REQUEST AUTHORIZATION FOR MAYOR AND FINANCE OFFICER TO SIGN
PROFESSIONAL SERVICES AGREEMENT OR AMENDMENT
Date: 3-5-2018

Project Name & Number: Perrine and Unnamed Tributary Drainage Basin Design Plan (DBDP) CIP #: 51189.1
Amendments – Phase 1
Project Number 18-2430
Project Description: To provide professional engineering services related to the preparation of design plans for Perrine and Unnamed Tributary DBDP Amendments

Consultant: FMG Engineering

Original Contract Amount: $46,918.00 Original 3/5/2018 Original 6/4/2018

Addendum No:
Amendment Description:

Current Contract Amount: ___________________________ Current Completion Date: ___________________________
Change Requested: ___________________________
New Contract Amount: $0.00 New Completion Date: ___________________________

Funding Source This Request:

<table>
<thead>
<tr>
<th>Amount</th>
<th>Dept.</th>
<th>Line Item</th>
<th>Fund</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$46,918.00</td>
<td>7402</td>
<td>4223</td>
<td>609</td>
<td>Stormwater Drainage Expansion</td>
</tr>
</tbody>
</table>

$46,918.00 Total

Agreement Review & Approvals

Project Manager: ___________________________ Date: 2-14-18
Division Manager: ___________________________ Date: 2-28-18
Compliance Specialist: ___________________________ Date: 2-14-18
Department Director: ___________________________ Date: 2-28-18
City Attorney: ___________________________ Date: 2/28/18

ROUTING INSTRUCTIONS
Route two originals of the Agreement for review and signatures.
Finance Office – Retain one original
Project Manager – Retain second original for delivery to Consultant
cc: Public Works Engineering Project Manager

FINANCE OFFICE USE ONLY
(Approportionment or Cash Flow)
Date: 3/1/18 Initials: Y N
(Nota to Finance: Please write date of Agreement in appropriate space in the Agreement document)
Agreement Between City of Rapid City and FMG Engineering for Professional Services for Perrine and Unnamed Tributary Drainage Basin Design Plan (DBDP) Amendment – Phase 1 Project No. 18-2430 / CIP No. 51189.1

AGREEMENT made ____________________________, 20__, between the City of Rapid City, SD (City) and FMG Engineering, (Engineer), located at 3700 Sturgis Road, Rapid City, 57702. City intends to obtain services for Perrine and Unnamed Tributary DBDP Amendment – Phase 1, Project No. 18-2430 / CIP No. 51189.1. The scope of services is as described within this document and as further described in Exhibits A and B (attached).

The City and the Engineer agree as follows:

The Engineer shall provide professional engineering services for the City in all phases of the Project and as further defined in Exhibits A and B (attached), serve as the City's professional engineering representative for the Project, and give professional engineering consultation and advice to the City while performing its services.

Section 1—Basic Services of Engineer

1.1 General

1.1.1 The Engineer shall perform professional services described in this agreement, which include customary engineering services. Engineer intends to serve as the City’s professional representative for those services as defined in this agreement and to provide advice and consultation to the City as a professional. Any opinions of probable project cost, approvals, and other decisions provided by Engineer for the City are rendered on the basis of experience and qualifications and represent Engineer’s professional judgment.

1.1.2 All work shall be performed by or under the direct supervision of a professional Engineer licensed to practice in South Dakota.

1.1.3 All documents including Drawings and Specifications provided or furnished by Engineer pursuant to this Agreement are instruments of service in respect of the Project and Engineer shall retain an ownership therein. Reuse of any documents pertaining to this project by the City on extensions of this project or on any other project shall be at the City’s risk. The City agrees to defend, indemnify, and hold harmless Engineer from all claims, damages, and expenses including attorney’s fees arising out of such reuse of the documents by the City or by others acting through the City.
1.1.4 The contract will be based on an hourly rate and reimbursable fee schedule with a maximum not-to-exceed amount.

1.2 **Scope of Work**

The Engineer shall:

1.2.1 Consult with the City, other agencies, groups, consultants, and/or individuals to clarify and define requirements for the Project and review available data.

1.2.2 Perform the tasks described in the Scope of Services. (See Exhibit A.)

1.2.3 Conduct a location survey of the Project to the extent deemed necessary to provide adequate site information.

1.2.4 Prepare a report presenting the results of the study as outlined in the scope of services.

**Section 2—Information Provided by City**

The City will provide any information in its possession for the project at no cost to the Engineer.

**Section 3—Notice to Proceed**

The City will issue a written notification to the Engineer to proceed with the work. The Engineer shall not start work prior to receipt of the written notice. The Engineer shall not be paid for any work performed prior to receiving the Notice to Proceed.

**Section 4—Mutual Covenants**

4.1 **General**

4.1.1 The Engineer shall not sublet or assign any part of the work under this Agreement without written authority from the City.

4.1.2 The City and the Engineer each binds itself and partners, successors, executors, administrators, assigns, and legal representatives to the other party to this agreement and to the partners, successors, executors, administrators, assigns, and legal representatives of such other party, regarding all covenants, agreements, and obligations of this agreement.

4.1.3 Nothing in this agreement shall give any rights or benefits to anyone other than the City and the Engineer.
4.1.4 This agreement constitutes the entire agreement between the City and the Engineer and supersedes all prior written or oral understandings. This agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

4.1.5 The Engineer shall make such revisions in plans which may already have been completed, approved, and accepted by the City, as are necessary to correct Engineer's errors or omissions in the plans, when requested to do so by the City, without extra compensation therefore.

4.1.6 If the City requests that previously satisfactorily completed and accepted plans or parts thereof be revised, the Engineer shall make the revisions requested by the City. This work shall be paid for as extra work.

4.1.7 If the City changes the location from the one furnished to the Engineer, or changes the basic design requiring a new survey for the portions so changed, the redesign will be paid for as extra work.

4.1.8 The City may at any time by written order make changes within the general scope of this Agreement in the work and services to be performed by the Engineer. Any changes which materially increase or reduce the cost of or the time required for the performance of the Agreement shall be deemed a change in the scope of work for which an adjustment shall be made in the Agreement price or of the time for performance, or both, and the Agreement shall be modified in writing accordingly. Additional work necessary due to the extension of project limits shall be paid for as extra work.

4.1.9 Extra work, as authorized by the City, will be paid for separately and be in addition to the consideration of this Section.

4.1.10 For those projects involving conceptual or process development services, activities often cannot be fully defined during the initial planning. As the project does progress, facts and conditions uncovered may reveal a change in direction that may alter the scope of services. Engineer will promptly inform the City in writing of such situations so that changes in this agreement can be renegotiated.

4.1.11 This Agreement may be terminated (a) by the City with or without cause upon seven days' written notice to the Engineer and (b) by the Engineer for cause upon seven days' written notice to the City. If the City terminates the agreement without cause, the Engineer will be
paid for all services rendered and all reimbursable expenses incurred prior to the date of termination.

If termination is due to the failure of the Engineer to fulfill its agreement obligations, the City may take over the work and complete it. In such case, the Engineer shall be liable to the City for any additional cost to the extent directly resulting from Engineer’s action.

4.1.12 The City or its duly authorized representatives may examine any books, documents, papers, and records of the Engineer involving transactions related to this agreement for three years after final payment. All examinations will be performed at reasonable times, with proper notice. Engineer’s documentation will be in a format consistent with general accounting procedures.

4.1.13 The City shall designate a representative authorized to act on the City’s behalf with respect to the Project. The City or such authorized representative shall render decisions in a timely manner pertaining to documents submitted by the Engineer in order to avoid unreasonable delay in the orderly and sequential progress of the Engineer’s services.

4.1.14 Costs and schedule commitments shall be subject to renegotiation for delays caused by the City’s failure to provide specified facilities or information or for delays caused by other parties, excluding subcontractors and sub-consultants, unpredictable occurrences including without limitation, fires, floods, riots, strikes, unavailability of labor or materials, delays or defaults by suppliers of materials or services, process shutdowns, acts of God, or the public enemy, or acts of regulations of any governmental agency or any other conditions or circumstances beyond the control of the City or Engineer. Temporary delays of services caused by any of the above which results in additional costs beyond those outlined may require renegotiation of this agreement.

4.1.15 The City will give prompt written notice to the Engineer if the City becomes aware of any fault or defect in the Project or nonconformance with the Project Documents.

4.1.16 Unless otherwise provided in this Agreement, the Engineer and the Engineer’s consultants shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to hazardous materials in any form at the project site, including but not limited to asbestos products, polychlorinated biphenyl (PCB), or other toxic substances.
4.1.17 In the event asbestos or toxic materials are encountered at the jobsite, or should it become known in any way that such materials may be present at the jobsite or any adjacent areas that may affect the performance of Engineer’s services, Engineer may, at their option and without liability for consequential or any other damages, suspend performance of services on the project until the City retains appropriate specialist CONSULTANT(S) or contractor(s) to identify, abate, and/or remove the asbestos or hazardous or toxic materials.

4.1.18 This agreement, unless explicitly indicated in writing, shall not be construed as giving Engineer the responsibility or authority to direct or supervise construction means, methods, techniques, sequences, or procedures of construction selected by any contractors or subcontractors or the safety precautions and programs incident to the work of any contractors or subcontractors.

4.1.19 Neither the City nor the Engineer, nor its Consultants, shall hold the other liable for any claim based upon, arising out of, or in any way involving the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids, or gases, waste materials, or other irritants, contaminants, or pollutants.

4.1.20 Neither the City nor the Engineer, nor its Consultants, shall hold the other liable for any claim based upon, arising out of, or in any way involving the specification or recommendation of asbestos, in any form, or any claims based upon use of a product containing asbestos.

4.1.21 Engineer hereby represents and warrants that it does not fail or refuse to collect or remit South Dakota or City sales or use tax for transactions which are taxable under the laws of the State of South Dakota.

4.2 City of Rapid City NonDiscrimination Policy Statement

In compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination act of 1975, the Americans with Disabilities Act of 1990, and other nondiscrimination authorities it is the policy of the City of Rapid City, 300 Sixth Street, Rapid City, SD 57701-5035, to provide benefits, services, and employment to all persons without regard to race, color, national origin, sex, disabilities/handicaps, age, or income status. No distinction is made among any persons in eligibility for the reception of benefits and services provided by or through the auspices of the City of Rapid City.

Engineer will permit access to any and all records pertaining to hiring and employment and to other pertinent data and records for the purpose of enabling the Commission, its agencies or representatives, to ascertain compliance with the above provisions.
This section shall be binding on all subcontractors or suppliers.

Section 5—Payments to the Engineer

5.1 Schedule of Pay Rates

The City will pay the Engineer for services rendered or authorized extra work according to the Engineer’s hourly and reimbursable rate schedule described in Exhibit C.

5.2 Fee

The maximum amount of the fee for the services as detailed in Section 1.2 shall not exceed $46,918.00 unless the scope of the project is changed as outlined in Section 4. If expenses exceed the maximum amount, the Engineer shall complete the design as agreed upon here without any additional compensation. Sub task dollar amounts may be reallocated to other tasks as long as the total fee is not exceeded. Prime consultant may not mark up sub-consultant or sub-contractor services.

5.3 Progress Payments

Monthly progress payments shall be processed by the City upon receipt of the claim as computed by the Engineer based on work completed during the month per the hourly rates and allowable reimbursable as established in Section 5.1 and approved by the City.

Net payment to the Engineer shall be due within forty-five (45) days of receipt by the City.

Section 6—Completion of Services

The Engineer shall complete services on or before June 4, 2018 based on a notice to proceed on or before March 12, 2018.

Section 7—Insurance Requirements

7.1 Insurance Required

The Engineer shall secure the insurance specified below. The insurance shall be issued by insurance company(s) acceptable to the City and may be in a policy or policies of insurance, primary or excess. Certificates of all required insurance including any policy endorsements shall be provided to the City prior to or upon the execution of this Agreement.
7.2 **Cancellation**

The Engineer will provide the City with at least 30 days’ written notice of an insurer’s intent to cancel or not renew any of the insurance coverage. The Contractor agrees to hold the City harmless from any liability, including additional premium due because of the Contractor’s failure to maintain the coverage limits required.

7.3 **City Acceptance of Proof**

The City’s approval or acceptance of certificates of insurance does not constitute City assumption of responsibility for the validity of any insurance policies nor does the City represent that the coverages and limits described in this agreement are adequate to protect the Engineer, its consultants or subcontractors interests, and assumes no liability therefore. The Engineer will hold the City harmless from any liability, including additional premium due, because of the Engineer’s failure to maintain the coverage limits required.

7.4 **Specific Requirements**

7.4.1 Workers’ compensation insurance with statutory limits required by South Dakota law. Coverage B-Employer’s Liability coverage of not less than $500,000 each accident, $500,000 disease-policy limit, and $500,000 disease-each employee.

7.4.2 Commercial general liability insurance providing occurrence form contractual, personal injury, bodily injury and property damage liability coverage with limits of not less than $1,000,000 per occurrence, $2,000,000 aggregate, and $2,000,000 aggregate products and completed operations. If the occurrence form is not available, claims-made coverage shall be maintained for three years after completion of the terms of this agreement. The policy shall name the City and its representatives as an additional insured.

7.4.3 Automobile liability insurance covering all owned, nonowned, and hired automobiles, trucks, and trailers. The coverage shall be at least as broad as that found in the standard comprehensive automobile liability policy with limits of not less than $1,000,000 combined single limit each occurrence. The required limit may include excess liability (umbrella) coverage.

7.4.4 Professional liability insurance providing claims-made coverage for claims arising from the negligent acts, errors or omissions of the Engineer or its consultants, of not less than $1,000,000 each occurrence and not less than $1,000,000 annual aggregate.
Coverage shall be maintained for at least three years after final completion of the services.

Section 8—Hold Harmless

The Engineer hereby agrees to hold the City harmless from any and all claims or liability including attorneys' fees arising out of the professional services furnished under this Agreement, and for bodily injury or property damage arising out of services furnished under this Agreement, providing that such claims or liability are the result of a negligent act, error or omission of the Engineer and/or its employees/agents arising out of the professional services described in the Agreement.

Section 9—Independent Business

The parties agree that the Engineer operates an independent business and is contracting to do work according to his own methods, without being subject to the control of the City, except as to the product or the result of the work. The relationship between the City and the Engineer shall be that as between an independent contractor and the City and not as an employer-employee relationship. The payment to the Engineer is inclusive of any use, excise, income or any other tax arising out of this agreement.

Section 10—Indemnification

If this project involves construction and Engineer does not provide consulting services during construction including, but not limited to, onsite monitoring, site visits, site observation, shop drawing review and/or design clarifications, City agrees to indemnify and hold harmless Engineer from any liability arising from the construction activities undertaken for this project, except to the extent such liability is caused by Engineer's negligence.

Section 11—Controlling Law and Venue

This Agreement shall be subject to, interpreted and enforced according to the laws of the State of South Dakota, without regard to any conflicts of law provisions. Parties agree to submit to the exclusive venue and jurisdiction of the State of South Dakota, 7th Judicial Circuit, Pennington County.

Section 12—Severability

Any unenforceable provision herein shall be amended to the extent necessary to make it enforceable; if not possible, it shall be deleted and all other provisions shall remain in full force and effect.
Section 13—Funds Appropriation

If funds are not budgeted or appropriated for any fiscal year for services provided by the terms of this agreement, this agreement shall impose no obligation on the City for payment. This agreement is null and void except as to annual payments herein agreed upon for which funds have been budgeted or appropriated, and no right of action or damage shall accrue to the benefit of the Engineer, its successors or assignees, for any further payments. For future phases of this or any project, project components not identified within this contract shall not constitute an obligation by the City until funding for that component has been appropriated.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.

City of Rapid City:       Engineer:

MAYOR

DATE:_________________________ DATE:_________________________

ATTEST:

FINANCE OFFICER

Reviewed By:

Mary Bosworth, PROJECT MANAGER

DATE: _______________________

CITY’S DESIGNATED PROJECT REPRESENTATIVE       ENGINEERING FIRM’S DESIGNATED PROJECT REPRESENTATIVE

NAME Mary Bosworth, PE, CFM       NAME Jerry Foster, PE
PHONE 605-394-4154       PHONE 605-342-4105
EMAIL mary.bosworth@rcgov.org       EMAIL jfoster@fmgeengineering.com
SCOPE OF SERVICES

FOR

PERRINE AND UNNAMED TRIBUTARY DRAINAGE BASIN DESIGN PLAN (DBDP) AMENDMENTS

CIP / PROJECT NO. 51189.1 / 18-2430

The City of Rapid City has requested professional services for the Perrine and Unnamed Tributary Drainage Basin Design Plans.

PROJECT BACKGROUND

The Unnamed Tributary DBDP was prepared by Davis-Atkins and Associates in 1987 for the Pennington County Drainage Commission. It was subsequently revised in 1991 to meet the requirements of the City of Rapid City Drainage Criteria Manual. The Perrine DBDP was prepared by FMG, Inc. in 1999 for the City of Rapid City. The Perrine drainage basin is located west of the Unnamed Tributary drainage basin. A map is attached showing the locations of the two basin boundaries as identified in the DBDP’s. During the development of the sub-basins for the Perrine DBDP it was apparent that flows from the Unnamed Tributary and Perrine basins discharge outside their respective basin boundaries as identified in the DBDP’s. The Unnamed Tributary DBDP was not amended to reflect the flows discharging from the Perrine basin into the Unnamed Tributary basin.

Since the preparation of the original DBDP’s there have been significant drainage improvements, development, land use changes, and more current future land use plans in both basins. In addition, new and improved hydrologic and hydraulic methods have been developed. A proposed development in the Unnamed Tributary basin (directly east of the Perrine basin) has necessitated the need for updated analysis within both drainage basin boundaries and updated flow rates to provide a stormwater management plan that will effectively convey flow from the uppermost reaches of the basins to the creek.

PROJECT SCOPE

The proposed project consists of revised Drainage Basin Design Plans for the Perrine and Unnamed Tributary basins and will be completed in two phases:

PHASE 1

An updated analysis shall be prepared for drainage design flows directly affecting the proposed development described above. The flow analysis is requested for portions of both the Perrine and Unnamed Tributary basins. A map is attached illustrating the general area anticipated for study during the Phase 1 portion of the project.
The Phase 1 analysis will provide flows for 4 conditions as follows:

- Pre-settlement Conditions for Hydrology and Hydraulics
- Existing Land Use and Existing Hydraulic Condition.
- Future Land Use with Existing Hydraulic Conditions.
- Future Land Use with Proposed Hydraulic Conditions.

Flows will be calculated for the 2 Year, 10 Year, and 100 Year storms.

The intent of the Phase 1 analysis is to determine design flows along South Valley Drive south of Highway 44 and along Highway 44 east of South Valley Drive. These flows will then be used by others for final design of conveyance system along and/or through the proposed development located east of South Valley Drive and south of Highway 44.

If drainage areas shown on the Phase 1 Study Area Map are determined during the study to not drain to the above design points, either under existing or future conditions, they will be excluded from the Phase 1 analysis.

Proposed hydraulic improvements for conveyance systems and detention ponds will be described in general terms in the report. However, hydraulic improvements through the above noted proposed development will not be described in the report as those improvements will be determined by the design of the development.

The flow analysis will address major drainage facilities only. Minor drainages are beyond the scope of the project.

Cost estimates for improvements are excluded from Phase 1.

Calculations will use the U.S. Army Corps of Engineers HEC-HMS Modeling System as the basis of runoff and routing analysis. Other models to supplement HEC-HMS may be HY8, Culvertmaster, and Flowmaster. HECRAS modeling of drainage ways is beyond the scope of the project; rather, channel capacity will be determined using normal depth type methodology.

Professional services for Phase 1 consist of three Tasks: Investigative, Draft Analysis and Report, and Final Analysis and Report.
Phase 1 Task 1 - Investigative:

This task consists of services necessary for investigative services to locate, gather, and compile various background data. Various methods and sources will be used and may include the following itemized services.

1.1 Kick-off Conference: The consultant shall meet with City Engineering Department staff prior to beginning work to discuss the project. FMG will take minutes and distribute minutes.

1.2 Obtain and review drainage reports and engineering data for the study area that are provided by the City Engineering Department. It is assumed that reports and data at the City will be provided to FMG in PDF format.

1.3 Obtain City GIS data and setup base maps of the study area.

1.4 Site visits. These visits are for familiarization of the study area. Major drainage ways will be "walked" where possible and documented with digital photos. Pipe sizes and other hydraulic structures will be measured in the field for size verification.

1.5 Limited field topographic surveys will be completed to determine existing sizes and elevations of critical culverts, storm sewers, and channel flow lines. Sanitary sewer flow lines for critical crossings will be determined from the City GIS database. Other hydraulic information will be determined from City provided as – built and the GIS contours.

1.6 Right of Way and Easement Documents. This task is to obtain right of way, easement, and historical plat information related to the major drainages in the study area. This information will be obtained through a search at the Pennington County Courthouse.

Phase 2 Task 2 – Draft Analysis and Report

This task consists of services necessary for preparing the Draft ANALYSIS AND REPORT. The following generally described tasks are in Task 2.

2.1 Layout the sub basins and hydraulic routing network skeleton. Multiple iterations are anticipated as the project progresses. It is anticipated the initial layout will somewhat mimic previous basins to compare modeling techniques and results. It is further anticipated that additional layouts may be necessary to better model the basin as the study progresses.

2.2 Develop Computer Modeling Input Data. This task will prepare the input data needed for the HMS models. Input data will be prepared following the recommendations in the Infrastructure Design Criteria. This task includes review of the City Criteria recommendations and possible adjustments to the recommendations as may be judged necessary.

Future imperviousness will be based on the Future Land Use Plan Maps in the 2014 City of Rapid City Comprehensive Plan.

Soils data will be determined from NRCS soil surveys. Field investigation of soils is beyond the scope of the project.
Existing detention pond storage and discharge data will be taken from the design report/drawings of each particular pond if available. The storage data will be checked against GIS contours as a test of reasonableness. An examination of the stage discharge data will be made prior to use in the models and adjustments made if determined necessary.

Channel routing geometry for the HMS model will be based on a combination of as built drawings, design drawings, and GIS data as judged applicable.

2.3 HMS Modeling Initial Comparison Scenarios. Scenarios anticipated are (1) Presettlement Conditions for comparison of HMS results to applicable simplistic methods, (2) comparisons to the 1990 DBDP where judged necessary, and (3) comparisons to other studies where judged necessary. The fundamental goal of this task is to judge the reasonableness of the HMS results.

2.4 Alternate Analysis, and Improvement Recommendations. This task is the process where current conditions in the basin are modeled, future development is modeled with existing hydraulic features to identify issues, and future development is modeled with recommended improvements. Proposed hydraulic conditions shall include existing detention ponds, proposed detention ponds, and flow conveyance systems. The recommendations in the previous DBDP’s shall be utilized for the starting point for proposed conditions and then modified as judged necessary and appropriate for this updated study. Recommendations will be conceptual in nature and will not include detailed drawings. Stormwater Quality Improvements related to the improvements will be limited to general recommendations for incorporation into detention ponds or channels.

2.5 Interim Submittals and Technical Memorandums will be made as necessary.

2.6 Progress Meetings with City Staff. Meetings will be held at least monthly.

2.7 Draft Submittal. At a minimum the Draft submittal shall include Introduction, Basin Information, Hydrologic Data, Hydraulic Data, and Improvement Recommendations.

2.8 A meeting will be held with the City after their review of the draft submittal report. The consultant will provide a written summary of the meeting.

Phase 2 Task 3 Final Analysis and Report

This task consists of services necessary for preparing the Final Analysis and Report. The following generally described tasks are in Task 3.

3.1 Submit Final Review Analysis and Report. This submittal will incorporate City review comments from the Task 2 draft submittal.

3.2 A meeting will be held with the City after their review of the Final Review submittal. The consultant will provide a written summary of the meeting.

3.3 Submit Final Analysis and Report which will incorporate City comments from the Final Review submittal.
PHASE 2

Preparation of revised DBDP’s for stormwater runoff control in the Perrine and Unnamed Tributary basins. The DBDP’s shall include existing and fully developed hydraulic conditions, conceptual designs, design documents, maps, stormwater quality improvements, infrastructure improvement costs, and other information necessary to adequately describe existing and proposed improvements for the drainage basins.

It is anticipated that the DBDP will include the following:

- Delineation of the final boundary limits within the Perrine and Unnamed Tributary Drainage Basins that will be used for the DBDP;
- Identification of the sub-basins within the delineated drainage basin: using natural topography, man-made barriers, existing street network, major street plan, existing storm sewer facilitates, previously completed interim drainage basin design plans and/or desired design points. Desired design points may be location identified as potential road crossings, potential detention cell locations; existing or potential storm sewer facilities or the confluence of drainage ways, etc.;
- Existing and future land use, zoning and street classification, basin topography, soil classifications, wetlands, floodplain, problem areas and significant design points/features including irrigation canals;
- Locations of all channels, potential detention areas and other natural and manmade features which will have an impact on the hydrologic and hydraulic modeling of the basin; Inventory of existing facilities;
- Detailed description of existing and proposed facilities – including information on existing conditions, recommended improvements, modeling parameters, design plan flows and flow hydrographs, typical sections, narrative statement describing the existing and proposed facilities;
- Evaluation of existing and proposed facilities for multiple use opportunities;
- Engineers probable construction cost for all recommended facilities, in 2018 dollars;
- Recommendations of right-of-way and/or easement requirements;
- Conceptual design parameters for regional storm drainage facilities;
- Protections for the existing natural channels within the proposed drainage facilities. Utilization of existing natural features within the drainage should be considered to augment stormwater quality treatment and minimize destruction of wetlands;
- Stormwater quality treatment within the existing and proposed drainage facilities;
- 2-year, 10-year and 100-year runoff volumes from basins for both existing and fully developed land use conditions; and
- Descriptive text concerning the existing and fully-developed conditions, the hydrologic and hydraulic modeling methodology.

Phase 2 scope and fee will be prepared following completion of Phase 1.
<table>
<thead>
<tr>
<th>PHASE 1 - TASK 1 - INVESTIGATIVE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Kickoff Meeting</td>
<td>$ 624.00</td>
</tr>
<tr>
<td>1.2 Review City Provided Previous Drainage Plans/Studies/As Built Plans</td>
<td>$ 1,544.00</td>
</tr>
<tr>
<td>1.3 Data Gathering of City GIS Data, Set Up Base Maps</td>
<td>$ 1,260.00</td>
</tr>
<tr>
<td>1.4 Site Visits</td>
<td>$ 1,592.00</td>
</tr>
<tr>
<td>1.5 Limited Field Survey for size and flow line of Critical Culverts, Storm Sewers, &amp; Channels</td>
<td>$ 1,736.00</td>
</tr>
<tr>
<td>1.6 Right of Way and Easement Research</td>
<td>$ 884.00</td>
</tr>
<tr>
<td><strong>TOTAL FOR TASK 1-INVESTIGATIVE</strong></td>
<td>$ 7,640.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 1 - TASK 2 - DRAFT ANALYSIS AND REPORT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Layout Subbasins and Initial Hydraulic Modeling Skeleton</td>
<td>$ 1,904.00</td>
</tr>
<tr>
<td>2.2 Develop updated modeling input data</td>
<td>$ 4,912.00</td>
</tr>
<tr>
<td>2.3 HMS Modeling Initial Comparison Scenarios</td>
<td>$ 4,632.00</td>
</tr>
<tr>
<td>2.4 Alternate Analysis and Improvement Recommendations</td>
<td>$ 18,168.00</td>
</tr>
<tr>
<td>2.5 Interim Submittals/Technical Memorandums</td>
<td>$ 1,864.00</td>
</tr>
<tr>
<td>2.6 Progress Meetings with City Staff</td>
<td>$ 888.00</td>
</tr>
<tr>
<td>2.7 Prepare and Submit Draft Analysis and Report</td>
<td>$ 3,200.00</td>
</tr>
<tr>
<td>2.8 Draft Submittal Review Meeting</td>
<td>$ 296.00</td>
</tr>
<tr>
<td><strong>TOTAL FOR TASK 2-DRAFT ANALYSIS AND REPORT</strong></td>
<td>$ 35,570.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 1 - TASK 3 - FINAL REPORT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Revise Draft Report per City Comments and make Final Review Submittal</td>
<td>$ 1,934.00</td>
</tr>
<tr>
<td>3.2 Final Review Meeting with City Staff</td>
<td>$ 296.00</td>
</tr>
<tr>
<td>3.3 Submit Final Analysis and Report</td>
<td>$ 1,378.00</td>
</tr>
<tr>
<td><strong>TOTAL FOR TASK 3-FINAL ANALYSIS AND REPORT</strong></td>
<td>$ 3,608.00</td>
</tr>
</tbody>
</table>

**TOTAL ALL TASKS**                                                  **$ 46,918.00**
EXHIBIT C

FMG ENGINEERING
RATE SCHEDULE
FOR

PERRINE AND UNNAMED TRIBUTARY
DRAINAGE BASIN DESIGN PLAN (DBDP) AMENDMENTS
CIP / PROJECT NO. 51189.1 / 18-2430

<table>
<thead>
<tr>
<th>PERSONNEL</th>
<th>RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Civil Engineer</td>
<td>$148.00/hr</td>
</tr>
<tr>
<td>Senior Geotechnical Engineer</td>
<td>$127.00/hr</td>
</tr>
<tr>
<td>Senior Civil Engineer</td>
<td>$125.00/hr</td>
</tr>
<tr>
<td>Senior Materials Specialist</td>
<td>$115.00/hr</td>
</tr>
<tr>
<td>Civil Engineer 2 – PE</td>
<td>$90.00/hr</td>
</tr>
<tr>
<td>Civil Engineer 1 – PE</td>
<td>$82.00/hr</td>
</tr>
<tr>
<td>Graduate Engineer – EIT</td>
<td>$78.00/hr</td>
</tr>
<tr>
<td>CADD Technician</td>
<td>$75.00/hr</td>
</tr>
<tr>
<td>Engineering Technician</td>
<td>$60.00/hr</td>
</tr>
<tr>
<td>GIS Specialist</td>
<td>$90.00/hr</td>
</tr>
<tr>
<td>Registered Land Surveyor</td>
<td>$92.00/hr</td>
</tr>
<tr>
<td>Survey Crew Chief</td>
<td>$72.00/hr</td>
</tr>
<tr>
<td>Survey Technician</td>
<td>$60.00/hr</td>
</tr>
<tr>
<td>Senior Administrative Assistant</td>
<td>$60.00/hr</td>
</tr>
</tbody>
</table>

**VEHICLES & EXPENSES**

<table>
<thead>
<tr>
<th>Expense</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilization (support vehicle)</td>
<td>$0.70/mile</td>
</tr>
<tr>
<td>Travel Costs - air, lodging, transport, meals, etc.</td>
<td>cost</td>
</tr>
<tr>
<td>Document/Plans Reproduction</td>
<td>cost</td>
</tr>
</tbody>
</table>