

**PROFESSIONAL SERVICES AGREEMENT FOR PROFESSIONAL ENGINEERING
SERVICES IN CONNECTION WITH ROSEDALE ROAD, ELM ROAD, AND
CLEVELAND LANE INTERSECTION IMPROVEMENTS**

THIS AGREEMENT (“Agreement” or “agreement”) is by and between THE MUNICIPALITY OF PRINCETON (“PRINCETON”), a municipal corporation of the state of New Jersey, 400 Witherspoon Street, Princeton, New Jersey, 08540 (hereinafter referred to as "PRINCETON") and ARORA AND ASSOCIATES, P.C., with offices at Princeton Pike Corporate Center, 1200 Lenox Drive, Suite 200, Lawrenceville, New Jersey 08648 (hereinafter referred to as "CONSULTANT".)

WITNESS

WHEREAS, PRINCETON desires to obtain professional engineering services in connection with Rosedale Road, Elm Road, and Cleveland Lane Intersection Improvements; and

WHEREAS, CONSULTANT provided a written proposal to PRINCETON for purposes of performing the sought-after professional services to PRINCETON, a copy of which is attached as Exhibit B hereto; and

WHEREAS, by resolution, the Council awarded an agreement for professional services to CONSULTANT without public bidding as authorized by law, in accordance with the provisions of the Local Public Contracts Law, N.J.S.A. 40A:11-1 et seq.

NOW THEREFORE, IT IS AGREED by and between PRINCETON and CONSULTANT as follows:

1. Scope of Services.

- a. In consideration for payment of the cost set forth in Section 3 below, CONSULTANT shall use its best efforts to perform professional services and other related duties as set forth in the CONSULTANT’S proposal, a copy of which is attached hereto as Exhibit B and incorporated herein as if fully restated. Should there be any conflict between the terms of CONSULTANT’S proposal and this Agreement, the terms of this Agreement shall control.

2. Contract Term.

- a. This Agreement shall become effective upon the date of the final signature below.
- b. In accordance with N.J.S.A. 40A:11-15 (9), the term of this contract shall be authorized for the length of time necessary for the completion of the actual construction, unless terminated sooner pursuant to the termination provisions set forth in subsection 2c. below.
- c. The Agreement may be terminated by either party, by giving thirty (30) days advanced written notice to the other, to the address as set forth on page 1 above.

3. Compensation; Manner of Payment.

- a. The anticipated cost of CONSULTANT’S services as described herein shall not exceed

one hundred twenty-one thousand, five hundred dollars and zero cents (\$121,500.00), subject to annual budgetary appropriations.

- b. CONSULTANT shall bill PRINCETON monthly on municipal vouchers for services rendered and reimbursement for such expenses incurred during the prior month, based on the hourly rates and fees set forth in Exhibit B. CONSULTANT shall give written notice to PRINCETON when the CONSULTANT has billed eighty percent (80%) of the compensation set forth in paragraph 3a.
- c. PRINCETON agrees to pay CONSULTANT within thirty (30) days of receipt of invoice and an audited and approved signed voucher.

4. Terms and Conditions.

- a. CONSULTANT shall take note of and comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27 regarding Affirmative Action/ Equal Employment Opportunity and the Americans with Disabilities Act. The parties hereby incorporate into this Agreement the Affirmative Action/Non-Discrimination addendum per the attached Exhibit A.
- b. CONSULTANT shall take note of and comply with the requirements of P.L. 2004, c.57 (N.J.S.A. 52:32-44 et seq.) regarding Business Registration and Sales and Use Tax. The parties hereby incorporate into this Agreement the Business Registration and Sales and Use Tax addendum per the attached Exhibit C.
- c. The Terms and Conditions printed on the purchase order issued by PRINCETON to CONSULTANT shall be incorporated into this agreement per the attached Exhibit D.

5. Political Contributions.

- a. This Agreement has been awarded to CONSULTANT based on the merits and abilities of CONSULTANT to provide the services as described herein. This Agreement was not awarded through a "fair and open process" as that phrase is defined in N.J.S.A. 19:44A-20.7. As such, CONSULTANT hereby certifies that CONSULTANT (including persons and other business entities having an interest in CONSULTANT, as defined by N.J.S.A. 19:44A-20.7) has neither made a contribution that is reportable by the recipient under P.L. 1973, c.83, N.J.S.A. 19:44A-1 et seq. (i.e., in excess of \$200.00), in the one (1) year period preceding the award of this Agreement nor will it make a reportable contribution during the term of this Agreement to any municipal committee of a political party if a member of that political party is serving in an elective public office of the municipality of PRINCETON when the Agreement is awarded, or to any candidate committee of any person serving in an elective public office of the municipality of PRINCETON when the Agreement is awarded.
- b. CONSULTANT is advised of the responsibility to file an annual disclosure statement on political contributions with the New Jersey Election Law Enforcement Commission (ELEC) pursuant to N.J.S.A. 19:44A-20.27 if CONSULTANT receives in a calendar year \$50,000 or more in the aggregate through agreements or contracts with a public entity. It is CONSULTANT'S responsibility to determine if filing is necessary. Additional

information on this requirement is available from ELEC at (888) 313-3532 or www.elec.state.nj.us.

6. Insurance; Hold Harmless.

- a. Prior to commencing work, CONSULTANT shall furnish PRINCETON with a Certificate of Insurance as evidence that it has procured such commercial, automobile, workers' compensation, employer's and professional liability insurance coverage as is customary for the type and scope of services to be rendered under this Agreement. PRINCETON, and its officers, employees, agents and consultants, shall be listed as additional insured and as the certificate holder on such policies.
- b. CONSULTANT shall defend, indemnify and hold harmless PRINCETON, its officers, employees, agents and consultants from any and all claims, suits, actions, damages or costs, of any nature whatsoever, whether for personal injury, property damage or other liability, arising out of or in any way connected with the CONSULTANT'S acts or omissions, or those of its officers, employees, agents and consultants, in connection with this Agreement.
- c. It is also agreed that the acceptance of the final payment by the CONSULTANT shall be considered as a release in full of all claims against PRINCETON arising out of or by reason of performance or non-performance of the CONSULTANT'S obligations under this contract.

7. Complete Agreement.

- a. This Agreement and any attachments hereto or incorporated by reference represents the entire contract between the parties and shall take precedence over all other prior or existing understandings or agreements, if any, whether oral or written.

IN WITNESS WHEREOF, the parties have set their hand and seal the day and date first written above.

ATTEST:

THE MUNICIPALITY OF PRINCETON

By: _____
Dawn M. Mount, Municipal Clerk

By: _____
Mark Freda, Mayor

Date: _____

Date: _____

WITNESS:

ARORA AND ASSOCIATES, P.C.

By: _____

By: _____
Authorized Representative

Date: _____

Date: _____

EXHIBIT A

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE **N.J.S.A. 10:5-31 et seq. (P.L. 1975, c. 127)** **N.J.A.C. 17:27 et seq.**

GOODS, GENERAL SERVICE AND PROFESSIONAL SERVICES CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union of the contractor's commitments under this chapter and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to meet targeted county employment goals established in accordance with N.J.A.C. 17:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, and labor unions, that it does not discriminate on the basis of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the targeted employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

Letter of Federal Affirmative Action Plan Approval;

Certificate of Employee Information Report; or

Employee Information Report Form AA302 (electronically provided by the Division and distributed to the public agency through the Division's website at http://www.state.nj.us/treasury/contract_compliance).

The contractor and its subcontractors shall furnish such reports or other documents to the Division of Purchase and Property, CCAU, EEO Monitoring Program as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Purchase and Property, CCAU, EEO Monitoring Program for conducting a compliance investigation pursuant to **N.J.A.C. 17:27-1 et seq.**

SCOPE OF SERVICES

Rosedale Road, Elm Road, and Cleveland Lane Intersection Improvements Municipality of Princeton, NJ

PROJECT UNDERSTANDING

The Municipality of Princeton and Mercer County desire to update the current traffic signal to current standards and implement geometric revisions at the intersection of Rosedale Road (CR 604), Elm Road, Cleveland Lane with a goal to improve traffic flow and ensure pedestrian and bicycle safety. ARORA and ASSOCIATES, P.C. (ARORA) submits this proposal to accomplish the Engineering tasks in that regard.

The evaluation of traffic conditions, pedestrian characteristics, and physical characteristics of the location must be conducted to develop a revised traffic signal plan and timing. The traffic study results will be used to determine the components of an updated traffic signal to develop Final Design plans and bidding documents. The investigation into the updated traffic signal will include analysis of factors related to the existing condition operation and safety. The potential to improve the operating conditions at the intersection for proposed condition after implementation of the geometric modifications will be evaluated. The work will include the necessary signal design and roadway improvements for the new traffic pattern and will include ADA and MUTCD compliance. The design will be done in conjunction and coordinated with the *Safe Routes to School Project (SRTS)*, (*Rosedale Road (CR 604) & General Johnson Dr. Intersection and Pathway Improvements*) currently being designed just west of the subject intersection.

TASK 1: PROJECT MANAGEMENT AND COORDINATION

Obtain Existing Plans, Studies and Documentation

ARORA team will coordinate with the Municipality of Princeton and Mercer County to obtain and review the existing information. We anticipate obtaining the following:

- Available As-Built plans (construction/geometric, traffic signal, and electrical) in CADD format for the intersection
- Available right-of-way, Jurisdiction Plans and other existing plans in CADD format

ARORA will conduct a field visit to verify and evaluate existing conditions. ARORA will document field conditions with photos. We will document the existing traffic signal operations, pedestrian facilities, utilities, drainage, lighting conditions and access issues near the intersection.

Public Meeting and Design Meetings

ARORA team will meet with representatives of Municipality of Princeton and Mercer County in three (3) design meetings to discuss the project and formalize the analysis and design requirements, potential alternatives, and study purpose and goals. The initial meeting will be conducted prior to initiating the analysis to get input regarding design constraints and design options that may be identified during the analysis. In addition, ARORA will prepare displays, prepare flyers and owners lists within 200' of the project to advertise the *Public Information Centers (PICs)*, and attend two (2) PICs and document any public input. ARORA will prepare and submit monthly progress reports and invoices to the Client PM, and will provide complete administrative support (draft letters, memorandum of meetings) as needed.

TASK 2: SURVEY**Conduct Supplemental Surveys**

ARORA will perform limited supplemental surveying services in support of the engineering design for the proposed intersection improvements. All surveying services will be performed under the supervision of a New Jersey Licensed Professional Land Surveyor and in accordance with the requirements of the New Jersey Board of Professional Engineers and Land Surveyors, applicable statutes including N.J.S.A. 45:8 and N.J.S.A. 45:8-44.1, and generally accepted land surveying practices in the State of New Jersey. Prior to commencing field operations, ARORA will compile a list of property owners adjacent to the project limits. ARORA will establish a horizontal and vertical survey control network to support the topographic and laser scanning survey. Survey control will be referenced to the North American Datum of 1983 (NAD83), 2011 Adjustment, and the North American Vertical Datum of 1988 (NAVD88), utilizing the New Jersey State Plane Coordinate System in U.S. Survey Feet. Primary control will be established using GNSS Real Time Network (RTN) methods, supplemented by conventional traverse procedures where satellite reception or site conditions limit GNSS observations. Permanent control points will be monumented using durable markers such as capped rebar or magnetic nails set in stable surfaces and will be observed and adjusted in accordance with accepted surveying practices.

ARORA will perform a limited field topographic survey within the limits necessary to support the engineering design. The survey will extend approximately 150 feet from the curb return at subject intersection. The survey will only capture visible surface features within the right of way to only include curbs, curb returns, driveways, drainage structures, utility structures and appurtenances, traffic signal infrastructure. Any other items will be added sketched in through a current aerial orthophoto. To support the proposed reconfiguration of the traffic signal and to identify potential conflicts with overhead utilities, ARORA will perform Terrestrial Laser Scanning (TLS) within approximately 100 feet of the intersection. The scanning will capture detailed 3-D locations of existing overhead infrastructure including utility poles, overhead wires and cables, luminaires, traffic signal heads, mast arms, and other related structures. The scan data will be processed into 3-D point clouds from which overhead wires will be modeled for wire clearances to existing or proposed traffic structures or luminaires. The right of way limits and deed boundaries will be shown using the existing digital tax map. No adjustments will be made to the tax map data. Survey base mapping. Survey field data above will be processed by ARORA survey office staff and incorporated into AutoCAD Civil 3D. A 2-D topographic base map depicting surveyed features will be generated and supplemented with Nearmap aerial data. ARORA will provide survey layout for up to four proposed Subsurface Utility Engineering (SUE) test pit locations to assist in verifying that underground utilities will not conflict with the proposed traffic signal pole foundations.

TASK 3: HIGHWAY ENGINEERING**Prepare Geometry**

The highway engineering design will consist of eliminating the slip ramp from Rosedale Road eastbound to Elm Road southbound and inclusion of an exclusive right-turn storage lane at the signal in lieu of the slip ramp.

ARORA will design ADA ramps at the intersection. We will coordinate with the Municipality of Princeton and Mercer County to confirm agreement with the crosswalk locations and ADA accommodation for the signals.

ARORA will lay in the geometrics to confirm that the design is within the existing right-of-way, and to verify that no environmental permits or stormwater management will be triggered (less than ¼ acre of new impervious). We will confirm that the design matches with Princeton's SRTS project.

The set of plans will consist of:

- Cover or Key sheet that denotes the project name, location, title block, and sheet index
- Estimate and Distribution of Quantities
- Typical Section
- Standard Legend and Notes
- Construction Plan
- Ties
- Traffic Control and Staging Plan
- Traffic Striping and Signing Plan
- Construction and ADA Details

TASK 4: TRAFFIC ANALYSIS, SIGNAL DESIGN, SIGNING AND STRIPING PLANS

Task 4A: Data Collection, Field Visit and Data Summary

- A field visit to the study intersection will be performed to inventory existing roadway conditions and adjacent land-use characteristics. Existing roadway speed limits, number of lanes and traffic control will be identified.
- ARORA will coordinate with the Municipality of Princeton and Mercer County to obtain the weekday morning (WDAM) and afternoon (WDPM) peak hour traffic count data (TMC).
- ARORA team will develop two separate volume flow maps to demonstrate WDAM and WDPM critical peak hour volumes graphically.
- ARORA team will coordinate with concerned public agencies to obtain copies of the existing As-Built traffic signal plans (CADD files), traffic signal timing information (including signal system cycle lengths, splits and offsets) and intersection geometry construction plans.

Task 4B: Traffic Operational Analysis

The study intersection roadway network will be modeled using the most recent version of the Synchro macro-simulation software. The WDAM and WDPM traffic analyses will be performed using the procedures and methodologies outlined in the Synchro analysis software and most recent version of *Highway Capacity Manual* guidelines. Various *Measure of Effectiveness (MOEs)* for individual intersection movements, such as, v/c ratio, delay, 95th percentile queue length, LOS as well as overall intersection delay and LOS will be summarized for all following conditions:

- **Existing Conditions**
Evaluate existing WDAM and WDPM operating conditions at the study intersection. The existing field lane configurations and existing signal timing will be used for this analysis scenario. The signalized intersection Synchro output files will be submitted. No report and/or memorandum writing is included in this proposal.
- **Proposed Build Conditions**
Evaluate the proposed Build condition WDAM and WDPM operational conditions at the study intersection. This scenario will incorporate the existing traffic volume and proposed geometric concept (one alternative). The existing signal timing will be modified/optimized to facilitate the proposed intersection improvement concept. The signalized intersection Synchro output files will be submitted. No report and/or memorandum writing is included in this proposal.

Task 4C: Traffic Signal Design, Signing, and Striping Plans

Traffic Signal Layout and Plan Preparation

Develop the traffic signal base plan sheets at the study intersection using AutoCAD software program. Information required to develop the base plan sheets include existing As-Built plans, roadway right-of-way, property lines, location and type of underground and overhead utilities, alignment of curb and gutter and/or roadway edge of pavement driveways, curb cuts, pavement markings will be obtained from the concerned public agencies. Base plan sheets will be prepared using available surveys,

roadway construction or As-Built plans, utility location information, and other information provided by the appropriate public agencies.

Final Design - Signal Plans

At the start of FD, it is recommended that test pits be conducted (not included in this proposal) at all proposed signal pole foundation locations to identify any conflicting underground utilities that will require the selection of alternate locations. This approach will minimize the relocation of foundations during construction that could impact the design and schedule.

The Final traffic signal and construction set of plans will consist of:

- Signal Poles and Mast Arms
- New Controller Cabinet with new 8-phase controller, GPS and Battery Backup System.
- 12-inch LED Signal Heads
- Conduit and junction boxes
- Signing and striping
- Radar Vehicle Detection
- Signal Phase Traffic Signal Timing Plan
- APS push-buttons
- Countdown Pedestrian Signals
- Leading Pedestrian Interval (LPI)
- HiVisibility Crosswalks
- Overhead electrical clearance sketches
- Lighting plan for designed crosswalk lighting
- ADA ramp design
- Consideration of using steel poles to enable signal backplate installation.
- Consideration posting No Turn On Red signing across pedestrian crosswalks
- Electrical Plans- includes callouts, block diagram, electrical details, an estimate of quantities, and conduit fill calculations for proposed traffic signal revisions
- Lighting Plan – Prepare a lighting design for each traffic signal using Visual software
- Other Items required by Municipality of Princeton/Mercer County.

Task 4D: MPT Plans

ARORA will include the Maintenance and Protection of Traffic (MPT) plans based on the standard NJDOT lane closure plans. We assume that the hours and days of permitted lane closures will be provided by Municipality of Princeton and/or Mercer County.

TASK 5: ELECTRICAL TRAFFIC SIGNAL AND LIGHTING DESIGN

A field investigation will be conducted to include existing lighting types, mounting height, wattage, possible service pole location and identification. The location and height of overhead wire types, (communication, primary, secondary) will be identified. If a new electrical service is required, we will communicate with the utility company. Electrical traffic signal plans will be required, including callouts, block wiring diagram, electrical details, and an estimate of quantities. Conduit fill calculations will be documented. A Lighting Plan will be prepared for lighting of the crosswalks at the traffic signal using Visual software. Design will be incorporated into the traffic signal design.

TASK 6: UTILITY ENGINEERING

During a recent field visit six (6) major utilities were identified within the project limits, namely: Public Service Electric and Gas (PSE&G) Company (Electric and Gas), Verizon, AT&T, Comcast Cable and water. PSE&G Company maintain 13 and 26 KV overhead wires that are located along Elm Road. Verizon and Comcast have aerial facilities also attached to the same utility poles. The proposed improvements require relocation of the overhead wires. Therefore, at this point in the process, the relocation of the electric overhead lines will be toward the R.O.W. line. ARORA will discuss this alternative with PSE&G. The issues can be more closely examined and discussed with the utility agencies. Verizon and Comcast Cable will require relocation on to the relocated PSE&G pole. An AT&T manhole located in the sidewalk along northbound Elm Road is not anticipated to be impacted except adjustment to new grade may be required. PSE&G Gas Main along eastbound Rosedale Road connects to a Pressure Regulating Chamber located on the island at southwest intersection corner. The Chamber is not traffic bearing construction and will require relocation/reconstruction. Numerous water valve boxes are noticed at the intersection with connection to Rosedale Road and Cleveland Lane. Any drainage improvement may conflict with the water main and require corrective action. A subsurface utility engineering (SUE) program may need to be performed (not included in this scope of work) to accurately identify the vertical and horizontal location to confirm any direct or indirect conflict. Seasonal restrictions will need to be introduced with respect to relocating the gas line, if needed, as typically a shutdown is not allowed during the winter months. Vigilant coordination efforts with all the utilities will be critical to the success of this project. The relocations will be developed in conjunction with the utility clearances High Voltage Proximity Act and the requirement of the Administrative Code Chapter 25, Utility Accommodation. If requested by the Municipality of Princeton and/or Mercer County, ARORA will work with the utility companies to develop construction staging scenarios that meet their goals and requirements. A separate scope of work will be submitted for that task.

TASK 7: FINAL DESIGN SUBMISSION & PS&E SUBMISSIONS**Prepare Final Design Package**

ARORA will prepare the Final Plans and deliver to the Municipality of Princeton and Mercer County for review. Once review comments are received, we will respond to comments in a Comment Resolution Summary and meet with the Municipality of Princeton and Mercer County as necessary to resolve issues. Once comment resolution is complete, we will deliver the Final Plans, Specifications and Estimate to the Municipality of Princeton and Mercer County. We anticipate delivering pdfs and AutoCAD files to the Municipality of Princeton and Mercer County at the Final Submission.

For the project specifications, we assume NJDOT Standard Specifications with Special Provisions provided by Mercer County. We will assist the County in revising Special Provisions to meet the project needs. We will also provide an Engineer's Estimate in the format desired by the County.

PROPOSAL GENERAL ASSUMPTIONS

- No 3-D surface will be prepared by Arora survey team. If requested, ARORA can perform this task. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- No drainage or utility survey will be performed by Arora survey team. If requested, ARORA can perform this task. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- No record or deed research or review will be performed for the survey. If requested, ARORA can perform this task. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- Deed and ROW lines will be placed using the existing digital tax map. This may be inaccurate and a full ROW survey should be conducted to show the extent of the existing ROW. If requested, ARORA can perform this task. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- No survey work will be performed on adjacent property owner's properties, so no notification letters will be required. If requested, ARORA can perform this task. A supplemental scope of work and fee

estimate will be submitted to accomplish this task.

- No utility mark-outs will be called in or surveyed. If requested, ARORA can perform this task. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- Municipality of Princeton and/or Mercer County will provide the TMC traffic data at the study intersection required to perform traffic operational analysis. ARORA will not be responsible for collecting any new traffic data on the field. If requested, ARORA can perform the traffic data collection task as out-of-scope extra work. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- Development of any traffic analysis report and/or memorandum is not included in this proposal. If requested, ARORA can develop the traffic analysis report as out-of-scope extra work. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- No future year traffic operational analysis will be performed in this proposal. If requested, ARORA can perform the future year traffic analysis as out-of-scope extra work. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- Municipality of Princeton and/or Mercer County will provide As-Built Plans and CADD files for the existing traffic signal, current traffic signal timing plans, traffic signal electrical plans, roadway, drainage, right-of-way and utility plans.
- Test Pits at proposed signal foundation locations are recommended but are not included in this proposal. If requested, this task can be done by an approved ARORA sub-contractor as out-of-scope extra work. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- It is assumed that no detour plans will be required. If Municipality of Princeton and/or Mercer County identifies a need for a detour and requests, then it will be considered as extra work out-of-scope. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- Maintenance and Protection of Traffic (MPT) plans will be prepared based on the standard NJDOT lane closure plans. It is assumed that the hours and day of permitted lane closures will be provided by Municipality of Princeton and/or Mercer County.
- Temporary traffic signal design is not included in this proposal.
- All communications with utility companies will be done by the Municipality of Princeton and/or Mercer County.
- All utility meetings will be scheduled by the Municipality of Princeton and/or Mercer County.
- The six utilities listed in the utility section of this proposal are determined based on visual site observation. Tasks related to any additional utility not listed in this proposal will be considered as out-of-scope extra work. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- The improvements will result in less than ¼ acre of new impervious and less than 1 acre of disturbance so that Stormwater Management (per NJAC 7:8 and GI-BMPs to be adopted March 2, 2021) design will not be required. No other environmental impacts are expected to trigger the need for permits.
- Construction Support Services are not included in this proposal. If required, they can be prepared as out-of-scope extra work, when requested. A supplemental scope of work and fee estimate will be submitted to accomplish this task.
- Right-of-way and property lines will be shown per tax map only. It is assumed all work will be performed within the right-of-way and no acquisitions are anticipated.
- It is assumed that the project will not be federally funded so that a NEPA process (Categorical Exclusion Document) will not be required.
- A Construction Schedule will not be required.

END OF SCOPE

ARORA AND ASSOCIATES, P.C.
 ROSEDALE RD AND CLEVELAND LANE AND ELM RD INTERSECTION IMPROVEMENT
 PRINCETON, MERCER COUNTY
 TRAFFIC ANALYSIS AND SIGNAL DESIGN
 GENERAL ENGINEERING SERVICES
 FINAL DESIGN COST PROPOSAL
 March 13, 2026

Prepared by: QM
 Checked by:

TASK NO.	ASCE GRADE	PIX	PVI	PV	PIII	PI	ET5	ET3	Total
	TITLE	Director	Project Manager	Project Engineer	Design Engineer	Designer/Detailer	Crew Chief	Technician	
1	PROJECT MANAGEMENT AND COORDINATION								
	OBTAIN EXISTING PLANS, STUDIES, DOCUMENTATION			2	4	2			8
	3-DESIGN MEETINGS (2 STAFF)			4	4				8
	2-PUBLIC MEETINGS (2 STAFF), PREPARE DISPLAYS, FLYERS, OWNERS LIST			12	14	6		16	48
	MONTHLY PROGRESS REPORTS AND BILLING			4					4
	SUBTOTAL			22	22	8	0	16	68
2	SURVEY								
	TOPO/DRAINAGE SURVEY/ROW EVIDENCE						16		16
	BASE MAP				4	8		12	24
	SUBTOTAL			0	4	8	0	28	40
3	HIGHWAY ENGINEERING								
	PREPARE GEOMETRY			1	16	16			33
	HIGHWAY PLANS								
	KEY SHEET (1)				2	4		4	10
	EDOG (1)				2	4		4	10
	TYPICAL SECTION (1)				2	4		4	10
	STANDARD LEGEND AND NOTES (1)					1		1	2
	CONSTRUCTION PLANS (1)			1	4	8	4	16	33
	TIES (1)				2	4		4	10
	CONSTRUCTION AND ADA DETAILS (1)				2	8	2	8	20
	SUBTOTAL			2	30	49	6	41	128
4	TRAFFIC ANALYSIS, SIGNAL DESIGN, SIGNING AND STRIPING PLANS								
	4A DATA COLLECTION, FIELD VISIT AND DATA SUMMARY				6		6		12
	4B TRAFFIC ANALYSIS & MODEL OUTPUT - WDAM & WDPM (EXISTING, PROPOSED)				10		16		26
	4C SIGNAL DESIGN			2	16	20	16	8	62
	SIGNAL PLAN, SIGNAL TIMING PLAN, DETAILS				4	2		2	8
	SIGNING & STRIPING DESIGN			2	16	16	16	8	42
	4D MPT DETAIL SHEETS					4		4	8
	SUBTOTAL			4	36	42	54	0	158
5	ELECTRICAL TRAFFIC SIGNAL AND LIGHTING DESIGN								
	ELECTRICAL TRAFFIC SIGNAL DESIGN, PLANS AND DETAILS			4	8	40	16	8	76
	PHOTOMETRICS, LIGHTING DESIGN, PLANS AND DETAILS				4	20	8	2	34
	CALCULATIONS, VOLTAGE DROP, CONDUIT FILL, ESI LETTER				4	8	8		20
	SUBTOTAL			4	16	68	32	0	130
6	UTILITY ENGINEERING (6 UTILITY PROVIDERS)								
	COORDINATION WITH CLIENT / UTILITY				32	32	32	8	104
	SUBTOTAL			0	32	32	32	0	104
7	FINAL DESIGN SUBMISSION & PS&E SUBMISSIONS								
	SPECIFICATIONS			1	8	4			13
	ENGINEER'S ESTIMATE			1	4	8	4		17
	DRAFT SUBMISSION			2	2	2		4	10
	COMMENT RESOLUTION			1	4	4			9
	PS&E SUBMISSION				2	2		4	8
	SUBTOTAL			5	20	20	4	0	57
	TOTAL HOURS		0	37	160	227	128	28	685
	AVERAGE HOURLY RATE (As of 03/01/2026)			\$120.63	\$88.07	\$62.36	\$46.27	\$46.21	\$39.97
	TOTAL SALARIES		\$0.00	\$4,463.31	\$14,091.20	\$14,155.72	\$5,922.56	\$1,293.88	\$4,196.85

LABOR COST	\$44,123.52
MULTIPLIER	2.75
SUBTOTAL	\$121,340
DIRECT EXPENSE (MILEAGE)	\$100.00
ARORA AND ASSOCIATES, P.C. TOTAL	\$121,440
GRAND TOTAL	\$121,500

EXHIBIT C

BUSINESS REGISTRATION AND SALES AND USE TAX REQUIREMENTS

A. Business Registration

P.L. 2004, c.57, as amended by P.L. 2009, C.315 (N.J.S.A. 52:32-44) requires VENDOR (also "CONTRACTOR") to provide PRINCETON with its business registration and that of any named subcontractors prior to the time this Agreement is awarded. In addition:

1. A Subcontractor named in the proposal made by CONTRACTOR shall provide a copy of its business registration to CONTRACTOR who shall provide it to PRINCETON as provided above. No Contract with a subcontractor shall be entered into by CONTRACTOR under this Agreement with PRINCETON unless the subcontractor first provides CONTRACTOR with proof of a valid business registration.
2. PRINCETON will retain the proof of business registration in an alphabetical file.
3. CONTRACTOR shall maintain and submit to PRINCETON a list of subcontractors and their addresses that may be updated from time to time during the course of the contract performance. A complete and accurate list shall be submitted before final payment is made for goods provided or services rendered under the Agreement.

B. Sales and Use Tax

1. For the term of this Agreement, CONTRACTOR and each of its affiliates shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury the use tax due pursuant to the "Sales and Use Tax Act," P.L. 1966, c.30 (C.54:32B-1 et seq.) on all their sales of tangible personal property delivered into this State.
2. CONTRACTOR shall include within its subcontracts the requirement that, for the term of this Agreement, the subcontractor and each of its affiliates shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury the use tax due pursuant to the "Sales and Use Tax Act," P.L. 1966, c.30 (C.54:32B-1 et seq.) on all their sales of tangible personal property delivered into this State.

Information on the law and its requirements is available by calling (609) 292-9292.

TERMS & CONDITIONSEXEMPTION

Princeton is exempted by statute from payment of all Federal, State, and Municipal excise, sales and other taxes.
FEDERAL I.D. 30-0746654

LEGAL REQUIREMENTS

The vendor agrees to comply with all statutes, rules and regulations and orders set forth by the State of New Jersey, Federal Government, and ordinances of Princeton.

STATE REQUIREMENT (BUSINESS REGISTRATION REQUIREMENT)

N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that knowingly provide goods or perform services for a contractor fulfilling this contract:

- 1) the contractor shall provide written notice to its subcontractors to submit proof of business registration to the contractor;
- 2) prior to receipt of final payment from a contracting agency, a contractor must submit to the contracting agency an accurate list of all subcontractors or attest that none was used;
- 3) during the term of this contract, the contractor and its affiliates shall collect and remit, and shall notify all subcontractors and their affiliates that they must collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into this State. A contractor, subcontractor or supplier who fails to provide proof of business registration or provides false business registration information shall be liable to a penalty of \$25.00 for each day of violation, not to exceed \$50,000 for each business registration not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements is available by calling (609)292-9292

AUTHORIZATION TO PROCEED

Princeton shall not be responsible for materials delivered or services performed delivered without authority of its written order and properly signed and executed by authorized Princeton official (s).

QUALITY & QUANTITY

All materials or services furnished on this order must be as specified, and subject to Princeton officials' inspection and approval within a reasonable time after delivery at destination. Materials other than specified will be returned at the order must not be substituted without the review and approval of authorized Princeton official(s). Materials rejected will be returned at the vendor's risk and expense. Quantities and unit prices specified must be adhered to. In case of a change, it first requires Princeton approval or it will be paid at the quoted price and quantity.

ASSIGNMENT

Neither party shall assign or transfer this order or any interest therein or monies payable thereunder without the written consent of the other party and any assignment made without such consent shall be null and void, except that Princeton may assign this order and its interest therein to any affiliated corporation or to any corporation succeeding to Princeton's business without consent of vendor.

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

N.J.S.A. 10:5-31 et seq., N.J.A.C. 17:27

GOODS, PROFESSIONAL SERVICES AND GENERAL SERVICE CONTRACTS

During the performance of this contract the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such action shall include, but not limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor, where applicable, will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to employ minority and women workers consistent with the applicable county employment goals established in accordance with N.J.A.C. 17:27-5.2 or a binding determination of the applicable county employment goals determined by the Division, pursuant to N.J.A.C. 17:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, labor unions, that it does not discriminate on the basis of age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personal testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the applicable employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken with out regard to age, creed, color, national origin, ancestry marital status, affectional or sexualorientation, gender identity or expression, disability, national or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

- Letter of Federal Affirmative Action Plan Approval
- Certificate of Employee Information Report
- Employee Information Report Form AA302

The contractor and its subcontractor shall furnish such reports or other documents to the Division of Contract Compliance & EEO as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Contract Compliance & EEO for conducting a compliance investigation pursuant to Subchapter 10 of the Administrative Code at N.J.A.C.17:27.