



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF TRANSPORTATION

87 Deacon Road  
Fredericksburg, VA 22405

GREGORY A. WHIRLEY  
COMMISSIONER

July 10, 2013

Re: Dominion Raceway  
ST13-0015  
Route 606 and Route FR-164  
Review 1  
Spotsylvania County

Spotsylvania County  
9019 Old Battlefield Blvd., Suite 320  
Spotsylvania, VA 22553  
Attn: Leon Hughes

Dear Mr. Hughes:

As requested, this office has reviewed the above-mentioned site plan and offers the following comments by discipline:

### Land Development:

1. Provide design details for review for the proposed transitions, tapers, and storage lanes on Route 606. Label all shoulder and lane widths.
2. A design waiver/exception may be required for the east-bound left turn lane.
3. Travel lane transition length (in feet) must be determined based on the following formula (for 40MPH or less): Square of the speed limit divided by 60, times the lane shift. Please display this information on the plan.
4. Indicate roadway drainage features and calculations on the Route 606 roadway plan. Explain how the increased runoff from the wider pavement will be handled.
5. Please provide typical sections for the roadway improvements along Route 606. Include the placement of guardrail in the typical sections.
6. Please label the Frontage Road number on the plan (FR-164)
7. The plan indicates sanitary sewer easements within the existing right-of-way for the frontage road. Please note that utilities within any right-of-way must be under a VDOT permit. No easements will be allowed that encumber VDOT right-of-way.
8. Signs visible from I-95 must be reviewed and approved by our Outdoor Advertising Agent.
9. Referenced turn lane improvements on I-95 SB off-ramp are not conditional and must be shown on this plan, not a separate plan as indicated in the proffer implementation plan.
10. We recommend extending the full pavement overlay on the south side of Route 606 to square up with the overlay on the north side at the east end of the project area for conformity.

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11. Comment 7A from VDOT's letter dated 4/17/13, references the allowable queuing distances on the I-95 NB and SB off-ramps as conveyed in now Proffer IIIC(5)a. VDOT recommended a 700' distance in said letter. In response, the applicant now proposes 1,000' allowable queuing, which does not appear to be based upon engineering judgment. In consultation with FHWA, they recommended a maximum distance of 620' for NB and 690' for SB. The 700' previous figure was derived based on VDOT's engineering judgment and, therefore (based upon the aforementioned), we cannot support the 1,000' without additional analysis from the consultant's engineer.

**Traffic:**

Sheet 67

12. The plans need to specify Type B, Class I Thermoplastic for the proposed pavement markings within VDOT R/W.
13. Please remove the stop bar in the left turn lane from Rte. 606 into the site.
14. Transition areas for turning lanes must use a dotted line with 2' line segments and 4' gaps. Please note this on the plans.
15. All intersection pavement markings must be clearly located in the plan set, unless PM-3 or PM-4 is used (and referenced). Please do not install any through arrows for this project.
16. Across the entrance to Mallard Road, end the striped median west of the entrance and continue with a double-yellow mini-skip centerline.
17. Hatched areas do not meet current standards. First hatch mark should be 36" wide and the subsequent hatches 24" wide on 12' spacing. This is similar to the PM-5 standard.
18. Verify the length of need for all proposed guardrail per the formula provided in the 2010 GRIT manual. The value for  $L_a$  should be a maximum of the clear zone. The value for  $L_2$  should be the offset from the edge of the traveled way to the face of the rail. Show all calculations.
19. The guardrail offset from the edge of the travel lane needs to be specified in the plans.
20. For curb use with guardrail, the curb height should be limited to 4" mountable (CG-3 or CG-7). If 6" barrier curb is used, then the guardrail should be constructed with a minimum 8' off-set from face of curb to face of rail.
21. The plans show guardrail which extends beyond the proposed right-of-way. VDOT maintenance of guardrail will end at the last guardrail joint on VDOT R/W.
22. Since GR-9's require 5' of additional clear shoulder outside the terminal, the plans either need to show callouts for the required site preparation at each GR-9 terminal, or specifically show the grading for the additional shoulder on the grading plans.
23. Please show double yellow lines around striped medians.
24. There are several I-95 and Richmond-Fredericksburg signs that need to be relocated.
25. We recommend a trail blazer assembly for I-95, Rte. 1 and Rte. 2 within the site for vehicles exiting the site.
26. What is the design vehicle for this project? Can a vehicle towing a trailer adequately navigate the right turns out of the site and onto I-95NB?
27. The current right turn channelizing island onto I-95NB has curb, therefore the new island also needs curb.

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Sheet 68

28. The designer needs to submit a list of members on the design team who developed the TMP. There needs to be someone listed who has completed the Advanced WZTC course. A letter listing the design team is sufficient, and will need to provide the approved WZTC training number and should be kept in the project file.
29. Additional project limit signs are required. ROAD WORK AHEAD signs as well as END ROAD WORK signs are required on the I-95 ramps, as well as all streets which intersect the mainline within the work zone.
30. The TMP does not address all aspects of construction. TE anticipates a flagging operation for paving. If flagging queues on the ramp extend more than 50% down the ramp the queues must be immediately removed.
31. The TMP needs to show a Public Communications Plan and a Traffic Operations plan. For smaller projects, these plans can be combined into a single narrative. A sample can be provided to the designer upon request.

**Planning:**

Sheet 67

32. The NE corner of the connection from Rte 606 (Mudd Tavern Rd) to Dominion Raceway appears to have a 33' radius with the face of the proposed guardrail flush with the face of the proposed curb. **VDOT RDM F-80** indicates a minimum radius of 45' should be used for this type of land use. While there are two receiving lanes, this movement should be tested with AutoTurn to assure its proper function, as there is zero room for off-tracking beyond the face of curb.
33. The type of GR and the type of GR terminal are not labeled on the Site Plan.
34. Retaining wall details are needed. **VDOT RDM 2E-22** and the pages following describe the types of details required. Per the plan, the proposed roadway fill will be retained behind the proposed wall. A review of the geotechnical details will be needed. Additionally, the proposed retaining wall is illustrated only 2' from the RW/Property line, which may be a challenge to construct within the existing right-of-way.
35. The proposed sub-standard left-turn-lane at the Dominion entrance extends through the intersection of Rte 606 and the I-95 NB Ramps. As the intersection is proposed to be signalized, this may not be a critical issue in terms of function and safety, (unsignalized it would be unacceptable, as such an arrangement would invite unsafe maneuvers.) However, this impact is within the functional area of the interchange and within the limited access area.
36. The proffered traffic signal at the north-bound ramps and Route 606 must be installed and operational before VDOT will support issuance of an occupancy permit for the site. What is the timing of the proposed traffic signal?
37. Associated with this change in access, the southernmost proposed entrance off of the Dominion entrance (sheet 5) should show a stub to the property line of parcel T.M. 63-A-62 to complete this arrangement and/or an easement should be shown in this area providing perpetual access.

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38. The roadway improvements in the frontage road are shown outside of the existing right-of-way. New right-of-way lines need to be established to encompass all roadway features. All elements within VDOT right-of-way must conform to VDOT standards. This includes, but is not limited to, a proper turn-around and "End of State Maintenance" sign at the end of State maintenance, and utilities located outside of the pavement.

**Location and Design:**

39. Sheet 67 - Route 606 east of I-95 in Spotsylvania County is classified as a Rural Major Collector. Use the appropriate design criteria from the VDOT Road Design Manual, Appendix A for GS-3 roadways. The total minimum length to facilitate a left turn lane on Rte 606 is 545' (assuming a design speed equal to the posted speed of 35 MPH) to provide for the channelizing taper, the turn lane taper and the turn lane. **VDOT RDM F-52 Note:** A more acceptable design speed of 40 MPH would require a total minimum length of 620'. (Both examples mentioned are based on the computed taper length versus the slightly longer rounded taper length.) The total length of the facility shown on the plans is approximately 325'. This indicates the proposed turn-lane-facility is sub-standard by greater than 200'.
- Design waivers and/or exceptions may be required where standards are not met.
  - Although not labeled, shoulder widths do not appear to meet minimums.
40. Note the posted speed, design speed and traffic counts for Route 606.
41. Provide detailed information for the proposed retaining wall. Please provide a detail of the extension of the existing 18" RCP to the proposed retaining wall. Is there a drainage easement at this culvert outlet?
42. Show posted speed limit on Sheet 69 to verify the minimum sight distance required.

The County and Applicant are hereby reminded that, per Transportation Proffer IIIB, if this development causes queues in the subject left turn lane to repeatedly exceed the storage length such that eastbound through traffic on Mudd Tavern Road is blocked when the Applicant's Traffic Control Plan is not implemented, the Applicant will agree to terminate the left turn lane entrance and commence the process, at its sole cost and expense, in coordination with VDOT and the County, of developing and constructing an alternate access to the site as specified by this proffer.

Once the above comments have been addressed by the engineer, the revised plan (five (5) copies preferred), with appropriate responses from all concerned parties, must be re-submitted to this office for further review. You may contact Ken Martin at (540) 374-3343 if additional assistance is required.

Sincerely,



Angela N. Foroughi, PE  
Transportation and Land Use Director  
Fredericksburg District

Cc: Dominion Raceway Holdings, LLC  
Bowman Consulting Group