

STATE OF DELAWARE



DEPARTMENT OF TRANSPORTATION

REQUEST FOR QUALIFICATIONS

for

CM/GC SERVICES

(Construction Manager/General Contractor)

BR 1-227 on N013 PAPER MILL ROAD
OVER MIDDLE RUN TRIBUTARY

PROJECT: CM/GC-201407102
(EBROS-N013002)

Advertisement Date: July 25, 2016

Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware until 2:00 P.M. local time **August 16, 2016**

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1.0 INTRODUCTION

CONSTRUCTION MANAGER/GENERAL CONTRACTOR (CM/GC)

The Delaware Department of Transportation (DelDOT) is accepting Statements of Qualifications (SOQ's) in response to this RFP from qualified firms interested in providing CM/GC services to DelDOT for this project.

The CM/GC process is a unique method used to accelerate project delivery. In the CM/GC process DelDOT hires an experienced, qualified contractor to provide feedback during the design phase before the start of construction.

The CM/GC process is broken down into two phases. The first, the Design Phase, allows the CM/GC to work with the Designer and DelDOT to offer constructability and pricing feedback on design options, identify risks based on the contractor's established means and methods, and help refine the project schedule. The CM/GC is compensated for this effort as described in Appendix A, Pre-Construction Services Fee. The second, the Construction Phase, begins once DelDOT considers the design to be complete. The CM/GC then has an opportunity to submit a cost proposal on the project based on the completed design and schedule. If DelDOT, utilizing the Designer's and an Independent Cost Estimator's (ICE) project estimate, determines that the contractor has submitted a fair price, DelDOT will issue a construction contract to the CM/GC and construction can begin.

If a fair price cannot be agreed upon, the CM/GC services are ended, and the construction project will be advertised following DelDOT's Design-Bid-Build competitive bidding process.

1.1 Advantages of CM/GC Procurement

There are advantages to using the CMGC process with certain projects. The contractor serves in a consulting role during the design process and can offer new innovations, best practices and reduced costs and schedule risks as a result of the contractor's years of proven experience doing similar work. This process also allows the project owner to employ new innovations, assist in the design process, and make informed decisions regarding cost and schedule.

Additional anticipated benefits for using the CM/GC process include:

- **Fostering innovation:** The process encourages both contractor and project owner to look at all options including using innovative techniques or approaches that reduce time and cost.
- **Mitigating risk:** The project owner is able to understand the risk and explore mitigation options with feedback provided by the contractor.
- **Improving design quality:** The contractor is able to review the designs and provide feedback, answer designer questions, and provide changes. By including the contractor review, the designer can produce better designs that reduce issues in construction and prevent change orders that can lead to project overruns.
- **Improving cost control:** Value engineering is part of the CMGC process where budget shapes the design approaches. With the contractor as part of the design team, the contractor is able to provide cost estimates for all designs and alternatives within the design phase. The project owner can use the estimates to make informed decisions around projects costs.
- **Optimizing construction schedules:** The CMGC process allows the contractor to begin planning the construction schedule during the design phase. By planning during the design phase the team can view how construction will impact traffic and adjust the construction schedule accordingly to minimize traffic impacts.

1.2 Authority

Delaware's 148th General Assembly authorized a Construction Manager/General Contractor pilot program within 80 *Del. Laws*, c.78, §130, allowing this procurement mechanism for up to six projects. This is the second procurement.

The Federal Highway Administration has issued a Notice of Proposed Rule Making (NPRM) proposing several amendments in 23 CFR part 630 and 635 to account for the particular application of various Federal requirements to CM/GC projects. This procurement meets these proposals. The NPRM can be found on the Federal Register Web site at: <https://www.federalregister.gov/articles/2015/06/29/2015-15617/construction-manager-general-contractor-contracting>.

2.0 PROJECT INFORMATION

2.1 Questions, Clarifications, and Addenda

Questions regarding this project are to be e-mailed to dot-ask@state.de.us no less than six business days prior to the proposal opening date in order to receive a response. Please include ‘CM/GC’ in the subject line. Responses to inquiries are posted on-line at bids.delaware.gov.

Any changes, clarifications, or interpretations of this RFQ that affect or change its requirements will be issued by DelDOT to the Project Web Site in the form of Addenda or in response to questions. Responses in any other form, including oral statements, will not be binding on DelDOT and should not be relied upon in preparing the SOQ.

All addenda and responses to questions issued by DelDOT before the Statement of Qualification Due Date are part of the RFP, and all requirements shall be incorporated into the SOQ. The Submitter shall acknowledge receipt of each addendum and the latest response to questions.

2.2 Project Schedule, Due Dates

Advertise RFP: July 25, 2016

Last day for submittal of questions: August 8, 2016

Statement of Qualifications Due:	August 16, 2016 prior to 2:00 PM Local Time
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Anticipated Selection of CM/GC August 30, 2016

Anticipated Notice to Proceed September 26, 2016

Development of Plans and Specifications Current – February 2018 (estimated)

Proposed Construction Price (PCP) Negotiation March 2018 (estimated)

Construction Letting (if no PCP agreement) April 2018 (estimated)

Construction Summer 2018 (estimated)

2.3 SOQ Delivery

Sealed Statements of Qualifications must be delivered to the following location prior to the date and time indicated in Section 2.2 of this RFQ:

Contract Administration
 SOQ OPENING 8/16/2016
 Delaware Department of Transportation
 Administration Building
 800 Bay Road
 Dover, DE 19901

DelDOT will not accept SOQ’s submitted by facsimile or e-mail.

3.0 PROJECT REQUIREMENTS

3.1 Phase 1 - Pre-Construction Services, Design

DeIDOT, its design consultant (Designer), and the awarded CM/GC will collaborate throughout the design phase of the Project. The CM/GC will be responsible to provide constructability reviews, cost estimates, and additional construction input during the design phase.

It is desired that during the design phase, the CM/GC, the Designer, and DeIDOT will develop and maintain a spirit of cooperation and open communication among the parties so that the goals and objectives of each are clearly understood, potential problems are resolved promptly, and upon completion, the Project is deemed a success by all.

The CM/GC is expected to deliver pre-construction services which typically may include:

- Review the Designer developed alternatives and identify potential construction issues and risks for each to assist the Project Team in selecting the appropriate option for the Project.
- Analyze and evaluate the constructability of the preliminary design.
- Provide information, cost estimates, and alternative options to help facilitate decisions regarding existing conditions, construction impacts, and staging.
- Provide input to the Project Team regarding current construction industry practices, labor market, and material and equipment availability.
- Review in-progress design plans and provide input and/or alternate design concepts and offer suggestions with respect to the means and methods, materials, innovations, and construction sequencing.
- Review design documents in-progress and offer suggestions to improve completeness or clarity.
- Notify the DeIDOT Project Manager of problems, conflicts, and/or deficiencies identified during the review and evaluation of design drawings.
- Assist the Designer and DeIDOT Project Manager in resolving problems, conflicts, and/or deficiencies identified during the review and evaluation of design drawings.
- Provide preliminary construction estimates at significant phases of the project planning process.
- Provide recommendations for the plans or construction documents to ensure completion of the Project in the most efficient manner possible.
- Provide a review and evaluation of the final plans and construction documents.

The scope of services in the preconstruction phase includes all alternatives identified and considered in the NEPA process. DeIDOT expressly declares that no commitments are being made to any alternative evaluated in the NEPA process and that the comparative merits of the alternatives will be evaluated and fairly considered.

3.2 Phase 1A - Pre-Construction Services;

Early Work Packages

An Early Work Package is an optional tool for a portion or phase of construction work (including material acquired for a construction phase) that is procured before all design work for the project is complete. Once NEPA is complete, Early Work Packages may allow DeIDOT to provide for; schedule acceleration; overall risk mitigation; cost savings related to inflation; acquiring long-lead items; or start a particular phase of construction; for which the risks are adequately identified and the scope of work is defined sufficiently to reasonably determine price. Early Work Packages are procured, authorized, awarded, and contracted utilizing the same process as the Proposed Construction Price contract would be handled if awarded to the CM/GC.

Proposed Construction Price (PCP)

As the design nears completion, DeIDOT will request a PCP from the CM/GC when the plans and construction documents are completed to a level efficient enough to do so. The Proposed Construction Price will include all necessary materials, equipment, staff, and labor to complete the construction of the

Project through DeIDOT acceptance. The PCP will not be exceeded without prior approval from DeIDOT through a written work order.

The Proposed Construction Price (PCP) shall include:

- All costs for the project's construction through to DeIDOT acceptance, including all overhead and profit considered within specified pay items; as well as any subcontracted work.
- Written guarantee from the CM/GC that the total construction cost shall not exceed the PCP. All costs or expenses in excess of the PCP shall be borne by the CM/GC, unless adjusted by a previously approved written change order.
- The CM/GC will prepare and submit paper and electronic bid documents for identified items per DeIDOT standard specifications.
- Construction schedule showing the proposed start and finished dates and any significant milestones.
- Staffing Plan during construction.
- Stated understanding of the project requirements including adherence to the soil erosion and sedimentation control plan requirements.
- Assurances that all environmental and mitigation measures identified in the NEPA documentation and committed to in the NEPA determination for the selected alternative will be implemented.
- Commitment to the identified Disadvantaged Business Enterprise (DBE) participation goal.
- The CM/GC is to make available all cost and budget estimates, including supporting materials and records, to DeIDOT if requested.

Subject to a successful negotiation with DeIDOT, the CM/GC will be awarded the construction portion of the project, responsible to complete the construction while directly performing at least 50 percent of the work with its own forces.

If DeIDOT and the CM/GC cannot agree on a PCP, DeIDOT reserves the right to terminate the CM/GC services without penalty or payment, except payment as identified in the Pre-Construction Services contract. DeIDOT will then proceed with the project as necessary, and may advertise the Project construction using traditional Design-Bid-Build or other procurement methods. All information provided by the CM/GC during the Pre-Construction phase becomes the property of DeIDOT, and may be used to develop the plans and specifications for the project.

3.3 Phase 2 - Construction Services

Upon DeIDOT's acceptance of the CM/GC's PCP, DeIDOT will Award the construction contract to the CM/GC. The CM/GC shall, once award is made by DeIDOT:

- Submit a Performance and Payment bond for 100% of the accepted PCP;
- Submit properly signed and notarized project Certification document;
- Submit a signed and notarized Affidavit Of Employee Drug Testing Program;
- Submit DBE participation information within the time specified in the Award;
- Enter into a standard project construction contract with DeIDOT following DeIDOT's Specifications and procedures;
- Attend pre-construction meeting;
- Request approval from DeIDOT for all subcontractors prior to their on-site work;
- Manage all construction related contracts;
- Perform at least 50% of all construction work, excluding any identified specialty items;
(The remaining percent of work may be completed by DeIDOT approved subcontractors)
- Adhere to all federal, state, and local permitting and environmental requirements;
- Maintain a safe work site;
- Achieve Substantial Completion no later than date specified in the PCP;

- If the CM/GC is a Joint Venture, each member of the Joint Venture will need to provide proof of a Delaware business license prior to entering into a construction contract.
- Delaware Standard Specifications for Road and Bridge Construction, current at the time of Award apply to all construction activity unless specifically addressed in this RFP or contract documents.
- The construction contract terms shall include provisions to pay prevailing wage rates as provided in 29 Del. C. § 6960, or the applicable Federal prevailing wage rate (if applicable), whichever is higher.
- The following additional provisions of 29 Del. C. c. 69 shall also be incorporated into these contracts:
 - § 6962(d)(4)a. (anti-pollution, conservation environmental measures);
 - § 6962(d)(7) (equal employment opportunity assurances); and
 - § 6962(d)(8) (performance bonding requirements).
- Any such contracts shall conform to all applicable Federal laws and regulations concerning CM/GC contracting, without regard to the source of funds.
- Any such contracts shall also be subject to the provisions of 17 Del. C. c. 8 (construction payments held in trust for protection of subcontractors and suppliers).

3.4 Project Scope of Work

The Scope of Work, Project Goals and Key Issues for this Project are contained in Appendix A.

3.5 Sample Contract

A sample Pre-Construction Services contract is contained in Appendix B.

3.6 Project Concept Plan

The Concept Plans for this Project is contained in Appendix C.

4.0 STATEMENT OF QUALIFICATION

WRITTEN SOQ SUBMISSION

Statements of Qualifications should be prepared simply and economically, providing a straightforward, concise description of proposer capabilities to satisfy the requirements of this project. To be considered, all submittals must be in writing and respond to the items outlined in this RFP using the requested format. Emphasis should be on completeness and clarity of contents.

SOQ's are required to address the following items in the order shown:

4.1 Cover Letter

Each SOQ should have a cover letter on the letterhead of the Proposer's company. At the top of the first page, list the Proposer's contact name, telephone number and e-mail address. This will be the main contact representing the Proposer. The cover letter shall summarize your ability to provide Pre-Construction Services and explain the advantages offered by your team. Proposer should describe their ability to coordinate with the Designer and DelDOT to improve constructability and provide input for design details.

4.2 Proposer's Team

Describe how the key members of your team will help address the Goals and Key Issues described in Appendix A, Scope of Work. Discuss the qualifications and experience of the below listed Key Personnel. When Proposers list personnel in the Project Team section of the Proposal, the Proposer is agreeing to make the personnel available to complete work on the Contract at whatever level the Project requires. Personnel changes will be reviewed and approved by DelDOT's Project Manager. Re-negotiation of the Pre-Construction Services Fee or termination of the contract may occur if a change in Key Personnel does not meet DelDOT's determination of "equal to" or "better than" the qualifications of the individual who was submitted in the Proposer's proposal.

Project Manager:

This will be the primary member of the CM/GC's team for the CM/GC preconstruction services, and is expected to lead the construction services phase of the project.

- Demonstrate recent experience managing the construction of projects of similar scope and complexity. Experience does not have to be CM/GC experience.
- Demonstrate experience working collaboratively with project owners and stakeholders.
- Demonstrate experience identifying and mitigating project risks.

Construction Manager:

Must have experience as a construction manager, including managing the construction of at least one project of similar scope and complexity (5 years preferred).

- Demonstrate experience with design plan constructability reviews.
- Demonstrate experience identifying and mitigating project risks.

Lead Estimator:

Must have experience as a lead estimator, including estimating at least one project of similar scope and complexity (10 years preferred).

- Demonstrate experience in current local construction pricing.
- Demonstrate experience in developing "take off" quantities.
- Demonstrate experience identifying and mitigating project risks.

Other Personnel:

Up to two other persons that the proposer considers as key to the stated goals of the project (ATTSA Certified Traffic Control Supervisor or construction phasing expert preferred).

- Describe any past experience collaboratively working with owners and/or design firms on highway and/or bridge projects (does not have to be CM/GC experience).

Organizational Conflict of Interest

- Proposers are required to disclose all relevant facts concerning any past, present, or currently planned interests, activities, or relationships which may present an organizational conflict of interest. Proposers shall state how their interest, activities, or relationships, or those of the chief executives, directors, key project personnel, or proposed firms may result, or could be viewed as, an organizational conflict of interest. Must describe details, or state if not applicable.

4.2.1 Resumes

Provide resumes for the Proposer's Team.

4.3 Preconstruction Approach

How the CM/GC supports the process to achieve the Project Goals is critical to the Project Team's success. This section is an opportunity for the Proposer to demonstrate their qualifications to be successful in a CM/GC contracting environment during the preconstruction phase.

Collaboration -

The CM/GC process is based on the principles of collaboration, cooperation, and trust between DeIDOT, the design team, and the CM/GC.

- Describe the Proposer's approach for accomplishing this objective.

Design and Constructability Review -

The CM/GC's involvement during the preconstruction phase of the project should help streamline the design process, reduce errors and omissions, improve constructability and quality, reduce the cost of construction, and optimize the project delivery schedule.

- Describe the Proposer's approach for accomplishing these objectives on the Project.

Risk Management -

The CM/GC process benefits from the contractor's engagement in risk management.

- Explain the approach the Proposer will use to help the Project team identify, price, and mitigate risks.

Cost Control -

The CM/GC plays a key role in partnership with the Project design team, and the ICE in developing and managing the project cost through the development of the design.

- Describe the Proposer's preconstruction approach to deliver this project within a controlled budget.

4.4 Construction Approach

Address the following regarding your approach to construction and how you will address the Project Goals and Key Issues.

- Describe the project approach which may include sequencing, Maintenance of Traffic (MOT) strategies, staging area(s), construction phasing, etc.
- Describe your approach to safety of workers and traveling public.
- Describe your approach to support DeIDOT in working with other stakeholders as it applies to Project Goals and Key Issues. Discuss how your approach will help local governments, utility companies, adjacent property owners, and local businesses achieve their goals.
- Describe the capabilities and resources that your company will bring to the project and how these resources and capabilities will be beneficial in achieving Project Goals and Key Issues. This narrative may also include discussion of any unique business advantages or construction methods that will benefit the project.

4.4.1 Similar Past Performance

List up to ten (10) projects where you performed a significant amount of work similar to that expected on this project.

4.4.2 Performance Issues

List each project in the past five (5) years the Proposer has defaulted or failed to complete a contract and the reasons why.

4.4.3 Current Projects

Provide a list of contracts currently in progress, and their respective associated dollar amounts

4.5 Approach to Price

Project estimating on CM/GC projects is a collaborative process where the CM/GC is expected to provide an open and transparent Cost Model at each estimating milestone to clearly document the means, methods, and assumptions that were used to derive the proposed pricing.

- Describe Proposer's approach to providing an open and transparent estimating environment that will assure DeIDOT is receiving a fair price for the work.
- Provide a sample estimate for the two bid items listed below, showing how the CM/GC will breakdown direct costs such as labor, equipment, material, trucking, small tools and supplies, etc, as well as the approach to applying indirect costs and markup associated with the items and any other detailed costs used to develop a fully loaded cost for the items. The costs and markups provided should be conceptual and will not be evaluated or considered "contractual". The purpose of the sample estimates is to demonstrate the CM/GC's approach to estimating/bidding is open and transparent and will be evaluated for the structure of the breakdown rather than the costs.
 - 207000 Excavation and Backfill for Structures (CY) and 909005 Stream Diversion (LS)
- Subcontractor Plan: The CM/GC has a minimum self-performance requirement of 50 percent. Discuss the approach to developing a subcontractor selection plan that will allow for competitive solicitation of bids from quality subcontractors. How will the Proposer demonstrate that the subcontractor's prices are competitive? What specific commitments will the Proposer provide that enhance DBE participation, during construction?

4.6 Surety Company Bonding Information

Provide a letter from a surety company indicating that the Proposer is capable of obtaining Payment and Performance Bonds for at least \$1,000,000. The surety must be such surety company or companies as are acceptable to the State of Delaware and are authorized to transact business in this State. Letters indicating “unlimited” bonding/security capability are not acceptable.

4.7 SOQ Required Format

- **Language:** All information shall be in English.
- **Font:** All narrative text shall be a minimum of eleven (11) point font and single spaced. The style and size of headings and figures are not prescribed.
- **Page Size:** 8.5-inch x 11-inch paper. Charts, exhibits, etc. may be 11-inch x 17-inch paper, folded to 8.5-inch x 11-inch and will be counted as one (1) sheet. Pages may be single or double sided.
- **Page Margins:** Set at 0.75 inches minimum, not including headers or footers.
- **Table of Contents:** Include a Table of Contents that provides page number references.
- **Page Limit:** Do not exceed 10 pages. Staff resumes and forms are not included in page limits.
- **Dividers:** Section dividers or tabs are required.
- **Binding:** Each copy of the SOQ shall be bound separately, with the exception of the “Original” which shall be submitted in a three ring binder.
- **Front Cover:** Front cover shall be clearly labeled with the Project name and Submitter’s name. The Front and Back Cover may contain photos, graphics, and logos but no written content and will not be considered part of the page count.
- **Appendices:** Any additional appendices or information included but not requested by DeIDOT will be removed from the Proposal and will not be reviewed by the Evaluation Team.

4.8 Submittal of SOQ

- One SOQ submission in 3 ring binder bearing original forms and signatures. This shall be identified as “Original” on its front cover;
- Five additional hardbound copies of the SOQ submission;
- One CD containing;
 - Electronic copy of the exact submitted SOQ in PDF format with sections bookmarked;
 - Electronic copy of the submitted SOQ in PDF format with proprietary or confidential information redacted. The PDF to be marked as “Redacted Copy”, required even if the submission contains no proprietary or confidential information. [*Firms should review Delaware’s Freedom of Information Regulations, section 6, Requests for Confidentiality, on the DeIDOT Website www.deldot.gov to determine what information may be considered proprietary or confidential and may be redacted.*]
- The unbound original, the bound copies, and CD shall be placed in one (1) sealed package for delivery to DeIDOT as set forth in Section 2. The outside of the sealed package shall be clearly labeled with the Project name, as well as the name and return address of the Submitter.

5.0 SELECTION AND AWARD

5.1 Selection Process

5.1.1 SOQ Submittal

SOQ submittals must be received by the time and at the location identified in Section 2.2. The proposals should contain all the essential information in which the award decision shall be made. The information that is required to be submitted in response to this RFP has been determined by DeIDOT to be essential for use by the Committee in the evaluation and award process. Therefore, all instructions contained in this RFP shall be met in order to qualify as a responsive and responsible proposer and participate in the consideration for

award. Proposals that do not meet or comply with instructions of this RFP may be considered non-conforming and deemed non-responsive and subject to disqualification at the sole discretion of the Committee.

5.1.2 Selection Committee

The Selection Committee will individually review each SOQ, and then meet as a group to review and discuss the submitted SOQ's. The Committee will discuss the Proposers' strengths and weaknesses in each scoring category based on the selection criteria. The committee will decide if interviews will be required. If any of the Proposer's submittals is missing information or is not complete, the Committee may request clarification and/or submittal of corrected, supplemental, or missing documents. Alternatively, the SOQ submittal may be declared non-responsive and not considered for award, and the Proposer will be advised of the Committee's decision.

5.1.3 Proposer Interviews

An interview of all Proposers may be requested by the Selection Committee. The interview will allow the Proposer the opportunity to present on the qualifications of their team, project approach or on other areas they feel will add value. DeIDOT will have the opportunity to ask each Proposer general questions or questions that are specific to their proposal.

If interviews are required, DeIDOT will notify all firms to arrange an interview. Proposers not participating in an interview will have their SOQ declared non-responsive and will no longer be considered for selection. Interviews are not expected to exceed 60 minutes. If interviews are held, the Selection Committee will meet after all interviews have been completed to review and discuss the submitted SOQ's, and the information gained from the interviews.

5.2 Selection Criteria

Evaluation Item	Maximum Points
Proposer's Team	15
Preconstruction Approach	30
Construction Approach	35
Approach to Price	20
Total Points	100

5.3 Scoring

After the Selection Committee meeting, committee members will individually score each SOQ submittal according to the Selection Criteria and utilizing the Qualitative Assessment Guidelines found below, which will rank each SOQ from highest to lowest (highest score receives ranking of 1 for first choice). Individual rankings are submitted to DeIDOT's Contract Administration section for compilation. The SOQ rankings of all committee members will then be averaged. The lowest average ranking will indicate the selected firm. In the event of a tie, highest total points will indicate the selected firm. This will be the Committee's recommendation for award. Upon approval of the appropriate DeIDOT Director, Contract Administration will notify all proposers of the Award.

continued on following page

Qualitative Assessment Guidelines	
Evaluation Team members will individually review and score each submission according to the criteria set forth in the RFQ. Team members will evaluate each category and assign a Qualitative Assessment Percentage considering the scoring range listed below:	
90-100%	The Proposer's qualifications are exceptional. The Proposer demonstrates a complete understanding of the subject and an approach that significantly exceeds the stated requirements and objectives of this project. The Proposal communicates an outstanding level of quality.
70-89%	The Proposer's qualifications are above average. The Proposer demonstrates a strong understanding of the subject and an approach that meets the stated requirements and objectives of this project. The Proposal communicates a high level of quality.
40-69%	The Proposer's qualifications are adequate. The Proposer demonstrates a general understanding of the project and an approach containing some weaknesses/ deficiencies regarding the stated requirements and objectives of this project. The proposal communicates an average level of quality.
20-39%	The Proposer's qualifications raise questions about the Proposer's ability to successfully complete the work. The Proposer demonstrates a vague understanding of the project and an approach containing significant weaknesses/ deficiencies regarding the stated requirements and objectives of this project. The Proposal communicates a below-average level of quality.
0-19%	The Proposer's qualifications do not indicate the likelihood that the work will be completed successfully. The Proposer demonstrates insufficient understanding of the subject and an approach that fails to meet the stated requirements and objectives of this project. The Proposal communicates a low level of quality.

5.4 Award

DelDOT intends to award the agreement to the most responsive and responsible Proposer in accordance with the listed selection criteria. DelDOT shall make this award in writing and for the selected Proposer. Concurrence from the FHWA Division Administrator is required prior to award, including agreements to proceed to the construction services phase or decisions to not proceed with an agreement for construction services.

5.5 Organizational Conflicts Of Interest

Organizational conflict of interest means that because of other activities or relationships with other persons or entities, an Organization:

- Is unable, or potentially unable, to render impartial assistance or advice to DelDOT;
- Is, or might otherwise be, impaired in its objectivity in performing the contract work;
- Has an unfair competitive advantage.

If an Organizational Conflict of Interest is determined to exist, DelDOT may, at its sole discretion: offer the Proposer the opportunity to avoid or neutralize the Organizational Conflict of Interest; disqualify the Proposer from participation; or, if award has already occurred, declare the Proposer nonresponsive and negotiate with the next highest scoring Proposer, or cancel the contract.

No firm that is ineligible for State or Federal contracts may be part of any Proposal. Each Proposer is responsible for determining eligibility of its team members.

6.0 RIGHTS AND DISCLAIMERS

DelDOT reserves the right, in its sole and absolute discretion, to:

1. Reject any or all submittals;
2. Issue a new RFQ;

3. Cancel, modify, or withdraw the RFQ;
4. Issue addenda, supplements, and modifications to this RFQ;
5. Modify the RFQ process (with appropriate notice to Proposers);
6. Appoint an Evaluation Committee and evaluation teams to review submissions;
7. Approve or disapprove substitutions and/or changes in submissions;
8. Revise and modify, at any time before the RFQ due date, the factors it will consider in evaluating submittals and to otherwise revise or expand its evaluation methodology. If such revisions or modifications are made, DelDOT will provide an addendum setting forth the changes to the evaluation criteria or methodology. DelDOT may extend the RFQ due date if changes are substantial;
9. Seek or obtain data from any source that has the potential to improve the understanding and evaluation of the submissions;
10. Waive weaknesses, informalities, and minor irregularities in submissions;
11. Retain ownership of all materials submitted in hard-copy and/or electronic format;

DelDOT Disclaimers:

The RFQ does not commit DelDOT to enter into a Contract, nor does it obligate payment for any costs incurred in preparation and submission of the RFQ submittals or in anticipation of a Contract. By submitting a response, a Proposer disclaims any right to be paid for such costs.

The execution and performance of a Contract is contingent upon sufficient appropriations and authorizations being made by the state General Assembly, and/or the Congress of the United States.

In no event shall DelDOT be bound by, or liable for, any obligations with respect to the Work or the PROJECT until such time (if at all) as the Contract has been executed by both parties, and then only to the extent set forth in a written Notice to Proceed.

In submitting responses to this RFQ, the Proposer is specifically acknowledging these disclaimers.

- end -

APPENDIX A – Project Scope of Work

Project Description

This project involves the replacement of Bridge 1-227, an existing large corrugated aluminum pipe arch, with a precast concrete box culvert. The box culvert will include a pathway to connect the adjacent bike trails in the parks on each side of the culvert. The approach roadways, drainage inlets, and guardrail will be reconstructed as needed, and riprap will be placed in the stream for scour protection. The work will be performed in a manner which minimizes impacts to traffic as much as possible. The existing pipe is structurally deficient and was identified by DelDOT's Bridge Management System for work. This bridge is ranked 32nd on the 2016 DelDOT Bridge Deficiency List (out of 1625 total bridges).

Goals

- Replace the existing corrugated metal pipe arch
- Provide a path for mountain bikers up to and through the proposed culvert
- Minimize impacts to traffic during construction
- Minimize impacts to surrounding environmentally sensitive areas
- Perform construction around existing utilities
- Complete construction before Fall 2018

Key Issues

- High traffic volume on SR72 Paper Mill Road
- Overhead utilities on west side
- High pressure gas line under culvert on east side
- Environmentally sensitive area
 - New Castle County park on east side and state park on west side of road
 - Significant number of trees surrounding work area
 - National Park Service Wild and Scenic Area
 - DNREC/Army Corps of Engineers permits needed

Project Team

The Project Team is composed of the following;

- DelDOT – The project will be administered and managed by DelDOT. The Designer, CM/GC, and ICE all report directly to DelDOT. The DelDOT Project Manager will be the point of contact after execution of the contract with the CM/GC.
- Designer – DelDOT is performing design services using in-house staff.
- CM/GC – The Construction Manager/General Contractor (successful Proposer).
- ICE – DelDOT will retain an Independent Cost Estimator that will provide comparative fair market price estimates throughout the preconstruction phase.

Estimated Cost

The estimated construction cost for the project is between \$600,000 and \$1,000,000.

Pre-Construction Services Fee

The Pre-Construction Services Fee for this project is \$35,000. Compensation for the pre-construction work shall be on a **monthly** basis, paid during the pre-construction services.

DelDOT may authorize incremental payments if the design phase is delayed due to circumstances beyond the CM/GC's control. Payment to the CM/GC for services rendered shall not exceed the maximum amount unless an increase is approved in accordance with the contract with the CM/GC.

Pre-Construction Services

As part of the Project team, the CM/GC will provide input on schedule, constructability, stream diversion, materials availability, staging, cost, etc. throughout the Pre-construction services phase of the Project. The CM/GC tasks during the Pre-construction services phase include:

- A. Provide a Project Manager and associated staff to consult with, advise, assist, and provide recommendations to the Project Team on all aspects of the planning, pre-construction, and proposed construction.
- B. Attend a public workshop that may include answering questions from the public, legislators, and media.
- C. Participate in Project Team meetings.
- D. Work collaboratively with the Project Team in the development of the plans and specifications.
- E. Participate in formal milestone reviews meetings, which will coincide with the anticipated preliminary, semi-final, and final design submissions. For each milestone review meeting, provide the following services:
 - 1. Participate in formal constructability, material, equipment and labor availability reviews. These formal reviews will focus on identifying revisions to improve clarity for pricing, identifying potential design revisions that would reduce construction costs, and identifying elements to improve the time performance of the project.
 - 2. Participate in formal risk analysis meetings with the Project Team. The focus of the risk analysis meetings will be to identify potential risks and to assign cost and schedule impacts to each risk in order to better define pricing and contingency.
 - 3. Assist the Project Team with the selection process of preconstruction elements that meet Project Goals.
 - 4. Provide progressively refined construction cost estimates and participate in pricing meetings.
 - 5. Prepare and submit a Critical Path Method (CPM) schedule at critical times upon request of DelDOT.
 - 6. Provide written comments and recommendations of the plans, including conflicts and/or deficiencies.
- F. Continually provide informal oversight and constructability reviews on various specific elements of the project and provide recommendations, including providing input on staging, sequencing, equipment storage, detour routes, traffic control, stream diversion, erosion and sediment control, and accelerated construction techniques.
- G. Identify any long lead items that may cause schedule impacts.
- H. Develop and formulate a subcontracting plan to integrate subcontractors as needed to accomplish all construction work. Identify how you will meet DBE contract goals for any Early Work Packages.
- I. Help ensure that environmental commitments can be implemented during construction through the review of design and permit applications. Provide input on temporary construction or staging activities that may require additional environmental permits based on the proposed construction operations. Clearly reflect in the CPM Schedule the times required to obtain these clearances and permits. Identify time and cost impacts associated with schedule slippage and propose mitigation measures to minimize these impacts. Provide constructability feedback on mitigation measures proposed in the design plans.
- J. Develop, propose, and track innovations for project construction. Document and track cost savings and schedule impacts associated with innovations in a written report to the Project Team.
- K. Coordinate with project stakeholders in conjunction with the Project Team.

Early Work Packages

An Early Work Package is a portion or phase of construction work (including material acquired for a construction phase) that is procured before all design work for the project is complete. Once NEPA is complete, Early Work Packages may allow DelDOT to provide for; schedule acceleration; overall risk mitigation; cost savings related to inflation; acquiring long-lead items; or start a particular phase of construction; for which the risks are adequately identified and the scope of work is defined sufficiently to reasonably determine price.

If desired, DelDOT may request a price proposal from the CM/GC contractor (or negotiate a price) for the defined scope and schedule for an Early Work Package. If the price is reasonable, DelDOT awards a construction contract for that portion of the project.

Early Work Packages are procured, authorized, awarded, and contracted utilizing the same process as the Construction Cost Proposal contract would be handled if awarded to the CM/GC.

Proposed Construction Price (PCP)

When the Project Team determines that the Project has been designed to a sufficient level of detail to allow for a constructible and biddable project or work package, the CM/GC will be given an opportunity to provide a PCP to construct the project. It is anticipated that the cost proposal required on this project will be a unit priced proposal. However, the Project Team will determine the final form of the cost proposal and may also elect to utilize other contract payment provisions, including Lump Sum or Fixed Plan Quantity items.

When preparing to submit a bid for the work, the following tasks must be completed:

- A. Participate in pre-proposal plan workshop in order to review and provide final input on the final plans and specifications.
- B. Participate in the final risk workshop for the project or work package. Provide final input to the Project Team regarding project risks and clarify risk assumptions and assignments in preparation for submitting a cost proposal for the work.
- C. Submit a cost proposal utilizing DelDOT required documents including DBE goal attainment for the entire project or work package.

After submission of the cost proposal for the work, the following tasks must be completed:

- D. DelDOT will review the CM/GC's proposal.
- E. Participate in the pricing reconciliation process, if needed to reconcile differences.
- F. Based on the outcome of A. and B. above, DelDOT will either:
 1. Award the Construction Contract to the CM/GC, or
 2. Reject the CM/GC's proposal and advertise the Construction Contract per DelDOT's Design-Bid-Build advertisement process.

Construction Services

If DelDOT is able to successfully validate the CM/GC's PCP and the CM/GC complies with DBE requirements and all other conditions of award, the CM/GC shall:

- A. Execute a Construction contract with DelDOT within fourteen (14) days of Award.
- B. Construct and manage all construction related contracts while meeting all Project/Contract requirements.
- C. Substantially complete the construction no later than specified in the contract.
- D. Participate in a post-construction lessons learned meeting outlining the positives and negatives of the CM/GC process.

- end -

AGREEMENT

for

CONSTRUCTION MANAGER/GENERAL CONTRACTOR (CM/GC) SERVICES

BR 1-227 on N013 PAPER MILL ROAD OVER MIDDLE RUN TRIBUTARY

State Project Number: CM/GC-T201407102

Federal-Aid Number: EBROS-N013002

THIS **AGREEMENT** is made and executed in quadruplicate, the day, month, and year affixed by the signature of the Department of Transportation's representative, by and between the **DELAWARE DEPARTMENT OF TRANSPORTATION (Department)**, a department created under the laws of the State of Delaware, party of the first part, and XXXXXXXXXXXX of Street City State Zip ("**CM/GC Contractor**"), party of the second part.

WITNESSETH:

WHEREAS, the **CM/GC Contractor** has been selected pursuant to state and federal guidelines and regulations to provide services to the **Department** as a Construction Manager/General Contractor as defined in the advertised Request for Qualifications (RFQ) for this project, which advertisement and RFQ are hereby incorporated by reference as part of this Agreement, and

WHEREAS, CM/GC is a contracting method that allows the **Department** to use a single procurement to secure pre-construction and construction services, and

WHEREAS, this Agreement covers pre-construction services, where the **Department** has procured the services of a construction contractor early in the design phase of a project in order to obtain the contractor's input on constructability issues that may be affected by the project design. The CM/GC contractor does not provide any preliminary or final design engineering. As part of the pre-construction services, the CM/GC contractor provides information for consideration in the design and environmental review processes on construction-related aspects of a project, including the potential effects of design elements on construction costs, schedule and quality, and

WHEREAS, construction services may begin once environmental review is complete and risks are adequately defined. If the **Department** and the **CM/GC Contractor** are able to agree on a price for a given scope and schedule for construction, the **CM/GC Contractor** and the **Department** will execute a separate contract for the construction of the project.

NOW, THEREFORE, for and in consideration of the mutual covenants, hereinafter are stipulated to be kept and performed, it is agreed between the parties as follows:

ARTICLE ONE. The TERM of this Agreement shall be from its effective date until either; this Agreement is terminated by the **Department** or mutual agreement of the parties in writing and signed by the parties; or, the **CM/GC Contractor** and the **Department** executes a final Agreement for Construction Services for this project (not including Early Work Packages). Should the **Department** desire to suspend the work, but not terminate the contract, this will be done by verbal notification followed by written confirmation from the **Department**. The work may be reinstated upon 30 days advance written notice from the **Department**.

ARTICLE TWO. Payment to the **CM/GC Contractor** is addressed in the RFQ. The **CM/GC Contractor** certifies that they have thoroughly investigated the **Department's** requirements and shall claim no compensation in addition to the amounts for work and services as set forth in this Agreement. Compensation provided to the **CM/GC Contractor** herein shall be the total compensation payable hereunder by the **Department**. It is further mutually agreed between the parties hereto that no payment made under this Agreement shall be conclusive evidence of the performance of this Agreement either wholly or in part.

ARTICLE THREE. The **CM/GC Contractor** shall and will provide and furnish all services as described in the referenced RFQ prepared by the **Department**. Following the execution of this Contract, the **CM/GC Contractor** shall begin work within ten (10) days from the Notice to Proceed, at such points as the Engineer may direct, and shall thereafter prosecute the work at such points and in such order as the Engineer may from time to time prescribe in accordance with the RFQ.

ARTICLE FOUR. The **CM/GC Contractor** shall hold its work and records open at all times for the inspection and/or audit by the **Department** and other authorized State and Federal auditors. The location of the inspection will be at the **Department's** discretion. Retain all books, documents, papers, accounting records and any other material pertaining to cost incurred under this Agreement for a minimum period of three years after final payment by the **Department** and shall make the material available upon request for inspection and audit by the **Department**.

ARTICLE FIVE. It is understood and agreed by and between the parties hereto that drawings, plans and specifications as may be necessary to detail and illustrate the work to be done are and remain the property of the **Department** whether furnished by the Engineer or **CM/GC Contractor**, as it may be consistent with the purpose and intent of the original RFQ incorporated by reference as part of this Contract. The **CM/GC Contractor** shall furnish the **Department** with copies of any studies, design information, cost analysis, surveys, documents, reports, designs, plans, specifications, maps, computations, digital media, charges and the like prepared or obtained under the terms of this Agreement upon request of the **Department**.

ARTICLE SIX. If the work to be done under this Contract shall be abandoned, or if this contract, or any part thereof shall be sublet without the previous written consent of the **Department**, or if the Contract shall be assigned by the **CM/GC Contractor**, otherwise than as herein specified, or if at any time the Engineer shall be of the opinion, and shall so certify in writing, that the work, or any part thereof, is unnecessarily or unreasonably delayed, or that the **CM/GC Contractor** has violated any provision of this contract, the **Department** may notify the **CM/GC Contractor** to discontinue all work or any part thereof; and thereupon the **CM/GC Contractor** shall discontinue such work or such part thereof as the **Department** may designate, and the **Department** may thereupon terminate this contract, and payment to the **CM/GC Contractor** will be a percentage of the Pre-Construction Services Fee matching the percentage of project plans completed at that time, unless otherwise specifically described in the RFQ.

ARTICLE SEVEN. The **CM/GC Contractor** agrees that it shall:

- Comply with all Federal and State laws applicable to the work and services to be done under this Agreement.
- Meet with the **Department** and others in the event that any matters arising out of this Agreement cannot be resolved in a mutually satisfactory manner. At such meetings, all interested parties shall be present with the SECRETARY of the Delaware Department of Transportation, who shall hear all arguments and render a final decision on the controversy that shall be binding on all parties concerned.

- Provide the standard of performance and degree of care and skill ordinarily exercised under similar conditions by contractors currently practicing in this state.
- Save harmless the State of Delaware and the **Department**, their agents, officers and employees, from all claims or liability. In meeting this obligation the **CM/GC Contractor** shall secure and furnish the **Department** a certificate of insurance evidencing regular Liability, Property Damage, Worker's Compensation, and Automobile insurance coverage from an insurance company authorized to do business in the State of Delaware. The **Department** must be named a certificate holder on the certificate of insurance. The **CM/GC Contractor** shall provide the **Department** with 30 days' notice in the event the policy is cancelled or not renewed. Nothing contained in this section shall be construed as limiting the **CM/GC Contractor's** obligation to indemnify the **Department** due to the **CM/GC Contractor's**, its agents', assignees', servants' or employee's negligence.

ARTICLE EIGHT. The **Department** and the **CM/GC Contractor** each binds itself, its successors, legal representative, agents, employees, officers, and assigns, to each other to this Contract. The **CM/GC Contractor** shall not assign, sell or in any way transfer its interest in this Agreement without the prior written consent of the **Department**.

ARTICLE NINE. Compliance with Title VI of the Civil Rights Act of 1964 and implementing regulations issued by the Department of Transportation. During the performance of this Agreement, the **CM/GC Contractor**, its assignees, agents, members, partners, officers, and successors, in interest hereinafter referred to as the **CM/GC Contractor**, agrees as follows.

COMPLIANCE WITH REGULATIONS: The **CM/GC Contractor** shall comply with the Regulations of the Department of Transportation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation Title 49, Code of Federal Regulations, Part 21, as amended from time to time, hereinafter referred to as the REGULATIONS, which are incorporated by reference and made a part of this Agreement.

ARTICLE TEN. The **CM/GC Contractor** shall be an independent contractor, and as such, shall have no authority, express or implied to bind the **Department** to any agreement, settlement, liability, or understanding whatsoever; and agrees not to perform any acts as agent for the **Department**, except as specifically authorized and set forth herein. Persons employed by the **Department** and acting under the direction of the **Department** shall not be deemed to be employees or agents of the **CM/GC Contractor**.

ARTICLE ELEVEN. This Agreement and the terms thereof shall be construed in accordance with the laws of the State of Delaware. In addition, **CM/GC Contractor** agrees to the jurisdiction and venue of a competent court within the State of Delaware. The declaration by any court, or other binding legal source, that any provision of this Agreement is illegal and void and shall not affect the legality and enforceability of any other provision of this Agreement, unless said provisions are mutually dependent.

signature page follows

IN WITNESS WHEREOF, the parties to these presents have duly executed this **AGREEMENT CM/GC-XXXXXXXXXX** in quadruplicate the day, month and year affixed by their signatures.

SEALED, AND DELIVERED IN THE
presence of

Name of CM/GC Contractor

Attest: _____

By: _____

Authorized Signature

CORPORATE SEAL

Title

Dated: _____

In the case of a corporation, firm, or partnership, this contract must be signed by the appropriate officials of such corporation, firm, or partnership and their corporate seal must be affixed hereto.

FOR THE STATE OF DELAWARE, DEPARTMENT OF TRANSPORTATION

SEAL

Attest: _____

By: _____

Shante Hastings, Acting Director,
Finance

Robert B. McCleary, Director
Transportation Solutions

Dated: _____

Approved as to Form:

Annie Cordo
Deputy Attorney General

Dated: _____

CM/GC CONTRACTOR'S CERTIFICATION STATEMENTS

SUSPENSION AND DEBARMENT

I, under penalty of perjury under the laws of the United States, certifies that, except as noted below, (the company) or any person associated therewith in the capacity of (owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds):

- *is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency:*
- *has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency:*
- *has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past three years;*
- *does not have a proposed debarment pending; and*
- *has not been indicted, convicted, or had a civil judgment rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.*

Exceptions will not necessarily result in denial of award, but will be considered in determining consultant responsibility. For any exception noted, indicate below to who it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions. *Insert Exceptions:*

TRUTH-IN-NEGOTIATION CERTIFICATION

KNOW ALL MEN BY THESE PRESENCE, that the company hereinafter listed, by and through the undersigned, its lawful agent and pursuant to this Agreement by and between said company and the State of Delaware, Department of Transportation,

HEREBY CERTIFIES THAT:

- Wage rates and other factual unit costs supporting the compensation under the aforesaid Agreement are accurate, complete and current at the time the Agreement was executed.
- The undersigned, on behalf of the company hereinafter listed below, further **CERTIFIED** that said firm **AGREES** that:
- In the event that the State of Delaware, Department of Transportation determines the compensation was, in fact, increased due to inaccurate, incomplete or noncurrent wage rates or other factual unit costs, the original compensation and additions thereto shall be adjusted to exclude any such sum. All such adjustments shall be made within one year following the termination of said Agreement.
- **IT IS AGREED** that this document be attached to the aforementioned Agreement and become a part thereof.

COMPANY: _____ SIGNATURE: _____
 (enter name of company) (authorized signature)

SWORN TO AND SUBSCRIBED before me, a Notary Public this ____ day of _____, 20____

My Commission Expires _____.

Signature of Notary Public _____

CERTIFICATION OF CM/GC CONTRACTOR

I hereby certify that I am an officer and duly authorized representative of the firm of XXXXXXXXXXXXXXXXXXXXXXXXXXXX, whose address is XXXXXXXXXXXXXXXXXXXXXXXXXXXX and that neither I, nor the above firm I hereby represent, has:

- (a) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above consultant) to solicit or secure this contract,
- (b) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract, or
- (c) paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above consultant) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the contract;

except as here expressly stated (if any):

I acknowledge that this certificate is to be furnished to the State **DEPARTMENT OF TRANSPORTATION** and the **FEDERAL HIGHWAY ADMINISTRATION** in connection with this contract involving participation of Federal-aid highway funds, and is subject to applicable, State and Federal Laws, both criminal and civil.

Date

(Signature)

S
A
M
P
L
E

CERTIFICATION OF STATE DIVISION OF:

I hereby certify that I am the Director of the Division of Transportation Solutions of the State of Delaware's Department of Transportation, and that the above firm or the firm's representative has not been required, directly or indirectly as an express or implied condition in connection with obtaining or carrying out this contract to:

- (a) employ or retain, or agree to employ or retain, any firm or person, or
- (b) pay, or agree to pay, to any firm, person or organization any fee, contribution, donation, or consideration of any kind:

except as here expressly stated (if any):

I acknowledge that this certificate is to be furnished to the **FEDERAL HIGHWAY ADMINISTRATION**, in connection with this contract involving participation of Federal-aid highway funds, and is subject to applicable State and Federal Laws, both criminal and civil.

Date

Signature

SAMPLE

Certification of Federal-Aid Contracts

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of the Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

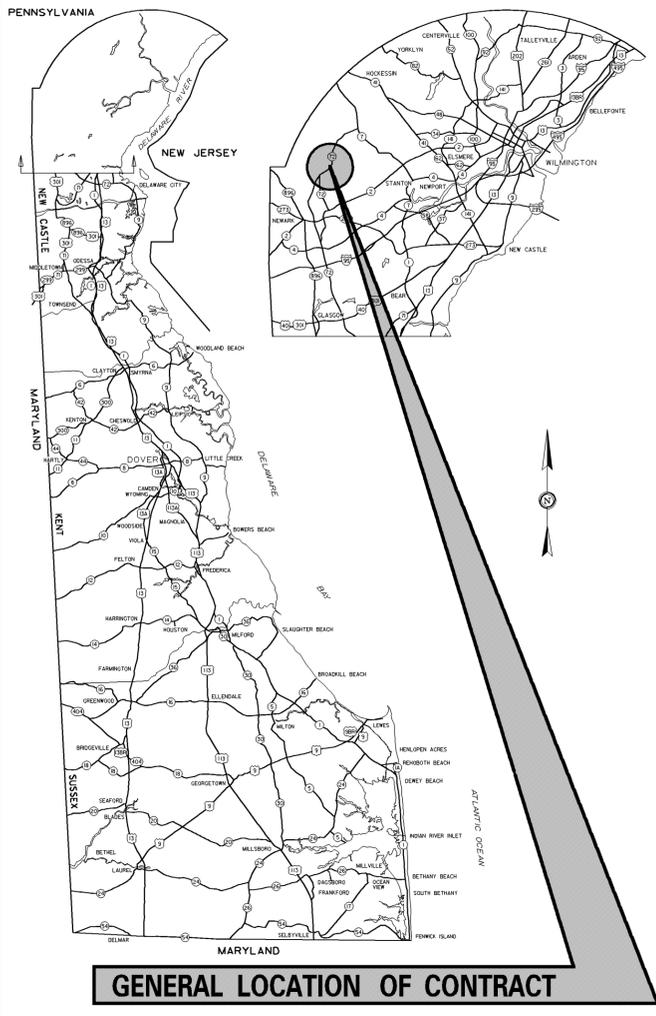
(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. code. Any persons who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such sub-recipients shall certify and disclose accordingly.

DATE

SIGNATURE



GENERAL LOCATION OF CONTRACT

THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

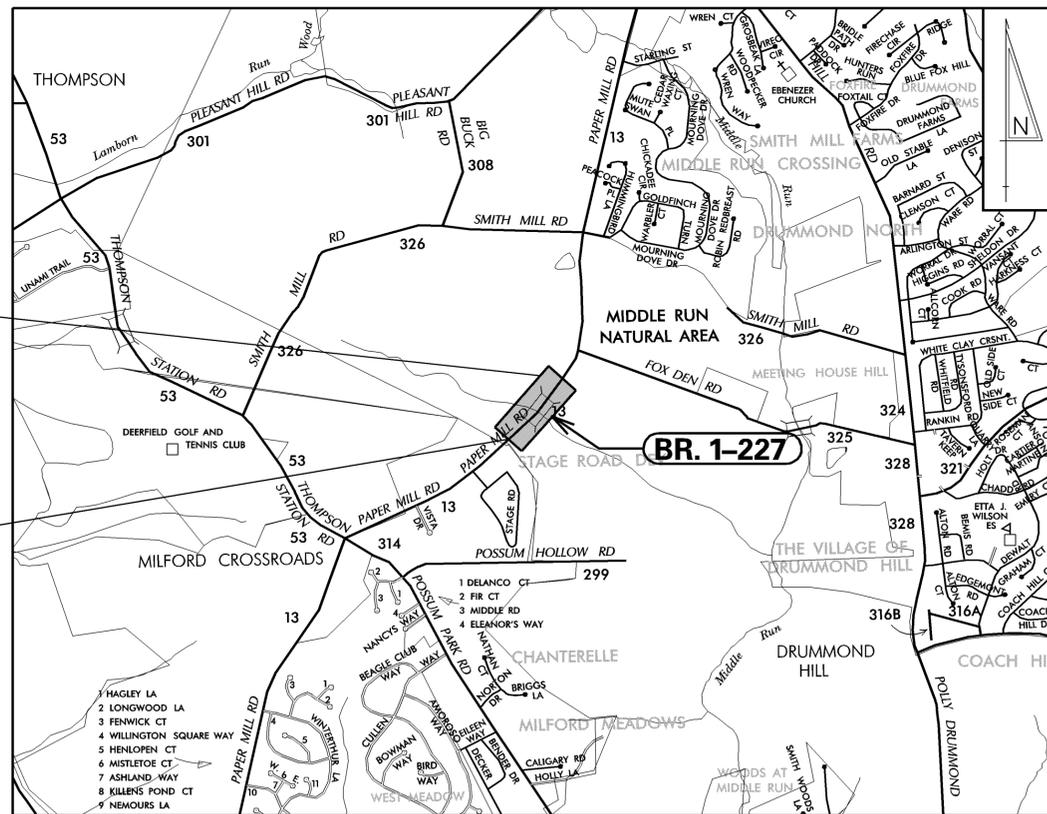
Appendix C Concept Plan

U.S. CUSTOMARY
UNITS

CONSTRUCTION & RIGHT-OF-WAY PLANS FOR: **BR 1-227 ON N013 PAPER MILL ROAD OVER MIDDLE RUN TRIBUTARY**

CONTRACT NUMBER: T201407102
FEDERAL AID PROJECT NUMBER: EBROS-N013(02)

COUNTY: NEW CASTLE M.R. #: N013



**END CONTRACT
STATION 17+80**

**BEGIN CONTRACT
STATION 10+00**

RECOMMENDED

AREA ENGINEER, CONSTRUCTION _____ DATE _____

GROUP ENGINEER, CONSTRUCTION _____ DATE _____

ASSISTANT DIRECTOR, CONSTRUCTION _____ DATE _____

**PRELIMINARY PLANS –
NOT FOR CONSTRUCTION**

RECOMMENDED

STORMWATER ENGINEER _____
DATE _____

RECOMMENDED

SQUAD MANAGER, BRIDGE DESIGN _____
DATE _____

RECOMMENDED

BRIDGE DESIGN ENGINEER _____
DATE _____

RECOMMENDED

ASSISTANT DIRECTOR, BRIDGE _____
DATE _____

APPROVED

CHIEF ENGINEER _____
DATE _____

DESIGN DESIGNATION

FUNCTIONAL CLASS: RURAL MINOR ARTERIAL	D.H.V. PROJECTED: 1120	YEAR: 2040
TYPE OF CONSTRUCTION: BRIDGE REPLACEMENT	DESIGN SPEED: 55 M.P.H.	
A.A.D.T. CURRENT: 15318	YEAR: 2012	TRUCKS: 8 %
A.A.D.T. PROJECTED: 20750	YEAR: 2040	DIRECTION OF DISTRIBUTION: 60 %

INDEX OF SHEETS

SHEET NO	TABLE OF CONTENTS
1	TITLE SHEET
2	LEGEND
3	NOTES
4	HORIZONTAL AND VERTICAL CONTROL
5	CONSTRUCTION PLAN
6	PROFILE
7	BRIDGE SECTION & ELEVATION

TOTAL SHEETS: 7

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME
21-011-01	PAPER MILL ROAD SIDEWALKS AND BIKE LANES
65-10-003	CONSTRUCTION PLAN FOR CONTRACT NUMBER 65-10-003
86-061-14	PAPER MILL RD., N. OF WHITE CLAY TO S.R. 7

EXISTING SYMBOLS

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE INLET
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES	
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	CURB
	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
	LAMP AND POST - RESIDENTIAL
	MAILBOX
	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
	PILE - BRIDGE
	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES	
	GRASS LAWN
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS	
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE
	HISTORIC RIGHT-OF-WAY BASELINE
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING DENIAL OF ACCESS
	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS

UTILITY	
	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
	CABLE TV DISTRIBUTION BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	SANITARY SEWER VENT OR CLEANOUT
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD
	MANHOLE - UNDETERMINED OWNER

UTILITY COMPANY FACILITIES	
	EXISTING DEC GAS LINE
	EXISTING OVERHEAD UTILITIES

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	BRICK PATTERNED SURFACE
	BUTT JOINT
	CONSTRUCTION BASELINE
	CONSTRUCTION SAFETY FENCE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
	CLEAR ZONE
	DRAINAGE INLET
	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	HORIZONTAL CLEARANCE
	IMPACT ATTENUATOR
	JUNCTION BOX - DRAINAGE
	LIMIT OF CONSTRUCTION
	MAILBOX
	MANHOLE
	PAVEMENT PATCH
	PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK - 4"
	P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)
	UNDERDRAIN
	UNDERDRAIN OUTLET

RIGHT-OF-WAY SYMBOLS	
	PROPOSED RIGHT-OF-WAY MONUMENT
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED RIGHT-OF-WAY BASELINE

PROPOSED SYMBOLS

IDENTIFIERS	
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	CONCRETE SAFETY BARRIER
	CURB OR CURB & GUTTER
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	CURB OPENING
	CURB RAMP / TYPE
	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
	CONSTRUCTION SAFETY FENCE
	DRAINAGE INLET
	DO NOT DISTURB
	ENERGY DISSIPATOR
	FENCE
	FLARED END SECTION
	FILL WITH FLOWABLE FILL
	FILTRATION STRUCTURE
	GUARDRAIL
	JUNCTION BOX
	MANHOLE
	MONUMENT - RIGHT-OF-WAY
	PIPE
	RELOCATE BY CONTRACTOR
	RELOCATE BY OTHERS
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS
	UNDERDRAIN / LENGTH
	UNDERDRAIN OUTLET PIPE

LANDSCAPING	
	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

TRAFFIC	
	ITMS CONDUIT
	SIGNAL CONDUIT
	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

PAVEMENT SECTION(S)	
	2" TYPE C, PG 6-22, 115 GYRATIONS CARBONATE STONE
	2" TYPE C, PG 6-22, 115 GYRATIONS CARBONATE STONE
	N/A

EROSION & SEDIMENT CONTROL	
	DEWATERING BAG
	DEWATERING BASIN
	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
	PORTABLE SEDIMENT TANK
	SANDBAG DIKE
	SANDBAG DIVERSION
	STONE CHECK DAM
	STABILIZED CONSTRUCTION ENTRANCE
	SILT FENCE / LENGTH
	SILT FENCE - REINFORCED
	SUMP PIT
	SEDIMENT TRAP / NUMBER
	SEDIMENT TRAP
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN
	TURBIDITY CURTAIN / LENGTH
	TURBIDITY CURTAIN

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

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GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

EROSION POTENTIAL FOR THIS PROJECT	SITE REVIEWER REQUIREMENT
() INSIGNIFICANT	NONE
() MINOR	CONTRACTOR CERTIFICATION COURSE TRAINING ONLY, AS DEFINED IN SECTION 13 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
() MEDIUM	THE SUPERINTENDENT OR A SEPARATE INDIVIDUAL FROM THE CONTRACTOR'S STAFF SHALL BE A CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 12 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
() MAJOR	SUPERINTENDENT AND AN INDIVIDUAL FROM CONTRACTOR'S STAFF SHALL BE CCR. ONE INDIVIDUAL FROM THE CONTRACTOR'S STAFF MUST BE A CCR PRIOR TO THE EXECUTION OF THE CONTRACT. THE SUPERINTENDENT MUST BECOME A CCR WITHIN ONE YEAR AFTER THE AWARD OF CONTRACT.

3. ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

()	NONE
()	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
(X)	FOR ALL PLAN SHEETS, IN PDF FORMAT.
()	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

4. PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

()	CROSS SECTIONS (WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR)
(X)	RIGHT-OF-WAY PLANS (INCLUDED IN PLAN SET)

5. AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

()	THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT.
()	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 743000.
()	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE ATSSA SUPERVISOR'S SOLE JOB SHALL BE SUPERVISION OF THE INSTALLATION, OPERATION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT SHALL NOT BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR SHALL BE PAID FOR UNDER ITEM 743031.

6. THE DISTURBED AREA FOR THIS PROJECT IS 43,421 SF.
THE ADDED IMPERVIOUS AREA FOR THIS PROJECT IS 0.00 SF.

7. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS ARE VALID FOR A THREE YEAR PERIOD, BEGINNING ON THE DATE THE STORMWATER ENGINEER SIGNED THE CONSTRUCTION TITLE SHEET. IF THE FINAL ACCEPTANCE OF THE PROJECT IS ANTICIPATED TO EXTEND BEYOND THE THREE YEARS, THE CONTRACTOR WILL INFORM THE ENGINEER THREE MONTHS PRIOR TO THE EXPIRATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS. THE STORMWATER ENGINEER WILL REVIEW THE CURRENT SEDIMENT AND STORMWATER MANAGEMENT PLAN AND ISSUE AN EXTENSION WITH ANY APPROPRIATE MODIFICATIONS.

PROJECT NOTES

SECTION 100

1. ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

SECTION 200

2. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
- EXISTING - 120" X 85" CORRUGATED METAL PIPE ARCH
- EXISTING 14" X 23" CORRUGATED METAL DRAINAGE PIPE
- EXISTING GUARDRAIL (AS SHOW ON PLANS)
- 5 - EXISTING DRAINAGE INLETS

3. THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THE CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NO15 KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S TEAM SUPPORT SECTION. A COPY OF THE GENERAL PERMIT OR THE NO15 CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

5. TO AVOID DAMAGE, PERMANENT SIGNS WITHIN THE PROJECT LIMITS MAY BE REMOVED DURING CONSTRUCTION IF NEEDED BUT MUST BE REPLACED TO MATCH EXISTING CONDITIONS BEFORE REOPENING THE ROADWAY. ALL WORK RELATED TO MOVING AND REINSTALLING THE SIGN SHALL BE INCIDENTAL TO ITEM #211000-REMOVAL OF STRUCTURES AND OBSTRUCTIONS. IF THE SIGN IS DAMAGED DURING CONSTRUCTION, THE SIGN MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE.

SECTION 600

5. THE DEPARTMENT AND THE CONTRACTOR SHALL INSPECT ALL EXISTING PIPES AND DRAINAGE STRUCTURES TO BE USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION PRIOR TO THE START OF CONSTRUCTION. EXISTING PIPES AND DRAINAGE STRUCTURES DAMAGED DUE TO CONTRACTOR OPERATIONS SHALL BE REPAIRED OR REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE. THE DEPARTMENT WILL VIDEO INSPECT NEW PIPE RUNS TO CONFIRM CONDITION PRIOR TO ACCEPTANCE. PIPE CLEANING PRIOR TO VIDEO INSPECTION AND MAINTENANCE OF TRAFFIC DURING THE VIDEO INSPECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND INCIDENTAL TO THE PIPE ITEM THAT IS BEING VIDEO INSPECTED.

SECTION 700

6. ALL PAVED AREAS TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT. ALL HOT-MIX SAW CUTTING SHALL BE FULL DEPTH.

7. PROPOSED STRIPING SHALL MATCH THE EXISTING STRIPING PATTERN OF A DOUBLE YELLOW CENTERLINE. WHITE EDGE LINES SHALL BE ADDED ALONG THE PROJECT LIMITS. PAYMENT FOR PERMANENT PAVEMENT STRIPING UNDER ITEM 748548.

8. ALL M.O.T. ITEMS WITH THE EXCEPTION OF CHANGEABLE MESSAGE BOARDS AND FLAGGERS WILL BE INCLUDED IN ITEM 763643 - MAINTENANCE OF TRAFFIC, ALL INCLUSIVE.

MISCELLANEOUS

9. DESIGN CRITERIA
AASHTO HL-93 FOR LIVE LOAD
25 PSF DEAD LOAD HAS BEEN INCLUDED FOR FUTURE OVERLAY.

10. HYDRAULIC DATA
DRAINAGE AREA = 0.47 SQ. MILES
DESIGN FREQUENCY = 50 YEARS
DESIGN DISCHARGE = 459 CFS
50 YEAR FLOOD ELEVATION = 189.40 FT

SCOUR ANALYSIS
THE PROPOSED STRUCTURE HAS BEEN ANALYZED FOR THE EFFECTS OF SCOUR IN ACCORDANCE WITH HEC-18 - 'EVALUATING SCOUR AT BRIDGES' AND HEC-14 - 'HYDRAULIC DESIGN OF ENERGY DISSIPATORS FOR CULVERTS AND CHANNELS.' SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE WORST CASE OF THE OVERTOPPING FLOOD OR THE 200-YR FLOOD EVENT.

SCOUR DESIGN EVENT: 200 YEAR STORM DESIGN VELOCITY: 12.3 FT/S
DESIGN DISCHARGE: 697 CFS TAILWATER DEPTH: 187.78 FT

11. ENVIRONMENTAL COMPLIANCE:
REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR ANY RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE ASSOCIATED WITH THIS PROJECT.

UTILITIES: IT IS THE RESPONSIBILITY OF THE INDIVIDUAL UTILITY COMPANY(IES) WORKING AT THIS PROJECT LOCATION TO OBTAIN ALL THE REQUIRED PERMITS/AUTHORIZATIONS FROM THE APPROPRIATE MUNICIPAL, COUNTY, STATE AND FEDERAL REGULATORY AGENCIES FOR AUTHORIZATION OF THEIR WORK. THE ENVIRONMENTAL PERMITS CITED ON THIS EC SHEET DO NOT AUTHORIZE ANY PART OF THE UTILITY WORK ASSOCIATED WITH THIS PROJECT.

12. UTILITIES:
SEE UTILITY STATEMENT FOR FULL DETAILS.

LOAD RATING SUMMARY

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TON)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	X.XX	N/A	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
HL-93 TANDEM (INVENTORY)	X.XX	N/A	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
HL-93 TRUCK TRAIN (INVENTORY)	X.XX	N/A	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
HS-20 (INVENTORY)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
HL-93 TRUCK (OPERATING)	X.XX	N/A	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
HL-93 TANDEM (OPERATING)	X.XX	N/A	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
HL-93 TRUCK TRAIN (OPERATING)	X.XX	N/A	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
HS-20 (OPERATING)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
DE S220 & LEGAL-LANE (LEGAL)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
DE S335 & LEGAL-LANE (LEGAL)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
DE S437 & LEGAL-LANE (LEGAL)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
DE S330 & LEGAL-LANE (LEGAL)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
DE S435 & LEGAL-LANE (LEGAL)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX
DE S540 & LEGAL-LANE (LEGAL)	X.XX	XX.XX	XXXXXXXXXXXXXXXXXX	XXX	XXXXXXX

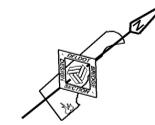
NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.

PRELIMINARY PLANS - NOT FOR CONSTRUCTION

 DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS		NOT TO SCALE	BR 1-227 ON N013 PAPER MILL ROAD OVER MIDDLE RUN TRIBUTARY	CONTRACT	BRIDGE NO.	1-227	NOTES	SHEET NO.	3
	T201407102	DESIGNED BY: CBB			TOTAL SHTS.	7				
	COUNTY	CHECKED BY: KRL								
	NEW CASTLE									

HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
TP #11	12+94.91	-25.87	626817.19	567718.54	201.46
TP #13	15+22.86	-24.63	626995.43	567857.47	198.41
TP #15	14+85.50	26.39	626935.27	567876.99	199.97
TP #16	14+15.02	190.71	626778.32	567964.72	185.25
TP #17	13+51.59	27.32	626827.44	567795.60	202.02
TP #18	10+79.01	22.07	626624.56	567610.27	212.99

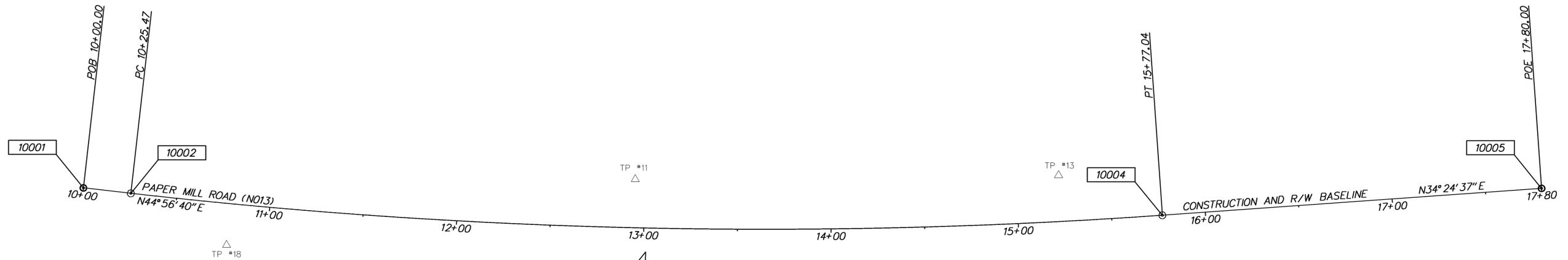
CONSTRUCTION ALIGNMENT CONTROL				
POINT	STATION	OFFSET	NORTHING	EASTING
10001	10+00.00	0.00	626583.62	567538.90
10005	17+80.00	0.00	627193.01	568023.25



DATUM REFERENCE:

HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83/91).

VERTICAL - THIS PROJECT IS REFERENCED TO NAVD 88.



Element: Circular Curve #1			
PC (10002)	10+25.47	626601.65	567556.90
PI (10100)	13+02.03	626797.39	567752.26
CC (10003)		628720.91	565433.52
PT (10004)	15+77.04	627025.56	567908.55
Radius:		3000.00	
Delta:		10° 32' 03" Left	
Degree of Curvature (Arc):		1° 54' 35"	
Length:		551.56	
Tangent:		276.56	
Chord:		550.79	
Middle Ordinate:		12.67	
External:		12.72	
Tangent Direction:		N 44° 56' 40" E	
Radial Direction:		S 45° 03' 20" E	
Chord Direction:		N 39° 40' 39" E	
Radial Direction:		S 55° 35' 22" E	
Tangent Direction:		N 34° 24' 38" E	

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



ADDENDUMS / REVISIONS



**BR 1-227 ON N013
PAPER MILL ROAD OVER
MIDDLE RUN TRIBUTARY**

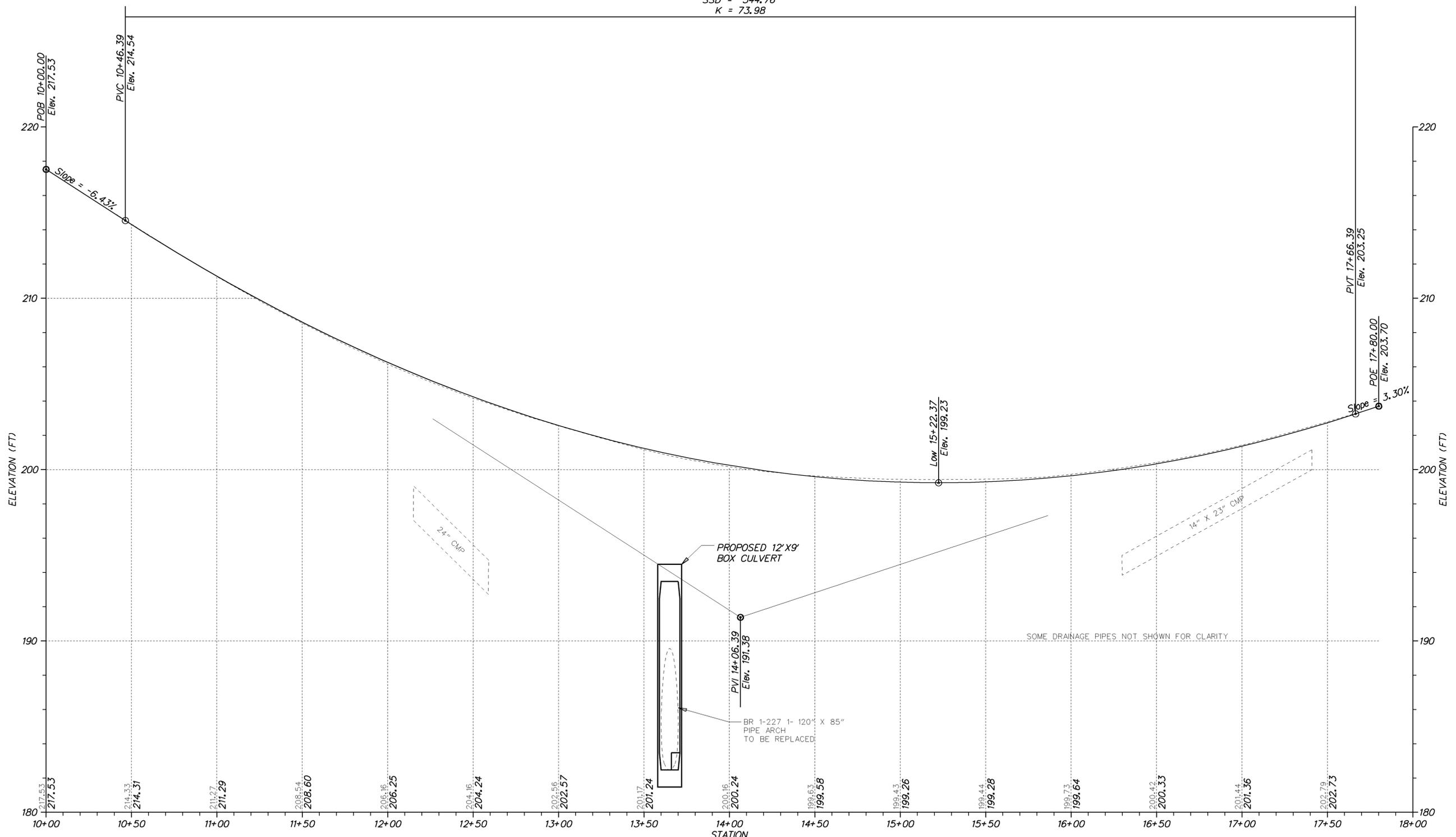
CONTRACT	BRIDGE NO.	1-227
T201407102	DESIGNED BY:	CBB
COUNTY	CHECKED BY:	KRL
NEW CASTLE		

HORIZONTAL AND VERTICAL CONTROL

SHEET NO.	4
TOTAL SHTS.	7

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Type of Curve = Symmetric Parabola
 Direction = Sag
 Length = 720.00'
 L1 = 360.00'
 L2 = 360.00'
 G1 = -6.43%
 G2 = 3.30%
 SSD = 344.76'
 K = 73.98

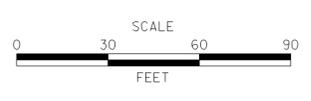


PAPER MILL ROAD (N013)

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



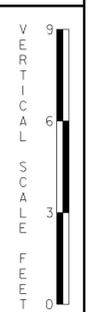
ADDENDUMS / REVISIONS	



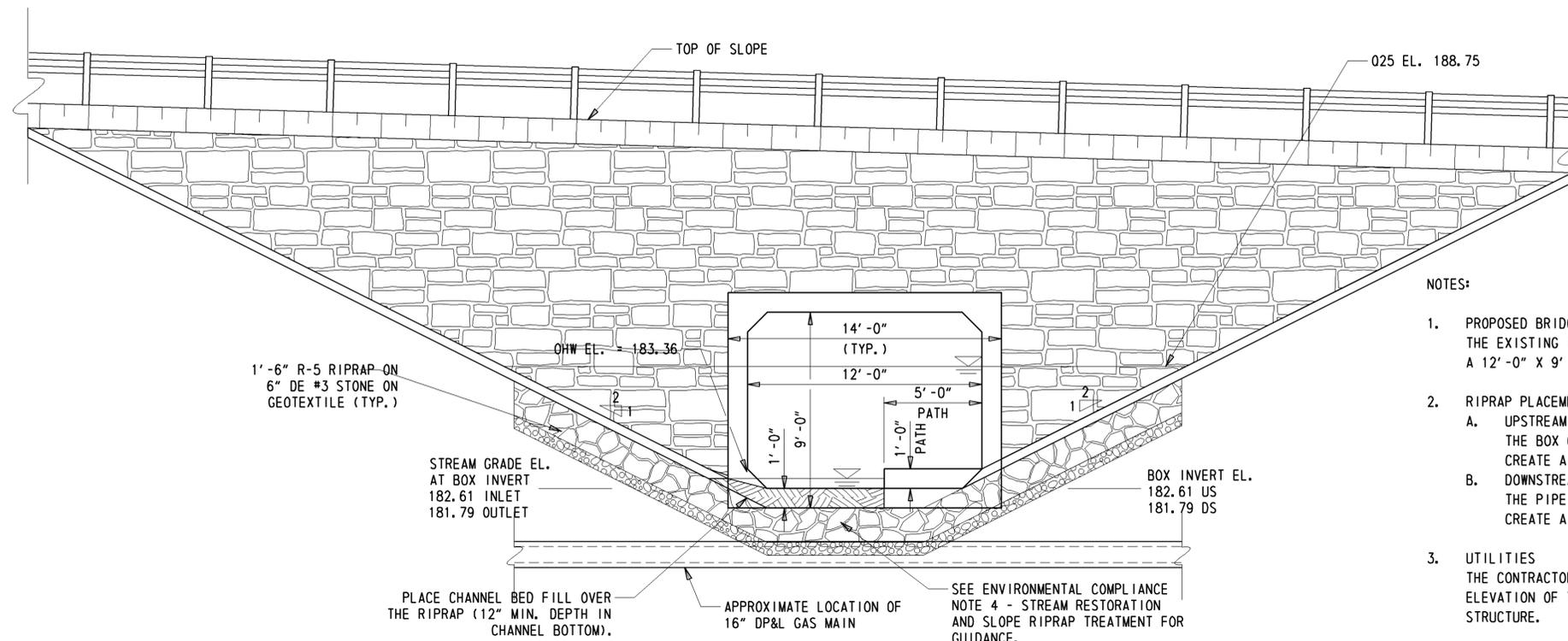
**BR 1-227 ON N013
 PAPER MILL ROAD OVER
 MIDDLE RUN TRIBUTARY**

CONTRACT	BRIDGE NO.	1-227
T201407102	DESIGNED BY:	CBB
COUNTY	CHECKED BY:	KRL
NEW CASTLE		

PROFILE	SHEET NO.	6
	TOTAL SHTS.	7



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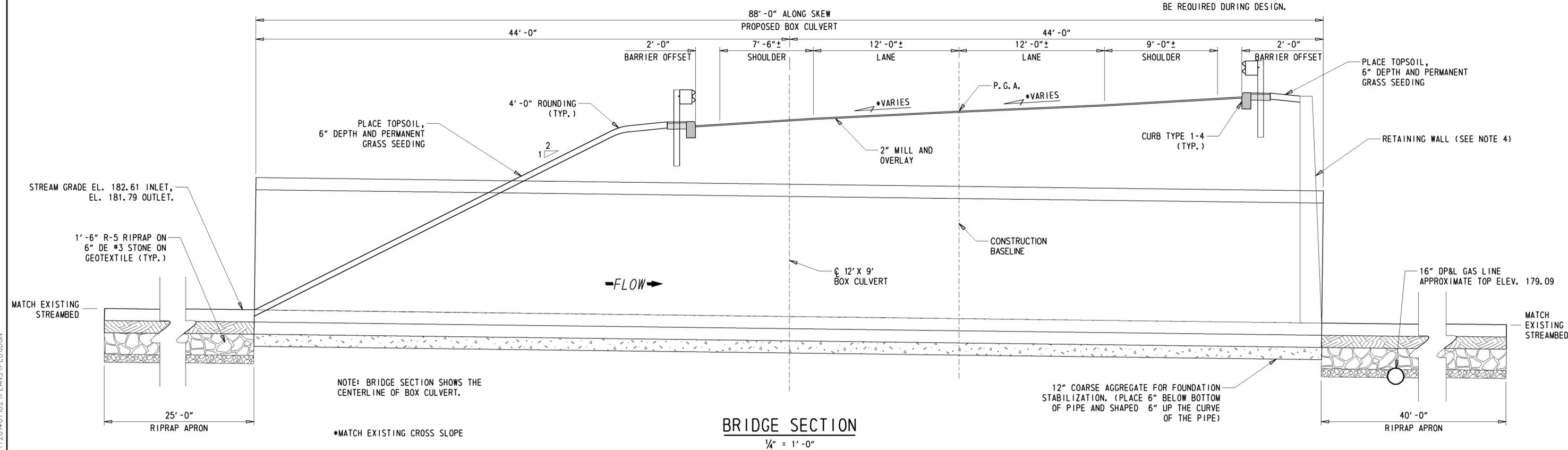


BRIDGE ELEVATION

1/4" = 1'-0"

NOTES:

1. PROPOSED BRIDGE
THE EXISTING 125" X 80" CORRUGATED METAL PIPE ARCH SHALL BE REPLACED WITH A 12'-0" X 9'-0" REINFORCED CONCRETE BOX CULVERT (88'-0" LONG).
2. RIPRAP PLACEMENT
A. UPSTREAM - RIPRAP SHALL BE PLACED IN THE CHANNEL BOTTOM 20'-0" FROM THE BOX CULVERT INLET ALONG THE STREAM CENTERLINE AND SHALL BE PLACED TO CREATE A SMOOTH BEND THAT MATCHES THE EXISTING STREAM BANKS.
B. DOWNSTREAM - RIPRAP SHALL BE PLACED IN THE CHANNEL BOTTOM 45'-0" FROM THE PIPE OUTLET ALONG THE STREAM CENTERLINE AND SHALL BE PLACED TO CREATE A SMOOTH BEND THAT MATCHES THE EXISTING STREAM BANKS.
3. UTILITIES
THE CONTRACTOR SHALL NOT IN ANY WAY DISTURB THE 16" DP&L GAS LINE. THE ELEVATION OF THE TOP OF THE GAS LINE IS APPROXIMATELY 179.09 AT THE PROPOSED STRUCTURE.
4. RETAINING WALL
EXTENDING CULVERT TO ELIMINATE RETAINING WALL IS AN OPTION. IN EITHER CASE, ADDITIONAL COORDINATION WITH THE UTILITY COMPANIES AND ENVIRONMENTAL AGENCIES WILL BE REQUIRED DURING DESIGN.



BRIDGE SECTION

1/4" = 1'-0"

PRELIMINARY PLANS - NOT FOR CONSTRUCTION



ADDENDUMS / REVISIONS	

SCALE AS NOTED

**BR 1-227 ON N013
PAPER MILL ROAD OVER
MIDDLE RUN TRIBUTARY**

CONTRACT	BRIDGE NO.	1-227
T201407102	DESIGNED BY:	CBB
COUNTY	CHECKED BY:	KRL
NEW CASTLE		

BRIDGE SECTION & ELEVATION

SHEET NO.	7
TOTAL SHTS.	7

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