CITY OF PORTLAND AGREEMENT FOR PROFESSIONAL, TECHNICAL, OR EXPERT SERVICES

CONTRACT NUMBER 30005200

TITLE OF WORK PROJECT Conduit Cathodic Protection Assessment

This contract is between the City of Portland ("City," or "Bureau") and <u>TRC Pipeline Services, LLC</u>, hereafter called Consultant. The City's Project Manager for this contract is <u>Stephen Ngai</u>.

Effective Date and Duration

This contract shall become effective on <u>July 1, 2016</u>. This contract shall expire, unless otherwise terminated or extended, on <u>March 1, 2017</u>.

Consid	eration
(0)	City

(a) City agrees to pay Consultant a sum not to exceed \$400,000 for accomplishment of the work.

☐ Estate/Trust

(b) Interim payments shall be made to Consultant according to the schedule identified in the STATEMENT OF THE WORK AND PAYMENT SCHEDULE.

Name (print ful	l legal name): TRC P	peline Services, LLC			
Address: 21 Gr	iffin Road North, Win	dsor, CT 06095			s
	ification Number (ΕΙΝ Γ CONSULTANTS: D		703 OCIAL SECURITY NUMBER	R (SSN) – LEAVE BI	LANK IF NO EIN]
City of Portland	Business Tax Registr	ation Number:	786825		
Citizenship:	Nonresident alien	Yes	□No		
Business Desig	gnation (check one):	☐ Individual	☐ Sole Proprietorship	☐ Partnership	☐ Corporation

CONSULTANT DATA AND CERTIFICATION

Payment information will be reported to the IRS under the name and taxpayer I.D. number provided above. Information must be provided prior to contract approval.

☐ Public Service Corp. ☐ Government/Nonprofit

TERMS AND CONDITIONS

1. Standard of Care

☐ Limited Liability Co (LLC)

Consultant shall perform all services under this contract using that care, skill, and diligence that would ordinarily be used by similar professionals in this community in similar circumstances.

2. Effect of Expiration

Passage of the contract expiration date shall not extinguish, prejudice, or limit either party's right to enforce this Contract with respect to any default or defect in performance that has not been corrected.

3. Order of Precedence

This contract consists of these Terms and Conditions, the Statement of Work and Payment Schedule, and any exhibits that are attached. Any apparent or alleged conflict between these items will be resolved by using the following order of precedence: a) these Terms and Conditions; b) Statement of Work and Payment Schedule; and c) any exhibits attached to the contract.

4. Early Termination of Contract

- (a) The City may terminate this Contract for convenience at any time for any reason deemed appropriate in its sole discretion. Termination is effective immediately upon notice of termination given by the City.
- (b) Either party may terminate this Contract in the event of a material breach by the other party that is not cured. Before termination is permitted, the party seeking termination shall give the other party written notice of the breach, its intent to terminate, and fifteen (15) calendar days to cure the breach. If the breach is not cured within 15 days, the party seeking termination may terminate immediately by giving written notice that the Contract is terminated.

5. Remedies and Payment on Early Termination

- (a) If the City terminates pursuant to 4(a) above, the City shall pay the Consultant for work performed in accordance with the Contract prior to the termination date. No other costs or loss of anticipated profits shall be paid.
- (b) If the City terminates pursuant to 4(b) above, the City is entitled all remedies available at law or equity. In addition, Consultant shall pay the City all damages, costs, and sums incurred by the City as a result of the breach.
- (c) If the Consultant justifiably terminates the contract pursuant to subsection 4(b), the Consultant's only remedy is payment for work prior to the termination. No other costs or loss of anticipated profits shall be paid.
- (d) If the City's termination under Section 4(b) was wrongful, the termination shall be automatically converted to one for convenience and the Consultant shall be paid as if the Contract was terminated under Section 4(a).
- (e) In the event of early termination the Consultant's work product before the date of termination becomes property of the City.

6. Assignment

Consultant shall not subcontract, assign, or transfer any of the work scheduled under this agreement, without the prior written consent of the City. Notwithstanding City approval of a subconsultant, the Consultant shall remain obligated for full performance hereunder, and the City shall incur no obligation other than its obligations to the Consultant hereunder. The Consultant agrees that if subconsultants are employed in the performance of this Agreement, the Consultant and its subconsultants are subject to the requirements and sanctions of ORS Chapter 656, Workers' Compensation.

7. Compliance with Applicable Law

Consultant shall comply with all applicable federal, state, and local laws and regulations. Consultant agrees it currently is in compliance with all tax laws. Consultant shall comply with Title VI of the Civil Rights Act of 1964 and its corresponding regulations. In connection with its activities under this Contract, the Consultant shall comply with all applicable Grant Terms and conditions. This includes all terms and conditions contained in this contract and, for a contract involving a grant, the Grant Terms and Conditions.

8. Indemnification for Property Damage and Personal Injury

Consultant shall indemnify, defend, and hold harmless the City, its officers, agents, and employees, from all claims, losses, damages, and costs (including reasonable attorney fees) for personal injury and property damage arising out of the intentional or negligent acts or omissions of the Consultant, its Subconsultants, suppliers, employees or agents in the performance of its services. Nothing in this paragraph requires the Consultant or its insurer to indemnify the City for claims of personal injury or property damage caused by the negligence of the City. This duty shall survive the expiration or termination of this contract.

Consultant's maximum aggregate liability hereunder shall be equal to the limits of coverage contained in consultant's insurance policies, but Consultant's maximum aggregate liability shall, at a minimum, be equal to the limits of insurance required under section 9 (Insurance).

9. Insurance

Consultant shall obtain and maintain in full force at Consultant expense, throughout the duration of the Contract and any warranty or extension periods, the required insurance identified below. The City reserves the right to require additional insurance coverage as required by statutory or legal changes to the maximum liability that may be imposed on Oregon cities during the term of the Contract.

COL	titaet.
(a)	Workers' compensation insurance as required by ORS Chapter 656 and as it may be amended. Unless exempt under ORS Chapter 656, the Consultant and all subconsultants shall maintain coverage for all subject workers.
	Required and attached // Proof of exemption (i.e., completion of Workers' Compensation Insurance Statement)
(b)	General commercial liability (CGL) insurance covering bodily injury, personal injury, property damage, including coverage for independent consultant's protection (required if any work will be subcontracted), premises/operations, contractual liability, products and completed operations, in per occurrence limit of not less than \$1,000,000, and aggregate limit of not less than \$2,000,000.
	🖾 Required and attached // 🔲 Waived by Bureau Director or designee // 🔲 Reduce by Bureau Director or designee
(c)	Automobile liability insurance with coverage of not less than \$1,000,000 each accident, and an umbrella or excess liability coverage of \$2,000,000. The insurance shall include coverage for any auto or all owned, scheduled, hired and non-owned auto. This coverage may be combined with the commercial general liability insurance policy.
	🛮 Required and attached // 🔲 Waived by Bureau Director or designee // 🔲 Reduce by Bureau Director or designee
(d)	Professional Liability and/or Errors & Omissions insurance to cover damages caused by negligent acts, errors or omissions related to the professional services, and performance of duties and responsibilities of the Consultant under this contract in an amount with a combined single limit of not less than \$1,000,000 per occurrence and aggregate of \$3,000,000 for all claims per occurrence. In lieu of an occurrence based policy, Consultant may have claims-made policy in an amount not less than

\$1,000,000 per claim and \$3,000,000 annual aggregate, if the Consultant obtains an extended reporting period or tail coverage

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for not less than three (3) years following the termination or expiration of the Contract.

X	Required and attached //	☐ Waived by	V Bureau Directo	r or designee // [Reduce by	Bureau Director	or designee
	recquired and attached //	LI Walveu D	y Duicau Diiccio	I OI UCSIGNICE //	I Reduce by	Duicau Director	of designee

Continuous Coverage; Notice of Cancellation: The Consultant agrees to maintain continuous, uninterrupted coverage for the duration of the Contract. There shall be no termination, cancellation, material change, potential exhaustion of aggregate limits or non renewal of coverage without thirty (30) days written notice from Consultant to the City. If the insurance is canceled or terminated prior to completion of the Contract, Consultant shall immediately notify the City and provide a new policy with the same terms. Any failure to comply with this clause shall constitute a material breach of Contract and shall be grounds for immediate termination of this Contract.

Additional Insured: The liability insurance coverages, except Professional Liability, Errors and Omissions, or Workers' Compensation, shall be without prejudice to coverage otherwise existing, and shall name the City of Portland and its bureaus/divisions, officers, agents and employees as Additional Insureds, with respect to the Consultant's activities to be performed, or products or services to be provided. Coverage shall be primary and non-contributory with any other insurance and self-insurance. Notwithstanding the naming of additional insureds, the insurance shall protect each additional insured in the same manner as though a separate policy had been issued to each, but nothing herein shall operate to increase the insurer's liability as set forth elsewhere in the policy beyond the amount or amounts for which the insurer would have been liable if only one person or interest had been named as insured.

Certificate(s) of Insurance: Consultant shall provide proof of insurance through acceptable certificate(s) of insurance, including additional insured endorsement form(s) and all other relevant endorsements, to the City prior to the award of the Contract if required by the procurement documents (e.g., request for proposal), or at execution of Contract and prior to any commencement of work or delivery of goods or services under the Contract. The Certificate(s) will specify all of the parties who are endorsed on the policy as Additional Insureds (or Loss Payees). Insurance coverages required under this Contract shall be obtained from insurance companies acceptable to the City of Portland. The Consultant shall pay for all deductibles and premium. The City reserves the right to require, at any time, complete, certified copies of required insurance policies, including endorsements evidencing the coverage the required.

Subconsultant(s): Consultant shall provide evidence that any subconsultant, if any, performing work or providing goods or service under the Contract has the same types and amounts of coverages as required herein or that the subconsultant is included under Consultant's policy.

10. Ownership of Work Product

All work product produced by the Consultant under this contract is the exclusive property of the City. "Work Product" includes, but is not limited to: research, reports, computer programs, manuals, drawings, recordings, photographs, artwork and any data or information in any form. The Consultant and the City intend that such Work Product shall be deemed "work made for hire" of which the City shall be deemed the author. If for any reason a Work Product is deemed not to be a "work made for hire," the Consultant hereby irrevocably assigns and transfers to the City all right, title and interest in such work product, whether arising from copyright, patent, trademark, trade secret, or any other state or federal intellectual property law or doctrines. Consultant shall obtain such interests and execute all documents necessary to fully vest such rights in the City. Consultant waives all rights relating to work product, including any rights arising under 17 USC 106A, or any other rights of authorship, identification or approval, restriction or limitation on use or subsequent modifications. If the Consultant is an architect, the Work Product is the property of the Consultant-Architect, and by execution of this contract, the Consultant-Architect grants the City an exclusive and irrevocable license to use that Work Product.

Notwithstanding the above, all pre-existing trademarks, services marks, patents, copyrights, trade secrets, and other proprietary rights of Consultant are and will remain the exclusive property of Consultant.

11. EEO Certification

In the event Consultant provides in excess of \$2,500.00 for services to the City in any fiscal year, Consultant shall obtain EEO certification from the City.

12. Equal Benefits

Consultant must comply with the City's Equal Benefits program as prescribed by Chapter 3.100 of the Code of the City of Portland. The required documentation must be filed with Procurement Services, City of Portland, prior to contract execution.

13. Successors in Interest

The provisions of this contract shall be binding upon and shall inure to the benefit of the parties hereto, and their respective successors and approved assigns.

14. Severability

The parties agree that if any term or provision of this contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the contract did not contain the particular term or provision held to be invalid.

15. Waiver

The failure of the City to enforce any provision of this contract shall not constitute a waiver by the City of that or any other provision.

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16. Errors

The Consultant shall promptly perform such additional services as may be necessary to correct errors in the services required by this contract without undue delays and without additional cost.

17. Governing Law/Venue

The provisions of this contract shall be interpreted, construed and enforced in accordance with, and governed by, the laws of the State of Oregon without reference to its conflict of laws provisions that might otherwise require the application of the law of any other jurisdiction. Any action or suits involving any question arising under this contract must be brought in the appropriate court in Multnomah County Oregon.

18. Amendments

All changes to this contract, including changes to the scope of work and contract amount, must be made by written amendment and approved by the Chief Procurement Officer to be valid. Any amendment that increases the original contract amount by more than 25% must be approved by the City Council to be valid.

19. Business Tax Registration

The Consultant shall obtain a City of Portland business tax registration number as required by PCC 7.02 prior to beginning work under this Contract.

20. Prohibited Conduct

The Consultant shall not hire any City employee who evaluated the proposals or authorized the award of this Contract for two years after the date the contract was authorized without the express written permission of the City and provided the hiring is permitted by state law.

21. Payment to Vendors and Subconsultants

The Consultant shall timely pay all subconsultants and suppliers providing services or goods for this Contract.

22 Access to Records

The Consultant shall maintain all records relating to this Contract for three (3) years after final payment. The City may examine, audit and copy the Consultant's books, documents, papers, and records relating to this contract at any time during this period upon reasonable notice. Copies of these records shall be made available upon request. Payment for the reasonable cost of requested copies shall be made by the City.

23. Audits

- (a) The City may conduct financial and performance audits of the billings and services specified in this agreement at any time in the course of the agreement and during the three (3) year period established by paragraph 22. Audits will be conducted in accordance with generally accepted auditing standards as promulgated in <u>Government Auditing Standards</u> by the Comptroller General of the United States Government Accountability Office.
- (b) If an audit discloses that payments to the Consultant exceed the amount to which the Consultant was entitled, the Consultant shall repay the amount of the excess to the City.

24. Electronic Signatures

The City and Consultant may conduct this transaction, including any contract amendments, by electronic means, including the use of electronic signatures.

25. Merger Clause

This Contract encompasses the entire agreement of the parties, and supersedes all previous understandings and agreements between the parties, whether verbal or written.

26. Dispute Resolution/Work Regardless of Disputes

The parties shall participate in mediation to resolve disputes before conducting litigation. The mediation shall occur at a reasonable time after the conclusion of the Contract with a mediator jointly selected by the parties. Notwithstanding any dispute under this Contract, the Consultant shall continue to perform its work pending resolution of a dispute, and the City shall make payments as required by the Contract for undisputed portions of the work. In the event of litigation no attorney fees are recoverable. No different dispute resolution paragraph(s) in this contract or any attachment hereto shall supersede or take precedence over this provision.

27. Progress Reports: /⊠/ Applicable /□/ Not Applicable

If applicable, the Consultant shall provide monthly progress reports to the Project Manager as described in the Statement of the Work and Payment Schedule.

28. Consultant's Personnel: /\(\simeg\) / Applicable /\(\subseteq\) / Not Applicable

If applicable, the Consultant shall assign the personnel listed in the Statement of the Work and Payment Schedule for the work required by the Contract and shall not change personnel without the prior written consent of the City, which shall not be unreasonably withheld.

29. Subconsultants

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The Consultant shall use the subconsultants identified in its proposals. The Consultant shall not change subconsultant assignments without the prior written consent of the Chief Procurement Officer. The City will enforce all social equity contracting and Minority, Women and Emerging Small Business (M/W/ESB) subcontracting commitments submitted by the Consultant in its proposals. Failure to use the identified M/W/ESB subconsultants without prior written consent is a material breach of contract. For contracts valued \$50,000 or more, the Consultant shall submit a Monthly Subconsultant Payment and Utilization Report (MUR), made part of this contract by reference, reporting ALL subconsultants employed in the performance of this agreement. An electronic copy of the MUR may be obtained by contacting the PTE Contract Compliance Specialist.

30. Third Party Beneficiaries

There are no third party beneficiaries to this contract. Enforcement of this contract is reserved to the parties.

31. Conflict of Interest

Consultant hereby certifies that, if applicable, its contract proposal is made in good faith without fraud, collusion or connection of any kind with any other proposer of the same request for proposals or other City procurement solicitation(s), that the Consultant as a proposer has competed solely on its own behalf without connection or obligation to, any undisclosed person or firm. Consultant certifies that it is not a City official/employee or a business with which a City official/employee is associated, and that to the best of its knowledge, Consultant, its employee(s), its officer(s) or its director(s) is not a City official/employee or a relative of any City official/employee who: i) has responsibility in making decisions or ability to influence decision-making on the contract or project to which this contract pertains; ii) has or will participate in evaluation or management of the contract; or iii) has or will have financial benefits in the contract. Consultant understands that should it elect to employ any former City official/employee during the term of the contract then that the former City official/Consultant employee must comply with applicable government ethics and conflicts of interest provisions in ORS Chapter 244, including but not limited to ORS 244.040(5) and ORS 244.047, and the City's Charter, Codes and administrative rules, including lobbying prohibitions under Portland City Code Section 2.12.080.

32. Respectful Workplace Behavior

The City of Portland is committed to a respectful work environment, free of harassment, discrimination and retaliation and other inappropriate conduct. Every individual has a right to work in a professional atmosphere where all individuals are treated with respect and dignity. The City's HR Rule 2.02 covers all employees with the City of Portland as well as consultants, vendors or consultants who provide services to the City of Portland. By signing this Contract/Agreement, the Consultant indicates compliance with all terms and conditions contained in this Contract including HR 2.02.

STATEMENT OF THE WORK AND PAYMENT SCHEDULE

INTRODUCTION

The City of Portland Water Bureau (PWB) requires the completion of an indirect assessment of their water transmission pipelines. These three (3) pipelines are each approximately twenty five (25) miles in length. The pipelines are designated Conduit No. 2, Conduit No. 3, and Conduit No. 4. The diameters of the pipelines are 44-inch, 54-inch, and 60-inch respectively. The Consultant shall complete the indirect assessment of the pipelines.

The methodology for completing the indirect inspections of the pipelines shall be similar to the second step of External Corrosion Direct Assessment (ECDA) process as defined by National Association of Corrosion Engineers (NACE) SP0502 Standard Practice Pipeline External Corrosion Direct Assessment Methodology for proving pipeline integrity. The Consultant shall perform the following surveys during the indirect inspection field work:

- ON/OFF Close Interval Potential Survey (CIPS)
- Close Interval Soil Resistivity (Geonics)
- Alternating Current Voltage Gradient (ACVG) and Direct Current Voltage Gradient (DCVG)
- Anode Attenuation CIPS
- Stray Current Evaluation
- Continuity Testing

The survey methods and their results for these water pipelines may differ from that of modern well coated energy pipelines, due to their large diameter, close proximity to other pipelines, and poor coating quality.

The final deliverables shall be presented to the PWB Project Manager (PM) in the form of two (2) separate reports; the Survey Data Report and the Survey Baseline Report.

SCOPE OF WORK

The indirect inspection survey approach shall involve multiple passes for each pipeline in the survey areas. The Consultant shall complete a complete survey on the pipelines within the watershed as directed by the PWB PM. The Consultant shall survey approximately to 33% of the total pipeline mileage. The Consultant shall also work with the PWB PM to select locations outside of the watershed for survey. These locations shall be selected based on present IR free pipe to soil potentials, accessibility, past

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history, PWB established regions, and risk of stray current. The Consultant shall conduct an interrupted test point survey to assist in determining the best locations the employ the full survey methodology.

The total survey pipeline mileage shall be approximately twenty five (25) miles. This includes the six (6) miles inside the watershed for each pipeline, totaling eighteen (18) miles, and an additional seven (7) miles of pipeline outside of the watershed. In order to complete the Conduit Cathodic Protection Assessment Project (Project), the Consultant shall perform the tasks below:

- 1. Locate Survey
- 2. Soil Resistivity Survey
- 3. On/Off Close Interval Survey (CIS)
- 4. DCVG Survey
- 5. Anode Gradient Survey
- 6. Stray Current Measurements
- 7. Continuity Testing
- 8. ACVG Survey
- 9. Depolarized CIS

A detailed breakdown of each task approach is presented in the following sections. The crew build for the field work is as follows:

Title	Hours / Day
Principal Technical Specialist	11
Project Manager	4
Pipeline Integrity Specialist	2
Planner / Scheduler	0.25
Data Analyst	2
Project Administrator	0.25
Field Technician II	. 11
Field Technician II	11
Field Technician I	10
Field Technician I	10
Breaks and Meal Periods	4
Automobile	2
Indirect Inspection Toolbox	2

Task 1 - Locate Survey

Prior to performing the CIS survey, the pipeline centerlines shall be located by the Consultant. The centerline shall be marked with marking paint and/or flags. The centerline data shall be collected using sub-meter accurate handheld Global Positioning System (GPS) units. The Consultant shall use control points at approximately 100' spacing and all points of intersect for aligning the CIS data to sub-meter quality GPS location. Electronic depth of cover (DOC) shall be collected at these control points. The Consultant shall use conductive locating methods. Based on knowledge of these pipelines, the ability to push signal down pipeline will be hindered by the poor coating conditions, presence of multiple lines in the corridor, and large diameter or the pipelines. If conductive locating methods will not work the Consultant shall use inductive locating after receiving written authorization from the PWB PM.

Task 2 - Soil Resistivity Survey

Soil resistivity shall be collected using the American Society for Testing and Materials (ASTM) G57 Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method (four (4) pin Wenner Method) made in a compass rose consisting of cardinal and intercardinal directions of N-S, E-W, NE-SE, and NW-SW. The soil resistivity readings shall be collected using 2.5°, 5°, 10°, and 15° pin spacing. Data analysis shall be by Barnes Layer Method will be performed to calculate the resistivity at the pipeline depth. This testing shall be performed at a minimum of ten (10) locations to be selected in conjunction with the PWB PM. All data shall be collected using sub-meter accurate handheld GPS units.

The Consultant shall utilize a Geonics EM-31 MKII electromagnetic (EM) ground conductivity meter. The meter will have an incorporated GPS data logging unit. EM testing shall be performed at the same locations as the soil resistivity measurements. The EM data shall be provided in spreadsheet format.

To minimize erroneous readings due to the presence of the pipelines, all resistivity and conductivity measurements shall be suitably offset from the pipelines but in apparently similar soil conditions.

Task 3 - On/Off CIS

An interrupted CIS survey shall be conducted on the conduits to establish their existing level of cathodic protection. An interruption cycle of 1.5 seconds on and .5 seconds off shall be utilized. The CIS measurements shall be taken on approximately five (5) foot centers. If the pipelines are found to be excessively shallow, the spacing shall be reduced accordingly.

In consideration of NACE SP0207-2007 Section 7.2.3, pipelines with diameters much greater than the depth of burial may require more than one CIS survey pass. Also, for pipeline corridors with closely spaced electrically continuous pipelines, a single survey may be sufficient to represent all structures. These conditions will be closely monitored by the Consultant and communicated to PWB during the locate survey. This will help determine the survey method to use for the Project.

For quality control purposes, data loggers shall be set at discreet locations within the survey area. Wave prints shall also be collected at the beginning and end of the daily survey segment.

The Consultant shall perform no drilling of paved surfaces for unless directed in writing by the PWB PM. The Consultant shall take offset measurements in cases where the pipeline is installed in such conditions. Standard industry practice accepts offset readings of up to ten (10) feet. Conditions may allow for incrementally increasing the offset reading distance of ten (10) feet. If the offset is of such distance that the measurements do not appear reasonable, the PWB PM shall be notified and provide the Consultant approved modifications to this task.

During the CIS survey, the specific current sources affecting the survey segment will be interrupted. The Consultant shall interrupt a minimum of two current sources beyond the survey segment, as the crew moves down the right-of-way (ROW) additional current sources shall be interrupted and or removed from the interruption plan. If additional current sources are suspected a Conduit Protection (CP) influence test shall be performed. The testing consists of temporarily interrupting rectifiers individually outside the survey segment until there is no longer any potential change within the survey segment while the rectifier is in the on or off position. The City's system contains a total of sixty five (65) rectifiers. Conduit No. 1 is being used as a linear anode which has twenty (20) rectifiers connected to the single anode. This configuration along with the fact that Conduit No. 2, Conduit No. 3, and Conduit No. 4 are interconnected at multiple locations may require that many, if not all, system rectifiers be simultaneously interrupted. The Consultant shall employ these standard practices to ensure that all known CP sources influencing the survey segment are interrupted.

Task 4 - DCGV Survey

The Consultant shall perform a DCVG survey on the subject pipelines. For the sake of maintaining the polarization on the pipelines, the rectifiers shall be set to an interruption cycle of 1.5 seconds on and .5 seconds off for this survey. Since it is likely that these lines will depolarize quickly, the best method will be to maintain a longer on cycle and shorter off cycle. The DCVG survey shall be conducted on approximately ten (10) foot spacing. In multiline corridors with twenty (20) feet of separation or less, a single pass between the pipelines may be utilized. This is equivalent to a ten (10) foot offset on either pipeline. Indications within a multiline corridor shall be noted as multiline indications due to the sharing of current and difficulty in identifying which structure has the defect. Percent IR shall not be evaluated in multiline corridors.

If the Consultant observes that the minimum shift between on and off is not being achieved between test stations, the survey may not be viable for the entire pipeline. In this event, the Consultant shall notify the PWB PM and an agreed method to proceed shall be established and approved by the PWB PM in writing.

The Consultant shall perform no drilling of paved surfaces unless directed in writing by the PWB PM. The Consultant shall take offset measurements in cases where the pipeline is installed in such conditions. Standard industry practice accepts offset readings of up to ten (10) feet. Conditions may allow for incrementally increasing the offset reading distance of ten (10) feet. If the offset is of such distance that the measurements do not appear reasonable, the PWB PM shall be notified and provide the Consultant on approved modifications to this task. All data will be collected using sub-meter accurate handheld GPS units.

The Consultant shall perform this survey on three (3) miles of conduit per day utilizing a five man crew. One day of time has been included for this effort to determine the effectiveness of this test.

Task 5 - Anode Gradient Survey

The Consultant shall perform an anode gradient CIS at six (6) locations to a sufficient distance to determine the anode gradient effect. The CIS survey shall be performed in at least four (4) directions from the center of each anode bed.

Three (3) days for a five man crew has been budgeted for this task. The crew shall work one day per location per two man survey team with a fifth man to provide support to both crews.

Task 6 - Stray Current Measurements

The Consultant shall perform stray current measurements at four (4) specific locations upon written authorization of PWB PM. Stray current testing methods are subjective to test station availability and access to foreign facilities.

Testing methods shall include short sections of CIS on the interfered-with structure while interrupting the cathodic protection from the interfering structure. Testing shall take place at both the pickup and discharge locations. All data shall be collected using submeter accurate handheld GPS units.

Task 7 - Continuity Testing

The Consultant shall perform one (1) day of continuity testing at some specific locations upon written authorization of PWB PM. After receiving additional information from the PWB PM the Consultant shall develop a detailed continuity testing plan.

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Continuity testing methods may include but not be limited to pipeline current mapping, current response testing, and/or resistance testing.

Task 8 - ACVG Survey

The Consultant shall perform an ACVG survey on the subject pipelines. The PCM plus transmitter shall be connected to the existing anode bed locations in an attempt to push the required signal down the pipelines. The ACVG survey shall be conducted on approximately fifteen (15) foot intervals. Fifteen foot intervals is not the standard practice for performing an ACVG survey, but will be effective in locating larger coating faults which are of more concern. This shall increase the production of this survey and provide valuable data needed to determine the trouble spots along the pipeline.

In multiline corridors with twenty (20) feet of separation or less, a single pass between the pipelines may be utilized. This is equivalent to a ten (10) foot offset on either pipeline. Conditions may allow for incrementally increasing the offset distance. Indications within a multiline corridor shall be noted as multiline indications due to the sharing of current and difficulty in identifying which structure has the defect. All data shall be collected using sub-meter accurate handheld GPS units.

If the transmitter signal is falling off rapidly as the Consultant moves away from the rectifier, the survey may not be viable for the entire pipeline. In this event, the Consultant shall notify the PWB PM and an agreed method to proceed shall be established and approved by the PWB PM in writing.

One day of time has been budgeted in this contract for this effort to determine the effectiveness of this test.

Task 9 - Depolarized CIS

The Consultant shall conduct a depolarized CIS survey on the conduits to establish their free corroding potential. This survey will help establish the amount of polarization each line is receiving form the existing cathodic protection systems. Prior to the survey beginning, data loggers shall be set at discreet locations and shall be monitored daily by the Consultant. The Consultant and PWB shall agree upon the amount of time needed to achieve depolarization prior to the start of the depolarized survey.

The CIS measurements shall be taken on approximately five (5) foot centers to correlate with the interrupted survey. If the pipelines are found to be excessively shallow, the spacing shall be reduced per NACE SP0207-2007.

In consideration of NACE SP0207-2007 Section 7.2.3, pipelines with diameters much greater than the depth of burial may require more than one CIS survey pass. Also, for pipeline corridors with closely spaced electrically continuous pipelines, a single survey may be sufficient to represent all structures. These conditions shall be closely monitored by the Consultant and communicated to the PWB PM during the locate survey. This will help determine the best survey method to use for the Project.

The Consultant shall perform no drilling of paved surfaces for this scope of work unless directed in writing by the PWB PM. The Consultant shall take offset reads in cases where the pipeline is installed in such conditions. Standard industry practice accepts offset readings of up to ten (10) feet. Conditions may allow for incrementally increasing the offset distance. If the offset is of such distance that the readings do not appear reasonable, the Consultant shall notify the PWB PM will be notified and provide the Consultant on approved modifications to this task.

REPORTING AND DELIVERABLES

The Consultant shall provide the PWB PM with two reports associated with the above referenced work. The first being a Data Report and the second being a Baseline Report. Report details and contents are listed below.

In addition to the final reports, the Consultant shall deliver weekly status updates to document production and progress. Along with the status updates, field charts shall be developed for the CIS data and delivered weekly. Other tests such as DCVG, ACVG, soil resistivity, stray current, and continuity testing shall be delivered weekly in an agreed to format. The weekly data shall be raw data in draft form. These weekly data deliveries shall serve as verification of completed work and justification for milestone billing.

The Survey Data Report shall provide all data collected. The CIPS and the Close interval Soil Resistivity Survey shall be provided in both tabular and GIS graphical format and shall include the following:

- · CIPS;
- Close Interval Soil Resistivity Survey;
- ACVG/DCVG;
- CIPS Anode Gradient/Attenuation;
- Stray Current Measurements; and,
- · Continuity Testing/Isolation Testing.

The data created by the surveys shall integrate with existing PWB systems and platforms. The data generated from the surveys shall meet the following criteria:

- Data format shall be relational database showing concurrent stationing with display charts, graphs and summary reports:
- All charts, graphs, summary reports shall be provided in hard print copy and in digital format;

- Digital format shall be transferable with ArcGIS, Microsoft Excel, and/or dbase format and per NACE SP 507-14
 ECDA Integrity Data Exchange;
- If the data cannot be formatted as noted above, the Consultant shall demonstrate level of effort necessary to transfer data to non-propriety programs. This effort shall be undertaken prior to any data being taken in the field.

The Consultant shall prepare a draft report. The PWB will review and comment on the report within three weeks. The Consultant shall organize a 1 ½ hour workshop during the review period to discuss the data obtained in the surveys with the PWB. This workshop shall be used to familiarize PWB management with the survey methods, how well they worked, what sections of the conduits were assessed, and obtain PWB input for the baseline report. The Consultant shall incorporate comments into the Survey Data report to create a final version.

The Survey Baseline Report shall interpret the data obtained in the surveys. The report shall discuss:

- Levels of Cathodic Protection based on CIPS instant off vs depolarization measurements;
- · Identify hot spot corrosion locations for direct examination;
- · Estimates of coating efficiency and corresponding CP current requirements/limits and opportunities for additional CP;
- Utility of Conduit No. 1 as anode;
 - Current output vs stray current/risk assessment
 - Consideration of circulating current, direct connection to conduits
 - Consideration of segmenting lengths of Conduit No. 1
- Deep well rectifier output cost/benefit of ground bed life vs pipe polarization, utility of maintaining existing anode beds at low amperage output and utility of new deep well anode beds;
- Requirements to protect C2, C3, C4;
 - Approach to partial protections/hot spot protection
 - Approach to segment pipe sections for full protection
- Costs for CP upgrade for alternative approaches to system reconfiguration that protect C2, C3, and C4 by partial protection and by segmenting pipeline sections for full protection;
- Projected life of existing and new CP installation for protecting the conduits, and;
- Stray current results at natural gas pipelines, light rail, test sites.

Assess the efficacy and limitations of the existing impressed current system, and provide recommendations to operate, maintain and further develop the impressed cathodic protection system.

The Consultant shall prepare a draft report. The PWB PM shall review and comment on the report within three (3) weeks. The Consultant shall organize a 1 ½ hour workshop during the review period to discuss the recommendations. This workshop will be used to discuss with PWB management, recommendations, the cost of improvements, and when they should be implemented. The Consultant shall incorporate comments into the Survey Data Report to create a final version.

The Consultant shall provide the PWB PM with:

- (10) Copies of Draft Survey Data Report plus Microsoft Word and PDF format;
- (10) Copies of Final Survey Data Report plus Microsoft Word and PDF format;
- Mobile data storage device containing the raw survey data;
- (10) Copies of Draft Survey Baseline Report plus Microsoft Word and PDF format; and,
- (10) Copies of Final Survey Baseline Report plus Microsoft Word and PDF format.

PROJECT MANAGEMENT

The Consultant shall manage this Project using sound project management principles. Immediate notification to the PWB PM shall be made upon recognition of variables that impact the cost, quality, and schedule.

SCHEDULE

All work under this contract shall be completed by February 1, 2017. The Consultant shall provide a detailed schedule to the PWB PM and shall maintain the schedule unless otherwise directed by the PWB PM in writing.

EXPECTATIONS AND CLARIFICATIONS

Below is a list of key expectations and clarification considered during the process of assembling the scope of work.

- This scope of work is based on a clear and passable right-of-way with no obstructions in the chosen survey areas. If
 impassable or inaccessible areas require survey, the Consultant shall notify the PWB PM and an agreed method to proceed
 shall be established and approved by the PWB PM in writing.
- There is adequate test station access to perform the indirect inspections for the survey.
- This scope of work, schedule, and not to exceed amount is based on standard work hours (typical 10 hour day) of Monday
 through Saturday, except when it may be necessary to survey during nighttime and/or morning hours in roadways to meet
 permit requirements, and/or for safety considerations.

- This contract does not include costs associated with collaborating with other facility operators or land owners. The PWB shall coordinate with other facility operators and land owners if required. The Consultant shall provide a working schedule and survey plan for areas that may require contacting operators or land owners.
- In the event that soil conditions are too dry to conduct accurate field measurements the PWB PM shall make arrangements for water to be available to the Consultant at the measurement sites.

CONSULTANT PERSONNEL

The Consultant shall assign the following personnel to do the work in the capacities designated:

NAME	ROLE ON PROJECT	
Wesley Avery	Project Manager	
Michael Baxter	Pipeline Integrity Specialist	

SUBCONSULTANTS

The Consultant shall assign the following subconsultants to perform work in the capacities designated:

NAME	ROLE ON PROJECT	SUBCONTRACT AMOUNT
Cathodic Protection Engineering, Inc.	Survey / Field Work	\$70,000

The City will enforce all social equity contracting and Minority, Women and Emerging Small Business (M/W/ESB) subcontracting commitments submitted by the Consultant in its Proposal. For contracts valued \$50,000 or more, the Consultant shall submit a Monthly Subconsultant Payment and Utilization Report (MUR), made part of this contract by reference, reporting ALL subconsultants employed in the performance of this agreement. A copy of the Subconsultant Change Request Form can be found on Procurement Services' website under Contractor Resources.

COMPENSATION

The maximum that the Consultant can be paid on this contract is \$\frac{\$400,000}{}\$ (hereafter the "not to exceed" amount). The "not to exceed" amount includes all payments to be made pursuant to this contract, including reimbursable expenses, if any. Nothing in this contract requires the City to pay for work that does not meet the Standard of Care or other requirements of the Contract. The actual amount to be paid Consultant may be less than that amount.

The Consultant is entitled to receive progress payments for its work pursuant to the Contract as provided in more detail below. The City will pay Consultant based on these invoices for acceptable work performed and approved until the "not to exceed" amount is reached. Thereafter, Consultant must complete work based on the Contract without additional compensation unless there is a change to the scope of work.

Any estimate of the hours necessary to perform the work is not binding on the City. The Consultant remains responsible if the estimate proves to be incorrect. Exceeding the number of estimated hours of work does not impose any liability on the City for additional payment.

If work is completed before the "not to exceed" amount is reached, the Consultant's compensation will be based on the Consultant's bills previously submitted for acceptable work performed and approved.

PAYMENT TERMS: Net 30 Days

The Consultant shall be compensated per the attached Exhibit A – Budget Detail. The task totals were determined using the hourly rates identified in Exhibit B – Hourly Rate Sheet.

Hourly Rates

The billing rates shall not exceed those set forth in Exhibit B.

Subconsultant Costs

Compensation for subconsultants shall be limited to the same restrictions imposed on the Consultant. The maximum markup on subconsultant services shall not exceed 5%.

Progress Payments

On or before the 15th of each month, the Consultant shall submit to the Water Bureau's Accounts Payable Department an invoice for work performed by the Consultant during the preceding month. The invoice shall contain the City's Contract Number and set out all items for payment including, but not limited to: the name of the individual, labor category, direct labor rate, hours worked

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during the period, tasks performed, and percentage complete of each task. The Consultant shall also attach photocopies of claimed reimbursable expenses, if applicable. The Consultant shall stamp and approve all subconsultant invoices and note on the subconsultant invoice what they are approving as "billable" under the contract. The billing from the prime should clearly roll up labor and reimbursable costs for the prime and subconsultants – matching the subconsultant invoices. Prior to initial billing, the Consultant shall develop a billing format for approval by the City. Invoices shall be e-mailed to wbaps@portlandoregon.gov

The City shall pay all amounts to which no dispute exists within 30 days of receipt of the invoice. Payment of any bill, however, does not preclude the City from later determining that an error in payment was made and from withholding the disputed sum from the next progress payment until the dispute is resolved.

The Consultant shall make full payment to its subconsultants within 10 business days following receipt of any payment made by the City to Consultant.

ACH Payments

It is the City's policy to pay its Consultant invoices via electronic funds transfers through the automated clearing house (ACH) network. To initiate payment of invoices, Consultants shall execute the City's standard ACH Vendor Payment Authorization Agreement.

Upon verification of the data provided, the Payment Authorization Agreement will authorize the City to deposit payment for services rendered directly into Consultant accounts with financial institutions. All payments shall be in United States currency.

WORKERS' COMPENSATION INSURANCE STATEMENT

Consultant Signature: Linguage Curstis Date: 5-17-16 Finity TRC Pipeline Services, CCC

IF YOUR FIRM HAS CURRENT WORKERS' COMPENSATION INSURANCE, CONSULTANT MUST SIGN HERE:

1, undersigned, am authorized to act on behalf of entity designated below, and I hereby certify that this entity has current Workers' Compensation Insurance.

		<u>DOES NOT HAVE</u> CURRENT WORKI NG INDEPENDENT CONSULTANT C			NI MUSI COMPLETE
As an in	dependent	Consultant, I certify that I meet the follow	ing standards:		
		or business entity providing labor or service or services for which such registration is re		Chapter 701, <u>if</u> the individual	or business entity
tax re		te income tax returns in the name of the bu filed for the previous year if the individual and			
busin busin enga	ess. Exce	or business entity represents to the public t pt when an individual or business entity fil performs farm labor or services that are rep independently established business when for g:	es a Schedule F as part of the portable on Schedule C, an i	ne personal income tax returns individual or business entity is	s and the individual or s considered to be
	Λ.	The labor or services are primarily carriperforms the labor or services, or are plas the location of the business;			
	B.	Commercial advertising or business can the individual or business entity has a t			rchased for the business, o
	C.	Telephone listing and service are used by an individual who performs the labor		ate from the personal residen	ce listing and service used
	D.	Labor or services are performed only p	ursuant to written contracts;		
	E.	Labor or services are performed for two	or more different persons v	within a period of one year; or	r
	F.	The individual or business entity assure evidenced by the ownership of perform to the labor or services to be provided.			
	Consult	ant Signature		Date	
FOR CI	TY USE (ONLY			
PROJEC ORS 670 business consultar	CF MAN/ 0.600 Indepentity that nt" if the st	ANGER-COMPLETE ONLY IF CONSI- pendent Consultant standards. As used in a performs labor or services for remuneration tandards of this section are met. The contri	rarious provisions of ORS C on shall be considered to per- acted work meets the follow	hapters 316, 656, 657, and 70 form the labor or services as a ing standards:	01, an individual or an "independent
		or business entity providing the labor or se vices, subject only to the right of the person			
		or business entity providing labor or servic uses required by state law or local governm			
	ndividual or service	or business entity providing labor or services;	es furnishes the tools or equ	ipment necessary for perform	nance of the contracted
4. The i	ndividual	or business entity providing labor or service	es has the authority to hire a	nd fire employees to perform	the labor or services;
		labor or services is made upon completion riodic retainer.	of the performance of spec	ific portions of the project or	is made on the basis of
	City Pr	oject Manager Signature		Date	-
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CONSULTANT SIGNATURE:

This contract may be signed in two (2) or more counterparts, each of which shall be deemed an original, and which, when taken together, shall constitute one and the same Agreement.

The parties agree the City and Consultant may conduct this transaction, including any contract amendments, by electronic means, including the use of electronic signatures.

I, the undersigned, agree to perform work outlined in this contract in accordance to the STANDARD CONTRACT PROVISIONS, the terms and conditions, made part of this contract by reference, and the STATEMENT OF THE WORK made part of this contract by reference; hereby certify under penalty of perjury that I/my business am not/is not in violation of any Oregon tax laws; hereby certify that my business is certified as an Equal Employment Opportunity Affirmative Action Employer and is in compliance with the Equal Benefits Program as prescribed by Chapter 3.100 of Code of the City of Portland; and hereby certify I am an independent consultant as defined in ORS 670.600.

TRC Pipel	ine Services, LLC	Date:	May 11, 2016	
Name:	Edward J. Wiegele Senior Vice President and Pipeline Services Director			

CONTRACT NUMBER: 30005200

CONTRACT TITLE: Conduit Cathodic Protection Assessment

TY OF	F PORTLAND SIGNATURES:		
		Date:	
	Bureau Director	Date.	
		Date:	
	Chief Procurement Officer		
		Date:	8
	Elected Official		
oved	:		
		Date:	
	Office of City Auditor APPROVED AS TO FORM		
oved	as to Form:	Date:	5/17/18
	Office of City Attorney CITY ATTORNEY	Date.	1

Contract Exhibit A – Budget Detail

During the field work, this project shall be invoiced monthly based on a day rate \$7,500 per day.

LUMP SUM SUMMARY				
Description	Amount (\$)			
Field Work Plan Draft	26,500			
Field Work Plan Final	3,500			
Survey Data Report Draft	32,250			
Survey Data Report Final (per requested revision)	3,500			
Survey Baseline Report Draft	46,500			
Survey Baseline Report Final (per requested revision)	3,500			
Mobilization	12,000			
Interim Mobilization	9,000			
Demobilization	12,000			
LUMP SUM TOTAL	_ \$148,750			

FIELD WORK SUMMARY				
Description	Day Rate	Estimated Quantity (miles or locations)	Days	Amount (\$)
Task 1 Pipeline Locate Survey	7,500	25 miles	6	45,000
Task 2 Soil Resistivity Survey	7,500	10 locations	1	7,500
Task 3 Close Interval Survey – On/Off	7,500	25 miles	9	67,500
Task 4 DCVG Survey	7,500	1 mile	1	7,500
Task 5 Anode Gradient CIS Survey	7,500	6 locations	3	22,500
Task 6 Stray Current Measurements	7,500	4 locations	4	30,000
Task 7 Continuity Testing	7,500	Unknown	1	7,500
Task 8 ACVG Survey	7,500	1 mile	1	7,500
Task 9 Close Interval Survey – Depolarized	7,500	25 miles	6	45,000
Project Management Site Visits	1,250	NA	9	11,250
对政协区的经济协议。但但这种政策	FIE	ELD WORK TOTAL	32	\$251,250
CONTRACT TOTAL				\$400,000

Contract Exhibit B - Rate Sheet

Labor Classification	Billing Rate	Unit of measure
ENGINEERING SERVICES		
Project Manager	\$160	Per Hour
Engineering Supervisor	\$160	Per Hour
Sr. Technical Advisor	\$160	Per Hour
Priccipal GIS Technologist	\$160	Per Hour
Project Specialist	\$147	Per Hour
Database Administrator	\$147	Per Hour
Field Services Manager	\$147	Per Hour
Sr. Engineer	\$142	Per Hour
Sr. Engineer Tech	\$142	Per Hour
Designer Supervisor	\$142	Per Hour
Principal Designer	\$142	Per Hour
GIS Specialist	\$127	Per Hour
Systems Engineer	\$127	Per Hour
Sr. Designer	\$127	Per Hour
Mapper	\$112	Per Hour
Engineer	\$105	Per Hour
Engineer Tech	\$105	Per Hour
Designer	\$99	Per Hour
Drafter	\$70	Per Hour
Safety Coordinator	\$66	Per Hour
Executive Sponsor	\$185	Per Hour
Chief Engineer	\$185	Per Hour
Program Manager	\$170	Per Hour
SURVEY SERVICES		
Survey Director	\$157	Per Hour
Survey Manager	\$139	Per Hour
Registered Land Surveyor	\$121	Per Hour
Survey Data Technician	\$94	Per Hour
Survey Field Manager	\$90	Per Hour
Survey Supervisor	\$83	Per Hour
Party Chief	\$55	Per Hour
Instrument Man	\$36	Per Hour
Rodman	\$26	Per Hour
2 Man Survey Crew	\$ 91	Per Hour
3 Man Survey Crew	\$117	Per Hour
4 Man Survey Crew	\$143	Per Hour

Labor Classification	Billing Rate	Unit of measure
EQUIPMENT AND SURVEY REIMBURSABLES		
RTK GPS System w/ data collector	\$250	Per Day
Differential GPS System w/ data collector	\$100	Per Day ,
High Definition 3-D Laser Scanner	\$2,000	Per Day
Survey work truck	\$120	Per Day
Conventional Total Station w/ data collector	\$50	Per Day
Laser Range Finder	\$15	Per Day
UTV	\$75	Per Day
Survey Material trailer	\$15	Per Day
Line Locator	\$15	Per Day
Consumables (Wooden stakes, lathe, flagging, paint, rebar, field books, batteries, etc.)	Cost + 10%	
LAND SERVICES		
Technology Advisor	\$475 - \$600	Per Day
Document Supervisor	\$490 - \$515	Per Day
Entry Level Land Representative	\$425 - \$445	Per Day
Land Representative	\$445 - \$490	Per Day
Senior Land Representative	\$495 - \$540	Per Day
Principal Land Representative	\$540 - \$585	Per Day
Land Supervisor	\$600 - \$725	Per Day
Land Manager	\$610 - \$775	Per Day
Executive QA/QC	\$115	Per Hour
Safety, QA/QC	\$900	Per Day
Database Management	\$900	Per Day
REGULATORY AND PUBLIC AFFAIRS SERVICES		
Environmental Technical Staff	\$85 - \$125	Per hour
Environmental Project Management	\$130 - \$170	Per hour
Environmental Principal	\$175 - \$205	Per hour
Stakeholder Outreach Staff	\$100 - \$150	Per hour
Senior Public/Government Affairs Staff	\$165 - \$190	Per hour
Principal Regulatory & Public Affairs Staff	\$190 - \$250	Per hour
Principal Regulatory & Public Affairs Staff	\$7,200	Up to 32 hours/month
Training, Outreach/Agency Meetings & Public Speaking	\$3,000	Per day
INTEGRITY SERVICES		
Integrity Operations Manager	\$170	Per Hour
Integrity Engineering Technician	\$116	Per Hour
NDT Technician & Welding Inspectors	\$120	Per Hour
Coating/Utility Inspectors	\$111	Per Hour
Senior Field Technician/Supervisor	\$94	Per Hour
Field Technician II – more than 2 years of experience	\$77	Per Hour
Field Technician I – less than 2 years of experience	\$66	Per Hour
Field Assistant/Laborer	\$50	Per Hour
Indirect Inspection Field Toolbox (Up to 10 Current Interrupters)	\$275	Per Day or Kit
Additional Current Interrupter	\$50	Per Day or Kit
NDT Field Toolbox	\$250	Per Day or Kit
Automobile	\$120	Per Day or Kit

Labo	Classification	Billing Rate	Unit of measure
PROJ	ECT CONTROLS, ADMINISTRATION, AND PROCUREMENT		
Procu	rement Manager	\$160	Per Hour
Proje	ct Controller	\$147	Per Hour
Buye	r/Expediter	\$91	Per Hour
Plann	er/Scheduler/Analyst	\$113	Per Hour
Mater	rialsman (60-HR/WK work week basis)	\$66	Per Hour
Proje	ct Administrator/Clerk /Administrative Assistant	\$64	Per Hour
Field	Office Administrator (60-HR/WK work week basis)	\$54	Per Hour