ATKINS

Atkins North America, Inc.

Brian Janes, P.E.
10509 Professional Circle, Suite 102
Reno, NV 89521
July 6, 2017

Andy Hummel, P.E.
431 Prater Way
Sparks, NV 89431

Re: East Prater Wat Storm Drain Design Project Scope

Andy,

Atkins is pleased to submit for your review this scope and fee for the proposed East Prater Way Storm Drain Design Project. This project's purpose is to increase the capacity of the East Prater Way storm drain system from approximately Sparks Boulevard to Vista Boulevard. The City's Basin Stormwater Master Plan has identified that this system does not currently meet drainage criteria. This project will improve the storm drain conveyance and attempt to meet City criteria. If unable to meet criteria, the project will be coordinated to provide the greatest capacity improvements given the constraints.

The fee estimate for the project management, development of a plan set and technical specifications, design support services, hydrologic and hydraulic analysis, project design report, and engineer's cost estimate is based on a time and materials estimate not-to-exceed $229,000. We anticipate that given a notice to proceed by August the construction plans, documents, and design report can be completed in March 2018. The scope of work is detailed on Attachment A and a fee summary is provided in Attachment B.

Please call me if you have any questions at 789-9831.

Sincerely,

Brian Janes, P.E.
Sr. Engineer IV, Integrated Water Resources

Enclosures:
Attachment A, Scope
Attachment B, Design Fee

Attachment A

SCOPE OF SERVICES
EAST PRATER WAY STORM DRAIN DESIGN PROJECT

PURPOSE AND PROJECT UNDERSTANDING

The City of Sparks (City) is requesting Atkins to develop final design plans for storm drain system improvements associated with the East Prater Way storm drain. This scope covers the services associated with the design of the storm drain system on East Prater Way from Sparks Boulevard/North Truckee Drain to Vista Boulevard. The City's Storm Drain Master Plan indicated that the system is under capacity near Vista Boulevard and that the system needs to be upsized from Sparks Boulevard to provide additional capacity.

This project will further evaluate the two alternatives presented in the Storm Drain Master Plan and recommend a final design to the City. This scope of work includes project management, project survey, detailed hydrologic and hydraulic analysis of inlets and storm drain, storm drain design and development of final plans and construction documents. Construction is planned for the spring/summer of 2018.

Assumptions for this scope of work include:

1. Geotechnical investigation and utility potholing will be necessary.
2. No permitting will be necessary.
3. Design will include approximately 5,500 to 5,800 feet of storm drain improvements as shown in the 2012 Storm Drain Master Plan.

The following is a tentative project design schedule, assuming a notice to proceed (NTP) is issued by late August and City/agency submittal review comments are received within three (3) weeks after each milestone submittal date:

- 50% Submittal- October
- 90% Submittal- December
- Final Submittal- February

Attachment B summarizes the proposed project fee. The specific tasks to be performed under this scope are described as follows and will be billed at a rate of 3.05 times the raw labor cost.

TASK 100. PROJECT MANAGEMENT AND COORDINATION

Project management will include project budgeting, invoicing, internal staff coordination, meeting preparation and attendance, development and distribution of meeting agendas/minutes, and coordination with City staff, sub-consultants, and permitting and utility agencies.

Task 1 assumptions include the following:

- Atkins will coordinate and participate in up to six (6) project meetings with the City as requested. These coordination meetings include design milestone review meetings.
- Atkins will attend bid opening, review bids received and tabulate bid results. Additionally, Atkins will be available during the bidding process to answer any technical questions.
- A progress report will be prepared and submitted monthly with project billing during the design phase. Atkins anticipates the preparation of seven (7) progress reports.
- Three (3) submittals will be required at the 50%, 90%, and final design levels.

- Significant engineering support during the construction phase is not anticipated and not included in this scope of work.

Deliverables: monthly progress reports, meeting agendas/minutes

TASK 200. ALTERNATIVES EVALUATION

The two alternatives presented in the City's Storm Drain will be reviewed to determine the preferred alternative that will be advanced to final design. The design recommendations will be coordinated with the City and documented in an Alternatives Evaluation memorandum

Deliverables: Alternatives Evaluation Memorandum

TASK 300. HYDROLOGIC AND HYDRAULIC ANALYSIS

The existing and proposed condition XPSWMM models within the City's Storm Drain Master Plan will be reviewed and adjusted to facilitate the final design of the preferred alternative storm drain alignment. It is anticipated that the proposed condition models will include identifying a new storm drain alignment that will route flows to the North Truckee Drain. As part of this realignment, an inlet analysis will be performed. If the proposed storm drain cannot be constructed or design criteria cannot be met to meet City standards due to utility location or other constraints, coordination with the City will be conducted to determine the optimal design condition.

It is assumed that:

- Drop inlet locations will not change in the proposed condition and that an analysis will not be required as no known problems exist in this area.
- Drainage basins will not be modified from the master plan basins.
- Tailwater conditions on the North Truckee Drain will be evaluated for the design and agreed upon with the City.
- While the City's Storm Drain Master Plan was modeled with XPSWMM, the City may want the final design completed with InfoSWMM.

The post-project hydraulic analysis results will be summarized in **Task 5** to identify the additional storm drain capacity that will be achieved with the construction of this project. In addition, the final report will show that there will be no adverse impacts associated with the preferred design.

Deliverables: XPSWMM or InfoSWMM *hydrologic models, hydraulic storm drain models, FlowMaster inlet analysis files*

TASK 400. DRAINAGE DESIGN REPORT

Atkins will summarize the findings of **Task 2** and **Task 3** in a drainage design report and submit to the City for review and comment. The report will describe the analyses performed, the findings, and describe the design components. The report will identify the quantity of flow that can be conveyed in the post-project storm drain, street carrying capacity criteria and associated inlet analysis, the expected benefit on neighboring properties, and any downstream impacts or considerations. Atkins estimates that the draft drainage report will be submitted with the 50% design submittal and that the final report will be submitted with the 90% design submittal. No significant changes to the drainage report are anticipated after the 90% submittal. Comments from the 50% design submittal will be incorporated into the final report delivered with the 90% design submittal plans. Engineer's cost estimate will be included in the drainage design report.

Deliverables: draft and final drainage reports (2 copies each)

TASK 500. DESIGN

Atkins will perform topographical survey at 1-foot contour intervals; provide cross sections along the storm drain alignment at not less than 50 foot intervals; survey pertinent drainage features and surface apparent utilities; and survey of storm drain manholes/catch basins and sewer manholes necessary for design and hydraulic modeling.

Construction plans and notes to specifications, suitable for construction bid advertisement, will be developed for the storm drain design. 50% design, 90% design, and final design milestone submittals will be submitted to the City. Overall, this project is anticipated to include approximately 5,500 to 5,800 linear feet of proposed storm drain, additional drop inlets and laterals, headwall, and permanent roadway patching. Utility relocations may be necessary to accommodate the upsized storm drain. This project will identify the relocations needed and coordinate with the utility owners. Utility relocation design is not included in this scope of services.

The technical specifications will primarily reference the latest approved edition of the Standard Specifications for Public Works Construction (Orange Book) for standard construction items. Milestone design plan review submittals will be on 11" x 17" size sheets and show all elements of the project construction, including plan/profile view, cross-sections, and details. For the final plan submittal, Atkins will submit 11" x 17" and 22" x 34" size sheets to the City. Plans will be submitted to City, any impacted and identified utility companies and other affected parties for review at the 50% and 90% stages of completion.

A probable construction cost estimate will be prepared for the City's use. The estimate will be developed with the 90% design plans and finalized with the final design. The cost estimate will be based on recent, local bid tabs to determine probable project construction cost.

This task assumes the following:

- The storm drain alignment will not be changed significantly after receiving 50% design submittal comments from the City
- The City will provide GIS information (topography, roadways, parcels, storm drain, sewer, etc.) and requested sanitary sewer and storm drain video/City survey dip sheets, if available.
- Utility relocations (if needed) will be accomplished by the utility owner.
- Full specifications will not be required for the design and will rely on the Orange Book.

Deliverables: 50%, 90%, and final design submittals of constructions plans (2 copies each); 90% and final design submittals of technical specifications (2 copies each)

TASK 600. PERMITTING

Atkins anticipates that there may be permitting associated with the project. The following assumptions are included in this scope:

- An NDEP Working in Waterways Temporary Permit will be required for work associated with the headwall at the North Truckee Drain.
    - Temporary permit application fee of $250 is included in this scope of work and will be billed to the City with normal monthly billing as a project expense.
    - Atkins will complete the permit form online and include a project narrative to support the permit requirements
    - The City will be listed as the responsible party for the permit.

- A U.S. Army Corps of Engineers (USACE) Section 404 Permit is not anticipated to be required.
    - Based on the City's recent experience, this scope assumes that the project will be exempt from the Section 404 Permit Requirements because it will be categorized as maintenance of drainage ditches.
    - This scope of work includes up to 8 hours of coordination with the City and the USACE to confirm that a permit will not be required for the project.
    - If the Corps does require a permit, that effort will be addressed in a separate scope of work.
- No other permits are anticipated to be required and additional work is not included in this scope of work

TASK 700. SUB-CONSULTANT SUPPORT

If necessary, Atkins will hire a sub-consultant to perform utility pothole for design. For the purpose of estimating, eight (8) pothole locations have been assumed.

Additionally, Atkins will hire a sub-consultant to perform a geotechnical investigation that will evaluate the surface and subsurface soil conditions along the proposed storm drain alignment and provide geotechnical recommendations for the project. It is anticipated that borings or test pits will be made to sufficient depths to adequately reveal subsurface soil and groundwater conditions near East Prater Way, Wabash Circle, and Frisco Way. The geotechnical sub-consultant's scope of work includes research, field exploration, field and laboratory testing, and engineering analyses to allow formulation of geotechnical recommendations for design and construction of this project. All of these items will be summarized in a geotechnical report suitable for use by the project design team members and for submittal to governing agencies.

Deliverables: final geotechnical report (1 copy)

Attachment B

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Atkins North America

Cost Proposal - By Task

East Prater Way Storm Drain Design Project
City of Sparks
p100055539

Submittal Date: Jul-06-2017

Task ID	Description	Price
100	Project Management	$31,600
200	Alternative Evaluation	$11,500
300	Hydrologic and Hydraulic Analysis	$43,000
400	Drainage Design Report	$21,300
500	Design Plans and Notes to Specifications	$88,100
600	Permitting	$3,500
700	Subconsultants	$30,000
	Total Extended Price	**$229,000**