

CHAPTER 2G - CONSTRUCTION PLANS

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CHAPTER 2G - CONSTRUCTION PLANS

SECTION 2G-1-FINALIZING PLANS

REVIEWING REPORTS – INTEGRATED PROJECT MANAGEMENT*

A thorough review of all correspondence and reports relative to summaries must be made to insure incorporation of applicable items into the plans. Usually, appreciable time has elapsed between the date of the [Field Inspection](#) and [incorporation of the recommendations into the plans](#). Therefore, current nomenclature, basis of payment, and items affected by Instructional & Informational Memoranda are to be checked. [Type code number\(s\)](#), [federal numbers](#) (for Federally funded projects), bridge plan numbers, etc., on the title sheet should be verified.

If a change is made in the latter stages of plan development that affects the limits of a construction project or projects within the original right of way project termini, it can affect right of way acquisition, utility adjustments or railroad agreements. The Right of Way and Utilities Division should be advised accordingly, as soon as possible, in order that they can arrange to clear the desired segment and subsequently can certify to the Scheduling and Contract Division that a project is clear for advertisement. The methods of required notification (Plan Revision or Memorandum) are outlined in [Section 2F-6-FORMAL REVISIONS-MAJOR CHANGES](#).

The designer should review the parameters of the project's classification, size, and geographic location as shown in [Integrated Project Manager \(IPM\)](#). The correct alignment length, numbers, and elements of work should be reviewed for correctness.

RESOLUTION OF PENDING CONSTRUCTION DETAILS

Few problems occur during construction of standard items. When special design or modified items are called for in the plans, it would be prudent to review these with the Scheduling and Contract Division for inclusion of proper notes or special provisions. Minor construction problems resolved at this stage may prevent the need for major revisions later.

On complex projects, a sequence of construction plan is required to guide the contractor (See [Section 2E-10-SAFETY ITEMS AND SEQUENCE OF CONSTRUCTION](#) and [Road Design Manual, Section A-8](#)). [Safety devices](#) and/or [barriers](#) must be provided for the protection of the traveling public and construction personnel during the life of the project. "Safety Guidelines for Construction Zones" (See [IIM LD-93](#)) delineate fully the warrants and treatment of potentially unsafe areas.

* Rev. 7/07

SPECIAL DESIGN DRAWING REQUEST PROCEDURES

When road plans have been developed to the stage of right of way acquisition, requests shall be made to the [Standards/Special Design Section](#), by memorandum, to prepare the required special design drawings for minor structures and roadside appurtenances not included in the standard drawings for inclusion in the plan assembly. Exceptions to this procedure are requests for special design box culverts and special wing details, which are to be made to the Structure and Bridge Division.

All requests are to be made a minimum of nine (9) months to one (1) year prior to the date of [Advertisement Quality Control Review](#) of the project. The Hydraulics Engineer shall submit all requests for required special design drainage drawings (copy of memo to the Road Designer) to the [Standards/Special Design Section](#). Completed special design drainage drawings will be furnished to the Hydraulics Engineer for their review and approval. The Hydraulics Engineer will submit the final drawing to the road designer for insertion in the plan assembly. Non-drainage drawing requests shall be made by the Road Designer. All requests shall include the scheduled advertisement date, complete project charge number and the name and telephone number of the Road Designer. Requests under specific time restraints should include a date desired. Special Design drainage structure drawing requests shall include the following:

1. Structure number, height, length, width, top elevation, invert elevation
2. Pipe size entering and exiting the structure
3. Prints of the pertinent plan, profile and x-sect sheets with structure clearly located

Retaining Wall drawing requests are made to the [Standards/Special Design Section](#)*. When appropriate, standard walls will be recommended. Reviews requiring special designs will be forwarded to the Structure and Bridge Division, with a copy of the request sent to the road designer making the original request. The Structure and Bridge Division will respond directly to the original road designer. Retaining Wall drawing requests shall include the following:

1. Plans depicting the horizontal and vertical location of the wall
2. Road station for wall beginning and end
3. Boring log data for foundation design
4. Retaining wall and boring locations should be marked clearly on plan sheets

* Rev. 7/07

[Impact Attenuator](#) requests shall include the following:

1. Design speed
2. Propose location of the required attenuator, profile, and cross-section sheets with [structure](#) clearly located.

The Road Designer shall furnish the [Standards/Special Design Section](#) any additional data or information necessary for the design and preparation of the special design drawings. Special Design drawings must be in sufficient detail to construct the item and contain the basis of payment, reference to specifications and materials required for construction. Special design drawings normally follow the typical section sheets in the plan assembly.

Sound Barrier Wall requirements for location and profile elevations are determined by the Environmental Division who will provide the roadway designer with the requirements. The roadway designer will coordinate with the Environmental Division and include horizontal locations and profiles of the walls in the roadway plans and cross sections. When sound barrier wall locations are determined, the roadway designer will immediately request foundation data from the Materials Division. A Boring Log Data Sheet is required for all projects having retaining walls and sound barrier walls whenever boring log data is available. Boring Log Data Sheet (in MicroStation format) will be furnished to the project designer by the Materials Division. The District Material Section will prepare these sheets or they will forward a request to the Geologist Supervisor at Elko. If assistance is needed in preparing these sheets, contact Location and Design Division's [Standards/Special Design Section](#). The project contractor is responsible for the design and construction of the wall based on Special Provisions. These Special Provisions contain design and construction requirements, which become part of the roadway project specifications.

The request for special provisions should have the following information:

"Subject: Order No: A12 Project No. U000-1000-101, C501, AD Feb 2001 [UPC](#)* No. XXXX PS&E-YES".

Special Provisions for sound barrier walls (designed by VDOT) are prepared by the Scheduling and Contract Division. The Project Manager will request [Standards/Special Design Section](#) to provide the Scheduling and Contract Division with a suggested draft of the provisions.

When sound barrier walls are designed by a consultant, the [Engineering Development and Project Management Section](#) will advise the consultant to contact [Standards/Special Design Section](#) for input and direction prior to initiating the development of Special Provisions. When [Standards/Special Design Section](#) is made aware of the need for a Special Provision, it will coordinate with the Scheduling and Contract Division and provide Engineering Development and Project Management a suggested draft of the provisions.

* Rev. 1/07

PLANS PREPARED BY OTHER DIVISIONS

Plans prepared by other divisions are to be available approximately seven months prior to the scheduled advertisement date in accordance with the "Contract Document and Processing Cut-Off Dates for Advertisement" and are to follow the last roadway profile sheet in the plan assembly (See [Section 2E-6-PREPARATION OF SUPPLEMENTAL SHEETS](#))*.

* Rev.7/06

SECTION 2G-2-SUMMARY SHEETS

GENERAL

The names and phone numbers, including area code, and District, if applicable, of the following persons are to be shown in the upper left corner: Project Manager: (VDOT), Surveyed By: (L&D Survey Office Manager or Consultant Survey Project Manager), Design Supervised By: (Design Engineer in Responsible Charge) and Designed By:(Designer).*

Normal roadway construction projects prepared by the Location and Design Division are summarized into five categories: Grading, Drainage, Incidental, Pavement and Roadside Development/Temporary Erosion and Siltation Control. Each category must be separated with individual totals for each project and contract number. Projects with more than one type of financing will require separate totals for applicable items. These summaries are usually shown in tabular form.

An example of this is the case of a storm sewer system in an urban area wherein financing responsibilities are based on the run-off ratio, to be shared jointly with city, state, and/or federal funds.

Small projects or those of less complexity may be summarized in a list or "Streamline" summary. These projects will generally be limited to Minimum, No Plan, Safety, and Plant Mix Projects.

The items shown in summaries must agree with the description and pay unit shown in VDOT'S Road and Bridge Specifications as amended by contract provisions and plans.

To alleviate the inconsistencies in denoting the use of Regular and Alternate Designs or Design Options on the plans, the following policy is to be adhered to:

1. When more than one design is shown on plans and it is practical to establish the same units of measurement to provide equitable payment for construction of either design, such designs are not to be designated as Regular, Alternate, or Option. The successful bidder will then be permitted to select the design he prefers, without having to designate which design he has selected at the time of bidding. As an example: separate designs are shown for guardrail consisting of concrete posts, and wood posts; however, one bid price is furnished for guardrail on a Linear Feet (Metric) basis and the successful bidder constructs the design he prefers.
2. When more than one design is shown on the plans and it is not practical to establish the same units of measurement to provide equitable payment for construction of either design, such designs are to be designated as Design Option A, Design Option B, etc. The Scheduling and Contract Division will then incorporate a provision in the proposal, which advises that bidders have the option of bidding on any one of the design options and that award will be made on the basis of the lowest bid submitted.

* Rev. 7/07

3. Designs are not to be designated as Regular and Alternate except on those occasions when such designs are not considered to be equal or one is considered to be questionable, either from a performance standpoint or from a competitive cost standpoint. In such an event, the designation of Regular and Alternate designs must be approved by the **State Construction Engineer*** well in advance of plans being sent to the Scheduling and Contract Division for advertisement. When the Regular and Alternate design concepts are approved, the Scheduling and Contract Division will incorporate a provision in the proposal which advises that the Department will, at its option, award to the bidder submitting the lowest Regular or Alternate total bid, whichever is in the best interest of the State.

Pay item totals in summaries shall be shown to the nearest whole number, except in the following situations:

1. Concrete to be measured for payment by the cubic yards (m³), in which case the concrete total shall be computed to two decimal places and shown to one decimal in the summaries.
2. Metric culvert and storm sewer pipe lengths are shown to the nearest 0.5 m
3. Metric manhole and drop inlet heights are shown to the nearest 0.01 m.
4. Metric pipe cover is shown to the nearest 0.1 m.

GRADING DIAGRAM AND SUMMARY

The notes shown in the legend should be used to clarify the method of arriving at the individual earthwork totals. Pay items should be designated and plan quantity items specified in accordance with Instructional and Informational Memorandum [IIM LD-135](#). Show the plan quantity symbol for "Roadway Cut" as well as other applicable measured cut quantities in the Grading Summary. Because the "Total Regular Excavation" quantity is subject to change during construction as well as inclusion of some non-plan quantity items, do not show the plan quantity symbol with the "Total Regular Excavation" in the Grading Summary. The plan quantity symbol should not be shown on the "Regular Excavation" quantity in the engineer's estimate if any part of the total includes non-plan quantity items.

For instructions on computing and summarizing earthwork quantities see [IIM LD-138](#).

* Rev. 7/07

DRAFTING FINAL GRADING DIAGRAM & SUMMARY

A base Grading Diagram and Summary Sheet is available as a CADD file. This sheet has all the applicable notes and symbols for a typical Grading Diagram and Summary. Designers should use only notes, which are applicable to their project.

DRAINAGE SUMMARY

The Drainage Summary is usually set up with the identifying **sheet number and structure*** and lane down the left **side**, the description of the item including the pay unit across the top, and a "Remarks" column down the right side.

On projects where an agreement has been reached between the Department and city/county that the city/county will participate in the cost of storm sewer construction (See [IIM LD-146](#)), the following note must be shown under the drainage summary and the items referenced by an asterisk.

*Denotes items to be paid for on the run-off ratio basis according to Commonwealth Transportation Board Policy, % City/County Cost.

Separate quantity summaries (including all structure related items) are to be shown on the plans and estimates for structures, measuring over 20 feet (6.1 m) along the centerline, that are classed as major structures and assigned a separate project number, e.g., B-601, D-603, (See [Section 2E-6-Project Length Tabulation](#)). In cases where the roadway fill and pavement is carried over but is not a part of the structure, the roadway quantities are not to be segregated on the plans and estimates but are to be included in the roadway project summary.

PAVEMENT SUMMARY

The Pavement Summary is usually prepared with identifying stations and lane down the left column, the description of the item and pay unit across the top, and a "Remarks" column down the right side (where necessary).

Instructional and Informational Memoranda must be checked for inclusion of all pertinent notes relative to pavement designs.

* Rev. 1/06

PUG MILL MIX AGGREGATES

The following criteria must be observed when summarizing quantities:

Imperial Projects:

1. Aggregate base or subbase materials:
The pavement recommendation will show an in-place dry weight of aggregate to be used in pounds per cubic foot.

For example: 145 lbs. per cubic foot

$$\frac{145 \times \text{Volume (Cu. Ft.)}}{2000} = \text{tons of Aggregate (dry weight)}$$

Add 6% to tons of aggregate for moisture correction.

2. If cement stabilized:
To determine the amount of cement required (tons): Compute *4% of the total dry weight of the aggregate in pounds and divide by 2000.

*4% cement by weight is the usual rate but should another rate be recommended in the pavement design, it is to be used.

Metric Projects:

1. Aggregate base or subbase materials:

The pavement recommendation will show an in-place dry weight of aggregate to be used in kilograms per square meter per millimeter of depth.

For example: 2.4 kg/m²/mm

$$\frac{2.4 \times \text{Area(m}^2\text{)} \times \text{Depth(mm)}}{1000} = \text{Metric Tons of Aggregate (dry weight)}$$

Add 6% to metric ton(s) of aggregate for moisture correction.

2. If cement stabilized:

To determine the amount of cement required (metric ton):

Compute *4% of the total dry weight of the aggregate in metric ton.

*4% cement by weight is the usual rate, but, should another rate be recommended in the pavement design, it is to be used.

CRUSHER RUN AGGREGATE

Where either No. 25 or 26 aggregate is recommended, both gradations shall be shown on the plans and summaries.

AGGREGATE BASE MATERIAL

Whenever a material usually used as a base course is used in the subbase position (reference Section 101 of VDOT's Road and Bridge Specifications for definitions of "Base Course" and "Subbase"), it must be noted on the typical sections, summaries, and estimate as follows:

Aggregate Base Material Type (used as subbase)

If there is any question about the usage of nomenclature of a material, the designer is to contact the Materials and Scheduling and Contract Divisions for clarification.

WEIGHTS OF ASPHALT CONCRETE

In computing weights of asphalt concrete, the weights in pounds per sq. yd. per inch ($\text{kg/m}^2/\text{mm}$) of depth shall be used unless otherwise directed by the Materials Division. (Use rate provided by the Materials Division, when available.) See [IIM LD-158](#) for specific weights used by each district.

COAL TAR PITCH EMULSION

Due to damage done to asphalt concrete parking areas, it is necessary to provide a protective coating resistant to the deteriorating effect of gasoline and oil. The parking and maneuvering area of all rest areas and weigh stations being constructed with asphalt concrete surface, are to receive this treatment. The plan portion of the facility is to have a line drawn delineating the limits of the coating as in the example below. It is not to include exit and entrance roadways. This item is to be entered into the pavement summary under the heading of "Coal Tar Pitch Emulsion" in square yards (m^2). A special provision will be included in the project assembly by the Scheduling and Contract Division.



INCIDENTAL SUMMARY

The Incidental Summary is usually prepared with identifying stations and lane down the left column, the description of the item and pay unit across the top, and a remarks column down the right side.

SPECIALTY SUMMARIES

ROADSIDE DEVELOPMENT

Quantities relative to Roadside Development and Temporary Erosion and Sediment Control are summarized on the Roadside Development Sheet provided as a CADD file. This is a multi-purpose sheet providing types of seed mixtures, rates of application, and quantities. Quantities relative to temporary Erosion and Siltation Control, shall be summarized on the Roadside Development Sheet, with the exception of any necessary outfall pipe, which will be summarized in the drainage summary.

STORMWATER MANAGEMENT

Quantities relative to stormwater management facilities* are to be summarized in the appropriate summary or for the particular pay item (e.g.) drainage items in the Drainage Summary, earthwork items in the Grading Summary, erosion and sediment control items in the Erosion and Sediment Control Summary, etc.

DEMOLITION OF BUILDINGS AND CLEARING OF PARCELS

A Building Data Report lists buildings to be removed and parcels to be cleared and is furnished by the Right of Way and Utilities Division, when applicable, for inclusion in the contract. Appropriate identification and description of the buildings are to be included in the summary. These summaries may be combined.

* Rev. 1/06

UTILITY ADJUSTMENTS

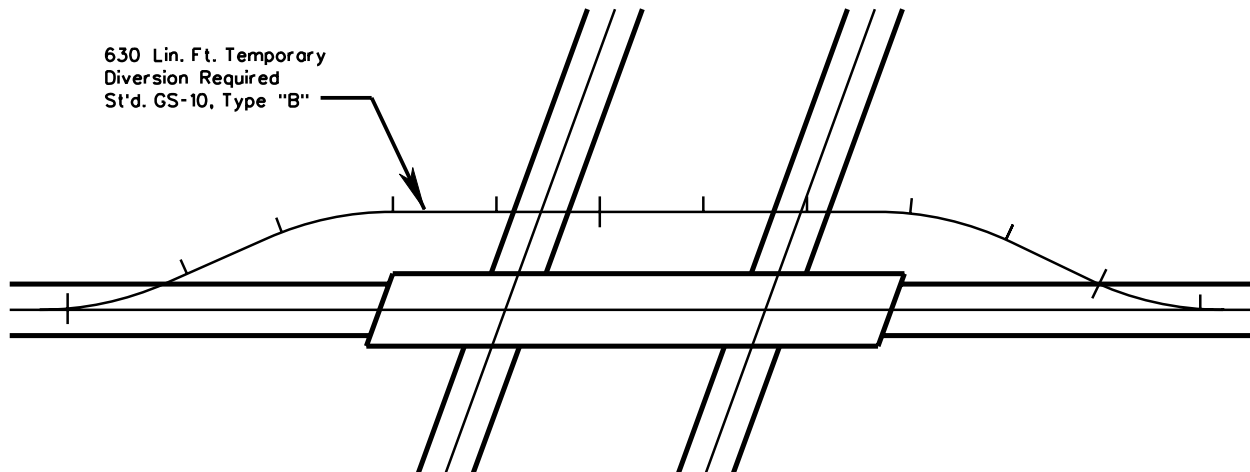
Sewer, water, or other utility adjustments which are not included in Utility Plans (Section 2G-1-PLANS PREPARED BY OTHER DIVISIONS) are summarized separately.

SPECIAL DESIGN BRIDGES

All special design bridges applicable to the contract are to be listed. This will include project number, description, plan number, sheet number, clear roadway, and minimum vertical clearance, where applicable. Although this is not a summary of quantities, it helps to define the scope of the project. Bridge approach slabs are included in road plans with quantities summarized on the detail sheets.

TEMPORARY DIVERSIONS*

Each Standard GS-10 **diversion** road, Type "A" and Type "B", is to be shown on the plans by means of a construction baseline as noted below:



Diversions on crossroads carrying over 750 ADT should have the complete alignment, grades, typical sections, drainage, etc., shown on the plans. Additional temporary construction easement lines should also be shown, if necessary.

If a type "A" or "B" **Diversion** can be constructed within existing right of way, it will be necessary to only show the baseline of the **diversion**.

If a type "A" or "B" **Diversion** cannot be constructed entirely within the existing right of way, it will be necessary to show both line and grade of the **diversion**, together with the temporary construction easement lines necessary to construct it.

* Rev. 1/07

The diversions* are to be set up in separate summaries as follows:

Type A and B

Temporary Diversions, Standard GS-10

Location	Type "A" (Feet)	Type "B" (Feet)
Route 601 (Sta. 100+00)	550'	
Route 602 (Sta. 150+00)		625'
Route 604 (Sta. 250+00)	655'	
Route 605 (Sta. 300+00)	560'	
Totals	1765'	625'

Type C through F

Temporary Diversion St'd. GS-10 Type "E"

Route 606 (Sta. 350+00)

1233 Cu. Yds.. Regular Excavation

* 223' 18" Pipe

* 112' 30" Pipe

222 Cu. Yds. Aggregate Base Mat'l. Ty. I No. 21 or 21A (6" Depth)

100 Tons Asphalt Concrete Type SM-2A @ 165 lbs/yd²

*Set up pipes for payment only when recommended by the Drainage Section.

The quantities for a Type "C", "D", "E", or "F" diversion are to be shown separately, as above, but are to be combined with the mainline quantities on the estimate and bidding proposal.

* Rev. 1/07

SECTION 2G-3-REVIEW OF PLANS

CHECK FOR ACCURACY AND COMPLETENESS

When the summaries have been completed, the computations are to be checked for accuracy and completeness. If conflicts in quantities are discovered, they are not to be changed until the discrepancies have been mutually resolved by compiler and checker.

Check plans for most recent insertable sheets. Review items on [Quality Control Checklist \(LD-436\)*](#).

The [Hydrologic Data Sheet](#) is to be reviewed to determine if all information contained thereon is up-to-date.

The traffic data on the title sheet should be reviewed and if it is over two years old, an update should be requested. (See [Section 2A-4-REQUEST FOR TRAFFIC DATA](#) and [Section 2E-6-Functional Classification - Traffic Data](#).)

Computer Listings must be reviewed in accordance with [IIM LD- 68](#).

Detailed instructions regarding checking, labeling, etc., can be found in [IIM LD- 68](#).

INTEGRATED PROJECT MANAGER

By this stage, most entries on the [Integrated Project Manager \(IPM\)](#) have been completed. A review is to be made to assure that the project limits shown in [IPM](#) are in agreement with those shown on the title sheet. After final submission of the project to the Scheduling and Contract Division, forward a copy of the [Activity Report from IPM](#) to the Central File.

RIGHT OF WAY NOTE ON TITLE SHEET

In some instances, the proposed construction will be within existing Right of Way. Such is the case with some intersection improvements for the addition of turning lanes or on safety projects. When this situation occurs, the following note is to be shown on the title sheet in the area adjacent to the [Right of Way Approval signature block](#):

"All construction is to be performed within existing right of way."

* Rev. 1/07

SECTION 2G-4-COST ESTIMATE

PREPARATION OF CONSTRUCTION COST ESTIMATE

A Project Cost Estimate is required for each project to be advertised for construction. Each project must be coded separately, just as the summaries were split, e.g., C-501, C-502, D-601 (Box Culvert).

The Location and Design Division has the responsibility of compiling all project estimates. Prior to final submission to the Scheduling and Contract Division, estimates furnished to anyone outside of the Department are to be taken from the current Six Year Improvement Program (SYIP). If the scope of the project has drastically changed the estimate since the SYIP was updated, the designer must get approval from the Assistant State Location and Design Engineer before furnishing an estimate that differs from the SYIP. Exceptions are projects such as, but not limited to, roadway bridge maintenance, sign, signal, lighting, landscape, etc., developed exclusively by other divisions. (See [IIM LD -183](#))

All estimates furnished outside of Location and Design prior to final submission to the Scheduling and Contract Division are to be approved estimates (by the applicable Assistant State Location and Design Engineer) for the applicable stage of project development. (See [Section 2E-7-CONSTRUCTION COST ESTIMATE](#))

The Project Manager reviews estimates (Preliminary Engineering and Construction) in iPM at Scoping, Public Hearing, Field Inspection, Right of Way and Construction Stages, as well as at 90-day intervals between these milestones, for accuracy. If a project is significantly modified between these stages, the estimate must be adjusted and entered into iPM and PCES.

ALL Engineers' Estimates (Preliminary Engineering and Construction) will be reviewed by the Project Manager and updated, if necessary, for use by the Programming Division and Local Assistance Division in preparing the SYIP. At this time it is imperative that ALL estimates be reviewed for accuracy before incorporation into the new SYIP.

After final submission of the plans has been made to the State **Construction*** Engineer for project advertisement, any request for estimate information or any inquiries regarding project estimates from the press or others outside the department are to be referred to the Scheduling and Contract Division's Estimate Engineer.

The final construction estimate, prepared by the Scheduling and Contract Division for the purpose of determining whether or not acceptable bids are received, is not provided to anyone.

* Rev. 7/07

SECTION 2G-5-CONSTRUCTABILITY QUALITY REVIEW

CONSTRUCTABILITY QUALITY REVIEW

Constructability review is defined as the review of plans, specifications, and contract documents from a construction perspective to assure the documents propose an operation that is efficient, cost effective, and buildable. Its emphasis is primarily focused on “how” the documents propose the operation to be built and not on “what” gets built.

AASHTO defines constructability review as “a process that utilizes construction personnel with extensive construction knowledge early in the design stages of projects to ensure that the projects are buildable, while also being cost-effective, biddable, and maintainable”.

This analysis is normally performed at the Preliminary Field Inspection, Public Hearing, Field Inspection and Pre-Advertisement stage of plan development. Additional reviews can be performed as needed when the plans are further developed.

The constructability review includes the report of findings, a completed checklist, and cost savings report. This report is a detailed tabulation of any anticipated savings identified during the review.

SECTION 2G-6-QUALITY CONTROL CHECKING

QUALITY CONTROL CHECKING PROCEDURE

This review of the completed construction plans is conducted when all items have been checked in the Advertisement column of the checklist (approximately 10 days prior to the **Pre-Advertisement Conference***). This review will be conducted by the Design Section Manager. There may be situations in which the Design Section Manager's peers will conduct this review.

It is the Project Manager's responsibility to coordinate with other disciplines involved (Structure and Bridge, Traffic Engineering, etc.) to ensure complete plan assemblies for checking. It will be the other disciplines' responsibility to conduct their own internal plan reviews before submitting plans to the Project Manager for review.

[See Chapter 1E for Quality Control Checking Procedures.](#)

* Rev. 7/07

SECTION 2G-7-PRE-ADVERTISEMENT CONFERENCE

PRE-ADVERTISEMENT CONFERENCE

The Pre-Advertisement Conference is an inter-disciplinary team milestone that allows managers from different disciplines to review the final plans. When plans are adequately complete and within a reasonable proximity to the advertisement date (in accordance with the cutoff dates schedule), the Project Manager will schedule a Pre-Advertisement Conference. All concerned parties are advised of time and location. The Project Manager will inform all parties of the location, in Falcon, of the plans and how prints can be obtained. The EEO Manager is to always be invited to the Pre-Advertisement Conference.

For an electronic copy of the Plan Submission Process see [http://insidevdot/sites/Location and Design/PPQ/default.aspx](http://insidevdot/sites/Location%20and%20Design/PPQ/default.aspx) on Location and Design Division website.

While the State Construction Engineer* is generally advised of this meeting by copy of the notification memorandum, the appropriate Scheduling and Contract Division person is to be contacted by the respective project manager to see if he/she plans to attend the meeting or send a representative. The project file is to be documented accordingly.

The meeting is held to determine if right of way and utilities will be cleared in time for the scheduled construction advertisement, to review maintenance of traffic during construction and items to be provided therefore, to discuss [sequence of construction](#), time of construction, special provisions, and any other items pertinent to the anticipated advertisement of the project. The Project Manager shall write a report on the findings of the meeting and distribute copies to all concerned.

The Project Manager shall discuss the report with the appropriate Scheduling and Contract Division person and obtain agreement or suggested revisions. This is done by the Local Assistance Division, on applicable projects, prior to their writing the report.

Following the Pre-Advertisement Conference the Environmental Division will conduct an Environmental Certification (Form [EQ-103](#)) on all projects to certify that all environmental activities are complete. A PS&E Re-evaluation (Form [EQ-200](#)) is conducted on the NEPA document when federal funds are used or when a federal action has occurred to verify that the scope and design are consistent with the NEPA document. . The [LD-442](#) Form must be completed and distributed by the Project Manager to the District Environmental Manager. This Form will initiate the [EQ-103 and EQ-200](#) Forms. The District Environmental Manager will notify the Project Manager by email upon completion of this review. See Environmental Certification & Re-evaluation at PS&E Flow Chart:

<http://www.virginiadot.org/business/resources/PSERevaluationFlowChart.pdf>

* Rev. 7/07

SECTION 2G-8-PREPARATION OF PLAN ASSEMBLY FOR CONSTRUCTION

PREPARATION OF PLANS FOR CONSTRUCTION

The following procedure is to be adhered to by the Project Manager to ensure that the project complies with the advertisement schedule. After the Quality Control Review has been completed, and the Pre-advertisement Conference has been held*, and all necessary adjustments have been accomplished, the Project Manager is to proceed as follows:

- 1) Ensure that the project cost estimate and the estimate shown in iPM are current.
- 2) Check the plans provided by other divisions/sections (Signs, Signals, Utilities, Landscaping, etc.) for correlation to the roadway plans (including sheet numbers, references, file names, etc.).
- 3) Make any necessary additions/corrections to the Index of Sheets. The Structure and Bridge Division will provide the designer with the number of sheets included in the bridge assembly to be shown in the Index of Sheets (the bridge plans, then the cross sections, are the last two assemblies in the total plan package). The bridge plans will be made available by the Structure and Bridge Division.
- 4) Remove the note that reads "THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION."

DATA REQUIRED FOR PLAN COORDINATION REVIEW

Submit the following to the Plan Coordination Section in accordance with the Contract Processing Cut off Dates:

- a) Original Title Sheet and all other original title sheets (Structure & Bridge, Environmental, etc.) for signatures approving the project for construction.
- b) Form [LD-426](#) (Federal Aid Interstate and Primary Projects), if applicable
- c) Form [C-99](#) (Minimum and No Plan Projects), if applicable
- d) Soil Analysis and Pavement Design
- e) Pre-advertisement Conference Report
- f) Transport Detail Cost Estimate
- g) Draft [LD-406](#) Certification of Plan Correctness

* Rev. 7/07

Immediately upon signing, the original Title Sheet (right of way and construction stage) will be filed in the VDOT Central Office Plan Library. The **type written** names of the signers, and date signed (i.e. John W. Doe, signed October 29, 2003), will be inserted into the Signature Blocks of the .dgn version of the Title Sheet.

The complete official electronic .tif version of the plan assembly will be available through VDOT's Plan File Room internal Falcon web page.

For instructions on creating .tif files, see the "REFERENCE GUIDES" on the Location and Design Division website at <http://www.virginiadot.org/business/locdes/reference-guides.asp>.

The Project Manager is to ensure that the final electronic construction files on appropriate projects are made accessible through Falcon at **advertisement*** submission of the plan assembly to the Scheduling and Contract Division. The following files, in accordance with VDOT's CADD Manual, Chapter 8, "Electronic Deliverables" are required:

- 1) IGrds Files, if applicable
- 2) CAICE Files, if applicable
- 3) Microstation DGN files
- 4) Reports
- 5) Index of Files
- 6) .tif files
- 7) GEOPAK files, if applicable

All scanned signatures inserted into a .dgn file, or attached as a reference file to an existing .dgn file title sheet, must be removed.

The electronic .dgn version of the Title Sheet (including the typed names of the signers) will depict the latest version of the Title Sheet, from which the designer will create a .tif file for the "current drawings" folder on Falcon. At no point should a scanned signature be attached to a MicroStation file.

The Environmental Division will submit environmental documents and permits to the Scheduling and Contract Division. The Department of Rail and Public Transportation will submit any railroad agreements to the Scheduling and Contract Division.

* Rev. 7/07

BRIDGE ONLY CONTRACT

When a bridge contract is to be let separately from the road contract, sufficient road plans must be included to establish the line and grade of the bridge. In some instances, such as widening of an existing bridge, road plans may not be necessary.

The road plan designer should coordinate the submission of the plan assembly with the Bridge Engineer according to the guidelines in the section on "DATA REQUIRED FOR PLAN SUBMISSION".

GOVERNMENT STREAM GAGING STATIONS

If U.S. Geological Survey, Weather Bureau, Virginia Department of Conservation and Development, or other government stream gaging stations are located within the limits of construction, or will be destroyed or disturbed by construction, arrangements must be made to have these gaging stations moved before construction is started.

When plans have been submitted to the Scheduling and Contract Division for advertisement on which government stream gaging stations will be disturbed by construction, the Hydraulics Section must be notified by memorandum. The memorandum, accompanied by a print of each plan sheet on which such a gaging station occurs, shall give the description and location of each gaging station that has to be adjusted. Upon receipt of this data, the Hydraulics Section will notify the appropriate governmental agencies of the pending highway construction and of the necessity for the adjustment of the stream gaging stations.

POST-CERTIFICATION* PLAN CHANGES

During the review of the plans by the Scheduling and Contract Division after the Project Manager has certified the plans and prior to Advertisement Submission, "changes" may be made to the plans (with no formal revision) as long as the designer receives concurrence from the Scheduling and Contract Division and the State Location and Design Engineer and there is sufficient time to make the changes and furnish prints of the sheets involved to the Scheduling and Contract Division prior to Advertisement Submission.

* Rev. 7/07

SECTION 2G-9-PROJECT APPROVAL

APPROVAL

At this stage, the Plan Coordination Section will coordinate approval of the plan assembly through the office of the State Location and Design Engineer. Before the Chief Engineer signs the plans giving approval to construct the project, signatures recommending approval are required. The signature block should be located in the lower right corner of the title sheet. The Plan Coordination Section will record the date of approval.

BID PROPOSAL

The Scheduling and Contract Division will check the cost estimate, prepare a Bid Proposal and review, with the designer, any discrepancies discovered during their review of the plans to insure total agreement between plans and specifications. The designer will make the changes on the plans requested by the Scheduling and Contract Division and revise the original computerized estimate in the Scheduling and Contract Division to indicate the revised quantity or material correction(s).

Deleted Information*

* Rev. 7/06

SECTION 2G-10-BIDDABILITY REVIEW

BIDDABILITY REVIEW

The Biddability Review is conducted after the draft contract documents have been completed*. This review looks at the details of the drawings and the quantities for the major cost items. The quantities stated in the summaries will be compared to the project contract documents and cost estimate to ensure that payment for all required work is addressed.

The goal is to ensure that the project can be constructed for the bid amount by ensuring through biddability analysis that complete and accurate contract line items contain sufficient quantities to construct the project, thus preventing work orders and overruns. An estimate of the required quantities to perform the work is made from the Construction Plans. The plan quantities are then compared to the contract quantities to ensure accuracy.

The Specifications, Standards, Special Designs and Special Provisions are also reviewed to make sure they are appropriate and correct for the work to be performed.

A report is created after the review. It summarizes the review findings and gives recommendations as to adding or rewording notes to clarify pay items, working hours, specifications, etc.

* Rev. 7/07

SECTION 2G-11-ADVERTISEMENT* SUBMISSION OF APPROVED PLANS

PROCEDURES FOR ADVERTISEMENT SUBMISSION OF PLAN ASSEMBLY

- 1) Project Manager submits the LD Form [LD-377](#) to the Plan Coordination Section in accordance with the Contract Processing Cut Off Dates:
- 2) No revisions may be made to the plans between advertisement submission and the project showing, generally 10 days after advertisement.

* Rev. 7/07

SECTION 2G-12- CONTACT WITH CONSTRUCTION PERSONNEL

CONTACT WITH CONSTRUCTION PERSONNEL

Communication between the Project Designer* and construction personnel should promote a superior product. Therefore, to avoid conflicts during construction, it is recommended that the project designer/coordinator contact the residency soon after the project is awarded to determine a field contact person. On large projects, an on site meeting held prior to construction, may be beneficial in answering questions regarding design intent that may prevent future revisions.

* Rev. 7/07

SECTION 2G-13-CONSTRUCTION PLAN REVISIONS

FORMAL CONSTRUCTION REVISIONS

After prints of approved plans have been made available at **advertisement*** submission, any change on the plans will require a formal revision and approval of Scheduling and Contract Division. When a proposed revision involves a change in quantities and the project has been turned in to the Scheduling and Contract Division but has not been advertised, the Scheduling and Contract Division may agree that the changes or revisions can be made before advertisement. If so, the summary sheet and estimate should be changed to reflect the revised quantity. Do not show a change in quantity on the Revision Data Sheet.

The designer or district/consultant coordinator will **coordinate** all changes in the estimate with the Scheduling and Contract Division.

The Contract Engineer must always be notified of any proposed plan revision that is required between the time plans are received in the Scheduling and Contract Division (**advertisement** submission) and the award of the project.

After **advertisement** of the project, and prior to bids being received, a "project showing" will be held. Any plan revisions requested at this time must be approved by the Scheduling and Contract Division, prior to incorporation into the plans.

After the contract has been awarded, the estimate or summaries will not be changed. The addition of new items and increases or decreases of current contract items are to be shown on the Revision Data Sheet only, with the revision data as shown in Figure 2G-3.

Electronic plan submission of formal construction revisions must follow the Electronic Plan Submission Process. See diagram on the web at: <http://www.virginiadot.org/business/locdes/e-plan-submission-index.asp> .

All revisions are submitted to the Plan Coordination Section for processing, accompanied by the Revision Data sheet and Revision Data Form [LD-36](#). The appropriate blanks on Form [LD-36](#) must be marked in the lower left corner to designate who is to receive prints of the revised plans.

* Rev. 7/07

The "Reason for Revision" part of the form should state: "See Revision Data Sheet No _____. The person responsible for making the revision is to sign the form and show his/her telephone extension at the bottom. Revisions should be submitted electronically in accordance with the Electronic Plan Submission Process.

The Plan Coordination Section will request the Plan Library to print and distribute the necessary copies of the revision. Revisions are updated electronically in the Falcon Plan File Room.

The changes must be described clearly and fully on the Revision Data Sheet. State and Federal Project numbers (including P.E. numbers), project descriptions, and **UPC*** numbers are to be shown at the top of the sheet. For each revision, list the following information:

1. Revision date
2. State Project number
3. Sheets revised (excluding Bridge sheets)
4. Description of change to each sheet
5. Authorization for making the revision

For illustration, see Figure 2G-3.

In addition to the above, all instructions noted in Section [2F-6-FORMAL REVISIONS-MAJOR CHANGES](#) relating to utilities are applicable to this section.

During the life of a construction project, all construction revisions that will affect the final contract cost must be approved by the Scheduling and Contract Division before revising the plans.

In order to avoid plan revisions to work already under construction, the project designer/coordinator should contact the project engineer or inspector prior to making any formal plan revisions. Advance copies of revisions may be beneficial to field personnel and should be provided.

* Rev. 1/07

SECTION 2G-14-PROJECT ROUTE FILES AND DESIGN FILES

ROUTE FILES AND CORRESPONDENCE

One year after acceptance of a completed construction project, the route file may be discarded, except for original survey data.

For applicable projects:

All field books, electronic survey plan base and certified drawings are to be delivered to the District L&D Survey Manager to be prepared for warehouse storage.

All electronic and paper* correspondence shall be stored in Falcon.

RETENTION OF DESIGN FILES

From the preliminary to the final stages of a roadway design project, it is not unusual to have several design schemes developed utilizing the computer. Only one design scheme may be retained in computer storage. Alternate design schemes and studies will not be permanently stored, but may be reprocessed for the desired computer listing.

If/when it is necessary to use one of the alternate design schemes in lieu of the stored data or another copy of a listing is needed, the file can be retrieved and the desired output recreated to replace the existing data on file. If multiple design schemes, such as alternate sub-grade designs, must be considered at construction advertisement stage, the alternate design files will be retained.

The designer will be notified on Form C-5 when construction of the project has been completed.

Correspondence, computations, reports, etc. are to be retained in accordance with the table shown in Table 2G-10-1.

FINAL NOTEBOOK AND PROJECT RECORDS RETENTION

The District Location and Design Engineer will retain all source documents, "project inspector" notebooks and/or project records for a period of five years, following payment of the final voucher, on all Federally funded, State, and Revenue Bond financed projects.

* Rev.1/07

At a time convenient to the district, the "As Built" plan assembly shall be sent to the State Location and Design Engineer electronically* with a request that the project records be stored in Falcon.

If no audits, litigation or claims are in progress, all source documents, notebooks and/or project records can be disposed of after the five-year retention period. Otherwise, the retention period should be extended until such cases are resolved.

* Rev. 7/06

SECTION 2G-15-PREPARATION OF FINAL ESTIMATE

PROCEDURE

The review and preparation of final estimates, while requiring the coordinated effort of many divisions in the Central Office, is basically a responsibility of the District Administrator utilizing the District Design Units as focal points in fulfilling this obligation.

The primary objective during the review and preparation of the final estimate is to determine that the final records present a factual representation of the work performed by the contractor on the project.

Guidelines for review and preparation of final estimates may be found in the Post Construction Operations manual.

Completed final estimates are kept on file at the District Headquarters.

SECTION 2G-16-POST CONSTRUCTION REVIEW **(Design Quality Index Report)***

POLICY

A Design Quality Review will be conducted on completed projects to evaluate the completeness, accuracy, clarity, and constructability of the design. The Design Quality Index form (LD-433) will be used on all projects completed and accepted by VDOT. The form is to be submitted as a routine part of the final record submission process.

SCOPE

The review process shall include the major component items of the project selected. The normal components are:

- A. Constructability
- B. Drainage
- C. Subsurface Investigation
- D. Utilities
- E. Maintenance of Traffic
- F. Document Clarity
- G. Survey

REPORTS

The Design Quality Index, form [LD-433](#), shall be completed by the Project Inspector, in conjunction with Project Engineer. Where applicable, data to be used in the evaluation should be collected by all persons involved in the project (including those outside of VDOT), throughout the life of the project.

EVALUATION

The rating value for each factor is to be given in whole numbers. The Inspector will also provide a brief explanation as to why the rating with specific examples, if available, that supports the rating given. To arrive at the Project Index, all of the ratings are added together, and then divided by the number of factors used. The number is rounded to the nearest tenth. For other design related concerns which occurred on the project, but cannot be included in one of the seven factors, comments shall be made in the "Additional Comments" section on back of the form. If more space is needed in any of the comments sections, additional paper may be used and attached to the form.

* Rev. 7/07

Each of the seven factors will be rated using the following scale:

RATING

4 – No design problems – Minor deviations or field adjustments, no plan revisions or work orders processed.

Example: “Two additional entrances were installed to match existing farm entrance”.

“The power source for the signals was shown 1250’ from the controller when in reality; power was available only 225’ away. This saved almost \$2500.”

3 – Some design problems – Minor plan revision, minor work order or time extension processed.

Example: “An abandoned lighting standard foundation that was shown on the old as-built plans was discovered during pipe excavation. The abandoned lighting system was not shown on the new plans even though it was in conflict. The obstruction was removed by work order during the pipe work.”

“The new ditch line was deep enough that when field reviewed, necessitated guardrail to be installed.”

2 – Numerous design problems – Plan revision(s) processed, work order or time extension required to construct.

Example: “Many of the culvert tie-ins were shown to be concrete pipe. All were found to be CMP. Because of the deteriorated state of the CMP all had to be relined before the new pipe could be attached. The project was delayed while the Dept. decided on a repair method and secured prices to do the work.”

“Even though the gas line is evident by the above ground markers, it was not indicated on the plans as being in conflict.”

1 – Major design problems – Major design change required or major time impact to construction.*

Example: “The proposed west bound storm drain system was found to be in conflict with a 12” high pressure gas main. Since the cost to relocate the gas main was prohibitively expensive, the entire WB storm system was redesigned. This added considerable cost due to disposal of DI’s and lost time and production.”

Sequence of construction indicated a center lane closure, which is not permitted by Traffic Engineering.”

Each factor is to be evaluated; however, if a factor does not apply to a particular project, do not enter a score for that factor. Write “N/A” for all non-applicable factors.

After the Inspector and Project Engineer have completed the form, the Resident Administrator will hold a Post Construction Meeting for the purpose of discussing the ratings provided on the form. The attendees at the Post Construction Meeting will be at least the Resident Administrator, Project Inspector, Project Engineer, Location and Design designer/coordinator and consultants and other designers/coordinators involved in the project (Structure & Bridge, Right of Way, Traffic Engineering, Materials, and Construction). If for some reason the Post Construction Meeting cannot be attended by all parties, the latest technology can be used to accomplish the objectives of the meeting.

At the Post Construction Meeting, at least the following items will be discussed:

- How the evaluator arrived at each rating
- Review of each comment (ensuring that each section has a comment)
- General discussion regarding the overall design
- How effectively changes were made
- Other design concerns noticed by the Inspector that did not fall under one of the seven criteria listed on the form
- Feedback for improvement regarding the design (or the evaluation process)

If any difference of opinion occurs as to whether design issues are errors, omissions, unforeseen or changed conditions, and cannot be resolved at this meeting, the designer may attach a written statement as to why the rating is not appropriate with specific comments. The designer should also indicate what rating is more appropriate with specific reasons. The form will be signed by the Project Inspector, Project Engineer, and the Resident Administrator and distributed within 30 days of the Post Construction Meeting.

* Rev.7/07

The original signed form and all attachments will be sent to the State Location and Design Engineer. If a difference of opinion exists regarding a rating between the inspector and the designer, the State Location and Design Engineer (or other appropriate designer) to review the information and decide what the appropriate rating should be. This will then be recorded as the final rating.*

* Rev. 7/07

0209
RD009
SURVEYED BY ...
DESIGNED BY ...

0209
RD009
RELEVON

0209
RD009
RELEVON

0209
RD009
RELEVON

0209
RD009
RELEVON

0209
RD009
RELEVON

0209
RD009
RELEVON

DESIGN FEATURES RELATING TO CONSTRUCTION
OR TO REGULATION AND CONTROL OF TRAFFIC
MAY BE SUBJECT TO CHANGE AS DEEMED
NECESSARY BY THE DEPARTMENT

REVISION	DATE	REVISION	DATE	SHEET NO.
	VA.			

DRAINAGE SUMMARY SHEET

PROJECT NUMBER	DRAINAGE SUMMARY																									REMARKS									
	DRAINAGE LOCATION	PIPE				ARCH PIPE		CONCRETE PIPE		DROP INLETS				MANHOLES		EROSION CONTROL STRUCTURE		24" END SECTION		PIPE SPALLOUT		CONCRETE CURB		STAKE			DITCH		DITCH FLUME CONNECTOR						
		NUMBER	FT	LF	LF	LF	LF	LF	LF	FT	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA		EA	EA	EA	EA					
0205-01-24(CS)	5-1	3						127	7.5																					type II grate req'd., 4" x 6" back up berm req'd. (H-1) 4" x 6" back up berm req'd. (H-1)					
	5-2																																		
	5-3	6																																	
	5-4								6.7																										
	5-2.5-4	6							4.7																										
	5-5	4							6.3																										
	5-8																																		
	5-9																																		
	5-10																																		
	5-11	7								4.0																									
	5-14																																		
	5-15	MIN.																																	
	5-17	MIN.																																	
	5-18	MIN.																																	
	6-1																																		
6-2																																			
6-3																																			
6-4	MIN.																																		
6-5																																			
6-6	MIN.																																		
6-7																																			
6-11																																			
SUBTOTAL		33	134	138	—	—	—	329	—	—	—	2	1	—	—	—	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
SUBTOTAL - SHEET 2.8(1)		143	63	—	37	15	216	497	—	—	1	4	—	—	13	2	39	1	1	232	84	3	692	1126	53	4									
GRAND TOTAL		176	197	138	37	15	216	826	—	—	1	4	2	1	13	2	55	1	1	232	84	3	1416	1126	53	4									

⊕ DENOTES ITEM TO BE PAID FOR ON BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH CURRENT ROAD AND BRIDGE SPECIFICATIONS.

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
----------	---------	----------	-----------

FIGURE 2G-1 SAMPLE DRAINAGE SUMMARY SHEET*

* Rev. 1/07

#0000 RDWLEY	#0000 REVD00	#0000 REVD02	#0000 REVD03	#0000 REVD04	#0000 REVD05	#0000 REVD06
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

PROJECT MANAGER _____ SURVEYED BY _____ DESIGN SUPERVISED BY _____ DESIGNED BY _____	DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT
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SUMMARIES OF ESTIMATED QUANTITIES SHEET

(C) NOTE: Existing surface, aggregate base and subbase material which will be demolished or utilized during construction and which is suitable for maintenance of traffic, as determined by the Engineer, shall be salvaged and utilized for maintenance of traffic prior to the use of commercial material. When not specified as a separate pay item, the removal and salvaging of existing surface and aggregate base and subbase material will be measured and paid for as Regular Excavation in accordance with Section 303 of the Specifications.

INCIDENTAL SUMMARY

SHEET NUMBER	INCIDENTAL SUMMARY										MAINTENANCE OF TRAFFIC (C)										REMARKS									
	MODIFICATION	CONSTRUCTION SURFING	CLEANING AND GRASSING	OBSCURING ROADWAY	DEMOLITION OF PAVEMENT	QUADRANT OR-2	QUADRANT TYPICAL ONLY (W/CHOP 250)	FENCE FECL	LINE BRACE UNIT FECL	CORNER BRACE UNIT FECL	DATE FECL L/H	REMOVE EXIST. QUADRANT	REMOVE EXIST. FENCE	R/W MONUMENT AN-2	SEALANT CONCRETE CORNER BRACE MATERIAL	FIELD OFFICE TT-II	ALFING DIST	CR. R/W AGGR. INLET OR 20	GROUP 2 CHANNELIZING DEVICES	FLASHER SERVICE		WARNING LIGHT TT-A	TYPE A PAVEMENT LINE MARKING #	PAVEMENT MARKING PRE-EXISTING AND ELONGATED ARROW	PAVEMENT MARKING PRE-FORMED THERMO. PAVE. LINE MARKING 2"	PAVE. MESSAGE MARK. SQUARE SIGN	CONSTR. PAVE. MARK. (TT, F, C, L, I, 2)"	CONSTR. PAVE. MARK. (TT, F, C, L, I, 2)"	EMULSION OF EXIST. PAVEMENT MARKING	
LS.	LS.	LS.	LS.	UNIT	SY.	LF.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	
3				0.6	3350	557	172	0	315	28	7	1	354	47	17	4														
4				0.1	386	0	84	0	0	0	0	0	0	50	0	20	0													
5				0.8	2504	1379	156	2	0	0	0	0	0	0	0	14	0													
6				2.7	1565	744	194	0	0	0	0	0	0	666	0	14	0													
TOTAL	LS.	LS.	LS.	4.2	1215	2680	606	2	315	28	7	1	1070	47	65	4	...	1080	(C) 5059	20000	5000	750	20000	30	6	2	14000	30	1000	

UNDERDRAIN SUMMARY

SHEET NUMBER	COMB. UNDERDRAIN COY		OUTLET PIPE		ENDWALL BR-2 (15% SLOPE)		ENDWALL BR-2 (4% SLOPE)	
	LF.	EA.	LF.	EA.	EA.	EA.	EA.	EA.
3	0	0	0	0	0	0	0	0
4	32	24	1	1				
5	0	0	0	0	0	0	0	0
6	31	12	1	0				
TOTAL	63	36	2	1				

(C) DENOTES ITEMS TO BE PAID FOR ON BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH CURRENT ROAD AND BRIDGE SPECIFICATIONS.

PAVEMENT QUANTITY

LOCATION	STATION TO STATION	MAINLINE AND CONNECTORS					ENTRANCES						REMARKS
		SUBBASE		BASE	SURFACE	PRIME	TYPE I		TYPE III		TYPE IV		
		NO. 1 OPEN GRADED 100 LB/CF	AGGR. BASE MATL. TT-1 NO. 20 (155 LB/CF)	ASPHALT CONCRETE BASE COURSE TT-30-250 (114 LB/ST/IN)	ASPHALT CONCRETE TT-50-250 (165 LB/ST/IN)	COVER MATL. FINE AGGR. OR ASPHALT (104 GAL/ST)	CR. R/W AGGR. NO. 20 (155 LB/CF)	AGGR. BASE MATL. TT-1 NO. 20 (155 LB/CF)	ASPHALT CONCRETE TT-50-250 (165 LB/ST/IN)	AGGR. BASE MATL. TT-1 NO. 20 (155 LB/CF)	ASPHALT CONCRETE TT-30-250 (114 LB/ST/IN)	ASPHALT CONCRETE TT-50-250 (165 LB/ST/IN)	
15th DEPTH TON	8th DEPTH TON	4th DEPTH TON	TON	TON	GAL	8th DEPTH TON	4th DEPTH TON	TON	8th DEPTH TON	4th DEPTH TON	TON	TON	
ROUTE 605	948.95 TO 62-15.66	322	950	4395	184	136	7242						
ROUTE 827	10-1100 TO 1177.82		223	103	35	3	89						
ENTRANCES							344	490	219	430	199	72	
TOTAL		322	(C) 9724	(C) 4498	(C) 1529	139	741	(C) 344	(C) 490	(C) 219	(C) 430	(C) 199	(C) 72

(C) DENOTES ITEMS TO BE PAID FOR ON BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH CURRENT ROAD AND BRIDGE SPECIFICATIONS.

GRAND TOTALS

CR. R/W AGGR. NO. 20 (155 LB/CF)	AGGR. BASE MATL. TT-1 NO. 20 (155 LB/CF)	ASPHALT CONCRETE BASE COURSE TT-30-250 (114 LB/ST/IN)	ASPHALT CONCRETE TT-50-250 (165 LB/ST/IN)
(C) 5403	(C) 10641	(C) 4697	(C) 1820

WORK TO BE DONE BY STATE FORCES (NON-PARTICIPATING)	
FURNISH CONSTRUCTION SIGN	T.E.C.
PERMANENT SIGNS	T.E.C.

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
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FIGURE 2G-2 SAMPLE PAVEMENT AND INCIDENTAL SUMMARY SHEET*

* Rev. 1/07

REVISION DATA SHEET

STATE PROJECT: 0168-131-F04, PE-103, RW-202 FEDERAL PROJECT: M-5403 (217) (PE), M-RRS-5403 (242) (RW) FROM: 0.011 Mi. S. Int, Buckland Ave. TO: NCL City of Chesapeake PPMS: 1945	
Continued 4-28-95	Continued 6-28-95
Sheet 8: Name change on parcels 058,060,128,176. Added new parcel numbers 177,178,179,181. Prop. u.g. utility ease. was added along west and east side of Campostella Rd. Added the wording "Proposed Acquisition Line" to parcel 058. P/L deleted on parcel 056. P/L symbol added to parcel 154.	Sheet 7: Revised P/L to "Z" marks on former parcels 048,049,050,051,126. Added tax numbers to the former parcels.
Sheet 9: Name change on parcels 026,069. Adjusted P/L on parcel 069. Prop. u.g. utility ease. was added along west side of Campostella Rd. Dwelling removed on parcel 073. Conveyance symbol removed on parcel 026. Replaced P/L symbol with "Z" mark symbol on parcel 068	Sheet 8: Proposed permanent utility easement pluses were adjusted to match utility easement line on parcel 061. This revision is made in accordance with various phone conversations with and memos from Mr. William Beaman, Suffolk District Right-of-Way Section.
Sheet 10: Adjusted plus and distance for prop. R/W and prop. temporary construction easement on parcel 075. This revision is made in accordance with various phone conversations with and memos from Mr. William Beaman, Suffolk District Right-of-Way Section.	
Date: May 25, 1995	Proj. 0168-131-F04, RW-202
Sheet 1:	Sheet numbers revised.
Sheet 1D:	Name change on parcels 008,034,036.
Sheet 1E:	Name change on parcel 074.
Sheet 3:	Name change parcel 008.
Sheet 4B:	Revised location of existing bldg. on parcel 082.

THIS IS A PORTION OF A SAMPLE INSERTABLE SHEET, FOR A CURRENT VERSION, ACCESS THE CADD INSERTABLE DIRECTORY

FIGURE 2G-3 REVISION DATA SHEET

DEMOLITION OF BUILDINGS / CLEARING OF PARCEL / CLOSING WELL / UNDERGROUND STORAGE TANK REMOVAL SUMMARY												
0058-070-103,RW-201												
Sheet Number	Parcel Number	Demolition Number	Landowner	Station Rt. or Lt.	Description	INCLUDED IN CONTRACT					NOT IN CONTRACT	
						Demolition of Buildings	Clearing of Parcel	Closing Well	Underground Storage Tank Removal			Items To Be Removed By Others
									Type A	Type B		
Lump Sum	Lump Sum	Each	Each	Each								
3	001	D-1	Vaxy, Tom Q.	103+40 Lt.	2 Story Frame Dwelling	L.S.						
3	001	D-2	"	104+58 Lt.	1 Story Frame Garage	L.S.						
3	001	D-3	"	104+71 Lt.	Well - 30' X 40'			1				
3	001	D-4	"	104+71 Lt.	Well House	L.S.						
3	001	D-5	"	105+05 Lt.	Shed		L.S.					
4	002	D-6	Tiger Oil Co.	109+62 Rt.	1 Story Brick Building	L.S.						
4	002	D700	"	109+68 Rt.	Sign							
4	002	D500	"	109+72 Rt.	Underground Tank -700 Gal.				1		1	
4	002	D900	"	109+75 Rt.	2 Lights						1	
4	002	D-7	"	109+84 Rt.	10' X 20' Metal Sign	L.S.						
4	002	D-8	"	109+95 Rt.	Well			1				
4	002	D701	"	110+14 Rt.	2' X 2' Sign		L.S.					
4	002	D501	"	110+72 Rt.	Underground Tank - 1000 Gal.					1		
0008-070-106,RW-201												
7	019	D-9	Roe, Roger L.	138+94 Lt.	1 Story Stucco Dwelling	L.S.						
7	019	D901	"	139+02 Lt.	Fence						1	
7	019	D902	"	140+14 Lt.	Mobile Home		L.S.					
7	019	D-10	"	140+16 Lt.	Well - 30' X 55'			1				
TOTALS						LUMP SUM	LUMP SUM	3	1	1	(N.I.C.)	

FIGURE 2G-4 DEMOLITION OF BUILDINGS/CLEARING OF PARCEL/CLOSING WELL/UNDERGROUND STORAGE TANK REMOVAL SUMMARY

RECORDS RETENTION						
	Until Revised Or Voided	1	2	3	Permanent	Comments
		Year	Years	Years		
		After Completion of Project				
SURVEY						
Aerial Photography					X	
Aerial Survey Records				X*		* Retained until audit or 3 yrs., whichever is longer
Airport Clearance Files					X*	* Retained 20 years / longer if needed
Contour Mapping					X	
Flight Records					X*	* Retained 6 years / longer if needed
Photo. Mosaics	X					
Subsurface Utility Requests				X		
Survey Books/Control Files/Disks	X*					* Retain as long as Administratively necessary
Survey Files					X	
Survey Progress Reports		X				
Survey Requests			X			
Survey Rolls / U.S.G.S. Mapping	X					
DESIGN						
Design Route Files	X					
IGAES Testing Material	X					
Preliminary Field Rev. / F.I. Plans					X*	* In accordance with Falcon, Retain copies 5 yrs.
Paper Plan Files					X*	* Paper copies may be destroyed after scanning
Project CADD Files					X	
Project Computations		X*				* Retained until project is Route Filed
ESTIMATES						
Appalachian Cost Estimates					X	
Appalachian Estimate Backup	X					
Interstate Cost Estimates					X	
Interstate Estimates Backup	X					
Project Estimates		X*			X*	* Originals retained in Central File, See IIM 183
CORRESPONDENCE						
Non-Project Correspondence			X			
Project Correspondence		X*			X*	* Originals retained in Central File, See Sec. 2G-12
RECORDS/FORMS						
Engineering Publications		X				
Budget Reports				X*		* Retained 3 years beyond applicable biennium
Committee minutes	X					
Consultant Files				X*		* Non-short-listed Expressions of Interest-30 days
Consultant Perform. Reports				X		
Consultant Vouchers/Invoices	X*					* Most recent three
Leave Records					X*	* Retained in FMS
Personnel Files		X*				* May be destroyed 6 months after separation
Publications/Photo Sales Records				X		
Training Records				X		
MANUALS						
CADD/Survey Man./Support Data	X					
IIM / RDM/Support Data					X	
ST'D/SPEC. DESIGN						
Special Designs / Shop Drawings					X	
St'd. /Insert. Sheets/Backup Data					X	

TABLE 2G-1-1