CITY OF SUNNYVALE REPORT
ZONING ADMINISTRATOR HEARING

March 27, 2013

File Number: 2013-7013 **Permit Type:** Use Permit

Location: 150 Lawrence Station Rd. (near Kifer Rd.) (APN: 216-27-052)

Applicant/Owner: Barghausen Consulting Engineers, Inc./Costco Wholesale

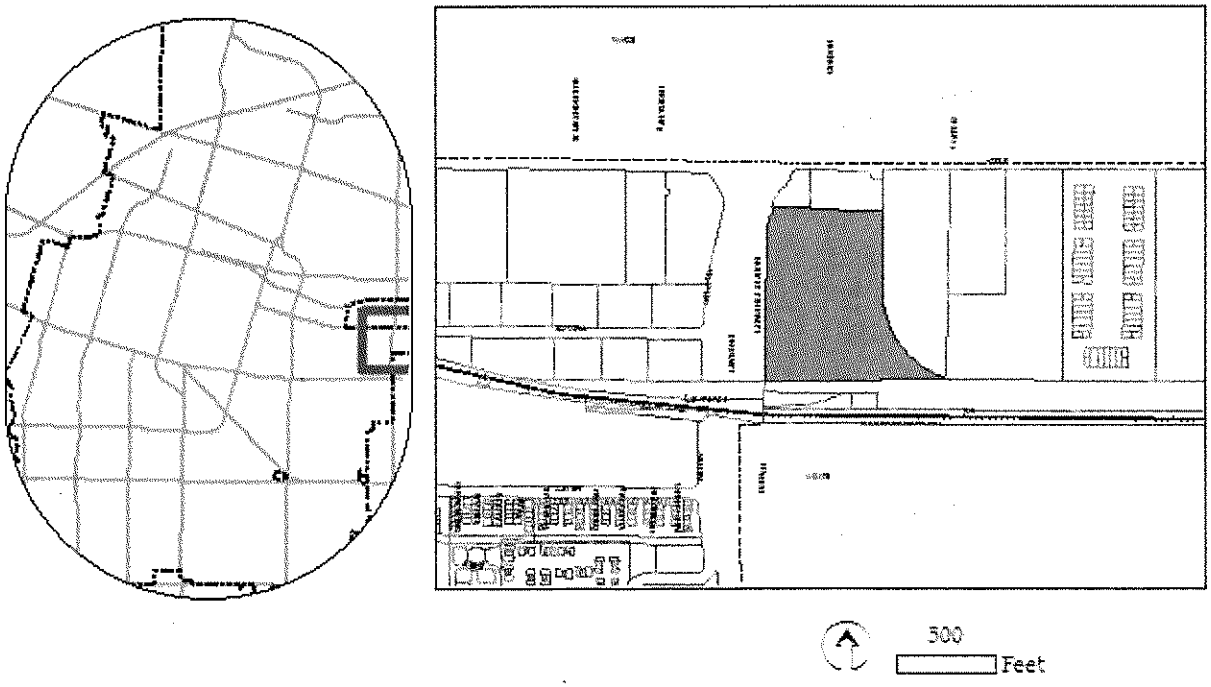
Staff Contact: Noren Caliva-Lepe, Associate Planner, (408) 730-7637

Project Description: To allow the expansion of an existing fuel facility at Costco.

Reason for Permit: A Use Permit is required for modifications to a fuel facility.

Issues: Parking and circulation

Recommendation: Approve with Conditions



PROJECT DESCRIPTION

	Existing	Proposed
General Plan:	Industrial	Same
Zoning District:	M-S	Same
Lot Size:	560,885 sq. ft.	Same
Gross Floor Area:	141,510 sq. ft. total *(137,450 sq. ft. buildings, 3,836 sq. ft. fuel canopy, 24 sq. ft. accessory structure)*	142,940 sq. ft. total *(137,450 sq. ft. buildings, 5,394 sq. ft. fuel canopy, 96 sq. ft. accessory structure)*
Floor Area Ratio:	25.2%	25.4%
Parking Spaces:	761	735
Fuel Dispensers:	16	20
Landscaping / % of Lot Area:	47,701 sq. ft. / 8.5%	48,747 sq. ft. / 8.7%
Parking Lot Shading:	49%*	64.7%*

**For reconfigured parking lot areas area only, not entire site.*

Previous Planning Projects related to Subject Application: Use Permit #1986-0073 was approved in 1986 to allow retail use on the site. In 1997, Use Permit #1997-0450 was approved to expand the use to allow an automotive service station.	**Yes**
Neighborhood Preservation Complaints	**No**
Deviations from Standard Zoning Requirements: The site was developed in 1986 with substandard landscaping area and parking lot shading, which are considered to be nonconforming and not deviations from the code. In addition, new parking requirements recently took effect, which has significantly reduced the number of required parking spaces. As a result, the maximum number of parking spaces on-site is also now considered to be nonconforming.	**No**

Use Description: Costco currently occupies the entire site, with retail use, tire repair and automobile fuel service. All services are available for Costco-members only and not to the general public. No changes are proposed to the existing uses. The proposed project will expand the fueling facility from 16 fuel dispensers to 20 (increase of 4). Site modifications include an expansion of the fuel canopy, parking lot restriping, and landscaping upgrades.

Hours of Operation: Costco and the existing fueling facility currently operate Monday through Friday, 10 a.m. to 8:30 p.m., Saturday 9:30 a.m. to 6 p.m., and Sunday 10 a.m. to 6 p.m. No changes are proposed to the hours of operation.

Changes to Fueling Facility: An additional row of 4 fuel dispensers will be added along the north side, which will expand the fuel canopy from 3,836 square feet to 5,394 square feet (increase of 1,558 square feet). The design of the fuel canopy will match the existing, with the same metal fascia, steel columns, and color palette. New canopy signs will require a separate staff-level Planning permit and must comply with Sunnyvale Municipal Code (SMC) Chapter 19.44 (see Attachment A).

New equipment associated with the expansion includes a new transformer, relocated Enhanced Vapor Recovery (EVR) system, and modified controller structure. The new transformer and relocated EVR system will be located behind the fuel canopy to the east and will be screened with landscaping.

The existing controller structure (accessory structure) is approximately 24 square feet in size, 8 feet in height, and is located within a larger lattice enclosure just north of the fuel canopy. The controller structure currently houses mechanical equipment for the fueling facility, such as electrical panels, pump programming and an emergency shut-off system. The applicant proposes to remove the entire lattice enclosure from the site, relocate the controller structure behind the fuel canopy to the east, and expand the controller structure to be 96 square feet in size. Staff finds that the relocated controller structure will be minimally visible from the street frontage, as it will be placed behind the fuel dispensers within a landscaping area.

Parking: New parking requirements took effect in early February, which includes a reduced parking rate for "bulky-merchandise retail" at a minimum of 2.5 spaces per 1,000 square feet of building area and maximum of 4 spaces per 1,000 square feet. Bulky-merchandise retail is defined as "a tenant that primarily sells bulky goods or retail in a warehouse setting that is not part of a shopping center." The new parking code also excludes fuel canopies from parking calculations. Under the new code, the site requires a minimum of 344 parking spaces and a maximum of 550 parking spaces.

The applicant proposes to reconfigure two main parking lots adjacent to the fuel canopy and restripe a portion of the parking lot in back of the main building. The modified parking spaces will comply with the new parking requirements and design guidelines, such as universal stall dimensions, double-striping, and installation of wheel stops. The parking lot modifications will result in a total of 735 on-site parking spaces (loss of 26 parking spaces). The site will comply with the minimum parking rate and will continue to be legal, nonconforming for the maximum parking rate.

Enhanced Pedestrian Walkways: The new parking design guidelines also encourage enhanced pedestrian walkways within parking lots. Therefore, staff recommends that the reconfigured parking lot to the east of the fuel canopy be

modified to include a pedestrian walkway that leads to the sidewalk adjacent to the main building. The following specifications are recommended (see Attachment A):

- The walkway must be at least 5 feet wide,
- The walkway must be visually distinct from the vehicular driving surfaces (e.g. pavers, bricks, scored concrete, or color),
- A maximum of 4 parking spaces may be removed,
- Landscaping areas may not be reduced.

Vehicle Circulation and Queuing: The proposed parking lot modifications and relocation of ground equipment will improve access to the fueling facility by creating a wider area for vehicle queuing. A queuing analysis was prepared by Kittelson & Associates, Inc, dated February 7, 2013 (see Attachment D). The consultant conducted vehicle counts during the busiest time (weekend between 11 a.m. and 3 p.m.), a found a total of 43 vehicles at the fuel dispensers and queuing lanes. Based on the modified site plan the consultant found that a total of 62 vehicles can be accommodated, including 20 vehicles at the fuel dispensers and 42 vehicles in the queuing lanes. Therefore, the consultant found that the modified site plan will provide adequate queuing space.

Landscaping: The existing site provides a total of 47,701 square feet of landscaping, which is 8.5% of the lot and is considered to be legal nonconforming. The applicant proposes to add an additional 1,046 square feet of landscaping to the parking lot, resulting in 48,747 square feet and 8.7%. New landscaping includes trees, shrubs and groundcover.

An arborist report was prepared by HortScience, Inc., dated January 2013 (see Attachment E), which evaluated the size, species, health and disposition of existing trees within the project area. A total of 37 trees on-site will be removed, 13 of which are protected London plane and Brazilian pepper trees. The majority of the London plane trees for removal are in good health but their locations conflict with the proposed parking lot modifications to the north of the fuel canopy. The Brazilian pepper trees are primarily located to the east of the fuel canopy and are generally in moderate to poor condition due to branch failure, trunk wounds, or poor form. The mature trees along the street frontages will be preserved.

Approximately 40 new 25 inch box trees will be planted within the reconfigured parking areas, which include London plan, Brazilian pepper, Canary island pine, and Red alder trees. The trees will increase the shading of the reconfigured parking lots from 49% to 64.7%.

Although the entire site continues to be severely under landscaped, staff finds that the added landscaping is an improvement over the existing site. In

addition, the new trees will provide significantly more parking lot shading in the reconfigured parking lots.

Stormwater Management Plan: A preliminary Stormwater Management Plan has been submitted for the modified areas, which shows proposed drainage patterns and conceptual treatment techniques to minimize surface runoff and pollution. Flow-through planters are proposed, with an underdrain that will connect to the on-site storm drain system. A more detailed Stormwater Management Plan will be submitted during the building permit phase per Conditions of Approval and the plans will be reviewed and certified by a City approved Third Party reviewer.

Public Contact: 17 notices were sent to surrounding property owners and residents adjacent to subject site in addition to standard noticing practice. A courtesy notice was also sent to the City of Santa Clara, as the site is adjacent to several properties within their city limits. No letters were received since the time of the staff report.

Environmental Determination: A Categorical Exemption Class 1 (minor modifications to an existing facility) relieves this project from CEQA provisions.

FINDINGS

In order to approve the Use Permit the following findings must be made:

1. The proposed use attains the objectives and purposes of the General Plan of the City of Sunnyvale.

   Land Use and Transportation Element
   Policy LT-4.1 – Protect the integrity of the City's neighborhoods, whether residential, industrial, or commercial.

   Policy LT-4.7 – Support the location of convenient retail and commercial services (e.g., restaurants and hotels) in industrial areas to support businesses, their customers, and their employees.

   Goal LT-6 – Sustain a strong local economy that contributes fiscal support for desired city services and provides a mix of jobs and commercial opportunities.

   The proposed project will expand an existing fueling facility, which is appropriately located within an industrial area. The project includes upgrades to the existing parking lot and landscaping. These upgrades will help to improve the overall look and circulation of the site.

Staff was able to make the findings as the design meets the guidelines described above.

2. The proposed use ensures that the general appearance of proposed structures, or the uses to be made of the property to which the application refers, will not impair the orderly development of, or the existing uses being made of, adjacent properties. Sufficient parking is provided to serve all uses on-site, and sufficient queuing area is provided for the fueling facility expansion. Site upgrades will help to reduce nonconformities to landscaping, and will improve the streetscape along Lawrence Station Road.

   The project is expected to have minimal impacts on surrounding properties.

ALTERNATIVES:

1. Approve the Use Permit with recommended Conditions in Attachment A.
2. Approve the Use Permit with modifications.
3. Deny the Use Permit.

RECOMMENDATION

Alternative 1. Approve the Use Permit with recommended Conditions in Attachment A.

Reviewed by:

Shaunn Mendrin
Senior Planner

Prepared By: Noren Caliva-Lepe, Associate Planner

Attachments:

A. Standard Requirements and Recommended Conditions of Approval
B. Site and Architectural Plans
C. Letter from the Applicant & Project Justifications
D. Queuing Analysis prepared by Kittelson & Associates, Inc., dated February 2013
E. Arborist Report prepared by HortScience, Inc., dated January 2013

RECOMMENDED
CONDITIONS OF APPROVAL AND
STANDARD DEVELOPMENT REQUIREMENTS
March 27, 2013

Planning Application 2013-7013
105 Lawrence Station Road
Use Permit to allow the expansion of an existing fuel facility at Costco, including modifications to portions of the parking lot and landscaping.

The following Conditions of Approval [COA] and Standard Development Requirements [SDR] apply to the project referenced above. The COAs are specific conditions applicable to the proposed project. The SDRs are items which are codified or adopted by resolution and have been included for ease of reference, they may not be appealed or changed. The COAs and SDRs are grouped under specific headings that relate to the timing of required compliance. Additional language within a condition may further define the timing of required compliance. Applicable mitigation measures are noted with "Mitigation Measure" and placed in the applicable phase of the project.

In addition to complying with all applicable City, County, State and Federal Statutes, Codes, Ordinances, Resolutions and Regulations, Permittee expressly accepts and agrees to comply with the following Conditions of Approval and Standard Development Requirements of this Permit:

GC: THE FOLLOWING GENERAL CONDITIONS OF APPROVAL AND STANDARD DEVELOPMENT REQUIREMENTS SHALL APPLY TO THE APPROVED PROJECT.

GC-1. CONFORMANCE WITH APPROVED PLANNING APPLICATION:
All building permit drawings and subsequent construction and operation shall substantially conform with the approved planning application, including: drawings/plans, materials samples, building colors, and other items submitted as part of the approved application. Any proposed amendments to the approved plans or Conditions of Approval are subject to review and approval by the City. The Director of Community Development shall determine whether revisions are considered major or minor. Minor changes are subject to review and approval by the Director of Community Development. Major changes are subject to review at a public hearing. [COA] [PLANNING]

GC-2. PERMIT EXPIRATION:
The permit shall be null and void two years from the date of approval by the final review authority at a public hearing if the approval is not exercised, unless a written request for an extension is received prior to expiration date and is approved by the Director of Community Development. [SDR] [PLANNING]

GC-3. CONFORMANCE WITH PREVIOUS PLANNING PERMIT:
The subject site shall comply with all conditions of approval and requirements of planning application 1986-0073 and 1997-0450. [PLANNING] [COA]

GC-4. SIGNS:
Proposed signage is shown for reference on plans but is not within the scope of this review. All existing/new signs shall be in conformance with Title 19 of the Sunnyvale Municipal Code. New or modified signs require approval of Sign Permits. [SDR] [PLANNING]

PS: THE FOLLOWING SHALL BE MET PRIOR TO SUBMITTAL OF BUILDING PERMIT AND/OR GRADING PERMIT.

PS-1. REQUIRED REVISIONS TO PROJECT PLANS:
The plans shall be revised to include the following:

a) The reconfigured parking lot to the east of the fuel canopy must be modified to include a pedestrian walkway that leads to the sidewalk adjacent to the main building. The following walkway specifications are required:

1. The walkway must be at least 5 feet wide,
2. The walkway must be visually distinct from the vehicular driving surfaces (e.g. pavers, bricks, scored concrete, or color),
3. A maximum of 4 parking spaces may be removed,
4. Landscaping areas may not be reduced. [COA] [PLANNING/PUBLIC WORKS]

BP: THE FOLLOWING SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS SUBMITTED FOR ANY DEMOLITION PERMIT, BUILDING PERMIT, GRADING PERMIT, AND/OR ENCROACHMENT PERMIT AND SHALL BE MET PRIOR TO THE ISSUANCE OF SAID PERMIT(S).

BP-1. CONDITIONS OF APPROVAL:

Final plans shall include all Conditions of Approval included as part of the approved application starting on sheet 2 of the plans. [COA] [PLANNING]

BP-2. RESPONSE TO CONDITIONS OF APPROVAL:
A written response indicating how each condition has or will be addressed shall accompany the building permit set of plans. [COA] [PLANNING]

BP-3. NOTICE OF CONDITIONS OF APPROVAL:
A Notice of Conditions of Approval shall be filed in the official records of the County of Santa Clara and provide proof of such recordation to the City prior to issuance of any City permit, allowed use of the property, or Final Map, as applicable. The Notice of Conditions of Approval shall be prepared by the Planning Division and shall include a description of the subject property, the Planning Application number, attached conditions of approval and any accompanying subdivision or parcel map, including book and page and recorded document number, if any, and be signed and notarized by each property owner of record.

For purposes of determining the record owner of the property, the applicant shall provide the City with evidence in the form of a report from a title insurance company indicating that the record owner(s) are the person(s) who have signed the Notice of Conditions of Approval. [COA] [PLANNING]

BP-4. BLUEPRINT FOR A CLEAN BAY:
The building permit plans shall include a "Blueprint for a Clean Bay" on one full sized sheet of the plans. [SDR] [PLANNING]

BP-5. LANDSCAPE PLAN:
Plans submitted for building permits shall include detailed landscape and irrigation plans prepared and signed by a certified professional. Landscape and irrigation plans shall be subject to review and approval by the Director of Community Development (per Condition of Approval PS-3) and comply with Sunnyvale Municipal Code Chapter 19.37 including water efficient landscaping requirements. [COA] [PLANNING]

BP-6. TREE PROTECTION PLAN:
Prior to issuance of a Demolition Permit, a Grading Permit or a Building Permit, whichever occurs first, obtain approval of a tree protection plan from the Director of Community Development. Two copies are required to be submitted for review. The tree protection plan shall include

measures noted in Title 19 of the Sunnyvale Municipal Code and at a minimum:

a) An inventory shall be taken of all existing trees on the plan including the valuation of all 'protected trees' by a certified arborist, using the latest version of the "Guide for Plant Appraisal" published by the International Society of Arboriculture (ISA).

b) All existing (non-orchard) trees shall be shown on the plans, including sizes and varieties, and clearly specify which are to be retained.

c) Provide fencing around the drip line of the trees that are to be saved and ensure that no construction debris or equipment is stored within the fenced area during the course of demolition and construction.

d) The tree protection plan shall be installed prior to issuance of any Building or Grading Permits, subject to the on-site inspection and approval by the City Arborist and shall be maintained in place during the duration of construction and shall be added to any subsequent building permit plans. [COA] [PLANNING/CITY ARBORIST]

BP-7. STORMWATER MANAGEMENT CALCULATIONS:
Submit two updated copies of the City of Sunnyvale Impervious Surface Calculation worksheet prior to issuance of a Building Permit. [COA] [PLANNING]

BP-8. STORM WATER MANAGEMENT PLAN THIRD PARTY CERTIFICATION:
Third party certification of the Storm Water Management Plan is required per the following guidance: City of Sunnyvale – Storm Water Quality BMP Applicant Guidance Manual for New and Redevelopment Projects - Addendum: Section 3.1.2 Certification of Design Criteria Third-Party Certification of Storm Water Management Plan Requirements. The third party certification shall be provided prior to building permit issuance. [SDR] [PLANNING/PUBLIC WORKS]

BP-9. BEST MANAGEMENT PRACTICES - STORMWATER:
The project shall comply with the following source control measures as outlined in the BMP Guidance Manual and SMC 12.60.220. Best management practices shall be identified on the building permit set of plans and shall be subject to review and approval by the Director of Public Works:

a) Storm drain stenciling. The stencil is available from the City's Environmental Division Public Outreach Program, which may be reached by calling (408) 730-7738.

b) Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping.

c) Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.

d) Covered trash, food waste, and compactor enclosures.

e) Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:

i) Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.

ii) Dumpster drips from covered trash and food compactor enclosures.

iii) Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.

iv) Swimming pool water, spa/hot tub, water feature and fountain discharges if discharge to onsite vegetated areas is not a feasible option.

v) Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.

[SDR] [PLANNING]

BP-10. PHOTOMETRIC PLAN:
Prior to issuance of a Building Permit submit a contour photometric plan for approval by the Director of Community Development. The plan shall meet the specifications noted in the Standard Development Requirements. [COA] [PLANNING]

BP-11. EXTERIOR LIGHTING PLAN
Prior to issuance of a Building Permit submit an exterior lighting plan, including fixture and pole designs, for review and approval by the Director of Community Development. Driveway and parking area lights shall include the following:

a) Sodium vapor (or illumination with an equivalent energy savings).

b) Pole heights to be uniform and compatible with the area.

c) Provide photocells for on/off control of all security and area lights.

d) All exterior security lights shall be equipped with vandal resistant covers.

e) Wall packs shall not extend above the roof of the building.

f) Lights shall have shields to prevent glare onto adjacent properties. [COA] [PLANNING]

BP-12. FEES AND BONDS:
The following fees and bonds shall be paid in full prior to issuance of building permit.

a) TRANSPORTATION IMPACT FEE - Pay Traffic Impact fee for the net new trips resulting from the proposed project per SMC 3.50, prior to issuance of a Building Permit. (SMC 3.50). [SDR] [PLANNING]

AT: THE FOLLOWING CONDITIONS OF APPROVAL AND STANDARD DEVELOPMENT REQUIREMENTS SHALL BE COMPLIED WITH AT ALL TIMES THAT THE USE PERMITTED BY THIS PLANNING APPLICATION OCCUPIES THE PREMISES.

AT-1. LANDSCAPE MAINTENANCE:
All landscaping shall be installed in accordance with the approved landscape plan and shall thereafter be maintained in a neat, clean, and healthful condition. Trees shall be allowed to grow to the full genetic height and habit (trees shall not be topped). Trees shall be maintained using standard arboriculture practices. [COA] [PLANNING]

AT-2. PARKING LOT MAINTENANCE:
The parking lot shall be maintained in accordance with the approved plans and as follows:

a) Clearly mark all parking spaces. This shall be specified on the Building Permit plans and completed prior to occupancy.

b) Maintain all parking lot striping and marking.

c) Assure that adequate lighting is available in parking lots to keep them safe and desirable for the use.

d) Require signs to direct vehicles to additional parking spaces on-site, as needed.

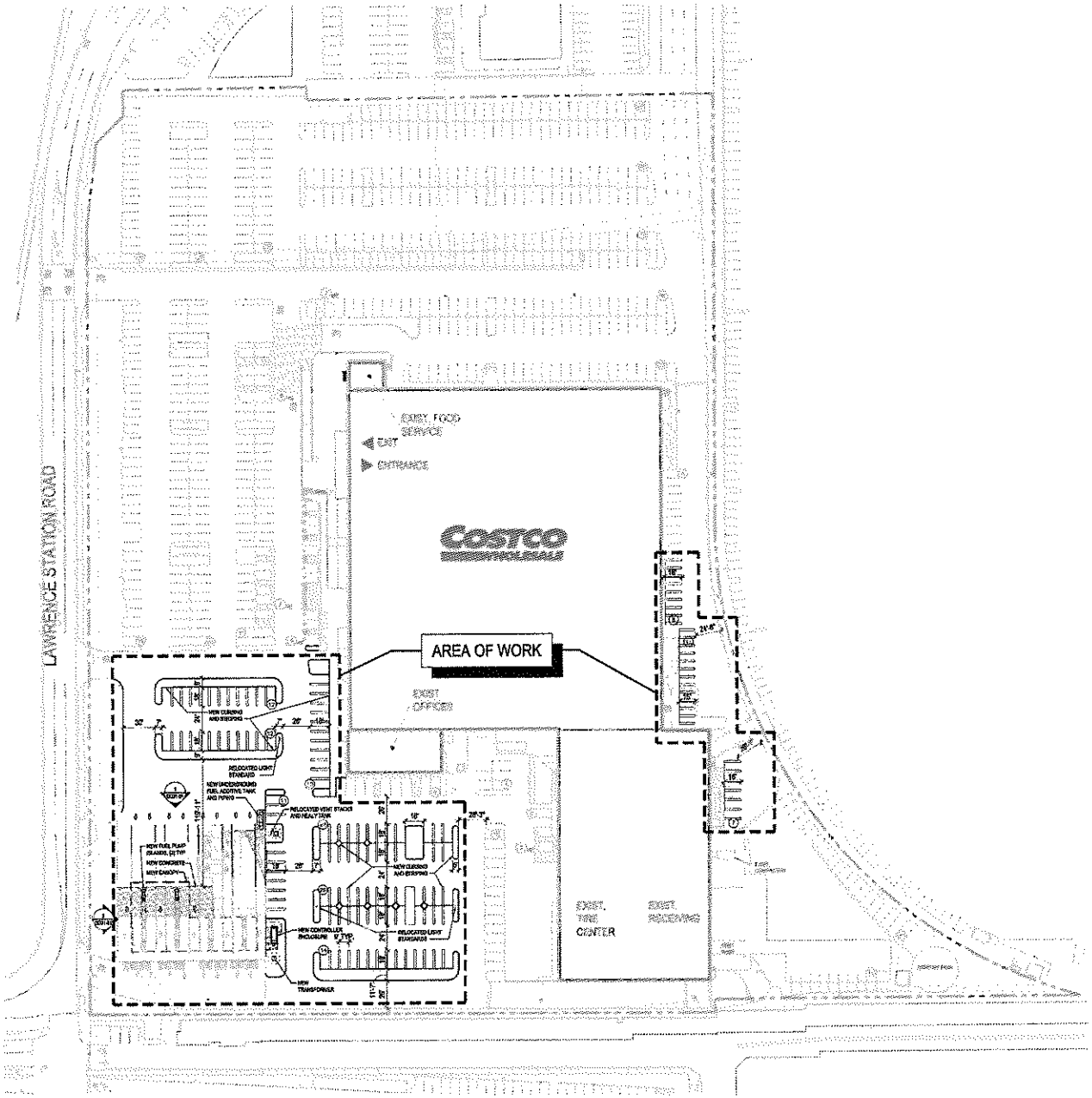
e) Clearly mark all spaces as per approved plans.

[COA] [PLANNING]

AT-3. BMP MAINTENANCE:
The project applicant, owner, landlord, or HOA, must properly maintain any structural or treatment control best management practices to be implemented in the project, as described in the

approved Stormwater Management Plan and indicated on the approved building permit plans. [SDR] [PLANNING]

AT-4. BMP Right of ENTRY:
The project applicant, owner, landlord, or HOA, shall provide access to the extent allowable by law for representatives of city, the local vector control district, and the Regional Water Quality Control Board, strictly for the purposes of verification of proper operation and maintenance for the storm water treatment best management practices contained in the approved Storm Water Management Plan.[SDR] [PLANNING]



PROJECT DATA

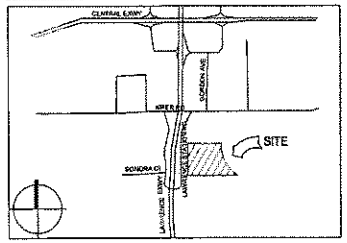
CLIENT:	COSTCO WHOLESALE 999 LAKE DRIVE ISSAQUAH, WA 98027
PROJECT ADDRESS:	150 LAWRENCE STATION ROAD SUNNYVALE, CA 94086
SITE AREA:	12.88 ACRES (560,885 S.F.)
BOUNDARIES INFORMATION:	THIS PLAN HAS BEEN PREPARED BY USING MA SITE PLAN DATED 3-13-98.

BUILDING DATA:	
BUILDING AREA	132,840 S.F.
TIRE CENTER	3,743 S.F.
FOOD SERVICE	867 S.F.
TOTAL BUILDING	137,450 S.F.

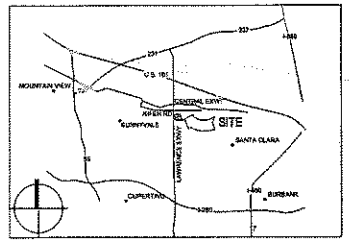
PARKING DATA:	
EXISTING PARKING:	
(#) STANDARD STALLS	733 STALLS
(#)HC HANDICAP STALLS	28 STALLS
TOTAL PARKING	761 STALLS
NO. OF STALLS PER 1000 S.F. OF BUILDING AREA:(137,450 S.F.)	5.54 STALLS
PROPOSED PARKING :	
(#) STANDARD STALLS	707 STALLS
(#)HC HANDICAP STALLS	28 STALLS
TOTAL PARKING	735 STALLS
NO. OF STALLS PER 1000 S.F. OF BUILDING AREA:(137,450 S.F.)	5.35 STALLS
PARKING LOST	26 STALLS

NOTES:
1. EXISTING CONDITIONS TO BE FIELD VERIFIED.
2. ACCESSIBLE STALLS REQUIRED: 18 STALLS.

VICINITY MAP



REGIONAL MAP



COSTCO WHOLESALE

SUNNYVALE, CALIFORNIA

CONCEPT SITE PLAN

FEBRUARY 20, 2013

ATTACHMENT 5
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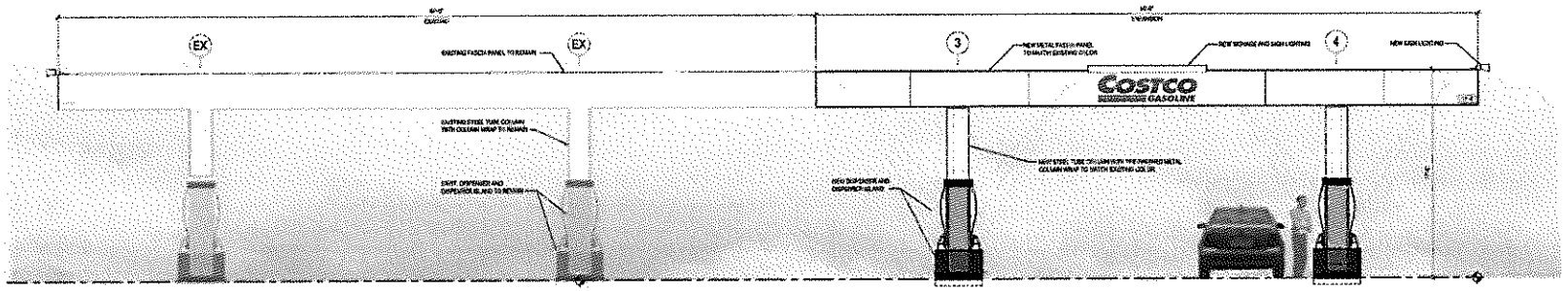
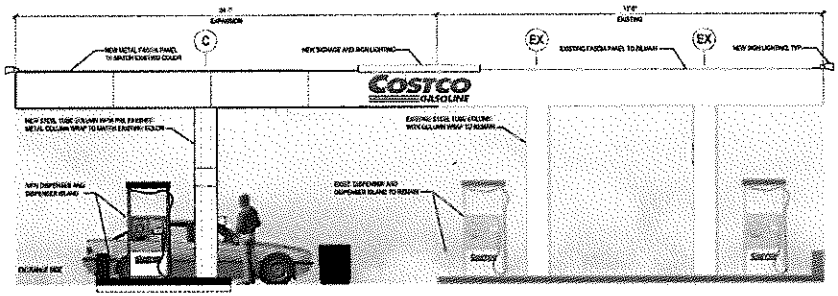
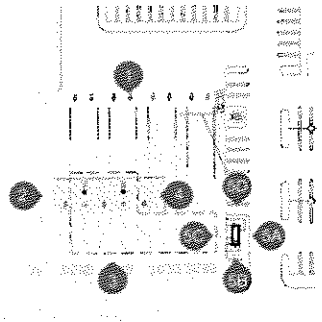


① NORTH ELEVATION
SCALE: 1/4" = 1'-0"



② WEST ELEVATION
SCALE: 1/4" = 1'-0"



KEY PLAN

COSTCO WHOLESALE — CONCEPT FUEL FACILITY ELEVATIONS

SUNNYVALE, CALIFORNIA

FEBRUARY 8, 2013

ATTACHMENT 15
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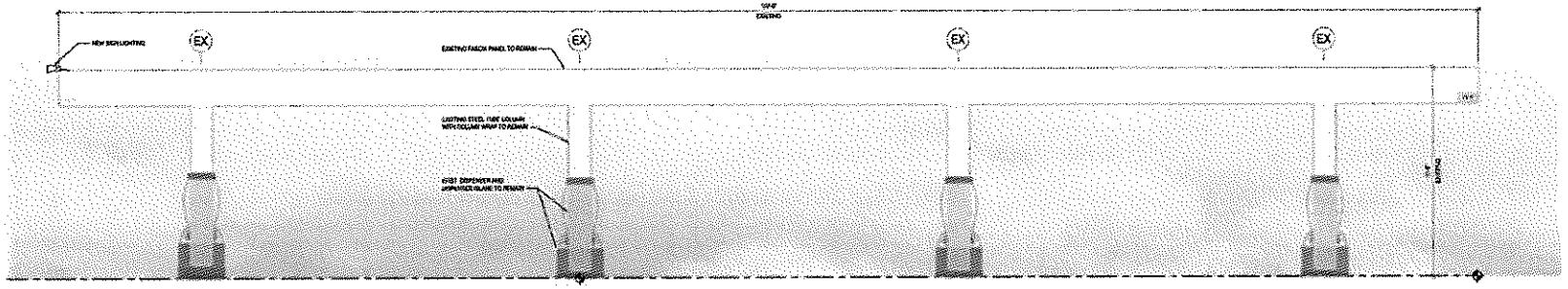
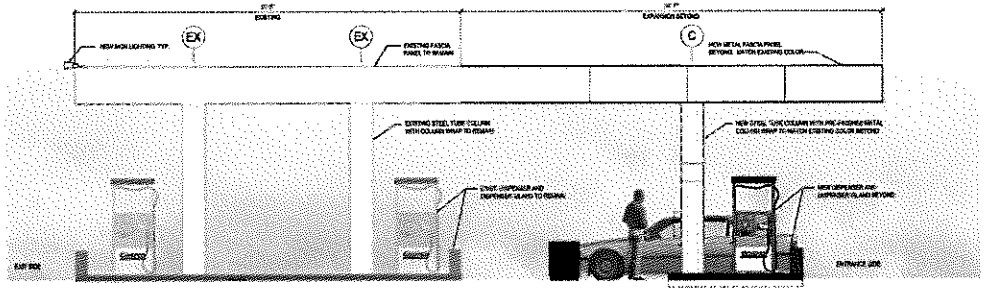
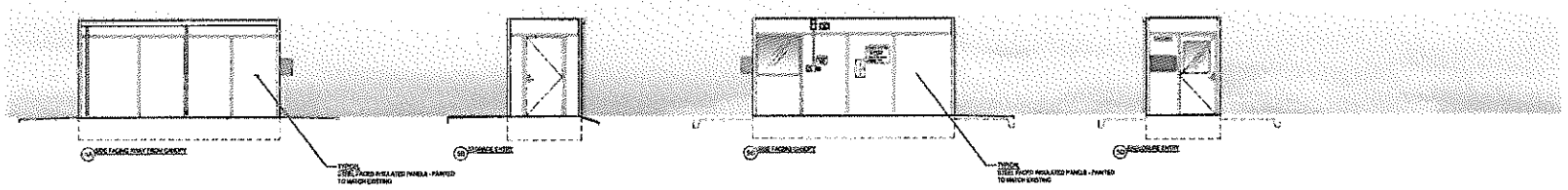


③ SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



④ EAST ELEVATION
SCALE: 1/4" = 1'-0"



⑤ CONTROLLER ENCLOSURE ELEVATIONS
SCALE: 1/4" = 1'-0"

COSTCO WHOLESALE — CONCEPT FUEL FACILITY ELEVATIONS

SUNNYVALE, CALIFORNIA

FEBRUARY 8, 2013

ATTACHMENT 4
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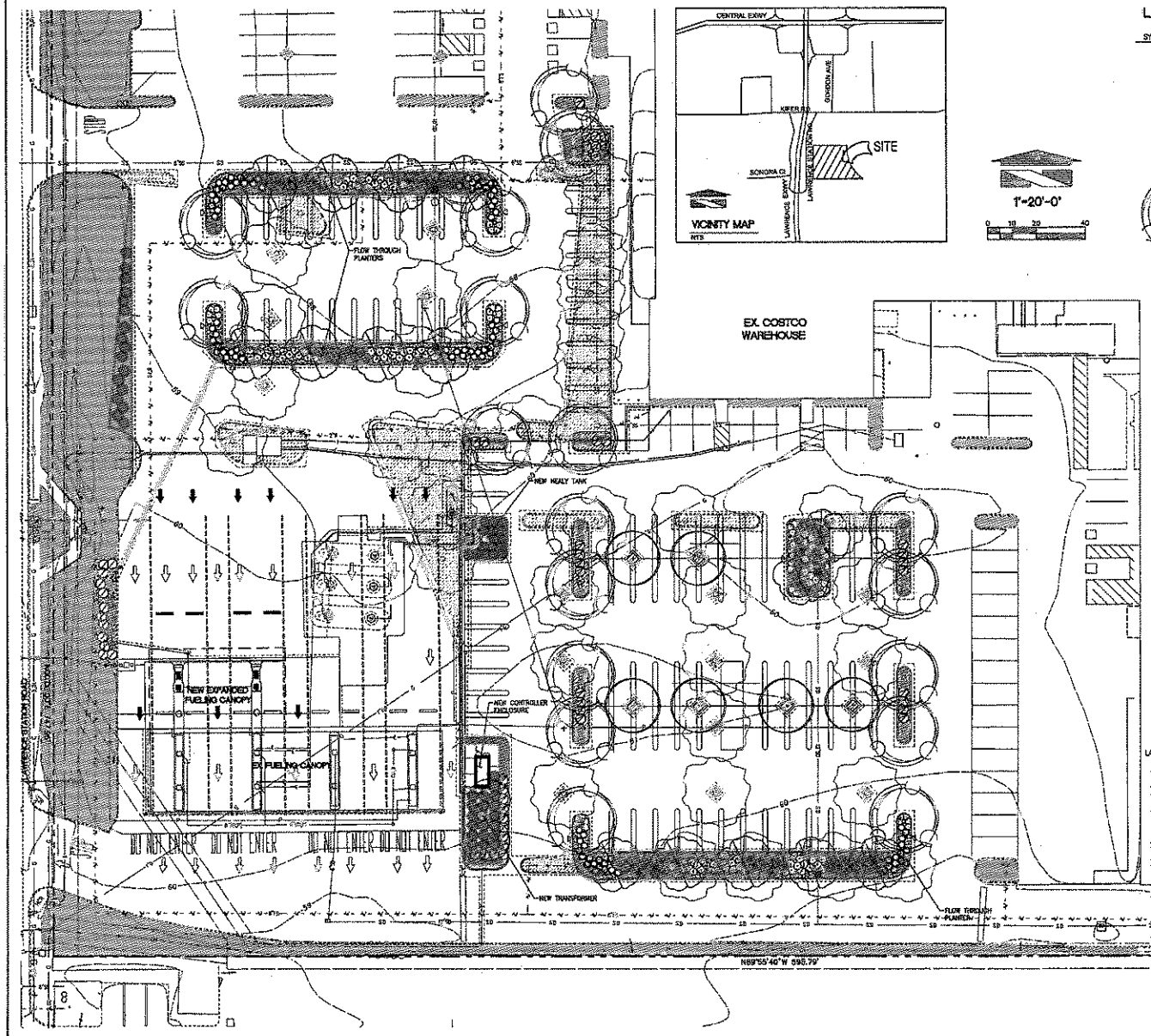
150 LAWRENCE STATION ROAD
PRELIMINARY LANDSCAPE PLANTING PLAN



1"=20'-0"

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LANDSCAPE PLANT MATERIAL LEGEND

SYMBOL	BOTANICAL / COMMON NAMES	SIZE CONDITION	SPACING	QUANT.	REMARKS
	TREES:				
	ALNUS RUBRA / RED ALDER (FLOW THROUGH PLANTER)	24" BOX	AS SHOWN	15	STAKE & GUY ONE GROWING SEASON; NURSERY GROWN FOR STREET TREE USE, BRANCHED AT 6'
	PINUS CANARIENSIS / CANARY ISLAND PINE	24" BOX	AS SHOWN	2	STAKE & GUY ONE GROWING SEASON; NURSERY GROWN, UN-CUT LEADER
	PLATANUS ACERIFOLIA 'YARWOOD' / LONDON PLANE TREE	24" BOX	AS SHOWN	6	STAKE & GUY ONE GROWING SEASON; NURSERY GROWN FOR STREET TREE USE, UN-CUT LEADER, BRANCHED AT 6'
	SCHINUS TEREBINTHEFOLIUS / BRAZILIAN PEPPER TREE	24" BOX	AS SHOWN	18	STAKE & GUY ONE GROWING SEASON; NURSERY GROWN, FOR STREET TREE USE, BRANCHED AT 6'
	SHRUBS:				
	CORNUS SERICEA/RUBRA / REDTWIG DOGWOOD (FLOW THROUGH PLANTER)	5 GALLON	4' O.C.	65	FULL AND BUSHY
	DIETES IRIDIOIDES / FORTNIGHT LILY	5 GALLON	3' O.C.	48	FULL
	ESCALLONIA EXONIENSIS 'BALFOURI' / BALFOURI ESCALLONIA	5 GALLON	4' O.C.	12	FULL AND BUSHY
	IRIS DOUGLASIANA / PACIFIC COAST IRIS (FLOW THROUGH PLANTER)	1 GALLON	2.5' O.C.	50	FULL
	LIGUSTRUM JAPONICUM 'TEXANUM' / TEXANUM JAPANESE PRIVET	5 GALLON	4' O.C.	18	FULL AND BUSHY
	MAHONIA AQUIFOLIUM / OREGON GRAPE (FLOW THROUGH PLANTER)	5 GALLON	4' O.C.	82	FULL AND BUSHY, 3 CANES MINIMUM
	MAHONIA AQUIFOLIUM 'COMPACTA' / COMPACT OREGON GRAPE (FLOW THROUGH PLANTER)	5 GALLON	4' O.C.	81	FULL AND BUSHY, 3 CANES MINIMUM
	RHAPHOLEPIS INDICA 'SPRINGTIME' / SPRINGTIME INDIAN HAWTHORN	5 GALLON	4' O.C.	43	FULL AND BUSHY
	XYLOSMA CONGESTUM 'COMPACTA' / COMPACT SHINY XYLOSMA	21" - 24"	5' O.C.	37	FULL AND BUSHY, MATCHED HEIGHT AND FORM
	GROUNDCOVERS:				
	FESTUCA RUBRA / RED FESCUE (UN-MOWED) (FLOW THROUGH PLANTER)	HYDROSEED		COVER	PROVIDE 6 12" MULCH RING AROUND ALL SHRUBS AND TREES
	GAZANIA REPENS 'MITSUWA YELLOW' / MITSUWA YELLOW GAZANIA	FLATS	12" O.C.	AS REQ'D	HOLD 12" FROM BORDERS, SHRUBS, AND TREES
	HEDERA HELIX 'HAHN'S' / HAHN'S IVY	FLATS	12" O.C.	AS REQ'D	HOLD 12" FROM BORDERS, SHRUBS, AND TREES
	EXISTING:				
	EXISTING TREE			35	TO BE REMOVED
	EXISTING LANDSCAPE AND IRRIGATION				TO REMAIN, SAVE, AND PROTECT
	EXISTING LANDSCAPE AND IRRIGATION				TO BE REMOVED

LANDSCAPE PLANTING NOTES:

1. WATER-EFFICIENCY DESIGN OPTION 1 IS SELECTED FOR THE PROPOSED LANDSCAPE.
2. LANDSCAPE IRRIGATION SYSTEM WILL BE A PERMANENT BELOW GRADE AUTOMATIC SYSTEM CONNECTING TO THE EXISTING AUTOMATIC IRRIGATION SYSTEM.
3. LANDSCAPE IRRIGATION SYSTEM WILL BE A POP-UP SPRAY SYSTEM MATCHING THE EXISTING.
4. LANDSCAPE IRRIGATION SYSTEM WILL BE DESIGNED AND MAINTAINED TO PREVENT WATER WASTE AND MEET OR EXCEED AN AVERAGE LANDSCAPING IRRIGATION EFFICIENCY OF 70%.
5. LANDSCAPE IRRIGATION SYSTEM WILL BE DESIGNED TO MEET THE INDIVIDUAL WATER NEEDS OF EACH HYDROZONE; SPRINKLER HEADS AND OTHER EMISSION DEVICES ARE SELECTED BASED ON WHAT IS APPROPRIATE FOR THE PLANT MATERIAL WITHIN EACH HYDROZONE. SPRINKLER HEADS WILL HAVE MATCHED PRECIPITATION RATES WITHIN EACH CIRCUIT.
6. ALL PROPOSED LANDSCAPE AREAS, EXCLUDING FESCUE AREAS, WILL RECEIVE A MINIMUM 3" LAYER OF MULCH.
7. SOIL AMENDMENTS WILL BE APPROPRIATELY ADDED ACCORDING TO SOIL CONDITIONS AND SELECTED PLANT MATERIAL.
8. GRADING IS DESIGNED TO MINIMIZE SOIL EROSION, RUNOFF, AND WATER WASTE. SEE CIVIL PLANS FOR GRADING.
9. THE EXISTING LANDSCAPE IRRIGATION CONTROLLER WILL BE REPLACED WITH AN IRRIGATION CONTROLLER WHICH USES EVAPOTRANSPIRATION DATA AND CAPABLE OF DUAL MULTIPLE PROGRAMMING. SENSORS THAT OVERRIDE THE CALL FOR WATER DURING UNFAVORABLE WEATHER CONDITIONS OR IF THE SOIL IS STILL MOIST WILL BE INCORPORATED INTO THE SYSTEM.
10. LANDSCAPE IRRIGATION CONTROLLER AND BACKFLOW DEVICES WILL BE SCREENED FROM PUBLIC VIEW.
11. THE INSTALLING CONTRACTOR WILL PROVIDE THE REQUIRED CERTIFIED IRRIGATION AUDIT PRIOR TO APPROVAL OF OCCUPANCY BY A BUILDING OFFICIAL.
12. THE INSTALLING CONTRACTOR WILL A LANDSCAPE MAINTENANCE SCHEDULE PRIOR TO THE FINAL INSPECTION BY A BUILDING OFFICIAL.
13. ALL LANDSCAPE AND IRRIGATION WILL MEET THE SPECIFIED REQUIREMENTS OF CHAPTER 19.37 FOR THE SUNNYVALE MUNICIPAL CODE.

No. | Date | By | Chkd. | Appr. | Revision

Title: PRELIMINARY LANDSCAPE PLANTING PLAN
COSTCO GAS STATION EXPANSION
SUNNYVALE, CA COSTCO LOC NO. 423

For: COSTCO WHOLESALE
999 LAKE DRIVE
ISSAQUAH, WA

REGISTERED LANDSCAPE ARCHITECT ANTHONY M. GUZZETTA 1539 Expires 12-31-14 STATE OF CALIFORNIA

SIGNED DATE WITH SIGNATURE

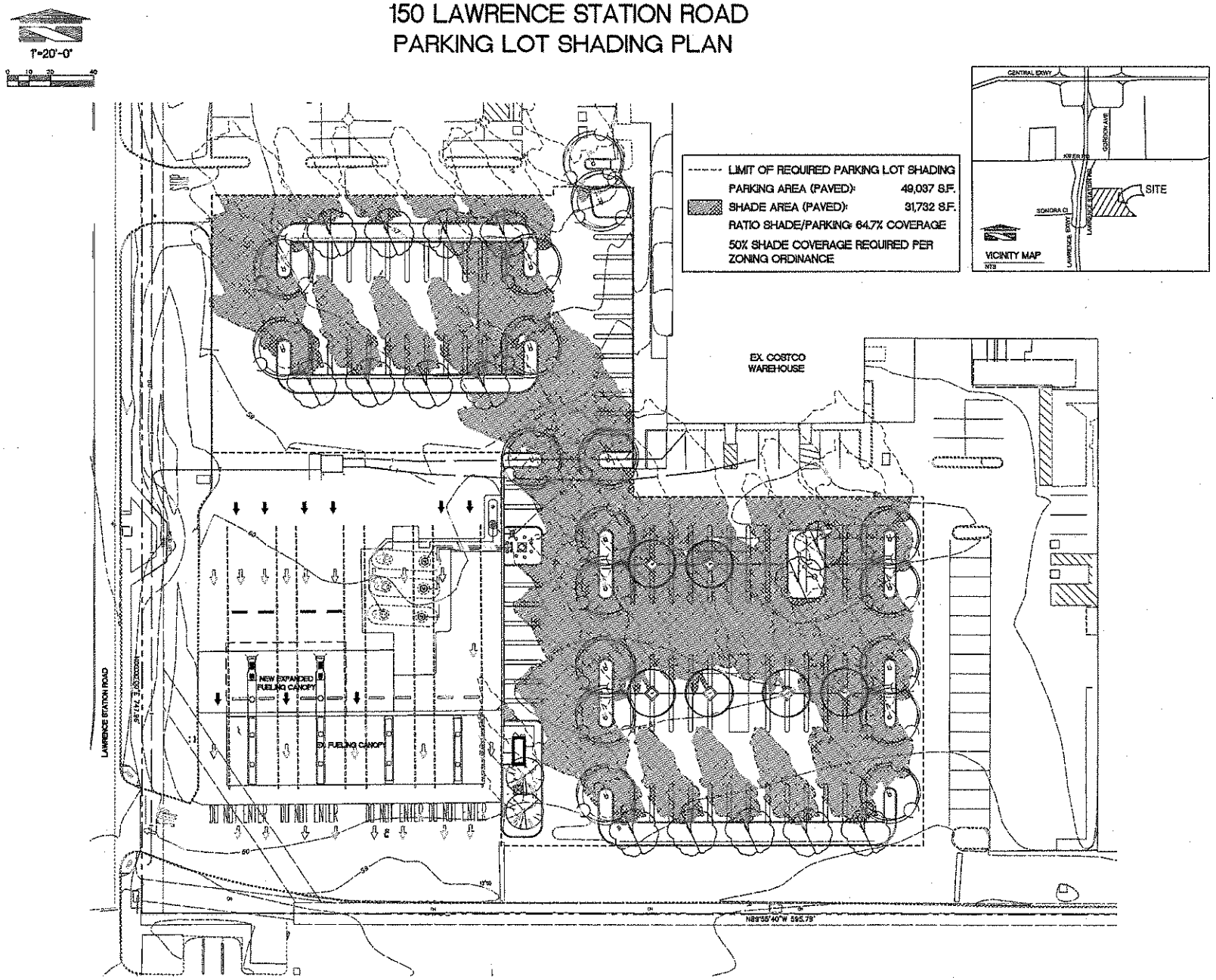
Scale: Horizontal 1"=20'-0" Vertical N/A

ASSOC. Tree

L-1

ATTACHMENT B
Page 4 of 6

150 LAWRENCE STATION ROAD
PARKING LOT SHADING PLAN

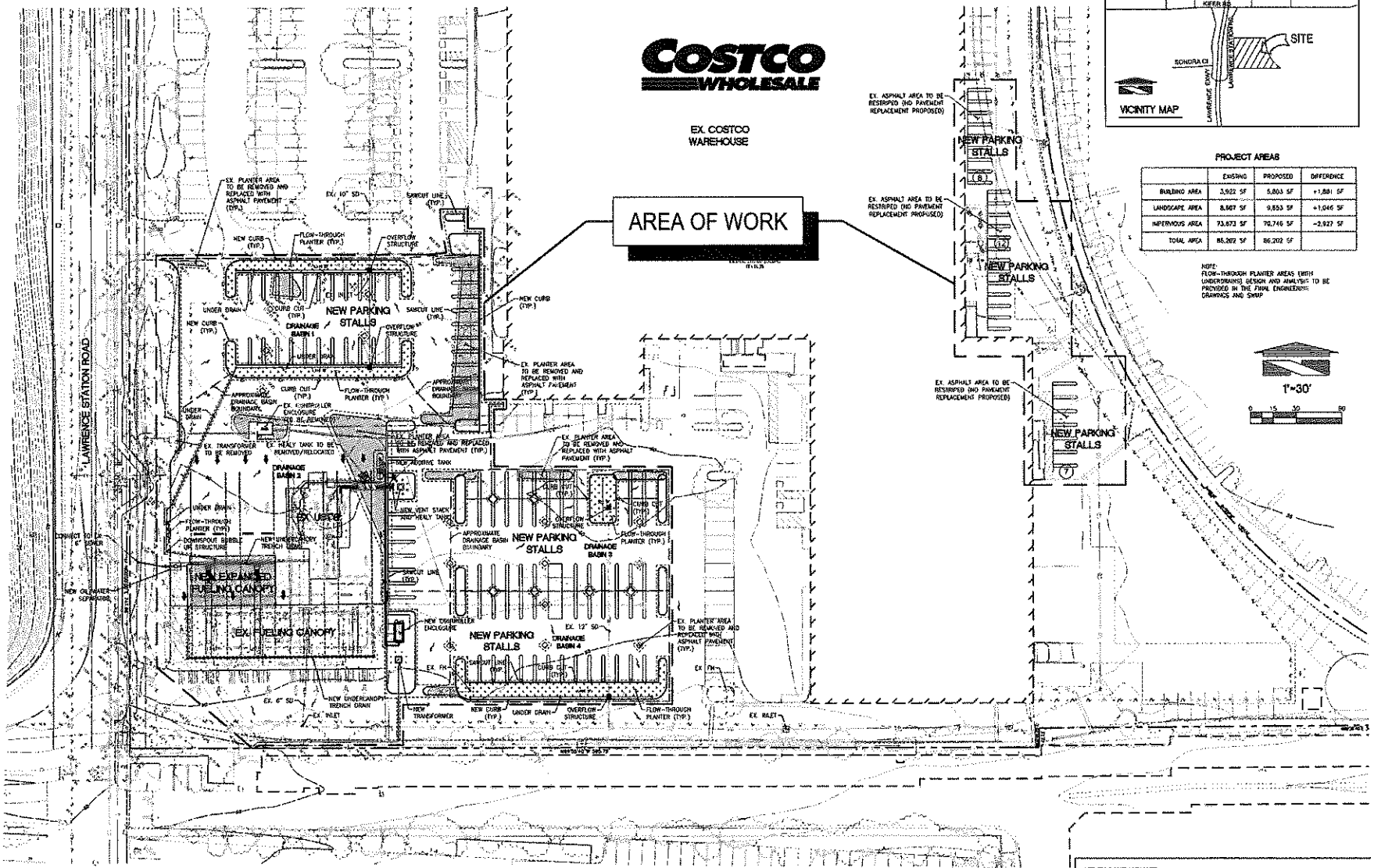


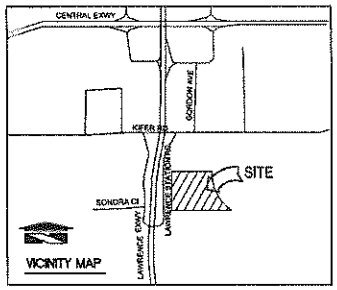
Title: PARKING LOT SHADING PLAN
COSTCO GAS STATION EXPANSION
SUNNYVALE, CA COSTCO LOC NO. 423

For: COSTCO WHOLESALE
999 LAKE DRIVE
ISSAQUAH, WA

ATTACHMENT R
Page 5 of 6

150 LAWRENCE STATION ROAD
PRELIMINARY GRADING, DRAINAGE AND UTILITY PLAN
FUELING FACILITY EXPANSION





PROJECT AREAS

	EXISTING	PROPOSED	DIFFERENCE
BUILDING AREA	3,922 SF	5,803 SF	+1,881 SF
LANDSCAPE AREA	8,607 SF	9,653 SF	+1,046 SF
IMPERVIOUS AREA	73,673 SF	70,746 SF	-2,927 SF
TOTAL AREA	86,202 SF	86,202 SF	

NOTE:
FLOW-THROUGH PLANTER AREAS (WITH UNDERDRAINS) DESIGN AND ANALYSIS TO BE PROVIDED IN THE FINAL ENGINEERING DRAWINGS AND SWMP

NOTE:
SEE ARCHITECTURAL PLANS FOR ALL ON-SITE SIGNAGE.

811 Know what's below. Call before you dig. Dial 811

UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLU CALLING UTILITY LOCATE @ 811 AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIO NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS C UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AN SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUS CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUC

No.	Date	By	Chk.	Appr.	Revision
2	2/26/13	PB	JSG	HPG	LAND USE SUBMITTAL
1	1/07/13	PB	JSG	HPG	LAND USE SUBMITTAL

Title: PRELIMINARY GRADING
DRAINAGE AND UTILITY PLAN
COSTCO GAS STATION EXPANSION
SUNNYVALE, CA COSTCO LOC NO. 423

For: COSTCO WHOLESALE
999 LAKE DRIVE
ISSAQUAH, WA

Scale: Horizontal 1"=30' Vertical N/A

PRELIMINARY

ATTACHMENT B
Page 6 of 6

Project Description
Fueling Facility Expansion
Costco Wholesale
150 Lawrence Station Road, Sunnyvale, CA
APN# 216-27-052
Costco Loc. No. 423 / Our Job No. 6217
January 11, 2013

Project Narrative:

Expansion of the fueling facility will consist of two additional multi-product gasoline dispensers (MPDs) located to the north of the existing Costco fueling facility to create two dispenser islands with three MPDs. The expansion will also include a 34-foot by 56-foot dispenser island canopy addition (approximately 1,904 square feet), relocation of the existing 6-foot by 13-foot controller enclosure, installation of one 1,500 gallon underground fuel additive storage tank, and associated site improvements.

The expanded fueling facility will operate in the same manner as the existing fueling facility with regard to the hours of operation and staffing levels approved under the existing Use Permit. This minor amendment to the Use Permit is required as the project will increase the number of fueling positions at this location by four.

The canopy expansion will match the existing canopy and provide similar under canopy lighting. New Costco Gasoline canopy signage, approximately 20 square feet in size, will be relocated on the canopy in accordance with the Master Sign Program for an overall signage area of 40-square feet.

The associated site improvements include an increased queuing area, a parking lot reconfiguration within the project area, and parking lot landscape islands that increase the overall parking lot landscape area. Low impact development features will be utilized to address stormwater requirements for the project area. This will include the use of bioretention landscape areas and tree well filters. Existing parking lot lighting poles will be relocated within the project area to provide parking lot lighting.

The project will remove approximately 12 parking stalls resulting in a revised off-street parking count of 749 parking stalls or 5.45 spaces per 1,000 square feet. While the expansion will reduce the stall count, the parking count will exceed the minimum stall count identified in the City's proposed Parking Ordinance for Warehouse Retail or Bulky-Merchandise Retail (2.5 spaces per 1,000 square feet). Other improvements associated with the parking lot have been designed in accordance with the proposed Parking Ordinance.

Expansion of the facility is intended to improve on-site circulation for the established membership base utilizing the facility. The expansion is not anticipated to generate new trips to the fueling facility. The expansion will simply allow Costco Wholesale to provide a more efficient fuel purchasing experience for the members already utilizing the facility at this location.

Construction of the expansion will be completed in a single phase and commence after approval of applicable permits. The fueling facility will remain open during construction and authorization to conduct night construction work will be requested for the project.

USE PERMIT/SPECIAL DEVELOPMENT PERMIT JUSTIFICATIONS

One of the two following findings must be made in order to approve a Use Permit or Special Development Permit application.

The Sunnyvale Municipal code states that at least one of the following two justifications must be met before granting the Use Permit or Special Development Permit. Please provide us information on how your project meets **at least one** of the following criteria.

1. The proposed use attains the objectives and purposes of the General Plan of the City of Sunnyvale as the project ...

   See Attached.

OR

2. The proposed use ensures that the general appearance of proposed structures, or the uses to be made of the property to which the application refers, will not impair either the orderly development of, or the existing uses being made of, adjacent properties as ...

   See Attached.

If you need assistance in answering either of these justifications, contact the Planning Division staff at the One-Stop Permit Center.

Use Permit Justification
Fueling Facility Expansion
Costco Wholesale
150 Lawrence Station Road, Sunnyvale, CA
APN# 216-27-052
Costco Loc. No. 423 / Our Job No. 6217
January 8, 2013

1. The proposed use attains the objectives and purposes of the General Plan of the City of Sunnyvale as the project...

The Minor Use Permit for the expansion of the fueling facility is preceded by approval of a Use Permit for construction of the original fueling facility in 1998 and a Use Permit for the expansion of the facility in 2000. Both of these preceding projects were found compatible with the goals and policies of the General Plan. The expansion of the fueling facility will support similar goals and policies identified in preceding approvals and are described below:

- Community Design – Goal CC-3: Ensure that buildings and related site improvements for private development are well designed and compatible with surrounding properties and districts.

Justification: The expansion is a continuation of the existing fueling facility use. The architecture proposed for the dispenser island canopy addition is designed to match the existing canopy and is compatible with other buildings in the M-S zone. The scale of the expansion and associated site improvements is expected to improve on-site circulation. Landscaping improvements will be consistent with the existing site landscaping and the overall landscape area of the site is expected to increase slightly with the expansion.

- Community Design – Policy CC-3.2: Ensure site design is compatible with the natural and surrounding built environment.

Justification: The expansion of the existing fueling facility poses the least intrusion to the surrounding environment. Existing circulation patterns to and from the fueling facility will be unchanged. The additional fueling positions, combined with the site improvements, are expected to diminish existing queuing congestion. This will have a positive impact on the surrounding environment by increasing efficiency and safety at the facility.

- Land Use and Transpiration – Policy LT-4.7: Support the location of convenient retail and commercial services (...) in industrial areas to support businesses, their customers and their employees.

Justification: The expansion provides a convenient location for automobile fueling needs of local businesses and community who are members of Costco. The expansion is designed and scaled to efficiently serve the members utilizing the site without queuing backups.

2. **The proposed use ensures that the general appearance of proposed structures, or the uses to be made of the property to which the application refers, will not impair either the orderly development of, or the existing uses being made of, adjacent properties, as ...**

Justification: The expansion is architecturally designed to match the existing fueling facility and warehouse, and is compatible with architecture in the surrounding M-S zone. The use is a continuation an existing use and the surrounding properties have been developed in the presence of this use. The expansion is not expected to impair the adjacent property due to the efficiency improvements incorporated into the facility. These efficiency improvements include an increased number of fueling dispensers, an increased queuing area, and the continued availability of facility attendants to facilitate circulation.

It is important to note that the expansion will not exponentially increase fueling facility traffic. The existing fueling facility has an established membership base; therefore, additional member traffic should not increase proportional to the additional fueling dispensers, but rather improve the efficiency of serving the existing membership base.

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
101 S Capitol Boulevard, Suite 301, Boise, ID 83702 P 208.338.2683 F 208.338.2685

MEMORANDUM

Date: February 7, 2013 Project #: 12894.0

To: Matt Cyr, Barghausen Consulting Engineers

From: Sonia Hennum, PTOE & Ryan Whitney

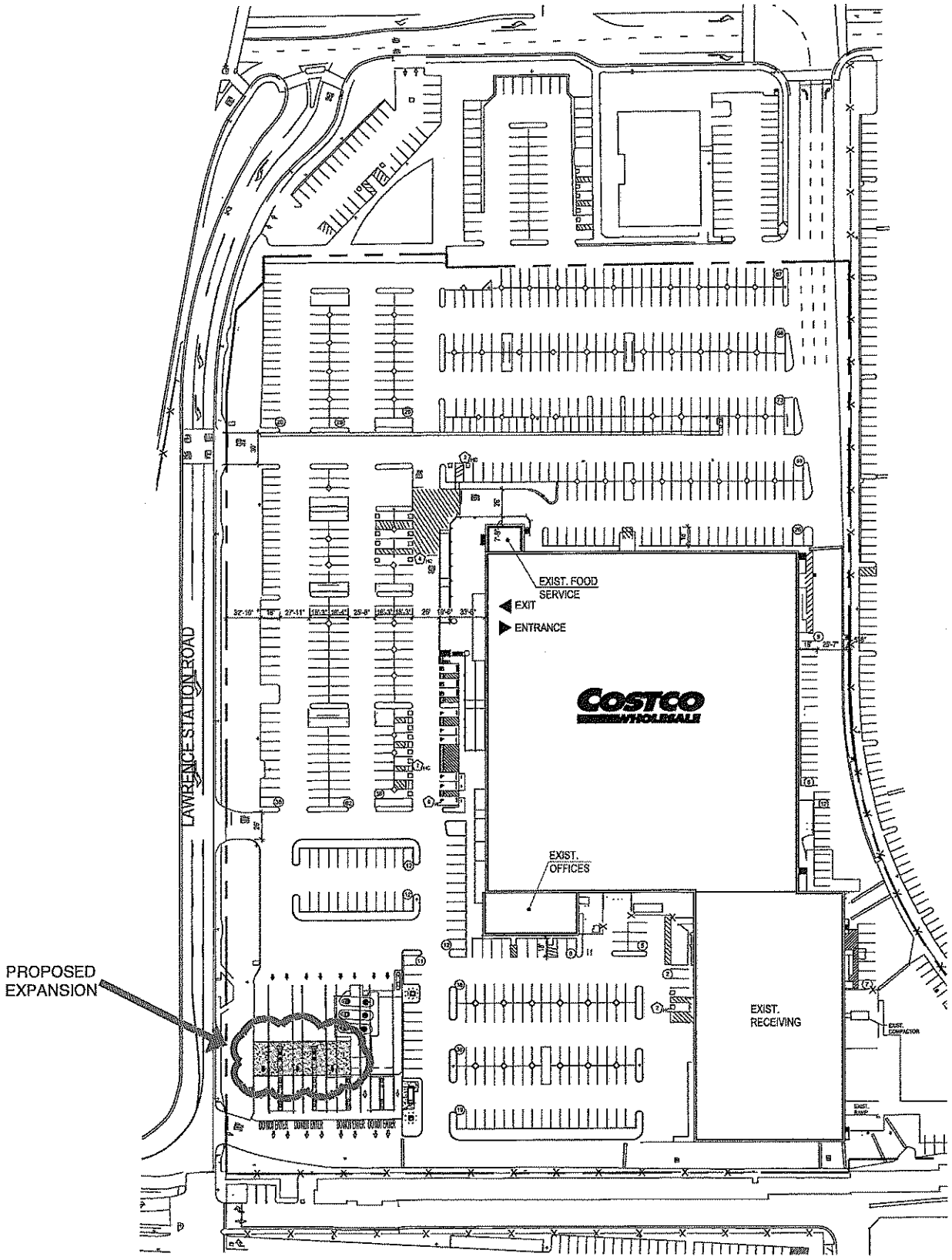
Project: Sunnyvale Costco Gasoline Expansion

Subject: Fuel Station Expansion Queuing & Trip Generation Estimate

cc: Kim Katz, Costco Wholesale
John Ellingsen, Barghausen Consulting Engineers
Steve Bullock, Mulvanny G2 Architecture

This memorandum provides a response to the City of Sunnyvale comments on the development application for the proposed expansion to the existing Costco Gasoline facility in located on Lawrence Station Road in Sunnyvale, California. Included is a queuing figure that outlines the queuing capacity of the fuel station. In addition, we have provided information related to the expected increase in trip generation for the proposed expansion for use in the determination of the project transportation impact fee.

The existing Sunnyvale Costco Gasoline fuel station consists of four islands with a total of 16 vehicle fueling positions. Costco is proposing to expand the size of the existing fuel station by adding a third pump to two of the islands (4 additional fueling positions), resulting in a total of 20 vehicle fueling positions. The proposed redevelopment site plan is provided in Figure 1.



PROPOSED EXPANSION SITE PLAN
SUNNYVALE, CALIFORNIA

FIGURE 1

H:\projfile\12894 - Sunnyvale Costco Gasoline Expansion\dwgs\figs\12894FIGS.dwg Feb 07, 2013 - 4:53pm - openboi Layout Tab: FIG01

FUEL STATION VEHCILE QUEUING

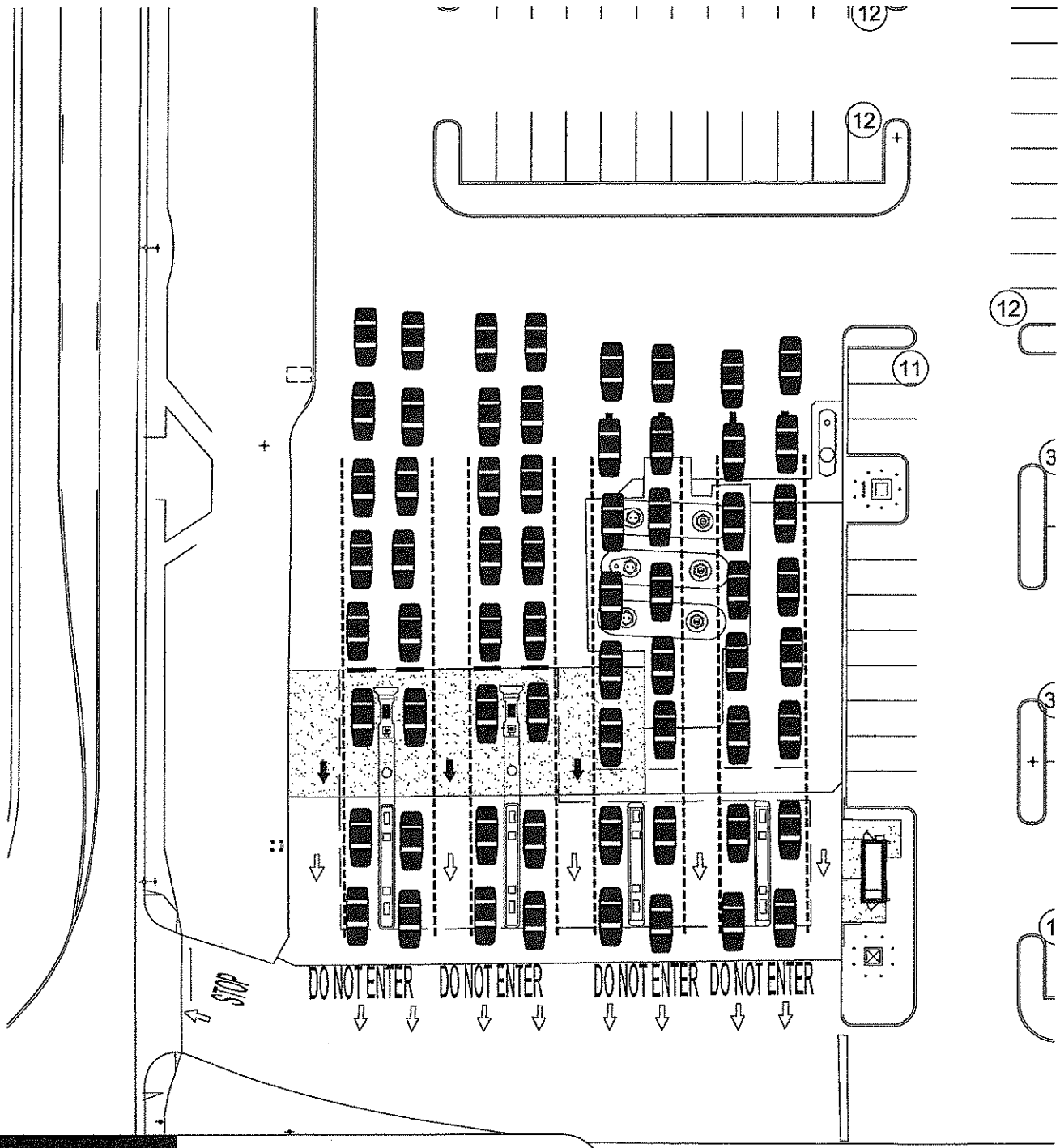
As requested by the City of Sunnyvale, Figure 2 illustrates the fuel station area vehicle queuing capacity or how many vehicles can be accommodated in the queuing lanes. As seen in Figure 2, the proposed expansion site plan has the capacity to accommodate a total of up to 62 vehicles in the fuel station area including those at the pumps or 42 vehicles waiting behind the pumps. It is important to note that this is not the expected queue for the fuel station but represents the queue capacity of the fuel station area for storage. A queue study was completed at the existing Sunnyvale Costco Gasoline facility in September 2012 to document the existing peak period queues. At that time, the peak periods exhibited queuing characteristics summarized in Table 1.

Table 1 Existing Sunnyvale Costco Gasoline Queuing Characteristics

	Weekday PM Peak (4 to 7 PM)	**Weekend Midday Peak (11 AM to 3 PM)**
Average Queue	21 vehicles	34 vehicles
95th Percentile Queue	24 vehicles	39 vehicles
Maximum Queue	28 vehicles	43 vehicles

Note: queue numbers in this table are total including vehicles at the pumps

As can be seen from Table 1, the current peak period maximum queue observed on site was a total of 43 vehicles. This is significantly less than what could be accommodated by the proposed site plan (which is 62 vehicles) even without considering the reduction in queuing expected once more pumps are provided to process the peak period demands.



NOTE

FIGURE ILLUSTRATES FUEL STATION QUEUING CAPACITY (62 VEHICLES) & IS NOT INDICATIVE OF EXPECTED ACTUAL QUEUE

FUEL STATION QUEUING CAPACITY
SUNNYVALE, CALIFORNIA

FIGURE **2**

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING

H:\proj\file\12894 - Sunnyvale Costco Gasoline Expansion\dwgs\figs\12894FIGS.dwg Feb 07, 2013 - 5:23pm - openboi Layout Tab: FIG02

FUEL STATION EXPANSION TRIP GENERATION ESTIMATE

In developing a trip generation estimate for the project, it is important to recognize that the fuel station exists on site today and the proposed project is an expansion to this existing use, not the addition of a new use. Furthermore, the market area of the Sunnyvale Costco is already defined through existing membership and operations. As such, it's unlikely that trip generation of the fuel station will increase directly in proportion to the increased number of fueling positions. More likely is that the additional fueling positions will serve to more efficiently and effectively process the current peak demand at the fuel station, thus reducing wait times, vehicle queuing, and vehicle idling. To test this assumption, before and after data from other comparable Costco Gasoline fuel station expansion sites was reviewed to determine a more representative relationship between new trip generation and the addition of fueling positions to the existing station.

Before & After Fuel Expansion Data Summary

Kittelson & Associates, Inc. (KAI) worked with Costco to identify eight other Costco Gasoline locations that have expanded in size. There are several examples where Costco Gasoline fuel stations had been expanded from three islands (12 fueling positions) to four islands (16 fueling positions), one example of expanding from 16 to 20 positions, and one example of expanding from 12 to 20 positions. The comparable expansion sites identified were:

- Salem, Oregon
- Kona, Hawaii
- Orem, Utah
- Waipio, Hawaii
- Concord, California
- Folsom, California
- Vancouver, Washington
- Issaquah, Washington

In order to work with a representative sample size, Costco provided fuel transactions collected on an hourly basis for a period before and after the expansion at each of these locations. Only data that was collected during similar months of the year prior to and after the expansion was included in this summary (for example, fuel transactions for the months of March and April before the expansion were compared to fuel transactions for the months of March and April after the expansion). The results of this before and after comparison for the eight listed sites are provided in Table 2.

Table 2 Average Weekday Fuel Transactions Before & After Data Summary

Location	Average Weekday Daily Fuel Transactions		
	Before Expansion	After Expansion	% Difference
Salem, OR	1,911	2,223	16.3%
Kona, HI	2,336	2,406	3.0%
Orem, UT	2,239	2,390	6.7%
Concord, CA	2,502	2,578	3.0%
Folsom, CA	2,370	2,593	9.4%
Vancouver, WA	2,370	2,709	14.3%
Waipio, HI[1]	3,941	4,258	8.0%
Issaquah, WA[2]	2,800	3,150	12.5%
Average			9.2%

[1] Expansion from 16 fueling positions to 20 fueling positions

[2]Expansion from 12 fueling positions to 20 fueling positions

As shown in Table 2, each of the eight sites recorded an increase in the number of Average Weekday Daily Fuel Transactions. However, the increase found in all situations is significantly less than what would be calculated from a direct linear relationship to the number of vehicle fueling positions. Using a linear relationship, expanding the fuel station from 12 to 16 fueling positions would equate to an increase in activity or trip generation of 33%, expanding from 16 to 20 positions would equate to an increase of 25%, and expanding from 12 to 20 would equate to an increase of 67%. However, the actual before and after data only shows an average increase of 9.2% in daily fuel transactions.

This data can be used to support the claim that the expansion at the Sunnyvale Costco will not see a trip generation increase in proportion with the increase of fueling stations. Two of the eight sites are also located in California and provide an accurate representation of how Costco expansions in California have impacted the number of daily fuel transactions at the site. The information form all this sites is applicable and reasonable to use in this assessment. The before and after data captures the change in demand that results from reducing peak hour queues and wait times at the fuel stations due to the effect of latent demand and more efficient peak operations. In all cases, peak queues and wait times are significantly reduced and those members who previously chose not to purchase fuel because of the wait times will likely do so in either case once the operations are improved.

Project Trip Generation Estimate

Recent transaction counts for a six month period at the existing Sunnyvale Costco Gasoline fuel station were also evaluated. Using data gathered over these six months the average number of weekday p.m. peak hour transactions was quantified. For this data, the range of weekday p.m. peak hours is 4:00 PM to 7:00 PM. The highest hourly count during that time was used to find an average of weekday p.m. peak hour transactions at the site. Since one fuel transaction equates to two trip ends (one inbound and one outbound), an estimate for the number of average weekday p.m. peak

hour trips can be made by doubling the transaction. The existing level of activity at the Sunnyvale Costco Gasoline facility is summarized in Table 3.

Table 3 Existing Sunnyvale Costco Gasoline Fuel Station Activity

Date	Average Weekday PM Peak Hour Trip Ends
February – July 2012	476

As can be seen from Table 3, the existing Sunnyvale Costco Gasoline fuel station generates and average of approximately 486 total weekday p.m. peak hour trip ends. Considering the data from Table 2 and the observed increase in vehicle trips from those eight example expansion sites, an estimate can be made for the number of additional weekday p.m. peak hour trips that will result from the expansion at the Sunnyvale site. Applying the determined 9.2% increase in activity due to the proposed expansion, the new total weekday p.m. peak hour trip generation estimate is approximately 520 trip ends. This is an increase of approximately 44 weekday p.m. peak hour trip ends or 22 vehicles.

EXPANSION IMPACT ON PM PEAK HOUR TRIPS

The city of Sunnyvale and Santa Clara County require that all developments that generate more than 100 peak hour trips in either the a.m. or p.m. peak hour have a transportation impact analysis (TIA) prepared. For this project, using the ITE Trip Generation Manual to predict trip generation will not provide an accurate representation of the expansion impacts. It is important to recognize that the Costco Gasoline fuel station is an existing use with an existing established market and membership base. ITE rates have been created based on the establishment of a new use and are not reflective of increase or changes to an established existing use. Furthermore, the manual states that use and location specific information should be used whenever possible. The unique nature of Costco sales and membership requirements result in different trip generation characteristics than those presented in the ITE manual. Although the standard reference manual ITE Trip Generation (8th Edition) currently reports trip generation for gasoline stations based on the independent variable of fueling positions, more recent transportation studies indicate that other variables besides the specific number of fueling pumps have a much larger influence on trip generation. As such, the profession is moving towards modifying this for the gasoline station land use codes and working on studies that include different independent variables. An ITE paper was just recently published in the June 2011 ITE Journal documenting a study completed by North Carolina State University confirming these methodologies.

With that said, the ITE manual predicts that each fueling station will generate an average of 13.87 trips per vehicle fueling position. Therefore, according to the ITE Trip Generation Manual, the addition of 4 fueling positions to the Sunnyvale Costco will generate 55 new trips. However, the data provided by the ITE Trip Generation Manual is not based on Costco-specific data, does not account for the fact that there is an existing Costco Gasoline fuel station use in operation on the site today,

and assumes a linear increase in trip generation with respect to fueling station increase. The data summarized in Table 2 is a more accurate representation of the trip generation impacts of a Costco gasoline expansion. As such, we request that the before and after study data provided here within be used as a more detailed and use specific reference upon which to base the development's trip generation estimate.

We trust this letter adequately quantifies the anticipated trip generation impacts associated with the proposed expansion to the Costco Gasoline fuel station located on Lawrence Station Road in Sunnyvale, California. If you have any additional questions or require additional information please contact us at 1-866-900-2683 or shennum@kittelson.com.

Arborist Report

Costco
Sunnyvale, CA

Prepared for:
Costco Wholesale
999 Lake Drive
Issaquah, WA 98027

Prepared by:
HortScience, Inc.
325 Ray St.
Pleasanton, CA 94566

January 2013

HORT SCIENCE

Arborist Report

Costco
Sunnyvale, CA

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Suitability for Preservation	4
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Appraisal of Value	6
Tree Preservation Guidelines	7

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Attachments

Tree Assessment Form

Tree Assessment Map

Introduction and Overview

Costco Wholesale is planning to expand the existing fueling facility at the Costco retail facility in Sunnyvale, CA. Current site use consists of the warehouse retail facility, a fueling facility, parking lot and associated landscaping. HortScience, Inc. was asked to prepare an **Arborist Report** for the site to meet the development requirements for the City of Sunnyvale.

This report provides the following information:

1. An evaluation of the health and structural condition of the trees within the proposed project area based on a visual inspection from the ground.
2. An assessment of the development impacts to the trees based on the plans provided by Barghausen Consulting Engineers.
3. An appraisal value of the trees according to the procedures described in the *Guide for Plant Appraisal* (Council of Tree and Landscape Appraisers).
4. Guidelines for tree preservation during the design, construction and maintenance phases of development.
5. A Tree Assessment and Tree Assessment Map showing the location of trees and tag numbers within the proposed project area.

Assessment Methods

Trees were assessed on September 25 and December 7, 2012. The assessment included all trees within proposed construction area measuring 4" and greater in diameter. The assessment procedure consisted of the following steps:

1. Identifying the tree as to species;
2. Tagging each tree with a numerically coded metal tag and recording its location on a map;
3. Measuring the trunk diameter at a point 54" above grade;
4. Evaluating the health and structural condition using a scale of 1 – 5:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "good", "moderate" or "poor". Suitability for preservation considers the health, age and structural condition of the tree species, and its potential to remain an asset to the site.

   Good: Trees with good health and structural stability that have the potential for longevity at the site.

   Moderate: Trees with somewhat declining health and/or structural defects than can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'good' category.

   Poor: Trees in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual tree may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

Description of Trees

Sixty-seven (67) trees were evaluated, representing 10 species (**Table 1** following page). Trees were tagged with numbers 1-43 and 99-122; trees with tags numbered 44-98 are no longer within the improvement area. All trees were planted on the site; none of the species were considered native. Most were semi-mature in development and were planted when the site was originally developed. Descriptions of each tree are found in the ***Tree Assessment Form*** and approximate locations are plotted on the ***Tree Assessment Map*** (see attachments).

The most commonly encountered species was London plane, with 23 trees or 34% of the population. London planes were young to semi-mature, with circumferences ranging from 5-15". Condition of the London planes was predominantly fair (14 trees), with one (1) in poor condition and eight (8) in good condition. Most trees were growing in small 3'x3' planters surrounded by asphalt. In general, London planes appeared water stressed; many trees had thin crowns and twig or branch dieback (photo 1).

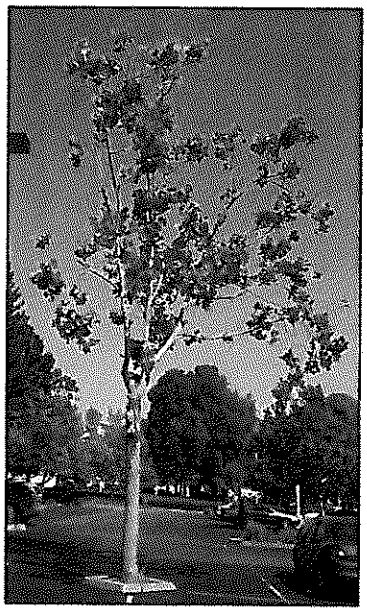

Photo 1: London planes in the parking lot had restricted rooting space and were in fair condition with twig dieback and slightly thin crowns, an indication of water stress.

Ten (10) Brazilian pepper trees, representing 15% of the population, were evaluated. Nine (9) were in fair condition and one (1) was in poor condition (#112). Many trees were characterized by having dense crowns but poor structure (photo 2), with codominant trunks or multiple trunks emerging from one point, crossing branches and other defects. Others had thin crowns and exhibited twig and branch dieback.

Photo 2: Brazilian pepper trees on site often had full, dense crowns and structural defects. Tree #39 had a healthy crown and poor structure with a trunk cavity extending from the base to 6' (arrows).

A total of eight (8) Chinese pistache were assessed, representing 12% of the population, with conditions ranging from fair to good. Trees were young to semi-mature in development and had trunk diameters from 5-10". Smaller trees (<7") had good vigor while larger trees (>7") had thinning crowns, an indication of water stress.

The following trees were also assessed at the Costco site:

- Seven (7) Lombardy poplars located on the southwest property line were in poor to fair condition. All seven trees had been topped for overhead utility line clearance.
- Along the west edge of the parking lot near the existing fueling facility, five (5) Chinese elms were in poor to fair condition. All had thin or thinning crowns and twig dieback.
- Five (5) olive trees were growing among the Chinese elms. Four (4) were in fair condition and one was in good condition. All had multiple attachments, which is typical of the species.
- Four (4) coast redwoods adjacent to the poplars had also been topped for overhead utilities. All were in fair condition with good vigor.
- In the southwest corner of the site, three (3) purple leaf plums were in fair condition with multiple attachments. Trunk decay was present in two trees (#15 and 16).
- One (1) each of southern magnolia and xylosma were growing on the site. The magnolia was in poor condition and in decline. The xylosma was in fair condition with poor form and structure.

The City of Sunnyvale defines any single-trunk tree with a trunk diameter of 12" or greater as *Protected*. By this definition, 25 trees evaluated qualified as *Protected*. *Protected* status of individual trees is provided in the ***Tree Assessment Forms***.

Table 1. Condition ratings and frequency of occurrence of trees. Costco Wholesale, Sunnyvale CA.

Common name	Scientific name	Condition			No. of trees
		Poor (2)	Fair (3)	Good (4)	
Southern magnolia	*Magnolia grandiflora*	1	-	-	1
Olive	*Olea europaea*	-	4	1	5
Chinese pistache	*Pistacia chinensis*	-	4	4	8
London plane	*Platanus x hispanica*	1	14	8	23
Lombardy poplar	*Populus nigra*	2	5	-	7
Purple leaf plum	*Prunus cerasifera*	-	3	-	3
Brazilian pepper	*Schinus terebinthifolius*	1	9	-	10
Coast redwood	*Sequoia sempervirens*	-	4	-	4
Chinese elm	*Ulmus parvifolia*	2	3	-	5
Xylosma	*Xylosma congestum*	-	1	-	1
Total		**7**	**47**	**13**	**67**
		10%	**70%**	**19%**	**100%**

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to provide greater assurance they survive development impacts, adapt to a new environment, and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. Trees with decay or poor branch attachments are not good candidates for preservation.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. In general, London planes are relatively tolerant of construction impacts and site changes while purple leaf plum is less tolerant.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Invasiveness**
  Trees with the potential to invade an established forest, reproduce rapidly, and grow in sub-optimal environments are considered invasive. Species with these qualities may alter the function and aesthetics of the forest. No invasive species were assessed at the Costco Wholesale site.

Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment. Table 2 provides a summary of suitability ratings. Suitability ratings for individual trees are provided in the ***Tree Assessment Forms*** (see attachments).

We consider trees with good suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2: Tree suitability for preservation.
Costco Wholesale, Sunnyvale CA.

Good	These are trees with good health and structural stability that have the potential for longevity at the site. Twelve (12) trees were of good suitability for preservation, including seven (7) London planes and five (5) Chinese pistache.

(Continued, following page)

Table 2: Tree suitability for preservation, continued.
Costco Wholesale, Sunnyvale CA.

Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. These trees require more intense management and monitoring, and may have shorter life-spans than those in the "good" category. Twenty-eight (28) trees were of moderate suitability for preservation, including 13 London planes, five (5) Brazilian peppers, four (4) olives, three (3) Chinese pistache, two (2) Chinese elms, and one (1) purple leaf plum.
Poor	Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Twenty-seven (27) trees were of poor suitability for preservation, including seven (7) Lombardy poplars, five (5) Brazilian peppers, four (4) coast redwoods, three (3) each of Chinese elm and London plane, two (2) purple leaf plums, and one (1) each of southern magnolia and xylosma.

Evaluation of Impacts and Recommendations

Appropriate tree retention develops a practical match between the location and intensity of construction activities and the quality and health of trees. The ***Tree Assessment Form*** was the reference point for tree health and condition. I referred to the Preliminary Landscape Plan prepared by Barghausen Consulting Engineers, Inc. (dated December 21, 2012) to estimate the impacts to trees from the proposed changes.

The plan proposes to expand the existing fueling facility. Surveyed trunk locations were not included for all trees. Potential impacts from construction were estimated for each tree. Precise impacts will have to be determined once trees have been located and plotted, and the plans are finalized. The most significant impacts to trees would be associated with demolition of the southern portion of the site for the expanded fueling facility.

Removal would be required for 37 trees. Of the trees to be removed, 13 were *Protected* trees. Eight (8) trees recommended for removal had poor suitability for preservation, 17 had moderate suitability, and 12 had good suitability. Table 3 (following page) shows trees recommended for removal with reasons for removal and their *Protected* status.

Establishing a **Tree Protection Zone** (**TPZ**) around trees identified for preservation prior to the demolition process will be critical to protecting roots and successfully preserving trees.

Table 3. Trees recommended for removal.
Costco Wholesale, Sunnyvale CA.

Tree No.	Species	DBH	Protected?	Reason for removal
1	Chinese pistache	8	No	Within new parking stalls.
2	London plane	12	Yes	Within new parking stalls.
3	London plane	9	No	Within new parking stalls.
4	London plane	12	Yes	Within new parking stalls.
5	Chinese pistache	6	No	Within new parking stalls.
30	London plane	11	No	Within new planter.
31	Brazilian pepper	9	No	Within new planter.
32	Brazilian pepper	14	Yes	Within new planter.
33	London plane	8	No	Within new planter.
34	Brazilian pepper	15	Yes	Within new planter.
35	Brazilian pepper	13	Yes	Within new planter.
36	London plane	6	No	Within new parking stalls.
37	London plane	8	No	Within new parking stalls.
38	Brazilian pepper	11	No	Within new parking stalls.
39	Brazilian pepper	18	Yes	Within new parking stalls.
40	Chinese pistache	6	No	Within new drive aisle.
41	Chinese pistache	8	No	Within new drive aisle.
42	Chinese pistache	5	No	Within new parking stalls.
43	Chinese pistache	5	No	Within new parking stalls.
102	London plane	12	Yes	Within new parking stalls.
103	London plane	13	Yes	Within new parking stalls.
104	London plane	14	Yes	Within new parking stalls.
105	London plane	15	Yes	Within new parking stalls.
106	London plane	11	No	Within new parking stalls.
107	London plane	5	No	Within new parking stalls.
108	London plane	9	No	Within new parking stalls.
109	London plane	12	Yes	Within new parking stalls.
110	London plane	12	Yes	Within new parking stalls.
111	London plane	9	No	Within new parking stalls.
112	Brazilian pepper	18	Yes	Within new parking stalls.
113	London plane	8	No	Within new parking stalls.
114	London plane	5	No	Within new parking stalls.
115	London plane	7	No	Within new parking stalls.
116	Brazilian pepper	11	No	Within new parking stalls.
117	London plane	9	No	Within new parking stalls.
118	London plane	9	No	Within new parking stalls.
121	London plane	11	No	Within new parking stalls.

Appraisal of Value

The City of Sunnyvale requires that the value of all of the surveyed trees be established. To accomplish this, I used the standard methods found in *Guide for Plant Appraisal*, 9th edition (published in 2000 by the International Society of Arboriculture, Champaign IL). In addition, I referred to *Species Classification and Group Assignment* (2004), a publication of the Western Chapter of the International Society of Arboriculture. These two documents outline the methods employed in tree appraisal.

The value of landscape trees is based upon four factors: size, species, condition and location. Size is measured as trunk diameter, normally 54" above grade. The species factor considers the adaptability and appropriateness of the plant in the South Bay area. The *Species Classification and Group Assignment* lists recommended species ratings

and evaluations. Condition reflects the health and structural integrity of the individual, as noted in the ***Tree Assessment Form***. Location factor considers the site, placement, and contribution of the tree in its surrounding landscape.

Using the methods described above, the appraised value of the 67 evaluated trees is **$79,400** (see ***Tree Assessment Form***). The appraised value of the 37 trees to be removed is **$42,750**.

Tree Preservation Guidelines

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Impacts can be minimized by coordinating any construction activities inside the **TREE PROTECTION ZONE**.

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Design recommendations

1 Any plan affecting trees should be reviewed by the Consulting Arborist with regard to tree impacts. These include, but are not limited to, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans and demolition plans.

2 A **TREE PROTECTION ZONE** shall be established around each tree to be preserved. No grading, excavation, construction or storage of materials shall occur within that zone. For design purposes, the **TPZ** for trees #6-29 and #99-101 shall extend to the dripline or, where driplines extend over paved areas, to the edge of the curb. The **TPZ** for trees in parking lot cut-outs (#119, 120) shall be the entire exposed soil area. These trees should receive trunk protection (photo 3).

Photo 3: Protect trunks by winding silt sock wattling and orange snow fencing around trunks.

3 **Tree Preservation Notes**, prepared by the Consulting Arborist, should be included on all plans.

4 Underground services including utilities, sub-drains, water or sewer shall be routed around the **TREE PROTECTION ZONE**. Where encroachment cannot be avoided, special construction techniques such as hand digging or tunneling under roots shall be employed where necessary to minimize root injury.

Pre-construction treatments and recommendations

1. The demolition contractor shall meet with the Consulting Arborist before beginning work to discuss work procedures and tree protection.

2. Structures and underground features to be removed within the **TREE PROTECTION ZONE** shall use the smallest equipment, and operate from outside the **TREE PROTECTION ZONE**. The consultant shall be on-site during all operations within the **TREE PROTECTION ZONE** to monitor demolition activity.

3. Fence trees #6-29 and #99-101 to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing, or grading. Fences shall be 6 ft. chain link or equivalent as approved by the City of Sunnyvale. Fences are to remain until all construction is completed.

4. For trees to be preserved in the parking lot, fencing at the dripline is not an option. Wrap the trunk to a height of 8' with straw wattle and orange snow fencing to provide a visual cue and protection from incidental contact (photo 3).

5. Trees to be preserved may require pruning to provide construction clearance. All pruning shall be completed by a Certified Arborist or Tree Worker. Pruning shall adhere to the latest edition of the ANSI Z133 and A300 standards as well as the *Best Management Practices -- Tree Pruning* published by the International Society of Arboriculture.

6. Structures and underground features to be removed within the **TREE PROTECTION ZONE** shall use the smallest equipment, and operate from outside the **TREE PROTECTION ZONE**. The Consulting Arborist should be on-site during all operations within the **TREE PROTECTION ZONE** to monitor demolition activity.

Recommendations for tree protection during construction

1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.

2. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the Consultant.

3. Any excavation within the dripline or other work that is expected to encounter tree roots should be monitored by the Consulting Arborist. Roots shall be cut by manually digging a trench and cutting exposed roots with a hand saw. The Consulting Arborist will identify where root pruning is required

4. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.

5. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.

Maintenance of impacted trees

Trees preserved at the Costco Wholesale site may experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of branches or entire trees failing will increase. Therefore, annual inspection for hazard potential is recommended.

If you have any questions regarding my observations or recommendations, please contact me.

HortScience, Inc.

Deanne Ecklund

Deanne Ecklund
ISA Certified Arborist WE9067-A

Attached: ***Tree Assessment Form***
Tree Assessment Map

Tree Assessment

Costco Wholesale
150 Lawrence Station Rd.
Sunnyvale, California
September & December 2012

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	PROTECTED TREE?	APPRAISED VALUE	COMMENTS
1	Chinese pistache	8	3	Good	No	$950	Good form and structure; slightly thin crown.
2	London plane	12	3	Good	Yes	$1,400	Thin crown; in small planter; displacing asphalt; slight lean west.
3	London plane	9	3	Good	No	$800	Codominant trunks at 6'; leans west; in small planter; slightly thin crown.
4	London plane	12	4	Good	Yes	$1,750	Good form and structure; slightly thin crown.
5	Chinese pistache	6	4	Good	No	$750	Good form and structure; slight lean west; full crown.
6	Olive	11,8,6	3	Moderate	No	$1,950	Multiple attachments at 3'; thin crown; crossing stems.
7	Chinese elm	11	2	Poor	No	$950	Multiple attachments at 7'; thin crown; dieback.
8	Olive	12,8,7,6	3	Moderate	No	$2,450	Multiple attachments at 4'; pruned for light standard; heading cuts; slightly thin crown; trunk wounds.
9	Olive	10,8,8	4	Moderate	No	$2,650	Codominant trunks at 2'; full crown.
10	Chinese elm	8	2	Poor	No	$500	Multiple attachments at 7'; thin crown; dieback; canker.
11	Chinese elm	9	3	Moderate	No	$1,100	Slightly thin crown; twig dieback; surface roots.
12	Chinese elm	8	3	Moderate	No	$850	Twisted form; minor twig dieback.
13	Chinese elm	11	3	Poor	No	$1,450	Leans east; thin crown; dieback; canker.
14	Purple leaf plum	8,6,4	3	Moderate	No	$450	Upright stems from topping cuts; full crown.
15	Purple leaf plum	12,8	3	Poor	No	$750	Upright stems from topping cuts; sunscald; trunk decay.
16	Purple leaf plum	6,5	3	Poor	No	$200	Sunscald; trunk decay from base to 4'.
17	Southern magnolia	7	2	Poor	No	$200	Stunted; branch dieback; in decline.
18	Coast redwood	18	3	Poor	Yes	$2,000	Topped for overhead utilities; full crown.
19	Coast redwood	18	3	Poor	Yes	$2,000	Topped for overhead utilities; full crown.
20	Coast redwood	16	3	Poor	Yes	$1,600	Topped for overhead utilities; full crown.
21	Coast redwood	32	3	Poor	Yes	$6,200	Topped for overhead utilities; full crown.

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Tree Assessment

Costco Wholesale
150 Lawrence Station Rd.
Sunnyvale, California
September & December 2012

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	PROTECTED TREE?	APPRAISED VALUE	COMMENTS
22	Xylosma	5,4	3	Poor	No	$300	Codominant trunks at 4'; upright stems from topping cuts; poor form and structure; 3' from utility pole.
23	Lombardy poplar	19	3	Poor	Yes	$1,000	Topped for overhead utilities.
24	Lombardy poplar	17	3	Poor	Yes	$800	Topped for overhead utilities.
25	Lombardy poplar	13	3	Poor	Yes	$500	Topped for overhead utilities.
26	Chinese pistache	10	3	Moderate	No	$1,350	Codominant trunks at 6'; poor structure.
27	Lombardy poplar	19	2	Poor	Yes	$650	Topped for overhead utilities; 3' long trunk wound; circling root.
28	Lombardy poplar	10	3	Poor	No	$300	Topped for overhead utilities; small crown.
29	Lombardy poplar	13	3	Poor	Yes	$500	Topped for overhead utilities; small crown.
30	London plane	11	4	Good	No	$1,600	Codominant trunks at 8'; slight lean southeast; full crown.
31	Brazilian pepper	9	2	Poor	No	$450	Codominant trunks at 8'; significant crown dieback.
32	Brazilian pepper	14	3	Moderate	Yes	$1,700	Codominant trunks at 7'; pruning wound at attachment; crossing branches; full crown.
33	London plane	8	3	Good	No	$650	Multiple attachments at 5'; twig dieback; slightly thin crown.
34	Brazilian pepper	15	3	Poor	Yes	$1,750	Multiple attachments at 7'; chlorotic; slightly thin crown.
35	Brazilian pepper	13	3	Moderate	Yes	$1,500	Codominant trunks at 6' with wide attachment; full crown.
36	London plane	6	2	Poor	No	$200	Codominant trunks at 6'; twig and branch dieback; thin crown.
37	London plane	8	3	Good	No	$650	Multiple attachments at 6'; twig dieback; slightly thin crown.
38	Brazilian pepper	11	3	Poor	No	$950	Codominant trunks at 6'; chlorotic; thin crown;
39	Brazilian pepper	18	3	Poor	Yes	$2,550	Poor form and structure; trunk wound from base.

ATTACHMENT E
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Tree Assessment

Costco Wholesale
150 Lawrence Station Rd.
Sunnyvale, California
September & December 2012

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	PROTECTED TREE?	APPRAISED VALUE	COMMENTS
40	Chinese pistache	6	4	Good	No	$750	Good young tree.
41	Chinese pistache	8	4	Good	No	$1,100	Multiple attachments at 5'; slightly thin crown.
42	Chinese pistache	5	3	Moderate	No	$350	Multiple attachments at 6'; slightly thin crown.
43	Chinese pistache	5	4	Good	No	$550	Codominant trunks at 5'; slight lean west; good young tree.
99	Olive	15	3	Poor	Yes	$2,250	Codominant trunks at 7'; poor form and structure; history of branch failure; stub cuts; trunk wound from base to 4'.
100	Chinese pistache	8	3	Moderate	No	$850	Codominant trunks at 9'; one sided form over parking lot.
101	Olive	7,7	3	Moderate	No	$750	Codominant trunks at 4'; poor form.
102	London plane	12	4	Moderate	Yes	$1,750	Multiple attachments at 9'; nice form; roots pruned for 3x3 planter; twig dieback.
103	London plane	13	3	Poor	Yes	$1,350	Codominant trunks at 13'; tearout wound on north side of trunk; pruned for light standard; root pruned.
104	London plane	14	4	Good	Yes	$2,750	Good form and structure; nice tree.
105	London plane	15	4	Moderate	Yes	$2,750	Multiple attachments at 7'; corrected lean south; nice form.
106	London plane	11	4	Moderate	No	$1,500	Multiple attachments at 8'; nice form; slightly thin crown.
107	London plane	5	3	Moderate	No	$250	Codominant trunks at 6'; suppressed form; history of branch failure.
108	London plane	9	3	Moderate	No	$750	Multiple attachments at 7'; seam on interior of south stem; surface roots.
109	London plane	12	3	Moderate	Yes	$1,250	Codominant trunks at 9'; heavy lateral limb; ok form; surface roots.

ATTACHMENT E
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Tree Assessment

Costco Wholesale
150 Lawrence Station Rd.
Sunnyvale, California
September & December 2012

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	PROTECTED TREE?	APPRAISED VALUE	COMMENTS
110	London plane	12	4	Moderate	Yes	$1,750	Codominant trunks at 10'; nice form; twig dieback; significant root lifting asphalt 2-3" on north.
111	London plane	9	3	Moderate	No	$750	Multiple attachments at 7'; history of branch failure; trunk wounds; twig dieback.
112	Brazilian pepper	18	3	Poor	Yes	$2,550	Codominant trunks at 6'; trunk tearout on north side; history of branch failure; asymmetrical form.
113	London plane	8	3	Moderate	No	$600	Codominant trunks at 9'; twig dieback; history of branch failure.
114	London plane	5	3	Moderate	No	$250	Small crown; trunk wounds; history of branch failure; trunk bows south.
115	London plane	7	3	Poor	No	$400	Codominant trunks at 7'; history of branch failure; trunk wounds; poor structure.
116	Brazilian pepper	11	3	Moderate	No	$1,050	Codominant trunks at 6' and 8'; slight lean east; broken limb.
117	London plane	9	4	Moderate	No	$950	Multiple attachments at 8'; nice form; history of branch failure.
118	London plane	9	3	Moderate	No	$650	Codominant trunks at 9'; corrected lean south; history of branch failure; twig dieback.
119	Brazilian pepper	7	3	Moderate	No	$400	Nice form; poor structure; chlorotic.
120	Brazilian pepper	13	3	Moderate	Yes	$1,350	Codominant trunks at 9'; trunk tearout seam from 1'-6'; nice form.
121	London plane	11	3	Moderate	No	$1,050	Multiple attachments at 10'; history of branch failure; slight lean south.
122	Lombardy poplar	14	2	Poor	Yes	$350	Topped at 20'; girdling root.

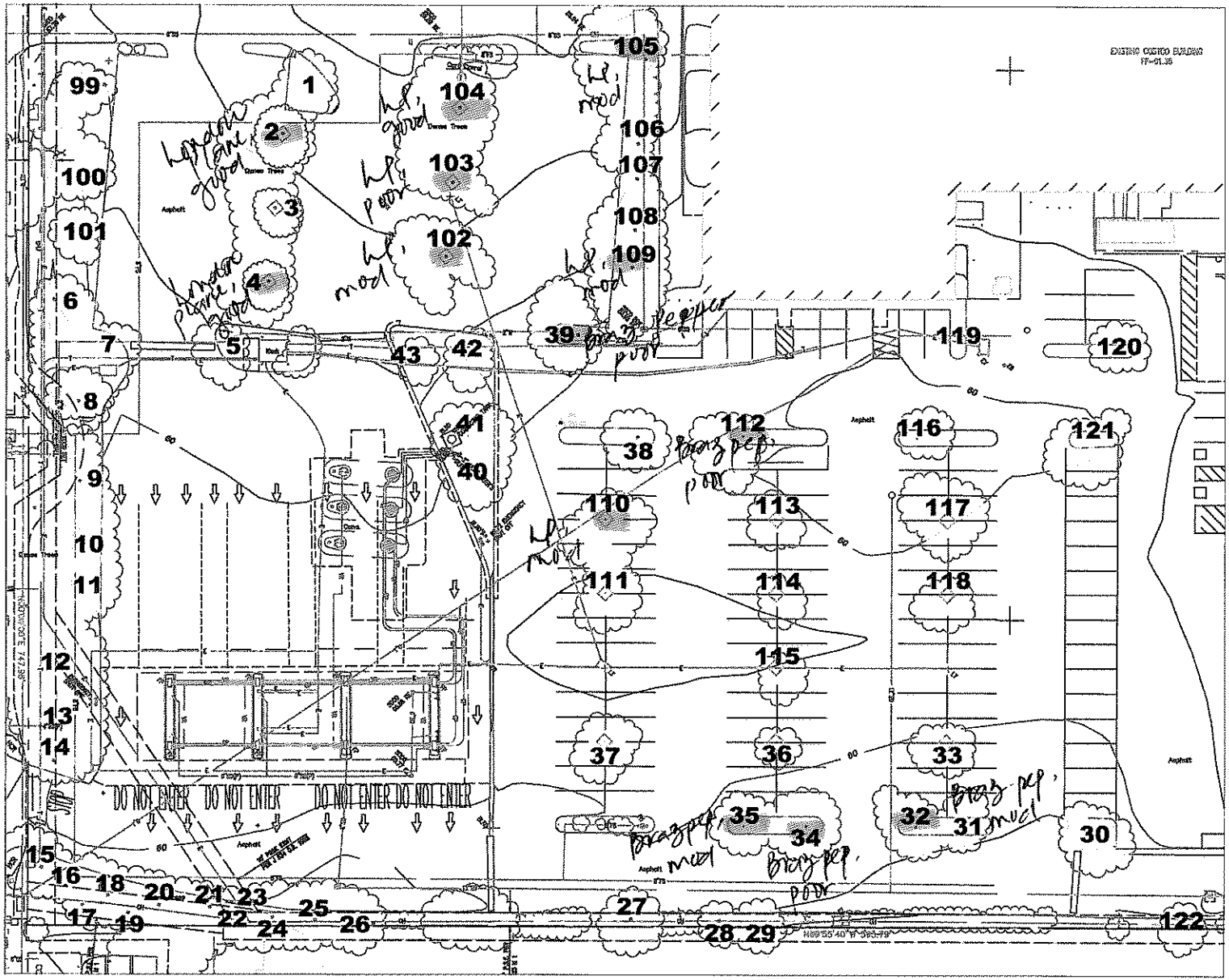
Tree Assessment Map

Costco

Sunnyvale, CA

Prepared for:
Costco Wholesale Corporation
Issaquah, WA

December 2012



No Scale

Notes:
Base map provided by:
Kier & Wright / Livermore, CA

Numbered tree locations are approximate.

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ATTACHMENT E
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