

APPENDIX G

VDOT Road Design Manual Excerpts

SECTION A-7-"NO PLAN" AND "MINIMUM PLAN" PROJECTS

GENERAL CONCEPTS

Description

The "No Plan" and "Minimum Plan" concept provides for the accomplishment by contract of the type improvements that would not require complete and detailed surveys and plans, and where the use of modified Specifications would be appropriate. Generally, the improvements will consist of widening, grading, draining and stabilizing primary and secondary roads with relatively low traffic volumes by using engineering judgment. "No Plan" and "Minimum Plan" concepts are to be used only for projects where significant reductions in the cost of engineering and construction can be experienced by using these concepts to obtain the quality of improvement necessary for the particular situation. To optimize the usefulness of this concept, very careful initial study and project selection by the District and Residency staff is required. The Federal Highway Administration has concurred with the use of the "No Plan" and "Minimum Plan" concept on selected projects with Federal Oversight.

"No Plan" projects are used when no survey, engineering, hydraulic analysis or river mechanics studies are needed or when there will be no major structures with "B" or "D" designation numbers. Right of way may be acquired on "No Plan" projects provided it is acquired thru donations and no condemnation is required. A "No Plan" project is an assembly of letter size sketches showing the location of the project with a typical cross section and estimated quantities.

A "Minimum Plan" project differs in that limited survey is needed to provide the information necessary to secure right of way by the Right of Way and Utilities Division and a profile sheet is provided. In the establishment of such projects, attention should be given to determine that the project location and selection is in an area where disruption due to construction can be tolerated by the users of that particular roadway for a reasonable period of time.

PUBLIC HEARING AND RIGHT OF WAY

All right of way negotiations are to be conducted in accordance with the applicable statutes, regulations, policies, and procedures stipulated in the Right of Way and Utilities Division's Manual of Instructions and related memoranda.

Any required right of way and/or easements will normally be secured by donation. However, right of way may be purchased by individual deeds or under the minimum plan concept (see - second paragraph under "Minimum Plan" Projects).

The Commonwealth Transportation Board's resolution of February 16, 1961 specifies a minimum 40-foot right of way is to be provided for any initial improvement to the secondary system, except in extenuating circumstances.

Section 33.1 - 70.1, Code of Virginia permits consideration for hard surfacing of a secondary road on less than a 40-foot right of way.

Right of Way - Donations

Public hearing requirements will normally be waived on "No Plan" and "Minimum Plan" projects when all landowners are willing to donate the right of way provided there is no evidence of controversy, the landowners have been advised of their right to receive just compensation prior to requesting donations, and the project files have been so documented.

Right of Way - Acquisitions

When right of way must be acquired, a "Willingness to Hold a Public Hearing" will be advertised and public hearings will be conducted upon request. A public hearing handout and appropriate environmental document, on projects with Federal Oversight, will be prepared following the usual guidelines. If there are questions concerning the public hearing requirements or procedures, check with the State Location and Design Engineer.

SPECIAL DESIGN STRUCTURES, SOIL SURVEY AND PAVEMENT DESIGN

"No Plan" projects may include drainage structures; however, major structures with "B" or "D" designation numbers and all standard and/or channel modifications* culverts that require a hydraulic study are to be constructed under the "Minimum Plan" concept. When pipes are to be extended and endwalls, end sections, pipe spillouts, etc., are to be provided, separate bid items are to be set up.

The District Materials section is to review the project site to determine if soil samples may be necessary. The District Materials Engineer is to furnish recommendations regarding any undercutting pipe bedding requirements and pavement design.

MOBILIZATION AND FIELD OFFICE

Mobilization is to be set up as a contract item on "No Plan" and "Minimum Plan" projects in accordance with VDOT's Road and Bridge Specifications.

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When it is necessary to set up a field office, it is set up as a contract item in accordance with VDOT's Road and Bridge Specifications at the discretion of the District; however, other arrangements should be considered such as the use of existing facilities where feasible to eliminate the need for the extra cost of a field office.

EROSION AND SEDIMENT CONTROL

Temporary and permanent erosion and sediment control measures are required in accordance with the Department's standard practices and procedures. Seeding operations, erosion control, and sedimentation measures shall be included as specific contract items in accordance with standard specifications and procedures or shall be performed by State Forces, at the discretion of the District. When seeding operations and other items are to be performed by State Forces, a plan note must be included to denote such State Force work; and, in the event of Federal Oversight, finding of cost effectiveness must be furnished in accordance with existing policy and procedures.

CONTRACT TIME LIMIT

Generally, a 90 to 180 calendar day time limit should be established; however, the contract time limit should be determined after thorough consideration of the need to realize the lowest cost possible to provide the improvement at the earliest practical date.

PROCEDURES

General

A general description of the work must be provided on Form C-99 (No Plan and Minimum Plan Quantity Support Report) and the Field Narrative to denote the nature of the work to be performed, such as daylighting of slopes; realignment; intersection improvement; or widening of shoulders and ditchlines are to be completed by the District Construction Engineer or the District Administrator's Staff. "Simple" sketches may be used in lieu of the narrative. They are to be submitted with the project assembly for the purpose of providing information concerning the general description of construction work from which to develop and support the construction cost estimate. For all projects disturbing 10,000 square feet or greater* of soil (or greater than 2,500 square feet or greater of soil in Tidewater Virginia**), plan details must accompany any plan narrative and shall denote the type and location of proposed erosion and sediment control measures. Stormwater management facilities may be addressed in a similar fashion provided sufficient detail is included to ensure their proper construction. The Plan Narrative will also become part of the contract assembly.

** Tidewater, VA, as defined by the Virginia Chesapeake Bay Preservation Act, Title 10.1, Chapter 21, Code of Virginia.

PROJECT SCOPING & INITIAL FIELD REVIEW

All projects are to be scoped and an Initial Field Review is to be held in accordance with IIM LD-210. These procedures will define the potential need for field and office engineering as well as right of way and environmental requirements.

"NO PLAN" PROJECTS

The "No Plan" concept should be used when:

- (a) survey data is not required
- *(b) improvements to roadways do not involve major structures, channel modifications* or special design items
- *(c) Hydraulic or River Mechanics Studies are not required.
- (d) rights of way are acquired thru donations and no condemnation is required.
- (e) environmental permits will not normally be required
- (f) construction activities must be handled in an expeditious manner
- (g) detailed engineering is not required

* Exception - when a project requires an extensive study (survey, hydraulic or river mechanics study, etc.) for a major structure or channel modifications, the "No Plan" concept may be used only if the necessary studies for the structure or channel design are performed. When a major structure or channel modifications is located on a long No Plan project, the site should be treated as a Minimum Plan exception to the No Plan Project

The District Construction Engineer normally obtains any donated right of way by use of the appropriate Right of Way Forms. When a "No Plan" project is to be constructed within existing right of way, a note must be placed on the title sheet indicating that "All construction is to be performed within existing right of way."

Metes and bounds plans are required for right of way from unique clients (e.g. Federal and State agencies, the National Forest, railroads, Virginia Power, etc.) - see VDOT's Road Design Manual Chapter 2E, Section 2E-5.

The construction baseline should generally follow the center of the existing roadway; however, minor relocation and alignment improvements (horizontal and vertical), roadway widening, and turn lanes may be accomplished. The geometrics should comply with the appropriate design standards. However, where it is impractical or not economical to obtain the minimum design and an exception is required, permission shall be secured from the State Location and Design Engineer and, if applicable, from the Federal Highway Administration.

For all projects disturbing 10,000 square feet or greater of soil (or 2,500 square feet or greater of soil in Tidewater Virginia**), an Erosion and Sediment Control Plan must be developed, reviewed, and approved by appropriate qualified personnel in accordance with the latest version of IIM LD- 11.*

For all projects disturbing one acre of land or greater, a Stormwater Management Plan must be developed, reviewed, and approved by appropriate qualified personnel in accordance with the latest version of IIM LD- 195.

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The Project Manager, with the assistance of the project designer, determines the typical section and furnishes an estimate of quantities on the "Quantity Support Report" Form C-99. Grading should generally be balanced and set up as a lump sum quantity. Form C-99 should indicate an estimate of grading quantities, including anticipated waste quantities, to guide the Scheduling and Contract Division in preparing the construction cost estimate.

When borrow material is anticipated, "Borrow Excavation" is to be set up as a separate bid item in accordance with VDOT's Road and Bridge Specifications. Borrow sources should be located and designated whenever possible in accordance with VDOT's Road Design Manual Chapter 2E, Section 2E-1 - SOIL SURVEY AND PAVEMENT DESIGN.

A unit price for extra excavation is to be established by the District Construction Engineer or the District Administrator's staff and entered on Form C-99 for inclusion in the contract assembly by the contract section.

The Project Manager is responsible for conducting the utility field inspections and preparing the field inspection reports, determining utility conflicts, method of adjustment, cost responsibility and for obtaining and forwarding all plans and estimates from utility owners to the District Administrator (District Utilities Engineer) for processing. The District Construction Engineer is also responsible for advising the District Administrator (District Utilities Engineer) in writing, no later than 60 days prior to the advertisement of the project, when all arrangements have been made with the utility owners to adjust the utilities prior to or in conjunction with project construction. The Central Office Right of Way and Utilities Division will obtain any necessary FHWA authorization for utility work and will furnish the usual utility clearances and estimates to the Scheduling and Contract Division for contract projects and State Force projects with Federal Oversight. If no known utilities and/or railroads are involved, the plans will contain a note so stating.

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The responsibility for compliance with applicable regulations, policies and standards is assumed by the District Administrator for "No Plan" secondary projects. The State Location and Design Engineer is responsible for all other roadway classifications. This responsibility is evidenced by affixing the signature of the District Administrator or the State Location and Design Engineer in the appropriate plan signature space.

On Secondary "No Plan" projects, the project designer will **submit*** the plan assembly directly to the Central Office **Plan** Coordination Section for processing, construction advertisement or authorization for State Force work on projects with Federal Oversight, whichever is applicable. Primary "No Plan" projects will continue to be **submitted** to the Central Office **Plan** Coordination Section for processing and recommended approval for advertisement (**See IIM-68 for Electric Plan Submission**). Construction plans will be retained in the District until right of way has been secured and arrangements made for utility adjustments. When retained, status reports (containing applicable correspondence) will be submitted the by District Administrator's staff by the plan-due-date and quarterly until clear.

"MINIMUM PLAN" PROJECTS

Those sites that require an engineering evaluation should be designated as "Minimum Plan" projects. This will permit the development of required engineering studies and will provide a vehicle for transmitting critical information to the contractor.

Projects that should be developed with the "Minimum Plan" concept include:

- (a) locations requiring survey
- (b) major stream crossing sites
- (c) locations that will require environmental evaluation and/or permits
- (d) all projects with "B" and "D" designation numbers
- (e) locations requiring Hydraulic or River Mechanics studies
- (f) locations that involve the acquisition of right of way and/or condemnation

The basic difference between the "Minimum Plan" and the "No Plan" project is the need for a limited survey and topo to provide sufficient right of way plans necessary to acquire right of way. Form RW-205 or individual deed forms are to be used. If any additional right of way or easements are necessary, the usual right of way certification letter and release for advertisement will be required. If additional right of way or easements are not required, the "Minimum Plan" title sheet is to contain a note indicating that "All construction is to be performed within existing right of way."

"Minimum Plan" projects may include relocation or alignment improvements (horizontal or vertical), roadway widening, and the addition of turn lanes. The intent of the "Minimum Plan" project is for it to be constructed using engineering judgment; however, the complete project should not be required to be redesigned during construction. Special attention should be given to major drainage problems and the limits set for the proposed right of way. The geometrics should comply with the appropriate design

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standards. However, where it is impractical or not economical to obtain minimum design and an exception is required, permission must be secured from the State Location and Design Engineer and, if applicable, from the Federal Highway Administration.

Quantities, typical sections, entrance profiles and other similar information should be shown on the initial plan and profile sheets. A grade line is required when the grade is to be different than that of the existing road. In areas where right of way is to be obtained and entrance grading is necessary, a profile showing the approximate grade of the proposed entrance should be included in the plan assembly.

When borrow material is anticipated, "Borrow Excavation" is to be set up as a separate bid item in accordance with Section 303 of VDOT's Road and Bridge Specifications. Borrow sources should be located and designated, whenever possible, in accordance with VDOT's Road Design Manual, Chapter 2E, Section 2E-1 - SOIL SURVEY AND PAVEMENT DESIGN.

A unit price for extra excavation is to be established by the District Construction Engineer or the District Administrator's staff and entered on Form C-99 for inclusion in the contract assembly by the contract section.

Utility adjustments shall be handled in accordance with IIM LD- 140 and 203.

A general description of work must be provided on Form C-99 and the Field Narrative to denote additional work that is not covered on the plans.

For all projects disturbing more than 10,000 square feet of soil (or greater than 2,500 square feet of soil in Tidewater Virginia**), an Erosion and Sediment Control Plan must be developed, reviewed, and approved by appropriate qualified personnel in accordance with the latest version of IIM LD- 11.

For all projects disturbing greater than one acre of land, a Stormwater Management Plan must be developed, reviewed, and approved by appropriate qualified personnel in accordance with the latest version of IIM LD- 195.

** Tidewater, VA, as defined by the Virginia Chesapeake Bay Preservation Act, Title 10.1, Chapter 21, Code of Virginia.

PERMITS AND REVIEWS ("NO PLAN" AND "MINIMUM PLAN" PROJECTS)

The need for 401, 404, navigation, and other environmental permits is to be considered in accordance with the Guidelines for the Preparation of Permit Application. Any land disturbing activity that disturbs one acre or greater (or 2,500 square feet or greater in areas designated as a Chesapeake Bay Preservation Area), except certain routine maintenance activities specifically exempted by the Virginia Stormwater Management Law and the Virginia Stormwater Management Program (VSMP) Permit Regulations - 4VAC50-30 et seq. and 4VAC50-60 et seq., must have a project specific VSMP

Construction Permit registration. Instructions for registering a project for VSMP Construction Permit coverage are contained in IIM-LD-242. (Request Form LD-445)*

Historical and archaeological reviews are to be made. (Request Forms LD-252 and EQ-429).

PLAN PREPARATION

The sample plan assemblies for both "No Plan" and "Minimum Plan" projects provide the manner of showing the minimum essential information and the notes necessary to govern construction. For current versions of these sheets, see the CADD No Plan Directory, which is in Falcon under Engineering Services (eng-ser). Variation may be made to the formats to meet the specific project needs and to best utilize all available sheet space, thereby minimizing the total number of project assembly sheets. Careful attention should be given to the notes shown thereon.

The plan assemblies for both "No Plan" and "Minimum Plan" projects are to be placed in Falcon and transmitted electronically to the Plan Coordination Section in the Central Office. The document assembly instructions are located in Falcon along with the other typical drawings needed for "No and Minimum Plan" projects.

Generally, plan variations from AASHTO guidelines, as set forth in the Geometric Design Standards (See VDOT's Road Design Manual, Appendix A), are not readily apparent in an office review; therefore, it is very important that the variations be defined in the project assembly (consisting of the plan details, Form C-99, cost analysis, and narrative or description of the work) by the Project Manager and/or District Administrator.

Aggregate Material No. 21, 21A, 25 or 26 should be set up as a contract item for roadway base or subbase, maintenance of traffic, private entrances, and mailbox turnouts. Normally, one contract item should cover all uses.

SPECIFICATIONS

It is intended that modified versions of parts of VDOT's Road and Bridge Specifications will be followed in order to reduce the field engineering and final computations required; however, the use of such modifications must still be consistent with good construction practices in relation to the kind and type of improvement being provided.

A unit price for extra excavation is to be established by the District Construction Engineer or the District Administrator's staff and entered on Form C-99 for inclusion in the contract assembly by the contract section.

The Special Provisions for "No Plan and Minimum Plan Projects" (available from VDOT's Scheduling and Contract Division) are approved by the Federal Highway Administration for use on a project by project basis. When additional changes to the

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Specifications are necessary, such changes should be documented and submitted with the project assembly. (Any additional Special Provisions are to be reviewed by the Scheduling and Contract Division in ample time for inclusion in the project bid proposal.)

"No Plan" and "Minimum Plan" projects will often consist of small quantities of materials; therefore, materials testing requirements for most items will fall within the limits of minimum testing as set forth in VDOT's Materials Manual. Compactive effort must be provided by the Contractor in such a manner as to attain the required densities and random compaction tests will be performed to the extent required to assure proper compaction.

Generally, materials from sources that have proven to be satisfactory in the past will normally be accepted by certification as determined by VDOT's Materials Division, subject to visual inspection at the project site.

The Contractor shall perform all construction surveying on "No Plan" and "Minimum Plan" projects in accordance with the Special Provision "Copied Note" for Section 105.10 of VDOT's (See IIM LD- 152) VDOT's Road and Bridge Specifications.

Prospective bidders may be required to attend the Project Showing as a prerequisite for submitting a bid proposal for "No Plan" and "Minimum Plan" projects. When attendance is required, prospective bidders must register with the Engineer at the project showing and all attending parties are to be noted in the project showing letter. The Project Engineer and the Project Inspector must also attend the project showing. The Field Narrative will indicate if attendance is required.

PROJECT LAYOUT

If deemed necessary by the District Administrator or District Construction Engineer, marked stakes shall be established showing the approximate depth at centerline of major fills and cuts which exceed 4 feet and/or other areas as required. Marked stakes shall be in place at the time of the Project Showing.

Survey work for "Minimum Plan" projects should normally be performed in accordance with the VDOT Survey Instructions Manual or as otherwise determined by the District Administrator or **District Construction Engineer***. The designer should determine in the early stages of the plan development where additional survey is needed in order to alleviate any major problem during construction. For entrance profiles on "Minimum Plan" projects see Section C-1 DESIGN FEATUERS - ENTRANCES

INSPECTION AND RECORD KEEPING

Close coordination between the Project Inspector and the Contractor is necessary to assure the success of the "No Plan" and "Minimum Plan" concepts.

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Only one loose leaf notebook is normally necessary on a "No Plan" or "Minimum Plan" project and it may be used as a combination diary, materials book, and sketch book provided that electronic versions of these materials are not available.

Alignment and sketches may be entered in accordance with standard procedures or, where feasible, small sketches may be glued into the notebook to properly indicate the work performed.

Where it is determined by the District that "As Built Plans" are more practical, they may be used in lieu of entering alignment, sketches, and summaries in the notebook. When "As Built Plans" are used, any changes, additions, or deletions of any nature are to be clearly indicated on the prints/files furnished to the Inspector with the diary and materials information entered in the notebook.

Upon the completion of a project, all records shall be submitted in accordance with standard procedures; except that after verification of the materials section by the District Materials Engineer, a reproducible copy of the materials section of the notebook/file is to be furnished to the State Materials Engineer in lieu of furnishing the original document/file.