

APPROACH

PROJECT UNDERSTANDING

BKF Engineers (BKF) understands the City of Mountain View (City) is seeking proposals from qualified firms to prepare construction-ready plans, specifications, and cost estimates (PS&E) for the enhancement and improvement of pedestrian and bicycle facilities along Ellis Street and Middlefield Road, known as the East Whisman Area Transit-oriented Development Improvements (TOD), Project 16-48 (Project).

The BKF Team is streamlined and readily available to start immediately, has significant resources of specialized consultants and experienced personnel, and has a proven track record in delivering fast-tracked projects in the immediate area involving Caltrans encroachment permit and VTA construction access permit approval, intersections modifications (ADA improvements), median improvements, signal modification, pedestrian facilities, bicycle facilities, roadway grading, and pedestrian paths. BKF has successfully provided the City of Mountain view with professional design and consulting services for the delivery of PS&E for construction. Our understanding of the Project is based on the scope of services for three locations as outlined in the RFP and summarizes as follows:

- » **Location 1: Ellis Street Between Fairchild and Bayshore/NASA LRT Station**
 - Modify curve radii at the intersection of Ellis with Fairchild Drive and Hwy 101 off-ramp
 - Sidewalk widening
 - Installation of new pathway south of the light rail tracks from Ellis Street to Manila Drive
 - Landscaping and irrigation
 - Striping and pavement markings
 - Lighting/traffic signal modifications
 - Retaining wall construction

- » **Location 2: East Middlefield Road between Whisman Road and Ferguson Drive**
 - Removal and replacement of concrete median curb
 - Removal of concrete pavement
 - Installation of maintenance band, concrete interlocking pavers
 - Landscaping and irrigation
 - Striping and pavement markings for left turn pockets

- » **Location 3: Middlefield Road between the Middlefield LRT Station and Bernardo Avenue**
 - Installation of new ADA compliant ramps
 - Installation of bike lane striping
 - Installation of pedestrian-scale lighting in the underpass (may require Caltrans Encroachment Permit)

Over the past 30 years, BKF Engineers has been involved in hundreds of intersection modifications, roadway design, rail crossings, utility improvements, and pedestrian and bicycle safety improvement projects throughout the San Francisco Bay Area, from project inception, through conceptual design, all the way to construction.

With a solid understanding of the Project setting, BKF has summarized in this section Project constraints and opportunities with a clear and comprehensive approach for this Project.



PROJECT APPROACH/METHODOLOGY

BKF proposes to implement its four step technical approach which integrates the following key components: **managing** the process; **defining** the critical constraints; **developing** a complete work plan and coordinated design documents; and **validating** constructability in ensuring project delivery. BKF's approach is comprehensive and considers all phases of the Project. It involves nurturing the relationships established with the stakeholders, following through with a comprehensive Scope of Work (SOW) executed by an experienced staff which is continuously monitored by the Project Manager, **Marcelo Cosentino, PE**, to ensure the delivery of an approved Project and PS&E documents for bid and advertisement. We developed the approach based on our years of experience and project implementation, which includes ensuring that multiple tasks and project phases can be performed in parallel to maintain and accelerate project schedules. We believe this approach will be instrumental in delivering the City's Project in the most efficient manner.

STEP ONE

BKF will manage the process by understanding and obtaining the City's confirmation on our detailed Project scope, budget and schedule. This includes having committed and experienced personnel on the team led by Marcelo Cosentino, our experienced Project Manager.

This step is undertaken at the initiation of the Project. Although management is not identified as a specific task, it will be the Project Manager's responsibility to ensure that the work is completed in accordance to the set schedule and commitments are met for successful approval of Environmental permitting, Caltrans encroachment permit, and VTA construction access permit. These parallel activities will be continuously monitored throughout the Project duration, will provide a seamless and expedited project delivery.

The BKF Team is readily available, has significant resources of specialized and experienced personnel, and has a proven track record in delivering fast-track projects involving intersection modification, utility improvements, roadway design and signal design.

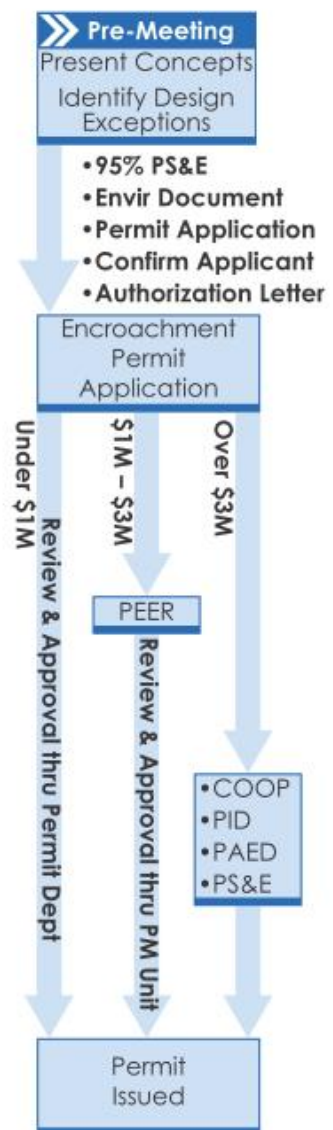
With an in-house survey department, the BKF project manager will ensure the fast track task for survey work and, at the request of the City, preparation of plats and legal documents for property acquisition to make sure the final PS&E will be delivered on time.

BKF has a wealth of experience in processing Caltrans encroachment permit projects through the Caltrans encroachment permit office. Our personal relationships with Caltrans staff and understanding of the Caltrans process will allow for a smooth Project delivery.



Ellis Street at Route 101

Caltrans Approval Process



STEP TWO

The **definition** of the Project will first include having a thorough understanding of the Project via review of existing available Project data and clarity of the City's current goals and objectives, including stakeholder's issues and expectations. With this, we will be identify any obstacles or critical issues early in the design process so that they may be recognized, brought to the City with recommended solutions and resolved with the City's concurrence.

BKF Has already reviewed the following information provided by the City:

- » NASA-Ames Bayshore Light Rail Station Pedestrian Access Study

In conjunction with the development of the Project SOW, budget and schedule, BKF's approach recognizes that the Project affects multiple stakeholders whose consensus is necessary to obtain project approval. To have the Project move forward, BKF's approach is to quickly review and assess the existing available information. This includes reviewing the existing work and ensuring that the design is still in compliance with current design standards and guidelines.

With the objectives and goals known, the BKF Team will be able to engage the next step and to prepare conceptual design and address any issues before proceeding further with the project. Working continuously with the City and defining the Project, its goals, and objectives will allow seamless design refinement and development in the subsequent step, that can validated and then used to engage stakeholders and solicit ideas, recommendations and comments for ultimate project improvements and approval.



Whisman Road Median Improvements

IDENTIFY OBSTACLES/ CRITICAL ISSUES

BKF will identify obstacles or critical issues early in the design process so that they may be recognized, brought to the City with recommended solutions and resolved with the City's concurrence.

The following are possible critical issues shall be identified early:

- ✓ *Pedestrian safety for light rail track crossing at Ellis Street.*
- ✓ *Corner sight distance for pedestrian crossing at Manila Drive*
- ✓ *Horizontal and vertical constraints for new path under Route 101.*
- ✓ *Right-of-way or lane width constraints along the Middlefield Road corridor and at intersections*
- ✓ *Stage construction and traffic control measures during construction*
- ✓ *Identify existing utilities in conflict with the work*



BKF designed the Whisman Road Median Improvements



STEP THREE

The **development** of the PS&E will require not only understanding the PS&E approval process, but providing thorough, expert, and experienced design services in refining and finalizing the ultimate design of the project.

BKF will work closely with the City as well as Caltrans, VTA, CPUC, NASA Ames, utility owners, stakeholders and businesses/residents to ensure that all bases are covered in the approved PS&E. Associated permit fees will be a pass-through cost to the City.

To implement Step 3 of the approach, BKF has developed a detailed Work Plan which identifies the scope of work to be performed during each task.

The goal of the project is to enhance pedestrian and bicycle usage. For the Fairchild Drive to Manila Drive segment, we will need to create an experience that is perceived as safe and inviting, especially as pedestrians are asked to cross numerous intersections, travel underneath 101, and then cross through the land between the Frontage Road and the light rail tracks.

To illustrate our clear understanding of the project, we have prepared a visual rendering showing the implementation of the project goals along Ellis Street.

COMMUNITY ENTRY

The proposed connection to the Bay Shore/NASA station is a visual prominent location in the Mountain View community.

- ✓ Location 1 serves as a vital entry to the East Whisman area and an invitation to transit oriented development
- ✓ It is a community entry for LRT users and from 101. It requires a design treatment consistent with its importance.
- ✓ The design solution should consider the strong, landmark architectural presence of the NASA/Ames structure and build upon the character of the Light Rail Station (lighting, signage, and seating).



Rendering of Ellis Street Undercrossing at Route 101 (Looking North)



BKF will work closely with the City, Caltrans, business owners and the community to determine the appropriate length and width of medians along Middlefield Road.

As a key corridor in Mountain View, the Middlefield streetscape design will need to support the vision for the corridor that is currently being developed in the East Whisman Precise Plan. The landscape will also need to reflect Mountain View's commitment to sustainability. Use of smart irrigation technology, seamlessly incorporates storm water treatment into streetscape and low water use plant materials which do not require excessive maintenance or generate green waste.

To illustrate our clear understanding of the median improvement project, below is a sample of a similar project prepared by Gates + Associates showing implementation of median improvements with pedestrian, accessibility, and bicycle friendly features.

PEDESTRIAN/BIKE FRIENDLY ENVIRONMENT

The goal of the median, bicycle and pedestrian improvements along E. Middlefield Road will be to facilitate access to the East Whisman Area and the Middlefield light rail station.

- ✓ *Create an inviting and safe environment for pedestrian and bicycles.*
- ✓ *Enhance accessibility by upgrading curb ramps at intersections.*
- ✓ *Control vehicle left-turn movements by adding raised, planted medians while maintaining access to business driveways.*
- ✓ *Increase safety under Highway 237 by adding pedestrian level lighting along Middlefield Road.*
- ✓ *Install clearly delineated bicycle lanes along Middlefield Road.*



Charleston –Arastadero Corridor Improvements, Palo Alto (Before)



Charleston –Arastadero Corridor Improvements, Palo Alto (After)



STEP FOUR

Our last step in our four-step approach, which is a continuous process throughout the Project, is the **validation** of the Project. BKF is committed to providing excellent services, and we stand behind our work. We have a fine-tuned quality control and quality assurance (QA/QC) program overseen by our dedicated **QA/QC Engineer, Carmelo Cecilio, PE** for design, reports, plan, specification, and estimate production, and project processing efforts.

This validation and QA/QC process enables us to quickly develop practical approaches and also provides experienced input in cost estimating, constructability, end-user operations and maintenance, and value engineering. This same commitment of monitoring and validating is extended also to other project components such as scope, budgets, schedules and cost estimates so that no surprises arise that may delay the Project.

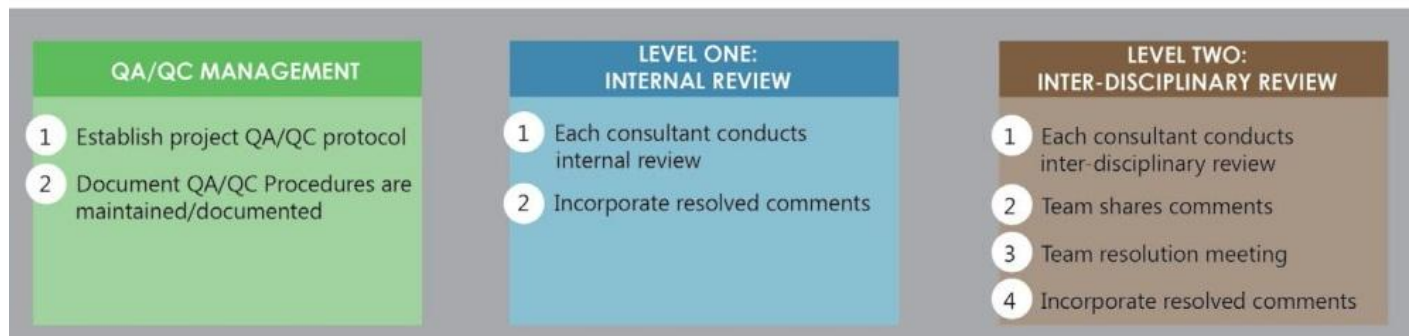
With BKF's four step project approach/methodology, a detailed work plan/scope of work is yielded, that is continually monitored and evolving, and we believe that partnering is both aligned and reinforced. This ensures that together with the City and BKF's leadership, along with the Team's technical expertise in intersection layout, grading & drainage design, and traffic signal modification, we will meet our goals and objectives.



PERMITS

The following are permits that will need to be obtained for the Project

1. **Caltrans Encroachment Permit**
 - ✓ Submit Encroachment permit with 65% Design Level
 - ✓ Required for improvement to abutment wall and on/off ramps at Ellis Street
 - ✓ Required for improvements under Highway 237
 - ✓ Obtain cost of improvements within the Caltrans Right of way.
2. **VTA Construction Access Permit**
 - ✓ Obtain cost of improvements within the VTA Right of way.
 - ✓ Include APN number of impacted parcel
 - ✓ VTA will require City to purchase an easement through federal lands for the pedestrian at-grade crossing
 - ✓ Contractor background security check
3. **CPUC GO-88B**
 - ✓ Prepare exhibit for alteration of rail crossing at Ellis Street & Route 101 NB Off ramp
 - ✓ Attend mandatory field meeting with CPUC and VTA.
 - ✓ Prepare submittal package and application.
4. **NASA Ames Permit**
 - ✓ Obtain NASA permit for Project improvements
 - ✓ Work with NASA Design Review Board for permit approval



WORK PLAN

BKF's **Project Manager Marcelo Cosentino, PE**, **Principal-in-Charge Natalina Bernardi, PE** will be the lead for the City and have the entire company's resources available to them. Having worked together for over 9 years on roadway design, intersection modification, pedestrian and bicycle safety improvements, traffic signal installation and median projects throughout the San Francisco Bay Area, we are committed to the City and responsible for managing the Project and the BKF Team. We will Supervise, coordinate and monitor the design for conformance with City, VTA and Caltrans standards and policies. We will establish and implement a quality control procedure for design activities, perform in-house quality control reviews for each task, and submit Project deliverables to the City for review in accordance with the approved schedule. These project management elements have been integrated into the various tasks that follow:

TASK 1 – PRELIMINARY INVESTIGATION/PROJECT COORDINATION

Immediately after receiving the Notice-to-Proceed, BKF will meet with City staff to review project requirements and obtain information prepared to date. Having worked on the Whisman Road Median and Pedestrian Improvements, as well as various studies and projects on the NASA/Ames site, BKF has much of the history and information for this particular area. BKF will perform field investigations to verify preliminary studies, conduct engineering-oriented investigations and verify utility locations. This task will consist of compiling, reviewing existing data pertinent to the Project and performing investigations and studies necessary to verify Project criteria and scope. Also included are planning phase activities, conducting site visits/field review/field trips, and obtaining information and requirements related to utilities. BKF team activities will include the following during this task:

- **Kick-off Meeting:** A kick-off meeting will be scheduled with the City soon after the Notice-to-Proceed to confirm Project scope and objectives. BKF will meet with City staff to establish project expectations, discuss agency reviews and determine the schedule for the Project.
- **Project Meetings:** Mr. Cosentino will set up and run monthly Project Development Team meetings with the City, agencies and stakeholders during PS&E development. We will discuss the Project progress, issues which may affect the Project schedule and budget, and any other agenda items that City may request for discussion. Agendas, action logs, updated Project schedules and meeting minutes will be prepared and distributed. We will maintain continuous communication with the City to ensure the City's goals and expectations are being satisfied.
- **Project Schedule:** Prepare and update schedule for the entire project using Microsoft Project software to be submitted at each monthly Project Meeting. Project Schedule will include key milestones and agency review periods.
- **Reporting and Invoicing:** Monthly progress reports will summarize milestones accomplished during the reporting period and discuss outstanding issues and action items. Progress reports will also identify concerns and recommendations. Invoices will include costs to date and percent complete.
- **Site Visit:** BKF will request the City and project stakeholders attend a field review for the Project site. This site visit is imperative to ensure the design team and the City are in agreement with the scope and limits of work. The Project Team will conduct site visits to evaluate and document the existing Project site conditions, constraints, opportunities, including utilities in conflict with improvements, and possible contractor staging areas.
- **Data Collection and Review:** BKF has obtained/will obtain and review available data and information necessary for final design of the Project. This information may be obtained from the City and Caltrans:
 - [NASA Ames Bayshore Light Rail Station Pedestrian Access Study \(April 2015\)](#)
 - [Third Five-year Review Report for Middlefield-Ellis-Whisman \(MEW\) Superfund Study Area \(September 2015\)](#)
 - [City, VTA and Caltrans As-Builts and other Record Documents](#)



- Caltrans/Federal As-Builts and Right of Way Record Documents
- Bridge Inspection Reports
- Other studies prepared to date
- Utility Information
- **Design Surveys and Survey Control Data:** BKF will initially establish a basis of bearing for the project using existing City monumentation. For location 1 and 2, BKF will Conduct High Definition Surveying (HDS) to collect high resolution point cloud data for the Project. HDS will allow our crews to survey project locations without affecting traffic, operations, nor encroaching onto the light rail tracks, thereby improving site-safety. Curb returns in Location 3 will be surveyed conventionally.
- **Traffic Counts:** BKF will conduct traffic counts at the following locations to support pedestrian, bicycle and roadway improvements for Location 1:
 - Intersection: Ellis Street/Fairchild Drive
 - Intersection: Ellis Street/Southbound Route 101 on/off Ramps
 - Intersection: Ellis Street/Northbound Route 101 on/off Ramps
 - Queuing Analysis: Manila Drive for proposed crosswalk

Additionally, BKF will conduct left-turn traffic counts into major driveways on Middlefield Road from Whisman Road to Ferguson Drive to determine left-turn lane pocket length to support pedestrian, bicycle and roadway improvements for Location 2.

- **Geotechnical Investigation: Geocon Inc.** will conduct the project geotechnical investigation including a field exploration program, geotechnical laboratory testing, engineering analysis, and will provide a draft and final geotechnical design report that will contain recommendations to be used by the Design Team for pavement structural section recommendations and retaining wall design and backfill. BKF will obtain a Caltrans encroachment permit for this work; it is assumed by BKF that permit fees associated with geotechnical investigations are a pass-through cost to the City. As required for the Health and Safety Plan and Soil Management and Air Monitoring Plan, Geocon will also obtain a no-cost encroachment permit from the City to Advance 16 soil borings using hand auger methods to maximum depth of 2.5 feet. A soil sample and analysis report will be prepared in draft and final format.
- **Structural Investigations: Biggs Cardosa Associates (BCA)** will evaluate the existing structure at Ellis Street/Route 101 to determine the extent of the cut for the west-side abutment. BCA will make recommendations for retaining wall design. For the purposes of this proposal, BCA has assumed a ground anchor (tieback) type retaining wall. The

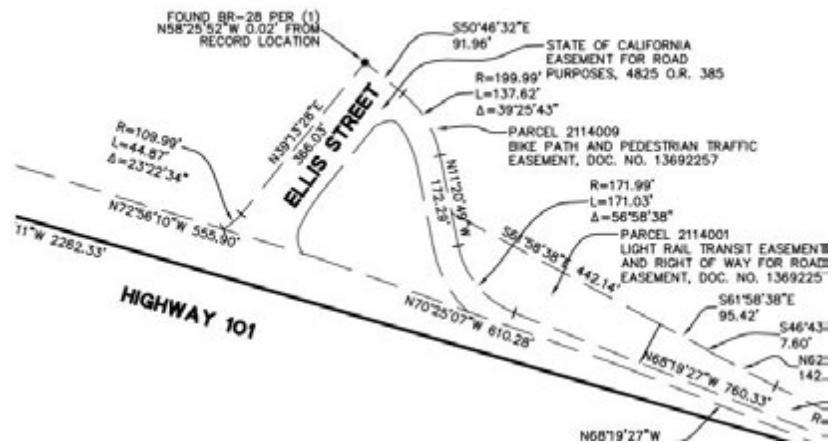


retaining wall design will be prepared in accordance to Caltrans Standards. Aesthetic enhancements, beyond uniform finishes comprised of readily available concrete form liners, off the shelf masonry blocks, and standard safety railing, are not included in the scope of services. Enhanced patterns, textures and treatments can be provided as extra work. See Optional Task 3 for enhanced retaining wall aesthetics scope of work.

- **Arborist Investigations:** There are a number of trees within the project area. The proposed design will impact trees. **Gates + Associates** arborist will assist the team in design refinements to maximize tree preservation and survival. The BKF team is already familiar with the City's tree preservation policies and removal procedures.
- **Environmental Permitting and Process:** As a subconsultant to BKF, **David J. Powers & Associates (DJP&A)** will undertake a site visit at each of the three project locations to determine if any environmental constraints are present. DJP&A will provide CEQA clearance for each of the three locations. The CEQA clearance will consist of preparing a Notice of Exemption (NOE) and filing each NOE with the Santa Clara County Clerk-Recorder. DJP&A will also pay the \$50 filing fee for each NOE. Based on comments from City staff, the scope includes one round of revisions to each NOE prior to filing.

DJP&A will also complete the NASA NEPA checklist for the improvements located on NASA property. The scope includes one round of revisions to the checklist based on comments from NASA staff.

- **Right-of-way:** For Location 1, BKF will refine the existing ownership map that we already have available/prepared for this area based on record boundary information obtained from previous studies and research performed by BKF. This information will be incorporated into the Project base mapping and will be used by the Team to determine the extents of the permanent easement required through federal lands for Project Location 1. BKF will prepare up to one plat and legal description for the permanent easement required for the pedestrian path through federal lands.



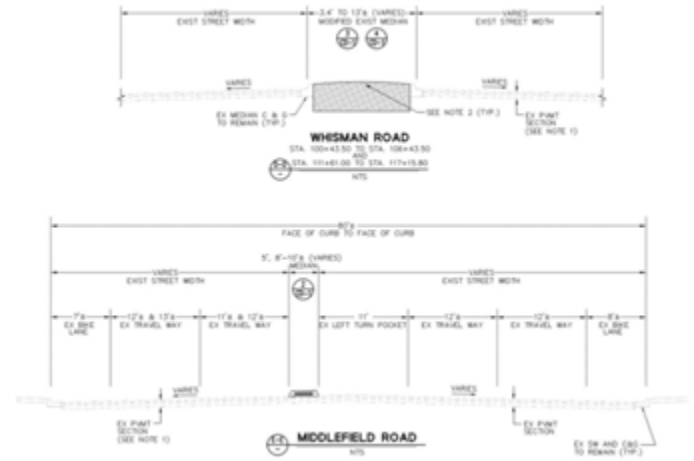
For Location 2 and 3, BKF will prepare the right of way base file from record boundary information. It is understood by BKF that the median work at Locations 2 is within the City's right of way. However, for location 3 BKF will evaluate existing right of way to determine if any pedestrian improvements, ADA curb ramps in particular, will encroach into private property.

- **Utility Coordination:** BKF will coordinate with the City and other utility companies to verify location and depth of existing facilities. We will also perform utility research and surveys to map the existing utilities in the Project area, positively locate utilities (as needed) that potentially conflict with the proposed improvements and develop relocation plans for conflicting utilities. This level of effort will minimize construction costs and schedule delay, and ensure the correct placement of the proposed improvements. BKF will:
 - Review and update as-built utility information for the Project area
 - Request utility mapping from all affected utility owners
 - Update base mapping with existing utility information
 - Submit utility maps to affected utility owners for verification
 - Identify potential utility conflicts for potholing/relocation



All the information gathered from maps and field investigation will be compiled into a comprehensive utility map and matrix and will be updated throughout the course of the Project. This utility matrix will document and track the disposition of all utilities within the limits of the Project, if relocation is necessary, prior rights, and potential relocation costs.

- **Project Base Plans:** BKF will prepare base plans using the topographic and survey information and as-builts in accordance to City CADD standards. We will field verify the base map with the existing conditions prior to the design phase.
- **Geometric Plan:** BKF will review the City’s preferred concept from the NASA/Ames Bayshore Light Rail Station Pedestrian Access Study to verify that all roadway alignments, including roadway geometry, sections, conceptual utility impacts and any other key design elements can be brought forward into the design Development/Construction Documents phase.



The goal of Task 1 is to gather all existing and new information and create a basis of conceptual design necessary to move forward with development of a refined design, and address any issues before proceeding further with the 65% PS&E, 95% PS&E, Draft 100% PS&E, and Final 100% PS&E.

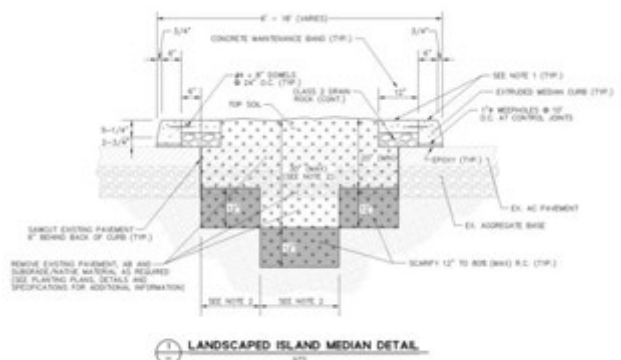
TASK 1 – DELIVERABLES:

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| » Progress Report and Invoices | » Meeting Agendas and Minutes |
| » Submittal Logs | » Action Logs |
| » Schedule Updates | » Transmittal and Memos |
| » Field Review Meeting Summary/Action Items | » Topo and Supplemental Survey |
| » Utility Request Letters | » Utility Map and Matrix |
| » Geotechnical Report | » Geometric Plans |
| » Utility Layouts | » Project Base Mapping |
| » 1 Plat and Legal Descriptions for easement | » Arborist Report |
| » Environmental Documentations, Health and Safety Plan and Soil Management and Air Monitoring Plan | |

TASK 2 – DESIGN DEVELOPMENT/CONSTRUCTION DOCUMENTS PREPARATION OF 65% PS&E

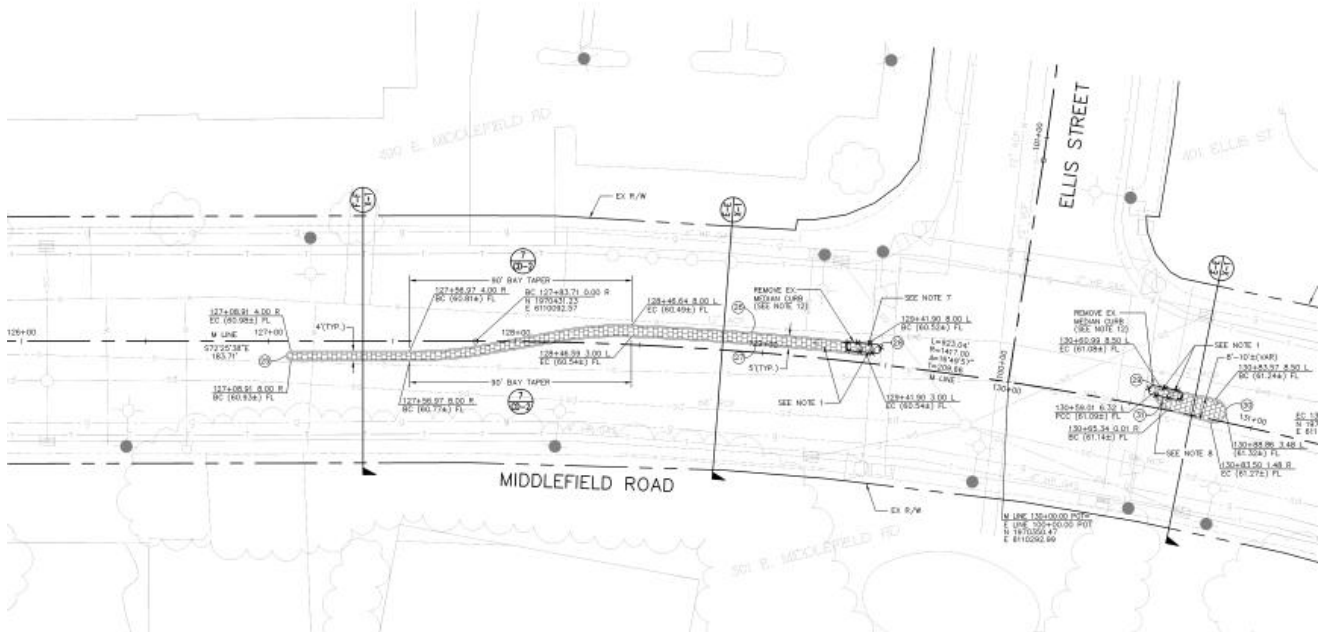
Using the information gathered by the BKF Team in Task 1 and initial input from the City, we will generate the 65% PS&E package including drawings, technical specifications, engineers estimate, calculations and other necessary documents. Supporting information may also include catalog cuts and product literature of elements used throughout the Project. The PS&E package will, at a minimum, contain the following information:

- **Title Sheet:** BKF will prepare a Title Sheet using the City standard sheet to provide an overview of the Project limits and an index of sheets. Contact information for the City and utility companies



will be assembled along with the Project vertical datum and horizontal control information.

- Demolition Plan:** Demolition plans will be prepared showing the extents of pavement and sidewalk removal along E. Middlefield road for new median improvements and curb ramp upgrades. These will also show the extent of removal of pavement, sidewalk, curb and gutter for pedestrian improvements along Ellis Street. The demolition plan will also reference existing utilities and the main alignments for the project.
- Plan Sheets:** All plan sheets will be prepared showing the horizontal alignments for the improvements. Plan view will include location of curb ramps, pavement, sidewalk, and curb and gutter. It is anticipated at this time that no post-construction storm water quality treatment will be required for this project.
- Typical Sections:** Typical Sections will be developed showing the location of the alignment line, lane lines, new medians, bike lanes, pathway, curb and gutter, sidewalk, and right-of-way. These sections will show relative vertical and horizontal dimensions of pathway, medians, lane widths, sidewalks, and other hardscape items.
- Construction Detail Sheets:** Sheets will be prepared showing construction items that will need additional details and information to ensure the Contractor can construct the Project as intended. Details will include items such as, pathway detailing/grading conforms, sidewalks, special curb ramps, and curb and gutter/cross gutter replacement information sufficient for the contractor to accurately construct the project.
- Storm Water Pollution Prevention Plan (SWPPP):** BKF will prepare a Storm Water Pollution Prevention Plan (SWPPP) for projects to meet the requirements of the California Construction General Permit by a Qualified SWPPP Developer (QSD). The Project's Risk Level will be determined and based on the risk level the appropriate BMPs and other appurtenant measures will be included in the SWPPP. BKF will coordinate with the City to determine the Legally Responsible Person (LRP) and determine how the document will be loaded on the SMARTS system. If required, the SWPPP will be amended if there is a change in construction or operations which may affect the discharge of pollutants, change in duration, and when deemed necessary by the QSD.
- Signing and Pavement Delineation:** Plans will be developed using the approved geometry and will be prepared to show the new pavement delineation for the left-turn pockets along E. Middlefield Road. For the pedestrian and bicycle improvements along Ellis Street, BKF will include high visibility crosswalks and bicycle pavement markings to highlight pedestrian and bicycle safety.



As part of the Whisman Rd. Median Improvements, BKF prepared ADA Accessibility, Traffic Signal Modifications, and Median Improvements at Middlefield Rd./Ellis St.



- **Traffic Control Plans/Construction Detour Plans:** BKF will generate the appropriate traffic control plans for the proposed improvements for Location 1. BKF will work with Caltrans as part of the encroachment permit to verify our construction staging approach near the Route 101 on/off ramps and Highway 237 on/off ramps. Traffic control for Location 2 and 3 will be per Caltrans Standard Plans for median and lane closures.
- **Traffic Signal Modification and Lighting:** Traffic signal plans and schedules for modifications at northbound Route 101 on/off ramps with Ellis Street will be designed and detailed to include the new pedestrian crossing. BKF will work with the City and Caltrans to determine signal phasing and prioritization modules. Additionally, Alliance Engineers (AEC) will prepare the lighting plans for the City's Project. AEC has extensive experience in projects with the City and is familiar with the City's photometric lighting standards and requirements.
- **Composite Utility Sheets:** BKF will show existing utilities gathered from supplemental surveying and third party utility mapping. If relocations are necessary for wet utilities, both the horizontal and vertical locations will be depicted for storm drain, sewer, water, and reclaimed water lines on the sheets. If third party relocations are necessary, BKF will prepare documentation for the City to notify the utility owner. These documents will clearly show the location of the conflict, location of possible relocation, timeframe of when the relocation will be needed and confirm the liability of the relocation costs.
- **Planting/Irrigation Plans:** Gates + Associates will prepare planting and irrigations plans for areas disturbed by construction. Additionally, they will prepare plans for median planting. Based on the evaluation of the existing irrigation controller capacity, it will be determined if a new controller will be required for median irrigation. Additionally, BKF will work with DGA to determine if additional points of connection are needed for median planting or if a simple irrigation crossovers (from the existing irrigation main line) will suffice.
- **Structure Plans:** BKF will work with BCA to establish the alignment of the retaining wall layout line, and retaining wall height. BCA will prepare retaining wall plans for the wall under Route 101. The retaining wall will be placed at a location that provides a horizontal minimum of 12 feet for the pathway. Retaining wall plans will be accompanied by the log of test borings prepared by Geocon.
- **Specifications:** Technical Specifications will incorporate Caltrans 2015 formatting and will be prepared based on the Project needs. The bid schedule will be prepared and verified along with an outline of the project-specific front end specifications documents.
- **Engineer's Estimates:** For each submittal, BKF will develop an engineer's estimate which will be in line with the bid schedule and the specifications that will be reviewed against the project budget throughout the design and into construction.

PREPARATION OF 95% PS&E

The assigned BKF Project Team will meet with City staff to review comments from the 65% Submittal. Focus will be on resolving and incorporating all design review comments resulting from the 65% submittal. BKF may attend an additional field review meeting, if necessary, to compare the 65% plans with the current field conditions and requirements. All gaps in the design caused by changes or pending design and policy decisions, will be specifically targeted for immediate resolution. Construction details for the project elements will be finalized as part of this phase of the design process.

We understand there is finite construction budget associated with capital funding and will compare this budget to the Engineer's Estimate to confirm both are in alignment. BKF will continue to monitor the engineer's estimate and make any necessary recommendations to the City, if necessary, for adjustments to the base bid or introduction of bid additives.



PREPARATION OF “DRAFT” 100% PS&E

BKF will incorporate all design review comments resulting from the 95% submittal. An updated engineer’s cost estimate will be generated and compared to the allowable budgets. Any adjustments to the base/additive bid schedules will be made and engineer’s estimate will be updated. We will work closely with the City to refine and publish the front end of the specifications including order of work, construction schedule, and bid schedules.

PREPARATION OF “FINAL” 100% PS&E

BKF will incorporate all design review comments resulting from the “Draft” 100% submittal. Any adjustments to the base/additive bid schedules will be made and engineer’s estimate will be updated. We will work closely with the City to refine and publish the front end of the specifications including order of work, construction schedule, and bid schedules.

In addition to the above, several supporting documentations and parallel approval processes will be required. Based on BKF’s extensive experience, the following be provided:

CALTRANS

Caltrans has jurisdiction over the Route 101 Overcrossing and the on/off ramps on Ellis Street up to, and including the traffic signalized intersections. Caltrans will want to verify that traffic operations are not impacted during and following construction operations of the improvements. It is anticipated that the work will be performed under a Caltrans encroachment permit. Additional work that may be required under a permit will be the lighting under Highway 237.

As part of the Caltrans encroachment permit, we will prepare a comprehensive set of plans and specifications to encompass roadway/civil, traffic signal, structure plans, grading and drainage plans, traffic handling and utilities. BKF will evaluate impact to the roadway and traffic signals and provide roadway and traffic signal modification plans for review by Caltrans.

The following tasks, documentation and supporting services will be provided to assist the facilitation of the Caltrans encroachment permit process and PS&E:

- **Design Exception Fact Sheets:** Based on the alternatives developed to date, design exceptions fact sheets will be required. The fact sheets will be drafted by BKF and submitted to Caltrans for approval. This work involves close communications with Caltrans as fact sheets for pedestrian and bicycle facilities are not granted frequently, nor easily. BKF’s relationship and mutual respect with the District Bicycle Coordinator and Headquarter Design Coordinator will help avoid a schedule delay in obtaining fact sheet approval. Design exceptions may include shoulder widths, median widths and lane width standards.
- **ADA Compliance Certification:** The project will be required to submit an ADA compliance certification for both design and construction. BKF will initiate the certification and ensure that the certification is submitted with the Caltrans permit application.
- **Traffic Management Plan (TMP) Checklist:** A TMP checklist will be required to identify the traffic impacts during construction. Given that we are detailing the stage construction and traffic handling for all the modes of transportation as part of the 65% PS&E, the TMP Checklist will act as a quality control document that will be submitted to Caltrans.
- **Storm Water Data Report (SWDR):** Caltrans may require SWDR report to be drafted to document the temporary and permanent water quality issues and mitigations within their right of way. BKF will also prepare this report to support the EP process.



VTA CONSTRUCTION ACCESS PERMIT

VTA has jurisdiction along the light rail tracks and at the Bayshore/NASA and Middlefield Stations. Coordination with the CPUC and the preparation of Construction Access Permit (CAP) will be required for work within the light rail tracks and/or stations. The Contractor will be required to have personnel go through the "improveit.com" process security scanning which is a requirement of the CAP. These and additional requirements will be added to the specifications as a requirement of the contractor. BKF is extensively familiar with the VTA's CAP process and has established clear lines of communication and strong relationships with the CAP office.

CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) GO-88B:

The CPUC may require a GO-88B application to be drafted to document the modifications to the existing light rail crossing at Ellis Street/Route 101 northbound off-ramp and associated mitigations. BKF will also prepare this report with required attachments to support our submission. The GO-88B approval letter is inherently necessary for approval of the VTA CAP and Caltrans Encroachment Permit process.

TASK 2 – DELIVERABLES:

- » 65%, 95%, DRAFT 100%, and FINAL 100% PS&E Submittal Packages.
- » Response to Comments after each submittal
- » Caltrans Encroachment Permit submittal package for improvements within the Caltrans Right of way
- » VTA Construction Access Permit (CAP) submittal package for improvements within the VTA Right of way
- » California Public Utility Commission (CPUC) Order 88-B Package

TASK 3 – BIDDING ASSISTANCE

The BKF team will assist the City through the bid phase of the Project. BKF will attend the Pre-Bid Meeting, provide responses to bidder questions/clarifications, and prepare addenda as necessary to assist the City through the bid process.

TASK 4 – CONSTRUCTION ASSISTANCE

The BKF team will assist the City in providing support throughout the construction phase of the Project. BKF will assist the City in reviewing contractor submittals and responding to contractor RFIs in a timely manner. BKF's survey crews will prepare the survey staking based on the engineering issued for bid drawings. Having BKF survey crews perform the initial field survey for design and survey staking improves accuracy of the design implementation during construction.

TASK 4 – DELIVERABLES:

- » Attend Pre-Construction Meeting
- » Review Contractor Submittals and Shop Drawings
- » Review and Respond to Contractor RFIs
- » Construction Staking for the Project

TASK 5 – POSTCONSTRUCTION

The BKF team will assist the City in post-construction and preparation of record documents. BKF will prepare record drawings on Mylar based the contractor's redline drawing.



TASK 5 – DELIVERABLES:

- » One stamped and signed set of record drawings on Mylar showing incorporated changes.
- » CD of AutoCAD and PDF files.

OPTIONAL TASK 1: PUBLIC MEETINGS

At the request of the City, BKF and Gates + Associates will prepare presentation materials including PowerPoint presentation to assist the City in hosting up to two (2) community meetings.

OPTIONAL TASK 1 – DELIVERABLES:

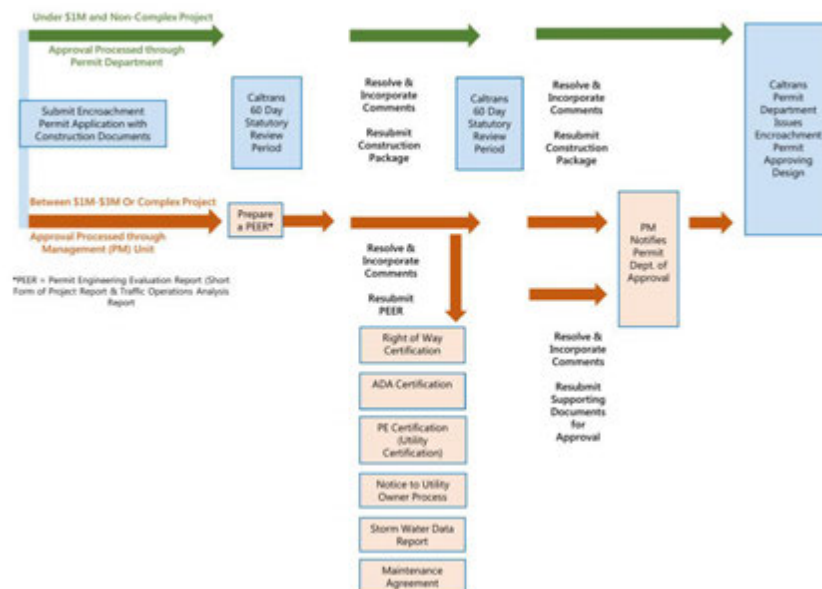
- » Meeting presentation materials
- » Attendance at up to two community meetings

OPTIONAL TASK 2: PREPARATION OF PEER – LOCATION 1

As an optional task, upon request by Caltrans and the City, The BKF team will assist the City in preparation of the Permit Engineering Evaluation Report (PEER) for the improvements at Location 1. In addition to the above, several supporting documentations and parallel approval processes will be required. Based on BKF’s extensive experience, the following will be provided:

- **Permit Engineering Evaluation Report (PEER):** If requested by Caltrans, a PEER will be provided. A PEER provides the engineering analysis to support the design being proposed and is usually prepared when a design may have adverse impacts to the State system. The PEER is a document that replaces a Project Report for encroachment permit projects. Upon review of the permit application which will be accompanied by the 65% PS&E, Caltrans will determine if a PEER is required.
- **Coordination with Caltrans:** As part of the Caltrans PEER process, Caltrans will request a CEQA document. This will require coordination with the Caltrans District 4 environmental staff and DJP&A proposes to undertake that coordination on behalf of the City. This effort will include attendance by DJP&A Staff at up to two meetings at Caltrans’ offices in Oakland.

Caltrans Approval Process



OPTIONAL TASK 2 – DELIVERABLES:

- » Caltrans PEER for proposed improvements within the State right of way.

OPTIONAL TASK 3: Enhanced Retaining Wall Aesthetic

BKF will recommend an artist to the City for retaining wall aesthetic treatment. BCA will incorporate enhanced aesthetics into the wall design. Scope of work assumes that non-standard/custom formliners or art panels will be developed by artist or others. BCA will provide an Architectural Treatment sheet as necessary to address inclusion of the art/architectural treatment into the wall design.

OPTIONAL TASK 3 – DELIVERABLES:

- » Architectural Treatment Sheet for enhanced retaining wall aesthetics

ADDITIONAL SERVICES

Upon the City's request, BKF will prepare a potholing plan for review by the City and retain **EXARO**, who will conduct pothole activities at strategic locations as directed by BKF. Both vertical and horizontal information on utilities posing potential conflicts will be gathered and summarized on a Potholing Investigation Summary and added to the Project base plans. Often times BKF has recommended that agencies pothole locations of proposed pole foundations to verify that there are no conflicts with existing utilities.

ADDITIONAL SERVICES – DELIVERABLES:

- » Potholing plan to communicate the various potential utility conflicts



SUMMARY OF FEES & HOURS BY TASK

Proposal for Engineering Services for
for
East Whisman Area Transit-Oriented Development Improvements, Project 16-48

BKF Engineers
1650 Technology Drive, Suite 650
San Jose, CA 95110
925.396.7700
www.bkf.com

Task 1 Project Investigation/ Project Coordination
Task 2 Design Development/Construction Documents
Task 3 Bidding Assistance
Task 4 Construction Assistance
Task 5 Post Construction

April 28, 2016

Engineering Costs (BKF)

Personnel	Hourly Rate	Task 1	Task 2	Task 3	Task 4	Task 5	Total
PIC	\$235.00	16	40	2	4	1	
Assoc	\$194.00	4	46	0	0	0	
PM	\$184.00	78	100	4	20	4	
Eng III	\$157.00	46	84	0	0	4	
Eng II	\$138.00	64	240	6	38	4	
Eng I	\$120.00	236	36	0	0	0	
Tech	\$135.00	12	362	8	18	26	
Proj Asst	\$75.00	0	4	0	0	0	
Surv	\$262.00	106	0	0	72	0	
Total Hours		562	912	20	152	39	
<i>BKF Engineering Subtotal</i>		\$ 92,654	\$ 136,522	\$ 3,114	\$ 31,158	\$ 5,661	\$ 269,109

Reimbursables - Other Direct Costs (BKF)

	Task 1	Task 2	Task 3	Task 4	Task 5	Total
Printing/Delivery /Computer/Plotter	\$ 463.27	\$ 1,365.22		\$ 311.58	\$ 113.22	\$ 2,253
Mileage/Parking/Tolls		\$ 120.00		\$ 120.00		\$ 240
Aerial Mapping	\$ 1,600.00					\$ 1,600
Traffic Counts	\$ 2,740.00					\$ 2,740
<i>Reimbursable Subtotal</i>	\$ 4,803	\$ 1,485	\$ -	\$ 432	\$ 113	\$ 6,833

Subconsultants

	Task 1	Task 2	Task 3	Task 4	Task 5	Total
Biggs Cardosa Associates Inc.	\$ 10,425.00	\$ 30,605.00	\$ 1,020.00	\$ 9,672.00	\$ 2,225.00	\$ 53,947
Gates + Associates	\$ 4,800.00	\$ 52,855.00	\$ 1,960.00	\$ 3,680.00	\$ 1,960.00	\$ 65,255
Alliance Engineering Consultants	\$ 1,280.00	\$ 23,680.00	\$ -	\$ -	\$ -	\$ 24,960
Geocon Consultants, Inc.	\$ 40,315.00	\$ -	\$ -	\$ -	\$ -	\$ 40,315
David J Powers & Associates	\$ 9,531.00	\$ -	\$ -	\$ -	\$ -	\$ 9,531
<i>Subconsultant Subtotal</i>	\$ 66,351	\$ 107,140	\$ 2,980	\$ 13,352	\$ 4,185	\$ 194,008

Project Total **Total (Time and Materials - Not to Exceed Fee)** \$ **469,950**

Optional Services

Optional Task 1 Public Meeting

BKF Engineers	\$ 8,910
Biggs Cardosa Associates Inc.	\$ -
Gates + Associates	\$ 6,100
Alliance Engineering Consultants	\$ -
Geocon Consultants, Inc.	\$ -
David J Powers & Associates	\$ -
<i>Subtotal - Optional Task 1</i>	\$ 15,010

Optional Task 2 Preparation of PEER - Location 1

BKF Engineers	\$ 7,858
Biggs Cardosa Associates Inc.	\$ -
Gates + Associates	\$ -
Alliance Engineering Consultants	\$ -
Geocon Consultants, Inc.	\$ -
David J Powers & Associates	\$ -
<i>Subtotal - Optional Task 2</i>	\$ 7,858

Optional Task 3 Enhanced Retaining Wall Aesthetics

BKF Engineers	\$ -
Biggs Cardosa Associates Inc.	\$ 10,000
Gates + Associates	\$ -
Alliance Engineering Consultants	\$ -
Geocon Consultants, Inc.	\$ -
David J Powers & Associates	\$ -
<i>Subtotal - Optional Task 3</i>	\$ 10,000

Assumptions:

- Project design duration is assumed to be from June, 2016 to February, 2017.
- City Fees for permits applications will be waived.
- Potholing of Utilities will be considered as additional scope of services.