



ADDENDUM NO. 2

RFP No. 19-06

SB on-ramp from NM 599 to US 84/285 MP 165.5 to 166.5
Engineering Design Services (Phase II)

August 6, 2018

To Whom It May Concern:

The New Mexico Department of Transportation (NMDOT or Department) is issuing a 2nd Addendum for RFP No. 19-06. It shall be the responsibility of the interested Offerors to adhere to any changes or revisions to the RFP as identified in this Addendum No. 2. This documentation shall become permanent and made part of the Department's procurement file.

Questions and Responses:

Question: Per the RFP, NMDOT will perform Utility Coordination, but the Engineer is to provide subsurface utility engineering (SUE) QL D, C and A. The recent trend seems to be that NMDOT is responsible for all utility work using SUE on-calls. As such, will NMDOT also perform the subsurface utility engineering required for the project?

Answer: "Per the RFP, the selected consultant will perform SUE QL-C and possible QL-A (if there are conflicts). NMDOT will do utility coordination, not subsurface utility engineering (SUE)"

Question: The consultant will perform the topographic and planimetric surveys of all visible items. Will the consultant provide the survey information to the NMDOT?

Answer: Yes, the consultant will provide survey information to the NMDOT.

Question: What type and extent of Design Partnering is expected for Phase I-D?

Answer: Design Partnering has been removed from the RFP.

If there are any questions or inquiries in relation to this Addendum No. 2, Offerors may contact Juanita Sanchez at (505) 827-0606 or by email at juanita.sanchez@state.nm.us.

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Revisions to the RFP:

Appendix A – Project Introduction and Scope of Work, is hereby deleted and replaced with:

Scope of Work – CN S100430, District 5 NM 599 MP 165.5 to MP 166.5 RFP 19-06

General Information:

Control Number: S100430

Project Number: S100430

Type of Work: Reconstruction of the SB on-ramp to US 84/285 from NM 599, drainage, lighting and concrete wall barrier improvements

Posted Route: US 84/285

Begin Mile Post: MP 165.5

End Mile Post: MP 166.5

Termini: SB on-ramp from NM 599 to US 84/285 MP 165.5 to 166.5

Proposed Length: ± 1 mile

NMDOT District: Five (5)

County: Santa Fe

Functional Classification: Principal Arterial

Terrain Type: Urban

Construction Programmed Year: FY 2021

Anticipated Letting Date: December 2020

Project Development Engineer: Denise Peralta, PE

Urban or Rural: Urban

Existing Conditions:

The SB on-ramp from NM 599 to US 84/285 in Santa Fe County between MP 165.5 and 166.5 was not constructed with an acceleration lane. This condition forces traffic entering SB US 84/285 from NM 599 to a stop condition if there are no gaps in the traffic to allow for merging. This may also create an unsafe merge for large trucks and vehicles wanting to access Guadalupe Street Bridge immediately from NM 599 SB on-ramp. Existing drainage is adjacent to SB US 84/285 and a drainage ditch parallels the roadway. The existing concrete wall barrier does not meet design criteria and is rapidly deteriorating. There are also existing earth berm noise barriers that the NMDOT installed per an agreement.

The purpose of this project is to provide an acceleration lane to the existing SB on-ramp for the safety of traffic merging onto US 84/285. The project will also address the existing deteriorating concrete wall barrier on US 84/285 up to Guadalupe Street Bridge. Drainage issues have also been identified and will need to be reviewed for the proposed on-ramp. Mitigation of these issues will require a combination of right-of-way actions and possible additional retaining walls. Lighting may also be included for the safety of US 84/285 and merging traffic to Guadalupe Street Bridge.

All required NEPA documentation permits, clearances, right-of-way needs, construction costs, project documentation, construction letting package and all project specific specifications will be included in the design of this segment. It will be the Engineer's responsibility to interact with the public and all branches of government and other agencies to incorporate feedback throughout the design stages and preconstruction stages for this project.

Fees:

It is the intent of the NMDOT to negotiate a fixed price for each of the following services:

Phase I-C:	Environmental Documentation and Processing (if needed, by amendment)
Phase I-D:	Preliminary Design
Phase II:	Final Design

If needed, the Consultant will be asked to negotiate for the additional phase of the project:

Phase III:	Engineering Services during Construction
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The project milestone dates for the design will have the assessment of liquidated damages tied to project deliverables which will be described during negotiations with the Engineer/Successful Offeror. The offering Engineer is required to submit a schedule that includes proposed timelines for Phase I-C, Phase I-D, and Phase II Services (including, but not limited to, tasks described under "Description of Work Responsibilities) below).

Scope of Work:

The Engineer shall be responsible for all studies, analysis, coordination, engineering, right-of-way activities, and all else necessary to complete the design. It is the NMDOT's intent that the Engineer will have full latitude and complete responsibility for developing this project.

The work performed by the Engineer shall be in accordance with the Guidelines for Geometric & Roadway Design and Surveying, or if required, transit design guides. All documents shall have only imperial units including right-of-way documents. All work accomplished under the Contract shall be in accordance with the AASHTO "A Policy on the Geometric Design of Highway and Streets, 2011;" FHWA Policy; the NMDOT Survey Handbook (2000 edition); and other current NMDOT manuals, standards, guidelines, standard specifications and standard procedures.

The Engineer shall perform work services under Phase I-C, Phase I-D and Phase II. The services require (but are not limited to) the following:

1. Phase I-C Services – Environmental Investigations and Documentation

- Conduct environmental and cultural resource investigations (if required)
- Agency Coordination
- Conduct Public Involvement Plan (PIP), including public hearing (if required)
- Prepare Environmental and Cultural Resource Documentation, including:
 - Biological Technical Memorandum and Cultural Resources Report
 - Categorical Exclusion (CE) and all supporting documentation, or Environmental Assessment (EA) if required
 - Input Synopsis
 - Finding of No Signification Impact (FONSI) request and FONSI (if required)
 - Quality Control Plan

2. Phase I-D Services – Preliminary Design

- Location Survey and Mapping
- Preliminary Property Ownership Maps
- Coordination
- Public Relations
- SUE Quality Level QL-C
- Preliminary Roadway and Traffic Control Design Plans
- 30% Design and Constructability Reviews
- Preliminary Drainage Study and Report
- Traffic Control
- Context Sensitive Design Activities and Documentation
- Preliminary Engineering Estimate
- Subgrade Soils Testing and Pavement Testing for Pavement Design
- Preliminary Geotechnical Services and Report
- Determination of Right-of-Way requirements
- Quality Control Plan

3. Phase II Services – Final Design

The Engineer shall prepare Pre-Final and PS&E Design Plans and engineering estimates utilizing data provided by the NMDOT and as described in Section VII above.

A. Location Survey & Mapping

The Engineer shall provide controlled location and topographic survey and digitized cross-sections. All surveying shall be performed under the direct supervision of a New Mexico Registered Professional Land Surveyor.

B. Photogrammetry

The Engineer shall be responsible for obtaining and preparing data needed to develop computer mapping described below and preliminary/final design plans. Accurate Digital Terrain Modeling/Surface Modeling is an acceptable design development product.

C. Computer Mapping

Mapping limits should extend from approximately milepost 57.8 to 62.1 on NM 41, approximately ½ mile north and south of NM 41. Mapping limits can be expanded to incorporate drainage basins that impact the project area, if desired. Computer mapping software used should be compatible with the NMDOT's mapping and design software.

D. Graphics File

Provide a graphics file covering the complete project. The graphics file shall contain all digital terrain modeling (DTM) breaklines, planimetric, topographic, alignment data, and approximate locations of existing right-of-way limits. The contour map scale should equal the horizontal scale used on the plan and profiles. Select the scales accordingly.

E. Planimetric Plan and Profile Sheet Files

Provide Plan and Profile (P&P) Sheets with planimetric and topographic data at a horizontal scale of 1" = 100' and a vertical scale of 1" = 10'. Provide planimetric and topographic coverage for 300 feet left and right of the roadway on a D-size sheet. Provide baselines for all turnouts and side roads, if applicable. It may be necessary to place angle points along the baseline to define the turnouts and side roads. Along major side roads, provide P&P sheets with planimetric and topographic data on both sides of side road centerline for 500 feet, if applicable.

F. Surface Model Files

Provide contour maps at a scale of 1" = 100' with one foot contour intervals unless an alternate scale is recommended by the Project Development Engineer. Maps shall meet the US National Map Accuracy Standards. Provide planimetric and topography coverage for 500 feet left and right of roadway. Areas within the mapping corridor with steep slopes may be covered with 5 foot contour intervals or as directed by the Project Development Engineer. Drainage areas which require a structure of 100 square feet or more opening will require 1,000 feet of planimetric and topographic data left and right of the centerline beginning 500 feet before and continuing 500 feet after the structure. Provide a flow line baseline for 1,000 feet from centerline up and down stream with a tie to centerline on the contour map. Show flow line baseline on graphics files and planimetric P&P files.

G. Existing Structure Section Sheet Files

Provide existing structure sections at a scale of 1" = 10' horizontal and 1" = 10' vertical on a D-size sheet with a maximum of three structures sections per sheet.

H. Turnout and Side Road Profile Sheet Files

Provide turnout and side road profile sheets at a scale of 1" = 10' horizontal and 1" = 10' vertical for 200 feet of profile left and right of mainline centerline and 500 feet of profile for major side roads, if applicable.

I. Major Side Road Cross-Section Files

Provide cross-sections at 100 foot intervals for turnouts and at all breaks for at least 200 feet left and right of side road baselines, for a distance of 500 feet left and right of mainline centerline, if applicable. Show baselines on graphics files, contour maps and P&P sheets.

J. Survey Notes Sheet File

Provide a Survey Notes/Control Sheet file; for sample sheet, contact Robert Sexton Surveying and Lands Engineering Section, at 505-827-5560. The survey notes sheet shall be appropriately incorporated into the final plan set to be used for construction of the project.

K. Reference Stakes

The Centerline of the Survey or Centerline of Construction, as appropriate, shall be staked at 500 foot station pluses and at all PC's and PT's of curves. If the actual alignment cannot be staked because of safety measures, the alignment may be staked on a parallel offset line.

L. Sheet Boundaries or Reference Marks

On all electronic files transmitted to the NMDOT wherein P&P or other sheets are extracted, the sheet boundaries or reference marks shall be left intact and shall remain in place as invisible or phantom lines. This is done to allow the exact duplication of coordinates when extracting and printing the P&P sheets.

M. Copies

Provide one hard copy of all planimetric Plan & Profile sheets, contour maps, existing Structure Section sheets, Preliminary Property Ownership Layout Maps, and Turnout & Side Road Profile sheets to Robert Sexton, Surveying and Lands Engineering Section, at 505-827-5560

N. Coordination

The Engineer will be responsible for all coordination necessary to accomplish the work required by the Contract. This responsibility shall include coordination with all property owners and federal, state, city, county, schools and other agencies having jurisdiction or

interest in the project. This will include obtaining approvals and/or concurrence on all work that is to be completed by the Engineer including work completed by sub-contractors working under the Contract.

This responsibility shall also include obtaining all initial informal (verbal) approvals. For any required formal (written) approvals, the Engineer will provide the NMDOT with all required data and draft letters of transmittal. In the event the Engineer is not successful in obtaining informal approvals, the Engineer shall promptly notify the NMDOT in writing, and the NMDOT will assist in resolving the matter.

In addition to the above, the Engineer shall be responsible for:

- Scheduling all design reviews.
- Copying and the distribution of plans and documents.
- Writing design review reports (due within one week of the meeting).
- Writing design team meeting minutes (due within one week of the meeting).
- Documenting verbal approvals in writing in the monthly reports to the design team and NMDOT.
- Performing and documenting property owner interviews.
- Being the focal point, for the flow of all project activity, including the sub-contractor work.
- Providing monthly progress reports for design, utility, environmental, right-of-way and construction.
- Providing periodic presentations to the design team, NMDOT management. (i.e. Division Director, Bureau Chief, District Engineer), local agencies, and/or other public or private entities, etc., if applicable.
- Scheduling PS&E Office Review
- Writing PS&E Office Review Report
- Providing meeting minutes of all project meetings within one week of the meeting taking place.

O. Agency Coordination

Agency coordination will include any agency with management responsibilities, all agencies with sensitive resource responsibilities and any agency that may have permit authority for project activities. The Engineer will coordinate the environmental and cultural resource mitigation measures.

The appropriate federal, state, tribal, county, and local agencies, the public and other interested agencies will be contacted to insure that the community and governmental concerns are identified and considered for inclusion in the design development of the project.

P. Subsurface Utility Engineering Services and Coordination

Utility Coordination will be provided by the NMDOT Utilities Section. Quality Level C is anticipated for this project. Quality Level C is anticipated for this project. QL-C is probably the most commonly used level of information. It involves surveying visible utility facilities (e.g., manholes, valve boxes, etc.) and correlating this information with

existing utility records (QL-D information). When using this information, it is not unusual to find that many underground utilities have been either omitted or erroneously plotted. Its usefulness, therefore, is primarily on rural projects where utilities are not prevalent, or are not too expensive to repair or relocate.

If potential conflicts are identified during the design process, the Engineer will be responsible for Quality Level A locating by pothole exploration and associated survey required to establish proper project control. Coordination with all effected Utility Companies will be required for private Utility relocation design. For Public Water and/or Sewer relocations, the Engineer will be responsible for design and construction plans for this work to be performed by the NMDOT's contractor.

Q. Geotechnical Services (if needed, by amendment only)

If geotechnical services will be requested by amendment then the following services will be required:

Engineer shall provide geotechnical recommendations and Preliminary and Final Geotechnical Reports and shall provide geotechnical recommendations related to any structures and submit Preliminary and Final Foundation Reports. The Foundation Reports, to include detailed recommendations for structures and retaining walls, shall be prepared for the selected structure alternatives. Field Exploration activities (soil borings/rock cores) will be performed by the NMDOT Geotechnical Field Exploration Unit with samples delivered to the consultant's laboratory for testing or will be done by the consultant, if needed. The consultant will provide a field geologist to complete exploration logs and determine sample types in and frequency in the field.

1. Preliminary Geotechnical Report

The Preliminary Geotechnical Report shall document the results of preliminary geotechnical activities. The preliminary geologic and geotechnical study of the corridor with recommendations regarding the impacts, effects and possible mitigation measures associated with highway construction throughout the corridor, shall be provided for use in the detailed evaluation of alternatives. The following activities shall be conducted for the development of this report as well. One (1) copy of this report shall be submitted to the Department with one CD containing a PDF of the report.

2. Field Reconnaissance

Determine the nature, range and extent of major geologic units. A field reconnaissance of the proposed alignment shall be performed. The following tasks shall be performed:

- Geologic literature search
- Compilation of a preliminary geologic map
- Briefing of geologic conditions impacting the alignment study
- Perform initial geophysical testing (seismic refraction) if necessary

3. Field Geologic Mapping

Topographic base maps and aerial photographs shall be utilized along with supplemental information gathered by backhoe pits or borings to develop geologic mapping of the alignment. Critical structural units and the nature of surficial geologic contacts that may be obscure shall be identified.

4. Final Geotechnical Report

The following activities shall be conducted for the development of the Final Geotechnical Report. The Final Geotechnical Report shall document the results of geotechnical activities. The final geologic and geotechnical study of the final alignment within the corridor shall make final geotechnical design recommendations to provide for a stable roadway prism. One (1) copy of this report shall be submitted to the Department with one CD containing a PDF of the report in conjunction with the Preliminary Design Report.

5. Geotechnical Exploration Plan

Based on the recommended alignment of the Location/Alignment Study Report, a geotechnical exploration plan proposed for the geotechnical investigation to be performed during Preliminary Design shall be developed. The Engineer shall submit the exploration plan to the State Materials Bureau, Geotechnical Design Section for review and approval prior to mobilization for this activity.

6. Geotechnical Investigation and Laboratory Testing

Geologic/geotechnical exploration shall follow the procedures, requirements and guidelines as outlined in the latest edition of the NMDOT Materials Geotechnical Manual. The Final Geotechnical Report shall present data collected during the geotechnical investigation. Information shall include at least the following:

- Project location map
- Description of the project scope
- Presentation of the field investigations
- Station to station descriptions of the earth materials encountered during the field investigation
- Laboratory test results including consolidation, tri-ax, direct shear, point load and unconfined compression tests (rock cores)
- Geophysical test results
- Plan and profile sheets with test holes or pits shown in plan and profile views.

7. Geotechnical Design Recommendations

Final design recommendations may address some or all of the following:

- Stabilization/densification of unsuitable embankment or native soils
- Slope stability/steepened slope design
- Mitigation of settlements
- Rock excavation and blasting requirements
- Rock fall mitigation
- Maximum cut slope angles in soil and rock

- Suitability of foundation soils or rock to support an embankment or structure
- Shrink and swell factors of earthwork
- Groundwater affecting the project/need for cut-off trenches
- Special treatments, i.e. use of geotextiles, soil nails, pressure grouting, etc.

8. Preliminary Foundation Report

The following activities shall be conducted during the Final Design for the development of the Preliminary Foundation Report. The Preliminary Foundation Report shall document the recommendation for the most suitable structure foundation and/or retaining wall alternatives based on the geology documented from the geologist's field exploration cards. Analysis shall include development of two conceptual bridge foundation and/or retaining wall alternatives. A cost comparison should be performed between the two alternatives as well as a comparison of which alternative is most constructible. A recommendation shall be made for the most suitable foundation/wall alternative with concurrence given by the Department's State Geotechnical Engineer. Preliminary points-of-fixity shall be provided for deep foundation alternatives. Recommended state of stress lateral soil pressures and equivalent soil-spring constants shall be provided as required. One (1) copy of this report shall be submitted to the Department with one CD containing a PDF of the report in conjunction with the Pre-Final Inspection.

9. Geotechnical Investigation and Laboratory Testing

Foundation and geologic/geotechnical exploration shall follow the procedures, requirements and guidelines as outlined in the latest edition of the NMDOT Materials Geotechnical Manual. The geotechnical exploration and laboratory testing shall include at least the following:

- For retaining walls, one soil boring and/or rock core shall be completed every 200 feet with no less than two borings completed per wall. Borings should be taken to a depth of twice the height of the walls.
- For drainage structures, the need for borings will be determined on a site by site basis.
- Perform required lab testing and soil classifications as required by the Manual. Lab testing may require consolidation and tri-axial testing of undisturbed samples if clay soils are encountered, direct shear tests, or rock core point load and unconfined compression tests.

10. Final Foundation Report

The following activities shall be conducted for the development of the Final Foundation Report. The Final Foundation Report shall document the results of the field exploration and laboratory testing, bridge foundation recommendations and analyses retaining wall recommendations and analyses. All work shall be completed according to the standards set forth in the most recent edition of the NMDOT Materials Geotechnical Manual or as approved by the State Geotechnical Engineer. One (1) copy of this report shall be submitted to the Department with one CD containing a PDF of the report in conjunction with the Final Design Inspection.

11. Retaining Walls

Retaining walls shall be designed based on AASHTO design guidelines. Bearing capacity, settlement, and global stability analyses shall be performed at all retaining walls to insure serviceability of the walls. Requirements for stabilization of unsuitable subsoil's will be specified where required to meet serviceability requirements. Mechanically Stabilized Earth (MSE) walls will utilize the Department's approved MSE wall manufacturers.

12. Subgrade Soils Testing

NMDOT Pavement Exploration Unit will perform field coring and subgrade sampling. Samples will be delivered to the Engineer for laboratory testing. The Engineer will perform laboratory testing of subgrade samples collected and provide test report summaries in accordance with NMDOT Pavement Design Policy for testing frequency as follows:

- Coordinate contract laboratory testing with NMDOT personnel (Jeff Mann, NMDOT Pavement Design Section Head, 505-795-4927).
- Perform geotechnical laboratory tests according to applicable AASHTO standards including, but not limited to, the following:
 - Sieve Analysis (including Minus No. 200 Wash);
 - Atterberg Limits;
 - Moisture Content; and
 - R-Value.
 - Lime stabilization testing
 - Edes and Grimes
 - Sulfate content

R. Roadway Design

The Engineer shall provide or conduct the following:

1. Pre-final Field Review

The Engineer shall conduct a Pre-Final Design Review (PFDR) after NMDOT transmittal of Corridor Data is complete. The PFDR will be held to establish the scoping for the project.

2. Pre-Final, Final and PS&E Roadway Design Plans

Provide pre-final (30% and 60% completion), constructability review, final (90% completion), and PS&E (100% completion) plans for the project to be finalized that shall include: geometrics, traffic control plan, plan and profile sheets and a preliminary construction cost estimate by construction type. Project plans will include: recommended horizontal and vertical alignment, typical roadway sections, intersection layouts, slope limits, right-of-way requirements, utility relocation/adjustment requirements, and preliminary earthwork analysis. Project plans shall be prepared using NMDOT standards for general content and format. Plans shall be prepared for the alignment and typical sections, as approved by the NMDOT and Federal Highway Administration (FHWA).

The design plans shall include, but are not limited to, the following:

- General Sheets
 - Title Sheet
 - Vicinity Map
 - Project Layout Sheet
 - Index of Sheets
 - Summary of Quantities
 - General Notes and Incidental Items
 - Environmental commitments

- Miscellaneous Sheets
 - Typical Sections
 - Miscellaneous Details
 - Surfacing Schedule
 - Structure Quantities
 - Miscellaneous Quantities
 - Curb and Gutter Layouts
 - Erosion and Sediment Control
 - Seeding and Landscaping
 - Grading Plans
 - Visual/Aesthetic Details
- Plan and Profiles Sheets
 - Mainline
- Turnout Profiles
- Bridge/Retaining Wall/Noise Wall Plans
- Traffic Control Plans
 - Notes
 - Sequence of Construction
 - Sign Face Details
 - Traffic Control Plans
- Signal Plans
 - Signal Warrant Analysis for at-grade intersections
 - Signal Design Plans
- Lighting Plans
 - Lighting Analysis
 - Lighting Plan
- Permanent Signing and Striping Plans
 - Plans
 - Overhead Signs
 - Sign Face Details
- Drainage Plans
 - Plan and Profile
 - Structure Sections
- Earthwork Cross-Sections

3. Design Completion Reviews

Schedule and conduct the project design reviews. The reviews shall be held for the entire project depending on the priority plan. Submit and distribute seven (7) bound sets of plans (11" x 17" reduced) for each design review (District Engineer, Assistant District Engineer – Construction, Assistant District Engineer – Engineering, Assistant District Engineer – Maintenance, Construction Liaison Engineer, Federal Highway Administration – Area Engineer, Project Development Engineer). Provide copies of the minutes of the reviews including comments received at the review to the members of the design team and other review participants. The minutes of the inspection reviews will be submitted within one (1) week of the plan review inspection. Provide one (1) CD containing a PDF of the plans for each design review.

For bridge and structural design computations, provide one (1) copies of all bridge and structural computations to the NMDOT. Provide one (1) CD containing a PDF of the design computations.

4. Final Design Reports

The Engineer shall prepare and submit to the Project Development Engineer reports subsequent to the pre-final design and final design reviews and PS&E office review detailing project status, minutes and required plan modifications within one (1) week of holding reviews.

5. Design Data Transmittal

All surveying, mapping and design data shall be submitted to the NMDOT in an Intergraph (.dgn) format or other compatible format approved by the NMDOT. The Engineer must obtain the latest version of the NMDOT's information table from the NMDOT's Surveying and Lands Engineering Section prior to digitizing any data. The Engineer must obtain the latest symbols, layer names, and template data from, Surveying and Lands Engineering Section, prior to digitizing any data. Data must be submitted to the NMDOT on CD ROM.

S. Environmental Follow-Up (if needed)

The environmental investigation and documentation process, subsequent circulation, and public/stakeholder meetings, shall be completed in accordance with the latest edition of the NMDOT Location Study Procedures: A Guidebook for Alignment and Corridor Studies; FHWA Technical Advisory T 6640.8A, 23 CFR Part 771; and other applicable guidelines and regulations. The use of federal funds construction on this project requires adherence to federal and state law including, but not limited to, NEPA, which requires the identification and assessment of impacts associated with a proposed action, and mitigation of impacts if necessary.

The following are the minimum services to be provided by the Engineer:

- Environmental and Cultural Resource Investigations

- Agency Coordination and Public Involvement, including public meetings and a public hearing (if required)
- Preparation and distribution of a FONSI Re-Evaluation and FONSI Request
- Summary of all public involvement activities and Public Input Synopsis, including Transcript of Public Hearing, Public and Agency Comments, and Responses to Comments

The environmental document summarizes the environmental investigations, agency coordination, and public involvement. The effort must be commensurate with the potential for environmental impacts. It is anticipated that a re-evaluation of the FONSI will be the appropriate level of effort required. If significant design changes have occurred or significant time has elapsed since the issuance of the FONSI, a contract amendment will be undertaken and the appropriate environmental level of effort will be negotiated.

1. Environmental and Cultural Resources Investigations

The environmental investigations must be conducted by an interdisciplinary team including qualified natural resource and cultural resource specialists. The environmental investigations will include, if appropriate, surveys and analyses in the following areas:

- Biological surveys conducted by qualified biologists including a biological survey report and biological evaluation for threatened and endangered species and, if necessary, an official Biological Assessment and Evaluation for Endangered Species Act compliance regulatory agency review and approval;
- Wetland determination and delineation including, if necessary, a Wetland Delineation Report for regulatory agency review and approval;
- Section 4(f) determination and evaluation including, if necessary, an official 4(f) Determination Report for land management agency and FHWA review and approval including avoidance options, alternative evaluations and measures to minimize harm;
- A visual impact assessment including, if necessary, a separate Visual Impact Assessment Report for NMDOT review and approval;
- A cultural resource survey conducted by permitted archaeologists and historians including a report and all appropriate forms and attachments, following the guidelines set forth in 4.10.15 NMAC.
- A noise analysis including, if necessary, a separate Noise Analysis Report for NMDOT review and approval;
- An air quality analysis including, if necessary, a separate Air Quality Analysis Report for NMDOT review and approval;
- Other surveys, investigations, and analyses may be required as appropriate to the project.

Environmental investigations must include analyses of all issues mandated by NEPA as well as other state and federal environmental legislation, including Executive Orders on Wetlands, Floodplains, and Environmental Justice. The environmental

investigations shall include evaluations of all appropriate alignment and typical section alternatives, including the no-build option and avoidance options. Environmental investigations will also include, as appropriate, measures to minimize harm, enhancement measures and measures to mitigate impacts.

The cultural resources survey and preparation of a final Cultural Resources Survey Report must meet all federal and state requirements. A permitted archaeologist and historian must conduct the cultural resources survey. Cultural Resource investigations shall include Historic Building inventories and all attachments, following state guidelines delineated in 4.10.15 NMAC and federal guidelines as per the National Historic Preservation Act, Section 106.

All environmental reports submitted to the NMDOT are subject to NMDOT review and approval before investigations are accepted as complete. Based on engineering, cost, environmental and right-of-way impacts, the Engineer shall determine, recommend, and obtain NMDOT concurrence on the preferred alternative to be used for location approval in the environmental document and for final design.

2. Agency Coordination

Agency coordination will include any agency with management responsibilities, all agencies with sensitive resource responsibilities and any agency that may have permit authority for project activities. The Engineer will determine and coordinate the environmental and cultural resource impacts and mitigation measures of the alternatives examined, including the consequences of the no-build alternative. The appropriate local, county, and state agencies, the public and other interested agencies will be contacted to insure that the community and governmental concerns are identified and considered for inclusion in the design development of the project. The Engineer shall be responsible for all coordination that is required to provide a satisfactory Public Involvement Plan and environmental document. This responsibility further includes coordination as described in Section X of this RFP.

3. Public Involvement

A Public Involvement Plan (PIP) consistent with Context-Sensitive Solution methods and practices must be submitted to the NMDOT Environmental Program Manager prior to the first public information meeting. The PIP is expected to be an evolving document and process, specific to the project. The PIP should contain goals of working with the community, analyses of the background context, modal considerations, opportunities to express local values and discussion of the design approach with specific consideration of the potential project issues, initial identification of the various stakeholders and their issues of concern, techniques for communicating with them, and possible methods for addressing concerns. The plan should follow the outline of the NMDOT Context Sensitive Public Involvement Plan for Location Study Projects as included in Appendix A.

The PIP will be evaluated and updated as necessary to proceed into subsequent project phases. The PIP should include: a brief project description, planning history/background information, community profile, discussion of anticipated issues, known or likely impacts (positive and negative), objectives and goals (including approaches to resolution of issues), public outreach activities, agency coordination activities, coordination with elected officials & community representatives, and mailing list.

It is anticipated that a high level of public involvement will be required. This level of effort typically involves several public information meetings, coordination with community stakeholders, agency coordination, and at least one public hearing (if required).

4. Environmental Document

A qualified environmental professional shall be responsible for preparation of the environmental document. The environmental document summarizes the environmental and cultural resources investigations, agency coordination, and public involvement. The effort must be commensurate with the potential for environmental impacts. It is anticipated that a FONSI re-evaluation will be the appropriate level of effort required. The environmental document shall be developed using the format outlined in FHWA Technical Advisory T6640.8A, 23 CFR Part 771 and other applicable guidelines and regulations. Submittal of an environmental document to the NMDOT, which is incomplete as determined by Environmental staff or the PDE, will not be reviewed. Submittal of an environmental document that is considered to be complete shall be reviewed once and comments made to the Engineer. A complete environmental document shall have a comprehensive discussion of purpose and need, alternatives (as appropriate), environmental investigations, assessment of impacts, and appropriate mitigation as necessary. Errors or omissions not adequately corrected from the first review will be subject to liquidated damages that will be withheld from final payment of the Contract.

5. Input Synopsis

The public involvement summary, or Input Synopsis, and draft request for a FONSI re-evaluation, shall be submitted to the NMDOT Environmental Program Manager. The Input Synopsis shall contain copies of the public involvement handouts and written comments. It shall also contain the environmental document circulation list, responses to verbal and written comments and the public involvement summary and transcript. All studies, commitments and recommendations must be summarized and finalized (cultural resources, agency permits, etc.).

T. Drainage Study Report

1. Preliminary Drainage Study Report

Prior to performing a preliminary drainage study, the Engineer shall meet with the Department's assigned Drainage Engineer to discuss the hydrologic methodologies

and analysis of existing and proposed drainage structures. The Preliminary Drainage Report shall summarize the results of the preliminary drainage analysis.

The report shall include:

Discussion of soil types;

Rainfall Depths and Intensities

Vegetation and land use distribution;

Curve number or rational formula "C" calculations;

Time of concentration calculations;

Drainage area topographic map with existing structures inventory;

Drainage basin and sub-basin areas;

Design (50yr) and 100-year discharges and their corresponding headwater depths;

Summary of the drainage field inspection results including District personnel (public and other local agencies) interview and drainage structure field inspection forms;

Construction Maintenance Easement's (CME) required to construct & maintain the structures;

Summary table of existing and recommended drainage structure sizes and types, and identification of sources used in the analysis; Preliminary erosion protection and energy dissipaters design and preliminary details.

The preliminary hydraulics shall be computed based on existing information to provide scope of drainage work and cost estimate that will be the basis for the Final Scope Report and the Final Drainage Report. The Preliminary Drainage Report shall include preliminary design and locations of drop inlets, trunk lines, other preliminary drainage data, and dimensions of CME's and ponds needed.

2. Final Drainage Study Report

The Final Drainage Report is basically a refinement of the Preliminary Drainage Report. A detailed hydraulic analysis such as: backwater profiles, flow velocities, scour calculations, and other hydraulic design data are required for major structures and design of permanent erosion protection.

In preparing the Final Drainage Report, the Engineer shall perform, on all major structures or channels, a hydraulic analysis using the HEC 2, HECRAS or WSPRO computer model to develop water surface profiles for the existing conditions and for the proposed conditions. An approved Final Drainage Report shall be prepared for the selected alternative which shall incorporate all pertinent design data into a concise document including: drainage map(s); inventory of existing drainage structures; detailed structure recommendations including drainage areas, design discharges, head water depths; and a Water Surface Profile Structure Layout Sheet for any major structures.

If Section 401 and 404 applications are required, the Engineer shall prepare and submit the necessary applications with the approval and signature of the Drainage Engineer. This work will be included in Phase II Services and shall not be done prior to the completion and approval of the environmental documentation.

Include in the Final Drainage Report the storm drain design data at each drop inlet and manhole such as design discharges, carry over discharges, intercept discharges, and other hydraulics data. The construction plans, prepared during Phase II Services shall include storm drain system data such as hydraulic grade line for 100-year discharge; invert elevations, slopes, velocities, and discharges.

If the disturbed area during construction is greater than 1 acre, the Engineer shall prepare a storm water pollution prevention plan (SWPPP). The Engineer shall also prepare temporary erosion and sediment control plans (TESCP).

The Engineer shall use the NMDOT "Drainage Manual - Volume 1, Hydrology, 1995" or current revision, "Drainage Manual - Volume II Hydraulics, Sedimentation and Erosion 1998" or current revision, and "National Pollutant Discharge Elimination System Handbook, December 2012" or current revision for methodologies in preparation of the Final.

U. National Pollutant Discharge Elimination System (NPDES)

The Engineer shall prepare an erosion and sediment control plan in accordance with the requirements of the NMDOT NPDES handbook dated January 1997, or current edition. The completed plans shall include the temporary erosion and sediment control measures in accordance with the NPDES requirements.

V. Quality Control Plan

A project specific Quality Control Plan is required for each phase of this project. The specific requirements are outlined in the current edition of the NMDOT Consultant Services Procedures Manual & Handbook and the NMDOT Design Manual.

4. Phase III Services

Phase III Services (engineering services provided during construction) will be negotiated and added by contract amendment or new RFP, if required. The services will be detailed in the amendment or RFP.

Deliverables:

1. Electronic Submittal of Design Data by Engineer

All survey, mapping (existing, right-of-way, and monumentation), and preliminary design data shall be created and submitted to the Department in AutoCAD Civil 3D R2013 (.dwg) format. All drawings shall be produced by computer, utilizing AutoCAD Civil 3D Software adhering to the standards set by the Department for the use of that software. All design related data files must be produced using AutoCAD Civil 3D software products. Electronic files submitted shall include, but are not limited to, geometry, points, surfaces, alignments, aerial imagery if acquired for photogrammetric mapping, coordinate system details, calibration reports, survey notes, survey field books (electronic and scanned field books with structure details),

and survey controller files. KMZ files for design should be submitted at each design completion (30/60/90). Standards and resource files are available upon request from the Engineering Automation Section. NMDOT will only accept projects delivered on CD-ROM, flash drive or external hard drive. Data is not to be compressed by any software.

All surveying and mapping activities, including surveys for Subsurface Utility Engineering (SUE) services, shall be performed by a qualified Professional Surveyor licensed in New Mexico and shall meet the Minimum Standards for Surveying in New Mexico (12.8.2 NMAC).

2. Environmental Documentation

Provide one (1) paper copy and one (1) CD of all environmental documentation. Documentation shall be in PDF format.

3. Reports

Provide one paper (1) copy and one (1) CD of any report(s) generated during design. Reports shall be in PDF format.

4. Preliminary/Final Drainage Reports

The Engineer shall be responsible for the preparation of Preliminary and Final Drainage Study Reports. The drainage reports will require a detailed study of the project area and recommendations are to be developed with alternate proposals to correct any of the problems.

5. Pre-Final, Final and PS&E Design Plans and Documents

The Engineer shall submit and distribute to all appropriate parties seven (7) bound sets of plans (11" x 17" reduced) and one (1) CD containing an electronic file (.pdf format) of plans for each design review. The Engineer shall provide minutes of all review meetings, including comments received, and responses which include corrective action to the PDE. These minutes and design reports will be submitted within one (1) week of the plan review meeting.

6. Production Documents

Provide the Project Development Engineer all documentation required for the PS&E.

7. Right-of-Way Maps, Title Reports and Monumentation Maps

Provide final right-of-way mapping and title reports to the Department such that the Department may acquire the required right-of-way, if applicable. Submit one (1) unbound (full size) original set of the final accepted right-of-way maps to the NMDOT in addition to electronic submission. Final ROW maps will be a deliverable subject to liquidated damages.

NMDOT Shall Provide:

The NMDOT will furnish the following to the Engineer. However, the NMDOT may choose to have the Engineer perform all or part of these services. If any of the services listed below are required from the Engineer, each service will be initiated through contract negotiations or by amendment to the Contract.

- A PDE from the NMDOT staff to serve as an engineering liaison for the project.
- Electronic copies of reports and data available from previous study and design efforts (including Drainage Reports and Design, SUE, Survey, and Mapping).
- Traffic Analysis including forecasts and crash data.
- Equivalent single axle loads (ESALs).
- Hazardous material investigations and recommendations.
- Subgrade Soils Testing.
- Pavement design.
- Right-of-way real estate services (if required).
- Verification of right-of-way mapping (if required).
- Review bridge or structural design (if required).
- Review of Preliminary and Final Geotechnical Recommendations (if required).
- Review of environmental documentation and mitigation measures (if required).
- Review of Updated Drainage Report (if required).
- Review & Coordination of Visual Aesthetic Landscape Architecture (if required).
- Utility Coordination

1. NMDOT Review

The NMDOT will provide review of the Engineer's work for conformity with NMDOT procedures and the Contract terms only. Review by the NMDOT does not include detailed review or checking of design components and related details or the accuracy with which such is depicted. NMDOT acceptance of the Engineer's work product, plans, studies, etc., does not constitute NMDOT approval.

2. Engineer's Responsibilities

The Engineer has total responsibility for the accuracy, completeness and correctness of the plans and related data prepared under the terms of the Contract and shall check all material accordingly. The plans will be reviewed by the NMDOT for conformity with NMDOT procedures and contract terms. Review by the NMDOT does not include detailed review or checking of design components and related details or the accuracy with which such designs are depicted on the Plans. The Engineer shall not deviate from standard geometric design without the express written approval of the NMDOT.

3. Accuracy of Work

Acceptance of the work by the NMDOT and contract termination does not constitute NMDOT approval and will not relieve the Engineer of the responsibility for subsequent corrections of any errors and omissions and the clarification of any ambiguities. The Engineer shall make all necessary revisions or corrections resulting

from errors and/or omissions on the part of the Engineer without additional compensation. If these errors and/or omissions are discovered during the construction of the project they shall be corrected without additional compensation.

Although every effort has been made to fully describe the scope of services it is anticipated that changes may be required during the course of the project to accommodate input from the public, other agencies within the NMDOT and outside of the NMDOT. Changes to the scope of work that may be required to provide a complete project shall be negotiated and authorized by an amendment to the Contract as they are identified. The Engineer shall attach a List of Work Activities for the project consistent with the activities described in this RFP, which shall be used in evaluating the Engineer's Proposal.