	17.50	0.0	0.0	360.92	367.2	368.27	N/A		6.31	7.35	7.71	NO	2.08%	DR-25 C900 - PVC		
21	01+05	359.92	360.59	29.50	0.0	0.0	361.21	366.7	367.72	N/A		5.47	6.51	7.13	NO	2.08%	DR-25 C900 - PVC		
	5 TO 14	169 FEET OF	SAN. @ 0.50%	LOW END INV.= 358.31	0.0	MATERIAL: DR-		300.7	SIZE = 8"	IVA		3.47	0.51	7.13	1 110	2.00 /0	DR-23 C300 - 1 VC		
2	0+54	358.58	359.24	17.50	0.0	0.0	359.61	366.7	367.93	N/A		7.04	8.32	8.69	NO	2.08%	DR-25 C900 - PVC		
2	0+54	358.70	359.24	17.50	0.0	0.0	359.73	366.7	367.93	N/A		6.97	8.20	8.57	NO	2.08%	DR-25 C900 - PVC		
4	01+02	358.82	359.48	17.50	0.0	0.0	359.75	367.1	368.43	N/A		7.25	8.58	8.95	NO	2.08%	DR-25 C900 - PVC		
5	01+02	358.82	359.48	17.50	0.0	0.0	359.85	367.5	368.93	N/A N/A		7.53	8.96	9.33	NO NO	2.08%	DR-25 C900 - PVC		
6	01+26	358.94	359.72	17.50	0.0	0.0	360.09	367.5	368.93	N/A N/A		7.56	8.84	9.33	NO	2.08%	DR-25 C900 - PVC		
	8 TO 14	147 FEET O F	SAN. @ 1.00%	LOW END INV.= 358.31	1 0.0	MATERIAL: DR-		307.7	SIZE = 8"	IVA	<u> </u>	/.ວບ	0.04	7.41	1 110	<b>⊿.</b> 00 70	DR-25 C700 - F VC	1	1
	0+22	358.53		1	0.0	0.0	1	365.4	366.96	N/A		5.95	7.50	7.76	NO	2.08%	DR-25 C900 - PVC		
28	0+22	358.53	359.20 359.40	12.50 12.50	0.0	0.0	359.46 359.66	365.4	366.96	N/A N/A		5.64	7.30	7.56	NO	2.08%	DR-25 C900 - PVC		
	0+42	358.73	359.40	72.00	0.0	0.0	361.01	365.5	367.41	N/A N/A		4.49	6.40	7.90	NO	2.08%	DR-25 C900 - PVC		
30	0+62	358.84	359.60	12.50	0.0	0.0	359.86	365.5	366.96	N/A N/A		5.62	7.10	7.36	NO	2.08%	DR-25 C900 - PVC		
25	0+62	358.93	359.68	72.00	0.0	0.0	361.18	365.5	367.41	N/A N/A		4.32	6.23	7.73	NO NO	2.08%	DR-25 C900 - PVC		
31	0+/1	359.02	359.80	12.50	0.0	0.0	360.06	365.9	367.46	N/A N/A		5.79	7.40	7.66	NO	2.08%	DR-25 C900 - PVC		
24	0+99	359.30	359.97	72.00	0.0	0.0	361.47	365.5	367.41	N/A		4.03	5.94	7.44	NO	2.08%	DR-25 C900 - PVC		+
32	01+02	359.33	360.00	12.50	0.0	0.0	360.26	366.1	367.46	N/A		5.80	7.20	7.46	NO	2.08%	DR-25 C900 - PVC		
33	01+02	359.53	360.20	12.50	0.0	0.0	360.46	366.4	367.96	N/A		5.97	7.50	7.76	NO	2.08%	DR-25 C900 - PVC		
34	01+47	360.11	360.11	13.63	0.0	0.0	360.39	366.8	367.96	N/A		6.41	7.57	7.85	NO	2.08%	DR-25 C900 - PVC		
	4 TO 13	129 FEET OF	SAN. @ 0.50%	LOW END INV.= 357.46	1 0.0	MATERIAL: DR-		500.0	SIZE = 8"	11//21		0.71	1.01	7.03	1 110	2.00/0	DIC-25 C/00-1 VC	<u>l</u>	
1	01+01	357.97	358.63	12.00	0.0	0.0	358.88	365.8	367.43	N/A		6.92	8.55	8.80	NO	2.08%	DR-25 C900 - PVC		
27	01+01	358.03	358.69	16.00	0.0	0.0	359.03	365.8	366.96	N/A		6.77	7.93	8.27	NO	2.08%	DR-25 C900 - PVC		
<u>4</u> 1	01+13	330.03	330.03	10.00	0.0	0.0	1 333.03	202.0	300.30	1V/A		0.77	1.33	0.4/	1 110	<b>4.00</b> 70	DR-23 C300 - F VC		

1.) ALL LATERALS ARE 4" WITH THE EXCEPTION OF LATERALS FOR PARCELS 1 AND 3 WHICH ARE 6" IN DIAMETER AND TO BE INSTALLED AT 1/4" PER FOOT UNLESS OTHERWISE NOTED.

2.) RISERS TO BEGIN A MINIMUM OF 3' FROM INVERT AT MAIN.

3.) ALL LATERALS ARE TO BE THE SAME MATERIAL AS THE MAIN SANITARY SEWER LINE THAT IT IS CONNECTING TO. \*DENOTES BASEMENTS WITH HUNG SEWER - EJECTOR PUMPS REQUIRED FOR SUB-BASEMENT

Water & Sanitary Sewer Information Sheet

Sheet revised as of September 1, 2019

#### EXISTING SITE CONDITIONS

THE TOPOGRAPHY ON THIS SITE RANGES IN ELEVATION FROM 352 FEET TO 368 FEET ABOVE SEA LEVEL. THE MAJORITY OF THE SITE RUNOFF FLOWS TO THE NORTHEAST TO AN EXISTING WETLAND. A PORTION OF THE SITE RUNOFF DRAINS TO AN EXISTING CULVERT ADJACENT HUNTING PATH ROAD. A SMALL PORTION

RUNOFF DRAINS UNCONTROLLED TO THE NORTH. SLOPES ON SITE RANGE FROM 2% TO 33%. ADJACENT PROPERTIES THE SITE IS BOUND TO THE WEST BY HUNTING PATH ROAD, TO THE SOUTH BY WASHINGTON STREET, TO THE

NORTH BY EXISTING TOWN-HOMES, AND TO THE EAST BY AN EXISTING CHURCH AND MEDICAL CENTER.

A SOILS MAP AND SUPPORTING SOILS DATA HAVE BEEN PROVIDED ON **SHEET** 1 OF THIS PLAN SET.

THE EARTHWORK FOR THIS SITE BALANCES. ADDITIONAL OFFSITE BORROW OR SPOIL AREAS ARE NOT NEEDED. SANITARY AND WATERLINE TIE IN CONNECTIONS WILL BE NECESSARY FOR THIS PLAN SET. CRITICAL EROSION AREAS

WETLAND LOCATIONS PROVIDED BY WETLAND STUDIES AND SOLUTIONS, INC. PER JOINT PERMIT APPLICATION DATED JUNE 4, 2020.

#### STORMWATER RUNOFF CONSIDERATIONS:

#### MINIMUM STANDARDS

SEE SHEET 23.

FOR EVERY MEASURE EMPLOYED TO SATISFY EACH OF THE NINETEEN MINIMUM STANDARDS APPLICABLE TO THIS DEVELOPMENT, THE NUMBER FOR THE PARTICULAR STANDARD BEING SATISFIED HAS BEEN PLACED IN PARENTHESES NEXT TO THE CORRESPONDING MEASURE. STORM SEWER COMPUTATIONS HAVE BEEN PROVIDED ON SHEET 13,, DEMONSTRATING COMPLIANCE WITH MS-19. THE FOLLOWING MINIMUM STANDARDS DO NOT APPLY TO THIS DEVELOPMENT: (MS-12) (MS-13) (MS-14) (MS-15). EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

NO DISTURBED AREAS SHALL BE LEFT DENUDED. THE DISTURBED LAND WHERE WORK HAS BEEN COMPLETED WILL BE STABILIZED ON A DAILY BASIS. (MS-1)

ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN SEVEN (7) DAYS SHALL BE SEEDED AND MULCHED FOR TEMPORARY VEGETATION. WHEN NECESSARY TO DE-WATER A TRENCH, THE PUMP DISCHARGE HOSE SHALL BE OUTLETTED INTO A STABILIZED AREA OR SEDIMENT TRAPPING STRUCTURE.

THE CONTRACTOR SHALL MAKE PROVISIONS FOR DUST CONTROL DURING CONSTRUCTION ACTIVITIES. ACCEPTABLE MEASURES FOR DUST CONTROL INCLUDE TEMPORARY VEGETATIVE COVER, MULCHING, TILLAGE, IRRIGATION, SPRAY-ON ADHESIVES, STONE, BARRIERS, AND CALCIUM CHLORIDE. PLEASE SEE STD & SPEC 3.39 OF THE VESCH FOR A DESCRIPTION OF EACH METHOD, AND HOW IT IS USED MOST EFFECTIVELY.

#### STRUCTURAL PRACTICES

TEMPORARY CONSTRUCTION ENTRANCE - 3.02 A TEMPORARY CONSTRUCTION ENTRANCE WITH A WASH RACK SHALL BE INSTALLED ON WASHINGTON STREET ROUTE 55. SEE SHEET 19 FOR CONSTRUCTION ENTRANCE LOCATION. A WATER TANK TRUCK WILL BE USED TO WASH VEHICLES AS THEY LEAVE THE SITE. THE PROPOSED FIRE HYDRANT ON KARTER MANOR DRIVE MAY BE USED ONCE OPERATIONAL. (MS-17)

THE SITE PLAN. (MS-11) TEMPORARY SEDIMENT BASIN/TRAPS - 3.14 TEMPORARY SEDIMENT BASINS WILL BE CONSTRUCTED AS PONDING AREAS TO DETAIN SEDIMENT-LADEN RUNOFF LONG ENOUGH TO ALLOW THE MAJORITY OF THE

OUTLET PROTECTION - 3.18 RIPRAP IS TO BE PLACED AT THE OUTLET OF ALL PIPES AS INDICATED ON

SEDIMENT TO SETTLE OUT. SEE SHEET 18 FOR SEDIMENT BASIN DESIGN. (MS-6) <u>SILT FENCE BARRIER - 3.05</u> SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DOWNSLOPE OF AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW AS INDICATED ON THE SITE

STORM DRAIN INLET PROTECTION — 3.07 ALL STORM SEWER INLETS SHALL BE PROTECTED DURING CONSTRUCTION. SEDIMENT—LADEN WATER SHALL BE FILTERED BEFORE ENTERING THE STORM SEWER INLETS.

 ${10PSOILING-3.30}$  PROVIDE A SUITABLE GROWTH MEDIUM FOR FINAL SITE STABILIZATION WITH VEGETATION. PERIMETER CONTROLS MUST BE PLACED AROUND THE STOCKPILE IMMEDIATELY; SEEDING OF STOCKPILES

SHALL BE COMPLETED WITHIN 7 DAYS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH STD. & SPEC. 3.31 TEMPORARY SEEDING IF IT IS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS. TOPSOIL WILL BE RESPREAD AT AN AVERAGE OF 8 INCHES ACROSS OPEN AREAS ONSITE UNTIL ALL TOPSOIL HAS BEEN USED. THERE WILL BE NO EXCESS MATERIAL AFTER FINAL GRADES ARE ESTABLISHED. (MS-1 & MS-2)

 $\underline{\text{DUST CONTROL}-3.39}$  REDUCING SURFACE AND AIR MOVEMENT OF DUST DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO PREVENT SURFACE AND AIR MOVEMENT OF DUST FROM

EXPOSED SOIL SURFACES. TEMPORARY SEEDING SPECIFICATION - 3.31 ESTABLISHMENT OF TEMPORARY GRADE WITHIN A PERIOD OF MORE THAN 30 DAYS) BY SEEDING AND MULCHING WITH VEGETATIVE COVER ON DISTURBED AREAS (THAT WILL NOT BE BROUGHT TO FINAL FAST GERMINATING TEMPORARY VEGETATION. (MS-1)

PLANT SELECTION - TEMPORARY SEEDING PLANT MATERIALS SHALL BE APPLIED AS LISTED IN THE

<u>TE</u>	EMPORARY SEEDING PLANT MATERIALS	
PLANTING DATES	<u>SPECIES</u>	
SFPT. 1 — FFB. 15	50/50 MIX OF ANNUAL RYEGRASS	RATE (LBS/AC)
	& CEREAL (WINTER RYE)	75
FEB. 16 - APR. 30	ANNUAL RYEGRASS	80
MAY 1 - AUG. 31	GERMAN MILLET	50

<u>SURFACE ROUGHENING</u> — IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FURTHER ROUGHENING IS REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED, OR HARDENED, THE SOIL SURFACE SHALL BE LOOSENED BY DISCING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS (SEE SURFACE ROUGHENING, STD. & SPEC. 3.29 VE&SCH).

SEEDING - SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN ONE INCH DEEP. GRASSES AND LEGUMES SHALL BE PLANTED WITH NO LESS THAN 1/4" SOIL COVER.

RE-SEEDING - AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.

<u>PERMANENT SEEDING SPECIFICATION: 3.32</u> — ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON ROUGH GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE OR WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL. THE PROJECT SITE IS IN THE COASTAL PLAIN REGION OF PRINCE WILLIAM COUNTY THEREFORE PLANT MATERIALS SHOULD BE SELECTED SPECIFICALLY FOR THIS REGION. (MS-3)

PLANT SELECTION - SELECT PLANT MATERIALS BASED ON CLIMATE, TOPOGRAPHY, SOILS, LAND USE, AND PLANTING SEASON. USE THE FOLLOWING TABLE FOR PERMANENT SEEDING REQUIREMENTS:

MINIMAL CARE LAWN	TOTAL LBS/AC.
TALL FESCUE*** OR	175-200 LBS.
BERMUDA GRASS*	75 LBS.
GENERAL SLOPE (3:1 OR LESS) TALL FESCUE***	128 LBS.
RED TOP GRASS SEASONAL NURSE CROP**	2 LBS. <u>20 LBS.</u> 150 LBS.
USE UNHULLED SEED. WEEPING LOW-MAINTENANCE MIX DURING WLBS./AC. IN MIXES  **USE SEASONAL NURSE CROP IN STATED BELOW: FEBRUARY, MARCH THROUGH MAY 1ST THROUGH AUGUST SEPTEMBER, OCTOBER THROU	JLLED SEED. ALL OTHER SEEDING PERIODS, DVEGRASS MAY BE ADDED TO ANY SLOPE OF VARMER SEEDING PERIODS; ADD 10-20  I ACCORDANCE WITH SEEDING DATES AS I APRILANNUAL RYEFOXTAIL MILLET JGH NOVEMBER 15THANNUAL RYE ANUARYWINTER RYE

DD'S STABILIZED WITH FESCUE CANNOT BE USED UNTIL THE GRASS IS ESTABLISHED TO THE SATISFACTION OF THE INSPECTOR.

<u> SEEDBED REQUIREMENTS</u> — VEGETATION SHOULD NOT BE ESTABLISHED ON SLOPES THAT ARE UNSUITABLE DUE TO INAPPROPRIATE SOIL TEXTURE, POOR INTERNAL STRUCTURE OR INTERNAL DRAINAGE, VOLUME OF OVERLAND FLOW, OR EXCESSIVE STEEPNESS, UNTIL MEASURES HAVE BEEN TAKEN TO CORRECT THESE PROBLEMS (SEE STD. & SPEC. 3.32 FOR THESE REQUIREMENTS).

- TOPSOILING SPREAD 4 INCHES OF TOPSOIL ON AREAS IN PREPARATION FOR PERMANENT SEEDING. REMOVE ROOTS AND ROCKS LARGER THAN 1-INCH.
- SOIL CONDITIONERS IF REQUIRED, THE FOLLOWING MATERIALS MAY BE ADDED TO THE SOIL TO IMPROVE STRUCTURE, TEXTURE, OR DRAINAGE CHARACTERISTICS OF THE SOIL: PEAT, SAND, VERMICULITE, RAW MANURE, ROTTED SAWDUST, TREATED SEWAGE SLUDGE. A DESCRIPTION OF THESE MATERIALS AND APPLICATIONS CAN BE FOUND IN STD. & SPEC. 3.32 VE&SCH.
- <u>SOIL TESTS</u> SOIL TESTS SHALL BE MADE TO DETERMINE APPLICATIONS OF LIME AND FERTILIZER. THE TEST RESULTS WILL BE DELIVERED TO THE CONTRACTOR AND COUNTY INSPECTOR NO LATER THAN THE PRE-CONSTRUCTION MEETING.
- INCORPORATION LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4- 6 INCHES OF THE SOIL BY DISCING OR OTHER MEANS WHEREVER POSSIBLE. FOR EROSION CONTROL, WHEN APPLYING LIME AND FERTILIZER WITH A HYDROSEEDER, APPLY TO A ROUGH, LOOSE SURFACE.

SEEDING — CERTIFIED SEED WILL BE USED FOR ALL PERMANENT SEEDING. THE SEED MUST MEET PUBLISHED STATE STANDARDS AND BEAR AN OFFICIAL "CERTIFIED SEED" LABEL. LEGUME SEED SHOULD BE APPROPRIATELY INOCULATED TO THE SPECIES. SEED OF LESPEDEZAS, THE CLOVERS AND CROWNVETCH SHOULD BE SCARIFIED TO PROMOTE UNIFORM GERMINATION, APPLY SEED UNIFORMLY WITH A BROADCAST SEEDER, DRILL, CULTI-PACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED. SEEDING DEPTH

HYDROSEEDING SPECIAL REQUIREMENTS — TO AVOID POOR GERMINATION RATES AS A RESULT OF SEED DAMAGE DURING HYROSEEDING, IT IS RECOMMENDED THAT IF A MACHINERY BREAKDOWN OF 30 MINUTES TO 2 HOURS OCCURS, 50% MORE SEED SHOULD BE ADDED TO THE TANK, BASED ON PROPORTIONS OF THE SLURRY REMAINING IN THE TANK. BEYOND 2 HOURS A BATCH OF NEW SEED MAY BE NECESSARY. IN INACCESSIBLE AREAS, LIME MAY HAVE TO BE APPLIED SEPARATELY IN PELLETIZED OR LIQUID FORM. SURFACE ROUGHENING IS PARTICULARLY IMPORTANT WHEN HYDROSEEDING BECAUSE A ROUGHENED SLOPE WILL PROVIDE SOME NATURAL COVERAGE OF LIME, FERTILIZER, AND SEED. LEGUME INOCULANTS SHOULD BE APPLIED AT FIVE TIMES THE RECOMMENDED RATE WHEN INOCULANT IS INCLUDED IN THE HYDROSEEDER

MULCHING, WATERING, RE-SEEDING - ALL PERMANENT SEEDING MUST BE MULCHED IMMEDIATELY UPON COMPLETION OF SEED APPLICATION (SEE MULCHING STD. & SPEC. 3.35 VE&SCH). NEW SEEDINGS SHOULD BE SUPPLIED WITH ADEQUATE MOISTURE INSPECT SEEDED AREAS FOR LACK OF GERMINATION AND MAKE NECESSARY REPAIRS AND RE-SEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.

MAINTENANCE FERTILIZATION — COOL SEASON GRASSES SHOULD BEGIN TO BE FERTILIZED 90 DAYS AFTER PLANTING TO ENSURE PROPER STAND AND DENSITY. WARM SEASON FERTILIZATION SHOULD BEGIN AT 30 DAYS AFTER PLANTING. SEE STD. & SPEC. 3.32 VE&SCH FOR PROPER MAINTENANCE FERTILIZATION BASED ON SITE CONDITIONS.

SODDING: 3.33 - STABILIZING FINE GRADED AREAS BY ESTABLISHING PERMANENT GRASS STANDS WITH SOD PROVIDES IMMEDIATE PROTECTION AGAINST EROSION AND IS ESPECIALLY EFFECTIVE IN GRASSED SWALES AND WATERWAYS OR IN AREAS WHERE IMMEDIATE AESTHETIC EFFECT IS DESIRABLE.

MULCHING: 3.35 — APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO DISTURBED SURFACES TO PREVENT EROSION AND REDUCE OVERLAND FLOW VELOCITIES FOSTER PLANT GROWTH BY INCREASING AVAILABLE MOISTURE AND PROVIDING INSULATION AGAINST EXTREME HEAT OR COLD. APPLICABLE TO ALL SEEDING OPERATIONS, OTHER PLANT MATERIALS WHICH DO NOT PROVIDE ADEQUATE SOIL PROTECTION BY THEMSELVES, AND BARE AREAS WHICH CANNOT BE SEEDED DUE TO THE SEASON BUT WHICH STILL NEED

SOIL STABILIZATION BLANKETS AND MATTING: 3.36 - THE INSTALLATION OF A PROTECTIVE COVERING (BLANKET) OR A SOIL STABILIZATION MAT ON A PREPARED PLANTING AREA OF A STEEP SLOPE, CHANNEL ÒR SHORÉLINE. BLANKETS AND MATTING SHOULD BE USED TO ESTABLISH VEGETATION ONLY ON SLOPES THAT ARE 3:1 OR STEEPER.

- 1. PERMANENT SEEDING SHALL BE PLACED ON ALL CUT/FILL SLOPES ADJACENT TO THE LIMITS OF CLEARING AND TEMPORARY SEEDING SHALL BE PLACED ON ALL AREAS THAT WILL BE DENUDED FOR MORE THAN 7 DAYS, EXCEPT FOR THAT PORTION IN WHICH WORK WILL BE CONTINUOUS BEYOND 7 DAYS.
- 2. PER VESCH STD. 3.30, PLANTING SOIL MUST HAVE ENOUGH FINES, SUFFICIENT PORE SPACE, DEPTH, AND FREE OF DELETERIOUS MATERIALS TO PROMOTE GROWTH.
- 3. IF THE ENTIRE SITE WILL NOT BE PERMANENTLY STABILIZED BEFORE DECEMBER 1, THE RESPONSIBLE LAND DISTURBER SHALL CONTACT THE COUNTY EROSION AND SEDIMENT CONTROL STAFF TO SCHEDULE A PER-WINTER MEETING TO OCCUR BEFORE OCTOBER 1.

CONSTRUCTION SEQUENCING

SHOULD BE 1/4 TO 1/2 INCH.

CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE. IN PARTICULAR, INSTALLATION OF CONTROLS SHALL FOLLOW THIS ORDER: PHASE I EROSION AND SEDIMENT CONTROL PLAN:

- 1. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH TOWN OF HAYMARKET PRIOR TO ANY WORK BEING PERFORMED ON-SITE.
- 2. A TEMPORARY CONSTRUCTION ENTRANCE WITH A WASH RACK SHALL BE INSTALLED ON WASHINGTON STREET ROUTE 55. SEE SHEET 18 FOR CONSTRUCTION ENTRANCE LOCATION. A WATER TANK TRUCK WILL BE USED TO WASH VEHICLES AS THEY LEAVE THE SITE. THE PROPOSED FIRE HYDRANT ON KARTER MANOR DRIVE MAY BE USED ONCE OPERATIONAL.
- 2. PERFORM MINIMAL CLEARING AND GRUBBING ONLY AS NECESSARY TO INSTALL ALL PERIMETER SEDIMENT CONTROL SILT FENCE. INSTALL INLET PROTECTION, CULVERT INLET PROTECTION AND DIVERSION DIKE, SEDIMENT BASIN AND OUTLET PROTECTION. (MS-4)
- 3. CONTRACTOR SHALL RECEIVE APPROVAL FROM THE SITE INSPECTOR AFTER INSTALLATION OF ALL PHASE I E&S CONTROLS PRIOR TO BEGINNING OF CONSTRUCTION.
- 4. BEGIN ROUGH GRADING, PAVEMENT AND CURB AND GUTTER REMOVAL.
- 5. IF NECESSARY, FIELD ADJUSTMENTS SHALL BE MADE TO PERIMETER CONTROLS TO ACCOMMODATE CHANGING DRAINAGE PATTERNS AND TO FACILITATE POSITIVE DRAINAGE.
- 6. FINISH TOP ROUGH GRADING.
- 7. INSTALLATION OF UTILITIES (STORM, WATER, AND SANITARY) CURB AND GUTTER, PAVEMENT BASE STONE, RETAINING WALLS, AND GUARD RAIL SHALL PROCEED AS FINAL GRADE IS REACHED WITHIN THE SITE. PHASE II EROSION AND SEDIMENT CONTROL PLAN:
- 1. TRANSITION FROM PHASE I TO PHASE II CONTROLS SHALL OCCUR AS FINAL GRADE IS REACHED AND CURB AND GUTTER, PAVEMENT, ETC. ARE IN PLACE.
- 2. PHASE II CONTROLS INCLUDE STORM INLET PROTECTION, CULVERT INLET PROTECTION, SILT FENCE, TEMPORARY SEEDING, MULCHING, AND DUST CONTROL.
- 3. BASE STONE FOR PAVED AREAS SHALL BE PLACED AND COMPACTED UPON A COMPACTED SUBGRADE WITHIN 7 DAYS OF THE SUBGRADE REACHING FINAL GRADE.
- 4. START RE-VEGETATION AS AREAS ARE BROUGHT TO GRADE OR STAND IDLE FOR MORE THAN SEVEN (7)
- 5. STABILIZE AREAS, NOT BUILT UPON OR COVERED BY PAVEMENT, WITH TOP SOIL AND PERMANENT
- 6. CONVERT TEMPORARY SEDIMENT BASIN TO PERMANENT SWM WET POND. REPLACEMENT OF SEDIMENT BASIN WITH PERMANENT FACILITY PERIMETER E&S CONTROLS SHOULD BEGIN AT TIME WHEN COMPLETION OF FINAL GRADING REQUIRES INSTALLATION AND UPSTREAM AREAS HAVE BEEN SUFFICIENTLY VEGETATED AND STABILIZED. SEE SHEET 25 FOR SEDIMENT BASIN CONVERSION NARRATIVE. (MS-1)
- 7. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, WITH PERMISSION OF THE EROSION CONTROL INSPECTOR. (MS-18)MAINTENANCE PROGRAM

DAILY SITE INSPECTION WILL BE REQUIRED AND DAMAGED CONTROLS REPAIRED BY CLOSE OF THAT DAY. INSPECTIONS SHALL ALSO FOLLOW EACH SIGNIFICANT RAINFALL. IN PARTICULAR THE FOLLOWING SHALL BE

- 1. THE SEDIMENT BASINS AND TRAPS WILL BE CHECKED REGULARLY FOR SEDIMENT CLEANOUT.
- 2. THE GRAVEL AND SILT FENCE INLET PROTECTION WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WILL PREVENT DRAINAGE. IF THE GRAVEL IS CLOGGED BY SEDIMENT, IT SHALL BE REMOVED AND CLEANED OR REPLACED.
- 3. THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALFWAY TO THE TOP OF THE BARRIER.
- 4. THE SEEDED AREAS AND CUT AND FILL SLOPES WILL BE CHECKED REGULARLY TO INSURE THAT A GOOD STAND OF VEGETATION IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED. (MS-7) EROSION AND SEDIMENT CONTROL NOTES

1. THE OWNER/DEVELOPER GRANTS THE RIGHT OF ENTRY ONTO THIS PROPERTY TO THE DESIGNATED

WITH THE CODE OF VIRGINIA, EROSION AND SEDIMENT CONTROL LAW. 2. THE OWNER/DEVELOPER MUST NOTIFY TOWN OF HAYMARKET AT LEAST 24 HOURS PRIOR TO THE START

TOWN OF HAYMARKET PERSONNEL FOR THE PURPOSE OF INSPECTING AND MONITORING FOR COMPLIANCE

- OF CONSTRUCTION. CONTROLS. 3. THE CONTRACTOR ONSITE SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL
- EROSION AND SEDIMENT 4. ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE 1992 VIRIGNIA

EROSION & SEDIMENT CONTROL HANDBOOK.

- 5. ALL EROSION CONTROL MEASURES SHOWN ON THE APPROVED PLAN MUST BE IN PLACE AND INSPECTED AND APPROVED BY THE TOWN OF HAYMARKET INSPECTOR PRIOR TO CLEARING, STRIPPING OF TOPSOIL OR GRADING.
- 6. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ONSITE AT ALL TIMES.

- 7. THE SITE SHALL BE CLEARED AND GRUBBED AND UNSUITABLE MATERIAL SHALL BE REMOVED.
- 8. FILL MATERIAL SHALL BE TAKEN FROM APPROVED, ONSITE BORROW AREA WHICH SHALL BE FREE FROM ROOTS, WOODY VEGETATION AND OVERSIZED
- 9. WHEN SEDIMENT IS TRANSPORTED ONTO A PAVED ROAD SURFACE, THE ROAD WILL BE CLEANED THOROUGHLY AT THE END OF EACH DAY ACCORDING TO THE FOLLOWING PROCEDURE: SEDIMENT SHALL BE REMOVED FROM THE ROAD SURFACE BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
- 10. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS. A SUPPLEMENTARY EROSION CONTROL PLAN SHALL BE SUBMITTED AND APPROVED BY TOWN OF HAYMARKET
- 11. CONCENTRATED RUN-OFF SHALL NOT FLOW DOWN CUT AND FILL SLOPES UNLESS CONTAINED IN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, SLOPE DRAIN OR OTHER PERTINENT STRUCTURE. IF WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR PROTECTION SHALL BE PROVIDED. (MS-8.
- 12. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
- a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME: b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES;
- c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAM OR OFF-SITE PROPERTY: d. MATERIAL USED FOR BACK-FILLING TRENCHES SHALL BE COMPACTED TO MINIMIZE EROSION AND PROMOTE STABILIZATION;
- e. RE-STABILIZATION SHALL BE ACCOMPLISHED WITH THESE REGULATIONS; AND f. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH. (MS-16)
- 13. IF THE ENTIRE SITE WILL NOT BE PERMANENTLY STABILIZED BEFORE DECEMBER 1, THE RESPONSIBLE LAND DISTURBER SHALL CONTACT THE COUNTY EROSION AND SEDIMENT CONTROL STAFF TO SCHEDULE A PRE-WINTER MEETING TO OCCUR BEFORE OCTOBER 1.

#### EROSION CONTROL NOTES

- 1. THE OWNER/DEVELOPER MUST NOTIFY THE TOWN OF HAYMARKET AT LEAST 24 HOURS PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH APPLICABLE TOWN AND COUNTY ORDINANCES AND
- 2. THE OWNER/DEVELOPER GRANTS THE RIGHT-OF-ENTRY ON TO THIS PROPERTY TO THE DESIGNATED TOWN OF HAYMARKET PERSONNEL FOR THE PURPOSE OF INSPECTING AND MONITORING FOR COMPLIANCE WITH TITLE 10.01, CHAPTER 5, ARTICLE 4 OF THE CODE OF VIRGINIA, EROSION AND SEDIMENT CONTROL LAW AND THE DESIGN AND CONSTRUCTION STANDARDS MANUAL SECTION 750.04 (C).
- 3. ALL EROSION CONTROL MEASURES SHOWN ON THE APPROVED PLAN MUST BE IN PLACE AND INSPECTED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS PRIOR TO CLEARING, STRIPPING OF TOPSOIL OR
- 4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE KEPT ON THE SITE AT ALL TIMES.
- 5. THE DEVELOPER DEVELOPER'S REPRESENTATIVE IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY PRINCE WILLIAM COUNTY.
- 6. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL COMPLETE AND ADEQUATE STABILIZATION IS ACHIEVED.
- 7. WATER MUST BE PUMPED INTO AN APPROVED FILTERING DEVICE DURING DEWATERING OPERATIONS.
- 8. ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS. THE DEVELOPER/DEVELOPER'S REPRESENTATIVE WILL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES
- 9. THE DEVELOPER/DEVELOPER'S REPRESENTATIVE SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECKED IN
- a. GRAVEL OUTLETS WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WILL PREVENT DRAINAGE. IF THE GRAVEL IS CLOGGED BY SEDIMENT, IT SHALL BE REMOVED AND CLEANED OR
- b. SILT FENCE BARRIERS WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.

LININGS ARE NOT IMPAIRED.ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE

- c. SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED. d. STREAM DIVERSION AND STORM CONVEYANCE CHANNELS SHALL BE INSPECTED DAILY AND AFTER EACH RAIN TO ENSURE THEY'RE FUNCTIONING PROPERLY AND THAT THE INTEGRITY OF THE
- EFFECTIVENESS OF THE EROSION CONTROL DEVICES MUST BE MADE IMMEDIATELY AFTER THE 10. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE
- 11. PERMANENT SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.
- 12. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN FOURTEEN
- 13. SEEDING AND SELECTION OF THE SEED MIXTURE SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK STANDARD AND SPECIFICATION 3.32.
- 14. ROADS AND PARKING AREAS SHALL BE STABILIZED WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS
- 15. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE REMOVED WITHIN 30 DAYS AFTER ADEQUATE SITE STABILIZATION AND AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, AS AUTHORIZED BY THE PRINCE WILLIAM COUNTY INSPECTORS. TRAPPED SEDIMENT AND TH DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES WILL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- 16. WHEN SEDIMENT IS TRANSPORTED ONTO A PAVED ROAD SURFACE. THE ROAD WILL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT WILL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
- 17. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC. 18. TREE SAVE AREAS SHALL BE CLEARLY MARKED IN THE FIELD BY ORANGE SAFETY FENCE.
- 19. ORANGE SAFETY FENCE MUST BE INSTALLED AROUND ALL SILT TRAPS AND SEDIMENT BASINS. 20. GEOTECHNICAL RECOMMENDATIONS FOR THE PHASE I EROSION AND SEDIMENT CONTROL PLAN ARE TO BE SUBMITTED UNDER SEPARATE COVER.
- 21. A PRE-CONSTRUCTION MEETING IS TO BE USED PRIOR TO COMMENCEMENT OF CONSTRUCTION. 22. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE NECESSARY TO BE INSTALLED UPON
- THE DISCRETION OF THE TOWN OF HAYMARKET INSPECTORS DURING CONSTRUCTION. 23. ALL EROSION AND SEDIMENT CONTROL MEASURE ON PHASE I SHALL REMAIN THROUGH THE DURATION OF PHASE II CONSTRUCTION. SEDIMENT CONTROLLING DEVICES MAY BE MODIFIED AS GRADING 24 PROGRESSES WITH THE TOWN OF HAYMARKET APPROVAL.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WITH APPROVAL FROM TOWN OF HAYMARKET INSPECTORS.

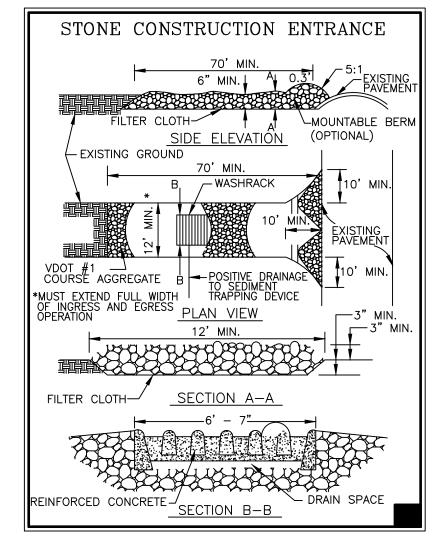
EROSION AND SEDIMENT CONTROL POLLUTANT DISCHARGE NOTES:

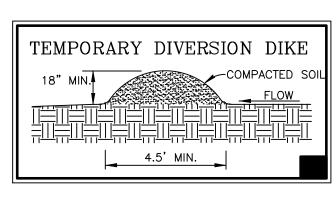
1. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER AND OTHER WASH WATERS;

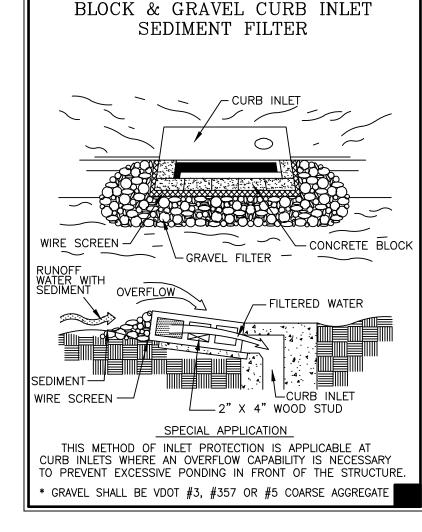
2. MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER

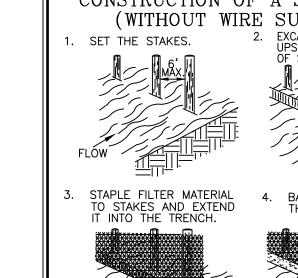
- MATERIALS PRESENT ON-SITE TO PRECIPITATION AND TO STORMWATER; 3. PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT OF CONCRETE;
- 4. PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS; AND
- 5. PROHIBIT THE DISCHARGE OF FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.

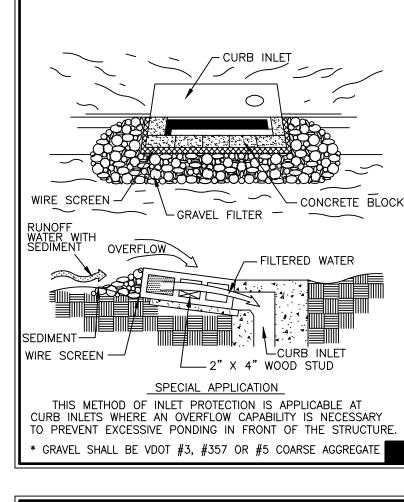
MINIMUM STANDARDS CHECKLIST Yes No N/A  $^{m X}$   $^{--}$  MS-1 Have temporary and permanent stabilization been addressed in narrative? X — Are practices shown on the plan? \_X \_\_\_ Seed specifications? \_X \_\_\_ Mulching? \_X \_\_\_ Gravel?  $X \longrightarrow MS-2$  Has stabilization of soil stockpiles been addressed? Are sediment trapping measures provided? \_X \_\_\_ MS—3 Has maintenance of permanent stabilization been addressed? X — MS-4 Are sediment trapping facilities to be constructed as a first step Has maintenance of practices been addressed? (I.E. repair of structures and removal of accumulated sediment) <u>X</u> \_\_\_ MS-5 Has stabilization of earthen structures been addressed? X = MS-6 Are sediment traps/basins required where needed? X \_\_\_ MS-7 Has stabilization of cut and fill slopes been adequately addressed? X \_\_\_ MS-8 Are paved flumes, channels, or slope drains required where necessary? X \_\_\_ MS-9 Have water seeps from slope face, adequate drainage or other protection addressed? \_X \_\_\_ MS-10 Is adequate inlet protection required on all operation storm sewer inlets? X \_\_\_ MS-11 Are channel lining and/or outlet protection required on stormwater conveyance channels? \_\_\_\_\_X\_MS-12 Are in-stream construction measures required so that channel damage is minimized? \_\_\_\_ \_X MS-13 Are temporary stream crossings of non-erodible material required where necessary? \_\_\_\_ <u>X</u> MS—14 Are all applicable federal, state and local regulations pertaining to working in or crossing live watercourses being met? \_\_\_\_ \_X\_ MS-15 Has re-stabilization of areas subject to in-stream construction been adequately addressed? X \_\_\_ MS-16 Has stabilization of utility trenches been addressed? X \_\_\_ MS—17 Has the prevention of transporting of soil and mud onto public roadways been adequatel addressed? (i.e. Construction Entrances, Wash Racks, daily cleaning of roadways, transport of sediment to a trapping facility) X \_\_\_ MS-18 Has the removal of temporary practices been addressed? \_X \_\_\_ MS-19 Are properties and waterways downstream from the development adequately protected from erosion and sediment deposition due to increases in peak stormwater runoff?

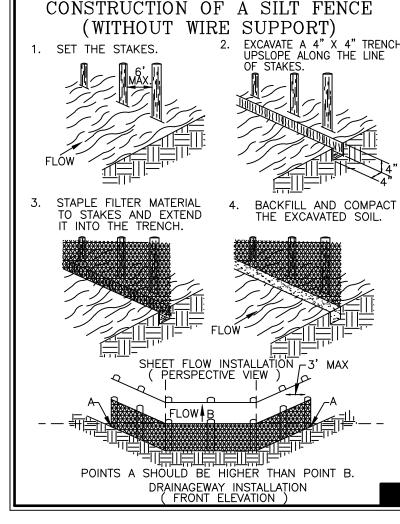












ENGINEERING GROUPE PROJECT STATUS

0/02/20 REVISED PER TOWN COMMENTS

DATE: JULY, 2020 SCALE: **N/A** 

SHEET **17** OF **41** 

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DENAR H. C. ANTELO Lic. No. 38680 9/4/2020

DESIGNER: **CF,SO,MP** DRAFTSMAN: **ZEF,DP,MP** FILE NO. **SP-393** 

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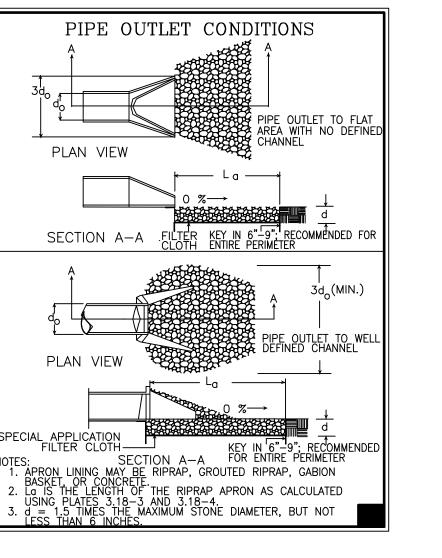
AND

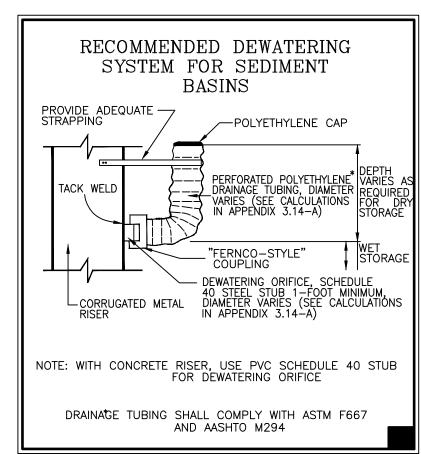
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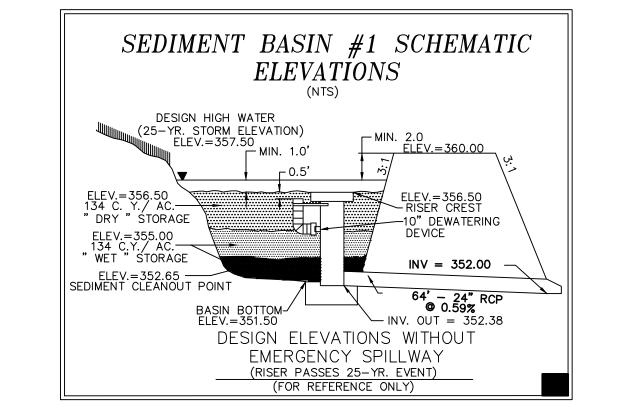
CONTROL

SEDIMENT

SHEET 18 OF 41







#### TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET

PROJECT Robinson Village

BASIN# 1

TOTAL AREA DRAINING TO BASIN:

BASIN VOLUME DESIGN

#### WET STORAGE:

MINIMUM REQUIRED VOLUME = 67 CU. YDS. X TOTAL DRAINAGE AREA (ACRES) 67 CU. YDS/AC. x 7.33 ACRES. = 491.11 CU. YDS.

7.33 ACRES.

2. AVAILABLE BASIN VOLUME = 1047.61 CU. YDS. AT ELEVATION - 355.00 3. EXCAVATE 1048 CU. YDS. TO OBTAIN REQUIRED VOLUME\*.

\* ELEVATION CORRESPONDING TO REQUIRED VOLUME = INVERT OF THE DEWATERING ORIFICE

4. AVAILABLE VOLUME BEFORE CLEANOUT REQUIRED.

33.5 CU. YDS/AC. x 7.33 ACRES. = 245.56 CU. YDS. 5. ELEVATION CORRESPONDING TO CLEANOUT LEVEL = 352.65 FT.

6. DISTANCE FROM INVERT OF THE DEWATERING ORIFICE TO CLEANOUT LEVEL = 2.35 FT.

#### DRY STORAGE:

MINIMUM REQUIRED VOLUME = 67 CU. YDS. X TOTAL DRAINAGE AREA (ACRES) 67 CU. YDS/AC. x 7.33 ACRES. = 491.11 CU. YDS. 8. TOTAL AVAILABLE BASIN VOLUME AT CREST OF RISER\* = 1763.33 CU. YDS. AT ELEVATION - 356.50 \* MINIMUM = 134 CU. YDS./ACRE OF TOTAL DRAINAGE AREA. = 1538.72 CU. YDS.

9. DIAMETER OF DEWATERING ORIFICE = 10 IN. 10. DIAMETER OF FLEXIBLE TUBING = 12 IN.

PRELIMINARY DESIGN ELEVATIONS

11. CREST OF RISER = 356.50 TOP OF DAM = DESIGN OF HIGH WATER = 357.50 UPSTREAM TOE OF DAM = 351.50

BASIN SHAPE

12. <u>LENGTH OF FLOW</u> EFFECTIVE WIDTH 41.89090909 L/We = 6.6 FT.

BAFFLE NOT REQUIRED

Q2 = 12.47 CFS  $(Q = CIA = 0.35 \times 4.86 \times 7.33Ac)$ Q25 = 18.82 CFS (Q = CIA =  $0.35 \times 7.33 \times 7.33 \text{Ac}$ )

#### PRINCIPAL SPILLWAY DESIGN

15. WITH EMERGENCY SPILLWAY, REQUIRED SPILLWAY CAPACITY Qp = Q2 = 12.47 CFS. 16. WITHOUT EMERGENCY SPILLWAY, REQUIRED SPILLWAY CAPACITY Qp = Q25 = 18.82 CFS.

ASSUMED AVAILABLE HEAD (h) = 1 FT. (USING Q25) h = DESIGN HIGH WATER ELEVATION - CREST OF RISER ELEVATION = 357.50-356.50

17. RISER DIAMETER (Dr) = N/A" ACTUAL HEAD (h) = 1.00 FT

(FROM PLATE 3.14-8) NOTE: AVOID ORIFICE FLOW CONDITIONS.

18. BARREL LENGTH (L) = 64.00 FT HEAD (H) ON BARREL THROUGH EMBANKMENT =

19. BARREL DIAMETER = 24" CMP (FROM TABLE 3.14-B [CONCRETE PIPE]) (FROM TABLE 3.14-A [METAL PIPE])

20. TRASH RACK AND ANTI-VORTEX DEVICE DIAMETER = N/A HEIGHT = N/A

## (FROM TABLE 3.14-D)

EMERGENCY SPILLWAY DESIGN N/A

22. N/A (FROM TABLE 3.14-C)

ANTI-SEEP COLLAR DESIGN N/A

23. DEPTH OF WATER AT PRINCIPAL SPILLWAY CREST (Y) = 5 FT

3 FT PER 1 FT VERTICAL SLOPE OF UPSTREAM FACE OF EMBANKMENT (Z) = SLOPE OF PRINCIPAL SPILLWAY BARREL (Sb) = 0.0059 35.8 FT LENGTH OF BARREL IN SATURATED ZONE (Ls) =

24. NUMBER OF COLLARS REQUIRED = COLLAR SIZE = 4.25'x 4.25'

(FROM PLATE 3.14-12)

FINAL DESIGN ELEVATIONS 25. TOP OF DAM

360.00 DESIGN HIGH WATER 357.50 EMERGENCY SPILLWAY 356.50 PRINCIPAL SPILLWAY CREST DEWATERING ORIFICE INVERT 355.00 CLEANOUT ELEVATION 352.65 UPSTREAM TOE OF DAM 351.50

SOURCE: VA EROSION AND SEDIMENT CONTROL HANDBOOK, 1 \* SEE SHEET 25 FOR RISER AND TRASH RACK DETAILS

> Stage-Storage Stage-Storage: Conic Approximation Method

	PROJECT:		Robinson Villa			
	ENGINEER / DA	ATE:				
ı			T4.1	T-4-1	T-4-1	1
	Devation	Area	Incremental Volume	Total Volume	Total Volume	
	(Feet)	(Acres)	(acre-feet)	(acre-feet)	(cubic-feet)	(Cubic-Y
5.00	351.50	0.107	0.000	0.000	0	0
0.00	352.00	0.137	0.061	0.061	2,650	98

	Devation	Area	Volume	Volume	Volume	
(SqFt)	(Feet)	(Acres)	(acre-feet)	(acre-feet)	(cubic-feet)	(Cubic-Yard
4,665.00	351.50	0.107	0.000	0.000	0	0
5,960.00	352.00	0.137	0.061	0.061	2,650	98
9,375.00	354.00	0.215	0.349	0.410	17,856	661
11,520.00	355.00	0.264	0.239	0.649	28, 285	1,048
13,352.00	356.00	0.307	0.285	0.935	40,710	1,508
17,129.00	358.00	0.393	0.698	1.633	71,113	2,634
21,173.00	360.00	0.486	0.878	2.510	109,343	4,050

Diameter of dewatering orifice:

d\*=

 $A = (Q)/(((64.32 \times .5h)^{.5})(.6))$ A = flow area of orifice  $d = 2 \times ((A/3.14)^{.5})$ d = diameter of circular orifice

h=head= 356.50 - 355.00 Q = = 1.50 0.53 S = total storage available in dry storage = 1,763.33 cu. yds A = 0.82 feet Q = S/21,600 sec. d\*=

\* minimum of 3"

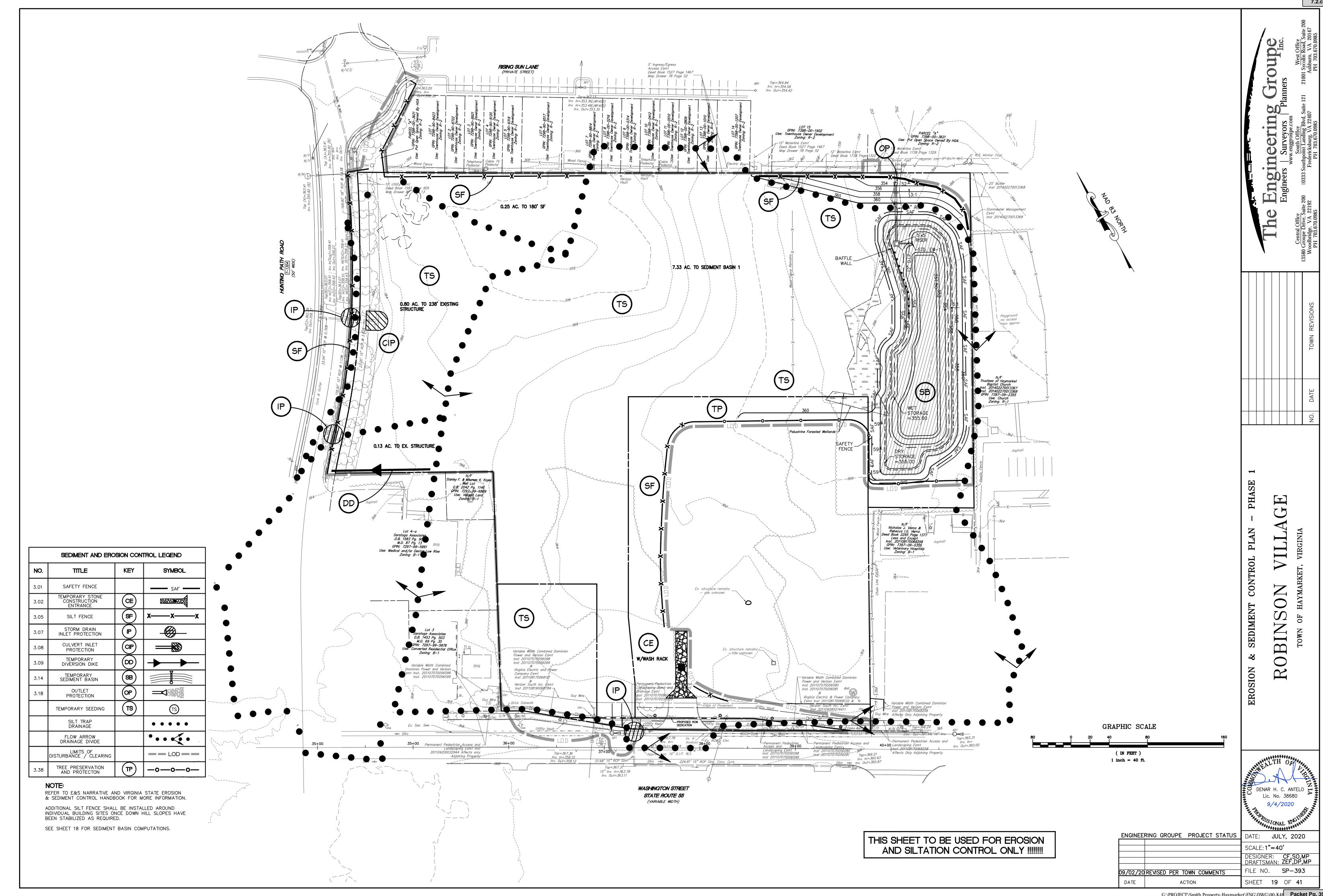
10 " diameter dewatering orifice will be used. Therefore a

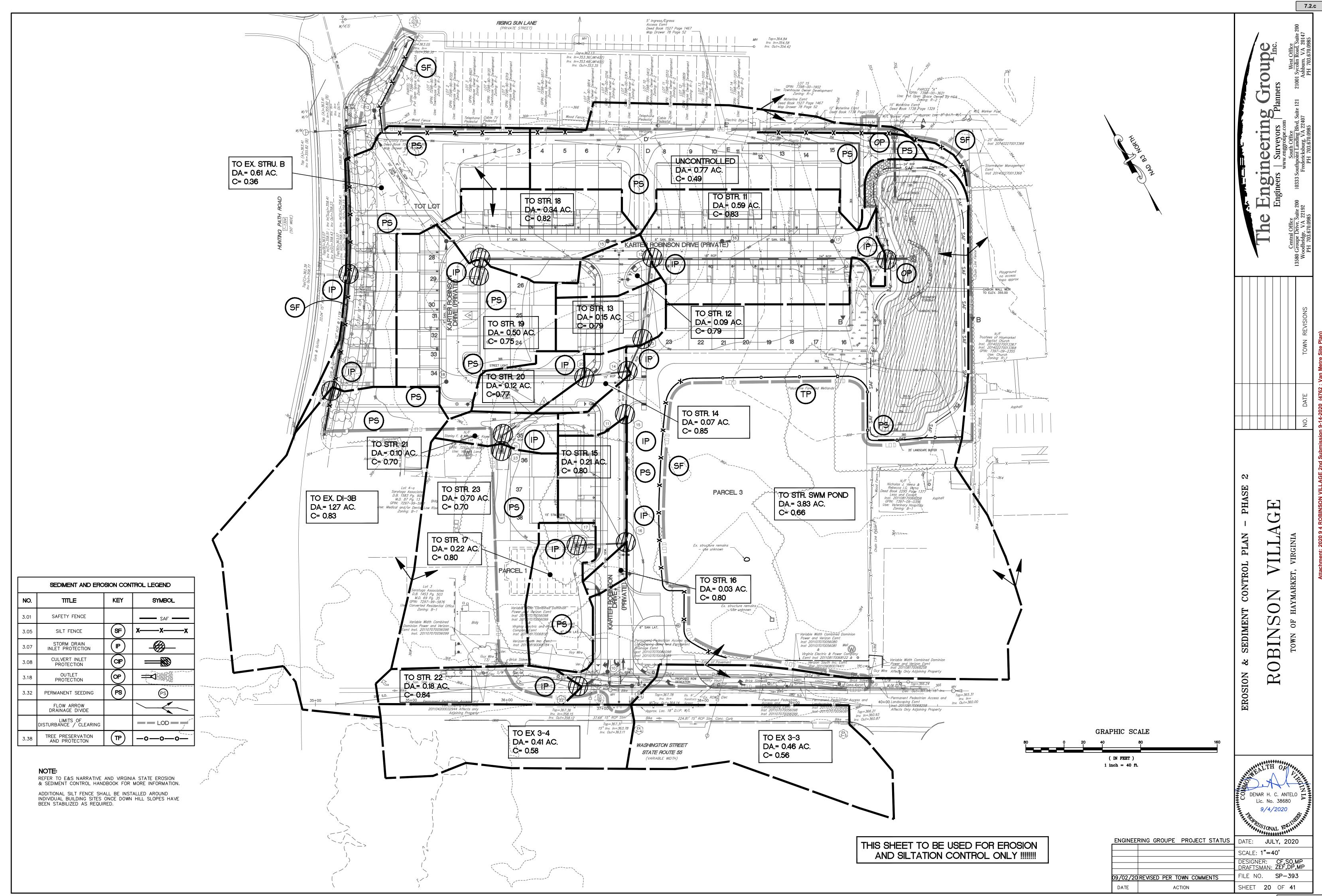
10 inches

	Page of	PPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPP
ENGINEERING GROUPE PROJECT STATUS	DATE:	JULY, 2020
	SCALE:	N/A
	DESIGNE DRAFTSN	R: <b>CF,SO,M</b> P MAN: <b>ZEF,DP,M</b> P
09/02/20 REVISED PER TOWN COMMENTS	FILE NO	. SP-393

ACTION

N/A





SHEET **21** OF **41** 

ACTION

Sub-Area Identifier	Land Use			Hydrologic Soil Group	Sub-Area Area (ac)	Curve Numbe:
Open	space; grass cover : space; grass cover : parking lots, roofs	→ 75%	(good)		2.287 4.025 .843	61 74 98

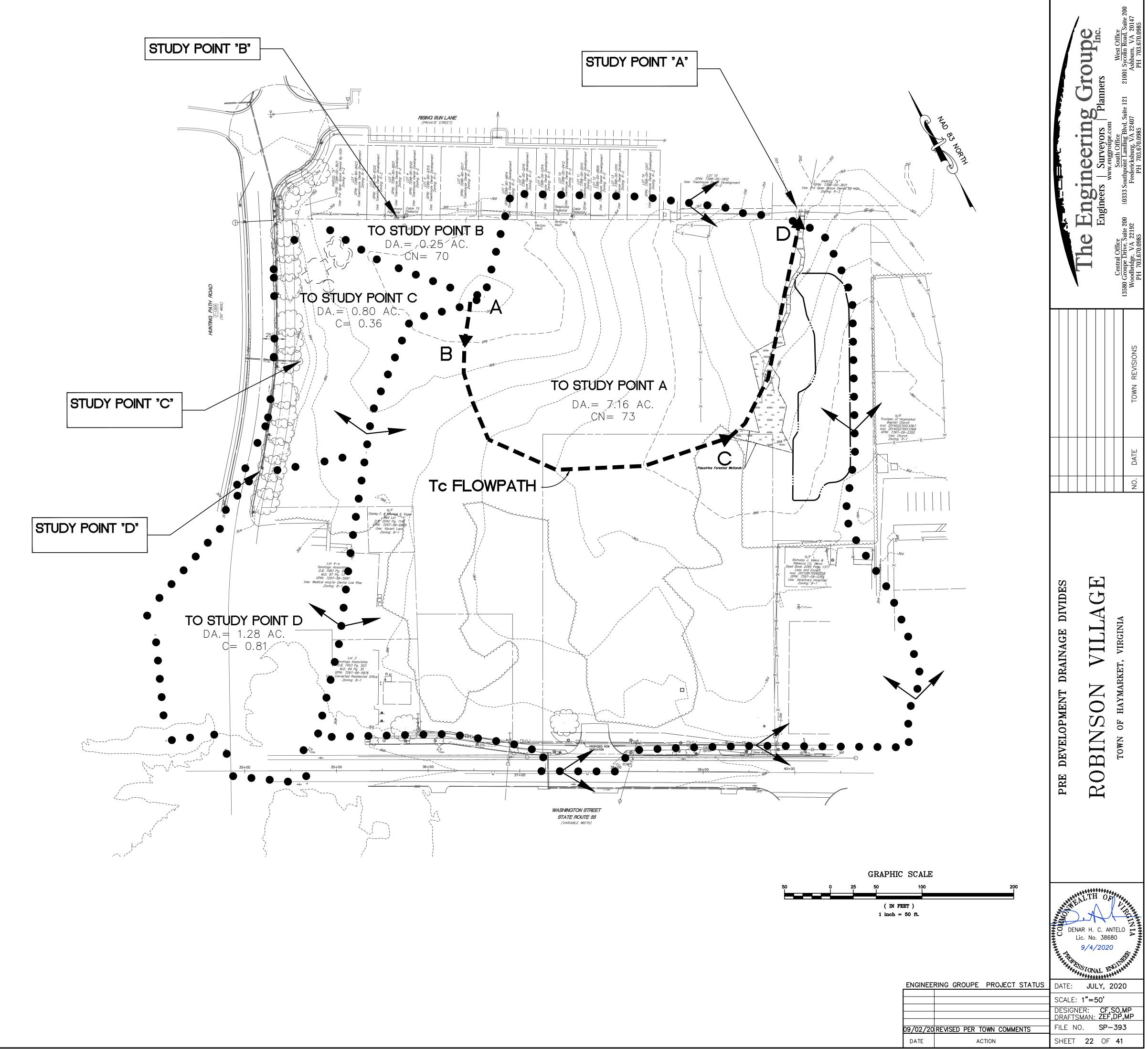
7.16 73 ==== ==

#### SCS TIME OF CONCENTRATION (Tc)

Total Area / Weighted Curve Number

Prince William NOAA\_C County, Virginia
Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
PRE STUDY1							
SHEET	50	0.0600	0.800				0.238
SHALLOW	365	0.0280	0.050				0.038
CHANNEL	249					3.500	0.020
				Ti	me of Concer	ntration	0.296



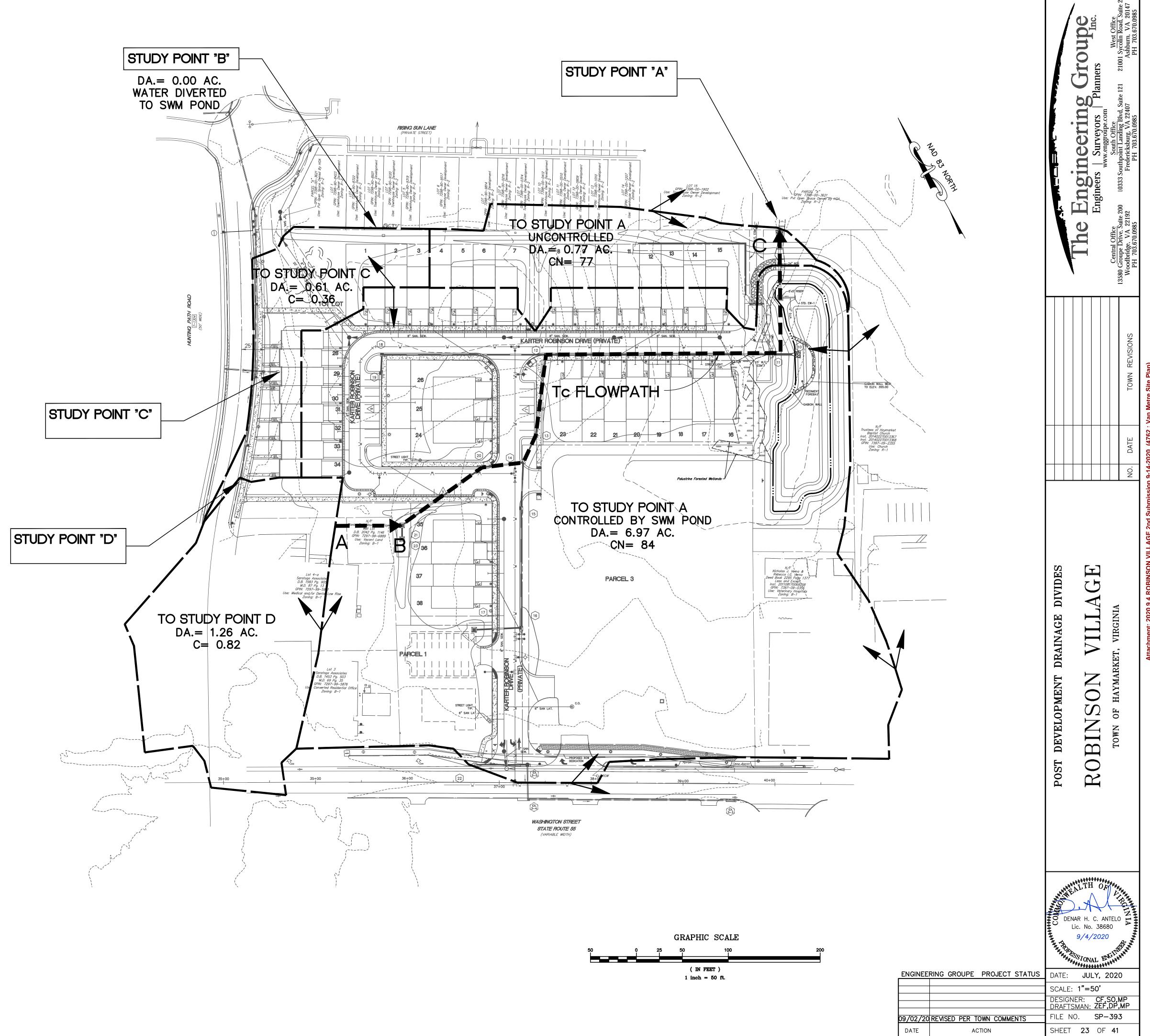
Sub-Area Identifie	r Land Use	 Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
SP.A.UNC.	Open space; grass cover > 75% Open space; grass cover > 75% Paved parking lots, roofs, driveways Paved parking lots, roofs, driveways	. –	.119 .476 .026 .148	61 74 98 98
	Total Area / Weighted Curve Number		.77 ===	77 ==
SP.A.POND	Open space; grass cover > 75% Open space; grass cover > 75% Paved parking lots, roofs, driveways Paved parking lots, roofs, driveways		1.097 2.32 1.218 2.338	61 74 98 98
	Total Area / Weighted Curve Number		6.97	84

#### SCS Time of Concentration (Tc)

Prince William NOAA\_C County, Virginia

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Trave Time (hr)
POST DEV SHEET CHANNEL	71 731	0.0230	0.240			10.000	0.17
				Ti	me of Conce	ntration	.19



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The plan for implementing pollution prevention measures during construction activities developed on this sheet must be implemented and updated as necessary. Any PPP requirements not included on this sheet must be incorporated into the SWPPP required by 9VAC25-870-54 that must be developed before land disturbance commences. This PPP identifies potential sources of pollutants that may reasonable be expected to affect the quality stormwater discharges from the construction site (both on- and off-site activities) and describes control measures that will be used to minimize pollutants in stormwater discharges from the construction site.

#### OTHER REFERENCED PLANS

SWPPP requirements may be fulfilled by incorporating, by reference, other plans. All plans incorporated by reference become enforceable under the VSMP Permit Regulations and General Permit VAR10 for Discharges of Stormwater from Construction Activities. If a plan incorporated by reference does not contain all of the required elements of the PPP, the operator must develop the missing elements and include them in the SWPPP.

Independent Plans Incorporated by Reference	Date Approved
Stormwater Management Plans (Regional or Master)	N/A
Erosion and Sediment - Control Plans	N/A
Off-Site Stockpile	N/A
Off-Site Borrow Area	N/A
	,

#### **POTENTIAL POLLUTANT SOURCES**

The following sources of potential pollutants must be addressed in the Pollution Prevention Plan. Various controls and/or measures designed to prevent and/or minimize pollutants in stormwater discharges from the project site must be applied to the sources found on the site. Additional information concerning the following controls and/or measures may be found in the SWPPP. Deviations from the location criteria may be approved by the Town of Haymarket.

#### LEAKS, SPILLS, AND OTHER RELEASES

- ✓ The operator(s) shall ensure procedures are in place to prevent and respond to all leaks, spills and other releases of pollutants.
- ✓ The operator(s) shall ensure all leaks, spills and other releases of pollutant are contained and cleaned immediately upon discovery. Any contaminated materials are to be disposed in accordance with federal, state, and/or local requirements.
- ✓ The operator(s) shall ensure spill containment kits containing appropriate materials (e.g., absorbent material and pads, brooms, gloves, sand, etc.) are available at appropriate locations, including, but not limited to: designated areas for vehicle and equipment maintenance; vehicle and equipment fueling; storage and disposal of construction materials, products, and waste; and storage and disposal of hazardous and toxic materials; and sanitary waste facilities.
- ✓ The locations of the spill containment kits are identified as described below:

Date	Shown on Plan Sheet #(s)	Location	
Approved Plan	24	SPILL KIT	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location	Operator(s) Initials

√ The operator(s) shall notify the Department of Environmental Quality (DEQ) of leaks, spills, and other releases that discharge to or have the potential to discharge to surface waters immediately upon discovery of the discharge but in no case later than 24 after the discovery. Written notice of the discharge must be sent to DEQ and Prince William County Department of Public Works within five (5) days of the

Virginia Department of Environmenta	al C	)ua
Northern Regional Office		
(703) 583-3800 (voice)		
(703)-583-3821 (fax)		
Website:		

http://www.deq.virginia.gov/Programs/Pollution ResponsePreparedness/MakingaReport.aspx For emergencies

1-800-468-8892 (outside normal working hours)

area(s) are located.

1 County Complex Court Prince William, Virginia 22192 703-792-6800 703-792-6813 (outside normal working hours)

PW County Department of Fire & Rescue

#### **EQUIPMENT / VEHICLE WASHING**

- ✓ Washing must be conducted in a dedicated area that is located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- ✓ All wash water used in vehicle wheel washing must be directed to a sediment
- ✓ All vehicle washing activities other than wheel washing must have secondary
- ✓ Each facility must have appropriate signage to inform users where the dedicated.

Activity	Location of Dedicated Area(s)	Shown on Plan Sheet #(s)	Water Sou Location	
Wheel Wash		24		
Other Wash Areas				
	REVISIO	NS TO LOCA	ATIONS	
Activity	Location of	Shown on Plan	Water Source	Operator's

### **VEHICLE FUELING AND MAINTENANCE**

- ✓ Conduct regular maintenance in a dedicated area that is located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- ✓ If fueling is conducted at a **dedicated** area, the location must be located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but
- no less than 50 feet from those features. √ The dedicated areas must be designed to eliminate the discharge of spilled and. leaked fuels and chemicals from vehicle fueling and maintenance activities by
- providing secondary containment (spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available).
- ✓ Each facility must have appropriate signage to inform users where the dedicated. area(s) are located.

VEHICLE FUELING AND MAINTENANCE CELL

Date	Shown on Plan Sheet #(s)	Location of <i>Dedicated Area(s)</i>	
Approved Plan			
		REVISIONS TO LOCATIONS	
Date	Shown on Plan	Location of <b>Dedicated Area(s)</b>	Operator's

- ✓ If mobile fueling will be used, the fueling must be done in an area that is located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- ✓ Spill kits must be readily available at all mobile fueling locations.
- ✓ On-site storage tanks must have a means of secondary containment (spill berms, decks, spill containment pallets, etc.) and must be covered where appropriate.
- ✓ All vehicles on site must be monitored for leaks and receive regular preventive. maintenance to reduce the chance of leakage.

#### DISCHARGE FROM STORAGE, HANDLING, AND DISPOSAL OF CONSTRUCTION PRODUCTS, MATERIALS, AND WASTE

- ✓ Storage of construction products, materials, and waste is to be conducted in
- dedicated areas. √ The dedicated area must be located to maximize the distance from storm drain. inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features. Separations of less than 50 feet may be approved by the Public Works Site
- ✓ The **dedicated areas** must be designed to minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete and other trash or building
- ✓ Each facility must have appropriate signage to inform users where the *dedicated* area(s) are located.

Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for waste from construction products and materials					
Approved Plan							
		REVISIONS TO LOCATIONS					
Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for waste from construction products and materials	Operator(s) Initials				
	24	STORAGE CELL AREA					

- ✓ Follow all federal, state, and local requirements that apply to the use, handling and disposal of pesticides, herbicides, and fertilizers.
- √ Keep chemicals on-site in small quantities and in closed, well marked containers.
- ✓ Clean up solid waste, including building materials, garbage, and debris on a daily basis and deposit into covered dumpsters that are periodically emptied.
- ✓ Schedule waste collection to prevent exceeding the capacity of onsite containers. Additional containers may be necessary depending on the phase of construction (e.g., demolition, etc.)
- ✓ Dispose of all solid waste at an authorized disposal site.
- ✓ Ensure that containers have lids or are otherwise protected from exposure to

#### DISCHARGES FROM OTHER POTENTIAL POLLUTANT SOURCES

✓ Discharges from other pollutant sources (e.g., water line flushing, storm sewer flushing, above ground storage tanks, etc.) not mentioned elsewhere must be addressed.

Other Potential Pollutant Sources	Location(s) of Potential Pollutant Sources

- √ Above ground oil storage tanks with a storage capacity exceeding 1,320 gallons and have a reasonable expectation of a discharge into or upon Waters of the United States are required to have a Spill Prevention Control and Countermeasure (SPCC)
- √ The discharge of contaminated flush water and material removed during flushing. operations must be collected and disposed of in accordance with appropriate federal, state, and local requirements.

## DISCHARGES FROM CONCRETE RELATED

Location of Dedicated Area(s)

- ✓ Concrete trucks are not allowed to wash out or discharge surplus concrete or drum wash water on site except in a dedicated area(s) that is located to prevent discharge to storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- ✓ Each facility must have a stabilized access to prevent mud tracking into the street. ✓ Each facility must have appropriate signage to inform users where the *dedicated*

Shown on

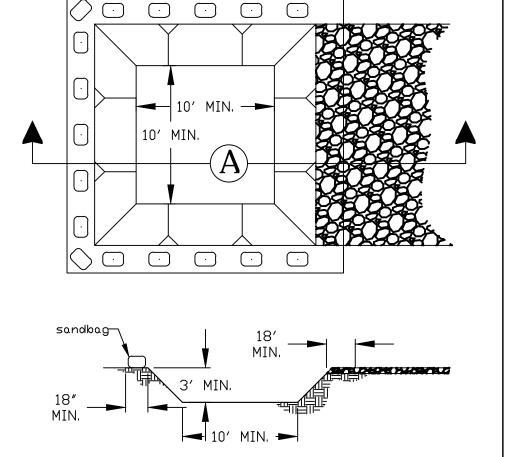
Plan

WASH ACTIVITIES

	Oneer m(s)		
Approved Plan			
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location of <i>Dedicated Area(s)</i>	Operator's Initials
	24	CONCRETE WASHOUT	

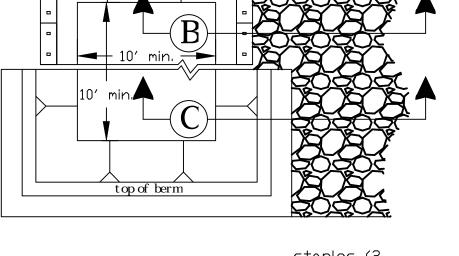
 Facilities must be cleaned, or new facilities constructed, once the washout area is two-thirds (2/3) full.

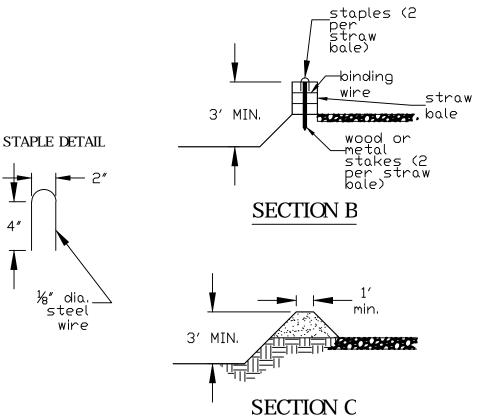
## BELOW GRADE CONCRETE WASHOUT AREA



# ABOVE GRADE CONCRETE WASHOUT AREA

SECTION A





## **CONCRETE WASHOUT AREA NOTES**

- The facility must be lined with 10 mil plastic lining that is free from holes, tears, or
- other defects that might compromise the material's impermeability. The lining must be anchored with staples (2' spacing) or sandbags.
- Side slopes must be 1:1 (horizontal:vertical) or flatter. Stone access must be provided between the street and the concrete washout area.
- A "Concrete Washout" sign must be installed within 30 feet of the washout facility. The sign must be no smaller than 2' tall by 4' wide.

#### DISCHARGES OF SOAPS, DETERGENTS, SOLVENTS, AND WASH WATER FROM CONSTRUCTION ACTIVITIES SUCH AS CLEANUP OF STUCCO, PAINT, FORM RELEASE OILS, AND CURING COMPOUNDS

- ✓ Washing activities associated with construction activities other than vehicle and equipment washing, such as clean up of stucco, paint, form release oils, and curing compounds are to be conducted in a dedicated area.
- √ The dedicated area must be located to maximize the distance from storm drain. inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features. Separations of less than 50 feet may be approved by the Public Works Site
- The dedicated areas must be designed to provent the discharge of s

⊣ne <i>aeaicatea a</i>	<i>areas</i> n	nust be	designed	to	prevent	the	discharge	of	soaps,	
detergents, solven	its, and s	wash wa	ter.							
9	,									
I Shown o	nn l									

Date	Plan Sheet #(s)	Location(s) of <b>Dedicated Area</b>	's)
Approved Plan			
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b>	Operator(s) Initials
	24	MISC. DISCHARGE CELLS	

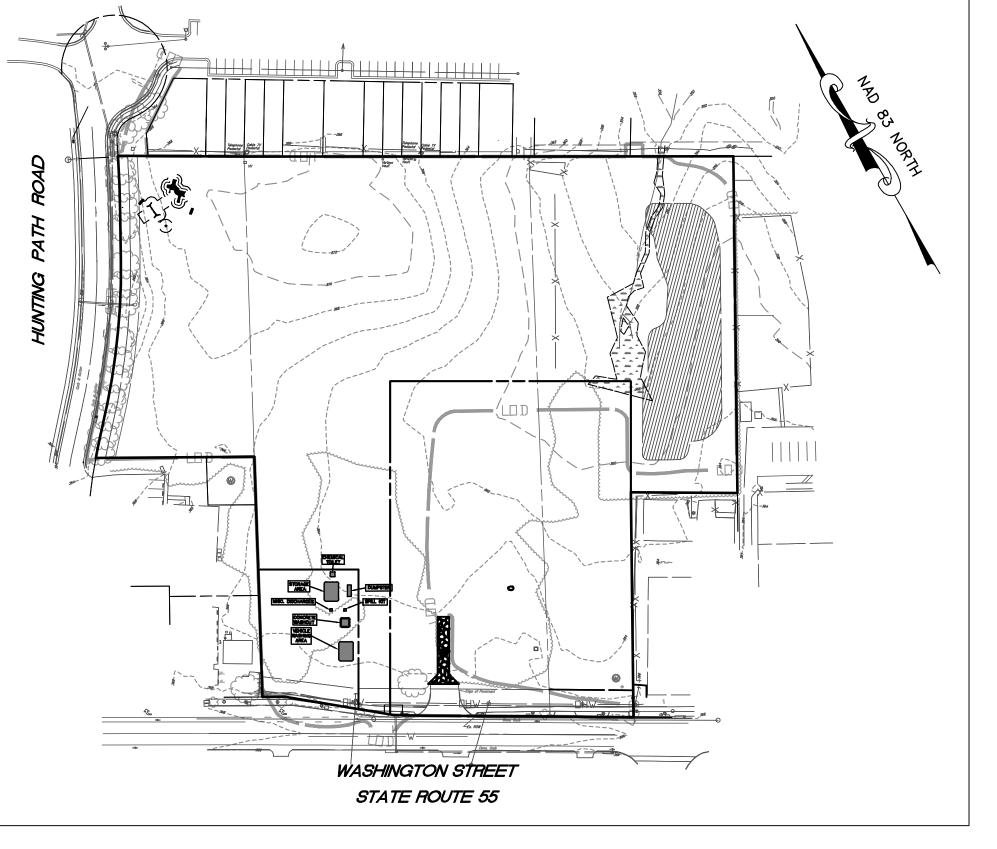
- ✓ The *dedicated area* must be covered (e.g., plastic sheeting, temporary roof, etc.) to prevent contact with stormwater.
- √ The contaminated wastewater from the dedicated area must be collected for disposal by a waste hauler or discharged to the sanitary sewer.

#### DISCHARGES OF HAZARDOUS, TOXIC, AND SANITARY WASTE

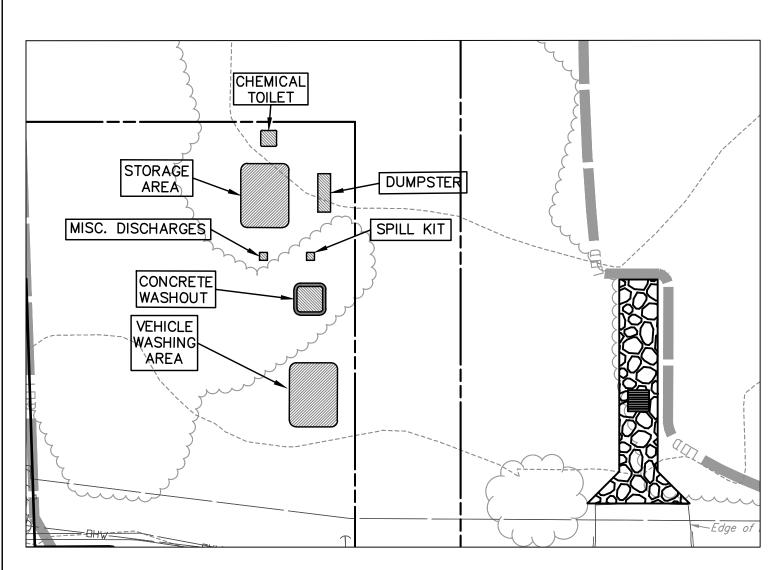
- ✓ Storage and disposal of hazardous, toxic and sanitary wastes are to be conducted in dedicated areas.
- ✓ The **dedicated areas** must be located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features. Separations of less than 50 feet may be approved by the Public Works Site
- ✓ The *dedicated areas* must be designed to prevent the discharge of hazardous, toxic and sanitary waste by avoiding contact with precipitation
- ✓ Each facility must have appropriate signage to inform users where the *dedicated* area(s) are located.

Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for storage an hazardous and toxic wastes	d disposal of
Approved Plan			
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for storage and disposal of hazardous and toxic wastes	Operator(s) Initials
	24	MISC. DISCHARGE CELLS	

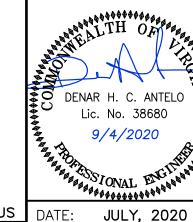
- ✓ Consult with local waste management authorities or private firms about the requirements for disposing of hazardous materials and/or soils that may be contaminated with hazardous materials.
- √ Never remove the original product label from the container. Follow the
- manufacturer's recommended method of disposal.
- ✓ Schedule periodic pumping of portable toilets and dispose of waste
- ✓ Dispose of all solid waste at an authorized disposal site.



SCALE: 1' = 100'



SCALE: 1' = 30'



PLAN

TION

PREV

M M

ENGINEERING GROUPE PROJECT STATUS

SCALE: **AS SHOWN** 09/02/20 REVISED PER TOWN COMMENTS FILE NO. **SP-393** SHEET **24** OF **41** 

G:\PROJECT\Smith Property-Haymarket\ENG\DWG\00-K5100 POLLUTION PRE Packet Pg. 44

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oupe.

DETAILS

FILE NO. **SP-393** 09/02/20 REVISED PER TOWN COMMENTS SHEET **25** OF **41** 

## MAINTENANCE NOTES

#### **Maintenance Inspections**

Maintenance of a wet pond is driven by annual inspections that evaluate the condition and performance of the pond, including the following:

- Measure sediment accumulation levels in the forebay.
- Monitor the growth of wetland plants, trees and shrubs planted. Record the species and their approximate coverage, and note the presence of any invasive plant species. • Inspect the condition of stormwater inlets to the pond for material damage, erosion or
- undercutting. • Inspect the banks of upstream and downstream channels for evidence of sloughing, animal burrows, boggy areas, woody growth, or gully erosion that may undermine embankment
- Inspect the pond outfall channel for erosion, undercutting, rip-rap displacement, woody growth, etc.
- Inspect the condition of the principal spillway and riser for evidence of spalling, joint failure, leakage, corrosion, etc.
- Inspect the condition of all trash racks, reverse-sloped pipes, or flashboard risers for evidence
- of clogging, leakage, debris accumulation, etc. • Inspect maintenance access to ensure it is free of woody vegetation, and check to see whether
- valves, manholes and locks can be opened and operated. • Inspect internal and external side slopes of the pond for evidence of sparse vegetative cover,
- erosion, or slumping, and make needed repairs immediately.

Based on inspection results, specific maintenance tasks will be triggered. Example maintenance inspection checklists for Wet Ponds can be accessed in Appendix C of Chapter 9 of the *Virginia* Stormwater Management Handbook (2010).

Maintenance Items <sup>1</sup>	Frequency <sup>1</sup>
<ul> <li>Remove debris and blockages</li> <li>Repair undercut, eroded, and bare soil areas</li> </ul>	Quarterly or after major storms (>1 inch of rainfall)
Mowing embankment	Twice a year
<ul> <li>Shoreline cleanup to remove trash, debris and floatables</li> </ul>	
A full maintenance inspection	Annually
<ul> <li>Open up the riser to access and test the valves</li> </ul>	
<ul> <li>Repair broken mechanical components, if needed</li> </ul>	
Pond buffer and aquatic bench reinforcement plantings	One time –during the second year following construction
Forebay Sediment Removal	Every 5 to 7 years
Repair pipes, the riser and spillway, as needed	From 5 to 25 years

#### Common Ongoing Maintenance Tasks

Maintenance is needed so stormwater ponds continue to operate as designed on a long-term basis. Routine stormwater pond maintenance, such as removing debris and trash, is needed several times each year (See Table 14.6). More significant maintenance (e.g., removing accumulated sediment) is needed less frequently but requires more skilled labor and special equipment. Inspection and repair of critical structural features (e.g., embankments and risers) needs to be performed by a qualified professional (e.g., a structural engineer) who has experience in the construction, inspection, and repair of these features.

The maintenance plan should clearly outline how vegetation in the pond and its buffer will be managed or harvested in the future. Periodic mowing of the stormwater buffer is only required along maintenance rights-of-way and the embankment. The remaining buffer can be managed as a meadow (mowing every other year) or forest. The maintenance plan should schedule a shoreline cleanup at least once a year to remove trash and floatables.

Buoyancy Computations	T											$\square$			<u> </u>
Rectangular Riser with Rectangular Base															
Project:	Smith Pro	perty													
Top of Riser Elevation (ft)	=	357.60	ft												<u> </u>
Inside Length (ft)	=	5.00	ft									Ш			
Inside Width (ft)		5.00	ft.												
Riser Wall Thickness (in)	=	8.00	in												
BMP Elevation (ft)	=	356.00	ft												
Culvert Invert (ft)	=	352.38	ft												
Base Depth (ft)	=	D	ft												
Base Length		8.33	ft.	(Турі	cally = Insi	ide	Length + 2*Wa	all <sup>-</sup>	Thickness	+ 2	')				
Base Width	=	8.33	ft	(Typi	cally = Insi	ide		ΙΙΤ	hickness +	F 2")	· 				
Avg. Soil Ht. over Base	=	2.5	ft		-										
Bouyant Soil Wt.	=	35	pcf												
Factor of Safety at Against Flotation	=	1.3													
												$\square$			
Wt. of Riser = ((Outside Area) - (Inside Area)) x heig	ht x 150 pct	<u>                                     </u>		<del> </del> =	40.11	-	25.00	х	5.22	х	150	=	11832		
Wt of Ballast = Base Area x D x 150 pcf	100 po			=	10.11		69.39	x	D	x		╘	10408	<del>                                     </del>	П
Wt of Soil = (Base Area-Riser Area) x (ht x wt. of so	il)			=	69.39	-	40.11	x	2.5	X	35	╘	2562	_	
(Base , field					00.00		10.11		2.0	ı A	- 55	H	2002		1
Wt of Water Displaced By Riser = Riser Area x Heig	ht x 62.4 pc	ef		=			40.11	х	5.22	x	62.4	=	13065		
Wt of Water Displaced By Ballast = Base Area x D				=			69.39	х	D	x		=	4330	_	Ь
														i i	
												H			
												П			
Wt of Riser + Wt. of Ballast + Wt. Of Soil					11832	+	10408.335*D	+	2562						
Wt of Water (Riser) + Wt of Water(Ballast)	1	=			13065		4329.86736*D				≥ 1.3	П			
vvi el vvatel (Neel) - vvi el vvatel(Ballaet)					10000		1020:00:00					П			
Ballast Depth for FS =1.3	0.54	ft													
	0.75	ft	(Value Rou	nded in	3 inch inc	rem	nents; min. de	pth	= 0.5 ft.)						
												П			

Sediment	Forebay			
Water Qu	ality Volume (WQV)= (Ir	mp Area x 1/4 in / 12in)	V( r)=	3267 cf
	(Imp. Area =	3.6 AC.)		0.08 ac-fl
	Min. WQV = Imp. Are	ea x 0.1 in =	•	1307 cf
				0.03 ac-fl

Elevation	Area	Incremental	Total	Total
		Volume	Volume	Volume
(Feet)	(sq.ft.)	(cu.ft.)	(cu.ft.)	(ac.ft.)
351.5	208.88	0.0000	0.0000	0.000
352	338.33	136	136	0.003
354	636.12	959	1094	0.025
355	807.38	720	1814	0.041

User Defined Contou	rs		Stage / Storage Table									
Description	Input	Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)						
Bottom Elevation, ft	351.50											
Voids (%)	100.00	0.00	351.50 352.00	4,665 5,960	0.000 2,656	0.000 2,656						
		2.50	352.00	9,375	15,335	17,991						
Volume Calc	None	3.50	355.00	11,520	10,448	28,439						
		4.50	356.00	13,352	12,436	40,875						
		6.50	358.00	17,129	30,481	71,356						
		8.50	360.00	21,173	38,302	109,658						
						,						
		_										
		AV.										
		(p)				7						
		1										

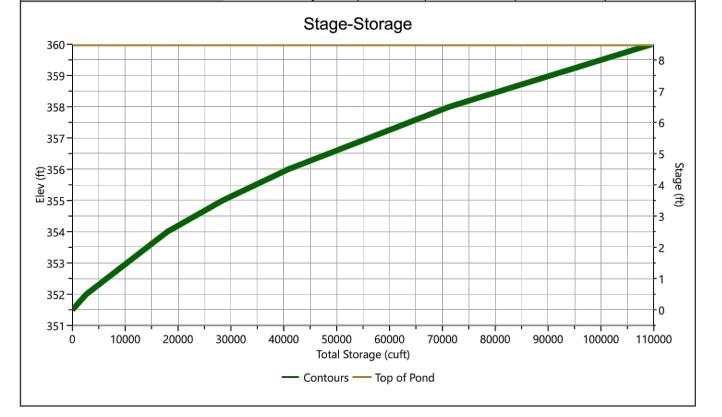
1-,2- AND 10-YEAR POST DEVELOPMENT HEC-1 ROUTING: POND 1

Pond Report

Hydrology Studio v 3.0.0.14

Project Name:

06-19-2020



Pond Report	Project Name:
Hydrology Studio v 3.0.0.14	06-19-2020

d 1					Stage-Discharg
Outrant / Outflana	0.11		Orifices		Orifica Dista
Culvert / Orifices	Culvert	1*	2	3	Orifice Plate
Rise, in	24	2			Orifice Dia, in
Span, in	24	2			No. Orifices
No. Barrels	1	1			Invert Elevation, ft
Invert Elevation, ft	352.38	355.00			Height, ft
Orifice Coefficient, Co	0.60	0.60			Orifice Coefficient, Co
Length, ft	64				
Barrel Slope, %	.59				
N-Value, n	0.013				
)A/-:	D:*		Weirs		A : !!!
Weirs	Riser*	1*	2	3	Ancillary
Shape / Type	Box	Rectangular			Exfiltration, in/hr
Crest Elevation, ft	357.6	356			Tailwater Elevation, ft
Crest Length, ft	17.3	2.7			
Angle, deg					
Weir Coefficient, Cw	3.3	3.3			



lyarology	Studio v 3.	0.0.14											(	06-19-2020
Pond	1							St	age-S	torag	e-Disc	harge	Sum	mary
Stage	Elev.	Storage	Culvert	(	Orifices, cf	s	Riser		Weirs, cfs	<b>.</b>	Pf Riser	Exfil	User	Total
(ft)	(ft)	(cuft)	(cfs)	1	2	3	(cfs)	1	2	3	(cfs)	(cfs)	(cfs)	(cfs)
0.00	351.50	0.000	0.000	0.000			0.000	0.000						0.000
0.50	352.00	2,656	0.000	0.000			0.000	0.000						0.000
2.50	354.00	17,991	0.000	0.000			0.000	0.000						0.000
3.50	355.00	28,439	0.000	0.000			0.000	0.000						0.000
4.50	356.00	40,875	0.101 ic	0.101			0.000	0.000						0.101
6.50	358.00	71,356	30.85 ic	0.071			14.44	16.33 s						30.85
							0.000	0.000						38.92

## 100-YEAR POST DEVELOPMENT HEC-1 ROUTING: POND 1

Basin Model	Project Nam
drology Studio v 3.0.0.14	06-19-20
Pre Pre-Development Post Post-Development	
Post Pond1	
combined	

Hyd.	Hydrograph	Hydrograph		Peak Outflow (cfs)										
No.	Туре	Name	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr				
1	NRCS Runoff	Pre Pre-Development	4.176	6.814			16.39			39.29				
2	NRCS Runoff	Post Post-Development	11.32	15.58			29.40			58.33				
3	Pond Route	Post Pond1	0.907	2.772			12.95			33.90				
4	NRCS Runoff	Uncontrolled	0.980	1.439			3.016			6.589				
5	Junction	combined	1.047	2.955			13.38			36.43				

combined	Hyd. No. 5
Hydrology Studio v 3.0.0.14	06-19-2020
Hydrograph Report	Project Name:

Hydrograph Type Storm Frequency	= Junction = 1-yr	Peak Flow Time to Peak	= 1.047 cfs = 11.97 hrs
Time Interval	= 2 min	Hydrograph Volume	= 30,872 cuft
Inflow Hydrographs		Total Contrib. Area	= 0.77 ac
., 2. 29. 49.10			
27	<b>Qp = 1.05 cfs</b>		
1.9			
-			
1.8			
1.7			
1.6			
1.5			
-			
1.4			
1.3			
1.2			
- 1.1 <del>-</del>			
(cts) 0 (cts)			
	Λ		
0.9	N .		
0.8			
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0.6			
-	<b>\</b>		
0.5			
0.4			
0.3			
0.2			
0.1			
-			
0 <del>-                                    </del>		;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	<del>                                     </del>
	Time (hrs)		
	— Pond1 — Uncontrolled — comb	pined	

-	rograph ' udio v 3.0.0.14	1-yr Summary						Project Nam 06-19-20
Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre Pre-Development	4.176	12.10	15,035			
2	NRCS Runoff	Post Post-Development	11.32	12.00	29,523			
3	Pond Route	Post Pond1	0.907	12.93	28,899	2	356.20	43,920
4	NRCS Runoff	Uncontrolled	0.980	11.97	1,973			
5	Junction	combined	1.047	11.97	30,872	3, 4		

## NOTES:

ALL JOINTS BETWEEN PRECAST RISER SEGMENTS SHALL BE MADE WATER TIGHT. ADJUST REBAR SPACING AROUND OFFSET PEDESTAL AND SLUICE GATE OPERATING WHEEL TO PROVIDE ADEQUATE CLEARANCE FOR OPENING & CLOSING REBAR GATE.

## SEDIMENT BASIN CONVERSION NARRATIVE

FOR SEDIMENT CONVERSION TO PERMANENT SWM POND. THE SEDIMENT BASIN MUST BE CAREFULLY DEWATERED. ONCE SEDIMENT BASIN HAS BEEN SUCCESSFULLY DEWATERED AND THE SLURRY HAS DRIED, DEMUCKING CAN BEGIN. SEDIMENT MUST BE DISPOSED OFF APPROPRIATELY. FOLLOWING SEDIMENT DISPOSAL TEMPORARY DEWATERING DEVICE IS TO BE REMOVED WITH THE TOWN INSPECTORS APPROVAL. 10" DEWATERING ORIFICE IS TO BE PLUGGED. WEIR SLOTS MUST BE DE-BRICKED TO SWM POND DESIGN ELEVATION.

## NOTES:

- 1. THE DIMENSIONS AND ELEVATIONS SHOWN ON THIS SHEET ARE FOR GENERAL INFORMATION PURPOSES REGARDING THE HYDRAULIC FUNCTION OF THE RISER STRUCTURES. ACTUAL STRUCTURAL DRAWINGS, WALL/FOUNDATION THICKNESS, FOUNDATION DEPTH, STEEL REINFORCEMENT, AND STEEL PLATE ANCHORS ARE TO BE DESIGNED UNDER SEPARATE COVER BY A LICENSED STRUCTURAL AND
- 2. ACTUAL FOUNDATION DEPTHS AND DIMENSIONS ARE TO BE DETERMINED BY A LICENSED GEOTECHNICAL ENGINEER. FOR MIN. FOUNDATION DEPTHS, SEE BOUYANCY COMPUTATIONS.
- 3. ALL RISER JOINTS AND CONNECTIONS ARE TO BE WATERTIGHT.
- 4. ADJUST REBAR SPACING AROUND OFFSET PEDESTAL AND SLUICE GATE OPERATING WHEEL TO PROVIDE ADEQUATE CLEARANCE.
- 5. THE 12" DIP DRAWDOWN PIPE SHALL BE ANGLED SUCH THAT IT ENTERS THE RISER STRUCTURE PERPENDICULAR TO WALL FACE.
- 6. ALL STEEL REBAR AND ANGLES SHALL BE GALVANIZED AND PAINTED ACCORDING TO VDOT ROAD & BRIDGE SPECIFICATIONS, SECTIONS 231.03 AND 411.06. PAINT COLOR SHALL BE BLACK.
- 7. SEEPAGE CONTROLS AND EMBANKMENT STABILITY PER GEOTECHNICAL RECOMMENDATIONS.
- 8. GEOTECHNICAL ENGINEER TO DETERMINE SUITABLE FILL MATERIAL AND COMPACTION.
- 9. GEOTECHNICAL CONSULTANT TO SPECIFY DAM EMBANKMENT MATERIAL, SEEPAGE CONTROL DEVICES, CUT-OFF TRENCH DESIGN CULVERT BEDDING REQUIREMENTS AND OTHER APPROPRIATE GEOTECHNICAL DESIGN REQUIREMENTS.
- 10. MAINTENANCE OF MECHANICAL EQUIPMENT FOR SWM FACILITY SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

## DAM CONSTRUCTION NOTES:

- 1. GEOTECHNICAL CONSULTANT TO SPECIFY DAM EMBANKMENT MATERIAL, SEEPAGE CONTROL DEVICES, CUT-OFF TRENCH DESIGN, CULVERT BEDDING REQUIREMENTS, AND OTHER APPROPRIATE GEOTECHNICAL DESIGN REQUIREMENTS.
- 2. FOUNDATION AND ABUTMENT AREA EXTENDING 10' BEYOND DAM FOOTPRINT SHALL BE CLEARED, GRUBBED & STRIPPED OF ALL VEGETATION TOPSOIL AND/OR ORGANIC SOIL & OTHER UNSUITABLE
- 3. AFTER CLEARING, GRUBBING, STRIPPING AND REMOVING ANY OTHER UNSUITABLE MATERIALS, THE SUBGRADE SHALL BE PROOFROLLED WITH COMPACTION EQUIPMENT UNDER THE OBSERVATION OF A QUALIFIED ENGINEER. THE COMPACTION EQUIPMENT SHOULD BE THE HEAVIEST POSSIBLE EQUIPMENT THAT WILL NOT CAUSE DISTURBANCE OF SUITABLE SUBGRADE SOILS. EXCESSIVELY SOFT OR UNSUITABLE MATERIALS SHALL BE REMOVED AND REPLACED WITH COMPACTED FILL. WHERE ROCK IS EXPOSED AFTER STRIPING OR UNDERCUTTING, ALL LOOSE ROCK MATERIAL SHALL BE REMOVED PRIOR TO PLACING COMPACTED FILL. ROCK SUBGRADES SHALL BE INSPECTED AND APPROVED BY THE INSPECTOR OR ENGINEER PRIOR TO PLACEMENT OF FILL
- 4. COMPACTED FILL SHALL NOT BE PLACED PRIOR TO PERFORMING THE REQUIRED FOUNDATION AND ABUTMENT PREPARATION, OR ON ANY FROZEN SURFACE. COMPACTED FILL SHALL EXTEND TO THE FILL LIMIT LINES AND GRADES INDICATED BY THE APPROVED CONSTRUCTION PLAN. COMPACTED FILL MATERIAL SHALL BE OF THE TYPE CLASSIFICATION SYMBOL SPECIFIED BY THE GEOTECHNICAL CONSULTANT OR OF A BETTER QUALITY MATERIAL AS DEFINED BY THE UNIFIED SOIL CLASSIFICATION SYSTEM. ALSO, RESTRICTIONS ON THE LIQUID LIMITS AND PLASTICITY INDEX OF THE MATERIAL MAY BE INCLUDED WHERE APPLICABLE. COMPACTED FILL SHALL CONSIST OF MATERIAL FREE OF ORGANIC MATTER, RUBBISH, FROZEN SOIL, SNOW, ICE, PARTICLES WITH SIZES LARGER THAN 3" OR OTHER DELETERIOUS
- 5. COMPACTED FILL SHALL BE PLACED IN HORIZONTAL LAYERS OF 8" TO 12" IN LOOSE THICKNESS. ACTUAL LIFT THICKNESS WILL BE SPECIFIED BY THE GEOTECHNICAL CONSULTANT. THE MOISTURE CONTENT SHALL BE CONTROLLED SUCH THAT COMPACTION IS ACHIEVED WITHOUT YIELDING OF THE SURFACE. EACH LAYER SHALL BE UNIFORMLY COMPACTED WITH SUITABLE COMPACTION EQUIPMENT TO AT LEAST 95% OF STANDARD PROCTOR MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-698, AASHTO T-99, OR VDOT SPECIFICATIONS. ANY LAYER OF FINE GRAINED FILL WHICH BECOMES SMOOTH UNDER COMPACTION OR CONSTRUCTION TRAFFIC SHOULD BE SCARIFIED TO A DEPTH OF 2" TO ALLOW ADEQUATE BONDING BETWEEN LAYERS.
- 6. COMPACTED FILL WITH A MOISTURE CONTENT WHICH WILL NOT PERMIT COMPACTION TO THE SPECIFIED DENSITY STANDARD SHALL BE SCARIFIED DRIED OR WETTED AS NECESSARY TO PERMIT PROPER

## STORMWATER AS-BUILT CERTIFICATION NOTE

AFTER THE FACILITY HAS BEEN CONSTRUCTED, THE DEVELOPER SHALL HAVE AN AS-BUILT CERTIFICATION CONDUCTED BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA AND SUBMITTED TO THE TOWN ALONG WITH THE AS-BUILT CHECKLIST AND AS-BUILT PLAN. THE AS-BUILT CERTIFICATION VERIFIES THAT THE FACILITY WAS INSTALLED AS DESIGNED AND APPROVED.

TYPICAL GABION WALL DETAIL

TOP OF WEIR BASKET=356.0

BMP ELEV. =355.00

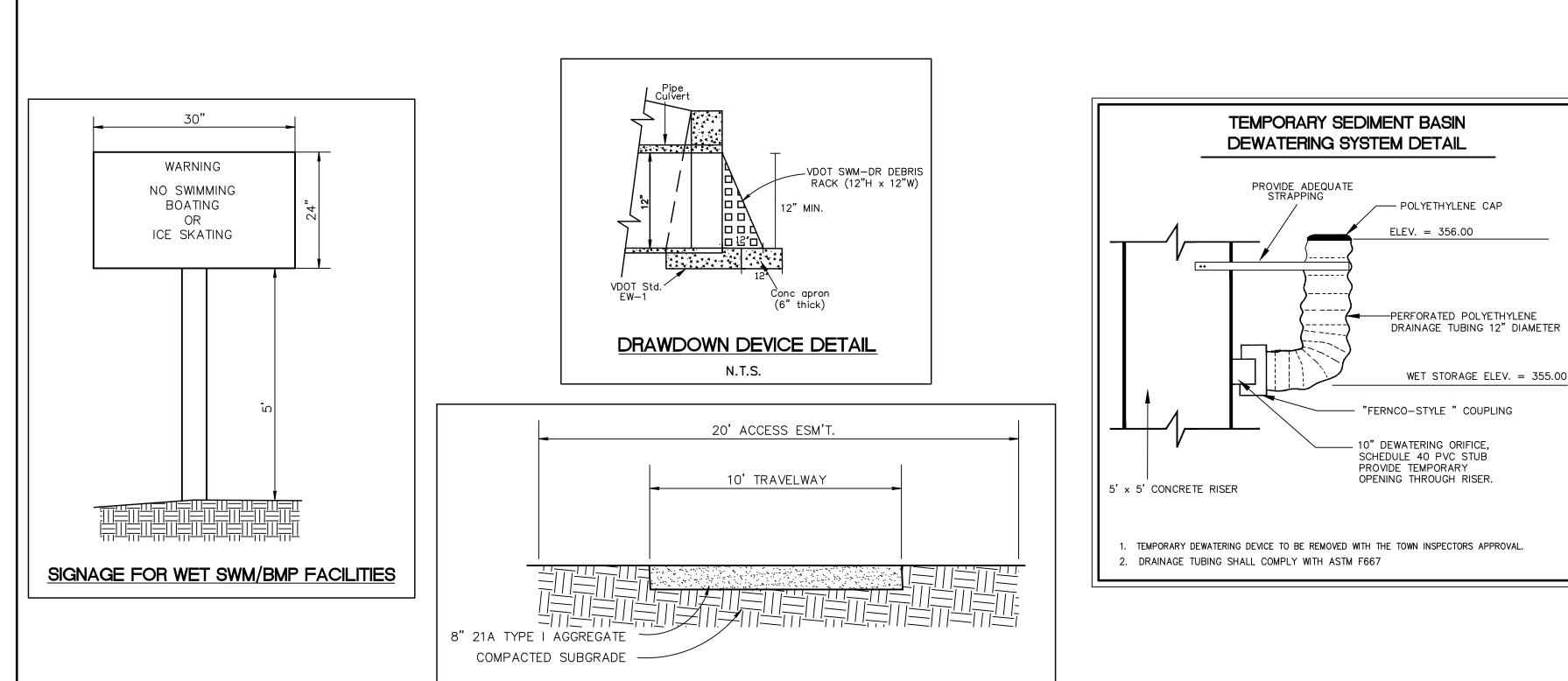
GABION WALL

POND BOTTOM

### STORMWATER CONSTRUCTION INSPECTION NOTE

INSPECTIONS ARE NEEDED DURING CONSTRUCTION TO ENSURE THAT THE FACILITIES ARE BUILT IN ACCORDANCE WITH THE APPROVED PLANS AND DESIGN SPECIFICATIONS. THE DEVELOPER/OWNER SHALL PROVIDE FOR PERIODIC INSPECTIONS OF THE FACILITY DURING CONSTRUCTION. DETAILED INSPECTION CHECKLISTS SHALL BE USED THAT INCLUDE SIGN-OFFS BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA AT CRITICAL STAGES OF CONSTRUCTION, TO ENSURE THAT THE CONTRACTOR'S INTERPRETATION OF THE PLAN IS CONSISTENT WITH THE DESIGNER'S INTENT. THE ACTUAL INSPECTIONS MAY BE PERFORMED BY AN INDIVIDUAL UNDER THE DIRECT SUPERVISION OF THE LICENSED PROFESSIONAL.

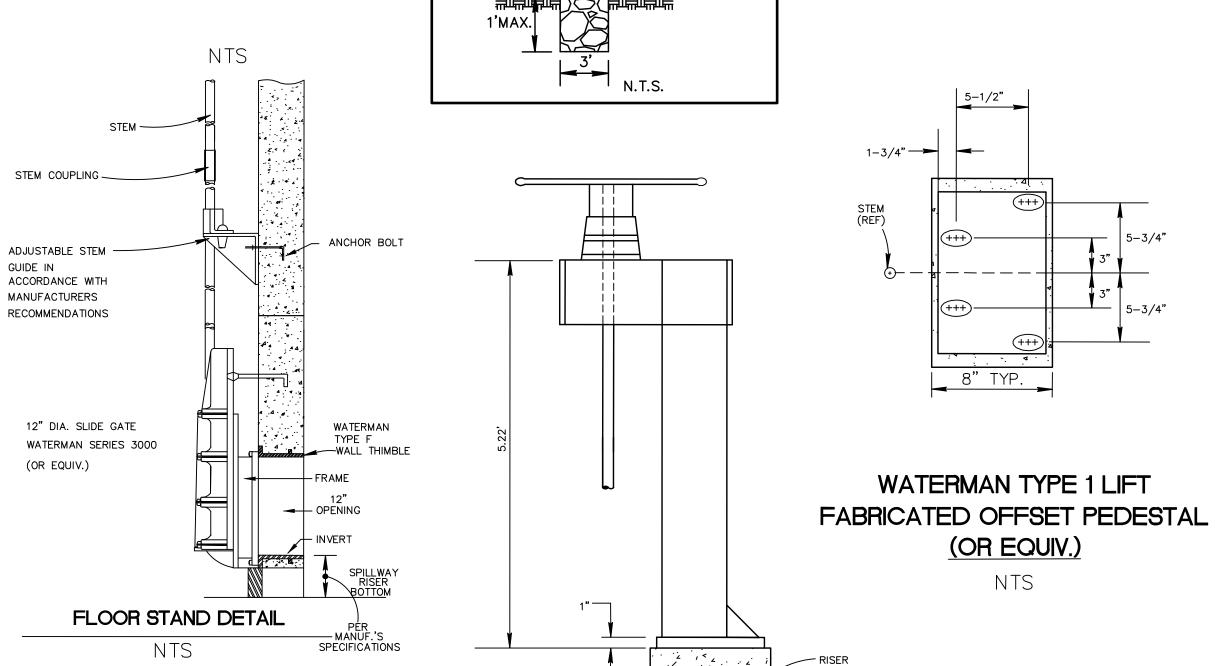
**VARIES** 



TYPICAL PAVEMENT SECTION FOR SWM POND

ACCESS ROAD

N.T.S.

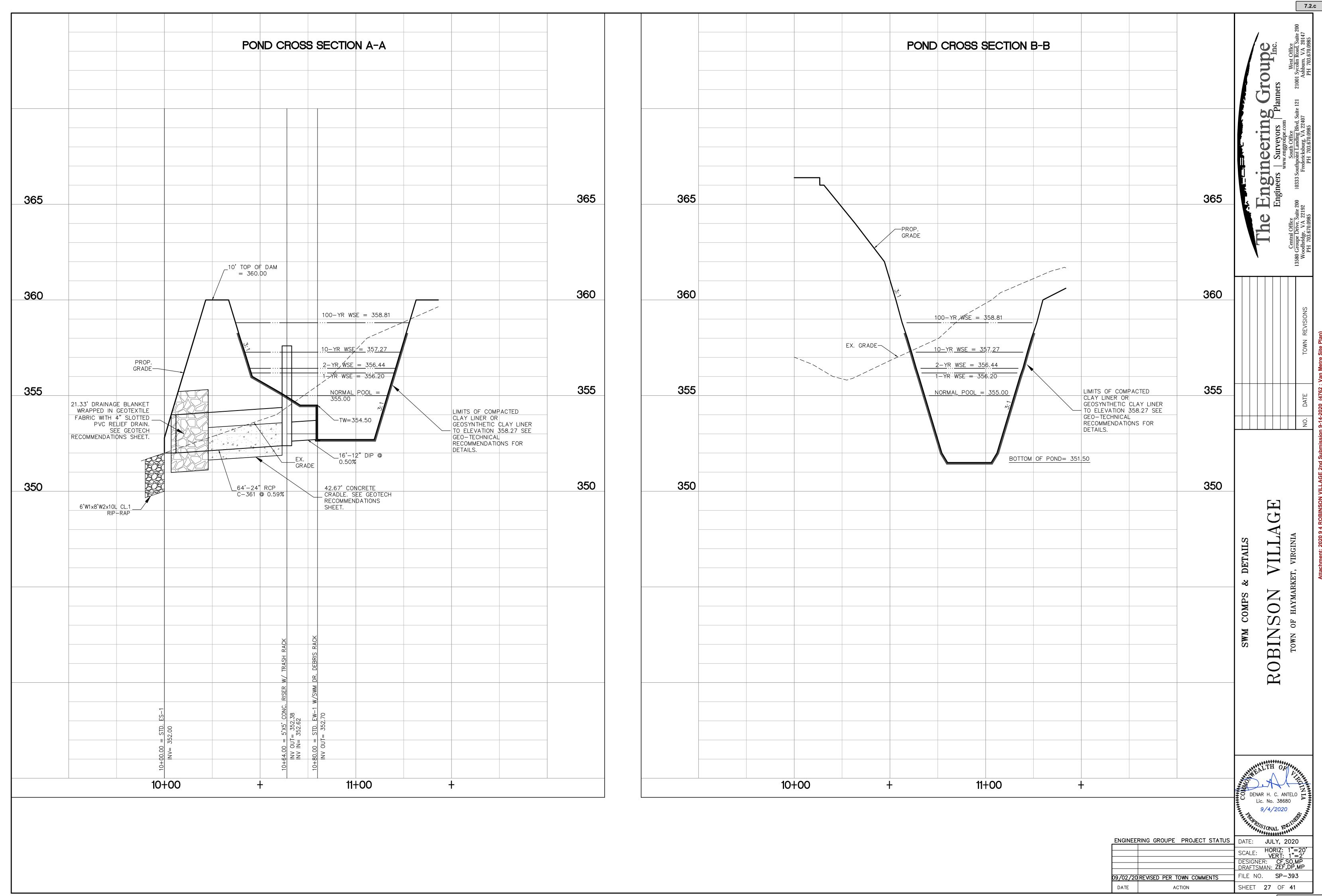


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Hydrograph Report 06-19-2020 Hydrology Studio v 3.0.0.14 Hyd. No. 5 combined Hyd. No. 5 Peak Flow = 13.38 cfsHydrograph Type = Junction Peak Flow = 39.12 cfs Time to Peak = 12.17 hrs Time to Peak = 12.00 hrs

Storm Frequency Hydrograph Volume = 82,233 cuf Hydrograph Volume = 133,565 cuft Time Interval Time Interval Total Contrib. Area = 0.77 ac Total Contrib. Area = 0.77 ac Inflow Hydrographs = 3, 4Inflow Hydrographs = 3, 4Qp = 13.38 cfsQp = 39.12 cfs

745678 <b>%</b> &1			7 8 9 101112131415161 —— Por	71819202122	23242526272 ime (hrs)	829303132333				14 12 10 8	2 -	— Por		12 13 14 Time (hrs) ntrolled — c		18 19 2	20 21 22	23 24 25
Project Name: 06-19-2020		drograph 1	I0-yr Summar	у					Project Name: 06-19-2020		rograph 1	100-yr Summa	ary					Project Name: 06-19-2020
Maximum Storage (cuft)	Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)	Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
	1	NRCS Runoff	Pre Pre-Development	16.39	12.07	52,031				1	NRCS Runoff	Pre Pre-Development	39.29	12.07	122,944			
	2	NRCS Runoff	Post Post-Development	29.40	12.00	76,785				2	NRCS Runoff	Post Post-Development	58.33	12.00	156,782			
47,610	3	Pond Route	Post Pond1	12.95	12.17	76,141	2	357.27	60,248	3	Pond Route	Post Pond1	35.23	12.13	119,961	2	358.81	86,777
	4	NRCS Runoff	Uncontrolled	3.016	11.93	6,092				4	NRCS Runoff	Uncontrolled	6.589	11.93	13,605			
	5	Junction	combined	13.38	12.17	82,233	3, 4			5	Junction	combined	39.12	12.00	133,565	3, 4		

### STORMWATER MANAGEMENT NARRATIVE

Pre Pre-Development

Uncontrolled

Hydrograph 1-yr Summary

Hydrograph

NRCS Runoff

NRCS Runoff

4 NRCS Runoff

#### PROJECT DESCRIPTION

Hydrograph Report

Hydrograph Type = Junction

Inflow Hydrographs = 3, 4

Hydrology Studio v 3.0.0.14

Storm Frequency

Time Interval

combined

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF 38 TOWNHOMES AND ASSOCIATED INFRASTRUCTURE. ONE SWM/BMP FACILITY LOCATED AT N: 38.811803 E: -77.632274 WILL BE CONSTRUCTED TO PROVIDE WATER QUANTITY AND QUALITY MEASURES FOR THIS PROJECT. IN ADDITION, THE SWM/BMP FACILITY WILL BE DESIGNED TO PROVIDE WATER QUALITY AND QUANTITY MEASURES FOR THE FUTURE COMMERCIAL DEVELOPMENT ASSOCIATED WITH THIS PROJECT. APPROXIMATELY 5.85 ACRES WILL BE DISTURBED DURING CONSTRUCTION.

01234567891**01**23456782**02223**42**0289032345678904234267895585456789066866689072345678888888**8688 Time (hrs)

Time to Peak (hrs)

12.10

12.93

11.97

11.97

0.980

Hydrograph Volume

1,973

30,872

Inflow Hyd(s)

----

Maximum Elevation

356.20

— Pond1 — Uncontrolled — combined

#### WATER QUALITY ANALYSIS

FROM THE VRRM SPREADSHEET, A TOTAL PHOSPHORUS (TP) LOAD REDUCTION OF 6.98 LB/YR IS REQUIRED. A REDUCTION IN THE REQUIRED LOAD IS ACHIEVED THROUGH THE CONSTRUCTION ON AN ON-SITE SWM/BMP WET POND. THIS PRACTICE REDUCES THE REQUIRED LOAD REDUCTION TO 2.48 LB/YEAR. SINCE THE REQUIRED LOAD IS LESS THAN 10LBS/YR, PER STATE CODE 9VAC25-870-60, OFFSITE COMPLIANCE OPTIONS WILL BE UTILIZED TO ACHIEVE THE REMAINING NUTRIENT REDUCTION BY PURCHASING REQUIRED NUTRIENT CREDITS.

#### HYDROLOGIC ANALYSIS

THE PROJECT LOCATION IS WITHIN THE BULL RUN WATERSHED. THE SCS METHOD WAS USED TO COMPUTE PRE-AND POST-DEVELOPMENT PEAK DISCHARGES. THE RAINFALL DISTRIBUTION USED FOR THE HYDROLOGIC ANALYSIS WAS TYPE II, 24-HOUR, INCORPORATING TOWN OF HAYMARKET RAINFALL DEPTHS FOR 24-HOUR STORM EVENTS OBTAINED FROM NOAA ATLAS 14 PRECIPITATION ESTIMATES.

THE PRE-DEVELOPMENT DRAINAGE DIVIDES AND HYDROLOGIC COMPUTATIONS ARE SHOWN ON SHEET 22. THE POST-DEVELOPEMENT DRAINAGE DIVIDES AND HYDROLOGIC COMPUTATIONS ARE SHOWN ON SHEET 23. THE SITE IS DIVIDED INTO FOUR DRAINAGE AREAS IN THE POST DEVELOPMENT CONDITION.

## WATER QUANTITY ANALYSIS

IN PRE-DEVELOPMENT CONDITIONS, THE SITE DRAINS AS FOLLOWS:

## STUDY POINT A

THE RUNOFF IN THIS PRIMARILY WOODED AREA WITH SOME IMPERVIOUS AREA FROM EXISTING STRUCTURES IS UNCONTROLLED. RUNOFF FLOWS NATURALLY ACROSS THE SITE TO AN EXISTING DRAINAGE SWALE WHERE IT ENTERS SOME EXISTING WETLANDS PRIOR TO DISCHARGING ALONG THE EASTERN PORTION OF THE NORTHERN PROPERTY LINE.

#### STUDY POINT B

THE RUNOFF IN THIS WOODED AREA IS UNCONTROLLED. THE RUNOFF IN THIS AREA CONSISTS OF SHEET FLOW WHICH DISCHARGES ALONG THE NORTHERN PROPERTY LINE. THE RUNOFF DOES NOT FORM A CONCENTRATED SWALE PRIOR TO LEAVING THE SITE.

#### STUDY POINT C

THE RUNOFF IN THIS WOODED AREA IS UNCONTROLLED. THE RUNOFF IN THIS AREA IS DIRECTED TO THE WEST OF THE PROPERTY. THE RUNOFF ENTERS THE STORM SEWER SYSTEM VIA A CULVERT LOCATED ON THE PROPERTY PRIOR TO THE RIGHT OF WAY OF HUNTING PATH ROAD.

### STUDY POINT D

Pre Pre-Development

Uncontrolled

Hydrograph 2-yr Summary

NRCS Runoff

Junction

Hydrograph Report

Hydrograph Type = Junction

Inflow Hydrographs = 3, 4

= 2 min

Hydrology Studio v 3.0.0.14

Storm Frequency

Time Interval

06-19-2020

06-19-202

Storage (cuft)

Hyd. No. 5

= 1.047 cfs

= 11.97 hrs

Hydrograph Volume = 30,872 cuft

Total Contrib. Area = 0.77 ac

Peak Flow

Qp = 1.05 cfs

Time to Peak

THE RUNOFF IN THIS PRIMARILY WOODED AREA WITH SOME IMPERVIOUS AREA FROM EXISTING STRUCTURES IS UNCONTROLLED. THE RUNOFF IN THIS AREA IS DIRECTED TO THE WEST OF THE PROPERTY. THE RUNOFF ENTERS THE STORM SEWER SYSTEM VIA A STORM SEWER INLET LOCATED IN HUNTING PATH ROAD.

356.44

Hydrograph Report

Hydrograph Type = Junction

Hydrology Studio v 3.0.0.14

Hyd. No. 5

= 2.955 cfs

= 12.30 hrs

Hydrograph Volume = 42,672 cuft

Total Contrib. Area = 0.77 ac

Peak Flow

Qp = 2.96 cfs

0123456789101234567896655565656567677234567834567834444444444444445678565556666556565656767723456778

— Pond1 — Uncontrolled — combined

12.10

11.97

12.30

2,879

42,672

1.439

Time to Peak

IN POST-DEVELOPMENT CONDITIONS THE SITE DRAINS AS FOLLOWS

#### STUDY POINT A

THE RUNOFF IN THIS MAINLY DEVELOPED AREA WITH SOME WOODED SECTIONS IS UNCONTROLLED. RUNOFF FLOWS NATURALLY ACROSS THE SITE TO AN EXISTING DRAINAGE SWALE WHERE IT ENTERS SOME EXISTING WETLANDS PRIOR TO DISCHARGING ALONG THE EASTERN PORTION OF THE NORTHERN PROPERTY LINE.

#### STUDY POINT B

THE RUNOFF IN THIS DEVELOPED AREA IS UNCONTROLLED. THE RUNOFF IN THIS AREA CONSISTS OF SHEET FLOW WHICH DISCHARGES ALONG THE NORTHERN PROPERTY LINE. THE RUNOFF DOES NOT FORM A CONCENTRATED SWALE PRIOR TO LEAVING THE SITE.

#### STUDY POINT C

THE RUNOFF IN THIS DEVELOPED AREA IS UNCONTROLLED. THE RUNOFF IN THIS AREA IS DIRECTED TO THE WEST OF THE PROPERTY. THE RUNOFF ENTERS THE STORM SEWER SYSTEM VIA A CULVERT LOCATED ON THE PROPERTY PRIOR TO THE RIGHT OF WAY OF HUNTING PATH ROAD.

#### STUDY POINT D

THE RUNOFF IN THIS PRIMARILY WOODED AREA WITH SOME IMPERVIOUS AREA FROM EXISTING STRUCTURES IS UNCONTROLLED. THE RUNOFF IN THIS AREA IS DIRECTED TO THE WEST OF THE PROPERTY. THE RUNOFF IN THIS AREA IS DIRECTED TO THE WEST OF THE PROPERTY. THE RUNOFF ENTERS THE STORM SEWER SYSTEM VIA A

IN POST-DEVELOPMENT CONDITIONS THE SITE DRAINS AS FOLLOWS:

STORM SEWER INLET LOCATED IN HUNTING PATH ROAD.

#### STUDY POINT A

THE RUNOFF FROM THIS AREA IS COLLECTED BY A STORM SEWER SYSTEM ON-SITE AND CONVEYED TO THE SWM/BMP POND. AS SHOWN IN THE CHART BELOW, THE FLOW FOR DRAINAGE AREA A THE 1-YEAR 24-HOUR STORM EVENT MEETS THE ALLOWABLE RELEASE RATE OF THE ENERGY BALANCE EQUATION AT STUDY POINT A. THEREFORE, FURTHER ANALYSIS IS NOT REQUIRED.

## STUDY POINT B

STUDY POINT "B": IN POST DEVELOPMENT THIS AREA HAS BEEN GRADED TO DIVERT WATER TO THE SWM/BMP POND. A BERM HAS BEEN DESIGNED ALONG THE PROPERTY LINE TO PREVENT WATER FROM LEAVING THE SITE AT THIS STUDY POINT. AS SHOWN IN THE CHART BELOW, THE FLOW FOR DRAINAGE AREA B THE 1-YEAR 24-HOUR STORM EVENT MEETS THE ALLOWABLE RELEASE RATE OF THE ENERGY BALANCE EQUATION AT STUDY POINT B DUE TO THE REDUCTION IN RUNOFF TO THIS STUDY POINT. THEREFORE, FURTHER ANALYSIS IS NOT REQUIRED.

#### STUDY POINT C

STUDY POINT "C":

THE RUNOFF FROM THIS AREA IS DIRECTED TO THE STORM SEWER SYSTEM ALONG HUNTING PATH ROAD. THIS DRAINAGE AREA HAS BEEN REDUCED BY DIVERTING A PORTION OF THE DRAINAGE AREA TO THE SWM/BMP POND. STORM SEWER COMPUTATIONS HAVE BEEN PROVIDED TO DEMONSTRATE ADEQUACY OF THE STORM SEWER SYSTEM FOR SEVERAL STRUCTURES DOWNSTREAM

## STUDY POINT D

THE RUNOFF FROM THIS AREA IS DIRECTED TO THE STORM SEWER SYSTEM ALONG HUNTING PATH ROAD. THIS DRAINAGE AREA HAS BEEN REDUCED BY DIVERTING A PORTION OF THE DRAINAGE AREA TO THE SWM/BMP POND. STORM SEWER COMPUTATIONS HAVE BEEN PROVIDED TO DEMONSTRATE ADEQUACY OF THE STORM SEWER FOR SEVERAL STRUCTURES DOWNSTREAM.

## **CHANNEL PROTECTION**

THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE 2-YEAR STORM EVENT HAS BEEN REDUCED FROM THE PRE-DEVELOPMENT PEAK FLOW RATE AT OUTFALL POINTS A AND B. FURTHER ANALYSIS DOWNSTREAM IS NOT REQUIRED. THEREFORE, PER 9VAC25-870-66B.1, CHANNEL PROTECTION HAS BEEN SATISFIED. FOR OUTFALL POINTS C AND D DISCHARGE IS INTO A MAN MADE CHANNEL AND ADEQUACY HAS BEEN DEMONSTRATED FOR SEVERAL RUNS DOWNSTREAM.

#### FLOOD PROTECTION

THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR STORM EVENT HAS BEEN REDUCED FROM THE PRE-DEVELOPMENT PEAK FLOW RATE AT OUTFALL POINTS A AND B. FURTHER ANALYSIS DOWNSTREAM IS NOT REQUIRED. THEREFORE, PER 9VAC25-870-66C.1, FLOOD PROTECTION AND VSCE REGULATION MS-19 HAVE BEEN SATISFIED. FOR OUTFALL POINTS C AND D DISCHARGE IS INTO A MAN MADE CHANNEL AND ADEQUACY HAS BEEN DEMONSTRATED FOR SEVERAL RUNS DOWNSTREAM.

			<u>ENERG</u>	GY BAL	ANCE E	<u>QUATIC</u>	N RESU	<u>JLTS</u>			
STUDY POINT	STORM EVENT	PRE-DEV DRAINAGE AREA (ac)	PRE-DEV RV (in)	PRE-DEV CN	PRE-DEV FLOW (cfs)	POST-DEV DRAINAGE AREA (ac)	POST-DEV CN	POST-DEV RV (in)	POST-DEV FLOW (cfs)	POST-DEV FLOW ALLOWABLE CALCULATED* (cfs)	ENERGY BALANCE EQUATION SATISFIED
A	1	7.16	0.567	73	4.18	7.74	83	1.06	1.05	1.79	YES
В	1	0.25	0.124	70	0.15	0	0	0	0	N/A	YES

\* BASED ON THE ENERGY BALANCE EQUATION: FOR THE 1-YEAR FLOW:  $Q(post) \le 0.80 \{Q(pre)*RV(pre)/RV(post)\}$ 

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DENAR H. C. ANTELO II.  Lic. No. 38680  9/4/2020  5/10/AL EXTENDED TO SERVICE AND SERVICE	
9/4/2020  9/4/2020  10NAL EXCITATIONAL	DENAR H. C. ANTELO
TOWAL EXTREMENT	9/4/2020
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ENGINEERING GROUPE PROJECT STATUS DATE: JULY, 2020

SCALE: **N/A** DESIGNER: CF,SO,MP DRAFTSMAN: ZEF,DP,MP FILE NO. **SP-393** 09/02/20 REVISED PER TOWN COMMENTS

SHEET **28** OF **41** G:\PROJECT\Smith Property-Haymarket\ENG\DWG\00-K6400 SWM COMPS & Packet Pg. 48

Print Preview

roupe

## Site Land Cover Summary

Total Rainfall = 43 inches

Site Summary

Site Land Cover Summary						
	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	1.05	2.05	0.00	3.10	45
Impervious Cover (acres)	0.00	1.16	2.68	0.00	3.84	55
					6.94	100

Project Title: Upland Village

Date: 44007

6.98

#### Site Tv and Land Cover Nutrient Loads

Site Rv	0.62
Treatment Volume (ft³)	15,642
TP Load (lb/yr)	9.83
TN Load (lb/yr)	70.31

#### Site Compliance Summary

Total TP Load Reduction Required

Total Runoff Volume Reduction (ft <sup>3</sup> )	0
Total TP Load Reduction Achieved (lb/yr)	4.50
Total TN Load Reduction Achieved (lb/yr)	19.32
Remaining Post Development TP Load (lb/yr)	5.33
Remaining TP Load Reduction (lb/yr) Required	2.48

#### Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres)	2.51	0.00	0.00	0.00	0.00	2.51
Impervious Cover (acres)	3.60	0.00	0.00	0.00	0.00	3.60
Total Area (acres)	6.11	0.00	0.00	0.00	0.00	6.11

#### **Drainage Area Compliance Summary**

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
TP Load Reduced (lb/yr)	4.50	0.00	0.00	0.00	0.00	4.50
TN Load Reduced (lb/yr)	19.32	0.00	0.00	0.00	0.00	19.32

## Drainage Area A Summary

#### Land Cover Summary

Total Area (acres): 6.11

Volume (ft³): 0

Runoff Reduction

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	1.02	1.49	0.00	2.51	41
Impervious Cover (acres)	0.00	1.16	2.44	0.00	3.60	59
					6.11	

#### **BMP Selections**

Practice	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	BMP Treatment Volume (ft <sup>3</sup> )	TP Load from Upstream Practices (lbs)	Untreated TP Load to Practice (lbs)	TP Removed (lb/yr)	TP Remaining (lb/yr)	Downstream Treatment to b Employed

Total Impervious Cover Treated (acres)	3.60
Total Turf Area Treated (acres)	2.51
Total TP Load Reduction Achieved in D.A. (lb/yr)	4.50
Total TN Load Reduction Achieved in D.A. (lb/yr)	19.32

#### **Runoff Volume and CN Calculations**

rarget Raintail Event (in)	2.55	3.09	4.76			
Drainage Areas	RV & CN	Drainage Area A	Drainage Area B	Drainage Area C	Drainage Area D	Drainage Area B
CN		86	0	0	0	0
RR (ft <sup>3</sup> )		0	0	0	0	0
	RV wo RR (ws-in)	1.28	0.00	0.00	0.00	0.00
1-year return period	RV w RR (ws-in)	1.28	0.00	0.00	0.00	0.00
	CN adjusted	86	0	0	0	0
	RV wo RR (ws-in)	1.74	0.00	0.00	0.00	0.00
2-year return period	RV w RR (ws-in)	1.74	0.00	0.00	0.00	0.00
	CN adjusted	86	0	0	0	0
	RV wo RR (ws-in)	3.24	0.00	0.00	0.00	0.00
10-year return period	RV w RR (ws-in)	3.24	0.00	0.00	0.00	0.00

1-year storm 2-year storm 10-year storm

#### TOTAL IMPERVIOUS COVER TREATED (ac) 3.60 AREA CHECK: OK. TOTAL MANAGED TURF AREA TREATED (ac) 2.51 AREA CHECK: OK.

## TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr) 6.98

TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr)	9.01
DTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	4.50
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. A (lb/yr)	4.50
AL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. A (lb/yr)	4.51

#### SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (Ib/yr)	0.00
NITROGEN REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (Ib/yr)	19.32
TOTAL NITROGEN REMOVED IN D.A. A (lb/yr)	19.32

**Runoff Volume and Curve Number Calculations** 

Enter design storm rainfall depths (in):

1-year storm 2-year storm 10-year storm 2.55 3.09 4.76

[1] The curve numbers and runoff volumes computed in this spreadsheet for each drainage area are limited in their applicability for determining and demonstrating compliance with water

[2] Runoff Volume (RV) for pre- and post-development drainage areas must be in volumetric units (e.g., acre-feet or cubic feet) when using the Energy Balance Equation. Runoff measured in waters hed-inches and shown in the spreadsheet as RV(waters hed-inch) can only be used in the Energy Balance Equation when the pre- and post-development drainage areas are equal.

> Drainage Area Curve Numbers and Runoff Depths\* Curve numbers (CN, CNadj) and runoff depths (RV Developed) are computed with and without reduction practices.

> > 1.02

1.16

1-year storm 2-year storm 10-year storm

1.74

A Soils B Soils C Soils D Soils

1.49

2.44 98

0.00

[3] Adjusted CNs are based on runoff reduction volumes as calculated in D.A. tabs. An alternative CN adjustment calculation for Vegetated Roofs is included in BMP specification No. 5.

0.00

0.00

\*Notes (see below):

quantity requirements. See VRRM User's Guide and Documentation for additional information.

Area (acres)

Area (acres)

Area (acres)

Adjusted CN\* \*See Notes above

Otherwise RV(watershed-inch) must be multiplied by the drainage area.

Drainage Area A

Forest/Open Space -- undisturbed, protected

forest/open space or reforested land

turf to be mowed/managed

Impervious Cover

 $\mathsf{RV}_{\mathsf{Developed}}$  (watershed-inch) with no Runoff Reduction\*

RV<sub>Developed</sub> (watershed-inch) with Runoff Reduction\*

**BMP LOAD REQUIREMENTS** 

LOAD REDUCTION REQUIRED= 6.98 LB/YR

LOAD REDUCTION REQUIRED= 0.35 LB/YR

LOAD REDUCTION REQUIRED = 4.64 LB/YR

LOAD REDUCTION REQUIRED= 1.99 LB/YR WET POND REMOVAL= 1.40 LB/YR

CREDITS FOR PURCHASE= 0.59 LB/YR

TOTAL SITE AREA= 6.94 ACRES

WET POND REMOVAL= 4.50 LB/YR CREDITS FOR PURCHASE= 2.48 LB/YR

WET POND REMOVAL= 0.24 LB/YR CREDITS FOR PURCHASE= 0.11 LB/YR

WET POND REMOVAL= 2.86 LB/YR

CREDITS FOR PURCHASE= 1.78 LB/YR

TOTAL AREA= 0.32 ACRES

PARCEL 2 TOTAL AREA= 4.66 ACRES

TOTAL AREA= 1.96 ACRES

PARCEL 1

PARCEL 3

Managed Turf -- disturbed, graded for yards or other

#### Constants Annual Rainfall (inches) 43 Target Rainfall Event (inches) 1.00 Total Phosphorus (TP) EMC (mg/L) 0.26 Total Nitrogen (TN) EMC (mg/L) 1.86 Target TP Load (lb/acre/yr) 0.41 0.90

2011 BMP Standards and Specifications

Site Information

Land Cover (acres)

for yards or other turf to be

Impervious Cover (acres)

j (unitless correction factor)

Forest/Open Space (acres) -- undisturbed,

protected forest/open space or reforested Managed Turf (acres) -- disturbed, graded

**Project Name:** 

BMP Design Specifications List: 2013 Draft Stds & Specs

Post-Development Project (Treatment Volume and Loads)

A Soils

B Soils

1.05

1.16

Runoff Coefficients (Rv)								
	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				

Totals

0.00

3.10

3.84

6.94

(Ctrl+Shift+R)

FP Load Reduction Required (lb/yr)	6.9
(, ,	

# LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary	
Forest/Open Space Cover (acres)	0.00
Weighted Rv (forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	3.10
Weighted Rv (turf)	0.21
% Managed Turf	45%
Impervious Cover (acres)	3.84
Rv (impervious)	0.95
% Impervious	55%
Site Area (acres)	6.94

Treatment Volume and Nutrient Loads			
Treatment Volume (acre-ft)	0.3591		
Treatment Volume (cubic feet)	15,642		
TP Load (lb/yr)	9.83		
TN Load (lb/yr) (Informational Purposes Only)	70.31		

DEQ Virginia Runoff Reduction Method New Development Compliance Spreadsheet - Version 3.0

2013 Draft BMP Standards and Specifications

C Soils

2.05

2.68

Robinson Village

7/6/2020

## Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	3.60	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	3.60	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	2.51	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	2.51	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft<sup>3</sup>) 15,642

0.62

## Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft <sup>3</sup> )	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	9.01	0.00	0.00	0.00	0.00	9.01
TP LOAD REDUCTION ACHIEVED (lb/yr)	4.50	0.00	0.00	0.00	0.00	4.50
TP LOAD REMAINING (lb/yr)	4.51	0.00	0.00	0.00	0.00	4.51

NITROGEN LOAD REDUCTION ACHIEVED (lb/yr) 19.32 0.00 0.00 0.00 0.00 19.32

#### **Total Phosphorus**

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	9.83
TP LOAD REDUCTION REQUIRED (lb/yr)	6.98
TP LOAD REDUCTION ACHIEVED (lb/yr)	4.50
TP LOAD REMAINING (lb/yr):	5.33
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	2.48

#### **Total Nitrogen (For Information Purposes)**

• · · · · · · · · · · · · · · · · · · ·	
POST-DEVELOPMENT LOAD (lb/yr)	70.31
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	19.32
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	50.98

### Drainage Area A

13.a. Wet Pond #1 (Spec #14)

Drainage Area A Land Cover (acres)						
	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)		1.02	1.49		2.51	0.21
Impervious Cover (acres)		1.16	2.44		3.60	0.95

otal Phosphorus Available for Removal in D.A. A (lb/yr) 9.01 Post Development Treatment Volume in D.A. A (ft<sup>3</sup>) 14,345

#### Stormwater Best Management Practices (RR = Runoff Reduction) --Select from dropdown lists--Phosphorus Phosphorus Untreated Phosphorus Remaining Downstream Practice to be Runoff | Managed | Impervious | Volume from | Runoff | Remaining | Total BMP | Removal | Load from | Phosphorus | Removed By | Phosphorus | Reduction | Turf Credit | Cover Credit | Upstream | Reduction | Practice Runoff Treatment Efficiency Upstream Load to Credit (%) Area (acres) Area (acres) Practice (ft<sup>3</sup>) (ft<sup>3</sup>) Practice (lb) Load (lb) Practices (lb) Practice (lb)

**Total** 6.11

Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (Ibs)	Remaining Nitrogen Load (lbs)
30	0.00	64.40	19.32	45.08

SHEET **29** OF **41** 

BIIN

COMPUTATIONS

	<u> </u>
ENGINEERING GROUPE PROJECT STATUS	DATE: JULY, 2020
	SCALE: N/A
	DESIGNER: <b>CF,SO,MP</b> DRAFTSMAN: <b>ZEF,DP,M</b> P
09/02/20 REVISED PER TOWN COMMENTS	FILE NO. SP-393

Plan status: T - Complete approved not approved <u>Inc.</u> - Incomplete/Incorrect N/A - Not Applicable

SUPPORTING DATA

Narrative describing stormwater management strategy including all assumptions made in the

A. <u>Drainage Area Map</u> \_\_\_\_ Site and drainage area boundaries Off-site drainage areas

Pre- and post-developed land uses with corresponding acreage Pre- and post-developed time of concentration flow paths

Existing and proposed topographic features Drainage area appropriate for BMP

B. Soils Investigation Soils map with site and drainage area outlined

Geotechnical report with recommendations and earthwork specifications Boring locations

\_\_\_\_ Borrow area Basin pool area

Embankment area: centerline principal spillway, emergency spillway, abutments

Boring logs with Unified Soils Classifications, soil descriptions, depth to seasonal high groundwater table, depth to bedrock, etc. Compaction requirements specified

N/A Additional geophysical investigation and recommendations in Karst environment

3B - 1

**DETENTION, RETENTION, and IMPOUNDMENT BMPs** 

APPENDIX 3B

**Design and Plan Review Checklist** Page 2 of 7

II. <u>COMPUTATIONS</u>

Runoff curve number determinations: pre- and post-developed conditions, with worksheets. Time of concentration: pre- and post-developed conditions, with worksheets.

Hydrograph generation: pre- and post-developed condition for appropriate design and safety storms (SCS methods or modified rational-critical storm duration method)

Hydraulics

Specify assumptions and coefficients used.

\_\_\_\_ Stage-storage table and curve Riser structure and barrel

> Weir/orifice control analysis for riser structure discharge openings Weir/orifice control analysis for riser crest

Barrel: inlet/outlet control analysis

Riser/Outlet Structure flotation analysis (factor of safety = 1.25 min.).

Anti-seep collar or filter diaphragm design. Outlet protection per <u>VE&SCH</u> Std.. & Spec. 3.18.

Provisions for use as a temporary sediment basin riser with clean out schedule & instructions for conversion to a permanent facility.

Emergency spillway adequacy/capacity analysis with required embankment freeboard. Stage - discharge table and curve (provide equations & cite references).

Storm drainage & hydraulic grade line calculations.

Reservoir routing of post-development hydrographs for appropriate design storms (2-yr., 10-yr., or as required by watershed conditions) & safety storms (100-yr. or as required).

C. Downstream impacts \_\_\_\_ Danger reach study.

\_\_\_\_\_ 100 year floodplain impacts. "Adequate channel" calculations for receiving channel

Provide downstream hydrographs at critical study points.

Storm drainage plans for site areas not draining to BMP Safe conveyance - MS-19

Areas compensated for in water quality performance-based criteria calculations

3B - 2

APPENDIX 3B **DETENTION, RETENTION, and IMPOUNDMENT BMPs** 

**Design and Plan Review Checklist** 

Page 3 of 7

D. Water Quality

Impervious cover tabulation

Technology-based criteria: proper selection of BMP based on impervious cover

N/A Performance-based criteria: pre- and post-developed pollutant load and pollutant removal requirement calculations (provide worksheets)

N/A Water quality volume for retention basin I, II, or III permanent pool

Water quality volume for ext. detention and ext. detention enhanced with drawdown calculations N/A Proper surface area/depth allocations for permanent pool/shallow marsh/constructed wetland

N/A Constructed stormwater wetland / shallow marsh N/A Adequate drainage area and/or base flow

N/A Adequate pool volume N/A Adequate surface area

N/A Allocation of surface area to depth zones

N/A Maximum ponding depth over pool surface specified

III. PLAN REQUIREMENTS

A. General Items Plan view drawn at 1"=50' or less (40', 30', etc.)

✓ North arrow Legend

Location plan and vicinity map

Property lines

Existing & proposed contours (2' contour interval min.)

Existing features & proposed improvements (including utilities and protective measures)

Locations of test borings Earthwork specifications

Construction sequence for SWM basin and E&S controls

Temporary erosion & sediment control measures Conveyance of base flow during construction

✓ Temporary and permanent stabilization requirements

\_\_\_ Emergency spillway Basin side slopes

3B - 3

**DETENTION, RETENTION, and IMPOUNDMENT BMPs** 

APPENDIX 3B

**Design and Plan Review Checklist** 

\_\_\_\_ Basin bottom

N/A Delineation of FEMA 100 year floodplain Plans sealed by a qualified licensed professional

B. BMP Plan Views

Dimensions of basin features: perm. Pool, sediment forebay, embankment, etc.

Location of all conveyance system outfalls into basin Proper orientation to avoid short circuiting Outlet protection per <u>VE&SCH</u>

Top of bank & basin bottom elevations Elevations of permanent pool, water quality volume and max. design water surface elevations for

all appropriate design storms and safety storms Side slope (H:V) of basin storage area and embankment (upstream and downstream slopes)

Proper length-to-width ratio as specified in BMP design criteria N/A Pervious low flow channel

N/A Sediment forebay Basin bottom slope

Maintenance access to sediment forebay, riser structure, and one side of the basin ponding area

Peripheral ledge for safety N/A Aquatic Bench

N/A Shoreline protection N/A Safety fence

Riser and barrel materials and dimensions labeled

N/A Constructed stormwater wetland / shallow marsh

N/A Basin liner specifications

N/A Pool depth zones identified on plan N/A Pool geometry - wet/dry weather flow path

3B - 4

**DETENTION, RETENTION, and IMPOUNDMENT BMPs** 

**Design and Plan Review Checklist** Page 5 of 7

C. BMP - Section Views & Related Details

Embankment (or dam) and Ponding Areas

Elevations of permanent pool, water quality volume and max, design water surface elevations for all appropriate design storms and safety storms

Top of dam elevations- constructed height and settled height (10% settlement).

\_\_\_\_ Adequate freeboard \_\_\_\_ Top width labeled

N/A Elevation of crest of emergency spillway

N/A Emergency spillway w/ side slopes labeled.

N/A Emergency spillway inlet, level, and outlet sections labeled

Existing ground and proposed improvements profile along center line of embankment Existing ground and proposed improvements profile along center line of principal spillway

Typical grading section through pond including typical side slopes with aquatic bench, safety ledge,

Existing ground and proposed improvements along center line of emergency spillway N/A Dimensions of zones for zoned embankment

Seepage Control

✓ Impervious lining N/A Phreatic line (4:1 slope measured from the principal spillway design high water).

a. Anti-seep Collar Anti-seep collar (detail regd..).

Size (based upon 15% increase in seepage length). Spacing & location on barrel (at least 2' from pipe joint).

b. <u>Filter Diaphragm</u>

N/A Design certified by a professional geotechnical engineer.

Foundation Cut Off Trench or Key Trench Materials labeled

Bottom width (4' min. or greater per geotech. report).

Side slopes labeled (1:1 max. steepness). Depth (4' min. or as specified in geotechnical report)

3B - 5

**DETENTION, RETENTION, and IMPOUNDMENT BMPs** 

APPENDIX 3B

APPENDIX 3B

**Design and Plan Review Checklist** 

4. Multi Stage Riser and Barrel System

\_\_\_\_ Materials labeled

\_\_\_\_ Bedding or cradle details provided Gauge & corrugation size for metal pipes specified

Barrel diameter, inverts, and slope (%) labeled

Outlet protection per <u>VESCH</u>, Std. & Spec. 3.18, 3.19 w/ filter cloth underlayment Crest elevation of riser structure shown

Inverts and dimensions of control release orifices/weirs shown Structure dimensions shown

Control orifice/weir dimensions shown Extended detention orifice protection (detail required for construction)

Riser trash rack or screen (detail reqd., for construction). Riser anti-vortex device (detail regd., for construction).

✓ Proper riser structure footing. Access to riser structure interior for maintenance.

\_\_\_\_ Basin drain pipe

Planting schedule and specifications (transport / storage / installation / maintenance)

Plant selection for planting zones 1thru 6 Preservation measures for existing vegetation Top soil / planting soil included in final grading

Maintenance Items

Person or organization responsible for maintenance. Maintenance narrative which describes the long-term maintenance requirements of the facility and all

✓ Facility access from public R/W or roadway.

✓ Maintenance easement.

3B - 6

**DETENTION, RETENTION, and IMPOUNDMENT BMPs** APPENDIX 3B

> **Design and Plan Review Checklist** Page 7 of 7

COMMENTS

BY: CHRISTOPHER FERRARA DATE: 6/26/20

3B - 7

oupe.

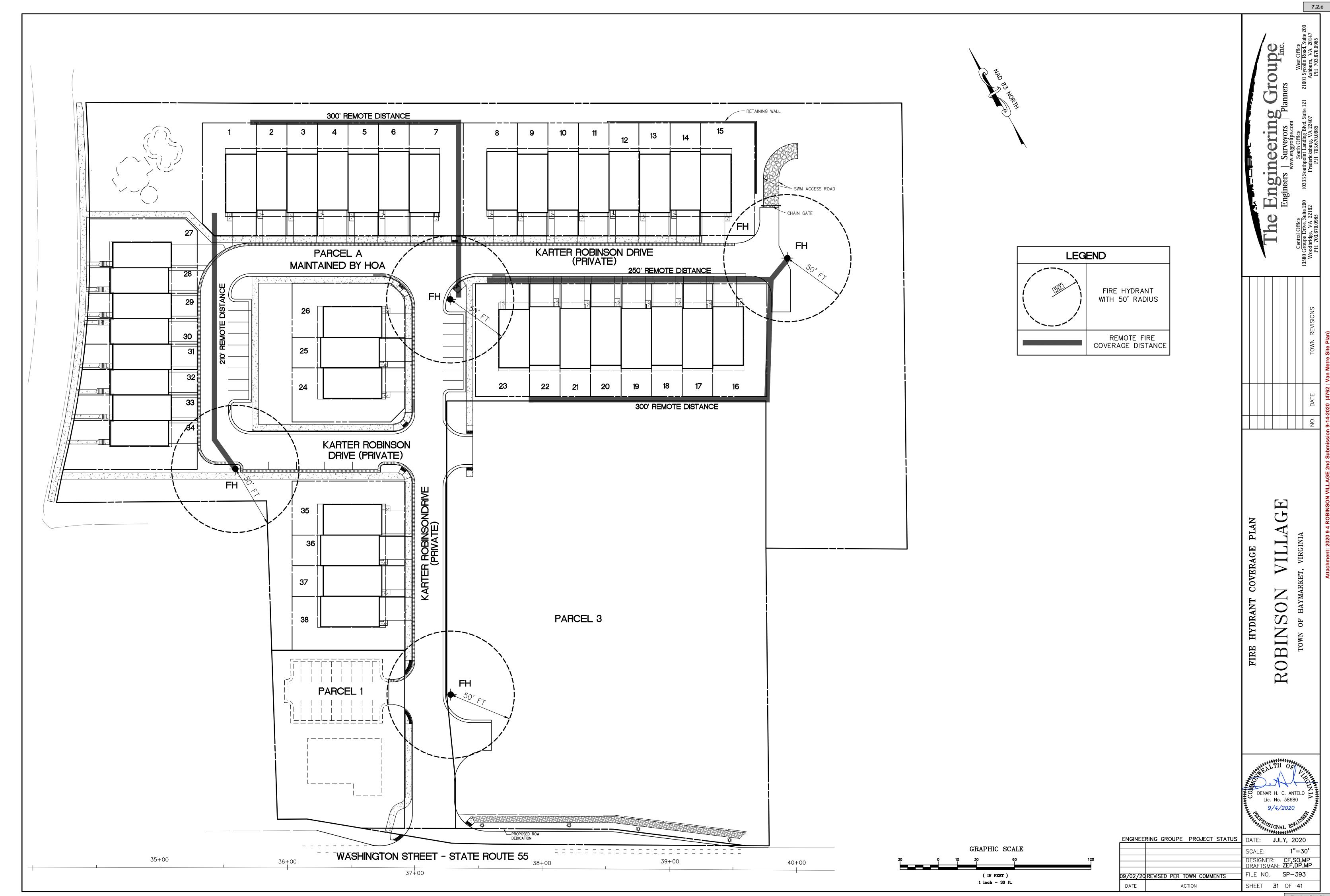
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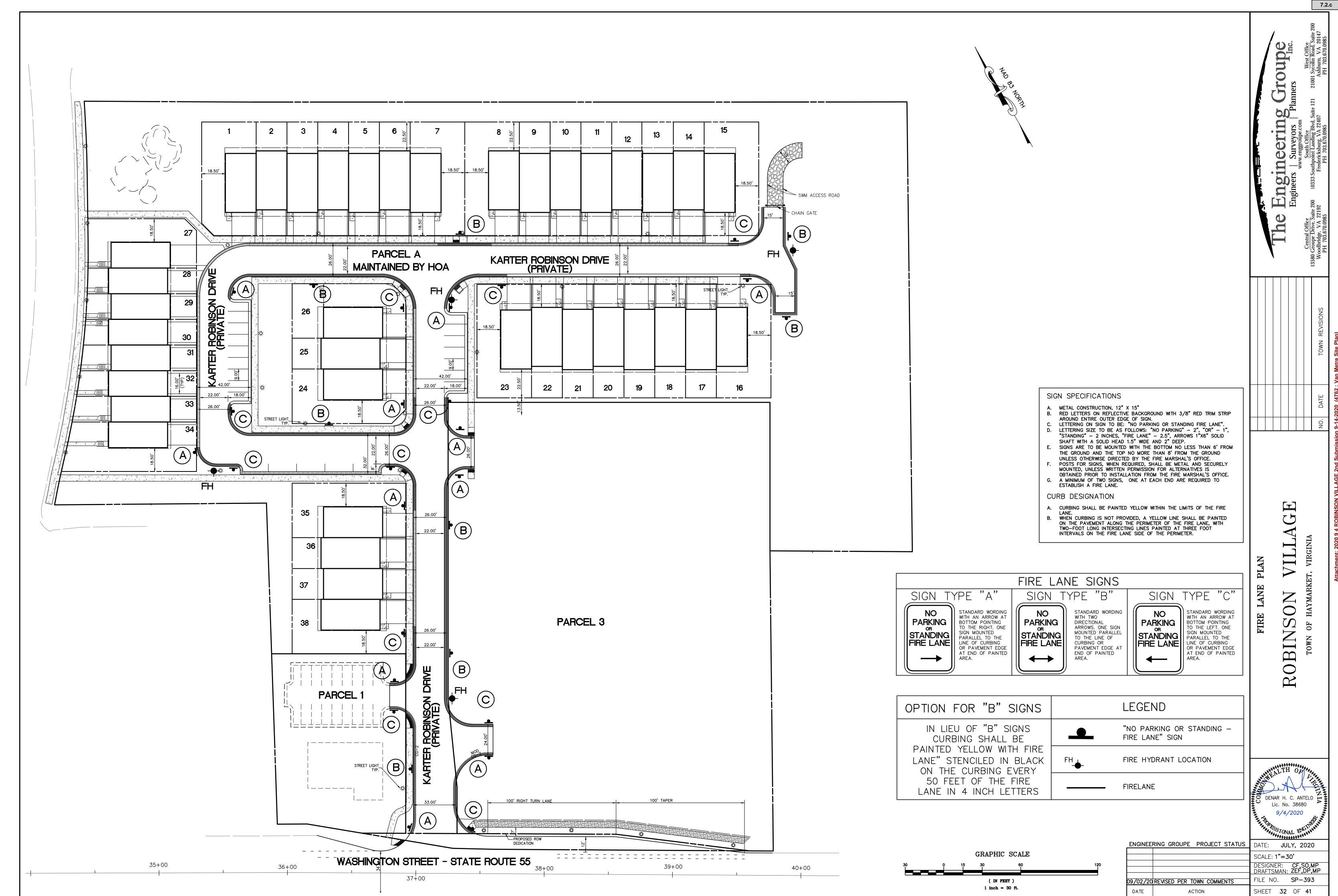
ENGINEERING GROUPE PROJECT STATUS DATE: JULY, 2020

SCALE: N/A FILE NO. **SP-393** 09/02/20 REVISED PER TOWN COMMENTS

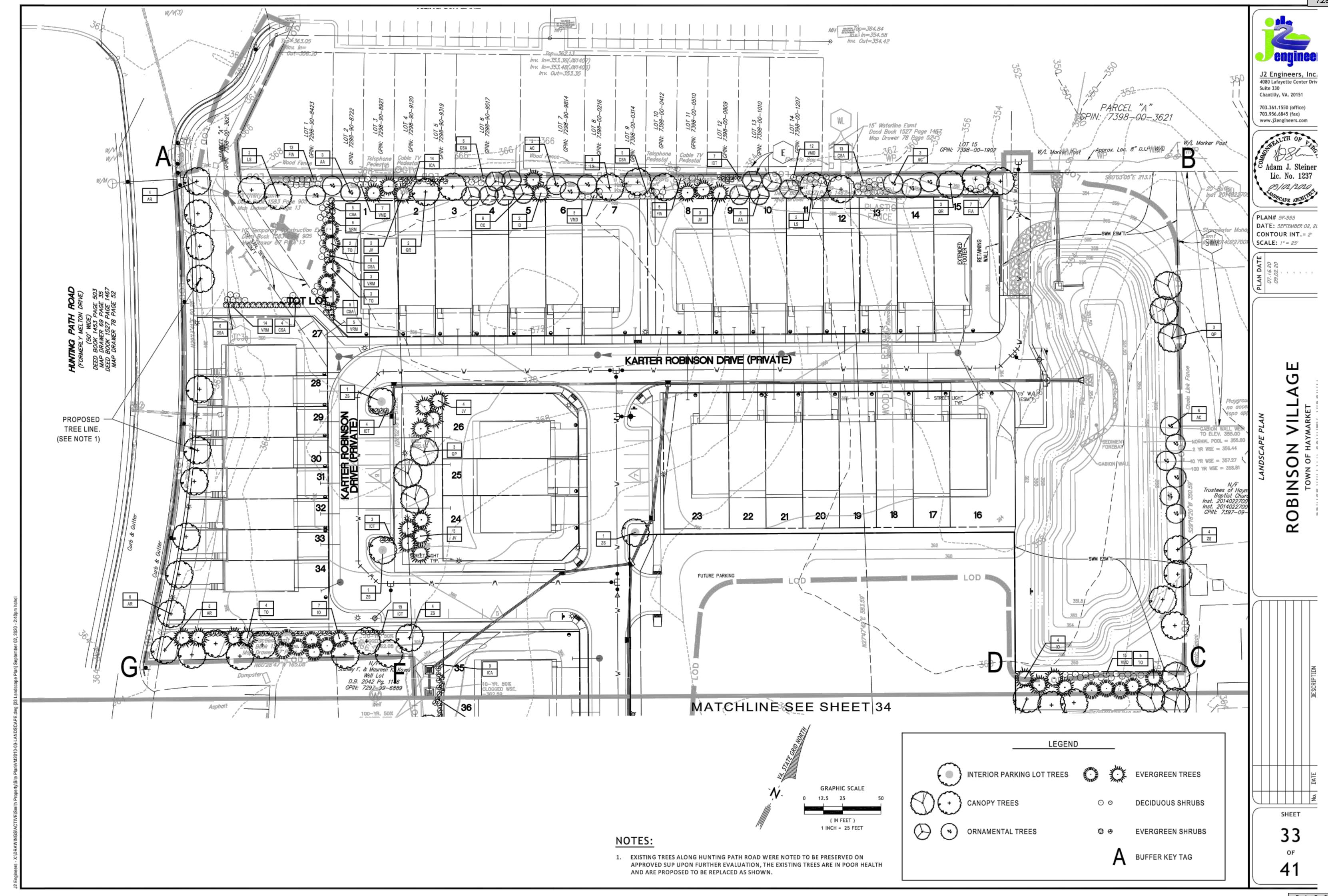
SHEET **30** OF **41** G:\PROJECT\Smith Property-Haymarket\ENG\DWG\00-K6400 SWM COMPS & Packet Pg. 50

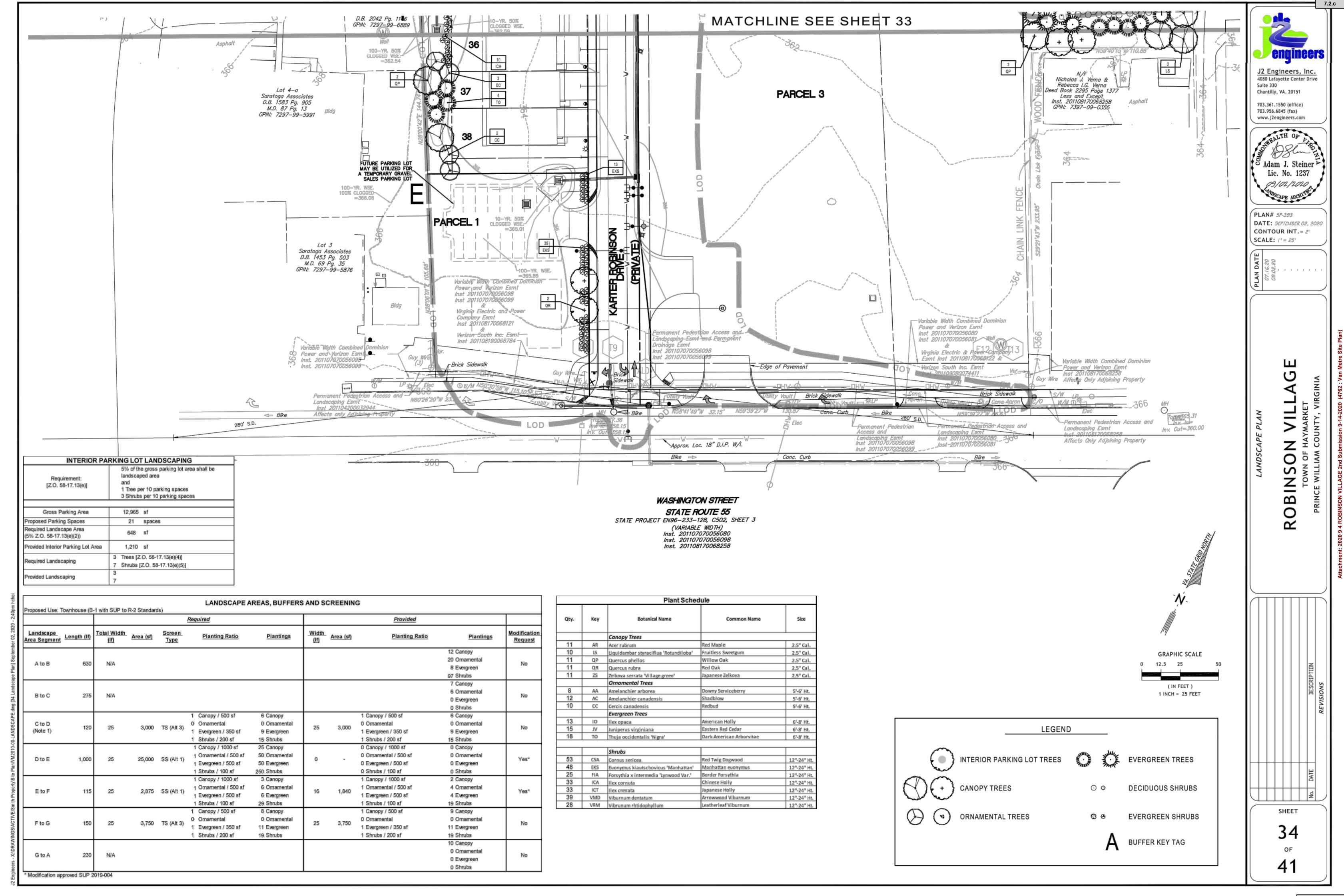


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in this type and scale of work. B. Applicable Specifications and Standards:

Town of Haymarket Zoning Ordinance;

Virginia Stormwater Management Handbook; American Joint Committee on Horticultural Nomenclature;

American Standard for Nursery Stock (ANSI Z60.1), latest edition;

- Landscape Specification Guidelines for Baltimore Washington Metropolitan Areas, latest edition, by Landscape Contractors Association MD, DC, VA.
- C. The Contractor shall guarantee all landscape improvements, including sod/seeding, for one full year from the date of
- initial acceptance by the owner. Contractor must contact owner at least 10 business days in advance to schedule acceptance inspection(s). Contractor must replace all dead or unacceptable plants during the following planting season.
- SUBMITTALS: Submit the following to the Owner's Representative prior to beginning work: Copies of manufacturer's data for all materials required.
- Samples of required mulch material.
- Chemical and mechanical analysis and samples of all existing soil, topsoil, organic matter and soil mix to be used.
- D. Planting schedule showing the dates (earliest and latest) proposed for each type of plant specified, schedule each type of planting within the normal planting seasons for such work. Include requests for any proposed changes in the approved planting season and a list of proposed sources for all plant materials.
- List of proposed sources for all plant material.
- DELIVERY, HANDLING, AND STORAGE:
- Deliver packaged materials in manufacturer's unopened containers or bundles, fully identified with name, brand, type, weight, and analysis. Store packaged materials in such a manner as to prevent damage or intrusion of foreign matter.
- B. Dig balled and burlapped (B&B) plants with firm, natural balls of earth, of a diameter not less than that shown on the plant list nor less than recommended by the American Standard for Nursery Stock, and of sufficient depth to include the fibrous and feeding roots. B&B plants will not be accepted if the ball is cracked or broken before or during planting C. Deliver trees and shrubs after preparations for planting have been completed. Do not bend, bind, or tie trees or shrubs
- in such a manner as to damage bark, break branches or destroy natural shape. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by heeling-in bare root stock and covering plant balls with soil, peat moss or other acceptable material for balled stock. Plants shall be kept well watered and shall not remain unplanted for longer than ten (10) days after delivery.
- D. Plants shall be lifted and handled from the bottom of the ball only.
- E. Do not remove container-grown stock from containers until planting time. <u>DRAINAGE</u>: Before planting, determine that areas to receive plant material have adequate subdrainage.
- The landscape contractor is responsible for drainage tests as necessary to identify any problems prior to beginning planting operations. Upon commencement of planting operations the landscape contractor assumes responsibility for
- B. Dig planting pits to full depth and dimensions indicated on drawings.
- C. At bottom of planting pit, excavate rectangular pit 12 inches by 12 inches by 18 inches deep. Quickly pour water into pit to a depth of 6 inches (approximately 3-3 3/4 gallon). Note time required for water to be completely absorbed. Divide time noted by 6 to achieve average rate of absorption for 1 inch of water. Where rate of absorption exceeds 60 minutes
- per inch, notify owner immediately for directions on how to proceed.
- PLANTING DATES: Planting shall be done only within the following dates except as approved by Owner.
- A. Deciduous Trees and Shrubs: March 1 to May 31 and October 15 to December 15.
- B. Evergreen Trees, Shrubs and Vines: March 1 to May 31 and September 1 to November 15. C. All plant material shall be guaranteed by the Contractor for a period of 1 year from the date final acceptance to be in
- good, healthy and flourishing condition. MATERIALS FOR PLANTING: Contractor must provide, load, haul, mix and spread all materials for plantings as required.
- Topsoil: shall be a fertile, friable natural loam, uniform in composition, free of stones, lumps, plants and their roots, debris and other extraneous matter over 1 inch in diameter, capable of sustaining vigorous plant growth. Soil shall be harvested at a single source from the O and/or A horizons of the soil profile.
- Topsoil shall have a pH range of 5.5 to 7.5.
- 2) Topsoil shall contain 1.5-5% organic matter by dry weight .
- 3) Soil Texture: sandy loam, sandy clay loam with the following particle size distribution: Less than 10%
- 15-30% 20-35%
- Chemical Levels shall be: Magnesium Mg
  - Phosphorus P205 150+ units
- Potassium K20 120+ units Soluble Salts/ Conductivity - Not to exceed 900 ppm/0.9 mmhos/cm (in soil); not to exceed 3000 ppm/2.5 mmhos/cm
- (in high organic mix) 6) Cation exchange capacity shall be a minimum of 8 meg/100g.
- B. Clay Loam to Sandy Clay Loam Soil: shall be a fertile, friable natural loam, uniform in composition, free of stones, lumps, plants and their roots, debris and other extraneous matter over 1 inch in diameter, capable of sustaining vigorous plant
- Soil shall have a pH range of 5.5 to 6.5.
- 2) Soil shall contain 2-5% organic content by volume.
- 3) Soil Texture: Clay loam to sandy clay loam with the following particle size distribution:
- Gravel Less than 10% 20-50% Sand <35%
- 20-40% 4) Chemical Levels shall be:
- Magnesium Mg
- 100+ units
- Phosphorus P205 150+ units Potassium - K20 120+ units
- 5) Soluble Salts/ Conductivity Not to exceed 900 ppm/0.9 mmhos/cm (in soil); not to exceed 3000 ppm/2.5 mmhos/cm (in high organic mix)
- Cation exchange capacity shall be 20-35 meq/100g. C. Compost: Compost shall be mature, stable, weed free, and produced by aerobic decomposition of organic matter.
- Compost feedstock shall be plant matter, such as high lignin forestry products or yard waste (leaves, brush and yard The product must not contain any visible refuse or other physical contaminants, substances toxic to plants, or over 5%
- sand, silt, clay or rock material by dry weight. 2) Compost shall be sampled and tested as required by the Seal of Testing Assurance Program of the United States
- Composting Council (USCC) and shall meet the physical requirements for compost as determined by USCC. 3) The product shall possess no objectionable odors. The product must meet all applicable USEPA CFR, Title 40, Part
- 503 Standards for Class A biosolids.
- The moisture level shall be such that no visible water or dust is produced when handling the material. Composted Pine Bark Fines: Shall be approved composted, ground pine bark having no particle with a dimension
- greater than 3/4 inch. No more than 10% shall be wood.
- E. Mulch: Shall be shredded hardwood bark for trees and shrubs. Fine bark mulch is to be used for perennial beds. F. Sand: Shall be quartz based sharp concrete sand, ASTM C-33 Fine Aggregate, with a Fines Modulus Index between
- G. Trace Elements: Shall be commercially available slow release materials containing zinc (Zn), Molybdenum (Mo),
- Copper (Cu), Boron (B), and Magnesium (Mn). H. Fertilizer: A commercial fertilizer for ornamental trees, shrubs and ground cover with an analysis of 10% Nitrogen, 6%
- Phosphorus and 4% Potassium shall be used. This fertilizer shall be granular with a minimum of 50% of the total Nitrogen in organic form. 14-14-14-Osmocote (or approved equal) shall be applied at a rate of 10 lbs. per square foot, tilled to a depth of 8 inch, shall be used for perennials.
- Soil Separator: Shall be rot resistant non-woven polypropylene filter fabric, water permeable, and unaffected by freezing and thawing. Acceptable products include: Mirafi 140N, Mirafi Civil Engineering Co., or Stabilenka Type T-80, American Enka Co., Enka, N.C.
- Planter Drainage Fabric: Shall be prefabricated planter drainage fabric Miradrain 9000, a composite system consisting of a Mirafi drainage fabric bonded to a three-dimensional highly impact-resistant plastic core. The core shall have the following attributes:
- Compressive Strength: (ASTM D-1621), 15,000 + PSF.
- Overlaps: Shall be capable of mechanically interlocking so as to prevent separation of the overlaps during backfill. PLANT MATERIALS: Refer to the PLANT LIST on the drawings for specific types and quantities of plants:
- A. Plants shall be nursery grown in accordance with good horticultural practices. Plants shall either be obtained from local nurseries and/or others, which have soil (heavy clay) and climatic conditions similar to those in the locality of the project. Plant material grown in sandy, well-drained soil will not be approved for this project. Plants shall be true to species and variety and unless specifically noted otherwise, all plants shall be of specimen quality, exceptionally heavy, symmetrical, tightly-knit plants, so trained or favored in their development and appearance as to be superior in form, number of
- branches, compactness and symmetry. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf, free of disease, insect pests, eggs or larvae and shall have healthy, well-developed root systems. They shall be free from physical damage or any conditions that would prevent thriving health and the desired appearance.
- Trees with abrasion of the bark, sun scald, disfiguring knots, or pruning cuts more than 1 1/4 inch diameter which have not completely callused, will be rejected. Plants shall conform to measurements specified in the plant schedules except that plants larger than specified may be

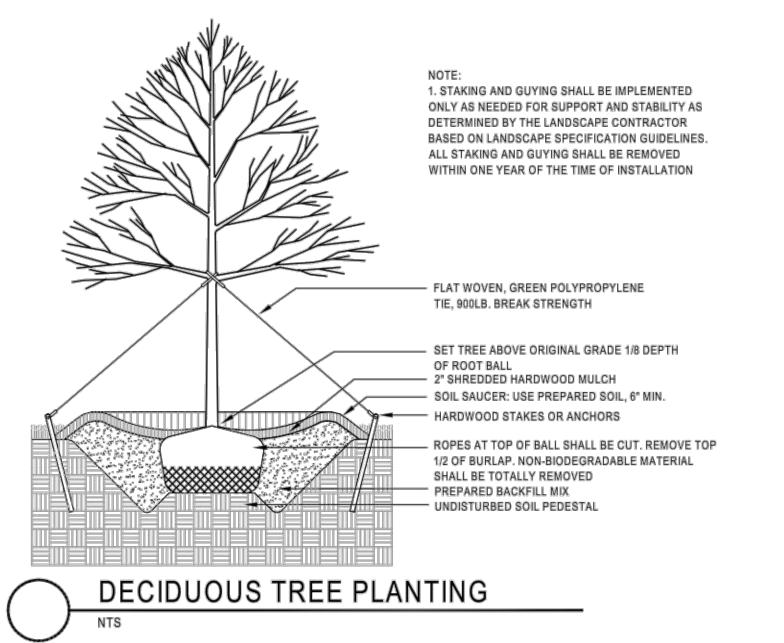
Trees, which have a damaged or crooked leader, or multiple leaders, unless specified in the plant list, will be rejected.

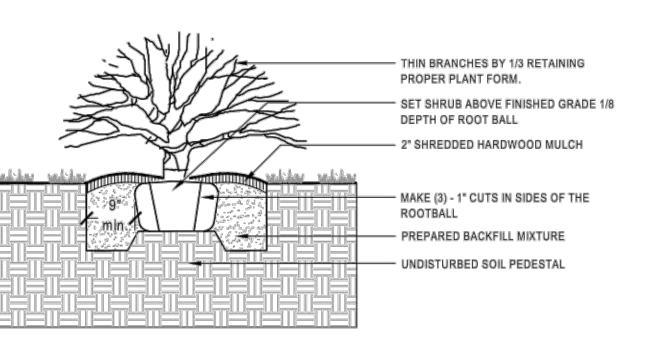
- used if acceptable to the Landscape Architect or owner. Use of such plants shall not increase the contract price. If larger plants are accepted, the root ball shall be sized for the larger plant. Caliper Measurement: Shall be taken at a point on the trunk 6 inches above natural ground line for trees up to 4 inches
- diameter, and at a point 12 inches above the natural ground line for trees over 4 inches diameter. G. Plants shall be measured when branches are in the normal position. Height and spread dimensions specified refer to

- the main body of the plant and not from branch tip to tip.
- SOIL MIXING PROCEDURES
- Topsoil used in sand/soil mixes shall be screened or shredded prior to mixing in sands. Maximum clod inclusion for soil mixes shall not exceed:
  - Clod size (largest dimension) % of the soil mix volume
  - 1 to 3 inches 3 to 6 inches
- >6 inches Less than 2% B. Source material and soil mix stockpiles shall be protected from rain by covering with filter cloth.
- A. Examine the areas and conditions where soil mix is to be installed and notify the Landscape Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.
- B. Cooperate with other Contractors and trades working in and adjacent to other work areas. Examine drawings which show development of entire project and become familiar with scope of other work required.
- SOIL INSTALLATION GENERAL PROCEDURES: If subgrade soil compaction exceeds 80%, existing soil shall be ripped to a depth of 14 inches to alleviate compaction which has taken place during construction. Prior to loosening of soil, Contractor must locate existing utilities and
- coordinate with Owner any underground electric lines, drainage pipes, conduits, etc. B. Prepare the subgrade by roughening the top 3 inches of the subsoil by dragging the teeth of a backhoe bucket across
- C. Begin soil installation as soon as subsoil is prepared. Use low impact equipment with track belts, large tires, or low tire
- pressure to lower compaction and soil damage during installation. D. Monitor compaction during installation and loosen soils as needed if compaction exceeds 80%. E. Install specified soil in 12-18 inch thick lifts. Compact each lift sufficiently to reduce settling but not enough to prevent
- the movement of water and feeder roots through the soil. The soils in each lift should feel firm to the foot in all areas and make only slight heel prints.
- INSTALLATION OF SOIL MIX FOR LAWN AREAS ON GRADE; A. Soil Mix for Lawns on Grade: shall consist of 10% compost and 90% topsoil, by volume. These materials must meet specifications described in Section 2.00.
- B. Loosen subgrade lawn areas to a minimum of 3 inches. Remove stones more than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter. Limit preparation to areas which will be planted promptly after
- C. Spread soil mix for lawn areas on grade to a minimum depth of 6 inches as required to meet grade and elevations shown on drawings, after lightly rolling and natural settlement. Allow for sod thickness in areas to be sodded.
- 12. INSTALLATION OF SOIL MIX FOR TREE PITS ON GRADE A. Confirm that native subsoil drains at a rate of at least ¼ inch per hour. If drainage is less than ¼ inch per hour, provide
- B. Install 30-36 inches of Soil Mix for Tree Pit Backfill on Grade, which shall consist of 3 parts existing clay loam to sandy clay loam soil, amended per soil test results instructions and incorporating 1 part Compost and/or Composted Pine Bark
- Till 4 inches of compost into the top 6 inches of the installed Soil Mix.
- 13. INSTALLATION OF SOIL MIX FOR MULCHED SHRUB AND PERENNIAL BEDS:
- A. Confirm that native subsoil drains at a rate of at least 1/2 inch per hour. If drainage is less than 1/2 inch per hour, provide subsurface drainage lines.
- B. Install 14-18 inches of Soil Mix for Mulched Shrub and Perennial Beds, which shall consist of 3 parts existing clay loam to sandy clay loam soil, amended per soil test results instructions and incorporating 1 part Compost and/or Composted
- C. Till 4 inches of compost into the top 6 inches of the installed Soil Mix. 14. EROSION CONTROL MATERIAL AND PLANTING ON STEEP SLOPES:
- A. Material meeting the requirements of the specifications shall be installed and maintained on the designated areas as shown and specified. The areas to be covered shall be prepared and fertilized as specified before the erosion material is placed. Immediately prior to the planting operations, the material shall be laid evenly, smoothly and in contact with the
- B. Lay erosion control materials with one inch nominal openings in accordance with manufacturer's instructions. Unroll in direction of water flow. Overlap sheets by at least 6 inches. Where strips are to be spliced lengthwise, overlap strips by 8 inches. Upgrade section shall be on top of all splices.
- C. The Contractor shall maintain and protect the erosion control material until the final inspection. Maintenance shall consist of repairs made necessary by erosion, wind or any other cause. Following the restoration of damaged areas under plant and turf guarantee and establishment requirements for applicable underlying items; the erosion control material shall be repaired or replaced to meet the original requirements and maintained until the final inspection.
- GENERAL PLANT INSTALLATION: Excavation: Excavate all tree pits and planting areas to the width and depth shown in the planting details.
- B. Center plant in pit and orient for the best visual effect. Set plants plumb and hold rigidly in position until soil has been tamped firmly around root ball.
- C. Mix soil amendments and fertilizers with existing soil in accordance with soil recommendations for plant type, based upon soil test results as approved by Owner. Delay mixing of fertilizer if planting will not occur within a few days.
- D. Backfill pit with planting soil mix, consisting of 2/3 existing soil and 1/3 organic material, and fertilizer, until two-thirds full. Tamp and water each layer thoroughly to settle soil. After soil settles, fill pit with remaining planting soil mix, water and shape surface so that it slopes to drain from trunk and matches ground at edge of planting pit. Mulch within 48 hours after planting and after applying the pre-emergent herbicide, except ground cover areas (which
- shall be cut with a smooth consistent edge to a minimum depth of 3 inches. Keep mulch out of the crowns of shrubs and off buildings, sidewalks, light standards, and other structures. F. All planting areas to conform to specified grades after full settlement has occurred and mulch has been applied. Provide

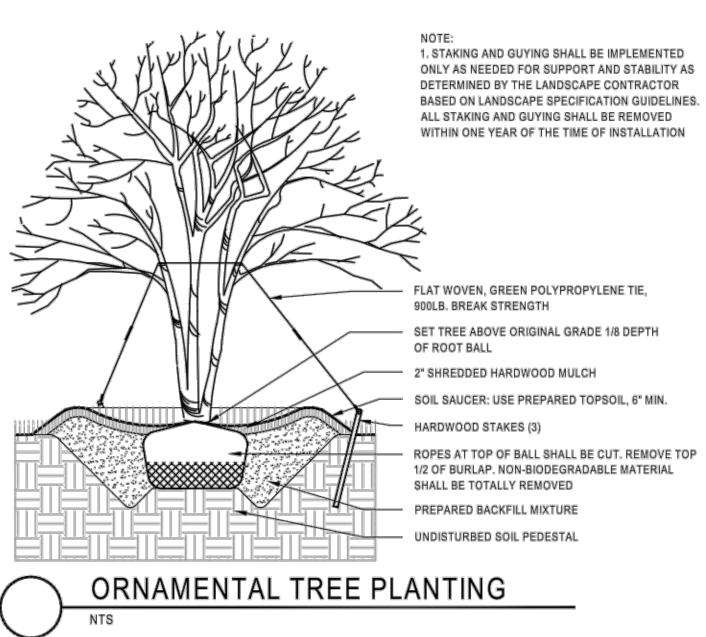
shall have organic material placed before planting) with a 2 inch layer of mulch immediately after planting. All bed lines

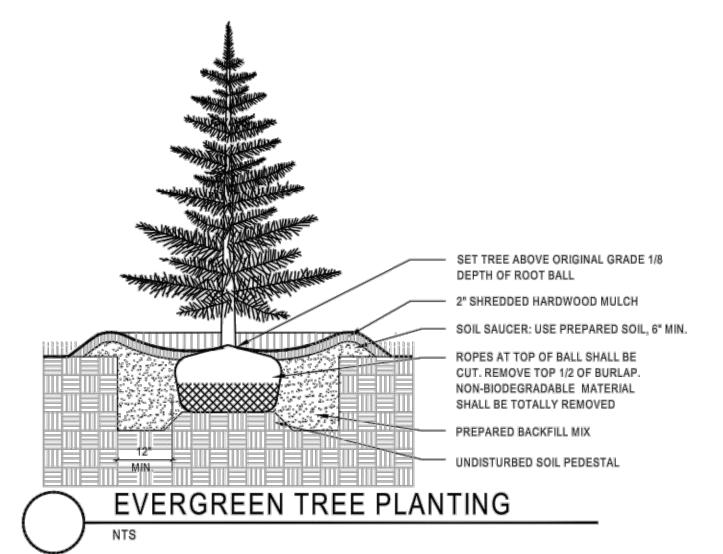
- saucers around tree pits as shown on planting details. Remove all tags, labels, strings, etc. from all plants.
- PERMANENT SEEDING OR SODDING FOR GRASS AREAS: A. Lawn Seed or Sod varieties shall be an improved variety turf-type tall fescue blend. The landscape contractor shall select from varieties approved by the Maryland or Virginia Department of Agriculture.
- Refer to the Virginia Erosion and Sediment Control Handbook, for guidelines, specifications and installation techniques
- C. Maintenance shall begin immediately after each plant and lawn area is installed and shall continue until 90 days after final acceptance of the last section.





TYP. B&B SHRUB PLANTING





J2 Engineers, Inc. 4080 Lafayette Center Drive Suite 330 Chantilly, VA. 20151 703.361.1550 (office) 703.956.6845 (fax) www.j2engineers.com

> PLAN# 5P-393 DATE: SEPTEMBER 02, 2020 CONTOUR INT. = 2° SCALE: 1" = 25"

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SHEET

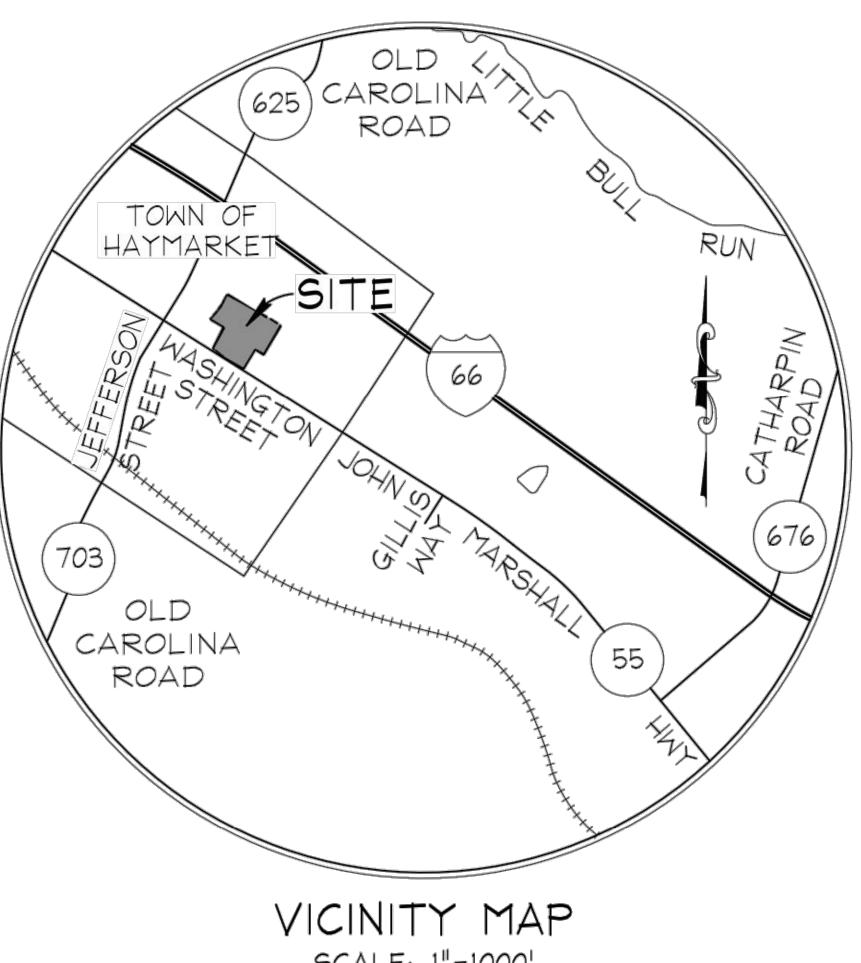
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SMITH

# SPECIAL USE PERMIT PLAN **FOR** SMITH PROPERTY AT HAYMARKET

# TOWN OF HAYMARKET, **VIRGINIA**



## SHEET INDEX:

SHEET NUMBER

PRELIMINARY LANDSCAPE PLAN

SCALE: 1"=1000"

## **OWNER:**

BENJAMIN M SMITH JR TR C/O BM SMITH & ASSOCIATES INC 2407 COLUMBIA PIKE, SUITE 200 ARLINGTON, VA 22204

## **APPLICANT**

VAN METRE COMMUNITIES, LLC 9900 MAIN STREET, SUITE 500 FAIRFAX, VA 22031 (703) 425-2610

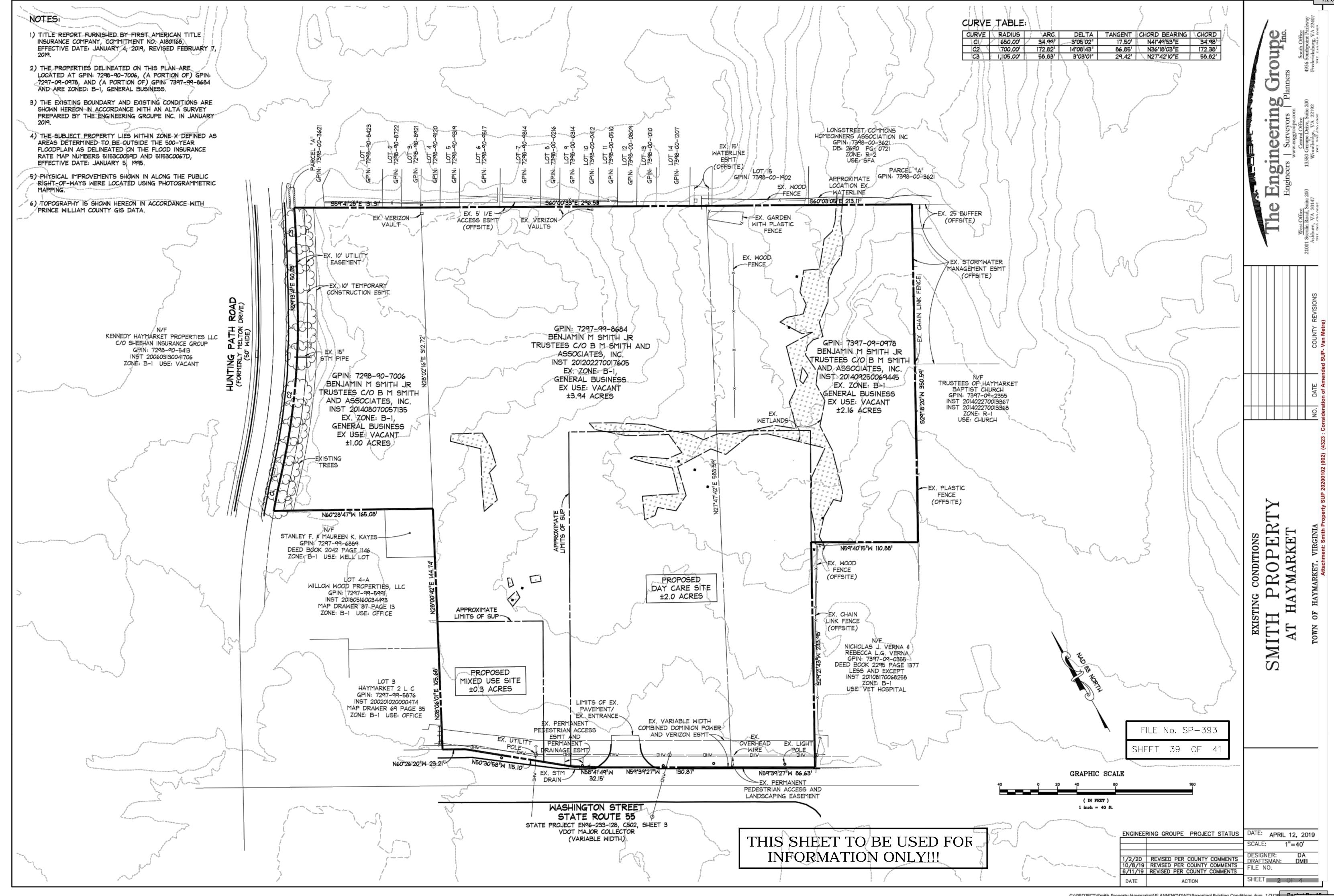
## **ENGINEER:**

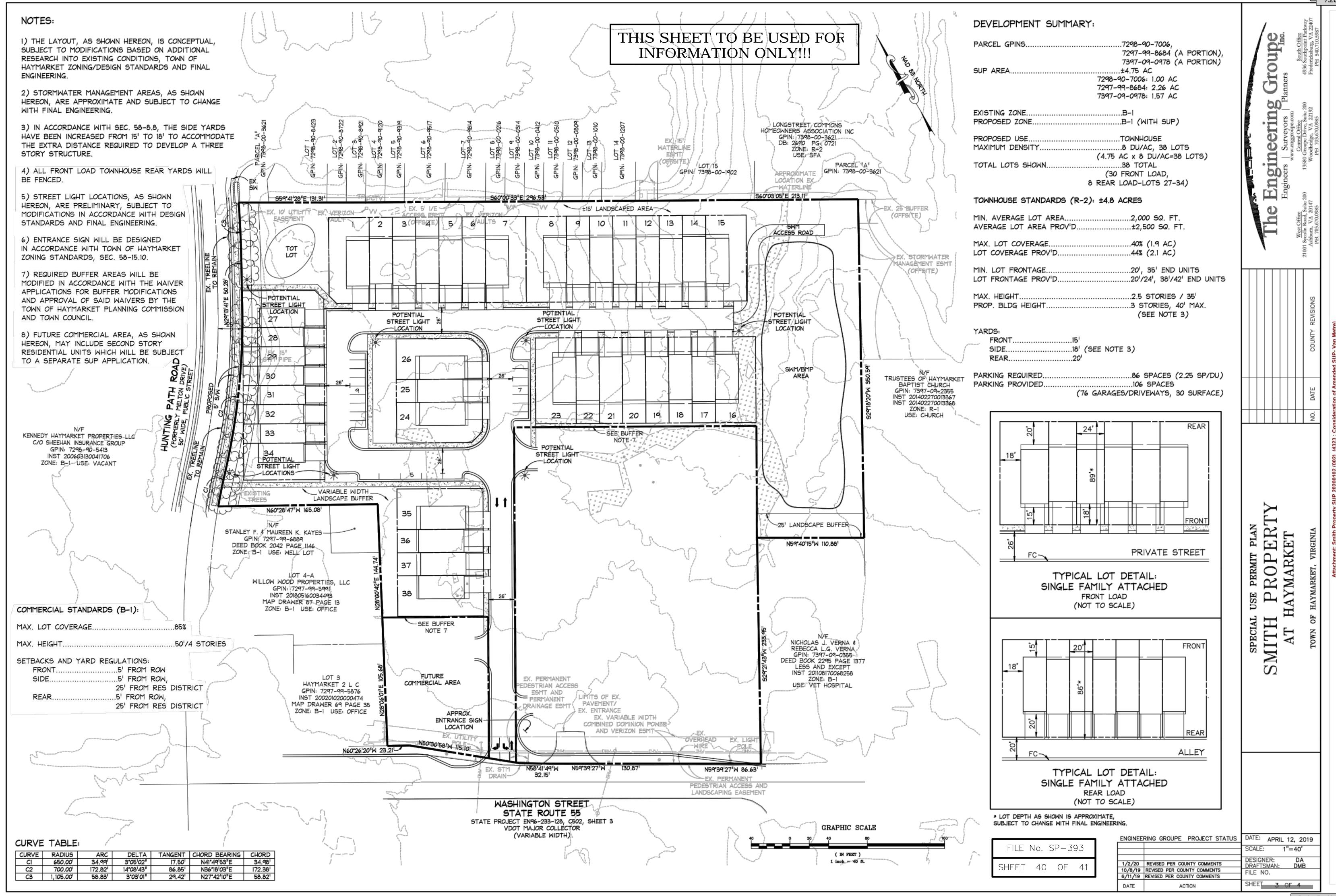
THE ENGINEERING GROUPE, INC. 13580 GROUPE DRIVE, SUITE 200 WOODBRIDGE, VA 22192 (703) 670-0985

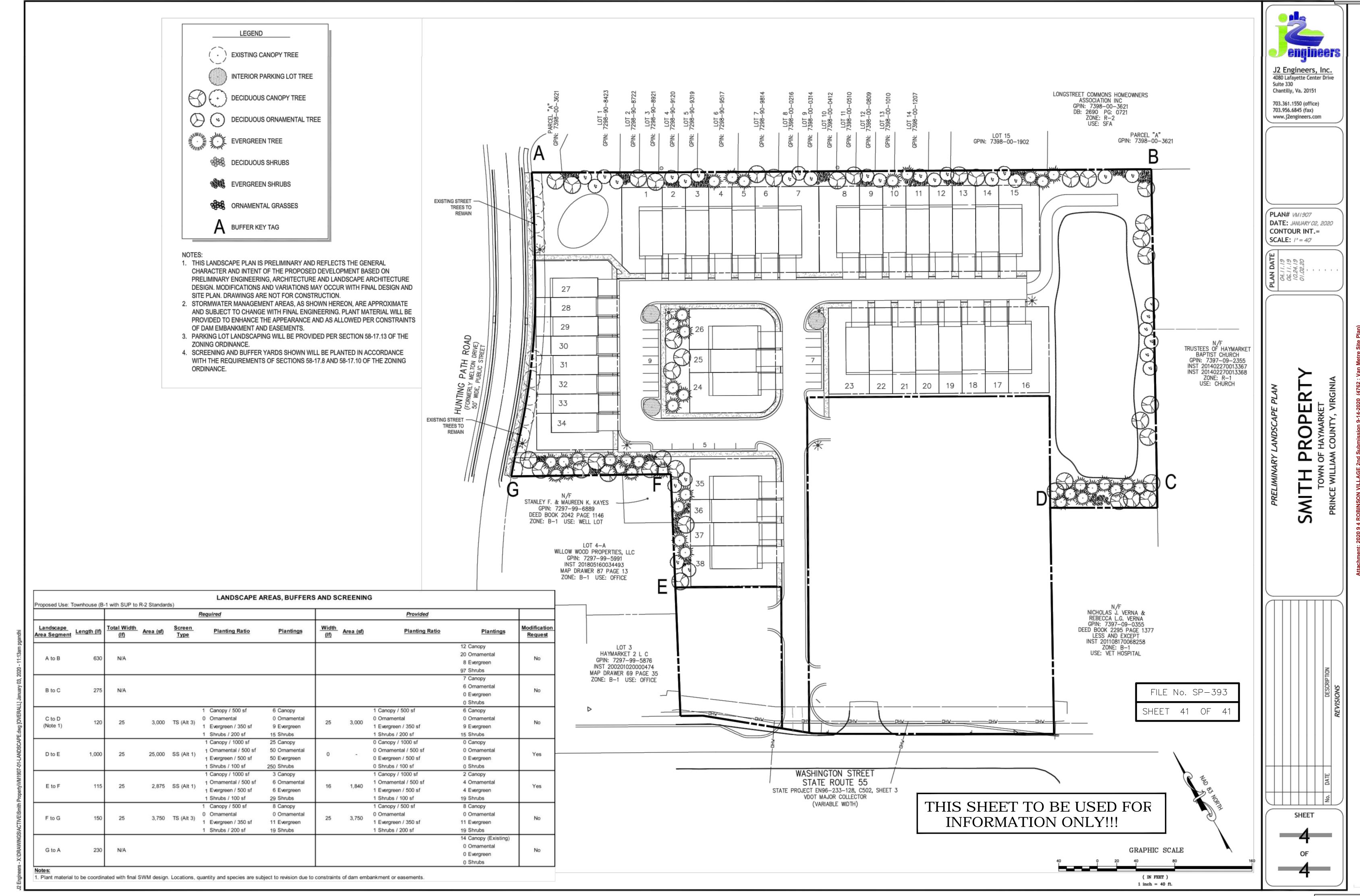
THIS SHEET TO BE USED FOR INFORMATION ONLY!!!

FILE	No.	SP-3	93
SHEET	38	OF	41

	ENGINEE	RING GROUPE PROJECT STATUS	DATE: APRIL 12, 20
1			SCALE: 1"=40'
ł	1/2/20 10/8/19 6/11/19	REVISED PER COUNTY COMMENTS REVISED PER COUNTY COMMENTS REVISED PER COUNTY COMMENTS	DESIGNER: DA DRAFTSMAN: DME FILE NO.
J	DATE	ACTION	SHEET 1 OF 4







#### PAGE 1 OF 1

#### VIRGINIA DEPARTMENT OF TRANSPORTATION **COMMENT CATEGORIES:** PRINCE WILLIAM LAND USE 1. REQUIREMENT 2. RECOMMENDATION **PROJECT REVIEW COMMENT AND RESOLUTION SHEET DEVELOPER/ENGINEER: THE ENGINEERING** DATE: 09/22/2020 **COUNTY NUMBER: HAYMARKET SUBMISSION** REVIEWER(S): HIREN JOSHI; P.E. GROUP REVIEW PHASE & Type: 2ND REVIEW SITE PROJECT NAME: ROBINSON VILLAGE DISCIPLINE: **PWC LAND USE SECTION PLAN ITEM** Dwg. COMMENT RESPONSE(2) DATE: FINAL DISPOSITION(3) COMMENTS No.(1) **CATEGORY** No.

2

(1	)	Indicate drawing no./	′page no. or use "G	6" for genera	I comment.
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2.01

SP

We have completed our review of the subject site plan

and we have no objection to its approval.

Note: This form is to be used by the VDOT land use team to provide comments or concerns associated with the rezoning applications, site plans or any other plans when requested by the county or the applicants.

REVISED SEPTEMBER, 2014

<sup>(2)</sup> To be filled out by Applicant/Engineer. Date of Response is required.

<sup>(3)</sup> The VDOT reviewer is responsible for the final disposition of all comments.

# Rebecca Horner, AICP, CZA

Director of Planning

#### COUNTY OF PRINCE WILLIAM

5 County Complex Court, Prince William, Virginia 22192-9201 (703) 792-7615 Metro 631-1703 Ext. 7615 FAX (703) 792-4401 www.pwcgov.org/planning

PLANNING OFFICE

September 23, 2020

#### The attached packet is provided for review and comment from the following agencies:

County Archaeologist (DS940)

Crime Prevention Police (MA210)

Fire Marshal's Office (DS920)

Historical Commission (DS940)

Housing & Comm Development

Land Development Case Manager (DS940)

Long Range Planning (DS940)

Parks and Recreation (EA795)

Planning Case Planner

Planning GIS Specialist - JBM (DS940)

Proffer Administrator (DS940)

School Board (EA790)

Service Authority (SA317)

Town of Haymarket

Transportation Department (DS990)

VDOT Fairfax (MA290)

Watershed Management (DS930)

Zoning Administrator (DS940)

**RE:** REZ2016-00028, Utterback Rezoning

REZONING, RESIDENTIAL

MAGISTERIAL DISTRICT: 20 - Gainesville

REQUEST: REZONING REQUEST RECEIVED JUNE 24, 2016 - NOT SUBJECT TO SB 549; Request to rezone ±81.6 acres fro A-1, Agricultural, to PMR, Planned Mixed Residential, to allow up to 240 single-family detached residential units and with associated waivers and modifications. \*\*Project has been reactivated and with expanded area\*\*

GPIN(s):	7398-27	7-2919	7398-06	5-8298
7398-18-2	402	7398-18-6	330	7398-17-729
7398-18-8	728	7398-17-1	471	7398-27-058
7398-17-7	989	7398-17-0	335	7398-16-0860
7398-27-0	026	7398-27-3	346	7398-16-877
7398-17-5	727	7398-06-7	859	7398-16-3682
7398-17-7	559	7398-18-4	032	7398-16-793

#### Your comments should:

- 1) address the anticipated impacts of the proposal on the goals, policies and action strategies of the 2008 Comprehensive Plan;
- 2) address the anticipated impacts of the proposal on the services of your department;
- 3) address any site specific concerns which are materially relevant to the requested land use decision;
- 4) list minimum development standards which may conflict with the proposed development or require special consideration in the Planning Office's analysis of the proposal.

Your assigned Case Planner is **Scott Meyer**. Please use **eReview** to submit your comments. Reviewer without eReview access should submit their comments by email to **rthornton@pwcgov.org**.

Your comments should be directed to **Randy Thornton** and received no later than **October 21, 2020**. Your cooperation is appreciated.

The attached packet is provided for information only. No comment is necessary from the following:

SUPERVISOR - PETE K. CANDLAND
COMMISSIONER - RICHARD BERRY
BOARD CHAIRMAN - ANN B. WHEELER
COMMISSIONER AT LARGE - DON TAYLOR
ACTING PLANNING DIRECTOR - STEPHEN DONOHOE
COUNTY ATTORNEY
COUNTY EXECUTIVE - CHRISTOPHER MARTINO
PLANNING COMMISSION CHAIRMAN - WILLIAM MILNE



Jessica Pfeiffer Planner (703)680-4664 Ext. 5119 jpfeiffer@thelandlawyers.com

August 25, 2020

#### Via Email and Hand Delivery

Scott Meyer Prince William County Planning Office 5 County Complex Court, Suite 210 Prince William, VA 22192

Re:

REZ #2016-00028, Utterback

Resubmission and Comment Response Letter

#### Dear Mr. Meyer:

Enclosed please find the following documents constituting a resubmission of the above reference rezoning.

- 1. Executed Application for Rezoning;
- 2. Completed Fee Calculation Worksheet for the additional 11.04 acres that is being added to the rezoning request;
- 3. A check in the amount of \$4,426.27, which constitutes the review fee for the additional acreage;
- 4. Executed Interest Disclosure Affidavit for William J. McMenamin;
- 5. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL XIII LC;
- 6. Executed Interest Disclosure Affidavit for DOMINION STATION DC, LLC;
- 7. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL IV LLC;
- 8. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL X LC;
- 9. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL XII LC;
- 10. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL I LLC;

#### ATTORNEYS AT LAW

- 11. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL III LLC;
- 12. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL II LLC;
- 13. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL XI LC;
- 14. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL XVI LC;
- 15. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL XV LC;
- 16. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL V LLC;
- 17. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL VI LLC;
- 18. Executed Interest Disclosure Affidavit for Michael R. Veness;
- 19. Executed Interest Disclosure Affidavit for Beverly R. Veness;
- Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL VII LLC;
- 21. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL VIII LC;
- 22. Executed Interest Disclosure Affidavit for HAYMARKET RESIDENTIAL XIV LC;
- 23. Executed Adjacent Property Owners Affidavit for William J. McMenamin;
- 24. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL XIII LC;
- 25. Executed Adjacent Property Owners Affidavit for DOMINION STATION DC, LLC;
- 26. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL IV LLC;
- 27. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL X LC;
- 28. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL XII LC;
- 29. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL I LLC;

- 30. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL III LLC;
- 31. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL II LLC;
- 32. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL XI LC;
- 33. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL XVI LC;
- 34. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL XV LC;
- 35. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL V LLC;
- 36. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL VI LLC;
- 37. Executed Adjacent Property Owners Affidavit for Michael R. Veness;
- 38. Executed Adjacent Property Owners Affidavit for Beverly R. Veness;
- 39. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL VII LLC;
- 40. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL VIII LC;
- 41. Executed Adjacent Property Owners Affidavit for HAYMARKET RESIDENTIAL XIV LC;
- 42. Two (2) copies of Instrument #201312230121099 (William J. McMenamin);
- 43. Two (2) copies of Instrument #202003310025378 (HAYMARKET RESIDENTIAL XIII LC);
- 44. Two (2) copies of Instrument #201212120119735 (DOMINION STATION DC, LLC);
- 45. Two (2) copies of Instrument #201902060007728 (HAYMARKET RESIDENTIAL IV LLC);

- 46. Two (2) copies of Instrument #20200120004500 (HAYMARKET RESIDENTIAL X LC);
- 47. Two (2) copies of Instrument #202004010025799 (HAYMARKET RESIDENTIAL XII LC);
- 48. Two (2) copies of Instrument #201603210019527 (HAYMARKET RESIDENTIAL I LLC);
- 49. Two (2) copies of Instrument #201602050008140 (HAYMARKET RESIDENTIAL III LLC);
- 50. Five (5) copies of the revised proffer statement, dated August 20, 2020 (hereinafter, the "Proffers");
- 51. Five (5) blacklined copies of the revised proffer statement, reflecting revision to those initially submitted and dated June 24, 2016;
- 52. Five (4) copies of the traffic impact analysis entitled "Traffic Impact Study Utterback Property (REZ2016-0028)," prepared by Gorove/Slade, dated June 17, 2016, last revised August 24, 2020;
- 53. One (1) copy of the Prince William County Department of Transportation Project Review Comment and Resolution Sheet, dated August 5, 2016;
- 54. One (1) copy of the Virginia Department of Transportation Prince William Land Use Project Review Comment and Resolution Sheet, dated August 4, 2016;
- 55. Fifteen (15) 8.5x11 copies of the design guidelines entitled "Utterback Community Design Guidelines," prepared by Dewberry Engineers, Inc., dated August 13, 2020 (hereinafter, the "Design Guidelines");
- 56. Fifteen (15) full sized copies and a reduction of the master zoning plan, prepared by Dewberry Engineers, Inc., dated June 14, 2016, last revised August 13, 2020 and consisting of the following three sheets (hereinafter, collectively the "MZP"):
  - a. Land Use Plan;
  - b. Open Space Plan; and
  - c. Utility Plan.

- 57. Fifteen (15) 11x17 copies of the exhibit entitled "Utterback Lightner Road Improvements," prepared by Dewberry Engineers, Inc., dated August 13, 2020 (hereinafter, the "Lightner Road Improvements Exhibit");
- 58. Five (5) full sized copies and a reduction of the environmental constraints analysis entitled "Utterback Environmental Constraints Analysis," prepared by Dewberry Engineers, Inc., dated June 14, 2016, last revised August 13, 2020 and consisting of two sheets (hereinafter, the "ECA");
- 59. Five (5) full sized copies and a reduction of the plan entitled "Rezoning Plat (Utterback Assemblage), prepared by Dewberry Engineers, Inc., dated April 29, 2016, last revised July 20, 2020; and
- 60. Ten (10) 11x17 copies of the illustrative plan entitled "Utterback Illustrative Plan," prepared by Dewberry Engineers, Inc., dated August 13, 2020.

The following are the Applicant's responses to the case planner summary letter and agency comment that they received. Please note that only weaknesses/items to be addressed are listed below.

Zoning Administrator, dated August 10, 2016					
Agency Comment	Applicant's Response				
Pursuant to Sec.32-601.60 of the Zoning Ordinance, the lawful status of the nonconforming lots shall be verified. The applicant shall obtain verification of the lawful status of the nonconforming lots prior to the next submission or prior to scheduling the case for the Planning Commission public hearing.	The rezoning of the property would change the status of these lots.				
Land Development Case Manager, July 28, 2016					
Agency Comment	Applicant's Response				
Is any recreation being proposed? Will there be a trail system connecting neighborhoods?	Please see the Design Guidelines, which include more information on open space opportunities in the community.				
Is a second ingress/egress point being proposed?	Please see the revised MZP where access has been updated and improved.				

Transportation #4 Monetary Contribution: last sentence should have a comma after improvements and say, "prior to issuance of occupancy permit."			
Will monument sign conform to sign ordinance regulations?	The Applicant is not requesting a modification to the sign ordinance.		
Cultural Resources #9, first sentence replace period with comma and say, "prior to land disturbance permit issuance."	The current trigger is "as a condition of site/subdivision plan approval", which is earlier than the requested language.		
Long Range Planning, dated August 8, 2016			
Agency Comment	Applicant's Response		
The Planned Mixed Residential (PMR) zoning district per the Compatibility Matrix, Zoning and Comprehensive Plan Designations for Residential uses, is an allowable use for the Suburban Residential Low (SRL) comprehensive plan designation.	Please see the revised MZP and other resubmission documents.		
In the narrative statement the applicant has indicated that they are proposing a density of 3.18 units per gross area for Land Bay "A" and a density of 3.38 units per acre for Land bay B. This density, while in conformance with the Comprehensive Plan's designation of I -4 units per acre for the low suburban residential density (less the ER designated portion of the proposed plan), is on the upper end of the recommendation. Please provide written support/justification for how your specific plan "furthers valuable environmental objectives as stated in EN-Policy I and EN-Policy 4 of the Environment Plan, the intent stated in the Cultural Resources Plan and preserves valuable cultural resources throughout the County."			
On page 5 of the applicant's proffer statement under libraries there is a reference made to "multifamily" residential use, however no multi-	Acknowledged. This is a typo and has been removed.		

family residential uses are being proposed in the application.				
The applicant should review and correct/clarify this proffer statement				
Applicant has requested waiver to the provision requiring that a mix of housing types should be provided in the PMR District. Please provide justification for this waiver request.	Please see the Design Guidelines. The Applicant is now proposing a mix of two housing type – a reduced setback house and a village house.			
Applicant should state the type of housing being proposed and acknowledge the corresponding standards as required by 32-306.126. Justification should be provided for the preferred housing type(s).	Please see the Design Guidelines.			
The applicant has requested for a total of 230 lots for this project, does this include any of the existing homes? This information should be clarified in the application in order to clearly address density issues and proffered contributions for this site. It is noted that the applicant is requesting some flexibility between the total counts in the two land bays. Please clarify how the existing homes factor into the final layout and the final tabulations.	The Applicant is not proposing to retain any of the existing homes at this time.			
A waiver to this section of the Planned Mixed Residential district diminishes the desired result of this planning district. The PMR, Planned Mixed Residential District as defined in the adopted comprehensive plan is designed to permit and encourage the establishment of communities of varied housing types in planned districts. Please provide justification for this request.	Please see the Design Guidelines.			
School Board, dated July 27, 2016				
Agency Comment	Applicant's Response			
The School Division is not in support of any rezoning that increases student capacity at	This comment is out of date and does not take into account the additional schools under			

schools already at or in excess of 100% capacity or a rezoning that causes student capacity at any school to exceed 100% capacity, unless proffers sufficient to mitigate the impact to the School Division are received.	construction (such as the 13 <sup>th</sup> high school) and planned.	
The applicant's Proffer Statement, dated June 24, 2016, indicates a Level of Service monetary contribution in accordance with the applicable level of service standard which is \$20,694.00 per single family unit, which is in-line with Schools Policy Guide for Monetary Contributions.	Acknowledged.	
An elementary school at Vint Hill Road is scheduled to open September 2024.	Acknowledged.	
A 6-classroom addition at an elementary school in the Haymarket area is scheduled to open September 2025.	Acknowledged.	
A middle school west is scheduled to open September 2024.	Acknowledged.	
The 13th high school is scheduled to open September 2021 in the western County area.	The 13 <sup>th</sup> high school is under construction.	
Service Authority, dated August 22, 2016		
Agency Comment	Applicant's Response	
No oils, fuels, anti-freeze, solvents or other pollutants or flammable substances shall be discharged into the public sewer system.		
Applicant shall size, design and install a Service Authority (or PWC) approved grease trap onsite, if required by the Service Authority. The applicant shall properly maintain the grease trap to prevent grease build-up in the force main or gravity sewer.	with site/subdivision plan review.	

Fire sprinkler systems shall incorporate a county approved backflow prevention device and be designed to eliminate water hammer.	If required, this will be addressed in connection with site/subdivision plan review.	
Grinder pumps in the sanitary sewer system may be required.	If required, this will be addressed in connection with site/subdivision plan review.	
A county approved, adequately sized backflow prevention device shall be installed by the applicant on the water service line. This device shall be on the customer side of the water meter and before any point of use fixture of the onsite plumbing system.	If required, this will be addressed in connection with site/subdivision plan review.	
For any proposed landscape irrigation system, the applicant shall demonstrate to the Service Authority that there is no detrimental effect on the Service Authority's water distribution system and service pressure to the community. Irrigation systems shall be represented as a collective maximum hour demand for the hydraulic modeling of the proposed water system, both with and without a simultaneous fire flow event.	If required, this will be addressed in connection with site/subdivision plan review.	
All on-site and off-site water system improvements necessary to mitigate the impact of the proposed irrigation system demands shall be the responsibility of the applicant.	If required, this will be addressed in connection with site/subdivision plan review.	
Public water is available from an existing 12-inch water main located along Lightner Road, from an existing 8-inch stub-out located west of Land Bay A, and from an existing 12-inch water main located along Piedmont Vista Drive.	, with site/subdivision plan review.	
The developer will be required to install a minimum 12-inch diameter main through the site from the existing 12-inch water main in Lightner Road to the existing 12-inch water main in Piedmont Vista Drive to provide a system loop closure for reliability and redundancy. In addition, off-site easements will be required.		

Public Sewer is available off site from an existing 8-inch gravity sewer located west of proposed Land Bay A in the Westmarket Subdivision and from an existing 8-inch gravity sewer located south of Land Bay B, in the vicinity of Ashby Oak Court cul-de-sac. In addition, off-site easements will be required.

If required, this will be addressed in connection with site/subdivision plan review.

Depending on the final configuration of the onsite water mains, additional water main extensions may be required by the Service Authority to provide adequate fire protection or satisfy water quality requirements. If required, this will be addressed in connection with site/subdivision plan review.

The applicant shall design and construct all onsite and off-site water and sanitary sewer utility improvements necessary to develop the subject property and the above listed requirements in accordance with the Service Authority's USM, and County and State requirements, standards and regulations. The sizing and configuration of on-site and off-site utility system improvements will be determined during the preliminary and final development plan review process, based existing and proposed on zonings surrounding properties and the dictates of the County Comprehensive Plan and Service Authority planning documents, and will be supported by appropriate engineering analysis/modeling of affected existing utility systems and the proposed new facilities.

If required, this will be addressed in connection with site/subdivision plan review.

Approval of a Special Use Permit or the rezoning of a property does not guarantee or assure water and sanitary sewer capacity availability for development of said property. Available utility system capacities are allocated on a first-come-first-served basis to zoned properties having approved final site/subdivision plans upon filing the required application and full payment of all associated utility fees/charges.

If required, this will be addressed in connection with site/subdivision plan review.

Transportation Department, August 5, 2016					
Agency Comment	Applicant's Response				
All projected average daily trips (ADT) or design traffic volumes should be shown at each site entrance and surrounding roadways.					
The distance of the development entrance to the nearest intersection in both directions shall be shown on the plans	Please see the revised MZP.				
It was not possible to perform a complete analysis of this proposed development given that the Utility Plan was missing the internal street network (location, typical cross sections, public vs private, length of cul-de-sacs not indicated) and specified trails/sidewalks.	Please see the revised MZP and Design Guidelines.				
All streets shall be constructed to the property boundary with any adjoining properties if eligible to be accepted into the state secondary system. The internal roadways should be connected to Omland Place and/or Olga Court for interparcel connections.	Please see the revised MZP and Design Guidelines.				
The number of intersections of local streets with collector or arterial streets shall be held to a minimum to avoid hazard, delay, and preserve their integrity. The Applicant should explore access on Omland Place and Olga Court in lieu of constructing a new access onto Lightner Road.	Please see the revised MZP and Design Guidelines.				
The Applicant should construct sidewalks along the property's frontage on Lightner Road and along all internal roadways.	Please see the revised MZP and Design Guidelines.				
Provide a right turn lane/taper warrant analysis for Lightner Road access.	Please see the Lightner Road Improvements Exhibit.				
Proffer #5 states that the Applicant will convert the westbound right tum lane on Lightner Road	Please see the Lightner Road Improvements Exhibit.				

at Rt. 15 into a shared left-right turn lane at the 116 <sup>th</sup> residential occupancy permit. The mitigation is needed for existing conditions and should be completed earlier than after half the residences have been constructed.			
VDOT, dated August 5, 2016			
Agency Comment	Applicant's Response		
Roadway and lot layout of the plan does not match that of the TIA report. In next submission, provide roadway network and lot layout consistent with the TIA exhibits.	Guidelines.		
According to the road layout of the TIA report, there is only one entrance at Lightner Road. According to SSAR standards, there should be at least 4 connections to VDOT roads. Lightner Road can be considered as two connections, so there should be at least two internal connections to VDOT roads within the rest of the residential subdivision. Please revise the layout to connect to additional roads in next submission of the rezoning plan.	property has been improved and utilizes existing Omland Place.		
Provide ingress/egress easements for all interparcel connections proposed.	Please see the revised MZP.		
No sidewalk or shared-use path has been shown. VDOT recommends that the County require the placement of pedestrian facilities along the frontage of property adjacent to Lightner Road and across from Mountain View Elementary School.	Please see the revised MZP and Design Guidelines.		
Provide right-turn lane warrant analysis for the proposed entrance road coming off Lightner Road. Refer to App. F of the RDM for more details.	Please see the Lightner Road Improvements Exhibit.		
VDOT recommends improvement for the intersection of Lightner Road with US Route 15	Please see the Lightner Road Improvements Exhibit.		

based on the proposal of this new subdivision. This may include increased storage of both right-turn lane from NB US 15 and left-turn lane from SB US 15. The turn-lane tapers should be 200' length each.	R7
The plans just show thick dashed lines for all proposed VDOT-maintained roadways. With next submission, please show proposed R/W dedication for all future VDOT-maintained assets on all plan sheets.	Please see the revised MZP and Design Guidelines.
Please provide typical sections for all VDOT-maintained roadway types including proposed streets following SSAR standards and any proposed street widening along Lightner Road access. SSAR standard requirements can be found in App B(l) of the VDOT Road Design Manual.	Please see the revised MZP and Design Guidelines.
The study should include a warrant analysis for right turn lane at the access to the development.	Please see the Lightner Road Improvements Exhibit.
Ensure that the receiving lanes meet the requirements for the dual left turn movement.	Please see the Lightner Road Improvements Exhibit.
A signal modification plan will needed for converting right lane to shared left and right tum lane.	Please see the Lightner Road Improvements Exhibit.
All new development access will need to meet the access management standards, regulations and design standards for minor arterials, collectors, and local streets. The design standards govern the design of intersections, turn lanes, and entrances as well as providing spacing standards for entrances, intersections, crossovers, and traffic signals on minor arterials, collectors, and local streets. The study should discuss the access management standards and should include a figure detailing the distances between the driveways as well as existing and proposed intersections.	

Watershed Management, dated August 10, 2016				
Agency Comment	Applicant's Response			
A 25' wide buffer is required around existing cemeteries. Please show this buffer.	Please see the revised MZP and Design Guidelines.			
There is a 20% tree cover requirement for this site. Small and isolated areas of existing trees are proposed for presentation. Although there is sufficient existing forest cover to meet this minimum standard via the conservation of existing trees, this is not proposed. Preservation of existing trees if preferred over replanting.	Please see the revised MZP and Design Guidelines.			
Staff recommends the Applicant:				
a. Revise the Open Space Plan to meet the minimum tree cover through the preservation of existing trees.				
b. Proffer to provide a tree preservation plan meeting the minimum elements outlined in the Plant Selection Guide of the DCSM.				
The site entrance is off of Lightner Road. The Applicant has not indicated if they intend to have a community entrance sign. If you are going to have an entrance sign, please provide an illustrative design for the accompanying landscaping that integrates the sign into the landscape features of the site.	Please see the revised Proffers and Design Guidelines.			
The Applicant has indicated placement of a stormwater management facility within an RPA. This is not permitted. Please revise the GDP to relocate the proposed SWM facility outside of the RPA.	Please see the revised MZP and Design Guidelines.			
Update the Zoning Ordinance Environmental Constraints Analysis (ECA) requirements to add the following:	Please see the revised ECA.			
<ul> <li>Delineation of all jurisdictional wetlands</li> </ul>	¥			

and waters.

- Location of all Chesapeake Bay Resource Protection Areas (Preservation Area Site Assessment (PASA) submittal required).
- All significant non-RPA streams.
- Ponds and culverts.
- Contributing drainage areas.
- Existing structures, roads and the location of known utilities and easements.
- Publicly available information on adjoining parcels regarding the location of 100-year floodplains, wetlands, stormwater infrastructure, and streams.
- Proposed limits of disturbance.
- Existing vegetation map of the entire site.
- Location of all specimen trees.
- Unique habitats of special concern.
- Identification of environmental features proposed for preservation or conservation.
- Acreage of all Environmental Resources (ER) (i.e., per ER definition).

Already required in the ECA (from Reference Manual):

- 15 percent and greater slopes.
- Highly erodible and highly permeable soils.
- Areas that will remain in a natural or undisturbed state upon completion of a project (including woodland conservation areas).

- Proposed impervious and pervious surfaces.
- Existing natural ground surface features and drainage patterns that will be preserved, including non-tidal wetlands.
- 100-year floodplain boundary.
- Endangered and threatened plant and animal species.
- A description of appropriate avoidance and/or mitigation efforts, including preservation or conservation areas that will be provided as part of the proposed development, as described in EN-Policy 4.

On the ECA and Open Space Plan, please show the existing tree line. Many existing trees are not shown. On the ECA please provide the area of ER onsite per the definition in the Comprehensive Plan. It appears that you have not included wetland acreage. (EN-1.2)

The proposed Open Space Plan indicates the Applicant proposes to clear and grade within the RPA. This disturbance is not permitted. Staff recommends the Applicant revise the limits of clearing and grading (lcg) to show this. Additionally, staff requests that the Applicant commit to reforestation of the RPA.

Please see the revised MZP and Design Guidelines.

#### Fire Marshal's Office, dated July 19, 2016

Agency Comment	Applicant's Response	
The project is outside the 4 minute response time criteria for basic life support and fire response and within the 8 minute response time criteria for advance life support.	Please see the Proffers where the Applicant has committed to a monetary contribution.	

Please do not hesitate to contact me if you have any questions or need additional information.

Very truly yours,

WALSH, COLUCCI, LUBELEY & WALSH, P.C.

Jessica Pfeiffer

Planner

JLP

Enclosures

cc: Bruce Gould/Luke Linthicum (via email only)

Bryan Lilly (via email only) Chad Baird (via email only)

P1005919.DOCX

#### NARRATIVE STATEMENT

#### UTTERBACK REZOING

GPINs: 7398-18-4032, 7398-18-6330, 7398-18-2402, 7398-17-1471, 7398-17-0335, 7398-06-8298, 7398-06-7859, 7398-16-0866, 7398-16-3682, 7398-16-7933, 7398-27-2919, 7398-27-0026, 7398-16-8778, 7398-17-5727, 7398-27-3346, 7398-17-7559, 7398-17-7989, 7398-27-0588, 7398-18-8728 and 7398-17-7298 (the "Property") June 24, 2016

#### Updated – September 15, 2020

**Introduction:** The Property, which is comprised of approximately 81.6 acres, is located approximately 1,200 feet southwest of the intersection of Route 15 and Lightner Road and approximately 575 feet northwest of the intersection of Route 15 and Utterback Lane. The Property is located in the Gainesville Magisterial District.

**Proposal:** The Applicant is requesting a rezoning of the Property from A-1, Agricultural to PMR, Planned Mixed Residential.

The following changes have been made to the proposal with this resubmission:

- The proposal now shows access only from Omland Place, which allows for no additional curb cuts on Lightner Road.
- The proposal includes additional property (previously 70 acres, now 81.6 acres).
- There are Design Guidelines included with this resubmission which show a new design that allows for a central park community oriented open space. This is depicted on the Illustrative Plan.
- The revised plan and additional properties allow for more open space.

Land Use: The Property is zoned A-1, Agricultural, and designated as SRL, Suburban Residential Low, on the Long Range Land Use Map. The purpose of the SRL classification is to "provide for housing opportunities at a low suburban density, [with a] density range of 1-4 units per gross acres, less the ER designate portion of a property." As depicted on the Land Use Plan, this rezoning allows for 240 single detached units, which will be complimentary to existing uses, zonings and designations on adjacent properties. Adjacent properties to the east, west and south are also designated SRL and the properties to the north are designated Public Land. The proposed rezoning is consistent with adjacent land uses and zonings.

**Community Design:** Included with this resubmission is a Land Use Plan, Illustrative Plan and Design Guidelines. The Open Space Plan identifies a total of 27 acres of open space on the Property, of which 7.2 acres (or approximately 8.8%) of the site will be natural open space.

**Transportation:** A revised Traffic Impact Analysis (TIA) is included with this resubmission. The Applicant is committing to improvements at the intersection of Route 15 and Lightner Road as described in the proffers and depicted on the Lightner Road Improvements exhibit.

**Environment:** A revised Environmental Constraints Analysis Plan is included with this resubmission.

**Fire and Rescue:** The Property appears to be located in an area designated on County maps as having an 8 minute response time.

**Schools:** The Applicant has proffered a monetary level of service contribution for schools.

**Parks and Open Space:** The Applicant has proffered a monetary level of service contribution for parks and recreation. The Design Guidelines outline parks and open spaces amenities and opportunities within the project.

**Housing:** The proposed development will provide a high quality housing product of a type and value consistent with the current market and in an area that will benefit from a diversified residential product. The Applicant has proffered a monetary level of service contributions for the County's Housing Trust Fund.

**Cultural Resources:** A Phase I study entitled "Utterback Assemblage," prepared by Thunderbird Archaeology, dated June 2016, was submitted with the original application.

**Water and Sanitary Sewer:** Development on the Property will be served by public water and sewer.

**Libraries:** The proposed rezoning will have a minimal impact on library facilities, which will be addressed by proffered monetary contributions.

**Economic Development:** Development in accordance with the proposed plan will result in associated residential tax revenue for the County while the impacts of the residential development on the infrastructure will be addressed with a monetary contribution in accordance with the applicable level of service standard or specific improvements to facilities and infrastructure.

**Police:** It is anticipated that the proposed use will have no significant impact upon the established level of service standards for the Prince William County Police. The owner will review the "Crime Prevention Through Environmental Design" strategies with the goal of providing natural surveillance techniques, natural access control and continuing maintenance of the site, all of which will reinforce the active nature of the Property and will deter otherwise unwanted activities that may require police attention.

### APPLICATION FOR: (REZONING) PROFFER AMENDMENT (check one)

TO THE BOARD OF COUNTY SUPERVISORS OF PRINCE WILLIAM COUNTY, VIRGINIA

#### Project Name Utterback Rezoning

The undersigned, being all of the owner(s), contract purchasers, or the respective duly authorized agents thereof, do hereby petition to change the zoning of the property described below and shown on the accompanying plans, which are made part of this application, as follows:

**G.P.I.N.** #

From:

To:

See attached

ownership chart

A-1 **PMR** 

Property Location (Describe the location of the property by distance, in feet or portion of a mile, and direction from an intersection of two (2) public roads or streets.

The property is located approximately 1,200 feet southwest of the intersection of Route 15 and Lightner Road and approximately 575 feet northwest of the intersection of Route 15 and Utterback Lane.

The name(s), mailing address(es), and telephone number(s) of owner(s), authorized agent(s), contract purchaser/lessee, and engineer(s) as applicable are:

#### □ Owner of Property

✓ Authorized Agent(s)

name: \*See attached signature pages

mailing

address:

phone:

name: Pete Dolan, Esquire and Jessica Pfeiffer

Walsh, Colucci, Lubeley & Walsh, P.C.

mailing:4310 Prince William Parkway, Suite 300

Acres: approx. 81.64 acres (Total)

address: Woodbridge, VA 22192

phone: (703) 680-4664

□ Contract Purchaser/Lessee

☐ Engineer

name:

mailing address: name: Dewberry Consultants LLC

mailing 13575 Heathcote Boulevard, Suite 130

address: Gainesville, VA 20155

Please check the box next to the contact to which correspondence should be sent.

[See attached signature pages]

### **Utterback Rezoning**

### Ownership Chart

GPIN	Address	Acreage	Owner	DB/PG
		Ü		Instrument #
7398-18-	14751	1.5207	William J. McMenamin	201312230121099
4032	Lightner Road			
7398-18-	6330	1.6977	HAYMARKET	202003310025378
6330	Omland	1.0577	RESIDENTIAL XIII LC	202003310023370
	Place			
7398-18-	6300	6.5658	DOMINION STATION	201212120119735
2402	Omland		DC, LLC	
	Place			
7398-17-	6274	6.721	HAYMARKET	201902060007728
1471	Omland Place		RESIDENTIAL IV, LLC	
7398-17-	6244	5.1344	HAYMARKET	20200120004500
0335	Omland	3.13 11	RESIDENTIAL X LC	20200120001500
	Place			
7398-06-	6174 Pattie	6.6066	HAYMARKET	202004010025799
8298	Court		RESIDENTIAL XII LC	
7398-06-	6124 Pattie	4.5869	HAYMARKET	201603210019527
7859	Court		RESIDENTIAL I LLC	
7398-16-	6100 Pattie	0.8351	HAYMARKET	201608230066786
0866	Court		RESIDENTIAL I LLC	202004010025700
			HAYMARKET	202004010025799
			RESIDENTIAL III LLC	
			RESIDENTIAL III EEC	
			HAYMARKET	
			RESIDENTIAL XII LC	
7398-16-	6151 Pattie	6.5717	HAYMARKET	201602050008140
3682	Court		RESIDENTIAL III LLC	
7398-16-	14705	12.2259	HAYMARKET	201602050008139
7933	Utterback		RESIDENTIAL II LLC	
	Lane			
7398-27-	6227 Olga	1.7951	HAYMARKET	202003310025309
2919	Court	2.0712	RESIDENTIAL XI LC	202004010025471
7398-27-	6230 Olga	2.0512	HAYMARKET DESIDENTIAL VVII C	202004010025471
0026	Court	10 5765	RESIDENTIAL XVI LC HAYMARKET	202003310025313
7398-16-	14700 Utterback	10.5765	RESIDENTIAL XV LC	202003310023313
8778	Lane		RESIDENTIAL AV LC	
	Lane			

GPIN	Address	Acreage	Owner	DB/PG
	(2.10.01			Instrument #
7398-27-	6249 Olga	1.63	HAYMARKET	201905010028719
3346	Court	2.1.1	RESIDENTIAL V LLC	
7398-27-	6280 Olga	3.14	HAYMARKET	201910110075089
0588	Court	1.24	RESIDENTIAL VI LLC	DD 4450 DC 454
7398-17-	6301	1.34	Michael and Beverly	DB 1458, PG 356
7989	Omland		Veness	
7200 10	Place	1.07	TIAND CARLET	2010102010070505
7398-18-	6329	1.87	HAYMARKET	2019102040078585
8728	Omland		RESIDENTIAL VII LLC	
7200 17	Place	1 4412	TIAND CADYCOT	0 0 1 0
7398-17- 7298	6340	1.4413	HAYMARKET DESIDENTIAL VIII C	Confirmation of
/298	Omland Place		RESIDENTIAL XIII LC	ownership is
	Flace		DOMINION STATION	pending in Prince William Circuit
			DC, LLC	Court Case
			DC, LLC	(Haymarket
			HAYMARKET	Residential IV,
			RESIDENTIAL IV LLC	LLC et al. v.
			TESTEDENTIALE IV ELEC	Longlevel Acres
			HAYMARKET	Homeowners
			RESIDENTIAL X LC	Ass'n, Inc., et al.,
			TESTEE THE TEST	Prince William
			HAYMARKET	Circuit Court Case
			RESIDENTIAL XIV LC	No. CL20-5003.)
				,
			HAYMARKET	
			RESIDENTIAL VIII LC	
			Michael and Beverley	
			Veness	
			HAYMARKET	
			RESIDENTIAL VII LLC	
7398-17-	6261	1.5669	HAYMARKET	201912160092875
7559	Omland		RESIDENTIAL VIII LC	
	Place			
7398-17-	6251	3.8114	HAYMARKET	202003310025320
5727	Omland		RESIDENTIAL XIV LC	
	Place			

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 13, 2020

**GPIN 7398-18-4032** 

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

#### GPINs 7398-18-6330 and 7398-17-7298

Haymarket Residential XIII LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jop M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 13, 2020

GPINs 7398-18-2402 and 7398-17-7298

DOMINION STATION DC, LLC, a Virginia limited liability company

Name: William J. McMenamin

Title: Member Manager

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPINs 7398-17-1471 and 7398-17-7298

Haymarket Residential IV LLC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name. Jon M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPINs 7398-17-0335 and 7398-17-7298

Haymarket Residential X LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jon M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPINs 7398-06-8298 and 7398-16-0866

Haymarket Residential XII LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jon M. Peterson

Tide. Manager

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPINs 7398-06-7859 and 7398-16-0866

Haymarket Residential I LLC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

Packet Pg. 94

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9 \_\_\_\_, 2020

#### GPINs 7398-16-3682 and 7398-16-0866

Haymarket Residential III LLC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jon M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPIN 7398-16-7933

Haymarket Residential II LLC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: John Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPIN 7398-27-2919

Haymarket Residential XI LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name on M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9 \_\_\_, 2020

GPIN 7398-27-0026

Haymarket Residential XVI LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Joh M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPIN 7398-16-8778

Haymarket Residential XV LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jon M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

#### GPIN 7398-27-3346

Haymarket Residential V LLC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

Name: Jon M. Peterson

Tette: Manager

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

#### GPIN 7398-27-0588

Haymarket Residential VI LLC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name. Jon M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of  $\frac{7}{15}$ , 2020

GPINs 7398-17-7989 and 7398-17-7298

Michael R. Veness

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of  $\frac{7}{15}$ , 2020

GPINs 7398-17-7989 and 7398-17-7298

Beverly R. Veness

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9 \_\_\_\_, 2020

GPINs 7398-18-8728 and 7398-17-7298

Haymarket Residential VII LLC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jon M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPINs 7398-17-7559 and 7398-17-7298

Haymarket Residential VIII LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jon M. Peterson

I have read this application, understand its intent, and freely consent to its filing. Furthermore, I have the power to authorize and hereby grant permission to Prince William County officials and other authorized government agents on official business to enter the property as necessary to process this application.

Signed this day of July 9, 2020

GPINs 7398-17-5727 and 7398-17-7298

Haymarket Residential XIV LC a Virginia limited liability company

By: MVP Management, LLC,

a Virginia limited liability company,

its Manager

By: Name: Jon M. Peterson

#### PROFFER STATEMENT

**RE:** REZ #2016-00028, Utterback Rezoning

Record Owners: William J. McMenamin

HAYMARKET RESIDENTIAL XIII LC

DOMINION STATION DC, LLC

HAYMARKET RESIDENTIAL IV, LLC HAYMARKET RESIDENTIAL X LC HAYMARKET RESIDENTIAL XII LC HAYMARKET RESIDENTIAL II LLC HAYMARKET RESIDENTIAL III LLC HAYMARKET RESIDENTIAL XI LC HAYMARKET RESIDENTIAL XVI LC HAYMARKET RESIDENTIAL XVI LC HAYMARKET RESIDENTIAL XV LC HAYMARKET RESIDENTIAL V LLC HAYMARKET RESIDENTIAL VI LLC HAYMARKET RESIDENTIAL VI LLC

Michael and Beverly Veness

HAYMARKET RESIDENTIAL VII LLC HAYMARKET RESIDENTIAL VIII LC HAYMARKET RESIDENTIAL XIV LC

Property: GPINs 7398-18-4032, 7398-18-6330, 7398-18-2402, 7398-17-1471, 7398-17-0335, 7398-06-8298, 7398-06-7859, 7398-16-0866, 7398-16-3682, 7398-16-7933, 7398-27-2919, 7398-27-0026, 7398-16-8778, 7398-17-5727, 7398-27-3346, 7398-17-7559, 7398-17-7989, 7398-27-0588, 7398-18-8728 and 7398-17-7298 (the

"Property")

Gainesville Magisterial District

±81.6 Acres from A-1 to PMR, Planned Mixed Residential

Date: August 20, 2020

The undersigned hereby proffers that the use and development of the Property shall be in substantial conformance with the following conditions and shall supersede all other proffers made prior hereto. The headings of the proffers set forth below have been prepared for convenience or reference only and shall not control or affect the meaning or be taken as an interpretation of any

### PROFFER STATEMENT REZ #2016-00028, Utterback Rezoning August 20, 2020

provision of the proffers. Any improvements proffered herein below shall be provided at the time of development of the portion of the site served by the improvement, unless otherwise specified. The terms "Applicant" and "Developer" shall include all future owners and successors in interest.

References in this Proffer Statement to plans and exhibits shall include the following:

- A. Master Zoning Plan (the "MZP") prepared by Dewberry Engineers Inc. entitled "Utterback" dated June 14, 2016, last revised August 13, 2020:
  - i. Utterback Land Use Plan ("Land Use Plan")
  - ii. Utterback Open Space Plan ("Open Space Plan")
  - iii. Utterback Utility Plan ("Utility Plan")
- B. Utterback Community Design Guidelines prepared by Dewberry Engineers Inc., dated August 13, 2020

#### **USE AND SITE DEVELOPMENT**

- 1. <u>Development in Accordance with MZP</u> Development of the Property will be in substantial conformance with the MZP, subject to minor modifications as needed to comply with Zoning Ordinance and Design and Construction Standards Manual ("DCSM") requirements, including changes to the location of travelways, parking, buildings, and on site community amenities (such as tot lot, outdoor seating area, pavilion and monument sign), the final locations of which shall be shown on the final site plan.
- 2. <u>Use</u> A maximum of two hundred and forty (240) single family detached residential units may be constructed on the Property.
- 3. <u>Limits of Clearing and Grading</u> The Applicant shall limit clearing and grading on the Property to those areas depicted on the Open Space Plan, subject to minor revisions in accordance with final engineering considerations at the time of plan review and approval. No clearing or improvements shall be made outside of the clearing and grading on the Property with the exception of: (a) the removal of noxious vegetation, such as poison ivy, poison oak, etc., as well as dead, dying or hazardous trees at the Applicant's sole discretion; (b) the installation and maintenance of water, sanitary sewer, storm sewer outfalls; and (c) the installation of access to the existing cemetery.

#### **TRANSPORTATION**

- 4. <u>Monetary Contribution</u> As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$16,780.00 per single family unit constructed on the Property to be used for transportation improvements.
- 5. <u>Lightner Road Improvements</u> If the Applicant is able to obtain off site right-of-way for construction and easements, the Applicant shall design and construct the improvements to Lightner Road, as depicted on the exhibit entitled "Utterback Lightner Road Improvements," prepared by Dewberry Engineers, Inc., dated June 10, 2020, subject to obtaining all necessary Prince William County Department of Transportation (County Transportation) and Virginia Department of Transportation (VDOT) approvals. In the event the Applicant is not able to obtain off-site right-of-way and easements needed for the construction for these improvements, there shall be no further obligation under this proffer. If right-of-way is obtained and the improvements are approved, the Applicant shall show the final location and design of such improvements on the first site/subdivision plan for the Property (or on a separate public improvements plans to be submitted with the first site/subdivision plan for the Property) and said improvements shall be completed by the Applicant prior to and as a condition of the issuance of an occupancy permit for the 50<sup>th</sup> residential unit constructed on the Property.

#### **COMMUNITY DESIGN**

- 6. <u>Monument Sign</u> The Applicant may provide a monument sign or entry feature(s) at the entrance off of Lightner Road, subject to obtaining required sign permits.
- 7. <u>Design Guidelines</u>
  - a. Development on the Property shall be in conformance with the Design Guidelines.
  - b. The Design Guidelines are subject to minor modifications made in connection with site/subdivision and building plans review. More substantial modifications to the Design Guidelines, which represent an overall improvement to the quality of the development, may be approved by the Planning Director.

#### **CULTURAL RESOURCES**

- 8. <u>Cemetery Buffer</u> The Applicant shall provide a twenty-five foot (25') wide buffer around the cemetery (Site 44PW2015) as shown on the Open Space Plan, subject to appropriate access easement crossing(s) and fencing. Where existing vegetation is undisturbed within said cemetery buffer, said existing vegetation shall be credited against the plant unit requirements identified in the DCSM and where the existing vegetation is sufficient may satisfy said requirements.
- 9. <u>Cemetery Access</u> The Applicant shall provide a fifteen foot (15') wide public pedestrian access easement for a pedestrian footpath to the cemetery (Site 44PW2015) with the final location of said public pedestrian access easement to be determined at final subdivision plan.
- 10. Phase II Evaluation of Site 44PW2014 As a condition of site/subdivision plan approval, the Applicant shall conduct a Phase II archaeological evaluation on areas within Site 44PW2014 that will be disturbed by the proposed development. The Phase II scope of work shall be approved by the Planning Director or his designee. Three (3) copies and one electronic copy of the Phase II draft report documenting the results and recommendations of the archaeological evaluation shall be submitted to the Planning Office for review, comment, and approval prior to final site/subdivision plan approval for each Land Bay B. The qualified professional, the archaeological testing, and the reports shall meet the standards set forth in the current version of the Virginia Department of Historic Resources (VDHR) Guidelines for Conducting Historic Resources Survey in Virginia.

In the event the Phase II evaluation finds an archaeology site significant and the site will be disturbed by construction, the Applicant will, prior to issuance of a land disturbance permit for that area containing the significant site, either initiate mitigation of the archaeology site through Section 106 of the National Historic Preservation Act (NHPA), with the County as a consulting party; or, if Section 106 review is not required, the Applicant will prepare a mitigation plan for approval by the Planning Director or his designee. If a County mitigation plan is required, its stipulations shall be completed prior to issuance of the land disturbance permit. The mitigation plan shall meet the standards set forth in the current version of the VDHR's *Guidelines for Conducting Historic Resources Survey in Virginia* and also the Advisory Council on Historic Preservation's (ACHP) *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (http://www.achp.gov/archguide.html#supp). Final reports shall be submitted in quantities, formats and media as requested by the County Archaeologist after the report(s) have been approved by the County.

11. <u>Curation</u> - The Applicant shall curate with the County, artifacts, field records, laboratory records, photographic records, computerized data and other historical records the Applicant possesses as recovered as a result of its cultural resources investigations. All artifacts and records submitted for curation shall meet current professional standards and The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. A curation fee equal to VDHR's curation fee (not to exceed \$350.00/box) will be paid by the Applicant at the time of delivery to the County. Ownership of all records submitted for curation shall be transferred to the County with a letter of gift.

#### PARKS AND RECREATION

12. <u>Monetary Contribution</u> - As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$5,591.00 per single family residential unit constructed on the Property to be used for parks purposes.

#### **ENVIRONMENTAL**

- 13. <u>Monetary Contribution</u> The Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$75.00 per acre to conduct water quality monitoring, stream restoration projects and/or drainage improvements. Said contribution shall be paid prior to and as a condition of the approval of the final site plan.
- 14. <u>Storm Water Management</u> Storm Water Management/Best Management Practice ("SWM/BMP") areas, on-site or off-site in accordance with DCSM Standards.

#### **LIBRARIES**

15. <u>Monetary Contribution</u> - As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$812.00 per single family residential unit constructed on the Property to be used for library purposes.

#### FIRE & RESCUE

16. <u>Monetary Contribution</u> - As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County

Supervisors in the amount of \$1,053.00 per single family residential unit constructed on the Property to be used for fire and rescue purposes.

#### **SCHOOLS**

17. <u>Monetary Contribution</u> - As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$20,694.00 per single family residential unit constructed on the Property to be used for school purposes.

#### AFFORDABLE HOUSING

18. <u>Monetary Contribution</u> - As a condition of occupancy permit issuance of each new unit constructed on the Property, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$250.00 per single family residential unit for the Housing Preservation and Development Fund.

#### WATER AND SEWER

19. <u>Development on Public Water and Sewer</u> - The Property shall be served by public sanitary sewer and water and the Applicant shall be responsible for the costs and construction of those on and off-site improvements required in order to provide such service for the demand generated by the development on the Property. The final location and size of the waterline to be extended to the Property will be determined by the hydraulic analysis prepared in connection with final engineering and shall be in accordance with the Prince William County Service Authority Utilities Standards Manual.

#### **MISCELLANEOUS**

20. <u>Escalator Clause</u> - In the event the monetary contributions set forth in the Proffer Statement are paid to the Prince William County Board of County Supervisors ("Board") within eighteen (18) months of the approval of this rezoning, as applied for by the Applicant, said contributions shall be in the amounts as stated herein. Any monetary contributions set forth in this Proffer Statement which are paid to the Board after eighteen (18) months following the approval of this rezoning shall be adjusted in accordance with the Urban Consumer Price Index ("CPI-U") published by the United States Department of Labor, such that at the time contributions are paid they shall be adjusted by the percentage change in the CPI-U from that date eighteen (18) months after the approval of this rezoning to the most recently available

CPI-U to the date the contributions are paid, subject to a cap of 6 percent (6%) per year, non-compounded.

#### WAIVERS/MODIFICATIONS

- 21. Waivers and modifications pursuant to Section 32.700.25 of the Zoning Ordinance approval of the subject rezoning shall constitute a waiver/modification of the following:
  - a. Waiver of Section 32-306.10.1(b) of the Zoning Ordinance to allow two unit types within the PMR District.
  - b. Waiver of Section 32-306.21 of the Zoning Ordinance to allow the elimination of the nonresidential secondary use requirement within the PMR District.
  - c. Modification to DCSM Detail 650.03 to allow a modified RM-1 road section for the private access streets.
  - d. Modification to DCSM Detail 650.05 to allow a modified RM-2 road section to include a median.
  - e. Modification to DCSM Section 601.01C to eliminate the requirement to connect to Olga Court and Utterback Lane.
  - f. Modification to DCSM to Section 601.04C to eliminate the requirement for all single family detached lots to front on a state maintained street.
  - g. Modification to DCSM Section 602.07B to eliminate the requirement for all street centerlines to be separated by 200 feet.
  - h. Modification to DCSM Section 602.07C to eliminate the requirement for all streets to intersect with a minimum 100' tangent.
  - i. Modification to DCSM Section 602.18A to eliminate the requirement to have sidewalks on all streets.

[Signature(s) to follow on next page]

#### PROFFER STATEMENT

**RE:** REZ—<u>#2016-00028</u>, Utterback Rezoning

Record Owners: William J. McMenamin

James Chaffee and Kathy Emmerling
HAYMARKET RESIDENTIAL XIII LC

Dominion Station DOMINION STATION DC, LLC

Leonard C. Waters, Jr. and Sadie J. Waters, Trustees for the Leonard and

**Sadie Waters Living Trust** 

Donna F. Beebe, Sole Trustee of the Beebe Family Trust

C. Campbell and Shirley Campbell, Trustees under the Campbell Living

Trust, dated July 15, 2015

Haymarket Residential I LLC

HAYMARKET RESIDENTIAL IV, LLC

HAYMARKET RESIDENTIAL X LC

HAYMARKET RESIDENTIAL XII LC

HAYMARKET RESIDENTIAL I LLC

#### Haymarket Residential II LLC

#### Haymarket Residential HAYMARKET RESIDENTIAL III LLC

Don Brauninger, Trustee under the Brauninger Living Trust

Dion Charles Wydick, Trustee under the Dion Charles Wydick Revocable

**Trust** 

Roger A. Johnson

Verna Annetha Harris, Trustee of the Verna Annetha Harris Trust

Terry Duane Harris, Trustee of the Terry Duane Harris Trust

HAYMARKET RESIDENTIAL II LLC

HAYMARKET RESIDENTIAL XI LC

HAYMARKET RESIDENTIAL XVI LC

HAYMARKET RESIDENTIAL XV LC

HAYMARKET RESIDENTIAL V LLC

HAYMARKET RESIDENTIAL VI LLC

Michael and Beverly Veness

HAYMARKET RESIDENTIAL VII LLC

HAYMARKET RESIDENTIAL VIII LC

HAYMARKET RESIDENTIAL XIV LC

Property: GPINs 7398-18-4032, 7398-18-6330, 7398-18-2402, 7398-17-1471, 7398-17-0335, 7398-06-8298, 7398-06-7859, 7398-16-0866, 7398-16-3682, 7398-16-

7933, 7398-27-2919, 7398-27-0026, 7398-16-8778, 7398-17-5727, <u>7398-27-</u>

3346, 7398-17-7559, 7398-17-7989, 7398-27-0588, 7398-18-8728 and 7398-17-

<u>7298</u> (the "Property")

#### Gainesville Magisterial District

±70.6 ±81.6 Acres from A-1 to PMR, Planned Mixed Residential

Date: June 24 August 20, 2016 2020

The undersigned hereby proffers that the use and development of the Property shall be in substantial conformance with the following conditions and shall supersede all other proffers made prior hereto. The headings of the proffers set forth below have been prepared for convenience or reference only and shall not control or affect the meaning or be taken as an interpretation of any provision of the proffers. Any improvements proffered herein below shall be provided at the time of development of the portion of the site served by the improvement, unless otherwise specified. The terms "Applicant" and "Developer" shall include all future owners and successors in interest.

References in this Proffer Statement to plans and exhibits shall include the following:

- A. The Master Zoning Plan (the "MZP") shall be the plan prepared by Dewberry Consultants, LLC Engineers Inc. entitled "Utterback" dated June 14, 2016, last revised August 13, 2020:
  - i. •Utterback Land Use Plan ("Land Use Plan")
  - ii. •Utterback Open Space Plan ("Open Space Plan")
  - iii. •Utterback Utility Plan ("Utility Plan")
- B. Utterback Community Design Guidelines prepared by Dewberry Engineers Inc., dated August 13, 2020

#### **USE AND SITE DEVELOPMENT**

1. <u>Development in Accordance with MZP</u>— Development of the Property will be in substantial conformance with the MZP, subject to minor modifications as needed to comply with Zoning Ordinance and Design and Construction Standards Manual ("DCSM") requirements, including changes to the location of travelways, parking, buildings, and on site community amenities (such as tot lot, outdoor seating area, pavilion and monument sign), the final locations of which shall be shown on the final site plan.

The exact boundaries and acreage of the Land Bays may be increased or decreased at the time of site plan/subdivision, not to exceed ten percent (10%)of the gross area of the larger Land Bay impacted by each such change.

- 2. <u>Use. A maximum of 230-two hundred and forty (240)</u> single family detached residential units may be constructed on the Property.
- 2. Limits of Clearing and Grading.— The Applicant shall limit clearing and grading on the Property to those areas depicted on the GDPOpen Space Plan, subject to minor revisions in accordance with final engineering considerations at the time of plan review and approval. No clearing or improvements shall be made outside of the clearing and grading on the Property with the exception of: (a) the removal of noxious vegetation, such as poison ivy, poison oak, etc., as well as dead, dying or hazardous trees at the Applicant's sole discretion; and (b) the installation and maintenance of water, sanitary sewer, storm sewer outfalls; and (c) the installation of access to the existing cemetery.

#### TRANSPORTATION

- 4. <u>Monetary Contribution—</u> As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$16,780.00 per single family unit constructed on the Property to be used for transportation improvements.
- 5.As a condition of the issuance of the 116th residential occupancy permit, the Applicant shall convert the westbound right turn lane on Lightner Road, at its intersection with Route 15, into a shared left-right turn lane.
- Lightner Road Improvements If the Applicant is able to obtain off site right-of-way for construction and easements, the Applicant shall design and construct the improvements to Lightner Road, as depicted on the exhibit entitled "Utterback Lightner Road Improvements," prepared by Dewberry Engineers, Inc., dated June 10, 2020, subject to obtaining all necessary Prince William County Department of Transportation (County Transportation) and Virginia Department of Transportation (VDOT) approvals. In the event the Applicant is not able to obtain off-site right-of-way and easements needed for the construction for these improvements, there shall be no further obligation under this proffer. If right-of-way is obtained and the improvements are approved, the Applicant shall show the final location and design of such improvements on the first site/subdivision plan for the Property (or on a separate public improvements plans to be submitted with the first site/subdivision plan for the Property) and said improvements shall be completed by the Applicant prior to and as a condition of the issuance of an occupancy permit for the 50<sup>th</sup> residential unit constructed on the Property.

#### **COMMUNITY DESIGN**

- 6. <u>Monument Sign.— The Applicant may provide a monument sign in the general location shown on the MZP or entry feature(s) at the entrance off of Lightner Road</u>, subject to obtaining required sign permits.
- 7. <u>Design Guidelines -</u>
  - a. Development on the Property shall be in conformance with the Design Guidelines.
  - b. The Design Guidelines are subject to minor modifications made in connection with site/subdivision and building plans review. More substantial modifications to the Design Guidelines, which represent an overall improvement to the quality of the development, may be approved by the Planning Director.

#### **CULTURAL RESOURCES**

- 8. 7.Cemetery Buffer. The Applicant shall provide a twenty-five foot (25') wide buffer around the cemetery (Site 44PW2015) as shown on the Open Space Plan, subject to appropriate access easement crossing(s) and fencing. Where existing vegetation is undisturbed within said cemetery buffer, said existing vegetation shall be credited against the plant unit requirements identified in the DCSM and where the existing vegetation is sufficient may satisfy said requirements.
- <u>8. Cemetery Access. The Applicant shall provide a fifteen foot (15') wide public pedestrian access easement for a pedestrian footpath to the cemetery (Site 44PW2015) with the final location of said public pedestrian access easement to be determined at final subdivision plan.</u>
- 9. Phase II Evaluation of Site 44PW2014:— As a condition of site/subdivision plan approval for Land Bay B, the Applicant shall conduct a Phase II archaeological evaluation on areas within Site 44PW2014 that will be disturbed by the proposed development. The Phase II scope of work shall be approved by the Planning Director or his designee. Three (3) copies and one electronic copy of the Phase II draft report documenting the results and recommendations of the archaeological evaluation shall be submitted to the Planning Office for review, comment, and approval prior to final site/subdivision plan approval for each Land Bay B. The qualified professional, the archaeological testing, and the reports shall meet the standards set forth in the current version of the Virginia Department of Historic Resources (VDHR) Guidelines for Conducting Historic Resources Survey in Virginia.
  - 10. In the event the Phase II evaluation finds an archaeology site significant and the site will be disturbed by construction, the Applicant will, prior to issuance of a land disturbance permit for that area containing the significant site, either initiate mitigation of the archaeology site through Section 106 of the National Historic Preservation Act (NHPA), with the County as a consulting party; or, if Section 106 review is not required, the Applicant will prepare a mitigation plan for approval by the Planning Director or his designee. If a County mitigation plan is required, its stipulations shall be completed prior to issuance of the land disturbance permit. The mitigation plan shall meet the standards set forth in the current version of the VDHR's Guidelines for Conducting Historic Resources Survey in Virginia and also the Advisory Council on Historic Preservation's (ACHP) Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites (http://www.achp.gov/archguide.html#supp). Final reports shall be submitted in quantities, formats and media as requested by the County Archaeologist after the report(s) have been approved by the County.
- 11. Curation The Applicant shall curate with the County, artifacts, field records, laboratory records, photographic records, computerized data and other historical records the Applicant possesses as recovered as a result of its cultural resources investigations. All artifacts and records submitted for curation shall meet current professional standards and The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. A curation fee equal to VDHR's curation fee (not to exceed \$350.00/box) will be paid by the Applicant at the time of delivery to the County. Ownership of all records submitted for curation shall be transferred to the County with a letter of gift.

#### PARKS AND RECREATION

12. <u>Monetary Contribution</u>— As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$5,591.00 per single family residential unit constructed on the Property to be used for parks purposes.

#### **ENVIRONMENTAL**

- 13. <u>Monetary Contribution—</u> The Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$75.00 per acre to conduct water quality monitoring, stream restoration projects and/or drainage improvements. Said contribution shall be paid prior to and as a condition of the approval of the final site plan.
- 14. <u>Storm Water Management/Best Management Practices Facilities ("SWM/BMP").</u> <u>- Storm Water Management/Best Management Practice ("SWM/BMP") areas, shall be located generally as shown on the Open Space Plan, subject to minor modifications for engineering considerations and shall be on-site or off-site in accordance with DCSM standards.</u>

#### **LIBRARIES**

15. <u>Monetary Contribution</u>— As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$812.00 per <u>multifamily single family</u> residential unit constructed on the Property to be used for library purposes.

#### FIRE & RESCUE

16. <u>Monetary Contribution</u>— As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$1,053.00 per single family residential unit constructed on the Property to be used for fire and rescue purposes.

#### **SCHOOLS**

17. <u>Monetary Contribution——</u> As a condition of occupancy permit issuance of each new unit, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$20,694.00 per single family residential unit constructed on the Property to be used for school purposes.

#### AFFORDABLE HOUSING

18. <u>Monetary Contribution——</u> As a condition of occupancy permit issuance of each new unit constructed on the Property, the Applicant shall make a monetary contribution to the Prince William Board of County Supervisors in the amount of \$250.00 per single family residential unit for the Housing Preservation and Development Fund.

#### WATER AND SEWER

19. <u>Development on Public Water and Sewer——</u> The Property shall be served by public sanitary sewer and water and the Applicant shall be responsible for the costs and construction of those on and off-site improvements required in order to provide such service for the demand generated by the development on the Property. The final location and size of the waterline to be extended to the Property will be determined by the hydraulic analysis prepared in connection with final engineering and shall be in accordance with the Prince William County Service Authority Utilities Standards Manual.

#### **MISCELLANEOUS**

20. <u>Escalator Clause</u>— In the event the monetary contributions set forth in the Proffer Statement are paid to the Prince William County Board of County Supervisors ("Board") within eighteen (18) months of the approval of this rezoning, as applied for by the Applicant, said contributions shall be in the amounts as stated herein. Any monetary contributions set forth in this Proffer Statement which are paid to the Board after eighteen (18) months following the approval of this rezoning shall be adjusted in accordance with the Urban Consumer Price Index ("CPI-U") published by the United States Department of Labor, such that at the time contributions are paid they shall be adjusted by the percentage change in the CPI-U from that date eighteen (18) months after the approval of this rezoning to the most recently available CPI-U to the date the contributions are paid, subject to a cap of 6 percent (6%) per year, non-compounded.

#### WAIVERS/MODIFICATIONS

- 21. Waivers and modifications pursuant to Section 32.700.25 of the Zoning Ordinance approval of the subject rezoning shall constitute a waiver/modification of the following:
  - <u>a.</u> Waiver of Section 32-306.10.1(b) of the Zoning Ordinance to allow two unit types within the PMR District.
  - <u>a.</u> Waiver of Section 32-306.21 of the Zoning Ordinance to allow the elimination of the nonresidential secondary use requirement within the PMR District.

    <u>Waiver of Section 32-306.10.1.a of the Zoning Ordinance to allow one unit type with in the PMR District.</u>
  - <u>c.</u> <u>Modification to DCSM Detail 650.03 to allow a modified RM-1 road section for the private access streets.</u>
  - <u>d.</u> <u>Modification to DCSM Detail 650.05 to allow a modified RM-2 road section to include a median.</u>
  - <u>e.</u> <u>Modification to DCSM Section 601.01C to eliminate the requirement to connect to Olga Court and Utterback Lane.</u>
  - f. Modification to DCSM to Section 601.04C to eliminate the requirement for all single family detached lots to front on a state maintained street.
  - g. Modification to DCSM Section 602.07B to eliminate the requirement for all street centerlines to be separated by 200 feet.

- <u>h.</u> <u>Modification to DCSM Section 602.07C to eliminate the requirement for all streets to intersect with a minimum 100' tangent.</u>
- i. Modification to DCSM Section 602.18A to eliminate the requirement to have sidewalks on all streets.

[Signature(s) to follow on next page]

#### PAGE 1 OF 4

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#### **PRINCE WILLIAM COUNTY DEPARTMENT OF TRANSPORTATION PROJECT REVIEW COMMENT AND RESOLUTION SHEET**

**COMMENT CATEGORIES:** 

			MENT OF TRANSPORTATION PROJECT REVIEW T AND RESOLUTION SHEET		TIA (REQUIRED)	COMMENT CATEGORIES:  1. CORRECTIONS  2. RECOMMENDATIONS
COUNTY PROJECT NUMBER: REZ 2016-00028 DEVELOPER/ENGINEER: DEWBERRY					REVIEWER(S): ELIZABETH SCULLIN, ESCULLIN@PWCGOV.ORG, (703) 792-4051	DATE: 08/05/2016
TYPE & S	UBMITTAL#:1ST	SUBMISSION	PROJECT NAME: 14705 UTTERBACK REZO	NING		
ITEM No.	I DEFENCE I COMMENTS				Response <sup>(1)</sup> Date:	FINAL DISPOSITION <sup>(2)</sup>
1.01	DCSM 602.03 C	traffic volum	average daily trips (ADT) or design es should be shown at each site surrounding roadways.	1	The plans have been updated.	
1.02	DCSM 603.13		of the development entrance to the ection in both directions shall be plans.	1	The plans have been updated.	
1.03	General	analysis of that the Utili street network public vs pr	possible to perform a complete his proposed development given ty Plan was missing the internal k (location, typical cross section, ivate length of cul-de-sacs not dispecified trails/sidewalks.	1	The plans have been updated.	

(1	) To be fi	lled o	ut bv Ai	oplicant/l	Fnaineer	Date of	Response i	s require	ьe
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<sup>(2)</sup> The PWC reviewer is responsible for the final disposition of all comments.

Note: This form is to be used by the PWC Transportation Planning to provide comments or concerns associated with the rezoning applications, site plans, special use permit applications or any other plans when requested by the applicants.

#### PAGE 2 OF 4

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#### **PRINCE WILLIAM COUNTY DEPARTMENT OF TRANSPORTATION PROJECT REVIEW COMMENT AND RESOLUTION SHEET**

**COMMENT CATEGORIES:** 

			MENT OF TRANSPORTATION PROJECT REVIEW T AND RESOLUTION SHEET		TIA (REQUIRED)	COMMENT CATEGORIES:  1. CORRECTIONS  2. RECOMMENDATIONS	
COUNTY PROJECT NUMBER: REZ 2016-00028			DEVELOPER/ENGINEER: DEWBERRY		REVIEWER(S): ELIZABETH SCULLIN, ESCULLIN@PWCGOV.ORG, (703) 792-4051	DATE: 08/05/2016	
TYPE & S	UBMITTAL #: 1 <sup>ST</sup> S	UBMISSION	PROJECT NAME: 14705 UTTERBACK REZON	NING			
ITEM No.	REFERENCE COMMENTS CAT				Response <sup>(1)</sup> Date:	FINAL DISPOSITION <sup>(2)</sup>	
1.04	All streets shall be constructed to the property boundary with any adjoining properties if eligible to be accepted into the state secondary system. The internal roadways should be connected to Omland Place and / or Olga Court for interparcel connections.			1	The layout of the site has been modified since the last submission of the TIA. Previously, the site would have been access via a new entrance along Lightner Road. Based on current concepts, the site will be accessed via Omland Place.		
1.05	DCSM 601.05 B  The number of intersections of local streets with collector or arterial streets shall be held to a minimum to avoid hazard, delay, and preserve their integrity. The Applicant should explore access on Omland Place and Olga Court in lieu of construction a new access onto Lightner Road.		1	Based on current concepts, the site will be accessed via Omland Place.			

(1	) To be filled	A vid hiv A	opplicant/Enginee	or Date of R	esnonse is	required
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<sup>(2)</sup> The PWC reviewer is responsible for the final disposition of all comments.

Note: This form is to be used by the PWC Transportation Planning to provide comments or concerns associated with the rezoning applications, site plans, special use permit applications or any other plans when requested by the applicants.

Attachment: Planning-Review Packet S2-Utterback Rezoning-2020\_0923 (4763: One Mile Review

#### PAGE 3 OF 4

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# PRINCE WILLIAM COUNTY DEPARTMENT OF TRANSPORTATION PROJECT REVIEW COMMENT AND RESOLUTION SHEET

TIA (REQUIRED)

**COMMENT CATEGORIES:** 

1. CORRECTIONS

2. **RECOMMENDATIONS** 

COUNTY PROJECT NUMBER: REZ 2016-00028		REZ 2016-00028	DEVELOPER/ENGINEER: DEWBERRY		REVIEWER(S): ELIZABETH SCULLIN, ESCULLIN@PWCGOV.ORG, (703) 792-4051	DATE: 08/05/2016
TYPE & S	UBMITTAL # : 1 <sup>ST</sup> SU	BMISSION	PROJECT NAME: 14705 UTTERBACK REZON	IING		
ITEM No. REFERENCE			COMMENTS	COMMENT CATEGORY	RESPONSE <sup>(1)</sup> DATE:	FINAL DISPOSITION <sup>(2)</sup>
1.06	Comp Plan – DOT Non- Motorized Plan Policy 3	the property's	Applicant should construct sidewalks along property's frontage on Lightner Road and gall internal roadways.		The Applicant will construct sidewalks along the property's frontage along Lightner Road and along internal roadways.	
1.07	DCSM Table 6-7		6-7 – Provide a right turn lane/taper sis for Lightner Road access.	1	A section regarding turn lane assessments has been added to the updated TIA. A westbound right turn lane and taper is warranted. It is anticipated that the Applicant will provide a right turn bay.	

(1) To be filled out by Applicant/Engineer. Date of Response is required.

(2) The PWC reviewer is responsible for the final disposition of all comments.

Note: This form is to be used by the PWC Transportation Planning to provide comments or concerns associated with the rezoning applications, site plans, special use permit applications or any other plans when requested by the applicants.

Attachment: Planning-Review Packet S2-Utterback Rezoning-2020\_0923 (4763: One Mile Review

#### PAGE 4 OF 4

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# PRINCE WILLIAM COUNTY DEPARTMENT OF TRANSPORTATION PROJECT REVIEW COMMENT AND RESOLUTION SHEET

TIA (REQUIRED)

**COMMENT CATEGORIES:** 

1. CORRECTIONS

2. **RECOMMENDATIONS** 

COUNTY PROJECT NUMBER: REZ 2016-00028	DEVELOPER/ENGINEER: DEWBERRY	REVIEWER(S): ELIZABETH SCULLIN,	DATE: 08/05/2016
		ESCULLIN@PWCGOV.ORG, (703) 792-4051	

TYPE & SUBMITTAL #: 1ST SUBMISSION		BMISSION	PROJECT NAME: 14705 UTTERBACK REZONING				
Iтем <b>N</b> o.	I DEEEDENCE I		COMMENTS	COMMENT CATEGORY	Response <sup>(1)</sup> Date:	FINAL DISPOSITION <sup>(2)</sup>	
1.08	Rezoning Proffers – Transportati on Proffer	the westbound Rt. 15 into a sh residential occurred for exi	tes that the Applicant will convert I right turn lane on Lightner Road at nared left-right turn lane at the 116th cupancy permit. The mitigation is string conditions and should be dier than after half of the residences astructed.	1	Comment acknowledged. The proffer has been updated to state that the conversion will occur at a lower threshold (see the updated proffers).		

(1) To be filled out by Applicant/Engineer. Date of Response is required.

(2) The PWC reviewer is responsible for the final disposition of all comments.

Note: This form is to be used by the PWC Transportation Planning to provide comments or concerns associated with the rezoning applications, site plans, special use permit applications or any other plans when requested by the applicants.

Attachment: Planning-Review Packet S2-Utterback Rezoning-2020\_0923

#### PAGE 1 OF 6

COMMENT CATEGORIES:

#### PRINCE WILLIAM LAND USE 1. REQUIREMENT 2. RECOMMENDATION **PROJECT REVIEW COMMENT AND RESOLUTION SHEET** COUNTY PROJECT NUMBER: REZ 2016-00028 DEVELOPER/ENGINEER: DEWBERRY REVIEWER(S): TAHIR BENABDI AND DATE: 8-4-2016 TRAFFIC ENGINEERING (TE) TAHIR.BENABDI@VDOT.VIRGINIA.GOV PROJECT NAME: UTTERBACK REZONING REVIEW PHASE & TYPE: 1ST SUBMISSION DISCIPLINE: LAND USE ITEM Dwg. COMMENT COMMENTS RESPONSE(2) DATE: FINAL DISPOSITION(3) No.(1) **CATEGORY** No. Roadway and lot layout of the plan does not match that of the TIA report. In next submission, provide The plan and TIA have been updated and are 1.01 roadway network and lot layout consistent with the 2 consistent. TIA exhibits. According to the road layout of the TIA report, there is only one entrance at Lightner Road. According to SSAR standards, there should be at least 4 The layout of the site has been modified since the last submission of the TIA. Previously, the connections to VDOT roads. Lightner Road can be considered as two connections, so there should be at site would have been access via a new entrance 1.02 least two internal connections to VDOT roads within along Lightner Road. Based on current the rest of the residential subdivision. Please revise concepts, the site will be accessed via Omland the layout to connect to additional roads in next Place. submission of the rezoning plan. Provide ingress/egress easements for all inter-parcel 1.03 2 See response to Comment 1.02 connections proposed. G

{P1019872.DOCX / 1 VDOT responses 080416 rvsd by Bohler 001903 000094}

(1) Indicate drawing no./page no. or use "G" for general comment.

(2) To be filled out by Applicant/Engineer. Date of Response is required.

(3) The VDOT reviewer is responsible for the final disposition of all comments.

VIRGINIA DEPARTMENT OF TRANSPORTATION

Note: This form is to be used by the VDOT land use team to provide comments or concerns associated with the rezoning applications, site plans or any other plans when requested by the county or the applicants.

TIA - NOT ACCEPTED (SEE COMMENTS)

Attachment: Planning-Review Packet S2-Utterback Rezoning-2020\_0923

#### PAGE 2 OF 6

#### VIRGINIA DEPARTMENT OF TRANSPORTATION TIA - NOT ACCEPTED (SEE COMMENTS) COMMENT CATEGORIES: PRINCE WILLIAM LAND USE 1. REQUIREMENT 2. RECOMMENDATION **PROJECT REVIEW COMMENT AND RESOLUTION SHEET** COUNTY PROJECT NUMBER: REZ 2016-00028 DEVELOPER/ENGINEER: DEWBERRY REVIEWER(S): TAHIR BENABDI AND DATE: 8-4-2016 TRAFFIC ENGINEERING (TE) TAHIR.BENABDI@VDOT.VIRGINIA.GOV PROJECT NAME: UTTERBACK REZONING REVIEW PHASE & TYPE: 1ST SUBMISSION DISCIPLINE: LAND USE COMMENT ITEM Dwg. RESPONSE(2) DATE: FINAL DISPOSITION(3) COMMENTS No. No.(1) **CATEGORY** Based on comments received from the County. No sidewalk or shared-use path has been shown. the County has recommended that pedestrian VDOT recommends that the County require the facilities be placed along the property's placement of pedestrian facilities along the frontage frontage along Lightner Road. 1.04 2 of property adjacent to Lighter Road and across from Mountain View Elementary School. The plan currently shows a sidewalk along the development's frontage and throughout the development. The TIA has been updated and now provides a Provide right-turn lane warrant analysis for the section regarding turn lane assessments. A proposed entrance road coming off Lightner Road. right turn lane and taper is warranted. The 2 1.05 G Refer to App. F of the RDM for more details. Applicant is planning to provide a right turn bay.

{P1019872.DOCX / 1 VDOT responses 080416 rvsd by Bohler 001903 000094}

(1) Indicate drawing no./page no. or use "G" for general comment.

(2) To be filled out by Applicant/Engineer. Date of Response is required.

(3) The VDOT reviewer is responsible for the final disposition of all comments.

Note: This form is to be used by the VDOT land use team to provide comments or concerns associated with the rezoning applications, site plans or any other plans when requested by the county or the applicants.

Attachment: Planning-Review Packet S2-Utterback Rezoning-2020\_0923

#### PAGE 3 OF 6

#### VIRGINIA DEPARTMENT OF TRANSPORTATION TIA - NOT ACCEPTED (SEE COMMENTS) COMMENT CATEGORIES: PRINCE WILLIAM LAND USE 1. REQUIREMENT 2. RECOMMENDATION **PROJECT REVIEW COMMENT AND RESOLUTION SHEET** COUNTY PROJECT NUMBER: REZ 2016-00028 DEVELOPER/ENGINEER: DEWBERRY REVIEWER(S): TAHIR BENABDI AND DATE: 8-4-2016 TRAFFIC ENGINEERING (TE) TAHIR.BENABDI@VDOT.VIRGINIA.GOV PROJECT NAME: UTTERBACK REZONING REVIEW PHASE & TYPE: 1ST SUBMISSION DISCIPLINE: LAND USE COMMENT ITEM Dwg. RESPONSE(2) DATE: FINAL DISPOSITION(3) COMMENTS No.(1) **CATEGORY** No. Based on the finding of the revised TIA, the existing effective storage length would be able to accommodate the additional traffic. The southbound left turn bay has a storage and taper of approximately 550' and 410', respectively. Based on the results of the VDOT recommends improvement for the intersection of Lightner Road with US Route 15 capacity analysis, the southbound left's 95<sup>th</sup> based on the proposal of this new subdivision. This percentile queue is 40 feet or less with a LOS may include increased storage of both right-turn lane 1.06 G 2 B or better. from NB US 15 and left-turn lane from SB US 15. The turn-lane tapers should be 200' length each. The northbound right turn has a storage and taper of approximately 480' and 170'. Based on the results of the capacity analysis, the northbound right's 95th percentile queue is 3 feet or less with a LOS A. Therefore, there is no plan to modify the existing turn bays along Route 15.

{P1019872.DOCX / 1 VDOT responses 080416 rvsd by Bohler 001903 000094}

- (1) Indicate drawing no./page no. or use "G" for general comment.
- (2) To be filled out by Applicant/Engineer. Date of Response is required.
- (3) The VDOT reviewer is responsible for the final disposition of all comments.

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#### PAGE 4 OF 6

	PRINCE WILLIAM PROJECT RE	LAND USE	TION		TIA - NOT ACCEPTED (SEE COMMENTS)	COMMENT CATEGORIES:  1. REQUIREMENT  2. RECOMMENDATION
PROJEC	CT NUMBER: REZ 2016-00028	DEVELOPER/ENGINEE			REVIEWER(S): TAHIR BENABDI AND TRAFFIC ENGINEERING (TE) TAHIR.BENABDI@VDOT.VIRGINIA.GOV	DATE: 8-4-2016
T <b>N</b> AME:	UTTERBACK REZONING	REVIEW PHASE & TY	PE: 1 <sup>ST</sup> SUBMIS	SION	DISCIPLINE: LAND USE	
Dwg. No. <sup>(1)</sup>	Comments		COMMENT CATEGORY		RESPONSE <sup>(2)</sup> DATE:	FINAL DISPOSITION <sup>(3)</sup>
G	proposed VDOT-maintained roadw submission, please show proposed	yays. With next R/W dedication	2	The plan	s have been updated.	
G	maintained roadway types includin following SSAR standards and any widening along Lightner Road acce	2	The plan	s have been updated.		
	The following comments are from t Traffic Engineering (TE) division.	he VDOT District				
The study should include a warrant analysis for right turn lane at the access to the development.			2	section r	egarding turn lane assessments. An lane and taper is warranted. The	
	Dwg. No. <sup>(1)</sup>	PRINCE WILLIAM PROJECT RE COMMENT AND RESO  PROJECT NUMBER: REZ 2016-00028  PROJECT NUMBER: REZ 2016-00028  The plans just show thick dashed liproposed VDOT-maintained roadw submission, please show proposed for all future VDOT-maintained as sheets.  Please provide typical sections for maintained roadway types includin following SSAR standards and any widening along Lightner Road accessandard requirements can be found the VDOT Road Design Manual.  The following comments are from the Traffic Engineering (TE) division.  The study should include a warrant	PRINCE WILLIAM LAND USE PROJECT REVIEW COMMENT AND RESOLUTION SHEET  PROJECT NUMBER: REZ 2016-00028  DEVELOPER/ENGINEE  REVIEW PHASE & TYLE  DWG. NO. (1)  COMMENTS  The plans just show thick dashed lines for all proposed VDOT-maintained roadways. With next submission, please show proposed R/W dedication for all future VDOT-maintained assets on all plan sheets.  Please provide typical sections for all VDOT-maintained roadway types including proposed streets following SSAR standards and any proposed street widening along Lightner Road access. SSAR standard requirements can be found in App. B(1) of the VDOT Road Design Manual.  The following comments are from the VDOT District Traffic Engineering (TE) division.  The study should include a warrant analysis for right	PROJECT REVIEW COMMENT AND RESOLUTION SHEET  PROJECT NUMBER: REZ 2016-00028  DEVELOPER/ENGINEER: DEWBERRY  T NAME: UTTERBACK REZONING  REVIEW PHASE & TYPE: 1 <sup>ST</sup> SUBMIS  COMMENTS  COMMENTS  COMMENT CATEGORY  The plans just show thick dashed lines for all proposed VDOT-maintained roadways. With next submission, please show proposed R/W dedication for all future VDOT-maintained assets on all plan sheets.  Please provide typical sections for all VDOT-maintained roadway types including proposed street widening along Lightner Road access. SSAR  Standard requirements can be found in App. B(1) of the VDOT Road Design Manual.  The following comments are from the VDOT District Traffic Engineering (TE) division.  The study should include a warrant analysis for right	PROJECT REVIEW COMMENT AND RESOLUTION SHEET  PROJECT NUMBER: REZ 2016-00028  DEVELOPER/ENGINEER: DEWBERRY  T NAME: UTTERBACK REZONING  DWG. NO.(1)  The plans just show thick dashed lines for all proposed VDOT-maintained roadways. With next submission, please show proposed R/W dedication for all future VDOT-maintained assets on all plan sheets.  Please provide typical sections for all VDOT-maintained roadway types including proposed streets following SSAR standards and any proposed street widening along Lightner Road access. SSAR standard requirements can be found in App. B(1) of the VDOT Road Design Manual.  The following comments are from the VDOT District Traffic Engineering (TE) division.  The study should include a warrant analysis for right turn lane at the access to the development.  2 The TIA section right turn Applicant.	PROJECT REVIEW COMMENT AND RESOLUTION SHEET  PROJECT NUMBER: REZ 2016-00028  DEVELOPER/ENGINEER: DEWBERRY TRAFFIC ENGINEERING (TE) TAHIR.BENABDI @VDOT.VIRGINIA.GOV  INAME: UTTERBACK REZONING  REVIEW PHASE & TYPE: 1 <sup>ST</sup> SUBMISSION DISCIPLINE: LAND USE  DWG. NO. <sup>(1)</sup> COMMENTS  COMMENT The plans just show thick dashed lines for all proposed VDOT-maintained roadways. With next submission, please show proposed R/W dedication for all future VDOT-maintained assets on all plan sheets.  Please provide typical sections for all VDOT-maintained roadway types including proposed street widening along Lightner Road access. SSAR standards and any proposed street widening along Lightner Road access. SSAR 2 The plans have been updated.  The following comments are from the VDOT District Traffic Engineering (TE) division.  The study should include a warrant analysis for right turn lane at the access to the development.  2 The TIA has been updated and now provides a section regarding turn lane assessments. A right turn lane and taper is warranted. The Applicant is planning to provide a right turn

- (1) Indicate drawing no./page no. or use "G" for general comment.
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REVISED SEPTEMBER, 2014

Attachment: Planning-Review Packet S2-Utterback Rezoning-2020\_0923

#### PAGE 5 OF 6

#### VIRGINIA DEPARTMENT OF TRANSPORTATION TIA - NOT ACCEPTED (SEE COMMENTS) COMMENT CATEGORIES: PRINCE WILLIAM LAND USE 1. REQUIREMENT 2. RECOMMENDATION **PROJECT REVIEW COMMENT AND RESOLUTION SHEET** COUNTY PROJECT NUMBER: REZ 2016-00028 DEVELOPER/ENGINEER: DEWBERRY REVIEWER(S): TAHIR BENABDI AND DATE: 8-4-2016 TRAFFIC ENGINEERING (TE) TAHIR.BENABDI@VDOT.VIRGINIA.GOV PROJECT NAME: UTTERBACK REZONING REVIEW PHASE & TYPE: 1ST SUBMISSION DISCIPLINE: LAND USE COMMENT ITEM Dwg. RESPONSE<sup>(2)</sup> DATE: FINAL DISPOSITION(3) COMMENTS No. No.(1) **CATEGORY** Based on a preliminary assessment the Ensure that the receiving lanes meet the requirements receiving lanes could accommodate the for the dual left turn movement. 2 proposed dual left turn lanes. Further review 1.10 TE will be conducted at site plan and design will be adjusted accordingly per VDOT standards. A signal modification plan will needed for Comment acknowledged. The signal converting right lane to shared left and right turn modification plan, if needed, will be submitted TE 2 1.11 lane. to VDOT when required by proffer.

{P1019872.DOCX / 1 VDOT responses 080416 rvsd by Bohler 001903 000094}

(1) Indicate drawing no./page no. or use "G" for general comment.

(2) To be filled out by Applicant/Engineer. Date of Response is required.

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#### PAGE 6 OF 6

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{P1019872.DOCX / 1 VDOT responses 080416 rvsd by Bohler 001903 000094}

(1) Indicate drawing no./page no. or use "G" for general comment.

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S 86°47'04" W

100.00

MINOR REVISIONS BASED UPON A CURRENT FIELD

RUN BOUNDARY SURVEY.

3. NO TITLE REPORT FURNISHED.

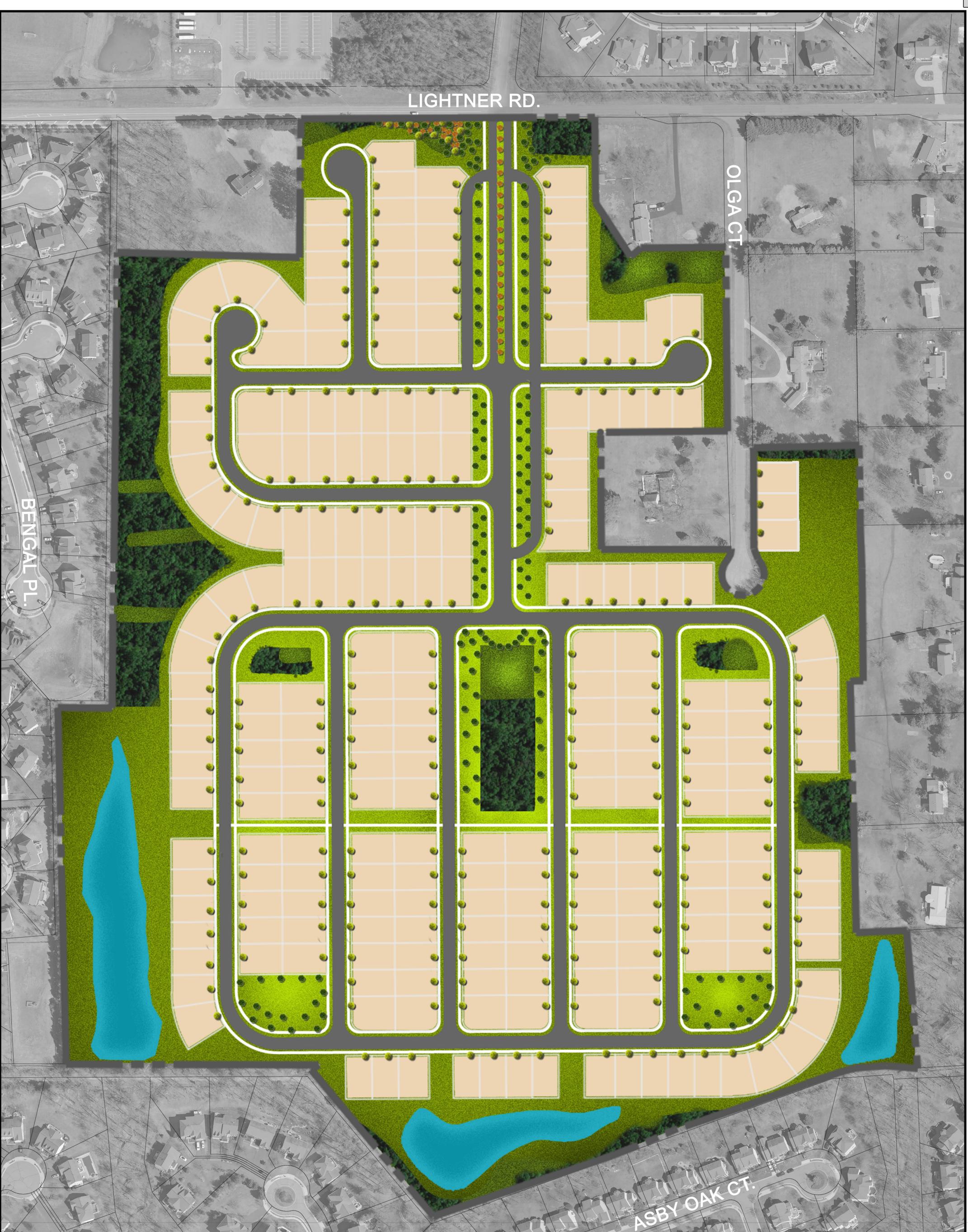
ZP-139 Packet Pg. 131

13575 HEATHCOTE BLVD, SUITE 130 GAINESVILLE, VIRGINIA 20155

PHONE:703.468.2211

FAX: 703.468.2212

Dewberry Engineers Inc.



### NOTES:

- 1. SITE AREA +/- 81.6 ACRES
- 2. EXISTING ZONING A-1 (AGRICULTURAL)
- 3. PROPOSED ZONING PMR (PLANNED MIXED RESIDENTIAL)
- 4. DWELLING UNITS PROPOSED 237
- 5. DENSITY PROPOSED 2.9 UNITS PER ACRE
- 6. OPEN SPACE PROPOSED 27.5 AC. OR 33.7%
- 7. PRESERVATION AREA PROPOSED 7.5 AC. OR 9.2%

**GRAPHIC SCALE** 

## LEGEND:

= PROPOSED LOTS



= PRESERVATION AREA

= SWM/BMP POND

# UTTERBACK ILLUSTRATIVE PLAN

DATE: AUGUST 13, 2020

PLN2016-00028

GAINESVILLE MAGISTERIAL DISTRICT PRINCE WILLIAM COUNTY, VIRGINIA

# UTTERBACK COMMUNITY DESIGN GUIDELINES

PLN2016-00028

Prepared By:



Dewberry Engineers Inc. 13575 Heathcote Boulevard, Suite 130 Gainesville, VA 20155-6693

> Date: August 13, 2020

## TABLE OF CONTENTS

PROJECT SUMMARY	4
SITE LOCATION	5
THE PLAN	6
CIRCULATION	8
VEHICULAR CIRCULATION	9
RESIDENTIAL BOULEVARD STREET III	9
RESIDENTIAL STREET III (VPD 2,001-7,000)	10
RESIDENTIAL STREET II (VPD 401-2,000)	11
residential street i (vpd 1-400)	12
PRIVATE ACCESS STREET	13
PEDESTRIAN CIRCULATION	14
PEDESTRIAN CIRCULATION PLAN	
PEDESTRIAN CIRCULATION SECTIONS	
RESIDENTIAL LOT STANDARDS	
SINGLE FAMILY DWELLING DETACHED: REDUCED SETBACK HOUSE	
SINGLE FAMILY DWELLING DETACHED: VILLAGE HOUSE	
OPEN SPACE AND LANDSCAPE	
OPEN SPACE AND LANDSCAPE PLAN	
TREE PRESERVATION PLAN	
RESIDENTIAL LANDSCAPE CONSIDERATIONS.	
PLANTING PALETTE	· · · ∠/

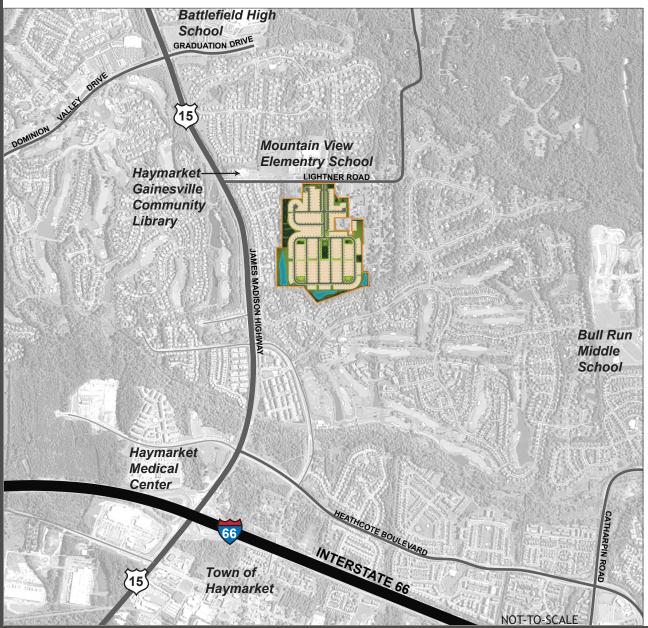
## PROJECT SUMMARY

#### **DESCRIPTION**

These design guidelines provide a vision for the Utterback Community which is a proposed residential community comprised of single-family detached homes and thoughtfully placed open areas. The design of the homes and the scale of the community will be harmonious with the existing development in the surrounding area. The information provided in the following pages provides a detailed framework to ensure the projects design objectives, as outlined below, are met during the implementation of the community.

- Objective 1 Create a vibrant and desirable neighborhood that compliments the surrounding area while also creating its own identity.
- Objective 2 Create a walkable community that encourages residents to enjoy interconnected open space areas.
- Objective 3 Provide quality open spaces areas using the following design principles.
  - A Create an inviting entrance.
  - B Be well placed to create exceptional visual site lines.
  - C Be evenly dispersed and accessible to residents.
  - D Provide variety in the type of space provided.

## SITE LOCATION



#### **DESCRIPTION**

The Utterback Community is located off Lightner Road in western Prince William County just north of the Town of Haymarket. Its is conveniently located less than a ½ mile from the north/south corridor of James Madison Highway and less than two miles away from the east/west corridor of Interstate 66. The community is also near a library, healthcare, education, shopping, and dining facilities.

## THE PLAN



The plan of development consisting of approximately 81 acres proposes 237 single-family detached homes. The residents of this community will be greeted by a very inviting entrance greenway. The greenway will be well landscaped and provide an inviting site line to a central Community Park. Corner Parks and an additional greenway connection will also be provided within the community. Much of the perimeter of the project will be surrounded by open space areas. A robust pedestrian network of sidewalks and trails will be used to interconnect the internal parks as well as provide external connections.

## CIRCULATION

## **CIRCULATION**

Note: Exemplary Images contained on this page are for concept purposes only.

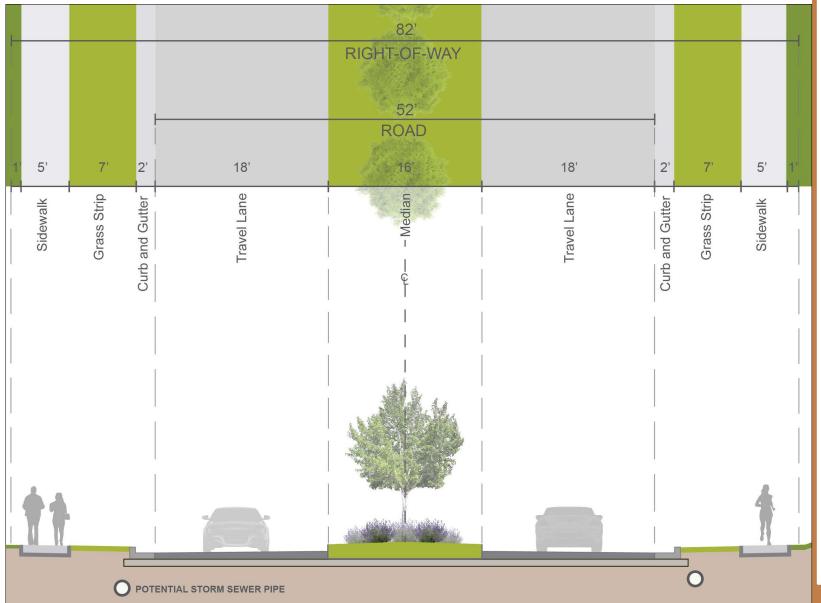
#### **DESCRIPTION**

Subject to VDOT and Prince William County Department of Transportation approval publicly maintained residential streets will be provided. The type and category of streets will be determined based upon the projected vehicles per day (VPD). The following examples depict the size and character of the internal residential streets.

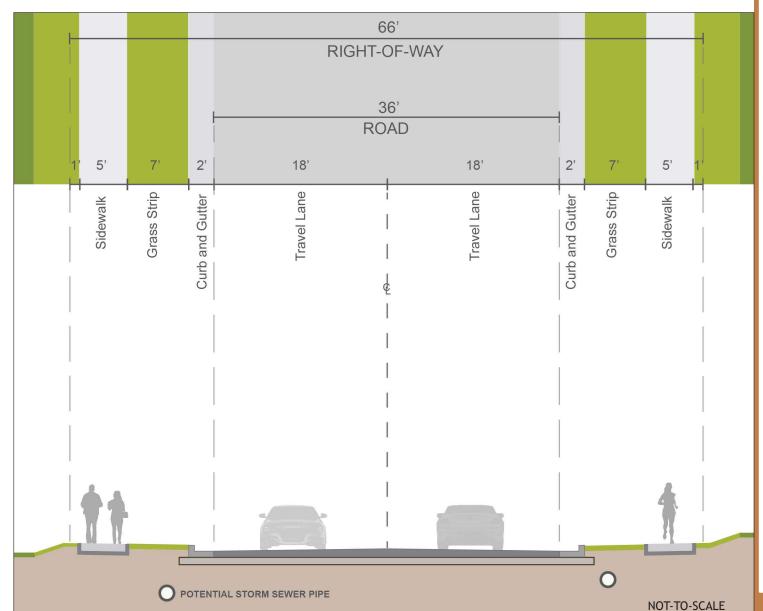


Example of Entrance Feature

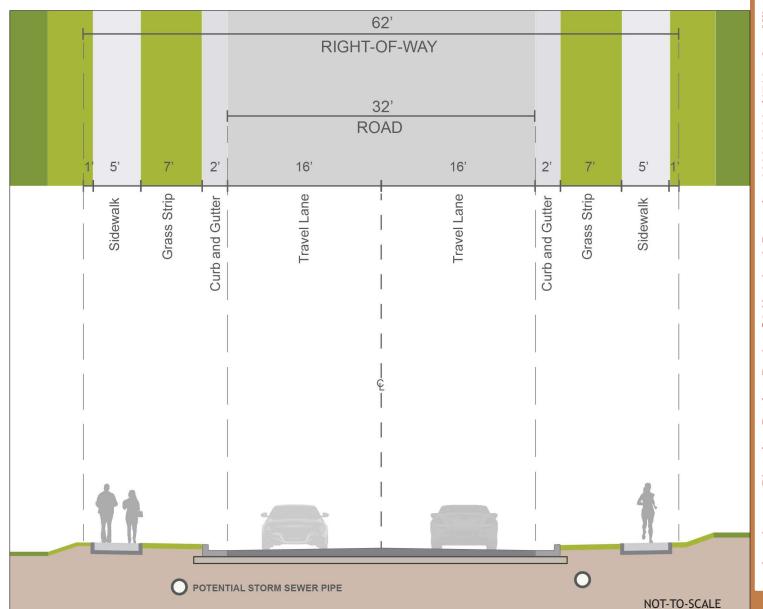
#### RESIDENTIAL BOULEVARD STREET III



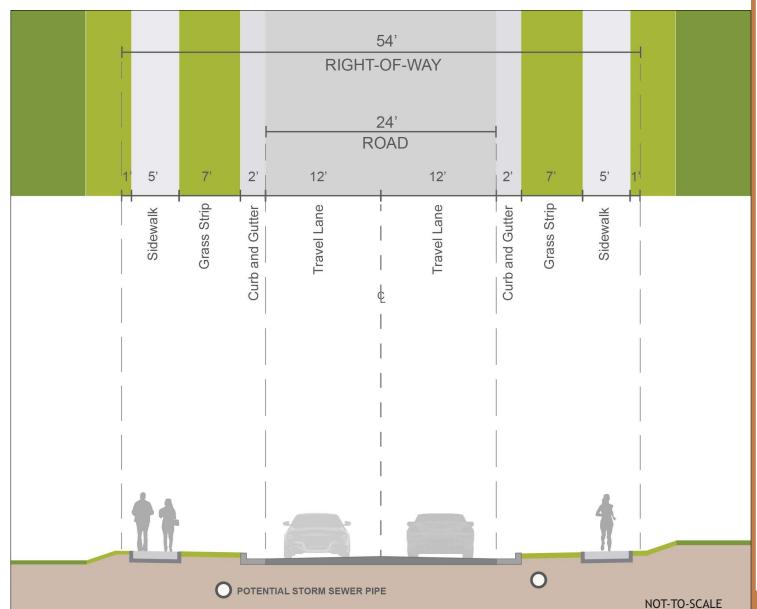
RESIDENTIAL STREET III (VPD 2,001-7,000)



RESIDENTIAL STREET II (VPD 401-2,000)

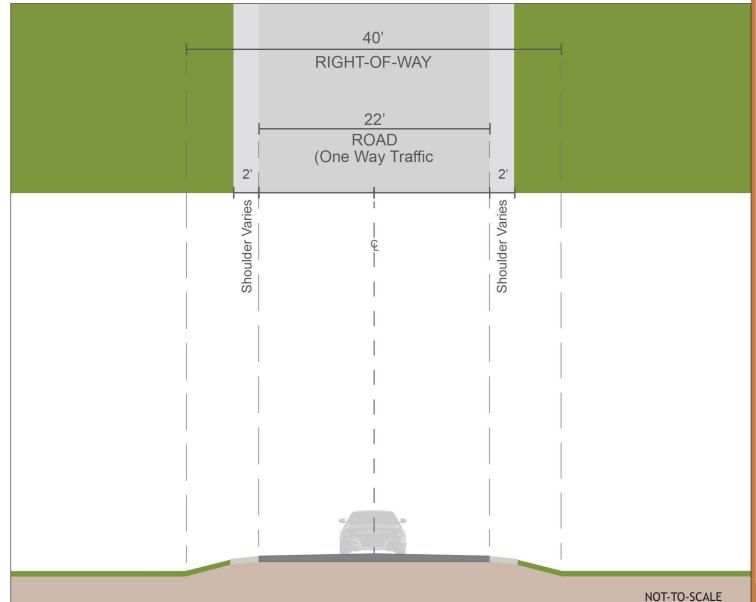


RESIDENTIAL STREET I (VPD 1-400)



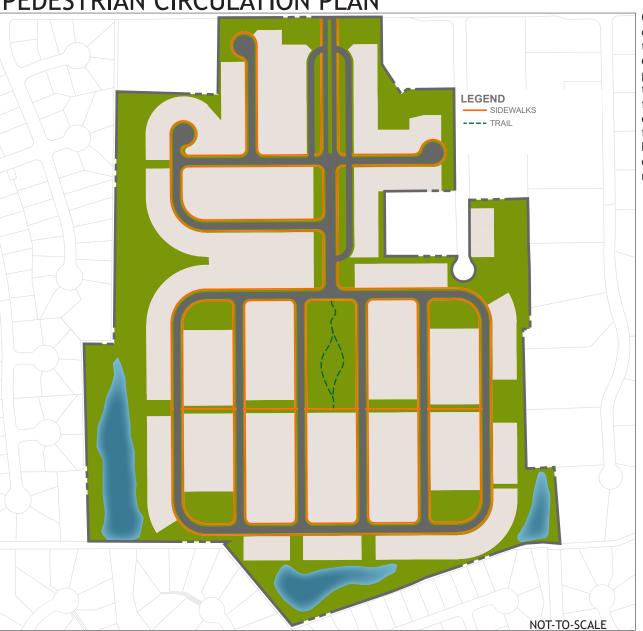
### VEHICULAR CIRCULATION

#### PRIVATE ACCESS STREET



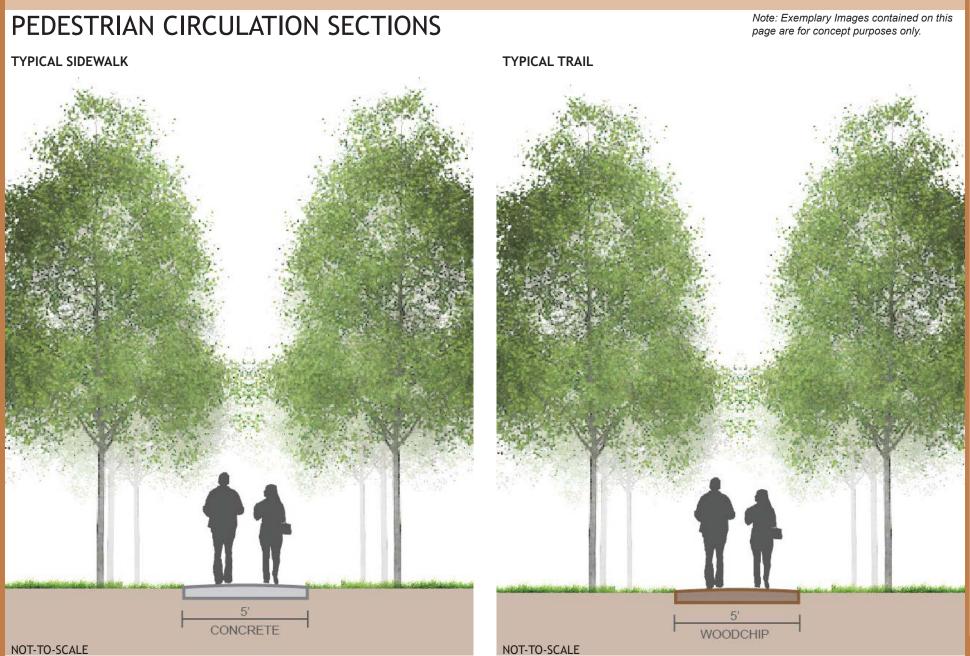
### PEDESTRIAN CIRCULATION

#### PEDESTRIAN CIRCULATION PLAN



One of the design objectives for this development is to create a walkable community that encourages residence to enjoy the provided open space areas. To fulfill this objective a combination of sidewalks and trails have been proposed that link all the open space areas. By doing this the open space areas are well within a 5-minute walking distance for all residents. This system has also been created to provide a series of loops that residents can use for exercise purposes. External pedestrian connections have also been provided to Lightner Road. The sidewalk connection provided to Lightner Road will provide convenient access to Mountain View Elementary School.

# PEDESTRIAN CIRCULATION



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# RESIDENTIAL LOT STANDARDS

### RESIDENTIAL LOT STANDARDS

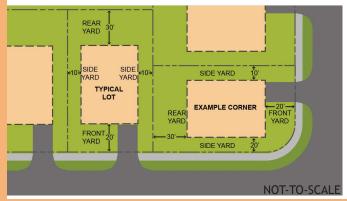
#### SINGLE FAMILY DWELLING DETACHED: REDUCED SETBACK HOUSE

#### **DESCRIPTION**

This dwelling type consists of a single-family, fully detached residence located on an individual lot which is set not closer than twenty feet from the front lot line

LOT LAYOUT STANDARDS	DIMENSIONS
Minimum Lot Area	7,000 SF
Maximum Lot Coverage	0.50
Maximum Building Height	35
Minimum Setbacks	
Front	20
Side	10
Corner Lot (Side)	20
Rear	30
un-roofed decks, stoops, landings, and similar features	
Front	15
Side	5
Corner Side	20
Rear	8
	•
Minimum Lot Width	70

#### REDUCED SETBACK HOUSE DIAGRAM



<sup>\*</sup> Dimensions shown depict the minimum depth of the side, front, or rear yard.

### RESIDENTIAL LOT STANDARDS

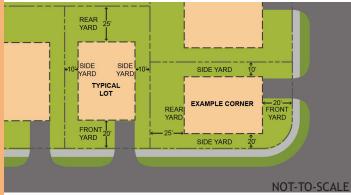
#### SINGLE FAMILY DWELLING DETACHED: VILLAGE HOUSE

#### **DESCRIPTION**

This dwelling type is a single-family residence which is fully detached from neighboring structures. The village house is distinguished by small front and side yards.

LOT LAYOUT STANDARDS	DIMENSIONS
Minimum Lot Area	6,000 SF
Maximum Lot Coverage	0.60
Maximum Building Height	35
Minimum Setbacks	
Front	20
Side	10
Corner Lot (Side)	20
Rear	25
un-roofed decks, stoops, landings, and similar features	
Front	15
Side	5
Corner Side	20
Rear	8
Minimum Lot Width	60

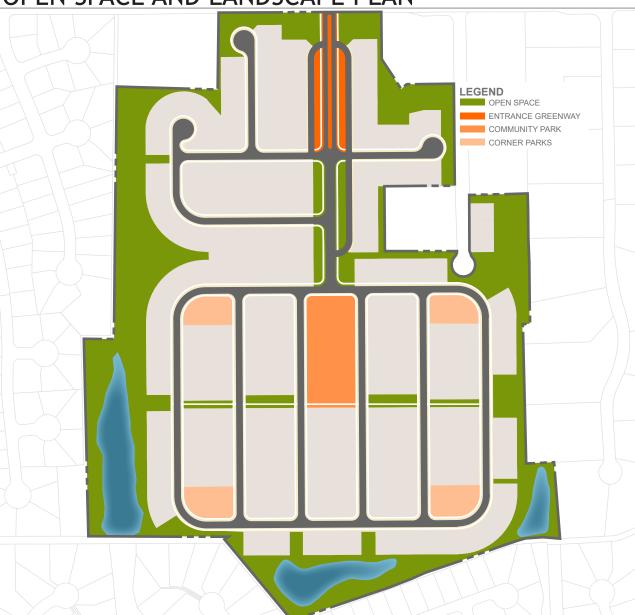
#### VILLAGE HOUSE SETBACK DIAGRAM



<sup>\*</sup> Dimensions shown depict the minimum depth of the side, front, or rear yard.

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OPEN SPACE AND LANDSCAPE PLAN



Note: Exemplary Images contained on this page are for concept purposes only.



Example Stormwater Management Pond

To achieve design Object 3 an Entrance Greenway has been provided to create an inviting entrance. The Community Park has been at the visual terminus of the Entrance Greenway to create an exception visual site line. The Entrance Gateway, Community Park, and Corner Parks have been evenly dispersed to provide easy access for all residents. The Community Park and Corner Parks will be a combination of preserved natural vegetation and groomed open space to provide a sense of open space variety .

NOT-TO-SCALE

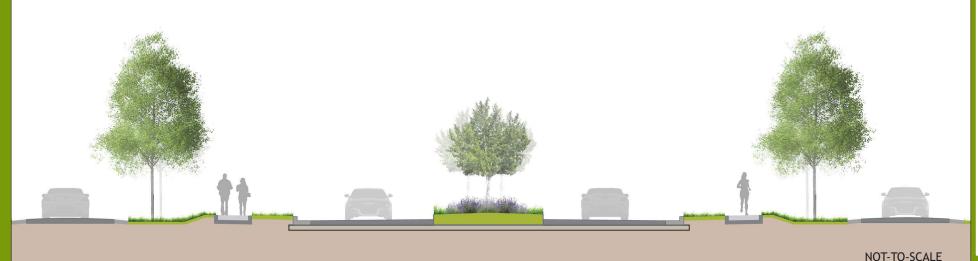
Note: Exemplary Images contained on this page are for concept purposes only.



Example of Community Park



Example of Corner Park



Entrance Greenway Section

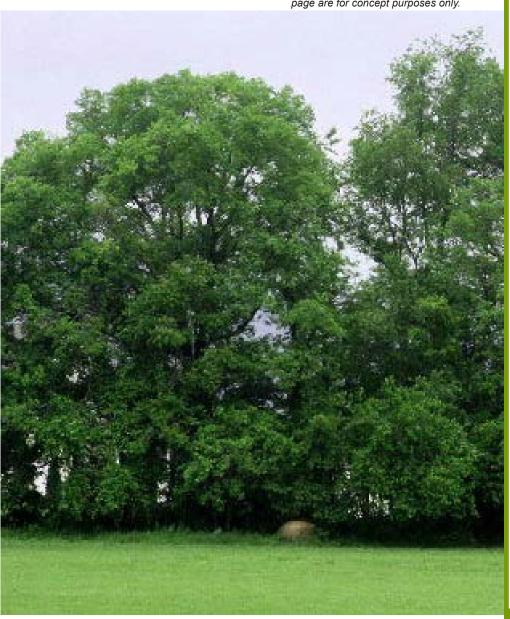
#### TREE PRESERVATION PLAN



The forest cover that does exist is generally located along the western boundary and central portion of the project. The plan of development has been laid out to protect portions of the limited existing forest cover. The Community Park has been strategically located to take advantage of and preserve a portion of the existing forest cover.

Note: Exemplary Images contained on this page are for concept purposes only.





Example of Designated Tree Preservation Areas

#### RESIDENTIAL LANDSCAPE CONSIDERATIONS

#### **DESCRIPTION**

- Single Family Lots should include a minimum of one canopy tree and one ornamental tree per home.
- · Yard trees may include ornamental trees.
- Existing or saved trees may be substituted for required plantings at a ratio of 1 existing tree for 2 required trees, however at least one front yard tree is required.
- Foundation shrubs shall be provided for all single family detached residences along any building facade with direct exposure to public rights-ofway, private streets, common driveways or parking areas.
- Evergreen trees shall be placed to screen rear yards that are exposed to public and private streets, common driveways and parking areas.
- Foundation shrubs and plantings for single family detached units shall be provided at a minimum of one plant per three feet of any building facade length with direct exposure to pubic right-of-way, private streets, common driveways or parking areas.
- Plant material shall be chosen based on the relationship of ultimate height and width with regard to the space in which planted. Layering of plant materials is encouraged. Taller plants shall be placed behind lower plants.
- Beds of plant material providing seasonal color are encouraged.
- Use of perennials, ornamental grasses and hedges are highly encouraged.
- Shrubs shall be planted a minimum of three feet from building foundations.

- · Architectural building corners should be softened with evergreen trees.
- All planting beds must be covered with shredded hardwood mulch at sufficient depth to cover the topsoil.

Note: Exemplary Images contained on this page are for concept purposes only.



#### PLANTING PALETTE

#### **DESCRIPTION**

- Canopy Trees are to be used along the streetscape, in open space, and parking lot islands. These trees shall be large deciduous trees, 2"-2 1/2" at time of installation, that will grow to at least 30' height at maturity.
- Evergreen Trees can be used along property lines to accent borders and to screen for privacy. The plant material are to grow to at least 15' at maturity. Evergreen trees are to be a minimum of 6'-7' height at installation.
- Ornamental Trees are to be used at key focal points to provide seasonal color. The growth habits of the plant material will assist in creating a vertical element in the landscape such trees will typically be around 20' in height at maturity.
- Shrubs selections are to be primarily evergreen
  to promote year round visual interest. Typically,
  deciduous shrubs are to be used as accent
  plantings, integrated into the planting beds at less
  prominent areas. The combination of two shrub
  types will help create the desired layering effect
  throughout the design.
- All plants shall conform to the American Standard for Nursery Stock as published by the American Association of Nurserymen.

CANOPY TREES	
SCIENTIFIC NAME	COMMON NAME
Acer rubrum var.	Red Maple
Acer saccharum	Sugar Maple
Fagus grandiflora	American Beech
Fagus sylvatica	European Beech
Nyssa sylvatica	Black Gum
Ostrya virginiana	Hophornbeam
Platanus x. acerfolia	London Planetree
Quercus alba	White Oak
Quercus coccinea	Scarlet Oak
Quercus palustris	Pin Oak
Quercus phellos	Willow Oak
Quercus rubra	Red Oak
Quercus shumardii	Shumard Oak
Tilia americana	American Linden
Tilia cordata	Littleleaf Linden
Ulmus americana	American Elm

Note: Exemplary Images contained on this page are for concept purposes only.

EVERGREEN TREES	
SCIENTIFIC NAME	COMMON NAME
Cedrus atlantica	Atlas Cedar
Ilex x 'atttenuata 'Fosteri'	Foster Holly
Ilex opaca	American Holly
Juniperus virginiana	Eastern Red Cedar
Magnolia grandifolia	Southern Magnolia
Magnolia sp.	Magnolia species
Pinus abies	Norway Spruce
Pinus nigra	Austrian Pine
Pinus taeda	Loblolly Pine
Pinus virginiana	Virginia Pine
Thuja occidentalils	American Arborvitae
Tsuga caroliniana	Carolina Hemlock



#### PLANTING PALETTE

ORNAMENTAL TREES	
SCIENTIFIC NAME	COMMON NAME
Amelanchier spp.	Serviceberry
Betula nigra	River Birch
Carpinus caroliniana	American Hornbeam
Cercis canadensis	Eastern Redbud
Chionanthus vigininicus	Fringe Tree
Cornus florida	Flowering Dogwood
Lagerstromia indica	Crepe Myrtle

DECIDUOUS SHRUBS	
SCIENTIFIC NAME	COMMON NAME
Calycanthus floridus	Carolina Allspice
Clethra alnifolia	Summersweet
Cornus servicea	Redosier Dogwood
Itea virginiana	Virginia Sweetspire
Hamamelis virginiana	Virginia Witchhazel
Rhododendron spp.	Azalea varieties
Viburnum spp.	Viburnum

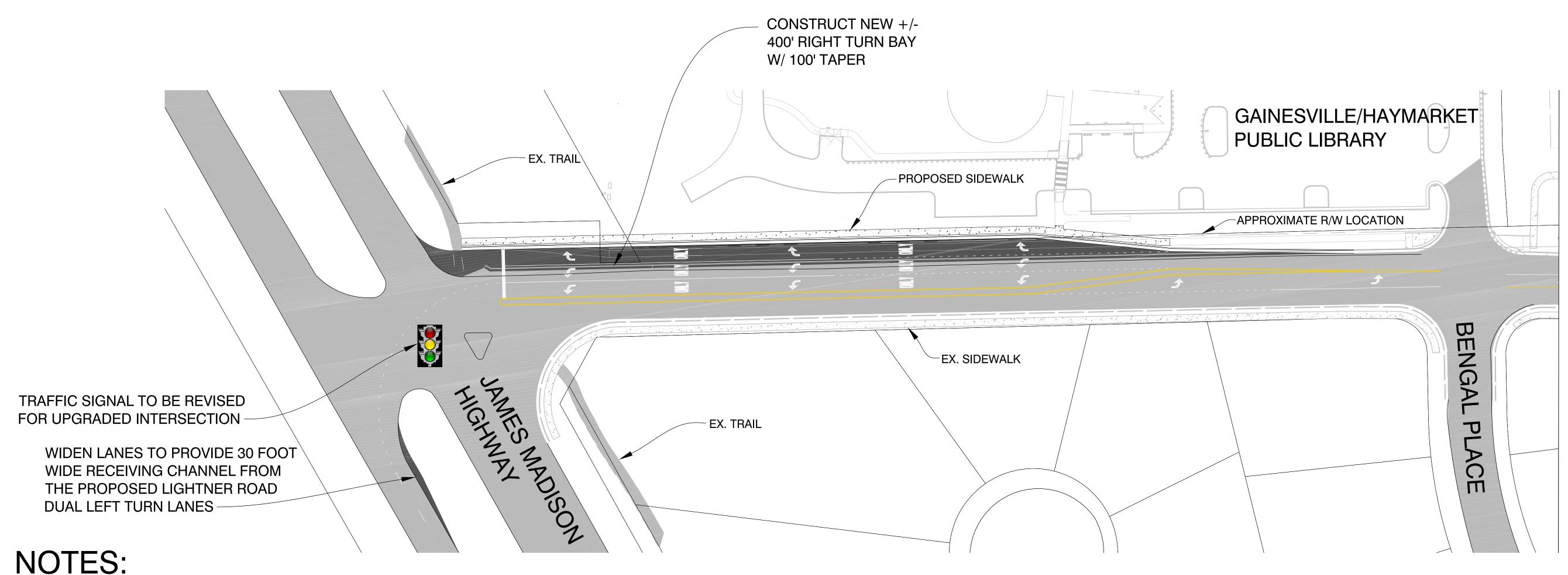
Note: Exemplary Images contained on this page are for concept purposes only.

EVERGREEN SHRUBS	
SCIENTIFIC NAME	COMMON NAME
Abelia grandiflora	Glossy Abelia
Ilex spp.	Holly
Juniperus horizontalis	Juniper
Prunus laurocerasus	Skip Laurel
Rhododendron spp.	Azalea varieties

GROUNDCOVERS	
SCIENTIFIC NAME	COMMON NAME
Liriope muscari	Liriope
Hosta spp.	Hosta
Pachysandra terminalis	Pachysandra

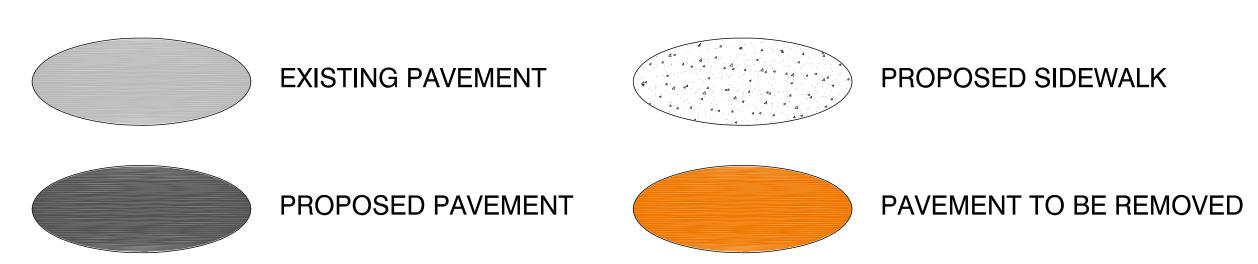


M7D 007 Packet Pg. 162



- 1. INFORMATION SHOWN HEREON IS APPROXIMATE AND SUBJECT TO FINAL ENGINEERING CONSIDERATIONS
- 2. BACKGROUND INFORMATION (EXISTING PROPERTY LINES, RIGHT-OF-WAY, ETC) IS BASED ON AVAILABLE PRINCE WILLIAM COUNTY MAPPING INFORMATION.
- 3. PROPOSED ROAD ALIGNMENT SUBJECT TO PRINCE WILLIAM COUNTY DEPARTMENT OF TRANSPORTATION AND VDOT APPROVAL.

# LEGEND:



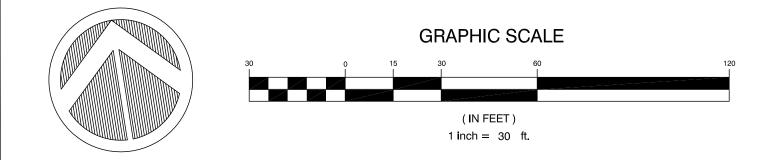
# UTTERBACK LIGHTNER ROAD IMPROVEMENTS

DATE: 08/13/20

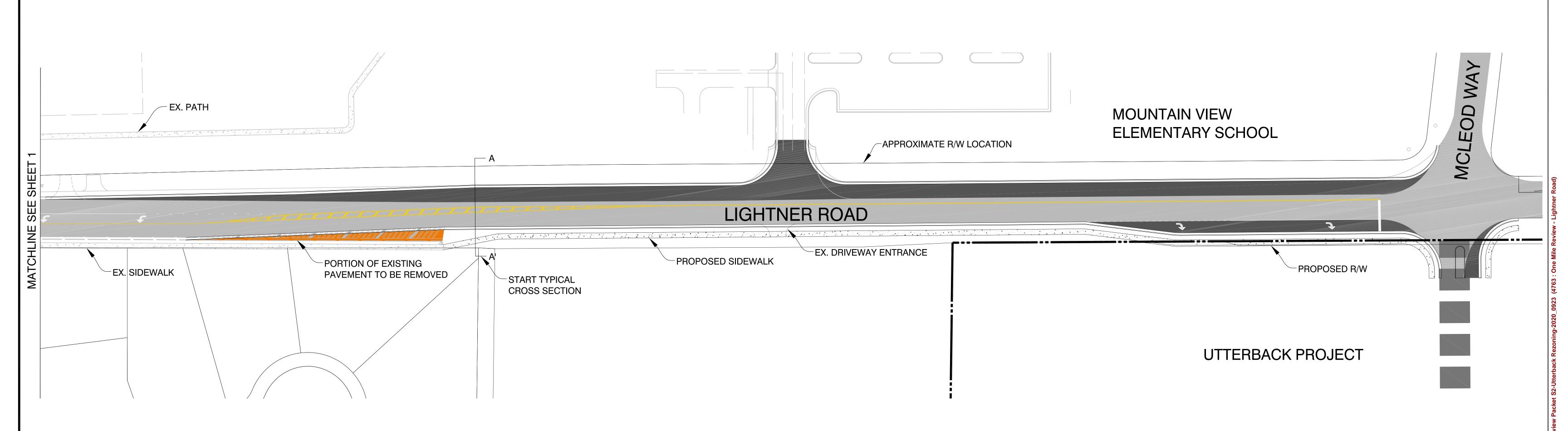
GAINESVILLE MAGISTERIAL DISTRICT PRINCE WILLIAM COUNTY, VIRGINIA

**Dewberry**°

PLN2016-00028



SHEET 1 of 2

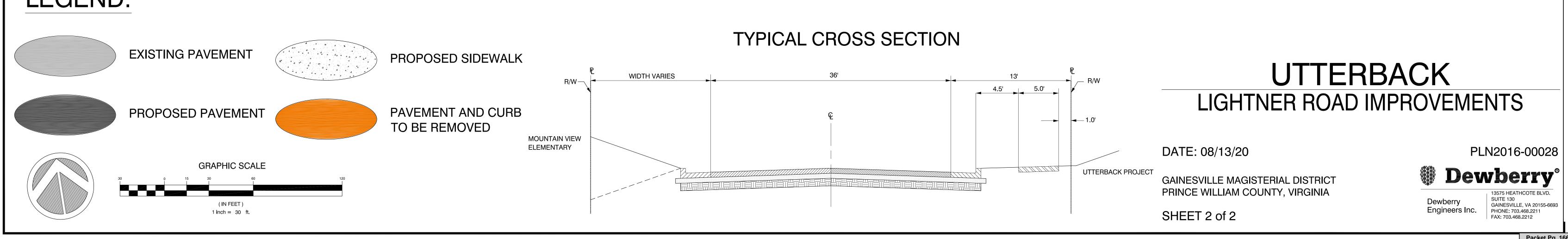


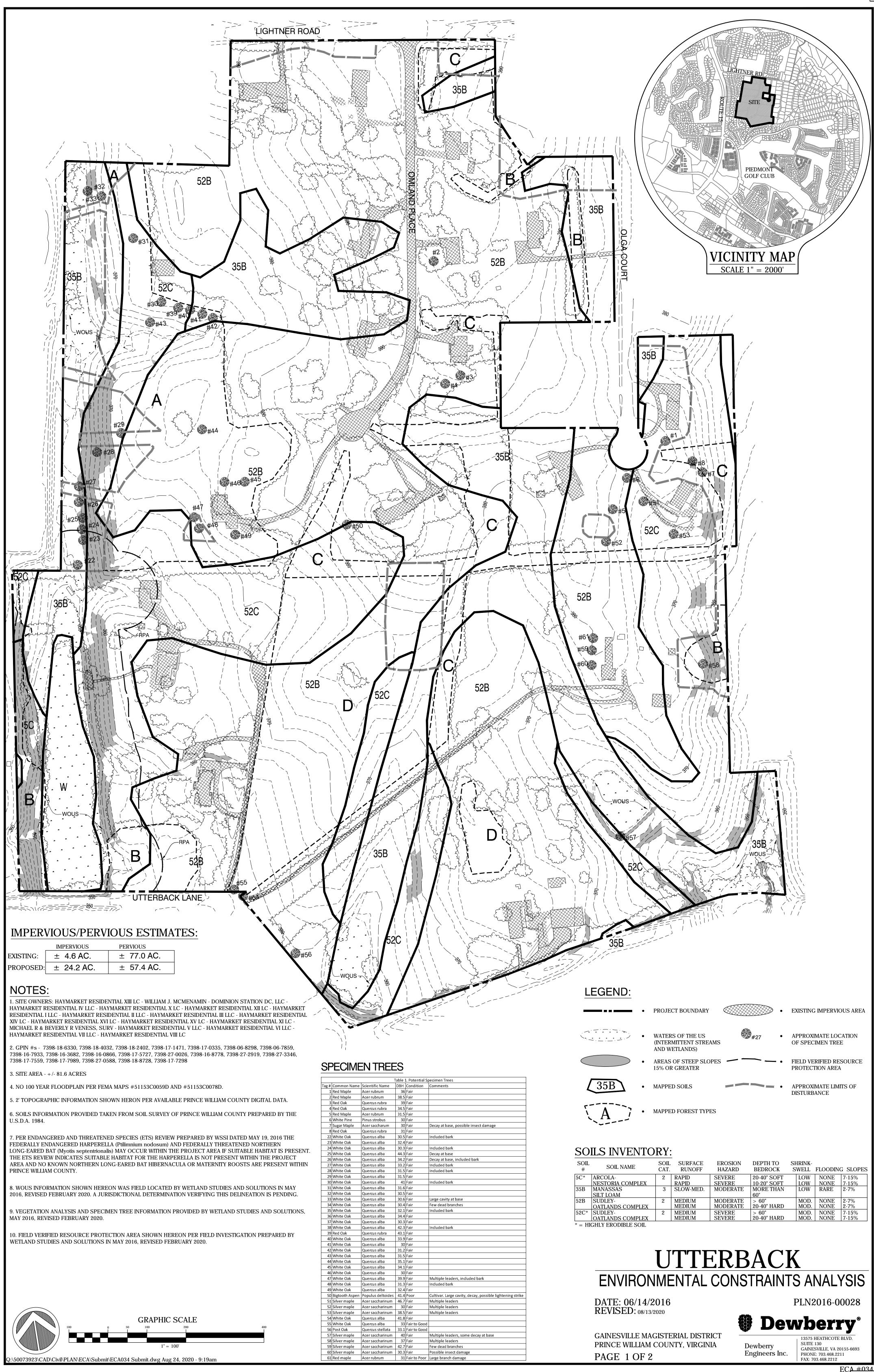
7.3.a

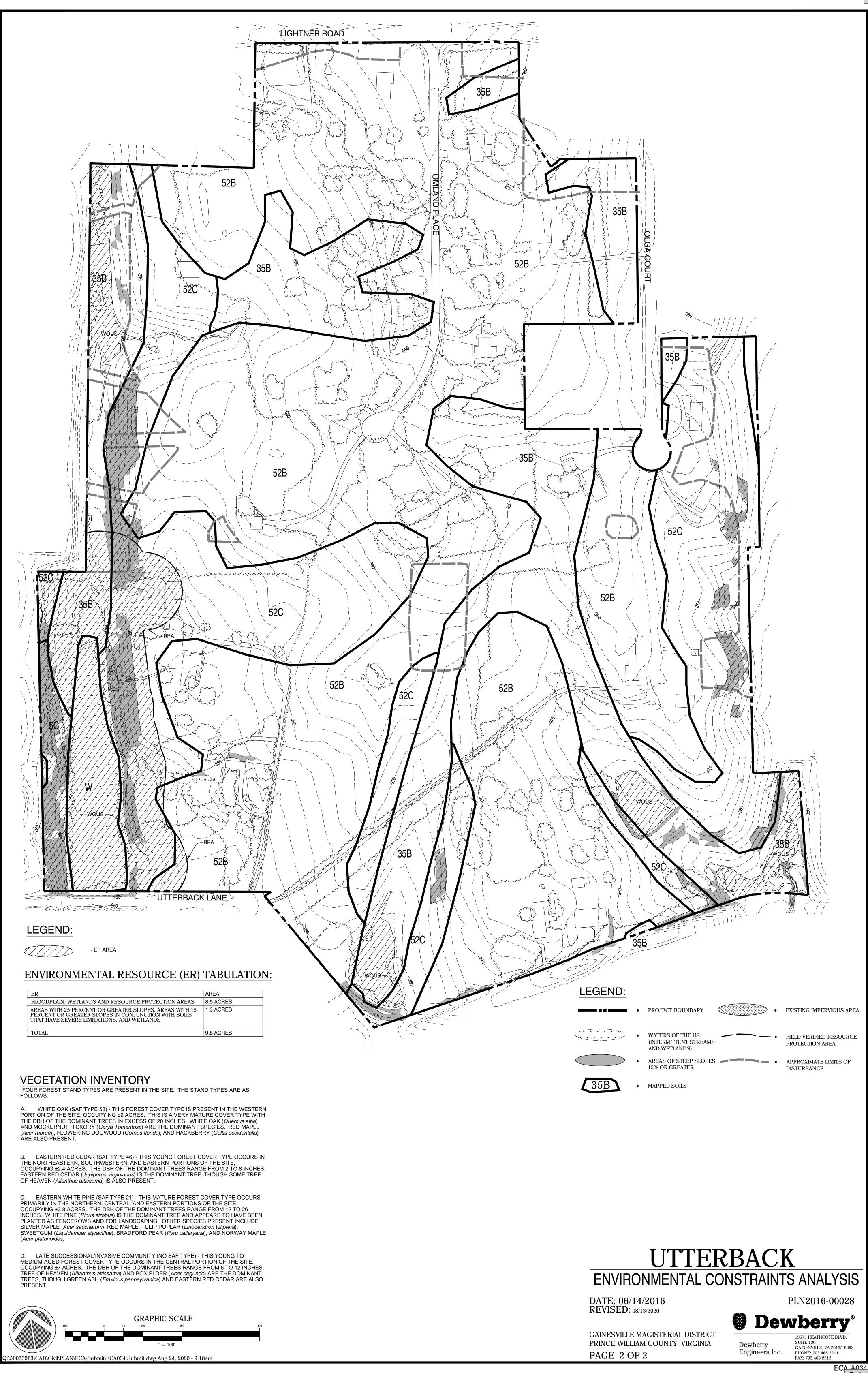
### NOTES:

- 1. INFORMATION SHOWN HEREON IS APPROXIMATE AND SUBJECT TO FINAL ENGINEERING CONSIDERATIONS
- 2. BACKGROUND INFORMATION (EXISTING PROPERTY LINES, RIGHT-OF-WAY, ETC) IS BASED ON AVAILABLE PRINCE WILLIAM COUNTY MAPPING INFORMATION.
- 3. PROPOSED ROAD ALIGNMENT SUBJECT TO PRINCE WILLIAM COUNTY DEPARTMENT OF TRANSPORTATION AND VDOT APPROVAL.

### LEGEND:

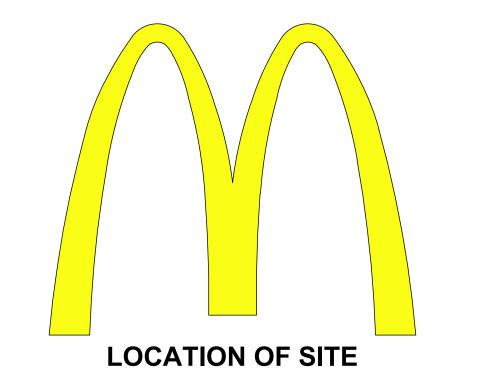






# SITE PLAN DOCUMENTS

FOR



6740 LEA BERRY WAY
TOWN OF HAYMARKET
PRINCE WILLIAM COUNTY, VIRGINIA
GPIN: 7298-70-4485

#### CONTACT INFORMATION

REFERENCES

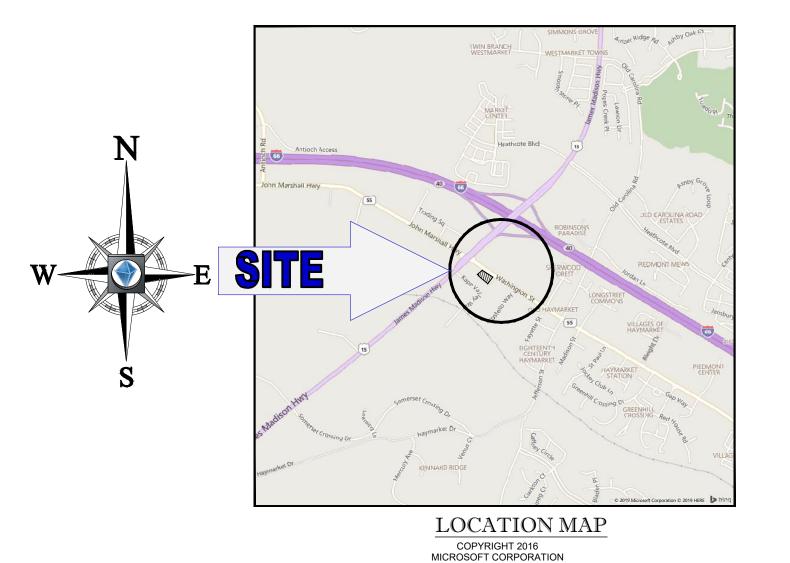
♦ BOUNDARY & TOPOGRAPHIC/ALTA SURVEY:
"BOUNDARY & TOPOGRAPHIC SURVEY FOR MCDONALD'S USA,
LLC, 6740 LEA BERRY WAY, TOWN OF HAYMARKET, PRINCE
WILLIAM COUNTY, VIRGINIA"
PREPARED BY: BOHLER ENGINEERING
PROJECT NUMBER: SV175005
DATED: 1/31/19, REVISED: 2/27/19

GOVERNING AGENCIES

◆ TOWN OF HAYMARKET PLANNING & ZONING
CONTACT: EMILY LOCKHART, TOWN PLANNER & ZONING ADMINISTRATOR
15000 WASHINGTON STREET, SUITE 100
HAYMARKET, VA 20169
(703) 753-2600 (P)

◆ TOWN OF HAYMARKET ENGINEER
CONTACT: KATIE McDANIEL, TOWN ENGINEER
15000 WASHINGTON STREET, SUITE 100
HAYMARKET, VA 20169
(703) 766-0285 (P)

◆ <u>PWSCA</u>
CONTACT: EDWARD KOVALCHUK
4 COUNTY COMPLEX COURT
WOODBRIDGE, VA 22192
(703) 335-7900 (P)



OWNER/DEVELOPER

ARCHLAND PROPERTY I, LLC
P.O. BOX 182571
COLUMBUS, OH 43218
CONTACT: TOM HUGHES
PHONE: (410) 977-1214

PREPARED BY



28 BLACKWELL PARK LANE, SUITE 201 WARRENTON, VIRGINIA 20186

Phone: (540) 349-4500
Fax: (540) 349-0321

VA@BohlerEng.com

CONTACT: JONATHAN Q. RITCHIE, P.E.

ZONING REQUIREMENTS:

BULK REQUIREMENTS:	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	N/A	0.98 AC	NO CHANGE
MIN. BUILDING SETBACK			
FRONT SETBACK (NORTH)	10'	70'	NO CHANGE
SIDE SETBACK (WEST)	0'	102'	NO CHANGE
SIDE SETBACK (EAST)	0'	77'	NO CHANGE
REAR SETBACK (SOUTH)	0'	36'	NO CHANGE
MIN. BUFFER TO ADJACENT PROPERTY			
FRONT BUFFER (NORTH)	10' *	5'	5'
SIDE BUFFER (WEST)	10' *	5'	5'
SIDE BUFFER (EAST)	10'	13'	13'
REAR BUFFER (SOUTH)	10' *	5'	5'
PARKING REQUIREMENTS			
1 SPACES PER 100 SF GFA, 2 ADA SPACES REQUIRED	40	39	40
MIN. GROSS FLOOR AREA (GFA)	N/A	3,956 SF	NO CHANGE
MAX. LOT COVERAGE (ONE STORY)	85%	84%	NO CHANGE
MAX. BUILDING HEIGHT	50'	17'	NO CHANGE
NON-CONFORMANCE (*) = MINIMUM WIDTH IS 5' WHEN THE EXISTING AN NARROWER THAN 10' IN WIDTH	DJOINING LANDS	CAPE STRIP IS	

PWSCA NOTE: NO ALTERATION OF THE EXISTING SANITARY OR WATER LINES ARE PROPOSED WITH THIS PROJECT.

SHEET INDEX			
SHEET TITLE	SHEET NUMBER		
COVER SHEET	1		
GENERAL NOTES	2		
GENERAL NOTES AND LEGEND	3		
BOUNDARY & TOPOGRAPHIC SURVEY	4		
EXISTING CONDITIONS/DEMOLITION PLAN	5		
SITE PLAN	6		
SIGNAGE PLAN	7		
GRADING PLAN	8		
PRE/POST DEVELOPED DRAINAGE MAP	9		
EROSION AND SEDIMENT CONTROL PLAN PHASE I & II	10		
EROSION AND SEDIMENT CONTROL NOTES	11		
EROSION AND SEDIMENT CONTROL DETAILS	12		
LANDSCAPE PLAN	13		
LANDSCAPE NOTES AND DETAILS	14		
LIGHTING PLAN (BY OTHERS)	15		
LIGHTING DETAILS (BY OTHERS)	16		
CONSTRUCTION DETAILS	17-18		
UNIT PRICE LIST	19		

ENGELINGE ERRIEDERING

ENGRAM MANAGEMENT

LAND SURVEYING

PROGRAM MANAGEMENT

LANDSCAPE ARCHITECTURE

SUSTAINABLE DESIGN

PERMITTING SERVICES

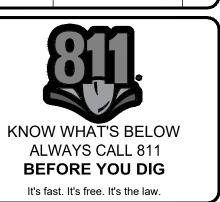
TRANSPORTATION SERVICES

REVISIONS

REV DATE COMMENT BY

1 03/27/2020 PER TOWN COMMENTS JQR

2 10/23/2020 PER TOWN COMMENTS JQR



NOT APPROVED FOR CONSTRUCTION

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SITE PLAN
DOCUMENTS
FOR

LOCATION OF SITE 6740 LEA BERRY WAY TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA



28 BLACKWELL PARK LANE, SUITE 20
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
Fax: (540) 349-0321
VA@BohlerEng.com



SHEET TITLE:

COVER SHEET

EET NUMBER:

H:\17\V175005\DRAWINGS\PLAN SETS\SITE PLAN DOCUMENTS\V175005SD0.DWG PRINTED BY: MGIBSON 10.22.20 @ 4:43 PM LAST SAVED BY: MGIBSON

CONSTRUCTION

- THESE PLANS ARE SOLELY BASED ON INFORMATION THE OWNER AND OTHERS PROVIDED TO BOHLER ENGINEERING. VA. LLC (HEREIN "BOHLER ENGINEERING") PRIOR TO THE DATE ON WHICH ENGINEER PREPARED THESE PLANS. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS AND IMMEDIATELY NOTIFY BOHLER ENGINEERING, IN WRITING, IF ANY ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THESE PLANS, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
- THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN. THE CONTRACTOR MUST ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS. THESE NOTES. AND THE REQUIREMENTS ARTICULATED IN THE NOTES CONTAINED IN ALL THE OTHER DRAWINGS THAT COMPRISE THE PLAN SET OF DRAWINGS. ADDITIONAL NOTES AND SPECIFIC PLAN NOTES MAY BE FOUND ON THE INDIVIDUAL PLANS. THESE GENERAL NOTES APPLY TO THIS ENTIRE DOCUMENT PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE, PRIOR TO THE INITIATION AND COMMENCEMENT OF
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE ENGINEER OF RECORD THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR REPORTS REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION. THIS IS THE CONTRACTOR'S SOLE AND COMPLETE RESPONSIBILITY.
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION IS TO BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE CONDITIONS OF APPROVAL TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES AND HAS ALSO CONFIRMED THAT ALL NECESSARY AND REQUIRED PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND <u>APPROVALS ON SITE AT ALL TIMES.</u>
- THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT. AND ALL PROVISIONS IN AND CONDITIONS OF THE CONSTRUCTION CONTRACT WITH THE OWNER/DEVELOPER INCLUDING ALL EXHIBITS, ATTACHMENTS AND ADDENDA TO SAME
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFULLY REVIEWING THE MOST CURRENT ARCHITECTURAL, CIVIL AND STRUCTURAL CONSTRUCTION DOCUMENTS (INCLUDING BUT NOT LIMITED TO. MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLANS. WHERE APPLICABLE), THE CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND ENGINEER OF RECORD, IN WRITING, OF ANY CONFLICTS. DISCREPANCIES OR AMBIGUITIES WHICH EXIST BETWEEN THESE PLANS AND ANY OTHER PLANS THAT COMPRISE THE CONSTRUCTION DOCUMENTS
- CONTRACTOR MUST REFER TO AND ENSURE COMPLIANCE WITH THE APPROVED ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS. ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT
- THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND MEASUREMENTS SHOWN ON THESE PLANS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY ENGINEER OF RECORD, IN WRITING, IF ANY CONFLICTS. DISCREPANCIES. OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE RE-DONE OR REPAIRED DUE TO DIMENSIONS, MEASUREMENTS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO BOTH (A) THE CONTRACTOR GIVING ENGINEER OF RECORD WRITTEN NOTIFICATION OF SAME AND (B) ENGINEER OF RECORD, THEREAFTER, PROVIDING THE CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.
- THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND MEASUREMENTS INCLUDED ON DESIGN DOCUMENTS HEREIN AND MUST NOT SCALE OFF THE DRAWINGS DUE TO POTENTIAL PRINTING INACCURACIES. ALL DIMENSIONS AND MEASUREMENTS ARE TO BE CHECKED AND CONFIRMED BY THE GENERAL CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS, FABRICATION/ORDERING OF PARTS AND MATERIALS AND COMMENCEMENT OF SITE WORK. SITE PLAN DRAWINGS ARE NOT INTENDED AS SURVEY DOCUMENTS. DIMENSIONS SUPERSEDE GRAPHICAL REPRESENTATIONS. THE CONTRACTOR MUST MAKE CONTRACTOR'S OWN MEASUREMENTS FOR LAYOUT OF IMPROVEMENTS.
- THE OWNER AND CONTRACTOR MUST BE FAMILIAR WITH, AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- WHEN INCLUDED AS ONE OF THE REFERENCED DOCUMENTS, THE GEOTECHNICAL REPORT, SPECIFICATIONS AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND. IN CASE OF CONFLICT, DISCREPANCY OR AMBIGUITY, THE MORE STRINGENT REQUIREMENTS AND/OR RECOMMENDATIONS CONTAINED IN: (A) THE PLANS: AND (B) THE GEOTECHNICAL REPORT AND RECOMMENDATIONS. MUST TAKE PRECEDENCE UNLESS SPECIFICALLY. NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF RECORD. IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY BETWEEN THE GEOTECHNICAL REPORT AND PLANS AND SPECIFICATIONS, PRIOR TO PROCEEDING WITH ANY FURTHER WORK. IF A GEOTECHNICAL REPORT WAS NOT CREATED, THEN THE CONTRACTOR MUST FOLLOW AND COMPLY WITH ALL OF THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE SPECIFICATIONS WHICH HAVE JURISDICTION OVER THIS PROJECT.
- 2. ENGINEER OF RECORD IS NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, HAS NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR POLLUTANTS ON, ABOUT OR UNDER THE PROPERTY. 3 THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN AND WHERE SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES. ALL OF THIS WORK IS TO BE PERFORMED AT CONTRACTOR'S SOLE COST AND EXPENSE.
- THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT. STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND TO PROVIDE A SAFE WORK AREA FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT. 5. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION AND CONSTRUCTION WASTES, UNSUITABLE EXCAVATED MATERIAL, EXCESS SOIL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER THE CONTRACTOR
- S. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN RECORDS TO DEMONSTRATE PROPER AND FULLY COMPLIANT DISPOSAL ACTIVITIES. TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
- THE CONTRACTOR MUST REPAIR, AT CONTRACTOR'S SOLE COST, ALL DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC, AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME TO INCLUDE, BUT NOT BE LIMITED TO, REDESIGN RE-SURVEY. RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY MUST RESTORE SUCH CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR CODES, LAWS, RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR MUST, PROMPTLY, DOCUMENT ALL EXISTING DAMAGE AND NOTIFY, IN WRITING, THE OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
- 18. THE ENGINEER OF RECORD AND BOHLER ENGINEERING ARE NOT RESPONSIBLE FOR AND HAVE NO CONTRACTUAL, LEGAL OR OTHER RESPONSIBILITIES FOR JOB SITE SAFETY JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME. THE ENGINEER OF RECORD AND BOHLER ENGINEERING HAVE NOT BEEN RETAINED TO PERFORM OR TO BE RESPONSIBLE FOR JOB SITE SAFETY. SAME BEING WHOLLY OUTSIDE OF ENGINEER OF RECORD'S AND BOHLER ENGINEERING SERVICES AS RELATED TO THE PROJECT THE ENGINEER OF RECORD AND BOHLER ENGINEERING ARE NOT RESPONSIBLE TO IDENTIFY OR REPORT ANY JOB SITE SAFETY ISSUES OR ANY JOB SITE CONDITIONS AT ANY TIME
- ). THE CONTRACTOR MUST IMMEDIATELY IDENTIFY IN WRITING, TO THE ENGINEER OF RECORD AND BOHLER ENGINEERING, ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST, IF THE CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER WRITTEN NOTIFICATION AS DESCRIBED ABOVE. IT WILL BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, THE CONTRACTOR MUST INDEMNIFY, DEFEND AND HOLD HARMLESS THE ENGINEER OF RECORD AND BOHLER ENGINEERING FOR ANY AND ALL DAMAGES, COSTS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM OR ARE IN ANY WAY RELATED TO SAME INCLUDING, BUT NOT LIMITED TO, ANY THIRD PARTY AND FIRST PARTY CLAIMS
- 20. THE ENGINEER OF RECORD AND BOHLER ENGINEERING ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE, IF THE CONTRACTOR AND/OR OWNER FAIL TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH APPROVED PLANS, RULES, STATUTES, CODES AND THE LIKE, THE CONTRACTOR AND/OR OWNER AGREE TO AND MUST JOINTLY, INDEPENDENTLY, SEPARATELY, AND SEVERALLY INDEMNIFY AND HOLD THE ENGINEER OF RECORD AND BOHLER ENGINEERING HARMLESS FOR AND FROM ALL INJURIES. CLAIMS AND DAMAGES THAT ENGINEER AND BOHLER. ENGINEERING SUFFER AND ANY AND ALL COSTS THAT ENGINEER AND BOHLER ENGINEERING INCUR AS RELATED TO SAME
- 21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALLY REASONABLE STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND COMMERCIAL GENERAL LIABILITY INSURANCE (CGL) INCLUDING ALSO ALL UMBRELLA COVERAGES. ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME BOHLER ENGINEERING, AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AS ADDITIONAL NAMED INSUREDS AND TO PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE THE (DEFEND, IF APPLICABLE) AND HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED AND AGREED TO BY THE CONTRACTOR HEREIN. ALL CONTRACTORS MUST FURNISH BOHLER ENGINEERING WITH CERTIFICATIONS OF INSURANCE OR CERTIFICATES OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE COVERAGES PRIOR TO COMMENCING ANY WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR TWO YEARS AFTER THE COMPLETION OF CONSTRUCTION AND AFTER ALL PERMITS ARE ISSUED, WHICHEVER DATE IS LATER. IN ADDITION, ALL CONTRACTORS AGREE THAT THEY WILL, TO THE FULLEST EXTENT PERMITTED LINDER THE LAW INDEMNIFY DEFEND AND HOLD HARMLESS BOHLER ENGINEERING AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS FROM AND AGAINST ANY DAMAGES, INJURIES, CLAIMS, ACTIONS, PENALTIES, EXPENSES, PUNITIVE DAMAGES, TORT DAMAGES, STATUTORY CLAIMS, STATUTORY CAUSES OF ACTION, LOSSES, CAUSES OF ACTION, LIABILITIES OR COSTS, INCLUDING, BUT NOT LIMITED TO REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH OR TO THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTOR(S), ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. THE CONTRACTOR MUST NOTIFY ENGINEER, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF ITS INSURANCE HEREUNDER.
- 22. THE ENGINEER OF RECORD AND BOHLER ENGINEERING ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK DEPICTED BOTH ON THESE PLANS, AND FOR ANY CONFLICTS IN SCOPE AND REVISIONS THAT RESULT FROM SAME. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- 3. NEITHER THE PROFESSIONAL ACTIVITIES OF: BOHLER ENGINEERING, NOR THE PRESENCE OF BOHLER ENGINEERING AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AT A CONSTRUCTION/PROJECT SITE (HEREIN "BOHLER ENGINEERING PARTIES") RELIEVES OR WILL RELIEVE THE CONTRACTOR OF AND FROM ITS OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, OVERSEEING. SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND COMPLIANCE WITH ALL HEALTH AND SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER ENGINEERING AND ITS EMPLOYEES, PERSONNEL, AGENTS, SUBCONTRACTORS AND SUBCONSULTANTS HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER (OR ANY RESPONSIBILITY FOR) ANY CONSTRUCTION, THE CONTRACTOR OR ITS EMPLOYEES RELATING TO THEIR WORK AND ANY AND ALL HEALTH AND SAFETY PROGRAMS OR PROCEDURES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR MUST INDEMNIFY, DEFEND, PROTECT AND HOLD HARMLESS BOHLER ENGINEERING FOR AND FROM ANY LIABILITY TO BOHLER ENGINEERING RESULTING FROM THE CONTRACTOR'S WORK, SERVICES AND/OR VIOLATIONS OF THIS NOTE, THESE NOTES OR ANY NOTES IN THE PLAN SET AND, FURTHER, THE CONTRACTOR MUST NAME BOHLER ENGINEERING AS AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE
- $^{24}$ . WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER ENGINEERING'S SCOPE OF SERVICES CONTRACT WITH THE OWNER/DEVELOPER. BOHLER ENGINEERING WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT BUT ONLY FOR THE LIMITED PURPOSE OF EVALUATING CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND BOHLER ENGINEERING HAS NO RESPONSIBILITY OR LIABILITY FOR SAME. BOHLER ENGINEERING WILL PERFORM ITS SHOP DRAWING REVIEW WITH REASONABLE PROMPTNESS. AS CONDITIONS PERMIT. ANY DOCUMENT, DOCUMENTING BOHLER ENGINEERING'S REVIEW OF A SPECIFIC ITEM OR LIMITED SCOPE, MUST NOT INDICATE THAT BOHLER ENGINEERING HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER ENGINEERING IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR MUST, IN WRITING, PROMPTLY AND IMMEDIATELY BRING ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS TO BOHLER ENGINEERING'S ATTENTION. BOHLER ENGINEERING IS NOT REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.

- 25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD AND/OR BOHLER ENGINEERING FOR ALL DEVIATIONS WITHIN ENGINEER'S SCOPE, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK PERFORMED WHICH DEVIATES FROM THE PLANS. ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, MUST DEFEND, INDEMNIFY, PROTECT, AND HOLD HARMLESS THE ENGINEER OF RECORD AND BOHLER ENGINEERING PARTIES TO THE FULLEST EXTENT PERMITTED UNDER THE LAW. FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS. JUDGMENTS, CLAIMS, INJURIES, PENALTIES AND THE LIKE RELATED TO SAME
- . THE CONTRACTOR IS RESPONSIBLE FOR A MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS, FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE RIGHT OF WAY OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE AND IS THE CONTRACTOR'S SOLE RESPONSIBILITY
- 7. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLAN(S) AND DESIGN; AND, FURTHER, THE ENGINEER OF RECORD AND/OR BOHLER ENGINEERING ARE NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES. IF OWNER FAILS TO MAINTAIN AND/OR PRESERVE ALL PHYSICAL SITE FEATURES AND/OR DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, OWNER AGREES TO INDEMNIFY AND HOLD THE ENGINEER OF RECORD AND BOHLER ENGINEERING PARTIES, HARMLESS FOR ALL INJURIES, DAMAGES AND COSTS THAT ENGINEER OF RECORD AND/OR BOHLER ENGINEERING INCUR AS A RESULT OF SAID FAILURE OR FAILURE TO PRESERVE.
- 28 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES, AND ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 ET SEQ.) AS AMENDED, AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
- 29. THE CONTRACTOR MUST STRICTLY COMPLY WITH THE LATEST AND CURRENT OSHA STANDARDS AND REGULATIONS. AND/OR ANY OTHER AGENCY WITH JURISDICTION OVER EXCAVATION AND TRENCHING PROCEDURES. ENGINEER OF RECORD AND BOHLER ENGINEERING HAS NO RESPONSIBILITY FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES AND WORK. 30. THE CONTRACTOR AND THE OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDED INSTALL ATION CRITERIA AND SPECIFICATIONS. IF THE
- FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS AS A RESULT OF SAID FAILURE. 31. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS OR LOCAL GOVERNING AGENCY FOR SITES WHERE ONE (1) ACRE OR MORE IS DISTURBED BY CONSTRUCTION ACTIVITIES (UNLESS THE LOCAL JURISDICTION REQUIRES A DIFFERENT THRESHOLD). THE CONTRACTOR MUST ENSURE THAT ALL ACTIVITIES. INCLUDING THOSE OF ALL SUBCONTRACTORS. ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE AND FURTHER, THE CONTRACTOR IS SOLELY AND

CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY, INDEPENDENTLY, SEPARATELY, COLLECTIVELY, AND

SEVERALLY INDEMNIFY, DEFEND, PROTECT AND HOLD ENGINEER OF RECORD AND/OR BOHLER ENGINEERING PARTIES HARMLESS

32. AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED DOCUMENTS PREPARED BY THE SIGNATORY PROFESSIONAL ENGINEER OF RECORD. THE USE OF THE WORDS 'CERTIFY' OR 'CERTIFICATION' CONSTITUTE(S) AN EXPRESSION ONLY OF PROFESSIONAL OPINION REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE ENGINEER OF RECORD'S KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON AND ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE, AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE OF ANY NATURE OR TYPE, EITHER EXPRESSED OR IMPLIED, UNDER ANY

#### SITE LAYOUT NOTES

COMPLETELY RESPONSIBLE FOR FAILING TO DO SO

- 1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN. AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES. IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
- 2. PRIOR TO THE COMMENCEMENT OF GENERAL CONSTRUCTION. THE CONTRACTOR MUST INSTALL SOIL EROSION CONTROL AND ANY STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MEASURES NECESSARY, AS INDICATED ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN AND IN ACCORDANCE WITH APPLICABLE AND/OR APPROPRIATE AGENCIES' GUIDELINES TO PREVENT SEDIMENT AND/OR LOOSE DEBRIS FROM WASHING ONTO ADJACENT PROPERTIES OR THE RIGHT OF WAY.
- 3. ALL DIRECTIONAL/TRAFFIC SIGNING AND PAVEMENT STRIPING MUST CONFORM TO THE LATEST STANDARDS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL (MUTCD) AND ANY APPLICABLE STATE OR LOCALLY APPROVED SUPPLEMENTS, GUIDELINES, RULES, REGULATIONS STANDARDS AND THE LIKE THE LOCATIONS OF PROPOSED UTILITY POLES AND TRAFFIC SIGNS SHOWN ON THE PLANS ARE SCHEMATIC AND PRELIMINARY.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR FIELD-VERIFYING THEIR LOCATION. THE CONTRACTOR MUST COORDINATE THE RELOCATION OF TRAFFIC SIGNS WITH THE ENTITY WITH JURISDICTION OVER THE PROJECT ALL DIMENSIONS SHOWN ARE TO BOTTOM FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING, EXCEPT WHEN

#### DIMENSION IS TO A PROPERTY LINE, STAKE OUT OF LOCATIONS OF INLETS, LIGHT POLES, ETC. MUST BE PERFORMED IN STRICT ACCORDANCE WITH THE DETAILS, UNLESS NOTED CLEARLY OTHERWISE.

#### GRADING NOTES

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.

- SITE GRADING MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AS REFERENCED IN THIS PLAN SET, IF NO GEOTECHNICAL REPORT HAS BEEN REFERENCED. THE CONTRACTOR MUST HAVE A GEOTECHNICAL ENGINEER PROVIDE WRITTEN SPECIFICATIONS AND RECOMMENDATIONS PRIOR TO THE CONTRACTOR COMMENCING THE GRADING WORK. THE CONTRACTOR MUST FOLLOW THE REQUIREMENTS OF ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS, WHICH HAVE JURISDICTION OVER THIS PROJECT,
- THE CONTRACTOR IS REQUIRED TO SECURE ALL NECESSARY AND/OR REQUIRED PERMITS AND APPROVALS FOR ALL OFF-SITE MATERIAL SOURCES AND DISPOSAL FACILITIES. THE CONTRACTOR MUST SUPPLY A COPY OF APPROVALS TO THE ENGINEER OF RECORD AND THE OWNER PRIOR TO THE CONTRACTOR COMMENCING ANY WORK.
- 4. THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFYING EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION, SHOULD DISCREPANCIES BETWEEN THE PLANS AND INFORMATION. OBTAINED THROUGH FIELD VERIFICATIONS BE IDENTIFIED OR EXIST. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IN WRITING.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING ALL UNSUITABLE MATERIALS WITH SUITABLE MATERIALS A SPECIFIED IN THE GEOTECHNICAL REPORT. THE CONTRACTOR MUST COMPACT ALL EXCAVATED OR FILLED AREAS IN STRICT ACCORDANCE WITH THE GEOTECHNICAL REPORT'S GUIDANCE. MOISTURE CONTENT AT TIME OF PLACEMENT MUST BE SUBMITTED IN A COMPACTION REPORT PREPARED BY A QUALIFIED GEOTECHNICAL ENGINEER, REGISTERED WITH THE STATE WHERE THE WORK IS PERFORMED. THIS REPORT MUST VERIFY THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS. SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS. RULES STATUTES, LAWS, ORDINANCES AND CODES WHICH ARE IN EFFECT AND WHICH ARE APPLICABLE TO THE PROJECT. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT MUST BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER/DEVELOPER, OR OWNER/DEVELOPER'S REPRESENTATIVE, SUBBASE MUST BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL. COMPACTED AS THE GEOTECHNICAL REPORT DIRECTS. EARTHWORK ACTIVITIES INCLUDING, BUT NOT LIMITED TO, EXCAVATION, BACKFILL, AND COMPACTING MUST COMPLY WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES. EARTHWORK ACTIVITIES MUST COMPLY WITH THE STANDARD STATE DOT SPECIFICATIONS FOR
- ROADWAY CONSTRUCTION (LATEST EDITION) AND ANY AMENDMENTS OR REVISIONS THERETO. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS MUST BE ADJUSTED, AS NECESSARY, TO MATCH PROPOSED FINISHED GRADES WITH NO TRIPPING OR SAFETY HAZARD IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.
- '. IN THE EVENT OF A DISCREPANCY(IES) AND/OR A CONFLICT(S) BETWEEN PLANS, OR RELATIVE TO OTHER PLANS, THE GRADING PLAN TAKES PRECEDENCE AND CONTROLS. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IN WRITING, OF ANY DISCREPANCY(IES) AND/OR CONFLICT(S).
- 8. THE CONTRACTOR IS RESPONSIBLE TO IMPORT FILL OR EXPORT EXCESS MATERIAL AS NECESSARY TO CONFORM TO THE PROPOSED GRADING, AND TO BACKFILL EXCAVATIONS FOR THE INSTALLATION OF UNDERGROUND IMPROVEMENTS.

#### ACCESSIBILITY DESIGN GUIDELINES

- 1. ALL ACCESSIBLE (A.K.A. ADA) COMPONENTS AND ACCESSIBLE ROUTES MUST BE CONSTRUCTED TO MEET, AT A MINIMUM, THE MORE STRINGENT OF: (A) THE REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT" (ADA) CODE (42 U.S.C. § 12101 ET SEQ. 18. THE CONTRACTOR MUST MAINTAIN A RECORD SET OF PLANS UPON WHICH IS INDICATED THE LOCATION OF EXISTING UTILITIES AND 42 U.S.C. § 4151 ET SEQ.); AND (B) ANY APPLICABLE LOCAL AND STATE GUIDELINES, AND ANY AND ALL AMENDMENTS TO BOTH, WHICH ARE IN EFFECT WHEN THESE PLANS WERE COMPLETED. 2. THE CONTRACTOR MUST REVIEW ALL DOCUMENTS REFERENCED IN THESE NOTES FOR ACCURACY, COMPLIANCE AND
- CONSISTENCY WITH INDUSTRY GUIDELINES. 3. THE CONTRACTOR MUST EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ACCESSIBLE (ADA) COMPONENTS AND ACCESSIBLE ROUTES FOR THE SITE FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING. SPACES, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, AND INTER-BUILDING ACCESS, TO POINTS OF ACCESSIBLE BUILDING ENTRANCE/EXIT, MUST COMPLY WITH THE ACCESSIBLE GUIDELINES AND REQUIREMENTS WHICH INCLUDE, BUT ARE NOT LIMITED O THE FOLLOWING:

A. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SLOPES MUST NOT EXCEED 1:50 (2.0%) IN ANY DIRECTION.

- . PATH OF TRAVEL ALONG ACCESSIBLE ROUTE MUST PROVIDE A 36-INCHES MINIMUM WIDTH (48-INCHES PREFERRED), OR AS SPECIFIED BY THE GOVERNING AGENCY. UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS) MUST NOT REDUCE THIS MINIMUM WIDTH. THE SLOPE MUST NOT EXCEED 1:20 (5.0%) IN THE DIRECTION OF TRAVEL AND MUST NOT EXCEED 1:50 (2.0%) IN CROSS SLOPE, WHERE ACCESSIBLE PATH OF TRAVEL IS GREATER THAN 1:20 (5.0%), AN ACCESSIBLE RAMP MUST BE PROVIDED. ALONG THE ACCESSIBLE PATH OF TRAVEL, OPENINGS MUST NOT EXCEED 1/2-INCH IN WIDTH. VERTICAL CHANGES OF UP TO 1/2-INCH ARE PERMITTED ONLY IF THEY INCLUDES A 1/4-INCH BEVEL AT A SLOPE NOT STEEPER THAN 1:2. NO VERTICAL CHANGES OVER 1/4-INCH ARE PERMITTED.
- ACCESSIBLE RAMPS MUST NOT EXCEED A SLOPE OF 1:12 (8.3%) AND A RISE OF 30-INCHES. LEVEL LANDINGS MUST BE PROVIDED AT EACH END OF ACCESSIBLE RAMPS. LANDING MUST PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES, AND MUST NOT EXCEED 1:50 (2.0%) SLOPE IN ANY DIRECTION. RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS MUST HAVE A CLEAR LANDING OF A MINIMUM OF 60-INCHES BY 60-INCHES. HAND RAILS ON BOTH SIDES OF THE RAMP MUST BE PROVIDED ON AN ACCESSIBLE RAMP WITH A RISE GREATER THAN 6-INCHES D. ACCESSIBLE CURB RAMPS MUST NOT EXCEED A SLOPE OF 1:12 (8.3%). WHERE FLARED SIDES ARE PROVIDED, THEY MUST NOT
- EXCEED 1:10 (10%) SLOPE. LEVEL LANDING MUST BE PROVIDED AT RAMPS TOP AT A MINIMUM OF 36-INCHES LONG (48-INCHES PREFERRED). IN ALTERATIONS, WHEN THERE IS NO LANDING AT THE TOP, FLARE SIDES SLOPES MUST NOT EXCEED A SLOPE DOORWAY LANDINGS AREAS MUST BE PROVIDED ON THE EXTERIOR SIDE OF ANY DOOR LEADING TO AN ACCESSIBLE PATH OF

TRAVEL. THIS LANDING MUST BE SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (2.0%) FOR POSITIVE DRAINAGE. THIS

LANDING AREA MUST BE NO FEWER THAN 60-INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE CLEARLY PERMITTED BY

- ACCESSIBLE STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS. (SEE ICC/ANSI A117.1-2009 AND OTHER REFERENCES INCORPORATED BY CODE). WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION OR EXTENSION OF OR TO ACCESSIBLE COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, THE CONTRACTOR MUST VERIFY ALL EXISTING ELEVATIONS SHOWN ON THE PLAN. NOTE THAT TABLE 405.2 OF THE DEPARTMENT OF JUSTICE'S ADA STANDARDS FOR ACCESSIBLE DESIGN ALLOWS FOR STEEPER RAMP SLOPES. IN RARE CIRCUMSTANCES. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IN WRITING, OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER IN ANY WAY OR IN ANY RESPECT FROM WHAT IS SHOWN ON THE PLANS BEFORE COMMENCING ANY WORK. CONSTRUCTED
- AND THE ACCESSIBLE GUIDELINES : THE CONTRACTOR MUST VERIFY ALL OF THE SLOPES OF THE CONTRACTOR'S FORMS PRIOR TO POURING CONCRETE. IF ANY NON-CONFORMANCE EXISTS OR IS OBSERVED OR DISCOVERED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IN WRITING, PRIOR TO POURING CONCRETE, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL COSTS TO REMOVE REPAIR AND/OR REPLACE NON-CONFORMING CONCRETE AND/OR PAVEMENT SURFACES 4. IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION TO ENSURE SAME IS

CONSISTENT WITH THE LOCAL BUILDING CODE PRIOR TO COMMENCING CONSTRUCTION.

IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS

#### DEMOLITION NOTES

REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE

THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.

THE CONTRACTOR MUST CONDUCT DEMOLITION/REMOVALS ACTIVITIES IN SUCH A MANNER AS TO FINSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND ALL OTHER ADJACENT FACILITIES. THE CONTRACTOR MUST OBTAIN ALL APPLICABLE PERMITS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY(IES) PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.

THE CONTRACTOR MUST ALSO REVIEW ALL CONSTRUCTION DOCUMENTS AND INCLUDE WITHIN THE DEMOLITION ACTIVITIES

- WHEN DEMOLITION-RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY, THE CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE CURRENT FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS
- THE DEMOLITION (AND/OR REMOVALS) PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION AND TO IDENTIFY ONLY CONDITIONS REGARDING ITEMS TO BE DEMOLISHED. REMOVED, AND/OR TO REMAIN.
- ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS. THIS PLAN IS NOT INTENDED TO AND DOES NOT PROVIDE DIRECTION REGARDING THE MEANS, METHODS, SECUENCING TECHNIQUES AND PROCEDURES TO BE EMPLOYED TO ACCOMPLISH THE WORK, ALL MEANS, METHODS, SEQUENCING TECHNIQUES AND PROCEDURES TO BE USED MUST BE IN STRICT ACCORDANCE AND CONFORMANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER
- SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE FOR THE CONTRACTOR AND THE PUBLIC THE CONTRACTOR MUST PROVIDE ALL "METHODS AND MEANS" NECESSARY TO PREVENT MOVEMENT. SETTLEMENT. OF COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR, AT THE CONTRACTOR'S SOLE COST, MUST REPAIR ALL DAMAGE TO ALL ITEMS AND FEATURES THAT ARE TO REMAIN CONTRACTOR MUST USE NEW MATERIAL FOR ALL REPAIRS CONTRACTOR'S REPAIRS MUST INCLUDE THE RESTORATION. OF ALL ITEMS AND FEATURES REPAIRED TO THEIR PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR MUST PERFORM ALL
- ENGINEER OF RECORD AND/OR BOHLER ENGINEERING ARE NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. THE CONTRACTOR MUST PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER. COMPLYING WITH ALL OSHA REQUIREMENTS. TO ENSURE PUBLIC AND CONTRACTOR SAFETY AND SAFETY TO ALL PROPERTY ON THE SITE OR ADJACENT OR NEAR TO THE SAME THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY. WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, OTHER APPROPRIATE AND/OR NECESSARY SAFETY FEATURES AND ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR

MUST SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF

- ALL UNAUTHORIZED PERSONS AT ANY TIME, TO OR NEAR THE DEMOLITION AREA. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS AND/OR SPECIFICATIONS. ALL CONCERNS OR QUESTIONS REGARDING THE APPLICABLE SAFETY STANDARDS, AND/OR THE SAFETY OF THE CONTRACTOR AND/OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT. ANY SUCH CONCERNS MUST BE CONVEYED TO THE ENGINEER OF RECORD AND/OR BOHLER ENGINEERING. IN WRITING AND MUST ADDRESS ALL ISSUES AND ITEMS RESPONDED TO BY THE ENGINEER OF RECORD AND/OR BY BOHLER ENGINEERING. IN WRITING, ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND
- LOCAL REGULATIONS, RULES, REQUIREMENTS, STATUTES, ORDINANCES AND CODES. THE CONTRACTOR MUST BECOME FAMILIAR WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING LITHLITY DEMOLITION AND/OR DISCONNECTION AS IDENTIFIED OR REQUIRED FOR THE PROJECT. THE CONTRACTOR MUST PROVIDE THE OWNER WITH WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES. AND SERVICES HAVE BEEN TERMINATED, REMOVED AND/OR ABANDONED IN ACCORDANCE WITH THE JURISDICTION AND UTILITY COMPANY REQUIREMENTS AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES. PRIOR TO COMMENCING ANY DEMOLITION. THE CONTRACTOR MUST
- OBTAIN ALL REQUIRED PERMITS AND MAINTAIN THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND ALL PUBLIC AGENCIES WITH JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT, SITE WORK, AND DEMOLITION WORK. NOTIFY, AT A MINIMUM, THE MUNICIPAL ENGINEER, DESIGN ENGINEER, AND LOCAL SOIL CONSERVATION JURISDICTION, AT LEAST 72 BUSINESS HOURS PRIOR TO THE COMMENCEMENT OF WORK INSTALL THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE, AND MAINTAIN
- SAID CONTROLS UNTIL SITE IS STABILIZED IN ACCORDANCE WITH STATE LAW, THE CONTRACTOR MUST CALL THE STATE ONE-CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARK OUT IN ADVANCE OF ANY EXCAVATION LOCATE AND PROTECT ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN AND ADJACENT TO THE LIMITS OF PROJECT
- ACTIVITIES. THE CONTRACTOR MUST USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL UNDERGROUND UTILITIES PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ANY DEMOLITION ACTIVITIES
- ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) FOR THE TEMPORARY OR PERMANENT TERMINATION OF SERVICE REQUIRED BY THE PROJECT PLANS AND SPECIFICATIONS REGARDING THE METHODS AND MEANS TO CONSTRUCT SAME. THESE ARE NOT THE ENGINEER OF RECORD'S RESPONSIBILITY. IN THE EVENT OF ABANDONMENT, THE CONTRACTOR MUST PROVIDE THE UTILITY ENGINEER AND OWNER WITH IMMEDIATE WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTIONAL AND UTILITY COMPANY REQUIREMENTS. ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) REGARDING WORKING "OFF-PEAK"
- HOURS OR ON WEEKENDS AS NECESSARY OR AS REQUIRED TO MINIMIZE THE IMPACT ON, OF AND TO THE AFFECTED PARTIES. WORK REQUIRED TO BE PERFORMED "OFF-PEAK" IS TO BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL. THE REMOVAL OF WHICH IS NOT ADDRESSED IN THE PROJECT PLANS AND SPECIFICATIONS, OR THE CONTRACT WITH THE OWNER/DEVELOPER. THE CONTRACTOR MUST IMMEDIATELY CEASE ALL WORK IN THE AREA OF DISCOVERY, AND IMMEDIATELY NOTIFY, IN WRITING AND VERBALLY, THE OWNER AND ENGINEER OF RECORD AND BOHLER ENGINEERING, THE DISCOVERY OF SUCH MATERIALS TO PURSUE PROPER AND COMPLIANT REMOVAL OF SAME.
- 11. THE CONTRACTOR MUST ENSURE THAT ANY EXISTING ASBESTOS-CONTAINING MATERIALS ENCOUNTERED ARE PROPERLY REMOVED FROM THE SUBJECT PREMISES AND ARE DISPOSED OF IN ACCORDANCE WITH FEDERAL. STATE. AND LOCAL REQUIREMENTS, PRIOR TO THE COMMENCEMENT OF DEMOLITION ON SITE AND MUST PERFORM ALL AGENCY NOTIFICATIONS AS REQUIRED, AT THE CONTRACTOR'S SOLE EXPENSE.
- 12. THE CONTRACTOR MUST NOT PERFORM ANY EARTH MOVEMENT ACTIVITIES. DEMOLITION OR REMOVAL OF FOUNDATION WALLS. CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS, OR PURSUANT TO THE WRITTEN DIRECTION OF THE OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
- 13. DEMOLITION ACTIVITIES AND EQUIPMENT MUST NOT USE OR INCLUDE AREAS OUTSIDE THE DEFINED PROJECT LIMIT LINE, WITHOUT SPECIFIC WRITTEN PERMISSION AND AUTHORITY OF AND FROM THE OWNER AND ALL GOVERNMENTAL AGENCIES WITH
- 14. THE CONTRACTOR MUST BACKFILL ALL EXCAVATION RESULTING FROM, OR INCIDENTAL TO, DEMOLITION ACTIVITIES. BACKFILL MUST BE ACCOMPLISHED WITH APPROVED BACKFILL MATERIALS AND MUST BE SUFFICIENTLY COMPACTED TO SUPPORT ALL NEW IMPROVEMENTS AND MUST BE PERFORMED IN COMPLIANCE WITH THE RECOMMENDATIONS AND GUIDANCE ARTICULATED IN THE GEOTECHNICAL REPORT. BACKFILLING MUST OCCUR IMMEDIATELY AFTER DEMOLITION ACTIVITIES AND MUST BE PERFORMED SO AS TO PREVENT WATER ENTERING THE EXCAVATION. FINISHED SURFACES MUST BE GRADED TO PROMOTE POSITIVE DRAINAGE. THE CONTRACTOR IS RESPONSIBLE FOR COMPACTION TESTING AND MUST SUBMIT SUCH REPORTS AND RESULTS TO THE ENGINEER OF RECORD AND THE OWNER.
- 15. EXPLOSIVES MUST NOT BE USED WITHOUT PRIOR WRITTEN CONSENT FROM BOTH THE OWNER AND ALL APPLICABLE, NECESSARY AND REQUIRED GOVERNMENTAL AUTHORITIES. PRIOR TO COMMENCING ANY EXPLOSIVE PROGRAM AND/OR ANY DEMOLITION ACTIVITIES. THE CONTRACTOR MUST ENSURE AND OVERSEE THE INSTALL ATION OF ALL OF THE REQUIRED PERMIT AND EXPLOSIVE CONTROL MEASURES THAT THE FEDERAL, STATE, AND LOCAL GOVERNMENTS REQUIRE. THE CONTRACTOR IS ALSO RESPONSIBLE TO CONDUCT AND PERFORM ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES AND THE LIKE. 16. IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS, THE CONTRACTOR MUST USE DUST CONTROL MEASURES
- TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR. AFTER THE DEMOLITION IS COMPLETE. THE CONTRACTOR MUST CLEAN ALL ADJACENT STRUCTURES AND IMPROVEMENTS TO REMOVE ALL DUST AND DEBRIS WHICH THE DEMOLITION OPERATIONS CAUSE. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR 'PRE-DEMOLITION" CONDITION AT CONTRACTOR'S SOLE COST. 17. PAVEMENT MUST BE SAW CUT IN STRAIGHT LINES, AND EXCEPT FOR EDGE OF BUTT JOINTS, MUST EXTEND TO THE FULL DEPTH
- OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS MUST BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS OUTSIDE OF APPROVED AREAS WILL NOT BE PERMITTED, INCLUDING BUT NOT LIMITED TO, THE PUBLIC RIGHT-OF-WAY THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES. THIS RECORD DOCUMENT MUST BE
- PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST. 19. THE CONTRACTOR MUST EMPTY, CLEAN AND REMOVE FROM THE SITE ALL UNDERGROUND STORAGE TANKS, IF ENCOUNTERED, IN ACCORDANCE WITH FEDERAL, STATE, COUNTY AND LOCAL REQUIREMENTS, PRIOR TO CONTINUING CONSTRUCTION IN THE

#### LIGHTING NOTES (Rev. 1/2019)

AREA AROUND THE TANK WHICH EMPTYING, CLEANING AND REMOVAL ARE AT THE CONTRACTOR'S SOLE COST.

- THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT. DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
- THE LIGHTING CONTRACTOR MUST COMPLY WITH ALL APPLICABLE CONTRACTOR REQUIREMENTS INDICATED IN THE PLANS, INCLUDING BUT NOT LIMITED TO GENERAL NOTES, GRADING AND UTILITY NOTES, SITE SAFETY, AND ALL AGENCY AND GOVERNMENTAL REGULATIONS THIS LIGHTING PLAN DEPICTS PROPOSED, SUSTAINED ILLUMINATION LEVELS CALCULATED USING DATA PROVIDED BY THE NOTED MANUFACTURER, ACTUAL SUSTAINED SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO

VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND

- OTHER RELATED VARIABLE FIELD CONDITIONS THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ALL ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT ELEVATION ZERO (GROUND LEVEL) UNLESS OTHERWISE NOTED. ILLUMINATION LEVELS ARE SHOWN IN FOOT-CANDLES. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK MAY INCLUDE, BUT IS NOT LIMITED TO, VISUAL OBSERVATION, CLEANING OF LENSES, AND RE-LAMPING (IF NECESSARY) AT LEAST ONCE EVERY SIX (6) MONTHS. UPON COMPLETION AND OWNER'S ACCEPTANCE OF THE WORK ALL OF THE ABOVE
- OUTLINED AND DESCRIBED RESPONSIBILITIES SHALL BECOME SOLELY THE OWNER'S. WHERE APPLICABLE, THE EXISTING CONDITION LIGHT LEVELS ILLUSTRATED ARE REPRESENTATIVE OF AN APPROXIMATION UTILIZING LABORATORY DATA FOR SIMILAR FIXTURES, UNLESS ACTUAL FIELD MEASUREMENTS ARE TAKEN WITH A LIGHT METER. DUE TO FACTORS SUCH AS FIXTURE MAINTENANCE, EQUIPMENT TOLERANCES, WEATHER CONDITIONS, ETC., ACTUAL LIGHT LEVELS MAY DIFFER. EXISTING LIGHT LEVELS DEPICTED ON THIS PLAN ARE TO BE CONSIDERED APPROXIMATE. THIS LIGHTING PLAN IS INTENDED TO SHOW THE LOCATIONS AND TYPE OF LUMINAIRES. POWER SYSTEM, CONDUITS, WIRING AND

OTHER ELECTRICAL COMPONENTS ARE SOLELY THE ARCHITECT'S, MECHANICAL ENGINEER'S AND/OR LIGHTING CONTRACTOR'S

RESPONSIBILITY, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. THESE ITEMS MUST BE INSTALLED AS REQUIRED

- BY STATE AND LOCAL REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF LIGHTING FIXTURES AND APPURTENANCES IN ACCORDANCE WITH ALL APPLICABLE BUILDING AND ELECTRICAL CODES. THE CONTRACTOR MUST BRING IMMEDIATELY, IN WRITING, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURE(S) TO THE ENGINEER OF RECORD'S ATTENTION, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- THE LIGHTING CONTRACTOR MUST COORDINATE WITH THE PROJECT ARCHITECT REGARDING ANY AND ALL POWERS SOURCE FROM WITHIN THE BUILDING, AND TIMING DEVICES NECESSARY TO MEET THE DESIGN INTENT 10. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT SHIELDING AND OR ROTATED OPTICS ARE INSTALLED AS INDICATED ON THE PLAN IN ORDER TO ACHIEVE THE LIGHTING LEVELS THE REVIEWING AGENCY APPROVED.

#### SOIL EROSION & SEDIMENT CONTROL PLAN NOTES

- 1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
- EROSION CONTROL MEASURES MUST CONFORM TO THE VIRGINIA GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL UNLESS OTHERWISE NOTED, OR UNLESS ENGINEER CLEARLY AND SPECIFICALLY, IN WRITING, DIRECTS OTHERWISE. INSTALLATION OF EROSION CONTROL, CLEARING, AND SITE WORK MUST BE PERFORMED EXACTLY AS INDICATED IN THE EROSION CONTROL CONSTRUCTION NOTES.
- THE DISTURBED LAND AREA OF THIS SITE IS APPROXIMATELY 0.47 ACRES. THE FOLLOWING EROSION CONTROL MEASURES ARE PROPOSED FOR THIS SITE:
- A. STABILIZED CONSTRUCTION ENTRANCE/EXIT A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT IS TO BE INSTALLED AT THE DESIGNATED LOCATION SHOWN ON THE PLAN. THIS AREA MUST BE GRADED SO THAT RUNOFF WATER WILL BE RETAINED ON-SITE
- B. SEDIMENT FENCE INSTALL SILT FENCE(S) AND/OR SILT SOCK AROUND ALL OF THE DOWNSLOPE PERIMETERS OF THE SITE, TEMPORARY FILL AND SOIL STOCKPILES. C. INSTALL FILTER FABRIC DROP INLET PROTECTION AROUND EACH DRAINAGE INLET AS DRAINAGE STRUCTURES ARE
- INSTALLED TO REDUCE THE QUANTITY OF SEDIMENT. INSTALL TEMPORARY INLET PROTECTION ON INLETS DOWNSLOPE FROM DISTURBANCE, WHICH MAY BE BEYOND THE LIMITS OF DISTURBED AREA. INSTALLATION OF EROSION CONTROL DEVICES MUST BE IN ACCORDANCE WITH ALL OF THE MANUFACTURER'S
- RECOMMENDATIONS. 6. THE CONTRACTOR MUST INSPECT EROSION CONTROL MEASURES WEEKLY. THE CONTRACTOR MUST REMOVE ANY SILT
- DEPOSITS GREATER THAN 6" COLLECTED ON THE FILTER FABRIC AND/OR SILT SOCK BARRIERS AND EXCAVATE AND REMOVE ANY SILT FROM DROP INLET PROTECTION. THE CONTRACTOR MUST APPLY TEMPORARY SEED AND MULCH TO ALL DISTURBED AREAS THAT WILL NOT BE BROUGHT TO
  - FINISHED GRADE AND VEGETATED WITHIN 7 DAYS. WHEN AREAS ARE DISTURBED AFTER THE GROWING SEASON. THE CONTRACTOR MUST STABILIZE SAME WITH GEOTEXTILE FABRIC AND MAINTAIN SAME IN STRICT ACCORDANCE WITH BEST MANAGEMENT PRACTICES
- THE CONTRACTOR MUST INSTALL ADDITIONAL EROSION CONTROL MEASURES IF ENGINEER SO REQUIRES, TO PREVENT ANY, INCLUDING THE INCIDENTAL, DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE. THE CONTRACTOR MUST BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL EROSION CONTROL MEASURES ON THE SITE

UNTIL PERMANENT PAVING AND TURF/LANDSCAPING IS ESTABLISHED. THE COSTS OF INSTALLING AND MAINTAINING THE EROSION

- CONTROL MEASURES MUST BE INCLUDED IN THE BID PRICE FOR THE SITE WORK AND THE CONTRACTOR IS RESPONSIBLE FOR ALL SUCH COSTS. 10. THE CONTRACTOR MUST CONTINUE TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE COMPLETION OF CONSTRUCTION
- AND THE ESTABLISHMENT OF VEGETATION. THE CONTRACTOR MUST REMOVE EROSION CONTROL MEASURES, SILT AND DEBRIS AFTER ESTABLISHING PERMANENT VEGETATION COVER OR OTHER INSTALLING A DIFFERENT, SPECIFIED METHOD OF STABILIZATION.
- THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF TEMPORARY FROSION AND SEDIMENTATION CONTROL FACILITIES, MEASURES AND STRUCTURES. ADDITIONAL FACILITIES, MEASURES AND STRUCTURES MUST BE INSTALLED WHERE NECESSARY TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS AND/OR TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.
- 13. THE CONTRACTOR MUST PROTECT ALL EXISTING TREES AND SHRUBS. THE CONTRACTOR MUST REFER TO THE LANDSCAPE AND/OR DEMOLITION PLAN(S) FOR TREE PROTECTION, FENCE LOCATIONS AND DETAILS. THE CONTRACTOR MUST REFER TO GRADING PLANS FOR ADDITIONAL INFORMATION.
- 15. THE CONTRACTOR MUST CLEAN EXISTING AND PROPOSED DRAINAGE STRUCTURES AND INTERCONNECTING PIPES ON OR OFF-SITE AS THE JURISDICTIONAL AGENCY REQUIRES, BOTH AT THE TIME OF SITE STARILIZATION AND AT END OF PROJECT SOIL EROSION CONTROL MEASURES MUST BE ADJUSTED OR RELOCATED BY THE CONTRACTOR AS IDENTIFIED DURING SITE
- OBSERVATION IN ORDER TO MAINTAIN THE COMPLETE EFFECTIVENESS OF ALL CONTROL MEASURES. THE CONTRACTOR MUST IDENTIFY, ON THE PLAN, THE LOCATION OF WASTE CONTAINERS, FUEL STORAGE TANKS, CONCRETE WASHOUT AREAS AND ANY OTHER LOCATIONS WHERE HAZARDOUS MATERIALS ARE STORED.

### DRAINAGE AND UTILITY NOTES

(Rev.1/2019)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES. IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.

- LOCATIONS OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE, AND THE CONTRACTOR MUST INDEPENDENTLY VERIFY AND CONFIRM THOSE LOCATIONS AND SERVICES WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCING ANY CONSTRUCTION OR EXCAVATION. THE CONTRACTOR MUST INDEPENDENTLY VERIFY AND CONFIRM ALL SANITARY CONNECTION. POINTS AND ALL OTHER UTILITY SERVICE CONNECTION POINTS IN THE FIELD. PRIOR TO COMMENCING NY CONSTRUCTION. THE
- CONTRACTOR MUST REPORT ALL DISCREPANCIES, ERRORS AND OMISSIONS IN WRITING, TO THE ENGINEER OF RECORD. THE CONTRACTOR MUST VERTICALLY AND HORIZONTALLY LOCATE ALL UTILITIES AND SERVICES INCLUDING, BUT NOT LIMITED TO, GAS WATER FLECTRIC SANITARY AND STORM, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC, WITHIN THE LIMITS OF DISTURBANCE OR WORK SPACE. WHICHEVER IS GREATER. THE CONTRACTOR MUST USE, REFER TO, AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL OF THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO ANY EXISTING UTILITIES WHICH OCCUR DURING CONSTRUCTION, AT NO COST TO THE OWNER AND AT CONTRACTOR'S SOLE COST AND EXPENSE. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH DAMAGE TO ANY EXISTING UTILITIES WHICH OCCURS DURING CONSTRUCTION.
- THE CONTRACTOR MUST FIELD VERIFY THE PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT TO CONFIRM EXACT DEPTH, PRIOR TO COMMENCEMENT OF CONSTRUCTION. STORMWATER ROOF DRAIN LOCATIONS ARE BASED ON ARCHITECTURAL PLANS. THE CONTRACTOR IS RESPONSIBLE FOR
- VERIFYING LOCATIONS OF SAME BASED UPON FINAL ARCHITECTURAL PLANS THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SITE PLAN DOCUMENTS AND ARCHITECTURAL PLANS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, GREASE TRAP REQUIREMENTS AND DETAILS, DOOR ACCESS, AND EXTERIOR GRADING. THE ARCHITECT WILL DETERMINE THE UTILITY SERVICE SIZES. THE CONTRACTOR MUST COORDINATE INSTALLATION OF UTILITY SERVICES WITH THE INDIVIDUAL COMPANIES, TO AVOID CONFLICTS AND TO ENSURE THAT PROPER DEPTHS ARE ACHIEVED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT INSTALLATION OF ALL IMPROVEMENTS COMPLIES WITH ALL LITILITY REQUIREMENTS OF THE APPLICABLE JURISDICTION AND REGULATORY AGENCIES AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES AND, FURTHER, IS RESPONSIBLE FOR COORDINATING THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO THE EXISTING UTILITY/SERVICE. WHERE A CONFLICT(S) EXISTS BETWEEN THESE DOCUMENTS AND THE ARCHITECTURAL PLANS, OR WHERE ARCHITECTURAL PLAN UTILITY CONNECTION POINTS DIFFER, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IN WRITING, AND PRIOR TO CONSTRUCTION,
- MUST RESOLVE SAME 7. ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION MUST BE EXACTLY AS PER THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT AND THE CONTRACTOR MUST COORDINATE SAME WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS. WHEN THE PROJECT DOES NOT HAVE GEOTECHNICAL RECOMMENDATIONS. FILL AND COMPACTION MUST, AT A MINIMUM, COMPLY WITH THE STATE DOT REQUIREMENTS AND SPECIFICATIONS AND CONSULTANT
- HAS NO LIABILITY OR RESPONSIBILITY FOR OR AS RELATED TO FILL. COMPACTION AND BACKFILL. DURING THE INSTALLATION OF SANITARY, STORM, AND ALL UTILITIES, THE CONTRACTOR MUST MAINTAIN A CONTEMPORANEOUS AND THOROUGH RECORD OF CONSTRUCTION TO IDENTIFY THE AS-INSTALLED LOCATIONS OF ALL UNDERGROUND INFRASTRUCTURE THE CONTRACTOR MUST CAREFULLY NOTE ANY INSTALLATIONS THAT DEVIATE IN ANY RESPECT. FROM THE INFORMATION CONTAINED IN THESE PLANS. THIS RECORD MUST BE KEPT ON A CLEAN COPY OF THE SITE PLAN. WHICH THE
- CONTRACTOR MUST PROMPTLY PROVIDE TO THE OWNER IMMEDIATELY UPON THE COMPLETION OF WORK. THE CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS INCLUDING SANITARY WATER AND STORM SYSTEMS, ARE REPAIRED IN ACCORDANCE WITH REFERENCED MUNICIPAL, COUNTY AND OR STATE DOT DETAILS AS APPLICABLE. THE CONTRACTOR MUST COORDINATE INSPECTION AND APPROVAL OF COMPLETED WORK WITH THE AGENCY WITH JURISDICTION OVER SAME.
- 10. FINAL LOCATIONS OF PROPOSED UTILITY POLES, AND/ OR POLES TO BE RELOCATED ARE AT THE SOLE DISCRETION OF THE RESPECTIVE UTILITY COMPANY, REGARDLESS OF WHAT THIS PLAN DEPICTS. WATER SERVICE MATERIALS, BURIAL DEPTH, AND COVER REQUIREMENTS MUST BE SPECIFIED BY THE LOCAL UTILITY COMPANY. THE CONTRACTOR MUST CONTACT THE APPLICABLE MUNICIPALITY TO CONFIRM THE PROPER WATER METER AND VAULT, PRIOR TO COMMENCING CONSTRUCTION.

**[** + ] ⊢

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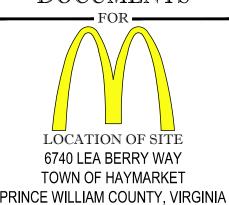


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**WARRENTON, VIRGINIA 20186** Phone: (540) 349-4500 Fax: (540) 349-0321 VA@BohlerEng.com



**GENERAI** 

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ENGINEERING 8 BLACKWELL PARK LANE, SUITE 20

SIANDAK	D DRAWING FOR ENTIRE PLAN SET (NOT TO SCALE)	TLEGENU	AI	STANDARD BREVIATIONS
LIMIT OF WORK		LOW——LOW——		
LIMIT OF DISTURI	BANCE ——	LOD	AC F	ACRES
			ADA	AMERICANS WITH
EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE	ARCH	DISABILITY ACT ARCHITECTURAL
	ONSITE PROPERTY LINE / R.O.W. LINE		BC	BOTTOM OF CURB
	NEIGHBORING PROPERTY LINE /		BF	BASEMENT FLOOR
	INTERIOR PARCEL LINE		BK	BLOCK
	EASEMENT LINE		BL	BASELINE
	SETBACK		BLDG BM	BUILDING BUILDING BENCHMARK
	LINE		BRL	BUILDING RESTRICTION LINE
			CF	CUBIC FEET
		CURB AND GUTTER	CL	CENTERLINE  CORPUGATED METAL PIPE
	001100575 01100 0	SPILL TRANSITION	CMP	CORRUGATED METAL PIPE  CONNECTION
	CONCRETE CURB & GUTTER	DEPRESSED CURB AND GUTTER	CONC	CONCRETE
		BET KESSEB GOKB AND GOTTEK	CPP	CORRUGATED PLASTIC PIPE
	UTILITY POLE		CY	CUBIC YARDS
	WITH LIGHT		DEC DEP	DECORATIVE  DEPRESSED
	POLE LIGHT	<u> </u>	DIP	DUCTILE IRON PIPE
⊡€	TRAFFIC LIGHT	<b>□</b> €	DOM	DOMESTIC
	UTILITY		ELEC ELEV	ELECTRIC ELEVATION
0	POLE	0	ELEV EP	ELEVATION  EDGE OF PAVEMENT
	TYPICAL LIGHT		ES	EDGE OF SHOULDER
<u></u>	ACORN	<b>\$</b>	EW	END WALL
Υ.	LIGHT	·Y.	EX	EXISTING  ELABED END SECTION
$ \forall$	TYPICAL SIGN		FES FF	FLARED END SECTION FINISHED FLOOR
$\bigwedge$	PARKING COUNTS		FH	FIRE HYDRANT
<u> </u>	COUNTS	/	FG	FINISHED GRADE
			G GF	GRADE GARAGE FLOOR (AT DOOR)
- — —170— — — 169	CONTOUR LINE	<u>190</u> 	GH	GRADE HIGHER SIDE OF WALL
	SPOT	TC516 00 TC 516.00	GL	GRADE LOWER SIDE OF WALL
TC 516.4 OR 516.4	ELEVATIONS	BC 515.55	GRT	GRATE
			GV	GATE VALVE HIGH DENSITY
SAN #	SANITARY LABEL	SAN #	HDPE	POLYETHYLENE PIPE
<u> </u>	STORM	X X	HP HOR	HIGH POINT  HORIZONTAL
	LABEL	#	HW	HEADWALL
	SANITARY SEWER LATERAL	SL	INT	INTERSECTION
	UNDERGROUND		INV	INVERT
	WATER LINE UNDERGROUND		LF LOC	LINEAR FOOT LIMITS OF CLEARING
E	ELECTRIC LINE	Е ———	LOD	LIMITS OF DISTURBANCE
	UNDERGROUND GAS LINE	G	LOS	LINE OF SIGHT
OH	OVERHEAD	OH ————	LP L/S	LANDSCARE
UII	WIRE	OII -	L/S MAX	LANDSCAPE MAXIMUM
Γ	UNDERGROUND TELEPHONE LINE	т	MIN	MINIMUM
	UNDERGROUND CABLE LINE	c	MH	MANHOLE
	STORM		MJ OC	MECHANICAL JOINT ON CENTER
	SEWER		PA	POINT OF ANALYSIS
	SANITARY SEWER MAIN	s	PC	POINT CURVATURE
~	HYDRANT	~	PCCR	POINT OF COMPOUND CURVATURE, CURB RETURN
			PI	POINT OF INTERSECTION
(\$)	SANITARY MANHOLE		POG	POINT OF GRADE
(D)	STORM MANHOLE	(®)	PROP	PROPOSED PANCENCY
₩M ⊗	WATER		PT	POINT OF TANGENCY POINT OF TANGENCY,
₩V	METER	•	PTCR	CURB RETURN
₩V ⊠	WATER VALVE	•	PVC	POLYVINYL CHLORIDE PIPE POINT OF VERTICAL
П	GAS		PVI	INTERSECTION
	VALVE	_	PVT	POINT OF VERTICAL TANGENCY
	GAS METER		R RCP	RADIUS REINFORCED CONCRETE PIPE
	TYPICAL END SECTION	Δ	RET WALL	RETAINING WALL
	HEADWALL OR		R/W	RIGHT OF WAY
or [	ENDWALL	OR OR	S SAN	SLOPE SANITARY SEWER
	GRATE INLET	<b>(III)</b>	SAN	SQUARE FEET
	CURB INLET	<b>O</b>	STA	STATION
0	CLEAN	0	STM S/W	SIDEWALK
	OUT		TBR	TO BE REMOVED
E	ELECTRIC MANHOLE	E	TBRL	TO BE RELOCATED
7	TELEPHONE MANHOLE	T	TC	TOP OF CURB
	MANHOLE ELECTRIC		TELE TPF	TELEPHONE TREE PROTECTION FENCE
[EB]	BOX	EB	TW	TOP OF WALL
EP	ELECTRIC PEDESTAL	EP	TYP	TYPICAL
	1	1	UG	UNDERGROUND
<i>→</i>	NOVETOE:::-	<i>→</i>	UP W	UTILITY POLE WIDE
	MONITORING WELL		W/L	WATER LINE
	TEST PIT	<b>-</b>	W/M	WATER METER
•	BENCHMARK	•	± •	PLUS OR MINUS
		,	Ø	DEGREE DIAMETER
/	BORING		.	

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LAND SURVEYING

PROGRAM MANAGEMENT

LANDSCAPE ARCHITECTURE

SUSTAINABLE DESIGN

PERMITTING SERVICES



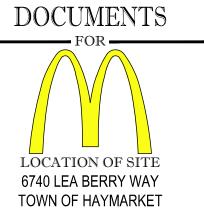
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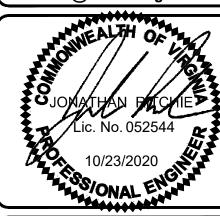
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SITE PLAN



BOHLER BOHLERING

PRINCE WILLIAM COUNTY, VIRGINIA

28 BLACKWELL PARK LANE, SUITE 201
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SHEET TITLE:

PROPOSED EASEMENT LEGEND

STORM DRAIN

WATER

SANITARY SEWER

PUBLIC ACCESS

COMMON SHARED

**INGRESS-EGRESS** 

VARIABLE WIDTH S

PUBLIC UTILITY

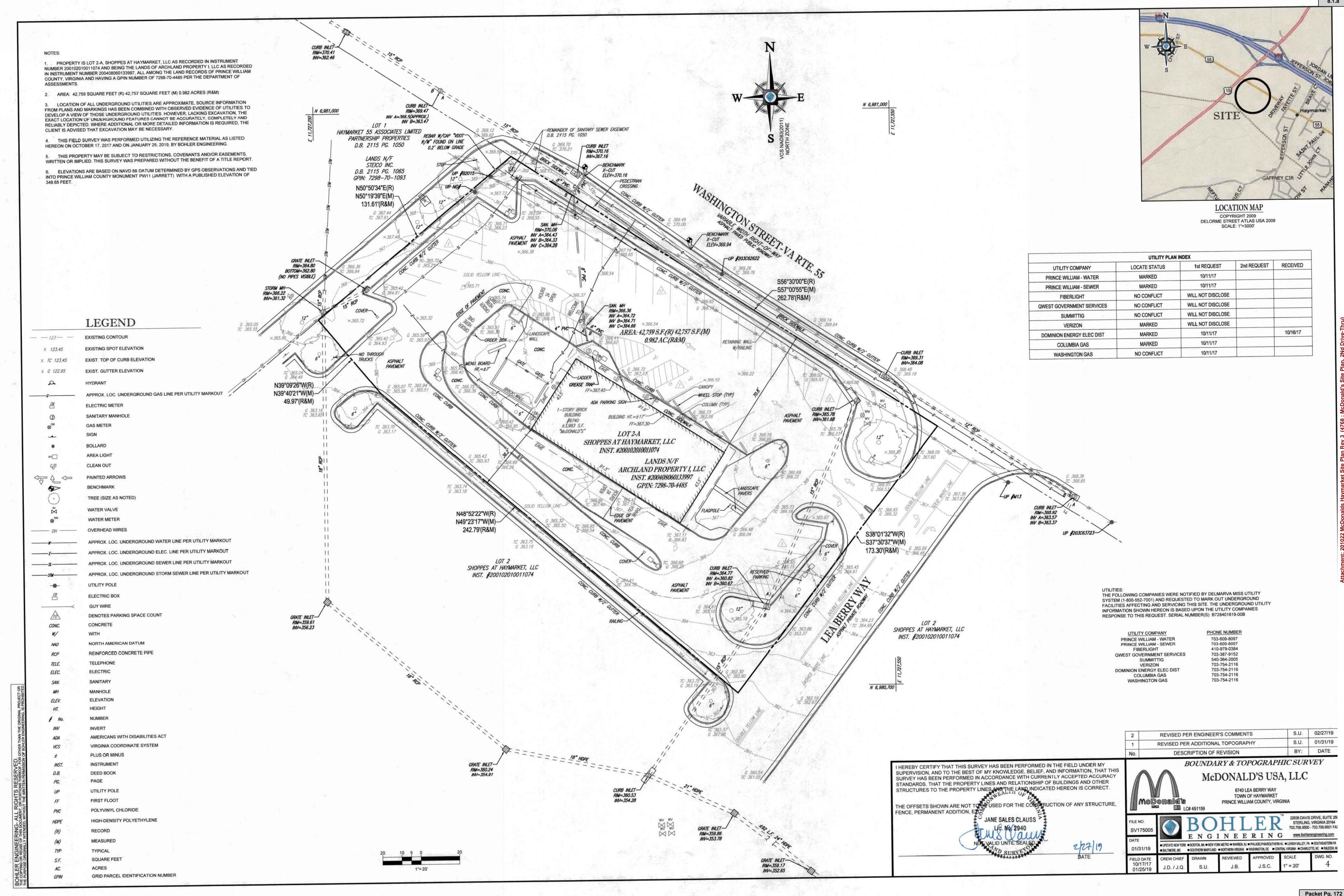
GENERAL NOTES AND LEGEND

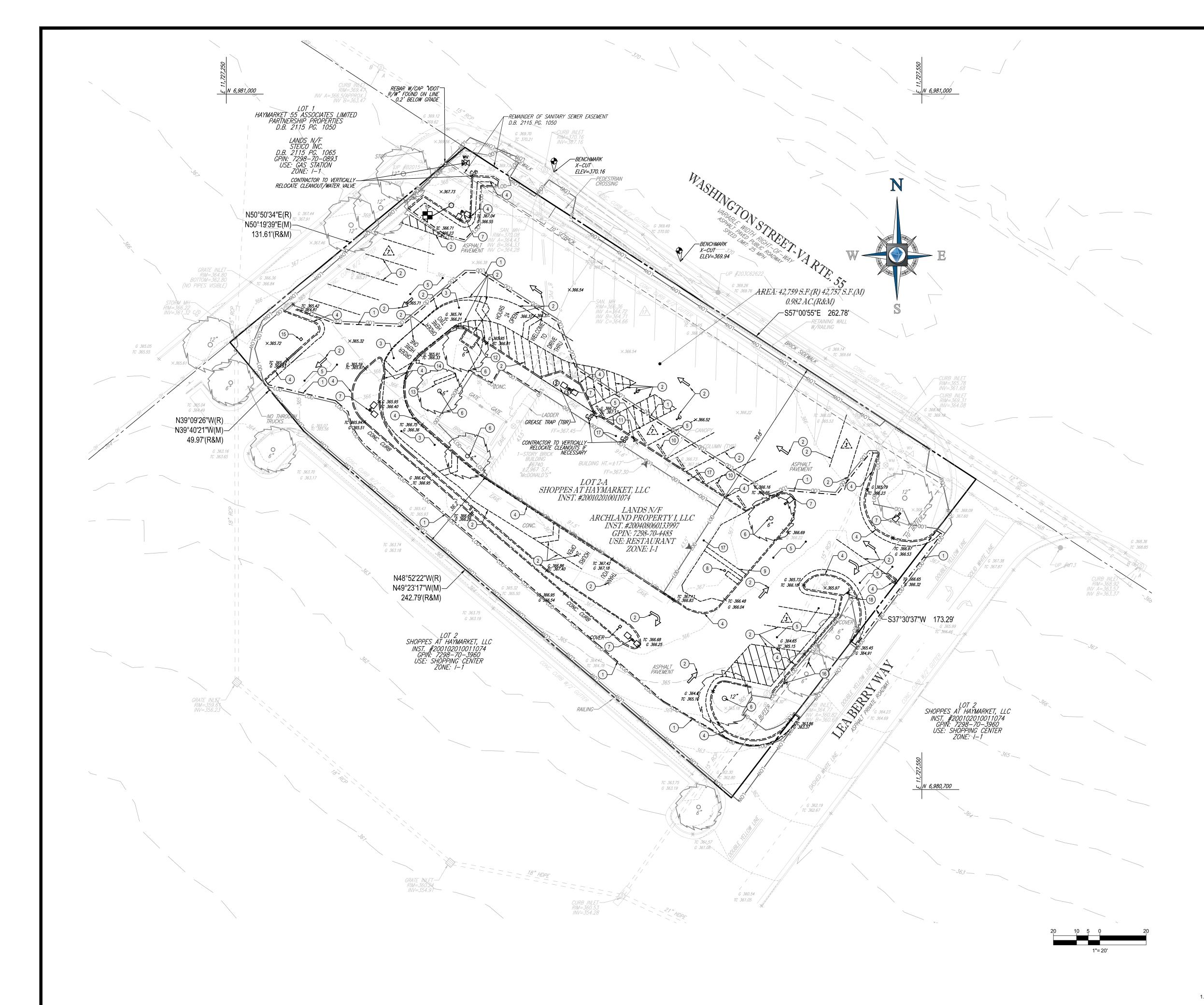
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LEGEN	$\overline{\mathbf{D}}$
DEMOLITION/REMOVAL NOTE	TYPICAL NOTE TEX
	EASEMENT LINE
	CONCRETE CURB
4350	UTILITY POLE WITH LIGHT
<b>6==</b> 0	POLE LIGHT
•	TRAFFIC LIGHT
රි	UTILITY POLE
 ∰	TYPICAL LIGHT
<b>‡</b>	ACORN LIGHT
<u>A</u>	TYPICAL SIGN
	PARKING COUNTS
TC 516.4 OR 516.4	SPOT ELEVATIONS
SAN #	SANITARY LABEL
STM #	STORM LABEL
SL	SANITARY SEWER LATERAL
w	UNDERGROUND WATER LINE
E	UNDERGROUND ELECTRIC LINE
G	UNDERGROUND GAS LINE
————ОН —————	OVERHEAD WIRE
TT	UNDERGROUND TELEPHONE LINE
cc	UNDERGROUND CABLE LINE
	STORM SEWER
ss	SANITARY SEWER MAIN
<b>7</b>	HYDRANT SANITARY
6	MANHOLE
(0)	STORM MANHOLE
⊗ <sup>WM</sup>	WATER METER
×	WATER VALVE
	GAS VALVE
$\boxtimes$	GAS METER

### DEMOLITION KEY

- 1) SAWCUT AND REMOVE CONCRETE / ASPHALT / CURB AND GUTTER
- 2 PAVEMENT MARKING TO BE REMOVED
- (3) CONCRETE TO BE REPLACED, SEE SITE PLAN
- 4 CURB TO BE REMOVED
- 5 ASPHALT TO BE REMOVED AND REPLACED PER SITE PLAN
- 6 TREE TO BE REMOVED
- 7 LIGHT POLE TO BE RELOCATED
- 8 FLAG POLE TO BE RELOCATED
- (9) LANDSCAPE PAVERS TO BE REMOVED
   (10) WHEEL STOP TO BE REMOVED
- ADA PARKING SIGN TO BE RELOCATED
- 12 LANDSCAPE WALL TO BE REMOVED
- MENU BOARD TO BE REMOVED
- ORDER BOX TO BE REMOVED

  CONTRACTOR TO CONFIRM IRRIGATION COVER AND RELOCATE
- (NOTIFY ENGINEER IF DISCREPANCIES ARISE)

  (16) RESERVED PARKING SIGN TO BE RELOCATED
- 17 SIDEWALK TO BE REPLACED, SEE SITE PLAN
- (18) SIGN TO BE REMOVED

#### **DEMOLITION PLAN NOTES:**

- CONTRACTOR TO PROVIDE MINIMUM PAVEMENT SECTION AND MATCH EXISTING CROSS-SLOPES IF ASPHALT PATCHING IS REQUIRED. SEE PAVEMENT DETAILS.
- 2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED. CONTRACTOR SHALL DETERMINE ACTUAL LOCATIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. IF CONFLICTS EXIST, NOTIFY ENGINEER IMMEDIATELY.
- 3. THERE ARE NO MAPPED RPA'S OR HISTORIC AREAS ON SITE.4. THERE ARE NO CEMETERIES OR HISTORIC SITES ON THE PARCEL.

I L E R I N G

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1 AND SCRAM MANAGEI



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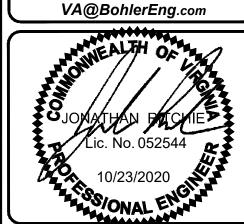


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TOWN OF HAYMARKET

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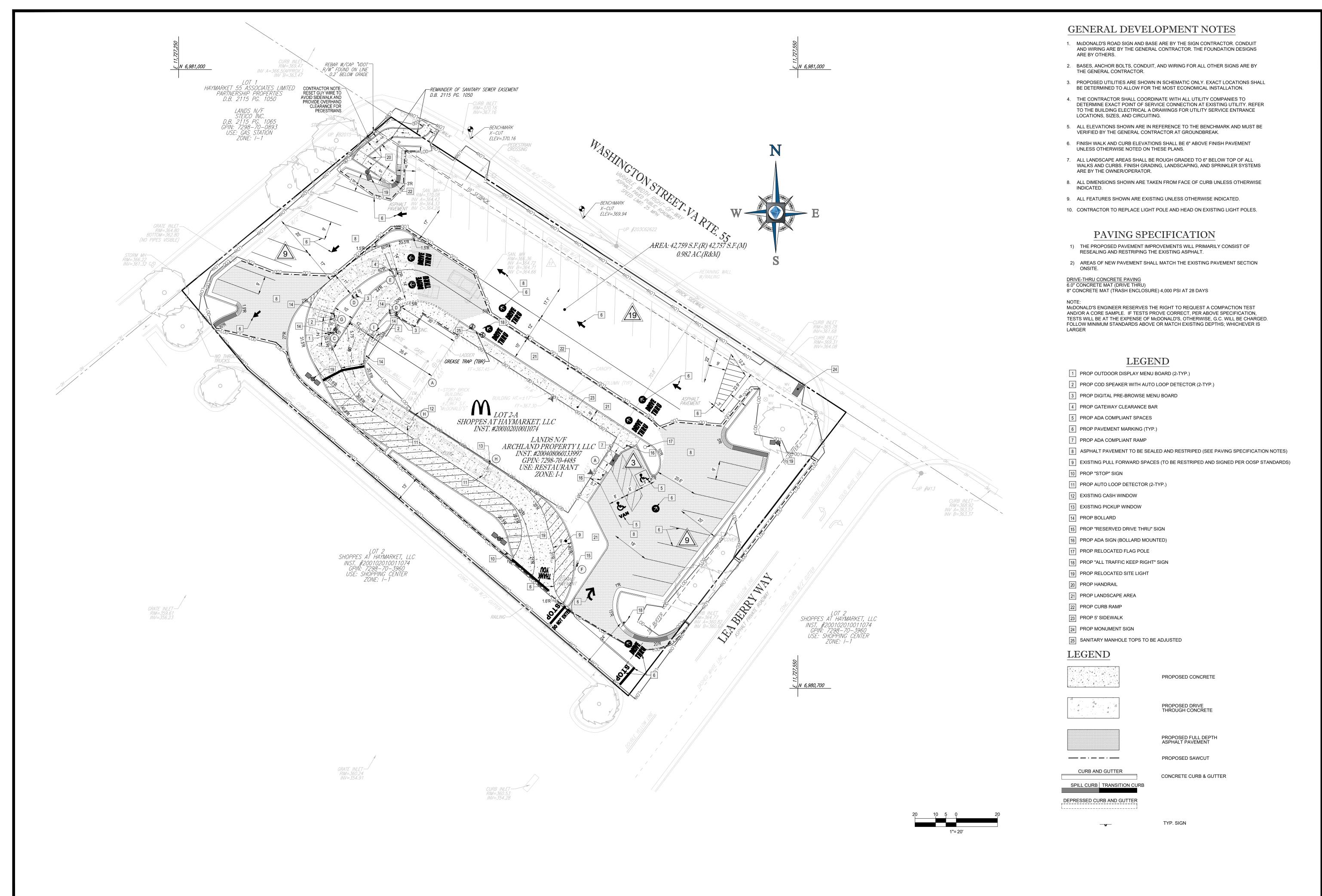
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CONDITIONS/

DEMOLITION

PLAN

SHEET NUMBER:



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LAND SURVEYING

PROGRAM MANAGEMENT

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SUSTAINABLE DESIGN

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TRANSPORTATION SERVICES

TRANSPORTATION SERVICES

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DOCUMENTS
FOR



BOHLER BURGERING

PRINCE WILLIAM COUNTY, VIRGINIA

28 BLACKWELL PARK LANE, SUITE 20
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
Fax: (540) 349-0321
VA@BohlerEng.com

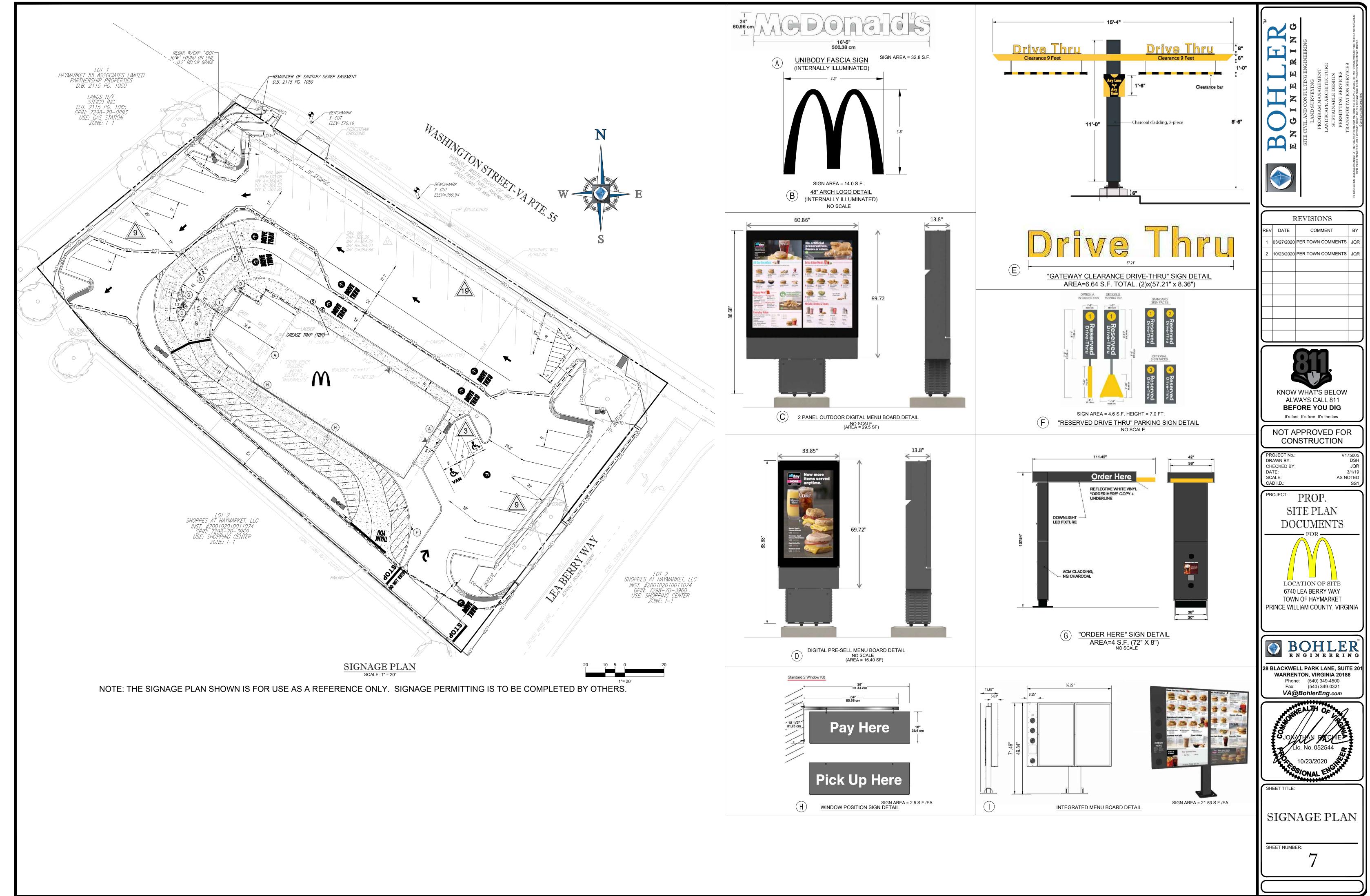


SHEET TITLI

SITE PLAN

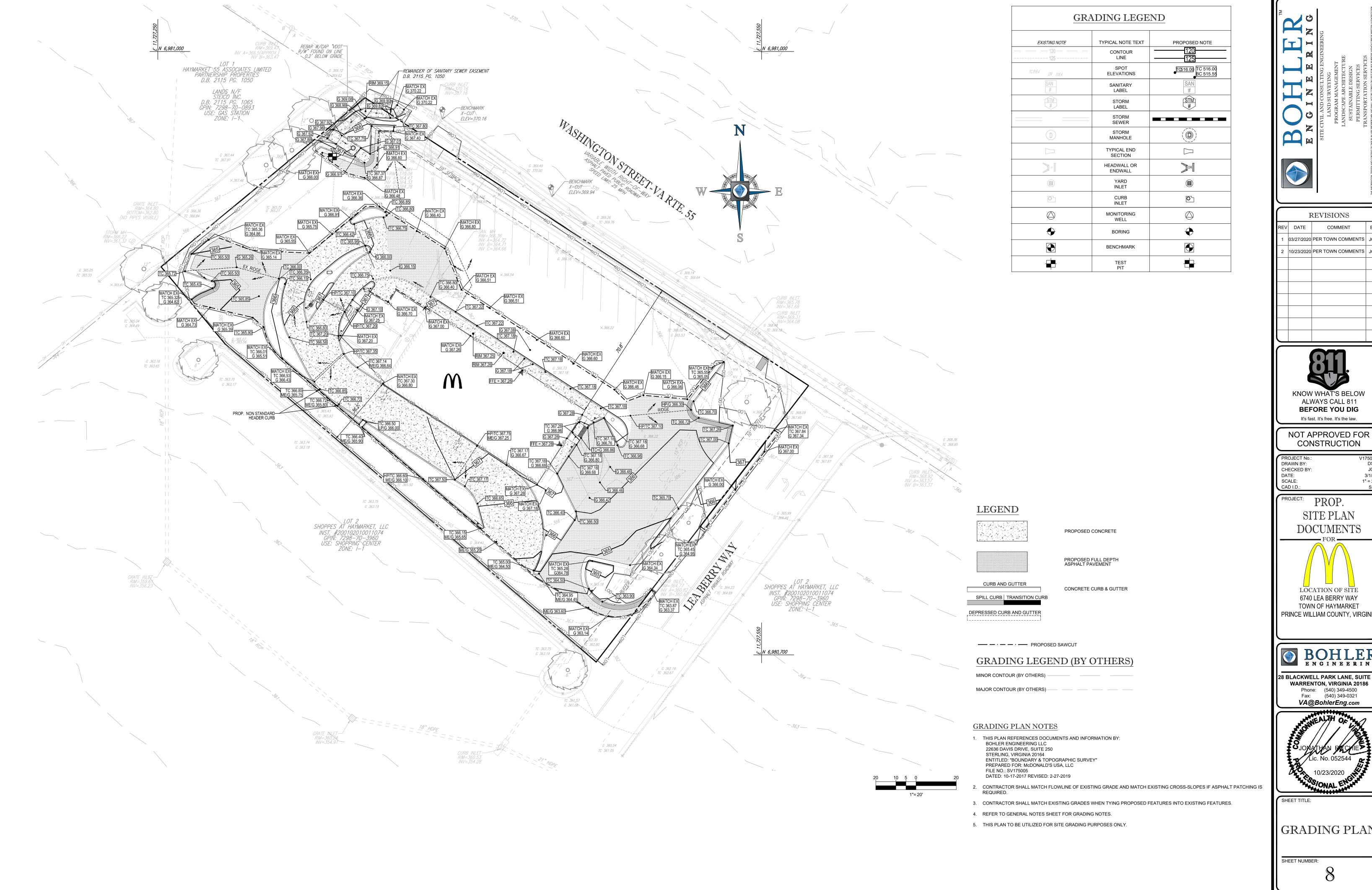
SHEET NUMBER:

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REVISIONS REV DATE COMMENT 03/27/2020 PER TOWN COMMENTS JQF 10/23/2020 PER TOWN COMMENTS JQ



CONSTRUCTION

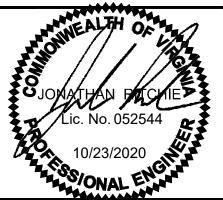
SITE PLAN

DOCUMENTS LOCATION OF SITE

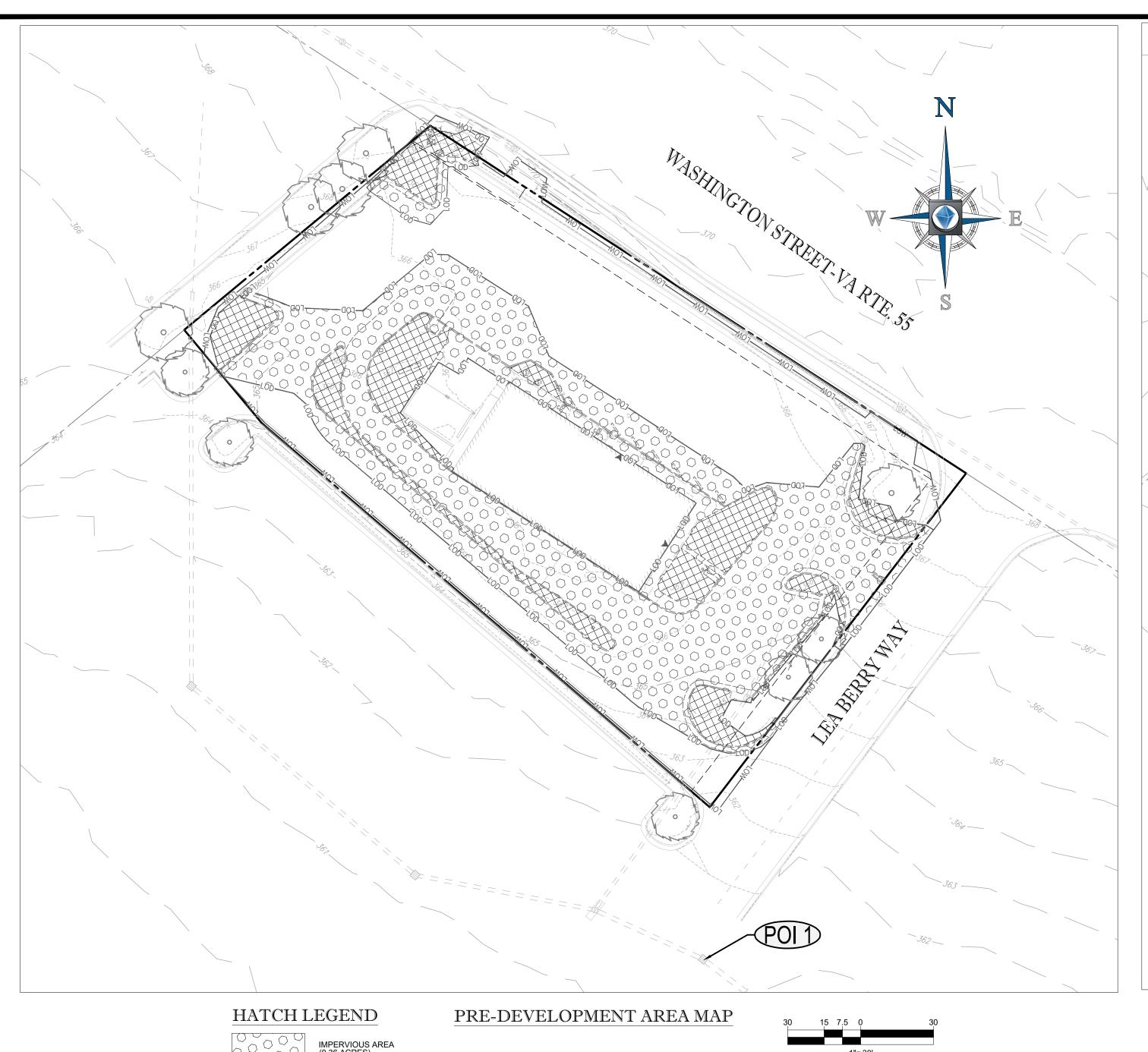
6740 LEA BERRY WAY TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

BOHLER ENGINEERING

28 BLACKWELL PARK LANE, SUITE 20<sup>-</sup> **WARRENTON, VIRGINIA 20186** Phone: (540) 349-4500 Fax: (540) 349-0321



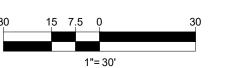
GRADING PLAN



HATCH LEGEND

IMPERVIOUS AREA (0.36 ACRES)

(0.36 ACRES) PERVIOUS AREA (0.11 ACRES)



DBQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0 BMP Design Specifications List: 2013 Dreft Stds & Specs Site Summary

Updale Sum mary Sheet Print Preview Print

PreReDevelopment
Development TP Load
TP Load persone
persone
(https://doi.org/10.)

 (Itb/scre/yr)
 (Itb/scre/yr)

 178
 178

 178
 178

	A soils	8 Sois	CSaib	D Soils	Totals	% ofTo
Ronest√Open (scres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	0.00	0.11	0.00	0.11	23
Impervious Cover (acres)	0.00	0.00	0.36	0.00	036	77
					0.47	100

BELONGING TO THE ADJACENT SHOPPING CENTER TO THE SOUTH. PRIOR TO THE PROPOSED IMPROVEMENTS, THE LIMITS OF DISTURBANCE CONTAINED 0.36 ACRES OF IMPERVIOUS AREA AND 0.11 ACRES OF PERVIOUS AREA IN THE DISTURBED AREA, EQUIVALENT TO A C FACTOR OF 0.76. THE PROPOSED REDEVELOPMENT WILL NOT INCREASE IMPERVIOUS AREA ONSITE. THE DISTURBED AREA WILL ALSO CONTAIN 0.36 ACRES OF IMPERVIOUS AREA Impervious Cover (acres) AND 0.11 ACRES OF PERVIOUS AREA, EQUIVALENT TO A C-FACTOR OF 0.76.

C-FACTORS OF 0.30 AND 0.90 WERE USED FOR PERVIOUS AND IMPERVIOUS SURFACES, RESPECTIVELY, PER EXHIBIT 1, SECTION 700 OF THE PWC DCSM. RAINFALL INTENSITIES WERE BASED ON NOAA ATLAS 14 RAINFALL DATA.

THE PROPOSED PROJECT IS FOR THE REDEVELOPMENT OF AN EXISTING DRIVE-THRU RESTAURANT, ASSOCIATED SITE IMPROVEMENTS AND PARKING LOT

RECONFIGURATION. THE SITE IS LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF WASHINGTON STREET (VA ROUTE 55) AND LEA BERRY WAY. RUNOFF FROM THIS REDEVELOPMENT DRAINS TO AN EXISTING STORM SYSTEM VIA EXISTING CURB INLETS ON THE EASTERN AND WESTERN SIDES OF THE SITE AND IS CONVEYED TO THE EXISTING STORMWATER SYSTEM. BASED ON AVAILABLE GIS DATA, THE SHOPPING CENTER DRAINS TO THE SOUTH INTO NORTH FORK BROAD

THE PROPOSED LIMITS OF DISTURBANCE FOR THIS PROJECT IS APPROXIMATELY 0.47 ACRES. THE EXISTING SITE FLOWS INTO A LARGER STORMWATER SYSTEM

THE PRE AND POST-DEVELOPMENT FLOW RATES AT THE POINT OF INTEREST ARE SUMMARIZED BELOW:

2-YEAR: 1.56 CFS 2-YEAR: 1.56 CFS 10-YEAR: 2.45 CFS

STORMWATER MANAGEMENT AND BMP NARRATIVE:

STORMWATER QUANTITY

AT THE POINT OF INTEREST, THERE IS NO CHANGE IN THE 2 AND 10-YEAR FLOW RATES BETWEEN THE EXISTING AND PROPOSED CONDITIONS. THEREFORE, AS THE EXISTING, MANMADE CONVEYANCE SYSTEM IS CONCRETE PIPE, DESIGNED TO ADEQUATELY CONVEY THE 10-YEAR STORMWATER EVENT, THERE IS NO CONCERN FOR EROSION DURING THE 2-YEAR STORMWATER EVENT. THUS MEETING CHANNEL PROTECTION REQUIREMENTS. GIVEN THE EXISTING FLOW IS UNCHANGED IN POST DEVELOPED CONDITIONS, THE EXISTING STORM CONVEYANCE SYSTEM IS STILL ADEQUATE FOR THE 10-YEAR STORM EVENT AS WELL; THEREFORE MEETING FLOOD PROTECTION REQUIREMENTS.

BASED ON REVIEW OF AVAILABLE GIS DATA, THE SHOPPING CENTER DRAINS GENERALLY TO THE SOUTH TO THE NORTH FORK OF BROAD RUN. THE CONTRIBUTING DRAINAGE AREA TO THAT POINT IS APPROXIMATELY 3,800 AC, OVER ONE THOUSAND TIMES THE DISTURBED AREA. GIVEN THAT THE FLOW RATE DOES NOT INCREASE DUE TO THE PROPOSED DEVELOPMENT AND THERE IS NO EROSION OF THE MANMADE STORWMATER CONVEYANCE SYSTEM AT THE POINT OF INTEREST SHOWN ON THE PLAN; AT NO POINT BETWEEN THIS POINT OF INTEREST AND THE LIMITS OF ANALYSIS WILL THE PROPOSED DEVELOPMENT CAUSE THE EXISTING CONDITION TO INCREASE. THEREFORE IT IS THE OPINION OF THE ENGINEER THAT CHANNEL AND FLOOD PROTECTION REQUIREMENTS HAVE BEEN MET AND NO FURTHER ANALYSIS IS WARRANTED.

#### STORMWATER QUALITY

SINCE THE SUBJECT SITE WAS PREVIOUSLY DEVELOPED, WATER QUALITY REQUIREMENTS WERE CALCULATED USING THE VIRGINIA RUNOFF REDUCTION METHOD (VRRM) RE DEVELOPMENT SPREADSHEET. USING THIS SPREADSHEET, IT WAS DETERMINED THAT THE DEVELOPMENT OF THIS SITE WOULD REQUIRE THE TREATMENT OF AN ADDITIONAL 0.08 LB/YR OF PHOSPHORUS REMOVAL. TO MEET THIS REMOVAL REQUIREMENT, NUTRIENT OFFSET CREDITS WILL BE PURCHASED. AN AVAILABILITY LETTER SHOWING THAT MORE CREDITS THAN REQUIRED ARE AVAILABLE HAS BEEN PROVIDED. SINCE THE PHOSPHORUS REMOVAL ACHIEVED BY THESE MEASURES MEETS THE AMOUNT REQUIRED BY THE VRRM RE DEVELOPMENT SPREADSHEET, ALL STORMWATER QUALITY REQUIREMENTS FOR THIS PROJECT HAVE BEEN MET AND NO FURTHER ANALYSIS IS REQUIRED.

#### CONCLUSION

AS STORMWATER QUALITY REQUIREMENTS ARE BEING MET THROUGH THE PURCHASE OF NUTRIENT OFFSET CREDITS AND THE STORMWATER QUANTITY REQUIREMENTS ARE BEING MET BY SHOWING THAT EXISTING DRAINAGE AREAS AND FLOWS ARE BEING MAINTAINED, IT IS THE OPINION OF THE ENGINEER THAT THE STORMWATER QUANTITY AND QUALITY REQUIREMENTS ARE SATISFIED FOR THIS PROJECT AND NO FURTHER ANALYSIS IS WARRANTED.



ProjectTitle: MtDonald's Haymarket-Y175005 Total Raintall (in): 48 Total Disturbed Acreage: 0.47 Site Land Cover Summary

	A 50115	8 50 IB	CSOIS	DSOIL	Totals	N OTIOBI
Ronest/Open (ecnes)	0.00	0.00	0.00	0.00	000	0
Managed Tuirf (acres)	0.00	0.00	0.11	0.00	0.11	23
Impervious Cover (acres)	0.00	0.00	0.36	0.00	036	77
-					0.47	100
Post-Re Development Land Cover (a	cres) A soils	8 Sois	CSois	D Soits	Totals	% ofTotal
				1		7 011001
Ronest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0

Site Triand Land Cover Nutrient Loads Final Post-Deve to preent Adjuste d Pre-Re Deve lopment (New Impervious) B New Impervious) 0.72 Treatment Volume (ft<sup>\*</sup>)

ΙΦ/γ r)			
	Development Load ament & New Impervio	7US)	Pre- Re De ve lo prme n

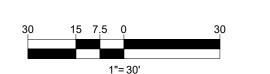
#### Site Compliance Summary

Pre-ReDevelopment Load

o	Total Runoff Volume Reduction (ft <sup>3</sup> )
0.00	Total TP Load Reduction Achieved (Ib/yr)
0.00	Total TN Load Reduction Achieved (Ib/yr)
0.84	Remaining Post Development TP Load (lb/yr)
0.08	Remaining TP Load Reduction (lb/yr) Required

VRRM SUMMARY SHEETS

POST-DEVELOPMENT AREA MAP



Owings Mills, MD 21117

Baton Rouge, LA 70802

Suite 431 Pittsburgh, PA 15219

1408 B Roseneath Rd

February 27, 2019 Kevin Lee **Bohler Engineering** Caitlan Parker Credit Sales Coordinator Resource Environmental Solutions

Subject: Potomac Watershed - Nutrient Credit Availability 5020 Montrose Blvd. Project Reference: McDonald's - Haymarket, VA; 0.10 Credits Requested; HUC

This letter is to confirm the availability of 0.10 authorized nutrient credits ("Nutrient 1200 Camellia Blvd. Credits") from one or more of Resource Environmental Solutions' ("RES") 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 1371/2 East Main St. 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 Antonio Nutrient Reduction Implementation Plan ("NRIP"). Please feel free to contact me if you have any questions. 302 Jefferson St. Suite 110 Raleigh, NC 27605

author B. Packers Caitlan B. Parker Resource Environmental Solutions cparker@res.us

NUTRIENT CREDIT AVAILABILITY LETTER

REVISIONS DATE COMMENT



NOT APPROVED FOR CONSTRUCTION

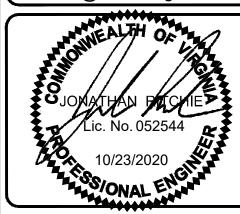
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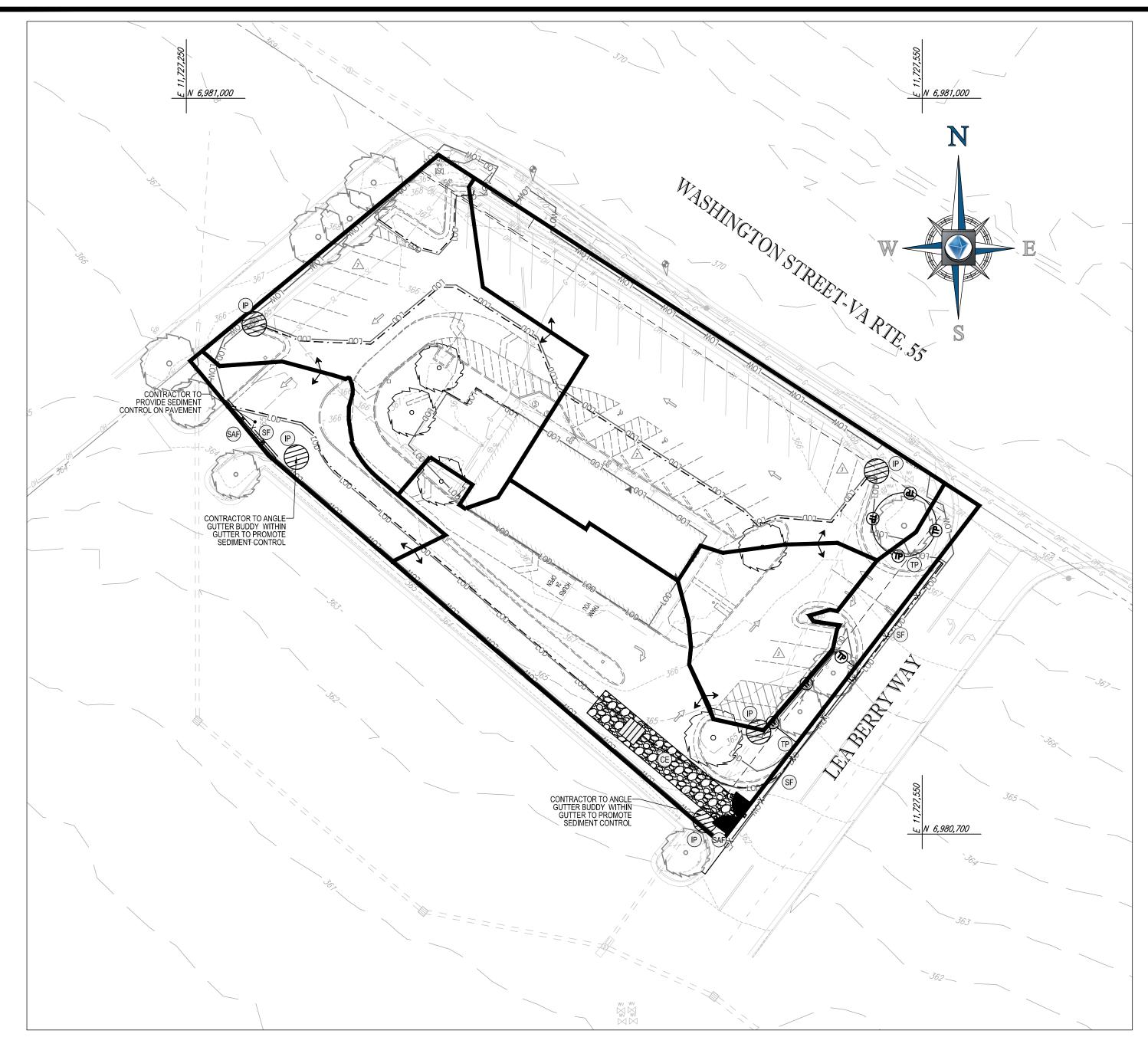


**WARRENTON, VIRGINIA 20186** Phone: (540) 349-4500 Fax: (540) 349-0321 VA@BohlerEng.com



PRE/POST DEVELOPED DRAINAGE MAP

SHEET NUMBER:

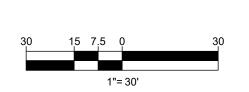




E&S CONTROL PLAN - PHASE I



E&S CONTROL PLAN - PHASE II



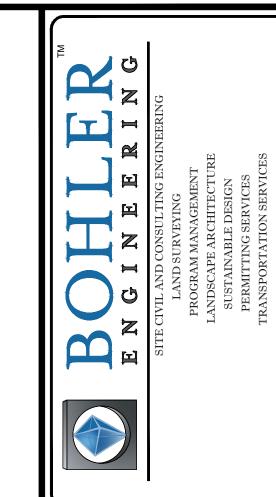
#### VIRGINIA UNIFORM CODING SYSTEM

	SOILS TABL	E
SYMBOL	SOIL NAME	SLOPES
4B	ARCOLA SILT LOAM	2-7%

	•	IKGII	FOR EROSION AND SEC		PRACTICES PRACTICES		
NO.	TITLE	KEY	SYMBOL	NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	SAF	SAF N	3.32	PERMANENT SEEDING	PS	PS
3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	CE)	3.35	MULCHING	MU	MU
3.05	SILT FENCE	SF	<u></u>	3.38	TREE PRESERVATION AND PROTECTION	TP	TP
3.07	STORM DRAIN INLET PROTECTION	IP)					

### EROSION CONTROL NOTES

- 1. REFER TO EROSION CONTROL DETAILS FOR ADDITIONAL EROSION NOTES & DETAILS.
- 2. THIS PLAN TO BE UTILIZED FOR EROSION PURPOSES ONLY.
- 3. SEE SHEET 11 FOR SEQUENCE OF CONSTRUCTION.



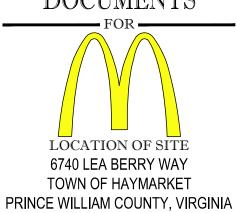
REVISIONS						
DATE	COMMENT	BY				
03/27/2020	PER TOWN COMMENTS	JQR				
10/23/2020	PER TOWN COMMENTS	JQR				
	DATE 03/27/2020					



NOT APPROVED FOR CONSTRUCTION

PROJECT No.: DRAWN BY: CHECKED BY: DATE: SCALE:

PROP.
SITE PLAN
DOCUMENTS





28 BLACKWELL PARK LANE, SUITE 20
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
Fax: (540) 349-0321
VA@BohlerEng.com



SHEET TITLE:
EROSION AND
SEDIMENT
CONTROL PLAN
PHASE I & II
SHEET NUMBER:

THIS PROPERTY IS LOCATED AT 6740 LEA BERRY WAY IN HAYMARKET, VIRGINIA. THE PURPOSE OF THIS PROJECT IS TO EXPAND THE DRIVE-THRU, CLOSE AN ENTRANCE, AND RECONFIGURE THE PARKING LOT. THE TOTAL AREA DISTURBED IS 0.47 ACRES UPON COMPLETION, AND THERE IS NO INCREASE IN IMPERVIOUS AREA.

THE EXISTING 0.98 ACRE SITE IS CURRENTLY A RESTAURANT, DRIVE THRU, AND PARKING LOT. CONSTRUCTION ENTRANCE, SILT FENCE, TREE PROTECTION AND INLET PROTECTION WILL SERVE AS PERIMETER CONTROLS TO PROTECT THE EXISTING VEGETATION OUTSIDE THE LIMITS OF CLEARING AND TO PREVENT SEDIMENT FROM EXITING THE SITE. THE SLOPES ON THE SITE ARE BETWEEN 1% AND 15%, AND GENERALLY DRAIN TO THE PERIMETER OF THE SITE INTO AN EXISTING CONCRETE STORM SYSTEM.

THIS PROPERTY IS BORDERED TO THE NORTH BY WASHINGTON STREET (VA ROUTE 55), TO THE EAST BY LEA BERRY WAY, TO THE SOUTH BY A COMMERCIAL SHOPPING CENTER AND PARKING LOT, AND TO THE WEST BY A GAS OFF-SITE AREAS:

NO OFFSITE AREAS REQUIRED FOR EXPORT OF MATERIALS ARE ANTICIPATED WITH THE PROJECT. IF EXCAVATED MATERIAL IS GENERATED, IT SHALL BE DISPOSED OF IN A LAWFUL MANNER AND THE CONTRACTOR SHALL COORDINATE THE HAUL ROUTE WITH THE TOWN OF HAYMARKET CIVIL INSPECTOR. ANY OFFSITE AREAS SHALL BE APPROVED AND PERMITTED BY THE TOWN OF HAYMARKET PRIOR TO USE.

PER NRCS SOILS INFORMATION, THE SOILS ON-SITE ARE 4B (ARCOLA SILT LOAM, 2 TO 7 PERCENT SLOPES), HYDROLOGIC SOIL GROUP C.

NO KNOWN CRITICAL AREAS SUCH AS STEEP SLOPES, CHANNELS, OR UNDERGROUND SPRINGS HAVE BEEN IDENTIFIED WITHIN THE PROPOSED LIMITS OF DISTURBANCE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE APPROPRIATE SAFETY MEASURES AND EROSION CONTROLS DURING THE CONSTRUCTION ACTIVITIES.

#### **EROSION AND SEDIMENT CONTROL MEASURES:**

UNLESS OTHERWISE NOTED ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED. ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE

SPECIFIC EROSION AND SEDIMENT MEASURES UTILIZED IN THIS PROJECT INCLUDE THE FOLLOW

1. SAFETY FENCE - 3.01 - A PROTECTIVE BARRIER INSTALLED TO PREVENT ACCESS TO AN EROSION CONTROL MEASURE. SAFETY FENCE SHALL BE INSTALLED AROUND THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS TO PREVENT PEDESTRIAN TRAFFIC ON SITE.

RACK SHALL BE INSTALLED. DRIVERS OF THE CONSTRUCTION VEHICLES WILL BE REQUIRED TO WASH THEIR SILT FENCE - 3.05 - A PROTECTIVE BARRIER TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM

TEMPORARY CONSTRUCTION ENTRANCE - 3.02 - A TEMPORARY CONSTRUCTION ENTRANCE WITHOUT A WASH

DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PRESENT SEDIMENT FROM LEAVING 4. STORM INLET PROTECTION - 3.07 - A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A

STORM DRAIN DROP INLET OR CURB INLET PERMANENT SEEDING - 3.32 - ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED ARES BY PLANTING SEED TO REDUCE EROSION AND DECREASE SEDIMENT YIELD, IMPROVED WILDLIFE HABITAT, ENHANCE NATURAL BEAUTY AND TO PERMANENTLY STABILIZE DISTURBED AREAS IN A MANNER THAT IS ECONOMICAL, ADAPTABLE TO SITE CONDITIONS, AND ALLOWS SELECTION OF THE MOST APPROPRIATE PLANT

MULCHING - 3.35 - APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE.

TREE PROTECTION - 3.38 - PROTECTION OF DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY.

#### SEQUENCE OF CONSTRUCTION:

- 1. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS.
- 2. PRIOR TO ANY EARTH DISTURBANCE, CONTRACTOR TO CONTACT THE TOWN AND SCHEDULE A PRE-CONSTRUCTION MEETING.
- 3. CONTRACTOR SHALL CONTACT JURISDICTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- 4. INSTALL STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN ON SHEET 10).
- INSTALL INLET PROTECTION ON EXISTING INLETS AND GUTTERBUDDY'S ALONG GUTTER PAN (AS SHOWN ON
- 6. INSTALL TREE PROTECTION.
- 7. BEGIN REMOVING THE EXISTING PAVEMENT, CURB, AND SURROUNDING DISTURBED AREAS.
- 8. START CONSTRUCTION OF PROPOSED DRIVE-THRU, BEGIN GRADING THE DISTURBED AREAS AND PREPARING
- START CONSTRUCTION OF CURB AND GUTTER, DRIVE-THRU ISLANDS, AND SIDEWALK.
- 10. TEMPORARILY STABILIZE, THROUGHOUT CONSTRUCTION IMMEDIATELY FOLLOWING THE COMPLETION OF THE R-5: NOT APPLICABLE. THERE ARE NO PROPOSED EARTHEN STRUCTURES. MOST RECENT LAND DISTURBING/GRADING ACTIVITY, ANY DISTURBED AREAS, INCLUDING MATERIAL STOCKPILES THAT ARE SCHEDULED OR LIKELY TO REMAIN INACTIVE FOR 7 DAYS OR MORE.
- 11. IMMEDIATELY, PERMANENTLY STABILIZED AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
- 12. INSTALLED COMPACTED SUB BASE AND POUR CONCRETE FOR SIDEWALKS AND THE DRIVE-THRU. MILL AND OVERLAY PARKING LOT IN NECESSARY AREAS.
- 13. INSTALL TOP COAT OF ASPHALT AND TIE TO DRIVE-THRU CONCRETE IN NECESSARY AREAS.
- 14. INSTALL APPROPRIATE PROTECTION DEVICES FOR PAVED AREAS AS WORK PROGRESSES.
- 15. COMPLETE GRADING AND INSTALLATION OF PERMANENT STABILIZATION OVER ALL AREAS, IF NECESSARY 16. OBTAIN CONCURRENCE FROM THE TOWN INSPECTOR THAT THE SITE HAS BEEN FULLY STABILIZED AND ALL
- CONSTRUCTION HAS BEEN COMPLETED. THEN: WITHIN 30 DAYS REMOVE ALL REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
- REMOVE ALL TEMPORARY CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIALS AND DEBRIS

#### STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF TEMPORARY MEASURES. NOTE: THE CONTRACTOR SHALL CONTRACT WITH A GEOTECHNICAL ENGINEER FOR SPECIFIC CONSTRUCTION RECOMMENDATIONS REGARDING MATERIALS AND TESTING. MAINTENANCE PROGRAM:

- MADE AS NEEDED. SAFETY FENCE SHALL BE CHECKED REGULARLY FOR WEATHER-RELATED OR OTHER DAMAGE. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY. CARE SHOULD BE TAKEN TO SECURE ALL ACCESS POINTS (GATES) AT THE END OF EACH WORKING DAY.
- TEMPORARY CONSTRUCTION ENTRANCE 3.02 THE MEASURE SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL AND REPAIRS MADE AS NEEDED. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS MS-9: WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIAL DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
- SILT FENCE 3.05 SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL, ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCES RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY. THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIERS. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
- 4. STORM DRAIN INLET PROTECTION 3.07 THE MEASURE SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL AND REPAIRS MADE AS NEEDED. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- 5. PERMANENT SEEDING 3.32 ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.
- 6. MULCHING 3.35 ALL MULCHES AND SOIL COVERINGS SHOULD BE INSPECTED PERIODICALLY (PARTICULARLY AFTER RAINSTORMS) TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED. NETS AND MATS SHOULD BE INSPECTED AFTER RAINSTORMS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. INSPECTIONS SHOULD TAKE PLACE UP UNTIL GRASSES ARE FIRMLY ESTABLISHED. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE; REPAIR AS NEEDED.
- NO AREA SHALL BE LEFT DENUDED FOR A PERIOD LONGER THAN 7 DAYS WITHOUT CONSTRUCTION ACTIVITY
- NO UNPROTECTED, UNDISTURBED AREA SHALL DRAIN TO ROADWAY PAVEMENTS SUCH THAT THE SUBBASE, BASE, OR WEARING SURFACE ARE CONTAMINATED BY SILT TRAPPED AT LOW POINTS.
- ADJACENT ROADWAYS AND ENTRANCES WILL BE KEPT CLEAN FROM ACCUMULATED DEBRIS AT ALL TIMES.
- 10. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.

#### PERMANENT STABILIZATION:

PERMANENT STABILIZATION SHALL BE PROVIDED ONCE ALL CONSTRUCTION ACTIVITIES ARE COMPLETE. THE SPECIFICATIONS AND DETAILS FOR THE PERMANENT STABILIZATION ARE INCLUDED ON THIS SHEET. PERMANENT STABILIZATION INCLUDES PERMANENT SEEDING, SODDING, AND MULCHING. THE SITE CONTRACTOR SHALL USE THE STABILIZATION METHOD AS DEEMED MOST APPROPRIATE FOR EACH GIVEN PERVIOUS AREA.

#### **STORMWATER RUNOFF CONSIDERATIONS:**

THERE IS NO INCREASE IN IMPERVIOUS AREA FOR THE SITE AND DRAINAGE DIVIDES ARE GENERALLY BEING MAINTAINED. FLOWS ARE NON-EROSIVE, AND EXISTING SYSTEM IS ADEQUATE, THEREFORE NO FURTHER STORMWATER CONSIDERATIONS ARE REQUIRED.

THERE ARE NO CALCULATIONS REQUIRED FOR THE PROPOSED EROSION AND SEDIMENT CONTROLS.

- 1. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLANS SHALL BE MAINTAINED ON SITE AT ALL PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A
- SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN 3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES AND INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY TO PREVENT EROSION AND
- SEDIMENTATION AS DETERMINED BY THE CITY OF CHESTER. 4. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN
- 5. ALL AREAS TO BE PAVED MAY BE STABILIZED BY INSTALLATION OF BASE AND SUBBASE MATERIALS INSTEAD OF
- THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING MUD FROM TRUCKS AND/OR OTHER EQUIPMENT PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAR THE STREETS AND TAKE WHATEVER MEASURES NECESSARY TO ENSURE THAT THE STREETS ARE
- MAINTAINED IN A CLEAN AND DUST-FREE CONDITION AT ALL TIMES. 7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE WORK IN SUCH A MANNER AS TO PREVENT RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT THE WASHING OF ANY TOPSOIL OR DEBRIS ONTO ADJACENT PROPERTIES.
- PRIOR TO FORECAST OF A LARGE STORM EVENT, THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AND ENSURE THEY ARE FUNCTIONAL. ANY OPEN TRENCHES SHALL BE TEMPORARILY BACKFILLED.

EROSION AND SEDIMENT CONTROL NOTES

MS-1: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BÉ APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.

R-1: TEMPORARY SOIL STABILIZATION WILL BE APPLIED TO NEWLY GRADED AND DENUDED AREAS THAT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 7 DAYS. PERMANENT STABILIZATION WILL BE APPLIED WITHIN 14 DAYS TO DENUDED AREAS WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED FOR LONGER

MS-2: DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

#### R-2: NOT APPLICABLE

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

#### R-3: PERMANENT VEGETATION WILL BE PROVIDED FOR ALL DENUDED AREAS.

MS-4: SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

#### R-4: INLET PROTECTION IS PROPOSED AT EXISTING INLETS NEAR DISTURBED AREAS AND WILL BE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE COMMENCES.

MS-5: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION

MS-6: SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.

A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE (3) ACRES. B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE (3) ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL AT A MINIMUM MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

#### R-6: NOT APPLICABLE. THERE ARE NO PROPOSED SEDIMENT TRAPS

MS-7: CUT AND FILL SLOPES SHALL BE ASSIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

R-7: NOT APPLICABLE. THERE ARE NO CUT OR FILL SLOPES PROPOSED WITH THESE IMPROVEMENTS.

1. SAFETY FENCE - 3.01 - THE MEASURE SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL AND REPAIRS MS-8: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

R-8: CONCENTRATED RUN-OFF IS NOT EXPECTED DURING CONSTRUCTION, ANY CONCENTRATED RUN-OFF

ENCOUNTERED DURING CONSTRUCTION WILL BE CONTAINED WITHIN AN ADEQUATE, CHANNEL, FLUME OR SLOPE

R-9: IT IS NOT ANTICIPATED HOWEVER, CONTRACTOR SHALL ENSURE ADEQUATE MEASURES ARE PROVIDED

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

R-10: INLET PROTECTION IS PROPOSED TO PREVENT UNFILTERED WATER TO ENTER THE CONVEYANCE SYSTEM.

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

ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT

POSSIBLE DURING CONSTRUCTION. NON-ERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF

#### R-11: NOT APPLICABLE, NO STORMWATER CONVEYANCE CHANNEL OR PIPES ARE PROPOSED. MS-12: WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE

CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NON-ERODIBLE COVER MATERIALS. R-12: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

MS-13: WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN A SIX (6) MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NON-ERODIBLE MATERIALS SHALL

### R-13: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

R-14: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

MS-14: ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE

MS-15: THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

#### R-15: NOT APPLICABLE. THE PROPOSED WORK DOES NOT CROSS A LIVE WATERCOURSE.

MS-16: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA

- A. NO MORE THAN 500 LINEAR FEET OF TRENCH SHALL BE OPENED AT ONE TIME
- B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT
- FLOWING STREAMS OR OFFSITE PROPERTY. D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- E. RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

#### R-16: CONTRACTOR TO ENSURE THAT STANDARDS ARE MET SHOULD UTILITIES BE RELOCATED.

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

R-17: ANY AND ALL MATERIAL OR DEBRIS TRACKED ONTO A PUBLIC OR PRIVATE ROAD SURFACE WILL BE REMOVED THOROUGHLY AT THE END OF EACH DAY BY THE CONTRACTOR. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROLLED DISPOSAL AREA. THE EXISTING ASPHALT ENTRANCE AS SPECIFIED IN THIS SITE PLAN SET WILL BE UTILIZED AS THE SITE CONSTRUCTION ENTRANCE AND WILL BE MAINTAINED IN ACCORDANCE WITH THIS STATEMENT.

MS-18: ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS FURTHER EROSION AND SEDIMENTATION.

#### R-18: TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE REMOVED UPON APPROVAL BY THE TOWN INSPECTORS AND ANY AREA DISTURBED BY THE REMOVAL WILL BE IMMEDIATELY STABILIZED.

B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER

MS-19: PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:

A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED

(1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR

(2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO (2) YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR

(B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF À TEN (10) YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS BY THE USE OF A TWO (2) YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS: AND PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN (10) YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM

C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL

(1) IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN (10) YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO (2) YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN (10) YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES: OR

(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO (2) YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN (10) YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR

(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURE WHICH IS SATISFACTORY TO THE PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM

E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT. F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN

). THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.

PERFORMING THE MAINTENANCE G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATERS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A

SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR

J. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

K ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO

I. DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; II. DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24- HOUR STORM: AND

III. REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT

L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT

IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 10.1-562 OR 10.1-570 OF THE ACT.

M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 10.1-561 A

OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS. UNLESS SUCH LAND DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS. N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA

MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.

R-19: THE PROPOSED IMPROVEMENTS CAUSE A NEGLIGIBLE INCREASE IN STORMWATER DRAINING TO THE EXISTING INLETS. AS SUCH, IT IS THE OPINION OF THE ENGINEER THAT THE EXISTING CLOSED STORM SYSTEM IS ADEQUATE TO CONVEY STORMWATER

#### GENERAL EROSION & SEDIMENT CONTROL NOTES

SOURCE: TABLE 6-1, CHAPTER 6, VIRGINIA EROSION & SEDIMENT CONTROL

- ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL <u>HANDBOOK</u> AND VIRGINIA REGULATIONS 4VAC50-30 EROSION AND SEDIMENT CONTROL
- THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3 ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING AND GRADING.
- ES-4 A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLANS SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED, OFFSITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- ES-6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8 DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING
- ES-9 THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE
- ES-10 SEEDING OPERATIONS SHALL BE INITIATED WITHIN 7 DAYS AFTER REACHING FINAL GRADE OR UPON SUSPENSION OF GRADING OPERATIONS FOR ANTICIPATED DURATION OF GREATER THAN 30 DAYS OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIC AREA.
- ES-11 PERMANENT VEGETATION SHALL NOT BE CONSIDERED ADEQUATELY STABILIZED UNTIL THE VEGETATION IS UNIFORM IN HEIGHT, THICK ENOUGH TO PREVENT EROSION AND MATURE

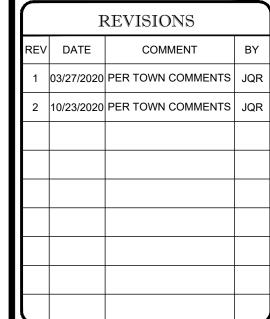
OF DUST FROM EXPOSED SOILS WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY

ES-12 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING SURFACE AND AIR MOVEMENT

PROBLEMS, OR HARM ANIMAL OR PLANT LIFE.

7







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LOCATION OF SITE 6740 LEA BERRY WAY TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA



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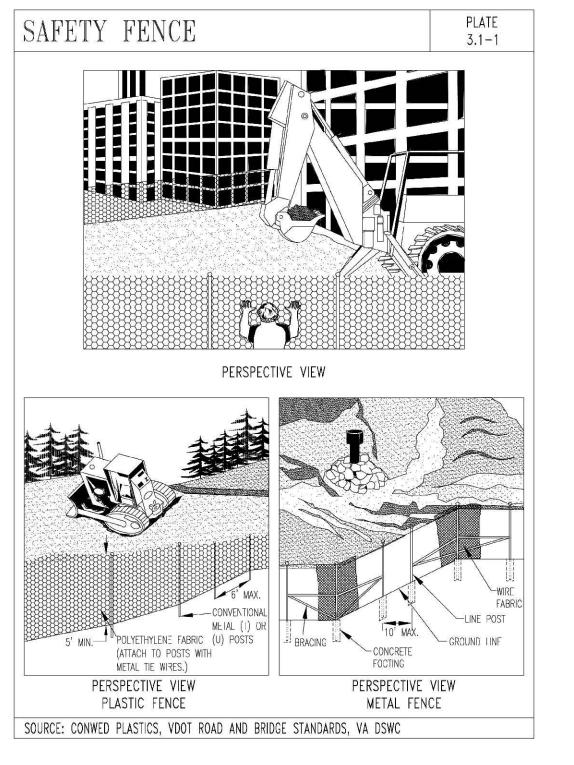


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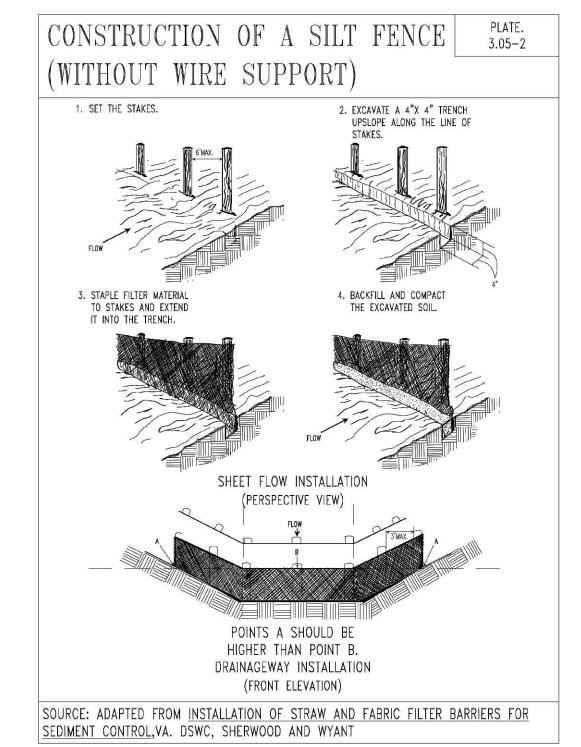
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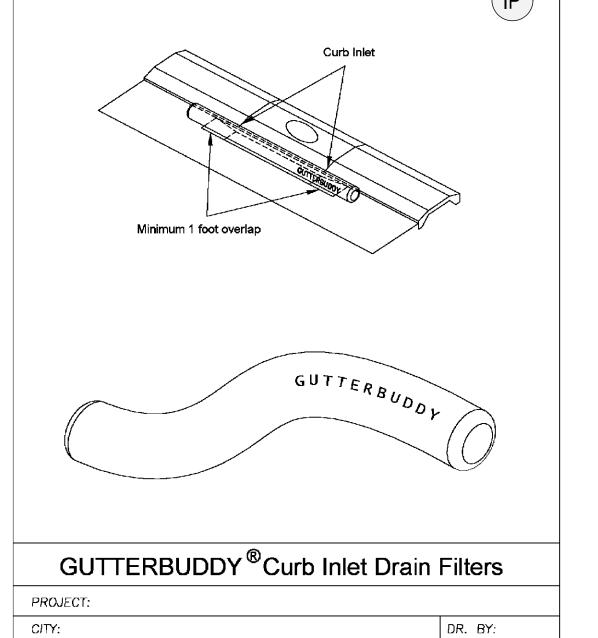
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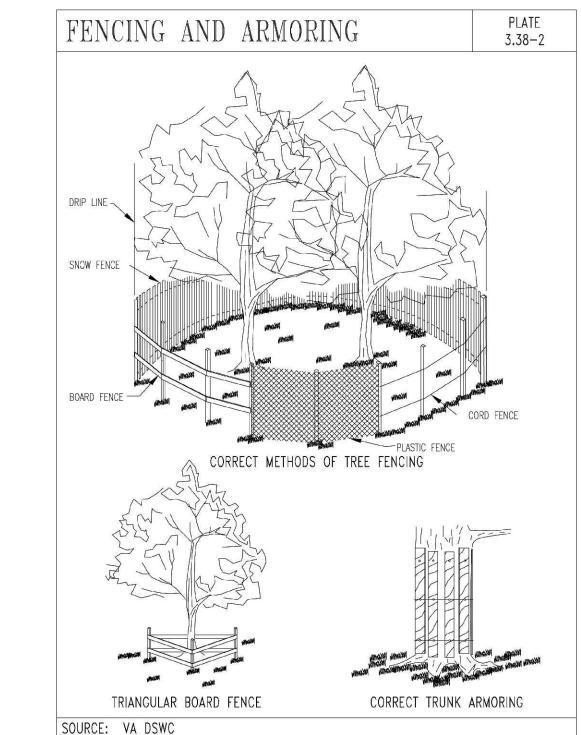
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> PROP. SITE PLAN DOCUMENTS

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LOCATION OF SITE 6740 LEA BERRY WAY TOWN OF HAYMARKET

BOHLER BURGINEERING

PRINCE WILLIAM COUNTY, VIRGINIA

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**EROSION AND** SEDIMENT CONTROL DETAILS

SHEET NUMBER:

**TABLE 3.33-A** TYPE OF SOD AVAILABLE IN VIRGINIA AND RECOMMENDED USES Kentucky Bluegrass: Adapted to the Northern Piedmont and Mountain Regions. Individual varieties selected must make up not less than 10%, nor more than 35% of the total mixture on a weight basis. All varieties must be certified. Selections can be made from Category I alone or various combinations of Categories I, II and III, as noted. <u>Category I</u> - Recommended Kentucky Bluegrass Varieties 65% - 100% A-34, Abbey, Aspen, Asset, Baron, Blacksburg, Bristol, Cheri, Chateau, Classic, Coventry, Georgetown, Glade, Haga, Julia, Liberty, Loft's 1757, Merit, Midnight, Monopoly, Plush, Princeton 104, Rugby, Suffolk, Victa Category II - Special use varieties. If used, must contain at least 65% Category I varieties Shade Tolerant Bristol, Columbia, Georgetown, Glade, Midnight Low-Maintenance Tolerant Columbia, Georgetown, Monopoly, Ram I, Touchdown, Victa

Category III -

Promising Kentucky Bluegrass - Limited

\*\*(continued)\*\*

performance data or seed availability

Dawn, Estate, Freedom, Kelly

TABLE 3.33-A (CONTINUED) TYPE OF SOD AVAILABLE IN VIRGINIA AND RECOMMENDED USES Tall Fescue: Adapted to the entire state. Recommended Tall Fescue Varieties: 90-100% Amigo, Apache, Bonanza, Chieftain, Finelawn 5GL, Mesa, Rebel II, Shenandoah, Tribute Promising Tall Fescues Certified Arriba, Austin, Avanti, Aztec, Cochise, Crossfire, Eldorado, Hubbard 87, Jaguar II, Maverick II, Monarch, Olympic II, Phoenix, Safari, Shortstop, Sundance, Taurus, Thoroughbred, Titan, Tradition, Vegas, Winchester, Wrangler Kentucky bluegrass: Baron, Cheri, Columbia, Monopoly, Nassau, Ram I, Victa Bermudagrass: Tufcote is adapted to the Richmond-Danville-Newport News triangle. Midiron may be used east of Roanoke and south of Charlottesville. Tifgreen and Tifway may be used to the east and south of Richmond. Vamont may be used east of Roanoke and at lower elevations in southwestern Virginia. Certified Midiron, Tifgreen#, Tifway, Tifway II, Tufcote and Vamont Zoysiagrass: This sod performs best in southeastern Virginia. Meyer, Emerald# Note: Common Bermudagrass is not recommended for sod production. \* Only recommended in southeastern Virginia.

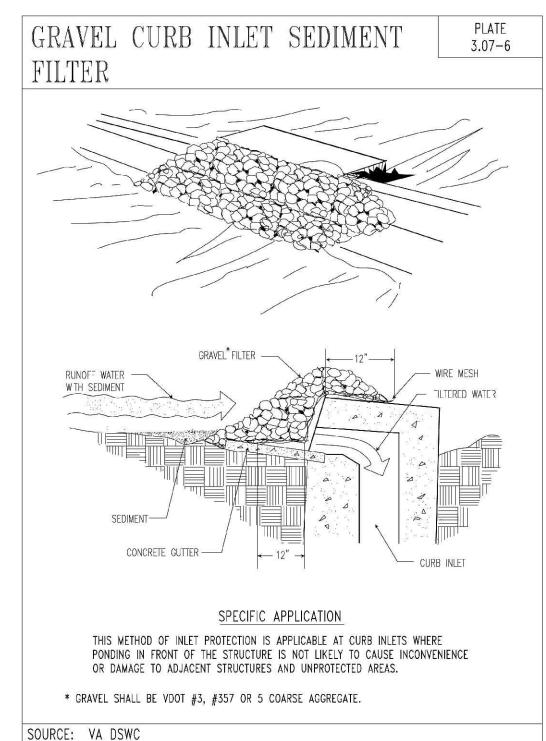
1991 Virginia Turfgrass Variety Recommendations, Virginia Crop

Improvement Association

SIDE ELEVATION EXISTING GROUND 75' MN. --- WASHRACK (OPTIONAL) ∠ VDOI #1 COURSE TO SEDIMENT AGGREGATE TRAPPING DEVICE \* MUST EXTEND FULL WIDTH OF INGRESS AND EGRESS PLAN VIEW FILTER CLOTH -SECTION A-A REINFORCED CONCRETE SECTION B-B SOURCE: ADAPTED FROM 1983 MARYLAND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL, AND VA. DSWC

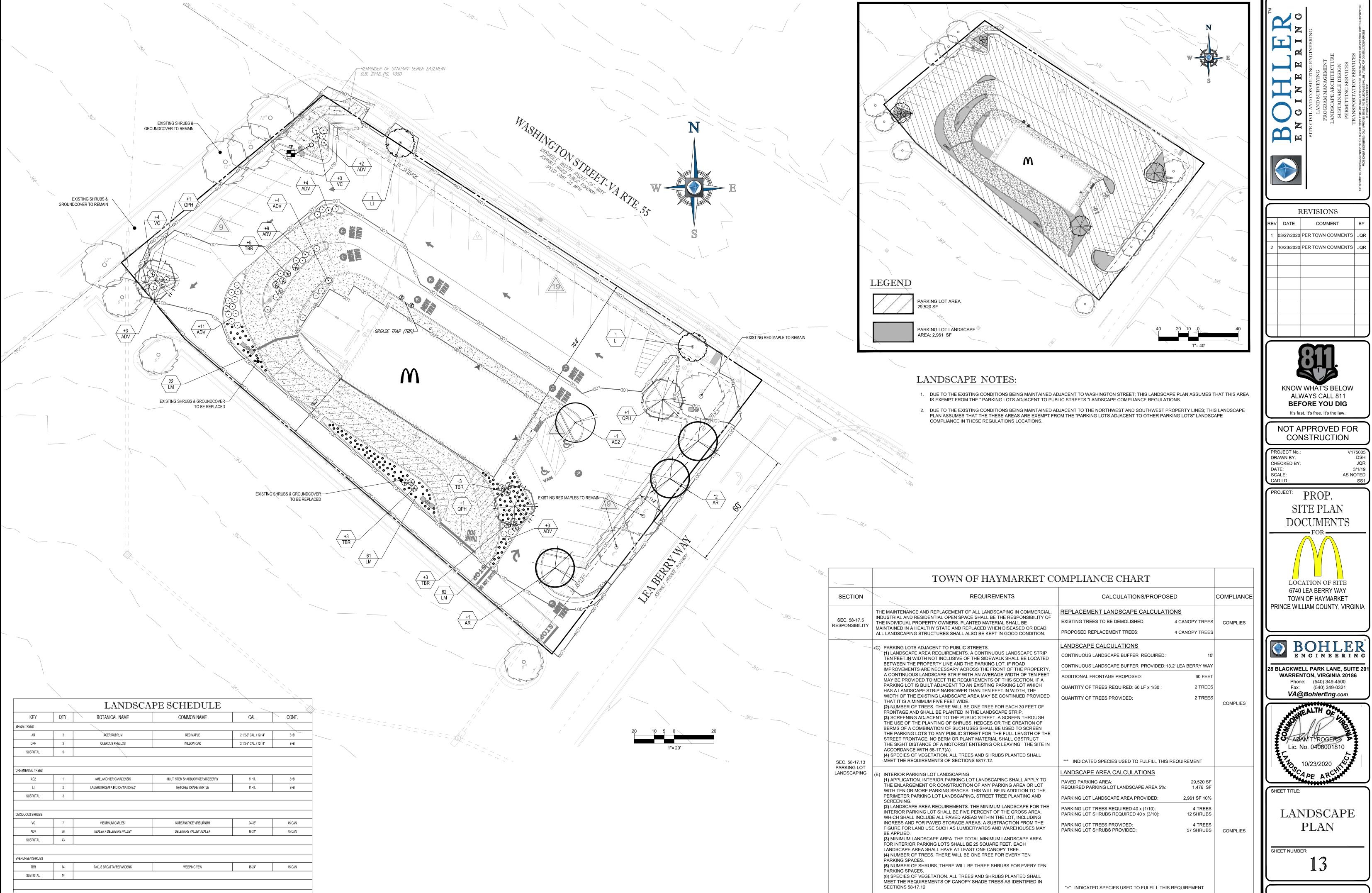
**TABLE 3.35-A** ORGANIC MULCH MATERIALS AND APPLICATION RATES RATES: MULCHES: NOTES: Per Acre Per 1000 sq. ft. Free from weeds and coarse Straw or Hay 1½ - 2 tons 70 - 90 lbs. (Minimum 2 matter. Must be anchored. Spread with mulch blower tons for or by hand. winter cover) Do not use as mulch for Fiber Mulch Minimum 1500 lbs. winter cover or during hot, dry periods.\* Apply as Cut or shredded in 4-6" lengths. Air-dried. Do not Corn Stalks 4 - 6 tons 185 - 275 lbs. use in fine turf areas. Apply with mulch blower or by 185 - 275 lbs. Free of coarse matter. Air-Wood Chips 4 - 6 tons dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand. 50 - 70 cu. 1-2 cu. yds. Free of coarse matter. Air-Bark Chips dried. Do not use in fine Shredded turf areas. Apply with mulch blower, chip handler, Bark or by hand. \* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.

Source: Va. DSWC



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8.1.a

- A. GENERAL ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.
- B. TOPSOIL NATURAL, FRIABLE, LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 4.5-7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE
- C. LAWN ALL DISTURBED AREAS ARE TO BE TREATED WITH A MINIMUM SIX INCH (6") THICK LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT. AND SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED WITHIN THE SOIL EROSION AND SEDIMENT CONTROL NOTES. 1.1. LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.
- 1.2. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS. 1.3. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.
- D. MULCH THE MULCH AROUND THE PERIMETER OF THE BUILDING SHALL BE A 3" LAYER OF DOUBLE SHREDDED BLACK CEDAR MULCH ONLY. ALL OTHER AREAS SHALL BE MULCHED WITH A 3" LAYER OF DOUBLE SHREDDED DARK BROWN HARDWOOD BARK MULCH, UNLESS OTHERWISE STATED ON THE LANDSCAPE PLAN.
- E. FERTILIZER 1.1. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER, FERTILIZER SHALL BE STORED IN A
- WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE 1.2. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY

## PLANT MATERIAL

- 1.1. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION
- 1.2. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL
- 1.3. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION. 1.4. TREES WITH ABRASION OF THE BARK, SUN SCALDS. DISFIGURATION OR FRESH CUTS OF LIMBS OVER 11/4".
- WHICH HAVE NOT BEEN COMPLETELY CALLUSED, SHALL BE REJECTED.PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. 1.5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH: WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF
- DISEASE, INSECTS, PESTS, EGGS OR LARVAE. 1.6. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE
- CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE. 1.7. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE
- LONGEST BRANCH 1.8. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL

- A. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED. STOCKPILED OR DISPOSED OF
- B. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

# A. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG

TO PREVENT SHOCK OR DECLINE

- OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN. B. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE TRUNK. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL N. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED
- CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

- CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR 15 FEET FROM THE TRUNK OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.
- B. A FORTY-FIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY 'VISI-FENCE' OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL
- WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.
- D. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

# 6. SOIL MODIFICATIONS

- A. CONTRACTOR SHALL ATTAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY
- B. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.
- THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS
- PERFORMED BY A CERTIFIED SOIL LABORATORY. 1.1. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF
- OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5 1.2. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE
- 1.3. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

# FINISHED GRADING

- A. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE
- B. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT
- CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT. D. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND
- AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

# A. CONTRACTOR SHALL PROVIDE A SIX INCH (6") THICK MINIMUM LAYER OF TOPSOIL. OR AS DIRECTED BY THE

- LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS.
- B. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAY BE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.
- . CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE
- ALL PLANTING AND LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE TILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA): 1.1. 20 POUNDS 'GROW POWER' OR APPROVED EQUAL
- E. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN CONDITIONS.

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1.2. 20 POUNDS NITRO-FORM (COURSE) 38-0-0 BLUE CHIP

## <u>9. PLANTING</u> A. INSOFAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.

- B. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE.
- C. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.

PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.

- D. ALL PLANTING CONTAINERS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.
- E. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS. MAKING NECESSARY ADJUSTMENTS AS DIRECTED
- F. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:
- 1.1. PLANTS: MARCH 15 TO DECEMBER 15 1.2. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1
- G. PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.
- H. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPLANT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY. THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON
- ACFR RUBRUM PLATANUS X ACERIFOLIA **BETULA VARIETIES** POPULOUS VARIETIES CARPINUS VARIETIES PRUNUS VARIETIES CRATAEGUS VARIETIES PYRUS VARIFTIES KOELREUTERIA **QUERCUS VARIETIES** LIQUIDAMBER STYRACIFLUA TILIA TOMENTOSA LIRIODENDRON TULIPIFERA ZELKOVA VARIETIES
- PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, WITH THE WIDTH TWICE THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH
- THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY: • 1 PART PEAT MOSS
- 1 PART COMPOSTED COW MANURE BY VOLUME • 3 PARTS TOPSOIL BY VOLUME
- 21 GRAMS 'AGRIFORM' PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:
  - A) 2 TABLETS PER 1 GALLON PLANT B) 3 TABLETS PER 5 GALLON PLANT

WATERING SPECIFICATIONS AS LISTED HEREIN.

- C) 4 TABLETS PER 15 GALLON PLANT D) LARGER PLANTS: 2 TABLETS PER 1/2" CALIPER OF TRUNK
- J. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.
- K. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL
- L. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE.
- M. GROUND COVER AREAS SHALL RECEIVE A 1/4" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.
- EXISTING STRUCTURES AND SIDEWALKS. O. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED
- AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB. P. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE

# 10. TRANSPLANTING (WHEN REQUIRED)

- A. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT. B. IF PLANTS ARE TO BE STOCKPILED BEFORE REPLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL,
- C. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.
- D. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE. E. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.
- F. IF TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

- A. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.
- B. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.
- C. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL. BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH

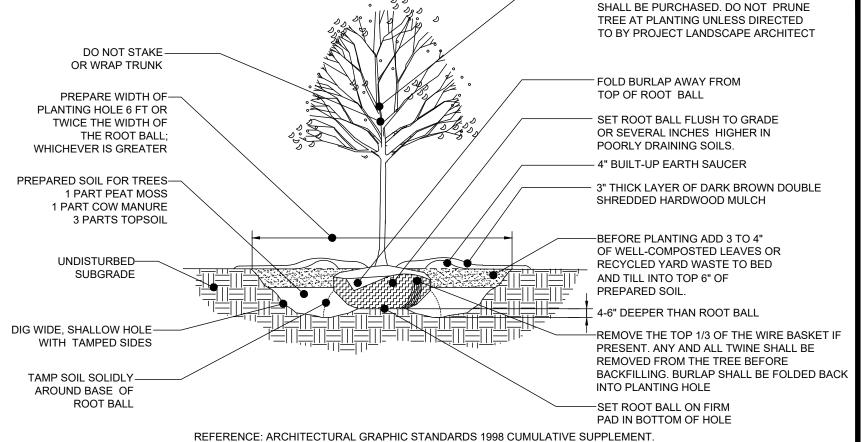
- A. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF ONE (1) YEAR FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.
- B. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.
- C. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND THROUGHOUT THE 90 DAY MAINTENANCE PERIOD AS SPECIFIED HEREIN. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.
- D. LAWNS SHALL BE MAINTAINED THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

- A. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.
- B. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

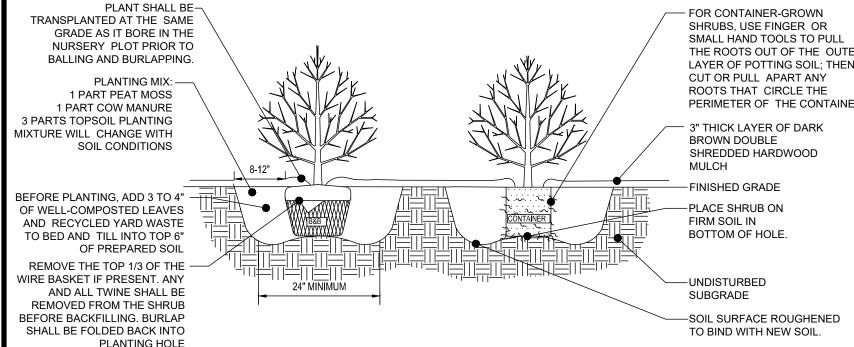
#### ONLY TREES WITH ONE MAIN LEADER SHALL BE PURCHASED DO NOT PRUNE TREE AT PLANTING UNLESS DIRECTED TO BY PROJECT LANDSCAPE ARCHITECT DO NOT STAKE OR-FOLD BURLAP AWAY FROM TOP OF WRAP TRUNK ROOT BALL SET ROOT BALL FLUSH TO GRADE OR PREPARE WIDTH OF SEVERAL INCHES HIGHER IN PLANTING HOLE 6 FT OR TWICE THE WIDTH POORLY DRAINING SOILS. OF THE ROOT BALL - 4" BUILT-UP EARTH SAUCER WHICHEVER IS GREATER 3" THICK LAYER OF DARK BROWN DOUBLE SHREDDED HARDWOOD MULCH PREPARED SOIL FOR TREES 1 PART PEAT MOSS 1 BEFORE PLANTING ADD 3 TO 4" PART COW MANURE 3 OF WELL-COMPOSTED LEAVES PARTS TOPSOIL OR RECYCLED YARD WASTE TO BED AND TILL INTO TOP 6" OF PREPARED SOIL. 4-6" DEEPER THAN ROOT BALL UNDISTURBED-SUBGRADE REMOVE THE TOP 1/3 OF THE WIRE BASKET IF PRESENT. ANY AND ALL TWINE SHALL BE DIG WIDE, SHALLOW HOLE-REMOVED FROM THE TREE BEFORE WITH TAMPED SIDES BACKFILLING. BURLAP SHALL BE FOLDED TAMP SOIL SOLIDLY AROUND-**BACK INTO PLANTING HOLE** BASE OF ROOT BALL SET ROOT BALL ON FIRM PAD IN BOTTOM OF HOLE REFERENCE: ARCHITECTURAL GRAPHIC STANDARDS 1998 CUMULATIVE SUPPLEMENT.

# EVERGREEN TREE PLANTING DETAIL

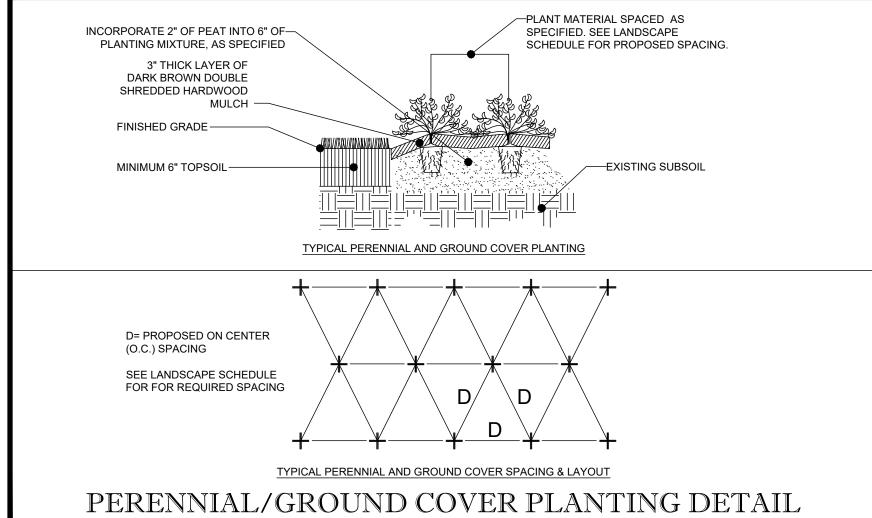
ONLY TREES WITH ONE MAIN LEADER



# DECIDUOUS TREE PLANTING DETAIL



## REFERENCE: ARCHITECTURAL GRAPHIC STANDARDS 1998 CUMULATIVE SUPPLEMENT DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL NOT TO SCALE



NOT TO SCALE

# SEEDING SPECIFICATIONS

## MATERIAL:

NOTE: TREE STAKING TO BE REMOVED

DO NOT WRAP TRUNK

(1/2" DIA.)

2 PER TREE

EXISTING GRADE-

1 PART PEAT MOSS

3 PARTS TOPSOIL

1 PART COW MANURE

REINFORCED RUBBER HOSE-

PREPARED SOIL FOR TREES-

UNDISTURBED SUBGRADE-

TAMP SOIL SOLIDLY AROUND-

BASE OF ROOT BALL

12 GAUGE GALVANIZED WIRE GUYS TWISTED-

2" DIA. HARDWOOD STAKES 2/3 TREE HT.-

AFTER 2 GROWING SEASONS

- 1.1. SEED MIXTURE MUST BE COMPRISED OF THE FOLLOWING VARIETIES AND AT THE SPECIFIED COMPOSITION:
- 1.1.1. 80% TURF TYPE TALL FESCUE SEED 10% - KENTUCKY BLUEGRASS SEED
- 1.1.3. 10% ANNUAL RYE GRASS SEED
- 1.2. INSTALLATION RATES

THROUGH THE STRAW LAYER.

SEED: LAWN SEED SHOULD BE APPLIED AT A RATE OF 7 LBS/1,000 SF LIME: AGRICULTURAL OR PELLETIZED LIME SHOULD BE APPLIED AT SPECIFIED RATE ACCORDING TO SOIL ANALYSIS OR 2 000 LBS PER ACRE

(46 LBS/1.000 SF) IF NO SOIL ANALYSIS IS PERFORMED

- FERTILIZER: COMMERCIAL GRADE 12-20-12 SHOULD BE APPLIED AT A RATE OF 250 LBS PER PER ACRE (5.8 LBS/ 1,000 SF) LIQUID OR DRY LIME: LIQUID LIME SHOULD BE APPLIED AT A RATE OF 2.5 GALLONS PER ACRE OR NEUTRA LIME DRY APPLIED AT A RATE OF 80LBS
- PER ACRE IN AREAS OF ACIDIC SOILS TO ASSURE GERMINATION AND INITIAL ESTABLISHMENT MULCH: WHEAT, OAT, OR BARLEY STRAW MULCH SHALL BE APPLIED AT A RATE OF 80 LBS PER 1,000 SF. DO NOT INSTALL MULCH SO THICK THAT IT COMPLETELY COVERS THE GROUND. TOPSOIL SHOULD BE VISIBLE

## 2. EXECUTION AND PREPARATION:

- 2.1. A SOIL ANALYSIS SHOULD BE PERFORMED TO ASSESS THE FERTILITY NEEDS AND PH OF THE SOIL. ALL INSTALLATION AREAS SHOULD BE PREPARED TO AGRICULTURAL STANDARD RECOMMENDED BY THE DEPARTMENT OF AGRICULTURE WITHIN THE STATE WHERE THE WORK IS BEING PERFORMED. AGRICULTURAL LIME OR PELLETIZED LIME SHOULD BE ADDED DURING THE GROUND PREPARATION STAGE AT THE RATE RECOMMENDED ACCORDING TO SOIL ANALYSIS.
- 2.2. ALL WEEDS AND UNDESIRABLE PLANTS SHOULD BE REMOVED BEFORE PLANTING BY METHOD OF SPRAYING OR TILLAGE. A NON-SELECTIVE HERBICIDE CAN BE SPRAYED ONE MONTH PRIOR TO PLANTING TO KILL ALI WEEDS AND UNDESIRABLE PLANTS THAT MAY COMPETE WITH THE NEW SEEDLINGS. TILLAGE CAN BE PERFORMED AT LEAST 4 WEEKS PRIOR TO PLANTING AND AGAIN 2 WEEKS AFTER THE INITIAL TILLAGE. THE TILLAGE PROCEDURE CAN BE ADVANTAGEOUS IF LARGE AMOUNTS OF ORGANIC
- DEBRIS ARE PRESENT ON THE INSTALL ATION AREAS 2.3. PRIOR TO SEEDING, AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED
- OF ALL DEBRIS LARGER THAN 2" DIAMETER. 2.4. AREAS TO BE PLANTED SHOULD BE ROLLED WITH A CULTI-PACKER. TURF ROLLER, OR SIMILAR DEVICE TO FIRM THE SEEDBED. THIS PROCESS HELPS ACHIEVE THE DESIRED FIRMNESS. SOIL SHOULD BE FIRMED TO 85% OF

# 3. INSTALLATION:

- 3.1. STRICTLY COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS
- AND RECOMMENDATIONS 3.2. EQUIPMENT USED TO SPREAD SEED SHOULD HAVE SUFFICIENT CAPACITY TO HOLD AND AGITATE SEED EVENLY IN A CYCLONE OR DROP PATTERN. HYDROSEEDING MAY ALSO BE PERFORMED WITH THE ENGINEER/ARCHITECT'S APPROVAL.
- 3.3. SEED MAY NEED TO BE APPLIED AT A HALF RATE IN ALTERNATING DIRECTIONS TO ENSURE AN EVEN COVERAGE OF SEED
- LIQUID LIME OR NEUTRA LIME DRY SHOULD BE TOPICALLY APPLIED TO AREAS WITH ACIDIC SOILS TO ASSIST THE SEED GERMINATION AND VEGETATION GROWTH DURING THE FIRST 90 DAYS. LIQUID LIME SHOULD BE APPLIED AT A RATE OF 2.5 GALLONS PER ACRE OR NEUTRA LIME DRY AT A RATE OF 80LBS PER ACRE.
- 3.5. FERTILIZER SHOULD BE SPREAD EVENLY OVER THE SEEDED AREAS AT THE RECOMMENDED RATE DETERMINED BY THE INITIAL SOIL ANALYSIS. IF NO SOIL ANALYSIS IS AVAILABLE EVENLY APPLY 12-20-12 STARTER FERTILIZER AT A RATE OF 250LBS PER ACRE (5.8LBS/1000 SQUARE FEET).
- 3.6. A ROLLED EROSION CONTROL PRODUCT CAN BE APPLIED OVER THE TOP OF SEED IN STEEP SLOPE SITUATIONS TO HELP PREVENT SEED FROM WASHING AND REINFORCE VEGETATION THROUGH ESTABLISHMENT. (FOLLOW REC PRODUCT MANUFACTURER RECOMMENDATIONS.)

# 4. MAINTENANCE

OTHER HAZARDS

- 4.1. FREQUENT LIGHT IRRIGATION WILL NEED TO BE APPLIED TO SEEDED AREAS IF NO NATURAL RAIN EVENTS HAVE OCCURRED WITHIN 2 WEEKS OF SEEDING. AFTER SEED GERMINATION HAS OCCURRED AND PLANTS ARE VISIBLE THE FREQUENCY OF IRRIGATION CAN BE CUT BACK WITH HEAVIER
- APPLICATION RATES. 4.2. REPAIR ALL SEED WASHINGS AND EROSION.

# OWNER MAINTENANCE RESPONSIBILITIES

- UPON OWNER'S (OR OWNER CONTRACTOR'S) COMPLETION OF LANDSCAPING WORK, THE OWNER IS FULLY RESPONSIBLE FOR ALL FUTURE MAINTENANCE, CARE, UPKEEP, WATERING, AND TRIMMING OF ALL INSTALLED VEGETATION, PLANTS, TREE, BUSHES, SHRUBS, GRASSES, GRASS, ORNAMENTAL PLANTS AND FLOWERS, FLOWERS, GROUND COVER, AND LANDSCAPING, INCLUDING ALL LANDSCAPE ISLANDS AND AREAS ADJACENT OR PART OF THE LANDSCAPED AREAS. THIS RESPONSIBILITY INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:
- TREES ADJACENT TO WALKWAYS AND AREAS OF PEDESTRIAN TRAFFIC MUST BE MAINTAINED TO ASSURE THAT ANY BRANCHES MUST BE LIMBED UP TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PEDESTRIAN SURFACES) OR PRUNED BACK TO AVOID ANY INTERFERENCE WITH THE TYPICAL PATH OF TRAVEL
- TREES WITHIN VEHICULAR SIGHT LINES, AS ILLUSTRATED ON THE LANDSCAPE PLAN, ARE TO BE TRIMMED TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PAVED, TRAVELED SURFACES), OR AS OTHERWISE INDICATED ON THE PLANS.
- VEGETATIVE GROUND COVER, SHRUBS AND ORNAMENTAL PLANTS AND GRASSES MUST BE TRIMMED SO THAT NO PORTION OF THE PLANT EXCEEDS 30 INCHES ABOVE GRADE (OF ALL PAVED, TRAVEL SURFACES) ALONG AND WITHIN THE SIGHT LINES OF PARKING LOTS AND INGRESS-EGRESS WAYS.

FALLEN PLANT FLOWERS, FRUIT, SEEDS AND DEBRIS DROPPINGS ARE TO BE REMOVED IMMEDIATELY

FROM VEHICULAR AND PEDESTRIAN TRAFFIC AREAS TO PREVENT TRIPPING, SLIPPING OR ANY

THESE REQUIREMENTS DO NOT AFFECT THE PLANT LIFE GUARANTEES THE LANDSCAPE CONTRACTOR IS REQUIRED TO PROVIDE.

REVISIONS FV DATE COMMENT 03/27/2020 PER TOWN COMMENTS | JQF 10/23/2020 PER TOWN COMMENTS JO

-ONLY TREES WITH ONE MAIN LEADER

SHALL BE PURCHASED. DO NOT PRUNE

TO BY PROJECT LANDSCAPE ARCHITECT

TREE AT PLANTING UNLESS DIRECTED

-SET ROOT BALL FLUSH TO GRADE

OR SEVERAL INCHES HIGHER IN

POORLY DRAINING SOILS.

-3" THICK LAYER OF DARK

HARDWOOD MULCH

OF PREPARED SOIL

BROWN DOUBLE SHREDDED

-4" BUILT-UP EARTH SAUCER

BACK INTO PLANTING HOLE

-SET ROOT BALL ON FIRM

PAD IN BOTTOM OF HOLE

TREE PLANTING ON SLOPE DETAIL

NOT TO SCALE

BEFORE PLANTING ADD 3 TO 4" OF

REMOVED FROM THE TREE BEFORE

WELL-COMPOSTED LEAVES OR RECYCLED

YARD WASTE TO BED AND TILL INTO TOP 6

-REMOVE THE TOP 1/3 OF THE WIRE BASKET

IF PRESENT. ANY AND ALL TWINE SHALL BE

BACKFILLING. BURLAP SHALL BE FOLDED

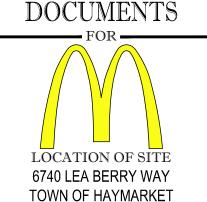


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DRAWN BY CHECKED BY:

SCALE:

AS NOTED



PRINCE WILLIAM COUNTY, VIRGINIA



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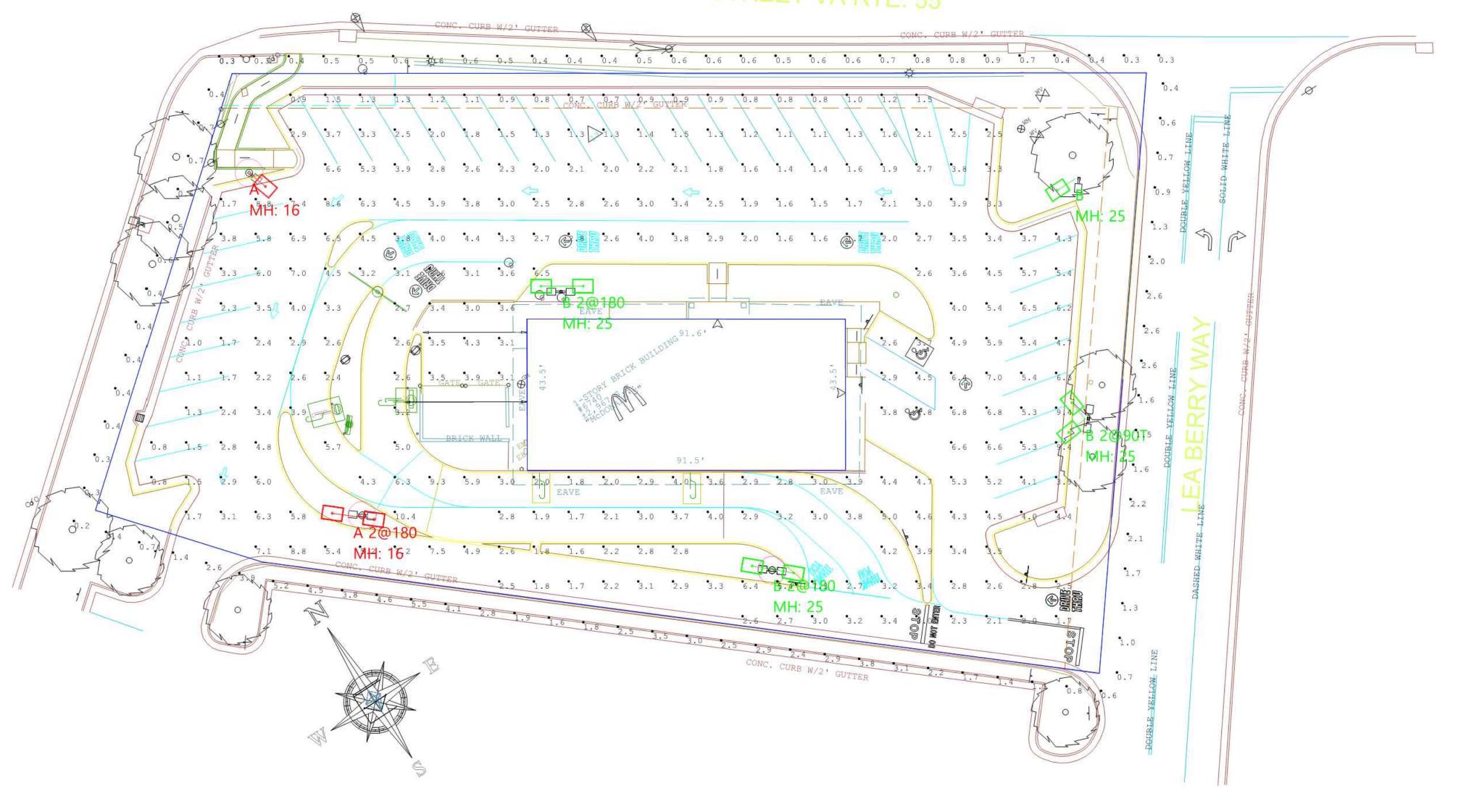
LANDSCAPE NOTES AND DETAILS

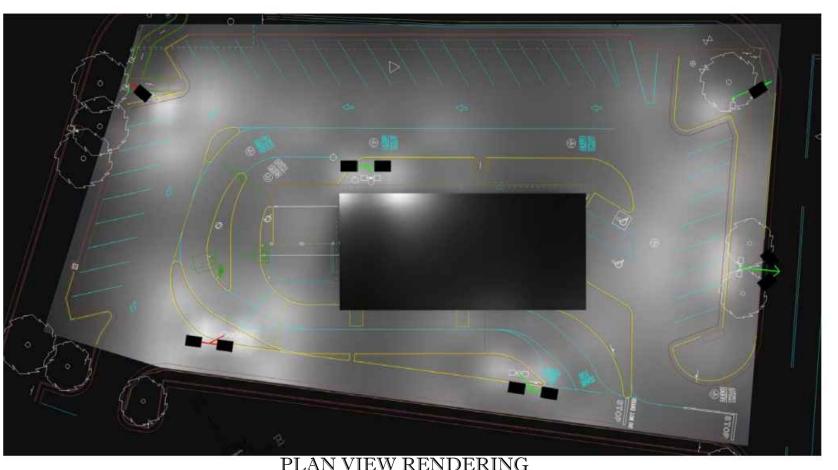
# THE FOOTCANDLE LEVELS AS SHOWN ARE BASED ON THE FOLLOWING

CRITERIA. ANY SUBSTITUTIONS IN SPECIFIED FIXTURES OR CHANGES TO LAYOUT WILL AFFECT LIGHTING LEVELS SHOWN AND WILL NOT BE THE RESPONSIBILITY OF SECURITY LIGHTING.

Calculation Summary											
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min				
PAVED SURFACE READINGS	Illuminance	Fc	3.41	10.4	0.7	4.87	14.86				
PROPERTY LINE READINGS	Illuminance	Fc	1.41	5.5	0.2	7.05	27.50				

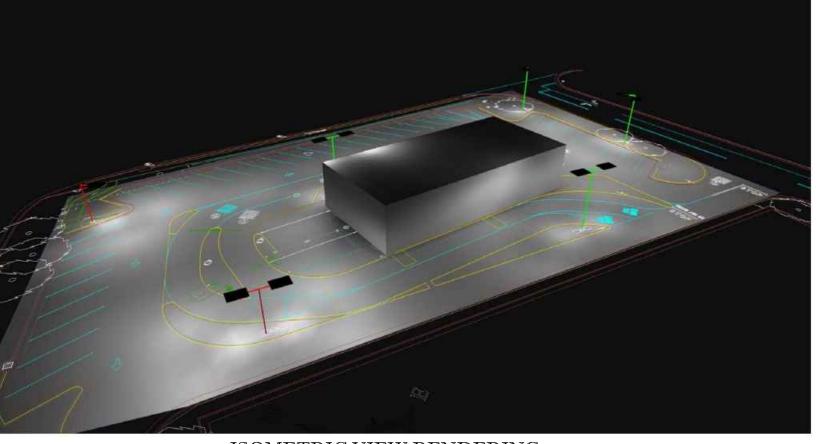
# WASHINGTON STREET-VA RTE. 55





PLAN VIEW RENDERING

NOT TO SCALE



ISOMETRIC VIEW RENDERING NOT TO SCALE

# FOR REFERENCE ONLY

2100 Golf Road, Suite 460, Rolling Meadows, IL 60008 1-800-544-4848

\*\* - SPECIFY COLOR

Luminaire Schedule Label Arrangement LLF Description Lum. Watts EPA | Mtg Height Pole Type 0.900 VP-L-80NB-180-5K-T4 SINGLE 180 SES-13-40-1-GL-TA-xx (4") 1.2 | 16 0.900 VP-L-80NB-180-5K-T4 SES-13-40-1-GL-TA-xx (4") A 2@180 BACK-BACK 180 2.4 16 SINGLE 0.900 VP-L-80NB-180-5K-T4 180 1.2 25 EXISTING 0.900 VP-L-80NB-180-5K-T4 2.4 25 EXISTING BACK-BACK B 2090T 2 0 90 DEGREES 0.900 VP-L-80NB-180-5K-T4 EXISTING 2.4 25

\* PROJECT WIND LOAD CRITERIA BASED ON: ASCE 7-10 WIND SPEEDS (3-SEC PEAK GUST MPH) 50 YEAR MEAN RECURRENCE INTERVAL

> Wind Load 90MPH Allowed EPA 14.2 (New Poles Only)

THIS DRAWING MEETS OR EXCEEDS McDONALDS CURRENT ILLUMINATION SPECIFICATIONS OF A 3-4 FOOTCANDLE AVERAGE, UNLESS SUPERSEDED BY OTHER REQUIREMENTS.

 THIS LIGHTING DESIGN IS BASED ON INFORMATION SUPPLIED BY OTHERS TO SECURITY LIGHTING SYSTEMS. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS. 3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE. 4. THIS LAYOUT MAY NOT MEET TITLE 24 OR LOCAL ENERGY REQUIREMENTS. IF THIS LAYOUT NEEDS TO E COMPLIANT WITH TITLE 24 OR OTHER ENERGY REQUIREMENTS, PLEASE CONSULT FACTORY WITH SPECIFIC DETAILS REGARDING PROJECT REQUIREMENTS SO THAT REVISIONS MAY BE MADE TO THE DRAWING.

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES SCALE 1"=20' 0" rawn by BV POINT-BY-POINT FOOTCANDLE PLOT FOR MCDONALDS 6740 LEA BERRY WAY

HAYMARKET, VA NATIONAL STORE NUMBER

25126 DRAWING NUMBER

0/20/2020 41886A-Rev2.AGI

Packet Pg. 183

REVISIONS

03/27/2020 PER TOWN COMMENTS JQF

10/23/2020 PER TOWN COMMENTS | JQI

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**BEFORE YOU DIG** 

It's fast. It's free. It's the law.

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CONSTRUCTION

JQR

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DRAWN BY:

SCALE:

CAD I.D.

CHECKED BY:

REV DATE COMMENT



**SES POLES** LIGHTING SQUARE STEEL STRAIGHT POLES (SSP)

# Ordering Information

Catalog Number ft m	e Ati	Nominal	Wind Load Rating						Bolt							
		Shaft Dim.	-70 MPH	80 MPH	90 MPH	100 MPH	120 MPH	Wall Thick.	Circle (Sug.)	Bolt Circle	Bolt Sq.	Base Plate (sq.)	Anchor Bolt Size	Bolt Proj.	Pole Wt (lbs)	
SES-10-40-1-XX-XX	10	3.0	4"	25	25	22	17	11.8	.119*	11"	8-11"	5.6-7.8"	10.25x0.75*	3/4x30x3*	4"	91
SES-10-50-1-XX-XX	10	3.0	5"	25	25	25	23	15	.119*	11"	10-13.5*	7.1-9.5*	12×1*	3/4x30x3*	4"	106
SES-12-40-1-XX-XX	12	3.7	4"	25	21	16	13.0	8.8	.119*	11"	8-11"	5.6-7.8*	10.25x0.75*	3/4x30x3*	4"	104
SES-12-50-1-XX-XX	12	3,7	5"	25	25	23	18	11.8	,119*	11"	10-13.5*	7.1-9.5*	12×1*	3/4x30x3*	4"	122
SES-14-40-1-XX-XX	14	4.3	4"	24	18	14.2	11.0	6.8	.119°	11"	8-11"	5.6-7.8*	10.25x0.75*	3/4x30x3*	4"	116
SES-14-50-1-XX-XX	14	4.3	5"	25	24	19	14.4	9.0	.119"	11"	10-13.5*	7.1-9.5*	12x1*	3/4x30x3"	4"	138
SES-16-40-1-XX-XX	16	4.9	4"	16	12.2	9.0	6.8	3.8	,119*	11"	8-11"	5.6-7.8*	10.25x0.75*	3/4x30x3*	4"	128
SES-16-50-1-XX-XX	16	4.9	5"	22	16	12.2	9.2	5.2	.119*	11"	10-13.5*	7.1-9.5"	12x1*	3/4x30x3*	4"	153
SES-16-50-7-XX-XX	16	4.9	5"	25	25	24	19	12.4	.179*	11"	10-13.5*	7.1-9.5"	12x1*	3/4x30x3*	4"	214
SES-18-40-1-XX-XX	18	5.5	4"	13.8	10.0	7.2	5.2	2.4	.119*	11"	8-11"	5.6-7.8"	10.25x0.75*	3/4x30x3*	4"	147
SES-18-50-1-XX-XX	18	5.5	5"	18	13.2	9.6	7.0	3.4	.119*	21"	10-13.5*	7.1-9.5*	12×1*	3/4x30x3*	4"	175
SES-18-50-7-XX-XX	18	5.5	5"	25	25	20	16	9.8	.179*	12"	8.5-12"	6-8.4*	12×1*	3/4x30x3*	4"	243
SES-20-40-1-XX-XX	20	6.1	4"	11.4	8.0	5.6	3.8	1.4	,119*	11"	8-11"	5.6-7.8*	10.25x0.75*	3/4x30x3*	4"	160
SES-20-50-1-XX-XX	20	6.1	5"	15	10.8	7.6	5,2	2.0	.119*	11"	10-13.5"	7.1-9.5*	12x1*	3/4x30x3*	4"	191
SES-20-50-7-XX-XX	20	6.1	5"	25	23	17	13.2	7.6	.179°	11"	10-13.5*	7.1-9.5°	12x1*	3/4x30x3"	4"	266
SES-25-40-1-XX-XX	25	7.6	4"	7.0	4.2	2.2	NR:	NR	.119°	12"	8-11"	5.6-7.8*	10.25x0.75*	3/4x30x3"	4"	190
SES-25-50-1-XX-XX	25	7.6	5"	9.6	6.0	3.4	1.4	NR:	.119*	11"	10-13.5*	7.1-9.5*	12x1*	1x36x4"	4"	231
SES-25-50-7-XX-XX	25	7.6	5"	22	15	11.2	7.8	3.4	.179"	11"	10-13.5*	7.1-9.5*	12x1*	1x36x4"	4"	324
SES-30-50-7-XX-XX	30	9.1	5"	14.2	9,4	6.0	3.4	NR:	.179*	12"	10-13.5*	7.1-9.5*	12x1"	1x36x4"	4"	398

Stocked Poles **Bolt Circle Diagram** 

4" Square Pole 5" Square Pole Measure diagonal from the center of the bolt to rice 10.5"

(11" Bolt Circle)

(Min. B.C. = 10")

(Max B.C. = 12.5") (10" Bolt Circle) (Min. B.C. = 8") (MAX. B.C. - 11")

All listed SES poles use 27701349904 paper template It's the contractors' responsibilty to ensure that new poles will fit existing bases

# LIGHTING"

## **SES POLES** SQUARE STEEL STRAIGHT POLES (SSP)

#### Poles should initially be selected, according to lighting application POLE SELECTION PROCEDURE needs, and second, but equally important, according to the structural With an understanding of the parameters for pole selection, you requirements imposed on the pole by the lighting fixtures, can follow this simple step-by-step procedure and, with confidence, bracketry and wind. Before attempting to make this selection, it select a pole to meet your particular requirements. would be helpful to have an understanding of the terminology, such as steady or sustained wind velocity, gust velocity, EPA, 1. Determine the site location and steady wind velocity by referring to

special wind region, and maximum weight. Then a step-by-step the appropriate isotach map. If the steady wind exceeds those listed, procedure can be followed to select the proper pole for your consult factory. The isotach maps are provided for reference only. particular requirements. Consult local authorities to determine the maximum velocities in STEADY WIND OR SUSTAINED WIND VELOCITY

next page for the wind velocity in your location. Isotach maps are 3. Total the **weight** of the luminaires and bracketry. provided for reference only. Consult local authorities to determine

the maximum velocities in your area. weight tables shown for the style, material, and height pole required. The maximum allowable must be equal to or exceed the Our isotach maps represent two different methods of addressing wind speed gusts. We have used the 'fastest-mile' wind speeds for years.

These have a 1.3 gust factor in the calculations to account for gusting. POLE SELECTION CONCERNS As technology has improved the ability to accurately measure wind speeds for short durations, the gusts associated to a sustained wind speed have lessened. We are now moving toward '3-second-gust' wind you consult qualified professionals for verification of overall system speed maps. The results are typically higher steady/sustained wind design, site suitability, foundation considerations and applicable speeds with lower factors for gusts. The gust factors are different depending on the wind speed map selected.

EFFECTIVE PROJECTED AREA Effective Projected Area (EPA) is the exposed surface area of a fixture and bracket multiplied by a shape factor which varies depending on the shape of the fixture and bracket. For example, a large rectangular fixture will present more resistance to the wind than will a round or cylindrical shape.

to occur in a specific location. Refer to isotach wind map on the

SPECIAL WIND REGIONS Many locations such as mountainous areas, coastal areas and areas or any items that can add excessive wind or mechanical load to surrounding the Great Lakes exhibit wind velocities considerably higher than the surrounding areas. Consult local authorities to determine maximum wind velocities and select equipment accordingly.

MAXIMUM WEIGHT This is the maximum allowable weight based on EPA loads. The weight is based on 30 pounds per square foot of EPA. Weight EPA rating of the pole.

This is the maximum steady wind velocity expressed in MPH likely 2. Total the EPA for the required luminaires and bracketry. 4. Compare steps 2 and 3 with the maximum allowable EPA and

Caution: These selection methods are guidelines only. Hubbell Lighting assumes no responsibility for selection and recommends

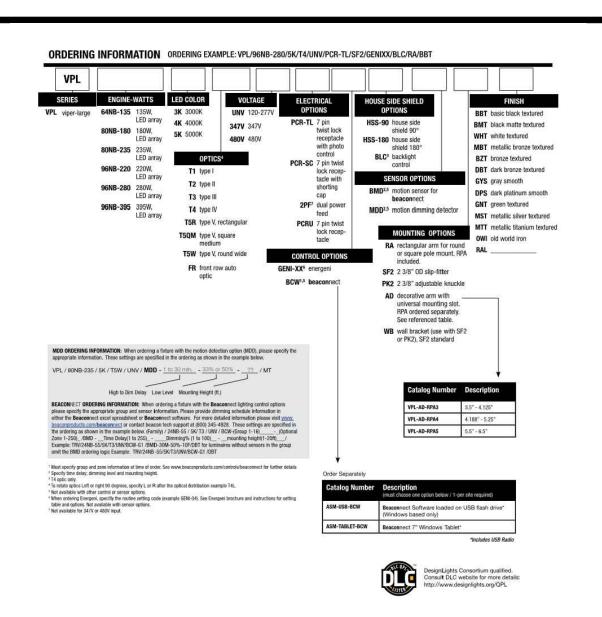
Maintenance: The facility owner's/manager's regular scheduled maintenance program must include initial and regular follow-up inspections for structural damage, broken welds, tampering, nut loosening, missing wire covers, dangling electrical wiring, internal deflection and vibration for all lighting poles. Immediate repair or replacement may be necessary.

Overloading: Do not overload poles by attaching flags, banners,

Observation: Installation and local area conditions can dramatically affect lighting pole performance. Excessive vibration may result from some wind and mounting conditions. Only individuals with local knowledge, who have observed or inspected the site can effectively evaluate site specific issues. Consult the factory for information on vibration dampers, special corrosion, foundation settlement, excessive exceeding the 30 pound per foot of EPA may reduce the allowable shaft deflection and vibration for all lighting poles. Immediate repair or replacement may be necessary.

Web: <u>www.securitylighting.com</u>
2100 Golf Road, Suite 460, Rolling Meadows, IL 60008-4704
Phone: 1-800-LIGHT IT, 1-800-544-4848, Fax: 847-279-0642 Il Rights Reserved • Specifications subject to change without notice. • Printed in U.S.A. • SLS0017 02/17



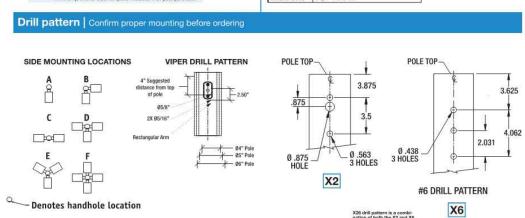


BEACON

Due to our continued efforts to improve our products, product specifications are subject to change without notice.



Anchorage | Order as a separate line item Base Detail 3/4" x 30" x 3" Anchor Bolt TAB-30M38 qty: 4 1" x 36" x 4" Anchor Bolt TAB-36M38 qty: 4 1" x 42" Anchar Bolt TAB-30M38 qty: 4

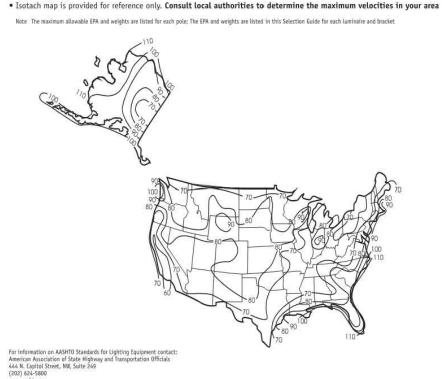




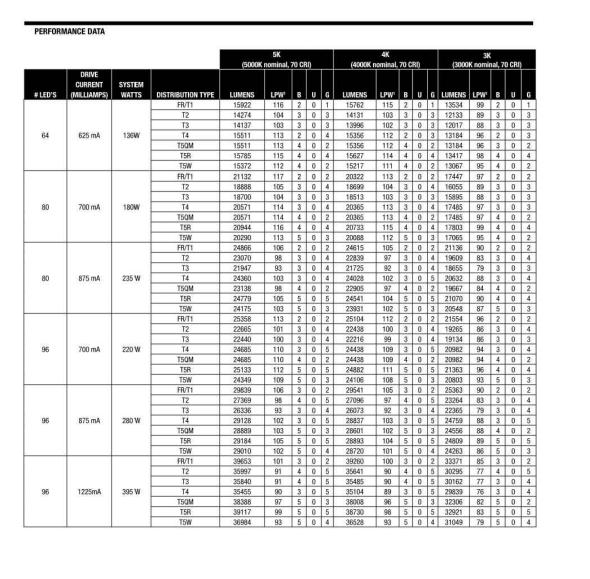
**SES POLES** SQUARE STEEL STRAIGHT POLES (SSP)

## Wind Speed STEADY/SUSTAINED WIND VELOCITY (Miles Per Hour, for KM/hr - multiply values by 1.61)

 Hawaii has an 80 MPH wind velocity · Puerto Rico has a 95 MPH wind velocity • Use caution in determining wind velocities in special wind areas such as mountainous areas, coastal areas and areas surrounding

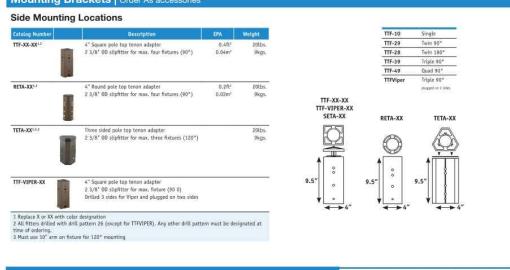


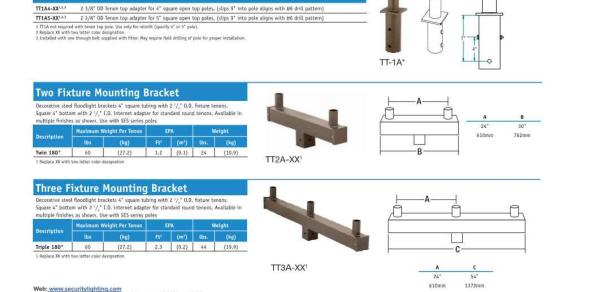
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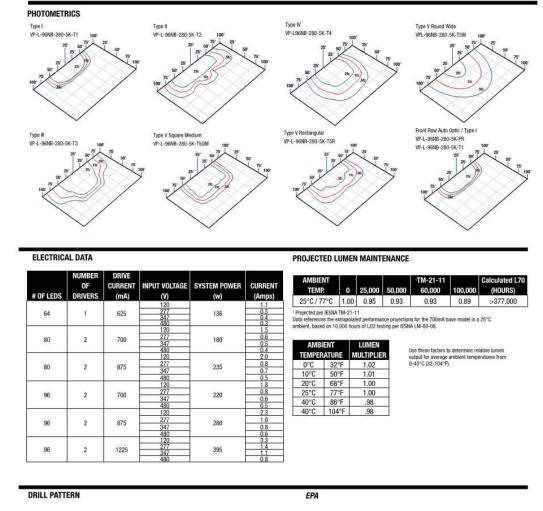
\*\*Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application

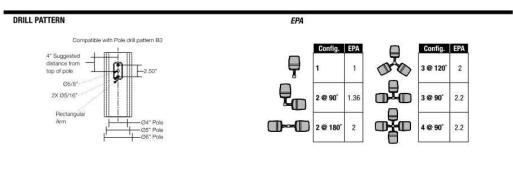






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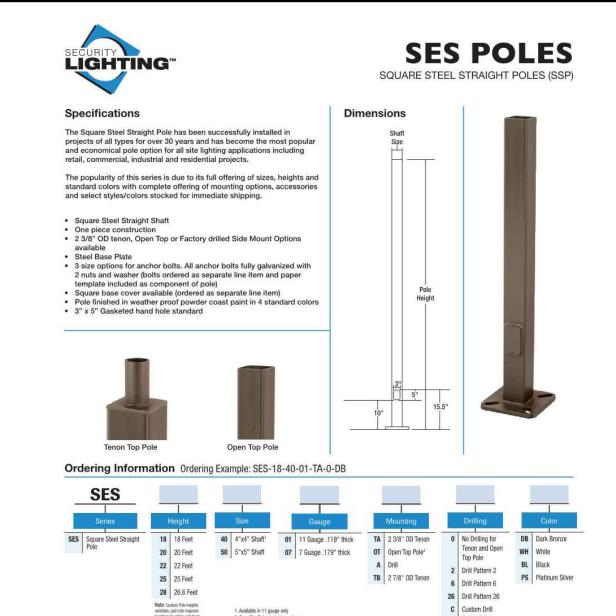










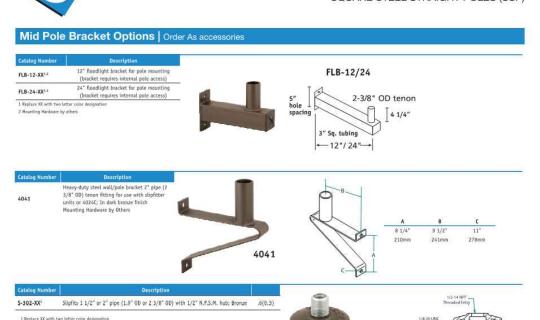


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B4 Drill Pattern Viper

B3 Drill Pattern Viper



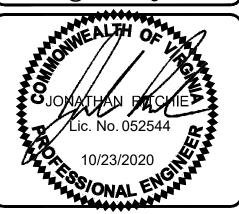


LOCATION OF SITE 6740 LEA BERRY WAY TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

**DOCUMENTS** 

# BOHLER ENGINEERING

28 BLACKWELL PARK LANE, SUITE 20<sup>,</sup> **WARRENTON, VIRGINIA 20186** Phone: (540) 349-4500 Fax: (540) 349-0321 VA@BohlerEng.com



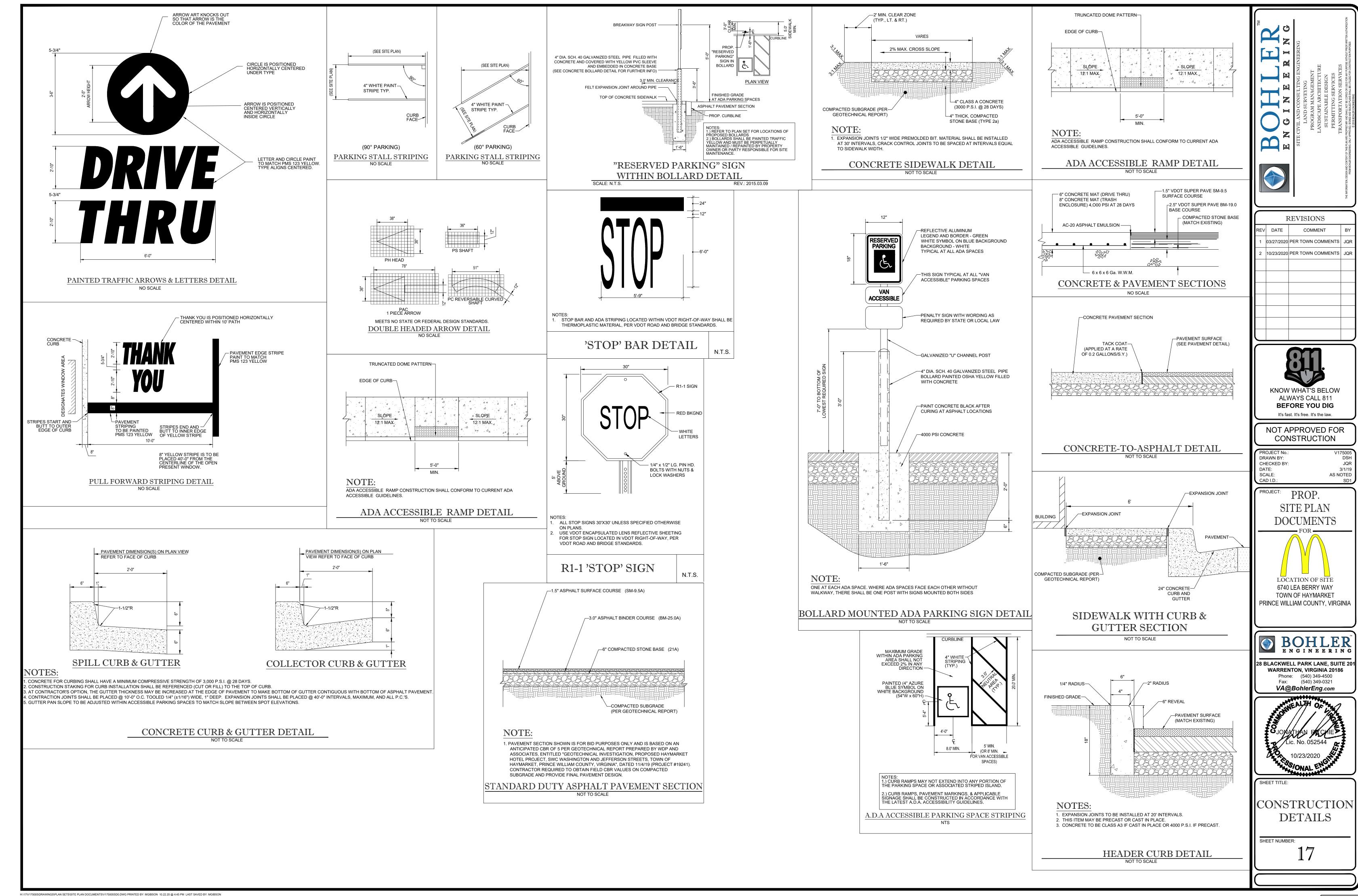
SHEET TITLE LIGHTING DETAILS

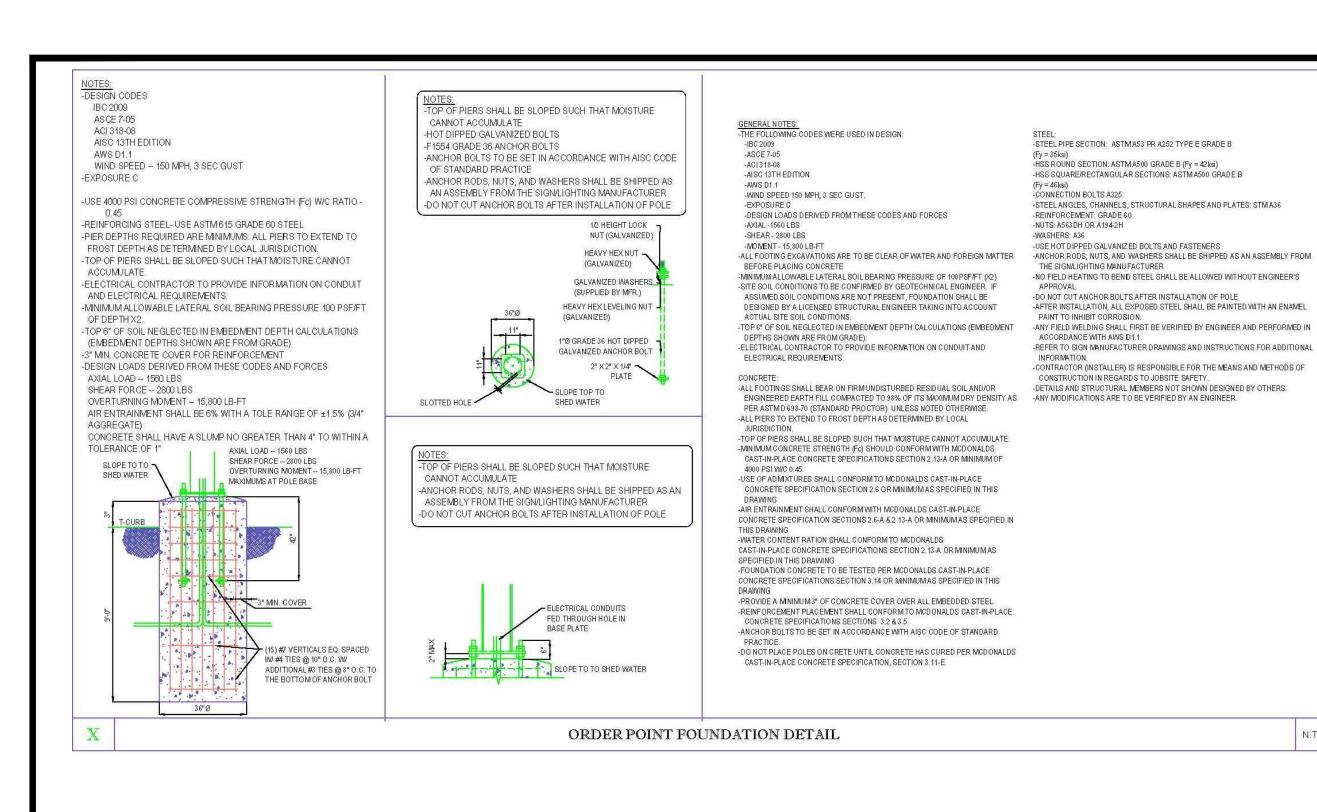
SHEET NUMBER:

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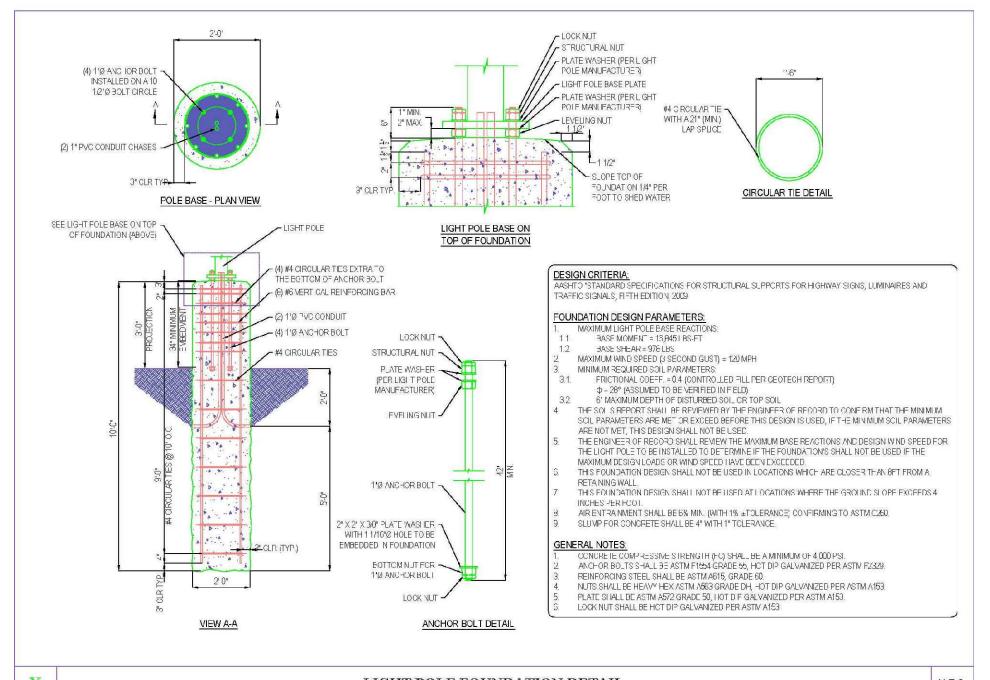
ALL DETAILS THIS SHEET WERE PROVIDED BY OTHERS AND ARE FOR INFORMATIONAL PURPOSES, ONLY. BOHLER ENGINEERING SHALL BE HELD HARMLESS IN THE EVENT OF ERRONEOUS INFORMATION CONTAINED WITHIN THESE DETAILS AND/OR STRUCTURAL FAILURE.

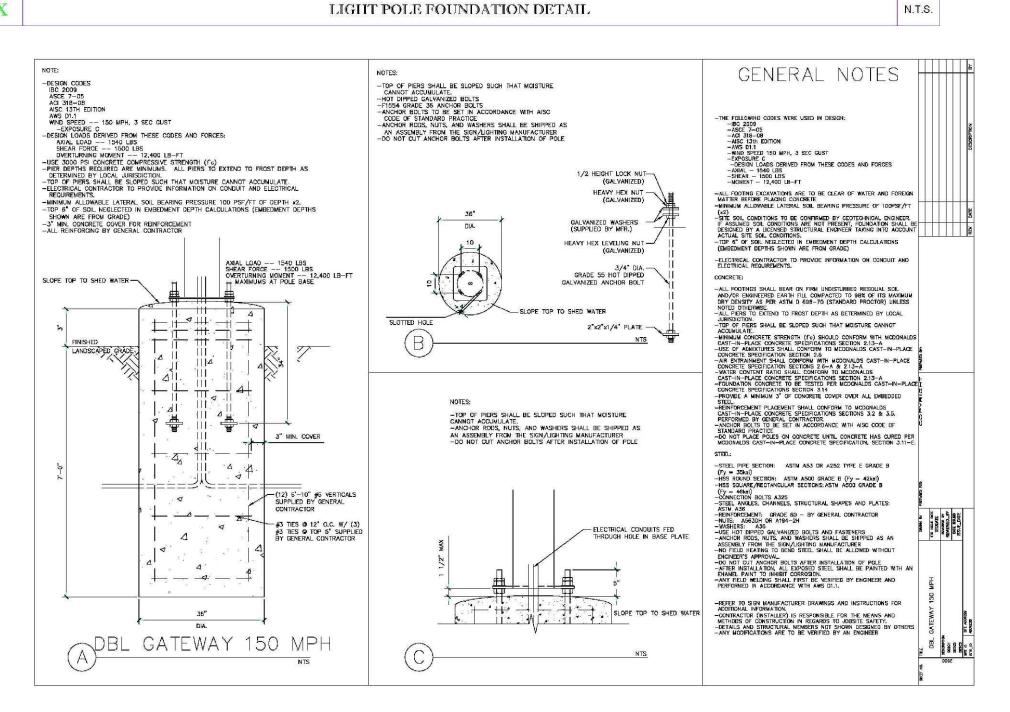
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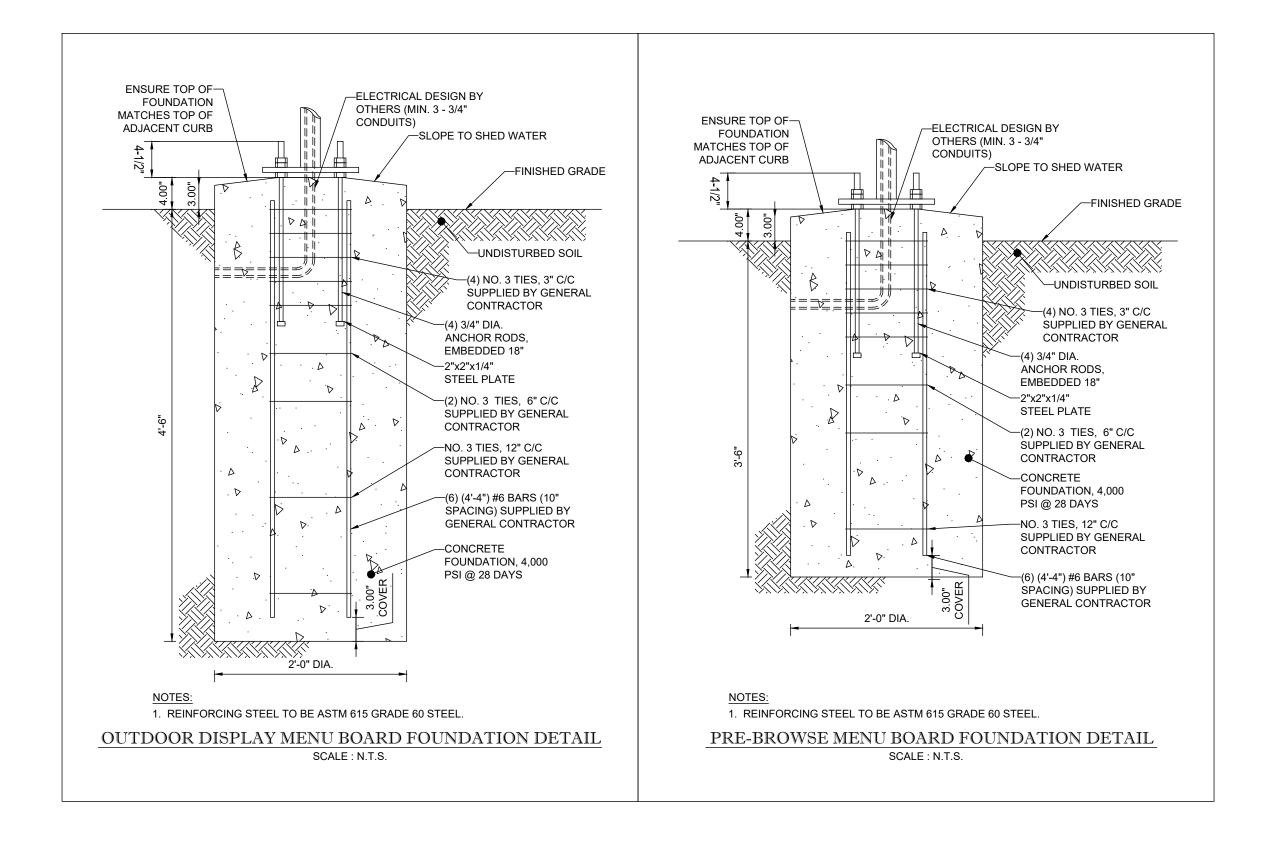


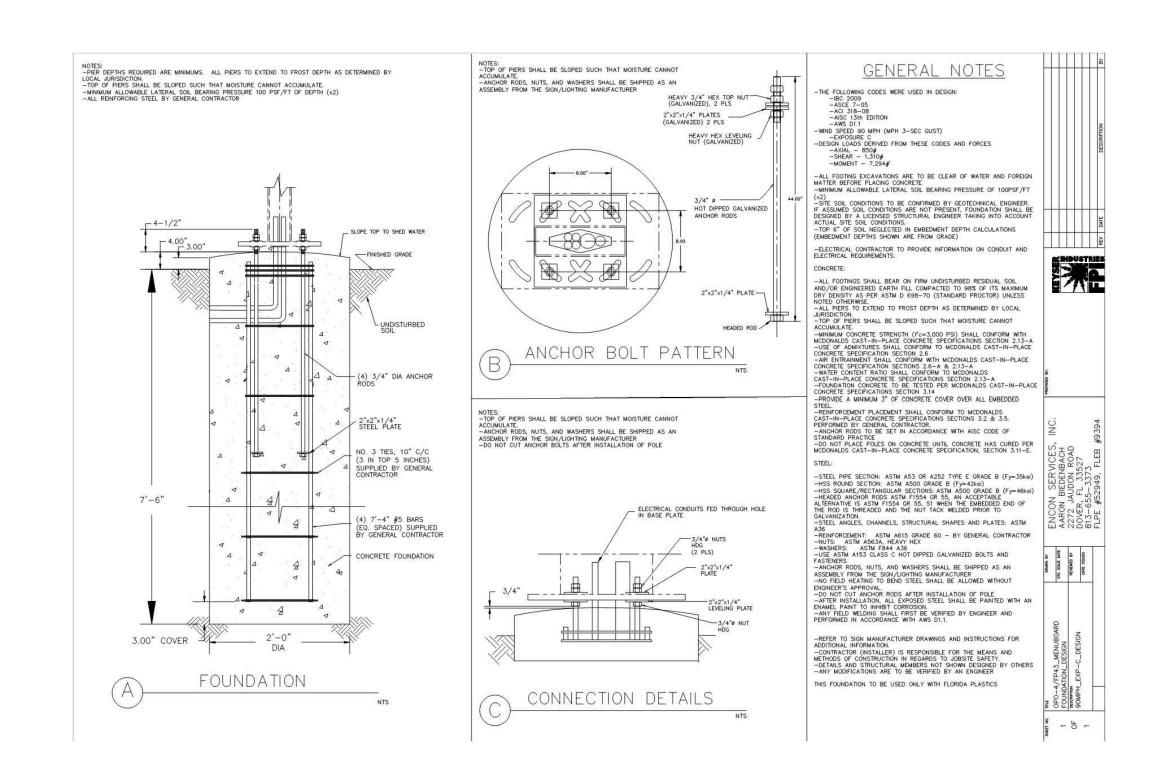


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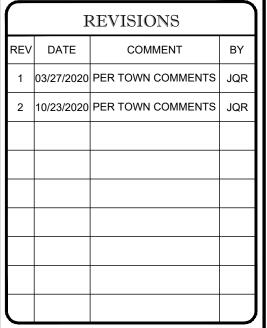






ALL DETAILS ON THIS SHEET WERE PROVIDED BY MCONDALD'S AND ARE FOR INFORMATIONAL PURPOSES ONLY. BOHLER ENGINEERING SHALL BE HELD HARMLESS IN THE EVENT OF ERRONEOUS INFORMATIONED CONTAINED WITHIN THESE DETAILS AND/OR STRUCTURAL FAILURE.







## NOT APPROVED FOR CONSTRUCTION

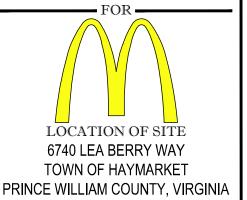
DRAWN BY: CHECKED BY: JQR

SCALE:

CAD I.D.: **PROJECT DOCUMENTS** 

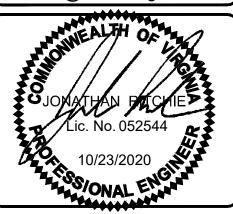
3/1/19

AS NOTED





WARRENTON, VIRGINIA 20186 Phone: (540) 349-4500 Fax: (540) 349-0321 VA@BohlerEng.com



CONSTRUCTION DETAILS

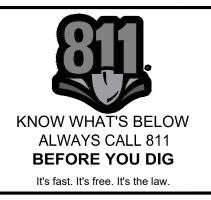
SHEET TITLE

SHEET NUMBER: 18

# COUNTY OF PRINCE WILLIAM DEPARTMENTS OF TRANSPORTATION / PUBLIC WORKS

# UNIT PRICE LISTS FOR PERFORMANCE BONDS, LANDSCAPING ESCROWS AND SILTATION & EROSION CONTROL ESCROWS

CMIT I MICE LIB	I DI ONI ENI ONIMINCE BONDO, EMIDDOM	ING ESCROVIS AND SILIATION & EROSION C	
REVISED: March 15, 2017 EFFECTIVE DATE: March 15, 2017	J. MISCELLANEOUS DRAINAGE ITEMS		7. LANDSCAPING ESCROWS
PROJECT NAME : McDonald's - Haymarket, VA	QTY COST	QTY COST  Guardrail @\$ 39 LF	A. DECIDUOUS TREES  QTY  COST
P.W.C. FILE #: DATE PREPARED : Mar 01, 2019	Box Culvert	GR-7 NCHRP 350 @ \$ 2,686 EA	5' - 6'
Note: This form is to be used to estimate performance bond, landscaping escrow and soil erosion	Wing Walls @ \$ 860 CY	Address Sign (Entrance to Pipestems) @\$ 398 EA	6 2" - 2.5 " or 2.5" - 3"
escrow prices posted with Prince William County. These prices do not include items that are to be bonded separately with the Virginia Department of Transportation.	Ditches	Traffic Control Sign       @ \$ 392 EA         Bus Stop Sign       @ \$ 342 EA	B. EVERGREEN TREES
1. MOBILIZATION/DEMOBILIZATION OF CONSTRUCTION EQUIPMENT	Roadside standard ditches @\$ 7.00 LF (Seed, fertilize and mulch)	Bus Shelter @ \$ 17,284 EA  Traffic Signal @ \$ LUMP SUM	5' - 6' @ \$ 125 EA
Mobilization/Demobilization @ LUMP SUM	Sod Ditches @ \$ 9.00 LF Paved Ditches @ \$ 8.00 SF	HC Parking Space Sign @ \$ 649 EA Bike Rack @ \$ 305 EA	6' - 7' @ \$ 175 EA
2. STORM DRAINAGE	Filter Cloth Fabric & Gabion Stone @\$ 14.00 SF Rip-Rap @\$ 7.00 SF	Roadside Delineators (ED-1) @ \$ 64 EA Hand Rail (HR-1) @ \$ 102 LF	8' - 10' @ \$ 400 EA
A. STRUCTURES	Grouted Rip-Rap @\$ 9.00 SF Paved Flume @\$ 10.00 SF	Pavement Marking (Paint) @\$ 2.00 SF Pavement Marking (Thermoplastic) @\$ 6.00 SF	C. SHRUBS
QTY COST QTY COST	Flush the Drainage System @ \$ 250 HR 8 hours Min.	Traffic Barricade (TB-1) @ \$ 1,500 EA Street Lighting @ \$ 5,500 EA	5718" - 24"
DI-1	SUB-TOTAL \$ -	Utilities Relocation \$40,000 Min.  (Or provide an estimate from utility company)	D. ORNAMENTAL
DI-4 @ \$ 5,500 EA DI-12 @ \$ 4,000 EA MH-1 @ \$ 3,000 EA MH-2 @ \$ 3,500 EA	3. CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY	VDOT Street Acceptance Package @ \$ 5,000 P.E. Certified "As-Built" Plans @ \$ LUMP SUM	1 Gal. (#1) @ \$ 10 EA
B. CONCRETE PIPE	AND/OR PRIVATE INGRESS/EGRESS EASEMENTS	\$12,000 Min.	3 2 Gal. (#2) @ \$ 22 EA \$ 66 3 Gal. (#3) @ \$ 30 EA
12" @\$ 40 LF 36" @\$ 120 LF	A. SITE WORK	SUB-TOTAL \$ 170	E. PERENNIAL
	Clear & Grub @ \$ 11,860 AC Excavation @ \$ 26.00 CY	4. SANITARY SEWER & WATER LINE CONSTRUCTION	18" - 24" @ \$ 9 EA
21" @\$ 55 LF54" @\$ 200 LF	Embankment** (cut and fill)  Embankment (haul off)  @ \$ 10.00 CY  Embankment (haul off)  @ \$ 36.00 CY	WATERMAIN (Exclusive of Fire Hydrants)	F. REFORESTATION
27" @\$ 65 LF 66" @\$ 300 LF	Final Grading @ \$ 5,000.00 AC	4" DIP @\$ 50 LF	# of Acres @ \$ 11,700 AC
30"    @ \$ 75 LF 72"    @ \$ 350 LF	Slope Stabilization - Hydroseeding @\$ 1.00 SY	8" DIP @ \$ 78 LF	TOTAL LANDSCAPE ESCROW AMOUNT \$ 4,131
C. END WALLS	(3:1 or flatter) \$1000 Min.	12" DIP @ \$ 108 LF	7. SILTATION AND EROSION CONTROL ESCROWS
12"    @ \$ 900 EA36"    @ \$ 2,800 EA	Slope Stab Jute Mesh, Matting, Blankets, etc. @ \$ 6.00 SY(Between 2:1 to 3:1) \$200 Min.	18" DIP	Diversion Dike @ \$ 6 LF
15" @ \$ 1,100 EA 42" @ \$ 4,000 EA 18" @ \$ 1,300 EA 48" @ \$ 4,200 EA	Slope Stab Sod @\$ 8.00 SY	8" or 12" RW Valve (with Accessories)	Cleaning out SWM Facilities, @ \$ 500 HR Silt Traps, and Sediment Basins \$20,000 Min. Lump Sum
21" @ \$ 1,500 EA 54" @ \$ 5,000 EA 24" @ \$ 1,700 EA 60" @ \$ 5,500 EA	(Between 2:1 to 3:1) \$200 Min.	Fire Hydrant Assembly @\$ 8,000 EA Central Sewer Lift/Pump Station Construction @\$ LUMP SUM	200 Silt Fence 0' - 1,000' @ \$ 8 LF <u>\$ 1,600</u> (installation, maintenance for 1 year & removal)
27"     @ \$ 1,900 EA66"     @ \$ 6,000 EA 30"     @ \$ 2,100 EA72"     @ \$ 7,500 EA	Steep Slopes (Grading and Stabilization @\$ 17.00 SY with Jute Mesh, Netting, Blankets, etc.)	Standard Meter Crock & Appurtenances @ \$ 2,000 EA (Angle Valve, Backflow Preventer, Yoke, Frame & Cover, and Svc Line)	Silt Fence 1,001' - 10,000' @ \$ 6 LF (installation, maintenance for 1 year & removal)
33" @ \$ 2,300 EA	B. SUBGRADE, SUBBASE AND BASE COURSE ITEMS	Meter Vault & Appurtenances @ \$ 10,500 EA (3" Meters & Larger)	Silt Fence 10,000' + @ \$ 4 LF (installation, maintenance for 1 year & removal)
D. END SECTIONS (ES - 1)	Subgrade Preparation @ \$ 3.00 SY	Water Main Blow-off Assembly	Super Silt Fence 0' - 1,000' @ \$ 20 LF (installation, maintenance for 1 year & removal)
12"	Subbase & Base Course:	Dead End Anchor System @\$ 7,500 EA	Super Silt Fence 1,001' - 10,000' @ \$ 10 LF (installation, maintenance for 1 year & removal)
18" @ \$ 700 EA 33" @ \$ 1,500 EA 21" @ \$ 875 EA 36" @ \$ 1,900 EA	Aggregate (21A/21B) (per inch depth) @ \$ 2.50 SY	SANITARY SEWER PIPE LINE (Exclusive of Manhole Structures)	Super Silt Fence 10,000' + @ \$ 7 LF (installation, maintenance for 1 year & removal)
24" @ \$ 900 EA	Reinforced Conc. Pavement (per inch depth) @\$ 15.50 SY	1.5" thru 4" LPFM @ \$ 30 LF (Low Pressure Force Main System)	Sod @ \$ 6.00 SY
E. CORRUGATED METAL PIPES	Soil Cem. Stabilization (4%) (6" depth) @ \$ 20.50 SY	8" PVC @\$ 70 LF	Steep Slopes (grading and stabilization with jute mesh, @\$ 15.00 SY
12" @\$ 30 LF 36" @\$ 90 LF 15" @\$ 35 LF 42" @\$ 100 LF	Cement Treated Aggregate (per inch depth) @ \$ 5.00 SY	10" PVC @\$ 85 LF	netting,and blankets, etc.)  @ \$ 28 TON
18" @ \$ 45 LF48" @ \$ 115 LF 24" @ \$ 55 LF54" @ \$ 130 LF	Underdrains:UD-1 @ \$ 16.00 LF	12" PVC @ \$ 145 LF	(# 1 or # 57) 3 Inlet Protection @ \$ 165 EA \$ 495
30" @ \$ 65 LF60" @ \$ 150 LF	UD-2 @ \$ 18.00 LF UD-3 @ \$ 19.00 LF	15" PVC @ \$ 190 LF	Check Dam       @ \$ 175 EA         1 Temp. Construction Entrance       @ \$ 1,150 EA       \$ 1,150
F. END SECTION (ES - 2)	UD-4 @\$ 21.00 LF	5' Dia. Sanitary Sewer Manhole @\$ 10,000 EA Street Manhole Frame & Cover Assembly @\$ 1,000 EA	1 Wash Rack @ \$ 2,000 EA \$ 2,000 EA
15"     @ \$ 400 EA36"     @ \$ 1,100 EA 18"     @ \$ 420 EA42"     @ \$ 1,400 EA	C. ENTRANCES AND PIPE STEMS	(including Rain Bowl & Chimney Seal)  Easement Manhole Frame & Cover Assembly @\$ 1,000 EA	(Drainage area 0-1 Ac.)
24"  @ \$ 480 EA 48"  @ \$ 1,800 EA	DE-1	(including Chimney Seal)  Abandonment of Manhole @\$ 250 VF	(Drainage area 2-3 Ac.) @ \$ 2,000 EA Temporary Sediment Basin By itemized cost
G. AD N-12 (HDPE)	DE-3 @ \$ 2,000 EA DE-4 @ \$ 2,000 EA	4" PVC Lateral (including clean-out stack) @ \$ 40 LF	Channel Diversion By itemized cost  6' Chain-link Safety Fence  \$\infty\$ 20 LF
12"     @ \$ 35 LF	PP-1 (1 lot) @ \$ 1,800 EA PP-1 (2 - 5 lots) @ \$ 2,000 EA	6" PVC Lateral (including clean-out stack) @ \$ 60 LF 6" DIP Lateral (including clean-out stack) @ \$ 65 LF	30 4' Plastic Orange Safety Fence @\$ 3.00 LF \$ 90 Yard utility refurbishment (Single Family Lot) @\$ 750 EA
15"	PP-2 (1 lot) @ \$ 1,200 EA PP-2 (2 - 5 lots) @ \$ 1,500 EA	LPFM Flushing Station @ \$ 2,500 LF Sewerage Air Release/Vacuum Breaker Assembly @ \$ 3,500 EA	Stockpile Removal (Quantity based on policy) @\$ 25 CY Removal of Erosion Control Measures @ AC \$ 2,000
24"     @ \$ 75 LF	CG-9D or equal (30' Width)       @ \$ 5,000 EA         CG-9D or equal (40' Width)       @ \$ 6,500 EA	Steel Casing @ \$ 500 LF  Grease Trap (500 Gal. Minimum) @ \$ 4,500 EA	\$200 Min. Level Spreader By itemized cost
Section	CG-10A or equal (30' Width)	For sizes larger than 15", add \$4.00 per inch increase in diameter.	TOTAL \$ 7,935
H. STORMWATER MANAGEMENT / BMP FACILITIES COST ESTIMATES PER IMPERVIOUS ACRE TREATED (SEE NOTE #3)	CG-11 (Concrete Entrance)	SUB-TOTAL \$ -	ADMINISTRATIVE COST (10% of Total Cost) \$ 794
Non-Proprietary BMP By Itemized Cost	Pipestem Driveway - 10' (1 lot)         @ \$ 55 LF           Pipestem Driveway - 18' (2-5 lots)         @ \$ 70 LF	TOTAL CONSTRUCTION COST \$ 170	TOTAL SILTATION & EROSION CONTROL ESCROW AMOUNT \$ 8,729
(Engineer Estimate for all SWM)  Proprietary/Manufactured BMP - CDS Unit  By Itemized Cost	D. MISCELLANEOUS CONSTRUCTION ITEMS	5. MISCELLANEOUS COSTS	(Minimum acceptable amount for Siltation and Erosion Control Escrow is \$1,000.00)
(Manufacturer's Certified Cost Plus Construction Cost)  Proprietary/Manufactured BMP - Underground System By Itemized Cost	5 Sidewalk (5' Width) @ \$ 34 LF <u>\$ 170</u>	A. ADMINISTRATIVE COST - 10% of the total construction cost \$ 17	I hereby certify that the above is my best estimate of the quantities and current cost of bondable
(Manufacturer's Certified Cost Plus Construction Cost)  I. MISCELLANEOUS STORMWATER MANAGEMENT	Header Curb (CG-2/CG-3)	not to exceed \$50,000  B. INFLATION COST - Compounded annually at 3.0% per year \$ 5	improvements, landscaping items, and Siltation & Erosion Control Escrow in this subdivision or site plan.
	CG-12 (Exposed Aggregate)	of the total Construction Cost TOTAL PERFORMANCE BOND AMOUNT \$ 192	
Seed, Fertilizer, Mulch \$200 Min. @ \$ 1.50 SY	Raised Concrete Median @ \$ 70 SY	6. FLOODPLAIN ITEMS ESCROW	PREPARER'S SIGNATURE TELEPHONE #
Bituminous Concrete - 1" depth @ \$ 5.00 SY	Trail (Wood Chip) @ \$ 19 SY Trail (Stone Dust) @ \$ 19 SY		
Rip-Rap	Retaining Walls	Elevation Certificate @ \$ 800	NAME (print) COMPANY OR FIRM
Erosion Control Stone (EC - 1)	Timber	LOMC (SF Detached) @ \$ 1,500 Stream Restoration By Itemized Cost	
(# 9 gauge or better, including braces, end posts and gate) 6' High Chain Link Fence  @ \$ 37.00 LF	Gravity Wall Excavation for tiebacks  @ \$ 62 SF  Excavation for tiebacks  @ \$ 25 CY	TOTAL FLOODPLAIN ITEMS ESCROW AMOUNT \$ 0	
(# 9 gauge or better, including braces, end posts and gate)  SWM Sign (WATER RISES RAPIDLY)  @\$ 37.00 EP	(For walls in cut areas)		NOTES:  1. For items identified with ** the quantity for the embankment material the net difference of
(Minimum 3 signs per facility)  Access Road  SWM Sign (WATER RISES RAPIDLY)  (@ \$ 390 EA  By Itemized Cost	Anti-Graffiti Treatment/Sealant @ \$ 15 SF (Concrete retaining walls only) \$2,500 Min.		total fill material needed and cut material available at the project site, if excavated or cut material is suitable for embankment.
			The excavation and embankment costs include the necessary grading, spreading and/or compaction of soil in accordance with County and State Standards and Specifications.
			3 The unit cost for each of the items in this Unit Price List is the installation cost which includes
			factors such as excavation, bedding, backfilling, compaction, form work, etc.  4 Inflation has been calculated based on Northern Virginia Consumer Price Index of the
			Washington D.C. area provided by the Bureau of Labor and Statistics.  5. Whomever certifies the site development plans must also certify the total cost of the bonded
			items, landscaping escrow and siltation and erosion control escrow and must sign on "Preparer's Signature" on page 10 of this form.
	I		<ol><li>Floodplain Items Escrow not to be part of Bond/Escrow reduction.</li></ol>

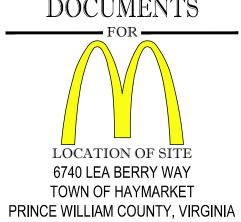


NOT APPROVED FOR CONSTRUCTION

PROJECT No.: DRAWN BY: CHECKED BY: DATE: SCALE:

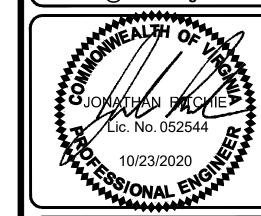
AS NOTED D.:

SITE PLAN





28 BLACKWELL PARK LANE, SUITE 201
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
Fax: (540) 349-0321
VA@BohlerEng.com



UNIT PRICE

LIST

10

to

October 14, 2020

#### DRAFT ZONING TEXT AMENDMENTS Haymarket Town Code Chapter 58 – Zoning and Subdivisions

#### Sec. 58-1.2 - Purpose.

To promote the health, safety or general welfare of the public and further accomplish the objectives of Code of Virginia, § 15.2-2200, this chapter is adopted as the zoning and subdivision ordinance of the Town, together with the zoning map. This chapter has been designed to:

2 Protect approach slopes and other safety areas of licensed airports.

military airports and their adjacent safety areas, excluding armories operated by the Virginia National Guard.

#### Sec. 58-1.5 - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning. Where terms are not defined, they shall have their ordinarily accepted meaning, or such as the context may imply.

undertakes some business by authority of the principal. The principal is the property owner.

Aviation facility - also referred to as an airport; Landing fields, aircraft parking and service facilities, and related facilities for operation, service, fueling, repair, storage, charter, sales, and rental of aircraft, including activities directly associated with the operation and maintenance of airport facilities and the provision of safety and security.

Cabaret, adult – A building or portion of a building regularly featuring dancing or other live entertainment if the dancing or entertainment that constitutes the primary live entertainment is distinguished or characterized by an emphasis on the exhibition of specified sexual activities or specified anatomical areas for observation by patrons therein.

Cluster development – A development design technique that concentrates buildings on a part of a to allow the remaining land to be used for recreation, nmentally sensitive features.

Cluster subdivision - A development that may allow for a reduction in lot area and bulk requirements, and may provide for an increase in the number of lots permitted under a conventional subdivision (an increase in overall density of development), in proportion to the remaining land area that is devoted to open space.

- A single, permanent detached dwelling unit, which may or may not contain cooking and <del>bathroom facilities, dedicated to temporary occupancy for purposes of recreation, education, or</del> acation. Rental properties meeting the above description shall be considered cottages.

Dark sky lighting – A term that refers to shielded light fixtures that cast light downward a conform to the specifications endorsed by the International Dark-Sky Association (IDA).

Commented [SM1]: Defining uses, whether perm not, assists the Zoning Administrator to distinguish uses that might be argued similar under a "general category" in a zoning district.

Commented [SM2]: This "catch all" could be used justify removal of several terms listed below, but we encourage retention of defined uses. Typically, ZA's Webster dictionary terms when use not defined.

Commented [SM31: Recommend retaining as this distinguishes this use from other "live entertainmer "club" uses, etc. Suggest consulting Town Attorney

Commented [SM4]: Note this corresponds to recommended removal of cottages from the R distr Comprehensive plan policies encourage variety of h opportunities / options, so recommend this be revis after comp plan update and not removed.

Commented [SM5]: These are accepted industry describe shielded lighting fixtures.

October 14, 2020

Haymarket Town Code Chapter 58 – Zoning and Subdivisions

which share at least one common wall, each occupied by one family, that separates living space (i.e., living room, kitchen, bedroom, bathroom, etc.). Each dwelling unit may be vertically stacked. The exterior appearance of the whole resembles a single structure.

Entertainment establishment, adult — Any adult cabaret, adult motion picture theater, adult videoviewing or arcade booth, or adult book store; also referred to as a sexually oriented business.

Fair market value — The price at which property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.

Full cutoff luminaire — An outdoor light fixture shielded in such a manner that all light emitted by the fixture is projected below the horizontal plane; also a type of dark sky lighting.

Golf course — A tract of land for playing golf, improved with tees, greens, fairways, hazards, and which may include clubhouses and shelters. Included would be executive or par 3 golf courses. Specifically excluded would be independent driving ranges and any miniature golf course. See Commercial outdoor sports and recreation.

Greenway — A corridor of open space managed for conservation, recreation, and non-motorized transportation. Greenways often follow natural geographic features such as ridge lines, stream valleys, and rivers, but may also be built along canals, utility corridors, abandoned rail lines, and the like. Greenways may include a trail or bike path or may be designed strictly for environmental or scenic protection.

Historic area — An area containing buildings or places in which historic events occurred or having special public value because of notable architectural or other features relating to the cultural or artistic heritage of the area, of such significance as to warrant conservation and preservation.

Media, adult — Magazines, books, videotapes, movies, slides, CD-ROMs, or other devices used to record computer images, or other media that are distinguished or characterized by their emphasis on matter depicting, describing, or relating to specified sexual activities or specified anatomical areas.

#### Specified anatomical areas -

(1) Less than completely and opaquely covered: human genitals, pubic region, buttock, and female breast below a point immediately above the top of the areola; and

(2) Human male genitals in a discernibly turgid state, even if completely and opaquely covered. Specified sexual activities — Human genitals in a state of sexual stimulation, arousal, acts of human masturbation, sexual intercourse, sodomy, fondling, or other erotic touching of human genitals, pubic region, buttock, or female breast.

Store, adult — An establishment that: offers for sale or rent items from any of the following categories: (a) adult media, (b) sexually oriented goods, or (c) goods marketed or presented in a context to suggest their use for specified sexual activities; and the combination of such items constitutes more than 15 percent of its stock in trade or occupies more than 15 percent of its gross public floor area; and where there is no on-site consumption of the goods, media or performances for sale or rent.

Video-viewing booth or arcade booth, adult – An enclosure designed for occupancy by no more than five persons, used for presenting motion pictures or viewing publications by any photographic.

**Commented [E6]:** Should we leave this definition Zoning Ordinance since we have duplexes?

**Commented [SM7R6]:** Agreed, see comment aboregarding cottages and relationship to comp plan

**Commented [SM8]:** See comment above regarding cabaret, adult.

Commented [SM9]: Issue with this definition not

**Commented [SM10]:** See comment above regard sky lighting.

**Commented [SM11]:** Greenways are described / encouraged in the Comprehensive Plan. Recommen retaining until comp plan updated

**Commented [SM12]:** This supplements the Sec. ! 14.4.(a)., ARB certificate of appropriateness. Recon retaining.

October 14, 2020

Haymarket Town Code Chapter 58 - Zoning and Subdivisions

electronic, magnetic, digital, or other means of media, or live performances or lingerie modeling, for observation by patrons therein.

#### Sec. 58-6.1 - Minimum off-street parking and loading.

(a) Minimum standards. At the time of erection of any main building, or at the time any main building or its accessory uses is enlarged or the use changed, all provisions of article XIII shall be met along with minimum required off-street parking and loading space with adequate provision for entrance and exit of motor vehicles, in accordance with the following table. Modifications to these requirements may be approved if shared parking is provided in accordance with sec. 58-6.1(b).

(b) Shared parking. The minimum required parking spaces may be reduced if a land owner can provide parking that will be shared by complementary adjacent land uses. Such a proposal must be prepared using the methods set forth in the latest edition of the Shared Parking Manual of the Urban Land Institute (ULI). The necessary calculations and other data that show the suitability of a shared parking proposal must be submitted to the Town in conjunction with a site plan or other applicable development

application, and will be evaluated by the Town as part of the normal application review process.

#### Sec. 58-7.2 - Use regulations.

In residential district R-1, the following uses are permitted by-right:

#### Residential

#### Accessory apartmen

Family health care structure, temporary Group home Guest room Single family detached

#### Commercial

### Business, short-term rental (STRB)

Family day home Home occupation, Class A

#### Civic

Religious assembly

#### Miscellaneous

Amateur radio antenna Garage, private Greenhouse Recreation facility, private Utility service minor

#### Sec. 58-7.3 - Special uses.

The following uses may be permitted in the R-1 district with a special use permit:

#### Residential

Cottage

Commented [SM13]: See comments above regar cabaret, adult. In this example, such a use has beer to be similar to "retail" or "book store" use.

**Commented [SM14]:** Would need to be stricken (b) removed.

Commented [SM15]: Comprehensive plan policie encourage shared parking options to address limite acreage in town for development / open space, so recommend this be revisited after comp plan updat tweak text as necessary.

Commented [SM16]: Comprehensive plan policie encourage variety of housing opportunities / option recommend this be revisited after comp plan updat

Commented [E17]: Should we revisit to specifical mention AirBnb style uses and clearly include them by-right section? Thoughts on HOA involvement and term rentals?

Commented [SM18]: Ibid

October 14, 2020

Haymarket Town Code Chapter 58 – Zoning and Subdivisions

#### Civic

Civic use

Educational facility, primary/secondary

Recreation facility, public

#### Commercial

Bed and breakfast

Life care facility

#### Miscellaneous

Parking facility

Utility service, major

#### Sec. 58-8.3 - Special uses.

The following uses may be permitted in the R-2 district with a special use permit:

#### Residential

Cottage

#### Civic

Civic use

Club

Educational facility, primary/secondary

## Commercial

Bed and breakfast

Home occupation, Class B

#### Miscellaneous

Parking facility

Utility service, major

### Sec. 58-9.2 - Use regulations.

In the transitional commercial district, the following uses shall be permitted by-right:

## Residential

Accessory apartment

Group home

Guest room

Single-family dwelling, attached

Townhouse

## Civic

Civic use

Cultural services

Educational facility, primary/secondary

Recreation facility, public

Religious assembly

Commented [SM19]: Ibid

October 14, 2020

Haymarket Town Code Chapter 58 - Zoning and Subdivisions

#### Commercial

Bed and breakfast

Brewery (500 barrels or less annually) or Distillery (5,000 gallons or less annually)

Business or trade school

Business, short-term rental (STRB)

Communications service

Consumer repair service

Day care center

Farmer's market

Greenhouse, commercial

Guidance services

Home occupation, Class A

Life-care facility

Nursing home

Office, general

Office, medical

Personal improvement services

Personal services

#### Restaurant, general

Restaurant, mobile

Restaurant, small

Store, general

#### Store, neighborhood convenience

Studio, fine arts

#### Miscellaneous

Parking facility

Utility service, minor

#### Sec. 58-9.3 - Special uses.

The following uses may be permitted in the transitional commercial district with a special use permit:

## Residential

Two-family dwelling

#### Civic

Recycling center

#### Commercial

#### Automobile repair service

Brewery (over 500 barrels annually) or Distillery (over 5,000 gallons annually)

<del>Cemetery</del>

Commercial indoor amusement

Commercial indoor entertainment

Commercial outdoor entertainment

Commercial indoor sports and recreation

Commented [E20]: Definitions need updating/rev

**Commented [E21]:** Need a better definition to invariety of retail services. Personal Services definition updating as well

Commented [SM22]: Ibid

Commented [E23]: Remove? Would a recycling for along Washington Street in the transitional commer section? Would recycling facility better fit with the i area? Or commercial? Thinking along the lines of sc smells, noise, hours of operation, bins, etc.

October 14, 2020

Haymarket Town Code Chapter 58 – Zoning and Subdivisions

Commercial outdoor sports and recreation

Financial institution

Funeral home

Garden center

Halfway house

Home occupation, Class B

Hotel

Veterinary hospital/clinic

#### Sec. 58-10.2 - Use regulations.

The following uses shall be permitted in the B-1 district by-right:

#### Residential

Accessory apartment

Guest room

#### Civic

Civic use

Club

**Cultural** services

Educational facility, primary/secondary

Recreation facility, public

Shelter

#### Commercial

Bed and breakfast

Brewery (500 barrels or less annually) or Distillery (5,000 gallons or less annually)

Business, short-term rental (STRB)

**Business support service** 

Communications service

Consumer repair service

Day care center

Farmer's market

Financial institution

Hotel

Office, general

### Office, medical

Personal improvement services

Personal services

Restaurant, general

Restaurant, mobile

Restaurant, small

Store, general Store, grocery

Store, liquor

Store, neighborhood convenience

Studio, fine arts

Veterinary hospital/clinic

**Commented [E24]:** Need to better define restaur mobile to include an analysis of how we permit food and collect taxes

**Commented [SM25R24]:** Suggest revisiting 'defi as well as "use and design standards' for all permitt restaurant uses for clarity / distinction between use ambiguity in current text.

October 14, 2020

Haymarket Town Code Chapter 58 – Zoning and Subdivisions

#### Miscellaneous

Utility service, minor

#### Sec. 58-10.3 - Special uses.

The following uses may be permitted in the B-1 district with a special use permit:

#### Residential

Multi-family dwelling

Townhouse

#### Civic

Educational facility, college/university

**Emergency shelter** 

**Public assembly** 

Recycling center

Refuse collection site

Religious assembly

#### Commercial

Brewery (over 500 barrels annually) or Distillery (over 5,000 gallons annually)

Business or trade school

Custom manufacturing

Funeral home

#### Office, medical

Restaurant, fast food

#### Miscellaneous

Outdoor gathering

Parking facility

#### Sec. 58-10.7 - Height regulations.

Permitted uses in the B-1 district may be erected up to 50 35 feet in height from grade: building not more than four three stories above grade. Chimneys, flues, cooling towers, flagpoles, radio or communication towers, or their accessory facilities not normally occupied by workers are excluded from this limitation. Parapet walls may be permitted per the building code above the height of the building on which the walls rest.

#### Sec. 58-11.3 - Special uses.

The following uses may be permitted in the B-2 district with a special use permit:

#### Residential

#### Multi-family dwelling

Townhouse

#### Civic

Educational facility, college/university Emergency shelter Commented [SM26]: Ibid

October 14, 2020

Haymarket Town Code Chapter 58 - Zoning and Subdivisions

Public assembly

Public maintenance and service facility

Recycling center

Refuse collection site

Religious assembly

#### Commercial

Automobile rental/leasing

Automobile repair service

Bed and breakfast

Business or trade school

Car wash

Commercial outdoor entertainment

Commercial outdoor sports and recreation

Commercial vehicle repair service

Construction sales and service

**Custom manufacturing** 

Equipment sales and rental

Funeral home

#### **Hospital**

Restaurant, drive-in

Tattoo Parlor and/or body piercing salon

Industrial

Warehousing and distribution

#### Miscellaneous

Outdoor gathering

#### Sec. 58-11.7 - Height regulations.

Buildings in the B-2 district may be erected up to a height of 50 35 feet. For buildings over 50 feet in height, approval shall be obtained as a special use. Chimneys, flues, cooling towers, flagpoles, radio or communication towers, or their accessory facilities not normally occupied by workers are excluded from this limitation. Parapet walls may be permitted per the building code above the height of the building on which the walls rest.

#### Sec. 58-12.6 - Height regulations.

Buildings in the I-1 district may be erected up to a height of 35 feet. For buildings over 50 feet in height, approval shall be obtained as a special use. Chimneys, flues, cooling towers, flagpoles, or their accessory facilities not normally occupied by workers are excluded from this limitation. Parapet walls may be permitted per the building code above the height of the building on which the walls rest.

#### Sec. 58-13.3 - Setback regulations.

Structures in the C-1 district shall be located 35 feet or more from any street right-of-way which is 50 feet or greater in width, or 50 feet or more from the center of any street right-of-way less than 50 feet in width. This shall be known as the setback line.

## Sec. 58-13.4 - Frontage regulations.

For permitted uses in the C-1 district, the minimum lot width at the setback line shall be 75 feet or

October 14, 2020

Haymarket Town Code Chapter 58 - Zoning and Subdivisions

#### more

#### Sec. 58-13.5. - Yard regulations.

- (a) Side. The minimum side yard for each main structure in the C-1 district shall be ten feet, and the total width of the two side yards shall be at least 20 feet.
- (b) Rear. Each main structure shall have a rear yard of 25 feet.

#### Sec. 58-13.6 - Height regulations.

- (a) Permitted uses in the C-1 district may be erected up to 35 feet in height from grade: building not be more than three stories above grade.
- (b) Accessory buildings more than five feet from any lot line in the R-1 district may be erected to a height no more than 15 feet above grade.

#### Sec. 58-7-11. - Maximum lot coverage.

The maximum lot coverage shall be 30 percent.

#### Sec. 58-15.5 - Prohibited signs.

The following signs are prohibited:

- (a) Flashing Signs or signs lighted in a varying degree including strobe lights. For the purposes of this article, a sign that has a change rate or dwell time of four (4) seconds or longer does not fit within the prohibition noted herein.
- (b) Moving or Rotating Signs.
- (c) Portable Signs with the exception of A-frame Signs.
- (d) Off-premises signs.
- (e) Inflatable signs.
- (f) Signs or parts of a sign located anywhere on the roof or wall of a building so that they shall extend above or beyond the perimeter of the building's roof, wall or parapet wall or into a front, side or rear yard setback.
- (g) Signs illuminated with sodium halide lights; and any illuminated sign that emits lighting levels in excess of the limitation.
- (h) Electronic message boards.
- (i) Abandoned sign structures.
- (j) Changeable copy signs, except as specifically permitted by this Zoning Ordinance.
- (k) Any signs, including posters and handbills, affixed to any structures, trees or other natural vegetation, rocks or poles.
- (I) Any sign that may be confused with or obstruct the view of any authorized traffic sign or signal, or obstruct the sight-distance triangle at any road intersection, or extend into the public right-of-way or otherwise create a distraction for drivers.
- (m) Portable signs, including those on wheels, except A-Frame/sandwich boards.
- (n) Signs that prevent free ingress or egress from any door, window, fire escape, or that prevent free access from one part of a roof to any other part or otherwise adversely affect safety or are in violation of any building code or other applicable law.
- (o) Signs that emit smoke, visible vapors, particles, normally detectable sound or odor shall not be permitted, including open flames used to attract public attention.
- (p) Mirrors or mirror devices on, in, or as part of a sign.

(q) Parasail Signs.

Sec. 58-17.7 Landscape features.

**Commented [E27]:** This is already in Sec. 58-7-11 proposing to remove the other text in this section?

Commented [SM28R27]: Or change this percent

**Commented [SM29]:** Prohibition of parasail signs reduces sign clutter. Prohibition also consistent wit 58-15.1. - Findings, purpose and intent; interpretati should be consulted.

October 14, 2020

Haymarket Town Code Chapter 58 – Zoning and Subdivisions

(a) There shall be no planting, structure, fence, retaining wall, shrubbery or obstruction to vision in violation of AASHTO standards.

(a) Trees, shrubs, flowers or plants shall not be permitted or maintained on any required front, side or rear yard if they interfere with the safe use of the public street or sidewalk. Such landscape features shall be permitted in any required front, side or rear yard, provided they do not interfere with public safety and do not produce a hedge effect contrary to subsection (a) of this section.

(b) The setback and yard requirements of this chapter shall not be deemed to prohibit any otherwise lawful fence or wall which is not more than four feet high; however, a fence or wall along the rear lot line and along the side lot line to the rear of the required setback line may be erected to a height not exceeding six feet when erected between residential uses and to a height not exceeding seven feet when erected either between non-residential uses or between non-residential and residential uses. This provision shall not be deemed to allow any wall more than three feet high. This provision shall be interpreted to prohibit any open-mesh-type fence enclosing any school or playground.

Sec. 58-19.2 - Commercial Uses.

(h) Additional standards for the B1 district:

(1) Any new buildings shall be street-oriented with pedestrian entrances from the street, and compatible with the surrounding development.

(2) Maximum lot coverage: Forty-five (40) percent including building and all paved areas. THIS DOES NOT MATCH

(i)

Entertainment Establishment, adult (Sexually Oriented Business)

(1

Purpose. It is a purpose of this chapter to regulate sexually oriented businesses in order to promote the health, safety, and general welfare of the citizens of the Town and to establish reasonable and uniform regulations to prevent the deleterious secondary effects of sexually oriented businesses within the Town. The requirements of this chapter have neither the purpose nor effect of imposing a limitation or restriction on the content or reasonable access to any communicative materials, including sexually oriented materials. Similarly, it is neither the intent nor effect of this chapter to restrict or deny access by adults to sexually oriented materials protected by the First Amendment, or to deny access by the distributors and exhibitors of sexually oriented entertainment to their intended market. Neither is it the intent nor effect of this chapter to condone or legitimize the distribution of obscene material.

<del>(2)</del>

Findings and rationale. Based on evidence of the adverse secondary effects of adult uses presented in hearings and in reports made available to the Town Council, and on findings, interpretations, and narrowing constructions incorporated in the cases of City of Littleton v. Z.J. Gifts D-4, L.L.C., 541 U.S. 774 (2004); City of Los Angeles v. Alameda Books, Inc., 535 U.S. 425 (2002); City of Erie v. Pap's A.M., 529 U.S. 277 (2000); City of Renton v. Playtime Theatres, Inc., 475 U.S. 41 (1986); Young v. American Mini Theatres, 427 U.S. 50 (1976); Barnes v. Glen Theatre, Inc., 501 U.S. 560 (1991); California v. LaRue, 409 U.S. 109 (1972); N.Y. State Liquor Authority v. Bellanca, 452 U.S. 714 (1981); and Imaginary Images, Inc. v. Evans, 612 F.3d 736 (4th Cir. 2010); Independence News, Inc. v. City of Charlotte, 568 F.3d 148 (4th

Commented [SM30]: Reference VDOT instead?

**Commented [E31]:** Need to discuss the optimal locoverage – current is 85%

Commented [SM32R31]: Suggest striking altoge defer to district standard

Commented [SM33]: Ibid

# DRAFT ZONING TEXT AMENDMENTS Haymarket Town Code Chapter 58 – Zoning and Subdivisions

October 14, 2020

Cir. 2009); McDoogal's East, Inc. v. County Comm'rs of Caroline County, 341 F. App'x 918 (4th Cir. 2009); Allno Enters., Inc. v. Baltimore County , 10 F. App'x 197 (4th Cir. 2001); Steakhouse, Inc. v. City of Raleigh, 166 F.3d 634 (4th Cir. 1999); D.G. Restaurant Corp. v. City of Myrtle Beach, 953 F.2d 140 (4th Cir. 1991); Wall Distributors, Inc. v. City of Newport News , 782 F.2d 1165 (4th Cir. 1986); Boyd v. County of Henrico , 42 Va. App. 495, 592 S.E.2d 768 (2004) (en banc); and Peek-a-Boo Lounge of Bradenton, Inc. Manatee County , - F.3d - 2011 WL 182819 (11th Cir. Jan. 21, 2011); Flanigan's Enters., Inc. v. Fulton County, 596 F.3d 1265 (11th Cir. 2010); East Brooks Books, Inc. v. Shelby County, 588 F.3d 360 (6th Cir. 2009); Entm't Prods., Inc. v. Shelby County , 588 F.3d 372 (6th Cir. 2009); Sensations, Inc. v. City of Grand Rapids, 526 F.3d 291 (6th Cir. 2008); World Wide Video of Washington, Inc. v. City of Spokane, 368 F.3d 1186 (9th Cir. 2004); Ben's Bar, Inc. v. Village of Somerset, 316 F.3d 702 (7th Cir. 2003); Daytona Grand, Inc. v. City of Daytona Beach , 490 F.3d 860 (11th Cir. 2007); Williams v. Morgan , 478 F.3d 1316 (11th 2007); H&A Land Corp. v. City of Kennedale , 480 F.3d 336 (5th Cir. 2007); Illinois One News. Inc. v. City of Marshall, 477 F.3d 461 (7th Cir. 2007); G.M. Enterprises, Inc. v. Town of St. Joseph, 350 F.3d 631 (7th Cir. 2003); Richland Bookmart, Inc. v. Knox County, 555 F.3d 512 (6th Cir. 2009); Richland Bookmart, Inc. v. Nichols , 137 F.3d 435 (6th Cir. 1998); Spokane Arcade, Inc. v. City of Spokane , 75 F.3d 663 (9th Cir. 1996); City of New York v. Hommes , 724 N.E.2d 368 (N.Y. 1999); For the People Theatres of N.Y., Inc. v. City of New York, 793 N.Y.S.2d 356 (N.Y. App. Div. 2005); Taylor v. State, No. 01-01-00505-CR, 2002 WL 1722154 (Tex. App. July 25, 2002); Gammoh v. City of La Habra , 395 F.3d 1114 (9th Cir. 2005); Z.J. Gifts D. 4, L.L.C. v. City of Littleton, Civil Action No. 99-N-1696, Memorandum Decision and Order (D. Colo. March 31, 2001); People ex rel. Deters v. The Lion's Den, Inc., Case No. 04 CH-26, Modified Permanent Injunction Order (Ill. Fourth Judicial Circuit, Effingham County, July 13, 2005); Reliable Consultants, Inc. v. City of Kennedale, No. 4:05-CV-166-A, Findings of Fact and Conclusions of Law (N.D. Tex. May 26, 2005); and based upon reports concerning secondary effects occurring in and around sexually oriented businesses, including, but not limited to, Austin, Texas - 1986; Indianapolis, Indiana - 1984; Garden Grove, California - 1991; Houston, Texas - 1983, 1997; Phoenix, Arizona 1979, 1995-98; Chattanooga, Tennessee 1999-2003; Los Angeles, California 1977; Whittier, California 1978; Spokane, Washington 2001; St. Cloud, Minnesota 1994; Littleton, Colorado 2004; Oklahoma City, Oklahoma - 1986; Dallas, Texas - 1997; Ft. Worth, Texas - 2004; Kennedale, Texas - 2005; Greensboro, North Carolina 2003; Amarillo, Texas 1977; Jackson County, Missouri 2008; Louisville, Kentucky - 2004; New York, New York Times Square - 1994; the Report of the Attorney General's Working Group On The Regulation Of Sexually Oriented Businesses, (June 6, 1989, State of Minnesota); Dallas, Texas - 2007; "Rural Hotspots: The Case of Adult Businesses," 19 Criminal Justice Policy Review 153 (2008); "Social Change and Crime Rate Trends: A Routine Activity Approach," 44 American ological Review 588-608 (1979); Duncan Associates, Survey of Florida Appraisers (2007); Texas City neys Association, Survey of Texas Appraisers and Crime-Related Secondary Effects (2008); "Background Analysis and Recommendations: Zoning Amendments Related to Sex Businesses," sas, Virginia - 2010; and "Everything You Always Wanted to Know About Regulating Sex Businesses," American Planning Association, 2000, the Town Council finds:

a

Sexually oriented businesses, as a category of commercial uses, are associated with a wide variety of adverse secondary effects including, but not limited to, personal and property crimes, prostitution, potential spread of disease, lewdness, public indecency, obscenity, illicit drug use and drug trafficking,

October 14, 2020

Haymarket Town Code Chapter 58 – Zoning and Subdivisions

negative impacts on surrounding properties, declining property value, urban blight, litter, and sexual assault and exploitation.

b

Sexually oriented businesses shall be separated from sensitive land uses, including schools, churches, parks, libraries, public recreation areas, and residential areas, to minimize the impact of their secondary effects upon such uses and shall be separated from other sexually oriented businesses to minimize the secondary effects associated with such uses and to prevent an unnecessary concentration of sexually oriented businesses in one area.

€.

Each of the foregoing negative secondary effects constitutes a harm, which the Town has a substantial government interest in preventing and/or abating. This substantial government interest in preventing secondary effects, which is the Town's rationale for this chapter, exists independent of any comparative analysis between sexually oriented and non-sexually oriented businesses. Additionally, the Town's interest in regulating sexually oriented businesses extends to preventing future secondary effects of either current or future sexually oriented businesses that may locate in the Town. The Town finds that the cases and documentation relied on in this chapter are reasonably believed to be relevant to said secondary effects.

(3)

The Town hereby adopts and incorporates herein its stated findings and legislative record related to the adverse secondary effects of sexually oriented businesses, including the judicial opinions and reports related to such secondary effects. The following general standards shall apply to all adult entertainment establishments:

a.

Distances specified in this section shall be measured from the property line of one use to the property line of the other. The distance between an adult entertainment establishment and a residentially zoned district shall be measured from the property line of the use to the nearest point of the boundary line of the residential zoning district.

Ь.

An adult entertainment establishment shall be located at least 350 feet from any religious assembly, education facility, public recreational facility, day care center, public assembly, cultural services, home for adults, life care facility, or residential zoning district in existence on the date on which the establishment obtains its zoning permit.

€.

Any protected use listed in subsection (2)b of this section may begin operation within 350 feet of a sexually oriented business only if the owner of the protected use, in addition to any other requirements of this Code, gives the Town a written statement that it acknowledges the presence of the sexually oriented business(es) and voluntarily waives the protection of subsection c, of this section as to the sexually oriented business(es) for as long as the sexually oriented business(es) or any successor thereto

October 14, 2020

Haymarket Town Code Chapter 58 – Zoning and Subdivisions

remains. This written statement does not waive the protection of this section as to any sexually oriented business established or relocated after the written statement. If a sexually oriented business is discontinued for a period of two years or more, then it must comply with the setback requirements of this section regardless of any such written statements by protected uses.

<del>d</del>.

No adult entertainment establishment shall be located within 1,000 feet of any adult store or other adult establishment.

e.

No adult entertainment establishment shall display adult media, depictions of specified sexual activities or specified anatomical areas in its window, or in a manner visible from the street, highway, or public sidewalk, or the property of others. Window areas shall remain transparent.

f.

Exterior lighting shall be installed in accordance with section 58-18-15 of this chapter to illuminate the parking area, walkways, and all entrances to the establishment.

g.

Hours of operation shall not extend after 1:00 am

#### Additional Text Revisions / Amendments to be considered:

- 1. <u>Crematoriums.</u> Crematory definition and funeral home definition update, passed in 2019, needs to ensure the definition is/was included in latest update
- 2. <u>Accessory Apartments.</u> Definition update for the Commercial, B-1 zoning district, needed to ensure the definition is/was included in latest update
- Curb and Gutter / Sidewalks. Require for all new developments along all public streets? All redevelopments along public streets?
- 4. Parking calculations. Should be reevaluated, to include a discussion of shared parking agreements.
- 5. <u>Landscape Plans.</u> To reviewed by Planning Commission? Reviewed by the Architectural Review Board? PC and ARB also review requests to reduce / provide alternative buffer yards.
- 6. <u>Administrative Approvals vs. Board Approvals</u>. Have a full discussion with PC, ARB and TC. For example, many applications also require HOA approval and would be simple administrative approvals, current ZT requires an additional Board approval.
- 7. <u>Board Membership</u>. Consider whether to amend the membership of the ARB to include property / business owners in addition to residents.
- 8. <u>Period of Validity for Zoning Permits / Certificates of Appropriateness</u>. Consider whether or not to reinstitute an expiration of such applications. Previously, COA's expired after one year if not diligently pursued.