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Project No. CD1210.55 2302

August 18, 2023

Mr. Scott De Leon, PE
Lake County Public Works Director
255 N. Forbes Street
Lakeport, CA 95453

RE: Scope and Fee to Provide Pavement and Civil Engineering and Design, and Prepare Civil Engineering Plans, Specifications, and Cost Estimate (PS&E) for 2024 Paving

In response to your request, NCE has prepared the following scope of work and estimated fee to provide pavement and civil engineering design services, including the preparation of civil engineering plans, specifications, and cost estimate (PS&E) for the bidding and construction of multiple roads as presented in Table 1 and mapped in Attachment A.

Project Understanding

The County has requested that NCE provide pavement and civil design for the pavement rehabilitation of the selected roads within the County's 2025 work plan plus other roads added by the County for construction in 2024 (Table 1). There is a total of approximately 17 centerline miles with an estimated construction budget of \$10 million. Maps of the roads in the 2024 construction plan are presented in Attachment A. For reference, these maps identify the approximate limits of the Valley Fire. Some of the roads in the 2024 construction plan are in areas that were heavily damaged in the Valley Fire, and some residents are rebuilding their homes. The residential pavements in this plan generally exhibit a wide range of distress including significant load related cracking and potholes, edge breakdown, patches, surface raveling and weathering, and overall are in poor condition. The Cobb neighborhood has relatively new and extensive longitudinal and transverse utility cuts in its pavements. These cuts along with post fire hauling likely further accelerated the failures exhibited in these pavements. The northern Hobergs neighborhood that was not touched by the Valley fire is in relatively better condition, but still possess distortion and edge cracking along with extensive load related cracking and patches. The southern Hobergs neighborhood pavements that were heavily impacted by the Valley Fire are all in failed condition. Based on the County's StreetSaver database, the Cobb Mountain and Pine Summit neighborhoods consist of 24 and 6 pavement sections, respectively, with a weighted average pavement condition index (PCI) of 23 and 30 respectively. The major roads in the plan also exhibit a range of distresses. The Red Hills Road pavement and chip seal surface has areas of high severity load cracking and pumping, bleeding, patching and potholes, edge deterioration, and roughness. Others such as Harrington Flat Road have considerable wheelpath and localized patching, generalized structural failure, and roughness.

8795 Folsom Blvd
Sacramento, CA 95826

NCE will assess the roads and provide the County a range of pavement treatment and rehabilitation strategies. Generally, the subject sections appear to be strong candidates for recycle in-place technology such as Full Depth Reclamation (FDR) recycling or surface reconstruction among others. The field investigation will inform the suitability of these treatments.

NCE understands that the geometry of the roads will remain the same and that no curb and gutter will be installed. Raising of the roads by a few inches is acceptable if drainage is not negatively impacted and conforms at existing driveways and cross streets is addressed. New striping placed will match existing striping using the current Caltrans standard traffic striping details.

NCE will provide pavement and civil engineering design in accordance with the following key assumptions and tasks.

Table 1 List of County Roads for 2024

Street Name	Beg Location	End Location	Ln	Length (ft)	Width (ft)	Area (sq ft)	PCI
ADAMS SPRINGS COURT	ADAMS SPRINGS RD.	END	2	211	21	4,431	18
ADAMS SPRINGS RD.	ADAMS SRINGS CT	SH 175	2	1,954	25	48,850	21
ADAMS SPRINGS RD.	SH 175	ADAMS SPRINGS CT	2	1,162	20	23,240	21
ANGELLY WAY	HOBERG DRIVE SOUTH	HOBERG DRIVE SOUTH	2	1,003	23	23,069	19
BLEUSS COURT	HOBERG DRIVE SOUTH	END	2	1,109	23	26,932	11
BLEUSS WY (137 L)	KAREN WY	END	2	686	23	15,778	5
CAROLYN DRIVE	ELLIOTT	LASSEN	2	1,162	21	24,402	16
CASENTINI DR	SNEAD DR	HARRINGTON FLAT	2	1,690	22	37,180	3
CREEK VIEW DRIVE	HARRINGTON FLAT RD.	END	2	1,003	20	20,060	5
COSTELLO WAY	ADAMS SPRINGS RD.	ADAMS SPRINGS RD.	2	634	20	12,680	11
ELLIOT DR	VENTURI DR.	ST. HELENA DR.	2	1,954	20	39,080	27
FOX DR.	300' W. OF REGINA	END	2	3,168	24	76,032	67
FOX DR.	EMERFORD	300' W. OF REGINA	2	3,168	20	63,360	43
GLENN ROAD	SUMMIT BLVD.	SHASTA	2	898	18	16,164	9
HARRINGTON FLAT	SULPHUR CREEK ROAD	SR 175	2	5,800	22	127,600	33
HOBERG DRIVE EAST	HOBERG DR	END	2	528	22	11,616	50
HOBERG DR (136FA)	EMERFORD DR	HOBERG RD SOUTH	2	2,112	23	48,576	21
HOBERG DRIVE (136F)	SUMMIT BOULEVARD	HOBERG DR EAST	2	697	20	13,940	10
HOBERG DRIVE (136F)	HOBERG DR EAST	HOBERG DR SOUTH	2	2,056	18	37,008	8
HOBERG DR. SO.	HOBERG DR.	BLEUSS CT.	2	2,270	20	45,400	4
HOGAN HILL LANE	SNEAD DR	END	2	792	18	14,256	9
HUMBOLDT DRIVE	SUMMIT	SR 175	2	1,056	18	19,008	55
HUMBOLDT DRIVE EXTENSION	SUMMIT BLVD.	END	2	264	20	5,280	35
JONES COURT	HOGAN HILL LANE	END	2	475	20	9,596	33
KAREN WAY	HOBERG DRIVE SOUTH	END	2	634	23	14,582	6
LASSEN DR.	ELLIOT DR.	VENTURI DR.	2	1,267	21	26,607	40
LEMA COURT	LEMA LANE	END	2	211	25	6,953	18
LEMA LN.	EMERFORD	HARRINGTON FLAT	2	2,851	20	57,020	30
NELSON COURT	LEMA LANE	END	2	422	23	10,651	7
NELSON LANE	LEMA LANE	END	2	686	23	16,842	12
PALMER DR	HARRINGTON FLAT	END	2	1,742	20	34,840	6
PALMER COURT	PALMER DRIVE	END	2	581	20	11,620	2
PAMELA DRIVE	ELLIOTT DR.	VENTURI DR.	2	528	22	11,616	40
PRATHER COURT	PRATHER WAY	END	2	211	25	5,275	14
PRATHER WAY	COSTELLO WAY	END	2	1,373	25	35,345	8
RED HILLS RD.	SR 29	SR 175	2	11,620	24	278,880	29
REGINA WAY	FOX DRIVE	FOX DRIVE	2	739	24	17,736	57
ST. HELENA DRIVE	FOX DRIVE	VENTURI DRIVE	2	2,323	22	51,106	46
SHASTA ROAD (136D)	SUMMIT BLVD.	GLENN ROAD	2	950	18	17,100	24
SNEAD DR.	SH 175	SH 175	2	2,164	20	43,280	24
SULPHUR CREEK ROAD	BOTTLE ROCK ROAD	HARRINGTON FLAT	2	6,300	22	138,600	40
SUMMIT BOULEVARD	HOBERG DRIVE	SR 175	2	2,100	20	42,000	14
SUMMIT BOULEVARD	HOBERG DRIVE	END	2	1,003	18	18,054	31
TRINITY ROAD	SUMMIT BLVD.	SHASTA ROAD	2	1,214	20	24,280	44
VENTURI DR.	FOX DR.	EMERFORD	2	3,907	20	78,140	40
GREENAWAY COURT(128E)	PINE SUMMIT DR	END	2	475	18	8,550	21
MAPES PASS - MAPESP	PINE SUMMIT DRIVE	GIFFORD SPRINGS ROAD	2	528	20	10,560	26
PINE SUMMIT DRIVE	GIFFORD SPRINGS RD.	PAVEMENT CHANGE	2	1,848	25	46,200	29
PINE SUMMIT DRIVE	PAVEMENT CHANGE	PAVEMENT CHANGE	2	528	23	12,144	22
PINE SUMMIT DRIVE	PAVEMENT CHANGE	END	2	264	24	7,166	21
SUGAR PINE RIDGE ROAD	PONDEROSA	END	2	1,109	12	13,308	19
SUGAR PINE DRIVE	SUMMIT DRIVE	SUMMIT DRIVE	2	1,426	23	32,798	18
SUMMIT DRIVE	SR 175	END	2	1,162	26	31,812	11
TANYA TERRACE	PINE SUMMIT DRIVE	PINE SUMMIT DRIVE	2	363	20	7,260	7
HILL COURT	OAK ST	SOUTH END	2	450	20	9,000	N/A
OAK ST	MAPLE ST	SOUTH END	2	3,000	20	60,000	N/A
MAPLE ST	OAK ST	GIFFORD SPRINGS ROAD	2	591	20	11,820	N/A
PINE ST	OAK ST	MAPLE ST	2	912	20	18,240	N/A
FIR ST	OAK ST	PINE ST	2	236	20	4,720	N/A

Key Assumptions

To deliver the most cost-effective design strategy, we have made the following key assumptions:

County's Responsibilities

NCE has assumed that the County will be able to provide the following:

1. Information readily available regarding utilities owned by the County and utility contact information (i.e., water, sanitary sewer, electrical, and storm drain).
2. Readily available aerial maps, GIS maps showing ROW and property lines.
3. Project requirements including design objectives, budget, constraints, and criteria.
4. County technical specifications or specification format as the basis for developing/modifying new technical specifications.
5. Upfront specifications including General Provisions and Special Provisions, if applicable, in case the County wishes NCE to prepare these. For this scope of work and fee proposal NCE assumes that the County will prepare the upfront specifications.
6. County Standard Provisions, Standard Design Criteria, and County Standard Plans assuming the latest versions are available on the County website.
7. Electronic files of County cover sheet and title block template, if preferred.
8. Traffic engineering design if required.

Pavement Testing and Design

1. Pavement design will be generally based on Caltrans Standards with a combination of pavement coring, pavement condition surveys, deflection testing (1 day on major collectors and arterials), and laboratory testing. Mechanistic design methods will be utilized where suitable on the major collector and arterial roads to seek more efficient and less costly pavement sections. The pavement survey task will confirm suitability of using these methods. Engineering judgement in combination with County consult will also be used where necessary and where Caltrans Standards yield unreasonably costly designs.
2. Pavement coring will be performed on the subject road section as follows:
 - a. Pavement cores will be obtained at 37 locations (21 pavement cores and 16 bulk samples).
 - b. Because the road sections are candidates for pavement rehabilitation, sixteen (16) bulk samples of subgrade will be obtained if portions of the road might require limited surface reconstruction or a deeper pavement inlay.
 - c. If present, aggregate base (AB) thickness will be measured at the core locations.
3. Ground Penetrating Radar (GPR) at travel speed will be conducted on the major collector and arterial roads to gain a continuous measurement of the pavement thicknesses to help facilitate and economize design. It is estimated that one (1) day of testing plus analysis will be required.
4. Base repairs will be measured in length and width to estimate base repair bid quantities. It is the intent that base repair quantities included in the Bid Schedule will be for bidding purposes only. Actual locations will be marked by NCE with the County's inspectors prior to construction.
5. A no fee encroachment permit will be obtained from the County for pavement coring activities.

6. The County will provide Traffic Indexes (Tis) and/or traffic counts, from which NCE can develop TIs. NCE will confirm these with the County before finalizing designs.

Topographic Surveying and Base Maps

1. Pavement rehabilitation limits will be within the existing edge of pavement. No road widening is anticipated.
2. Base maps for preparing plans will be from aerial photography and County provided GIS maps.
3. If a topographic survey is requested by the client, any related cost will be based on T&M.

Utility Coordination and Location

1. If underground utilities are present, NCE will prepare and distribute utility notification letters to collect facility maps and as-builts, confirm utility planned work, and notify utilities of the County's utility cut moratorium on improved streets.
2. The roads are expected to be candidates for reconstruction. Utility location is currently not included in our scope of work. If significant roadway reconstruction is required, we will discuss with the County utility location options (e.g., GPR) and can provide this service for an additional scope and fee.

Traffic Striping

1. NCE assumes that traffic striping will match existing striping unless minor changes are requested by the County. This may include alterations with minor striping changes proposed by the County for safety, which it is assumed that the County will provide appropriate details and lane configurations.
2. No significant traffic striping changes or design requiring traffic studies or assessment of traffic impacts is planned or included in this scope of work.
3. Existing striping will be shown up to 25 feet outside of the paving limits.

Traffic Control Plans

1. Traffic control plans are not included in this scope of work. We assume that the contractor will prepare traffic control plans in accordance with project technical specifications and requirements and submit to the County traffic engineering group for review.

Drainage

1. No major drainage improvements (e.g., significant stormwater drain and pipe alteration and/or reconstruction or adding, relocating, or modifying catch basins and manholes) are assumed for this project.
2. If AC dikes or other minor drainage elements are present, these will be replaced in like kind to perpetuate the existing drainage pattern.

Culverts

1. Culverts will not require survey. Approach is to replace in-kind or "slip line".
2. Hydrology and hydraulic calculations are not required since the approach is to replace in kind and place or slip line.
3. Culvert means and method per County standards.

4. The scope and fee to address culverts provided by the County includes 120 culverts beneath the roadways planned for pavement rehab.
5. Assume rehabilitating 60 of the 120 culverts for the purpose of scope and fee estimate.
6. Culvert improvements will only be shown on plan sheets. No culvert profiles will be required since the approach is to either slip line or replace in-kind and place.
7. County will approve and provide input on the NCE field inventory recommendations prior to commencement of preparing the PS&E related to the culvert rehabilitation.

Additional Assumptions

1. No federal funds are being used for design or construction.
2. This scope of work does not include identifying utility conflicts, developing legal plats and descriptions, reviewing franchise agreements, owner claim of liability, title report and appraisal, and utility relocation plans.
3. Right-of-way will be shown as record ROW as available from the County.
4. Improvements will be constructed within the County ROW.
5. Utility adjustments will be limited to utility cover raising and lowering; no utility relocation is expected or included in this scope of work.

SCOPE OF SERVICES

NCE will provide pavement and civil engineering design in support of the planned project by the County. To accomplish the stated purpose, we propose the following scope of services:

Task 1 – Project Management & Coordination

1A) Project Kick-off Meeting/Progress Meetings:

NCE's Project Manager will arrange a Kick-Off Meeting with the County to initiate work on the project. The objectives of the Kick-Off Meeting will be:

- Review of the Scope of Work
- Establish Lines of Communication
- Confirm Deadlines
- Establish Project Schedule and Milestones
- Define Design and Operation Criteria

Whether a simple preventative maintenance project or a complex reconstruction project, it is critical to establish effective lines of communication with, and coordination among, the various stakeholders from the start to ensure the delivery a high-quality project within budget and on schedule.

In addition to County Staff (Engineering, Maintenance, etc.), NCE will research and coordinate with other agencies such as PG&E, AT&T, County Sewer, Water, and Stormwater, Schools, etc., to identify potential conflicts, requirements, or design issues early to help minimize delays (and costs) later in the design process or during construction. At the Kick-Off Meeting, key deliverables for each Task and the Project Schedule will be reviewed and adjusted accordingly to meet County needs.

NCE is very sensitive to construction costs, particularly the volatile price of materials, which have affected the scope of many similar projects. To keep the County aware of overall project costs, NCE will begin developing a preliminary engineering estimate of probable construction cost as soon as we have developed our engineering design recommendations to closely monitor potential funding issues, which may develop. During the project, NCE will be seeking to develop the most appropriate and cost-effective pavement rehabilitation alternatives to stay within the planned project budget and schedule.

Throughout the project, NCE staff will be available to attend regularly scheduled progress meetings either virtual or in person with the County (maximum of 3), to maintain good communications. The purpose of the progress meetings will be to identify and resolve design or funding issues that may surface in a timely manner, present design alternatives and recommendations to County staff, and continue coordination with project stakeholders as necessary.

Deliverables

- 1) Kick-off/Progress Meeting Agendas and Summaries, monthly invoicing, progress, and schedule updates

1B) Utility Coordination

NCE will coordinate with utility agencies early in the design process to help avoid potential construction delays and unnecessary disruptions to public services. Utility coordination will be a critical item to keep utility providers informed about the project and schedule. One of the first items that NCE will do is send notification letters to applicable utility providers with a preliminary project construction schedule. This will allow the utility providers to perform maintenance on their facilities prior to moratorium on the street paving area and/or assess their utilities and the possible need to lower/adjust their facilities, which can take up to a year or longer. We will also request utility as-builts and record drawings of utilities that may be present in the project area.

NCE will document the utility coordination notifications, conversations, and meetings with utility contacts and information in a matrix format with dates of contacts and mailing detailed in this matrix. Follow-up calls will be made for each of the above notifications to confirm receipt. NCE will also keep the County informed of potential project delays related to utilities.

Deliverables

- 1) Utility notification letters, as-built information included in the base map.

Task 2 – Pavement Rehabilitation Design

2A) Pavement Survey

NCE will perform a detailed pavement condition survey of the subject road sections based on distresses. The surveys will generally cover the travel lanes. Pavement condition surveys serve the purpose of further refining the appropriate pavement rehabilitation treatments that are developed based on pavement coring. The first step in this survey task will be to work with the County to verify the completeness and accuracy of Table 1 and to establish the final road list as the County had expressed interest in additional roads being added to the original plan.

The pavement condition survey will generally note the presence of load related and environmental distresses, such as alligator cracking, longitudinal and transverse cracking, rutting, patches and utility cuts, distortions and depressions as they pertain to developing appropriate pavement treatments. If appropriate, potential base

repairs will be identified in the condition survey. The surveys on the major collectors and arterials will also be done with the idea of potentially using mechanistic design methods on these roads. Our scope of work and condition surveys do not address issues including, but not limited to traffic, safety and road hazards, geometric issues, or short-term maintenance that should be performed (i.e., pothole repairs).

2B) Pavement Coring

NCE will collect pavement section core samples (4" – 8" diameter cores) at locations determined by NCE. Our current fee estimate assumes up to 37 core locations (21 - 4" pavement cores and 16 - 8" pavement cores for subgrade bulk sample collection) that we estimate will require up to 7 days to complete. Pavement coring and related days of coring and costs may be reduced following review of the observations made in Task 2A. These cores will also be used for calibration of GPR. NCE will call in USA for each of the core locations so the utilities can verify safety of coring in the desired locations. NCE will also hire traffic control for safety of the coring crew and public each day of the coring process. Traffic control will be based on established Caltrans methods.

Subgrade bulk sample locations will be spread geographically throughout the neighborhoods to obtain generalized soil conditions for groupings of road sections. For each non-bulk core location, NCE will perform dynamic cone penetrometer (DCP) testing to estimate aggregate base thickness. At each core location, NCE will measure and record the thickness and material type of each layer encountered in the pavement structural section, including the presence of pavement reinforcing fabric.

Bulk samples of subgrade will be obtained in accordance with stated key assumptions. We will collect bulk samples of subgrade materials at the core locations for laboratory testing such as R-value, moisture content and Atterberg Limits (plasticity index) determinations. Our current fees assume up to 16 bulk samples will be obtained for testing. The thickness of aggregate base (AB) will be measured at the pavement core locations.

The core holes will penetrate through the pavement section and will then be backfilled with the excavated materials capped with AC cold patch on paved streets. NCE will then compile the coring and laboratory data and append it to its pavement design memorandum. Each core sample will be logged and stored at NCE's office and retained through the duration of the project including construction before they are disposed. Additionally, NCE will apply for and obtain a no-fee encroachment permit from the County prior to starting the coring and provide traffic control in accordance with the same standards discussed in pavement deflection testing.

2C) Pavement Design Recommendations

Using the data obtained in Tasks 2A and 2B, NCE will perform pavement analysis and design services and develop pavement rehabilitation recommendations for the subject street sections. NCE will perform its analysis in accordance with the Caltrans Highway Design Manual and engineering judgement. Mechanistic design methods to seek more efficient pavement designs on the major collectors and arterials will be utilized where suitable. NCE will develop pavement structural section recommendations based on the Traffic Indexes (TIs) or traffic counts that will be provided by the County. NCE will develop recommendations including, but not limited to the following:

- Reconstruction
- Reconstruct AC Surface
- Alternative rehabilitation methods (in-place recycling, mill & fill treatments, etc.)
- Conventional Hot Mix Asphalt (HMA) pavement overlays
- Warm Mix Asphalt (WMA)

- Rubberized Hot Mix Asphalt (RHMA) overlays
- Quantities and treatments of failed pavement sections (base repairs)
- Full width milling and wedge grinding requirements

NCE will then summarize its recommendations in a Pavement Design Technical Memorandum to the County that, at a minimum, will include the following:

- Results of condition surveys, deflection testing, coring, and laboratory testing
- Description of testing procedures and analysis performed for the project
- Recommended alternatives for pavement rehabilitation

NCE will submit an electronic copy of its draft technical memorandum to the County for review. NCE will also submit a preliminary cost estimate for pavement treatments that will be submitted to the County for review. Upon receiving comments from the County, NCE will prepare its final technical memorandum, which will be signed and stamped by NCE's pavement engineer. The final technical memorandum will then be provided to the County reflecting the comments on the draft technical memorandum.

Deliverables

- 1) Draft & Final Pavement Technical Memorandums and Preliminary Pavement Treatment Costs.

Task 3 – Plans, Specifications & Estimates (PS&E)

The work that will be performed during the development of design PS&E is outlined in the subsequent tasks.

3A) Design Data Gathering

NCE will review relevant available data and records from the County as listed in the previous sections, public and private utility providers, and other sources that may be appropriate to support the preparation of project contract documents. These may include but are not limited to the County drainage structure inventory maps, aerial photographs of the County, as-built street improvement and infrastructure plans, striping and markings, as-built plans from utility providers, including preliminary plans for future work that may conflict with this project. The gathered information will be compiled and included in the base sheets used for design.

NCE assumes that the proposed pavement rehabilitation improvements will be constructed within the existing edge of pavement. It is our understanding that widening outside the existing edge of pavement is not allowed.

Similarly, culvert design will be either replaced in kind and place or slip lining.

With these approaches, no topographic survey will be required. NCE will use aerial imagery that is geo-referenced and orthorectified as the topographic/base mapping.

Deliverables

- 1) Base map from aerial imagery and County provided GIS data.

3B) Culvert Inventory

NCE will conduct a field inventory of the cross culverts and compare the identified list of culverts provided by the County. We assume that the identified culverts will closely match those listed. Proposed improvements will

include either replacement or slip lining improvements and will be included in the PS&E package. During field review of the culverts the following information will be collected:

- Information to be collected will include location, approximate depth to top of pipe (cover), culvert diameter, pipe material, end treatment, inlet and outlet condition, approximate pipe skew with road, and pipe condition.
- Coordination with County on improvement preferences such as pipe material and rehabilitation methods and strategies.

Deliverables

- 1) List of culverts and attributes

3C) 35% P&E:

NCE will prepare the 35% P&E for the pavement rehabilitation/reconstruction of the subject road sections. It is NCE's intent to provide larger scale maps to mainly show the limits of the reconstruction, typical cross sections for each road indicating road widths, pavement treatment (e.g., FDR), HMA pavement thickness, typical driveway conforms, and conforms at cross streets. In addition, typical details for storm drain culvert replacement, and utility adjustment will be included in the plans. The plan sheets will include tables summarizing the FDR, HMA, utility adjustment and striping quantities. The 35% P&E will also include drainage improvements based on the culvert field inventory. The 35% plans will include GIS based right-of-way and parcel lines, conform grind locations at intersecting side streets, and limits of work. The plans will be prepared in AutoCAD format on 22" x 34" sheets, drawn at a scale of 1"=40'.

If a roadway warrants a topographic survey to depict the intended work, geometry, vertical alignment and cross slopes, we will work with County to establish the best course of action and engage with a local surveyor to implement the agreed actions to provide a base map for design. The topographic surveying is not included in this scope and fee.

Shall include drainage improvement based on the field culvert inventory.

The following plan sheets forming a plan set of 54 plan sheets are anticipated at this time:

- Title Sheet (1)
- Notes, Legends, and Abbreviations (1)
- Typical Cross Sections per Road (3)
- Improvement Plan (40)
- Civil & Striping Details (3)
- Construction Area Signage Plan (5)
- Quantities Sheet (2)

The Engineer's Estimate of Probable Construction Cost will be prepared in MS Excel format and will be based on recent construction cost data available to NCE for projects of this type. Because of NCE's involvement in the design and construction of numerous similar projects throughout California, we are confident in our ability to estimate the construction cost of the County's project. This initial estimate will then be updated and refined as the design effort progresses.

It is assumed that the County will require a 10-day review/comment period once the 35% PS&E package is submitted.

Deliverables

- 1) 35% Plans and Engineer's Estimate of Probable Construction Cost (PDF's)

3D) 65% PS&E

The 35% PS&E will be revised to incorporate comments received from the County. NCE will meet with the County to review these comments, from which the 65% PS&E will be prepared. NCE will provide a response to each comment that is included in a comment table provided by the County. The 65% PS&E will include additional design information and details typically expected at this stage of completion, traffic striping, and pavement legends. The 65% PS&E will then be packaged and submitted similar to the 65% PS&E, unless directed otherwise.

NCE assumes that the County will provide the "Front End" documents and Special Provisions. The Technical Specifications will be prepared in MS Word format and will follow the County's formatting conventions. The Technical Specifications and details will reference the County's standard provisions and Caltrans 2022 Standards (including subsequent updates). NCE will, however, recommend deviating from Caltrans standards where, from our experience, such changes will improve the likelihood of achieving a successful construction project without compromising the integrity of the design. NCE recognizes the value of incorporating Caltrans Standard Specifications in projects such as these, both because these specifications have been developed by an agency that designs and builds a vast amount of highway work, and because most contractors performing public works construction in Northern California are familiar with them. Caltrans, however, has the resources to administer projects quite differently than most local agencies, so NCE advocates modifying the Caltrans Standard Specifications to better fit the abilities, needs, and budgets of municipal agencies.

NCE also believes that an efficient, yet thorough Quality Control/Quality Assurance program is essential for getting the maximum value out of every dollar spent on construction. Projects designed by NCE therefore contain technical specifications that attempt to optimize the balance between using rigid, but time-tested, specifications and meeting local agency needs, with the goal of obtaining value for its clients.

NCE's Senior Construction Inspector will conduct a constructability review on site during the 65% plan preparation. Such reviews are standard procedures at NCE and allow for consideration of potential construction issues early in the design. The observations made during the constructability review will be incorporated into the 95% submittal prior to submitting the design documents to the County.

Shall include drainage improvement based on the field culvert inventory.

It is assumed that the County will require a 10-day review/comment period once the 65% PS&E package is submitted.

Deliverables

- 1) 65% Plans, Technical Specifications, and Engineer's Estimate of Probable Construction Cost (PDF'S)

3E) Final PS&E

The 65% PS&E will be revised to incorporate comments received from the County. NCE will again meet with the County to review these comments, from which the Final PS&E will be prepared. NCE will provide a response to

each comment that is included in a comment table provided by the County. The Final PS&E will include the notes and details necessary for construction.

The Technical Specifications will be further refined at this stage of the design. If requested, NCE can review and comment on the County's front-end documents (bid and contract forms, General Provisions, Special Provisions, etc.), which the County will prepare and provide.

A final quantity calculation will be tabulated, and this will be entered into the final Engineer's Estimate of Probable Construction Cost for the project. The final documents will be reviewed, stamped and signed by NCE's Engineer, and the Final PS&E will be delivered to the County in both hard copy and electronic formats.

Shall include drainage improvement based on the field culvert inventory.

Deliverables

- 1) One (1) Wet-signed and One (1) Electronic File of the Final (100%) Plans, Technical Specifications, and Engineer's Estimate (PDF's).
- 2) The electronic files for the final construction plans, specifications, and engineer's estimate will be in AutoCAD 2022, MS Word, and MS Excel, respectively.

Task 4 – Bidding and Construction Support

4A) Bidding Support Services

NCE will provide the County with assistance during the advertisement and bidding period for the bid package. This will include providing assistance to the County in attending the pre-bid conference, responding to questions received about the project design, and preparation of up to one (1) addendum and/or clarifications to the PS&E that are deemed necessary. We have assumed up to a total of 37 hours of effort for this Task.

Deliverables

- 1) Attend pre-bid meetings
- 2) Prepare responses to questions received regarding project design
- 3) Prepare one bid addendum if necessary
- 4) Provide assistance with bid responsiveness (as needed)

4B) Construction Support Services

NCE will provide support services to the County during construction of the project. At a minimum, these services are anticipated to include attendance at the pre-construction conference, reviewing contractor submittals and responding to contractor requests for information (RFIs), field verification of localized repair areas if necessary (e.g., pavement digouts), providing recommendations for necessary civil engineering related construction changes due to unforeseen field conditions, assisting with the review of Contract Change Orders, and reviewing construction for acceptance. We have assumed up to a total of 65 hours of effort for this task. This task does not provide field inspection services and assumes that construction inspection will be provided by the County. This task also does not include preparation of "As-Builts", we assume that the Contractor will be required to provide "red line" As-Builts to the County.

Deliverables

- 1) Attend pre-Construction Conference.
- 2) Assist with review of Contractor Submittals and RFIs as necessary.
- 3) Provide recommendations for necessary civil engineering related construction changes due to unforeseen conditions.
- 4) Assist with review of Contract Change Orders.

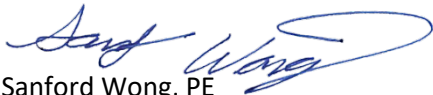
SCHEDULE

We have assumed that the notice to proceed and kick-off meeting will be completed by the end of August 2023. Once we have conducted the kick-off meeting we will develop a detailed project design schedule. NCE understands the importance of the County putting this project to bid by late 2023 or early 2024 to maximize bidding opportunities from the contracting community and we plan to deliver accordingly.

FEE ESTIMATE

NCE will provide the defined scope of work on a time-and-materials basis for an estimated fee of \$524,300. The price breakdown by task is attached. Total compensation will not exceed the amounts set forth without receipt of prior written authorization from the County.

Sincerely,



Sanford Wong, PE
Associate



James Signore, PhD, PE
Principal

NCE

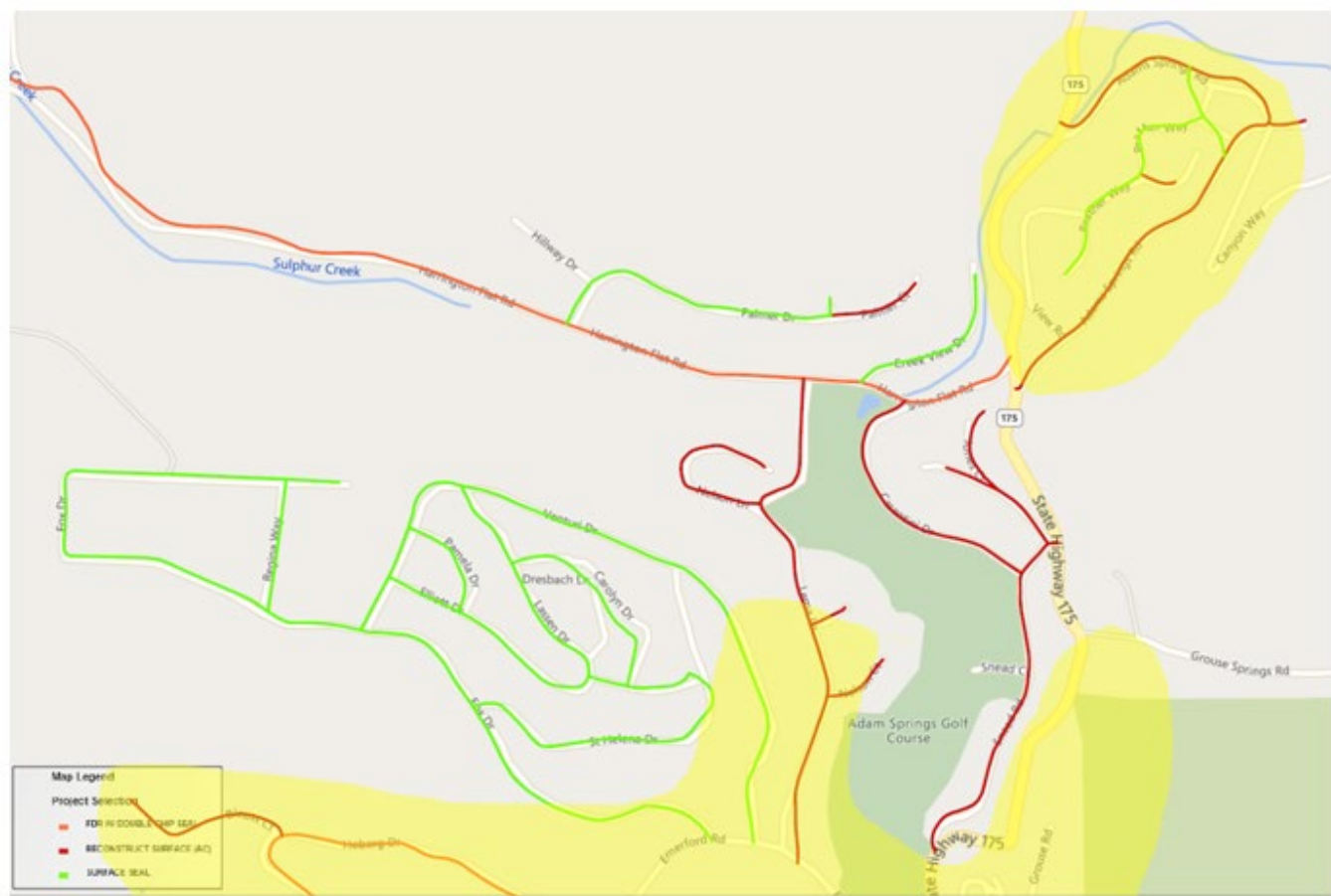
8795 Folsom Blvd
Sacramento, CA 95826
916-388-5655

Attachments:

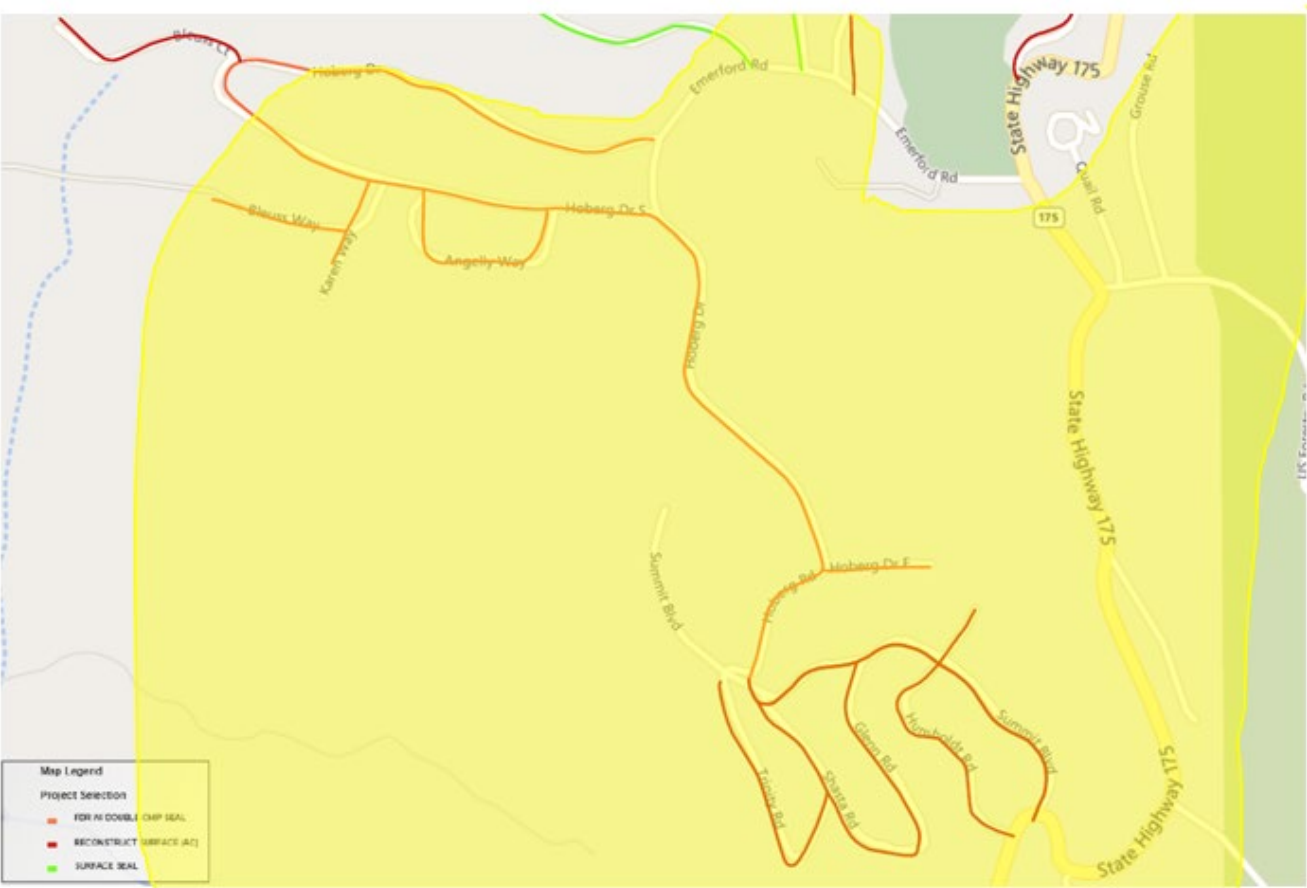
- A – Maps of Roads
- B - Fee Estimate

Attachment A
Maps of Roads

Northern Hobergs and Surrounding Area – Valley Fire Approximate Extent in Yellow

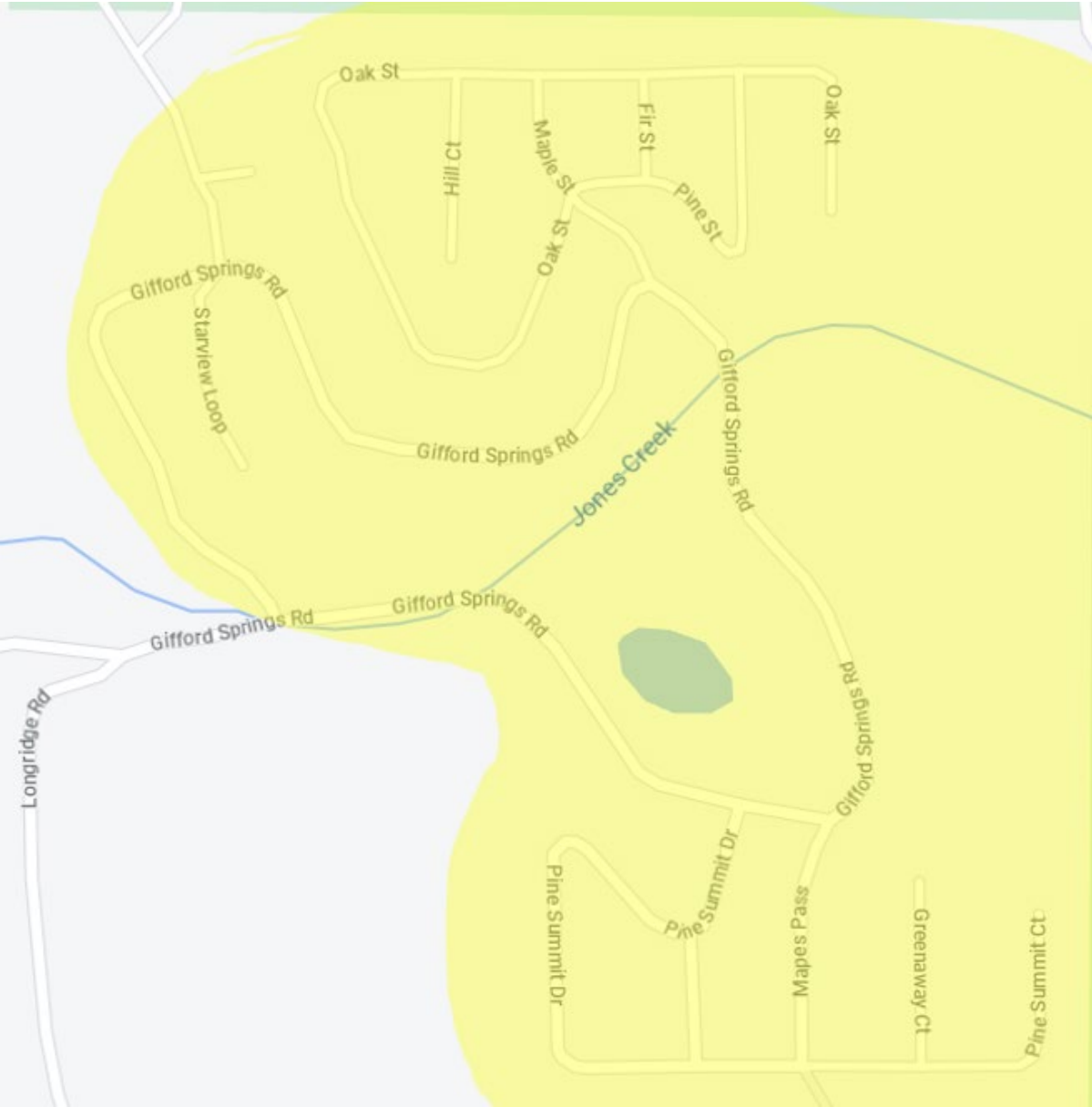


Southern Hobergs / Cobb Areas – Valley Fire Approximate Extent in Yellow



[illegible]

Pine Summit / Gifford Springs Road Neighborhood - Valley Fire Approximate Extent in Yellow



Attachment B
Fee Estimate

Lake County 2024 Pavement and PS&E
Fee Estimate
August 2023

	Labor Hours															
Task Description	Project Manager	QA/QC Manager	Principal I	Project II	Project I Engineer	Staff II Engineer	Staff I Engineer	Senior Technician	Clerical	Labor Expenses	Coring/FV D	GPR	Traffic Control	Laboratory Testing	Reimbursable Expenses	Total Cost
Rate	\$245	\$245	\$310	\$195	\$180	\$170	\$155	\$140	\$105							
1. Project Management & Meetings																
1A. Project Kick-off and Progress Meetings	16		8	4			8		1	\$ 8,525					\$ 100	\$ 8,600
1B. Utility Coordination	2		2				16			\$ 3,590					\$ 100	\$ 3,700
Sub-Total	18	0	10	4	0	0	24	0	1	\$ 12,115	\$ -		\$ -	\$ -	\$ 200	\$ 12,300
2. Pavement Rehabilitation Design																
2A. Pavement Survey	2	2	16	8	48		32			\$ 21,100					\$ 800	\$ 21,900
2B. Pavement Coring	2	2	4	4	16		24	60	1	\$ 18,105	\$ 35,000	\$ 6,000	\$ 15,400	\$ 14,080	\$ 1,000	\$ 89,600
2C. Pavement Design Recommendations	2	4	8	8	32		40			\$ 17,470					\$ 100	\$ 17,600
Sub-Total	6	8	28	20	96	0	96	60	1	\$ 56,675	\$ 35,000	\$ 6,000	\$ 15,400	\$ 14,080	\$ 1,900	\$ 129,100
3. Plans, Specifications & Estimates (PS&E)																
3A. Design Data Gathering	4				8		24	40	1	\$ 11,845					\$ 100	\$ 11,900
3B. Culvert Inventory	8	2				60	70		4	\$ 23,920					\$ 3,200	\$ 27,100
3C. 35% P&E	32	9	12		240		410		3	\$ 120,830					\$ 100	\$ 120,900
3D. 65% PS&E	24	18	10		220		370		3	\$ 110,655					\$ 100	\$ 110,800
3E. Final PS&E	16	8	8		200		290		3	\$ 89,625					\$ 100	\$ 89,700
Sub-Total	84	37	30	0	668	60	1164	40	14	\$ 356,875	\$ -		\$ -	\$ -	\$ 3,600	\$ 360,400
4. Bidding and Construction Support																
4A. Bidding Support Services	8		8	8			12		1	\$ 7,965					\$ 100	\$ 8,100
4B. Construction Support Services	16		16	8			24		1	\$ 14,265					\$ 100	\$ 14,400
Sub-Total	24	0	24	16	0	0	36	0	2	\$ 22,230	\$ -		\$ -	\$ -	\$ 200	\$ 22,500
Total	132	45	92	40	764	60	1320	100	18	\$ 447,895	\$ 35,000	\$ 6,000	\$ 15,400	\$ 14,080	\$ 5,900	\$ 524,300