



REGULAR TOWN COUNCIL MEETING

Monday, February 12, 2018 @ 7:00pm
Warren County Government Center

1. Pledge of Allegiance
2. Moment of Silence
3. Roll Call
4. Approval of the Regular Council Meeting minutes of January 22, 2018
5. Receipt of Petitions and/or Correspondence from the Public
6. Reports:
 - a. Report of special committees or Town officials and Town Manager
 *** Report from County Administrator Doug Stanley**
 - b. Requests and inquiries of Council members.
 - c. Report of the Mayor
 - d. Proposals for addition/deletion of items to the Agenda.
7. **CONSENT AGENDA ITEMS** – (ROLL CALL VOTE REQUIRED) NONE
 - A. COUNCIL APPROVAL – Bid for Front End Alignment Equipment
 - B. COUNCIL APPROVAL – Bid for Waterline Upgrade Project
 - C. COUNCIL APPROVAL – Bid for Tandem Dump Bed/Hoist
 - D. COUNCIL APPROVAL – Bid for Global Positioning System (GPS)
 - E. COUNCIL APPROVAL – Agreement to Enforce “Code of Conduct” on Warren County Parks and Recreation Properties Within the Town Limits
8. **PUBLIC HEARING** – An Ordinance to Rescind Town Code §180-182 Policy Statements (*1st Read*)
9. **PUBLIC HEARING** – Request to Amend 2010 Proffers for Conditional Rezoning of Approximately 149 acres – Front Royal Limited Partnership (FRLP) – David Vazzana (*1st Reading*)
10. **PUBLIC HEARING** – Ordinance Amendment to Town Code Chapter 9: BUILDINGS Including Provisions for the Adoption of Part III, Maintenance Code (*1st Reading*)
11. **COUNCIL APPROVAL** – Release of Development Sureties and Acceptance of Infrastructure for Happy Creek Knolls Section 3 and Oden Ridge Section 1 – Ramsey Inc. – Chris Ramsey
12. **COUNCIL APPROVAL** – Budget Amendment to Accept Monies from Anti-Litter Council
13. **COUNCIL APPOINTMENT** – Urban Forestry Advisory Commission (UFAC)

7A



**Town of Front Royal, Virginia
Council Agenda Statement**

Page 1
Item No. 7(A)

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPROVAL – Bid for Front End Alignment Equipment

Summary: Council is requested to approve a bid from Mohawk Resources in the amount of \$35,758.56 for the purchase of new front-end alignment equipment for the Vehicle Equipment Maintenance Department.

Budget/Funding: Funding is available in the Vehicle Equipment Maintenance Department line item 1203-R47001 “Machinery Equipment” in the amount of \$35,000 carried forward from FY17 and from line item 1203-47001 in the amount of \$758.56 from FY18.

Attachments: Memos from Director of Finance and Manager of Vehicle Equipment Maintenance, Quotation Tabulation, and Sales Agreement

Meetings: None

Staff

Recommendation: Approval ✓ Denial _____

Should Council wish to remove this item from the consent agenda, the following motion would allow approval of this request:

Proposed Motion: I move that Council approve a bid from Mohawk Resources in the amount of \$35,758.56 for the purchase of new front-end alignment equipment for the Vehicle Equipment Maintenance Department.

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: _____



MEMORANDUM

Date: January 23, 2018
To: Tina Presley, Senior Administrative Assistant
Jennifer Berry, Clerk of Council
From: B.J. Wilson, Director of Finance
RE: Agenda Item

On Wednesday, December 13, 2017, Cindy Hartman held a bid opening for the purchase of new front end alignment equipment for the Town's Vehicle Equipment Maintenance Department. She received 4 responses. The lowest quotation received was from Mohawk Resources (see attached tabulation sheet). I sent a copy of each response to Fleet Services for review to ensure compliance with the specification requirements. Due to the dollar amount, I will need Council approval before proceeding with the purchase. Please add this item to the February 12, 2018 agenda for their action.

The Town's Vehicle Equipment Maintenance Department recommends award for the purchase of new Front End Alignment Equipment for the Vehicle Maintenance Department be made to Mohawk Resources, for a cost of \$35,758.56.

Funding is available in the Vehicle Maintenance Department line item 1203-R47001 "Machinery & Equipment", in the amount of \$35,000.00 and in line item 1203-47001, in the amount of \$758.56. The \$35,000 is funding carried forward from FY17. The balance of the cost, \$758.56 will be from the FY18 line item 1203-47001.

MEMORANDUM

TO: BJ Wilson, Director of Finance

FROM: Donald B McPaters, Manager of Vehicle Equipment Maint.

SUBJECT: Purchase of a Front-End Alignment Equipment for vehicle and heavy trucks.

DATE: January 19, 2018

I have looked over the bid results and compared prices for the front-end alignment equipment. Mohawk Resources from Amsterdam New York with a price of \$35,758.56 for a Hunter alignment system for automotive and heavy truck and met our specs. Mac Tools from Winchester Virginia with a price of \$37,412.98 for a Mac automotive and heavy truck alignment system and met our specs. Napa Auto Parts from Front Royal Virginia with a price of \$38,900.00 for a Rotary wheel alignment system for automotive and heavy trucks and met our specs. Advance Auto Parts from Stephens City with a price of \$39,577.53 for an Atlas Edge automotive and heavy trucks and meets specs.

Mohawk Resource has the best price of \$35,758.56 and met our specs.

TOWN OF FRONT ROYAL, VIRGINIA

Quotation Tabulation

Item: FRONT END ALIGNMENT EQUIPMENT

Quotation #31

Date: DECEMBER 13, 2017

Mailed _____

Replied 4

Vendor Quotation

	MOHAWK RESOURCES	ADVANCE AUTO PARTS	NAPA AUTO PARTS	MAC TOOLS
	AMSTERDAM, NY	STEPHENS CITY	FRONT ROYAL	WINCHESTER
QUANTITY	QUOTATION	QUOTATION	QUOTATION	QUOTATION
FRONT END ALIGNMENT EQUIPMENT	\$35,758.56	\$39,577.53	\$38,900.00	\$37,412.98
PER TOWN SPECIFICATIONS	(HUNTER)	(ATLAS EDGE)	(ROTARY WHEEL SERVICE)	(MAC)
Discount				
Net Quotation	\$35,758.56	\$39,577.53	\$38,900.00	\$37,412.98
Terms				

The above proposals verified to specifications and compliance with terms and conditions.

Witness

Witness


Purchasing Agent



EQUIPMENT PROPOSAL / SALES AGREEMENT

Prepared on 1/10/2018 by Ben Blanchette

Submitted to:

Town of Front Royal
800-C Crosby Rd.
Front Royal, VA 22630
(540) 636-6350

Quoted through:

MOHAWK RESOURCES LTD



WT572 (Mfr. sug. price: \$14,490.00)

12,695.56

HD Aligner with Compact Cabinet and 24" Wide Screen LCD Display includes:

- Hunter Shop Tough(TM) PC with Windows 10
- Award-Winning WinAlign(R) HD software
- 2 years free vehicle specs & WebSpecs(R) instant specs by web
- Exclusive tools including WinToe(TM) and ABC
- Premium Color Printer, Wired & Wireless Network
- Certified iShop & ASANET compliant
- Professional Installation & On-Site Training
- Made in USA



Plus Several Light Vehicle Exclusive Features such as:

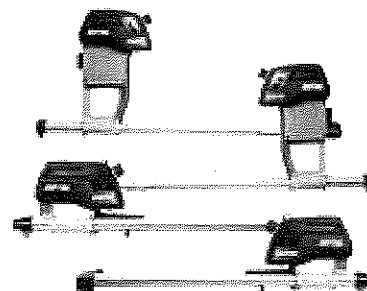
- Exclusive tools including WinToe(TM) Shim-Select(R) II, CAMM(R) and ABC
- Tool & Kit Database with required tools replacement part numbers
- Full Digital Photo Adjustments & Instruction Video Library
- Live Ride Height & WinAlign Tuner(TM) application for modified vehicles
- TPMSpec(TM) Database (Vehicle Specific Sensor Type & Reset Procedures)

DSP740T (Mfr. sug. price: \$13,300.00)

11,652.93

Wireless Hunter ShopTough(TM) DSP740T HD Sensors include:

- Hard shell cover made of the same bulletproof material used in fighter jet canopies
- Impact-prone areas are protected by integrated bumpers
- Solid state integrated electronic components for unmatched durability
- Heavy duty self-centering adaptors fit wheels 14.5 to 28 inch wheels.
- Industrial wireless communication to console means no wires
- Low-cost rechargeable batteries provide a full day of continuous operation.
- "Hot-swap" batteries without interrupting the alignment job.
- Professional setup and on-site training included
- Factory Installation & Training
- Made in USA



DSP706 (Mfr. sug. price: \$8,550.00)

6,554.77

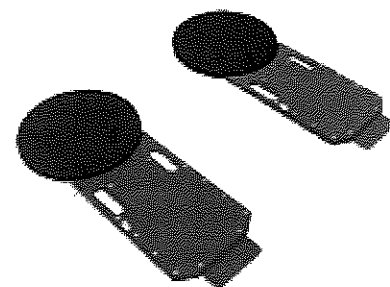
DSP706 Sensors' Greater Versatility helps service more vehicles:

- High Speed Wireless Communication
- Pro-Comp continuous compensation
- 2 point compensation option
- F2R (Front-to-Rear) sensor mounting
- Toe-out-on-turns measurement
- Level Reminder on-screen leveling (front only)
- Interrupted measurement retention
- Swap batteries without losing readings
- Sensors recharge while mounted on the aligner
- 10" - 24.5" clamping range with included self-centering wheel adaptors
- Weighs less than 7.5 lbs
- Factory Installation & Training
- Made in USA

**20-3271-1** (Mfr. sug. price: \$2,750.00) 2 @ 2,427.65

4,855.30

Mobile HD turnplate kit. Suitable for rolling or jacking compensation.



Prices subject to change without notice.	Subtotal	\$35,758.56	(\$41,840.00 MSRP)
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This proposal is good through 02/09/2018

Total investment	\$35,758.56
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Electrical and compressed air connections to equipment are not included on this quotation.

Estimated Delivery: 10-15 Business Days ARO

For purchase using: NJPA Awarded Contract

Contract Number: 061015-MRL

Contract Period: 7/21/2015 - 7/21/2019

NJPA Member ID#: 12883

Please note: Contract prices have already been put out to Bid and the prices are guaranteed to be the lowest government prices.

Installation, training, and freight are included in this cost.

If lift gate required please add \$75.00.

Any required concrete work is to be supplied by an outside contractor or the end user and is not included in this quote.

If you have any questions regarding this quote or if you would like to place an order, please contact Ben Blanchette of Mohawk Resources at 800-833-2006 ext 37 or benb@mohawklifts.com.

7B



**Town of Front Royal, Virginia
Council Agenda Statement**

Page 1
Item No. 7(B)

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPROVAL – Bid for Waterline Upgrade Project

Summary: Council is requested to approve a bid from Bushong Contracting Corporation in the amount of \$249,475.00 for a waterline upgrade project in the area of Dixie Avenue, Belair Avenue/6th Street and Midway Avenue.

Budget/Funding: Funding is available in the Waterline Maintenance FY18 budget line item 9602-47513 “Waterline Upgrade”

Attachments: Memo from Purchasing Agent, letter from Public Services Manager and Quotation Tabulation

Meetings: None

Staff

Recommendation: Approval ✓ Denial _____

Should Council wish to remove this item from the consent agenda, the following motion would allow approval of this request:

Proposed Motion: I move that Council approve a bid from Bushong Contracting Corporation in the amount of \$249,475.00 for a waterline upgrade project in the area of Dixie Avenue, Belair Avenue/6th Street and Midway Avenue.

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: JW



MEMORANDUM

Date: January 23, 2018
To: Tina Presley, Senior Administrative Assistant
Jennifer Berry, Clerk of Council
From: B. J. Wilson, Director of Finance
RE: Agenda

On Tuesday, January 16, 2018, I opened bids for a waterline upgrade project in the area of Dixie Ave, Belair Ave/6th St, and Midway Ave. I received four responses (see attached tabulation). Due to the dollar amount of this award, I will need Council approval before continuing. Please add this to the February 12th agenda for their action.

Staff recommends the award for the Dixie Ave, Belair/6th St, and Midway Ave waterline project be made to Bushong Contracting Corporation in the amount of \$249,475.00.

Funding is available in the Waterline Maintenance FY18 budget line item 9602-47513 "Waterline Upgrade".



TOWN OF FRONT ROYAL

Public Works
800 Crosby Rd.
P.O. BOX 1560
FRONT ROYAL, VIRGINIA 22630-1560

Robert B. Boyer
Public Services Manager
(540) 635-7819
(540) 635-8973(Fax)
rboyer@frontroyalva.com

January 23, 2018

B.J.,

I have reviewed the water line upgrade bids we received for the Belair Ave, Dixie Ave and Midway Ave. I would like to recommend we move forward with the low bidder on this project, Bushong Contracting out of Woodstock VA. Bushong Contracting has worked on several town projects in the past and always done quality work for us and meets all town standards & specs. Their bid was for \$249,475.00 which would come out of 9602-7513 which has plenty of funding to cover this project.

If you need anything else just let me know.

Thanks,

Robert B. Boyer
Public Services Manager
Town of Front Royal

TOWN OF FRONT ROYAL, VIRGINIA

Quotation Tabulation

Item: WATERLINE UPGRADE DIXIE AVE, BELAIR/6TH ST, MIDWAY AVE

Quotation #23

Date: JANUARY 16, 2018

Mailed

Replied 4

Vendor Quotation				
	Bushong Contracting Cporation	Mutch Contracting Company	Ashburn Contracting Corporation	Lantz Construction
	Woodstock, Va.	Berkeley Springs, W	Sterling, Va.	Winchster, Va.
QUANTITY	QUOTATION	QUOTATION	QUOTATION	QUOTATION
Total	\$ 249,475.00	\$ 374,328.32	\$ 491,600.00	\$ 527,515.00
Total	\$ 249,475.00	\$ 374,328.32	\$ 491,600.00	\$ 527,515.00
Discount				
Net Quotation				
Terms				

The above proposals verified to specifications and compliance with terms and conditions.

Witness

Witness



Purchasing Agent

7C



**Town of Front Royal, Virginia
Council Agenda Statement**

Page 1
Item No. 7(C)

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPROVAL – Bid for Tandem Dump Bed/Hoist

Summary: Council is requested to approve a bid from Excel Truck Group Virginia Truck Center Freightliner in the amount of \$148,894.00 for the purchase of a new Tandem Dump Bed and Hoist with Central Hydraulic System for the Street Maintenance Department.

Budget/Funding: Funding is available in the Highway Maintenance Department FY17 line item 4500-R47005 “Motor Vehicles” in the amount of \$63,000 and FY18 line item 4500-47005 in the amount of \$85,894.

Attachments: Memos from Director of Finance and Manager of Vehicle Equipment Maintenance, Quotation Tabulation

Meetings: None

Staff

Recommendation: Approval ✓ Denial

Should Council wish to remove this item from the consent agenda, the following motion would allow approval of this request:

Proposed Motion: I move that Council approve a bid from Excel Truck Group Virginia Truck Center Freightliner in the amount of \$148,894.00 for the purchase of a new Tandem Dump Bed and Hoist with Central Hydraulic System for the Street Maintenance Department.

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: JW



MEMORANDUM

Date: February 6, 2018
To: Tina Presley, Senior Administrative Assistant
Jennifer Berry, Clerk of Council
From: B.J. Wilson, Director of Finance
RE: Agenda Item

On Wednesday, January 10th, 2018, I held a bid opening for the purchase of a new Tandem Dump Bed and Hoist with Central Hydraulic Systems for the Town's Street Maintenance Department. I received 4 responses. The lowest quotation received was from Virginia Truck Center (see attached tabulation sheet). I sent a copy of each response to Fleet Services for review to ensure compliance with the specification requirements. Due to the dollar amount, I will need Council approval before proceeding with the purchase. Please add this item to the February 12th, 2018 agenda for their action.

The Town's Vehicle Equipment Maintenance Department recommends award for the purchase of a new Tandem Dump Truck for the Street Maintenance Department be made to Virginia Truck Center Freightliner, for a cost of \$148,894.00.

Funding is available in the Highway Maintenance Department line item 4500-R47005 "Motor Vehicles", in the amount of \$63,000.00 and in line item 4500-47005, in the amount of \$85,894. The \$63,000 is funding carried forward from FY17.

MEMORANDUM

TO: BJ Wilson, Director of Finance.

FROM: Donald B McPaters, Manager of Vehicle Equipment Maint. *DBM*

SUBJECT: Purchase of a tandem dump truck with stainless steel dump bed and hydraulic system.

DATE: January 25, 2018

I have reviewed the four bids for the tandem dump truck with stainless steel bump bed and hydraulic system. We had a bid from Truck Equipment from Harrisonburg Virginia with a price of \$163,415.00 complete and met our specification. The next bid was Highway Motors from Winchester Virginia with a price of \$150,825.67 complete and met our specifications. The next bid was from Excel Truck Group from Weyers Cave Virginia with a price of \$148,894.00 and met our specification. The last bid was from Highway Motors in Winchester Virginia with a price of \$140,266.21 and does not our specifications on the transmission and on engine hp. All venders bid the same hydraulic system, dump body, and accessories.

The bid from Virginia Truck Center had a price of \$148,894.00. They were the lowest price and that met our specifications.

TOWN OF FRONT ROYAL, VIRGINIA

Quotation Tabulation

Item: TANDEM DUMP TRUCK

Quotation #38

Date: JANUARY 10, 2018

Mailed

Replied 3

QUANTITY	Vendor Quotation			
	EXCEL TRUCK GROUP VTC FREIGHTLINER	TRUCK & EQUIPMENT CORP	HIGHWAY MOTORS OPTION 1	HIGHWAY MOTORS OPTION 2
	WEYERS CAVE QUOTATION	HARRISONBURG QUOTATION	HARRISONBURG QUOTATION	HARRISONBURG QUOTATION
1 EACH - NEW TANDEM DUMP BED & HOIST WITH CENTRAL HYDRAULIC SYSTEMS PER TOWN SPECIFICATIONS				
OPTION #1 - COMPLETE TRUCK, AS SPECIFIED	\$148,894.00	\$163,415.00	\$140,266.21	\$ 150,825.67
OPTION #2 - CHASSIS ONLY	\$ 106,979.00	\$121,500.00	\$98,351.21	\$ 108,910.67
OPTION #3 - DUMP BODY ONLY WITH HOIST AND CENTRAL HYDRAULIC SYSTEM	\$41,915.00	\$41,915.00	\$41,915.00	\$ 41,915.00
Total				
Discount				
Net Quotation				
Terms				

The above proposals verified to specifications and compliance with terms and conditions.

Witness

Witness

Purchasing Agent



TOWN OF FRONT ROYAL, VIRGINIA



We are requesting price quotations on the items listed below.

Deliver to F.O.B. TOWN OF FRONT ROYAL

Delivery to be made WITHIN 30 DAYS ARO

Please use this form. Terms _____

QUOTATION #38
RETURN ADDRESS
 Director of Finance
 Quote No. #38
 Town of Front Royal
 102 E. Main Street
 P.O. Box 1560
 Front Royal, VA 22630

Bids are to be received by: 4:00 P.M., WEDNESDAY, JANUARY 10, 2018

PLEASE NOTE: In the event that the Town of Front Royal Finance Department is closed due to inclement weather and/or emergency situations prior to or at the time set aside for the receipt

Quantity	Unit	Item	Quotation
NO FAX OR EMAIL QUOTATIONS ACCEPTED.			
1	EACH	TANDEM DUMP BED AND HOIST WITH CENTRAL HYDRAULIC SYSTEMS <u>PER ATTACHED SPECIFICATIONS</u> OPTION #1: QUOTATION FOR COMPLETE TRUCK AS SPECIFIED OPTION #2: QUOTATION FOR CHASSIS ONLY OPTION #3: QUOTATION FOR ONLY TANDEM DUMP BODY WITH HOIST AND CENTRAL HYDRAULIC SYSTEM PLEASE SPECIFY YEAR AND MODEL: QUOTED PRICE SHALL INCLUDE DELIVERY TO: TOWN OF FRONT ROYAL VEHICLE/EQUIPMENT MAINTENANCE DEPARTMENT 800 CROSBY ROAD FRONT ROYAL, VA 22630 QUESTIONS PERTAINING TO THE SPECIFICATIONS SHOULD BE DIRECTED TO: DON MCPATERS, SUPERINTENDENT VEHICLE/EQUIPMENT MAINTENANCE (540) 636 - 6350 automaintenance@frontroyalva.com	\$ 148,894.00 \$ 106,979.00 \$ 41,915.00 2019

The right is reserved to reject any or all quotations submitted.
 Also, privilege is granted to the Town to purchase any part of the whole of the items listed unless otherwise stated on this form by the Vendor.

Quotations above are subject to all requirements stated herein.

Thank You.


 Cynthia A. Hartman, CPPB
 Purchasing Agent

Phone: (540) 636 - 6889 Fax: (540) 636 - 7473
cahartman@frontroyalva.com

7D



**Town of Front Royal, Virginia
Council Agenda Statement**

Page 1
Item No. 7(D)

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPROVAL – Bid for Global Positioning System (GPS)

Summary: Council is requested to approve a bid from BEARCOM in the amount of \$39,106.00 for the purchase of a Global Positioning System (GPS) for the Vehicle Equipment Maintenance Department

Budget/Funding: Funding is available in the Vehicle Equipment Maintenance Department line items:
1203-R47003 Vehicle Maintenance Dept - Communication Equipment - \$31,106.00
4203-47003 Solid Waste – Communication Equipment - \$2,560.00
9602-47003 Water Line Maintenance – Communication Equipment - \$1,280.00
9802-47003 Sewer Line Maintenance – Communication Equipment - \$1,280.00
4500-47003 Highway Maintenance – Communication Equipment - \$2,880.00

Attachments: Memos from Director of Finance and Manager of Vehicle Equipment Maintenance

Meetings: None

Staff

Recommendation: Approval ✓ Denial _____

Should Council wish to remove this item from the consent agenda, the following motion would allow approval of this request:

Proposed Motion: I move that Council approve a bid from BEARCOM in the amount of \$39,106.00 for the purchase of a Global Positioning System (GPS) for the Vehicle Equipment Maintenance Department.

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: JW



MEMORANDUM

Date: February 6, 2018
To: Tina Presley, Senior Administrative Assistant
Jennifer Berry, Clerk of Council
From: B.J. Wilson, Director of Finance
RE: Agenda Item

On Wednesday, December 12, 2017, Cindy Hartman held a bid opening for the purchase of a Global Positioning System for the Town's Vehicle Equipment Maintenance Department. She received 2 responses. The lowest quotation received without requiring a subscription was from BEARCOM. I sent a copy of each response to Vehicle Equipment Maintenance for review to ensure compliance with the specification requirements. Due to the dollar amount, I will need Council approval before proceeding with the purchase. Please add this item to the February 12th, 2018 agenda for their action.

The Town's Vehicle Equipment Maintenance Department recommends award for the purchase of Global Positioning System for the Town's Vehicle Equipment Maintenance Department be made to BEARCOM, for a cost of \$39,106.00.

Funding is available in the Vehicle Equipment Maintenance Department line items:

1203-R47003 Vehicle Maintenance Dept. - Communication Equipment - \$31,106.00
4203-47003 Solid Waste - Communication Equipment - \$2,560.00
9602-47003 Water Line Maintenance – Communication Equipment - \$1,280.00
9802-47003 Sewer Line Maintenance – Communication Equipment - \$1,280.00
4500-47003 Highway Maintenance – Communication Equipment - \$2,880.00

MEMORANDUM

TO: BJ Wilson, Director of Finance

FROM: Donald B McPaters, Manager of Vehicle Equipment Maint. *DBM*

SUBJECT: Purchase of a Global Positioning System

DATE: January 24, 2018

I have looked over the bid results and compared prices for the Global Positioning System. BEARCOM from Chantilly Virginia has quoted a price of \$39,106.00 Works with our radio system and everything we purchase belong to the Town of Front Royal. They have a minimum three-year warranty and support. No contract to sign. MarshallGIS has quoted us a price of \$13,375.00 for the first year and \$6,000.00 per year for an ongoing subscription. We must sign a contract agreement.

BEARCOM price is up front of \$39,106.00, meets our specification, we sign no contracts, we have 3-year warranty and support and we own the equipment and no yearly ongoing cost.

GLOBAL POSITIONING SYSTEM

NO CHANGES SHALL BE MADE TO THE PAY ITEM QUANTITIES CONTAINED HEREIN.

ANY CORRECTIONS TO BIDDER'S ENTRIES SHALL BE MADE IN INK AND SHALL BE INITIALED BY BIDDER.

ITEM NO.	QUANTITIES	ITEMS	UNIT VALUES	AMOUNT
DIVISION I – GPS SYSTEM				
	1 EACH	NEOTERRA GFS SYSTEM, F2 LICENSES, AND (4) DEDICATED CONTROL STATIONS	\$ 21,656.00	\$ 21,656.00
		INSTALLATION, CONFIGURATION, AND TRAINING	\$ 8,500.00	\$ 8,500.00
		INSTALLATION MATERIALS	\$ 1,575.00	\$ 1,575.00
		ANTENNA AND MOUNT	\$ 1,175.00	\$ 1,175.00
		8-CHANNEL STATION COMBINER WITH DUMMY LOADS	\$ 2,325.00	\$ 2,325.00
	2 EACH	MOTOTRBO IN VN4048 ENHANCED GFS LICENSE KEY FOR REPEATERS	\$ 500.00	\$ 500.00
25	EACH	MOTOROLA RAD4216 COMBO GFS/VHF 1 WAVE ANTENNA	\$ 115.00	\$ 2,875.00
		MINIMUM 3-YEAR SUPPORT	\$ 0.00	\$ 0.00
		MINIMU 3-YEAR WARRANTY	\$ 0.00	\$ 0.00
TOTAL PROJECT				\$ 39,106.00

60 day lead time ARO; Front Royal maintenance shop will handle installation of RAD4216 antennas in existing vehicles.

THIS PAGE MUST BE COMPLETED AND RETURNED WITH QUOTATION.

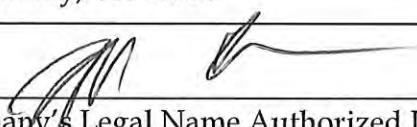
In compliance with this Invitation for Bid and to all the conditions imposed herein, the undersigned offers and agrees to furnish the services in accordance with the attached signed quotation.

LEGAL NAME & ADDRESS OF FIRM:

Bear Communications, Inc.

4511 Daly Dr. Suite G

Chantilly, VA 20151

By: 

Company's Legal Name Authorized Representative - Signature in Ink

Printed Name: Jakob Wertz

Title: Account Executive

Date: 12/7/2017

Phone: 703-818-8800 x 11818

Email: jakob.wertz@bearcom.com

Fax: 703-818-1898

7E



**Town of Front Royal, Virginia
Council Agenda Statement**

Page 1
Item No. 7(E)

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPROVAL – Agreement to Enforce Code of Conduct on Warren County Parks and Recreation Property Within the Town Limits

Summary: Council is requested to approve an Agreement to enforce the “Code of Conduct” on Warren County Parks and Recreation Properties located within the Town limits. If approved, “Code of Conduct” signs will be posted at all indoor and outdoor facilities in the Warren County Park System as well as providing the Police Department with Trespass Notice Forms to be issued when necessary.

Budget/Funding: No costs will be incurred to implement or enforce.

Attachments: Agreement

Meetings: Work Session held February 5, 2018

Staff

Recommendation: Approval ✓ Denial

Should Council wish to remove this item from the consent agenda, the following motion would allow approval of this request:

Proposed Motion: I move that Council approve an Agreement to enforce the “Code of Conduct” on Warren County Parks and Recreation Properties located within the Town Limits, as presented.

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: JW

**AGREEMENT TO FURNISH POLICE SERVICES
BETWEEN THE COUNTY OF WARREN
AND THE TOWN OF FRONT ROYAL**

This Agreement to furnish police services (hereinafter the “Agreement”), entered into on _____, 2017 between the **COUNTY OF WARREN, VIRGINIA**, a political subdivision of the Commonwealth of Virginia (hereinafter the “County”) and the **TOWN OF FRONT ROYAL, VIRGINIA**, a municipal corporation (hereinafter the “Town”) provides as follows:

WITNESSETH

WHEREAS, Va. Code § 15.2-1726 allows for localities to enter into agreements with other localities for cooperation in the furnishing of police services; and

WHEREAS, the Warren County Board of Supervisors approved a Parks and Recreation Department code of conduct (hereinafter the “Code of Conduct”) and suspension guidelines (hereinafter “Suspension Guidelines”) as evidenced by a Motion authorizing the same adopted by the Warren County Board of Supervisors on _____, 20____; and

WHEREAS, the employees and agents of the Warren County Parks and Recreation Department (hereinafter the “Parks and Recreation Department”) may enforce the Code of Conduct and Suspension Guidelines in all parks, open spaces and facilities owned and operated by the Parks and Recreation Department; and

WHEREAS, the Front Royal Police Department (hereinafter the “Police Department”) and the Parks and Recreation Department mutually determined that it is in the interest of public safety for the Police Department to exercise their police powers to enforce the Code of Conduct and Suspension Guidelines in all parks, open spaces and facilities located in the Town of Front Royal limits and owned and operated by the Parks and Recreation Department.

NOW THEREFORE, in consideration of the mutual covenants, terms and conditions contained herein, the parties hereto mutually covenant and agree as follows:

1. The Police Department's jurisdiction and authority encompasses all parks, open spaces, and facilities located in the Town of Front Royal limits and owned and operated by the Parks and Recreation Department.

2. The Agreement does not diminish the authority of the Parks and Recreation Department to enforce the Code of Conduct and the Suspension Guidelines in all parks, open spaces, and facilities owned and operated by the Parks and Recreation Department.

3. In accordance with Virginia Code § 15.2-1726, all Police Department officers, shall have all police powers, rights, benefits, privileges and immunities in in all parks, open spaces and facilities located in the Town of Front Royal limits and owned and operated by the Parks and Recreation Department.

4. The Police Department has the authority to enforce the Code of Conduct based upon the Suspension Guidelines, including the authority to issue summons or to make arrests.

5. The Code of Conduct and Suspension Guidelines may be amended in the future upon a motion of the Warren County Board of Supervisors. The Parks and Recreation Department will send notice of such amendments to the Police Department.

6. This Agreement constitutes the entire, full, and complete understanding and agreement of the parties, and may not be modified orally or in any other manner than by agreement in writing signed by all parties to the Agreement or their respective successors in interest.

7. Any term of this Agreement which is prohibited by, or is unlawful or unenforceable under Virginia law shall be ineffective only to the extent of such prohibition, without invalidating the remaining terms of this Agreement.

8. Interpretation of the provisions of this Agreement shall be in accordance with the laws of the Commonwealth of Virginia.

9. Any action maintained by either party for the enforcement or interpretation of the terms of this Agreement shall be filed in the courts of Warren County, Virginia.

10. This Agreement may be terminated with ninety (90) days' notice at any time by either party.

IN WITNESS THEREOF, the parties hereafter have caused this Agreement to be duly executed the date and year above written, all by due authority.

This Agreement is hereby entered into by the County of Warren, Virginia, as evidenced by the signature of the undersigned, who is authorized to enter into this Agreement on behalf of the County of Warren, as evidenced by a Motion authorizing the same adopted by the Warren County Board of Supervisors on _____, 20__.

For the County of Warren, Virginia

Linda P. Glavis, Chair
Board of Supervisors

Attest:

Douglas P. Stanley, Clerk
Board of Supervisors

This Agreement is hereby entered into by the Town of Front Royal, Virginia, as evidenced by the signature of the undersigned, who is authorized to enter into this Agreement on behalf of the Town of Front Royal, as evidenced by a Resolution authorizing the same adopted by the Front Royal Town Council on _____, 20__.

For the Town of Front Royal, Virginia

Hollis L. Tharpe,
Mayor

Attest:

Joseph E. Waltz,
Town Manager

Approved as to Form:

Dan N. Whitten
County Attorney

Douglas W. Napier
Town Attorney



THIS “CODE OF CONDUCT” APPLIES TO ALL PARKS, OPEN SPACES AND FACILITIES OWNED AND OPERATED BY THE WARREN COUNTY PARKS AND RECREATION DEPARTMENT

- Loud, offensive, abusive, and/or profane language or disruptive behavior is PROHIBITED.
- Consumption or possession of alcohol is PROHIBITED.
- Selling, possessing or using illegal drugs is criminal conduct and is PROHIBITED.
- Use of portable sound systems without earphones is PROHIBITED.
- Use of bicycles and skateboards in shelters, on sidewalks, or on green spaces is PROHIBITED.
- Lewd, obscene or indecent conduct or expression, including harassment, or threats is PROHIBITED.
- Conduct that disrupts or obstructs any authorized program, event or class is PROHIBITED.
- Use of a park, open space or facility at any time other than during the posted hours of operation is PROHIBITED.
- Any conduct which is illegal under state or local law is PROHIBITED.

The County of Warren and/or its agents reserves the right to require anyone violating any “Code of Conduct” to leave all parks, open spaces and facilities and/or not to trespass upon the property for a period of ONE (1) YEAR.

To report violations, please call the Front Royal Police Department at (540) 635-2111 or the Warren County Sheriff’s Office at (540) 635-4128

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Town of Front Royal, Virginia Council Agenda Statement

Page 1
Item No. 8

Meeting Date: February 12, 2018

Agenda Item: PUBLIC HEARING – An Ordinance to Rescind Town Code §180-182 POLICY STATEMENTS (*1st Reading*)

Summary: Council is requested to affirm on its first reading an Ordinance to rescind Town Code Section 180-182 POLICY STATEMENTS due to these specific policies no longer being in existence as written.

Budget/Funding: None

Attachments: Ordinance

Meetings: Work Session held January 2, 2018

Staff

Recommendation: Approval ✓ Denial

Proposed Motion: I move that Council affirm on its first reading an Ordinance to rescind Town Code Section 180-182 POLICY STATEMENTS, as presented.

ROLL CALL VOTE REQUIRED

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: 

DRAFT

**ORDINANCE TO RESCIND CHAPTER 180-182 OF THE FRONT ROYAL TOWN
CODE PERTAINING TO POLICY STATEMENTS**

WHEREAS, the Front Royal Municipal Town Code §180-182 POLICY STATEMENTS Electrical Department General Practices – Policies; Procedures for Process Parking Tickets; Wrecking Service Policy and the Towing Services were adopted in the 1970's and are no longer in existence as written; and,

NOW, THEREFORE, BE IT ENACTED by the Town Council of the Town of Front Royal, Virginia that Chapter 180-182 of the Front Royal Code is hereby rescinded:

POLICY STATEMENTS

180-182 POLICY STATEMENTS ~~RESERVED~~

The following policy statements of the Town of Front Royal are available for public inspection at the office of the Town Clerk during regular office hours:

~~_____ Electrical Department General Practices; Policies; Procedures (adopted 6-28-71)~~
~~_____ Procedures for Processing Parking Tickets (adopted 12-1-77)~~
~~_____ Wrecking Service Policy (adopted 6-12-78)~~
~~_____ Towing Services (adopted 4-23-79)~~

This ordinance shall become effective upon passage.

APPROVED:

Hollis L. Tharpe, Mayor

ATTEST:

Jennifer E. Berry, Clerk of Council

THIS ORDINANCE was approved at the Regular Meeting of the Town of Front Royal, Virginia on its second reading, conducted _____ 2018, upon the following recorded vote:

Eugene R. Tewalt	Yes/No	Jacob L. Meza	Yes/No
William A. Sealock	Yes/No	Christopher S. Morrison	Yes/No
John P. Connolly	Yes/No	Gary Gillispie	Yes/No

A public hearing on the above was held on _____, 2018, having been advertised in the Northern Virginia Daily on _____, 2018, and _____, 2018. The Ordinance was enacted at the Regular Meeting of the Town Council held _____ 2018, to become effective immediately.

Approved as to form and legality: _____
Douglas W. Napier, Town Attorney

Date: ____/____/____

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Town of Front Royal, Virginia Council Agenda Statement

Page 1
Item No. 9

Meeting Date: February 12, 2018

Agenda Item: PUBLIC HEARING – Proffer Amendment to Amend 2010 Proffers for Conditional Rezoning of Approximately 149 Acres – Front Royal Limited Partnership – David Vazanna (*1st Reading*)

Summary: A proffer amendment has been submitted by Front Royal Limited Partnership (FRLP), c/o David Vazanna, to amend the 2010 proffers associated with the conditional rezoning of approximately 149 acres that is located within the R1-A Zoning District. The proposed proffers do not alter the maximum allowed density of the development. The proposed proffers include other changes such as, but not limited to: 1) New off-site transportation proffers to be completed by FRLP; 2) The addition of per-unit cash proffers to be paid to the Town for use towards a new police headquarters; 3) Elimination of per-unit cash proffers to be used towards Leach Run Parkway; 4) Removal of the future off-site phases of the East/West Connector Road; 5) Removal of various credits to be received by FRLP from the Town; 6) Adjustment of “when” cash proffers are paid to Warren County for school impacts; 7) Widening of a proposed on-site trail; and 8) Elimination of Energy Star Certification requirements.

Council is requested to affirm on its first reading a request to amend the 2010 proffers associated with the conditional rezoning of approximately 149 acres to the R1-A District as presented.

Budget/Funding: None

Attachments: Staff Report, Letter from David Vazzana, New Proffer Statement, Existing Proffer Statement, Dedication of Plat, 2017 Traffic Impact Study, Memorandum from the Town Attorney

Meetings: Planning Commission Meeting held November 15, 2017. Council Work Sessions held December 4, 2017 and January 2, 2018.

Staff

Recommendation: Approval ✓ Denial _____

Proposed Motion: I move that Council affirm on its first reading a request from Front Royal Limited Partnership (FRLP) c/o David Vazzana to amend the 2010 proffers associated with the conditional rezoning of approximately 149 acres to the R1-A District, as presented.

ROLL CALL VOTE REQUIRED

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: JW

**TOWN OF FRONT ROYAL
DEPARTMENT OF PLANNING & ZONING**



STAFF REPORT FOR THE NOVEMBER 15, 2016 PLANNING COMMISSION MEETING

Revised/Updated for Town Council's 12/4/17 Work Session

APPLICATION #:

FRREZON-000522-2017

APPLICANT:

Front Royal Limited Partnership (FRLP)

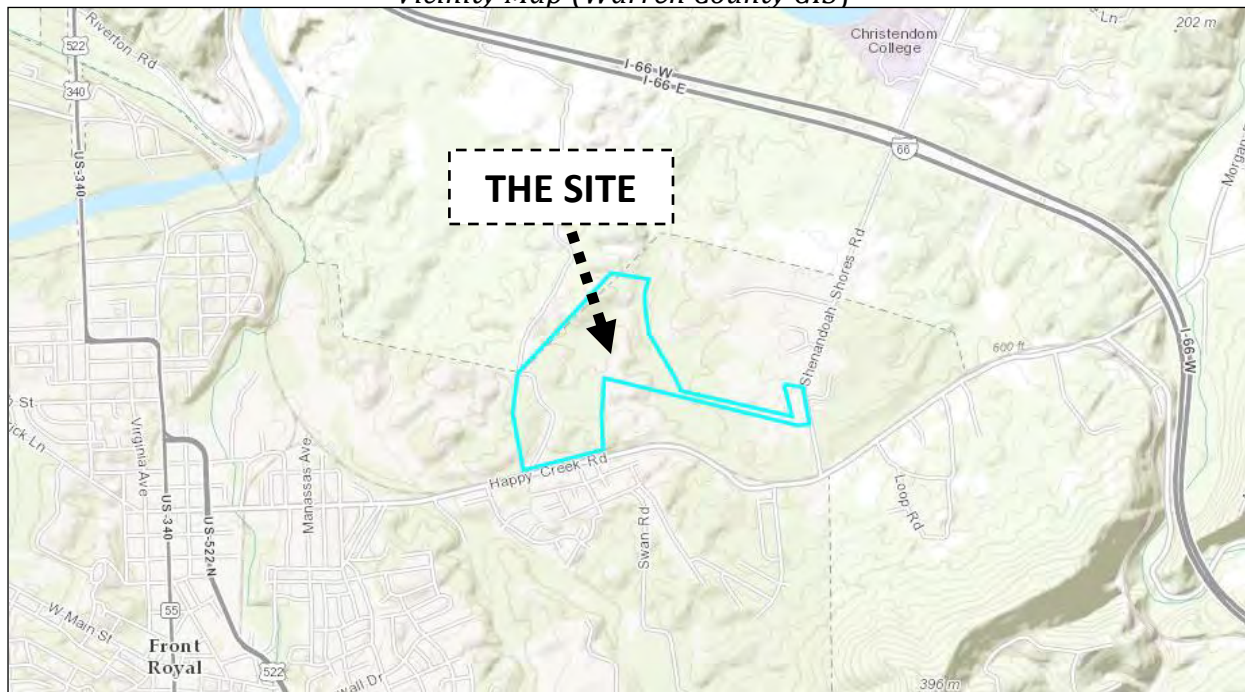
SUMMARY OF REQUEST:

FRLP has submitted a request to amend the 2010 proffers associated with the conditional rezoning of approximately 149 acres to the R1-A Zoning District.

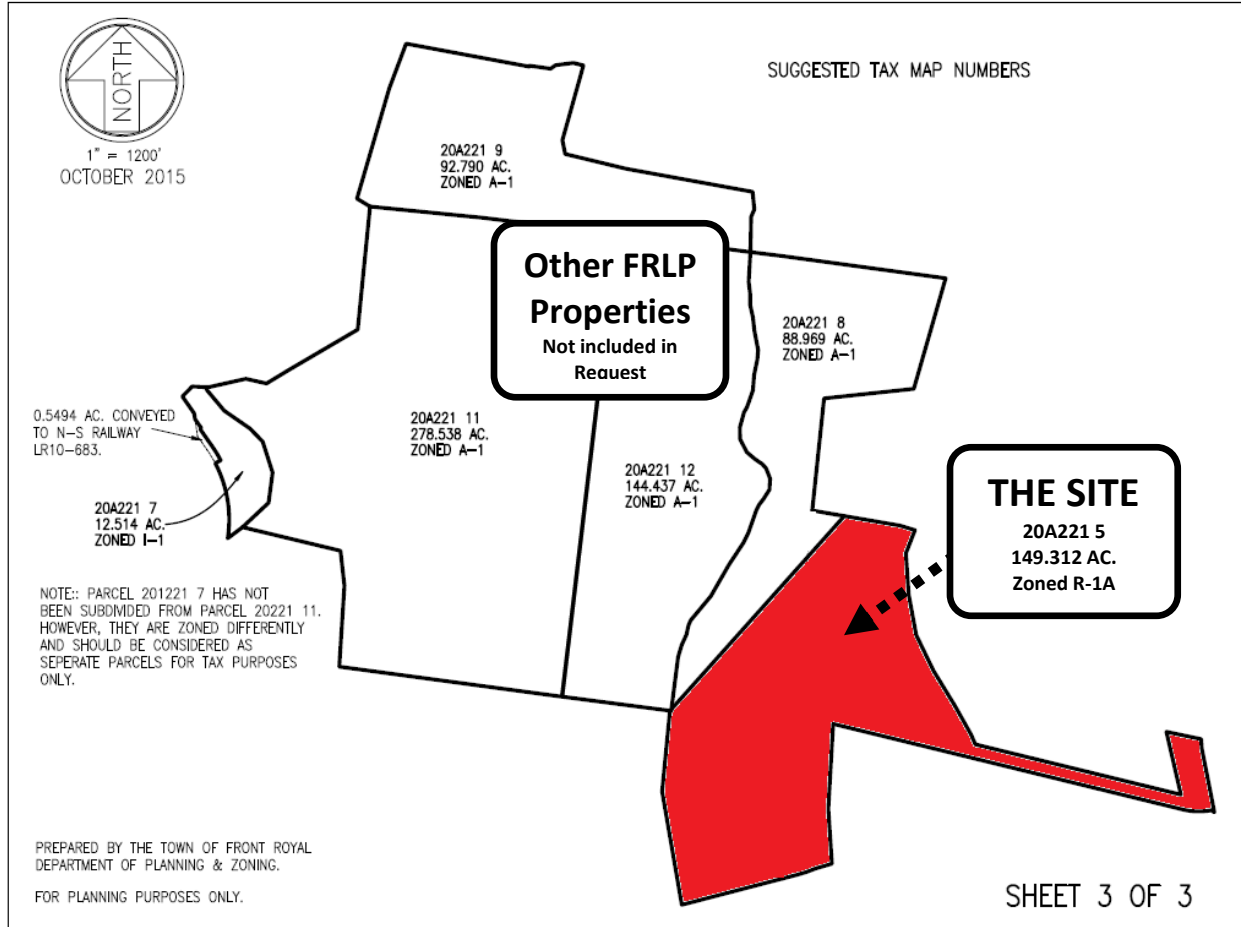
GENERAL INFORMATION:

<i>Site Addresses</i>	None (Vacant Land)
<i>Property Owner(s)</i>	Front Royal Limited Partnership
<i>Zoning District</i>	R-1A (Residential) District
<i>Tax Identification</i>	20A221 5
<i>Location</i>	The property is located north of Happy Creek Road and Norfolk Southern Railroad, presently accessible via Marys Shady Lane.

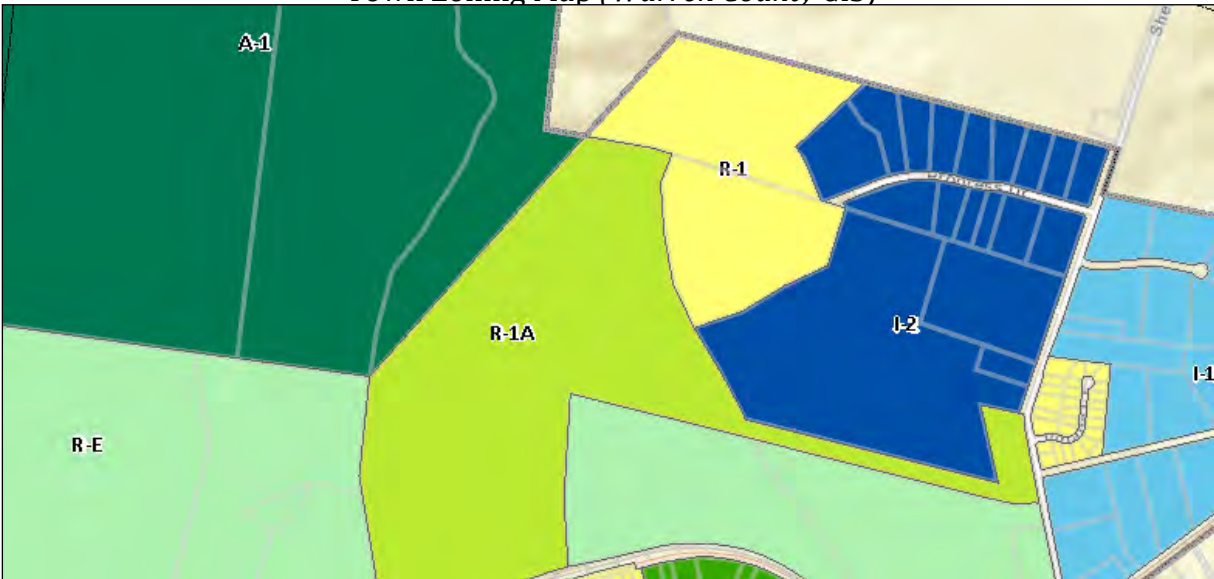
Vicinity Map (Warren County GIS)



Map of FRLP Properties (Survey Illustration)



Town Zoning Map (Warren County GIS)



Aerial Map (WC Online GIS)



SUPPLEMENTAL INFORMATION:

What are Proffers?

Virginia Code § 15.2-2296 through § 15.2-2303.4 address the legislative intent and rules associated with the practice of “conditional rezoning.” Conditional rezoning, typically just referred to as “proffers”, is a process where a zoning reclassification (rezoning) may be allowed subject to certain conditions that are proffered by the applicant. This process gives local governing bodies the ability to better protect their communities from negative impacts associated with new development. Proffers also give developers more flexibility to address negative impacts to obtain approval of rezoning applications that may not otherwise be possible. Once accepted by the governing body, proffers are the same as an ordinance and run with the land.

Proffers can either be cash proffers or non-cash proffers. However, not all localities are authorized to accept cash proffers. Pursuant to Virginia Code § 15.2-2298, the Town of Front Royal has the ability to accept either type. This is because the Town is classified as a high-growth locality (due to Warren County’s growth rate) in the State of Virginia.

Cash proffers may be collected by localities if the funds are for a capital improvement project that is on the community’s Capital Improvement Program (CIP). The funds must be used within 12 years, and may only be used for the project listed in the proffer statement, unless alternative use of the funds is specified within the proffers. Proffers must also be reasonably related to the rezoning; the rezoning must give rise for the need of such proffers; they must be in writing; signed by all parties; and may not obligate a locality to do something they would not otherwise have to do. In addition, proffers are intended to impose additional requirements and restrictions, not alternative or lesser requirements or restrictions. The alteration or lessening of requirements or restrictions is considered “contract zoning”. Contract zoning, much like spot zoning, is illegal. [Pima Gro Systems, Inc. v. Board of Supervisors of King George County, 52 Va. Cir. 241 (2000)].

Perhaps the most important thing to remember about proffers is that they cannot be required, they must be made voluntarily by the applicant.

What Does It Mean That Proffers Must Be “Voluntary”?

- The locality must identify all of the impacts that could result from the rezoning so that the owner may decide which impacts it will address through proffers.
- It is up to the owner to decide whether to address the impacts that could result from the rezoning through proffers.
- If the locality denies the rezoning and the owner did not volunteer proffers to address all of the identified impacts, the decision must be based on sound zoning principles (including unmitigated impacts), and not simply on the fact that the owner did not proffer something.
- It does not mean that the locality is powerless to engage the applicant and its representatives in a meaningful dialogue to ensure that the applicant either addresses the identified adverse impacts through proffers or makes a conscious decision to not address those impacts through proffers.

[Chapter 11, Conditional Zoning: Proffers, The Albemarle County Land Use Law Handbook, Kamptrner (June 2017).

Review Procedure

Adoption or revision of proffers requires the same procedures as a rezoning or ordinance amendment. The submission must first be reviewed by the Planning Commission, and the Planning Commission must forward recommendations to Town Council. Town Code 175-146.D. specifies that the Planning Commission must take action within 90 days after the date of the first regular meeting of the Commission. It is important to note that when the submission changes, such as when a property owner revises the proffers during the review process, the 90-day time period resets.

Before approving and adopting any rezoning, or modification of a previously approved rezoning (proffers), a public hearing is required, pursuant to Virginia Code § 15.2-2204.

Existing Proffers (2010)

The original proffers were reviewed by Town Council and the Planning Commission on June 22, 2017. During this joint meeting, the following issues were discussed:

- 1) Tap Fee Credits. Various aspects of the proffers are not permissible by law (see legal review document from the Town Attorney). Most notably, this includes the tap fee credit that reduces the required tap fees for FRLP. The existing proffers cap the tap fees paid by FRLP at \$10,000 per connection. **[See the Town Attorney's legal review]**
- 2) Confusing Language. Both the Town Attorney and FRLP agree that the proffers are "untenably confusing to interpret." The multiple ways to interpret many of the proffers could lead to unnecessary lawsuits in the future.
- 3) Complexity. In addition to being confusing, the language of the existing proffers is complex. Documentation from the original rezoning process in 2009/2010 appears to be misleading by suggesting that the proffers ensure the construction of the East/West Connector Road. This is far from the case. The existing proffers do account for the possibility of the East/West Connector Road being built, but such possibility is very unlikely due to the following provisions found in the proffers:
 - The proffers require FRLP to build Phases 2-4 of the East/West Connector if the Town elects to build Phase 5. However, even if the Town elects to build Phase 5, FRLP can chose to not build Phases 2 – 4 by stopping development at 199 houses.
 - Even if FRLP decides to build over 199 houses, and the Town builds Phase 5, the existing proffers give FRLP a dollar-for-dollar credit for all the costs FRLP incurs in the construction and design of the East/West Connector (Phases 2 – 4). It is probable that these credits (construction costs) would far exceed any cash proffers paid by FRLP, and not unimaginable that FRLP (or future owner) would try to seek additional payments or credits from the Town.

[See Scenario 1 and Scenario 2 tables for more details attached to the Town Attorney's legal review memorandum]

Proposed Proffers

The Applicant's original proffer revision submission was dated August 24, 2017. It was revised by the Applicant on September 29, 2017, October 27, 2017, November 6, 2017, and most recently on November 8, 2017. Below is a summary of the proffer changes proposed by the Applicant:

- **The proposed proffers eliminate the tap fee credits.**

As mentioned above, there are legal issues with the tap fee credits. FRLP proposes to eliminate the tap fee credits, but in doing so has eliminated the per-unit cash proffers.

- **The proposed proffers eliminate the per-unit cash proffers.**

The existing proffers (2010) include a cash proffer amount of \$19,600 per house, for each house built after the first 99 houses. There are many possible outcomes written into the proffers that control what the total amount of cash proffers would be. This could range dramatically, from a positive 3.1 million dollars to the Town to a negative 11.5 million dollars, or more, to the Town. The major variables that control the outcome include the following:

- How the tap fee credit is accounted for in the first 99 houses.
- The value of land dedications.
- Whether the East/West Connector Road is built or not (scenario 1 or 2).
- How many houses the applicant decides to build.
- The amount of time it takes for the development to occur.

Scenario 1 and 2 is broken down in more detail on the tables attached to the Town Attorney's legal review memorandum.

- **The proposed proffers eliminate Phases 2-5 of the East/West Connector Road.**

The proposed proffers require FRLP to build the first section of the East West Connector and provide right-of-way throughout FRLP's R1-A Zoned property. The intent is that the remaining sections would be addressed in the rezoning of FRLP's 604-acre property. Based on the Applicant's traffic study from 2010, as well as the draft 2017 traffic study, Phases 2 – 5 of the East/West Connector Road is not necessary to accommodate the traffic from the R1-A Zoned property (up to 320 dwelling units).

- **The proposed proffers add new transportation related proffers.**

FRLP has offered up to \$450,000 to the Town for traffic signals at the intersections of Shenandoah Shores Road & East/West Connector, and, Shenandoah Shores Road &

Happy Creek Road. Alternatively, the funds could be used toward Leach Run Parkway if the Town decides to not require a traffic signal. The applicant has also added a proffer for a left-turn lane onto the East/West Connector from northbound traffic on Shenandoah Shores Road. The applicant also has added an eastbound right-turn lane onto Shenandoah Shores Road. The westbound right turn lane off of Happy Creek Road to Shenandoah Shores Road remains in the proffers.

The applicant's original submission on August 24, 2017 included other transportation improvements, such as a southbound right-turn lane on Shenandoah Shores Road at Happy Creek Road. However, these were removed when the applicant's transportation consultants determined that this was not needed for the 320 units, but would be in the future. Current State law prohibits localities from accepting proffers for improvements that are not warranted by the proposed development.

- **The proposed proffers remove other credits in the existing proffers.**

The proposed proffers also remove various credits and gifts that would be received by FRLP, other than the tap fee credits. This includes credits for the right-of-way dedication needed for the development's access road; credits for a small portion of land at Shenandoah Shores Road that is needed for the future realignment of Shenandoah Shores Road for the flyover; and the gifting of Town land to FRLP.

- **The proposed proffers include other minor changes.**

The proposed proffers include other minor changes, such as, but not limited to, the elimination of Energy Star Certification; the increased width of the proposed trail to 8 feet, the modification of East/West Connector road location, as shown on Exhibit 3; the modification of when the neighborhood park would be built in the development process (150th versus 99th permit); the modification of when the school proffers are paid to Warren County; and clarification of what the entrance road will consist of.

The proffers include a provision that the road section A1 to B will be built when any final record plat includes a residential lot within 25 feet of Marys Shady Lane. Staff would note that this effectively means that section A1 to B may not be built. However, the proffers do guarantee that the Town would have reservation of the right to obtain such right-of-way if needed for the future road extension. Furthermore, the road section will be necessary before the A-1 property can be developed.

CONCLUSIONS:

The following bullet points include Pros and Cons associated with the proposed proffers:

- **Pro:** The proposed proffers do address the major legal issues that have been the topic of conversation for the past few years. This includes, but is not limited to, the removal of the tap fee credits and the elimination of Scenario 2 of the East/West Connector road that places a great financial burden on the Town.
- **Pro:** While the proposed proffers only address the first section of the East/West Connector road, this is all that can be legally required. The new proffer laws of the Virginia Code restrict proffers from including off-site improvements that are not necessary for the proposed development. As identified in the applicant's traffic studies, only the first part of the East/West Connector is necessary for the 320 dwelling units on the subject property.
- **Pro/Con:** FRLP did not combine the R1-A and A-1 properties into one unified development project, as requested from Town Council and the Planning Commission. FRLP intends to submit a rezoning application in the near future on the A-1 property to address the future extension of the East/West Connector.
- **Pro/Con:** Although improved from the existing proffers, the proposed proffers still include a great deal of unnecessary and unenforceable language. For example, Sections 2 and 3 are already required by Town Code, and Section 4 and 5 are unenforceable.
- **Pro/Con:** Upon evaluation of the proposed proffers, the most significant change from the Town's perspective appears to be the elimination of the per-unit cash proffers. The existing proffers allow these funds to be used by the Town towards Leach Run Parkway. The proposed proffers eliminate these per-unit cash proffers, but does add \$225,000 towards traffic signalization at the entrance road. Added with the \$225,000 already proffered for traffic signalization at Happy Creek Road/Shenandoah Shores Road, the applicant is offering \$450,000 in cash to the Town to address off-site transportation impacts created by the proposed development. The applicant has also added alternative language, so if the Town decides not to install either of the traffic lights, the funds can be used towards Leach Run Parkway. From FRLP's point of view, the per-unit cash proffers and tap fee credits were originally intended to balance each other out. Therefore, FRLP believes that eliminating the tap fee credits necessitates the elimination of the per-unit cash proffers.
- **Con:** Just as the existing proffers do not, the proposed proffers do not address impacts to law enforcement.

At the November 15, 2017 Planning Commission Meeting, a public hearing was held on the application. No citizen input was received at the public hearing. The Planning Commission approved a motion to recommend approval of the proposed proffers by FRLP.

Attachments to Staff Report:

- 1) Attachment 1 – Applicant's Cover Letter & Statement of Justification
- 2) Attachment 2 – Clean Copy of Proposed Proffers
- 3) Attachment 3 – Exhibits
- 4) Attachment 4 – Redline Version of Proposed Proffers
- 5) Attachment 5 – 2009 Traffic Study
- 6) Attachment 6 – Draft Traffic Report 2017
- 7) Attachment 7 – Technical Memorandum: Left Turn Lane Warrant and 4-Hour Traffic Signal Evaluation
- 8) Attachment 8 – 2010 Approved Recorded Proffers
- 9) Attachment 9 – Legal Review of Existing Proffers w/ Scenario Tables

Paper copies of the above attachments will be provided to Town Council in a 3-ring binder at the Work Session on 12/4/17.

**FRONT ROYAL LIMITED PARTNERSHIP – TOWN PROPERTY
TOWN OF FRONT ROYAL, VIRGINIA**

REZONING: RZ09-02-64

PROPERTY: Parcel 5A, containing approximately 149.3 acres, as shown on “Plat Showing Vacation of Boundary Line on the Property of F&R Limited Partnership” and as recorded in the Land Records of Warren County as Instrument Number 060012763, (attached hereto and incorporated herein by reference as Exhibit 1)

PROPERTY OWNER: Front Royal Limited Partnership, a Virginia Limited partnership

APPLICANT: Front Royal Limited Partnership, a Virginia Limited Partnership

PROJECT NAME: To be determined at time of subdivision application

ORIGINAL DATE OF PROFFERS: February 20th, 2009

REVISION DATES: August 5, 2009
September 4, 2009
September 10, 2009
December 7, 2009
December 28, 2009
January 29, 2010
~~August 24, 2017~~
~~September 29, 2017~~
~~October 27, 2017~~
~~November 6, 2017~~
~~November 8, 2017~~
January 2, 2018

The undersigned hereby proffers that the use and development of the subject property ("Property"), as described above, shall be in general conformance with the following conditions, which shall supersede all other proffers that may have been made prior hereto. In the event the above referenced rezoning is not granted as applied for by the Applicant ("Applicant"), these proffers shall be withdrawn and shall be invalid. In the event this application is denied by the Front Royal Town Council (the "Council"), such denial is appealed to a court of competent jurisdiction, and this rezoning application

is thereafter remanded to the Council for reconsideration, then the Applicant may elect to readopt all or any portion hereof, in a writing specifically for that purpose; if no such election is made, these proffers shall be withdrawn and shall be invalid.

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.

The improvements proffered herein shall be provided at the time of development of that portion of the Property adjacent to or including the improvement or other proffered requirement, unless otherwise specified herein.

The term “Applicant” as referenced herein shall include the present and all future owners and successors in interest. The term “building permit” as used herein shall mean a building permit issued for the construction of a single-family home on the Property.

1. LAND USE:

- 1.1. The Property shall be developed in general conformance with the regulations of the R1-A zoning districts, as it is set forth in the Town of Front Royal Code, or as may be otherwise approved by the Town of Front Royal or modified herein.
- 1.2. The total number of dwelling units shall not exceed 320 single-family dwellings.

2. WATER AND SEWER

- 2.1. The Property shall be connected to public water and sewer systems constructed at the Applicant’s expense.

3. STORMWATER MANAGEMENT & ENVIRONMENT

- 3.1. Stormwater management on the Property shall be provided in accordance with the applicable regulations of the town of Front Royal and Warren County. In addition, Best Management Practices and low impact development technologies shall be used where reasonably practical, as determined by the Applicant, and permitted, to mitigate any adverse water quality impact on the Shenandoah River that may occur.

4. COMMUNITY DESIGN

- 4.1. The Applicant shall impose restrictive covenants for the overall community, which shall be recorded prior to the conveyance of the first parcel of the Property, and which shall be made available to staff upon request prior to recordation of any final

subdivision plat. Among other things such covenants will address the overall continuity of design within the community through design standards for the following elements:

- 4.1.1. Custom mailbox design;
- 4.1.2. Standardized private residential fencing styles and color;
- 4.1.3. Custom designed street signage and stop signage;
- 4.1.4. Uniform site furnishing selection (trash receptacles and benches);
- 4.1.5. Standardized common area fencing style and color.
- 4.1.6. Permitted building materials.
- 4.1.7. Restrictions on the visibility of concrete block from streets within the development.

5. CREATION OF HOMEOWNERS' AND PROPERTY OWNERS' ASSOCIATIONS

- 5.1. One or more homeowners' associations ("HOA") shall be created and shall be made responsible for the maintenance and repair of common areas, including any common open space that may be established in accordance with the requirements of the Town Zoning Ordinance or these proffers. Any such HOA shall be granted such other responsibilities, duties, and powers as are customary for such associations, or as may be required to effect the purposes for which such HOA is created. Such HOA shall be granted sufficient powers as may be necessary, by regular or special dues or assessment, to raise revenues sufficient to perform the duties assigned hereby, or by the documents creating the Association, and to perform rate studies necessary to determine dues, fees, and assessments as may be required.
- 5.2. In addition to any other duties and responsibilities as may be assigned to it, the HOA shall have title to and responsibility for (i) common open space areas not dedicated to public use in accordance with these proffers and (ii) common buffer areas located outside of residential lots. It shall also have (iii) responsibility for the perpetual maintenance of any entrance feature (subdivision) signs, street, alleys and perimeter or road

buffers located within any easements for those purposes to be granted to the HOA, and (iv) for maintenance of private streets and alleyways, if any.

6. LAND DEDICATION

- 6.1. The Applicant shall dedicate to the Town of Front Royal, under the conditions set forth below, a 1.75 acre site adjacent to Route 606, as such area is generally depicted on Exhibit 2 attached hereto and incorporated herein by reference, prepared by J. Duggan & Associates, dated September 4, 2009, and identified as "1.75-Acre Land Dedication" (the "Dedication Area"). A sight distance easement shall be reflected on the Dedication Plat, if required by VDOT at the time of dedication, so as not to impede or adversely affect design or approval of the Entrance Road (as defined below), and its connection to Route 606.
- 6.2. The Dedication Area shall be used by the Town and the Virginia Department of Transportation ("VDOT") for the construction of the Leach Run Parkway, or, at the Town's sole discretion, it may be further conveyed by the Town to Warren County, Virginia, for use as a fire and rescue station. If the Town elects to use the Dedication Area for construction of Leach Run Parkway and if the Town determines that additional right-of-way beyond the Dedication Area is necessary for Leach Run Parkway, the Applicant shall dedicate additional land to the Town solely for construction of Leach Run Parkway the "Additional Land Dedication"). Provided, however, that (i) such Additional Land Dedication shall not exceed two (2) acres in size, and (ii) the Additional Land Dedication shall not impede or adversely affect design or approval of the Entrance Road (as defined below), and its connection to Route 606.
- 6.3. The Applicant shall execute a dedication plat within 18 months of the Town's delivery of a plat at the Town's expense, depicting by metes and bounds the Dedication Area (the "Dedication Plat"), provided that no such dedication shall be required prior to the issuance of the 25th building permit for the Property. Further, and notwithstanding the foregoing, in the event the Town does not request the aforesaid dedication prior to the issuance of the 300th building permit for the Property, the Applicant shall be relieved of its obligation to make the aforesaid dedication.

7. PEDESTRIAN AND PARK FACILITIES

- 7.1. Trails.

- 7.1.1. The Applicant shall construct a walking/jogging trail with a minimum width of 8 feet on one side of Phase 1 of the East/West Connector as generally depicted on Exhibit 3 attached hereto and incorporated herein prepared by Bowman Consulting and entitled “R1-A Transportation Exhibit”.
 - 7.1.2. In addition, if the Town approves all final subdivision plats for the development permitting sidewalks on one side of each street in the development, the Applicant shall construct alternative pedestrian walking trails within the development of a minimum length of .75 miles. The location of the walking trails shall be determined by the Applicant and depicted on any preliminary plat for the development of the Property. The construction of such walking trails shall occur either in phases in conjunction with the development of sections Property as depicted on the preliminary plat, or at one time, in the sole discretion of the Applicant. If such final subdivision plats are not approved with sidewalks on one side of each street of the development, the Applicant shall not be obligated to construct such additional trails, but in any event, the Applicant shall construct the trails as set forth in Proffer 7.1.1
- 7.2. Not later than the issuance of the 150th building permit for the Property, the Applicant shall construct a neighborhood park or parks (the “Neighborhood Park”) that shall consist of not less than four (4) acres but not more than ten (10) acres, and shall include a basketball court or 2 basketball hoops, a playground, and at least one multi-purpose playing field, or similar equivalent amenities if approved by the Director of Planning. The design and location of the Neighborhood Park and its associated amenities shall be in the sole discretion of the Applicant.
- 7.3. Alternatively and notwithstanding the foregoing, in the event the Town elects in writing prior to the issuance of the 25th building permit for the Property to require the Applicant to dedicate the Neighborhood Park to Warren County, and Warren County agrees in writing to accept such dedication and the maintenance responsibility for the Neighborhood Park and its amenities, the Applicant shall design, plat, and construct the Neighborhood Park and the amenities described above in accordance with the standards set by the Warren County

Department of Parks and Recreation. In the event that the County declines to accept the aforesaid dedication, the Neighborhood Park shall be dedicated to an HOA created pursuant to Proffer 5, above.

8. RIGHT-OF-WAY DEDICATIONS AND RESERVATION

- 8.1. Entrance Road –Phase 1 of East/West Connector. The final subdivision plat (a “Record Plat”) for the first phase of the development of the Property shall include reservation and/or dedication of not less than 100 feet of right-of-way, unless an alternative width is mutually agreed to by the Town and Applicant, for an entrance road into the Property, the general location of which is depicted on the Exhibit 3 attached hereto and incorporated herein prepared by Bowman Consulting and entitled “R1-A Transportation Exhibit,” with such road identified thereon as Phase 1, and connecting Point A to A-1 and A-1 to B thereon (hereinafter the “Entrance Road”). The right-of-way reservation and/or dedication language shall be submitted by the Applicant and reviewed by the Town Attorney and Director of Planning before recordation of the first final record plat.
- 8.2. Right-of-Way Dedication. As a condition of the approval of each record plat where the East/West Connector is located the Applicant shall dedicate to the Town, at no cost and in fee simple absolute, right-of-way with a minimum width of one-hundred (100) feet, unless an alternative width is mutually agreed to by the Town and Applicant, to accommodate the development of the East/West Connector on the Property.
- 8.3. The final locations of the aforesaid roads shall be subject to modifications based on final design and final engineering and approvals thereof by the Town and/or VDOT, final lot layout, and Town Code requirements.

9. CONSTRUCTION OF EAST/WEST CONNECTOR

- 9.1. Entrance Road – Phase 1 of East/West Connector. The Entrance Road shall consist of a two-lane roadway with full turn lanes, and shall include a 4-lane section at its connection with Shenandoah Shores Road for five hundred and fifty (550) feet as required by Town Code or as otherwise may be approved by the Town. For purposes of this Proffer Statement the segments

of the roadways to be dedicated and constructed are depicted on Exhibit 3 and designated by letters and numbers and referenced herein.

- 9.1.1. Point A to A-1. The Applicant shall construct a two (2) lane Entrance Road to the first proposed street intersection in the subdivision prior to and as a condition of the issuance of the first building permit for the property
- 9.1.2. Point A-1 to B. Prior to and as a condition of the recordation of any final record plat that includes any residential lot area within 25 feet of the centerline of existing Mary's Shady Lane the Applicant shall have completed the construction of two (2) lanes of Phase 1 of the East/West Connector to the western property boundary.
- 9.1.3. No individual single-family lot shall have direct driveway access to the East/West Connector.
- 9.2. Eastbound Right Turn Lane on Entrance Road at Shenandoah Shores Road. The Applicant shall construct one (1) dedicated eastbound right turn lane on the Entrance Road at its intersection with Shenandoah Shores Road.

10. TRANSPORTATION IMPROVEMENTS

- 10.1. Westbound Right Turn Lane on Happy Creed Road. The Applicant shall construct a fifty (50) foot westbound right turn lane on Happy Creek Road at Shenandoah Shores within the existing right-of-way prior to the issuance of the 25th building permit for the Property. In the event that such improvement has been completed at such time, then the Applicant shall be relieved of its obligations herein.
- 10.2. Traffic Light at Happy Creek Road and 606. If the Town determines that a traffic light is warranted at Route 606 and Happy Creek Road, then the Applicant shall contribute \$225,000.00 to the Town of Front Royal for the construction of such traffic light. The Applicant shall not be required to make such contribution earlier than the issuance of the 50th building permit for the Property or later than the issuance of the 225th building permit for the Property.

- 10.2.1. Alternatively, and notwithstanding the foregoing, any such monies paid pursuant to this Proffer may be applied toward the right-of-way acquisition, design, and/or construction of the Leach Run Parkway, including a future fly-over of Happy Creek Road and the Norfolk Southern Railroad tracks to Shenandoah Shores Road.
- 10.3. Northbound Shenandoah Shores Road Left Turn at East/West Connector. The Applicant shall construct a two hundred (200) foot northbound left turn lane with taper on Shenandoah Shores Road at its proposed intersection with the Entrance Road within the existing right-of-way prior to the issuance of the 200th building permit for the Property. In the event that such improvement has been completed at such time, then the Applicant shall be relieved of its obligations herein.
 - 10.3.1. Alternatively, and notwithstanding the foregoing, if at any time prior to the issuance of the 150th building permit on the Property the Applicant shall have designed and engineered a traffic circle or roundabout at this location, and the Town and VDOT shall have approved such design and in lieu of the aforementioned turn lane, then the Applicant shall construct a traffic roundabout prior to and as a condition of the issuance of the 200th building permit on the Property.
- 10.4. Roundabout or Traffic Signalization at Shenandoah Shores Road and East/West Connector.
 - 10.4.1. Prior to and as a condition of the issuance of the 1st building permit on the Property, the Applicant shall submit a roundabout justification report to the Town and VDOT for the intersection of Route 606 and the Entrance Road.
 - 10.4.2. Prior to and as a condition of the issuance of the 225th building permit for the Property, the Applicant shall submit a traffic signalization warrant analysis to the Town, and in accordance with VDOT requirements for the same, for the intersection of Route 606 and the Entrance Road. In the event such traffic signal is warranted, the Applicant shall make a one-time contribution to the Town of Front Royal equal to its pro-rata share of the estimated costs of

such traffic light, provided, however, that in no event shall such contribution exceed \$225,000.00. The Applicant shall not be required to make such contribution earlier than the issuance of the 250th building permit for the Property or later than the issuance of the 300th building permit for the Property.

- 10.4.2.1. Alternatively, and notwithstanding the foregoing, any such monies paid pursuant to this Proffer may be applied toward the right-of-way acquisition, design, and/or construction of the Leach Run Parkway, including a future fly-over of Happy Creek Road and the Norfolk Southern Railroad tracks to Shenandoah Shores Road.

11. CASH CONTRIBUTIONS TO TOWN OF FRONT ROYAL, VIRGINIA FOR NEW POLICE DEPARTMENT FACILITY

- 11.1. The Applicant shall pay to the Town of Front Royal a per unit sum of \$1,220.00 prior to and as a condition of the issuance of each residential unit occupancy permit on the Property, not to exceed a total of \$390,400.00, for the engineering, design, construction, and related improvements costs of a new Police Department building and facility.

12. CASH CONTRIBUTIONS TO WARREN COUNTY, VIRGINIA

- 12.1. In the event this rezoning application is approved, the Applicant will pay to Warren County, Virginia a per unit sum of \$11,000.00, prior to and as a condition of the issuance of an occupancy permit for each single-family dwelling unit in excess of 160 such units constructed on the Property.
- 12.2. Notwithstanding the foregoing Proffer, the audited costs of the engineering, design, and construction of the Neighborhood Park as provided in these Proffers, shall be credited against the aforesaid per unit contribution, provided further that the Applicant shall be entitled to a credit for the dedication of the land therefor in the amount of \$320,000.

13. MARY'S SHADY LANE

- 13.1. If the Applicant fails to relocate Mary's Shady Lane, the Applicant shall revise its then current site or subdivision plan to reflect the continued existence thereof.

- 13.2. If the Applicant successfully relocates Mary's Shady Lane, then the Applicant shall connect Mary's Shady Lane to the Entrance Road no later than the 300th building permit for the Property. At no time during the construction on or development of the Property shall access be denied to persons using Mary's Shady Lane.
- 13.3. Applicant shall not utilize Mary's Shady Lane as a construction entrance for the Property.

14. MISCELLANEOUS

- 14.1. Prior to the commencement of any land disturbing activities on the Property, the Applicant shall perform a Phase I Archeological Study for investigation of those areas previously identified on the Property as potentially sensitive in the "Phase IA Archeological Evaluation of the 830.4 Acre Vazzana Property, Front Royal and Warren County, Virginia," dated January 2004, prepared by Thunderbird Archeological Associates, Inc.
- 14.2. Any additional archeological features identified on the Property during the Phase I study shall be further evaluated in accordance with the Virginia Department of Historical Resources ("VDHR") guidelines.

15. OPEN SPACE

- 15.1. A minimum of 30% of the Property will be used for permanent open space. Such open space shall be inclusive of passive and active open space including all park land provided hereunder and stormwater management uses.

16. COMPLIANCE WITH STATE LAWS

- 16.1. The Applicant hereby acknowledges, affirms, and agrees that all offsite proffers, including cash proffers, offered herein are voluntary, reasonable, specifically attributable to the new residential development or new residential use, address an impact to an offsite public facility such that the new residential development or residential use creates a need, or identifiable portion of a need, for one or more public facility improvements in excess of existing public facility capacity at the time of the rezoning or proffer condition amendment and each new residential development or new residential use receives a direct and material benefit from the proffer made with respect to any public facility improvement, and are offered in accordance with

all requirements of state law. Furthermore, the Applicant agrees that the Town, including its officers, employees and agents, have not suggested, requested, required or accepted any unreasonable proffers for the rezoning or proffer condition amendment.

17. ESCALATOR

- 17.1. Monetary contributions as set forth in this Proffer Statement that are paid to the Town of Front Royal and/or Warren County after 24 months from the date of rezoning approval shall be adjusted in accordance with the Urban Consumer Price Index (“CPI-U”), as published by the United States Department of Labor. The adjustment shall be calculated from the CPI-U published most nearly to and following January 1st from that date 24 months after rezoning approval and the date the contributions are paid, subject to a cap of 3% per year, non-compounded.

SIGNATURES APPEAR ON THE FOLLOWING PAGE

OWNER:

FRONT ROYAL LIMITED PARTNERSHIP,
a Virginia limited Partnership

By: MVA Limited Partnership, general partner of
Front Royal Limited Partnership

By: DOC Corporation, general partner of MVA
Limited Partnership

By: _____
David A. Vazzana, President of
DOC Corporation

Date: _____

**FRONT ROYAL LIMITED PARTNERSHIP – TOWN PROPERTY
TOWN OF FRONT ROYAL, VIRGINIA**

REZONING: RZ09-02-64

PROPERTY: Parcel 5A, containing approximately 149.3 acres, as shown on "Plat Showing Vacation of Boundary Line on the Property of F&R Limited Partnership" and as recorded in the Land Records of Warren County as Instrument Number 060012763, (attached hereto and incorporated herein by reference as Exhibit 1)

PROPERTY OWNER: Front Royal Limited Partnership, a Virginia Limited partnership

APPLICANT: Front Royal Limited Partnership, a Virginia Limited Partnership

PROJECT NAME: To be determined at time of subdivision application

ORIGINAL DATE OF PROFFERS: February 20th, 2009

REVISION DATES: August 5, 2009
September 4, 2009
September 10, 2009
December 7, 2009
December 28, 2009
January 29, 2010
~~August 24, 2017~~
~~September 29, 2017~~
~~October 27, 2017~~
~~November 6, 2017~~
~~November 8, 2017~~
January 2, 2018

The undersigned hereby proffers that the use and development of the subject property ("Property"), as described above, shall be in general conformance with the following conditions, which shall supersede all other proffers that may have been made prior hereto. In the event the above referenced rezoning is not granted as applied for by the Applicant ("Applicant"), these proffers shall be withdrawn and shall be invalid. In the event this application is denied by the Front Royal Town Council (the "Council"), such denial is appealed to a court of competent jurisdiction, and this rezoning application

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is thereafter remanded to the Council for reconsideration, then the Applicant may elect to readopt all or any portion hereof, in a writing specifically for that purpose; if no such election is made, these proffers shall be withdrawn and shall be invalid.

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.

The improvements proffered herein shall be provided at the time of development of that portion of the Property adjacent to or including the improvement or other proffered requirement, unless otherwise specified herein.

The term "Applicant" as referenced herein shall include the present and all future owners and successors in interest. The term "building permit" as used herein shall mean a building permit issued for the construction of a single-family home on the Property.

1. LAND USE:

- 1.1. The Property shall be developed in general conformance with the regulations of the R1-A zoning districts, as it is set forth in the Town of Front Royal Code, or as may be otherwise approved by the Town of Front Royal or modified herein.
- 1.2. The total number of dwelling units shall not exceed 320 single-family dwellings.

2. WATER AND SEWER

- 2.1. The Property shall be connected to public water and sewer systems constructed at the Applicant's expense.

3. STORMWATER MANAGEMENT & ENVIRONMENT

- 3.1. Stormwater management on the Property shall be provided in accordance with the applicable regulations of the town of Front Royal and Warren County. In addition, Best Management Practices and low impact development technologies shall be used where reasonably practical, as determined by the Applicant, and permitted, to mitigate any adverse water quality impact on the Shenandoah River that may occur.

4. COMMUNITY DESIGN

- 4.1. The Applicant shall impose restrictive covenants for the overall community, which shall be recorded prior to the conveyance of the first parcel of the Property, and which shall be made available to staff upon request prior to recordation of any final

subdivision plat. Among other things such covenants will address the overall continuity of design within the community through design standards for the following elements:

- 4.1.1. Custom mailbox design;
- 4.1.2. Standardized private residential fencing styles and color;
- 4.1.3. Custom designed street signage and stop signage;
- 4.1.4. Uniform site furnishing selection (trash receptacles and benches);
- 4.1.5. Standardized common area fencing style and color.
- 4.1.6. Permitted building materials.
- 4.1.7. Restrictions on the visibility of concrete block from streets within the development.

5. CREATION OF HOMEOWNERS' AND PROPERTY OWNERS' ASSOCIATIONS

- 5.1. One or more homeowners' associations ("HOA") shall be created and shall be made responsible for the maintenance and repair of common areas, including any common open space that may be established in accordance with the requirements of the Town Zoning Ordinance or these proffers. Any such HOA shall be granted such other responsibilities, duties, and powers as are customary for such associations, or as may be required to effect the purposes for which such HOA is created. Such HOA shall be granted sufficient powers as may be necessary, by regular or special dues or assessment, to raise revenues sufficient to perform the duties assigned hereby, or by the documents creating the Association, and to perform rate studies necessary to determine dues, fees, and assessments as may be required.
- 5.2. In addition to any other duties and responsibilities as may be assigned to it, the HOA shall have title to and responsibility for (i) common open space areas not dedicated to public use in accordance with these proffers and (ii) common buffer areas located outside of residential lots. It shall also have (iii) responsibility for the perpetual maintenance of any entrance feature (subdivision) signs, street, alleys and perimeter or road

buffers located within any easements for those purposes to be granted to the HOA, and (iv) for maintenance of private streets and alleyways, if any.

6. LAND DEDICATION

- 6.1. The Applicant shall dedicate to the Town of Front Royal, under the conditions set forth below, a 1.75 acre site adjacent to Route 606, as such area is generally depicted on Exhibit 2 attached hereto and incorporated herein by reference, prepared by J. Duggan & Associates, dated September 4, 2009, and identified as "'1.75-Acre Land Dedication" (the "Dedication Area"). A sight distance easement shall be reflected on the Dedication Plat, if required by VDOT at the time of dedication, so as not to impede or adversely affect design or approval of the Entrance Road (as defined below), and its connection to Route 606.
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- 13.3. Applicant shall not utilize Mary's Shady Lane as a construction entrance for the Property.

14. MISCELLANEOUS

- 14.1. Prior to the commencement of any land disturbing activities on the Property, the Applicant shall perform a Phase I Archeological Study for investigation of those areas previously identified on the Property as potentially sensitive in the "Phase IA Archeological Evaluation of the 830.4 Acre Vazzana Property, Front Royal and Warren County, Virginia," dated January 2004, prepared by Thunderbird Archeological Associates, Inc.
- 14.2. Any additional archeological features identified on the Property during the Phase I study shall be further evaluated in accordance with the Virginia Department of Historical Resources ("VDHR") guidelines.

15. OPEN SPACE

- 15.1. A minimum of 30% of the Property will be used for permanent open space. Such open space shall be inclusive of passive and active open space including all park land provided hereunder and stormwater management uses.

16. COMPLIANCE WITH STATE LAWS

- 16.1. The Applicant hereby acknowledges, affirms, and agrees that all offsite proffers, including cash proffers, offered herein are voluntary, reasonable, specifically attributable to the new residential development or new residential use, address an impact to an offsite public facility such that the new residential development or residential use creates a need, or identifiable portion of a need, for one or more public facility improvements in excess of existing public facility capacity at the time of the rezoning or proffer condition amendment and each new residential development or new residential use receives a direct and material benefit from the proffer made with respect to any public facility improvement, and are offered in accordance with

all requirements of state law. Furthermore, the Applicant agrees that the Town, including its officers, employees and agents, have not suggested, requested, required or accepted any unreasonable proffers for the rezoning or proffer condition amendment.

17. ESCALATOR

- 17.1. Monetary contributions as set forth in this Proffer Statement that are paid to the Town of Front Royal and/or Warren County after 24 months from the date of rezoning approval shall be adjusted in accordance with the Urban Consumer Price Index (“CPI-U”), as published by the United States Department of Labor. The adjustment shall be calculated from the CPI-U published most nearly to and following January 1st from that date 24 months after rezoning approval and the date the contributions are paid, subject to a cap of 3% per year, non-compounded.

SIGNATURES APPEAR ON THE FOLLOWING PAGE

OWNER:

FRONT ROYAL LIMITED PARTNERSHIP,
a Virginia limited Partnership

By: MVA Limited Partnership, general partner of
Front Royal Limited Partnership

By: DOC Corporation, general partner of MVA
Limited Partnership

By: _____
David A. Vazzana, President of
DOC Corporation

Date: _____

Town Police Department: Based on Springsted Tax Base Value % attributable to residential vs. business*. This allocated the costs of the new Police Department based on 66.87% of the tax base being residential and 32.16% being business (i.e. cannot allocate entire cost of a capital improvement to one portion of the tax base).

PD Capital Improvements	\$11,000,000
% Attributable to Residential*	66.87%
PD Costs Attributable to Residential Tax Base	\$7,355,700
FR Population 2010 Census	14440
2012-2016 Persons per Household	2.53
320 Units - FRLP New Persons	810
Front Royal Population + FRLP New Residents	15250
Total Cost/Capita	\$482.35
Cost per New Home	<u>\$1,220</u>
(x 2.53 Persons per Home)	

SUMMARY: The Cost allocation to a new home on a per capita basis equals \$1,220.

*Springsted Study 2010 (page 4) shown below:

Town of Front Royal Allocation Percentages

Property Type	Number of Parcels	Market Value	Percentage by Value	Percentage By Number	Average Of Value and Number Percentages
Residential Totals	5,643	1,162,010,300	66.87%	86.94%	76.90%
Business Totals	830	558,905,200	32.16%	12.79%	22.48%
Other Totals	18	16,769,300	0.97%	0.28%	0.62%
Total	6,491	1,737,684,800	100.00%	100.00%	100.00%

Front Royal Limited Partnership

August 24, 2017

SENT VIA E-MAIL ONLY

Mr. Jeremy Camp
Director of Planning
Town of Front Royal
Front Royal, Va. 22630

Re: FRLP's R1-A Proffer Amendment, originally submitted June 25, 2015

Dear Mr. Camp,

Per our ongoing discussions of FRLP's 2015 proffer amendment please find attached:

1. A table outlining FRLP's proposed proffer changes, August 24, 2017.
2. A clean & redline version of the revised Proffer Statement, dated August 24, 2017.
3. Updated Statement of Justification in support of the application, August 24, 2017.

The proposed proffer revisions represent our best efforts to meet Town requests for changes to the original proffers. We believe that the proposed changes should resolve the Town's remaining legal concerns with the 2010 proffer statement. The proffer revisions also include an additional \$810,000+ in cash and transportation improvements that the Town would not receive (in any event) under the existing proffers.

R1-A and A-1 Property Transportation Improvements Coordination

Most notably, we have added transportation improvements to the revised proffers that reflect the results of our 2016 traffic study for the recently annexed property and an additional phasing analysis our traffic engineers did. Although these 320 homes will not generate any more traffic than when the project was approved, the underlying traffic counts on 606 and at H.C. Road increased significantly since our 2009 and 2013 study (and recent VDOT data). We are unaware of any development north of the railroad tracks that might account for the increase. In any event, the added improvements coordinate development of the two projects in an effort to minimize impacts to the area residents and businesses, and include 3 added turn lanes and a new traffic light or roundabout on 606.

where is this?

Why did FRLP submit the proffer amendment in 2015?

FRLP submitted the amendment in an effort to move beyond the Town's issues with the 2010 proffers and the uncertainties associated with the potential interpretations

of the proffers. The Town has expressed legal concerns with the proffers since the annexation efforts in 2013. At that time, it became clear that the Town interpretations had materially adversely changed since the proffers had been approved in 2010.

As such, and based on our subsequent discussions with the Town about the Town's concerns, FRLP submitted the amendment and that proposed removing all of what we believed to be the legally egregious terms to the Town. The 2010 proffer statement has two scenarios in it, and we believed the Town found portions of the "E/W scenario" as unacceptable to it and/or not legally permissible and thus the proffer amendment proposed removing it. In sum, we submitted this amendment to:

- Address and resolve the Town's concerns as stated since 2013, and
- Address and resolve the Town's concerns in order to remove the cloud of uncertainty associated with the varying proffer interpretations. Such uncertainty is untenable to development and we believe resolving these issues would be to the benefit of both parties, and
- Address and resolve the Town's concerns in order to enable both parties to negotiate rezoning proffers for the recently annexed A-1 property. We believe failing to resolve the proffer interpretation issues had become and is untenable to any rezoning effort for the recently annexed property.

The Town response was closed sessions. It became evident that the Town now found *both* scenarios in the proffers to be unacceptable to it and as it demanded wholesale changes to the proffer terms. In sum, FRLP had requested the Town consider making a choice between the two proffer scenarios that it will need to make one day anyway, and the Town response was both proffer scenarios were impermissible or unacceptable to it.

The Town added 82 new homes between 2009-16, or 10.25 per year on average

As an aside, Front Royal is not alone as many localities decide they do not want any more growth and/or will not approve viable projects. By adding enough costs or impact fees and proffer demands to our project(s), the Town eliminates incentive for the private sector to invest in and to finance any development. Capitalism is a terrible system, but it is the best one we have – and growth and investment will continue to go to viable projects in neighboring localities and states. Some states and localities actually even view growth favorably (think Texas/Southeast/Southwest). Virginia is not one of them.

Growth will go where it makes economic sense and where there is the least amount of risk as possible. Private sector investment requires some certainty, and the Town's 2013+ R1-A concerns and interpretations eliminated any certainty the project had.

3

We believe resolving the uncertainties associated with the interpretation of the proffers would be in the best interests of both parties. The Town appears to want to litigate these issues, or at least threaten to do so in order to force FRLP to agree to its desired terms, and we have now removed all of the objectionable tap fees/proffer credits.

FRLP's 2010 R1-A Proffer Statement - Hindsight is 20/20

In hindsight, we under estimated the Town's distaste for both scenarios in the proffers it agreed to in 2010 – FRLP believed the Town would view this amendment favorably. We certainly did not expect such a visceral reaction from the Town. We had discussed these issues since we became aware of them during the annexation efforts in 2013, and in numerous meetings prior to filing the amendment. And we did not think that the Town would object to removing the scenario it deems unacceptable or impermissible.

In sum, if we can't resolve the Town's issues with our 2010 proffers then we would like to know that sooner rather than later and so that we may change our approach and efforts toward the project(s) accordingly. Similarly, if the Town refutes the R1-A proffer terms, and we can't resolve its requests for changes, then we see no path forward or reason to invest in any rezoning efforts and proffers for the A-1 property.

As such, FRLP would respectfully request a vote on our proffer amendment as soon as practicable. We might also request a work session with Council at the Mayor's discretion and Council and staff's earliest convenience.

Finally, we cannot emphasize enough that our door is always open to discuss any issues that Council, Town officials, and community members may have. We look forward to all such discussions, whether over coffee or in formal public meetings. We hope and would encourage any community stakeholders and decisions makers to be in touch and we would be happy to discuss the project and/or answer any questions.

I look forward to our continued discussions, and to closure on this amendment.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Vazzana", followed by a horizontal line.

David Vazzana

FRLP

dvazzana@gmail.com

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Section 1: Introduction

FRLP is proposing an amendment to its 2010 R1-A proffer statement for 150 acres and approved for 320 homes. It would be a text amendment to the proffers to reflect the understanding reached between the Town and property owner to eliminate legal concerns that have arisen and changes that have occurred in the post-recession housing market.

We believe the proffers should resolve the Town's remaining legal concerns and we believe that it would remove the uncertainty generated by these issues in the best interests and to the benefit of both parties. Importantly, the August 2017 proffers make every effort to coordinate the development of the two projects to the greatest extent and greatest benefit to existing residents/businesses and the Town as possible and feasible.

A. The 2010 Proffers have two potential scenarios

The existing proffers have 2 potential scenarios, each with their own terms and conditions, and the Town will need to choose one or the other in the future prior to approval of the first final record plat. The two potential scenarios in the proffers:

- The "E/W" scenario or/vs.
- The Town getting its full W&S tap/connection fees, and directing any cash proffer contributions toward transportation improvements.

Of the two, the proffer amendment proposes eliminating the "E/W" scenario.

Section 2: Proposed Removal of the E/W Scenario

FRLP filed the amendment primarily based on the legal concerns that the Town had expressed with the R1-A proffers, and specifically with the "E/W scenario". These concerns first surfaced during the annexation efforts. At that time, it became clear that the Town's legal interpretations of the two scenarios, and of what may and may not be allowed, had materially changed since the approval of the rezoning and proffers in 2010.

A. Town Concern: Legal Issues with the E/W scenario

- Legal Issues – Town staff has indicated that capping the W&S tap fees at \$10,000 as called for in 11.3.4 and that the escrow account mechanism in 13.4 may not be legally permissible. And the proffers make clear that if the Town and FRLP do not enter into an agreement for the reduced Tap fees (etc.), then we default to the other scenario in the proffers. In any event, the E/W scenario appears not acceptable to the Town at best, and a litigious headache or train wreck at worst.

- FRLP believes that the Town's legal concerns would prevent it from choosing, and/or from having the option to choose, the "E/W" scenario.
- FRLP did not believe that the Town would object to removing the "E/W" scenario" due to its position that its terms are impermissible and/or unacceptable to it.
- Based on the Town's concerns with proffers 11.3.4 and 13.4 respectively, and the fact that both 11.3.4 and 13.4 are only applicable to the E/W scenario, the proffer amendment proposed removing the legally objectionable E/W scenario.

The Town's legal concerns with the E/W scenario, and specifically sections 11.3 and 13.4 of the 2010 proffers, are discussed in more detail in Appendix B.

In sum, the Town considers proffers 11.3 and 13.4 as unacceptable to it and/or potentially not legally permissible – the amendment now proposes removing all tap fees/proffer credits from the proffer statement.

B. Town Concern: Adverse Fiscal Implications of E/W scenario

- Fiscal Implications – FRLP believes the Town would also not choose the E/W scenario due to the financial implications and potential liabilities to the Town. The "what if" legal risks associated with the varying interpretations of this scenario could result in adverse impacts and/or costs to the Town.
 - If the Town chooses the "E/W scenario" proposed for removal – FRLP could build 199 homes with tap fees of \$10,000 per home. Cash proffers to the Town go into an escrow account to be repaid to FRLP for Phase 2-4 of the East/West Connector. Town would receive 1.99 million in tap fees and no additional cash proffers or transportation improvements.
 - "The current proffers allows development to stop at the 199th house, and under such circumstances, the requirement to build Phases 2 – 4 is eliminated, even if the Town has already built phase 5.
 - "The current proffers require the Town to provide FRLP with a credit for costs incurred in the construction of Phases 2 – 4 of the East/West Connector Road. This credit is applied to FRLP's per unit cash proffer noted above. However, it is not clear what will happen when the credits exceed the per unit contributions. This is a probable outcome considering the cost of the East/West Connector Road.

- *“Could FRLP bill the Town for such additional costs for the off-site road improvements?”¹*

FRLP believes that removing any or all such adverse fiscal risks and/or liabilities associated with the “E/W” scenario might be considered by the Town to be in its best interests moving forward. In any event, such risks to the Town have been outlined by staff and for Council’s consideration.

Section 3: Removal of the E/W without Removal of Tap Fees/Proffer Credits

Notably, the cash proffer credits in proffer 13.2 that the Town would like removed are applicable to *both* proffer scenarios – not just the E/W scenario – removing these proffer credits is a material adverse change for FRLP. That said, the uncertainty generated by these proffer and tap fee credits interpretations, combined with our hope to move beyond the R1-A issues, has led FRLP to conclude that removing all the proffer credits is the only way to eliminate the Town’s concerns and move the project forward.

FRLP hopes its willingness to remove all the myriad proffer credits in its revised proffers helps to result in positive resolutions to the Town’s remaining concerns with the 2010 proffers and the R1-A project.

A. Removal of Tap Fees/Cash Proffer Credits – Proffer 13.2.1 & 13.2.2

By removing the cash proffer credits in 13.2, FRLP assumes the additional risk that the Town is going to substantially increase its W&S fees in the future. In such an event, agreeing to remove the proffer credits now will have increased our impact fees to the Town. Credits to be used to reduce the cash proffers to the Town in proffer 13 are,

13.2 “The Applicant shall receive a dollar-for-dollar credit against the aforesaid per-unit contribution for the following costs actually incurred by the Applicant:

13.2.1. the engineering, design and construction costs associated with constructing Phases 2 through 4 of the East/West Connector, and

13.2.2. any combined sewer and water connection and availability fees that exceed \$10,000 on a per-unit

¹ Town Staff Report, June 14, 2016.

basis.”

We believe a reading of proffer 13 makes clear that FRLP is to receive these credits to its cash contributions to the Town under either (any) scenario in the 2010 proffers. Moreover, FRLP would note that regardless of any presumptions or assertions about what the Town’s “intent” of any of the proffer credits might have been in 2010, the law is clear that any “intent” and/or “inferences” are irrelevant when interpreting proffers, and must therefore be disregarded in all interpretations of proffers,

“Because development proffers, once accepted, have the force of law that will bind both the local government and the current and future owner of the property to their terms, the terms of the proffers must be interpreted according to the plain meaning of the language used. Just as a court is not permitted to go beyond the words of a statute to infer a meaning that is not found in its express language, a meaning in development proffers cannot be inferred that is not found through a plain reading of the text.”²

Since filing the proffer amendment, FRLP has refused to remove the cash proffer credits in 13.2 as it was in our interests to keep these credits.

- Proffer 13.2.1 provides for a reduction to the cash proffers for amounts spent on the engineering, design, and construction of the E/W - FRLP has the option of using its Town cash proffers toward phases 2-4 of the E/W connector on its recently annexed property.
- Proffer 13.2.2 provides reductions to the cash proffers paid by each new home to the Town equal to the amount of the W&S Tap fees in excess of \$10,000 per home. It effectively “locks in” FRLP total impact fees (W&S plus cash outlays). As the Town’s W&S fees increase over time our cash proffers decrease by a like amount.

Combined, proffer 13.2.1 and 13.2.2 provides FRLP with the ability to:

FIRST: Decrease its cash proffers for its W&S tap fees credit amounts, and

SECOND: At FRLP’s sole discretion, to use any remaining funds toward phases 2-4 of the E/W on its annexed property, which we will likely need to do one day.

THIRD: FRLP would choose to use all of the remaining cash proffer monies to design and engineer phases 2-4 of the E/W on its recently annexed property and instead of paying any such amounts to the Town.

In sum, as a result of the proffer credits provided for by proffer 13.2 the Town would not receive any cash proffers under either scenario in the 2010 proffers.

² Hale v. Board of Zoning Appeals of Blacksburg, Virginia Supreme Court, 2009

B. The Town will receive no cash and no added improvements under 2010 proffers

The August 2017 proffer amendment removes all the tap fees and cash proffer credits from the proffer statement based on Town requests to do so. We consider these concessions as our best effort to address the Town's requests and as much as possible.

a. Future Tap Fees and Cash Proffer Credits

The W&S proffer credit in 13.2.2 alone could eliminate the cash proffer payments to the Town in the future if W&S Tap Fees increased enough. Under the 2010 proffers, if/when total W&S tap fees reach \$23,550 FRLP's cash proffers will be reduced to zero:

<u>Proffers=\$0</u>	Average W&S Tap Fee	Proffer "Credit"
Per Unit	<u>\$23,550</u>	<u>\$13,550</u>
Cash Proffers for units 100-320 ($\$19,600 \times 221$ units)		\$4,331,600
W&S Tap Fees>10k units 1-320 ($13,550 \times 320$)		\$4,336,000
Per Unit Cash Proffer after Proffer Credit has been used		<u>\$0</u>

Further, we believe future tap fees increases are a matter of when, not if. Tap Fees exceeded \$17,000 three years ago, and have drastically increased across the valley since the late 2000's. Based on the Town's W&S businesses and Councils preference to increase costs on new homes/residents before increasing user rates on existing residents, we believe W&S connection fees will resume their march upwards as soon as (if) new residential construction in Town begins to substantively increase.

For example, the Town's FY13-14 approved budget's proposed future connection fees schedule is instructive as to the future of Town tap fees, and was as follows³:

³ Town FY14 Budget, page 111.

<u>Connection Fees:</u>	Feb-11	Jul-11	Jul-13	Jul-14	Jul-15	Jul-16	
<u>Sewer:</u>			20%	30.00%	30.00%	7.50%	
\$ 7,500	\$ 9,750	11,700	15,210	19,773	21,256	3/4" Tap	
\$ 16,875	\$ 21,938	26,325	34,223	44,489	47,826	1" Tap	
\$ 32,500	\$ 42,250	50,700	65,910	85,683	92,109	1 1/2" Tap	
\$ 51,250	\$ 66,625	79,950	103,935	135,116	145,249	2" Tap	
\$ 101,250	\$ 131,625	157,950	205,335	266,936	286,956	3" Tap	
\$ 157,500	\$ 204,750	245,700	319,410	415,233	446,375	4" Tap	
\$ 313,750	\$ 407,875	489,450	636,285	827,171	889,208	6" Tap	
\$ 501,250	\$ 651,625	781,950	1,016,535	1,321,496	1,420,608	8" Tap	
\$ 720,000	\$ 936,000	1,123,200	1,460,160	1,898,208	2,040,574	10" Tap	
\$ 938,750	\$ 1,220,375	1,464,450	1,903,785	2,474,921	2,660,540	12" Tap	
<u>Water:</u>			23.50%	8.50%	8.50%	8.50%	
\$ 4,000	\$ 4,340	5,360	5,815	6,310	6,846	3/4" Tap	
\$ 8,125	\$ 8,816	10,887	11,813	12,817	13,906	1" Tap	
\$ 15,000	\$ 16,275	20,100	21,808	23,662	25,673	1 1/2" Tap	
\$ 23,250	\$ 25,226	31,154	33,803	36,676	39,793	2" Tap	
\$ 45,250	\$ 49,096	60,634	65,788	71,380	77,447	3" Tap	
\$ 70,000	\$ 75,950	93,798	101,771	110,422	119,807	4" Tap	
\$ 138,750	\$ 150,544	185,922	201,725	218,871	237,476	6" Tap	
\$ 221,250	\$ 240,056	296,469	321,669	349,011	378,677	8" Tap	
\$ 317,500	\$ 344,488	425,442	461,605	500,841	543,413	10" Tap	
\$ 413,750	\$ 448,919	554,415	601,540	652,671	708,148	12" Tap	

Based on the proposed schedule of future connection fee charges that were included in the FY14 Budget (above & below), and that were recommended by Town staff and its W&S consultant and approved by Council, our W&S connection fees would be \$28,102 dollars today had the Town followed through with its FY14 connection fees schedule.⁴

<u>Budget FY14</u>	FY14 (Jul-13)	FY15 (Jul-14)	FY16 (Jul-15)	FY17 (Jul-16)
Sewer	\$11,700	\$15,210	\$19,773	\$21,256
Water	\$5,360	\$5,815	\$6,310	\$6,846
TOTAL	\$17,060	\$21,025	\$26,083	\$28,102

In hindsight, we underestimated the Town's opposition to these credits, and its desire and resolve to have us remove them. Understandably, at \$23,550 in tap fees all the cash proffers in proffer 13 would be eliminated. Further, and based on the fact that combined W&S tap fees were \$17,060 in 2015, and projected to be raised to \$28,102 by FY17, eliminating them may increase our proffers - tap fees were to be \$28,102 this year.

FRLP believes tap fees will go up. However, in any event - whether they go up or down - the proffer credits in 13.2.1 and 13.2.2 make it unlikely that the Town would receive any cash proffers under the existing proffer statement - i.e. at FRLP's discretion.

⁴ Ibid. Also see: Alex Bridges, "NVDaily, X to Y, April, 2013

As such, our August 2017 proffer amendment has removed all these cash proffer credits as requested and, if approved, would result in the Town receiving \$810,000 in additional cash and improvements that it will not receive under the terms of the existing proffers.

C. The Amendment would provide the Town with \$810,000 in additional cash and transportation improvements that it will not receive under the 2010 proffers

FRLP believes that removing proffer 13.2 will ensure that the Town will receive both its full tap fees and additional cash proffers and needed transportation improvements that it would not receive under either scenario in the 2010 proffers. The revised proffers would provide the Town an estimated \$810,000+ in additional cash and transportation improvements.

Summary of new transportation improvements added to the R1-A proffers:

<i>Newly Added Transportation Improvements & Cash Proffer Outlays</i>				
9.2	Eastbound right on E/W at 606 Marys Shady Lane Emergency	Prior to 1st (required)	E/W & 606	\$0
10.3	Access Improvements Northbound left turn lane on 606	Units 100-199	M.S. Lane	\$100,000
10.4	at E/W (or Roundabout) Traffic Light at E/W and 606	Units 175-225 (or prior to 225th)	E/W & 606	\$160,000
10.5	intersection (or Roundabout) Southbound Turn Lane on 606 at	Units 200-299 (or prior to 225th)	E/W & 606	\$250,000
10.6	H.C. Road	Units 200-299	606 & H.C.	\$300,000
				<u>\$810,000</u>

Section 4: R1-A & A-1 Property Transportation Improvements Coordination

A. 2016/17 A-1 Property Traffic Analysis & New 2017 R1-A Transp. Improvements

In 2016, FRLP met with VDOT and Town officials in order to receive their directions on what assumptions FRLP should use in its preparation of a traffic study for any rezoning effort for the recently annexed A-1 property. As a complement to that traffic study FRLP asked our transportation engineers to add a phasing analysis with the R1-A property development in order to get a better understanding of the potential timing of improvements during development the R1-A and future A-1 property (if any).

3

Three (3) out of the four (4) transportation improvements added to the R1-A proffers were recommended in our 2016 phasing analysis but were not recommended in our 2009 traffic study (TIA). The R1-A project has not changed and its new homes will not generate any more traffic than they did in our 2009 TIA, however, the underlying assumptions and data were different in our 2016 study compared to our 2009 study.⁵

The newly recommended improvements in the 2016/17 phasing analysis were largely due to the underlying traffic count(s) on 606 and at H.C. Road having increased significantly since our 2009 and 2013 traffic studies (and recent VDOT data). We are unaware of any development north of the railroad tracks that might account for such an increase. In any event, the results of the 2016/17 phasing analysis indicated the need for improvements not recommended in the 2009 TIA study. In an effort to make these improvements sooner rather than later we added the following to the R1-A proffers:

- a) *Shenandoah Shores Road and E/W Connector (recommended with closure of Marys Shady Lane (225+/- units))*
- Add an eastbound right turn lane on E/W at 606
 - Add a northbound left turn lane on 606 at E/W
 - Add a traffic control signal at E/W and 606 intersection
- b) *Shenandoah Shores Road and H.C. Road (recommended with 700 units)*
- Add southbound right turn lane on 606 at H.C. Road

The added improvements coordinate development of the two projects in an effort to minimize impacts to the residents, businesses, and community in the area ASAP, and include 3 additional turn lanes and a traffic light or similar improvement (roundabout) on 606 at its future connection to the E/W.

B. 2009 Traffic Study: FRLP proffered all improvements prior to the 50th home

Recognizing the importance of transportation improvements to the Town and the community FRLP has made every effort to facilitate the construction of community transportation improvements as early as possible. And in response to these community

⁵ footnote on study assumptions...

concerns in 2009 FRLP proffered the improvements in proffers 10.1, 10.2, and 10.3 far sooner than they were called for in the 2009 traffic impact analysis (TIA) study.

These proffered improvements were needed in order to ensure the transportation network functioned at the Town's desired levels of service and for all:

- Existing traffic, plus
- Background growth on the traffic network (assumed 3%), plus
- New traffic associated with previously approved developments, plus
- FRLP's traffic associated with the 320 units in the R1-A rezoning.

FRLP's proffered transportation improvements met the needs of the transportation network, the Town's desired level of service ("LOS"), and as recommended by our 2009 VDOT TIA during the rezoning.⁶ The TIA showed that the traffic generated by these 320 homes would be safely accommodated and at the Town's desired LOS of C with the recommended and proffered improvements.

In sum, FRLP proffered to make every improvement needed in our 2009-10 TIA, and to do so prior to the 50th building permit and despite such improvements not being needed or recommended until far later in the project (i.e. build-out plus 6 years).

a) FRLP background & overview on Traffic "studies" (FYI)

FRLP would note that, after completing 8 "traffic studies" for the Town/County/VDOT since 2004, we have come to the conclusion these studies are as much art as they are "science". Traffic studies depend on the assumptions (dictated by regulators) – FRLP and its transportation consultants basically conduct the traffic counts and plug in the assumptions dictated to us. In other words – we run the numbers – we do the "science" part - while the VDOT/Town regulators adjust the assumptions each time and in so doing they control the "art" part that most impacts the outcome, or the studies recommended improvements. As such, VDOT (& Town) regulators presume all powers that can and do change the outcomes and recommended improvements of each study. (We note this FYI, and as any rezoning effort for the A-1 property these issues will be prescient).

b) Summary - For Town Transportation Network - 2016/17 traffic study and analysis trumps 2009 traffic study

⁶ The Town requires a LOS of "C" – V-DOT requires a LOS of "D". FRLP's studies have always been required to use much more rigorous assumptions than Town (&VDOT) studies. (i.e. The 2007 Town traffic study used a LOS of D – LOS C vs. D is most notable, but FRLP's studies have all used significantly more adverse assumptions, across the board, than the Town's study).

Based on the 2016/17 traffic study and phasing analysis we have added the above 4 additional improvements to H.C. Road and Shenandoah Shores Road. FRLP's 2016 traffic study and analysis also used the new (2016) assumptions dictated by VDOT and the Town (input). Notably, an additional southbound turn lane on 606 at H.C Road was also added despite not being recommended until the 700th total home in both projects – we felt accelerating this improvement to be in the best interests of the community and folks using Shenandoah Shores at Happy Creek on a daily basis.

C. The R1-A project has now proffered improvements to every approach on H.C. at 606 and to 2 out of 3 approaches on 606 at E/W – plus traffic lights at both locations

<u>Old Proffers</u>	<u>New Proffer #</u>	<u>Transportation: H.C. Road & Shenandoah Shores & M.S. Lane</u>	<u>When Required</u>	<u>Intersection / Location</u>
12.1	10.1	Westbound right turn lane on H.C. Road at 606	Prior to 25th	H.C. & 606
12.2	N/A	Eastbound left turn lane on H.C. at 606 (done)	Prior to 50th	H.C. & 606
12.3	10.2	606/HC Light -\$225,000	50th (warranted)	H.C. & 606
<u>NEW</u>	9.2	Eastbound right on E/W at 606 Marys Shady Lane Emergency Access	Prior to 1st (required)	E/W & 606
<u>NEW</u>	10.3	Improvements	Units 100-199	M.S. Lane
<u>NEW</u>	10.4	Northbound left turn lane on 606 at E/W (or Roundabout)	Units 175-225 (or prior to 225th)	E/W & 606
<u>NEW</u>	10.5	Traffic Light at E/W and 606 intersection (or Roundabout)	Units 200-299 (or prior to 225th)	E/W & 606
<u>NEW</u>	10.6	Southbound Turn Lane on 606 at H.C. Road	Units 200-299	606 & H.C.

The revised proffer amendment offers a transportation plan for long needed improvements – and for improvements that if not made by FRLP will need to be made by the Town, and sooner rather than later. FRLP's project(s) cannot fix or make up for a lack of investment in the transportation network in this area overnight. Investments in the Town's infrastructure by FRLP's project(s) must be phased otherwise we will not be able to finance or begin the project(s).

Similarly, development efforts for the A-1 property do not make much sense if the Town's demands are for the project to finance infrastructure improvements all at once. If that is the case then an A-1 rezoning may not be viable until the Town makes improvements to its transportation network in the N.E. planning area. Such FRLP project(s) contributions must be phased or the project(s) will not be viable.

Section 5: Conclusion

A. The Amendment adds \$810,000+ in needed improvements to 606 & H.C. Road

The R1-A project has proffered a new traffic light and adding new turn lanes at all 3 approaches at the intersection of H.C. Road and Shenandoah Shores Road. At the entrance road (the E/W), the project has proffered a new left turn lane on 606 going north and a dedicated right turn lane on the E/W at 606. At build-out, the R1-A project will have added 1 mile of the E/W connector with 2 lanes. These investment levels will need support from the recently annexed property in order to finance or begin any development.

i. This was the first project to offer any proffers to the Town

The Town annexed and rezoned this area for residential and industrial use in its N.E. planning area 40 years ago. The Town annexed the R1-A property in 1978. In 2009, FRLP was the first property owner to proffer anything to the Town for a residential development. In addition to all of the transportation improvements we proffered land for a future park, construction of that future park, land for a fire station, design covenants, 1-mile of the E/W with a walking/biking trail, cash to the Town, and cash to the County (schools). To our knowledge, no homes built in Town have proffered to contribute anything to the Town or County - ever.

ii. Town Legal & Fiscal Concerns - August 2017 Revised Proffers

- Legal Concerns – FRLP’s August 2017 proffer amendment has removed all of the tap fees/proffer credits from the 2010 proffers and based on Town requests that we do so. Removes legal/fiscal liability of any adverse interpretation to the Town.
- Fiscal Implications – The amendment will provide the Town with an additional \$810,000+ in cash and transportation improvements that it would not receive in any scenario under the 2010 proffers. Further,
 - FRLP believes that new Town residents and taxpayers would help to fund the ongoing maintenance and replacement costs attributable to the Town’s ageing G.F. and W&S infrastructure. New residents/customers will help fund system-wide repairs and that the Town’s existing resident’s will need to pay for one day whether any new homes are constructed or not.
 - FRLP believes that the Town would benefit from expanding its tax base. The project(s) would also create jobs and represents an opportunity for the Town. We also believe that the cumulative taxes generated will exceed the Town’s costs to provide services – (i.e.) the Town would be using excess

revenues generated by the project to fund community wide improvements and to the benefit of the Town and community environs.

iii. In Sum – A “win/win”?

FRLP is excited about Front Royal. And we believe fiscally and environmentally sustainable development is imperative to the community’s long-term sustainability and vitality. We believe the North-East Planning area offers opportunities to build upon the community’s existing civic culture and values. We believe this area represents an opportunity for a potential competitive advantage to the Town in attracting new businesses in the future. We agree area road improvements will help and are needed.

Since 2015, the proffer amendment has proposed removing only the proffer credits that are applicable under the “E/W” scenario. This has been a major roadblock to resolving the Town’s remaining legal concerns and issues with the 2010 proffers. At this time, we believe that removing the uncertainty surrounding the numerous tap fees/proffer credits would be in the best interests of both parties. The revised proffers reflect our best efforts to compromise and accommodate the Town’s concerns with the hope of breaking our current stalemate over these issues.

We also better understand the Town’s concerns and requests that we remove the myriad proffer and tap fee credits – and removing the proffer credits should eliminate the Town’s remaining concerns as well as any potential fiscal liabilities that would result from adverse legal interpretations of the proffer credits and to the detriment of the Town. Moreover, removing the tap fees/cash proffer credits in 13.2 is also a business (liability) issue for the Town or in the event of any future adverse legal interpretations to the Town.

In sum, based on our discussions and Town requests our revised proffers have removed all of the tap fee/proffer credits from the 2010 proffers. We have also added \$810,000+ in improvements to the local transportation network, all improvements that we believe the Town is going to need to make in any event and if FRLP’s project does not.

Appendix A:

Table of Contents

- A. The Need for Town Infrastructure Investments has been clear for 40 years, or not
 - i. *The Town annexed and rezoned 800-acres North-East Planning Area 40 years ago*
 - ii. *The capacity of the present road network is inadequate to serve by-right dev. of area*
 - iii. *1976/78 Town Annexations of the North East Planning Area for Residential/Business*
 - iv. *FRLP's position on the E/W has not changed since concluding with the P.C in 2009*
 - v. *Need for Infrastructure Improvements to serve the N.E. was created 40 years ago*

Appendix A: Town Transportation Planning

A. The Need for Town Infrastructure Investments has been clear for 40 years, or not

i. The Town annexed and rezoned 800-acres North-East Planning Area 40 years ago

In a 2009 memo to the Town Planning Commission during this rezoning, and in regard to the local transportation network, Town staff stated,

“There seems to be universal agreement that the *future* development pattern (specifically overall density) of the Happy Creek land bay is a function of the capacity of the future road network. However, the assertion I wish to make is that the capacity of the *present* road network (i.e. Happy Creek Road and the intersection with Shenandoah Shores Road) is inadequate to serve the *present* and potential by-right demands of the industrial, residential, and institutional development in this area. So the membership is asked if there is consensus that a robust package of transportation improvements is already necessary. To reiterate, it is already necessary even if the subject property and the surrounding properties are to be developed by-right, and therefore this need is not generated exclusively by any increases in densities that might be permitted through the subject rezoning.”⁷

Then Planning Commission Chairman Mr. Gushee expounded upon the rezoning and transportation improvements proffers in a 2010 joint work session with the County P.C., “it will provide support to the transportation network that will need to be built

⁷ Andy Conlon, Town Director of Planning, August 25, 2009, Staff Report to Planning Commission, page 1.

because of the County growth outside of the Town limits. Because the roads will need to be built, the Town would like to get proffers to help pay for the roads....”⁸

ii. The capacity of the present road network is inadequate to serve by-right dev. of area

Not including the recent (2014) annexation, the Town’s North East Planning Area had approximately 691 developable acres out of a total of 799 total acres. Of the developable acres 399 acres were zoned for Residential and 297 acres were planned and zoned for Industrial/ Business use.⁹

To the best of our knowledge, the Town has not invested any money in capacity or safety improvements to its transportation network in the N.E. planning area in order to improve access to this industrial land it owns and to improve access to the entire N.E. planning area that it annexed 40 years ago.

iii. 76/78 Town Annexations of the North East Planning Area for Residential/Business

On December 3, 1976, and December 31, 1978, the Town formally adjusted its boundary and added 799 acres to the north of Happy Creek Road. The latter annexation decree, dated October 20, 1978, stated that,

“[t]he area described in paragraph 3 above, when taken together with the present Town forms a reasonably compact body of land and such area is adapted to town improvements and will be needed in the reasonably near future for development and especially is said land suitable for industrial development, which the court doth so adjudicate.”¹⁰

These issues were also noted by the County planning commission and during the 2007 Comprehensive Plan amendment hearings.

“The proposed [town] plan also appears to be completely contradictory of the purposes and requirements of the Town’s 1976 annexation of the area. The town’s petition for annexation indicated that the area would be developed ‘for the coordinated and harmonious development and growth of the community,’ including the extension of water lines, sewer lines, streets and avenues, and street lighting ‘as soon as practicable.’”¹¹

⁸ February 25, 2010, Joint Town-County Planning Commission Work Session, Meeting Minutes, page 3.

⁹ 2008 Town Comprehensive Plan Amendment, page 36.

¹⁰ 1978 Town Annexation Agreement, page 3.

¹¹ 1978 Town Annexation Area. Deed Book 243, Page 749.

Further, numerous local business owners in the area expressed their frustration at the transportation situation during public hearings in 2007 and 2008. They also sent a letter to the Town signed by the majority of the business owners in the H.C. Park. As a local businessman summarized in the public hearings of the Town P.C. and Council and in regard to 606 and the roads leading to the H.C. technology park,

“(he) currently brings in 12-15 tractor-trailer loads of equipment daily and that the owners and operators of those trucks had expressed serious safety concerns because of sole access along roads referred to as ‘paved cow trails’ to get to the Happy Creek Industrial and Technology Park areas.”¹²

After the 1976/78 annexations the Town did not follow the legal requirements of the annexations to extend its sewer lines and service to annexation areas. The Town faced legal action in 1987, and it extended a sewer line in 1989. The case concluded in 1996.

In this case, FRLP filed its first preliminary site plan for its R1-A property in 2004. We filed another one a few years later. We asked for an open space ordinance in 2007. We asked for more environmentally friendly regulations beginning in 2009... The Town has preferred to defer until... In any event, FRLP has done its best to follow the Comprehensive Plan & for the N.E. planning area and to meet the Town’s requests as much as has been tenable. Indecision is a refusal to act, but it is a decision nonetheless.

I would also stress our issues are with Town Council – we hold no issue with staff through the years. Needless to say, the buck stops at Council for the Town’s actions, laws, and culture of viewing residential development as a zero sum “us” vs. “them” proposition and ever since we filed our 2004 site plan and the Town first went into closed sessions. Staff has the hardest job in Town, beholden to the political expediencies of an ever-changing Council and individual Councilman, a tall order.

iv. FRLP’s position on the E/W has not changed since concluding with the P.C in 2009

In 2010, it was clear that no matter which scenario the Town might choose in the future, we believed that both scenarios were well discussed, thought out, and beneficial to both parties when compared to the alternative at the time of 99 1-acre home lots. This is still true, and our positions on these issues have not changed since our discussions with the P.C. concluded in 2009¹³, as we tried to make clear and stated to the P.C. at the time,

“I was disappointed that staff chose our last work session to present the Applicant and the P.C. with an entirely new set of proffer requests. I thought the timing and

¹² Roger Biancini, “Businessmen tell Town to fix roads or we’ll leave”, W.C. Report, Early October, 2007.

¹³ What has changed at the local level (for FRLP) are our expectations of future W&S tap fees – FRLP’s ability to proffer improvements are impacted by tap fees – indeed, that is why we negotiated all of these proffer/tap fees “credits” in 2010.

content of these new requests was confusing for both the Applicant and the P.C.... It was unfortunate that we had to conclude our negotiations with the P.C. with a new set of requests from staff after months of back and forth negotiations, a public hearing, five work sessions, and a meeting with the County Administrator. With this 11th hour set of requests, the Town has quickly exceeded what FRLP considers to be our tipping point of reasonable proffer negotiations and requests. As the Town planning staff has previously stated, such requests (for the construction of the E/W) are beyond the scope of this project...

"I am not passionate about, and FRLP has less interest in, wild proffer negotiation tactics ... FRLP made significant concessions after the August 25th work session with the shortsighted assumption that such concessions would lead to a staff recommendation of approval. I feel as though FRLP has negotiated this deal in good faith with the Town Planning staff and P.C. If we missed something or failed to address any requirements on the part of the P.C., we are more than happy, and eager to discuss any such oversight. Based upon our negotiations to date, and my belief in the professionalism and integrity of the Town Planning staff, it seems unlikely that these new requests came from the Planning staff."¹⁴

FRLP's positions on the E/W have been consistent and we believe we had met every Town/P.C. request prior to our final work session with the P.C. in 2009. The 2010 proffers were the direct result of the Town P.C. and FRLP (& staff) doing our best to meet the Town's expectations for such an "E/W scenario" in these proffers. Since our annexation discussion with the Town, the Town has conveyed its concerns that aspects of the E/W scenario may not be legally permissible and the Amendment proposes we remove all of the objectionable tap fees/proffer credits from the proffer statement.

**v. Need for Infrastructure Improvements to serve the N.E.
was created 40 years ago**

Similar to Leach Run Parkway, the demand for much of the needed transportation infrastructure was generated 40 years ago when the Town annexed its N.E. Planning area and rezoned 800+/- acres for residential and industrial development.

**a. 2004 Town/County Funded Happy Creek Road
Area Traffic Analysis**

The 2004 Town/County jointly funded Happy Creek Charrette highlighted the need for improvements to the Town's traffic network in the future based solely on what may occur by-right in the Town, County, and specifically, the Happy Creek Road area. The Town/County funded Happy Creek Transportation Study projected future Average

¹⁴ FRLP, Letter to Town P.C. (Town Staff and Town Manager), September 11, 2009. FRLP comments after our last work session with P.C. and prior to its vote on this project.

Daily Trips (ADT's), generated from the by-right development of the area, on the local transportation network as follows:

LONG RANGE PLANNING (20-50 years) - H.C. Charrette 'by-right' development scenario				
Existing "By-Right" Development Potential			Units	ADT's (Approx.)
Town Residential			1400.00	14000.00
Town I-1	145 acres	.5 FAR	3158000.00	23000.00
Town I-2	70 acres	.4 FAR	1220000.00	8200.00
TOTAL ADT's from NEW by-right Dev.				45200.00

NOTE: The H.C. Charrette was a jointly funded planning exercise by the Town and County in 2004. Additionally, its residential unit #'s do not reflect the downzonings.

The H.C. technology park, developed by right, will generate significantly more traffic on the local transportation network than FRLP's projects combined.

- The by right development of 145 acres of the EDA owned H.C. technology park would generate 23,000 ADT's.
- FRLP's R1-A project will generate 3,200 ADT's. In perspective/context, 1,000 single-family detached homes would generate 10,000 ADT's – less than half of the 23,000 ADT's generated by right by development of the H.C. technology park (i.e. excluding the 100+/- acres of by right industrial in the privately owned H.C. Industrial Park, and which would add another 8,200 ADT's to the EDA's 23,000.

The EDA is a Town/County owned quasi-governmental agency, and the Town/County will benefit financially from the future sale and development of the H.C. technology park in the form of reduced financial support requirements, an expanded local tax base, and expanded local employment further resulting in increased tax receipts.

b. The Need for Town Infrastructure Investments to serve the N.E. has been clear for 40 years, or not

FRLP would disagree with an assertion that the project has fallen short in any transportation planning capacity, to the contrary, we believe the R1-A amendment offers a short to medium term transportation plan for the area that is realistic and that makes improvements that should (ideally) be made sooner rather than later. If the R1-A project does not make some of these improvements the Town may need/decide to do so instead.

Appendix B: **Table of Contents**

A. The Town has been clear that the terms and conditions of the "E/W" scenario are unacceptable and/or legally impermissible to it - we propose we remove it

- i. *Concern: Capping the Tap Fees at \$10,000 in Proffer 11.3.4*
- ii. *Concern: Escrow Account in Proffer 13.4*
- iii. *It appears reasonable to assume that the Town will not choose the E/W scenario*

Appendix B: Town Legal Concerns with the E/W scenario in the 2010 proffers

**A. The Town has been clear that the terms and conditions of the
"E/W" scenario are unacceptable and/or legally
impermissible to it - we propose we remove it.**

i. Concern: Capping the Tap Fees at \$10,000 in Proffer 11.3.4

In an August 2015 Memo to the Planning Commission from the Town Attorney, legal concerns were raised in regards to the tap fee credits provided to FRLP that effectively act to cap, or limit FRLP's total tap fees per unit to \$10,000 under the "E/W" scenario (11.3.4). The relevant portions of that summary and in regards to such tap fee credits under the E/W scenario are included below:

1) The validity of the Town taking moneys from its water and sewer enterprise funds to pay the credits called for in the 2010 FRLP proffers;

...

"A locality may make like gifts, donations and appropriations of money to industrial development authorities for the purposes of promoting economic development.") FRLP is clearly not a charitable institution or association. The situation is even more pronounced under attached Scenario 2. Note what the Department of Planning & Zoning has calculated: "Under this scenario with the current proffers, the Town gets the E/W Connector [Road] constructed with a financial loss [to the Town] of approximately 5 million dollars. Worst case scenario, the Town loses 11 Y2 million dollars and FRLP covers the cost of the entrance road (4lanes) required by the Subdivision Ordinance.

...

"The Attorney General stated in 83-84 Va. AG 133 that local governments Counties have the right to make gifts to certain charitable and eleemosynary organizations by reason of the aforementioned statute; they do not, however, have the right to make gifts to private parties.

"It seems to me the overall effect of the 2010 proffers is that, at the sole election of FRLP, FRLP could require the Town, in essence, to pay to FRLP a net sum of money or other things of value; in essence, require the Town to make a gift of money or other things of value to FRLP. I do not think this is legally permissible."¹⁵

The Town position appears to be that capping the tap fees at \$10,000 per home would constitute the Town making a "gift" to FRLP and therefore doing so would not be legally permissible. If that is indeed the Town position, then why would/could the Town choose the "E/W" scenario? Further, if the Town does choose this scenario and then refuses to cap our tap fees at \$10,000 then FRLP would not be required to build the road. The proffers make this clear (11.3) - FRLP's obligations under the E/W scenario are contingent upon the Town's agreement to these terms in a MOU (discussed in #3 below).

ii. Concern: Escrow Account in Proffer 13.4

The following additional concern was expressed in regards to the "E/W" scenario and its reimbursements that would be paid to FRLP as required in proffer 13.4.

FOURTH: The proffers have been worded so that the proffer contributions paid by FRLP would be placed in a third party escrow account and be paid over to FRLP "to reimburse it for the actual audited cost of the engineering, design, and construction of the Phase 2 through 4 improvements." This is frightening wording. Does "improvements" mean "residential units" as well as the cost of the East/West Connector Road, the water and sewer tap fees, sidewalks, and all the other miscellaneous costs? Whatever it means, it certainly seems the Town will be making gifts to FRLP, and this would seem to be the making of impermissible gifts."¹⁶

Based on the position that the escrow account mechanism in 13.4, and the tap fees cap in 11.3.4, would constitute the Town making impermissible gifts to FRLP, we do not believe the Town would/could choose the "E/W" scenario and that it would therefore make sense to remove the objectionable scenario.

¹⁵ Town Attorney, Memo to Director of Planning, August 25, 2015

¹⁶ Ibid.

iii. **It appears reasonable to assume that the Town will not choose the E/W scenario**

The Town's legal concerns with the E/W scenario in the R1-A proffers suggest that the Town views this scenario or option as being unsavory - but also illegal.

FRLP's obligations in this scenario are contingent upon the Town's future agreement to cap the tap fees and use an escrow account that the Town deems illegal. Notably, the Town cannot "choose" this scenario and then refuse to agree to the terms outlined in the proffers - as doing so would relieve FRLP of any and all of its obligations under the "E/W" scenario and we would default to the other scenario.

The Town has noted that proffers cannot legally "obligate" the Town to do anything, and we agree, however, we set these proffers up so that FRLP's obligations are contingent upon the Town's future agreement to these terms. In other words, the Town is not "obligated" to provide FRLP with the cap to its W&S fees, but if the Town chooses not to provide the cap then FRLP is not obligated to fulfill any of its obligations under the E/W scenario. Proffer 11.3 makes this clear, and begins "Subject to the following conditions, the Applicant shall...", and it then lists the conditions of the E/W scenario that must be met in order for it to apply, including,

11.3.4 within twelve months from approval of the first Final Record Plat for the Property, the Town and the Applicant have entered into a mutually satisfactory memorandum of understanding which shall, among other things, include provisions delineating i) ... the Applicant shall receive a dollar for dollar credit in the amount of... Such sums shall be a credit against the Applicant's Water and Sewer Tap fees in excess of the current cost thereof of \$10,000 per such unit. If the Town increases the aforesaid Water and Sewer Tap fees, then the Applicant shall be entitled to a credit against Water and Sewer Tap Fees in the amount of any increase above \$10,000. (*Section 11.3.4 of Proffers, emphasis added*)

If the Town position is that agreeing to these terms would be illegal then let's remove this scenario and move on. If the Town position is to try to require FRLP to fulfill its obligations under the E/W scenario but the Town is not going to live up to its obligations then we can revisit this in the future. The law is clear on interpreting proffers.¹⁷

In sum, the Town's legal issues with "capping" the tap fees at \$10,000 as required in section 11.3, and specifically 11.3.4, and its legal issues with the escrow account mechanism in section 13.4, each suggest to FRLP that the Town would and/or could not choose the "E/W" scenario that is proposed for removal because it views portions of this scenario as being illegal. Similarly, the first sentence of 11.3 makes clear that if the Town does not agree to these conditions within 12 months of the first final record plat then FRLP's obligations under the E/W scenario are no longer applicable or enforceable.

¹⁷ See Section 3(A) & Footnote #5

FRLP continues to believe we should remove this "E/W" scenario and that doing so would be to the benefit of both parties. We believe resolving these issues is significantly more important now than it was when we submitted the amendment. This is due to our underestimating these Town concerns. We believe the proffer amendment is an opportunity for a "win/win" and is in the Town's best interests legally and financially.

EXHIBIT 1

FOR PLAT SEE SLIDES

227-H

227-I

227-J

227-K

WARREN COUNTY, VIRGINIA
LAND RECORDS

DEDICATION OF PLAT ENTITLED
PLAT SHOWING VACATION OF BOUNDARY LINE
ON THE PROPERTY OF F & R LIMITED PARTNERSHIP
SHENANDOAH DISTRICT
WARREN COUNTY, VIRGINIA

00023 | NOV-98

06001850

Centex/F & R Limited

KNOW ALL MEN BY THESE PRESENTS: That, Front Royal Limited Partnership, a Virginia Limited Partnership, f/k/a/ F & R Limited Partnership, a Virginia Limited Partnership the owner and proprietor of a certain parcel of real estate located in Warren County, Virginia, as shown on a plat entitled, "Plat Showing Vacation of Boundary Line on the Property of F&R Limited Partnership," dated May 22, 2006, and prepared by Walter C. Sampsell, Jr., Land Surveyor;

The undersigned desiring to have said plat and survey recorded in the Clerk's Office so the deeds hereafter be executed with reference to and in accordance with said plat, does hereby adopt, ratify, approve and confirm said plat and survey as a true plat and survey of the said real estate and do announce their intention to refer hereafter to said plat and survey for the purposes of identifying in any deed hereafter to be granted and conveyed.

WITNESS the following signatures and seals this 9th day of November, 2006.

Front Royal Limited Partnership,
a Virginia Limited Partnership
f/k/a F & R Limited Partnership

By MVA Limited Partnership, a Virginia limited partnership, its general partner

By DOC Corporation, a Virginia corporation, its general partner

By: David A. Vazzana
Its: President

EXHIBIT 1

COMMONWEALTH OF VIRGINIA
COUNTY OF Warren, to-wit:

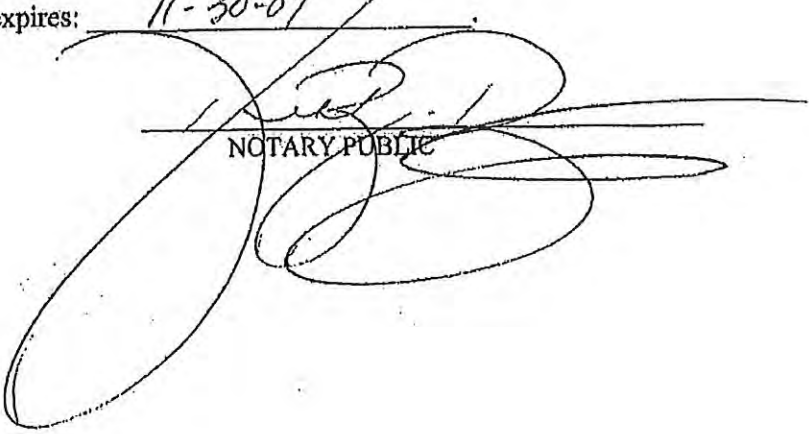
WARREN COUNTY, VIRGINIA
LAND RECORDS

000232 NOV-9 2006

I, the undersigned, a Notary Public in and for the State and County aforesaid, do hereby certify that David A. Vazzana, President of DOC Corporation, a Virginia, whose name is signed to the foregoing Dedication of Plat, has this day personally appeared and acknowledged the same before me in my State and County aforesaid.

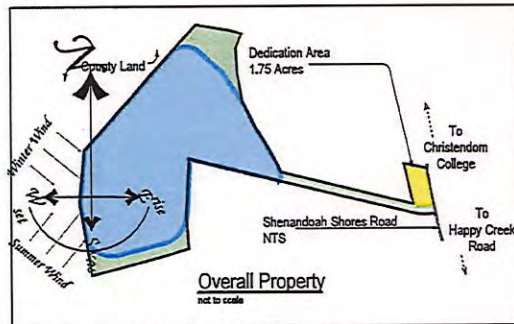
Given under my hand this 9th day of November, 2006.

My commission expires: 11-30-07

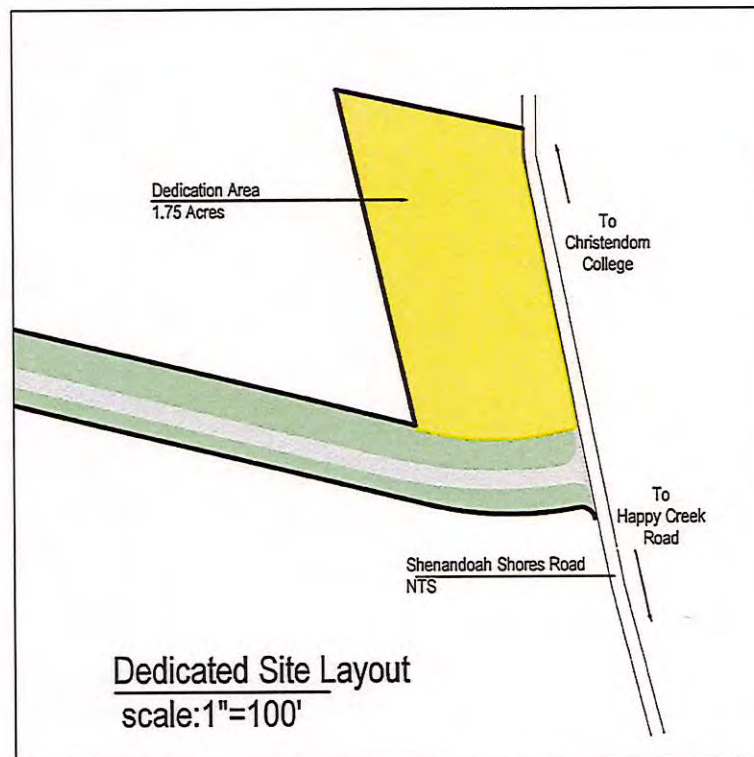

NOTARY PUBLIC

INSTRUMENT #060011850
RECORDED IN THE CLERK'S OFFICE OF
WARREN COUNTY ON
NOVEMBER 5, 2006 AT 11:36PM
JENNIFER E. GIMEN CLERK

RECORDED BY: MCS



- LEGEND**
- Road
 - Open Space
 - Project Area (approx location)
 - Dedicated Public Use Site

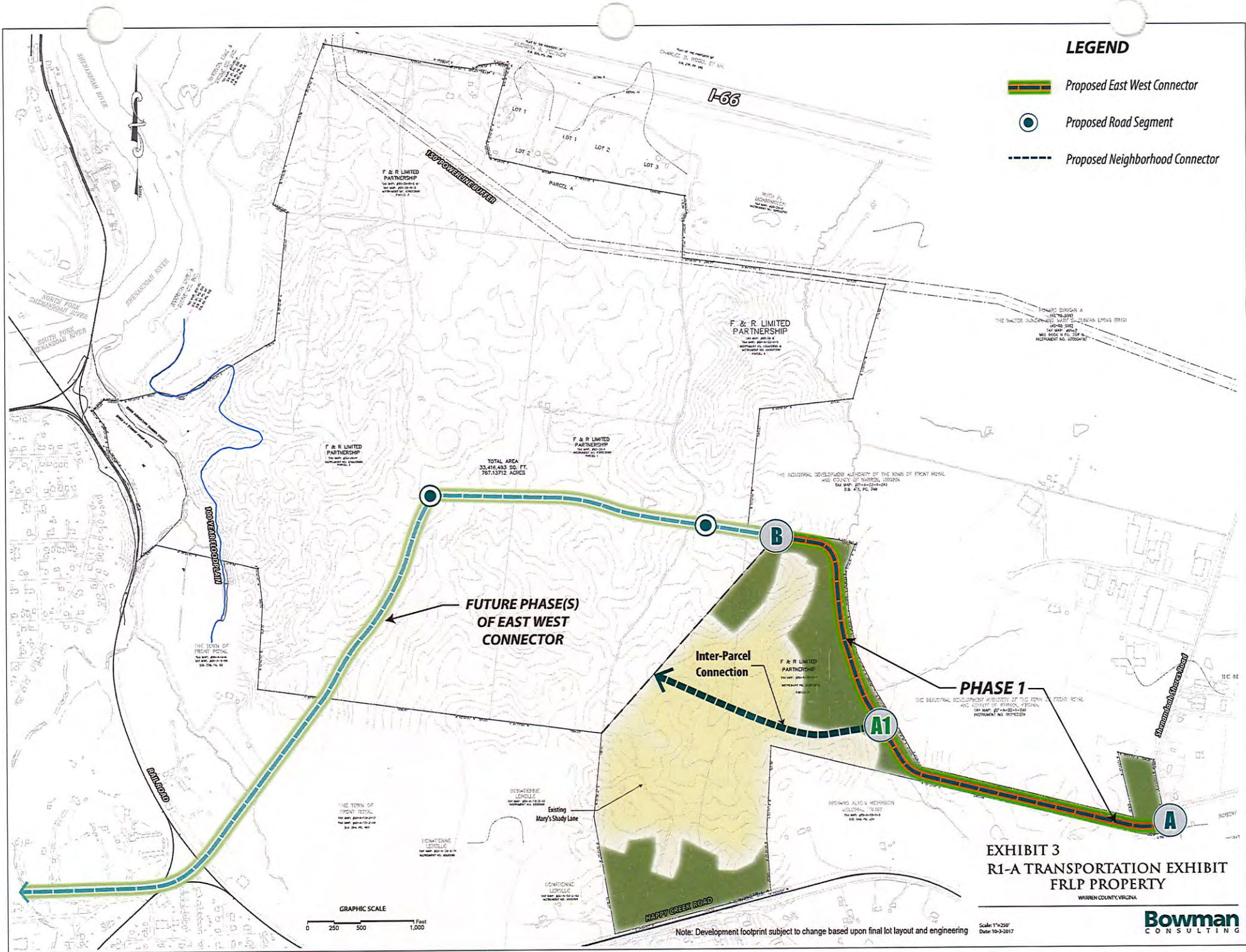


FOR DISCUSSION PURPOSES ONLY

Front Royal Limited Partnership Rezoning Proffer Exhibit 2



1	12-09	Proffer exhibit #
No.	Date	Revisions
Design Firm  J. Duggan & Associates Landscape Architecture 151 Honey Hill Lane, Winchester, VA 22602 540.734.5205 www.jdugganlandscape.com		
Consultant		
Project Title Maplecroft		
Drawing Title Proffer Exhibit		
Project Manager J. Duggan RLA		
Drawn By TM/JD	Scale as shown	Drawing No. 1 of 1 Total Sheets
Reviewed By JD		
Date 06-25-08		
CAD File		



LEGEND

- Proposed East West Connector
- Proposed Road Segment
- Proposed Neighborhood Connector

FUTURE PHASE(S)
OF EAST WEST
CONNECTOR

Inter-Parcel
Connection

PHASE 1

EXHIBIT 3 R1-A TRANSPORTATION EXHIBIT FRLP PROPERTY

WARREN COUNTY, VIRGINIA

Bowman
CONSULTING

Note: Development footprint subject to change based upon final lot layout and engineering
Scale: 1"=250'
Date: 10-3-2017

Traffic Impact Study

Vazzana Property Development

Town of Front Royal, Virginia

September 29, 2017

Prepared For:

Front Royal Limited Partnership

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Middleburg, VA 20118

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INTRODUCTION AND SUMMARY

Purpose of Report and Study Objectives

The following report presents the findings of a traffic impact analysis for the proposed Vazzana Property development located in the Town of Fort Royal, Virginia. The site is located north of Route 647 (Happy Creek Road), south of I-66, east of Route 522, and west of Route 606 (Shenandoah Shores Road). The proposed development is planned to consist of approximately 715 single-family detached residential units, 155 senior adult housing units, and up to 95,000 square feet of non-residential space (estimated as a 10 kSF day care center, 20 kSF church, 40 kSF office space and 25 kSF of specialty retail center). The 715 dwelling units (DUs) and 95 kSF retail space will complement the 320 by-right dwelling units located on the Vazzana property that was rezoned by the Town in 2010. Also, it is possible that a portion of the property will be dedicated to Warren County to develop a fire station and up to ±700 student elementary school. The 604-acre site has been annexed in the Town of Front Royal and is zoned Agriculture. The site is currently vacant, and full build out is anticipated by 2034.

The following tasks were completed as part of this study:

- A scoping document was prepared to outline the scope and parameters of the study and relevant background information. Both the Town of Front Royal and the Virginia Department of Transportation (VDOT) reviewed and provided input regarding the scope. A copy of the scoping document is included in Appendix A.
- Field reconnaissance in the vicinity of the site was performed to collect information related to existing traffic controls, roadway geometry, and traffic flow characteristics.
- In order to determine the weekday peak hour traffic volumes, turning movement traffic counts were conducted during the AM and PM commuter peak periods.
- Future traffic conditions were estimated based on a regional growth rate of 1.0%. The proposed HEPTAD development, the approved by-right Vazzana development and the elementary school and fire station were included as background developments in the analysis per discussions held with VDOT and Town of Front Royal staff. Historical data from VDOT was available along Happy Creek Road, Dismal Hollow Road, Shenandoah Shores Road, 6th Street, and Commerce Avenue.
- Traffic volumes for the background developments were generated using the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 9th Edition publication.
- Intersection capacity analyses were performed for existing conditions (2016), future conditions without proposed development (2034), future conditions with proposed development (2034) and build-out plus six years (2040) during weekday morning and afternoon commuter peak hour traffic conditions at the intersections located within the study area.

Sources of data for this study include Institute of Transportation Engineers (ITE), the Virginia Department of Transportation (VDOT), the Town of Fort Royal, and the office files and field reconnaissance efforts by Gorove/Slade Associates, Inc.

EXECUTIVE SUMMARY

Site Location and Study Area

The proposed Vazzana Property development will be located in Fort Royal, Virginia. The site is located north of Route 647 (Happy Creek Road), south of I-66, east of the Shenandoah River, and west of Route 606 (Shenandoah Shores Road.) The development will be accessed via one full-access entrance along Shenandoah Shores Drive and a connection to East 8th Street. The property is approximately 604 acres.

Description of the Proposed Development

The majority of the 604-acre site has been annexed in the Town of Front Royal and is previously approved to develop 320 DU's. The site is currently vacant. The proposed Vazzana Property development plan calls for the additional construction of approximately 715 single-family detached residential units, 155 senior adult housing units, and up to 95 kSF of non-residential space (approximately 10 kSF day care center, 20 kSF church, 40 kSF office space and 25 kSF of specialty retail center). In addition, it is possible that a portion of the property will be dedicated to Warren County to develop a fire station and up to ±700 student Elementary School. The full build out is anticipated by 2034.

Principal Findings, Conclusions, and Recommendations

The analysis presented in this report supports the following major conclusions:

▪ **Existing Conditions (2016)**

The following intersections operate beyond capacity under the Existing conditions:

- *North Commerce Avenue and East 6th Street*
The eastbound and westbound approaches operate at level of service D during both the weekday morning and afternoon peak hours.
- *North Commerce Avenue and East 8th Street*
The eastbound and westbound approaches operate at level of service E and D respectively during the weekday afternoon peak hours.
- *North Commerce Avenue and North Royal Avenue*
The westbound left and southbound left turn movements approach at level of service E during both the morning and afternoon peak hour. The overall level of service is at LOS D during the afternoon peak hour.
- *W 14th Street and North Shenandoah Avenue*
The southbound approach operates at acceptable levels of service during both the weekday morning and afternoon peak hours. The remaining approaches operate at LOS D or worse.

▪ **Future Conditions without Proposed Development (2034)**

- A 1.0% growth rate was applied to Happy Creek Road, Shenandoah Shores Road, North Commerce Avenue, and East 8th Street.
- The anticipated traffic from the 450 residential units of the proposed HEPTAD development was added. That site is located south of Happy Creek Road along the future Leach Run Parkway.
- Currently, there are 320 residential units previously approved for development on the by-right portion of the Vazzana Property. Anticipated traffic from this by-right development was added under background conditions.

- With the development of the by-right Vazzana property, access to Happy Creek Road from Marys Shady Lane will close. Traffic will access Happy Creek Road via Shenandoah Shores Road.
- It is possible that a portion of the Vazzana property will be dedicated to Warren County to develop a fire station and up to ±700 student Elementary School. These developments were also considered as background developments.
- The construction of Leach Run Parkway between John Marshall Highway and Happy Creek Road at Shenandoah Shores Road is expected to be complete by 2034. A portion of existing traffic was rerouted to use this new roadway.
- According to the Town of Front Royal, it is desirable to maintain a level of service (LOS) C or better for each movement. The following intersections operate beyond capacity under future without development 2034 conditions:
 - *Happy Creek Road and Shenandoah Shores Road*
The southbound approach operates at level of service F during both the weekday morning and afternoon peak hours.
 - *North Commerce Avenue and East 6th Street*
The westbound approach operates at level of service E during both the peak hours. During the afternoon peak hour, the northbound approach operates at level of service C and the rest of the approaches operate at level of service D or worse.
 - *North Commerce Avenue and East 8th Street*
The westbound left turn operates at level of service D during the morning peak hours. During the afternoon peak hour, the eastbound and westbound approaches operate at level of service D or worse.
 - *North Commerce Avenue and North Royal Avenue*
The northbound approach operates at LOS C during both the morning and afternoon peak hours. All the other approaches operate at LOS D or worse during both the peak hours.
 - *W 14th Street and North Shenandoah Avenue*
The westbound and southbound approaches operate at acceptable levels of service during both the peak hours. Rest all of the approaches operate at LOS D or worse during both the morning and the afternoon peak hours.
 - *Leach Run Parkway and Happy Creek Road*
The northbound approach operates at LOS F during both the morning and the afternoon peak hours.

The following improvements are anticipated with the by-right Vazzana development and the middle school:

- Happy Creek Road and Shenandoah Shores Road
 - Add an exclusive eastbound left turn lane. (Proffered under rezoning RZ09-02-64, Front Royal Limited Partnership-Town Property). The eastbound left turn lane will be constructed with the middle school and is anticipated to open by 2017.
 - Add an exclusive westbound right turn lane. (Proffered under rezoning RZ09-02-64, Front Royal Limited Partnership-Town Property)

- Install a traffic control signal. (Proffered under rezoning RZ09-02-64, Front Royal Limited Partnership-Town Property) This recommendation is subject to the completion of an MUTCD signal warrant study, which should be conducted before installation of a traffic signal.
- Happy Creek Road and Leach Run Parkway (new intersection with middle school construction)
 - Add an eastbound right turn lane.
 - Add a westbound left turn lane.
 - Add a northbound left turn lane, and,
 - Install a traffic control signal.
- **Future Conditions with Proposed Development (2034)**
 - The proposed development program consists of approximately 715 single-family detached residential units, 155 senior adult housing units, and up to 95 kSF of non-residential space. The site will be accessed via one full-access entrance along Shenandoah Shores Drive and a connection to East 8th Street.
 - The proposed development will generate approximately 796 trips during the weekday morning peak period, 1,022 trips during the weekday afternoon peak period, and 9,654 trips during an entire weekday.
 - The following improvements are recommended with the proposed development:
 - Happy Creek Road and Shenandoah Shores Road
 - Add a southbound right turn lane.
 - Adjust signal timings as necessary.
 - N. Commerce Avenue and E. 8th Street:
 - Restripe the westbound approach to a thru/left turn lane and a right turn lane, and,
 - Install a traffic control signal.
 - Shenandoah Shores Road and East/West Connector
 - Add a traffic control signal
 - Add an eastbound right turn lane.
 - Add a northbound left turn lane.
 - With the above improvements in place under the future with development conditions, the study intersections operate at the following levels of service:
 - *Happy Creek Road and Shenandoah Shores Road*

The overall intersection and each of the turning movements operate at LOS C or better during the commuter peak hours.
 - *North Commerce Avenue and East 6th Street*

The westbound approaches operate at level of service D during both the morning and afternoon peak hours. The eastbound approach and the overall intersection operate at LOS D during the afternoon peak hour.
 - *North Commerce Avenue and East 8th Street*

- The westbound through/left turn movement operates at level of service D during the afternoon peak hour. The remaining movements and the overall intersection operate at LOS C or better during both peak periods.
- *North Commerce Avenue and North Royal Avenue*
All the approaches operate at LOS D or worse during both the morning and the evening peak hours, except for the southbound approach during the afternoon peak hour.
 - *W 14th Street and North Shenandoah Avenue*
Most of the movements operate at LOS D or worse during both the morning and the evening peak hours.
 - *Shenandoah Shores Road and East West connector*
The overall intersection and each of the turning movements operate at LOS C or better during the commuter peak hours.
- **Build-out Plus Six Years (2040)**
- With continued regional traffic growth, the following intersections operate with at least one movement at unacceptable levels of service under the future (2040) conditions:
- *North Commerce Avenue and East 6th Street*
 - *North Commerce Avenue and East 8th Street*
 - *North Commerce Avenue and North Royal Avenue*
 - *W 14th Street and North Shenandoah Avenue*

EXISTING CONDITIONS (2016)

Existing and Proposed Site Uses

The study site is located north of Route 647 (Happy Creek Road), south of I-66, east of Route 522, and west of Route 606 (Shenandoah Shores Road). The site currently is vacant. The proposed Vazzana Property development site plan calls for approximately 715 single-family detached residential units, 155 senior adult housing units, and up to 95 kSF of non-residential space. For the purposes of this analysis, the full build out of the property was assumed to be complete by 2034. Site access will be provided via a new East/West Connector Road at one full-access entrance along Shenandoah Shores Road and a connection to East 8th Street. The area map and site location is shown in Figure 1.

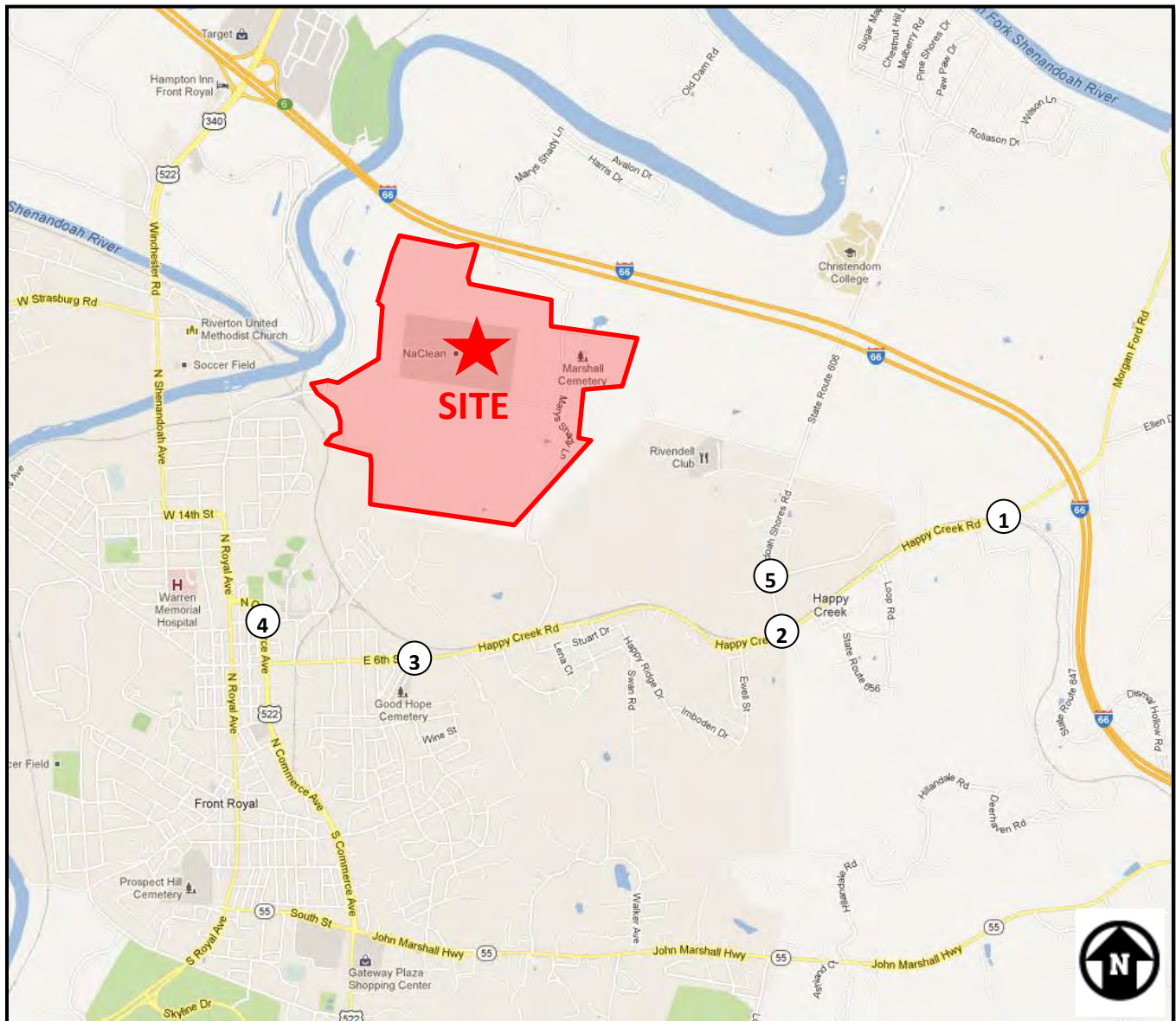


Figure 1: Area Map and Site Location

The following intersections were analyzed as part of this study:

1. Happy Creek Road and Dismal Hollow Road
2. Happy Creek Road and Shenandoah Shores Road
3. North Commerce Avenue and East 6th Street
4. North Commerce Avenue and East 8th Street
5. North Commerce Avenue and North Royal Avenue
6. W 14th Street and North Shenandoah Avenue
7. Happy Creek Road and Leach Run Parkway (Future intersection)
8. Shenandoah Shores Road and Site Entrance (Future intersection)

Roadway Network

A description of the major roadways within the immediate vicinity of the site is presented below:

Happy Creek Road (VA Route 624/647) is a two-lane, undivided roadway with varying posted speed limits of 25 mph (near downtown Front Royal), 35 mph, and 45 mph (near Dismal Hollow Road) in the study area.

Dismal Hollow Road (VA Route 624) is a two-lane, undivided roadway that runs from Happy Creek Road to John Marshall Highway with a posted speed limit of 45 mph in the study area.

Shenandoah Shores Road (VA Route 606) is a two-lane, undivided roadway that runs from Happy Creek Road to Rollason Drive with a posted speed limit of 35 mph in the vicinity of the site.

East 6th Street (VA Route 647) is a two-lane, undivided roadway with left turn lanes at signalized intersections. The posted speed limit is 25 mph in the vicinity of the project site.

North Commerce Street (US Route 522) is a four-lane, divided roadway that runs from North Royal Avenue to John Marshall Highway. The posted speed limit is 35 mph.

East 8th Street is a two-lane, undivided roadway. Parking is provided on either side of the street between North Royal Avenue and North Commerce Street.

The existing lane configuration and traffic controls for the study intersections are shown in Figure 2.

Existing Traffic Volumes

In order to determine the weekday peak hour turning movement traffic volumes, traffic counts at the study intersections were conducted on Thursday, March 17, 2016, from 6:00 AM to 9:00 AM and from 4:00 PM to 7:00 PM. Analysis of the existing traffic data determined the following peak hours:

AM Peak Hour: 7:45 AM to 8:45 AM

PM Peak Hour: 4:30 PM to 5:30 PM

The existing morning and afternoon peak hour traffic volumes for the study intersections are shown in Figure 3, and the estimated average daily traffic data are also shown in the same graphic. The existing turning movement counts are included in Appendix B.

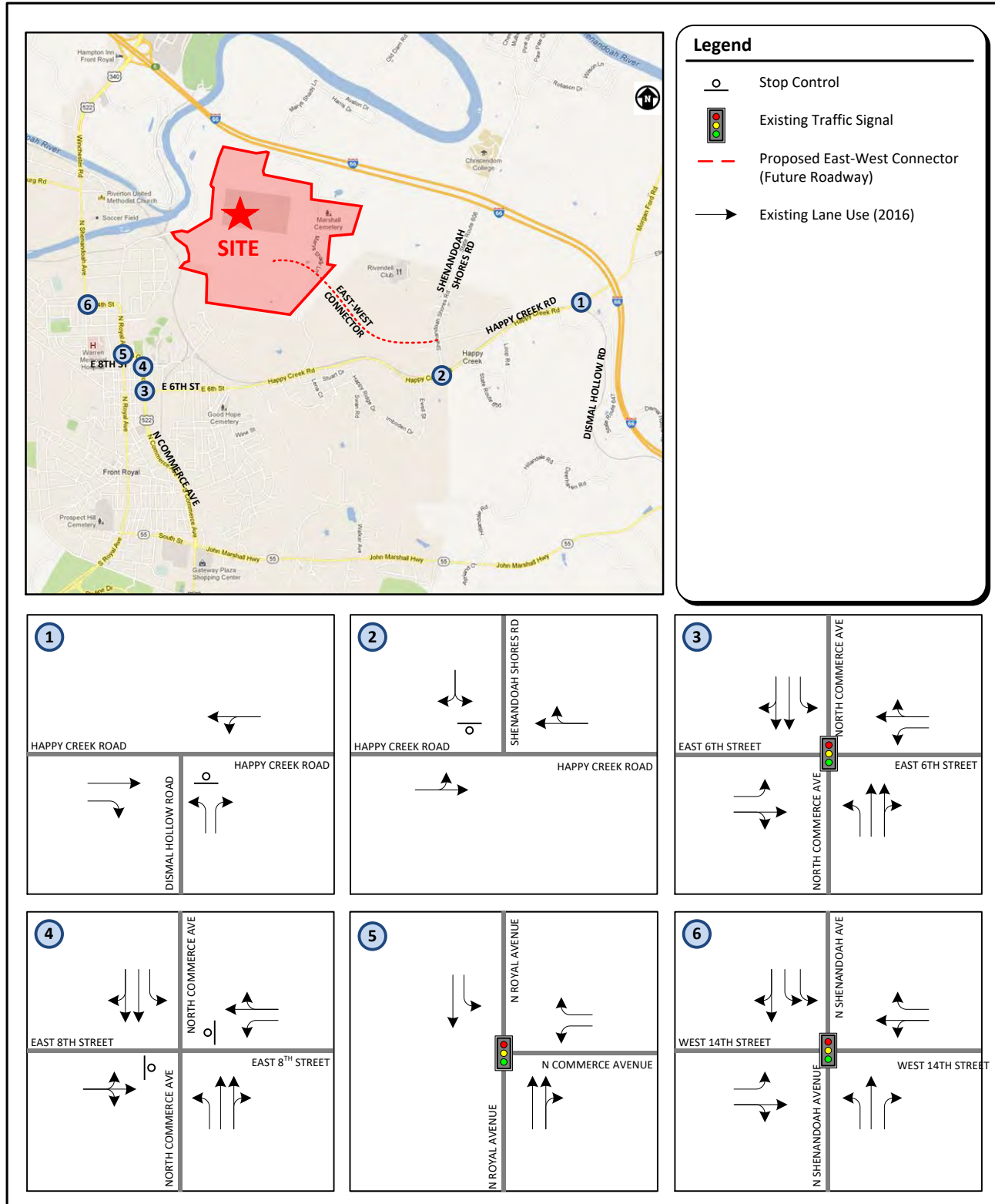


Figure 2: Lane Configuration and Traffic Control – Existing Conditions (2016)

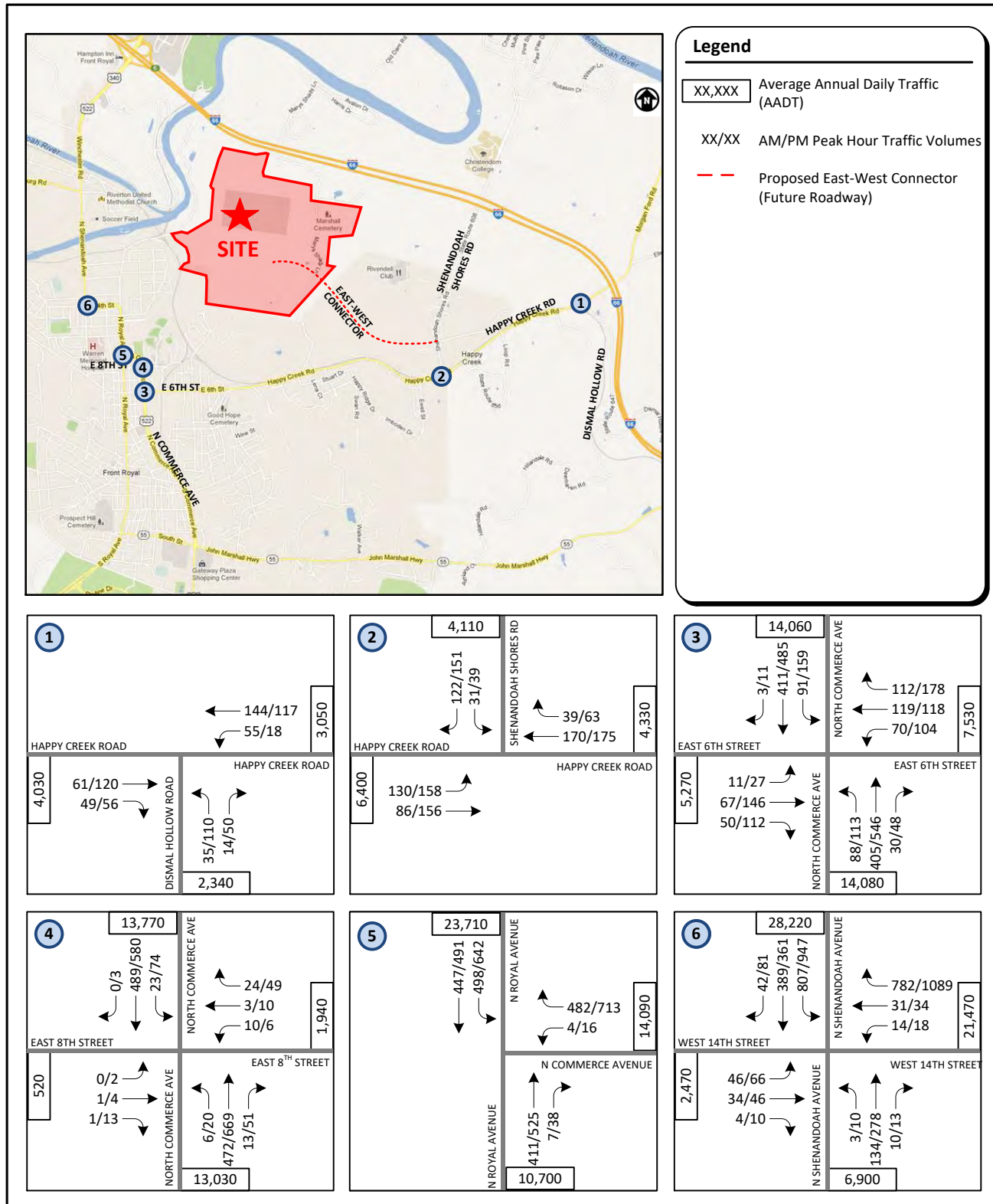


Figure 3: Existing Traffic Volumes (2016)

Existing Conditions Capacity Analysis

Capacity analyses were performed at the study intersections during the weekday morning and afternoon commuter peak hours under the existing conditions. Intersection capacity analyses were performed using *Synchro version 9.1* based on the latest Highway Capacity Manual (HCM 2000) data and methodology. Existing peak hour factors by movement were calculated from field count data.

Table 1 summarizes the results of the intersection capacity analyses for existing conditions, and Figure 4 shows the existing levels of service. A description of the different LOS and delay and the detailed analysis worksheets for the existing conditions are included in Appendix C and D, respectively.

Table 1: Existing Conditions (2016) Intersection Capacity Analysis

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue		LOS	Delay (sec/veh)	Queue		LOS	Delay (sec/veh)
			50th	90th			50th	90th		
1	<i>Happy Creek Rd and Dismal Hollow Rd</i>									
	Overall Intersection (Unsignalized)				n/a	n/a			n/a	n/a
	Westbound Approach		n/a	n/a		3.6	n/a	n/a		1.4
	Westbound Through/Left		n/a	7	A	3.6	n/a	2	A	1.4
	Northbound Approach		n/a	n/a	B	12.1	n/a	n/a	B	11.2
	Northbound Left		n/a	10	B	12.1	n/a	19	B	11.2
2	<i>Happy Creek Rd and Shenandoah Shores Rd</i>									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Eastbound Approach		n/a	n/a		6.1	n/a	n/a		4.8
	Eastbound Through/Left		n/a	14	A	6.1	n/a	13	A	4.8
	Southbound Approach		n/a	n/a	B	14.4	n/a	n/a	B	14.6
	Southbound Left/Right		n/a	41	B	14.4	n/a	48	B	14.6
3	<i>East 6th St and N Commerce Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	C	24.2	n/a	n/a	C	31.7
	Eastbound Approach		n/a	n/a	D	36.5	n/a	n/a	D	45.4
	Eastbound Left		7	17	C	32.2	18	31	C	30.5
	Eastbound Through/Right		68	109	D	37.0	233	212	D	47.1
	Westbound Approach		n/a	n/a	D	37.8	n/a	n/a	D	38.4
	Westbound Left		40	68	C	27.2	87	88	C	32.1
	Westbound Through/Right		132	233	D	40.9	227	337	D	41.1
	Northbound Approach		n/a	n/a	B	19.1	n/a	n/a	C	26.2
	Northbound Left	145'	30	64	B	13.6	52	86	B	18.9
	Northbound Through/Right		107	181	C	20.3	176	250	C	27.8
	Southbound Approach		n/a	n/a	B	18.2	n/a	n/a	C	24.7
	Southbound Left	165'	36	64	B	13.6	68	120	B	19.5
	Southbound Through/Right		98	173	B	19.6	146	212	C	26.4
4	<i>East 8th St and N Commerce Avenue</i>									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Eastbound Approach		n/a	n/a	C	18.0	n/a	n/a	E	45.6
	Eastbound Left/Through/Right		n/a	2	C	18.0	n/a	28	E	45.6
	Westbound Approach		n/a	n/a	C	16.9	n/a	n/a	D	27.5
	Westbound Left	140'	n/a	7	C	23.1	n/a	8	F	54.7
	Westbound Through/Right		n/a	8	B	14.1	n/a	31	C	24.8
	Northbound Approach		n/a	n/a		0.2	n/a	n/a		0.3
	Northbound Left	150'	n/a	1	A	8.7	n/a	3	A	8.9
	Southbound Approach		n/a	n/a		0.5	n/a	n/a		1.8
	Southbound Left	165'	n/a	3	A	8.5	n/a	14	A	9.8
5	<i>N Commerce Avenue and N Royal Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	C	31.4	n/a	n/a	D	43.8
	Westbound Approach		n/a	n/a	C	32.1	n/a	n/a	D	51.5
	Westbound Left		9	12	E	68.7	24	36	E	69.3
	Westbound Right		207	327	C	31.3	539	#830	D	50.8
	Northbound Approach		n/a	n/a	C	27.3	n/a	n/a	C	32.2
	Northbound Through/Right		134	199	C	27.3	246	285	C	32.2
	Southbound Approach		n/a	n/a	C	33.0	n/a	n/a	D	45.3
	Southbound Left		407	#646	E	59.4	~650	#916	E	78.7
	Southbound Through		0	123	A	2.4	99	152	A	3.0
6	<i>W 14th Street and Shenandoah Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	E	57.5	n/a	n/a	C	29.6
	Eastbound Approach		n/a	n/a	F	478.8	n/a	n/a	F	157.7
	Eastbound Left		~160	#318	F	665.7	~74	#152	F	265.2
	Eastbound Through/Right		37	58	D	47.1	52	75	D	50.2
	Westbound Approach		n/a	n/a	A	7.3	n/a	n/a	A	7.5
	Westbound Through/Left		47	74	E	74.1	58	84	E	63.0
	Westbound Right		0	0	A	1.4	0	0	A	3.3
	Northbound Approach		n/a	n/a	D	35.3	n/a	n/a	D	50.7
	Northbound Left	125'	7	8	E	72.3	10	24	E	58.0
	Northbound Through		123	151	C	33.7	224	#393	D	51.4
	Northbound Right		0	0	C	27.8	0	0	C	32.5
	Southbound Approach		n/a	n/a	C	28.5	n/a	n/a	C	28.1
	Southbound Left	288'	267	313	D	36.2	313	377	C	34.0
	Southbound Through/Right		150	296	B	13.8	149	307	B	15.4

According to the Town of Fort Royal, it is desirable to achieve a level of service C or better for each movement at an intersection. The results show that the following intersections operate at unacceptable levels of service under the existing conditions:

- *North Commerce Avenue and East 6th Street*
The eastbound and westbound approaches operate at level of service D during both the weekday morning and afternoon peak hours.
- *North Commerce Avenue and East 8th Street*
The eastbound and westbound approaches operate at level of service E and D respectively during the weekday afternoon peak hours.
- *North Commerce Avenue and North Royal Avenue*
The westbound left and southbound left turn movements operate at level of service E during both the morning and afternoon peak hour. The overall level of service is LOS D during the afternoon peak hour.
- *W 14th Street and North Shenandoah Avenue*
The southbound approach operates at acceptable levels of service during both the weekday morning and afternoon peak hours. The remaining approaches operate at LOS D or worse.

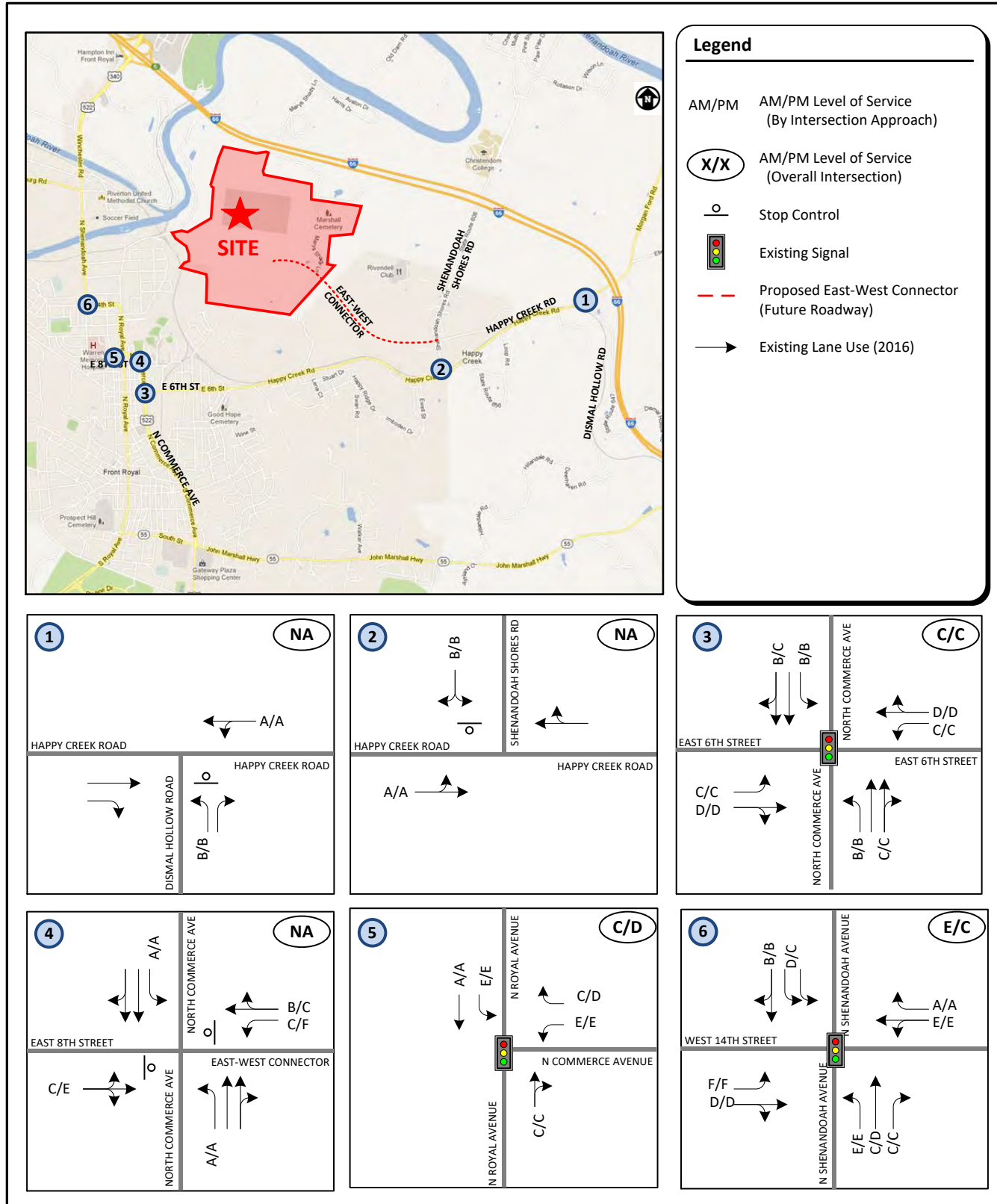


Figure 4: Existing Levels of Service (2016)

FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT (2034)

Planned Roadway/Transportation Improvements

The following planned or proposed roadway/transportation improvements in the vicinity of the site for the 2034 traffic conditions were considered in the traffic study:

- Marys Shady Lane – The connection of Marys Shady Lane to Happy Creek Road will be replaced with a connection to Shenandoah Shores Road with development of the by-right portion of the Vazzana Property. Therefore, the relocated access is assumed under all future conditions.
- Leach Run Parkway – Leach Run Parkway is currently under construction in conjunction with the middle school, and will be in place for all future scenarios. Leach Run Parkway will be a four-lane, divided, limited-access highway between John Marshall Highway (Route 55) to the south and Happy Creek Road to the north with a design speed of 50 mph. The northern terminus of the Leach Run Parkway would be an at-grade intersection with Happy Creek Road, approximately 450 feet west of Shenandoah Shores Road

Direction of Approach and Future Conditions without Proposed Development Traffic Volumes (2034)

Traffic volumes were analyzed during the morning peak hour and the afternoon peak hour for the future year 2034. In order to determine the weekday peak hour volumes, the following data was used:

- Existing 2016 AM and PM peak period turning movement counts
- Annual growth rate of 1.00%
- Traffic volumes at the intersection of Happy Creek Road and Marys Shady Lane from *2009 Vazzana Property Development Traffic Impact Study*
- Previously approved Vazzana Property by-right development program
- Approved future HEPTAD development, located south of Happy Creek Road on Leach Run Parkway
- A fire station and an elementary school to be developed on the Vazzana property to be dedicated to Warren County.

Inherent Growth

Future traffic volumes are projected by increasing existing traffic volumes to the build-out year using a growth rate. It was agreed at the scoping meeting that, to be conservative, a regional growth rate of 1.00% would be used in this traffic study to account for background growth and development outside of the study area. Figure 5 shows the existing 2016 volumes with the applied growth rate.

Marys Shady Lane Rerouting

The access for Marys Shady Lane at Happy Creek Road will be removed as development occurs on the Vazzana property. The vehicles currently using Marys Shady Lane will be rerouted to Shenandoah Shores Road. The directional split along Happy Creek Road for the vehicles currently using Marys Shady Lane was replicated at the intersection of Shenandoah Shores Road and Happy Creek Road when they were relocated. Traffic volumes were not recounted at the intersection of Happy Creek Road and Marys Shady Lane; instead, the same traffic volumes from the *2009 Vazzana Property Development Traffic Impact Study* were used in this analysis. Since the road is a dead end, the volumes should be similar. The rerouted volumes are shown in Figure 6 and Figure 7.

Leach Run Parkway Rerouting

Leach Run Parkway is expected to be constructed by the year 2034. It will extend approximately two (2) miles from Happy Creek Road near Shenandoah Shores Road south to John Marshall Highway. A portion of the vehicles currently using Dismal Hollow Road will be rerouted to Leach Run Parkway. The rerouted volumes are shown in Figure 8 and Figure 9.

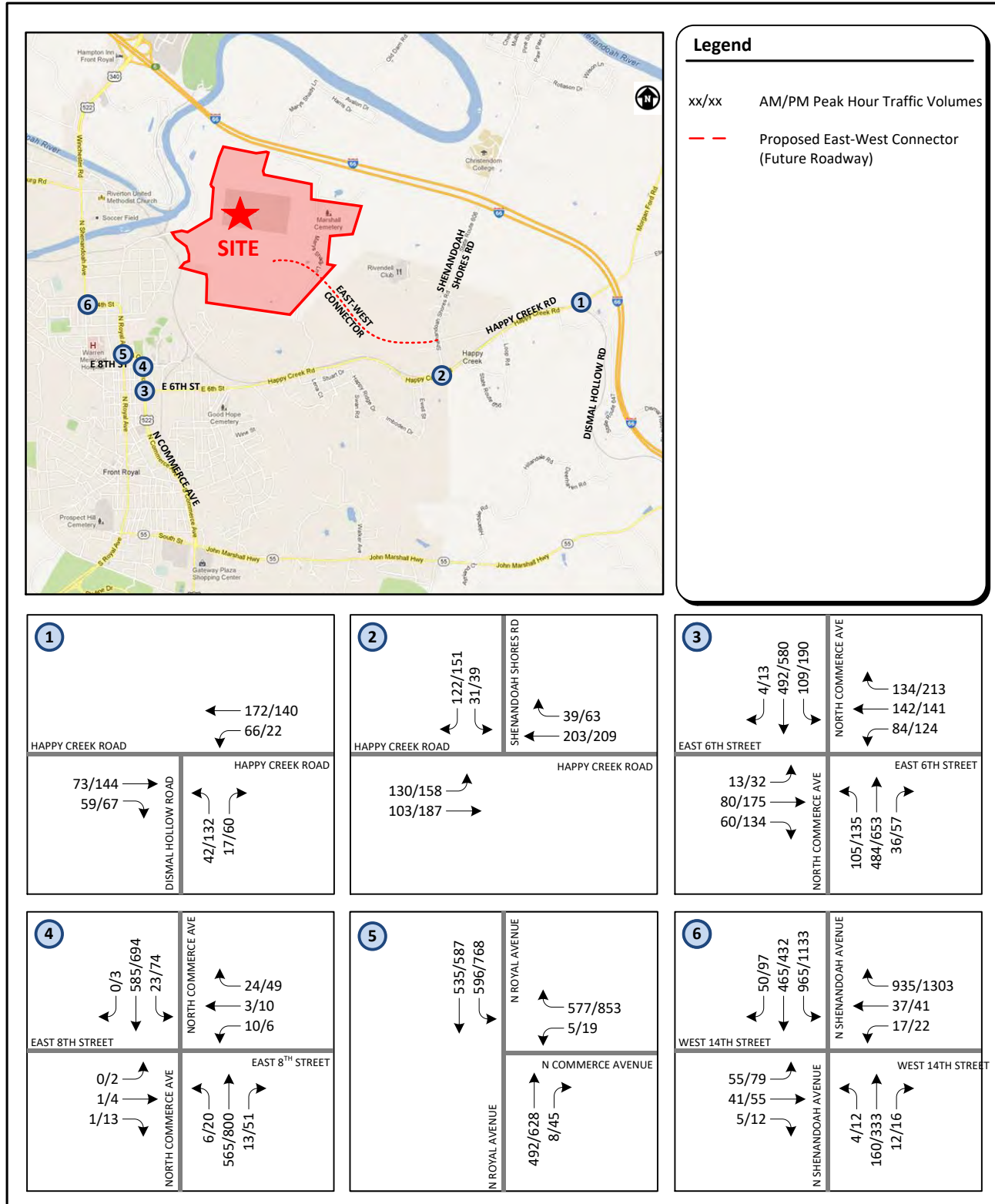


Figure 5: Existing 2016 Volumes + 1.00% Annual Growth

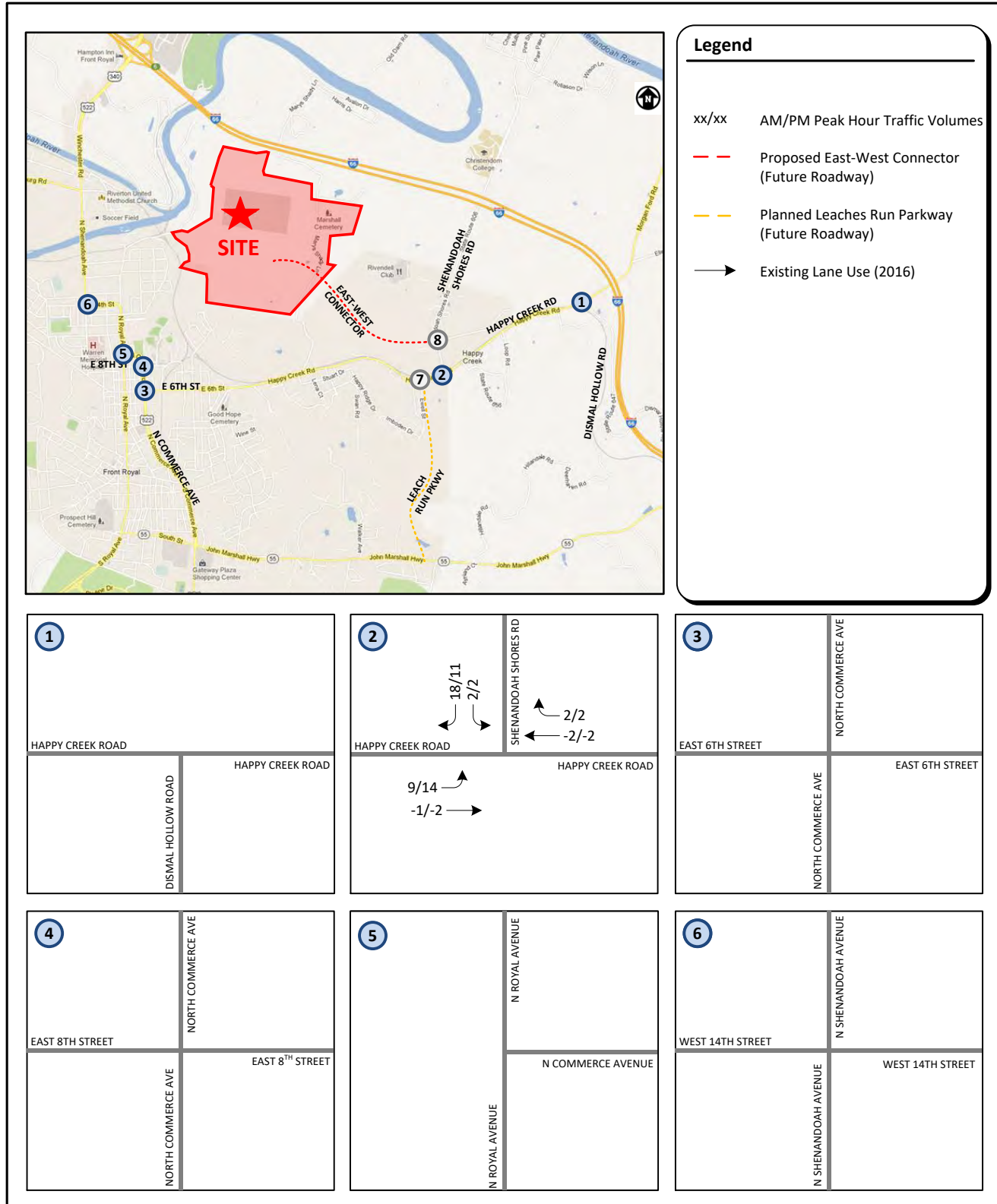


Figure 6: Marys Shady Lane Rerouting (1 of 2)

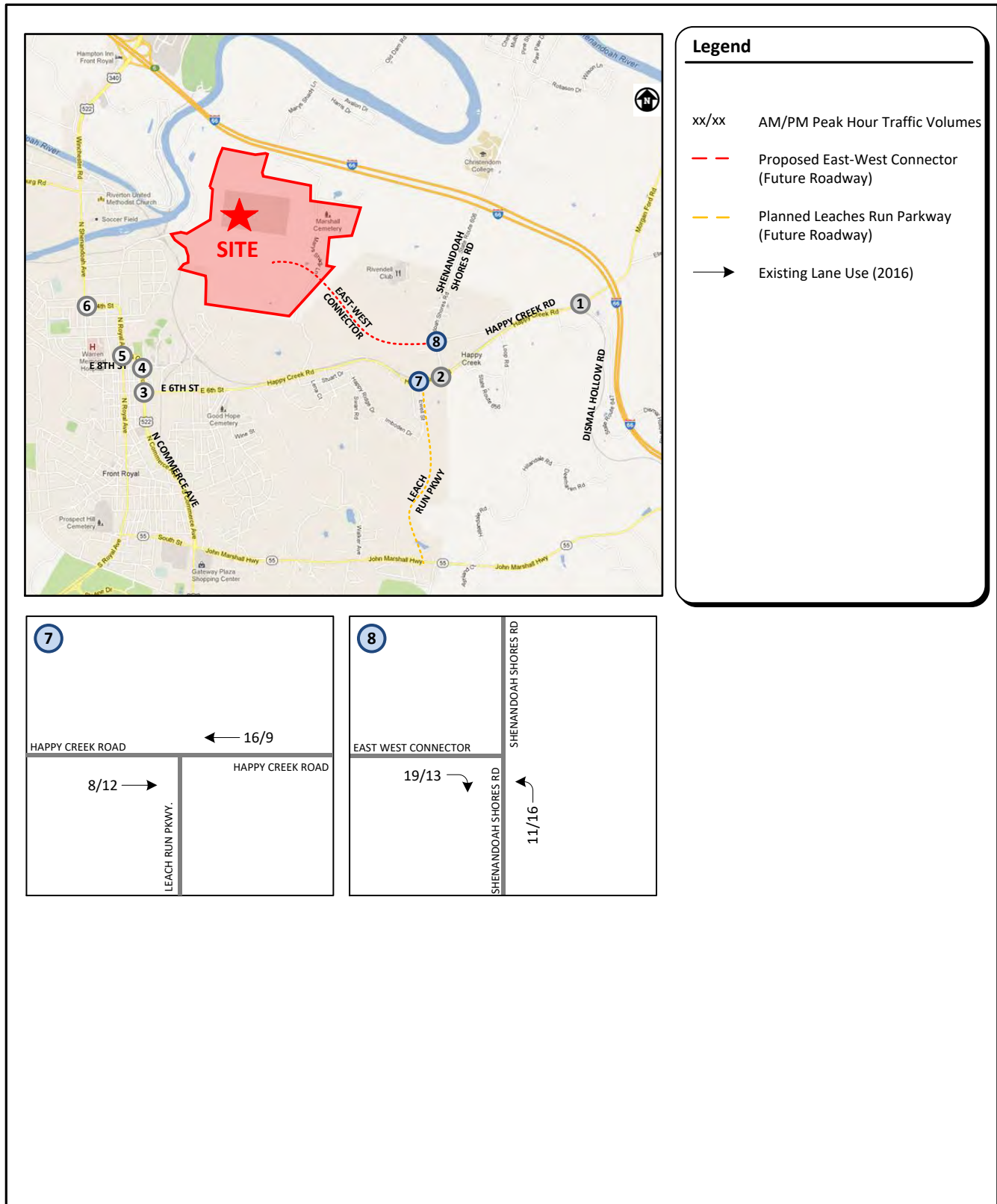


Figure 7: Marys Shady Lane Rerouting (2 of 2)

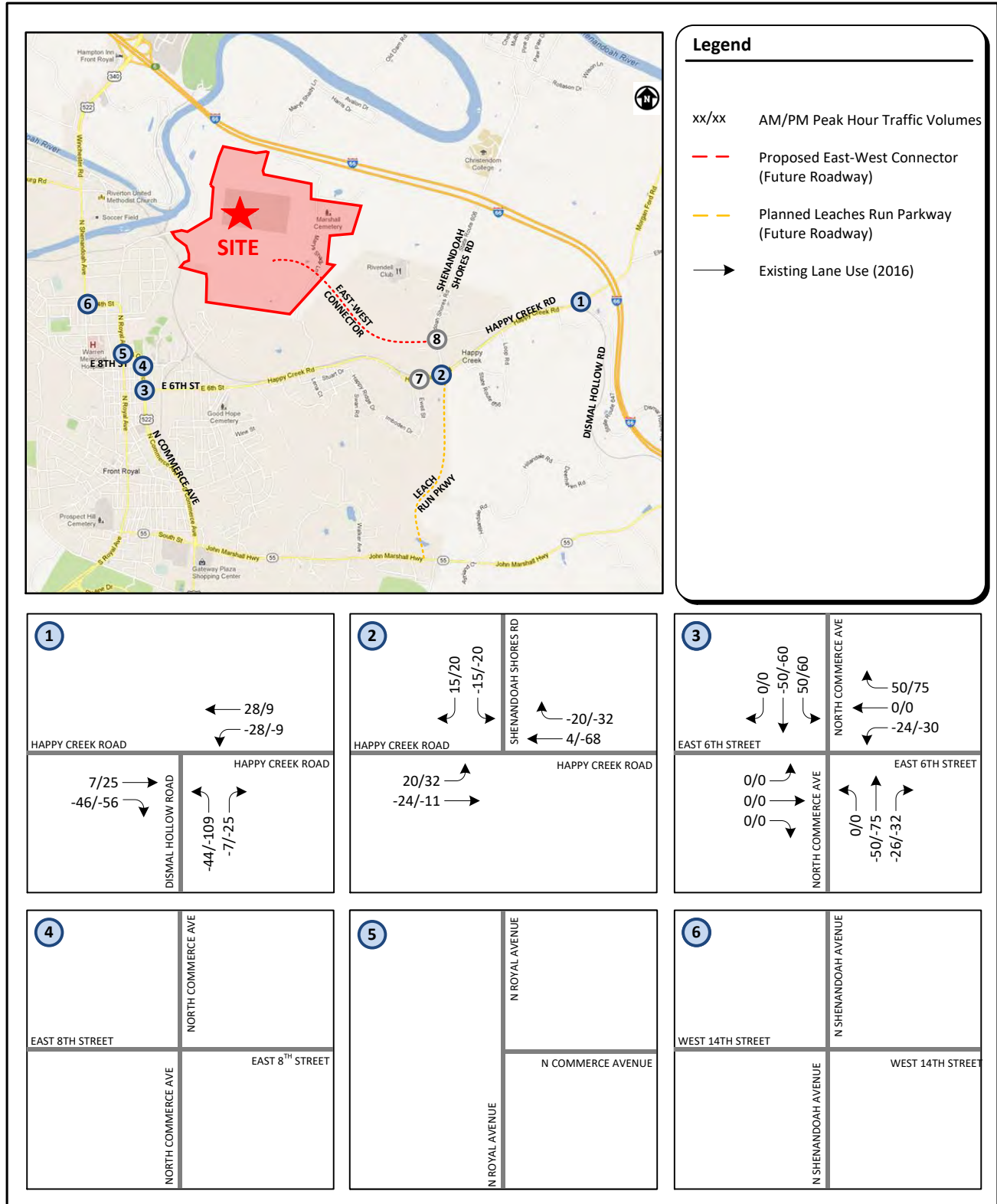


Figure 8 : Leach Run Parkway Rerouting (1 of 2)

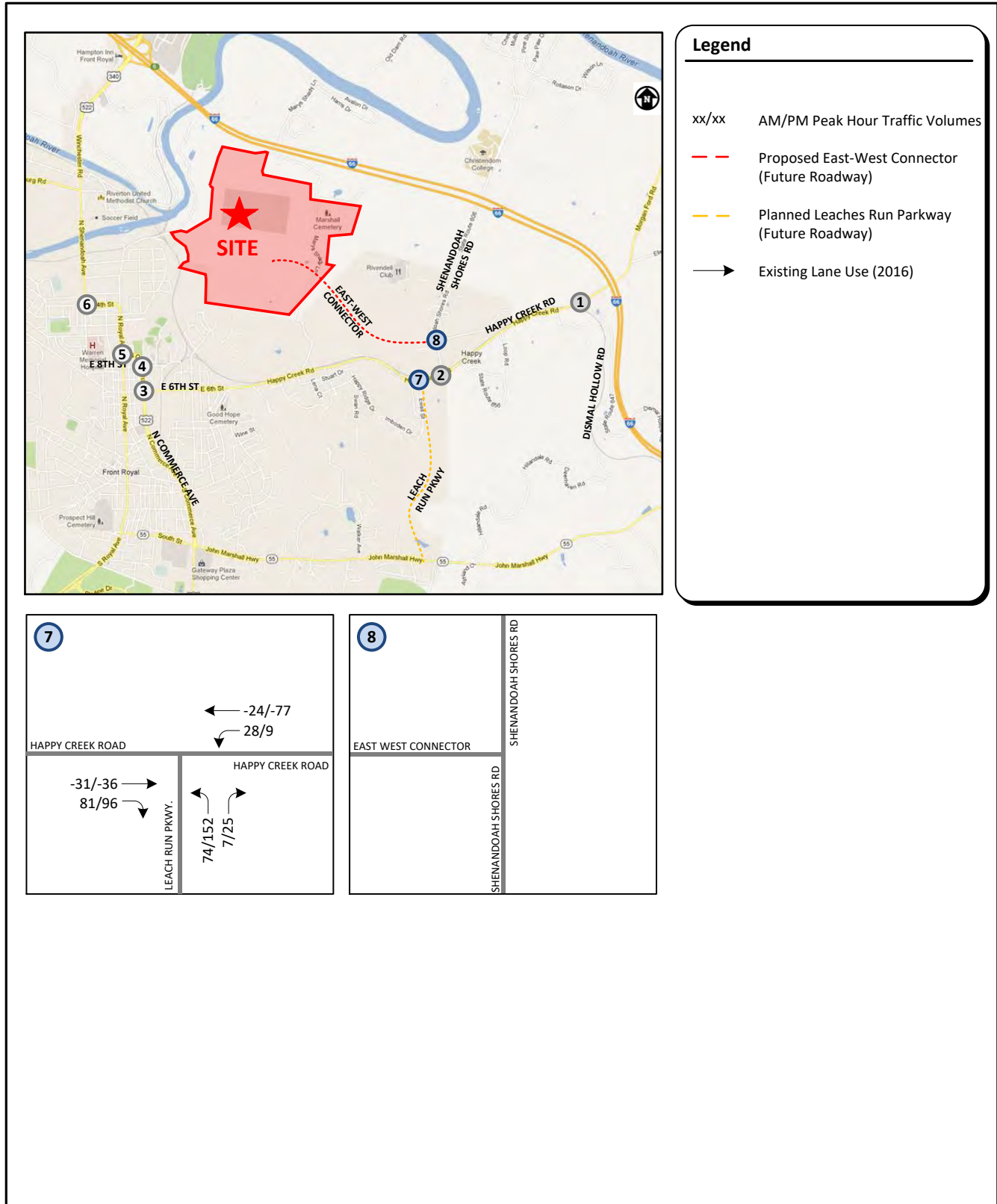


Figure 9 : Leach Run Parkway Rerouting (2 of 2)

Approved Vazzana Property By-right Development Traffic Volumes

The Vazzana Property development is currently approved for 320 single-family residential units. These homes are included under future background conditions without the proposed rezoning. To calculate the trips generated by the approved development, ITE's Trip Generation Manual, 9th Edition was used to determine the trips for the weekday morning and afternoon peak hours. The trip generation for the approved Vazzana Property development is shown in Table 2.

Table 2: 2034 Future without Proposed Development (Future Background) Trip Generation: Vazzana Property

Land Use	ITE Code	Size	----- Week day -----						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
<u>Vazzana Property (By-Right, Within Town)</u>									
<i>Residential</i>									
Single-Family Detached Housing	210	320 DU	59	175	234	188	111	299	3,062
Total Background By-Right External Trips			59	175	234	188	111	299	3,062

As shown in Table 2, the approved Vazzana Property development will generate 234 weekday morning peak hour trips and 299 weekday afternoon peak hour trips under future conditions without proposed development.

In order to route the projected traffic through the study area, a direction of approach was established based on previous traffic studies, existing travel patterns, and general engineering judgment. The direction of approach assumptions for traffic generated by the approved development are shown in Table 3 and Figure 10 and Figure 11. The inbound and outbound trips calculated for the weekday morning and weekday afternoon commuter peak hours were routed based on these distributions.

Table 3: Direction of Approach

APPROVED VAZZANA PROPERTY DEVELOPMENT	Residential
To and from the north along North Shenandoah Avenue	25%
To and from the south along Dismal Hollow Road	15%
To and from the south along (Future) Leach Run Parkway	30%
To and from the south along North Royal Avenue	5%
To and from the south along North Commerce Avenue	5%
To and from the east along Happy Creek Road	15%
To and from the west along West 6 th Street	5%
Total	100%

Figure 10 and Figure 11 also illustrate the site traffic assignment for both peak hours.

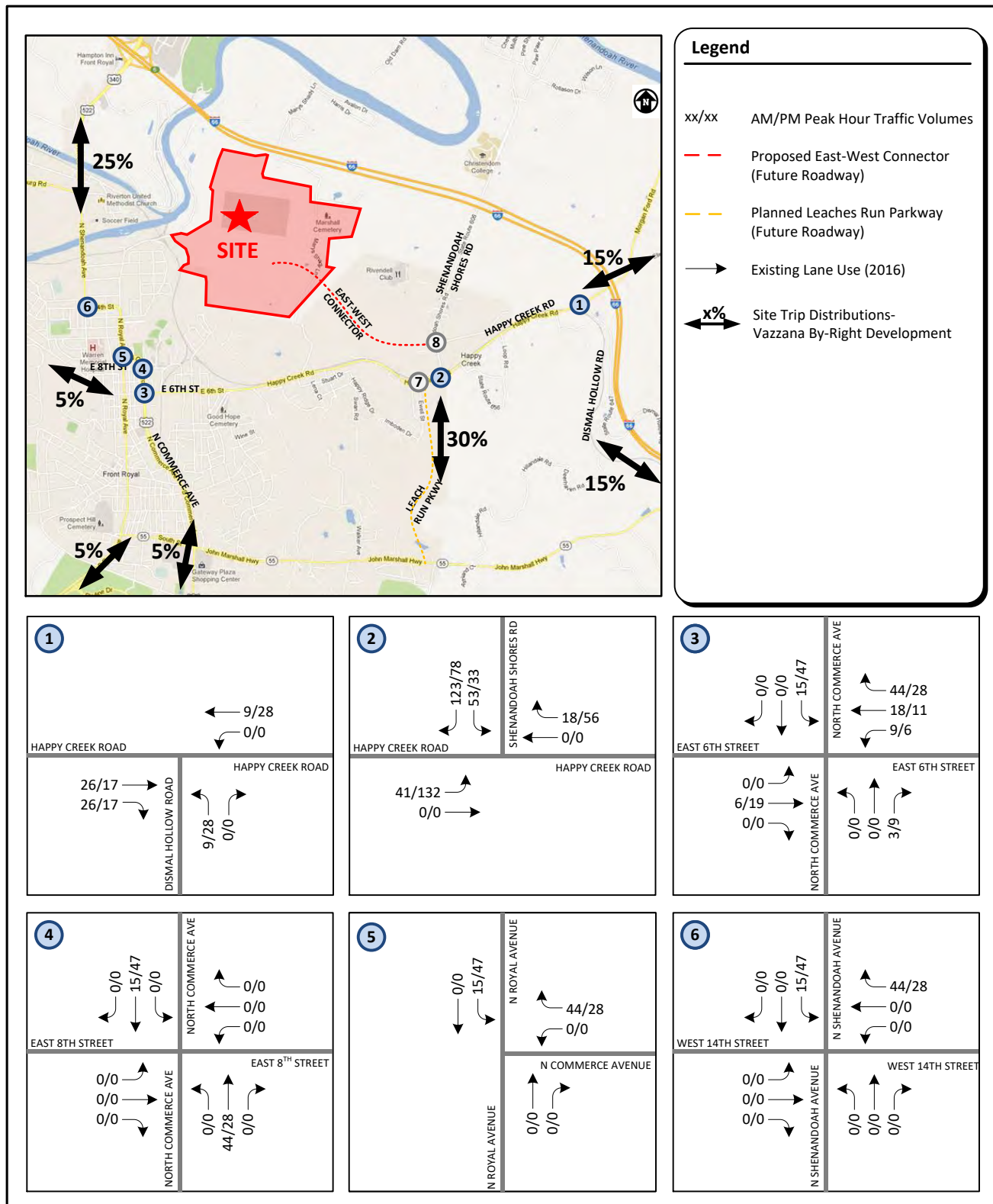
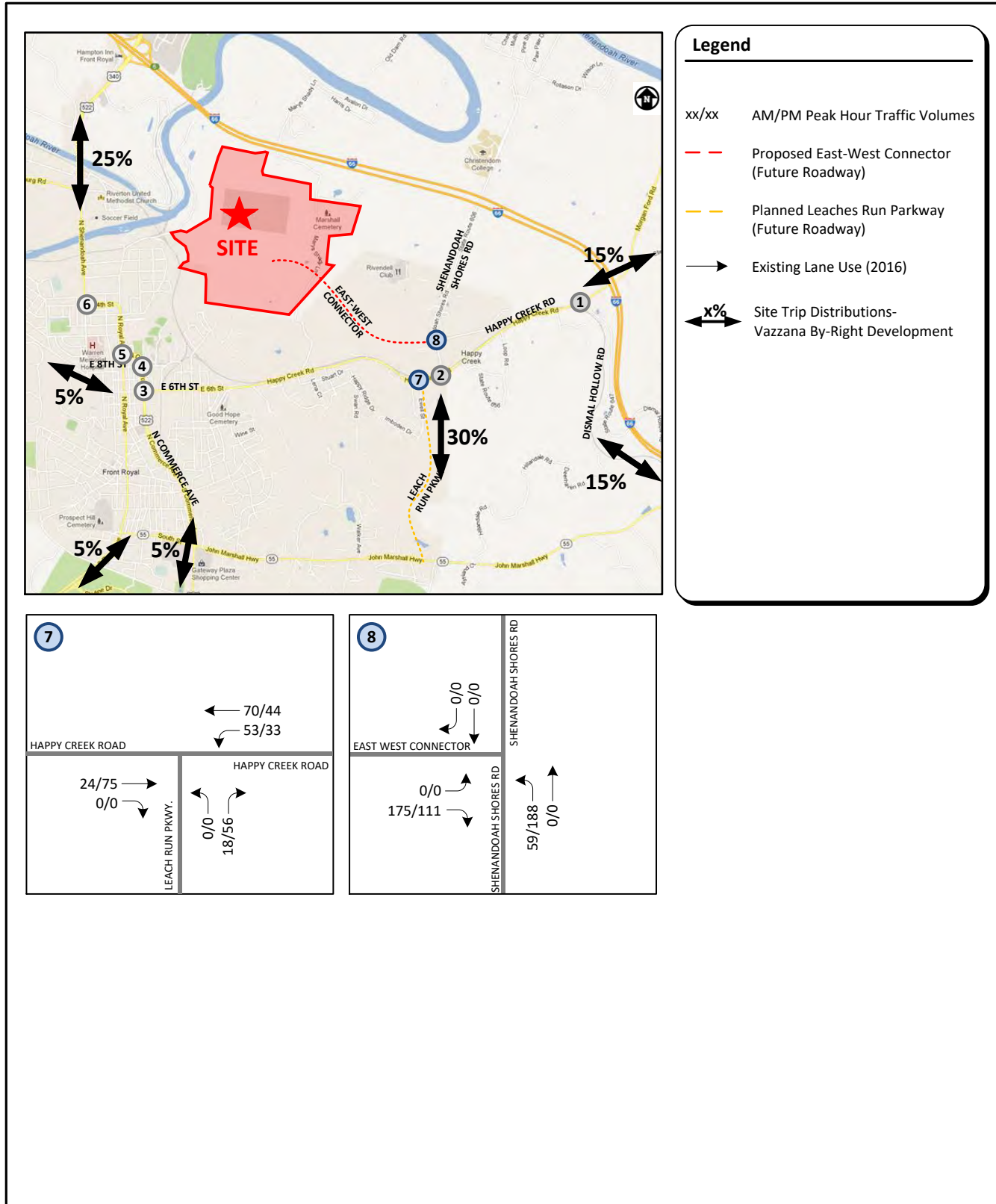


Figure 10: Approved Vazzana Property Development Traffic Volumes (2034) (1 of 2)



Approved Future Heptad Development Traffic Volumes

The HEPTAD development is currently approved for 450 residential units. This development is included under future background conditions without the proposed development. To calculate the trips generated by the approved development, ITE's Trip Generation Manual, 9th Edition was used to determine the trips for the weekday morning and afternoon peak hours. The trip generation for the approved HEPTAD development is shown in Table 4.

Table 4: 2034 Future without Proposed Development (Future Background) Trip Generation: Heptad Development

Land Use	ITE Code	Size	AM Peak Hour			PM Peak Hour			Daily	
			In	Out	Total	In	Out	Total	Total	
<u>Heptad Development</u>										
Residential										
Single-Family Detached Housing	210	54	DU	12	36	48	39	22	61	596
Single-Family Attached Housing	230	100	DU	9	43	52	41	20	61	644
Multifamily Housing	220	296	DU	30	119	149	118	63	181	1,918
Total Residential External Trips				51	198	249	198	105	303	3,158

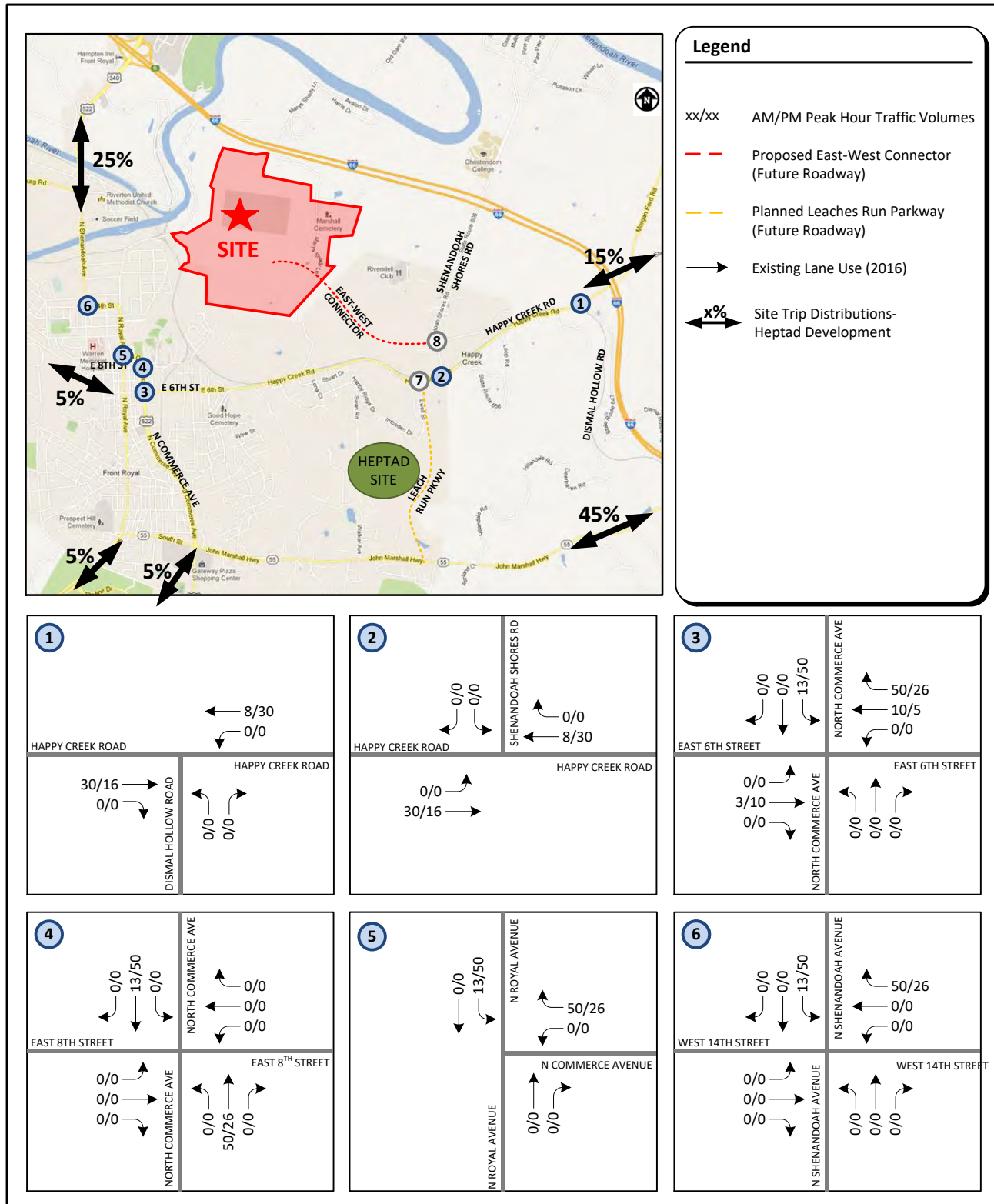
As shown in Table 4, the approved HEPTAD development will generate 249 weekday morning peak hour trips and 303 weekday afternoon peak hour trips under future conditions without proposed development. The location of the HEPTAD development is shown in Figure 12.

In order to route the projected traffic through the study area, a direction of approach was established based on previous traffic studies, existing travel patterns, and general engineering judgment. The direction of approach assumptions for traffic generated by the approved development are shown in Table 5 and Figure 12 and Figure 13. The inbound and outbound trips calculated for the weekday morning and weekday afternoon commuter peak hours were routed based on these distributions.

Table 5: Direction of Approach

APPROVED HEPTAD DEVELOPMENT	Residential
To and from the north along North Shenandoah Avenue	25%
To and from the east along John Marshall Highway 55	45%
To and from the southwest along North Royal Avenue	5%
To and from the southwest along North Commerce Avenue	5%
To and from the east along Happy Creek Road	15%
To and from the west along West 6 th Street	5%
Total	100%

Figure 12 and Figure 13 also illustrate the site traffic assignment for both peak hours.



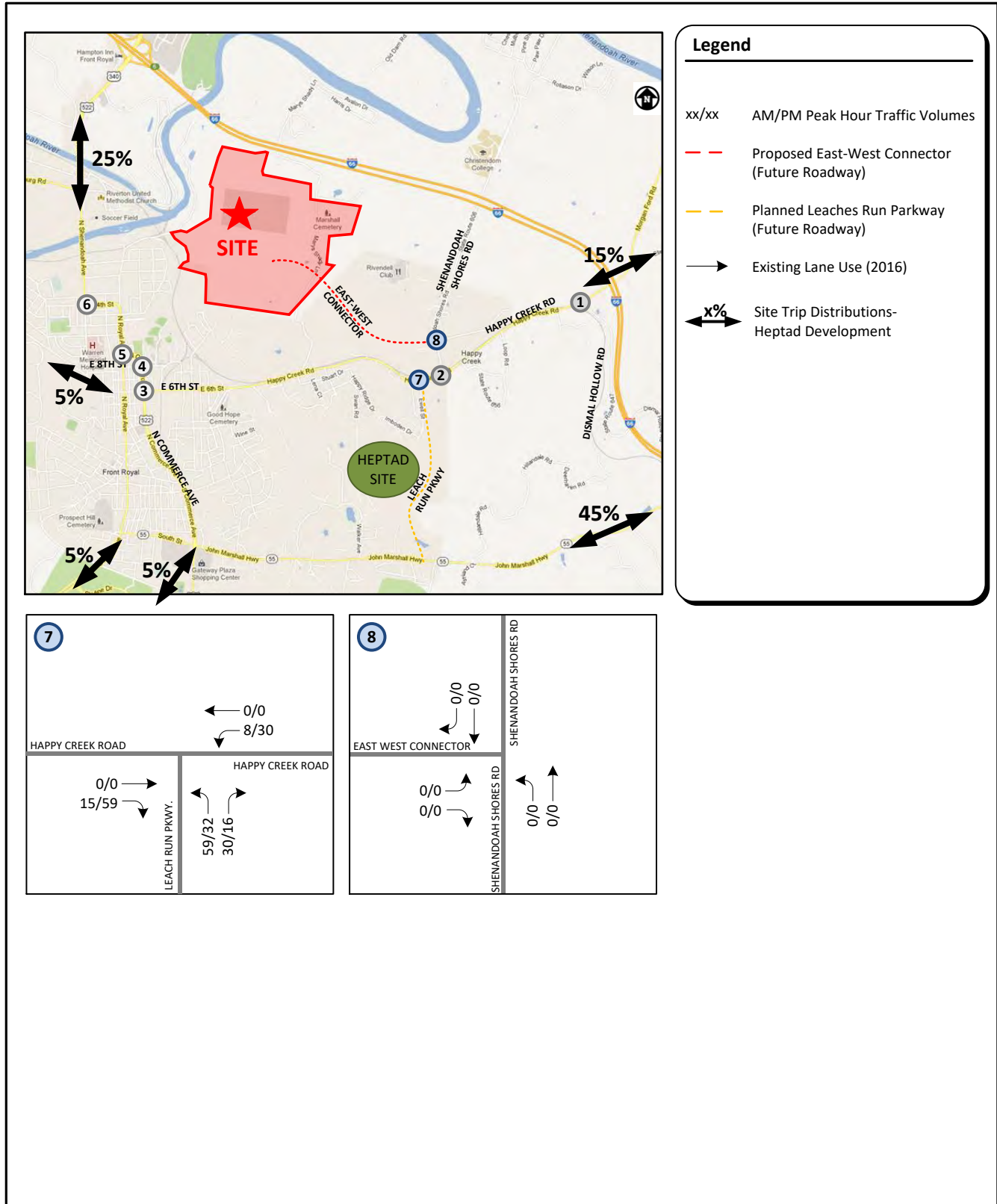


Figure 13: Heptad Development Traffic Volumes (2034) (2 of 2)

Elementary School and Fire Station Traffic Volumes

It is possible that a portion of the Vazzana property will be dedicated to Warren County to develop a fire station and up to ±700 student Elementary School. Per discussion at the scoping meeting, these developments were also considered as background developments. To calculate the trips generated by the elementary school, ITE's Trip Generation Manual, 9th Edition was used to determine the trips for the weekday morning and afternoon peak hours. Based on traffic engineering judgment, the fire station was estimated to generate 10 trips each during the morning and afternoon peak hours. The trip generation for this background development is shown in Table 6.

Table 6: Future Background Trip Generation: Fire Station and Elementary School

Land Use	ITE Code	Size	Weekday							
			AM Peak Hour			PM Peak Hour			Daily	
			In	Out	Total	In	Out	Total	Total	
Elementary School	520	700	Students	174	141	315	52	53	105	903
School Internal Trips Reduction: 13% ¹		13%		-23	-18	-41	-7	-7	-14	-117
Fire Station				5	5	10	5	5	10	100
Total Elementary School and Fire Station Trips				156	128	284	50	51	101	886

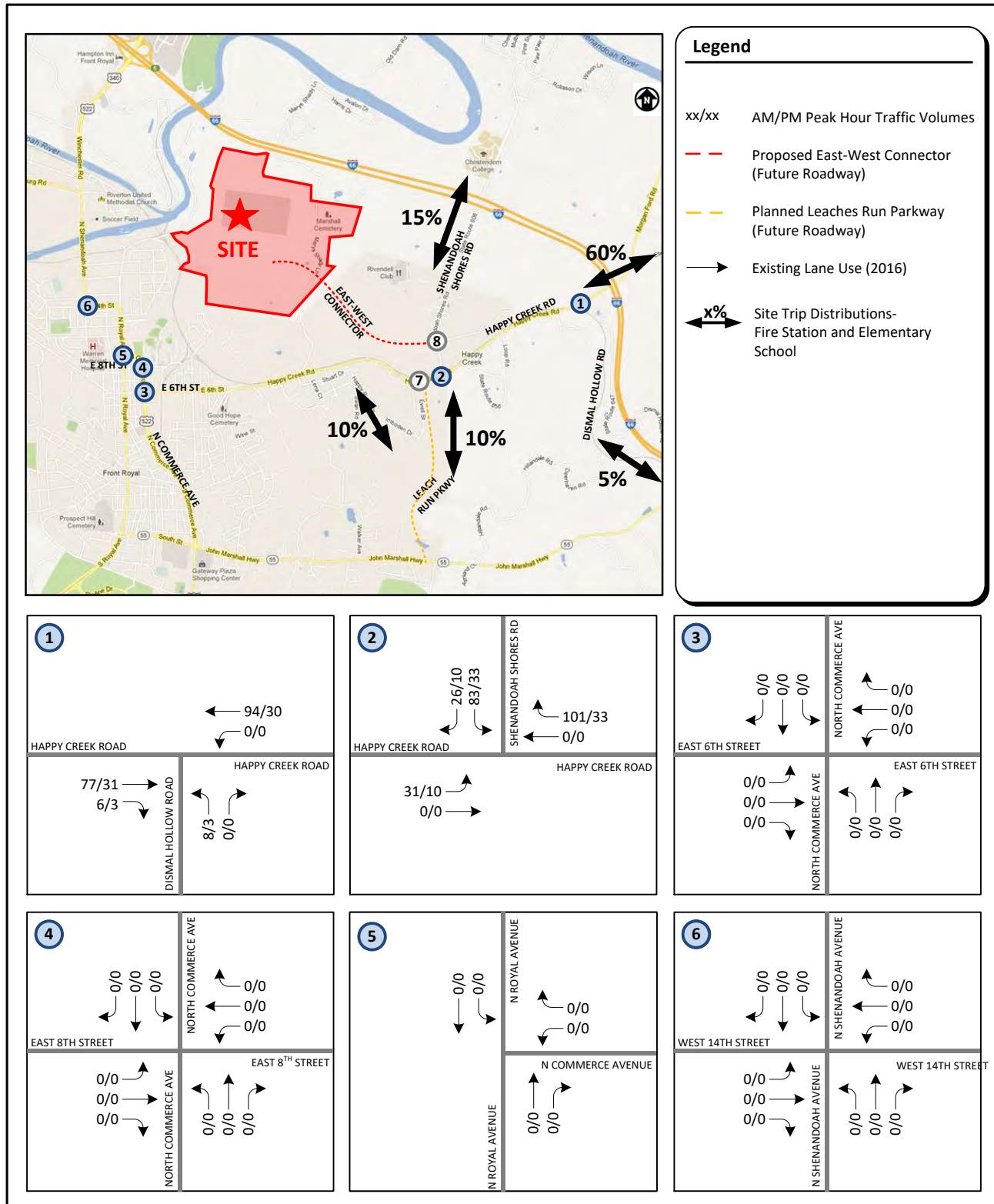
Note: 1 – The elementary school internal reduction rate was developed using data for Warren County's population based on age and number of households. 13% = [0.181 students per DU x 515 DU] / 700 students, or in other words approximately 13% of the school's students will live in the proposed development.

As shown in Table 6, the background development will generate 284 weekday morning peak hour trips and 101 weekday afternoon peak hour trips under future conditions without proposed development. In order to route the projected traffic into the Vazzana Property development, a direction of approach was established based on previous traffic studies, existing travel patterns, location of employment within the region, approved developments, and general engineering judgment. The direction of approach assumptions for traffic generated by the elementary school and fire station development and are shown in Table 7 and Figure 14 and Figure 15. The inbound and outbound trips calculated for the weekday morning and weekday afternoon commuter peak hours were routed based on these distributions.

Table 7: Direction of Approach

APPROVED VAZZANA PROPERTY DEVELOPMENT	Elementary School/Fire Station
To and from the north along North Shenandoah Avenue	0%
To and from the north along Shenandoah Shores Road	15%
To and from the south along Happy Ridge Drive	10%
To and from the south along Dismal Hollow Road	5%
To and from the south along (Future) Leach Run Parkway	10%
To and from the south along North Royal Avenue	0%
To and from the south along North Commerce Avenue	0%
To and from the east along Happy Creek Road	60%
To and from the west along West 6 th Street	5%
Total	100%

Figure 14 and Figure 15 show the site traffic assignment for both peak hours for the elementary school and fire station.



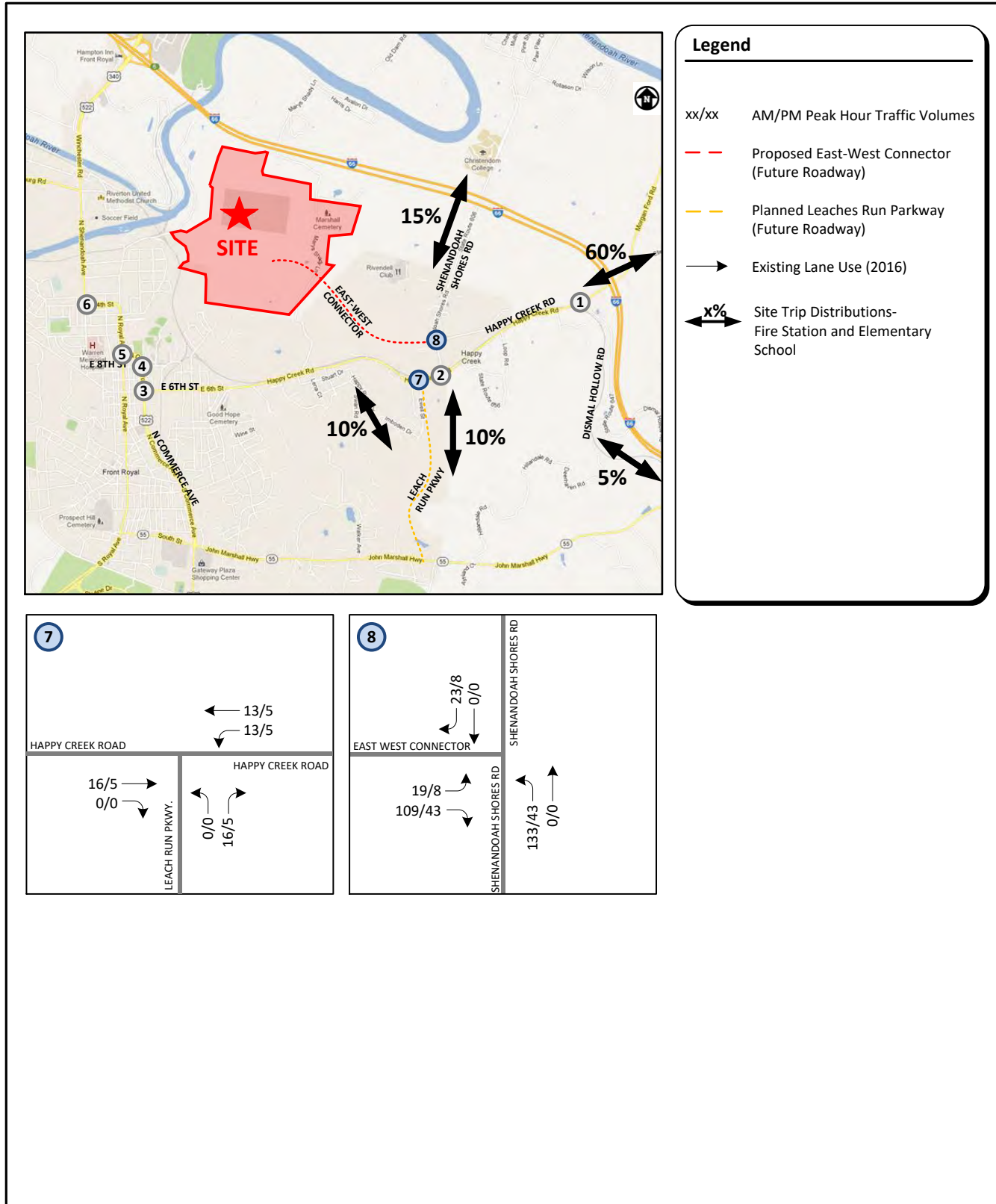


Figure 15: Elementary School and Fire Station Traffic Volumes (2034) (2 of 2)

The trips from the anticipated developments (Figures 10 thru 15) were added to the existing volumes with growth (2034) (Figure 5), the rerouted Marys Shady Lane traffic (Figures 6 and 7) and the rerouted Leach Run Parkway traffic (Figures 8 and 9) to establish the future without proposed development (2034) traffic volumes, as shown in Figure 16 and Figure 17.

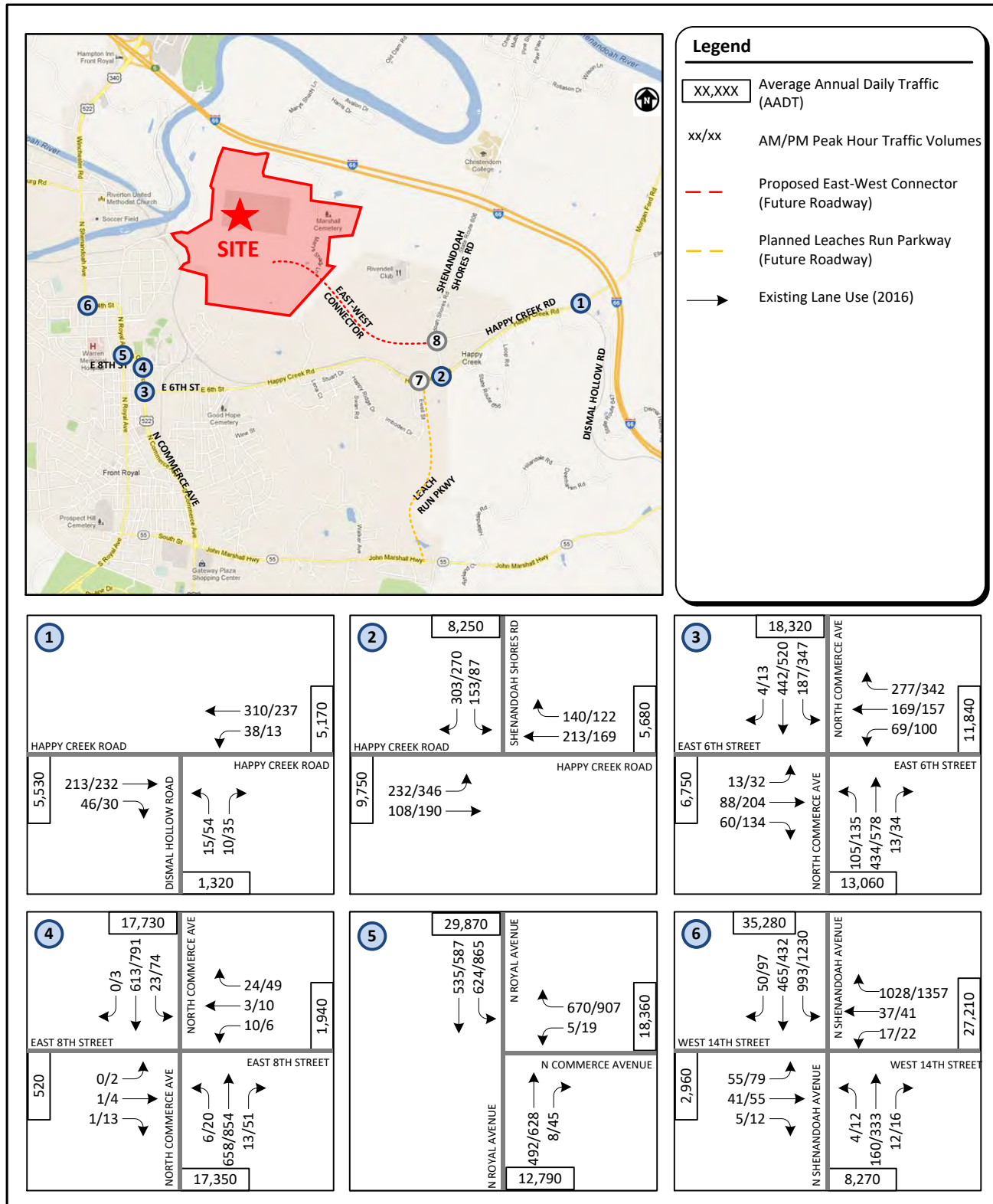


Figure 16: Future Conditions without Proposed Development Traffic Volumes (2034) (1 of 2)

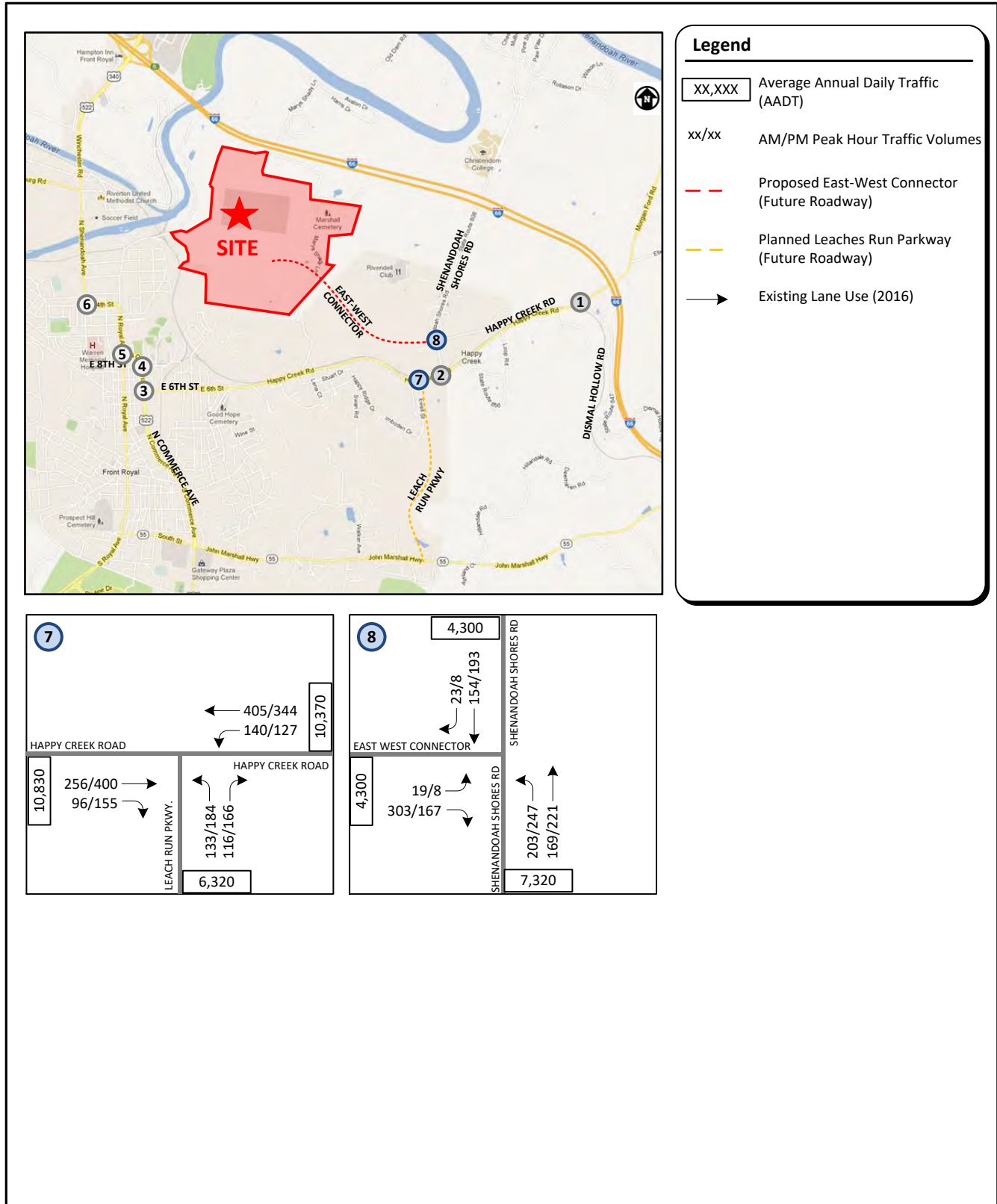


Figure 17: Future Conditions without Proposed Development Traffic Volumes (2034) (2 of 2)

Future Conditions without Proposed Development Capacity Analysis (2034)

Capacity analyses were performed at the study intersections during the weekday morning and afternoon peak hours under future 2034 conditions. Intersection capacity analyses were performed using *Synchro version 8* based on the latest Highway Capacity Manual (HCM 2000) data and methodology. A peak hour factor of 0.90 was used for all movements under the future without development conditions.

The results of the intersection capacity analyses for the future conditions without the proposed development (2034) are summarized in Table 8 and

Figure 18 and Figure 19. A description of the different LOS and delay and the detailed analysis worksheets for the future conditions without proposed development (2034) are included in Appendix C and E, respectively.

Figure 20 and Figure 21 show the recommended lane geometry for each study intersection.

Table 8: Future Conditions without Proposed Development (2034) Intersection Capacity Analysis

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
1	Happy Creek Rd and Dismal Hollow Rd									
	Overall Intersection (Unsignalized)				n/a	n/a			n/a	n/a
	Westbound Approach		n/a	n/a		1.2	n/a	n/a		0.5
	Westbound Through/Left		n/a	3A	A	1.2	n/a	1	A	0.5
	Northbound Approach		n/a	n/a	B	12.4	n/a	n/a	B	12.0
	Northbound Left		n/a	3	B	12.4	n/a	10	B	12.0
2	Happy Creek Rd and Shenandoah Shores Rd									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Eastbound Approach		n/a	n/a		6.9	n/a	n/a		7.1
	Eastbound Through/Left		n/a	22	A	6.9	n/a	34	A	7.1
	Southbound Approach		n/a	n/a	F	153.9	n/a	n/a	F	122.1
	Southbound Left/Right		n/a	526	F	153.9	n/a	384	F	122.1
2	Happy Creek Rd and Shenandoah Shores Rd									
	Mitigation: Add a traffic control signal; add a eastbound left turn lane; add a westbound right turn lane									
	Overall Intersection (Signalized)		n/a	n/a	C	24.0	n/a	n/a	B	17.4
	Eastbound Approach		n/a	n/a	B	14.3	n/a	n/a	A	5.6
	Eastbound Left	250'	40	115	B	16.9	34	69	A	6.2
	Eastbound Through		18	38	A	8.7	18	41	A	4.6
	Westbound Approach		n/a	n/a	C	23.5	n/a	n/a	C	20.7
	Westbound Through		130	207	C	34.6	95	165	C	29.8
	Westbound Right	250'	0	16	A	6.6	0	20	A	8.1
	Southbound Approach		n/a	n/a	C	31.6	n/a	n/a	C	32.3
	Southbound Left/Right		210	338	C	31.6	124	229	C	32.3
3	East 6 th St and N Commerce Avenue									
	Overall Intersection (Signalized)		n/a	n/a	C	33.9	n/a	n/a	D	51.5

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Eastbound Approach		n/a	n/a	C	33.7	n/a	n/a	D	45.1
	Eastbound Left		6	20	C	31.2	17	38	C	32.3
	Eastbound Through/Right		81	145	C	33.9	246	363	D	46.3
	Westbound Approach		n/a	n/a	E	57.6	n/a	n/a	E	64.2
	Westbound Left		36	69	C	24.9	53	93	C	26.8
	Westbound Through/Right		274	#547	E	62.6	~375	#615	E	71.6
	Northbound Approach		n/a	n/a	C	24.2	n/a	n/a	C	27.9
	Northbound Left	145'	35	80	B	18.1	59	103	C	20.1
	Northbound Through/Right		116	190	C	25.6	205	274	C	29.6
	Southbound Approach		n/a	n/a	C	23.1	n/a	n/a	E	65.6
	Southbound Left	165'	67	139	B	19.4	~228	#464	F	123.3
	Southbound Through/Right		114	189	C	24.6	175	237	C	27.9
4	East 8th St and N Commerce Avenue									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Eastbound Approach		n/a	n/a	C	21.7	n/a	n/a	D	34.8
	Eastbound Left/Through/Right		n/a	1	C	21.7	n/a	17	D	34.8
	Westbound Approach		n/a	n/a	C	17.0	n/a	n/a	D	32.8
	Westbound Left	140'	n/a	5	D	27.6	n/a	10	F	63.5
	Westbound Through/Right		n/a	5	B	13.1	n/a	38	D	29.5
	Northbound Approach		n/a	n/a		0.1	n/a	n/a		0.2
	Northbound Left	150'	n/a	1	A	9.0	n/a	3	A	9.9
	Southbound Approach		n/a	n/a		0.3	n/a	n/a		0.9
	Southbound Left	165'	n/a	2	A	9.0	n/a	11	B	10.2
5	N Commerce Avenue and N Royal Avenue									
	Overall Intersection (Signalized)		n/a	n/a	D	42.2	n/a	n/a	F	125.3
	Westbound Approach		n/a	n/a	D	51.2	n/a	n/a	F	157.6
	Westbound Left		4	21	E	78.4	18	46	E	67.5
	Westbound Right		479	#766	D	50.9	~1054	#1326	F	159.5
	Northbound Approach		n/a	n/a	C	27.8	n/a	n/a	C	32.8
	Northbound Through/Right		148	241	C	27.8	270	344	C	32.8
	Southbound Approach		n/a	n/a	D	43.2	n/a	n/a	F	147.7
	Southbound Left		506	#927	E	78.2	~1170	#1464	F	245.6
	Southbound Through		0	152	A	2.3	129	198	A	3.4
6	W 14th Street and Shenandoah Avenue									
	Overall Intersection (Signalized)		n/a	n/a	E	67.7	n/a	n/a	D	36.4
	Eastbound Approach		n/a	n/a	F	687.9	n/a	n/a	F	177.5
	Eastbound Left		~212	#378	F	869.7	~86	#193	F	283.9
	Eastbound Through/Right		31	75	D	48.1	48	97	D	51.0
	Westbound Approach		n/a	n/a	A	6.0	n/a	n/a	B	17.7

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Westbound Through/Left		4	88	E	63.4	50	99	E	69.7
	Westbound Right		0	0	A	3.0	0	#171	B	15.3
	Northbound Approach		n/a	n/a	D	36.5	n/a	n/a	F	69.9
	Northbound Left	125'	3	14	E	59.7	9	30	E	58.6
	Northbound Through		110	196	D	36.4	~321	#509	E	72.0
	Northbound Right		0	0	C	30.9	0	0	D	35.1
	Southbound Approach		n/a	n/a	C	28.6	n/a	n/a	C	32.9
	Southbound Left	288'	326	410	D	36.1	459	565	D	40.6
	Southbound Through/Right		181	368	B	14.1	188	389	B	15.1
7	<i>Leach Run Parkway and Happy Creek Road</i>									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Westbound Approach		n/a	n/a		3.4	n/a	n/a		3.8
	Westbound Through/Left		n/a	12	A	3.4	n/a	9	A	3.8
	Northbound Approach		n/a	n/a	F	69.0	n/a	n/a	F	277.3
	Northbound Left/Right		n/a	216	F	69.0	n/a	328	F	277.3
7	<i>Leach Run Parkway and Happy Creek Road</i>									
	Mitigation: Add a traffic control signal; add a eastbound right turn lane; add a westbound left turn lane; add a northbound left turn lane									
	Overall Intersection (Signalized)		n/a	n/a	B	17.7	n/a	n/a	B	18.9
	Eastbound Approach		n/a	n/a	B	19.8	n/a	n/a	B	17.1
	Eastbound Through		135	209	C	25.4	198	292	C	22.0
	Eastbound Right	250'	0	11	A	4.9	0	12	A	4.6
	Westbound Approach		n/a	n/a	B	14.5	n/a	n/a	B	13.7
	Westbound Left	250'	55	m86	B	13.2	38	m89	B	13.6
	Westbound Through		175	261	B	14.9	132	281	B	13.8
	Northbound Approach		n/a	n/a	C	21.7	n/a	n/a	C	28.7
	Northbound Left	250'	69	118	C	26.5	109	178	C	34.0
	Northbound Right		0	29	B	17.3	0	40	C	22.8
8	<i>Shenandoah Shores Road and East West Connector</i>									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Eastbound Approach		n/a	n/a	B	13.7	n/a	n/a	B	11.8
	Eastbound Left/Right		n/a	62	B	13.7	n/a	27	B	11.8
	Northbound Approach		n/a	n/a		5.1	n/a	n/a		5.3
	Northbound Through/Left		n/a	15	A	5.1	n/a	19	A	5.3

According to the Town of Fort Royal, it is desirable to achieve a level of service C or better for each movement at an intersection. The results show that the following intersections operate at unacceptable levels of service under the future without development conditions:

- *Happy Creek Road and Shenandoah Shores Road*

The southbound approach operates at level of service F during both the weekday morning and afternoon peak hours.

- *North Commerce Avenue and East 6th Street*

The westbound approach operates at level of service E during both the peak hours. During the afternoon peak hour, the northbound approach operates at level of service C and the rest of the approaches operate at level of service D or worse.

- *North Commerce Avenue and East 8th Street*

The westbound left turn operates at level of service D during the morning peak hours. During the afternoon peak hour, the eastbound and westbound approaches operate at level of service D or worse.

- *North Commerce Avenue and North Royal Avenue*

The northbound approach operates at LOS C during both the morning and afternoon peak hours. All the other approaches operate at LOS D or worse during both the peak hours.

- *W 14th Street and North Shenandoah Avenue*

The westbound and southbound approaches operate at acceptable levels of service during both the peak hours. Rest all of the approaches operate at LOS D or worse during both the morning and the afternoon peak hours.

- *Leach Run Parkway and Happy Creek Road*

The northbound approach operates at LOS F during both the morning and the afternoon peak hours.

The following improvements are recommended:

- Happy Creek Road and Shenandoah Shores Road

- Add an exclusive eastbound left turn lane. (Proffered under rezoning RZ09-02-64, Front Royal Limited Partnership-Town Property). The eastbound left turn lane will be constructed by as part of the middle school project and is anticipated to open by 2017.
- Add an exclusive westbound right turn lane. (Proffered under rezoning RZ09-02-64, Front Royal Limited Partnership-Town Property)
- Install a traffic control signal. (Proffered under rezoning RZ09-02-64, Front Royal Limited Partnership-Town Property) This recommendation is subject to the completion of an MUTCD signal warrant study, which should be conducted before installation of a traffic signal.

- Happy Creek Road and Leach Run Parkway (new intersection by others)

- Add an eastbound right turn lane.
- Add a westbound left turn lane.
- Add a northbound left turn lane, and,
- Install a traffic control signal.

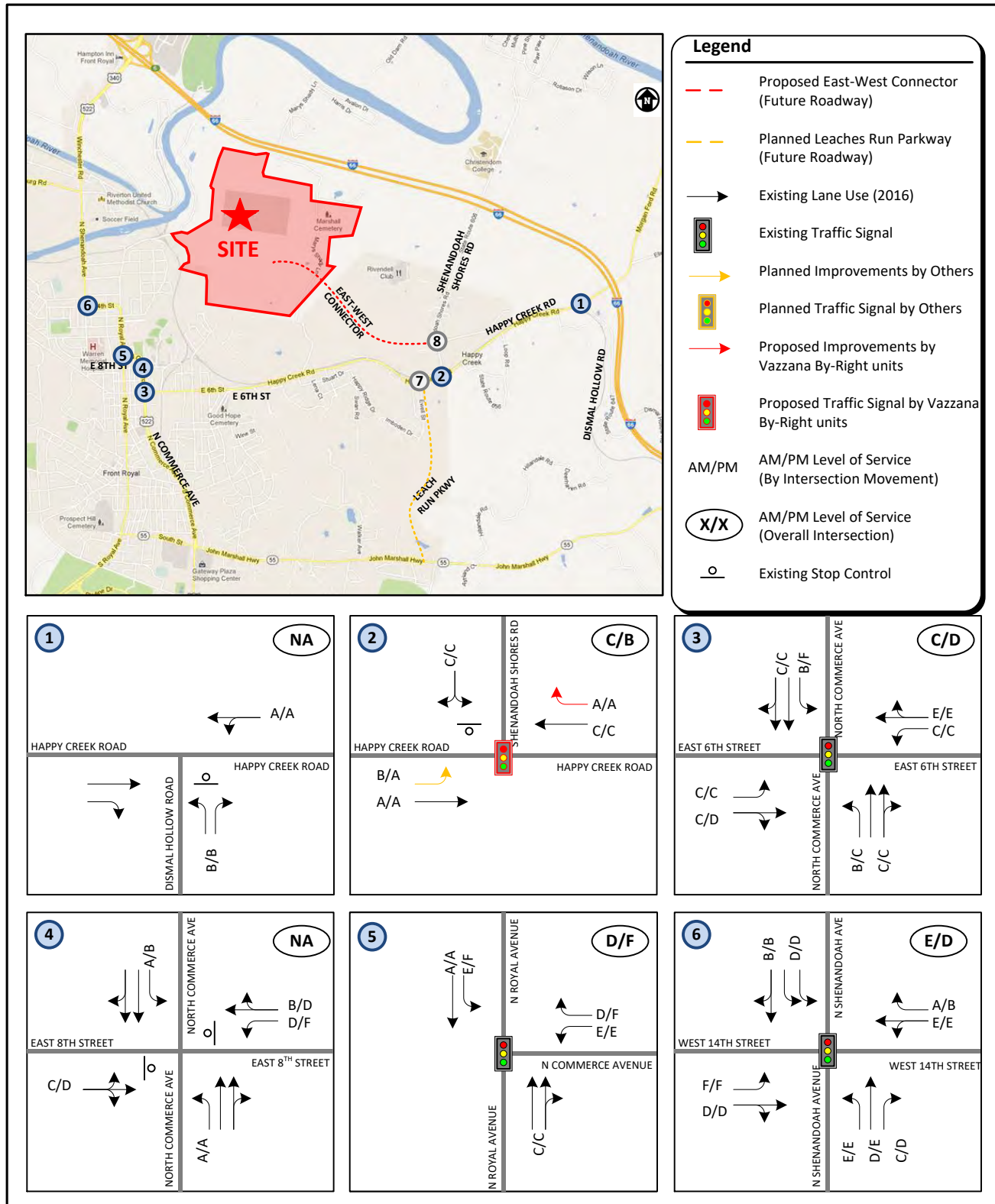


Figure 18: Future Conditions without Proposed Development Levels of Service (2034) (1 of 2)

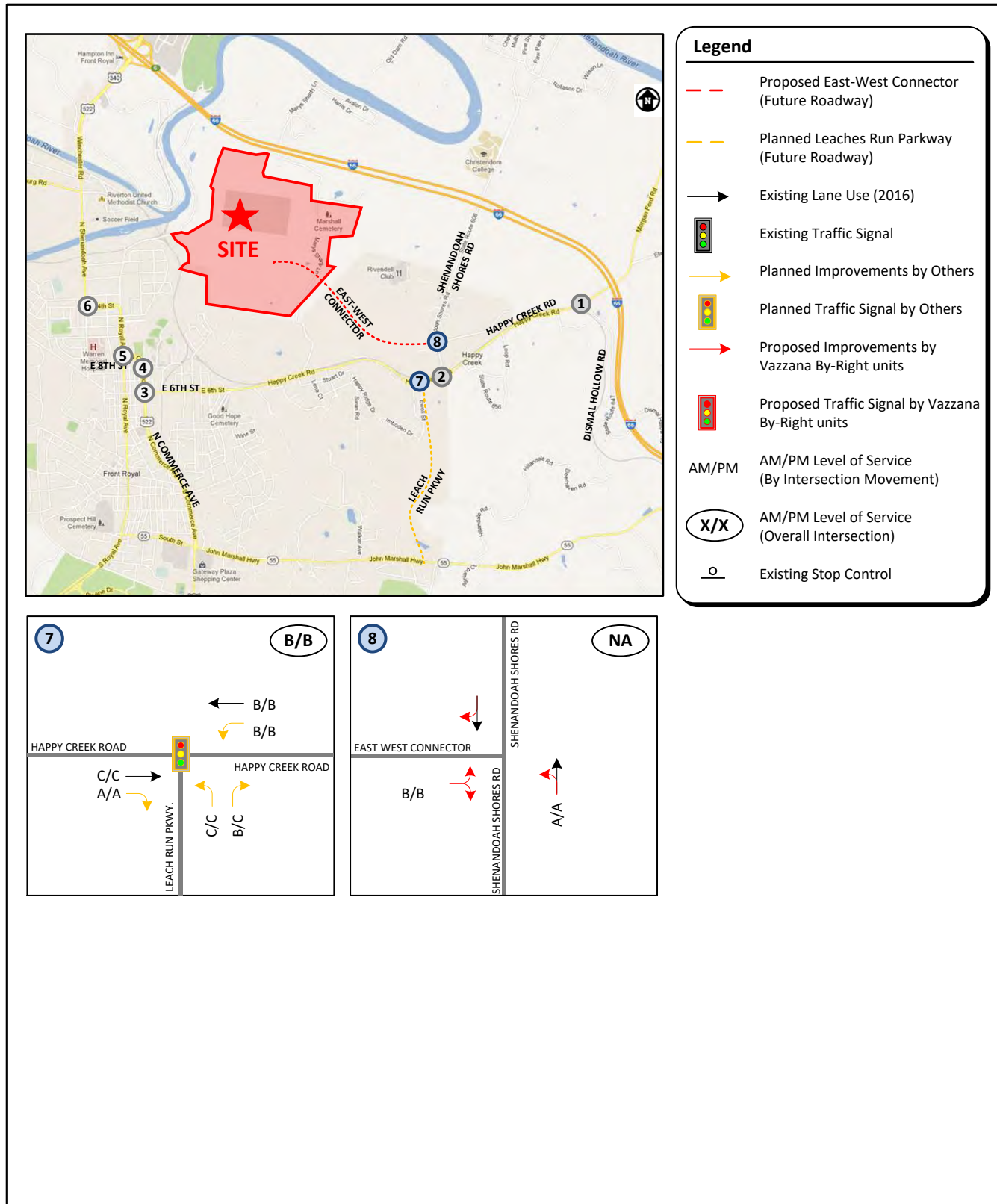


Figure 19: Future Conditions without Proposed Development Levels of Service (2034) (2 of 2)

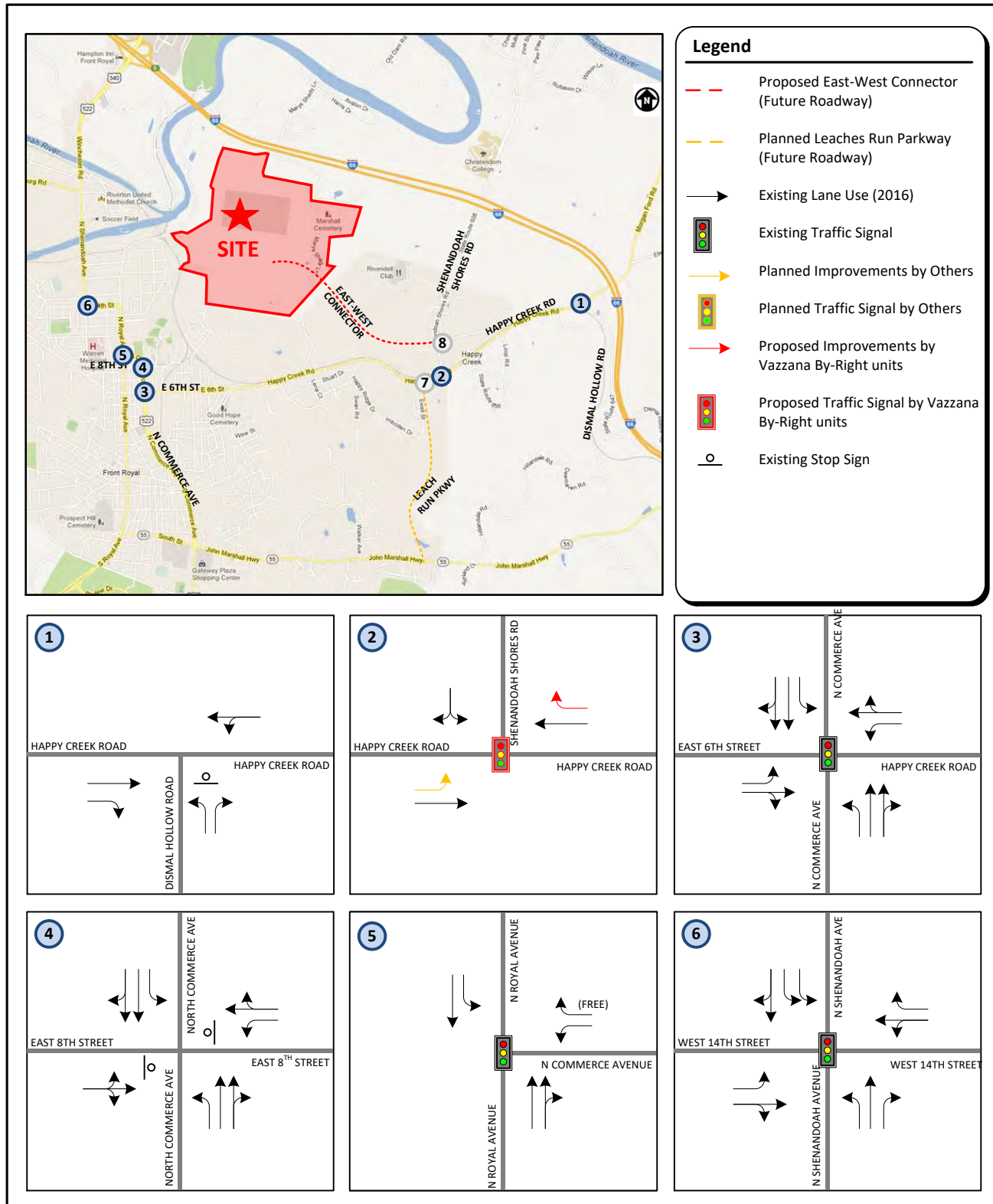


Figure 20: Future Lane Configuration and Traffic Control without Proposed Development (2034) (1 of 2)

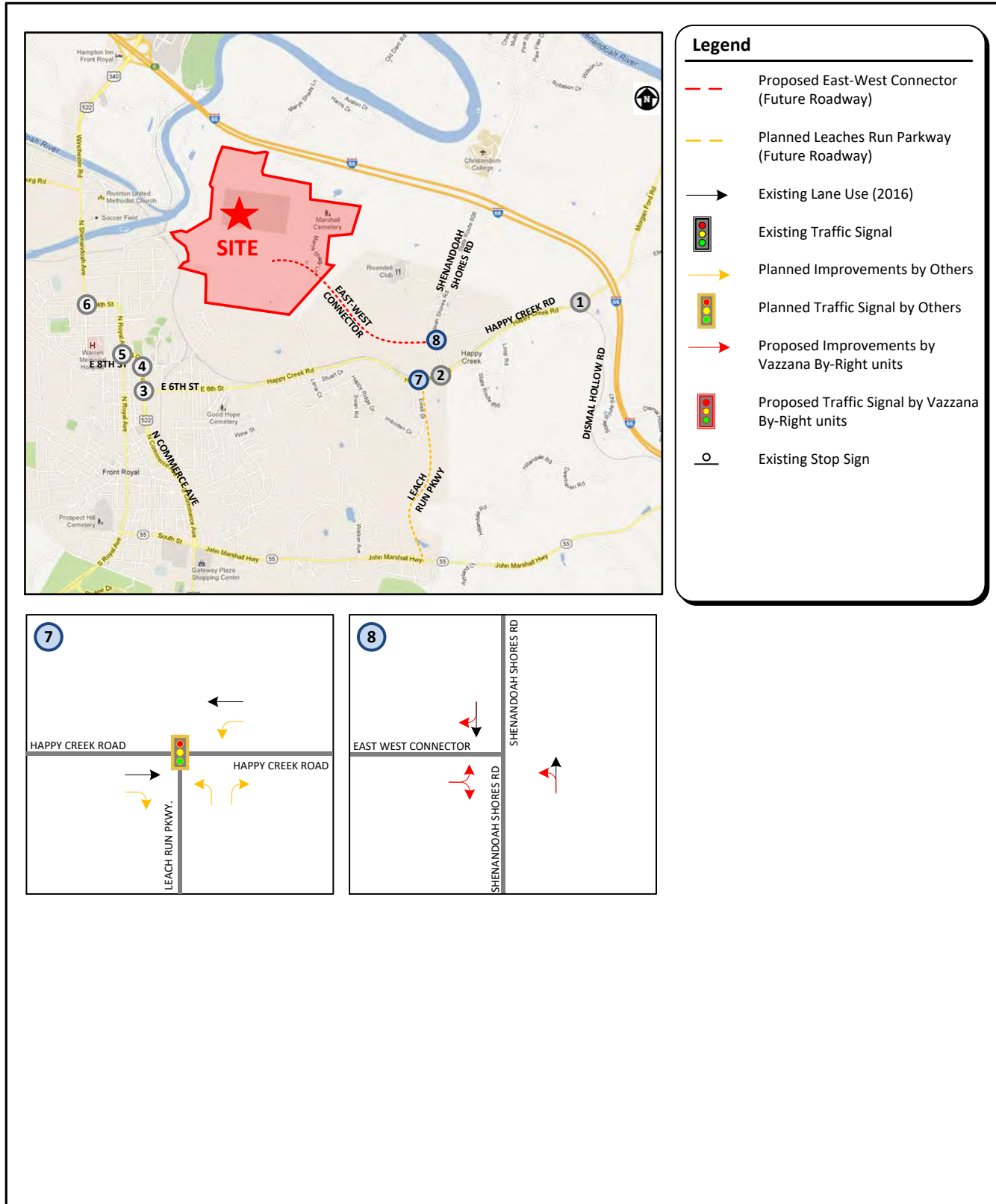


Figure 21: Future Lane Configuration and Traffic Control without Proposed Development (2034) (2 of 2)

TRIP GENERATION AND SITE TRAFFIC FOR FUTURE CONDITIONS WITH PROPOSED DEVELOPMENT (2034)

Site Description

The study site is located north of Route 647 (Happy Creek Road), south of I-66, east of Route 522, and west of Route 606 (Shenandoah Shores Road). The proposed Vazzana Property development plan calls for the additional construction of approximately 715 single-family detached residential units, 155 senior adult housing units, and up to 95 kSF of non-residential space (approximately 10 kSF day care center, 20 kSF church, 40 kSF office space and 25 kSF of specialty retail center). The site is currently vacant. Full-build of the proposed development is anticipated to be complete by 2034.

Site Access

Site access for the Vazzana Property development will be provided via one full-access entrance along Shenandoah Shores Drive and a connection to 8th Street, both via the new East-West Connector road.

With the connection to 8th Street, the 320 DUs previously approved on the Vazzana by-right parcel will have a second access point. The trips associated with the 320 DUs included in the Future without Development scenario (as shown in Figure 10) were removed and redistributed through the network with the revised direction of approach.

Site Generated Volumes

The proposed Vazzana Property development is expected to be built by 2034. To calculate the trips generated for the build-out year, ITE's *Trip Generation Manual*, 9th Edition was used to determine the trips for the weekday morning and afternoon peak hours. The trip generation for the proposed Vazzana Property development is shown in Table 9.

Table 9: Proposed Vazzana Property Development Trip Generation

Land Use	ITE			Weekday						
	Code	Size		AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	Total
Residential										
Single-Family Detached Housing	210	715	DU	128	383	511	390	228	618	6,416
School Internal Trips Reduction: 13% ¹		13%		-18	-23	-41	-7	-7	-14	-117
Senior Adult Housing (VDOT -Staunton Rates)		155	DU	23	75	98	81	45	126	1,262
Residential Subtotal				133	435	568	464	267	731	7,561
Internal Trips				-3	-8	-10	-13	-8	-20	-226
Residential Total (with VDOT Staunton Housing Rates)				130	428	558	451	259	710	7,334
Institutional										
Day Care Center	565	10	kSF	65	57	122	59	65	124	741
Church	560	20	kSF	8	4	12	7	6	13	183
Church Internal Trip Reduction		15%		-1	-1	-2	-1	-1	-2	-27
Institutional Total				72	60	132	65	70	135	897
Office										
General Office Building	710	40	kSF	81	11	92	22	102	124	655
Office Internal Trip Reduction		5%		-4	-1	-5	-1	-5	-6	-33
Office Total				77	10	87	21	97	118	622

Land Use	ITE Code	Size	----- Week day -----							
			AM Peak Hour			PM Peak Hour			Daily	
			In	Out	Total	In	Out	Total	Total	
Retail										
Specialty Retail Center	826	25 kSF	16	10	25	37	45	82	1,108	
Retail Internal Trip Reduction		15%	-2	-1	-4	-6	-7	-12	-166	
Retail Pass-by Trip Reduction		15%	-2	-1	-3	-5	-6	-10	-141	
Retail Total			11	7	18	27	33	59	801	
Total New Proposed External Trips			290	506	796	564	458	1,022	9,654	

Note: 1 – The elementary school internal reduction rate was developed using data for Warren County's population based on age and number of households.

13% = $[0.181 \text{ students per DU} \times 515 \text{ DU}] / 700 \text{ students}$, or in other words approximately 13% of the school's students will live in the proposed development.

The proposed development, with reductions for internal trip interactions, will generate approximately 796 trips during the weekday morning peak period, 1,022 trips during the weekday afternoon peak period, and 9,654 trips during an entire weekday.

Through the scoping process, VDOT staff required the use of special Staunton District rates for the senior adult housing component of the site. It is noted that these rates are considerably higher than the corresponding ITE rates for this type of use. The resulting trip generation estimates are approximately twice those projected by the ITE equations and are nearly the same on a per-unit basis as the non-age-restricted single family trip generation. Further, the ITE peak hour trip generation recommendations were developed from 23 studies across five states and Canada over a significant span of time. The VDOT Staunton rates were not developed based on empirical traffic count data, but on anticipated driver behavior and automobile availability.

Direction of Approach and Future Conditions with Proposed Development Traffic Volumes (2034)

In order to route the projected traffic into the Vazzana Property development, a direction of approach was established based on previous traffic studies, existing travel patterns, location of employment within the region, approved developments, and general engineering judgment. The direction of approach assumptions for traffic generated by the proposed development are separate for residential and non-residential development and are shown in Table 10 and Figure 22 through Figure 25. The inbound and outbound trips calculated for the weekday morning and weekday afternoon commuter peak hours were routed based on these distributions.

Table 10: Direction of Approach

APPROVED VAZZANA PROPERTY DEVELOPMENT	Residential	Non-Residential
To and from the north along North Shenandoah Avenue	30%	35%
To and from the north along Shenandoah Shores Road	0%	5%
To and from the south along Happy Ridge Drive	0%	5%
To and from the south along Dismal Hollow Road	15%	10%
To and from the south along (Future) Leach Run Parkway	30%	15%
To and from the south along North Royal Avenue	5%	10%
To and from the south along North Commerce Avenue	10%	10%
To and from the east along Happy Creek Road	5%	5%
To and from the west along West 6 th Street	5%	5%
Total	100%	100%

Figure 22 through Figure 25 also show the site traffic assignment for both peak hours. The site trips were added to the future without proposed development (2034) volumes (Figure 16 and Figure 17) in order to establish the future with proposed development (2034) volumes, as shown in Figure 26 and Figure 27.

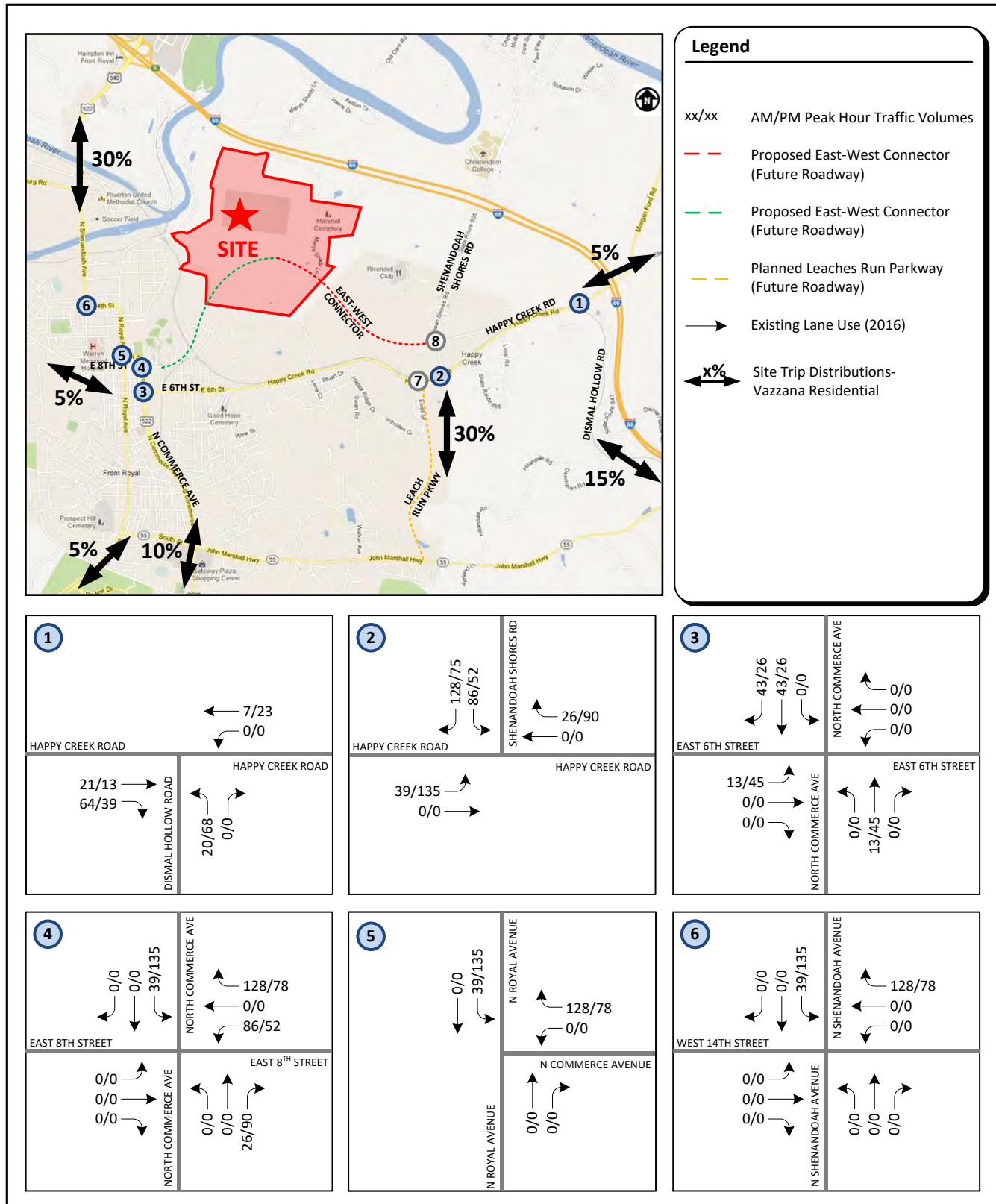


Figure 22 : Proposed Vazzana Property Development Residential Trip Generation and Assignment (2034) (1 of 2)

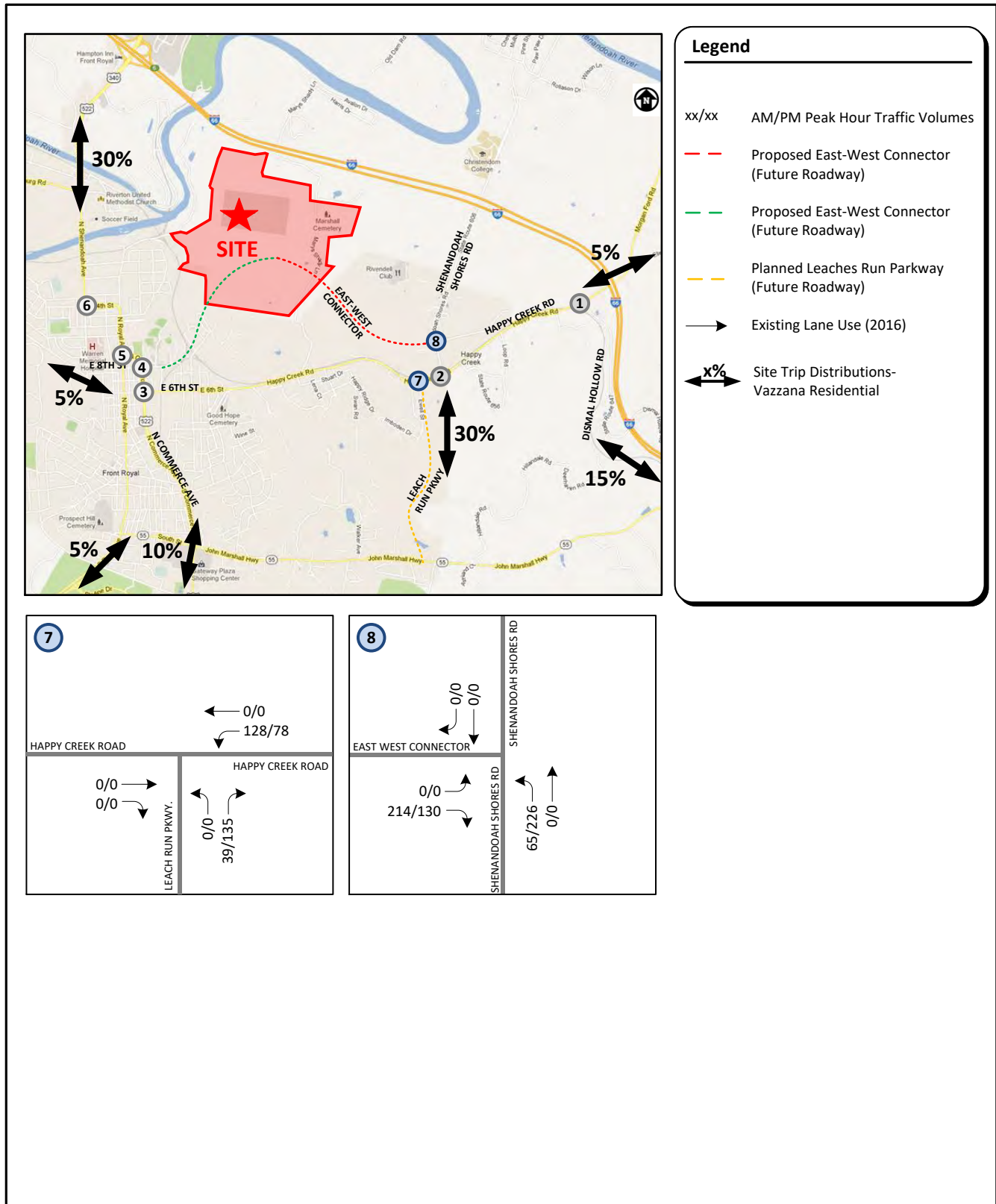


Figure 23 : Proposed Vazzana Property Development Residential Trip Generation and Assignment (2034) (2 of 2)

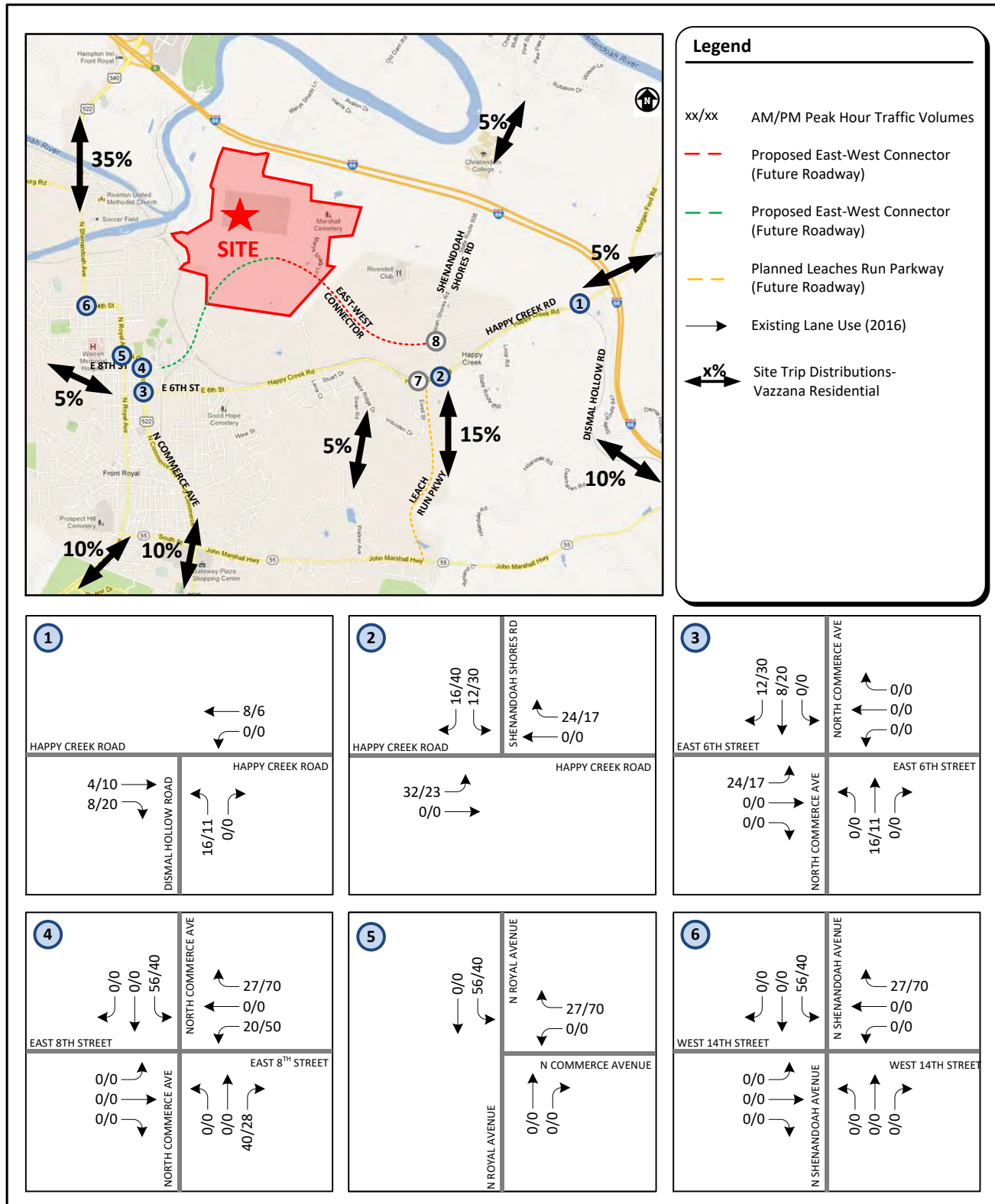


Figure 24 : Proposed Vazzana Property Development Non-Residential Trip Generation and Assignment (2034) (1 of 2)

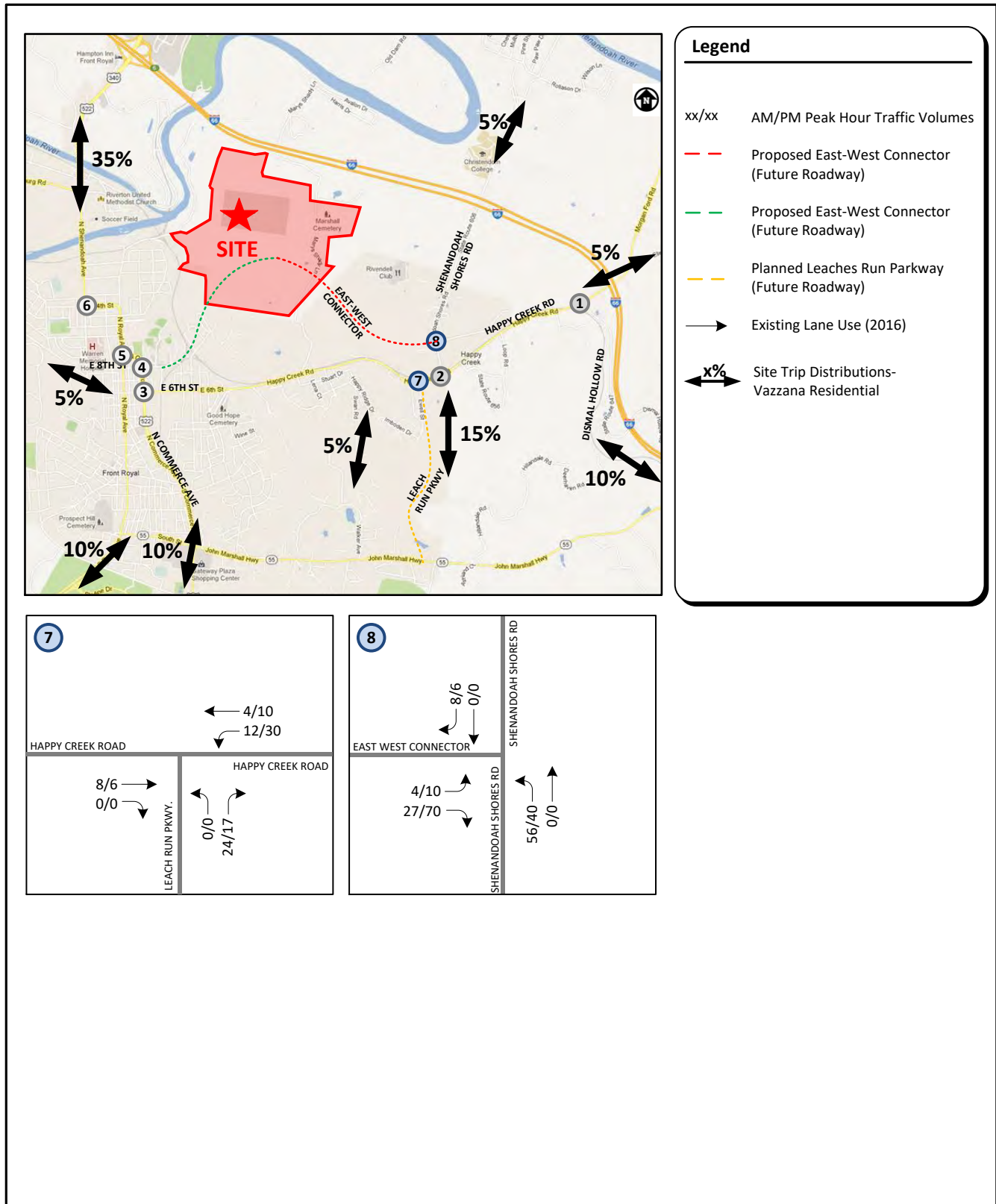


Figure 25 : Proposed Vazzana Property Development Non-Residential Trip Generation and Assignment (2034) (2 of 2)

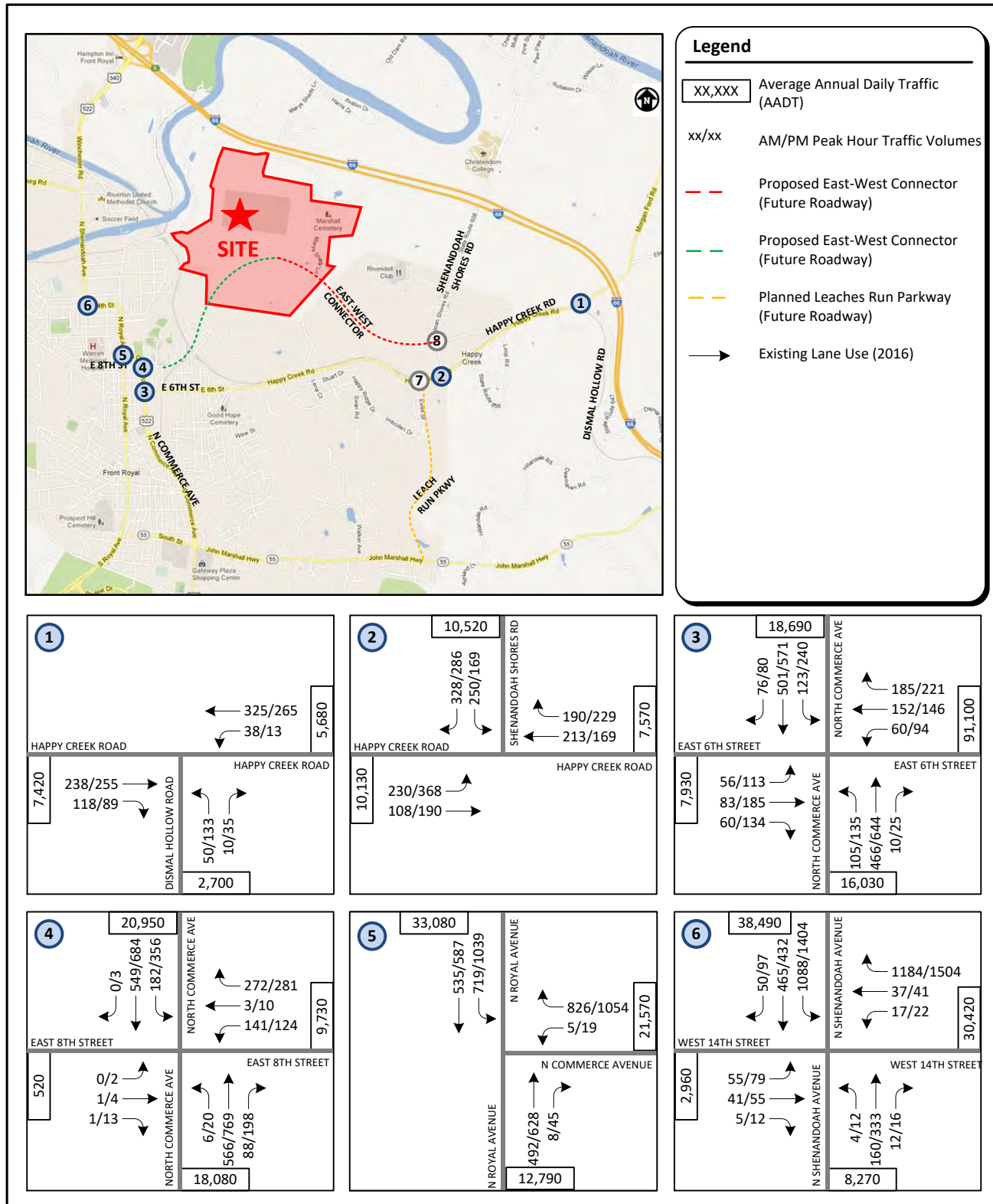


Figure 26 : Future Conditions with Proposed Development Traffic Volumes (2034) (1 of 2)

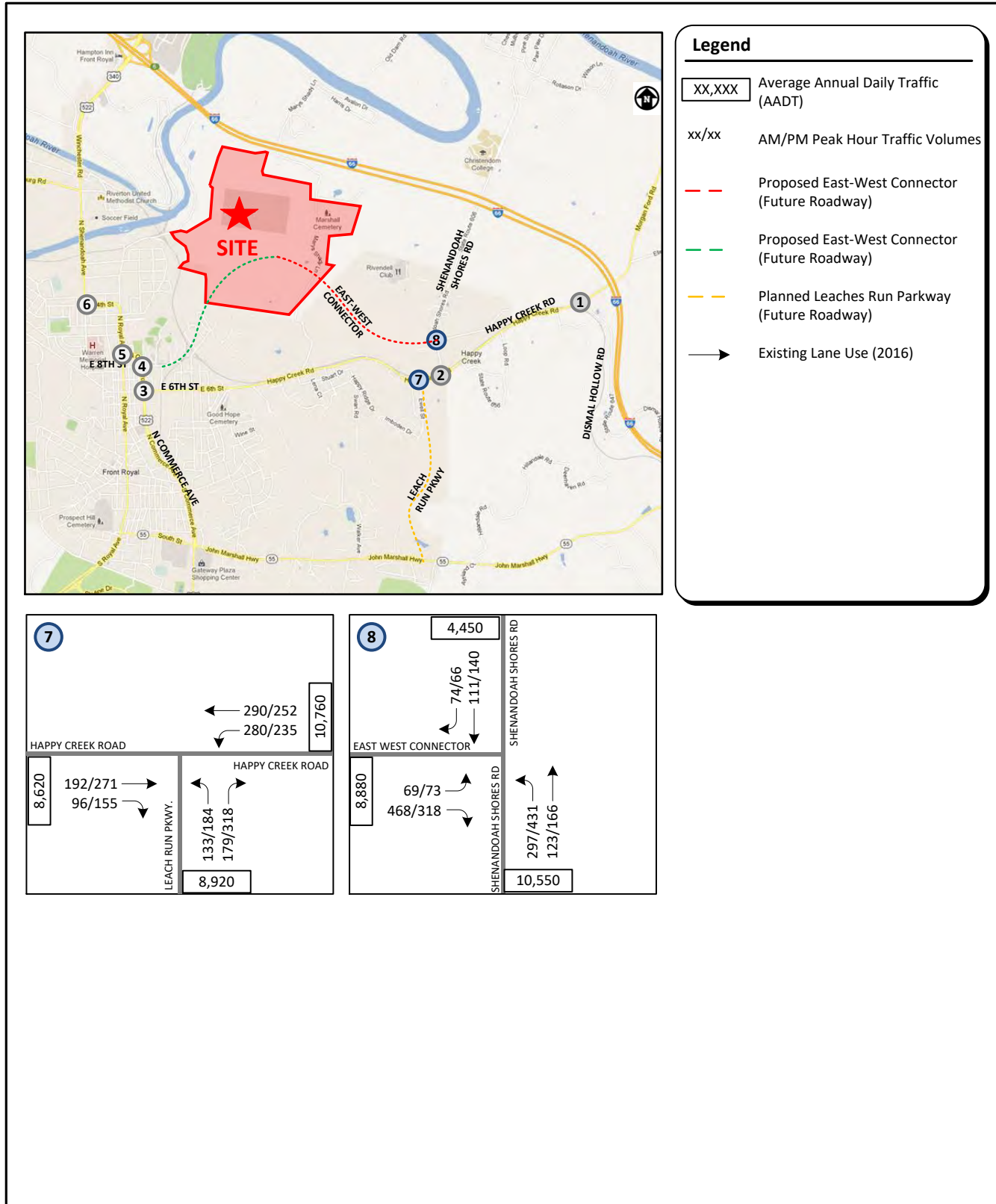


Figure 27 : Future Conditions with Proposed Development Traffic Volumes (2034) (2 of 2)

FUTURE CONDITIONS WITH PROPOSED DEVELOPMENT (2034)

Future Conditions with Proposed Development Capacity Analysis (2034)

Capacity analyses were performed at the study intersections during the weekday morning and afternoon peak hours under future 2034 conditions. Intersection capacity analyses were performed using *Synchro version 9.1* based on Highway Capacity Manual (HCM 2000) data and methodology. A peak hour factor of 0.90 was used for all movements under the future without development conditions.

The results of the intersection capacity analyses for the future conditions with the proposed development (2034) are summarized in Table 11 and Figure 28 and Figure 29. A description of the different LOS and delay and the detailed analysis worksheets for the future conditions with proposed development (2034) are included in Appendix C and F, respectively. Figure 30 and Figure 31 show the recommended lane geometry for each study intersection.

Table 11: Future Conditions with Proposed Development (2034) Intersection Capacity Analysis

			AM Peak Hour				PM Peak Hour			
No.	Intersection (Movement)	Storage Length	Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
1	Happy Creek Rd and Dismal Hollow Rd									
	Overall Intersection (Unsignalized)				n/a	n/a			n/a	n/a
	Westbound Approach		n/a	n/a		1.2	n/a	n/a		0.5
	Westbound Through/Left		n/a	3	A	1.2	n/a	1	A	0.5
	Northbound Approach		n/a	n/a	C	15.1	n/a	n/a	C	15.3
	Northbound Left		n/a	13	C	15.1	n/a	35	C	15.3
2	Happy Creek Rd and Shenandoah Shores Rd									
	Overall Intersection (Signalized)		n/a	n/a	C	32.6	n/a	n/a	C	24.4
	Eastbound Approach		n/a	n/a	B	13.6	n/a	n/a	A	9.5
	Eastbound Left	250'	53	105	B	14.9	70	134	B	10.4
	Eastbound Through		24	50	B	10.7	34	73	A	7.9
	Westbound Approach		n/a	n/a	C	21.5	n/a	n/a	B	18.1
	Westbound Through		130	207	C	34.6	97	165	C	30.5
	Westbound Right	250'	0	19	A	6.9	0	26	A	9.0
	Southbound Approach		n/a	n/a	D	51.4	n/a	n/a	D	48.2
	Southbound Left/Right	250'	350	#584	D	51.4	255	#445	D	48.2
2	Happy Creek Rd and Shenandoah Shores Rd									
	Mitigation: Add a southbound left turn lane and mitigate signal timings									
	Overall Intersection (Signalized)		n/a	n/a	C	21.2	n/a	n/a	B	13.0
	Eastbound Approach		n/a	n/a	B	10.5	n/a	n/a	A	9.5
	Eastbound Left	250'	46	87	B	11.3	70	134	B	10.4
	Eastbound Through		21	45	A	8.7	34	73	A	7.9
	Westbound Approach		n/a	n/a	B	20.0	n/a	n/a	B	18.2
	Westbound Through		121	211	C	31.3	98	165	C	30.7
	Westbound Right	250'	0	23	A	7.3	0	26	A	9.0

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Southbound Approach		n/a	n/a	C	28.3	n/a	n/a	B	12.6
	Southbound Left	250'	146	226	C	27.7	86	143	C	22.4
	Southbound Right		46	68	C	28.8	0	0	A	6.8
3	<i>East 6th St and N Commerce Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	C	30.0	n/a	n/a	D	35.4
	Eastbound Approach		n/a	n/a	C	32.9	n/a	n/a	D	43.2
	Eastbound Left		29	58	C	29.3	61	104	C	32.7
	Eastbound Through/Right		76	138	C	34.3	225	337	D	46.9
	Westbound Approach		n/a	n/a	D	49.9	n/a	n/a	D	50.9
	Westbound Left		31	62	C	28.2	50	88	C	29.3
	Westbound Through/Right		227	350	D	53.8	249	#385	E	56.4
	Northbound Approach		n/a	n/a	C	22.7	n/a	n/a	C	27.5
	Northbound Left	145'	43	83	B	16.8	60	103	B	19.6
	Northbound Through/Right		148	211	C	24.0	234	305	C	29.1
	Southbound Approach		n/a	n/a	C	24.0	n/a	n/a	C	30.9
	Southbound Left	165'	52	97	B	16.6	116	#246	D	37.5
	Southbound Through/Right		184	261	C	25.6	224	295	C	28.4
4	<i>East 8th St and N Commerce Avenue</i>									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Eastbound Approach		n/a	n/a	D	33.6	n/a	n/a	F	Err
	Eastbound Left/Through/Right		n/a	1	D	33.6	n/a	Err	F	Err
	Westbound Approach		n/a	n/a	F	167.6	n/a	n/a	F	Err
	Westbound Left	140'	n/a	326	F	466.7	n/a	Err	F	Err
	Westbound Through/Right		n/a	53	B	13.7	n/a	480	F	285.0
	Northbound Approach		n/a	n/a		0.1	n/a	n/a		0.2
	Northbound Left	150'	n/a	1	A	8.8	n/a	3	A	9.4
	Southbound Approach		n/a	n/a		2.5	n/a	n/a		5.2
	Southbound Left	165'	n/a	20	A	9.9	n/a	71	C	15.3
4	<i>East 8th St and N Commerce Avenue</i>									
	Mitigation: Add a traffic control signal and restripe the WB approach to shared thru/left and a right turn lane									
	Overall Intersection (Signalized)		n/a	n/a	C	20.2	n/a	n/a	C	25.7
	Eastbound Approach		n/a	n/a	C	25.9	n/a	n/a	C	33.8
	Eastbound Left/Through/Right		0	6	C	25.9	3	24	C	33.8
	Westbound Approach		n/a	n/a	C	25.7	n/a	n/a	C	30.7
	Westbound Through/Left	140'	84	148	C	33.9	89	156	D	49.0
	Westbound Through		62	126	C	21.4	100	167	C	22.0
	Northbound Approach		n/a	n/a	C	24.5	n/a	n/a	C	33.6
	Northbound Left	150'	3	12	B	18.3	9	26	C	20.7
	Northbound Through/Right		177	235	C	24.6	310	396	C	33.8

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Southbound Approach		n/a	n/a	B	13.2	n/a	n/a	B	16.1
	Southbound Left		57	94	B	19.3	147	#268	C	33.7
	Southbound Through/Right	165'	98	131	B	11.2	93	122	A	7.0
5	<i>N Commerce Avenue and N Royal Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	F	81.2	n/a	n/a	F	201.1
	Westbound Approach		n/a	n/a	F	119.4	n/a	n/a	F	248.3
	Westbound Left		4	21	E	78.4	18	46	E	67.5
	Westbound Right		~805	#1102	F	119.7	~1359	#1641	F	251.6
	Northbound Approach		n/a	n/a	C	27.8	n/a	n/a	C	32.8
	Northbound Through/Right		148	241	C	27.8	270	344	C	32.8
	Southbound Approach		n/a	n/a	E	77.2	n/a	n/a	F	239.7
	Southbound Left		~699	#1129	F	132.8	~1526	#1833	F	373.2
	Southbound Through		0	152	A	2.3	129	198	A	3.4
6	<i>W 14th Street and Shenandoah Avenue</i> (1)									
	Overall Intersection (Signalized)		n/a	n/a	E	67.6	n/a	n/a	D	46.5
	Eastbound Approach		n/a	n/a	F	719.2	n/a	n/a	F	189.1
	Eastbound Left		~230	#378	F	909.5	~86	#192	F	303.8
	Eastbound Through/Right		34	75	D	49.6	48	97	D	52.8
	Westbound Approach		n/a	n/a	A	8.2	n/a	n/a	C	23.1
	Westbound Through/Left		43	88	E	65.2	50	99	E	71.1
	Westbound Right		0	0	A	5.6	0	#245	C	21.0
	Northbound Approach		n/a	n/a	D	38.6	n/a	n/a	E	79.6
	Northbound Left	125'	3	14	E	61.8	9	30	E	60.0
	Northbound Through		121	196	D	38.5	~321	#509	F	82.0
	Northbound Right		0	0	C	32.6	0	0	D	36.9
	Southbound Approach		n/a	n/a	C	30.7	n/a	n/a	D	47.2
	Southbound Left	288'	379	470	D	38.8	~588	#760	E	57.9
	Southbound Through/Right		183	368	B	13.8	188	389	B	14.8
7	<i>Leach Run Parkway and Happy Creek Road</i>									
	Overall Intersection (Signalized)		n/a	n/a	B	16.6	n/a	n/a	B	18.2
	Eastbound Approach		n/a	n/a	B	17.9	n/a	n/a	B	13.9
	Eastbound Through		97	156	C	24.4	122	188	B	19.2
	Eastbound Right	250'	0	11	A	5.1	0	12	A	4.7
	Westbound Approach		n/a	n/a	B	13.7	n/a	n/a	B	12.6
	Westbound Left	250'	126	m167	B	14.3	79	m136	B	13.9
	Westbound Through		129	m171	B	13.1	78	m147	B	11.3
	Northbound Approach		n/a	n/a	C	20.7	n/a	n/a	C	27.3
	Northbound Left	250'	69	118	C	25.5	109	178	C	34.0

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Northbound Right		0	34	B	17.1	0	53	C	23.4
8	<i>Shenandoah Shores Road and East West Connector</i>									
	Overall Intersection (Unsignalized)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Eastbound Approach		n/a	n/a	E	49.7	n/a	n/a	F	130.0
	Eastbound Left/Right		n/a	326	E	49.7	n/a	426	F	130.0
	Northbound Approach		n/a	n/a		6.6	n/a	n/a		7.7
	Northbound Through/Left		n/a	24	A	6.6	n/a	41	A	7.7
8	<i>Shenandoah Shores Road and East West Connector</i>									
	Mitigation: Add a traffic control signal; add a eastbound right turn lane; add a northbound left turn lane									
	Overall Intersection (Signalized)		n/a	n/a	C	20.9	n/a	n/a	B	19.9
	Eastbound Approach		n/a	n/a	B	15.4	n/a	n/a	B	17.0
	Eastbound Left		32	65	C	21.8	42	84	C	33.1
	Eastbound Right	250'	0	40	B	14.4	0	35	B	13.3
	Northbound Approach		n/a	n/a	C	24.1	n/a	n/a	B	17.2
	Northbound Left	250'	147	233	C	25.9	136	244	C	21.1
	Northbound Through		63	115	B	19.7	35	61	A	7.2
	Southbound Approach		n/a	n/a	C	30.0	n/a	n/a	C	33.2
	Southbound Through/Right		86	150	C	30.0	109	181	C	33.2

Notes: (1): In order to get a result without any errors, the PM Peak westbound right turn volume at the intersection of N Shenandoah Avenue and W. 14th Street was changed from 1500 to 1400 vph in Synchro.

According to the Town of Fort Royal, it is desirable to achieve a level of service C or better for each movement at an intersection. The results show that the following intersections operate at unacceptable levels of service under the future with development conditions:

- *Happy Creek Road and Shenandoah Shores Road*
The southbound approach operates at level of service D during both the weekday morning and afternoon peak hours.
- *North Commerce Avenue and East 6th Street*
The westbound approaches operate at level of service D during both the morning and afternoon peak hours. The eastbound approach and the overall LOS is at LOS D during the afternoon peak hour.
- *North Commerce Avenue and East 8th Street*
The eastbound and westbound approaches operate at level of service D or worse during both the morning and afternoon peak hours.
- *North Commerce Avenue and North Royal Avenue*
All the approaches operate at LOS D or worse during both the morning and the evening peak hours, except for the southbound approach during the afternoon peak hour.
- *W 14th Street and North Shenandoah Avenue*
Most of the movements operate at LOS D or worse during both the morning and the evening peak hours.
- *Shenandoah Shores Road and East West connector*

The eastbound approach operates at LOS E and F during the morning and the evening peak hours respectively. The following improvements are recommended:

- Happy Creek Road and Shenandoah Shores Road
 - Add a southbound right turn lane, and,
 - Adjust signal timings as necessary.
- N. Commerce Avenue and E. 8th Street:
 - Restripe the westbound approach to a thru/left turn lane and a right turn lane, and,
 - Install a traffic control signal.
- Shenandoah Shores Road and East/West Connector
 - Add a traffic control signal,
 - Add an eastbound right turn lane, and,
 - Add a northbound left turn lane.

The Applicant's Proffer Statement includes commitments to implement the improvement recommended above.

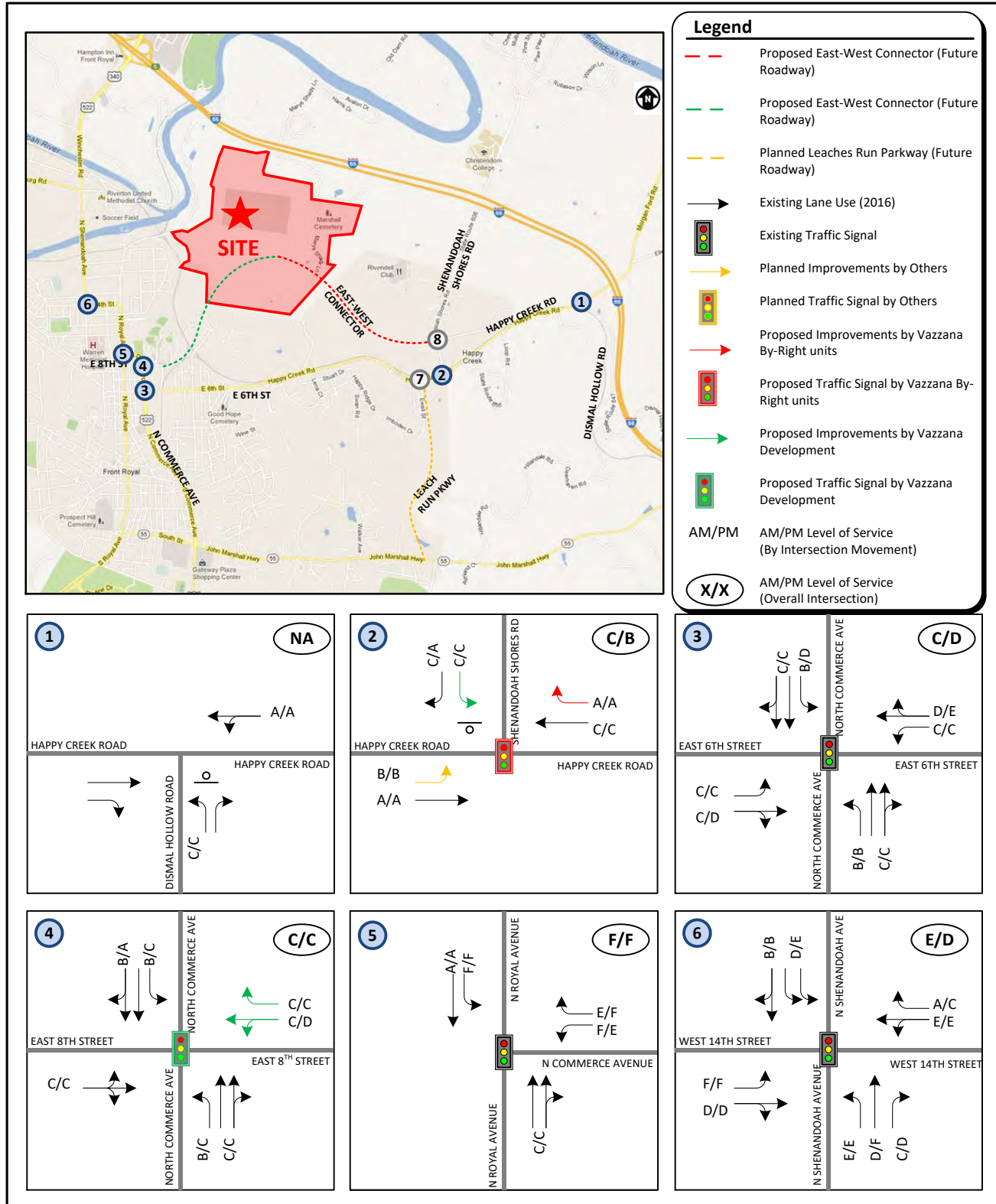


Figure 28: Future Conditions with Proposed Development Levels of Service (2034) (1 of 2)

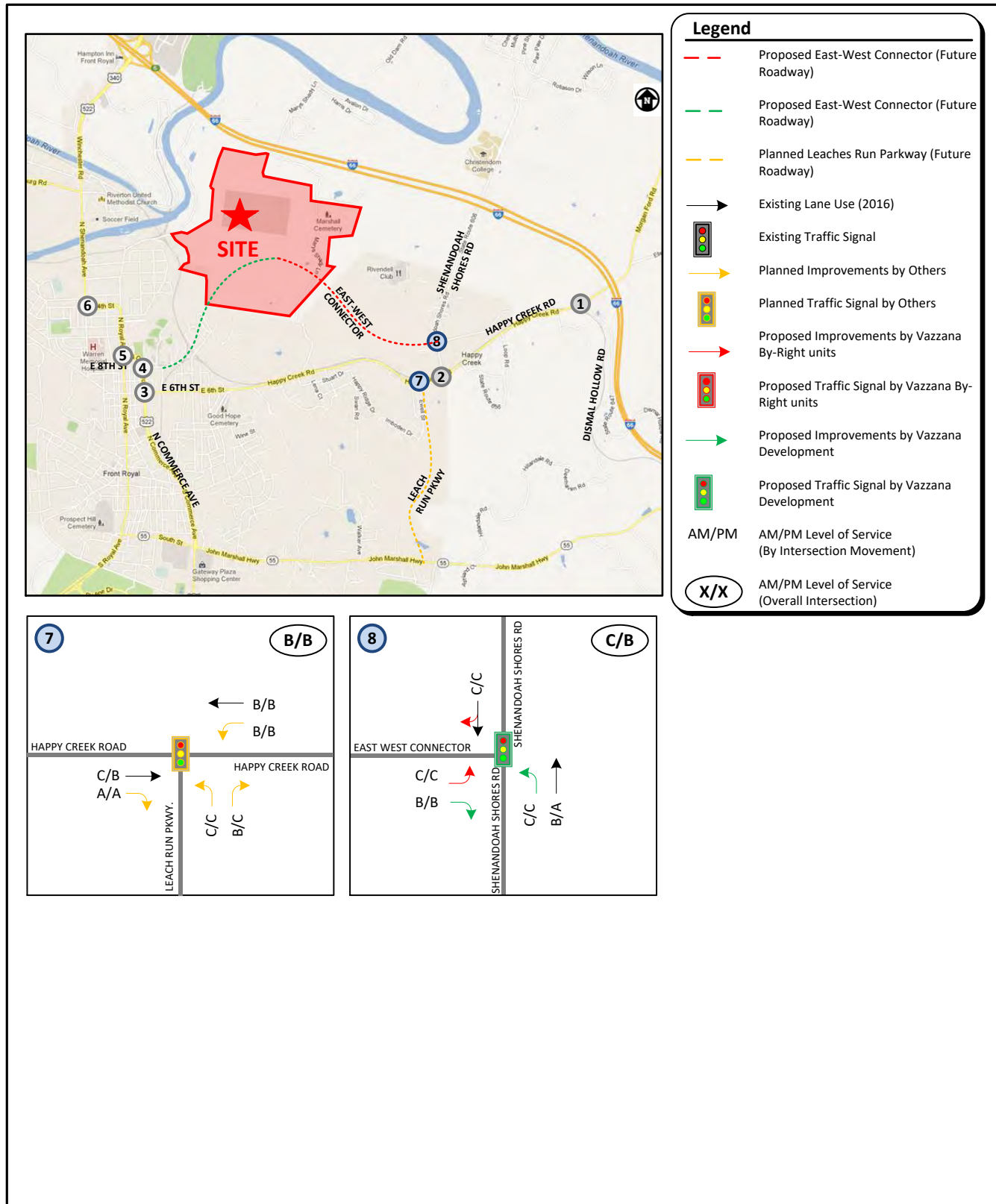


Figure 29: Future Conditions with Proposed Development Levels of Service (2034) (1 of 2)

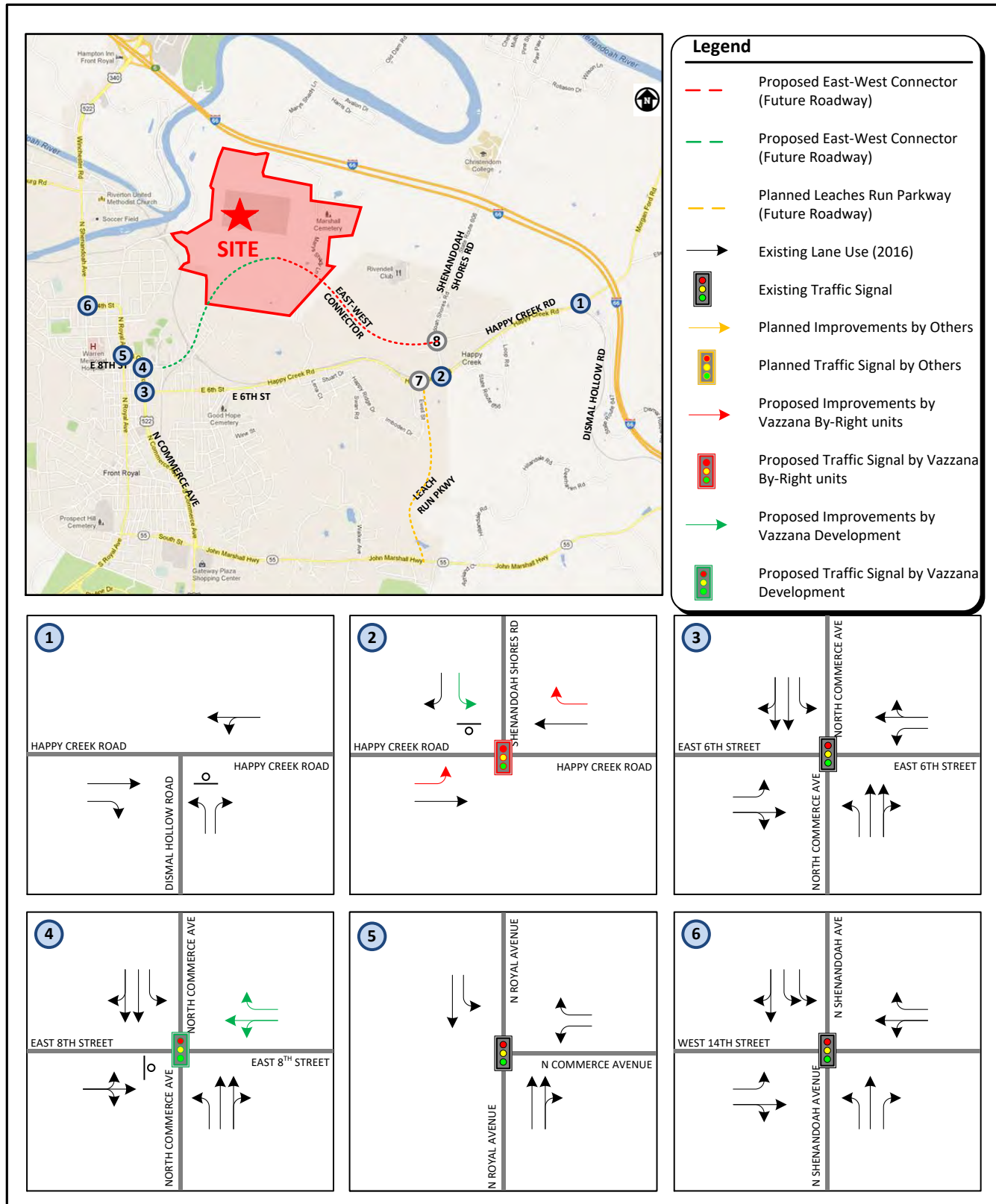


Figure 30: Future Conditions Lane Configuration and Traffic Control with Proposed Development (2034) (1 of 2)

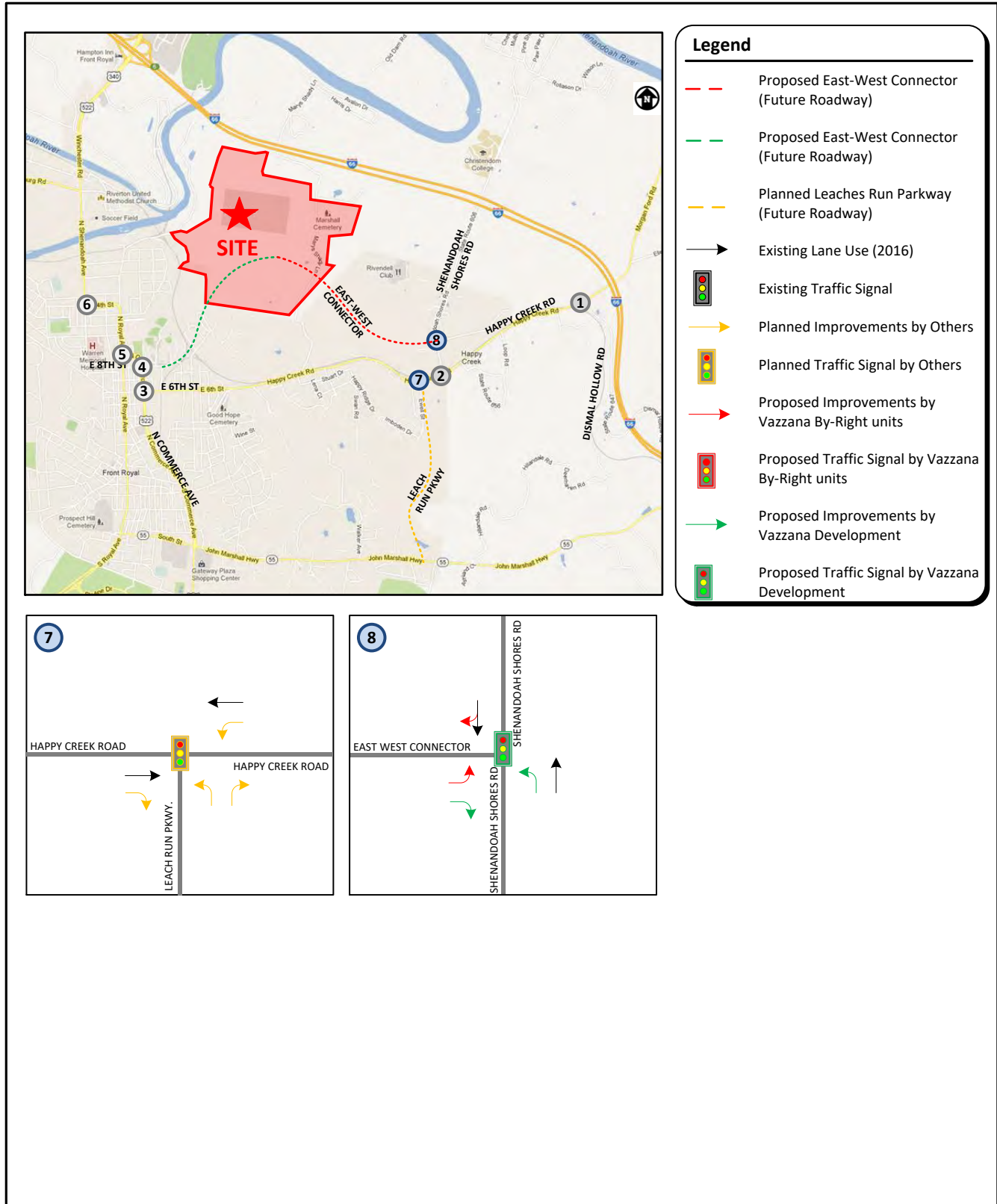


Figure 31: Future Conditions Lane Configuration and Traffic Control with Proposed Development (2034) (2 of 2)

BUILD-OUT PLUS SIX YEARS (2040)

As discussed previously, the proposed redevelopment is anticipated to be complete in 2034. The future year 2040 analysis is provided in accordance with VDOT guidelines and the terms of the scoping agreement.

Future (2040) Development Traffic Volumes

Traffic volumes were projected by increasing the Existing (2016) traffic volumes to the year 2040 using an inherent growth rate of one (1.0) percent, as per the terms of the scoping agreement. These volumes were added to the trips generated from the anticipated developments, the rerouted Mary's Shady Lane traffic and the rerouted Leach Run Parkway traffic volumes to establish the Build-out plus six future traffic volumes. The Build-out plus six years future volumes are shown in Figure 32 and Figure 33.

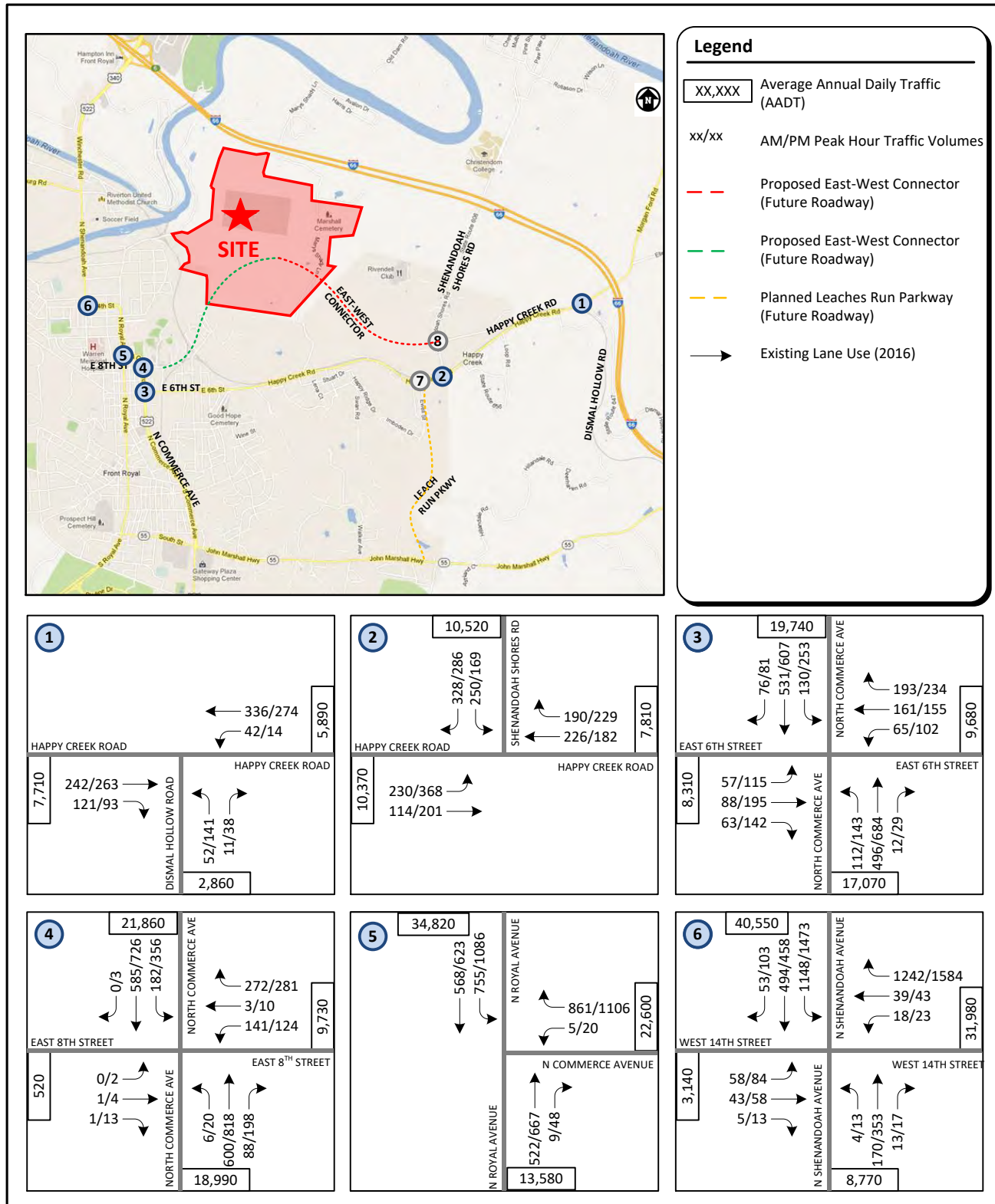


Figure 32 : Build Out Plus Six Future Conditions Traffic Volumes (2040) (1 of 2)

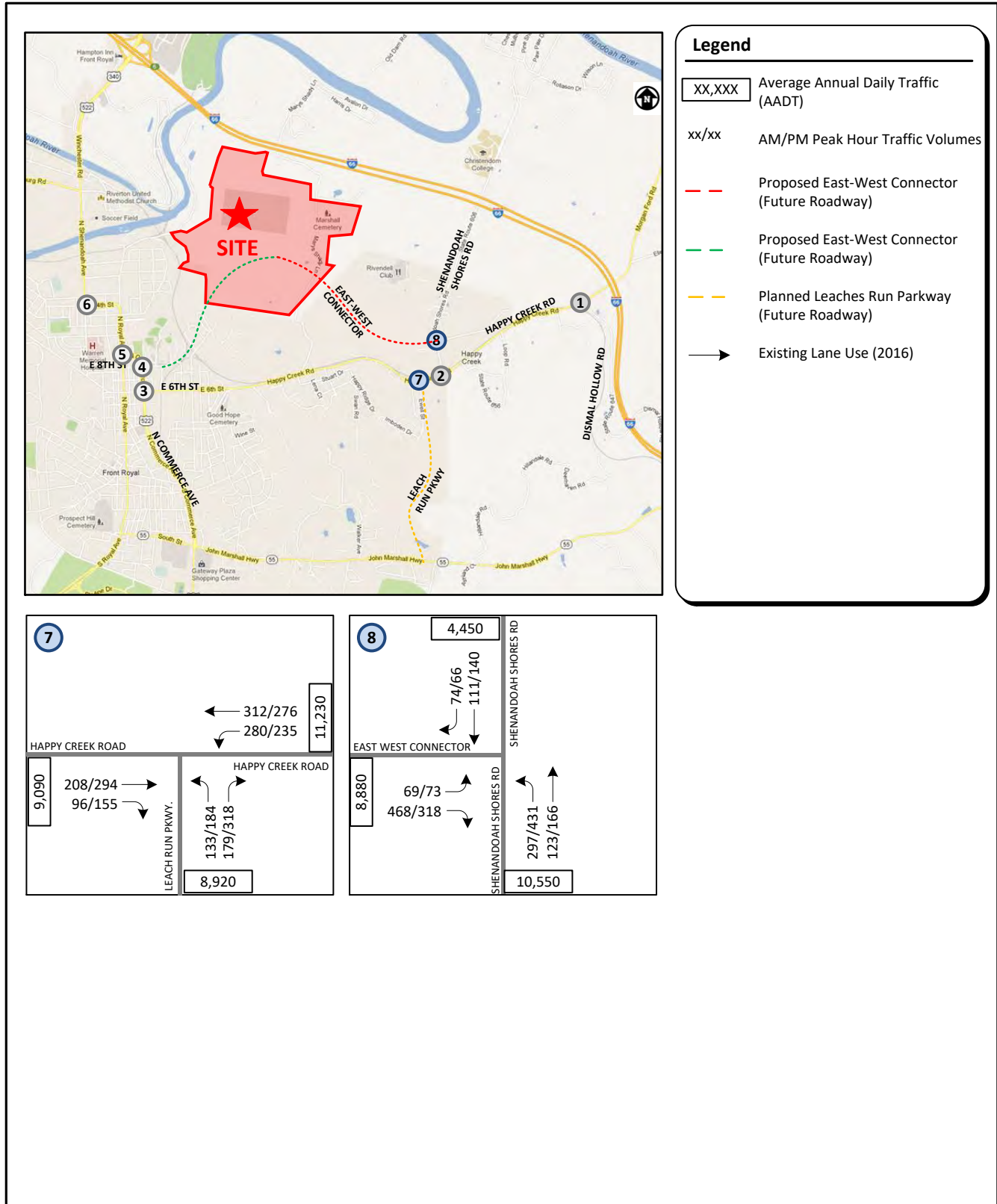


Figure 33 : Build Out Plus Six Future Conditions Traffic Volumes (2040) (2 of 2)

Future (2040) Development Capacity Analysis

Capacity analyses were performed at the study intersections during the weekday morning and afternoon peak hours under future 2034 conditions. Intersection capacity analyses were performed using Synchro version 8 based on Highway Capacity Manual (HCM 2000) data and methodology. A peak hour factor of 0.90 was used for all movements under the future without development conditions.

The results of the intersection capacity analyses for the future conditions with the proposed development (2040) are summarized in Table 11 and Figure 34 and Figure 35. A description of the different LOS and delay and the detailed analysis worksheets for the future conditions with proposed development (2034) are included in Appendix C and F, respectively. Figure 36 and Figure 37 show the recommended lane geometry for each study intersection.

Table 12: Future Conditions with Proposed Development (2040) Intersection Capacity Analysis

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
1	<i>Happy Creek Rd and Dismal Hollow Rd</i>									
	Overall Intersection (Unsignalized)				n/a	n/a			n/a	n/a
	Westbound Approach		n/a	n/a		1.3	n/a	n/a		0.5
	Westbound Through/Left		n/a	3	A	1.3	n/a	1	A	0.5
	Northbound Approach		n/a	n/a	C	15.5	n/a	n/a	C	16.1
	Northbound Left		n/a	14	C	15.5	n/a	40	C	16.1
2	<i>Happy Creek Rd and Shenandoah Shores Rd</i>									
	Overall Intersection (Signalized)		n/a	n/a	C	20.8	n/a	n/a	B	13.1
	Eastbound Approach		n/a	n/a	B	10.5	n/a	n/a	A	9.3
	Eastbound Left	250'	44	83	B	11.4	67	128	B	10.2
	Eastbound Through		21	46	A	8.5	34	74	A	7.7
	Westbound Approach		n/a	n/a	C	20.6	n/a	n/a	B	18.8
	Westbound Through		129	224	C	31.8	106	177	C	31.1
	Westbound Right	250'	0	23	A	7.3	0	26	A	9.0
	Southbound Approach		n/a	n/a	C	27.1	n/a	n/a	B	12.6
	Southbound Left	250'	146	226	C	27.7	86	143	C	22.4
	Southbound Right		53	75	C	26.6	0	0	A	6.8
3	<i>East 6th St and N Commerce Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	C	31.1	n/a	n/a	D	39.2
	Eastbound Approach		n/a	n/a	C	32.9	n/a	n/a	D	43.8
	Eastbound Left		30	59	C	29.3	62	106	C	33.8
	Eastbound Through/Right		82	147	C	34.2	243	358	D	47.2
	Westbound Approach		n/a	n/a	D	51.2	n/a	n/a	D	52.6
	Westbound Left		34	65	C	27.9	55	95	C	29.4
	Westbound Through/Right		244	#399	E	55.5	272	#440	E	58.7
	Northbound Approach		n/a	n/a	C	23.7	n/a	n/a	C	29.3
	Northbound Left	145'	48	88	B	17.5	67	110	C	21.1

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Northbound Through/Right		165	226	C	25.1	261	330	C	30.9
	Southbound Approach		n/a	n/a	C	25.2	n/a	n/a	D	39.0
	Southbound Left	165'	57	102	B	17.4	128	#290	E	62.6
	Southbound Through/Right		205	277	C	26.9	248	315	C	30.3
4	<i>East 8th St and N Commerce Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	C	20.5	n/a	n/a	C	27.0
	Eastbound Approach		n/a	n/a	C	25.9	n/a	n/a	C	33.8
	Eastbound Left/Through/Right		0	6	C	25.9	3	24	C	33.8
	Westbound Approach		n/a	n/a	C	25.8	n/a	n/a	C	30.8
	Westbound Thru/ Left		82	144	C	33.9	89	156	D	49.0
	Westbound Right		69	134	C	21.5	105	172	C	22.2
	Northbound Approach		n/a	n/a	C	25.0	n/a	n/a	D	36.1
	Northbound Left	150'	3	12	B	18.3	9	26	C	20.8
	Northbound Through/Right		191	251	C	25.1	335	#432	D	36.4
	Southbound Approach		n/a	n/a	B	13.6	n/a	n/a	B	16.8
	Southbound Left		57	94	C	20.5	161	#303	D	36.7
	Southbound Through/Right	165'	106	141	B	11.4	101	131	A	7.1
5	<i>N Commerce Avenue and N Royal Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	F	96.4	n/a	n/a	F	222.5
	Westbound Approach		n/a	n/a	F	147.0	n/a	n/a	F	285.3
	Westbound Left		4	21	E	78.4	19	48	E	68.0
	Westbound Right		~885	#1192	F	147.4	~1481	#1767	F	289.2
	Northbound Approach		n/a	n/a	C	28.2	n/a	n/a	C	33.6
	Northbound Through/Right		159	256	C	28.2	292	370	C	33.6
	Southbound Approach		n/a	n/a	F	90.6	n/a	n/a	F	260.2
	Southbound Left		~763	#1207	F	156.9	~1626	#1934	F	407.3
	Southbound Through		0	166	A	2.4	143	219	A	3.6
6	<i>W 14th Street and Shenandoah Avenue</i>									
	Overall Intersection (Signalized)		n/a	n/a	E	72.9	n/a	n/a	E	55.1
	Eastbound Approach		n/a	n/a	F	775.4	n/a	n/a	F	206.5
	Eastbound Left		~248	#396	F	978.3	~94	#203	F	335.2
	Eastbound Through/Right		35	78	D	50.3	50	100	D	53.1
	Westbound Approach		n/a	n/a	B	10.1	n/a	n/a	C	23.5
	Westbound Through/Left		45	91	E	68.4	53	104	E	76.1
	Westbound Right		0	0	A	7.4	0	#245	C	21.0
	Northbound Approach		n/a	n/a	D	40.3	n/a	n/a	F	92.4
	Northbound Left	125'	3	14	E	62.3	10	31	E	60.5
	Northbound Through		130	207	D	40.3	~355	#548	F	96.2

No.	Intersection (Movement)	Storage Length	AM Peak Hour				PM Peak Hour			
			Queue				Queue			
			50th	90th	LOS	Delay (sec/veh)	50th	90th	LOS	Delay (sec/veh)
	Northbound Right		0	0	C	33.5	0	0	D	36.9
	Southbound Approach		n/a	n/a	C	32.6	n/a	n/a	E	59.5
	Southbound Left	288'	414	513	D	41.3	~685	#821	E	76.2
	Southbound Through/Right		200	400	B	14.3	205	426	B	15.4
7	<i>Leach Run Parkway and Happy Creek Road</i>									
	Overall Intersection (Signalized)		n/a	n/a	B	17.7	n/a	n/a	B	19.4
	Eastbound Approach		n/a	n/a	B	18.6	n/a	n/a	B	14.5
	Eastbound Through		106	170	C	24.8	135	205	B	19.7
	Eastbound Right	250'	0	11	A	5.1	0	12	A	4.7
	Westbound Approach		n/a	n/a	B	15.6	n/a	n/a	B	15.8
	Westbound Left	250'	89	193	B	17.0	101	168	B	17.5
	Westbound Through		100	204	B	14.4	110	187	B	14.5
	Northbound Approach		n/a	n/a	C	20.7	n/a	n/a	C	27.3
	Northbound Left	250'	69	118	C	25.5	109	178	C	34.0
	Northbound Right		0	34	B	17.1	0	53	C	23.4
8	<i>Shenandoah Shores Road and East West Connector</i>									
	Overall Intersection (Signalized)		n/a	n/a	C	20.8	n/a	n/a	B	19.9
	Eastbound Approach		n/a	n/a	B	15.4	n/a	n/a	B	17.0
	Eastbound Left		32	65	C	21.8	42	84	C	33.1
	Eastbound Right	250'	0	40	B	14.4	0	35	B	13.3
	Northbound Approach		n/a	n/a	C	23.7	n/a	n/a	B	17.2
	Northbound Left	250'	147	233	C	25.6	136	245	C	21.0
	Northbound Through		63	115	B	19.3	35	62	A	7.2
	Southbound Approach		n/a	n/a	C	30.0	n/a	n/a	C	33.2
	Southbound Through/Right		86	150	C	30.0	109	181	C	33.2

Notes: (1): In order to get a result without any errors, the PM Peak westbound right turn volume at the intersection of N Shenandoah Avenue and W. 14th Street was changed from 1584 to 1400 vph in Synchro.

According to the Town of Fort Royal, it is desirable to achieve a level of service C or better for each movement at an intersection. The results show that the following intersections operate with at least one movement at unacceptable levels of service under the future (2040) conditions:

- North Commerce Avenue and East 6th Street
- North Commerce Avenue and East 8th Street
- North Commerce Avenue and North Royal Avenue
- W 14th Street and North Shenandoah Avenue

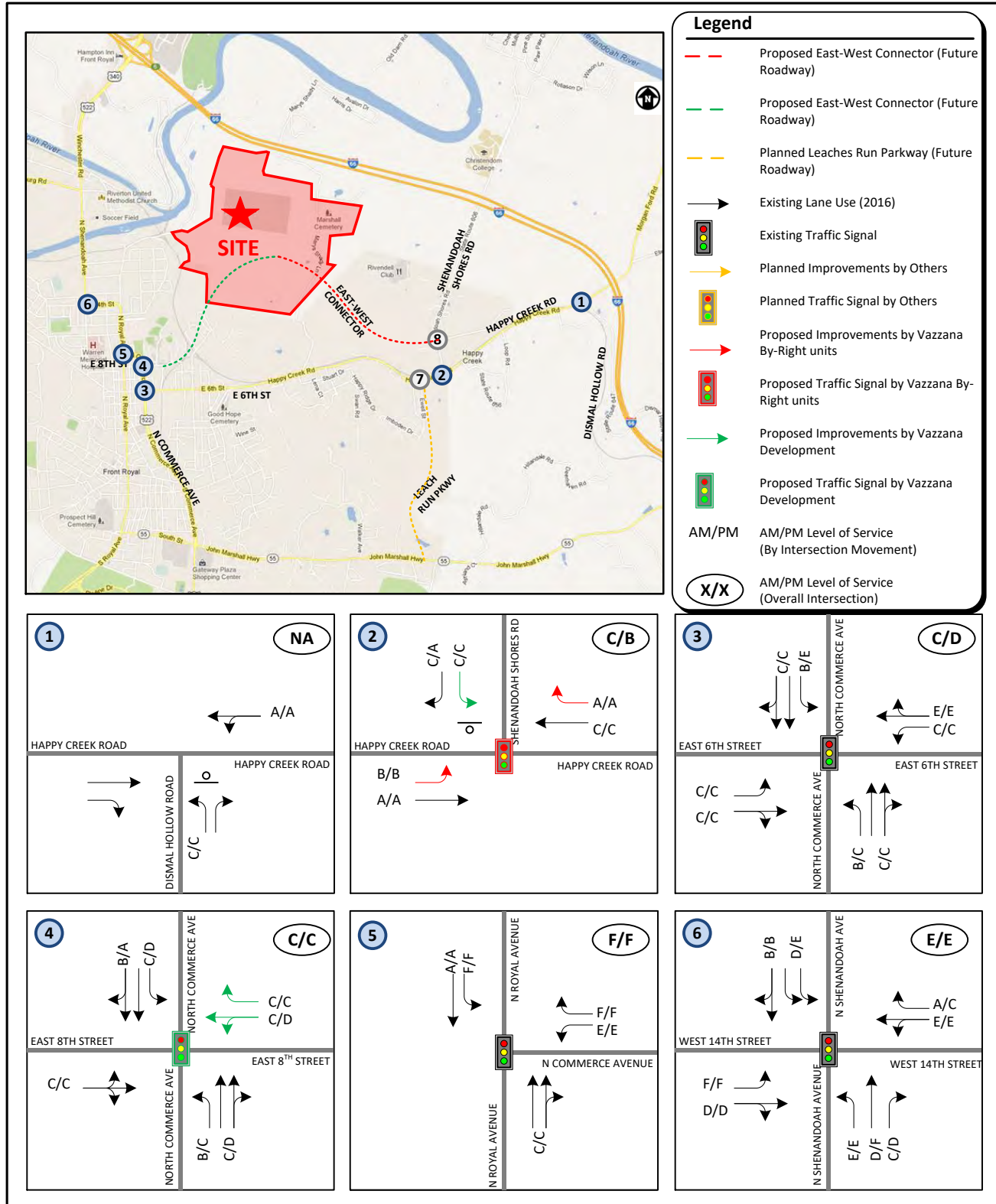


Figure 34: Build-out Plus Six Conditions Levels of Service (2040) (1 of 2)

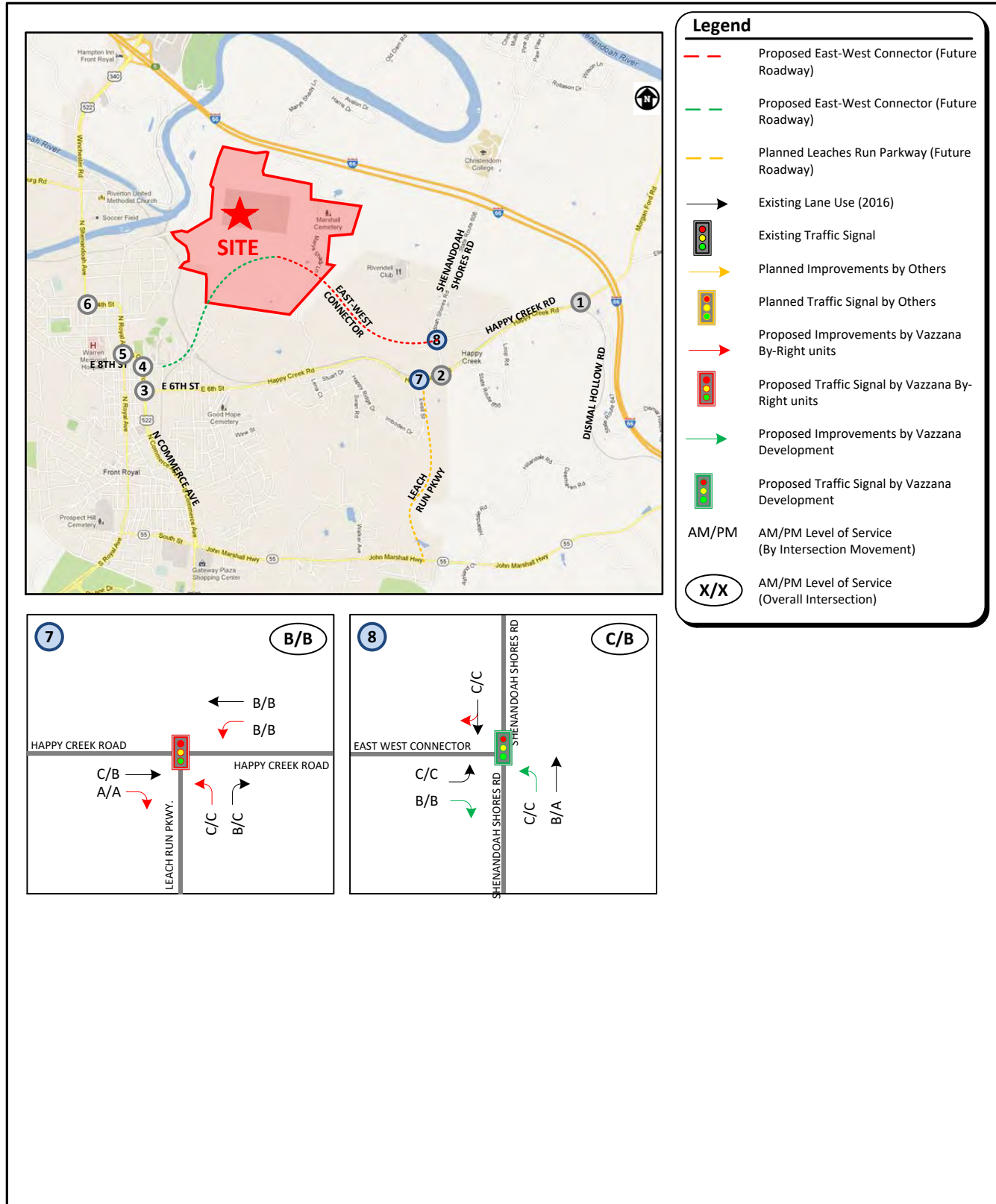


Figure 35: Build-out Plus Six Conditions Levels of Service (2040) (1 of 2)

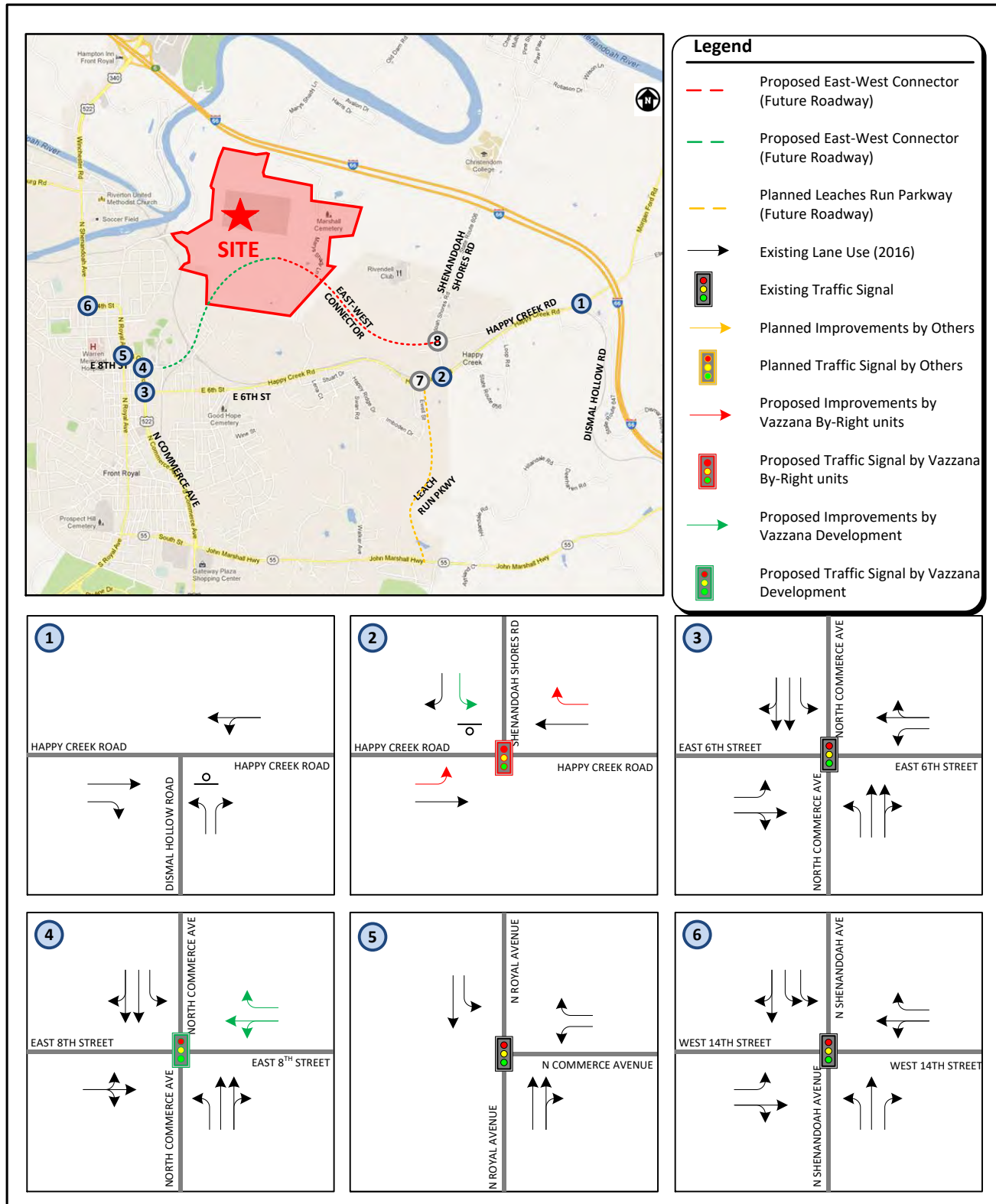


Figure 36: Build-out Plus Six Conditions Lane Configuration and Traffic Control (2040) (1 of 2)

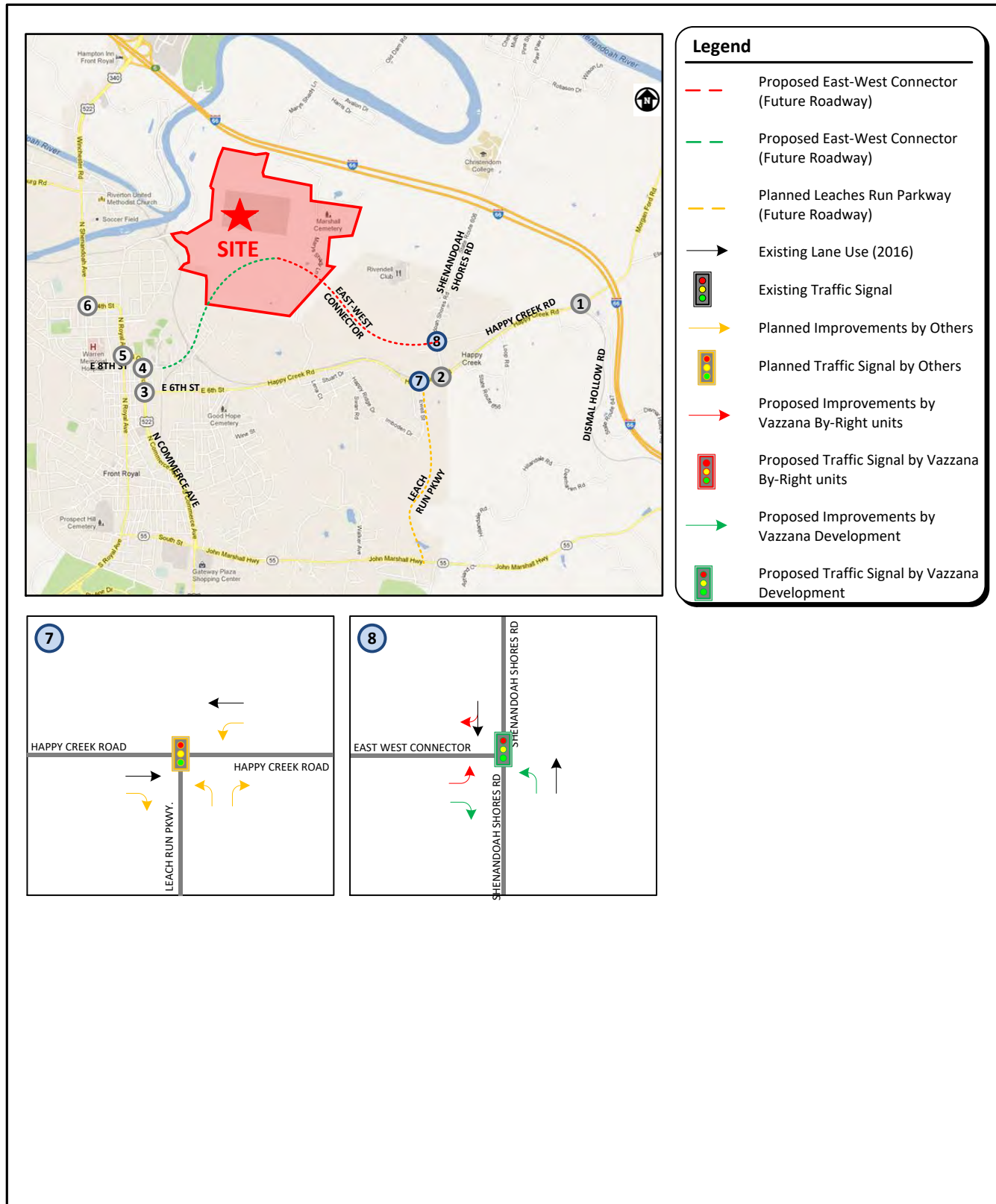


Figure 37: Build-out Plus Six Conditions Lane Configuration and Traffic Control (2040) (1 of 2)

ROADWAY IMPROVEMENT PHASING ANALYSIS

A phasing analysis was performed to estimate the point at which various roadway improvements at the study intersection would be needed. It is anticipated that the majority of the residential portion of the property will be developed prior to the development of the non-residential portion. Hence, the trips generated by only the residential portion of the site were used to estimate the traffic impacts on the roadway network. The following methodology was used to carry out the roadway improvement phasing analysis:

- The number of units that could be potentially built each year until the buildout year 2034 were calculated based on the average absorption rate of 66 dwelling units per year (320 by-right plus 870 proposed units divided across 18 years).
- Future traffic volumes were projected for the year to be investigated were determined by adding a regional growth of 1.00% per year and the trips generated by the residential units in that year to the existing traffic volumes.
- Capacity analyses were performed at the study intersections for each of these years to estimate the impact of the trips generated by the residential units on the study intersections. The results of the roadway improvement phasing analysis are shown in Table 13.

Table 13: Phasing Analysis

Intersection	Improvements	No. of units	Year
Mary's Shady Lane Closure	Closure	225 DU	2020
Shenandoah Shores Road/Happy Creek Road	Southbound turn lane improvements	700 DU	2027
N. Commerce Avenue/E. 8th Street	3rd westbound lane	Not required, even with full residential development (1190 DU)	2034

Table 13 shows that:

- The access for Marys Shady Lane at Happy Creek Road will be removed as development occurs on the by-right portion of the Vazzana property. This lane closure is anticipated to occur in the year 2020 with the development of approximately 225 DU.
- The addition of a southbound left turn lane at the intersection of Shenandoah Shores Road and Happy Creek Road would be required in the year 2027 with the development of approximately 700 DU.
- The addition of a 3rd westbound lane at the intersection of N. Commerce Avenue and E. 8th Street is not necessary with the buildout of the entire residential development (1,190 DU) in the year 2034. This improvement would be needed with commercial development on the Vazzana property or future regional growth.

CONCLUSIONS

The analysis presented in this report supports the following major conclusions:

- **Existing Conditions (2016)**
 - All study intersections operate at acceptable levels of service (LOS) C or better overall, with the exception of the North Commerce Avenue/North Royal Avenue and West 14th Street/North Shenandoah Avenue intersections. No improvements are recommended at this time due to the available reserve capacity for the mainline approaches.
- **Future Conditions without Proposed Development (2034)**
 - A 1.0% annual growth rate was applied to Happy Creek Road, Shenandoah Shores Road, North Commerce Avenue, and East 8th Street.
 - The anticipated traffic from the 450 residential units of the proposed HEPTAD development was added to the road network. The site is located south of Happy Creek Road along the future Leach Run Parkway.
 - Currently, there are 320 residential units approved for development on the Vazzana Property. Anticipated traffic from this by-right development was added under background conditions.
 - With the development of the by-right Vazzana property, access to Happy Creek Road from Marys Shady Lane is expected to close. Traffic will be rerouted to Shenandoah Shores Road and may access Happy Creek Road from Shenandoah Shores Road.
 - The construction of Leach Run Parkway between John Marshall Highway and Happy Creek Road at Shenandoah Shores Road is expected to be complete by 2034. A portion of existing traffic was rerouted to use this new roadway.
 - The following intersections operate with at least one movement at an unacceptable LOS:
 - *Happy Creek Road and Shenandoah Shores Road*
 - *North Commerce Avenue and East 6th Street*
 - *North Commerce Avenue and East 8th Street*
 - *North Commerce Avenue and North Royal Avenue*
 - *W 14th Street and North Shenandoah Avenue*
 - *Leach Run Parkway and Happy Creek Road*
 - The following improvements are anticipated in association with the by-right Vazzana property and middle school:
 - *Happy Creek Road and Shenandoah Shores Road*
 - Eastbound left turn lane
 - Westbound right turn lane
 - New traffic signal
 - *Happy Creek Road and Leach Run Parkway*
 - Eastbound right turn lane
 - Westbound left turn lane

- Northbound left turn lane
 - New traffic signal
- All other study intersections operate at acceptable levels of service C or better.
- **Future Conditions with Proposed Development (2034)**
 - The proposed development program consists of approximately 870 residential units and 95,000 square feet of commercial space. The site will be accessed via the new East-West Connector road at Shenandoah Shores Road and East 8th Street.
 - The proposed development will generate approximately 796 trips during the weekday morning peak period, 1,022 trips during the weekday afternoon peak period, and 9,654 trips during an entire weekday.
 - Similar to the future conditions without the rezoning, the following intersections operate with at least one movement at an unacceptable LOS:
 - *Happy Creek Road and Shenandoah Shores Road*
 - *North Commerce Avenue and East 6th Street*
 - *North Commerce Avenue and East 8th Street*
 - *North Commerce Avenue and North Royal Avenue*
 - *W 14th Street and North Shenandoah Avenue*
 - *Leach Run Parkway and Happy Creek Road*
 - *Shenandoah Shores Road and East/West Connector*
 - The following improvements are recommended with the proposed development:
 - *Shenandoah Shores Road and East/West Connector (with closure of Marys Shady Lane)*
 - Install a traffic control signal
 - Add an eastbound right turn lane
 - Add a northbound left turn lane
 - *Happy Creek Road and Shenandoah Shores Road (700 DU)*
 - Add a southbound right turn lane
 - Adjust signal timings as necessary
 - *N. Commerce Avenue and E. 8th Street (with commercial development)*
 - Restripe the westbound approach to a thru/left turn lane and a right turn lane
 - Install a traffic control signal
 - The Applicant's Proffer Statement includes implementation of the improvements recommended above. With these improvements, all movements at the intersections of Shenandoah Shores Road with Happy Creek Road and with the East/West Connector would operate at acceptable levels of service. The intersection of East 8th Street and North Commerce Street would operate with acceptable levels of service for the overall intersection and each movement, with the exception of the westbound through/left movement during the PM peak hour.

TECHNICAL MEMORANDUM

To: Dave Vazzana
From: Kevin Sitzman, P.E.
Steven Dauterman, E.I.T.
Date: October 27, 2017
Subject: Vazzana Property Development – Left-Turn Lane Warrant and 4-Hour Traffic Signal Evaluation

This memorandum presents the results of a left-turn lane warrant analysis and a 4-hour traffic signal warrant evaluation in conjunction with the by-right Vazzana Property Development in the Town of Front Royal, Virginia. The need for, and the appropriateness of, a northbound left-turn lane and traffic signal at the intersection of Shenandoah Shores Road (Rte. 606) and the proposed East-West Connector were evaluated with the additional traffic associated with the future conditions of the roadway network.

PROJECT DESCRIPTION

The by-right Vazzana Property Development is planned to be comprised of 320 single-family residential homes. With the development, access to Happy Creek Road from Mary's Shady Lane will be rerouted via Shenandoah Shores Road through the proposed East-West Connector. This change to the road network and other specifics regarding the development are discussed in a traffic impact study (TIS) performed by Gorove/Slade Associates, titled *Traffic Impact Study – Vazzana Property Development* and dated September 29, 2017.

This memorandum was performed in response to the Town of Front Royal request for justification of a northbound left-turn lane and traffic signal at the subject intersection with the R1-A proffer amendment.

An aerial of the site and the location of the study intersections are shown in **Figure 1**. It should be noted that the study intersection for this memo is labeled as "Intersection 8," in the aforementioned TIS and in **Figure 1**.

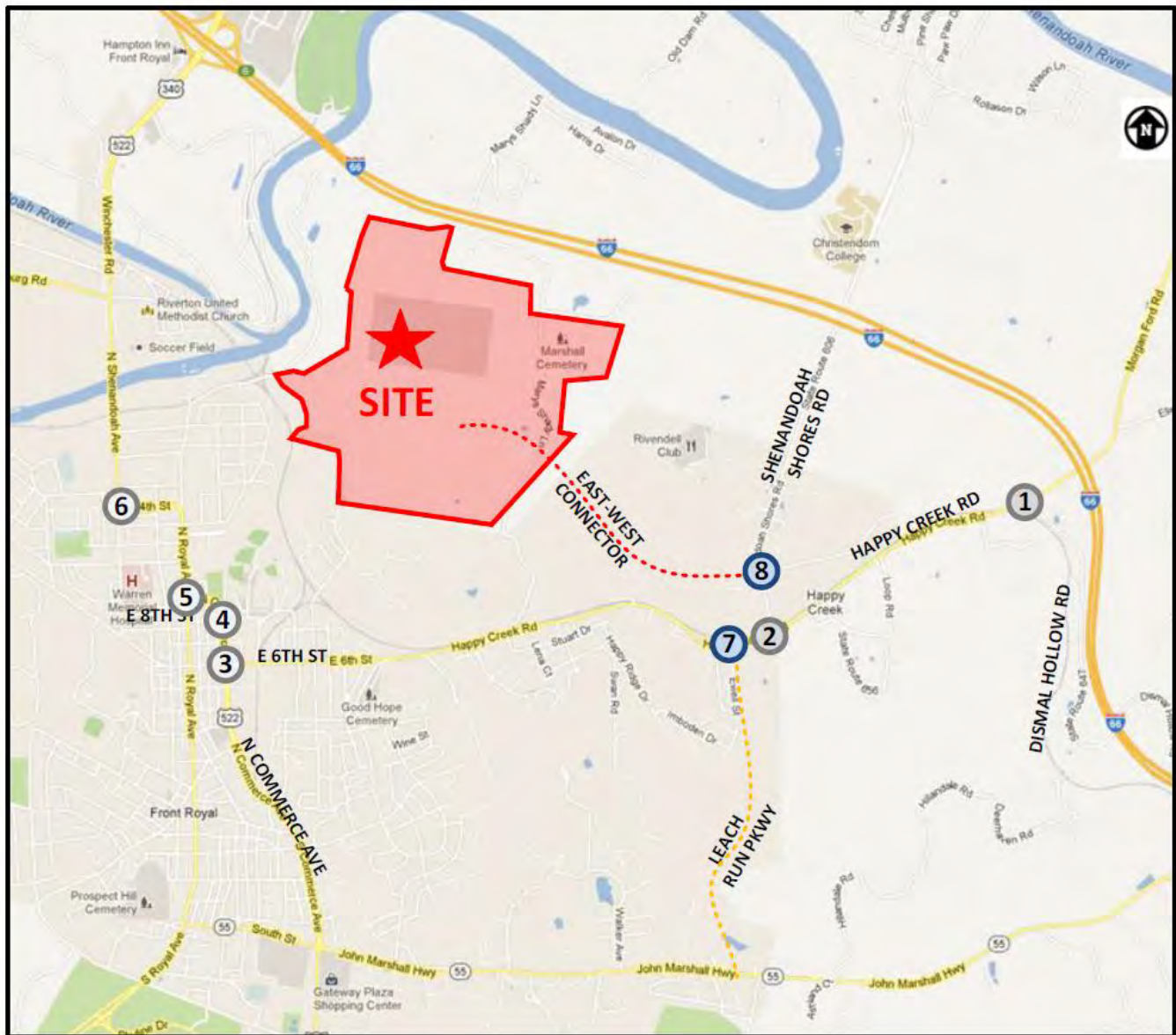


Figure 1: Site Aerial

2034 TRAFFIC CONDITIONS

2034 traffic conditions are taken from the TIS’s “Future Conditions without the Proposed Development (2034)” section. The 2034 traffic volumes are based traffic counts conducted on Thursday, March 17, 2016, from 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM.

To determine the 2034 traffic volumes, as mentioned in the TIS, the existing traffic volumes had an inherent growth rate applied to account for regional growth within the study area. As mentioned previously, along with the by-right Vazzana Property Development, access to Happy Creek Road will be rerouted from Mary’s Shady Lane to Shenandoah Shores Road via the proposed East-West Connector.

For the 2034 traffic volumes, other background developments and reroutes were also analyzed and discussed in the “Future Conditions without the Proposed Development (2034)” section of the 2017 TIS. An excerpt of this section for the TIS is provided in the Appendix A.

Figure 2 illustrates the 2034 lane configuration and traffic volumes at the future intersection of Shenandoah Shores Road and the East-West Connector.

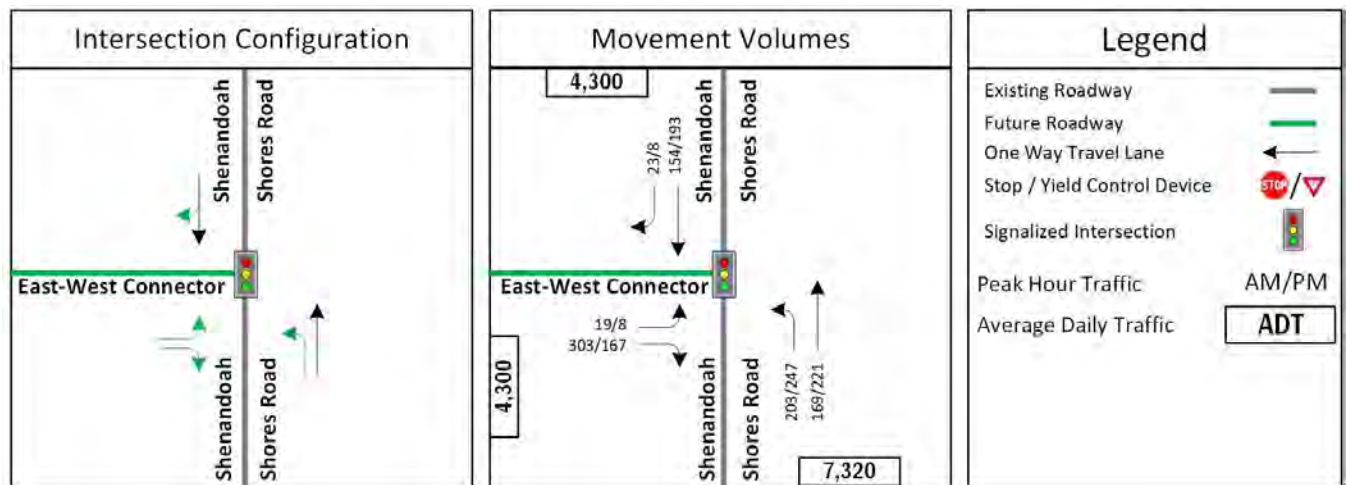


Figure 2: Lane Configuration and Traffic Volumes

TURN LANE WARRANTS ANALYSIS

Left and right turn lane warrants are based off VDOT’s Road Design Manual (RDM), Appendix F. The future volumes with development, shown in **Figure 2**, were evaluated to determine the need for, and appropriateness of, a northbound left-turn lane at the intersection of Shenandoah Shores Road and the East-West Connector.

Left Turn Lane Warrant

The warrants for left-turn storage lanes for two-lane highways at unsignalized intersection are based on Figure 3-5 to Figure 3-22 in Appendix F of VDOT’s RDM. Each figure varies based on the left-turn percentages and the design speed. These figures provide a graphical representation for determining the necessity of a left turn lane by comparing advancing volumes and the respective opposing volumes. Figure 3-10 shows the warrant for left-turn storage lanes with 40% or more left-turning movements and a design speed of 40 mph. This figure was used for left-turn warrant analysis for the northbound approach.

Table 1 illustrates the respective advancing volumes, opposing volumes, and left-turn movements used in the analysis. **Figure 3** illustrates the left-turn analysis for the northbound approach at the intersection of Shenandoah Shores Road and the proposed East-West Connector with the use of RDM Appendix F Figure 3-10.

It should be noted that the RDM does not contain figures for the design speed lower than 40 mph and higher left-turning movements of 40% for two-lane highways.

Table 2: Left Turn Lane Warrant Analysis

	AM Peak	PM Peak
Shenandoah Shores Road at East-West Connector		
Advancing Volume (vph)	372	468
Opposing Volume (vph)	177	201
Left Turn Movements (vph)	203	247
% Left Turns	54.57%	52.78%

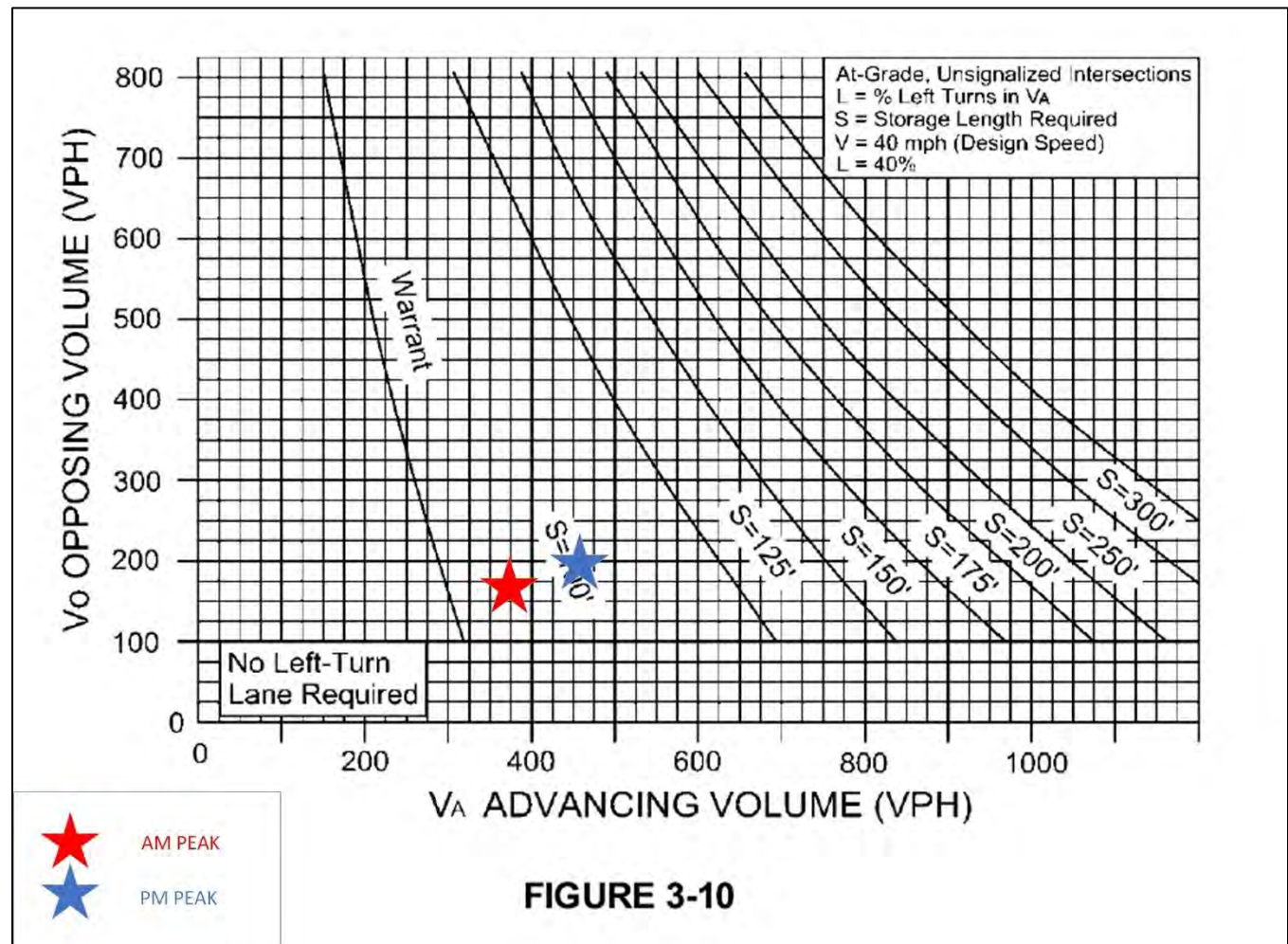


Figure 3: Left-Turn Lane Analysis for the Northbound Approach for the Intersection of Shenandoah Shores Road and the East-West Connector (VDOT Road Design Manual, Appendix E, Figure 3-10)

As seen in **Figure 3**, the northbound left turning movements would warrant a separate left-turn lane. Per the RDM, the left-turn lane would require a minimum storage length of 100-feet and a minimum taper length of 100-feet.

RDM Appendix F, Figure 3-10 is provided in Appendix B.

TRAFFIC SIGNAL WARRANT ANALYSIS

The signal warrant analysis is based off the Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition, *Chapter 4C: Traffic Control Signal Needs Studies*. Chapter 4C discusses 9 separate warrants, by which only one warrant needs to be satisfied to justify the installation of a traffic control signal. For the analysis of the intersection of Shenandoah Shores Road and East-West Connector, only the 4-hour traffic signal warrant was analyzed due to the available traffic count information. It should be noted that a signal justification report would be required to be conducted and approved by VDOT prior to the installation of a signal at this location. Such a report would evaluate each of the 9 separate warrants, including the 8-hour warrant, and would require the collection of traffic count data for additional hours.

4-Hour Vehicular Volume (MUTCD Chapter 4C Warrant 2)

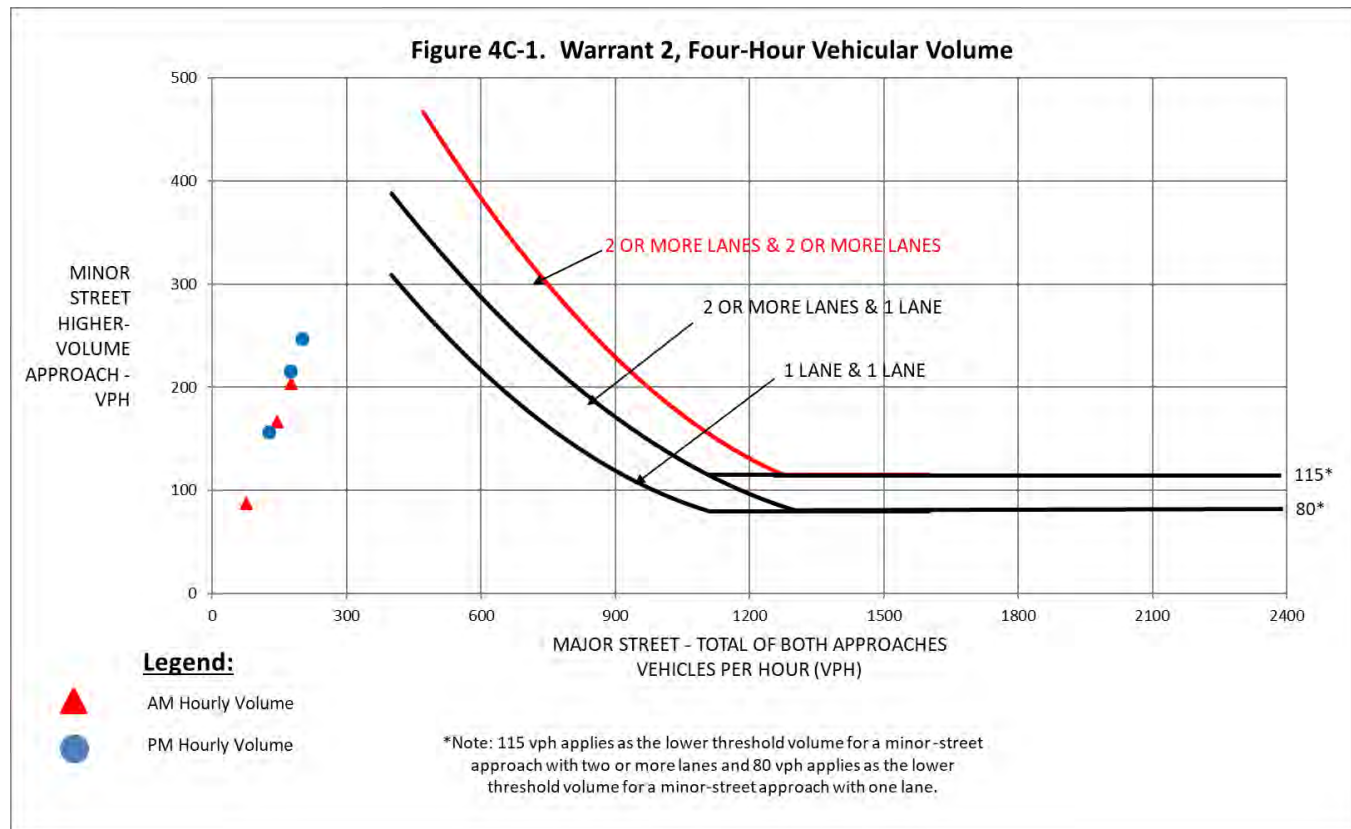
The 4-Hour Vehicular Volume Signal Warrant (Warrant 2) conditions are intended to be applied where the volume of intersecting traffic is the principle reason to consider installing a traffic signal. Warrant 2 is satisfied when the plotted points representing the vehicles per hour on the major-street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only), for each of any four hours of an average day, all fall above either MUTCD Figure 4C-1 or Figure 4C-2 (depending on applicability) for the future combination of approach lanes. If the posted speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

As noted in MUTCD Chapter 4C Section 1, signal warrant analysis should consider the effect of right-turn vehicle from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the 9 signal warrants. Similarly, at an intersection with a high volume of left-turn traffic from the major street, the signal warrant analysis may be performed in a manner that considers the higher of the major-street left-turn volumes as the “minor-street” volume and the corresponding single direction of the opposing traffic on the major street as the “major-street” volume. For this analysis, the right-turns on the minor-street (the East-West Connector) were reduced by 100% due to the expected availability of gaps along the major street (Shenandoah Shores Road). Due to the high number of northbound left-turn movements, the northbound left-turn volume was treated as the “minor-street” volumes and the corresponding the southbound approach volumes were treated as the “major-street” volumes. Figure 4C-1 was used since the posted speed limit along the major road is 25 mph, and the intersection is not located in an isolated community.

In order to determine the hourly traffic volumes for the 4-Hour Vehicular Volume Signal Warrant, the 2016 traffic counts at the intersection of Shenandoah Shores Road and Happy Creek Lane were used. Identifying the peak hours as 100% of the morning traffic and afternoon traffic, the “shoulder” hours were calculated as a percentage of either the 2034 AM peak hour volumes or the 2034 PM peak hour volumes depending on their time of day. **Table 3** illustrates the 2034 traffic volumes used in this analysis. The six 2034 hourly traffic volumes were plotted in Figure 4C-1, as shown in **Figure 4**.

Table 3: 2034 Hourly Volume

Movements	Morning			Afternoon		
	6:00 AM	7:00 AM	8:00 AM	4:00 PM	5:00 PM	6:00 PM
	43% of AM Peak	AM Peak	82% of AM Peak	87% of PM Peak	PM Peak	63% of PM Peak
EBL	8	19	16	7	8	5
EBR	130	303	248	145	167	105
EBR (reduction)	0	0	0	0	0	0
NBL	87	203	166	215	247	156
NBT	73	169	139	192	221	139
SBT	66	154	126	168	193	122
SBR	10	23	19	7	8	5
Major Approach	76	177	145	175	201	127
Minor Approach	87	203	166	215	247	156

**Figure 4: 4-Hour Vehicular Volume Analysis for the Intersection of Shenandoah Shores Road and the East-West Connector (MUTCD, Chapter 4-C, Section 3)**

As can be seen in Figure 4, none of the six hourly volumes meet the minimum threshold. Therefore, Warrant 2 is not satisfied.

MUTCD, Chapter 4C, Section 1 and 3 are provided in Appendix C.

ROUNDAABOUT

VDOT policy requires that roundabouts be considered at any location where a signal warrant study is being conducted. At the subject intersection, a single-lane roundabout would be an appropriate design solution. The capacity of a single-lane roundabout is typically 15,000 vehicles per day, and the 2040 volume projection from the traffic study is approximately one-half of that. Interim traffic volumes would be lower, with an associated improvement in level of service. Further, the two major-volume movements, the northbound left turn and eastbound right turn, would not conflict with each other within the circulating roadway. Thus, it is anticipated that a roundabout at this location would operate efficiently, improve levels of service, and serve the traffic demands of existing and planned uses along both Shenandoah Shores Road and the East-West Connector. This this would include current residential, institutional, and employment uses along Shenandoah Shores Road, as well as the by-right and recently-annexed portions of the proposed Vazzana development.

RESULTS/CONCLUSIONS

The northbound left-turn lane warrant analysis and 4-hour traffic signal warrant evaluation for the intersection of Shenandoah Shores Road and the proposed East-West Connector with the by-right Vazzana Property Development in the Town of Front Royal, Virginia indicate the following:

- The analysis of the northbound left turn movement at the intersection indicated that a left-lane is required. Per the RDM, the left-turn bay should have at minimum 100-feet of storage and a 100-foot taper.
- The 4-hour traffic signal study indicated that a traffic signal is not warranted with the 320-unit by-right development. However, this location should be monitored to determine if a signal is necessary in the future.

TECHNICAL APPENDIX TABLE OF CONTENTS

Appendix A: Excerpts from *Traffic Impact Study – Vazzana Property Development* (dated September 29, 2017)

Appendix B: VDOT Road Design Manual Appendix F Documentation for Turning Lanes

Appendix C: MUTCD Four-Hour Vehicular Volume

APPENDIX A:

Excerpts from *Traffic Impact Study – Vazzana Property Development*
(dated September 29, 2017)

Approved Future Heptad Development Traffic Volumes

The HEPTAD development is currently approved for 450 residential units. This development is included under future background conditions without the proposed development. To calculate the trips generated by the approved development, ITE's Trip Generation Manual, 9th Edition was used to determine the trips for the weekday morning and afternoon peak hours. The trip generation for the approved HEPTAD development is shown in Table 4.

Table 4: 2034 Future without Proposed Development (Future Background) Trip Generation: Heptad Development

Land Use	ITE Code	Size	AM Peak Hour			PM Peak Hour			Daily	
			In	Out	Total	In	Out	Total	Total	
<u>Heptad Development</u>										
Residential										
Single-Family Detached Housing	210	54	DU	12	36	48	39	22	61	596
Single-Family Attached Housing	230	100	DU	9	43	52	41	20	61	644
Multifamily Housing	220	296	DU	30	119	149	118	63	181	1,918
Total Residential External Trips				51	198	249	198	105	303	3,158

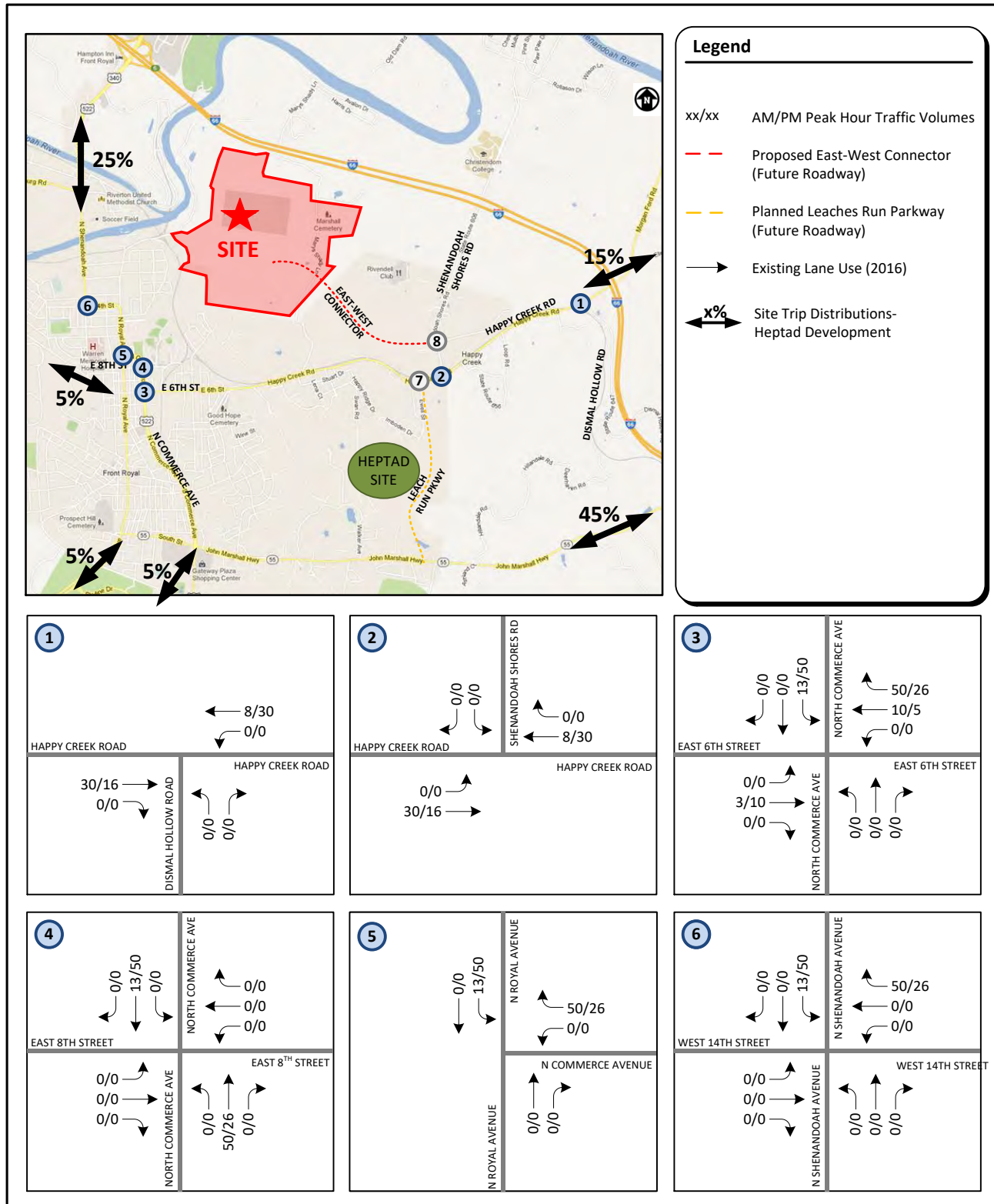
As shown in Table 4, the approved HEPTAD development will generate 249 weekday morning peak hour trips and 303 weekday afternoon peak hour trips under future conditions without proposed development. The location of the HEPTAD development is shown in Figure 12.

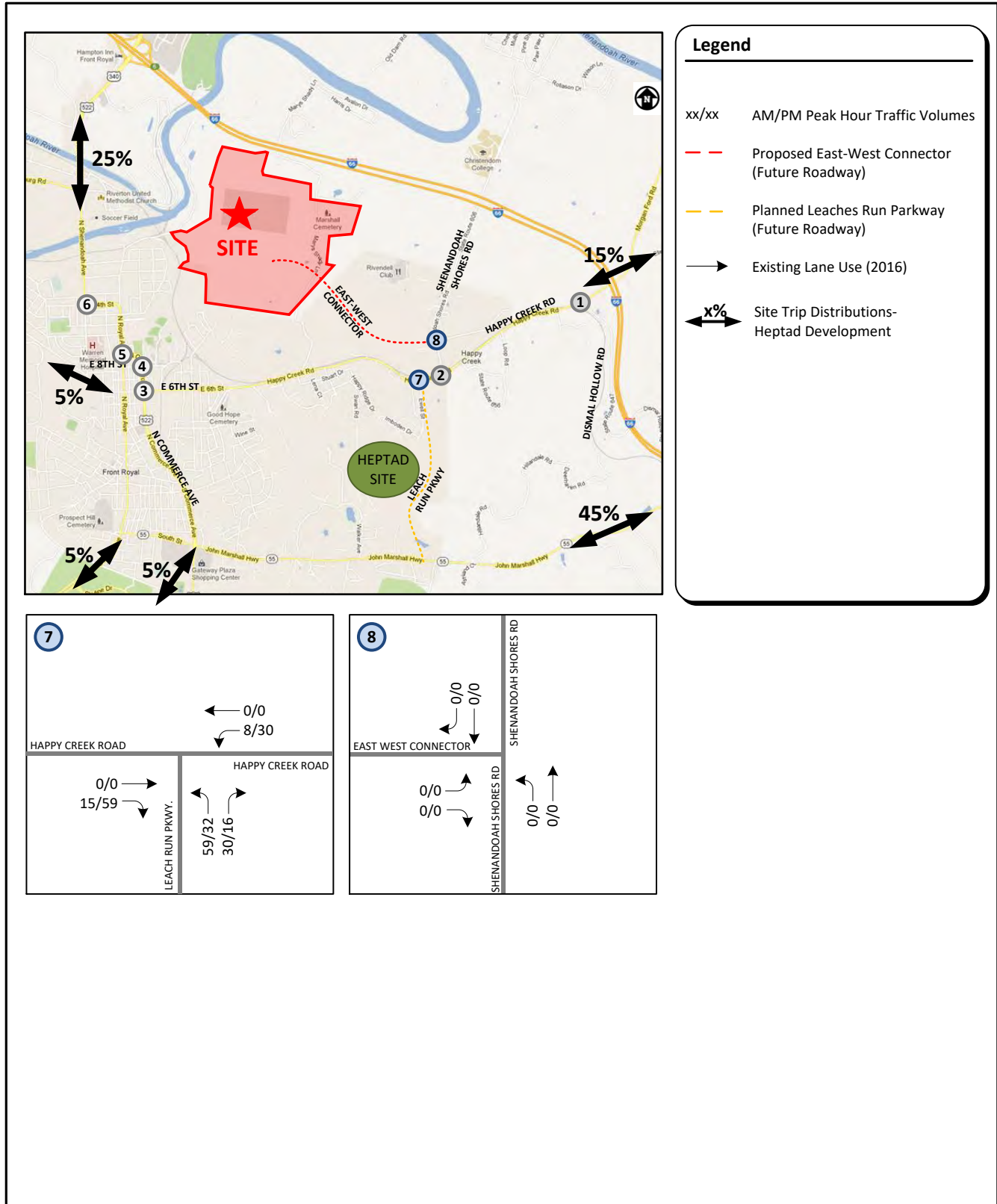
In order to route the projected traffic through the study area, a direction of approach was established based on previous traffic studies, existing travel patterns, and general engineering judgment. The direction of approach assumptions for traffic generated by the approved development are shown in Table 5 and Figure 12 and Figure 13. The inbound and outbound trips calculated for the weekday morning and weekday afternoon commuter peak hours were routed based on these distributions.

Table 5: Direction of Approach

APPROVED HEPTAD DEVELOPMENT	Residential
To and from the north along North Shenandoah Avenue	25%
To and from the east along John Marshall Highway 55	45%
To and from the southwest along North Royal Avenue	5%
To and from the southwest along North Commerce Avenue	5%
To and from the east along Happy Creek Road	15%
To and from the west along West 6 th Street	5%
Total	100%

Figure 12 and Figure 13 also illustrate the site traffic assignment for both peak hours.





Elementary School and Fire Station Traffic Volumes

It is possible that a portion of the Vazzana property will be dedicated to Warren County to develop a fire station and up to ±700 student Elementary School. Per discussion at the scoping meeting, these developments were also considered as background developments. To calculate the trips generated by the elementary school, ITE's Trip Generation Manual, 9th Edition was used to determine the trips for the weekday morning and afternoon peak hours. Based on traffic engineering judgment, the fire station was estimated to generate 10 trips each during the morning and afternoon peak hours. The trip generation for this background development is shown in Table 6.

Table 6: Future Background Trip Generation: Fire Station and Elementary School

Land Use	ITE Code	Size	Weekday							
			AM Peak Hour			PM Peak Hour			Daily	
			In	Out	Total	In	Out	Total	Total	
Elementary School	520	700	Students	174	141	315	52	53	105	903
School Internal Trips Reduction: 13% ¹		13%		-23	-18	-41	-7	-7	-14	-117
Fire Station				5	5	10	5	5	10	100
Total Elementary School and Fire Station Trips				156	128	284	50	51	101	886

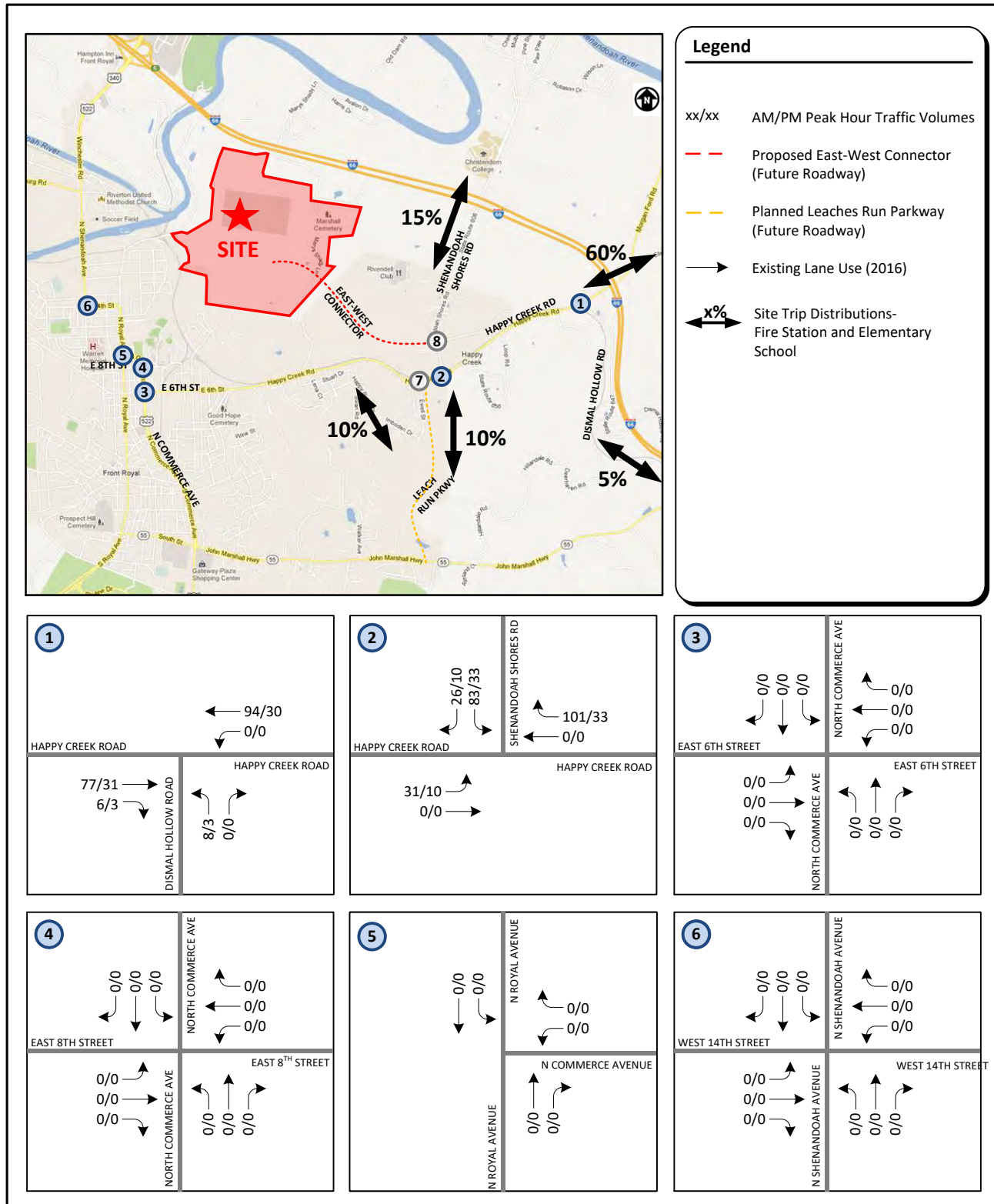
Note: 1 – The elementary school internal reduction rate was developed using data for Warren County's population based on age and number of households. 13% = [0.181 students per DU x 515 DU] / 700 students, or in other words approximately 13% of the school's students will live in the proposed development.

As shown in Table 6, the background development will generate 284 weekday morning peak hour trips and 101 weekday afternoon peak hour trips under future conditions without proposed development. In order to route the projected traffic into the Vazzana Property development, a direction of approach was established based on previous traffic studies, existing travel patterns, location of employment within the region, approved developments, and general engineering judgment. The direction of approach assumptions for traffic generated by the elementary school and fire station development and are shown in Table 7 and Figure 14 and Figure 15. The inbound and outbound trips calculated for the weekday morning and weekday afternoon commuter peak hours were routed based on these distributions.

Table 7: Direction of Approach

APPROVED VAZZANA PROPERTY DEVELOPMENT	Elementary School/Fire Station
To and from the north along North Shenandoah Avenue	0%
To and from the north along Shenandoah Shores Road	15%
To and from the south along Happy Ridge Drive	10%
To and from the south along Dismal Hollow Road	5%
To and from the south along (Future) Leach Run Parkway	10%
To and from the south along North Royal Avenue	0%
To and from the south along North Commerce Avenue	0%
To and from the east along Happy Creek Road	60%
To and from the west along West 6 th Street	5%
Total	100%

Figure 14 and Figure 15 show the site traffic assignment for both peak hours for the elementary school and fire station.



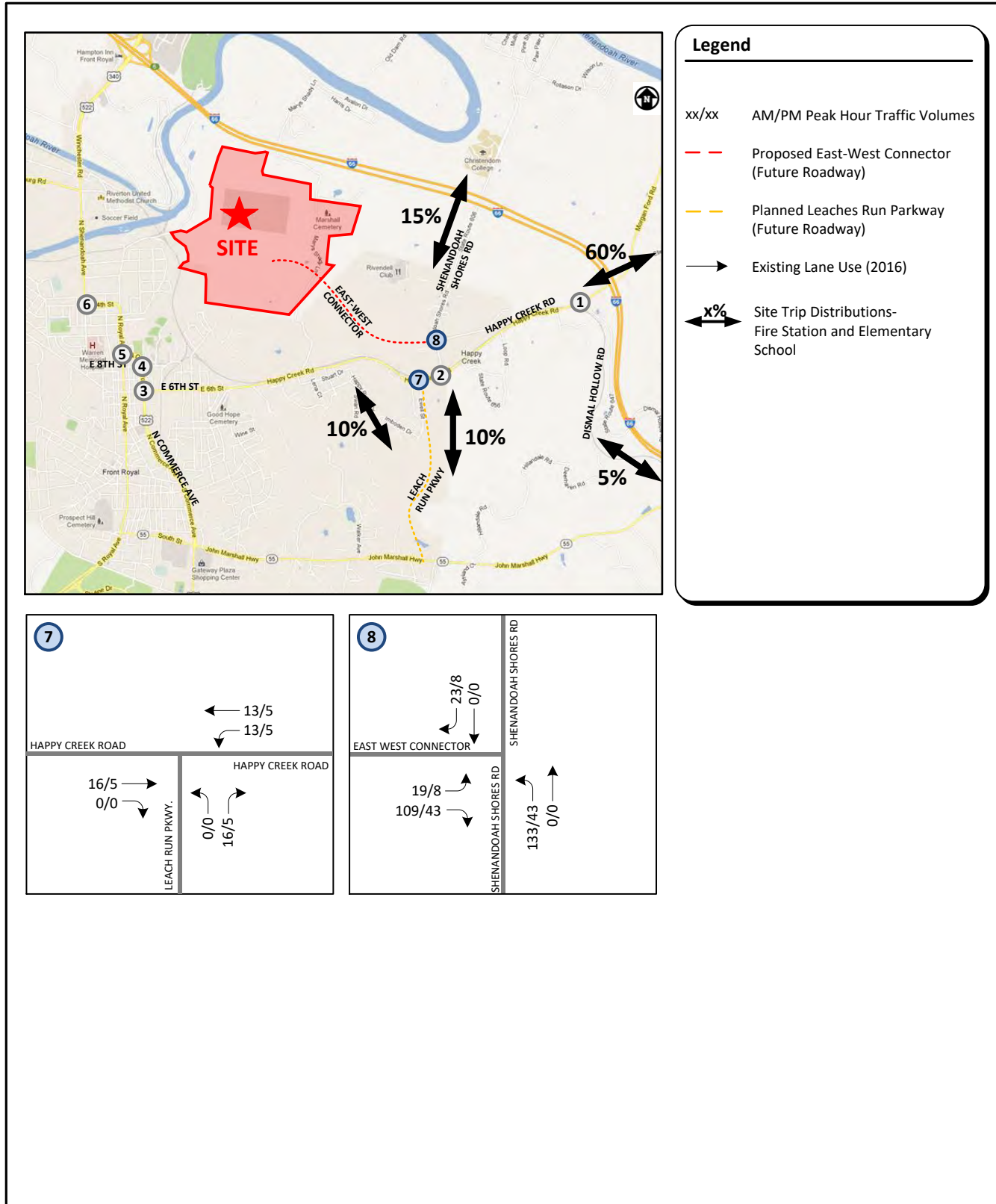


Figure 15: Elementary School and Fire Station Traffic Volumes (2034) (2 of 2)

The trips from the anticipated developments (Figures 10 thru 15) were added to the existing volumes with growth (2034) (Figure 5), the rerouted Marys Shady Lane traffic (Figures 6 and 7) and the rerouted Leach Run Parkway traffic (Figures 8 and 9) to establish the future without proposed development (2034) traffic volumes, as shown in Figure 16 and Figure 17.

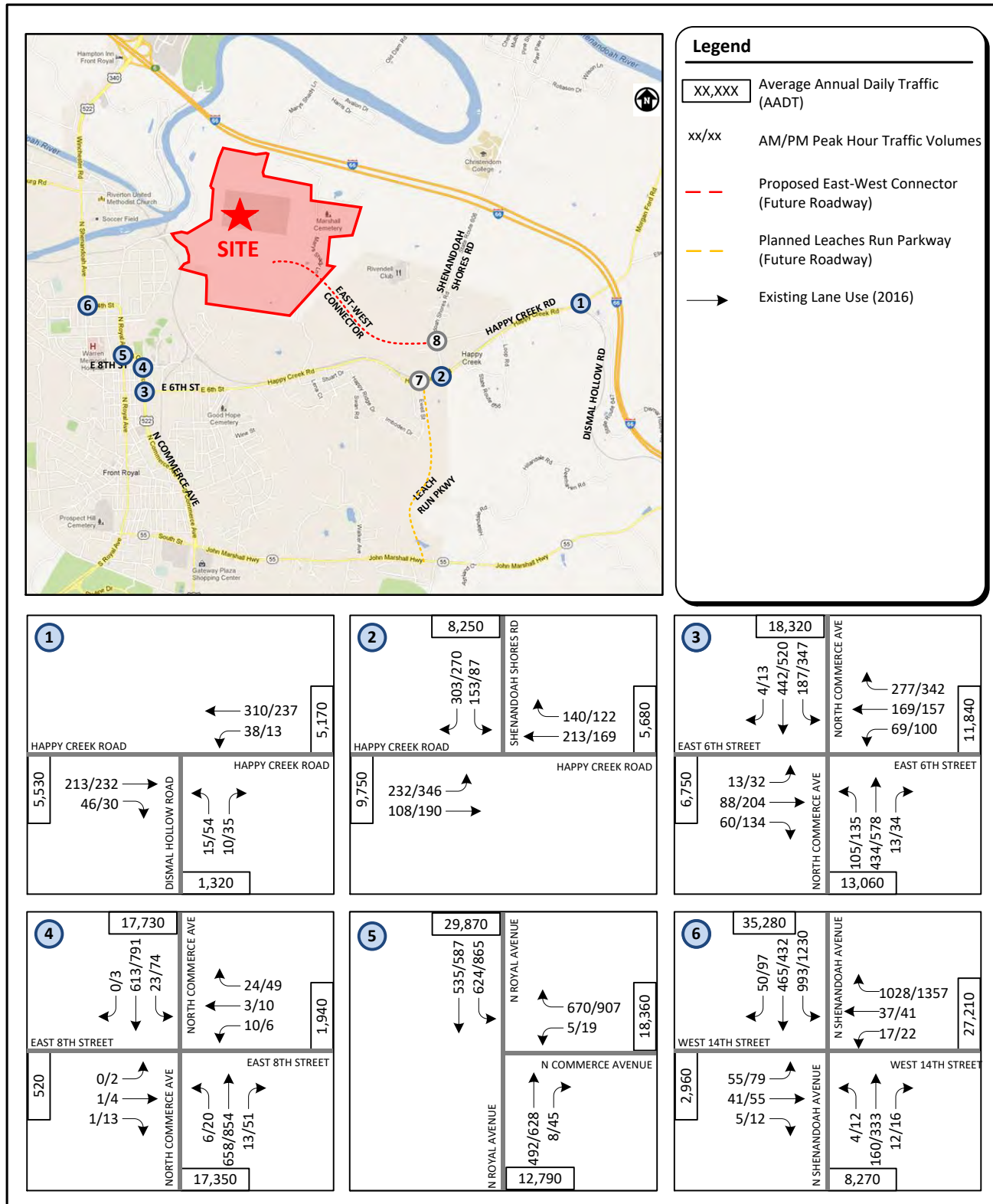


Figure 16: Future Conditions without Proposed Development Traffic Volumes (2034) (1 of 2)

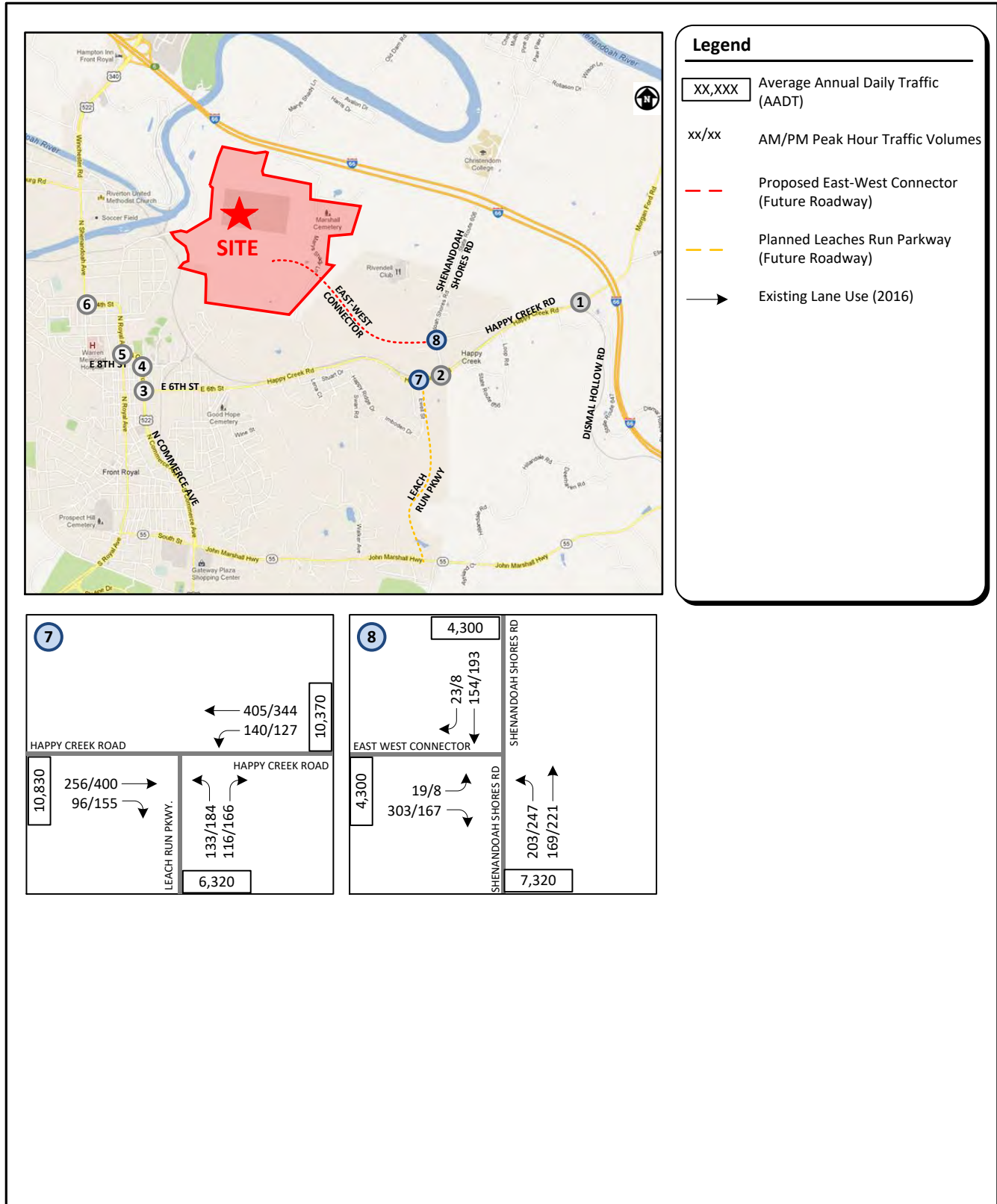


Figure 17: Future Conditions without Proposed Development Traffic Volumes (2034) (2 of 2)

APPENDIX B:

VDOT Road Design Manual Appendix F Documentation for Turning Lanes

SECTION 3 – TURNING LANES

Turn Lane Criteria for Single and Dual Lanes

Right and left-turn lanes are to be provided for traffic in both directions in the design of intersections and left turn lanes for median crossovers and in one direction for directional median openings (see Figure 3-25 illustration) on non-access controlled four-lane or greater divided highways using controls as shown in Figure 3-1 and adjusted upward as determined by Figure 3-3 or by capacity analysis for left-turn storage.

Left-turn lanes should also be established on two-lane and four lane undivided highways where needed for storage of left-turn vehicles and/or prevention of thru-traffic delay as shown in Figure 3-1 and adjusted upward as determined by Table 3-1 and Figure 3-5 through 3-22 or by capacity analysis for left-turn storage.

Intersections with low right turn volumes shall be evaluated in accordance with Figures 3-26 and 3-27.

LENGTH OF STORAGE (*)		TAPER - Rural (*)	
Rural - For Design Speeds 50 MPH or Higher	*L - 200' min. (For 240 or fewer vehicles during peak hour, <u>making turn</u>)	- For Design Speeds 35 MPH or Higher	**T - 200' Min.
Rural - For Design Speeds 45 MPH or Less	*L - 100' min. (For 60 or fewer vehicles during peak hour, <u>making turn</u>)	- For Design Speeds 30 MPH or Less	**T - 100' Min. (single) **T - 200' Min. (dual)
*Distance L to be adjusted upward as determined by capacity analysis for Left and Right Turn Storage.		**Tapers are to be straight-line unless local policy requires reverse curves. In congested areas the taper length may be reduced to increase storage length. However, a design waiver shall be required.	
LENGTH OF STORAGE		TAPER - Urban	
Urban - Length determined by capacity analysis for Left and Right Turn Storage (100' Minimum)		- For Design Speeds 50 MPH or Higher	**T - 200' Min.
		- For Design Speeds 45 MPH or Less	**T - 100' Min. (single) **T - 150' Min. (dual)

(*) For instructions on selection of design speed, see [Appendix A, Section A-1](#)*

FIGURE 3-1 RIGHT AND LEFT TURN LANE CRITERIA FOR SINGLE AND DUAL LANES

WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAY

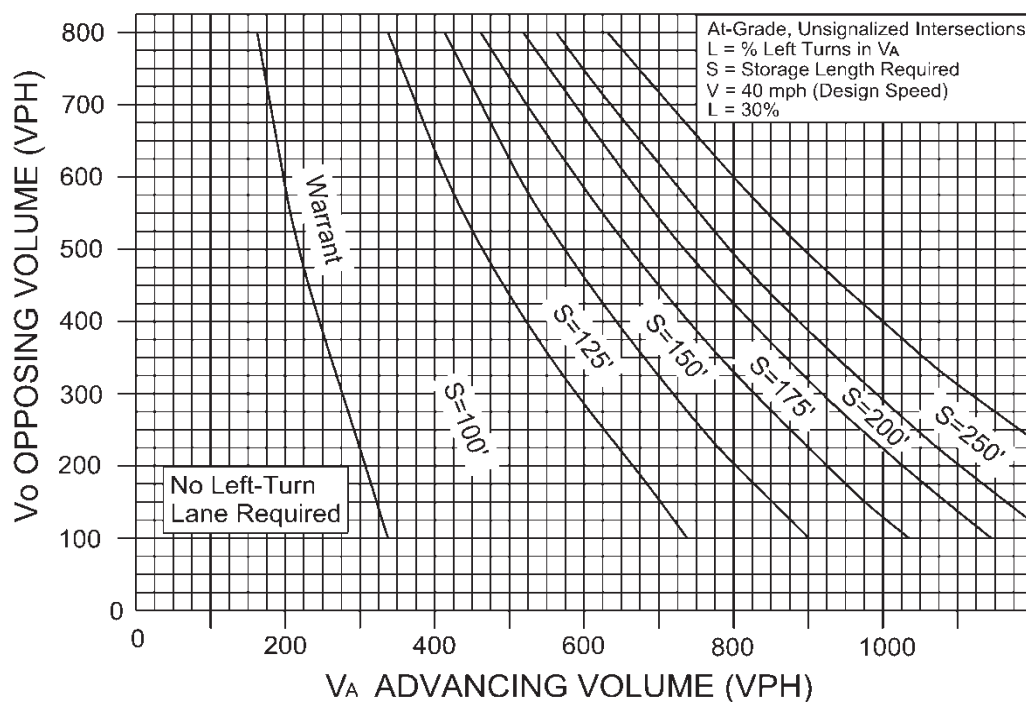


FIGURE 3-9

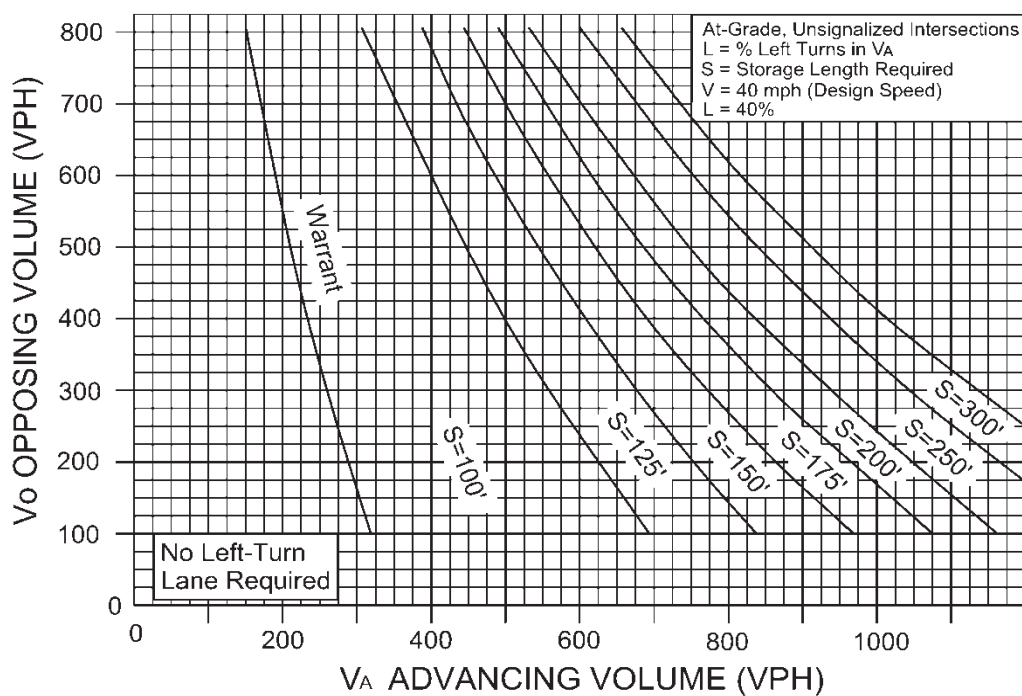


FIGURE 3-10

APPENDIX C:

MUTCD Four-Hour Vehicular Volume

CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

Standard:

- 01 An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.
- 02 The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:
- Warrant 1, Eight-Hour Vehicular Volume
 - Warrant 2, Four-Hour Vehicular Volume
 - Warrant 3, Peak Hour
 - Warrant 4, Pedestrian Volume
 - Warrant 5, School Crossing
 - Warrant 6, Coordinated Signal System
 - Warrant 7, Crash Experience
 - Warrant 8, Roadway Network
 - Warrant 9, Intersection Near a Grade Crossing

- 03 The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Support:

- 04 Sections 8C.09 and 8C.10 contain information regarding the use of traffic control signals instead of gates and/or flashing-light signals at highway-rail grade crossings and highway-light rail transit grade crossings, respectively.
- Guidance:*
- 05 A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.
- 06 A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.
- 07 A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow.
- 08 The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2.
- 09 Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.
- 10 Similar engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.
- 11 At a location that is under development or construction and where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into stop-and-go operation to determine if the signal is justified. If not justified, the signal should be taken out of stop-and-go operation or removed.
- 12 For signal warrant analysis, a location with a wide median, even if the median width is greater than 30 feet, should be considered as one intersection.

Option:

- 13 At an intersection with a high volume of left-turn traffic from the major street, the signal warrant analysis may be performed in a manner that considers the higher of the major-street left-turn volumes as the “minor-street” volume and the corresponding single direction of opposing traffic on the major street as the “major-street” volume.
- 14 For signal warrants requiring conditions to be present for a certain number of hours in order to be satisfied, any four sequential 15-minute periods may be considered as 1 hour if the separate 1-hour periods used in the warrant analysis do not overlap each other and both the major-street volume and the minor-street volume are for the same specific one-hour periods.
- 15 For signal warrant analysis, bicyclists may be counted as either vehicles or pedestrians.

Support:

- 16 When performing a signal warrant analysis, bicyclists riding in the street with other vehicular traffic are usually counted as vehicles and bicyclists who are clearly using pedestrian facilities are usually counted as pedestrians.

Option:

- 17 Engineering study data may include the following:
 - A. The number of vehicles entering the intersection in each hour from each approach during 12 hours of an average day. It is desirable that the hours selected contain the greatest percentage of the 24-hour traffic volume.
 - B. Vehicular volumes for each traffic movement from each approach, classified by vehicle type (heavy trucks, passenger cars and light trucks, public-transit vehicles, and, in some locations, bicycles), during each 15-minute period of the 2 hours in the morning and 2 hours in the afternoon during which total traffic entering the intersection is greatest.
 - C. Pedestrian volume counts on each crosswalk during the same periods as the vehicular counts in Item B and during hours of highest pedestrian volume. Where young, elderly, and/or persons with physical or visual disabilities need special consideration, the pedestrians and their crossing times may be classified by general observation.
 - D. Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements at the location under study. These persons might not be adequately reflected in the pedestrian volume count if the absence of a signal restrains their mobility.
 - E. The posted or statutory speed limit or the 85th-percentile speed on the uncontrolled approaches to the location.
 - F. A condition diagram showing details of the physical layout, including such features as intersection geometrics, channelization, grades, sight-distance restrictions, transit stops and routes, parking conditions, pavement markings, roadway lighting, driveways, nearby railroad crossings, distance to nearest traffic control signals, utility poles and fixtures, and adjacent land use.
 - G. A collision diagram showing crash experience by type, location, direction of movement, severity, weather, time of day, date, and day of week for at least 1 year.
- 18 The following data, which are desirable for a more precise understanding of the operation of the intersection, may be obtained during the periods described in Item B of Paragraph 17:
 - A. Vehicle-hours of stopped time delay determined separately for each approach.
 - B. The number and distribution of acceptable gaps in vehicular traffic on the major street for entrance from the minor street.
 - C. The posted or statutory speed limit or the 85th-percentile speed on controlled approaches at a point near to the intersection but unaffected by the control.
 - D. Pedestrian delay time for at least two 30-minute peak pedestrian delay periods of an average weekday or like periods of a Saturday or Sunday.
 - E. Queue length on stop-controlled approaches.

Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume

Support:

- 01 The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.
- 02 The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.
- 03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

Standard:

- 04 The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:

- A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or
- B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Option:

- 05 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Guidance:

- 06 The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Standard:

- 07 The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:

- A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and
- B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70% ^c	56% ^d
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume

^b Used for combination of Conditions A and B after adequate trial of other remedial measures

^c May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

^d May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Option:

- 08 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Section 4C.03 Warrant 2, Four-Hour Vehicular Volume

Support:

- 01 The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

Standard:

- 02 **The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.**

Option:

- 03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Section 4C.04 Warrant 3, Peak Hour

Support:

- 01 The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Standard:

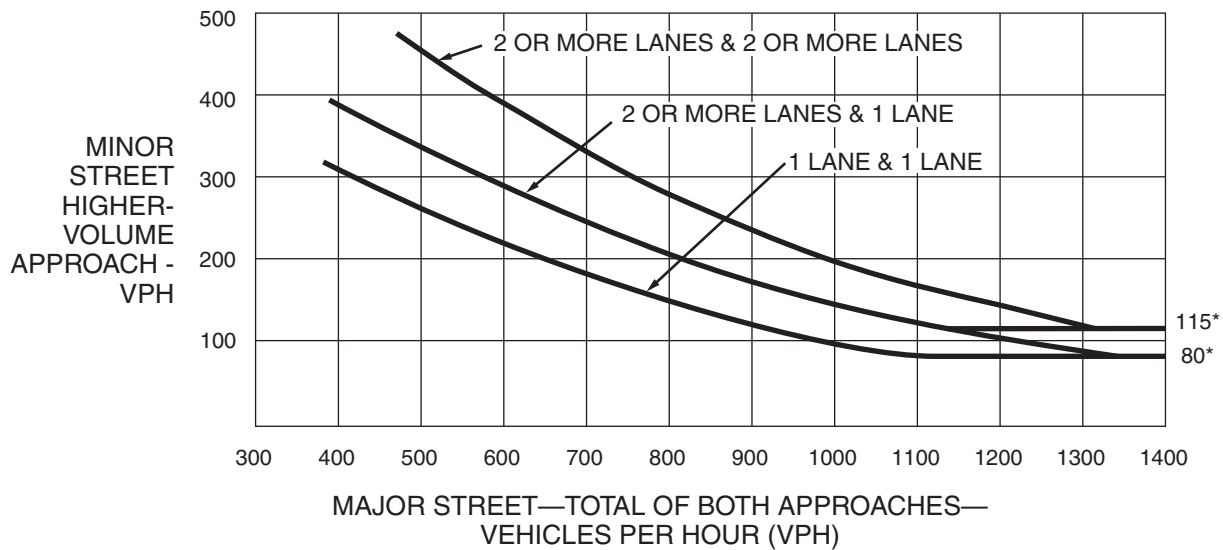
- 02 **This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.**
- 03 **The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:**
- A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:**
 - 1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and**
 - 2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and**
 - 3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.**
 - B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.**

Option:

- 04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in the second category of the Standard.
- 05 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Guidance:

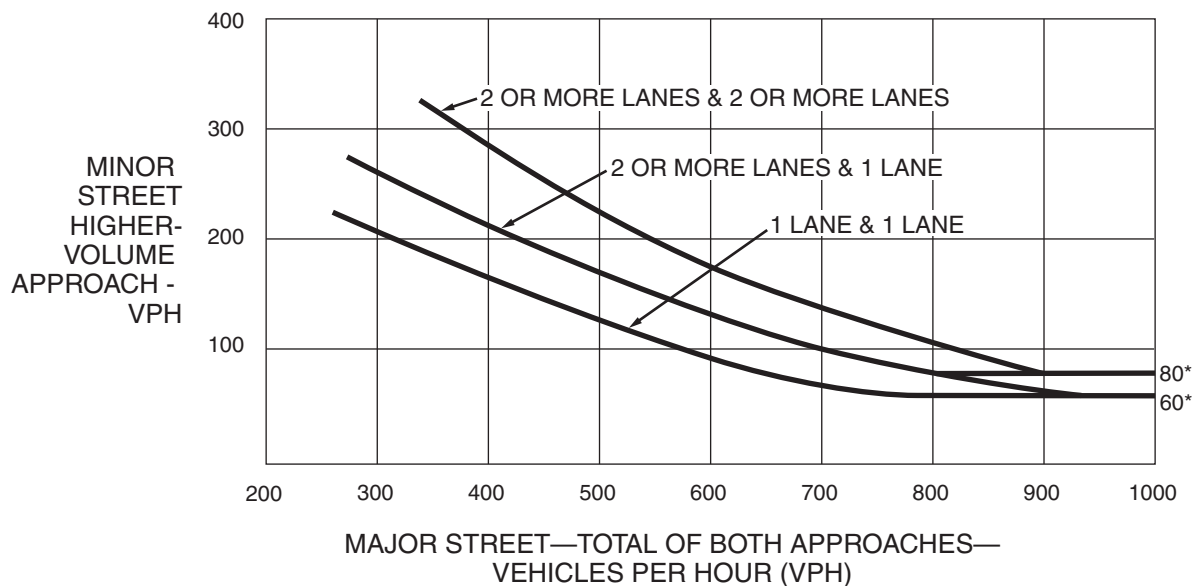
- 06 *If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.*

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.



COPY

OFFICIAL RECEIPT
WARREN COUNTY CIRCUIT
1 EAST MAIN STREET
FRONT ROYAL, VA 22630
540-635-2435

DEED RECEIPT

DATE: 10/13/10 TIME: 15:05:45 ACCOUNT: 187CLR100005293 RECEIPT: 10000010354
CASHIER: AMM REG: WK36 TYPE: OTHER PAYMENT: FULL PAYMENT
INSTRUMENT : 100005293 BOOK: PAGE: RECORDED: 10/13/10 AT 15:05
GRANTOR: FRONT ROYAL LIMITED PARTNERSHIP EX: N LOC: CO
GRANTEE: FRONT ROYAL LIMITED PARTNERSHIP EX: N PCT: 100%
AND ADDRESS :
RECEIVED OF : TOWN OF FRONT ROYAL
CASH: \$30.00
DESCRIPTION 1: PARCEL 5A F & R LIMITED PARTNERSHIP PAGES: 17 O/P 0
2: PROFFER STATEMENT NAMES: 0
CONSIDERATION: .00 A/VAL: .00 MAP: PIN:
301 DEEDS 28.50 145 VSLF 1.50

TENDERED : 30.00
AMOUNT PAID: 30.00
CHANGE AMT : .00

CLERK OF COURT: JENNIFER R. SIMS

PAYOR'S COPY
RECEIPT COPY 1 OF 2

**FRONT ROYAL LIMITED PARTNERSHIP – TOWN PROPERTY
TOWN OF FRONT ROYAL, VIRGINIA**

REZONING: RZ09-02-64

PROPERTY: Parcel 5A as shown on "Plat Showing Vacation of Boundary Line on the Property of F&R Limited Partnership" and as recorded in the Land Records of Warren County as Instrument Number 060012763, (attached hereto and incorporated herein by reference as Exhibit 1)

PROPERTY OWNER: Front Royal Limited Partnership, a Virginia Limited partnership

APPLICANT: Front Royal Limited Partnership, a Virginia Limited Partnership

PROJECT NAME: To be determined at time of subdivision application

ORIGINAL DATE OF PROFFERS: February 20th, 2009

REVISION DATES: August 5, 2009
September 4, 2009
September 10, 2009
December 7, 2009
December 28, 2009
January 29, 2010

WARREN COUNTY VIRGINIA
LAND RECORDS
000055 OCT 13 2009

The undersigned hereby proffers that the use and development of the subject property ("Property"), as described above, shall be in general conformance with the following conditions, which shall supersede all other proffers that may have been made prior hereto. In the event the above referenced rezoning is not granted as applied for by the Applicant ("Applicant"), these proffers shall be withdrawn and shall be invalid. In the event this application is denied by the Front Royal Town Council (the "Council"), such denial is appealed to a court of competent jurisdiction, and this rezoning application is thereafter remanded to the Council for reconsideration, then the Applicant may elect to readopt all or any portion hereof, in a writing specifically for that purpose; if no such election is made, these proffers shall be withdrawn and shall be invalid.

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.

The improvements proffered herein shall be provided at the time of development of that portion of the Property adjacent to or including the improvement or other proffered requirement, unless otherwise specified herein.

The term "Applicant" as referenced herein shall include the present and all future owners and successors in interest. The term "building permit" as used herein shall mean a building permit issued for the construction of a single-family home on the Property.

1. LAND USE:

- 1.1. The Property shall be developed in general conformance with the regulations of the R1-A zoning districts, as it is set forth in the Town of Front Royal Code, or as may be otherwise approved by the Town of Front Royal or modified herein.
- 1.2. The total number of dwelling units shall not exceed 320 single-family dwellings.

2. PHASING

- 2.1. The Applicant shall construct no more than 48 single-family dwellings in any calendar year. Units not constructed in a calendar year may be constructed in subsequent years.
- 2.2. The first year in which development may commence shall be the date of approval of a preliminary plan for the Property.

3. WATER AND SEWER

- 3.1. The Property shall be connected to public water and sewer systems constructed at the Applicant's expense.

4. STORMWATER MANAGEMENT & ENVIRONMENT

- 4.1. Stormwater management on the Property shall be provided in accordance with the applicable regulations of the town of Front Royal and Warren County. In addition, Best Management Practices and low impact development technologies shall be used where reasonably practical, as determined by the Applicant, and permitted, to mitigate any adverse water quality impact on the Shenandoah River that may occur.

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5. COMMUNITY DESIGN

- 5.1. The Applicant shall impose restrictive covenants for the overall community, which shall be recorded prior to the conveyance of the first parcel of the Property, and which shall be made available to staff upon request prior to recordation of any final subdivision plat. Among other things such covenants will address the overall continuity of design within the community through design standards for the following elements:

- 5.1.1. Custom mailbox design;
- 5.1.2. Standardized private residential fencing styles and color;
- 5.1.3. Custom designed street signage and stop signage;
- 5.1.4. Uniform site furnishing selection (trash receptacles and benches);
- 5.1.5. Standardized common area fencing style and color.
- 5.1.6. Permitted building materials.
- 5.1.7. Restrictions on the visibility of concrete block from streets within the development.

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6. CREATION OF HOMEOWNERS' AND PROPERTY OWNERS' ASSOCIATIONS

- 6.1. One or more homeowners' associations ("HOA") shall be created and shall be made responsible for the maintenance and repair of common areas, including any common open space that may be established in accordance with the requirements of the Town Zoning Ordinance or these proffers. Any such HOA shall be granted such other responsibilities, duties, and powers as are customary for such associations, or as may be required to effect the purposes for which such HOA is created. Such HOA shall be granted sufficient powers as may be necessary, by regular or special dues or assessment, to raise revenues sufficient to perform the duties assigned hereby, or by the documents creating the Association, and to perform rate studies necessary to determine dues, fees, and assessments as may be required.
- 6.2. In addition to any other duties and responsibilities as may be

assigned to it, the HOA shall have title to and responsibility for (i) common open space areas not dedicated to public use in accordance with these proffers and (ii) common buffer areas located outside of residential lots. It shall also have (iii) responsibility for the perpetual maintenance of any entrance feature (subdivision) signs, street, alleys and perimeter or road buffers located within any easements for those purposes to be granted to the HOA, and (iv) for maintenance of private streets and alleyways, if any.

7. HOME CONSTRUCTION

- 7.1. All homes shall be constructed using regionally appropriate Energy Star approved appliances, insulation, and windows. In addition, all homes shall qualify as an Energy Star approved home and carry the Energy Star label as determined by an independent third party approved by the United States Environmental Protection Agency.

8. LAND DEDICATION

- 8.1. The Applicant shall dedicate to the Town of Front Royal, under the conditions set forth below, a 1.75 acre site adjacent to Route 606, as such area is generally depicted on Exhibit 2 attached hereto and incorporated herein by reference, prepared by J. Duggan & Associates, dated September 4, 2009, and identified as "1.75-Acre Land Dedication" (the "Dedication Area"). A sight distance easement shall be reflected on the Dedication Plat, if required by VDOT at the time of dedication, so as not to impede or adversely affect design or approval of the Entrance Road (as defined below), and its connection to Route 606.
- 8.2. The Dedication Area shall be used by the Town and the Virginia Department of Transportation ("VDOT") for the construction of the Leach Run Parkway, or, at the Town's sole discretion, it may be further conveyed by the Town to Warren County, Virginia, for use as a fire and rescue station. If the Town elects to use the Dedication Area for construction of Leach Run Parkway and if the Town determines that additional right-of-way beyond the Dedication Area is necessary for Leach Run Parkway, the Applicant shall dedicate additional land to the Town solely for construction of Leach Run Parkway the "Additional Land Dedication". Provided, however, that (i) such Additional Land Dedication shall not exceed two (2) acres in size and (ii) the Additional Land Dedication shall not impede or adversely affect design or approval of the Entrance Road (as

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defined below), and its connection to Route 606.

- 8.3. The Applicant shall execute a dedication plat within 18 months of the Town's delivery of a plat at the Town's expense, depicting by metes and bounds the Dedication Area (the "Dedication Plat"), provided that no such dedication shall be required prior to the issuance of the 25th building permit for the Property. Further, and notwithstanding the foregoing, in the event the Town does not request the aforesaid dedication prior to the issuance of the 300th building permit for the Property, the Applicant shall be relieved of its obligation to make the aforesaid dedication.

9. PEDESTRIAN AND PARK FACILITIES

9.1. Trails.

9.1.1. The Applicant shall construct a walking/jogging trail with a minimum width of 6 feet on one side of Phase 1 of the East/West Cross Connector as generally depicted on Exhibit 3 attached hereto and incorporated herein prepared by J2 Engineers, Inc. and entitled "Cross Connector Road."

9.1.2. In addition, if the Town approves all final subdivision plats for the development permitting sidewalks on one side of each street in the development, the Applicant shall construct alternative pedestrian walking trails within the development of a minimum length of .75 miles. The location of the walking trails shall be determined by the Applicant and depicted on any preliminary plat for the development of the Property. The construction of such walking trails shall occur either in phases in conjunction with the development of sections Property as depicted on the preliminary plat, or at one time, in the sole discretion of the Applicant. If such final subdivision plats are not approved with sidewalks on one side of each street of the development, the Applicant shall not be obligated to construct such additional trails, but in any event, the Applicant shall construct the trails as set forth in Proffer 9.1.1

- 9.2. Not later than the issuance of the 99th building permit for the Property, the Applicant shall construct a neighborhood park (the "Neighborhood Park") that shall consist of not less than four (4)

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acres but not more than ten (10) acres, and shall include a basketball court, a playground, and at least one multi-purpose playing field. The design and location of the Neighborhood Park and its associated amenities shall be in the sole discretion of the Applicant.

- 9.3. Alternatively and notwithstanding the foregoing, in the event the Town elects in writing prior to the issuance of the 25th building permit for the Property to require the Applicant to dedicate the Neighborhood Park to Warren County, and Warren County agrees in writing to accept such dedication and the maintenance responsibility for the Neighborhood Park and its amenities, the Applicant shall design, plat, and construct the Neighborhood Park and the amenities described above in accordance with the standards set by the Warren County Department of Parks and Recreation. In the event that the County declines to accept the aforesaid dedication, the Neighborhood Park shall be dedicated to an HOA created pursuant to Proffer 6, above.

10. RIGHT-OF-WAY DEDICATIONS AND RESERVATION

- 10.1. Entrance Road – Phase 1 of East/West Connector. The final subdivision plat (a "Record Plat") for the first phase of the development of the Property shall include dedication of not less than 100 feet of right-of-way for an entrance road into the Property, the general location of which is depicted on the Exhibit 3 attached hereto and incorporated herein prepared by J2 Engineers, Inc. and entitled "Cross Connector Road," with such road identified thereon as Phase 1 (hereinafter the "Entrance Road").
- 10.2. Phase 2 of East/West Connector. Prior to the issuance of the 1st building permit, Applicant shall make a reservation of not less than 100 feet of right-of-way to connect the Entrance Road to the southwestern boundary of the Applicant's property located in Warren County, the general location of which is depicted on Exhibit 3 and identified thereon as Phase 2.
- 10.3. The final locations of the aforesaid roads shall be subject to modifications based on final engineering and approvals thereof by the Town and/or VDOT, final lot layout, and Town Code requirements. The Town shall have the option to move the intersection of the East/West Connector and Commerce Avenue to another location, in its discretion. The Town shall also have the option to notify the Applicant prior to approval of the first

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final record plat for the subdivision that the Town will not construct Phase 5 of the East/West Connector. If the Town elects not to construct Phase 5, then the per unit monetary contributions set out in Proffer 13.1 shall be paid to the Town for the construction of Leach Run Parkway.

11. CONSTRUCTION OF EAST/WEST CONNECTOR

11.1. Entrance Road – Phase 1 of East/West Connector.

11.1.1. The Applicant shall construct two (2) lanes of the Entrance Road to the first proposed street intersection in the subdivision prior to and as a condition of the issuance of the first building permit for the property or as otherwise required by Chapter 148 of the Town Code ("Subdivision Ordinance"). The Applicant shall have completed the construction of Phase 1 of the East/West Connector to the western property boundary prior to and as a condition of the issuance of the 75th building permit.

11.1.2. No individual single-family lot shall have direct driveway access to the East/West Connector.

11.2. Completion of the East/West Connector to Commerce Avenue or 8th Street.

11.2.1. Phases 2 through 5 of East/West Connector. The general location of the right-of-way for the remaining phases of the East/West Connector are depicted on Exhibit 3 and generally described as follows:

11.2.2. Phase 2. The right-of-way for Phase 2 shall connect the Entrance Road with the southwestern boundary of the Applicant's property located in Warren County.

11.2.3. Phase 3. The right-of-way for Phase 3 shall be co-located with the existing 50 foot easement running to the benefit of the Applicant, which easement is recorded in Deed Book 207 at Page 447.

11.2.4. Phase 4. The existing right-of-way for Phase 4 shall begin at the southern terminus of Phase 3 and end at the Norfolk Southern Railroad crossing as set out in Deed Book 118 at Page 443, which shall accommodate a two-lane rural collector road that

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meets VDOT standards to the southern terminus of Phase 5.

11.2.5. Phase 5. The right-of-way for Phase 5 shall be wide enough to accommodate a two-lane urban collector road that meets VDOT standards and shall run from 8th Street to or other location approved by the Town and across the Norfolk Southern right-of-way connecting to the street that was dedicated in Deed Book 118 at Page 443, and shall include the construction of two at-grade crossings that meet all applicable VDOT and Federal Surface Transportation Board safety requirements;

11.3. Subject to the following conditions, prior to and as a condition of the issuance of the 200th building permit, the Applicant shall construct a two-lane rural connector road that meets VDOT standards in the right-of-way for Phases 2 through 4:

11.3.1. prior to the recordation of the first final plat for the development of the Property, the Town shall have notified the Applicant in writing that it desires the Applicant to construct Phases 2 through 4;

11.3.2. the existing at-grade railroad crossing at Mary's Shady Lane and Happy Creek Road will have been closed or will have been authorized for closure by a court or other competent authority, or, alternatively, consent has been given by the necessary parties and governmental agencies for the construction of an at-grade intersection of Mary's Shady Lane and the East/West Connector;

11.3.3. the Town has used its best good faith efforts to design and construct a road within the Phase 5 right-of-way and the Norfolk Southern railroad crossing that is a part of Phase 5 as described above, provided that, if the Town elects not to construct the Phase 5 road as set forth above, the Applicant shall not be obligated to construct phases 2 through 4; and

11.3.4. within twelve months from the approval of the first Final Record Plat for the Property, the Town and the Applicant have entered into a mutually satisfactory memorandum of understanding which shall, among other things, include provisions delineating i) the

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parties' responsibilities with respect to construction of Phases 2-5 of the East/West Connector, ii) the Applicant's responsibility to assign any rights it has to the crossing of the railroad tracks that is a part of Phase 5 to the Town, and iii) provided that, pursuant to §§ 134-22 (J) and 134-30 (K) of the Town Code, no connection fee for sewer or water service shall be accepted by the Town prior to the issuance of a zoning permit and the approval of a building permit application for building development or conversion upon the lot or parcel of land to be served, the Applicant shall receive a dollar for dollar credit in the amount of all costs incurred by the Applicant in the design and construction of Phases 2-4 of the East/West Connector as provided in Proffer 11.2, and the Land Dedication as provided in Proffer 8.1 (with a minimum credit of \$110,000), the right-of-way reservation as provided in Proffer 10.2 (with a minimum credit of \$462,500). Such sums shall be a credit against the Applicant's Water and Sewer Tap fees in excess of the current cost thereof of \$10,000 per such unit. If the Town increases the aforesaid Water and Sewer Tap fees, then the Applicant shall be entitled to a credit against Water and Sewer Tap Fees in the amount of any increase above \$10,000.

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12. SHENANDOAH SHORES ROAD AND HAPPY CREEK ROAD

- 12.1. The Applicant shall construct a westbound right turn lane on Happy Creek Road at Shenandoah Shores within the existing right-of-way prior to the issuance of the 25th building permit for the Property
- 12.2. The Applicant shall construct an eastbound left turn lane on Happy Creek Road at Shenandoah Shores within the existing right-of-way prior to the issuance of the 50th building permit for the Property.
- 12.3. If the Town determines that a traffic light is warranted at Route 606 and Happy Creek Road, then the Applicant shall contribute \$225,000.00 to the Town of Front Royal for the construction of such traffic light. The Applicant shall not be required to make such contribution earlier than the issuance of the 50th building permit for the Property or later than the issuance of the 225th building permit for the Property.

13. CASH CONTRIBUTIONS TO TOWN OF FRONT ROYAL

- 13.1. In the event this rezoning is approved, the Applicant will pay to the Town of Front Royal, a per unit contribution of \$19,600 for each single-family dwelling unit in excess of 99 such units, which contributions shall be used by the Town solely for the planning, design, engineering, right of way acquisition and/or construction of Leach Run Parkway or the East/West Connector above.
- 13.2. The Applicant shall receive a dollar-for-dollar credit against the aforesaid per-unit contribution for the following costs actually incurred by the Applicant:
- 13.2.1. the engineering, design and construction costs associated with constructing Phases 2 through 4 of the East/West Connector, and
- 13.2.2. any combined sewer and water connection and availability fees that exceed \$10,000 on a per-unit basis.
- 13.3. Prior to the issuance of the 99th building permit, and at the end of each phase of the development of the Property thereafter, an accounting of the credits accrued by the Applicant shall be undertaken by the Town, in cooperation with the Applicant, and the credits available for the future phases of the development shall be determined. The Applicant's obligation to make future per-unit contributions required by Proffer 13.1 shall be adjusted according to the dollar amount of the credits earned.
- 13.4. In the event the Town elects to have the Applicant construct Phases 2 through 4 of the East/West Connector as provided above, the per unit contribution set out in Proffer 13.1 shall be placed in third party escrow (such third party escrow agent and the escrow agreement to be mutually agreed upon by the Town and the Applicant), and shall be paid over to the Applicant to reimburse it for the actual audited cost of the engineering, design, and construction of the Phase 2 through 4 improvements. The Town and the Applicant shall enter into a mutually agreeable agreement that sets out responsibilities of the parties; provided that until such agreement is entered into, the Applicant shall not be obligated to make the Phase 2 through 4 improvements nor shall it be obligated to make further per unit contributions, and provided further that the Applicant shall not unreasonably condition or withhold

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approval of such agreement. After the Applicant completes such improvements, and if the actual audited cost of the engineering, design, and construction of the Phase 2 through 4 improvements do not exceed the escrowed contribution proffers and projected future proffer payments, the remaining per-unit contributions, if any, shall be made directly to the Town of Front Royal.

14. CASH CONTRIBUTIONS TO WARREN COUNTY, VIRGINIA.

- 14.1. In the event this rezoning application is approved, the Applicant will pay to Warren County, Virginia a per unit sum of \$5,500.00, prior to and as a condition of the issuance of an occupancy permit for each single-family dwelling constructed on the Property.
- 14.2. Notwithstanding the foregoing Proffer, the audited costs of the engineering, design, and construction of the Neighborhood Park as provided in these Proffers, shall be credited against the aforesaid per unit contribution, provided further that the Applicant shall be entitled to a credit for the dedication of the land therefor in the amount of \$320,000.

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15. DESIGN MODIFICATIONS

- 15.1. If, at the time of or prior to the approval of a preliminary subdivision plat for the Property, the Town approves amendments to the Subdivision and Land Development Ordinance, or approves modifications to or waivers of the standards set forth therein so permitting, the Applicant shall construct streets without curb and gutter.
- 15.2. If, at the time of or prior to the approval of the preliminary subdivision plat for the Property, the Town approves amendments to the Subdivision and Land Development Ordinance, or approves modifications to or waivers of the standards set forth therein so permitting, the Applicant shall construct:
- i) one-way local streets with a minimum pavement width of 16 feet;
 - ii) two way collector streets without on-street parking and a minimum pavement width of 18 feet;
 - iii) pavement widths of 20' with parking on one side for local

and cul-de-sac streets: and,

iv) pavement widths of 26' with parking on both sides for local, collector, and cul-de-sac streets; and

v) sidewalks on only one side of all streets within the development.

16. MARY'S SHADY LANE

- 16.1. If the Applicant fails to relocate Mary's Shady Lane, the Applicant shall revise its then current site or subdivision plan to reflect the continued existence thereof.
- 16.2. If the Applicant successfully relocates Mary's Shady Lane, then the Applicant shall connect Mary's Shady Lane to the Entrance Road no later than the 300th building permit for the Property. At no time during the construction on or development of the Property shall access be denied to persons using Mary's Shady Lane.
- 16.3. Applicant shall not utilize Mary's Shady Lane as a construction entrance for the Property.

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17. MISCELLANEOUS

- 17.1. Prior to the commencement of any land disturbing activities on the Property, the Applicant shall perform a Phase I Archeological Study for investigation of those areas previously identified on the Property as potentially sensitive in the "Phase IA Archeological Evaluation of the 830.4 Acre Vazzana Property, Front Royal and Warren County, Virginia," dated January 2004, prepared by Thunderbird Archeological Associates, Inc.
- 17.2. Any additional archeological features identified on the Property during the Phase I study shall be further evaluated in accordance with the Virginia Department of Historical Resources ("VDHR") guidelines.

18. OPEN SPACE

- 18.1. A minimum of 30% of the Property will be used for permanent open space. Such open space shall be inclusive of passive and active open space including all park land provided hereunder and stormwater management uses.

19. ESCALATOR

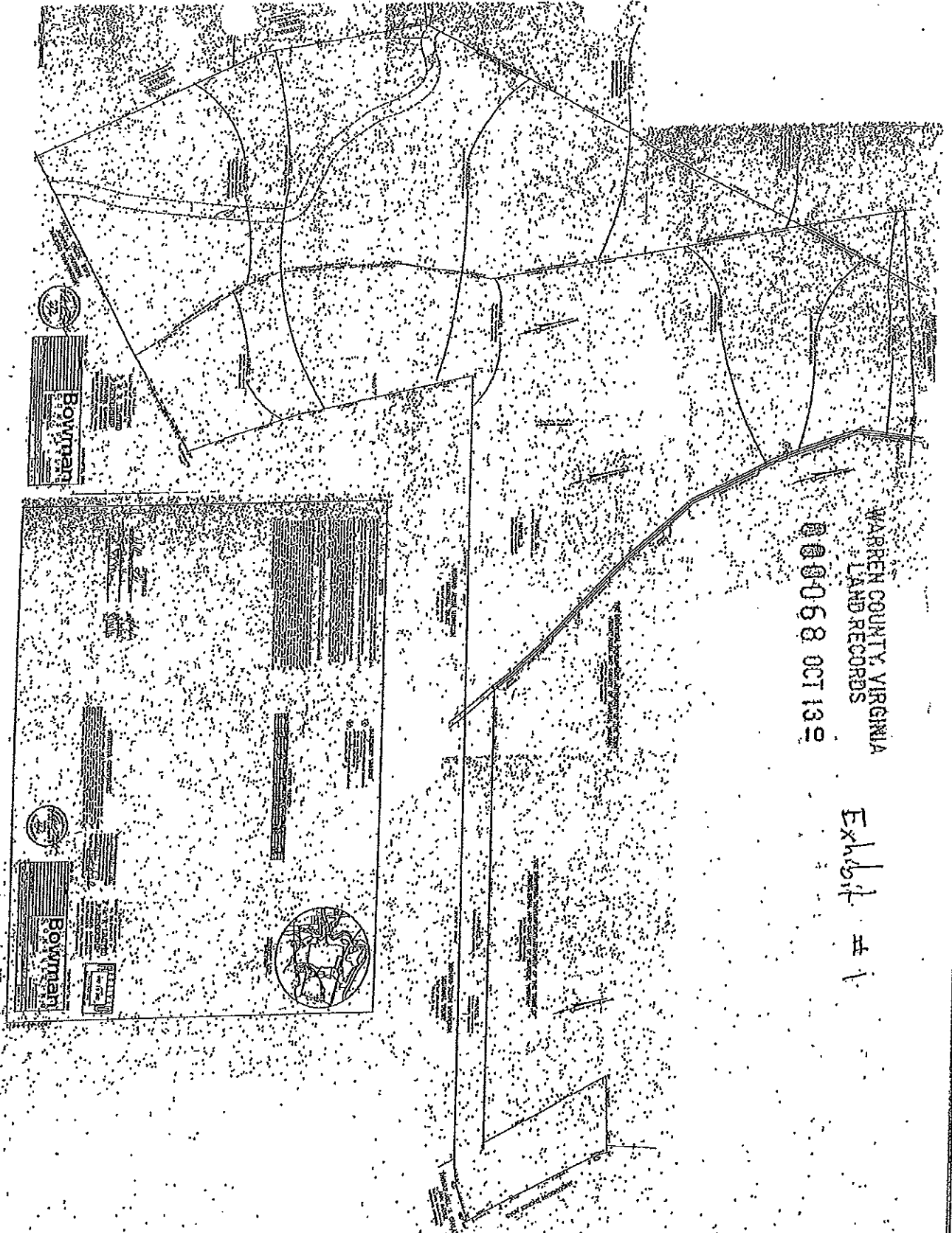
- 19.1. Monetary contributions as set forth in this Proffer Statement that are paid to the Town of Front Royal and/or Warren County after 24 months from the date of rezoning approval shall be adjusted in accordance with the Urban Consumer Price Index ("CPI-U"), as published by the United States Department of Labor. The adjustment shall be calculated from the CPI-U published most nearly to and following January 1st from that date 24 months after rezoning approval and the date the contributions are paid, subject to a cap of 3% per year, non-compounded.

SIGNATURES APPEAR ON THE FOLLOWING PAGE

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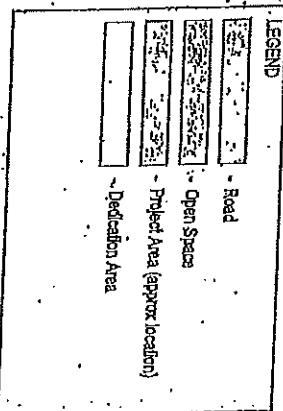
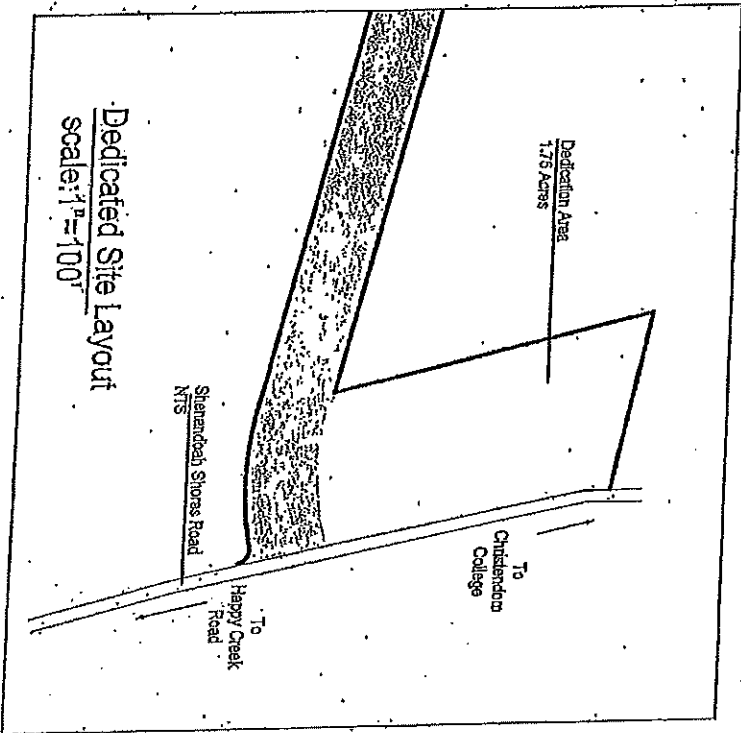
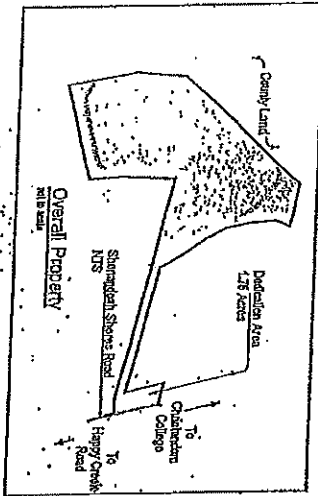
Exhibit # 1



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Front Royal Limited Partnership
Rezoning
Proffer Exhibit # 2



Map	Scale	1" = 100'
Project Name	Front Royal Limited Partnership	
Project Location	Stemands Shores Road	
Project Area	1.75 Acres	
Project Owner	Front Royal Limited Partnership	
Project Status	Rezoning	
Project Date	10/13/2013	

Project Name	Front Royal Limited Partnership
Project Location	Stemands Shores Road
Project Area	1.75 Acres
Project Owner	Front Royal Limited Partnership
Project Status	Rezoning
Project Date	10/13/2013

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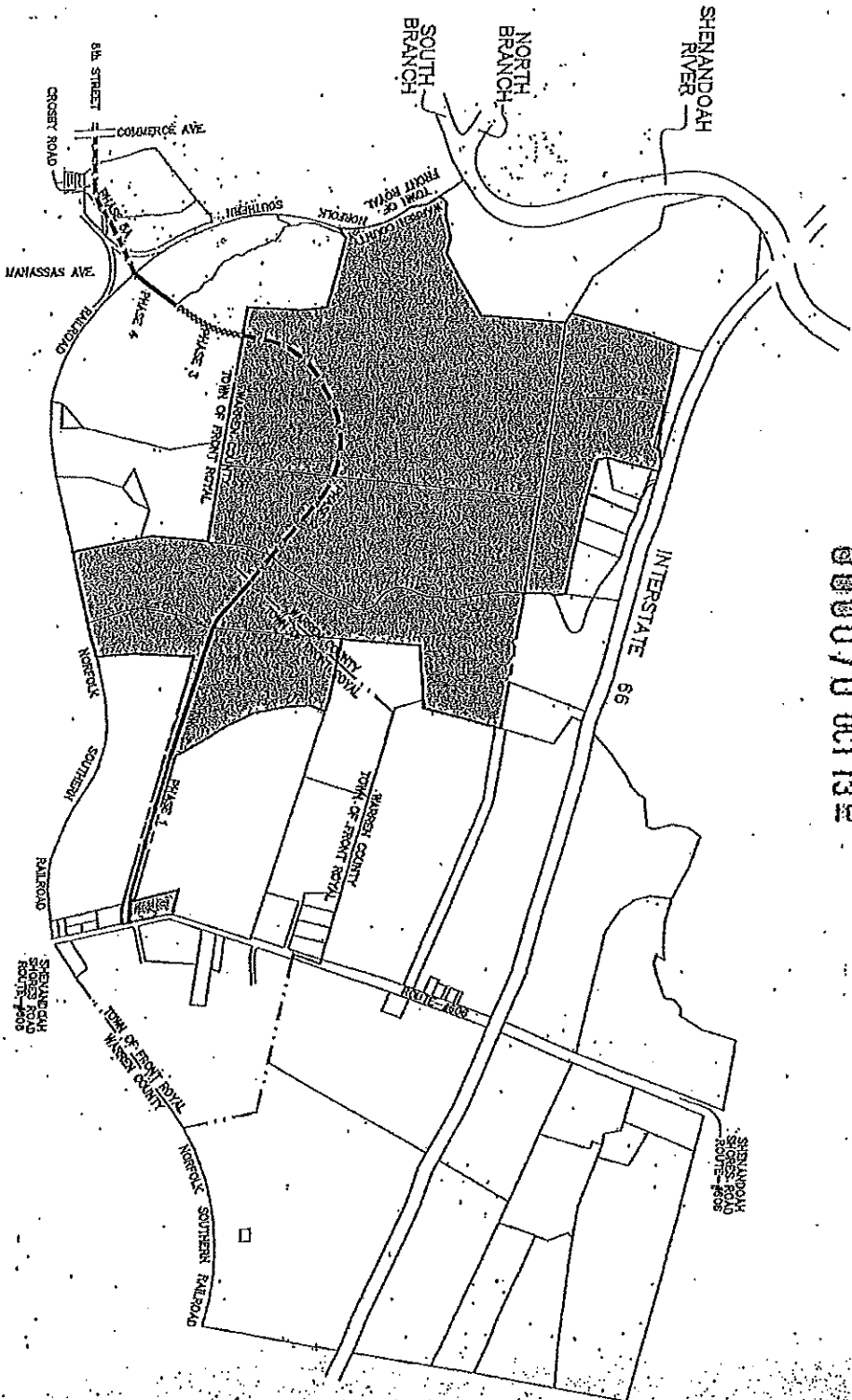


EXHIBIT #3

CROSS CONNECTOR ROAD

SEPTEMBER 4, 2009
Revised 12-02-09

SCALE: 1" = 100'



PREPARED BY:

12200 S. 15th Street
Farmingdale, NY 11735
716-353-1500
www.zengr.com

FOR INFORMATIONAL PURPOSES ONLY

OWNER:

FRONT ROYAL LIMITED PARTNERSHIP,
a Virginia Limited Partnership

By: MVA Limited Partnership, general partner of
Front Royal Limited Partnership

By: DOC Corporation, general partner of MVA
Limited Partnership

By:

David A. Vazzana, President of
DOC Corporation

Date:

10/7/10

City/County of Warren

Commonwealth of Virginia

The foregoing instrument was acknowledged before me this

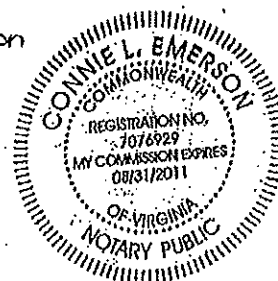
7th day of October, 2010 by DAVID A. VAZZANA

Connie L. Potter
Notary Public

Notary registration number: 7076929

My commission expires: 8/31/2011

I was commissioned
As Connie L. Emerson



INSTRUMENT #100005293
RECORDED IN THE CLERK'S OFFICE OF
WARREN COUNTY ON
OCTOBER 13, 2010 AT 03:05PM

JENNIFER R. SIMS, CLERK
RECORDED BY: AMM

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WARREN COUNTY, VIRGINIA
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MEMORANDUM

TO: JEREMY F. CAMP, DIRECTOR OF PLANNING
FROM: DOUGLAS W. NAPIER, TOWN ATTORNEY *DWN*
DATE: AUGUST 19, 2015
RE: 2010 PROFFERS OF FRONT ROYAL LIMITED PARTNERHIP

ISSUES:

You have asked me a number of related questions concerning the interpretation and validity of the 2010 proffers accompanying the rezoning request of Front Royal Limited Partnership ("FRLP") (RZ09-02-64). These include:

- 1) The validity of the Town paying net moneys to FRLP as a result of the development of the FRLP property in the event of the playing out of factual Scenarios I or 2, as set forth on the attachments which you and your staff projected from the approved 2010 proffers, if FRLP chose to develop to one of those particular factual scenarios;
- 2) The validity of the Town taking moneys from its water and sewer enterprise funds to pay the credits called for in the 2010 FRLP proffers; and
- 3) The almost seemingly impossible-to-resolve ambiguities and uncertainties in understanding the language contained in the 2010 FRLP proffer statements, which even FRLP itself has recently stated "have become untenably confusing to interpret as we have discussed with both [Town] staff and the Planning Commission since 2013".

ANALYSIS:

[This Memorandum will be a sketch of what I will fill out with a more organized scheme of legal authorities and analysis shortly. Despite working on this matter over many hours over the past month, because of the difficulty in understanding the proffer statement on even a rudimentary level, it has taken me until the past couple of days to where I could fashion a coherent legal framework of the legal underpinning of the issues that appear to govern these matters. Some of my legal research, in a somewhat unorganized fashion, is enclosed.]

FIRST: The first point to note is that how many residential units will be developed, and over what period of time, appear to me to be totally within the discretion and control of FRLP, and not the Town. Because of this, the Town has very little control over what it will ultimately receive from these proffers. Conversely, FRLP has a great deal of control over what it can require from the Town. It is almost exactly the opposite of what one would expect from a traditional, typical proffer statement, where a developer "offers" certain things to the local government to offset and mitigate the net impacts and net expenses of the development to the local government and to the community as a whole. Instead, these proffers seem to work more to be designed to offset the impact and expense to FRLP of its development, depending upon the level, degree, and timing of development it might ultimately wish to put in place.

SECOND: The second point to note is the difficulty in determining what the proffer statement means precisely. Part of this is trying to make sense of the notion of FRLP paying cash proffers of \$19,600 per residential unit for each unit in excess of 99 units, but then receiving a dollar for dollar credit against that payment for each tap fee in excess of \$10,000. If this is read to apply to all tap fees up to the total amount of residential units built by FRLP, then the amount of money the Town would ultimately owe back to FRLP would be quite large, as this \$10,000 credit would be owed by the Town to FRLP for each and every single unit built by FRLP, including the units in Phase I.

THIRD: The attached Scenarios 1 and 2 are factual scenarios provided me by the Department of Planning and Zoning.

Note under Scenario 1, if FRLP decided to stop the development at the 99th residential unit, "the Town receives no [cash] proffers and there is no East/West Connector Road under this option. In addition, the Town would subsidize \$495,000 in tap fees [to FRLP to allow it to connect its residential units to Town utilities] and pay FRLP at least \$110,000 for land dedication."

This brings up the point raised in "FIRST", above, that FRLP has full control over how many residential units it wishes to develop. The Town, under the scenario of only 98 residential units being built, would receive nothing, and would be giving FRLP substantial cash and other valuable contributions. This, it seems to me, would violate the Dillon Rule:

As stated often by the courts and the Attorney General, Virginia adheres to the Dillon Rule of strict construction, which provides that local governing bodies "have only those powers that are expressly granted, those necessarily or fairly implied from expressly granted powers, and those that are essential and indispensable."² The powers of a local governing body are limited to those "conferred expressly or by necessary implication."³ Any doubt as to the existence of power must be resolved against the locality.⁴ The Dillon Rule requires a narrow interpretation of all powers conferred on local governments since they are delegated powers. 2004 Va. AG 48.

.” In addition, § 15.2-953(A) clearly permits appropriations of public funds by local governing bodies, but only to charitable institutions or associations “located within their respective limits or outside their limits if such institution or association provides services to residents of the locality.” *Id.* (Va. Code § 15.2-953. **Donations to charitable institutions and associations, volunteer and nonprofit organizations, chambers of commerce, etc....** “A locality may make like gifts, donations and appropriations of money to industrial development authorities for the purposes of promoting economic development.”) FRLP is clearly not a charitable institution or association.

The situation is even more pronounced under attached Scenario 2. Note what the Department of Planning & Zoning has calculated: “Under this scenario with the current proffers, the Town gets the E/W Connector [Road] constructed with a financial loss [to the Town} of approximately 5 million dollars. Worst case scenario, the Town loses 11 ½ million dollars and FRLP covers the cost of the entrance road (4 lanes) required by the Subdivision Ordinance.”

The Attorney General stated in 83-84 Va. AG 133 that local governments Counties have the right to make gifts to certain charitable and eleemosynary organizations by reason of the aforementioned statute; they do not, however, have the right to make gifts to private parties.

It seems to me the overall effect of the 2010 proffers is that, at the sole election of FRLP, FRLP could require the Town, in essence, to pay to FRLP a net sum of money or other things of value; in essence, require the Town to make a gift of money or other things of value to FRLP. I do not think this is legally permissible.

FOURTH: The proffers have been worded so that the proffer contributions paid by FRLP would be placed in a third party escrow account and be paid over to FRLP “to reimburse it for the actual audited cost of the engineering, design, and construction of the Phase 2 through 4 improvements.” This is frightening wording. Does “improvements” mean “residential units” as well as the cost of the East/West Connector Road, the water and sewer tap fees, sidewalks, and all the other miscellaneous costs? Whatever it means, it certainly seems the Town will be making gifts to FRLP, and this would seem to be the making of impermissible gifts.

My opinion, from everything I have seen and been to interpret, is the 2010 proffers are, by the admission of FRLP itself, “untenably confusing to interpret”. They are also work to provide FRLP, at the option of FRLP, with impermissible gifts to it from the Town (and its taxpayers), and is contrary to public policy.

Because of the unusually convoluted and confusing wording of these proffers, and the significance of the issues presented, both to the Town and to FRLP, I think it would be advisable for the Town to seek a second opinion, either from the Office of the Attorney General, from outside counsel, or both. Prior to doing that, I would like to flesh out my own written opinion over the next week or so, so as to make it a more finished product.

SCENARIO 1**IF THE TOWN DOESN'T BUILD PHASE 5 OF THE E/W CONNECTOR**

(THIS WOULD RELIEVE FRLP FROM THE OBLIGATION OF BUILDING PHASES 2 – 4 OF THE E/W CONNECTOR)

Houses 1 – 99 (99)

Financial Analysis	Cash Proffers Paid	0.00 - First 99 houses exempt from paying per unit cash proffer.
	Financial Losses	[\$605,000] - \$495,000 Tap Fee Subsidy Given to FRLP based on amount over 10K, which is currently approximately 5K (5K x 99); plus \$110,000 minimum estimated credit for 1.75-2.0 acre land dedication along Shenandoah Shores Road. If the tap fees increase this credit will increase.
	Proposed Changes	No change.
Road Infrastructure Analysis	Currently	A 2-lane entrance road off of Shenandoah Shores Road to a point selected by FRLP by the 75 th house.
	Proposed Changes	No change.

If development stops at 99th house the Town receives no proffers and there is no East/West Connector Road under this option. In addition, the Town would subsidize \$495,000 in tap fees and pay FRLP at least \$110,000 for land dedication.

Houses 100 – 320 (221)

Financial Analysis	Cash Proffers Paid	\$4,331,600 - Less if fewer houses built.
	Financial Losses	[\$1,230,000] \$1,105,000 Tap Fee Subsidy Given to FRLP based on amount over 10K, which is currently approximately 5K (5K x 221); plus \$462,500 minimum estimated credit for Phase 2 E/W Connector right-of-way dedication (Could occur sooner, at least by the 200 th permit). If the tap fees increase this credit will increase.
	Proposed Changes	No change.
Road Infrastructure Analysis	Currently	A 2-lane entrance road off of Shenandoah Shores Road to a point selected by FRLP by the 75 th house.
	Proposed Changes	No change.

A net of 3,101,600 in per unit cash proffers could be used towards Leach Run Parkway, Phase 2, based on full-build out. Pursuant to Virginia Code § 15.2-2303.2 these funds would need to be used by 12 years or the funds go the Commonwealth Transportation Board.

IF THE TOWN DOES BUILD PHASE 5 OF THE E/W CONNECTOR*(THIS WOULD REQUIRE FRLP TO BUILD PHASES 2 – 4 OF THE E/W CONNECTOR)***Houses 1 – 99 (99)**

Financial Analysis	Cash Proffers Paid	0.00 - First 99 houses exempt from paying per unit cash proffer.
	Financial Losses	[\$605,000] - \$495,000 Tap Fee Credit accumulated by FRLP based on amount over 10K, which is currently approximately 5K (5K x 99); plus \$110,000 minimum estimated credit for 1.75-2.0 acre land dedication along Shenandoah Shores Road. If the tap fees increase this credit will increase.
	Proposed Changes	The draft revised proffer removes this scenario entirely. The language of the proffers is not clear if the tap fee credit would apply if the Town does require FRLP to build the E/W Connector. If it does not, the draft revised language of the proffers proposes the removal of language in this section. The removal of this language would clarify that the tap fee credit applies regardless if the Town requires FRLP to build Phases 2 – 4.
Road Infrastructure Analysis	Currently	A 2-lane entrance road off of Shenandoah Shores Road to a point selected by FRLP by the 75 th house.
	Proposed Changes	<u>This scenario is proposed for removal.</u>

Under the current proffers of this scenario, if the tap fee credits apply to this scenario, if development stops at 99th house the Town receives no proffers and there is no East/West Connector Road under this option. In addition, FRLP would have a credit of \$495,000 from tap fee overpayment and the Town would have to pay FRLP at least \$110,000 for land dedication. This option is proposed for removal.

Houses 100 – 320 (221)

Financial Analysis	Cash Proffers Paid	\$4,331,600 - Less if fewer houses built.
	Financial Losses	[\$5,226,600 - 11,593,400] \$1,105,000 Tap Fee Credit given to FRLP based on amount over 10K, which is currently approximately 5K (5K x 221); plus \$462,500 minimum estimated credit for Phase 2 E/W Connector right-of-way dedication (Could occur sooner, at least by the 200 th permit); plus \$6,563,400, the amount of the cost of the E/W Connector after Tap Fee Credits and Cash Proffers Paid based on a 12 million dollar cost; plus \$462,500 a rough guess at the value of land lost by the Town donating the Town property for ROW; plus 3 million, an estimated cost for construction of Phase 5, including the railroad crossing.
	Proposed Changes	<u>This scenario is proposed for removal.</u>
Road Infrastructure Analysis	Currently	The E/W Connector, with a varying number of lanes between 2 and 4.
	Proposed Changes	<u>This scenario is proposed for removal.</u>

Under this scenario with the current proffers, the Town gets the E/W Connector constructed with a financial loss of approximately 5 million dollars. Worst case scenario, the Town loses 11 ½ million dollars and FRLP covers the cost of the entrance road (4 lanes) required by the Subdivision Ordinance.

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**Town of Front Royal, Virginia
Council Agenda Statement**

Page 1
Item No. 10

Meeting Date: February 12, 2018

Agenda Item: PUBLIC HEARING – Ordinance Amendment to Town Code Chapter 9 BUILDINGS, Including Provisions for the Adoption of Part III, Maintenance Code (*1st Reading*)

Summary: Council is requested to affirm on its first reading a draft Ordinance Amendment to Town Code Chapter 9, including provisions for the adoption of Part III, Maintenance Code, of the Virginia Uniform Building Code, applicable to the entire Town, as presented. The optional rental inspection district program is not proposed. Specific changes to the Town Code include the removal of 9-1 and 9-2, and the addition of 9-100, 9-200, 9-300 *Reserved*, 9-400, 9-401, 9-402, 9-403, 9-404 through 9-409, and 9-410.

Budget/Funding: None

Attachments: Ordinance

Meetings: Work Sessions held January 2 and February 5, 2018.

Staff

Recommendation: Approval ✓ Denial _____

Proposed Motion: I move that Council affirm on its first reading a draft Ordinance Amendment to Town Code Chapter 9, including provisions for the adoption of Part III, Maintenance Code, of the Virginia Uniform Building Code, applicable to the entire Town, as presented.

ROLL CALL VOTE REQUIRED

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: JW

DRAFT AMENDMENT
“Building Code & Maintenance Code” (4)

This draft amendment to the Town Code proposes the adoption of the Virginia Maintenance Code (2012); establishment of a Property Maintenance Code Official. It does not propose a Residential Rental Inspection District. The following language also includes the existing provisions of Chapter 9 and language that reserves the Town’s right to establish a Building Department and designates Warren County to administer the building code, as previously established by an agreement in 1983, until such time that the Town may establish a building department.

START -----

Chapter 9

BUILDINGS BUILDING CODE & MAINTENANCE CODE

9-1 ~~REMOVAL, REPAIR, ETC., OF CERTAIN BUILDINGS AND STRUCTURES~~
[remove in full]

**9-2 REMOVAL, REPAIR, ETC., OF BUILDINGS AND OTHER STRUCTURES
HARBORING ILLEGAL DRUG USE**
[relocate to Chapter 145-4 in full]

ARTICLE 1: BUILDING CODE REGULATIONS

9-100 BUILDING CODE

A. In accordance with the Code of Virginia § 36-105, the Town of Front Royal hereby reserves its authority to establish a Town Building Department, and a Local Board of Building Code Appeals (LBBCA), herein referred to generally as the “Board of Appeals,” to administer and enforce the mandatory provisions of the Virginia Uniform Building Code, including Part I, Construction Code, Part II, Rehabilitation Code, and including future amendments thereto, and all codes incorporated by reference therein. Such codes shall generally be referred to herein generally as the “Building Code.”

B. Under the provisions of this Chapter, Town Council may elect to pass a resolution to officially establish a Town Building Department to administer and enforce the Building Code. Such resolution shall also include the establishment of a Board of

Appeals, as described further herein. Upon adoption of such resolution of Town Council the Town hereby adopts the Building Code, and all such duties and requirements specified therein.

C. Until such time that the Town elects to establish a Town Building Department and Town Board of Appeals, the Town shall enter into an agreement with the local governing body of another county or municipality or with some other agency, or an approved state agency for such administration, enforcement and appeals resulting therefrom.

(1) The February 8, 1983 agreement with Warren County shall remain in effect at the passing of this ordinance until such time that the agreement is terminated, renewed or amended. This agreement establishes Warren County as the Building Department for the Town, including the Warren County Board of Building Code Appeals as the appeals board for the Town.

D. At such time that Town Council may establish a Building Department and Board of Appeals, the Town Manager shall appoint a Building Official to administer and enforce the Building Code. Such Building Official shall meet the required qualification and certification requirements, and shall maintain all permanent records of the Building Department, including applications received, permits, certificates, notices and orders issued, fees collected and reports of inspection in accordance with the Library of Virginia's General Schedule Number Six. The Building Official shall administer and enforce the Building Code, and may establish procedures and policies as may be necessary for such administration and enforcement. All codes and procedures shall be made available for the public to view and/or obtain copies from the office of the Building Official during established normal business hours.

E. As specified under Subsection B, Town Council shall appoint five (5) members to a Board of Appeals upon adoption of a Town Building Department. The membership of the Board shall be established in compliance with the following requirements, unless more stringent requirements are required by the Building Code.

(1) All members of the Board of Appeals shall live within Warren County, Virginia, and at least three (3) members shall reside within the Town.

(2) Town Council may appoint two (2) alternate members who shall be called by the board chair to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership.

(3) Members shall be selected on the basis of their ability to render fair and competent decisions regarding application of the USBC and shall to the extent possible, represent different occupational or professional fields relating to the construction industry. At least one member should be an experienced builder; at least one member should be an RDP, and at least one member should be

an experienced property manager. Employees or officials of the locality shall not serve as members of the LBBCA.

(4) No employee or official of the Town may serve as a Board Member.

(5) Compensation, meeting dates, voting procedures, officers, term limits and other procedures of the Board of Appeals shall be established in by-laws that are approved by Town Council.

(6) The Board of Appeals shall be used as the appeals board for the Virginia Maintenance Code, and if applicable in the future, appeals of the Fire Marshal and for and adopted Rental Inspection Program.

ARTICLE 2: MAINTENANCE CODE REGULATIONS

9-200 ADOPTION OF MAINTENANCE CODE

A. To ensure the protection of the public health, safety and welfare, the Town hereby adopts the optional provisions of the Virginia Uniform Building Code, including Part III, Virginia Maintenance Code, future amendments thereto, and including codes incorporated by reference therein, herein also generally referred to generally as the "Maintenance Code," as related to building regulations that facilitate the maintenance, rehabilitation, development and reuse of existing buildings at the least possible cost to ensure the protection of the public health, safety and welfare of Town residents. Furthermore, in accordance with §36-99 of the Code of Virginia, the purpose of this code is to protect the health, safety and welfare of the residents of the Commonwealth of Virginia, provided that buildings and structures should be permitted to be maintained at the least possible cost consistent with recognized standards of health, safety, energy conservation and water conservation, including provision necessary to prevent overcrowding, rodent or insect infestation, and garbage accumulation; and barrier-free provisions for the physically handicapped and aged.

B. The Town Manager shall appoint a Maintenance Code Official to administer and enforce the Virginia Maintenance Code. The Maintenance Code Official shall meet the required qualifications, certification requirements, and training requirements as required by the Building Code for administration and enforcement of the Maintenance Code. All codes, policies and procedures shall be made available for the public to view and/or obtain copies from the office of the Maintenance Code Official during established normal business hours.

C. The Town shall appoint a Board of Appeals to consider all appeals that may arise from the provisions of this Article. Such Board of Appeals shall be established under the criteria found within Chapter 9, Section 100, Subsection E. Alternatively, the Town may elect to use the Board of Appeals used by another county or municipality, or with some other agency, provided that an agreement is

entered into with the appropriate local government board, or an approved state agency.

9-300 Reserved.

ARTICLE 3: GENERAL

9-400 NONLIABILITY OF PERSONNEL ENFORCING CHAPTER.

Nothing in this chapter or in any code adopted by this chapter shall be construed as imposing upon any Town officer or employee duly authorized to administer or enforce the provisions of this chapter any liability or responsibility for damages to any person injured by a defect in any building construction or other work mentioned herein, or by the installation thereof, nor shall the Town government or any official or employee thereof be held as assuming any such liability or responsibility by reason of inspections authorized by this chapter or certificates of approval issued by the building official or property maintenance code official.

9-401 VIOLATIONS & PENALTIES

A. It shall be unlawful for any owner or any other person, firm or corporation, to violate any provision of this chapter, including all applicable codes that are referenced in the Building Code.

B. Penalties for violations of this chapter shall be as set out in § 36-106 of the Code of Virginia. The successful prosecution of a violation of the code shall not preclude the institution of appropriate legal action to require correction or abatement of a violation.

C. Upon findings by Building Code that violations of the Building Code exist; or Maintenance Code Official, upon findings of violation of the Maintenance Code, a correction notice or notice shall be issued to the owner or the person responsible for the maintenance of the structure.

D. Work done to correct violations of this code, subject to the permit, inspection and approval provisions of the Virginia Uniform Building Code, Part I, Construction Code, shall not be construed as authorization to extend the time limits established for compliance with the Building Code.

E. Prosecution under this section shall be commenced within the time specifications provided under Virginia Code § 19.2-8.

9-402 PERMIT FEES.

A. Town Council reserves the right to adopt and publish a schedule of fees for services rendered by either the Building Code Official and/or Maintenance Code Official, and

to amend the schedule by separate resolution. Such schedule of fees and any amendment shall be in lieu of any permit fees set forth in any technical code adopted by the Town.

- B. No permit as required by the Town by ordinance or regulation shall be issued unless the fee prescribed for the service shall have been paid, nor shall any amendment to such a permit be approved until any additional fee, if any, due to an increase in the estimated cost of the building or structure, shall also have been paid.

9-403 AUTHORITY TO REQUIRE REMOVAL, REPAIR, ETC., OF BUILDING AND OTHER STRUCTURES.

- A. Owners of real property within the Town shall remove, repair or secure any building, wall or any other structure which might endanger the public health or safety of other residents of the Town.

- B. If an owner fails to do so, the building official may send the owner notice of his or her obligations under this section. Such notice shall be:

(1) In writing, mailed by certified mail, return receipt requested, sent to the last known address of the property owner; and

(2) Published in a newspaper having general circulation in the locality in accordance with the applicable provisions of Code of Virginia §§ 15.2-1426, 15.2-1427.

- C. The Town, through its own agents or employees, may remove, repair or secure any building, wall or any other structure which might endanger the public health or safety of other residents of the Town if the owner and lien holder of the property fails to do so within thirty (30) days following the later of the return of the certified mail receipt or newspaper publication. However, if the structure is deemed to pose a significant threat to public safety and such fact is stated in the notice, the Town may take action to prevent unauthorized access to the building within seven days of such notice. Repair of the structure may include maintenance work to the exterior of a building to prevent deterioration of the building or adjacent buildings.

- D. In the event the Town, through its own agents or employees removes, repairs or secures any building, wall or any other structure pursuant to this section, the cost or expenses thereof shall be chargeable to and paid by the owners of such property and may be collected by the Town as taxes and levies are collected.

- E. Every charge authorized by this section which remains unpaid shall constitute a lien against such property ranking on a parity with liens for unpaid local taxes and enforceable in the same manner as provided Code of Virginia (1950), Title 58.1, Chapter 39, Articles 3 and 4, as amended.

- F. The remedies provided by this section are in addition to, and not in lieu of, any other remedy provided by general law or by the Building Code.

9-404 THROUGH 9-409. Reserved**9-410 DEFINITIONS.**

In addition to the definitions of the Building Code, 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:

Building Code means the applicable provisions of the Virginia Uniform Building Code, Part I, Construction Code, and Part II, Rehabilitation Code, and Part III, Maintenance Code, to be collectively known as the Building Code, including future amendments thereto, and all codes incorporated by reference therein.

Building Code Official means the person that is employed, contracted, or designated with an agreement from another county, municipality or other agency, that has been appointed by the Town to administer and enforce the applicable provisions of the Building Code, as defined herein.

Day means a calendar day.

Maintenance Code means the applicable provisions of the Virginia Uniform Building Code, Part III, Maintenance Code, and all codes incorporated by reference therein.

Maintenance Code Official means the person that is employed, contracted, or designated with an agreement from another county, municipality or other agency, that has been appointed by the Town to administer and enforce the applicable provisions of the Maintenance Code, as defined herein.

-----END

Editorial Notes: All language shown in yellow highlight is proposed new text. Text shown in [brackets] is a note to the editor. All language shown in ~~striketrough~~ is existing language that is proposed to be removed. Regular text shown is existing language with no changes proposed.

Drafted 01/16/18 (JFC), 1/17/18 (JFC), 1/23/18 (JFC/DB)

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Town of Front Royal, Virginia Council Agenda Statement

Page 1
Item No. 11

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPROVAL – Release of Development Sureties and Acceptance of Infrastructure for Happy Creek Knolls Section 3 and Oden Ridge Section 1 – Ramsey Inc. – Chris Ramsey

Summary: Council has received a request from Ramsey, Inc. c/o Chris Ramsey to accept the public infrastructure with Happy Creek Knolls, Section 3 and Oden Ridge, Section 1 and release the development sureties for the projects. Town Staff has inspected both projects and has determined that the required site improvements for the subdivisions have been completed. The required as-builts are attached. In accordance with the Town and State Code, the Town is required to release development sureties upon completion of the required public improvements by the developer.

Budget/Funding: None

Attachments: Memo from the Director of Planning and Zoning and As-Builts

Meetings: None

Staff

Recommendation: Approval ✓ Denial _____

Proposed Motion: I move that Council approve the Release of Development Sureties and Acceptance of Public Infrastructure for Happy Creek Knolls Section 3 and Oden Ridge Section 1 for Ramsey Inc. c/o Chris Ramsey.

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: *JW*



TOWN OF FRONT ROYAL
DEPARTMENT OF PLANNING & ZONING
Memorandum

To: Joe Waltz, Town Manager
Cc: Jimmy Hannigan, Director of Public Works
Tina Presley, Executive Assistant
From: Jeremy F. Camp, Director of Planning & Zoning
Date: February 6, 2018
Re: Happy Creek Knolls, Section 3 and Oden Ridge, Section 1

ISSUE:

Ramsey Inc. has requested that the Town accept the public infrastructure within Happy Creek Knolls, Section 3 and Oden Ridge, Section 1, and release the development sureties for the projects.

DISCUSSION:

Oden Ridge, Section 1, includes 76 single-family detached residential lots on Ewell Street, Oden Street, Ashby Street and Wright Street. Happy Creek Knolls, Section 3, which is adjacent to Oden Ridge, Section 1, includes 27 single-family detached residential lots on Imboden Street and Ewell Street.

At this time, Town Staff has inspected both Oden Ridge, Section 1, and Happy Creek Knolls, Section 3, and determined that the required site improvements for the subdivision have been completed. The required as-builts were submitted and are attached with this memo.

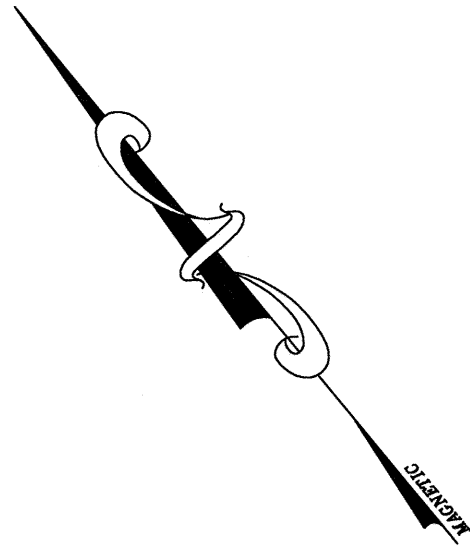
The following development sureties are presently held by the Town. In accordance with the Town and State Code, the Town is required to release these funds upon completion of the required public improvements by the developer.

- Letter of Credit in the amount of \$364,910.00 by First Bank for Oden Ridge, Section 1.
- Letter of Credit in the amount of \$19,396.12 by United Bank for Happy Creek Knolls, Section 3.

RECOMMENDATION:

Staff recommends acceptance of the public improvements for Oden Ridge, Section 1, and Happy Creek Knolls, Section 3, followed by the release of the letter of credits. Pursuant to Town Code, this requires approval by Town Council due to the amount of the development sureties.

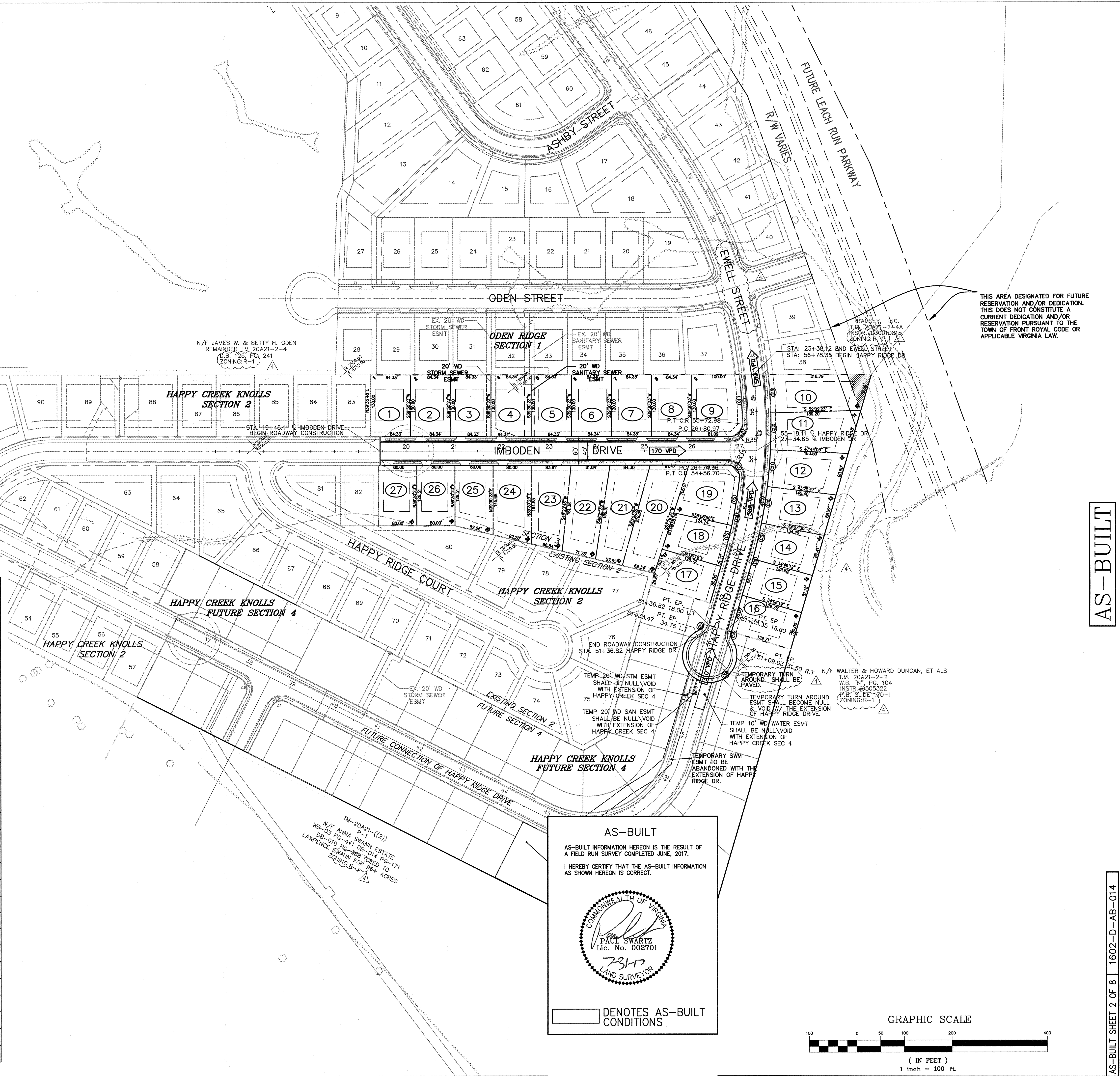
ATTACHMENT: As-Built Drawings



CURVE NO.	RADIUS	ARC	DELTA	TANGENT	CHORD	CH. BRG.
①	970.00'	105.13'	06°12'36"	52.62'	105.08'	N36°11'06"E
②	25.00'	39.36'	90°12'59"	25.09'	35.42'	S84°23'54"W
③	25.00'	42.09'	96°28'00"	27.99'	37.29'	S02°15'37"E
④	970.00'	167.97'	09°55'18"	84.20'	167.76'	S50°56'02"W
⑤	970.00'	100.36'	05°55'41"	50.22'	100.31'	S48°56'14"W
⑥	970.00'	67.61'	03°59'38"	33.82'	67.60'	S53°53'53"W
⑦	1030.00'	403.38'	22°26'20"	204.31'	400.81'	N44°40'31"E
⑧	1030.00'	12.85'	00°42'53"	6.42'	12.85'	S55°32'15"W
⑨	1030.00'	77.39'	04°18'18"	38.71'	77.37'	S53°01'39"W
⑩	1030.00'	77.39'	04°18'18"	38.71'	77.37'	S48°43'21"W
⑪	1030.00'	77.39'	04°18'18"	38.71'	77.37'	S44°25'04"W
⑫	1030.00'	77.39'	04°18'18"	38.71'	77.37'	S40°06'46"W
⑬	1030.00'	80.98'	04°30'16"	40.51'	80.96'	S35°42'29"W
⑭	1000.00'	394.81'	22°37'16"	200.01'	392.26'	S44°35'03"W
⑮	1000.00'	234.58'	13°26'25"	117.83'	234.04'	S49°10'29"W
⑯	1000.00'	160.24'	09°10'51"	80.29'	160.07'	S37°51'51"W

ADJACENT OWNERS TABULATION

OWNER NAME	TAX MAP NUMBER	SUBDIVISION / BLOCK REFERENCE	LOT NUMBER
N/F WALTER & HOWARD DUNCAN, ET ALS	T.M. 20A21-2-2		
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A21-2-3		
N/F JAMES W. & BETTY H. ODEN	REMAINDER T.M. 20A21-2-4		
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A21-2-4D		
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-57	HAPPY CREEK KNOLLS SECTION TWO	57
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-58	HAPPY CREEK KNOLLS SECTION TWO	58
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-64	HAPPY CREEK KNOLLS SECTION TWO	64
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-65	HAPPY CREEK KNOLLS SECTION TWO	65
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-66	HAPPY CREEK KNOLLS SECTION TWO	66
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-67	HAPPY CREEK KNOLLS SECTION TWO	67
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-68	HAPPY CREEK KNOLLS SECTION TWO	68
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-69	HAPPY CREEK KNOLLS SECTION TWO	69
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-70	HAPPY CREEK KNOLLS SECTION TWO	70
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-71	HAPPY CREEK KNOLLS SECTION TWO	71
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-72	HAPPY CREEK KNOLLS SECTION TWO	72
N/F KRISTI N & BRIAN C COONS	T.M. 20A213-2-73	HAPPY CREEK KNOLLS SECTION TWO	73
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-74	HAPPY CREEK KNOLLS SECTION TWO	74
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-75	HAPPY CREEK KNOLLS SECTION TWO	75
N/F KRISTI N & BRIAN C	T.M. 20A213-2-76	HAPPY CREEK KNOLLS SECTION TWO	76
N/F GREG COONS	T.M. 20A213-2-77	HAPPY CREEK KNOLLS SECTION TWO	77
N/F ELEANOR & KENT COONS	T.M. 20A213-2-78	HAPPY CREEK KNOLLS SECTION TWO	78
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-79	HAPPY CREEK KNOLLS SECTION TWO	79
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-80	HAPPY CREEK KNOLLS SECTION TWO	80
N/F RICHMOND AMERICAN HOMES	T.M. 20A213-2-82	HAPPY CREEK KNOLLS SECTION TWO	82
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A213-2-83	HAPPY CREEK KNOLLS SECTION TWO	83
N/F RAMSEY, INC. A VIRGINIA CORPORATION	T.M. 20A212-4D		
N/F SWAN LLC	T.M. 20A212-1		

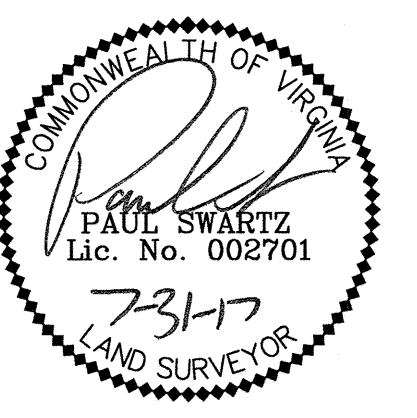


AS-BUILT

AS-BUILT

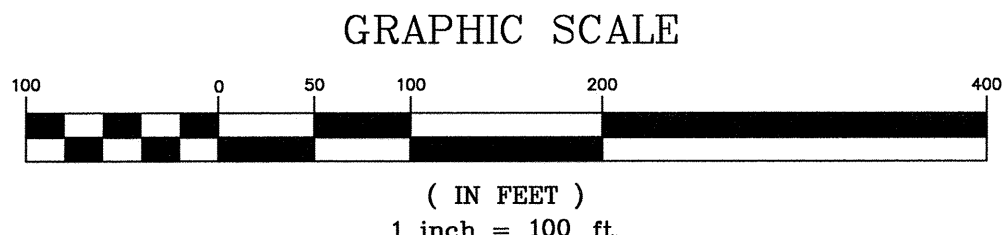
AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED JUNE, 2017.

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.



731-17 LAND SURVEYOR

□ DENOTES AS-BUILT CONDITIONS



AS-BUILT SHEET 2 OF 8 1602-D-AB-014

Bowman
CONSULTING

Bowman Consulting Group, Ltd.
Winchester Office
124 East Cook Street
Winchester, Virginia 23301
Phone: (540) 722-2443
Fax: (540) 722-5980
www.bowmanconsulting.com
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GEOMETRIC LAYOUT PLAN
FOR
HAPPY CREEK KNOLLS SECTION 3
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA

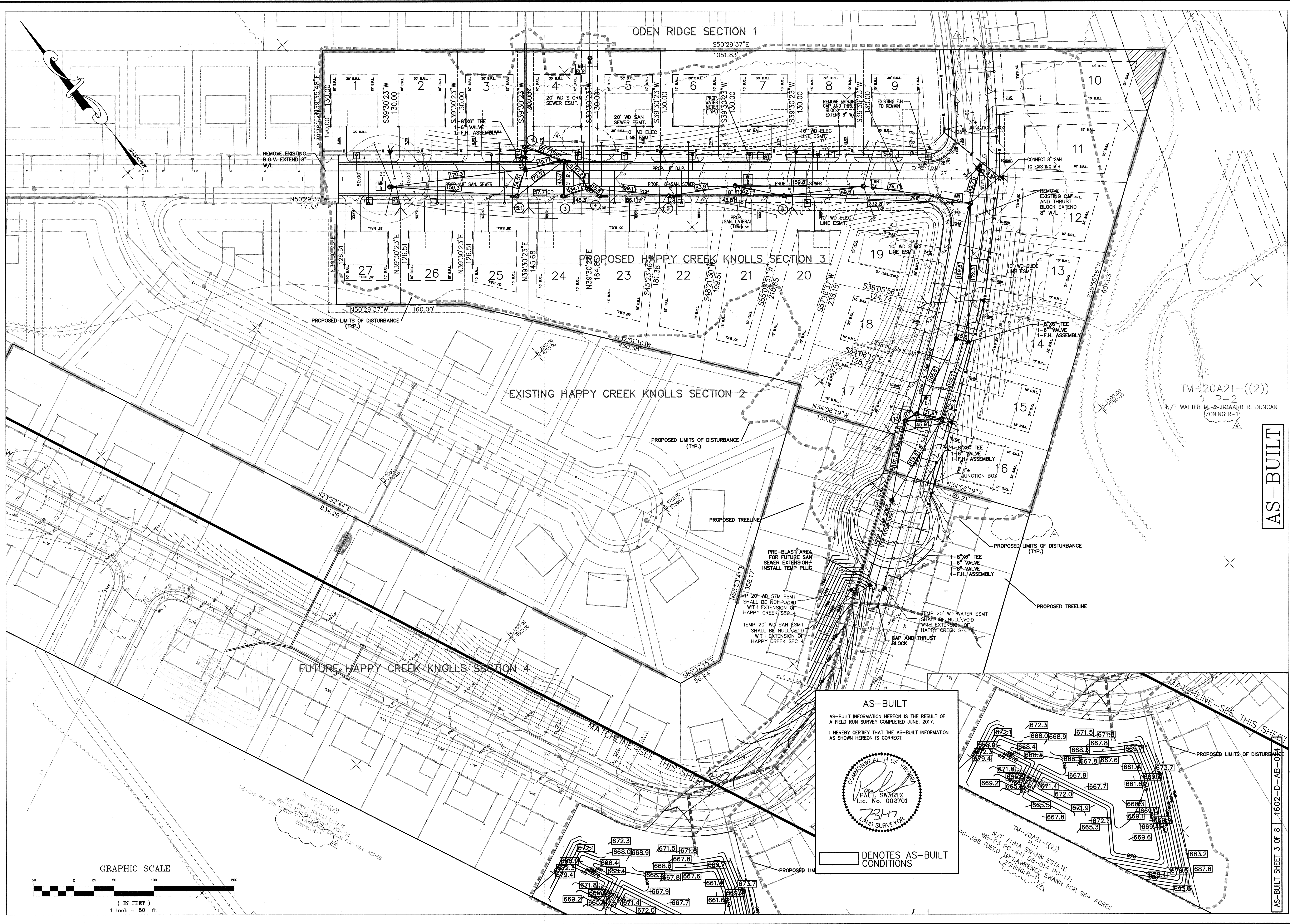
COMMONWEALTH OF VIRGINIA
JON KYLE BRICKSON
Lic. No. 002355
PROFESSIONAL ENGINEER

REVISIONS

8-15-05	PER TOWN COMMENTS
11-17-05	DATE ONLY
3-19-07	PER TOWN COMMENTS
	3/13/07 LETTER
04-26-07	REV. LOT NO.'S PER P.C. COMMENTS

DATE	DESCRIPTION	
DR	JGT	CAR
DESIGN	DRAWN	CHKD
SCALE	HORIZ. 1"=100'	VERT. N/A
JOB No. 1602-02-008		
DATE FEB. 21, 2005		
FILE No. 1602		

SHEET 5 OF 21



AS-BUILT

AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED JUNE, 2017.

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

PAUL SWARTZ
Lic. No. 002701
7347
LAND SURVEYOR

□ DENOTES AS-BUILT CONDITIONS

Bowman
CONSULTING

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Winchester, Virginia 22601
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UTILITY PLAN
FOR
HAPPY CREEK KNOLLS SECTION 3
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA

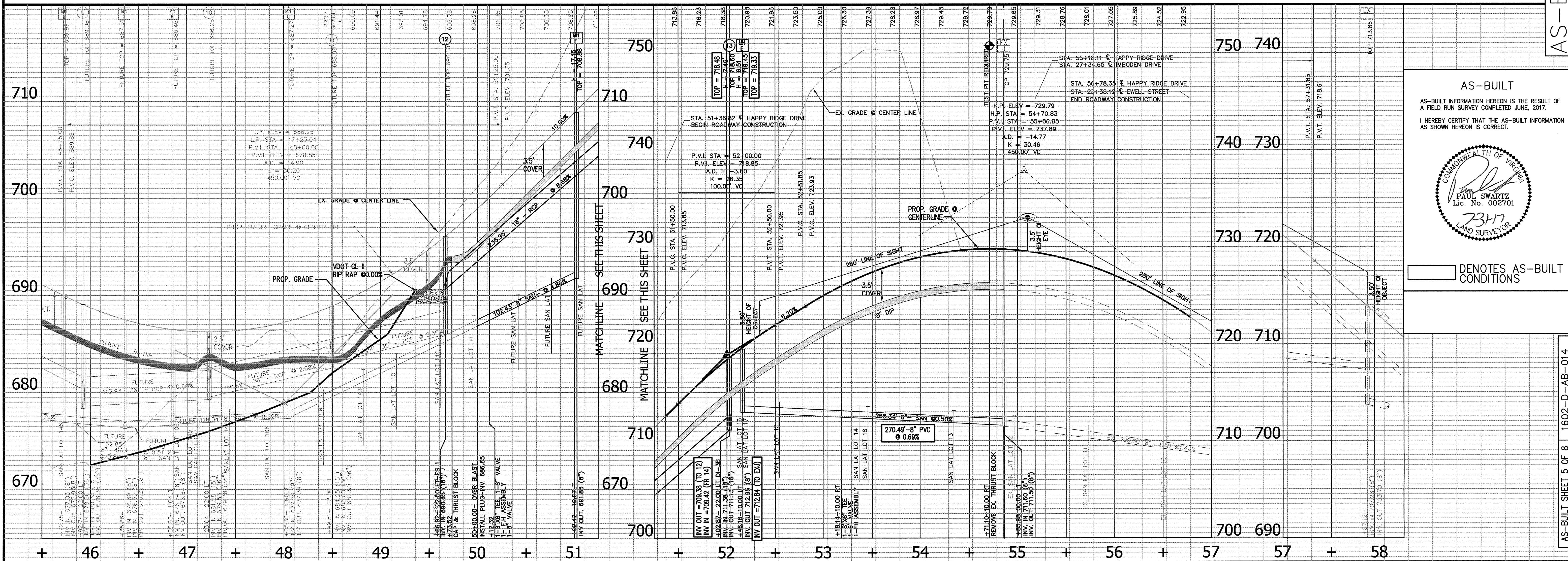
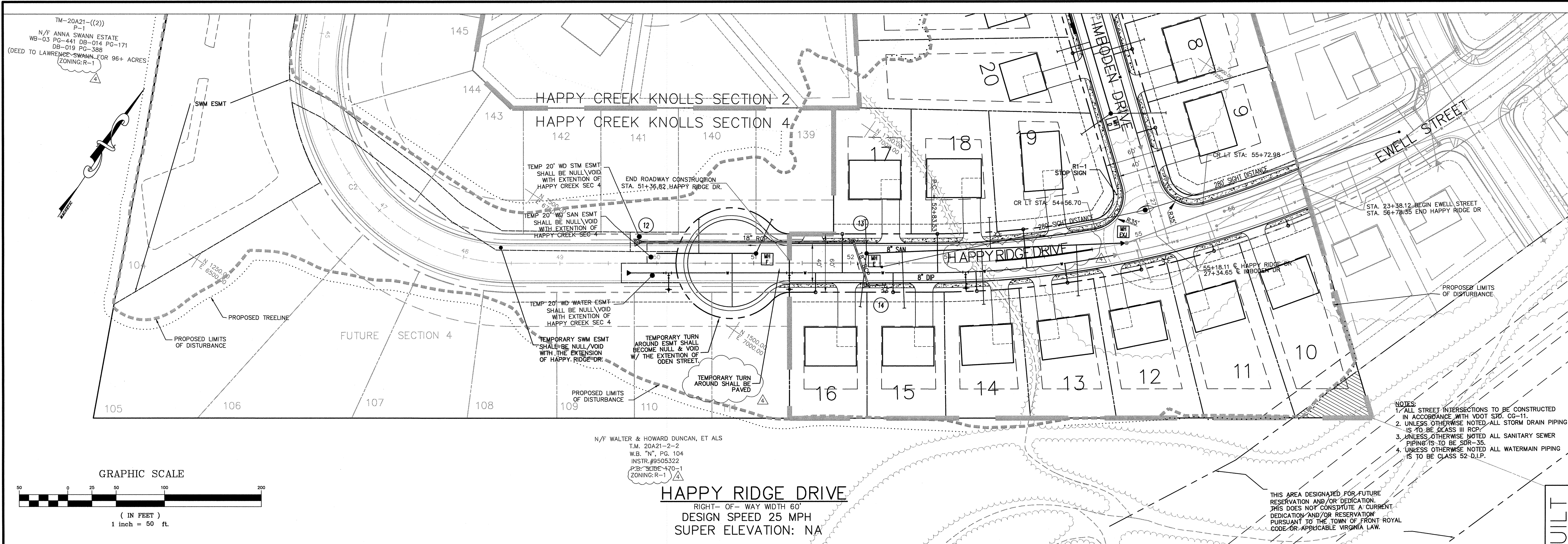
DAVID FRANK
No. 007061
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF VIRGINIA

REVISIONS

DATE	DESCRIPTION
DR	JGT CAR
DESIGN	DRAWN CHKD
SCALE	HORIZ. 1"=50'
	VERT. N/A
JOB No.	1602-02-008
DATE	FEB. 21, 2005
FILE No.	1602

AS-BUILT SHEET 3 OF 8 1602-D-AB-04

SHEET 5 OF 21



Bowman
CONSULTING

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Winchester, Virginia 22601
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PLAN & PROFILE
HAPPY RIDGE DRIVE
HAPPY CREEK KNOLLS SECTION 3
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA

AS-BUILT

COMMONWEALTH OF VIRGINIA
JON KYLE BRICKSON
Lic. No. 0303355
PROFESSIONAL ENGINEER

REVISIONS

DATE	DESCRIPTION	
DR	JGT	CAR
DESIGN	DRAWN	CHKD
SCALE	HORIZ. 1"=50'	VERT. 1"=5'
JOB No.	1602-02-008	
DATE	FEB. 21, 2005	
FILE No.	1602	

AS-BUILT SHEET 5 OF 8 1602-D-AB-014

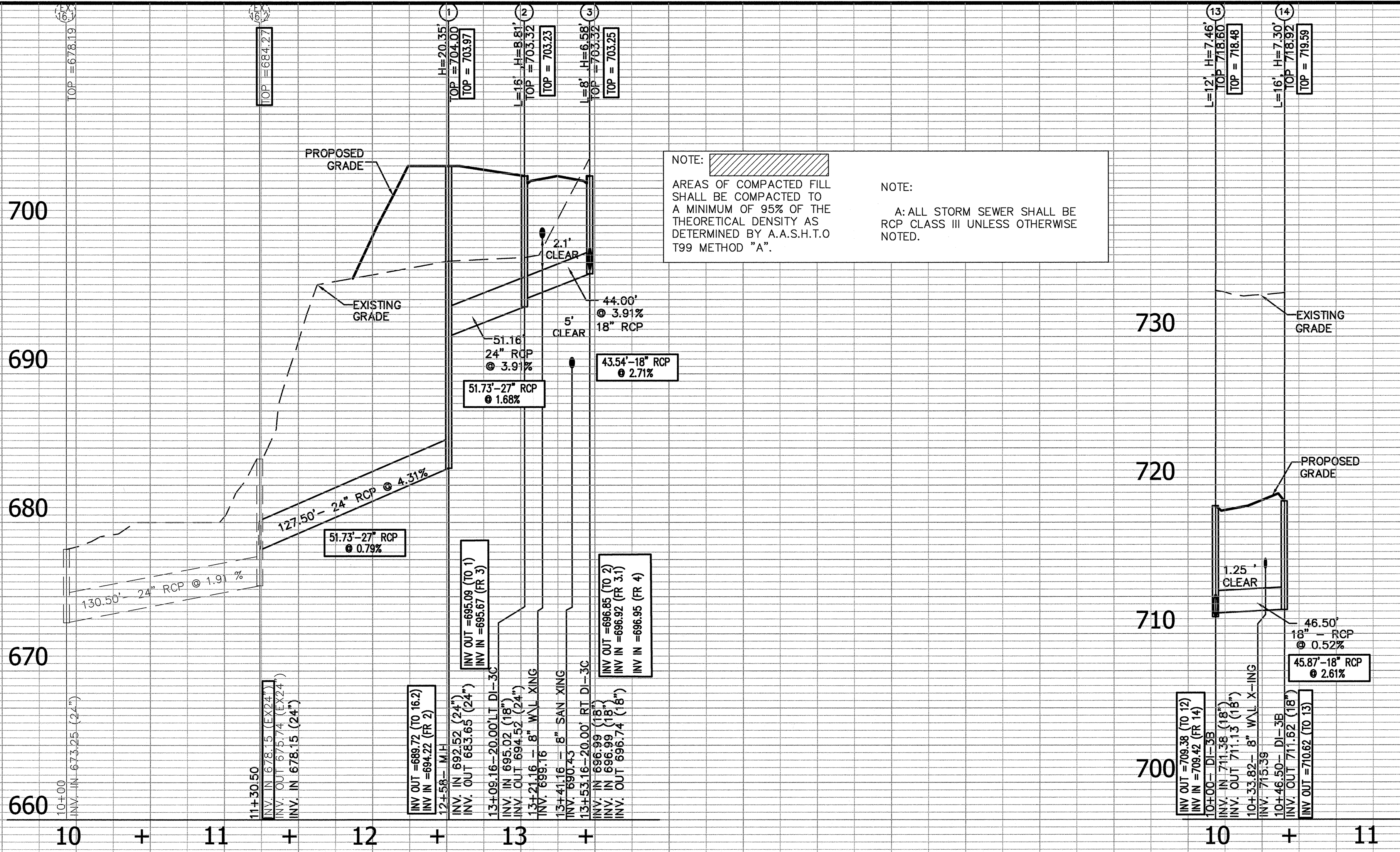
7 OF 21

STORM SEWER DESIGN CALCULATIONS

FROM	TO	DRAIN AREA (AC)	RUNOFF COEF (C)	INCREM C x A	ACCUM C x A	Tc TO PIPE (MIN)	TIME IN PIPE (MIN)	ACCUM TIME (MIN)	INTEN (I)	INCR FLOW (CFS)	ACCUM FLOW (CFS)	LENGTH (FT)	PPE DIA (IN)	SLOPE PERCENT	MAX Q (CFS)	VEL (FPS)	FLOW DEPTH (IN)	UPPER INVERT	FALL (FT)	LOWER INVERT	DROP IN STRUCT.	TOP ELEV	REMARKS
EX21	EX20	0.80	0.60	0.48	0.48	5.00	0.08	5.08	6.80	3.26	3.26	44.13	15	0.50	4.56	4.04	9.39	704.09	0.22	703.87	0.00	711.15	
EX20	EX19	0.39	0.60	0.23	0.71	5.08	0.12	5.20	6.79	1.59	4.85	35.11	15	10.91	21.33	14.07	4.86	703.62	3.83	699.79	0.25	711.15	
EX19	EX18	0.05	0.60	0.03	0.74	5.20	0.07	5.27	6.77	0.20	5.03	44.40	15	0.88	6.05	5.52	10.44	699.54	0.39	699.15	0.25	706.06	
EX18	EX17	0.02	0.60	0.01	0.76	5.27	0.53	5.80	6.75	0.06	5.10	197.49	18	3.58	19.89	9.42	6.22	699.07	7.08	691.99	0.08	705.93	
EX17.1	EX17	0.45	0.60	0.27	0.27	5.00	0.11	5.11	6.80	1.84	1.84	44.00	15	0.50	4.57	3.52	6.62	692.21	0.22	691.99	0.00	696.41	
EX17	EX16	0.25	0.60	0.15	1.18	5.00	0.71	5.71	6.80	1.02	8.00	262.23	21	7.20	42.53	13.57	6.17	691.74	18.89	672.85	0.25	696.41	
EX16.3	EX16.2	1.84	0.60	1.10	1.10	5.00	0.23	5.23	6.80	7.51	7.51	110.00	24	1.90	31.18	8.16	8.02	680.24	2.09	678.15	0.00	685.00	
6	5	0.49	0.60	0.29	0.29	5.00	0.69	5.69	6.80	2.00	2.00	143.50	18	5.66	24.99	8.47	3.44	708.82	8.12	700.70	0.00	715.75	
5	4	1.17	0.60	0.70	1.00	5.69	0.18	5.88	6.68	4.69	6.65	86.31	18	2.44	16.42	8.80	7.97	700.45	2.11	698.34	0.25	706.19	
4	3	0.77	0.60	0.46	1.46	5.00	0.07	5.07	6.80	3.14	9.91	45.19	18	2.43	16.39	9.71	10.10	698.09	1.10	696.99	0.00	703.66	
3.1	3	1.04	0.60	0.62	0.62	5.00	0.16	5.16	6.80	4.24	4.24	58.13	18	2.82	17.64	8.21	6.01	698.63	1.64	696.99	0.00	703.88	
3	2	1.03	0.60	0.62	2.70	5.07	0.06	5.13	6.79	4.19	16.32	44.00	18	3.91	20.77	13.26	13.13	696.74	1.72	695.02	0.00	703.32	
2	1	1.33	0.60	0.80	3.50	5.13	0.07	5.20	6.78	5.41	23.71	51.16	24	3.91	44.73	14.44	12.42	694.52	2.00	692.52	0.00		
1	EX16.2	0.00	0.60	0.00	3.50	5.20	0.18	5.38	6.76	0.00	23.66	127.50	24	4.31	46.08	14.98	12.05	683.65	5.50	678.15	0.00		
EX16.2	EX16.1	0.00	0.60	0.00	4.60	5.23	0.11	5.34	6.76	0.00	31.11	130.50	24	1.91	31.25	11.34	19.57	675.74	2.49	673.25	2.41	684.27	
EX16.1	EX16	0.52	0.60	0.31	4.91	5.34	0.04	5.38	6.74	2.10	33.12	44.00	30	1.48	49.85	10.86	17.87	672.75	0.65	672.10	0.50	678.07	
EX16	EX15	0.62	0.60	0.37	6.46	5.00	0.28	5.28	6.80	2.53	43.94	298.88	30	2.74	67.85	14.70	17.58	669.72	8.18	661.54	3.13	678.07	
EX15.1	EX15	0.69	0.60	0.41	0.41	5.00	0.09	5.09	6.80	2.82	2.82	44.00	18	0.50	7.43	3.91	7.68	661.76	0.22	661.54	0.00	667.32	
EX15	EX14	0.62	0.60	0.37	7.25	5.00	0.02	5.02	6.80	2.53	49.29	30.72	30	1.53	50.73	11.78	23.85	658.00	0.47	657.53	3.54	667.32	
EX14	EX13	0.00	0.60	0.00	7.25	5.02	0.14	5.16	6.80	0.00	49.26	156.65	30	2.89	67.24	14.96	19.07	657.28	4.21	653.07	0.25	667.42	
14	13	0.94	0.60	0.56	0.56	5.00	0.07	5.07	6.80	3.84	3.84	46.50	18	0.52	7.55	4.29	9.09	713.21	0.24	712.97		667.32	
13	12	0.57	0.60	0.34	0.91	5.07	0.67	5.75	6.79	2.32	6.15	235.95	18	9.35	32.12	14.02	5.34	712.72	22.07	690.65	0.25	667.42	

STM EX16.1 THRU 3

STM 13 THRU 14



AS-BUILT

STORM SEWER PROFILES AND CALCULATIONS
FOR
HAPPY CREEK KNOLLS SECTION 3
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA



AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED JUNE 2017.

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

DENOTES AS-BUILT CONDITIONS

REVISIONS		
6-15-05	PER TOWN COMMENT	
1-17-05	DATE ONLY	
3-19-07	PER TOWN COMMENT	
<u>A</u>	3/13/07 LETTER	
DATE		DESCRIPTION
DR	JGT	CAR
DESIGN	DRAWN	CHKD
SCALE HORIZ. 1"=50'		
VERT. 1"=5'		
JOB No. 1602-02-008		
DATE FEB. 21, 2005		
FILE No. 1602		
 		

AS-BUILT SHEET 6 OF 8 1602-D-AB-014

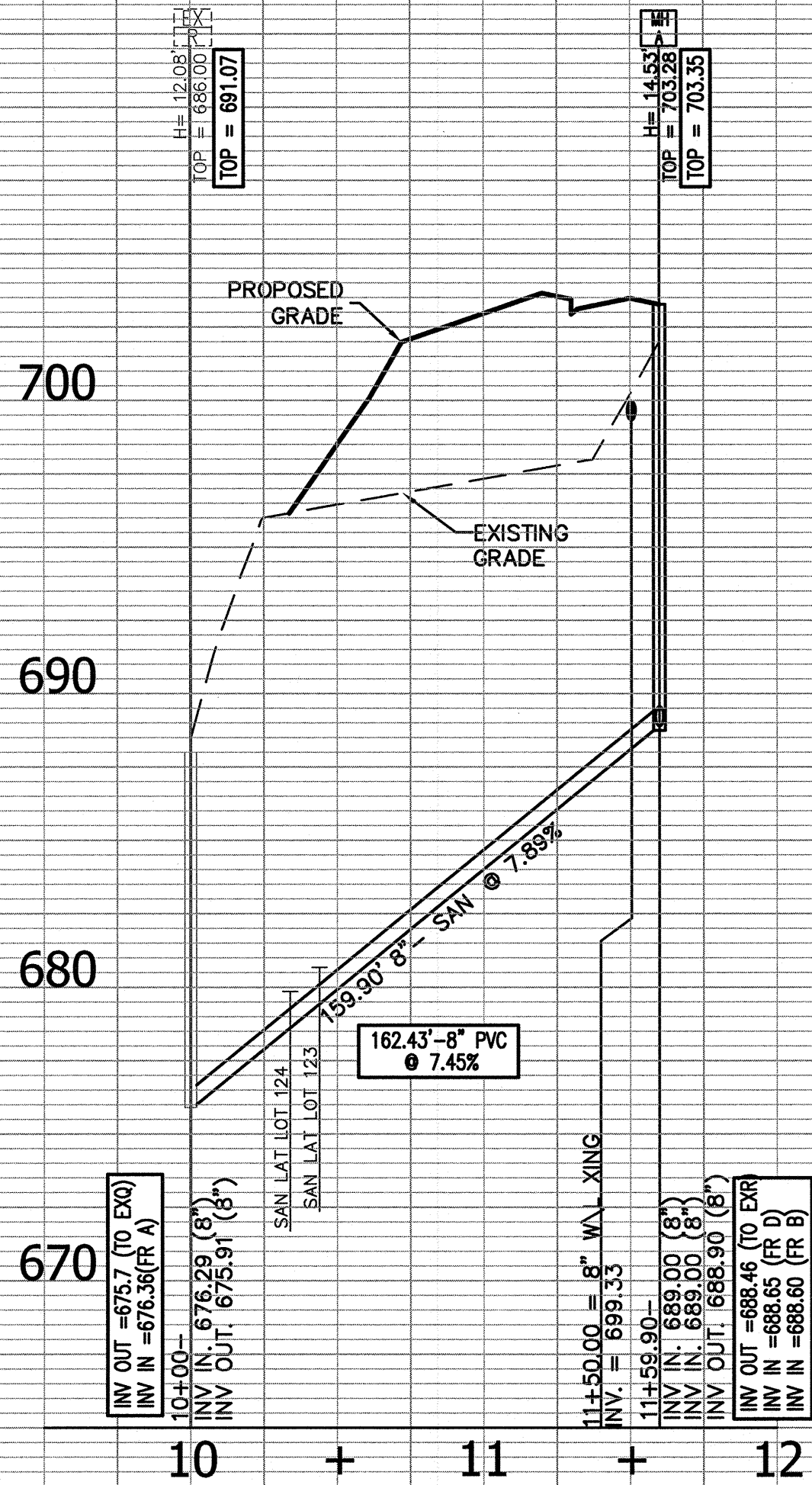
STORM SEWER INLET CALCULATIONS

	D1-3C	16	0.08	0.60	0.05	4.00	0.19	0.00	0.19		0.0208								19.60	0.23	0.46		0.49		10.91	RT SIDE	
	D1-3C	16	0.61	0.60	0.37	6.50	2.38	0.00	2.38		0.0208								19.60	0.24	0.46		0.51		11.36	CHECK STORM	
3	D1-3C	8	1.03	0.60	0.62	4.00	2.47	0.00	2.47		0.0208								11.60	0.20	0.46		0.43		9.26	SUMP CONDITIONS	
	D1-3C	8	0.47	0.60	0.28	4.00	1.13	0.00	1.13		0.0208								11.60	0.18	0.46		0.39		8.54	LT SIDE	
	D1-3C	8	0.56	0.60	0.34	4.00	1.34	0.00	1.34		0.0208								11.60	0.19	0.46		0.42		9.26	RT SIDE	
	D1-3C	8	1.03	0.60	0.62	6.50	4.02	0.00	4.02		0.0208								11.60	0.24	0.46		0.52		11.54	CHECK STORM	
3.1	D1-3B	10	1.04	0.60	0.62	4.00	2.50	0.00	2.50	0.0190	0.0208	7.25	2.00	0.0833	4.00	0.73	3.5	0.146	0.127	11.5		0.87		0.97	2.43	0.07	
4	D1-3B	10	0.77	0.60	0.46	4.00	1.85	0.00	1.85	0.0160	0.0208	6.46	2.00	0.0833	4.00	0.78	3.5	0.146	0.135	9.3		1.08		1.00	1.85	0.00	
5	D1-3B	14	1.17	0.60	0.70	4.00	2.81	0.00	2.81	0.0440	0.0208	6.14	2.00	0.0833	4.00	0.81	3.5	0.146	0.138	14.8		0.95		1.00	2.79	0.02	
6	D1-3B	10	0.49	0.60	0.29	4.00	1.18	0.00	1.18	0.0825	0.0208	2.26	2.00	0.0833	4.00	1.00	3.5	0.146	0.167	11.1		0.90		0.99	1.16	0.02	
13	D1-3B	12	0.57	0.60	0.34	4.00	1.37	0.00	1.37	0.0740	0.0208	2.90	2.00	0.0833	4.00	0.99	3.5	0.146	0.165	11.5		1.04		1.00	1.37	0.00	
14	D1-3B	16	0.93	0.60	0.56	4.00	2.23	0.00	2.23	0.0680	0.0208	4.65	2.00	0.0833	4.00	0.88	3.5	0.146	0.149	14.7		1.09		1.00	2.23	0.00	

SANITARY LATERAL TABLE

LOT NUMBER	DIST. FROM LOWER MH	MANHOLE	SLOPE	LATERAL	INVERT MAIN	INVERT CONN.	START STA	BEGIN RISER	RISER NV	END RISER	INVERT END	BF ELEV	PROP GRADE @ END	REMARKS	
23	24.75	A	B	0.0208	35.00	690.49	691.74	15.00	692.05	3.00	695.05	695.41	700.75	705.59	
22	108.36	A	B	0.0208	35.00	686.52	696.77	15.00	687.08	3.00	700.08	700.44	704.09	709.01	HUNG SEWER
6	123.09	A	B	0.0208	55.00	695.55	697.66		697.66		697.66	698.80	704.15	708.81	
4	33.90	EXR	A	0.0208	11.08	678.74	679.99	2.00	680.03	6.00	686.03	686.10	697.58	298.00	
5	43.90	EXR	A	0.0208	10.00	675.55	680.80	2.00	680.84	6.00	686.84	686.88	699.60	698.00	
21	0.00	B	C	0.0208	35.21	700.00	701.25	15.00	701.56	3.00	704.56	704.92	709.19	712.59	HUNG SEWER
7	12.45	B	C	0.0208	55.00	700.78	702.03	15.00	702.34	3.00	705.34	706.11	710.79	712.84	HUNG SEWER
20	83.42	B	C	0.0208	35.00	705.21	706.46	15.00	706.77	3.00	709.77	710.13	715.63	719.62	
8	96.79	B	C	0.0208	55.00	706.04	707.29	15.00	707.61	4.00	711.61	712.36	717.36	719.32	
19	180.12	B	C	0.0208	37.00	710.00	711.25	10.00	711.46	6.00	719.46	719.85	725.39	726.64	
9	160.12	B	C	0.0208	57.15	710.00	711.25	15.00	711.56	4.00	715.56	716.35	721.60	725.70	
24	10.00	A	D	0.0208	35.00	689.45	690.70	15.00	691.01	3.00	694.01	694.36	699.52	704.37	
25	56.24	A	D	0.0208	35.00	693.30	694.55		694.55		694.55	695.28	701.20	705.50	
3	112.58	A	D	0.0208	55.00	694.03	695.28		695.28		695.28	696.42	700.12	705.84	HUNG SEWER
26	180.24	A	D	0.0208	35.00	697.05	698.30		698.30		698.30	699.03	704.74	708.32	
2	186.61	A	D	0.0208	55.00	697.80	699.05		699.05		699.05	700.19	704.92	708.22	HUNG SEWER
1	246.25	A	D	0.0208	59.70	700.00	701.25		701.25		701.25	702.40	706.69	712.26	
27	246.25	A	D	0.0208	35.00	700.00	701.25		701.25		701.25	701.98	708.24	713.21	
13	51.79	EXJ	E	0.0208	62.43	711.88	713.11	20.00	713.53	5.00	718.53	719.10	724.91	730.34	
18	140.42	EXJ	E	0.0208	31.91	712.31	713.56	15.00	713.87	3.00	718.87	719.16	722.46	728.00	
14	149.62	EXJ	E	0.0208	67.26	712.36	713.60	20.00	714.02	3.00	717.02	717.13	723.53	729.79	
15	231.65	EXJ	E	0.0208	57.94	712.77	714.02		714.02		714.02	715.22	719.62	724.97	HUNG SEWER
17	268.34	EXJ	E	0.0208	33.27	712.95	713.28	15.00	713.59	5.00	718.59	718.87	725.39	730.84	
16	268.34	EXJ	E	0.0208	55.45	712.95	713.28		713.28		713.28	714.43	714.09	720.77	HUNG SEWER
10	131.94	EXI	EXJ	0.0208	49.16	709.14	710.39	20.00	710.80	5	715.80	716.30	722.40	724.95	
11	212.78	EXI	EXJ	0.0208	47.40	710.27	711.52	20.00	711.84	10	721.84	722.30	725.05	729.87	
12	289.78	EXI	EXJ	0.0208	46.92	711.38	712.61	20.00	713.02	7	720.02	720.44	725.65	730.20	
FUTURE	43.43	END	F	0.0208	34.95	688.98	690.21	12.00	690.46	7	697.46	697.79	703.06	711.85	
FUTURE	77.81	END	F	0.0208	55.06	690.63	691.88	30.00	692.51	8	700.51	700.86	706.43	700.00	
FUTURE	102.43	END	F	0.0208	38.68	692.00	693.25	12.00	693.50	12	705.50	705.80	711.05	697.00	

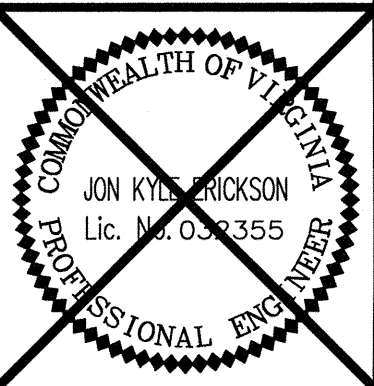
SANITARY MH-A THRU MH-Ex.R



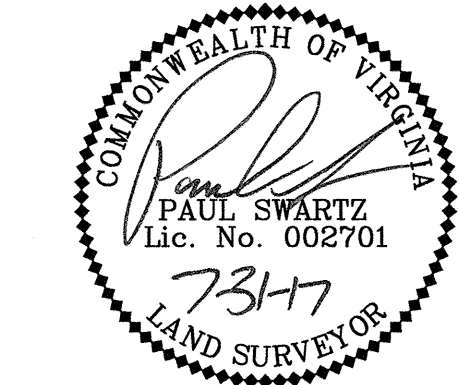
NOTE:
A: ALL SANITARY SEWER SHALL BE
SDR-35 UNLESS OTHERWISE NOTED.

AS-BUILT

SANITARY SEWER PROFILES AND CALCULATIONS
STORM INLET CALCULATIONS
HAPPY CREEK KNOLLS SECTION 3
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA



AS-BUILT

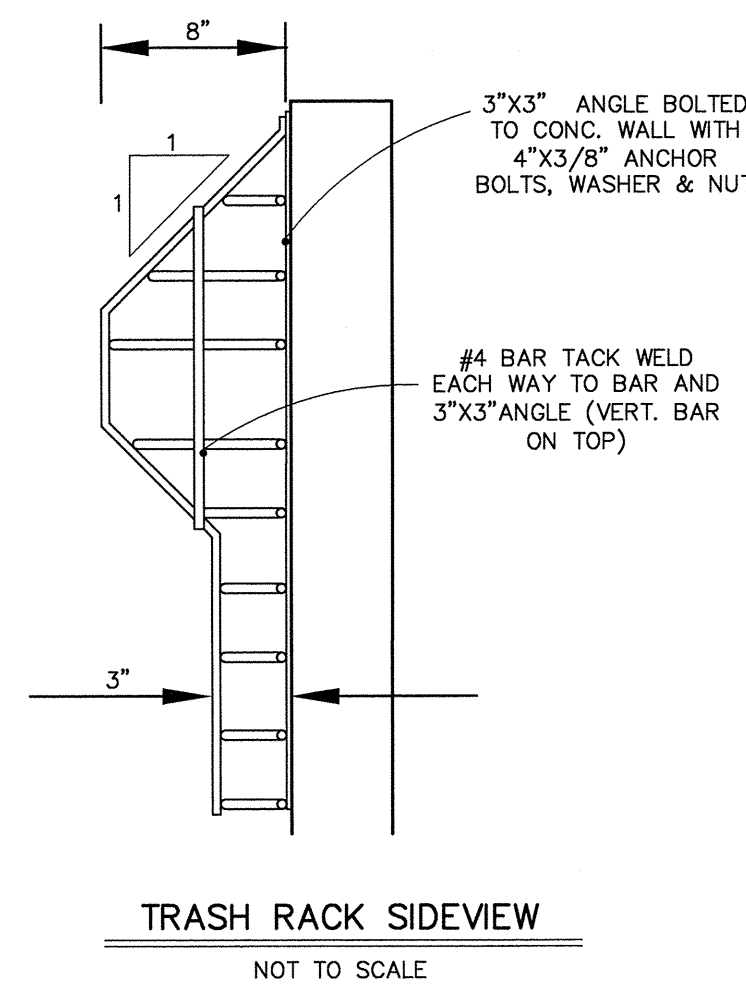
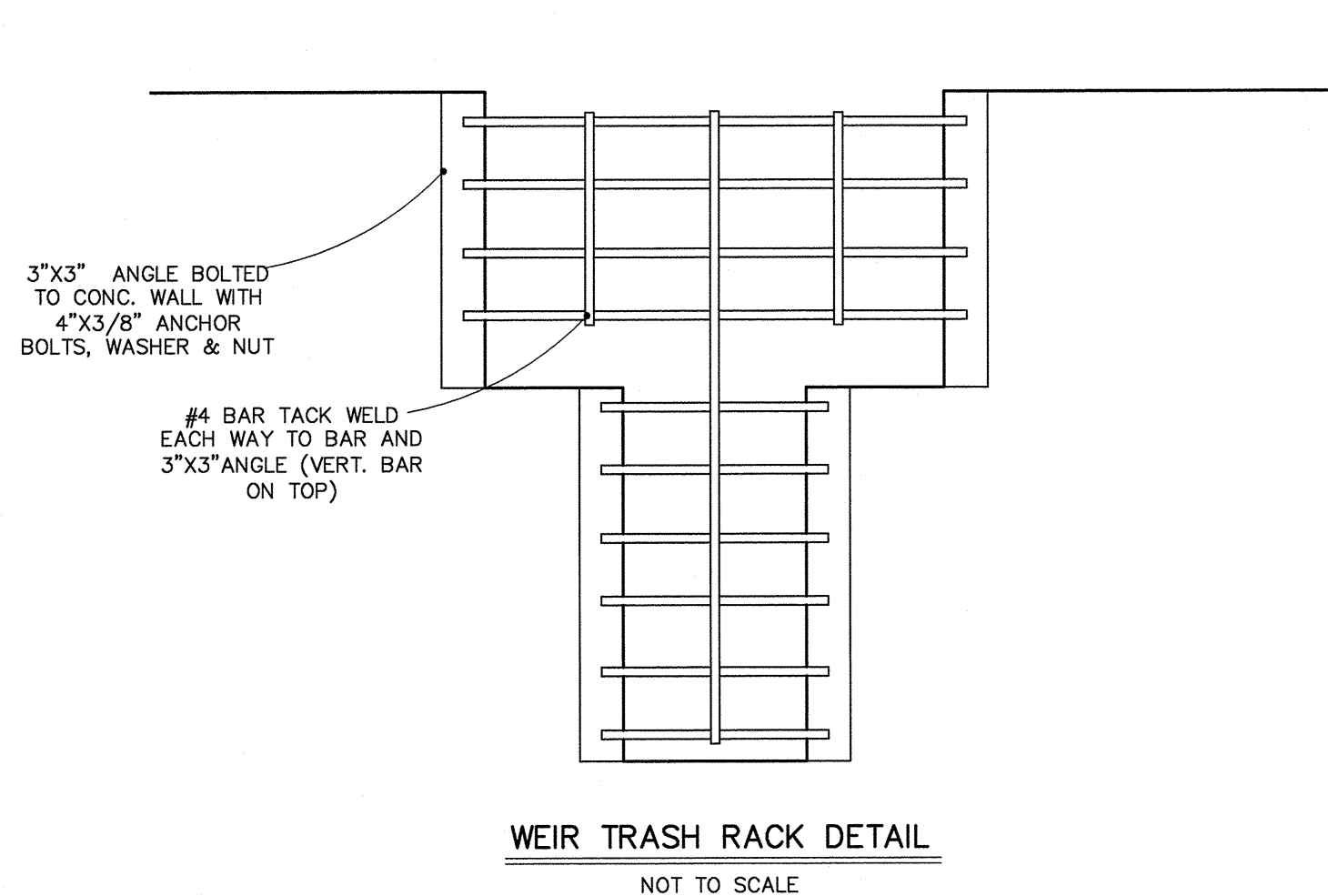


DENOTES AS-BUILT
CONDITIONS

REVISIONS	
11-17-05	DATE ONLY
3-19-07	DATE ONLY
04-26-07	REV. LOT NO.'S PER P.C. COMMENTS

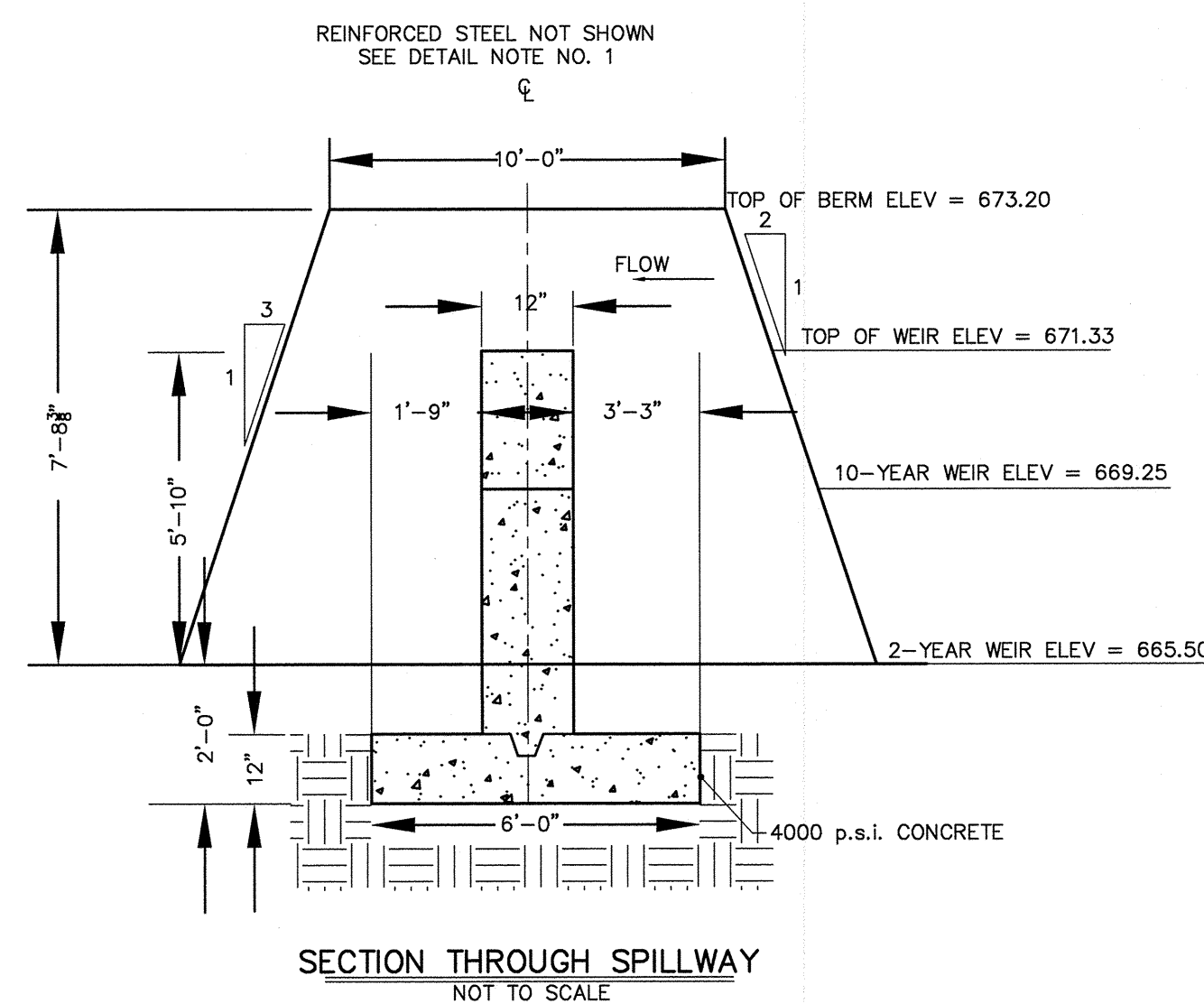
DATE	DESCRIPTION
DR DESIGN	JGT DRAWN
CAR	CHKD
SCALE	HORIZ. 1"=50'
	VERT. 1"=5'
JOB No.	1602-02-008
DATE	FEB. 21, 2005
FILE No.	1602

- AREAS UNDER THE EMBANKMENT AND ANY STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL, ROOTS OR OTHER OBJECTIONAL MATERIAL.
2. THE SUITABILITY AND ACCEPTABILITY OF ALL FILL MATERIAL WILL BE DETERMINED BY REGULAR PERIODIC SOIL ANALYSIS AND COMPACTION TESTS, WHICH SHALL BE MADE BY A QUALIFIED GEOTECHNICAL ENGINEER
3. TESTS FOR SOIL ANALYSIS, MOISTURE CONTENT, AND COMPACTION ARE TO BE CONDUCTED IN ACCORDANCE WITH THE LATEST APPLICABLE ASTM STANDARDS AND SPECIFICATIONS.
4. MATERIALS USED FOR THE IMPERVIOUS CORE AND CUT-OFF TRENCH, IF REQUIRED, SHALL BE COMPOSED OF ONE OF THE FOLLOWING SOILS AS DESIGNATED BY THE UNITED STATES SOIL SYSTEM: SC, CL, OR ML, HAVING A MINIMUM PLASTICITY INDEX OF 8 WITH A MINIMUM OF 45% PASSING THE NO. 200 SIEVE AND A MAX. OF 5% RETAINED ON THE NO. 4 SIEVE.
5. THE EMBANKMENT MAY BE CONSTRUCTED AS A HOMOGENEOUS EMBANKMENT DAM USING ACCEPTABLE MATERIAL CLASSIFIED ML, CL, SC, OR GC SOILS PER ASTM D-2487. IN ADDITION TO THESE MATERIALS, SOILS CLASSIFIED CH AND MH MAY BE USED AS COMPACTED EMBANKMENT FILL BELOW THE UPPER 5 FEET OF THE SLOPES. SOILS CLASSIFIED AS SM OR GM PER ASTM D-2487 OR SUITABLE FILL MAY BE USED FOR EMBANKMENT IN THE DOWNSTREAM HALF OF THE EMBANKMENT.
6. COMPACTION SHALL BE NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY FOR THE SOIL TYPE, AS DETERMINED BY USE OF THE STANDARD PROCTOR METHOD PER ASTM T-99 OR ASTM D-698.
7. THE FILL SHALL BE CONSTRUCTED IN 8" LOOSE LIFTS AND SHALL BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL SO THAT SMOOTH HORIZONTAL PLANES ARE NOT BUILT INTO THE FILL STRUCTURE. SMOOTH HORIZONTAL PLANES CAN BE AVOIDED BY SCARIFYING OR USE OF SHEEPS-FOOT ROLLERS.
8. THE EMBANKMENT SHALL BE CONSTRUCTED TO A MINIMUM ELEVATION 5% HIGHER THAN THE DESIGNED HEIGHT TO ALLOW FOR SETTLEMENT WHEN MECHANICAL COMPACTORS ARE USED FOR CONSTRUCTION.
9. IF SUFFICIENT ACCEPTABLE MATERIAL IS NOT AVAILABLE ON THE SITE TO PROPERLY CONSTRUCT THE FILL, THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ACCEPTABLE BORROW MATERIAL.
10. THE STORM WATER MANAGEMENT FACILITY IS TO BE MAINTAINED AS FOLLOWS:
 - (A) THE STORM WATER MANAGEMENT FACILITY SHALL BE INSPECTED ON A SEMI-ANNUAL BASIS AND AFTER ANY STORM WHICH CAUSES THE CAPACITY OF THE FACILITY TO BE EXCEEDED. ANY TRASH AND/OR DEBRIS WITHIN THE FACILITY SHALL BE REMOVED AND AS DETERMINED BY INSPECTION REPORTS ARE TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION.
 - (B) THE STORM WATER MANAGEMENT FACILITY SHALL BE PERIODICALLY CLEANED OUT (EVERY 5-10 YEARS) DEPENDING ON SEDIMENT LOADING, SO AS TO REESTABLISH THE ORIGINAL CONFIGURATION WITHIN THE EXISTING WET POND AND OTHER AREAS. ALL EXCAVATED AND/OR DREDGED MATERIAL SHALL BE PLACED IN COMMON OPEN SPACE AS DESIGNATED BY THE HARRY CREEK KNOLLS SEED & SOIL HOME OWNERS ASSOCIATION. THE DREDGED MATERIAL SHALL BE APPROPRIATE E & S CONTROLS AND SHALL BE IMMEDIATELY SEEDED AND STABILIZED.



THE PURPOSE OF THESE PLANS IS TO PROVIDE THE BASIC DIMENSIONS REQUIRED TO CONTROL THE CONSTRUCTION OF THE COMBINATION PRINCIPAL & EMERGENCY SPILLWAY. THE FOLLOWING DIMENSIONS AND/OR ELEVATIONS ARE FIXED:

TOP OF FOOTING ELEV. = 664.50'
CREST OF 2 YR. WEIR ELEV. = 665.50'
CREST OF 10 YR. WEIR ELEV. = 669.25'
TOP OF SIDE WALLS ELEV. = 671.33'
LENGTH OF 2 YR. WEIR = 0'-3"
LENGTH OF 10 YR. WEIR = 1'-4"



MASTER DESIGN STORM SUMMARY					
PRE DEVELOPED FLOW					
Network Storm Collection: Front Royal					
Return Event	Total Depth	Rainfall Type	RNF ID		
100 yr	8,000	Synthetic Curve	Typell	24hr	
10 yr	5,100	Synthetic Curve	Typell	24hr	
2 yr	3,500	Synthetic Curve	Typell	24hr	

MASTER NETWORK SUMMARY									
SCS Unit Hydrograph Method									
(*Node=Outfall; +Node=Diversion;)									
(Trun= HYG Truncation: Blank=None; L=Left; R=Right; LR=Left&Right)									
Node ID	Return Type	HYG Event	Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max ft	WSEL	Max Pond Storage ac-ft
A	AREA	100	7.258		12.3500	55.50			
A	AREA	10	3.062		12.3500	21.43			
A	AREA	2	1.256		12.4500	7.17			
*OUTFALL	JCT	100	7.258		12.3500	55.50			
*OUTFALL	JCT	10	3.062		12.3500	21.43			
*OUTFALL	JCT	2	1.256		12.4500	7.17			

STAGE STORAGE DISCHARGE ANALYSIS							
No Infiltration							
INITIAL CONDITIONS							

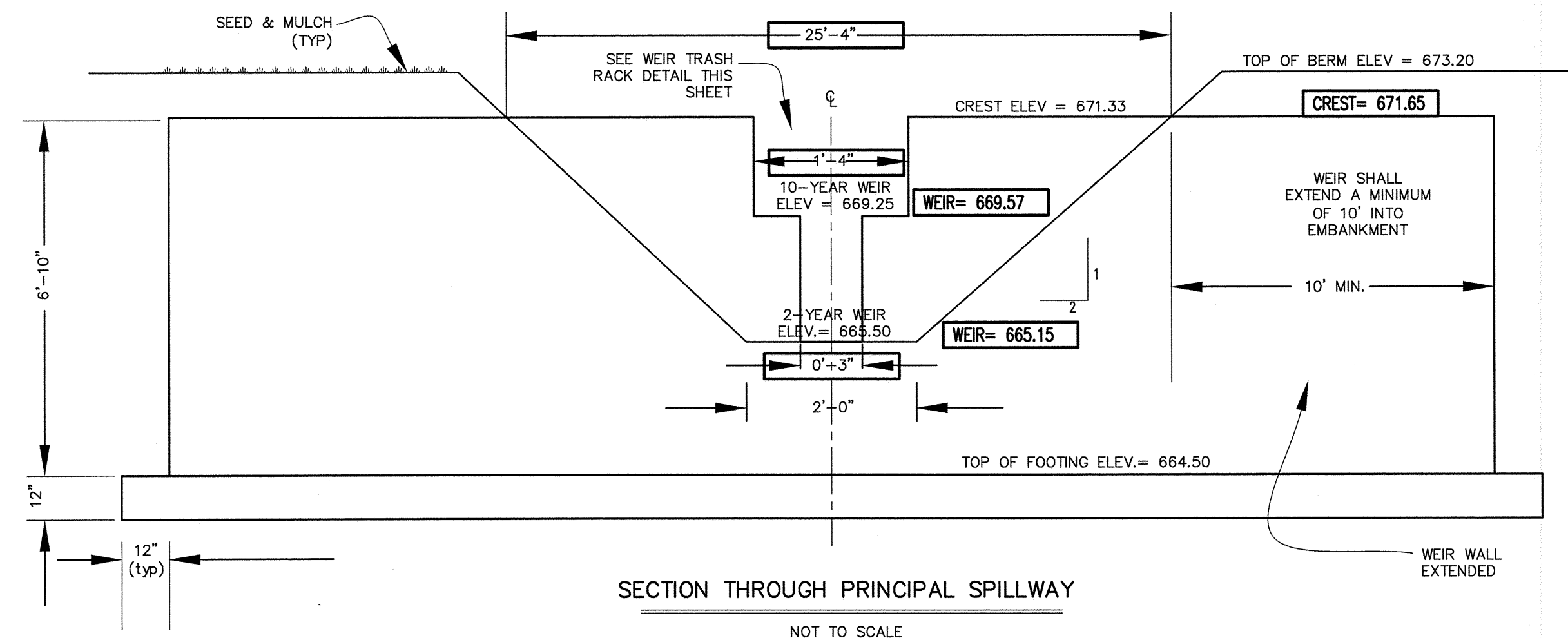
Starting WS Elev	=	665.50 ft					
Starting Volume	=	.00 ac-ft					
Starting Outflow	=	.00 cfs					
Starting Infiltr	=	.00 cfs					
Starting Total Out	=	.00 cfs					
Time Increment	=	.05 hrs					

Elevation (ft)	Outflow (cfs)	Storage (ac-ft)	Area (ac)	Infiltr. (cfs)	Q Total (cfs)	2S/(t + C)	
665.50	.00	.000	.0000	.00	.00	.00	.00
666.00	.27	.001	.0048	.00	.27	.66	.66
666.50	.78	.006	.0197	.00	.78	3.92	3.92
667.00	1.42	.022	.0449	.00	1.42	12.18	12.18
667.50	2.19	.053	.0784	.00	2.19	27.67	27.67
668.00	3.06	.102	.1213	.00	3.06	52.52	52.52
668.50	4.03	.173	.1650	.00	4.03	87.98	87.98
669.00	5.07	.268	.2154	.00	5.07	134.91	134.91
669.25	5.63	.324	.2280	.00	5.63	162.28	162.28
669.50	6.62	.382	.2409	.00	6.62	191.64	191.64
670.00	9.58	.509	.2678	.00	9.58	256.12	256.12
670.50	13.36	.647	.2819	.00	13.36	326.41	326.41
671.00	17.77	.791	.2964	.00	17.77	400.79	400.79
671.23	20.98	.891	.3058	.00	20.98	452.09	452.09
671.50	27.94	.943	.3107	.00	27.94	484.40	484.40
672.00	68.96	1.102	.3253	.00	68.96	602.37	602.37
672.50	128.18	1.268	.3398	.00	128.18	742.07	742.07
673.00	200.87	1.442	.3547	.00	200.87	898.78	898.78
673.19	284.79	1.492	.3584	.00	284.79	1020.49	1020.49

1. IMPERVIOUS CORE IS TO BE CONSTRUCTED FROM SOILS CLASSIFIED AS ML, CL, OR SC PER ASTM D-2487 COMPACTED TO 93% PER ASTM D-698.
2. THE CUT OFF TRENCH (IF REQUIRED) SHALL EXTEND A MINIMUM OF 5' BELOW SUBGRADE OR TO REFUSAL.
3. DESIGN AND CONSTRUCTION OF THE PROPOSED DAM IS SUBJECT TO RECOMMENDATIONS AND INSPECTION BY A QUALIFIED GEOTECHNICAL ENGINEER.

MASTER DESIGN STORM SUMMARY			
POST DEVELOPED FLOW			
Return Event	Total Depth in	Rainfall Type	RNF ID
Dev 100	8,000	Synthetic Curve	TypeII 24hr
Dev 10	5,100	Synthetic Curve	TypeII 24hr
Dev 2	3,500	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY							
SCS Unit Hydrograph Method							
(*Node=Outfall; +Node=Diverion;)							
(Trun= HYG Truncation: Blank=None; L=Left; R=Right; LR=Left&Rt)							
Node ID	Type	Return Event	HYG Vol (ac-ft)	Qpeak (hrs)	Qpeak (cfs)	Max WSEL (ft)	
A	AREA	100	8,600	12,200	84.58		
A	AREA	10	3,908	12,200	36.79		
	AREA	2	1,774	12,250	14.80		
BYPASS-A	AREA	100	1,30	11,900	2.36		
BYPASS-A	AREA	10	0.65	11,900	1.18		
BYPASS-A	AREA	2	.034	11,950	.60		
*OUTFALL	JCT	100	8,730	12,250	83.02		
*OUTFALL	JCT	10	3,974	12,500	21.33		
*OUTFALL	JCT	2	1,808	12,650	6.76		
POND	IN POND	100	8,600	12,200	84.58		
POND	IN POND	10	3,908	12,200	36.79		
POND	IN POND	2	1,774	12,250	14.80		
POND	OUT POND	100	8,600	12,250	82.68		
POND	OUT POND	10	3,908	12,500	21.22		671.34
POND	OUT POND	2	1,774	12,650	6.70		669.51



AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF
A FIELD RUN SURVEY COMPLETED JUNE 2017.

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION
AS SHOWN HEREON IS CORRECT.

COMMONWEALTH OF VIRGINIA
Paul Swartz
PAUL SWARTZ
Lic. No. 002701
73117
LAND SURVEYOR

☐ DENOTES AS-BUILT
CONDITIONS

OUTLET STRUCTURE INPUT DATA			
Structure ID	=	W3	
Structure Type	=	Weir-Rectangular	

# of Openings	=	1	
Crest Elev.	=	671.33 ft	
Weir Length	=	24.00 ft	
Weir Coeff.	=	3.100000	

Structure ID	=	W2	
Structure Type	=	Weir-Rectangular	

# of Openings	=	1	
Crest Elev.	=	669.25 ft	
Weir Length	=	1.08 ft	
Weir Coeff.	=	3.100000	

Structure ID	=	W1	
Structure Type	=	Weir-Rectangular	

# of Openings	=	1	
Crest Elev.	=	665.50 ft	
Weir Length	=	2.25 ft	
Weir Coeff.	=	3.100000	

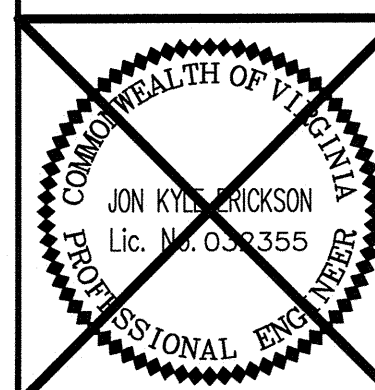
AS-BUILT SHEET 8 OF 8	1602-D-AB-014
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Winchester, Virginia 22601

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Fax: (540) 722-5080
www.bowmanconsulting.com

STORMWATER MANAGEMENT DETAILS
AND CALCULATIONS
HAPPY CREEK KNOLL SECTION 3
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA



REVISIONS	
11-17-05	PER TOWN COMMENT
3-19-07	DATE ONLY
04-26-07	DATE ONLY

[illegible]

~~SHEET 19 OF 21~~

P:\1602 - Happy Creek Knolls Sec 3\1602-02-014 (SUR) - Happy Creek Sec 3 As-built Survey\Plats\As-Builts\1602-D-AB-014-08-STM &SWM-DETAILS.dwg

NOTES

1. OWNERSHIP AND MAINTENANCE OF STORM WATER MANAGEMENT PONDS SHALL BE THE RESPONSIBILITY OF THE HAPPY CREEK KNOLLS SEC II HOME OWNERS ASSOCIATION.
2. LOTS WILL BE STABILIZED WITHIN 10 DAYS OF COMPLETION OF OVERLOT GRADING ACTIVITY.
3. WATER AND SEWER LATERALS SHALL NOT BE INSTALLED UNDER ANY DRIVEWAYS.

NOTES FOR FILL LOTS

1. TOPSOIL AND UNSUITABLE MATERIAL SHALL BE STRIPPED FROM LOT PRIOR TO BEGINNING ANY FILL OPERATIONS.
2. FILL SHALL BE SPREAD IN 8" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY WITHIN THE BUILDING ENVELOPE.
3. FILL OPERATIONS SHALL BE MONITORED BY A QUALIFIED GEOTECHNICAL ENGINEER. SAID ENGINEER SHALL PREPARE WRITTEN REPORTS DETAILING THE COMPACTION TESTING ON THE FILL. REPORTS SHALL BE SUBMITTED TO THE COUNTY BUILDING OFFICIAL.
4. FILL DIVERSION REQUIRED AT TOP OF FILL SLOPES DAILY.

AS-BUILT PLAN

AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED FEBRUARY 2007 AND JULY 2017

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

COMMONWEALTH OF VIRGINIA

PAUL SWARTZ

Lic. No. 002701

7-31-17

LAND SURVEYOR

DENOTES AS-BUILT CONDITIONS



AS-BUILT

ODEN RIDGE SECTION ONE

TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA

JON K. CRICKSON

No. 032555

PROFESSIONAL ENGINEER

PLAN STATUS

12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPT. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-21-05	PER TOWN COMMENTS
04-12-05	PER 8/10/05 LETTER

DATE	DESCRIPTION
MPP/TH	CJM
DESIGN	DRAWN
SCALE	H: 1"=50'
	V: N/A
JOB No.	2181-01-001
DATE	OCTOBER 21, 2003
FILE No.	2181-01-001

ASBUILT SHEET 2 OF 18

2181-D-AB-001

4 of 36

SHEET

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www.bowmanconsulting.com

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AS-BUILT PLAN

- NOTES:
1. OWNERSHIP AND MAINTENANCE OF STORM WATER MANAGEMENT PONDS SHALL BE THE RESPONSIBILITY OF THE HAPPY CREEK KNOLLS SEC II HOME OWNERS ASSOCIATION.
 2. LOTS WILL BE STABILIZED WITHIN 10 DAYS OF COMPLETION OF OVERLOT GRADING ACTIVITY.
 3. WATER AND SEWER LATERALS SHALL NOT BE INSTALLED UNDER ANY DRIVEWAYS.

NOTES FOR FILL LOTS

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 2. FILL SHALL BE SPREAD IN 8" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY WITHIN THE BUILDING ENVELOPE.
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 4. FILL DIVERSION REQUIRED AT TOP OF FILL SLOPES DAILY.

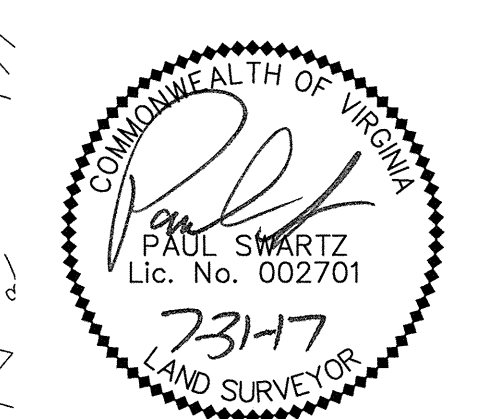
THIS AREA DESIGNATED FOR FUTURE RESERVATION AND/OR DEDICATION. THIS DOES NOT CONSTITUTE A CURRENT DEDICATION AND/OR RESERVATION PURSUANT TO THE TOWN OF FRONT ROYAL CODE OR APPLICABLE VIRGINIA LAW.

THE EXTENSION OF ODEN STREET UP TO THE AREA SHOWN AS FUTURE RESERVATION AND/OR DEDICATION FOR FUTURE LEACH RUN PARKWAY DOES NOT CONSTITUTE A DIRECT CONNECTION TO THE FUTURE PARKWAY, HOWEVER, IT IS INTENDED TO PROVIDE ACCESS TO THE OWNERS PROPERTY ON THE EAST SIDE OF THE RESERVATION.

AS-BUILT

AS-BUILT INFORMATION HEREON IS THE
RESULT OF A FIELD RUN SURVEY COMPLETED
FEBRUARY 2007 AND JULY 2017

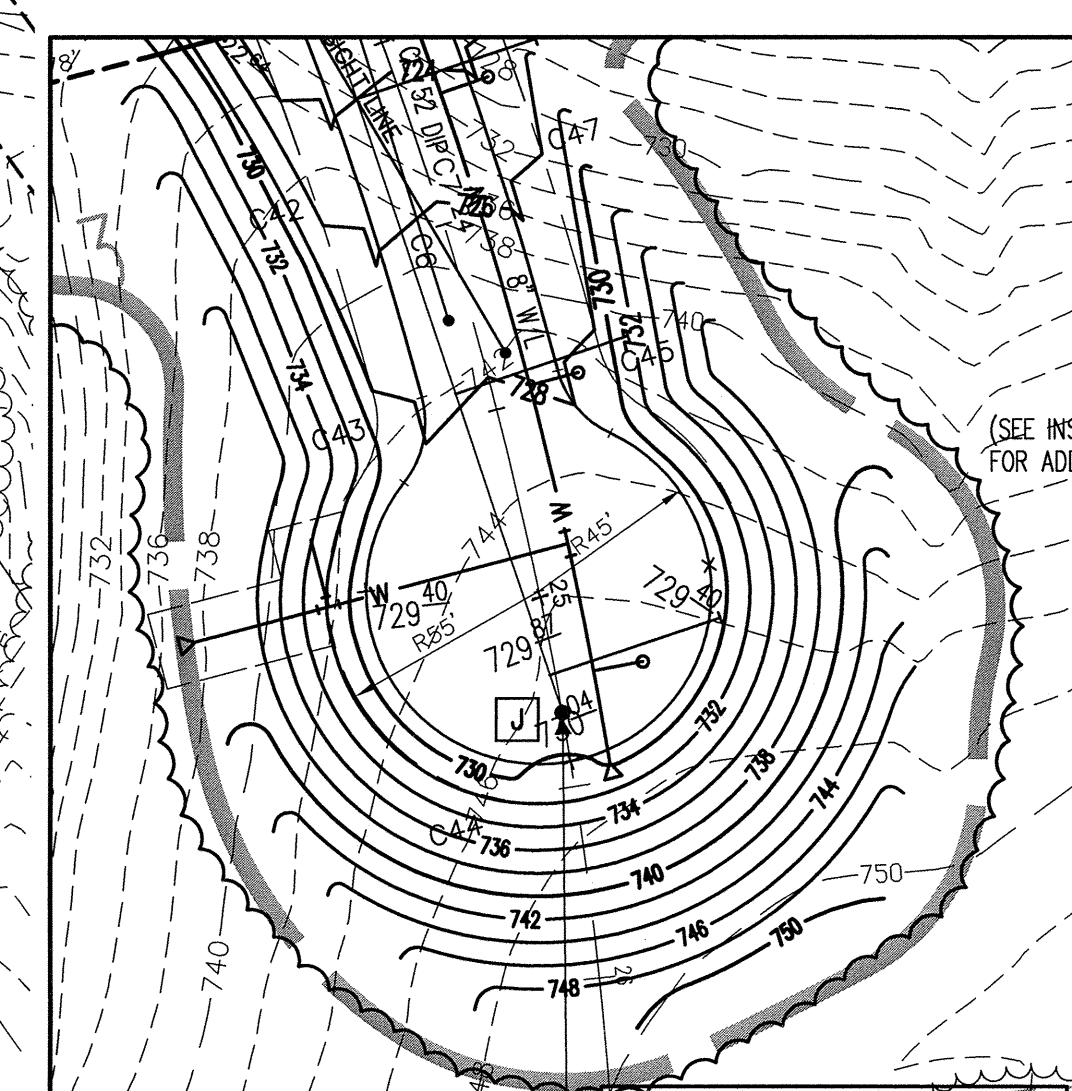
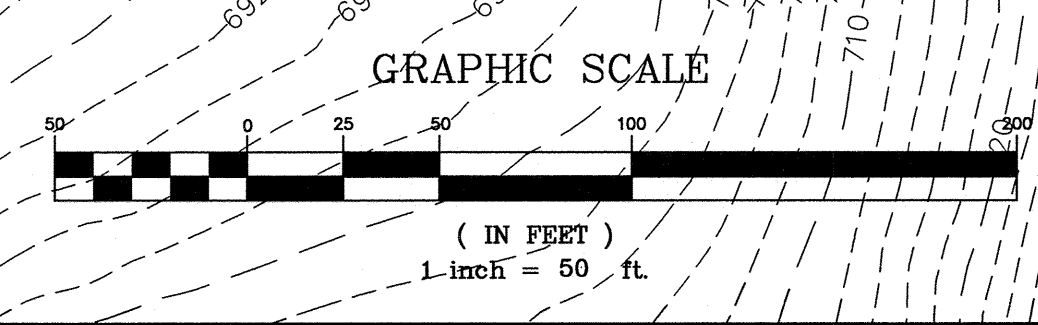
I HEREBY CERTIFY THAT THE AS-BUILT
INFORMATION AS SHOWN HEREON IS CORRECT.



 DENOTES
AS-BUILT CONDITIONS

TEMPORARY TURN AROUND
ESMT SHALL BECOME NULL &
VOID W/ THE EXTENSION OF
ODEN STREET

TEMPORARY TURN-AROUND
ESMP SHALL BECOME NULL &
VOID W/ THE EXTENSION OF
EWELL STREET.
(SEE INSERT ON THIS SHEET
FOR ADDITIONAL GRADING VIEW)



ASBUILT SHEET 3 OF 18

2181-D-AB-001

GRADING PLAN

AS-BUILT

ODEN RIDGE
SECTION ONE
TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
JON K. ERICKSON
No. 032355
PROFESSIONAL ENGINEER

PLAN STATUS	
-------------	--

PLAN STATUS		
12-19-03	PER STAFF COMMENTS	
12-30-03	HEALTH DEPT. SUBMISSION	
02-04-04	PER TOWN COMMENTS	
07-16-04	PER TOWN COMMENTS	
09-24-04	PER TOWN COMMENTS	
11-18-04	PER TOWN COMMENTS	
02-21-05	PER TOWN COMMENTS	
05-13-05	PER TOWN COMMENTS	
09-12-05	PER 8/10/05 LETTER	

DATE	DESCRIPTION
------	-------------

DATE	DESCRIPTION	
MPP/TH	CJM	

MPP/TH	CJM	
DESIGN	DRAWN	CHKD

DESIGN	DRAWN	CHKD
SCALE	H: 1"=50' V: N/A	

SCALE H: 1"=50'
V: N/A

JOB No. 2181-01-001

DATE OCTOBER 21, 2003

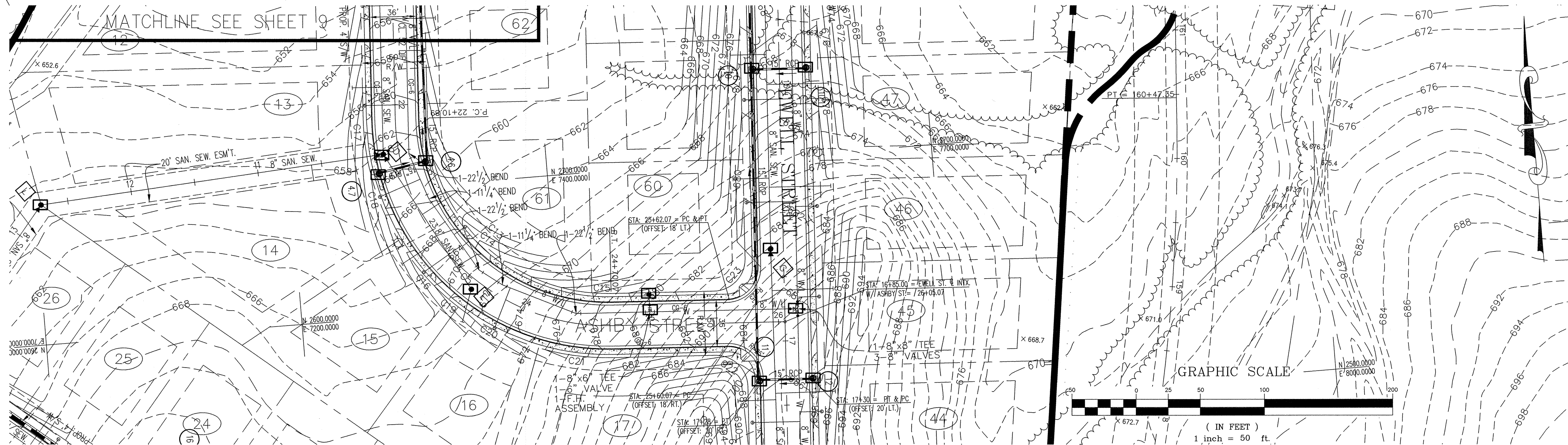
DATE OCTOBER 21, 2003
FILE No. 2181-01-001

FILE No. ~~2181-01-001~~

5 OF 36

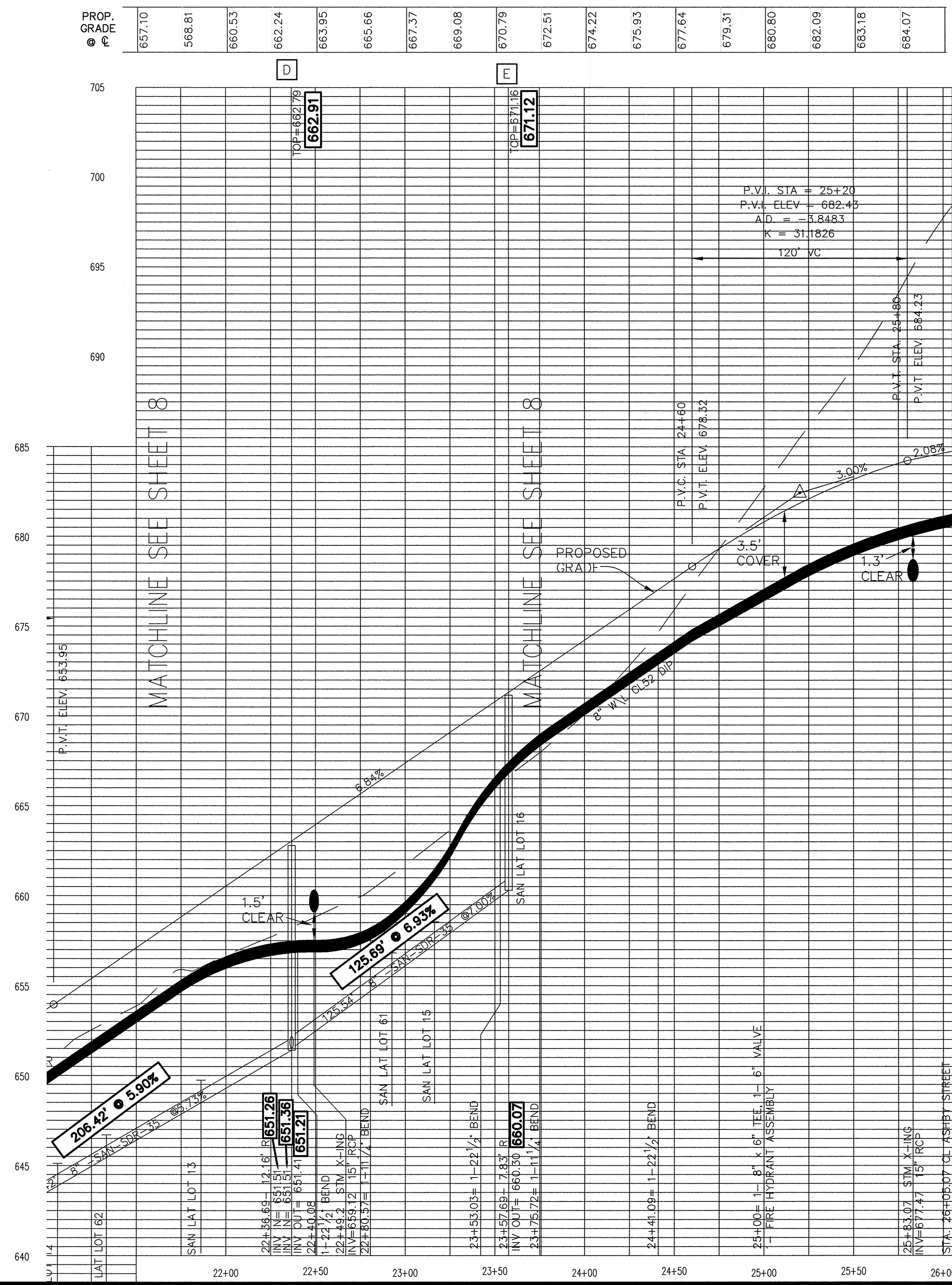
~~SHEET~~ ~~5~~ OF ~~36~~

SHEET 1



ASHBY STREET
DESIGN SPEED = 25 MPH
R.O.W. = 50'
300 ADT

AS-BUILT PLAN



AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED FEBRUARY 2007 AND JULY 2017

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

PAUL SWARTZ
Lic. No. 002701
73117
LAND SURVEYOR

AS-BUILT

AS-BUILT CONDITIONS

ASBUILT SHEET 5 OF 18
2181-D-AB-001

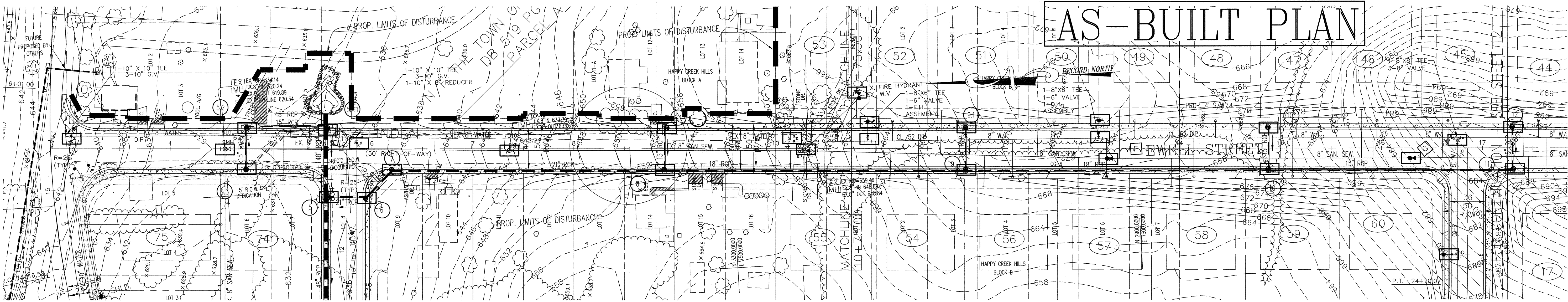
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ASHBY STREET PLAN & PROFILE
(STA. 21+50.00 TO STA. 26+05.07)
ODEN RIDGE
SECTION ONE
TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
JON K. ERICKSON
No. 032355
PROFESSIONAL ENGINEER

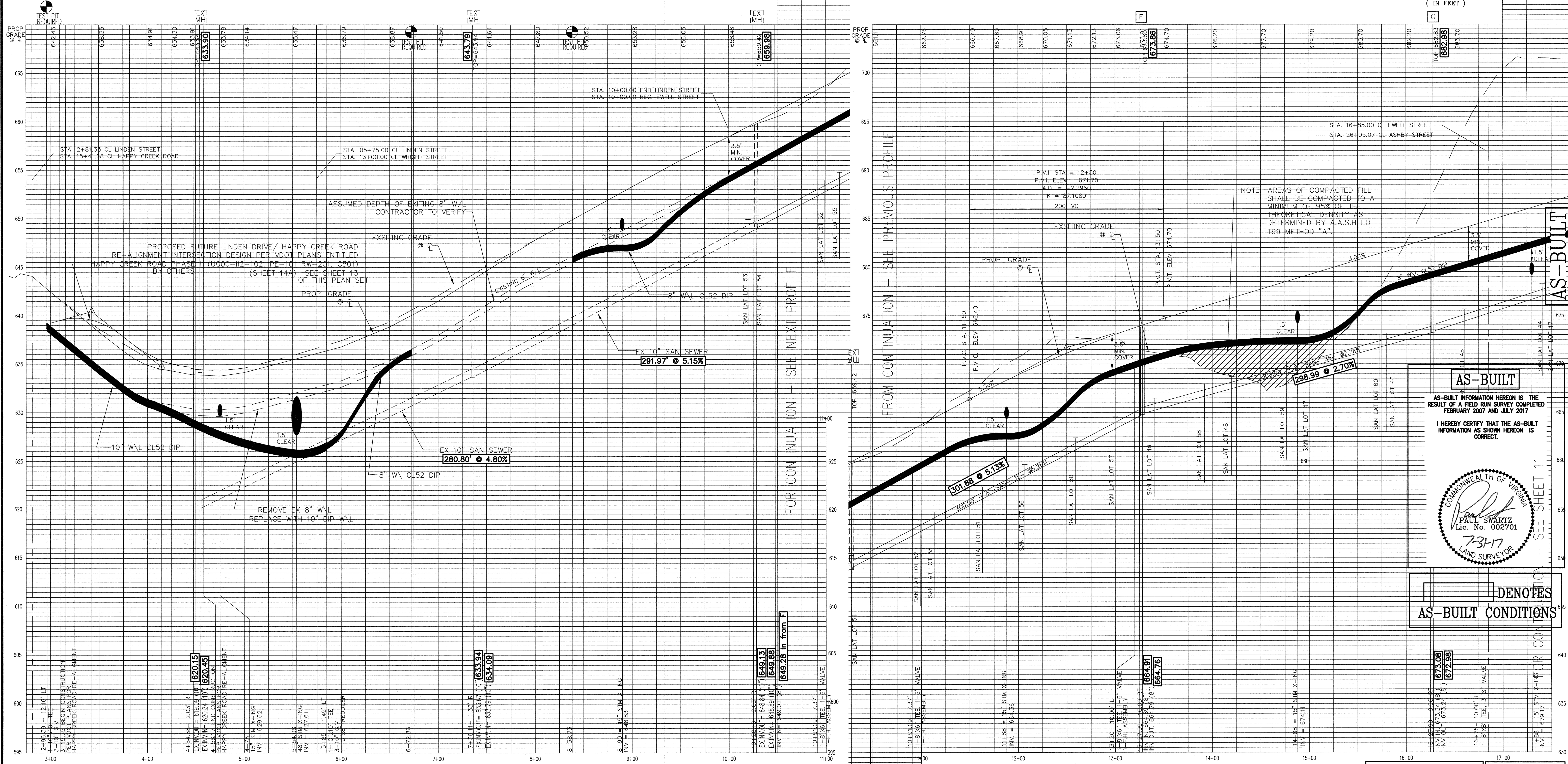
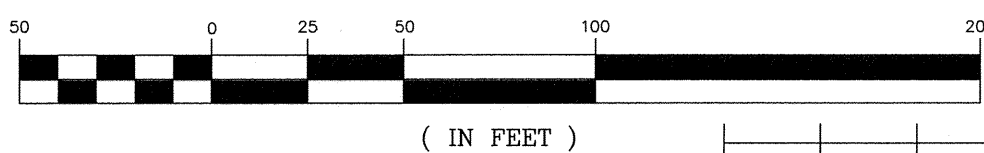
PLAN STATUS	
12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPT. SUBMISSION
02-04-04	PER TOWN COMMENTS
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09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-24-05	PER TOWN COMMENTS
07-12-05	PER 8/10/05 LETTER
DATE	DESCRIPTION
MPP/TH	CJM
DESIGN	DRAWN
SCALE	CHKD
SCALE: H: 1"=50' V: 1"=5'	
JOB No. 2181-01-001	
DATE: OCTOBER 21, 2003	
FILE No. 2181-01-001	
SHEET 9 OF 36	



R.O.W. STA 2+50.00 - 10+75 = 50'
ADT= 1470 VPD

EWELL STREET
DESIGN SPEED = 25 MPH

R.O.W. STA 10+75.00 - 17+25.00 = 60'
ADT= 1470 VPD



AS-BUILT

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I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

PAUL SWARTZ
Lic. No. 002701
7-31-17
LAND SURVEYOR

COMMONWEALTH OF VIRGINIA

PROFESSIONAL ENGINEER

JOHN K. ERICKSON
No. 032355

PLAN STATUS

DATE	DESCRIPTION
12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPT. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
08-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-21-05	PER TOWN COMMENTS
05-17-05	PER TOWN COMMENTS
08-12-05	PER 8/10/05 LETTER

DATE **DESCRIPTION**

MPP/TH **CJM**

DESIGN **DRAWN** **CHKD**

SCALE **H: 1"=50'**
V: 1"=5'

JOB No. 2181-01-001

DATE **OCTOBER 21, 2003**

FILE No. 2181-01-001

10 of 36

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EWELL STREET PLAN & PROFILE
(STA. 2+50 TO STA. 17+25.00)

ODEN RIDGE

SECTION ONE

TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED FEBRUARY 2007 AND JULY 2017

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

PAUL SWARTZ
Lic. No. 002701
7-31-17
LAND SURVEYOR

COMMONWEALTH OF VIRGINIA

PROFESSIONAL ENGINEER

JOHN K. ERICKSON
No. 032355

PLAN STATUS

DATE	DESCRIPTION
12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPT. SUBMISSION
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MPP/TH **CJM**

DESIGN **DRAWN** **CHKD**

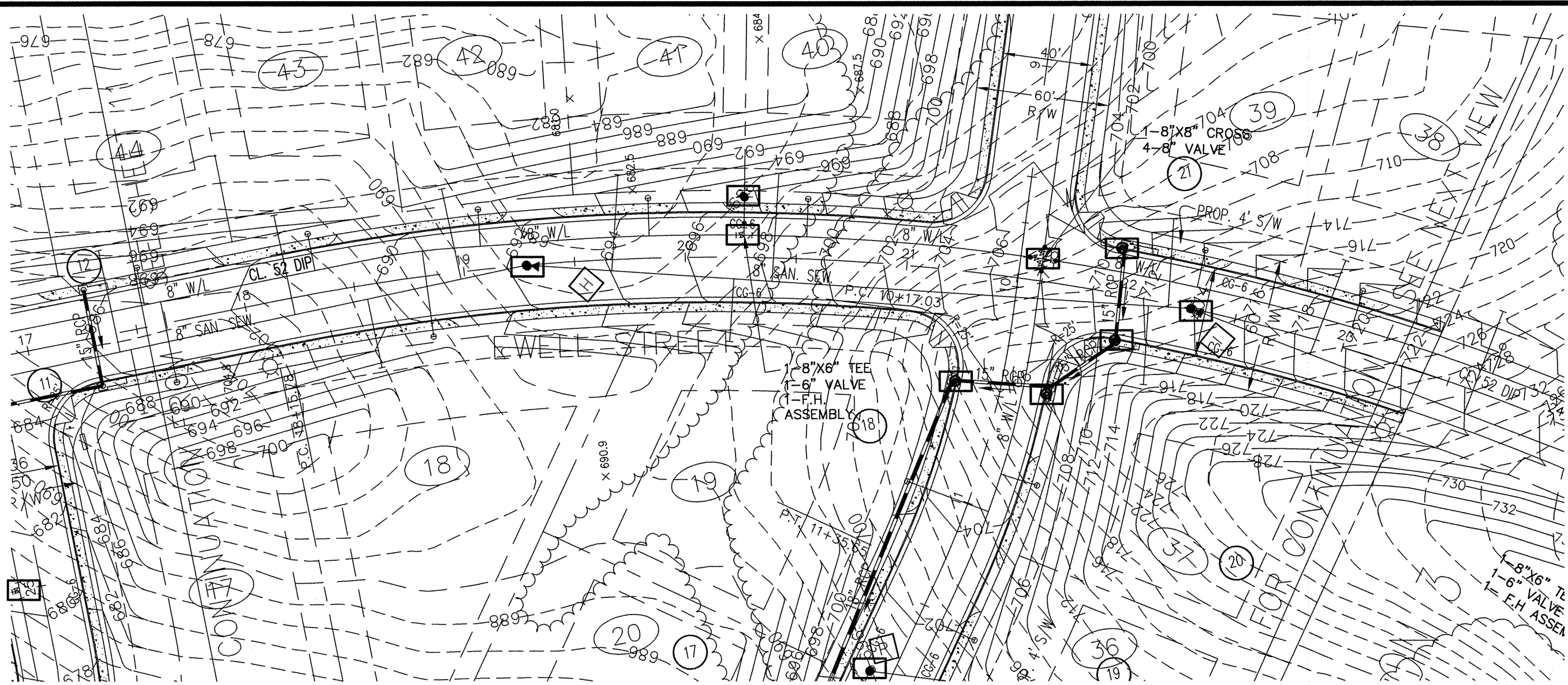
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JOB No. 2181-01-001

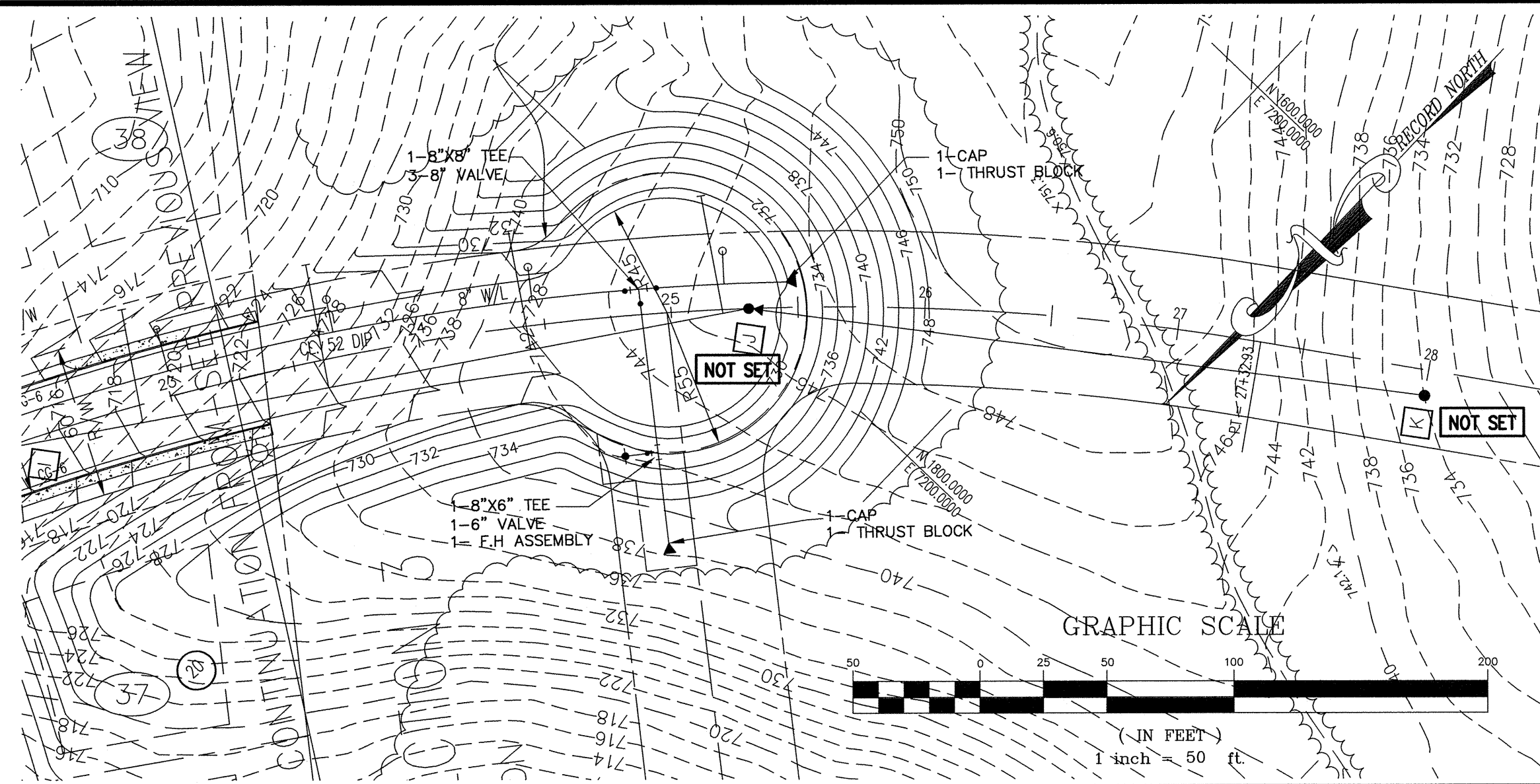
DATE **OCTOBER 21, 2003**

FILE No. 2181-01-001

10 of 36

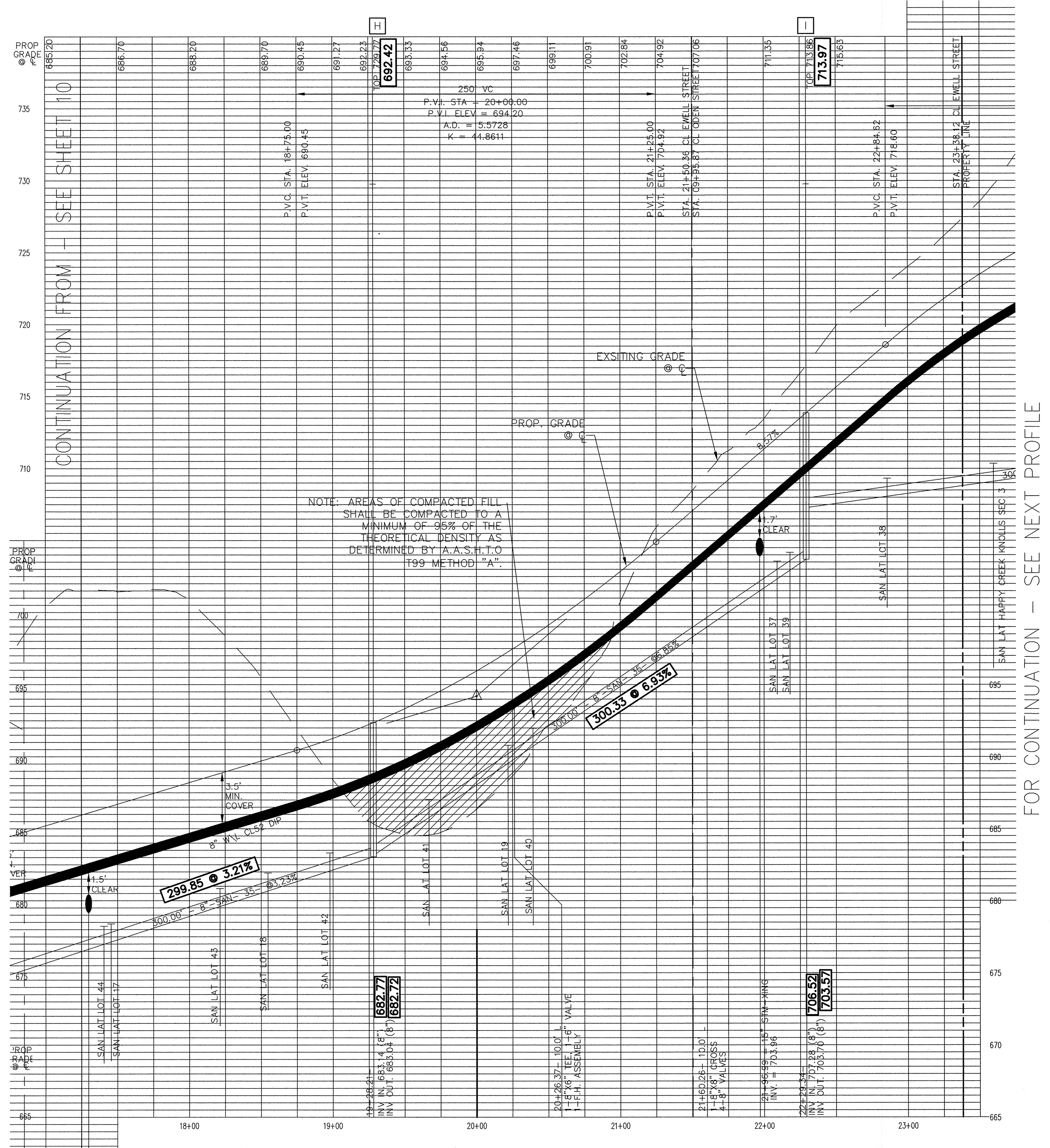


R.O.W. STA 17+25.00 - 23+25 = 60'
ADT= 1470 VPD

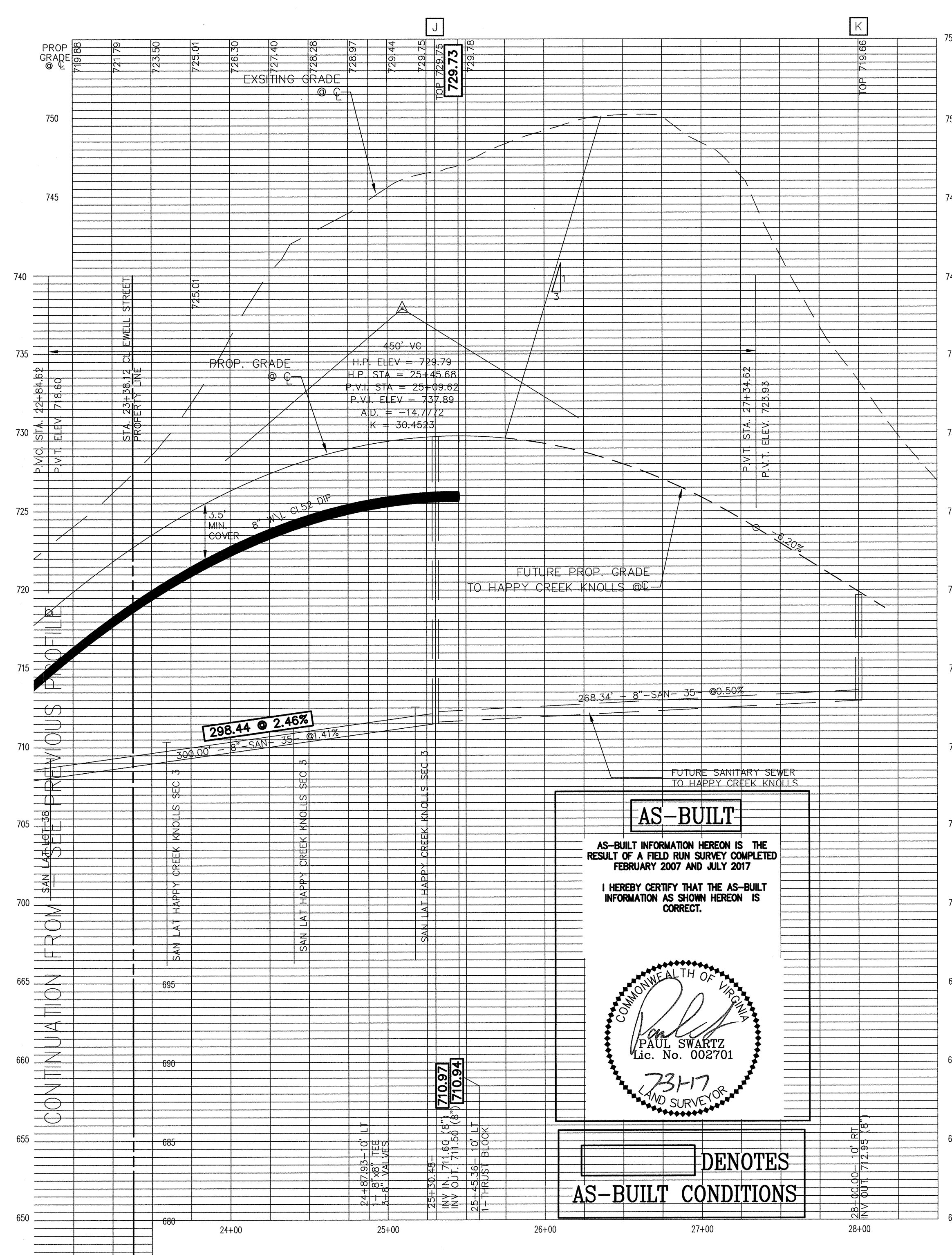


R.O.W. STA 23+25.00 - 28+50 = 52.5'
ADT= 560 VPD

AS-BUILT PLAN



FOR CONTINUATION - SEE NEXT PROFILE



AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED FEBRUARY 2007 AND JULY 2017

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

COMMONWEALTH OF VIRGINIA
PAUL SWARTZ
Lic. No. 002701
23-17
LAND SURVEYOR

DENOTES
AS-BUILT CONDITIONS

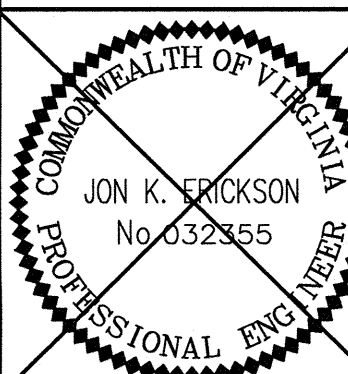
ASBUILT
SHEET 7 OF 18
2181-D-AB-001

AS-BUILT

EWELL STREET PLAN & PROFILE
(STA. 17+25.00 TO STA. 28+50.00)

ODEN RIDGE
SECTION ONE

TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA



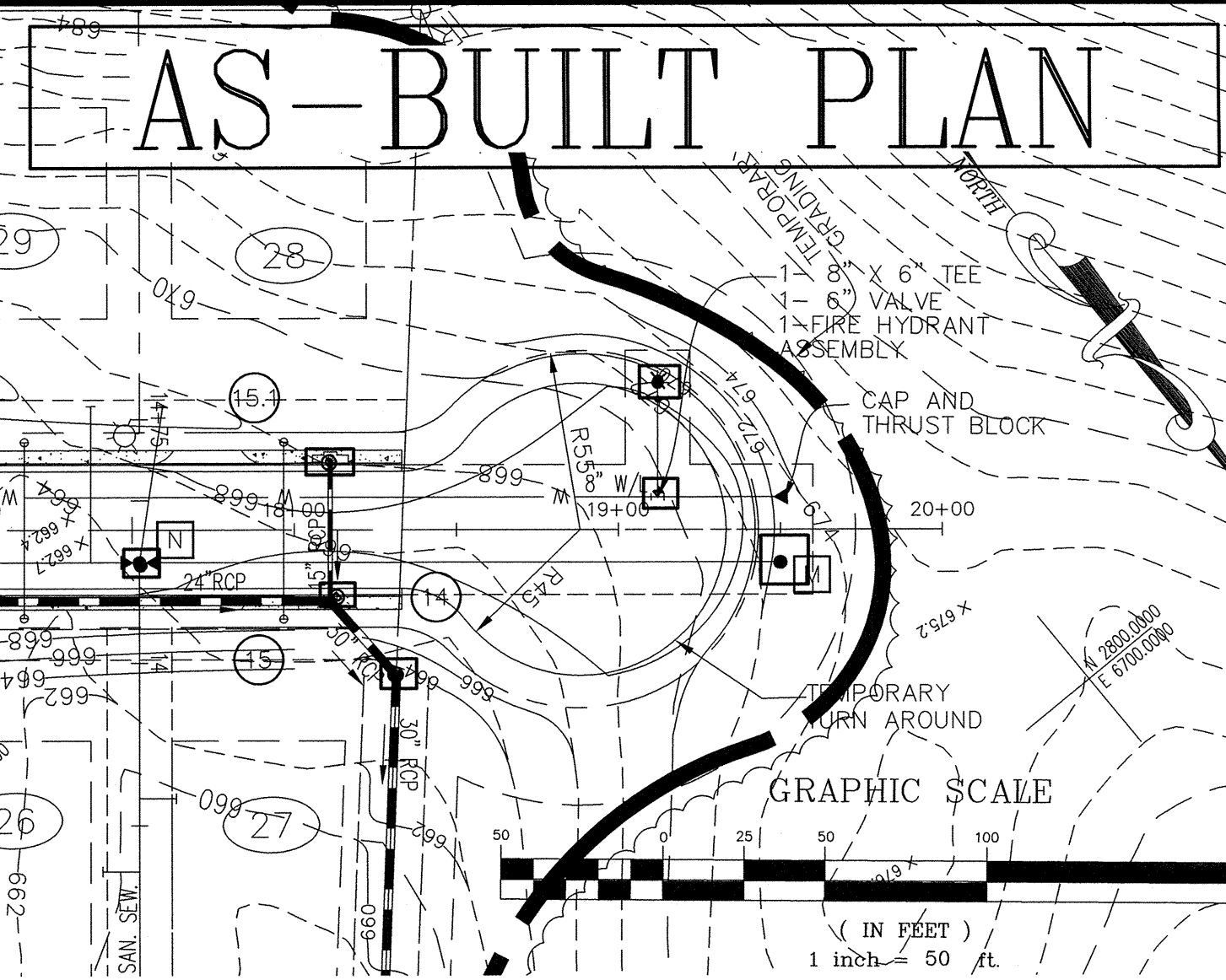
PLAN STATUS	
12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPT. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-24-05	PER TOWN COMMENTS
07-12-05	PER 8/10/05 LETTER

DATE		DESCRIPTION	
MPP/TH		CJM	
DESIGN		DRAWN	CHKD
SCALE	H: 1"=50' V: 1"=5'		
JOB No. 2181-01-001			
DATE		OCTOBER 21, 200	
FILE No.		2181-01-001	
SHEET		11 OF 36	

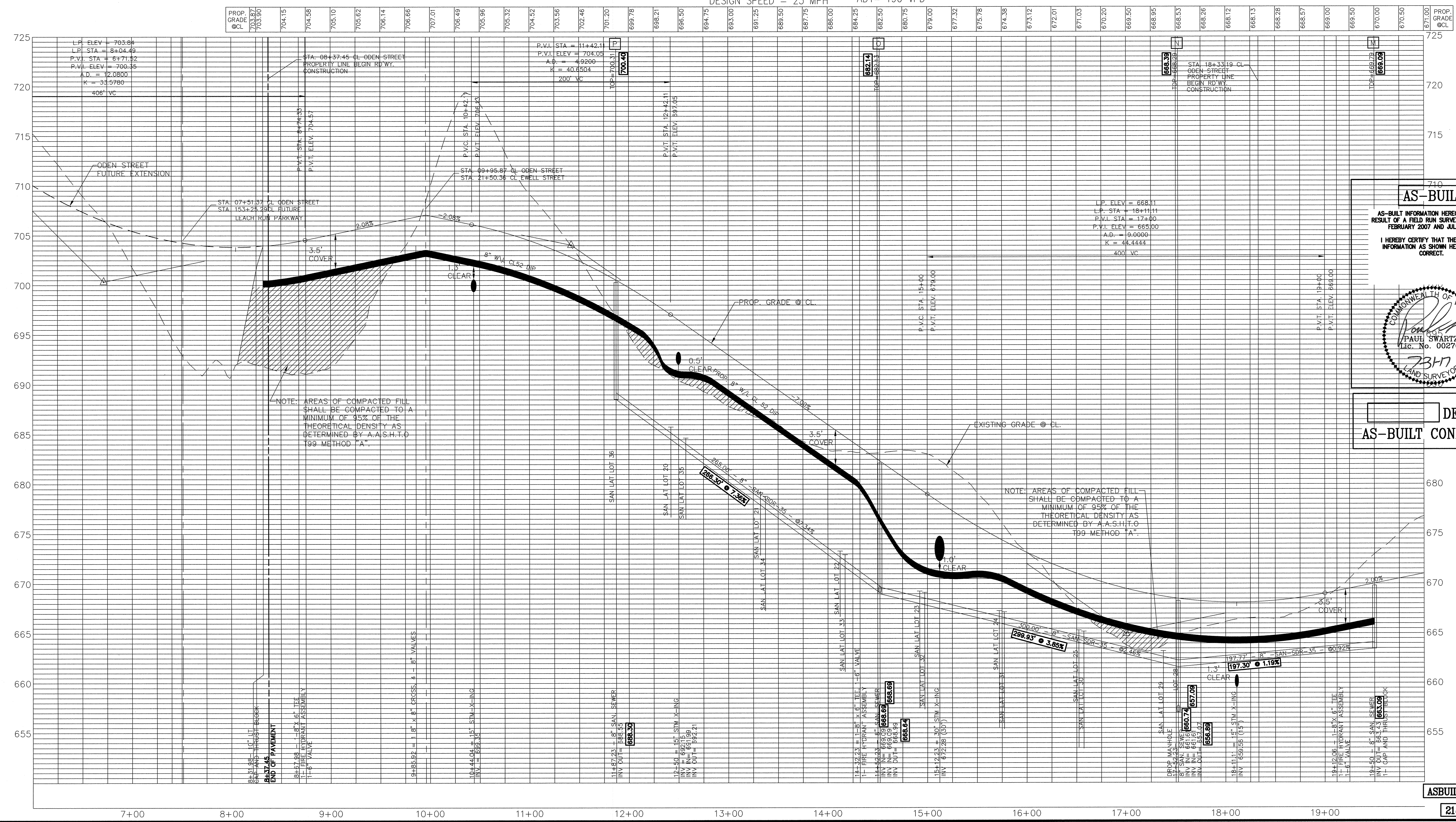
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ODEN STREET
DESIGN SPEED = 25 MPH
R.O.W. = 60'
ADT = 190 VPD



AS-BUILT

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PAUL SWARTZ
Lic. No. 002701
7317
LAND SURVEYOR

AS-BUILT

AS-BUILT CONDITIONS

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ODEN STREET PLAN & PROFILE
ODEN RIDGE
SECTION ONE
TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

AS-BUILT

PLAN STATUS

DATE	DESCRIPTION
12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPT. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
05-13-05	PER TOWN COMMENTS
07-28-05	PER TOWN COMMENTS
08-12-05	PER 8/10/05 LETTER

DATE OCTOBER 21, 2005
FILE NO. 2181-01-001
JOB NO. 2181-01-001
DATE OCTOBER 21, 2005
FILE NO. 2181-01-001

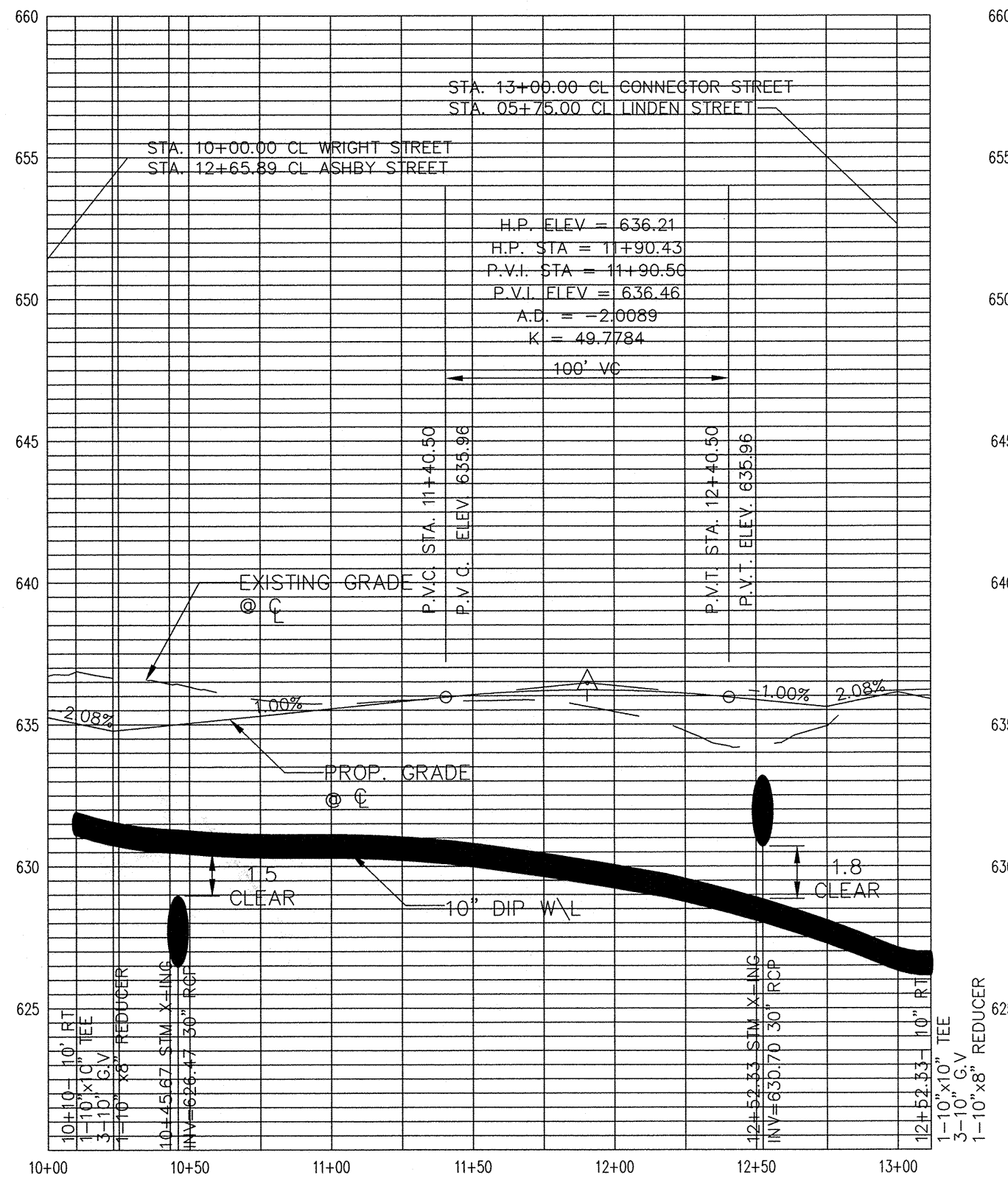
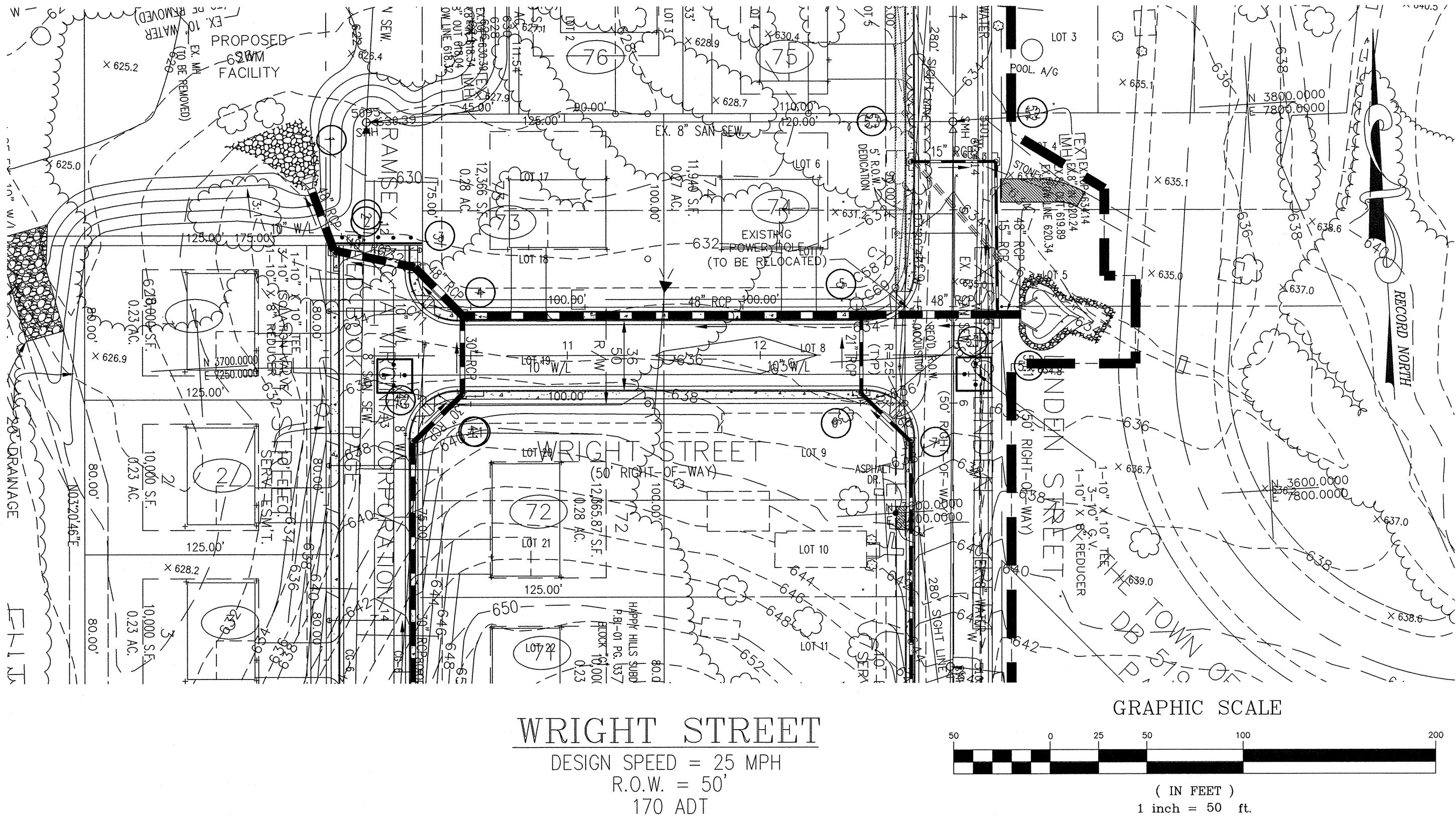
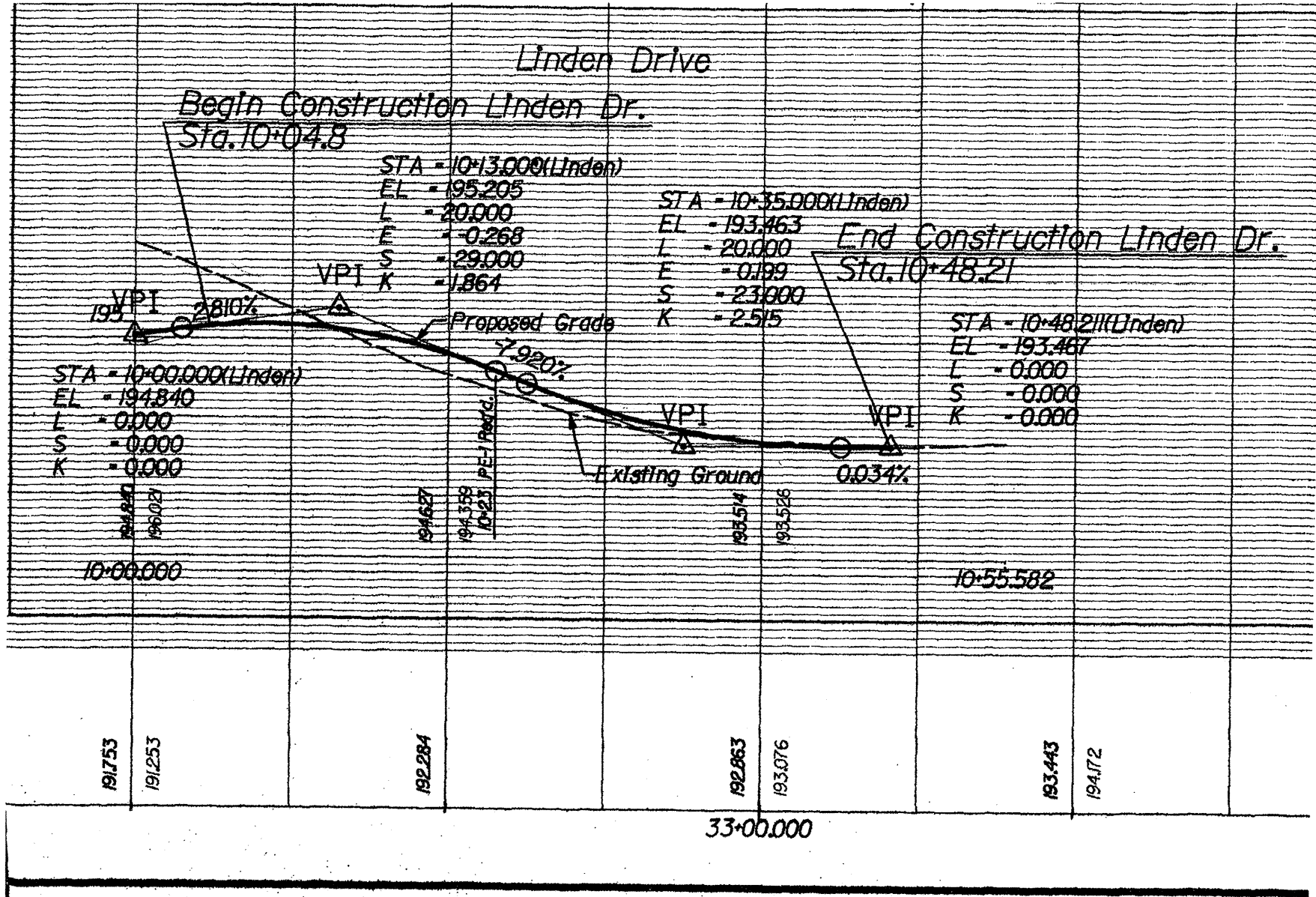
ASBUILT SHEET 8 OF 18
2181-D-AB-001

12 OF 36

AS-BUILT PLAN

VDOT PLANS FOR FUTURE HAPPY CREEK ROAD REALIGNMENT BY OTHERS

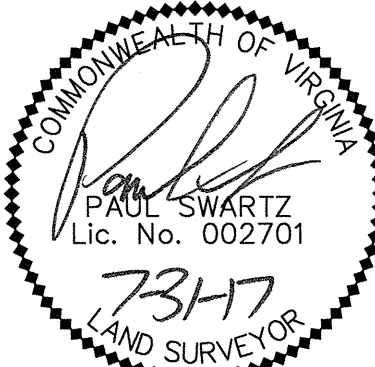
(NOTE: ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE GIVEN ON METERS. VDOT STATION 10+00.00 ~ LINDEN DRIVE STATION 3+00.00)



AS-BUILT

AS-BUILT INFORMATION HEREON IS THE
RESULT OF A FIELD RUN SURVEY COMPLETED
FEBRUARY 2007 AND JULY 2017

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INFORMATION AS SHOWN HEREON IS
CORRECT.



 DENOTES
AS-BUILT CONDITIONS

ASBUILT SHEET 9 OF 18

2181-D-AB-001

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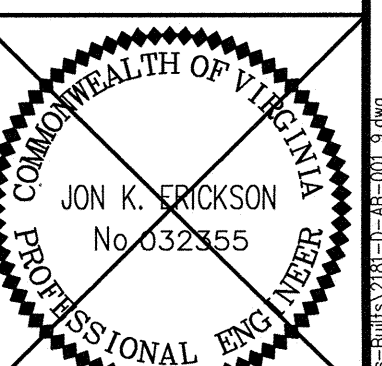
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AS-BUILT

WRIGHT STREET. PLAN & PROFILE

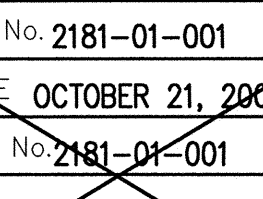
WOODEN RIDGE
SECTION ONE

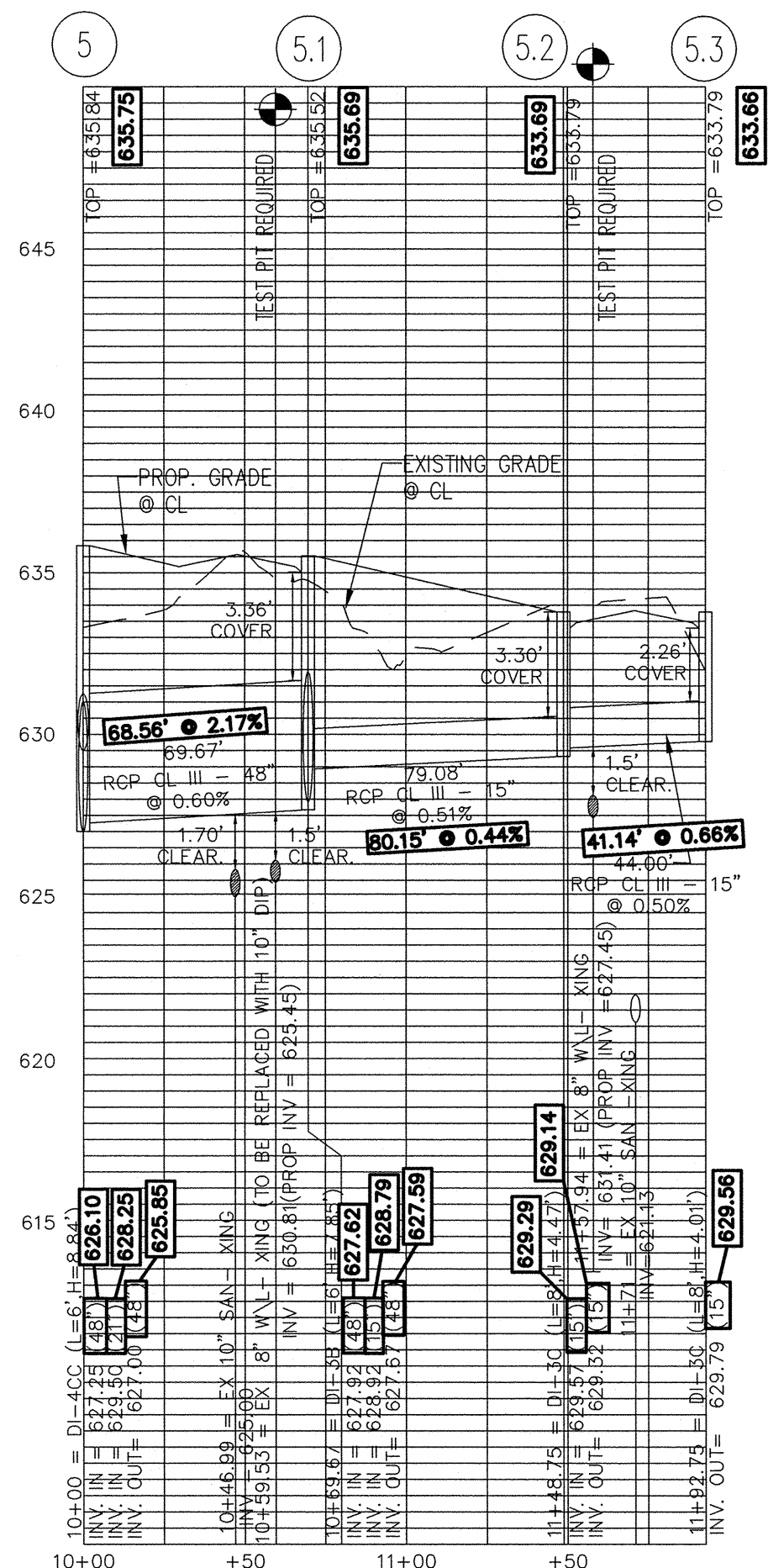
TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA



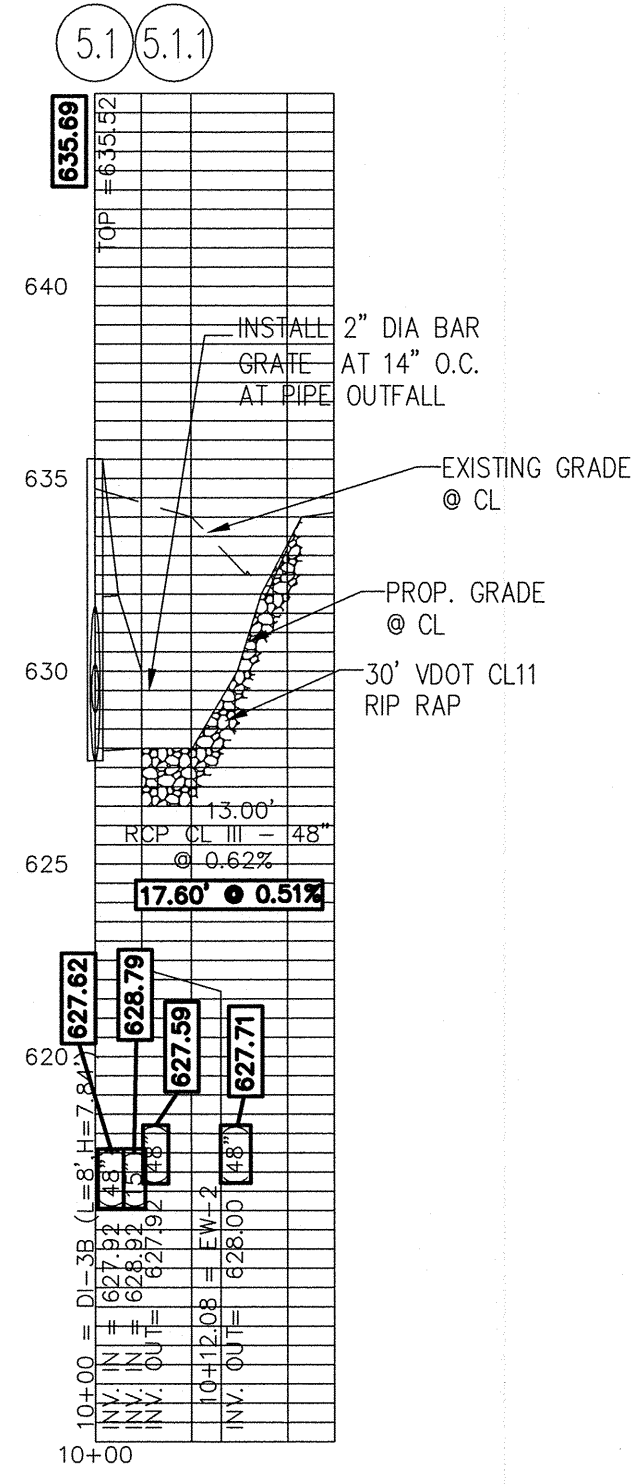
PLAN STATUS

1-19-03	PER STAFF COMMENTS
2-20-03	HEALTH DEPART. SUBMISSION
2-02-04	PER TOWN COMMENTS
7-16-04	PER TOWN COMMENTS
9-24-04	PER TOWN COMMENTS
1-18-04	PER TOWN COMMENTS
2-21-05	PER TOWN COMMENTS
9-12-05	PER 8/10/05 LETTER

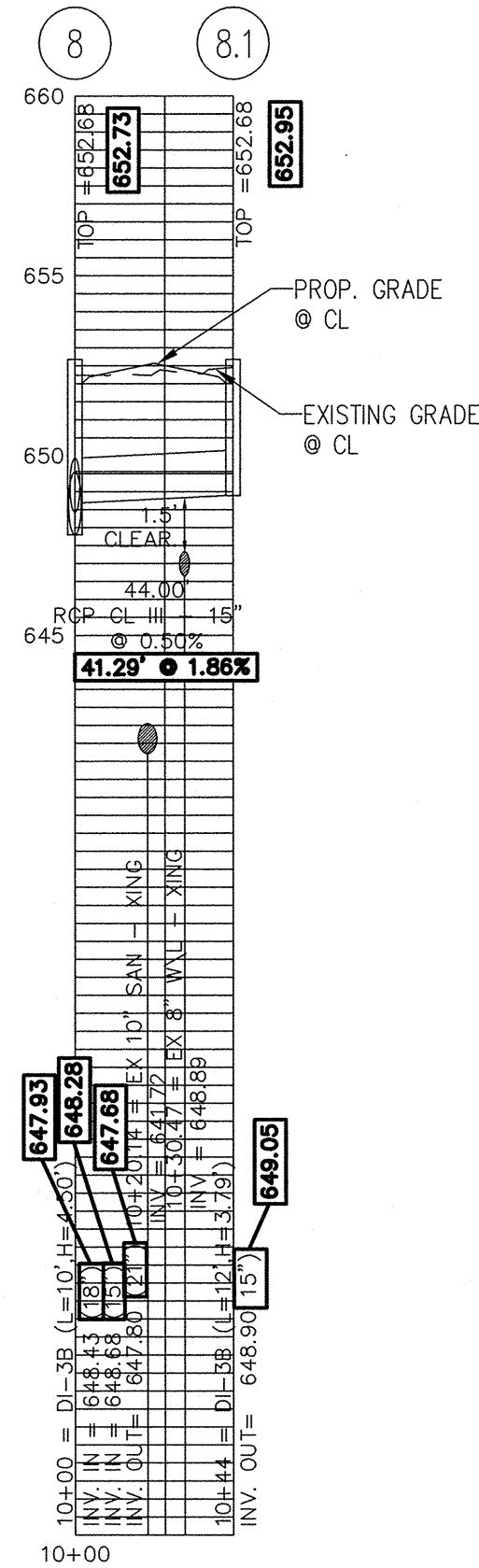
DATE	DESCRIPTION	
PP/TH	CJM	
DESIGN	DRAWN	CHKD
SCALE	H: 1"=50' V: 1"=5'	
JOB No.	2181-01-001	
DATE	OCTOBER 21, 2003	
FILE No.	2181-01-001	
		
SHEET	13 OF 36	



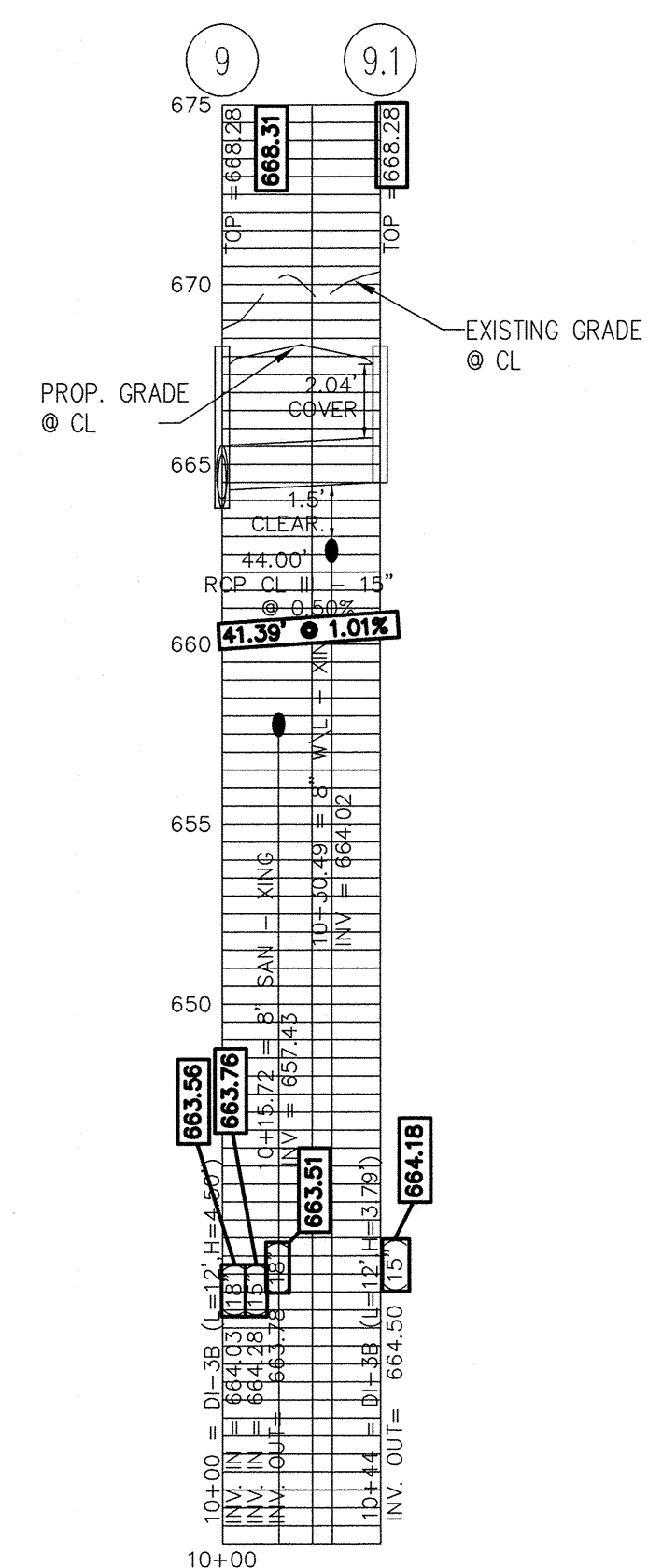
STM 5 -5.3



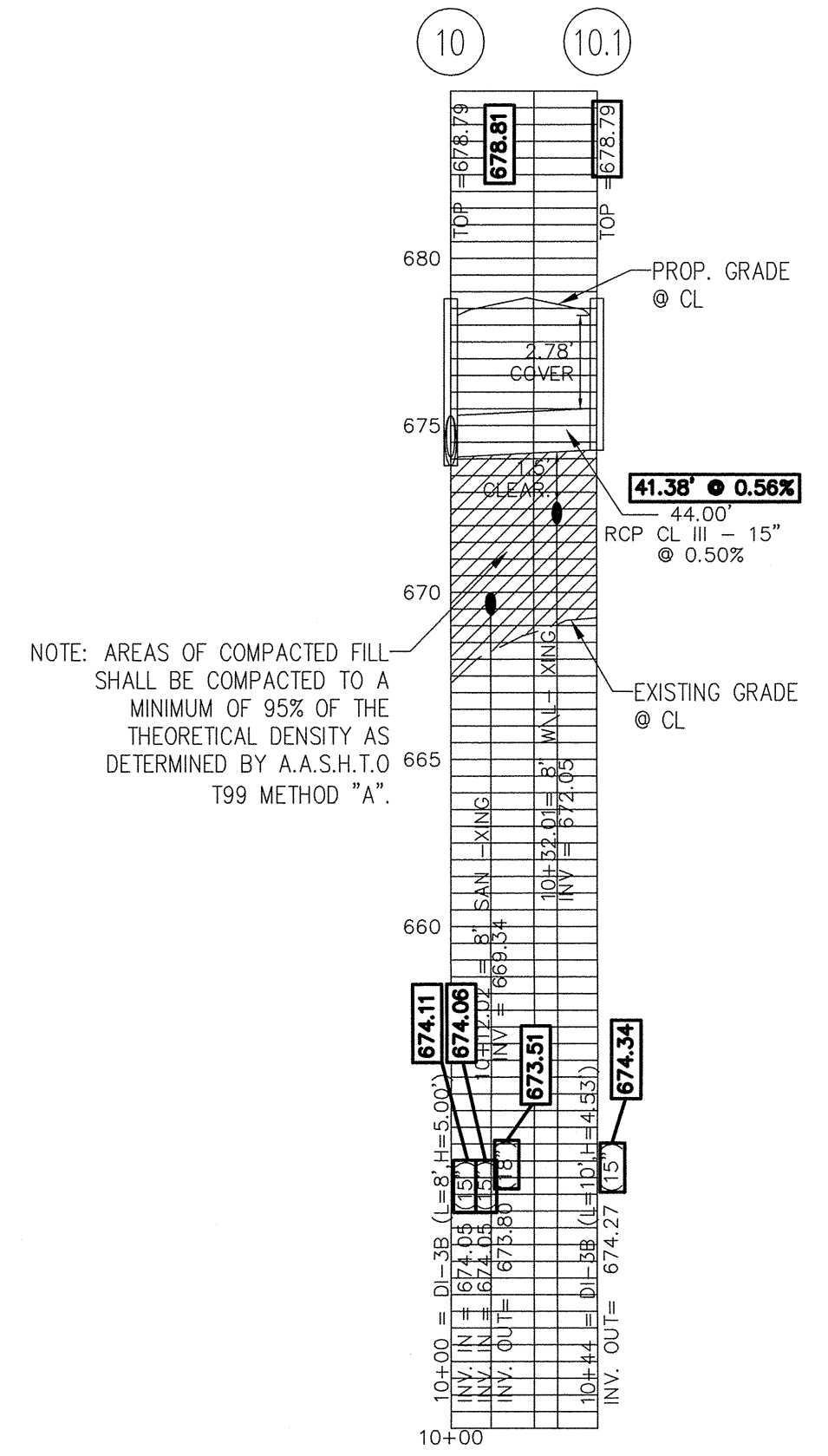
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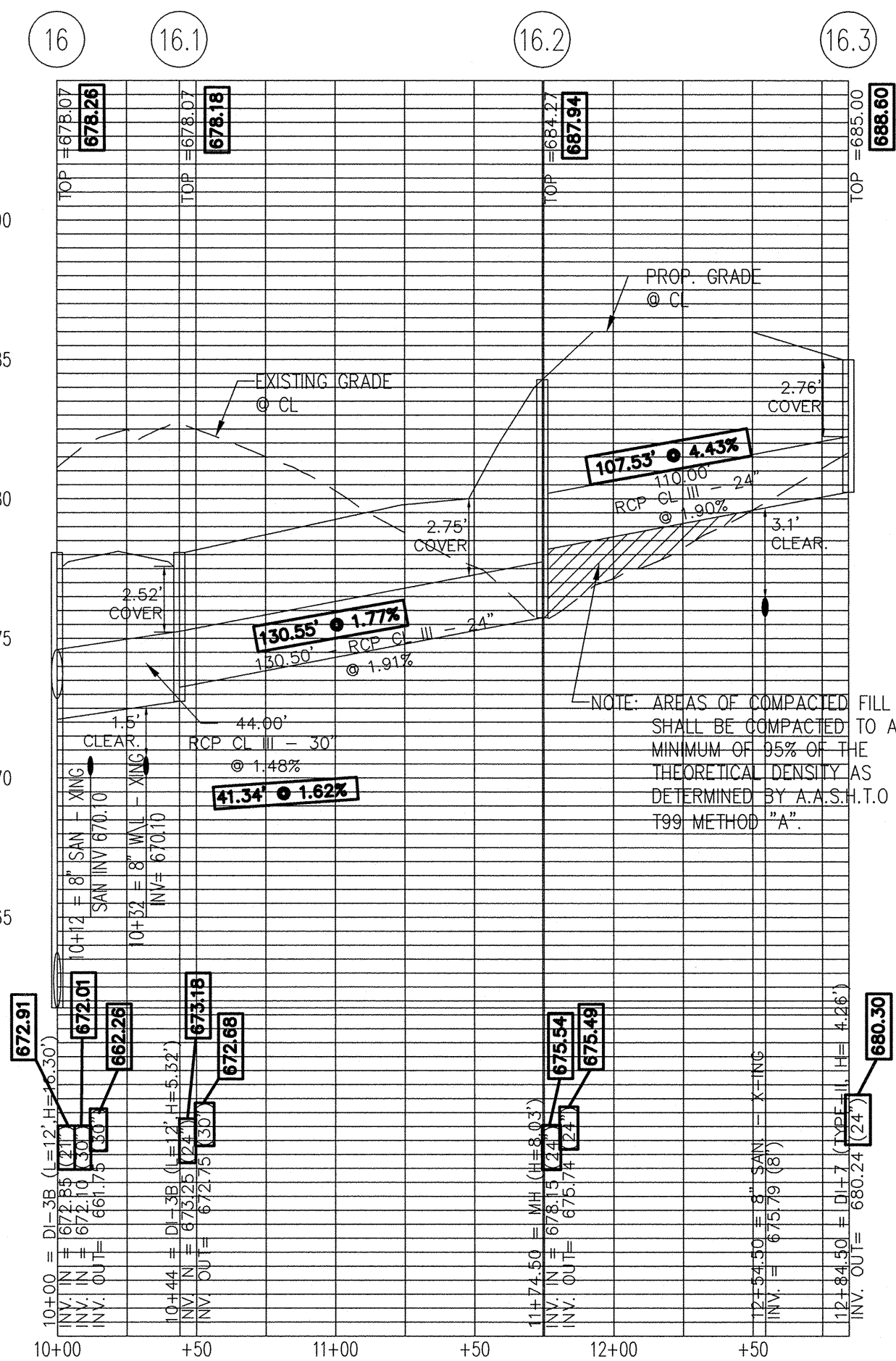
STM 8-8.1



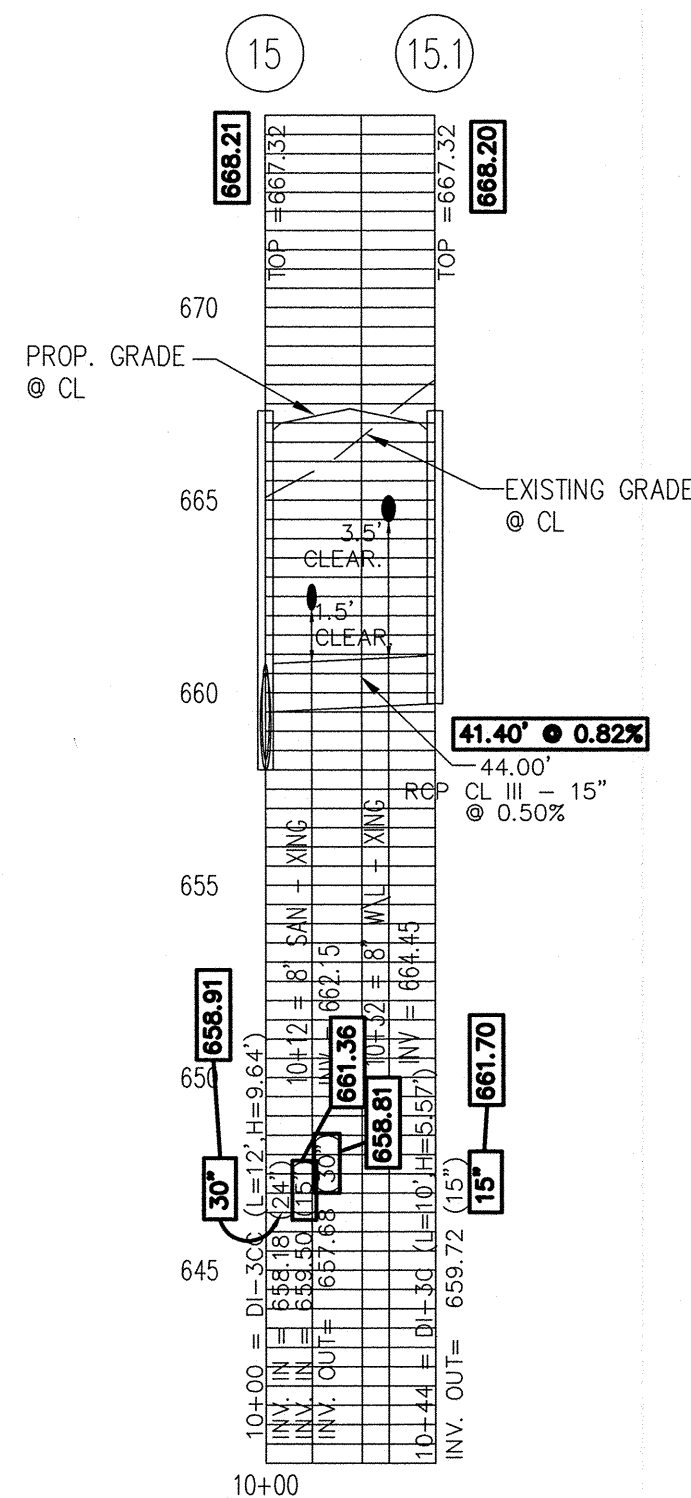
STM 9-9.1



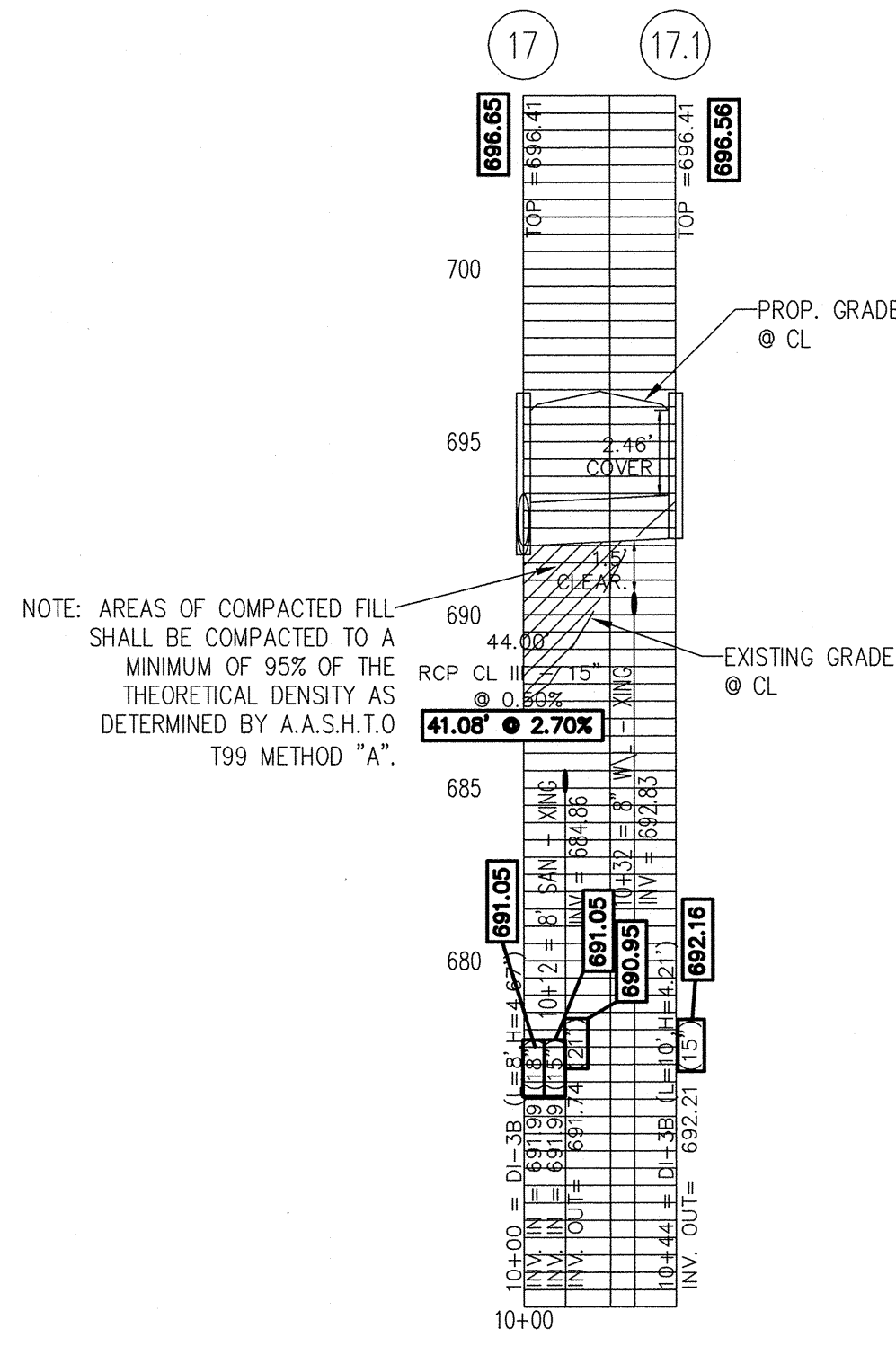
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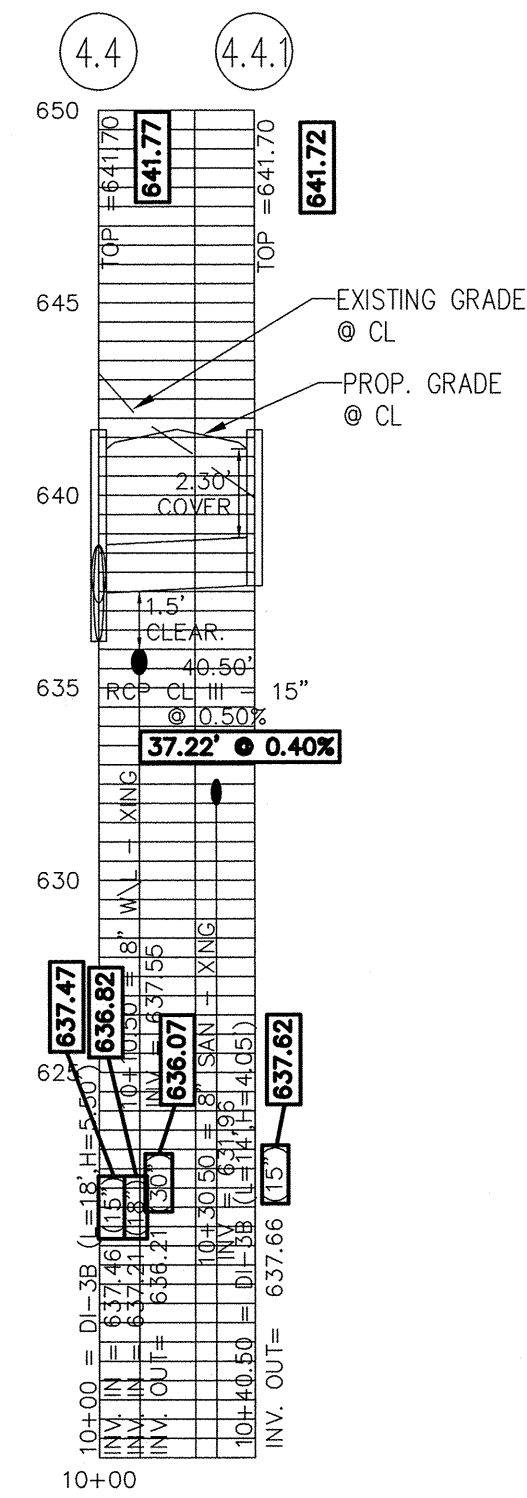
STM 16-16.3



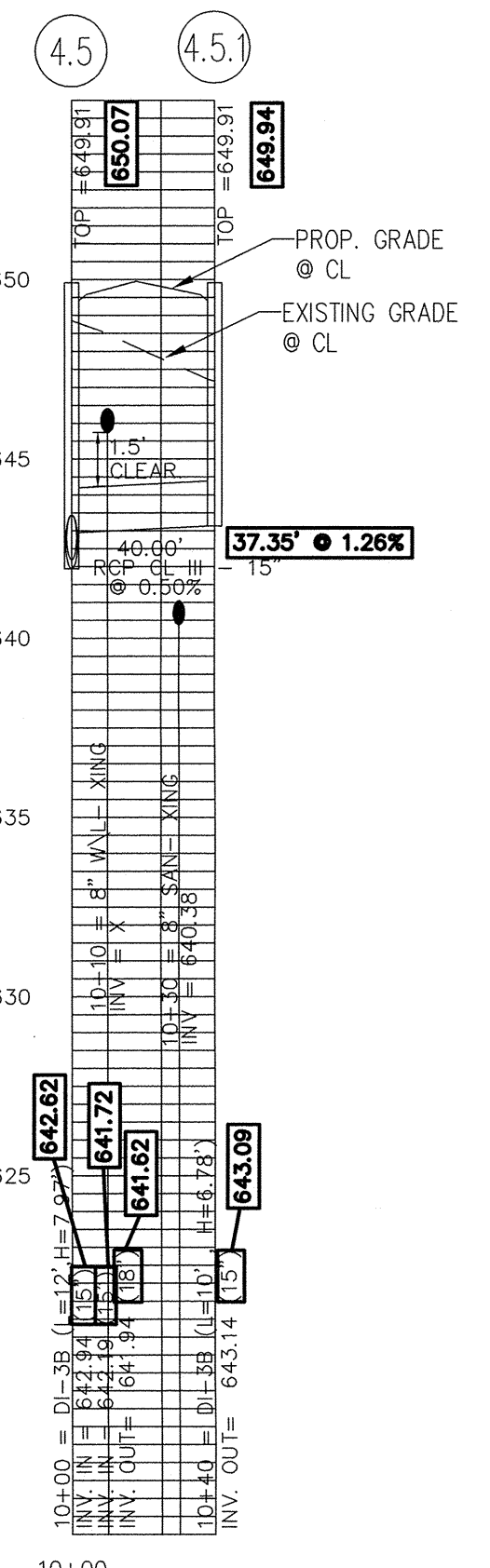
STM 15-15.1



STM 17-17.1



STM 4.4-4.4.1



STM 4.5-4.5.1

AS-BUILT PLAN

NOTE: AREAS OF COMPACTED FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE THEORETICAL DENSITY AS DETERMINED BY A.A.S.H.T.O T99 METHOD "A".

AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED FEBRUARY 2007 & JULY 2017

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

COMMONWEALTH OF VIRGINIA

PAUL SWARTZ

Lic. No. 002701

731-17

LAND SURVEYOR

DENOTES AS-BUILT CONDITIONS

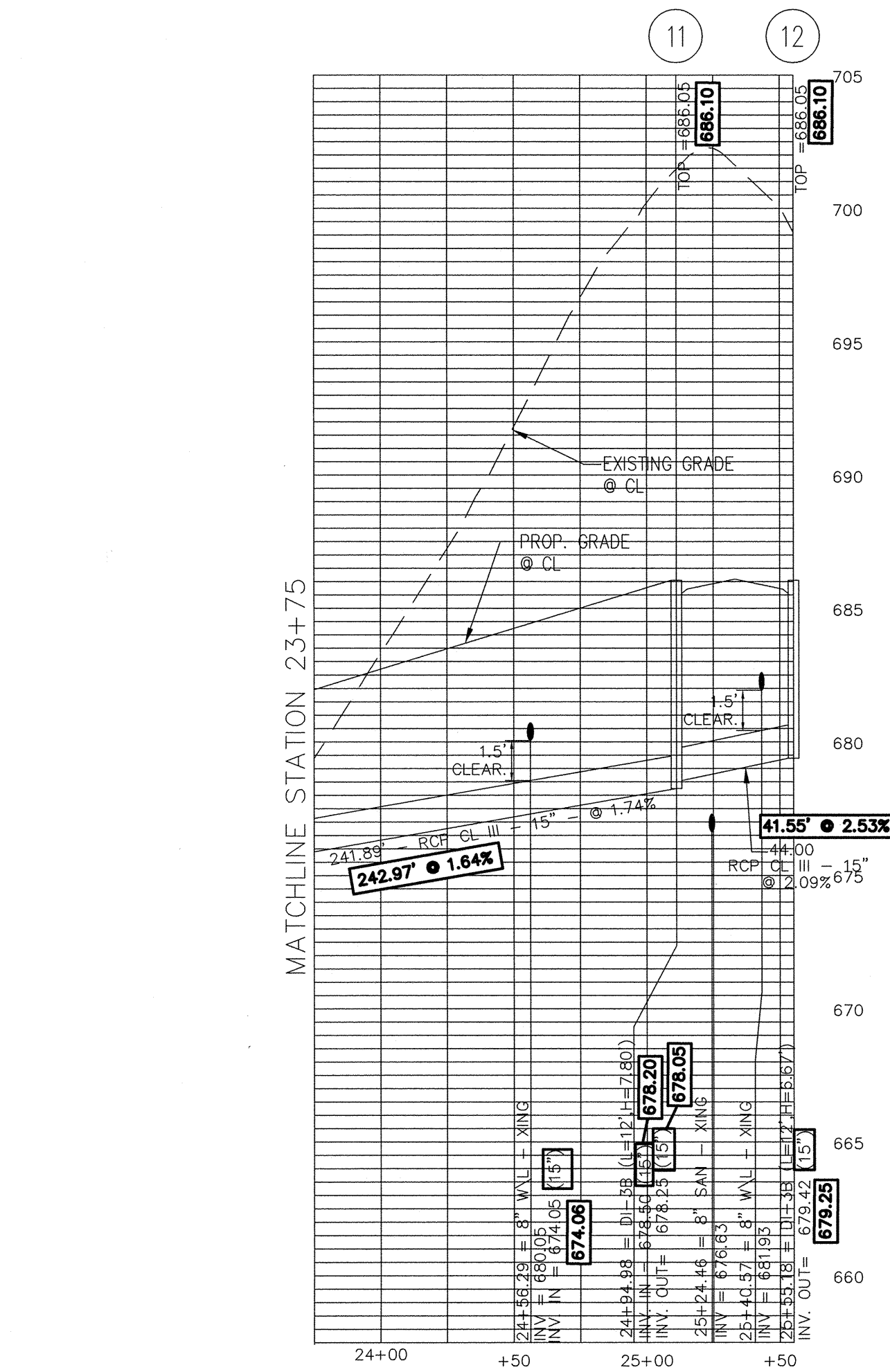
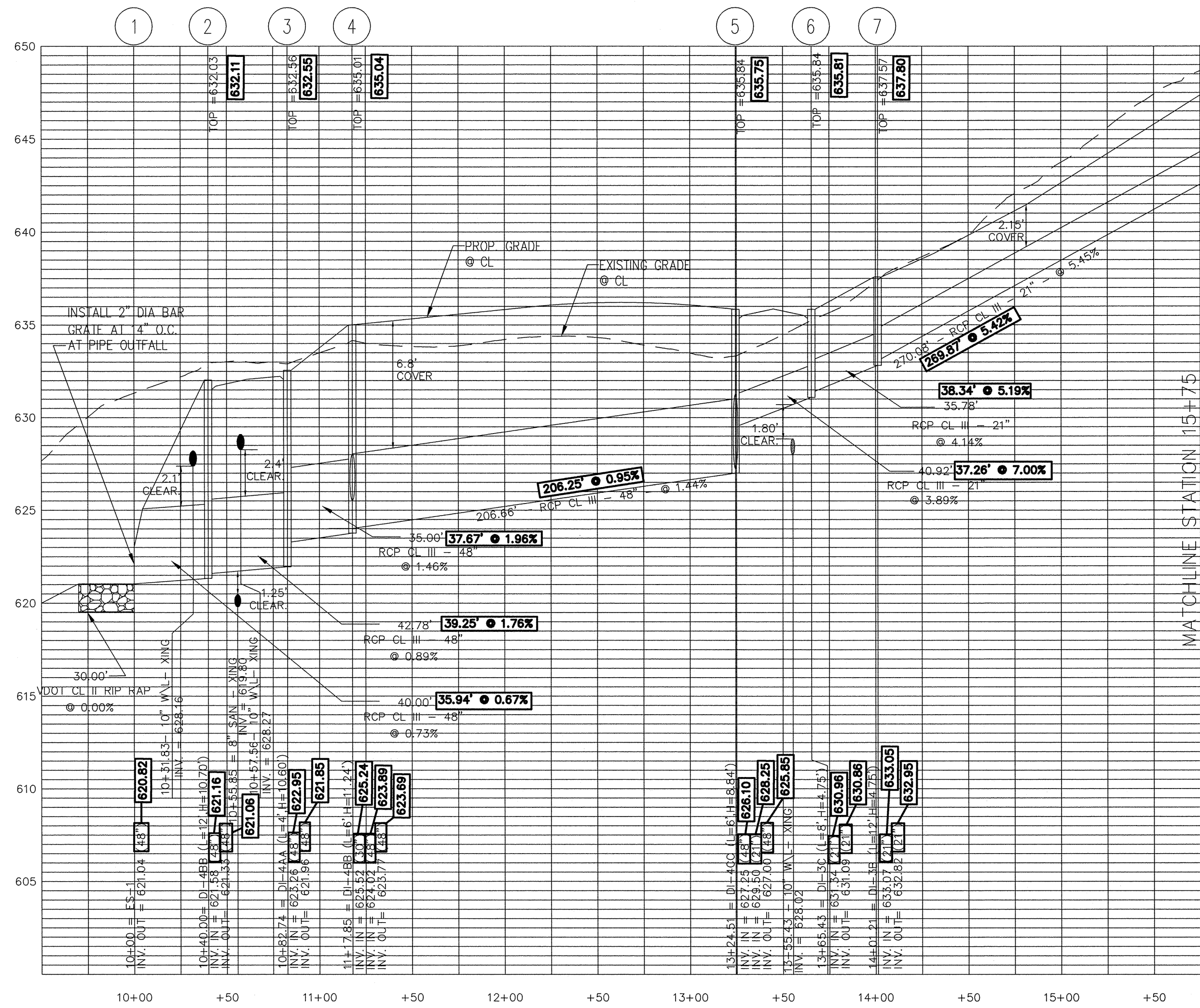
ASBUILT SHEET 10 OF 18
2181-D-AB-001

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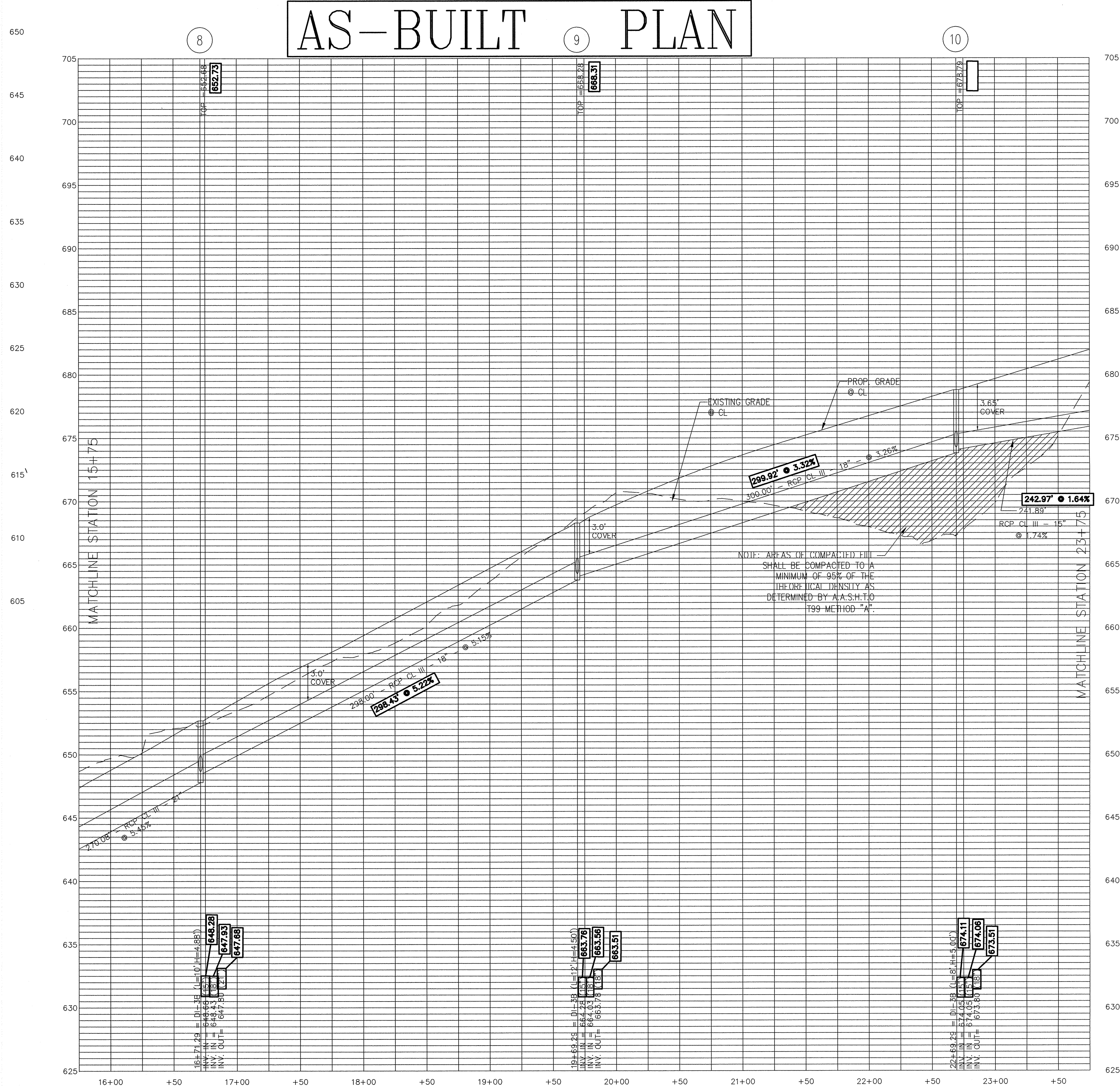
STORM SEWER PROFILES
ODEN RIDGE
SECTION ONE
TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
JON K. ERICKSON
No. 032855
PROFESSIONAL ENGINEER

PLAN STATUS	
12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPART. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-24-05	PER TOWN COMMENTS
05-12-05	PER TOWN COMMENTS
06-12-05	PER 8/10/05 LETTER
DATE	DESCRIPTION
MPP/TH	CJM
DESIGN	DRAWN CHKD
SCALE	H: 1"=50' V: 1"=5'
JOB No.	2181-01-001
DATE	OCTOBER 21, 2003
FILE No.	2181-01-001
SHEET	14 OF 36



STM 1-12



AS-BUILT

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COMMONWEALTH OF VIRGINIA

PAUL SWARTZ

Lic. No. 002701

7317

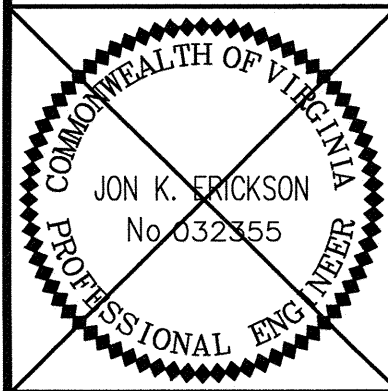
LAND SURVEYOR

DENOTES
AS-BUILT CONDITIONS

ASBUILT SHEET 11 OF 18

2181-D-AB-001

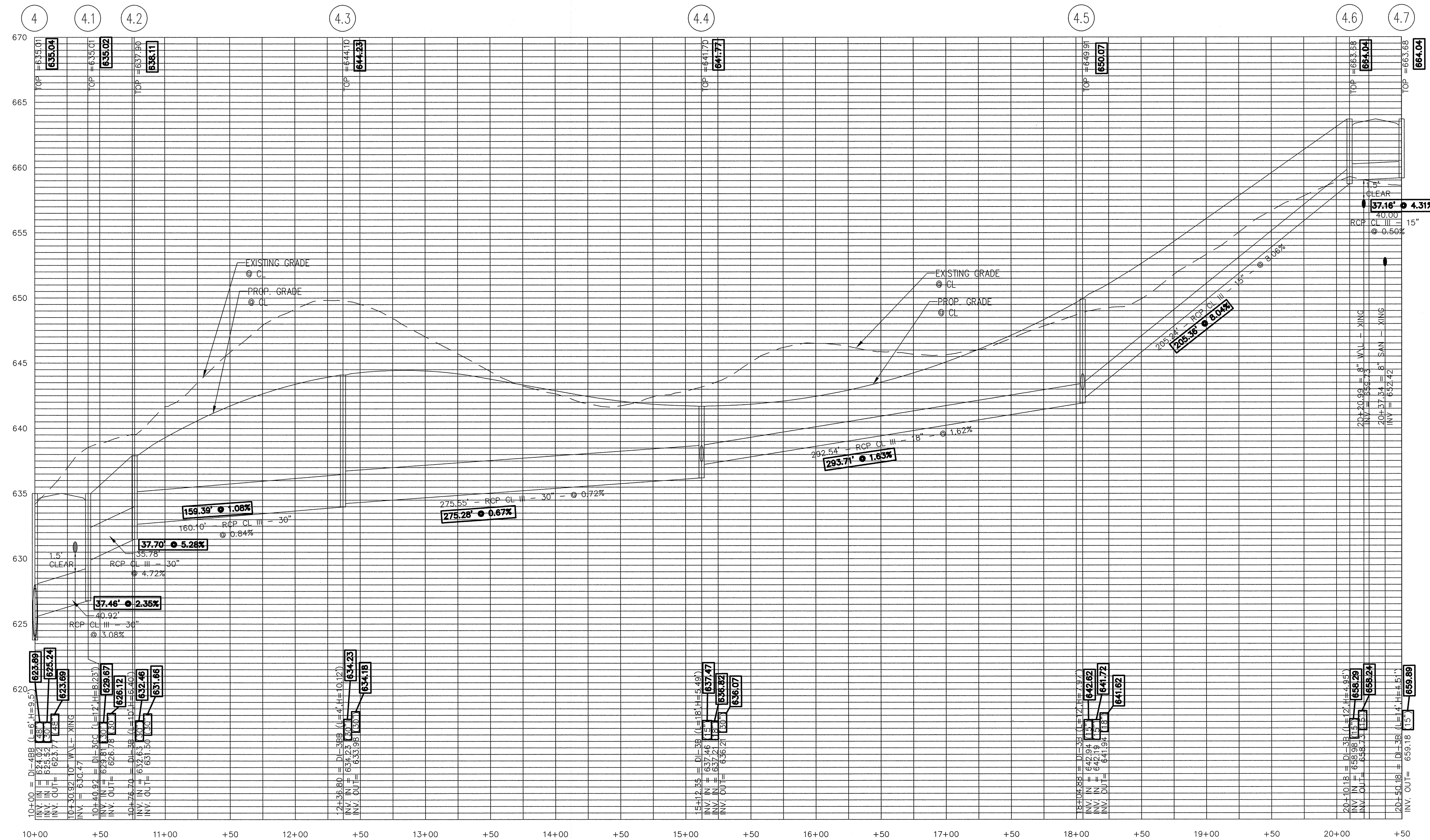
STORM SEWER PROFILES
ODEN RIDGE
SECTION ONE
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA



PLAN STATUS		
12-19-03	PER STAFF COMMENTS	
12-30-03	HEALTH DEPT. SUBMISSION	
02-04-04	PER TOWN COMMENTS	
07-16-04	PER TOWN COMMENTS	
09-24-04	PER TOWN COMMENTS	
11-18-04	PER TOWN COMMENTS	
02-24-05	PER TOWN COMMENTS	
05-17-05	PER TOWN COMMENTS	
06-12-05	PER 8/10/05 LETTER	
DATE	DESCRIPTION	
MPP/TH	CJM	
DESIGN	DRAWN	CHKD
SCALE	H: 1"=50'	
	V: 1"=5'	
JOB No. 2181-01-001		
DATE OCTOBER 21, 2003		
FILE No. 2181-01-001		
SHEET 15 OF 36		

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AS-BUILT PLAN



STM 4-4.7

AS-BUILT

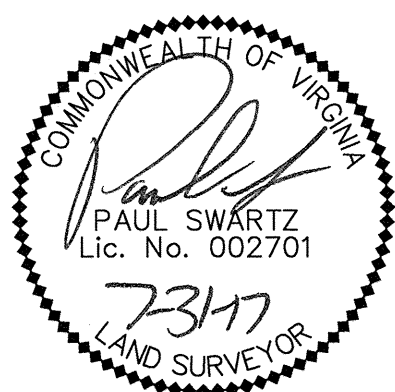
STORM SEWER PROFILES
ODEN RIDGE
SECTION ONE

TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

AS-BUILT

AS-BUILT INFORMATION HEREON IS
THE RESULT OF A FIELD RUN SURVEY
COMPLETED FEBRUARY 2007 & JULY
2017

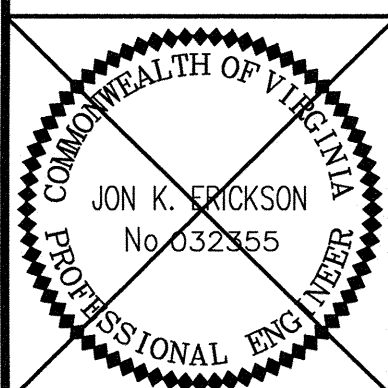
I HEREBY CERTIFY THAT THE
AS-BUILT INFORMATION AS SHOWN
HEREON IS CORRECT.



 DENOTES
AS-BUILT CONDITIONS

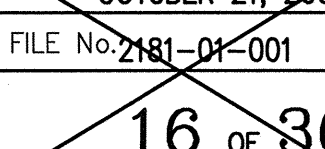
ASBUILT SHEET 12 OF 18

2181-D-AB-001



PLAN STATUS
PLAN STATUS

12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPART. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-24-05	PER TOWN COMMENTS
08-12-05	PER 8/10/05 LETTER

DATE	DESCRIPTION	
MPP/TH	CJM	
DESIGN	DRAWN	CHKD
SCALE	H: 1"=50' V: 1"=5'	
JOB No.	2181-01-001	
DATE	OCTOBER 21, 2003	
FILE No.	2181-01-001	
		
16 OF 36		
SHEET		

SHEET 16 OF 36

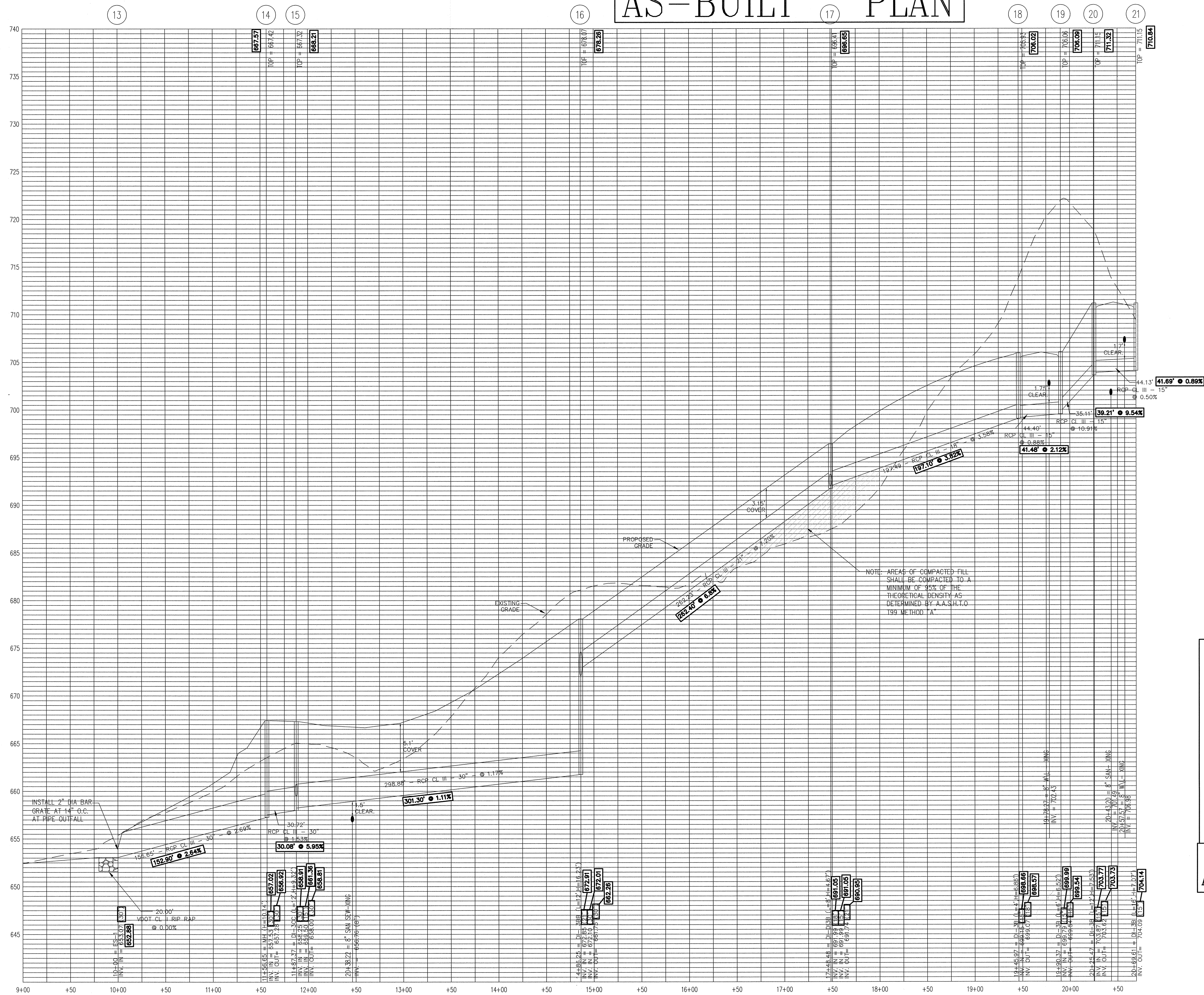
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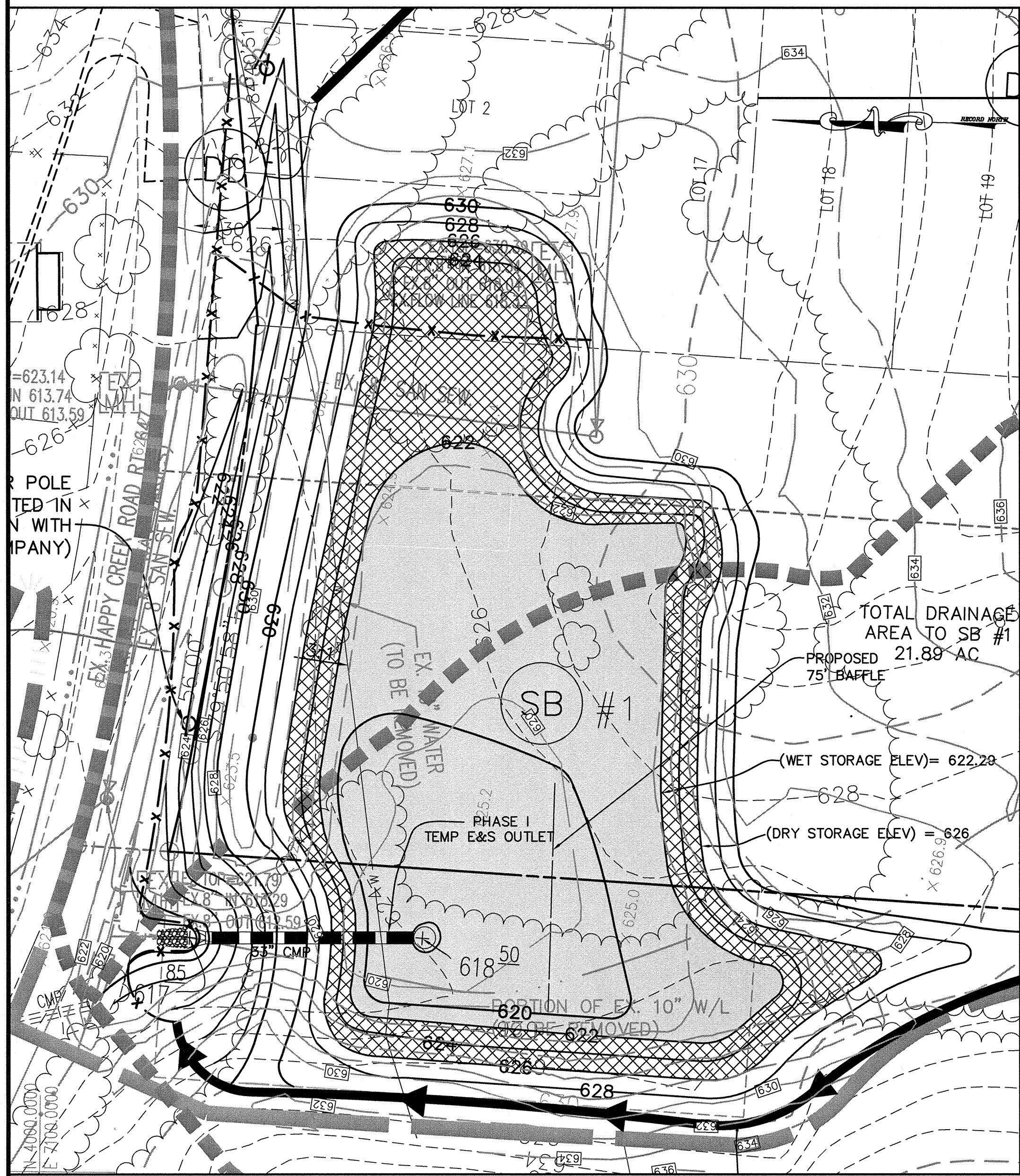
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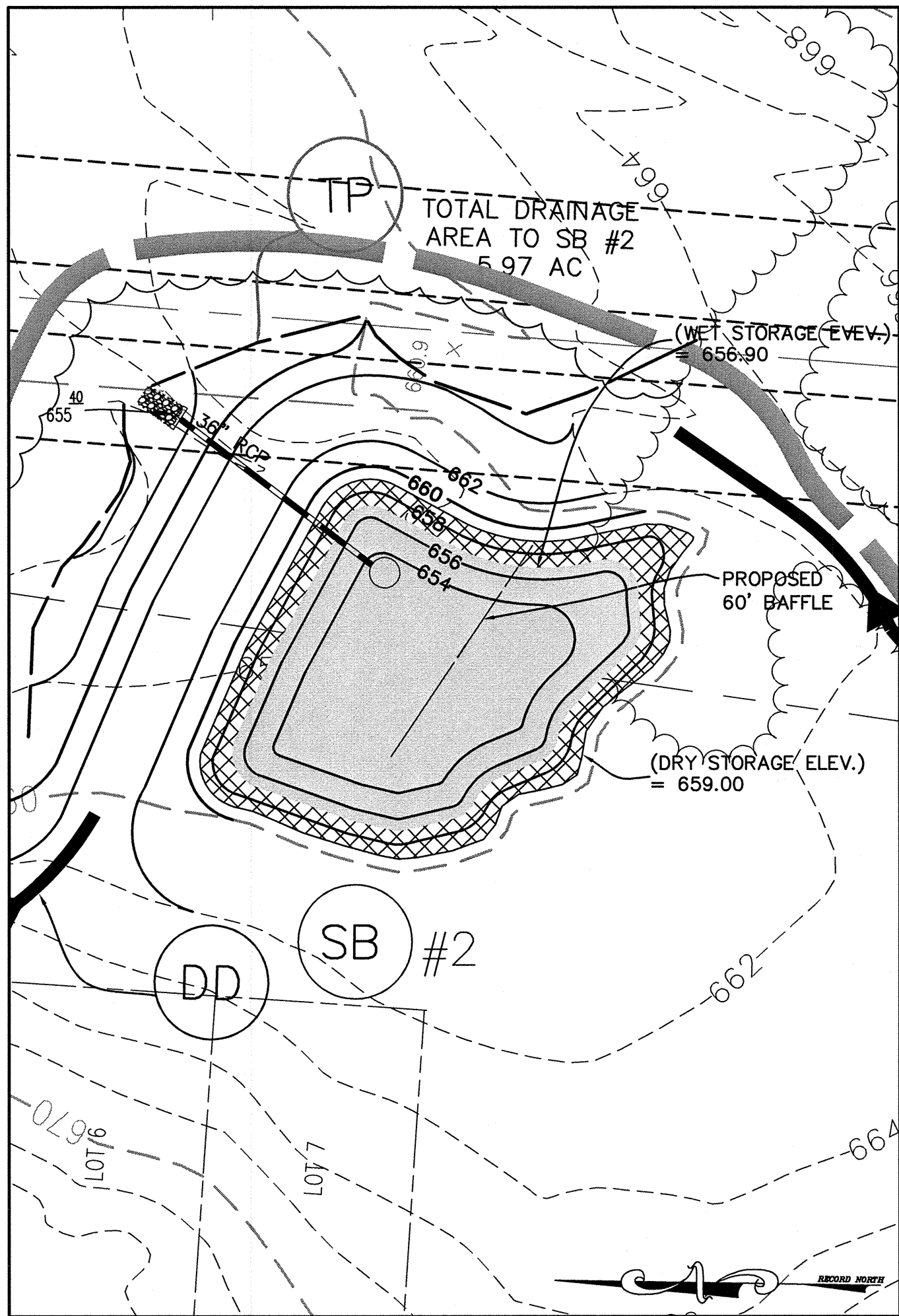
SANITARY LATERAL TABLE																
ODEN RIDGE SECTION ONE																
LOT NUMBER	DIST FROM LOWER MH	MANHOLE FROM TO	SLOPE LATERAL FT/FT	INVERT @	IN @ MAIN CONN.	START STA	BEGIN RISER	RISERS FT.	RISER END	IN @	GRADE @	BF ELEV.	REMARKS			
73	30.42	EX A	0.0208	37.67	619.00	620.25	20.00	620.67	3.00	623.67	623.97	631.00	629.67			
1	81.37	EX A	0.0208	27.23	620.04	621.29	20.00	621.71	5.00	626.71	626.76	633.19	628.65			HUNG SEWER
2	161.35	EX A	0.0208	25.75	621.68	622.93	15.00	623.24	4.00	627.24	627.38	637.89	633.33			
72	179.22	EX A	0.0208	40.62	622.04	623.29	25.00	623.81	8.00	631.81	631.97	639.61	637.14			
3	241.34	EX A	0.0208	24.17	623.31	624.56	15.00	624.87	8.00	630.87	630.94	642.12	636.63			
71	255.01	EX A	0.0208	42.31	623.80	625.05	32.00	625.71	8.00	633.71	633.76	643.32	639.79			
4	211.11	A B	0.0208	23.00	630.16	631.41	10.00	631.61	6.00	637.61	637.76	644.48	638.27			HUNG SEWER
70	46.86	A B	0.0208	43.00	630.28	631.53	32.00	632.19	5.00	637.19	637.32	645.64	640.48			HUNG SEWER
5	146.11	A B	0.0208	23.00	630.78	632.03	10.00	632.24	4.00	638.24	638.42	643.91	637.79			HUNG SEWER
69	165.86	A B	0.0208	43.00	630.86	632.13	32.00	632.79	4.00	636.79	636.94	644.00	640.03			HUNG SEWER
6	226.11	A B	0.0208	23.00	631.18	632.43	10.00	632.63	4.00	636.63	636.82	642.68	637.18			HUNG SEWER
68	245.86	A B	0.0208	43.00	631.27	632.52	32.00	633.19	4.00	637.19	637.34	643.71	638.62			HUNG SEWER
67	277.86	A B	0.0208	43.00	631.43	632.68	32.00	633.35	5.00	638.35	638.47	643.99	637.79			HUNG SEWER
7	26.76	B C	0.0208	23.00	632.29	633.54	10.00	633.74	3.00	639.74	639.95	642.08	635.92			HUNG SEWER
8	54.07	B C	0.0208	23.00	632.70	633.95		633.95		633.95	634.42	642.25	636.60			HUNG SEWER
66	78.62	B C	0.0208	43.00	633.21	634.46		634.46		634.46	635.35	643.74	638.78			HUNG SEWER
9	134.07	B C	0.0208	23.00	634.35	635.60		635.60		635.60	636.07	643.63	638.78			HUNG SEWER
65	158.82	B C	0.0208	43.00	634.86	636.11		636.11		636.11	637.00	644.46	640.95			HUNG SEWER
10	214.07	B C	0.0208	23.00	636.00	637.25		637.25		637.25	637.73	645.88	642.18			HUNG SEWER
64	238.82	B C	0.0208	43.00	636.51	637.76	32.00	638.42	3.00	641.42	641.59	647.43	644.50			HUNG SEWER
11	294.07	B C	0.0208	23.00	637.65	638.90	15.00	639.21	3.00	642.21	642.31	649.65	646.81			HUNG SEWER
63	26.83	C D	0.0208	43.00	641.13	642.38		642.38		642.38	643.27	651.82	648.82			
12	74.08	C D	0.0208	23.00	643.83	645.08		645.08		645.08	645.56	654.64	652.63			
62	101.33	C D	0.0208	43.00	645.39	646.64	32.00	647.31	4.00	651.31	651.45	657.20	654.73			HUNG SEWER
13	164.08	C D	0.0208	23.00	648.41	649.66	15.00	649.97	3.00	652.97	653.08	659.97	657.24			HUNG SEWER
61	55.88	D E	0.0208	31.89	655.42	656.67		656.67		656.67	657.34	668.13	666.14			
15	79.62	D E	0.0208	34.52	657.08	658.33		658.33		658.33	659.05	668.89	666.33			
16	125.54	D E	0.0208	26.44	660.30	661.55	15.00	661.86	4.00	665.86	666.02	672.37	669.48			HUNG SEWER
53	276.79	EX EX	0.0208	40.02	648.06	649.31	15.00	649.62	3.00	652.62	653.08	660.78	657.33			HUNG SEWER
54	0.00	EX F	0.0208	35.99	648.02	650.27		650.27		650.27	651.02	660.07	655.93			HUNG SEWER
52	70.61	EX F	0.0208	41.92	652.74	653.99		653.99		653.99	654.06	664.33	661.33			
55	85.83	EX F	0.0208	33.70	653.53	654.78		654.78		654.78	655.48	664.47	661.97			
51	135.00	EX F	0.0208	43.63	656.12	657.37		657.37		657.37	658.27	667.49	664.88			
56	176.79	EX F	0.0208	32.23	658.42	659.67		659.67		659.67	660.34	669.51	666.14			
50	230.75	EX F	0.0208	46.17	661.15	662.40		662.40		662.40	663.36	672.19	670.09			
57	271.76	EX F	0.0208	28.76	663.31	664.56		664.56		664.56	665.15	673.32	669.24			HUNG SEWER
49	12.00	F G	0.0208	48.00	665.23	666.48		666.48		666.48	667.48	674.90	670.08			HUNG SEWER
58	64.00	F G	0.0208	28.01	666.67	667.92		667.92		667.92	668.50	676.32	672.03			HUNG SEWER
48	92.01	F G	0.0208	47.99	667.45	668.70		668.70		668.70	669.70	677.39	672.48			HUNG SEWER
59	148.62	F G	0.0208	28.02	669.02	670.27		670.27		670.27	670.86	678.83	674.82			HUNG SEWER
47	172.01	F G	0.0208	47.98	669.68	670.93		670.93		670.93	671.93	679.78	674.88			HUNG SEWER
60	245.00	F G	0.0208	28.03	671.71	672.96		672.96		672.96	673.54	681.73	676.64			HUNG SEWER
46	252.01	F G	0.0208	47.97	671.90	673.15		673.15		673.15	674.15	682.25	677.28			HUNG SEWER
45	32.59	G H	0.0208	47.57	674.39	675.64	25.00	676.16	3.00	679.16	679.57	684.81	679.68			HUNG SEWER
44	112.58	G H	0.0208	46.60	676.98	678.23	25.00	678.75	3.00	681.75	682.14	687.19	682.98			HUNG SEWER
17	117.58	G H	0.0208	29.47	677.14	678.39	15.00	678.70	3.00	681.70	681.94	687.21	683.86			HUNG SEWER
43	193.36	G H	0.0208	45.60	679.59	680.84		680.84		680.84	681.79	689.56	682.08			HUNG SEWER
18	226.74	G H	0.0208	31.59	680.67	681.92		681.92		681.92	682.68	690.53	686.82			HUNG SEWER
42	269.86	G H	0.0208	41.44	682.07	683.32		683.32		683.32	684.18	691.85	687.27			HUNG SEWER
41	38.66	H I	0.0208	43.28	685.79	687.04		687.04		687.04	687.54	695.31	691.43			HUNG SEWER
19	83.74	H I	0.0208	28.32	689.56	690.81		690.81		690.81	691.40	697.82	697.08			
40	111.00	H I	0.0208	45.58	690.75	692.00		692.00		692.00	693.01	698.96	697.14			HUNG SEWER
37	280.94	H I	0.0208	35.56	702.39	703.64		703.64		703.64	704.38	712.05	701.75			HUNG SEWER
39	289.84	H I	0.0208	39.78	703.00	704.25		704.25		704.25	705.08	712.96	711.43			
38	67.55	I J	0.0208	45.16	708.09	709.34		709.34		709.34	710.28	719.55	716.80			
FUTURE	131.94	I J	0.0208	49.16	709.14	710.39	20.00	710.80	5.00	715.80	716.30	724.25	722.40			
FUTURE	212.78	I J	0.0208	47.40	710.27	711.52	20.00	711.94	10.00	721.94	722.30	730.00	725.05			HUNG SEWER
FUTURE	288.78	I J	0.0208	46.12	711.36	712.61	20.00	713.02	7.00	720.02	720.42	729.00	725.85			
28	0.00	N O	0.0208	48.53	661.81	662.86		662.86		662.86	663.87	669.81	664.84			HUNG SEWER
29	15.00	N O	0.0208	48.00	661.98	663.23		663.23		663.23	664.23	669.83	665.74			HUNG SEWER
30	95.00	N O	0.0208	48.00	663.95	665.20		665.20		665.20	666.20	671.31	672.86			
25	100.00	N O	0.0208	28.00	664.07	665.32		665.32		665.32	665.90	671.36	667.39			HUNG SEWER
31	175.00	N O	0.0208	47.96	665.92	667.17		667.17		667.17	668.16	675.00	672.86			HUNG SEWER
24	180.00	N O	0.0208	28.00	666.04	667.29		667.29		667.29	667.87	675.21	672.05			HUNG SEWER
32	255.00	N O	0.0208	48.00	667.88	669.13		669.13		669.13	670.13	679.69	676.34			
23	260.00	N O	0.0208	28.00	668.01	669.26	15	669.57	3	672.57	672.78	679.93	677.63			HUNG SEWER
26	64.68	N L	0.0208	11.31	654.65	655.90		655.90		655.90	656.13	661.91	664.17			
27	87.25	N L	0.0208	11.31	655.22	656.47		656.47		656.47	656.70	665.49	662.39			
33	35.00	O P	0.0208	48.00	671.86	672.91		672.91		672.91	673.91	679.69	683.50			
22	39.86	O P	0.0208	28.00	672.03	673.28	13.00	673.55	4.00	677.55	677.78	685.60	683.23			
34	115.00	O P	0.0208	48.00	677.53	678.78	25.00	679.30	4.00	683.30	683.70	691.00	688.71			
21	120.00	O P	0.0208	28.00	677.90	679.15	13.00	679.42	3.00	682.42	682.67	691.50	688.33			
35	195.00	O P	0.0208	48.00	683.41	684.66	25.00	685.18	3.00	688.18	688.60	696.49	694.00			
20	210.00	O P	0.0208	28.00	684.51	685.76	13.00	686.03	5.00	691.03	691.24	697.79	694.12			HUNG SEWER
36	265.00	O P	0.0208	50.29	688.55	689.8.00</										

Wet Storage:		
Drainage Area to Basin.....	21.89	acres
Required Storage Volume (67 yds ³ x Acres).....	1,467	Yds ³
Available Volume before Clean-out Req'd (33 yds ³ x Acres).....	722	Yds ³
Elevation Corresponding to Clean-out Level.....	621.04	ft.
Distance from Dewatering Device Invert to Clean-out Level.....	1.19	ft.
Dry Storage:		
Required Storage Volume (67 yds ³ x Acres).....	1,467	Yds ³
Total Available Storage Volume at Crest of Riser.....	7,112	Yds ³
Diameter of Dewatering Orifice.....	14.75	inches
Diameter of Flexible Tubing.....	17.75	inches
Crest of Riser Elevation.....	627.00	
Top of Dam Elevation.....	630.0	
Design High Water Elevation.....	628.25	
Runoff:		
Q ₂ Tributary to Sediment Basin [Q=(.35)(5.3)(21.89)].....	40.6	cfs
Q ₂₅ Tributary to Sediment Basin [Q=(.35)(7.75)(21.89)].....	59.4	cfs
Principal Spillway Design:		
Upstream Invert of Outfall Pipe.....	618.50	ft
Downstream Invert of Outfall Pipe.....	617.85	ft
Length of Outfall Pipe.....	73.17	ft
Slope on the Outfall Pipe.....	0.89%	
Diameter of CMP Outfall Pipe.....	36	inch
Capacity of CMP Outfall Pipe [Q=(1.49Ah)R ^{2.63} S ^{1/2}]	171.3	cfs
Dewatering Device Design:		
Total Dry Storage Available, S.....	192.011	ft ³
Find Discharge, Q where Q = S/21,600 seconds.....	8.89	cfs
Orifice Area, A = Q/(64.32x(h/2)) ^{1/2} x(0.6).....	1.1962	ft ²
Minimum Diameter of Dewatering Orifice.....	14.81	inches
Use Minimum Diameter to prevent clogging.....	14.81	inches
Diameter of Drainage Tubing.....	17.81	inches



SEDIMENT BASIN #1
SCALE: 1" = 30'

Wet Storage:		
Drainage Area to Basin.....	5.53	acres
Required Storage Volume (67 yds ³ x Acres).....	371	Yds ³
Available Volume before Clean-out Req'd (33 yds ³ x Acres).....	182	Yds ³
Elevation Corresponding to Clean-out Level.....	656.85	ft.
Distance from Dewatering Device Invert to Clean-out Level.....	1.25	ft.
Dry Storage:		
Required Storage Volume (67 yds ³ x Acres).....	371	Yds ³
Total Available Storage Volume at Crest of Riser.....	559	Yds ³
Diameter of Dewatering Orifice.....	5.00	inches
Diameter of Flexible Tubing.....	8.00	inches
Crest of Riser Elevation.....	660.46	
Top of Dam Elevation.....	663.6	
Design High Water Elevation.....	661.06	
Runoff:		
Q ₂ Tributary to Sediment Basin [Q=(.35)(5.3)(5.53)].....	10.3	cfs
Q ₂₅ Tributary to Sediment Basin [Q=(.35)(7.75)(5.53)].....	15.0	cfs
Principal Spillway Design:		
Upstream Invert of Outfall Pipe.....	656.00	ft
Downstream Invert of Outfall Pipe.....	655.40	ft
Length of Outfall Pipe.....	50.00	ft
Slope on the Outfall Pipe.....	1.20%	
Diameter of CMP Outfall Pipe.....	36	inch
Capacity of CMP Outfall Pipe [Q=(1.49Ah)R ^{2.63} S ^{1/2}]	199.1	cfs
Dewatering Device Design:		
Total Dry Storage Available, S.....	15.093	ft ³
Find Discharge, Q where Q = S/21,600 seconds.....	0.70	cfs
Orifice Area, A = Q/(64.32x(h/2)) ^{1/2} x(0.6).....	0.1337	ft ²
Minimum Diameter of Dewatering Orifice.....	4.95	inches
Use Minimum Diameter to prevent clogging.....	5.00	inches
Diameter of Drainage Tubing.....	8.00	inches



SEDIMENT BASIN #2
SCALE: 1" = 30'
NOT CONSTRUCTED

DITCH COMPUTATION DATA SUMMARY TABLE

SECTION	DRAINAGE AREA (AC)	C	CA ACCUM.	SLOPE (%)	BOTTOM WIDTH (FT)	LEFT SIDE SLOPE	RIGHT SIDE SLOPE
A-A	40.27	0.35	14.09	6.14	0	* SEE NATURAL CHANNEL POINTS BELOW FOR STATION & ELEVATION	
B-B	5.07	0.35	1.77	2.20	0		
C-C	0.55	0.35	0.19	9.52	0		
					0		

*SEE E & S PHASE II SHEETS FOR CROSS SECTION LOCATIONS

	RIGHT SIDE SLOPE	n	Q2 (CFS)	V2 (FPS)	d2 (FT)	Q10 (CFS)	V10 (FPS)	d10 (FT)	REMARKS	MAX. ALLOW. VEL. (fps)	ACTUAL DITCH DEPTH (FT.)
NATURAL POINTS BELOW STATION & EAVION		0.030	94.38	6.88	0.56	121.08	7.39	0.64	EC-3 Reg'd	10.00	--
		0.030	29.08	3.32	0.40	37.31	3.58	0.46	EC-3 Reg'd	10.00	--
		0.030	1.02	2.55	0.08	1.31	2.77	0.09		3.00	--

NATURAL CHANNEL POINTS

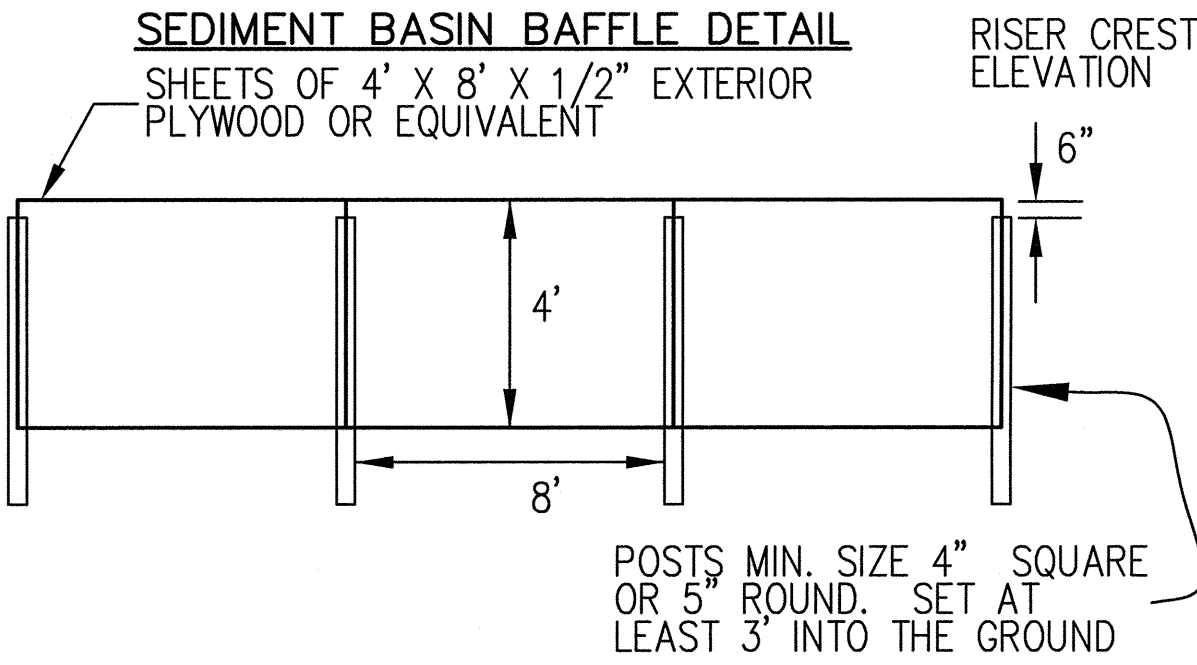
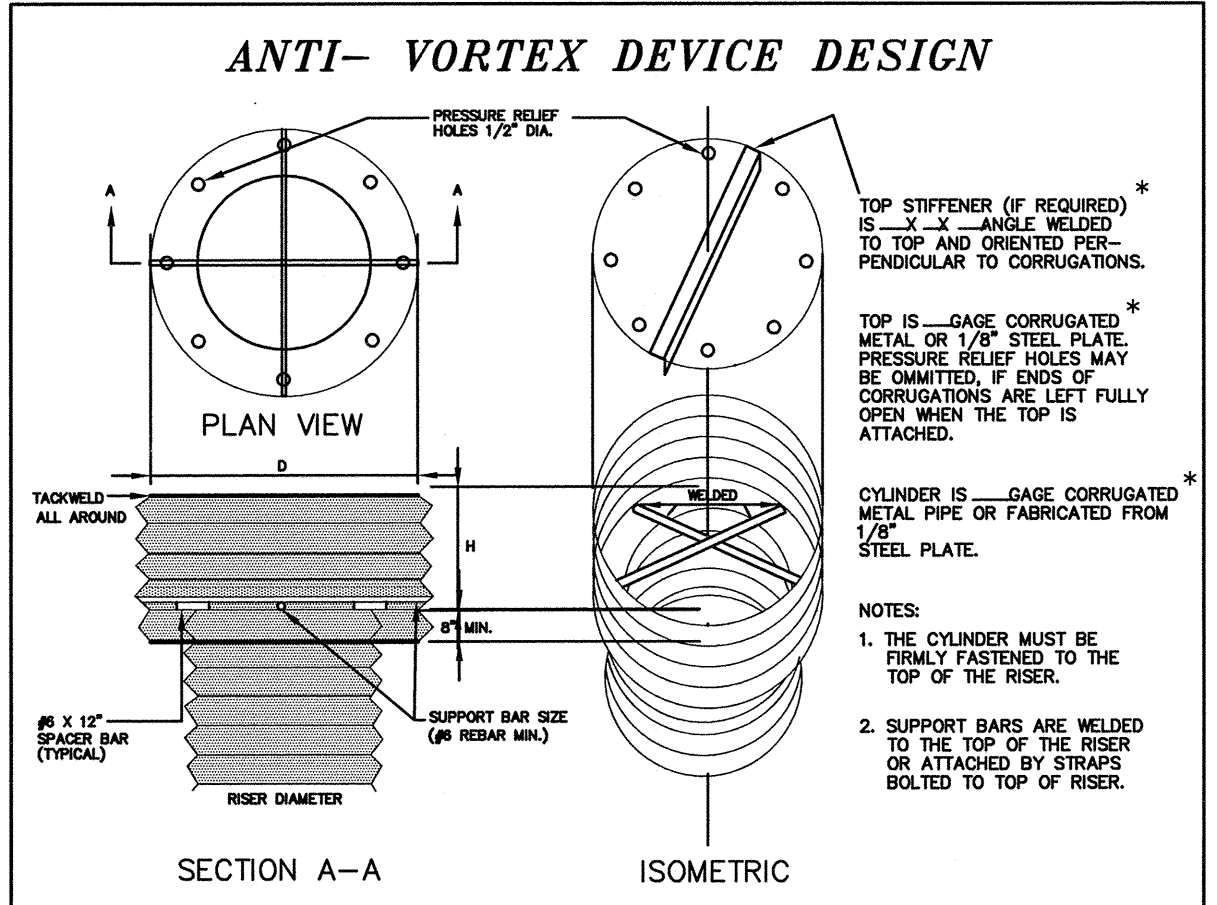
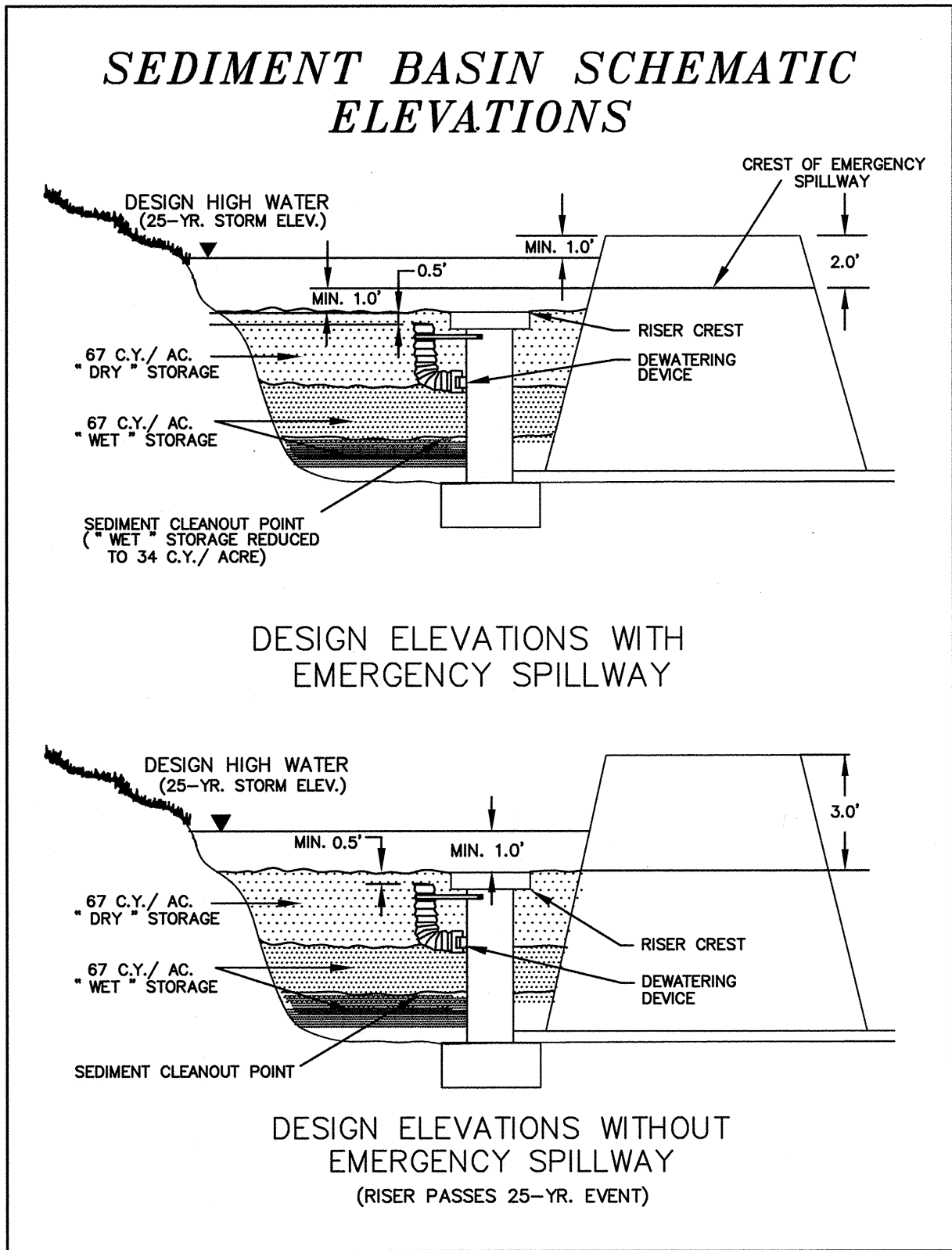
A-A STATION ELEVATION	B-B STATION ELEVATION	C-C STATION ELEVATION	D-D STATION ELEVATION
10+00 636.00	10+00 659.00	10+00 687.00	10+00 620.82
10+11 634.00	10+14 658.00	10+17 684.00	10+12 620.53
10+22 632.00	10+20 656.00	10+49 682.00	10+23 620.76
10+35 630.00	10+28 654.00	10+53 680.00	10+35 620.51
10+51 630.00	10+32 652.00	10+66 678.00	10+40 620.00
10+67 632.00	10+40 650.00	10+74 676.00	10+50 620.00
11+00 632.10	10+46 648.00	10+81 676.00	10+53 622.00
	10+61 648.00	10+89 678.00	10+68 624.00
	11+00 649.25	10+78 626.00	10+78 626.00
		11+00 678.25	11+00 627.00

DITCH COMPUTATION DATA SUMMARY TABLE

SECTION	SLOPE (%)	BOTTOM WIDTH (FT)	LEFT SIDE SLOPE	RIGHT SIDE SLOPE	n	Q100 (CFS)	V100 (FPS)	d100 (FT)	REMARKS	MAX. ALLOW. VEL. (fps)	ACTUAL DITCH DEPTH (FT.)
D-D	3.62	5.00	SEE CHANNEL POINTS ABOVE		0.040	517.98	7.99	1.73	RIP-RAP	--	

*SEE E & S PHASE II SHEETS FOR CROSS SECTION LOCATIONS

AS-BUILT PLAN



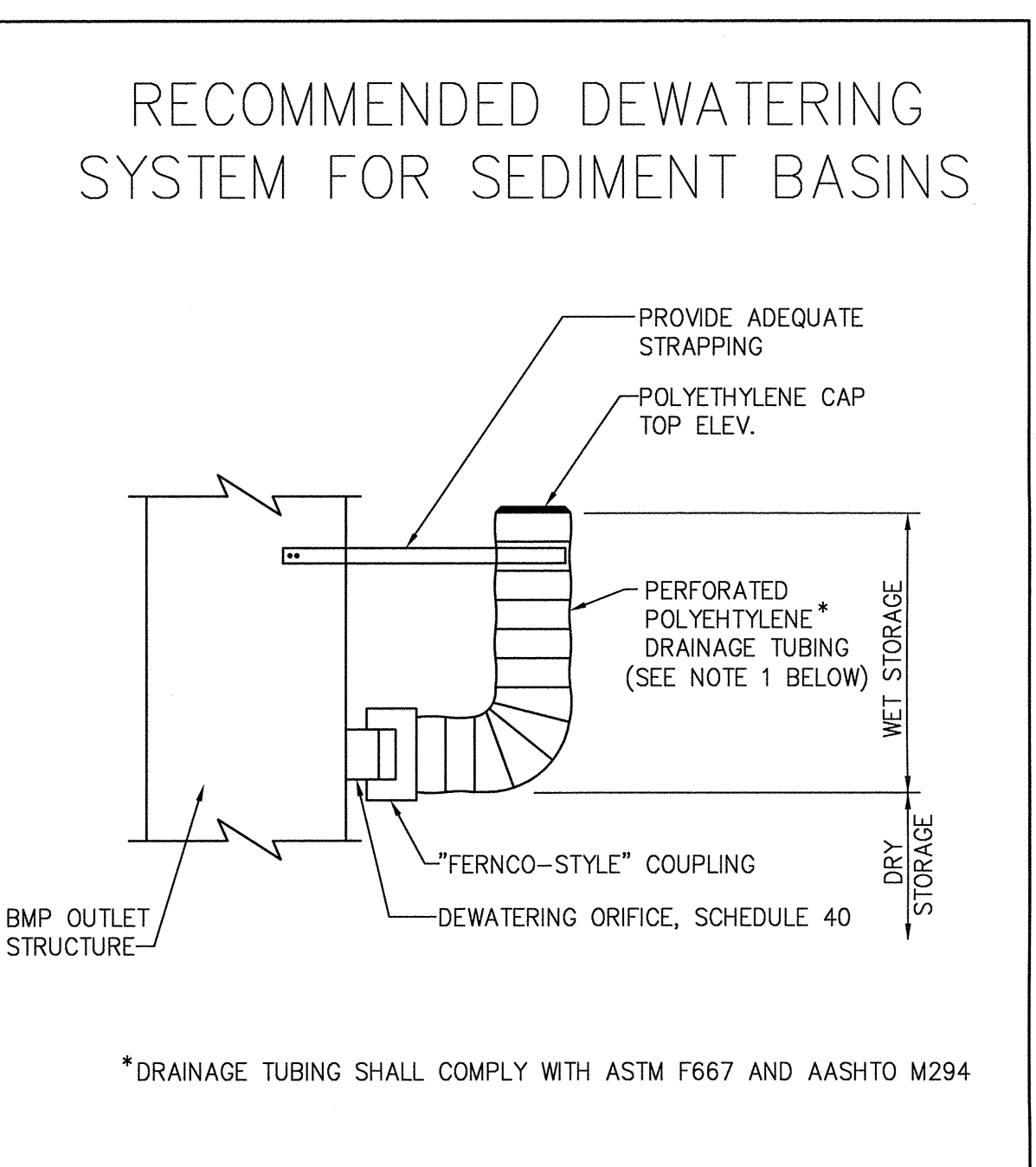
AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED FEBRUARY 2007 AND JULY 2007.

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.

PAUL SWARTZ
Lic. No. 002701
731-17
LAND SURVEYOR

DENOTES AS-BUILT CONDITIONS



*DRAINAGE TUBING SHALL COMPLY WITH ASTM F667 AND AASHTO M294

2181-D-AB-001

ASBUILT SHEET 15 OF 18

Bowman
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SEDIMENT BASIN & CROSS SECTION COMPUTATIONS

AS-BUILT ODEN RIDGE SECTION ONE

TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
JON K. CRICKSON
No. 032355
PROFESSIONAL ENGINEER

PLAN STATUS

12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPT. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-24-05	PER TOWN COMMENTS
09-12-05	PER 8/10/05 LETTER

DATE	DESCRIPTION
MPP/TH	CJM
DESIGN	DRAWN
SCALE	H: 1"=30'
	V: N/A
JOB NO.	2181-01-001
DATE	OCTOBER 21, 2003
FILE NO.	2181-01-001

23 OF 36

GENERAL SPECIFICATIONS FOR S.W.M. DAM AND FACILITY

- AREAS UNDER THE EMBANKMENT AND ANY STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL, ROOTS OR OTHER OBJECTIONAL MATERIAL.
- THE SUITABILITY AND ACCEPTABILITY OF ALL FILL MATERIAL WILL BE DETERMINED BY REGULAR PERIODIC SOIL ANALYSIS AND COMPACTION TESTS, WHICH SHALL BE MADE BY A QUALIFIED GEOTECHNICAL ENG.
- TESTS FOR SOIL ANALYSIS, MOISTURE CONTENT, AND COMPACTION ARE TO BE CONDUCTED IN ACCORDANCE WITH THE LATEST APPLICABLE ASTM STANDARDS AND SPECIFICATIONS.
- MATERIALS USED FOR THE IMPERVIOUS CORE AND CUT-OFF TRENCH, IF REQUIRED SHALL BE, COMPRISED OF ONE OF THE FOLLOWING SOILS AS DESIGNATED BY THE UNIFIED SOIL SYSTEM: SC, CL, OR ML, HAVING A MINIMUM PLASTICITY INDEX OF 8 WITH A MINIMUM OF 45% PASSING THE NO. 200 SIEVE AND A MAX. OF 5 % RETAINED ON THE NO. 4 SIEVE.
- THE EMBANKMENT MAY BE CONSTRUCTED AS A HOMOGENOUS EMBANKMENT DAM USING ACCEPTABLE MATERIAL CLASSIFIED ML, CL, SC, OR GC SOILS PER ASTM D -2487. IN ADDITION TO THESE MATERIALS, SOILS CLASSIFIED CH AND MH MAY BE USED AS COMPACTED EMBANKMENT FILL BELOW THE UPPER 5 FEET OF THE SLOPES. SOILS CLASSIFIED AS SM OR GM PER ASTM D-2487 OR SUITABLE FILL MAY BE USED FOR EMBANKMENT IN THE DOWNSTREAM HALF OF THE EMBANKMENT.
- COMPACTION SHALL BE NOT LESS THAN 95% OF THE MAX. DRY DENSITY FOR THE GIVEN EMBANKMENT MATERIAL AS DETERMINED BY USE OF THE STANDARD PROCTOR METHOD PER ASTM T-99 OR ASTM D-698.
- THE FILL SHALL BE CONSTRUCTED IN 8-INCH LOOSE LIFTS AND SHALL BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL SO THAT SMOOTH HORIZONTAL PLANES ARE NOT BUILT INTO THE FILL STRUCTURE. SMOOTH HORIZONTAL PLANES CAN BE AVOIDED BY SCARRIFYING OR USE OF SHEERS-FOOT ROLLERS.
- THE EMBANKMENT SHALL BE CONSTRUCTED TO A MINIMUM ELEVATION 8% HIGHER THAN THE DESIGNED HEIGHT TO ALLOW FOR SETTLEMENT WHEN MECHANICAL COMPACTORS ARE USED FOR CONSTRUCTION.
- IF SUFFICIENT ACCEPTABLE MATERIAL IS NOT AVAILABLE ON THE SITE TO PROPERLY COMPLETE THE FILL, THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ACCEPTABLE BORROW MATERIAL.
- THE STORM WATER MANAGEMENT FACILITY IS TO BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION AS FOLLOWS:
 - THE STORM WATER MANAGEMENT FACILITY SHALL BE INSPECTED ON A SEMI-ANNUAL BASIS AND AFTER ANY STORM WHICH CAUSES THE CAPACITY OF THE FACILITY TO BE EXCEEDED. ANY TRASH AND/OR DEBRIS WITHIN THE FACILITY SHALL BE REMOVED AND PROPERLY DISPOSED OF. INSPECTION REPORTS ARE TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION.
 - THE STORM WATER MANAGEMENT FACILITY SHALL BE PERIODICALLY CLEANED OUT (EVERY 5-10 YEARS) DEPENDING ON SEDIMENT LOADING, SO AS TO REESTABLISH THE ORIGINAL CONTOURS WITHIN THE EXISTING WET POND AND OTHER AREAS. ALL EXCAVATED AND/OR DREDGED MATERIAL SHALL BE PLACED IN COMMON OPEN SPACE AS DESIGNATED BY THE HAPPY CREEK KNOLLS SEC II HOME OWNERS ASSOCIATION. THE DISPOSAL AREA SHALL HAVE APPROPRIATE E & S CONTROLS AND SHALL BE IMMEDIATELY SEEDED AND STABILIZED.

DETAIL NOTES:

- THE PURPOSE OF THESE PLANS IS TO PROVIDE THE BASIC DIMENSIONS REQUIRED TO CONTROL THE CONSTRUCTION OF THE COMBINATION PRINCIPAL & EMERGENCY SPILLWAY.
- THE FOLLOWING DIMENSIONS AND/OR ELEVATIONS ARE FIXED:

WEIR WALL STRUCTURE

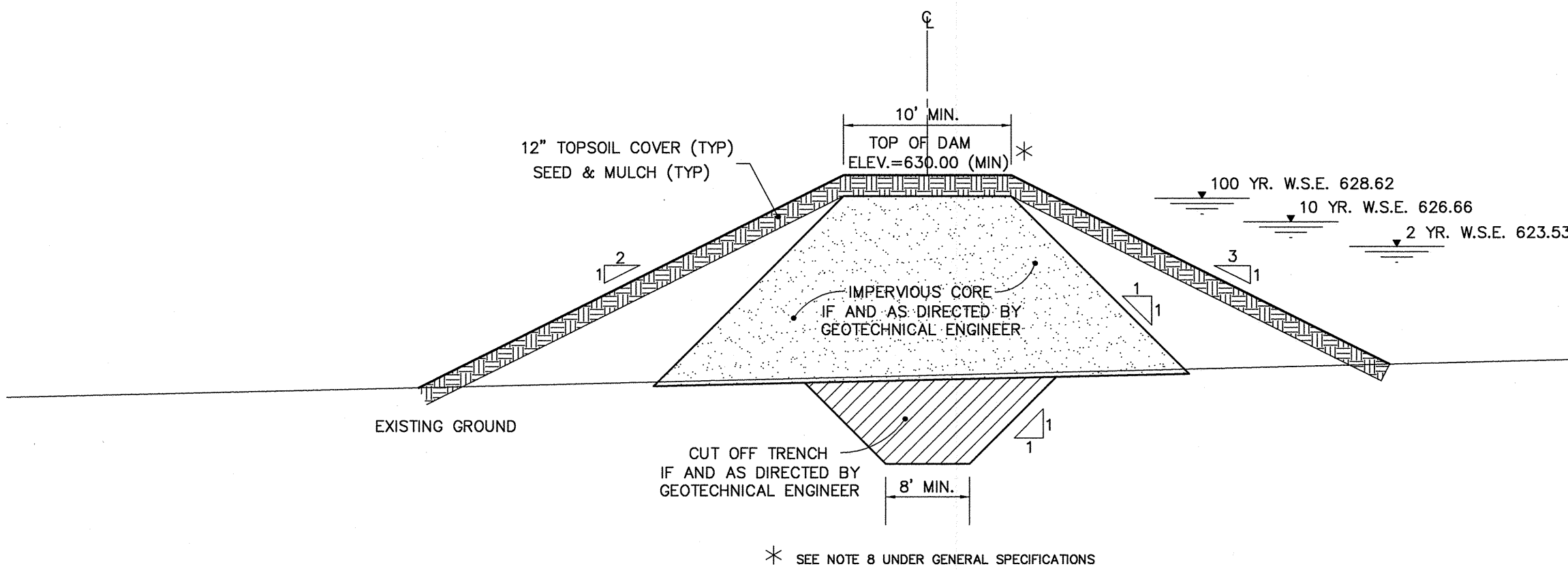
TOP OF FOOTING ELEV. = 616.50'
CREST OF 2 YR. WEIR ELEV. = 618.50'
CREST OF 10 YR. WEIR ELEV. = 623.50'
TOP OF SIDE WALLS ELEV. = 262.65'
LENGTH OF 2 YR. WEIR 0'-11"
LENGTH OF 10 YR. WEIR 4'-9"

- ALL OTHER WALL, SPILLWAY AND FOOTING DIMENSIONS AND/OR THICKNESS, AS WELL AS, REINFORCEMENT, BUOYANCY CALCULATIONS AND THE METHOD OF JOINING THE VARIOUS STRUCTURAL ELEMENTS ARE SUBJECT TO DESIGN BY A PROFESSIONAL STRUCTURAL ENGINEER.
- CONSTRUCTION AND CONTRACTION JOINTS ARE TO BE PROVIDED AS REQUIRED BY THE LATEST EDITION OF THE ACI CODE.
- SUBGRADE PREPARATION AND BEDDING REQUIREMENTS FOR ALL STRUCTURAL ELEMENTS ARE SUBJECT TO DESIGN BY A PROFESSIONAL GEOTECHNICAL ENGINEER.
- PRECAST CONCRETE IS TO ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSL. CAST IN PLACE CONCRETE IS TO BE VDOT CLASS A3.
- REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A-615 (REINFORCING BARS).
- ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN STRICT CONFORMANCE TO THE LATEST VDOT STANDARDS AND SPECIFICATIONS.
- SHOP DRAWINGS ARE TO BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO FABRICATION.
- FOOTING DEPTHS SHOWN ARE MINIMUMS. ALL FOOTINGS ARE TO EXTEND DOWN TO SUITABLE BEARING MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

GENERAL NOTES:

- IMPERVIOUS CORE IS TO BE CONSTRUCTED FROM SOILS CLASSIFIED AS "ML", "CL", OR "SC" PER ASTM D-2487 COMPACTED TO 95% PER ASTM D-698.
- THE CUT OFF TRENCH (IF REQUIRED) SHALL EXTEND A MINIMUM OF 5' BELOW SUBGRADE OR TO REFUSAL.
- DESIGN AND CONSTRUCTION OF THE PROPOSED DAM IS SUBJECT TO RECOMMENDATIONS AND INSPECTION BY A QUALIFIED GEOTECHNICAL ENGINEER.

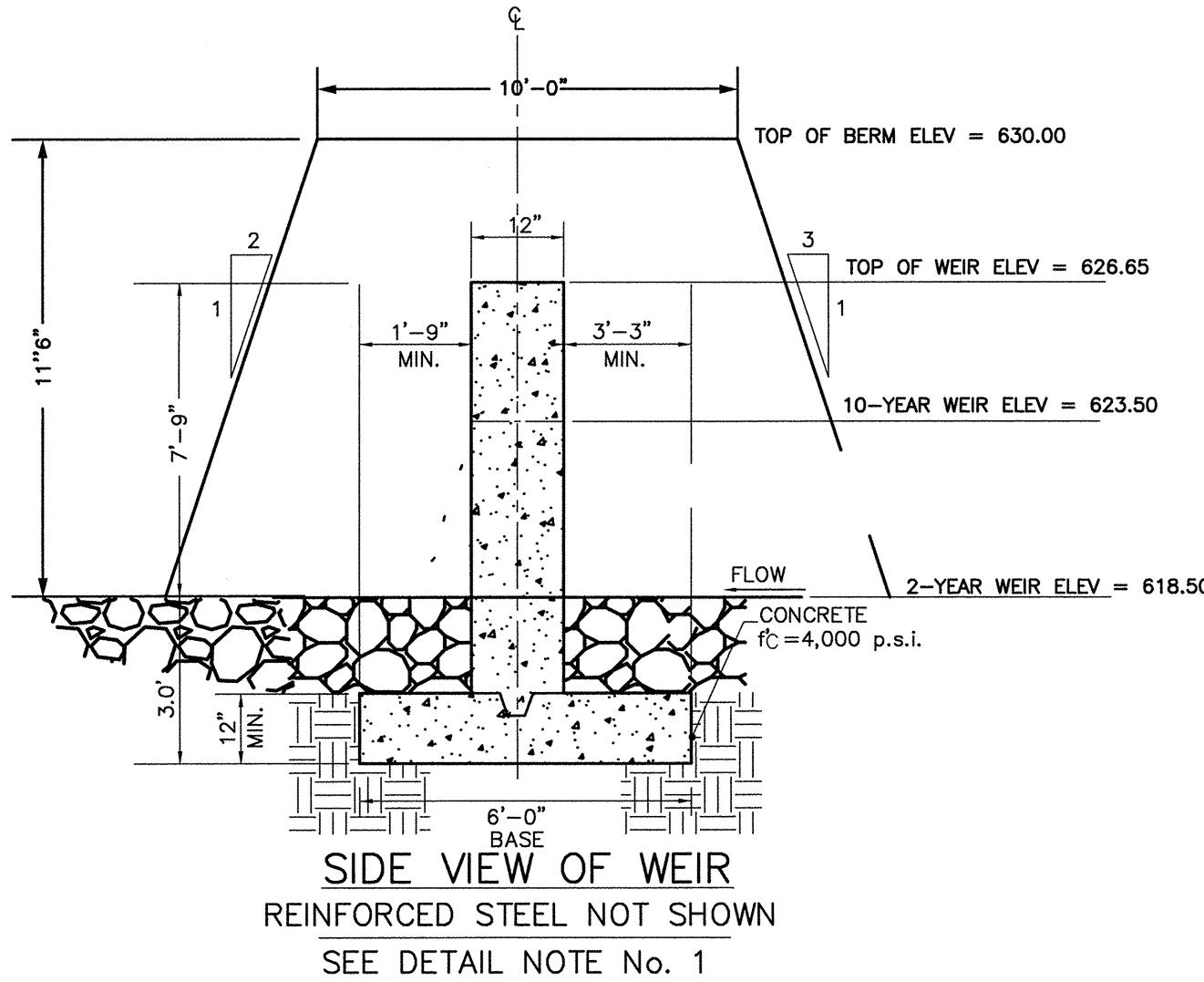
AS-BUILT PLAN



SECTION THRU DAM EMBANKMENT

NOT TO SCALE

SECTION THRU COMBINATION PRINCIPAL & EMERGENCY SPILLWAY POND



AS-BUILT

AS-BUILT INFORMATION HEREON IS THE RESULT OF A FIELD RUN SURVEY COMPLETED FEBRUARY 2007 AND JULY 2017

I HEREBY CERTIFY THAT THE AS-BUILT INFORMATION AS SHOWN HEREON IS CORRECT.



DENOTES AS-BUILT CONDITIONS

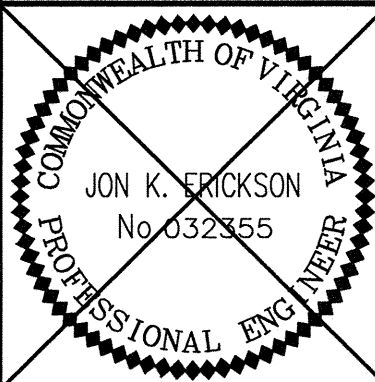
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STORMWATER MANAGEMENT DETAILS

ODEN RIDGE
SECTION ONE

TOWN OF FRONT ROYAL WARREN COUNTY, VIRGINIA



PLAN STATUS	
12-19-03	PER STAFF COMMENTS
12-30-03	HEALTH DEPART. SUBMISSION
02-04-04	PER TOWN COMMENTS
07-16-04	PER TOWN COMMENTS
09-24-04	PER TOWN COMMENTS
11-18-04	PER TOWN COMMENTS
02-24-05	PER TOWN COMMENTS
08-12-05	PER 8/10/05 LETTER

DATE	DESCRIPTION
MPP/TH	CJM
DESIGN	DRAWN
SCALE	H: AS SHOWN V:
JOB No.	2181-01-001
DATE	OCTOBER 21, 2003
FILE No.	2181-01-001
SHEET	24 OF 36

ASBUILT SHEET 16 OF 18

2181-D-AB-001

12



Town of Front Royal, Virginia Council Agenda Statement

Page 1
Item No. 12

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPROVAL – Budget Amendment to Accept Monies from the Front Royal-Warren County Anti-Litter Council

Summary: Council is requested to approve a budget amendment to accept \$1,601.00 from the Front Royal-Warren County Anti-Litter Council to purchase one 95-gallon animal-resistant garbage container to be located on the Criser Road Trail.

Budget/Funding: 4203-3410209 Solid Waste Department Reimbursement - \$1,601.00
4203-47001 Solid Waste Department – Machinery/Equipment - \$1,601.00

Attachments: Memo from the Director of Finance

Meetings: None

Staff Recommendation: Approval ✓ Denial _____

Proposed Motion: I move that Council approve a budget amendment to accept \$1,601.00 from the Front Royal-Warren County Anti-Litter Council to purchase one 95-gallon animal-resistant garbage container to be located on the Criser Road Trail.

ROLL CALL VOTE IS REQUIRED

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance

*To be clear and concise, motions should be made in the positive

Approved By: JW



MEMORANDUM

Date: February 6, 2018
To: Tina Presley, Senior Administrative Assistant
Jennifer Berry, Clerk of Council
From: B.J. Wilson, Director of Finance
RE: Agenda Item - Budget Amendment

The Department of Solid Waste would like to request Town Council to approve a budget amendment to accept \$1,601.00 from the Front Royal Warren County Anti Litter Council to purchase one 95-gallon animal resistant garbage container to be located on the Criser Road Trail.

The FY2018 budget amendment will involve line items:

4203-3410209	Solid Waste Department Reimbursement - \$1,601.00
4203-47001	Solid Waste Department Machinery & Equipment - \$1,601.00

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**Town of Front Royal, Virginia
Council Agenda Statement**

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Item No. 13

Meeting Date: February 12, 2018

Agenda Item: COUNCIL APPOINTMENT – Urban Forestry Advisory Commission (UFAC)

Summary: Council is requested to appoint _____ to the Urban Forestry Advisory Commission (UFAC) to fill an unexpired term, said term to expire December 20, 2021.

Budget/Funding: None

Attachments: None

Meetings: Interview held February 5, 2018

**Staff
Recommendation:** Approval ✓ Denial _____

Proposed Motion: I move that Council appoint _____ to the Urban Forestry Advisory Commission (UFAC) to fill an unexpired term, said term to expire December 20, 2021.

*Note: Motions are the formal & final proposal of Council,
proposed motions are offered by Staff for guidance
*To be clear and concise, motions should be made in the positive

Approved By: ju