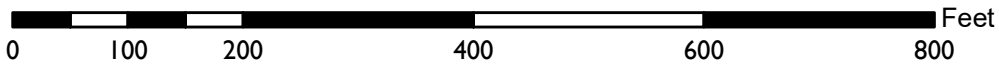
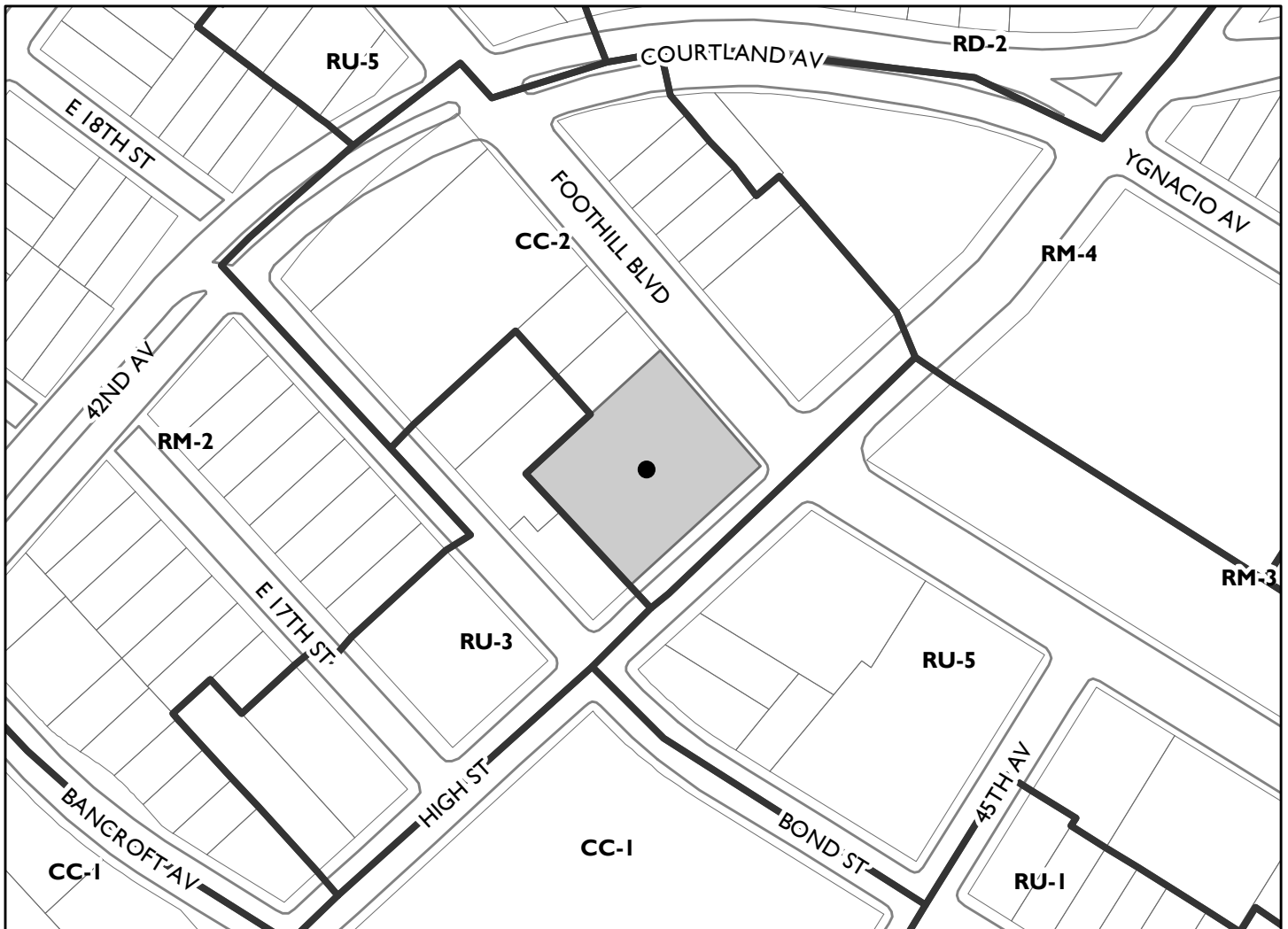


Location:	4265 Foothill Boulevard. (APN: 035 -2352-008-01). (See map on reverse)
Proposal:	Remodel of a “Chevron” gas station, including the creation of a convenience market, addition of an automated car wash, and site improvements.
Applicant:	Navdeep S. Grewal / NG Grewal One
Owner:	NG Grewal One
Planning Permits Required:	Major Conditional Use Permit (CUP) to establish a Convenience Market Commercial Activity and to add a Drive-Through Nonresidential Facility. Minor CUP to add an Automotive Repair and Cleaning Commercial Activity. Regular Design Review for the construction of convenience market, car wash, and site improvements.
General Plan:	Community Commercial
Zoning:	CC-2 Community Commercial 2 Zone
Environmental Determination:	Pending
Historic Status:	OCHS Rating: X
City Council District:	5
Date Filed:	Oct. 1, 2018
Action to be Taken:	Review proposed design. Provide design recommendations and refer to the Planning
Staff Recommendation:	Commission
For Further Information:	Contact case planner Jose M. Herrera-Preza at 510-238-3808 or jherrera@oaklandca.gov

SUMMARY

The proposal involves the remodel of an existing Chevron gas station located at the northwest corner of the intersection of High Street and Foothill Boulevard. The project consists of expanding an existing cashier booth to create a 1,492 square-foot convenience market beneath an existing fueling canopy, the addition of a detached automated drive-through car wash, and site improvements such as landscaping and consolidation of curb cuts. The project requires a Major Conditional Use Permit (CUP) with additional findings to create a convenience market located at a conditionally approved gas station. The project also requires a Major CUP for a new Drive-Through Nonresidential Facility for the car wash, and a minor Conditional Use Permit for establishment of the car wash activity. No alcoholic beverage sales are proposed. The gas station and convenience market would be open 24-hours daily.

CITY OF OAKLAND PLANNING COMMISSION



Case File: PLN18376
Applicant: NG Grewal One
Address: 4265 Foothill Blvd
Zone: CC-2

PROPERTY DESCRIPTION

The site is a 26,310 square-foot, flat parcel at the north-west corner of High Street and Foothill Boulevard. The site contains a Chevron gas station, consisting of a 30' x 90' fueling canopy with a 400 square-foot cashier station, five petroleum fueling stations and several small storage structures. The gas station is accessed by a total of four curb cuts (two curb cuts on High Street and two curb cuts on Foothill Boulevard). The site is part of a commercial intersection containing a neighborhood shopping center to the south, another gas station to east, and Castlemont High School to the north. Outside the intersection, Foothill Boulevard generally contains a mix of commercial buildings and High Street contains a mixture of single- and multi-family residential buildings.

Both properties adjacent to the site on High Street and Foothill Boulevard contain residential facilities. The adjacent property on High Street is a one-story single-family residence. The adjacent property on Foothill Boulevard is a two-story multi-family building. These buildings are set back approximately 15 feet from their front property line.

This area of Foothill Boulevard in East Oakland is characterized by small-scale ground floor commercial spaces under upper-story residential units and freestanding commercial and civic buildings. Construction materials in the area include primarily stucco buildings with glass transoms and tile roof details; brick with wood details, wood shiplap and shingle walls with composite roofs, and other early- to mid-20th Century materials.

PROJECT DESCRIPTION

The primary objective of the project is to remodel and expand the commercial offerings of an existing gas station. The proposed project would construct a 1,492 square-foot convenience market beneath the existing canopy, a detached 867 square-foot car wash tunnel, drive-through facility, and a total of 420 square-foot of miscellaneous storage rooms. Site improvements include landscaping and a consolidation of curb cuts.

The proposed project would consolidate two curb cuts on High Street into one curb cut and preserve the two on Foothill Boulevard, leaving three curb driveways into the gas station, despite recommendations to remove one curb cut from Foothill Boulevard and create a one-way in and out circulation system. This issue is further discussed in the "Key Design Issues" Section of this report.

The proposal would substantially increase the amount of landscaping throughout the site by removing three palm trees and replacing them with with a total of 15 trees, each with at least a 15-gallon box. Other landscaping would include ground cover and shorts shrubs. A new 6'-8' section of CMU site wall would be constructed along property lines that are bound the residential buildings.

GENERAL PLAN ANALYSIS

The property is in the Community Commercial Land Use classification of the Land Use and Transportation Element of the General Plan (LUTE). This designation is intended "to create, maintain and enhance areas suitable for a wide variety of commercial and institutional operations along the City's major corridors and in shopping districts or centers." Foothill Boulevard is a "Growth and Change" corridor under the LUTE designation. The application is consistent with the following LUTE policies:

LUTE Policy I/C1.2 states that "Existing Businesses and jobs within Oakland which are consistent with the long-range objectives of this Plan should, whenever possible, be retained."

Policy I/C3.4 states that “The vitality of existing neighborhood mixed use and community commercial areas should be strengthened and preserved.”

Policy N1.5 Designing Commercial Development states that “Commercial development should be designed in a manner that is sensitive to surrounding residential uses.”

Staff finds that the proposed gas station remodel is consistent with the intent of the General Plan because it implements these policies and intent.

ZONING ANALYSIS

The property located within the CC-2 Community Commercial-2 Zoning District. The new convenience market, car wash, and drive-through that serves the car wash are all conditionally permitted in the CC-2 Zone. The CUPs for the convenience market and the drive-through are major and, therefore, require approval from the Planning Commission, according to Section 17.134.020 of the Planning Code. In general, the uses are consistent with the intent of the zone to allow a wide range of commercial activities.

KEY DESIGN ISSUES

Staff requests design feedback on the items below.

Circulation and Traffic

The site is currently accessed through four curb cuts, two on High Street and two on Foothill Boulevard. Each of the existing curb cuts are on average 42 feet in width. The applicant has agreed to consolidate the curb cuts on High Street from two curbs cuts to one 35-foot curb cut and locate the curb cut to 50 feet from the corner of the intersection. The project has been routed to the Department of Traffic (DOT) and received the following comments and recommendation from DOT regarding curb cuts.

- DOT recommends that the driveway on Foothill, adjacent to the intersection, be eliminated to remove unnecessary conflict points and to improve safety adjacent to the intersection and to increase safety near the existing bus stop on Foothill.
- Two-way curb cuts should be 20 feet wide typical, and 24 feet wide where driveways are anticipated to have high volumes. Due to the land use, we recommend reducing the width of the driveways to 24.’
- This project is at the nexus of two major corridors. To provide more certainty and smoother transitions for drivers, people on bikes, and pedestrians, we recommend considering a one-way in (off of Foothill) and one-way out (off of High) and if this recommendation were considered, then we’d also recommend narrowing the driveways to 12 feet.

The applicant has voluntarily agreed to consolidate the curb cuts on High Street but not on Foothill Boulevard. Staff would recommend, at a minimum, the curb cuts on High Street be consolidated in a similar fashion as the proposed High Street improvements, which proposes to create one curb cut at 35 feet wide. This further consolidation of curb cuts is recommended because the site is located within an area of the City noted as a Bicycle [High Injury Network](#), which has contributed to 47% of severe and fatal crashes citywide. Reduction of curb cuts limits conflicts between bicyclists/pedestrians and cars.

The applicant submitted a Trip Generation Analysis by Abrams Associates Traffic Engineering Inc., which concluded that the addition of the convenience market and reduction in the number of fueling

stations would only generate an additional ten peak trips per hour more than what is currently generated by the existing gas station. The study also anticipated no queuing onto surrounding streets from the site or from the car wash or any other part of the proposal.

Staff also recommends the following circulation elements:

- Require delivery parking on-site;
- Indicate clearance height on canopy;
- Stripe an on-site truck loading zone;
- Relocate the trash enclosure to the interior corner to allow delivery vehicles to load on site, dispose of bulky wastes currently stored within the enclosure to create room and store the dumpster within it; and
- Relocate the propane tank further back to allow full use of the driveway including by delivery vehicles.

Staff requests the DRC to comment on the proposed site and circulation plan, particularly the proposed curb cuts.

Car Wash Noise

The proposed car wash is an automated touchless tunnel system located along the south-west property line, adjacent to 1723 High Street, which contains a one-story single-family residence. The proposed car wash is approximately 10 feet from the existing residence. A noise study conducted by Extant Acoustical Inc. determined that the proposed car wash would be within the maximum allowable dba of less than 60 dba between 7:00am and 10:00pm. The car wash is expected to have a maximum of 57 dba and the existing peak ambient sound is 53 dba. Therefore, staff believes that the noise from the car wash will not be a major impact on neighboring property. Staff also recommends signage requiring car wash users to turn off their car stereo while using the facility.

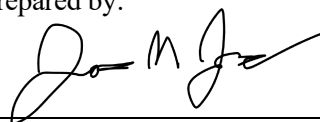
Convenience Market

Staff requests comments on the proposed design of the convenience market. Specifically, the placement of the proposed entry door. The entry door is proposed as a single door along the Foothill Blvd frontage. Staff recommends the door be located along the High Street frontage as double doors. This location would allow for pedestrian access and increase visibility from the street. The proposed market has a large expanse of solid wall. Staff recommends the wall fronting Foothill Boulevard incorporate increased glazing.

RECOMMENDATIONS

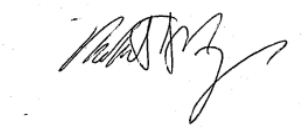
Staff requests the Design Review Committee review the project, provide design recommendations to the applicant and staff, and refer the project to the full Planning Commission with recommendations.

Prepared by:



Jose M. Herrera-Preza
Planner III

Reviewed by:



Robert D. Merkamp
Zoning Manager

ATTACHMENTS:

A. Project Plans and Documents



M I Architects, Inc.
 ARCHITECTURE
 PLANNING
 MANAGEMENT
 DESIGN

2221 OLYMPIC BLVD.
 SUITE 100
 WALNUT CREEK, CA
 94595

925-287-1174 Tel
 925-943-1581 Fax
 925-878-9875 Cell
 muthana@miarchitect.com
 www.miarchitect.com

**CHEVRON GAS STATION,
 CONVENIENCE STORE & CARWASH**
 4265 FOOTHILL BLVD
 OAKLAND, CA 94601

ISSUED FOR CONSTRUCTION
 ISSUED FOR PLAN CHECK
 ISSUED FOR PLANNING

NO.	DATE	DESCRIPTION

SITE PLAN

PROJECT #: 16-12401
 DRAWN: BB CHECKED: MI
 SCALE: AS NOTED DATE: 7-20-17

SD1

SHEET OF

DRAWING INDEX

- SD1 SITE PLAN
- 1 OF 1 SURVEY
- C1 PRELIMINARY SITE PLAN
- C2 PRELIMINARY GRADING, DRAINAGE & PAVING PLAN
- C3 PRELIMINARY STORMWATER CONTROL PLAN
- LA1 LANDSCAPE PLAN
- SD1-L SITE PHOTOMETRIC PLAN
- AI0 EXISTING STORE FLOOR PLAN
- AI1 CONVENIENCE STORE & CARWASH FLOOR PLANS
- A2.1 CONVENIENCE STORE ELEVATIONS
- A2.2 CARWASH BUILDING ELEVATIONS

SITE INFO

APN# 035-2352-008-001
 JURISDICTION: CITY OF OAKLAND, CA
 CURRENT ZONING: CC2 (COMMUNITY COMMERCIAL)

SITE COVERAGES:

SITE: 26,186 S.F. / 0.6 AC (100%)

BUILDINGS: 6,079 S.F. (23%)

NEW CONVENIENCE STORE: 1,442 S.F.
 NEW CARWASH TUNNEL: 867 S.F.
 NEW CARWASH EQUIPMENT ROOM: 229 S.F.
 NEW PRIVATE RESTROOM: 53 S.F.
 NEW STORAGE: 69 S.F.
 (E) FUELING CANOPY TO REMAIN: 3,438 S.F.

(E) BUILDING UNDER CANOPY TO BE REMOVED: 4,941 S.F.

PARKING REQUIREMENTS:

CONVENIENCE STORE: 1 SPACE PER 200 S.F.
 1,442 S.F. / 200 = 8 SPACES

PARKING REQUIRED: 8 SPACES

PARKING PROVIDED: 8 SPACES

STANDARD PARKING STALLS (8'-6" x 18'-0"): 3 SPACES
 PARALLEL PARKING STALL (9'-0" x 22'-0"): 2 SPACES
 AIR / WATER STALL PARALLEL PARKING: 1 SPACE
 VACUUM STALL PARALLEL PARKING: 1 SPACE
 ACCESSIBLE PARKING STALL: 1 SPACE

SITE PLAN LEGEND

- NEW LANDSCAPING
- NEW CONCRETE PAVING
- 4 FT. WIDE (MIN.) ACCESSIBLE ROUTE OF TRAVEL, SHALL NOT EXCEED 5% SLOPE IN THE DIRECTION OF TRAVEL AND 2% CROSS SLOPE
- BIO PLANTER, SEE CIVIL DWGS.
- EXISTING TO REMAIN
- EXISTING CURB TO REMAIN
- NEW CONCRETE CURB

PROJECT DIRECTORY

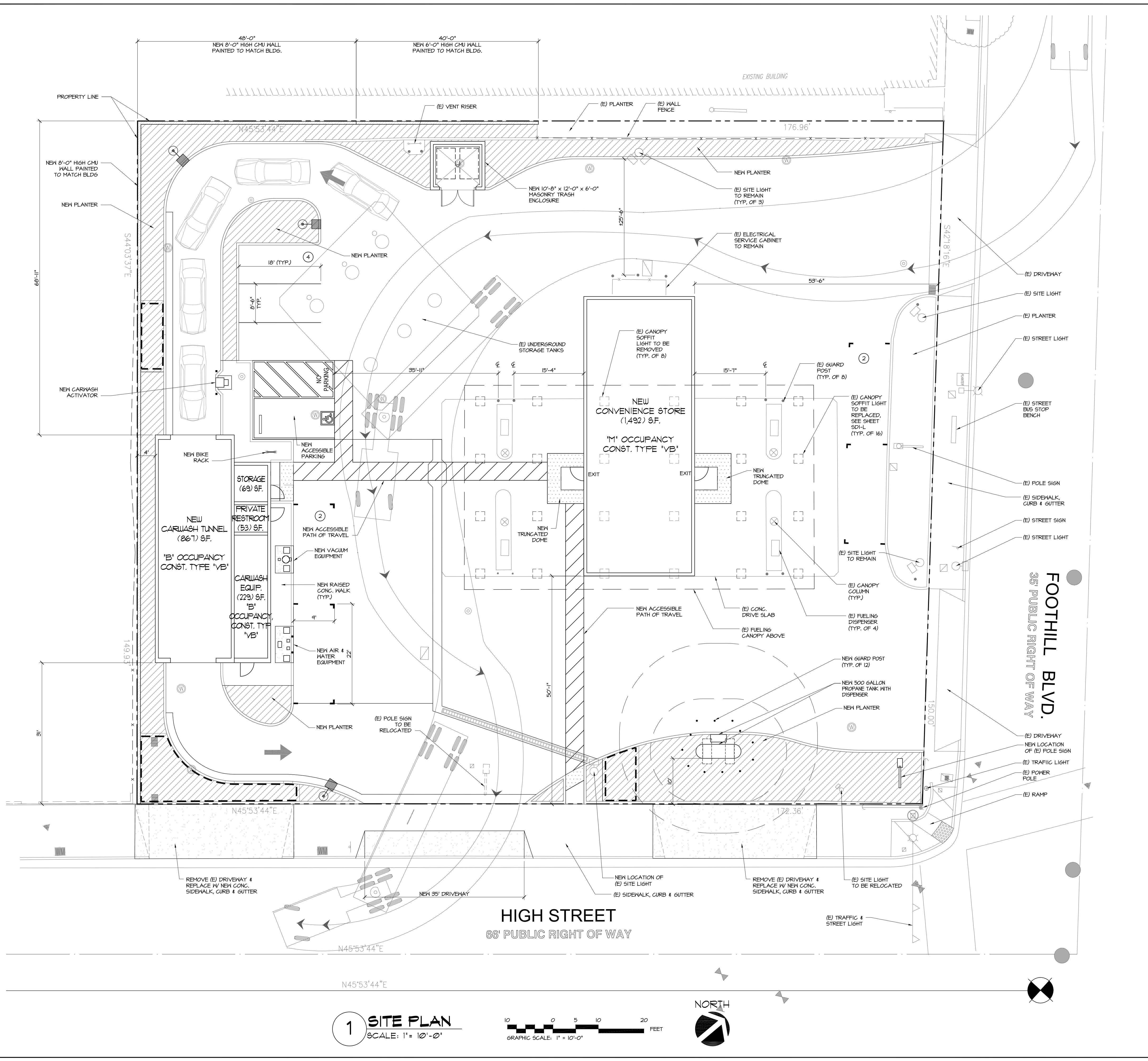
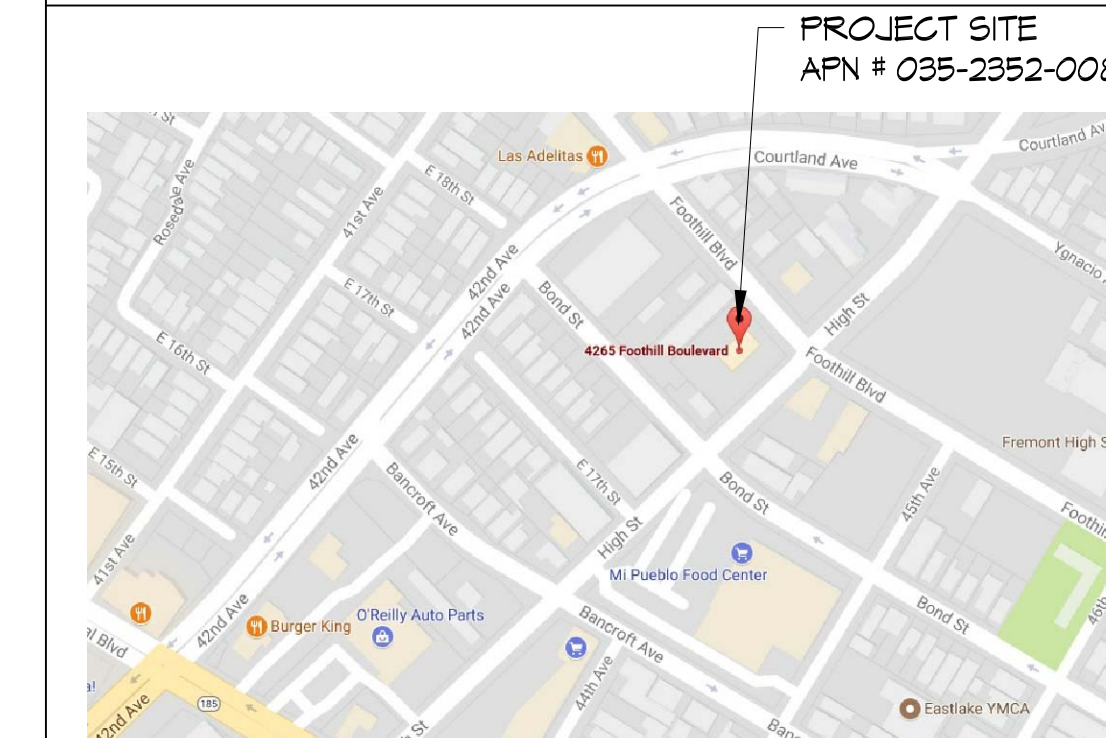
ARCHITECT
 M I ARCHITECTS, INC.
 2221 OLYMPIC BLVD, SUITE 100
 WALNUT CREEK, CA 94595
 TEL: (925) 287-1174 x1
 FAX: (925) 943-1581
 CELL: (925) 878-1875
 MR. MUTHANA IBRAHIM, ARCHITECT

DEVELOPER
 MR. NAVDEEP GREHAL
 4265 FOOTHILL BLVD
 OAKLAND, CA 94601
 TEL: (510) 407-5650

CIVIL ENGINEER
 RFE ENGINEERING, INC.
 2260 DOUGLAS BLVD, SUITE 160
 ROSEVILLE, CA 95661
 TEL: (916) 712-1800
 FAX: (916) 712-1804
 MR. SHAWN SOMERS, P.E.

LANDSCAPE ARCHITECT
 GIARDELLA ASSOCIATES
 640 MENLO AVE, SUITE 10
 MENLO PARK, CA 94025
 TEL: (650) 326-6100
 FAX: (650) 323-6106
 MR. RICHARD GIARDELLA

VICINITY MAP



1 SITE PLAN
 SCALE: 1" = 10'-0"

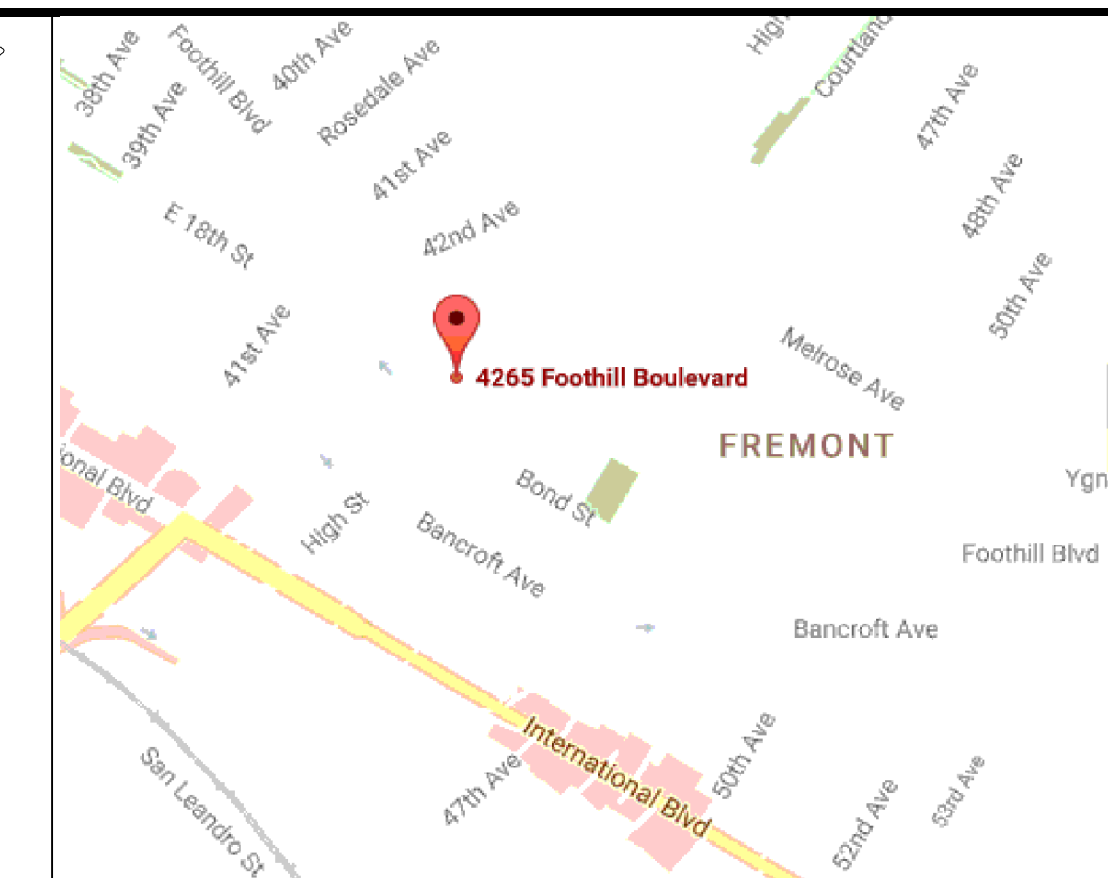
GRAPHIC SCALE: 1" = 10'-0"

0 5 10 20 FEET

S:\1-Projects\16-12401-4265 Foothill Blvd (Oakland)\Dwg's\Planning\16-12401-SD1.dwg modified by musered at Apr 26, 2021 - 9:27am

SURVEY NOTES:

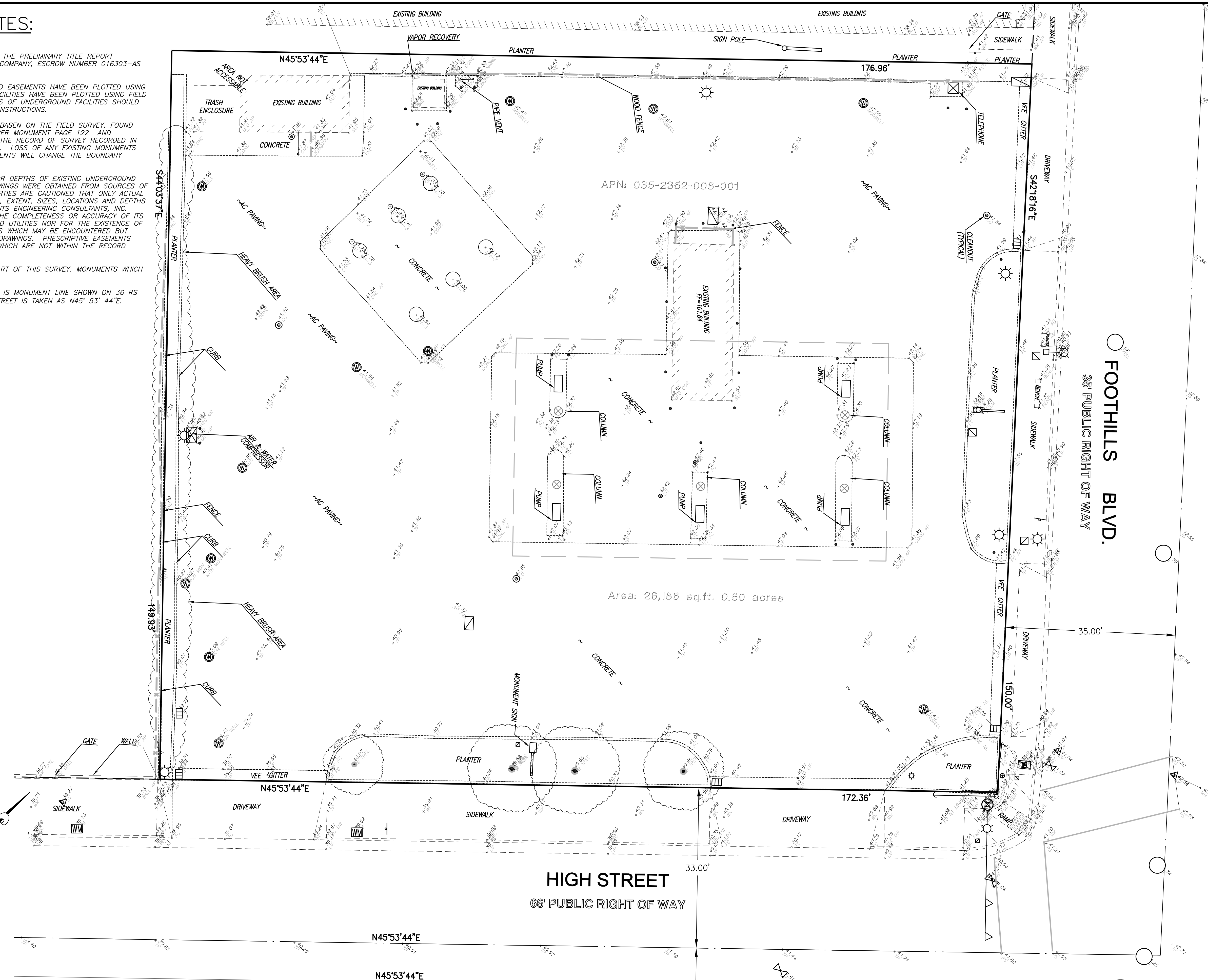
- 1) THIS SURVEY WAS PREPARED USING THE PRELIMINARY TITLE REPORT PREPARED BY PACIFIC COAST TITLE COMPANY, ESCROW NUMBER 016303-AS DATED MARCH 1, 2016.
- 2) THE POSITION OF IDENTIFIED RECORD EASEMENTS HAVE BEEN PLOTTED USING RECORD DESCRIPTIONS. SURFACE FACILITIES HAVE BEEN PLOTTED USING FIELD INFORMATION. THE ACTUAL LOCATIONS OF UNDERGROUND FACILITIES SHOULD BE VERIFIED PRIOR TO ANY NEW CONSTRUCTIONS.
- 3) THE BOUNDARY SHOWN HEREON IS BASED ON THE FIELD SURVEY, FOUND CITY MONUMENTS IN HIGH STREET PER MONUMENT PAGE 122 AND MONUMENTS FOUND AS SHOWN ON THE RECORD OF SURVEY RECORDED IN BOOK 36 OF SURVEYS, AT PAGE 57. LOSS OF ANY EXISTING MONUMENTS OR DISCOVERY OF ANY NEW MONUMENTS WILL CHANGE THE BOUNDARY SHOWN ON THIS SURVEY.
- 4) THE TYPES, LOCATION, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. INTERESTED PARTIES ARE CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. JTS ENGINEERING CONSULTANTS, INC. ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE DRAWINGS. PRESCRIPTIVE EASEMENTS MAY EXIST OVER THOSE FACILITIES WHICH ARE NOT WITHIN THE RECORD EASEMENT.
- 5) NO MONUMENTS WERE SET AS A PART OF THIS SURVEY. MONUMENTS WHICH WERE FOUND ARE SHOWN HEREON.
- 6) BASIS OF BEARING OF THIS SURVEY IS MONUMENT LINE SHOWN ON 36 RS 57 ALONG CENTER LINE OF HIGH STREET IS TAKEN AS N45° 53' 44"E.



VICINITY MAP
NO SCALE

LEGEND

- MANHOLE
- DRAIN INLET
- WATER LINE
- DRAIN LINE
- SEWER LINE
- GAS LINE
- FIRE HYDRANT
- WATER VALVE
- SEWER CLEAN OUT
- WATER METER
- FIRE DEPT. CONNECTION
- EDGE OF PAVEMENT
- BACK FLOW PREVENTER
- CONCRETE CURB
- SPOT ELEVATION
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL WITH LIGHT
- PARKING LIGHT
- PULL BOX
- GAS VALVE
- UTILITY POLE
- GAS METER
- OVER HEAD WIRE
- UTILITY POLE W/GUY
- PUBLIC STREET LIGHT
- SIGN
- FENCE
- WALL
- GUARD POST
- TREE
- VAULT
- TRANSFORMER
- RAIN WATER LEADER
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND ELECTRICAL LINE
- U.G. CABLE LINE
- RIDGE LINE



APN: 035-2352-008-001

Area: 26,186 sq.ft. 0.60 acres

FOOTHILLS BLVD.
35' PUBLIC RIGHT OF WAY

HIGH STREET
66' PUBLIC RIGHT OF WAY

BENCHMARK ELEV. _____
FIELD BOOK NO. _____ PG. _____

STUKAM CONSULTING ENGINEERS, INC.
11344 COLOMA ROAD, SUITE 235C
GOLD RIVER CALIFORNIA 95670, (916) 835-5791

DESIGNED: N/A
DRAWN: RTS
CHECKED: RTS
SUBMITTED: FARFED T. SIDDIQUI, P.E. RCE: 56122



NO	DATE	REVISION	APPROVAL	BY


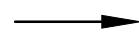


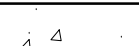
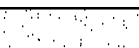


TOPOGRAPHIC SURVEY
4265 FOOTHILL BLVD.
APN: 035-2352-008-001
CITY OF OAKLAND COUNTY OF ALAMEDA

DATE: DEC. 2016
SHEET 1 OF 1

(E) BUILDING

APN: 035-2352-008-001

GRADING & PAVING LEGEND

- OVERLAND RELEASE 
- SURFACE FLOW DIRECTION 
- HEAVY DUTY AC 
- OFF-SITE AC 
- HEAVY DUTY PCC 
- PEDESTRIAN PCC 
- BIO-RETENTION PLANTER 
- LANDSCAPING SEE LANDSCAPE PLANS 

CONSTRUCTION KEYNOTES

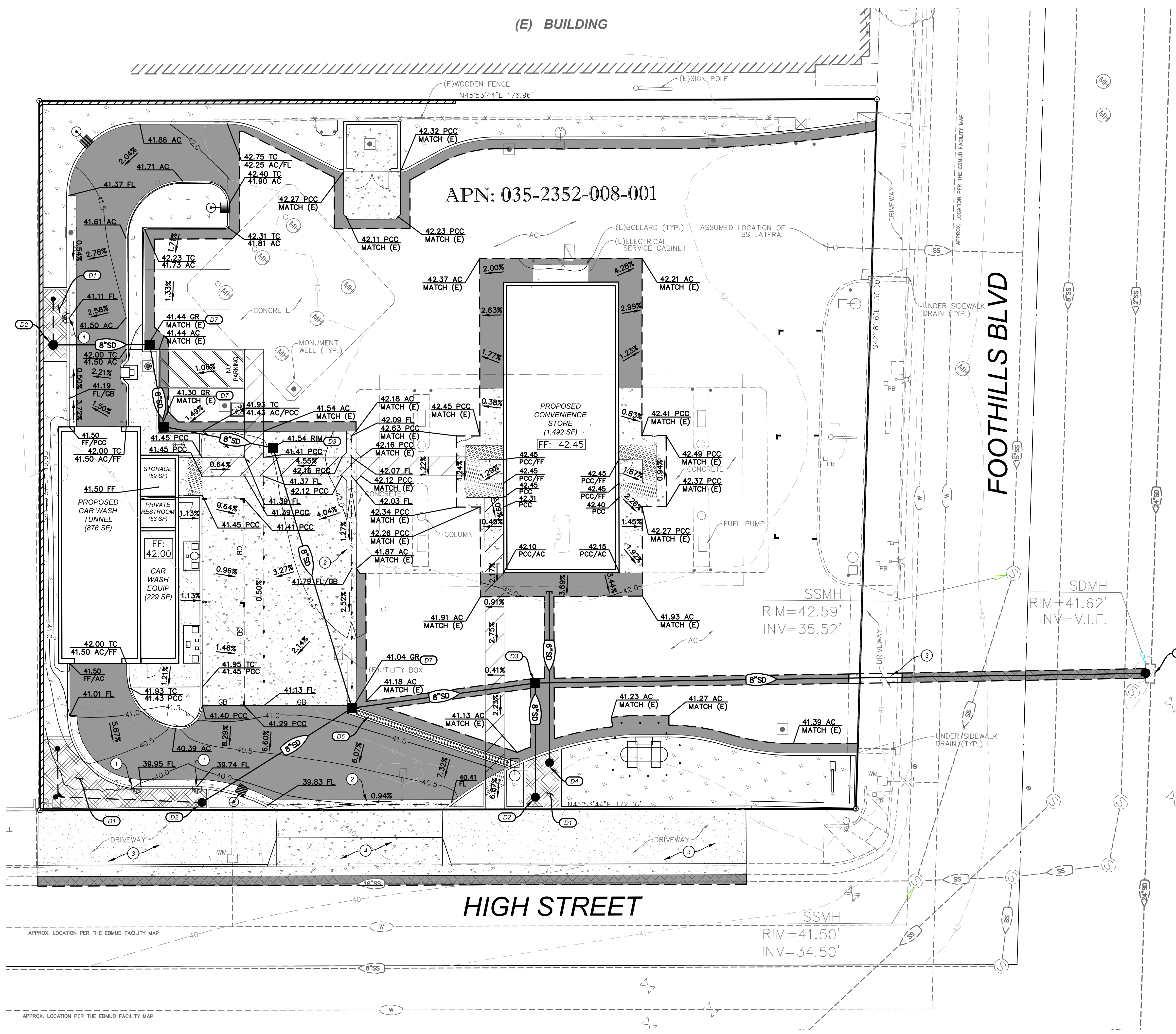
- 1 PLACE 24" WIDE CURB OPENING FOR DRAINAGE.
- 2 PLACE 24" WIDE CONCRETE VALLEY GUTTER.
- 3 REMOVE AND REPLACE SECTION OF CONCRETE DRIVEWAY AS NEEDED PER CITY OF OAKLAND STANDARDS.
- 4 PLACE NEW CONCRETE DRIVEWAY PER CITY OF OAKLAND STANDARDS SPECIFICATIONS.

DRAINAGE CONSTRUCTION KEYNOTES:

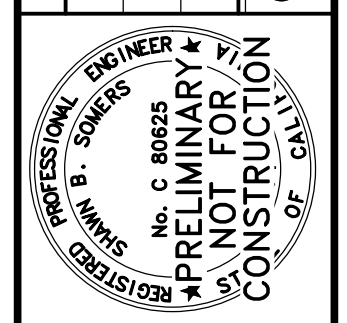
- D1 PROPOSED BIO-RETENTION PLANTER.
- D2 PROPOSED OVERFLOW STRUCTURE.
- D3 PROPOSED DRAINAGE JUNCTION STRUCTURE.
- D4 PROPOSED DRAIN BASIN BUBBLER.
- D5 CONNECT PROPOSED STORM DRAIN LINE TO (E) CURB INLET.
- D6 CONNECT PROPOSED TRENCH DRAIN TO PROPOSED DRAINAGE INLET.
- D7 PROPOSED DRAINAGE INLET.

GRADING GENERAL NOTES:

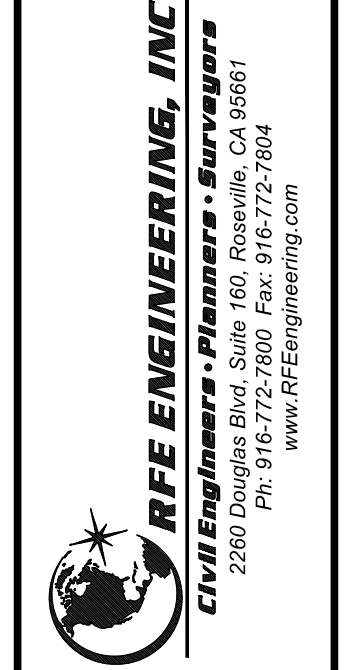
1. ALL VALVES, MANHOLES, TRAFFIC CONTROL BOXES, CLEANOUTS, D/S, ETC. WITHIN LIMITS OF CONSTRUCTION TO BE ADJUSTED TO FINISH GRADE AS NEEDED.
2. ALL HANDICAP ACCESSIBLE PARKING SPACES SHALL HAVE SLOPES LESS THAN 2% IN ANY DIRECTION. ON PEDESTRIAN PATHS, THE MAXIMUM CROSS SLOPE SHALL BE LESS THAN 2% AND THE MAXIMUM LONGITUDINAL SLOPE SHALL BE 5%.
3. GRADING AND PAVING SHALL BE IN ACCORDANCE WITH PROJECT GEOTECHNICAL REPORT.
4. THE CONTRACTOR SHALL VERIFY THE CONTENTS AND THICKNESS OF THE BUILDING SLAB SECTION WITH THE STRUCTURAL PLANS AND THE ELEVATIONS SHOWN HEREON PRIOR TO COMMENCEMENT OF THE GRADING OPERATIONS.
5. SEE ARCHITECTURAL PLANS FOR SIGNING AND STRIPING DETAILS, AND DEMOLITION LIMITS.
6. SITE LIGHTING SHOWN HEREON IS FOR REFERENCE ONLY. VERIFY ALL SITE LIGHT LOCATIONS WITH THE ELECTRICAL PLANS PRIOR TO CONSTRUCTION.
7. MINOR CONTOURS SHOWN HEREON ARE SHOWN AT 0.5-FOOT INTERVALS. INDEX CONTOURS ARE SHOWN AT 1-FOOT INTERVALS.



APPROVED	BY	DATE	REVISION
CHECK	NO.	BY	DATE
DESIGN	NO.	BY	DATE
DRAWN	NO.	BY	DATE
QUANT.	NO.	BY	DATE
ORIGINAL SCALE IS IN INCHES			
0 1 2			



NG GREWAL, INC.
 4265 FOOTHILL BLVD.
 OAKLAND, CA 94601
 CONTACT: NAVDEEP GREWAL
 PHONE: (510) 407-5650

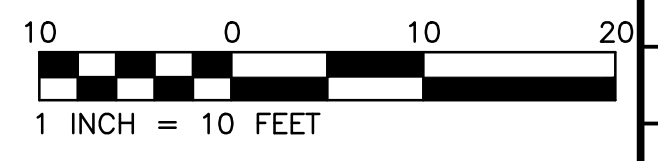


RFE ENGINEERING, INC.
 Civil Engineers - Planners - Surveyors
 2260 Douglas Blvd., Suite 200
 Oakland, CA 94612
 Phone: (510) 872-7800
 Fax: (510) 872-7804
 www.RFEEngineering.com

CHEVRON GAS STATION, CONVENIENCE STORE, & CARWASH
 4265 FOOTHILL BOULEVARD
 OAKLAND, CALIFORNIA 94601
PRELIMINARY GRADING, DRAINAGE & PAVING PLAN



Know what's below.
Call before you dig.
or (800) 227-2600

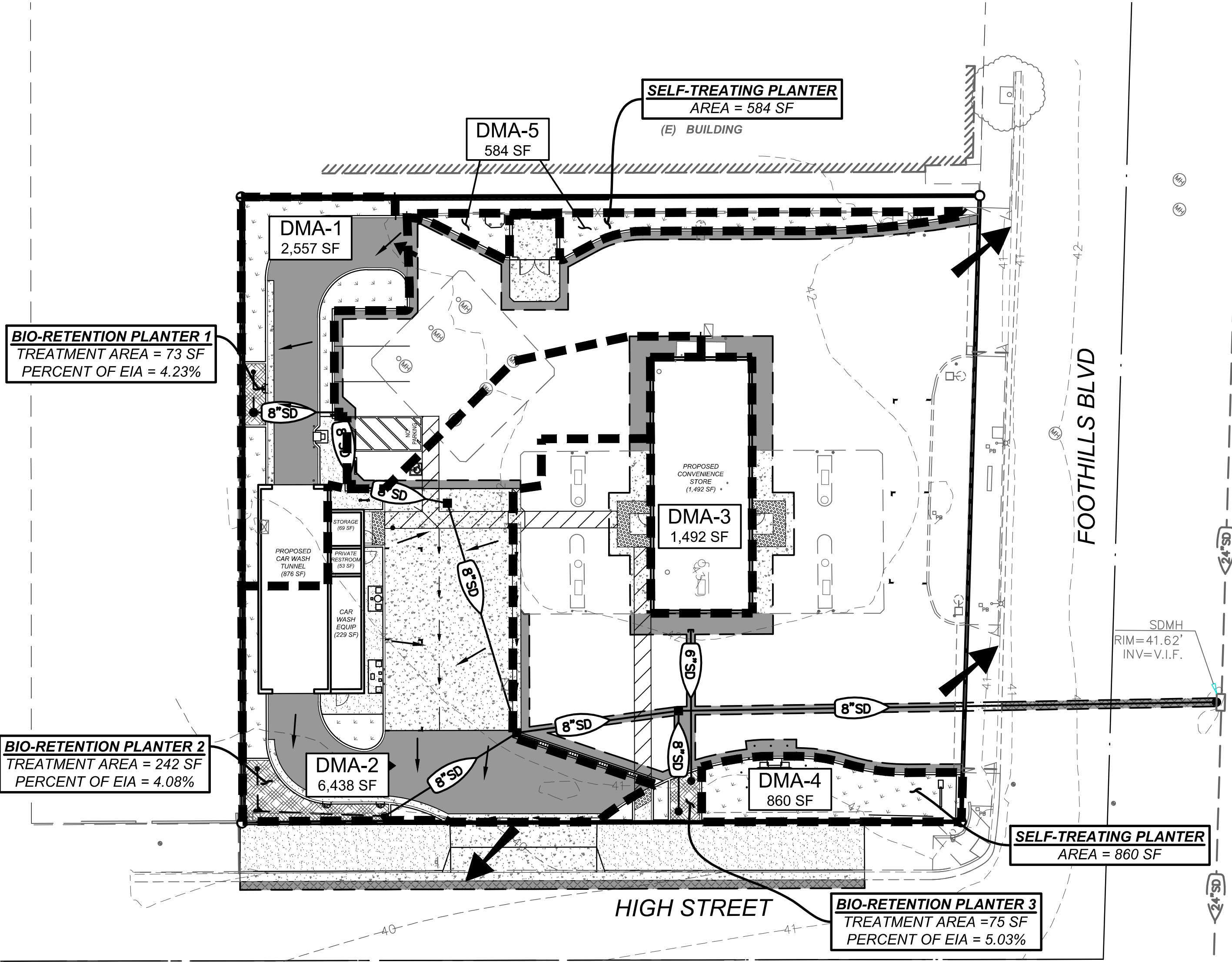
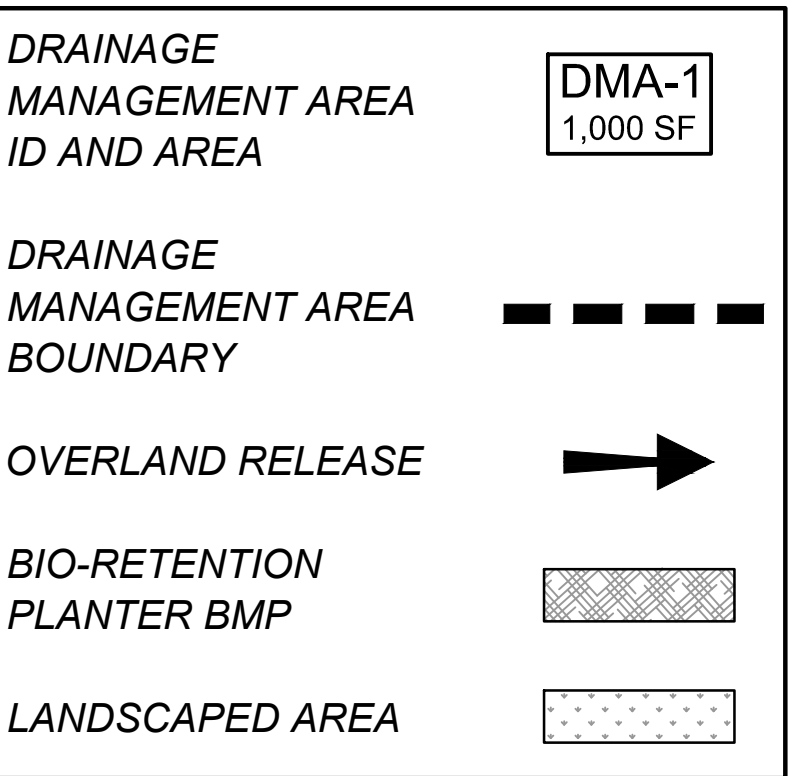


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SOURCE CONTROL MEASURES

- MARK ON-SITE INLETS WITH THE WORDS "NO DUMPING! FLOWS TO BAY" OR EQUIVALENT.
- PLUMB INTERIOR FLOOR DRAINS TO SANITARY SEWER.
- RETAIN EXISTING VEGETATION AS PRACTICABLE.
- LANDSCAPING:
 - SELECT DIVERSE SPECIES APPROPRIATE TO THE SITE. INCLUDE PLANTS THAT ARE PEST- AND/OR DISEASE-RESISTANT, DROUGHT-TOLERANT, AND/OR ATTRACT BENEFICIAL INSECTS.
 - MINIMIZE USE OF PESTICIDES AND QUICK-RELEASE FERTILIZERS.
 - USE EFFICIENT IRRIGATION SYSTEM; DESIGN TO MINIMIZE RUNOFF.
- REFUSE AREAS:
 - PROVIDE A ROOFED AND ENCLOSED AREA FOR DUMPSTERS, RECYCLING CONTAINERS, ETC., DESIGNED TO PREVENT STORMWATER RUN-ON AND RUNOFF.
 - CONNECT ANY DRAINS IN OR BENEATH DUMPSTERS, COMPACTORS, AND TALLOW BIN AREAS SERVING FOOD SERVICE FACILITIES TO THE SANITARY SEWER.
- FUELING AREAS:
 - FUELING AREAS SHALL HAVE IMPERMEABLE SURFACE THAT IS A) MINIMALLY GRADED TO PREVENT PONDING AND B) SEPARATED FROM THE REST OF THE SITE BY A GRADE BREAK.
 - CANOPY SHALL EXTEND AT LEAST 10 FT. IN EACH DIRECTION FROM EACH PUMP AND DRAIN AWAY FROM FUELING AREA.
- MISCELLANEOUS DRAIN OR WASH WATER:
 - DRAIN CONDENSATE OF AIR CONDITIONING UNITS TO LANDSCAPING. LARGE AIR CONDITIONING UNITS MAY CONNECT TO THE SANITARY SEWER.
 - ROOF DRAINS FROM EQUIPMENT DRAIN TO LANDSCAPED AREA WHERE PRACTICABLE.
 - DRAIN BOILER DRAIN LINES, ROOF TOP EQUIPMENT, ALL WASH WATER TO SANITARY SEWER.

LEGEND



Site Calculations (square feet)

Total Site Area	Total Land Area Disturbed	Total Existing/Pre-Project Impervious Surface	Replaced Impervious Surface	New Impervious Surface	Total Post-Project Impervious Surface
26,186	11,256	23,786	7,889	500	22,254

Total new and replaced impervious surface area (sf) = 8,389
 Percent of total impervious surface new or replaced = 35.27%
 Total impervious area requiring LID treatment (sf) = 8,389

Treatment Area Calculations

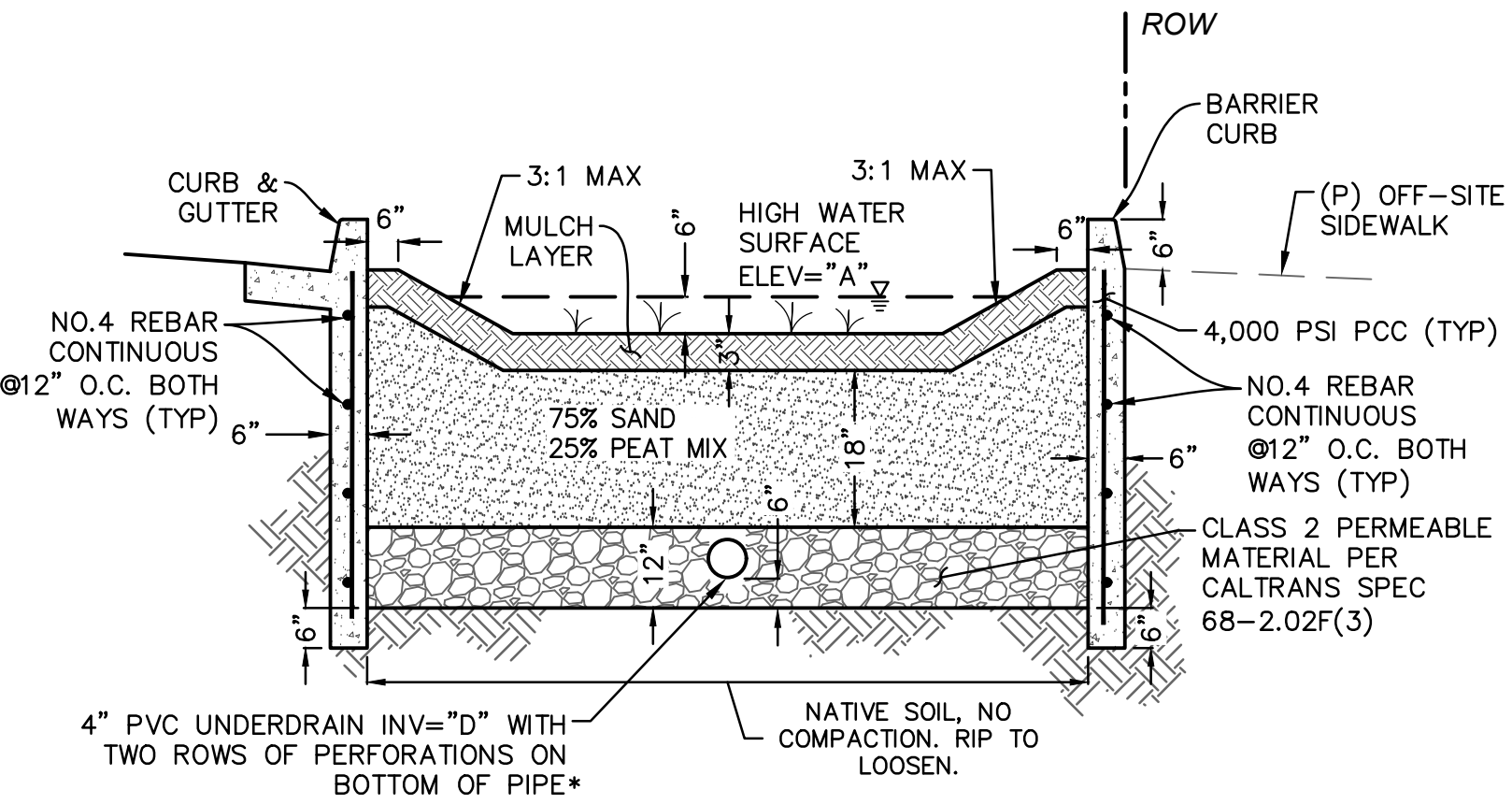
DMA	Total Area (sf)	Impervious Area (sf)	Pervious Area (sf)	Pervious Area x 0.1	Effective Impervious Area "EIA" (sf)	Required Treatment Area = EIA x 0.04 (sf)
DMA-1	2,557	1,635	922	92	1,727	69
DMA-2	6,438	5,866	572	57	5,923	237
DMA-3	1,492	1,492	0	0	1,492	60
TOTALS	10,487	8,993	1,494	149	9,142	366

Self-Treating Area

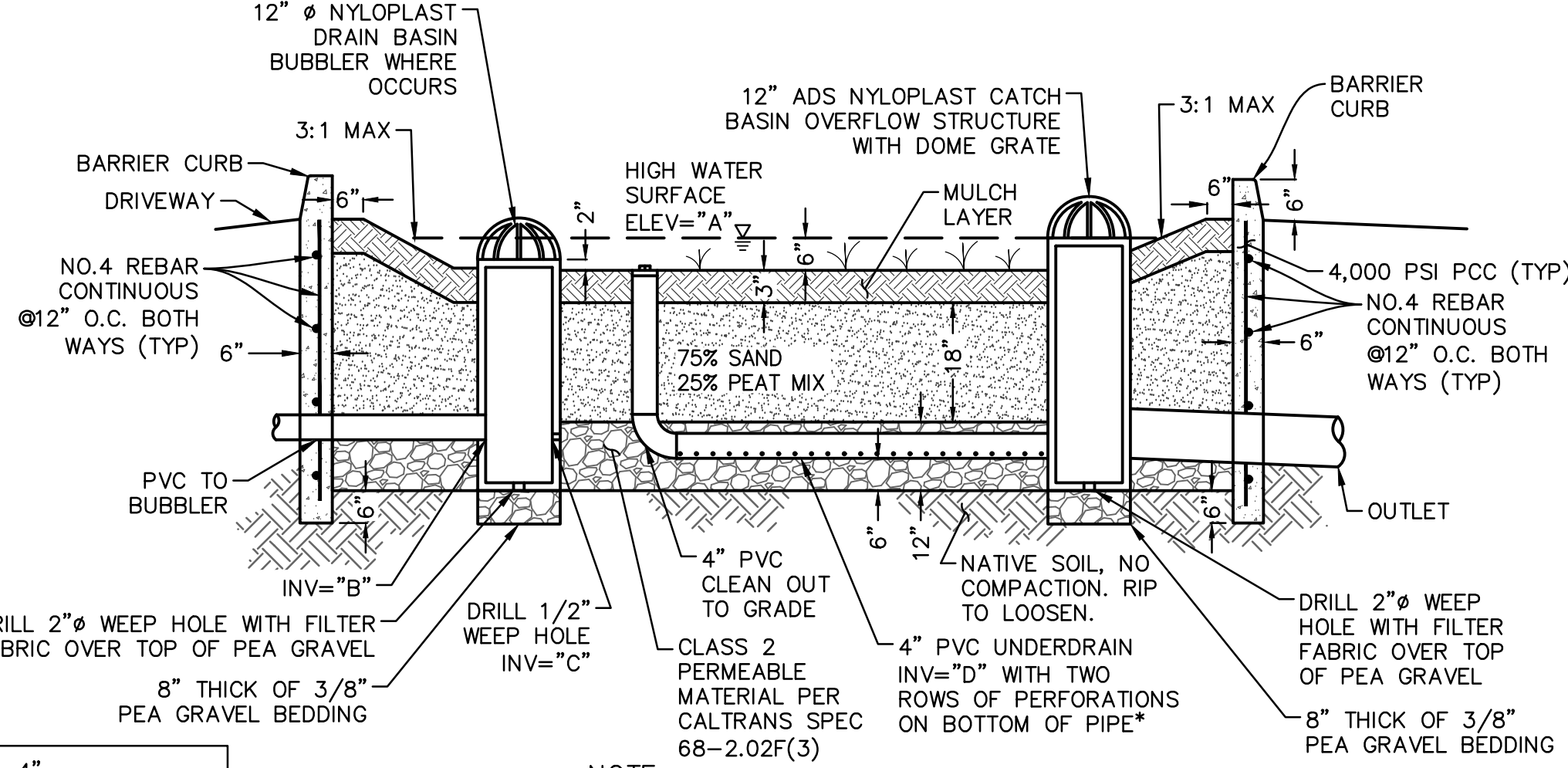
DMA	Total Area (sf)
DMA-4	860
DMA-5	584

Routine Maintenance Activities for Bioretention Areas

No.	Maintenance Task	Frequency
1	Remove obstructions, weeds, debris and trash from bioretention area and its inlets and outlets; and dispose of properly.	Quarterly, or as needed after storm events
2	Inspect bioretention area for standing water. If standing water does not drain within 2-3 days, till and replace the surface biotreatment soil with the approved soil mix and replant.	Quarterly, or as needed after storm events
3	Check underdrains for clogging. Use the cleanout riser to clean any clogged underdrains.	Quarterly, or as needed after storm events
4	Maintain the irrigation system and ensure that plants are receiving the correct amount of water (if applicable).	Quarterly
5	Ensure that the vegetation is healthy and dense enough to provide filtering and protect soils from erosion. Prune and weed the bioretention area. Remove and/or replace any dead plants.	Annually, before the wet season begins
6	Use compost and other natural soil amendments and fertilizers instead of synthetic fertilizers, especially if the system uses an underdrain.	Annually, before the wet season begins
7	Check that mulch is at appropriate depth (2 - 3 inches per soil specifications) and replenish as necessary before wet season begins. It is recommended that 2" - 3" of arbor mulch be reapplied every year.	Annually, before the wet season begins
8	Inspect the energy dissipation at the inlet to ensure it is functioning adequately, and that there is no scour of the surface mulch. Remove accumulated sediment.	Annually, before the wet season begins
9	Inspect overflow pipe to ensure that it can safely convey excess flows to a storm drain. Repair or replace damaged piping.	Annually, before the wet season begins
10	Replace biotreatment soil and mulch, if needed. Check for standing water, structural failure and clogged overflows. Remove trash and debris. Replace dead plants.	Annually at the end of the rainy season, and/or after large storm events
11	Inspect bioretention area using the inspection checklist.	Annually, before the wet season begins



- NOTES:
- SEE LANDSCAPE PLANS FOR VEGETATION.
 - PLANTING SURFACE SHALL BE LEVEL ACROSS EACH PLANTER.
 - SEE PLAN FOR LOCATIONS OF UNDERDRAIN PIPE AND OUTLET CONTROL STRUCTURE.

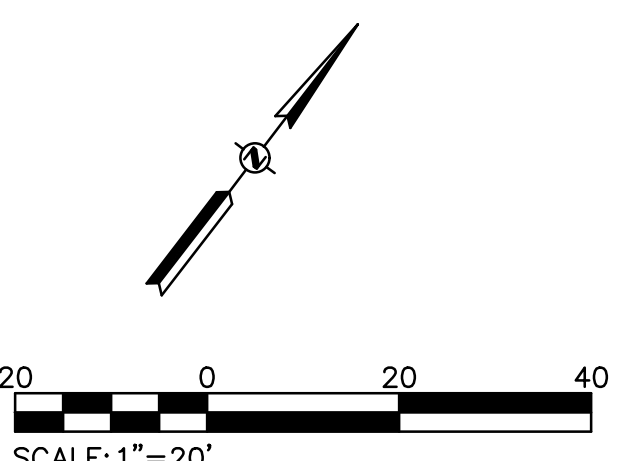


- * PIPE SIZE: 4"
 HOLE SIZE: 3/8"
 HOLE SPACING: 3"±1/4"
 HOLE ROWS: 2 @ 90' (±3')

- NOTE:
- SEE LANDSCAPE PLANS FOR VEGETATION.
 - PLANTING SURFACE SHALL BE LEVEL ACROSS PLANTER.
 - SEE PLAN FOR LOCATIONS OF UNDERDRAIN PIPE, OVERFLOW DRAIN, AND OUTLET STRUCTURE.



Know what's below.
 Call before you dig.
 or (800) 227-2600



APPROVED BY: _____ DATE: _____

REVISION NO. _____

DESIGN: _____ DRAWN: _____ QUANT.: _____

CHECK NO. _____

BY: _____

SCALE: 1"=20'

ORIGINAL SCALE IS IN INCHES

NO. 10 PRELIMINARY NOT FOR CONSTRUCTION

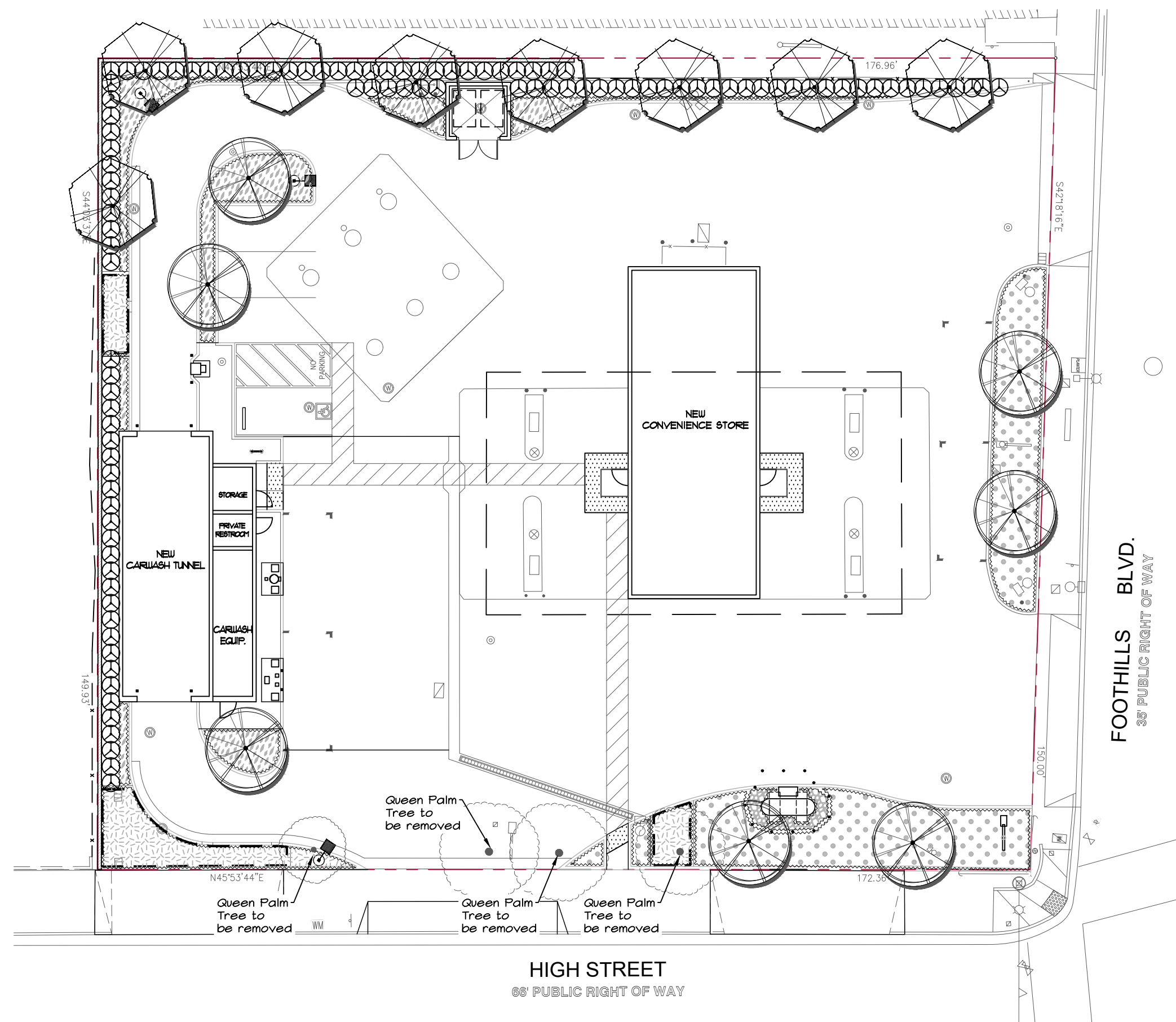
RFE ENGINEERING, INC.
 Civil Engineers - Planners - Surveyors
 2260 Douglas Blvd., Suite 200, Oakland, CA 94601
 Phone: (510) 272-7800 Fax: (510) 272-9661
 www.RFEengineering.com

NG GREWAL, INC.
 4265 FOOTHILL BLVD.
 OAKLAND, CA 94601
 CONTACT: NAVDEEP GREWAL
 PHONE: (510) 407-5660

CHEVRON GAS STATION, CONVENIENCE STORE, & CARWASH
 4265 FOOTHILL BOULEVARD
 OAKLAND, CALIFORNIA 94601
PRELIMINARY STORMWATER CONTROL PLAN

Sheet **C3**
 3 of 3
 6/20/2019

RFE PROJECT #18046 - CHEVRON OAKLAND, CA



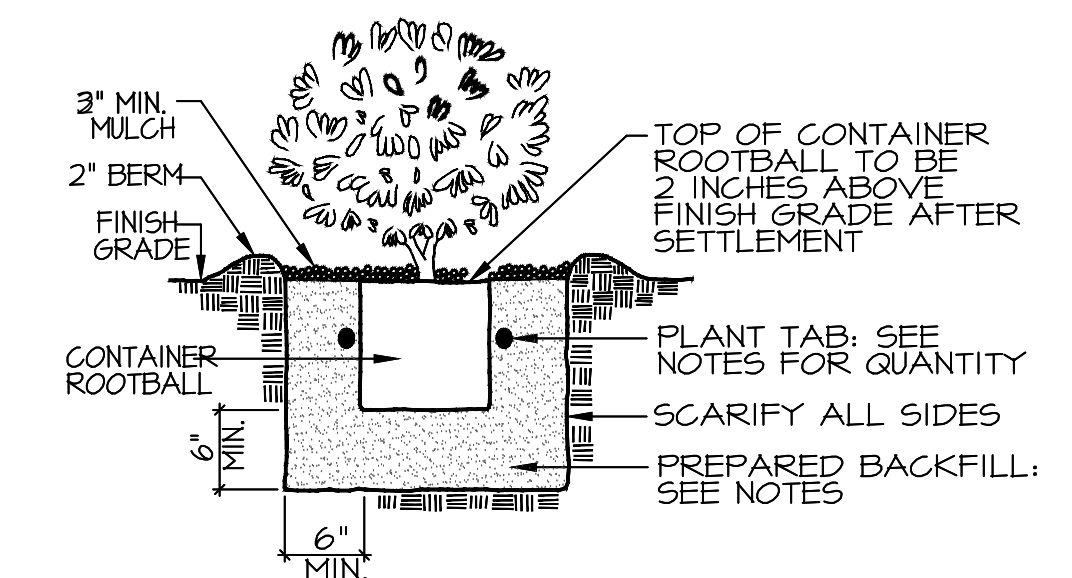
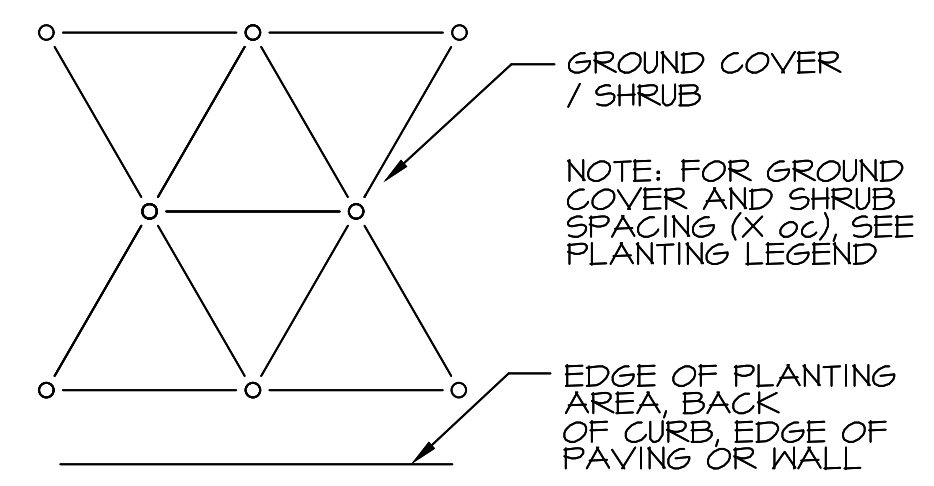
1 LANDSCAPE PLAN
SCALE: 1" = 20'-0"



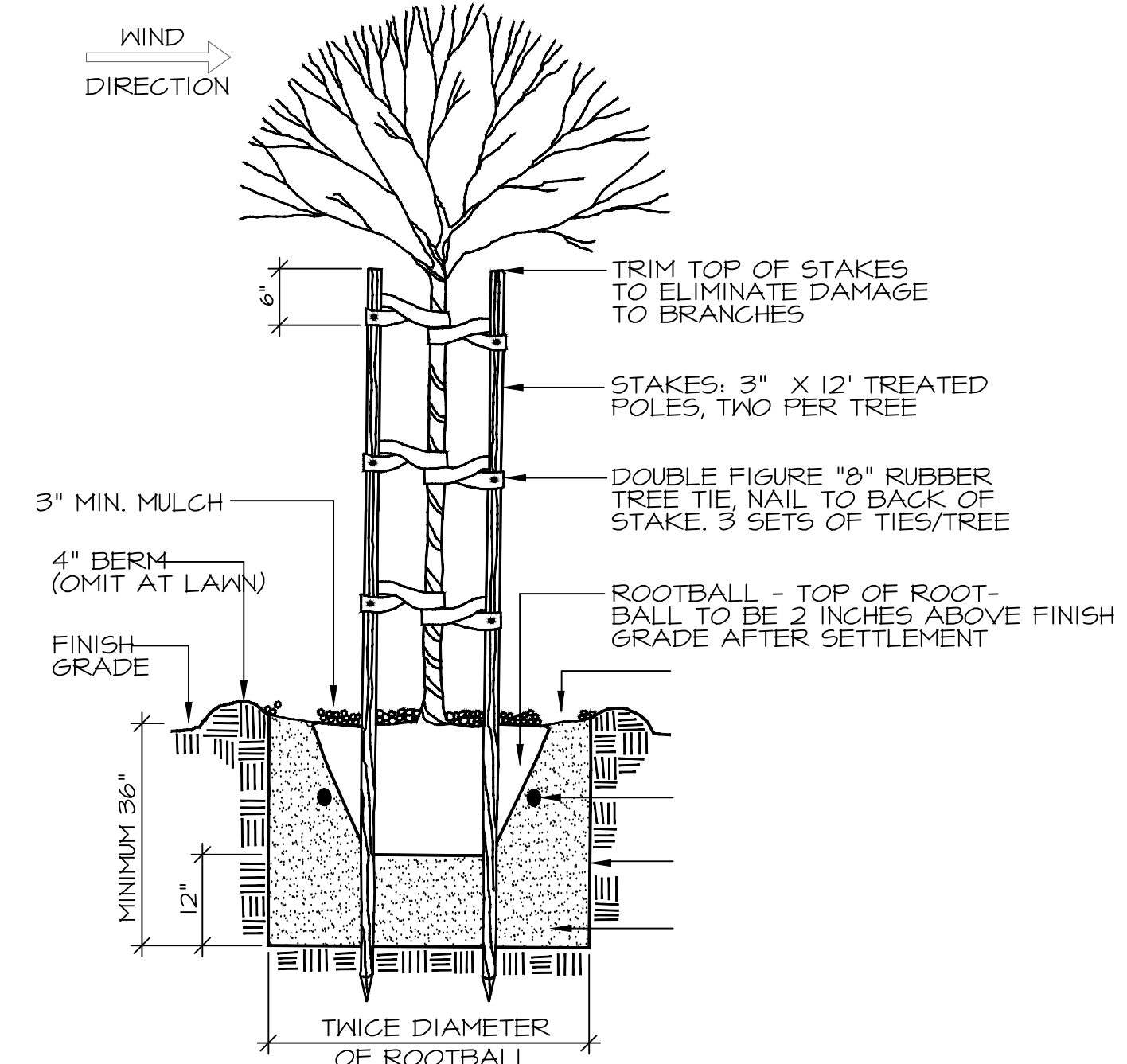
Maximum Applied Water Allowance				
Eto	X	.45 X	Ptg S X	MAXA
44.2	0.45	3,961	0.62	41,447

Proposed Landscape Water Use				
Plant Type	H2O Use	Ptg SF	Gallons	
Low	0.30	3,961	100.0%	
Medium	0.50	0	0.0%	
High	0.90	0	0.0%	
Totals		3,961	100%	

Estimated Total Water Use			
Plant	Water (Eto)(.062)	(PF X HA)	ETWU
Use			
Low	27,404	1,245	34,113
Medium	27,404	0	0
High	27,404	0	0
Total			34,113



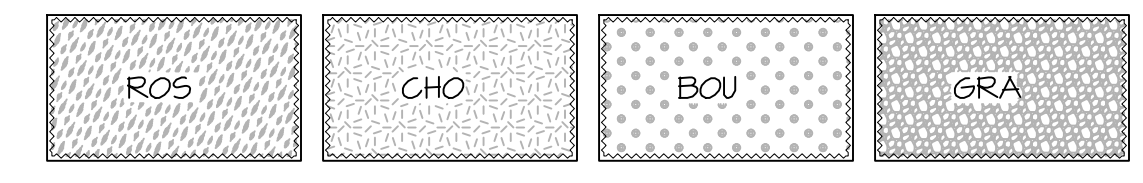
PLANTING INSTALLATION AND LAYOUT



TREE PLANTING AND STAKING

PLANTING LEGEND

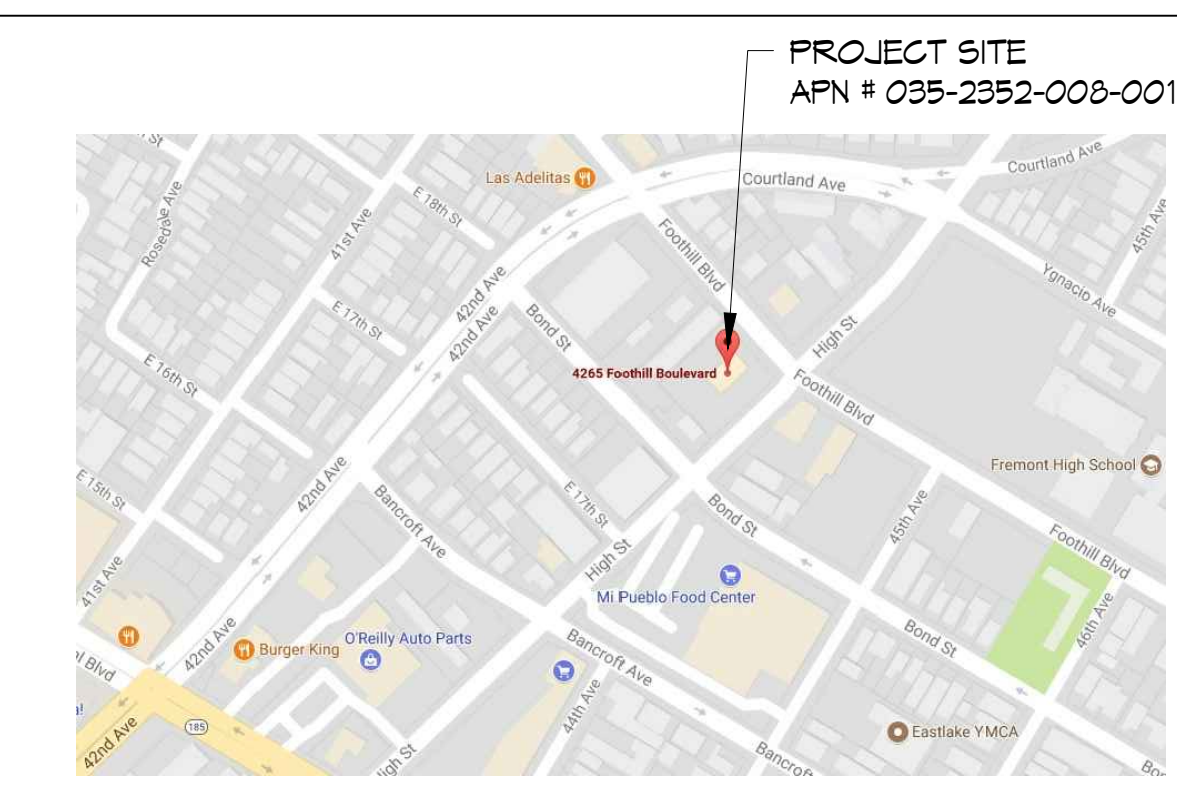
Symbol	BOTANICAL NAME	COMMON NAME	H2O
Tree	Tristania conferta	Brisbane Box	L 15 Gallon
	Lagerstroemia indica x fauriei 'Tuscarora'	Tuscarora Grape Myrtle	L 15 Gallon
Shrubs and Vines	Myrica californica	Pacific Wax Myrtle	L 5 Gallon
	CHO Chondropetalum elephantinum	Large Cape Rush	L 5 Gallon @ 48" oc
Ground Cover	ROS Rosmarinus officinalis 'Huntington Carpet'	Rosemary	L 1 Gallon @ 30" oc
	BOU Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition	L 1 Gallon @ 42" oc
	GRA Gravel	3" Drain Rock	4" deep



PLANTING NOTES

- All trees are to be staked as shown in the staking diagram per city requirement.
- Plant locations are to be adjusted as necessary to screen utilities but not block windows or impede access.
- All ground cover and shrub areas shall be top-dressed with a 3" layer of bark mulch.
- All ground cover planting will be placed no farther than 6" from edge of pavement, edge of header or back of curb. Spacing shall ensure full coverage in one year.
- There shall be no storing of material or equipment, permitting of any burning or operating or parking of equipment under branches of any existing plants to remain. If existing plants to remain are damaged during construction, the plants shall be replaced with the same species or size as those damaged.
- All plant material shall be nursery grown stock. All plant materials shall be tagged at the nursery at least 1 month prior to planting for the Landscape Architects review.
- Review layout of all landscape elements with the Landscape Architect prior to installation. Field modifications may be necessary. Final layout to be reviewed by the Landscape Architect.
- Written dimensions supersede scaled dimension. Measurements are from the wall face, back of curb, edge of walk, building wall, property line or center line as graphically indicated.
- All layout corners are at 90 degrees right angles unless otherwise indicated. All curves shown are segments of circles with noted radii or diameter if noted. Circles can be scaled and be connected by freeform curves.
- HERBICIDE APPLICATION: Herbicide shall not be used until all plant material has been planted a minimum of 20-days. All planting areas shall be kept weed-free by non-herbicide methods during this time period. Herbicide shall not be applied to any areas which are or have been seeded. Contractor must be licensed by the State and County for fertilizer application, and must have current registration on file with the County.
- Landscape shall be maintained in a manner to prevent landscaping from growing above 3' in height in the areas indicated in the plans as being located within a safety visibility triangle area.
- CERTIFICATION: Prior to occupancy, the Landscape Architect shall certify in writing in a manner acceptable to the Building Inspection Division, that the landscaping has been installed in accordance with all aspects of the approved landscape plans.
- A minimum of 8" of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.
- Incorporate compost or natural fertilizer into the soil to a minimum depth of 8" at a minimum rate of 6 cubic yards per 1000 square feet.
- All Plantings shall be automatically irrigated utilizing state of the art system, components and installation techniques.

VICINITY MAP



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www.miarchitect.com

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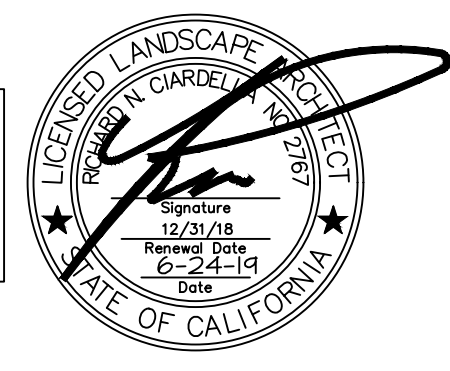
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- ISSUED FOR PLANNING

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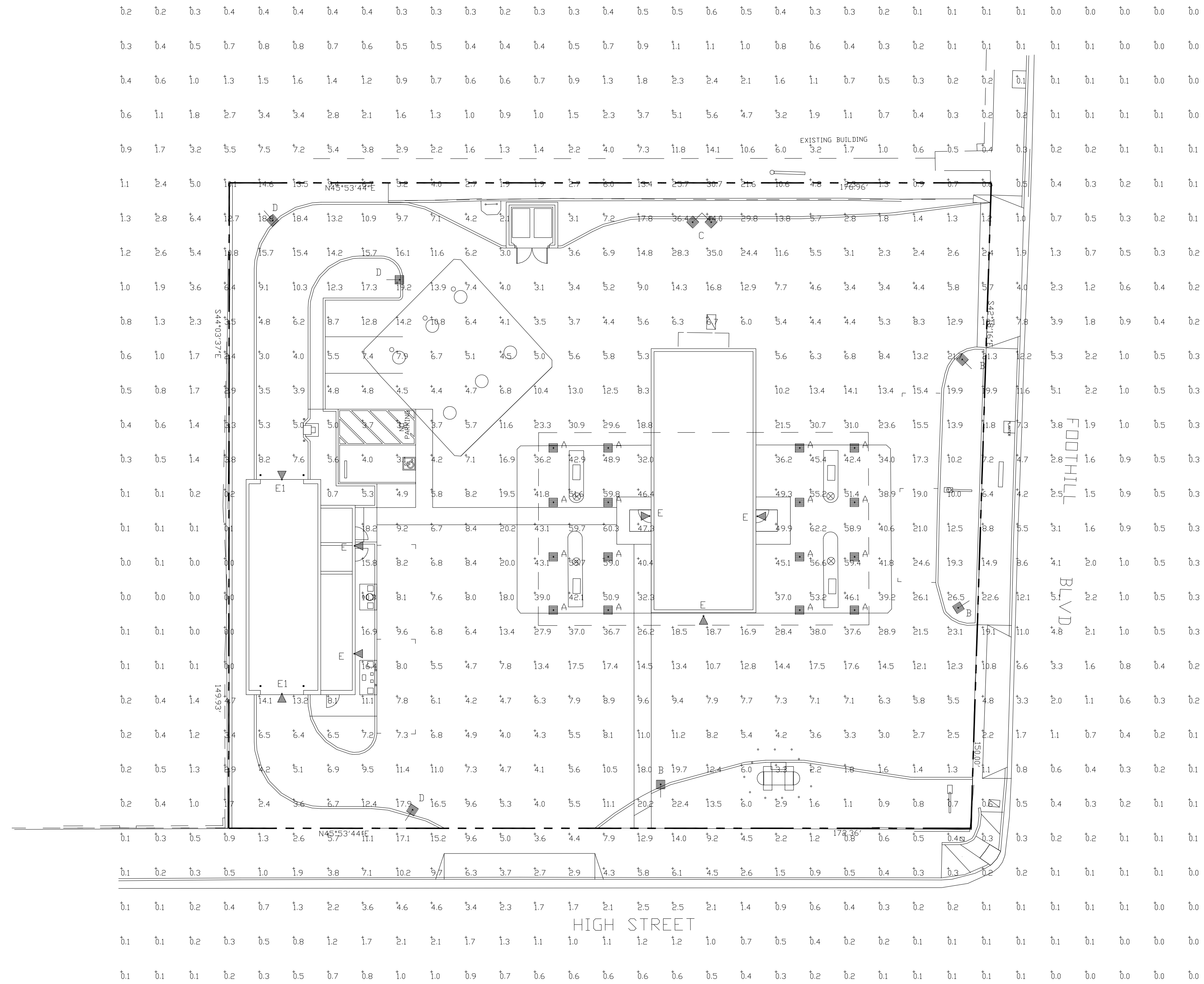
LANDSCAPE PLAN
PROJECT #: 16-12401
DRAWN: rc CHECKED: rc
SCALE: AS NOTED DATE: 7-20-17

LA1

Ciardella associates
640 Menlo Ave, Suite 10
Menlo Park, CA 94025
Tel 650 326 6100
F 650 285 4527
ca@ciardella-assoc.com



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CRUS



PLCS



XPWS3

Symbol	Qty	Label	Arrangement	Description	LLF	Lumens/Lamp	Arr. Lum. Lumens	Arr. Watts	BUG Rating
	16	A	SINGLE	CRUSK-UNV-SC-LED-SS-50 MTD @ 14'=5"	1.000	N.A.	13674	97.9	B3-U0-G1
	3	B	SINGLE	PLCS-S-LED-HO-50-SINGLE MTD @ 18'-2" EXISTING	1.000	N.A.	21987	157.9	B4-U0-G2
	1	C	2 @ 90 DEGREES	PLCS-S-LED-HO-50-D90 MTD @ 18'-2" EXISTING	1.000	N.A.	43974	315.8	B4-U0-G2
	3	D	SINGLE	PLCS-S-LED-HO-50-SINGLE-18'POLE+2'BASE NEW	1.000	N.A.	21987	157.9	B4-U0-G2
	5	E	SINGLE	XPWS3-FT-LED-48-450-CW-UE MTD @ 9'	1.000	N.A.	6159	72	B2-U0-G1
	2	E1	SINGLE	XPWS3-FT-LED-48-450-CW-UE MTD @ 11'	1.000	N.A.	6159	72	B2-U0-G1

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ALL_CALC_POINTS	Illuminance	Fc	6.98	62.2	0.0	N.A.	N.A.
CANDPY	Illuminance	Fc	43.79	62.2	16.9	2.59	3.68
INSIDE CURB	Illuminance	Fc	10.17	41.8	1.2	8.48	34.83

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine the applicability of the layout to existing or future field conditions.

This lighting plan represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved methods. Actual performance of any manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in lamps/LED's and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted. Fixture nomenclature noted does not include mounting hardware or poles. This drawing is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

Total Project Watts
Total Watts = 33336

SD1-L

100% ALLIANCE RE. CINCINNATI OHIO 45202 USA
100% 100% 100% + FAX 100% 100% 100%

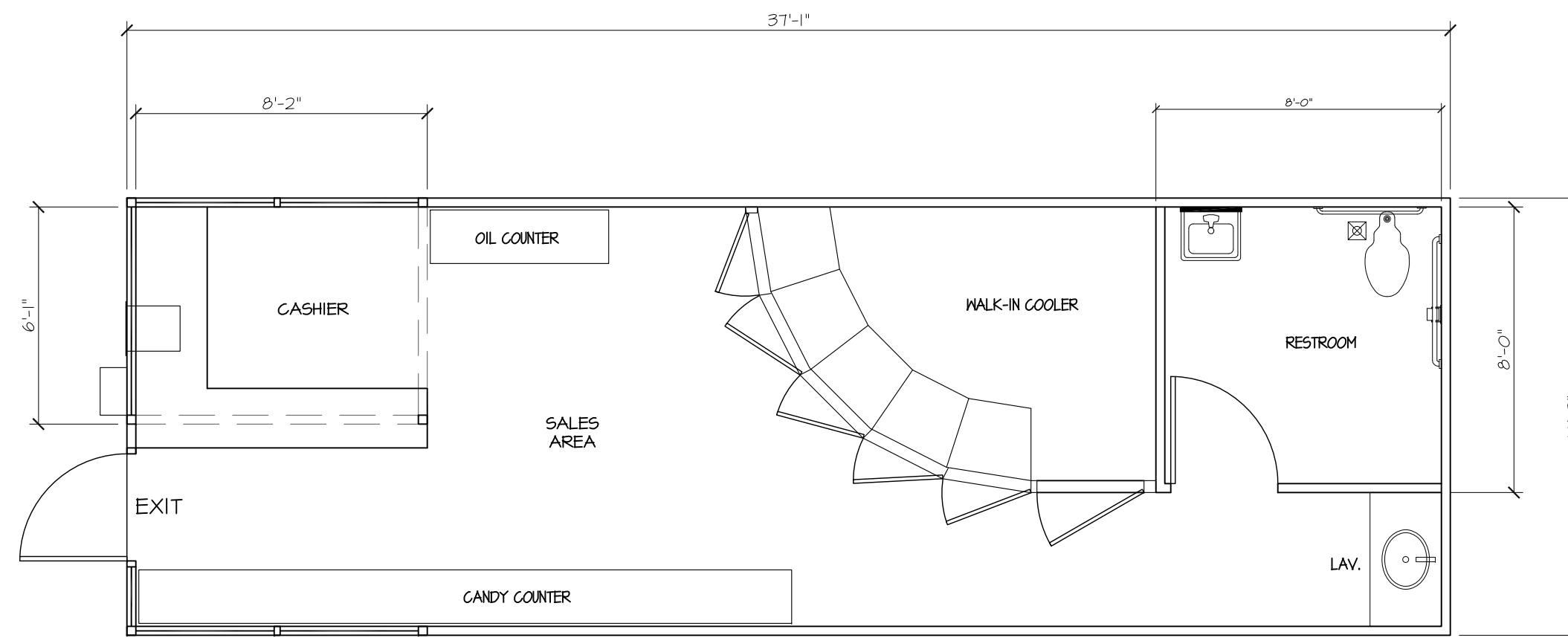
LIGHTING PROPOSAL LD-142826-1

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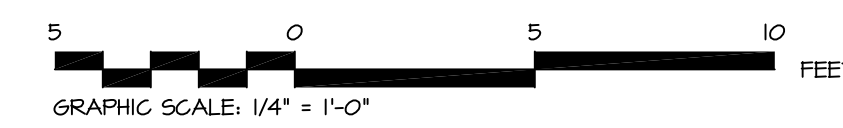
BY/ME	DATE: 5-21-18	REV: 5-23-18	SHEET 1 OF 1
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SCALE: 1"=16'

S:_Projects\16-12401_4265 Foothill Blvd Oakland\Drawings\Planning\16-12401_A1.0.dwg modified by mbauser at Apr 26, 2021 - 9:32am



1 (E) STORE FLOOR PLAN
1/4" = 1'-0"



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EXISTING STORE FLOOR PLAN
PROJECT #: 16-12401
DRAWN: DP CHECKED: MI
SCALE: AS NOTED DATE: 03-05-21

A1.0
SHEET OF

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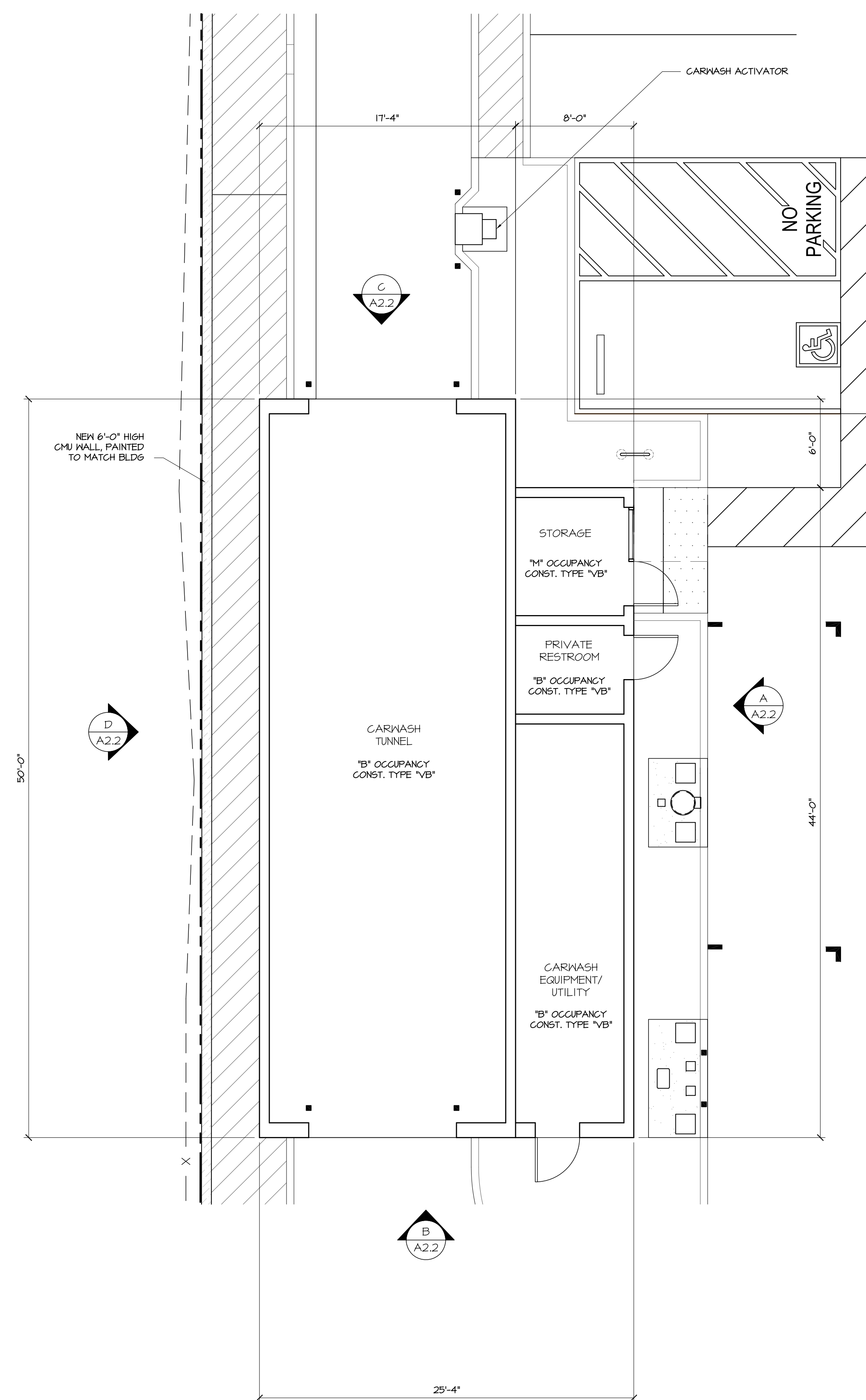
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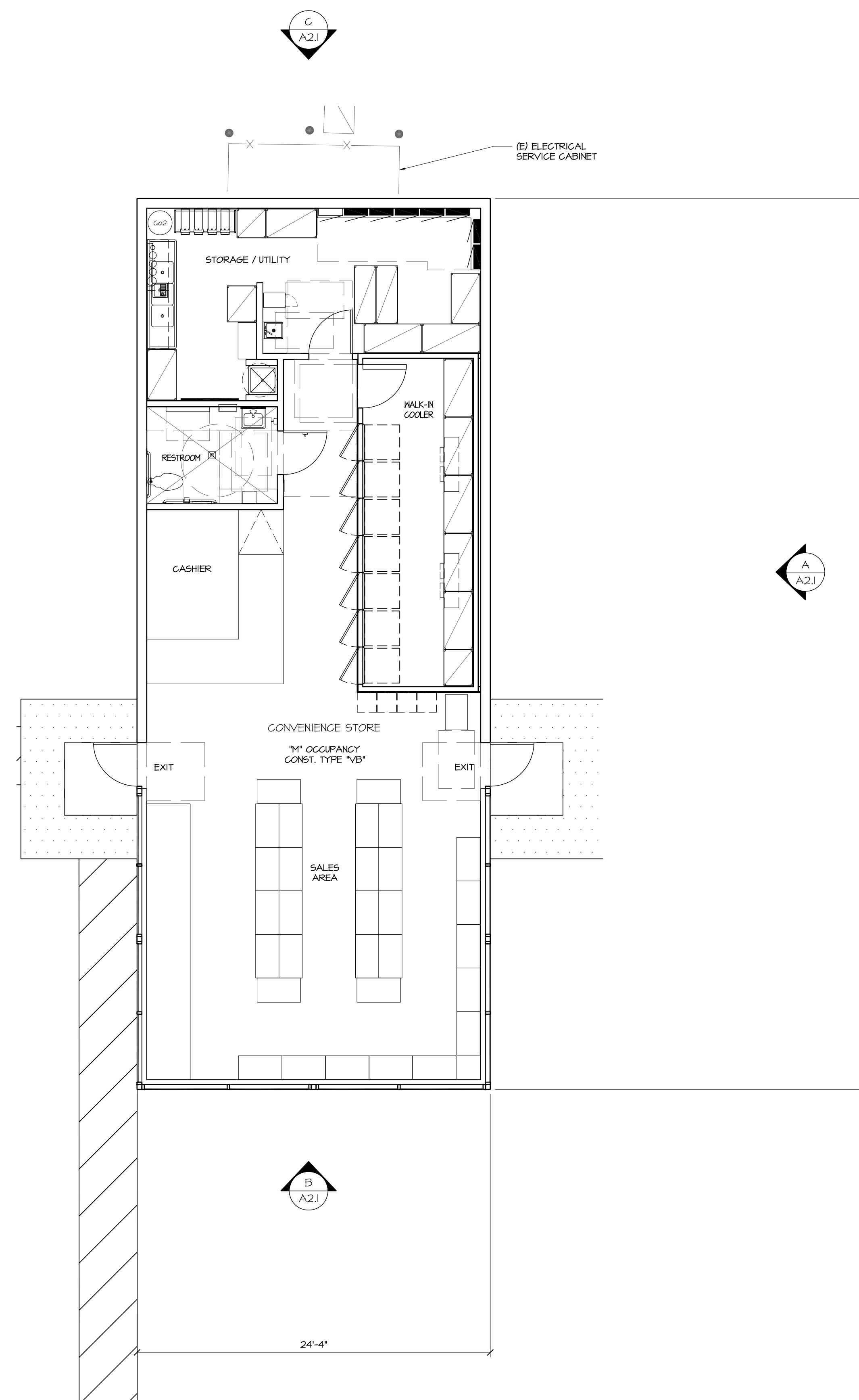
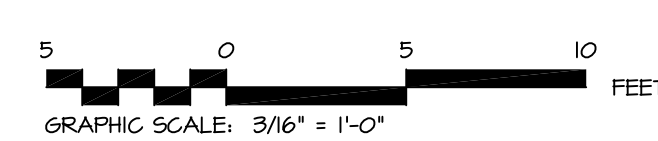
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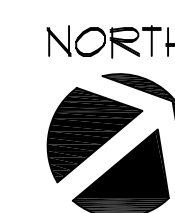
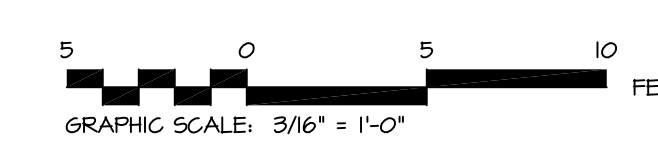
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2 CARWASH FLOOR PLAN
3/16" = 1'-0"



1 CONVENIENCE STORE FLOOR PLAN
3/16" = 1'-0"



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CONVENIENCE STORE & CARWASH FLOOR PLANS

PROJECT #: 16-12401
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SCALE: AS NOTED DATE: 09-23-17

A1.1

SHEET OF

COLOR & MATERIAL NOTES

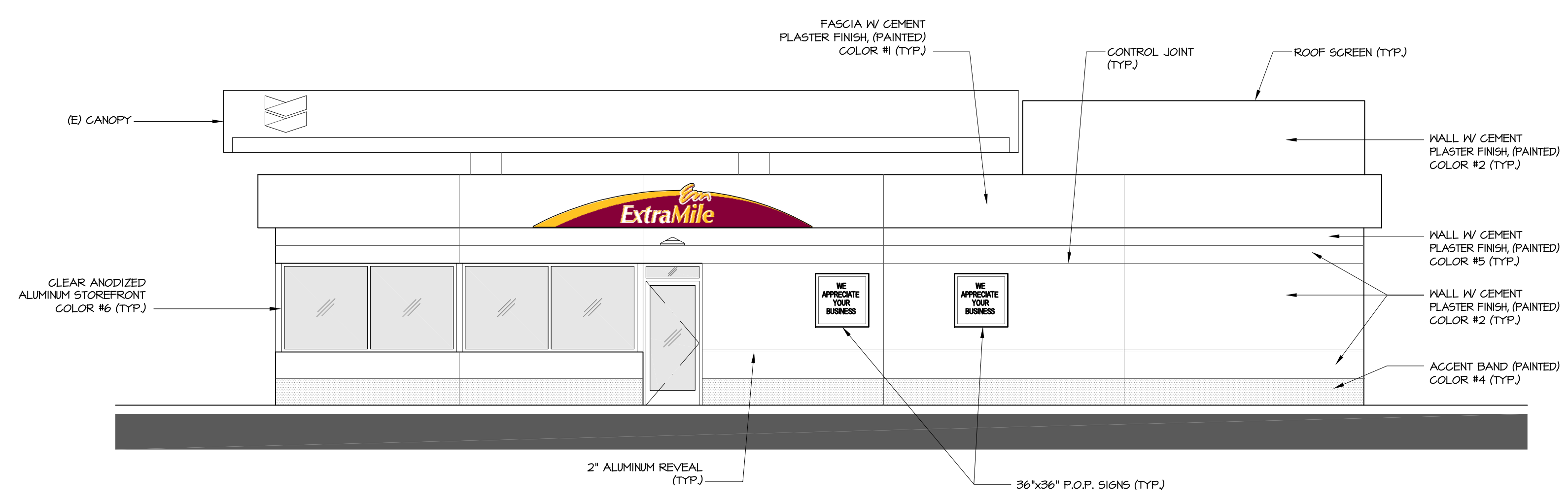
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2	NUTMEG (SEMI GLOSS)	NCS-102-PP6
4	MOCHA (SEMI GLOSS)	NCS-104-PP6
5	CHILLED WINE (SEMI-GLOSS)	T4-300
6	CLEAR ANODIZED	215 OLD-CASTLE GLASS



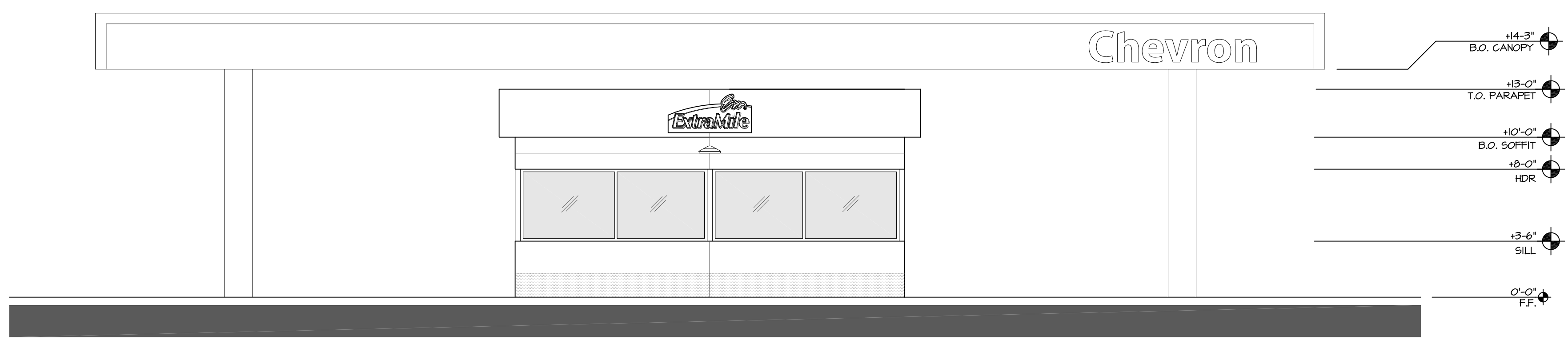
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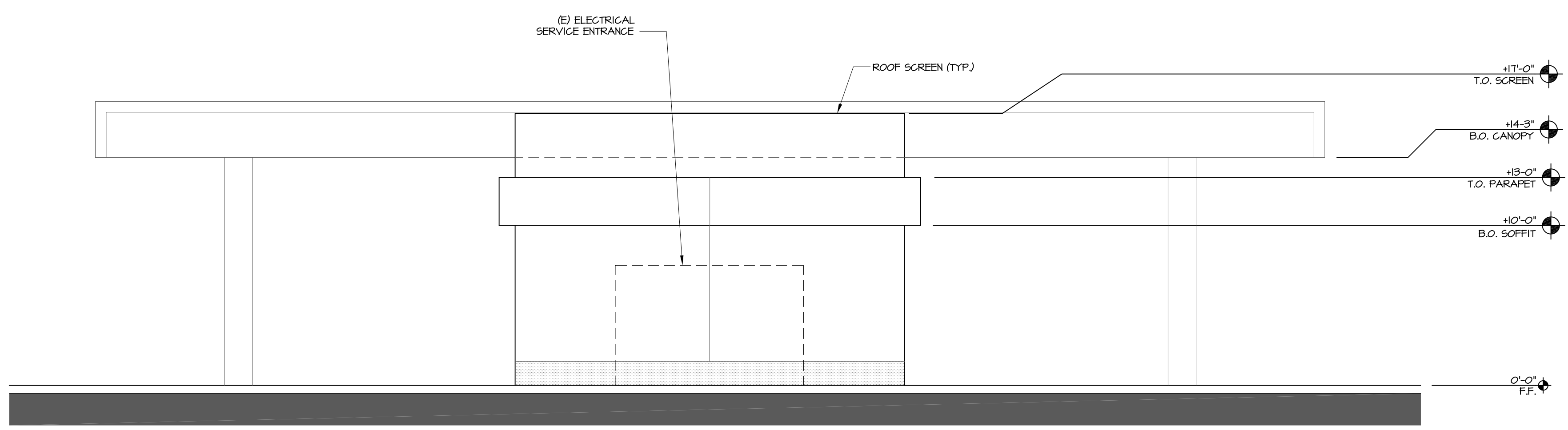
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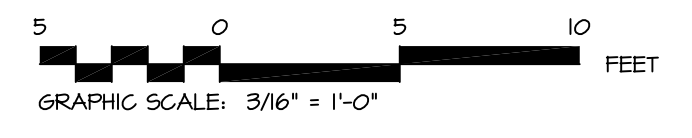
A NORTHEAST ELEVATION (SOUTHWEST ELEVATION SIM.)
 3/16" = 1'-0"



B SOUTHEAST ELEVATION
 3/16" = 1'-0"



C NORTHWEST ELEVATION
 3/16" = 1'-0"



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CONVENIENCE STORE
 BUILDING ELEVATIONS

PROJECT #: 16-12401
 DRAWN: BB CHECKED: MI
 SCALE: AS NOTED DATE: 08-22-17

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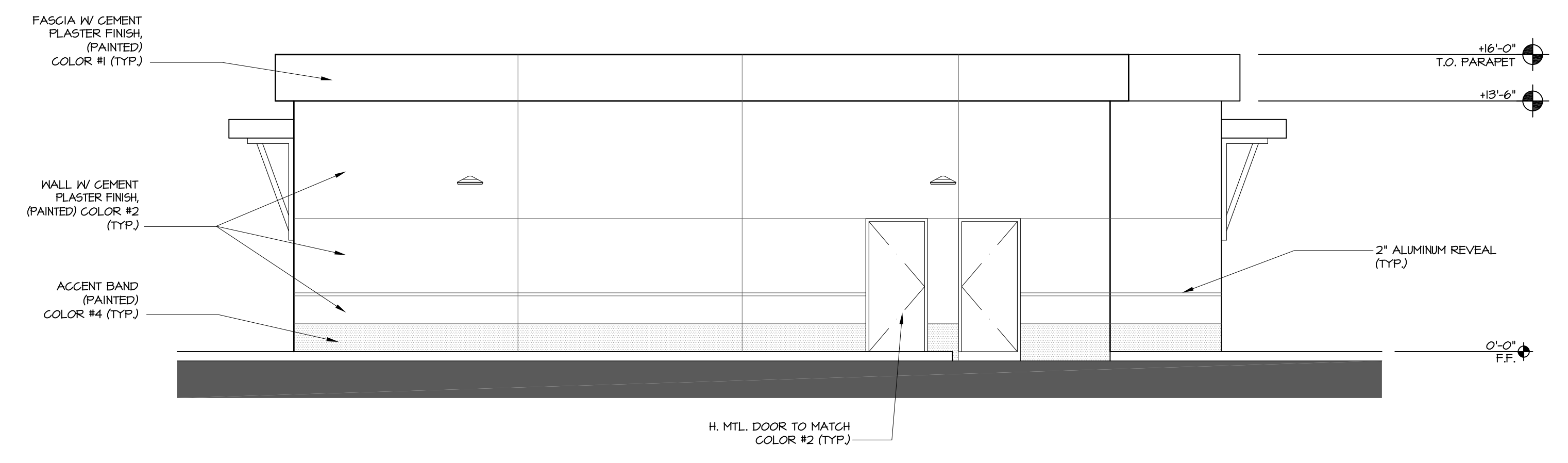
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COLOR & MATERIAL NOTES

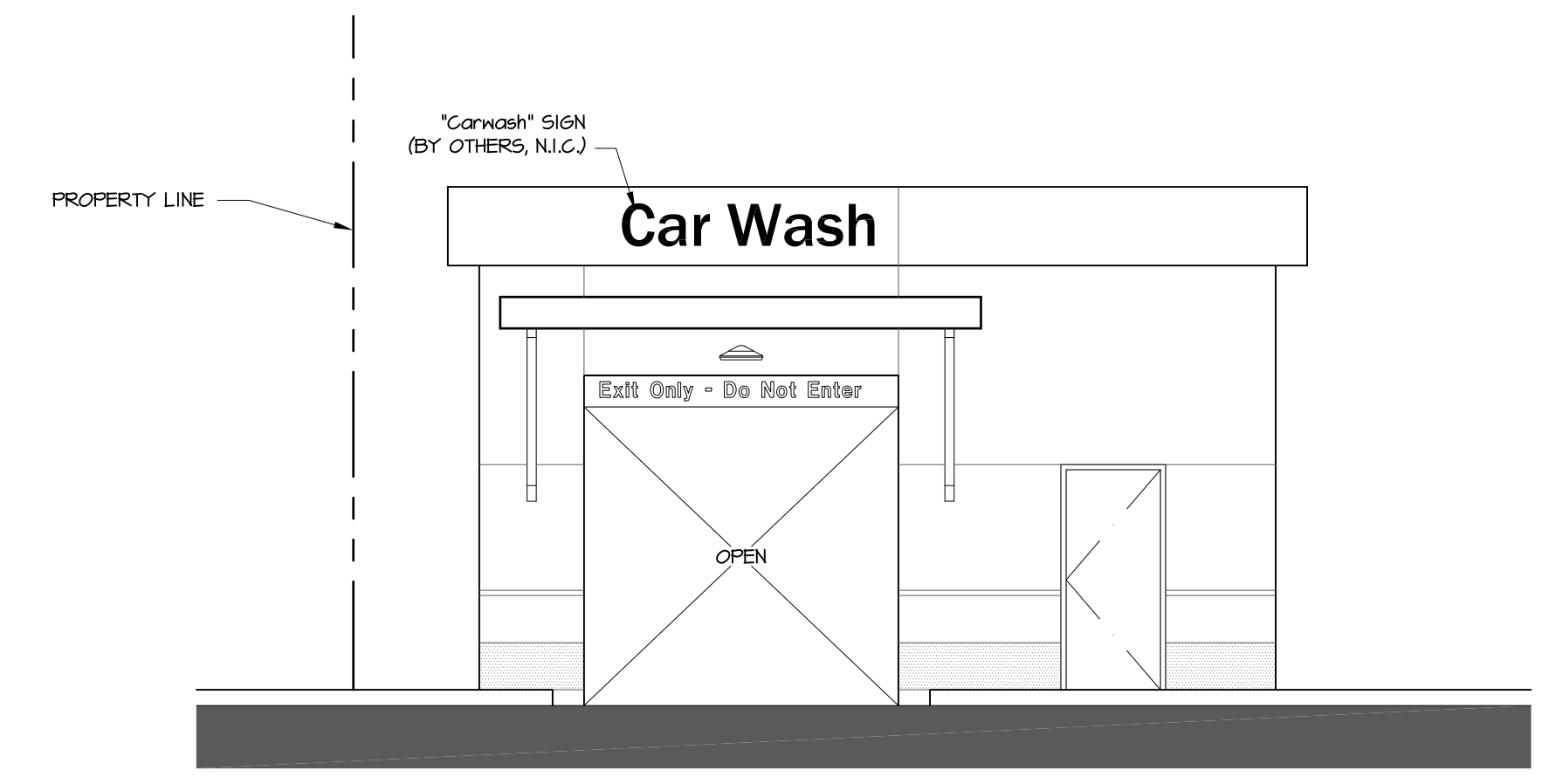
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2	NUTMEG (SEMI GLOSS)	NCS-102-PP6
4	MOCHA (SEMI GLOSS)	NCS-104-PP6
5	CHILLED WINE (SEMI-GLOSS)	74-300
6	CLEAR ANODIZED	215 OLD-CASTLE GLASS



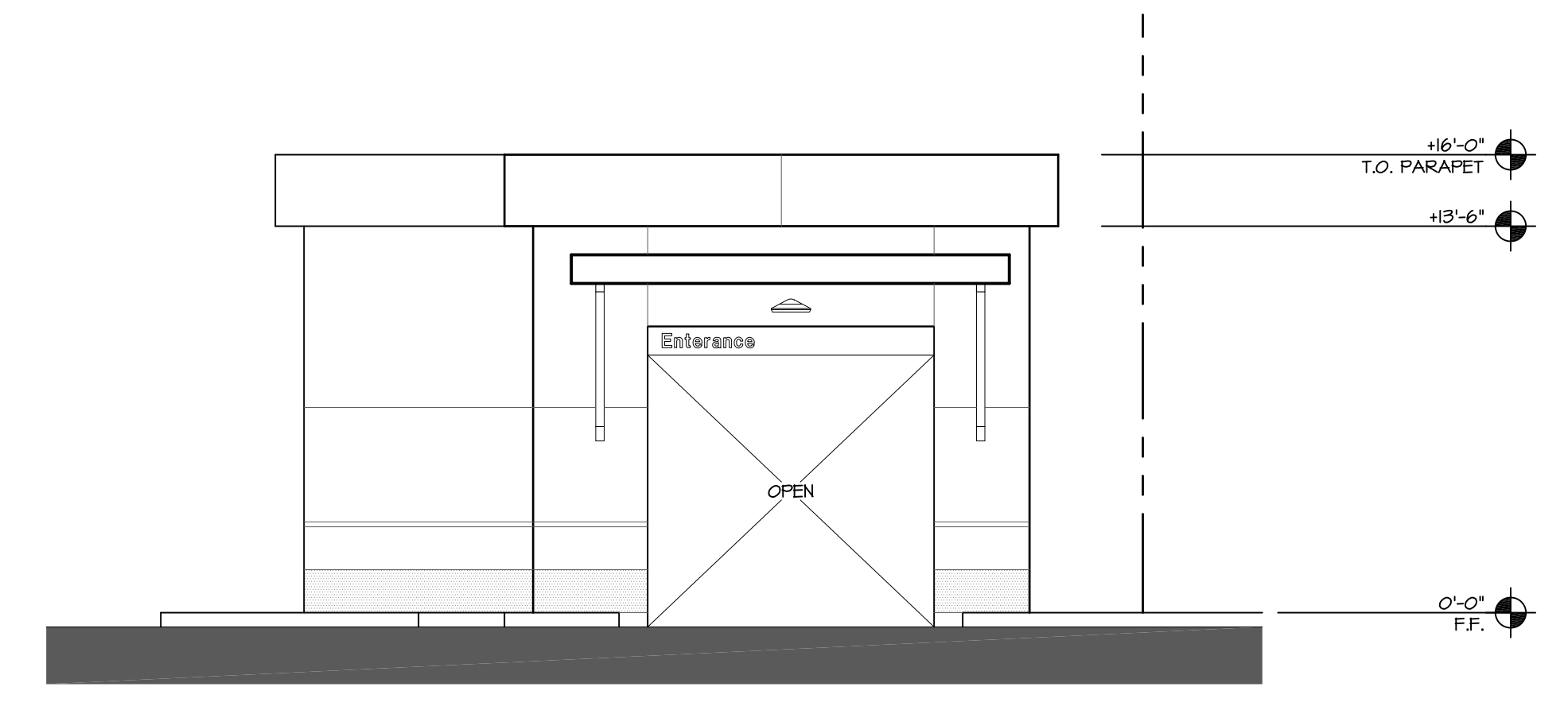
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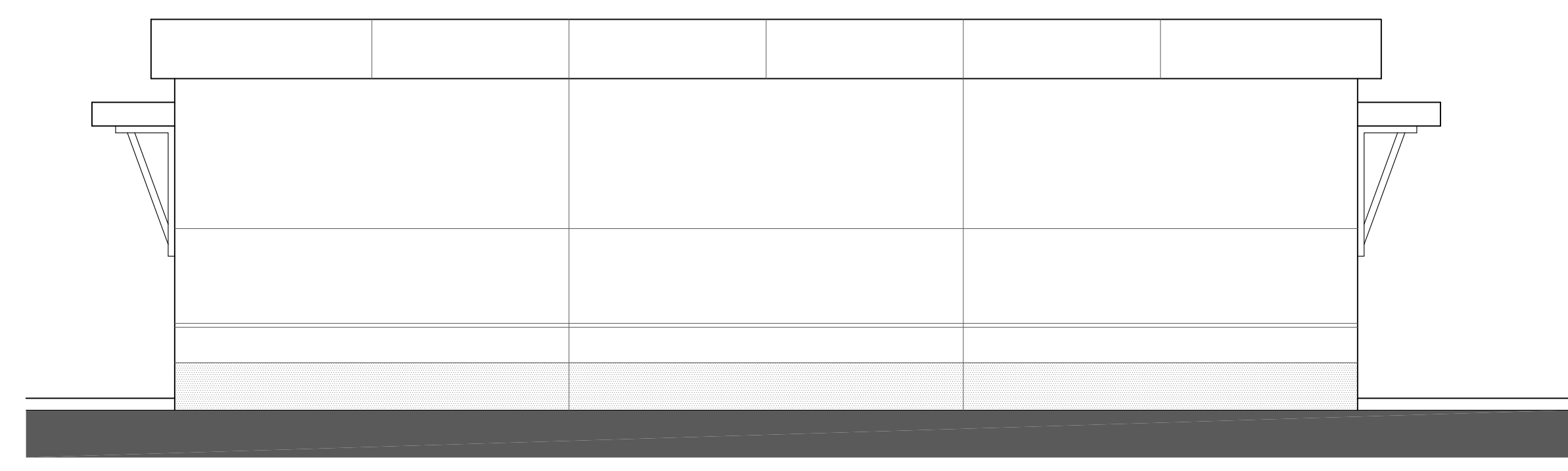
A **NORTHEAST ELEVATION**
 3/16" = 1'-0"



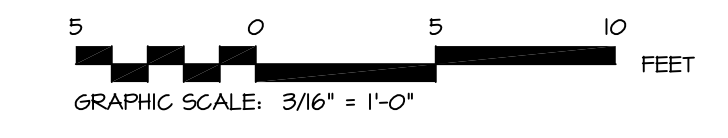
B **SOUTHEAST ELEVATION**
 3/16" = 1'-0"



C **NORTHWEST ELEVATION**
 3/16" = 1'-0"



D **SOUTHWEST ELEVATION**
 3/16" = 1'-0"



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CARWASH BUILDING ELEVATIONS

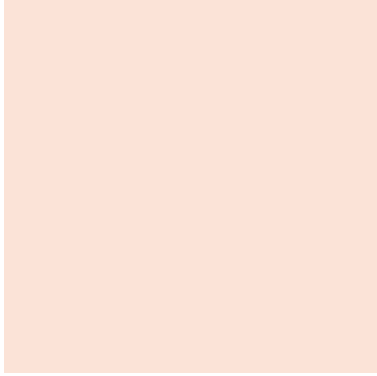
PROJECT #: 16-12401

DRAWN: BB CHECKED: MI

SCALE: AS NOTED DATE: 08-22-17

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"CAFE AU LAIT"
NCS-101-PPG (SEMI-GLOSS)
CEMENT PLASTER FASCIA,
PAINTED



"CHILLED WINE"
79-300 (SEMI-GLOSS)
ACCENT BAND, PAINTED



OLDCASTLE BUILDING ENVELOPE
215 CLEAR CLASS I
CLEAR ANODIZED STOREFRONT



"NUTMEG"
NCS-102-PPG (SEMI-GLOSS)
CEMENT PLASTER ROOF SCREEN
& WALL FINISH, PAINTED



"MOCHA"
NCS-104-PPG (SEMI-GLOSS)
CEMENT PLASTER
FASCIA, PAINTED



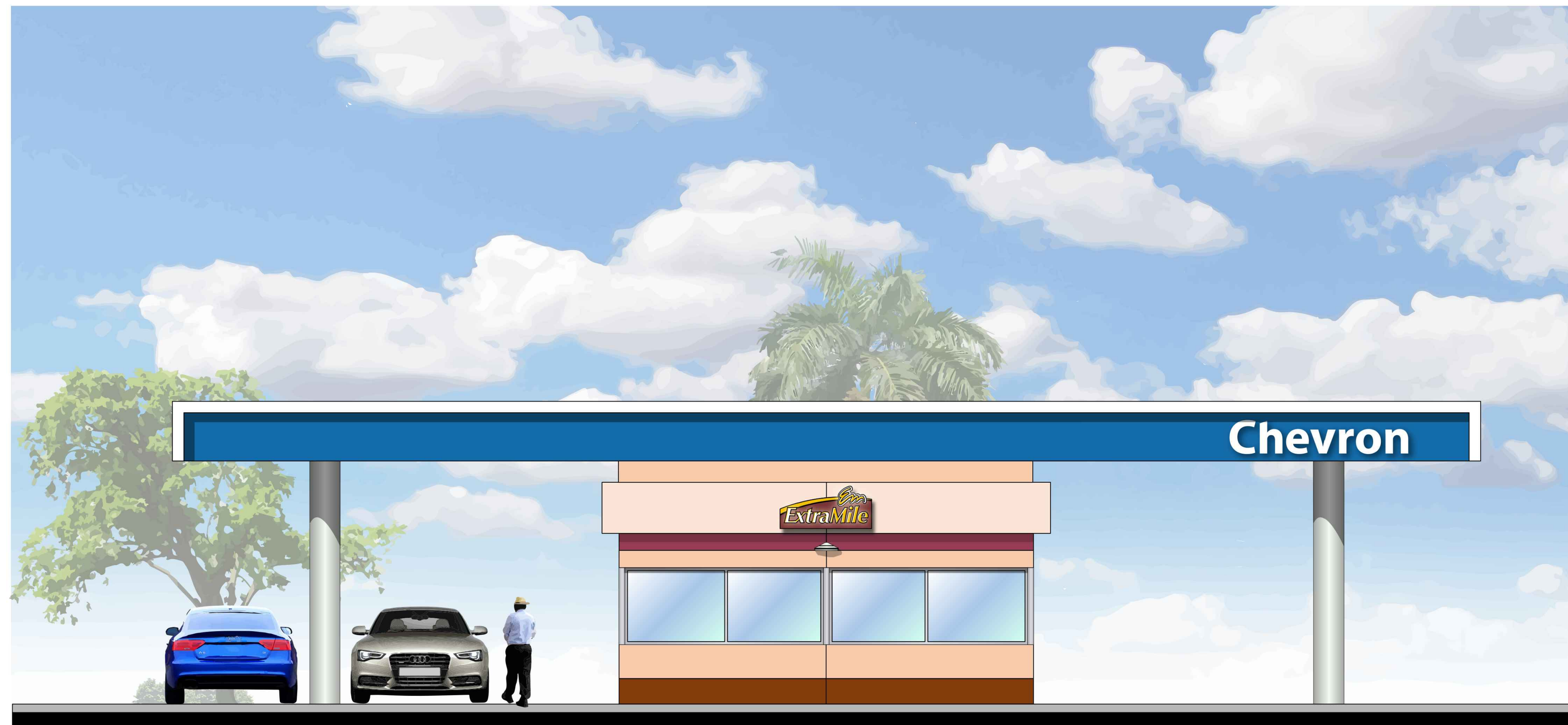
M I Architects, Inc.

ARCHITECTURE, PLANNING, MANAGEMENT & DESIGN
2221 OLYMPIC BLVD., SUITE 100, WALNUT CREEK, CA 94595
925-287-1174 Tel, 925-943-1581 Fax, 925-878-9875 Cell, muthana@miarchitect.com

CHEVRON GAS STATION,
CONVENIENCE STORE & CARWASH
4265 FOOTHILL BLVD
OAKLAND, CA 94601



A NORTHEAST ELEVATION



B SOUTHEAST ELEVATION

- ISSUED FOR CONSTRUCTION
- ISSUED FOR PLAN CHECK
- ISSUED FOR PLANNING

NO.	DATE	DESCRIPTION
△		
△		
△		
△		

CONVENIENCE STORE

PROJECT #: 16-12401
DRAWN: emq CHECKED: MI
SCALE: AS NOTED DATE: 04-22-21



Architects

M I Architects, Inc.

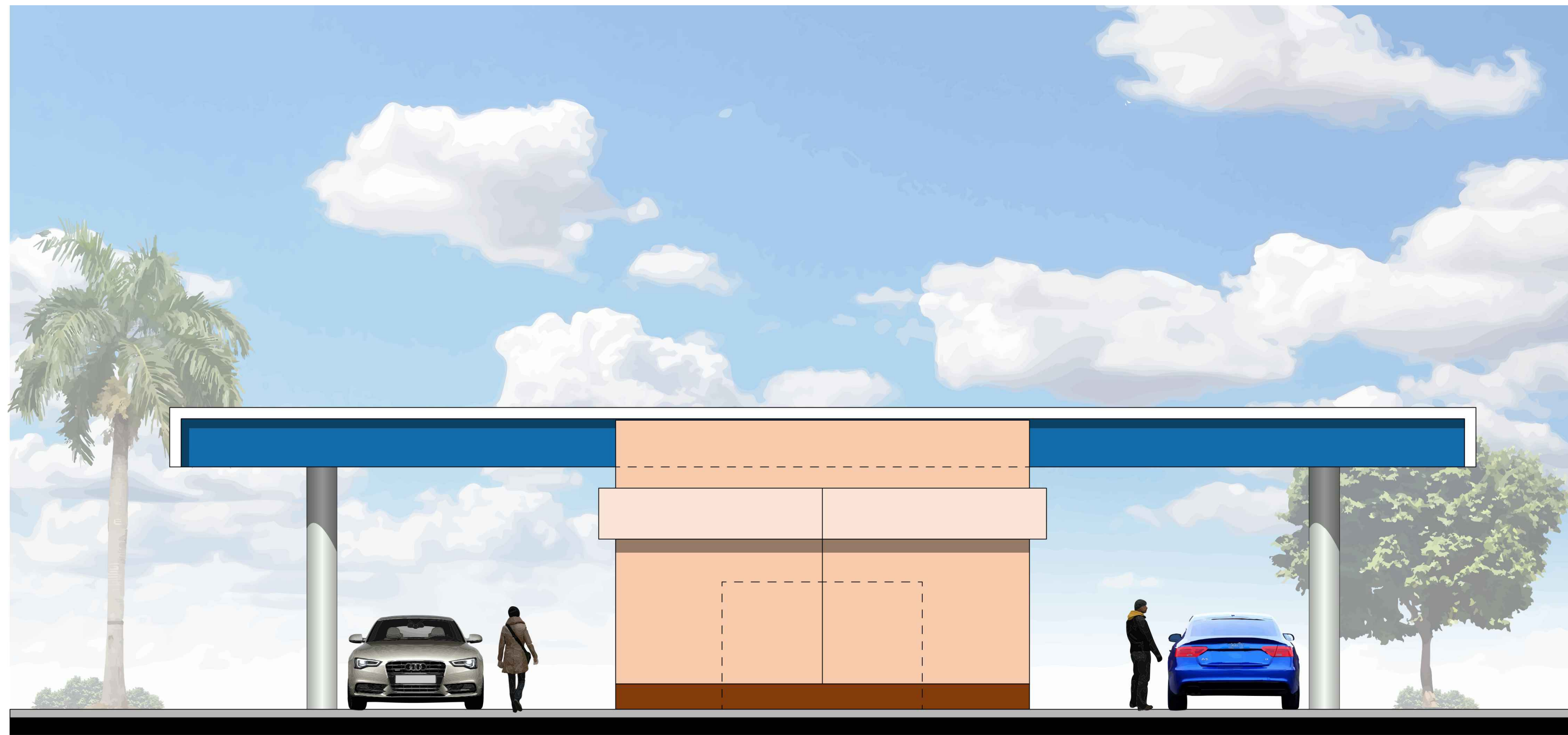
ARCHITECTURE
PLANNING
MANAGEMENT
DESIGN

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925-287-1174 Tel
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www.miarchitect.com

**CHEVRON GAS STATION,
CONVENIENCE STORE & CARWASH
4265 FOOTHILL BLVD
OAKLAND, CA 94601**

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A NORTHWEST ELEVATION



B SOUTHWEST ELEVATION

S:\1-Projects\16-12401_4265 Foothill Blvd Oakland\Drawings\Planning\Rendering\04-22-21 final\16-12401_A_Colored.dwg modified by mouse2 at Apr 22, 2021 - 5:20pm

- ISSUED FOR CONSTRUCTION
- ISSUED FOR PLAN CHECK
- ISSUED FOR PLANNING

NO.	DATE	DESCRIPTION
△		
△		
△		
△		

CONVENIENCE STORE

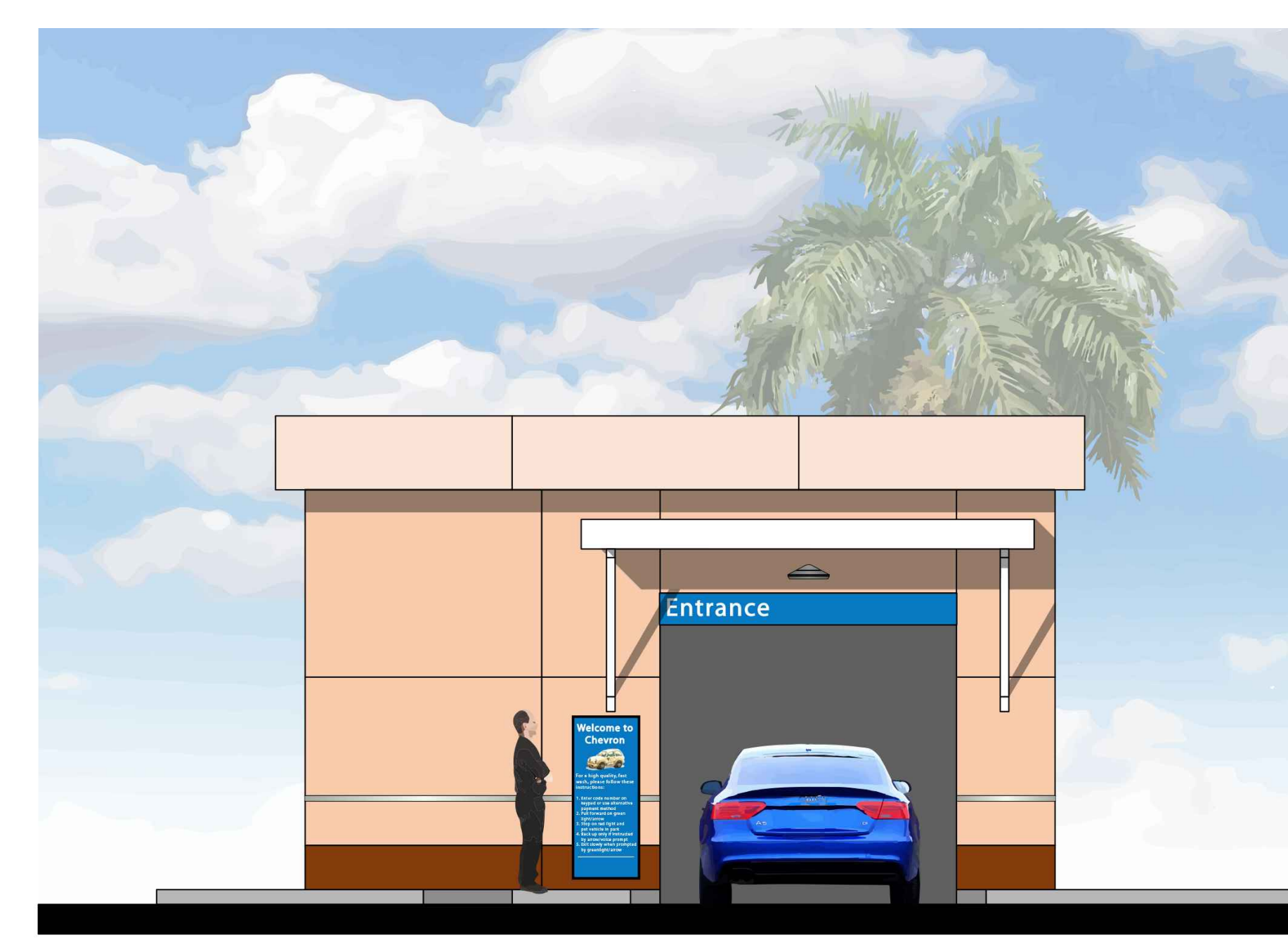
PROJECT #: 16-12401
DRAWN: emq CHECKED: MI
SCALE: AS NOTED DATE: 04-22-21



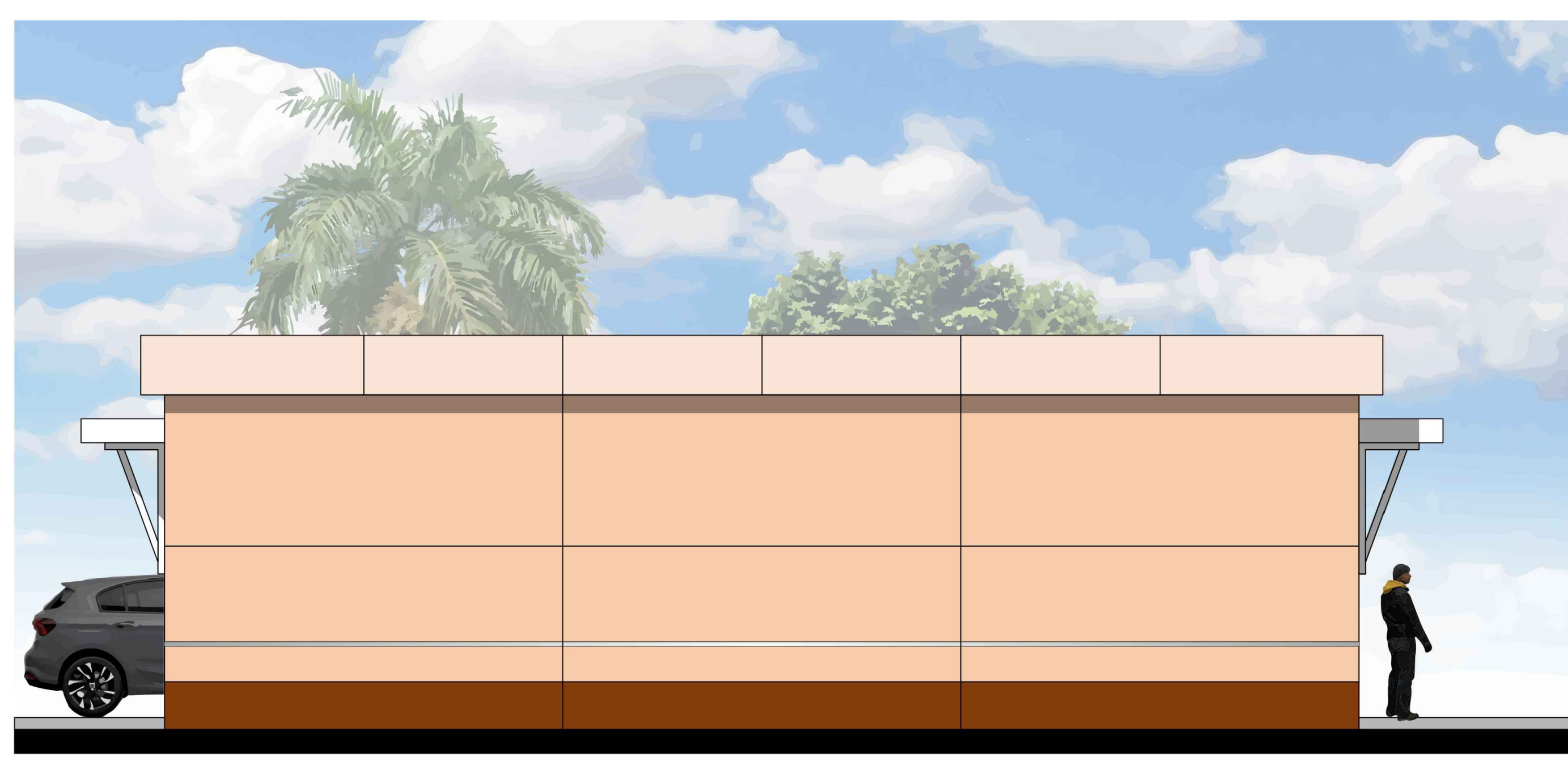
B SOUTHEAST ELEVATION



A NORTHEAST ELEVATION



C NORTHWEST ELEVATION



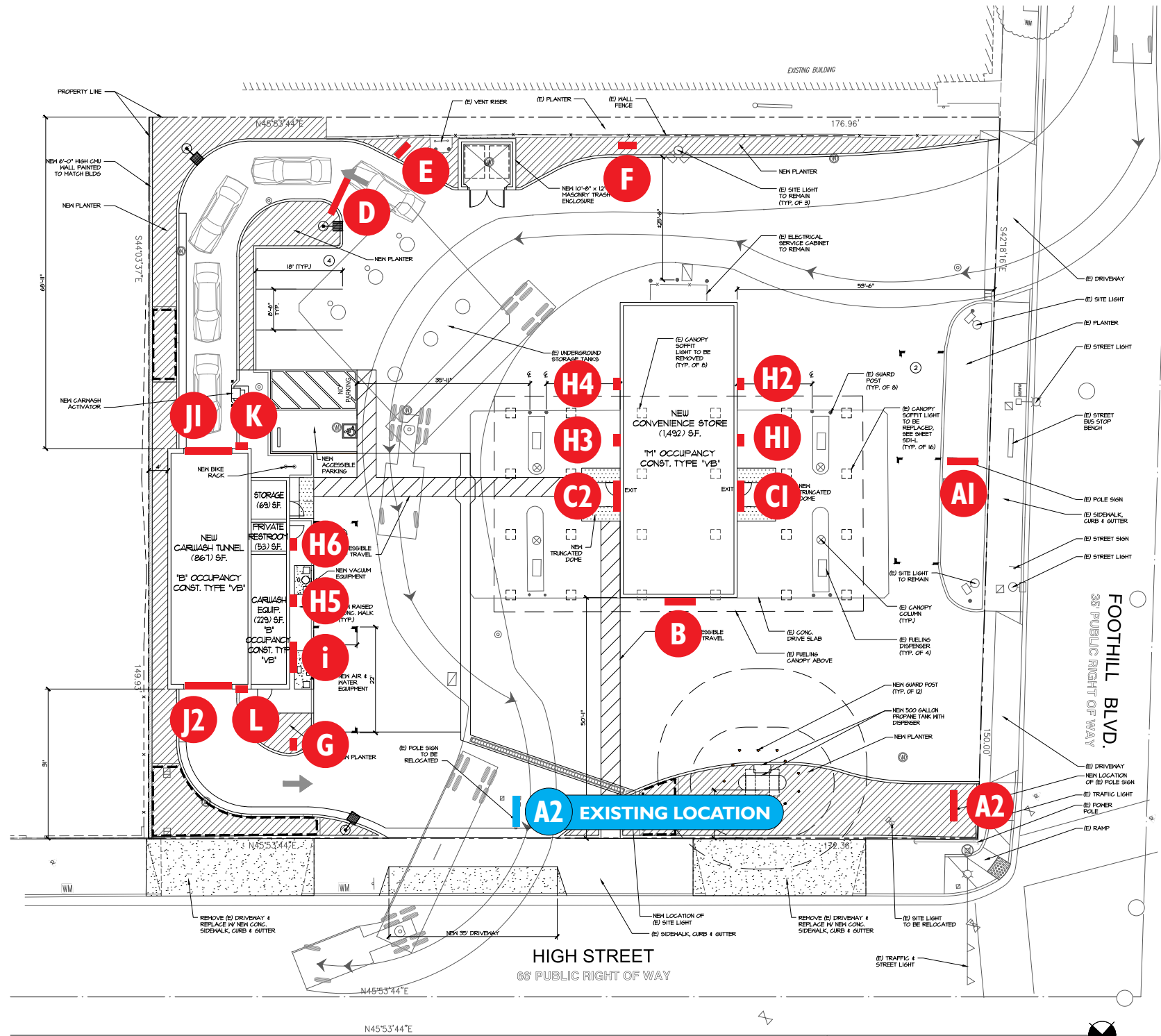
D SOUTHWEST ELEVATION

S:_Projects\16-12401_4265 Foothill Blvd Oakland\Draw's\Planning\Rendering\04-22-21_final\16-12401_C_Colors.dwg modified by mouse2 at Apr 23, 2021 - 8:43am

- ISSUED FOR CONSTRUCTION
- ISSUED FOR PLAN CHECK
- ISSUED FOR PLANNING

NO.	DATE	DESCRIPTION
△		
△		
△		
△		

CARWASH
 PROJECT #: 16-12401
 DRAWN: emq CHECKED: MI
 SCALE: AS NOTED DATE: 04-22-21



1 SITE PLAN



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210574 / 1 OF 12

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MEMBER

NOTICE TO THE CUSTOMER

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CUSTOMER APPROVAL

ACCEPTED W/ NO CHANGES ACCEPTED W/ CHANGES AS NOTED

REVISE AS NOTED AND RESUBMIT

BY CUSTOMER BY LANDLORD

DATE _____ DATE _____

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION **210574**

CHEVRON SIGN PROGRAM

ADDRESS: **4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601**

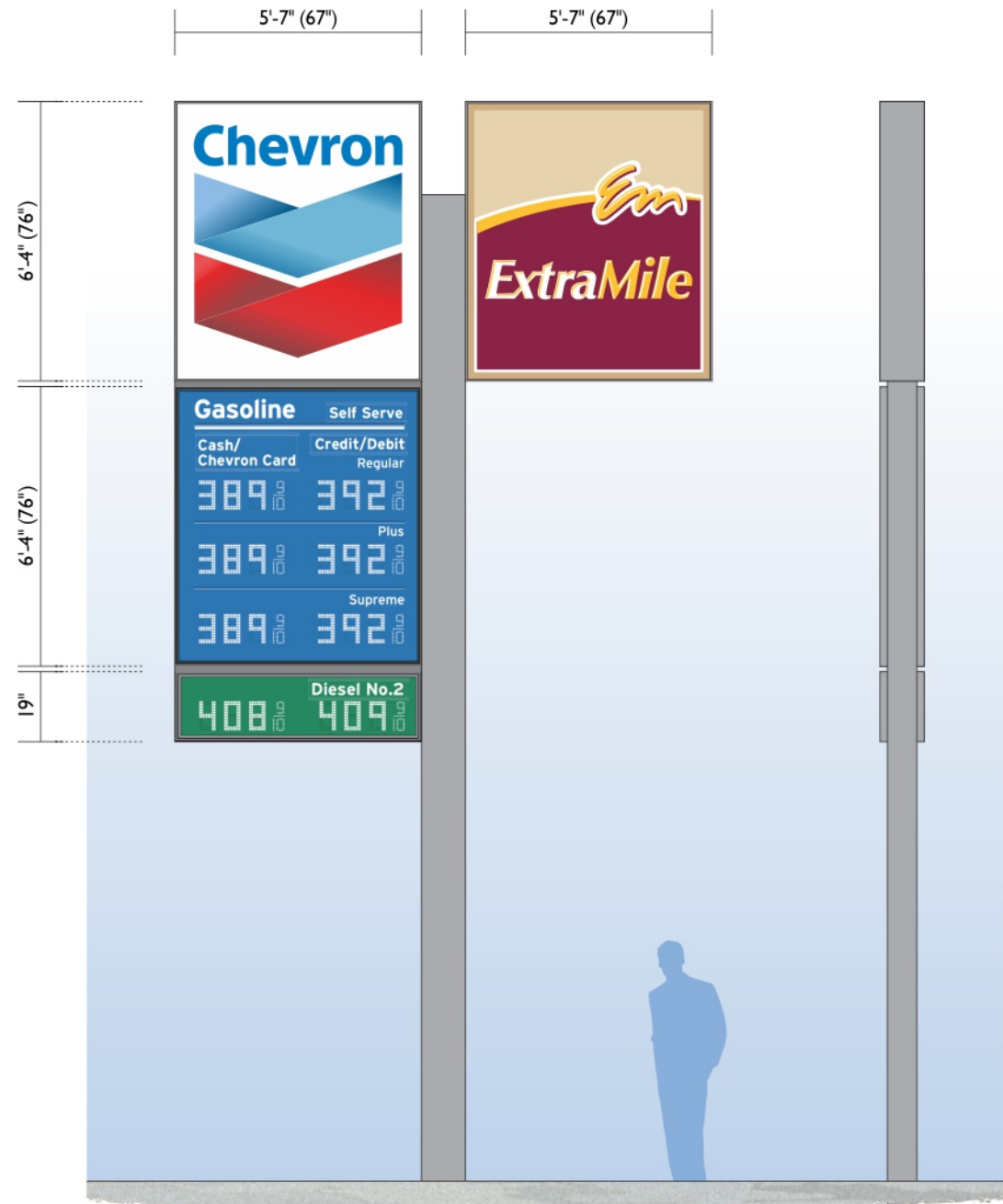
SALESPERSON: **DOUG SMITH** CUSTOMER CONTACT: **XXXXXX**

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1 OF 12



SIGN A1 & A2: D/F ILLUMINATED CHEVRON C-60POLE SIGN

- CABINETS & FACES:** (1) EXISTING C-60 FULL HEIGHT CABINET W/ CHEVRON HALLMARK FACES
 (1) EXISTING C-60 FULL HEIGHT CABINET W/ **NEW** 2 TIER 3 GRADE LED LPS FACES
 (1) EXISTING C-60 1/4 CABINET W/ **NEW** 2 TIER LED DIESEL FACES
 (1) **NEW** C-60 FULL HEIGHT CABINET W/ **NEW** EXTRA MILE FACES

SIGN A2 NOTES: SIGN TO BE RELOCATED FROM CURRENT LOCATION (SEE SITE MAP)
 "FOOD MART" APC CABINET TO BE REMOVED AND PLACED BELOW OF LPS CABINET AND REINSTALLED.
 "FOOD MART" PLACES TO BE REMOVED AND REPLACED WITH DIESEL FACES

ILLUMINATION: CHEVRON STANDARD ILLUMINATION / ADD PHOTOCELL TO CONTROL INTERNAL ILLUMINATION

SUPPORT: CHEVRON STANDARD 8" X 12" X 0.25" RECT. TUBE

REMOVAL:

NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

**SCOPE OF WORK: RECEIVE AND INSTALL NEW (2) TOTAL CABINETS & (12) TOTAL FACES FOR
 (2) EXISTING D/F ILLUMINATED CHEVRON C-60 POLE SIGN**

SIGN A: D/F ILLUMINATED POLE SIGN
 1/4" = 1'-0"

QTY: (2) / 114.7 SQ. FT.

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CUSTOMER APPROVAL

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 REVISE AS NOTED AND RESUBMIT

BY CUSTOMER BY LANDLORD
 DATE DATE

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION **210574**

CHEVRON SIGN PROGRAM

ADDRESS: **4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601**

SALESPERSON: **DOUG SMITH** CUSTOMER CONTACT: **XXXXXX**

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2 OF 12



SIGN A1 / AFTER



SIGN A1 / EXISTING



SIGN A2 / AFTER



SIGN A2 / EXISTING

PHOTO RENDERINGS ARE REPRESENTATIONAL ONLY

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CUSTOMER APPROVAL

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 REVISE AS NOTED AND RESUBMIT

BY CUSTOMER BY LANDLORD
 DATE _____ DATE _____

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION

210574

CHEVRON
SIGN PROGRAM

ADDRESS: 4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601

SALESPERSON: DOUG SMITH CUSTOMER CONTACT: XXXXXX

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This sign is intended to be installed in accordance with the requirements of ARTICLE 600 of the national electrical code &/or other applicable codes. this includes proper grounding & bonding of the sign. The location of the disconnect switch after installation shall comply w/ ARTICLE 600.6(A)(1) of the National Electrical Code. All measures shown in this drawing are nominal until the "NOT FOR PRODUCTION" is removed



SIGN B: SINGLE FACED ILLUMINATED PAN CHANNEL LETTERS ON BACKER PANEL (PBK39) QTY: (1) / 23.29 SQ. FT.

0.75" = 1'-0"

FACES: 3/16" WHITE ACRYLIC W/ FIRST SURFACE VINYL DECORATION

VINYL: 3630-49 (BURGUNDY), 3630-125 (GOLDEN YELLOW)

RETURNS: (LETTERS & LOGO) 5" DEEP 0.040" ALUMINUM PAINTED TO MATCH PMS 209C

(SWOOSH) 4" DEEP 0.040" ALUMINUM PAINTED TO MATCH PMS 209C (BURGUNDY)

TRIM CAP: 1" BURGUNDY **LETTERBACKS:** 0.040" PRE PAINTED WHITE ALUMINUM **BACKER PANEL:** 0.090" ALUMINUM

ILLUMINATION: WHITE LED

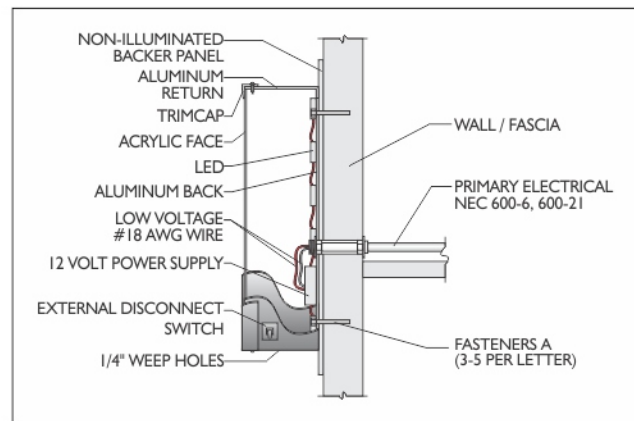
FINISH: (RETURNS & BACKER PANEL) PAINTED TO MATCH PMS 209C (BURGUNDY), GLOSS, NO TEXTURE

MOUNTING: FLUSH TO WALL USING THRU BOLTS OR BEST METHOD

WALL TYPE: _____ **REMOVAL:** _____

NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: FABRICATE AND INSTALL (1) SINGLE FACED ILLUMINATED WALL SIGN



SIGNS C1 & C2: S/F NON-ILLUMINATED EXTRAMILE BUILDING SIGNS

QTY: (2) / 32 SQ. FT. (EACH)

0.5" = 1'-0"

FACES: ALUMINUM COMPOSITE MATERIAL (ACM) W/ 1ST SURFACE ALL WEATHER VINYL DECAL

MOUNTING: FLUSH TO WALL USING VHB DOUBLE SIDE TAPE OR BEST METHOD

WALL: _____ **REMOVAL:** _____

NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: RECEIVE AND INSTALL (2) S/F NON-ILLUMINATED WALL SIGNS

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210574 / 4 OF 12



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NOTICE TO THE CUSTOMER

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CUSTOMER APPROVAL

ACCEPTED W/ NO CHANGES ACCEPTED W/ CHANGES AS NOTED
 REVISE AS NOTED AND RESUBMIT

BY _____ CUSTOMER BY _____ LANDLORD
 DATE _____ DATE _____

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION

210574

CHEVRON SIGN PROGRAM

ADDRESS: 4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601

SALESPERSON: DOUG SMITH CUSTOMER CONTACT: XXXXXX

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SIGN D: SINGLE FACED NON ILLUMINATED CAR WASH HEIGHT DETECTOR DISPLAY

QUANTITY: (1)

0.75" = 1'-0"

SUBSTRATE: 3mm THICK ALUMINUM COMPOSITE MATERIAL W/ FIRST SURFACE VINYL DECORATION

VINYL: EXTERIOR GRADE DIGITAL PRINT W/ UV LAMINATE

SUPPORT: EXISTING CHEVRON STANDARD HEIGHT DETECTOR **FOOTING:** EXISTING DIRECT BURIAL

REMOVAL: REMOVE AND DISCARD EXISTING HEIGHT DETECTOR

NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: FABRICATE AND INSTALL (1) SINGLE FACED NON ILLUMINATED CAR WASH HEIGHT DETECTOR DISPLAY ON EXISTING SUPPORT

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NOTICE TO THE CUSTOMER

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CUSTOMER APPROVAL

ACCEPTED W/ NO CHANGES ACCEPTED W/ CHANGES AS NOTED
 REVISE AS NOTED AND RESUBMIT

BY CUSTOMER BY LANDLORD
 DATE DATE

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION

210574

CHEVRON SIGN PROGRAM

ADDRESS: **4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601**

SALESPERSON: **DOUG SMITH** CUSTOMER CONTACT: **XXXXXX**

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SIDE VIEW

SIGN E: SINGLE FACED NON ILLUMINATED POST AND PANEL DIRECTIONAL SIGN QUANTITY: (1) / 12 SQUARE FEET

1.5"=1'-0"
DOUBLE FACED NON ILLUMINATED POST AND PANEL DIRECTIONAL SIGN
FACES AND SUPPORT: CHEVRON STANDARD DOUBLE FACED "EXIT" CAR WASH DIRECTIONAL SIGNS
FOOTING: _____ REMOVAL: _____ NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: RECEIVE AND INSTALL (1) NEW DOUBLE FACED NON ILLUMINATED POST AND PANEL DIRECTIONAL SIGN



SIDE VIEW

SIGN F: SINGLE FACED NON ILLUMINATED POST AND PANEL DIRECTIONAL SIGN QUANTITY: (1) / 6.3 SQUARE FEET

1.5"=1'-0"
FACES AND SUPPORT: CHEVRON STANDARD DOUBLE FACED CAR WASH DIRECTIONAL SIGNS
FOOTING: _____ REMOVAL: _____
NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: RECEIVE AND INSTALL (1) NEW SINGLE FACED NON ILLUMINATED POST AND PANEL DIRECTIONAL SIGN

210574 / 6 OF 12



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NOTICE TO THE CUSTOMER

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CUSTOMER APPROVAL

ACCEPTED W/ NO CHANGES ACCEPTED W/ CHANGES AS NOTED
 REVISE AS NOTED AND RESUBMIT

BY _____ CUSTOMER BY _____ LANDLORD
DATE _____ DATE _____

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION

CHEVRON SIGN PROGRAM

ADDRESS: **4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601**

SALESPERSON: **DOUG SMITH** CUSTOMER CONTACT: **XXXXXX**

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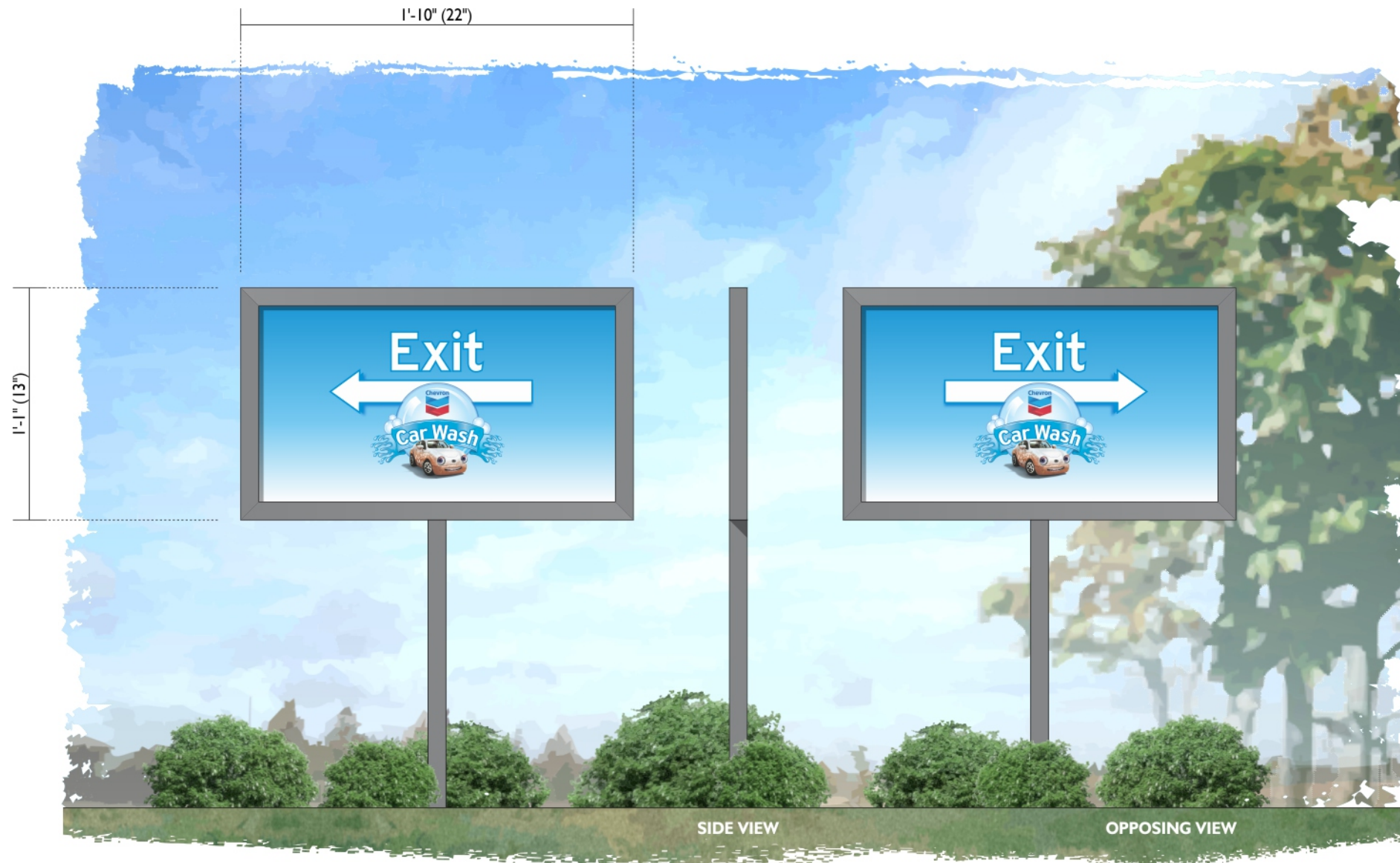
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NAME / DATE

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SIGN G: DOUBLE FACED NON ILLUMINATED POST AND PANEL DIRECTIONAL SIGN

QUANTITY: (1) / 2 SQUARE FEET

1.5" = 1'-0"

FACES AND SUPPORT: CHEVRON STANDARD DOUBLE FACED "EXIT" CAR WASH DIRECTIONAL SIGNS

FOOTING: _____ **REMOVAL:** _____

NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: RECEIVE AND INSTALL (1) NEW DOUBLE FACED NON ILLUMINATED POST AND PANEL DIRECTIONAL SIGN

NOT FOR PRODUCTION

210574 / 7 OF 12



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CUSTOMER APPROVAL

ACCEPTED W/ NO CHANGES ACCEPTED W/ CHANGES AS NOTED
 REVISE AS NOTED AND RESUBMIT

BY _____ CUSTOMER BY _____ LANDLORD
DATE _____ DATE _____

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION

CHEVRON SIGN PROGRAM

ADDRESS: **4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601**

SALESPERSON: **DOUG SMITH** CUSTOMER CONTACT: **XXXXXX**

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SIGN i: S/F ILLUMINATED PAN CHANNEL LETTERS
3/4" = 1'-0"

QTY: (1) / 11.39 SQ. FT.

FACES: 0.188" WHITE ACRYLIC W/ FIRST SURFACE VINYL DECORATION **VINYL:** 3630-97 BRISTOL BLUE
RETURNS: 5" DEEP ALUMINUM **TRIM CAP:** 1" METALLIC SILVER
RETURN FINISH: PAINTED IR SILVER (PPG IR SILVER / JONES-BLAIRE #45968 / PMS 429C)
ILLUMINATION: WHITE LED
MOUNTING: FLUSH TO WALL USING THRU BOLTS OR BEST METHOD (USE SPACERS TO ALLOW FOR DRAINAGE)
WALL: _____ **REMOVAL:** REMOVE AND DISCARD EXISTING "CAR WASH" PAN CHANNEL LETTERS
NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: RECEIVE AND INSTALL (1) SET OF S/F ILLUMINATED PAN CHANNEL LETTERS



SIGN H1-H6: S/F NON ILLUMINATED WALL SIGN

QTY: 1 / 9 SQ. FT. (EACH)

1" = 1'-0"

FACE: REMOVABLE CURVED FACE EXTRA MILE P.O.S. DISPLAY INSERTS
FRAME / RETAINER: 1.5" METAL FRAME
MOUNTING: CLIP MOUNTED FLUSH TO WALL (OR BEST METHOD)
WALL: _____
REMOVAL: _____
NOTE: THERE HAS NOT BEEN AN OFFICIAL SURVEY AS OF 04.15.21

SCOPE OF WORK: RECEIVE AND INSTALL (2) S/F NON ILLUMINATED WALL SIGNS

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210574 / 8 OF 12



NOTICE TO THE CUSTOMER

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CUSTOMER APPROVAL

ACCEPTED W/ NO CHANGES ACCEPTED W/ CHANGES AS NOTED
 REVISE AS NOTED AND RESUBMIT

BY _____ CUSTOMER BY _____ LANDLORD
 DATE _____ DATE _____

DATE	BY	DATE	BY
04.15.21	VT	.21	VT

COMPANY OR JOB NAME / JOB DESCRIPTION

210574

CHEVRON SIGN PROGRAM

ADDRESS: **4265 FOOTHILL BOULEVARD OAKLAND CALIFORNIA 94601**

SALESPERSON: **DOUG SMITH** CUSTOMER CONTACT: **XXXXXX**

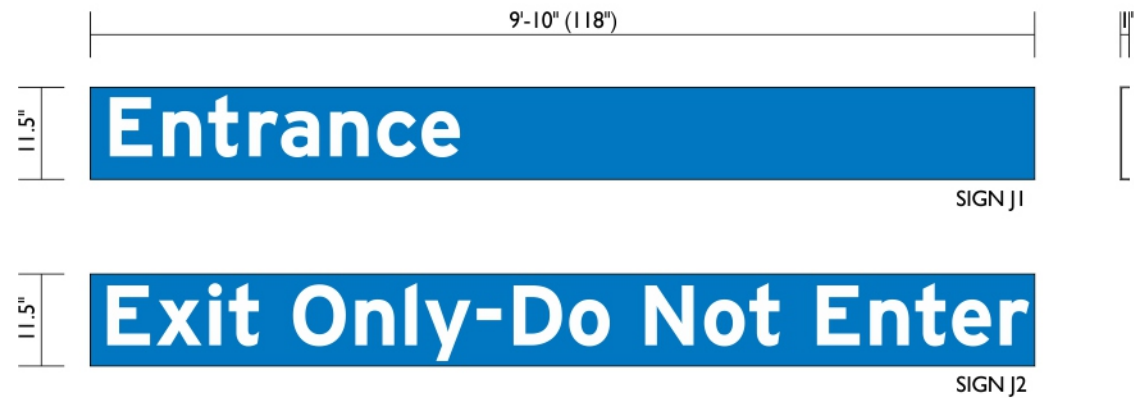
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NAME / DATE _____

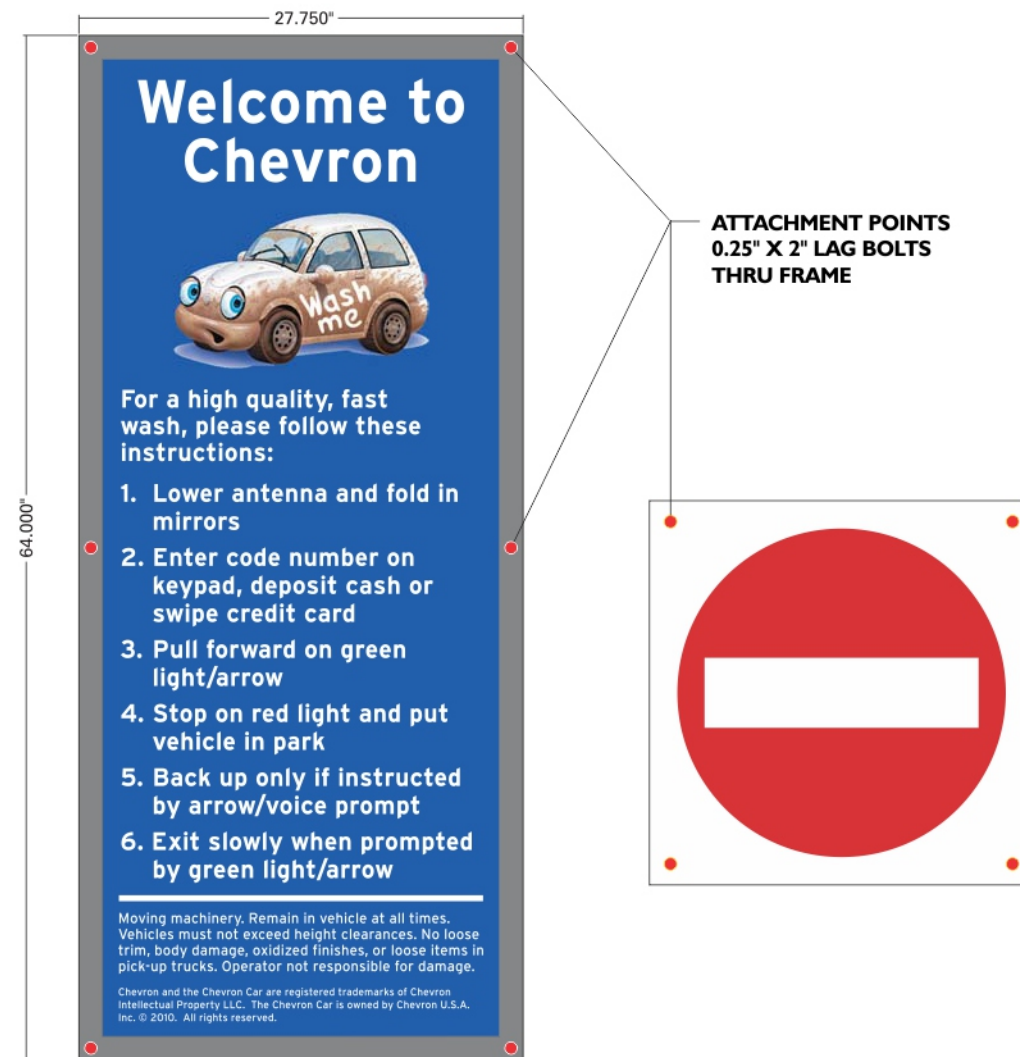
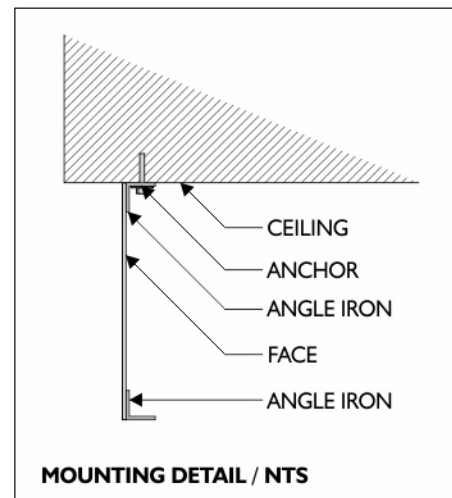
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SIGNS J1 & J2: S/F NON ILLUMINATED WALL SIGNS **QTY: 2 (TOTAL)**
0.5" = 1'-0"

FACES: ALUMINUM OR ACM W/ FIRST SURFACE VINYL DECORATION **VINYL:** OPAQUE WHITE
FRAME: 1" ANGLE IRON ALONG TOP AND BOTTOM OF FACE LENGTH ATTACHED W/ WATERPROOF GLUE
 NO VERTICAL ANGLE FRAME (ENDS LEFT OPEN)
FINISH: PAINTED TO MATCH CHEVRON BLUE (PPG 95-8800/95-859 IR BLUE OR JONES BLAIR #4550-001)
REMOVAL: NONE

SCOPE OF WORK: FABRICATE AND INSTALL (2) S/F NON ILLUMINATED WALL SIGNS



SIGN K & L: PRE PRINTED ALUMINUM DIRECTIONAL SIGNS **QTY: 2 (TOTAL)**
1" = 1'-0"

FACES: CHEVRON STANDARD FRICTION CAR WASH DIRECTIONAL SIGNS
 TO INCLUDE "DO NOT ENTER" SIGN
NOTE: DESIGN DEPT. DOES NOT HAVE ARTWORK, DIMENSIONS OR SPECS FOR SIGN L
REMOVAL: _____

SCOPE OF WORK: RECEIVE AND INSTALL (2) S/F ALUMINUM DIRECTIONAL SIGNS

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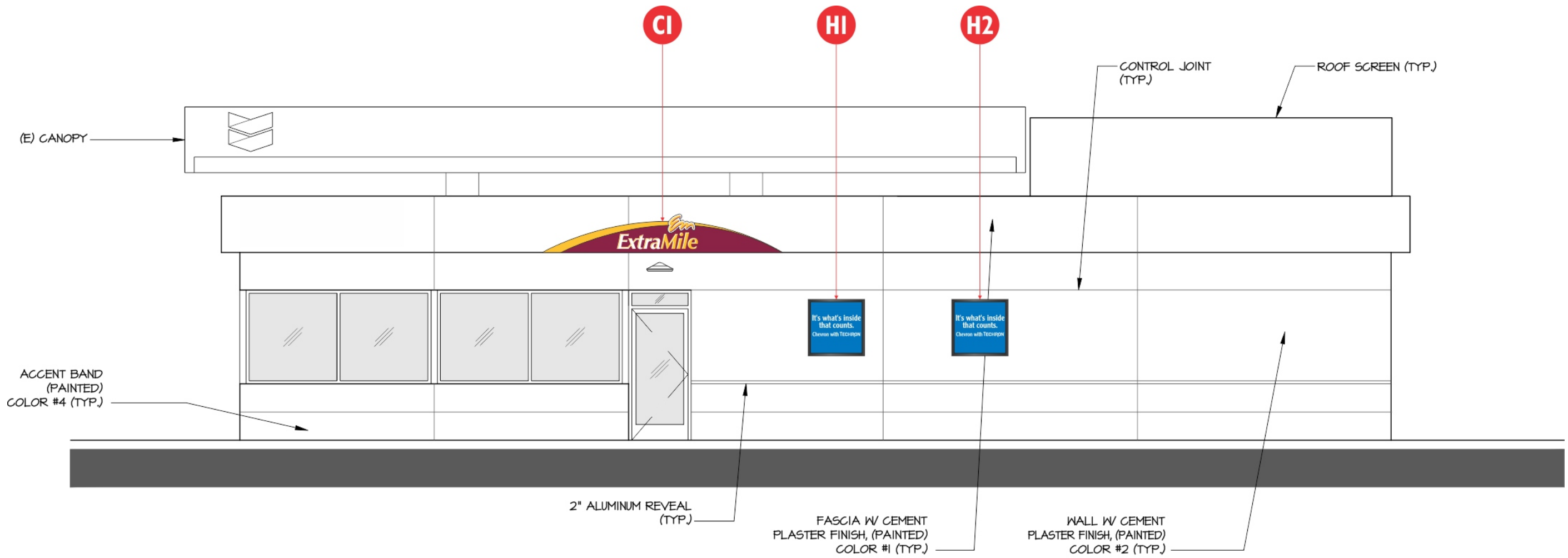
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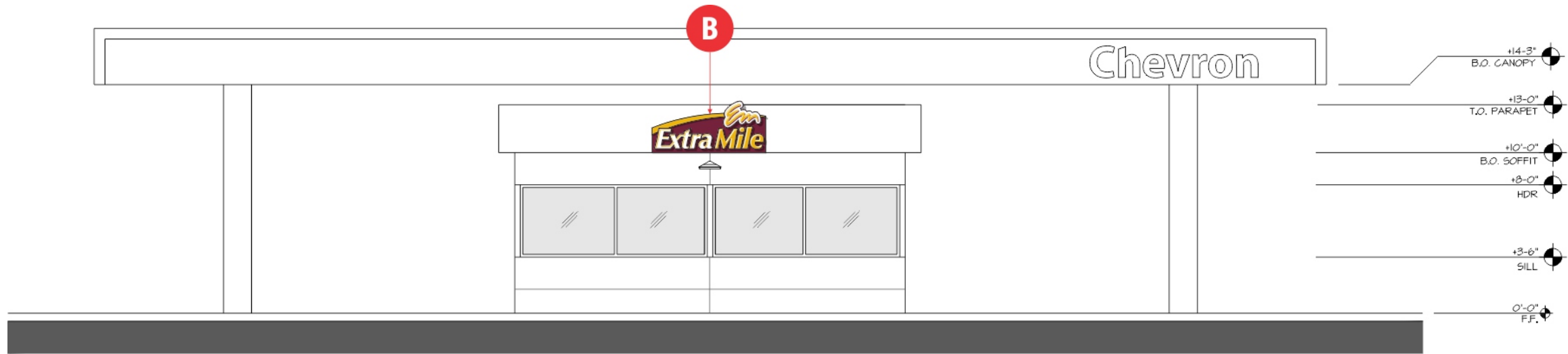
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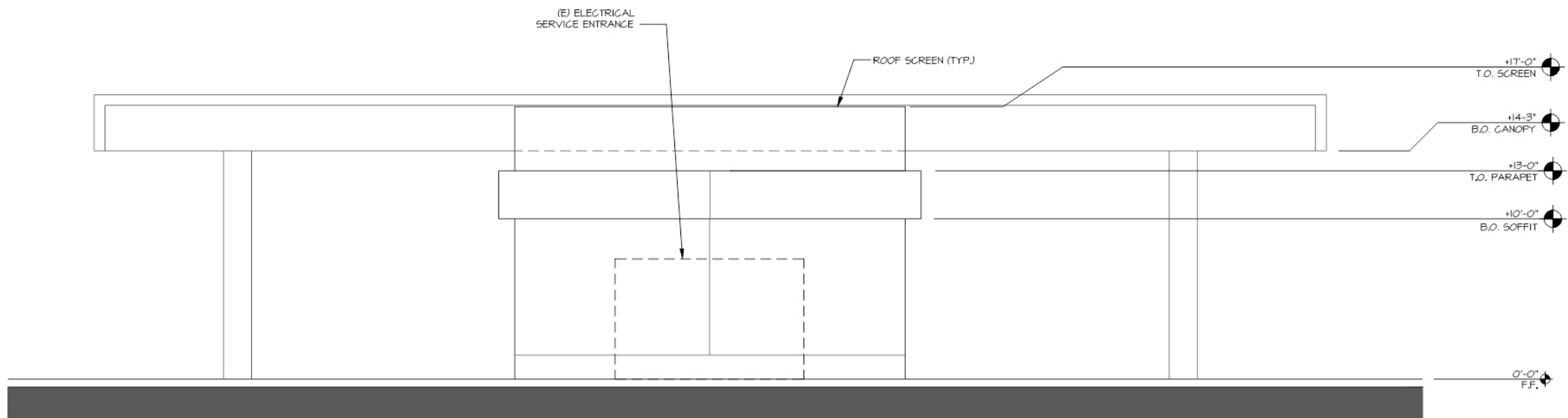
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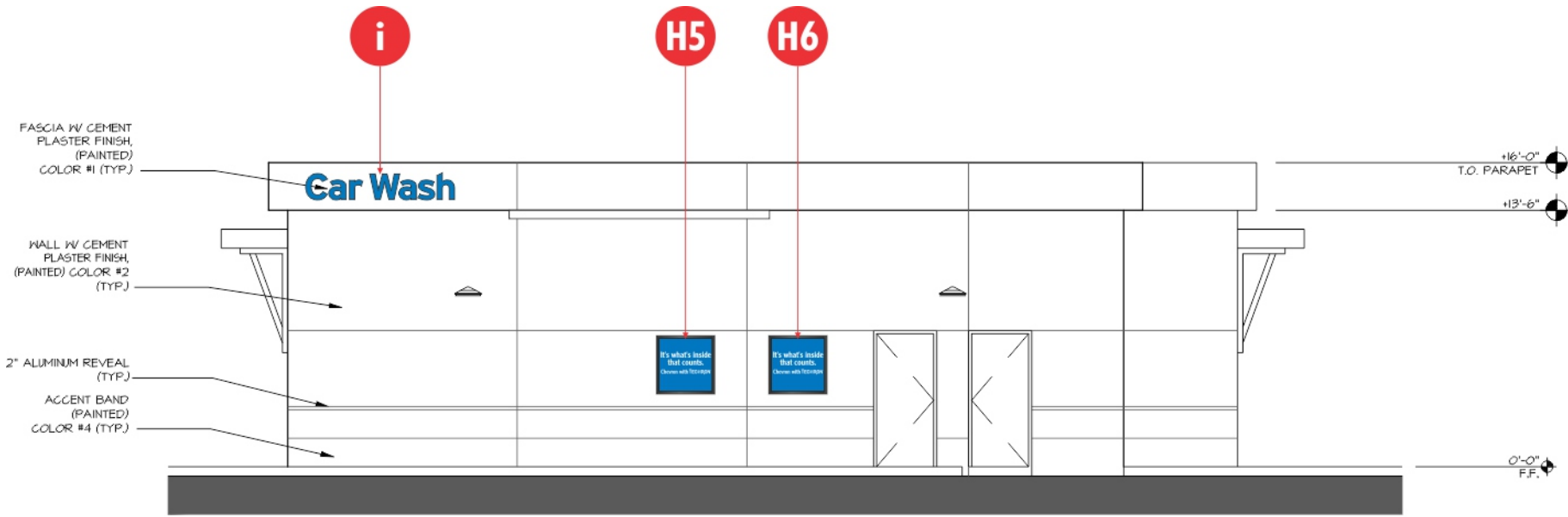
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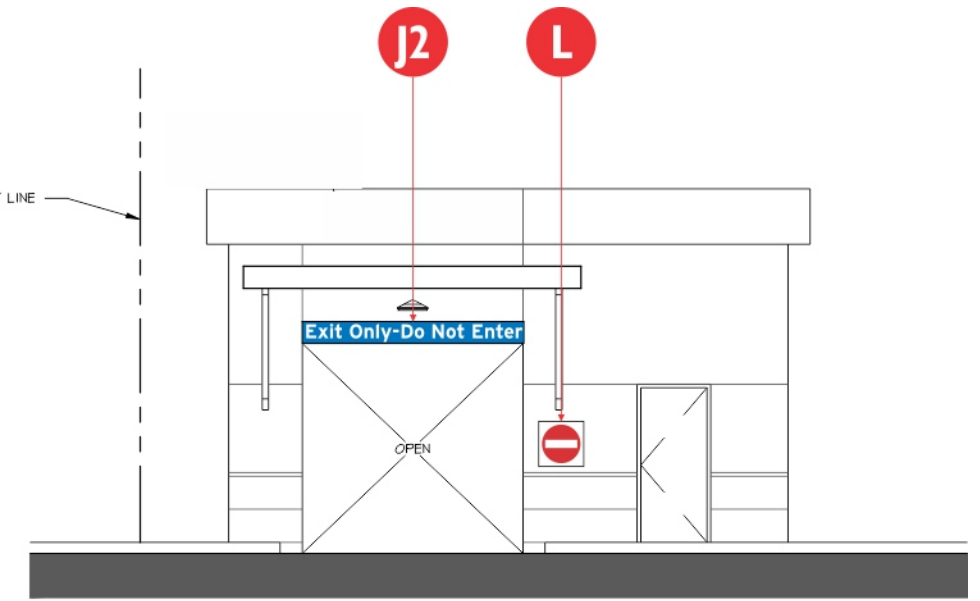
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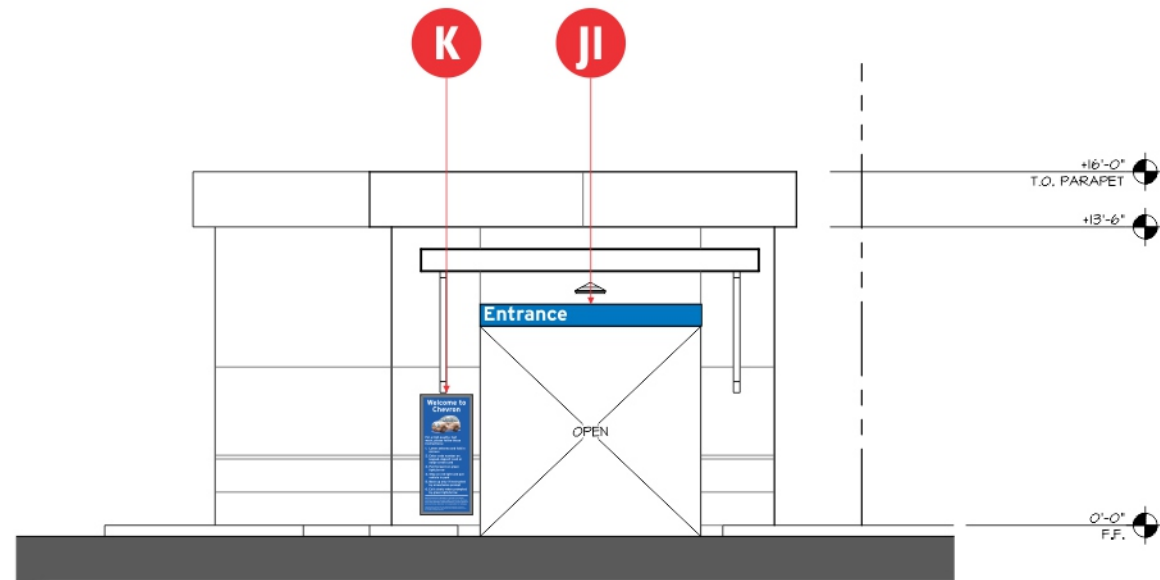
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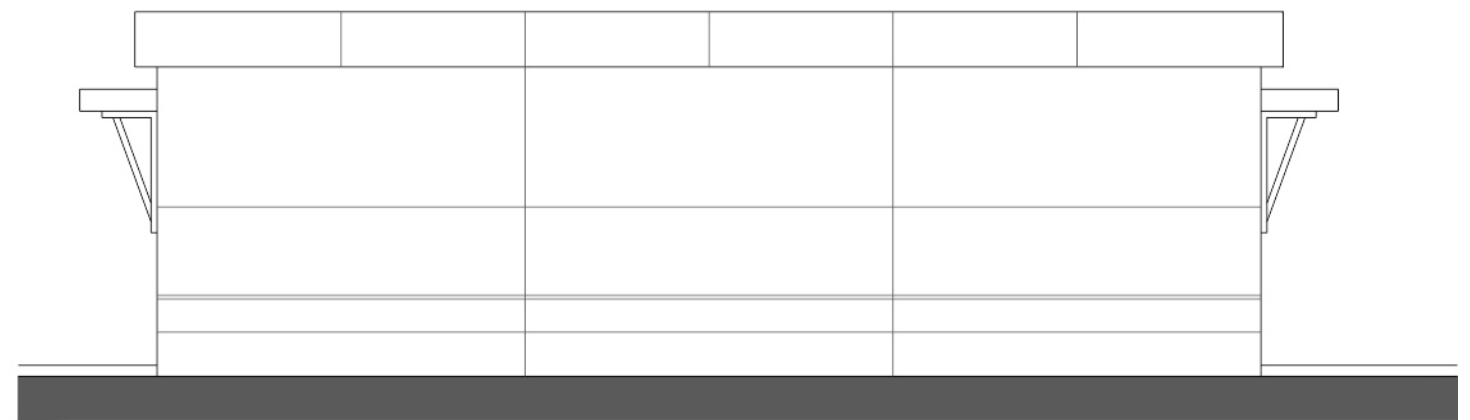
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May 14, 2019

Navdeep Grewal
NG Grewal One
349 Brienne Ct.
Pleasanton, CA 94566

**Re: Trip Generation Analysis for the Proposed Remodel of the Chevron Service Station
at 4265 Foothill Boulevard in the City of Oakland**

This report presents the results of a trip generation analysis of 4265 Foothill Boulevard in the City of Oakland. The proposed project involves remodeling the existing service station on the site which will remove two fueling stations, add an automated car wash, and expand the existing 400 square foot convenience market to 1,492 square feet.

PROJECT TRIP GENERATION

Trip Generation Calculations Based on Institute of Transportation Engineers (ITE) Rates -

The trip generation rates for the proposed project are based on the Institute of Transportation Engineers rates for a Service Station (ITE Land Use Code 944) taken from the 10th Edition of the ITE Trip Generation Manual. Please note that a car wash and convenience market are typical components of a service station and the trips are not calculated separately, they are considered to be covered by the trip rate “*per fueling station*”. However, ITE also provides rates for a service station based on the square footage of the convenience market and a comparison using these rates as also been provided.

Please note a “*trip*” is defined in ITE’s Trip Generation publication as a single or one-directional vehicular movement with either the origin or destination at the project sites. As a result, a trip can be either “*to*” or “*from*” the site. Consistently, a single visit to a site is counted as two trips (i.e., one to and one from the site). For the purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network from a proposed project, the trips generated by this proposed development are estimated for the peak commute hours which represent the peak hours of “*adjacent street traffic*”. This is the time period when the project traffic would generally contribute to the greatest amount of congestion. Please note the trip generation has been reduced to account for pass-by trips as specified for this land use in the ITE Trip Generation Handbook.¹ These are vehicle trips that are already in the adjacent traffic stream and are not counted as new trips to the area. As shown in **Table 1**, the project is forecast to generate about the same amount of traffic with potentially a slight reduction in traffic with about 10 less vehicle trips during the AM and PM peak hours.

¹ *Trip Generation Handbook – 3rd Edition*, Institute of Transportation Engineers, Washington, D.C., September, 2017.

Table 1
Project Trip Generation Based on the Number of Fueling Stations

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Service Station Trip Rates (trips per 1,000 sq. ft.)	944		172.01	5.14	5.14	10.28	7.01	7.02	14.03
Unadjusted Service Station Trip Generation		8 pumps	1,720	51	52	103	70	70	140
Pass-By Traffic Reduction (66%)			1,135	30	29	58	39	39	79
<i>Proposed Project Trip Generation</i>			585	22	23	45	31	31	62
Existing Service Station		10 pumps	1,376	41	41	82	56	56	112
Pass-By Traffic Reduction (66%)			908	24	23	46	31	31	62
<i>Existing Service Station Trip Generation</i>			468	18	18	36	25	25	50
<i>Net Change in Trip Generation from the Project</i>			-117	-4	-5	-9	-6	-6	-12

Source: ITE Trip Generation, 10th Edition, 2018.

To provide a comparison based on the proposed square footage of the convenience market the trips were calculated using the “*per square foot*” rates and then compared to the trip generation based on the existing number of pumps. Please note that a straight comparison of the change in square footage of the convenience store is not presented since this would not account for the removal of two fueling stations. As shown in **Table 2**, based on the square footage of the proposed convenience store the proposed remodel project would be forecast to generate a small increase in traffic of about 10 vehicle trips during the AM and PM peak hours.

Table 2
Project Trip Generation Based on the Square Footage of the Convenience Market

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Service Station Trip Rates (trips per 1,000 sq. ft.)	944		1,202.83	42.28	42.27	84.55	54.64	54.63	109.27
Unadjusted Service Station Trip Generation		1,492 sq. ft.	1,795	63	63	126	82	82	163
Pass-By Traffic Reduction (66%)			1,184	36	35	71	46	45	91
<i>Proposed Project Trip Generation</i>			<i>610</i>	<i>27</i>	<i>28</i>	<i>55</i>	<i>36</i>	<i>36</i>	<i>72</i>
Service Station Trip Rates (trips per 1,000 sq. ft.)	944		172.01	5.14	5.14	10.28	7.01	7.02	14.03
Existing Service Station		10 pumps	1,376	41	41	82	56	56	112
Pass-By Traffic Reduction (66%)			908	24	23	46	31	31	62
<i>Existing Service Station Trip Generation</i>			<i>468</i>	<i>18</i>	<i>18</i>	<i>36</i>	<i>25</i>	<i>25</i>	<i>50</i>
<i>Net Change in Trip Generation from the Project</i>			<i>25</i>	<i>5</i>	<i>5</i>	<i>10</i>	<i>5</i>	<i>5</i>	<i>10</i>

Source: ITE Trip Generation, 10th Edition, 2018.

CONCLUSIONS

The proposed service station remodeling project would reduce the number of fueling stations but would involve an expansion and remodel of the existing convenience market and the addition of an automated car wash. Based on the trip generation forecasts the proposed project is forecast to generate about 10 peak hour trips more than what is currently generated by the existing service station.

Please don't hesitate to contact me if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink that reads "Stephen Abrams". The signature is written in a cursive style with a large, prominent "S" at the beginning.

Stephen C. Abrams
President, Abrams Associates
T.E. License No. 1852

Convenience Store, Gas Station and Car Wash – 4265 Foothill Boulevard Oakland, CA



Extant Project No. 181117.01

June 19, 2019

Prepared for:
NG Grewal One
349 Brianne Ct.
Pleasanton, CA 94566



4265 Foothill Blvd

Convenience Store, Gas Station and Car Wash

Environmental Noise Assessment

Extant Report No. 181117.01

June 19, 2019

Prepared for:

NG Grewal One

349 Brienne Ct.
Pleasanton, CA 94566

Prepared by:

Michael Carr, INCE, CTS
Principal Consultant



6520 Lonetree Blvd., Suite 1016
Rocklin, CA 95765
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Executive Summary

NG Grewal One, with the assistance of MI Architects, Inc., is proposing the construction of a new convenience store and in-bay automated car wash on the site of an existing Chevron gasoline station in the Jefferson area of Oakland, California. The proposed project site is located on the northwest corner of the Foothill Blvd and High Street intersection; with an address of 4265 Foothill Blvd. in the City of Oakland, California. The project site is bounded by multi-family residential land uses along the northern and western property lines, a single-family parcel on the southwestern property line, with transportation right-of-way bounding the site on the southern and eastern property lines. The location of the project site is shown in Figure 1. The proposed site plan and configuration of the proposed project is presented in Figure 2.

The project proposes to construct a new convenience store, and automated car wash on the existing site. The hours of operation for the car wash portion of the proposed project were assumed to be 7:00 AM to 9:00 PM, consistent with guidance provided by the City of Oakland.

Extant Acoustical Consulting LLC (Extant) was retained by the project applicant to perform a noise analysis for the car wash included within the proposed project. In this report, Extant reviews applicable noise standards and criteria, presents the noise monitoring program, evaluates the existing noise environment, and describes modeling assumptions and methodologies used to predict noise emissions due to the proposed project. Findings of the study were evaluated and analyzed against applicable City of Oakland noise standards.

The existing noise levels and observations from the noise monitoring program were used as the basis for modeling of the existing noise environment and evaluation of the potential for project noise levels to affect the existing noise environment. Existing noise level at the ambient noise monitoring locations were found to range from approximately 64 to 70 dBA Ldn. Modeled existing traffic noise exposure levels at noise-sensitive receptors in the project area ranged from approximately 54 to 70 dBA Ldn.

Noise levels from the operation of the proposed car wash are anticipated to approximately range from 38 to 53 dBA Ldn, with hourly operational noise levels ranging from 42 to 57 dBA Leq. Based on existing noise levels experienced in the vicinity of the project site, project-generated average day-night noise levels are predicted to be below ambient day-night noise levels in the project study area. Moreover, project-generated noise levels are not anticipated to cause a significant increase in the existing noise environment in the project study area.

Based on the assumptions and analysis presented in this report, we conclude the following:

- Due to the elevated ambient noise environment in the general vicinity of the project, average day-night noise levels associated with project operations are predicted to be below ambient noise levels currently experienced in the project study area.
- The predicted average day-night noise levels (Ldn) generated from operation of the proposed project car wash are predicted to comply with the City of Oakland exterior noise level standards set forth in Figure 6 of the City of Oakland General Plan (normally acceptable criteria).
- Development of the proposed car wash is anticipated to comply with the City of Oakland 60 dBA Planning Code standard for noise levels affecting residential uses as established in the City of Oakland Planning Code Chapter 17.120.050.

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1 Introduction

NG Grewal One, with the assistance of MI Architects, Inc. is proposing to construct convenience store, gas station and car wash at the location of an existing Chevron gasoline station in the Jefferson area of the City of Oakland, CA. The proposed project site is located on the northwest corner of the Foothill Blvd and High Street intersection; with an address of 4265 Foothill Blvd. in the City of Oakland, CA. The project site is bounded by multi-family residential land uses along the northern and western property lines, a single-family parcel on the southwestern property line, with transportation right-of-way bounding the site on the southern and eastern property lines. The location of the project site is shown in Figure 1.

Extant Acoustical Consulting LLC (Extant) was retained by the project applicant to perform a noise analysis for the proposed project. This report reviews applicable noise standards and criteria, evaluates the existing noise environment, and describes modeling assumptions and methodologies used to predict noise emissions from the project operations. Furthermore, the report assesses the potential for project-generated noise levels to result in noise impacts on nearby noise-sensitive receptors and land uses. Appendix A provides a description of the various noise metrics and terminology used in this report.

2 Project Description

The project being considered proposes to construct a new convenience store and in-bay automated car wash on the site of an existing Chevron gasoline fueling station. The project would incorporate the construction of the convenience store, car wash tunnel, a queuing lane and mechanical room for the car wash, signage, parking and landscaping. Parking for the project would be located adjacent to the car wash queuing lane and at the existing fueling islands. The fueling canopy would remain from the existing gas station, with the number of fueling positions being reduced from 10 to 8 positions. The proposed site plan and configuration of the proposed project is presented in Figure 2.

The hours of operation for the gas station and convenience store are assumed to remain consistent with the current operations; the hours of operation for the proposed car wash use associated with the project are assumed to be 7:00 AM to 9:00 PM, consistent with the guidelines provided by the City of Oakland.

The proximity of the proposed project to nearby receptors has prompted the City of Oakland to request an acoustical analysis be prepared to analyze potential noise impacts associated with the proposed project operations.

3 Environmental Setting

The project site is geographically located in the central portion of the City of Oakland, just east of I-880 in the Jefferson area of Oakland. Land uses in the general project area include a mix of commercial, institutional, single-family and multi-family residential zoned uses. The project site is bounded directly by multi-family residential land uses and the transportation right-of-ways for Foothill Blvd. and High Street.

The existing noise environment in the project area is dominated by noise generated by vehicular traffic on the local and regional roadway network. Commercial uses in the general project area and community activity contribute to the ambient noise level to a lesser extent. The project area experiences occasional aircraft overflights primarily associated with the aviation operations of Oakland International Airport. Oakland International Airport is located approximately 2.25 miles southwest of the project site.

3.1 Existing Noise Sensitive Land Uses

Noise-sensitive land uses are generally described as those uses where exposure to excessive noise would result in adverse effects, as well as uses where quiet is an essential element of the intended purpose. Residential dwellings are of primary concern due to the potential for increased and prolonged exposure of individuals to excessive interior and exterior noise levels.

Noise-sensitive receptors nearest the proposed project site are the residential uses adjoining the northern and western property boundaries; with additional multi-family receptors located south east of the Foothill Blvd intersection.

3.2 Existing Ambient Noise Survey

An ambient noise survey was conducted by Extant from December 26, 2018 through December 29, 2018 to document the existing ambient noise in the vicinity of the proposed project located at 4265 Foothill Blvd. Long-term unattended ambient noise monitoring was performed at one (1) location on the project site from December 26th through December 29th. Short-term noise level monitoring was performed at four (4) locations on the project site on December 16th, 2018. Locations of the noise monitoring sites are presented on an aerial photograph of the area on Figure 1. On Figure 1, the long-term noise measurement site is represented as LT-01; short-term measurement locations are shown as ST-##.

Noise measurements were performed using Larson Davis Laboratories (LDL) Model 831 precision integrating sound level meters (SLMs). Field calibrations were performed on the SLM with an acoustic calibrator before and after the measurements. Equipment meets all pertinent specifications of ANSI S1.4-1983 (R2006) for Type 1 SLMs. All instrumentation components, including microphones, preamplifiers and field calibrators have laboratory certified calibrations traceable to the National Institute of Standards and Technology (NIST). The microphones were located at a minimum height of 5-6 ft. above the ground, an average height for a person standing, and located a sufficient distance away from reflective surfaces in the monitoring area. Noise measurements were performed in accordance with American National Standards Institute (ANSI) and American Standards for Testing and Measurement (ASTM) guidelines.

The noise monitoring equipment was configured to catalog all noise metrics pertinent to identification and evaluation of noise levels (i.e., Leq, Lmax, Ln, etc.) in the study area. Monitoring data was collected for the overall measurement period and each hourly period.

The following sections discuss the overall monitoring results for the long-term and short-term measurements.

3.2.1 Long-Term Monitoring

Long-term noise monitoring data collected during the noise monitoring program serves to establish a baseline for ambient noise levels in the project vicinity. Additionally, the noise levels cataloged illustrate the diurnal pattern experienced at the site; and allow for correlation of hourly noise levels collected at the short-term monitoring locations with the 24-hour day-night noise levels. Long-term noise monitoring data is presented below for the monitoring period beginning on Thursday, December 26, 2018.

During the long-term monitoring, the primary background noise source affecting the monitoring location was vehicular traffic on the local roadway network (Foothill Blvd. and High St.). Additional noise sources experienced during the long-term noise monitoring period

included emergency vehicle pass-bys and general community noise. Ambient noise level exposure at the monitoring location was dependent on the relative exposure to nearby transportation noise sources.

Noise monitoring data is summarized below Table 1 for the long-term noise monitoring location in; with detailed noise level data provided in tabular and graph form in Appendix B. The average day-night (Ldn) noise level measured during the long-term ambient noise monitoring survey was approximately 65 dBA Ldn at the long-term monitoring location. Maximum hourly noise levels (Lmax) documented during the long-term monitoring ranged from approximately 69 to 96 dBA Lmax, with average maximum noise levels from approximately 76 to 85 dBA Lmax.

Table 1 – Summary of Long-Term Noise Monitoring

Site	Description ¹	Date	LDN	Average Hourly Noise Levels, dBA							
				Daytime				Nighttime			
				Leq	Lmax	L50	L90	Leq	Lmax	L50	L90
LT-01	Northwest portion of Project Site	12/26/18 to 12/27/18	64.8	62.3	84.8	58.4	54.7	57.2	76.7	52.5	48.0
		12/27/18 to 12/28/18	64.4	62.5	85.6	58.0	54.0	56.4	78.2	51.2	45.6
		12/28/18 to 12/29/18	65.5	63.3	84.7	59.3	55.6	57.7	76.4	53.9	50.1

Notes: dBA = A-weighted decibels; LDN = 24-hour day-night noise level; Leq = equivalent average noise level; Lmax = maximum noise level; L50 = sound level exceeded 50% of the hour; L90 = sound level exceeded 90% of the hour, typically represents the background noise level.

1 – Measurement locations are provided in Figure 1 as an overlay on an aerial photograph.

Source: Extant Acoustical Consulting LLC, 2019

3.2.2 Short-Term Noise Monitoring

Short-term attended monitoring was performed by Extant staff at four (4) locations on the project site on December 26, 2018. Detailed observations about the measurement environment, existing noise sources, and other elements with the potential to affect the measurement or the project analysis were documented throughout the monitoring program. Short-term monitoring locations are depicted on Figure 1. Noise experienced at the short-term monitoring locations was predominately due to vehicular traffic on the local roadway network and noise from the existing commercial operations at the adjoining uses.

Overall noise levels measured at the short-term noise monitoring locations representing the project boundaries (ST-01 and ST-02) ranged from approximately 62 to 66 dBA Leq. Maximum noise levels documented during the monitoring survey ranged from approximately 71 to 89 dBA Lmax. Short-term monitoring locations ST-03 and 04 were used to characterize traffic noise levels; ST-03 also provides insight into noise level exposure at the multi-family use to the south of the project.

Generally, noise level exposure was directly dependent on the distance of the monitoring location from surrounding traffic noise sources; however, operations at the adjacent commercial uses contributed to maximum (Lmax) noise levels. Table 2 presents the overall monitoring results for each of the short-term monitoring locations, along with some general notes from each site.

Table 2 – Summary of Short-Term Noise Monitoring

Site	Description ¹	Start Time	Average Noise Levels (dBA)				Notes/Sources	Ldn
			Leq	Lmax	L50	L90		
ST-01	Northwestern Boundary of Project Site.	3:26 pm	61.7	71.4	60.3	56.7	Traffic on Foothill Blvd and High Street, public transit operations and commercial activity in the area.	64.8
		3:36 pm	64.1	81.5	60.4	56.9		
ST-02	Southwestern portion of Project Site.	3:50 pm	65.6	88.7	60.9	57.3	Traffic on High Street, and commercial activity in the area.	67.9
		4:00 pm	66.4	85.1	61.8	58.2		
ST-03	South of project, adjacent to High Street	4:16 pm	68.9	86.5	66.4	59.9	Traffic on High Street, and commercial activity in the area.	70.5
		4:26 pm	68.2	81.9	64.4	59.8		
ST-04	Adjacent to Foothill Blvd.	4:41 pm	67.9	85.6	64.5	60.0	Traffic on Foothill Blvd and public transit operations.	65.3
		4:51 PM	58.9	61.1	58.3	56.8		

Notes: dB = A-weighted decibels; Leq = equivalent average noise level; Lmax = maximum noise level; L50 = sound level exceeded 50% of the period; L90 = sound level exceeded 90% of the hour, typically represents the background noise level.

1 – Measurement locations are provided in Figure 1 as an overlay on an aerial photograph.

2 – Shot-term noise measurements were performed for a duration of 10-minutes each.

3 – Average Day-Night Level (LDN) interpolated based on corresponding long-term measurement data.

Source: *Extant Acoustical Consulting LLC, 2019*

3.3 Existing Traffic Noise Levels

Existing traffic noise levels were modeled for roadway segments in the project vicinity based on the Federal Highway Administration (FHWA) Highway Traffic Noise Model (TNM) Version 2.5® prediction methodologies, and traffic data for project area roadways from the City of Oakland and on-site measurements. Vehicle classifications percentages, 24-hour temporal distribution percentages and vehicle speeds were incorporated based on measurements conducted and observations made during the ambient noise monitoring program.

Traffic noise modeling for the project was performed through the application of established assessment methodologies and algorithms to propagate noise levels into the surrounding community (e.g., traffic noise via FHWA TNM Version 2.5®) within the SoundPLAN noise modeling program.

In order to ensure that modeled existing traffic noise levels correlated with measured traffic noise levels, observations and data collected during short-term noise monitoring were used to validate/calibrate the traffic model. The Caltrans Technical Noise Supplement provides that differences between measured and modeled values less than ± 1 dBA indicate that the computerized noise model is within the accepted level of accuracy, given the uncertainties within the measurement and calibration procedures (Caltrans 2013). Application of traffic volumes and vehicle classification percentages observed during the noise monitoring program resulted in modeled traffic noise levels that were found to be reasonably consistent with traffic noise measurements performed at the project site and the application of a calibration factor is not warranted.

Modeled traffic noise exposure levels at nearby noise-sensitive receivers in the immediate project vicinity were predicted based on the above referenced Annual Average Daily Traffic data (AADTs) and are shown in Table 5. Equal level noise contours for the modeled existing traffic conditions in the project area are presented graphically in **Error! Reference source not found.**

Table 3 – Modeled Existing Traffic Noise Levels

Site	Location ¹	Noise Level dBA	
		Ldn	Average Daytime Leq
Measurement Receivers			
LT-01, ST-01, P-01	Northern Property Line	63	61
ST-02, P-02	Southwest Property Line / High Street Single-Family Residential	67	64
ST-03, P-03	High Street Multi-Family Residential Property Line	70	67
ST-04, P-04	Eastern Property Line	66	64
Additional Prediction Receivers			
P-05	Northeastern Property Line	64	62
P-06	Northwestern Property Line – In line with car wash entrance	54	52

Notes: dBA = A-weighted decibels; Ldn = day-night noise level; Leq = equivalent average noise level.

1 – Locations of noise prediction receivers with modeled existing traffic noise level contours are shown on **Error! Reference source not found.**

2 – Existing traffic noise levels based on annual average daily traffic volume data from the City of Oakland and vehicle distribution observations.

3 – Overall ambient noise levels include traffic noise levels and additional noise generated in the community as documented during the noise monitoring program conducted for the project.

Source: Extant Acoustical Consulting LLC, 2019

As shown in Table 5, existing traffic noise level exposure at noise-sensitive receivers in the project area ranges from approximately 54 to 70 dBA Ldn, based on AADT volumes in the study area.

It is notable that existing ambient noise levels occurring in the project vicinity are in excess of the “normally acceptable” standard of 60 dBA CNEL for residential receptors; with the exception of P-06, which is currently shielded by an existing building on the project site.

4 Regulatory Criteria

Standards and guidelines for addressing noise exposure within the City of Oakland are contained primarily in the City of Oakland General Plan, with additional guidelines found in the City of Oakland Code of Ordinances.

4.1 City of Oakland General Plan

The General Plan Noise Element establishes goals, objectives, policies, and actions to protect its inhabitants against exposure of noise-sensitive uses to loud noise and to prevent encroachment of incompatible noise-sensitive uses on noise producing uses.

The General Plan establishes exterior noise level compatibility standards at noise-sensitive land uses, which are considered normally or conditionally acceptable, and represented below in Table 4 (Chapter 5 and Figure 6 of the City of Oakland General Plan Noise Element). The noise level guidelines are presented in terms of the 24-hour CNEL or LDN noise level in dBA. The intent of these guidelines is to affect new project development through the discretionary review process to reduce potential noise exposure and excessive noise within the community.

As outlined in Policy 1, the General Plan seeks to ensure the compatibility of existing and proposed development projects the surrounding noise environment. The actions associated with Noise Element Policy 1 implement the policy through application of the land use compatibility matrix (reproduced in Table 4 of this report) to evaluate the acceptability of proposed projects and the need for noise mitigation measures. Noise level exposure of noise-sensitive residential land uses would be normally acceptable up to 60 dBA Ldn and conditionally acceptable from 60 to 70 dBA Ldn.

Additional Action statements of the Noise Element serve to implement policies of the general plan through the application of the City's zoning regulations, permitting process and noise ordinance; which are discussed in the following section.

4.2 The City of Oakland Code of Ordinances





The City of Oakland Code of Ordinances addresses and provides a means for protection of the citizens of Oakland through both qualitative and quantitative provisions and prohibitions. The Code serves as an implementation method for the General Plan and enforcement element for establishing the desired character of the City.

The City of Oakland Code of Ordinance contains subjective (qualitative) guidelines, codes and statutes within Oakland Municipal Code Chapter 8.18, Nuisances. The Nuisance Noise Ordinance defines nuisance noise and establishes qualitative enforcement guidelines. The nuisance noise chapter also limits noise emissions during the overnight period from 9 PM to 7 AM.

The City of Oakland provides further guidance and regulation on allowable noise levels within Chapter 17.120.050 of the Code of Ordinances (Oakland Planning Code). The Planning Code establishes maximum allowable noise levels for residential, commercial, and industrial zones. The maximum allowable noise level standards vary based on the cumulative number of minutes over which the sound is occurring during any 1-hour period. The maximum allowable performance standards are reproduced for residential land uses below in Table 5. Subsection D of 17.120.050 provides an adjustment to the applicable noise level standards, equivalent to the measured ambient noise levels.

Table 4 – Noise-Land Use Compatibility Matrix
(City of Oakland General Plan Noise Element, Figure 6)

Land Use Category	Community Noise Exposure L _{dn} or CNEL, dB					
	55	60	65	70	75	80
Residential	Light	Light	Light	Light	Light	Light
Transient Lodging – Motels, Hotels	Light	Light	Light	Light	Light	Light
Schools, Libraries, Churches, Hospitals, Nursing Homes	Light	Light	Light	Light	Light	Light
Auditoriums, Concert Halls, Amphitheaters	Light	Light	Light	Light	Light	Light
Sports Area, Outdoor Spectator Sports	Light	Light	Light	Light	Light	Light
Playgrounds, Neighborhood Parks	Light	Light	Light	Light	Light	Light
Golf Courses Riding Stables, Water Recreation, Cemeteries	Light	Light	Light	Light	Light	Light
Office Buildings – Business, Commercial & Professional	Light	Light	Light	Light	Light	Light
Industrial, Manufacturing, Utilities, Agriculture	Light	Light	Light	Light	Light	Light

-  **Normally Acceptable** – Development may occur without an analysis of potential noise impacts to the proposed development (though it might still be necessary to analyze noise impacts that the project might have on its surroundings).
-  **Conditionally Acceptable** – Development should be undertaken only after analysis of noise-reduction requirements is conducted, and if necessary noise-mitigating features are included in the design. Conventional construction will usually suffice as long as it incorporates air conditioning or forced fresh-air-supply systems, though it will likely require that project documents maintain their Windows closed.
-  **Normally Unacceptable** – Development should generally be discouraged; it may be undertaken only if a detailed analysis of noise-reduction requirements is conducted, and if highly effective noise insulation, mitigation or abatement features are included in the design.
-  **Clearly Unacceptable** – Development should not be undertaken.

Source: City of Oakland General Plan Noise Element, 2005

Table 5 – Maximum Allowable Noise Levels, Residential and Civic

Cumulative Number of Minutes in Either Daytime or Nighttime One Hour Period	Daytime 7 AM to 10 PM	Nighttime 10 PM to 7 AM
20 (L33)	60	45
10 (L16)	65	50
5 (L8)	70	55
1 (L1.6)	75	60
0 (Lmax)	80	65

Source: City of Oakland Planning Code, 2019

4.3 Project Criteria

The criteria specifically applicable to this project include portions of the City of Oakland General Plan, the Municipal Code and the Planning Code. The General Plan Noise Element establishes a normally acceptable standard of 60 dBA Ldn and a conditionally acceptable standard of 70 dBA Ldn, for the adjacent residential land uses.

The Planning Code establishes a maximum allowable residential noise level exposure of 60 dBA for operations occurring cumulatively for a period of 20-minutes out of a one-hour period. However, this standard is adjusted to be equal to the measured ambient noise level at the location. The level to which the Planning Code criteria is adjusted would be dependent on the noise level exposure at the given location and the time period in which the evaluation is being performed. For the purposes of this analysis, we will base the background (ambient) noise level adjustment on the noise levels measured during the site survey and the modeled existing traffic noise levels. The modeled noise levels are conservative in comparison to the real-world noise measurements; and as such, will result in a conservative adjustment to the Planning Code criteria.

As previously discussed, the ambient noise level in the project area was measured from December 26th, 2018 through December 29th, 2018. The results of the ambient noise level monitoring are discussed in Section 3.2, with additional measurement data provided in Appendix B. The average hourly noise level (Leq) during the daytime hours (7 AM to 10 PM) of the measurement period was 62.7 dBA Leq at measurement location LT-01 (prediction receiver P-01). The quietest daytime hours were 9 AM and between 7 PM and 10 PM; with noise levels 2 to 2.2 dB below the daytime average. Applying this offset hourly noise levels to the modeled existing traffic noise levels for the project area (presented in Table 3) results in background (ambient) noise levels ranging from approximately 50 to 65 dBA Leq at the prediction receiver locations, during the quietest daytime hours. Based on the modeled background noise levels, the Planning Code criteria would be adjusted up to 62 dBA at prediction receivers P-02 and P-03, and up to 65 dBA at P-03. The modeled hourly noise levels and applicable criteria are presented below in Table 6.

Table 6 – Applicable Planning Code Criteria

Site	Location ¹	Quiet Daytime Leq	20-Min. (L33) Criteria
P-01	Northern Property Line	59	60
P-02	Southwest Property Line / High Street Single-Family Residential	62	62 ²
P-03	High Street Multi-Family Residential Property Line	65	65 ²
P-04	Eastern Property Line	62	62 ²
P-05	Northeastern Property Line	60	60
P-06	Northwestern Property Line – In line with car wash entrance	50	60

Notes: dBA = A-weighted decibels; Leq = hourly equivalent average noise level.

1 – Locations of noise prediction receivers with modeled existing traffic noise level contours are shown on **Error! Reference source not found.**

2 – 20-minute Planning Code maximum allowable noise level adjusted to background (ambient) levels.

Source: Extant Acoustical Consulting LLC, 2019

5 Project Noise Analysis

As stated in the introduction, the project under consideration proposes to remodel an existing Chevron gas station with an expansion of the convenience store, removal of two fueling stations and the construction a new automated drive-thru in-bay car wash at the site of an existing Chevron gas station. Noise sources associated with the operation of the proposed project would include people accessing the site for the convenience store, fueling stations and the operations of the automated car wash. Because of the potential noise levels associated with the car wash and the proximity to nearby land uses, the City of Oakland has requested that an environmental noise study be prepared for the car wash.

5.1 Car Wash Operation Noise Levels

Automated car wash equipment and facilities have several potential noise generating sources associated with their general operation; including pumps, compressors, high-pressure applicators and spray nozzles, scrubbers, and dryers. The car wash mechanical equipment (pumps, compressors, etc.) can generate a substantial amount of noise; however, the majority of the mechanical equipment is proposed to be fully enclosed within a mechanical equipment room, inside the car wash tunnel. Potential noise sources not enclosed within the equipment room would include the high-pressure applicators and spray nozzle manifolds; noise from the friction of the scrubber, wrap and brush wash systems; and noise generated from the dryer system. The dryer system, however, is the dominate noise source associated with car wash operations; therefore, this analysis will examine car wash-generated noise levels through evaluation of sound levels generated by the dominant noise source, the dryer system.

The proposed automated in-bay car wash will include the use of a Protovest Windshear Dryer system with incorporated silencer. The Protovest Windshear dryer is a stationary, stand-alone drying system, using a single (1) 30 horse-power blower. The dryer system would be located approximately 10-feet inside of the southern end of the car wash tunnel. The car wash dryer manufacturer (Protovest) provided reference sound level data for the dryer in the form of sound pressure levels at varying distances. The manufacturer sound level data is provided as a reference in Appendix C. The supplied reference sound level data and operational characteristics for the equipment were used to calculate sound power levels (LwA) for the dryer.

The manufacturer reference source noise levels are based upon continuous operation of the dryers. However, drying cycles are typically limited to operate between 60 and 90 seconds per wash cycle; with the overall car wash cycles being 4 to 8 minutes in duration. Assuming the 4 minute car wash cycle time, the equipment is capable of completing approximately 15 car wash cycles during a peak hour.

Applying the peak-hour rate of 15 cycles with a 90-second drying cycle, across the operational hours of the car wash using typical temporal distribution, would provide a conservative analysis and is therefore used in this analysis.

Operational assumptions outlined above along with the calculated sound power levels were used as inputs to the SoundPLAN noise prediction model. Modeled noise levels generated from the operation of the proposed car wash at the representative noise prediction receiver locations are presented in Table 7. Modeled car wash noise levels are illustrated as equal-level noise contours over an aerial photograph in Figure 3.

Table 7 – Modeled Car Wash Noise Levels

Site	Location	Noise Level Exposure, dBA	
		Ldn	Leq
P-01	Northern Property Line	41	45
P-02	Southwest Property Line / High Street Single-Family Residential	52	56
P-03	High Street Multi-Family Residential	53	57
P-04	Eastern Property Line	38	42
P-05	Northeastern Property Line	42	46
P-06	Northwestern Property Line	46	50

Notes: dBA = A-weighted decibels; LDN = Day Night noise level; Leq = hourly equivalent average noise level.
Source: Extant Acoustical Consulting LLC, 2019

As shown in Table 7, based on the manufacturer's reference noise level data and the predicted car wash trip generation rates, noise levels generated from the proposed car wash is anticipated to range from approximately 41 to 53 dBA Ldn, at the prediction receivers representing the nearby property lines. Therefore, project car wash noise levels are predicted to comply with the City of Oakland General Plan noise level standard of 60 dBA Ldn at the adjacent residential land uses.

Car wash noise levels during peak hour operations are predicted to generate noise levels ranging from 42 to 57 dBA Leq at the prediction receivers representing the nearby residential property lines. Therefore, project car wash noise levels are anticipated to comply with the City of Oakland Planning Code noise level standard of 60 dBA, for operations occurring for 20 minutes out of a 1-hour period.

5.2 Effect on Existing Ambient Noise Environment

Existing ambient and traffic noise exposure levels at the site serve as the basis for evaluating if there is potential for the proposed project to result in increased noise levels. Incorporating existing traffic volumes on the local and regional roadway network into the SoundPlan noise simulation model for the overall project operations and comparing the resulting noise levels to those of the existing ambient environment, the effect of the proposed project on the existing noise environment can be determined. The analysis of the potential effects of the proposed project are presented below in Table 8.

The project-related effects on the existing ambient noise environment were calculated by finding the difference in baseline ambient noise levels (A) and combined plus project noise levels (C). The effect of the proposed project on the existing ambient environment was calculated to result in a change of less than dB from baseline no-project ambient conditions. With the project-generated car wash noise levels predicted to be 8 dB or more below the baseline ambient, project-generated noise would have a negligible effect on the ambient noise level exposure at the sensitive receptors.

Table 8 – Project Effect on Existing Ambient, (dBA Ldn)

Site	Location/Property Line	(A) Baseline Noise Exposure ¹	Plus Project Noise Exposure ^{2,3}		
			(B) Car Wash	(C) Combined	(C-A) Effect on Ambient
P-01	Northern Property Line	63	41	63	- ⁴
P-02	Southwest Property Line / High Street Single-Family Residential	67	52	67	- ⁴
P-03	High Street Multi-Family Residential	70	53	70	- ⁴
P-04	Eastern Property Line	66	38	66	- ⁴
P-05	Northeastern Property Line	64	42	64	- ⁴
P-06	Northwestern Property Line	54	46	55	<1

Notes: dBA = A-weighted decibels; LDN = Day Night noise level.

1 – Existing ambient noise level exposure, without implementation of the proposed project.

2 – Noise level exposure following construction and implementation of the proposed project.

3 – Project Effect determined by the difference in Baseline (A) and Plus-Project (C) noise levels.

4 – Net Project Effect resulted in a negligible change the overall noise exposure at the representative receiver.

Source: Extant Acoustical Consulting LLC, 2019

6 Conclusion

Extant Acoustical Consulting (Extant) has evaluated the proposed car wash project; located at 4265 Foothill Blvd. in Oakland, California. The project is proposed to be located at the site of an existing Chevron gas station, at the intersection of Foothill Blvd and High Street; in the Jefferson area of the City of Oakland. The project site is bounded by multi-family residential land uses along the northern and western property lines, a single-family parcel on the southwestern property line, with transportation right-of-way bounding the site on the southern and eastern property lines.

The project proposes to construct a new in-bay automated car wash on the project site. The hours of operation for the proposed car wash use associated with the project are assumed to be 7:00 AM to 9:00 PM, consistent with the City of Oakland Municipal Code qualitative noise guidelines. The analysis summarized the existing noise environment, presented the predicted noise levels potentially associated with the by the proposed car wash, and compared the resultant noise levels with applicable City of Oakland noise standards.

Car wash noise levels are anticipated range from approximately 38 to 53 dBA Ldn, at the prediction receivers representing the nearby residential property lines and from 42 to 57 dBA Leq at the nearby receptors during peak-hour operations.

Based on the analysis presented, the predicted average day-night noise levels (Ldn) generated from the operation of the proposed project are predicted to comply with the City of Oakland exterior noise level standards set forth in Figure 6 of the City of Oakland General Plan (normally acceptable criteria). Project noise levels are also predicted to comply with the 60 dBA Planning Code standard for noise levels affecting residential uses as established in the City of Oakland Planning Code Chapter 17.120.050.

Based on existing noise levels experienced in the vicinity of the project site, project-generated average day-night noise levels are predicted to be well below average ambient noise levels in the project study area. Noise levels generated from the proposed project were predicted to result in less than a 1 dBA increase in the existing noise environment at receivers in the project study area. However, it should be noted that the sound produced by the car wash would be a different character in comparison to the existing environment; and as such, may remain distinct and audible.

Development and operation of the proposed car wash at 4265 Foothill Blvd. is anticipated to comply with the applicable City of Oakland General Plan, Municipal Code and Planning Code noise standards.

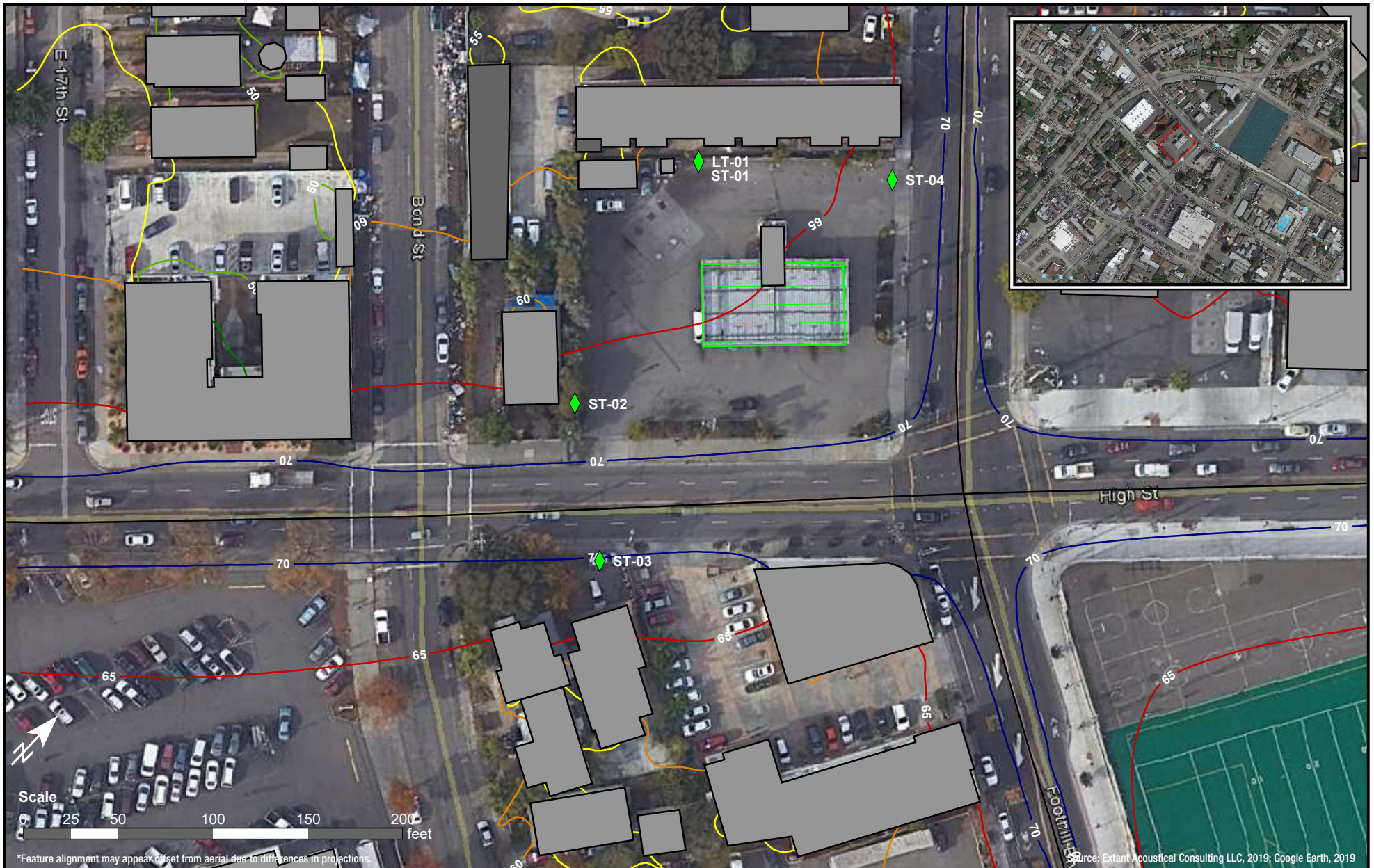


Figure 1

Project Location and Existing Traffic Noise
 Day/Night Noise Level Contours, dBA Ldn
 AADT Traffic Noise Contours

NG Grewal One
 4265 Foothill Blvd
 City of Oakland, CA

Signs and Symbols

- Project Site
- ◆ Receiver
- Building
- Auxiliary Structures
- Carwash
- Noise Barrier
- Canopy
- Roadway

Noise Level
 Ldn, dB(A)

- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- >= 70

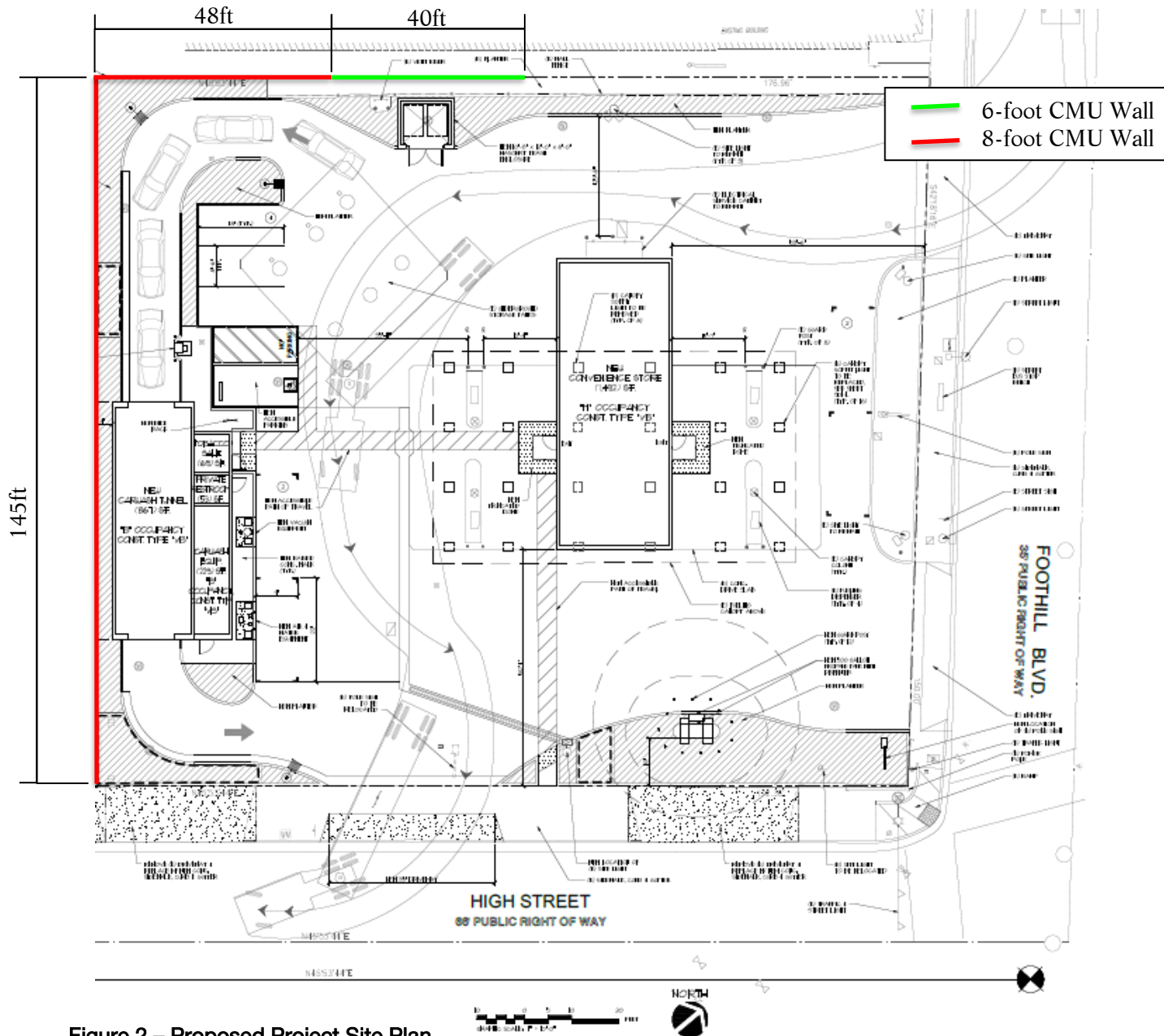


Figure 2 – Proposed Project Site Plan

Source: MI Architects Inc., 2019



Figure 3

Carwash Noise Levels
 Day/Night Noise Level Contours, dBA Ldn
 Protovest Windshear 30hp

NG Grewal One
 4265 Foothill Blvd
 City of Oakland, CA

Signs and Symbols

- Project Site
- ◆ Receiver
- Building
- Auxiliary Structures
- Carwash
- Noise Barrier
- Canopy
- Roadway

Noise Level
 Ldn, dB(A)

- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- >= 70



Figure 4

Carwash Noise Levels
 Loudest Daytime Hour Noise Level Contours, dBA Leq,d-1h
 Protovest Windshear 30hp

NG Grewal One
 4265 Foothill Blvd
 City of Oakland, CA

EA EXTANTACOUSTICAL
 CONSULTING LLC

Published: 06/06/2019
 Engineer: MJC

Signs and Symbols

- Project Site
- ◆ Receiver
- Building
- Auxiliary Structures
- Carwash
- Noise Barrier
- Canopy
- Roadway

Noise Level
 Leq,d-1h, dB(A)

- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- >= 70

Scale
 0 25 50 100 150 200 feet

*Feature alignment may appear offset from aerial due to differences in projections.

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Appendix A Description of Noise Metrics

This Appendix describes the noise terminology and metrics used in this report.

A.1 A-weighted Sound Level, dBA

Loudness is a subjective quantity that enables a listener to order the magnitude of different sounds on a scale from soft to loud. Although the perceived loudness of a sound is based somewhat on its frequency and duration, chiefly it depends upon the sound pressure level. Sound pressure level is a measure of the sound pressure at a point relative to a standard reference value; sound pressure level is always expressed in decibels (dB), a logarithmic quantity.

Another important characteristic of sound is its frequency, or “pitch.” This is the rate of repetition of sound pressure oscillations as they reach our ears. Frequency is expressed in units known as Hertz (abbreviated “Hz” and equivalent to one cycle per second). Sounds heard in the environment usually consist of a range of frequencies. The distribution of sound energy as a function of frequency is termed the “frequency spectrum.” The frequency spectrum of sound is often represented as the sum of the sound energy in frequency bands that are one octave or 1/3-octave wide. An octave represents a doubling of frequency.

The human ear does not respond equally to identical noise levels at different frequencies. Although the normal frequency range of hearing for most people extends from a low of about 20 Hz to a high of 10,000 Hz to 20,000 Hz, people are most sensitive to sounds in the voice range, between about 500 Hz to 2,000 Hz. Therefore, to correlate the amplitude of a sound with its level as perceived by people, the sound energy spectrum is adjusted, or “weighted.”

The weighting system most commonly used to correlate with people's response to noise is “A-weighting” (or the “A-filter”) and the resultant noise level is called the “A-weighted noise level” (dBA). A-weighting significantly de-emphasizes those parts of the frequency spectrum from a noise source that occurs both at lower frequencies (those below about 500 Hz) and at very high frequencies (above 10,000 Hz) where we do not hear as well. The filter has very little effect, or is nearly “flat,” in the middle range of frequencies between 500 and 10,000 Hz. A-weighted sound levels have been found to correlate better than other weighting networks with human perception of “noisiness.” One of the primary reasons for this is that the A-weighting network emphasizes the frequency range where human speech occurs, and noise in this range interferes with speech communication. The figure below shows common indoor and outdoor A-weighted sound levels and the environments or sources that produce them.

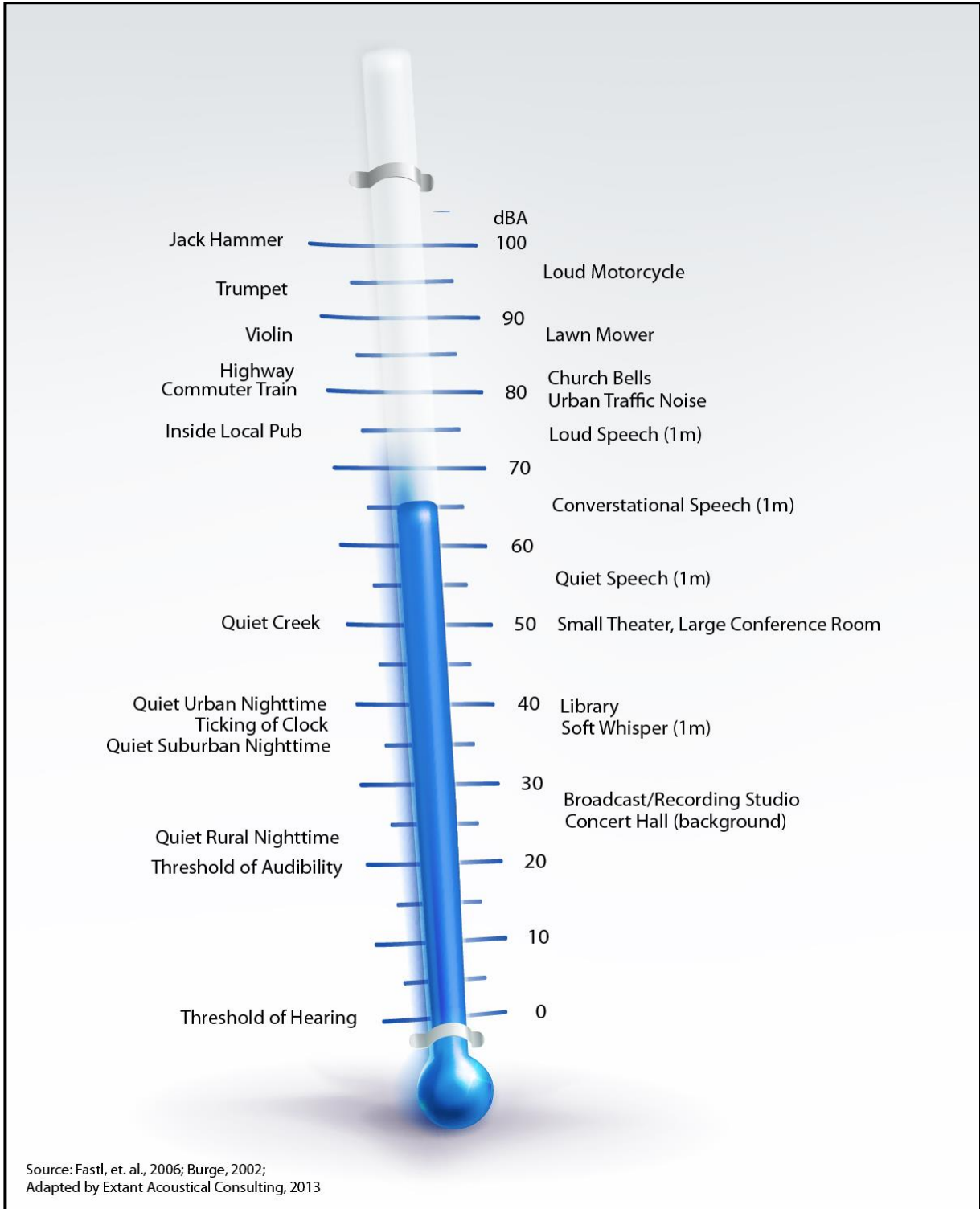


Exhibit A.1 – Common Noise Levels

A.2 Equivalent Sound Level, L_{eq}

The Equivalent Sound Level, abbreviated L_{eq} , is a measure of the total exposure resulting from the accumulation of A-weighted sound levels over a particular period of interest -- for example, an hour, an 8-hour school day, nighttime, or a full 24-hour day. However, because the length of the period can be different depending on the time frame of interest, the applicable period should always be identified or clearly understood when discussing the metric. Such durations are often identified through a subscript, for example L_{eq1h} , or $L_{eq(24)}$.

L_{eq} may be thought of as a constant sound level over the period of interest that contains as much sound energy as (is “equivalent” to) the actual time-varying sound level with its normal peaks and valleys. It is important to recognize, however, that the two signals (the constant one and the time-varying one) would sound very different from each other. Also, the “average” sound level suggested by L_{eq} is not an arithmetic value, but a logarithmic, or “energy-averaged” sound level. Thus, the loudest events may dominate the noise environment described by the metric, depending on the relative loudness of the events.

A.3 Statistical Sound Level Descriptors

Statistical descriptors of the time-varying sound level are often used instead of, or in addition to L_{eq} to provide more information about how the sound level varied during the time period of interest. The descriptor includes a subscript that indicates the percentage of time the sound level is exceeded during the period. The L_{50} is an example, which represents the sound level exceeded 50 percent of the time, and equals the median sound level. Another commonly used descriptor is the L_{10} , which represents the sound level exceeded 10 percent of the measurement period and describes the sound level during the louder portions of the period. The L_{90} is often used to describe the quieter background sound levels that occurred, since it represents the level exceeded 90 percent of the period.

A.4 Ldn/DNL (Day-Night Noise Level)

The 24-hour L_{eq} with a 10 dB “penalty” applied during nighttime noise-sensitive hours, 10:00 p.m. through 7:00 a.m. The Ldn/DNL attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

A.5 CNEL (Community Noise Equivalent Level)

The CNEL is similar to the Ldn/DNL described above, but with an additional 5 dB “penalty” for the noise-sensitive hours between 7:00 p.m. to 10:00 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the CNEL is typically 0.5 dB higher than the Ldn/DNL.

A.6 SEL (Sound Exposure Level)

The SEL describes the cumulative exposure to sound energy over a stated period of time; typically reference to one (1) second.

Appendix B Long-Term Noise Monitoring Data

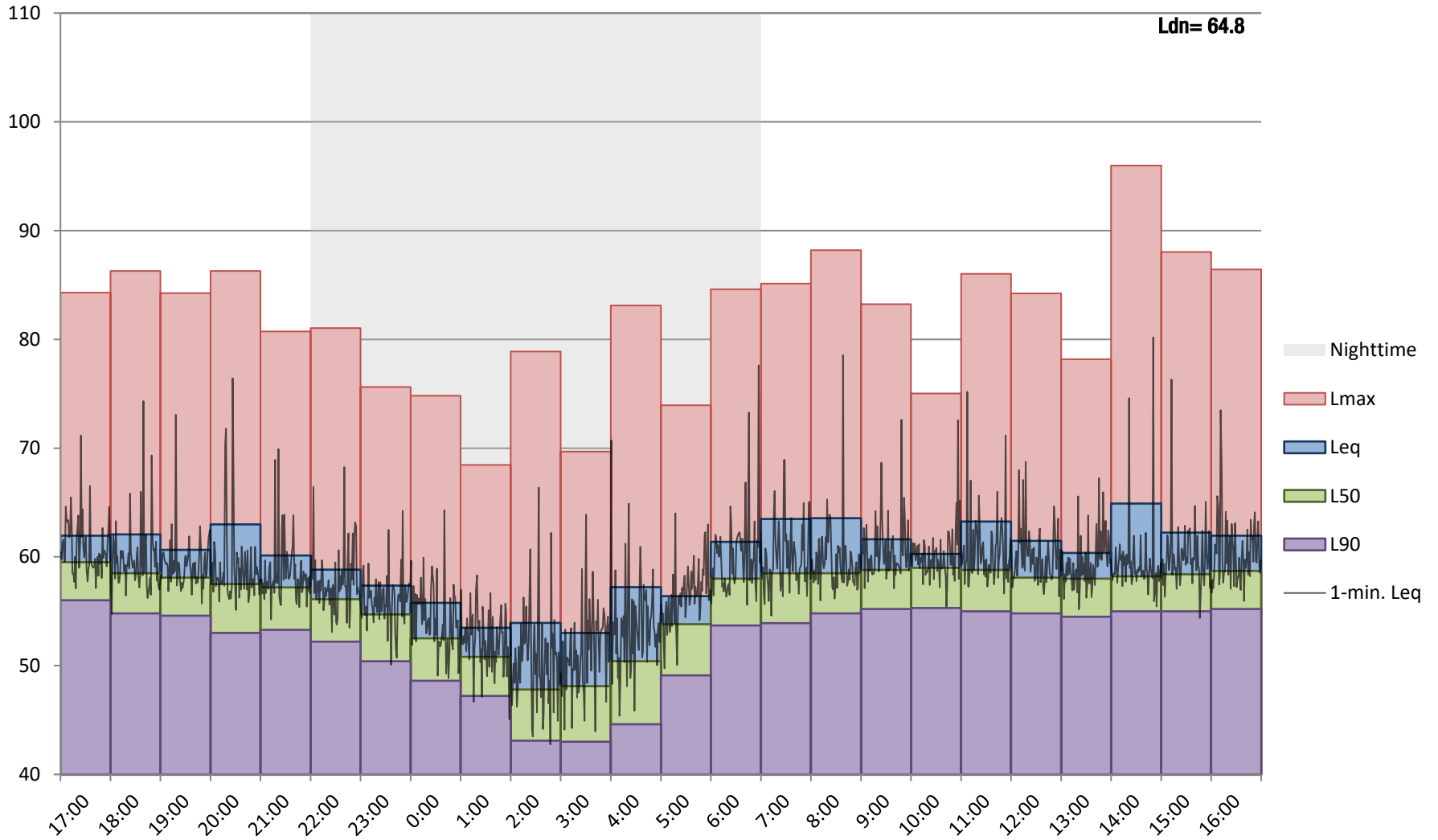
Appendix B-1
Long-Term 24 Hour Continuous Noise Monitoring



Project: 4265 Foothill Blvd Gas Station and Car Wash
Date: Wednesday, December 26, 2018 to Thursday, December 27, 2018
Site: LT-01

Hour	Leq	Lmax	L50	L90		Lowermost Level			
						Leq	Lmax	L50	L90
17:00	61.9	84.3	59.5	56.0					
18:00	62.1	86.3	58.5	54.8	Daytime (7 a.m. - 10 p.m.)	60.1	75.0	57.2	53.0
19:00	60.7	84.3	58.1	54.6	Nighttime (10 p.m. - 7 a.m.)	53.0	68.5	47.8	43.0
20:00	63.0	86.3	57.5	53.0					
21:00	60.1	80.7	57.2	53.3					
22:00	58.8	81.0	56.1	52.2					
23:00	57.4	75.6	54.7	50.4	Daytime (7 a.m. - 10 p.m.)	62.3	84.8	58.4	54.7
0:00	55.8	74.8	52.5	48.6	Nighttime (10 p.m. - 7 a.m.)	57.2	76.7	52.5	48.0
1:00	53.5	68.5	50.8	47.2					
2:00	53.9	78.9	47.8	43.1					
3:00	53.0	69.7	48.1	43.0					
4:00	57.2	83.1	50.4	44.6	Daytime (7 a.m. - 10 p.m.)	64.9	96.0	59.5	56.0
5:00	56.4	73.9	53.8	49.1	Nighttime (10 p.m. - 7 a.m.)	61.4	84.6	58.0	53.7
6:00	61.4	84.6	58.0	53.7					
7:00	63.5	85.1	58.5	53.9					
8:00	63.5	88.2	58.5	54.8					
9:00	61.6	83.2	58.8	55.2					
10:00	60.3	75.0	59.0	55.3					
11:00	63.3	86.0	58.8	55.0					
12:00	61.5	84.2	58.1	54.8					
13:00	60.4	78.2	58.0	54.5					
14:00	64.9	96.0	58.2	55.0					
15:00	62.2	88.0	58.4	55.0					
16:00	62.0	86.4	58.7	55.2					
						Energy Distribution			
						Daytime	84%		
						Nighttime	16%		
						Calculated L _{dn} , dBA			
						64.8			

Appendix B-1
4265 Foothill Blvd Gas Station and Car Wash - LT-01
Wednesday, December 26, 2018 to Thursday, December 27, 2018



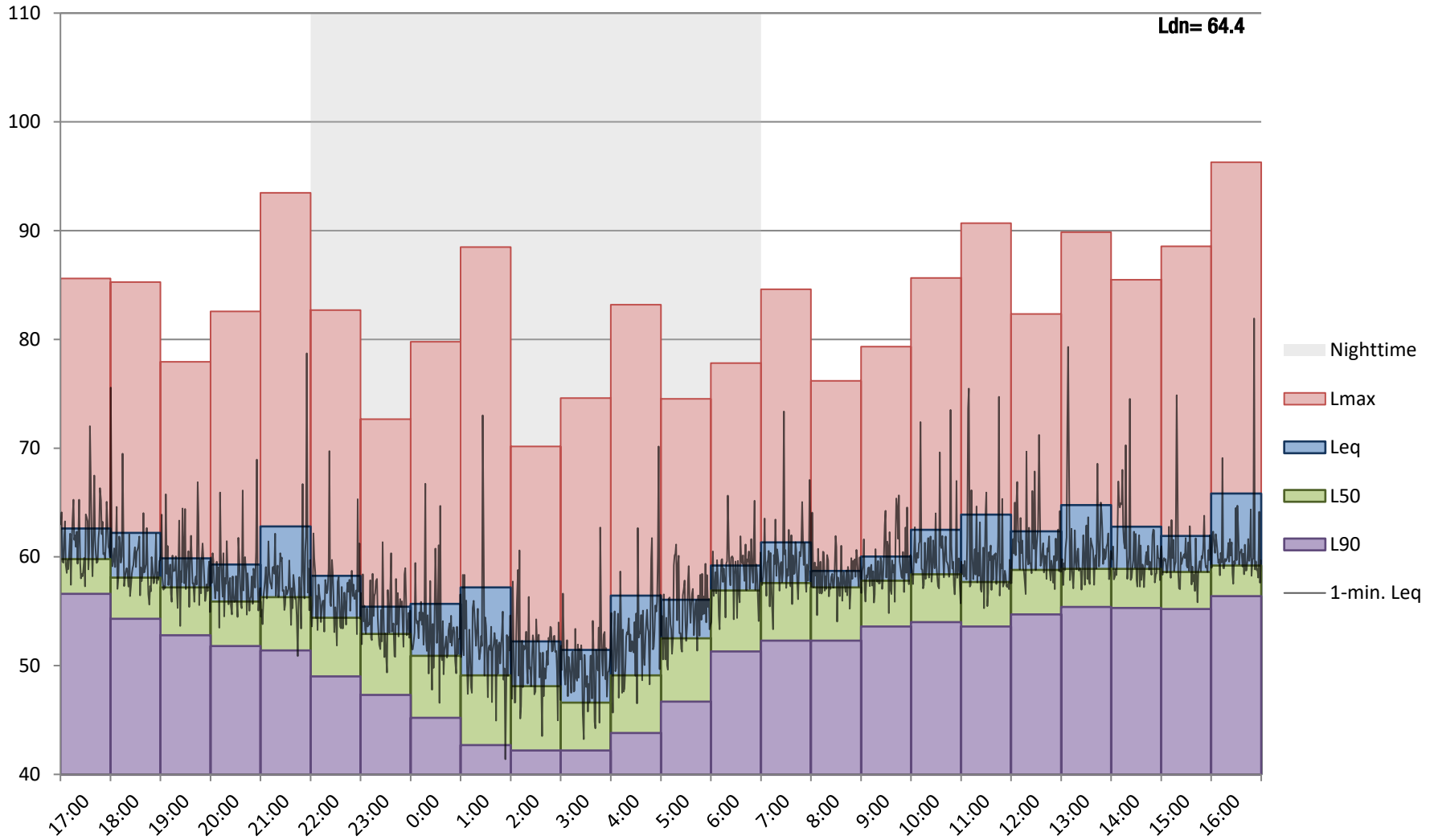
Appendix B-2
Long-Term 24 Hour Continuous Noise Monitoring



Project: 4265 Foothill Blvd Gas Station and Car Wash
Date: Thursday, December 27, 2018 to Friday, December 28, 2018
Site: LT-01

Hour	Leq	Lmax	L50	L90		Lowermost Level			
						Leq	Lmax	L50	L90
17:00	62.6	85.6	59.8	56.6					
18:00	62.2	85.3	58.1	54.3	Daytime (7 a.m. - 10 p.m.)	58.7	76.2	55.9	51.4
19:00	59.9	77.9	57.2	52.8	Nighttime (10 p.m. - 7 a.m.)	51.5	70.2	46.6	42.2
20:00	59.3	82.6	55.9	51.8					
21:00	62.8	93.5	56.3	51.4					
22:00	58.2	82.7	54.4	49.0					
23:00	55.4	72.7	52.9	47.3	Daytime (7 a.m. - 10 p.m.)	62.5	85.6	58.0	54.0
0:00	55.7	79.8	50.9	45.2	Nighttime (10 p.m. - 7 a.m.)	56.4	78.2	51.2	45.6
1:00	57.2	88.5	49.1	42.7					
2:00	52.2	70.2	48.1	42.2					
3:00	51.5	74.6	46.6	42.2					
4:00	56.4	83.2	49.1	43.8	Daytime (7 a.m. - 10 p.m.)	65.8	96.3	59.8	56.6
5:00	56.1	74.5	52.5	46.7	Nighttime (10 p.m. - 7 a.m.)	59.2	88.5	56.9	51.3
6:00	59.2	77.8	56.9	51.3					
7:00	61.3	84.6	57.6	52.3					
8:00	58.7	76.2	57.2	52.3					
9:00	60.0	79.3	57.8	53.6					
10:00	62.5	85.7	58.4	54.0					
11:00	63.9	90.7	57.7	53.6					
12:00	62.3	82.3	58.8	54.7					
13:00	64.8	89.8	58.9	55.4					
14:00	62.8	85.5	58.9	55.3					
15:00	61.9	88.6	58.6	55.2					
16:00	65.8	96.3	59.2	56.4					
						Energy Distribution			
						Daytime		87%	
						Nighttime		13%	
						Calculated L _{dn} , dBA			
						64.4			

Appendix B-2
4265 Foothill Blvd Gas Station and Car Wash - LT-01
Thursday, December 27, 2018 to Friday, December 28, 2018



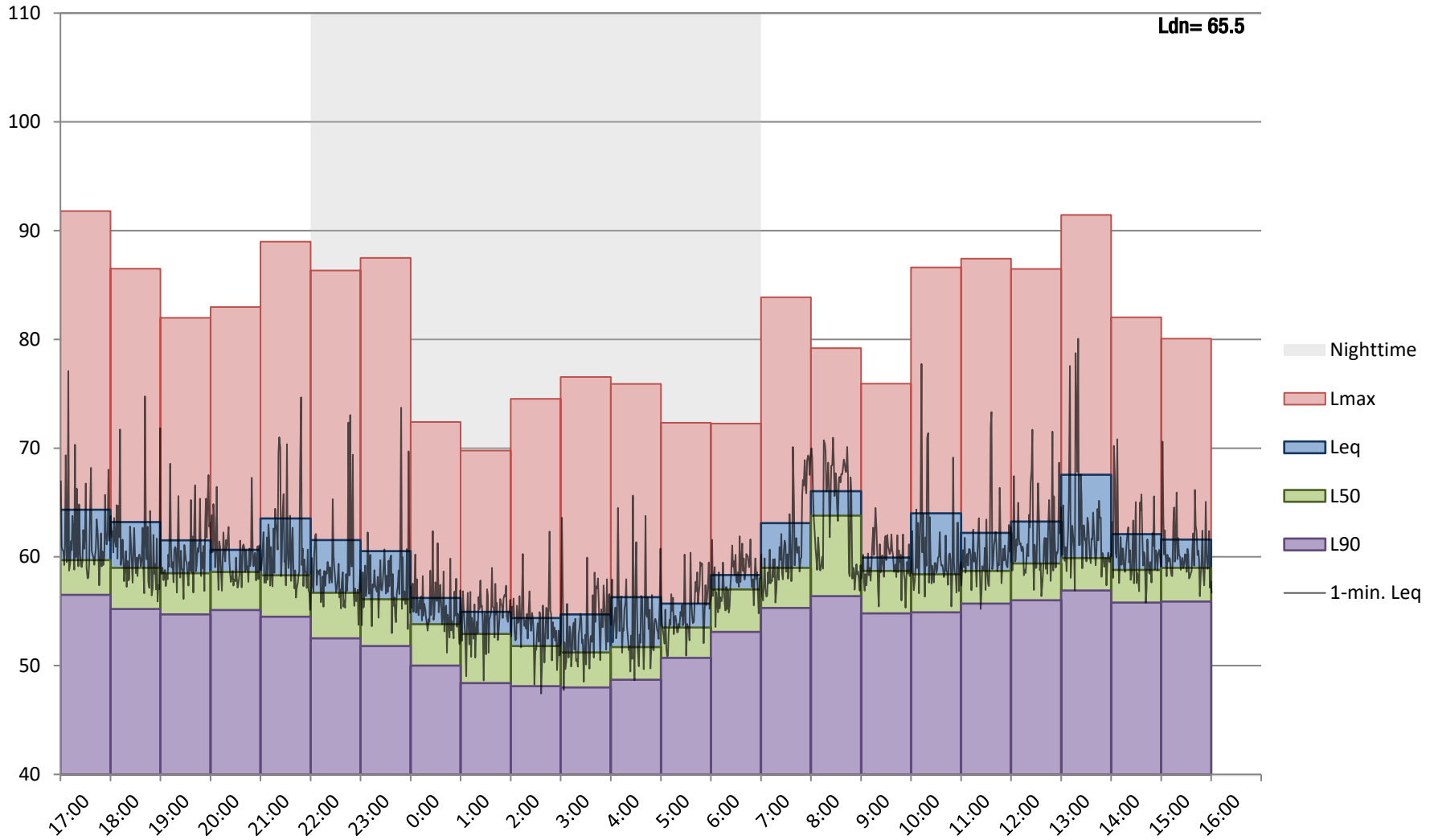
Appendix B-3
Long-Term 24 Hour Continuous Noise Monitoring



Project: 4265 Foothill Blvd Gas Station and Car Wash
Date: Friday, December 28, 2018 to Saturday, December 29, 2018
Site: LT-01

Hour	Leq	Lmax	L50	L90		Lowermost Level			
						Leq	Lmax	L50	L90
17:00	64.3	91.8	59.7	56.5					
18:00	63.2	86.5	59.0	55.2	Daytime (7 a.m. - 10 p.m.)	59.9	75.9	58.3	54.5
19:00	61.5	82.0	58.5	54.7	Nighttime (10 p.m. - 7 a.m.)	54.4	69.8	51.2	48.0
20:00	60.6	83.0	58.6	55.1					
21:00	63.5	89.0	58.3	54.5					
22:00	61.5	86.3	56.7	52.5					
23:00	60.5	87.5	56.1	51.8	Daytime (7 a.m. - 10 p.m.)	63.3	84.7	59.3	55.6
0:00	56.2	72.4	53.8	50.0	Nighttime (10 p.m. - 7 a.m.)	57.7	76.4	53.9	50.1
1:00	54.9	69.8	52.9	48.4					
2:00	54.4	74.5	51.8	48.1					
3:00	54.7	76.5	51.2	48.0					
4:00	56.3	75.9	51.7	48.7	Daytime (7 a.m. - 10 p.m.)	67.5	91.8	63.8	56.9
5:00	55.7	72.3	53.5	50.7	Nighttime (10 p.m. - 7 a.m.)	61.5	87.5	57.0	53.1
6:00	58.3	72.3	57.0	53.1					
7:00	63.1	83.9	59.0	55.3					
8:00	66.0	79.2	63.8	56.4					
9:00	59.9	75.9	58.7	54.8					
10:00	64.0	86.6	58.4	54.9					
11:00	62.2	87.4	58.7	55.7					
12:00	63.2	86.5	59.4	56.0					
13:00	67.5	91.4	59.9	56.9					
14:00	62.1	82.0	58.8	55.8					
15:00	61.6	80.1	59.0	55.9					
16:00									
						Energy Distribution			
						Daytime	86%		
						Nighttime	14%		
						Calculated L _{dn} , dBA			
						65.5			

Appendix B-3
4265 Foothill Blvd Gas Station and Car Wash - LT-01
Friday, December 28, 2018 to Saturday, December 29, 2018



Appendix C Manufacturer Sound Level Data

Silencer Package

GENERAL DESCRIPTION

The Proto-Vest "Silencer Package" was developed to enable our dryers to meet OSHA, federal, state and local noise reduction standards. The OSHA permissible noise exposure is 85 dB for an 8-hour shift. By reducing noise levels into the 70 dB to 80 dB range, comparable to an electric typewriter or digital alarm clock. You can be assured of a pleasant environment for both your employees and customers. The Silencing Package is a standard feature on all Untouchable dryers, while the Stripper and Windshear drying systems can be equipped with the Silencing Package as an option.

Using state-of-the-art materials, which require virtually no maintenance, Proto-Vest has designed three components to comprise the Silencer Package.

- **Blower Inlet:** reduces the noise generated by rapidly moving air being drawn into the blower assembly.
- **Blower-motor Cover:** houses the blower and motor completely, absorbing noise from the motor and impeller as well as protecting them.
- **Riser Can:** absorbs the noise created by the blower and impeller and the movement of the air as it leaves the blower and advances through the dryer's plenum.

The Silencer Package reduces decibel levels on Proto-Vest dryers on an average of 10 decibels. Therefore the Silenced Stripper, Windshear or Untouchable dryers are approximately 10 times quieter than the unsilenced model!

DECIBEL LEVEL READINGS

With Silencer (WS)	Without Silencer (WOS)	With Silencer (WS)	Without Silencer (WOS)
Windshear InBay - (2) 25hp Dryer:			
WS: 10 ft=88 dBa;	WOS: 10 ft=94 dBa	WS: 10 ft=74.5 dBa;	WOS: 10 ft=82.9 dBa
WS: 20 ft=82 dBa;	WOS: 20 ft=88 dBa	WS: 20 ft=68.5 dBa;	WOS: 20 ft=76.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=84.5 dBa	WS: 30 ft=64.9 dBa;	WOS: 30 ft=73.4 dBa
WS: 40 ft=76 dBa;	WOS: 40 ft=82 dBa	WS: 40 ft=62.4 dBa;	WOS: 40 ft=70.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=80 dBa	WS: 50 ft=60.5 dBa;	WOS: 50 ft=69 dBa
WS: 60 ft=72.4 dBa;	WOS: 60 ft=78.4 dBa		
Windshear - 30hp Dryer:			
WS: 10 ft=76.9 dBa;	WOS: 10 ft=91 dBa	WS: 10 ft=76.9 dBa;	WOS: 10 ft=91 dBa
WS: 20 ft=70.9 dBa;	WOS: 20 ft=84.9 dBa	WS: 20 ft=70.9 dBa;	WOS: 20 ft=84.9 dBa
WS: 30 ft=67.4 dBa;	WOS: 30 ft=81.4 dBa	WS: 30 ft=67.4 dBa;	WOS: 30 ft=81.4 dBa
WS: 40 ft=64.9 dBa;	WOS: 40 ft=78.9 dBa	WS: 40 ft=64.9 dBa;	WOS: 40 ft=78.9 dBa
WS: 50 ft=63 dBa;	WOS: 50 ft=77 dBa	WS: 50 ft=63 dBa;	WOS: 50 ft=77 dBa
Windshear II - (2) 30hp Dryer:			
WS: 10 ft=88 dBa;	WOS: 10 ft=99 dBa	WS: 10 ft=74.5 dBa;	WOS: 10 ft=82.9 dBa
WS: 20 ft=81.9 dBa;	WOS: 20 ft=92.9 dBa	WS: 20 ft=68.5 dBa;	WOS: 20 ft=76.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=89.4 dBa	WS: 30 ft=64.9 dBa;	WOS: 30 ft=73.4 dBa
WS: 40 ft=75.4 dBa;	WOS: 40 ft=86.9 dBa	WS: 40 ft=62.4 dBa;	WOS: 40 ft=70.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=85 dBa	WS: 50 ft=60.5 dBa;	WOS: 50 ft=69 dBa
TopShot - 30hp Dryer:			
WS: 10 ft=76.9 dBa;	WOS: 10 ft=91 dBa	WS: 10 ft=76.9 dBa;	WOS: 10 ft=91 dBa
WS: 20 ft=70.9 dBa;	WOS: 20 ft=84.9 dBa	WS: 20 ft=70.9 dBa;	WOS: 20 ft=84.9 dBa
WS: 30 ft=67.4 dBa;	WOS: 30 ft=81.4 dBa	WS: 30 ft=67.4 dBa;	WOS: 30 ft=81.4 dBa
WS: 40 ft=64.9 dBa;	WOS: 40 ft=78.9 dBa	WS: 40 ft=64.9 dBa;	WOS: 40 ft=78.9 dBa
WS: 50 ft=63 dBa;	WOS: 50 ft=77 dBa	WS: 50 ft=63 dBa;	WOS: 50 ft=77 dBa
TopShot II - (2) 30hp Dryer:			
WS: 10 ft=88 dBa;	WOS: 10 ft=99 dBa	WS: 10 ft=74.5 dBa;	WOS: 10 ft=82.9 dBa
WS: 20 ft=81.9 dBa;	WOS: 20 ft=92.9 dBa	WS: 20 ft=68.5 dBa;	WOS: 20 ft=76.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=89.4 dBa	WS: 30 ft=64.9 dBa;	WOS: 30 ft=73.4 dBa
WS: 40 ft=75.9 dBa;	WOS: 40 ft=86.9 dBa	WS: 40 ft=62.4 dBa;	WOS: 40 ft=70.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=85 dBa	WS: 50 ft=60.5 dBa;	WOS: 50 ft=69 dBa

SideShot - 15hp Dryer:

WS: 10 ft=74.5 dBa;	WOS: 10 ft=82.9 dBa
WS: 20 ft=68.5 dBa;	WOS: 20 ft=76.9 dBa
WS: 30 ft=64.9 dBa;	WOS: 30 ft=73.4 dBa
WS: 40 ft=62.4 dBa;	WOS: 40 ft=70.9 dBa
WS: 50 ft=60.5 dBa;	WOS: 50 ft=69 dBa

SideShot II - 30hp Dryer:

WS: 10 ft=76.9 dBa;	WOS: 10 ft=91 dBa
WS: 20 ft=70.9 dBa;	WOS: 20 ft=84.9 dBa
WS: 30 ft=67.4 dBa;	WOS: 30 ft=81.4 dBa
WS: 40 ft=64.9 dBa;	WOS: 40 ft=78.9 dBa
WS: 50 ft=63 dBa;	WOS: 50 ft=77 dBa

90N/90XS - 15hp Dryers:

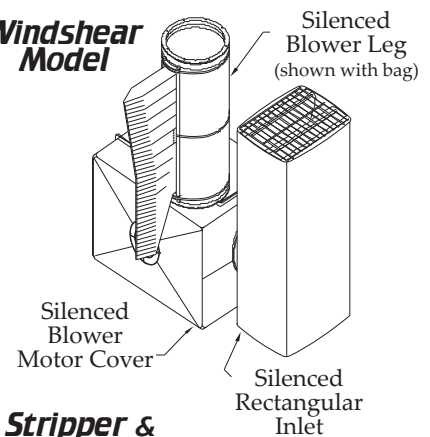
WS: 10 ft=74.5 dBa;	WOS: 10 ft=82.9 dBa
WS: 20 ft=68.5 dBa;	WOS: 20 ft=76.9 dBa
WS: 30 ft=64.9 dBa;	WOS: 30 ft=73.4 dBa
WS: 40 ft=62.4 dBa;	WOS: 40 ft=70.9 dBa
WS: 50 ft=60.5 dBa;	WOS: 50 ft=69 dBa

U325/90NU/90XSU - 30hp Dryers:

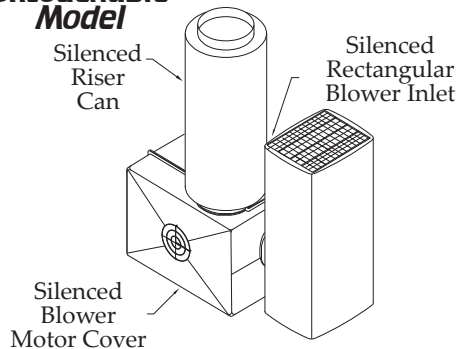
WS: 10 ft=76.9 dBa
WS: 20 ft=70.9 dBa
WS: 30 ft=67.4 dBa
WS: 40 ft=64.9 dBa
WS: 50 ft=63 dBa

(Untouchable Dryer Series is equipped with Silencer Package.)

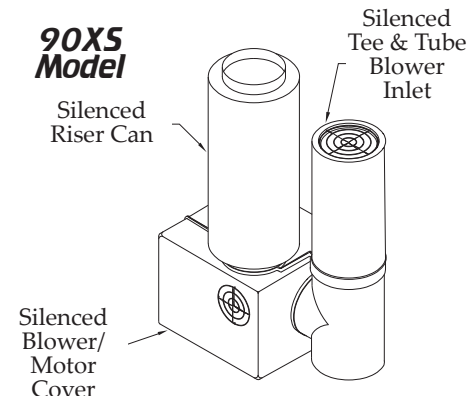
Windshear Model



Stripper & Untouchable Model



90XS Model



*Specifications subject to change without notice.

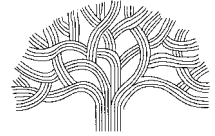
NOTE: The Proto-Vest dryer's dimensions will vary with the Silencer Package.

Proto-Vest, Inc., 7400 N. Glen Harbor Blvd., Glendale, AZ 85307 • 800-521-8218 • 623-872-8300 • Fax 623-872-6150
www.proto-vest.com

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Proto-Vest[®] Inc.

CITY OF OAKLAND



OAKLAND FIRE DEPARTMENT
FIRE PREVENTION BUREAU
250 Frank H. Ogawa Plaza • Suite 3341 • Oakland, California 94612-2033

Reviewed by: Anita Tsui, P.E.
Phone (510) 238-3866
Email: atsui@oaklandca.gov

(510) 238-3854
FAX (510) 238-6739
TDD (510) 238-3254

Development Permit:
PLN18376

4265 Foothill Blvd
Oakland, CA

OFD # 2020-41648
Date: 10.15.2020

FIRE REVIEW CONDITIONS OF APPROVAL

This is a review for OFD code issue only. If the project is to be approved by the advisory agency please attach the following conditions of approval:

Note that these conditions of approval are based on the current code (2019 CBC/ 2019 CFC/ 2019 OMC). OFD reserves the right to enforce provisions effective at the time an application for building permit.

Ref: CBC: 1.1.9 Effective date of this code Only those standards approved by the California Building Standards Commission that are effective at the time an application for building permit is submitted shall apply to the plans and specifications for, and to the construction performed under, that permit. For the effective dates of the provisions contained in this code, see the History Note page of this code.

Description of Work: Major Conditional Use Permit and Regular Design Review to allow for the establishment of a 1,492 square-foot Convenience Market and a drive through car wash as part of an existing gas station and add 500 gallon propane tank.

1. Verify and confirm the existing or proposed public fire hydrants shall be provided along all fire department access roads with a maximum travel distance of 150 feet to the property frontage or 300 feet hydrant to hydrant as required in CFC Appendix C and City Ordinance 13577 amended CFC 507.5.1.
2. Provide 2-1/2 inches Fire Department Connection at each street frontage of each proposed building on site.

When the fire department connection is located within 10 feet of the corner of a building adjacent to the fire department access, the fire department connection shall service both streets. Ref.: City Ord. amendment to CFC Chapter 80 adoption 2016 NFPA 13 Section 8.17.2.4.6.

3. Provide property address. Property address signs for the buildings shall comply with CFC 505.
4. Verify/Obtain separate permits from Fire Prevention Bureau required for installation, permitted activity of:
 - Installation of fire sprinkler system
 - Installation of underground piping
 - Installation of fire alarm/ fire sprinkler monitoring system
 - Hazardous materials
 - Operation permit for automotive fuel-dispensing facility
5. Provide vehicle impact protection in accordance to CFC 312 at propane tank. Bollards shall be at 4 feet maximum spacing and located not less than 3 feet from the tank.
6. The design of propane tank shall meet the requirements of CFC Ch 61 for Liquefied Petroleum Gases.

7. Provide emergency responder radio communications coverage. Ref.: CFC Section 510:

510.1 Emergency responder radio coverage in new buildings.

All new buildings shall have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building. This section shall not require improvement of the existing public safety communication systems.

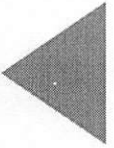
Exceptions:

1. *Where approved by the building official and the fire code official, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained in lieu of an approved radio coverage system.*
 2. *Where it is determined by the fire code official that the radio coverage system is not needed.*
 3. *In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency responder radio coverage system.*
8. Provide an approved fire sprinkler system for each building on site (car wash building and convenience store). Separate Permit required from Fire Prevention Bureau for fire sprinkler system. Hydraulic fire flow analysis shall be submitted for review of EBMUD's Water Service and Hydrant Application
 9. All drains shall discharge to sewer or open planter areas only; not to storm drains per City's retroactive Clean Water Program. Drains to sewer shall comply with California Plumbing Code. NFPA 13 may be used as a guide (i.e., air gap required between drain outlet and plumbing fixture. Coordinate with CEDA Building Services Building Inspector).
 10. Coordinate with Hazardous Material Unit (Ms. Sheryl Skillern, 510.238.7253, sskillern@oaklandca.gov) for inspections and submittal requirements if any hazardous materials found at the site during evacuation and demolition.
 11. Observe fire safety during demolition and construction work per 2016 CFC Chapter 33.

Water usage for Carwash



New Wave Industries
3315 Orange Grove Avenue
North Highlands, CA 95660
www.purclean.com



March 21, 2019

Site: Chevron Foothill Blvd. Oakland, CA
Wash Info: Mark VII Automatic – ChoiceWash XT
Subject: Water Usage Information

To Whom It May Concern:

The PurWater Recovery System has been engineered and designed specifically with the Professional Car Wash Operator in mind and incorporates the same innovative, cutting edge technology the industry has come to expect from PurClean. Modular in design, the PurWater System platform provides a simplified approach that allows the system to be easily adapted to meet the needs and requirements of the targeted wash facility and eliminates the confusion typically associated with water recovery.

Mark VII ChoiceWash XT

It is a commonly used number that you will lose 6 gallons to evaporation and carry out. Using 44 gallons total (reclaim, RO, RO reject and freshwater) per vehicle will put you at 68.42% reclaim which should be a good balance of wash quality and conservation. With your chemical applications and final rinse applications at 18 gallons per vehicle, all your undercarriage, and all wash applications running on reclaim water; site will be at 12 gallons per vehicle going to sewer.

Water Use Per Car

- ◆ evaporation and carry out 6 gallons
- ◆ chemical application and final rinse (RO and RO Reject) 18 gallons
- ◆ undercarriage and wash applications using reclaim water 26 gallons
- ◆ at maximum going to sewer 12 gallons of reclaim water

Summary

- ◆ Total of 44 gallons of water used per vehicle
- ◆ 18 gallons of RO, RO reject and freshwater for chemistry
- ◆ 26 gallons of water for wash applications using reclaim water
- ◆ 6 gallons of water lost to evaporation and carry out
- ◆ 12 gallons going to the sewer – calculates to 68.42% reclaim

Total Gallons to Sewer Daily (estimated at 100 cars per day count)

- ◆ 12 gallons per vehicle going to sewer (estimated 100 cars per day) total to sewer per day 1,200 gallons

Total Gallons Freshwater (RO & Reject) used (estimated at 100 cars per day count)

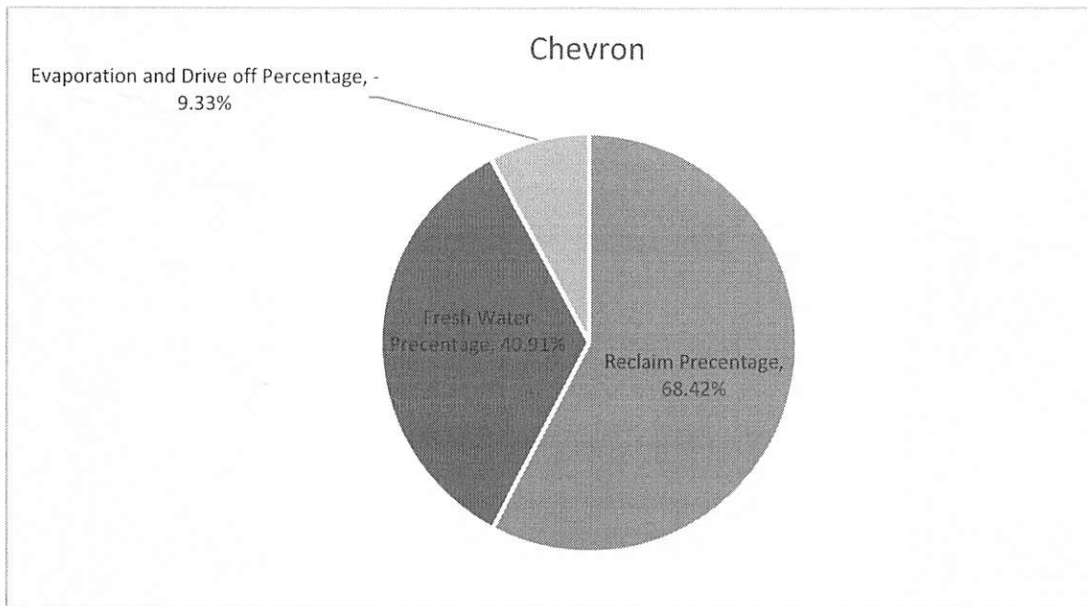
- ◆ 18 gallons per vehicle which includes freshwater, RO & RO Reject (estimated 100 cars per day) total freshwater used per day is 1,800 gallons

Best Regards,

Nicolle Hearne

Nicolle Hearne
Project Manager
New Wave Industries
PurClean/PurWater

Chevron		
Application	Gallons Used	Fresh/Reclaim
Undercarriage	4.0	Reclaim
High Side	4.0	Reclaim
Wheel Boss	4.0	Reclaim
High Side	2.0	Reclaim
High Pressure Arch	4.0	Reclaim
High Pressure Wheel	8.0	Reclaim
Freshwater for Chemistry Mixing	6.0	Fresh
Spot-Free Rinse & Reject	12.0	Fresh
Total (Chevron)	44.0	
Evaporation and Drive Off Gallons	-6.0	
Fresh Water Usage Gallons	18.0	
Reclaim Water Usage Gallons	26.0	
Reclaim Percentage	68.42%	
Fresh Water Percentage	40.91%	
Evaporation and Drive off Percentage	-9.33%	
	100.00%	





June 18, 2018

**Reclaim Effluent Quality Estimate for
PurWater Reclaim Systems**

Vehicles will attract contaminants predicated on the region of the country, and the roads traveled. These contaminants will consist of soil, road film, tree sap, bird droppings, pollen, insects, oil, and greases. Depending on if the region has snow and ice, then whatever will stick in the snow and ice will also stick to the vehicle. Snow and ice removal materials, which include but are not limited to sand, salt, liquid magnesium chloride which is often applied with a molasses to help it adhere to the road can and will stick to your vehicle as well. All of these contaminants will wash from the vehicle and will end up in the water reclamation tanking system.

The PurWater Reclaim System consists of two primary components ... the underground reclaim tank(s) and the above ground PurWater unit. The below ground tanks are normally supplied by a local concrete vault vendor, with their capacity and lay-out per PurWater specifications. The primary purpose of the reclaim system is to provide quality water to the wash so that the water can be re-used within the wash and still provide a clean car. The re-use of the water allows the operator to minimize the amount of incoming fresh water to the wash and the amount that is discharged from the wash. The reclaim system is not designed to meet a specific effluent quality of the discharge, although in many cases the water discharged from the system goes directly to sewer or a leach field.

As the primary purpose of the PurWater Reclaim System is to provide quality water for re-use within the wash, the system is designed to separate settleable solids (typically sand, grit) and free oils from the water going to the wash. These solids and oils can affect the wash quality, and increase the maintenance on wash pumps, piping, and nozzles. The large settleable solids (60-70 micron and larger) are settled within the underground tanks prior to entering the above ground PurWater unit. The PurWater unit uses high efficiency cyclones to remove down to 5 micron settleable solids prior to the wash. The solids-laden water from the PurWater unit is re-introduced into the reclaim water at the front end of the underground tanks, where some solids settle and some continue with the water phase to be re-treated or go out with the effluent. The free oils (60-70 micron and larger) float to the surface within the underground tanks and are trapped within the tanks. Accumulated settleable solids and free oils are periodically (normally every 3-6 months) removed from the reclaim system by pumping out the underground tanks and replacing with fresh water.

Some amount of water is continuously discharged from the reclaim system in order to satisfy the water balance for the wash. The volume of discharge is dependent on the amount of fresh water used by the wash, less any water that is lost to evaporation and carry-out. Depending upon local municipal requirements, the discharge can be sent directly to sewer or to a leach field, or may require additional treatment before final discharge. As each municipality will have its own discharge requirements, it is important to understand what contaminants the PurWater Reclaim System can and cannot affect.

The PurWater Reclaim system uses two processes to reduce contaminant loading. The first is physical separation using centrifugal force (the cyclones) and gravity settling (the reclaim tanks). Physical separation will directly affect the amount of free oil & grease (FOG) and total suspended solids (TSS) left in the discharge water, and indirectly affect the BOD / COD level as it removes oil & grease. The second process is chemical, oxidation using ozone. Ozone will affect the bacterial count, BOD / COD, total suspended solids (primarily bacterial), and some dissolved oils and chemicals. From field testing and experience, the PurWater Reclaim system has been shown to produce effluent qualities as follows:

CONTINUED NEX PAGE

Total Suspended Solids (TSS): 15-100 ppm
Free Oil & Grease (FOG): 10-25 ppm
BOD: 15-50 ppm

TSS, FOG, and BOD are typically the main concerns by municipalities receiving an effluent from a car wash. Given the type of processes used by the PurWater Reclaim system, there is no effect on total dissolved solids (TDS), pH, or temperature. There may also be little to no effect on certain chemicals dissolved in the water, emulsified or dissolved oils, and non-settleable solids.

The above effluent qualities are going to be similar for other types of systems that incorporate physical separation (plate separators, screen / bag filters, media filters, etc.) and chemical oxidation. Biological processes, when operating properly, may produce lower TSS, FOG, and BOD levels than the above, but still will not affect dissolved minerals and some dissolved chemicals in the water.

The above effluent quality estimates are based on normal contaminant loadings seen by car washes. The estimates are not a guarantee of performance. The estimated discharge quality from the PurWater Reclaim System may or may not be acceptable for direct discharge to sewer or a leach field. Local authorities and municipalities should be consulted to determine whether additional treatment is required to meet discharge permits.

If you have any questions or comments on the above, please contact our Sacramento office.

Sincerely,

Teresa Borchard

Teresa Borchard
Director of Technical Sales and Project Management
New Wave Industries
PurClean / PurWater



PurWater Reclaim System Design

The PurWater Reclaim System consists of two primary components the underground reclaim tank(s) and the above ground PurWater unit. The below ground tanks are normally supplied by a local concrete vault vendor, with their capacity and lay-out per PurWater specifications. (See attached drawing.) The primary purpose of the reclaim system is to provide quality water to the wash so that the water can be re-used within the wash and still provide a clean car. The re-use of the water allows the operator to minimize the amount of incoming fresh water to the wash and the amount that is discharged from the wash. The reclaim system is not designed to meet a specific effluent quality of the discharge, although in many cases the water discharged from the system goes directly to sewer or a leach field.

As the primary purpose of the PurWater Reclaim System is to provide quality water for re-use within the wash, the system is designed to separate settleable solids (typically sand, grit) and free hydrocarbons, from fat oil and greases, from the water going to the wash. These solids and hydrocarbons can affect the wash quality, and increase the maintenance on wash pumps, piping, and nozzles. The large settleable solids are settled within the underground tanks prior to entering the above ground PurWater unit. The free hydrocarbons float to the surface within the underground tanks and are trapped within the tanks. Accumulated settleable solids and free hydrocarbons are periodically (normally every 6-12 months) removed from the reclaim system by pumping out the underground tanks and replacing with fresh water. This is a recommendation only; local regulations may require more frequent service.

There are two factors we use in determining the size of the reclaim tanks for use with our PurWater Reclaim Units. The first consideration is the size of solid particle we want to separate within the reclaim tanks and the second consideration is how often we treat the water in the tanks using the continuous recirculation. The following will provide details on both of these factors:

- 1) Particle Removal: In the reclaim tank system, we are typically looking to remove solid particles between 60 – 75 microns in size. This ensures large particles are not going through the PurWater unit, which can cause excessive wear and / or plugging. Also, the size of the tanks needed for this removal allows for a relatively large volume for a sludge layer to build so that tanks do not need frequent clean-out. Particle size removal is determined by Stoke's Law:

$$V (R/S) = (g \times (\text{Rho1} - \text{Rho2}) \times D^2) / 18 \text{ Nu}$$

Where:

V (R/S) = Rise or Settling Velocity of a Particle (cm / sec)

g = Acceleration by Gravity (cm / sec²)

Rho1 = Density of Medium (g / cm³)

Rho2 = Density of Particle (g / cm³)

D = Particle Diameter (cm)

Nu = Viscosity of Medium (g / cm / sec)

We assume a water temperature of 68 DegF, which provides a water density of 1.0 g / cm³ and a viscosity of 1 cp (0.01 g / cm / sec). The solids density we use is 1.2 g / cm³, which is typically the lighter solids (silt) found in car washes. The acceleration of gravity is 980 cm / sec².

For a 60 micron (0.006 cm) particle, the settling velocity is 0.039 cm / sec, or 0.93 in / min. For a 75 micron (0.0075 cm) particle, the settling velocity is 0.061 cm / sec, or 1.45 in / min. We now use these velocities to determine the tank volume.

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We typically recommend using a tank that is 11 ft long (I.D.) by 5 ft wide (I.D.) with a 4.5 ft water depth. We allow for 1 foot at the bottom to be sludge accumulation, so we assume a solids particle must travel a maximum of 3.5 feet (42 in) to be removed. This leaves us with approximately 1440 gallons per tank of working volume (excluding the sludge layer).

For example, we will assume the maximum flow to the reclaim unit is 90 gpm (our PW300 series). To remove 60 micron particles, it will take a working tank volume of 4065 gallons (90 gpm x 42 in travel distance / 0.93 in per minute settling velocity), or 2.8 tanks (4065 gallons / 1440 gallons per tank of working volume). To remove 75 micron particles, it will take a working tank volume of 2606 gallons, or 1.8 tanks. We typically recommend using three tanks for this flow rate.

- 2) Treatment Frequency: One of the functions of the PurWater system is to continuously recirculate water through the reclaim tanks to provide odor control and to keep the water in the tanks from going stagnant. We recommend treating the entire reclaim tank working volume at least 2-3 times per day. On average, the PurWater unit recirculates water at 12 gpm. Using three tanks (per our example above), the entire working volume will be treated every 6 hours (3 tanks x 1440 gallons per tank / 12 gpm), or 4 times per day. This treatment frequency is well within our guidelines.

Some amount of water is continuously discharged from the reclaim system in order to satisfy the water balance for the wash. The volume of discharge is dependent on the amount of fresh water used by the wash, less any water that is lost to evaporation and carry-out. The discharge is sent to a separate, customer supplied wastewater treatment device, or directly to sewer or a leach field. The PurWater Reclaim System does not treat or affect minerals or chemicals dissolved in the water, emulsified or dissolved oils, non-settleable solids, the BOD / COD content, pH, or temperature of the water that is discharged.

The second component of the reclaim system is the above ground treatment system, which further removes solids from the reclaim water so that it is acceptable for the high pressure pumps and nozzles within the wash. The PurWater reclaim unit has a suction pump that brings water up from the reclaim tank to be treated. The pump speed is controlled by a Variable Frequency Drive (VFD) to either continuously recirculate water (low speed) or to provide water to the wash (high speed). Several pump speeds can be programmed into the VFD to meet various or multiple demands. The PurWater unit uses high efficiency cyclones to remove down to 5 micron settleable solids prior to the wash. The cyclones create nearly 1000 G's of centrifugal force to obtain this fine particle separation. The treated (cleaned) water is sent to the wash and / or back to the reclaim tank as part of its continual recirculation mode. The solids-laden water from the PurWater unit is re-introduced into the reclaim water at the front end of the underground tanks, where some solids settle and some continue with the water phase to be re-treated or go out with the effluent.

The above ground reclaim system also has the function of providing odor control for the reclaim water. Reclaim water is a great environment for growing bacteria which can create plugging and odor problems. Typically, anaerobic bacteria (bacteria that grow in the absence of oxygen) will grow beneath the settled solids in the reclaim water tank. This type of bacteria produces hydrogen sulfide which produces an odor similar to rotten eggs. To control this bacterial growth, the PurWater reclaim system continuously recirculates water through the tanks to keep the water moving so that it does not go septic. The PurWater system also incorporates one of three odor control devices to further keep the bacterial growth in check. The first method uses an Air Sparger, which brings in air as the recirculation water passes through it. This puts oxygen in the water stream and helps control the anaerobic bacteria. The second method adds an enzyme into the recirculation water, plus uses the Air Sparger. The enzyme breaks down the dissolved organic material in the water, which takes away the bacteria's food source to keep their population controlled. The third method used is the addition of ozone, which is a powerful disinfectant similar to chlorine. The ozone kills the bacteria to provide a nearly bacteria free water. Also, ozone oxidizes dyes in the water, so it will remove the color created by wash chemicals (i.e. triple foams).

Attached are spec sheets and drawings of typical underground reclaim tanks and PurWater reclaim systems. If you have any questions or comments on the above, please contact our Sacramento office.

Sincerely,

Teresa Borchart

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