

TECHNICAL PROPOSAL REPORT

Agreement: E02120

Project Specific

Active

Name: SR 0136 Section 136 (Ginger Hill Project)

Selection Process: Modified

Initiating Org: Engineering District 12-0

Part 1 - Preliminary Engineering

Description

Minimum tasks: geotechnical services, survey, environmental services, utility coordination, line & grade submission, design field view submission, preliminary TCP, SPMP & E & S plan; preliminary rw plan, public involvement activities, project management.

Task 1 - Project Management/Administration

Objective:

2.1.1 - Project Management/Administration

This task consists of the administrative effort required by principals, project manager, and involved personnel to complete the project on time and within budget, and to provide a quality product.

2.1.1.5 - Project Schedule Development and Maintenance

The purpose of this task is to prepare and maintain a design schedule that ranges from Scoping Field View to Contract Award.

Scope:

2.1.1 - Project Management/Administration

Project Management involves the planning, scheduling, organizing and controlling of resources to achieve specific objectives within established schedule, budget and quality standards. The Project Manager is responsible for the tasks outlined in the Department Detail.

2.1.1.5 - Project Schedule Development and Maintenance

Guidance:

- Publication 615, Scheduling Manual
- All applicable strike-off-letters
- ECMS (Project Management Homepage)

Scope:

1. Develop a design schedule utilizing Deltek's Open Plan software. The design schedule will be developed in accordance with Publication 615 using the Department's PDSPRJ and PDMASTER templates.

2. Maintain the design schedule utilizing Deltek's WelcomHome software.

3. Document all schedule issues to ensure that the project is let on time.

Scope Subtasks:

1. Coordinate the schedule development with the entire project team. The project team includes but is not limited to the District Portfolio Manager, the District Project Manager, various District functional units, the Bureau of Design, the Federal Highways Administration and various environmental agencies. Development of the schedule will consist of reviewing the schedule to ensure it contains the appropriate activities. There may be the need to add or delete activities to make the schedule specific to a given project. The review and modification of durations or relationships should also be performed to ensure that the schedule is setup to meet the desired completion date.

2. Prepare a draft of the design schedule that will be reviewed by the project team either in conjunction with a project status meeting or offline depending on the frequency of these meetings. The draft will, if approved, become the initial project schedule and be maintained through the remainder of the project.

3. Monthly progress of the design schedule activities will be input into Deltek's WelcomHome software. The schedule update day of the month will be specified by the District Project Manager to ensure that they have appropriate time to review proposed schedule changes prior to acceptance.

4. In the event that a major change in schedule occurs the Department will provide an Open Plan backup file (bk3) so that revisions can be made and resubmitted to the Department. Re-submittal shall follow the same process as the initial schedule development.

Scope Deliverables:

1. Provide the project team a draft design schedule in portable document format (PDF) and/or hard copy. The draft will contain relationships and durations so that they can be reviewed along with the activities that are included in the schedule. Schedules provided in portable document format (PDF) shall be submitted either by email or CD-ROM.

2. Upon acceptance of the schedule by the project team an Open Plan backup file (bk3) shall be provided to the District Project Manager either by email or CD-ROM.

3. Resubmit major revisions to the design schedule, as an Open Plan backup file (bk3), to the District Project Manager either by email or CD-ROM.

4. All schedule documentation shall be provided in MS Word compatible format to the District Project Manager either by email or CD-ROM.

Detail Task 1 - Project Management/Administration

Department Details:

The consultant will prepare and distribute to appropriate parties the minutes of all project meetings and telephone conversations where directions or decisions are made. The minutes are to be distributed within 10 calendar days following the meeting or telephone conversation.

The consultant project manager will attend the scoping field view.

The consultant shall provide construction cost estimates at milestones as listed below or as required by the Department. Construction estimates will be submitted at the following milestones:

1. Scoping Field View
2. Design Field View (50% complete)
3. Final Design Field Viewed

Develop, maintain and update the project development schedule using "Welcom's Open Plan" project development schedule. The schedule must be developed using PennDOT's standard work breakdown structure and templates as appropriate. Tasks should be added or deleted as necessary to a level of detail appropriate for the project. The schedule should be developed with input from the project team at, or within three weeks following issuance of Notice-To-Proceed, as appropriate. The schedule should be progressed and submitted to the Department on a monthly basis by the fourth Wednesday of each month. The project schedule and updates should be provided to the District electronically.

Progress reports will be submitted via email to the project manager by the first Wednesday and third Tuesday of each month.

The consultant will thoroughly check all design submissions prior to submitting them to the Department for review. All computation sheets shall bear the initials of both the individual who prepared the calculations and the individual who checked the calculations. The Department reviews will be cursory in nature and the consultant will be responsible for design and plan accuracy. The consultant will be liable for design and plan errors in accordance with 67 PA Code, Chapter 455, Consultant Highway Design Errors.

The prime consultant will be responsible for subconsultant and DBE progress. All submissions prepared by subconsultants will be submitted through the prime consultant's office. The prime consultant will be responsible for the accuracy and quality of work prepared by subconsultants.

For archiving into the ECMS Project Development Checklist, the following reports (once approved in writing by the District or the appropriate permitting agency) will be provided by the consultant to the District in electronic, PDF format:

- Typical Section Submission
- E&S Report/ NPDES Permit Submission
- Design Field View Submission
- any other document, as required

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

Robert G. Prophet, P.E. will serve as the Overall Project Manager for TPD. He will be responsible for the development and maintenance of the project schedule, budget and quality standards throughout the design phase. TPD understands that project management is a critical aspect of the project's success and involves careful planning, scheduling, organizing and controlling of resources in order to achieve the specific project goals and objectives within the project constraints. Mr. Prophet will call upon his extensive project experience and his most recent similar project management experience to ensure that these goals will be met, using close coordination and communication internally, with our subconsultants, with the Township, with the Department and with all other necessary agencies. He will also provide the direction and coordination of the in-house activities and provide the technical point of contact for the TPD Team, Township, Department and various agencies that will become included during the course of the project. To assist Mr. Prophet with the day-to-day activities with the projects, Martin Rosen, P.E. and Michael Mudry, P.E. will serve as the Assistant Project Managers on this contract. The combined similar experience of this project staff on this contract, as well as their

recent successful work together on intersection improvement agreements will help to ensure the successful delivery of this project.

The TPD Team will prepare an overall Welcom Open Plan baseline schedule within three weeks after the Notice to Proceed date. The District will provide a base .bk3 file for preparing the baseline schedule. The TPD Team will update the schedule on a monthly basis by the fourth Wednesday of each month per the Department Details. Mr. Prophet will coordinate with the District Project Manager via telephone to update the schedule as directed at the Scope Clarification conference call.

Separate progress reports will be provided to the District in writing by the first Wednesday and third Tuesday of the month per the Department Details. The progress reports will identify 1) work completed since the past progress report, 2) work to be completed prior to the next progress report and 3) any issues which need resolution. The progress reports will indicate estimated percent complete of each task.

At this time, it is assumed that all meetings of a technical nature will be included in the scope of work for that particular task. With respect to general coordination, TPD assumes that two (2) overall project status or coordination meetings will be required for this design phase of the project. It is assumed that the TPD Overall Project Manager and one of the Assistant Project Managers will attend these meetings. Subconsultants will not be required to attend these meetings unless requested by the District. TPD will prepare minutes of all meetings required to successfully complete the design of this project. As part of this process, the TPD Team will document actions taken in all meetings, record these actions in official meeting minutes and submit these to the District within five (5) days for verification and approval. Approved meeting minutes will then be distributed to appropriate attendees.

The TPD team will maintain complete records of all invoices, time sheets, progress reports, correspondence, memoranda, phone memos and other documentation necessary to complete the project file. If requested, TPD can upload any of the items above to our FTP site.

TPD will ensure that proper billing procedures are followed. Invoices will be submitted following the current ECMS format requirements. TPD will review the invoices and progress reports of the subconsultants prior to forwarding to the Department.

TPD will implement the provisions of our QA/QC Program. This program provides the TPD Team techniques and activities that are used to fulfill requirements for quality and those actions necessary to provide adequate confidence that a product or service will satisfy client requirements for quality. Donald Jacobs, P.E. will serve as TPD's Quality Assurance Coordinator responsible for reviewing the project to ensure schedule control, cost control, and quality throughout the design phase. Mr. Jacobs will not have any production responsibilities, thus providing the team with individual quality assurance resources to ensure that the Department receives quality submissions. The specific function of these administrators will include reviewing and evaluating the following areas at the different phases of the project.

- a.) Conformance to applicable Project Standards and governing codes.
- b.) Consistency in evaluation of field conditions and review of existing documentation.
- c.) Presentation and evaluation of the various alternatives, and completeness, accuracy of estimates, details and constructability of all alternatives.
- d.) Periodically review the work at project milestones to insure it is being performed in compliance with accepted codes, standards and accepted engineering practice.
- e.) Review computations, estimates, specifications, construction staging, and project constructability for compliance with project design criteria.

AWK

AWK will participate and assist TPD in the planning, scheduling, and organizing of this project as may be related to work tasks under our responsibility. This includes reviewing TPD's initial open plan schedule and periodic reviews of the schedule as the project progresses.

AWK will be required to attend the project kick-off meeting and one (1) project status meeting at a key point in the project development (for a total of two meetings). This effort will also include monthly reporting of progress, invoice preparation and the general management and administration.

ASC GROUP (ASC)

The ASC Project Manager for the scope of work contained herein is Susan E. Peters. Ms. Peters will be responsible for all project administration including technical work, adherence to budgets and schedules, and contract administration. Ms. Peters will also handle project administration and will represent ASC on contractual matters. She has the authority to commit resources to satisfy the requirements of the client.

We will work with TPD to prepare a project schedule and management system. We will provide regular updates to TPD.

We will work closely with TPD and PennDOT's project manager/scheduler to assure we are tracking and providing the information as expected. We anticipate monthly updates unless there is a need to have these updates occur more frequently.

Task 2 - Public Involvement

Objective:

2.1.3 - Public Involvement

This task includes the attendance and preparation of informational materials to be viewed and/or distributed to the general public at public meetings. This task may also include the preparation of newsletters, public announcements and all other aspects of public involvement as outlined in Publication 295.

Scope:

2.1.3 - Public Involvement

1. Obtain approval from PMC to proceed with public involvement activities.
2. Prepare announcement for public meeting.
3. Prepare visual materials and/or flyers for general public meetings.
4. Attend all public meetings and address comments made at the meeting.
5. Prepare minutes to the meeting and submit to the Project Manager for review. Revise if necessary.

Detail Task 1 - Public Involvement

Department Details:

As described in main task and as follows:

District Project Manager will request public involvement at District PMC meeting.

Four weeks prior to the public display of plans, the consultant will be responsible for submitting the draft 2nd Notification of Local officials to the District project manager. The District will be responsible for mailing the letters.

It is anticipated this project will require one (1) public officials meeting and one (1) combined public officials /plans display meeting during the preliminary engineering phase. One meeting when Alternative Analysis is completed and one meeting prior to Design Field View approval.

The consultant will prepare newspaper ad for the public plans display to be included in the local newspapers circulated in the area. The ad will be submitted to the Department for review. Once approved, the District will submit to the local media thru the District CRC. The consultant will make all necessary arrangements for a place to hold the public plans display.

The consultant will record minutes of the public officials meeting and the public plans display and will distribute to interested parties with 10 calendar days after the meetings.

The meeting is anticipated to be attended by three (3) consultant representatives including the project manager, highway engineer, and right-of-way specialist familiar with the project.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD is to provide an electronic version of the public meeting invitation to the District for mailing to the effected property owners and local stakeholders. TPD assumes that the Public Officials meeting will be held, immediately followed by the Public Meeting. It is assumed that the Public Meeting will take place at either the Municipal Building or a local property (i.e. school, firehouse, etc) near the project site. TPD will be responsible for coordinating with the local officials to secure the meeting space and preparing the appropriate advertisements in the local newspapers. TPD assumes that the Public Meeting will be a Plans Display only. It is assumed that the project team will have a total of three (3) attendees, two from TPD and one from Orion. TPD will be responsible for placing the appropriate signing outside and inside the meeting location so as to direct attendees. At the conclusion of the meeting, TPD will be responsible for preparing and collecting a sign in sheet and preparing minutes of the meeting. Any special concerns by the public will be forwarded to the District for consideration.

TPD assumes one (1) public meeting and one (1) follow up meeting with local officials.

Orion (ORION)

One (1) member of Orion will attend the Public Meeting.

Task 3 - Preliminary Drainage Design

Objective:

2.4.3 - Preliminary Drainage Design

This task includes all elements to develop preliminary drainage design with associated hydraulic computations

Scope:

2.4.3 - Preliminary Drainage Design

1. Develop a storm sewer drainage system layout for the selected alignment using very preliminary calculations and engineering judgement.
2. Size major culvert cross pipes by determining approximate drainage area.
3. Determine the need for top of slope and toe of slope ditches.
4. Identify existing drainage restrictions and coordinate with stormwater management strategy.
5. Identify drainage structures which will require agency permitting.

Include the following on the Design Field View Plans:

- * Minor drainage features (inlets and pipes)
- * Major drainage structures
- * Drainage ditches

Detail Task 1 - Preliminary Drainage Design

Department Details:

Prepare and submit a preliminary drainage design report to the Department for review including plans showing drainage areas, flows, swale/ pipe sizes, inlet data, and invert elevations. All Department comments will be incorporated into the final drainage design submission.

Anticipate one (1) field view pertaining to this task.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD will perform a review of the existing topographical information and will perform one (1) field view to determine existing drainage patterns and the condition of existing drainage structures, pipes and swales. Based on this information, TPD will prepare an existing conditions map which will identify existing drainage areas and conveyance systems. TPD will prepare preliminary calculations to determine the spacing of inlets along curbed sections or paved areas as well as the approximate size and grade of pipes and drainage ditches/swales. All calculations will be prepared in accordance with PennDOT Design Manual Part 2, Chapter 10 requirements. TPD will prepare a proposed conditions map which will identify

proposed drainage areas and conveyance systems based on proposed geometry. The locations and anticipated sizes of inlets, pipes and drainage ditches will be shown on the Design Field View plans.

TPD will prepare a Preliminary Drainage Report which will provide a detailed description of the methodology and a summary of the findings. The report will include all appropriate drainage maps, soil maps, graphs, tables and calculations.

Task 4 - Design Field View

Objective:

2.4.10 - Design Field View

This task consists of the development, submission and approval of the Design Field View submission.

Scope:

2.4.10 - Design Field View

1. Conduct design field view at the end of the preliminary engineering and within several weeks of the Design Field View Submission.
2. Evaluate the proposed alternatives under field conditions.
3. Solicit comments from review agencies for further project development.
4. Determine the preferred alternative if applicable.

Detail Task 1 - Design Field View

Department Details:

The Department will provide the preliminary pavement design.

The following work elements are to be part of the design view submission: 1. Finalize horizontal and vertical geometry and submit plans in accordance with Publication 10A, Design Manual Part 1A. 2. Review for compliance with design criteria and environmental constraints. 3. Tabulate project control point coordinates (POT, PC, PT, and PI) for all roadways and channel relocations. 4. Apply the project traffic data to the design criteria to determine lane requirements, turning movements, and weaving movements. 5. Tabulate pavement grades and superelevation for development of cross sections.

This submission will also include the Typical Section submission.

The plans and cross sections submitted as part of the Design Field View Submission shall be in a scale of 1"=25'.

A Design Field View Report is required as part of the Design Field View Submission to include but not be limited to the following:

- " Location Map
- " Project Description
- " Design Criteria
- " Traffic Information
- " General Evaluation of accident history

" Scoping Field View Minutes

" Letter of recommendation from the District Safety Review Committee.

If design exceptions are required, the Design Field View Report and the Design Exception Request can be combined as one report and submitted as the Design Field View Submission. Requirements for the design exception request are included in the standard scope. Do not include collision diagrams and/or accident cluster diagrams in the Design Exception Request or Design Field View Submission. A general evaluation of the accident history will be sufficient.

Additional plans, reports, details, and other deliverables not listed in this task shall be included in the Design Field View Submission as necessary to support the proposed design.

Prepare necessary information for a safety review and constructability review submissions as part of this task. Each submission will include two (2) half size copies of plans, profiles, typical sections and project design criteria reports, all in accordance with Design Manual 1A, Appendix D & E. These submissions must be completed prior to submitting the final design field view submission.

The following are also required as part of the Safety Review submission: The guiderail length of need, point of need and type of end treatment labeled for each guiderail run and the required and proposed sight distances labeled for each intersection and driveway. If the proposed sight distance does not meet the required sight distance, list the existing sight distance also. These items should be submitted as extra sheets so the plan view is not cluttered. Any changes that may result from the review will be incorporated into the Design Field View Submission.

Anticipate two (2) field views pertaining to this task.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

The limits of work for this project are as follows:

- 2,300 feet east along SR 0136 (Dry Run Road) from a point 50 feet west of Gamble Street;
- 900 feet west along SR 1087 (Ginger Hill Road) from SR 0136;
- 900 feet south along SR 917 from SR 0136; and
- 900 feet south along SR 1067 (Cracker Jack Road) from SR 0136.

Alignment Refinement

TPD will utilize the proposed horizontal and vertical alignment for S.R. 0136, Ginger Hill Road, Cracker Jack Road and S.R. 0917 as established in the Ginger Hill Engineering Study dated July 2008. It is our understanding from Scope Clarification meeting that the preferred alternative (Alternative 1) will be utilized for the development of preliminary engineering. Based on further coordination with the District, it is our understanding that the preferred alternative is to be refined to ensure that all sight distance requirements are met. These refinements include, but are not limited to, horizontal realignment and lowering/raising the roadway profiles of S.R. 0136, Ginger Hill Road, Cracker Jack Road and S.R. 0917. TPD will

review the preferred alternative to ensure that it meets current PennDOT Design Manual, Part 2 requirements. TPD assumes a maximum of three (3) alignment alternatives as part of this task.

TPD will not be responsible for additional traffic data collection or analysis under this task per the Scope Clarification meeting. If needed, the District will be responsible for additional traffic related items.

Typical Section

TPD will prepare a Typical Section Submission for District review. TPD will develop a Design Criteria table which will be utilized to develop the components of the typical sections. The typical sections will indicate lane widths, shoulder widths, lane and shoulder cross slopes, pavement base drain, guide rail and slope treatments. The typical sections will not show pavement materials as these will not be determined until Final Design. It is assumed that two (2) typical sections will be required for S.R. 0136 and one (1) typical section will be required for Ginger Hill Road, Cracker Jack Road and S.R. 0917. The Typical Section submission will occur prior to the Safety Review Submission.

TPD will develop Typical Sections in accordance with PennDOT Publication 10A, Design Manual Part 1A and Design Manual Part 3, Chapter 2. The following items will be included on the Typical Sections:

- Pavement depths (approximate)
- Shoulder type, width, depth and cross slope
- Median type, width and cross slope
- Embankment and cut slopes
- Swales and contiguous gutters as applicable
- Subbase drainage treatment
- Rate of superelevation
- Unusual design conditions (i.e., special treatment of subgrade, subbase or under-drain)
- Barrier and guide rail
- Point of profile grade
- Centerline or baseline
- Limits of variable widths
- Base course and subbase widths and depths (and slopes if not parallel with pavement)
- Seeding treatment
- Station Control

Safety Review

TPD will prepare a Safety Review Submission in accordance with PennDOT Publication 10A, Design Manual 1A, Appendix D and E requirements. The submission will include a Design Criteria Report, Safety Study and color-coded Safety Review Level Plans (plans, profiles and typical sections).

The Design Criteria Report will include all pertinent information related to the design of the roadway, including a project description, a location map, traffic information, roadway and land use typology, geometry computations, guide rail length of need computations, traffic control methods and descriptions of design deficiencies and design exceptions (if needed). The report will include tables which will identify existing conditions, design requirements and proposed conditions for items such as lane widths, shoulder widths, curvature, etc.

A separate confidential Safety Study will be prepared along with the Design Criteria Report. The Safety Study will include an analysis of crashes which have occurred over the past three (3) years within the project limits of work. The analysis will include a comparison of the crash data at the site versus the state wide average for a similar roadway type. A listing of potential mitigation measures will be included. In preparation of the Safety Study, TPD will coordinate with the District Project Manager to obtain a copy of the latest three years of crash data, homogenous report and crash cluster data. TPD will also coordinate with local municipal officials to obtain supplemental crash data.

The following plans will be included with the submission (number of anticipated sheets in parentheses):

- Title Sheet (1)
- Index Sheet (1)
- Location Sheet (1)
- Typical Sections (2)
- Plan Sheet (color coded) (5)
- Profile Sheet (5)
- Signing and Pavement Marking Plan (5)

All plans will be prepared at a scale of 1 inch = 25 feet.

TPD will also identify the need for design exceptions at this time. If necessary, TPD will prepare a Design Exception Report in accordance with PennDOT Publication 10A, Design Manual 1A, Appendix F. The report will be included with the Safety Review Submission package.

If requested, TPD will attend the safety review meeting with the District to discuss the design items and review any design issues. Following the meeting, TPD will prepare minutes which will summarize decisions made at the meeting and will revise the plans/reports to address any comments generated from the District Safety Review.

Design Field View

TPD will prepare a Design Field View Submission in accordance with PennDOT Publication 10A, Design Manual 1A, Chapter 6, PennDOT Publication 13M, Design Manual Part 2 and PennDOT Publication 14, Design Manual Part 3. The submission will include all necessary revisions from the Safety Review. The submission will include a Design Criteria Report, Design Exception Report (if needed) and Design Field View Level Plans.

The Design Criteria Report previously submitted with the Safety Review submission will be updated based on feedback from the Safety Review meeting. TPD will also prepare a detailed cost estimate which will be included with the submission package.

The following plans will be included with the submission (number of anticipated sheets in parentheses):

- Title Sheet (1)
- Index Sheet (1)
- Location Sheet (1)
- Plan Sheet (color coded) (6)

- Profile Sheet (6)
- Signing and Pavement Marking Plan (6)
- Preliminary Traffic Control Plan (12)
- Cross Sections (at 50 foot increments and critical sections) (80)

All plans will be prepared at a scale of 1 inch = 25 feet.

Following the meeting, TPD will prepare minutes which will summarize decisions made at the meeting and will revise the plans/reports to address any comments generated from the District.

TPD assumes a total of two (2) meetings for this task.

Markosky Engineering Group (MEG)

The Markosky Engineering Group, Inc. (MEG) will assist Traffic Planning and Design (TPD) with this task in a QA/QC role. MEG will perform independent checks of the engineering calculations and plans (as required) in accordance with TPD's Project Specific Quality Management Plan, and will provide our comments in redline form to TPD.

MEG anticipates reviews of the following:

- Design criteria (Functional classification, roadway typology, lane widths, shoulder widths, cross slopes, grades, radii, sight distance)
- Project control point coordinates (POT, PC, PT, and PI)
- Traffic information (ADT, DHV, directional distribution, truck percentages)
- Guide rail length of need calculations
- Typical sections
- Roadway plan
- Roadway profile
- Design Field View report

Task 5 - Other Preliminary Roadway Design Activities

Objective:

2.4.99 - Other Preliminary Roadway Design Activities

This includes any other necessary PennDOT preliminary roadway design activities for the project which are not otherwise covered under the standard preliminary roadway design tasks.

Scope:

2.4.99 - Other Preliminary Roadway Design Activities

Provide work as detailed by the Department. See Below.

Detail Task 1 - Preliminary Erosion and Sedimentation Pollution Control Plan/NPDES Permit

Department Details:

Preliminary Erosion and Sedimentation Pollution Control Plan/NPDES Permit

This task is the preparation of preliminary erosion and sedimentation control plans and application for all NPDES permits (Chapter 102, Earth Disturbance Permits). Preliminary Erosion and Sedimentation Control Plan includes the preliminary sizing and placement of major sediment control facilities (e.g. sediment basins). This effort must correspond with the stormwater management design to use the stormwater basins for erosion and sediment control during construction. Right-of-way requirements must be considered for sediment traps, collection ditches and drainage easements.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD will perform background research with respect to the soil characteristics using available soil mapping and the watershed classification through the PADEP website. TPD will also contact the Washington County Conservation District and PADEP office to perform early project coordination to discuss the overall project features, determine the level of stormwater management requirements based on the levels provided in PennDOT Publication 584 and to establish a contact person with each agency.

TPD will develop a preliminary layout of the anticipated erosion control devices using the proposed alignments, drainage features and grading. TPD will identify the locations and will develop the approximate size of all temporary and permanent stormwater management areas, including diversion swales, infiltration areas, sediment traps and sediment basins. TPD will also identify the need for any slope or drainage outfall treatments which may extend beyond the legal right-of-way. These features will be shown on the Design Field View plans.

Task 6 - Surveys**Objective:**

2.4.1 - Surveys

This task consists of providing the survey requirements associated with specific PennDOT projects designated for studies, reports, design and construction.

Scope:

2.4.1 - Surveys

Guidance:

- Publication 122M, Surveying and Mapping Manual
- Strike Off Letter 430-99-20, QA/QC Control checklist for Right-of-Way and Construction Plans
- Publication 213, Work Zone Traffic Control Manual
- Form D-428, Field Book
- Design Manual 3, Plans Presentation
- Referencing alignments should be in agreement with Pub 122M, Ch. 3.1 and DM3 Figure 3.214

Scope:

Surveys may consist of either conventional data collection, Three-Dimensional data collection, or a combination, as directed by the District. Obtain published horizontal and vertical control data for project use.

The Quality Assurance/Quality Control Checklist will be completed and discussed with the District Chief of Survey for all preliminary design survey work.

Prior to initiating surveys, develop a Traffic Control Plan in accordance with Publication 213 for implementation during surveys within existing transportation facilities.

Detail Task 1 - Surveys

Department Details:

All survey field books used, conforming to Pub. 122-M (Department Survey Manual) will be scanned into PDF files. The PDF copies and the original field books will be forwarded to the District's Survey Unit for archiving once the design is complete.

Aerial mapping exists for this project. The aerial mapping data will have to be field verified.

The following subtasks are considered survey requirements, relative to the exiting topography within specific boundaries

1. Perform County Tax records investigations (s) to obtain name and addresses of involved property owners.
2. Provide a draft Notice of Intent to Enter letter (Form 983) to each property owner. The District will be responsible for mailing the final NOITE letter.
3. Obtain published horizontal and vertical data for specific project use.
4. Prior to initializing survey, develop a Traffic Control Plan for implementation during surveys within existing highways and streets.
5. Establish horizontal and vertical control relative to referenced monumentation.
6. Establish the preliminary mainline horizontal alignment in the field.
7. Obtain profiles and cross sections along each of the project's established roadways, baselines, and centerlines.
8. Field edit mapping topography, including the type, size, location, and elevation of the existing storm drain and utility facilities, and evident property corners.
9. Perform existing bridge structure surveys including type, size, location and pertinent elevation data.
10. Flag horizontal alignment prior to the Design Field View.
11. Stakeout the approved Baselines and Centerlines at 50 foot intervals.
12. Stakeout the Core Boring Hole locations (anticipate 2 roadway, 4 bridge & 2 extra, as required).
13. Establish and record final Benchmarks and References for construction stakeout.
14. Field Survey Notebook compilations, numbering and content indexing.
15. Locate and stake the final core boring hole locations.
16. Stake proposed right-of-way lines as requested by the District.
17. Locate delineated wetland area.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

Upon receipt of the survey files, TPD will upload the DTM into our CADD system and will manipulate the file structure accordingly. TPD will review the survey files/DTM to ensure all information is correct and to identify any missing or conflicting items. TPD will prepare a detailed list of any missing or conflicting items and will coordinate with the surveyor to have these items updated.

AWK

AWK understands that the District's Survey Unit has completed field survey work for the S.R. 0136 roadway and vicinity. AWK will perform conventional survey work to confirm the existing District survey in accordance with PENNDOT Publication 122M and the Recommended Procedures and Guidelines of Strike Off Letter 430-07-13. This survey work will involve utilizing existing District horizontal and vertical control to verify and supplement information of the original survey.

It is anticipated that the survey / right-of-way tasks will affect up to a maximum twenty five (25) property owners within the project limits. Required traffic control will be provided in accordance with PENNDOT Pub. 203.

The limits of survey will follow the existing centerline of roadways with a bandwidth of 100 feet along the following sections of roadways:

- 2,300 feet east along SR 0136 (Dry Run Road) from a point 50 feet west of Gamble Street;
- 900 feet west along SR 1087 (Ginger Hill Road) from SR 0136;
- 900 feet south along SR 917 from SR 0136; and
- 900 feet south along SR 1067 (Cracker Jack Road) from SR 0136.

It is anticipated that the survey work will be collected in English units of measure and consist of the following:

- Edit base map plan drawings provided by TPD.
- Verify the contours on the Base Map Plan drawing in the field by survey by spotchecking elevations within the project limits, and comparing them to the contours shown on the drawing. If needed, AWK will take additional ground elevation shots in order for TPD to create an accurate two (2) foot contour drawing.
- AWK will walk the site to confirm all topographic features and utilities are identified from the District's survey. If needed, AWK will locate any topographic features, utilities, property markers, etc. that are not shown on the District's survey, or as directed by TPD.
- AWK will locate any physical features inside the limits of survey that may assist with the preparation of the property mosaic.
- Reduce, check and enter the additional field survey data into Microstation V8 used to prepare the existing base map plans.
- Re-establish existing ROW Centerline on plans.
- Provide additional reduced field notebook compilations, plan sketches, and survey data coordinates and coordinate point plot plans.

- Additional survey shots will be taken along driveways and local roads within the project limits in order to accurately represent the profile and edge of pavements.
- Drainage structures, leech fields and septic tanks that are visible upon the surface will be located within the project limits.
- Stakeout core boring locations and obtain existing ground surface elevations on each. Assume a total of fourteen (14) borings will be located.

AWK will provide additional field survey support to revisit the project site to locate utility test holes and xyz coordinates of the location of the test holes.

Task 8 - Preliminary ROW Activities

Objective:

2.6.1 - Preliminary ROW Activities

This task includes the requirements as stipulated under Publication 14M, Design Manual Part 3.

Scope:

2.6.1 - Preliminary ROW Activities

A preliminary right-of-way plan will be prepared for all Department projects where the construction activities require property acquisition beyond the footprint of existing Department of transportation property. The right-of-way plan shall be prepared in accordance with the requirements and contents as stipulated in Design Manual Part 3.

The right-of-way plan(s) is(are) subject to a plan check review by the District Right-of Way Unit, Chief of Surveys and the Central Office Bureau of Design, Field Liaison Engineer, Highway Quality Control Division. The plan and all supporting data shall be submitted to the District in advance of the scheduled plan check review meeting. The person(s) responsible for the plan preparation will attend the review meeting. Departments and comments stemming from the plan review shall be addressed and incorporated in the subsequent right-of-way plan submission.

The right-of-way plan will be prepared on mylar with appropriate Pennsylvania professional engineer and surveyor seals affixed.

Until NEPA clearance has been obtained, the Department may not perform final negotiations and acquisitions of property.

A right-of-way certificate is issued when the Department has adequately acquired right-of-way to allow project construction.

Detail Task 1 - Preliminary ROW Activities

Department Details:

The preliminary right of way involvement will include research and investigation of property involvement including utility easements in enough detail to establish an estimate of total and partial takes for the alignment studied, contacting affected property owners for their input as to existing iron pins, corners, septic tanks, septic fields, and/or wells, listing correct adverbs from parent deeds, and attempting to eliminate unknown property owners. Letters of Intent to Enter shall be sent to all involved parties prior to the start of field surveys. All Right-of Way activities shall be completed in accordance with Design Manual 1 and all plan preparation will be in accordance with Design Manual 3.

Once the preliminary RW impacts are determine, a preliminary RW-971(Right of Way - Project Funding Estimate) will be submitted to the District.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

All parcels must include the tax map number.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD will coordinate with the project surveyor to establish a right of way centerline and the location all legal right-of-way lines, existing easement lines and property lines. Using this information, a deed mosaic will be prepared. TPD will review the deed mosaic provided by the project surveyor for overall consistency with existing conditions.

At or near the time of the Safety Review Submission, TPD will determine locations where required right-of-way, permanent easements or temporary easements will be needed. TPD will refine the design where feasible to eliminate the right-of-way and easements, in particular those properties where environmental considerations (hazardous waste, agricultural, historic structures) are present. Upon establishing the required right-of-way and easement lines, TPD will prepare preliminary Right-of-Way plans in accordance with Publication 14, Design Manual Part 3, Chapter 3.

Individual property plats will be prepared for all parcels with takes on highway projects, unless directed by the District. The property plat shall contain all information necessary to provide a clear understanding, by all parties, of the existing conditions and the highway's taking requirements for the parcel, in accordance with Design Manual Part 3, Guidelines and Stipulations. The proposed highway affects on the individual property plat must be consistent with those shown on the highway right-of-way plan sheet, however, the showing of details and labels beyond the boundary lines of parcel shall be voided when practical.

The following plans will be included with the submission (number of anticipated sheets in parentheses):

- Title Sheet (1)
- Index Sheet (1)
- Location Sheet (1)
- Plan Sheet (color coded) (5)
- Profile Sheet (5)
- Property Plats (15)

All plans will be prepared at a scale of 1 inch = 25 feet.

TPD will submit the preliminary Right-of-Way plan along with all supporting documentation (i.e. deeds, mapping, land development plans, agreements, etc.) to the District for review and approval.

Based on coordination with the District Project Manaer, TPD is assuming fifteen (15) properties will be impacted rather than the seven (7) indicated

in the Department Details..

TPD is assuming that mylar plans will not be required as these will not be final for signature.

TPD is assuming that meetings with the District Right-of-Way Unit and/or property owners will not be required at this time.

AWK

AWK will assist with preliminary right-of-way activities in accordance with PENNDOT Publication 14M (DM-3), PENNDOT Strike-off Letter 430-99-20 and the Right-of-Way Manual. It is assumed that a maximum of twenty-fivehirty (2530) properties will be involved within the project area of about 23 acres, of which 15 will involve the development of property plots for the selected alignment alternative. It is also assumed that the base map and property mosaic with contours and all topographic and planimetric features will be provided to AWK (by others) in both hard copy and electronically. It is assumed that Gap plans or combination plans will not be required. It is anticipated that this task will involve the following:

- Perform the required deed and legal right-of-way research.
- Obtain the list of property owners and mailing addresses. These will be provided to TPD so they can prepare Notice of Intent to Enter Letters.
- Establish location of legal right-of-way and property lines.
- Contact affected property owners as necessary for their input as to existing iron pins, property corners, septic tanks, septic fields, water wells, listing correct adverbs from parent deeds, and attempting to eliminate unknown property owners.
- Prepare the property line mosaic and legal right-of-way lines to be incorporated on base plan for this project. It is assumed that the Department will provide a previously developed mosaic for AWK's use as a basis in development of the final mosaic. AWK's Professional Land Survey will have direct supervision over verification of property lines as shown on the Departments mosaic and final location of property lines and Legal Right-of-Way lines. If there are significant changes in the final location of property lines as to what is shown on the Departments mosaic, additional work may become necessary to resolve the discrepancy. This additional work could be accomplished under a supplemental agreement.
- Develop and provide existing right-of-way claim information in block data and property boundary bearing and distances for no more that fifteen (15) property acquisitions in a tabular format.
- Assist with assessment of Right-of-Way impacts.

This proposal assumes that AWK will not attend the preliminary ROW plan check.

ORION

Orion will assist TPD in determining the cost impacts of the potential right of way takes, temporary easements and permanent easements. Assume a total of fifteen (15) properties.

Task 9 - Preliminary Maintenance and Protection of Traffic

Objective:

2.8.2 - Preliminary Maintenance and Protection of Traffic

This task consists of developing preliminary maintenance and protection of traffic plans in accordance with Publication 14M, Design Manual Part 3,

the Manual on Uniform Traffic Control Devices and Publication 213, Work Zone Traffic Control to maintain safe and efficient traffic operations through the construction work zone.

Scope:

2.8.2 - Preliminary Maintenance and Protection of Traffic

Prepare a preliminary Maintenance and Protection of Traffic plan for anticipated work areas involving existing roads. The plans will include a conceptual sequence of operations and identify the type of traffic control needed for each roadway impacted by the anticipated work zones.

Plans will be developed at an appropriate scale.

Drawings will show the work areas and note the traffic control requirements for each area.

A conceptual sequence of operations will be developed identifying the anticipated phases and stages of work necessary to control traffic during hours of construction and at all other times during construction. Illustration of traffic control signs and devices, temporary pavement markings, temporary roads, detours, and other necessary details will not be developed.

The plans will include a title sheet with index map and general notes, and a listing of anticipated traffic control devices without quantities. The plan will also include the sequence of operations and plans sheets depicting the work areas.

Detail Task 1 - Preliminary Maintenance and Protection of Traffic

Department Details:

This task consists of developing preliminary maintenance and protection of traffic plans in accordance with Publication 14M, Design Manual Part 3, Publication 212 (Official Traffic Control Devices), and Publication 213 (Work Zone Traffic Control) to maintain safe and efficient traffic operations through the construction work zone.

Evaluate feasible alternatives and provide the District with an overview of each alternative prior to developing the preliminary traffic control plan.

This activity will include a separate plan and written narrative. All signs will be drawn (symbols will not be accepted) and the distance between signs will be shown on a 1"=25' minimum scale plan.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

This task consists of developing preliminary maintenance and protection of traffic plans in accordance with Publication 14M, Design Manual Part 3, the Manual on Uniform Traffic Control Devices and Publication 213, Work Zone Traffic Control and PennDOT District 12-0 Maintenance and Protection of Traffic requirements to maintain safe and efficient traffic operations throughout the construction work zone.

Prior to plan development, TPD will coordinate with the District to determine the sequence of staging and if a detour plan will be considered. This will include an abbreviated alternatives analysis in which TPD will review several traffic control staging alternatives. It is anticipated that TPD will review three (3) staging alternatives during this process, including staged traffic with temporary pavement, a temporary runaround and a temporary traffic signals with single lane traffic patterns. Upon completion, TPD will prepare a summary of the alternatives, which will include a description of temporary impacts (i.e. cost, right of way, duration, etc.) for District review. For purposes of developing a design fee, it is assumed that staged construction will be utilized with two primary stages of construction will be required with sub-stages (phases) at key locations. It is also assumed that a detour will not be utilized.

Upon selection of a preferred traffic control alternative, TPD will prepare a preliminary maintenance and protection of traffic plan for anticipated work areas involving existing roads. The plans will include a conceptual sequence of operations and identify the type of traffic control needed for each roadway impacted by the anticipated work zones. Drawings will show the work areas and note the traffic control requirements for each area. A conceptual sequence of operations will be developed identifying the anticipated phases and stages of work necessary to control traffic during hours of construction and at all other times during construction. Illustration of traffic control signs and devices, temporary pavement markings, temporary roads, detours, and other necessary details will not be developed. The plans will include a title sheet with index map and general notes, and a listing of anticipated traffic control devices without quantities.

This task does not involve any traffic analysis or development of temporary traffic signal plans.

Task 10 - Preliminary Pavement Marking Plan

Objective:

2.8.4 - Preliminary Pavement Marking Plan

This task consists of developing preliminary pavement marking plans in accordance with Publication 14M, Design Manual Part 3, the Manual on Uniform Traffic Control Devices, Traffic Standards (TC 7600 Series), and Publication 68 with guidance from the Pavement Marking Handbook.

Scope:

2.8.4 - Preliminary Pavement Marking Plan

Preliminary pavement marking plans will be developed depicting longitudinal lane lines and delineators on roadway sections. For interchange areas, pavement markings and delineators will be indicated for gore areas, islands, and other miscellaneous special markings. For intersections, the locations of stop bars, legends, and crosswalks will be indicated.

Plans will be prepared at an appropriate scale. The type, size, and color of pavement markings and delineators will be noted on the plans.

Specific details will not be developed.

The plan will include a title sheet with general notes and index map, blank tabulation sheets, and plan sheets for all roadway sections within the limits of work. Where roadway sections are consistent and repetitive, typical details may be developed to eliminate unnecessary and repetitive design sheets.

Detail Task 1 - Preliminary Signing & Pavement Marking Plan

Department Details:

The pavement marking and delineation plan will be incorporated with the signing plan. Submit (2) half-sized preliminary SPMP for review.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

It is anticipated that the Pavement Marking Plans will be combined with the Signing plans for clarity.

TPD will develop preliminary pavement marking plans depicting longitudinal lane lines and delineators on roadway sections. The locations of stop bars, legends, and crosswalks will be indicated. The type, size, and color of pavement markings and delineators will be noted on the plans. Specific details will not be developed at this time.

TPD will develop preliminary signing plans for all roadway sections within the limits of work. The plans will depict destination, regulatory, warning, information, and guide signs necessary to control and maintain traffic upon completion of construction. The plans will depict the approximate locations of signs, sign types, and sign messages. TPD does not anticipate needing any major sign structures or sign lighting. TPD does anticipate needing overhead signing on mast arms.

Plans will be prepared at an appropriate scale.

Task 11 - Utilities**Objective:****2.9.1 - Utilities**

This task involves project specific work requirements for utility relocation engineering activities.

2.9.1.1 - Utility Location Verification

This task is the verification of existing aerial and underground utility locations.

2.9.1.2 - One Call

This task is the compliance with the PA One-Call System design call requirements.

2.9.1.3 - Existing Utility Location Plan

This task is the compilation of the existing utility location plan for design/coordination purposes.

2.9.1.4 - Preliminary Utility Impact Assessment

This task is the assessments of potential conflicts by the project designs with existing utilities, and preliminary determination for utility relocations requirements.

Scope:

2.9.1 - Utilities

Guidance:

- Publication 16M, Design Manual Part 5, Utility Relocation

PennDOT projects which involve public utilities must include all necessary provisions for the safety and protection of both existing and any required relocation of utilities.

Coordination efforts will be maintained with the utility throughout the project design process to allow amicable solutions for known and potential utility/highway project conflicts.

2.9.1.1 - Utility Location Verification

The scope of work will include the following activities:

1. Invite District Utility Unit representatives to the project Design Field View meeting.
2. Initiate contact with all utilities in the vicinity of project by project notification letter.
3. Formally solicit copies of existing facility location records for underground installations from the utility company.
4. Subsequent to plotting the existing utility locations on the Department's right-of-way plan, submit plan copies to each company and request their verification, or revision, of the type, size, and location of their facilities.

Scope Deliverables:

1. It is the responsibility of the designer to prepare project base mapping showing all existing utility facilities.
 - a. Aerial and surface utility data will be obtained by conventional survey.
 - b. Underground utility data may be obtained from utility owner as-built plans and maps and/or test pits or non-destructive probe methods.
2. The existing utility location plan compilation will include the appropriate label and number, as applicable, for each facility.
 - For all existing underground utility installations, the locations will be supplemented with profiles and/or cross sections.
3. Once the utility location plan is compiled, the designer will submit copies of the plan to each utility owner on the project with a formal request for their verification of the facilities data depicted.
 - The designer will incorporate all revisions, additions, or deletions resulting from the verification comments received from the owners.

2.9.1.2 - One Call

Guidance:

- PA Act 287 of 1974, as amended (73 P.S. § 176, et seq.)

The scope of work will include the following activities:

1. The project designer, and/or survey party chief shall contact the PA One-Call System for the design call not less than 10 working days and no more than 90 working days prior to the final P.S. & E. submission to the District.
2. The project designer, and/or survey party chief must request underground utility line delineations by the utility owner prior to making field survey acquisitions of utility locations.

Scope Deliverable:

The design firm will add the one call serial numbers and the 1-800-242-1776 number to the plan prior to forwarding the plan to facility owners.

2.9.1.3 - Existing Utility Location Plan

Scope:

Preparation of this plan is based on project mapping including field data and the verified facility location as received from the utility companies.

The scope of work will include the following activity:

After a response from the facility owner, the designer will add their existing facility information to the drawing prior to the final P.S. & E. submission to the District.

Scope Deliverables:

The design engineer will prepare a master Existing Utility Location Plan using as a base the construction plan sheets.

2.9.1.4 - Preliminary Utility Impact Assessment

Scope:

When the existing utility location plan has been developed and verified, the proposed project preliminary designs will be investigated for utility impact potentials.

Scope Deliverables:

Conduct a preliminary impact assessment study and provide a report listing known and potential utility conflicts.

a. The project designer will complete a preliminary impact assessment study and report with coordination efforts from the utility owner. This information shall be presented in text and to clearly indicate the location and nature of the conflicts along with the preliminary cost comparisons and

conclusions and recommendations for the relocation of the utility facility versus possible project design modifications that would allow the facility to remain at its existing location.

Where utility conflicts are discovered, or other utility problems are anticipated on the project, a preliminary impact assessment study and report will be completed by the project designer, with coordination efforts from the utility owner.

b. The preliminary utility impact assessment report will be submitted to the Department for review, approval and/or conflict resolution decision.

Detail Task 1 - Utilities

Department Details:

Utility investigations and verification of all utilities within the project area shall be completed in accordance with Act 38 and Design Manual 1, Chapter 4, Section 2.

Provide the PA One Call Report to the District in PDF format prior to the initiation of the supplemental field survey. Consultant is responsible for updating the PA one call and PA One Call report during the preliminary engineering phase.

Preliminary plans (Verification Plan) showing all existing utility locations shall be provided to the District in PDF format. Provide hard copies of the Verification Plan to all involved utilities so that conflicts which influence line and grade can be determined. These utility location plans shall show utilities in color in accordance with the APWA Temporary Marking Standard, except that alternate colors shall be used in lieu of lighter colors (i.e. - yellow) which do not reproduce well.

Do not use aerial photography for utility data. Utilize conventional survey.

Once existing utility facilities have been established on the base plan and the Line, Grade, and Typical Section submission is approved, the consultant will aid the Department in determining if Subsurface Utility Engineering is required and the appropriate level. For proposal purposes, assume designation of utilities to a Quality Level B.

Provide a preliminary utility impact plan and matrix including a description/ tabulation of apparent utility impacts with station, offset, and nature of impact (i.e. - widening, cut, fill, drainage, etc.). These utility impact plans shall show utilities in color in accordance with the APWA Temporary Marking Standard, except that alternate colors shall be used in lieu of lighter colors (i.e. - yellow) which do not reproduce well.

Upon Design Field View approval, provide a single PDF file to the District containing the preliminary utility impact plan (showing preliminary right-of-way impacts), preliminary cross sections, and the preliminary utility impact matrix. Provide hard copies of these items to all involved utilities.

Anticipate at least two (2) meetings in the field associated with this task.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed and agrees with the District's Scope of Work and Department Details. All subsurface investigations will be completed under a

separate task.

Task 13 - Hazardous and Residual Wastes

Objective:

2.2.12 - Hazardous and Residual Wastes

This task consists of applying the waste site evaluation procedures to a transportation improvement project. Reference Publication 281.

Scope:

2.2.12 - Hazardous and Residual Wastes

Needs completed.

Detail Task 1 - Hazardous and Residual Wastes

Department Details:

As described in main task and as follows:

Part A - This task includes the identification Hazardous and Residual Wastes sites within the limits of the preferred alternative. The District project manager will notified the consultant to proceed to Part B of this task.

Part B - Once Notice to Proceed is authorized, proceed with finalizing this task. If the Phase I ESA or Concise Phase I ESA recommends additional studies (i.e. Phase II ESA) those studies will be completed during final design phase.

The initial Phase I ESA submission shall be submitted electronically only via .ftp or cd-rom in .pdf format. Once approved, supply the district with 3 hardcopies of approved report.

Approach:

ASC Group (ASC)

Phase I Environmental Site Assessment (ESA)

ASC will conduct the sensitive waste site investigation in accordance with The Transportation Project Development Process, Waste Site Evaluation Procedures Handbook Volume I (Publication No. 281, April 2010). ASC will consult with a hazardous waste site assessment service company to obtain a comprehensive list of potential hazardous waste sites within a one-mile radius of the project site. This list will comply with the American Society for Testing and Materials (ASTM) and PENNDOT standards. ASC will confirm this information and conduct the appropriate level of research with state and local authorities to complete a Phase I Environmental Site Assessment (ESA).

A preliminary investigation revealed that an industrial site is present to the north of S.R. 0136, which will be the focus of the investigation to determine if any past or current environmental conditions may exist that would affect the project. Deliverables will include of the draft Phase I Environmental Site Assessment report in PDF format and three (3) copies of the final Phase I Environmental Site Assessment report.

ASC is experienced in performing investigations of potential waste sites in accordance with PennDOT Publication 281, Waste Site Evaluation Procedures for the Highway Project Process.

As part of the Phase I study of the project area, we will perform a Phase I Site Assessment, which will include a background “paper study” that will consist of the following:

- Review of environmental regulatory database listings to identify sources which could impact the project area. Database information includes state and federal listings of hazardous waste generators, hazardous waste sites, and underground storage tank facilities;
- Contacts with knowledgeable persons; and
- Historical aerial photograph review of the project area.

The background study will aid in identifying historic land usage which may represent a potential for environmental concern such as aboveground storage tanks, lagoons, pipelines, gas stations, or other industrial usage. In addition, the Phase I ESA will include a complete project area “walk over” to observe visual signs of potential waste sites in or adjacent to the project area. The Phase I ESA will be performed prior to any intrusive activities. The Phase I ESA will be lead by OSHA certified project personnel experienced with identifying wastes and health and safety issues. Phase I ESA findings will be prepared and include a narrative, graphics and recommendations. The Phase I ESA findings and recommendations will be used to identify sites of specific environmental concern within the project study area. Sites of concern, if any, will require additional evaluation, which is beyond the current scope of work for this project.

ASC will not be responsible for the preparation of any engineering plans or mapping. ASC will aid the consultant working on the plans/mapping by meeting with said firm and discussing plan revisions.

Assumptions

If it is determined that any of the below tasks are required, a separate Scope of Work and Price Proposal will be prepared and submitted to the District for approval prior to the commencement of work:

- Asbestos Containing Materials Investigation
- Lead Based Paint Investigation
- Phase II or III Environmental Site Assessment

Task 14 - Level 1B CE

Objective:

2.3.2 - Level 1B CE

This task consists of the assembly and approval of the Level 1B Categorical Exclusion

Scope:

2.3.2 - Level 1B CE

Complete Part A and B, of the Categorical Exclusion Evaluation (CEE) form (Publication 294), that includes a Project Description and, may also include a location map(s) and/or illustrations.

Sheet C-2 will also require completion.

Submit the completed CEE form and pertinent supporting documents for review, concurrence, and approval to the District Office. If necessary, revise the CEE form and or supporting documentation as directed.

Detail Task 1 - Level 1B CE

Department Details:

In accordance with the main task and as follows:

Task also includes conducting field investigations for identifying streams and wetlands within the project study area. This effort includes identification, inventory, classification and analysis of the physical and biological elements of the stream and waterways within the project study area and the quantification of potential stream impacts. The result of this investigation and impact assessment will be documented in the CEE or Bridge Programmatic Agreement..

Task will investigate the presence of floodplains and identify the limits of base frequency within the project area. The floodplain limits will be delineated on appropriate mapping and impact potential will be assessed and addressed in the CEE narrative.

If applicable, complete Farmland Protection Policy Act (FPPA) forms for agricultural resources and/or prime and statewide important soils and include appropriate discussions in CEE.

Threatened and Endangered Species coordination will be initiated by Department personnel.

A District Qualified professional will clear the project for historic structures and historic archaeology under the new programmatic agreement. As a result, task does not include the evaluation of historic structures or conducting geomorphology investigations.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD will attend the E&E Scoping Field View meeting. It is assumed that the District will prepare the Scoping Field View form in the Expert System. Once approved, TPD will generate the Level 1b CEE from the Scoping Field View document. TPD will complete all sections of the form with the exception of the hazardous waste section (to be completed by ASC Group) and the Cultural Resources page (to be completed by the District). TPD will address any review comments and resubmit the document for approval as necessary. It is anticipated that none of the subject areas will require a detailed level of study beyond what is described in the remainder of this scope of work. Endangered species, and air/noise studies are not part of this scope of work.

Task 15 - Storm Water Management Design

Objective:

2.4.4 - Storm Water Management Design

This task is the development of the preliminary storm water management design with associated hydraulic computations.

Scope:

2.4.4 - Storm Water Management Design

1. Obtain local stormwater management plan and requirements.
2. Perform preliminary stormwater management analysis.
3. Coordinate with local stormwater management plan.
4. Determine the approximate size and location of the stormwater management basin.
5. Show the stormwater management basin on the design field view plan.

Detail Task 1 - Storm Water Management Design

Department Details:

Evaluate pre and post-development stormwater peak discharges at each point of interest (POI) where runoff from the development area exits the right-of-way boundary.

Determine the need for stormwater management facilities, determine the approximate size and location of each for stormwater management facility, and show approximate locations of each facility on the plans. Design of these facilities will be accomplished in final design.

Prepare a two (2) page letter report summarizing the findings. Attach preliminary calculations and submit to the District

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD assumes that there will be a maximum of three (3) storm water detention/infiltration areas located within the project limits. It is anticipated that the facilities will be located within the existing right of way.

TPD will research the local county and municipal requirements with respect to storm water management. TPD will prepare all design calculations in accordance with PennDOT Publication 584 Drainage Manual and where possible the local storm water management ordinances. All drainage and storm water management calculations will be performed using the most current version of the Hydroflow/Hydrograph design software package.

TPD will prepare a Preliminary Storm Water Management Design Report which will accompany the Preliminary Drainage Report. This report will include a summary of findings as well as all appropriate backup calculations.

Task 16 - Wetland and Waters Studies

Objective:

2.2.1 - Wetland and Waters Studies

Identify wetlands and waters and determine the impact of the proposed alternatives

Scope:

2.2.1 - Wetland and Waters Studies

Guidance:

- Pennsylvania Code Title 25, Chapter 105.17
- Publication 325, Wetland Resources Handbook
- U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (1987)

Scope:

Identify the presence of wetlands, coordinate with USACE and DEP, evaluate the impact to the resource, and develop mitigation measures and/or permit package as appropriate.

Detail Task 1 - Wetland and Waters Studies

Department Details:

As described in main task and as follows:

Title 25, Chapter 105.17 of the Pennsylvania Code will be used to identify wetlands and determine the impact of the proposed alternatives. This task consists of the delineation of wetland resources, wetland functional assessment, the preparation of wetland resource reports, mapping wetland resources and obtaining jurisdictional determinations within a project. Publication 325 applies to this task. This task includes the quantification of wetland impacts by project alternative to be included in the alternative analysis submission.

Delineate the wetlands within the study area utilizing the methodology presented in the U.S. Army Corps of Engineers (ACOE) Wetland Delineation Manual (1987). The wetland boundaries will be marked with surveyors flagging.

The functions and values for each wetland will be assessed using either the Corps Descriptive Method (CDM) or the WET 2.1 Analysis. This information will be compiled for inclusion into the Wetland Identification and Delineation Report. Determine if the wetlands within the study area meet the criteria of exceptional value.

A Wetland Identification and Delineation Report will be prepared to document the investigation including: methodology, findings, agency coordination activities and the photographs and data forms.

The locations of the wetlands is required to be shown on the plan views

Approach:

TPD agrees with the Dept scope with the following clarification:

Per discussion at the scoping field view and likelihood for avoidable or minimal impacts, TPD will prepare a letter report, photographs, data forms and boundary map in lieu of a formal Wetland Delineation Report.

Task 17 - Subsurface Utility Engineering (SUE) Services

Objective:

2.9.3 - Subsurface Utility Engineering (SUE) Services

Provide services at Quality Levels B and A (as defined in CI/ASCE 38-02) as directed by the Department to aid in the development of right-of-way, preliminary engineering, and construction contract plans for projects selected by the Department.

Scope:

2.9.3 - Subsurface Utility Engineering (SUE) Services

Guidance:

- American Society of Civil Engineers (ASCE) Standard CI/ASCE 38-02, Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data
- PennDOT Publication 16M, Design Manual 5 - Utility Relocation
- PennDOT Publication 14M, Design Manual Part 3 - Plans Presentation
- PennDOT Publication 212, Official Traffic Control Devices
- PennDOT Publication 213, Work Zone Traffic Control Manual
- Pennsylvania Underground Utility Line Protection Law, PA Act 287 as amended
- Pennsylvania Code Title 67, Chapter 459 Occupancy of Highways by Utilities, § 459.8, Special Conditions—Subsurface Operations

Scope:

General Services-

1. Project coordination will be handled through the District Utility Relocation Unit.
2. Provide all traffic control and maintenance of traffic operations as required by PennDOT Pub 212 and 213 and the Manual of Uniform Traffic Control Devices (MUTCD) and local ordinances.
3. Utility companies may require a non disclosure agreement to release their plans. The scope of work is to include all fees associated with these non-disclosure agreements.

SUE Services Requirements-

Demonstrate the staff, equipment, experience, and resources to perform all Subsurface Utility Engineering services through Quality Level A, as follows:

1. The consultant must have at least one professional engineer registered in the State of Pennsylvania and one professional surveyor registered in the State of Pennsylvania that are on the project team, each with a minimum of two years' experience in subsurface utility engineering.
2. Equipment available to perform the necessary range of Subsurface Utility Engineering services including a minimum of two types of electromagnetic / acoustical designating equipment and a ground penetrating radar (GPR) system (QLB), one air / vacuum excavation system (water jet systems not allowed) (QLA), and all necessary survey equipment.
3. Provide a single project manager to represent the firm in a liaison capacity with the Department in accordance with PennDOT Publication 442, Specifications for Consultant Agreements for Project Development Services.

4. Capability of providing both electronic and certified hard copy deliverables in approved PennDOT electronic and plan presentation format in accordance with PennDOT DM-3.

The scope of work will include the following minimum activities:

A. Designating Services (Horizontal Mapping) (QLB)

Perform designating services as directed by the Department, as follows:

1. Coordinate with the Department to conduct appropriate records research, investigate site conditions and identify applicable project limits. Contact the registered underground utility protection services and the owner(s) of underground utility facilities that are not members of PA One Call for the existence and location of all underground utility facilities within the project limits. The Consultant may provide plans to those utility owners contacted in which the existence and location of utilities over which they have ownership may be shown, as deemed necessary. Supplement this information through records research and site investigation to confirm the existence and location of the identified utilities. If another party has already completed this step in order to create a QLD or QLC map, then the Consultant shall verify the completeness of this information and document it as necessary.
2. Obtain necessary permits from city, county, or other municipal jurisdictions or railroads to allow the Consultant to work in the existing streets, roads and rights-of-way.
3. Designate the existing utilities and their laterals to existing buildings that are within project limits utilizing visual inspection, field survey, and surface geophysical methods. Designation will include both a search for, and a trace of, existing utilities within the project limits. Unless specifically requested by the Project Manager, utilities designated will not include (a) vault or manhole limits or dimensions, (b) lawn irrigation or sprinkler systems, (c) underground storage tanks, (d) traffic sensor loops in pavement, (e) gravity storm drainage systems or (f) laterals. Physical evidence of all utilities (manhole covers, above-ground pipes, etc.) will be surveyed. Perform all reasonable and necessary services to designate and map all utilities within project limits in accordance with applicable professional standards, i.e. CI/ASCE 38-02. For example, when a utility cannot be designated, perform all necessary actions in accordance with CI/ASCE 38-02 to depict it at a lower quality level.
4. Survey designating marks and reference to project control provided by the Department.
5. Prepare a reference CAD file capable of attachment to the Department's design file, in accordance with the PennDOT DM-3. Ensure that the file:
 - Uses correct symbology and cell libraries.
 - Is based on benchmarks and/or the same project survey control datum as the Department's design file.
 - Is set up as a base map.
 - Uses a scale to such that can be used with Department's design files.
6. Perform and document quality control and quality assurance procedures in accordance with Consultant's approved "Quality Assurance Plan" on file with the Department. Once the locations of subsurface facilities are shown on the Department's plans, verify that the plan locations are in accordance with the scope deliverables

B. Locating Services (QLA)

In performing QLA (test hole) services hereunder, the Consultant will:

1. Coordinate with the Department to conduct appropriate records research and investigate site conditions. If not previously performed, make all necessary contacts with utility owners.
2. Obtain necessary permits from city, county or other municipal jurisdictions to allow the Consultant to work in existing streets, roads, and rights-of-way. The Consultant will not be responsible to obtain permits for boring or other excavating work that is not performed by the Consultant pursuant to this Agreement.
3. Excavate test holes to expose the utility to be measured in such a manner that insures the safety of the excavation and the integrity of the utility to be measured. In performing such excavations, comply with Pennsylvania Underground Utility Line Protection Law, PA Act 287 as amended, and coordinate with utility inspectors, as required.
4. Investigate, evaluate, measure and record:
 - (a) horizontal and vertical location of top and/or bottom of utility referenced to project datum
 - (b) elevation of existing grade over utility at test hole referenced to project datum
 - (c) outside diameter of utility and configuration of non-encased, multi-conduit systems
 - (d) utility structure material composition, when reasonably ascertainable
 - (e) benchmarks and/or project survey control points used to determine elevations that are based on the same project survey control datum as the Department's design file.
 - (f) paving thickness and type, where applicable
 - (g) general soil type and site conditions
 - (h) such other pertinent information as is reasonably ascertainable from test hole site. References to project datum must maintain vertical tolerance to plus or minus 15 mm (0.05ft) based on benchmarks shown on the Consultant's deliverables and horizontal tolerance to applicable surveying standards.
5. Furnish and install permanent surface markers directly above centerline of utility structure for future use in locating the utility. Show the surveyed location of this surface marker on the QLA data sheet.
6. Provide permanent restoration of pavement and properly backfill within limits of original cut and in accordance with the conditions of the permit and PA Code Title 67 § 459.8, Special Conditions—Subsurface Operations. When test holes are excavated in areas other than roadway pavement, these disturbed areas will be restored to the condition that existed prior to excavation.

7. Evaluate and compare obtained information with utility information described in utility company records and resolve discrepancies. The Consultant shall recommend additional courses of action to the Project Manager if the discrepancies cannot be resolved with no additional cost to the Department. At minimum, a descriptive note on the project deliverables shall accompany any discrepancy that is not resolved.

8. Plot horizontal location and, if applicable, profile view of utility on drawings provided by the Department, if requested. Paper and electronic copies should both be provided to the Department. Information must also be formatted and presented on a detailed and certified QLA data sheet and available as a .pdf electronic file. The format of submitted copies should be in accordance with PennDOT DM-3.

9. Return and review with the Project Manager or his designee, all deliverables.

10. Perform and document quality control and quality assurance procedures in accordance with Consultant's "Quality Assurance Plan" on file with the Department. Once the locations of the subsurface facilities are shown on the Department's preliminary plans, verify that the plan locations are in accordance with the scope deliverables

Scope Deliverables:

Upon completion of designating and/or locating services, provide a reference CAD file, and a paper plan drawing of utilities in units and at a scale determined by the Department. Any QLA data will also be provided on a separate QLA data sheet and as a .pdf file.

The final deliverable must be certified by a professional engineer or surveyor licensed in the State of Pennsylvania, by placing their seal on the plans and on any individual QLA data sheets provided in accordance with PennDOT DM-3.

All deliverables must conform to PennDOT DM-3, and include the following information:

1. The project designation, ECMS, consultant name, work order number, and limits of the area designated.
2. All horizontal and vertical control furnished by the Department.
3. A listing of utility owners.
4. The Quality Level of the depicted utilities.
5. Additional information about Quality Level A consistent with CI/ASCE 38-02.
6. All depth and elevation information furnished by utility owners, annotated by notes on the CAD and paper drawings.
7. A Form for each QLA data point, with the following minimum information for each:
 - (a) horizontal and vertical location of top and/or bottom of utility referenced to project datum and project coordinate system
 - (b) elevation of existing grade over utility at test hole referenced to project datum
 - (c) outside diameter of utility and configuration of non-encased, multi-conduit systems
 - (d) utility structure material composition, when reasonably ascertainable

- (e) benchmarks and/or project survey control used to determine elevations
- (f) paving thickness and type, where applicable
- (g) general soil type and site conditions
- (h) such other pertinent information as is reasonably ascertainable from test hole site. References to project datum must maintain vertical tolerance to plus or minus 15 mm (0.05ft) based on benchmarks shown on the deliverables and horizontal tolerance to applicable surveying standards.

8. An electronic (EXCEL format or equivalent) and paper copy summary table for all QLA data, with the following information:

- (a). Test Hole Number
- (b). Elevation of utility
- (c). Depth below grade of utility
- (d). Type of utility
- (e) Size of utility
- (f) Material type

Detail Task 1 - Subsurface Utility Engineering (SUE) Services

Department Details:

As described in main task and as follows:

Once the need for SUE is determined, the District project manager will grant NTP for this task

For proposal purposes, assume designation of utilities to a Quality Level A.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD will coordinate with US with respect to the subsurface utility engineering effort. TPD will review the information provided by US to ensure that is consistent with design efforts.

Underground Services (US)

Quality Level A – Estimated number of test holes to locate underground utilities - 10 (12" x 12" x 6' deep)

Subsurface Locates; (Quality Level A)

- Obtain Highway Occupancy Permit and notify PA One Call.
- SoftDig[®] will provide routinely and normally carried cones and warning signs for Maintenance of Traffic. Traffic conditions, location of test holes in roadway and permit requirements may require other devices (T.M.A., arrow boards, etc.) and/or flaggers or police detail. Such costs will be invoiced as an expense.

- Comply with any and all OCSI and ULCC requirements.
- Coordinate with utility company inspectors as required by the resultant agreement and by law.
- Neatly cut and remove existing paving, with the cut area not exceeding 12 in. x 12 in. Excavate using the SoftDig[®] air/vacuum excavation system.
- Excavate test holes in such a manner as to prevent any damage to utilities.
- Be responsible for any damage to a utility during excavation.
- Backfill with approved material around utility structure.
- Furnish, install and color-code a permanent above-ground marker (e.g. P.K. nail, peg, steel pin, or hub) directly above the centerline of the structure, as well as “down the hole” color-coded plastic ribbon.
- Provide a bituminous patch of pavement within the limits of the original cut at the time of backfill. Pavement restoration is guaranteed for 3 years.
 - o Pavement course(s) is jack hammered producing an 8” – 12” square opening.
 - o Base course and sub-grade soil is excavated by air/vacuum to expose utility for observation and measurements.
 - o Excavated soil (less large rocks) is used as backfill and is continually compacted by down-hole tamper.
 - o Pavement (minimum 8” thickness) is restored with “High Performance Permanent Pavement Repair Material” manufactured by Unique Paving Materials of Cleveland, OH and approved by PennDOT. This granular plastic material is tamped into the pavement opening.
 - o Resulting patch is clean, tight, durable and ready for traffic.
- If the test hole is excavated in an area other than the roadway pavement, the area disturbed will be restored to the condition prior to excavation. Excluded from this provision would be any disturbance to sub soil and ground water conditions that may result in a “quick condition” or “bubbling” of water to the surface from hydrostatic pressure release resulting from excavation and through no fault of SoftDig[®].
- Provide the following test hole information:
 - o 3 swing ties from reference mark to physical objects.
 - o Elevation of top and/or bottom of utility tied to vertical control provided, to within 0.01 ft. If control is not provided, control will be assumed.
 - o Elevation of existing grade over utility at test hole to within 0.01 ft.
 - o Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.
 - o Utility structure material compositions, and condition when possible and utility owner.
 - o Pavement thickness, generalized soil type and unusual conditions.
- Should suspected hazardous material be encountered in the test hole, SoftDig[®] crews will immediately contact our office. We will also comply with DOT Hazardous Material Regulation Procedures.

NOTE: Test holes shall be terminated if subsurface conditions (rock, boulders, ground water, soil cave in, trash/debris, or excessive depth) prevent advancement of excavation to expose the utility or to reach required depth.

Data Management (Surveying/CADD Mapping)

- Survey reference mark to horizontal and/or vertical control by others.
- Provide MicroStation file showing test hole location with test hole data tabulation from survey and S.U.E. sources.
- Plan of test hole location and test hole data tabulation to be signed and sealed by PA registered P.E. and P.L.S.

Task 18 - Waterway Permits

Objective:

2.7.4 - Waterway Permits

This task is the coordination with the appropriate environmental agencies and the preparation of permit applications.

2.7.4.1 - 105 Permit Application/401 Water Quality Certification (WQC)
This task includes the preparation of the Chapter 105 Permit application package.

Scope:

2.7.4 - Waterway Permits
Needs completed.

2.7.4.1 - 105 Permit Application/401 Water Quality Certification (WQC)

1. Coordinate with the PADEP to present the water obstructions and encroachments associated with the project. Determine any specific information requirements that will be needed for the Chapter 105 permit review.

2. Prepare a summary of the information requirements needed for the permit review.

3. Prepare the Chapter 105 Permit Application package using the PENNDOT JPA Expert System. This will include, but not limited to: the General Information Form, Chapter 105 Application (signed and notarized), location map, Act 14 Notification Letters with return receipts, floodplain and stormwater management consistency letters, Environmental Assessment Form, H&H reports, E&S approval letter, etc.

4. Provide written responses to any PADEP comments received on the permit package.

Detail Task 1 - Waterway Permits

Department Details:

As described in the main task and as follows

Coordinate with District Permit Administrator

Approach:

TPD agrees with the Dept scope with the following clarification:

For purposes of this proposal, TPD assumes that an individual JPA and wetland mitigation will be required. TPD assumes that one field visit and one pre-application meeting will be required. TPD will prepare the wetland mitigation plan and report to include in the JPA.

Task 19 - Roadway Borings

Objective:

2.5.1 - Roadway Borings

This task is the performance of roadway test borings by an approved test boring contractor in accordance with Publication 10A, Design Manual Part 1A, Publication 293, and Publication 222M.

2.5.1.1 - Soils and Geological Engineering Investigations

This task is the preparation and administration of a geotechnical subsurface exploration program in accordance with Publication 10A, Design

Manual Part 1A, Publication 293, and Publication 222M.

Scope:

2.5.1 - Roadway Borings

The following work elements are required for completion of this task:

1. Coordinate the effort with the District Geotechnical Engineer (DGE) and the other engineering disciplines involved. Perform QA/QC on work processes and products.
2. Advertise and receive bids on a contract for performance of the test borings in accordance with Publication 222M, based on the approved PSDEP for preliminary (pre-final) design.
3. Submit a summary of the bids to the District for approval to award the contract and proceed with the work.
4. Upon notice to proceed, notify the affected public, and award and administer the test boring contract in accordance with Publication 222M.
5. Provide PennDOT-certified inspectors to oversee the field operations and log the borings as they are drilled.
6. Upon completion of the field work, verify contract terms have been met, close out the subcontract, and prepare and submit the subcontractor evaluation form.
7. Prepare a record copy of the engineer's logs for the borings for submission with the GER for Pre-Final Design.

2.5.1.1 - Soils and Geological Engineering Investigations

The following work elements are required for the successful completion of this task:

1. Coordinate the effort with the District Geotechnical Engineer (DGE) and the other engineering disciplines involved. Perform QA/QC on work processes and products.
2. Perform an office investigation. Review background geological information and maps, boring logs, project files and reports, environmental documents, and right-of-way plans to describe the soil/rock/hydrologic setting. Contact Federal and State agencies with access to soils and geologic data.
3. Visit the site, interviewing local residents and engineers. Perform a detailed field reconnaissance and refine the soil/rock/hydrologic setting description.
4. Prepare a Problem Statement and Draft Exploration Plan (PSDEP) for the project in accordance with Publication 293. Determine the field and laboratory investigation needs. Assemble a soil/rock boring and testing plan. As warranted by the project, assemble a water/soil/sediment sampling and testing plan, a field instrumentation plan and a geophysical investigation plan. Submit the PSDEP for approval.
5. Upon approval of the PSDEP, coordinate with the driller performing the soil/rock drilling. Perform the water/soil/sediment sampling and testing.

6. Collect readings and present reduced data from the field instruments. Perform the geophysical investigation and document findings and conclusions.

7. Assemble soil/rock/water data generated from this investigation into a set of tables for use in the GER for Pre-Final Design.

Detail Task 1 - Roadway Borings

Department Details:

As described in the main task and as follows:

Submit a hardcopy Problem Statement and Draft Exploration Plan, Subsurface Boring, Sampling and Testing Contract and a Subgrade & Pavement Design letter to the Geotechnical Unit for review.

The District will provide the Final Pavement Design.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD will coordinate with AWK with respect to the subsurface utility engineering effort. TPD will review the information provided by AWK to ensure that is consistent with design efforts.

AWK

AWK will prepare the following submissions for approval as part of this work item:

- (1) Problem Statement and Draft Exploration Plan (PSDEP);
- (2) Subsurface Boring, Sampling and Testing Contract (SBSTC) and Laboratory Testing;
- (3) Letter Report summarizing the work completed, provides roadway subgrade recommendations and a Coal Status Report.

These submissions will be provided in accordance with PennDOT Publication 10A, Design Manual Part 1A, Publication 293, and Publication 222M. QA/QC will be performed on work processes and products. The initial submissions will be in electronic pdf format and final submission (after comments are addressed and responses accepted) in hard copy format.

Per District request, no type of formal Preliminary or Final Geotechnical Engineering Report is required. Therefore, the only analysis to be performed is that for roadway subgrade, using the Department's spreadsheet.

PSDEP Submission Requirements:

- As part of the work to prepare the PSDEP, AWK will perform a detailed office investigation, which includes the following.
- Published geologic and soil publications;

- Landslide susceptibility mapping;
- Environmental documents for the project;
- Historic plans for the project
- Mining history (including obtaining available mine maps and correspondence from the PADEP concerning the potential for mining in the area), and;
- Previous reports prepared for the project and adjoining projects.

AWK will also perform a detailed site reconnaissance of the project to become familiar with the area, to verify information obtained during the literature search and to assess any potential problem areas that will need to be explored via the boring program. The site reconnaissance includes the following.

- Interviews with local residents, engineers, etc.;
- Photographs of significant features;
- Examination and description of significant rock outcrops;
- Recording the location and condition of physical features such as rock outcrops, marker beds, mines, mine spoil, slag dumps, seeps, slope movements, etc.;
- Estimate the field and laboratory investigation needs;
- Record condition of existing roadways pavement, noting any signs of stress; and
- Cursory inspection of existing drainage facilities and/or structures; noting any stress or corrosion issues.

The PSDEP will be prepared to justify the proposed Subsurface Investigation proposed in the SBSTC for roadway design. The report will contain information obtained from the literature review; data obtained from the reconnaissance visit, recommendations for roadway borings (including the purpose and depth of each boring) and a proposed Plan of Borings. In addition to the borings taken at proposed cut and fill slopes, borings will sample the existing pavement subgrade for pavement design parameters.

SBSTC and Laboratory Testing Requirements

The SBSTC will be assembled based on the approved PSDEP for preliminary (pre-final) design with the District Geotechnical Engineer (DGE) and the other engineering disciplines involved. It is understood that the SBSTC will be between TPD and the successful drilling contractor, with AWK assisting in the management and administration of the Contract. AWK will advertise and receive bids on the contract, provide full-time on-site PENNDOT certified inspectors (geologist or engineer) to oversee the drillers work, perform QA/QC during and after the drilling process, and prepare comprehensive Engineer's boring logs. The Inspector will coordinate the drilling, sampling, field-testing, as required to satisfy the SBSTC and design requirements. Upon notice to proceed, notification will be provided to the affected public and the Contract awarded and administered by AWK. Upon completion of the field work and after the contract terms have been met, AWK will close out the subcontract, and prepare/submit the subcontractor evaluation form.

It is anticipated that one (1) drill rig would be mobilized for this work, thus only one full time inspector is required. The boring logs will include soil and bedrock descriptions, along with soil density or stiffness (from the SPT testing); soil descriptions, i.e. texture, state, moisture and color; rock type, hardness, degree of fracturing, degree of weathering, recovery, rock quality designation (RQD), and color.

For the purpose of this proposal, it is assumed that 14 borings will be drilled, five (5) will be drilled to provide subgrade information for pavement design (CBR boring), and nine (9) for the roadway cuts and fills. Two CBR borings will be drilled on the Mainline (SR 0136) and one will be drilled

along each of the three connecting PennDOT roads. An additional 5-foot auger boring will accompany each CBR boring to provide sufficient sample for testing. It is further assumed that two (2) geologic sections are needed at the two (2) cut areas (along SR 0917 and SR 1067), and one (1) geologic section is needed in the fill area (along SR 1087). It is estimated that the CBR borings will be drilled to 10 feet each (plus 5' unsampled each) for a total of 5x15'=75 feet. The roadway borings will be drilled to 20 feet each, for a total of 9x20'=180 feet of drilling. At an assumed rate of 25 feet per day per drill rig, the subsurface investigation will take about $[(75+180)/25 \times 7/5]$ 15 calendar days (includes grouting and final inspection) to complete.

Utility clearance, and maintenance, and protection of traffic will be the responsibility of the drilling contractor. Once the boring program is completed, the drilling contractor will also be required to grout all of the borings and restore all disturbed areas, including seeding and mulching.

AWK will prepare a laboratory-testing program for District review and approval. After approved, AWK will subcontract for soil and rock laboratory testing, which is anticipated to include Proctor, CBR, and classification tests on soil for pavement design, and strength rock testing to determine its quality as a borrow source. Laboratory testing will be performed by an AMRL certified lab.

Letter Report Requirements

The Letter Report will include the following.

- a. A summary of the project, which includes “references only” to the information provided in previous report(s);
- b. Plan of Borings;
- c. Summary of subsurface investigations table;
- d. Summary of Laboratory testing table;
- e. Completed Department Subgrade & Pavement Design Spreadsheet (District to provide Pavement Design);
- f. Attachments consisting of typed boring logs, the District’s standard Embankment Construction details (non-drafted), laboratory testing results,

Consultant Hierarchy

Business Partner	DBE Type	Supervising BP
Traffic Planning and Design, Inc.	No	
ASC Group, Inc.	Yes	Traffic Planning and Design, Inc.
AWK Consulting Engineers, Inc.	Yes	Traffic Planning and Design, Inc.
Orion Land Services, Inc.	No	Traffic Planning and Design, Inc.
The Markosky Engineering Group, Inc.	Yes	Traffic Planning and Design, Inc.
Underground Services, Inc., DBA SoftDig	No	Traffic Planning and Design, Inc.

Attachments

No records found.

Part 2 - Final Design

Description

Minimum tasks: survey, final rdwy plans, utility coordination, final TCP, SPMP & E & S plan; final rw plan, public involvement activities, PSE

submission, project management.

Task 1 - Project Management/Administration

Objective:

2.1.1 - Project Management/Administration

This task consists of the administrative effort required by principals, project manager, and involved personnel to complete the project on time and within budget, and to provide a quality product.

2.1.1.5 - Project Schedule Development and Maintenance

The purpose of this task is to prepare and maintain a design schedule that ranges from Scoping Field View to Contract Award.

Scope:

2.1.1 - Project Management/Administration

Project Management involves the planning, scheduling, organizing and controlling of resources to achieve specific objectives within established schedule, budget and quality standards. The Project Manager is responsible for the tasks outlined in the Department Detail.

2.1.1.5 - Project Schedule Development and Maintenance

Guidance:

- Publication 615, Scheduling Manual
- All applicable strike-off-letters
- ECMS (Project Management Homepage)

Scope:

1. Develop a design schedule utilizing Deltek's Open Plan software. The design schedule will be developed in accordance with Publication 615 using the Department's PDSPRJ and PDSMASTER templates.
2. Maintain the design schedule utilizing Deltek's WelcomHome software.
3. Document all schedule issues to ensure that the project is let on time.

Scope Subtasks:

1. Coordinate the schedule development with the entire project team. The project team includes but is not limited to the District Portfolio Manager, the District Project Manager, various District functional units, the Bureau of Design, the Federal Highways Administration and various environmental agencies. Development of the schedule will consist of reviewing the schedule to ensure it contains the appropriate activities. There may be the need to add or delete activities to make the schedule specific to a given project. The review and modification of durations or relationships should also be performed to ensure that the schedule is setup to meet the desired completion date.
2. Prepare a draft of the design schedule that will be reviewed by the project team either in conjunction with a project status meeting or offline depending on the frequency of these meetings. The draft will, if approved, become the initial project schedule and be maintained through the remainder of the project.
3. Monthly progress of the design schedule activities will be input into Deltek's WelcomHome software. The schedule update day of the month will be specified by the District Project Manager to ensure that they have appropriate time to review proposed schedule changes prior to acceptance.

4. In the event that a major change in schedule occurs the Department will provide an Open Plan backup file (bk3) so that revisions can be made and resubmitted to the Department. Re-submittal shall follow the same process as the initial schedule development.

Scope Deliverables:

1. Provide the project team a draft design schedule in portable document format (PDF) and/or hard copy. The draft will contain relationships and durations so that they can be reviewed along with the activities that are included in the schedule. Schedules provided in portable document format (PDF) shall be submitted either by email or CD-ROM.
2. Upon acceptance of the schedule by the project team an Open Plan backup file (bk3) shall be provided to the District Project Manager either by email or CD-ROM.
3. Resubmit major revisions to the design schedule, as an Open Plan backup file (bk3), to the District Project Manager either by email or CD-ROM.
4. All schedule documentation shall be provided in MS Word compatible format to the District Project Manager either by email or CD-ROM.

Detail Task 1 - Project Management/Administration

Department Details:

The consultant will prepare and distribute to appropriate parties the minutes of all project meetings and telephone conversations where directions or decisions are made. The minutes are to be distributed within 10 calendar days following the meeting or telephone conversation.

The consultant shall provide construction cost estimates at milestones as listed below or as required by the Department. Construction estimates will be submitted at the following milestones:

1. Final Construction Plan (75% complete)
2. PSE submission

Develop, maintain and update the project development schedule using "Welcom's Open Plan" project development schedule. The schedule must be developed using PennDOT's standard work breakdown structure and templates as appropriate. Tasks should be added or deleted as necessary to a level of detail appropriate for the project. The schedule should be progressed and submitted to the Department on a monthly basis by the fourth Wednesday of each month. The project schedule and updates should be provided to the District electronically.

Progress reports will be submitted via email to the project manager by the first Wednesday and third Tuesday of each month.

The consultant will thoroughly check all design submissions prior to submitting them to the Department for review. All computation sheets shall bear the initials of both the individual who prepared the calculations and the individual who checked the calculations. The Department reviews will be cursory in nature and the consultant will be responsible for design and plan accuracy. The consultant will be liable for design and plan errors in accordance with 67 PA Code, Chapter 455, Consultant Highway Design Errors.

The prime consultant will be responsible for subconsultant and DBE progress. All submissions prepared by subconsultants will be submitted through the prime consultant's office. The prime consultant will be responsible for the accuracy and quality of work prepared by subconsultants.

For archiving into the ECMS Project Development Checklist, any document (once approved in writing by the District or the appropriate permitting agency) will be provided by the consultant to the District in electronic, PDF format:

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

Robert G. Prophet, P.E. will serve as the Overall Project Manager for TPD. He will be responsible for the development and maintenance of the project schedule, budget and quality standards throughout the design phase. TPD understands that project management is a critical aspect of the project's success and involves careful planning, scheduling, organizing and controlling of resources in order to achieve the specific project goals and objectives within the project constraints. Mr. Prophet will call upon his extensive project experience and his most recent similar project management experience to ensure that these goals will be met, using close coordination and communication internally, with our subconsultants, with the Township, with the Department and with all other necessary agencies. He will also provide the direction and coordination of the in-house activities and provide the technical point of contact for the TPD Team, Township, Department and various agencies that will become included during the course of the project. To assist Mr. Prophet with the day-to-day activities with the projects, Martin Rosen, P.E. and Michael Mudry, P.E. will serve as the Assistant Project Managers on this contract. The combined similar experience of this project staff on this contract, as well as their recent successful work together on intersection improvement agreements will help to ensure the successful delivery of this project..

The TPD Team will prepare an overall Welcom Open Plan baseline schedule within three weeks after the Notice to Proceed date. The District will provide a base .bk3 file for preparing the baseline schedule. The TPD Team will update the schedule on a monthly basis by the fourth Wednesday of each month per the Department Details. Mr. Prophet will coordinate with the District Project Manager via telephone to update the schedule as directed at the Scope Clarification conference call.

Separate progress reports will be provided to the District in writing by the first Wednesday and third Tuesday of the month per the Department Details. The progress reports will identify 1) work completed since the past progress report, 2) work to be completed prior to the next progress report and 3) any issues which need resolution. The progress reports will indicate estimated percent complete of each task.

At this time, it is assumed that all meeting of a technical nature will be included in the scope of work for that particular task. With respect to general coordination, TPD assumes that two (2) overall project status or coordination meetings will be required for this design phase of the project. It is assumed that the TPD Overall Project Manager and one of the Assistant Project Managers will attend these meetings. Subconsultants will not be required to attend these meetings unless requested by the District. TPD will prepare minutes of all meetings required to successfully complete the design of this project. As part of this process, the TPD Team will document actions taken in all meetings, record these actions in official meeting minutes and submit these to the District within five (5) days for verification and approval. Approved meeting minutes will then be distributed to appropriate attendees.

The TPD team will maintain complete records of all invoices, time sheets, progress reports, correspondence, memoranda, phone memos and other documentation necessary to complete the project file. If requested, TPD can upload any of the items above to our FTP site.

TPD will ensure that proper billing procedures are followed. Invoices will be submitted following the current ECMS format requirements. TPD will review the invoices and progress reports of the subconsultants prior to forwarding to the Department.

TPD will implement the provisions of our QA/QC Program. This program provides the TPD Team techniques and activities that are used to fulfill requirements for quality and those actions necessary to provide adequate confidence that a product or service will satisfy client requirements for quality. Donald Jacobs, P.E.. will serve as TPD's Quality Assurance Coordinator responsible for reviewing the project to ensure schedule control, cost control, and quality throughout the design phase. Mr. Jacobs will not have any production responsibilities, thus providing the team with individual quality assurance resources to ensure that the Department receives quality submissions. The specific function of these administrators will include reviewing and evaluating the following areas at the different phases of the project.

- a.) Conformance to applicable Project Standards and governing codes.
- b.) Consistency in evaluation of field conditions and review of existing documentation.
- c.) Presentation and evaluation of the various alternatives, and completeness, accuracy of estimates, details and constructability of all alternatives.
- d.) Periodically review the work at project milestones to insure it is being performed in compliance with accepted codes, standards and accepted engineering practice.
- e.) Review computations, estimates, specifications, construction staging, and project constructability for compliance with project design criteria.

AWK

AWK will participate and assist TPD in the planning, scheduling, and organizing of this project as may be related to work tasks under our responsibility. This effort will include monthly reporting of progress, invoice preparation and general management and administration.

AWK will be required to attend two (2) project status meetings at key points in the project development.

Task 2 - Roadway

Objective:

2.10.2 - Roadway

This task includes survey, roadway, pavement and drainage design, plans, cross sections, soil profile, final design office meeting, draft special provisions and final design field view.

2.10.2.1 - Final Drainage Design

This task includes the design of roadway drainage items. Publication 13M, Design Manual Part 2 applies to this task.

2.10.2.2 - Final Pavement Design

This task is the preparation of the final pavement design.

2.10.2.3 - Roadway Plan

This task includes the preparation of the final roadway plans and profiles in accordance with Publication 10A, Design Manual Part 1A.

Scope:

2.10.2 - Roadway

Needs completed.

2.10.2.1 - Final Drainage Design

Finalizing the drainage design based on the Design Field View approval.

One copy of the plan depicting the drainage design and the hydraulic design computations for roadway drainage structures shall be submitted to the appropriate District Office for review and comment by the Project Manager or designated drainage engineer. As directed by the District, one additional copy of the drainage submission shall be sent to Central Office, Bureau of Design for quality assurance review.

The following work elements are required for the successful completion of this task:

1. Develop a drainage design that provides the proper capacity, spacing, size and type of drainage facility (existing and proposed) for each drainage area, location, fill height, roadway type and environmental condition including all inlets, pipes, culverts, ditches and base drains.
2. Prepare hydraulic design computations using appropriate methodologies for all roadway drainage structures. Include energy grade line and hydraulic grade line computations for existing and proposed systems.
3. Develop alternate pipe designs as required with corresponding hydraulic computations for each alternate. Provide "For Information Only" quantities for each pipe type and alternate as well as minimum and maximum fill heights as required.
4. Verify that downstream drainage capacity is sufficient for the proposed design. Conform to local municipal storm water requirements, if a local storm water ordinance exists.
5. Show all existing and proposed drainage facilities on construction cross sections and profiles.
6. Prepare transmittal letter to include, plans showing drainage design and hydraulic design computations. Provide PE seal on all plans and computations.

~~2.10.2.2 - Final Pavement Design~~

~~Follow Publication 13M, Design Manual Part 2, which refers to Publication 242, Pavement Policy Manual for the preparation of final pavement design.~~

2.10.2.3 - Roadway Plan

Finalizing the roadway plan based on the Design Field View approval. Show the SUE information on the cross sections, if applicable. The submission will include the completion of the following work items:

1. ~~Interchange Design~~
2. Intersection Design - Prepare pavement elevation plans to describe the horizontal and vertical geometry that cross sections cannot describe.
3. ~~Airport Clearances - Review Part 77 of the Federal Aviation Regulations and adjust the design accordingly when the project is within 2 (3.2 km) miles of an operating airport. If the project is within 2 (3.2 km) miles of an operating airport, an Airport Clearance Submission to the FAA is required.~~

Prepare all the following work elements:

(Note: Plans listed below are highway design plans only and do not include also plans.)

1. Title sheet
2. Index/General Note Sheet
3. Typical Section Sheet (Location Map and General Notes)
4. Summary of Quantities Sheets
5. Tabulation of Quantities Sheets
6. Detail Plan Sheets
7. Profile Sheets
8. Contour, Grading, and Drainage Plans
9. Landscaping Plans
10. Cross Sections
11. Special Detail Sheets
12. Required Forms, Special Provisions and Estimates

Detail Task 1 - Final Roadway

Department Details:

As described in main task and as follows:

Final Cross Sections will include all critical cross sections (ex. inlets, outlets, driveways, side streets and superelevation, etc).

The District will provide the Final Pavement Design.

A Final Design Office Meeting will not be required for this project.

Anticipate two (2) field views pertaining to this task.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

Plans

TPD will address any comments received from the District at the Design Field View and incorporate the changes into the Final Plans. It is assumed that final plans will include:

- Title Sheet (1)
- Index Sheet (1)
- Location Sheet (1)
- Typical Sections (2)
- Detail Sheets (2)
- Summary Sheet (1)
- Tabulation Sheets (5)
- Plan Sheet (5)
- Profile Sheet (5)
- Signing and Pavement Marking Plan (7)
- Traffic Control Plan (18)
- Erosion and Sediment Pollution Control Plans (12)
- Cross Sections (at 50 foot increments and at critical locations) (80)

TPD will submit 90% complete plans for review by the District Contract Management Unit and Central Office Plan Reviewer. It is not anticipated that a Final Design Office Meeting will be required for this project.

Curb Ramps

TPD assumes that curbing and sidewalk will not be required for this project since there is no signalized intersection or sidewalk present or proposed. As such, TPD assumes that ADA curb ramp designs will not be required.

Drainage

TPD will update the drainage and stormwater calculations based on any changes to the design from the Design Field View meeting. A Final Drainage Report with all supporting calculations will be provided to the District during Final Design.

Draft Special Provisions

TPD will prepare draft project specific Special Provisions as needed and will submit to the District for review and approval. This does not include the development of special provision for proprietary items.

Final Pavement Design

PennDOT is to complete the pavement design.

Final Safety Review Submission

TPD will prepare and submit a Final Safety Review Plan submission. TPD assumes one (1) full submission and one (1) response letter addressing any comments which may arise during the review process.

MARKOSKY ENGINEERING GROUP (MEG)

The Markosky Engineering Group, Inc. (MEG) will assist Traffic Planning and Design (TPD) with this task in a QA/QC role. MEG will perform independent checks of the engineering calculations and plans (as required) in accordance with TPD's Project Specific Quality Management Plan, and will provide our comments in redline form to TPD.

MEG anticipates detailed reviews of the following:

- Title Sheet
- Index Sheet
- General Notes
- Typical sections
- Roadway plan
- Roadway profile
- Cross sections

Task 3 - Supplemental Surveys

Objective:

2.10.3 - Supplemental Surveys

This task includes all survey required to supplement the original roadway survey or Photogrammetric mapping performed in Preliminary Design.

Scope:

2.10.3 - Supplemental Surveys

Guidance:

- Publication 122M, Surveying and Mapping Manual
- Strike Off Letter 430-99-20, QA/QC Control Checklist for Right-of-Way and Construction Plans
- Publication 213, Work Zone Traffic Control Manual
- Form D-428, Field Book

Scope:

The Quality Assurance/Quality Control Checklist will be completed and discussed with the District Chief of Survey for all final design survey work.

Prior to initiating surveys, develop a Traffic Control Plan in accordance with Publication 213 for implementation during surveys within existing transportation facilities.

Detail Task 1 - Supplemental Surveys

Department Details:

Final design requires a higher level of detail in construction plan preparation. Some specific examples of information to be obtained through supplemental survey will include:

-Inverts and elevations of underground facilities

-Wire elevation to verify clearances.

-As directed by right of way acquisition work being conducted by others, verify property improvement locations of critical areas. In this regard, consultant will be required to field locate any water wells, sand mounds, sanitary facilities or other improvements as identified from contact with property owners as part of Final Right of Way plan task

-Recover horizontal and vertical control established during Preliminary Engineering. Benchmark locations shall be established as noted above (i.e. beyond limits of construction) and be based on input from District Chief of Surveys. In lieu of the half mile as indicated in scope 2.10.3.2, benchmarks shall be set not greater than 500 feet apart. As per the input received from the District Chief of Surveys, a minimum of two (2) benchmarks are to be set with the project.

-Stake out final alignment for all roadways (i.e. both SR 0040 and any intersecting roads with a baseline) in 50 foot intervals and reference all major control points. Stake the required right of way lines, as directed by the District Chief of Survey.

Reference the final alignment major control points not referenced for the Right of way plan. Control points will be referenced with three (3) rebars/caps set beyond the limits of construction.

As per DM1A, the consultant will issue updated Notice of Intent to Enter letter (Form 983) to each property owner by certified mail. List of property owners will be obtained from information obtained from preliminary ROW activities and final right of way plan tasks completed in preliminary engineering.

Approach:

AWK

Supplemental surveys will include the following:

- The Final ROW Baseline will be staked at 50-foot intervals. A minimum of two control points will be referenced.
- AWK understands that since wetlands will not be impacted along the preferred alignment, no delineation of wetlands is required.
- Any additional surveying will be done as directed to update or supplement the existing survey.

Task 4 - Final Right-of-Way Plan**Objective:**

2.10.5 - Final Right-of-Way Plan

This task includes all work necessary to prepare the final R/W plan in accordance with Publication 14M, Design Manual Part 3.

Scope:

2.10.5 - Final Right-of-Way Plan

Right-of-Way Plans, when specified in the project scope of work, will be the basis for determining all property damages which are involved in the construction requirements of a highway project. They will also serve as the legal record of the location, the extent, and the character of any acquisition of Right-of-Way, Permanent Easements, and Temporary Easements by the Commonwealth.

The Right of Way Plan presentation format will be as specified in the project scope of work. The Right-of-Way Plan format could be either, or a combination of the following:

- A. Standard Right-of-Way Plan - For the authorization of acquisition of both total take and partial take property, for both Free Access and Limited Access highways.
- B. Final Plan - Reestablishes and/or authorizes the GAP Plan right-of-way, if necessary, and establishes right-of-way and authorizes acquisition of property requirements that were not included under the GAP Plan.
- C. Combination Plan - This plan combines both the Right-of-Way and Construction requirements on the drawings. This plan shall be acceptable only for small Federal Aid and 100% state-financed projects involving few properties with no relocation problems.
- D. Simplified Right-of-Way Plan - This plan is a simple one (1) or two (2) sheet Right-of-Way Plan, applicable to small projects, where construction is primarily within existing legal right-of-way where only a few properties are involved and the area of taking is minor.

The following are general tasks and their description for Right-of-Way Plan preparation:

- 1. Current Property Owner Record Research
- 2. Deed Plotting
- 3. Composite Deed Plot Matrix Map
- 4. Property Owner Name
- 5. Parcel Numbers
- 6. Right-of-Way Plan Preparation

The following are the basic requirements comprising Right-of-Way Plan preparations:

- 1. Title Sheet
- 2. Index Sheet
- 3. Location Map, General Notes, Etc., Sheets
- 4. Typical Sections
- 5. Summary of Project Coordinates
- 6. Summary of Required Right-of-Way Line Coordinates
- 7. Detail Plan Sheets
- 8. Profile Sheets
- 9. Property Plats
- 10. Right-of-Way Plan Revisions

Detail Task 1 - Final Right-of-Way Plan

Department Details:

As described in main task and as follows:

It is anticipated that seven (7) claims will be required with the project.

The consultant project manager will attend the final rw plan check.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD assumes that this project will involve Standard Right-of-Way Plans. TPD assumes that fifteen (15) properties will be affected rather than the seven (7) indicated. This revision is based on coordination with the District PM.

The following plans will be included with the submission (number of anticipated sheets in parentheses):

- Title Sheet (1)
- Index Sheet (1)
- Location Sheet (1)
- Typical Sections (1)
- Summary of Project Coordinates (1)
- Summary of Required Right-of-Way Line Coordinates (1)
- Plan Sheet (5)
- Profile Sheet (5)
- Property Plats (15)

All plans will be prepared at a scale of 1 inch = 25 feet.

TPD will submit the final right-of-way plan along with all supporting documentation (i.e. deeds, mapping, land development plans, agreements, etc.) to the project surveyor for review and concurrence. Upon completion of the surveyors review, TPD will forward all plans and documents to the District for review and approval. Upon approval by the District, TPD will forward a mylar copy of the plans to the District for recording purposes.

TPD will not be responsible for right-of-way appraisals, negotiations, survey or acquisitions.

AWK

AWK will assist with the final right-of-way activities in accordance with PENNDOT Publication 14M (DM-3), PENNDOT Strike-off Letter 430-99-20 and the Right-of-Way Manual. It is assumed that a maximum of twenty-seven (27) properties will be involved, of which fifteen (15) involve the development of property plots, all typical sections, profiles, references, etc. required for the completion of the final right-of-way plans. It is anticipated that this task will involve the following:

- Two trips to the County Courthouse to perform the required courthouse research for verification of property ownership and right-of-way claim information within thirty (30) days of recordation.

For the purpose of this proposal, it is assumed that no subdivisions of property will occur after Preliminary Design.

ORION

Orion will assist TPD in determining the cost impacts of the potential right of way takes, temporary easements and permanent easements.

Task 5 - Right-of-Way Acquisition Services

Objective:

2.10.7 - Right-of-Way Acquisition Services

This task includes all time required to perform right-of-way acquisition services.

Scope:

2.10.7 - Right-of-Way Acquisition Services

Guidance:

The Department's Right-of-Way Manual

Department Strike-Off Letters

Pennsylvania Eminent Domain Code

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Deviation from any of those standards must be approved in writing by the Department.

Scope:

Develop memos of all meetings and/or appropriate conversations, and provide the District with one (1) electronic copy.

Reports concerning the status of all claims will be furnished to the District Office weekly. Monthly status meetings will be held in the District Office.

One (1) set of reproducible drawings of the right-of-way plan will be provided by the Department to the Consultant. Any additional prints will be made by the Consultant, as necessary.

Use of Department approved forms is required in the completion of all tasks under this agreement.

Consultant is responsible for all aspects of Right-of-Way Project Management. This is defined as the task of directly managing all of the services

described in WBS Code 2.10.7 with a goal of obtaining a final right-of-way clearance on time and within budget.

Unless otherwise directed, the Consultant will handle all contacts and all correspondence with the claimants from the initial notification through settlement or condemnation, including the preparation of all necessary forms and documents.

Consultant will pay for recording of all necessary claim associated documents (e.g., Deeds, Release of Liens, etc.), and will be reimbursed direct costs for these recordings.

In the event that the Department is notified by the Federal Highway Administration that a deficiency has been noted relating to any tasks (negotiation, appraisal, relocation assistance, property management, etc.) performed by the Consultant, the Department shall notify the Consultant, and the Consultant shall provide such information and take such action necessary to resolve the deficiency.

The appropriate Department representative must sign any correspondence that commits the Department to expend funds, such as offer letters and administrative settlement approvals.

Conduct any negotiations with Railroads in accordance with normal acquisition procedures; the Department will conduct any Public Utility Commission actions related to Railroad property. The Department will acquire any right-of-way required from a public utility or community facility.

Consultant will negotiate any parcels required for substitute right-of-way for utilities as requested in writing by the Department.

All work done by the Consultant shall be performed by qualified personnel experienced in performing their function in accordance with federally funded projects. The District Right-of-Way Administrators reserve the right to approve all Consultant personnel employed to perform work under agreements in their respective Districts.

Coordinate all work through the Department's designated representative. This person shall normally be the District Right-of-Way Administrator or his/her designee.

Right-of-Way Office Access:

Upon request from a District Right-of-Way Administrator or designee, the Consultant may access the Right-of-Way (ROW) Office claim and project database application only for the Right-of-Way project assigned under an executed agreement. The information may be accessed only for the purpose of completing a transaction. Database information may not be published nor disclosed for any purpose.

The Department will not be liable for any damage to the Consultant's database software owned, leased or licensed by the Consultant in the event a computer virus or other malicious, mischievous, or destructive programming is determined to have originated from the Department, its agents, or employees.

The Consultant will furnish and assume the total costs of all software and hardware necessary to connect to ROW Office via internet services. Such software shall include any operating system and any software needed to access ROW Office. The Department reserves the right to approve all software and hardware as may be deemed necessary by the Department.

Consultant will procure and is responsible for all costs associated with data communications lines required to connect to internet services.

The Consultant will implement appropriate security measures to insure that only authorized employees of the Consultant will have access to and provide data into ROW Office and to assign only its current employees user identification codes issued by the Department. Immediately upon the employee's separation and/or dismissal, the Consultant will promptly notify the Department. The Consultant agrees that its employees may not share user identification codes and that it is liable for the data submitted by its assigned users and for the actions or omissions of its employees.

The Consultant will use the ROW Office database application to review the status of claims and maintain and update claim and project information promptly and accurately on behalf of the District Right-of-Way Administrator.

ROW Office is constantly available for on-line access except for system upgrades and scheduled network maintenance (barring unforeseen technical problems). The Department will provide Help Desk support to its users only during normal business hours of the Department.

1. Relocation Assistance Plan/Problem Identification

Conduct personal interviews with all claimants to be relocated, including business and residential, and prepare a Relocation Pre-Acquisition Survey and Report in accordance with the Department's Right-of-Way Manual. Identify specific relocation needs and suggested solutions, including "Housing of Last Resort", if applicable. Maintain an inventory of comparable replacement housing and replacement sites. Each property requiring relocation assistance shall have 2 sets of digital color photos showing the four sides of the subject dwelling or business. The photos may be taken from diagonal views.

2. Appraisal Planning/Services

Note: Any individual performing appraisal tasks as identified in Pub 378 "The Right-of-Way Manual" Section 2.04 or preparing Facts & Data Books must be qualified and competent to perform such tasks. The qualifications for various appraisal tasks and specifications for such tasks are outlined in Pub 378, Sections 2.09, 2.11, 2.12, and 2.14; the individual is also bound by the competency rule of the Uniform Standards of Professional Appraisal Practice "USPAP".

Individuals performing appraisal tasks must be pre-qualified on PennDOT's current Invitation to Qualify "ITQ" Contract for Appraisal Services in Category 2.

Conflict of Interest No individual or firm will place themselves in a conflict of interest situation. Since some individuals are qualified under multiple Department Right-of-Way contracts, they will not appraise properties on a project where they are working as an acquisition consultant and vice versa. Any prior or subsequent involvement on a PennDOT project where they represent the property owner must be immediately disclosed, in writing, to the District Right-of-Way Administrator as per Pub 378, Section 2.09 F.

Review the project site and right-of-way plan with the District Chief Appraiser and the Central Office Review Appraiser to identify the valuation problems, determine the number and type of appraisal reports needed on each parcel, identify items pertinent to the valuation of each parcel and note any specific or unusual appraisal problems.

Obtain copies of all leases pertaining to the affected parcels.

Prepare and deliver to the District a complete appraisal problem analysis, Form RW-275 series, for each parcel or group of parcels to be on a particular appraisal contract. This analysis must be approved by the Department prior to soliciting bids from fee appraisers.

All fee appraisal contracts will be executed by the Department and not by the Consultant. All appraisals will be done by qualified, Department approved, certified appraisers. Appraisals are to be completed on Department forms in accordance with the Department's Right-of-Way Manual.

Depending upon plan availability, similarity of parcels and types of takings, and the time required to complete the appraisals, propose groupings of parcels to be included in individual fee appraiser contracts.

Prior to issuing a Notice to Proceed to appraiser(s), Consultant will prepare a Facts and Data Book and periodically update the book with current applicable sales information. The book and updates will be complete with digital color photos and three (3) copies with photos will be delivered to the District Right-of-Way Unit when solicitation of bids from fee appraisers begins.

The Facts and Data Book should have an adequate number of recent sales for each type of property to be appraised, i.e. vacant and improved residential, commercial, industrial, and agricultural sites, etc. Each sales sheet will provide all pertinent information pertaining to that sale, including but not limited to information contained in market data sales sheets found in the appraisal report, Form RW-270A.

The sales search should first concentrate in the vicinity of the project and be expanded into comparable neighborhoods or areas in the county and/or surrounding counties if an adequate number of sales cannot be found in the vicinity of the project. Attempt to obtain comparable sales within the past two (2) years, if possible.

All appraisals will be reviewed and approved by the Department of Transportation, or its agent, not by the Consultant.

Obtain mailing addresses and prepare and mail Form RW-299, by certified mail, to all claimants prior to the appraiser contacting them for a property inspection.

3. Negotiation

Negotiate claims in accordance with the Department's Right-of-Way Manual, the Uniform Act, and "good faith negotiation" procedures. Recommend, in writing, Administrative Settlements to the District Right-of-Way Administrator or designee, and include justification to support the settlement.

When negotiations result in an amicable settlement or administrative settlement, prepare the documents necessary and secure signatures for processing a claim for payment to the property owner. Subject documents will be submitted to the District for review.

When negotiations result in condemnation, prepare documents necessary to request the declaration of taking, provide follow-up negotiations and prepare necessary documents and secure signatures for payment of Estimated Just Compensation, or prepare necessary documents for Deposit of Estimated Just Compensation into Court. Prepare the documents necessary and secure signatures to process claims for reimbursement of attorney, engineering and appraisal fees in accordance with the Department's Right-of-Way Manual.

Provide follow-up negotiations and litigation support as requested by the Department on a case-by-case basis. This includes any right-of-way

service necessary to support litigation that may result during or after construction.

4. Title and Settlement Services

Obtain title searches prior to settlement or condemnation as required by the Department's Right-of-Way Manual. Assure satisfaction or release of all liens and other title encumbrances to the extent required by the Department.

Title services may be subcontracted on a fixed fee per parcel basis (as a non-professional service) to Title Companies or local attorneys. Consultant must comply with subcontracting requirements as referenced in Paragraph II-10 of the ITQ for Right-of-Way Services, Contract 359001 or any renewals thereof.

Coordinate the settlement on replacement dwellings, as necessary, with claimants and/or claimant's attorney or representative. Deliver Replacement Housing Supplemental check(s) to settlement.

5. Relocation Assistance and Payments

Provide relocation assistance and payment services in accordance with the Department's Right-of-Way Manual including any amendments. On a case-by-case basis, evaluate entitlements for all types of relocation assistance payments, including replacement housing supplemental payments, down payment and/or rent supplemental payments, moving payments, last resort housing plans, business relocation benefits, business reestablishment evaluations, and loss of tangible personal property evaluations.

Provide relocation advisory assistance services as appropriate. Prepare applications for relocation claim payments, review relocation payment claims, and submit claimant requests for appeals of eligibility or amount of relocation assistance payment to District for forwarding to the Chief of the Acquisition Unit, Central Office Utilities and Right-of-Way Section. Prepare the papers necessary and secure signatures for processing of all payments of relocation claims. Perform decent, safe, and sanitary inspections of replacement properties.

The Consultant will comply with the Department's Right-of-Way Manual and any future policy revisions, by letter or otherwise, on right-of-way claims involving the acquisition of businesses. This includes the preparation of a video of every business claim.

Secure business or off-premise Outdoor Advertising Device (OAD) moving cost estimates from reputable companies regularly engaged in moving that type of property or off-premise OAD. This includes the payment, by the Consultant, of any estimating fee as may be required by moving companies. Consultant will be reimbursed the direct costs for obtaining these moving cost estimates.

6. Property Management

Prior to the acquisition of any building, prepare an inventory of improvements. Inspect properties after they have been vacated to verify that the improvements listed on the inventory remain in place and notify the Department of any missing items.

If directed by the District, upon vacation of any acquired building, verify that the utility services have all been discontinued and that the meters have been removed.

If necessary, coordinate the disposal of any marketable goods remaining in vacated properties with the concurrence of the District Right-of-Way Administrator and in compliance with the Department's Right-of-Way Manual provide all necessary coordination to conduct these activities.

Prior to the acquisition of any buildings, prepare the necessary estimates and bidding documents for boarding and sealing contracts in compliance with procedures outlined in Department's Right-of-Way Manual. If necessary, initiate all advertising and solicitation for the boarding and sealing contract. Conduct the Bid Opening and provide all necessary documentation. (The Department will execute the boarding and sealing contract). The Consultant must follow all requirements of the Commonwealth Procurement Code (62 Pa. C.S. §101 et seq) when performing bidding functions on behalf of the Department. Upon vacation of any acquired building, notify the boarding and sealing contractor of the need to board and seal the building within the number of specified days within the contract. At the request of the Department, initiate and prepare all necessary documents for contracting property maintenance post-acquisition, such as lawn care, shrub trimming, litter cleanup, and snow removal. At the request of the Department, initiate and prepare all necessary documents for contracting the demolition or removal of structures.

Inspect acquired buildings weekly for any unauthorized entry, unsafe exterior conditions, or needed maintenance. When requested, provide the necessary coordination to obtain needed services. (Any required services will be placed under contract with the Department.)

7. Other Services

Maintain a project site office within the project limits. If a suitable site office cannot be found within the project limits, the site will have to be approved by the Department. The site office must meet Americans With Disabilities Act requirements for accessibility. In addition to normal daily weekday working hours, the Consultant's staff must be available a minimum of two (2) nights per week and on Saturday. Suggested hours would be 5:00 p.m. until 8:00 p.m. week nights and 10:00 a.m. until 2:00 p.m. on Saturday. It is anticipated that the site office will be operational within thirty (30) days of the Notice to Proceed, or at a later date as directed by the Department. The Consultant shall be responsible for all expenses associated with maintaining an office, including but not limited to rent, utilities, and necessary equipment. The site office must be equipped with a telephone and answering machine and the phone number and hours must be displayed on an exterior view and communicated to claimants.

Provide any other right-of-way services as determined necessary by the Department and identified in the scope of work for services.

Detail Task 1 - Right-of-Way Acquisition Services

Department Details:

As described in main task and as follows:

In accordance with the Pennsylvania Eminent Domain Code (26 P.S. 1-101 et seq.; 37 PA Code Chapter 151); The Department of Transportation's Right-of-Way Manual; The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 U.S.C. 4601 et seq.; 49 CFR Part 24) ("Uniform Act") and the attached "Exhibit B" Right of Way Acquisition Scope of Work and as follows:

-Submit written acquisition and relocation procedures on a parcel by parcel basis to the District Right of Way Administrator for approval prior to commencing right of way activities. These procedures should contain a prioritized appraisal, acquisition and relocation strategy (including timeframes for the activities as provided for in the project schedule) as well as milestones for Department approval, such as approval of fair market value, replacement housing calculations, replacement housing payment dates, moving cost payments, appraisal status, administrative and

stipulated settlement amounts and dates.

-Establish a tracking system and quality control system. This system must show the litigation, property management, appraisal, acquisition and relocation status of all parcels. Have the quality control system administered by someone with the necessary expertise in appraisal, acquisition and relocation policies and procedures, and who can make reviews and reports at the Department's request.

-All tasks identified in Exhibit B (part of the right of way acquisition ITQ contract No. 359001) will be required, with the exception of task 7: "Other Services"; maintaining a project site office will not be required. Reference to REMIS in Exhibit B is to mean the Department's Right of Way Office System. Throughout the right of way acquisition activities for the project, information will need to be entered into said system by the Right-of-Way Acquisition Firm.

-Have available to the project escrow closing and settlement services for up to 20% of the estimated claim count.

-All photography and video is to be submitted in a standardized digital format approved by the District.

-Titles to all affected properties will be searched back a minimum of sixty (60) years and establish the previous owner or arms length transaction or a sufficient time period in order to explain any easements, adverse and provide legal description. The following support documents are required including: Current deed(s), mortgage(s), deed(s) of easement, adverse(s), lot or subdivision plan(s), judgement(s), lien(s), tax assessment information for all adjoining owners, all tax and lien certification(s), tax map(s), current taxes including paid, unpaid, or delinquent status, bankruptcy verification and other related documents and available in a digital format, or paper copy if requested. Updated Bring Down(s) prepared as required.

-Contractor shall research & coordinate with local authorities in order to evaluate septic availability if no public sewage available. This would include testing, analysis and interviews. In addition verify all utilities available to the site.

-Provide inspection of Regulated Asbestos Containing Materials (RACM) and lead-based paint for all structures requiring demolition.

-Provide a sample spreadsheet for tracking key disposition milestones & times to process to completion. In addition provide a sample checklist for Quality Assurance on required documents for processing.

-Describe specific quality assurance plan for appraisal tasks, including updates; payment package/settlement document preparation through payment delivery, include specific details and steps in this process.

This Task also includes Property Management in accordance with the Department's Right-of-Way Manual, Publication 378.

The following information pertains to the Right of Way Appraisal related tasks:

1. The Right-of Way Acquisition Consultant shall contract for Appraisal Services as permitted by ITQs. Right of Way appraisal service are to be performed by an approved firm or individual on the latest Right-of-Way "invitation to Qualify (ITQ for Right-of-Way Appraisal Services, Contract Number 353A01)" list.
2. All right-of-way appraisal activities will follow the appraisal procedures as provided in Publication 378, Right-of-Way Manual.
3. Throughout the right-of-way acquisition activities for the project, information will need to be entered by the Right-of-Way Acquisition Firm into the

Department's Right-of-Way (ROW) Office system.

4. All documents associated with the right-of-way appraisal requiring signatures will be signed and approved by the Department. Appraisal Review will be completed by the Department.

Successful completion of this task involves working with the design consultant who prepared the right of way plan to update the right of way plan to reflect any improvement not shown on the property plots.

Assume that seven (7) parcels will have claims for right of way on this project.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed and agrees with the District's Scope of Work and Department Details. TPD assumes that a total of fifteen (15) properties will be impacted.

ORION

All activities will be performed in compliance with the tasks set forth in the solicitation. Orion Land Services will adhere to not only PennDOT's Right-of-Way Manual but also to the Pennsylvania Eminent Domain Code as well as Public Law 91-646, as amended. Orion assumes that a total of fifteen (15) properties will be impacted.

Task 6 - Traffic Control Plan

Objective:

2.10.14 - Traffic Control Plan

This task is the development of the final traffic control plan. Publication 14M, Design Manual 3; the MUTCD and Publication 213 apply to this task.

Scope:

2.10.14 - Traffic Control Plan

Phasing schemes, sign messages, and approximate locations of signs and traffic control devices should be approved at the Design Field View stage, prior to the development of the final plans.

The Traffic Control Plan will be a stand-alone plan and will include the following:

- Title sheet with general notes, location map, and pay item quantities,
- Tabulation of Traffic Control Devices,
- Typical-sections
- Narrative describing each stage and phase by stating the work to be performed and the traffic control to be implemented
- General plan layout
- Temporary road plan, typical-section and profile (if necessary)
- Temporary signal plan (if necessary)

- Temporary Highway Lighting (if necessary)
- Special Sign Details (if necessary)

The plan will also include, but will not be limited to, sign messages, sign sizes, general sign locations, tapers lengths, barricades, channelizing devices, impact attenuators, temporary pavement markings, temporary roadway locations, temporary highway lighting locations, detours, portable changeable message signs, and arrow boards. Detail of temporary roads cross-section and profile will be included as well as other details as appropriate.

If detours are necessary, the detour route(s) will be identified and driven to determine general safety issues and restrictions. State roads requiring a detour will utilize other State owned roadways. If detour routes formed from State owned roads are found to be unacceptable because of length or other reasons, then agreements between the State and municipalities will need to be developed to utilize local roadways. This scope does not include support activities needed to develop agreements between the State and municipalities.

In locations where pedestrian movements are prominent, either safe passage or restrictions will be addressed. Scope associated with construction temporary pedestrian structures and signals will be included in either the Amendments to the Standard Scope of Work or the Detailed Project Approach.

Provide temporary highway lighting for limited access crossovers and at locations as directed by the District. Contact the Highway Lighting Unit in Harrisburg for design requirements. Submit the lighting design to the Highway Lighting Unit for approval prior to the release of the Traffic Control Plans to the District for PS&E Development.

This scope of work does not provide for a temporary traffic signal plan. If the implementation of the traffic control plan impacts a signalized intersection such that a temporary signal design is necessitated, the temporary signal plan will be incorporated into the traffic control plan. However, the scope of work for the temporary signal design will be provided in the Detailed Project Approach or in the Amendments to the Standard Scope of Work.

Specifications will include the description of the construction staging and phasing. Special provisions will also be written for traffic control devices outside the scope of the specifications included in the Publication 408M.

If required for boring and drilling work associated with geotechnical studies, the subconsultant will develop traffic control plans. Details of the design for these plans will be provided in the Detailed Project Approach.

Detail Task 1 - Final Traffic Control Plan

Department Details:

As described in main task and as follows:

Submit (2) half-size TCP for review. Submit final TCP on vellum for signature.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

This task consists of developing final maintenance and protection of traffic plans in accordance with Publication 14M, Design Manual Part 3, the Manual on Uniform Traffic Control Devices and Publication 213, Work Zone Traffic Control and PennDOT District 12-0 Maintenance and Protection of Traffic requirements to maintain safe and efficient traffic operations throughout the construction work zone. TPD will prepare a final maintenance and protection of traffic plan for anticipated work areas involving existing roads. The plans will include a sequence of operations and identify the type of traffic control needed for each roadway impacted by the anticipated work zones.

For purposes of this proposal, it is assumed that staged construction will be utilized while maintaining traffic on all roads. It is assumed that two primary stages of construction will be required with sub-stages (phases) at key locations.

It is assumed that temporary highway lighting will not be required. It is assumed that special pedestrian or bicycle accommodations will not be required as there are no existing facilities. It is assumed that a temporary pavement design will not be required for this project or that the District will provide any necessary specifications regarding the depth and type of temporary pavement materials. It is assumed that a temporary traffic signal is not required for this project. It is assumed that a TMP nor PIP will not be required for this project.

The following plans will be included with the submission (number of anticipated sheets in parentheses):

Title Sheet with General Notes (1)
Detail Sheets (6)
Tabulation Sheets (2)
Traffic Control Plans (12)

Task 7 - Pavement Marking Plan

Objective:

2.10.16 - Pavement Marking Plan

This task is the development of the pavement marking plan.

Scope:

2.10.16 - Pavement Marking Plan

The final submission will include:

- General Plans
- Special Details
- Delineator Spacing Tables
- Delineator Mounting Details
- Quantities
- Specifications

For mainline roadway sections where markings and delineators are consistent and repetitive, typical details will be developed to eliminate unnecessary drafting and design sheets. The pavement marking and delineation plan for the interchange areas will detail all gore areas, islands and other special markings. Beginning and ending stations will be shown for longitudinal pavement markings and station locations will be identified

for pavement legends.

Depending on the complexity of the project, the details of the plan and the total length of the project, the elements of the pavement marking and delineation plan may be incorporated with the signing plan.

Detail Task 1 - Signing and Pavement Marking Plan

Department Details:

As described in main task and as follows:

The pavement marking and delineation plan will be incorporated with the signing plan. Submit (2) half-sized final SPMP for review.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

It is anticipated that the Pavement Marking Plans will be combined with the Signing plans for clarity.

TPD will develop pavement marking plans depicting longitudinal lane lines and delineators on roadway sections. The locations of stop bars, legends, and crosswalks will be indicated. The type, size, and color of pavement markings and delineators will be noted on the plans. Specific details will not be developed at this time.

TPD will develop signing plans for all roadways sections within the limits of work. The plans will depict destination, regulatory, warning, information, and guide signs necessary to control and maintain traffic upon completion of construction. The plans will depict the approximate locations of signs, sign types, and sign messages. TPD does not anticipate needing any major sign structures or sign lighting. TPD does anticipate needing overhead signing on mast arms.

Plans will be prepared at an appropriate scale.

Task 8 - Erosion and Sedimentation Control Plan / NPDES Permit

Objective:

2.10.25 - Erosion and Sedimentation Control Plan / NPDES Permit

This task is the development of the Erosion & Sedimentation Control Plan and submission of the NPDES Permit Application.

Scope:

2.10.25 - Erosion and Sedimentation Control Plan / NPDES Permit

The Erosion and Sediment Pollution Control Plans and supporting documentation shall be submitted to the applicable Engineering District for

review and approval. Upon acceptance of the plans by the District, the submission will be forwarded to the County Conservation District for review and approval.

The following work elements are required for the successful completion of this task:

1. Develop Erosion and Sedimentation Control Plans to include:

- cover sheet
- location map
- topography of the area including watershed areas and watercourses receiving runoff from the project
- proposed alterations to the area
- limits of the project
- the location of all temporary and permanent erosion and sediment pollution control measures and facilities
- all pertinent erosion control and construction details

2. Develop a narrative report describing the project and indicating the purpose, the engineering assumptions, the specifications, and the calculations for erosion control measures and facilities. The narrative shall include a schedule of installation and removal of temporary and permanent erosion control measures and facilities as they relate to the various earthmoving operations and a maintenance program for each type of temporary and permanent erosion control measure and facility.

3. Provide detailed instructions relating to the sequence of construction on the plan and in the narrative. Include staging, sequencing and scheduling of earthmoving activities and installation and removal of erosion and sediment pollution control measures and facilities as required.

4. Provide a detailed description in the narrative report of all soil types located within the project limits including each soil type, depth, slope and resistance to erosion. The soil boundaries and a summary table of the soil types and limitations should also be included on the plans.

5. Provide all applicable construction schedules, maintenance programs (including the removal and disposal of accumulated soil materials).

6. Prepare transmittal letter, plans and narrative report for submission to the County Conservation District. If necessary, on large projects meet with the County Conservation District prior to submission to discuss submission requirements and review conceptual plan.

7. For projects exceeding 5 acres of earth disturbance or impacting High Quality/Exceptional Value (HQ/EV) waterways, prepare a Notice of Intent (NOI) Application for an NPDES Storm Water Permit and a Preparedness, Prevention and Contingency (PPC) Plan (see below). The PPC plan should also be incorporated into the narrative report and the plans.

8. Address all applicable comments from the County Conservation District and/or PADEP and re-submit the revised package for approval.

The following tasks are required for the preparation of the NPDES permit application:

1. Develop an NPDES boundary map that includes the following information: limits of disturbance, highway alignment, cut & fill limits, ROW lines, contours, stations, location identifiers and, the permit boundary.

2. Complete the NPDES Permit Application. The application package will consist of the following items: Act 14 Notification, PNDI Form, location

map, NPDES Application Form, Cultural Resources Notice (if involves a Special Protection Watershed), General Information Form (if project involves a Special Protection Watershed or an Individual NPDES Application), and the Erosion and Sediment Pollution Control Plan.

3. Submit NPDES Permit Application package to PennDOT for review. Revise as necessary. Obtain PennDOT's notarized signature on the application and make the designated amount of copies to submit to the County Conservation District and, if applicable, the PADEP.

4. Schedule review meetings with the agencies prior to submitting the NPDES permit package to expedite the permitting process.

~~5. Submit permit package to the Conservation District/PADEP.~~

Detail Task 1 - Erosion and Sedimentation Control Plan / NPDES Permit

Department Details:

As described in main task and as follows:

Submit two copies of the narrative, two full size and one half-sized copy of the plan. All submissions are required to be submitted to the District for review. If required, schedule review meetings with the agencies prior to submitting the NPDES permit package to expedite the permitting process.

All plans will be prepared using Microstation V8 format and PENNDOT resource files.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD will schedule and attend a Pre-Application Meeting with the Washington County Conservation District approximately 4 weeks prior to submission. TPD will prepare meeting minutes to document any decisions or special requests made at the meeting.

All calculations will be performed in accordance with Pennsylvania's Storm Water Management Act (P.L. 864, No. 167) and local requirements.

As the disturbance for the project is assumed to be greater than 1.0 acres, it is assumed that a NPDES permit will be required for this project. TPD will develop an NPDES boundary map that includes the following information: limits of disturbance, highway alignment, cut & fill limits, ROW lines, contours, stations, location identifiers and, the permit boundary. TPD will complete the NPDES Permit Application. The application package will consist of the following items:

- Act 14 Notification
- PNDI Form
- Location map
- NPDES Application Form
- Erosion and Sediment Pollution Control Plan.

- Post Construction Storm Water Management Plans

TPD will be responsible for submitting the ESPC and supporting documentation to PennDOT District 12-0 for review and approval. The plans will show the existing topography, proposed alterations, the location of all temporary and permanent erosion and sediment pollution control facilities, the limit of disturbance, the NPDES boundary and any pertinent details. The Erosion and Sediment Pollution Control Plans will include the following (number of sheets shown in parentheses):

- General Notes and Location Map Sheet (1)
- Detail Sheets (6)
- Erosion and Sediment Pollution Control Plan Sheets (12)
- Post Construction Storm Water Management Plans (5)

Upon acceptance of the plans and receipt of signed forms by the District, the submission will be forwarded to the County Conservation District for review and approval.

It is assumed that this project will not require a Preparedness, Prevention and Contingency (PPC) Plan as this project will not exceed 5.0 acres of disturbance nor is located within a HQ/EV watershed.

Task 9 - Final Plan Checks

Objective:

2.10.28 - Final Plan Checks

This task is the time required to attend/perform all final plan checks.

Scope:

2.10.28 - Final Plan Checks

The Final Plan Check is performed by representatives of: Bureau of Design - Field Liaison Engineer, District Engineer/Administrator, and Consultant.

The Field Liaison Engineer is in charge of the Final Plan Check and prepares a Plan Review Report on any items which are not correct at the time of the Final Plan Check.

The District Engineer/Administrator provides qualified personnel to perform all required design review; prepares Form 407, Form D-444D and a list of Structural Special Provisions, and notifies the Field Liaison Engineer when the plans will be ready for the Final Plan Check.

The Consultant is required to have the plans adequately checked prior to the Final Plan Check, and will have the Project Engineer and adequate design personnel to make any required corrections, present at the Final Plan Check. It is expected that all required corrections will be made by the Consultant prior to leaving the Final Plan Check.

Detail Task 1 - Final Plan Checks

Department Details:

Assume a total of one (1) plan check for construction will be held. Attendance at the plan check shall be limited to one person with intimate

knowledge of the overall plan.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed and agrees with the District's Scope of Work and Department Details.

AWK

Cross Sections - AWK will review the final roadway cross sections prepared by TPD for the widened and reconstructed or relocated roadway to verify the implementation of any required geotechnical details.

MARKOSKY ENGINEERING GROUP (MEG)

MEG will perform a review of the complete plan set (including supplemental plans) for compliance with PennDOT Publication 14M, Design Manual Part 3. This review will be conducted in advance of the HQAD Plan Check.

Task 10 - Assemble Final Project Documents for Contract Management

Objective:

2.10.29 - Assemble Final Project Documents for Contract Management

This task is the preparation of the PS&E submission to District contract management.

2.10.29.2 - Finalize Pre-Bid Construction Schedule/Special Provisions

This task is to prepare the final pre-bid construction schedule/special provisions.

2.10.29.6 - Engineer's Estimate

This task is the preparation of the engineer's estimate.

2.10.29.7 - Construction Schedule

This task is the preparation of the final construction schedule.

Scope:

2.10.29 - Assemble Final Project Documents for Contract Management

Before any attempt is made to develop and submit a proposal, it is very important to obtain all required documents, contract drawings, design estimates and supporting data. Supporting documents such as environmental clearances and re-evaluations, funding authorizations, PMC approvals, DEP and Corps of Engineer permits, utility and right-of-way clearances, agreements and related administrative requirements must be resolved. Missing supporting documents complicate the PS&E process, and may affect project advancement to letting.

Assemble all available information on the project from the designers, such as plans or sketches, permits, non-standard special provisions, agreements, construction trainee requirements, Utility Form D-419 clearance and right-of-way certification.

Contract proposals should appear as uniform as possible on a State-wide basis to assist prospective bidders as well as Department personnel who use the proposal. All proposals are to be prepared by utilizing the Contract Management System (CMS) automated bid proposal development software, in accordance with the principles in the current "CMS Users Manual."

Assemble project documents in accordance with requirements of Publication 51M, "Contract Proposal Preparation Guide."

2.10.29.2 - Finalize Pre-Bid Construction Schedule/Special Provisions

Provide provisions, requirements, or directions applying to the project, as set forth in the proposal, that are not contained in Publication 408M or its supplements. Generally, the design engineer will submit draft special provisions to be reviewed, finalized and incorporated into the Bid proposal by Contract Management.

2.10.29.6 - Engineer's Estimate

Prepare a detailed estimate, which will be used to verify funding requirements and to determine acceptability of bids, and submit with the PS&E to Contract Management.

2.10.29.7 - Construction Schedule

Prepare Form D476 & D476A, or CPM schedule, for construction of the project.

Detail Task 1 - Assemble Final Project Documents for Contract Management

Department Details:

As directed by the Department Project Manager, and;

The method of providing Summary and Tab sheets (Items and quantities) to the Department will be via AUTOTAB (including plan stations). Provide one single sided set of roadway design computations (item numbers, item description, plan stations, & quantity calculations) with the PS&E. Complete an Engineer's Estimate and provide backup data to support the estimated unit prices for non-standard items and all lump sum items.

References to Publication 51M are replaced with Publication 51 - Bid Package Preparation Guide (ECMS). The PS&E package will be prepared in accordance with PENNDOT Design Manual Part 3, Publication 51, and Publication 352.

2.10.29

CMS will not be in operation when this project progresses to a letting. ECMS will be in operation. References to CMS are to be changed to ECMS in the paragraphs above. The consultant will be entering item numbers, plan stations, special provisions and cost estimates into ECMS. The project development checklist will be periodically updated and maintained by the Department's Project Manager. Provide special provisions in Microsoft Word format (not ASCII) through email or CD.

2.10.29.7

Use Open Plan to develop the Construction schedule. Coordinate with Department PM for meeting involving Department's Construction unit in the development of the CPM schedule. The consultant is to provide a paper copy with the PS&E submission of the pre-final and final schedules.

Complete a Cost Driver Analysis form for the Constructability and PS&E stages.

Deliverable - A complete PS&E package including one (1) set of full size mylars signed and sealed, and one (1) half-sized paper copy of the complete construction plan.

The final PSE package including all information inputted in ECMS will be completed by the PSE date established by the design schedule.

Once the project is advertised, the consultant will assist the District in answering ECMS questions and preparing addendums pertaining to the bid package, as required.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD will prepare a listing of final items and will develop final quantity tabulations using the AutoTAB software package. Backup calculations will be prepared to indicate how all quantities were developed. TPD will develop unit costs for all items utilized for the project using historical data including PennDOT ECMS. TPD will document how the unit costs were developed for all standard and non-standard items, including cost drivers for all lump sum items. TPD will develop final special provisions for all non-standard items used on the project. TPD will upload the items, quantities, unit costs and special provisions to the PennDOT ECMS website. All supporting calculations will be provided to the District upon request.

TPD will develop the engineer's construction schedule using the PennDOT approved Open Plan software package. TPD will forward either a hard copy or .pdf file of all approved Construction Plans, agreements, forms, certifications, approval letters and the construction schedule to PennDOT District 12-0 for uploading to the PennDOT ECMS website.

TPD will coordinate with the District Project Manager and District Contract Management Unit to finalize the bid package and to generate a Proposal Report.

All project documents will be prepared in accordance with Publication 51 guidelines.

Task 11 - Coordinate Constructability Review

Objective:

2.1.2 - Coordinate Constructability Review

This task is the coordination of the constructibility review team throughout design development.

Scope:

2.1.2 - Coordinate Constructability Review

The constructability review team will be established at the beginning of the project. Constructability reviews will be conducted periodically throughout the design process. The reviews will be performed to identify potential construction problem areas, possible cost savings, means to expedite construction, and alternate methodologies. The review will focus on the following issues:

- * Evaluate MPT vs. Construction Sequence
- * Set mandatory sequence logic where necessary
- * Detect potential problem areas
- * Avoid ambiguities
- * Limit inefficient and impractical design features
- * Evaluate coordination between design sections, where applicable
- * Avoid omissions and overlaps by reviewing specifications vs. plan and plan vs. plan

Detail Task 1 - Coordinate Constructability Review

Department Details:

The District Construction Unit will conduct an independent constructability review of the plan and special provisions, any comments from this review will be forwarded to Consultant for incorporation into plan.

The consultant will not be present for this review.

As part of this task, please have the consultant constructability specialist conduct a review of the plan and document any comments which will be part of the submission to the District.

Constructability review will be performed at the following:

- NTP final design, use design field view approval plans
- Final Plan check stage

Submit two (2) half size construction plans include a draft copy of the special provisions at the Final Plan check stage.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed and agrees with the District's Scope of Work and Department Details.

Task 12 - Utility Engineering

Objective:

2.10.8 - Utility Engineering

This task consists of engineering for utility relocation.

Scope:

2.10.8 - Utility Engineering

Guidance:

- Publication 16M, Design Manual Part 5, Utility Relocation

Solicit the utilities requirements for the design and construction of the relocations as soon as possible to determine if:

- work will be done by utility staff and forces,
- work will be done by utility consultant and contractor,
- work will be requested to be done by PennDOTs project designer and contractor, or any combinations of the above.

All utility related formal requests for agreements, permits and occupancy applications must be in accordance with the applicable policies and procedures of Design Manual Part 5.

Authorization to perform preliminary and final utility engineering will be provided in writing by the Department.

Detail Task 1 - Utility Engineering

Department Details:

This activity will be a continuation of the utility efforts initiated in the Preliminary Design phase.

The consultant will work with the affected utilities as the plan develops to insure that the utility locations shown on the final roadway plans are totally accurate.

The consultant will coordinate, set-up, and attend all required utility meetings. Assume 2 utility coordination meetings. Provide minutes of utility coordination meetings to the District in hard copy.

Once the involvement for each utility has been defined for the project, the utility clearance Form D-419 will be prepared by the Department.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

Utilities

TPD will be responsible for utility coordination during final design in accordance with PennDOT Publication 16, Design Manual Part 3, Utility Relocation Manual. TPD will forward two (2) copies of the construction plans, right-of-way plans and Form D4181 to each of the affected utilities within the project limits. TPD will revise the construction plans and right-of-way plans based on responses received from the various utilities. TPD will prepare a document summarizing the impacts to each utility, including all clear documentation. TPD will incorporate any special instructions or provisions provided by the utilities into the final project documents.

TPD will coordinate and attend one (1) utility coordination meeting to be held either at the District Office, Township Building or on-site to discuss utility conflicts and relocations. TPD will prepare meeting minutes for the Utility Coordination Meeting.

TPD will not be responsible for obtaining utility easements, obtaining utility agreements or highway occupancy permits for any affected utilities. TPD will not be responsible for coordinating or preparing engineering reimbursement documentation for any utilities. TPD will not be responsible for preparing the D-419 utility clearance forms. It is assumed that District 12-0 Utility Unit will be responsible for this work.

It is assumed that no Subsurface Utility Engineering will be completed under this Part.

Consultant Hierarchy

Business Partner	DBE Type	Supervising BP
Traffic Planning and Design, Inc.	No	
AWK Consulting Engineers, Inc.	Yes	Traffic Planning and Design, Inc.
Orion Land Services, Inc.	No	Traffic Planning and Design, Inc.
The Markosky Engineering Group, Inc.	Yes	Traffic Planning and Design, Inc.

Attachments

No records found.

Part 3 - Consultation During Construction

Description

Minimum tasks: Construction Partnering, Shop Drawing Review, Construction Consultation, Recordation of As-Built plans

Task 1 - Project Management/Administration

Objective:

2.1.1 - Project Management/Administration

This task consists of the administrative effort required by principals, project manager, and involved personnel to complete the project on time and within budget, and to provide a quality product.

Scope:

2.1.1 - Project Management/Administration

Project Management involves the planning, scheduling, organizing and controlling of resources to achieve specific objectives within established schedule, budget and quality standards. The Project Manager is responsible for the tasks outlined in the Department Detail.

Detail Task 1 - Project Management/Administration

Department Details:

Managing Services during construction including reviewing submissions in a timely manner as specified in contract or as directed by project manager, controlling budget and requests for information.

Project Manager will attend the construction pre-job and the semi-final/AAR.

An open Plan Schedule is not required for this part.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

TPD will prepare monthly status reports and invoicing.

AWK

Coordinate with the Department and the Contractor on design questions or clarification of intent.

Task 2 - Construction Consultation

Objective:

2.11.3 - Construction Consultation

This task is coordination with the contractor prior to issuance of the notice to proceed.

Scope:

2.11.3 - Construction Consultation

~~Upon contract execution, issue a Notice to Proceed letter and coordinate the scheduling of a pre-construction meeting.~~

Upon issuance of Notice to Proceed, respond to any requests for information from District or Design/Build Team concerning the project during construction.

Detail Task 1 - Construction Consultation

Department Details:

As directed, attend field views and meetings, respond to District's or Contractor's request for information. Submit recommendations to the District regarding approval/acceptance. The District will be responsible for final approval/acceptance.

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed the District's Scope of Work and Department Details and has the following additions or clarifications:

It is anticipated that this project will follow the standard Design-Bid-Build process.

TPD assumes a total of 100 hours for this task.

AWK

Address RFI's to clarify design intent or clarification to the Contractor, as needed.

Task 3 - Other Post-Design Activities

Objective:

2.11.99 - Other Post-Design Activities

This includes any other necessary PennDOT post design activities for the project which are not otherwise covered under the standard post design tasks.

Scope:

2.11.99 - Other Post-Design Activities

Provide work as detailed by the Department. See Below.

Detail Task 1 - As Built Plans

Department Details:

Prepare As-Built Roadway Plans in accordance with Department's DM 1/1A.

As-Built Plans (Mylars) must be submitted to the District within 45 days of final inspection acceptance

Approach:

Traffic Planning and Design, Inc. (TPD)

TPD has reviewed and agrees with the District's Scope of Work and Department Details.

Consultant Hierarchy

Business Partner

DBE Type

Supervising BP

Traffic Planning and Design, Inc.

No

AWK Consulting Engineers, Inc.	Yes	Traffic Planning and Design, Inc.
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Attachments

No records found.

Part 4 - Cancelled

You are currently logged in as **Roland L. Rode**.

Release: 20.0
Session size: 0.1k

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Wed Dec 21 10:23:00 EST 2011
Official ECMS Date/Time