

WEST VIRGINIA DIVISION OF HIGHWAYS MATERIALS DIVISION
2024 Materials Construction Conference



**MANAGING CONSULTANTS:
PROJECT DEVELOPMENT,
SCHEDULES, MEETINGS,
BUDGETS AND INVOICES, and
POST DESIGN SERVICE**

OGLEBAY RESORT

March 4th thru March 7th, 2024

*Dirar Ahmad, PE, Assistant Director, Engineering Division
Consultant Review Section (QA/QC)*



AGENDA

WELCOME AND INTRODUCTION

PRESENTATION

Managing Consultants: Project Development, Schedules, Meetings, Budgets and Invoices, and Post Design Service

Dirar Ahmad, PE, Engineering Division

CLOSING REMARKS AND REMINDERS

QUESTION AND ANSWERS

Career perspective and advice from a past co worker, mentor, and friend . . .

**“The first 10 years of your career, you
think that you know everything.**

**The second ten years of your career,
you realize how much you don’t know.**

**And the last ten years of your career, you
should be teaching everything you
know.”**

**Mark Walker, PE
Former Deputy State Highway Engineer
Of Operations**

An aerial photograph of a highway interchange. A multi-lane highway runs diagonally from the top left to the bottom right. It features a roundabout at the bottom and a bridge crossing a river. In the background, there are green hills, trees, and some buildings. The text "Kanawha Turnpike" is visible on a road in the upper part of the image.

Managing Consultants: Project Development, Schedules, Meetings, Budgets and Invoices, and Post Design Service

OVERVIEW

PROJECT DEVELOPMENT

SCHEDULES

MEETINGS

BUDGETS AND INVOICES

POST DESIGN SERVICE (PDS)

OVERVIEW

Someone complains about traffic congestion

A bridge inspection report shows some deficiencies

A new business expansion with a promise to create jobs

A flooding event that damages roads, bridges, infrastructure

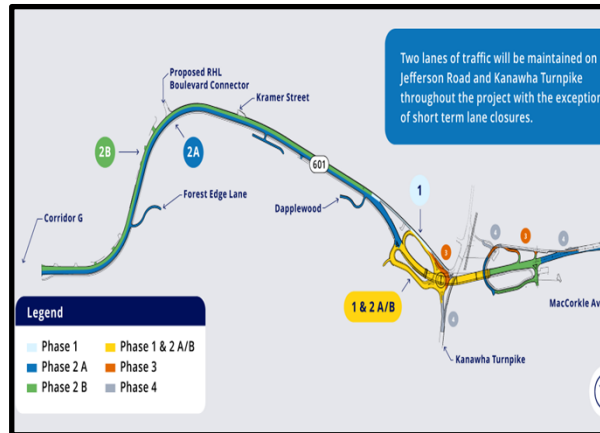
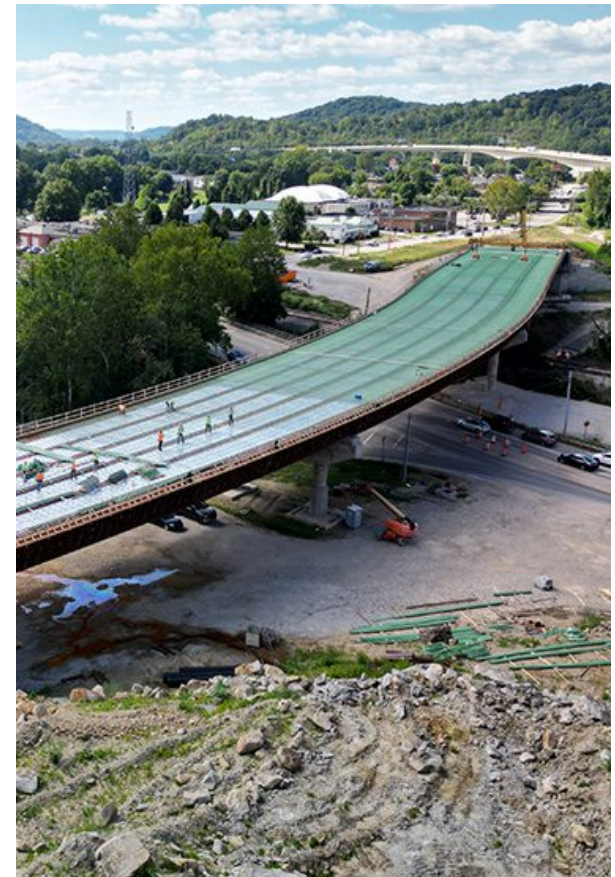
A congested I/S that needs some major upgrade

A major expansion project on the many Corridors around the state

Congress passes a legislation that contains major funding for certain project categories

All of the above are a catalyst to program a project by planning, district, engineering, traffic engineering, or other entities





PROJECT DEVELOPMENT

Jefferson Road, Kanawha County

PROJECT DEVELOPMENT

Programming a Project

Selecting a Consultant

Design Study and NEPA

Public Meetings

Plan Development

P S & E

Authorize

Advertise, Letting, and Award

Pre-Construction Meeting

Electronic File and Tracing Submission from Consultant



PROJECT DEVELOPMENT

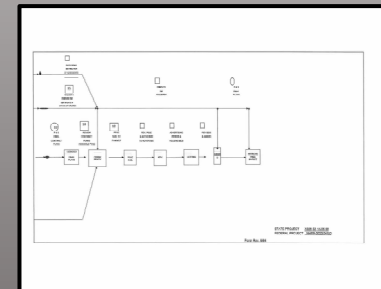
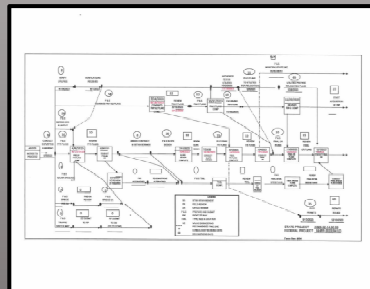
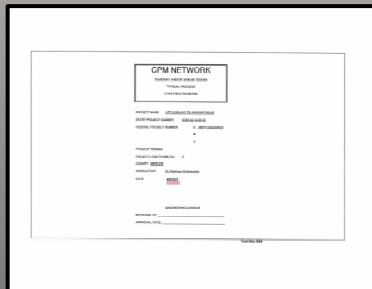
Programming a Project

After project origination, it is programmed by the district, engineering, development office, traffic or others.

Consultant is selected based on statewide if less than \$750,000 or short listing, interviews, selection, negotiations, NTP.

Project Manager (PM) attend scope of work meeting with selected consultant then set up a project schedule using Critical Path Method (CPM).

The CPM will have all major tasks and milestones for the project phases.



PROJECT DEVELOPMENT

Selecting a Consultant



PROJECT DEVELOPMENT

Public Meetings



PROJECT DEVELOPMENT

Plan Development

Preliminary Field Review

Slope Reviews

Final Field Review

Final Plans

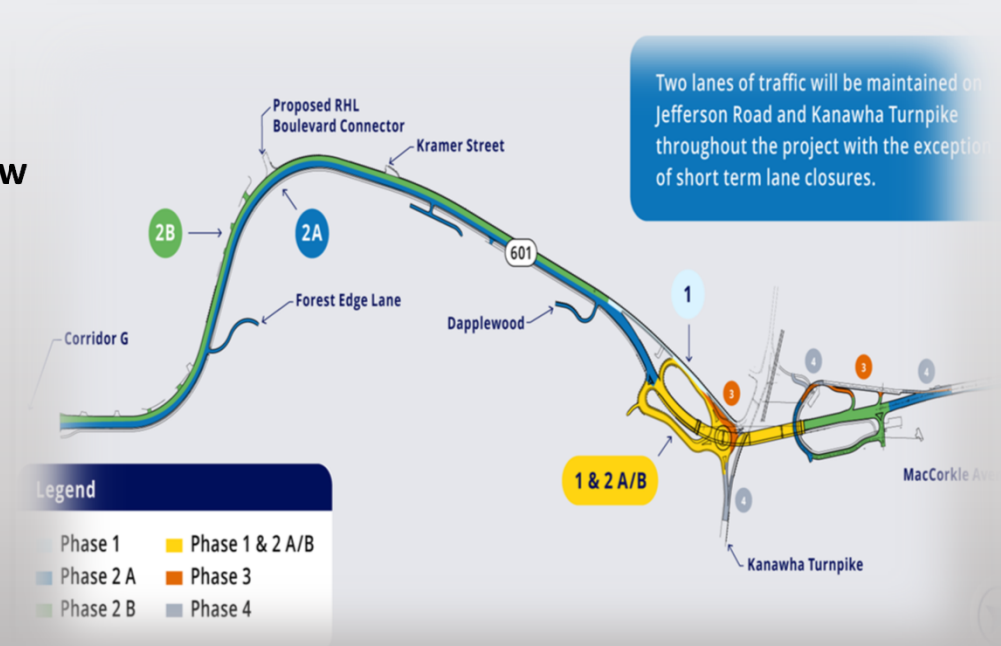
Bridge

Span Arrangement

Type, Size, and Location (TS&L)

Bridge Rating

Final Bridge Plans



PROJECT DEVELOPMENT

Plan Development

Items anticipated to be reviewed during preliminary design refinement on large complex projects will include, but may not be limited to the following:

- Mapping Edits
- CADD Standards/Programs and Coordination
- Field Reviews
- Line and Grade
- Typical Section
- Interchanges/Intersection Schematics
- Cross Sections
- Mass Haul Diagram
- Structure Span Arrangements and TS & L Submissions (Conceptual and Final)
- Geotechnical Investigations (Conceptual and Final)
- Structural Foundation Studies and Foundation Reports (Preliminary and Final)
- Final Structure Plans
- Hydrologic and Hydraulic Design Reports (Preliminary and Final)
- Signing and Pavement Markings Plans (Preliminary and Final)
- Maintenance of Traffic Plans (Preliminary and Final)
- Construction Cost Estimates
- Right of Way Plans (Preliminary and Final)
- Utility Coordination and Relocations (if applicable)
- Other Tasks as Required by the Division

PROJECT DEVELOPMENT

Plan Development

Some complicated projects involve more effort than others.

These areas may include, but are not limited to:

- Highway Design
- Hydraulics and Hydrology
- Drainage Design
- Traffic Specialist
- Geotechnical and Foundation Design
- Structural Design
- Signing and Pavement Markings
- Specification and Special Provision Specialists
- Noise Barrier Design
- Cost Estimating and Construction Scheduling
- Right of Way
- Hazardous Waste Remediation Design

PROJECT DEVELOPMENT

Plan Development

Plan Distribution Schedule

DD-202 PLAN DISTRIBUTION SCHEDULE																	March 28, 2012	
DIVISION/AGENCY	ELECTRONIC SUBMITTAL	LABEL	DESIGN REP.				CONTRACT PLAN DEVELOPMENT PROJECTS (Note 1)											Half-Size PS&E Plans
			FIELD REV.	OFFICE REV.	RW-1	PREL FIELD REV.	RW-1 & RW-2 Comb.	SPAN APPR.	SLOPE REV.	COMB. TBL.	RW-2	FINAL FIELD REV.	RW-3	REV. (Note 2)	FINAL OFFICE REV.	FINAL DET. BRIDGE PLANS		
FHWA (concurrent & nonexempt projects)	FHWA Area Engineers																	
Area Engineers	Jeffrey.Robinson@dot.gov	FHWA-Area	C,X	C,X	R	C,X	R	C	C,X	C	R	C,X		C,X,S,W	C,S,W	C,X,S,W		
R/W Section	Bert.Buchanan@dot.gov	FHWA-RW	N	N					C	C		N		N				
Division Bridge Engineer	Raymond.J.Schles@ev.gov	FHWA-Br.							C	C					C,S,W	C,S,W		
Engineering Division	David.P.Rodriguez@ev.gov	DD	C,X	C,X		C,X		C	N	N		N	N	N	N			
Engineering Division	Robert.L.Douglas@ev.gov	DD	C,X	C,X		C,X		C	N	N		N	N	N	N			
Roadway	Feres.Totaymash@ev.gov	DDR/DDI/Road	C,X	C,X	R	C,X	R	C	C,X	C	R	C,X	R	C,X,S,W	C,S,W	C,X,S,W		
PS&E	Michael.Carter@ev.gov	DDR (PS&E)														C,X,S,W		
Bridge Review	Ahmed.N.Moog@ev.gov	DDI							C	C		C,X		C,X,S,W	C,S,W	C,X,S,W		
Bridge (if applicable)	Tim.A.Hermansdorfer@ev.gov	DDI(Br.)	C	C		C			C	C				C,S,W	C,S,W	C,S,W		
Right-of-Way (Note 4)	Katrina.J.Parsons@ev.gov	DDR(RW)			3R	N	8R				8R	N	M2R_A, 2X (half size)	M2R	N			
Geotechnical (Note 5)	Regional Geotech. Map	DDI(Geo.)	C,X	C,X		2C,X		2C	C,X	C		C,X		2C,X	C			
Permitting	Regional Permitting Map	DDR(Perm.)	C	C		C			C	C				C	C			
Environmental	Ben.L.Hart@ev.gov	DDE	C	C		C,X			C	C		C,X		C,X	C	C		
Consultant Services	Kevin.A.Hall@ev.gov	DDC	C,N	C,N														
Initial Design	Mark.J.White@ev.gov	DDD	C,N	C,N											C			
Traffic Engineering Division																		
Design	Cindy.L.Cramer@ev.gov	DT-Design	C	C		C			C	C		C		C				
Operations		DT-Operations	C	C		C				C								
Technical Support Division																		
Publications Section	Martin.E.Dougherty@ev.gov	DS												C,N	C,N	C		
Right-of-Way Division																		
Division Director	Chad.J.Toney@ev.gov	DR	N	N	N	N	N			N	N	N	N	N				
Estimator	Sarah.L.Rumond@ev.gov	DR-Est.	C	C		C				C,X				C				
Utilities	Sarah.L.Rumond@ev.gov	DR(ULI)	C	C		C				C				C				
Contract Administration Division	Jason.M.Bay@ev.gov	FC				C,X			C	C	C,X			C,X,S,W	C,S,W	C,X,S,W		
Materials Control, S&B, Testing Div.	Ross.L.Barnes@ev.gov	FM							C	C				C,S	C,S			
Programming Division	Ryland.W.Musick@ev.gov	PP	C	C		C										C,E		
Planning Division	Elanor.C.Pearce@ev.gov	PR	C	C		C				C								
State Highway Engineer	Allen.D.Reed@ev.gov	CH	C	C		C								C				
Dep. State High. Eng. Construction	Stephen.T.Rumond@ev.gov	HF	C,N	C,N		N				N				N		N		
Dep. State High. Eng. Development	Jason.C.Foster@ev.gov	HD	C,N	C,N		N				N				N		N		
Dep. State High. Eng. for Operations	Gregory.L.Baltes@ev.gov	HO	N	N		N			N					N				
Maintenance Division	Jacob.M.Burns@ev.gov	OM				N				N				N				
District																		
District Engineer/Manager		DE-R/M	C,X	C,X		C		C		C				C,S,W	C,S,W			
Dist. Right-of-Way Agent		DR-RW	C	C		C				C				C				
Dist. Bridge Eng.(If appl.)		DR-Bridge	C	C				C		C				N	C,S,W			
Dist. Const. Engineer		DR-Const.				C,X			C	C,X				C,X,S	C,S			
Dist. Util. Supervisor		DR-ULI				C				C				C				
DEP-Office of Water Resources	DEP Water Resources Map	DEP-OWR	C	C		C,X				C,X								
DNR Wildlife Resources	DNR Wildlife Resources Map	DNR-WR	2C	2C		2C,2X				2C,2X								
U. S. Army Corps of Engineers	sarah.m.woodward@usaco.army.mil	US-COE	C	C		C		C		C								
Railroad Company (If appl.)	Sarah.L.Rumond@ev.gov	DR-RH	4C,4X			4C,4X			4C	4C,4X				4C,4X	4C			
Utility Companies Encountered	Utility Contact List	ULI Co. Name				C,X				C,X				C,X				
Other Appropriate Agencies			C	C		C				C				C	C			
Commissioner's Office of Econ. Dev.	David.E.Cramer@ev.gov	CD	C	C		C				C				C	C			

NOTE 1: C = Const. plans or Design Report; R = ROW plan; N = Notification by PM; X = Cross sections; M = Meters of RW plans; B = Project-specific special provisions; W = Working-time sheet.

E = All electronic plans in CAD/D format with electronic alignment file on acceptable media; A = Copy of asbestos inspection request memo to DDC-A1

NOTE 2: Right of Way Plans (3K) shall include 1R with crossings highlighted in red

NOTE 3: All Con, "H" & "L" "PR" projects contact CHC(H) for environmental agency distribution list

NOTE 4: Submit PDF in addition to paper copies.

NOTE 1: C = Const. plans or Design Report; R = RW plans; N = Notification by PM; X = Cross sections; M = Mylars of RW plans; S = Project-specific special provisions; W = Working-time chart.
 NOTE 2: Right of Way Plans (SR) shall include 1R with changes highlighted in red. NOTE 3: All Corr. "H" & RL "W" projects contact CH(CR) for environmental agency distribution list. NOTE 4: Submit PDF in addition to paper copies.
 NOTE 5: For 2C submit one hardcopy and one PDF.

PROJECT DEVELOPMENT

Plan Development

Preliminary Field Reviews (PFR)

Receive PFR plans and supporting documentation such as:

Preliminary H & H report
R/W 1's and 2's
Span arrangements
Submission checklists

IF NEPA WAS NOT DONE DURING THE DESIGN PHASE, the PM and consultant need to work with the consultant doing the NEPA through our Technical Support Division.

Check and verify **DESIGN CRITERIA** for all roadways, bridges, drainage design frequency, etc.

WEST VIRGINIA DIVISION OF HIGHWAYS PRELIMINARY FIELD REVIEW SUBMISSION CERTIFICATION	
State Project No. _____	Project Manager _____
Federal Project No. _____	Submission Date _____
Project Name _____	
County _____	
General Plan Requirements _____ Construction Project Numbers Shown _____ Line Weights Legible _____ Contours Fenced and Legible _____ Adequate Spot Elevations Shown	Environmental Requirements _____ Type of GSA Permit Documented _____ (Individual or National) (e) _____ Certification of Feasibility with _____ Environmental Documents _____ List of Required Environmental _____ Mitigation (DD-398) _____ Listing and Explanation of Deviations _____ to Design Report and Env. Documents _____ Noise Mitigation or Noise Wall Justification
Field Review Preparation _____ Notable Contaminants Flagged at Sufficient _____ Intervals for Field Review _____ R/W 1 Plans or R/W 1 & R/W 2 Combined _____ Plans Submitted (DD-307) _____ Value Engineering Review Required (DD-416)	Miscellaneous Sheets _____ Title Sheet with Proposed Sheet Index _____ (DD-701) _____ Mass Diagram _____ Interchange Geometric Layout _____ Traffic Sketch Map (DD-602) _____ Comprehensive Maintenance of Traffic Scheme, _____ including Detours (DD-691) _____ Traffic Routing Contingency Plan _____ for Bridge/Structure Projects _____ Property Maps, Ownership and Utility _____ Issues from R/W 1 Plans (DD-301)
Plan and Profile Sheets _____ Alignment, Curve Data, and Superelevation _____ Shown for Mainline and all Sidecasts _____ Stationing Shown for Mainline _____ and all Sidecasts _____ Post, Grades and Vertical Curve Data, _____ including K-Values, Shown for _____ Mainline and all Sidecasts _____ Proposed Construction Limits Shown _____ Property Lines Shown _____ Dissipation of all Cesspools, _____ Retained, and Streams or Ponds _____ Channel Change Requirements Incorporating _____ Natural Channel Design Features Shown _____ Major Drainage Requirements, Including _____ Pipe Profiles, Shown (DD-700) _____ Major Erosion and Sediment Control Features _____ on Plans and Cross Sections _____ Proposed and Existing R/W Limits Shown _____ Existing Public & Private Utilities, Including _____ Gas, Water, Sewer, and Leach Fields _____ for All Parallels, Shown (DD-300)	Boring Layout and Documents _____ Boring Layout Shown on a Set _____ of Topographic Plans _____ Boring Ref Documents (Submitted _____ after Preliminary Field Review) (DD-415) _____ Boring Tabulation Showing all Partient _____ Information (Submitted after _____ Preliminary Field Review)
Typical Sections _____ Mainline Typical _____ Shoulder Typical _____ Temporary Shoulder Typical	Preliminary Field Review Report _____ Design Criteria Listing for Mainline _____ and all Sidecasts _____ Access Point Cost Analysis (DD-307) _____ Draft of required Design Excavations
Cross Sections _____ Mainline Sections at 200 foot _____ Stationing and at Critical Locations _____ Sidecast Sections at 200 foot _____ Stationing and at Critical Locations _____ Earthwork Based on Assumed Slopes _____ Grading Topography, Including R/W, _____ Utilities, Bldg % etc., Shown	Miscellaneous Reports _____ Major Drainage Calculations _____ Geometric Calculations _____ Total Project Construction Cost Estimate _____ Consultant's Quality Control Markups
Notes: 1. All Lines to be Initiated by Office Manager or responsible management level above the Project Manager 2. Use "NA" for any item not applicable to the project. Do not leave any items blank.	
Worksheet Page 1 of 1	DD-301 Pg 9-15 rev 2019 Nov-15.dwg

Preliminary Field Review

PROJECT DEVELOPMENT

Plan Development

Design Study and NEPA

WEST VIRGINIA DIVISION OF HIGHWAYS
DESIGN REPORT FIELD REVIEW SUBMISSION CERTIFICATION

State Project No. _____ Consultant _____
Federal Project No. _____ Project Manager _____
Project Name _____ Submission Date _____
County _____

General Plan Requirements
Project Numbers Shown _____
Line Weights Legible _____
Contours Screened and Legible _____
Adequate Spot Elevations Shown _____

Plan and Profile Sheets
Alignment, Curve Data, and Superelevation Rate Shown for Mainline and all Sideroads _____
Stationing Shown for Mainline and all Sideroads _____
Prel. Grades and Vertical Curve Data, Including K-Value, Shown for Mainline and all Sideroads _____
Proposed Construction Limits Shown _____
Property Lines from Tax Maps Shown _____
Disposition of all Crossroads, Railroads, and Streams or Rivers _____
Channel Change Requirements Incorporating Natural Channel Design Features Shown _____
Major Drainage Requirements, Shown (DD-706) _____
Proposed and Existing R/W Limits Shown (DD-301) _____
Existing & Private Major Utilities, Including Gas Fields, Sewer, and Water Facilities Shown _____

Miscellaneous Sheets
Title Sheet with Proposed Sheet Index (DD-701) _____
Mass Diagram _____
Traffic Sketch Map (DD-802) _____
Conceptual Maintenance of Traffic Scheme, Including Detours _____
Ownership Index (May be submitted as a separate report on large projects involving a significant number of parcels) _____

Field Review Report
Design Criteria Listing for Mainline and all Sideroads _____
Listing of Proposed Design Exceptions _____
Listing of Advantages and Disadvantages of Each Alignment Under Study _____
Table of Physical Characteristics (curvature, grades, construction costs, right-of-way costs, displacements, length, etc.) of Each Alignment _____
Access Point Analysis Including type, location, etc. _____
Geotechnical Overview _____

Miscellaneous Reports
Major Drainage Calculations _____
Total Project Construction Cost Estimate of Each Alignment Under Study _____
Consultant's Quality Control Markups _____

Notes: 1- All Lines to be initiated by Office Manager or responsible management level above the Project Manager
2- Use "N/A" for any item not applicable to the project. Do not leave any items blank.

Checked Page 1 of 1
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Design Report Field Review

WEST VIRGINIA DIVISION OF HIGHWAYS
DESIGN REPORT OFFICE REVIEW SUBMISSION CERTIFICATION

State Project No. _____ Consultant _____
Federal Project No. _____ Project Manager _____
Project Name _____ Submission Date _____
County _____

General Plan Requirements
Project Numbers Shown _____
Line Weights Legible _____
Contours Screened and Legible _____
Adequate Spot Elevations Shown _____

Plan and Profile Sheets
Alignment, Curve Data, and Superelevation Rate Shown for Mainline and all Sideroads _____
Stationing Shown for Mainline and all Sideroads _____
Prel. Grades and Vertical Curve Data, Including K-Value, Shown for Mainline and all Sideroads _____
Proposed Construction Limits Shown _____
Property Lines from Tax Maps Shown _____
Disposition of all Crossroads, Railroads, and Streams or Rivers _____
Channel Change Requirements Incorporating Natural Channel Design Features Shown _____
Major Drainage Requirements, Shown (DD-706) _____
Proposed and Existing R/W Limits Shown (DD-301) _____
Existing & Private Major Utilities, Including Gas Fields, Sewer, and Water Facilities Shown _____

Miscellaneous Sheets
Title Sheet with Proposed Sheet Index (DD-701) _____
Mass Diagram _____
Traffic Sketch Map (DD-802) _____
Conceptual Maintenance of Traffic Scheme, Including Detours (If Required) _____
Ownership Index (May be submitted as a separate report on large projects involving a significant number of parcels) _____

Office Review Report
Design Criteria Listing for Mainline and all Sideroads _____
Listing of Proposed Design Exceptions _____
Listing of Advantages and Disadvantages of Each Alignment Under Study _____
Table of Physical Characteristics (curvature, grades, construction costs, right-of-way costs, displacements, length, etc.) of Each Alignment _____
Access Point Analysis Including type, location, etc. _____
Access Point Cost Analysis (DD-307) _____
Geotechnical Overview _____
Listing of Design Report Field Review Comments and Action Taken on Each Comment _____

Miscellaneous Reports
Major Drainage Calculations _____
Total Project Construction Cost Estimate of Each Alignment Under Study _____
Consultant's Quality Control Markups _____

Notes: 1- All Lines to be initiated by Office Manager or responsible management level above the Project Manager
2- Use "N/A" for any item not applicable to the project. Do not leave any items blank.
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Design Report Office Review



PROJECT DEVELOPMENT

Plan Development

Preliminary Field Reviews (PFR)

Review the PFR plans for completion and accuracy in accordance with WVDOH Design Directive and AASHTO.

Verify state and federal project numbers and project name

Consultant to get mapping or mapping is provided by DOH

Consultant to send out utility verification plans to all utilities encountered and picked up by survey / mapping

Get traffic sketch maps and request ADT, turning movements, as applicable

Verify all existing right of way and easements

Check and verify DESIGN CRITERIA for all roadways, bridges, drainage design frequency, etc.

Initiate, request, and the consultant prepare "DESIGN EXCEPTION" as applicable for review, processing and approval
(this could involve FHWA review and approval if applicable)

- o **Highway Design:** Verify all horizontal and vertical alignments
- o **Hydraulic And Hydrology:** Verify H&H submission to meet our drainage manual criteria

All major drainage structures and drainage areas



PROJECT DEVELOPMENT

Plan Development

Preliminary Field Reviews (PFR) continued . . .

Review with the Geotech team all proposed boring layouts, stake borings, get borings drilled by contract, solicitation or state forces.

Prepare draft geotechnical report and slope design recommendations.

Verify access is maintained to impacted properties.

Review MOT scheme and applicable / practical phases of construction.

Consultant shall submit, along with the PFR / SA plans, other applicable documents, their marked-up QC plans showing independent review of their plans, geometry, all facets of the submission prior to them submitting the plans for DOH Project Manager (PM) to process.

Review project cost estimate at each milestone plan submission. Update the project cost in the HUB accordingly as needed. (Cherri Moffat)

Consultant to submit all the comments given to them during the PFR in a word format showing all who attended the review, each comment typed clearly, and disposition of each comment (See DD-202).

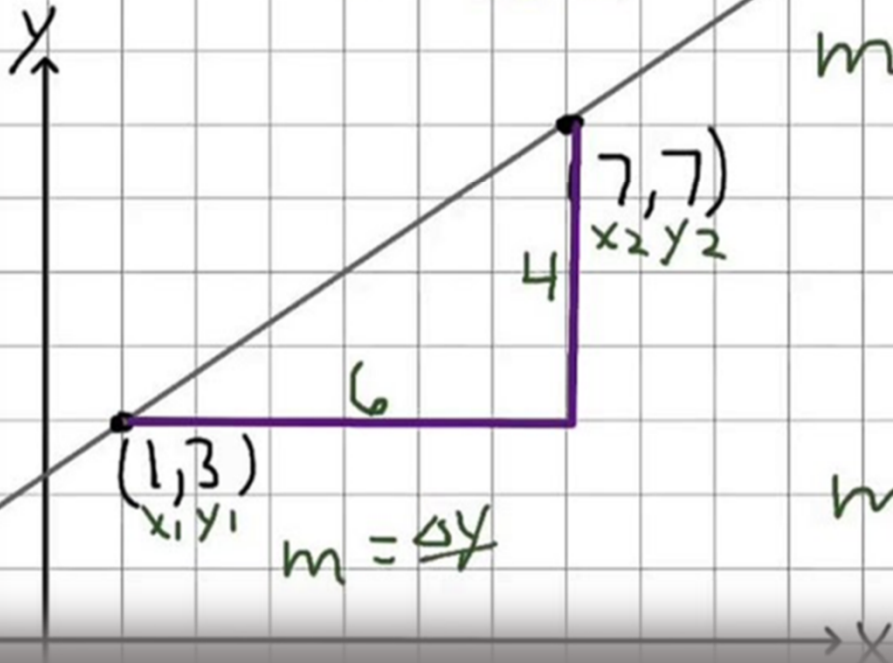
PROJECT DEVELOPMENT

Plan Development

Slope Reviews

Slope

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$



Slope Review

WEST VIRGINIA DIVISION OF HIGHWAYS SLOPE REVIEW SUBMISSION CERTIFICATION	
State Project No. _____	Consultant _____
Federal Project No. _____	Project Manager _____
Project Name _____	Submission Date _____
County _____	
General Plan Requirements	Cross Sections
_____ Construction Project Numbers Shown	_____ Cross Sections with Recommended Cut Slopes, Fill Slopes and Associated
_____ Line Weights Legible	_____ Fill Benches, and Select Embankment
_____ Contours Screened and Legible	_____ Placement
_____ Adequate Spot Elevations Shown	_____ Earthwork Based on Assumed Slopes and Recommended Shrink and Swell Factors
Plan and Profile Sheets	_____ Borings Plotted on all Applicable Sections
_____ Alignment, Curve Data, and Superelevation Shown for Mainline and all Sideroads	
_____ Stationing Shown for Mainline and all Sideroads	Miscellaneous Sheets
_____ Prel. Grades and Vertical Curve Data, Including K-Value, Shown for Mainline and all Sideroads	_____ Title Sheet for Boring Logs Showing
_____ Proposed Construction Limits Shown	_____ Geologic Symbols (DD-402)
_____ Property Lines Shown	_____ Mass Diagram
_____ Disposition of all Crossroads, Railroads, and Streams or Rivers	Geotechnical Report
_____ Channel Change Requirements Incorporating Natural Channel Design Features Shown	_____ Discussion of Recommended Slopes
_____ Major Drainage Requirements, Including Pipe Profiles, Shown (DD-706)	_____ Discussion of Recommended Culverts and Retaining Walls
_____ Proposed and Existing R/W Limits Shown	_____ Discussion of Project Site and Geologic Conditions, Including Subsurface Conditions (DD-402)
_____ Existing Public & Private Utilities, Including Gas, Water, Septic, and Leach Fields for Residences, Shown (DD-303)	_____ Discussion and Justification for Recommended Shrink and Swell Factors (DD-406)
_____ Boring Layout Plotted on All Plan Sheets	_____ Laboratory Testing & Soil/Rock Analysis
_____ Borings Plotted on Profile Sheets	_____ Engineer's Written Field Boring Logs
_____ Preliminary Layout of all Structures, Including Bridges, Culverts, and Walls	_____ Total Project Construction Cost Estimate
Typical Sections	Miscellaneous Report
_____ Mainline Typical	_____ Consultant's Quality Control Markups
_____ Sideroad Typical	
_____ Temporary Detour Typical	
Notes: 1- All Lines to be initiated by Office Manager or responsible management level above the Project Manager 2- Use "NA" for any item not applicable to the project. Do not leave any items blank.	

Checklist Page 1 of 1

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PROJECT DEVELOPMENT

Plan Development

Final Field Review

Receive Final Field Review plans (FFR) and supporting documents such as: Final, RW 3, Type, Size and Location (TS&L), Draft Geotechnical Report, NPDES permit application, 404 permit application, submission checklists.

Review the FFR for completion and accuracy in accordance with design criteria, Design Directives, AASHTO Greenbook, and other applicable state, local laws and requirements..

Review proposed right of way limits and easements

Review Draft Geotechnical report

Review final H&H submission to meet drainage manual

Send out FEMA coordination letters to be included in the 404 permit application

Review Project cost estimate and request changes if needed thru the HUB

Make sure all utility verifications were received and start looking into impacted utilities to coordinate relocations.

Review all submitted permit applications and send them to the appropriate divisions for review and processing

Review project constructability and maintenance of traffic phases

Review NEPA Status and any commitments

Request moving with design passed preliminary engineering as needed to finalize the NEPA process

WEST VIRGINIA DIVISION OF HIGHWAYS FINAL FIELD REVIEW SUBMISSION CERTIFICATION	
State Project No. _____	Project Manager _____
Federal Project No. _____	Submission Date _____
Project Name _____	
County _____	
General Plan Requirements	Miscellaneous Sheets
_____ Construction Project Numbers Shown	_____ Title Sheet with Proposed Sheet Index (DD-701)
_____ Line Weights Legible	_____ Summary of Quantities Showing List of Items Separated by Categories with Alternates at the End of Each Category (BAMS Format) (DD-705)
_____ Contours Screened and Legible	_____ General Note Sheets (DD-704)
_____ Adequate Spot Elevations Shown	_____ Quantity Tables without Quantities except Earthwork (DD-705)
_____ All Phases of Work Included in a Bid Item	_____ Mass Diagram
Plan and Profile Sheets	_____ Reference Point Sheet
_____ Alignment, Curve Data, and Superelevation Shown for Mainline and all Sideways	_____ Geometric Layout Sheet with Coordinates
_____ Stationing Shown for Mainline and all Sideways	_____ Benchmarks Shown on Ref. Pt. Sheet, Geometric Layout Sheet, or Profile Sheet
_____ Grades and Vertical Curve Data, Including K-Value, Shown for Mainline and all Sideways	_____ Super-elevation Shown for all Curves (DD-403)
_____ Construction Limits Shown	_____ Interchange Geometrics Shown
_____ Property Lines Shown	_____ Intersection Layout Including Joint Layout
_____ Disposition of all Crossroads, Railroads, and Streams or Rivers	_____ Complete Maintenance of Traffic Scheme Including Sequence of Construction (DD-451)
_____ Channel Change Requirements Incorporating Natural Channel Design Features Shown	_____ Traffic Routing Contingency Plan for Bridge/Structure Projects
_____ All Drainage Requirements Including Pipes, Pipes, Profiles, Ditches, and Underdrains Shown (DD-706)	_____ Prel. Pavement Marking Layout (DD-682)
_____ Major Erosion and Sediment Control Features on Plans and Cross Sections	_____ Preliminary Sign Layout (DD-683)
_____ Proposed and Existing RW Limits Shown	_____ Preliminary Signal Layout
_____ Utility Dispositions Shown (if Available)	_____ Preliminary Lighting Layout (DD-484)
_____ Existing Public & Private Utilities, Including Gas, Water, Septic, and Leach Fields for All Parcels, Shown (DD-503)	_____ All Required Ret. Wall and Culvert Details Shown
_____ Pavement/Surface Limits for All Roads	_____ Any Required Special Detail Sheets
_____ Site Plans for All Structures	_____ Property Maps, Ownership and Utility Index from RW-2 Plans (DD-301)
Typical Sections	_____ Completed Set of Soil Plans and Profiles Including Title Sheet (DD-402)
_____ Mainline Typical	Cross Sections
_____ Sidewalk Typical	_____ Complete Set of Mainline Cross Sections Showing Templates, Earthwork, Borings, RW Limits, Guardrail & Barriers
_____ Pavement Edge/Shoulder Details	_____ Complete Set of Sidewalk Cross Sections Showing Templates, Earthwork, Borings, RW Limits, Guardrail & Barriers
_____ Pavement Design with Legend Including all Related Details	_____ All Drainage Features Shown
_____ Temporary Detour Typical	_____ Quantity Tables Completed
Checklist Page 1 of 2	DD-202 Pg 9-25 rev 2019-Nov-12.ahm
Special Provisions	Final Field Review Preparation
_____ Discussion of Need for Incentive/Disincentive Contract Provisions (DD-708)	_____ Engineering Review (DD-416)
Miscellaneous Reports	_____ Discussion of Actions Taken on Each Comment
_____ Complete Drainage Calculations	_____ RW-2 Plans Submitted (DD-301)
_____ Geometric Calculations	
_____ Geotechnical Report (Draft)	
_____ Total Project Construction Cost Estimate	
_____ Consultant's Quality Control Markups	
Checklist Page 2 of 2	DD-202 Pg 9-25 rev 2019-Nov-12.ahm

Notes: 1- All Lines to be Initialed by Office Manager or responsible management level above the Project Manager.
2- Use "NA" for any item not applicable to the project. Do not leave any items blank.

Final Field Review



PROJECT DEVELOPMENT

Plan Development

Final Office Review

Consultant submit Final Office Review plans (FOR) and supporting documents such as:

Final Geotechnical Report

Revised RW 3, submission checklists and their QC marked up plans

Review the Final Office Review for completion and accuracy in accordance with WVDOH Design Directive and AASHTO requirements

Check all comments from Final Field Review (FFR) and verify the responses to these comments have been addressed and incorporated into the FOR submission

Check all project details and Project Specific special provisions

Check Final Geotechnical report

Check all pay items are correct

Check randomly some quantities for accuracy (summary sheet vs. quantity tables)

Check Project cost estimate and request changes in the HUB as needed.

Check all utility relocation plans have been received and incorporated into the plans

Request ROW certificate and USR

WEST VIRGINIA DIVISION OF HIGHWAYS
FINAL OFFICE REVIEW SUBMISSION CERTIFICATION
Consultant

State Project No. _____
Federal Project No. _____
Project Name _____
County _____

Project Manager _____
Submission Date _____

General Plan Requirements
Construction Project Numbers Shown _____
Line Weight/Legible _____
Contours Screened and Legible _____
Adequate Spot Elevations _____
Shown _____
All Phases of Work Included in a _____
Bid Item _____

Plan and Profile Sheets
Alignment, Curve Data, and Superelevation _____
Shown for Mainline and at Interchanges _____
Stationing Shown for Mainline _____
and at Interchanges _____
Grades and Vertical Curve Data _____
Including K-Value, Shown for _____
Mainline and at Interchanges _____
Construction Limits Shown _____
Property Lines Shown _____
Disposition of all Crossroads, _____
Railroads, and Streams or Rivers _____
Channel Change Requirements Incorporating _____
Natural Channel Design Features Shown _____
All Drainage Requirements Including Pipe, Pipe _____
Profiles, Ditches, and Underdrains Shown _____
(DD-708)
Major Erosion and Sediment Control Features _____
on Plans and Cross Sections _____
Drainage and Guardrail Limits/Details Noted _____
on Plan and Profile Sheets _____
Proposed and Existing RW Limits Shown _____
Utility Depositions Shown _____
for all affected Utilities (If Available) _____
Existing Public & Private Utilities, Including _____
Gas, Water, Sewer, and Land Fills _____
for Residences, Shown (DD-303) _____
Pavement/Structure Limits for All Roads _____
Site Plans for All Structures _____
Curb Ramps and Other ADA Features _____

Typical Sections
Mainline Typical _____
Shoulder Typical _____
Pavement Edge/Shoulder Details _____
Pavement Design with Legend _____
Including all Related Details _____
Temporary Detour Typical _____

Miscellaneous Sheets
Title Sheet with Proposed Sheet Index _____
(DD-701)
Summary of Quantities Showing List of _____
Items Separated by Categories with _____
Alternates at the End of Each Category _____
(BAMS Format) (DD-705)
General Note Sheets (DD-704) _____
Quantity Tables with all Quantities _____
Completed (DD-705)
Mass Diagram _____
Reference Point Sheet _____
Geometric Layout Sheet with Coordinates _____
Benchmarks Shown on Plan, Profile Sheet, _____
Geometric Layout Sheet, or Profile Sheet _____
Superelevation Tables and Diagrams _____
Completed for all Curves (DD-403) _____
Interchange Geometrics Shown _____
Intersection Layout Including Joint Layout _____
Complete Maintenance of Traffic Scheme _____
Including Sequence of Construction _____
(DD-481)
Traffic-Paving Contingency Plan _____
for Bridge/Structure Projects _____
Pavement Marking Layout (DD-682) _____
Sign Layout (DD-683) _____
Signal Layout _____
Lighting Layout (DD-684) _____
All Required "Not-Yet" and Culvert _____
Details Shown _____
Any Required Special Detail Sheets _____
Including ADA Features _____
Property Maps, Ownership, and Utility _____
Index from Revised RW-3 Plans _____
Completed Set of Soil Plans and Profiles _____
Including Title Sheet (DD-402)

Cross Sections
Complete Set of Mainline Cross _____
Sections Showing Templates, _____
Earthwork, Borings, RW Limits, _____
Quantities & Barriers _____
(DD-403)
Complete Set of Shoulder Cross _____
Sections Showing Templates, _____
Earthwork, Borings, RW Limits, _____
Guardrail & Barriers _____
All Drainage Features Shown _____
Quantity Tables Completed _____

Checklist Page 1 of 2

FOR Checklist rev 2020-Feb-01

Completed Copies of All Project Specific _____
Special Provisions (Word Format) _____
(DD-105, DD-820) _____
Complete Inclosure/Disinfectant Provisions _____
Letters Approving Proposed Relocations From _____
Utility Companies _____

Environmental Requirements
List of Required Environmental _____
Mitigation (DD-208) _____
Certification and Listing of Adherence _____
to Environmental Documents _____
Listing and Explanation of Deviations _____
to Design Report and Env. Documents _____
Copy of Transmittal Letter From DOT _____
Submitting NPDES Registration to DEP _____
Completed NPDES Registration Form _____
with all Attachments sent to DEP _____

Miscellaneous Reports
Complete Drainage Calculations _____
Computations Including Horizontal/Vertical _____
Geometry and Quantity Calculations _____
Final Geotechnical Report (DD-402) _____
Consultant's Quality Control Markups _____

Pipes, etc. Shown For Proposed _____
Construction Scheme _____
Copy of Section 106 "Historical Clearance _____
(DD-403) _____
Copy of "Plans, Threatened, and Endangered _____
Species Clearance Letter" Included _____
Copy of Letter Submitting Plans to Resource _____
Agency for Review _____
Copy of All Comments Received from _____
Resource Agencies _____
Copy of FEMA Clearance Letter _____
(If Applicable) _____
Two Copies of Completed 404 Permit _____
Application Package Included _____

Supplemental Contract Information
Estimated Contract Time Chart _____
(DD-403)
Total Project Construction Cost Estimate _____

Notes:
1- All Lines to be Initiated by Office Manager _____
or responsible management level _____
above the Project Manager _____
2- Use "N/A" for any item not applicable to the _____
project. Do not leave any items blank.

Checklist Page 2 of 2

FOR Checklist rev 2020-Feb-01

**Final Office
Review**



PROJECT DEVELOPMENT

Plan Development

Final Plans

Consultant submits Final Plans and supporting documents and submission checklists, per CPM date.

Quick review of the Final plans for completion and make sure any comments from FOR have been addressed, incorporated.

Verify Final documents are submitted.

Send all documents to the PS & E Unit for starting the PS & E process.

Any comments will be sent to the consultant.

Any plan Submission not meeting our DD-checklist requirements, the plans are rejected by notifying the consultant.

WEST VIRGINIA DIVISION OF HIGHWAYS FINAL OFFICE REVIEW SUBMISSION CERTIFICATION	
State Project No. _____	Consultant _____
Federal Project No. _____	Project Manager _____
Project Name _____	Submission Date _____
County _____	
General Plan Requirements	Miscellaneous Sheets
_____ Construction Project Numbers Shown	_____ Title Sheet with Proposed Sheet Index (DD-701)
_____ Line Weights Legible	_____ Summary of Quantities Showing List of Items Separated by Categories with Alternates at the End of Each Category (BARS Form) (DD-705)
_____ Adequate Spot Elevations Shown	_____ Quantify Tables with all Quantities Completed (DD-705)
_____ All Phases of Work Included in a Bid Item	_____ Mass Diagram
Plan and Profile Sheets	_____ Reference Point Sheet
_____ Alignment, Curve Data, and Superlevation Shown for Mainline and at Sideways	_____ Geometric Layout Sheet with Coordinates
_____ Stationing Shown for Mainline and at Sideways	_____ Benchmarks Shown on Ref. Pt. Sheet
_____ Grades and Vertical Curve Data, Including K-Value, Shown for Mainline and at Sideways	_____ Geometric Layout Sheet or Profile Sheet
_____ Construction Limits Shown	_____ Superlevation Tables and Diagrams
_____ Property Lines Shown	_____ Consolidated for all Curves (DD-803)
_____ Disposition of all Crosswalks, Railroads, and Streams or Rivers	_____ Interchange Geometrics Shown
_____ Channel Change requirements incorporating Natural Channel Design Features Shown	_____ Intersection Layout including joint Layout
_____ All Drainage Requirements including Pipes, Pipes, Profiles, Ditches, and Underdrains Shown (DD-706)	_____ Complete Maintenance of Traffic Scheme including Sequence of Construction (DD-681)
_____ Major Erosion and Sediment Control Features on Plans and Cross Sections	_____ Traffic Rounding Contingency Plan for Bridge/Structure Projects
_____ Drainage and Guardrail Limits/Details Noted on Plan and Profile Sheets	_____ Pavement Marking Layout (DD-902)
_____ Proposed and Existing RW Limits Shown	_____ Sign Layout (DD-683)
_____ Utility Dispositions Shown for all affected Utilities (if Available)	_____ Signal Layout
_____ Existing Public & Private Utilities, including Gas, Water, Sewer, and Land Fields for Residences, Shown (DD-903)	_____ Lighting Layout (DD-684)
_____ Pavement/Shoulder Limits for All Roads	_____ All Required Ret. Wall and Culvert Details Shown
_____ Site Plans for All Structures	_____ Any Required Special Detail Sheets including ADA Features
_____ Curb Ramps and Other ADA Features	_____ Property Maps, Ownership and Utility Index from Revised RW's Plans
Typical Sections	_____ Completed Set of Soil Plans and Profiles including Title Sheet (DD-402)
_____ Mainline Typical	Cross Sections
_____ Shoulder Typical	_____ Complete Set of Mainline Cross Sections Showing Templates, Earthwork, Borings, RW Limits, Guardrail & Barriers
_____ Pavement Edge/Shoulder Details	_____ Complete Set of Sideline Cross Sections Showing Templates, Earthwork, Borings, RW Limits, Guardrail & Barriers
_____ Pavement Design with Legend including all Related Details	_____ All Drainage Features Shown
_____ Temporary Detour Typical	_____ Quantify Tables Completed
Checklist Page 1 of 2	FOR Checklist rev 2020 Feb-21
Certification and Listing of Adherence	Supplemental Contract Information
_____ to Environmental Documents	_____ Estimated Contract Time Chart (DD-603)
_____ Listing and Explanation of Deviations to Design Report and Env. Documents	_____ Total Project Construction Cost Estimate
_____ Copy of Transmittal Letter From DOT Submitting NPDES Registration to DEP	
_____ Completed NPDES Registration Form with all Attachments sent to DEP	
Miscellaneous Reports	Notes:
_____ Complete Drainage Calculations	1- All Lines to be Initiated by Office Manager or responsible management level above the Project Manager
_____ Computations including Horizontal/Vertical Geometry and Quantity Calculations	2- Use "N/A" for any item not applicable to the project. Do not leave any items blank.
_____ Final Geotechnical Report (DD-402)	
_____ Consultant's Quality Control Markings	
Checklist Page 2 of 2	FOR Checklist rev 2020 Feb-21

Final Office
Review



PROJECT DEVELOPMENT

Plan Development

QC Examples . . .

601002-001	CLASS B CONCRETE	CY	18.89	\$865.00	\$16,339.85
604028-016	18 INCH CORRUGATED ALLUMINUM ALLOY PIPE END SECTION	EA	4	\$6,200.00	\$24,800.00
606029-001	FREE DRAINING BASE TRENCH	LF	12798	\$6,200.00	\$79,347,600.00
606030-001	OUTLET PIPE, 6 INCH	LF	9	\$6,200.00	\$55,800.00
604050-010	12 INCH HIGH DENSITY POLYETHYLENE PIPE	LF	56	\$270.00	\$15,120.00
604050-020	24 INCH HIGH DENSITY POLYETHYLENE PIPE	LF	200	\$170.00	\$34,000.00
604050-024	36 INCH HIGH DENSITY POLYETHYLENE PIPE	LF	342	\$350.00	\$119,700.00
604050-032	48 INCH HIGH DENSITY POLYETHYLENE PIPE	LF	164	\$913.00	\$149,732.00
604050-026	60 INCH HIGH DENSITY POLYETHYLENE PIPE	LF	164	\$1,200.00	\$196,800.00

Example of Project Manager detailed QC revisions from the Final Field Review cost estimate.

601002-001	CLASS B CONCRETE	CY	18.89	\$865.00	\$16,339.85
604028-016	18 INCH CORRUGATED ALLUMINUM ALLOY PIPE END SECTION	EA	4	\$6,200.00	\$24,800.00
606029-001	FREE DRAINING BASE TRENCH	LF	12798	\$6,200.00	\$79,347,600.00
606030-001	OUTLET PIPE, 6 INCH	LF	9	\$6,200.00	\$55,800.00

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
601002-001	CLASS B CONCRETE	CY	18.89	\$865.00	\$16,339.85
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606030-001	OUTLET PIPE, 6 INCH	LF	9	\$6,200.00	\$55,800.00

PROJECT DEVELOPMENT

Plan Development

QC Examples . . .

HDR West Virginia Department of Transportation | Division of Highways
2023 Annual Submission - Quality Assurance/Quality Control (QA/QC) Procedures Overview

Quality Management System

HDR has a fully documented Quality Management System (QMS), including a collection of QMS procedures and a comprehensive QMS Manual. HDR's QMS is comprised of:

- QMS Manual and Quality Policy
- Quality Procedures
- Standards, Guidelines, Analyses, and Tools
- Quality Records

Our QMS and Quality Policy are consistently reviewed and maintained to conform to business and industry drivers for continuous improvement. Revisions and updates to our Quality Policy and/or QMS are executed during the periodic meetings of our corporate Quality Steering Committee. Once executed, revisions and updates are communicated to all employees and are in effect on the issued date.

Quality Policy and Goal

Our Policy. Consistently provide professional services that satisfy statutory and regulatory requirements and that meet or exceed your expectations.

Our Goal. Set the industry benchmark for excellence in the services we provide.

Your projects call for a high level of accountability, and you will find that our attention to detail and adherence to standards lead to successful outcomes. To achieve quality in our work, we have developed a Quality Management System (QMS) based on the principles and guidelines set forth by the ISO 9001:2015 series of international standards for quality management.

Our QMS has been designed to maximize congruency with the principles and guidelines established by the ISO 9001:2015 series of quality standards. However, HDR has not undertaken the formal process of certification by an independent external organization with the exception of select international office locations and U.S.-based projects where specifically required by clients.

While the ISO 9001 Standard is based on solid business practices (such as client focus and controlling the quality of products and services), certification alone does not mean "better quality." Our approach is to build on these fundamental business management strategies and to maintain consistency with ISO 9001 requirements.

Due to the costs associated with obtaining and maintaining certification, our approach to ISO 9001 certification is strategic and purposeful. We maintain our ability to certify on a project-by-project basis when contractually required, and the structure and implementation of our corporate QMS allows us to easily certify when needed.

Quality Processes

HDR has a number of processes in place to control or monitor the quality of our products and services:

QC Review. Manages risk by verifying that project deliverables and supporting documentation are complete, understandable, conform to applicable and reasonable standards relative to their intended purpose, and meet client and HDR requirements.

hdrinc.com 500 Virginia Street East, Suite 1250, Charleston, WV 25301-2135 (803) 343-6100

1

HDR West Virginia Department of Transportation | Division of Highways
2023 Annual Submission - Quality Assurance/Quality Control (QA/QC) Procedures Overview

Quality Checking. Provides a consistent process for verifying the accuracy and completeness of information/data, and for verifying and documenting corrections and/or changes that have been made for calculations, drawings, reports, specifications, and spreadsheets.

Project Review. Facilitates communication between the Project Manager and HDR technical and operational management on the status of a project and identifies areas where actions may be required to improve project performance.

Project Approach and Resource Review (PARR). The PARR results in a summary of key findings and recommendations to the project team. It provides the project team with an independent review for appropriate:

- Solutions applied
- Technical approach implemented
- Staff with required technical skills engaged
- Project technical risks identified, and appropriate mitigation measures incorporated

Quality Management System

Our goal is to set the industry benchmark for excellence in services. We accomplish this through work well done, staying true to purpose, and exercising discipline.

Project reviews occur throughout project execution to facilitate communication between the project manager and HDR management. Managing the quality of deliverables is essential to minimizing cost and schedule overruns on projects.

QUALITY CHECK
Detailed checking occurs between Originator and Checker to verify the accuracy of information relative to the intended purpose.

QUALITY REVIEW
Following quality checking, the Originator submits the deliverable to the QC Reviewer to verify deliverables and supporting documents are complete for the release schedule of release and conforms to applicable standards.

QUALITY CHECKING
1A ORIGINATOR
1B CHECKER

ORIGINATOR (1A) submits deliverable to the **QC REVIEWER** (2).
Initial QC Review

ORIGINATOR (3) → **QC REVIEWER** (4) → **PROJECT MANAGER** (5).
Comment Resolution
Approval of Deliverable

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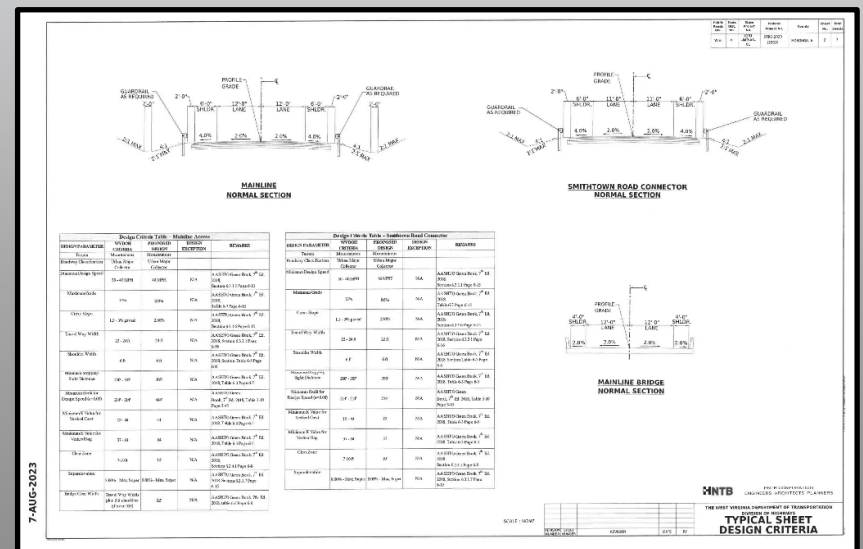
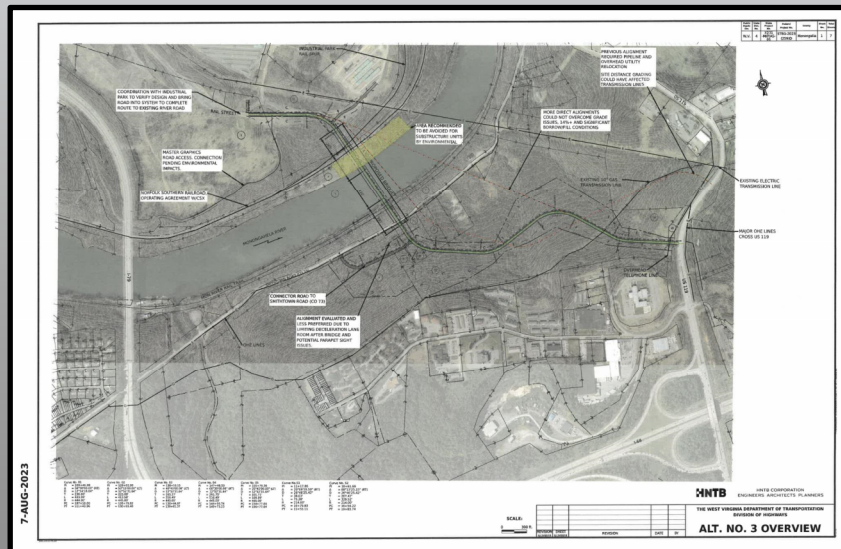
2

Consultant QC after Final Field Review

PROJECT DEVELOPMENT

Plan Development

QC Examples . . .



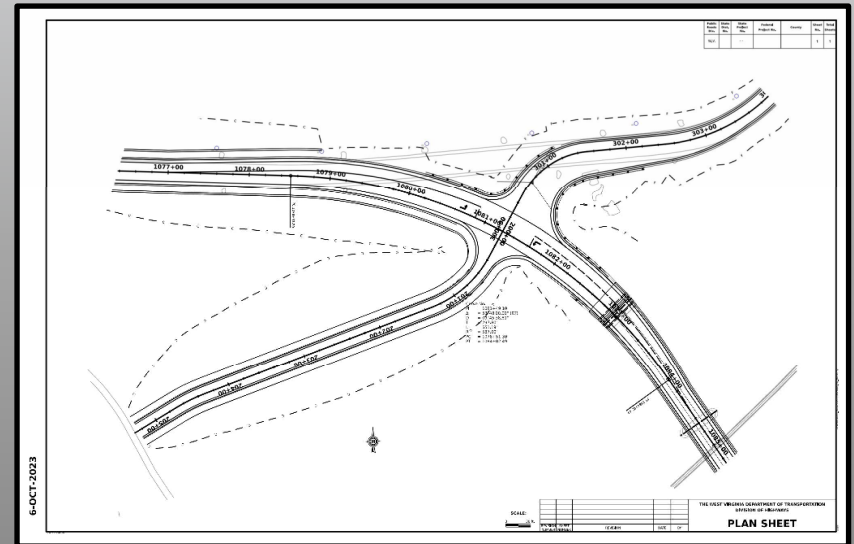
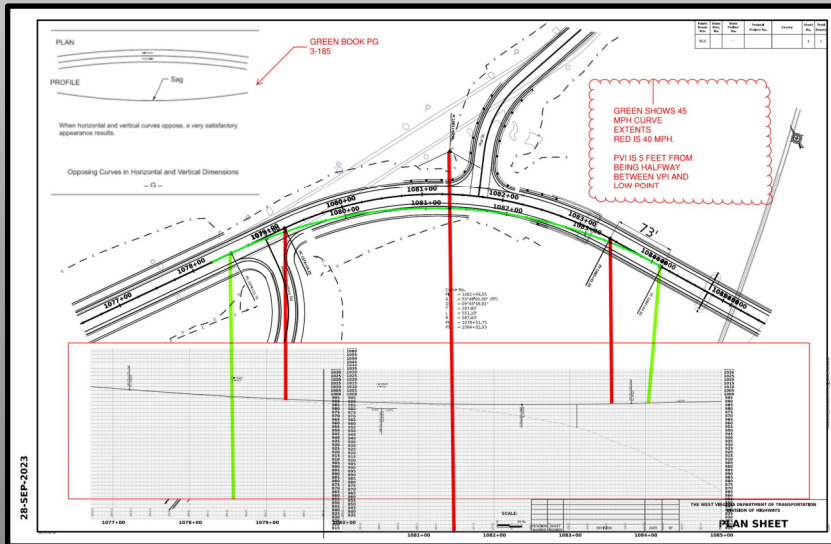
Project Manager QC mark-up of horizontal and vertical geometrics per AASHTO requirements early on.

Typical consultant design criteria submission.

PROJECT DEVELOPMENT

Plan Development

QC Examples . . .

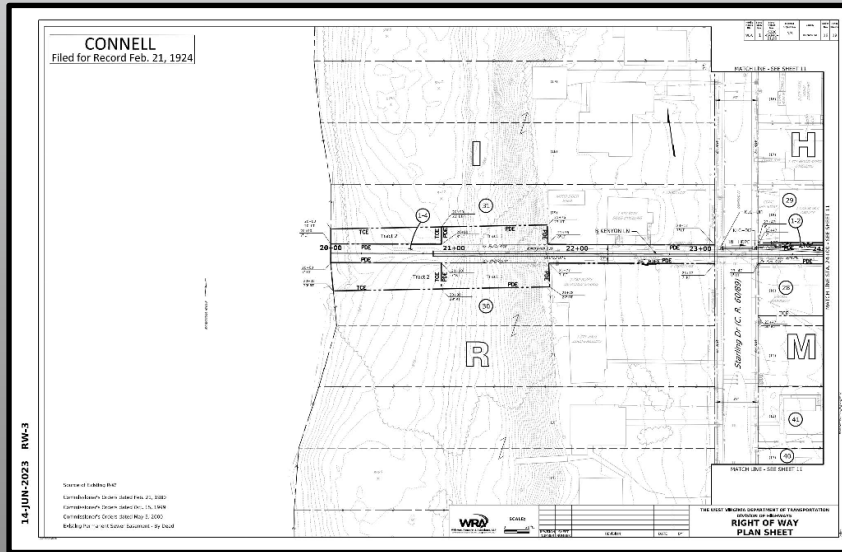


Consultant response of horizontal and vertical geometrics per AASHTO requirements.

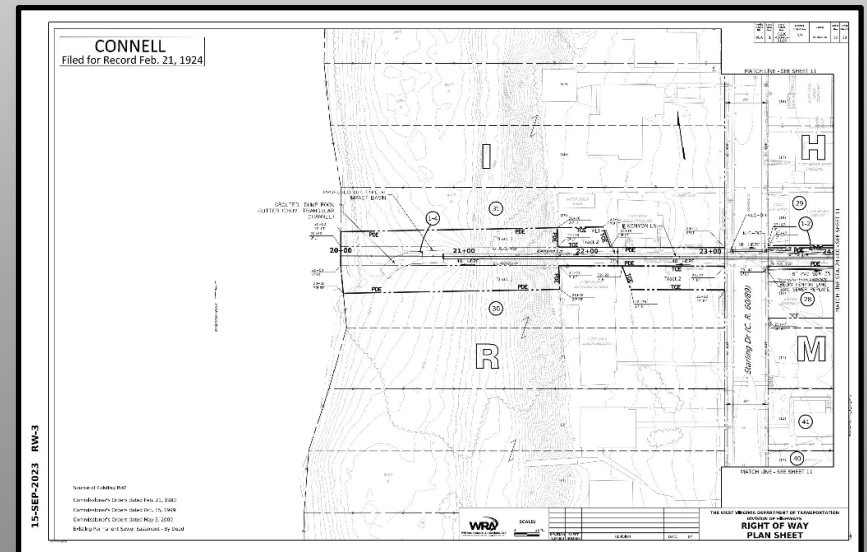
PROJECT DEVELOPMENT

Plan Development

QC Examples . . .



Kenyon Lane
Before



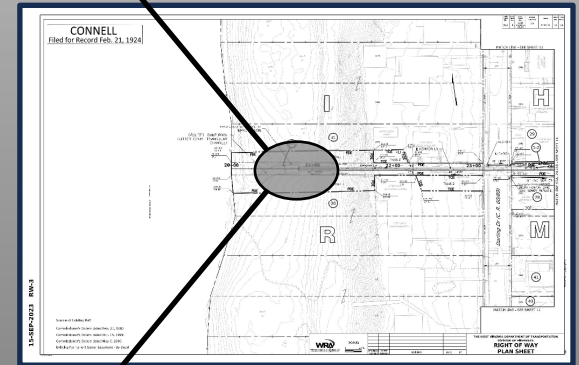
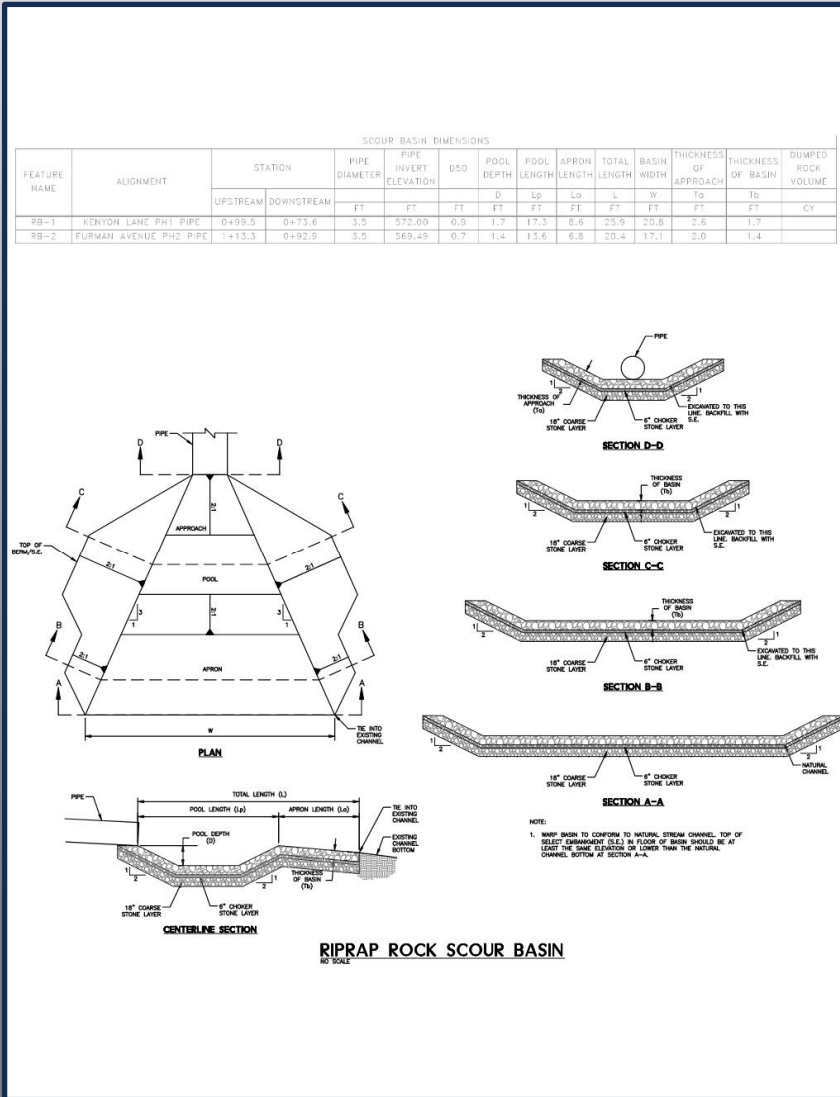
Kenyon Lane
After

Rand Drainage Project

PROJECT DEVELOPMENT

Plan Development

QC Examples . . .

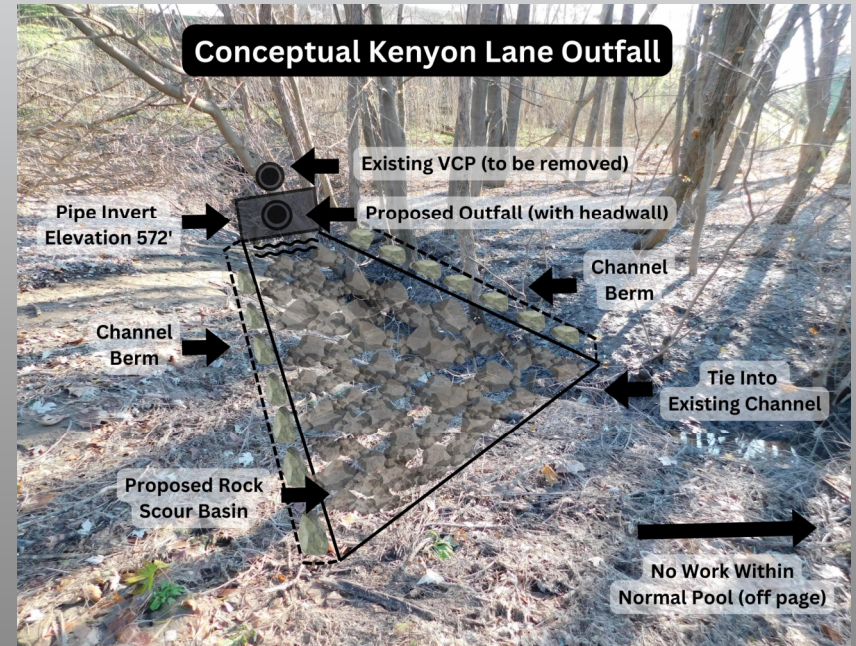
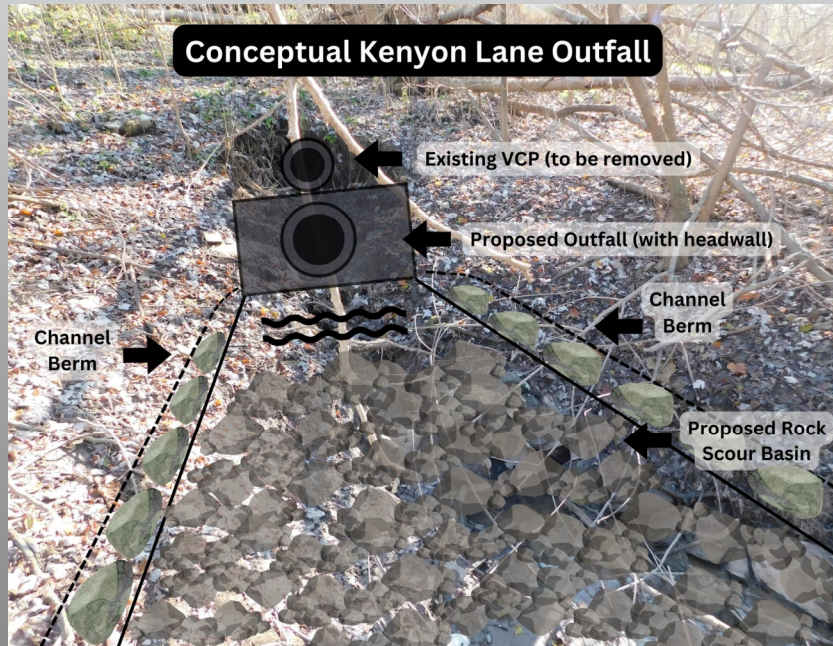


**After
Kenyon Lane**

PROJECT DEVELOPMENT

Plan Development

QC Examples . . .



Kenyon Lane Outfall

PROJECT DEVELOPMENT

Plan Development

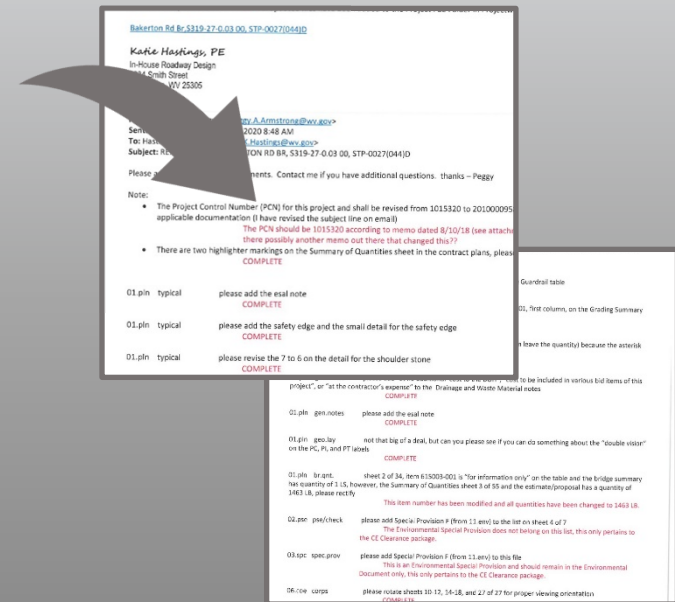
COMMENTS AND RESPONSES

Here is a great example of the proper way to address written comments. Our Engineering Division requires this format from our consultants and our In-house Design staff.

Responding in an alternate color under the original comment is preferred.

Refer to DD-202.

QC Examples . . .



PROJECT DEVELOPMENT

Plan Development

PS&E SUBMISSION & REVIEW

The consultant submits final plans, estimate, Applicable Special Provisions for the Project Manager, thru PW. PM distributes the submission to the appropriate divisions, sections, for final QC review.

PS&E Section Review

Review consultant designed highway plans for accuracy and completeness at final office review and final plan submission stages

Provide plan comments to project managers, or consultant

Verify that project pay items and quantities are correct

Develop/prepare the engineers detailed cost estimate to be used in project bid comparison and analysis

Utilize the historical bid tab data to determine unit prices for project pay items

PROJECT DEVELOPMENT

Plan Development

PS&E Section Review Continued . . .

Prepare/assemble the PS&E package for highway projects, for submission to Contract Administration Division. The PS&E package will normally consist of the project plans, detailed estimate, working day calculations, applicable permits, applicable special provisions, right of way certificate, Geotech report, environmental documents, and the PS&E checklist

Prepare project plan revisions and addendums as needed and submit to Contract Administration for inclusion in the bidding documents

Maintain a PS&E project status report for use in progress meetings

Provide necessary AASHTO Transport Preconstruction Program assistance to Contract Administration, and other divisions and district offices within highways

[illegible]

PS & E Submission

[illegible]

Tracing Submission

PROJECT DEVELOPMENT

Plan Development



PROJECT MODIFICATION DOCUMENTATION

Date PMD Prepared: July 28, 2020	PMD Seq # : 14
State Project Number: X341-ZWA/Y-1.00 02	Consul. Name: L.A. Gates Company
Federal Project Number: STP-0019(427)D	Consul. Proj. No: 15.030
Project Name: Shady Spring-Beaver	Consul. Proj. Mgr: Jay Cantley
Project Location: Shady Spring, WV	Original Agmt. Date: September 27, 2016
County: Raleigh Dist. # 10	DOH Proj. Mgr: Dirar Ahmad
NTP Date: Not yet given	Consul. Principal Contact: Jay Cantley

Project Task:

Adding Beckley Water Waterline Relocation Plans to the Contract Plans

Projected Schedule:

Estimated Start Date: August 1, 2023

Estimated End Date: August 11, 2023

Description of Task Modification/Addition:

Gates has been directed to add the Beckley Water Waterline Relocation plans to the Highway Contract plans. The Plans include approximately 3.5 miles of 14" water line and all appurtenances. The Plans will also include a General Note Sheet, Water line quantities, Waterline Plan Sheets, Water line Profile sheets and all Water line details. The effort will include getting the relocation plans in a format that is acceptable to DOH standards and specifications. This includes having DOH bid items and descriptions for all water lines items. The original plans were prepared for Beckley Water use and were done to their standards and to the format for their bidding purposes.

Reasons/Remarks:

Gates originally designed the Waterline Relocation Plans for Beckley Water's use in relocating their own water lines. Later the DOH decided that the Waterline Plans would be incorporated into the Highway Plans and done by the Highway Contractor.

This form to be EMAILED to:

Proj Mgr/Dist Design Eng/Construction Eng:

Date: 8/1/2023

Approved as to Form:

Director/Assistant Director/District Engineer:

Date: 8/1/23

Rev. 7/18

Project Modification Document (PMD)



PROJECT DEVELOPMENT

Plan Development

Right of Way Review Process

Consultant / In-House submits RW-1 & 2 plans and supporting materials as part of the RW-1 & 2 submission

Review the Right of Way plans for content in accordance with **DD-301**. Some things to look for:

- o Check project numbers and name
- o Check all existing right of way and easements
- o Check property boundaries and ownership of each affected property
- o Check to make sure the right of way being acquired is adequate to construct, maintain and operate the roadway / bridge, I/S, corridor in a safe and efficient manner
- .
- o Verify all existing improvements and features are shown
- o Verify access is maintained to all properties, especially impacted properties

PROJECT DEVELOPMENT

Plan Development

Right of Way Review Process continued . . .

If plans submitted do not meet our minimum requirements:

The submission is rejected, consultant contacted, a meeting may be warranted to go over the deficiencies.

A new submission will be required to address all deficiencies.

If the plans are accepted:

Submit RW-1 & 2 plans, questionnaires and deeds, and all other supporting documents to Right of Way Division with a request to prepare right of way and utilities estimates in order to get the right of way phase authorized.

Return comments to the consultant or design engineer to be addressed for the RW-3 submission.

PROJECT DEVELOPMENT

Plan Development

Right of Way Review Process continued . . .

Receive RW-3 plans (Acquisition Plans), cross sections, property descriptions, along with any updated:

questionnaires or other supporting documentation as part of the RW-3 submission.

Review the RW-3 plans to verify all previous comments have been addressed.

Submit RW-3 plans, cross sections, and all other updated supporting documentation to the Right of Way division for the use of acquiring property.

Review the property descriptions to verify areas of take are properly described. Make or request revisions as necessary.

Submit approved property descriptions to the Right of Way Division for the acquisition process.

Upon completion of the acquisition process, RW-4 plans are produced replicating the RW-3 plans and all revisions, including the all deeds or final orders recorded on the Ownership Index. The RW-4 plans are submitted to the Right of Way Division for further handling. They will become the record set.

PROJECT DEVELOPMENT

Plan Development

Structures REVIEW

Voting member on the Selection Panel for Consultant Interviews for bridge projects

Attend Scope of Work meetings

Bridge Project Manager on bridge replacements and rehabilitations plans developed by Consultants

Consultant with district bridge engineer prior to scoping all Rehab projects

Review and approve recommendations in the Rehabilitation Report
Attends Preliminary Field Review

Review 60 percent plan submission

Review Final Plans

PROJECT DEVELOPMENT

Plan Development

Structures REVIEW continued . . .

Review submissions on Bridge Replacement Projects

- o Span Arrangement
 - o Type Size and Location
 - o Final Detail Bridge Plans
- The section reviews Consultant plan submissions for compliance with WVDOH Structural Directives (SD), Design Directives(DD) and current design policies.
 - The minimum standard for each submission shall meet all items in the scope of work and meet all WVDOH Structural Directives (SD), Design Directives(DD) and current design policies.
 - o During each submission's comments are provided to Consultant to be addressed in their next scheduled submission.

This is the 'SPAN ARRANGEMENT SUBMISSION CERTIFICATION' form. It includes sections for 'General Plan Requirements' (listing items like bridge layout, span arrangement, and materials), 'Plan and Profile Sheet' (listing items like plan and profile sheets, and cross-sections), 'Typical Sections' (listing items like bridge types, and materials), and 'Miscellaneous Items' (listing items like bridge layout, and materials). It also has a 'Notes' section at the bottom.

This is the 'BRIDGE LAYOUT AND DOCUMENTS' form. It includes sections for 'Bridge Layout and Documents' (listing items like bridge layout, and documents), 'Notes' (listing items like bridge layout, and documents), and 'Miscellaneous Items' (listing items like bridge layout, and documents).

This is the 'BRIDGE LAYOUT AND DOCUMENTS' form. It includes sections for 'Bridge Layout and Documents' (listing items like bridge layout, and documents), 'Notes' (listing items like bridge layout, and documents), and 'Miscellaneous Items' (listing items like bridge layout, and documents).

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Span Arrangement

Type, Size, and Location (TS&L)

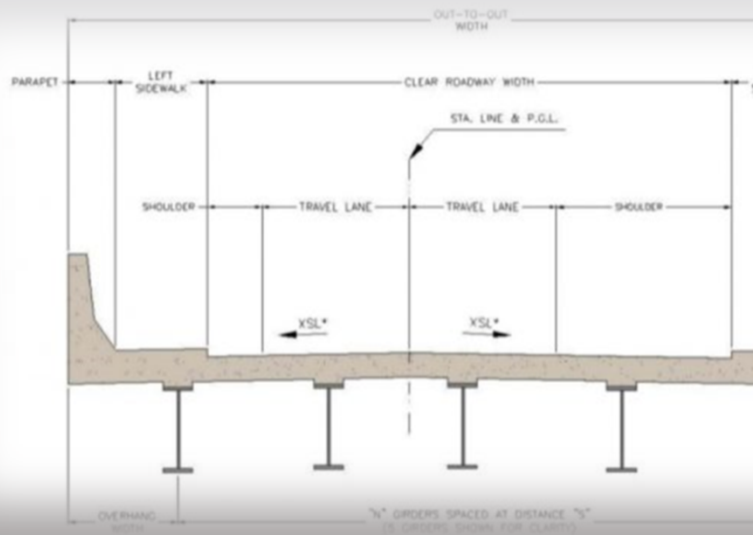
Final Bridge Plan



PROJECT DEVELOPMENT

Plan Development

Bridge Rating



WEST VIRGINIA DIVISION OF HIGHWAYS BRIDGE RATING SUBMISSION CERTIFICATION	
State Project No. _____	Consultant _____
Federal Project No. _____	Project Manager _____
Project Name _____	Submission Date _____
County _____	
General Requirements - Rating by District Bridge Eng.	General Requirements - Rating by Design Engineer
_____ Title Sheet with Proposed Sheet Index (DD-701)	_____ Title Sheet with Proposed Sheet Index (DD-701)
_____ Complete Set of Superstructure Plans with All Dimensions, Thicknesses, and Material Specifications Shown	_____ Complete Set of Superstructure Plans with All Dimensions, Thicknesses, and Material Specifications Shown
_____ Complete Set of Substructure Plans with All Dimensions, Thicknesses, and Material Specifications Shown	_____ Complete Set of Substructure Plans with All Dimensions, Thicknesses, and Material Specifications Shown
_____ Horizontal Roadway Alignment Including Curve Data Shown	_____ Horizontal Roadway Alignment Including Curve Data Shown
_____ Vertical Roadway Grade Shown	_____ Vertical Roadway Grade Shown
_____ Bridge Layout Dimensions Shown	_____ Bridge Layout Dimensions Shown
_____ Foundation Elev. And Low Bearing Elevation Shown	_____ Foundation Elev. And Low Bearing Elevation Shown
_____ Plan View of Deck Showing All Dimensions, Including Span Lengths Widths, Skew Angles, etc.	_____ Plan View of Deck Showing All Dimensions, Including Span Lengths Widths, Skew Angles, etc.
_____ Typical Sections Showing Deck Width, Overhang, Parapet Location, Deck Thickness, Overlay Thickness (If applicable), Reinforcing, and Reinforcing Clearances	_____ Typical Sections Showing Deck Width, Overhang, Parapet Location, Deck Thickness, Overlay Thickness (If applicable), Reinforcing, and Reinforcing Clearances
_____ Complete Set of Bridge Superstructure Calculations	_____ Complete Set of Bridge Rating Calculations with All Members Rated by "The Manual for Bridge Evaluation", Latest Edition, Published by AASHTO and the "LRFD Bridge Design Specifications" Latest Edition
Miscellaneous Report	_____ Published by AASHTO
_____ Consultant's Quality Control Markups	_____ Completed WDOH DS-25 "Bridge Safe Load Capacity Analysis and Justification Report"
	_____ Completed WDOH DS-34 "Scour Evaluation Summary"
Notes: 1- All Lines to be initiated by Office Manager or responsible management level above the Project Manager 2- Use "NA" for any item not applicable to the project. Do not leave any items blank.	
Checklist Page 1 of 1	DD-202 Pg 9-20 rev 2019-Nov-12.docx

Bridge Rating Submission Certification

PROJECT DEVELOPMENT

Authorize

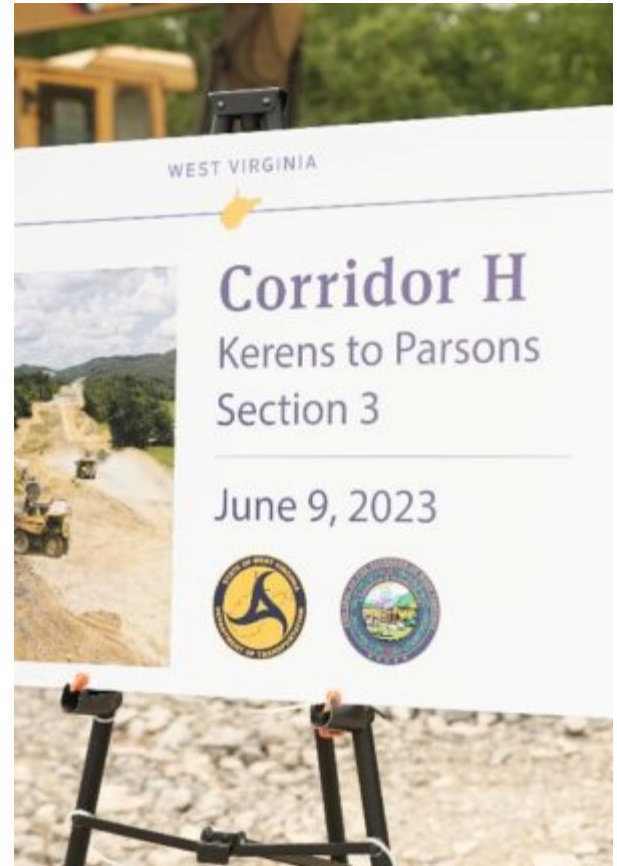
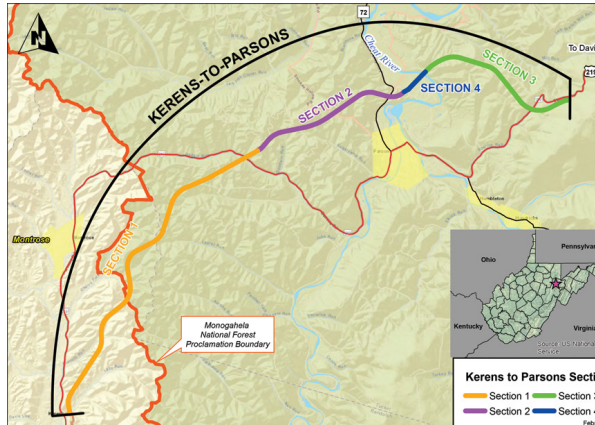


Advertise, Letting, and Award



Pre-Construction Meeting





SCHEDULES

Corridor H Kerens to Parsons, Randolph and Tucker Counties

SCHEDULES

Nature of Project

Purpose of the project (emergency

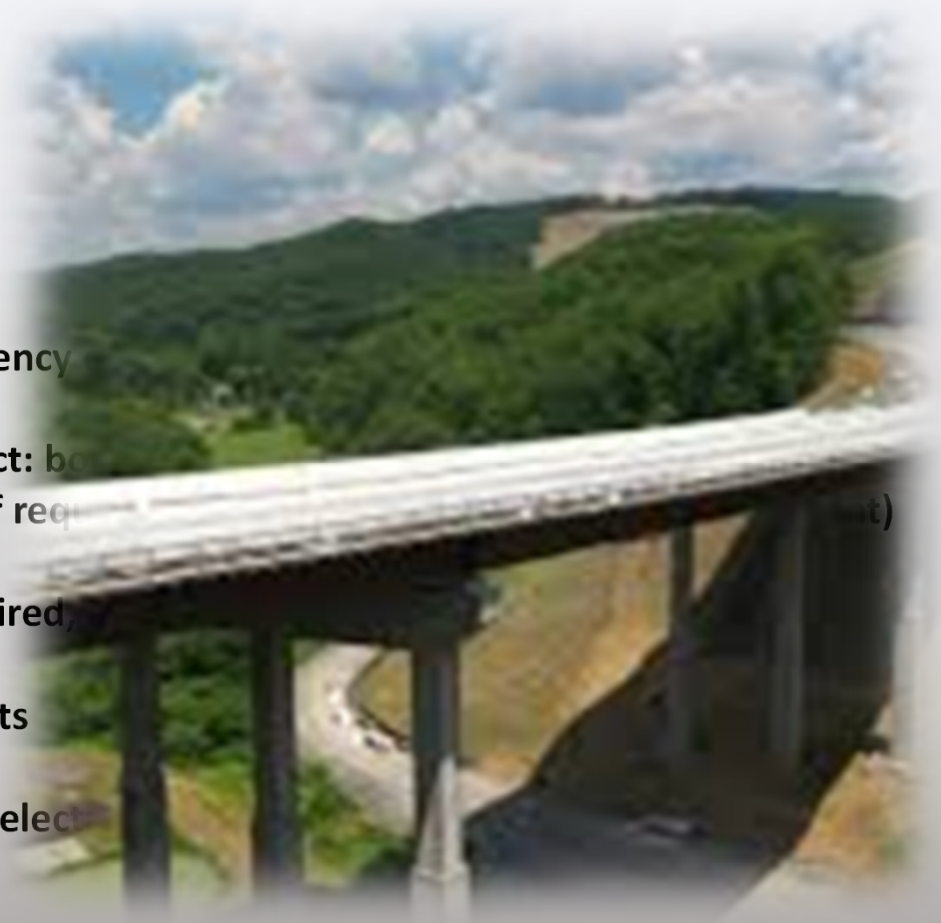
Source of funding of the project: bond (these have different type of requirements)

The NEPA Process: is a CE required

Right of Way and Utility impacts

Some political considerations: election

All of these play a role in the schedule that is set for any project

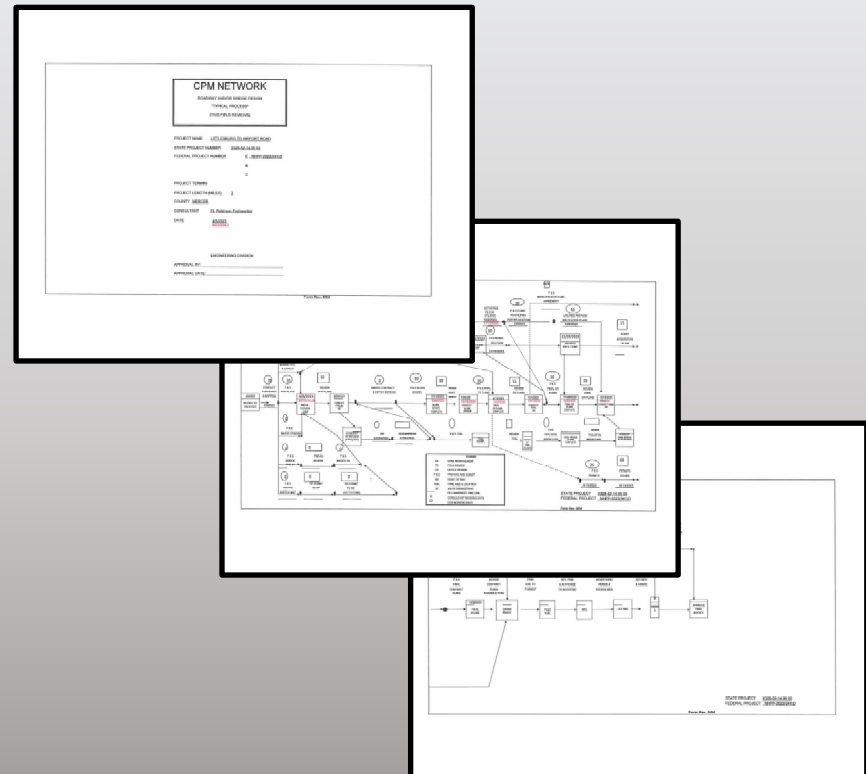


SCHEDULES

CPM's (Critical Path Method)

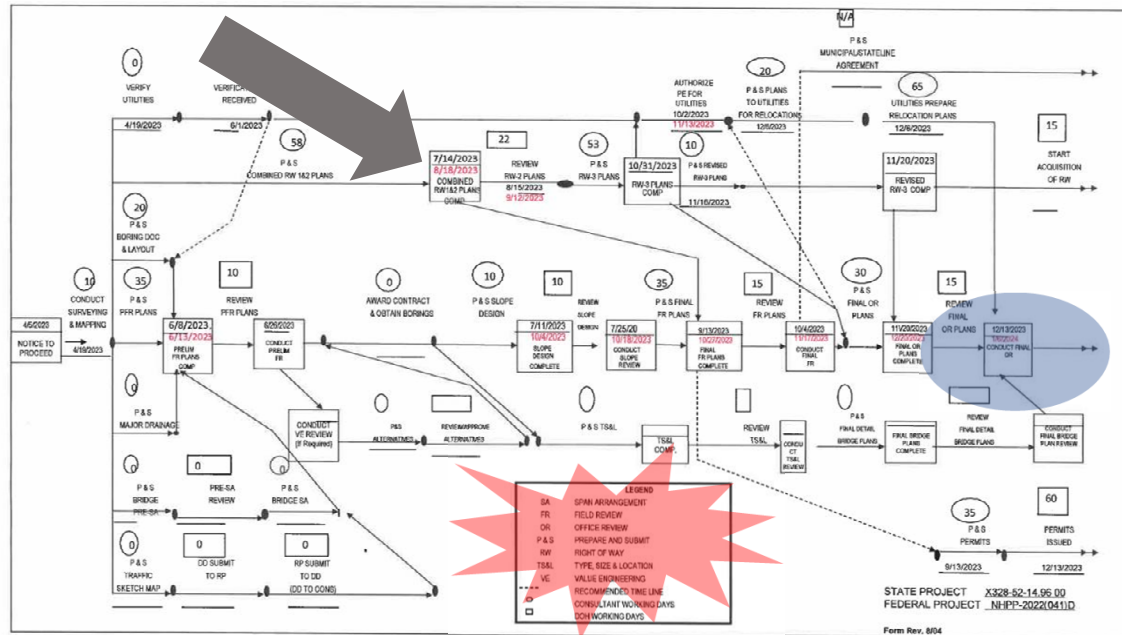
Why important

How to use and follow

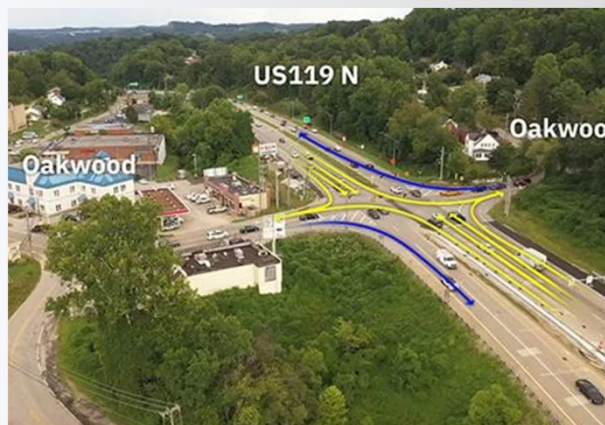
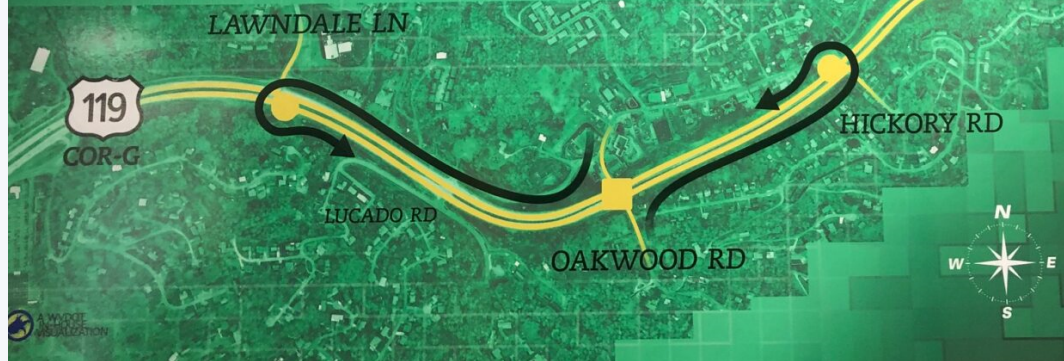


SCHEDULES

Importance of Milestones



Corridor-G/US119 Kanawha County R-CUT Improvements



MEETINGS

Corridor G "R - Cuts", Kanawha County

MEETINGS

Each project requires many meetings after it is properly handled properly, developed, Right of Way acquired and coordination's are completed.

Examples of meetings:

- Consultant shortlist meeting
- NEPA consultant selection meeting
- Consultant interviews
- Scope of work meeting
- Public meetings
- Meeting with municipalities
- Meetings with stakeholders as applicable
- Utilities coordination meeting

All project development meetings to get the project to construction phase





BUDGETS AND INVOICES

University and Town Center Interchange, Monongahelia County

BUDGETS AND INVOICES

When a project is programmed, a budget is
Most of the time, this is lower than what is

Many reasons for that, however, the primary

SCOPE IS NOT DEFINED

The Right of Way and utilities phase is often forgotten and needs to be
programmed and budgeted.

Railroad involvement is also a large expense and needs to be
budgeted for the engineering and construction phases.



BUDGETS AND INVOICES

Each district should create a shared email address

Example: D1EngineeringInvoices@wv.gov, D2EngineeringInvoices@wv.gov

Invoices should be managed by the district comptroller

Invoices should be logged into the tracking data system
provide a guide as to where the invoice is in the process

Invoices should be logged, reviewed, processed and submitted for payment within 30 days to comply with the Federal Prompt Pay requirement.

Each invoice should be reviewed by the District Project Manager (PM). If the PM approves the % complete, he or she should mark the invoice “% approved by _____”



BUDGETS AND INVOICES

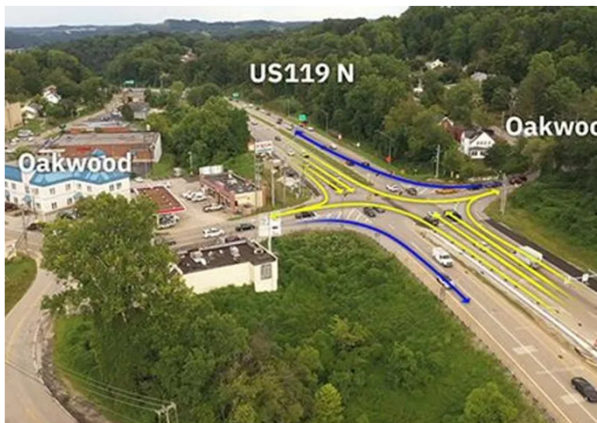
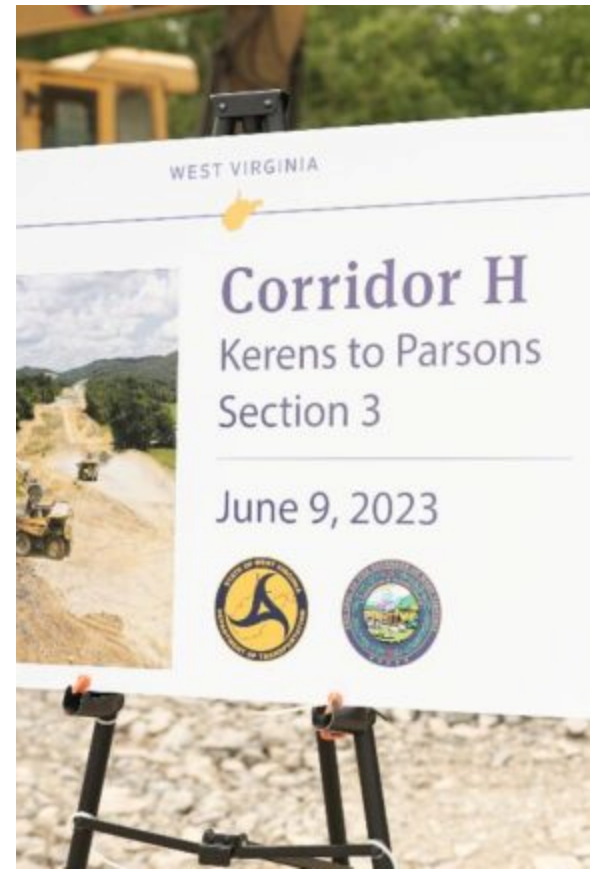
If the invoice is rejected, the PM should coordinate with the contractor to discuss and resolve the issues that are keeping it from approving. The comptroller's office should track all rejections so the database can be updated.

After the PM approval, during the comptroller's review, if there are issues with an invoice, (work date issues, math errors, missing information) the comptroller's office should contact the consultant to resolve these issues.

To assist with the review and audit of each project, an Excel summary of the project costs should be obtained.

Be sure to log the various stages of the payment process into the database.





POST DESIGN SERVICE (PDS)

Jefferson Road, Kanawha County

POST DESIGN SERVICE

Post Award Plan Comment Memo dated:

February 4, 2022



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways
1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25345-6430 • (304) 558-3505

D. Alse Reed, P.E.
State Highway Engineer

Jimmy Wriston, P.E.
Secretary of Transportation
Commissioner of Highways

February 4, 2022

MEMORANDUM

TO: C&E Level
Division Directors
District Engineers/Managers

FROM: Jimmy Wriston, P.E. *JW*
Secretary of Transportation
Commissioner of Highways

THRU: *DD, DM, and CH*

SUBJECT: Post Award Plan Comment

Effective immediately, requests for information concerning plans made after the project has been awarded will be sent from project personnel through their Regional Construction Engineer (RCE) to the appropriate development division or district project manager.

The RCE will make the determination as to whether the question should be handled by the construction project personnel. If the question is to be forwarded to the Engineer of Record (EOR), the RCE, in conjunction with the development project manager, shall first determine if the question is categorized as a request for clarification or a request for engineering review. The development project manager or designer will facilitate gathering and forwarding the information to the EOR and a response to the RCE and district construction personnel.

If a question is categorized as a request for clarification, the RCE will document details of the question. The documentation will indicate if the review prior to award should have revealed issues that would create problems in administering the project. This documentation shall accompany the error and omission report to provide specific information on a mistake.

The EOR will be responsible for handling requests for clarification as part of the tasks that should have been handled pre-award.

If a question is categorized as a request for engineering review, the development division or district project manager will engage the EOR. If the EOR is a consultant firm, a PMD will be generated to allow immediate response to maintain the project schedule. Requests from the RCE for engineering review initiate a notice to proceed and indicates there are enough funds in the construction projects authorization E&C to cover expenses. The responsible district or division will be responsible for consultant procurement activities.

If the request for engineering review indicates a mistake by the contractor, the RCE will initiate the process to request payment to recoup charges from the contractor for engineering fees.

JW:5b

EEO/AFFIRMATIVE ACTION EMPLOYER

POST AWARD PLAN COMMENT

POST DESIGN SERVICE (PSD) AGREEMENT

POST DESIGN SERVICE

01/30/2024 When this was originally written in May 2023 the intent was to update the Post Design Services aka Shop Drawings (SD). But the definitions I used were unclear to the districts in the same manner as Engineering Division. The last paragraph of the original document assumed that the districts had reviewers called Project Managers (PM's) like the following verbiage will replace the original last paragraph.

Going forward Consultants should send invoices to the appropriate district Construction Engineer will review and approve payment and forward the invoice for payment.

Original verbiage

Post Design Services (PDS), aka Shop Drawings (SD) Invoice Review

Post Design Services invoices are paid with district construction funds. Currently the Engineering Division reviews and processes these invoices for the districts.

The 'quick close' for construction projects has created issues paying some of these invoices because the funds are closed before the final PDS invoice is paid. Before CN funds are closed the PDS final invoice needs to be processed and paid.

To help facilitate and support the 'quick close' of CN funds and to ensure any/all PDS invoices are completed, the review and processing of these invoices will now be handled by the district managing the funds.

Engineering Division will continue to process Post Design Services Agreements and forward the executed agreements to the responsible District.

Engineering Division will complete all projects currently active, but all new project agreements will be distributed to the appropriate district and related invoices will be forwarded for district management, review, and processing.

Going forward Consultants should send invoices to the appropriate district e-mail address listed below. The District Construction Engineer will forward the invoice to the Project Manager for review and approve for payment. The PM will return the invoice to the District Construction Engineer who will forward to the District Comptroller for payment.

Invoices and executed agreements
contacts cc:
CEIservicesinvoice@wv.gov

D-1: d0td01construction@wv.gov
D-2: d0td02construction@wv.gov
D-3: d0td03construction@wv.gov
D-4: d0td04construction@wv.gov
D-5: d0td05construction@wv.gov
D-6: d0td06construction@wv.gov
D-7: d0td07construction@wv.gov
D-8: d0td08construction@wv.gov
D-9: d0td09construction@wv.gov
D-10: d0td10construction@wv.gov

Requests to re-open a project contacts
cc: russell.l.kees@wv.gov

D-1: james.r.clifton@wv.gov
D-2: phil.r.williamson@wv.gov
D-3: brian.k.westfall@wv.gov
D-4: samuel.i.perris@wv.gov
D-5: michael.s.stanislawczyk@wv.gov
D-6: ryan.d.dague@wv.gov
D-7: steven.j.ruppert@wv.gov
D-8: lori.a.anello@wv.gov
D-9: dwayne.d.hoover@wv.gov
D-10: c.mike.raulerson@wv.gov

S:\Administration section\SD debacle for District Review\Revised Shop Drawing to Districtes final procedure 1-30-2024.docx

**THIS IS WHAT HAPPENS WHEN THE CONTRACTOR DOES NOT
FOLLOW THE STANDARD DRAWINGS**



CLOSING REMARKS



QUESTIONS



“This is Palestine”

*Thank
you!*