

CIRCULAR LETTER

SECTION: 102.01 PREQUALIFICATION STATEMENTS AND COMPETENCY OF BIDDERS
NUMBER: 102.01-01
SUBJECT: CONTRACTOR PERFORMANCE EVALUATION
DATE: JANUARY 11, 2016

As required in the prequalification rules, prime contractors are to be evaluated on all contracts using the attached form. The Contractor Performance Evaluation shall be completed at the end of each calendar year and/or upon the completion of each contract.

The evaluation shall be prepared by the District Supervisor and reviewed by the District Operations Engineer and the Operations Engineer or Director of Regional Operations. For contracts with consultant engineering and inspection (CEI), the consultant should prepare and sign the evaluation after reviewing it with the TDOT District Supervisor.

The contractor shall be provided a copy of the completed report by the Regional Operations Office. The contractor shall be given an opportunity to meet and discuss any rating.

The overall rating for each evaluation period shall be entered in the Contract Administration>Contractor Management>Contractor Evaluation window of SiteManager. An electronic copy of the approved evaluation form shall be attached to each rating in the Contractor Evaluation window and the original shall be maintained in the project files.

A contractor's overall performance rating will be determined and maintained by the Headquarters Construction Office. It will be based on a weighted score of all of current prime contracts and any prime contract completed within two years of the rating period. The overall weighted score will be calculated using the original contract amount and the relative score for each respective contract.

CONTRACTOR PERFORMANCE EVALUATION—RATINGS GUIDELINES

Evaluate the contractor based on the following guidelines. The full range of values should be used. Intermediate values in the range may be used. Place the points in the appropriate box on the front of this form. For items that do not apply to a particular contractor, no points should be allowed. A final percentage should be based on the total number of points rated by the Project Supervisor divided by the total possible points for the items that apply.

PROJECT ORGANIZATION AND MANAGEMENT:

A. Superintendent in charge with authority.

5 Contractor has knowledgeable superintendent on project, start to finish, with authority to solve problems and schedule the work.

3 Contractor superintendent available most of the time, with limited authority.

0 Contractor failed to properly designate authority for project supervision or superintendent is routinely unavailable on the project site.

B. Coordination with suppliers, other contractors and utilities.

5 All coordinating done at proper time by contractor.

3 Some coordinating necessary by contracting authority with timely notification in all instances.

0 Lack of timely coordination.

C. Adequate and competent labor force.

5 Contractor has adequate number of people; labor force is knowledgeable of proper procedures and consistently does complying work with limited supervision.

3 Number of people is adequate, some training is needed, supervision of routine items is occasionally necessary.

0 Insufficient number of people or inadequate training or lack of proper supervision for many portions of the project.

D. Processing paperwork/certifications.

5 All paperwork completed and submitted in a timely manner throughout project. Pay item disputes and change orders are resolved with no delay to progress of the work.

3 Minor delays in finalizing out the project, some disputes have delayed resolution, but most of paperwork is consistent and timely.

0 Contractor was unable to provide all required paperwork.

E. Attitude and cooperation.

5 Quick response to concerns of the contracting authority, extra effort made by contractors personnel in public relations, problems are resolved amicably.

3 Periodic delays in responding to engineer/inspector, public concern. Most problems resolved friendly.

0 Pattern of slow response of concerns, or poor public relations effort.

WORK PERFORMANCE

F. Completion on schedule.

10 Project is currently on schedule or was completed on schedule.

7 Project is currently slightly behind schedule or was completed slightly behind schedule (after adjusting for excusable delays).

4 Project is currently moderately behind schedule or was completed moderately behind schedule (after adjusting for excusable delays).

0 Project is currently extremely behind schedule or was completed extremely behind schedule (after adjusting for excusable delays).

G. Compliance of work.

10 All work complies with the plan and specifications and no price adjustments are assessed.

5 Minor non-compliances, with some delays in resolution or some repeated violations.

0 Corrective work required on much of the project.

H. Quality of the finished product.

10 Excellent appearance of all portions of the work. No deducts for deficient work. Only one final check necessary on each portion of the work.

7 Adequate appearance of the work with some non-uniformity. No more than 5% of the items have deficient work in the finished product.

4 Poor appearance of work or more than 5% of the items have deficient work or repeated final checks necessary.

0 Much of the work is borderline acceptable or life of finished product has been shortened due to poor quality of work.

I. Completion on Budget

- 10** Project completed below or at contract award amount or revised contract amount
- 7** Project completed between 0%-3% above contract award amount or revised contract amount
- 5** Project completed between 3% - 8% above contract award amount or revised contract amount
- 3** Project completed between 8%-10% above contract award amount or revised contract amount
- 0** Project completed more than 10% above contract award amount or revised contract amount

SAFETY PRACTICES

J. Administration and general project safety.

- 5** Active safety officers. Timely inspection and reports without prompting. No non-complying equipment. Safety concerns are addressed and corrected promptly. All personnel trained and following good safety practices.
- 3** Safety is adequate. Minor problems with paperwork, equipment, training or practices.
- 0** Documented need for improvement that did not occur by completion of the contract, or any failure to immediately repair/correct unsafe equipment, or any repeat violation of a safety rule or practice.

K. Accidents/Fatalities/Safety violations

- 15** There are no accidents, either vehicular or workers, no fatalities, or no TOSHA/OSHA citations
- 10** Only 1 accident on the project
- 5** No more than 2 accidents on the project
- 0** More than 2 accidents, a fatality occurs or there is a TOSHA/OSHA citation

L. Signing and traffic control.

- 10** Signing is properly placed and maintained at all times. Signing material is above average. Contractor makes documented routine and night checks of signs. No non-compliances for signing or traffic control.
- 7** Some minor problems with sign placement or maintenance, or lack of consistent documented routine and night sign checks.
- 4** One or more major problems with signing or traffic control, or failure to document signing, or any repeat non-compliance on a safety item.
- 0** Contractor showed repeated total disregard of signing and traffic control.

ENVIRONMENT

M. Compliance with erosion control plan and permits

- 10** No erosion control issues. No environmental violation notices were issued.
- 5** Only minor erosion control issues. No environmental violation notices were issued.
- 0** Several severe erosion control issues. Multiple environmental violation notices were issued.

N. Responsiveness to erosion control issues

- 10** Contractor responded quickly (within 24 hours per SP107FP) to erosion and sediment control issues.
- 5** Contractor responded fairly quickly (within 72 hours) when notified of erosion control issues.
- 0** Contractor frequently failed to address erosion control issues in a timely manner.

CIRCULAR LETTER

SECTION: 102.01 PREQUALIFICATION STATEMENTS AND COMPETENCY OF BIDDERS
NUMBER: 102.01-02
SUBJECT: ATTESTATION FOR ILLEGAL IMMIGRANTS
DATE: OCTOBER 2, 2015

Effective with the October 27, 2006 letting, all contracts will include Special Provision 102I. Special Provision 102I, "Employing and Contracting with Illegal Immigrants" requires the Contractor to attest, certify, and assure that they are not knowingly utilizing the services of illegal immigrants in the performance of each contract. The Prime Contractor makes this initial attestation when they accept and sign the proposal contract.

The Prime Contractor must reaffirm this requirement semi-annually for each contract by completing the attached "attestation" form. To assure consistent and timely attestation, the Prime Contractor shall submit a completed attestation form for each awarded contract on January 1st and July 1st each calendar year in which work has not been completed.

The District Supervisor shall maintain a file for each project with the completed Attestation forms for proper documentation. If a Prime Contractor fails to submit the required attestation form, the partial progress payment shall be withheld until the attestation is submitted by the contractor.

For projects with Consultant Engineering and Inspection services (including Erosion Prevention and Sediment Control Inspection), the project file shall include the completed Attestation forms for the CEI consultant. The consultant shall submit a completed attestation form for each project CEI contract agreement on January 1st and July 1st each calendar year in which work has not been completed. If a Consultant fails to submit the required attestation form, Monthly Progress Billings shall be withheld until the completed attestation form is submitted by the consultant.

ATTACHMENT 1

**ATTESTATION REGARDING PERSONNEL USED IN
CONTRACT/AGREEMENT PERFORMANCE**

SUBJECT CONTRACT/AGREEMENT NUMBER:	
ENGINEER/CONTRACTOR LEGAL ENTITY NAME:	
FEDERAL EMPLOYER IDENTIFICATION NUMBER: (or Social Security Number)	

The Engineer/Contractor, identified above, does hereby attest, certify, warrant, and assure that the Engineer/Contractor shall not knowingly utilize the services of an illegal immigrant in the performance of this Contract/Agreement and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant in the performance of this Contract/Agreement.

SIGNATURE & DATE: _____

NOTICE: This attestation MUST be signed by an individual empowered to contractually bind the Engineer/ Contractor. If said individual is not the chief executive or president, this document shall attach evidence showing the individual's authority to contractually bind the Engineer/Contractor.

CIRCULAR LETTER

SECTION: 104.04 MAINTENANCE OF TRAFFIC
NUMBER: 104.04-01
SUBJECT: LANE/STRUCTURE WIDTH RESTRICTIONS
DATE: SEPTEMBER 15, 2015

When routing trucks and/or oversize traffic around or detouring through a work zone, the District Supervisor shall advise the District Operations Engineer, Regional Operations Office, and the Overweight and Over Dimensional Permit Office approximately two weeks prior to the hard barrier restriction of lane width and/or closing of a structure on the State or Interstate Highway System. Soft barrier restrictions would not fall under the notice. This will allow the Regional Operations Office and the Overweight and Overdimensional Office ample time to make advisements of the lane restrictions. Once the restriction or closure has terminated, the District Supervisor shall again advise the Regional Operations Office and the Overweight and Overdimensional Office.

The District **Supervisor** will be responsible for completing and submitting the 104.04-01 form and a location map to the Overweight and Overdimensional Permit Office at the email address shown on the form. A copy will also be submitted to the Regional Operations Office. The lane width restriction shall also be entered into SWIFT. Once the restriction has ended, the **District Supervisor** will be responsible for submitting the form again to notify of the restriction termination end date. (Please submit the excel document, Width Restriction Notice CL 104-04-01.xls, located in File Management.)

The Permits Section may be reached at the following address:

Overweight and Overdimensional Permit Office
Tennessee Department of Transportation
Suite 300 James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0331
Phone: (615) 741-3821
Tdot.permitoffice@tn.gov

**STRUCTURE and/or RESTRICTION of WIDTH
CLOSING or REOPENING NOTICE**

Regional/District Location Address:

Contract No. :

Project No. :

County:

Project No. :

Project Supervisor:

Phone No:

LANE CLOSURE:

Date:

Route:

Log Mile:

RESTRICTION:

Horizontal:

Vertical:

DESCRIPTION OF LOCATION AND MAP(ATTACHED):

RESTRICTION OR CLOSURE TERMINATED:

Date:

Send to:

Tdot.permitoffice@tn.gov

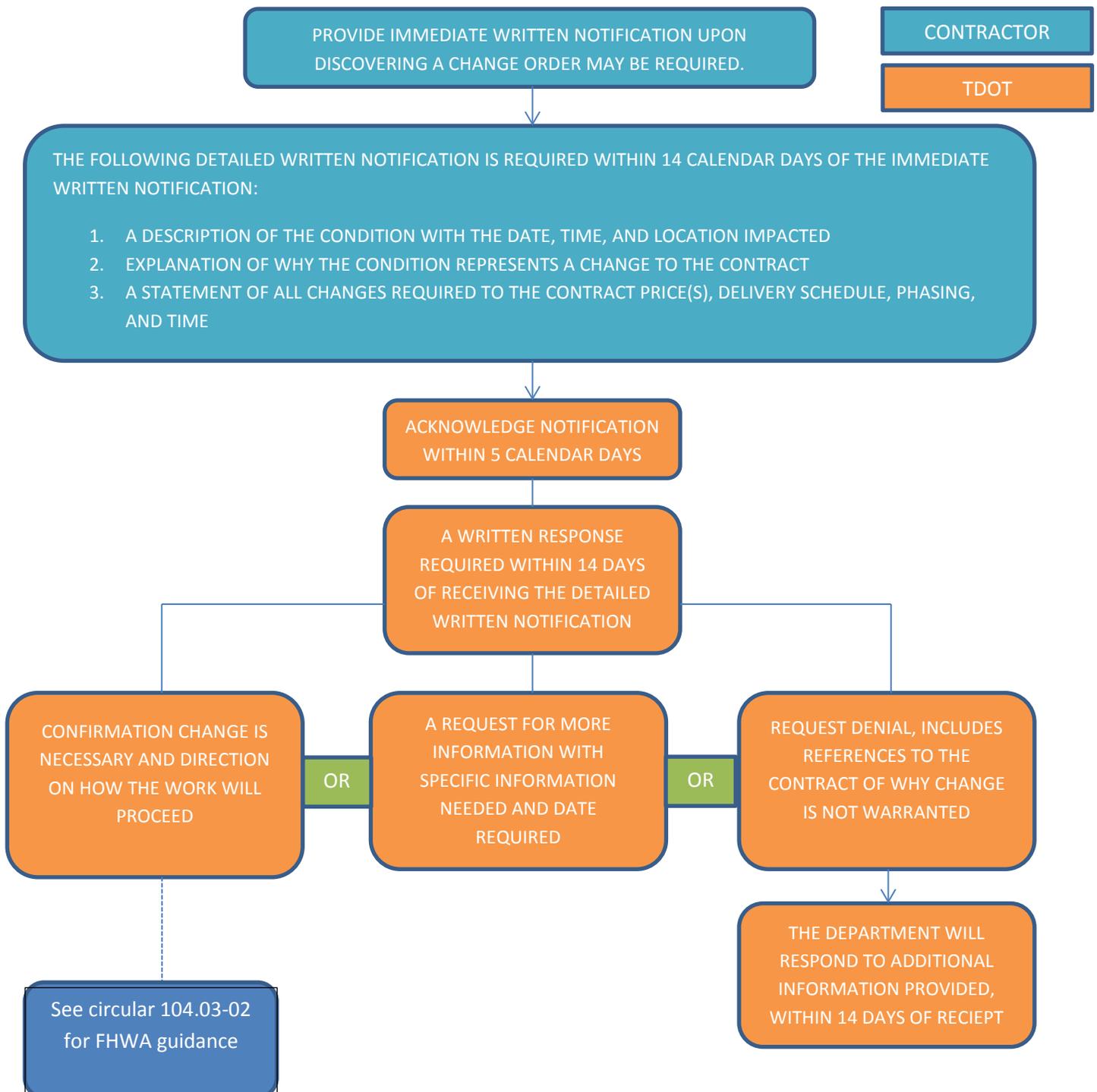
615-532-9289

CIRCULAR LETTER

SECTION: 104.03 CONTRACT CHANGE NOTIFICATION
NUMBER: 104.03-01
SUBJECT: CONTRACT CHANGE
DATE: JULY 1, 2015

CONTRACT CHANGE NOTIFICATION

The following flow chart is to provide guidance for the new contract change order notification process. Ensure all documentation has been reported in SiteManager as required.



Change Order Guidance for Notification Requirements

The following flow chart directs when and who to submit the change order documentation as well as notification requirements.

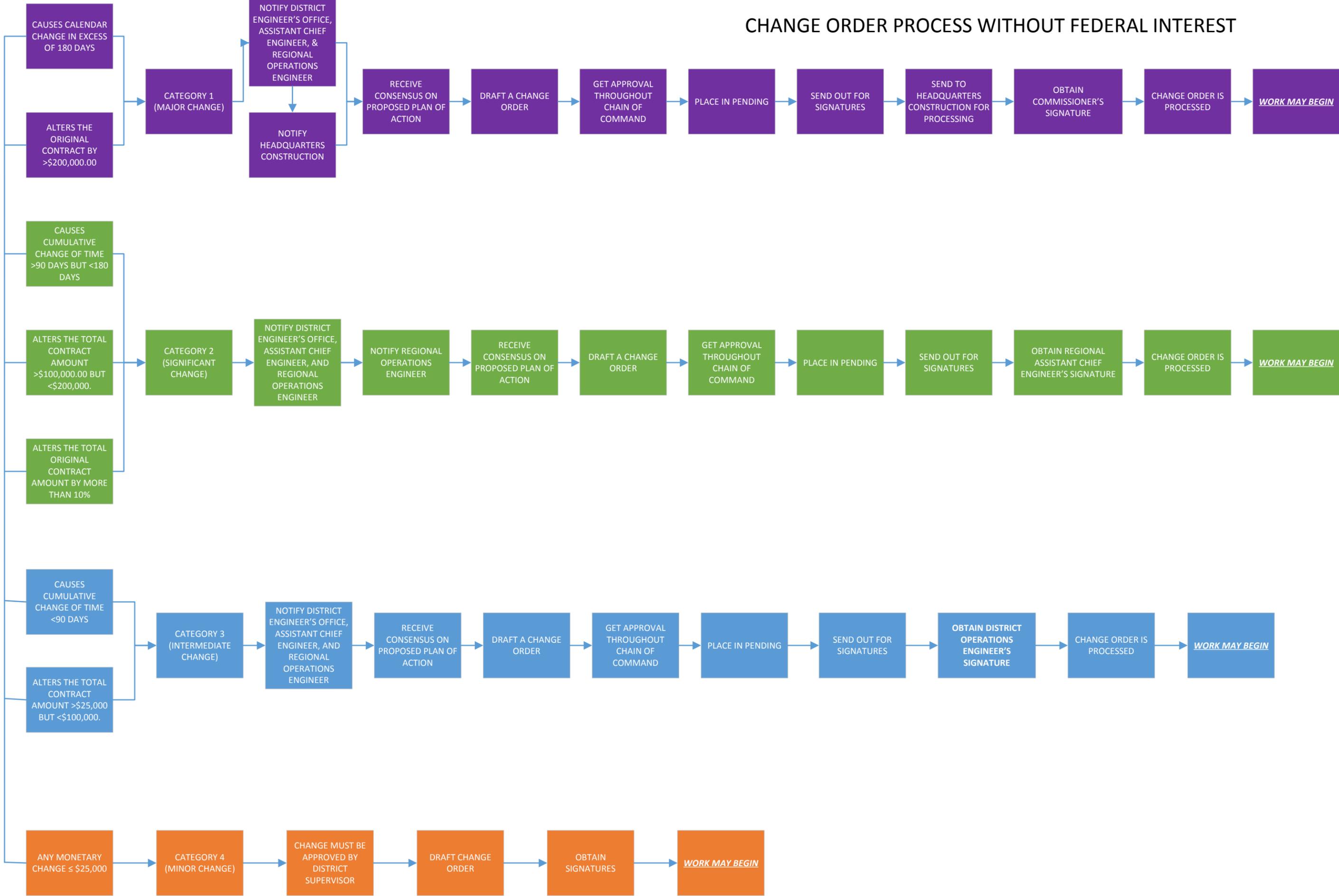
Policy 355-01 must be adhered to when compiling and processing a change request / change order. The **last** signature on all change orders will be a TDOT signature. Distribute copies as stated in the policy.

After consensus is achieved, verbal approval may be obtained from Final Signatory to allow work to begin before executing the official change order.

All potential change orders on any alternative contract project shall be sent to headquarters construction for approval as soon as the potential change has been identified.

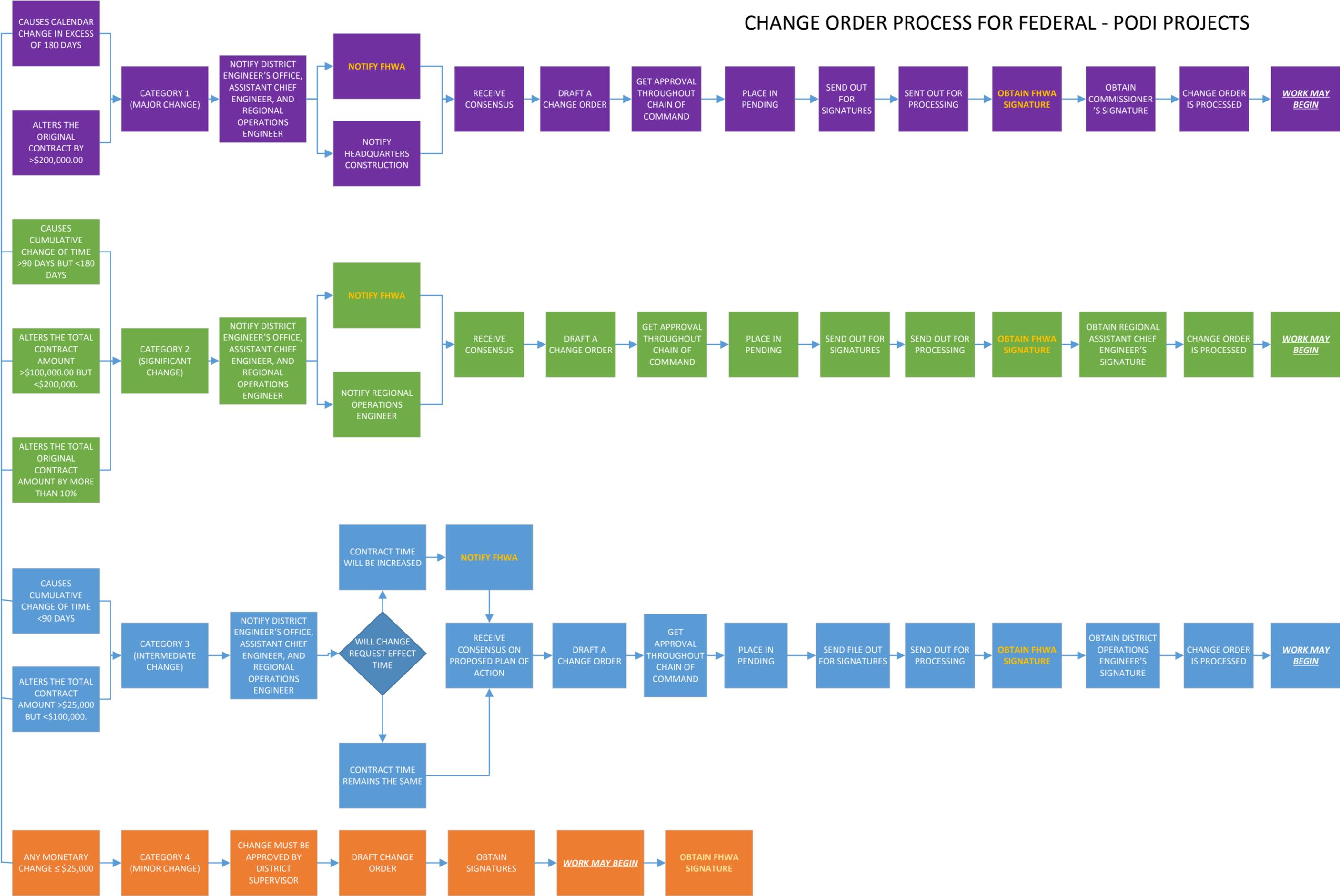
CHANGE ORDER PROCESS WITHOUT FEDERAL INTEREST

CHANGE ORDER REQUIRED



CHANGE ORDER PROCESS FOR FEDERAL - PODI PROJECTS

CHANGE ORDER REQUIRED



CIRCULAR LETTER

SECTION: 104.11 VALUE ENGINEERING CHANGE PROPOSAL
NUMBER: 104.11-01
SUBJECT: VALUE ENGINEERING CHANGE PROPOSAL (VECP)
DATE: OCTOBER 2, 2015

The purpose of this Circular Letter is to establish requirements for the proper submittal and approval of Contractor **Value Engineering Change Proposals (VECP)**.

Unless otherwise directed, a Contractor may submit a VECP on any project as long as the total estimated savings is greater than \$25,000. VECP's that propose a total savings of less than \$25,000 (twenty-five thousand dollars) will normally not be considered unless there are other non-monetary savings or benefits to be realized.

All VECP's must be reviewed by the appropriate TDOT Divisions to assure all original design, structural, environmental, geotechnical, safety, etc. intentions are not compromised. The attached form shall be completed with each VECP submittal to verify acceptability with the appropriate Divisions.

It will be the responsibility of the Headquarters Construction Division to assure all Category 1 Change Orders for VECP are acceptable by the applicable divisions (and FHWA when applicable), Category 2 Change Orders shall be submitted to Regional Operations Office, and District Supervisors to assure the appropriate Divisions (and FHWA when applicable) accept the VECP for Category 3 Change Orders.

Before any VECP "Concept" or VECP is to be considered, the Contractor must provide all the minimal information required in the specifications.

Contract bid unit prices shall be carefully reviewed. Any prices exceeding average prices by more than 10% should have sufficient data and calculations supporting the increased prices..

The Contractor and TDOT will split the actual net savings. The actual savings will be determined when all the work outlined in the VECP and Change Order is completed and final quantities are known. The quantities of other items not in the Change Order that change as a result of the VECP shall be considered in the actual savings calculation. The contractor shall be paid 50% of the actual savings only when all the VECP work is completed.

In accordance with standard specification 104.11, any VECP's that result in an increase greater than the original contract amount will be paid at a rate of 50% of the contract prices for all costs above the original contract amount.

Contract No.:	Project No.:
Date Submitted:	County:
Contractor:	Estimated Savings: \$
Project Description:	
VECP Description:	

Review needed	Division	Acceptable	Reviewed By:	Date:
	Design	YES NO		

Comments:

Review needed	Division	Acceptable	Reviewed By:	Date:
	Structures/ Hydraulics	YES NO		

Comments:

Review needed	Division	Acceptable	Reviewed By:	Date:
	Environmental Permits	YES NO		

Comments:

Review needed	Division	Acceptable	Reviewed By:	Date:
	Geotechnical Engineering	YES NO		

Comments:

Review needed	Division	Acceptable	Reviewed By:	Date:
	FHWA	YES NO		

Comments:

Review needed	Division	Acceptable	Reviewed By:	Date:
	Maintenance/ Traffic	YES NO		

Comments:

EXAMPLE

Contract No.: CNE 520	Project No.: 40172-4585-04
Date Submitted: July 4, 2006	County: Washington
Contractor: Uncle Sam Grading Co.	Estimated Savings: \$ 67,000
Project Description: The grading and paving of U.S. 76 from East of Atlantic Ave. to Pacific Coast Rd.	
VECP Description: Revise the drainage plans to replace the 6'x4' box culvert at STA 17+76 and STA 20+06 with a 72" RCP-Class III pipe, and the 45"X73" arch pipe with a 60" RCP pipe at STA 25+50	

Review needed	Division	Acceptable	Reviewed By:	Date:
YES	Design	<input checked="" type="radio"/> YES <input type="radio"/> NO	Alfred E. Newman	July 12, 2006

Comments: VECP is satisfactory as submitted

Review needed	Division	Acceptable	Reviewed By:	Date:
YES	Structures/ Hydraulics	<input checked="" type="radio"/> YES <input type="radio"/> NO	Howdy D. Doody	July 13, 2006

Comments: New pipe sizes are satisfactory as proposed with equivalent capacity

Review needed	Division	Acceptable	Reviewed By:	Date:
YES	Environmental Permits	<input checked="" type="radio"/> YES <input type="radio"/> NO	Sierra P. Nevada	July 13, 2006

Comments: Will revise permit with TDEC to show new pipe sizes

Review needed	Division	Acceptable	Reviewed By:	Date:
NO	Geotechnical Engineering	<input type="radio"/> YES <input type="radio"/> NO		

Comments:

Review needed	Division	Acceptable	Reviewed By:	Date:
NO	FHWA	<input type="radio"/> YES <input type="radio"/> NO		

Comments:

Review needed	Division	Acceptable	Reviewed By:	Date:
NO	Maintenance/ Traffic	<input type="radio"/> YES <input type="radio"/> NO		

Comments:

CIRCULAR LETTER

SECTION: 105.02 AS-BUILT PLANS
NUMBER: 105.02-01
SUBJECT: AS-BUILT PLANS
DATE: OCTOBER 2, 2015

All significant changes not included in a change order or plans revision shall be documented by the District Supervisor and submitted to the appropriate stakeholders as well as the project file. A significant change would include, but not necessarily be limited to, pavement section thickness and/or width, utility relocations, drainage size and/or routing, rights-of-way, ITS, and structure modifications. If there is a question of the significance of the change, a final determination shall be determined by the District Engineer.

The District Supervisor will submit with the final records a letter advising if there were no significant deviations.

CIRCULAR LETTER

SECTION: 105.06 NUMBER: 105.06-01

SUBJECT: REQUIRED NOTIFICATIONS

DATE: OCTOBER 2, 2015

PRECONSTRUCTION NOTICES AND STARTING NOTICES

Preconstruction Notices and Starting Notices shall be sent to the following:

Original - Director of Construction
Suite 700, James K. Polk Building
Nashville, TN 37243-0326

Copies - Regional Operations Engineer
District Operations Engineer/Manager
Regional Materials Engineer
Regional Environmental Coordinator
Regional Project Development Manager

Manager, Comprehensive Inspections Program
4005 Cromwell Road
P.O. Box 22368
Chattanooga, TN 37422

Manager, Natural Resources Office
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, Tennessee 37243-0334

Director, Materials and Tests Division
6601 Centennial Blvd.
Nashville, TN 37209

Director, Small Business Development Office
Suite 1800, James K. Polk Building
Nashville, TN 37243-0347

Manager, Program Operations Office
Suite 600, James K. Polk Building
Nashville, TN 37243-0341

Manager, Program Development & Scheduling Office
Suite 600, James K. Polk Building
Nashville, TN 37243-0341

Director, Labor Standards Division
Prevailing Wage Commission
220 French Landing Dr., Suite 1B
Nashville, TN 37243
e-mail: Mark.Finks@tn.gov, and Mary.Ledbetter@tn.gov

Director, Division Workers' Compensation
220 French Landing Dr., Suite 1B
Nashville, TN 37243
e-mail: Carol.D.Duncan@tn.gov

Contract Payments Section
Suite 800, James K. Polk Building
Nashville, TN 37243-0329

NOTIFICATION TO LOCAL OFFICIALS:

Local Officials are to be notified in writing of the proposed schedule of construction before work is started on any facilities that may fall within their jurisdiction. If desired by said officials, a meeting could be scheduled to fully apprise them of the impact of the proposed construction.

The Highway Patrol and/or local law enforcement shall be invited to the preconstruction meeting on all projects on the interstate system.

NOTIFICATION TO PRIME CONTRACTOR:

Notification of the Preconstruction Conference to the Prime Contractor should contain:

- 1) An emphasis that project level supervisors need to be in attendance. The contractor's EPSC representative should attend as well.
- 2) The Prime Contractor is to notify all subcontractors advising them of the date, time and place soliciting their attendance.

NOTIFICATION TO CONTRACTOR CONCERNING ARCHAEOLOGICAL CERTIFICATION OF WASTE AND BORROW SITES:

On projects where multiple parties are involved (i.e. Railroads, utility companies, other DOT personnel, etc.), all parties should be notified at least one week prior to the Preconstruction Conference.

The Contractor shall be notified at the preconstruction conference that he shall obtain an archaeological certification for any exclusive waste and/or borrow site located outside the project rights-of-way, in accordance with Section 107.06 of the Specifications and the Waste and Borrow Manual. The certification shall be obtained and a copy forwarded to the Project Supervisor prior to the movement of any material from or to the site.

The Contractor shall make his request for certification in writing (Faxed requests will not be accepted) to:

Ms. Jennifer Barnett
Federal Programs Archaeologist
TN Division of Archaeology
Cole Building #3
1216 Foster Ave
Nashville, TN 37243
615-741-1588, ext.105

and shall include the following:

- 1) Name and address of Contractor.
- 2) Description of construction project, including Project Number and Contract Number.

CIRCULAR LETTER

SECTION: 105.07 COOPERATION WITH UTILITIES (RAILROADS)

NUMBER: 105.07-01

SUBJECT: UTILITY RELOCATION PROCEDURES

DATE: February 29, 2016

1. Utility relocations and adjustments are to be made in accordance with FHWA's FHPM 6-6-3-1 dated September 6, 1985.
2. Advise all utilities in writing at the preconstruction conference that work performed without prior notification to allow Department verification will not be reimbursed. Due to the fact that State Project Work within a railroad's rights-of-way must receive approval of the railroad being impacted by such project, and the fact that a railroad's rights-of-way is private property and must be treated as such, that in cases where work to accommodate such project has been performed by a railroad on a State Highway Project and/or State Managed Utility Relocation Project, and such work is performed for some reason without prior notification to the Department, the work performed shall be inspected and verified by the Field Construction Office and/or the Department's Railroad Inspection Office prior to any reimbursement to a railroad for such work. This letter should also include instructions as to how, where and when the Project Supervisor or his representative may be reached.
3. Project Supervisors should emphasize the need for proper traffic control by the utility companies during construction. Closer monitoring by field personnel of the utility companies is needed.
4. Project Supervisors should notify the Regional Utilities Engineer if assistance is needed in setting up proper records.
5. Project Supervisors should advise the utility companies in writing as to the need for inspection of all salvaged materials. These inspections will now be performed by the Project Supervisors.
6. When personnel changes are made Project Supervisors must ensure that new utility inspectors are aware of their job responsibilities and have all pertinent materials.
7. All utility/railroad activities are to be recorded daily on Form DT-0667 regardless of whether said relocations are reimbursable or not.

- | 8. Plans should be reviewed and possible utility conflicts with_ proposed construction investigated. (Ex. Underground utilities and guardrail)

- | 9. The Regional Construction Office is to develop a system of_ periodic random review of each Project Supervisor's utility relocation procedure to ensure compliance.

CIRCULAR LETTER

SECTION: 105.07 COOPERATION WITH UTILITIES (RAILROADS)
NUMBER: 105.07-03
SUBJECT: RAILROAD/HIGHWAY GRADE CROSSING SAFETY PROJECTS
DATE: MAY 15, 2002

The following procedures for project control and inspection for Safety Projects programmed under Section 203 and 230 of the 1973 Highway Safety Act and TCA 65-11-113 and 114 (Prefix RRP, RRO).

1. The Utilities Engineer will provide the District Operations Engineer with the approved plans and specifications, approved estimate of costs and agreement executed between Tennessee Department of Transportation and Railroad Company and approved by Federal Highway Administration.
2. The Regional Operations Engineer will assign a District Operations Engineer to represent the Bureau of Operations and work directly with the railroad. The project supervisor will be provided copies of material outlined in paragraph one above e.
3. The District Operations Engineer will hold a pre-construction meeting with railroad company representatives when he is notified they are ready to begin installation of signals to discuss the scope of work and establish the date the railroad is to begin work. Daily inspection of the work by the railroad will not be performed, instead, a close out or final inspection will be held by the regional construction supervisor and the project supervisor with the railroad company to insure that the signals and related equipment have been installed in accordance with approved plans and specification and that required signing and markings have been installed by the Maintenance Division or local Government. Any extraordinary problems encountered by the railroad that will increase the cost of the project shall be discussed at this time, and an explanation written by the project supervisor for attachment to the railroad's invoice.
4. The District Operations Engineer will be required to endorse the railroad billing to the effect that work has been completed in accordance with approved plans and specifications.
5. These railroad billings will be handled for audit and payment as other railroad and utility bills. Final bills are not to be approved unless all work has been completed.
6. Upon project completion the attached form is to be filled out and transmitted to those individuals noted. On projects consisting of both signals and crossing work, completion notices are to be submitted only after all work is finished. On notices for projects consisting of signals only "N/A" is to be entered for the crossing pad.

Use of these procedures is limited to projects for the installation of flashing light signals and/or related highway markings and signing not a part of a highway construction project. Railroad adjustments and installation necessary to accommodate highway construction projects will be handled as they have been, and will be subject to inspection and record keeping as other utility adjustments.

CIRCULAR LETTER

SECTION: 105.07 COOPERATION WITH UTILITIES
NUMBER: 105.07-04
SUBJECT: UTILITY DIARIES AND INSPECTION PROCEDURES
DATE: ~~DECEMBER 15, 2007~~ February 29, 2016

On all projects requiring utility relocations, Form DT-0667 "Project Utility Diary" is to be used to document said relocations whether the work is reimbursable or not. When a utility is relocating at its own expense or under a lump sum reimbursement contract, the "Description of Work Performed" section will be the only notation required. The notation shall indicate if the relocation is a non-reimbursable or lump sum reimbursable contract. ~~Form DT-0667 fulfills the requirements for documentation detailed in Section 109.05 of the Department of Transportation Construction Manual and Section 18.7 of the Standard Utility Procedures Manual.~~

1. Form DT-0667 is to be completed in the field by the utility inspector.
2. The original or white sheet is to be transmitted to the TDOT Project Supervisor's office ~~and bound.~~
3. The first copy or yellow sheet is to be transmitted to the utility company on reimbursable relocations.
4. The second copy or pink sheet is to be retained in the utility diary.

If the utility relocation is included in the state contract, the utility will be responsible for inspecting all phases of the relocation, per TCA 54-5-804, 2003 Public Chapter 86. The TDOT inspector shall document the utility work activities performed on the Daily Work Report in SiteManager. ~~the daily project diaries.~~ The inspector provided by the utility company will:

1. Complete Form DT-0667 as described above and submit it each estimate period, as directed by the TDOT Project Supervisor. Along with the item descriptions, the inspector will include the quantities and stations of installed items.
2. Complete "Installed Item Certification" portion of Form DT-1716 and submit it each estimate period, as directed by the TDOT Project Supervisor. This form will be signed to certify that the items installed during that estimate period met all applicable specifications.
3. Complete and attach Form DT-1716A to DT-1716 and submit it each estimate period, as directed by the TDOT Project Supervisor. This form will be used to summarize, by project number, the utility items installed during that estimate period. The TDOT inspector shall sign Form DT-1716A after ensuring it is consistent with the utility diaries and daily project diaries. The completed Form DT-1716A shall be referenced in the progress pay quantity documentation.
4. Complete "Final Acceptance of Work" portion of Form DT-1716 and submit it to the TDOT Project Supervisor's office when the utility relocation work is complete.

UTILITY ITEM CERTIFICATION/FINAL ACCEPTANCE

Contract Number: _____ **Utility Company:** _____

Project Number(s): _____ **Utility Inspector:** _____
Print

County(ies): _____

Instructions: Please check appropriate box (or boxes) and fill out required information. For **Installed Item Certification**, attach **Summary of Installed Utility Items** sheet(s) for each project number and submit each estimate period as directed by the TDOT Project Supervisor. [Include completed copies of DT-0667, Project Utility Diary for the associated estimate period, \(Diaries must include quantities and Station Numbers\)](#)

Installed Item Certification

On behalf of the above utility company, I certify that the materials used for the item(s) listed on the following page(s) meet and were installed in accordance with all applicable specifications. Any pertinent shop drawings or engineering changes have been approved.

Estimate Period: _____ **to** _____

Utility Inspector Signature

Date

Final Acceptance of Work

I certify that the utility relocation work is complete and is accepted by the above utility company.

Utility Inspector Signature

Date

CIRCULAR LETTER

SECTION: 105.07 COOPERATION WITH UTILITIES (RAILROADS)
NUMBER: 105.07-05
SUBJECT: CSX RAILROAD
DATE: DECEMBER 1, 2006 (01/01/2010)

In order to finalize handling and updating records concerning overpass projects, CSX Transportation, Inc. would like to be advised of the final inspection date in order to participate if desired.

They also wish to be advised in writing, as to the date the structure was completed and opened to traffic.

In order for the Structures Division to certify "As Built" clearances, upon completion of the structure the Project Supervisor shall request the Regional Bridge Inspection Supervisor to conduct his initial inspection of the bridge.

Correspondence relative to the above should be directed as follows with copies to appropriate Department personnel:

Mr. Shelby Stevenson
Principal Engineer – Public Projects
CSX Transportation, Inc.
500 Water Street, J301
Jacksonville, FL 32202

CIRCULAR LETTER

SECTION: 105.07 COOPERATION WITH UTILITIES (RAILROADS)
NUMBER: 105.07-06
SUBJECT: RAILROAD FLAGGING SERVICES
DATE: ~~DECEMBER~~JANUARY 11, 2006~~2010~~

The railroad flagging services for certain projects will be paid by the Department effective for the December 3, 1993 letting. The payment, when required, for flagging services will be specified by Special Provision 105C. The Department will pay for all verified flagging required up to the number of specified flagging days stipulated in Special Provision 105C. The Special Provision states that the Contractor and the Department shall sign the Railroad's time sheets in order to verify the presence of the flagman for a particular day. The Engineer's verification of the time sheets should check for the need of a flagman on a particular day, confirm that the contractor has provided proper notification for the presence of a flagman and confirming the actual flagging hours as noted in the Special Provision. **At all times and in all cases, the Railroad reserves the right and authority to determine when, where and if flagging services are required on a State Highway Project.** Flagging services for work that is not required by the contract (temporary crossings, etc.) will not be paid by the Department. The Utilities section will receive and forward all billing information to the Project Engineer for verification. The payment to the Railroad for flagging will be the responsibility of the utilities Section. However, if the days of flagging services required extend beyond the number of days allotted, the costs of such additional flagging shall be deducted from the Contractor as specified in the Special Provision. The Project Engineer shall make this deduction when he receives the billing information from the Utilities Section. This deduction should be clearly defined in the billing information.

In addition, on projects where the flagging will be paid by the Department, a final inspection in accordance with Subsection 105.13 of the Standard Specifications shall be made for the work that is within the limits of the Railroad. This inspection shall include a representative of the Railroad and once the work is accepted the Railroad shall sign the attached completion notice on the date of final inspection. It is imperative that this inspection is documented because the Railroad has 365 days after this date to submit all billing that is reimbursable by the Department.

Date: _____

Utility Manager
Utilities Section
600 James K. Polk Building
Nashville, TN 37219

Re: Completion Notice of Work within the limits of the Railroad

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

Dear Sir:

This notice is to confirm the acceptance of all work within the limits of the Railroad in accordance with Subsection 105.13 of the Standard Specifications.

Date of Railroad Inspection _____
Inspected by Railroad Representative _____
Inspected by D.O.T. Representative _____

Sincerely,

Project Supervisor

cc: Regional Construction Supervisor
Railroad
Contractor
Director of Construction
Finance Office

CIRCULAR LETTER

SECTION: 105.07 COOPERATION WITH UTILITIES
NUMBER: 105.07-07
SUBJECT: FINAL INVOICES FROM UTILITIES AND RAILROADS
DATE: JUNE 29, 1998

In order to enforce the timely receipt of final invoices from Utilities and Railroads for their work performed on highway construction projects, Project Supervisors are hereby advised to notify the appropriate Regional Utility Engineer of the date the Utility or Railroad work was completed on the project immediately following completion of said work. Once the Regional Utility Engineer is notified of the completion date, the Utility or Railroad will be notified that a final invoice for the work performed is needed. This will be identified as the official beginning of the one year time limit for reimbursement which will be monitored and enforced.

CIRCULAR LETTER

SECTION: 105.07 COOPERATION WITH UTILITIES
NUMBER: 105.07-08
SUBJECT: CONSTRUCTION UTILITY COMPLIANCE/NON-COMPLIANCE WITH UTILITY CONTRACT
DATE: JANUARY 15, 2013

TCA 54-5-804 Allows for TDOT and Utility Companies to enter into a contract to move utility facilities ~~which~~ are in conflict with TDOT Construction Projects.

During the development of Right-of-Way plans, the Utility Division begins the process of utility coordination with all Utilities that will be affected by the proposed construction project. There are several steps that the Utility must take regarding reimbursement and some Utilities may decide to relocate prior to construction, at no cost to the State. For those who do request reimbursement, TDOT will enter into one of the following types of contracts:

- Percentage Contract (Move Prior or Move in State Contract) %Public/% Private
- Chapter 86 Move Prior
- Chapter 86 Move in State Contract
- Easement Replacement
- Pipelines (special contracts for transmission pipelines)

For all Move Prior Contracts, the Utility is responsible for:

- Notifying TDOT Construction (Project Supervisor or Regional Construction) of the intended date to begin utility relocation construction no less than 3 days prior to beginning work
 - Surveying (including, but not limited to staking the ROW)
 - Clearing and grubbing (must have TDOT authorization)
 - Coordinating the relocation
 - Constructing the relocation
 - Providing all environmental permits (Notice of Coverage, etc.)
 - Providing environmental inspection as required by permits
 - Providing EPSC
 - Disposing of waste
 - Traffic Control
 - Providing utility easements
 - Meeting Buy America requirements
 - Moving all utility services prior to the letting date of the construction contract (proposed letting date provided to utility in the Go-to-Work Authorization)
- NOTE: This only applies to CH86 projects move prior to letting date. All contracts are subject to the approved Schedule of Calendar Days.

Once the Utility has completed the CH86 Move Prior work, in order to receive reimbursement, the Utility must submit:

1. Invoice to the Regional Utility Office
2. Contract Obligation Certification to both the Project Supervisor and the Regional Utility Office

The Project Supervisor has three options when signing the Contract Obligation Certification:

1. Accepting Certification as submitted.
2. Accepting Certification pending Final Verification by project staking: the Utility will not be reimbursed until Construction work begins and project staking has verified that the Utility has been relocated in accordance with the approved Utility plans.
3. Denying Certification as submitted with documented reasons.

The Regional Utility office will not pay for the relocation until receipt of approval from the Project Supervisor (approval of the invoice and a signed Contract Obligation Certification).

Schedule of Calendar Days Violations – ALL Utility Relocation Contracts

When the Utility fails to complete work within the approved schedule of calendar days, creating a conflict or delay to the construction project, TCA 54-5-854 (h)(1)(A) allows for TDOT to collect a civil penalty from the Utility Owner:

If the owner fails to complete the required installation, relocation or adjustment of its utility facilities within the approved schedule of calendar days as approved by the department, the commissioner of transportation shall have the authority to assess and collect from the owner a civil penalty in the amount of five hundred dollars (\$500) for each calendar day after the scheduled completion date that the owner fails to complete the required installation, relocation or adjustment. Owners having less than three thousand (3,000) customers shall be subject to the assessment of a civil penalty not to exceed two hundred fifty dollars (\$250) per calendar day when the owner fails to complete the required installation, relocation or adjustment of its utility facilities within the approved schedule of calendar days.

To enforce the civil penalty, due process must be provided. To fulfill this requirement, notification must be provided to the utility, specifically the utility management such as the General Manager, that they are considered to be in violation and provide a deadline date for the utility to take corrective action. This should be done by certified mail, FEDEX/UPS, or verified receipt delivery.

The Project Supervisor is the project site authority who determines the utility is causing delays to the project and who acts as the on-site authority to coordinate the work necessary to rectify the deficiencies. It is imperative that the Project Supervisor document utility delays and all coordination with the utilities in preparation for assessing any civil penalties against the utilities for causing delay to the project.

The following steps should be considered minimum documentation in this process (more information may be found in Utility Instructional Bulletin 01-10-2012 Construction Utility Non-Compliance):

1. The Project Supervisor should not sign the “Certification Contract Obligation” if the utility has not met its obligation to Move Prior. Doing so will limit the ability to enforce civil penalties. (NOTE: When there are multiple utilities on one pole, TDOT does not recognize joint use ownership transfer so, if the state permit is issued to a power company, for instance, it is their pole until removed. If the pole is not out of the ground by the Move Prior Day, then none of the joint users are eligible for reimbursement under Chapter 86). If the Project Supervisor is uncertain whether the utility has met its obligation, he/she should contact the Regional Utility Office for assistance.
2. Once the Project Supervisor determines the utility relocation is delaying the project, a notification should be given to the utility. This notification should be documented and placed in the project files (email, letter, meeting minutes, etc.)
3. The Project Supervisor should then notify the Regional Utility Office of these issues. The Regional Utility Office can assist in providing contact information for the utilities’ management above the utility field personnel, coordination documentation, Put to Work date, etc.
4. The Project Supervisor will then arrange a project meeting via verified receipt mail, to discuss utility conflicts delaying the project. Representatives from all utility companies as well as the Prime Contractor should be invited to attend. Inviting ALL participants will provide the opportunity to address coordination issues collectively. This meeting will seek to clarify the issues and provide a deadline date for completion of the utility relocation to prevent continued delay to the project.
5. After the meeting, the Project Supervisor will issue meeting minutes via verified receipt mail, summarizing actions to be taken by the utilities, deadline for completing relocation and consequences for not meeting the deadline (site TCA 54-5-854(h)). This letter should be sent to both the on-site utility representative and the utility management via return receipt mail. (see attached example)
6. If the deadline is not met, the Project Supervisor will transmit a request to the Regional Utility Office to proceed with actions to fine the utility per the state statute.
7. The Regional Utility Office will then submit the request to the State Utility Coordinator if the request has been properly documented.
8. The State Utility Coordinator will review the request, and if properly documented, will submit a request to TDOT Legal recommending that action be taken to fine the utility per state statute.

The Project Supervisor should contact the Regional Utility Office if any conflicts or questions arise during installation, relocation or adjustment of utility facilities. The Regional Utility Office can assist with coordination efforts and can provide technical guidance related to Utility contracts, requirements, etc. If the Regional Utility Office is unable to provide the needed assistance, then the Project Supervisor (with approval from the Regional Construction Office) may contact the Headquarters Utility Office for assistance.

CIRCULAR LETTER

SECTION: 105.11 INSPECTION OF WORK
NUMBER: 105.11-01
SUBJECT: TDOT INSPECTION RESPONSIBILITIES ON LOCAL PROGRAMS PROJECTS
DATE: OCTOBER 2, 2015

In accordance with the TDOT and FHWA Stewardship Agreement, for Local Agency Projects:

“TDOT is responsible for assuring that all Federal-aid projects administered by local agencies comply with all applicable Federal and State requirements. TDOT is not relieved of this responsibility even though the project may be delegated to the local agency. In accordance with 23 CFR 1.11, TDOT is responsible for ensuring that the local agency is qualified and equipped to administer the project and has processes in place to ensure compliance with federal requirements.”

In order to assure adequate construction and materials acceptance and testing, TDOT will have an active oversight responsibility in the pre-construction and construction of these local projects.

The **Regional Operations Engineer** will assign a **TDOT representative** to participate in the project pre-construction meeting, to conduct routine project reviews, to attend quarterly progress meetings, and to participate in the final inspection as required in the Oversight and Frequency table below. When TDOT is conducting the routine project review and final inspection, the **Local Government Representative** responsible for the project shall be present. It is also preferable that the CEI be present during the reviews. The TDOT representative shall assure the quality of construction, completion of contract requirements, and project record keeping are satisfactory.

Required oversight and frequency (note these are minimum frequencies and more inspections may be needed if problems persist):

Project Amount	Pre-construction meeting	Project Reviews/Inspections during construction	Final Inspection
< \$250,000	Required	Required- 1 inspection minimum	Required
\$250,000 - \$2,000,000	Required	<ul style="list-style-type: none"> • Duration < 4 months- Recommend 1 per month, but must do at least 1 •Duration 4-8 months, recommend 1 per month, but must do at least 3 inspections at least 1 month apart • Duration > 8 months, Required every 4-6 weeks 	Required
>\$2,000,000	Required	Required 1 per month minimum.	Required

To document TDOT's oversight activities, the attached inspection form shall be completed during each project review. All findings, satisfactory or not, shall be documented in the inspection report. The inspector must document what was observed and its acceptability in the "comments" section (e.g. all certified payrolls were on file and wage rates comply with contract). It is required to attach supporting documentation when a negative finding is made. A closeout meeting with the Local Government Representative and CEI (if applicable) will be required to discuss the findings.

A representative from the **TDOT Regional Materials and Tests** section shall conduct all verification and Independent Assurance testing on the local project in accordance with TDOT SOP 1-2.

The assigned **TDOT representative and Materials and Tests representative** shall work together and shall attend and participate in the mandatory preconstruction meeting to explain TDOT expectations. These TDOT representatives are the "eyes and ears" for TDOT and must assure that the project is completed in accordance with the federal regulations just as though it is a TDOT project with federal funds.

The local entity and their CEI will have the day to day responsibility and authority for construction inspection and material acceptance.

The **TDOT Local Programs Office**, is responsible for project oversight on Enhancement Projects (except the construction of bicycle and pedestrian facilities) and buildings.

Additional inspection requirements and guidelines:

- As noted the Local Government Representative shall be present during the project review
- Once the review is completed, there shall be a close out meeting with the Local Government Representative and the CEI to discuss and explain the findings needing to be resolved and the expectations of TDOT. A copy of the completed inspection report should be distributed at that time, if not complete, a copy shall be provided as soon as available, preferably within 2 business days.
 - o All findings should be resolved on the project site if possible
 - o Findings that cannot be resolved on the project site should be raised to the District Operations Engineer / Regional Operations Engineer. The Local Programs Office and Headquarters Construction should be used to resolve problems that cannot be resolved at the Regional level
- The Local Government Representative will be responsible for responding, in writing, to the findings made in the inspection report. Corrective actions taken need to be documented.



**Tennessee Department of Transportation
Construction Monitoring Report
of Local Programs Projects**

Inspection Made By: In Company With:	Inspection Date: Inspection Number:
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PROJECT LOCATION

Local Entity: County: Route/Street/Other:
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PROJECT DETAILS

Project Identification Number: Project Description: Contractor: Award Date: Date Work Began:	Completion Date: <small>(Original contract)</small> Completion Date: <small>(current, including any post-award changes)</small>
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PROJECT PROGRESS

Contract Amount: \$ <small>(in original contract)</small>	Current Contract Amount: \$ <small>(including change orders to date)</small>
Percent Time:	Percent Money:

Work Completed To Date:

Work Performed During the Inspection (Include comments on quality/acceptability of work, testing, etc.)

Summary of Findings: (Recommendations and Resolutions)

| Other Comments -(also include that previous inspection findings have/have not been resolved satisfactorily):

Inspection Checklist

Date _____

Project Number _____

*Please provide a comment for ALL answers and resolution to any questions answered "NO"

General Documentation	Yes	No	NA	Comments
Are all Federally required posters on a board in a place accessible to employees? (Circular Letter 1273-01)				
How many inspectors are on the project? Does construction staffing appear to be sufficient enough to insure that adequate inspection and testing is being performed?				
Is the project on schedule? If no, discuss why-				
Is a daily diary being kept and updated? The diary should be of sufficient detail to get a general picture of activities taking place each day.				
Davis-Bacon/ TN Prevailing Wages				
Are employee interviews performed? (Check interview forms)				
Are certified payrolls being submitted, stamped, dated, and kept on file?				
Are the interviewed employees properly classified and are they paid the appropriate Davis-Bacon minimum wage rate for their classification, if required?				
Disadvantage Business Enterprise (DBE)				
Does the project have a DBE goal? If yes state goal and DBE's used to meet the goal.				

Are DBE Subcontractors on the job? List them.				
Has/have the CUF Checklist(s) been completed?				
Work Zone Traffic Control				
Is WZTC set up in accordance with plans and MUTCD?				
Are all signs properly placed and visible to motorists?				
Are all workers wearing safety vests and hard hats, if applicable? (Vests should meet ANSI Class 2 or 3 standards)				
Acceptance of Materials and Independent Assurance				
Is the project in compliance with the Buy America Requirements (SP106A, 23 CFR 635.410) Check steel items for proper certifications.				
Is a certified CEI/Local Gov't inspector performing the acceptance tests?				
Is acceptance testing being performed in accordance with TDOT SOP 1-1 (Test, Frequency, Location)				
Has the local government requested Independent Assurance tests to be completed as required? What requires IA on this project?				
Erosion Prevention/Sediment Control and Permits				
Has all erosion control been set up properly on the project? If no, what is incorrect? Are EPSC Inspections being performed?				

<p>Has the project received a notice of violation from TDEC? If so, what was the violation for? (Attach plan for mitigation of findings.)</p>				
<p>Progress Payments and Change Orders</p>				
<p>Have there been any Change Orders on this project? If yes, how many and for what reasons? Is there supporting documentation for approval and costs (CL 104.03-02)?</p>				
<p>Review most recent progress estimate. Select at least 3 pay items (2 large cost items and 1 random) and confirm there is proper documentation to support the payment. (i.e calculations, material certifications, test reports, etc.) Complete the form and use additional sheets if more than 3 items are reviewed.</p>				

Fill Out Documentation Form Below

Pay Item	Quantity Reviewed	Estimate #	SOP 1-1 Required Documentation	Was Required SOP 1-1 Documentation on File?	Do All Required Acceptance Tests Meet Minimum Requirements?
1)					
COMMENTS/RESOLUTIONS					
2)					
COMMENTS/RESOLUTIONS					
3)					
COMMENTS/RESOLUTIONS					

Distribution:
 TDOT Local Programs Administration Office (email to Local.Programs@tn.gov)
 TDOT Regional Director
 TDOT Regional Construction Supervisor
 Local Government Project Administrator

CIRCULAR LETTER

SECTION: 105.15
NUMBER: 105.15-01
SUBJECT: COMPLETION NOTICES
DATE: OCTOBER 2, 2015

Completion Notices shall be sent to the following:

Original

Director of Construction Division
Suite 700, James K. Polk Bldg.
Nashville, TN 37243-0326

Copies

Contractor
Surety
District Operations Engineer/Manager
Regional Operations Engineer
Regional Utilities Engineer
Regional Bridge Engineer

Director of Design Division
Suite 1300, James K. Polk Bldg.
Nashville, TN 37243-0340

Director, Materials and Tests Division
6601 Centennial Blvd.
Nashville, TN 37209

Director, Small Business Development Office
Suite 1800, James K. Polk Bldg.
Nashville, TN 37243-0347

Director, Maintenance Division
Suite 400, James K. Polk Bldg.
Nashville, TN 37243-0333
(Maintenance contracts only)

Director, Structures Division
Suite 1100, James K. Polk Bldg.
Nashville, TN 37243-0339

Manager, Program Operations Office
Suite 600, James K. Polk Bldg.
Nashville, TN 37243-0341

Manager, Mapping & Statistics
Suite 1100, James K. Polk Bldg.
Nashville, TN 37243-0344

Manager, Trans. Planning Office
Suite 900, James K. Polk Bldg.
Nashville, TN 37243-0334

Manager, Prog. Dev. & Sched. Office
Suite 600, James K. Polk Bldg.
Nashville, TN 37243-0341

Director, Labor Standards Division
220 French landing Drive, Suite 1B
Nashville, TN 37243
e-mail: Mark.Finks@tn.gov and
and Mary.Ledbetter@tn.gov

Roadway Specialist Supervisor 2
Utilities Section
Suite 600, James K. Polk Bldg.
Nashville, TN 37243-0337

Accounting Tech. 2
Contract Payment Section
Suite 800, James K. Polk Bldg.
Nashville, TN 37243-0329

Manager 2, TDOT Natural Resources Office
(via email)

Manager 1, TDOT Environmental Permits Section
Suite 900, James K. Polk Bldg
Nashville, TN 37243
Environmental.NPDES.TDOT@tn.gov

Manager 1, TDOT Ecology Section
Suite 900, James K. Polk Bldg
Nashville, TN 37243
E-Mail to : B.M.Richards@tn.gov

Manager, Comprehensive Inspection Office
James K. Polk Building, Suite 900
Nashville, Tennessee 37243
E-Mail to: Gregory.Russell@tn.gov

CIRCULAR LETTER

SECTION: 107.01 LAWS TO BE OBSERVED
NUMBER: 107.01-01
SUBJECT: CONTRACTOR EMPLOYEE SAFETY AND HEALTH PROGRAM
DATE: MARCH 15, 2010

Construction Contracts:

At the preconstruction meeting, the Contractor shall submit to the Project Supervisor written certification of an Employee Safety and Health Program (ESHP). The ESHP shall be developed by a safety professional with a minimum of 30 hours OSHA Construction Training. The Project Supervisor shall verify that the certification letter includes (at a minimum) the following:

1. Certification that the ESHP meets or exceeds all Federal, State, and local Safety and Health Standards.
2. Listing of the qualifications of the **safety professional** responsible for developing and maintaining the ESHP.
3. Name and 24/7 contact information of the **management level personnel** responsible for managing and implementing the ESHP for the contractor.
4. Name and 24/7 contact information for the **supervisory level personnel** responsible for implementing and monitoring the ESHP at the construction site.
5. Name and 24/7 contact information of the **Traffic Control Coordinator**.
6. Certification that all **sub-contractors** have a safety program.

The Certification letter must be submitted to the Project Supervisor before any work commences on the project.

Maintenance Contracts:

Includes on-call guardrail, sweeping, on-call striping/retracing, litter removal, tree services, mowing, and work performed at Welcome Centers and Rest Stops.

Prior to work beginning, the Maintenance Contractor must submit a Certification of an ESHP to the Project or Maintenance Supervisor. The Certification shall include (at a minimum):

1. Certification that the ESHP was developed by a safety professional with 30 hours of OSHA Construction Training.
2. Certification that the ESHP covers the unique and specific hazards for the type of work listed above and that a Hazard Communication Program is part of the ESHP.
3. Name and 24/7 contact information of the Safety professional responsible for developing and maintaining the ESHP.
4. Name and 24/7 contact information of the Traffic Control and Safety Supervisor who has the authority to stop work on the project.

For all Contracts:

If an incident occurs on a construction/maintenance project that requires hospitalizations, or TOSHA Citation to be submitted, the Contractor shall send notification of the incident to the Project Supervisor who will forward to the Regional Safety Coordinator.

CIRCULAR LETTER

SECTION: 107.08 PROTECTION OF STREAMS, LAKES AND RESERVOIRS
NUMBER: 107.08-01
SUBJECT: PROJECTS CONTAINING PERMITS
DATE: OCTOBER 2, 2015

Projects Containing Storm Water Permits

For all projects with Stormwater Permits where land disturbing activities are complete, the District Operations Supervisor or designee shall check that:

1. All slopes are stabilized as required by the contract;
2. All disturbed areas have met the requirements for final stabilization; and
3. The contractor has removed all temporary erosion prevention and sediment control (EPSC) practices such as silt fences or other measures that are not a part of permanent stormwater management or that the regional operations unit has not requested to be left in place.

When these criteria are satisfied, the District Operations Supervisor or designee shall contact the TDOT Regional Environmental Coordinator, the Contractor's EPSC inspector, the TDOT inspector (either in-house or consultant hired) to determine if final stabilization has been reached. If the Regional Environmental Coordinator determines that final stabilization has been reached, the TDOT Quality Assurance Auditor for the specific project will be contacted to set the final QA audit for concurrence of final stabilization. If concurrence is reached by all parties, the QA auditor will document this concurrence within the final QA audit report, including a photo record and the signed Finding of Final Stabilization.

Final Stabilization means that the construction project is stabilized with a permanent groundcover. This means that the use of EPSC measures to alleviate concerns of erosion control and sediment transport to surface water conveyances or to waters of the state is no longer necessary. The Tennessee Construction General Permit includes the following definition for final stabilization:

'Final Stabilization' means that all soil disturbing activities have been completed and one of the three following criteria is met:

- a) A uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a uniform density of at least 70 percent of the (preferably) native vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, and all slopes and channels have been permanently stabilized against erosion, or
- b) Equivalent permanent stabilization measures (such as the use of riprap; permanent geotextiles, hardened surface materials including concrete, asphalt, gabion baskets, or Reno mattresses) have been employed, or
- c) For construction project on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural or silvicultural use."

Further, final stabilization means that permanent controls, hard surfaces and/or vegetation, employed at the site are deemed adequate to prevent erosion and sediment transport. For slopes with rock cover, final stabilization means cover with 100% non-erodible rock material.

Once the final QA audit report (including the Finding of Final Stabilization) is posted, the TDOT District Operations Supervisor shall notify the TDOT Regional Director of Operations within one week of this

posting. If the TDOT Regional Engineer agrees with this concurrence, s/he, or their designate, shall sign and submit the Notice of Termination (NOT). The termination request shall be made on the attached form. The original shall be submitted within 30 calendar days of the posting of the Finding of Final Stabilization, to the Tennessee Department of Environment and Conservation (TDEC) Headquarters office, with copies sent to the following parties:

- TDOT District Operations Supervisor,
- TDOT Stormwater Coordinator,
- TDOT Director of Construction,
- TDOT Manager 2 of the Natural Resources Office (via email),
- TDOT Manager 1, Ecology Section
- TDOT Manager 1 of the Permits Section (via email Environmental.NPDES.TDOT@tn.gov),
- TDOT Regional Environmental Coordinator

The description of the project for the NOT shall include the language as it appears on the Notice of Coverage (NOC) (including the NPDES tracking number and contract number) in the contract proposal, and the information requested on the attached form.

If concurrence is not achieved, one of the following options shall be chosen:

- The TDOT District Operations Supervisor and the Contractor shall complete all repairs necessary to achieve final stabilization and again start the process stated above
or
- The TDOT District Operations Supervisor shall start the TDOT elevation process to reach concurrence or departmental decision.

Once final stabilization is achieved, a NOT is appropriate. The submission of the NOT to TDEC is a statement of accountability. If the project is subsequently found not to be permanently stabilized, TDEC may initiate formal enforcement action to ensure that the particular site is addressed, as well as to prevent future premature certifications of permanent stabilization at other construction projects.

The TDOT District Operations Supervisor will notify the contractor, EPSC Inspector and QA auditor Stormwater and Regional Environmental Coordinator once the NOT has been signed and submitted to TDEC. The Contractor will not be released from the project site until the NOT is submitted to TDEC by the TDOT Regional Engineer, or their designee and TDEC sends a letter concurring with close out of permit. At the appropriate time, after the NOT is submitted to TDEC and accepted, the Region shall request the final acceptance for the project. EPSC inspections shall continue until the NOT has been submitted to TDEC. If the NOT is not accepted by TDEC, EPSC inspections must resume immediately until the NOT is accepted.

Projects Containing Water Quality Permits

This Circular Letter establishes the procedures for changing the site information provided with the TDEC ARAP, USACE 404, or TVA 26a (Tennessee River Basin map is attached) water quality permits issued on a project, including the application package (letter, permit sketches, construction plans, supporting information, etc.). It also establishes the process for the identification of new features that may be impacted by construction activities and require water quality permits. Water quality permits are issued for physical alterations to properties of “waters of the state” or “waters of the United States” (i.e., perennial, intermittent, & ephemeral streams, wetlands, springs, sinkholes, etc), and are based on the applicant’s demonstration of aquatic resource alteration avoidance, minimization, and mitigation. Site

conditions, construction techniques, and construction materials may warrant modifications to water quality permits issued for a TDOT construction project: however, modifications should be avoided, minimized, and mitigated to the maximum extent possible.

A TDOT construction project may have one or more water quality permit sites within its termini. Any change to the information submitted with these permit applications, including any previously undiscovered aquatic resources found during construction, require notification to and/or approval of the respective regulatory agencies. A water quality permit modification is any change to the site information provided with the permit application, including any changes to the construction plans submitted with the application on previously permitted sites.

Refer to the contract SP107FP and standard specifications **Subsection 107.08 and Section 209** for additional information.

Most water quality permits for TDOT construction projects are issued through the regulatory agencies to the TDOT Environmental Division, Natural Resources Office (NRO). Permit modifications shall be addressed through Natural Resources Office. In order to expedite the modification/new permit process once a project goes to construction, these steps shall be followed:

A. The Regional Director of Operations (or their designee) shall be the single point of contact for the region and shall coordinate any request with the Regional Environmental Coordinator.

B. So that little or no delay will occur in the construction process, the Regional Engineer, or designee, shall submit information to the Regional Environmental Coordinator regarding the proposed modification as soon as possible after discovery. The information shall be submitted to the Regional Environmental Coordinator by email, to the Natural Resources Office, (with the subject line to include Contract Number, Project PIN, Route and County) and shall include:

- Cover Letter (signed by the Regional Engineer, or their designee) as follows:
 1. Address to the Regional Environmental Coordinator;
 2. A description of the basic nature of the modification;
 3. Permit Identification Numbers – Located on the USACE 404, TDEC ARAP and TVA 26a permits.
 4. Latitude/Longitude location of aquatic resource. This can be found within the original application or permit issued, on the Internet (e.g., www.topozone.com), with a GPS unit or on the topographic quadrangle map. This shall be in the form of Latitude XX.XXXX N, Longitude XX.XXXX W;
 5. The reason for the modification;
 6. Alternative considerations to modification;
 7. Proposed revisions to site mitigation resulting from the modification;
 8. The proposed modification construction schedule.
- Attachment to the cover letter containing:
 - a. A 7½-minute USGS Topographic Quadrangle Map identifying the location of modification or permit requested. This can be found in the appendix of the Storm Water Pollution Prevention Plan (SWPPP) as the Vicinity Map or within the original Water Quality Permit Application. A SWPPP will not be provided on all projects. A SWPPP is only provided on construction projects with the potential of causing one (1) acre or more of total land disturbance. For permit modifications: A drawing(s), sketch(s), or marked up plan sheet(s) showing the currently permitted location and the proposed modification.

The Design Division shall be consulted to determine if the alteration will significantly change the hydraulics of the structure or require additional ROW.

- b. For new features/permits: A drawing(s), sketch(es), or marked up plan sheets(s) showing the location of the newly identified feature that will be impacted and a description of the proposed impact (Regional biologist should be notified to verify feature). The Design Division shall be consulted to determine if the alteration will significantly change the hydraulics of the structure or require additional ROW.

C. The Regional Environmental Coordinator shall review the request to ensure all required information necessary for the notification/modification/new permit request is complete. Once the information packet is complete, the Regional Environmental Coordinator shall submit the packet to the Environmental Division. The anticipated timeframe for the Regional Environmental Coordinator to send notifications/modification requests/permit requests is approximately one week. The Environmental Division will put together regulatory requests and send to the appropriate contact person with each respective regulatory agency. The anticipated timeframe for the Environmental Division to send notifications/modification requests/permit requests is approximately one week. The response time from the regulatory agencies on ARAP or Section 404, and/or TVA Section 26a modification request may take from 45 to 120 days, depending upon impact.

D. The contractor shall take measures to protect the environmental feature. However, work in the area will cease until approvals are obtained from the respective agencies. Note that measures must be implemented to prevent further degradation or damage to the environmental features. The Regional Environmental Coordinator can be contacted for assistance regarding these measures.

Notes:

1. The current permit applications state that if competent bedrock is encountered on-site, box bridges or culverts under a current water quality permit can be field adjusted to a slab bridge without any permit modification or notification.
Groundwater exposed during construction can be altered by directing it underground (via engineered rock fill, French drain, pipe or other appropriate conveyance) without any permit modification or notification. The groundwater must be protected from construction activities through the use of appropriate EPSC measures.

Construction work cannot commence on the following until the Environmental Division distributes the regulatory agencies' permits and/or approvals to the Construction Division:

- **Modification request**
 - a. Box or slab bridge or culvert lengths under an ARAP permit requiring more than five (5) feet of modification at either end of the structure (on a single stream), including transitions.
 - b. Slab culverts or bridges under a current water quality permit, regardless of length, requiring a change to a box culvert, bridge culvert or pipe culvert. (Any change of structure type)
 - c. Inlet/Outlet protection of structures.
 - d. Bank stabilization on a stream under a current water quality permit, where the method of stabilization differs from that required by the permit or approval.
 - e. Any modification to the length of a box or slab bridge or culvert under a current TVA 26a water quality permit.
- **New permit request**
 - a. Discovery of a previously unknown aquatic resource (streams, wetlands, spring heads, etc.).
 - b. Bank stabilization on a stream not under a current water quality permit.

Once the modification approval or the new permit is received from the regulatory agencies the Environmental Division shall distribute all applicable permits/approvals to the Regional Environmental Coordinator, Regional Director of Operations (or their designee), and the Regional Stormwater Coordinator.



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
 Division of Water Resources
 William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
 1-888-891-TDEC (8332)

Notice of Termination (NOT) for General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator at the construction site. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the local DWR Environmental Field Office (EFO) address (see table below). For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC).

Type or print clearly, using ink.

Site or Project Name:		NPDES Tracking Number: TNR	
Street Address or Location:		County(ies):	
Name of Permittee Requesting Termination of Coverage:			
Permittee Contact Name:		Title or Position:	
Mailing Address:		City:	State: Zip:
Phone:		E-mail:	

Check the reason(s) for termination of permit coverage:

<input type="checkbox"/>	Stormwater discharge associated with construction activity is no longer occurring and the permitted area has a uniform 70% permanent vegetative cover OR has equivalent measures such as rip rap or geotextiles, in areas not covered with impervious surfaces.
<input type="checkbox"/>	You are no longer the operator at the construction site (i.e., termination of site-wide, primary or secondary permittee coverage).

Certification and Signature: (must be signed by president, vice-president or equivalent ranking elected official)

I certify under penalty of law that either: (a) all stormwater discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater associated with construction activity under this general permit, and that discharging pollutants in stormwater associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

For the purposes of this certification, elimination of stormwater discharges associated with construction activity means that all stormwater discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have been eliminated from the portion of the construction site where the operator had control. Specifically, this means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized, the temporary erosion and sediment control measures have been removed, and/or subsequent operators have obtained permit coverage for the site or portions of the site where the operator had control.

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Permittee name (print or type):	Signature:	Date:
---------------------------------	------------	-------

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett, TN	38133	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305	Chattanooga	1301 Riverfront Parkway, Ste. 206	37402
Nashville	711 R. S. Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

CIRCULAR LETTER

SECTION: 107.22
NUMBER: 107.22-01
SUBJECT: AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE ON RESURFACING AND OTHER MAINTENANCE TYPE PROJECTS
DATE: OCTOBER 2, 2015

The Department of Transportation's goal is to provide an accessible transportation network to all users; this includes ensuring the safety of pedestrians and individuals with disabilities. Any project that includes the construction or alteration of a facility that provides access to pedestrians must be made accessible to persons with disabilities.

Projects with existing pedestrian facilities must provide an adequate traffic detour for pedestrian movement in compliance with the Americans with Disability Act.

Resurfacing is an alteration that triggers the requirement to add curb ramps if it involves work on a street or roadway spanning from one intersection to another, and includes overlays of additional material to the road surface, with or without milling.

It is not practical for the project designer on small projects, such as resurfacing, to survey and design each and every curb cut adjustment. In most cases, the construction project engineer will be able to utilize standard drawings and accommodate the accessibility requirements easily.

If a resurfacing project is extended where it will impact an intersection with pedestrian crossings, the crossings must comply with ADA requirements where technically feasible. Standard drawings should be utilized by field construction staff to adjust the intersection as required.

In some cases, our standard drawings may call for a larger sidewalk than currently exists, or it may be technically infeasible to meet the grade requirements stipulated. When adherence to the standard drawing is technically infeasible, field engineering solutions are appropriate. In these cases, the construction project engineer shall document via **both** before and after photos and a written explanation (and sketches if appropriate) of why it was technically infeasible to meet the requirement of the standard drawing and what was done to maximize access. The solution should be well thought out prior to its implementation.

If further assistance is required, the TDOT ADA Coordinator should be contacted for assistance.

CIRCULAR LETTER

SECTION: 108.01 SUBLETTING OF CONTRACT
NUMBER: 108.01-01
SUBJECT: SUBLETTING OF CONTRACTS
DATE: OCTOBER 2, 2015

SECOND TIER CONTRACTS

When work to be performed under an approved subcontract is sublet by the subcontractor to a second (or more) tier subcontractor, a list of the work included in the second (or more) tier subcontract shall be submitted on the Department's Second Tier Subcontract Form to the Headquarters Construction Division for approval prior to performance of any work covered by the second tier subcontract.

APPROVAL AND DISTRIBUTION OF SUBCONTRACTS

Effective immediately, approval and distribution of subcontracts will be handled as follows:

1. The Prime Contractor will be responsible for submitting subcontracts to the Headquarters Construction Division for review and approval.
2. Subcontractors will be responsible for submitting Tier Subcontracts to the Headquarters Construction Division for review and approval.
3. The Headquarters Construction Division will forward DBE Tier Subcontracts to the Civil Rights Office for review.
4. The Headquarters Construction Division will email copies of approved subcontracts to the appropriate Regional Operations Offices and the Civil Rights Office.
5. Regional Operations Office or designated representative will distribute one copy of the approved subcontract to the following:
 1. District Supervisor
 2. Prime Contractor
 3. Subcontractor
 4. Audit Support Unit
TDOR Audit Division
6th Floor, Andrew Jackson Bldg.
Nashville, TN 37242
 5. Employment Security Division
Employer Acct. – Large Audit
220 French Landing Dr.
Nashville, TN 37243

SUBCONTRACTORS AND DISADVANTAGED BUSINESS ENTERPRISES (DBE)

As stated in sections 108.01 and 102.01 of the specifications, all work to be sublet must be approved, and must be performed by a subcontractor that is prequalified with the Department.

All required contractual work that is performed by a contractor other than the prime contractor will be considered a subcontractor (or tier subcontractor), and therefore must be prequalified, must submit subcontract forms for approval, receive approval, and must submit certified payrolls (section 107.20).

No subcontractor work shall begin work until the subcontract has been approved by TDOT and the contract is put into effect. Any work completed before approval and without other prior authority of TDOT will be considered unauthorized and may not be paid for as stated in 105.12 of the specifications.

The actual, legal subcontract between contractors shall physically include the following and it cannot be referenced:

- FHWA 1273
- DBE Assurance Statement

Any work involving “laborers and mechanics”, as defined by the Federal and/or State classification of workers and prevailing wage rates, will be required to be a subcontractor to verify compliance with Davis-Bacon Act and State prevailing wage laws. Therefore, a subcontract will be required for flagging, drilling/blasting, sweeping, surveying, trucking/hauling (see below) and all other standard work items.

When labor is subcontracted or the contractor enters into an employee lease agreement, the procedures in Circular Letter 1273-05 or 1273-05.01 must be adhered to.

Hauling/Trucking firms must have a subcontract when they are working and hauling material “on the project site” as defined in Circular Letters 1273-04 and 1273-04.01. When hauling/trucking firms are not working “on the project site”, and are hauling from a non-project specific or a commercial site, a subcontract is not required. However, if a hauling/trucking firm is a DBE, then a subcontract and certified payrolls will be required for documentation purposes. (The prevailing wages under Davis-Bacon or TN Prevailing Wage Act are *not* required if the hauling/trucking firm is not working “on the project site” but the certified payroll will serve as proof the DBE hauling subcontractor was working on the project and the drivers are employees of the DBE)

Any DBE who is performing work, or providing materials, must enter into a subcontract so TDOT can accurately monitor both race conscious and race neutral DBE participation. However, if the DBE is a manufacturer or regular dealer/material supplier *ONLY* (as defined in SP 1247) they are not required to be pre-qualified. They must state on the Sub-contract form that they are a MANUFACTURER ONLY or MATERIAL SUPPLIER ONLY.

Reference:

From the Standard Specifications:

101.50-Subcontractor. Any individual, firm, partnership, or corporation to whom the Contractor sublets any part of the *Work* under the Contract.

101.59-Work. The Work shall mean the furnishing of all labor, materials, equipment, and any incidentals necessary to the satisfactory completion of the project, including the carrying out of all duties and obligations imposed by the Contract.

From the TDOT Rules Chapter 1680-5-3 Prequalification of Contractors:

“Subcontractor” means any individual person, partnership, limited liability company, corporation, or other business entity, acting directly or through a duly authorized representative, that has entered or may seek to enter into a contract with a contractor to perform some part of the work under a contract with the Department; provided, however, that this definition of subcontractor does not include any such person or business entity that only provides or delivers materials to a contractor or subcontractor performing work under a contract with the Department.

From FHWA 1273:

GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. **The Required Contract Provisions shall not be incorporated by reference in any case.** The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

From 49 CFR Part 26.13:

Each contract you sign with a contractor (**and each subcontract the prime contractor signs with a subcontractor**) must include the following assurance:

“The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.”

CIRCULAR LETTER

SECTION: 108.02
NUMBER: 108.02-01
SUBJECT: CONSULTANT INSPECTION NOTICE (WORK ORDERS)
DATE: OCTOBER 2, 2015

Work Orders sent to the Contractors for Contracts that utilize Consultant Engineering and Inspection (CEI) shall include the following language:

This project has been assigned to “Name of District Operations Supervisor”, whose address is “Location”, and he is being requested by copy of this letter to notify the proper officials of this Department as to the date on which work is actually begun and the date from which time will be charged on the Contract. “Name of Consultant” will be performing the Inspection services on this Contract in accordance with Subsection 105.10 and 105.11 of the Standard Specifications. “Name of Consultant” will be the duly authorized representative of the Department and will work under the direction of “Name of District Operations Supervisor”. Conflicts or interpretation involving the inspection of the work or the Standard Specifications shall be resolved through “Name of District Operations Supervisor” or the Regional Operations Office.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

CIRCULAR LETTER

SECTION: 108.03 PROSECUTION OF CONSTRUCTION
NUMBER: 108.03 (C)
SUBJECT: CRITICAL PATH METHOD (CPM) SCHEDULES
Date: OCTOBER 2, 2015

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All projects after January 1, 2015 must follow the scheduling process outlined within this Circular Letter and the 2015 Standard Specifications.

1 Receiving and Storing Schedule Files

Once a schedule and related materials are received by the contractor, these files shall be stored under the respective contract folder on the CMS/File Management Drive (a.k.a. Unit Drive).

Within the contract's folder, create a folder titled "*CPM Schedules*".

Example: `\Unit ##### - CITY C\A###\CPM Schedules`

Save all schedule files and narratives in this folder.

2 Conducting the Baseline CPM Schedule Review Meeting

Within fifteen (15) calendar days after the Notice to Proceed, the contractor shall arrange a meeting to review and submit a draft baseline CPM schedule. The purpose of the meeting is to discuss the Contractor's plan to execute the work by the completion date set forth in the Proposal. This meeting also allows discussion of potential conflicts that may affect the schedule and how they might be mitigated.

The deliverables expected from the Contractor include the electronic schedule file (.xer, .xml, .xls format), and hard copies (Printed or PDF) of:

- *Logic Diagrams/bar charts (11" x 17")*
- *Tables or Tabular Sorts of Activity Details*
- *Narrative Report*
- *Optional or available through Regional Power-User:*
 - *The Schedule Log (SchedLog)*

Circular Letter 108.03(C) Critical path method (CPM) Schedules

- *Relationship Report Table including: Predecessor ID, Successor ID, Relationship Type, Predecessor Activity Name, Successor Activity Name, and Lag.*

During the meeting, use **FORM 108.03(C)(1) BASELINE CPM SCHEDULE REVIEW CHECKLIST** to ensure a complete CPM schedule has been submitted to the Engineer in accordance with **Section 108.03** of the Specifications. The Checklist is divided into categories of requirements, namely:

- *General*
- *Submission Requirements*
- *CPM Schedule Identifies, Includes, or Uses*
- *CPM Schedule Shall NOT Include*

The following is select supporting information on each category to assist the District **Supervisor** in completing **FORM 108.03(C)(1) BASELINE CPM SCHEDULE REVIEW CHECKLIST** and determining whether the baseline schedule meets the requirements of **108.03**.

2.1 General

Schedule begins with the date of the Notice to Proceed: The schedule should begin on the same date as the Notice to Proceed (NTP). This can be confirmed on the Log File under Scheduling/Leveling Results, *Data Date*, as shown below.

```
Scheduling/Leveling Results:
-----
# Projects Scheduled/Leveled.....1
# Activities Scheduled/Leveled.....672
# Relationships with other projects.....0
Data Date.....3-31-15
Earliest Early Start Date.....3-31-15
Latest Early Finish Date.....8-31-18
```

Figure 1) Log File - Scheduling/Leveling Results:

Float: The amount of time that an activity can be delayed without affecting the overall schedule. Float must be calculated as $float = late\ start - early\ start$. This can be confirmed on the Log File under Scheduling/Leveling Settings. *Compute Total Float As* should be set as *Start Float*, as shown in the figure below.

```
Scheduling/Leveling Settings:
-----
General
-----
Scheduling .....Yes
Leveling .....No
Ignore relationships to and from other projects .....No
Make open-ended activities critical .....No
Use Expected Finish Dates .....Yes
Schedule automatically when a change affects dates .....No
Level resources during scheduling .....No
Recalculate assignment costs after scheduling .....No
when scheduling progressed activities use .....Progress Override
calculate start-to-start lag from .....Early Start
Define critical activities as .....Longest Path
Compute Total Float As .....Start Float
Calculate float based on finish date of .....Each project
calendar for scheduling Relationship Lag .....Predecessor Activity Calendar
```

Figure 2) Log File - Scheduling/Leveling Settings:

Circular Letter 108.03(C) Critical path method (CPM) Schedules

2.2 Submission Requirements

2.2.1 Logic Diagram

Match data for diagram correlation: The diagram should be labeled so that each activity can be correlated with the corresponding data.

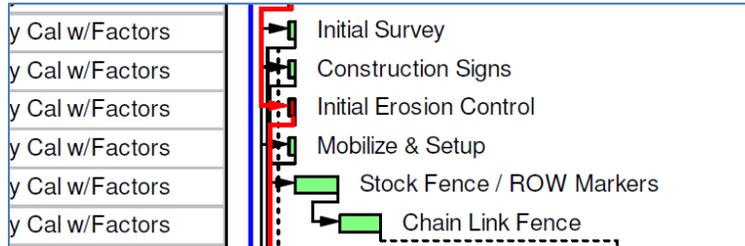


Figure 3) Match Data Example

Key: The logic diagram should contain a key that adequately describes all bar types.



Figure 4) Sample Key

2.2.2 Tabular sorts of activities

Tables should be submitted that show the required details *for each activity* in accordance with **Section 108.03(C)(2)(b)** of the Specifications.

SR-01 Classic Schedule Report - Sort by ES, TF										
Activity ID	Orig Dur	Rem Dur	%	Activity Name	Early Start	Early Finish	Late Start	Late Finish	Total Float	
A3110	0	0	0	Notice to Proceed	04/13/2015		06/01/2015			49
A3115	2	2	0	Mobilization	04/13/2015	04/14/2015	10/27/2015	10/29/2015		198
A3350	5	5	0	Lines and Grades for Walls	04/13/2015	04/20/2015	06/01/2015	06/08/2015		29

Figure 5) Tabular Sort Example

2.2.3 Bar Chart

See [Attachment A](#) for a sample 60-day look-ahead bar chart [sorted] by early start.

2.2.4 Narrative Report

The written Narrative shall describe the Contractor’s complete overall work plan and sequence in which the Work will be accomplished. The schedule narrative adds and supports understanding of the basis and assumptions in the schedule. The Narrative shall be prepared in accordance with **Section 108.03-(C)(2)(d)** of the Specifications.

Approach to sequencing the work: An outline of the plan on which the schedule is based, including the proposed overall approach and sequence of work.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

Critical or longest path: The sequence of activities that must be all be started and finished exactly on time in order to not delay the project. The critical activities detailed in the narrative should be consistent with those listed on the Log File, as illustrated in the following Figure.

Critical Activities				100
Project:	CNP079-02	Activity:	1305	Clear & Grubb/Pipe Reml - 31w/41 E
Project:	CNP079-02	Activity:	1308	Rd & Drain Exc Unc1 - 31w/41 E
Project:	CNP079-02	Activity:	1310	Storm Drainage Pt 1 - 31w/41 E
Project:	CNP079-02	Activity:	1311	Storm Drainage Pt 2 - 31w/41 E
Project:	CNP079-02	Activity:	1320	Borrow Unc1 - 31w/41 E
Project:	CNP079-02	Activity:	1328	Rip-Rap - 31w/41 E
Project:	CNP079-02	Activity:	1330	Topsoil - 31w/41 E
Project:	CNP079-02	Activity:	2015	Rd & Drain Exc Unc1 - Ramp A & B
Project:	CNP079-02	Activity:	2020	Borrow GSR-UCut-Geotex - Ramp A & B
Project:	CNP079-02	Activity:	2028	Borrow Unc1 - Ramp A & B
Project:	CNP079-02	Activity:	2029	Rip-Rap - Ramp A & B
Project:	CNP079-02	Activity:	2030	Topsoil - Ramp A & B

Figure 6) Critical Activities

Workdays per week: The assumed number of workdays per week for all activities. The number of workdays per week may vary depending on the activity work types. The Contractor should clarify all assumptions. (Note: Some Contractors will assume 5 workdays per week, and then use additional days during the week if progress falls behind schedule.)

Holidays: All Holidays in which work is not planned or allowed.

Number of shifts per day: The assumed number of shifts per day, including any exceptions.

Number of hours per shift: The assumed number of hours per shift, including any exceptions.

Equipment use: A generic statement regarding the use of proper equipment for each activity will suffice. Standard machinery and equipment does not need to be listed individually. The Contractor should comment on any unique or special equipment that they plan to use.

How the schedule accommodates adverse weather days for each month: A monthly breakdown of the number of Nonwork days anticipated due to adverse weather conditions, by work type if applicable.

2.3 CPM Schedule Identifies, Includes, or Uses...

Working days: This refers to the use of Standard, Nonwork, and Exception calendar days in conjunction with duration dependent activities to calculate the schedule.

Planned start and completion dates for each activity: Start and Finish Dates should be listed for every activity on the Tabular Report submitted. (Note: Milestones will only contain one date.)

Duration of each activity: Schedules are required to be updated monthly. In order to determine whether progress is on schedule with each update, activities durations should be 30 days or less. Longer activities shall be broken up into two or more. Long lead activities lasting more than 30 days, such as procurement activities may be approved by the **District Supervisor**.

Finish-to-start relationships among activities, without leads or lags: Relationships, which form the logic of the project network, are used together with activity durations to determine schedule dates. In order to check all relationship types and leads/lags together, the data must be exported to Excel.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

The *Relationship Report* may be obtained from the Contractor or Regional Power-user. The use of leads or lags must be approved by the **District Supervisor**. See [Attachment C](#) for a sample Activity Relationship Report.

Constraints: Network logic alone cannot reflect all project situations. Sometimes activities must be accomplished according to specific dates rather than on dates determined by other activities in the project. In such cases, constraints (start, finish, mandatory, & late) may be applied. Activities with constraints are identified on the Log File under Statistics, as shown below.

Statistics:	
# Projects.....	1
# Activities.....	672
# Not Started.....	672
# In Progress.....	0
# Completed.....	0
# Relationships.....	808
# Activities with Constraint.....	6

Figure 7) Log File – Statistics/Constraints

Critical or longest path: The sequence of activities that must be all be started and finished exactly on time in order to not delay the project. The critical activities are listed on the Log File, as shown in the following Figure.

Critical Activities.....100				
Project:	CNP079-02	Activity:	1305	Clear & Grubb/Pipe Repl - 31w/41 E
Project:	CNP079-02	Activity:	1308	Rd & Drain Exc Uncl - 31w/41 E
Project:	CNP079-02	Activity:	1310	Storm Drainage Pt 1 - 31w/41 E
Project:	CNP079-02	Activity:	1311	Storm Drainage Pt 2 - 31w/41 E
Project:	CNP079-02	Activity:	1320	Borrow Uncl - 31w/41 E
Project:	CNP079-02	Activity:	1328	Rip-Rap - 31w/41 E
Project:	CNP079-02	Activity:	1330	Topsoil - 31w/41 E
Project:	CNP079-02	Activity:	2015	Rd & Drain Exc Uncl - Ramp A & B
Project:	CNP079-02	Activity:	2020	Borrow GSR-UCut-Geotex - Ramp A & B
Project:	CNP079-02	Activity:	2028	Borrow Uncl - Ramp A & B
Project:	CNP079-02	Activity:	2029	Rip-Rap - Ramp A & B
Project:	CNP079-02	Activity:	2030	Topsoil - Ramp A & B

Figure 8) Critical Activities

Activities related to Procurement: Procurement activities are unique in that they are not constrained by weekends, holidays, weather, or other non-workday restrictions. These activities will therefore utilize a standard 7-day work calendar. Similar activities include, but are not limited to fabrication of long lead materials, curing, load test, and settlement or surcharge periods.

Furthermore, procurement activities lasting more than 30 days cannot be subdivided into shorter activities. Such activities still impact the project’s schedule, so it is necessary to include related activities in the schedule.

Activities related to Submittals: Administrative activities associated with the work shall be defined and included in the schedule. These include activities related to the submission of working drawings, plans, and other data specified for review or approval by the Engineer.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

Activities related to Department inspections and approvals: The Department’s activities associated with the work shall also be defined and included in the schedule, such as inspections or approvals.

Specified activities performed by others: Any work performed by parties other than the prime contractor that can be defined as discrete work task and other time-based tasks necessary to complete the project shall be included.

2.4 CPM Schedule Shall NOT Include

Float suppression techniques, such as preferential sequencing: Float suppression techniques include arranging critical path through activities more susceptible to a Department-caused delay. (Note: this is more applicable to A+B contracts)

Special lead/lag logic restraints: Leads and lags can be identified on the *Relationship Report*, which may be obtained from the Contractor or Regional Power-user. The use of leads or lags must be approved by the **District Supervisor**.

Zero total or free float constraints: Zero total or free float constraints (also known as “as late as possible”) are used to make the activity finish immediately prior to its successors. This constraint consumes float by setting the Early Dates to equal the Late Dates, and as a result is prohibited.

Constraint dates other than required by the Contract: Network logic alone cannot reflect all project situations. Sometimes activities must be accomplished according to specific dates rather than on dates determined by other activities in the project.

For example, 407.09-03 of the Specifications restricts placing bituminous plant mix, with a compacted thickness greater than 1.5 inches, between December 15 and March 16. In such cases, constraints (start, finish, mandatory, & late) may be applied. Activities with constraints are identified on the Log File under Statistics, as shown below.

Statistics:	
# Projects.....	1
# Activities.....	672
# Not Started.....	672
# In Progress.....	0
# Completed.....	0
# Relationships.....	808
# Activities with Constraint.....	6

Figure 9) Log File – Statistics/Constraints

The CPM schedule shall not include any constraints other than required by the “Contract Documents”.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

3 Schedule Updates

The CPM schedule will be updated on a monthly basis to determine the current status of the project. As the schedule is updated, it is critically important to ensure that the schedule accurately reflects how the work is being performed.

IMPORTANT: TO VERIFY THAT THE SCHEDULE UPDATES ARE CORRECT, IT IS NECESSARY FOR FIELD STAFF TO COLLECT AS-BUILT INFORMATION THROUGH A VARIETY OF SOURCES. SOURCES INCLUDE, BUT ARE NOT LIMITED TO: DAILY WORK REPORTS (DWRs), MEETING MINUTES, AND PROGRESS PHOTOGRAPHS/VIDEOS. (NOTE: IT IS RECOMMENDED TO DOCUMENT THE ACTUAL FINISH DATES FOR COMPLETED ACTIVITIES IN THE DAILY WORK REPORTS (DWRs)).

Use **FORM 108.03(C)(3) CPM SCHEDULE UPDATE CHECKLIST** to analyze the current progress, ensure compliance with **Section 108.03** of the Specifications, and determine potential needs for a schedule revision. The Checklist is divided into categories of requirements, namely:

- *General*
- *Submission Requirements*
- *Narrative Report*
- *Progress Assessment*
- *Circumstances that May Lead to Requesting a Revised Schedule*

The following is select supporting information on each category to assist the **District Supervisor** in completing **FORM 108.03(C)(3) CPM SCHEDULE UPDATE CHECKLIST** and determining whether the baseline schedule meets the requirements of **108.03**.

3.1 General

Activity Status Report: It is important for schedule updates to provide the as-built status of the project. The Contractor is required to provide actual start and finish dates of each activity or remaining durations of activities started but not yet completed. This information is often produced by running the Activity Status Report in the scheduling software, as shown in the following figure.

AD-01 Activity Status Report						
WBS						
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish
TDOT	TDOT					
Test Projects	Test Projects					
WD AR-JPS2	Access Road Bridge Across Auxiliary Lock Bascule Bridge Replacement					
A1030	NTP	0	0	100%	8-20-09 A	
R1040	RECORD AS-BUILTS	1	1	0%	2-14-11	2-14-11
R1080	RECORD AS-BUILTS	1	1	0%	2-14-11	2-14-11
B1000	DEMO & CLEARING PREP MEETING	1	1	0%	4-27-10*	4-27-10
M800	EROSION PREP MEETING	1	0	100%	2-17-10 A	2-17-10 A
N1000	FOUNDATION PREP MEETING	1	1	0%	4-21-10*	4-21-10

Figure 10) Activity Status Report

Circular Letter 108.03(C) Critical path method (CPM) Schedules

Updated critical or longest path: The critical path (shortest duration in which the project may be completed) may change if non critical activities are delayed more than the available float. A change in the critical path may extend the completion date of an interim milestone or the project. If a scheduled milestone or project completion date is delayed 15% or more behind schedule, the **District Supervisor** may request a revised schedule that reflects timely completion.

3.2 Submission Requirements

3.2.1 Logic Diagram

Refer to Section 2.1.1 *Logic Diagram*

3.2.2 Bar Chart

See [Attachment B](#) for a sample 60-day look-ahead bar chart [sorted] by early start.

3.2.3 Tabular sorts of activities by...

See [Attachment B](#) for a sample tabular sort of activities by Total Float and Early Start.

3.3 Narrative Report

Each schedule update shall include a narrative report meeting the requirements of **Section 108.03-(C)(3)(a)** of the Specifications. (Note: It is recommended to have the Contractor comment on the narrative report regarding progress of any on-going activities greater than 30 days in duration.)

3.4 Progress Assessment

Upon receiving each schedule update, progress will need to be assessed to determine if actual construction has fallen behind the plan of operations or schedule by more than 15%. When this occurs, the Contractor shall offer for approval a revised schedule that reflects timely completion. Otherwise, the **District Supervisor** may request a revised schedule.

A quick calculation of time versus money can be calculated using TIME COMPLETE (%) and WORK COMPLETE (%) from the most recent ESTIMATE in SiteManager. TIME COMPLETE (%) minus WORK COMPLETE (%) will result in the delay based on the straight line method.

TIME COMPLETE	4.2%	WORK COMPLETE	0.4%
TIME COMPLETE - WORK COMPLETE = 4.2% - 0.4% = 3.8% DELAYED			

Figure 11) Example Progress Assessment

3.5 Circumstances that May Lead to Requesting a Revised Schedule

The **District Supervisor** may request a revised schedule under the following circumstances:

- *15% or more behind schedule.*
- *Difference in actual sequence or duration of work.*
- *Alteration by Change Order.*

Circular Letter 108.03(C) Critical path method (CPM) Schedules

3.5.1 15% or more behind schedule.

A delay (actual or projected) to a scheduled milestone or project completion date of 15% or more warrants requesting a revised schedule. The delay may be calculated using the following equation.

Equation:

$$\frac{\text{Delay (actual or projected) in days}}{\text{Total Calendar days from Notice to Proceed to scheduled milestone or completion date}} \times 100\%$$

Example:

Notice to proceed: 8/7/2013

Original Completion Date: 05/30/2016

Estimated Completion Date: 11/6/2016 (no prior time extensions)

Projected Delay: 160 days

$$\frac{160 \text{ days}}{1027 \text{ days}} \times 100\% = 15.6\% , \text{ therefore a revised schedule should be requested.}$$

3.5.2 Difference in actual sequence or duration of work.

A difference between the actual sequence or duration of work and that depicted in the schedule warrants requesting a revised schedule. The revision is necessary to correct unrealistic activity durations or a significant number of activities that are being performed out-of-sequence.

3.5.3 Alteration by Change Order.

The issuance of a Change Order that alters the planned sequence of work or the method and manner of its performance by adding, deleting, or revising activities warrants requesting a revised schedule.

4 Schedule Revisions

A revision of the baseline CPM schedule is required when the schedule has been significantly impacted by a change in the Work or condition or the Contractor has deviated significantly from his baseline plan or schedule.

The Contractor may offer a revised schedule, or the **District Supervisor** may request one. Circumstances that may lead to requesting a revised schedule are addressed in **FORM 108.03(C)(3) CPM SCHEDULE UPDATE CHECKLIST** and in **Section 108.03(D)** of the Specifications.

If the Contractor cannot justify unsatisfactory progress, administrative actions can be made in accordance with **Section 108.03(D)** of the Specifications.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

5 Communication with the Contractor

Upon review of the CPM schedule and related materials, the **District Supervisor** will either:

- *Provide review comments,*
- *Request additional information,*
- *Accept the CPM schedule, or*
- *Reject the CPM schedule*

5.1 Providing review comments

General review comments may be provided verbally, or in writing. No formal letter is required.

5.2 Template Letters

Template Letters are available on the Construction Division's Website.

Purpose	File
Requesting additional information	108 03 - CPM Schedule Request Additional Information Letter
Accepting a CPM Schedule	108 03 - CPM Schedule Acceptance Letter
Rejecting a CPM Schedule	108 03 - CPM Schedule Rejection Letter

6 Time Impacts and Delays

Delays on construction projects are unavoidable. If the contractor has been delayed because of conditions beyond their control and they are without fault, then a time extension may be justified.

The Contractor shall notify the **District Supervisor** in accordance with **Section 104.03** of the Specifications and submit a written request for a time extension. The written request shall include a Time Impact Analysis and supporting documentation showing the impact of the delay on the critical path.

In accordance with **Section 108.07** of the Specifications, the **District Supervisor** may extend the contract time or completion date only if an excusable delay affects the critical path of the work as shown on the accepted progress schedule.

6.1 Time Impact Analysis (TIA)

Time Impact Analysis (TIA) is a 'forward-looking,' prospective schedule analysis technique that adds a modeled delay to an accepted CPM schedule to determine the possible impact of that delay to project completion. A TIA is performed to evaluate the most likely results of an unplanned event.

The TIA provides a reasonable assessment of a delay when applied appropriately. The TIA must be calculated quickly, while the project is on-going, and is best when modeling the effects of a single change or delay event.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

TIA relies on the CPM calculations to show the differences between two schedules:

- *A schedule that does not include a delay, and*
- *A schedule that does include an activity modeling the delay event.*

The difference in project completion dates is considered to be the impact of the delay for time duration considerations.

There are two assumptions that make TIA possible. The first assumption is that the most recent schedule update, just before the delay, accurately displays the status a sequence of work on the project at the time of delay. Therefore, timely acceptance of schedule updates is critical to the TIA success. The second assumption is that actual delay will not change the remaining work plan. Essentially, the work both prior to and following the delay remain unchanged, or 'frozen'.

When TIA is appropriate and all assumptions are met, it is a simple and effective method for modeling the effects of a delay.

6.1.1 Steps of TIA

According to **Section 108.07** of the Specifications, the Contractor is responsible for performing the TIA. These are the steps they are expected to perform:

1. Create activity/s to represent delay.
2. Insert into most recent update, but w/ zero duration.
3. Run network calculations. Dates should remain unchanged.
4. Input Approved durations into delay activity/s.
5. Recalculate CPM.
6. Determine total time impact, and then remove any delays already awarded.

6.1.2 TIA Deliverables

The support is very important when processing a time extension using TIA. At a minimum, the deliverables of a TIA should include:

- *A written request for a time extension.*
- *Two schedules with supporting documents (narrative, tables, reports):*
 - *The most recent schedule update, just prior to the delay.*
 - *A schedule that includes an activity modeling the delay event.*

Circular Letter 108.03(C) Critical path method (CPM) Schedules

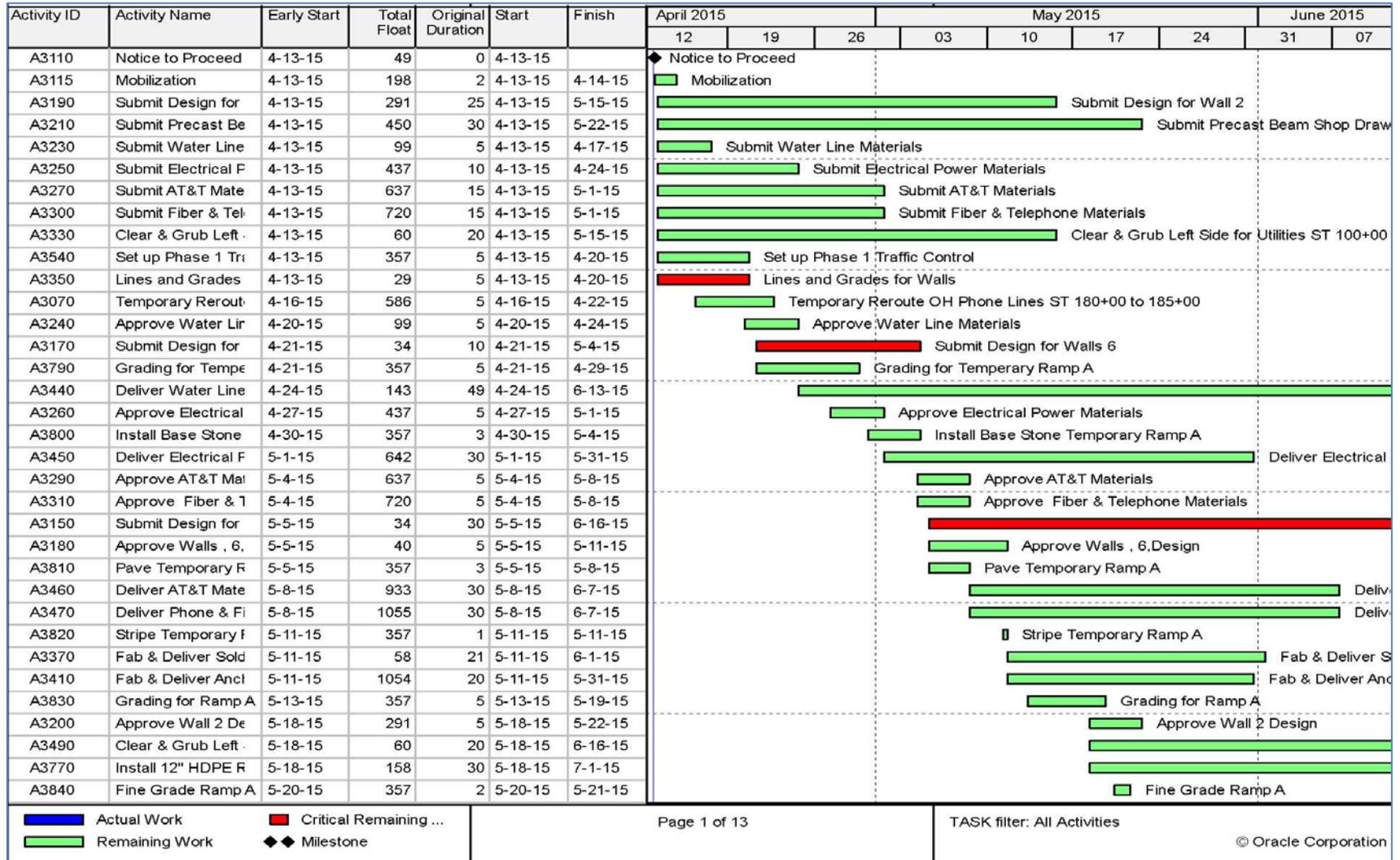
7 Support: Primavera Power-Users

Primavera Professional is the leading project management software used in the Construction Industry for scheduling. Within the Construction Division, both at Headquarters and regionally, there are Power-Users who have access to Primavera software, and advanced knowledge in CPM schedules. These Power-Users are available as a resource to provide assistance (such as running reports, or checking the TIA) as needed. To identify each Power-User and their contact information, visit the Construction Division Website, under Construction Division Resources, and select CPM Schedules.

Circular Letter 108.03(C) Critical path method (CPM) Schedules

Attachment A

Sample 60-Day Look-Ahead Bar Chart [Sorted] by Early Start



Circular Letter 108.03(C) Critical path method (CPM) Schedules

Attachment B

Sample Classic Schedule Report

SR-01 Classic Schedule Report - Sort by ES, TF

Activity ID	Activity Name	Original Duration	Remaining Duration	Units % Complete	Start	Finish	Late Start	Late Finish	Total Float
A1050	SETUP PROJECT TRAILER	3	0	100%	11-9-09 A	11-9-09 A	2-15-11	2-15-11	
A1020	SUBMITTAL APPROVAL	140	0	100%	8-20-09 A	1-6-10 A	4-19-10	4-19-10	
M800	EROSION PREP MEETING	1	0	100%	2-17-10 A	2-17-10 A	4-19-10	4-19-10	
A1030	NTP	0	0	100%	8-20-09 A		4-19-10		
A1070	DRAFT / SUBMIT SAFETY PLAN	141	0	100%	8-20-09 A	2-23-10 A	4-19-10	4-19-10	
A1000	CONTRACT AWARD	0	0	100%	8-3-09 A		4-19-10		
A1010	SAFETY PLAN APPROVAL	0	0	100%	2-23-10 A		4-19-10		
A1090	FABRICATE GIRDERS	10	0	100%	11-12-09 A	12-4-09 A	8-14-10	8-14-10	
A1110	FABRICATE BEARING PADS	50	0	100%	12-18-09 A	3-2-10 A	8-19-10	8-19-10	
A1100	SANDBLAST AND PAINT GIRDERS	22	10	0%	3-8-10 A	3-29-10	8-14-10	8-24-10	148
A1080	SECURITY CLEARANCE	272	60	0%	8-20-09 A	5-18-10	12-17-10	2-15-11	272
C1000	FORMWORK, REINFORCING, JOINTS, & CIP PREP MEETING	1	1	0%	3-22-10	3-22-10	5-10-10	5-11-10	36
P1010	DRILLED SHAFT, PILING, & ROCK ANCHOR PREP MEETING	1	1	0%	3-22-10	3-22-10	5-10-10	5-11-10	36
M1000	SITE EROSION CONTROL	3	9	0%	3-18-10 A	4-2-10	3-29-10	4-13-10	5
X0001	MOBILIZATION	20	10	0%	3-1-10 A	4-6-10	5-11-10	5-28-10	30
A1080	FURNISH AND DELIVER PILES	5	5	0%	3-23-10	3-29-10	7-8-10	7-15-10	78
P1030	P1 EXPLORATION BELOW SHAFT	15	0	100%	3-8-10 A	3-19-10 A	5-11-10	5-11-10	
P1050	P2 FOUNDATION EXPLORATION	15	0	100%	3-8-10 A	3-19-10 A	5-18-10	5-18-10	
N1010	P1 FOOTING EXCAVATION & PREP	4	4	0%	4-6-10	4-9-10	4-13-10	4-20-10	5
N1050	P2 FOOTING EXCAVATION & PREP	4	4	0%	4-13-10	4-18-10	5-18-10	5-24-10	22
Y1000	ELECTRICAL & FENCING PREP MEETING	1	1	0%	4-19-10	4-19-10	6-15-10	6-15-10	41
K1010	EARTHWORK & RIP RAPPREP MEETING	1	1	0%	4-19-10	4-19-10	6-15-10	6-15-10	41
1050	P2 PLACE FOOTING REBAR	2	2	0%	4-20-10	4-21-10	5-24-10	5-26-10	22
B1120	ROADWAY CLEARING	5	5	0%	4-20-10	4-27-10	6-16-10	6-22-10	34
N1000	FOUNDATION PREP PREPARATORY MEETING	1	1	0%	4-21-10*	4-21-10	4-19-10	4-20-10	-1
01020	P1 CONSTRUCT TEMP SHORING	7	7	0%	4-22-10	5-4-10	4-20-10	4-30-10	-1
01040	P2 FORM AND POUR FOOTING	4	4	0%	4-22-10	4-28-10	5-26-10	6-1-10	22
B1000	DEMO & CLEARING PREP MEETING	1	1	0%	4-27-10*	4-27-10	2-9-11	2-10-11	206

Circular Letter 108.03(C) Critical path method (CPM) Schedules

Attachment C

Sample Activity Relationship Report

pred_task_id	task_id	pred_type	PREDTASK_status_c	TASK_status_code	predtask__task_name	task__task_name	lag_hr_cnt
Predecessor	Successor	Relationship	(*)Predecessor Activity Status	(*)Successor Activity Status	(*)Predecessor Activity Name	(*)Successor Activity Name	Lag(d)
A1000	A1010	FS	Not Started	Not Started	BR 1R Construct Bent 1 Cofferdam & Seal	BR 1R Construct Bent 1 Columns	0
A1000	A1005	FS	Not Started	Not Started	BR 1R Construct Bent 1 Cofferdam & Seal	BR 1R Construct Bent 1 Footings	0
A1000	A1025	FS	Not Started	Not Started	BR 1R Construct Bent 1 Cofferdam & Seal	BR 1R Construct Bent 2 Cofferdam & Seal	0
A1005	A1010	FS	Not Started	Not Started	BR 1R Construct Bent 1 Footings	BR 1R Construct Bent 1 Columns	0
A1010	A1020	FS	Not Started	Not Started	BR 1R Construct Bent 1 Columns	BR 1R Construct Bent 1 Cap	0
A1020	A1030	FS	Not Started	Not Started	BR 1R Construct Bent 1 Cap	BR 1R Construct Bent 2 Footings	0
A1020	A1065	FS	Not Started	Not Started	BR 1R Construct Bent 1 Cap	BR 1R Core Drill and Install Abutment 1 Piles	0
A1025	A1030	FS	Not Started	Not Started	BR 1R Construct Bent 2 Cofferdam & Seal	BR 1R Construct Bent 2 Footings	0
A1030	A1050	FS	Not Started	Not Started	BR 1R Construct Bent 2 Footings	BR 1R Construct Bent 2 Columns	0
A1050	A1060	FS	Not Started	Not Started	BR 1R Construct Bent 2 Columns	BR 1R Construct Bent 2 Cap	0
A1060	A1070	FS	Not Started	Not Started	BR 1R Construct Bent 2 Cap	BR 1R Construct Abutment 1 Grade Beam	0
A1060	A1077	FS	Not Started	Not Started	BR 1R Construct Bent 2 Cap	BR 1R Core Drill and Install Abutment 2 Piles	0
A1065	A1070	FS	Not Started	Not Started	BR 1R Core Drill and Install Abutment 1 Piles	BR 1R Construct Abutment 1 Grade Beam	0
A1065	A1077	FS	Not Started	Not Started	BR 1R Core Drill and Install Abutment 1 Piles	BR 1R Core Drill and Install Abutment 2 Piles	0
A1070	A1075	FS	Not Started	Not Started	BR 1R Construct Abutment 1 Grade Beam	BR 1R Construct Abutment 1 Backwall	0
A1075	A1110	FS	Not Started	Not Started	BR 1R Construct Abutment 1 Backwall	BR 1R Set Precast Beams	0
A1075	A1080	FS	Not Started	Not Started	BR 1R Construct Abutment 1 Backwall	BR 1R Construct Abutment 2 Grade Beam	0
A1077	A1080	FS	Not Started	Not Started	BR 1R Core Drill and Install Abutment 2 Piles	BR 1R Construct Abutment 2 Grade Beam	0
A1080	A1100	FS	Not Started	Not Started	BR 1R Construct Abutment 2 Grade Beam	BR 1R Construct Abutment 2 Backwall	0
A1100	A1110	FS	Not Started	Not Started	BR 1R Construct Abutment 2 Backwall	BR 1R Set Precast Beams	0
A1100	A1170	FS	Not Started	Not Started	BR 1R Construct Abutment 2 Backwall	BR 2R Construct Bent 1 Foundation Prep & Fc	0
A1110	A1120	FS	Not Started	Not Started	BR 1R Set Precast Beams	BR 1R Form Deck	0
A1120	A1130	FS	Not Started	Not Started	BR 1R Form Deck	BR 1R Install Deck Rebar	0
A1130	A1140	FS	Not Started	Not Started	BR 1R Install Deck Rebar	BR 1R Place and Finish Deck	0
A1140	A1150	FS	Not Started	Not Started	BR 1R Place and Finish Deck	BR 1R Construct Bridge End Slabs	0
A1150	A1160	FS	Not Started	Not Started	BR 1R Construct Bridge End Slabs	BR 1R Slipform Parapet Rails	0
A1160	A1485	FS	Not Started	Not Started	BR 1R Slipform Parapet Rails	Demo Existing Bridge 1L	0
A1170	A1180	FS	Not Started	Not Started	BR 2R Construct Bent 1 Foundation Prep & Fc	BR 2R Construct Bent 1 Columns	0
A1180	A1190	FS	Not Started	Not Started	BR 2R Construct Bent 1 Columns	BR 2R Construct Bent 1 Cap	0
A1190	A1200	FS	Not Started	Not Started	BR 2R Construct Bent 1 Cap	BR 2R Construct Bent 2 Foundation Prep & Fc	0
A1190	A1225	FS	Not Started	Not Started	BR 2R Construct Bent 1 Cap	BR 2R Core Drill and Install Abutment 1 Piles	0
A1200	A1210	FS	Not Started	Not Started	BR 2R Construct Bent 2 Foundation Prep & Fc	BR 2R Construct Bent 2 Columns	0
A1210	A1220	FS	Not Started	Not Started	BR 2R Construct Bent 2 Columns	BR 2R Construct Bent 2 Cap	0
A1220	A1230	FS	Not Started	Not Started	BR 2R Construct Bent 2 Cap	BR 2R Construct Abutment 1 Grade Beam	0
A1220	A1225	FS	Not Started	Not Started	BR 2R Construct Bent 2 Cap	BR 2R Core Drill and Install Abutment 1 Piles	0
A1220	A1245	FS	Not Started	Not Started	BR 2R Construct Bent 2 Cap	BR 2R Core Drill and Install Abutment 2 Piles	0
A1225	A1230	FS	Not Started	Not Started	BR 2R Core Drill and Install Abutment 1 Piles	BR 2R Construct Abutment 1 Grade Beam	0
A1225	A1245	FS	Not Started	Not Started	BR 2R Core Drill and Install Abutment 1 Piles	BR 2R Core Drill and Install Abutment 2 Piles	0
A1230	A1240	FS	Not Started	Not Started	BR 2R Construct Abutment 1 Grade Beam	BR 2R Construct Abutment 1 Backwall	0
A1240	A1270	FS	Not Started	Not Started	BR 2R Construct Abutment 1 Backwall	BR 2R Set Precast Beams	0
A1240	A1250	FS	Not Started	Not Started	BR 2R Construct Abutment 1 Backwall	BR 2R Construct Abutment 2 Grade Beam	0

CPM Schedule Update Checklist

Project Information

Contract ID: _____

Reviewer

Name: _____

Title: _____

Date: _____

Schedule Update Date: ____ / ____ / ____

General

	<u>Meets Specification</u>	
	Yes	No
One hard copy of the schedule update received (PDF)?	<input type="checkbox"/>	<input type="checkbox"/>
One electronic copy of the schedule update received? <i>Acceptable file types: .xer, .xml, .xls</i>	<input type="checkbox"/>	<input type="checkbox"/>
Table including actual start and finish dates of each activity or remaining durations of activities started but not yet completed (Activity Status Report)?	<input type="checkbox"/>	<input type="checkbox"/>
Updated critical or longest path? Does it make sense?	<input type="checkbox"/>	<input type="checkbox"/>

Submission Requirements

Logic Diagram

	<u>Meets Specification</u>	
	Yes	No
In color?	<input type="checkbox"/>	<input type="checkbox"/>
Depicting no more than 50 activities on each page (11 x 17 inch format)?	<input type="checkbox"/>	<input type="checkbox"/>
Each sheet including title, match data for diagram correlation, and a key?	<input type="checkbox"/>	<input type="checkbox"/>

Bar Chart

	<u>Meets Specification</u>	
	Yes	No
60-day look-ahead bar charts [sorted] by early start?	<input type="checkbox"/>	<input type="checkbox"/>

Tabular sorts of activities by...

	<u>Meets Specification</u>	
	Yes	No
Total float?	<input type="checkbox"/>	<input type="checkbox"/>
Early start?	<input type="checkbox"/>	<input type="checkbox"/>

Narrative Report

	<u>Meets Specification</u>	
	Yes	No
Progress during the month?	<input type="checkbox"/>	<input type="checkbox"/>

CPM Schedule Update Checklist

Shifts in the critical activities from the previous update?	<input type="checkbox"/>	<input type="checkbox"/>
Sources of delay?	<input type="checkbox"/>	<input type="checkbox"/>
Potential problem areas?	<input type="checkbox"/>	<input type="checkbox"/>
Work planned for the succeeding update period?	<input type="checkbox"/>	<input type="checkbox"/>
Changes made to the CPM schedule? (Changes include additions, deletions, or revisions to activities due to the issuance of a change order, changes to an activity duration, changes to relationships between activities, or changes to the planned sequence of work or the method and manner of its performance.)	<input type="checkbox"/>	<input type="checkbox"/>

Progress Assessment

TIME COMPLETE (%)	_____
WORK COMPLETE (%)	_____
DIFFERENCE (%)	≤ 15 %, otherwise see note.

Note: If actual construction falls behind the plan of operations or schedule by more than 15%, the Contractor shall offer for approval a revised schedule that reflects timely completion. Otherwise, the District Supervisor may request a revised schedule.

Circumstances that May Lead to Requesting a Revised Schedule

	<u>Circumstance Present</u>	
	Yes	No
A delay (actual or projected) to scheduled milestone or project completion dates 15% or more behind schedule?	<input type="checkbox"/>	<input type="checkbox"/>
A difference between the actual sequence or duration of work and that depicted in the schedule?	<input type="checkbox"/>	<input type="checkbox"/>
The issuance of a Change Order that alters the planned sequence of work or the method and manner of its performance by adding, deleting, or revising activities?	<input type="checkbox"/>	<input type="checkbox"/>

If any of the above circumstances are met, the District Supervisor has the discretion to request a revised schedule from the contractor. See Section 108.03-D of the Specifications.

CIRCULAR LETTER

SECTION: 108.07 DETERMINATION OF TIME FOR COMPLETION
NUMBER: 108.07-01
SUBJECT: DETERMINATION OF TIME BASED ON QUANTITY INCREASES
DATE: OCTOBER 2, 2015

For projects let after February 1, 2009, Section 108.07 of the Standard Specifications was revised such that if satisfactory fulfillment of the Contract requires performance of work in greater quantities than those set forth in the proposal, the contract time allowed for performance **may be** proportionally increased. This increase in contract time applies **only** to major items of work as defined in Section 101.03 of the Standard Specifications and **only** if the Engineer determines that the increase in quantities affected the critical path of the project and **only** if the time due to the increase of the major item has not been previously addressed by Change Order. For Projects containing a required CPM, incentive clause, or bonus clause for early completion, the Engineer shall not increase the working time by this method.

The determination of contract completion dates assumes the critical path items and normal production rates depending on the type and size of contract. It also assumes that many items of work are completed concurrently with the critical path items. Based on these assumptions, the contractor is expected to provide an adequate workforce and equipment, and sound scheduling and managing of resources to complete the project on schedule, with the realization that the quantities as bid are approximate only and the Department reserves the right to alter the quantities as specified in Section 104.02 of the Standard Specifications.

If the Engineer determines that the increase in quantities for major items affected the critical path of the project, thus affecting project completion, then additional time allowance shall be made as follows:

$$AT = (MI / OCA) * OCT$$

Where AT = Additional contract time (days)
MI = sum of the additional cost of the major items (\$)
OCA = Original contract amount (\$)
OCT = Original contract time (days)

Example:
Original contract amount (OCA) = \$1,000,000.00
Original contract time (OCT) = 150 days
Sum of additional cost (MI) = \$150,000.00

$$AT = (\$150,000.00/\$1,000,000.00)*150 \text{ days} = 22.5, \text{ say } 23 \text{ days}$$

The above calculation can be used to revise the completion date without issuance of a Change Order.

Any other changes in contract time due to quantities will need to be justified and approved by Change Order. (e.g. significant changes to quantities of minor items, addition of items, etc.)

For Projects let prior to February 1, 2009, in accordance with Section 108.07 of the Standard Specifications, contract working time may be increased based on the increase in quantities of the project. The basis of increase in quantities shall be solely on material quantity variations and not price adjustments. The basis for the determination of the project total shall not include the following:

- Fuel Adjustments (Item 109-01.01)
- Bituminous Adjustments (Item 109-01.02)
- Rideability Adjustments (Items 411-03.30, 411-03.31, 411-03.32, 501-11.01, 604-23.01, 501-05.02, 501-05.03)
- Material Variation (LOI) Adjustments (Item 411-03.40)
- Density Deductions (Item 407-07)
- Incentives (108-10.0_ Items)
- Disincentives (108-10.1_ Items)
- Liquidated Damages (108-07 or 108-08 Items)
- A.C. Content and Gradation Deduction (Items 407-09)
- Steel inspection cost (Item 602-04)
- Rideability deduction (bridges) (Item 604-23.01)
- Flagging adjustment (Item 105-02)
- Railroad flagging (Item 105-03)

CIRCULAR LETTER

SECTION: 109.01 MEASUREMENT OF QUANTITIES
NUMBER: 109.01-02
SUBJECT: TRUCK WEIGHT LIMITS
DATE: OCTOBER 2, 2015

The Department now will require that all weight tickets conform to the new limits outlined on these sheets as required by law.

Interstate weight limits shall apply when hauling on any of the following:

- a) Ramps entering or exiting the interstate system.
- b) Any portion of an existing interstate open or previously opened to traffic.
- c) The surface course of a new interstate facility (never opened to public traffic). However, Non-Interstate Highway limits will apply to hauling on the subgrade or base courses of newly constructed interstate widening projects if accessed by non-interstate routes.
- d) New and existing structures on interstates.

In consideration of the status of construction, relative to the present federal interstate system, it is considered that the above determinations provide adequate guidance as to the applicability of interstate truck weights.

SECTION I: Non-Interstate Highway

- 1) Two axle truck (one front, one rear)
20,000# each axle
Maximum gross weight = 40,000# *
- 2) Three axle straight (one front, tandem rear)
Front axle = 20,000#
Tandem axle = 34,000#
Maximum gross weight = 54,000# *

Exception: Class 9 tag or zone tag
Maximum gross weight = 66,000# *
- 3) Four axle straight (one front, three rear)
Front axle = 20,000#
Single axle rear = 20,000#
Tandem axle = 34,000#
Maximum gross weight = 74,000# *
- 4) Three axle truck tractor and trailer (one axle front of tractor, one rear of tractor, one rear of trailer)
Front axle = 20,000#
Rear axle Tractor = 20,000#
Rear axle Trailer = 20,000#
Maximum gross weight = 60,000# *
- 5) Four axle truck tractor and trailer (one front of tractor, one rear of tractor, tandem rear of trailer)
Front axle Tractor = 20,000#
Rear axle Tractor = 20,000#
Tandem axle Trailer = 34,000#
Maximum gross weight = 74,000# *
- 6) Four axle truck tractor and trailer (one front of tractor, tandem rear of tractor, one rear of trailer)
Front axle Tractor = 20,000#
Tandem rear Tractor = 34,000#
Single axle Trailer = 20,000#
Maximum gross weight = 74,000# *
- 7) Five axle tractor and trailer (one front of tractor, tandem rear of tractor, tandem rear of trailer)
Maximum gross weight = 80,000# *

* A tolerance of up to 500 pounds will be allowed over the maximum gross weight.

SECTION II: Interstate Highway (Contracts Let On or After October 31, 2008)

Per Section 107.02 of the Standard Specifications, all trucks delivering material (rock, asphalt, concrete, etc.) to construction projects shall display the allowable gross weight for the Interstate System on the side of the truck. The Bridge Formula shall be used to determine Interstate System gross weights as defined below and in the attached Bridge Formula Weights brochure:

Weight Distribution Formula (Bridge Formula)

$$W = 500 \left(\frac{L N}{N-1} + 12N + 36 \right)$$

W = overall gross weight

N = number of axles under consideration

L = distance in feet between extremes of axles under consideration

Copy of Bridge Formula Weights brochure is attached.

Note

This pamphlet paraphrases the provisions in 23 U.S.C. 127 and 23 CFR 658 for the sake of clarity. In case of a dispute, the statute and regulations take precedence.

Previous editions of this pamphlet, entitled *Bridge Gross Weight Formula* (April 1984) and *Bridge Formula Weights* (January 1994), remain valid. Neither the Bridge Formula nor any resulting maximum gross weight values (table entries) has been changed.

U.S. Department of Transportation
Federal Highway Administration

Office of Freight Management and Operations
Phone: 202-366-9210
Fax: 202-366-3302
Web site: <http://www.ops.fhwa.dot.gov/freight>

August 2006

FHWA-HOP-06-105

**Bridge
Formula
Weights**

August 2006



U.S. Department of Transportation
Federal Highway Administration

Bridge Formula Weights

With a few exceptions noted in this pamphlet, the Bridge Formula establishes the maximum weight any set of axles on a motor vehicle may carry on the Interstate highway system. This pamphlet describes the Bridge Formula, why it was established, and how it is used.

What Is It?

Congress enacted the Bridge Formula in 1975 to limit the weight-to-length ratio of a vehicle crossing a bridge. This is accomplished either by spreading weight over additional axles or by increasing the distance between axles.

Compliance with Bridge Formula weight limits is determined by using the following formula:

$$W = 500 \left[\frac{LN}{N-1} + 12N + 36 \right]$$

W = the overall gross weight on any group of two or more consecutive axles to the nearest 500 pounds.

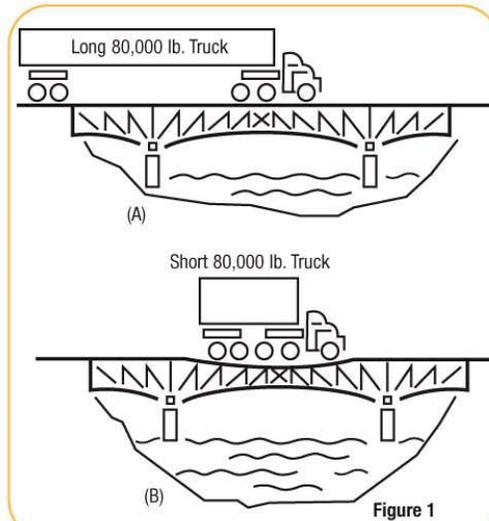
L = the distance in feet between the outer axles of any group of two or more consecutive axles.

N = the number of axles in the group under consideration.

In addition to Bridge Formula weight limits, Federal law states that single axles are limited to 20,000 pounds, and axles closer than 96 inches apart (tandem axles) are limited to 34,000 pounds. Gross vehicle weight is limited to 80,000 pounds (23 U.S.C. 127).

Is the Formula Necessary?

Bridges on the Interstate System highways are designed to support a wide variety of vehicles and their expected loads. As trucks grew heavier in the 1950s and 1960s, something had to



be done to protect bridges. The solution was to link allowable weights to the number and spacing of axles.

Axle spacing is as important as axle weight in designing bridges. In Figure 1A, the stress on bridge members as a longer truck rolls across is much less than that caused by a shorter vehicle as shown in Figure 1B, even though both trucks have the same total weight and individual axle weights. The weight of the longer vehicle is spread out, while the weight of the shorter vehicle is concentrated on a smaller area.

How Is the Formula Used?

The weight on various axle configurations must be checked to determine compliance with the Bridge Formula. Three definitions are needed to use the Bridge Formula correctly.

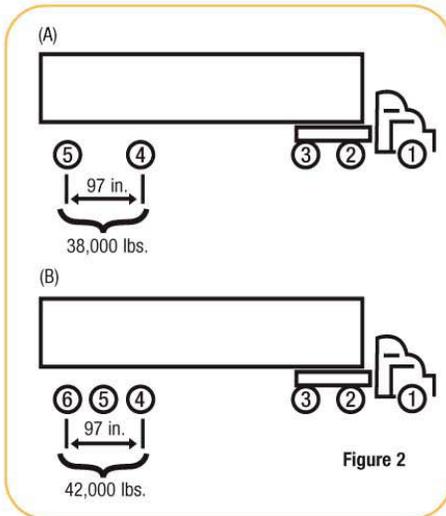
Gross Weight—the weight of a vehicle or vehicle combination and any load thereon. The Federal gross weight limit on the Interstate System is 80,000 pounds unless the Bridge Formula dictates a lower weight limit.

Single-Axle Weight—The total weight on one or more axles whose centers are spaced not more than 40 inches apart. The Federal single-axle weight limit on the Interstate System is 20,000 pounds.

Tandem-Axle Weight—The total weight on two or more consecutive axles whose centers are spaced more than 40 inches apart but not more than 96 inches apart. The Federal tandem-axle weight limit on the Interstate System is 34,000 pounds.

Interstate System weight limits in some States may be higher than the figures noted above due to "grandfather" rights. When the Interstate System axle and gross weight limits were first adopted in 1956, and amended in 1975, States were allowed to keep or "grandfather" weight limits that were higher.

Bridge Formula calculations yield a series of weights (Bridge Table, pages 5-6). It is important to note that the single-axle weight limit replaces the Bridge Formula weight limit on axles not more than 40 inches apart, and the tandem-axle weight limit replaces the Bridge Formula weight limit for axles over 40 but not more than 96 inches apart. At 97 inches apart, for example, two axles may carry 38,000 pounds (Figure 2A), and three axles may carry 42,000 pounds, as shown in Figure 2B.



Federal law states that any two or more consecutive axles may not exceed the weight computed by the Bridge Formula even though single axles, tandem axles, and gross weight are within legal limits. As a result, the axle group that includes the entire truck—sometimes called the "outer bridge" group—must comply with the Bridge Formula. However, interior combinations of axles, such as the "tractor bridge" (axles 1, 2, and 3) and "trailer bridge" (axles 2, 3, 4, and 5), must also comply with weights computed by the Bridge Formula (Figure 3).

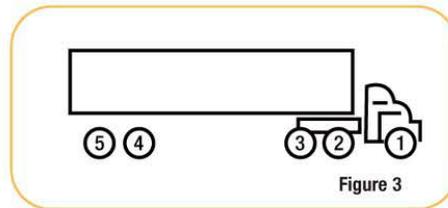
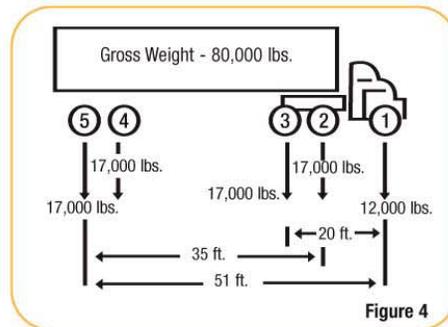


Figure 3 shows the most common vehicle checked for compliance with weight limit requirements. Although the Bridge Formula applies to each combination of two or more axles, experience shows that axle combinations 1 through 3, 1 through 5, and 2 through 5 are critical and must be checked. If these combinations are found to be satisfactory, then all of the others on this type of vehicle normally will be satisfactory.

The vehicle with weights and axle dimensions shown in Figure 4 is used to illustrate a Bridge Formula check.



Permissible Gross Loads for Vehicles in Regular Operation¹

Based on weight formula

$$W = 500 \left[\frac{LN}{N-1} + 12N + 36 \right]$$

Distance in feet (L) between the extremes of any group of 2 or more consecutive axles

Maximum load in pounds carried on

any group of 2 or more consecutive axles²

Tandem Axle Weight (see pages 3 & 4)	L	N=	Maximum load in pounds carried on any group of 2 or more consecutive axles ²																	
			2 AXLES	3 AXLES	4 AXLES	5 AXLES	6 AXLES	7 AXLES	8 AXLES	9 AXLES										
	4.....		34,000																	
	5.....		34,000																	
	6.....		34,000																	
	7.....		34,000																	
	8.....		34,000	34,000																
	More than 8/less than 9		38,000	42,000																
	9.....		39,000	42,500																
	10.....		40,000	43,500																
	11.....			44,000																
	12.....			45,000	50,000															
	13.....			45,500	50,500															
	14.....			46,500	51,500															
	15.....			47,000	52,000															
	16.....			48,000*	52,500	58,000														
	17.....			48,500	53,500	58,500														
	18.....			49,500	54,000	59,000														
	19 Example (see page 7)			50,000	54,500	60,000														
	20			51,000	55,500	60,500	66,000													
	21.....			51,500	56,000	61,000	66,500													
	22.....			52,500	56,500	61,500	67,000													
	23.....			53,000	57,500	62,500	68,000													
	24.....			54,000	58,000	63,000	68,500	74,000												
	25.....			54,500	58,500	63,500	69,000	74,500												
	26.....			55,500	59,500	64,000	69,500	75,000												
	27.....			56,000	60,000	65,000	70,000	75,500												
	28.....			57,000	60,500	65,500	71,000	76,500	82,000											
	29.....			57,500	61,500	66,000	71,500	77,000	82,500											
	30.....			58,500	62,000	66,500	72,000	77,500	83,000											
	31.....			59,000	62,500	67,500	72,500	78,000	83,500											
	32.....			60,000	63,500	68,000	73,000	78,500	84,500	90,000										
	33.....				64,000	68,500	74,000	79,000	85,000	90,500										
	34.....				64,500	69,000	74,500	80,000	85,500	91,000										
	35.....				65,500	70,000	75,000	80,500	86,000	91,500										
	36.....					70,500	75,500	81,000	86,500	92,000										
	37.....		Exception (see page 9)		66,000	71,000	76,000	81,500	87,000	93,000										
	38.....				66,500	71,500	77,000	82,000	87,500	93,500										
	39.....				67,500	72,000	77,500	82,500	88,500	94,000										
	40.....				68,000	72,000	77,500	82,500	88,500	94,000										
	41.....				68,500	73,000	78,000	83,500	89,000	94,500										
	42.....				69,500	73,500	78,500	84,000	89,500	95,000										
	43.....				70,000	74,000	79,000	84,500	90,000	95,500										
	44.....				70,500	75,000	80,000	85,000	90,500	96,000										
	45.....				71,500	75,500	80,500	85,500	91,000	96,500										
	46.....				72,000	76,000	81,000	86,000	91,500	97,500										
	47.....				72,500	76,500	81,500	87,000	92,500	98,000										
	48.....				73,500	77,500	82,000	87,500	93,000	98,500										
	49.....				74,000	78,000	83,000	88,000	93,500	99,000										
	50.....				74,500	78,500	83,500	88,500	94,000	99,500										
	51.....				75,500	79,000	84,000	89,000	94,500	100,000										
	52.....				76,000	80,000	84,500	89,500	95,000	100,500										
	53.....				76,500	80,500	85,000	90,500	95,500	101,000										
	54.....				77,500	81,000	86,000	91,000	96,500	101,500										
	55.....				78,000	81,500	86,500	91,500	97,000	102,000										
	56.....				78,500	82,500	87,000	92,000	97,500	102,500										
	57.....		Interstate Gross Weight Limit (see page 2)		79,500	83,000	87,500	92,500	98,000	103,000										
	58.....				80,000	83,500	88,000	93,000	98,500	104,000										
	59.....					84,000	89,000	94,000	99,000	104,500										
	60.....					85,000	89,500	94,500	99,500	105,000										
						85,500	90,000	95,000	100,500	105,500										

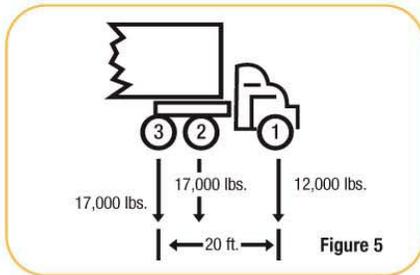
¹The values in this table reflect FHWA's policy of rounding down when calculated weights fall exactly halfway between 500-pound increments. Because the Bridge Formula is designed to protect highway infrastructure, FHWA determined that this conservative policy is consistent with the statutory mandate.

²The following loaded vehicles must not operate over H15-44 bridges; 3-S2 (5-axle tractor

semitrailer with a wheelbase of less than 38 feet), 2-S1-2 (5-axle semitrailer combination with a wheelbase of less than 45 feet), 3-3 (6-axle truck trailer combination with a wheelbase less than 45 feet), and any truck with 7 or more axles.

H15-44 bridges are designed for a specific vehicle load; H15 refers to a 15-ton 2-axle truck; 44 refers to the year AASHTO published the loading information. See AASHTO Standard Specifications for Highway Bridges.

Before checking for compliance with the Bridge Formula, a vehicle's single-axle, tandem-axle, and gross weight should be checked. Here the single axle (number 1) does not exceed 20,000 pounds, tandems 2-3 and 4-5 do not exceed 34,000 pounds each, and the gross weight does not exceed 80,000 pounds. Thus, these preliminary requirements are satisfied. The first Bridge Formula combination is checked as follows:



Check axles 1 through 3 (Figure 5)

Actual weight = 12,000 + 17,000 + 17,000 = 46,000 pounds.

N = 3 axles

L = 20 feet

$$W = 500 \left[\frac{LN}{N-1} + 12N + 36 \right]$$

$$W = 500 \left[\frac{(20 \times 3)}{(3 - 1)} + (12 \times 3) + 36 \right] = 51,000 \text{ lbs.}$$

Maximum weight (W) = 51,000 pounds, which is more than the actual weight of 46,000 pounds. Thus, the Bridge Formula requirement is satisfied.

Example From the Bridge Table (pages 5 & 6)

The same number (51,000 pounds) could have been obtained from the Bridge Table by reading down the left side to L = 20 and across to the right where N = 3.

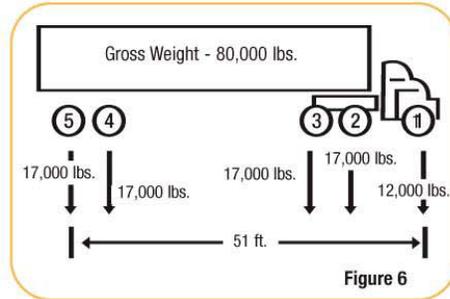


Figure 6

Now check axles 1 through 5 (Figure 6)

Actual weight = 12,000 + 17,000 + 17,000 + 17,000 + 17,000 = 80,000 pounds.

Maximum weight (W) = 80,000 pounds (Bridge Table for "L" of 51 feet and "N" of 5 axles).

Therefore, this axle spacing is satisfactory.

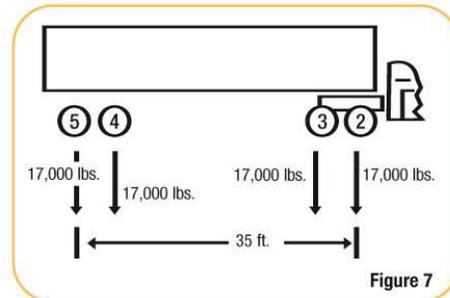


Figure 7

Now check axles 2 through 5 (Figure 7)

Actual weight = 17,000 + 17,000 + 17,000 + 17,000 = 68,000 pounds.

Maximum weight (W) = 65,500 pounds (Bridge Table for "L" of 35 feet and "N" of 4 axles).

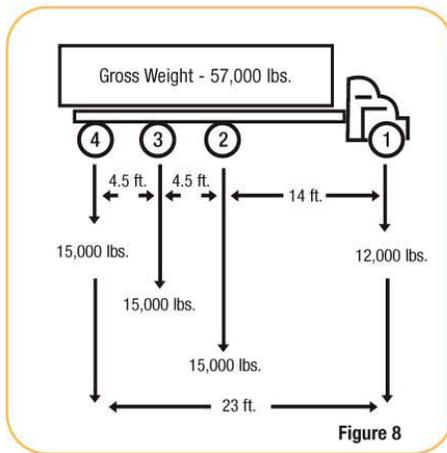
This is a violation because the actual weight exceeds the weight allowed by the Bridge Formula. To correct the situation, some load must be removed from the vehicle or the axle spacing (35 feet) must be increased.

Exception to Formula and Bridge Table

In addition to the grandfather rights noted on page 3, Federal law (23 U.S.C. 127) includes one other exception to the Bridge Formula and the Bridge Table—two consecutive sets of tandem axles may carry 34,000 pounds each if the overall distance between the first and last axles of these tandems is 36 feet or more. For example, a five-axle tractor-semitrailer combination may carry 34,000 pounds both on the tractor tandem (axles 2 and 3) and the trailer tandem (axles 4 and 5), provided axles 2 and 5 are spaced at least 36 feet apart. Without this exception, the Bridge Formula would allow an actual weight of only 66,000 to 67,500 pounds on tandems spaced 36 to 38 feet apart.

**Bridge Formula Application
to Single-Unit Trucks**

The procedure described above could be used to check any axle combinations, but several closely spaced axles usually produce the most critical situation.



The truck shown in Figure 8 satisfies the single-axle weight limit (12,000 pounds are less than 20,000 pounds), the tandem-axle limit (30,000 pounds are less than 34,000 pounds) and the gross-weight limit (57,000 pounds are less than 80,000 pounds). With these restrictions satisfied, a check is done for Bridge Formula requirements, axles 1 through 4.

Actual Weight = 12,000 + 15,000 + 15,000 + 15,000 = 57,000 pounds.

Maximum weight (W) = 57,500 pounds (Bridge Table for "L" of 23 feet and "N" of 4 axles).

Since axles 1 through 4 are satisfactory, check axles 2 through 4:

Actual weight = 15,000 + 15,000 + 15,000 = 45,000 pounds.

Maximum weight (W) = 42,500 pounds (Bridge Table for "L" of 9 feet and "N" of 3 axles).

This is a violation because the actual weight exceeds the weight allowed by the Bridge Formula. The load must either be reduced, axles added, or spacing increased to comply with the Bridge Formula.

Quality Assurance Statement

The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

CIRCULAR LETTER

SECTION: 109.02 SCOPE OF PAYMENT
NUMBER: 109.02-01
SUBJECT: PRICE ADJUSTMENTS
DATE: OCTOBER 2, 2015

Upon receiving monthly indices for price adjustment items, the proper payment adjustment should be reflected on the next current estimate.

When any adjustments are made on estimates due to penalties, content or price variations, the contractor should be furnished a copy of the computations and explanation therefore. All documentation should be uploaded into SiteManager.

CIRCULAR LETTER

SECTION: 109.02 SCOPE OF PAYMENT
NUMBER: 109.02-02
SUBJECT: TEST REPORTS
DATE: APRIL 1, 2006

On all estimates, compare all pay quantities to the test reports or required certifications to assure that all items on the estimate are covered by the necessary in hand test reports or certifications.

Payment for stockpiled material may still be made as per Section 109.06 of the Standard Specifications.

Using this procedure should not delay the processing of estimates or change the cu off dates for the estimate period since materials used in the work are supposed to show evidence of having been inspected or tested prior to their being used. Thus a Test Report or Certification should be readily available.

If the test report or certification is produced by the Department, payment for an item may be made based on a verbal approval from the Region. However, the respective Test Report or Certification shall be "in hand" on the subsequent estimate period or payment for the item shall be removed from the progress payment.

CIRCULAR LETTER

SECTION: 109.02 SCOPE OF PAYMENT
NUMBER: 109.02-04
SUBJECT: DOCUMENTATION OF QUANTITIES FOR PROGRESS PAYMENT
DATE: MAY 15, 2002

The Engineer will keep a book (either hardcopy or electronic) in which the current quantities for each item in the contract is shown. He is to show the calculations for each item in this book or if copied from other records he is to reference back by book and page or sheet to the original notes. All calculations for hardcopy documentation either original or copied are to be signed and dated.

CIRCULAR LETTER

SECTION: 109.02 SCOPE OF PAYMENT
NUMBER: 109.02-05
SUBJECT: CERTIFICATION OF PROMPT PAYMENT AND DBE/SBE SUMMARY
DATE: SEPTEMBER 1, 2012

The Standard Specifications, in accordance with **TCA, Section 12-4-707**, and 49 CFR 26.29 requires the Prime Contractor to pay each subcontractor and material supplier no later than 30 days from receipt of each payment the Prime Contractor receives from the Department. In addition, all subcontractors, at all tiers, must make payment no later than 30 days to each subcontractor and material supplier for work and/or material provided for the project once they receive payment from the prime contractor or subcontractor.

In order to validate this payment, the Prime Contractor shall certify each month that these payments have been made. The certification shall run no more than 2 months in arrears. If circumstances arise where payment to the subcontractors has not been made, the Prime Contractor shall list reasons for nonpayment and note whether or not the subcontractors are Disadvantaged Business Enterprises (DBE) or Small Business Enterprises (SBE)* in the exception block. Also, the Prime Contractor shall be required to list all subcontractors or material suppliers where joint checks are utilized and note whether or not the subcontractors or material suppliers are DBEs/SBEs in the joint checks box.

Once completed by the contractor, the Certification Regarding Prompt Payment to Subcontractors and Material Suppliers and DBE/SBE Payment Summary shall be submitted electronically to the Project Supervisor. If DBEs/SBEs are utilized on the project and listed on the Certification Regarding Prompt Payment to Subcontractors and Material Suppliers and DBE/SBE Payment Summary, then the completed form shall also be submitted by email to the Small Business Development/DBE Office (DBE.runningtally@tn.gov). Copies of joint checks for DBEs/SBEs shall be attached to the email.

When exceptions or joint check subcontractors are listed, the Project Supervisor shall forward copies of the Certification to the Director of Construction and the Regional Construction office.

Monthly progress payments shall not be processed without this certification.

Use of the form Certification Regarding Prompt Payment to Subcontractors and Material Suppliers and DBE/SBE Payment Summary is required for contracts beginning with the September 14, 2012 Letting.

* Small Business Enterprise (SBE) as certified with the Governor's Office of Diversity Business Enterprise's Go-DBE System. All small businesses are encouraged to apply for certification with the Go-DBE System. More information is available at www.tennessee.gov/diversity.

CIRCULAR LETTER

SECTION: 109.03 COMPENSATION FOR ALTERED QUANTITIES
NUMBER: 109.03-01
SUBJECT: OVERRUN AND UNDERRUN EXPLANATIONS
DATE: OCTOBER 2, 2015

Explanations for overruns and underruns on revised estimates are to be provided in accordance with the following guidelines:

1. Explanations are to be given if an item is not used.
2. Explain items covered by a Supplemental Agreement by referring to the Supplemental Agreement, e.g., "See Supplemental Agreement No.--."
3. Explain items covered by a Plans Revision by referring to the Plans Revision, e.g., "See Plans Revision dated -----."
4. Explanations are to be given for overruns or underruns on major items (as defined in Subsection 101.03 of the Standard Specifications) if the quantity varies from the original quantity by 10% or more.
5. Explanations are to be given if the Engineer extends time due to overruns in accordance with Subsection 108.07 of the Standard Specifications.
6. Explanations are to be given for overruns and underruns due to other factors considered significant by the District Supervisor.

Explanations for changes not consistent with the above will be required if deemed significant by the Regional Operations Office, Headquarters Construction Office or Federal Highway Administration.

CIRCULAR LETTER

SECTION: 109.04 ADDITIONAL OR ALTERED WORK
NUMBER: 109.04
SUBJECT: DOCUMENTATION AND METHOD OF PAYMENT
DATE: OCTOBER 2, 2015

All price adjustments must be submitted in accordance with **Subsections 104.02 and 104.03**.

1. Change Order – This method is applicable when the Department and the Contractor can agree on equitable prices for the extra work. The procedures relating to major and minor changes in the Department’s **Policy Number 355-01, Approval of Construction Change Orders and Force Account Work**, are to be followed for extra work covered by Change Order. The descriptions of the bid items, bid item numbers, and units of measure in the Change Orders should be obtained from the SiteManager Item Master. If an item of extra work is not covered in the SiteManager Item Master, the necessary bid item descriptive data shall be obtained from the Headquarters Construction Division.
2. Force Account – This method is applicable when the Department and the contractor are unable to agree on equitable prices for the extra work. The extra work must prove to be more cost effective than bidding the work. Prior approval for extra work performed by force account also is required in accordance with the procedures relating to major and minor changes in the Department’s **Policy Number 355-01, Approval of Construction Change Orders and Force Account Work**. In all cases, detailed cost records must be kept by the Operations District Supervisor as prescribed in **Subsection 109.04** to fully support all billings for the work. The line item for the force account work on the Estimate Summary to Contractor should show the following information:

Bid Item Number:	109-04
Description:	Force Account
Unit of Measurement:	Dollar

CIRCULAR LETTER

SECTION: 109.05 ELIMINATED OR ALTERED ITEMS

NUMBER: 109.05-01

SUBJECT: UNUSED OR SERVICEABLE MATERIAL REMOVED FROM THE PROJECT

DATE: OCTOBER 2, 2015

1. Payment for Items which have been approved by the District Operations Supervisor for delivery to the project and not used, will be paid to the contractor in accordance with Subsection 109.05 of the Standard Specifications.
2. The Contractor should submit to the District Operations Supervisor a letter detailing all the materials to be removed from the project. This letter should contain the information required in Subsection 109.05 of the Standard Specifications. After the District Operations Supervisor has received the letter, he/she shall forward a copy to the District Operations Engineer. After this has been accomplished the responsibility for the removal and disposition of the material belongs to the District Operations Engineer.

CIRCULAR LETTER

SECTION: 109.08 PARTIAL PAYMENT
NUMBER: 109.08-01
SUBJECT: PARTIAL PAYMENTS
DATE: OCTOBER 2, 2015

Concrete Retaining Walls:

Where concrete retaining walls are paid for by the square foot (square meter) or lump sum, partial payment for work performed during the estimate period may be made provided that no stockpile payment has been made for materials incorporated into the work. The partial payment will be paid for under the actual pay item for the respective retaining wall.

For walls in both cut and fill sections, the District Supervisor will estimate the percentage of the completed wall that is represented by:

1. Footing excavation and/or undercutting and select backfill, if required.
2. Concrete, reinforcing steel and piling in the footing(s).
3. Concrete and reinforcing steel, or precast panels and columns in the wall.
4. Drains and backfill.
5. Texture coat or other finish.

A partial payment quantity will be computed based on the percentages assigned above.

Method: $\text{Partial Payment Quantity} = \frac{\% \text{ complete}}{100\%} \times \text{plans quantity}$

Where, % complete = sum of percentages assigned for the estimate period

Calculations as indicated above will be shown in the field book for each progress estimate that partial payments are made.