



VDOT Traffic Standards & Specifications Updates

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Agenda

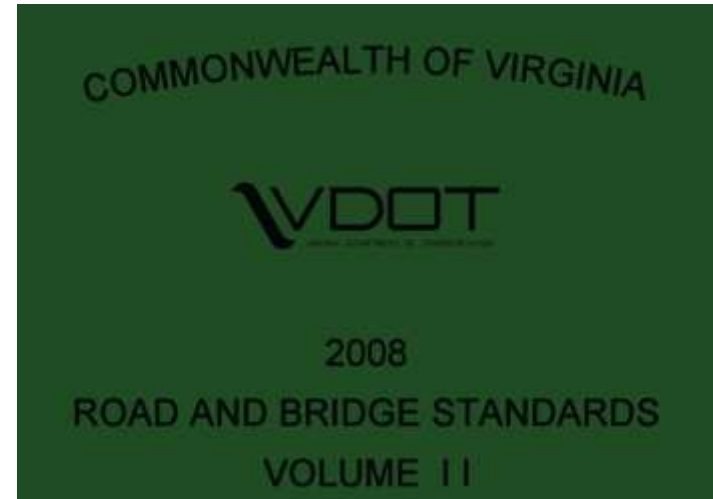
- Standards & Specs Overview
- Why update them?
- Major proposed changes – Standards
- Major proposed changes – Specifications
- Wrap-up
- Questions & Answers

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- ➔ ■ Standards & Specs Overview
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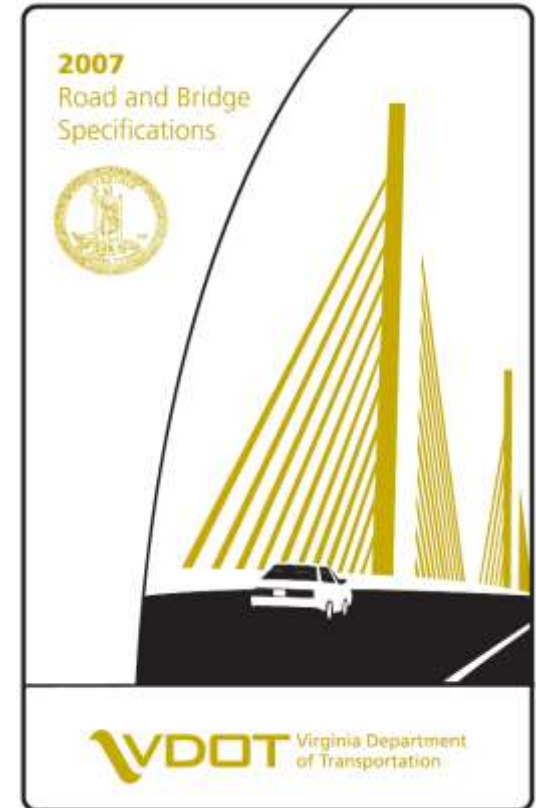
Standards & Specs Overview | *Standards*

- VDOT *Road & Bridge Standards* represent the standards that Contractors must follow on all VDOT construction projects, unless directed otherwise in the contract documents
- Last updated 2008
- Interim updates issued since 2008 should be included as “Insertable Sheets” on projects



Standards & Specs Overview | Specs

- VDOT *Road & Bridge Specifications* specify the materials, construction methods, and payment for all VDOT standard pay items
- Contractors must follow the Specs on all VDOT construction projects, unless directed otherwise in the contract docs
- Book last updated in 2007



Standards & Specs Overview | Goals

- Establish uniform and consistent technical criteria
- Be constructible
- Be unambiguous and enforceable
- Maximize safety
- Address long-term maintenance needs
- Result in quality end product
- Be good stewards of taxpayer dollars
- Minimize claims/disputes

Standards & Specs Overview | *Terminology*

- VDOT Road & Bridge Specifications
 - the green book (no, not THAT Green Book)
- Supplemental Specifications
 - Revisions to the Specifications Book that have been issued by VDOT on statewide basis and applicable to all projects after certain ad date
- Special Provisions
 - Specific to each project
 - VDOT may have standardized SP's already available
 - Special Provisions for Regional Signal Contracts may also be applicable to stand-alone signal projects
- Special Provision Copy Notes (SPCNs)
 - Similar to SPs; usually just a few sentences

Standards & Specs Overview | *Priority Order*

- In the case of a discrepancy, the following order of priority applies:
 - 1) Special Provision Copy Notes (SPCNs)
 - 2) Pay Items and Pay Units
 - 3) Special Provisions
 - 4) Plans
 - 5) Supplemental Specifications
 - 6) Specifications
 - 7) Standard Drawings

Standards & Specs Overview | *Traffic*

- Traffic standards = Section 1300
 - Signals
 - Signs and markings
 - Lighting
- Traffic Specifications = Division VII
 - Section 700 – General
 - Section 701 – Signs
 - Section 702 – Delineators
 - Section 703 – Traffic Signals
 - Section 704 – Pavement Markings
 - Section 705 – Lighting
 - Relates to Division II specs (materials) and Section 512 spec (MOT)

Standards & Specs Overview | *Stakeholders*

- Other VDOT Divisions
- Construction Industry
- Districts/Regions
 - Designers
 - Inspectors
 - Regional Maintenance
- Consultants
- Localities
- Design-Build Teams
- FHWA
- Our Customers

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Why Update Them?

- Match revisions to national standards
 - *AASHTO Design of Structural Supports for Highway Signs, Luminaires, and Traffic Signals*
 - MUTCD
 - etc.
- Match current typical VDOT field practices
- Incorporate previously issued supplemental specifications and common special provisions
- Address issues encountered in the field
 - *By Industry, by Inspectors, by Regional Maintenance*

Why Update Them? (cont.)

- Consistency between standards and specs
- Improve interoperability
- Materials prices
- Remove obsolete references

Why Update Them?



Why Update Them?

- Standards and specs do not apply in all situations; engineering judgment still required



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Standards Changes | *CF-4 Foundation*

- New, larger foundation standard to accommodate signal cabinet and separate UPS cabinet



Standards Changes | PA-3 Pushbuttons

- Current standard is non-breakaway
 - Results in maintenance headache when hit
- Larger diameter pole
- Breakaway (transformer) base



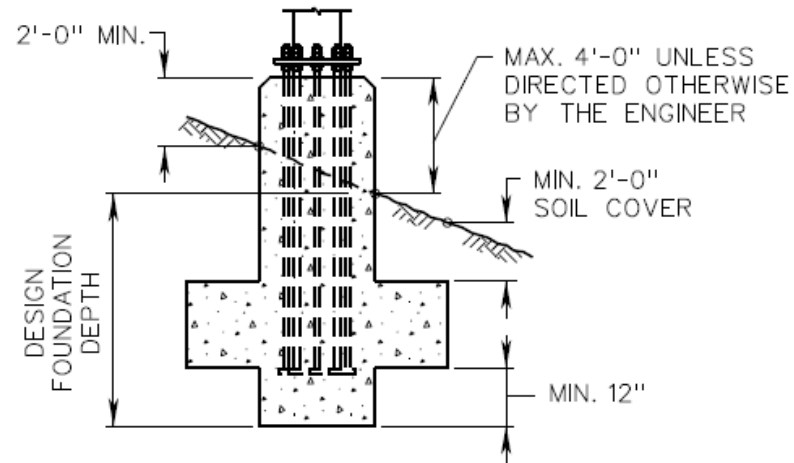
Standards Changes | *Flashing Beacons*

- New options for sign to be mounted on round pole with breakaway transformer base (instead of steel I-Beam)
- Flasher cabinet can be attached directly to the round pole



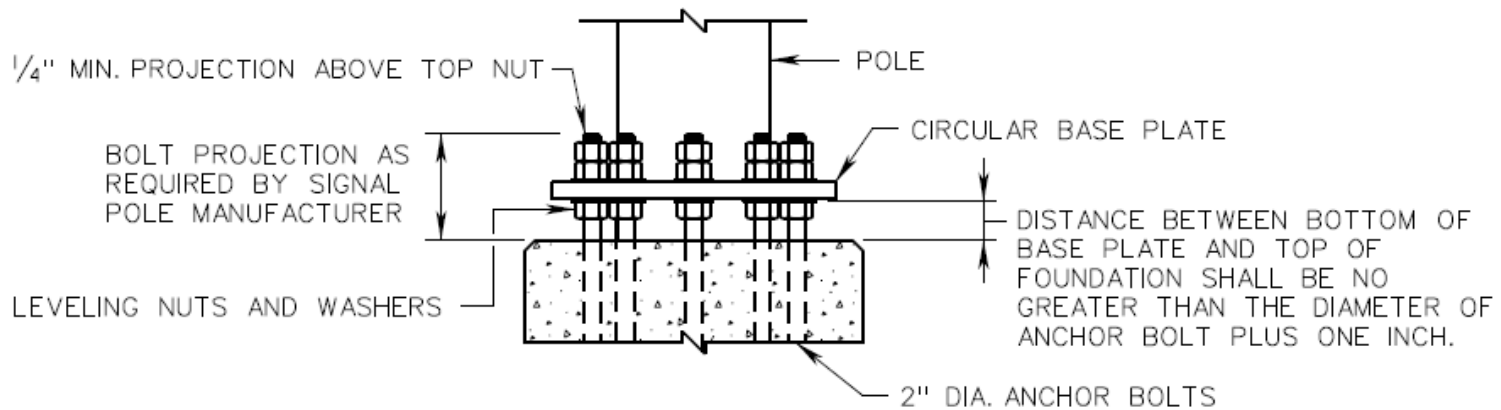
Standards Changes | *PF-1/PF-8 foundations*

- Additional guidance on when torsion wings can be eliminated
- Foundations to be elevated 2' above grade
 - Reduce risk of rusted anchor bolts sitting in standing water
 - Standards will allow for lesser elevation when immediately adjacent to sidewalk
 - May require designers to specify shorter pole to compensate



Standards Changes | *PF-1/PF-8 foundations*

- Maintain 5' min. sidewalk width
- Two nuts required above base plate
- Considering allowing smaller dia. foundation with just 6 anchor bolts when pole has a short arm



DETAIL D
ANCHOR BOLT AND BASE
PLATE CONNECTION DETAIL

Standards Changes | *Poles & Arms*

- For signal pole and arm design, standard loadings to be assumed for all arm lengths
 - Goal is to allow for future addition of new signs/signal heads/etc.
 - Set standard weights for common signal items
- Somewhat similar to current Regional signal contracts
- Provide flexibility for addition of new loads after construction



Standards Changes | Street Name Signs

- Overhead Street Name Signs
 - 18.5 ft maximum width
 - 30" maximum height
 - Use 8" text for all dual-line signs
- VA Standard Hwy Signs Book will also be updated to match



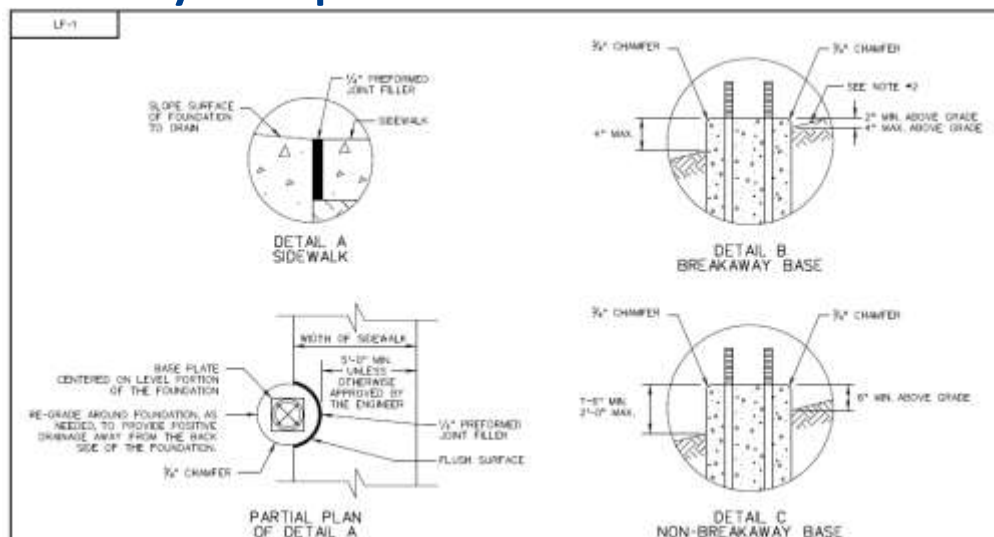
A	B	C	D	E	F	G	H	J	K	L	M
Var.****	30	1.5	3.75	4.5	8 (5-W)	5	6 Min.	12	9	3	Var.

N
Var.

** Refer to FHWA Standard Highway Signs Book for Standard Arrow Details
 **** Maximum length 144"

Standards Changes | *LF-1 foundations*

- Foundations to be elevated above grade
 - Non-breakaway: 6" min.
 - Breakaway: 2"-4"
 - In sidewalk: flush
- Maintain 5' min. sidewalk width from edge of foundation
- Note: designers need to specify breakaway vs. non-breakaway on plans



Standards Changes | STP-1 Sign Posts

- More variety in foundations and assemblies for easier installation
 - Some foundation options do not require concrete
- Revised design table
- Changed gauges for posts
- Clarify that mounting height is measured from top of curb
- VDOT is also evaluating changes to table based on AASHTO wind loading requirements



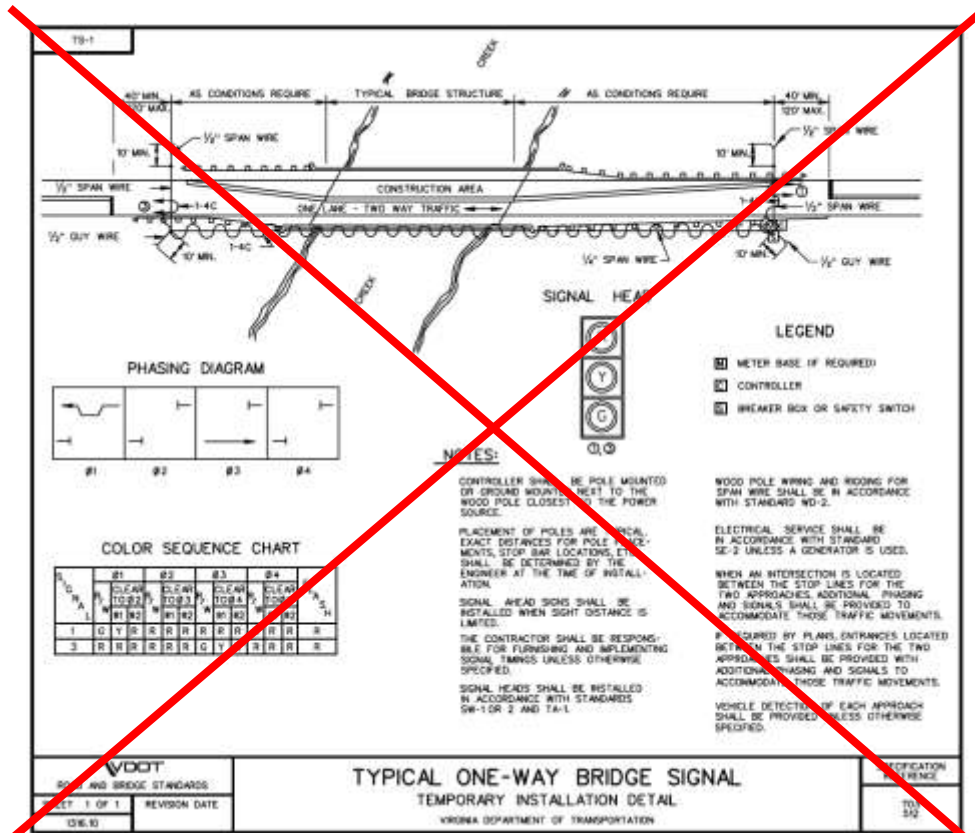
Top half with shoulder bolts



Bottom half with shoulder bolts

Standards Changes | TS-1 Temp Signals

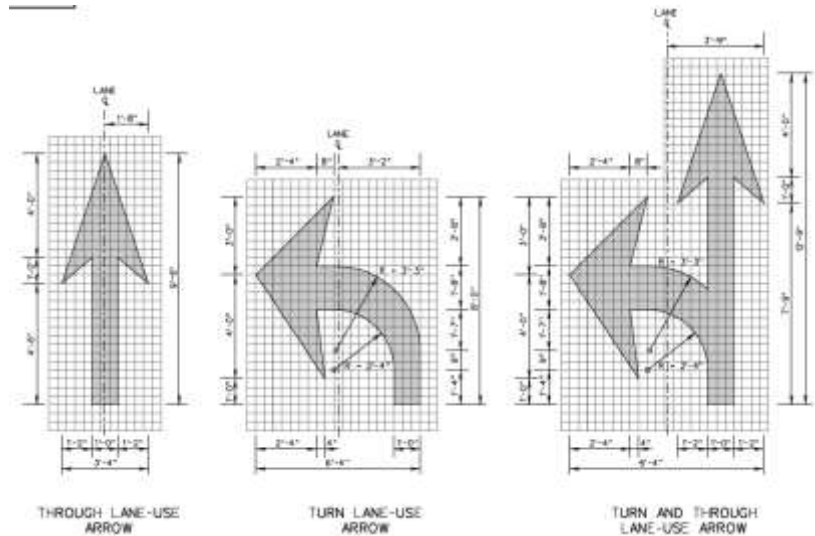
- Standard to be deleted
- Temp signals shall be designed on case-by-case basis
- Refer to VWAPM and Section 512 of specifications



Standards Changes | *PM Pavement Mkgs*

- Changes to match VA Supplement (Revision #1)
- Increased spacing for gore hatching
- New details

- Crosswalks
- Mandatory turn lanes
- Center turn lanes
- Shapes for most symbols/messages



- Standard square footage calcs for installation and for eradication

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Spec Changes | Sec. 700 (General)

- Increased requirements for number & length of anchor bolts
 - Will likely lead to increase in foundation costs
- Mast arms & poles are separate pay items
- Separate pay items for shorter vs. taller poles
- Test bores must be to 30' depth statewide
 - Current rule is 30' east of I-95, 15' west of I-95

Spec Changes | Sec. 703 (Signals)

- Several new standard pay items
 - Remove existing ... controller, pole, signal head, etc.
 - Video detection
 - Wireless detection
 - Emergency vehicle preemption
 - Uninterruptible power supply
- Update from old TS-1 standard to current VDOT practice (TS-2 or 2070)
- Clearer definition of who develops signal timings
- Signal equipment shall be IP address-able

Spec Changes | Sec. 704 (Pavement Mkgs)

- Patterned preformed tape (Type B-VI) now covered in Specifications Book
 - As per TE-Memo 261.1 and recent policy directive, B-VI tape required for all lane/edge/gore lines on freeways/expressways if surface is expected to last 6+ years
- B-VI tape may be used for contrast markings on concrete roads/bridge decks
- Revised pay items for symbols of different sizes
 - Example: “SCHOOL” markings with 8’ vs. 10’ letters
- New option for wet reflective removable tape (Type D-III)
 - Good solution for long-term work zones

Spec Changes | *Other*

- Section 246
 - As per supplemental specification issued Feb. 2011, Type IX or better sheeting required for most signs
- Section 701
 - Overlay panels can only be on flat surface (not on portion of sign that has protruding bolt heads)
- Section 702 (delineators)
 - Surface-mount post delineators to become standard pay item
- Section 705 (lighting) – no major changes
 - VDOT is in process of evaluating LEDs for roadway lighting

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Wrap-up / *Where we are now*

- Standards and Specs updates have been drafted, but are still in (lengthy) vetting process
- Release date TBD ... stay tuned!
 - Need to be coordinated with each other
 - When released, will also specify effective date
- Certain standards to be released as “interim” updates sooner
 - PF-1, PF-8, LF-1 foundation standards – July
 - STP-1 square tube post standards – next 2~6 months
- These draft standards/specs can be incorporated as special details/provisions into current design projects

Wrap-up / Where to find this stuff

- *2008 Road & Bridge Standards*
 - www.virginiadot.org/business/locdes/2008_road_and_bridge_standards.asp
- *2007 Road & Bridge Specifications*
 - www.virginiadot.org/business/resources/const/2007SpecBook.pdf
- *Supplemental Specifications (Revisions to 2007 R&B Specifications)*
 - www.virginiadot.org/business/const/spec-default.asp
- *Virginia Supplement to the MUTCD*
 - www.virginiadot.org/business/virginia_mutcd_supplement.asp



**You've got questions ... I've
(maybe) got answers!**

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