MERCEDES BENZ AUDI OF PALO ALTO

ARCHITECTURAL REVIEW BOARD: LANDSCAPE PLANS

DESIGN INTENT

THE LANDSCAPE DESIGN FOR THIS PROJECT EMBRACES THE BAYLANDS NATURAL PRESERVE; WHICH, IS THEN OVERLAID WITH THE MODERN MERCEDES BENZ BRAND. THE PLANTS WERE SELECTED FOR THEIR NATIVE SPECIES DESIGNATION, AS WELL AS, THEIR LOW-WATER USE REQUIREMENTS. ALL PLANTS CAN BE FOUND ON ONE OR MORE OF THE FOLLOWING LISTS:

- THE SANTA CLARA VALLEY WATER DISTRICT'S APPROVED PLANT LIST
- THE BAY-FRIENDLY RATED PLANT LIST
- LANDSCAPE PLANTS FROM THE SANTA CLARA VALLEY URBAN RUNOFF POLLUTION PREVENTION PROGRAM

THE BAYLANDS NATURAL PRESERVE IS LOCATED JUST EAST/SOUTHEAST OF THE EXISTING AUDI FACILITY (APPROXIMATELY 172' LINEAR FEET ALONG THE BACK LOT OF THEIR FACILITY). THE PLANTS SELECTED HERE ARE ONLY OF NATIVE SPECIES AND COMPLIMENTARY TO THE BAYLANDS NATURAL PRESERVE. THESE PLANTS INCLUDE: NATIVE OAKS, BIG LEAF MAPLE, COFFEEBERRY, NEVIN MAHONIA, DEER GRASS AND NATIVE SEDGES. THESE PLANTS ARE SENSITIVE TO THE BAYLAND TRAIL VIEW CORRIDORS (IN RESPECT TO COLOR AND HEIGHT) AS WELL AS TO WILDLIFE IN THE AREA SOFTENING THE CONNECTION BETWEEN THE TWO (2) USES. TO MINIMIZE THE ARCHITECTURAL MATERIALS AND HEIGHT THAT FACES THE BAYLANDS PRESERVE, GREEN SCREENS AND FLOW-THROUGH PLANTERS HAVE BEEN PLACED APPROXIMATELY 4'-0" DOWN FROM THE PARAPET ON THE FAÇADE OF THE BUILDING. THESE FULLY PLANTED WALLS WILL PROVIDE AN EXTENSION OF THE LANDSCAPE TO ENHANCE THE VIEW INTO THE SITE FROM THE TRAIL.

THE FOUNDATION LANDSCAPE SURROUNDING THE NEW MERCEDES BUILDING IS DESIGNED TO FRAME THE MODERN MARQUEE ENTRANCE OF THE BUILDING AND ITS SHOWROOM; WHILE PROVIDING ACCENTS AT PRIMARY ENTRY AREAS.

THE EXISTING AND ADJOINING AUDI FACILITY HAS STORMWATER BIORETENTION PLANTERS WITH NATIVE SEDGES IN A LINEAR AND/OR GRID PATTERN. THIS SAME DESIGN TECHNIQUE AND PLANT MATERIAL WAS INCORPORATED INTO THE VARIOUS STORMWATER BIORETENTION PLANTERS ON THE NEW MERCEDES SITE.

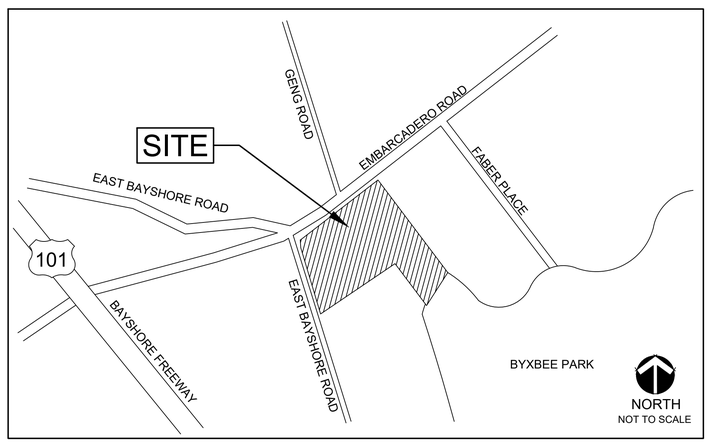
ALONG EMBARCADERO ROAD AND EAST BAYSHORE ROAD GRASSES AND OTHER ACCENT PLANTS ARE USED IN A SIMILAR LINEAR DESIGN FOR CONTINUITY ALONG THE STREETSCAPE. THE STREETSCAPE EMPHASIZES A MODERN AND CLEAN LANDSCAPE DESIGN WHICH HIGHLIGHTS THE NEW FACILITY ARCHITECTURE. THE STREETSCAPE ALSO PROVIDES A BAY TRAIL CONNECTION AND REST STOP FOR TRAIL USERS, EITHER ON FOOT OR BIKE, TO REST, GET WATER AND/OR ADJUST THEIR BIKES.

FINALLY, THE REMAINING PERIMETER LANDSCAPES FOUND ADJACENT TO OTHER USES TO THE SITE FOCUSES ON SIMILAR PLANT SELECTIONS AS WELL PLANTS THAT CREATE BUFFERS.

IRRIGATION STATEMENT:
THE IRRIGATION SYSTEM WILL BE DESIGNED TO COMPLY WITH THE WATER CONSERVATION LANDSCAPE ORDINANCE. THE EQUIPMENT SHALL UTILIZE THE MOST UP TO DATE WATER CONSERVATION METHODS INCLUDING DRIP IRRIGATION AND AN ET WEATHER MONITORING CONTROLLER.

DRAINAGE STATEMENT:
DRAINAGE ON THE SITE SHALL CONFORM TO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND C-3 REQUIREMENTS WHERE REQUIRED.

VICINITY MAP



DEVELOPMENT TEAM

CLIENT / DEVELOPER:

HOLMAN AUTOMOTIVE GROUP, INC.
911 NE 2ND AVENUE
FORT LAUDERDALE, FL 33304
PH: (954) 335-2200
CONTACT: STEVEN PRESSON

CONSULTANTS:

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CONTACT: JENNIFER CARPENTER, RLA

CIVIL ENGINEER

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ARCHITECT

YSM DESIGN
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PH: (949) 715 - 4275
CONTACT: LYLE HUTSON

SHEET INDEX

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MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
COVER SHEET

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
ARB NO. 2 (REVIEW)	09/10/2019
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

SHEET NUMBER

L-1

0' 40' 80'

GRAPHIC SCALE: 1" = 40'

NORTH

ARCHITECT / PLANNER

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1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
ILLUSTRATIVE PLAN

PROFESSIONAL STAMP

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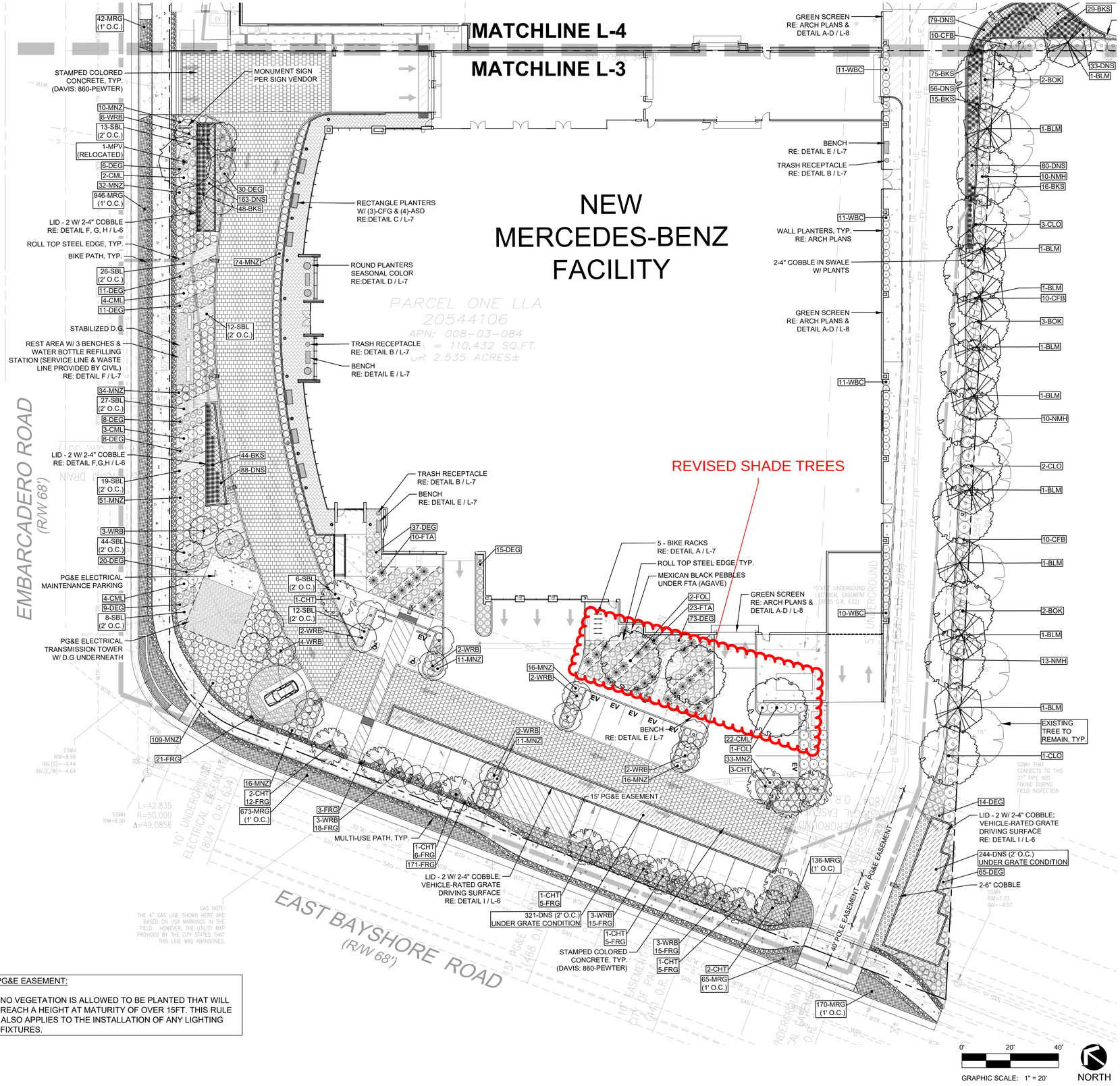
SHEET NUMBER

L-2



LEGEND (not to scale)

- SHADE TREES
- ORNAMENTAL TREES
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- ORNAMENTAL GRASSES UNDER GRATE CONDITION
- AGAVE
- PERENNIALS
- COBBLE (SEE PLAN FOR SIZE)
- EXISTING TREE
- ROLL TOP STEEL EDGE
- BIKE RACKS RE: A / L-7
- TRASH RECEPTACLES RE: B / L-7
- RECTANGLE PLANTERS RE: C / L-7
- ROUND PLANTERS RE: D / L-7
- BENCHES RE: E / L-7
- DECOMPOSED GRANITE

NOTE: COBBLE AND D.G. HATCH NOT SHOWN IN ALL PLANTING AREAS FOR CLARITY

PLANT LIST (TOTAL COUNTS)

LABEL	QTY	BOTANICAL NAME	COMMON NAME	MIN. SIZE
SHADE TREES				
BLM	31	Acer macrophyllum (N)	Big Leaf Maple	36" BOX
BOK	24	Quercus douglasii (L,N)	Blue Oak	36" BOX
CLO	6	Quercus agrifolia (L,N)	Coast Live Oak	36" BOX
FOL	3	Olea europaea 'Swan Hill'	Fruitless Olive Tree	36" BOX
VOK	12	Quercus lobata (N)	Valley Oak	36" BOX
WHB	6	Celtis reticulata (L,N)	Western Hackberry	36" BOX
ORNAMENTAL TREES				
CHT	13	Vitex agnus castus	Chaste Tree	36" BOX
MPV	1	Parkinsonia aculeata (L)	Mexican Palo Verde	SALVAGE
WRB	32	Cercis occidentalis (L,N,S) *alternatives see sheet L-9	Western Redbud	36" BOX
PERENNIAL & EVERGREEN SHRUBS				
CFB	130	Rhamnus californica (B,N,L,S)	Coffeeberry	5 GAL
CML	112	Ceanothus concha (B,N,L,S)	California Mountain Lilac	5 GAL
MNZ	413	Arcostaphylos densiflora 'Harmony' (B,N,L)	Harmony Manzanita	5 GAL
NMH	122	Mahonia nevinii (L,N,S)	Nevin Mahonia	5 GAL
SBL	167	Lupinus albifrons (B,N,L,S)	Silver Bush Lupine	5 GAL
WBC	59	Trichostema lanatum (N,L)	Woolly Blue Curls	5 GAL
ORNAMENTAL GRASSES / ACCENTS				
BKS	564	Carex divulsa (B,L,N,S)	Berkeley Sedge	1 GAL
DEG	596	Mulhenbergia rigens (B,L,N,S)	Deer Grass	5 GAL
DNS	2207	Carex pansa (B,L,N,S)	Dune Sedge	1 GAL
FRG	276	Calamagrostis acutiflora 'Karl Foerster' (L,N,S)	Feather Reed Grass	1 GAL
MRG	2466	Calamagrostis foliosa (L,N,S)	Mendocino Reed Grass	1 GAL
FTA	33	Agave attenuata (L,S)	Foxtail Agave	15 GAL
ACCENTS IN PLANTERS				
ASD	24	Sedum rupestre 'Angelina' (L,S)	Angelina Stonecrop	1 GAL
CFG	18	Cordalyne x 'JURed' Plant (L)	Festival Burgundy Cordalyne	2 GAL
ACCENTS ON GREEN SCREEN				
YSD	TBD	Sedum spathulifolium (L,N,S)	Yellow Stonecrop	1/2 GAL

ALL PLANTS ON THIS LIST ARE MODERATE TO LOW-WATER USE.
DESIGNATION IF FOUND ON AN APPROVED PLANT LIST, NATIVE SPECIES OR LOW-WATER USE:
(B)=BAY-FRIENDLY RATED PLANT LIST
(L)= LOW WATER USE
(N)=NATIVE SPECIES
(S)=SANTA CLARA VALLEY WATER DISTRICT'S APPROVED PLANT LIST

*NOTE: (1) MPV IS TO BE RELOCATED FROM THE EXISTING AUDI FACILITY TO THE MERCEDES BENZ SITE

NOTES

1. SEE SHEET L-6 FOR LANDSCAPE DETAILS.
2. PLANT SPACING IS PER PLANS.
3. DECOMPOSED GRANITE SHALL BE PROVIDED IN ALL PLANTING AREAS EXCEPT:
   - 3.1. COBBLE MULCH SHALL BE PROVIDED IN ALL SWALES AND WHERE INDICATED ON PLANS. TYPE IS TO BE MULTICOLORED RIVER ROCK/COBBLE WITH A BLEND OF 50% AREA COVERED WITH 2-3" DIA. AND 50% COVERED WITH 3-4" OR 3-6" DIA. REFER TO SPECIFIC NOTATION PER LOCATION FOR SIZING.
   - 3.2. 3-5" DIA. BLACK MEXICAN PEBBLE IN AGAVE PLANTING STRIPS.
4. THE CONTRACTOR SHALL VERIFY THE LOCATION OF AND PROTECT ALL UTILITIES DURING THE PLACEMENT OF TREES.

60' PG&E EASEMENT:

1. NO VEGETATION IS ALLOWED TO BE PLANTED THAT WILL REACH A HEIGHT AT MATURITY OF OVER 15FT. THIS RULE ALSO APPLIES TO THE INSTALLATION OF ANY LIGHTING FIXTURES.

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1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
LANDSCAPE PLAN

PROFESSIONAL STAMP

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CHECKED BY:	JC/KP

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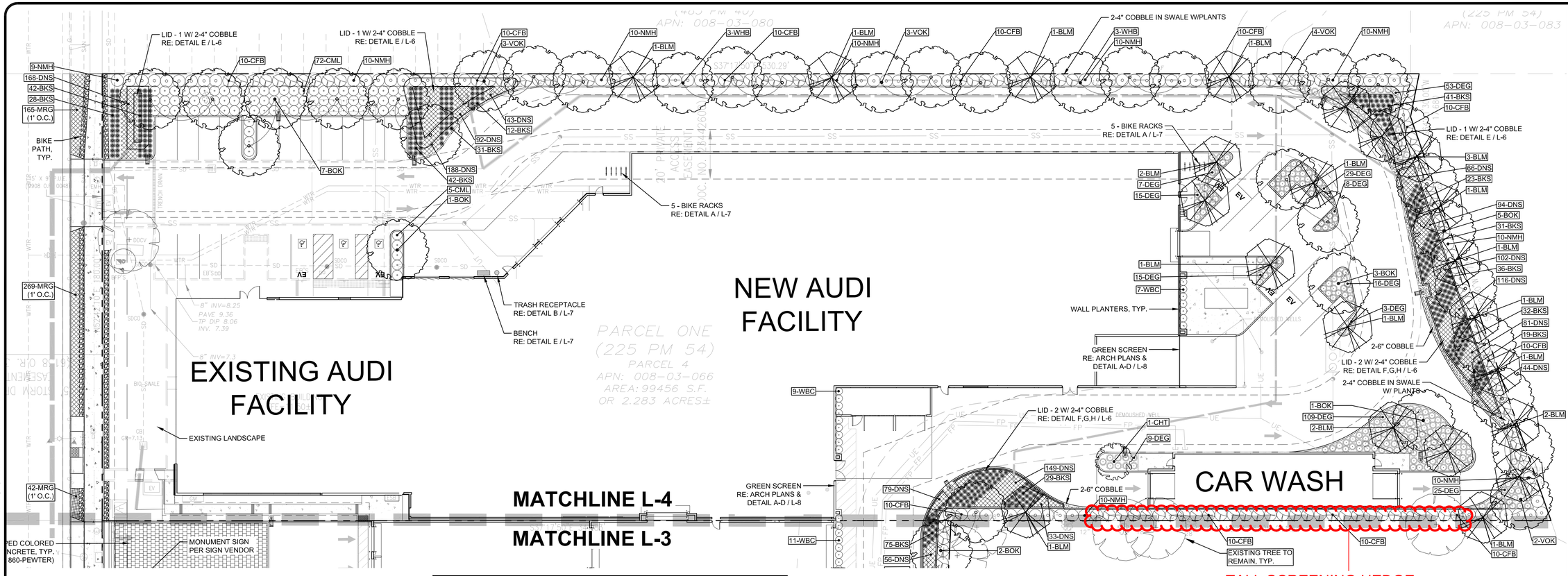
SHEET NUMBER

L-3



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GREEN SCREEN MAINTENANCE NOTE:

1. THE MAINTENANCE OF THE GREEN SCREEN SYSTEM WILL BE MAINTAINED THROUGH THE MANUFACTURER'S MAINTENANCE PROGRAM OR PER OWNER
2. THE MAINTENANCE SCHEDULE SHALL BE EVERY 3-4 WEEKS FOR PRUNING, CHECKING CONTROLS & IRRIGATION SYSTEM FOR PROPER FUNCTIONING, AND ANY REPLACEMENT OF PLANT MATERIAL.

GREEN SCREEN MAINTENANCE NOTES

LANDSCAPE DATA

TOTAL SITE AREA	209,888
TOTAL LANDSCAPE AREA	26,680
% OF SITE LANDSCAPE (minimum 10%)	13%
PARKING & DRIVES AREA (REFER TO SHEET L-5)	66,832
SHADED AREA (REFER TO SHEET L-5)	38,268
% SHADED PARKING AREA (REFER TO SHEET L-5)	57%
# OF SHRUBS AT PARKING AREA	603
# OF 5 GAL SHRUBS AT PARKING AREA	387
% 5+ GAL SHRUBS AT PARKING AREA (MIN. 50%)	64%

GRAPHIC SCALE: 1" = 20' (0', 20', 40')

NORTH

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1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
LANDSCAPE PLAN

PROFESSIONAL STAMP

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DRAWN BY:	CR
CHECKED BY:	JC/KP

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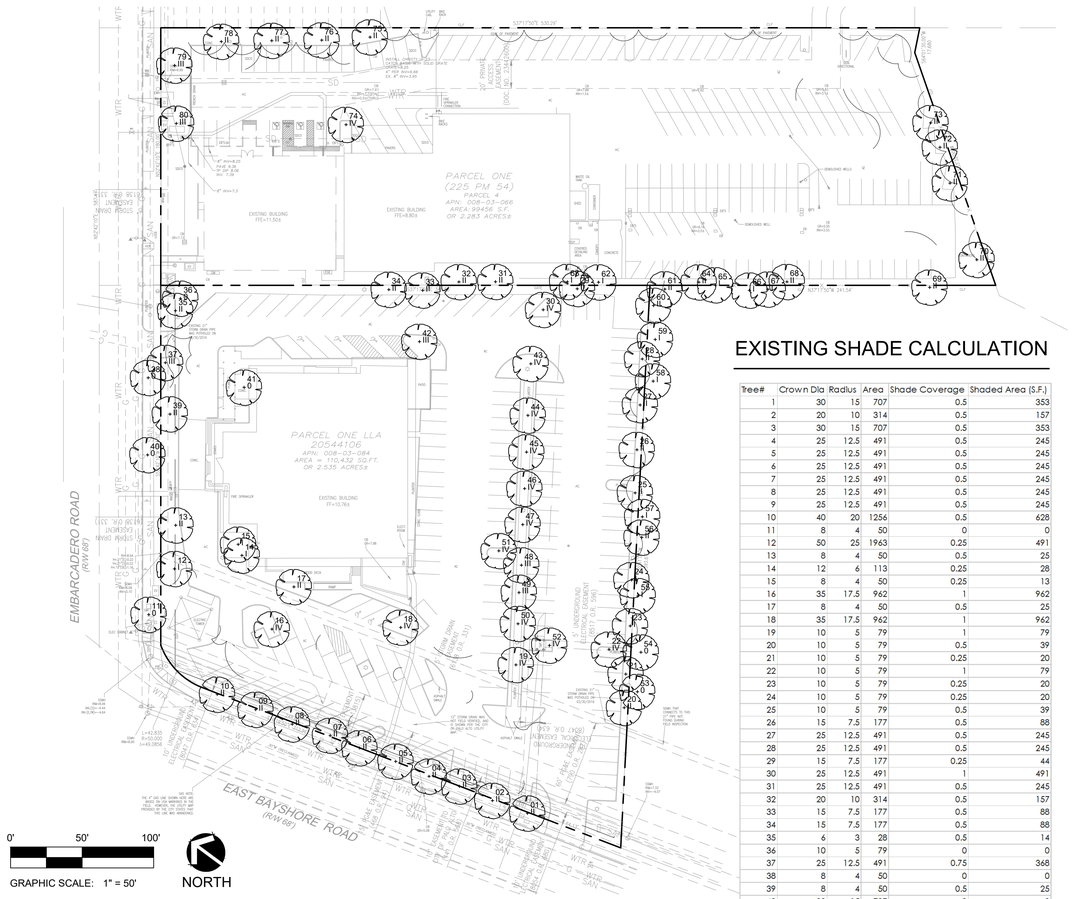
SHEET NUMBER

L-4

4 OF 16

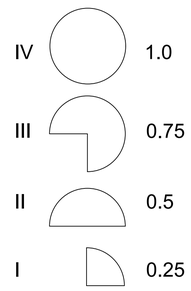
EXISTING SHADE CALCULATION PLAN



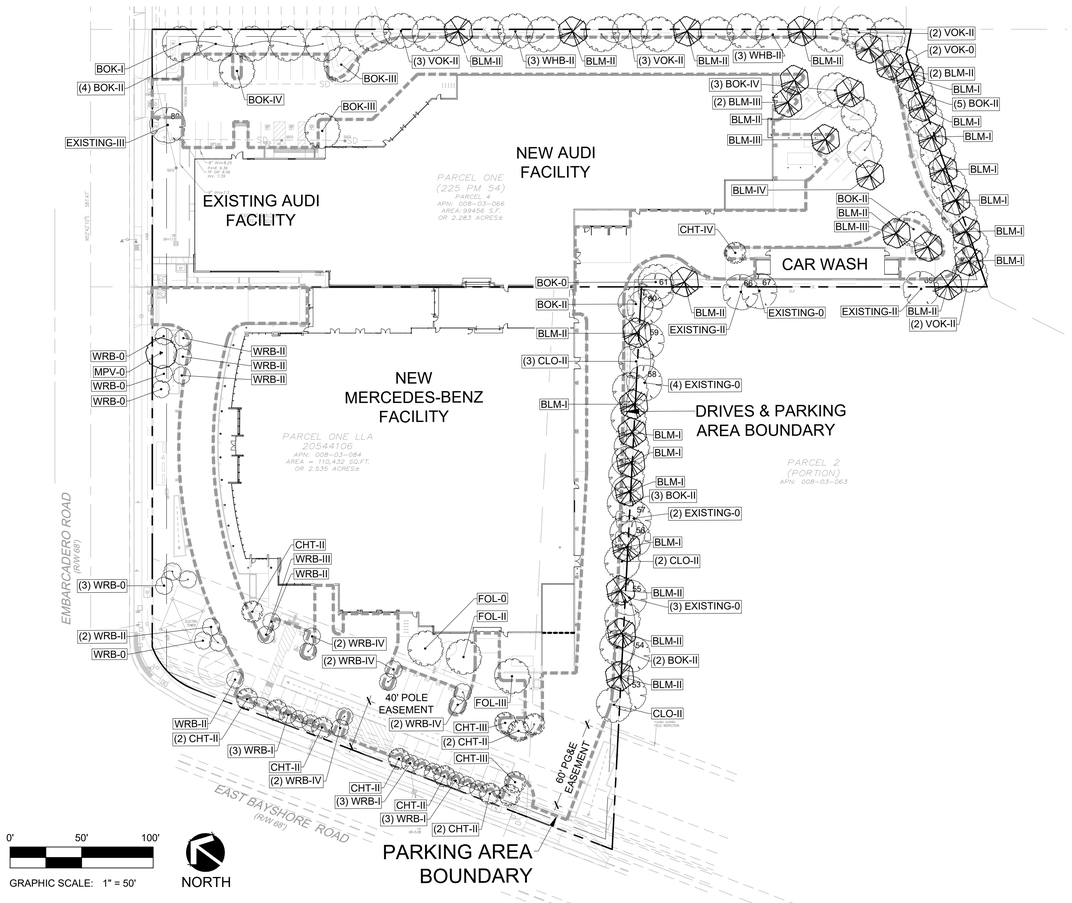
EXISTING SHADE CALCULATION

Tree#	Crown Dia	Radius	Area	Shade Coverage	Shaded Area (S.F.)
1	30	15	707	0.5	353
2	20	10	314	0.5	157
3	30	15	707	0.5	353
4	25	12.5	491	0.5	245
5	25	12.5	491	0.5	245
6	25	12.5	491	0.5	245
7	25	12.5	491	0.5	245
8	25	12.5	491	0.5	245
9	25	12.5	491	0.5	245
10	40	20	1256	0.5	628
11	8	4	50	0	0
12	50	25	1963	0.25	491
13	8	4	50	0.5	25
14	12	6	113	0.25	28
15	8	4	50	0.25	13
16	35	17.5	962	1	962
17	8	4	50	0.5	25
18	35	17.5	962	1	962
19	10	5	79	1	79
20	10	5	79	0.5	39
21	10	5	79	0.25	20
22	10	5	79	1	79
23	10	5	79	0.25	20
24	10	5	79	0.25	20
25	10	5	79	0.5	39
26	15	7.5	177	0.5	88
27	25	12.5	491	0.5	245
28	25	12.5	491	0.5	245
29	15	7.5	177	0.25	44
30	25	12.5	491	1	491
31	25	12.5	491	0.5	245
32	20	10	314	0.5	157
33	15	7.5	177	0.5	88
34	15	7.5	177	0.5	88
35	6	3	28	0.5	14
36	10	5	79	0	0
37	25	12.5	491	0.75	368
38	8	4	50	0	0
39	8	4	50	0.5	25
40	30	15	707	0	0
41	12	6	113	0	0
42	40	20	1256	0.75	942
43	30	15	707	1	707
44	10	5	79	1	79
45	10	5	79	1	79
46	10	5	79	1	79
47	10	5	79	1	79
48	10	5	79	0.75	59
49	10	5	79	0.75	59
50	10	5	79	1	79
51	12	6	113	1	113
52	18	9	254	1	254
53	40	20	1256	0	0
54	40	20	1256	0	0
55	40	20	1256	0.25	314
56	40	20	1256	0.5	628
57	40	20	1256	0.25	314
58	40	20	1256	0.25	314
59	40	20	1256	0.25	314
60	40	20	1256	0.5	628
61	40	20	1256	0.5	628
62	25	12.5	491	0.25	123
63	25	12.5	491	0.25	123
64	45	22.5	1590	0.5	795
65	45	22.5	1590	0.25	397
66	45	22.5	1590	0.25	397
67	45	22.5	1590	0.25	397
68	20	10	314	0.5	157
69	45	22.5	1590	0.5	795
70	25	12.5	491	0.5	245
71	30	15	707	0.5	353
72	30	15	707	0.5	353
73	35	17.5	962	0.5	481
74	15	7.5	177	1	177
75	15	7.5	177	0.5	88
76	15	7.5	177	0.5	88
77	15	7.5	177	0.5	88
78	15	7.5	177	0.5	88
79	20	10	314	0.75	236
80	20	10	314	0.75	236
					19,146

TREE VALUES



PROPOSED SHADE CALCULATION PLAN



PROPOSED SHADE CALCULATION

SYMBOL (CANOPY/SQ.FT.)	BOTANICAL NAME (COMMON NAME)	FULL SQ.FT.	3/4 SQ.FT.	1/2 SQ.FT.	1/4 SQ.FT.	TOTAL SQ.FT.
BLM (40/1256)	Acer macrophyllum (Big Leaf Maple)	1 @ 1256	4 @ 942	14 @ 628	12 @ 314	17584
CLO (20/314)	Quercus agrifolia (Coast Live Oak)		1 @ 236	6 @ 157		1178
BOK (20/314)	Quercus douglasii (Blue Oak)	4 @ 314	2 @ 236	16 @ 157	1 @ 79	4318
WHB (45/1590)	Celtis reticulata (Western Hackberry)			6 @ 795		4770
VOK (30/707)	Quercus lobata (Valley Oak)			10 @ 354		3535
FOL (25/491)	Olea europaea 'Swan Hill' Fruitless Olive Tree		1 @ 368	1 @ 246		614
WRB (14/154)	Cercis occidentalis (Western Redbud)	8 @ 154	1 @ 116	7 @ 77	9 @ 39	2233
CHT (20/314)	Vitex agnus castus (Chaste Tree)	1 @ 314	2 @ 236	13 @ 157		2826
Existing Trees to Remain	refer to existing shade calculations list					1825
TOTAL PROPOSED SHADED AREA (S.F.)						38,411
TOTAL PROPOSED AREA (S.F.) OF DRIVES & PARKING						66,832
% OF SHADED AREA REQUIRED						50%
% OF SHADED AREA PROVIDED						57%

ARCHITECT / PLANNER

LAI Design Group
world wide
88 Inverness Circle East,
Bldg. J, Suite 101
Englewood, Colorado 80112
T 303.734.1777 | F 303.734.1778
Architecture | Planning | Golf Design
Landscape Architecture | Visual Media
www.LAIdesigngroup.com

OWNER/CLIENT

HOLMAN AUTOMOTIVE GROUP, INC.
911 NE 2ND AVENUE
FORT LAUDERDALE, FL 33304
(954)335-2200

MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
SHADE CALCULATION

PROFESSIONAL STAMP

PROJECT INFORMATION

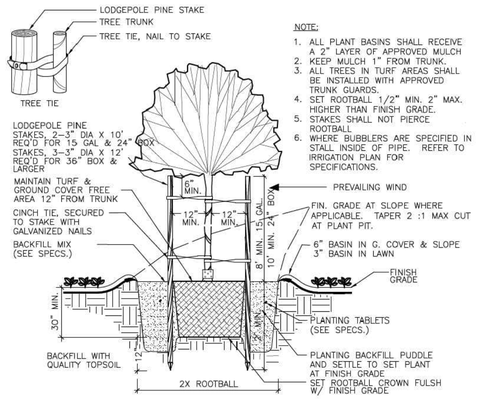
PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
ARB NO. 2 (REVIEW)	09/10/2019
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

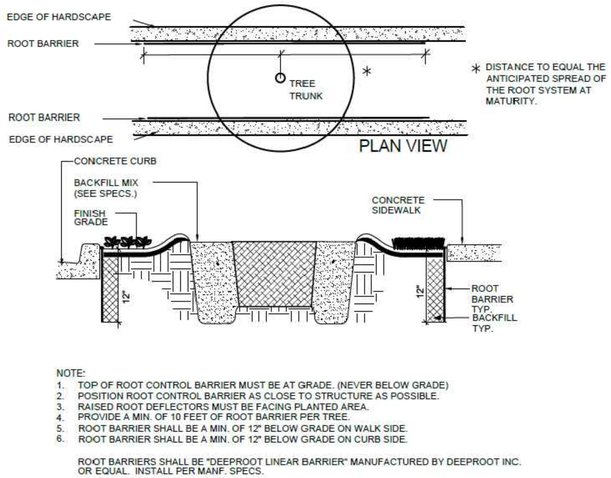
SHEET NUMBER

L-5



NOTE:
1. ALL PLANT BASINS SHALL RECEIVE A 2" LAYER OF APPROVED MULCH
2. KEEP MULCH 1" FROM TRUNK.
3. ALL TREES IN TURF AREAS SHALL BE INSTALLED WITH APPROVED TRUNK GUARDS.
4. SET ROOTBALL 1/2" MIN. 2" MAX. HIGHER THAN FINISH GRADE.
5. STAKES SHALL NOT PIERCE ROOTBALL
6. WHERE BUBBLERS ARE SPECIFIED IN STALL INSIDE OF PIPE. REFER TO IRRIGATION PLAN FOR SPECIFICATIONS.

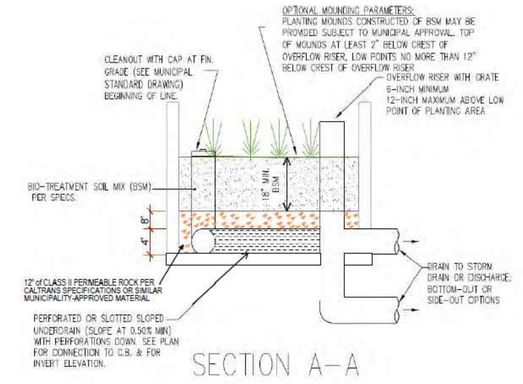
A TREE PLANTING
SCALE: NTS



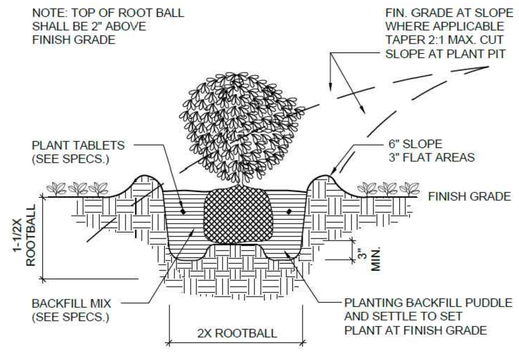
NOTE:
1. TOP OF ROOT CONTROL BARRIER MUST BE AT GRADE. (NEVER BELOW GRADE)
2. POSITION ROOT CONTROL BARRIER AS CLOSE TO STRUCTURE AS POSSIBLE.
3. RAISED ROOT DEFLECTORS MUST BE FACING PLANTED AREA.
4. PROVIDE A MIN. OF 10 FEET OF ROOT BARRIER PER TREE.
5. ROOT BARRIER SHALL BE A MIN. OF 12" BELOW GRADE ON WALK SIDE.
6. ROOT BARRIER SHALL BE A MIN. OF 12" BELOW GRADE ON CURB SIDE.

ROOT BARRIERS SHALL BE "DEEPROOT LINEAR BARRIER" MANUFACTURED BY DEEPROOT INC. OR EQUAL. INSTALL PER MANF. SPECS.

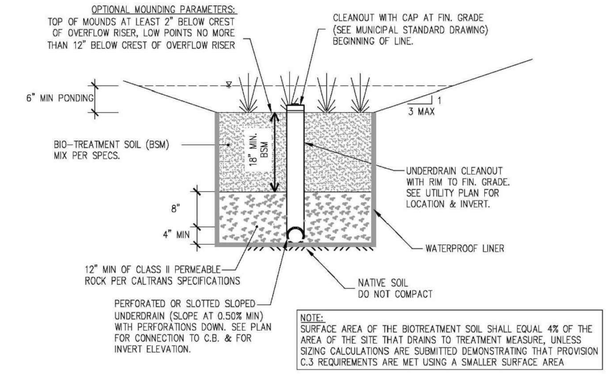
D ROOT BARRIER
SCALE: NTS



G LID - 2 FLOW-THROUGH PLANTER (SECTION A-A)
SCALE: NTS PER CITY OF PALO ALTO C.3 STORMWATER HANDBOOK

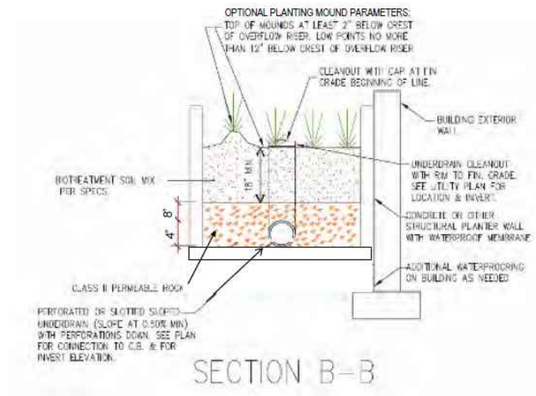


B SHRUB PLANTING
SCALE: NTS

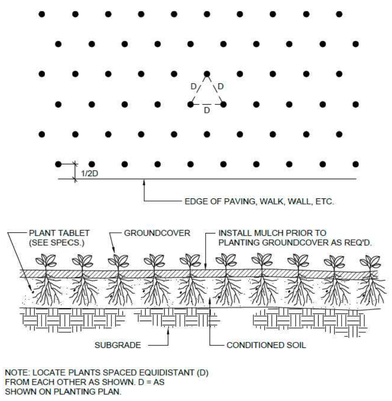


NOTE:
SURFACE AREA OF THE BIOTREATMENT SOIL SHALL EQUAL 4% OF THE AREA OF THE SITE THAT DRAINS TO TREATMENT MEASURE, UNLESS SIZING CALCULATIONS ARE SUBMITTED DEMONSTRATING THAT PROVISION C.3 REQUIREMENTS ARE MET USING A SMALLER SURFACE AREA

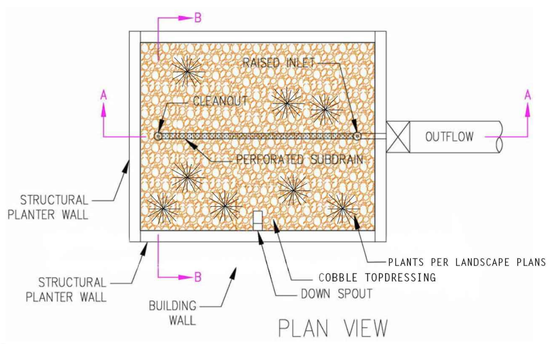
E LID - 1 LINED BIORETENTION
SCALE: NTS PER CITY OF PALO ALTO C.3 STORMWATER HANDBOOK



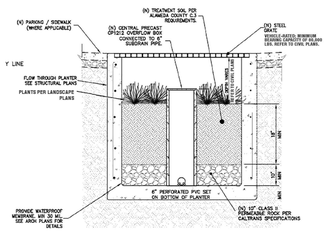
H LID - 2 FLOW-THROUGH PLANTER (SECTION B-B)
SCALE: NTS PER CITY OF PALO ALTO C.3 STORMWATER HANDBOOK



C GROUNDCOVER SPACING
SCALE: NTS



F LID - 2 FLOW-THROUGH PLANTER (PLAN VIEW)
SCALE: NTS PER CITY OF PALO ALTO C.3 STORMWATER HANDBOOK



FLOW THROUGH STORM WATER TREATMENT PLANTER

SOIL CONSIDERATIONS
THE BIO-RETENTION PLANTING SOIL SHALL MEET THE REQUIREMENTS SET FORTH IN APPENDIX L OF THE ALAMEDA COUNTY CLEANWATER PROGRAM C.3 STORMWATER TECHNICAL GUIDANCE HANDBOOK.

BIO-RETENTION SOIL SHALL HAVE A MINIMUM PERCOLATION RATE OF 5" PER HOUR AND MAXIMUM PERCOLATION RATE OF 10" PER HOUR OR RATE AS MAY BE MEET THE STORMWATER TREATMENT REQUIREMENTS. THE CONTRACTOR MAY MIX SAND WITH EXISTING SOIL TO ALLOW FOR A 5" PER HOUR PERCOLATION RATE. IN-SITU TESTING SHALL BE CONDUCTED TO VERIFY THAT THE MATERIAL MEETS THE PERCOLATION REQUIREMENTS.

NO BARK MULCH SHALL BE PLACED IN THE VEGETATED AREA.

IF IMPORT SOIL IS USED, IT SHALL HAVE THE FOLLOWING PROPERTIES: FOR USED LOAM, A TYPICAL SOIL MIX CONSISTED 50% CONSTRUCTION SAND, 20%–30% TOPSOIL WITH LESS THAN 5% MAXIMUM CLAY CONTENT AN 20%–30% ORGANIC LEAF COMPOST.

I FLOW-THROUGH PLANTER W/ GRATE
SCALE: NTS PER CITY OF PALO ALTO C.3 STORMWATER HANDBOOK

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MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303

LANDSCAPE DETAILS

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
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ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

SHEET NUMBER

L-6

TRIO™ BIKE RACK

PRODUCT DATA

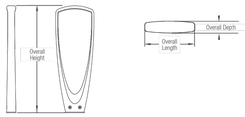
The **Trio Bike Rack** is the perfect complement to our Trio product line. Providing an excellent opportunity for design continuity, the Trio Bike Rack draws on the same triangular shape and exaggerated void seen in both our Trio Bench and Trio Lighting. Contemporary in design, its simple yet sculptural form allows it to be integrated into a myriad of settings.

MATERIAL & FINISHES

INSTALLATION & MAINTENANCE

MATERIAL	FINISHES	GUIDELINES & SECURITY	INSTALLATION	MAINTENANCE
• Body is made of corrosion-resistant cast aluminum with powdercoat finish.	• See the Forms+Surfaces Powdercoat Chart for details. Custom RAL colors are available for an upcharge. • Due to the inherent nature of metal castings, gloss powdercoats are not offered for cast components.	• Meets Association of Pedestrian and Bicycle Professionals (APBP) guidelines. • A locking point detail and mounting configurations that meet APBP guidelines can be found on pages 1 and 2 of this document.	• Trio Bike Racks must be surface mounted with embedded anchors. Stainless steel anchors and tamper-resistant stainless steel screws are included.	• Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.

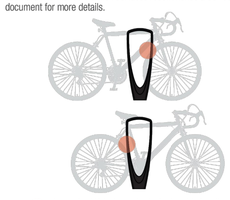
NOMINAL DIMENSIONS



OVERALL LENGTH	OVERALL DEPTH	OVERALL HEIGHT	WEIGHT
12" (305 mm)	2.75" (70 mm)	33.5" (851 mm)	25 lbs (11.3 kg)

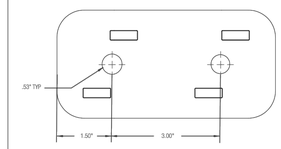
LOCKING POINT AND CONFIGURATION EXAMPLES

The Trio Bike Rack was designed to allow for a multitude of locking point and configuration options to meet your individual needs. Please note that for optimal performance, Forms+Surfaces recommends a 36" center-to-center placement. See diagrams below and the separate installation instructions document for more details.



A standard U-lock can be locked at this location to meet APBP guidelines for security and functionality.

LOCKING POINT EXAMPLE



MOUNTING / HARDWARE DETAIL

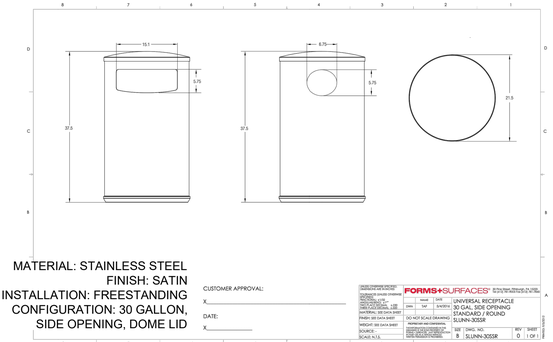
T 800.451.0410 I www.forms-surfaces.com

FORMS+SURFACES®

MATERIAL: CAST ALUMINUM
FINISH: POWDERCOAT
COLOR: ALUMINUM TEXTURE
INSTALLATION: SURFACE MOUNT

A BIKE RACK (QTY: 15)

SCALE: NTS



MATERIAL: STAINLESS STEEL
FINISH: SATIN
INSTALLATION: FREESTANDING
CONFIGURATION: 30 GALLON, SIDE OPENING, DOME LID

CUSTOMER APPROVAL:

X_____

DATE:

X_____

FORMS+SURFACES®

NAME	DATE	DESCRIPTION
DWN	TAP	UNIVERSAL RECEPTACLE
CHK		30 GAL. SIDE OPENING STANDARD / ROUND
APP		SLUNN-30SSR

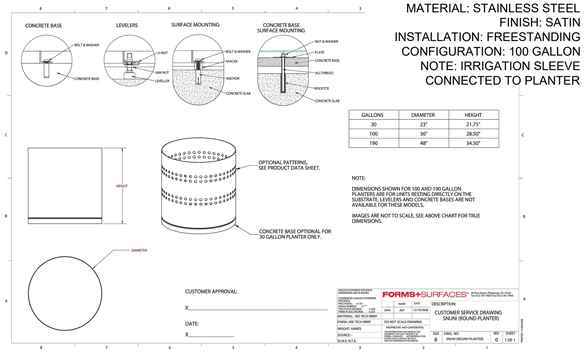
SIZE	DWG. NO.	REV	SHEET
B	SLUNN-30SSR	0	1 OF 1

MATERIAL & CONSTRUCTION DETAILS

INSTALLATION & MAINTENANCE

CONFIGURATIONS	GRAPHICS	BODY PATTERNS	INSTALLATION
• Universal Receptacles are available in top- and side-opening configurations with 36-, 30-, 24-, and 12-gallon capacities. • Top-opening configurations have the same number of liners as lid openings. • Side-opening configurations can be specified with one full liner or two half liners with an internal baffle.	• Instructional graphics are available with a variety of standard messages that clearly indicate the use for each opening. • Graphics have white letters and symbols with black, blue, or green backgrounds. • Graphics are printed on the back of clear, lightly textured polycarbonate, protecting them from wear over time.	• Eight different body patterns are available for an upcharge; see pages 8 and 9 for standard patterns. • Eco-Etch designs are applied using an advanced photolithographic bead-blasting system. • Impression designs have stamped, high-relief patterns. • Perforation patterns offer unique designs.	• Universal Receptacles may be used freestanding or surface mounted. • Anchors, levelers, and stainless steel mounting screws are provided when surface mounting is specified; levelers are supplied for all polyethylene base receptacles.
LIDS	**BODY FINISHES**	**BASES**	**MAINTENANCE**
• Standard lids for 36-, 24-, and 12-gallon receptacles are molded from polyethylene with a UL94HB fire rating, and are Slate with a light texture. • Top-opening lids for 36-, 24-, and 12-gallon receptacles with 10" and 7" diameter openings are available in Stainless Steel with a Satin finish for an upcharge. • Standard lids for 30-gallon receptacles are available in Stainless Steel only. • Concealed ash lids in Stainless Steel with Satin finish are available for 12-gallon, side-opening receptacles. • Tether cables are available to connect receptacle lid to body.	• Stainless Steel with Sandstone, Seastone, Linen, Diamond, or Satin finish are available for all Universal Receptacles. • Fused Bronze and Fused Nickel Silver bodies with Sandstone, Seastone, and Diamond finishes are available on 12-gallon receptacles for an upcharge.	• Standard 1.5" high tapered bases are molded from polyethylene with a UL94HB fire rating and are Slate with a light texture. • Black Sand concrete bases are available for an upcharge.	• Polyethylene and metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners. • Use caution when cleaning over graphics. • Tensioned rubber bag straps and drain holes can be specified on polyethylene liners.

MATERIAL: STAINLESS STEEL
FINISH: SATIN
INSTALLATION: FREESTANDING
CONFIGURATION: 100 GALLON
NOTE: IRRIGATION SLEEVE CONNECTED TO PLANTER



GALLONS	DIAMETER	HEIGHT
30	23"	21.75"
100	36"	28.50"
190	48"	34.50"

NOTE:

DIMENSIONS SHOWN FOR 100 AND 190 GALLON PLANTERS ARE FOR UNITS RESTING DIRECTLY ON THE SUBSTRATE. LEVELERS AND CONCRETE BASES ARE NOT AVAILABLE FOR THESE MODELS.

IMAGES ARE NOT TO SCALE. SEE ABOVE CHART FOR TRUE DIMENSIONS.

CUSTOMER APPROVAL:

X_____

DATE:

X_____

FORMS+SURFACES®

NAME	DATE	DESCRIPTION
DWN	KEP	CUSTOMER SERVICE DRAWING
CHK		ONLINE (ROUND PLANTER)
APP		

SIZE	DWG. NO.	REV	SHEET
B	ONLINE (ROUND PLANTER)	0	1 OF 1

MATERIAL & CONSTRUCTION DETAILS

INSTALLATION & MAINTENANCE

CONSTRUCTION	BODY FINISHES	INSTALLATION	MAINTENANCE
• Body and internal structure are both made entirely of stainless steel. • Concrete bases are 3.25" thick (2.5" visible) and are available in Black Sand color. • Drip pans included for 100- & 190-gallon planters.	• Planter comes in three standard stainless steel finishes, Sandstone, Diamond, and Satin, or can be powdercoated. • See the Forms+Surfaces Powdercoat Chart for standard and premium color options. Custom RAL colors are available for an upcharge.	• 30 gallon Universal Planters may be used freestanding with or without adjustable stainless steel levelers & nylon feet, freestanding with concrete base, or surface mounted directly to substrate or with concrete base. • 100- & 190-gallon Universal Planters may be used freestanding without levelers or surface mounted directly to substrate. • Anchors, levelers and stainless steel mounting screws are provided when specified.	• Surfaces can be cleaned as needed using soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.
LINERS	**BODY PATTERNS**		
• Universal Planters use independent, replaceable internal liners. • Liners are molded from durable black polyethylene with a UL94HB fire rating.	• Six different body patterns are available for an upcharge; see below and page 2 for standard patterns. • Eco-Etch designs are applied using an advanced photolithographic bead-blasting system. • Perforation patterns offer unique designs.		

C RECTANGLE PLANTER (QTY: 6)

SCALE: NTS

VICTOR STANLEY, INC.®
-Manufacturers of Quality Site Furnishings since 1962-

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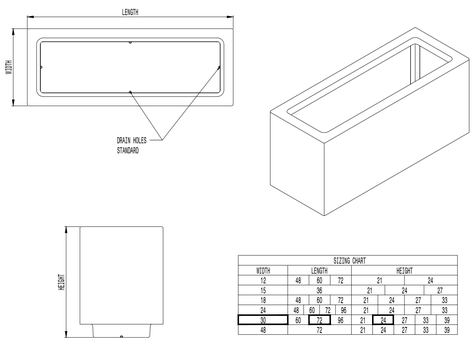
TEL: (001) 855-8000 - FAX (410) 257-7579
WEB SITE: HTTP://WWW.VICTORSTANLEY.COM

* ALL DIMENSIONS ARE IN INCHES *



SIZING CHART								
WIDTH	LENGTH			HEIGHT				
12	48	60	72	21		24		
15	36			21		24		27
18	48	60	72	21	24	27		33
24	48	60	72	96	21	24	27	33
30	60	72	96	21	24	27	33	39
48		72		96	21	24	27	33	39

AVAILABLE OPTIONS:

FINISHES

MATTE OR GRAIN

COLORS: BLACK, ESPRESSO, GINGER, MUSHROOM, PEBBLE, SANDAL, SPRUCE

METALLIC

COLORS: BRONZE, SILVER, WARM SILVER, TITANIUM

COARSE

COLORS: AVENUE, FAWN, HEATHER, RIVER BED, SAND

NOTES:

1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. HANDMADE USING APPLIED LAYERS OF GLASS-FIBER REINFORCED THERMOSETTING RESIN. SEAMLESS CONSTRUCTION.
3. EACH PLANTER IS DESIGNED AND CONSTRUCTED WITH ENOUGH STRUCTURAL REINFORCEMENT TO MINIMIZE WALL DEFLECTION AND TO ACCOMODATE THE PROPORTIONAL WEIGHT OF A PLANTED TREE.
4. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.
5. THIS PRODUCT IS SHIPPED FULLY ASSEMBLED.

FEATURES

AVAILABLE WITH DRAIN HOLE REMOVAL (NOT RECOMMENDED FOR COLD CLIMATES), CONCEALED CASTERS, FIRE-RETARDANT RESIN, COLORED BASE, AND FALSE BOTTOM WITH DRAIN HOLES REMOVED

URBAN FIBERGLASS SERIES

THERMOSETTING RESIN FIBERGLASS PLANTER
SHOWN: LONG PLANTER
STANDARD DRAIN HOLES

MATERIAL: FIBERGLASS
FINISH: METALLIC
COLOR: TITANIUM
INSTALLATION: SURFACE MOUNT
SIZE: 30" x 72" x 24"
NOTE: IRRIGATION SLEEVE CONNECTED TO PLANTER

REV. 7/13/10 DRAWN R.J.C. 2010-253

D ROUND PLANTER (QUANTITY: 3)

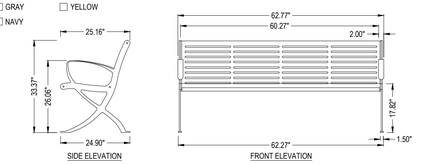
SCALE: NTS

ANOVA™

ANOVA
211 NORTH LINDBERGH, 2ND FLOOR
ST. LOUIS, MO 63141
TOLL FREE: 1-888-535-5005
PHONE: (800) 231-1327
FAX: (314) 754-0835
www.anovafurnishings.com

SELECT DESIRED COLOR:

☐ BLACK	☐ ORANGE
☐ BLUE	☐ PURPLE
☐ BRONZE	☐ RED
☐ BROWN	☐ SAGE
☐ BURGUNDY	☑ SILVER
☐ CAMEL	☐ TEAL
☐ CHARCOAL	☐ VANILLA
☐ EVERGREEN	☐ WHITE
☐ GRAY	☐ YELLOW
☐ NAVY	



FINISH: FUSION ADVANTAGE™ -HEAT INFUSED PLASTISOL COATING THAT RESISTS UV DETERIORATION, MILDEW,STAINING AND FADING. FUSIONGUARD® PRIMER IS APPLIED TO ALL THE UNDER SUPPORTS
MATERIAL: 10-GAUGE STEEL WITH .5" WIDE SLOT PATTERN
ARMRESTS & LEGS: STEEL

THE BENCH REQUIRES SOME ASSEMBLY. STAINLESS STEEL ASSEMBLY HARDWARE IS INCLUDED.
20 YEAR LIMITED STRUCTURAL WARRANTY - 7 YEAR COMPREHENSIVE WARRANTY

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. ALL DIMENSIONS ARE CONSIDERED TRUE AND REFLECT MANUFACTURER'S SPECIFICATIONS.
3. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 928-368.

EXPOSITION COLLECTION
LEXC5 - EXPOSITION 5' CONTOUR BENCH

MATERIAL: STEEL
FINISH: PLASTISOL COATING
COLOR: SILVER
INSTALLATION: SURFACE MOUNT

928-368

REVISION DATE 06/21/2016

www.CADdetails.com

E BENCH (QTY: 6)

SCALE: NTS

MATERIAL: HEAVY-DUTY STEEL
FINISH: TEXTURED POWDER COAT & E-COAT IMMERSION
INSTALLATION: SURFACE MOUNT
MODEL: 4420BF1UDB

Halsey Taylor®
Satisfying Thirsts Since 1912

MODEL 4420BF1UDB and MODEL 4420BF1LDB

GENERAL
Endura II™ Steel Outdoor Dual Station Fountain with Pet Fountain and Bottle Filling Station with rounded corner design, heavy-duty steel with textured powder-coat finish and E-Coat immersion for year-round beauty with minimum maintenance. The E-Coat immersion process coats the inside and outside for the ultimate in corrosion protection.

BOTTLE FILLER
Provides a quick fill at 1 gallon per minute. Laminar flow provides a clean fill with minimal splash and easy maintenance.

BUBBLER
Vandal-resistant bubbler is one-piece, heavy-duty construction. Unit has integral hood guard design to prevent contamination from other users, airborne deposits and tampering.

BASIN
Contour-formed stainless steel design with rounded edges reduces splatter, ensures proper drainage and prevents standing water.

PUSHBUTTON ACTUATION MECHANISM
Self-closing, vandal-resistant pushbutton does not require grasping or twisting.

INLET STRAINER
Easily cleaned in-line strainer screen traps particles of 140 microns or larger before they enter the waterway.

WATER INLET & DRAIN OUTLET
Inlet: 3/8" O.D. Tubing
Outlet: 1-1/2" tube outlet for 1-1/2" slip joint connection

ACCESS PANELS
Heavy-gauge steel with vandal-resistant screws. Provides access for easy hook-up of all plumbing connections.

PET FOUNTAIN
Actuated by upper pushbutton. Slow drainage feature for easy drinking.

SUGGESTED SPECIFICATIONS
Unit shall include powder-coated finish with vandal-resistant pushbutton actuation, vandal-resistant bubblers with integral hood guard, and contour-formed rounded basins to reduce splash and prevent standing water. Bottle Filler shall include a laminar flow for minimal splash and provide 1 gallon per minute fill rate. Fountain shall comply with ANSI 117.1 and ADA for visual and motion disabilities. The manufacturer shall certify the unit to meet the requirements of NSF/ANSI 61, and the Safe Drinking Water Act.

Model	Bottle Filler Placement	Color Option	ADA Compliant	C UL USA NSF/ANSI 61 Certified
4420BF1UDB*	Upper	(Refer to Finish Color Options)	•	•
4420BF1LDB*	Lower	(Refer to Finish Color Options)	•	•

* Select color option to complete model number. Example: 4420BF1UDB**EVG**

Note: Continued product improvement makes specifications subject to change without notice. See Halsey Taylor website for most current spec sheet.

Endura II™ Outdoor Tubular Bottle Filling Station
Dual Station with Pet Fountain

Now Available in 12 Colors!

FINISH COLOR OPTIONS - *Choose color option to complete your model number, add as suffix example: 4420BF1UDB**EVG***
Matte finish: ☐ Evergreen = **EVG**
Gloss finish:
☐ Beige = **BGE** ☐ Gray = **GRY** ☐ Terracotta = **TER**
☐ Black = **BLK** ☐ Orange = **ORN** ☐ White = **WHT**
☐ Blue = **BLU** ☐ Purple = **PUR** ☐ Yellow = **YLW**
☐ Brown = **BRN** ☐ Red = **RED**

OPTIONS
- Hose Bib (Locking) - 4471LHB* *(Choose color option to complete your model number)*
- Hose Bib (Non-Locking) - 4470HLHB* *(Choose color option to complete your model number)*
- Direct Bury Kit - 97890C

Endura II™ Outdoor Tubular Bottle Filling Station MODEL 4420BF1UDB

MOUNTING INSTRUCTIONS and PLUMBING CONNECTIONS
Provide solid, well-drained surface to mount pedestal fountain (concrete pad recommended). Mount on a smooth, flat, finished surface with adequate support. Use (300 lb. load minimum). Secure unit with (8) 3/8" minimum fasteners (not included). Refer to rough-in. Should be attached firmly to mounting surface in order to secure unit.

Modified low stream height bubbler for pet fountain.

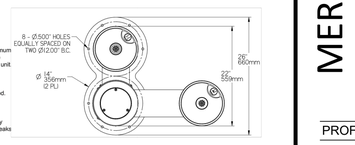
Locate and install plumbing through ground as required. **NOTE:** Unit is not furnished with service valve.

Position pedestal over plumbing and secure base to fasteners. Remove access panels and connect supply and water lines. Turn on water supply and check for leaks Reassemble access panels to pedestal.

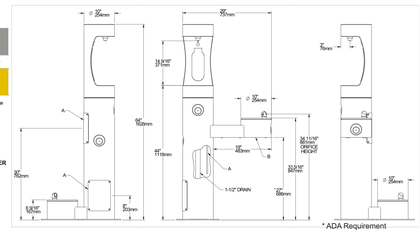
Trap and service stop not included.

OPERATING PRESSURES:
Supply water 20 – 105 psi maximum

TOP VIEW



FRONT & SIDE VIEWS



* ADA Requirement

A = 3/8" O.D. UNPLATED COPPER TUBE CONNECT
SHUT OFF VALVE BY OTHERS
B = ACCESS PANEL (8" x 10")
C = REMOVABLE BOTTOM COVER

Halsey Taylor®

halseytaylor.com
HALSEY TAYLOR, 2222 Camden Court, Oak Brook, IL 60523

SPEC00411 (10/15)

Page 2

halseytaylor.com
HALSEY TAYLOR, 2222 Camden Court, Oak Brook, IL 60523

Printed in the U.S.A.

F WATER BOTTLE REFILLING STATION (QUANTITY: 1)

SCALE: NTS

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MERCEDES BENZ AUDI OF PALO ALTO

1700 EMBARCADERO ROAD
PALO ALTO, CA 94303

SITE DETAILS

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

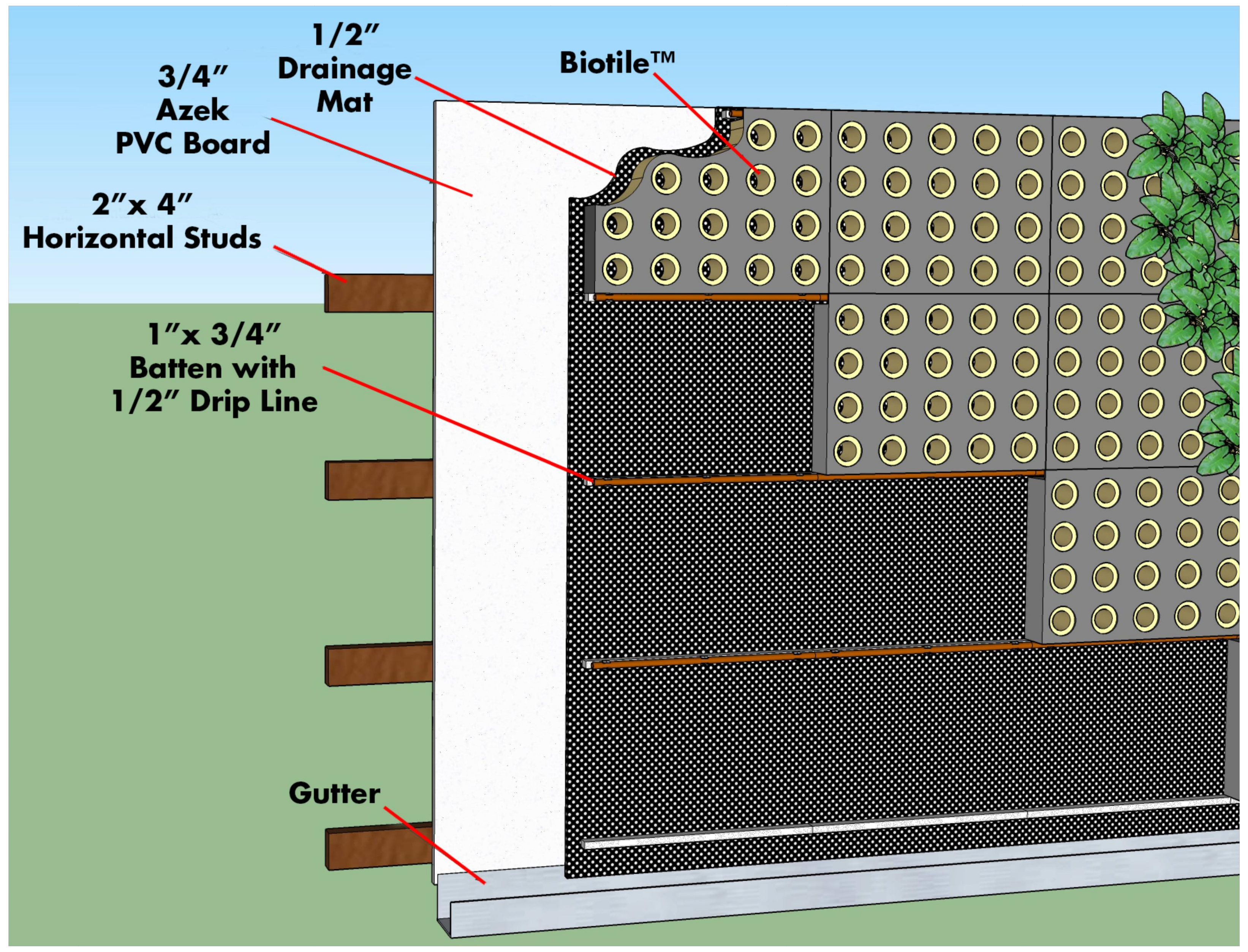
ISSUE RECORD

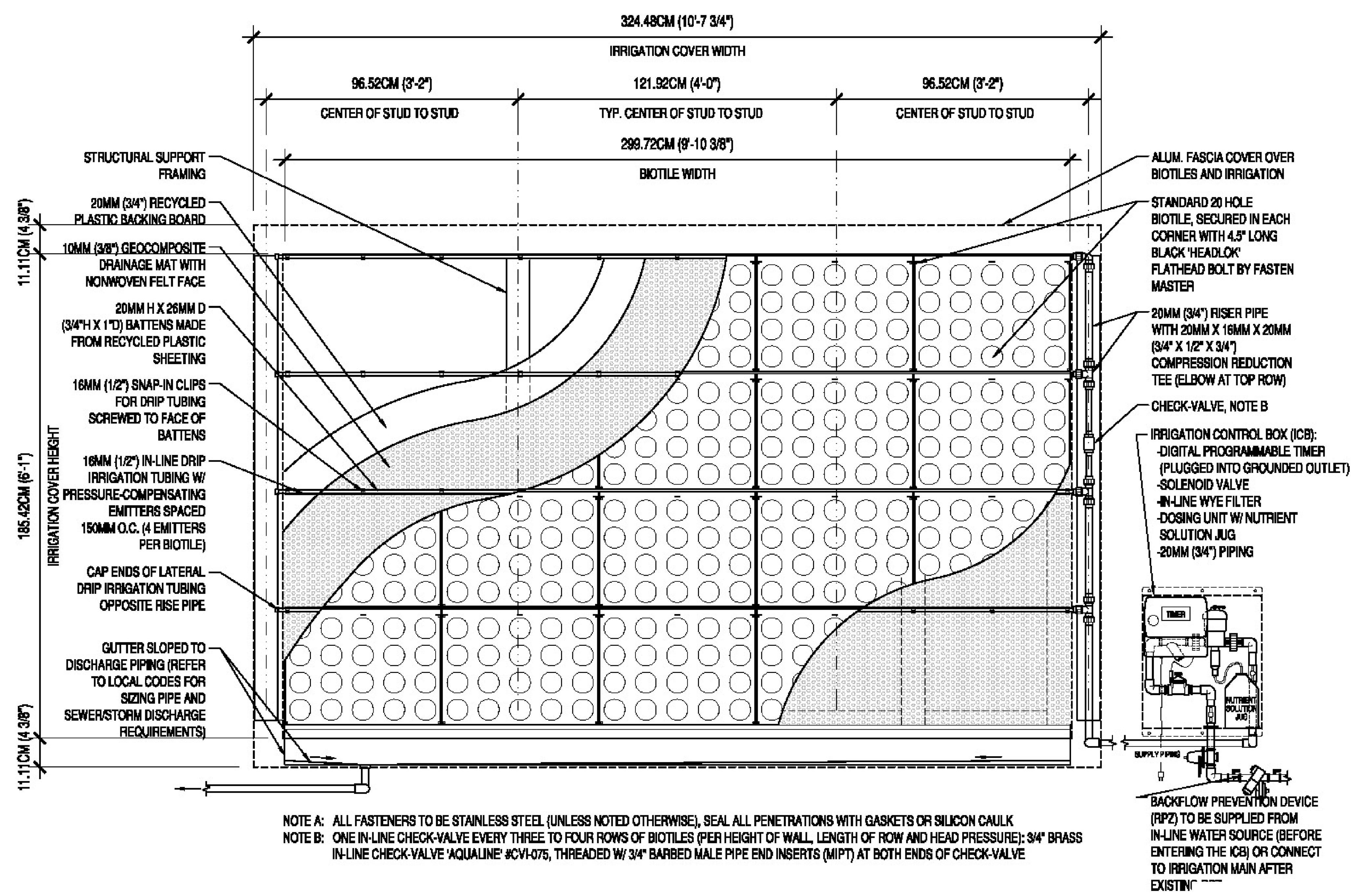
ARB NO. 2 (REVIEW)	08/20/2019
ARB NO. 2 (REVIEW)	09/10/2019
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

SHEET NUMBER

L-7

ADDED SHEET DESCRIBING THE WALL MOUNTED GREEN SCREEN

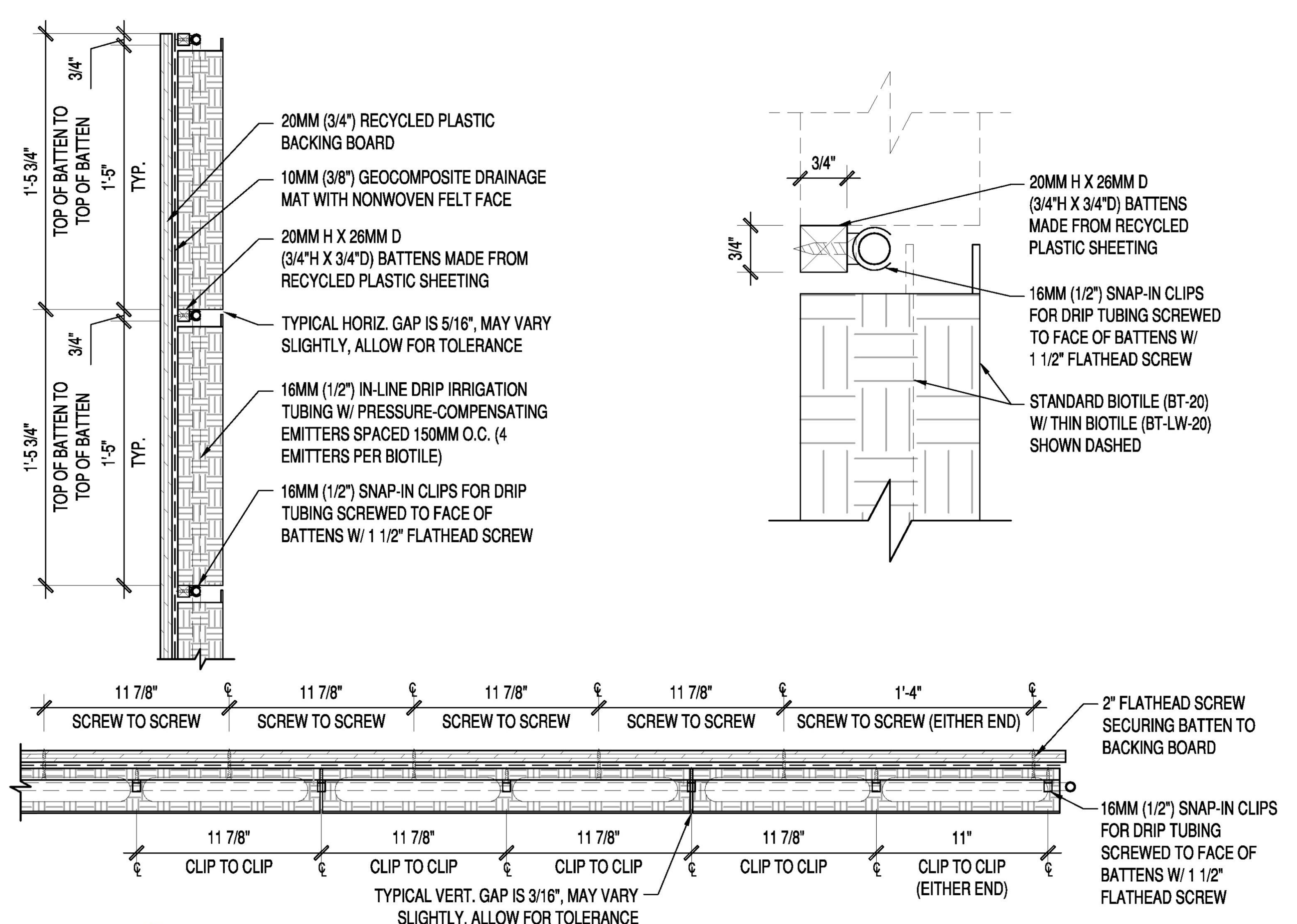




NOTE A: ALL FASTENERS TO BE STAINLESS STEEL (UNLESS NOTED OTHERWISE), SEAL ALL PENETRATIONS WITH GASKETS OR SILICON CAULK
NOTE B: ONE IN-LINE CHECK-VALVE EVERY THREE TO FOUR ROWS OF BIOTILES (PER HEIGHT OF WALL, LENGTH OF ROW AND HEAD PRESSURE): 3/4" BRASS IN-LINE CHECK-VALVE 'AQUALINE' #CVI-075, THREADED W/ 3/4" BARBED MALE PIPE END INSERTS (MIPT) AT BOTH ENDS OF CHECK-VALVE

Typical Wall Mounted Installation With In-line Plumbing Connecti

A TYPICAL WALL MOUNTED INSTALLATION
SCALE: NTS



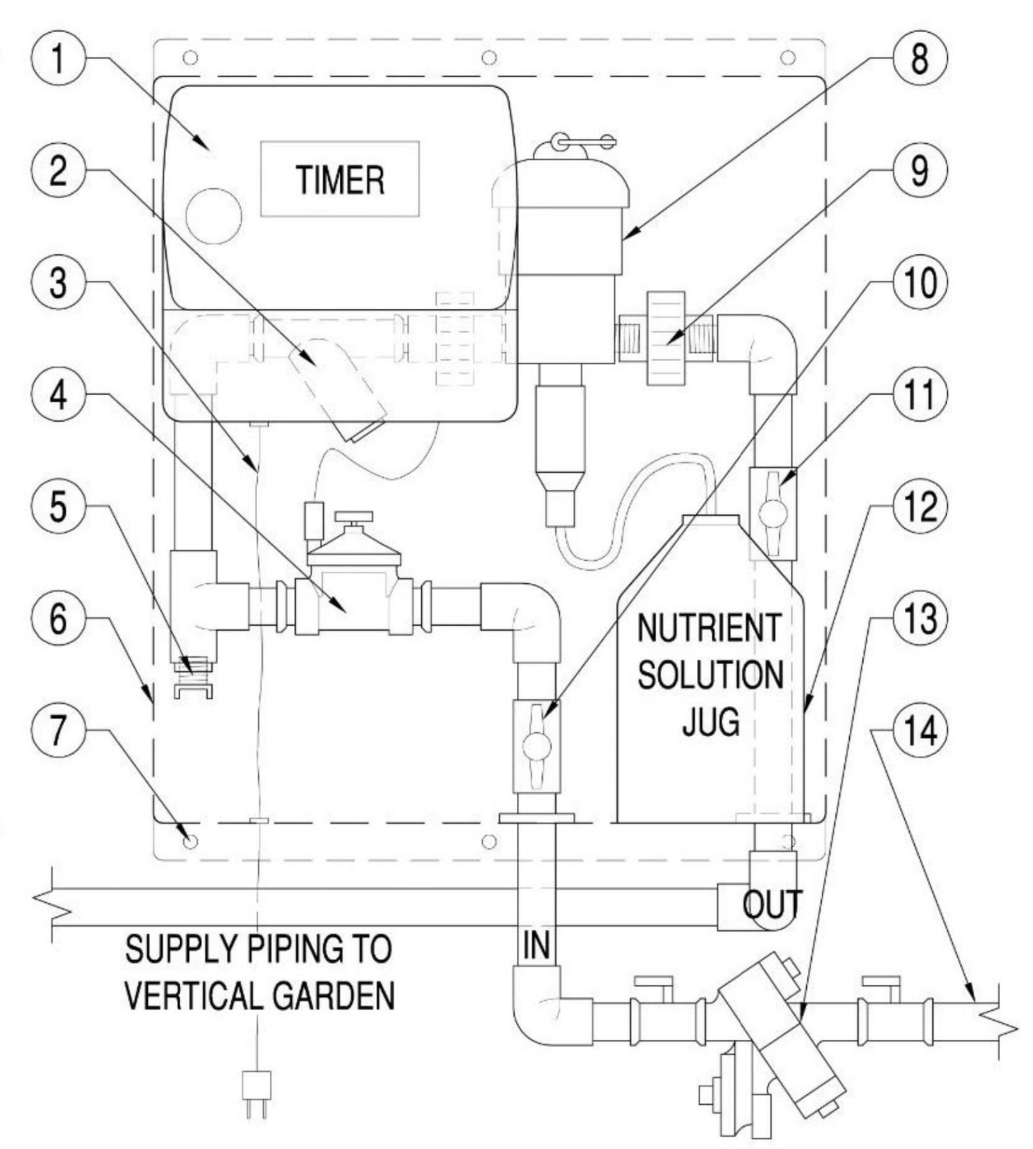
sagegreenlife

Batten Spacing Diagrams

B BATTEN SPACING
SCALE: NTS

Irrigation/Fertigation controls range as determined by the project

1. TIMER PRESETS MAY BE ADJUSTED FOR OUTDOOR LOCATIONS (USE PROGRAM BUTTON OR SEASONAL ADJUSTMENT FEATURE)
2. RINSE WYE FILTER CARTRIDGE EVERY 4-6 WEEKS
3. 3-PRONG CORD EXTENDS APPROX. 4' FROM BOTTOM OF ICB (PROVIDE GFCI OR HARD-WIRED CONNECTION)
4. SOLENOID VALVE
5. BRASS TEE-HANDLE DRAIN VALVE
6. 16"W X 20"H X 11.5"D ICB CABINET MAY BE LOCKED BY OWNER/MAINTAINER
7. MOUNT ICB TO WALL WITH CORROSION-RESISTANT FASTENERS/ANCHORS AS REQUIRED, NOT INCLUDED
8. FLIP FERTILIZER DOSING UNIT TO 'OFF' POSITION UNTIL SYSTEM IS TESTED AND BIOTILES ARE INSTALLED
9. PVC UNIONS FOR REPLACEMENT OF DOSING UNIT
10. 'IN' SHUT-OFF VALVE TO REMAIN SHUT UNTIL RPZ IS TESTED FOR LEAKS, ETC
11. 'OUT' SHUT-OFF VALVE
12. NUTRIENT SOLUTION JUG, CAULK AROUND HOSE PENETRATION THROUGH LID
13. BACKFLOW PREVENTION DEVICE (RPZ) WITH BALL VALVES, INSTALL PER LOCAL CODE, NOT INCLUDED
14. 3/4" PVC 'IN' LINE WATER SOURCE



ONE-VALVE IRRIGATION CONTROL BOX (ICB) DIAGRAM
IR-1101

Multi Valve & Multi Zone ICB

Two Valve ICB

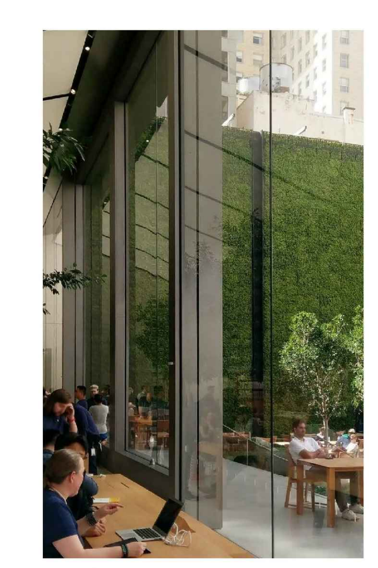
1. Check Valve
2. RPZ Back flow preventer
3. Pressure Reducer

1.

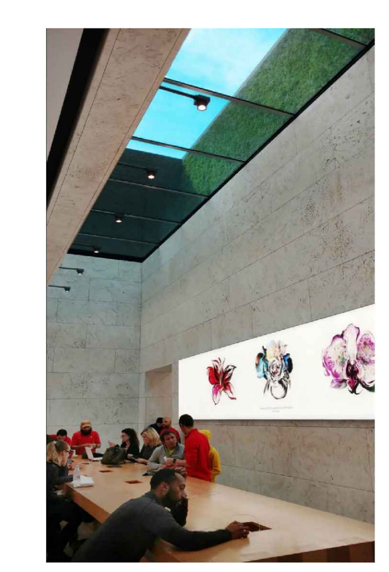
2.

3.

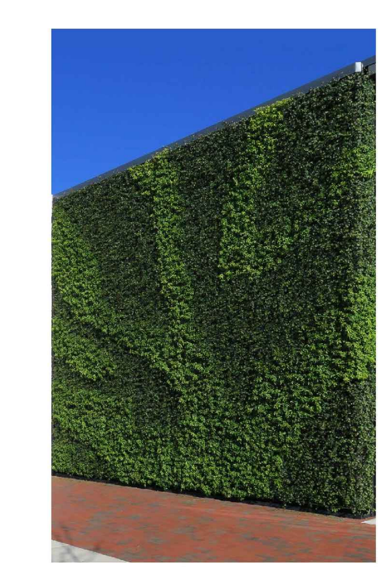
C TYPICAL IRRIGATION/FERTIGATION CONTROLS
SCALE: NTS



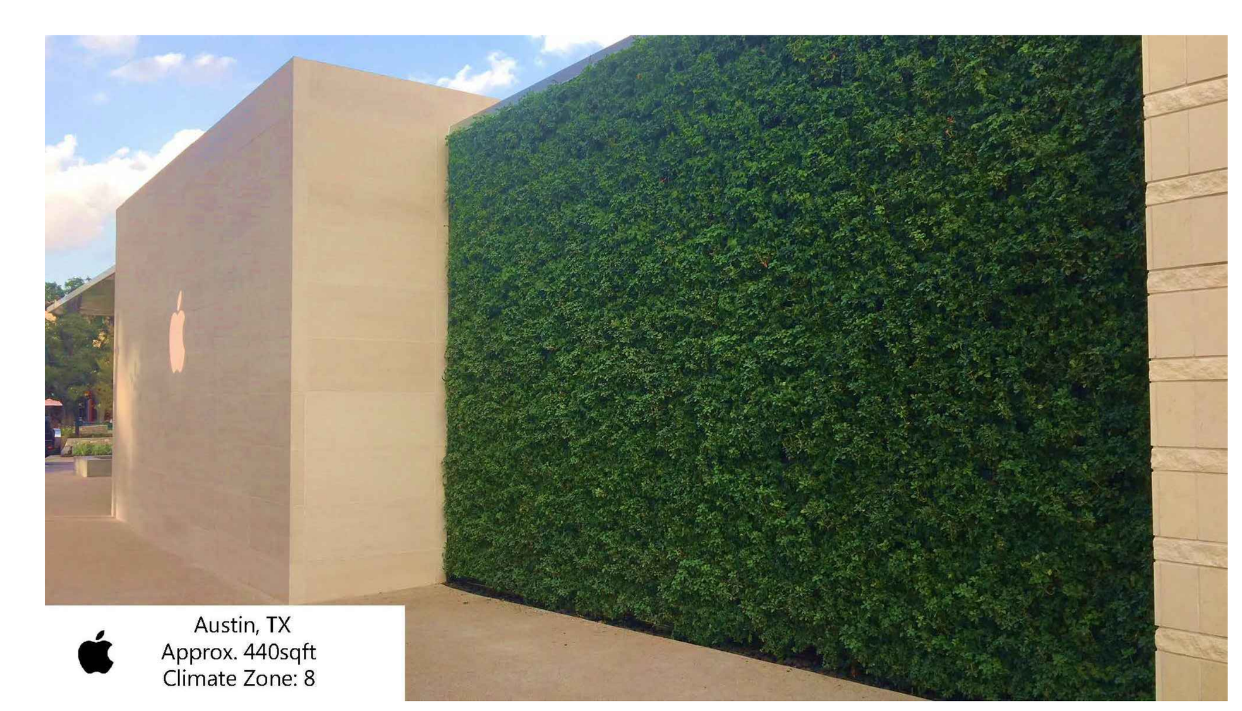
San Francisco CA
Approx. 3,200sqft
Climate Zone: 10
*Climate Zone Data Source USDA (Houston TX Climate Zone 9)



Miami FL
Approx. 2070sqft
Climate Zone: 10



Boston MA
Approx. 1060sqft
Climate Zone: 6



Austin, TX
Approx. 440sqft
Climate Zone: 8

D GREEN WALL SYSTEM EXAMPLES
SCALE: NTS

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PALO ALTO, CA 94303
GREEN SCREEN DETAILS

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
ARB NO. 2 (REVIEW)	09/10/2019
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

SHEET NUMBER

PLANT LIST (TOTAL COUNTS)

LABEL	QTY	BOTANICAL NAME	COMMON NAME	MIN. SIZE
SHADE TREES				
BLM	31	Acer macrophyllum (N)	Big Leaf Maple	36" BOX
BOK	24	Quercus douglasii (L,N)	Blue Oak	36" BOX
CLO	6	Quercus agrifolia (L,N)	Coast Live Oak	36" BOX
FOL	3	Olea europaea 'Swan Hill'	Fruitless Olive Tree	36" BOX
VOK	12	Quercus lobata (N)	Valley Oak	36" BOX
WHB	6	Celtis reticulata (L,N)	Western Hackberry	36" BOX
ORNAMENTAL TREES				
CHT	13	Vitex agnus castus	Chaste Tree	36" BOX
MPV	1	Parkinsonia aculeata (L)	Mexican Palo Verde	SALVAGE
WRB	32	Cercis occidentalis (L,N,S) *alternatives see sheet L-9	Western Redbud	36" BOX
PERENNIAL & EVERGREEN SHRUBS				
CFB	130	Rhamnus californica (B,N,L,S)	Coffeeberry	5 GAL
CML	112	Ceanothus concha (B,N,L,S)	California Mountain Lilac	5 GAL
MNZ	413	Arcostaphylos densiflora 'Harmony' (B,N,L)	Harmony Manzanita	5 GAL
NMH	122	Mahonia nevinii (L,N,S)	Nevin Mahonia	5 GAL
SBL	167	Lupinus albifrons (B,N,L,S)	Silver Bush Lupine	5 GAL
WBC	59	Trichostema lanatum (N,L)	Woolly Blue Curls	5 GAL
ORNAMENTAL GRASSES / ACCENTS				
BKS	564	Carex divulsa (B,L,N,S)	Berkeley Sedge	1 GAL
DEG	596	Mulhenbergia rigens (B,L,N,S)	Deer Grass	5 GAL
DNS	2207	Carex pansa (B,L,N,S)	Dune Sedge	1 GAL
FRG	276	Calamagrostis acutiflora 'Karl Foerster' (L,N,S)	Feather Reed Grass	1 GAL
MRG	2466	Calamagrostis foliosa (L,N,S)	Mendocino Reed Grass	1 GAL
FTA	33	Agave attenuata (L,S)	Foxtail Agave	15 GAL
ACCENTS IN PLANTERS				
ASD	24	Sedum rupestre 'Angelina' (L,S)	Angelina Stonecrop	1 GAL
CFG	18	Cordalyne x 'JURed' Plant (L)	Festival Burgundy Cordalyne	2 GAL
ACCENTS ON GREEN SCREEN				
YSD	TBD	Sedum spathulifolium (L,N,S)	Yellow Stonecrop	1/2 GAL

ALL PLANTS ON THIS LIST ARE MODERATE TO LOW-WATER USE.
DESIGNATION IF FOUND ON AN APPROVED PLANT LIST, NATIVE SPECIES OR LOW-WATER USE:
(B)=BAY-FRIENDLY RATED PLANT LIST
(L)= LOW WATER USE
(N)=NATIVE SPECIES
(S)=SANTA CLARA VALLEY WATER DISTRICT'S APPROVED PLANT LIST

TREES

Acer macrophyllum
Big Leaf Maple
60'H X 40' W
CA NATIVE

Quercus douglasii
Blue Oak
40'H X 25'W
CA NATIVE

Quercus agrifolia
Coast Live Oak
40'H X 25'W
CA NATIVE

Quercus lobata
Valley Oak
55'H X 40'W
CA NATIVE

Celtis reticulata
Western Hackberry
45'H X 45'W
CA NATIVE

Olea eurpaea 'Swan Hill'
Fruitless Olive Tree
30'H X 25'W

Cercis occidentalis
Western Redbud
15'H X 15'W
CA NATIVE

SHRUBS

Rhamnus californica
Coffeeberry
10-12'H X 8' W
CA NATIVE

Ceanothus concha
California Mountain Lilac
4'H X 4'W
CA NATIVE

Arcostaphylos densiflora 'Harmony'
Harmony Manzanita
3'H X 6'W
CA NATIVE

Mahonia nevinii
Nevin Mahonia
8-10'H X 9'W
CA NATIVE

Lupinus albifrons
Silver Bush Lupine
3'H X 3'W
CA NATIVE

Trichostema lanatum
Woolly Blue Curls
3'H X 4'W
CA NATIVE

ORNAMENTAL GRASSES / ACCENTS

Carex divulsa
Berkeley Sedge
2'H X 2' W
CA NATIVE

Mulhenbergia rigens
Deer Grass
4'H X 5'W
CA NATIVE

Carex pansa
Dune Sedge
1'H X 1'W
CA NATIVE

Calamagrostis x acutiflora 'Karl Foerster'
Feather Reed Grass
3'H X 2'W
CA NATIVE

Agave attenuata
Foxtail agave
5'H X 6'W

Calamagrostis foliosa
Mendocino Reed Grass
18"H X 18"W
CA NATIVE

ACCENTS FOR PLANTERS/GREEN SCREEN

Sedum repustre 'Angelina'
Angelina Stonecrop
4"H X 3' W

Cordalyne x 'JURed'
Festival Burgundy Cordalyne
3'H X 3'W

Sedum spathulifolium
Yellow stonecrop
4"H X 8"W

BAYSHORE ROAD/PARKING AREA TREE ALTERNATIVES

Caesalpinia cacalaco 'Smoothie'
Thornless Cascalote
15-18'H X 15-18' W
*Semi-evergreen, non-native, low water use

Sophora secundiflora
Texas Mountain Laurel
15'-18'H X 10-15'W
*Evergreen, non-native, low water use

Vitex agnus-castus
Chaste Tree
15-20'H x 20'W
*Deciduous, non-native, low water use, fast growing, accepts pruning for shape and smaller form

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1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
PLANT IMAGES

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
ARB NO. 2 (REVIEW)	09/10/2019
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

SHEET NUMBER

L-9

9 OF 16

City of Palo Alto

Tree Protection - It's Part of the Plan!

Make sure your crews and subs do the job right!

Fenced enclosures around trees are essential to protect them by keeping the foliage canopy and branching structure clear from contact by equipment, materials and activities, preserving roots and soil conditions in an intact and non-compacted state, and identifying the Tree Protection Zone (TPZ) in which no soil disturbance is permitted and activities are restricted, unless otherwise approved. **An approved tree protection report must be added to this sheet when project activity occurs within the TPZ of a regulated tree.**
For detailed information on Palo Alto's regulated trees and protection during development, review the **City Tree Technical Manual** (TTM) found at www.cityofpaloalto.org/trees/.

TREE DISCLOSURE STATEMENT

CITY OF PALO ALTO
Planning Division, 250 Hamilton Avenue
Palo Alto, CA 94301
(650) 329-2441
http://www.cityofpaloalto.org

Palo Alto Municipal Code, Chapter 8.10.040, requires disclosure and protection of certain trees located on private and public property, and that they be shown on approved site plans. A completed disclosure statement must accompany all building permit applications that include exterior work, all demolition or grading permit applications, or other development activity.

PROPERTY ADDRESS: 1700 EMBARCADERO ROAD PALO ALTO, CA 94303

Are there Regulated[1] trees on or adjacent to the property? (YES) **NO** (If no, proceed to Section 4)

[Sections 1- 4 MUST be completed by the applicant. Please circle and/or check where applicable.]

1. Where are the trees? Check those that apply. **(Plans must be submitted showing over 4" diameter trees)**
   - ☑ On the property
   - ☑ On adjacent property overhanging the project site
   - ☑ In the City planter strip or right-of-way easement within 30' of property line (Street Trees)*

*Street trees[1] **require special protection by a fenced enclosure**, per the attached instructions. Prior to receiving any permit, you must provide an authorized Street Tree Protection Verification form by calling Public Works Operations at 493-5953 for inspection of required type I, II or III fencing (see attached Detail #605).

2. Are there any Protected[1] or Designated[1] Trees? (YES) (Check where applicable) **NO**
   - ☑ Protected Tree (s)
   - ☐ Designated Tree (s)
   - ☑ On or overhanging the property

3. Is there activity or grading within the dripline? (radius 10 times the trunk diameter) of these trees? (YES) **NO**
   *If Yes, a **Tree Preservation Report** must be prepared by an ISA certified arborist and submitted for staff review (see TTM[2], Section 6.25). Attach this report to Sheet T-1,'Tree Protection, its Part of the Plan!", per Site Plan Requirements.*

4. Are the Site Plan Requirements** completed? **YES** (NO)

**Protection of Regulated trees during development require the following: (1) Plans must show the measured trunk diameter and canopy dripline; (2) Plans must denote, as a bold dashed line, a fenced enclosure area out to the dripline, per Sheet T-1 and Detail #605 - http://www.cityofpaloalto.org/trees/forms.htm (See also TTM[2], Section 2.15 for area to be fenced)

I, the undersigned, agree to the conditions of this disclosure. I understand that knowingly or negligently providing false or misleading information in response to this disclosure requirement constitutes a violation of the Palo Alto Municipal Code Section 8.10.040, which can lead to criminal and/or civil legal action.

Signature: _____ (Prop. Owner or Agent) Print: _____ Date: _____

FOR STAFF USE:

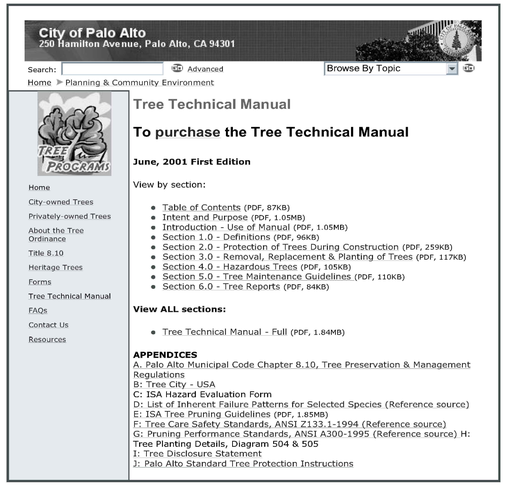
Protective Fencing
Sections 5-6 must be **completed by staff** for the issuance of any development permit (demolition, grading or building permit).

5. Protected Trees. The specified tree fencing is in place. A written statement is attached verifying that protective fencing is correctly in place around protected and/or designated trees. **YES** **NO**
(N/A if there are no protected trees, check here ☐)

6. Street Trees. A signed Public Works Street Tree Protection Verification form is attached. **YES** **NO**
(N/A if there are no street trees, check here ☐).

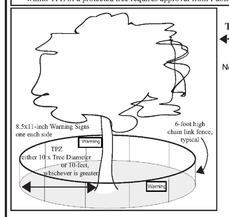
[1] Regulated Trees – a) Sizeet trees – trees on public property; b) Protected trees – Coast Live Oaks or Valley Oaks which are 11.5" in diameter or larger, Coast Redwoods which are 18" in diameter or larger, when measured 54" above natural grade; and Heritage trees are trees designated by City Council; and c) Designated Trees – commercial or non-residential property trees, which are part of an approved landscape plan.
[2] Palo Alto Tree Technical Manual (TTM) contains instructions for all requirements on this form, available at http://www.cityofpaloalto.org/planning-community/tree_technical-manual.html

S:Plan/Pladv/Arborist/Tree Protection Info/Tree Disclosure Statement Revised 08/06



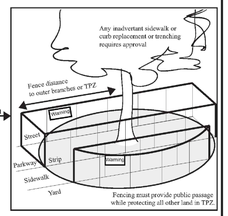
For written specifications associated with illustrations below, see Public Works Specifications Section 31
Detailed specifications are found in the Palo Alto Tree Technical Manual (TTM) (www.cityofpaloalto.org/trees/)

Tree Protection Zone (TPZ) shown in gray (radius of TPZ equals 10-times the diameter of the tree or 10-feet, whichever is greater).
- Restricted activity area -- see Tree Technical Manual Sec 2.15(E).
- Restricted trenching area -- see Tree Technical Manual Sec 2.20(C-D), any proposed trench or form work within TPZ of a protected tree requires approval from Public Works Operations. Call 650-496-5953.

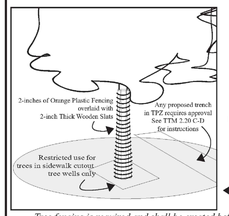


Type I Tree Protection — For all Ordinance Protected and Designated trees, as detailed in the site specific tree preservation report (TPR) prepared by the applicant's project arborist as diagramed on the plans.

Note: Ordinance Protected & Designated Trees. Issuance of a permit requires applicant's project arborist written verification Type I is installed correctly according to the plans and Tree Preservation Report



Type II Tree Protection



Note: Street Trees. Issuance of a permit requires Public Works Operations inspection and signed approval on the Street Tree Verification (STV) form provided.

Type III Tree Protection
(to be used only with approval of Public Works Operations)

Tree fencing is required and shall be erected before demolition, grading or construction begins.

Rev	By	Date
0	DWH	12/14/92
01	D.D.	08/04/04
02	D.D.	08/10/06

Tree Protection During Construction

Approved by: Dave Dockter
PE No. _____
Date 2006
Dwg No. 605

City of Palo Alto Standard

Scale: NTS

APPENDIX J

PALO ALTO
STREET TREE PROTECTION INSTRUCTIONS
–SECTION 31–

31-1 General

a. **Tree protection has three primary functions**, 1) to keep the foliage canopy and branching structure clear from contact by equipment, materials and activities; 2) to preserve roots and soil conditions in an intact and non-compacted state and 3) to identify the Tree Protection Zone (TPZ) in which no soil disturbance is permitted and activities are restricted, unless otherwise approved.

b. **The Tree Protection Zone (TPZ)** is a restricted area around the base of the tree with a radius of ten-times the diameter of the tree's trunk or ten feet, whichever is greater, enclosed by fencing.

31-2 Reference Documents

a. **Detail 605** – Illustration of situations described below.

b. **Tree Technical Manual (TTM) Forms** (http://www.cityofpaloalto.org/trees/)
1. Trenching Restriction Zones (TTM, Section 2.20(C))
2. Arborist Reporting Protocol (TTM, Section 6.30)
3. Site Plan Requirements (TTM, Section 6.35)
4. Tree Disclosure Statement (TTM, Appendix J)

c. **Street Tree Verification (STV) Form** (http://www.cityofpaloalto.org/trees/forms)

31-3 Execution

a. **Type I Tree Protection:** The fence shall enclose the entire TPZ of the tree(s) to be protected throughout the life of the construction project. In some parking areas, if fencing is located on paving or concrete that will not be demolished, then the posts may be supported by an appropriate grade level concrete base, if approved by Public Works Operations.

b. **Type II Tree Protection:** For trees situated within a planting strip, only the planting strip and yard side of the TPZ shall be enclosed with the required chain link protective fencing in order to keep the sidewalk and street open for public use.

c. **Type III Tree Protection:** To be used only with approval of Public Works Operations. Trees situated in a tree well or sidewalk planter pit, shall be wrapped with 2-inches of orange plastic fencing from the ground to the first branch and overlaid with 2-inch thick wooden slats bound securely (slats shall not be allowed to dig into the bark). During installation of the plastic fencing, caution shall be used to avoid damaging any branches. Major limbs may also require plastic fencing as directed by the City Arborist.

d. **Size, type and area to be fenced.** All trees to be preserved shall be protected with six (6') foot high chain link fences. Fences are to be mounted on two-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing. Fencing shall extend to the outer branching, unless specifically approved on the STV Form.

e. **'Warning' signs**. A warning sign shall be weather proof and prominently displayed on each fence at 20-foot intervals. The sign shall be minimum 8.5-inches x 11-inches and clearly state in half inch tall letters: "WARNING - Tree Protection Zone - This fence shall not be removed and is subject to a fine according to PAMC Section 8.10.110."

f. **Duration**. Tree fencing shall be erected before demolition; grading or construction begins and remain in place until final inspection of the project, except for work specifically allowed in the TPZ. Work or soil disturbance in the TPZ requires approval by the project arborist or City Arborist (in the case of work around Street Trees). Excavations within the public right of way require a Street Work Permit from Public Works.

g. **During construction**

1. All neighbors' trees that overhang the project site shall be protected from impact of any kind.
2. The applicant shall be responsible for the repair or replacement plus penalty of any publicly owned trees that are damaged during the course of construction, pursuant to Section 8.04.070 of the Palo Alto Municipal Code.
3. The following tree preservation measures apply to all trees to be retained:
   - **a.** No storage of material, topsoil, vehicles or equipment shall be permitted within the TPZ.
   - **b.** The ground under and around the tree canopy area shall not be altered.
   - **c.** Trees to be retained shall be irrigated, aerated and maintained as necessary to ensure survival.

END OF SECTION

City of Palo Alto 2004 Standard Drawings and Specifications
Street Tree Verification of Protection, PWE, Section 31 Revised 08/06

Table 2-2 Palo Alto Tree Technical Manual

CONTRACTOR & ARBORIST INSPECTION SCHEDULE

Reference: the Palo Alto Tree Technical Manual is available at www.cityofpaloalto.org/environment/

ALL CHECKED ITEMS APPLY TO THIS PROJECT:

1. ☑ **Inspection of Protective Tree Fencing**. For Public Trees, the Street Tree Verification Form shall be signed by the City Arborist. For Protected Trees, the project site arborist shall provide an initial Monthly Tree Activity Report form with a photograph verifying that he has conducted a field inspection of the trees and that the correct type of protective fencing is in place around the designated tree protection zone (TPZ) prior to issuance of a demolition, grading, or building permit. (See TTM, Verification of Tree Protection, Section 1.39).

2. ☑ **Pre-Construction Meeting**. Prior to commencement of construction, the applicant or contractor shall conduct a pre-construction meeting to discuss tree protection with the job site superintendent, grading operators, project site arborist, City Arborist, and, if a city maintained irrigation system is involved, the Parks Manager (Contact 650-496-6962).

3. ☑ **Inspection of Rough Grading or Trenching**. Contractor shall ensure the project site arborist performs an inspection during the course of rough grading or trenching adjacent to or within the TPZ to ensure trees will not be injured by compaction, cut or fill, drainage and trenching, and if required, inspect aeration systems, tree wells, drains and special paving. The contractor shall provide the project arborist at least 24 hours advance notice of such activity.

4. ☑ **Monthly Tree Activity Report Inspections**. The project site arborist shall perform a minimum monthly activity inspection to monitor and advise on conditions, tree health and retention or, immediately if there are *any revisions* to the approved plans or protection measures. The Tree Technical Manual Monthly Tree Activity Report format shall be used and sent to the Planning Dept. landscape reviewer staff no later than 14 days after issuance of building permit date. Fax to (650) 329-2154. (See TTM, Monthly Tree Activity Inspection Report, Addendum 11 & section 1.17).

5. ☑ **Special activity within the Tree Protection Zone**. Work in the TPZ area (see also #7 below) requires the direct onsite supervision of the project arborist (see TTM, Trenching, Excavation & Equipment, Section 2.20 C).

6. ☐ **Landscape Architect Inspection**. For discretionary development projects, prior to temporary or final occupancy the applicant or contractor shall arrange for the Landscape Architect to perform an on site inspection of all plant stock, quality of the materials and planting (see TTM, Planting Quality, Section 5.20.1 A) and that the irrigation is functioning consistent with the approved construction plans. The Planning Dept. landscape review staff shall be in receipt of written verification of Landscape Architect approval prior to scheduling the final inspection, unless otherwise approved.

7. ☐ **List Other** (please describe as called out in the site Tree Preservation Report, Sheet T-1, T-2, etc.)
   * _____
   * _____

City of Palo Alto
Tree Department
Public Works Operations
PO Box 10250 Palo Alto, CA 94303
650/496-5953 FAX: 650/852-9289
treeprotection@CityofPaloAlto.org

Verification of Street Tree Protection

Applicant Instructions: Complete upper portion of this form. Mail or FAX this form along with signed Tree Disclosure Statement to Public Works Dept. Public Works Tree Staff will inspect and notify applicant.

APPLICATION DATE:	
ADDRESS/LOCATION OF STREET TREES TO BE PROTECTED:	
APPLICANT'S NAME:	
APPLICANT'S ADDRESS:	
APPLICANT'S TELEPHONE & FAX NUMBERS:	

This section to be filled out by City Tree Staff

1. The Street Trees at the above address(es) are adequately protected. The type of protection used is:	YES ☐ NO* ☐ * If NO, go to #2 below
Inspected by:	
Date of Inspection:	
2. The Street Trees at the above address are **NOT** adequately protected. The following modifications are required: Indicate how the required modifications were communicated to the applicant.	_____ _____ _____ _____ _____ _____

Subsequent Inspection

Street trees at above address were found to be adequately protected:	YES ☐ NO* ☐ * If NO, indicate in "Notes" below the disposition of case.
Inpsected by:	
Date of Inspection:	
Notes: List City street trees by species, site, condition and type of tree protection installed. Also note if pictures were taken. Use back of sheet if necessary.	

Return approved sheet to Applicant for demolition or building permit issuance.

S:PWD/OPS/TreeDS/St.TreeProtect 5/1706

City of Palo Alto Tree Technical Manual ADDENDUM 11

Arborist Firm Data Here email:
RCA/ISA Certified Arborist #WR-000
Contract Call #:

Monthly Tree Activity Report- *Construction Site*

Inspection Date: _____ **Inspection #**_____	**Site address:** _____ Palo Alto, CA	**Contractor-Main Site Contact Information**	#1: Job site superintendent Company: Email: Job site Office: Cell: Mail:
		Also present:	• _____ • _____
Distribution:	1. City of Palo Alto 2. Others	**Attn: Dave Dockter**	Dave.dockter@cityofpaloalto.org 650-329-2440

Provide the requested minimum information with each report, customize as necessary. To be completed by project site arborist. Send monthly to city arborist at above address until project completion. Use additional sheets as needed.

1. Assignment Activity (Demolition/grading/sewer/trenching/foundation/list relevant visits)
   a. Pre-construction meeting requirement with sub-contractors
   b. Inspect to verify that tree protection measures are in place
   c. Determine if field adjustments, watering or plan revisions may be needed
2. Field Observations (general site-wide and list by individual tree number)
   a. Tree Protection Fences (TPF) are …
   b. Trenching has/will occur …
3. Action Items (list site-wide, by tree number and date to be satisfied) and Date Due
   a. Tree Protection Fence (TPF) needs adjusting (tree # x, x, x)
   b. Root zone buffer material (wood chips) can be installed next
   c. Schedule sewer trench, foundation dig with …
4. Photographs (use often)
5. Tree Location Map (mandatory 8.5 x 11 sheet)
6. Recommendations, notes or monitor items for project/staff/schedule
   •
7. Past visits (list carry-over items satisfied/still outstanding)
   •

Respectfully submitted,

Project site arborist
Consultant contact information (Include email, cell#, and mailing)
Cc:

Enter Date CPA Monthly Tree Activity Report: Type site address here Page #1 of 1

---WARNING---
Tree Protection Zone

This fencing shall not be removed without City Arborist approval (650-496-5953)

Removal without permission is subject to a $500 fine per day*

Palo Alto Municipal Code Section 8.10.110

City of Palo Alto Tree Protection Instructions are located at http://www.city.palo-alto.ca.us/trees/technical-manual.html

SPECIAL INSPECTIONS **PLANNING DEPARTMENT**

TREE PROTECTION INSPECTIONS MANDATORY

PAMC 8.10 PROTECTED TREES. CONTRACTOR SHALL ENSURE PROJECT SITE ARBORIST IS PERFORMING REQUIRED TREE INSPECTION AND SITE MONITORING. PROVIDE WRITTEN MONTHLY TREE ACTIVITY REPORTS TO THE PLANNING DEPARTMENT LANDSCAPE REVIEW STAFF BEGINNING 14 DAYS AFTER BUILDING PERMIT ISSUANCE.

BUILDING PERMIT DATE: _____

DATE OF 1ST TREE ACTIVITY REPORT: _____

CITY STAFF: _____

REPORTING DETAILS OF THE MONTHLY TREE ACTIVITY REPORT SHALL CONFORM TO SHEET T-1 FORMAT. VERIFY THAT ALL TREE PROTECTION MEASURES ARE IMPLIMENTED AND WILL INCLUDE ALL CONTRACTOR ACTIVITY, SCHEDULED OR UNSCHEDULED, WITHIN A TREE PROTECTION ROOT ZONE. NON-COMPLIANCE IS SUBJECT TO VIOLATION OF PAMC 8.10.080. REFERENCE: PALO ALTO TREE TECHNICAL MANUAL, SECTION 2.00 AND ADDENDUM 11.

Apply Tree Protection Report on sheet(s) T-2

Use addtional "T" sheets as needed

ARCHITECT / PLANNER

LAI Design Group world wide
88 Inverness Circle East,
Bldg. J, Suite 101
Englewood, Colorado 80112
T 303.734.1777 | F 303.734.1778
Architecture | Planning | Golf Design
Landscape Architecture | Visual Media
www.LAIdesigngroup.com

OWNER/CLIENT

HOLMAN AUTOMOTIVE GROUP, INC.
911 NE 2ND AVENUE
FORT LAUDERDALE, FL 33304
(954)335-2200

MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
TREE PROTECTION

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
ARB NO. 2 (REVIEW)	09/10/2019
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

SHEET NUMBER

T-1

10 OF 16

Tree Inventory, Assessment, And Protection

1700 and 1730 Embarcadero Road
Palo Alto, CA 94303

Prepared for:

LAI Design Group
88 Inverness Circle East, Suite J101
Englewood, Colorado 80112

April 3, 2018
Revised
October 31, 2019

Prepared By:

Monarch Consulting Arborists LLC
P.O. Box 1010
Felton, CA 95018
831.331.8982

ASCA - Registered Consulting Arborist ® #496
ISA - Board Certified Master Arborist® WE-4341B
ISA - Tree Risk Assessor Qualified
CA - Qualified Applicators License QL-104250

Table of Contents

Summary

There are two sites directly adjacent to each other located at 1700 and 1730 Embarcadero Road in Palo Alto. The inventory consists of trees on the property with trunk diameters greater than four inches (12.56 inches circumference) and those directly adjacent with crowns extending over the boundary. There are 80 trees comprised of 14 different species with Chinese elm (*Ulmus parvifolia*) being the most abundant. No oaks (*Quercus spp.*) or redwoods (*Sequoia sp.*) are growing on the sites. There are 13 "Street Trees" primarily composed of the Chinese elms along Bayshore Road. Fourteen trees originate on the adjacent site all comprised of various eucalyptus (*Eucalyptus spp.*). The remaining 53 trees are considered "Designated" by the City criteria and are located in the interior. Most of the trees are in fair condition while fourteen are in good shape and seventeen poor. Thirty-four trees are poorly suited for retention and twenty-four fair. Twenty-one trees have good suitability for conservation and consist of newly planted Chinese pistache (*Pistacia chinensis*) and elms. Sixty-six trees will be highly impacted and caused to be removed including "Street Trees" Chinese elms #1 through #11 and the two privet (*Ligustrum lucidum*) #38 and #40. The remaining trees to be removed and highly impacted are "Designated Trees" mostly in the interior. Fifteen trees will be moderately affected and include the eucalyptus on the adjacent site and Chinese elms #2, #3, and #4. The primary impacts will come from the bioretention ponds and any grading required for the perimeter road and heavy duty asphalt installation. The eucalyptus trees originating on the adjacent site will need to be preserved and the city will need to approve grading or disturbance for the drive isle.

Introduction

Background

LAI Design Group asked me to assess the sites, trees, and proposed plans to provide a report with my findings and recommendations to help satisfy the City of Palo Alto planning requirements.

Assignment

1. Provide an arborist's report including an assessment of the trees within the project area. The assessment is to include the species, size (trunk diameter), condition (health and structure), suitability for conservation ratings, and disposition.
2. Provide tree protection specifications and impact ratings for those potentially affected by the proposed project. Include Palo Alto required practices.

Limits of the assignment

1. The information in this report is limited to the condition of the trees during my last inspection on March 6, 2018. No tree risk assessments were performed..
2. The plans reviewed for this assignment are located in Table 1 below.

Table 1: Plans Reviewed Checklist

Plan	Date	Sheet	Reviewed	Source	Notes
Existing Site Topographic Map or A.L.T.A with tree locations			No		
Proposed Site Plan	Not dated	C02.00 and C02.01	Yes	Calichi Civil Engineers	Included In "Site and Paving Plan" not labeled or dated
Demolition Plan			No		
Construction Staging			No		
Grading and Drainage	Not dated	C02.00 and C02.01	Yes	Calichi Civil Engineers	Included In "Site and Paving Plan" not labeled or dated
Utility Plan and Hook-up locations	Not dated	Not labeled	Yes	Calichi Civil Engineers	Included In "Site and Paving Plan" not labeled or dated
Exterior Elevations			No		
Landscape Plan	October 18, 2019	T-5 and T-6	Yes	LAI Design Group	Illustrative Landscape Plan
Irrigation Plan			No		
T-1 Tree Protection Plan			No		

Purpose and use of the report

The report is intended to identify all the trees within the plan area that could be affected by a project. The report is to be used by the property owners, owner's agents, and the City of Palo Alto as a reference for existing conditions to help satisfy planning requirements.

Observations

Site and Trees

There are two sites directly adjacent to each other located at 1700 and 1730 Embarcadero Road. The inventory includes eighty trees with fourteen originating on the adjacent site with crowns extending over the boundary. Along East Bayshore Road there are ten "Street Trees" all comprised of Chinese elms (*Ulmus parvifolia*) adjacent to the sidewalk with no park strip. Along Embarcadero Road are three additional privet (*Ligustrum lucidum*) "Street Trees" growing in the park strip between the sidewalk and curb. There are thirteen "Street Trees" and fourteen additional trees growing on adjacent sites which are required to be protected. The interior of the properties contains fifty-three "Designated Trees" none of which are oaks (*Quercus spp.*) or redwoods (*Sequoia sempervirens*).

To summarize there are 80 trees comprised of 14 different species with Chinese elm being the most abundant. No oaks or redwoods are growing on the sites. There are thirteen "Street Trees" primarily composed of the Chinese elms along Bayshore Road. Fourteen trees originate on the adjacent sites all comprised of various eucalyptus. The remaining 53 trees are considered "Designated" by the City criteria and are located in the interior of the site.

Trees and Plans

All the trees located in the interior of the property are to be demolished including Chinese elm number 12 located near the corner of Embarcadero and East Bayshore Road. There is a proposed drive isle that circles the properties around the perimeter running past the eucalyptus on the adjacent sites. The following list indicates some of the primary conflicts between the trees and plans:

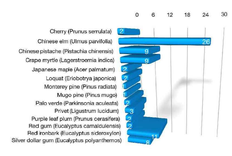
- Wash station directly adjacent to trees #64 through #68 two of which originate on the adjacent site.
- Bioretion pond directly adjacent/on top of trees #71 through #73.
- New entrance approach off Bayshore Road and public path over tree #1 through #11
- Tree #12 removed for vehicle display at the corner of Bayshore and Embarcadero.
- Stormwater retention in front of trees #2, #3, and #4 in parking lot.
- Heavy duty AC pavement near property boundary adjacent to trees 20-27 and 53-61.
- All interior "Designated Trees" to be removed except for the two palo verde (*Parkinsonia aculeata*) on 1730 Embarcadero Road.

Tree Inventory

The inventory consists of trees on the property with trunk diameters greater than four inches (12.56 inches circumference) and those directly adjacent with crowns that extending over the boundary. The City of Palo Alto considered the following "Protected Trees": all coast live oaks (*Quercus agrifolia*) and valley oaks (*Quercus lobata*) with trunk diameters 11.5 inches or greater (36-inches in circumference measured at 54-inches above natural grade) and coast redwoods (*Sequoia sempervirens*) that are 18-inches or greater in diameter (57-inches in circumference measured at 54-inches above natural grade) and Heritage Trees, individual trees of any size or species designated as such by City Council. In addition to the "Protected Trees" the city considers the following "Designated Trees" all trees, when associated with a development project, that are specifically designated by the City to be saved and protected on a public or private property which is subject to a discretionary development review; such as a variance, home improvement exception, architectural review, site and design, subdivision, etc. Approval from the Planning Division is required to remove a designated tree.

The chart below indicates the species and their relative quantities (Chart 1).

Chart 1: Species Distribution



Discussion

Condition Rating

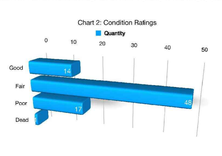
A tree's condition is a determination of its overall health and structure based on five aspects: Roots, trunk, scaffold branches, twigs, and foliage. The assessment considered both the health and structure of the trees for a combined condition rating.

- Exceptional = Good health and structure with significant size, location or quality.
- Good = No apparent problems, good structure and health, good longevity for the site.
- Fair = Minor problems, at least one structural defect or health concern, problems can be mitigated through cultural practices such as pruning or a plant health care program.
- Poor = Major problems with multiple structural defects or declining health, not a good candidate for retention.
- Dead/Unstable = Extreme problems, irreversible decline, failing structure, or dead.

Most of the trees are in fair condition while fourteen are in good shape and seventeen poor. Trees in good condition are comprised of smaller newly planted specimens that have not grown long enough to possess the same defects and conditions consistent with older plants.

The chart below list the condition ratings and the relative quantity of each category (Chart 2).

Chart 2: Condition Ratings



Suitability for Conservation

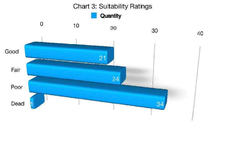
A tree's suitability for conservation is determined based on its health, structure, age, species and disturbance tolerances, proximity to cutting and filling, proximity to construction or demolition, and potential longevity using a scale of good, fair, or poor (Fite, K, and Smiley, E. T., 2016). The following list defines the rating scale:

- Good = Trees with good health, structural stability and longevity after construction.
- Fair = Trees with fair health and/or structural defects that may be mitigated through treatment. These trees require more intense management and monitoring, before, during, and after construction, and may have shorter life expectancy after development.
- Poor = Trees are expected to decline during or after construction regardless of management. The species or individual may possess characteristics that are incompatible or undesirable in landscape settings or unsuited for the intended use of the site.

Thirty-four trees are poorly suited for retention and twenty-four fair. Twenty-one trees have good suitability for conservation and consist primarily of newly planted Chinese pistache and elms.

The chart below list the suitability ratings and the relative quantity of each category (Chart 3).

Chart 3: Suitability Ratings



Impact Level

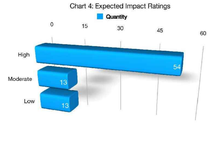
Impact level defines how a tree may be affected by construction activity and proximity to the tree, and is described as low, moderate, or high. The following scale defines the impact rating (Matheny, N. and Clark, J. 1998):

- Low = The construction activity will have little influence on the tree.
- Moderate = The construction may cause future health or structural problems, and steps must be taken to protect the tree to reduce future problems.
- High = Tree structure and health will be compromised and removal is recommended, or other actions must be taken for the tree to remain. The tree is located in the building envelope.

Sixty-six trees will be highly impacted and caused to be removed including "Street Trees" Chinese elms #1 through #11 and the two privet #38 and #40. The remaining trees to be removed and highly impacted are "Designated Trees" mostly in the interior. Thirteen trees will be moderately affected and include the eucalyptus on the adjacent site and Chinese elms #2, #3, and #4. The primary impacts will come from the bioretention ponds and any grading required for the perimeter road and heavy duty asphalt installation.

The chart below list the impact ratings and the relative quantity of each category (Chart 4).

Chart 4: Expected Impact Ratings



Tree Protection

Tree protection focuses on protecting trees from damage to the roots, trunk, or scaffold branches from heavy equipment (Appendix D).

The TPZ is defined by the City of Palo Alto as the following: "unless otherwise specified by a project arborist or City Arborist, the area of temporary fenced tree enclosure. Within the TPZ, roots that are critical for tree survival are typically found in the upper three feet soil horizon, and may extend beyond the dripline area. Protecting the roots in the TPZ is necessary to ensure the tree's survival. The TPZ is a restricted activity zone where no soil disturbance is permitted, unless otherwise approved. TPZ must be identified for each tree and shown on all applicable improvement plans for a development project."

The City of Palo Alto has two different tree protection requirements that apply to this project which are called Type I and Type II (Figures 1 and 2). The eucalyptus originating on the adjacent site would need to have tree protection fence placed at the maximum encroachment distance of ten times their trunk diameter onto the site using Type I tree protection (Appendix B2). The city will need to approve grading or disturbance within this zone for the new perimeter drive isle.

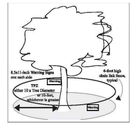


Figure 1: Type I Tree protection with fence placed at a radius of ten times the trunk diameter. Image City of Palo Alto 2006.

Figure 2: Type II Tree protection with fence placed along the sidewalk and curb to enclose the tree. Image City of Palo Alto 2006.

Palo Alto Required Practices

Activities prohibited within the TPZ include

In addition to the tree protection guidelines stipulated in Appendix D the following is prohibited within the tree protection zone and required by the Palo Alto Municipal Code (Copied from the Tree Technical Manual, City of Palo Alto 2001).

> Storage or parking vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials on or around trees and roots. Poisonous materials include, but are not limited to, paints, petroleum products, concrete or stucco mix, dirty water or any other material which may be deleterious to tree health.
>
> The use of tree trunks as a winch support, anchorage, as a temporary power pole, sign posts or other similar function.
>
> Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches and other miscellaneous excavation without prior approval of the City Arborist.
>
> Soil disturbance or grade change (see Grade Changes and Trenching, Section 2.20).
>
> Drainage changes.

Grading Limitations within the Tree Protection Zone

The following changes in grade are prohibited within the tree protection zone and required by the Palo Alto Municipal Code (Copied from the Tree Technical Manual, City of Palo Alto 2001).

> Grade changes outside of the TPZ shall not significantly alter drainage to the tree.
>
> Grade changes within the TPZ are not permitted.
>
> Grade changes under specifically approved circumstances shall not allow more than 6-inches of fill soil added or allow more than 4-inches of existing soil to be removed from natural grade unless mitigated.
>
> Grade fills over 6-inches or impervious overlay shall incorporate notes: an approved permanent aeration system, permeable material or other approved mitigation.
>
> Grade cuts exceeding 4-inches shall incorporate retaining walls or an appropriate transition equivalent.

Trenching or Tunneling for Utilities Near Street Trees

When trenching near the street tree the following shall be followed and required by the Palo Alto Municipal Code (Copied from the Tree Technical Manual, City of Palo Alto 2001):

Notification: Contractor shall notify the project arborist a minimum of 24 hours in advance of the activity in the TPZ.

Root Severance: Roots that are encountered shall be cut to sound wood and repaired. Roots 2-inches and greater must remain injury free.

> Root injury (Root Injury, Section 2.25 A-1): If trenches are cut and tree roots 2-inches or larger are encountered they must be cleanly cut back to a sound wood lateral root. The end of the root shall be covered with either a plastic bag and secured with tape or rubber band, or be coated with latex paint. All exposed root areas within the TPZ shall be backfilled or covered within one hour. Exposed roots may be kept from drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper 3-feet of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls.

Excavation: Any approved excavation, demolition or extraction of material shall be performed with equipment sitting outside the TPZ. Methods permitted are by hand digging, hydraulic or pneumatic air excavation technology. Avoid excavation within the TPZ during hot, dry weather.

> If excavation or trenching for drainage, utilities, irrigation lines, etc., it is the duty of the contractor to tunnel under any roots 2-inches in diameter and greater.
>
> Prior to excavation for foundation/footings/walls, grading or trenching within the TPZ, roots shall first be severed cleanly 1- foot outside the TPZ and to the depth of the future excavation.
>
> The trench must then be hand dug and roots pruned with a saw, sawzall, narrow trencher with sharp blades or other approved root pruning equipment.

Tunneling & Directional Drilling: If trenching or pipe installation has been approved within the TPZ, then the trench shall be either cut by hand, air-spade, hydraulic vac-on excavation or, by mechanically boring the tunnel under the roots with a horizontal directional drill and hydraulic or pneumatic air excavation technology. In all cases, install the utility pipe immediately, backfill with soil and soak within the same day. Installation of private utility improvements shall be tunnel bored beneath the tree and roots.

Root Zone Protection Around the Protected Trees

The following measures should be taken when designing the car wash station and required by the Palo Alto Municipal Code (Copied from the Tree Technical Manual, City of Palo Alto 2001):

> **Hevvy Equipment**: Use of backhoes, steel tread tractors or any heavy vehicles within the TPZ is prohibited unless approved by the City Arborist. If allowed, a protective root buffer (see Root Buffer and Damage to Trees, Section 2.25.A-1) is required. The protective buffer shall consist of a base course of tree chips spread over the root area to a minimum of 6-inch depth, layered by 3/4-inch quarry gravel to stabilize 3/4-inch plywood on top. This buffer within the TPZ shall be maintained throughout the entire construction process.
>
> **Structural design:** If injurious activity or interference with roots greater than 2-inches will occur within the TPZ, plans shall specify a design of special foundation, footing, walls, concrete slab or pavement designs subject to City Arborist approval. Discontinuous foundations such as concrete pier and structural grade beam must maintain natural grade (not to exceed a 4-inch cut), to minimize root loss and allow the tree to use the existing soil.
>
> **Hardscape installation:** When designing hardscape areas near trees, the project architect or engineer should consider the use of recommended base course material such as an engineered structural soil mix. The Palo Alto approved structural soil mix will allow a long term cost effective tree and infrastructure compatibility that is particularly suited for the following types development projects: repair or replacement of sidewalk greater than 40-feet in length; subdivisions with new street tree plantings; planting areas that are designed over structures or parking garages; confined parking lot medians and islands or other specialized conditions as warranted. (see City of Palo Alto Public Works Improvement Specifications Standards and; www.smxrog.com/cuintro)

Tree Pruning, Surgery, and Removal

> **Minimum Pruning:** If the project arborist recommends that trees be pruned, and the type of pruning is left unspecified, the standard pruning shall consist of 'crown cleaning' as defined by ISA Best Management Practices: Pruning 2008 with the objective to reduce risk and/or improve structure.
>
> **Maximum Pruning:** Maximum pruning should only occur in the rarest situation approved by the City Arborist. No more than one fourth (25 percent) of the functioning leaf and stem area may be removed within one calendar year of any protected or designated tree, or removal of foliage so as to cause the unbalancing of the tree.

Damage to Trees

> **Reporting:** Any damage or injury to trees shall be reported within 6-hours to the project arborist and job superintendent or City Arborist so that mitigation can take place. All mechanical or chemical injury to branches, trunk or to Required Practices notes: roots over 2-inches in diameter shall be reported in the monthly inspection report.
>
> **Penalty for damage to street trees:** In the event that street trees or their roots have been damaged, the contractor or property owner shall be subject to the penalty rate of $100.00 per inch of damage.

Conclusion

There are two sites directly adjacent to each other located at 1700 and 1730 Embarcadero Road in Palo Alto. The inventory consists of trees on the property with trunk diameters greater than four inches (12.56 inches circumference) and those directly adjacent with crowns extending over the boundary. There are 80 trees comprised of 14 different species with Chinese elm being the most abundant. No oaks or redwoods are growing on the sites. There are thirteen "Street Trees" primarily composed of the Chinese elms along Bayshore Road. Twelve trees originate on the adjacent sites all comprised of various eucalyptus. The remaining 53 trees are considered "Designated" by the City criteria and are located in the interior of the site. Most of the trees are in fair condition while fourteen are in good shape and seventeen poor. Trees in good condition are comprised of smaller newly planted specimens. Thirty-four trees are poorly suited for retention and twenty-four fair. Twenty-one trees have good suitability for conservation and consist of newly planted Chinese pistache and elms. Sixty-six trees will be highly impacted and caused to be removed including "Street Trees" Chinese elm #1 through #11 and the two privet #38 and #40. The remaining trees to be removed and highly impacted are "Designated Trees" mostly in the interior. Thirteen trees will be moderately affected and include the eucalyptus on the adjacent site and Chinese elms #2, #3, and #4. The primary impacts will come from the bioretention ponds and any grading required for the perimeter road and heavy duty asphalt installation. The eucalyptus trees originating on the adjacent site would need to have protection fence placed at the maximum encroachment distance of ten times their trunk diameters as per the City of Palo Alto tree protection zone recommendations (Appendix B2). No more than 6 inches of grade change can occur within the TPZ.

Thirty-four trees are poorly suited for retention and twenty-four fair. Twenty-one trees have good suitability for conservation and consist primarily of newly planted Chinese pistache and elms.

Recommendations

Pre-Construction Phase

1. Locate all trees to be retained on all plans and indicate their required tree protection zones/ drip line distances of ten times their trunk diameters as required.
2. Create a separate plan sheet that includes all protection measures labeled "T-1 Tree Protection Plan." Place all tree protection fence and locations on all plans including civil and construction documents. Include from this report the following sections: "Palo Alto Required Practices", "Recommendations", "Appendix B, D, and E".
3. Protect the street trees 1 through 11 as a group along East Bayshore Road by placing fence along the edge of the parking lot and sidewalk to enclose a rectangular fenced area as specified for "Type II" fence protection.
4. Remove street trees 1, 38, and 40 and replant with 24 inch box specimens. Modify soil appropriately base on soil analysis.
5. Protect eucalyptus trees 53 through 63, 66, 67, and 69 by placing tree protection fence at a distance of ten times their trunk diameters as per the City of Palo Alto tree protection zone recommendations (Appendix B2). No more than 6 inches of grade change can occur within the TPZ.
6. Place straw wattle at the base of the tree protection on the construction side to help prevent soils from sloughing into the tree protection zone as an erosion control measure.
7. Remove all trees to be demolished after obtaining all necessary permits from the City of Palo Alto.
8. Provide a copy of this report to all contractors and project managers, including the architect, civil engineer, and landscape designer or architect. It is the responsibility of the owner to ensure all parties are familiar with this document.
9. Arrange a pre-construction meeting with the project arborist or landscape architect to verify tree protection is in place, with the correct materials, and at the proper distances.
10. Provide a monthly monitoring schedule to planning expected to be every four weeks and when activity is expected within the TPZ. Schedule to be prepared after approval.

Construction Phase

1. Place irrigation or soaker hoses on the existing grade under the within the drip line area or within the tree protection zone or automatic irrigation under trees 1 through 10.
2. Place two to four inches of organic mulch, coarse woody debris, chips from tree care operations under the trees and over the soaker hoses within the tree protection zone.
3. If construction is to take place between June and October the trees should be watered to help mitigate any root loss and reduce stress. Ten gallons per inch of trunk diameter of water should be used to irrigate the root zones once a week with a deep soaking.
4. If roots are expected to be cut the work shall be supervised and documented by the project arborist. If tree roots 2 inches or larger are encountered they must be cleanly cut back to a sound wood lateral root. The end of the root shall be covered with either a plastic bag and secured with tape or rubber band, or be coated with latex paint. All exposed root areas within the TPZ shall be backfilled or covered within one hour. Exposed roots may be kept from drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper 3-feet of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls.
5. Provide monthly monitoring documentation to planning as required at least once every four weeks.

Post-Construction Phase

1. Monitor the health and structure of all trees for any changes in condition.
2. Manage soil moisture and maintain mulch.
3. Perform any other mitigation measures to help ensure long term survival.

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PROFESSIONAL STAMP

PROJECT INFORMATION

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DRAWN BY:	CR
CHECKED BY:	JC/KP

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ARB NO. 2	10/30/2019

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Bibliography

American National Standard for Tree Care Operations: Tree, Shrub and Other Woody Plant Management : Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)(Part 5). Londonderry, NH: Secretariat, Tree Care Industry Association, 2012. Print.

Dockter, Dave. Tree Technical Manual City of Palo Alto Standards and Specifications, Palo Alto Municipal Code, Chapter 8.10.030. Palo Alto, Calif.: City of Palo Alto, Dept. of Planning and Community Environment, 2001.

Fite, Kelby, and Edgar Thomas. Smiley. *Managing trees during construction*, second edition. Champaign, IL: International Society of Arboriculture, 2016.

ISA. *Glossary of Arboricultural Terms*. Champaign: International Society of Arboriculture, 2011. Print.

Matheny, Nelda P. Trees and development: A technical guide to preservation of trees during land development. Bedminster, PA: International Society of Arboriculture, 1998.

Glossary of Terms

Defect: An imperfection, weakness, or lack of something necessary. In trees defects are injuries, growth patterns, decay, or other conditions that reduce the tree's structural strength.

Diameter at breast height (DBH): Measures at 1.4 meters (4.5 feet) above ground in the United States, Australia (arboriculture), New Zealand, and when using the Guide for Plant Appraisal, 9th edition; at 1.3 meters (4.3 feet) above ground in Australia (forestry), Canada, the European Union, and in UK forestry; and at 1.5 meters (5 feet) above ground in UK arboriculture.

Drip Line (as defined by the City of Palo Alto): Means the area within X distance from the trunk of a tree, measured from the perimeter of the trunk of the tree at 54-inches above natural grade, where X equals a distance ten times the diameter of the trunk at 54-inches above natural grade.

Scaffold branches: Permanent or structural branches that for the scaffold architecture or structure of a tree.

Street Tree: Means any publicly owned tree, shrub or plant growing within the street right-of-way, outside of private property. In some cases, property lines lie several feet behind the sidewalk. A permit from the Public Works Department is required prior to any work on or around these trees. Check with the Public Works Department to verify prior to any work near a street tree (see Introduction - Use of The Manual, Regulated Trees)

Tree Protection Zone or (TPZ) (as defined by the City of Palo Alto): means, unless otherwise specified by a project arborist or City Arborist, the area of temporary fenced tree enclosure. Within the TPZ, roots that are critical for tree survival are typically found in the upper three foot soil horizon, and may extend beyond the dripline area. Protecting the roots in the TPZ is necessary to ensure the tree's survival. The TPZ is a restricted activity zone where no soil disturbance is permitted, unless otherwise approved. TPZ must be identified for each tree and shown on all applicable improvement plans for a development project.

Tree Risk Assessment: Process of evaluating what unexpected things could happen, how likely it is, and what the likely outcomes are. In tree management, the systematic process to determine the level of risk posed by a tree, tree part, or group of trees.

Trunk: Stem of a tree.

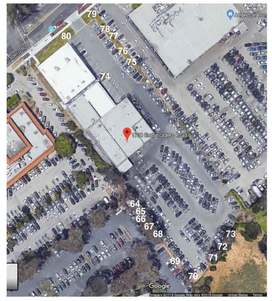
This Glossary of terms was adapted from the Glossary of Arboricultural Terms (ISA, 2011) and the Palo Alto Tree Technical Manual, 2001.

Appendix A: Tree Inventory Map

A1: 1700 Embarcadero Road

Tree inventory map produced and provided by Bay Area Tree Specialists, August 8, 2015.

A2: 1730 Embarcadero Road



Appendix B: Tree Inventory and Disposition Tables

Table 2: Tree Inventory and Disposition Table

Tree Species	Number	Trunk Diameter (in.)	~ Height (ft.)	~ Crown Diameter (ft.)	Condition	Suitability for Conservation	Expected Impact	Protected	Type	Remove/Retain
Chinese elm (*Ulmus parvifolia*)	1	13.5	20	30	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	2	8.5	20	20	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	3	10	20	30	Fair	Poor	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	4	10	20	25	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	5	11	20	25	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	6	9.5	20	25	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	7	9.5	20	25	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	8	8.5	20	25	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	9	11	20	25	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	10	17	20	40	Fair	Good	High	**Yes**	**Street Tree**	**Remove**
Privet (*Ligustrum lucidum*)	11	7.5	10	8	Poor	Poor	High	**Yes**	**Street Tree**	**Remove**
Chinese elm (*Ulmus parvifolia*)	12	23.5	30	50	Fair	Fair	High	No	Designated	**Remove**
Cherry (*Prunus serrulata*)	13	5	8	8	Fair	Poor	High	No	Designated	**Remove**
Japanese maple (*Acer palmatum*)	14	19	12	12	Good	Fair	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	15	6	10	8	Fair	Poor	High	No	Designated	**Remove**
Chinese pistache (*Pistachia chinensis*)	16	13	25	35	Good	Good	High	No	Designated	**Remove**
Purple leaf plum (*Prunus cerasifera*)	17	4.5	10	8	Fair	Poor	High	No	Designated	**Remove**
Chinese pistache (*Pistachia chinensis*)	18	12	25	35	Good	Good	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	19	4.5	20	10	Fair	Fair	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	20	8.5	20	10	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	21	6.5	20	10	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	22	9.5	20	10	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	23	5.5	20	10	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	24	6	20	10	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	25	6	20	10	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	26	9	20	15	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	27	9.5	25	25	Poor	Poor	High	No	Designated	**Remove**

Tree Species	Number	Trunk Diameter (in.)	~ Height (ft.)	~ Crown Diameter (ft.)	Condition	Suitability for Conservation	Expected Impact	Protected	Type	Remove/Retain
Chinese elm (*Ulmus parvifolia*)	28	8.5	25	25	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	29	5.5	20	15	Fair	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	30	9	30	25	Fair	Fair	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	31	8	25	25	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	32	7.5	25	20	Poor	Poor	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	33	6	25	15	Fair	Fair	High	No	Designated	**Remove**
Chinese elm (*Ulmus parvifolia*)	34	7.5	25	15	Poor	Poor	High	No	Designated	**Remove**
Mugo pine (*Pinus mugo*)	35	4.5	8	6	Poor	Poor	High	No	Designated	**Remove**
Monterey pine (*Pinus radiata*)	36	17	15	10	Dead	Dead	High	No	Designated	**Remove**
Loquat (*Eriobotrya japonica*)	37	21	25	25	Fair	Good	High	No	Designated	**Remove**
Privet (*Ligustrum lucidum*)	38	5.5	8	8	Poor	Poor	High	**Yes**	**Street Tree**	**Remove**
Cherry (*Prunus serrulata*)	39	6	8	8	Fair	Poor	High	No	Designated	**Remove**
Privet (*Ligustrum lucidum*)	40	18	35	30	Poor	Poor	High	**Yes**	**Street Tree**	**Remove**
Japanese maple (*Acer palmatum*)	41	9	12	12	Good	Fair	High	No	Designated	**Remove**
Chinese pistache (*Pistachia chinensis*)	42	20	35	40	Good	Fair	High	No	Designated	**Remove**
Chinese pistache (*Pistachia chinensis*)	43	12.5	25	30	Fair	Fair	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	44	4	20	10	Fair	Poor	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	45	4	20	10	Fair	Poor	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	46	4	20	10	Fair	Poor	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	47	4.5	20	10	Fair	Poor	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	48	5.5	20	10	Fair	Poor	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	49	4	20	10	Fair	Poor	High	No	Designated	**Remove**
Crape myrtle (*Lagerstroemia indica*)	50	4	20	10	Fair	Poor	High	No	Designated	**Remove**
Purple leaf plum (*Prunus cerasifera*)	51	4	20	12	Fair	Poor	High	No	Designated	**Remove**
Locust (*Ehiobotrya japonica*)	52	8	20	18	Fair	Poor	High	No	Designated	**Remove**
Red Ironbark (*Eucalyptus sideroxylon*)	53	14	50	40	Fair	Fair	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	54	18	50	40	Fair	Fair	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	55	13	50	40	Fair	Fair	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	56	14	50	40	Fair	Fair	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	57	15	50	40	Fair	Fair	Moderate	**Yes**	**Adjacent Site Tree**	Retain

Tree Species	Number	Trunk Diameter (in.)	~ Height (ft.)	~ Crown Diameter (ft.)	Condition	Suitability for Conservation	Expected Impact	Protected	Type	Remove/Retain
Red Ironbark (*Eucalyptus sideroxylon*)	58	17	50	40	Fair	Fair	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	59	13	50	40	Fair	Fair	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Red gum (*Eucalyptus camaldulensis*)	60	14	50	40	Poor	Poor	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	61	14	55	40	Good	Good	Moderate	**Yes**	**Adjacent Site Tree**	Retain
Silver dollar gum (*Eucalyptus polyanthemos*)	62	15	45	25	Fair	Poor	High	No	Designated	**Remove**
Silver dollar gum (*Eucalyptus polyanthemos*)	63	18	45	25	Fair	Poor	High	No	Designated	**Remove**
Silver dollar gum (*Eucalyptus polyanthemos*)	64	16	45	45	Fair	Fair	High	No	Designated	**Remove**
Silver dollar gum (*Eucalyptus polyanthemos*)	65	20	45	45	Good	Good	High	No	Designated	**Remove**
Red gum (*Eucalyptus camaldulensis*)	66	12	45	45	Fair	Fair	High	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	67	20	45	45	Fair	Fair	High	**Yes**	**Adjacent Site Tree**	Retain
Silver dollar gum (*Eucalyptus polyanthemos*)	68	13	25	20	Fair	Fair	Low	No	Designated	**Remove**
Red Ironbark (*Eucalyptus sideroxylon*)	69	30	45	45	Fair	Fair	Low	**Yes**	**Adjacent Site Tree**	Retain
Red Ironbark (*Eucalyptus sideroxylon*)	70	14	45	25	Fair	Fair	Moderate	No	Designated	**Remove**
Red Ironbark (*Eucalyptus sideroxylon*)	70	14	45	25	Fair	Fair	High	No	Designated	**Remove**
Silver dollar gum (*Eucalyptus polyanthemos*)	71	8, 8, 18	45	30	Fair	Fair	High	No	Designated	**Remove**
Silver dollar gum (*Eucalyptus polyanthemos*)	72	16	45	30	Fair	Fair	High	No	Designated	**Remove**
Silver dollar gum (*Eucalyptus polyanthemos*)	73	24	45	35	Fair	Fair	High	No	Designated	**Remove**
Chinese pistache (*Pistachia chinensis*)	74	3	15	15	Good	Good	High	No	Designated	**Remove**
Chinese pistache (*Pistachia chinensis*)	75	3	15	15	Good	Good	High	?	**May be required planting**	**Remove**
Chinese pistache (*Pistachia chinensis*)	76	3	15	15	Good	Good	High	?	**May be required planting**	**Remove**
Chinese pistache (*Pistachia chinensis*)	77	3	15	15	Good	Good	High	?	**May be required planting**	**Remove**
Chinese pistache (*Pistachia chinensis*)	78	3	15	15	Good	Good	High	?	**May be required planting**	**Remove**
Palo verde (*Parkinsonia aculeata*)	79	8	20	20	Good	Good	Low	?	**May be required planting**	Retain
Palo verde (*Parkinsonia aculeata*)	80	8	20	20	Good	Good	Low	?	**May be required planting**	Retain

Appendix B2: Tree Protection Distances Table

Table 3: Tree Protection Distance Table

Tree Species	#	Trunk Diameter	~ Crown Diameter	Protected	Type	Remove/ Retain	TPZ 10X DBH (ft. radius)
Chinese elm (*Ulmus parvifolia*)	1	13.5	30	Yes	Street Tree	Retain	11
Chinese elm (*Ulmus parvifolia*)	2	8.5	20	Yes	Street Tree	Retain	7
Chinese elm (*Ulmus parvifolia*)	3	10	30	Yes	Street Tree	Retain	8
Chinese elm (*Ulmus parvifolia*)	4	10	25	Yes	Street Tree	Retain	8
Chinese elm (*Ulmus parvifolia*)	5	11	25	Yes	Street Tree	Retain	9
Chinese elm (*Ulmus parvifolia*)	6	9.5	25	Yes	Street Tree	Retain	8
Chinese elm (*Ulmus parvifolia*)	7	9.5	25	Yes	Street Tree	Retain	8
Chinese elm (*Ulmus parvifolia*)	8	8.5	25	Yes	Street Tree	Retain	7
Chinese elm (*Ulmus parvifolia*)	9	11	25	Yes	Street Tree	Retain	9
Chinese elm (*Ulmus parvifolia*)	10	17	40	Yes	Street Tree	Retain	14
Chinese elm (*Ulmus parvifolia*)	12	23.5	50	No	Interior	Retain	20
Red Ironbark (*Eucalyptus sideroxylon*)	53	14	40	Yes	Adjacent Site Tree	Retain	12
Red Ironbark (*Eucalyptus sideroxylon*)	54	18	40	Yes	Adjacent Site Tree	Retain	15
Red Ironbark (*Eucalyptus sideroxylon*)	55	13	40	Yes	Adjacent Site Tree	Retain	11
Red Ironbark (*Eucalyptus sideroxylon*)	56	14	40	Yes	Adjacent Site Tree	Retain	12

Tree Species	#	Trunk Diameter	~ Crown Diameter	Protected	Type	Remove/ Retain	TPZ 10X DBH (ft. radius)
Red Ironbark (*Eucalyptus sideroxylon*)	57	15	40	Yes	Adjacent Site Tree	Retain	13
Red Ironbark (*Eucalyptus sideroxylon*)	58	17	40	Yes	Adjacent Site Tree	Retain	14
Red Ironbark (*Eucalyptus sideroxylon*)	59	13	40	Yes	Adjacent Site Tree	Retain	11
Red gum (*Eucalyptus camaldulensis*)	60	14	40	Yes	Adjacent Site Tree	Retain	12
Red Ironbark (*Eucalyptus sideroxylon*)	61	14	40	Yes	Adjacent Site Tree	Retain	12
Red gum (*Eucalyptus camaldulensis*)	66	12	45	Yes	Adjacent Site Tree	Retain	10
Red Ironbark (*Eucalyptus sideroxylon*)	67	20	45	Yes	Adjacent Site Tree	Retain	17
Red Ironbark (*Eucalyptus sideroxylon*)	69	30	45	Yes	Adjacent Site Tree	Retain	25

Appendix C: Photographs

C1: Chinese elms #1 through #10 along E. Bayshore Road

C2: Privet #11

C3: Privet #38

C4: Privet #40

C5: Adjacent Eucalyptus #53 through #61

C6: Adjacent Eucalyptus #62 and #63

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ARB NO. 2	10/30/2019

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C7: Eucalyptus #64 through #68

C8: Eucalyptus #71 to #73

Appendix D: Tree protection specifications

Tree protection locations should be marked before any fencing contractor arrives.

Pre-Construction Meeting with the Project Arborist

Prior to beginning work, all contractors involved with the project should attend a pre construction meeting with the project arborist to review the tree protection guidelines. Access routes, storage areas, and work procedures will be discussed.

Tree Protection Zones and Fence Specifications

Tree protection fence should be established prior to the arrival of construction equipment or materials on site. Fence should be comprised of six-foot high chain link fence mounted on eight-foot tall, 1 7/8-inch diameter galvanized posts, driven 24 inches into the ground and spaced no more than 10 feet apart. Once established, the fence must remain undisturbed and be maintained throughout the construction process until final inspection.

The fence should be maintained throughout the site during the construction period and should be inspected periodically for damage and proper functions.

Fence should be repaired, as necessary, to provide a physical barrier from construction activities.

A final inspection by the city arborist at the end of the project will be required prior to removing any tree protection fence and replacement tree shall be planted at this time.

Monitoring

Any trenching, construction or demolition that is expected to damage or encounter tree roots should be monitored by the project arborist or a qualified ISA Certified Arborist and should be documented.

The site should be evaluated by the project arborist or a qualified ISA Certified Arborist after construction is complete, and any necessary remedial work that needs to be performed should be noted.

Restrictions Within the Tree Protection Zone

No storage of construction materials, debris, or excess soil will be allowed within the Tree Protection Zone. Spoils from the trenching shall not be placed within the tree protection zone either temporarily or permanently. Construction personnel and equipment shall be routed outside the tree protection zones.

Root Pruning

Root pruning shall be supervised by the project arborist. When roots over two inches in diameter are encountered they should be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. Roots should be cut beyond sinker roots or outside root branch junctions and be supervised by the project arborist. When completed, exposed roots should be kept moist with burlap or backfilled within one hour.

Boring or Tunneling

Boring machines should be set up outside the drip line or established Tree Protection Zone. Boring may also be performed by digging a trench on both sides of the tree until roots one inch in diameter are encountered and then hand dug or excavated with an Air Spade® or similar air or water excavation tool. Bore holes should be adjacent to the trunk and never go directly under the main stem to avoid oblique (heart) roots. Bore holes should be a minimum of three feet deep.

Timing

If the construction is to occur during the summer months supplemental watering and bark beetle treatments should be applied to help ensure survival during and after construction.

Tree Pruning and Removal Operations

All tree pruning or removals should be performed by a qualified arborist with a C-61/D-49 California Contractors License. Tree pruning should be specified according to ANSI A-300A pruning standards and adhere to ANSI Z133.1 safety standards. Trees that need to be removed or pruned should be identified in the pre-construction walk through.

Tree Protection Signs

All sections of fencing should be clearly marked with signs stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited. Text on the signs should be in both English and Spanish (Appendix E).

Appendix E: Tree Protection Signs

E1: English

Warning
Tree Protection Zone

This Fence Shall Not Be Removed
Without City Arborist Approval

(650) 496-5953

Removal Without Permission is Subject to a
$500.00 Fine Per Day

Palo Alto Municipal Code Section 8.10.110

Appendix E: Tree Protection Signs

E2: Spanish

Cuidado
Zona De Arbol Pretejido

Esta valla no podrán ser sacados
Sin City Arborist Aprobación

(650) 496-5953

Extracción sin permiso está sujeta a una
Multa de $ 500.00 por día

Palo Alto Municipal Code Section 8.10.110

Qualifications, Assumptions, and Limiting Conditions

Any legal description provided to the consultant is assumed to be correct. Any titles or ownership of properties are assumed to be good and marketable. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

All property is presumed to be in conformance with applicable codes, ordinances, statutes, or other regulations.

Care has been taken to obtain information from reliable sources. However, the consultant cannot be responsible for the accuracy of information provided by others.

The consultant shall not be required to give testimony or attend meetings, hearings, conferences, mediations, arbitration, or trials by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

This report and any appraisal value expressed herein represent the opinion of the consultant, and the consultant's fee is not contingent upon the reporting of a specified appraisal value, a stipulated result, or the occurrence of a subsequent event.

Sketches, drawings, and photographs in this report are intended for use as visual aids, are not necessarily to scale, and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is only for coordination and ease of reference. Inclusion of said information with any drawings or other documents does not constitute a representation as to the sufficiency or accuracy of said information.

Unless otherwise expressed: a) this report covers only examined items and their condition at the time of inspection; and b) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that structural problems or deficiencies of plants or property may not arise in the future.

Certification of Performance

I Richard Gessner, Certify:

That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and Terms of Assignment;

That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;

That the analysis, opinions and conclusions stated herein are my own;

That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;

That no one provided significant professional assistance to the consultant, except as indicated within the report.

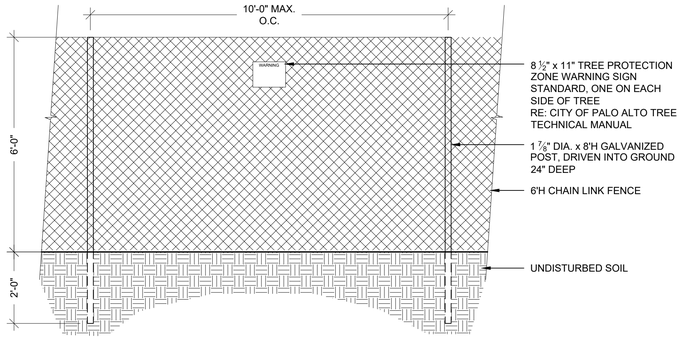
That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any other subsequent events;

I further certify that I am a Registered Consulting Arborist® with the American Society of Consulting Arborists, and that I acknowledge, accept and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Board Certified Master Arborist® and Tree Risk Assessor Qualified. I have been involved with the practice of Arboriculture and the care and study of trees since 1998.

Richard J. Gessner

ASCA Registered Consulting Arborist® #496
ISA Board Certified Master Arborist® WE-4341B
ISA Tree Risk Assessor Qualified

Copyright



NOTES:
1. THE TREE PROTECTION FENCE SHALL BE ESTABLISHED PRIOR TO THE ARRIVAL OF CONSTRUCTION EQUIPMENT OR MATERIALS ON SITE.
2. ONCE ESTABLISHED, THE FENCE MUST REMAIN UNDISTURBED AND BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS UNTIL FINAL INSPECTION.
3. THE FENCE SHOULD BE INSPECTED PERIODICALLY FOR DAMAGE AND PROPER FUNCTION.
4. THE FENCE SHOULD BE REPAIRED, AS NECESSARY, TO PROVIDE A PHYSICAL BARRIER FROM CONSTRUCTION ACTIVITIES.
5. A FINAL INSPECTION BY THE CITY ARBORIST AT THE END OF THE PROJECT WILL BE REQUIRED PRIOR TO REMOVING ANY TREE PROTECTION FENCE AND ANY REPLACEMENT TREE SHALL BE PLANTED AT THIS TIME.

A TREE PROTECTION FENCE
SCALE: NTS

ARCHITECT / PLANNER

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MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303

ARBORIST ASSESSMENT AND REPORT

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

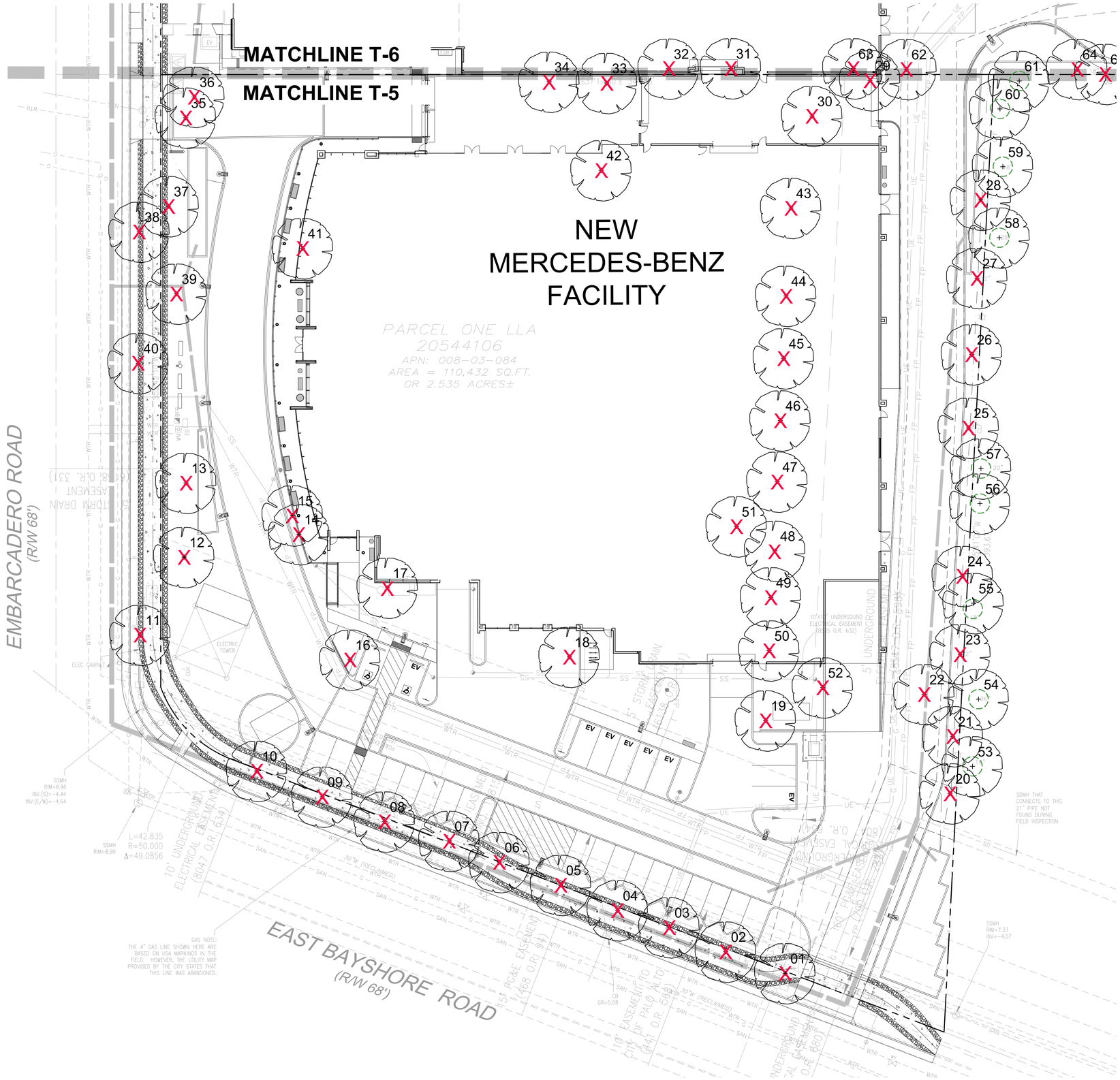
ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
ARB NO. 2 (REVIEW)	09/10/2019
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

SHEET NUMBER

T-4

13 OF 16



TREE PROTECTION LEGEND

- TREE REFERENCE NUMBER PER TREE INVENTORY
- TREES TO BE PRESERVED
- DRIP LINE (10X TREE DIAMETER)
- TREES TO BE REMOVED
- TREES TO BE TRANSPLANTED

TREES TO BE REMOVED

#	TREE TYPE
1-10	Chinese Elm (Ulmus parvifolia)
11	Privet (Ligustrum lucidum)
12	Chinese Elm (Ulmus parvifolia)
13	Cherry (Prunus serrulata)
14	Japanese maple (Acer palmatum)
15	Crape myrtle (Lagerstroemia indica)
16	Chinese pistache (Pistacia chinensis)
17	Purple leaf plum (Prunus cerasifera)
18	Chinese pistache (Pistacia chinensis)
19	Crape myrtle (Lagerstroemia indica)
20-34	Chinese elm (Ulmus parvifolia)
35	Mugo pine (Pinus mugo)
36	Monterey pine (Pinus radiata)
37	Loquat (Eriobotrya japonica)
38	Privet (Ligustrum lucidum)
39	Cherry (Prunus serrulata)
40	Privet (Ligustrum lucidum)
41	Japanese maple (Acer palmatum)
42-43	Chinese pistache (Pistacia chinensis)
44-50	Crape myrtle (Lagerstroemia indica)
51	Purple leaf plum (Prunus cerasifera)
52	Loquat (Eriobotrya japonica)
62-65	Silver dollar gum (Eucalyptus polyanthemos)
68	Silver dollar gum (Eucalyptus polyanthemos)
70	Red ironbark (Eucalyptus sideroxylon)
71-73	Silver dollar gum (Eucalyptus polyanthemos)
74-78	Chinese pistache (Pistacia chinensis)
66	TOTAL # TO BE REMOVED

TREES TO BE PRESERVED

#	TREE TYPE
53-59	Red ironbark (Eucalyptus sideroxylon)
60	Red gum (Eucalyptus camaldulensis)
61	Red ironbark (Eucalyptus sideroxylon)
66	Red gum (Eucalyptus camaldulensis)
67	Red ironbark (Eucalyptus sideroxylon)
69	Red ironbark (Eucalyptus sideroxylon)
79	Palo verde (Parkinsonia aculeata)
80	Palo verde (Parkinsonia aculeata)
14	TOTAL # TO BE PRESERVED

ARCHITECT / PLANNER

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MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
TREE PROTECTION PLAN

PROFESSIONAL STAMP

PROJECT INFORMATION

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DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

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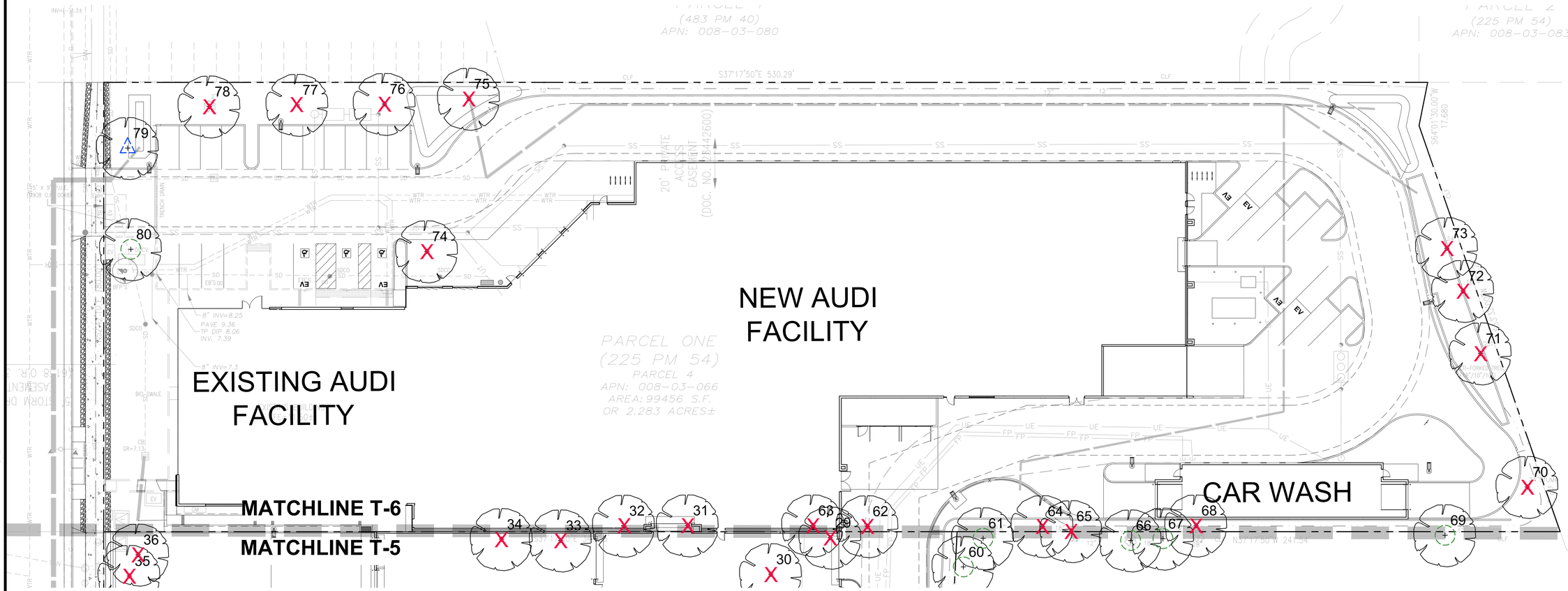
ARB NO. 2	10/30/2019

SHEET NUMBER

T-5



TREE PROTECTION LEGEND

TREE REFERENCE NUMBER PER TREE INVENTORY

58

TREES TO BE PRESERVED

DRIP LINE (10X TREE DIAMETER)

TREES TO BE REMOVED

TREES TO BE TRANSPLANTED

TREES TO BE REMOVED

#	TREE TYPE
1-10	Chinese Elm (Ulmus parvifolia)
11	Privet (Ligustrum lucidum)
12	Chinese Elm (Ulmus parvifolia)
13	Cherry (Prunus serrulata)
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66	TOTAL # TO BE REMOVED

TREES TO BE PRESERVED

#	TREE TYPE
53-59	Red ironbark (Eucalyptus sideroxylon)
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69	Red ironbark (Eucalyptus sideroxylon)
79	Palo verde (Parkinsonia aculeata)
80	Palo verde (Parkinsonia aculeata)
14	TOTAL # TO BE PRESERVED

TREES TO BE REPLACED

REQ. # OF TREES TO BE REPLACED W/ 24" BOX (MIN.)	56
REQ. # OF TREES TO BE REPLACED W/ 36" BOX (MIN.)	77
TOTAL REQ. # OF TREES	133
PROPOSED # OF TREES 24" BOX (MIN.)	56
PROPOSED # OF TREES 36" BOX (MIN.)	71
TOTAL PROPOSED # OF TREES	127
TREE DEFECIT	-6
PROPOSED # OF TREES PLANTED OFF-SITE (BAYLANDS)	6

NOTES:

1. CALCULATIONS ARE BASED ACCORDING TO TABLE 3-1 "TREE CANOPY REPLACEMENT STANDARDS" OF THE CITY OF PALO ALTO TECHNICAL MANUAL (JUNE 2001)
2. REPLACEMENT TREES FOR THE REMOVAL OF THE STREET TREES DUE TO THE MULTI-USE PATH HAVE NOT BEEN INCLUDED IN THESE CALCULATIONS. THIS IS A CITY-MANDATED MULTI-USE PATH AND NOT A RESULT OF THE APPLICANT.
3. REFER TO SHEET B-1, FOR THE TREE PLANTINGS ON THE BAYLANDS PROPERTY.

0' 20' 40'

GRAPHIC SCALE: 1" = 20'

NORTH

ARCHITECT / PLANNER

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OWNER/CLIENT

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(954)335-2200

MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303

TREE PROTECTION PLAN

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

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ARB NO. 2	10/30/2019

SHEET NUMBER

T-6

LEGEND (not to scale)

SHADE TREES

ORNAMENTAL TREES

EVERGREEN SHRUBS

PLANT LIST (TOTAL COUNTS)				
LABEL	QTY	BOTANICAL NAME	COMMON NAME	MIN. SIZE
SHADE TREES				
CBU	2	Aesculus californica	California Buckeye	24" BOX
CLO	1	Quercus agrifolia (L,N)	Coast Live Oak	24" BOX
VOK	1	Quercus lobata (N)	Valley Oak	24" BOX
ORNAMENTAL TREES				
BEB	2	Sambucus mexicana (N)	Blue Elderberry	24" BOX
EVERGREEN SHRUBS				
CSG	6	Artemisia californica	California Sagebrush	5 GAL
TOY	1	Heteromeles arbutifolia	Toyon	5 GAL

NOTES

1. TREES AND SHRUBS WILL BE DRIP IRRIGATED SUPPLIED BY THE MERCEDES BENZ AUDI OF PALO ALTO FOR 3 YEARS UNTIL ESTABLISHMENT OF THE PLANTS.

0' 20' 40'

GRAPHIC SCALE: 1" = 20'

NORTH

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MERCEDES BENZ AUDI OF PALO ALTO
1700 EMBARCADERO ROAD
PALO ALTO, CA 94303
BAYLANDS - OFF-SITE IMPROVEMENTS

PROFESSIONAL STAMP

PROJECT INFORMATION

PROJECT #:	181021
DRAWN BY:	CR
CHECKED BY:	JC/KP

ISSUE RECORD

ARB NO. 2 (REVIEW)	08/20/2019
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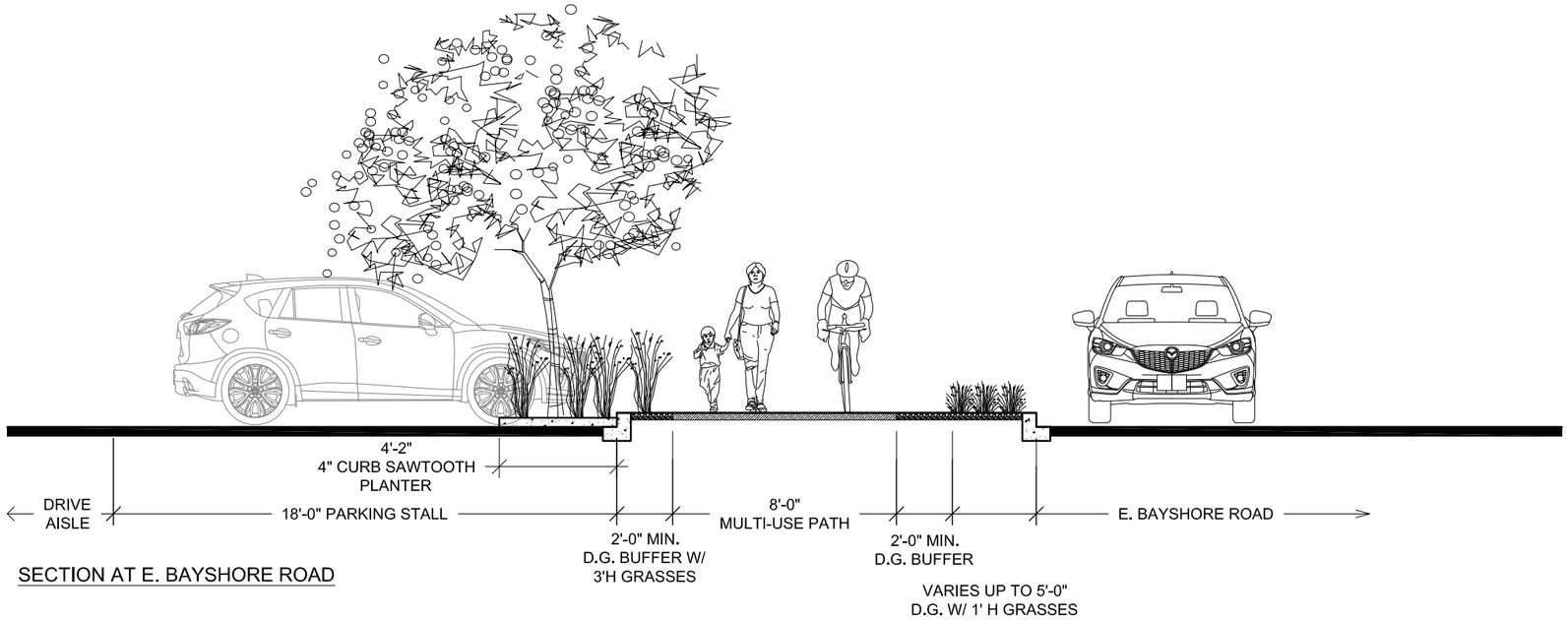
ARB NO. 2 (REVIEW)	10/22/2019
ARB NO. 2	10/30/2019

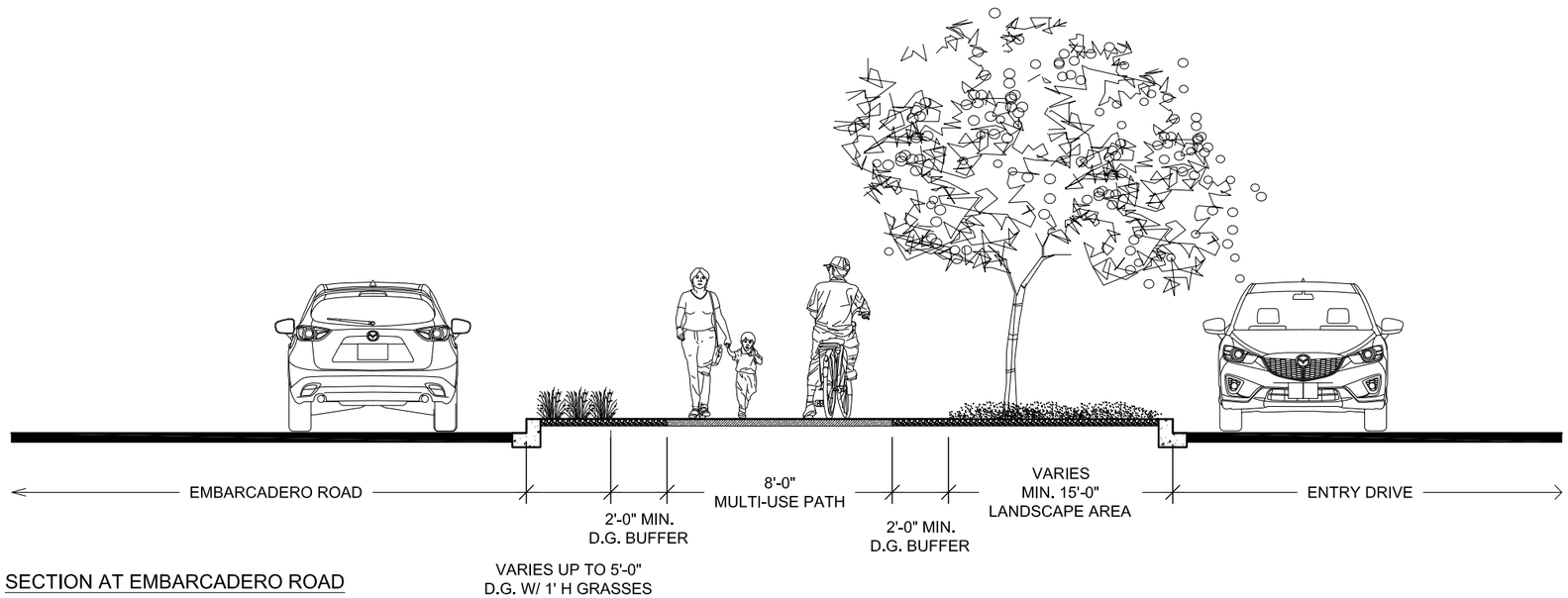
SHEET NUMBER

B-1

16 OF 16



SECTION AT E. BAYSHORE ROAD



SECTION AT EMBARCADERO ROAD

0' 5.5' 11'

GRAPHIC SCALE: 3/16" =1'-0"

Mercedes Benz Audi Palo Alto - Multi-Use Path Sections

Palo Alto,California
Holman Automotive
May 2, 2019
Project #181021

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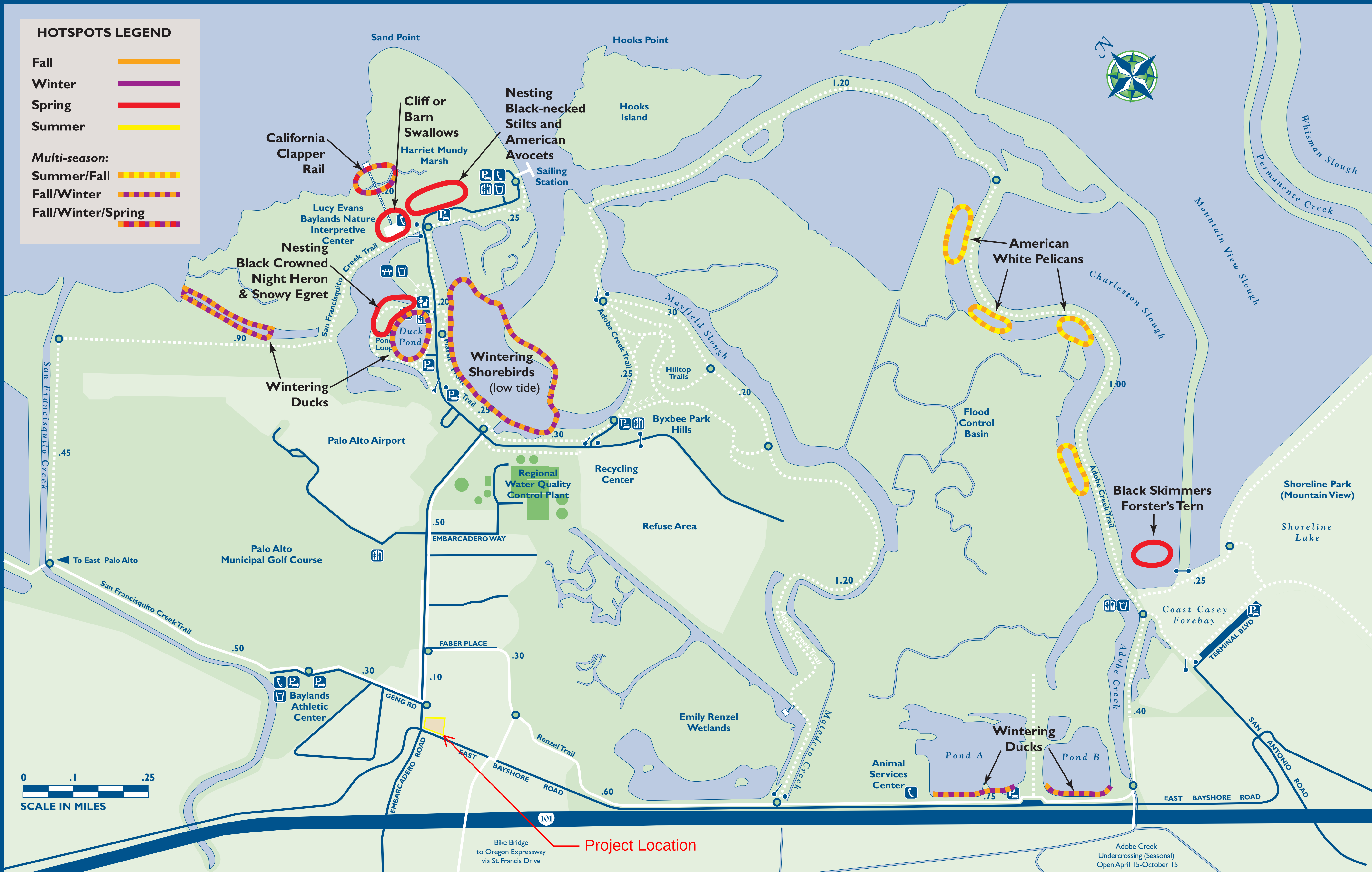
The Baylands



ACCESS INFORMATION

- Open to the public 8 am to sunset, every day.
- Dogs permitted on leash unless posted.
- Please do not feed wildlife.
- Park in designated parking areas.

Paved Trail
Gravel/ Boardwalk Trail
Paved Roadway
Mileage Markers
Ranger Station
Parking Lot
Picnic Area
Drinking Water
Restrooms
Public Phone
Wildlife Viewing Platform
Gates (open / area closed)

San Francisquito Creek Trail
3.2 miles/1-2 1/2 hours. Easy, flat terrain, can be extremely muddy during rainy season. Mixed terrain trail bed includes decomposed granite, crushed oyster shell, paved sections.

Boardwalk Trail *.2 mile (one way) 15 min.* Best area to view California clapper rail. Easy, flat terrain; mixed terrain trail bed includes gravel levee and wood boardwalk.

Duck Pond Loop Trail *.7 miles 10-15 min.* Dogs prohibited. Easy, flat terrain; crushed oyster shell and decomposed granite trail bed; no obstacles.

Renzel Trail *.9 mile/20-25 min.* Trail passes along the Emily Renzel Wetlands and connects the Adobe Creek Loop Trail with the San Francisquito Creek Trail. Easy, flat terrain; paved.

Hilltop Trails *1.0 mile/ 10-30 min.* Bay views, wildlife, wildflowers, landfill conversion process. Hilly terrain/trails are steep in places. Trail bed is decomposed granite and crushed oyster shell.

Marsh Front Trail *1.0 miles 25-30 min.* Descriptive marsh natural history panels. Easy, flat terrain; crushed oyster shell and decomposed granite trail bed; no obstacles.

Adobe Creek Loop Trail *5.6 miles/ 2-3 hours.* Bay views, bird life, converted landfill. Easy, flat terrain; trail mostly on bayside gravel levees and pavement.

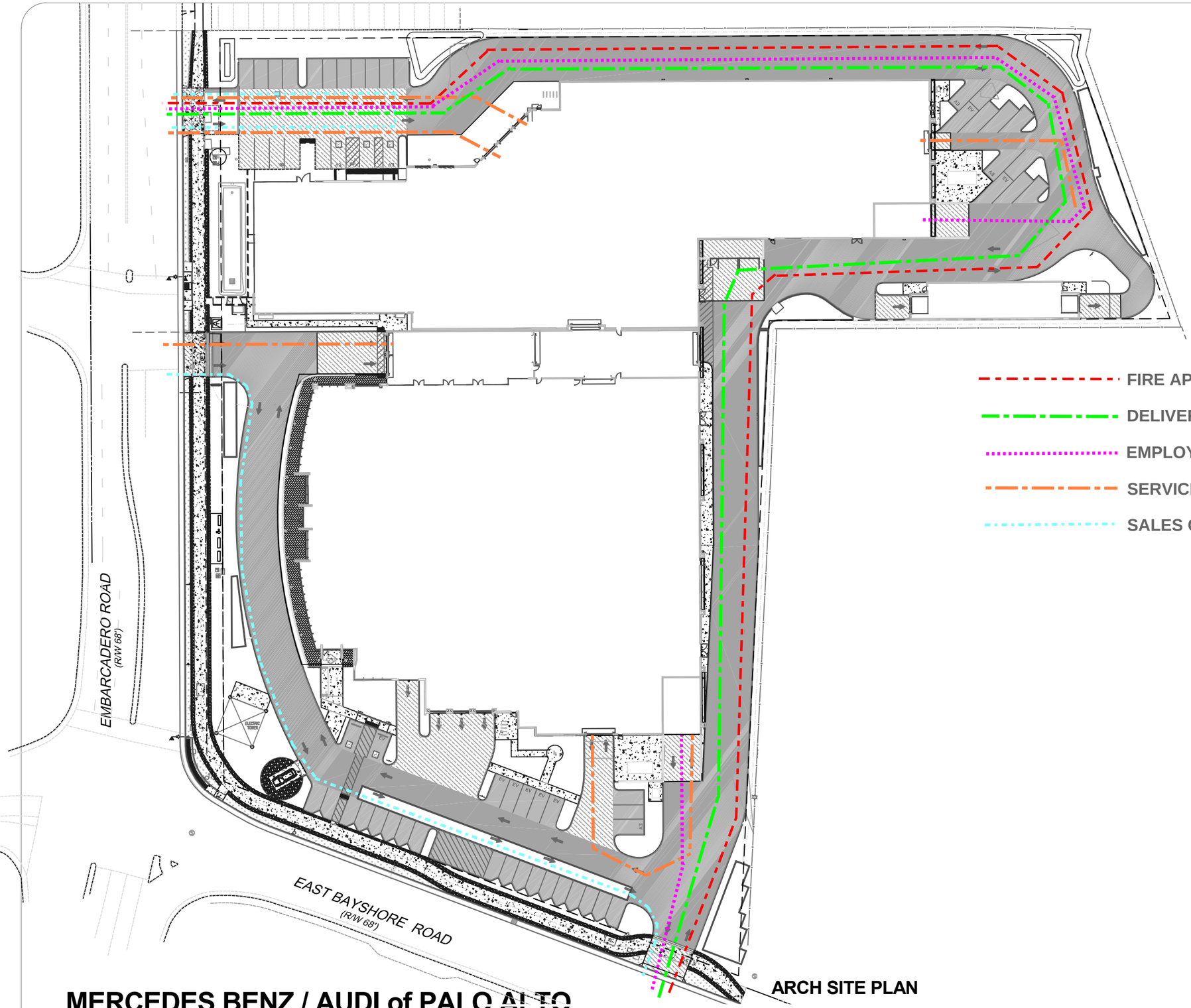
Photography (unless noted otherwise): Rosemary Lombard Illustration: Virginia Kolence; Lettering: Carl Rohrs Graphic Design: Sharon Eroaner

Palo Alto Baylands
Renzel Wetlands & former ITT Area

Prereffed Concept

Legend:

- Proposed north trail/ retain. wall
- Proposed pedestrian trail on existing maintenance road
- Existing road (stops at maint rd.)
- Existing multi-use trail
- Baylands boundary
- Freshwater pond and marsh (current footprint)
- Potential restoration areas
- Restored hydrology areas
- Existing primary and secondary dendritic channels
- Proposed primary and secondary dendritic channels
- Areas of habitat restoration after ITT removal and surrounding area regrading
- Tidal hydrological connection
- All antennae removed
- Proposed horse/bike barrier w/ mantenance gate. pedestrians & maint. personnel access only
- Interpretive sign, exsiting and proposed
- Overlook and gathering area, existing and proposed
- Proposed Mutt Mitt station
- Proposed bench
- Proposed informational sign
- Proposed directional sign
- Proposed recycling/trash can
- Proposed culvert
- Location of project



MERCEDES BENZ / AUDI of PALO ALTO

PLANNING REVIEW 03/06/2019

ARCH SITE PLAN

ysm DESIGN
RETAIL AUTOMOTIVE ARCHITECTURE

www.ysmdesign.com

Untitled Map
Write a description for your map.

Legend
Audi Palo Alto

Geng Rd
Embarcadero Rd
Faber Pl
Existing Honda
Existing Audi
Proposed Mercedes
Trail
Trail
Palo Alto Baylands
Renzel Wetlands
101
Sierra Ct
W Bayshore Rd
G3
Indian Dr
Cardinal Way
Moreno Ave
Greer Rd
Tenaha Dr
Amarillo Ave
Metro Cir
Renzel Trail
Adobe Creek Loop Trail
Google Earth
500 ft
N

Mercedes Benz & Audi of Palo Alto

LIGHTING REPORT

November 7, 2019

FRANCIS
KRAHE
& ASSOCIATES

Table of Contents

Introduction

Effective lighting will present a comfortable and attractive image of the Mercedes Benz Palo Alto to the surrounding community.

This Report presents lighting design and analysis for the critical public areas of the Project, with special emphasis on the placemaking aspects of light within the public realm, the visibility and brightness of the auto show room and display, and the impact of light trespass on the surrounding environment.

This Lighting Report summarizes the design recommendations developed by Francis Krahe & Associates to provide effective light for night use of the Property.

This lighting analysis evaluates the proposed solutions with respect to the light trespass and glare at the Project property lines including adjacent to the Baylands sensitive use property.

Design solutions are presented below including detailed specifications and lighting plans. Exterior lighting fixtures are specified on pages 12 to 16. Exterior site lighting location plans are shown on page 8. All exterior lighting fixtures may be on during the evening and are included in the light trespass analysis at full intensity. Exterior lighting illuminance calculations data is presented on pages 9, 10, and 11. The illuminance impact from the Project at the Project property line adjacent with the Baylands are summarized below on page 10, listed as Vertical Plane VPS1 . The Project illuminance at the Baylands is less than 0.09 fc with all adjacent site and building lighting operating at full intensity.

Aesthetic Goals

Beautiful auto retail display space

Transparency and connection of interior to exterior space.

Modern, minimal lighting product design elements

Brightness aligned with architectural form and function.

Lighting controls minimize energy use

High energy efficiency LED products minimize energy use.

Environmental Goals

Avoid light trespass and glare at Baylands

Comply with CALGreen and IESNA light trespass LZ1 0.09 fc

Comfortable night brightness

Prevent Glare or high contrast by shielding light sources.

Contrast ratio less than 30 to 1 with BUG rating standards.

Warm 3000K light color to minimize impact to Baylands habitat

Basis of Design

The Project Illuminance design criteria are established in accordance with California Electric Code and the Illuminating Engineering Society of North America recommendations and Mercedes Benz of North America retail display standards.

The Project energy efficiency design goal is to meet or exceed California Electric Code 2019 Title 24 lighting energy standards by utilizing high efficiency LED light fixtures, minimizing excess light in non-essential spaces, and employing state of the art control strategies.

The basis of design for lighting at the task area work plane surface, (average foot-candles) are as listed in the following table.

All light fixtures are dimmable LED.

ILLUMINANCE DESIGN CRITERIA (fc)

Space	fc	
Entrance and Exit Doors	5	average
Egress Walkways	10	average
	1	minimum
Outdoor Display:	5	average
Outdoor Seating	1	average
Parking Roof Deck	15	average
Roads & Parking	2	average
Main Lobby Display:	100	average
Office, at desk:	50	average
Office, ambient:	30	average
Corridor floor surface	10	average

LIGHTING CONTROLS SYSTEM

The lighting control systems will automate the on/off and dimming functions for interior and exterior lighting. The lighting control system will activate changes to the light intensity based upon a pre-programmed schedule and input from photocells, occupancy sensors and time clock functions.

Each day will include the following sequence of control as per Title 24 Section 130.2 (c). See below:

- Early morning, pre-dawn, the lighting control system activates the exterior lighting by Time Clock to gradually increase light intensity from Night security lighting to the required illuminance for staff and customers.
- After sunrise the Photocell activates dimming function to reduce light energy as the sun light is greater than 100 fc.
- At dusk photocell activates dimming function to raise illuminance from exterior and interior lighting as the sunlight is reduced below 100 fc.
- After business hours the Time Clock function dims all non essential lighting down to the minimum illuminance required for Code required Safety lighting.
- At night Occupancy Sensor activates local area lights in the vicinity of the sensors when people are present. After people exit the area and there is no activity for 20 minutes the lights are switched off by the Lighting Control System.

TITLE 24 SECTION 130.2 (C) OUTDOOR LIGHTING CONTROLS AND EQUIPMENT, CONTROLS FOR OUTDOOR LIGHTING

Outdoor lighting controls shall be installed that meet the following requirements as applicable:

1. All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control that automatically turns OFF the outdoor lighting when daylight is available.

2. All installed outdoor lighting shall be circuited and independently controlled from other electrical loads by an automatic scheduling control.

3. All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground shall be controlled with automatic lighting controls that meet all of the following requirements:

A. Shall be motion sensors or other lighting control systems that automatically controls lighting in accordance with Item B in response to the area being vacated of occupants;and

B. Shall be Capable of auotmatically reducing the lighting power of each luminaire by at least 40 percent but not exceeding 80 percent, or provide continuous dimming through a range that includes 40 percent through 80 percent, and

C. Shall employ auto-ON functionality when the area becomes occupied; and

D. No more than 1,500 watts of lighting power shall be controlled together.

Exception 3 to Section 130.2 (c)3: Outdoor lighting where luminaire rated wattage is determined in accordance with Section 130.0(c), and which meet one of the following conditions:

A. Pole-mounted luminaires each with a maximum rated wattage of 75 watts; or

B. Nonpole mounted luminaires with a maximum rated wattage of 30 watts each; or

C. Linear lighting with a maximum wattage of 4 watts per linear foot of luminaire

Exception 4 to Section 130.2(c)3: Applications listed as Exceptions to Section 140.7(a) shall not be required to meet the requirements of Section 130.2(c)3

4. For outdoor sales frontage, outdoor sales lots, and outdoor sales canopies lighting, an automatic lighting control shall be installed that meets the following requirements:

A. A part-night outdoor lighting control as defined in Section 100.1; or

B. Motion sensors capable of automatically reducing lighitng power by at least 40 percent but not exceeding 80 percent, and which have auto-ON functionality.

5. For building facade, ornamental hardscape and outdoor dining lighting, an automatic lighting control shall be installed that meets one or more of the following requirements:

A. A part-night outdoor lighting control as defined in Section 100.1; or

B. Motion Sensors capable of automatically reducing lighting power by at least 40 percent but not exceeding 80 percent, and which have auto-ON functionality; or

C. A centralized time-based zone lighting control capable of automatically reducing lighting power by at least 50 percent.

D. Outdoor wall mounted luminaires having a bilaterally symmetric distribution as described in the IES Handbook (typically referred to as “wall packs”) where the bottom of the luminare is mounted 24 feet or less above the ground shall comply with the applicable requirements in Section 130.2(c)3.

Site Lighting

Exterior lighting is designed to provide adequate illumination for the safety and security of the general public, retail customers, visitors and employees who use of the Project site during the evening and night.

The illumination intensity is designed in accordance with the recommended practice standards of the Illuminating Engineering Society of North America and complies with California Green Building Code and California Electric Code standards for minimum illuminance at all building exits, exterior loading, and site roadways and parking.

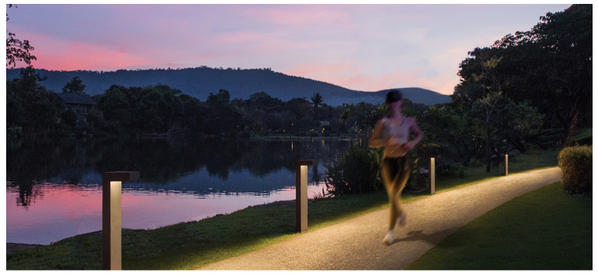
Light Trespass Illuminance at the Project Site complies with the following standards:

- At South Property Line adjacent to Baylands natural habitat Ev is less than 0.09 footcandles (fc).
- At north, east and west Project property lines adjacent to commercial properties E_v is less than 0.74 fc.

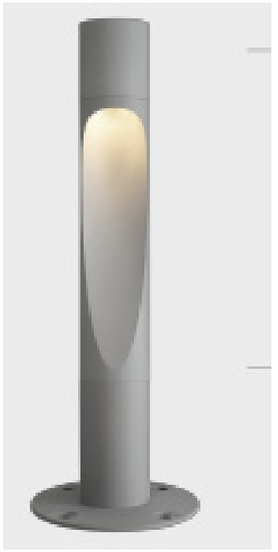
All exterior light fixtures are fully shielded, and direct light down to the ground plane.

All exterior light fixtures comply with CALGreen Backlight Uplight and Glare (BUG) rating.

All exterior light fixtures are 3000K to conform to Dark Sky recommended practice.



Type SA Pole with Accent Light



Type SB Bollard

Type SA-1 & SA-2 Pole

Type SK Wall Mounted Downlight

Type SK-1 Wall Mounted Downlight

Exterior Facade

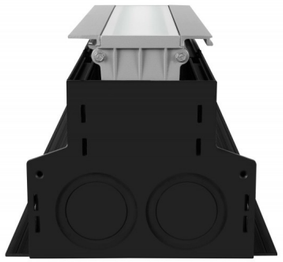
The Project building facade serves as the main entrance for the Project and a retail display for the auto showroom. Visitors and staff will utilize the exterior space in the evening to meet and review products.

The exterior facade is illuminated to promote transparency into the auto showroom space to feature the products and the people working and visiting.

The illumination intensity is designed in accordance with the Mercedes Benz of North America retail display guidelines, the recommended practice standards of the Illuminating Engineering Society of North America and complies with California Green Building Code and California Electric Code standards for minimum illuminance at building exit pathways and doors.

All exterior and interior light fixtures are fully shielded to limit glare and reflected glare.

Type SD Surface Mounted Downlight



Type SG Recessed Up Light

Exterior Parking Roof Deck

The Project exterior parking roof deck is illuminated by low level perimeter wall lights mounted to the exterior parapet at approximately 36 inches above grade and aimed down and in toward the parking deck surface .

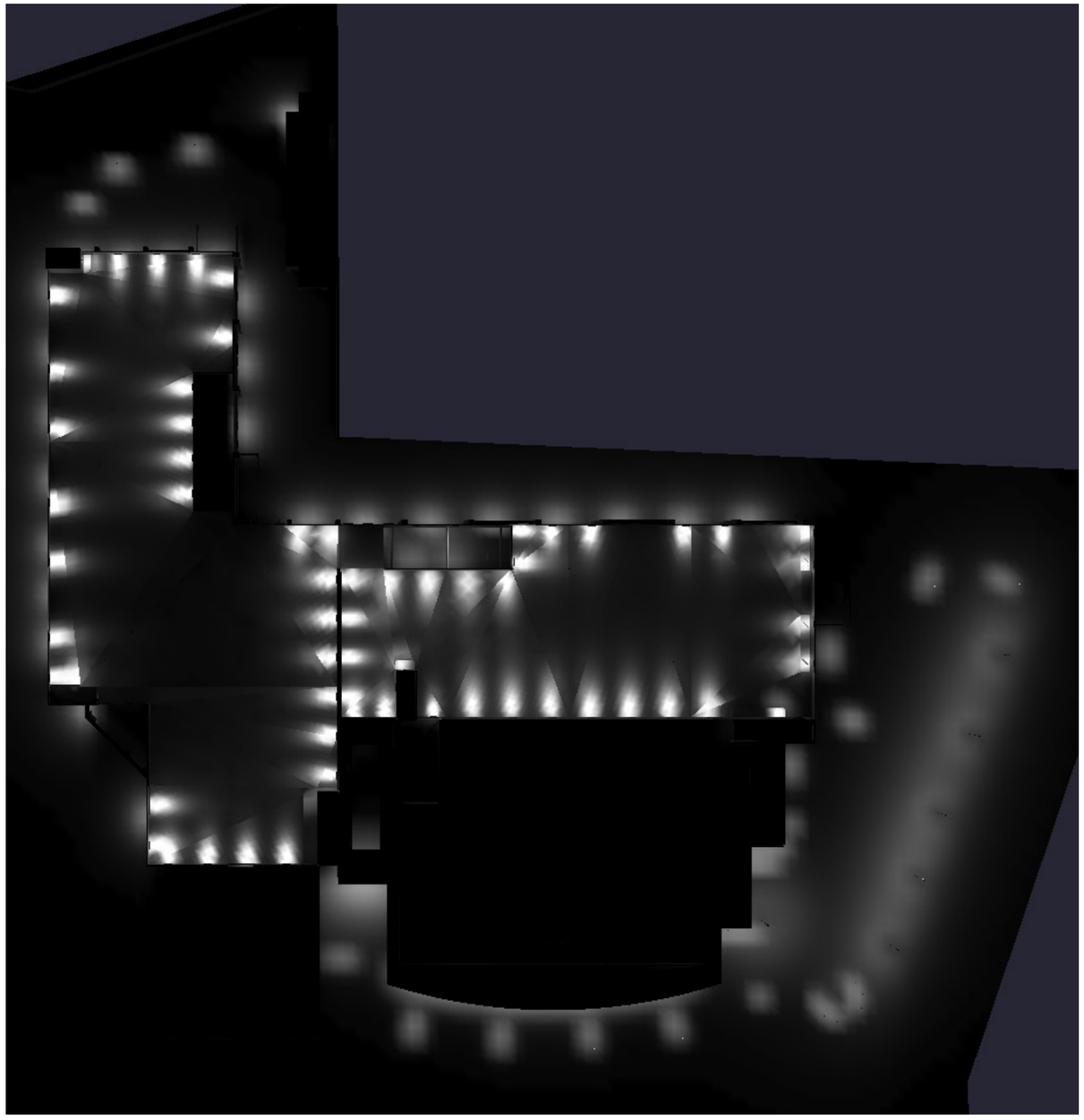
The illumination intensity is designed in accordance with the recommended practice standards of the Illuminating Engineering Society of North America and complies with California Green Building Code and California Electric Code standards for minimum standards of illumination for exterior parking and egress lighting.

All exterior light fixtures are fully shielded to limit glare and reflected glare.

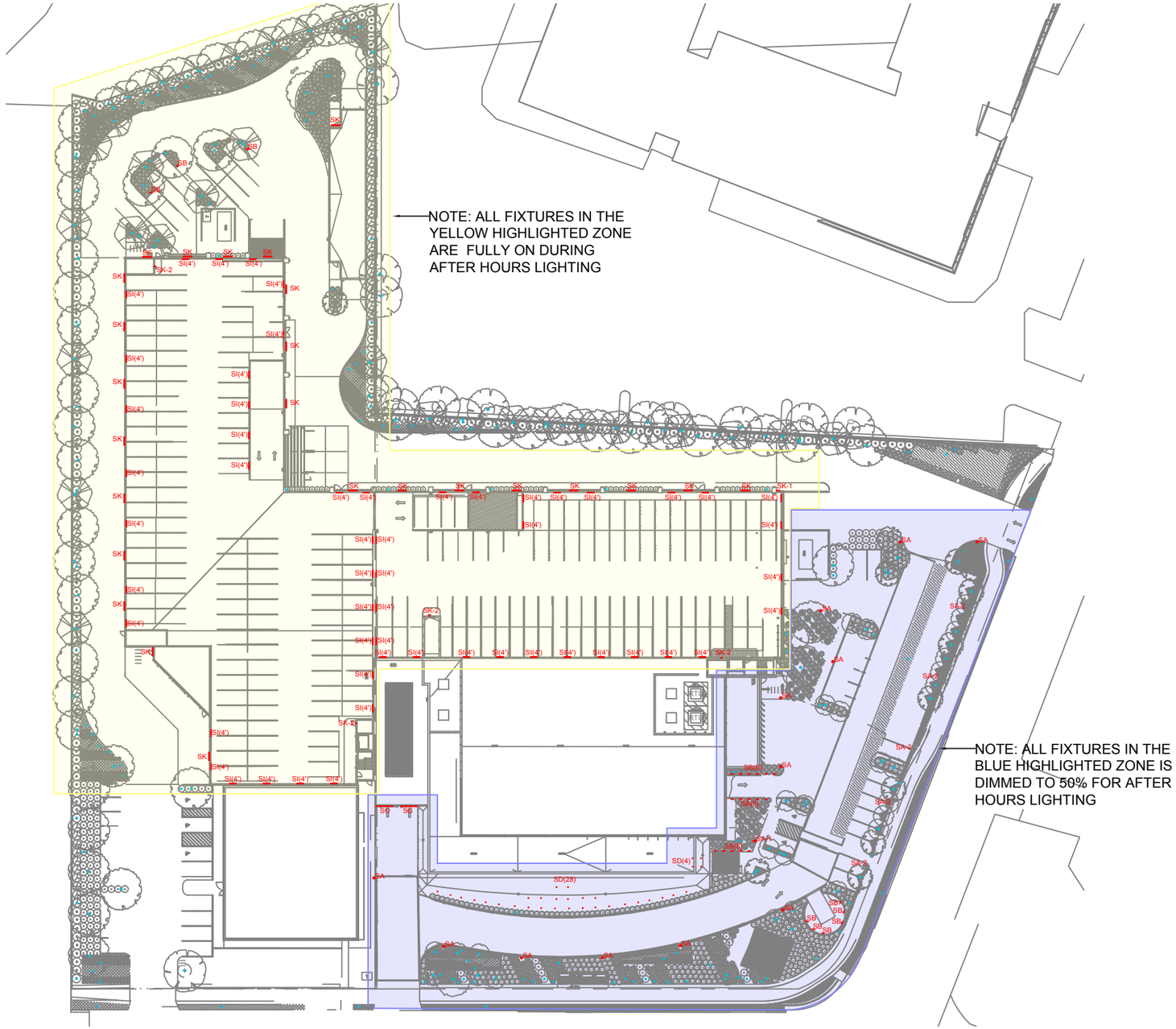
Parking deck illumination is reduced at the south roof deck adjacent to the Baylands to limit light trespass illuminance to 0.09fc at the south and east Project property line at the glass parapet wall.

Type SI: Parapet Wall Mounted Linear LED Downlight with Louvers

Type SK-2: Wall Mounted Downlight



Lighting Site Plan



SITE LIGHTING PLAN
SCALE : 1/64" = 1'-0"

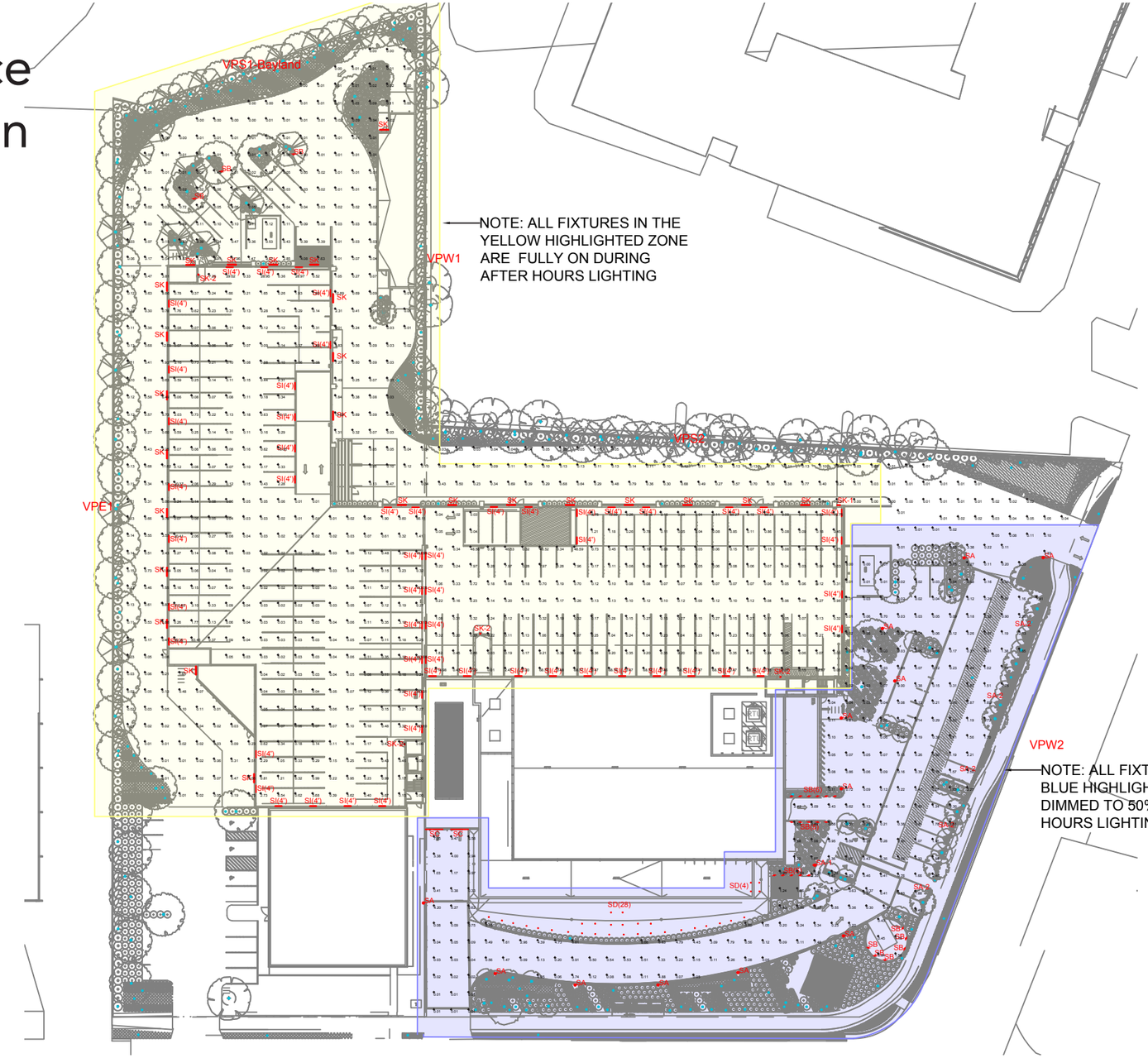
PLANNING REVIEW 05/26/2019

FIXTURE SCHEDULE

TYPE	DESCRIPTION	LUMINAIRE OUTPUT	MOUNTING HEIGHT
SA	SYMMETRIC POLE WITH ADJUSTABLE FLOODLIGHT	7444 LM	15 FT
SA-1	SYMMETRIC POLE	5748 LM	15 FT
SA-2	ASYMMETRIC POLE	5697 LM	15 FT
SB	BOLLARD	538 LM	3'-8" FT
SC	WALL MOUNTED DOWNLIGHT	875 LM/FT	14' A.F.F.
SD	SURFACE MOUNTED DOWNLIGHT	3900 LM	14'0" A.F.F.
SK	WALL MOUNTED DOWNLIGHT	1399 LM	8'-6" FT A.F.F.
SK-1	WALL MOUNTED DOWNLIGHT	587 LM	8'-6" FT A.F.F.
SK-2	WALL MOUNTED DOWNLIGHT	2021 LM	10' FT A.F.F.
SI	WALL MOUNTED LINEAR DOWNLIGHT WITH LOUVERS	910 LM/FT	3'-6" A.F.F.

Exterior lighting fixtures are specified on pages 12 to 16.

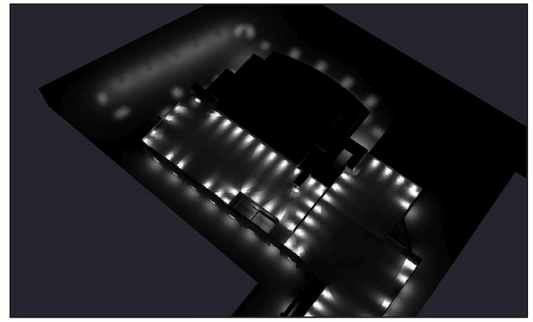
Exterior Illuminance Calculation



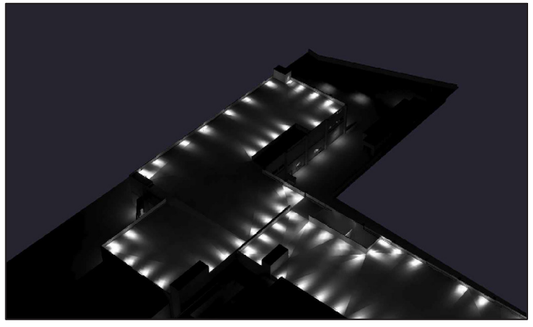
SITE PHOTOMETRIC CALCULATION
SCALE : 1/64" = 1'-0"

PLANNING REVIEW 05/26/2019

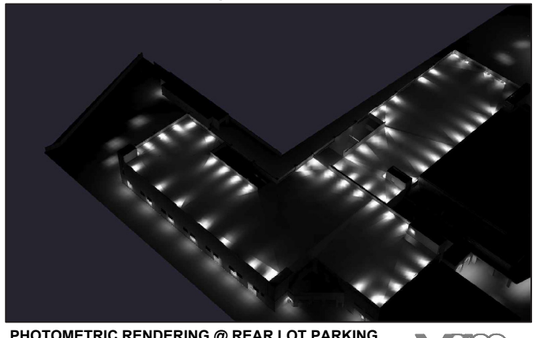
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Audi Garage Roof Top	Illuminance	Fc	6.08	312.82	0.00	N.A.	N.A.
Audi Parking Lot	Illuminance	Fc	0.00	0.00	0.00	N.A.	N.A.
Display Pad	Illuminance	Fc	2.09	6.84	0.43	4.86	15.91
Front Line Display - E Bayshore	Illuminance	Fc	0.71	9.00	0.00	N.A.	N.A.
M-B Garage Roof Top	Illuminance	Fc	5.42	114.98	0.01	542.00	11498
Rear Lot Parking Area	Illuminance	Fc	0.65	13.52	0.00	N.A.	N.A.
Store Front Drive	Illuminance	Fc	1.47	9.47	0.01	147.00	947.00
VPE1	Illuminance	Fc	0.17	0.38	0.02	8.50	19.00
VPN1	Illuminance	Fc	0.08	0.15	0.02	4.00	7.50
VPS1-BAYLAND	Illuminance	Fc	0.05	0.09	0.02	3.00	4.50
VPS2	Illuminance	Fc	0.13	0.25	0.02	6.50	12.50
VPW1	Illuminance	Fc	0.04	0.13	0.00	N.A.	N.A.
VPW2	Illuminance	Fc	0.10	0.19	0.01	10.00	19.00



PHOTOMETRIC RENDERING @ EMBARCADERO RD & E BAYSHORE RD



PHOTOMETRIC RENDERING @ REAR LOT PARKING-CARWASH



PHOTOMETRIC RENDERING @ REAR LOT PARKING

www.ysmdesign.com

Exterior Photometric Calculation

VPE1 (EAST PROPERTY LINE)

0.08	0.08	0.09	0.10	0.11	0.12	0.12	0.15	0.19	0.22	0.23	0.24	0.24	0.23	0.23	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.22	0.22	0.21	0.20	0.20	0.18	0.15	0.14	0.13	0.12	0.11	0.09	0.08	0.07	0.06	0.06	0.05
0.07	0.07	0.09	0.10	0.11	0.13	0.14	0.16	0.17	0.17	0.18	0.20	0.22	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.27	0.27	0.26	0.25	0.24	0.23	0.22	0.20	0.15	0.14	0.14	0.12	0.11	0.09	0.08	0.07	0.06	0.05	0.05
0.03	0.03	0.04	0.05	0.06	0.07	0.09	0.10	0.11	0.11	0.13	0.16	0.18	0.19	0.19	0.20	0.19	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.15	0.14	0.14	0.13	0.12	0.10	0.08	0.07	0.06	0.05	0.04	0.04
0.03	0.03	0.04	0.05	0.06	0.08	0.10	0.12	0.13	0.14	0.19	0.24	0.27	0.29	0.29	0.29	0.28	0.26	0.25	0.25	0.25	0.24	0.25	0.25	0.24	0.24	0.24	0.26	0.23	0.23	0.21	0.19	0.16	0.14	0.11	0.09	0.08	0.06	0.05	0.04	0.04
0.02	0.03	0.04	0.05	0.06	0.08	0.10	0.13	0.16	0.17	0.25	0.32	0.36	0.37	0.38	0.37	0.36	0.33	0.32	0.32	0.32	0.30	0.31	0.31	0.31	0.30	0.31	0.31	0.29	0.29	0.27	0.23	0.17	0.14	0.11	0.09	0.07	0.06	0.04	0.04	0.03
0.02	0.03	0.03	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.24	0.31	0.34	0.36	0.37	0.37	0.35	0.32	0.30	0.31	0.31	0.29	0.30	0.31	0.29	0.29	0.31	0.30	0.28	0.28	0.26	0.20	0.15	0.11	0.09	0.07	0.05	0.04	0.04	0.03	0.03

VPS1-BAYLAND (SOUTH PROPERTY LINE @ BAYLAND)

0.06	0.06	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.06	0.06	0.06
0.05	0.06	0.08	0.08	0.09	0.08	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.06	0.05
0.04	0.05	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04
0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.05	0.04	0.04	0.03
0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.03	0.03
0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02

VPW1 (WEST PROPERTY LINE @ CARWASH)

0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.12	0.12	0.11	0.12	0.12	0.11	0.11
0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.11	0.11	0.11	0.12	0.12	0.13	0.13	0.13	0.13
0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.06	0.07	0.06	0.07
0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.04	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07
0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.06	0.06	0.07	0.07	0.07	0.07	0.07
0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01

SITE PHOTOMETRIC CALCULATION-VERTICAL PLANES @ PROPERTY LINE
SCALE : 1/32" = 1'-0"

PLANNING REVIEW 05/26/2019

Exterior Photometric Calculation

VPS2(SOUTH PROPERTY LINE)

0.24	0.23	0.23	0.23	0.23	0.22	0.22	0.24	0.24	0.24	0.25	0.24	0.23	0.23	0.21	0.21	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.15	0.14	0.11	0.08	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.24	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.20	0.18	0.16	0.13	0.12	0.09	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
0.11	0.11	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.11	0.09	0.07	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.03	
0.13	0.13	0.13	0.14	0.14	0.16	0.17	0.18	0.19	0.19	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.20	0.19	0.19	0.18	0.16	0.12	0.08	0.06	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03
0.13	0.13	0.13	0.14	0.16	0.17	0.19	0.20	0.22	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.23	0.24	0.23	0.23	0.23	0.20	0.15	0.09	0.06	0.04	0.03	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02
0.10	0.10	0.10	0.12	0.13	0.15	0.17	0.19	0.20	0.20	0.21	0.22	0.21	0.20	0.20	0.19	0.20	0.21	0.22	0.22	0.22	0.22	0.19	0.14	0.09	0.06	0.04	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.04	0.04	0.03

VPW2(@ MIDDLE OF E BAYSHORE ROAD)

0.03	0.04	0.04	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.13	0.13	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	
0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.14	0.13	0.13	0.12	0.11	0.09	0.08	0.07	0.06	0.05	
0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	
0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.10	0.11	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.17	0.17	0.17	0.17	0.18	0.17	0.16	0.16	0.15	0.14	0.12	0.10	0.08	0.06	0.05	0.05	0.04	
0.01	0.01	0.01	0.02	0.03	0.04	0.05	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.14	0.13	0.11	0.10	0.08	0.06	0.05	0.04	0.04	0.03	
0.01	0.01	0.01	0.02	0.02	0.03	0.05	0.07	0.09	0.11	0.13	0.14	0.14	0.15	0.16	0.16	0.16	0.16	0.17	0.18	0.18	0.19	0.19	0.19	0.19	0.18	0.18	0.16	0.14	0.12	0.10	0.08	0.06	0.05	0.04	0.03	0.03	0.02	

VPN1 (@ MIDDLE OF EMBARCADERO RD)

0.06	0.07	0.07	0.08	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.13	0.13	0.13	0.14	0.15	0.15	0.15	0.14	0.15	0.14	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.08							
0.05	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.11	0.11	0.11	0.11	0.12	0.13	0.13	0.12	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.09	0.08	0.07							
0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.11	0.12	0.12	0.12	0.13	0.14	0.14	0.14	0.14	0.13	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.07	0.06							
0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.08	0.08	0.07	0.07	0.06	0.05	0.04							
0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.03							
0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.02								

SITE PHOTOMETRIC CALCULATION-VERTICAL PLANES @ PROPERTY LINE
SCALE : 1/32" = 1'-0"

PLANNING REVIEW 05/26/2019

Exterior Light Fixtures

Type SA

Light Building Element - symmetric distribution, adjustable floodlight **BEGA**

Type:
BEGA Product:
Project:
Modified:

Application
Light Building Elements are luminous design features for public areas. These luminaires are ideally suited for delineating and structuring interior and exterior spaces such as landscape areas, plazas, building entrances, and atria. Provided with one integral floodlight to accentuate facades, trees, and other design elements in public spaces. The floodlight is adjustable from 0° to 30° and can be rotated 360°, flat beam and wide beam options available.

Materials
Luminaire housing and post constructed of die-cast and extruded marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
UV stabilized acrylic diffuser
Clear safety glass
Reflector made of pure anodized aluminum
Silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP65
Weight: 136 lbs.

EPA (Effective projection area): 11.84 sq. ft.

Electrical

Operating voltage	120-277V AC (surge protection)
Minimum start temperature	-30° C
Maximum ambient temperature	55° C
LED module wattage	47.7 W (luminaire) 19.3 W (floodlight)
System wattage	83.0 W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	6343 lumens (4000K, luminaire) 1101 lumens (4000K, floodlight)
LED service life (L70)	60,000 hours

LED color temperature

☐ 4000K - Product number + **K4**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3**
☐ 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:

Light Building Element · symmetric distribution, adjustable floodlight

	LED	β	A	B	C	D
88063	47.7 W		8⅝	27½	197	39⅜
	19.3 W	14°				

Available Accessories

☐ **10047** Wide beam spread lens (floodlight)
☐ **10016** Flat beam spread lens (floodlight)

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Updated 01/15/19

Type SA-1

Light Building Element - symmetric **BEGA**

Type:
BEGA Product:
Project:
Modified:

Application
Light Building Elements are luminous design features for public areas. These luminaires are ideally suited for delineating and structuring interior and exterior spaces such as landscape areas, plazas, building entrances, and atria.

Materials
Luminaire housing and post constructed of die-cast and extruded marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
UV stabilized acrylic diffuser
Reflector made of pure anodized aluminum
Silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP65
Weight: 77.6 lbs.

EPA (Effective projection area): 11.84 sq. ft.

Electrical

Operating voltage	120-277V AC (surge protection)
Minimum start temperature	-30° C
Maximum ambient temperature	55° C
LED module wattage	47.7 W
System wattage	59.0 W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	5,748 lumens (4000K)
LED service life (L70)	60,000 hours

LED color temperature

4000K - Product number + **K4**
3500K - Product number + **K35**
3000K - Product number + **K3**
2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors Black (BLK) White (WHT) RAL:
Bronze (BRZ) Silver (SLV) CUS:

Light Building Element · symmetric

	LED	A	B	C	D
88065	47.7 W	8⅝	27½	197	39⅜

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Updated 01/15/19

Exterior Light Fixtures

Type SA-2

Light Building Element - asymmetric wide beam

Application
Light Building Elements are luminous design features for public areas. These luminaires are ideally suited for delineating and structuring interior and exterior spaces such as landscape areas, plazas, building entrances, and atria.

Materials
Luminaire housing and post constructed of die-cast and extruded marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
UV stabilized acrylic diffuser
Reflector made of pure anodized aluminum
Silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP 65
Weight: 77.6 lbs.

EPA (Effective projection area): 11.84 sq. ft.

Electrical

Operating voltage	120-277 V AC (surge protection)
Minimum start temperature	-30° C
Maximum ambient temperature	50° C
LED module wattage	47.7 W
System wattage	59.0 W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	5,697 lumens (4000K)
LED service life (L70)	60,000 hours

LED color temperature

4000K - Product number + **K4**
3500K - Product number + **K35**
3000K - Product number + **K3**
2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors	Black (BLK)	White (WHT)	RAL:
	Bronze (BRZ)	Silver (SLV)	CUS:

Light Building Element · asymmetric wide beam

	LED	A	B	C	D
88 068	47.7 W	8 5/8	27 1/2	197	39 3/8

Type:
BEGA Product:
Project:
Modified:

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Updated 01/15/19

Type SB

BEGA

Specification sheet 1/2

Flindt Bollard

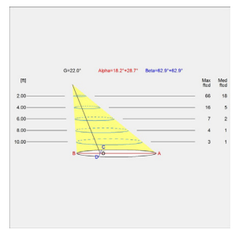
Project name:

Project type:

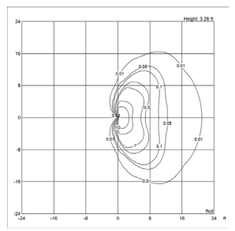
Notes:

Light distribution diagrams

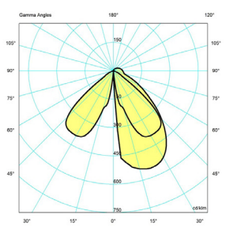
Cartesian



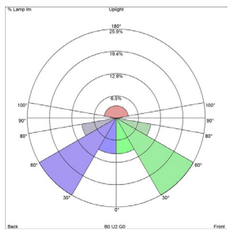
Isolux



Polar



Bug

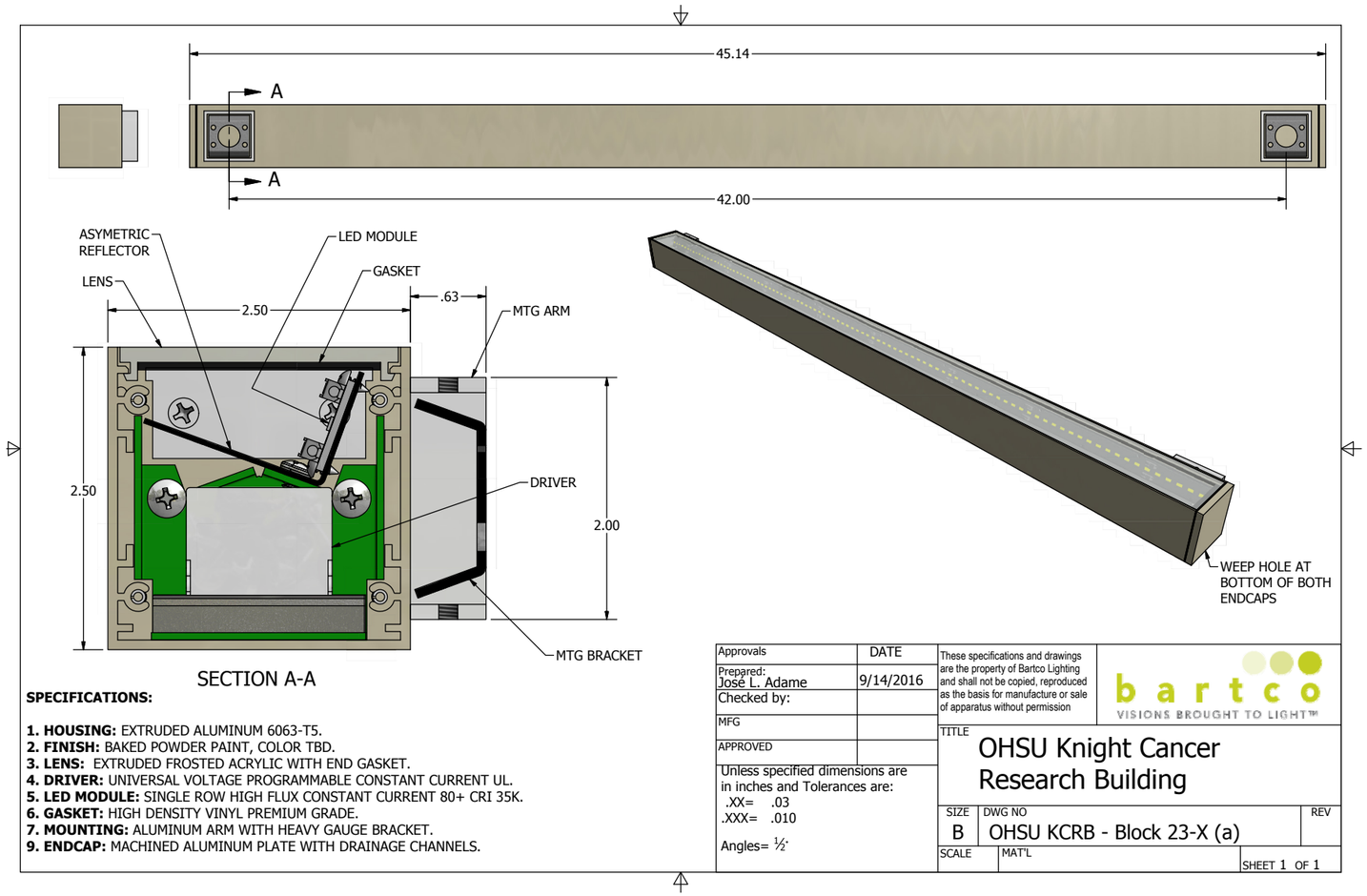


Variant options

Dimension	Light source	Voltage frequency	Color	Mounting	Lighting control
31.5 IN	14W LED/3000K	120-277V/60HZ	Corten color	-	Dim 0-10v
43.3 IN	LED 4000K		Nat paint alu	POST W/BASE PLATE	
				POST W/DIRECT BURIAL	

Exterior Light Fixtures

Type SC



SECTION A-A

SPECIFICATIONS:

1. HOUSING: EXTRUDED ALUMINUM 6063-T5.
2. FINISH: BAKED POWDER PAINT, COLOR TBD.
3. LENS: EXTRUDED FROSTED ACRYLIC WITH END GASKET.
4. DRIVER: UNIVERSAL VOLTAGE PROGRAMMABLE CONSTANT CURRENT UL.
5. LED MODULE: SINGLE ROW HIGH FLUX CONSTANT CURRENT 80+ CRI 35K.
6. GASKET: HIGH DENSITY VINYL PREMIUM GRADE.
7. MOUNTING: ALUMINUM ARM WITH HEAVY GAUGE BRACKET.
9. ENDCAP: MACHINED ALUMINUM PLATE WITH DRAINAGE CHANNELS.

Approvals	DATE
Prepared: José L. Adame	9/14/2016
Checked by:	
MFG	
APPROVED	

Unless specified dimensions are in inches and Tolerances are:
.XX= .03
.XXX= .010
Angles= ½°

bartco VISIONS BROUGHT TO LIGHT™

TITLE: OHSU Knight Cancer Research Building

SIZE	DWG NO	REV
B	OHSU KCRB - Block 23-X (a)	

SCALE | MAT'L | SHEET 1 OF 1

Exterior Light Fixtures

Type SI

tempo architectural

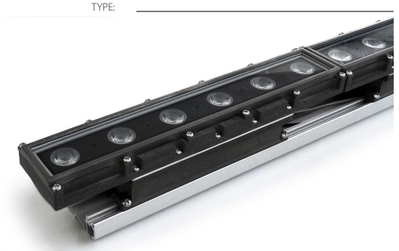
PROJECT: _____

TYPE: _____

C6RX Exterior

RIGID LED LINEAR LIGHTING, HIGH LUMEN

INTEGRAL POWER SYSTEM



APPLICATION

C6RX Exterior is designed to graze or wash building façades, highlight exterior signage or illuminate coves and soffits. Features an integral power supply & is IP66 rated. C6RX weathers harsh outdoor conditions with a low copper aluminum housing, glass lens, stainless steel fasteners and silicone gaskets throughout. Designed with modular CLiP® (Configurable Lighting Platform), C6RX provides options to suit multiple application requirements.

CONSTRUCTION

- Die cast low copper aluminum housing with tempered glass lens with silicone gaskets and stainless steel fasteners.
- Track, or section lengths, are available up to 6ft in 1ft increments and may be joined in the field for continuous runs. Threaded and sealed connectors join sections.
- Module spacing options of 0", 3", 6" or 12" between each 1 foot module.
- Surface mounting clips, 90° adjustable mounting clips or 6" and 12" arms secure sections.
- Fully compliant with NEC Article 400
- CSA wet location listed, IP66
- Marine Grade finishes Cyclic Salt Fog/UV Exposure tested in compliance with ASTM D5894 by 3rd party testing facility.
- Meets 1.5G and 3G ANSI C136.31 Vibration Standard for bridge applications.
  6" mounting arm (PAX-6) meets 3G standard.
  12" mounting arm (PAX-12) meets 1.5G standard.

POWER SYSTEM

- Universal (120V-277V) Integral Power Supply with Electronic Low Voltage (ELV) dimming to 5%
- Power Supply Total Harmonic Distortion <20%, Power Factor >0.9

OPTICS / LENS / DIFFUSER

- Factory installed Louver available with optic option BVL (5W and 9W only).
- 1 foot Glare Shield accessory (GS-C6RX) available for factory or field installation.

5 watt model:
- Frosted Glass Lens (120º x 120º) also available with 60° x 115° & Asymmetric optics
- Clear Glass Lens with 10° x 60°, 30° x 50° & 50° x 30° optics

9 watt model:
- Frosted Glass Lens (120º x 120º) also available with 60° x 115° & Asymmetric optics.

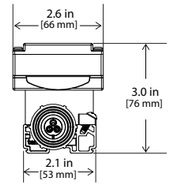
10 watt model:
- Clear Glass Lens with 10° x 10°, 10° x 60°, 30° x 50° or 50° x 30° optics.

PERFORMANCE

- Nominal light output of 460-910 lm/ft (5-10W/ft)
- -40ºC starting temperature

LIGHT CHARACTERISTICS

- Typical CRI of 80+ in 2000K to 4000K (5W & 9W); 2700K to 4000K (10W); plus Red, Green & Blue.
- 90+ CRI option available with 2700K, 3000K and 3500K.
- Tempo's UniBin™ process ensures consistent hue and color to within a maximum 2-step MacAdam ellipse per section.



Buy Tempo
Buy American

MADE IN USA
OF US AND IMPORTED COMPONENTS

86,000 HOURS
L85 LUMEN MAINTENANCE
LED Luminaires will reach 85% of initial lumen output at or beyond 86,000 hours at 25°C.

WARRANTY
Tempo provides a 5-year limited warranty.

PERFORMANCE SUMMARY All data nominal.

Watts/ft	5	9	10
Lumens/ft	460	800	910
Lumens/Watt	92	91	91
120V Maximum Run Length	200ft	110ft	100ft
277V Maximum Run Length	450ft	250ft	225ft

Type SK

LED wall luminaire - light output on one side

BEGA

Type:
BEGA Product:
Project:
Modified:

Application
The LED wall mounted luminaire has light output on one side. Arranged individually or in groups, this is a great design element for a host of lighting applications. For downlight applications only.

Materials
Luminaire housing constructed of die-cast and extruded marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
Matte safety glass
High temperature silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP 65
Weight: 26.2 lbs

Electrical

Operating voltage	120-277 V AC
Minimum start temperature	-30° C
LED module wattage	30.4 W
System wattage	36 W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	1399 lumens (3000K)
Lifetime at Ta = 15° C	>500,000 h (L70)
Lifetime at Ta = 45° C	229,000 h (L70)

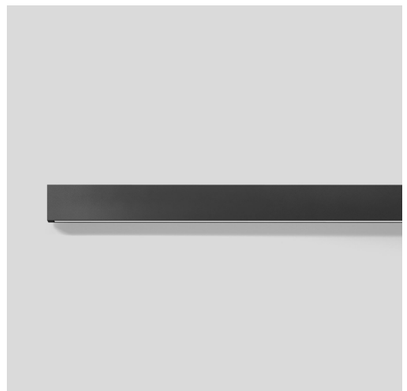
LED color temperature

☐ 4000K - Product number + **K4**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3**
☐ 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:



LED wall luminaire · light output on one side

	LED	A	B	C	Required wiring box
44419	30.4 W	59 7/8	4 1/8	5	**19537**

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Updated 09/10/18

Exterior Light Fixtures

Type SK-1

LED wall luminaire - light output on one side

BEGA

Type:
BEGA Product:
Project:
Modified:

Application
The LED wall mounted luminaire has light output on one side. Arranged individually or in groups, this is a great design element for a host of lighting applications. For downlight applications only.

Materials
Luminaire housing constructed of die-cast and extruded marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
Matte safety glass
High temperature silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP 65
Weight: 10.8 lbs

Electrical

Operating voltage	120-277V AC
Minimum start temperature	-30° C
LED module wattage	9.6 W
System wattage	13 W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	587 lumens (3000K)
Lifetime at Ta = 15° C	>500,000 h (L70)
Lifetime at Ta = 50° C	212,000 h (L70)

LED color temperature

☐ 4000K - Product number + **K4**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3**
☐ 2700K - Product number + **K27**

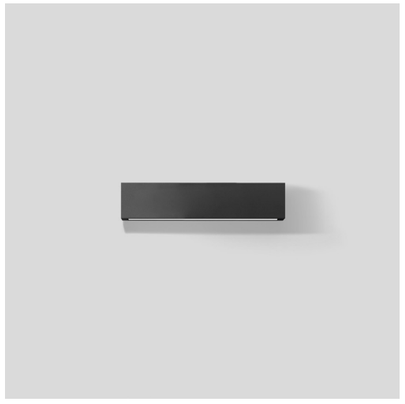
BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:

LED wall luminaire · light output on one side

	LED	A	B	C	Required wiring box
44 417	9.6 W	24 3/8	4 1/8	5	**19 537**



BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com

Updated 09/10/18

Type SK-2

LED wall luminaires - directed light

BEGA

Type:
BEGA Product:
Project:
Modified:

Application
LED wall luminaires with directed light distribution designed for general illumination of pathways and building entrances from various mounting heights.

Materials
Luminaire housing constructed of die-cast marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
Clear safety glass
Reflector made of pure anodized aluminum
Silicone applied robotically to casting, plasma treated for increased adhesion
High temperature silicone gasket
Mechanically captive stainless steel fasteners

NRTL listed to North American Standards, suitable for wet locations
Protection class IP 64
Weight: 3.5 lbs

Electrical

Operating voltage	120-277V AC
Minimum start temperature	-40° C
LED module wattage	14.0 W
System wattage	17.0 W
Controllability	0-10V, TRIAC, and ELV dimmable
Color rendering index	Ra > 80
Luminaire lumens	2,021 lumens (3000K)
Lifetime at Ta = 15° C	290,000 h (L70)
Lifetime at Ta = 30° C	220,000 h (L70)

LED color temperature

☐ 4000K - Product number + **K4**
☐ 3500K - Product number + **K35**
☐ 3000K - Product number + **K3**
☐ 2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:

LED wall luminaire · directed light

	LED	A	B	C
24 503	22.0 W	5 1/8	9 1/8	6

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Updated 02/06/18

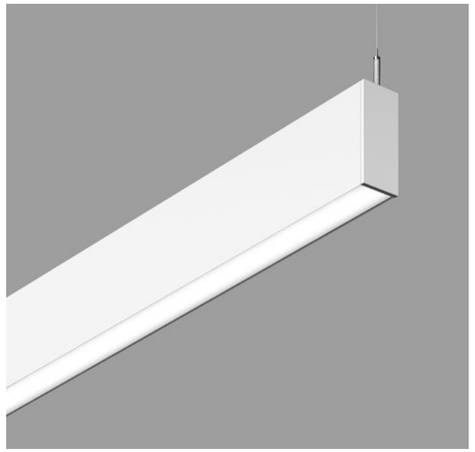
Interior Showroom

The Project Interior Showroom serves as the main interior lobby and as retail display for the auto showroom. Visitors and staff will utilize the interior space in the evening to meet and review products.

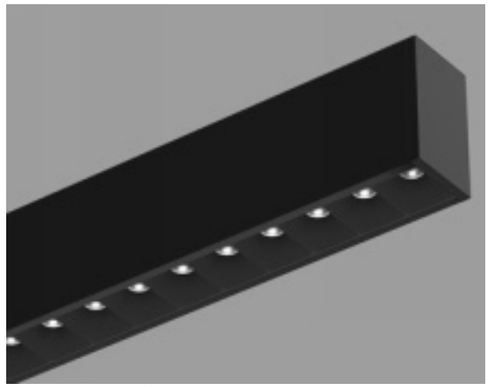
The interior showroom is brightly illuminated to promote transparency into the interior space to feature the products and the people working and visiting.

The illumination intensity is designed in accordance with the Mercedes Benz of North America retail display guidelines, the recommended practice standards of the Illuminating Engineering Society of North America and complies with California Green Building Code and California Electric Code standards for minimum illuminance at building exit pathways and doors.

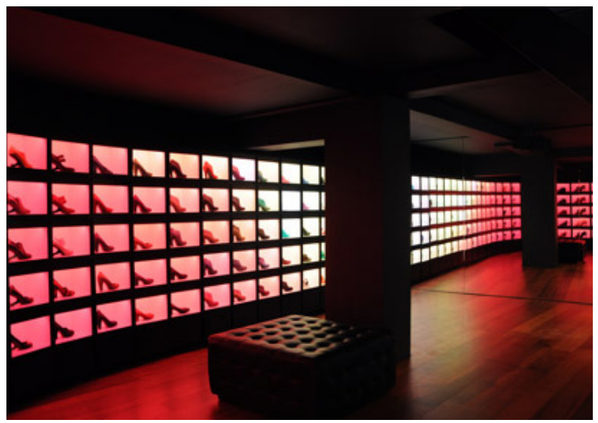
All interior light fixtures are fully shielded to limit glare and reflected glare.



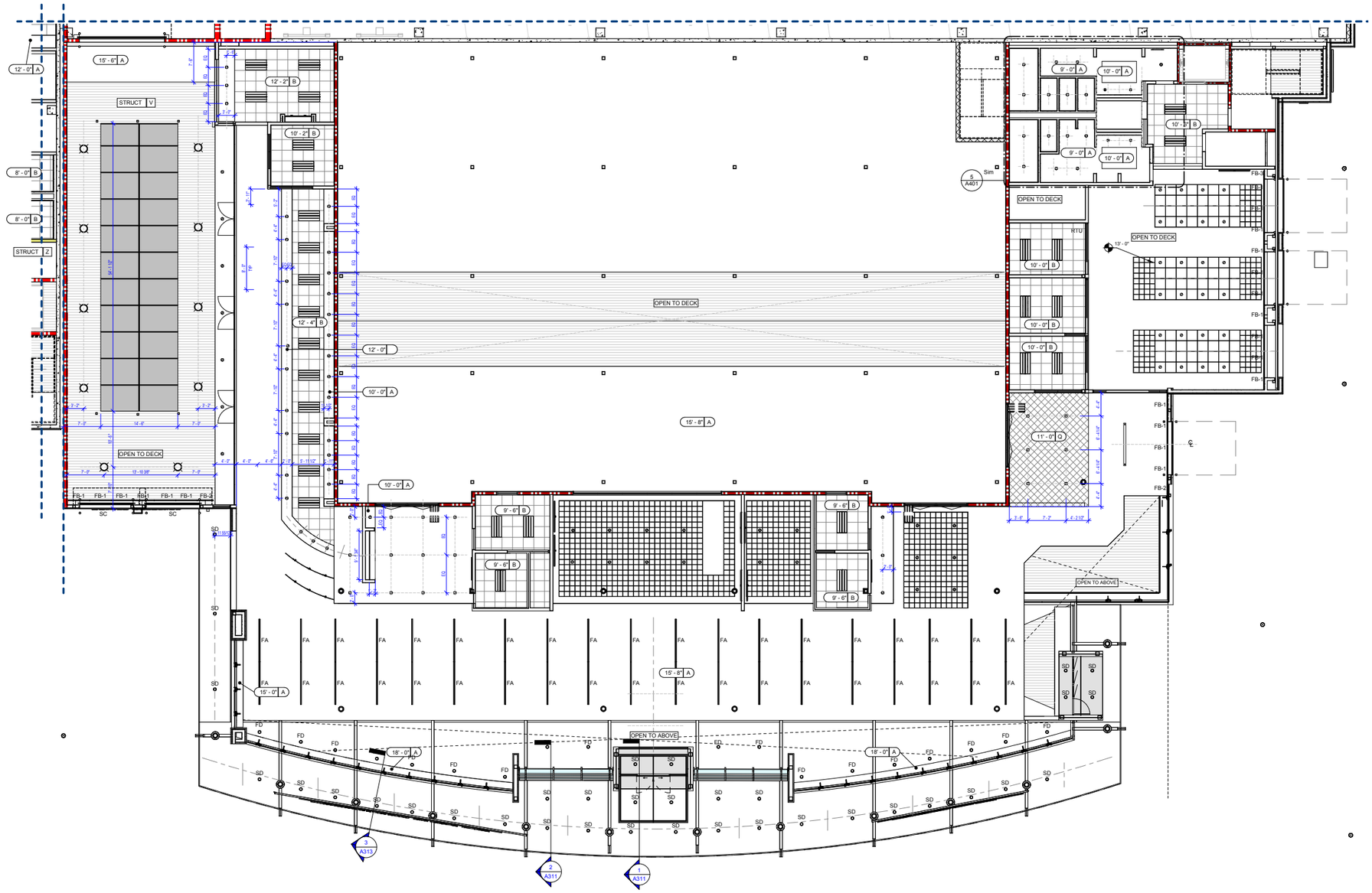
Type FA Suspended Pendants



Type FB Surface Mounted Downlight

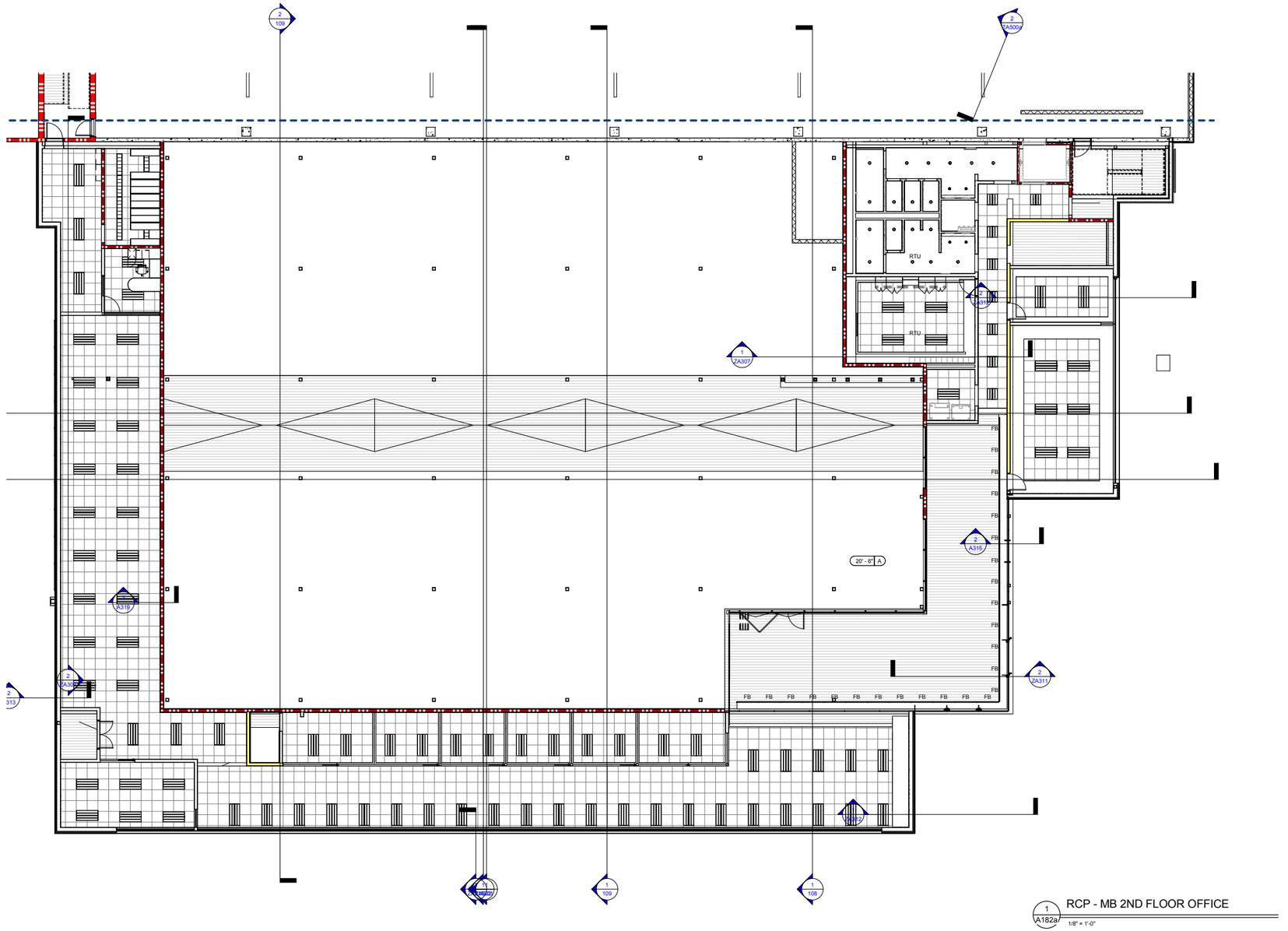


Lighting Plan



1 A181a RCP - M-B SHOWROOM 1ST FLOOR
1/8" = 1'-0"

Lighting Plan



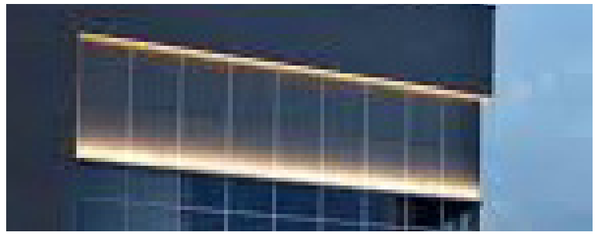
Interior Vehicle Inventory Stacker

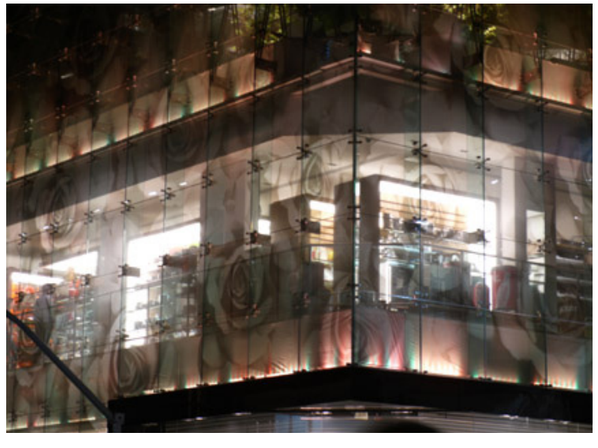
The Vehicle Inventory Stacker serves as a secondary retail display for the auto showroom. Visitors and staff will view the cars within the interior space of the Inventory Stacker in the evening.

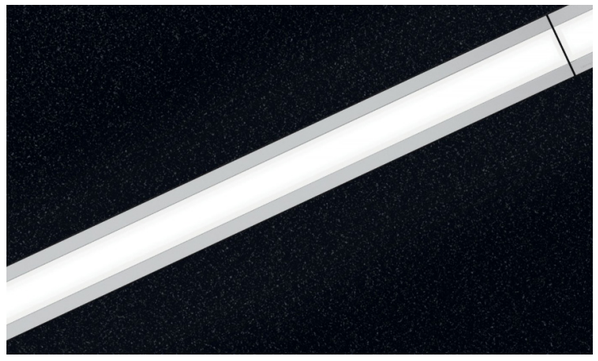
The interior of the Vehicle Inventory Stacker is brightly illuminated to promote transparency into the interior space from the exterior and to feature the products and the system moving the cars within the Stacker.

The illumination intensity is designed in accordance with the Mercedes Benz of North America retail display guidelines, the recommended practice standards of the Illuminating Engineering Society of North America and complies with California Green Building Code and California Electric Code standards for minimum illuminance at building exit pathways and doors.

All interior light fixtures are fully shielded to limit glare and reflected glare.

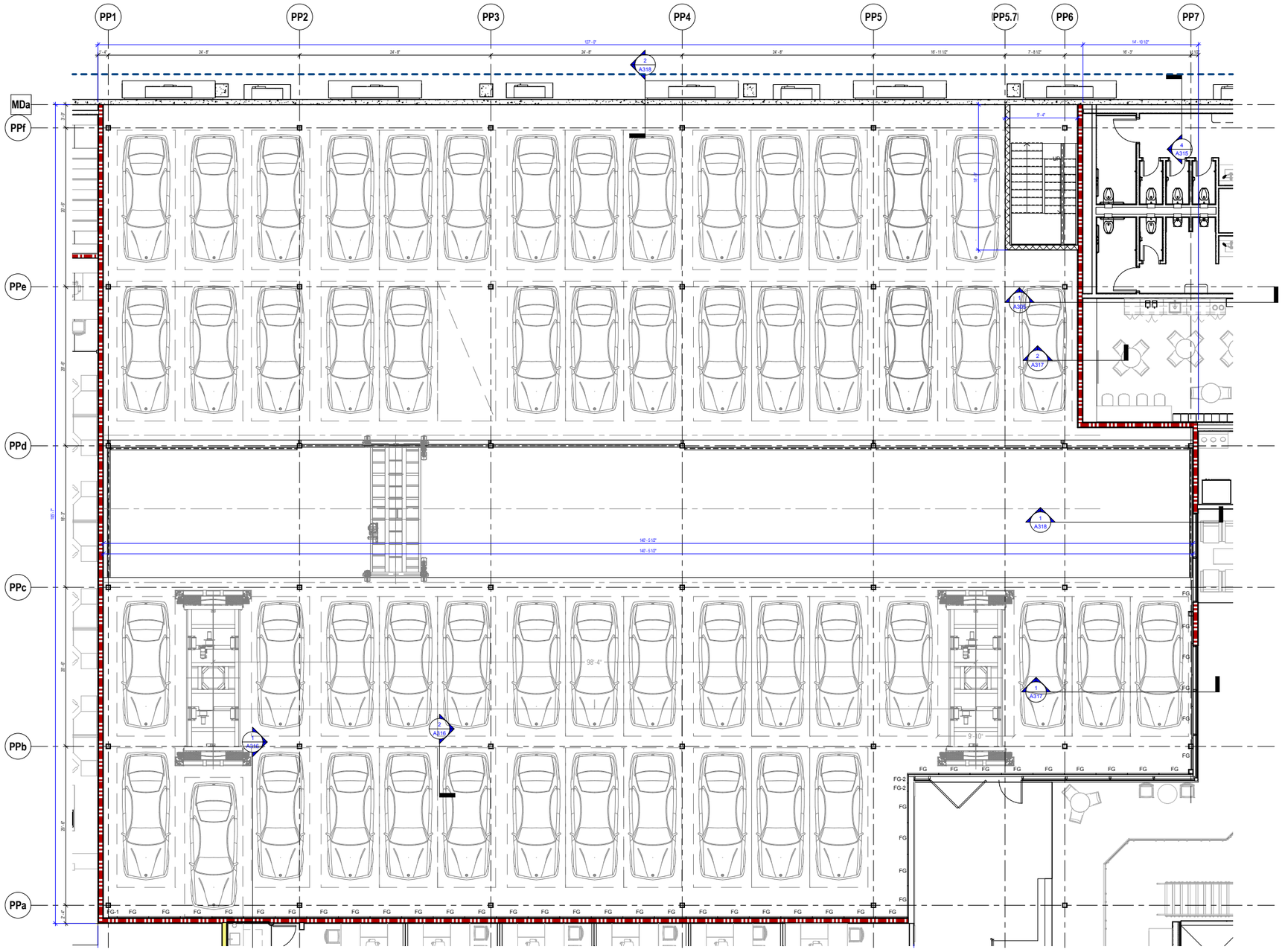






Type FG In-ground Uplight

Lighting Plan



SECTION AND DESCRIPTION
8. PARTITIONS SHOWN ARE FOR ARCHITECTURAL COORDINATION. WHERE PROVIDED, REFER TO METAL STUD ENGINEERING DRAWINGS FOR STUD SIZES.
9. TOP ELEVATION REPRESENTS TOP OF GYP FINISH. STUD FRAMING MAY CONTINUE TO DECK, OR BE BRAC TO DECK, AS REQUIRED BY ENGINEERED STUD DRAWINGS. GC SHALL FIELD COORDINATE WITH OTH BUILDING SYSTEMS.

METAL STUD ENGINEERING

ALL METAL STUD CONSTRUCTION SHALL BE DESIGNED AND SEALED BY AN ENGINEER LICENSED IN THE JURISDICTION WHERE THIS PROJECT IS LOCATED. IF ENGINEERED STUD DRAWINGS AND CALCULATIONS ARE NOT PROVIDED BY THE DESIGN TEAM AS PART OF THE CONTRACT DOCUMENTS, THE GC AND ITS SUBCONTRACTOR SHALL PROVIDE STUD ENGINEERING DRAWINGS AND CALCULATIONS, SEALED BY AN ENGINEER, SUBMITTED TO THE DESIGN TEAM FOR REVIEW, AND SUBMITTED TO THE LOCAL AUTHORITY HAVING JURISDICTION AS REQUIRED.

SEE STRUCTURAL DRAWINGS, STUD DRAWINGS, AND SPECIFICATIONS FOR DESIGN CRITERIA.

1. THESE ITEMS, INCLUDING MEMBER SIZES, SPACING AND CONNECTIONS, SHALL BE ENGINEERED:
A) ALL EXTERIOR FRAMING.
B) INTERIOR AND EXTERIOR CONNECTIONS WHERE STUDS ARE HUNG FROM THE DECK OR STRUCTURE ABOVE.
C) INTERIOR FRAMING USED AS SUPPORT FOR ACCORDIAN PARTITIONS
D) INTERIOR PARTITIONS TO DECK 12FT IN HEIGHT OR TALLER

2. THESE ITEMS ARE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SUBCONTRACTOR AND DO NOT REQUIRE SEALED ENGINEERING (SUBJECT TO LOCAL AUTHORITY REQUIREMENTS):
A) INTERIOR PARTITIONS LESS THAN 12 FT IN HEIGH
B) INTERIOR PARTITION OVERHEAD BRACING.
C) CONNECTIONS TO STRUCTURE ABOVE AND TO FLOOR, OF FLOOR MOUNTED INTERIOR PARTITIONS.

3. INTERIOR PARTITIONS TO RECEIVE TILE FINISH SHALL BE ENGINEERED FOR DEFLECTION L/360 PER ANSI 108.11 AS RECOMMENDED BY THE TCNA. STUD SPACING AT INTERIOR TILED WALLS SHALL BE 16" O.C

4. OVERHEAD CONNECTIONS OF HANGING STUD FRAMING SHALL NOT USE POWDER DRIVEN FASTENERS UNLESS APPROVED BY THE STUD ENGINEER OR PROJECT ENGINEER OF RECORD.

5. DEFLECTION - REFER TO STRUCTURAL AND/OR STUD ENGINEERING DRAWINGS. IF NOT SHOWN, LIMI DEFLECTION TO L/600 WHERE BACKING MASONRY OR STUCCO, AND L/360 WHEN BACKING EIFS OR METAL PANEL SIDING.

6. UNLESS OTHERWISE INDICATED BY ENGINEERING DESIGN, STUD SPACING MAY BE 24" O.C.

7. IN JURISDICTIONS REQUIRING NOA OR OTHER APPROVALS FOR SYSTEMS INCLUDING, BUT NOT LIMITED TO, EIFS, STUCCO, METAL PANELS, AND MASONRY VENEERS, THE NOA DESIGN WILL GOVERN. PLEASE REFER TO NOA NUMBERS SHOWN ELSEWHERE IN THESE DRAWINGS.

FIRE EQUIPMENT LEGEND

ALL FIRE EXTINGUISHERS ARE TO MEET OR EXCEED NFPA 10 CODE STANDARDS.

- FE — SURFACE MOUNTED FIRE EXTINGUISHE
- FEC — RECESSED OR SEMI-RECESSED FIRE EXTINGUISHER CABINET RECESSED IN STUD WALL 8" OR DEEPER
- FACP — FIRE ALARM CONTROL PANEL
- FAAP — FIRE ALARM ANNUNCIATOR PANEL

PARTITION LEGEND

- 1-HOUR FIRE BARRIE
- 2-HOUR FIRE BARRIE
- 3-HOUR FIRE BARRIE
- EXISTING PARTITION
- PROPOSED PARTITIO

GRIDLINE TYPE LEGEND

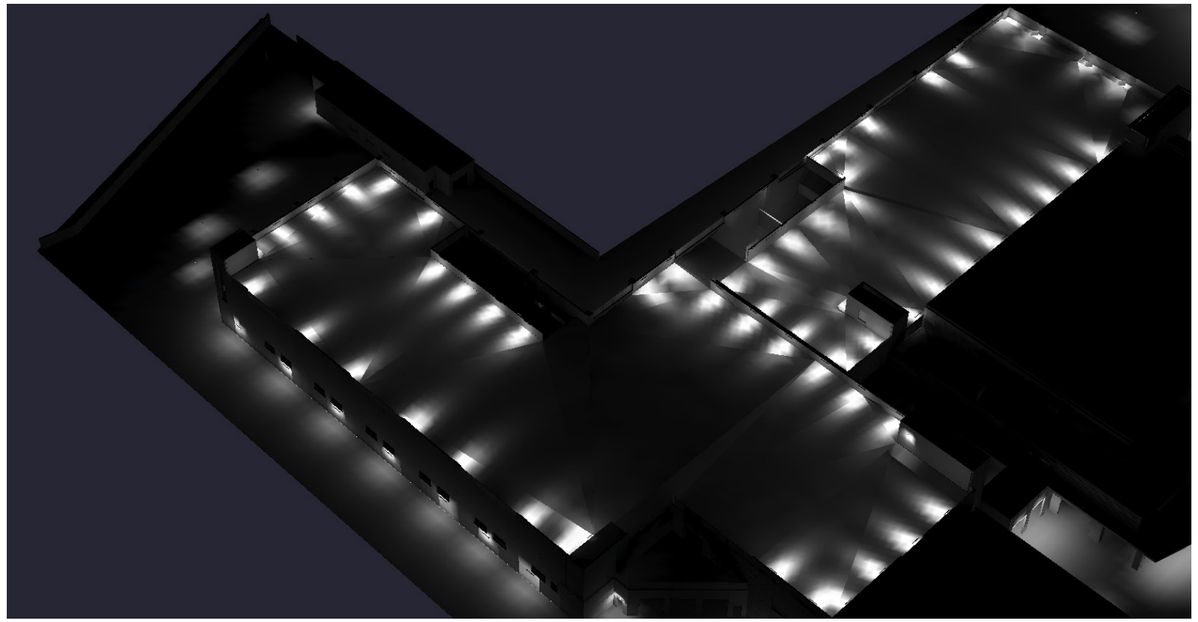
- NEW GRIDLINE
- EXISTING GRIDLINE
- F.O. MASONRY / CONCRETE
- MB MD — MERCEDES WORK SCOPE
- AU AD — AUDI WORK SCOPE
- CP — AUTOMATED PARKING SCOPE

PARTITION SYMBOL LEGEND

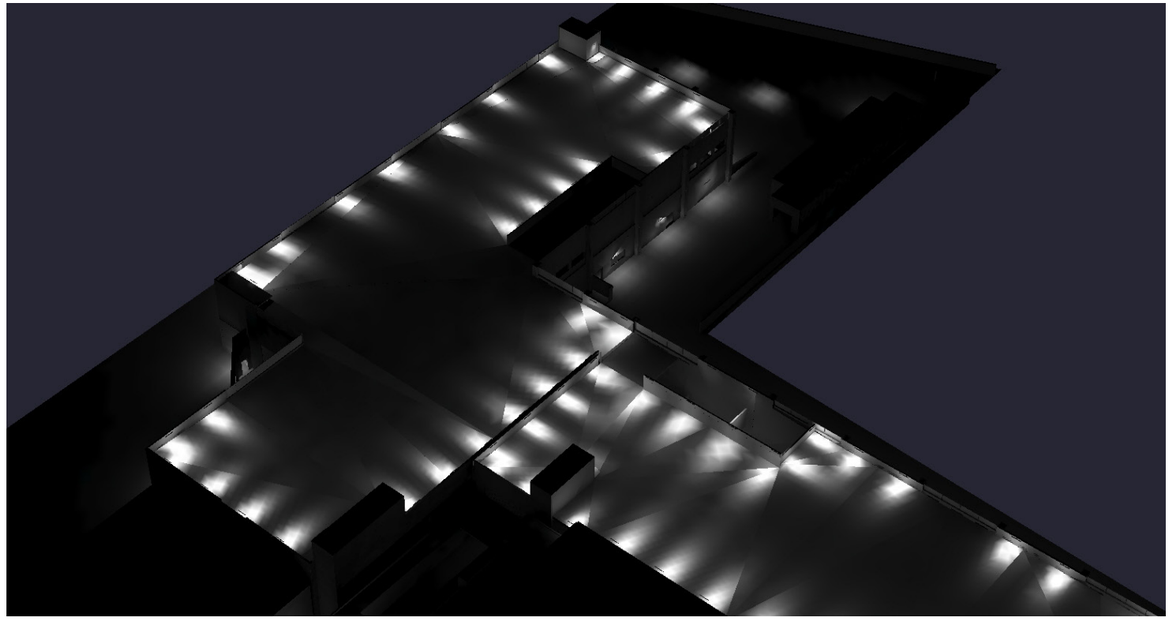
- W034 10'-0" — W034 = PARTITION TYPE 10'-0" = ELEVATION TO TOP OF GYP FINISH
- SOUND BATT INSULATION WHERE INDICATED

FRANCIS KRAHE & ASSOCIATES

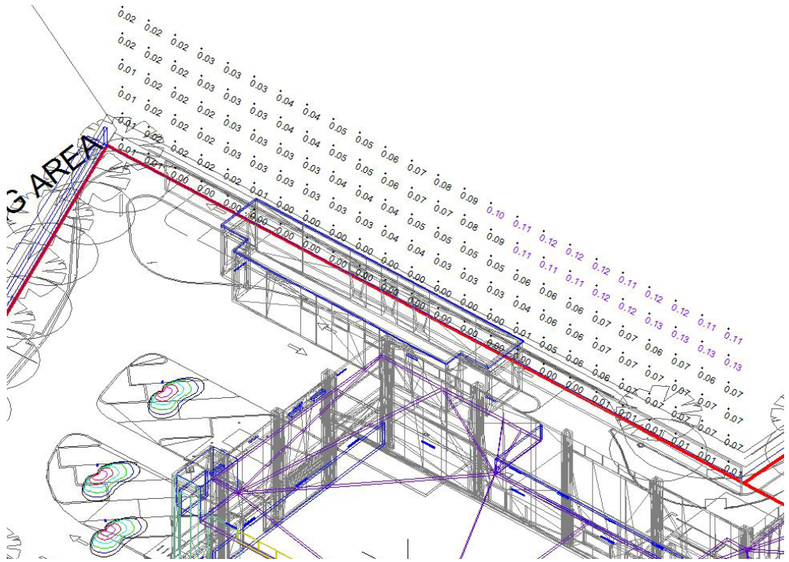
Exterior Light Trespass Illuminance Render View



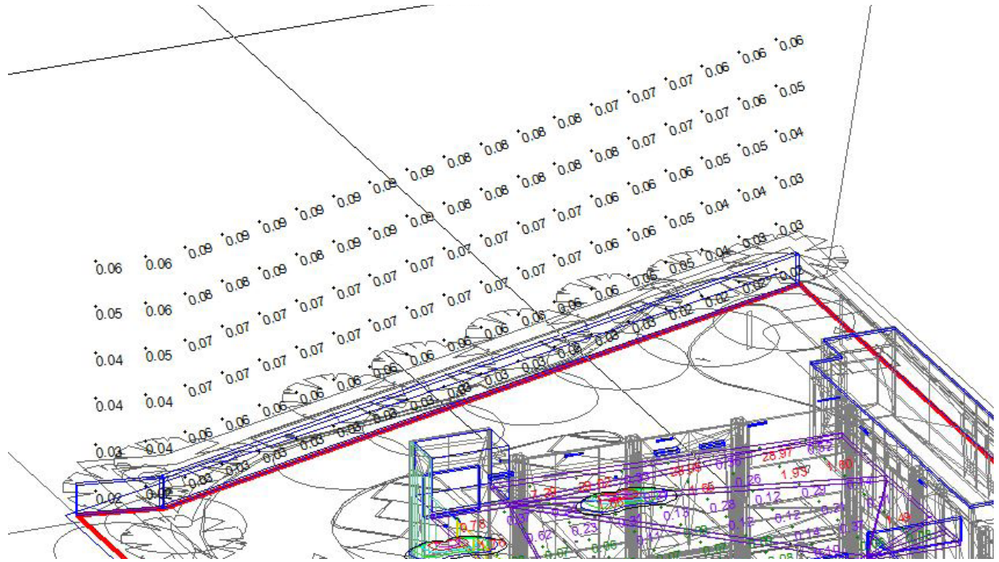
Exterior Photometric Rendering at West of Property-Behind Carwash at Night During Business Hours



Exterior Photometric Rendering at South of Property-Bayland Side at Night During Business Hours

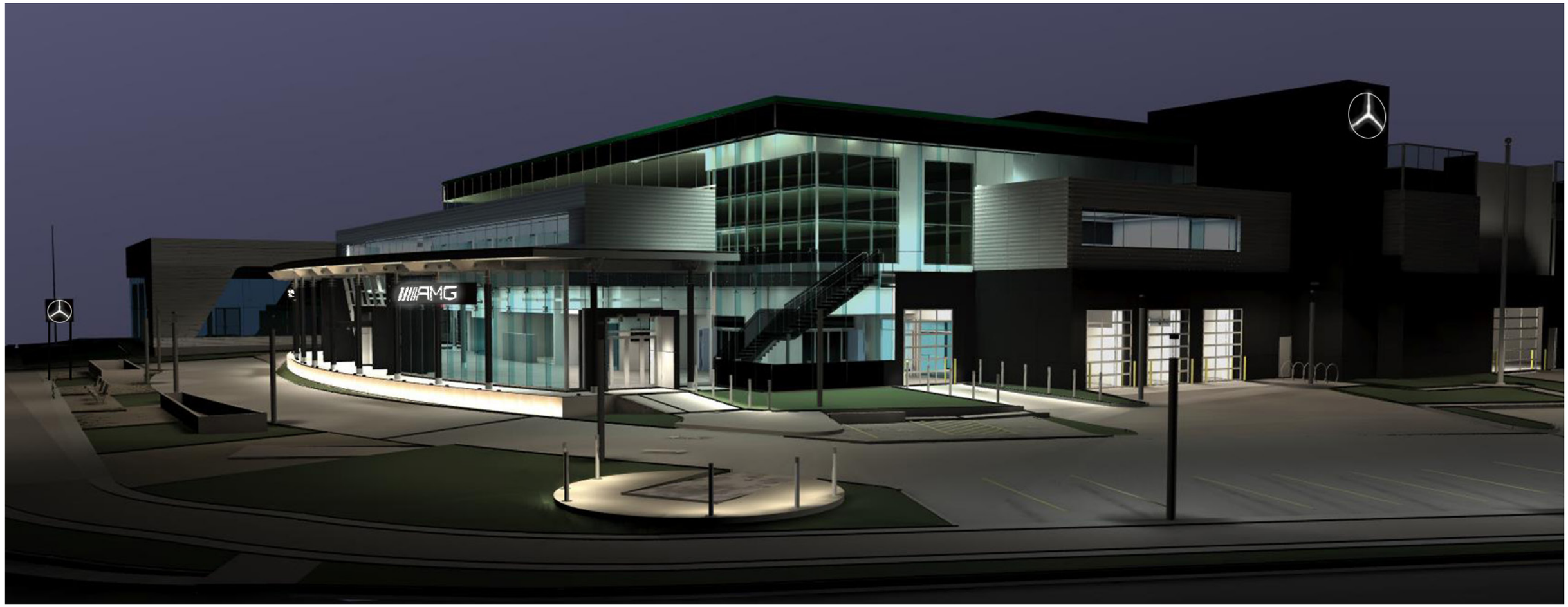


Exterior Photometric Data at West of Property-Behind Carwash at Night During Business Hours

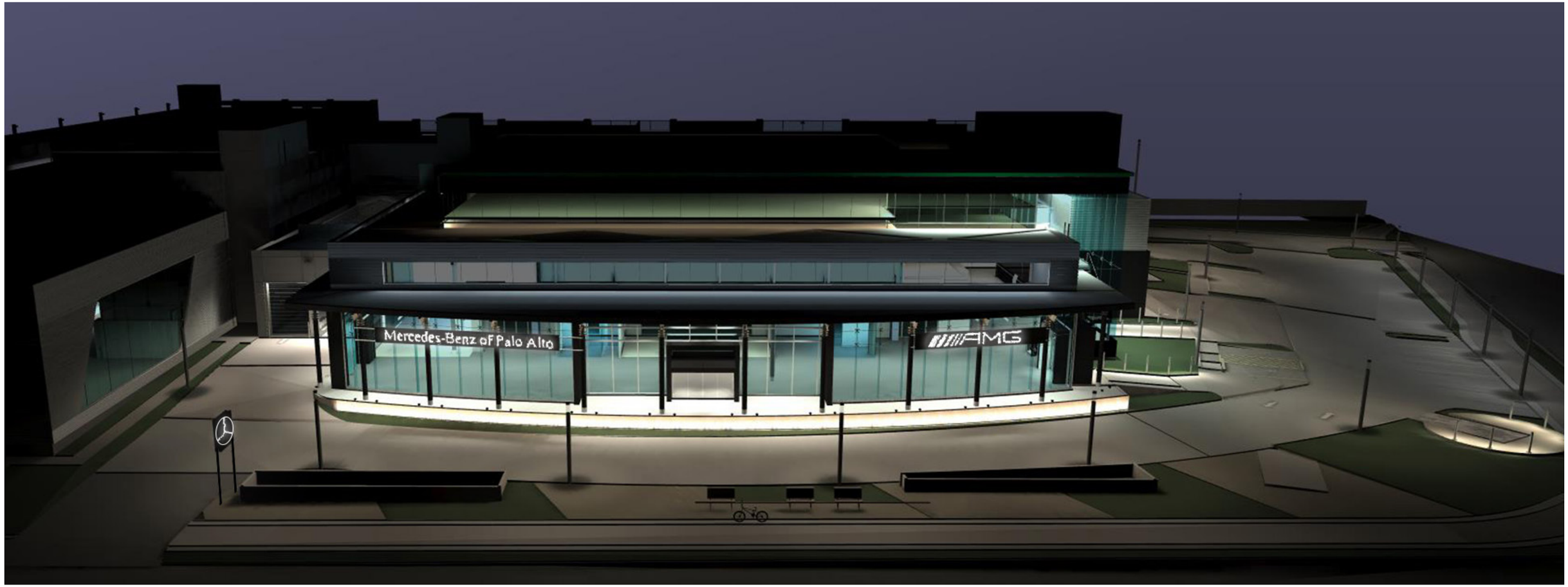


Exterior Photometric Data at South of Property-Bayland Side at Night During Business Hours

Lighting Renders



Lighting Renders



Lighting Renders

Lighting Renders

Exterior Lighting Analysis

Exterior lighting impact issues are focused around two key subjects: Light Trespass and Glare. These two technical terms are defined by the Illuminating Engineering Society of North America (IESNA) as follows:

- **Light Trespass** is the light that falls on a property but originates on an adjacent property. Light Trespass is measured in terms of illuminance (foot-candles or metric units lux), and can be measured at any point and in any direction. Where Light Trespass is evaluated the illuminance is measured perpendicular to the source of light, toward the source of light, at the property line, or the location where light is causing an issue, such as a residential window or balcony.
- **Glare** occurs when either the luminance is too high or the range of brightness in a visual field is too large. A bright light source, such as a flood light or street light, viewed against a dark sky may be uncomfortable to look at, and may create a temporary sensation of blindness, which is referred to as disability glare. Glare is evaluated by measuring the luminance (footlamberts or metric units candelas/m2) at the source of light, such as a digital display, in comparison to the surrounding adjacent luminance. The term which describes the extent of Glare at an observer position for a view is referred to as contrast, and is determined by the variation of luminance within the field of view. "High," "Medium," and "Low" contrast are terms used to describe contrast ratios. The ratio of peak measured luminance to the average within a field of view: contrast ratios greater than 30:1, between 10:1 and 30:1, and below 10:1, respectively. Contrast ratios above 30:1 are generally uncomfortable for the human eye to perceive. Any source luminance that is more than 50 times the adjacent background will be viewed as prominent, and may be viewed as distracting.

Light Trespass is evaluated at night. Glare may occur either during the day or night.

All urban areas within California are designated Lighting Zone 3 as default under the California Electric Code, which limits the Light Trespass to 8 lux (0.74 footcandles). Per the California Electric Code, California Building Energy Efficiency Standards, Section 10-114, page 40, 41, the designations for outdoor lighting zones in urban areas are as follows:

"The default for urban areas, as defined by the U.S. Census Bureau, is Lighting Zone 3. Local AHJs (Authorities Having Jurisdiction) may designate areas to Lighting Zone 4 for high intensity nighttime use, such as entertainment or commercial districts or areas with special security considerations requiring very high light levels."

The existing conditions within and surrounding the Project site are consistent with the definition of Lighting Zone 3 noted above. In addition, thelIluminating Engineering Society of North America defines Lighting Zone 3 as: "areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security and/or convenience and it is mostly uniform or continuous."

Illuminating Engineering Society of North America Handbook 11th Editiona Table 26.5, lists a Pre-curfew 8 Lux (0.74 footcandles) maximum at the location where trespass is under review for Zone 3. The California Electric Code standard is well defined and supported by the Illuminating Engineering Society of North America and The American Society of Heating, Refrigerating and Air-Conditioning Engineers, and other independent lighting organizations such as the International Dark Sky Organization and U.S. Green Building Council.

The existing conditions to the south of the Project site are consistent with the definition of Lighting Zone 1 noted above. In addition, the Illuminating Engineering Society of North America defines Lighting Zone 1 as:

"Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety, security and/or convenience but it is not necessarily uniform or continuous. After curfew most lighting should be extinguished or reduced as activity levels decline."

Illuminating Engineering Society of North America Table 26.5, lists a Pre-curfew 1 Lux (0.09 footcandles) maximum at the location where trespass is under review for Lighting Zone 1.

Exterior Light Trespass Illuminance (fc)

The analysis of the Project includes evaluation of the Light Trespass Illuminance from the Project at the nearest adjacent sensitive use property line, and an evaluation of Glare from the Project visible at sensitive use properties or at adjacent roadway locations.

This Report presents a conservative analysis with respect to Light Trespass and Glare. The Project Lighting is evaluated with a configuration of the maximum permissible lights that are within the limits of the California Building Code. This Study evaluates the Project Lighting as described above

a. Project Light Trespass Analysis

Light Trespass illuminance is calculated at the location where lighting is under review through the illumination modeling software program AGI32. This software utilizes the 3-dimensional architectural computer model, including Project Exterior Site and Building Lighting locations, dimensions, and luminous specifications to generate an accurate prediction of future illuminance. Light Trespass illuminance is evaluated with respect to horizontal and vertical illuminance at the locations where lighting is under review.

To evaluate Light Trespass Illuminance at the nearest sensitive use properties, the illuminance from the Project is calculated at the review location within a vertical plane at the sensitive use property line, extending from grade to a maximum viewing elevation above grade (for this Project 50 feet above grade). The calculated illuminance data is presented at 5 feet on center. The calculation plane simulates the illumination (fc) captured by light meters. The vertical calculation planes analyze the lighting at the locations adjacent to the Project property line, which will be greater than the illuminance at any location more distant from the Project. Incident light (fc) from a source degrades in proportion to the inverse square of the distance from the source to the location where lighting is under review. The illuminance EV (fc) incident at any given distance D (ft) from an illuminated surface S (ft2) with uniform surface luminance of L (cd/m2) is calculated by the following formula:

$$EV = (L \times S) / 10.76 \times D2$$

This formula illustrates the reduction in illuminance at any location as the distance increases from a light source. More distant sensitive use properties will receive less light from the Project due to the increased distance. Therefore, the Project will produce a less significant Light Trespass impact on sensitive use properties more distant from the nearest adjacent property line

The calculated maximum light trespass illuminance at the south property line adjacent to the Baylands is 0.09 fc.

The calculated maximum light trespass illuminance at the east, north, and west property lines is 0.48 fc.

The maximum light trespass illuminance is less then the threshold established by California Green Building Code, therefore the Project will not introduce a new source of light trespass.

Lighting Glossary

Discussions of lighting issues include precise definitions, descriptions or terminology of the specific lighting technical parameters. The following glossary summarizes explanations of the technical lighting terms utilized in this Study and the related practice standards to facilitate discussion of these issues. The following technical terms are used in this Study.

Brightness: The magnitude of sensation that results from viewing surfaces from which light comes to the eye. This sensation is determined partly by the measurable luminance of the source and partly by the conditions of observation (Context), such as the state of adaptation of the eye. For example, very bright lamps at night appear dim during the day, because the eye adapts to the higher brightness of daylight.

BUG Rating: A luminaire classification system established in IES TM15-11, BUG Ratings Addendum that provides for uniform assessment of the directional characteristics of illumination for exterior area lighting. BUG is an acronym composed of Backlight, Uplight, and Glare. BUG ratings are based on a zonal lumen calculations for secondary solid angles defined in IES TM15-11.

Candela: Measure of light energy from a source at a specific standard angle and distance. Candela (cd) is a convenient measure to evaluate output of light from a lamp or light fixture in terms of both the intensity of light and the direction of travel of the light energy away from the source.

Contrast: Calculated evaluation of high, medium and low contrast of visible light sources or surfaces within the Property by a ratio of luminance. Contrast is the ratio of one surface luminance to a second surface luminance or to the field of view. Contrast exceeding 30 to 1 are usually deemed uncomfortable; 10 to 1 are clearly visible; and less than 3 to 1 appear to be equal.

Fully Shielded: A lighting fixture constructed in such a manner that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the Luminaire, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding must be permanently affixed. In other words, no light shines above the horizontal from any part of the fixture.

Glare: Glare is visual discomfort experienced from high luminance or high range of luminance. For exterior environments at night, glare occurs when the range of luminance in a visual field is too large. The light energy incident at a point is measured by a scale of footcandles or lux, and is described in the technical term Illuminance. This incident light is not visible to the eye until it is reflected from a surface, such as pavement, wall, dust in the atmosphere or the surface of a light bulb. The visible brightness of a surface is measured in footlamberts (or metric equivalent candelas per square meter) and is described by the term Luminance.

The human eye processes brightness variations across a very broad spectrum of intensities. The range of brightness generated by direct noon sun versus a moonlight evening is over 5000 to 1. Human eyes are capable of accommodating to this range of intensities given adequate time to adjust. However, the eye cannot process brightness ratios of more than 30 to 1 within a view without discomfort. See Illuminating Engineering Society of North America 10th Edition Handbook, Section 4.10.1, Discomfort Glare and Section 10.9.2 Calculating Glare. For the purpose of this analysis, brightness of light sources may be described subjectively by the following criteria:

High Contrast Conditions: View of light fixture emitting surface, such as a lens, reflector, or lamp, where brightness contrast ratio exceeds 30 to 1 (source Luminance to background Luminance ratio in footlamberts).

Medium Contrast Conditions: Brightly lighted surfaces where contrast ratio exceeds 10 to 1, but is less than 30 to 1 (lighted surface Luminance to background Luminance ratio in footlamberts).

Low Contrast Conditions: Illuminated surfaces where contrast ratio exceeds 3 to 1, but less than 10 to 1 (source Luminance to background Luminance ratio in footlamberts).

Illuminance: Illuminance is the means of evaluating the density of Luminous Flux. Illuminance indicates the amount of Luminous Flux from a light source falling on a given area.

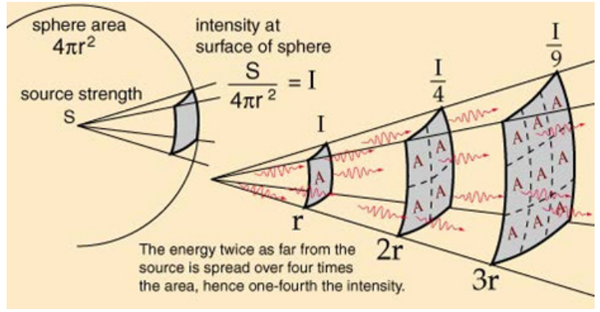
Lighting Glossary

Illuminance is measured in footcandles (fc) which is the lumens per square foot, or Lux (lumens per square meter). Illuminance need not necessarily be related to a real surface since it may be measured at any point within a space. Illuminance is determined from the Luminous intensity of the light source. Illuminance of a point source decreases with the square of the distance from the light source (see Inverse Square Law definition).

Horizontal Illuminance: Illuminance incident upon a horizontal plane. The orientation of the illuminance meter or calculation point will be 180 degrees from Nadir.

Vertical Illuminance: Illuminance incident upon a vertical plane. The orientation of the illuminance meter or calculation point will be 90 degrees from Nadir.

Inverse Square Law: In physics, an inverse-square law is any physical law stating that a specified physical quantity or intensity is inversely proportional to the square of the distance from the source of that physical quantity. The fundamental cause for this relationship can be understood as geometric dilution corresponding to point-source radiation into three-dimensional space (see Figure 2). The divergence of a vector field which is the resultant of radial inverse-square law fields with respect to one or more sources is everywhere proportional to the strength of the local sources, and hence zero outside sources. Newton's law of universal gravitation follows an inverse-square law, as do the effects of electric, magnetic, light, sound, and radiation phenomena. Thus, Illuminance decreases with the square of the distance from the light source. Light Source: Device which emits



Light Trespass: Electric light from subject property incident onto adjacent properties, measured in footcandles or lux, usually analyzed by measurement at or near the adjacent property line.

Lighting Zone (LZ): Defined by Illuminating Engineering Society of North America and summarized in Table 26.4 in the Handbook and adopted by California Green Building Code.

Lighting Zone LZ1: Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety, security and/or convenience but it is not necessarily uniform or continuous. After curfew most lighting should be extinguished or reduced as activity levels decline..

Lighting Zone LZ2: Outdoor areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting is not uniform or consistent. Lighting is generally desired for safety, security and/or convenience.

Lighting Zone LZ3: Outdoor areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security and/or convenience.

Lighting Zone LZ4: Outdoor areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally desired for safety, security and/or convenience.

Luminaire: A complete lighting unit consisting of a light source designed to distribute the light, to position and protect the source, and to connect the source to the power supply. Also referred to as a Light Fixture.

Luminance: Luminance is a measure of emissive or reflected light from a specific surface in a specific direction over a standard area. Luminance is measured in footlamberts (fL) ($1/\pi$ Candela per square foot) or cd/m2 (Candela per square meter). $1fL = 3.43\ cd/m^2$. Whereas Illuminance indicates the amount of Luminous Flux falling on a given surface, Luminance describes the brightness of an illuminated or luminous surface. Luminance is defined as the ratio of luminous intensity of a surface (Candela) to the projected area of this surface (m^2 or ft^2).

Luminous Flux: Mean value of total Candelas produced by a light source. Luminous Flux describes the total amount of light emitted by a light source. The unit for measuring

Lighting Glossary

Luminous Flux is Lumen (lm). This radiation could basically be measured or expressed in watts. This does not, however, describe the optical effect of a light source adequately, since the varying spectral sensitivity of the eye is not taken into account. To include the spectral sensitivity of the eye the Luminous Flux is measured in lumen. Radiant Flux or 1 W emitted at the peak of the spectral sensitivity (in the photopic range at 555 nanometers produces a Luminous Flux of 683 lumen). The unit of lumen does not define direction.