LAS POSITAS
COLLEGE

Las Positas College
Exterior Wayfinding Project
3000 Campus Hill Drive
Livermore, CA 94551

100% Construction Intent
January 23, 2026

Job 3738

SHANNON LEIGH
STRATEGIC PLACEMAKING

1455 Hays Street San Leandro, CA 94577
510.969.7870 shannonleigh.design

Table of Contents

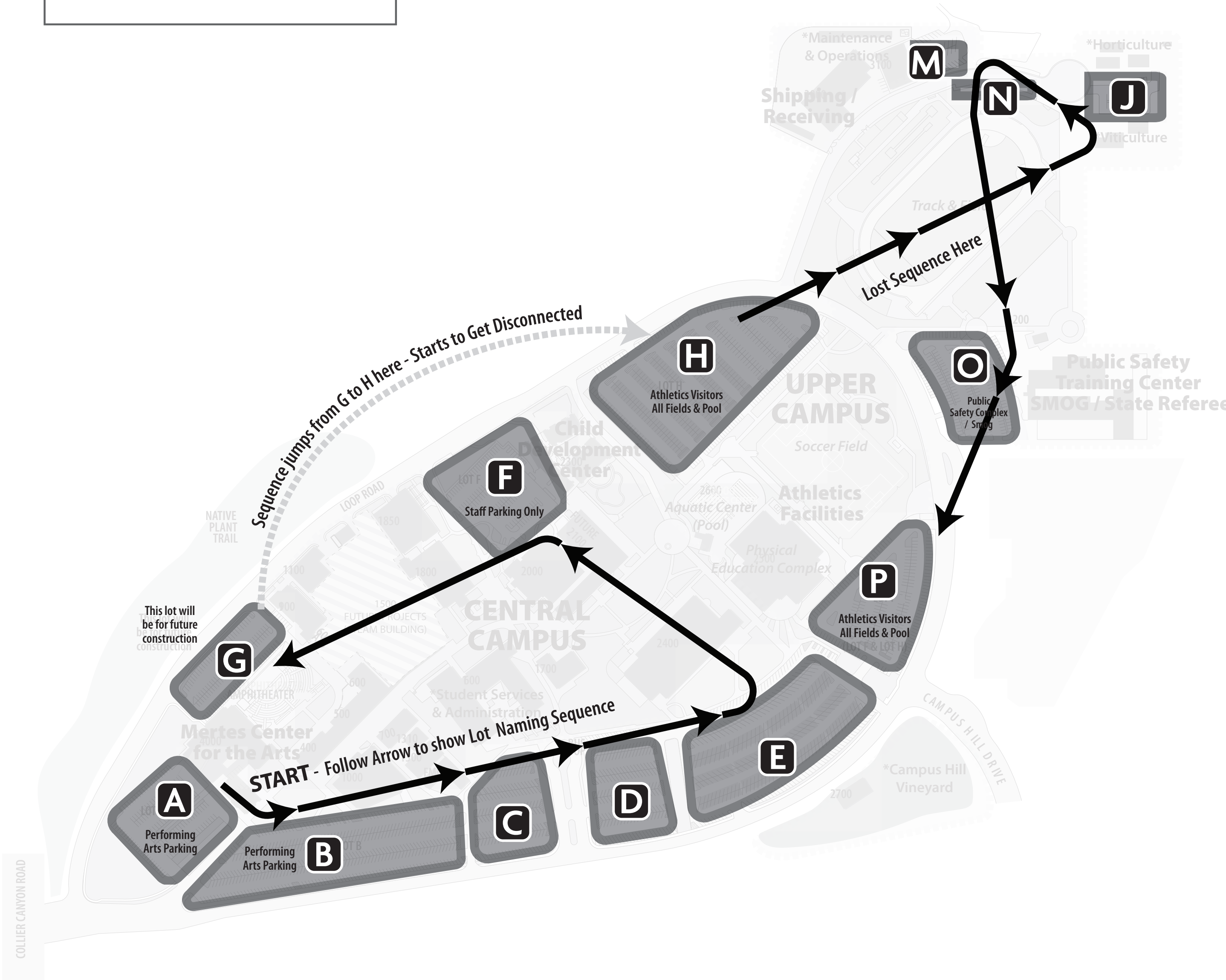
Parking Lot Renaming

Parking Lot Renaming

Key

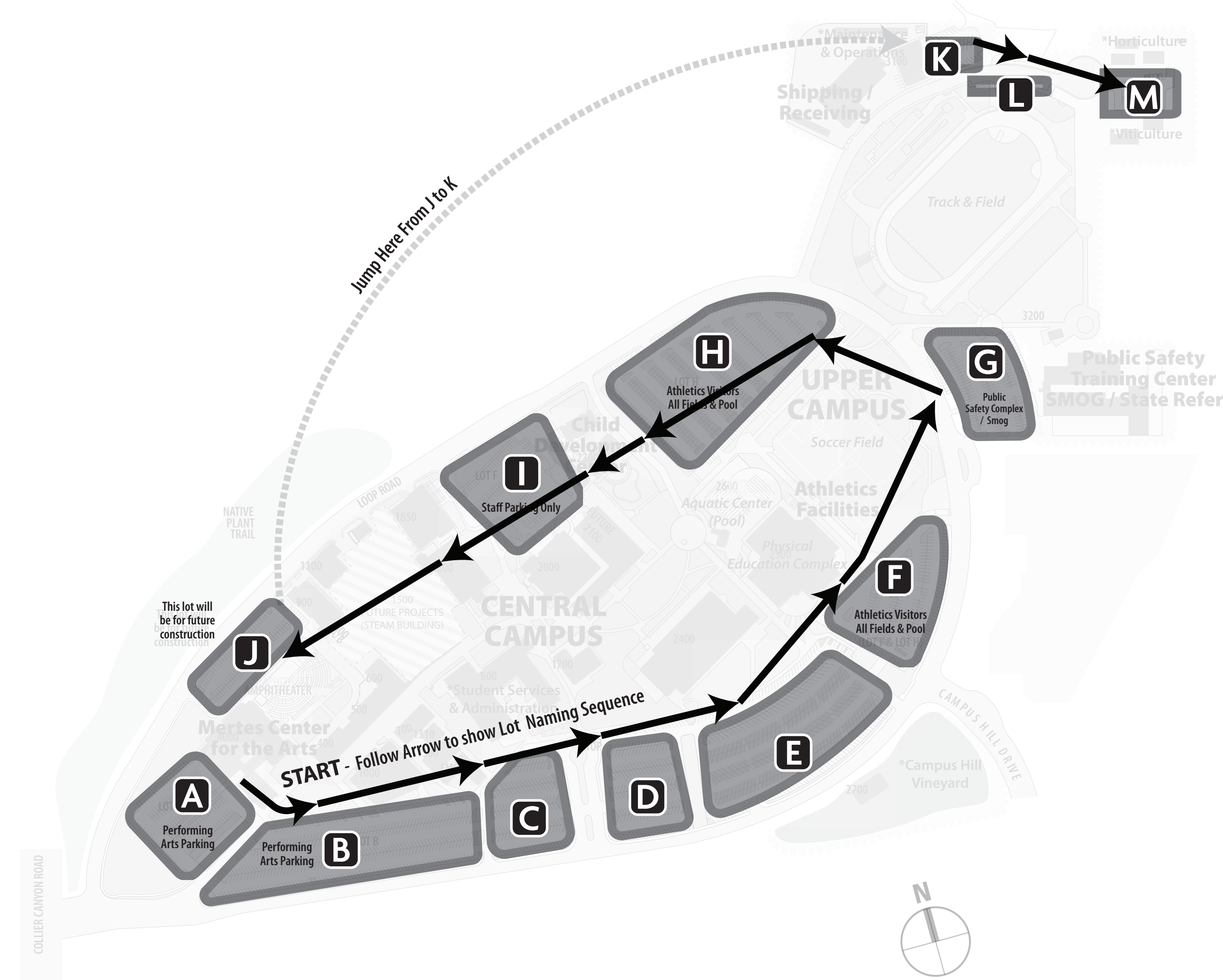
Lot Naming Sequence

Jump in Sequence



Current

The current numbering program is out of sequence. Renaming the lots will solve this and aid wayfinding efforts.



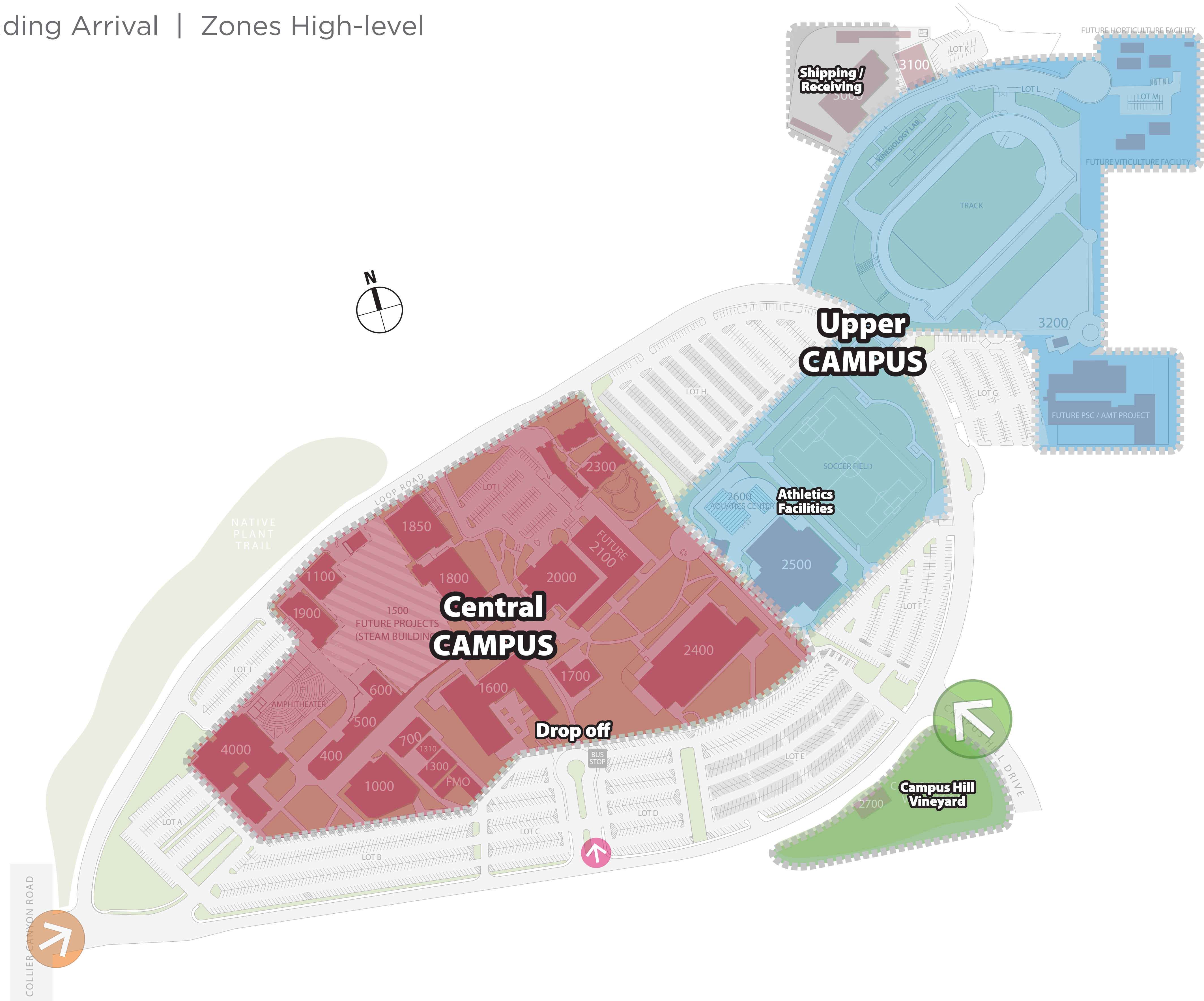
Approved Option

The lot sequence flows from the south end, following the loop in a counter clockwise direction. Then Jumping up the the far north end of the campus.

Client request 2025.06.02

Circulation and Use Plans

Wayfinding Arrival | Zones High-level



KEY

Circulation Evaluation

- Primary Entry Point to the Campus
- Secondary Entry Point to the Campus
- Bus Drop-off Entry Point
- Central Campus (zone)
- Upper Campus (zone)
- Campus Hill Vineyard
- Shipping Receiving

Hierarchy Overview for Vehicular Destination Copy

All destination & nomenclature captured from the August 6, 2025 vehicular wayfinding notes.

Bold = Recommended as h igh-level "zone" destinations on vehicular signage.

Asterisk (*) = Secondary destinations; may appear only on signage closest to the location (dotted line area) or on pedestrian signage.

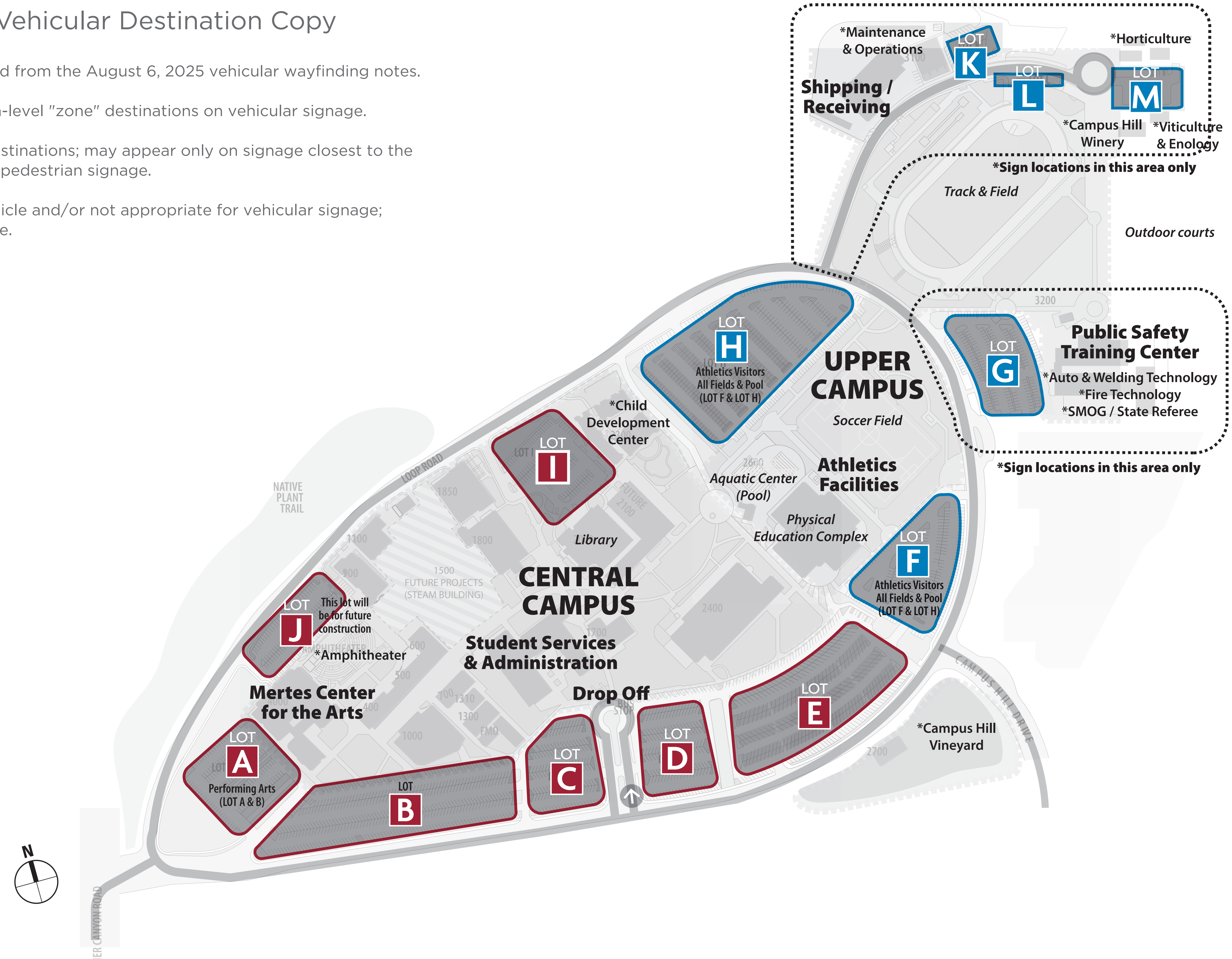
Italics = Not accessible by vehicle and/or not appropriate for vehicular signage; will appear on pedestrian signage.

Central Campus
Drop Off
Mertes Center for the Arts
Student Services & Administration

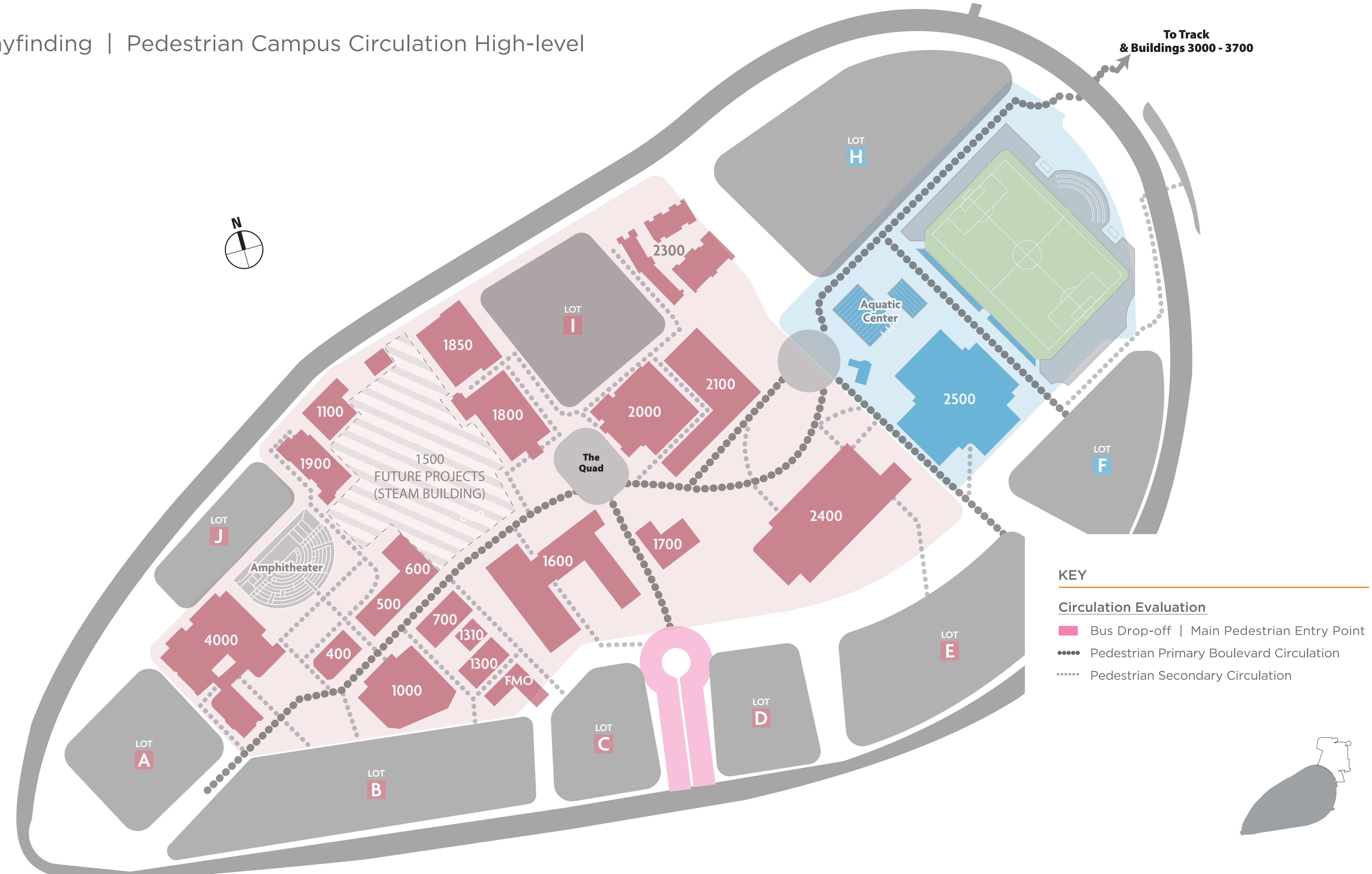
Upper Campus
Athletics Facilities
Public Safety Training Center
Shipping/Receiving

*Amphitheater
*Auto & Welding Technology
*Campus Hill Vineyard
*Campus Hill Winery
*Child Development Center
*Fire Technology
*Horticulture
*Maintenance & Operations
*SMOG / State Referee
*Viticulture & Enology

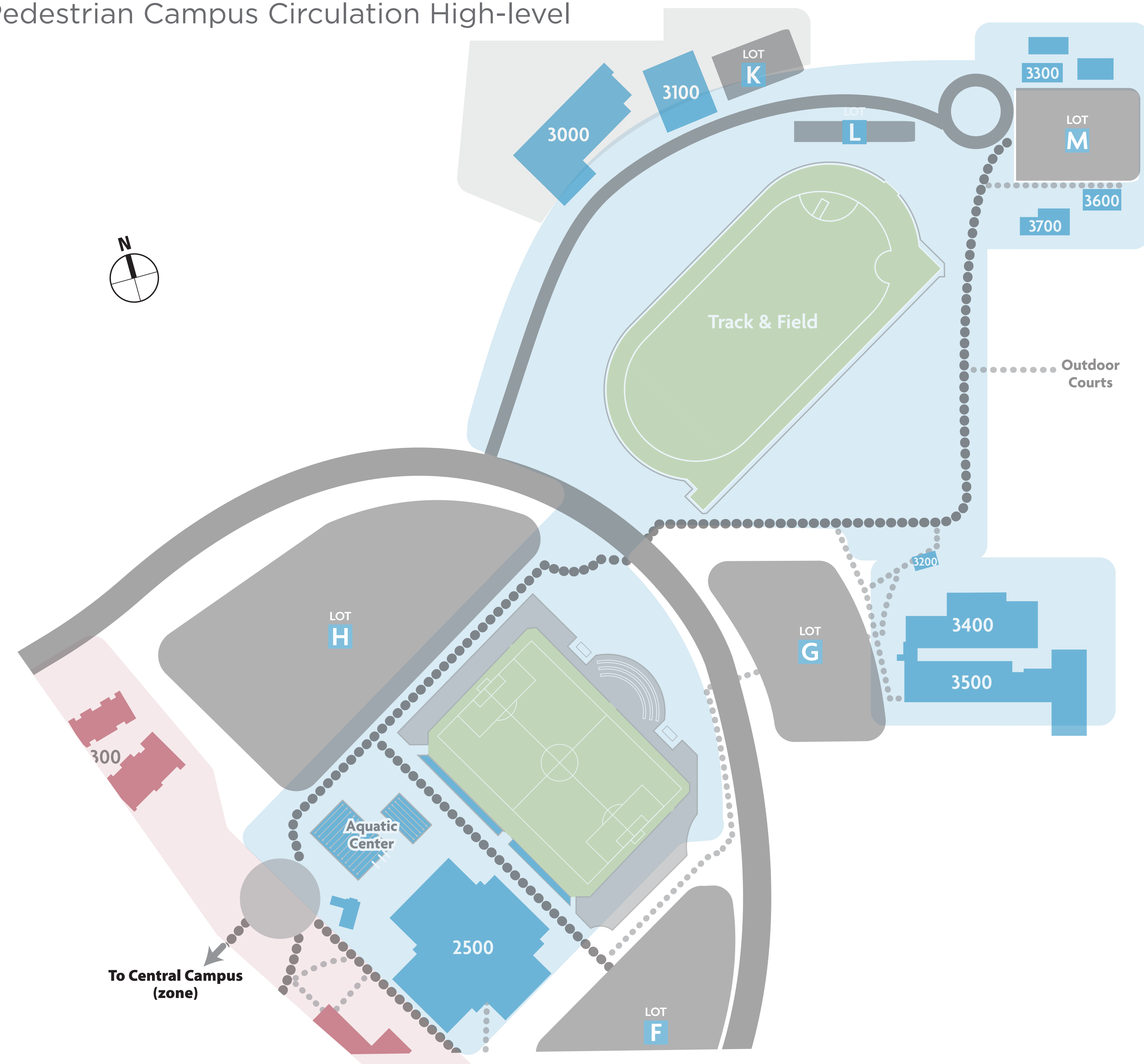
Aquatic Center (Pool)
Physical Education Complex
Soccer Field
Outdoor Courts
Track & Field



Wayfinding | Pedestrian Campus Circulation High-level



Wayfinding | Pedestrian Campus Circulation High-level



KEY

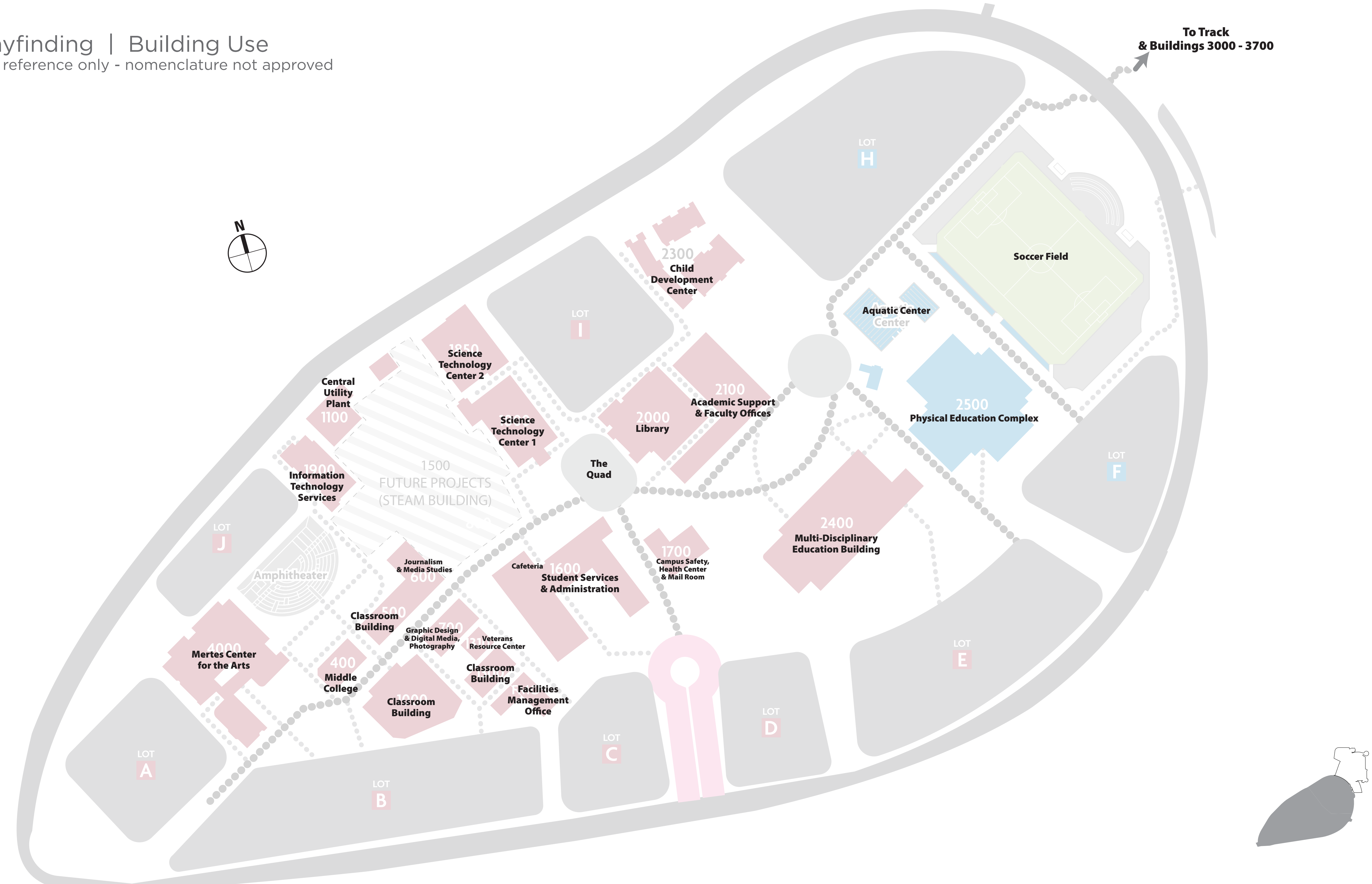
Circulation Evaluation

•••••• Pedestrian Primary Boulevard Circulation

······ Pedestrian Secondary Circulation

Wayfinding | Building Use

*For reference only - nomenclature not approved



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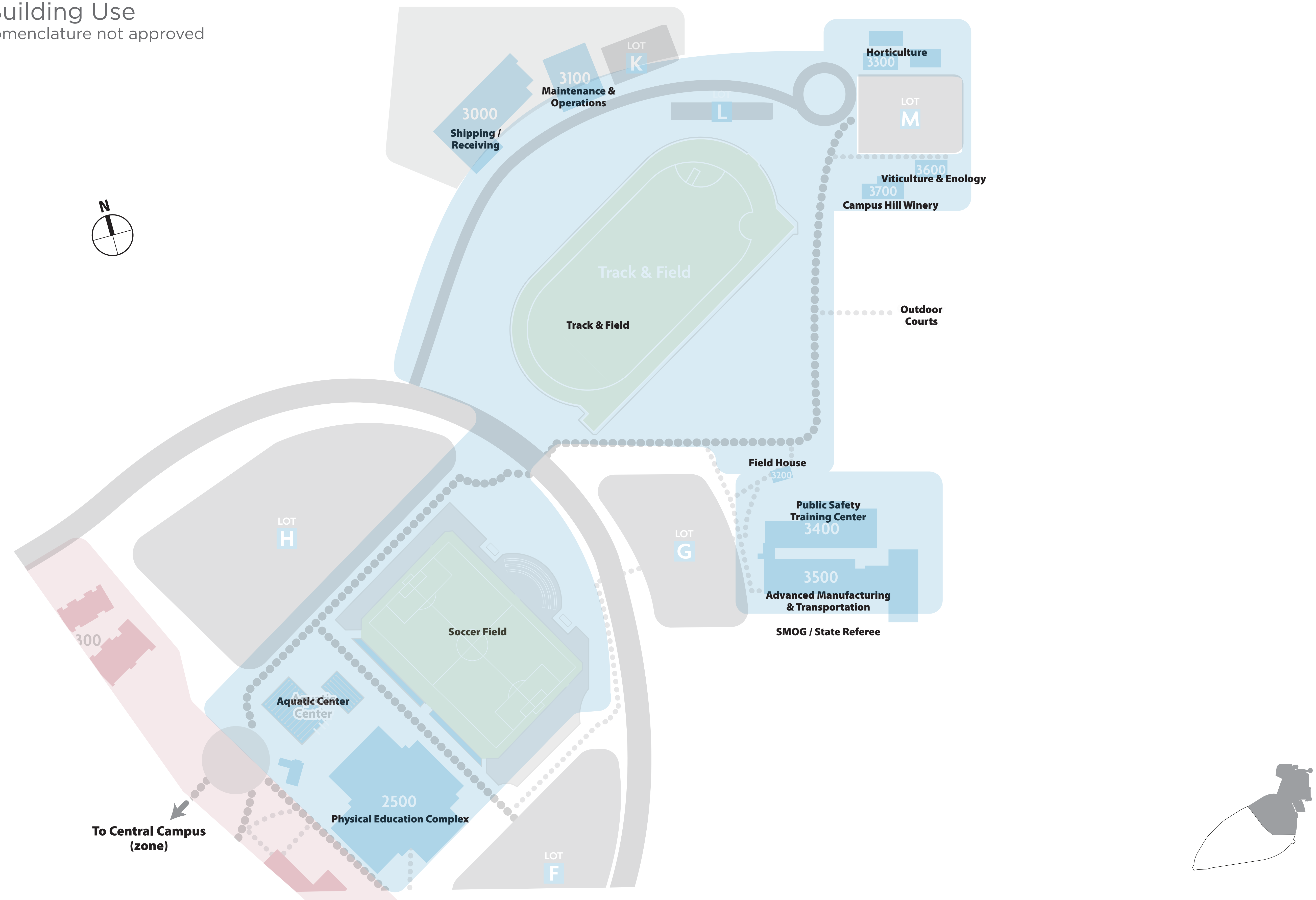
Wayfinding | Building Use
*For reference only - nomenclature not approved



Vehicular Sign Location Plans | Overview

Vehicular Sign Location Plan | **Overview**

KEY

ID.01/025

Sign Type

Location #

Brand ID Signs

Wayfinding Signs

Identification Signs

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Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
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MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_0123

PROJECT PHASE:

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SHEET TITLE:

Vehicular Sign Location Plan Overview

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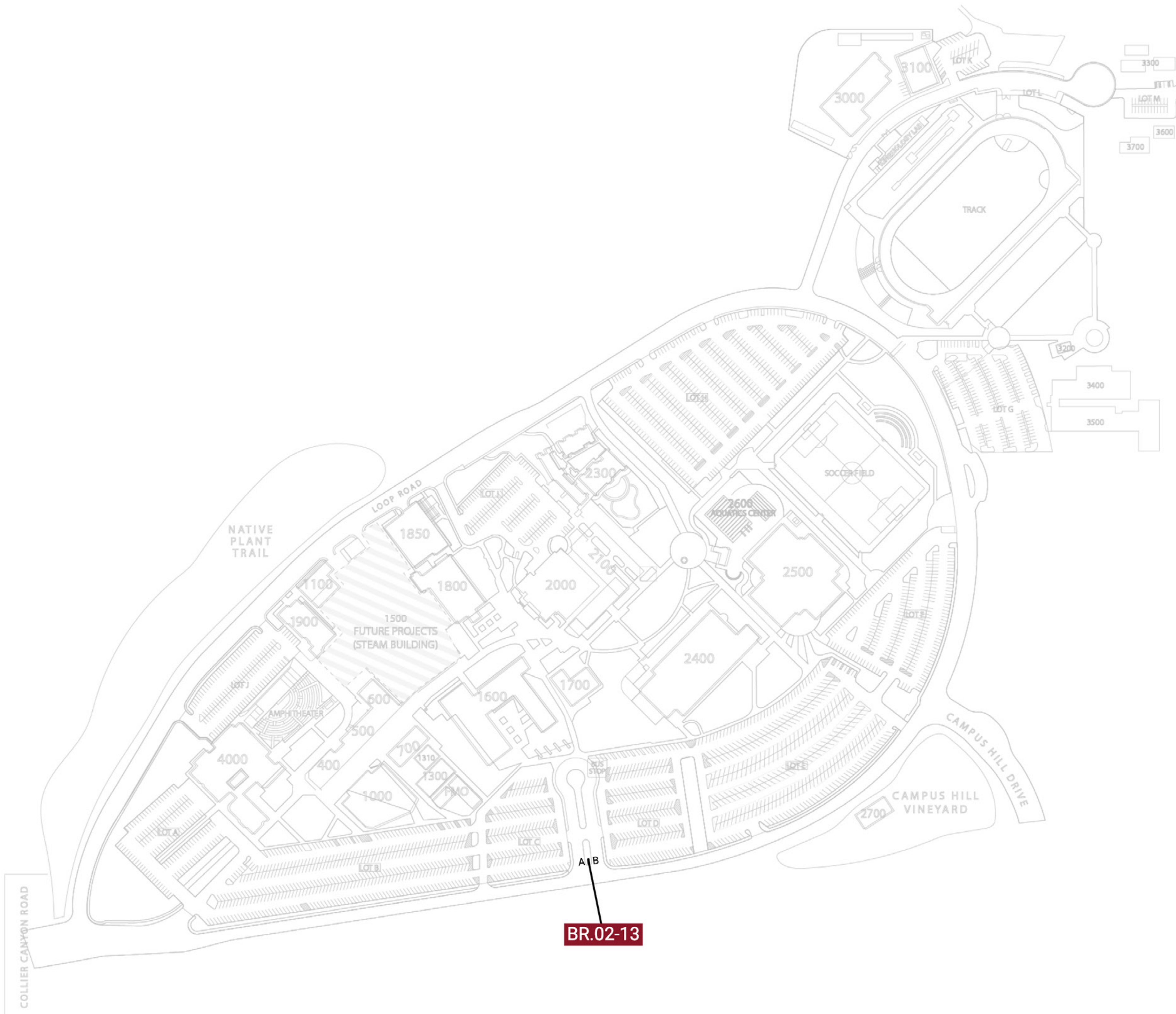
Vehicular Sign Location Plans | By Sign Type

Vehicular Sign Location Plan | **BR.02 Secondary Brand ID**

See Page(s): 6.2 - 6.6
For BR.02 Details



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PROJECT PHASE:
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SHEET TITLE:
Vehicular Sign Location Plan BR.02

PAGE NUMBER:

Vehicular Sign Location Plan | **PID.01 Parking Lot ID**

See Page(s): 6.24 - 6.29
For PID.01 Details

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SHEET TITLE:

Vehicular Sign Location Plan PID.01

PAGE NUMBER:

Vehicular Sign Location Plan | **EWF.01A Vehicular Directional at Main Entry Point**

See Page(s): 6.7 - 6.12
For EWF.01A Details

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PROJECT PHASE:

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SHEET TITLE:

Vehicular Sign Location Plan EWF.01A

Vehicular Sign Location Plan | **EWF.01 Primary Vehicular Directional**

See Page(s): 6.13 - 6.18
For EWF.01 Details

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SHEET TITLE:
Vehicular Sign Location Plan
EWF.01

Vehicular Sign Location Plan | **EWF.02 Secondary Vehicular Directional**

See Page(s): 6.19 - 6.23
For EWF.02 Details

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PROJECT PHASE:
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SHEET TITLE:
Vehicular Sign Location Plan
EWF.02

Add Alternate Bid | Vehicular Sign Location Plans

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SHEET TITLE:

Add Alternate Bid
Vehicular Sign Location Plan
PID.02

PAGE NUMBER:

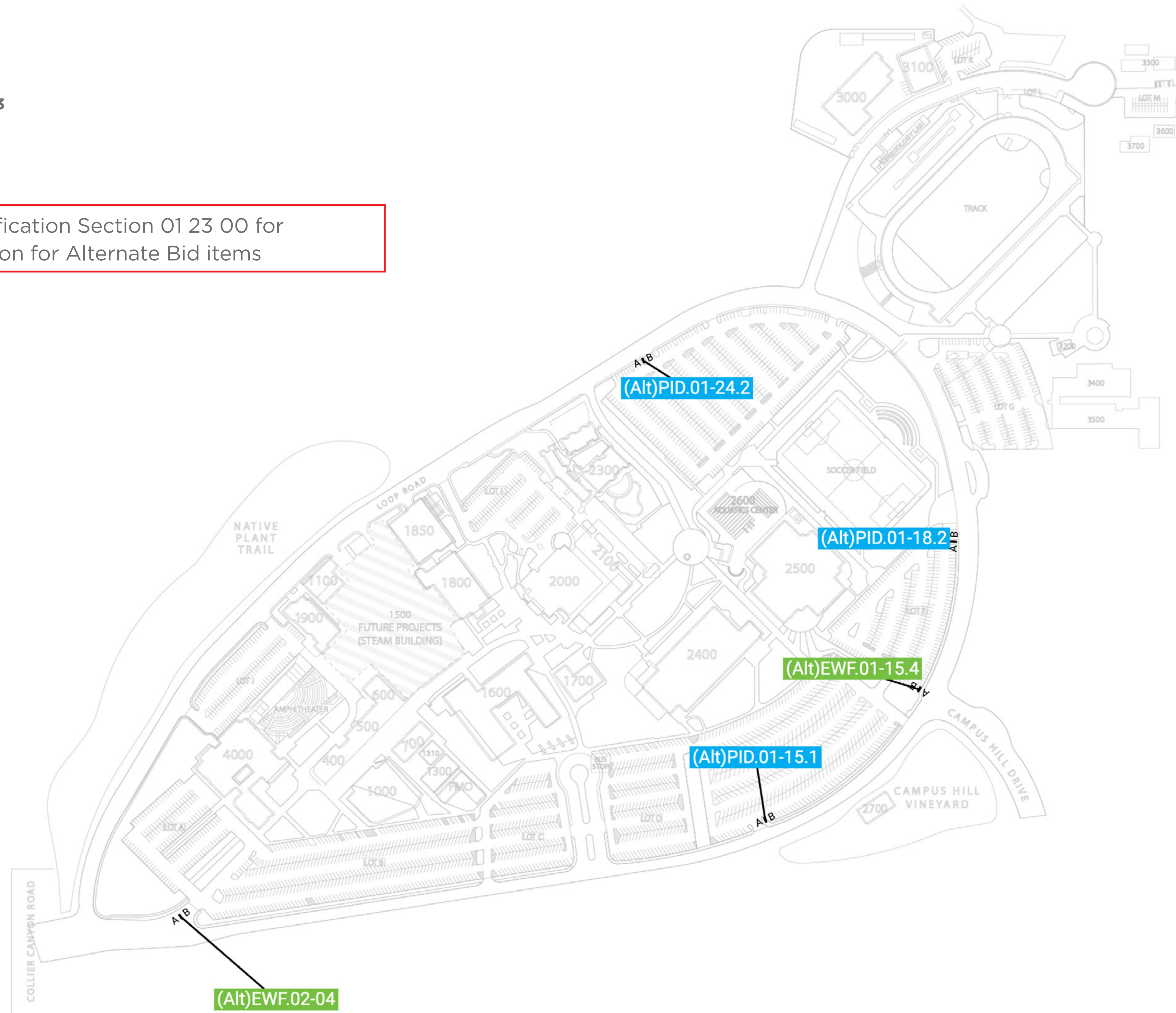
Add Alternate Bid | Vehicular Sign Location Plan

See Page(s): 6.24 - 6.29
For PID.01 Details

See Page(s): 6.13 - 6.18
For EWF.01 Details

See Page(s): 6.19 - 6.23
For EWF.02 Details

Reference Specification Section 01 23 00 for further information for Alternate Bid items



KEY

ID.01/025
Sign Type
Location #

Wayfinding Signs
Identification Signs

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MV 2025_1003
MV 2025_1125
MV 2025_0123

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SHEET TITLE:

Add Alternate Bid
Vehicular Sign Location Plan
PID.01, EWF.01, EWF.02

Pedestrian Sign Location Plans | Overview

Pedestrian Sign Location Plan | Central Campus | **Overview**

KEY

ID.01/025

Sign Type

Location #

Wayfinding Signs

Identification Signs

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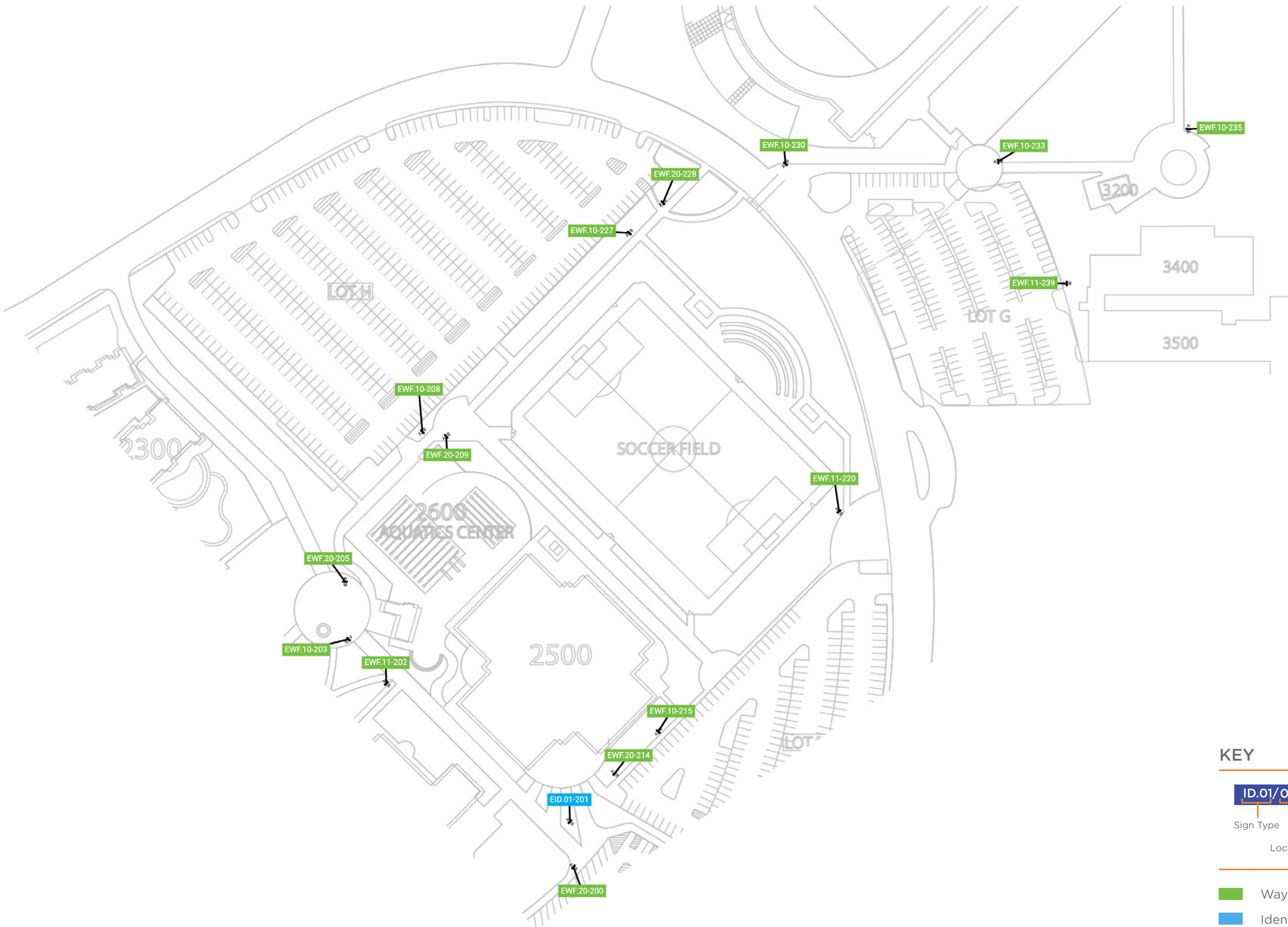
SHEET TITLE:

Pedestrian Sign Location Plan
Central Campus
Overview

Pedestrian Sign Location Plan | Upper Campus | **Overview**



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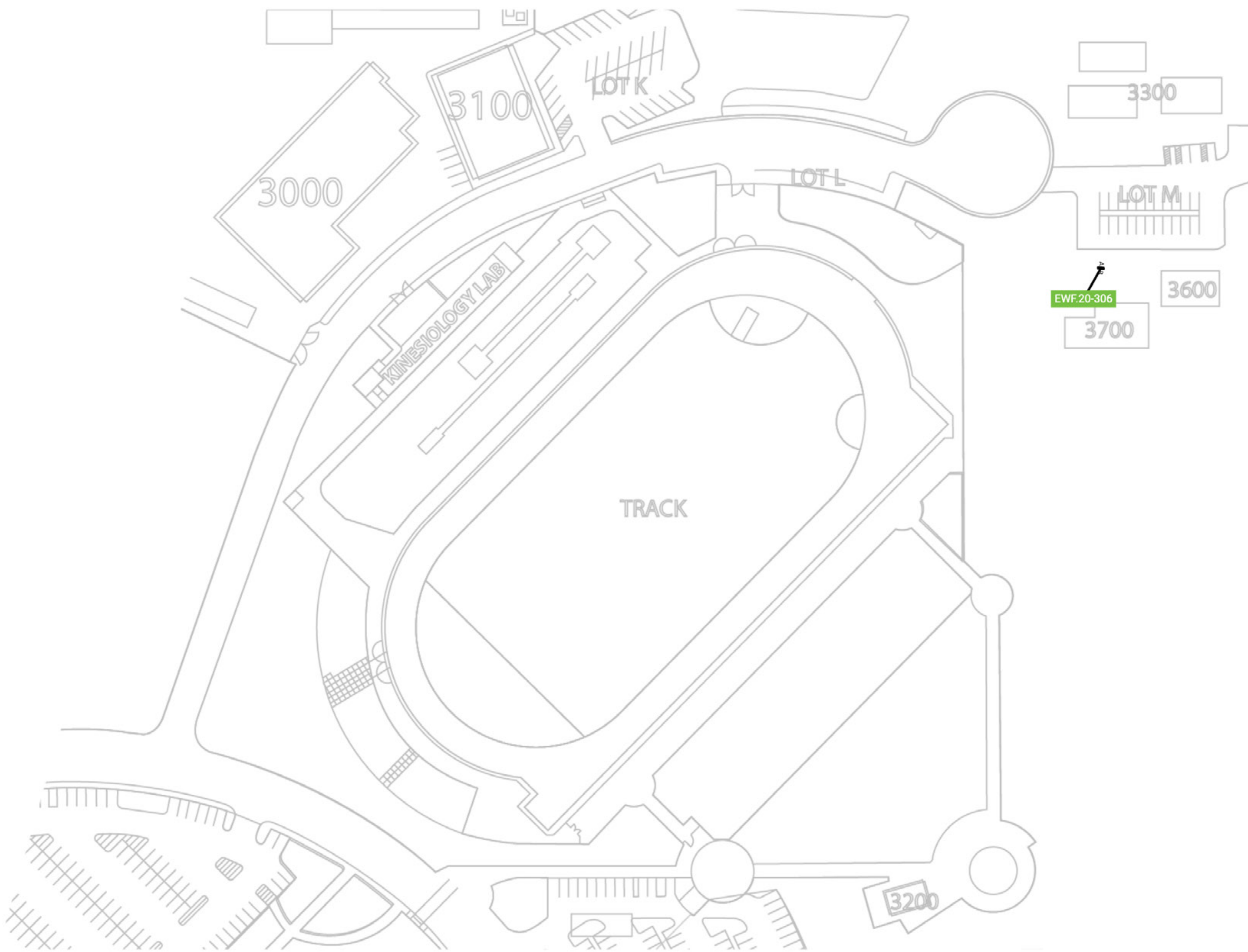
SHEET TITLE:
Pedestrian Sign Location Plan
Upper Campus
Overview

PAGE NUMBER:

Pedestrian Sign Location Plan | Upper Campus cont. | **Overview**



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Sign Type
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SHEET TITLE:

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Central Campus cont.
Overview

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Pedestrian Sign Location Plans | By Sign Type

Pedestrian Sign Location Plan | Central Campus | **EID.01 Building ID Freestanding**

See Page(s): 6.50 - 6.55
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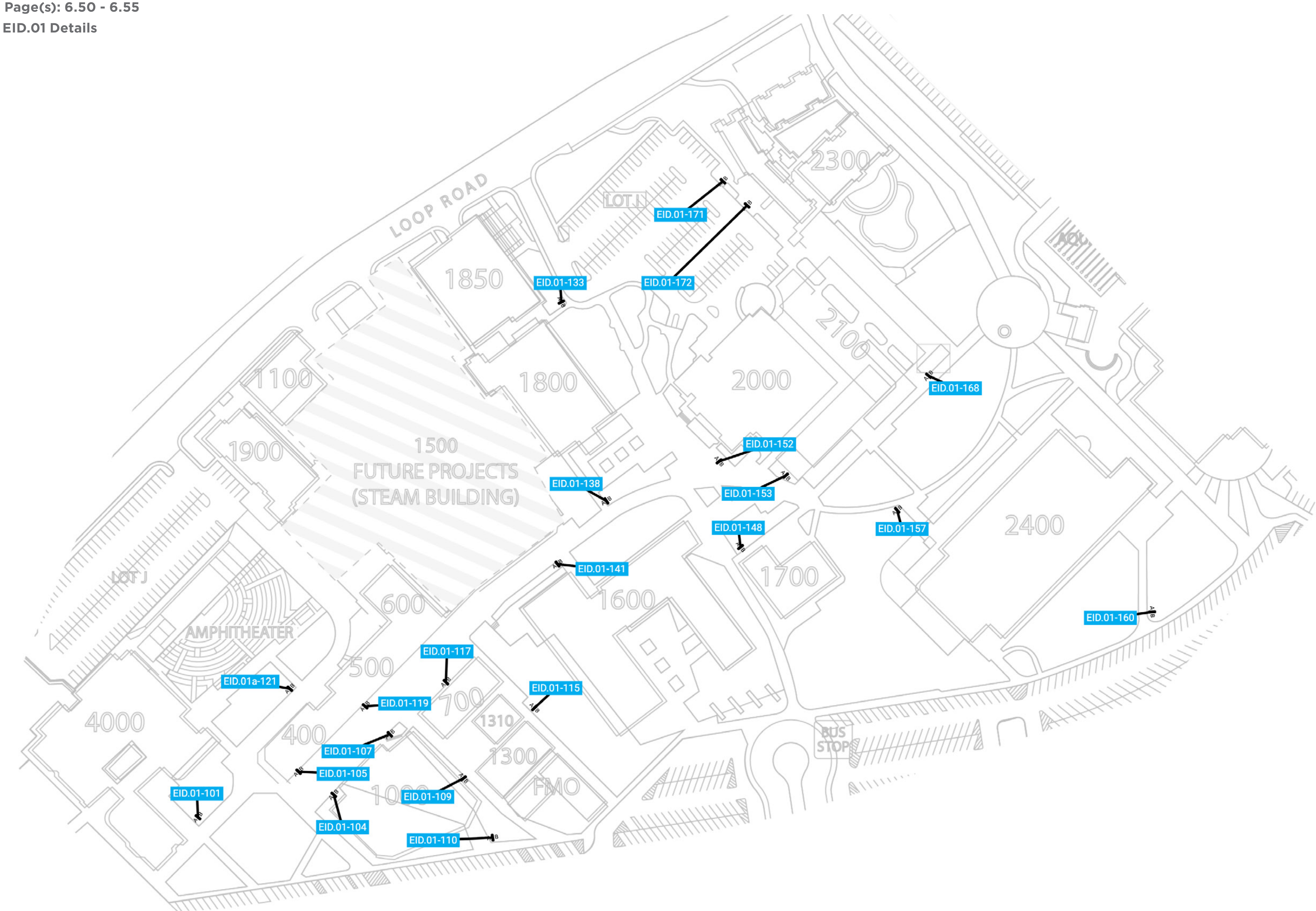

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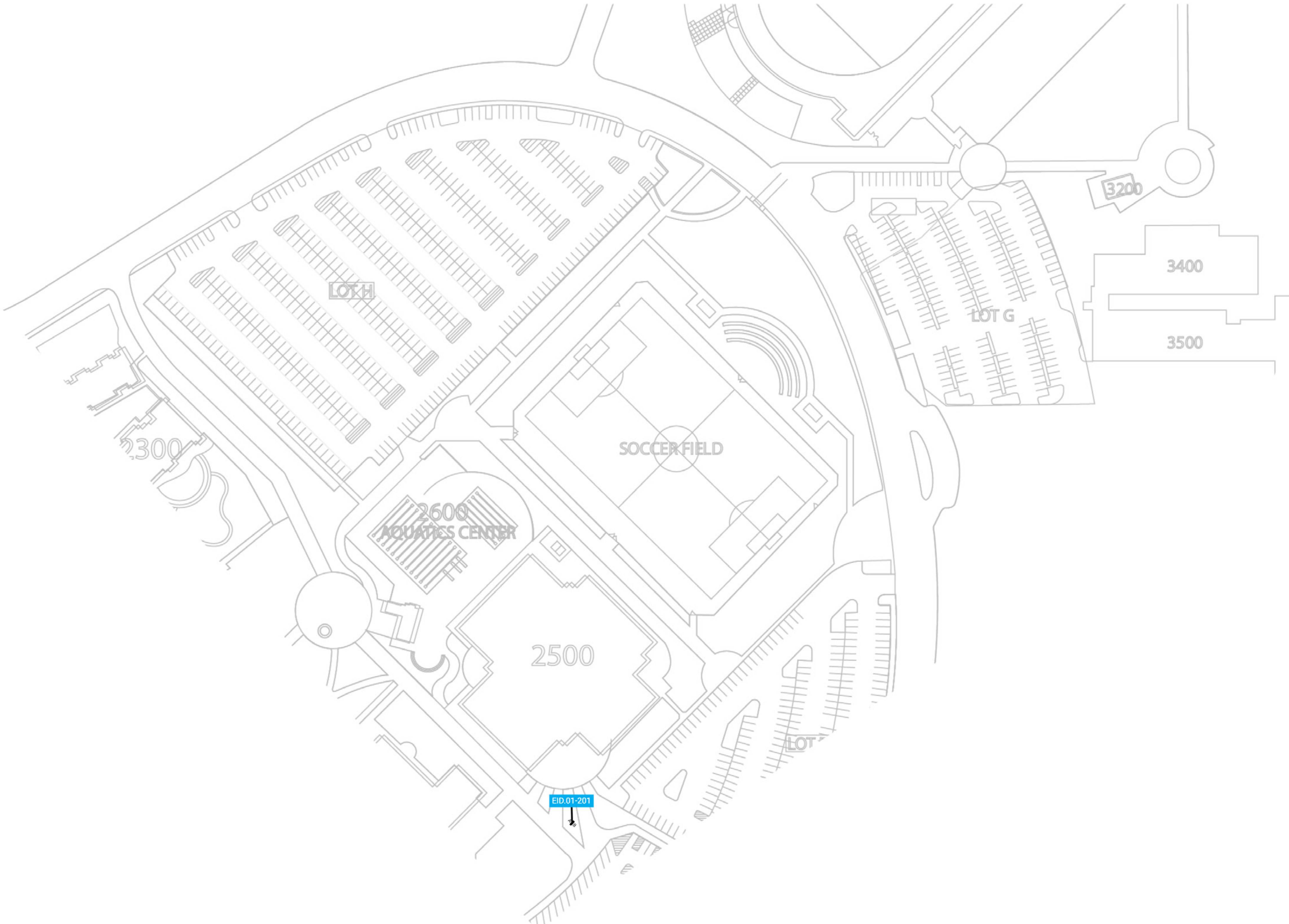
SHEET TITLE:
Pedestrian Sign Location Plan
Central Campus
EID.01

Pedestrian Sign Location Plan | Upper Campus | **EID.01 Building ID Freestanding**

See Page(s): 6.50 - 6.55
For EID.01 Details



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SHEET TITLE:

Pedestrian Sign Location Plan
Upper Campus
EID.01

PAGE NUMBER:

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PROJECT PHASE:
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SHEET TITLE:
Pedestrian Sign Location Plan
Upper Campus cont.
EID.01

Pedestrian Sign Location Plan | Central Campus | **EWF.10 Primary Pedestrian Directional**

See Page(s): 6.34 - 6.38
For EWF.10 Details

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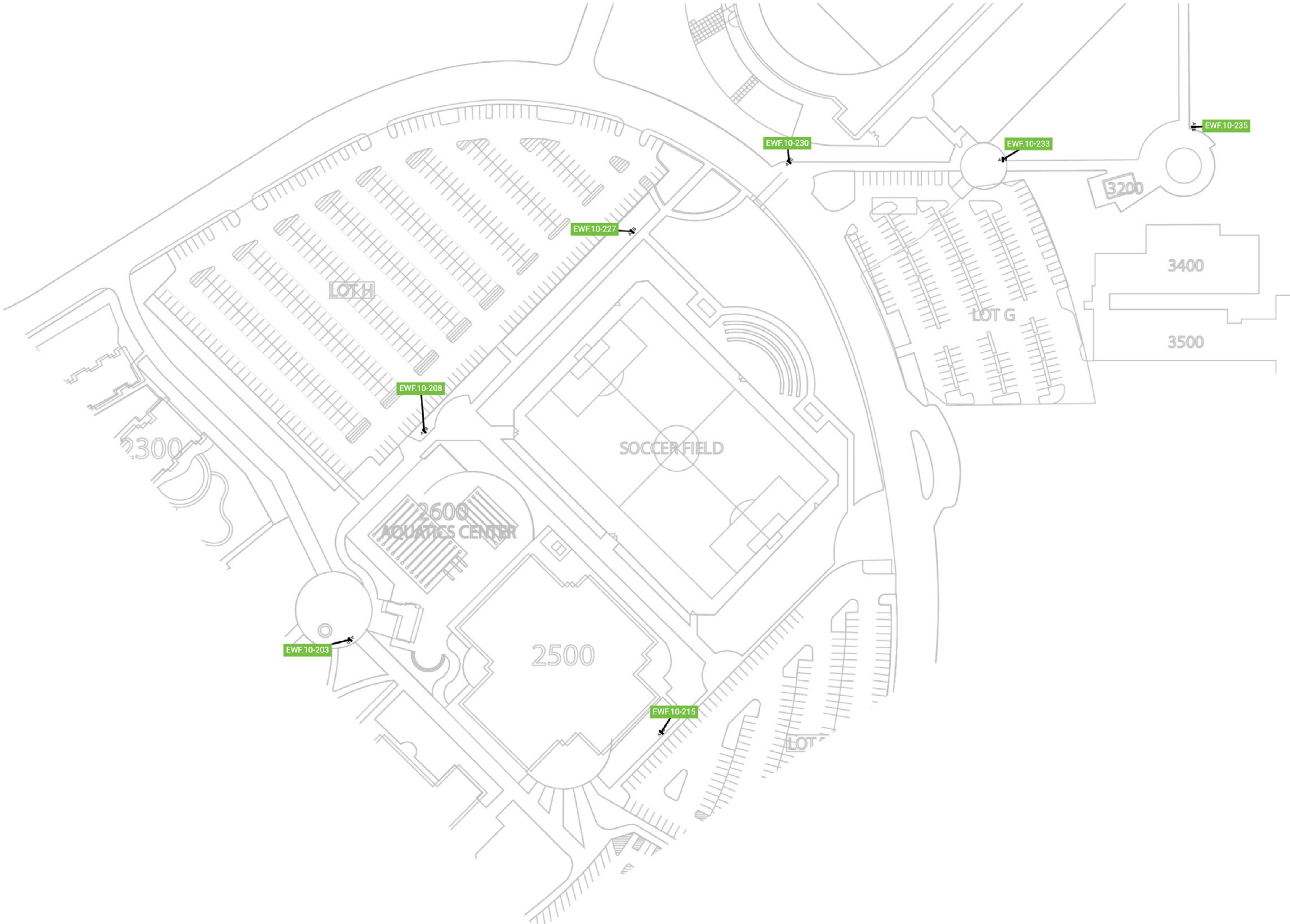
SHEET TITLE:
Pedestrian Sign Location Plan
Central Campus
EWF.10

PAGE NUMBER:

Pedestrian Sign Location Plan | Upper Campus | **EWF.10 Primary Pedestrian Directional**

See Page(s): 6.34 - 6.38
For EWF.10 Details



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SHEET TITLE:

Pedestrian Sign Location Plan
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EWF.10

Pedestrian Sign Location Plan | Central Campus | **EWF.11 Secondary Pedestrian Directional**

See Page(s): 6.39 - 6.42
For EWF.11 Details

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SHEET TITLE:
Pedestrian Sign Location Plan
Central Campus
EWF.11

Pedestrian Sign Location Plan | Upper Campus | **EWF.11 Secondary Pedestrian Directional**

See Page(s): 6.39 - 6.42
For EWF.11 Details

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SHEET TITLE:
Pedestrian Sign Location Plan
Upper Campus
EWF.11

Pedestrian Sign Location Plan | Central Campus | **EWF.20 Orientation Map**

See Page(s): 6.43 - 6.49
For EWF.20 Details

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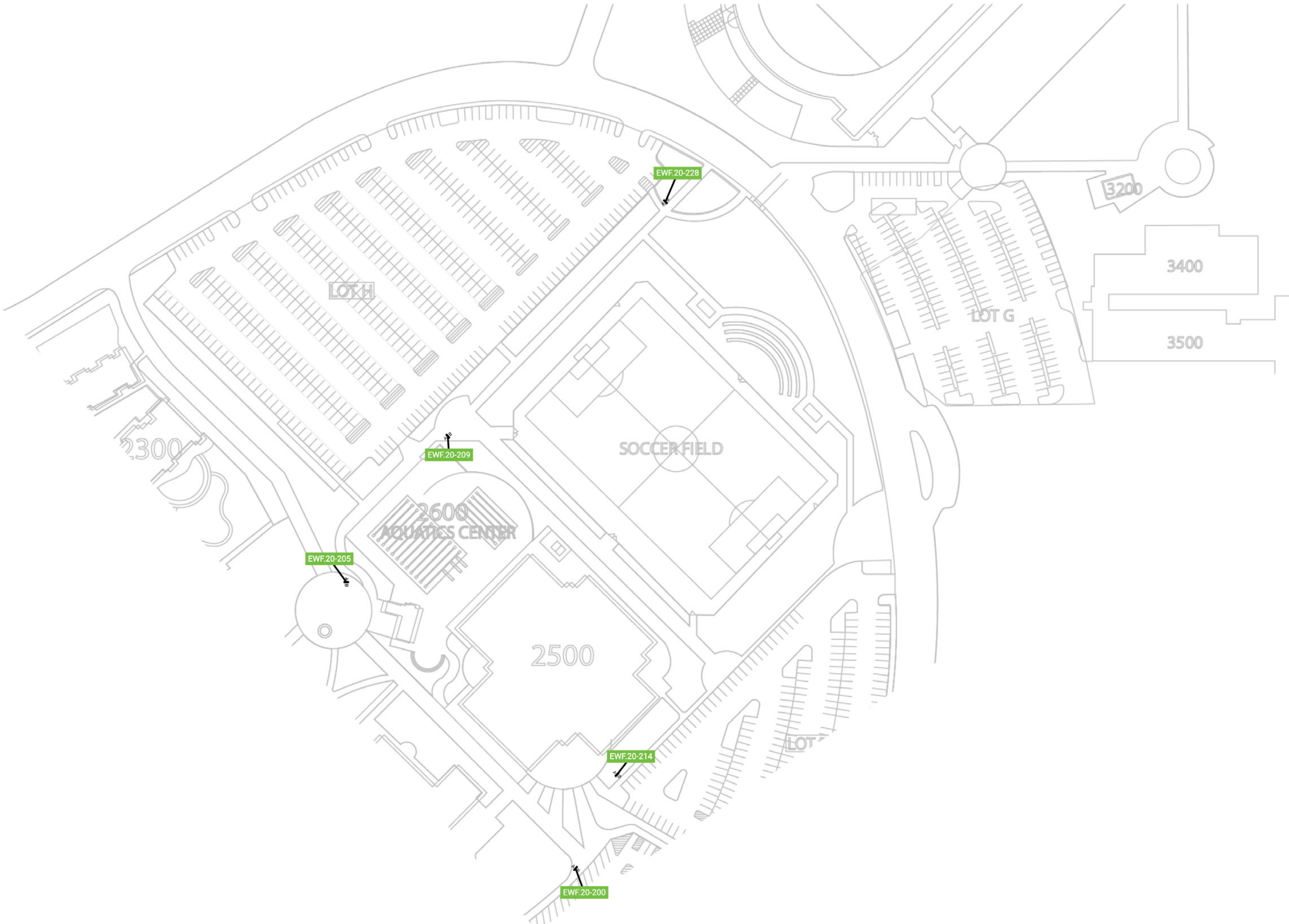
Pedestrian Sign Location Plan
Central Campus
EWF.20

PAGE NUMBER:

Pedestrian Sign Location Plan | Upper Campus | **EWF.20 Orientation Map**

**See Page(s): 6.43 - 6.49
For EWF.20 Details**



GRAPHIC CONSULTANT:

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CLIENT:

LAS POSITAS COLLEGE

PROJECT ADDRESS:

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECTURAL PLAN PHASE/DATE:

00-00-0000

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_0123

PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

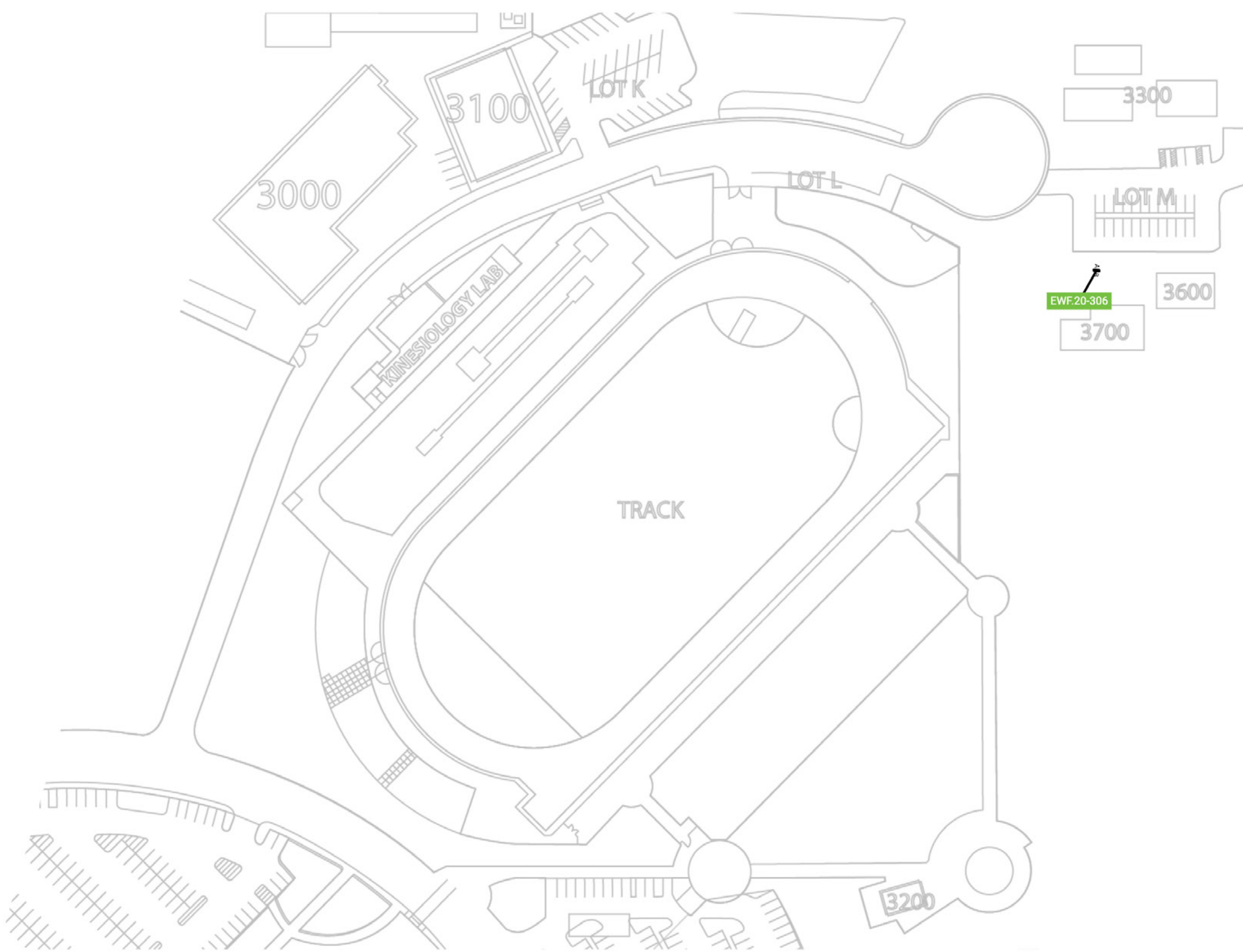
SHEET TITLE:

**Pedestrian Sign Location Plan
Upper Campus
EWF.20**

PAGE NUMBER:

Pedestrian Sign Location Plan | Upper Campus cont. | **EWF.20 Orientation Map**

See Page(s): 6.43 - 6.49
For EWF.20 Details



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PROJECT PHASE:

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SHEET TITLE:

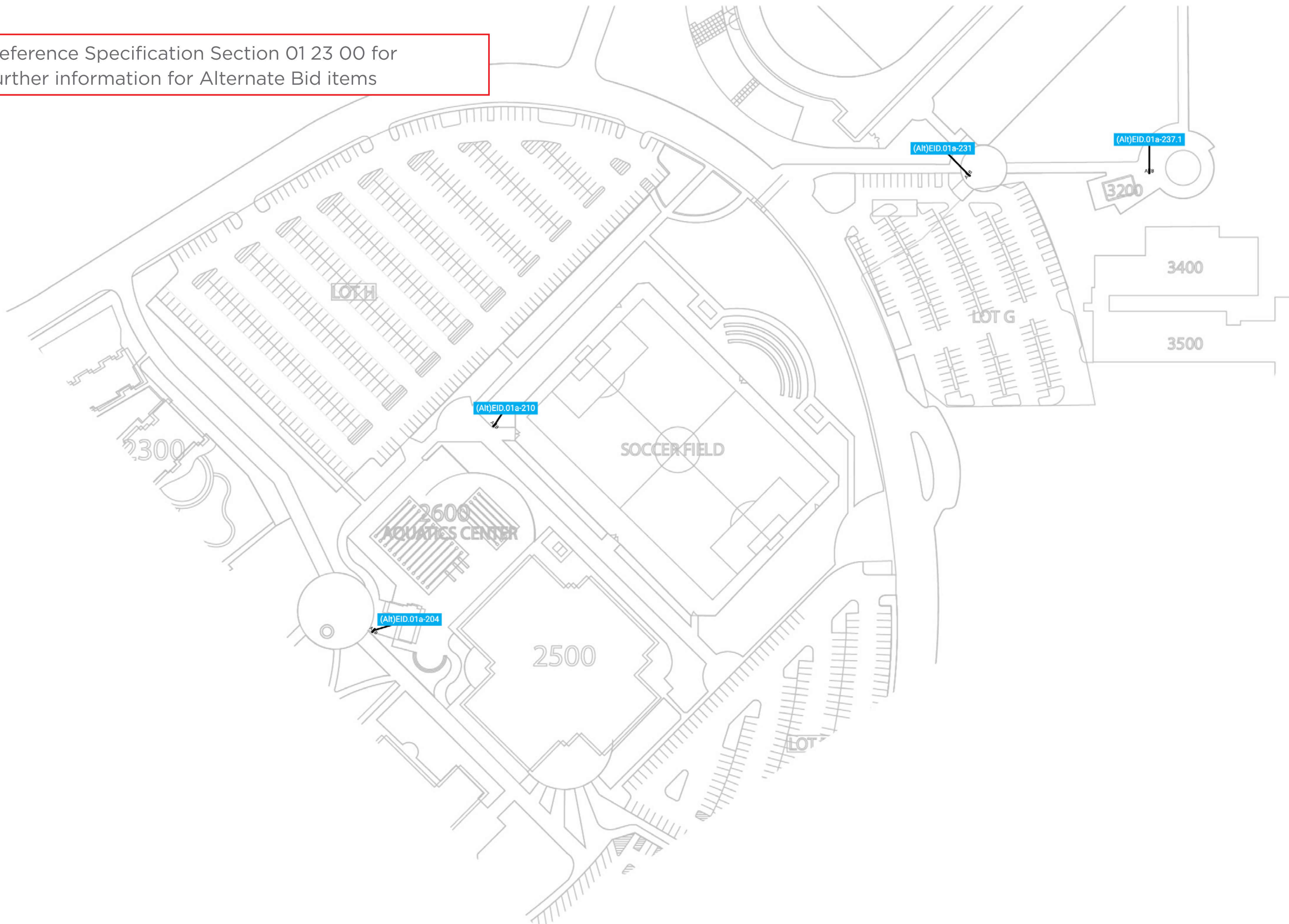
Pedestrian Sign Location Plan
Upper Campus cont.
EWF.20

Add Alternate Bid

Add Alternate Bid | Pedestrian Sign Location Plan | Upper Campus

See Page(s): 6.50 - 6.55
For EID.01/EID.01a Details

Reference Specification Section 01 23 00 for further information for Alternate Bid items



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MV 2025_0123

PROJECT PHASE:

100% Construction Intent
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SHEET TITLE:

Add Alternate Bid
Pedestrian Sign Location Plan
Upper Campus

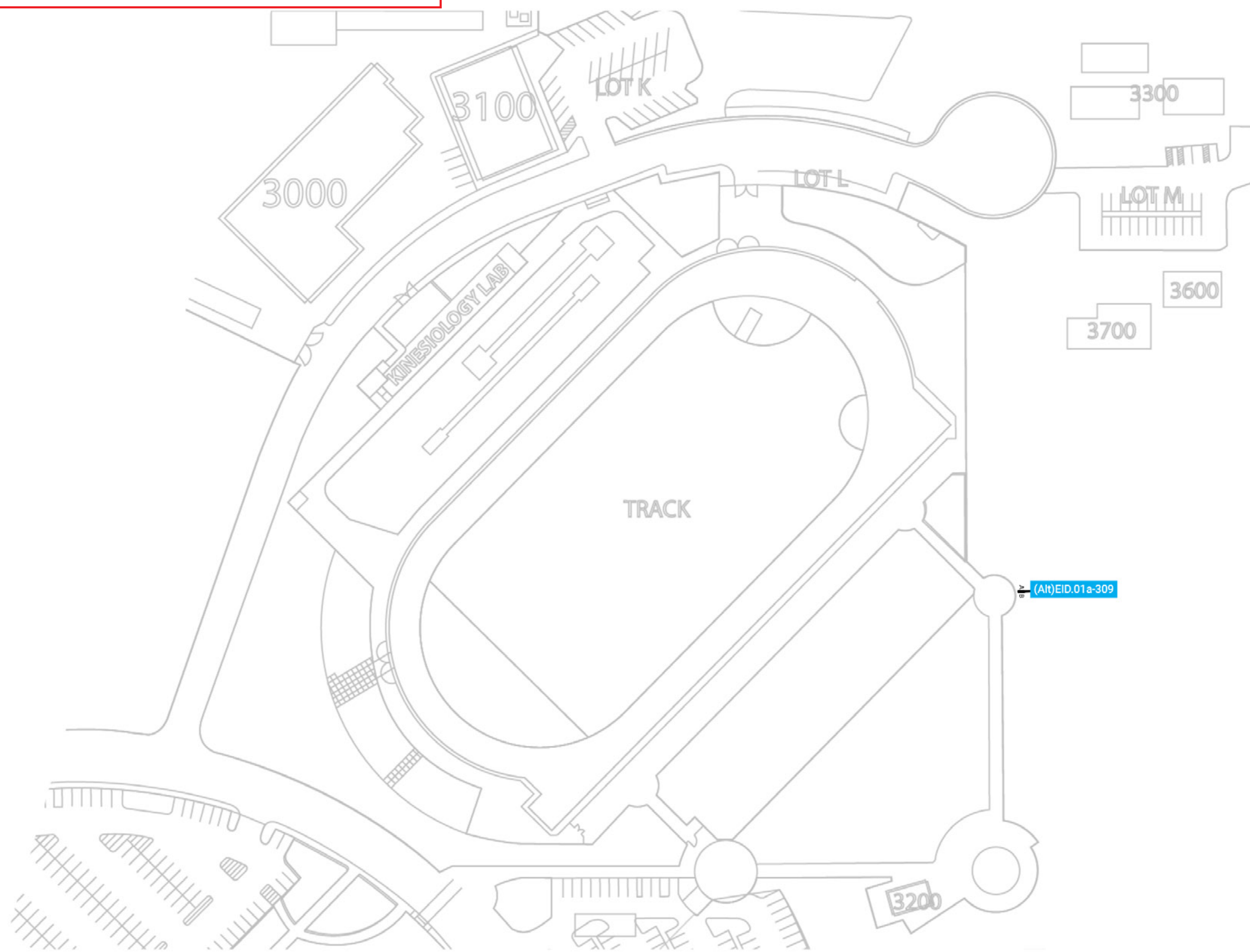
PAGE NUMBER:

Add Alternate Bid | Pedestrian Sign Location Plan | Upper Campus cont.

Add Alternate Bid

See Page(s): 6.50 - 6.55
For EID.01/EID.01a Details

Reference Specification Section 01 23 00 for further information for Alternate Bid items



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SHEET TITLE:

Add Alternate Bid
Pedestrian Sign Location Plan
Upper Campus cont.

PAGE NUMBER:

Sign Family Overview

Scale: 3/8" = 1'-0"

BR.02 Secondary Brand ID at Drop off Entry

EWF.01A Vehicular Dir at Main Entry Point

EWF.01 Primary Vehicular Dir

EWF.02 Secondary Vehicular Dir

PID.01 Parking Lot ID

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MV 2025_0123

PROJECT PHASE:

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SHEET TITLE:

Vehicular Sign Family Overview

PAGE NUMBER:

EWF.20
Orientation Map

Scale: 1/2" = 1'-0"

EWF.10
Primary
Pedestrian Dir

EWF.11
Secondary
Pedestrian Dir

EID.01
Building ID
Freestanding
EID.01a
Amenity ID
Freestanding

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MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
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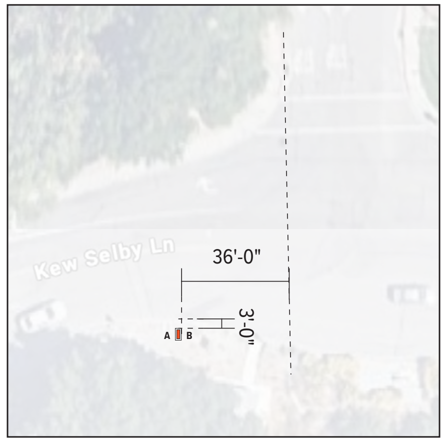
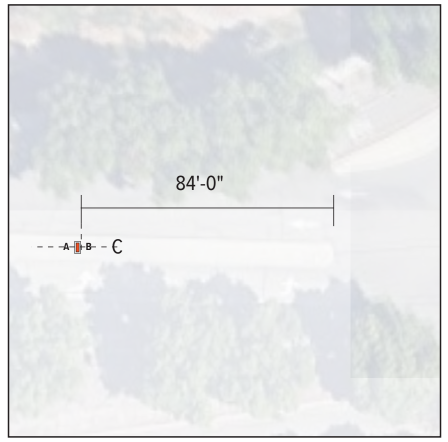
SHEET TITLE:
Pedestrian Sign Family Overview

PAGE NUMBER:

Vehicular
Dimensioned Setback Plans

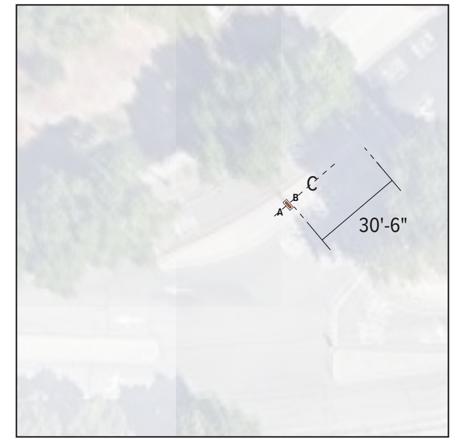


Loc 02 | Softscape **EWF.01A**
Scale: 1/64" = 1'-0"



Loc 03 | Hardscape **EWF.02**
Scale: 1/64" = 1'-0"

Add Alternate Bid



Loc 04 | Hardscape **EWF.02**
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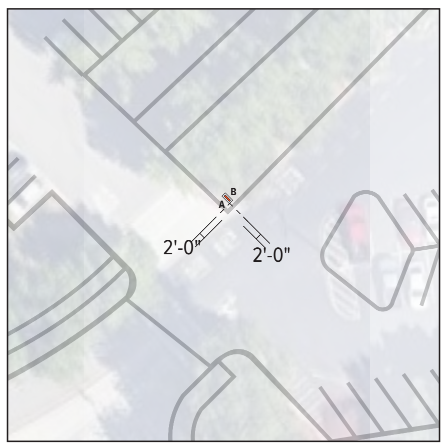
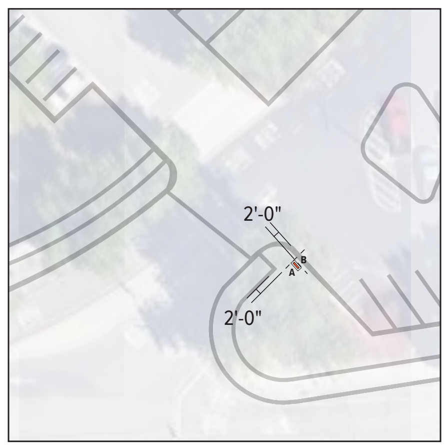


Loc 04.1 | Softscape **PID.01**
Scale: 1/64" = 1'-0"



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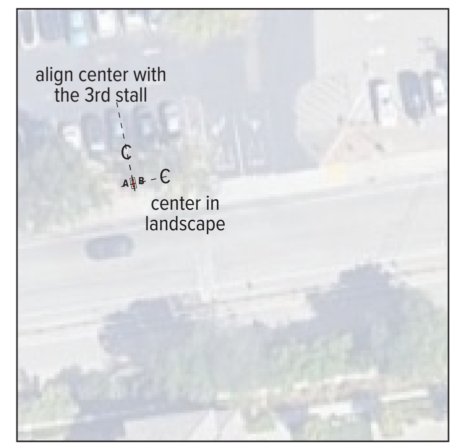

Loc 10 | Softscape **PID.01**
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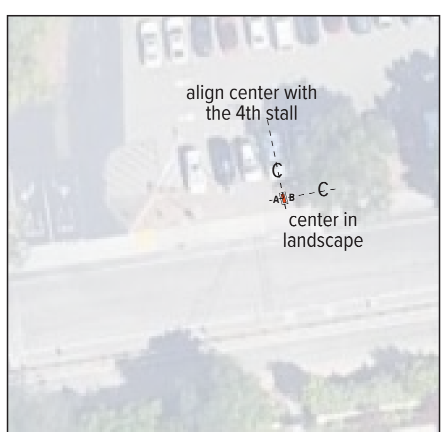
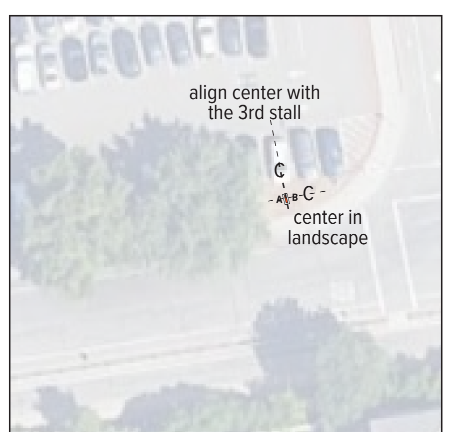
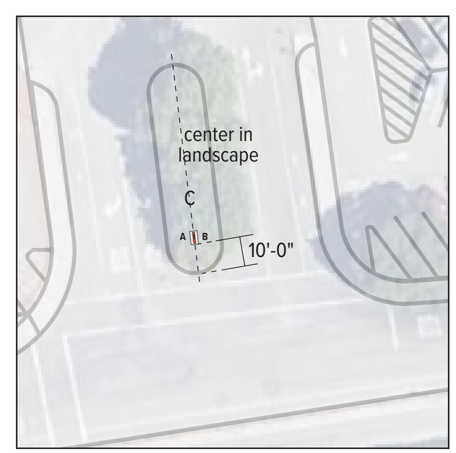


Loc 11 | Softscape **EWF.01**
Scale: 1/64" = 1'-0"

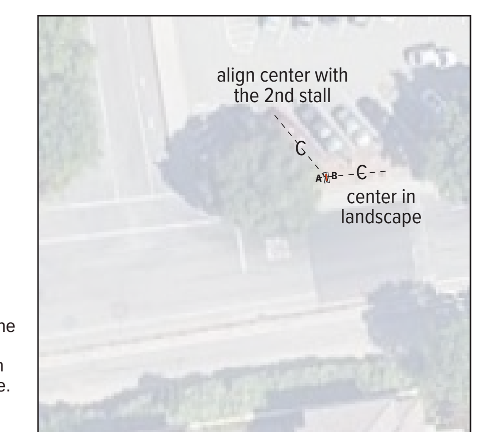


Loc 11.1 | Softscape **PID.01**
Scale: 1/64" = 1'-0"



NOTE:
Signage Contractor to provide power to BR.02 sign and landscape up-lights per note J. Trenching and providing power to be included in the Signage Contractor's scope. Reference section 10.1 for as-built reference.

Loc 13 | Softscape **BR.02**
Scale: 1/64" = 1'-0"



Loc 13.1 | Softscape **PID.01**
Scale: 1/64" = 1'-0"

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ARCHITECT:

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Exterior Wayfinding Project
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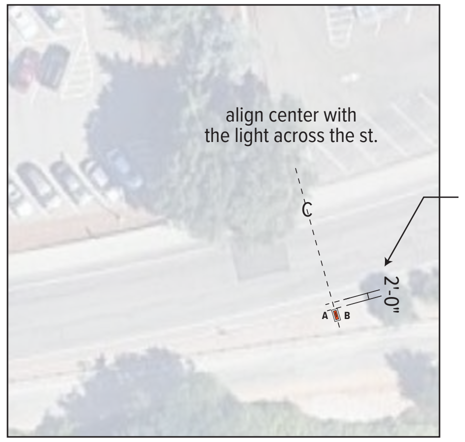
MV 2025_1211
MV 2025_0123

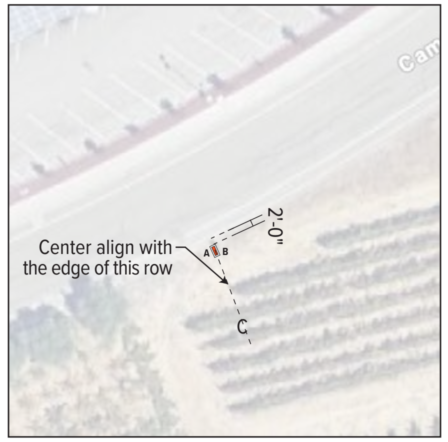
PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Setback Plans Vehicular Wayfinding



May need
to trim landscape
for best visibility

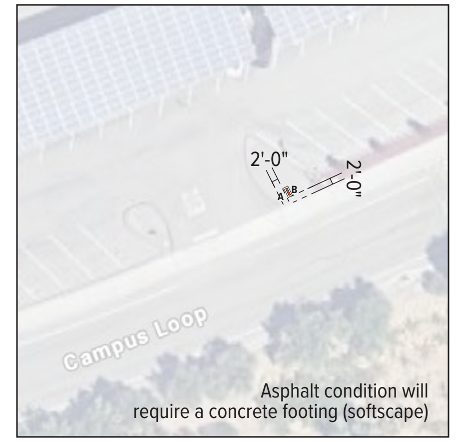
Loc 14 | Softscape **EWF.01**
Scale: 1/32" = 1'-0"



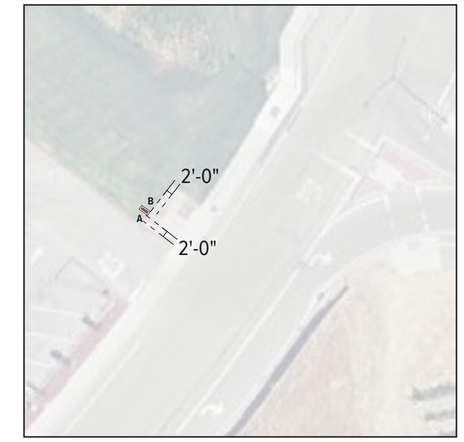
Center align with
the edge of this row

Loc 15 | Softscape **EWF.01**
Scale: 1/32" = 1'-0"

Add Alternate Bid

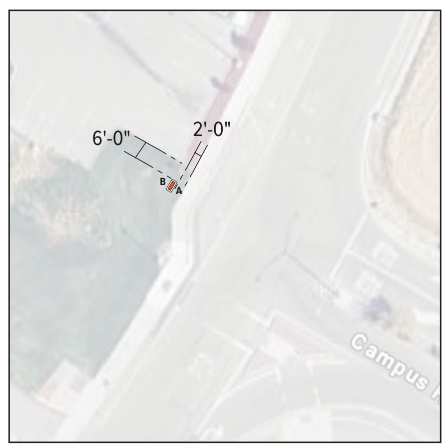


Loc 15.1 | Softscape **PID.01**
Scale: 1/32" = 1'-0"



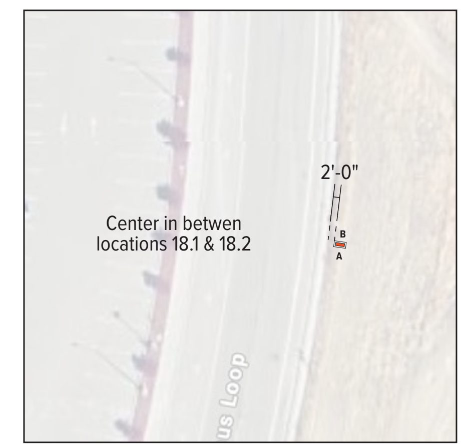
Loc 15.2 | Softscape **PID.01**
Scale: 1/32" = 1'-0"

Add Alternate Bid



Loc 15.4 | Softscape **EWF.01**
Scale: 1/64" = 1'-0"

Loc 17 | Softscape **EWF.01A**
Scale: 1/64" = 1'-0"



Loc 18 | Softscape **EWF.01**
Scale: 1/32" = 1'-0"

Loc 18.1 | Softscape **PID.01**
Scale: 1/64" = 1'-0"

Add Alternate Bid

Loc 18.2 | Softscape **PID.01**
Scale: 1/64" = 1'-0"

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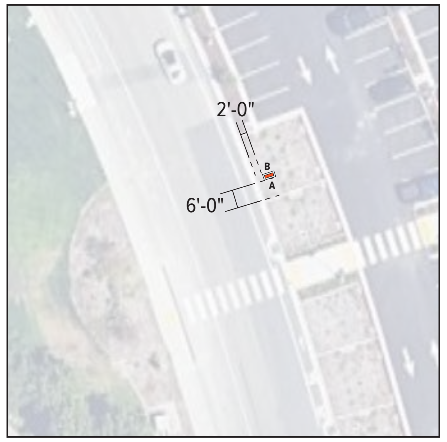
Setback Plans Vehicular Wayfinding

PAGE NUMBER:



Loc 20 | Softscape **EWF.01**
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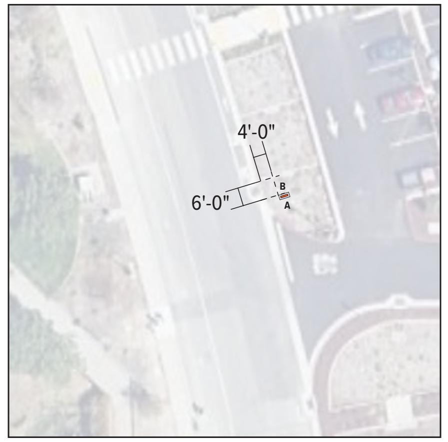

Loc 20.1 | Softscape **PID.01**
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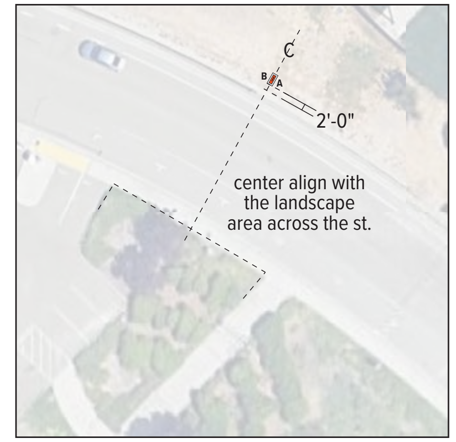

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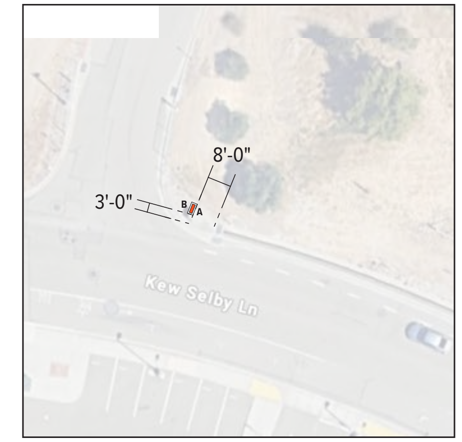
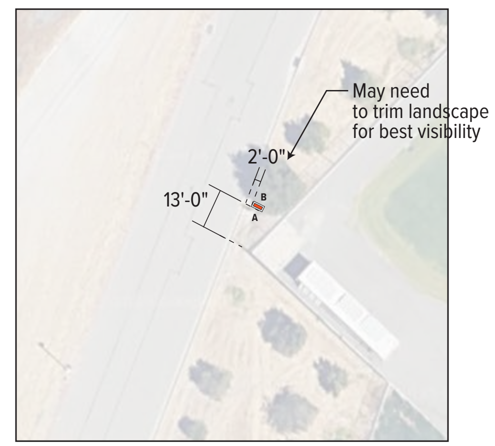


Loc 23 | Softscape **EWF.01**
Scale: 1/64" = 1'-0"

Loc 24.1 | Hardscape **PID.01**
Scale: 1/64" = 1'-0"

Add Alternate Bid

Loc 24.2 | Hardscape **PID.01**
Scale: 1/64" = 1'-0"



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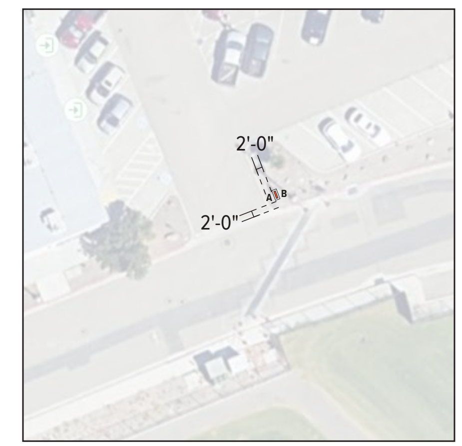

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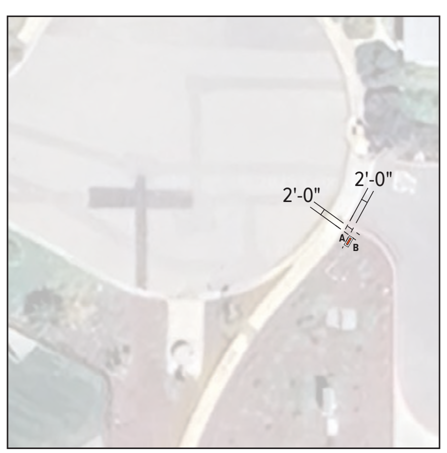

Loc 26.1 | Softscape **PID.01**
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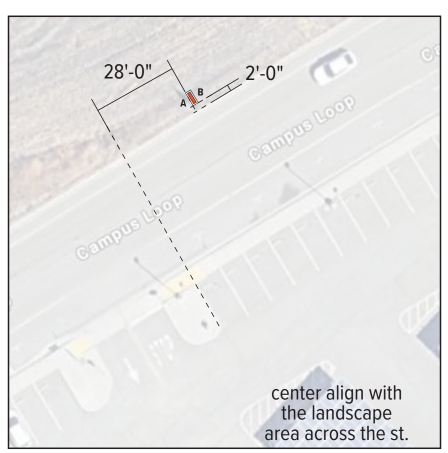

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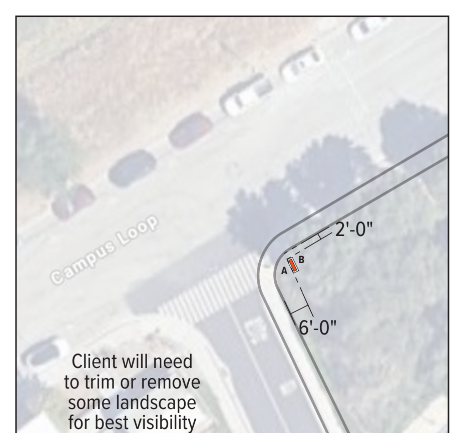
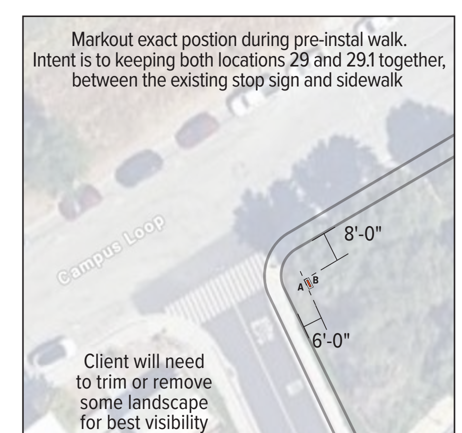


Loc 29 | Softscape **EWF.01**
Scale: 1/64" = 1'-0"



Loc 29.1 | Softscape **PID.01**
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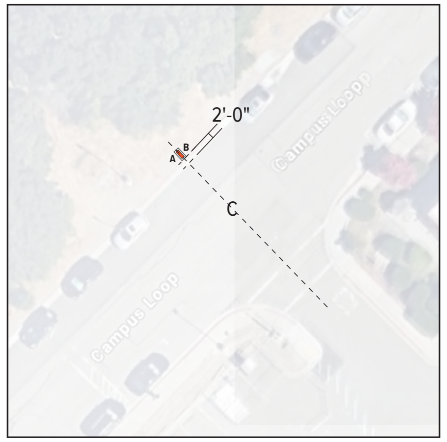
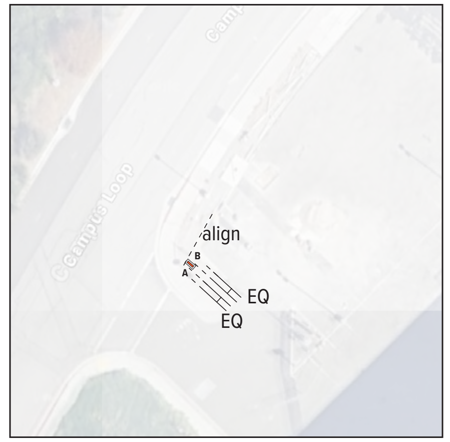
Setback Plans Vehicular Wayfinding

PAGE NUMBER:



Loc 31 | Softscape **EWF.01**
Scale: 1/64" = 1'-0"



Loc 31.1 | Softscape **PID.01**
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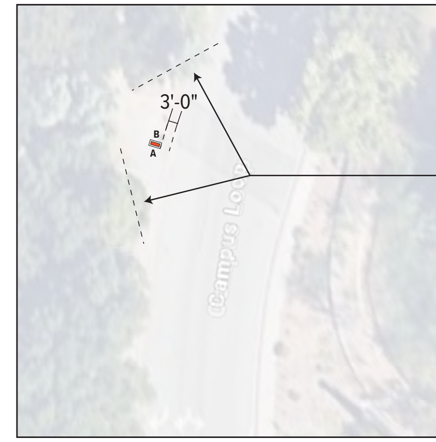

Loc 33 | Softscape **EWF.01**
Scale: 1/64" = 1'-0"

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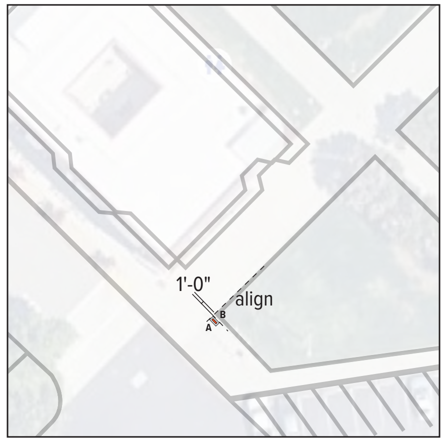
Setback Plans Vehicular Wayfinding

PAGE NUMBER:

Pedestrian
Dimensioned Setback Plans



Loc 100 | Hardscape EWF.10
Scale: 1/64" = 1'-0"

Loc 101 | Softscape EID.01
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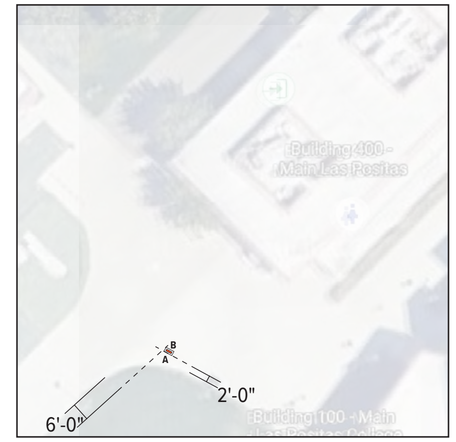

Loc 103 | Hardscape EWF.20
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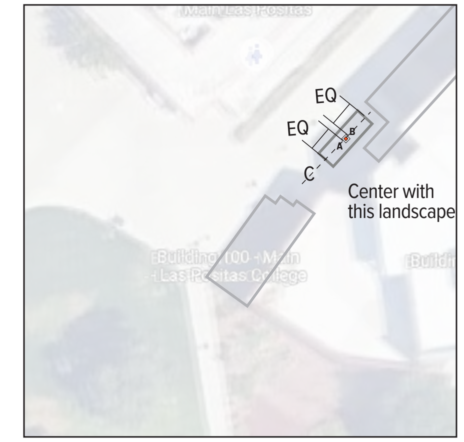

Loc 104 | Softscape EID.01
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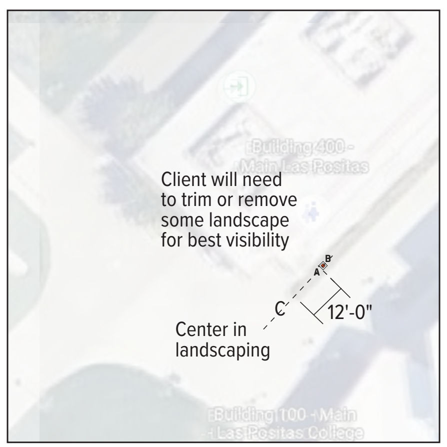

Loc 105 | Softscape EID.01
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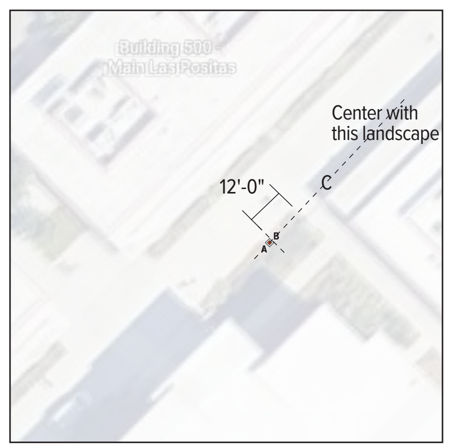
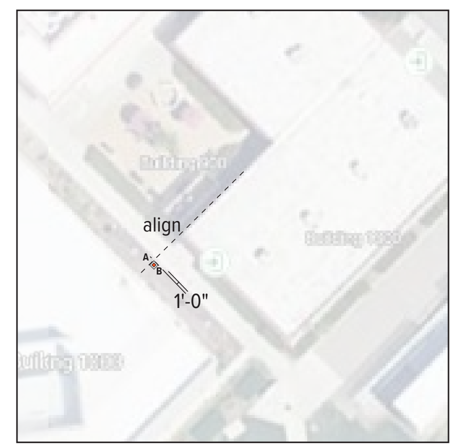


Loc 107 | Softscape EID.01
Scale: 1/64" = 1'-0"



Loc 109 | Softscape EID.01
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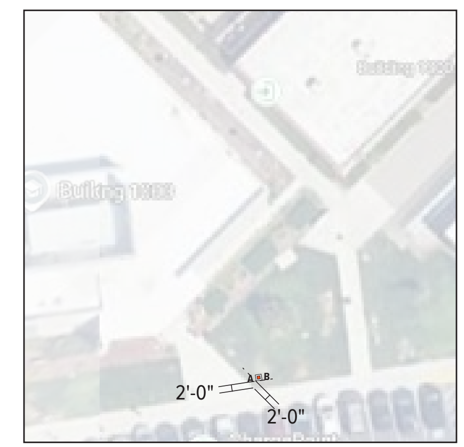

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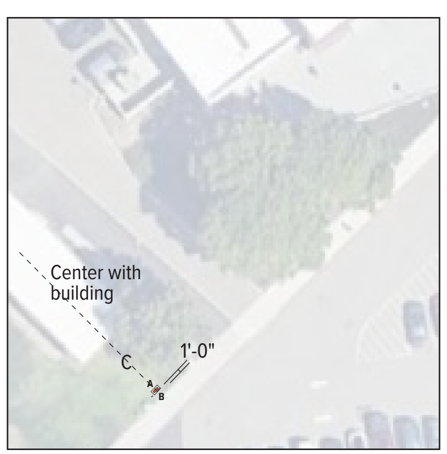

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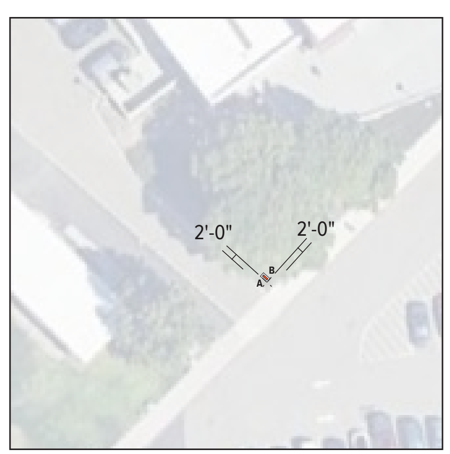

Loc 113 | Hardscape EWF.11
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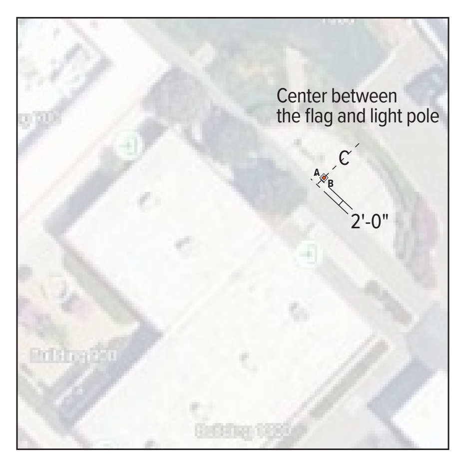

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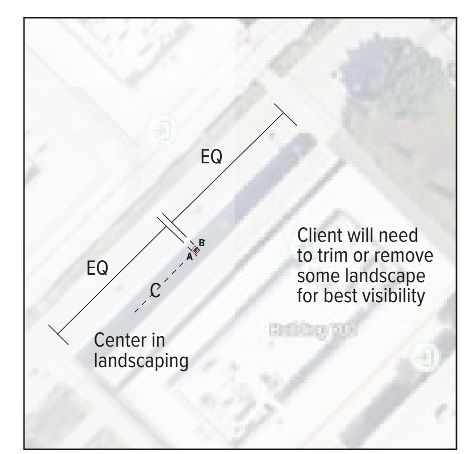

Loc 117 | Softscape EID.01
Scale: 1/64" = 1'-0"

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ARCHITECT:

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Exterior Wayfinding Project

Job# 3738

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MV / 2025_0217

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MV 2025_0313
MV 2025_0530
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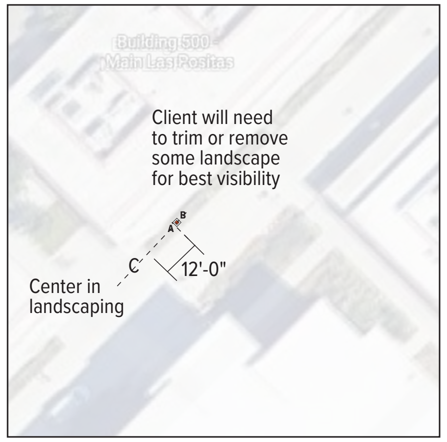

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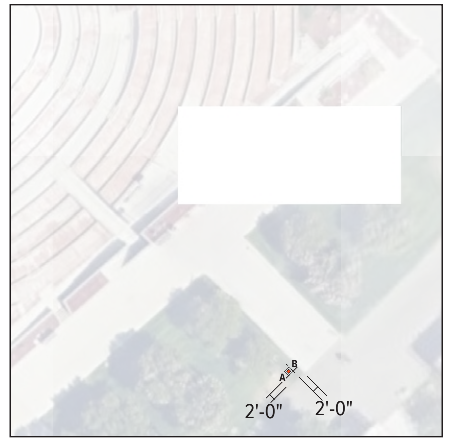

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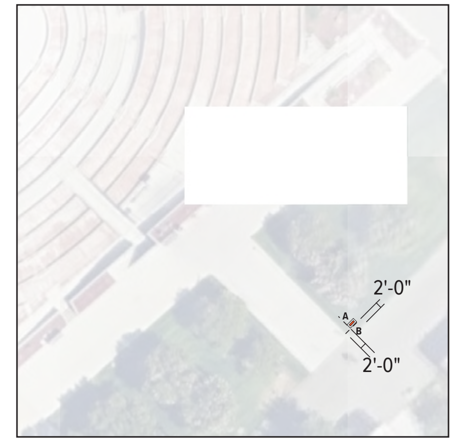

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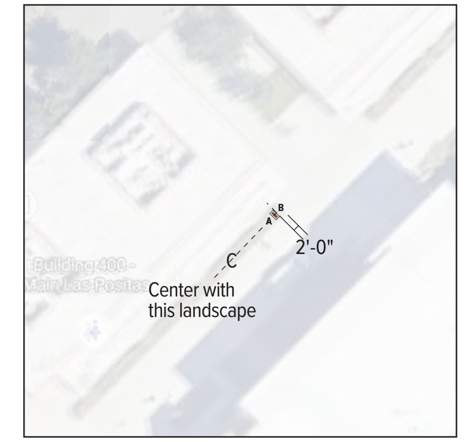

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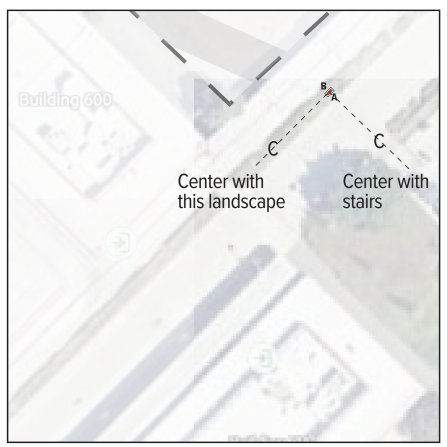

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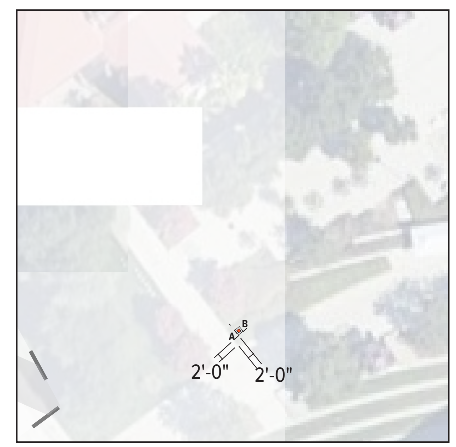

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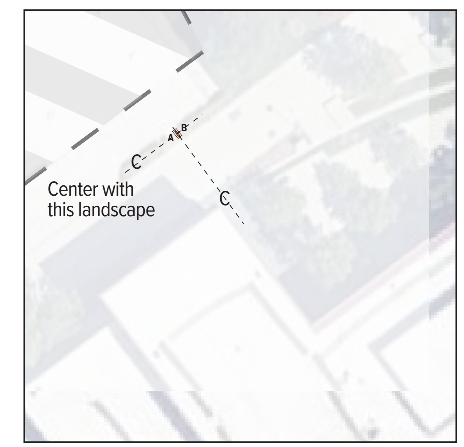

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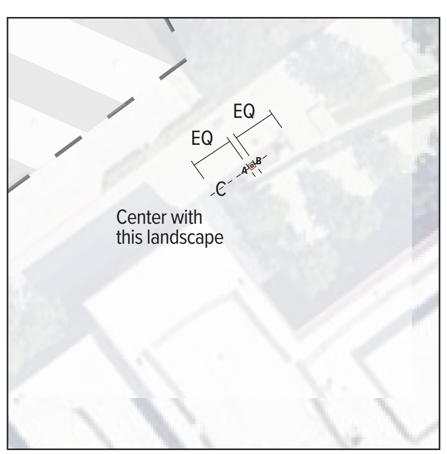

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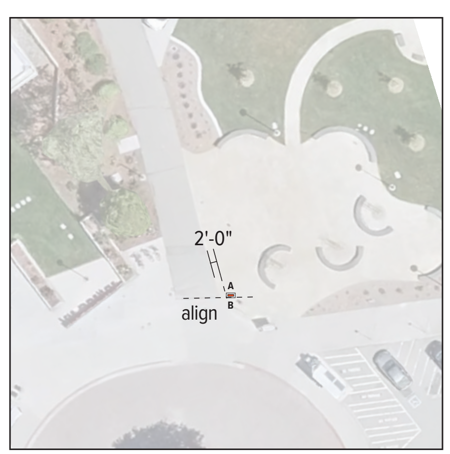

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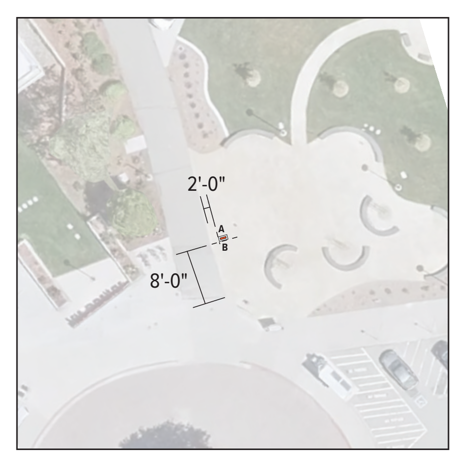

Loc 146 | Softscape **EWF.10**
Scale: 1/64" = 1'-0"

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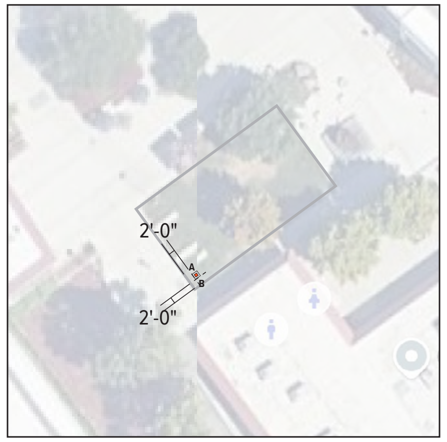

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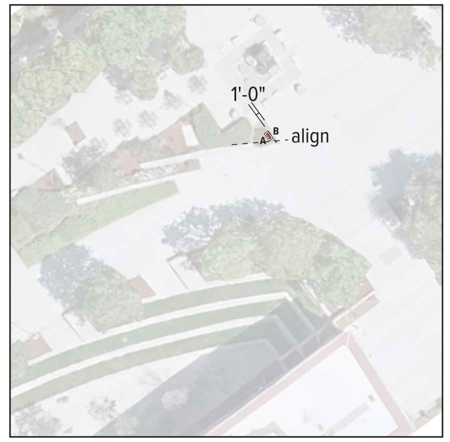

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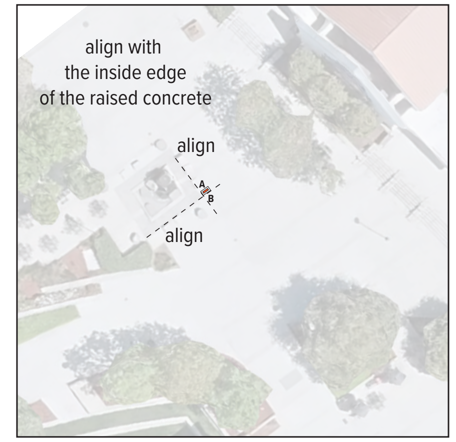

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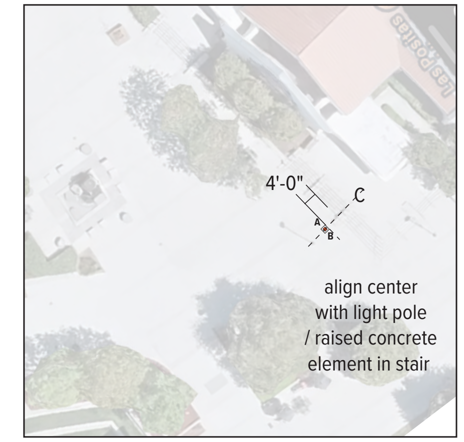

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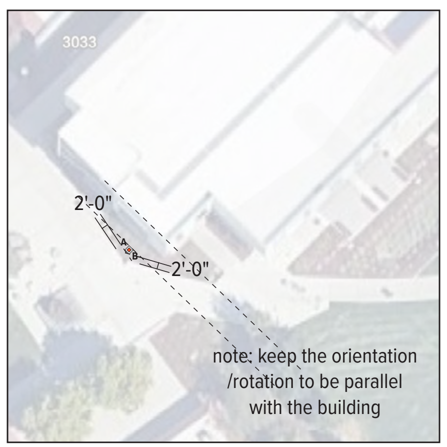

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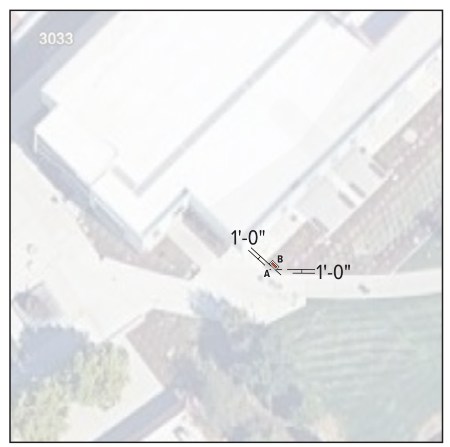

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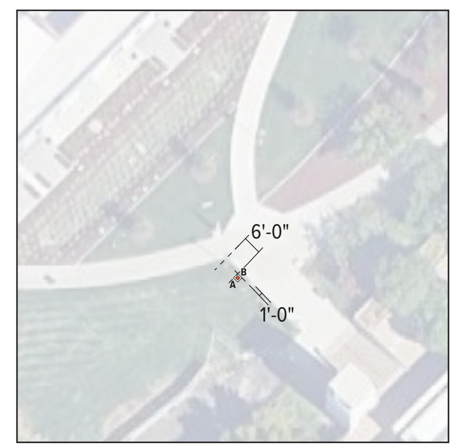

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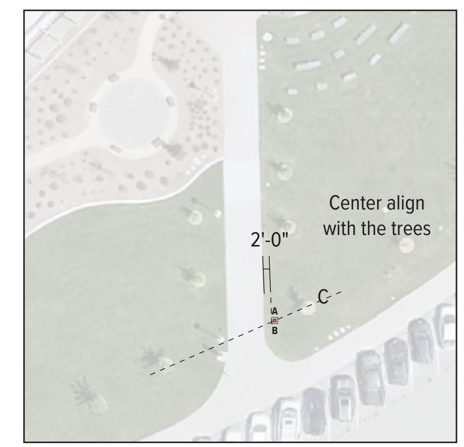

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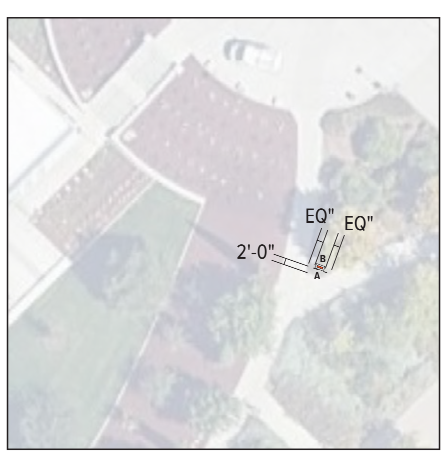

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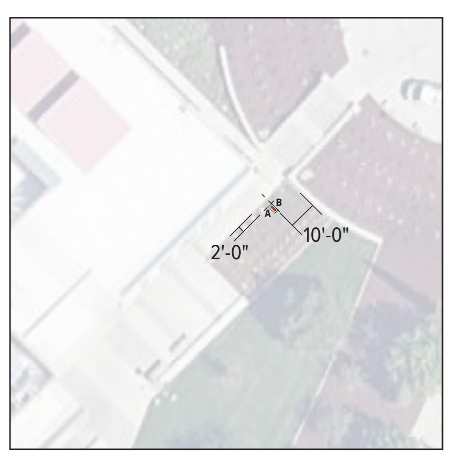

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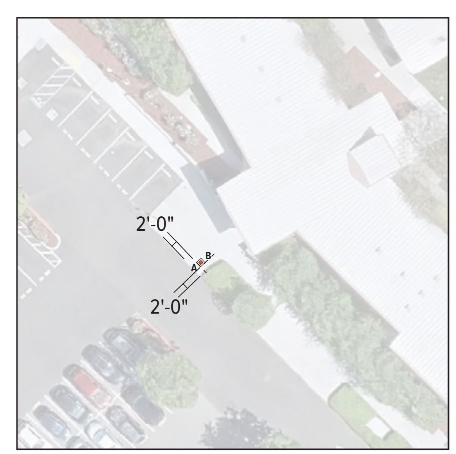

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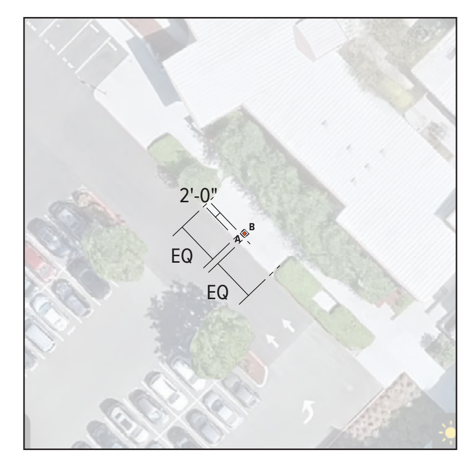

Loc 172 | Hardscape EID.01
Scale: 1/64" = 1'-0"

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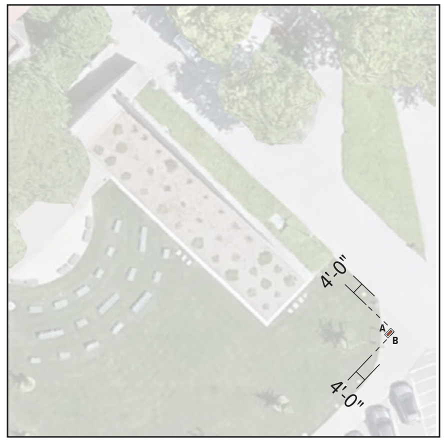

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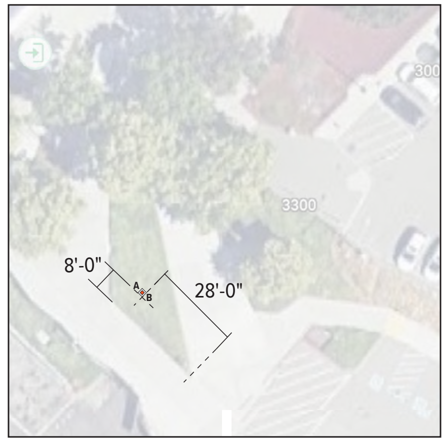

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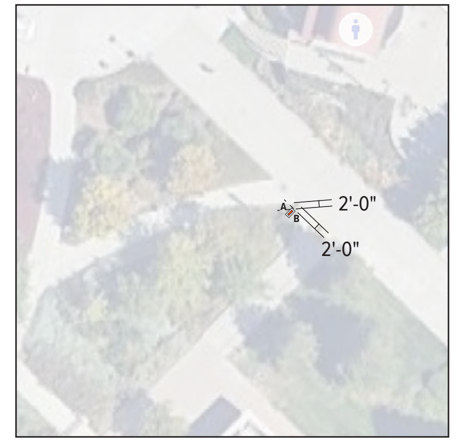

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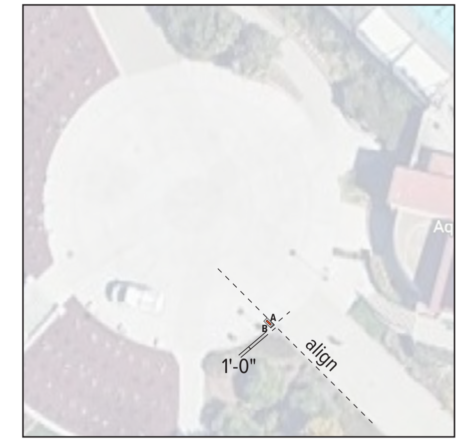
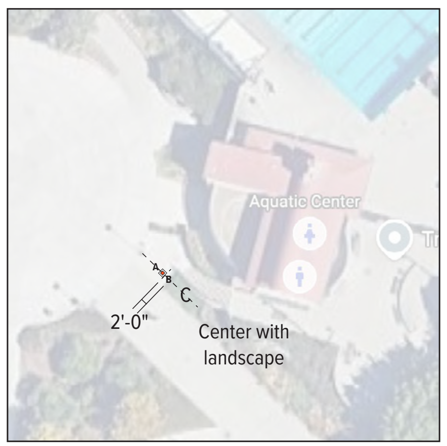


Loc 203 | Hardscape **EWF.10**
Scale: 1/64" = 1'-0"

Add Alternate Bid



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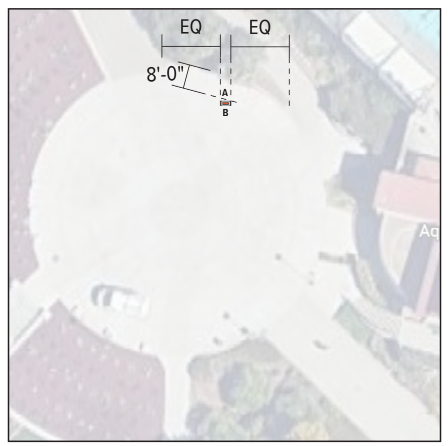

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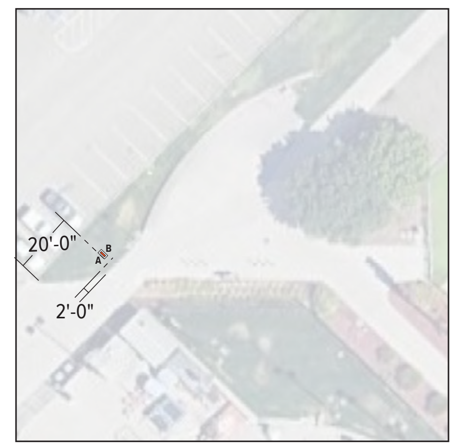

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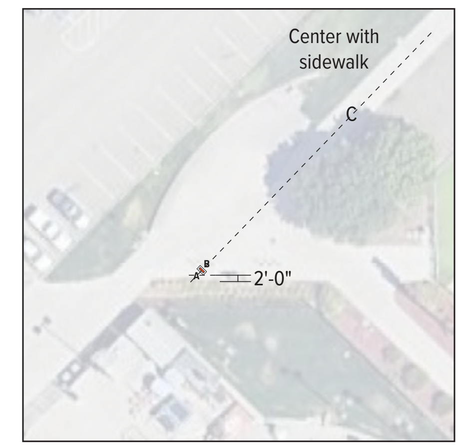

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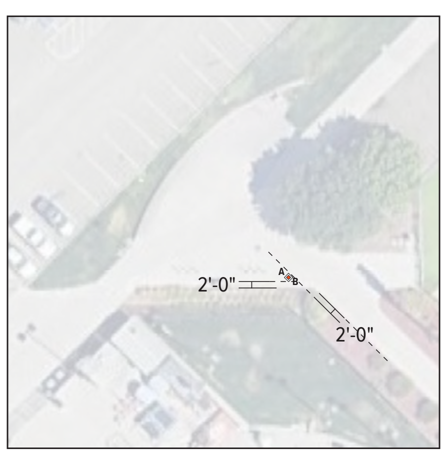
Add Alternate Bid



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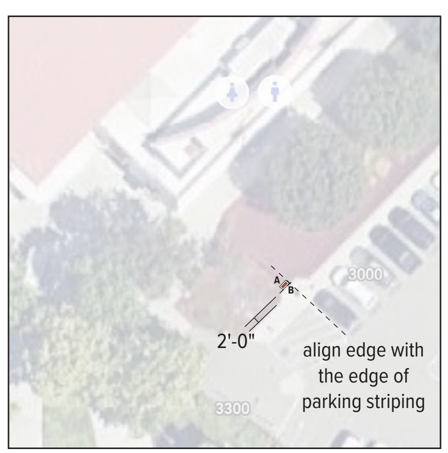

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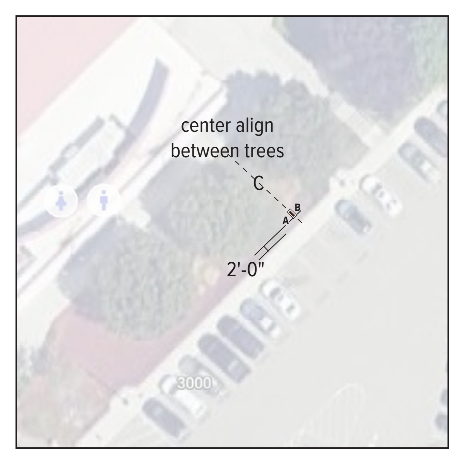

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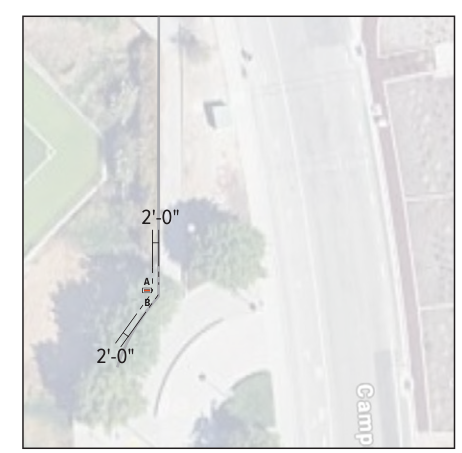

Loc 220 | Softscape **EWF.11**
Scale: 1/64" = 1'-0"

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Loc 227 | Softscape **EWF.10**
Scale: 1/64" = 1'-0"

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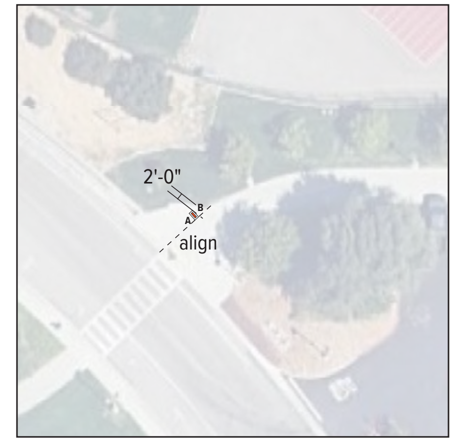

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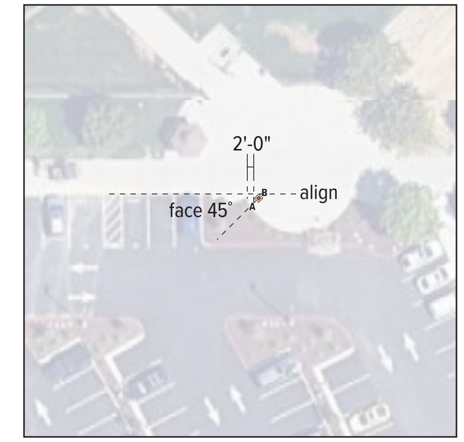
Add Alternate Bid



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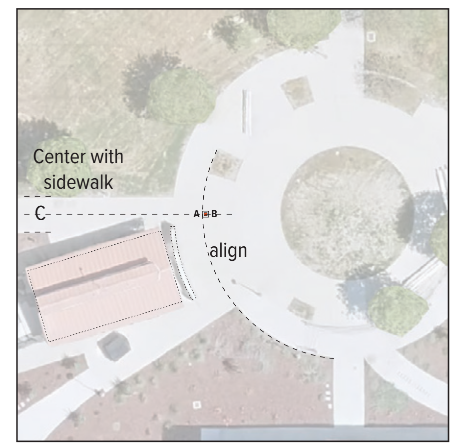
Loc 233 | Hardscape **EWF.10**
Scale: 1/64" = 1'-0"

Loc 235 | Softscape **EWF.11**
Scale: 1/64" = 1'-0"

Add Alternate Bid



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Scale: 1/64" = 1'-0"

Loc 239 | Softscape **EWF.11**
Scale: 1/64" = 1'-0"

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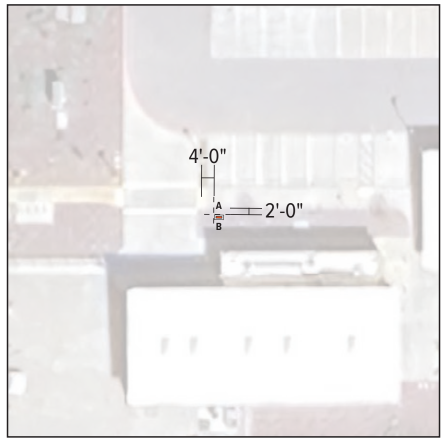

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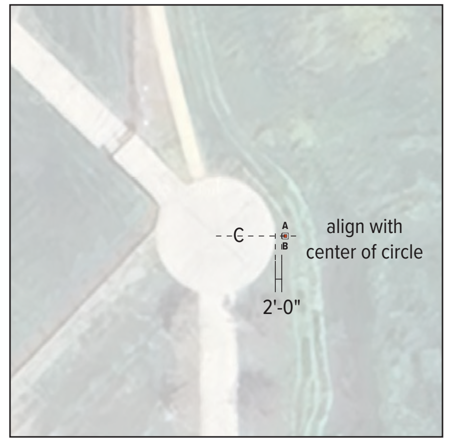
Add Alternate Bid



Loc 309 | Softscape? **EID.01a**
Scale: 1/64" = 1'-0"

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Graphic Standards

Typography

Agenda

Aa Aa Aa Aa Aa

Light Regular Medium SemiBold Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZ
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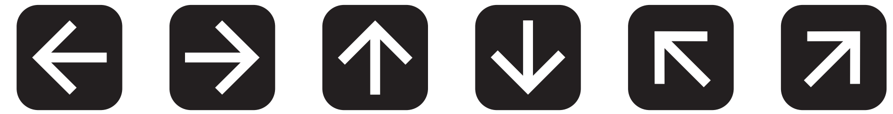
SemiBold

J

Symbols / Icons

Arrows



Colors (if a color callout reflects paint - Matthews Paint provides formulas to match PMS callouts)

C1
PMS 201C
(powdercoat to match where applicable)

C2
PMS BlackC
(powdercoat to match where applicable)

C3
PMS
Cool Gray 11
(powdercoat to match where applicable)

C4
PMS 7461C
(powdercoat to match where applicable)

C5
Matthews Paint
MP 32071
White Wonder
(powdercoat to match where applicable)

C6
Matthews Paint
MP 18213
Wrought Iron Metallic
(powdercoat to match where applicable)

C7
PMS
Warm Gray 4
(powdercoat to match where applicable)

C8
PMS 2259
(powdercoat to match where applicable)

C9
PMS 7483
(powdercoat to match where applicable)

M1
#7328 Acrylic
Milk White
with translucent vinyl overlay 3M 3630-20 white

V1
3M 225-20
Opaque Vinyl
Matte White

V1R
3M 5100-10
Reflective Vinyl
White

Brand

LAS POSITAS COLLEGE

LAS POSITAS COLLEGE

Brand - Monochromatic on dark background

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PROJECT ADDRESS:

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3000 Campus Hill Drive
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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:

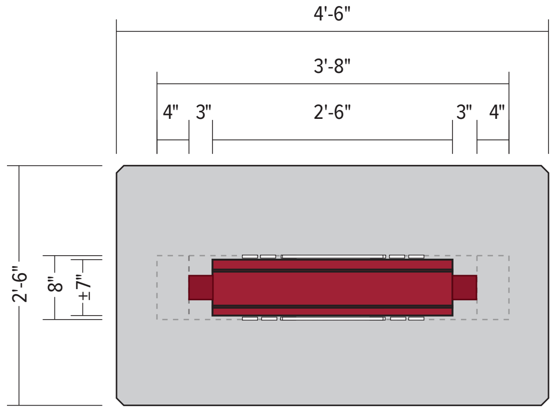
100% Construction Intent
For Construction Intent Only

SHEET TITLE:

Graphic Standards
Typography, Arrows, Colors Symbols, Brand

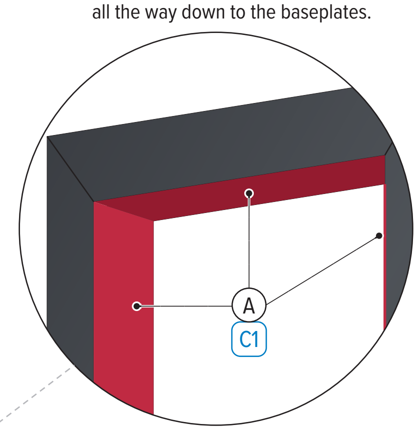
PAGE NUMBER:

Sign Layouts

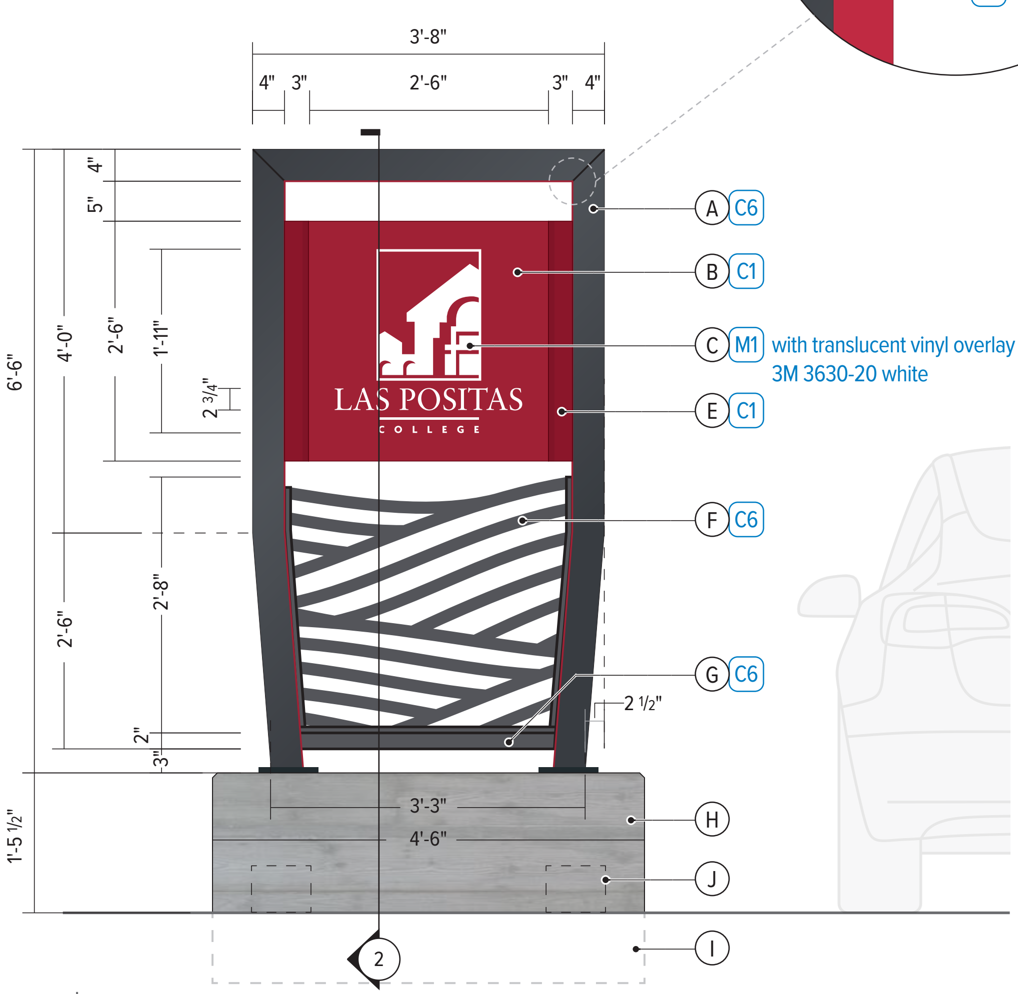


Top Section View

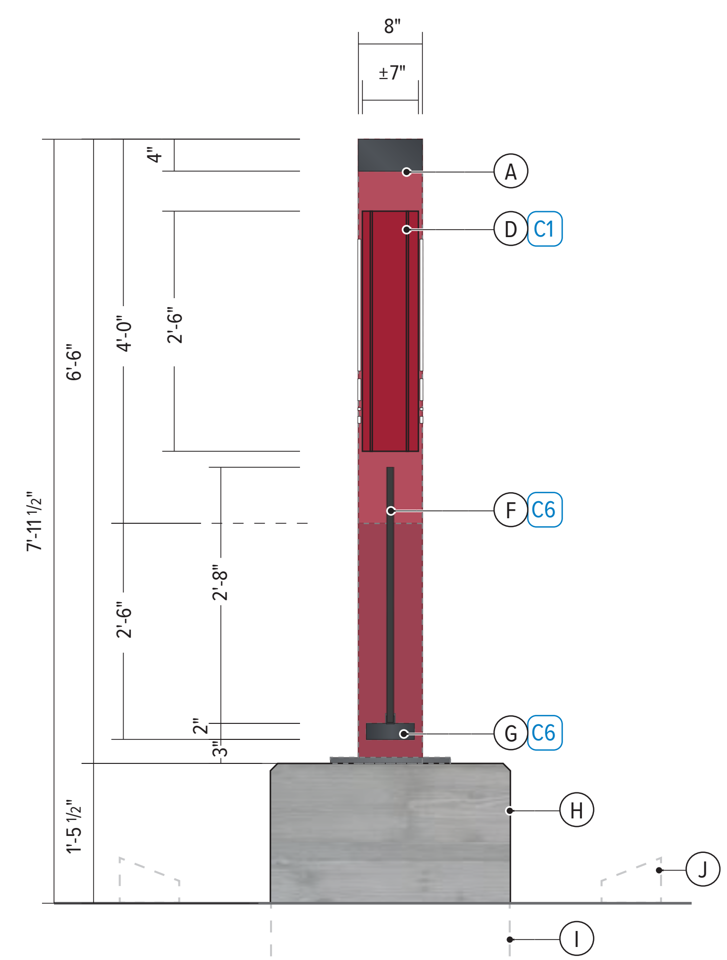
(3) Inside facing sides of the frame to be painted accent color all the way down to the baseplates.



The Intent is to have each element of the brand as individual pushthrus



1 Elevation
Scale: 1/2" = 1'-0"



2 Section View
Scale: 1/2" = 1'-0"

KEY
Ⓐ Item
P1 Color

A. Frame Structure:
Large rectangular tube frame.
All exposed edges to be surface painted.
Inside facing sides of the frame (3) to be painted accent color.
Bottom to have mounting plates
(see engineering: SGN9.1 - SGN9.5)

B. Brand Panels:
1/8" Aluminum Removable panels with routed copy.
Double sided - fitted with push throughs (illuminated)
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

C. Push-through acrylic brand/copy
with surface applied translucent vinyl overlay.
Push-throughs to protrude 3/8" from cabinet face.
Internally illuminated with 5K white LEDs.
Sloan or approved equal.

D. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

E. Square tube support spacers, attached to structure frame (see engineering: SGN9.1 - SGN9.5) .
Top/bottom to have welded caps.
All exposed edges to be surface painted

F. Pattern panel:
3/4" thk. Aluminum Flat cut out pattern panel.
Mounting rail retainers on the left/right/ bottom edges for attachment. Conceal attachment to the least visible side using countersunk tamperproof screws.
All exposed edges to be surface painted.
All hardware and mounting rails painted to match.

G. 2" x 6" Horizontal rectangular tube, welded to structure frame. All exposed edges to be surface painted.

H. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

I. Footing / Attachement
(see engineering: SGN9.1 - SGN9.5)

J. External Landscape up lighting, 5K white.
Landscape lighting to illuminate pattern panels.
Alcon Model 31022 or approved equal.

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint.

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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
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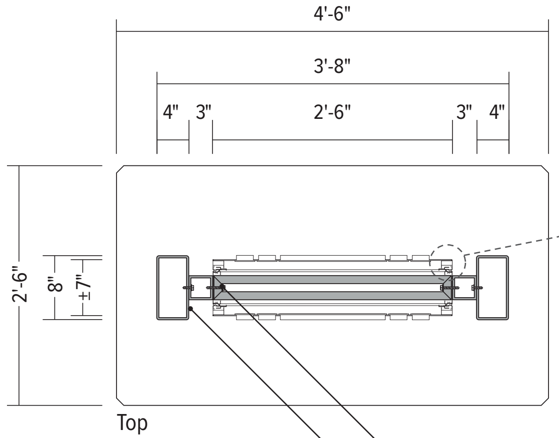
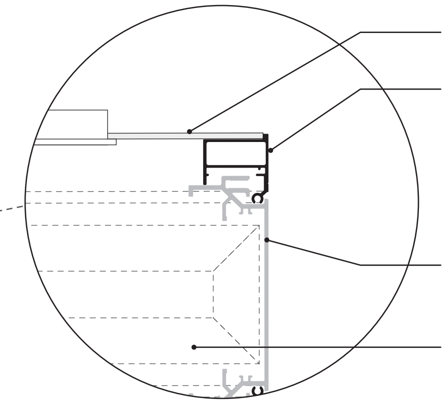
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
BR.02
Secondary Brand ID at Drop off Entry Double Sided





1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

SignComp or approved equal
Hinge body - **7" Series 7**

Aluminum rectangular tube frame
(see engineering: SGN9.1 - SGN9.5)

Through bolt aluminum frame to support

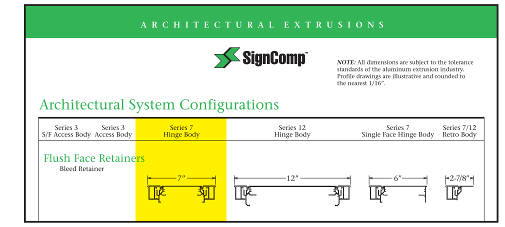
Support post
(see engineering: SGN9.1 - SGN9.5)

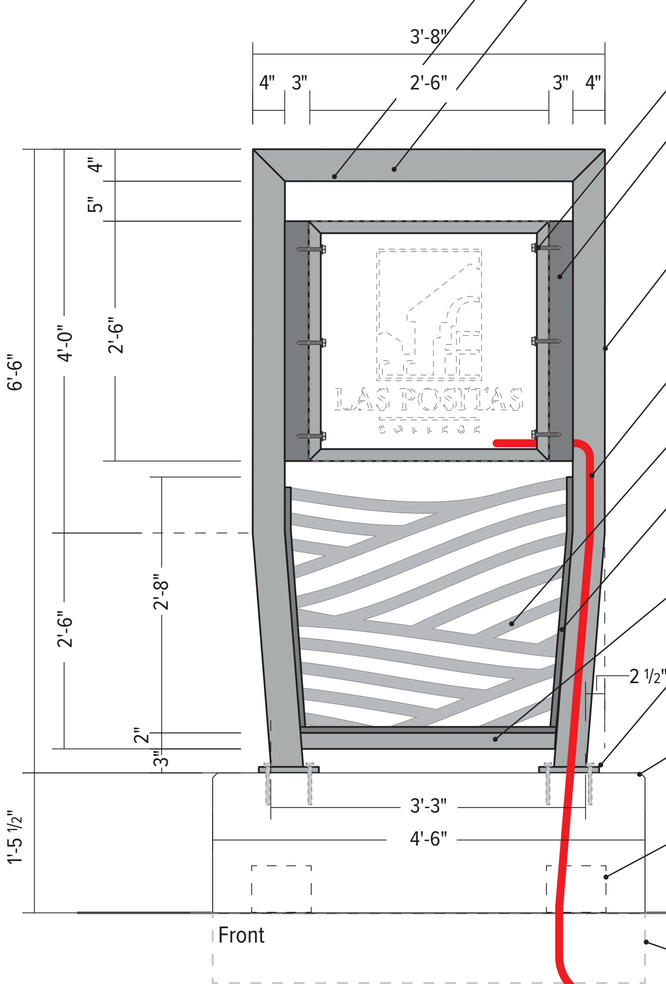
NOTE:

DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:

SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Aluminum tube frame sign cabinet

1/8" Aluminum faces with routed copy.
Double sided - fitted with push throughs (illuminated)
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Through bolt aluminum frame to support

Square tube support spacers,
attached to structure frame (see engineering: SGN9.1 - SGN9.5).
Top/bottom to have welded caps.

Support post (see engineering: SGN9.1 - SGN9.5)
All corners to be mittered

Electrical (by others)
Primary to circuit 120 VAC input.
Route though foundation and support post.

3/4" thk. Aluminum Flat cut out pattern panel.

Mounting rail retainers on the left/right/ bottom edges for attachment. Conceal attachment to the least visible side using countersunk tamperproof screws.

2" x 6" Horizontal rectangular tube, welded to structure frame

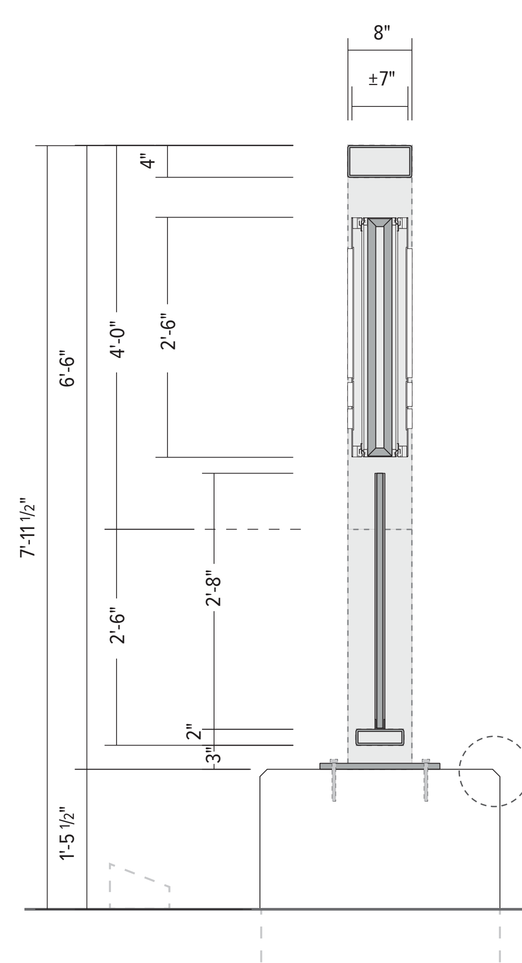
Baseplates (see engineering: SGN9.1 - SGN9.5)
Bolts to be cut even with minimal protrusion.
All hardware surface painted to match

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

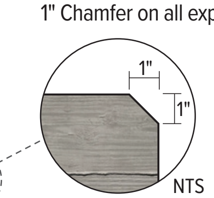
External Landscape up lighting, 5K white.
Landscape lighting to illuminate pattern panels.
Alcon Model 31022 or approved equal.

NOTE:

CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING SGN9.1 - SGN9.5
SEE ENGINEERING & CALCULATIONS SECTION 11.1



Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



1 **BR.02 Fabrication Intent**
Scale: 1/2" = 1'-0"

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

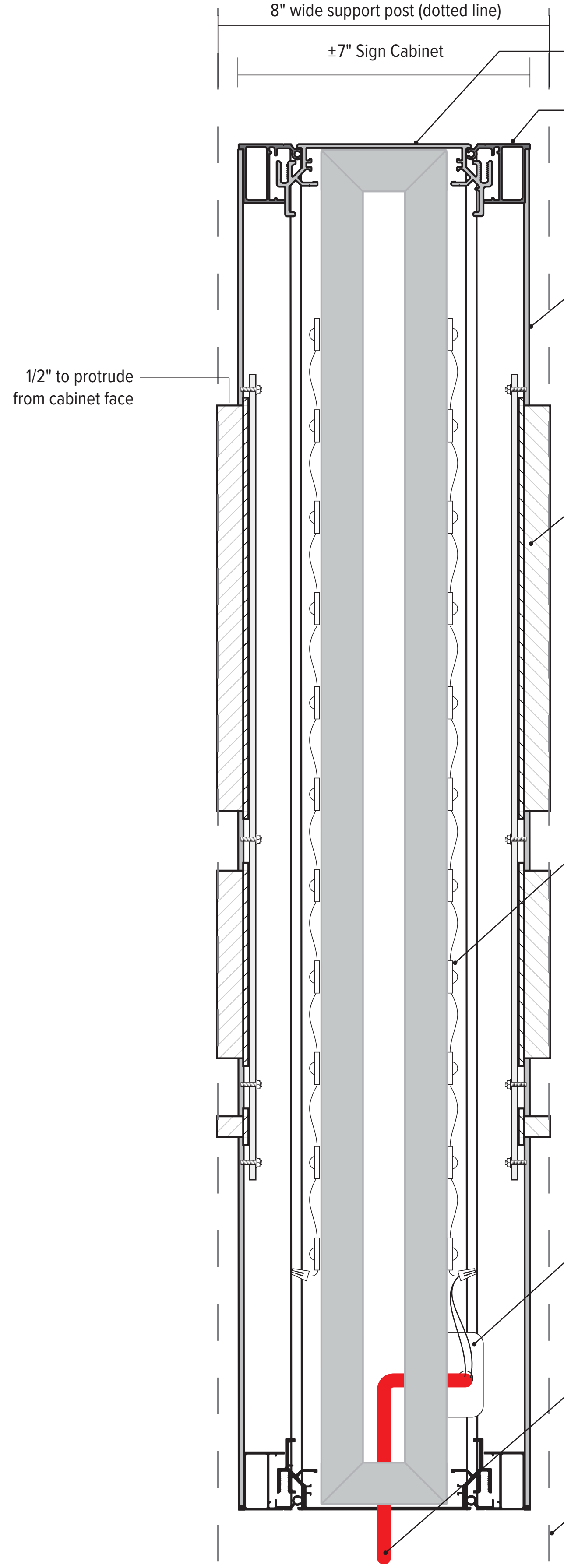
PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

SHEET TITLE:

Fabrication Intent BR.02

PAGE NUMBER:



SignComp or approved equal
Hinge body - **7" Series 7**

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

1/8" Aluminum faces with routed copy.
Double sided - fitted with push throughs (illuminated)
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible
side/edges. Eased edges on all corners.

Push-through #7328 Milk White acrylic brand/copy
with surface applied translucent vinyl overlay.
Push-throughs to protrude 1/2" from cabinet face.

Intent is to have each element of the brand
as individual pushthrus with a application of
translucent vinyl overlay 3M 3630-20 white
to create a matte finish that is evenly diffused.

LED modules spaced 3" apart.
Internally illuminated with 5K white LEDs.
Sloan or approved equal.

NOTE: All labels, disconnect switches, photo cells,
etc to be concealed / placed in least visible areas

191-T power supply 12 VDC output.
Provide as dimable & with photo cell

Electrical (by others)
Primary to circuit 120 VAC input.
Route though foundation and support post.

Support post (dotted line)

1 BR.01 & BR.02 - Illuminated Cabinet Section View
Scale: NTS

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
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MV 2025_0530
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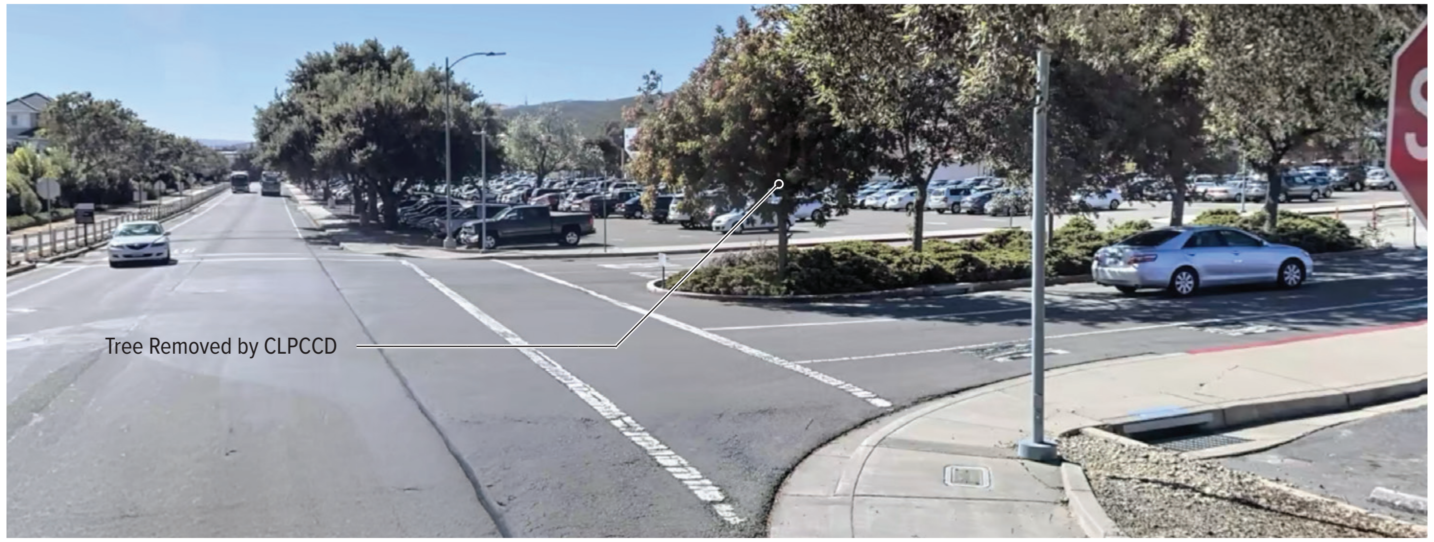
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

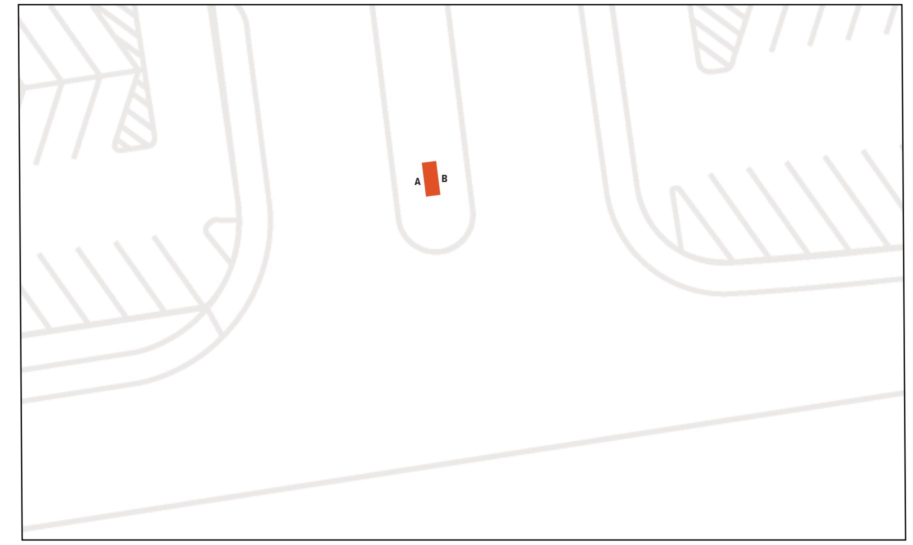
PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent
BR.01 & BR.02

General Note:
Reference Engineering Drawings & Calculations in Section 11



2 Existing Conditions | At Campus Hill Drive Entrance
Scale: NTS



3 Plan View | Loc 13 (see dimensioned setback plans)
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

1 Rendering Example | Loc 13
Scale: NTS

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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
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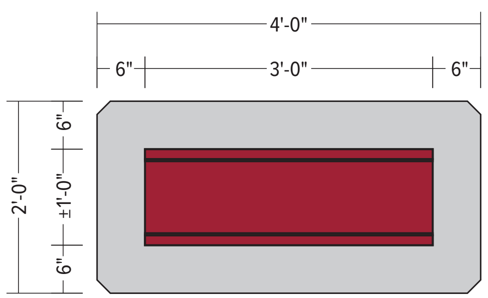
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

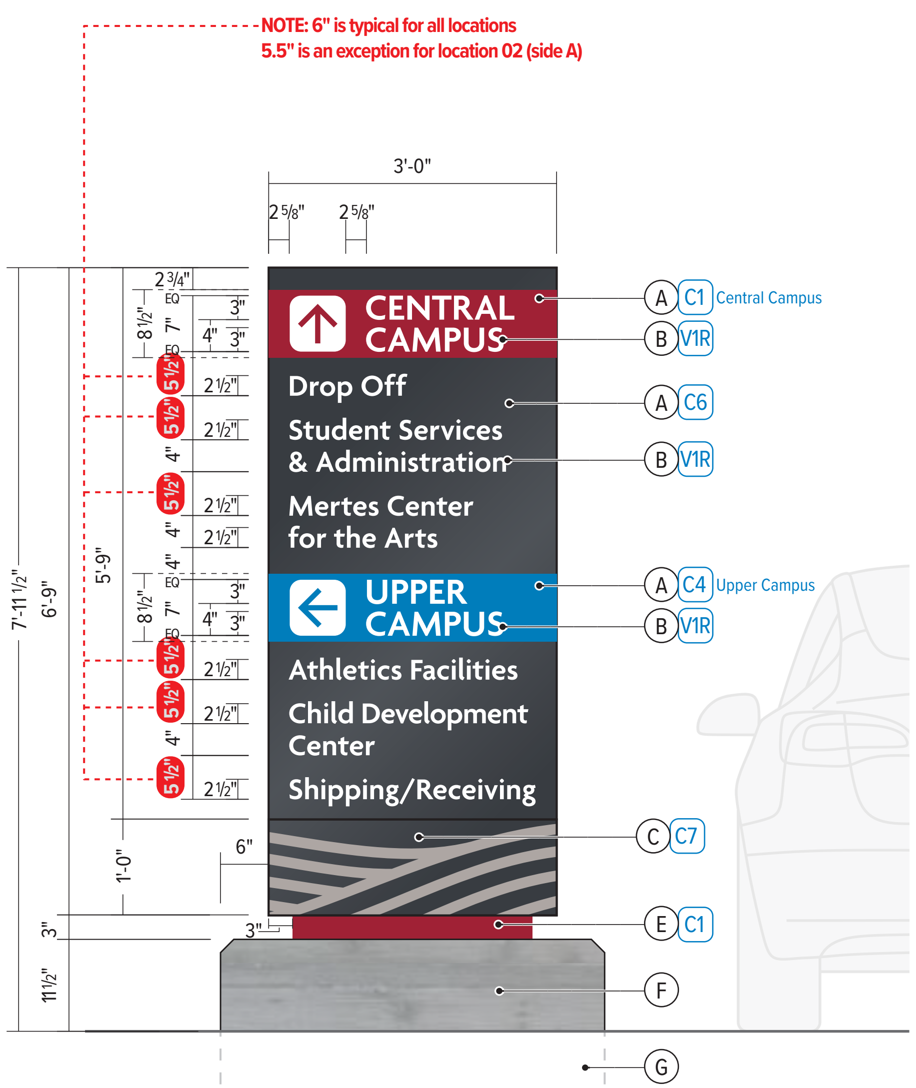
SHEET TITLE:
BR.02
Photo Rendering

PAGE NUMBER:

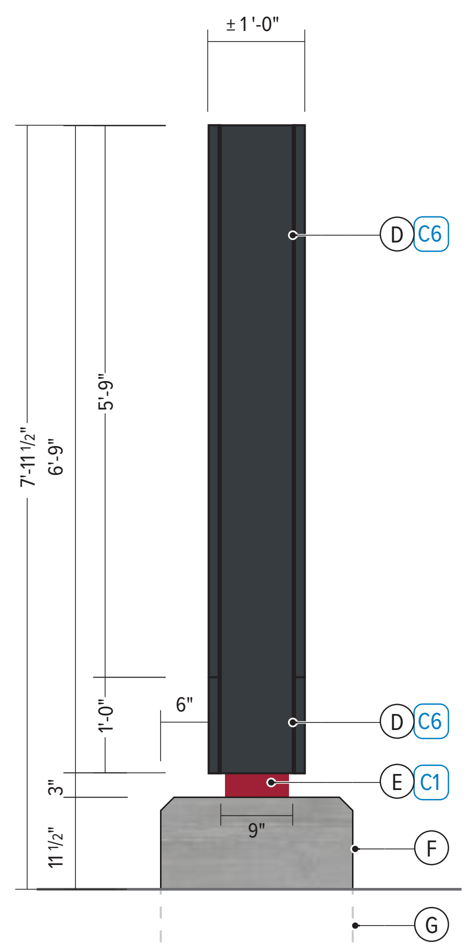


NOTE:
COPY SHOWN FOR TYPICAL SIZING AND SPACING ONLY.

SEE THE MESSAGE SCHEDULE FOR INDIVIDUAL LOCATIONS. PAGES 7.0 - 7.74



1 Elevation
Scale: 1/2" = 1'-0"



2 Side View
Scale: 3" = 1'-0"

KEY
(A) Item
(P1) Color

A. Message Panels:
1/8" Aluminum Removable message panels.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Copy and graphics:
Surface applied contour cut reflective vinyl.
Typeface: Agenda Semibold

C. Pattern panel:
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.
Pattern to be surface painted using Gerber paint mask or approved equal.

D. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

E. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

F. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

G. Footing / Attachement
(see engineering: SGN1.1 - SGN1.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint.
(including the masked pattern)

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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
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REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
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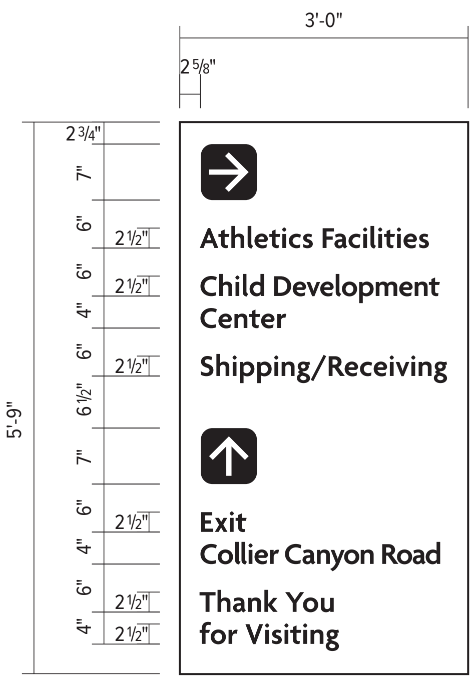
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

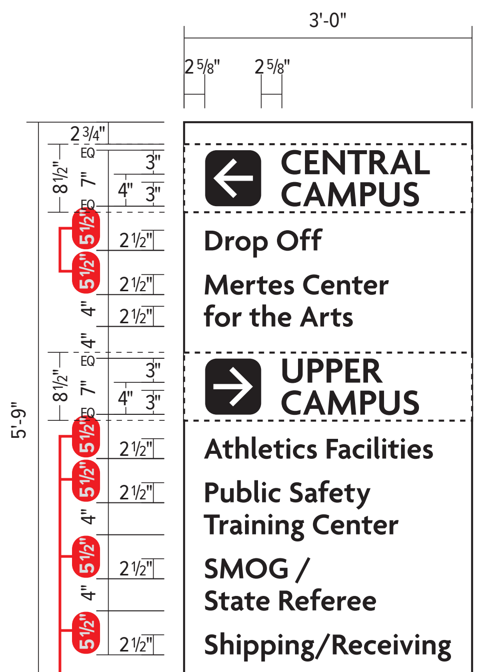
SHEET TITLE:
EWF.01A
Vehicular Directional at Main Entry Point Double Sided

PAGE NUMBER:

When Programming Vehicular Directionals:
Primary vehicular destinations are listed first

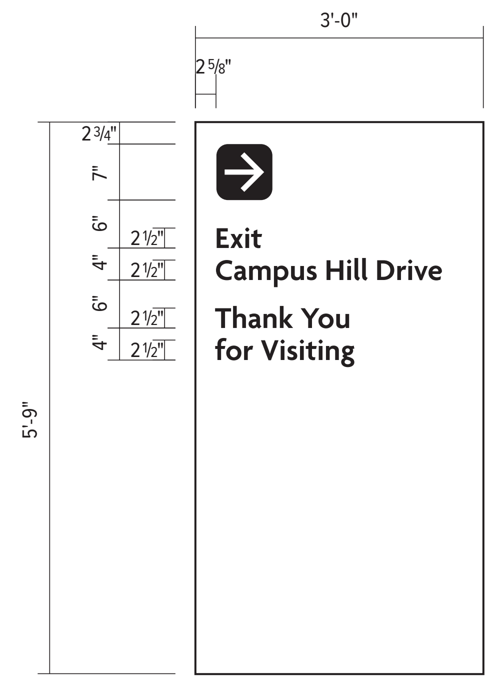


Example | Loc 02 side B



Example | Loc 17 side A

NOTE: 6" is typical for all locations
5.5" is an exception for location 17 (side A)



Example | Loc 17 side B

1 Alternate Copy Layouts
Scale: 1/2" = 1'-0"

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ARCHITECT:

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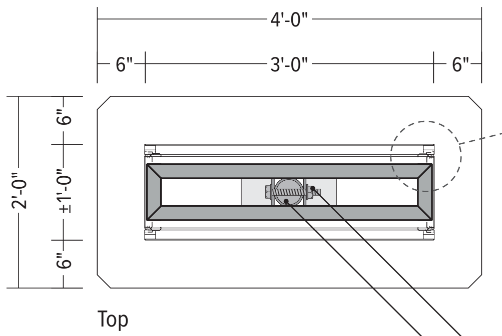
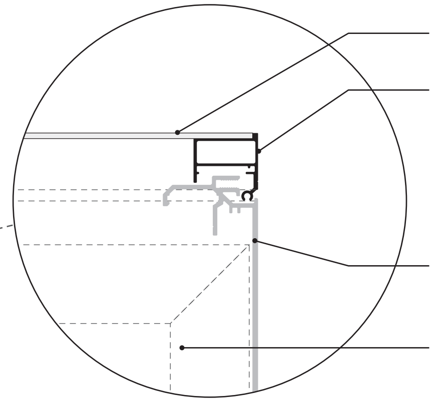
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.01A
Alternate Copy Layouts





1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

SignComp or approved equal
Hinge body - **12" Series 12**

Aluminum rectangular tube frame
(see engineering: SGN1.1 - SGN1.3)

Through bolt aluminum saddles to post

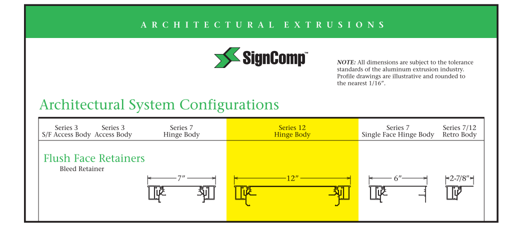
Steel post support
(see engineering: SGN1.1 - SGN1.3)

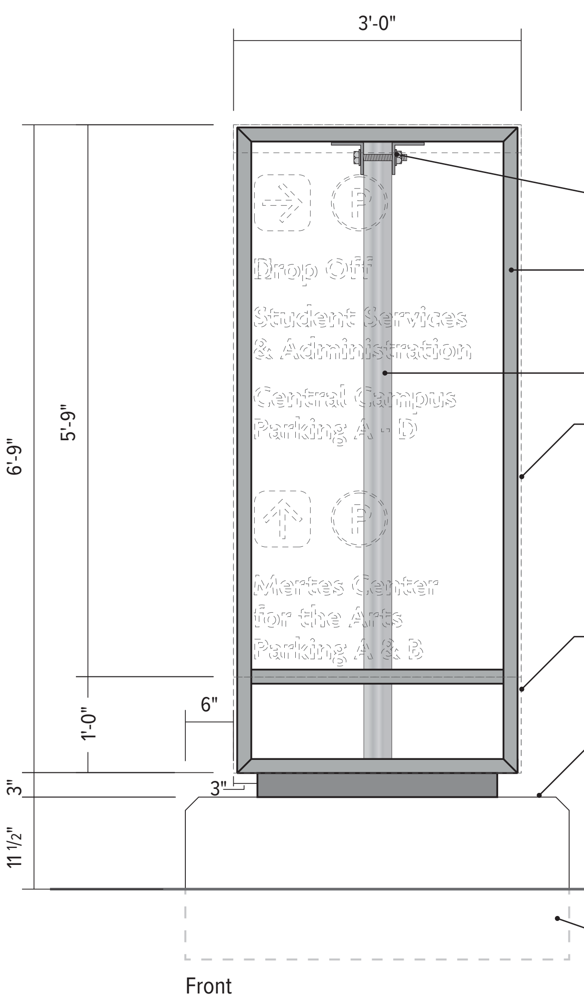
NOTE:

DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:

SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Through bolt aluminum saddles to post

Aluminum rectangular tube frame
(per engineering)

Steel post support (see engineering: SGN1.1 - SGN1.3)

1/8" Aluminum Removable faces (dotted line).
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Lower Removable Pattern Panel (dotted line)
(see same notes as panel above)

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

Hardscape conditions - may use anchor attachments to the existing pad. This board formed concrete base would be for aesthetics, keeping the look/feel the same across all locations (softscape or hardscape).

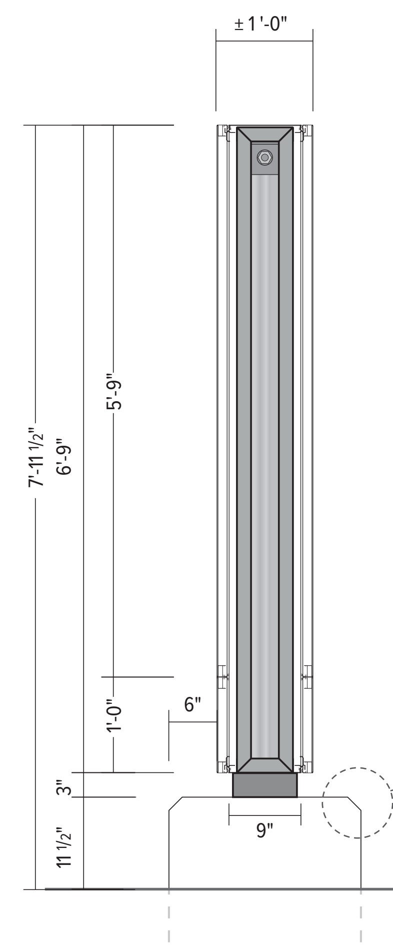
FINISHED GRADE

Softscape conditions

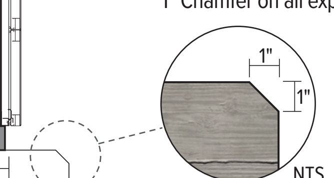
NOTE:

CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SGN1.1 - SGN1.3

SEE ENGINEERING & CALCULATIONS SECTION 11.1



Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



1 EWF.01 & EWF.01A Fabrication Intent
Scale: 1/2" = 1'-0"

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ARCHITECT:

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Exterior Wayfinding Project

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CREATED BY / DATE:

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MV 2025_0123

PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

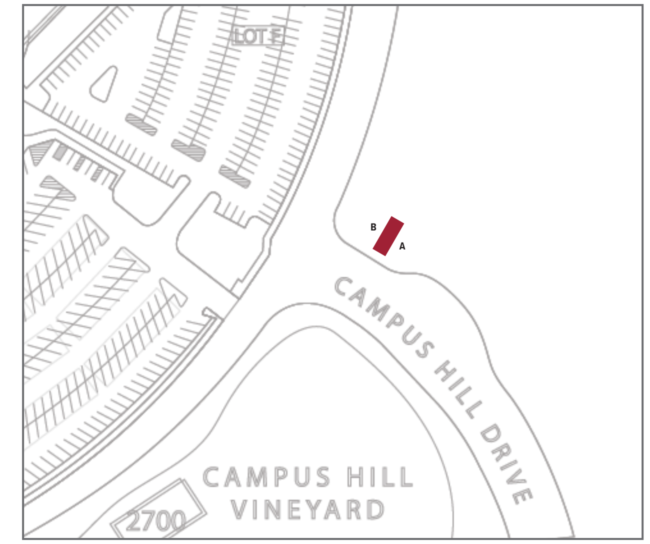
SHEET TITLE:

Fabrication Intent EWF.01 & EWF.01A

PAGE NUMBER:

General Note:
Reference Engineering Drawings & Calculations in Section 11

2 Existing Conditions | At Campus Hill Drive Entrance
Scale: NTS



3 Plan View | Loc 17 (see dimensioned setback plans)
Scale: NTS

1 Rendering Example | Loc 17
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

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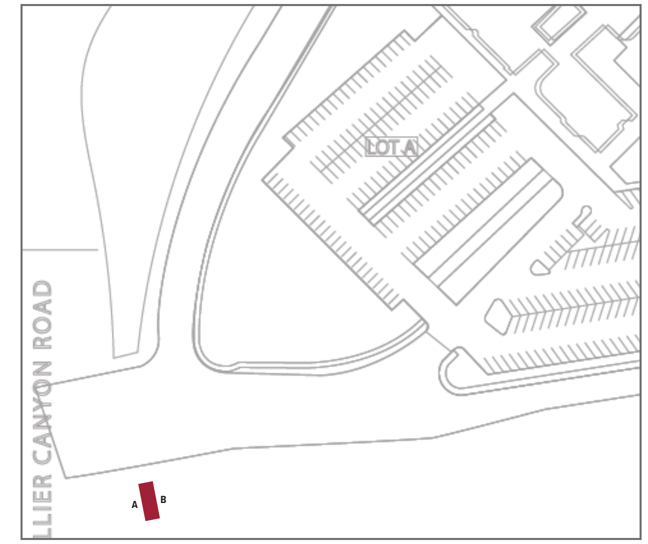
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.01A
Photo Rendering

PAGE NUMBER:

2 | Existing Conditions | At Collier Canyon Road Entrance
Scale: NTS



3 | Plan View | Loc 02 (see dimensioned setback plans)
Scale: NTS

1 | Rendering Example | Loc 02
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

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CLIENT:
LAS POSITAS COLLEGE

PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project

Job# 3738

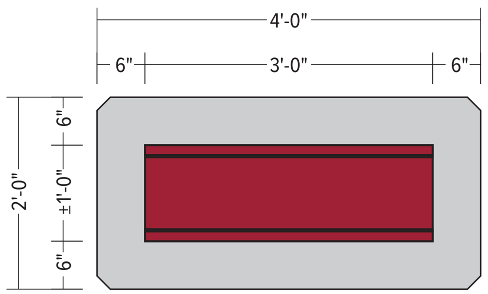
CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.01A
Photo Rendering

PAGE NUMBER:



NOTE:
COPY SHOWN FOR TYPICAL SIZING AND SPACING ONLY.
SEE THE MESSAGE SCHEDULE FOR INDIVIDUAL LOCATIONS. PAGES 7.0 - 7.74

KEY
- (A) Item
- (P1) Color

A. Message Panels:
1/8" Aluminum Removable message panels.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Copy and graphics:
Surface applied contour cut reflective vinyl.
Typeface: Agenda Semibold

C. Pattern panel:
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.
Pattern to be surface painted using Gerber paint mask or approved equal.

D. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

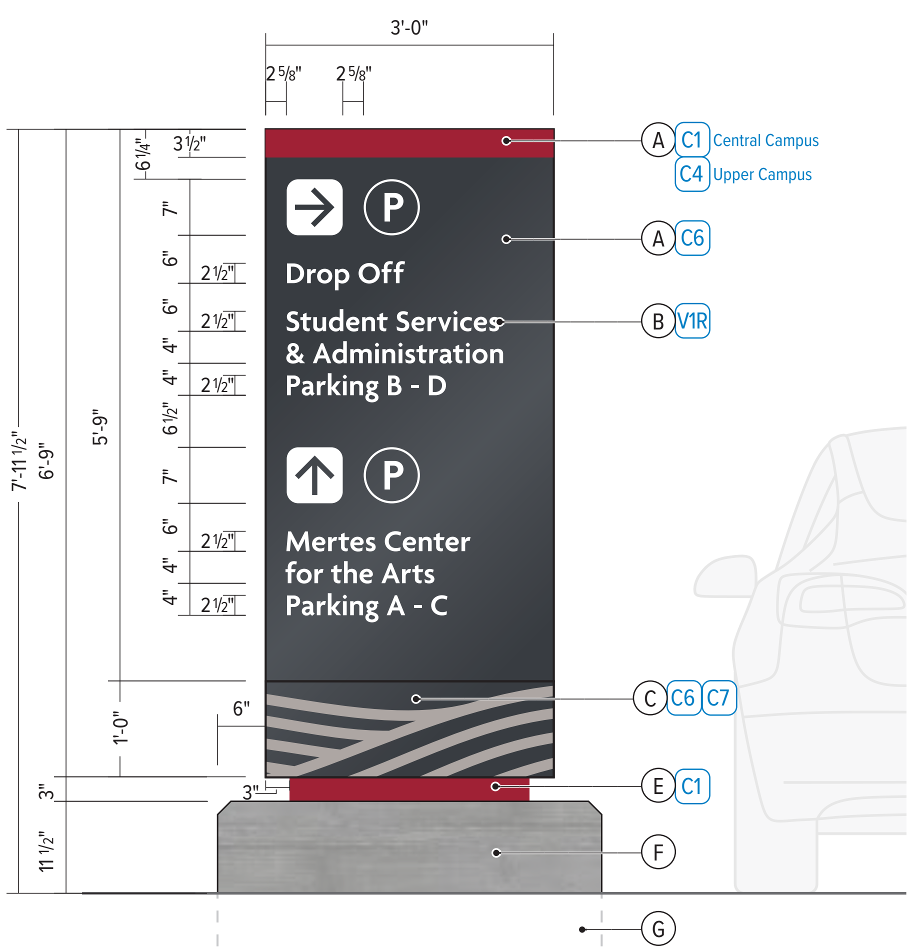
E. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

F. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

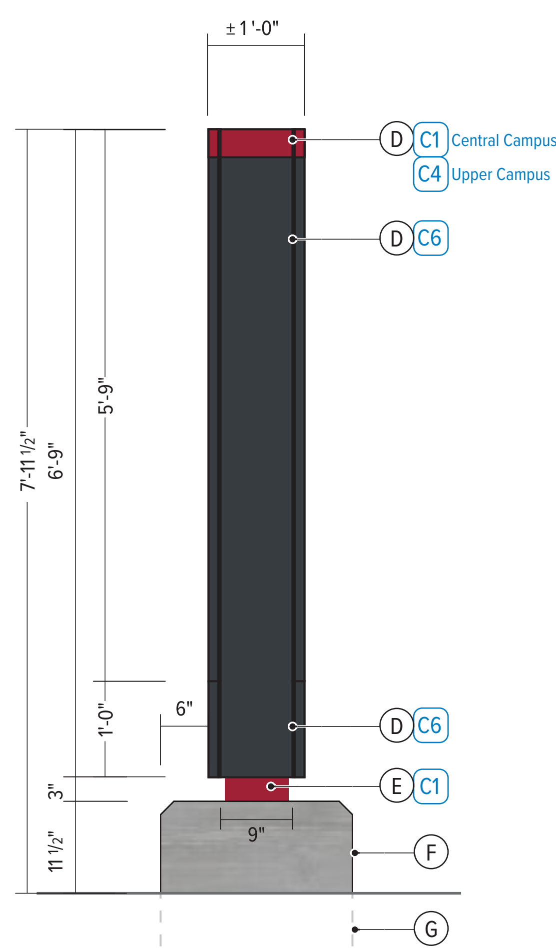
G. Footing / Attachement
(see engineering: SGN1.1 - SGN1.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint.
(including the masked pattern)



1 **Elevation**
Scale: 1/2" = 1'-0"



2 **Side View**
Scale: 3" = 1'-0"

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PROJECT ADDRESS:
Las Positas College
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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

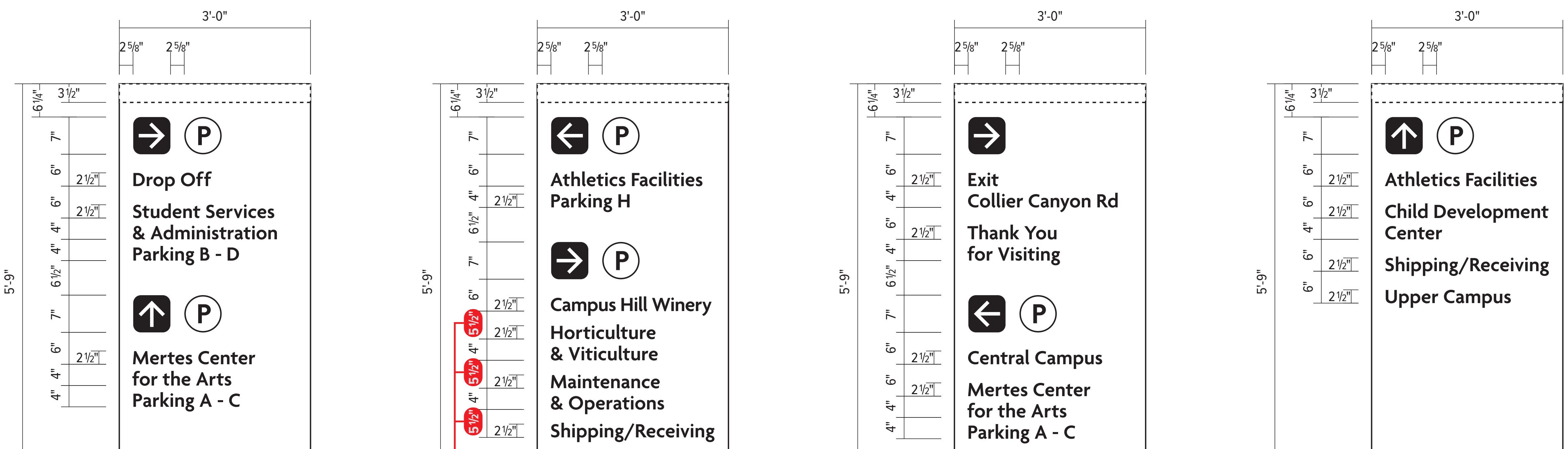
REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.01
Primary Vehicular Directional Double Sided

PAGE NUMBER:

When Programming Vehicular Directionals:
Primary vehicular destinations are listed first



Example | Loc 14 side B

Example | Loc 23 side A

Example | Loc 33 side B

Example | Loc 31 side A

NOTE: 6" is typical for all locations
5.5" is an exception for location 23 ONLY

NOTE: Client to confirm copy

1 Alternate Copy Layouts
Scale: 1/2" = 1'-0"

GRAPHIC CONSULTANT:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

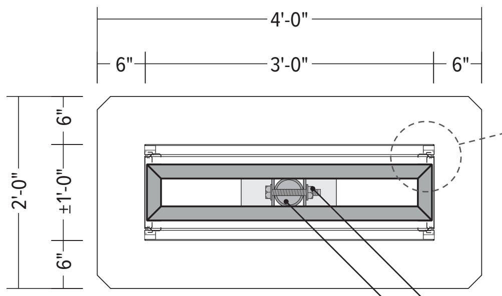
PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

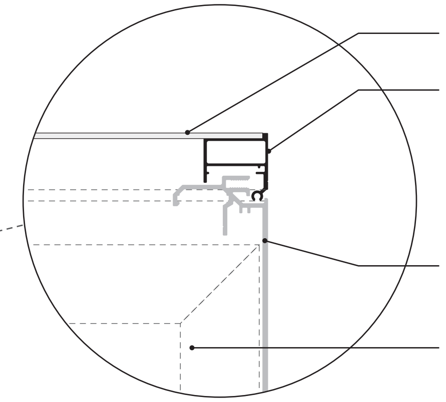
SHEET TITLE:

EWF.01
Alternate Copy Layouts

PAGE NUMBER:



Top



1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

SignComp or approved equal
Hinge body - **12" Series 12**

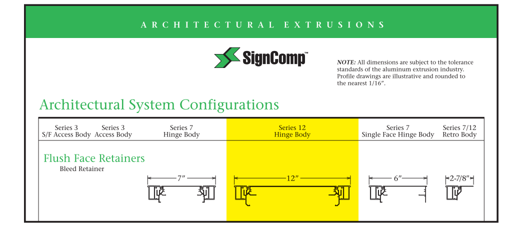
Aluminum rectangular tube frame
(see engineering: SGN1.1 - SGN1.3)

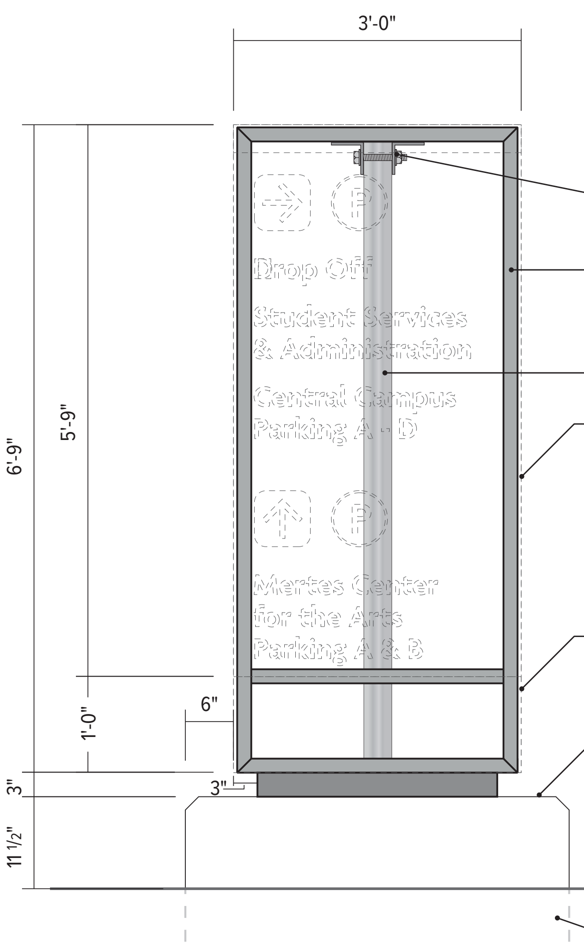
Through bolt aluminum saddles to post

Steel post support
(see engineering: SGN1.1 - SGN1.3)

NOTE:
DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:
SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Through bolt aluminum saddles to post

Aluminum rectangular tube frame
(per engineering)

Steel post support (see engineering: SGN1.1 - SGN1.3)

1/8" Aluminum Removable faces (dotted line).
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Lower Removable Pattern Panel (dotted line)
(see same notes as panel above)

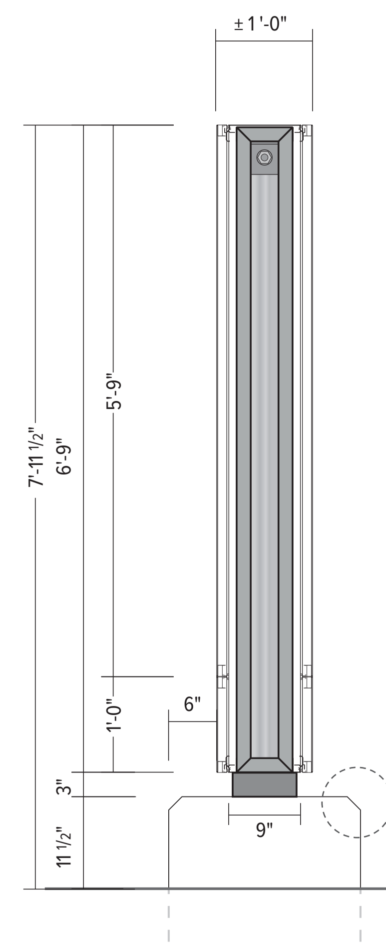
Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

Hardscape conditions - may use anchor attachments to the existing pad. This board formed concrete base would be for aesthetics, keeping the look/feel the same across all locations (softscape or hardscape).

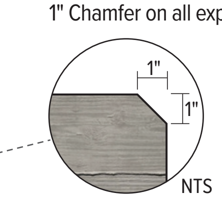
Softscape conditions

Front

NOTE:
CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SGN1.1 - SGN1.3
SEE ENGINEERING & CALCULATIONS SECTION 11.1



Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



1 **EWF.01 & EWF.01A Fabrication Intent**
Scale: 1/2" = 1'-0"

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PROJECT ADDRESS:
Las Positas College
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Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

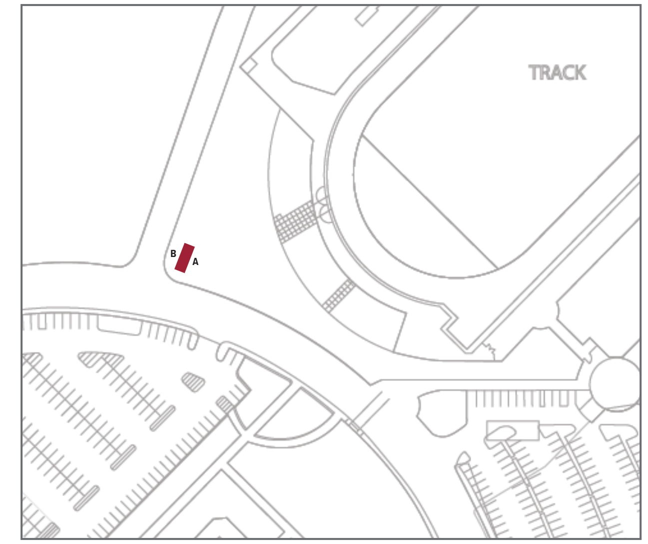
PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent EWF.01 & EWF.01A

PAGE NUMBER:

General Note:
Reference Engineering Drawings & Calculations in Section 11

2 **Existing Conditions | Loc 23**
Scale: NTS



3 **Plan View | Loc 23** (see dimensioned setback plans)
Scale: NTS

1 **Rendering Example | Loc 23**
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

GRAPHIC CONSULTANT:

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Las Positas College
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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:

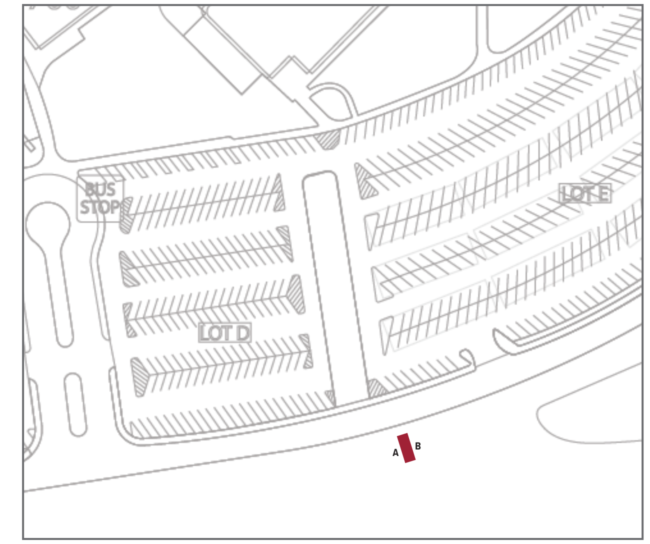
100% Construction Intent
For Construction Intent Only

SHEET TITLE:

EWF.01
Photo Rendering

PAGE NUMBER:

2 **Existing Conditions | Loc 14**
Scale: NTS



3 **Plan View | Loc 14** (see dimensioned setback plans)
Scale: NTS

1 **Rendering Example | Loc 14**
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

GRAPHIC CONSULTANT:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

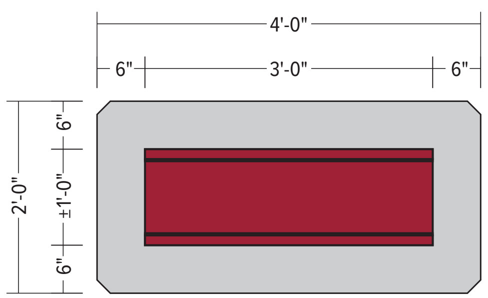
CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.01
Photo Rendering

PAGE NUMBER:



NOTE:
COPY SHOWN FOR TYPICAL SIZING AND SPACING ONLY.

SEE THE MESSAGE SCHEDULE FOR INDIVIDUAL LOCATIONS. PAGES 7.0 - 7.74

KEY

- (A) Item
- (P1) Color

A. Message Panels:
1/8" Aluminum Removable message panels.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Copy and graphics:
Surface applied contour cut reflective vinyl.
Typeface: Agenda Semibold

C. Pattern panel:
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.
Pattern to be surface painted using Gerber paint mask or approved equal.

D. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

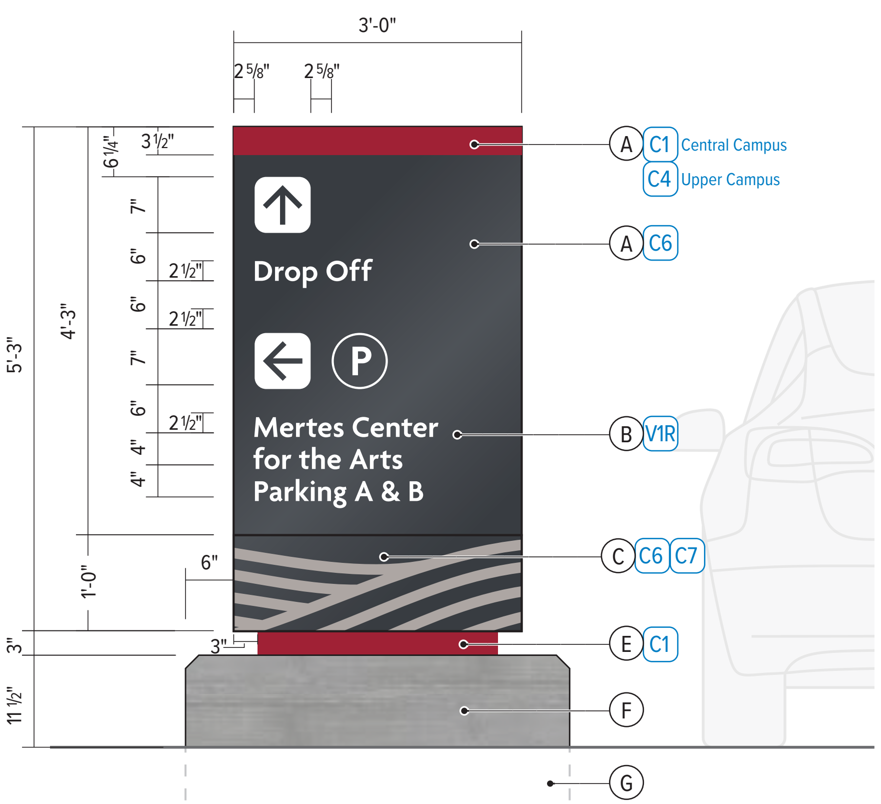
E. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

F. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

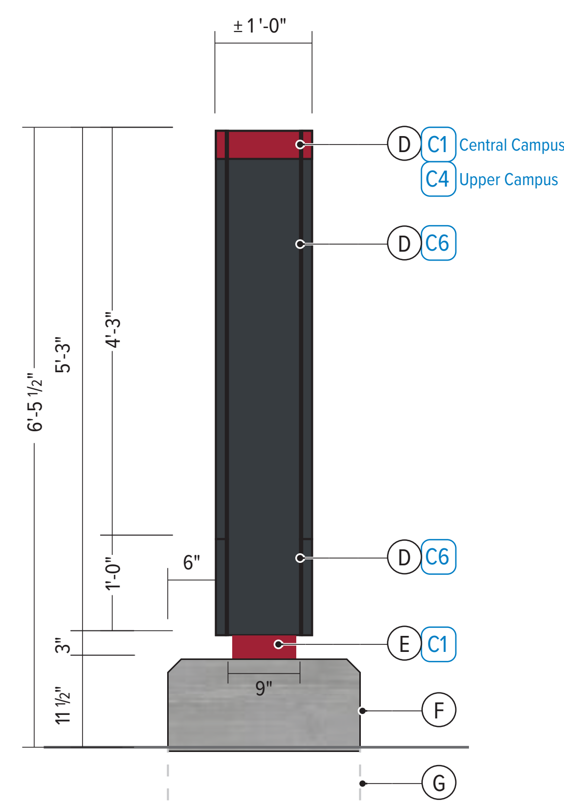
G. Footing / Attachement
(see engineering: SGN2.1 - SGN2.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint.
(including the masked pattern)



1 **Elevation**
Scale: 1/2" = 1'-0"



2 **Side View**
Scale: 1/2" = 1'-0"

GRAPHIC CONSULTANT:

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LAS POSITAS COLLEGE

PROJECT ADDRESS:

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:

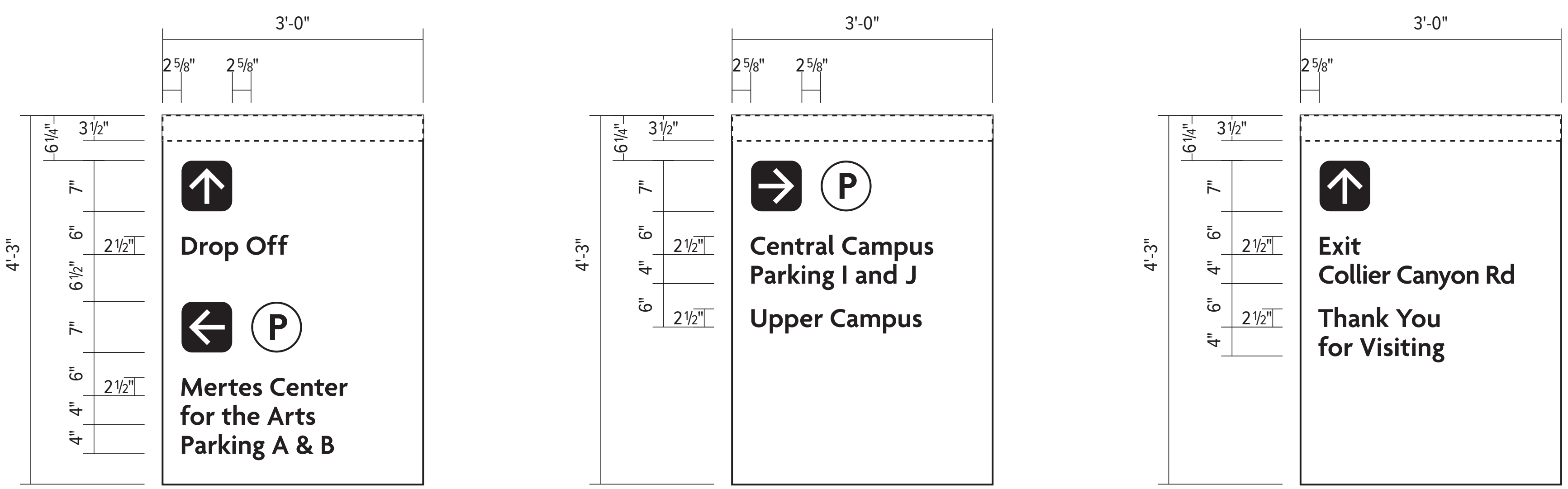
100% Construction Intent
For Construction Intent Only

SHEET TITLE:

EWF.02
Secondary Vehicular Directional Double Sided

PAGE NUMBER:

When Programming Vehicular Directionals:
Primary vehicular destinations are listed first



Example | Loc 03 side A   Example | Loc 03 side B   Example | Loc 04 side B

1 Alternate Copy Layouts
Scale: 1/2" = 1'-0"

GRAPHIC CONSULTANT:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

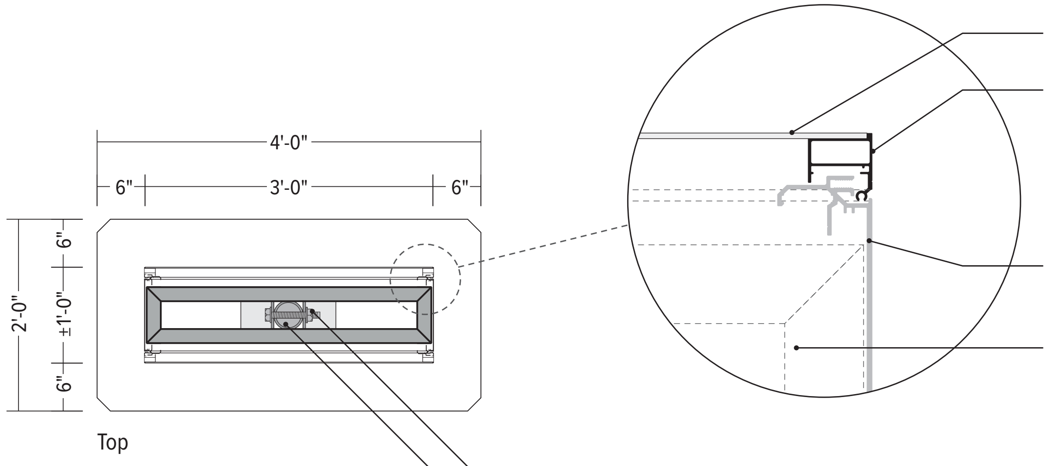
CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.02
Alternate Copy Layouts

PAGE NUMBER:



Top

1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

SignComp or approved equal
Hinge body - **12" Series 12**

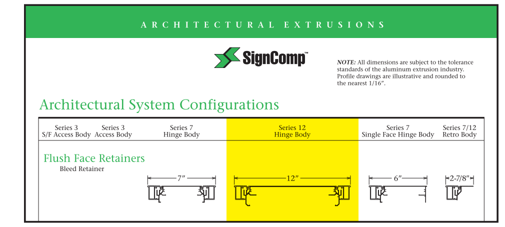
Aluminum rectangular tube frame
(see engineering: SGN2.1 - SGN2.3)

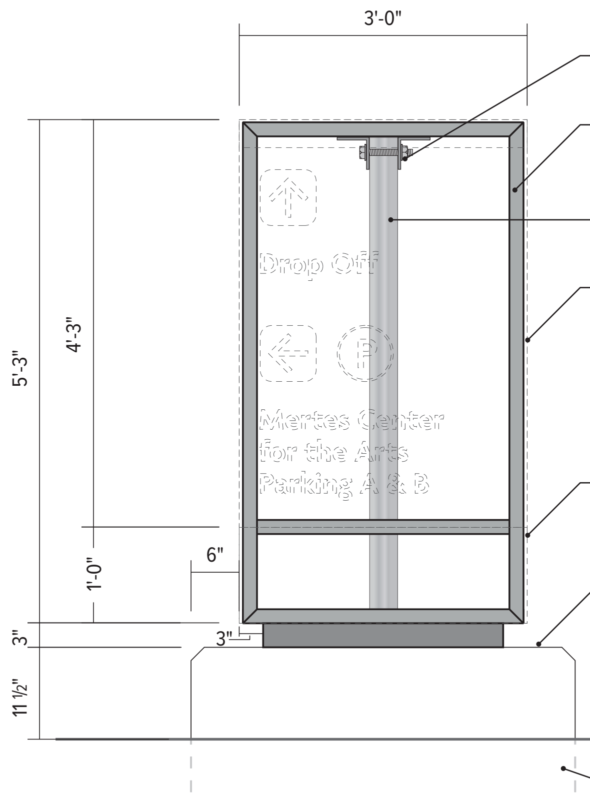
Through bolt aluminum saddles to post

Steel post support
(see engineering: SGN2.1 - SGN2.3)

NOTE:
DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:
SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Through bolt aluminum saddles to post

Aluminum rectangular tube frame
(per engineering)

Steel post support (see engineering: SGN2.1 - SGN2.3)

1/8" Aluminum Removable faces (dotted line).
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Lower Removable Pattern Panel (dotted line)
(see same notes as panel above)

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

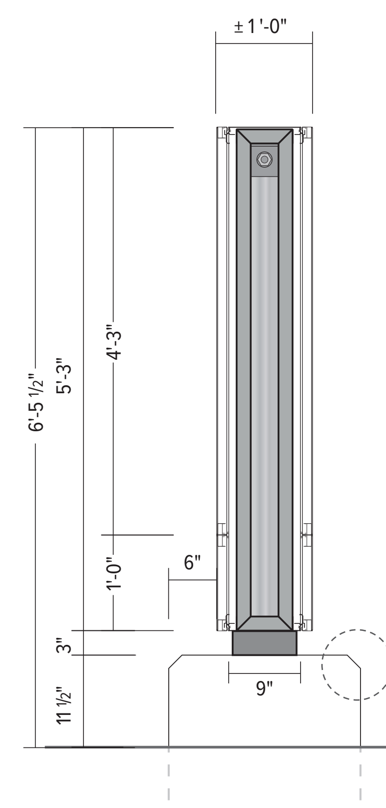
Hardscape conditions - may use anchor attachments to the existing pad. This board formed concrete base would be for aesthetics, keeping the look/feel the same across all locations (softscape or hardscape).

FINISHED GRADE

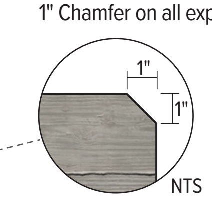
Softscape conditions

Front

NOTE:
CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SGN2.1 - SGN2.3
SEE ENGINEERING & CALCULATIONS SECTION 11.1



Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



NTS

FINISHED GRADE

1 **EWF.02 Fabrication Intent**
Scale: 1/2" = 1'-0"

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CLIENT:
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PROJECT ADDRESS:
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3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

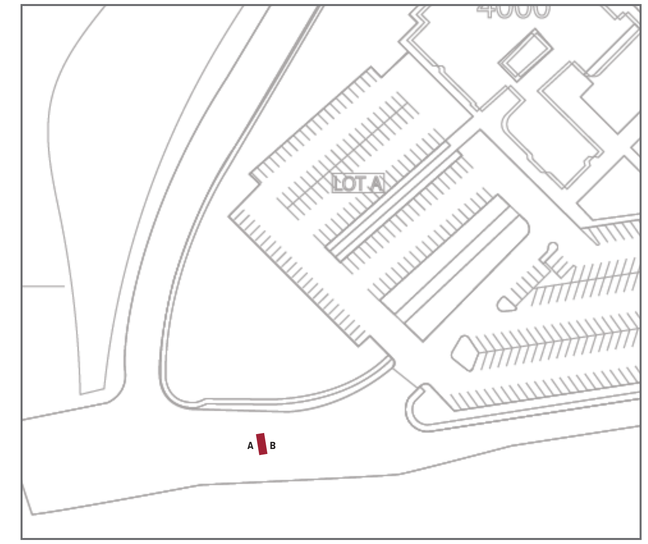
PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent EWF.02

PAGE NUMBER:

General Note:
Reference Engineering Drawings & Calculations in Section 11

2 **Existing Conditions | Loc 03**
Scale: NTS



3 **Plan View | Loc 03** (see dimensioned setback plans)
Scale: NTS

1 **Rendering Example | Loc 03**
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

GRAPHIC CONSULTANT:
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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project

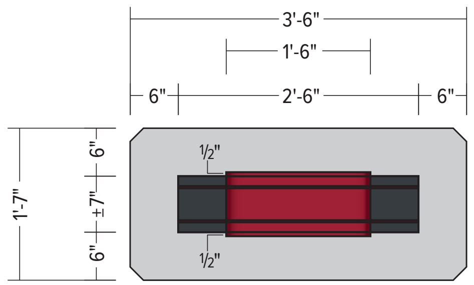
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

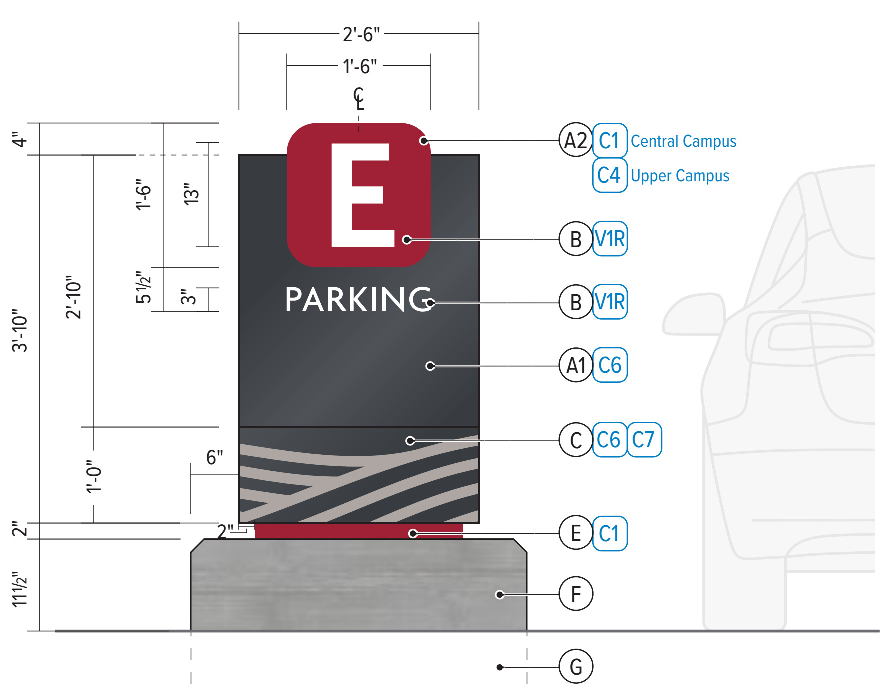
REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

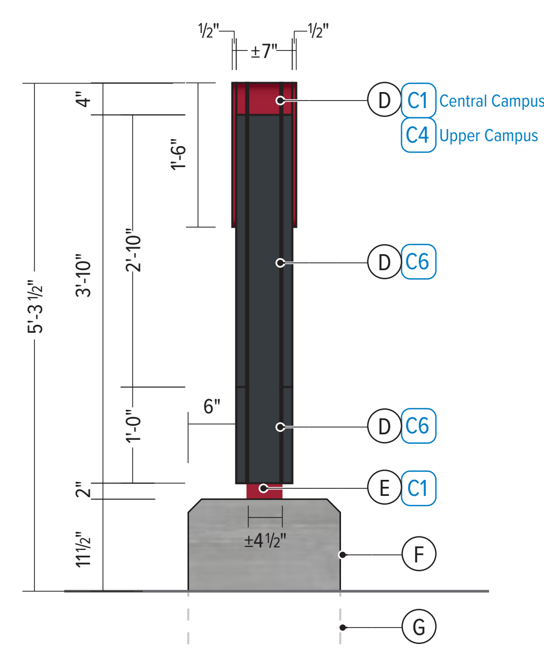
SHEET TITLE:
EWF.02
Photo Rendering



NOTE:
COPY SHOWN FOR TYPICAL SIZING AND SPACING ONLY.
SEE THE MESSAGE SCHEDULE FOR INDIVIDUAL LOCATIONS.



1 **Elevation**
Scale: 1/2" = 1'-0"



2 **Side View**
Scale: 1/2" = 1'-0"

KEY
(A) Item
(P1) Color

A1. Message Panels:
1/8" Aluminum Removable message panels.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

A2. Icon ID Panels:
1/2" Aluminum Removable panels.
Part A2 attached to part A1,
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Copy and graphics:
Surface applied contour cut reflective vinyl.
Typeface: Agenda Semibold and Medium.

C. Pattern panel:
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.
Pattern to be surface painted using Gerber paint mask or approved equal.

D. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

E. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

F. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

G. Footing / Attachement
(see engineering: SGN3.1 - SGN3.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint. (including the masked pattern)

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CLIENT:
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COLLEGE

PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

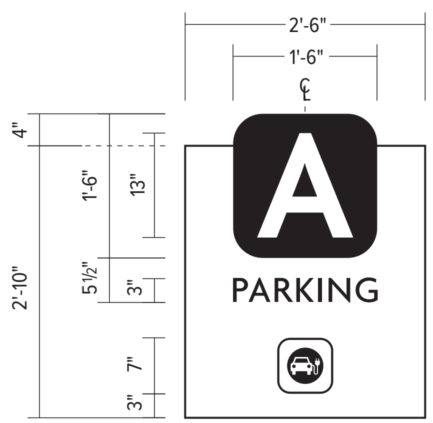
CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

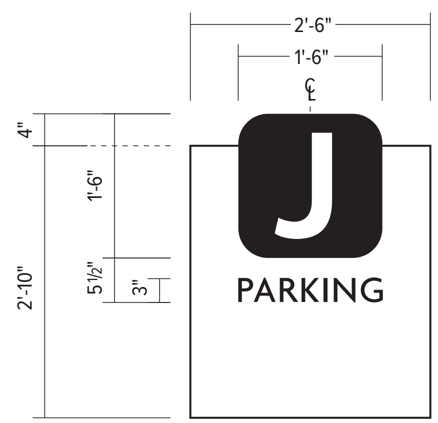
PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
PID.01
Parking Lot ID
Double Sided

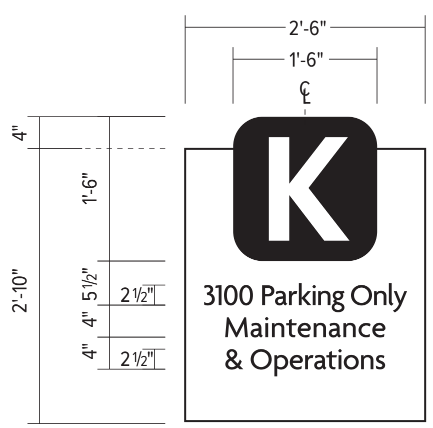
PAGE NUMBER:



Example | Loc 04.1



Example | Loc 31.1



Example | Loc 26

1 Alternate Copy Layouts

Scale: 1/2" = 1'-0"

GRAPHIC CONSULTANT:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

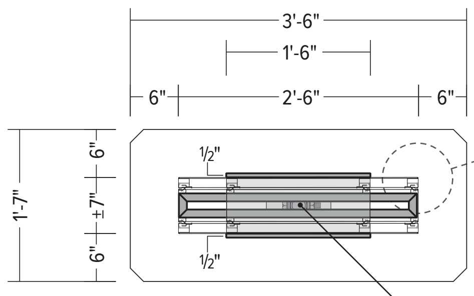
PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

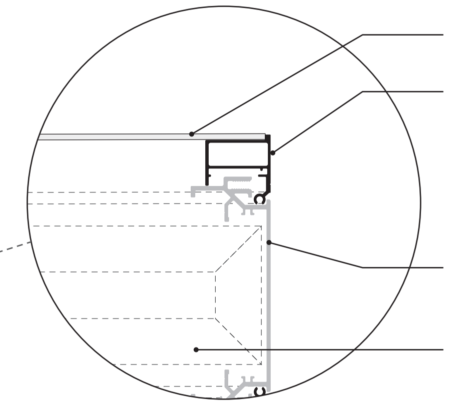
SHEET TITLE:

PID.01
Alternate Copy Layouts

PAGE NUMBER:



Top



1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

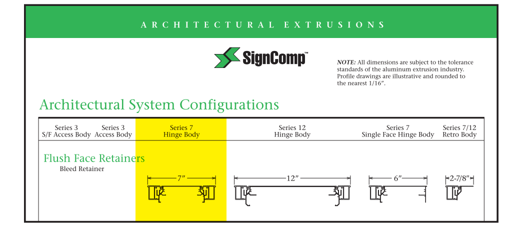
SignComp or approved equal
Hinge body - **7" Series 7**

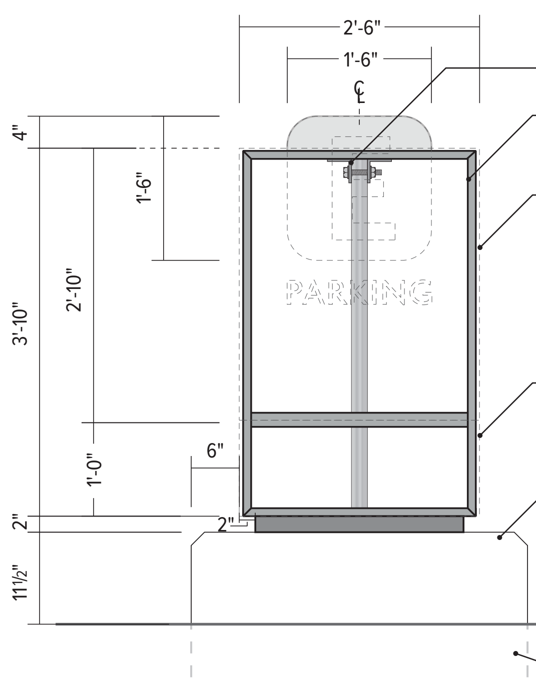
Aluminum rectangular tube frame
(see engineering: SGN3.1 - SGN3.3)

Steel post support
(see engineering: SGN3.1 - SGN3.3)
Through bolt aluminum saddles to post

NOTE:
DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:
SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Steel post support (see engineering: SGN3.1 - SGN3.3)
Through bolt aluminum saddles to post

Aluminum rectangular tube frame
(per engineering)

1/8" Aluminum Removable faces (dotted line).
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Lower Removable Pattern Panel (dotted line)
(see same notes as panel above)

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

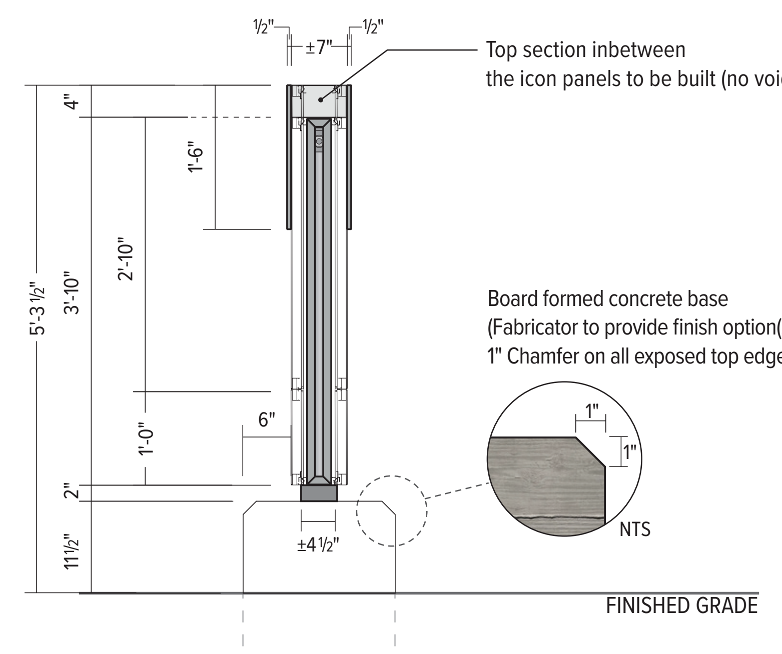
Hardscape conditions - may use anchor attachments to the existing pad. This board formed concrete base would be for aesthetics, keeping the look/feel the same across all locations (softscape or hardscape).

FINISHED GRADE

Softscape conditions

Front

NOTE:
CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SNG3.1 - SGN3.3
SEE ENGINEERING & CALCULATIONS SECTION 11.1



Top section inbetween
the icon panels to be built (no void)

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

FINISHED GRADE

1 **PID.01 Fabrication Intent**
Scale: 1/2" = 1'-0"

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PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

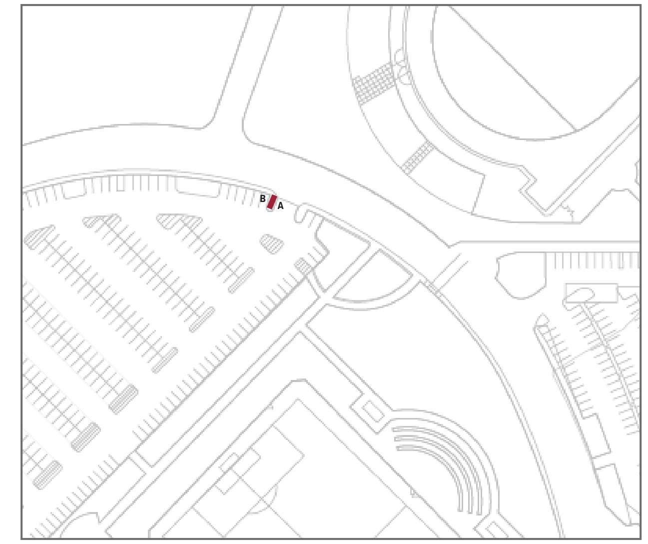
PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent PID.01

PAGE NUMBER:

General Note:
Reference Engineering Drawings & Calculations in Section 11

2 Existing Conditions | Loc 24.1
Scale: NTS



3 Plan View | Loc 24.1 (see dimensioned setback plans)
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

1 Rendering Example | Loc 24.1
Scale: NTS

GRAPHIC CONSULTANT:

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PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

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MV / 2025_0217

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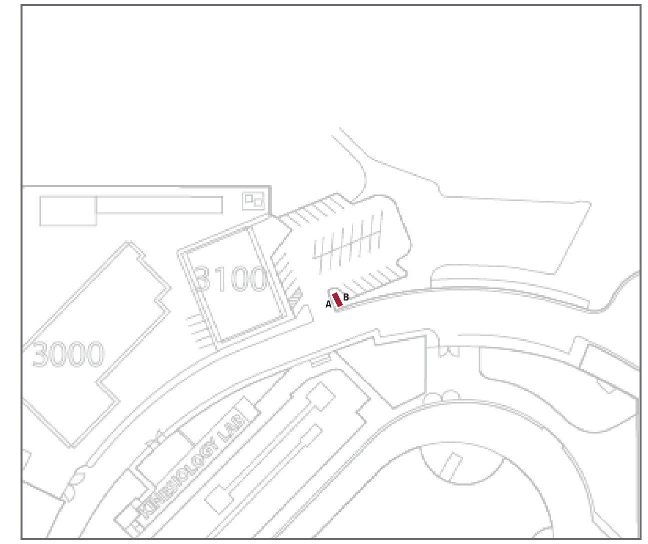
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
PID.01
Photo Rendering

PAGE NUMBER:

2 **Existing Conditions | Loc 26**
Scale: NTS



3 **Plan View | Loc 26** (see dimensioned setback plans)
Scale: NTS

1 **Rendering Example | Loc 26**
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

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MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
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MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
PID.01
Photo Rendering

PAGE NUMBER:

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PROJECT NAME:

Exterior Wayfinding Project

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MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
PID.02
Pole Mount
Parking Lot ID

PAGE NUMBER:

[Intentionally Blank]

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PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
PID.02
Alternate Copy Layouts

PAGE NUMBER:

[Intentionally Blank]

GRAPHIC CONSULTANT:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent PID.02

PAGE NUMBER:

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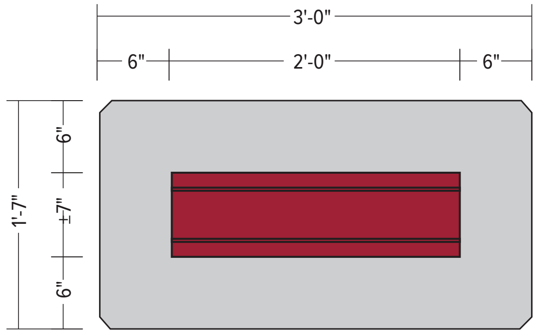


KEY
(A) Item
(P1) Color

A. Message Panels:
1/8" Aluminum Removable message panels.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Copy and graphics:
Surface applied contour cut reflective vinyl.
Typeface: Agenda Regular.

C. Pattern panel:
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.
Pattern to be surface painted using Gerber paint mask or approved equal.

D. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

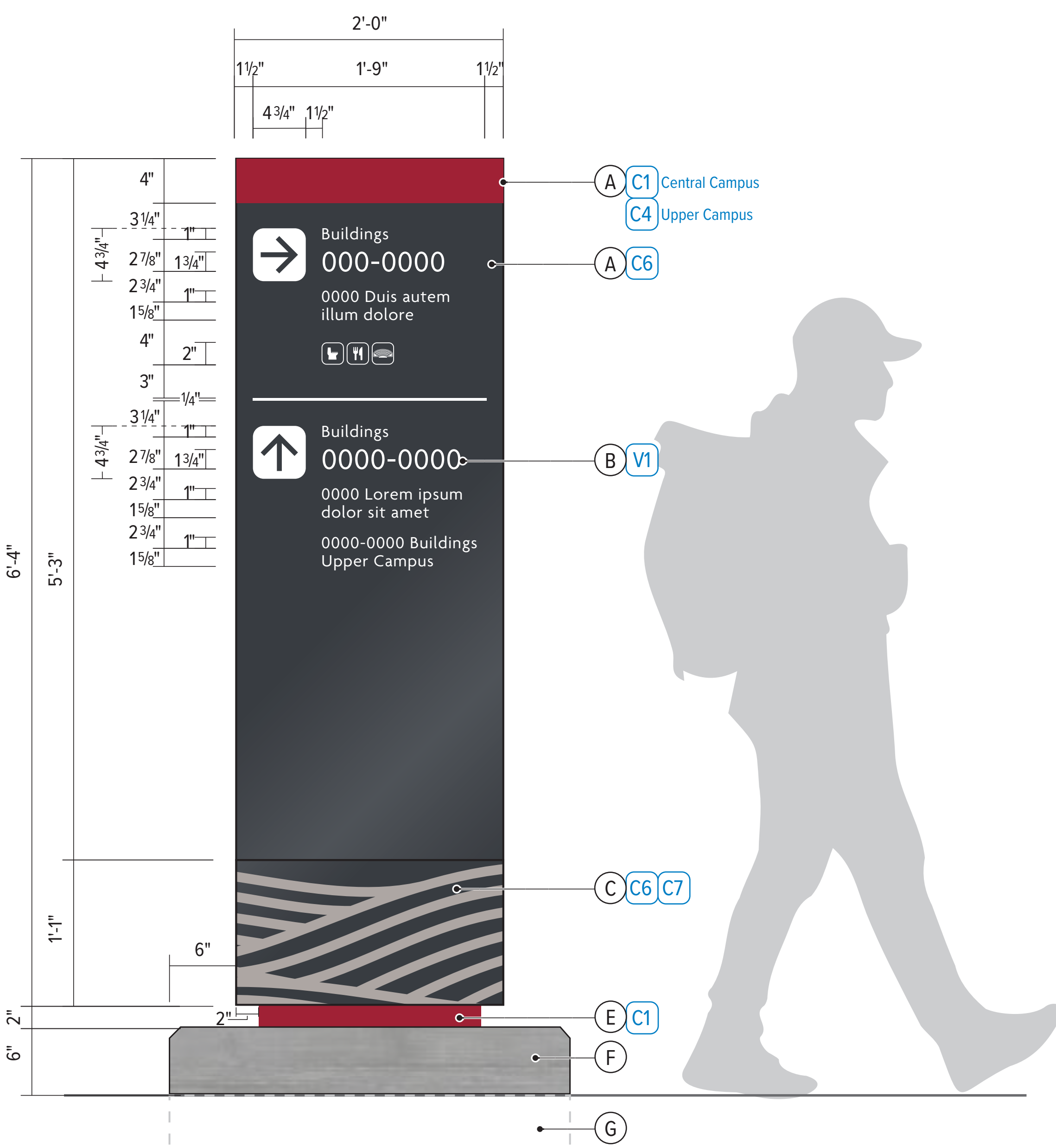
E. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

F. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

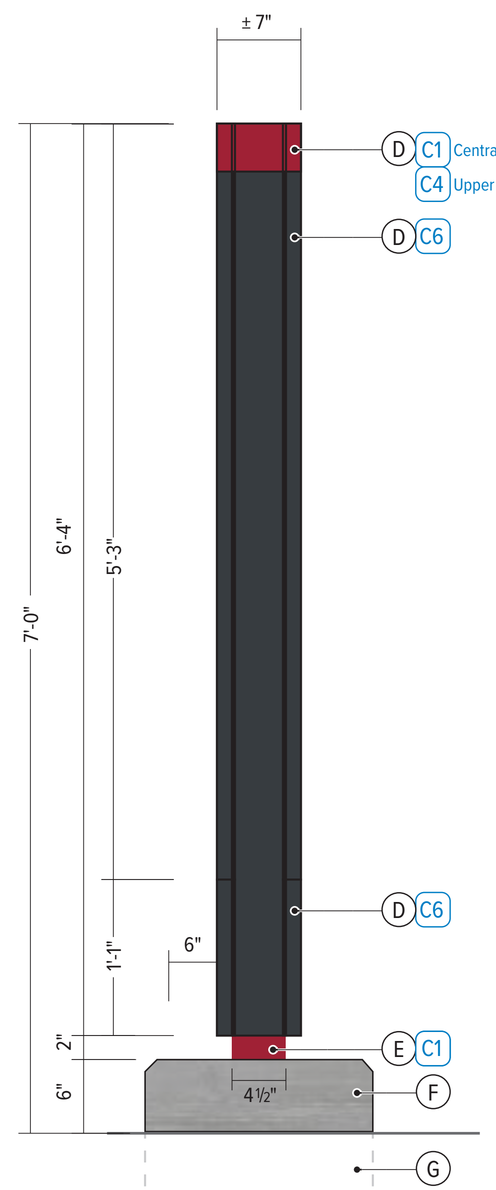
G. Footing / Attachement
(see engineering: SGN5.1 - SGN5.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint. (including the masked pattern)



1 Elevation
Scale: 3/4" = 1'-0"



2 Side View
Scale: 3/4" = 1'-0"

GRAPHIC CONSULTANT:

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Las Positas College
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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

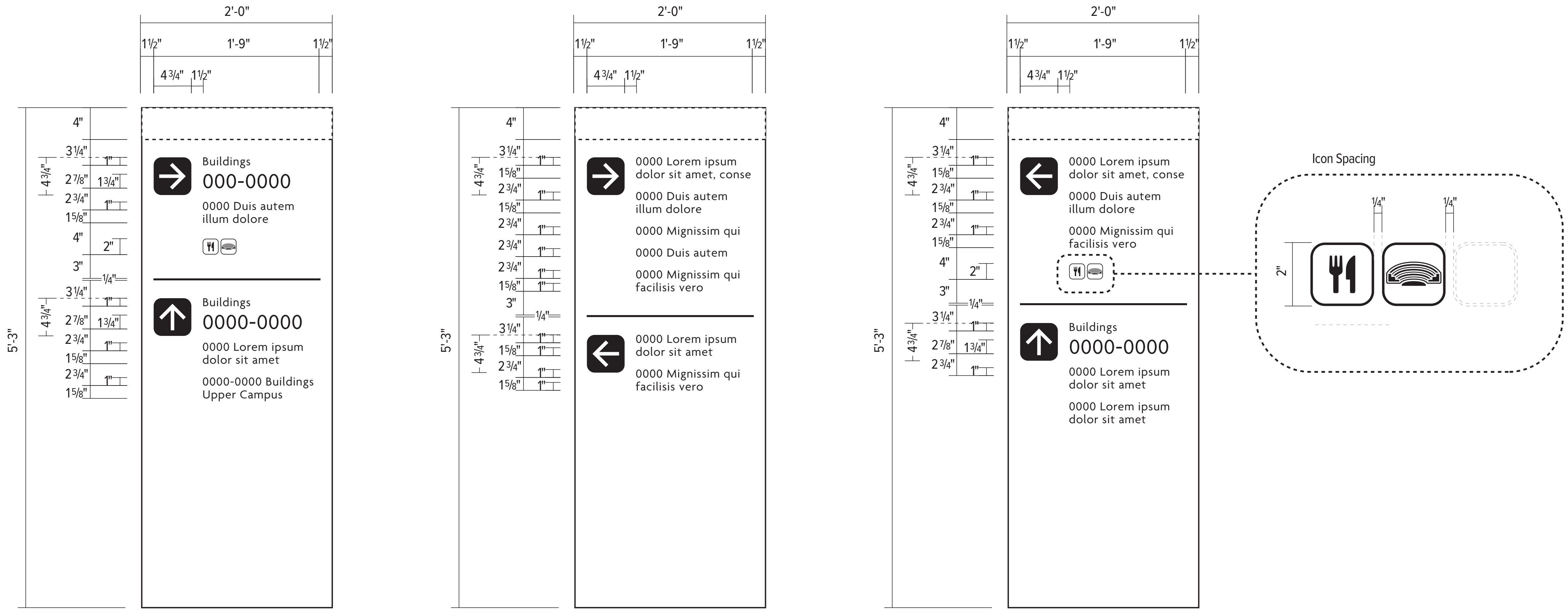
REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.10
Primary Pedestrian Directional Double Sided

PAGE NUMBER:

When Programming
Pedestrian Directionals:
Use Arrow sequence →, ←, ↑



1 Alternate Copy Layouts
Scale: 3/4" = 1'-0"

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Exterior Wayfinding Project

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MV / 2025_0217

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MV 2025_0313
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MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

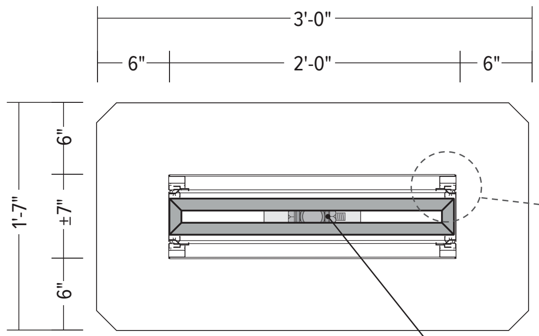
PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

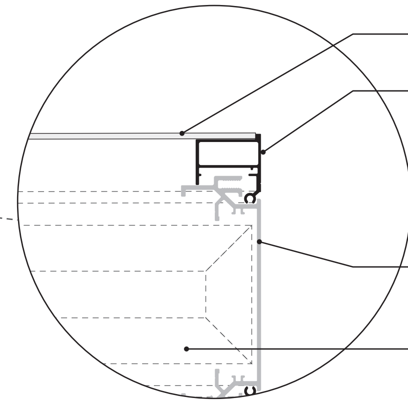
SHEET TITLE:

EWF.10
Alternate Copy Layouts

PAGE NUMBER:



Top



1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

SignComp or approved equal
Hinge body - **7" Series 7**

Aluminum rectangular tube frame
(see engineering: SGN5.1 - SGN5.3)

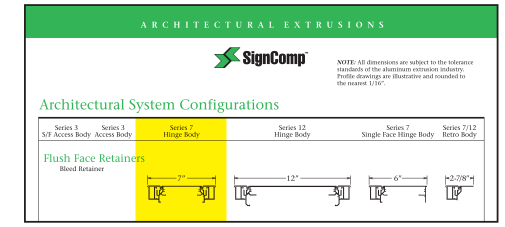
Steel post support
(see engineering: SGN5.1 - SGN5.3)
Through bolt aluminum saddles to post

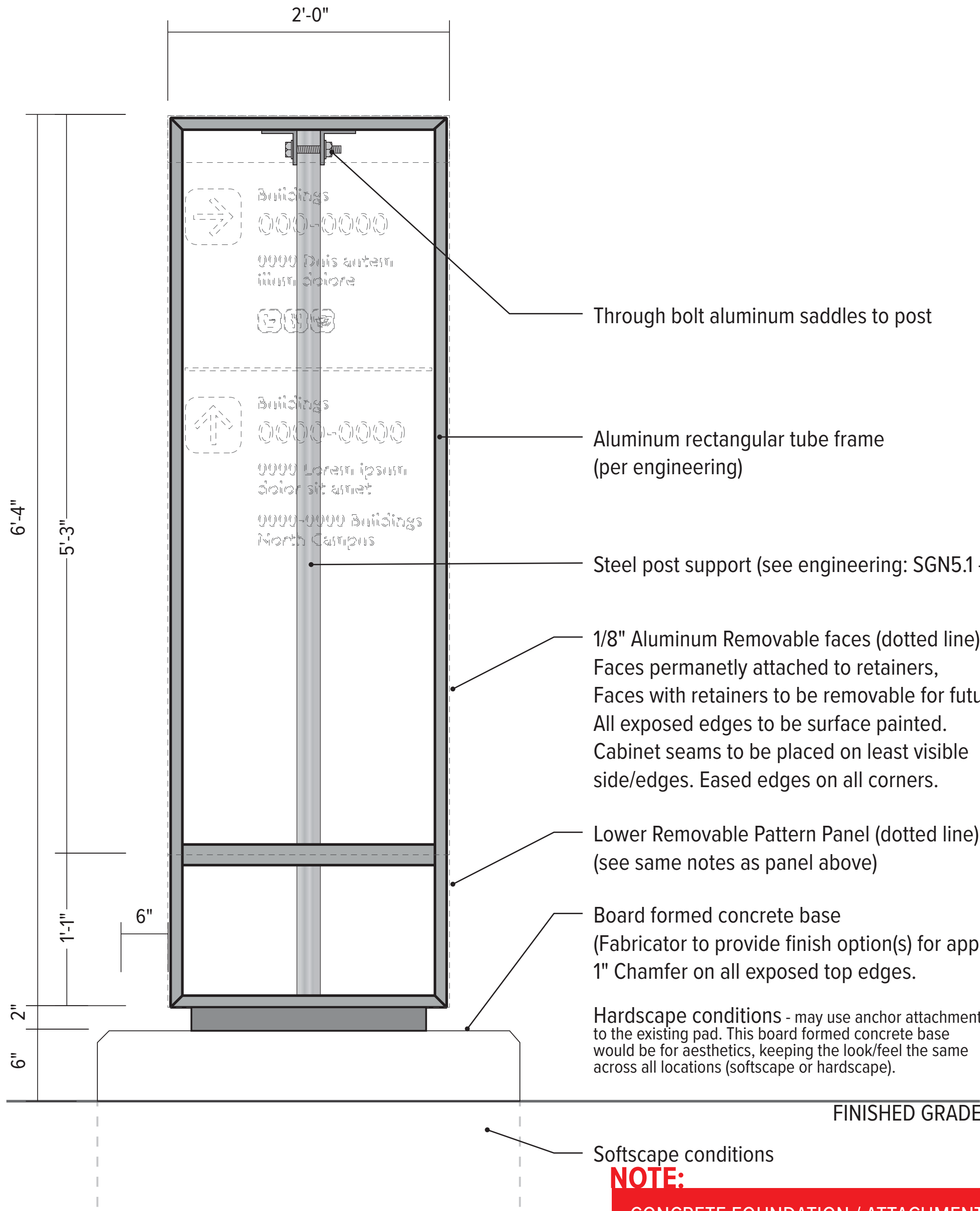
NOTE:

DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:

SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Through bolt aluminum saddles to post

Aluminum rectangular tube frame
(per engineering)

Steel post support (see engineering: SGN5.1 - SGN5.3)

1/8" Aluminum Removable faces (dotted line).
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Lower Removable Pattern Panel (dotted line)
(see same notes as panel above)

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

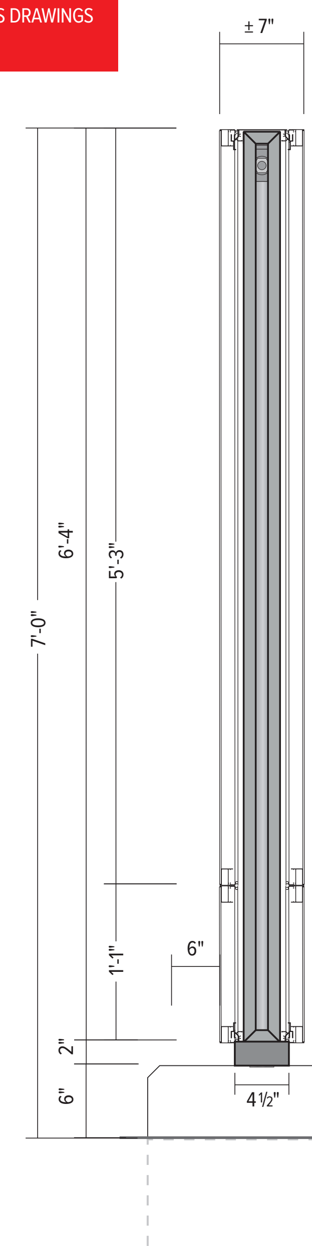
Hardscape conditions - may use anchor attachments to the existing pad. This board formed concrete base would be for aesthetics, keeping the look/feel the same across all locations (softscape or hardscape).

Softscape conditions

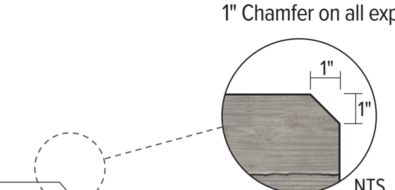
Front

NOTE:

CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SGN5.1 - SGN5.3
SEE ENGINEERING & CALCULATIONS SECTION 11.1



Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



1 **EWF.10 Fabrication Intent**
Scale: 3/4" = 1'-0"

GRAPHIC CONSULTANT:

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CLIENT:

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PROJECT ADDRESS:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

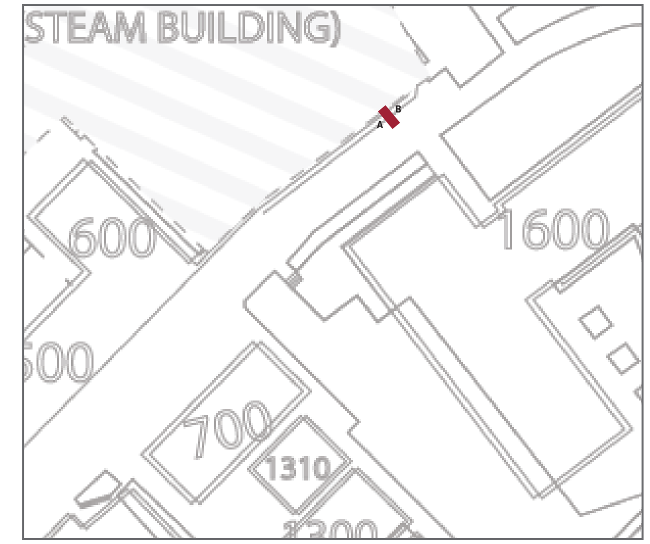
SHEET TITLE:

Fabrication Intent EWF.10

PAGE NUMBER:

General Note:
Reference Engineering Drawings & Calculations in Section 11

2 **Existing Conditions | Loc 139**
Scale: NTS



3 **Plan View | Loc 139** (see dimensioned setback plans)
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement
(see dimensioned setback plans)
Pages 4.0 - 4.12

1 **Rendering Example | Loc 139**
Scale: NTS

GRAPHIC CONSULTANT:
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ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

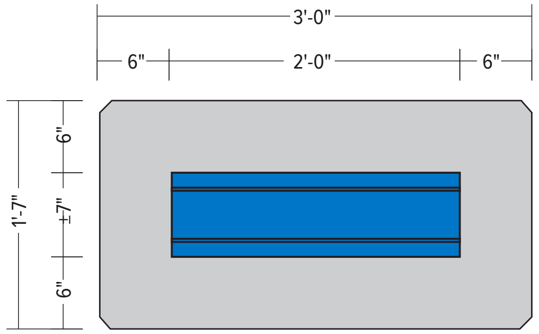
CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.10
Photo Rendering

PAGE NUMBER:



KEY

(A) Item

(P1) Color

A. Message Panels:
1/8" Aluminum Removable message panels.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Copy and graphics:
Surface applied contour cut reflective vinyl.
Typeface: Agenda Regular.

C. Pattern panel:
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.
Pattern to be surface painted using Gerber paint mask or approved equal.

D. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

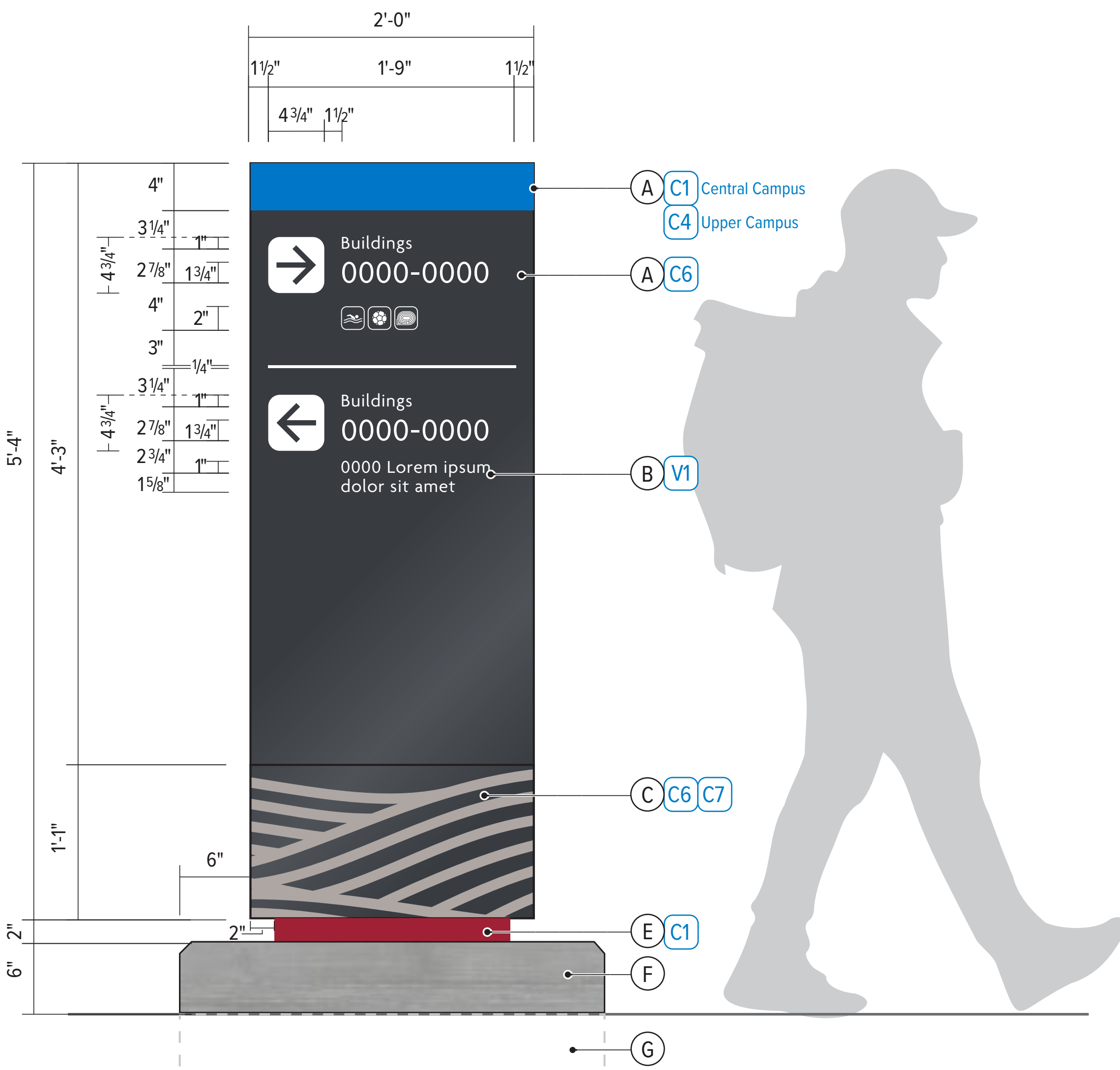
E. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

F. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

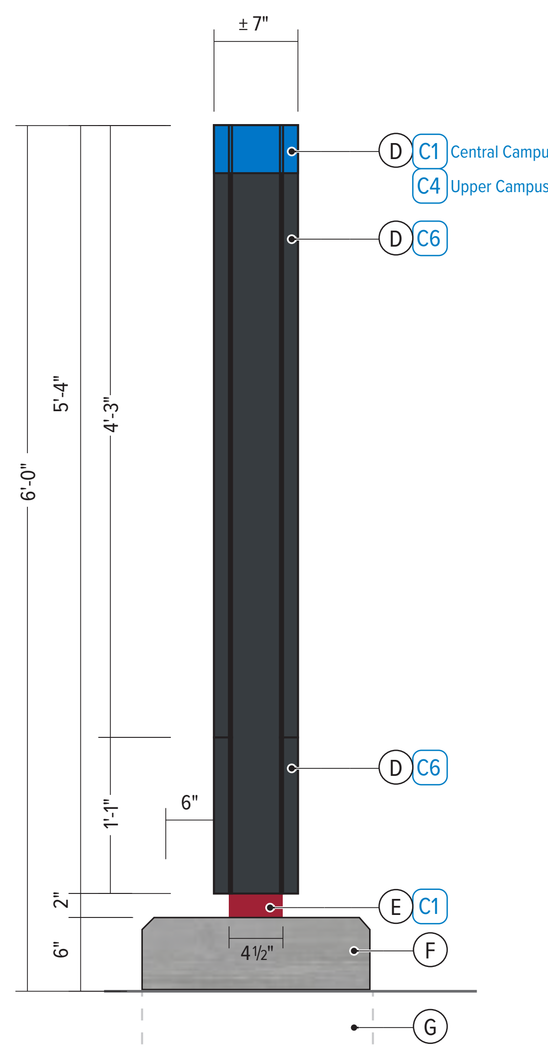
G. Footing / Attachement
(see engineering: SGN6.1 - SGN6.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint.
(including the masked pattern)



1 Elevation
Scale: 3/4" = 1'-0"



2 Side View
Scale: 3/4" = 1'-0"

GRAPHIC CONSULTANT:

SHANNON LEIGH
STRATEGIC PLACEMAKING

1455 Hays Street San Leandro, CA 94577
510.969.7870 info@shannonleigh.net

CLIENT:

LAS POSITAS COLLEGE

PROJECT ADDRESS:

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:

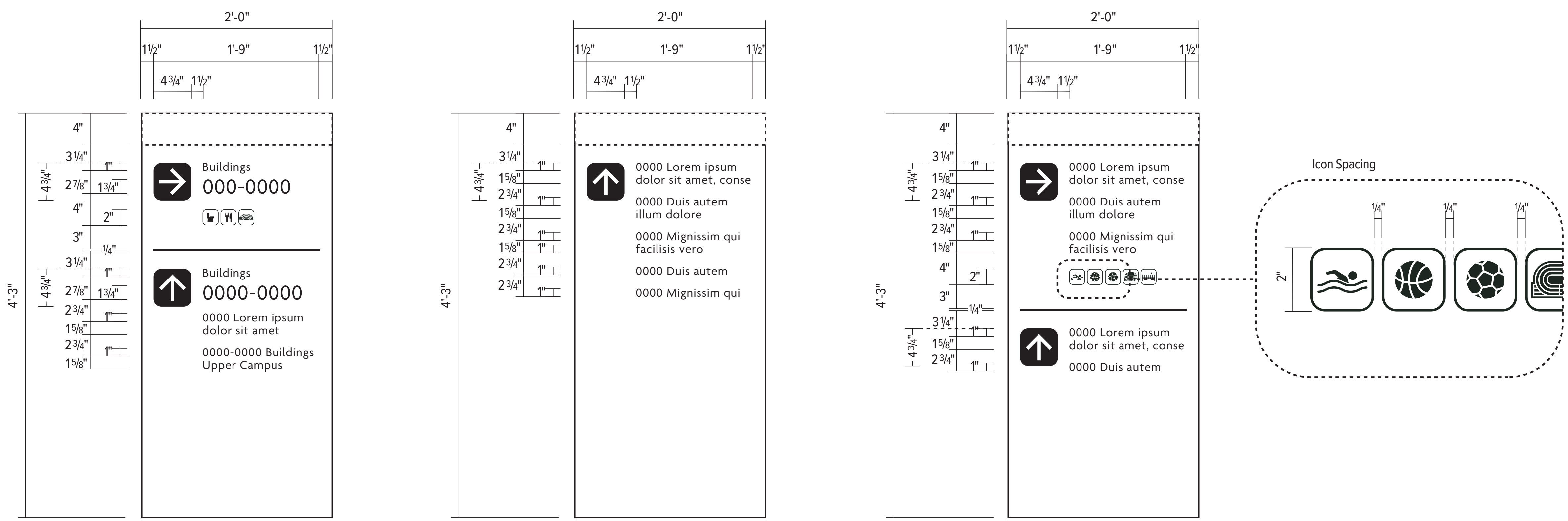
100% Construction Intent
For Construction Intent Only

SHEET TITLE:

EWF.11
Secondary Pedestrian Directional Double Sided

PAGE NUMBER:

When Programming
Pedestrian Directionals:
Use Arrow sequence →, ←, ↑



1 **Alternate Copy Layouts**
Scale: 3/4" = 1'-0"

GRAPHIC CONSULTANT:

SHANNON LEIGH
STRATEGIC PLACEMAKING

1455 Hays Street San Leandro, CA 94577
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CLIENT:

LAS POSITAS COLLEGE

PROJECT ADDRESS:

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3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

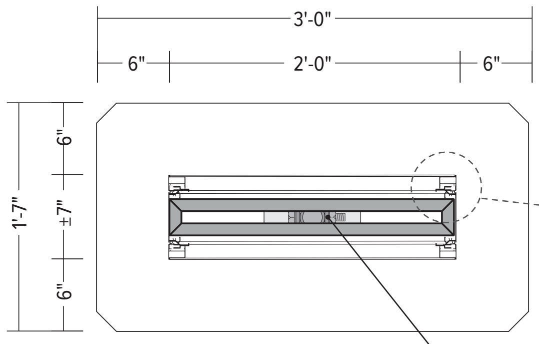
PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

SHEET TITLE:

EWF.11
Alternate Copy Layouts

PAGE NUMBER:



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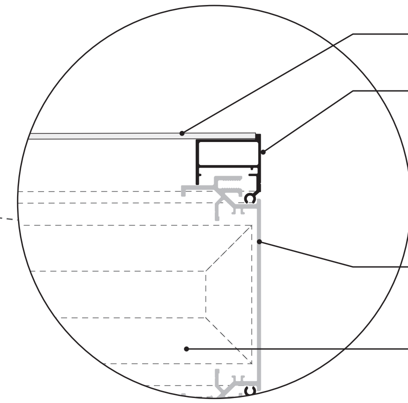


1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

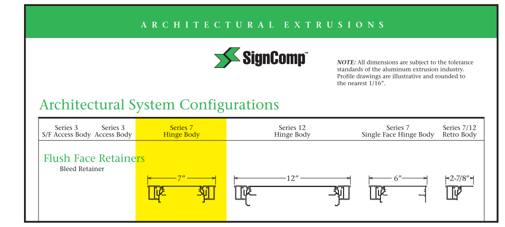
SignComp or approved equal
Hinge body - **7" Series 7**

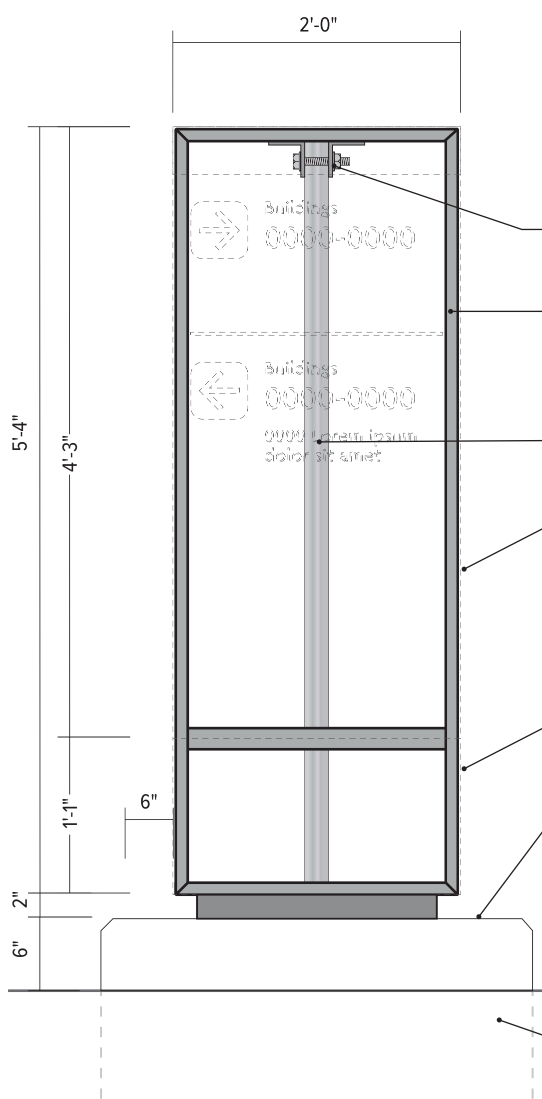
Aluminum rectangular tube frame
(see engineering: SGN6.1 - SGN6.3)

Steel post support
(see engineering: SGN6.1 - SGN6.3)
Through bolt aluminum saddles to post

NOTE:
DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:
SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Through bolt aluminum saddles to post

Aluminum rectangular tube frame
(per engineering)

Steel post support (see engineering: SGN6.1 - SGN6.3)

1/8" Aluminum Removable faces (dotted line).
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Lower Removable Pattern Panel (dotted line)
(see same notes as panel above)

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

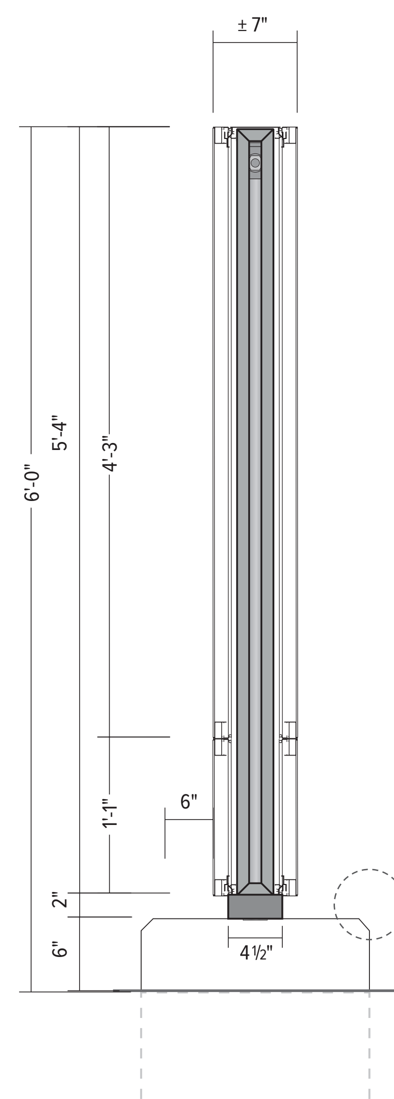
Hardscape conditions - may use anchor attachments to the existing pad. This board formed concrete base would be for aesthetics, keeping the look/feel the same across all locations (softscape or hardscape).

FINISHED GRADE

Softscape conditions

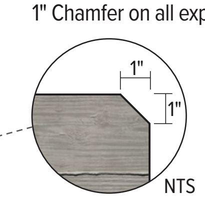
Front

NOTE:
CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SGN6.1 -SGN6.3
SEE ENGINEERING & CALCULATIONS SECTION 11.1



FINISHED GRADE

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



NTS

1 **EWF.11 Fabrication Intent**
Scale: 3/4" = 1'-0"

GRAPHIC CONSULTANT:
SHANNON LEIGH
STRATEGIC PLACEMAKING
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510.969.7870 info@shannonleigh.net

CLIENT:
LAS POSITAS COLLEGE

PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

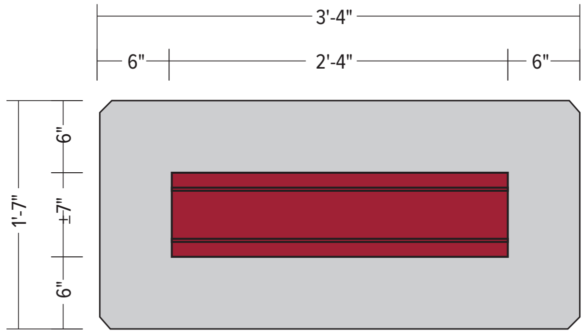
REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent EWF.11

PAGE NUMBER:

General Note:
Reference Engineering Drawings & Calculations in Section 11



KEY
(A) Item
(P1) Color

A. Brand / Logo Panel:
1/8" Aluminum Removable message panels.
Logo to be direct digitally printed.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Map Panel:
1/8" Aluminum Removable message panels.
Map and all copy to be direct digitally printed to match project colors.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

C. Directory Message Panel:
1/8" Aluminum Removable message panels.
All Graphics and copy to be direct digitally printed to match project colors.
Faces to be removable for future updates.
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.

D. Pattern panel:
All exposed edges to be surface painted.
All hardware to be concealed, no exposed seams or fasteners on sign faces.
Pattern to be surface painted using Gerber paint mask or approved equal.

E. SignComp or approved equal:
Hinge body paired with flush face bleed body retainers.
All exposed edges and hardware to be surface painted.

F. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

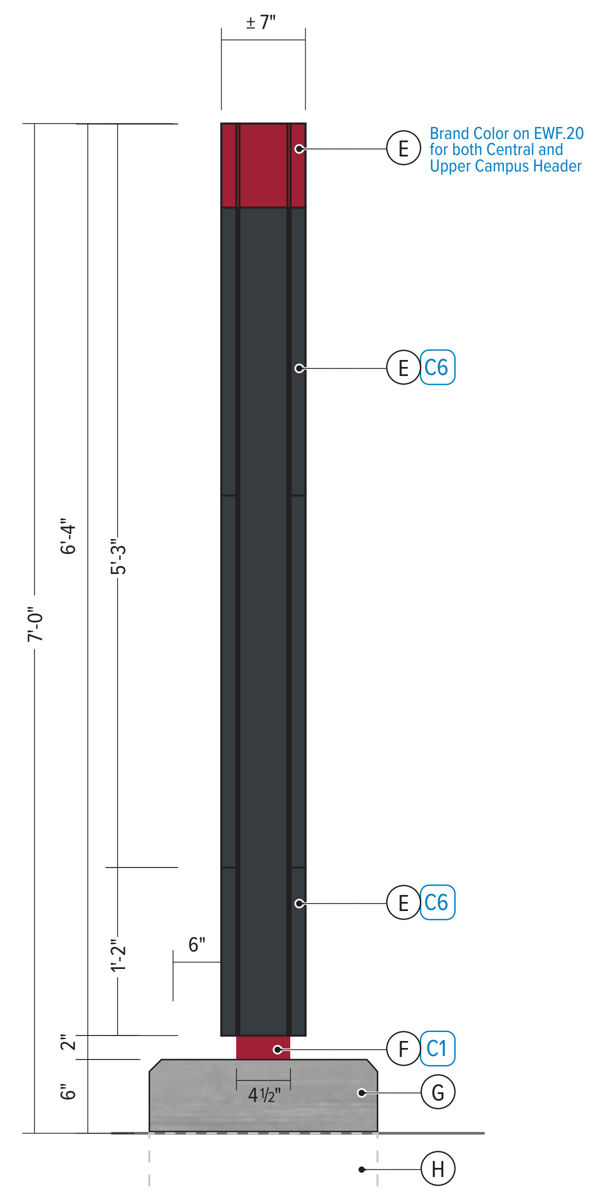
G. Board formed concrete base.
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

H. Footing / Attachement
(see engineering: SGN4.1 - SGN4.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint.
(including the masked pattern)

1 Elevation
Scale: 3/4" = 1'-0"



2 Side View
Scale: 3/4" = 1'-0"

GRAPHIC CONSULTANT:

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CLIENT:

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COLLEGE

PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.20
Orientation Directory Map Double Sided

PAGE NUMBER:

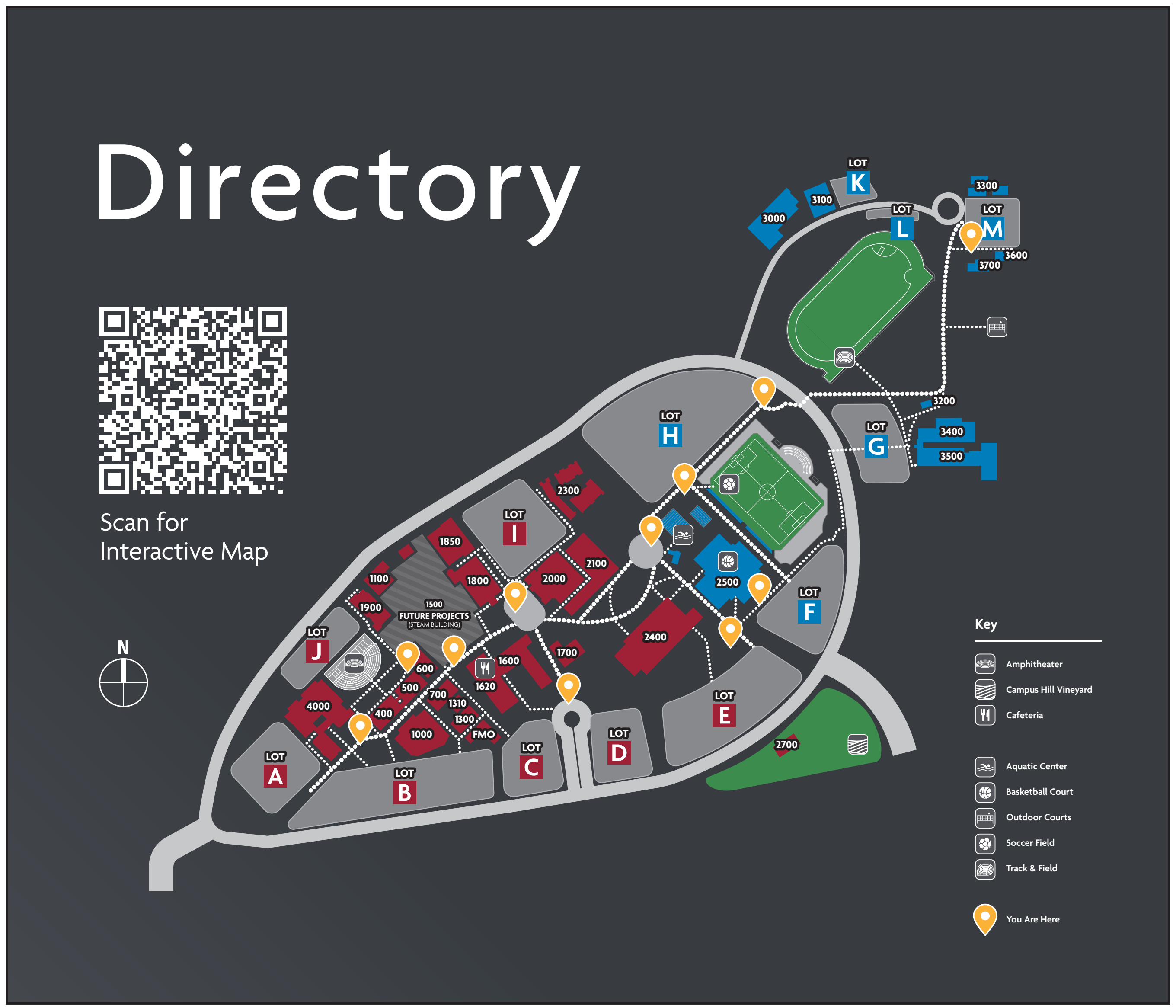
Phase 1 with temp vinyl (const. zone)

2'-4"

2 1/4"

1 13/16"

2'-0"



The Future Projects construction zone will be a temp low adhesion vinyl overlay (removable)

When the temp vinyl is removed, the final building footprint for building 1500 will be revealed.

LPC to provide the new footprint to match the as-built for the Future STEAM project prior to campus map production

SL currently showing all YOU ARE HERE icons to confirm fitment.

Only one single You Are Here icon per map location.

1 **Map Detail**
Scale: 3" = 1'-0"

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PROJECT ADDRESS:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.20
Map Detail

PAGE NUMBER:

Phase 2 - new building 1500 and path (removed temp vinyl)

The Future Projects construction zone will be a temp low adhesion vinyl overlay (removable)

When the temp vinyl is removed, the final building footprint for building 1500 will be revealed.

LPC to provide the new footprint to match the as-built for the Future STEAM project prior to campus map production

SL currently showing all YOU ARE HERE icons to confirm fitment.

Only one single You Are Here icon per map location.

1 | **Map Detail**
Scale: 3" = 1'-0"

GRAPHIC CONSULTANT:
SHANNON LEIGH
STRATEGIC PLACEMAKING
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CLIENT:
LAS POSITAS COLLEGE

PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.20
Map Detail

PAGE NUMBER:

2'-4"

2'-7"

30pt at full size

Central Campus

400	Middle College
500	Classroom Building
600	Journalism & Media Studies
700	Graphic Design & Digital Media, Photography Lab & Studio
1000	Classroom Building
1100	Central Utility Plant
1300	Classroom Building
1310	Veterans Resource Center
1500	STEAM
1600	Student Services & Administration
1620	Cafeteria
1700	Campus Safety, Health Center & Mail Room
1800	Science Technology Center 1
1850	Science Technology Center 2
1900	Information Technology Services
2000	Library
2100	Academic Support & Faculty Offices
2300	Child Development Center
2400	Multi-Disciplinary Education Building
2700	Campus Hill Vineyard
4000	Mertes Center for the Arts
FMO	Facilities Management Office

Upper Campus

2500	Physical Education Complex
2600	Aquatic Center
3000	Shipping / Receiving
3100	Maintenance & Operations
3200	Field House
3300	Horticulture
3400	Public Safety Training Complex
3500	Advanced Manufacturing & Transportation
3500	SMOG / State Referee
3600	Viticulture & Enology
3700	Campus Hill Winery

1 Directory Copy Detail
Scale: 3" = 1'-0"

GRAPHIC CONSULTANT:
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CLIENT:
LAS POSITAS COLLEGE

PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

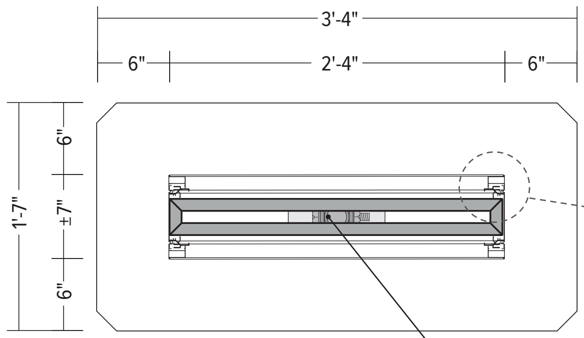
PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

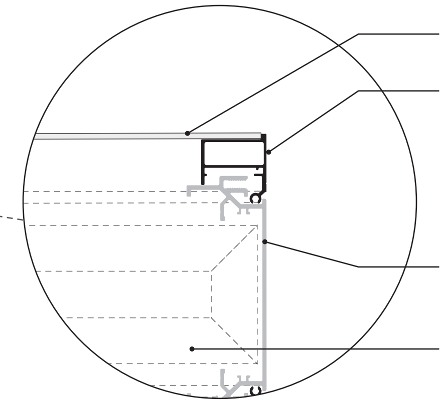
REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EWF.20
Directory Copy Detail



Top



1/8" Aluminum

SignComp or approved equal
Flush face Bleed body retainers
All hardware to be concealed,
no exposed fasteners on sign faces.
Hardware painted to match sign cabinet

SignComp or approved equal
Hinge body - **7" Series 7**

Aluminum rectangular tube frame
(see engineering: SGN4.1 - SGN4.3)

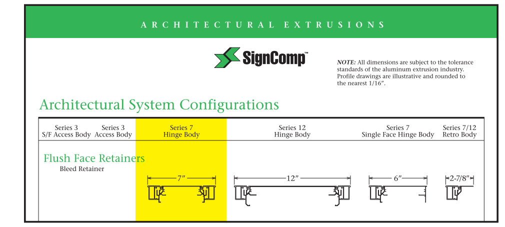
Steel post support
(see engineering: SGN4.1 - SGN4.3)
Through bolt aluminum saddles to post

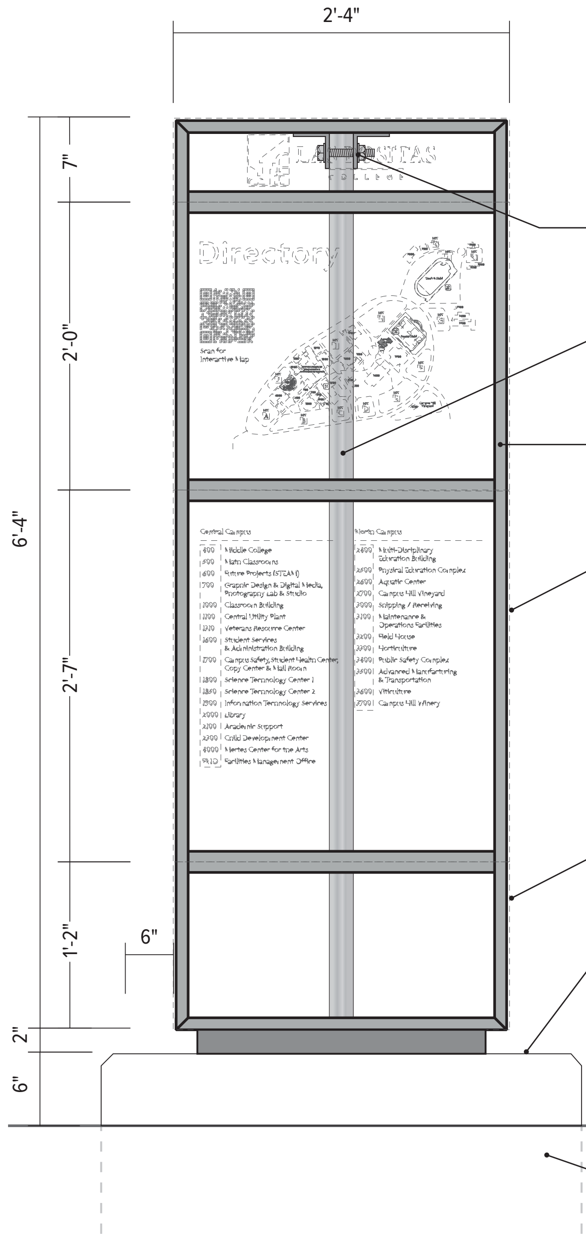
NOTE:

DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

NOTE:

SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.





Through bolt aluminum saddles to post

Steel post support (see engineering: SGN4.1 - SGN4.3)

Aluminum rectangular tube frame
(per engineering)

1/8" Aluminum Removable faces (dotted line).
Faces permanetly attached to retainers,
Faces with retainers to be removable for future updates.
All exposed edges to be surface painted.
Cabinet seams to be placed on least visible side/edges. Eased edges on all corners.

Lower Removable Pattern Panel (dotted line)
(see same notes as panel above)

Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.

Hardscape conditions - may use anchor attachments to the existing pad. This board formed concrete base would be for aesthetics, keeping the look/feel the same across all locations (softscape or hardscape).

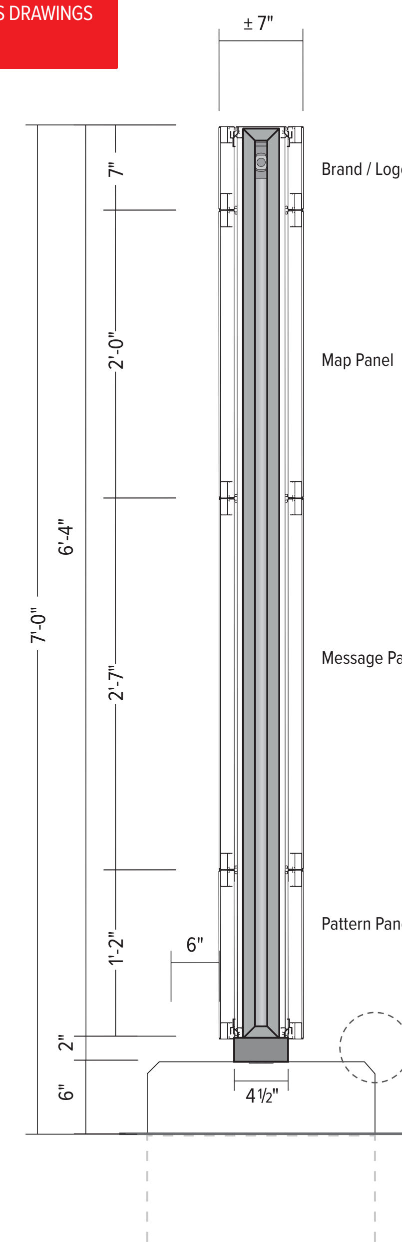
FINISHED GRADE

Softscape conditions

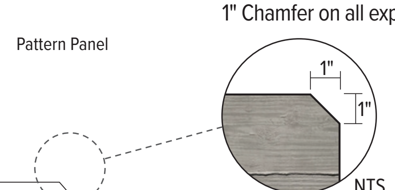
Front

NOTE:

CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SGN4.1 - SGN4.3
SEE ENGINEERING & CALCULATIONS SECTION 11.1



Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



FINISHED GRADE

1 **EWF.20 Fabrication Intent**
Scale: 3/4" = 1'-0"

GRAPHIC CONSULTANT:
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STRATEGIC PLACEMAKING
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510.969.7870 info@shannonleigh.net

CLIENT:
LAS POSITAS COLLEGE

PROJECT ADDRESS:
Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:
Exterior Wayfinding Project
Job# 3738

CREATED BY / DATE:
MV / 2025_0217

REVISIONS BY / DATE / NOTES:
MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent EWF.20

General Note:
Reference Engineering Drawings & Calculations in Section 11

2 Existing Conditions | Loc 151
Scale: NTS

3 Plan View | Loc 151 (see dimensioned setback plans)
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement (see dimensioned setback plans) Pages 4.0 - 4.12

1 Rendering Example | Loc 151
Scale: NTS

GRAPHIC CONSULTANT:

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CLIENT:

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Livermore, CA 94551

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Exterior Wayfinding Project

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MV 2025_0123

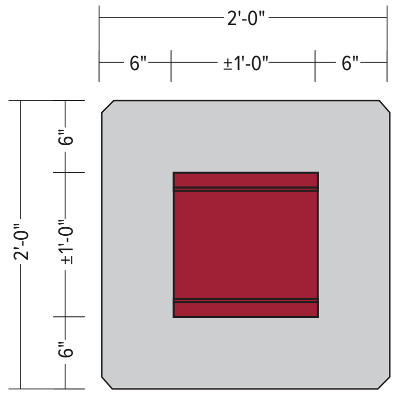
PROJECT PHASE:

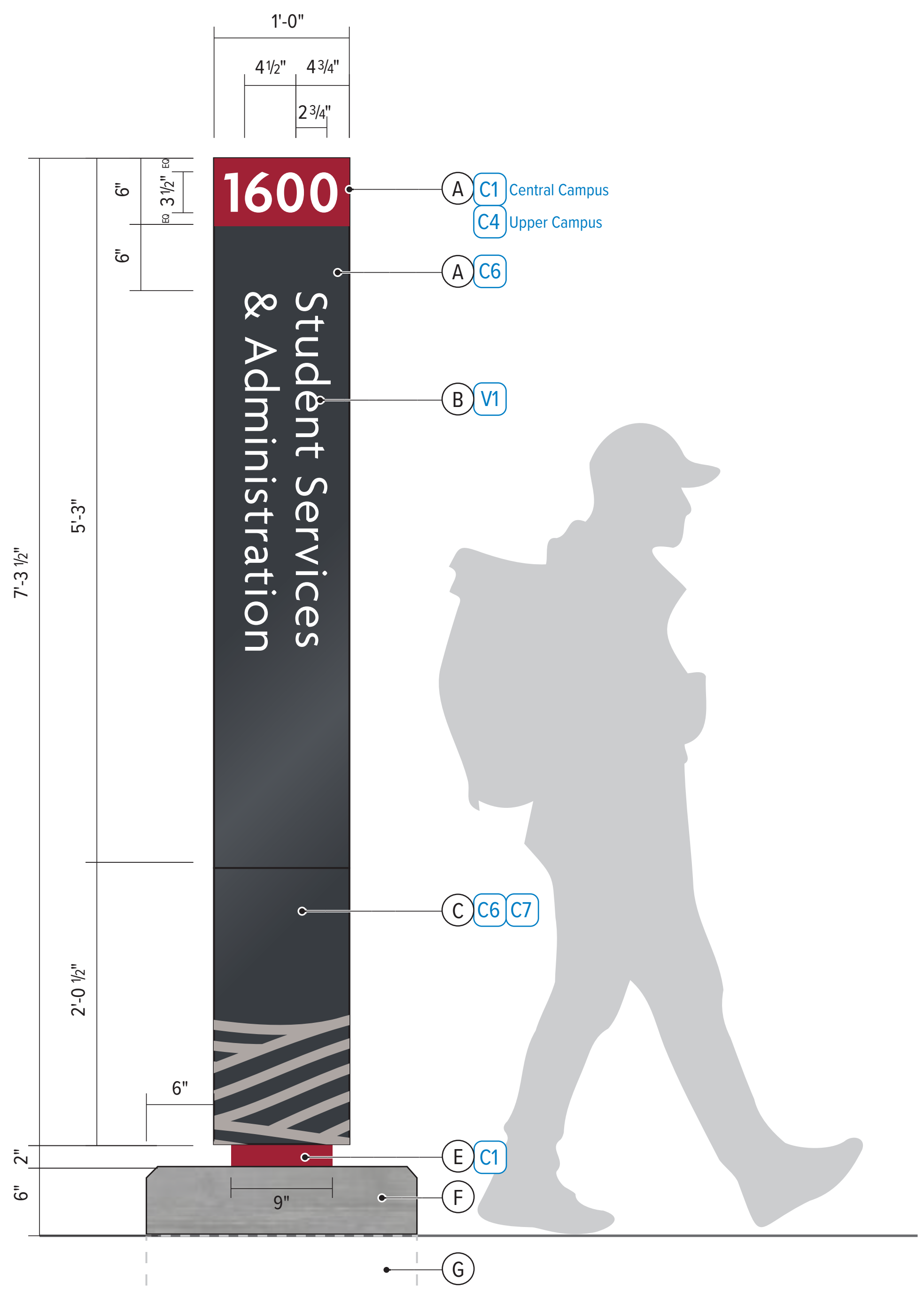
100% Construction Intent
For Construction Intent Only

SHEET TITLE:

EWF.20
Photo Rendering

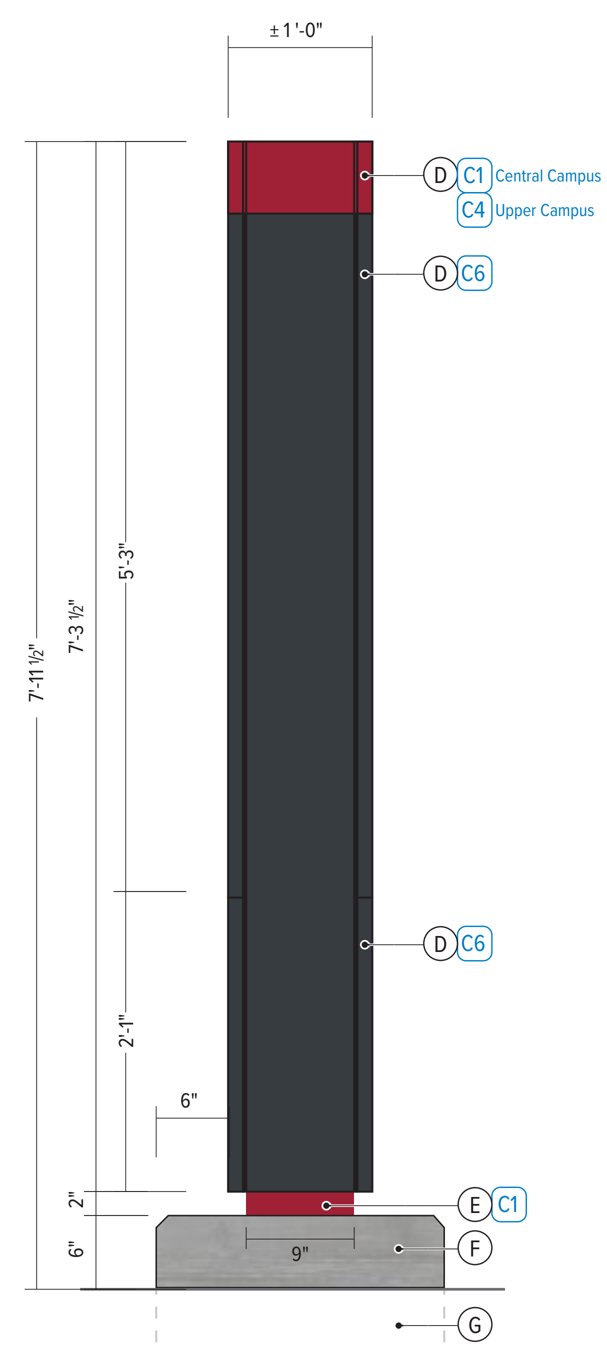
PAGE NUMBER:





1 **Elevation | Layout Option A**

Scale: 3/4" = 1'-0"



2 **Side View**

Scale: 3/4" = 1'-0"

KEY

(A) Item

(P1) Color

A. Message Panels:
   1/8" Aluminum Removable message panels.
   Faces to be removable for future updates.
   All exposed edges to be surface painted.
   All hardware to be concealed, no exposed seams or fasteners on sign faces.

B. Copy and graphics:
   Surface applied contour cut reflective vinyl.
   Typeface: Agenda Semibold and Medium.

C. Pattern panel:
   All exposed edges to be surface painted.
   All hardware to be concealed, no exposed seams or fasteners on sign faces.
   Pattern to be surface painted using Gerber paint mask or approved equal.

D. SignComp or approved equal:
   Hinge body paired with flush face bleed body retainers.
   All exposed edges and hardware to be surface painted.

E. Alum square tube reveal, with mitered corner fabrication. All exposed edges to be surface painted.

F. Board formed concrete base.
   (Fabricator to provide finish option(s) for approval).
   1" Chamfer on all exposed top edges.

G. Footing / Attachement
   (see engineering: SGN7.1 - SGN7.3)

Note: Entire sign including main sign body, all face panels and copy to receive a UV, anti-graffiti coating.

Note: BID alternate price with the entire sign using powdercoat finish vs. matthews paint. (including the masked pattern)

GRAPHIC CONSULTANT:

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ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

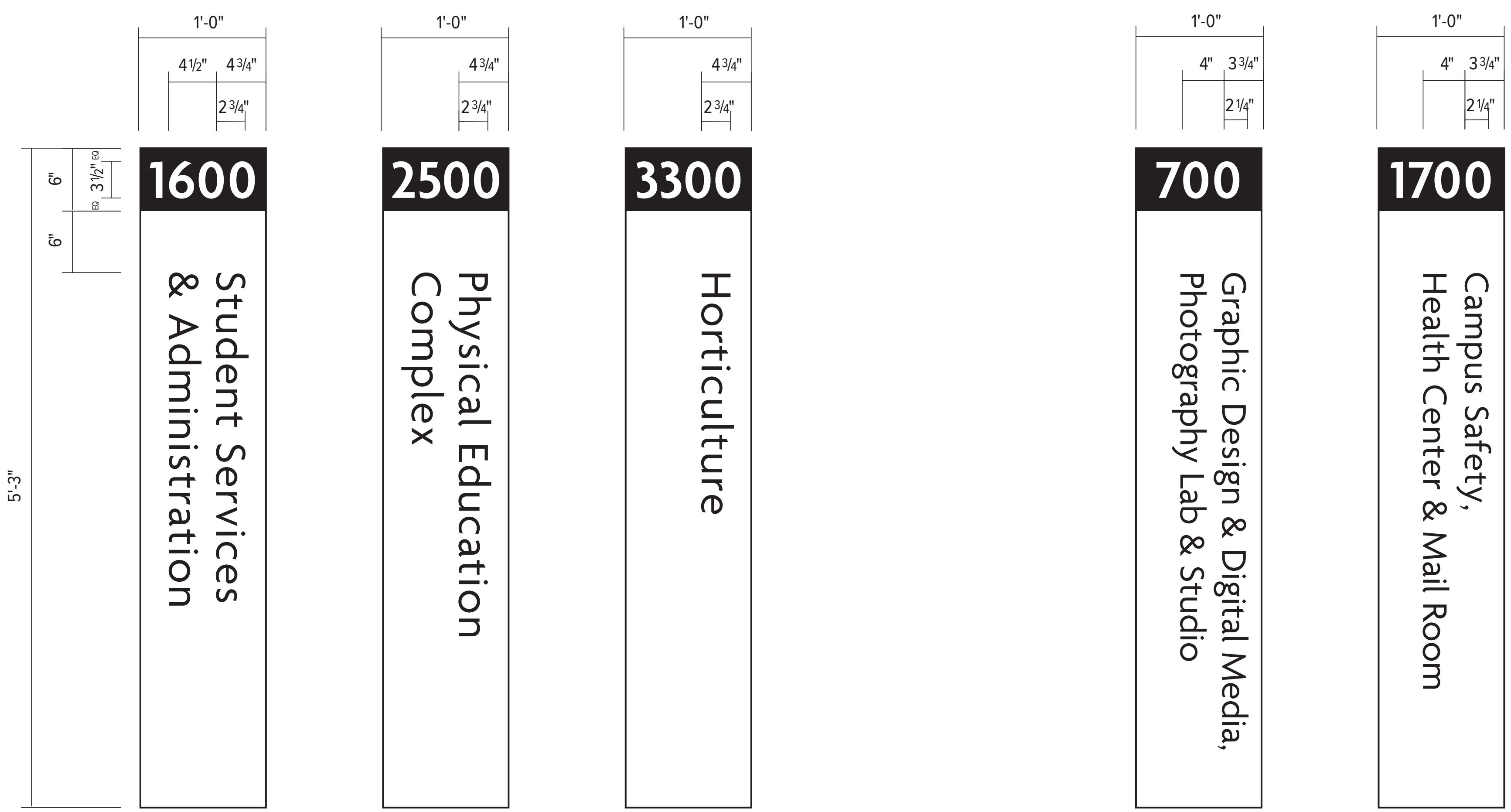
PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

SHEET TITLE:

EID.01
Building ID - Freestanding Double Sided

PAGE NUMBER:



2 1/4" Copy if needed to fit

1 Alternate Copy Layouts

Scale: 1/2" = 1'-0"

GRAPHIC CONSULTANT:

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CLIENT:

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PROJECT ADDRESS:

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Livermore, CA 94551

ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

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MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

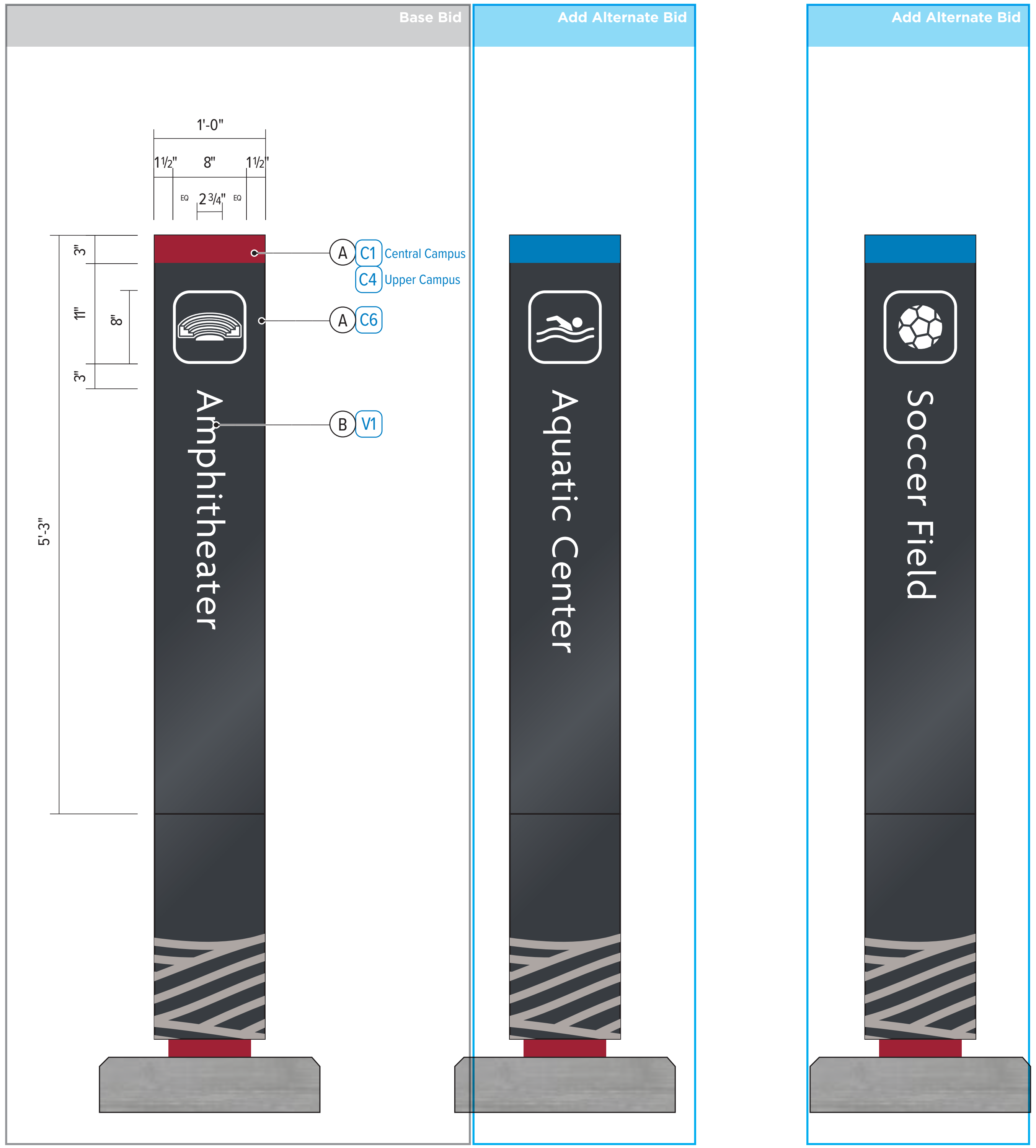
PROJECT PHASE:

100% Construction Intent
For Construction Intent Only

SHEET TITLE:

EID.01
Alternate Copy Layouts

PAGE NUMBER:



1 | EID.01a | Amenity Layouts

Scale: 1/2" = 1'-0"

GRAPHIC CONSULTANT:

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CLIENT:

LAS POSITAS COLLEGE

PROJECT ADDRESS:

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

ARCHITECT:

PROJECT NAME:

Exterior Wayfinding Project

Job# 3738

CREATED BY / DATE:

MV / 2025_0217

REVISIONS BY / DATE / NOTES:

MV 2025_0313
MV 2025_0530
MV 2025_0822
MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

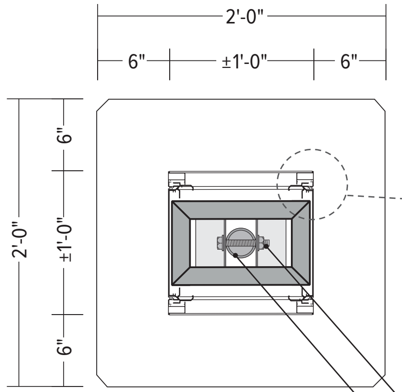
PROJECT PHASE:

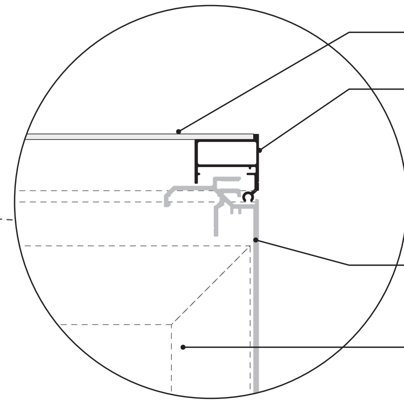
100% Construction Intent
For Construction Intent Only

SHEET TITLE:

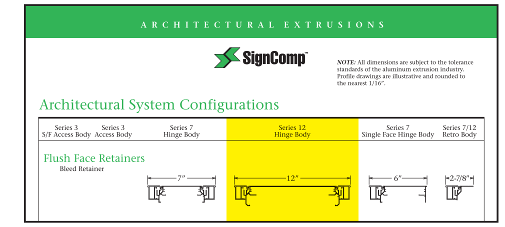
EID.01a
Alternate Amenity Layouts

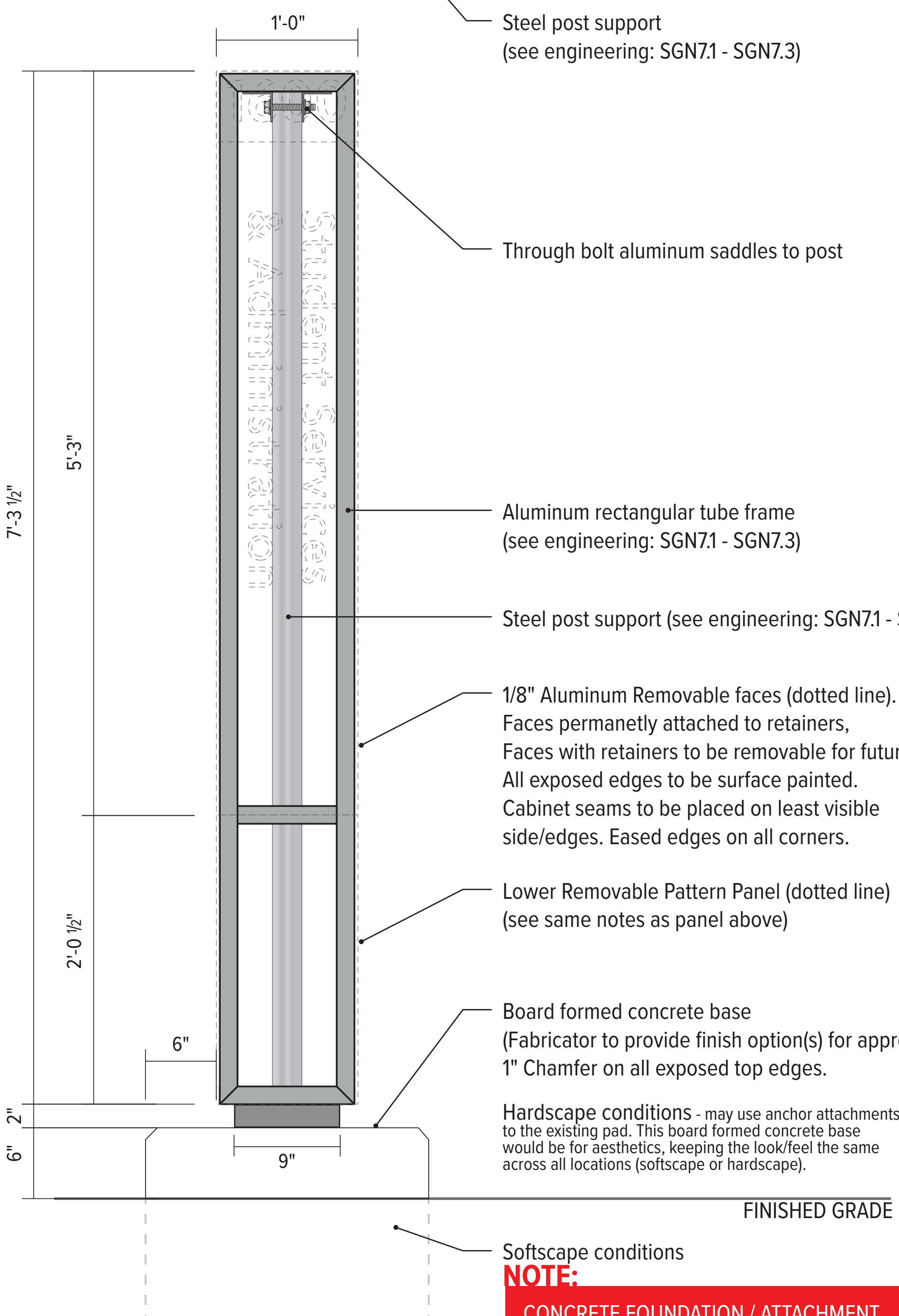
NOTE:
SIGN LOCATIONS TO BE COORDINATED WITH UNDERGROUND UTILITIES.
SIGN FABRICATOR IS RESPONSIBLE TO USE ERASABLE PAINT TO MARK ALL LOCATIONS AND REFERENCE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING / INSTALLATION.



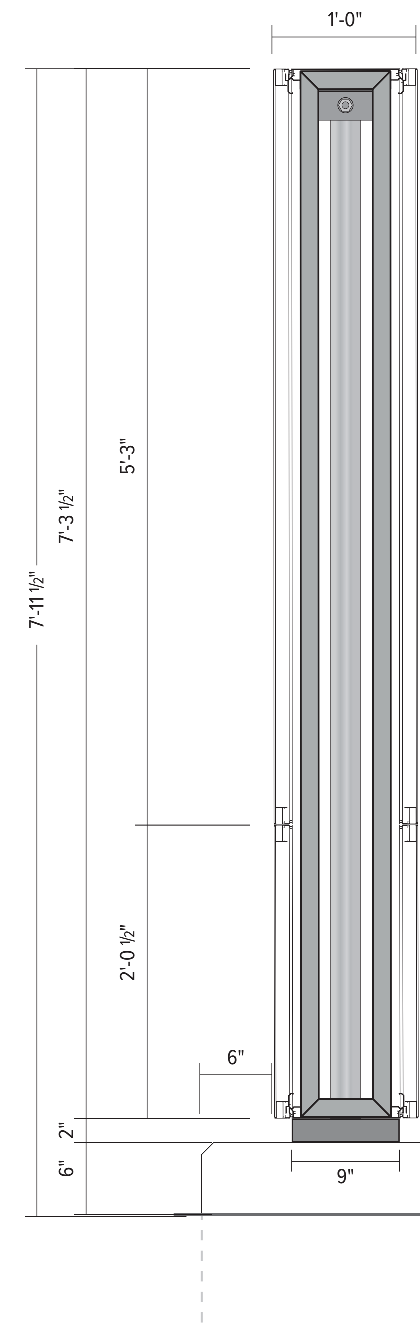


NOTE:
DRAWINGS FOR CONSTRUCTION INTENT ONLY.
DO NOT USE FOR FABRICATION. SIGNAGE CONTRACTOR TO PROVIDE FINAL DRAWING DETAILS.
(FINAL DETAILS SHALL BE DEFERRED TO THE SHOPS DRAWINGS BY CONTRACTOR)

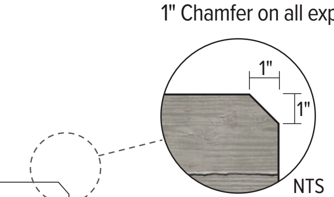




NOTE:
CONCRETE FOUNDATION / ATTACHMENT
SEE ENGINEERING: SGN7.1 - SGN7.3
SEE ENGINEERING & CALCULATIONS SECTION 11.1



Board formed concrete base
(Fabricator to provide finish option(s) for approval).
1" Chamfer on all exposed top edges.



1 **EID.01 Fabrication Intent**
Scale: 3/4" = 1'-0"

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MV 2025_1211
MV 2025_0123

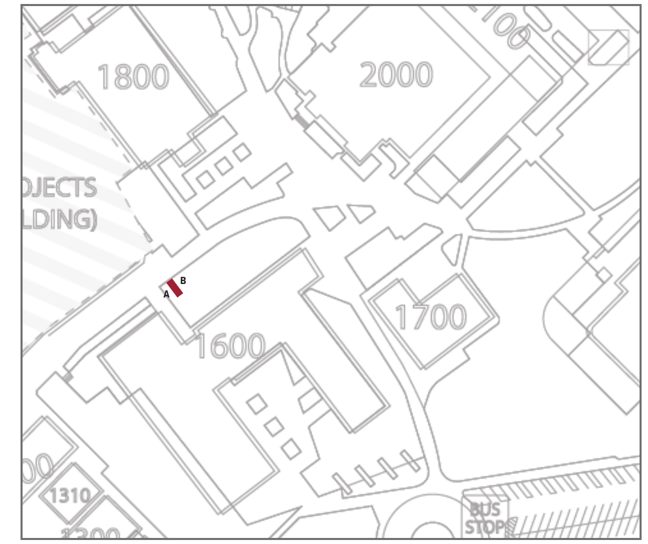
PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
Fabrication Intent
EID.01

PAGE NUMBER:

General Note:
Reference Engineering Drawings & Calculations in Section 11

2 **Existing Conditions | Loc 141**
Scale: NTS



3 **Plan View | Loc 141** (see dimensioned setback plans)
Scale: NTS

1 **Rendering Example | Loc 141**
Scale: NTS

NOTE:
Locations shown for representation purpose ONLY.

For exact placement
(see dimensioned setback plans)
Pages 4.0 - 4.12

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MV 2025_1003
MV 2025_1125
MV 2025_1211
MV 2025_0123

PROJECT PHASE:
100% Construction Intent
For Construction Intent Only

SHEET TITLE:
EID.01
Photo Rendering

PAGE NUMBER:

Vehicular Sign Summary and Message Schedule

TYPE	NEW	REPLACE	RETROFIT	RELOCATE	REMOVE ONLY	NO ACTION	TBD	TOTAL
Brand ID								
BR.02 - Secondary Brand ID	1	-	-	-	-	-	-	1
Identification								
PID.01 - Parking Lot ID	13	-	-	-	-	-	-	13
Wayfinding								
EWF.01A - Vehicular Directional at Main Entry Point	2	-	-	-	-	-	-	2
EWF.01 - Primary Vehicular Directional	12	-	-	-	-	-	-	12
EWF.02 - Secondary Vehicular Directional	1	-	-	-	-	-	-	1
							Total	**29**

Add Alternate Bid

TYPE	NEW	REPLACE	RETROFIT	RELOCATE	REMOVE ONLY	NO ACTION	TBD	TOTAL
Add Alternate Bid								
(Alt)PID.01 - Bid Alternate - Parking Lot ID	3	-	-	-	-	-	-	3
(Alt)EWF.01 - Bid Alternate - Primary Vehicular Directional	1	-	-	-	-	-	-	1
(Alt)EWF.02 - Bid Alternate - Secondary Vehicular Directional	1	-	-	-	-	-	-	1
							Total	**5**

Reference Specification Section 01 23 00 for further information for Alternate Bid items

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01A - Vehicular Directional at Main Entry Point	02	1	New	MESSAGE A [↑ CENTRAL CAMPUS] Drop Off Student Services & Administration Mertes Center for the Arts [← UPPER CAMPUS] Athletics Facilities Child Development Center Shipping / Receiving MESSAGE B → Athletics Facilities Child Development Center Shipping / Receiving ↑ Exit Collier Canyon Road Thank You for Visiting GENERAL NOTES

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.02 - Secondary Vehicular Directional	03	1	New	MESSAGE A ↑ Drop Off ← [P] Mertes Center for the Arts Parking A & B MESSAGE B → [P] Central Campus Parking I & J Upper Campus GENERAL NOTES
Vehicular WF Programming	Vehicular WF Plan	EWF.02 - Secondary Vehicular Directional	04	1	New	MESSAGE A ↑ [P] Mertes Center for the Arts Parking A & B MESSAGE B ↑ Exit Collier Canyon Rd Thank You for Visiting GENERAL NOTES
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	04.1	1	New	MESSAGE A A PARKING [EV icon] MESSAGE B A PARKING [EV icon]

Add Alternate Bid

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	04.2	1	New	**MESSAGE A** B PARKING [EV icon] **MESSAGE B** B PARKING [EV icon] **GENERAL NOTES** Confirm future landscaping conditions will allow for a sign at this location.
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	10	1	New	**MESSAGE A** B PARKING [EV icon] **MESSAGE B** B PARKING [EV icon]
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	11	1	New	**MESSAGE A** ← [P] Drop Off Student Services & Administration Parking B – D ↑ [P] Athletics Facilities Upper Campus **MESSAGE B** ↑ [P] Mertes Center for the Arts Parking A - C Exit Collier Canyon Rd **GENERAL NOTES**

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	11.1	1	New	MESSAGE A C PARKING MESSAGE B C PARKING
Vehicular WF Programming	Vehicular WF Plan	BR.02 - Secondary Brand ID	13	1	New	GENERAL NOTES
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	13.1	1	New	MESSAGE A D PARKING MESSAGE B D PARKING
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	14	1	New	MESSAGE A ↑ [P] Athletics Facilities Upper Campus MESSAGE B → [P] Drop Off Student Services & Administration Parking B – D ↑ [P] Mertes Center for the Arts Parking A - C GENERAL NOTES INSTALL NOTES 05.23.25: Install where the landscaping widens from the bike path ~ 8ft or more. May need to clear some landscaping to make both sides visible.

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	15	1	New	**MESSAGE A** ↑ [P] Athletics Facilities SMOG / State Referee Shipping / Receiving Upper Campus → Exit Campus Hill Drive **MESSAGE B** ↑ [P] Drop Off Central Campus Parking A – E Student Services & Administration Mertes Center for the Arts **GENERAL NOTES**
Add Alternate Bid Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	15.1	1	New	**MESSAGE A** E PARKING **MESSAGE B** E PARKING
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	15.2	1	New	**MESSAGE A** E PARKING **MESSAGE B** E PARKING

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	15.4	1	New	**MESSAGE A** ← Buildings 400-2400 4000 Mertes Center for the Arts → Buildings 2500 - 3700 **MESSAGE B** [Blank] **GENERAL NOTES** 09.16.25: One-off sign; this style of addressing wasn't intended for vehicular signage.

Add Alternate Bid

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01A - Vehicular Directional at Main Entry Point	17	1	New	MESSAGE A [← CENTRAL CAMPUS] Drop Off Mertes Center for the Arts [→ UPPER CAMPUS] Athletics Facilities Public Safety Training Center SMOG / State Referee Shipping / Receiving MESSAGE B ↑ Exit Campus Hill Drive Thank You for Visiting GENERAL NOTES

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	18	1	New	**MESSAGE A** ← [P] Athletics Facilities Parking F ↑ [P] Athletics Facilities Parking H Public Safety Training Center SMOG / State Referee **MESSAGE B** ↑ [P] Drop Off Central Campus Parking A – E ← Exit Campus Hill Drive **GENERAL NOTES**
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	18.1	1	New	**MESSAGE A** F PARKING **MESSAGE B** F PARKING
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	18.2	1	New	**MESSAGE A** F PARKING **MESSAGE B** F PARKING

Add Alternate Bid

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	20	1	New	**MESSAGE A** → [P] Auto & Welding Technology Public Safety Training Center SMOG / State Referee ↑ [P] Athletics Facilities Parking H **MESSAGE B** ← [P] Auto & Welding Technology Public Safety Training Center SMOG / State Referee ↑ [P] Athletics Facilities Parking F **GENERAL NOTES**
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	20.1	1	New	**MESSAGE A** G PARKING **MESSAGE B** G PARKING **GENERAL NOTES** 11.25.25: EV parking is planed for the future (currently no EV)

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	22	1	New	**MESSAGE A** ↑ [P] Athletics Facilities Parking H → [P] Parking K – M Campus Hill Winery Horticulture & Viticulture Shipping / Receiving **MESSAGE B** ↑ [P] Athletics Facilities Parking F Central Campus ← [P] Public Safety Training Center SMOG/ State Referee **GENERAL NOTES**

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	23	1	New	MESSAGE A ← [P] Athletics Facilities Parking H → [P] Campus Hill Winery Horticulture & Viticulture Maintenance & Operations Shipping / Receiving MESSAGE B ↑ [P] Athletics Facilities Parking F ← [P] Campus Hill Winery Horticulture & Viticulture Maintenance & Operations Shipping / Receiving GENERAL NOTES
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	24.1	1	New	MESSAGE A H PARKING [EV icon] MESSAGE B H PARKING [EV icon]

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	24.2	1	New	**MESSAGE A** H PARKING [EV icon] **MESSAGE B** H PARKING [EV icon]
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	25	1	New	**MESSAGE A** ↑ [P] Campus Hill Winery Parking M Horticulture & Viticulture Parking M Maintenance & Operations Parking K Shipping / Receiving Track & Field **MESSAGE B** ← Exit Campus Hill Drive → Exit Collier Canyon Rd **GENERAL NOTES**

Add Alternate Bid

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	26	1	New	**MESSAGE A** K 3100 Parking Only Maintenance & Operations **MESSAGE B** K 3100 Parking Only Maintenance & Operations **GENERAL NOTES** 09.16.25: Updated copy with client notes.
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	26.1	1	New	**MESSAGE A** M PARKING **MESSAGE B** M PARKING

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	27	1	New	**MESSAGE A** → [P] Athletics Facilities Parking H ↑ [P] Campus Hill Winery Horticulture & Viticulture Maintenance & Operations Shipping/Receiving **MESSAGE B** ← [P] Athletics Facilities Parking H ↑ [P] Central Campus Child Development Center **GENERAL NOTES** **INSTALL NOTES** 05.23.25: SL recommends to install after the fence ends.

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	29	1	New	**MESSAGE A** → [P] Child Development Center Drop Off Staff Parking I ↑[P] Athletics Facilities Upper Campus **MESSAGE B** ← [P] Child Development Center Drop Off Staff Parking I ↑ [P] Central Campus Parking G Exit Collier Canyon Rd **GENERAL NOTES**
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	29.1	1	New	**MESSAGE A** I PARKING [EV icon] **MESSAGE B** I PARKING [EV icon]

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	31	1	New	MESSAGE A ↑ [P] Athletics Facilities Child Development Center Shipping / Receiving Upper Campus MESSAGE B ← [P] Central Campus Parking J ↑ [P] Mertes Center for the Arts Parking A - C GENERAL NOTES
Vehicular WF Programming	Vehicular WF Plan	PID.01 - Parking Lot ID	31.1	1	New	MESSAGE A J PARKING MESSAGE B J PARKING

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Vehicular WF Programming	Vehicular WF Plan	EWF.01 - Primary Vehicular Directional	33	1	New	**MESSAGE A** ↑ [P] Athletics Facilities Child Development Center Shipping / Receiving Upper Campus **MESSAGE B** → Exit Collier Canyon Rd Thank You for Visiting ← [P] Central Campus Mertes Center for the Arts Parking A - C **GENERAL NOTES** **INSTALL NOTES** 05.23.25: Landscaping needs to be cleared prior to install.

[Intentionally Blank]

[Intentionally Blank]

[Intentionally Blank]

[Intentionally Blank]

Pedestrian Sign Summary and Message Schedule

TYPE	NEW	REPLACE	RETROFIT	RELOCATE	REMOVE ONLY	NO ACTION	TBD	TOTAL
Identification								
EID.01 - Building ID Freestanding	21	-	-	-	-	-	-	21
EID.01a - Building ID Freestanding (Amenity)	1	-	-	-	-	-	-	1
Wayfinding								
EWF.10 - Primary Pedestrian Directional	13	-	-	-	-	-	-	13
EWF.11 - Secondary Pedestrian Directional	6	-	-	-	-	-	-	6
EWF.20 - Orientation Map	12	-	-	-	-	-	-	12
							Total	**53**

Add Alternate Bid

TYPE	NEW	REPLACE	RETROFIT	RELOCATE	REMOVE ONLY	NO ACTION	TBD	TOTAL
Add Alternate Bid								
(Alt)EID.01a - Bid Alternate - Building ID Freestanding (Amenity)	5	-	-	-	-	-	-	5
							Total	**5**

Reference Specification Section 01 23 00 for further information for Alternate Bid items

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.10 - Primary Pedestrian Directional	100	1	New	**MESSAGE A** ← 4000 Mertes Center for the Arts ---- ↑ Buildings 400-2400 1000 Classroom Bldg 1600 Student Services & Administration 2000 Library [fork/knife icon] [amphitheater icon] **MESSAGE B** → 4000 Mertes Center for the Arts **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	101	1	New	**MESSAGE A** 4000 Mertes Center for the Arts **MESSAGE B** 4000 Mertes Center for the Arts
Pedestrian WF Programming	Pedestrian Central	EWF.20 - Orientation Map	103	1	New	**MESSAGE A** [orientation map - refer to drawing sheet] **MESSAGE B** [orientation map - refer to drawing sheet]
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	104	1	New	**MESSAGE A** 1000 Classroom Building **MESSAGE B** 1000 Classroom Building **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	105	1	New	**MESSAGE A** 400 Middle College **MESSAGE B** 400 Middle College

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	107	1	New	MESSAGE A 1000 Classroom Building MESSAGE B 1000 Classroom Building
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	109	1	New	MESSAGE A 1300 Classroom Building GENERAL NOTES
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	110	1	New	MESSAGE A 1000 Classrooms
Pedestrian WF Programming	Pedestrian Central	EWF.20 - Orientation Map	112	1	New	MESSAGE A [orientation map - refer to drawing sheet] MESSAGE B [orientation map - refer to drawing sheet]

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.11 - Secondary Pedestrian Directional	113	1	New	**MESSAGE A** ← Buildings 400 - 1310 4000 Mertes Center for the Arts [amphitheater icon] -------- ↑ Buildings 1600 - 2400 Cafeteria 1600 Student Services & Administration [fork/knife icon] **MESSAGE B** → Buildings 400 - 1310 4000 Mertes Center for the Arts [amphitheater icon] -------- ↑ 1000 Classroom Bldg **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	115	1	New	**MESSAGE A** 1310 Veterans Resource Center
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	117	1	New	**MESSAGE A** 700 Graphic Design, Digital Media & Photography **MESSAGE B** 700 Graphic Design, Digital Media & Photography
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	119	1	New	**MESSAGE A** 500 Classroom Building

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EID.01a - Building ID Freestanding (Amenity)	121	1	New	**MESSAGE A** [amphitheater icon] Amphitheater **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EWF.20 - Orientation Map	123	1	New	**MESSAGE A** [orientation map - refer to drawing sheet] **MESSAGE B** [orientation map - refer to drawing sheet]
Pedestrian WF Programming	Pedestrian Central	EWF.10 - Primary Pedestrian Directional	125	1	New	**MESSAGE A** ← 1900 Information Technology Services Amphitheater [amphitheater icon] ---- ↑ Buildings 1600 - 2400 Cafeteria 1600 Student Services & Administration 1700 Health Center & Campus Safety 2000 Library [fork/knife icon] **MESSAGE B** → 1900 Information Technology Services Amphitheater [amphitheater icon] ---- ↑ 4000 Mertes Center for the Arts **GENERAL NOTES**

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.20 - Orientation Map	126	1	New	**MESSAGE A** [orientation map - refer to drawing sheet] **MESSAGE B** [BLANK] **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	133	1	New	**MESSAGE A** 1850 Science Technology Center 2 **MESSAGE B** 1850 Science Technology Center 2
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	138	1	New	**MESSAGE A** 1800 Science Technology Center 1 **MESSAGE B** 1800 Science Technology Center 1

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.10 - Primary Pedestrian Directional	139	1	New	**MESSAGE A** → Cafeteria 1600 Student Services & Administration [fork/knife icon] ----- ↑ Buildings 1700-2400 2000 Library 2400 Multi-Disciplinary Education Building Upper Campus **MESSAGE B** ← Cafeteria 1600 Student Services & Administration [fork/knife icon] ----- ↑ Buildings 400-1310 1000 Classroom Bldg 4000 Mertes Center for the Arts [ampitheater icon] **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	141	1	New	**MESSAGE A** 1600 Student Services & Administration
Pedestrian WF Programming	Pedestrian Central	EWF.20 - Orientation Map	145	1	New	**MESSAGE A** [orientation map - refer to drawing sheet] **MESSAGE B** [orientation map - refer to drawing sheet]

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.10 - Primary Pedestrian Directional	146	1	New	MESSAGE A → Cafeteria 1600 Student Services & Administration [fork/knife icon] ---- ← Buildings 2400-3700 2400 Multi-Disciplinary Education Building MESSAGE B → Buildings 2400-3700 2400 Multi-Disciplinary Education Building ---- ← Cafeteria 1600 Student Services & Administration [fork/knife icon] ---- ↑ Buildings 400-2100 1700 Health Center & Campus Safety 1800-1850 Science Technology Center 1 & 2 2000 Library 4000 Mertes Center for the Arts [amphitheater icon] GENERAL NOTES
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	148	1	New	MESSAGE A 1700 Campus Safety & Health Center

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PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.10 - Primary Pedestrian Directional	150	1	New	**MESSAGE A** → 1700 Health Center & Campus Safety ---- ↗ Buildings 2100 & 2400 2500-3700 Upper Campus Bldgs [pool icon][basketball icon][soccer field icon][track icon][outdoor courts icon] ---- ← 1800-1850 Science Technology Center 1 & 2 ---- ↖ 2300 Child Development Center **MESSAGE B** → 1800-1850 Science Technology Center 1 & 2 ---- ← 1700 Health Center & Campus Safety ---- ↑ Buildings 400-1600 Cafeteria 1000 Classroom Bldg 1600 Student Services & Administration 4000 Mertes Center for the Arts [fork/knife][amphitheater icon] **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EWF.20 - Orientation Map	151	1	New	**MESSAGE A** [orientation map - refer to drawing sheet] **MESSAGE B** [orientation map - refer to drawing sheet]
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	152	1	New	**MESSAGE A** 2000 Library **MESSAGE B** 2000 Library

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	153	1	New	**MESSAGE A** 2100 Academic Support
Pedestrian WF Programming	Pedestrian Central	EWF.11 - Secondary Pedestrian Directional	155	1	New	**MESSAGE A** ↗ 2400 Multi-Disciplinary Education Building 2500 Physical Education Complex [basketball icon] ---- ↑ Building 2100 3000-3700 Upper Campus Bldgs [pool icon][soccer field icon][track icon][outdoor courts icon] **MESSAGE B** → Buildings 1800 - 2300 2000 Library ---- ↑ Buildings 400 - 1900 Cafeteria 1600 Student Services & Administration 4000 Mertes Center for the Arts [fork/knife icon][amphitheater icon] **GENERAL NOTES**

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	157	1	New	**MESSAGE A** 2400 Multi-Disciplinary Education Building **MESSAGE B** 2400 Multi-Disciplinary Education Building **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	160	1	New	**MESSAGE A** 2400 Multi-Disciplinary Education Building **MESSAGE B** 2400 Multi-Disciplinary Education Building **GENERAL NOTES**

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.10 - Primary Pedestrian Directional	166	1	New	**MESSAGE A** ↗ 2500 Physical Education Complex [basketball icon] ---- ↑ Buildings 3000-3700 Upper Campus 3400-3500 Public Safety Training Center [pool icon][soccer field icon][track icon][outdoor courts icon] **MESSAGE B** ↖ 2400 Multi-Disciplinary Education Building ↑ Buildings 400-2300 Cafeteria 1600 Student Services & Administration 1700 Health Center & Campus Safety 2000 Library 4000 Mertes Center for the Arts [fork/knife icon][amphitheater icon] **GENERAL NOTES**

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Central	EWF.11 - Secondary Pedestrian Directional	167	1	New	**MESSAGE A** ↑ Buildings 2500-3700 Upper Campus 2500 Physical Education Complex [pool icon][basketball icon][soccer field icon][track icon][outdoor courts icon] **MESSAGE B** ← 2400 Multi-Disciplinary Education Building ---- ↑ Buildings 400 - 2300 2000 Library 4000 Mertes Center for the Arts [fork/knife icon][amphitheater icon] **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	168	1	New	**MESSAGE A** 2100 Academic Support
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	171	1	New	**MESSAGE A** 2300 Child Development Center **MESSAGE B** 2300 Child Development Center
Pedestrian WF Programming	Pedestrian Central	EID.01 - Building ID Freestanding	172	1	New	**MESSAGE A** 2300 Child Development Center **MESSAGE B** 2300 Child Development Center

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.20 - Orientation Map	200	1	New	MESSAGE A [orientation map - refer to drawing sheet] MESSAGE B [orientation map - refer to drawing sheet]
Pedestrian WF Programming	Pedestrian Upper	EID.01 - Building ID Freestanding	201	1	New	MESSAGE A 2500 Physical Education Complex MESSAGE B 2500 Physical Education Complex

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.11 - Secondary Pedestrian Directional	202	1	New	MESSAGE A → Buildings 400 - 2400 Central Campus 2400 Multi-Disciplinary Education Building 4000 Mertes Center for the Arts [fork/knife icon][amphitheater icon] ----------- ↑ 2500 Physical Education Complex [basketball icon] MESSAGE B ← Buildings 400 - 2400 Central Campus 2400 Multi-Disciplinary Education Building 4000 Mertes Center for the Arts [fork/knife icon][amphitheater icon] ----------- ↗ Buildings 3000-3700 Upper Campus [pool icon][soccer field icon][track icon][outdoor courts icon] GENERAL NOTES

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.10 - Primary Pedestrian Directional	203	1	New	MESSAGE A ← 2500 Physical Education Complex [basketball icon] ---- ↑ Buildings 400-2400 Central Campus 4000 Mertes Center for the Arts [fork/knife icon][amphitheater icon] MESSAGE B → 2500 Physical Education Complex [basketball icon] ---- ↑ Buildings 3000 - 3700 Upper Campus [pool icon][soccer field][track icon][outdoor courts icon] GENERAL NOTES
Pedestrian WF Programming	Pedestrian Upper	EID.01a - Building ID Freestanding (Amenity)	204	1	New	MESSAGE A [pool icon] Aquatic Center GENERAL NOTES
Pedestrian WF Programming	Pedestrian Upper	EWF.20 - Orientation Map	205	1	New	MESSAGE A [orientation map - refer to drawing sheet] MESSAGE B [orientation map - refer to drawing sheet]

Add Alternate Bid

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.10 - Primary Pedestrian Directional	208	1	New	MESSAGE A ↑ Buildings 3000 - 3700 [track icon][outdoor courts icon] MESSAGE B ↑ Buildings 400-2500 Central Campus 1600 Student Services & Administration 1700 Health Center & Campus Safety 2000 Library 2500 Physical Education Complex 4000 Mertes Center for the Arts [pool icon][basketball icon] GENERAL NOTES
Pedestrian WF Programming	Pedestrian Upper	EWF.20 - Orientation Map	209	1	New	MESSAGE A [orientation map - refer to drawing sheet] MESSAGE B [orientation map - refer to drawing sheet]
Pedestrian WF Programming	Pedestrian Upper	EID.01a - Building ID Freestanding (Amenity)	210	1	New	MESSAGE A [soccer icon] Soccer Field MESSAGE B [soccer icon] Soccer Field GENERAL NOTES

Add Alternate Bid

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.20 - Orientation Map	214	1	New	MESSAGE A [orientation map - refer to drawing sheet] MESSAGE B [orientation map - refer to drawing sheet] GENERAL NOTES
Pedestrian WF Programming	Pedestrian Upper	EWF.10 - Primary Pedestrian Directional	215	1	New	MESSAGE A ↑ Buildings 3000 - 3700 [soccer field icon][track icon][outdoor courts icon] MESSAGE B ↑ Buildings 400-2500 Central Campus 1600 Student Services & Administration 1700 Health Center & Campus Safety 2000 Library 2500 Physical Education Complex 4000 Mertes Center for the Arts [basketball icon] GENERAL NOTES

Message Schedule

DATE: January 23,2026

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.11 - Secondary Pedestrian Directional	220	1	New	MESSAGE A → Buildings 400-2500 Central Campus 2500 Physical Education Complex [basketball icon][soccer field icon] ---- ← Buildings 3000-3700 [track icon][outdoor courts icon] MESSAGE B → Buildings 3000-3700 [track icon][outdoor courts icon] ---- ← Buildings 400-2500 Central Campus 2500 Physical Education Complex [basketball icon][soccer field icon] ---- ↑ Spectator Area GENERAL NOTES

SHANNON LEIGH
info@shannonleigh.net

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.10 - Primary Pedestrian Directional	227	1	New	**MESSAGE A** → Spectator Area ---- ↑ Buildings 3000 - 3700 [track icon][outdoor courts icon] **MESSAGE B** ← Spectator Area ---- ↑ Buildings 400-2500 Central Campus 2500 Physical Education Complex [pool icon][basketball icon][soccer field icon] **GENERAL NOTES**
Pedestrian WF Programming	Pedestrian Upper	EWF.20 - Orientation Map	228	1	New	**MESSAGE A** [orientation map - refer to drawing sheet] **MESSAGE B** [orientation map - refer to drawing sheet]
Pedestrian WF Programming	Pedestrian Upper	EWF.10 - Primary Pedestrian Directional	230	1	New	**MESSAGE A** ↑ Buildings 3000 - 3700 [track icon][outdoor courts icon] **MESSAGE B** ↑ Buildings 400 - 2500 Central Campus 2500 Physical Education Complex [pool icon][basketball icon][soccer field icon] **GENERAL NOTES**

	PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Add Alternate Bid	Pedestrian WF Programming	Pedestrian Upper	EID.01a - Building ID Freestanding (Amenity)	231	1	New	MESSAGE A (track icon) Track & Field MESSAGE B (track icon) Track & Field GENERAL NOTES
	Pedestrian WF Programming	Pedestrian Upper	EWF.10 - Primary Pedestrian Directional	233	1	New	MESSAGE A ↗ 3400 Public Safety Training Center 3500 Advanced Manufacturing & Transportation ---- ↑ 3000 Shipping/Receiving 3100 Maintenance & Operations 3200 Field House 3300 Horticulture 3600 Viticulture & Enology 3700 Campus Hill Winery [toilet icon][outdoor courts icon] MESSAGE B ←3400 Public Safety Training Center 3500 Advanced Manufacturing & Transportation ---- ↑ Buildings 400 - 2500 Central Campus [pool icon][basketball icon][soccer field icon] GENERAL NOTES

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.10 - Primary Pedestrian Directional	235	1	New	MESSAGE A → Track & Field [track icon] ---- ↗ 3200 Field House 3400 Public Safety Training Center 3500 Advanced Manufacturing & Transportation [toilet icon] MESSAGE B ↑ 3000 Shipping/Receiving 3100 Maintenance & Operations 3300 Horticulture 3600 Viticulture & Enology 3700 Campus Hill Winery [outdoor courts icon] GENERAL NOTES
Add Alternate Bid Pedestrian WF Programming	Pedestrian Upper	EID.01a - Building ID Freestanding (Amenity)	237.1	1	New	MESSAGE A (toilet icon) Restrooms MESSAGE B (toilet icon) Restrooms GENERAL NOTES

PLAN GROUP	PLAN	PLOT TYPE	PLOT NAME	QTY	INSTALL TYPE	DETAILS
Pedestrian WF Programming	Pedestrian Upper	EWF.11 - Secondary Pedestrian Directional	239	1	New	MESSAGE A ↖ 3000 Shipping/Receiving 3100 Maintenance & Operations 3200 Field House 3300 Horticulture 3600 Viticulture & Enology 3700 Campus Hill Winery [track icon][outdoor courts icon] MESSAGE B [blank] GENERAL NOTES
Pedestrian WF Programming	Pedestrian Upper Track	EWF.20 - Orientation Map	306	1	New	MESSAGE A [orientation map - refer to drawing sheet] MESSAGE B [orientation map - refer to drawing sheet]
Add Alternate Bid Pedestrian WF Programming	Pedestrian Upper Track	EID.01a - Building ID Freestanding (Amenity)	309	1	New	MESSAGE A (net court icon) Outdoor Courts MESSAGE B (net court icon) Outdoor Courts GENERAL NOTES

Signage Contractor is responsible to verify signs represented in this removal plan - signs shown with images are for general awareness. The quantity of signs is to be verified by the Signage Contractor.

3738 Las Positas College Livermore

REMOVAL PLANS Vehicular Sign Removal Plan

Master Document

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
1

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
2

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
2.1

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3.1

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3.2

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3.3

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3.4

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3.5

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3.6

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
3.7

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

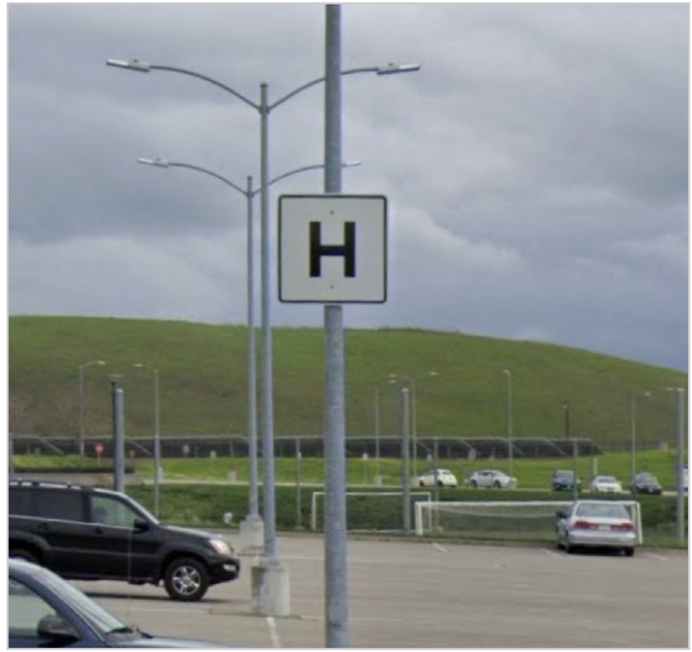
PLAN
Vehicular Sign Removal Plan

LOCATION
4

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1



PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
4.1

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
5

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
5.1

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
5.2

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
6

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT

3738 Las Positas College Livermore

PLAN GROUP

REMOVAL PLANS

PLAN

Vehicular Sign Removal Plan

LOCATION

6.1

PLOT TYPE

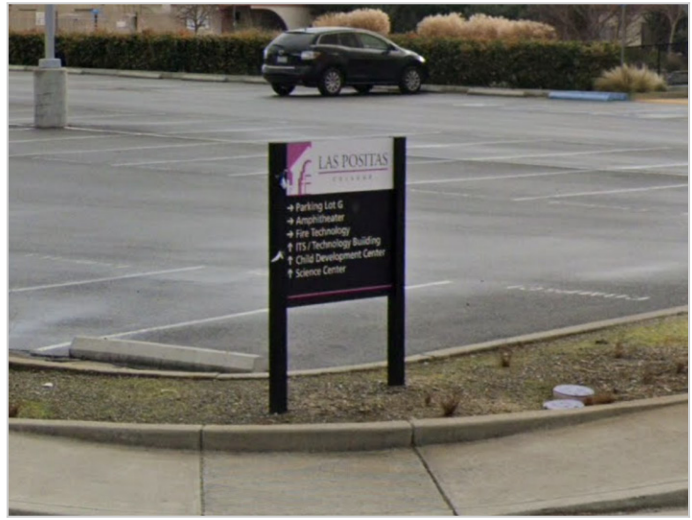
RM - Removal

INSTALL TYPE

Remove Only

QUANTITY

1



PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
6.2

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
6.3

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
6.4

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
6.5

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
6.6

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
6.7

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
7

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
7.1

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
7.2

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
8

PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
8.1

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Vehicular Sign Removal Plan

LOCATION
8.3

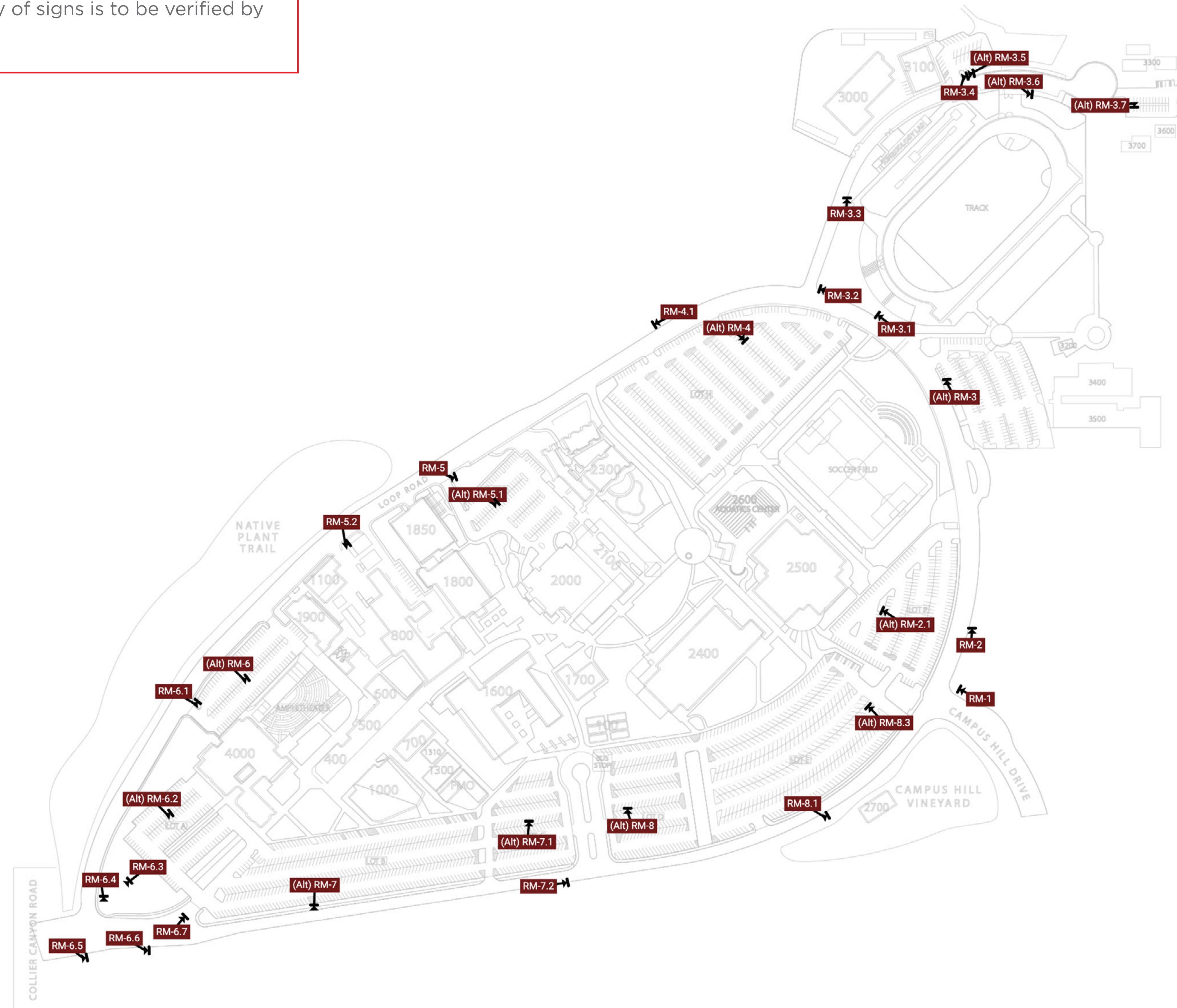
PLOT TYPE
(Alt) RM - Bid Alternate Removal

INSTALL TYPE
Remove Only

QUANTITY
1

TYPE	NEW	REPLACE	RETROFIT	RELOCATE	REMOVE ONLY	NO ACTION	TBD	TOTAL
Add Alternate Bid								
(Alt) RM - Bid Alternate Removal	-	-	-	-	13	-	-	
Removal								
RM - Removal	-	-	-	-	17	-	-	

Signage Contractor is responsible to verify signs represented in this removal plan - signs shown with images are for general awareness. The quantity of signs is to be verified by the Signage Contractor.

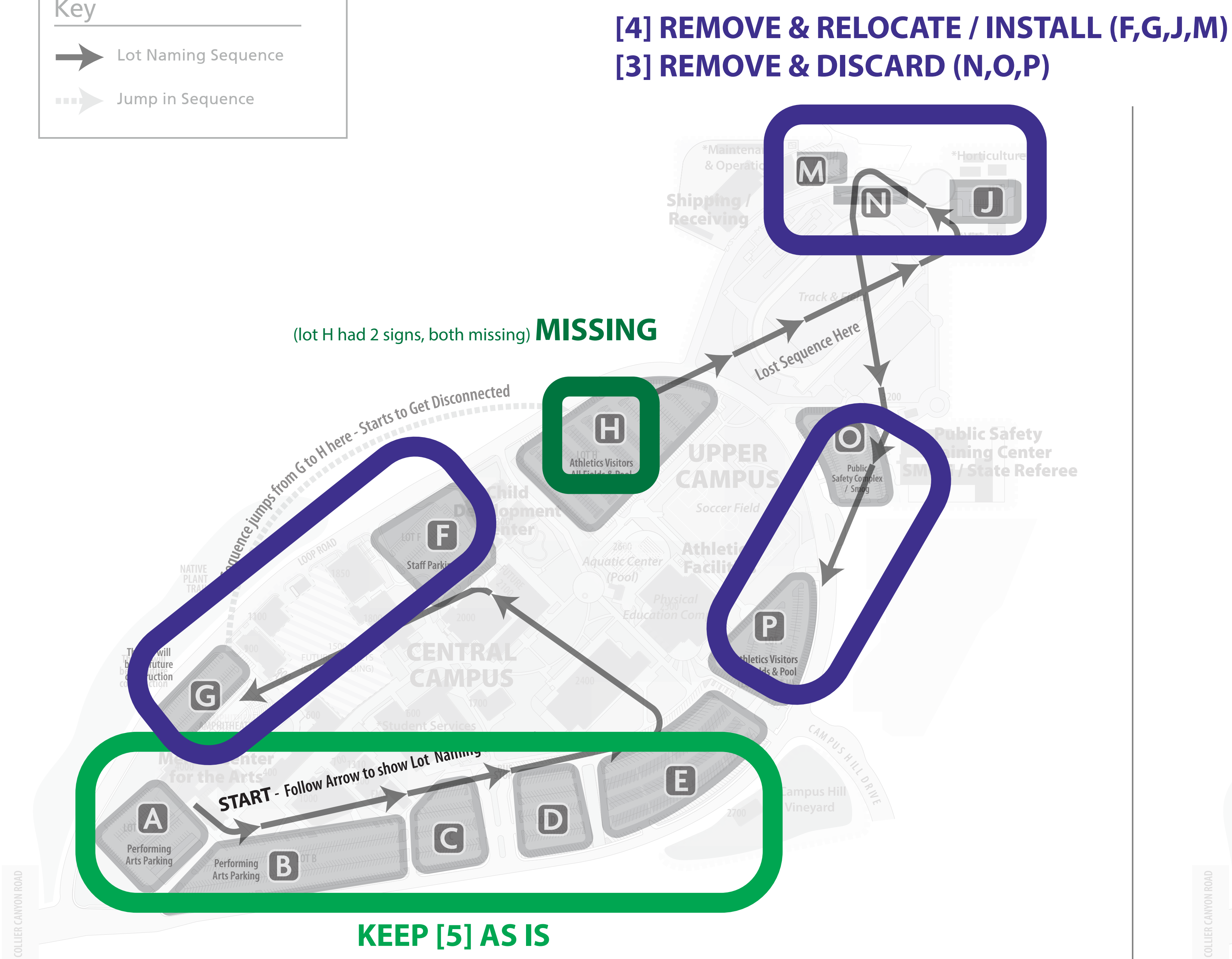


Parking Lot Renaming

Key

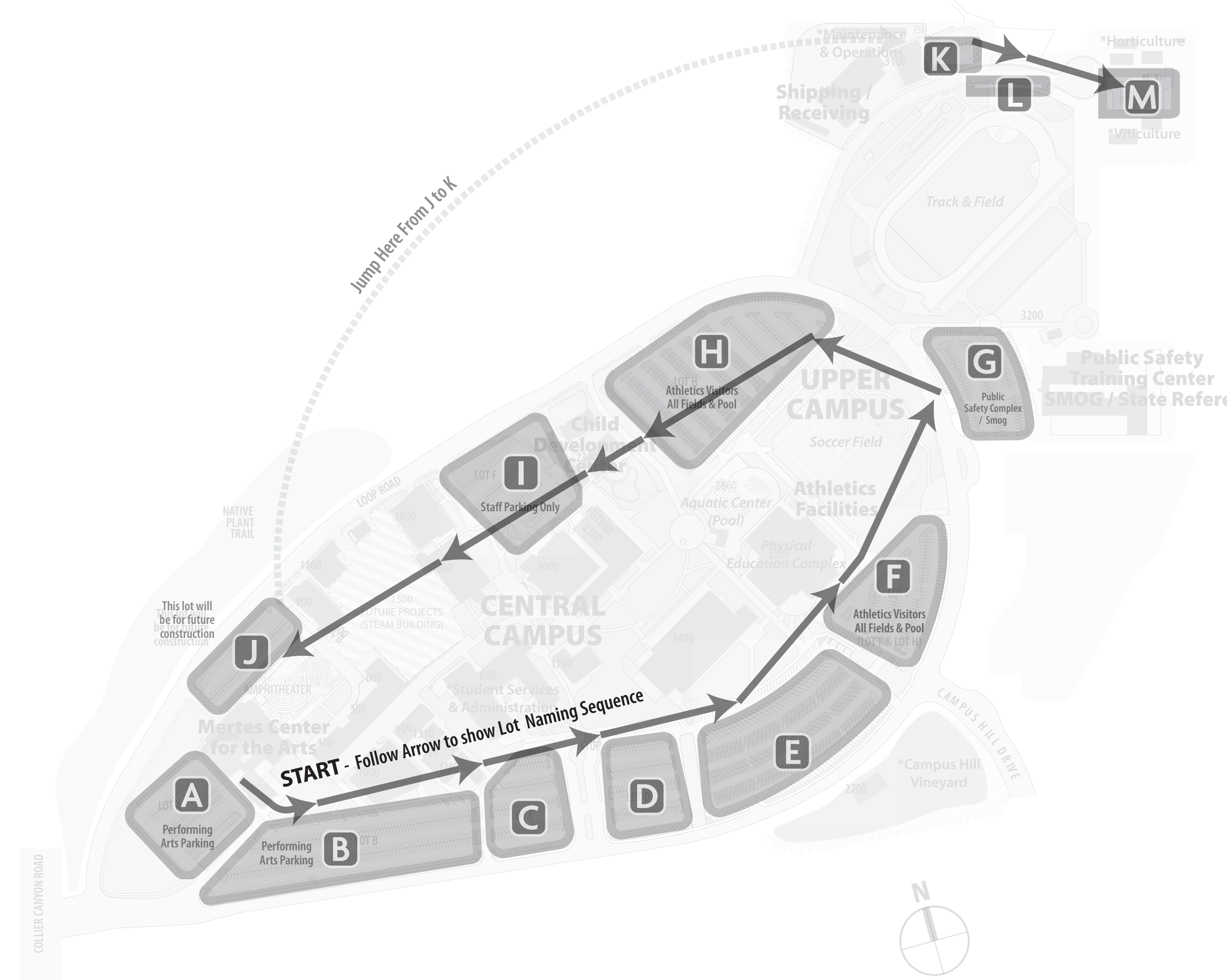
Lot Naming Sequence

Jump in Sequence



Current

The current numbering program is out of sequence. Renaming the lots will solve this and aid wayfinding efforts.



Approved Option

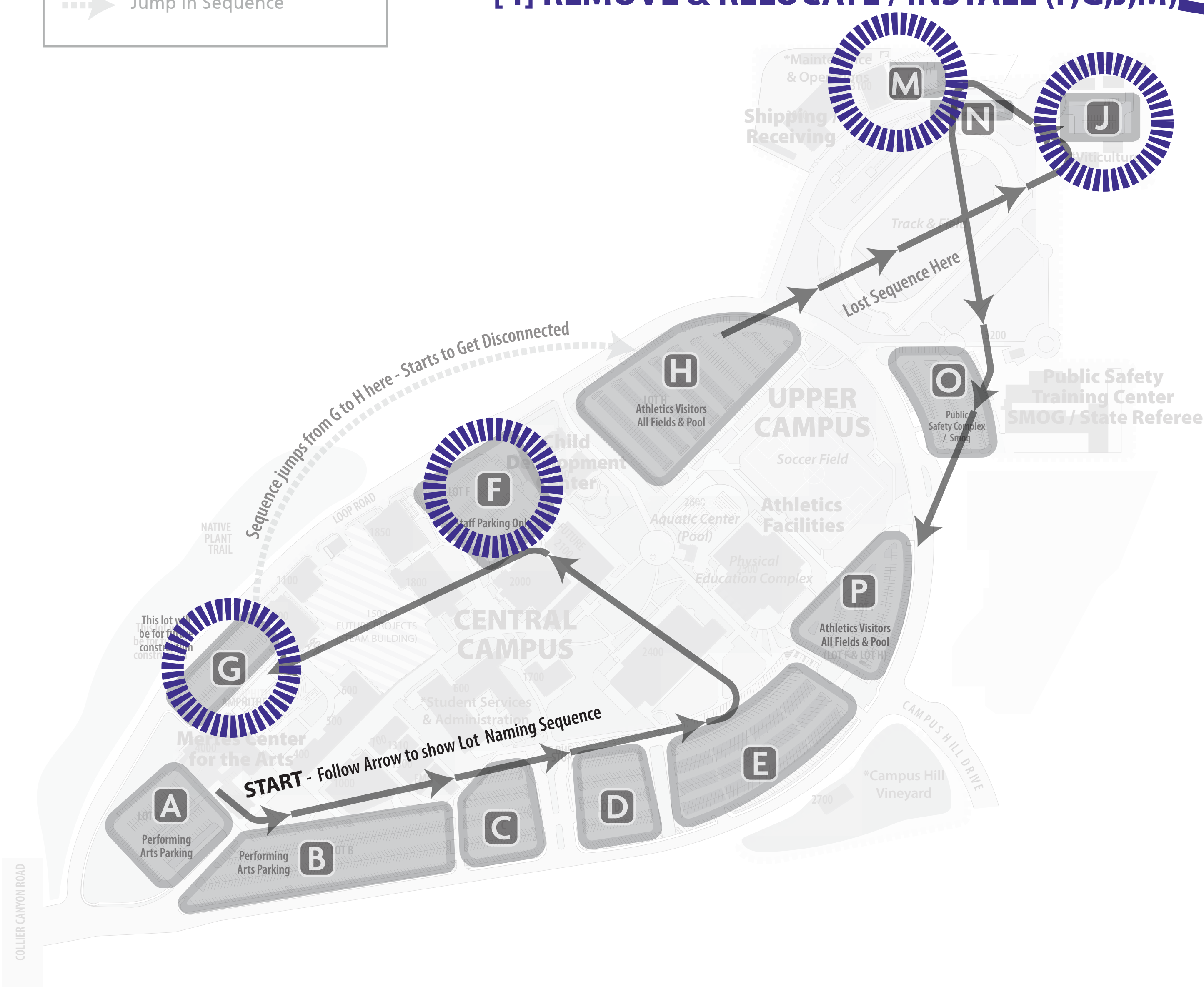
The lot sequence flows from the south end, following the loop in a counter clockwise direction. Then Jumping up the the far north end of the campus.

Client request 2025.06.02

Parking Lot Renaming

Key
- Lot Naming Sequence
- Jump in Sequence

[4] REMOVE & RELOCATE / INSTALL (F,G,J,M)



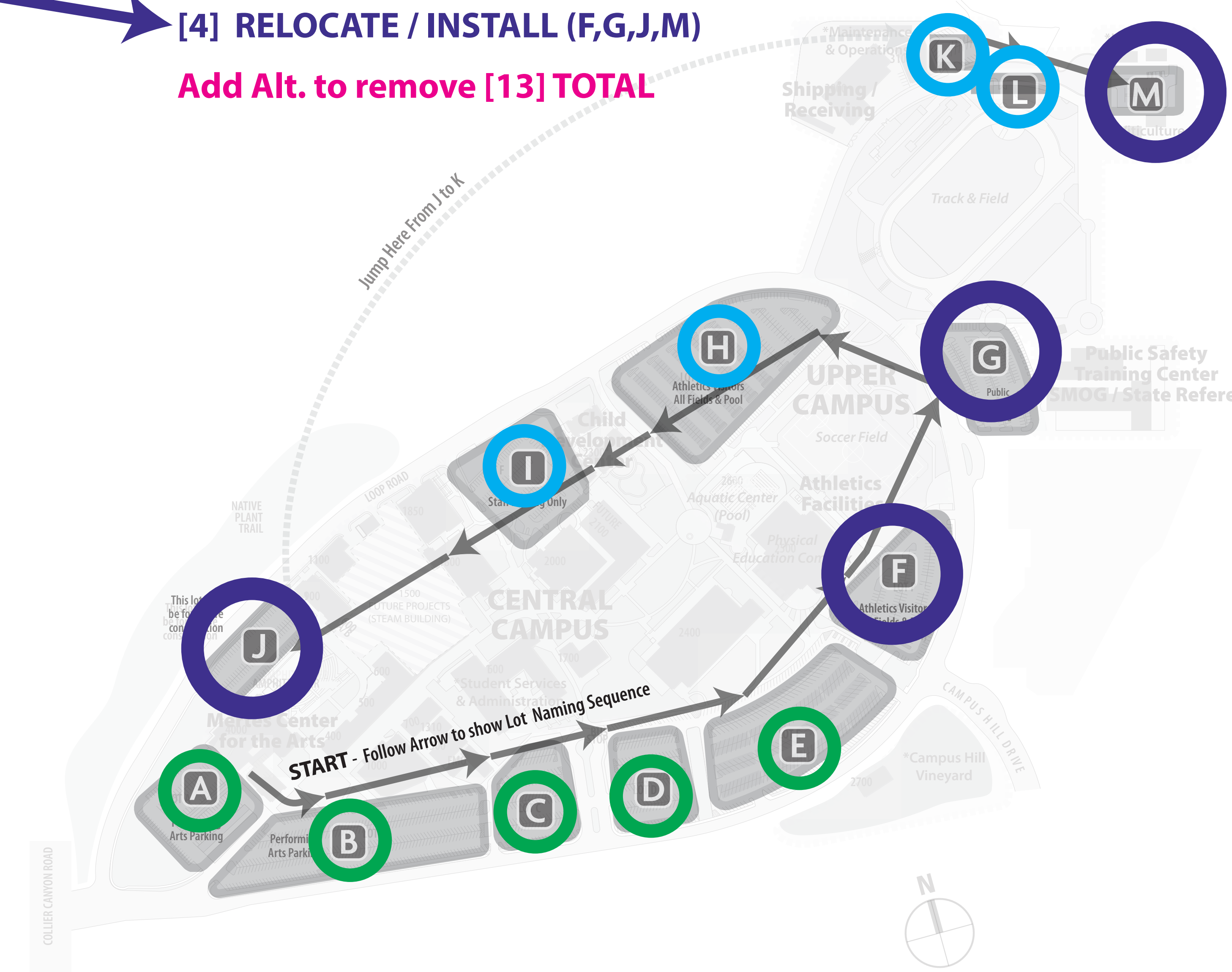
[5] KEEP AS IS

[4] FAB NEW + INSTALL (H, I, K, L)

[4] RELOCATE / INSTALL (F,G,J,M)

Add Alt. to remove [13] TOTAL

FAB NEW TO MATCH EXISTING



Current

The current numbering program is out of sequence. Renaming the lots will solve this and aid wayfinding efforts.

Approved Option

The lot sequence flows from the south end, following the loop in a counter clockwise direction. Then Jumping up the the far north end of the campus.

Client request 2025.06.02

Signage Contractor is responsible to verify signs represented in this removal plan - signs shown with images are for general awareness. The quantity of signs is to be verified by the Signage Contractor.

3738 Las Positas College Livermore

REMOVAL PLANS Pedestrian Sign Removal Plan

Master Document

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
50

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
51

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
52.2

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
52.3

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
53

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
54

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
58

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
60

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
61

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
65.2

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
65.3

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
66

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
67

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
68.2

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
68.3

PLOT TYPE
RM - Removal

INSTALL TYPE
Remove Only

QUANTITY
1

PROJECT
3738 Las Positas College Livermore

PLAN GROUP
REMOVAL PLANS

PLAN
Pedestrian Sign Removal Plan

LOCATION
69

PLOT TYPE
RM - Removal

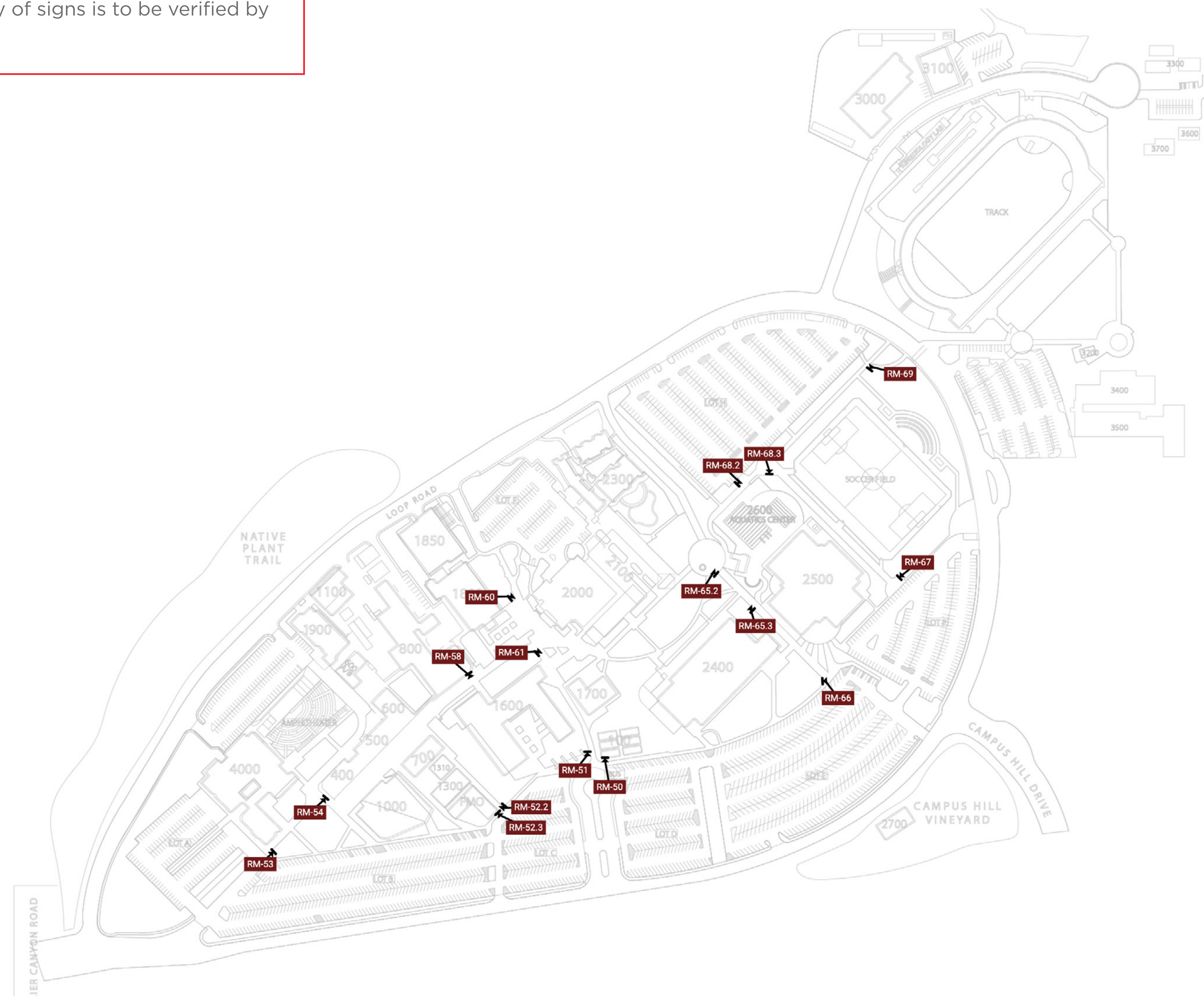
INSTALL TYPE
Remove Only

QUANTITY
1

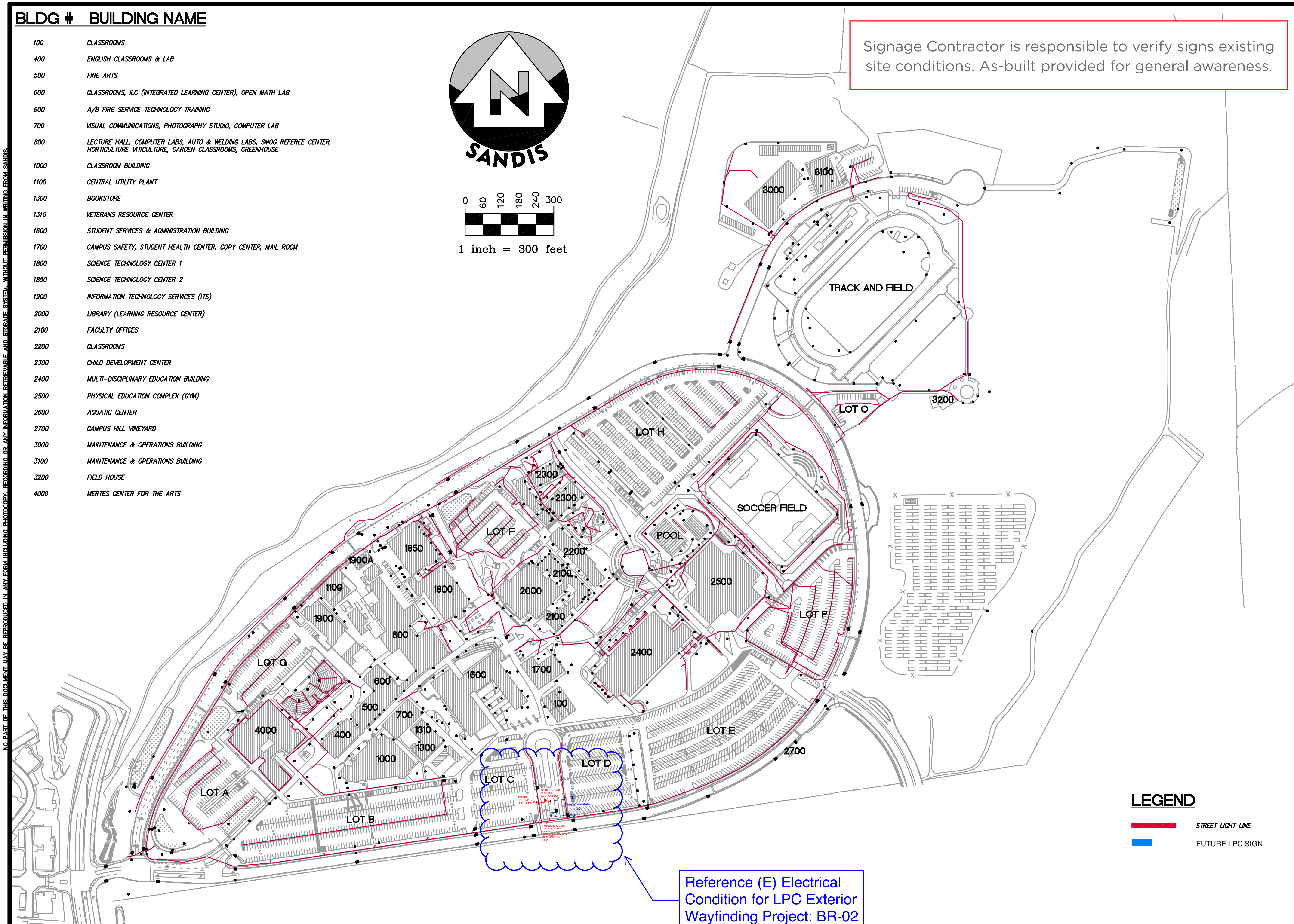
TYPE	NEW	REPLACE	RETROFIT	RELOCATE	REMOVE ONLY	NO ACTION	TBD	TOTAL
Removal								
RM - Removal	-	-	-	-	16	-	-	

Signage Contractor is responsible to verify signs represented in this removal plan - signs shown with images are for general awareness. The quantity of signs is to be verified by the Signage Contractor.

Signage Contractor is responsible to verify signs represented in this removal plan - signs shown with images are for general awareness. The quantity of signs is to be verified by the Signage Contractor.



BLDG #	BUILDING NAME
100	CLASSROOMS
400	ENGLISH CLASSROOMS & LAB
500	FINE ARTS
600	CLASSROOMS, ILC (INTEGRATED LEARNING CENTER), OPEN MATH LAB
600	A/B FIRE SERVICE TECHNOLOGY TRAINING
700	VISUAL COMMUNICATIONS, PHOTOGRAPHY STUDIO, COMPUTER LAB
800	LECTURE HALL, COMPUTER LABS, AUTO & WELDING LABS, SMOG REFEREE CENTER, HORTICULTURE VITICULTURE, GARDEN CLASSROOMS, GREENHOUSE
1000	CLASSROOM BUILDING
1100	CENTRAL UTILITY PLANT
1300	BOOKSTORE
1310	VETERANS RESOURCE CENTER
1600	STUDENT SERVICES & ADMINISTRATION BUILDING
1700	CAMPUS SAFETY, STUDENT HEALTH CENTER, COPY CENTER, MAIL ROOM
1800	SCIENCE TECHNOLOGY CENTER 1
1850	SCIENCE TECHNOLOGY CENTER 2
1900	INFORMATION TECHNOLOGY SERVICES (ITS)
2000	LIBRARY (LEARNING RESOURCE CENTER)
2100	FACULTY OFFICES
2200	CLASSROOMS
2300	CHILD DEVELOPMENT CENTER
2400	MULTI-DISCIPLINARY EDUCATION BUILDING
2500	PHYSICAL EDUCATION COMPLEX (GYM)
2600	AQUATIC CENTER
2700	CAMPUS HILL VINEYARD
3000	MAINTENANCE & OPERATIONS BUILDING
3100	MAINTENANCE & OPERATIONS BUILDING
3200	FIELD HOUSE
4000	MERTES CENTER FOR THE ARTS



Las Positas College

J.D. CAHILL ELECTRIC
LIVERMORE, CA 94551
AZ-BUILT

STREET LIGHT SYSTEM DIAGRAM

No.	REVISION	DATE	BY

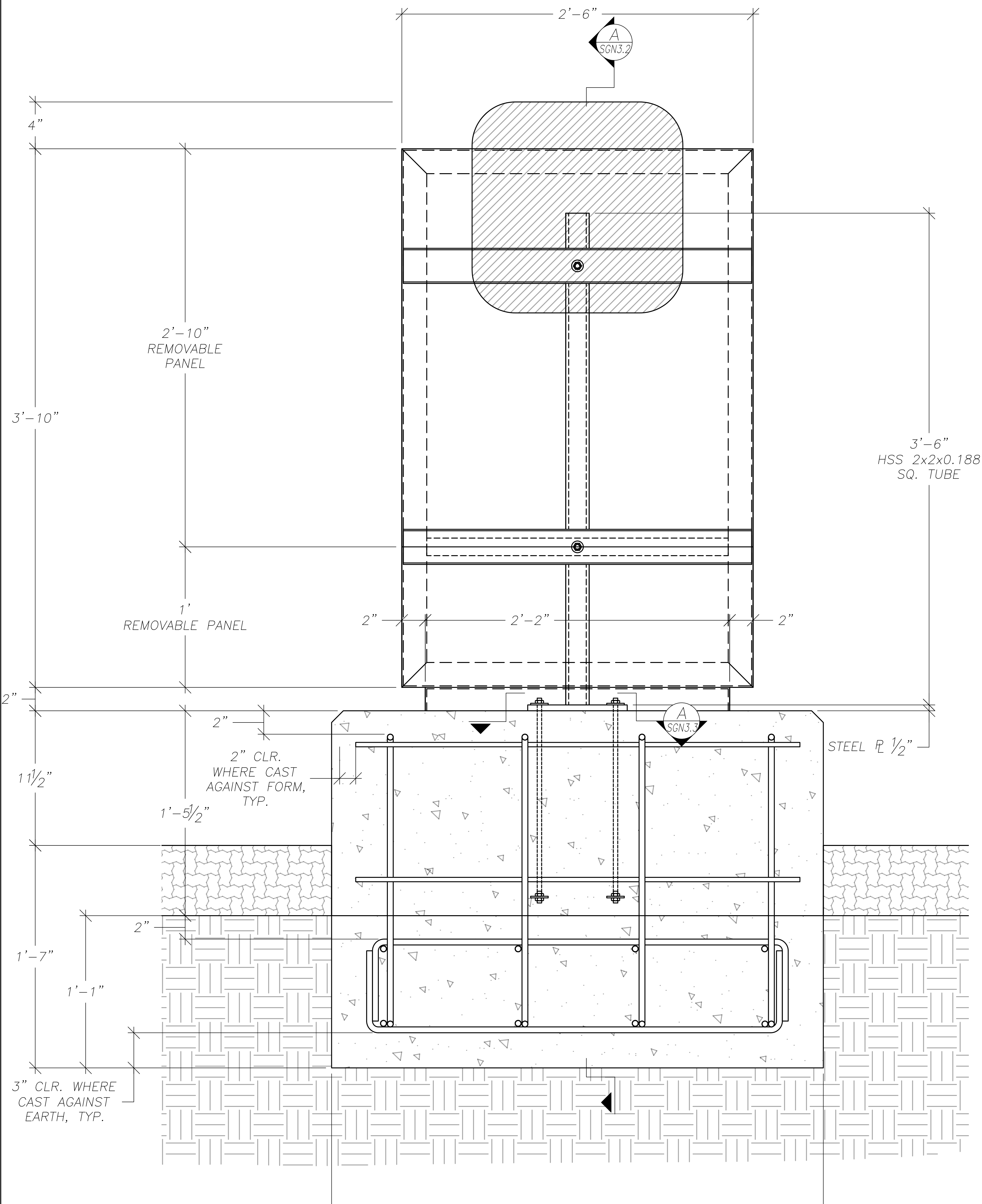
CAMPUS UTILITY SURVEY

DATE: 2/28/2020
SCALE: 1"=300'
DRAWN BY: GL
APPROVED BY: MAK
SANDIS DRAWING No.: 618184

SHEET
SLD
OF 106 SHEETS

Engineering Drawings & Calculations

NOTE: PEDESTAL/PLINTH TO BE FORMED W/ BOARD FORM OR BOARD FORM LINER. PATTERN T.B.D.



A

PID.01 ELEVATION

SCALE: 1 1/2"=1'

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STRUCTURE
ENGINEERING

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510.593.5022

ISSUED FOR	REV	DATE
1st Submission	0	1/15/26

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C 90708
CIVIL
STATE OF CALIFORNIA

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SHANNON LEIGH
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510. 969. 7870 info@shannonleigh.net

PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

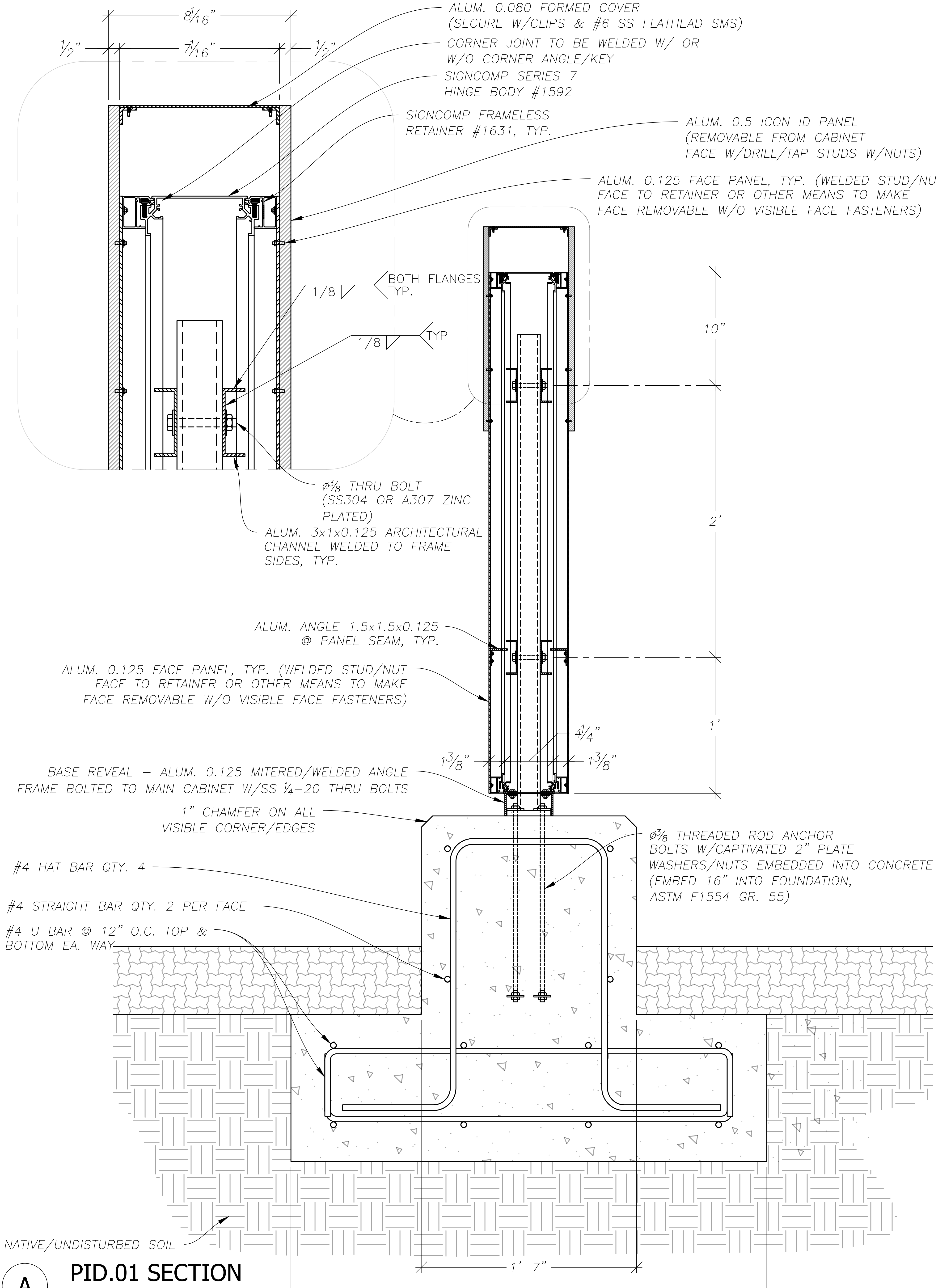
PROJECT NUMBER

DRAWING TITLE

PID.01
Elevation

DRAWING NUMBER

SGN3.1



A

PID.01 SECTION

SCALE: 1 1/2"=1'

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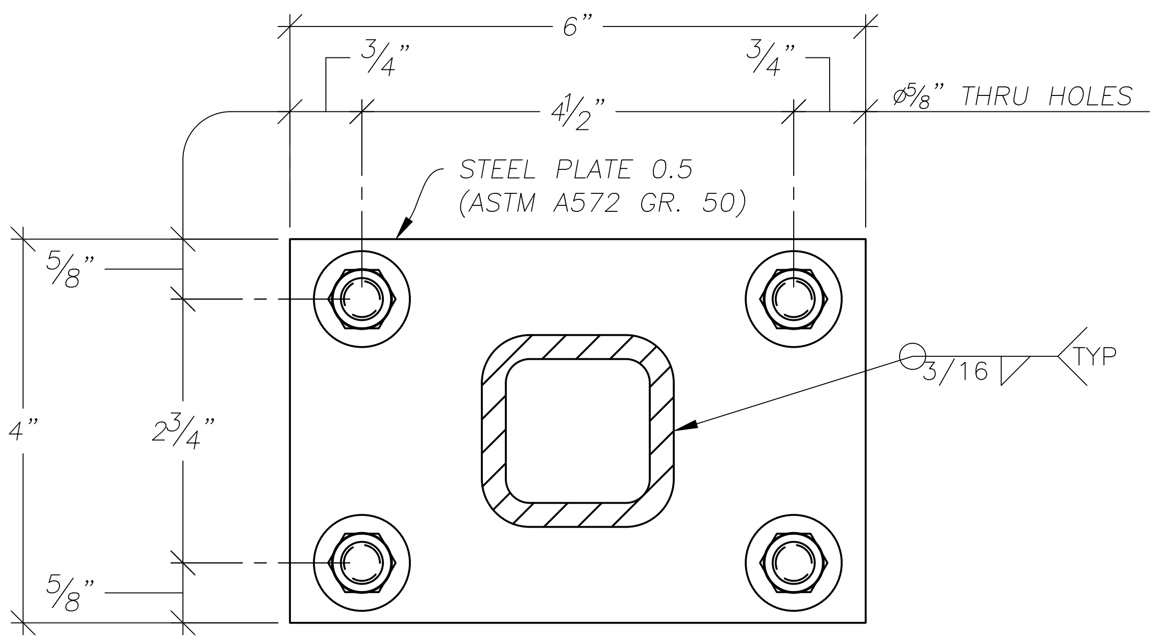
PROJECT NUMBER

DRAWING TITLE

PID.01
Section

DRAWING NUMBER

SGN3.2



NOTE: MAY USE TRIANGULAR STIFFENER/GUSSET FOR IMPROVED FIT UP

A

BASEPLATE TYPE 2

SCALE: 6"=1'

NOTE: APPLY HEAVY EPOXY PRIMER TO ALL SURFACES OF BASEPLATES

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1st Submission	0	1/15/26

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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

PROJECT NUMBER

DRAWING TITLE

PID.01
Details

DRAWING NUMBER

SGN3.3

MISSION STRUCTURE ENGINEERING					
Project	Las Positas College	By	MB	Sheet No.	
Location	Livermore, CA	Date	2025-11-25	1 / 5	
Section	Freestanding PID.01			Job No.	

Freestanding Monument Sign

Project Location:
3000 Campus Hill Drive
Livermore, CA 94551

for

Shannon-Leigh Associates, LLC
1455 Hays Street
San Leandro, CA 94577

Scope of design:

Design of freestanding monument sign anchorage & foundation. Design includes load analysis, base plate/anchor bolt design & footing design. Design Criteria based on geotechnical report by Ninyo & Moore dated November 22, 2023.

Current Codes Which Shall Apply (As applicable to project):

CBC 2025, ASCE 7-22, AISC 360-22, ACI 318-19, AA ADM1 2020,

Dead Load

Total Sign Weight: $DL = \text{Total Weight} = 107.906\ \text{lbf}$

Alum. Cabinet Weight: $DL_{cab} = \text{Weight.F14} = 65.406\ \text{lbf}$

Seismic Load (Full Sign Mass)

Seismic Loads

Seismic Loads of Non-Building Structures

ASCE 7-16 Chapter 15

Seismic Base Shear: $V_B = C_s * W_p$

Response Modification Factor: $R = 3$

Spectral Acceleration, Short Period: $SDS = 1.36$

Importance Factor: $I = 1.25$

Seismic Weight: $W_p = 107.906\ \text{lbf}$

Seismic Response Coefficient: $C_s = \dfrac{SDS}{\dfrac{R}{I}} = 0.567$

Seismic Base Shear: $V_B = C_s * W_p = 61.147\ \text{lbf}$

Overstrength Factor, Ω (where applicable): $OS = 1.75$

Load Distribution

Per ASCE Chapter 29

Top of Sign Height: $h = s = 5.25\ \text{ft}$

Cabinet Height: $h_c = \text{Weight.C2} = 4.25\ \text{ft}$

Pedestal Height: $h_p = 1\ \text{ft}$

Sign Height: $s = h_c + h_p = 5.25\ \text{ft}$

Sign Width (Breadth): $B = \text{Weight.E2} = 2.5\ \text{ft}$

Number of Posts: $n_p = 1$

Gross Sign Area: $A_g = s * B = 13.125\ \text{ft}^2$

Tributary Area (single post): $A_n = A_g = 13.125\ \text{ft}^2$

Moment Arm (@ baseplate): $arm_1 = 1.05 * \left(\frac{h_c}{2}\right) = 2.231\ ft$

Moment Arm (@ top of ftg.): $arm_T = 1.05 * \left(\frac{s}{2}\right) + 0.5\ ft = 3.256\ ft$

Wind Pressure: $p_w = 25\ psf$

Wind Load Section 1: $W_{l1} = p_w * A_n = 328.125\ lbf$

Wind Moment Section 1: $M_{w1} = W_{l1} * arm_1 = 732.1\ lbf * ft$ (Wind controls acting on sign face)

Wind Torsion: $T_w = 0.2 * B * W_{l1} = 164.063\ ft * lbf$

Seismic Load on Section 1 (alum. cab.): $EQ_{s1} = EQ2.C_s * DL = 61.147\ lbf$

Seismic Load Section 1 w/ Over strength: $EQ_{s1os} = EQ_{s1} * EQ2.OS = 107.007\ lbf$

EQ Lateral Shear Force @ baseplate: $V_{1eq} = EQ_{s1} = 61.147\ lbf$

EQ Lateral Force Moment: $M_{1eq} = V_{1eq} * arm_1 = 136.434\ lbf * ft$

EQ Lateral Force w/ OS: $V_{1eqos} = EQ_{s1os} = 107.007\ lbf$

EQ Lateral Force Moment w/OS: $M_{1eqos} = V_{1eqos} * arm_1 = 238.759\ lbf * ft$

<u>LRFD Load Combinations (as applicable-anchorage)</u>

LC: 0.9 DL + 1.0 W

Deal Load: $DL_{min} = \frac{0.9 * (DL_{cab})}{n_p} = 58.866\ lbf$

Shear Wind: $V_{1w1} = W_{l1} = 328.125\ lbf$

Moment Wind: $M_{1w1} = V_{1w1} * arm_1 = 732.129\ lbf * ft$

LC: 1.2 DL + 1.0 W

Deal Load: $DL_{max} = \frac{1.2 * (DL_{cab})}{n_p} = 78.488\ lbf$

Shear Wind: $V_{1w2} = W_{l1} = 328.125\ lbf$

Moment Wind: $M_{1w2} = V_{1w2} * arm_1 = 732.129\ lbf * ft$

LC: 0.9 DL - 1.0 E_v + E_{mh}

Dead Load: $DL_{eqmin} = \frac{0.9 * (DL_{cab})}{n_p} = 58.866\ lbf$

Vertical Seismic: $E_{v1} = \frac{-0.2 * EQ2.SDS * (DL_{cab})}{n_p} = -17.791\ lbf$

Shear EQ: $V_{1eq1} = \frac{EQ_{s1os}}{n_p} = 107.007\ lbf$

Moment EQ: $M_{1eq1} = \left(\frac{EQ_{s1os}}{n_p}\right) * arm_1 = 238.759\ lbf * ft$

LC: 1.2 DL + 1.0 E_v + E_{mh}

Dead Load: $DL_{1eqmax} = \dfrac{1.2 * \left(DL_{cab}\right)}{n_p} = 78.488\ \text{lbf}$

Vertical Seismic: $E_{v2} = \dfrac{0.2 * EQ2.SDS * \left(DL_{cab}\right)}{n_p} = 17.791\ \text{lbf}$

Shear EQ: $V_{eq2} = \dfrac{EQ_{s1os}}{n_p} = 107.007\ \text{lbf}$

Moment EQ: $M_{eq2} = \dfrac{EQ_{s1os} * arm_1}{n_p} = 238.759\ \text{lbf} * \text{ft}$

<u>ASD Load Combinations</u>
(Note: Omit axial loads on post-no restoring moment weld design)

LC: DL + 0.6 W

LC: DL + 0.7 $\left(E_v + E_{mh}\right)$

<u>Convert to ASD/service level loads</u>

Vertical Load, ASD: $DL_{S1} = DL = 107.906\ \text{lbf}$

Wind Pressure, ASD: $p_{wasd} = p_w * 0.6 = 15\ \text{psf}$

Wind Load, ASD: $W_{lasd} = p_{wasd} * A_n = 196.875\ \text{lbf}$

Wind Force Moment, ASD: $M_{wasd} = arm_1 * W_{lasd} = 439.277\ \text{ft} * \text{lbf}$

Wind Torsion, ASD: $T_{asd} = T_w * 0.6 = 98.438\ \text{ft} * \text{lbf}$

Max. Vertical Load, ASD: $DL_{eqasd} = \dfrac{DL_{S1} + 0.7 * 0.2 * EQ2.SDS * DL_{S1}}{n_p} = 128.452\ \text{lbf}$

Seismic Load, ASD: $EQ_{asd} = \dfrac{EQ2.V_B * 0.7}{n_p} = 42.803\ \text{lbf}$

Seismic Load w/ OS, ASD: $EQ_{osasd} = EQ_{asd} * EQ2.OS = 74.905\ \text{lbf}$

Seismic Force Moment, ASD: $M_{eqasd} = arm_1 * EQ_{asd} = 95.504\ \text{ft} * \text{lbf}$

Seismic Force Moment w/ OS, ASD: $M_{eqasdos} = EQ_{osasd} * arm_1 = 167.132\ \text{lbf} * \text{ft}$

Weld Connection From Post to Base Plate

Tube Depth: $d_{tube} = 2\ \text{in}$

Tube Breadth: $b_{tube} = 2\ \text{in}$

Tube Wall Thickness: $t_{tube} = 0.188\ \text{in}$

Weld Line Section Modulus: $S_w = d_{tube} * b_{tube} + \dfrac{d_{tube}^{\ 2}}{3} = 5.333\ \text{in}^2$

Weld Line Area: $A_w = d_{tube} * 2 + b_{tube} * 2 = 8\ in$

Fillet Weld Design (AISC 360 Section J2.4 or ADM J.2)

Weld to resist loads V & M.
Material = "Steel"

Weld Group Configuration: Type = "sq 2x2x0.188"

Input Weld Shear Load: $V = W_{lasd} = 196.875\ lbf$

Input Weld Moment Load: $M = M_{wasd} = 439.277\ ft * lbf$

Weld Line Section Modulus (bending): $S_w = Report1.S_w = 5.333\ in^2$

Weld Line Section Modulus (shear): $A_w = Report1.A_w = 8\ in$

Required Strength: $R = \sqrt{\left(\frac{V}{A_w}\right)^2 + \left(\frac{M}{S_w}\right)^2} = 988.7\ \frac{lb}{in}$

Weld Electrode Tensile Strength: $f_u = 70\ ksi$

Weld Factor of Safety: $\Omega_w = 2$

Strength of Weld per inch: $$R_n = \begin{cases} \left(\frac{0.707 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{if Material == "Steel"} \\ \left(\frac{0.707 * 0.85 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{otherwise} \end{cases} = 927.9\ \frac{lb}{in}$$

Required Size of Weld: $a_{req} = RoundUp\left(\frac{R}{R_n}\right) = 2/16"$ Weld Leg Size

Foundation Loads

Spread Footing Foundation

Nominal loads for allowable capacities per geotechnical report. Seismic Loads to have omega/overstrength applied (cantilever foundation system). Design provided in design worksheet to follow.

Width of Footing: $W_{ftg} = 3.5\ ft$

Length of Footing: $l_{ftg} = 3.5\ ft$

Width of Pedestal: $W_{ped} = 2\ ft$

Length of Pedestal: $l_{ped} = 3.5\ ft$

Height of Pedestal: $H_{ped} = 18\ in$

Weight of Concrete Pedestal: $Wt_{ped} = W_{ped} * l_{ped} * H_{ped} * 150\ pcf = 1575\ lbf$

LC: 0.9 DL + W
(nominal values for foundation software shown below)

Vertical Force: $A_1 = 0.9 * (DL + Wt_{ped}) = 1514.616\ lbf$

Horizontal Force: $P_1 = (B * s * p_w) = 328.125\ lbf$

Moment: $M_1 = P_1 * arm_T = 1068.457\ lbf * ft$

LC: $0.9\ DL + \left(E_v + E_{mh}\right)$

(nominal values for foundation software shown below)

DL Vertical Force: $A_2 = 0.9 * \left(DL + Wt_{ped}\right) = 1514.616\ lbf$

EQ Vertical Force: $A_3 = \left(-0.2 * EQ2.SDS * \left(DL + Wt_{ped}\right)\right) = -457.751\ lbf$

Horizontal Forces:

Sign Cabinet: $P_2 = EQ2.V_B * EQ2.OS = 107.007\ lbf$

Sign Cabinet moment arm: $a_2 = arm_T = 3.256\ ft$

Sign Cabinet moment: $M_2 = P_2 * a_2 = 348.442\ lbf * ft$

Combined EQ Axial: $A_{eq} = A_2 + A_3 = 1056.865\ lbf$

Combined EQ Shear: $V_{eq} = P_2 = 107.007\ lbf$

Combined EQ Moment: $M_{eq} = M_2 = 348.442\ lbf * ft$

Weight Takeoff

Component	Unit Wt	Unit Qty	Wt	Qty	Weight
	Height:	4.25 ft	Width:	2.5 ft	
Skin	2 psf	10.6 ft^2	21.25 lbf	2	42.5 lbf
Post	10 plf	4.25 ft	42.5 lbf	1	42.5 lbf
Channel Extrusion	1.5 plf	13.5 ft	20.25 lbf	1	20.25 lbf
Misc Framing/Stiffeners	0.25 psf	10.6 ft^2	2.656 lbf	1	2.656 lbf

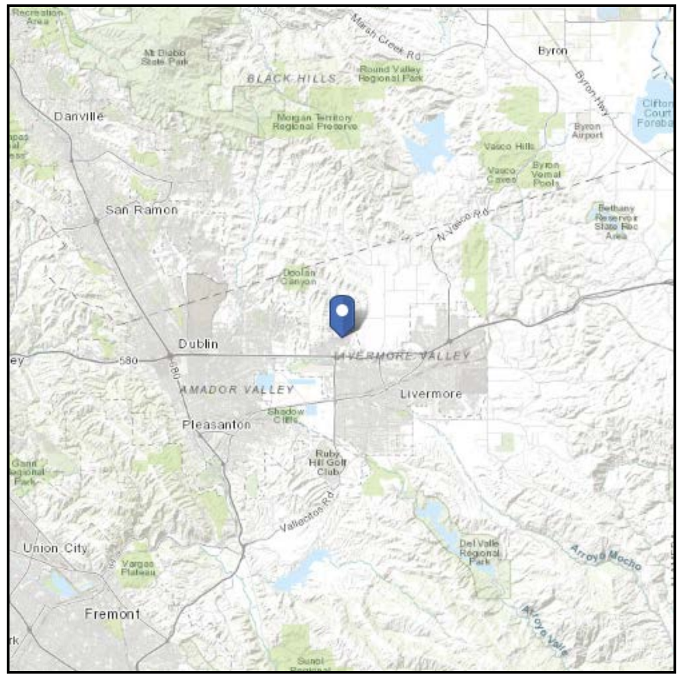
Cabinet Wt.:	65.41 lbf
Total:	107.9 lbf

ASCE Hazards Report

Address:
Las Positas College - 3000 Campus Hill Drive
Livermore,

Standard: ASCE/SEI 7-22
Risk Category: III
Soil Class: D - Stiff Soil

Latitude: 37.710873
Longitude: -121.80058
Elevation: 480.38484203241944 ft (NAVD 88)



Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	79 Vmph
300-year MRI	87 Vmph
700-year MRI	93 Vmph
1,700-year MRI	99 Vmph
3,000-year MRI	103 Vmph
10,000-year MRI	113 Vmph
100,000-year MRI	129 Vmph
1,000,000-year MRI	147 Vmph

Data Source: ASCE/SEI 7-22, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Nov 24 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

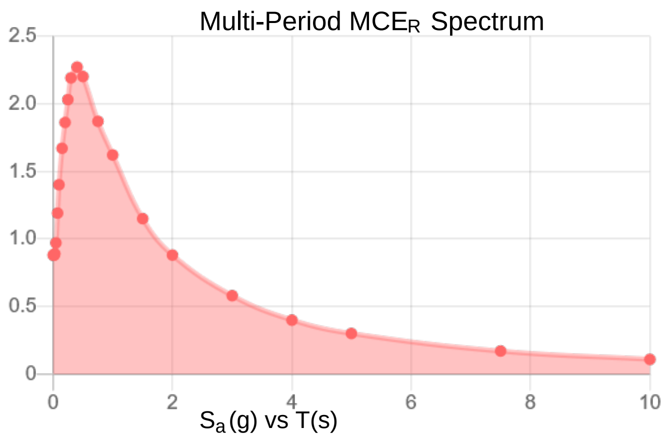
Seismic

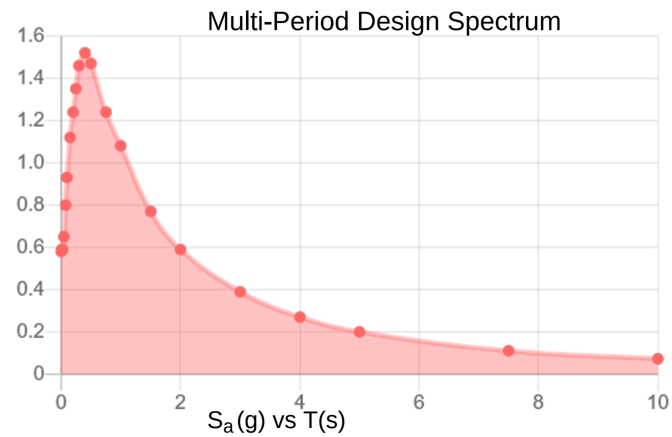
Site Soil Class: D - Stiff Soil

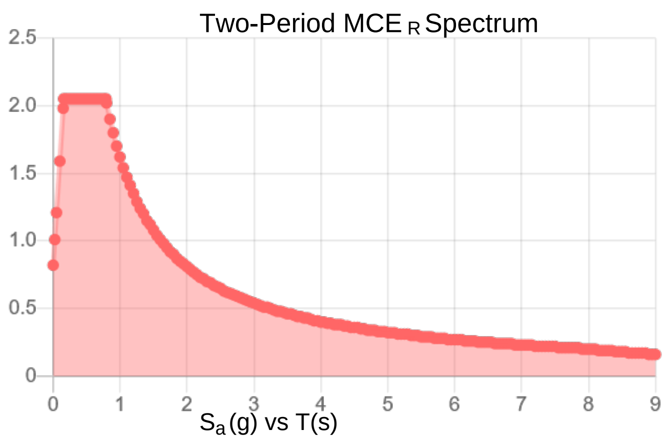
Results:

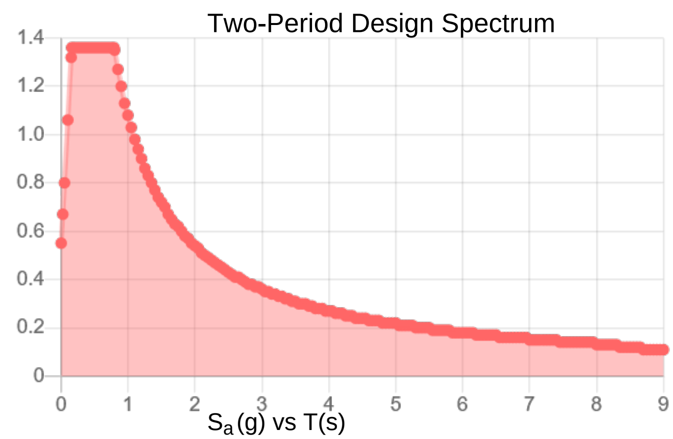
PGA_M :	0.73	T_L :	8
S_{MS} :	2.05	S_S :	2.13
S_{M1} :	1.62	S_1 :	0.81
S_{DS} :	1.36	V_{S30} :	260
S_{D1} :	1.08		

Seismic Design Category: E









MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Mon Nov 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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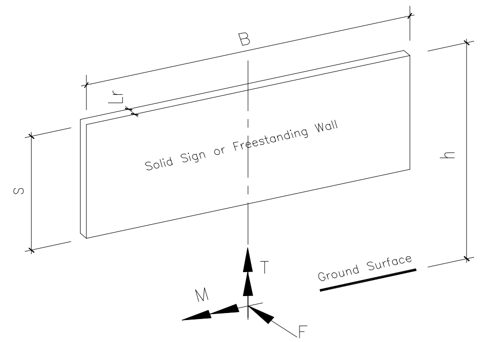
PROJECT : Las Positas College
CLIENT : Shannon Leigh
JOB NO. : DATE :

PAGE :
DESIGN BY :
REVIEW BY :

Wind Analysis for Freestanding Wall & Sign Based on ASCE 7-22 | **Monument Sign Wind Pressure**

INPUT DATA

Exposure category (B, C or D)	=	C	
Importance factor, 1.0 only, (Table 1.5-2)	I_w =	1.00	
Basic wind speed (ASCE 7 26.5.1)	V =	99	mph, (159.32 kph)
Topographic factor (26.8 & Table 26.8-1)	K_{zt} =	1	Flat
Height of top	h =	11	ft, (3.35 m)
Vertical dimension (for wall, s = h)	s =	11	ft, (3.35 m)
Horizontal dimension	B =	4	ft, (1.22 m)
Dimension of return corner	L_r =	0	ft, (0.00 m)



DESIGN SUMMARY

Max horizontal wind pressure	p =	25	psf, (1177 N/m^2)
Max total horizontal force at centroid of base	F =	1.08	kips, (5 kN)
Max bending moment at centroid of base	M =	6.54	ft-kips, (9 kN-m)
Max torsion at centroid of base	T =	0.87	ft-kips, (1 kN-m)

ANALYSIS

Velocity pressure

$q_h K_d = (0.00256 K_z K_{zt} K_e V^2) K_d$ = **18.13** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 277), K_e = **1.00** , (Tab. 26.9-1 page 275)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 277) = **0.85**

K_d = wind directionality factor. (Tab. 26.6-1, page 274) = **0.85**

h = height of top = **11.00** ft

Wind Force Case A: resultant force though the geometric center (Sec. 29.3.1)

$p = q_h K_d G C_N$	=	**25**	psf
$F = p A_s$	=	**1.08**	kips
M = F (h - 0.5s) for sign, F (0.55h) for wall	=	**6.54**	ft-kips
T =	=	**0.00**	ft-kips

where: G = gust effect factor. (Sec. 26.9) = **0.85**

C_f = net force coefficient. (Fig. 29.3-1, page 301) **1.60**

A_s = B s = **44.0** ft^2

Wind Force Case B: resultant force at 0.2 B offset of the geometric center (Sec. 29.3.1)

p = Case A	=	**25**	psf
F = Case A	=	**1.08**	kips
M = Case A	=	**6.54**	ft-kips
T = 0.2 F B	=	**0.87**	ft-kips

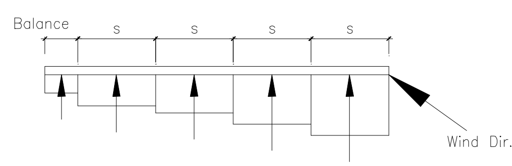
Wind Force Case C: resultant force different at each region (Sec. 29.4.1)

$p = q_h G C_f$

$F = \Sigma\, p A_s$

$M = \Sigma$ [F (h - 0.5s) for sign, F (0.55h) for wall]

$T = \Sigma\, T_s$



Distance	C_f	P_i	A_{si}	F_i	M_i	T_i
(ft)	(Fig. 29.3-1)	(psf)	(ft^2)	(kips)	(ft-kips)	(ft-kips)
4.0	1.800	28	44	1.22	7.38	0.00
4.0	1.200	18	0	0.00	0.00	0.00
Σ				**1.22**	**7.38**	**0.00**

<== Case C may not be considered, footnote 3 of Fig. 6-20

PROJECT :	Las Positas		PAGE :
CLIENT :			DESIGN BY :
JOB NO. :		DATE :	REVIEW BY :

HSS (Tube, Pipe) Member Design with Torsional Loading Based on AISC 360-10/16 — **PID.01 Post DL+W**

INPUT DATA & DESIGN SUMMARY

MEMBER SHAPE (Tube or Pipe) & SIZE		**HSS2X2X3/16**	< == **Tube**
STEEL YIELD STRESS	F_y =	**46**	ksi, (317 MPa)
TORSIONAL FORCE	T_r =	**0.099**	ft-kips, (0 kN-m), ASD
AXIAL COMPRESSION FORCE	P_r =	**0.107**	kips, (0 kN), ASD
STRONG AXIS EFFECTIVE LENGTH	kL_x =	**8**	ft, (2.44 m)
WEAK AXIS EFFECTIVE LENGTH	kL_y =	**8**	ft, (2.44 m)
STRONG AXIS BENDING MOMENT	M_{rx} =	**0.44**	ft-kips, (1 kN-m), ASD
STRONG AXIS BENDING UNBRACED LENGTH	L_b =	**4**	ft, (1.22 m), (AISC 360 F2.2.c)
STRONG DIRECTION SHEAR LOAD, ASD	V_{strong} =	**0.197**	kips, (1 kN)
WEAK AXIS BENDING MOMENT	M_{ry} =	**0**	ft-kips, (0 kN-m), ASD
WEAK DIRECTION SHEAR LOAD, ASD	V_{weak} =	**0**	kips, (0 kN)

THE DESIGN IS ADEQUATE.

ANALYSIS

CHECK TORSIONAL CAPACITY (AISC 360 H3.1)

$$T_c = \frac{1}{\Omega_T} T_n = \frac{1}{\Omega_T}\begin{cases} \left[2(B-t)(H-t)t - 4.5(4-\pi)t^3\right]\begin{bmatrix} 0.6F_y \ , \ for \ \frac{h}{t} \le 2.45\sqrt{\frac{E}{F_y}} \\ 0.6F_y 2.45\sqrt{\frac{E}{F_y}}\frac{t}{h} \ , \ for \ \frac{h}{t} \le 3.07\sqrt{\frac{E}{F_y}} \\ 0.458\frac{E\pi^2}{(h/t)^2}, \ for \ \frac{h}{t} \le 260 \end{bmatrix} , \ for \ HSS \ Tube \\ \frac{\pi(D-t)^2 t}{2} Max\left[\frac{1.23E}{\sqrt{\frac{L}{D}}\left(\frac{D}{t}\right)^{(5/4)}} \ , \ \frac{0.60E}{\left(\frac{D}{t}\right)^{(3/2)}}\right] , \ for \ HSS \ Pipe \end{cases} = 1.7 \text{ ft-kips}$$

> T_r **[Satisfactory]**

Where	B	H	h	t	D	E
	2.00	2.00	1.44	0.19		29000

Ω_T = 1.67 ,ASD

CHECK COMBINED COMPRESSION AND BENDING CAPACITY (AISC 360 H1)

$$\begin{cases} \frac{P_r}{P_c} + \frac{8}{9}\left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \ , \ for \ \frac{P_r}{P_c} \ge 0.2 \\ \frac{P_r}{2P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \ , \ for \ \frac{P_r}{P_c} < 0.2 \end{cases} = 0.25 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

Where $P_c = P_n / \Omega_c$ = 17 / 1.67 = 10.45 kips, (AISC 360 Chapter E)
> P_r **[Satisfactory]**

$M_{cx} = M_n / \Omega_b$ = 3.06 / 1.67 = 1.83 ft-kips, (AISC 360 Chapter F)
> M_{rx} **[Satisfactory]**

$M_{cy} = M_n / \Omega_b$ = 3.06 / 1.67 = 1.83 ft-kips, (AISC 360 Chapter F)
> M_{ry} **[Satisfactory]**

CHECK SHEAR CAPACITY (AISC 360 G2)

$V_{n,strong} / \Omega_v$ = 13.8 / 1.67 = 8.3 kips > V_{strong} = 0.2 kips **[Satisfactory]**

$V_{n,weak} / \Omega_v$ = 13.8 / 1.67 = 8.3 kips > V_{weak} = 0.0 kips **[Satisfactory]**

CHECK COMBINED TORSION, SHEAR, COMPRESSION, AND BENDING CAPACITY (AISC 360 H3.2)

$$\begin{cases} \frac{P_r}{P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) + \left[Max\left(\frac{V_{strong}}{V_{c,strong}} \ , \ \frac{V_{weak}}{V_{c,weak}}\right) + \frac{T_r}{T_c}\right]^2 \ , \ for \ \frac{T_r}{T_c} > 0.2 \\ Torsion \ Neglected \ , \ for \ \frac{T_r}{T_c} \le 0.2 \end{cases} = 0.0 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

MISSION STRUCTURE ENGINEERING

PROJECT :	Las Positas College	PAGE :	
CLIENT :		DESIGN BY :	
JOB NO. :	DATE :	REVIEW BY :	

Eccentric Footing Design Based on ACI 318-19

PID.01 0.9DL+W Spread Ftg.

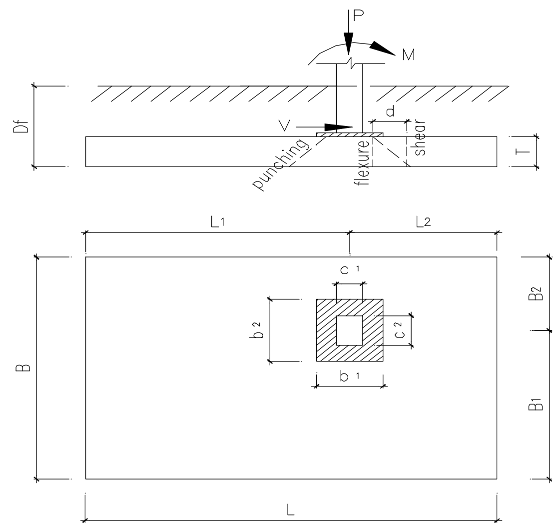
INPUT DATA

COLUMN WIDTH	c_1	=	2	in
COLUMN DEPTH	c_2	=	2	in
BASE PLATE WIDTH	b_1	=	5	in
BASE PLATE DEPTH	b_2	=	5	in
FOOTING CONCRETE STRENGTH	f_c'	=	2.5	ksi
REBAR YIELD STRESS	f_y	=	60	ksi
AXIAL DEAD LOAD	P_{DL}	=	1.514	k
AXIAL LIVE LOAD	P_{LL}	=	0	k
LATERAL LOAD (0=WIND, 1=SEISMIC)		=	0	Wind,SD
WIND AXIAL LOAD	P_{LAT}	=	0	k, SD
WIND MOMENT LOAD	M_{LAT}	=	1.069	ft-k, SD
WIND SHEAR LOAD	V_{LAT}	=	0.329	k, SD
SURCHARGE	q_s	=	0	ksf
SOIL WEIGHT	w_s	=	0.11	kcf
FOOTING EMBEDMENT DEPTH	D_f	=	1.5	ft
FOOTING THICKNESS	T	=	12	in
ALLOWABLE SOIL PRESSURE	Q_a	=	2	ksf
FOOTING WIDTH	B_1	=	1.75	ft
	B_2	=	1.75	ft
FOOTING LENGTH	L_1	=	1.75	ft
	L_2	=	1.75	ft
REINFORCING SIZE		#	4	

THE FOOTING DESIGN IS ADEQUATE.

DESIGN SUMMARY

FOOTING WIDTH	B	=	3.50	ft
FOOTING LENGTH	L	=	3.50	ft
FOOTING THICKNESS	T	=	12	in
LONGITUDINAL REINF., TOP	1 # 4			
LONGITUDINAL REINF., BOT.	3 # 4 @ 18 in o.c.			
TRANSVERSE REINF., BOT.	3 # 4 @ 18 in o.c.			



ANALYSIS

DESIGN LOADS AT TOP OF FOOTING (IBC 1605.2 & ACI 318 5.3)

CASE 1:	DL + LL	P	=	2	kips	1.2 DL + 1.6 LL	Pu	=	2	kips
		M	=	0	ft-kips		Mu	=	0	ft-kips
		e	=	0.0	ft, fr cl ftg		eu	=	0.0	ft, fr cl ftg
CASE 2:	DL + LL + 0.6(1.3) W	P	=	2	kips	1.2 DL + LL + 1.0 W	Pu	=	2	kips
		M	=	1	ft-kips		Mu	=	1	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	0.6	ft, fr cl ftg		eu	=	0.6	ft, fr cl ftg
CASE 3:	DL + LL + 0.6(0.65) W	P	=	2	kips	0.9 DL+ 1.0 W	Pu	=	1	kips
		M	=	1	ft-kips		Mu	=	1	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	0.4	ft, fr cl ftg		eu	=	0.8	ft, fr cl ftg

CHECK OVERTURNING FACTOR (2021 IBC 1605.2.1, 1808.3.1, & ASCE 7-22 12.13.4)

M_R / M_O = 5.0 **>** F = 1.0 / 0.9 = 1.11 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,T - P_{LAT}L_2$ = 1 k-ft

P_{ftg} = (0.15 kcf) T B L = 1.84 k, footing weight

P_{soil} = $w_s\,(D_f - T)$ B L = 0.67 k, soil weight

M_R = $P_{DL}L_2 + 0.5\,(P_{ftg} + P_{soil})\,L$ = 7 k-ft

FOR REVERSED LATERAL LOADS,

M_R / M_O = 4.5 **>** F = 1.0 / 0.9 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,D_f - P_{LAT}L_1$ = 2 k-ft

M_R = $P_{DL}L_1 + 0.5\,(P_{ftg} + P_{soil})\,L$ = 7 k-ft

CHECK SLIDING (2021 IBC 1807.2.3)

$1.5\,(V_{Lat,\,ASD})$ = 0.2961 kips < $\mu\,\Sigma W$ = 1.34 kips **[Satisfactory]**

Where ` μ = 0.4

(cont'd)

CHECK SOIL BEARING CAPACITY (ACI 318 13.3.1.1)

Service Loads	CASE 1		CASE 2		CASE 3		
P	1.5		1.5		1.5		k
e	0.0		0.8		0.5		ft (from center of footing)
q_s B L	0.0		0		0.0		k, (surcharge load)
$(0.15\text{-}w_s)$T B L	0.5		0.5		0.3		k, (footing increased)
Σ P	2.0		2.0		1.8		k
e_L	0.0	< L/6	0.6	> L/6	0.4	< L/6	ft
e_B	0.0	< B/6	0.0	< B/6	0.0	< B/6	ft
q_L	0.6		1.2		0.9		k / ft
q_{max}	0.2		0.3		0.3		ksf
q_{allow}	2.0		2.7		2.7		ksf

Where

$$q_L = \begin{cases} \dfrac{(\Sigma P)\left(1+\dfrac{6e_L}{L}\right)}{L}, & for \quad e_L \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P)}{3(0.5L-e_L)}, & for \quad e_L > \dfrac{L}{6} \end{cases} \qquad q_{MAX} = \begin{cases} \dfrac{q_L\left(1+\dfrac{6e_B}{B}\right)}{B}, & for \quad e_B \le \dfrac{B}{6} \\ \dfrac{2q_L}{3(0.5B-e_B)}, & for \quad e_B > \dfrac{B}{6} \end{cases}$$

[Satisfactory]

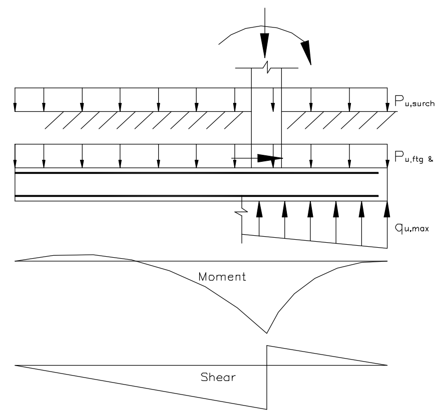
DESIGN FLEXURE & CHECK FLEXURE SHEAR
(ACI 318 13, 21, & 22)

$$q_{u,MAX} = \begin{cases} \dfrac{(\Sigma P_u)\left(1+\dfrac{6e_u}{L}\right)}{BL}, & for \quad e_u \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P_u)}{3B(0.5L-e_u)}, & for \quad e_u > \dfrac{L}{6} \end{cases}$$

$$\rho_{MAX} = \frac{0.85\beta_1 f'_c}{f_y}\frac{\varepsilon_u}{\varepsilon_u+\varepsilon_t}$$

$$\rho = \frac{0.85 f'_c\left(1-\sqrt{1-\dfrac{M_u}{0.383bd^2 f'_c}}\right)}{f_y}$$

$$\rho_{MIN} = MIN\left(0.0018\frac{T}{d} \;,\; \frac{4}{3}\rho\right)$$



FACTORED SOIL PRESSURE

Factored Loads	CASE 1		CASE 2		CASE 3		
P_u	1.8		1.8		1.4		k
e_u	0.0		0.8		1.0		ft
γ q_s B L	0.0		0.0		0.0		k, (factored surcharge load)
$\gamma[0.15T + w_s(D_f - T)]BL$	3.0		3.0		2.3		k, (factored footing & backfill loads)
Σ P_u	4.8		4.8		3.6		k
e_u	0.0	< L/6	0.3	< L/6	0.4	< L/6	ft
$q_{u,\ max}$	0.394		0.590		0.491		ksf

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **1**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.44	0.88	1.31	1.60	1.90	2.19	2.63	3.06	3.50
$M_{u,col}$ (ft-k)	0	0	0	0	0	-0.3	-0.8	-1.6	-2.4	-3.2
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.3	-0.7	-1.1	-1.5	-2.1	-3.0	-4.0	-5.3
$V_{u,ftg\ \&\ fill}$ (k)	0	0.4	0.8	1.1	1.4	1.6	1.9	2.3	2.6	3.0
$q_{u,soil}$ (ksf)	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
$M_{u,soil}$ (ft-k)	0	0.1	0.5	1.2	1.8	2.5	3.3	4.8	6.5	8.5
$V_{u,soil}$ (k)	0	-0.6	-1.2	-1.8	-2.2	-2.6	-3.0	-3.6	-4.2	-4.8
Σ M_u (ft-k)	**0**	**0.0**	**0.2**	**0.4**	**0.7**	**0.7**	**0.4**	**0.2**	**0.0**	**0**
Σ V_u (kips)	**0**	**-0.2**	**-0.5**	**-0.7**	**-0.8**	**0.8**	**0.7**	**0.5**	**0.2**	**0**

(cont'd)

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **2**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.44	0.88	1.31	1.60	1.90	2.19	2.63	3.06	3.50
$M_{u,col}$ (ft-k)	0	0	0	0	0	1.1	0.6	-0.2	-1.0	-1.8
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.3	-0.7	-1.1	-1.5	-2.1	-3.0	-4.0	-5.3
$V_{u,ftg\ \&\ fill}$ (k)	0	0.4	0.8	1.1	1.4	1.6	1.9	2.3	2.6	3.0
$q_{u,soil}$ (ksf)	0.20	0.25	0.30	0.35	0.38	0.41	0.44	0.49	0.54	0.59
$M_{u,soil}$ (ft-k)	0	0.1	0.3	0.7	1.2	1.7	2.3	3.6	5.1	7.1
$V_{u,soil}$ (k)	0	-0.3	-0.8	-1.2	-1.6	-2.0	-2.5	-3.2	-4.0	-4.8
Σ M_u (ft-k)	**0**	**0.0**	**0.0**	**0.0**	**0.1**	**1.3**	**0.9**	**0.4**	**0.1**	**0**
Σ V_u (kips)	**0**	**0.0**	**0.0**	**-0.1**	**-0.2**	**1.4**	**1.2**	**0.9**	**0.5**	**0**

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **3**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.44	0.88	1.31	1.60	1.90	2.19	2.63	3.06	3.50
$M_{u,col}$ (ft-k)	0	0	0	0	0	1.2	0.8	0.2	-0.4	-1.0
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.2	-0.6	-0.8	-1.2	-1.5	-2.2	-3.0	-4.0
$V_{u,ftg\ \&\ fill}$ (k)	0	0.3	0.6	0.8	1.0	1.2	1.4	1.7	2.0	2.3
$q_{u,soil}$ (ksf)	0.10	0.15	0.20	0.25	0.28	0.31	0.34	0.39	0.44	0.49
$M_{u,soil}$ (ft-k)	0	0.0	0.2	0.4	0.7	1.1	1.5	2.4	3.5	4.9
$V_{u,soil}$ (k)	0	-0.2	-0.5	-0.8	-1.1	-1.4	-1.7	-2.3	-2.9	-3.6
Σ M_u (ft-k)	**0**	**0.0**	**-0.1**	**-0.1**	**-0.1**	**1.1**	**0.8**	**0.4**	**0.1**	**0**
Σ V_u (kips)	**0**	**0.1**	**0.1**	**0.1**	**0.0**	**1.2**	**1.1**	**0.8**	**0.4**	**0**

DESIGN FLEXURE

Location	$M_{u,max}$		d (in)	ρ_{min}	ρ_{reqD}	ρ_{max}	s_{max}	use	ρ_{provD}
Top Longitudinal	0.1	ft-k	9.75	0.0000	0.0000	0.0129	no limit	1 # 4	0.0005
Bottom Longitudinal	1.3	ft-k	8.75	0.0001	0.0001	0.0129	18	3 # 4 @ 18 in o.c.	0.0016
Bottom Transverse	0	ft-k / ft	8.50	0.0001	0.0000	0.0129	18	3 # 4 @ 18 in o.c.	0.0017

[Satisfactory]

CHECK FLEXURE SHEAR

Direction	$V_{u,max}$		$\phi V_c = 2\ \phi\ b\ d\ (f_c')^{0.5}$		check $V_u < \phi\ V_c$
Longitudinal	1.4	k	28	k	**[Satisfactory]**
Transverse	0.2	k / ft	8	k / ft	**[Satisfactory]**

CHECK PUNCHING SHEAR (ACI 318 13.2.7.2, 22.6.4.1, 22.6.4.3, & 8.4.2.3)

$$v_u(psi) = \frac{P_u - R}{A_P} + \frac{0.5\gamma_v M_u b_1}{J}$$

$$A_P = 2(b_1 + b_2)d$$

$$\phi v_c(psi) = \phi(2+y)\sqrt{f_c'}$$

$$J = \left(\frac{d b_1^3}{6}\right)\left[1 + \left(\frac{d}{b_1}\right)^2 + 3\left(\frac{b_2}{b_1}\right)\right]$$

$$\gamma_v = 1 - \frac{1}{1 + \frac{2}{3}\sqrt{\frac{b_1}{b_2}}}$$

$$y = MIN\left(2, \frac{4}{\beta_c}, 40\frac{d}{b_0}\right)$$

$$R = \frac{P_u b_1 b_2}{A_f}$$

$$A_f = BL$$

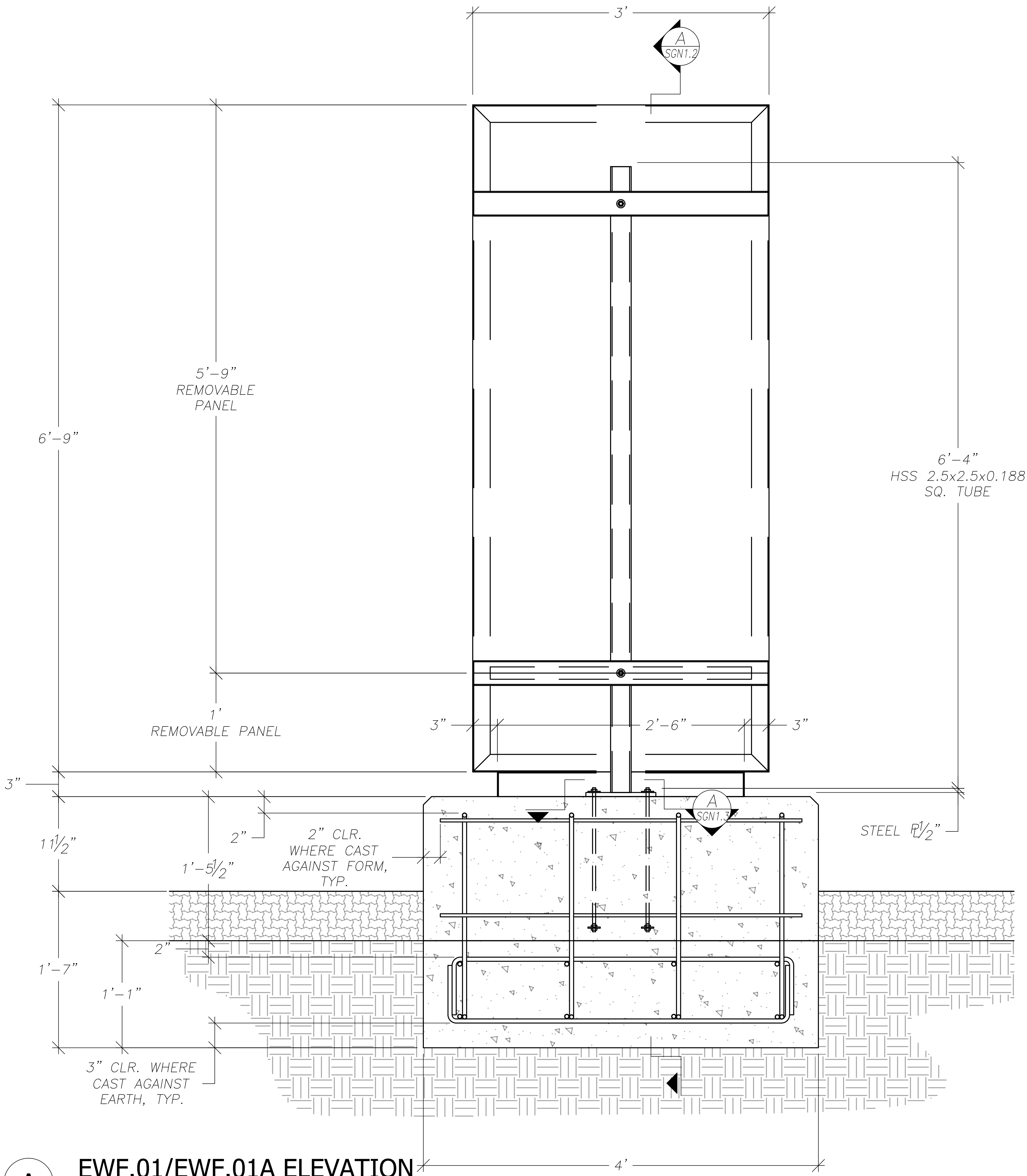
$$b_0 = \frac{A_P}{d}, b_1 = (0.5c_1 + 0.5b_1 + d), b_2 = (0.5c_2 + 0.5b_2 + d)$$

Case	P_u	M_u	b_1	b_2	b_0	γ_v	β_c	y	A_f	A_p	R	J	$v_{u\ (psi)}$	$\phi\ v_c$
1	1.8	0.0	12.0	12.0	0.3	0.4	1.0	2.0	12.3	2.8	0.1	0.5	4.1	150.0
2	1.8	1.1	12.0	12.0	0.3	0.4	1.0	2.0	12.3	2.8	0.1	0.5	4.1	150.0
3	1.4	1.1	12.0	12.0	0.3	0.4	1.0	2.0	12.3	2.8	0.1	0.5	3.1	150.0

[Satisfactory]

where ϕ = 0.75 , (ACI 318 21.2)

NOTE: PEDESTAL/PLINTH TO BE FORMED W/ BOARD FORM OR BOARD FORM LINER. PATTERN T.B.D.



A EWF.01/EWF.01A ELEVATION

SCALE: 1"=1'

MISSION STRUCTURE ENGINEERING

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ISSUED FOR	REV	DATE
1st Submission	0	1/15/26

SEALS AND SIGNATURES

LICENSED PROFESSIONAL ENGINEER
MICHAEL CLARK BENNETT
C 90708
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CLIENT INFORMATION

SHANNON LEIGH
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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

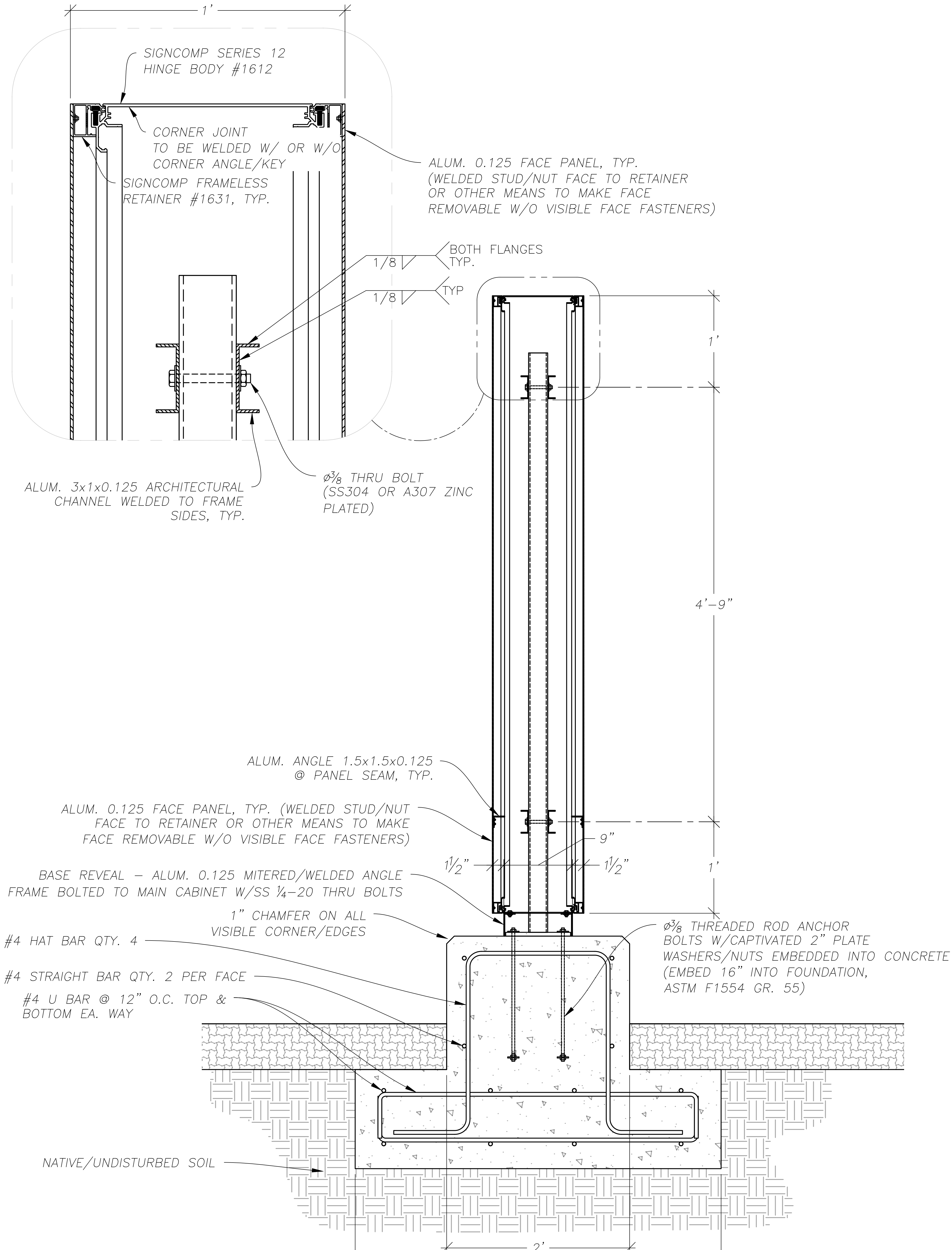
PROJECT NUMBER

DRAWING TITLE

EWF.01/EWF.01A
Elevation

DRAWING NUMBER

SGN1.1



B

EWF.01 SECTION

SCALE: 1"=1'

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1st Submission	0	1/15/26

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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

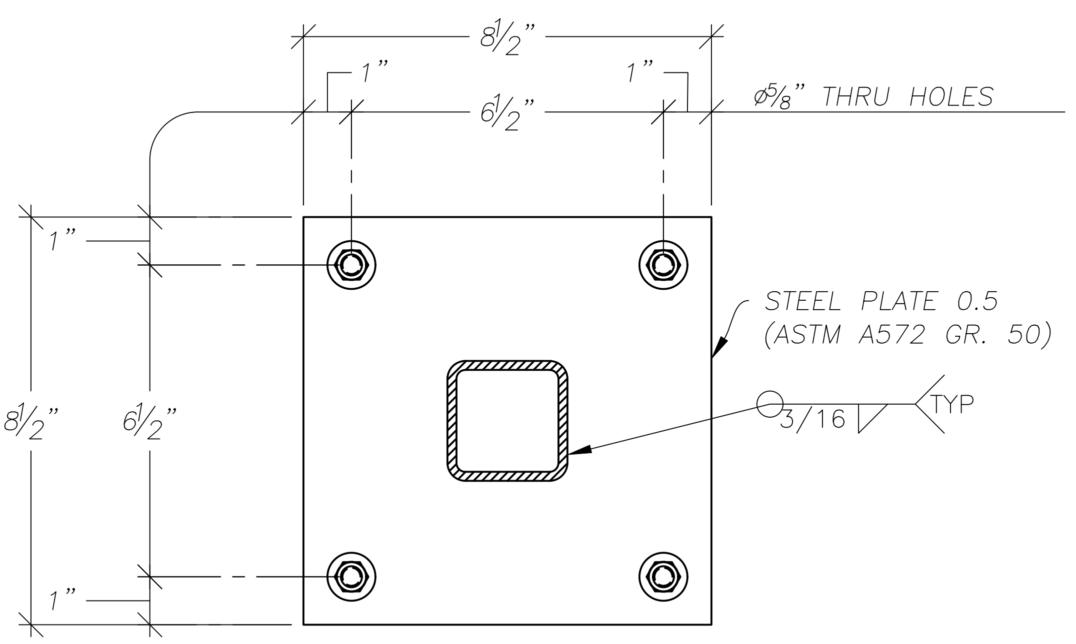
PROJECT NUMBER

DRAWING TITLE

EWF.01/EWF.01A
Section

DRAWING NUMBER

SGN1.2



NOTE: MAY USE TRIANGULAR STIFFENER/GUSSET FOR IMPROVED FIT UP

A

BASEPLATE TYPE 1

SCALE: 3"=1'

NOTE: APPLY HEAVY EPOXY PRIMER TO ALL SURFACES OF BASEPLATES

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PROJECT INFORMATION

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Livermore, CA 94551

PROJECT NUMBER

DRAWING TITLE

EWF.01/EWF.01A Details

DRAWING NUMBER

SGN1.3

Freestanding Monument Sign

Project Location:
3000 Campus Hill Drive
Livermore, CA 94551

for

Shannon-Leigh Associates, LLC
1455 Hays Street
San Leandro, CA 94577

LICENSED PROFESSIONAL ENGINEER
MICHAEL CLARK BENNETT
C 90708
CIVIL
STATE OF CALIFORNIA

Scope of design:

Design of freestanding monument sign anchorage & foundation. Design includes load analysis, base plate/anchor bolt design & footing design. Design Criteria based on geotechnical report by Ninyo & Moore dated November 22, 2023.

Current Codes Which Shall Apply (As applicable to project):

CBC 2025, ASCE 7-22, AISC 360-22, ACI 318-19, AA ADM1 2020,

Dead Load

Total Sign Weight: $DL = \text{Total Weight} = 189.25\ \text{lbf}$

Alum. Cabinet Weight: $DL_{cab} = \text{Weight.F14} = 119.25\ \text{lbf}$

Seismic Load (Full Sign Mass)

Seismic Loads

Seismic Loads of Non-Building Structures

ASCE 7-16 Chapter 15

Seismic Base Shear: $V_B = C_s * W_p$

Response Modification Factor: $R = 3$

Spectral Acceleration, Short Period: $SDS = 1.36$

Importance Factor: $I = 1$

Seismic Weight: $W_p = 189.25\ \text{lbf}$

Seismic Response Coefficient: $C_s = \dfrac{SDS}{\frac{R}{I}} = 0.453$

Seismic Base Shear: $V_B = C_s * W_p = 85.793\ \text{lbf}$

Overstrength Factor, Ω (where applicable): $OS = 1.75$

Load Distribution

Per ASCE Chapter 29

Top of Sign Height: $h = 8\ \text{ft}$

Cabinet Height: $h_c = \text{Weight.C2} = 7\ \text{ft}$

Pedestal Height: $h_p = 1\ \text{ft}$

Sign Height: $s = h_c + h_p = 8\ \text{ft}$

Sign Width (Breadth): $B = \text{Weight.E2} = 3\ \text{ft}$

Number of Posts: $n_p = 1$

Gross Sign Area: $A_g = s * B = 24\ \text{ft}^2$

Tributary Area (single post): $A_n = A_g = 24\ \text{ft}^2$

Moment Arm (@ baseplate): $arm_1 = 1.05 * \left(\frac{h_c}{2}\right) = 3.675 \text{ ft}$

Moment Arm (@ top of ftg.): $arm_T = 1.05 * \left(\frac{s}{2}\right) + 0.5 \text{ ft} = 4.7 \text{ ft}$

Wind Pressure: $p_w = 25 \text{ psf}$

Wind Load Section 1: $W_{l1} = p_w * A_n = 600 \text{ lbf}$

Wind Moment Section 1: $M_{w1} = W_{l1} * arm_1 = 2205 \text{ lbf} * \text{ft}$ (Wind controls acting on sign face)

Wind Torsion: $T_w = 0.2 * B * W_{l1} = 360 \text{ ft} * \text{lbf}$

Seismic Load on Section 1 (alum. cab.): $EQ_{s1} = EQ2.C_s * DL = 85.793 \text{ lbf}$

Seismic Load Section 1 w/ Over strength: $EQ_{s1os} = EQ_{s1} * EQ2.OS = 150.138 \text{ lbf}$

EQ Lateral Shear Force @ baseplate: $V_{1eq} = EQ_{s1} = 85.793 \text{ lbf}$

EQ Lateral Force Moment: $M_{1eq} = V_{1eq} * arm_1 = 315.291 \text{ lbf} * \text{ft}$

EQ Lateral Force w/ OS: $V_{1eqos} = EQ_{s1os} = 150.138 \text{ lbf}$

EQ Lateral Force Moment w/OS: $M_{1eqos} = V_{1eqos} * arm_1 = 551.758 \text{ lbf} * \text{ft}$

LRFD Load Combinations (as applicable-anchorage)

LC: 0.9 DL + 1.0 W

Deal Load: $DL_{min} = \frac{0.9 * (DL_{cab})}{n_p} = 107.325 \text{ lbf}$

Shear Wind: $V_{1w1} = W_{l1} = 600 \text{ lbf}$

Moment Wind: $M_{1w1} = V_{1w1} * arm_1 = 2205 \text{ lbf} * \text{ft}$

LC: 1.2 DL + 1.0 W

Deal Load: $DL_{max} = \frac{1.2 * (DL_{cab})}{n_p} = 143.1 \text{ lbf}$

Shear Wind: $V_{1w2} = W_{l1} = 600 \text{ lbf}$

Moment Wind: $M_{1w2} = V_{1w2} * arm_1 = 2205 \text{ lbf} * \text{ft}$

LC: 0.9 DL - 1.0 E_v + E_{mh}

Dead Load: $DL_{eqmin} = \frac{0.9 * (DL_{cab})}{n_p} = 107.325 \text{ lbf}$

Vertical Seismic: $E_{v1} = \frac{-0.2 * EQ2.SDS * (DL_{cab})}{n_p} = -32.436 \text{ lbf}$

Shear EQ: $V_{1eq1} = \frac{EQ_{s1os}}{n_p} = 150.138 \text{ lbf}$

Moment EQ: $M_{1eq1} = \left(\frac{EQ_{s1os}}{n_p}\right) * arm_1 = 551.758 \text{ lbf} * \text{ft}$

LC: 1.2 DL + 1.0 E_v + E_{mh}

Dead Load: $DL_{1eqmax} = \dfrac{1.2 * \left(DL_{cab}\right)}{n_p} = 143.1\ lbf$

Vertical Seismic: $E_{v2} = \dfrac{0.2 * EQ2.SDS * \left(DL_{cab}\right)}{n_p} = 32.436\ lbf$

Shear EQ: $V_{eq2} = \dfrac{EQ_{s1os}}{n_p} = 150.138\ lbf$

Moment EQ: $M_{eq2} = \dfrac{EQ_{s1os} * arm_1}{n_p} = 551.758\ lbf * ft$

ASD Load Combinations
(Note: Omit axial loads on post-no restoring moment weld design)

LC: DL + 0.6 W

LC: DL + 0.7 $\left(E_v + E_{mh}\right)$

Convert to ASD/service level loads

Vertical Load, ASD: $DL_{S1} = DL = 189.25\ lbf$

Wind Pressure, ASD: $p_{wasd} = p_w * 0.6 = 15\ psf$

Wind Load, ASD: $W_{lasd} = p_{wasd} * A_n = 360\ lbf$

Wind Force Moment, ASD: $M_{wasd} = arm_1 * W_{lasd} = 1323\ ft * lbf$

Max. Vertical Load, ASD: $DL_{eqasd} = \dfrac{DL_{S1} + 0.7 * 0.2 * EQ2.SDS * DL_{S1}}{n_p} = 225.283\ lbf$

Seismic Load, ASD: $EQ_{asd} = \dfrac{EQ2.V_B * 0.7}{n_p} = 60.055\ lbf$

Seismic Load w/ OS, ASD: $EQ_{osasd} = EQ_{asd} * EQ2.OS = 105.097\ lbf$

Seismic Force Moment, ASD: $M_{eqasd} = arm_1 * EQ_{asd} = 220.703\ ft * lbf$

Seismic Force Moment w/ OS, ASD: $M_{eqasdos} = EQ_{osasd} * arm_1 = 386.231\ lbf * ft$

Weld Connection From Post to Base Plate

Tube Depth: $d_{tube} = 3\ in$

Tube Breadth: $b_{tube} = 3\ in$

Tube Wall Thickness: $t_{tube} = 0.188\ in$

Weld Line Section Modulus: $S_w = d_{tube} * b_{tube} + \dfrac{{d_{tube}}^2}{3} = 12\ in^2$

Weld Line Area: $A_w = d_{tube} * 2 + b_{tube} * 2 = 12 \text{ in}$

Fillet Weld Design (AISC 360 Section J2.4 or ADM J.2)

Weld to resist loads V & M.
Material = "Steel"

Weld Group Configuration: Type = "sq 3x3x0.188"

Input Weld Shear Load: $V = W_{lasd} = 360 \text{ lbf}$

Input Weld Moment Load: $M = M_{wasd} = 1323 \text{ ft} * \text{lbf}$

Weld Line Section Modulus (bending): $S_w = \text{Report1}.S_w = 12 \text{ in}^2$

Weld Line Section Modulus (shear): $A_w = \text{Report1}.A_w = 12 \text{ in}$

Required Strength: $$R = \sqrt{\left(\frac{V}{A_w}\right)^2 + \left(\frac{M}{S_w}\right)^2} = 1323.3 \frac{\text{lb}}{\text{in}}$$

Weld Electrode Tensile Strength: $f_u = 70 \text{ ksi}$

Weld Factor of Safety: $\Omega_w = 2$

Strength of Weld per inch: $$R_n = \begin{cases} \left(\dfrac{0.707 * f_u * 0.6 * \left(\dfrac{1 \text{ in}}{16}\right)}{\Omega_w}\right) & \text{if Material == "Steel"} \\ \left(\dfrac{0.707 * 0.85 * f_u * 0.6 * \left(\dfrac{1 \text{ in}}{16}\right)}{\Omega_w}\right) & \text{otherwise} \end{cases} = 927.9 \frac{\text{lb}}{\text{in}}$$

Required Size of Weld: $a_{req} = \text{RoundUp}\left(\frac{R}{R_n}\right) =$ 2/16" Weld Leg Size

Foundation Loads

Spread Footing Foundation

Nominal loads for allowable capacities per geotechnical report. Seismic Loads to have omega/overstrength applied (cantilever foundation system). Design provided in design worksheet to follow.

Width of Footing: $W_{ftg} = 4 \text{ ft}$

Length of Footing: $l_{ftg} = 4 \text{ ft}$

Width of Pedestal: $W_{ped} = 2 \text{ ft}$

Length of Pedestal: $l_{ped} = 4 \text{ ft}$

Height of Pedestal: $H_{ped} = 18 \text{ in}$

Weight of Concrete Pedestal: $Wt_{ped} = W_{ped} * l_{ped} * H_{ped} * 150 \text{ pcf} = 1800 \text{ lbf}$

LC: 0.9 DL + W
(nominal values for foundation software shown below)

Vertical Force: $A_1 = 0.9 * (DL + Wt_{ped}) = 1790.325 \text{ lbf}$

Horizontal Force: $P_1 = (B * s * p_w) = 600 \text{ lbf}$

Moment: $M_1 = P_1 * arm_T = 2820 \text{ lbf} * \text{ft}$

LC: 0.9 DL + $\left(E_v + E_{mh}\right)$
(nominal values for foundation software shown below)

DL Vertical Force: $A_2 = 0.9 * \left(DL + Wt_{ped}\right) = 1790.325$ lbf

EQ Vertical Force: $A_3 = \left(-0.2 * EQ2.SDS * \left(DL + Wt_{ped}\right)\right) = -541.076$ lbf

Horizontal Forces:

Sign Cabinet: $P_2 = EQ2.V_B * EQ2.OS = 150.138$ lbf

Sign Cabinet moment arm: $a_2 = arm_T = 4.7$ ft

Sign Cabinet moment: $M_2 = P_2 * a_2 = 705.650$ lbf * ft

Combined EQ Axial: $A_{eq} = A_2 + A_3 = 1249.249$ lbf

Combined EQ Shear: $V_{eq} = P_2 = 150.138$ lbf

Combined EQ Moment: $M_{eq} = M_2 = 705.650$ lbf * ft

Weight Takeoff

	Height:	7 ft	Width:	3 ft	
Component	Unit Wt	Unit Qty	Wt	Qty	Weight
Skin	2 psf	21 ft^2	42 lbf	2	84 lbf
Post	10 plf	7 ft	70 lbf	1	70 lbf
Channel Extrusion	1.5 plf	20 ft	30 lbf	1	30 lbf
Misc Framing/Stiffeners	0.25 psf	21 ft^2	5.25 lbf	1	5.25 lbf

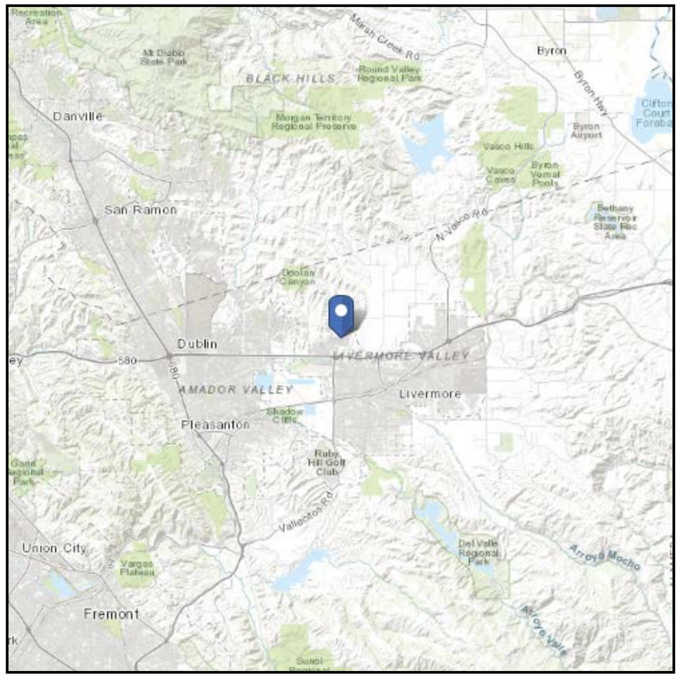
Cabinet Wt.:	119.3 lbf
Total:	189.3 lbf

ASCE Hazards Report

Address:
Las Positas College - 3000 Campus Hill Drive
Livermore,

Standard: ASCE/SEI 7-22
Risk Category: III
Soil Class: D - Stiff Soil

Latitude: 37.710873
Longitude: -121.80058
Elevation: 480.38484203241944 ft (NAVD 88)



Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	79 Vmph
300-year MRI	87 Vmph
700-year MRI	93 Vmph
1,700-year MRI	99 Vmph
3,000-year MRI	103 Vmph
10,000-year MRI	113 Vmph
100,000-year MRI	129 Vmph
1,000,000-year MRI	147 Vmph

Data Source: ASCE/SEI 7-22, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Nov 24 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

Seismic

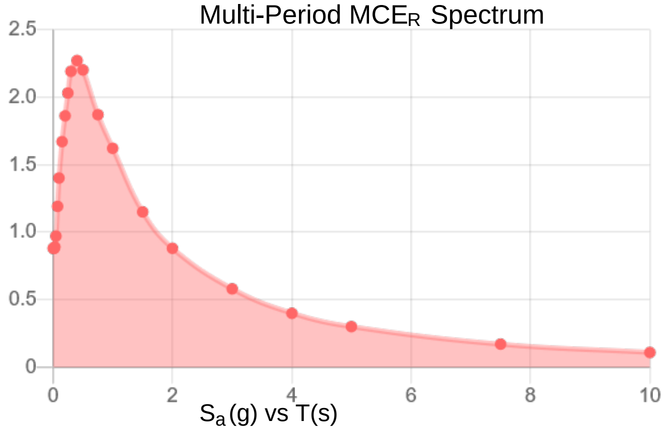
Site Soil Class: D - Stiff Soil

Results:

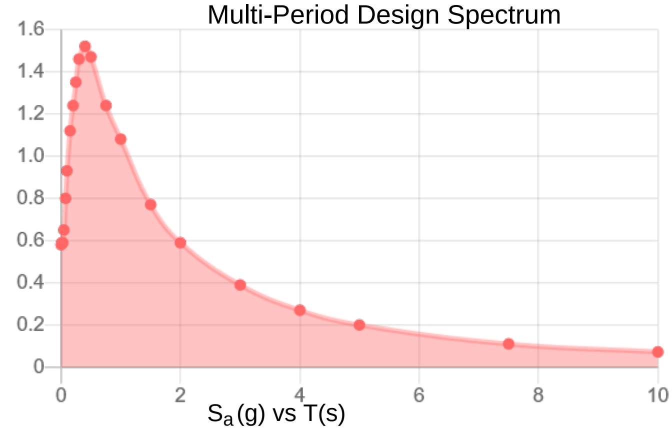
PGA_M :	0.73	T_L :	8
S_{MS} :	2.05	S_S :	2.13
S_{M1} :	1.62	S_1 :	0.81
S_{DS} :	1.36	V_{S30} :	260
S_{D1} :	1.08		

Seismic Design Category: E

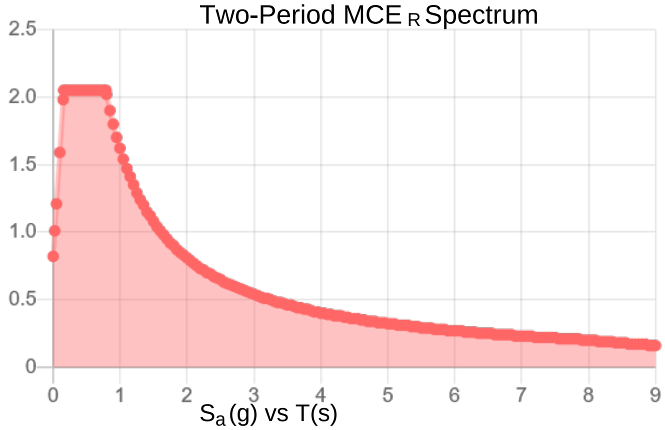
Multi-Period MCE_R Spectrum



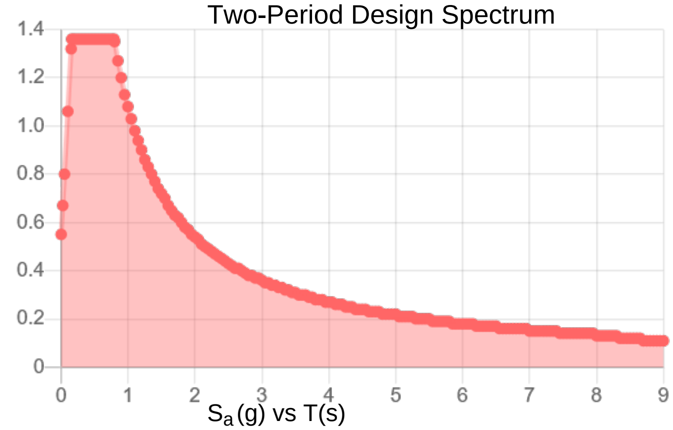
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Mon Nov 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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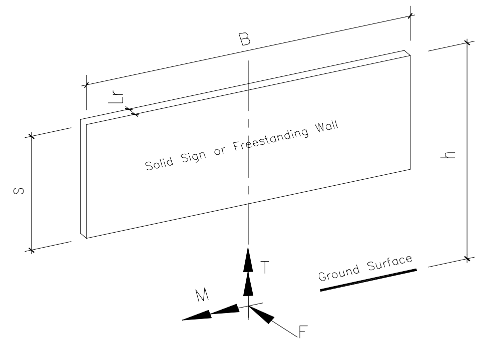
MISSION STRUCTURE ENGINEERING

PROJECT : Las Positas College
CLIENT : Shannon Leigh
JOB NO. :
DATE :
PAGE :
DESIGN BY :
REVIEW BY :

Wind Analysis for Freestanding Wall & Sign Based on ASCE 7-16 | **Monument Sign Wind Pressure**

INPUT DATA

Exposure category (B, C or D)	=	C	
Importance factor, 1.0 only, (Table 1.5-2)	I_w =	1.00	
Basic wind speed (ASCE 7 26.5.1)	V =	99	*mph, (159.32 kph)*
Topographic factor (26.8 & Table 26.8-1)	K_{zt} =	1	Flat
Height of top	h =	15	*ft, (4.57 m)*
Vertical dimension (for wall, s = h)	s =	15	*ft, (4.57 m)*
Horizontal dimension	B =	4	*ft, (1.22 m)*
Dimension of return corner	L_r =	0	*ft, (0.00 m)*



DESIGN SUMMARY

Max horizontal wind pressure	p	=	25 *psf, (1201 N/m^2)*
Max total horizontal force at centroid of base	F	=	1.50 *kips, (7 kN)*
Max bending moment at centroid of base	M	=	12.42 *ft-kips, (17 kN-m)*
Max torsion at centroid of base	T	=	1.20 *ft-kips, (2 kN-m)*

ANALYSIS

Velocity pressure

q_h K_d = (0.00256 $K_z K_{zt} K_e V^2$) K_d = **18.13** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 277), K_e = **1.00** , (Tab. 26.9-1 page 275)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 277) = **0.85**

K_d = wind directionality factor. (Tab. 26.6-1, page 274) = **0.85**

h = height of top = **15.00** ft

Wind Force Case A: resultant force though the geometric center (Sec. 29.3.1)

p = q_h K_d G C_N	=	**25**	psf
F = p A_s	=	**1.50**	kips
M = F (h - 0.5s) for sign, F (0.55h) for wall	=	**12.42**	ft-kips
T =	=	**0.00**	ft-kips

where: G = gust effect factor. (Sec. 26.9) = **0.85**

C_f = net force coefficient. (Fig. 29.3-1, page 301) **1.63**

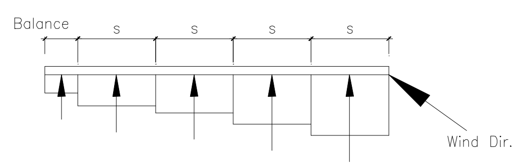
A_s = B s = **60.0** ft^2

Wind Force Case B: resultant force at 0.2 B offset of the geometric center (Sec. 29.3.1)

p = Case A	=	**25**	psf
F = Case A	=	**1.50**	kips
M = Case A	=	**12.42**	ft-kips
T = 0.2 F B	=	**1.20**	ft-kips

Wind Force Case C: resultant force different at each region (Sec. 29.4.1)

p = q_h G C_f
F = Σ p A_s
M = Σ [F (h - 0.5s) for sign, F (0.55h) for wall]
T = Σ T_s



Distance (ft)	C_f (Fig. 29.3-1)	P_i (psf)	A_{si} (ft^2)	F_i (kips)	M_i (ft-kips)	T_i (ft-kips)
4.0	1.800	28	60	1.66	13.73	0.00
4.0	1.200	18	0	0.00	0.00	0.00
Σ				**1.66**	**13.73**	**0.00**

<== Case C may not be considered, footnote 3 of Fig. 6-20

PROJECT :	Las Positas		PAGE :
CLIENT :			DESIGN BY :
JOB NO. :		DATE :	REVIEW BY :

HSS (Tube, Pipe) Member Design with Torsional Loading Based on AISC 360-10/16 **EWF.01 Post DL+W**

INPUT DATA & DESIGN SUMMARY

MEMBER SHAPE (Tube or Pipe) & SIZE		**HSS2X2X3/16**	< ==	**Tube**
STEEL YIELD STRESS	F_y =	46	ksi, (317 MPa)	
TORSIONAL FORCE	T_r =	0.36	ft-kips, (0 kN-m), ASD	
AXIAL COMPRESSION FORCE	P_r =	0.19	kips, (1 kN), ASD	
STRONG AXIS EFFECTIVE LENGTH	kL_x =	12	ft, (3.66 m)	
WEAK AXIS EFFECTIVE LENGTH	kL_y =	12	ft, (3.66 m)	
STRONG AXIS BENDING MOMENT	M_{rx} =	1.33	ft-kips, (2 kN-m), ASD	
STRONG AXIS BENDING UNBRACED LENGTH	L_b =	7	ft, (2.13 m), (AISC 360 F2.2.c)	
STRONG DIRECTION SHEAR LOAD, ASD	V_{strong} =	0.36	kips, (2 kN)	
WEAK AXIS BENDING MOMENT	M_{ry} =	0	ft-kips, (0 kN-m), ASD	
WEAK DIRECTION SHEAR LOAD, ASD	V_{weak} =	0	kips, (0 kN)	

THE DESIGN IS ADEQUATE.

ANALYSIS

CHECK TORSIONAL CAPACITY (AISC 360 H3.1)

$$T_c=\frac{1}{\Omega_T}T_n=\frac{1}{\Omega_T}\begin{cases}\left[2(B-t)(H-t)t-4.5(4-\pi)t^3\right]\begin{bmatrix}0.6F_y\ ,\ for\ \frac{h}{t}\le 2.45\sqrt{\frac{E}{F_y}}\\ 0.6F_y 2.45\sqrt{\frac{E}{F_y}}\frac{t}{h}\ ,\ for\ \frac{h}{t}\le 3.07\sqrt{\frac{E}{F_y}}\\ 0.458\frac{E\pi^2}{(h/t)^2},\ for\ \frac{h}{t}\le 260\end{bmatrix},\ for\ HSS\ Tube\\ \frac{\pi(D-t)^2 t}{2}Max\left[\frac{1.23E}{\sqrt{\frac{L}{D}}\left(\frac{D}{t}\right)^{(5/4)}}\ ,\ \frac{0.60E}{\left(\frac{D}{t}\right)^{(3/2)}}\right],\ for\ HSS\ Pipe\end{cases} = 1.7 \text{ ft-kips}$$

> T_r **[Satisfactory]**

Where	B	H	h	t	D	E
	2.00	2.00	1.44	0.19		29000

Ω_T = 1.67 ,ASD

CHECK COMBINED COMPRESSION AND BENDING CAPACITY (AISC 360 H1)

$$\begin{cases}\frac{P_r}{P_c}+\frac{8}{9}\left(\frac{M_{rx}}{M_{cx}}+\frac{M_{ry}}{M_{cy}}\right)\ ,\ for\ \frac{P_r}{P_c}\ge 0.2\\ \frac{P_r}{2P_c}+\left(\frac{M_{rx}}{M_{cx}}+\frac{M_{ry}}{M_{cy}}\right)\ ,\ for\ \frac{P_r}{P_c}<0.2\end{cases} = 0.75 < 1.3$$

[Satisfactory]
(2021 IBC, 1605.3.2)

Where $P_c = P_n / \Omega_c$ = 8 / 1.67 = 4.65 kips, (AISC 360 Chapter E)
> P_r **[Satisfactory]**

$M_{cx} = M_n / \Omega_b$ = 3.06 / 1.67 = 1.83 ft-kips, (AISC 360 Chapter F)
> M_{rx} **[Satisfactory]**

$M_{cy} = M_n / \Omega_b$ = 3.06 / 1.67 = 1.83 ft-kips, (AISC 360 Chapter F)
> M_{ry} **[Satisfactory]**

CHECK SHEAR CAPACITY (AISC 360 G2)

$V_{n,strong} / \Omega_v$ = 13.8 / 1.67 = 8.3 kips > V_{strong} = 0.4 kips **[Satisfactory]**

$V_{n,weak} / \Omega_v$ = 13.8 / 1.67 = 8.3 kips > V_{weak} = 0.0 kips **[Satisfactory]**

CHECK COMBINED TORSION, SHEAR, COMPRESSION, AND BENDING CAPACITY (AISC 360 H3.2)

$$\begin{cases}\frac{P_r}{P_c}+\left(\frac{M_{rx}}{M_{cx}}+\frac{M_{ry}}{M_{cy}}\right)+\left[Max\left(\frac{V_{strong}}{V_{c,strong}}\ ,\ \frac{V_{weak}}{V_{c,weak}}\right)+\frac{T_r}{T_c}\right]^2\ ,\ for\ \frac{T_r}{T_c}>0.2\\ Torsion\ \ Neglected\ ,\ for\ \frac{T_r}{T_c}\le 0.2\end{cases} = 0.8 < 1.3$$

[Satisfactory]
(2021 IBC, 1605.3.2)

Anchor Designer™ for Concrete Software
Version 3.4.2506.1

Company:		Date:	11/24/2025
Engineer:		Page:	1
Project:	Las Positas		
Address:			
Phone:			
E-mail:			

1.Project information

Project description:
Location: EWF.01 0.9DL+W
Design name: Design

Comment:

2. Input Data & Anchor Parameters

General
Design method:ACI 318-19
Units: Imperial units

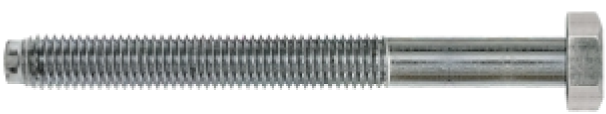
Anchor Information:
Anchor type: Cast-in-place
Material: F1554 Grade 55
Diameter (inch): 0.375
Effective Embedment depth, h_{ef} (inch): 8.000
Anchor category: -
Anchor ductility: Yes
h_{min} (inch): 9.13
C_{min} (inch): 2.25
S_{min} (inch): 2.25

Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 24.00
State: Cracked
Compressive strength, f'_c (psi): 2500
$\Psi_{c,V}$: 1.2
Reinforcement condition: B tension, B shear
Supplemental edge reinforcement: Not applicable
Reinforcement provided at corners: Yes
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: No
Ignore 6do requirement: No
Build-up grout pad: Yes

Base Plate
Length x Width x Thickness (inch): 8.50 x 8.50 x 0.50
Yield stress: 50000 psi

Profile type/size: 4X4X1/4

Recommended Anchor
Anchor Name: Heavy Hex Bolt - 3/8"Ø Heavy Hex Bolt, F1554 Gr. 55

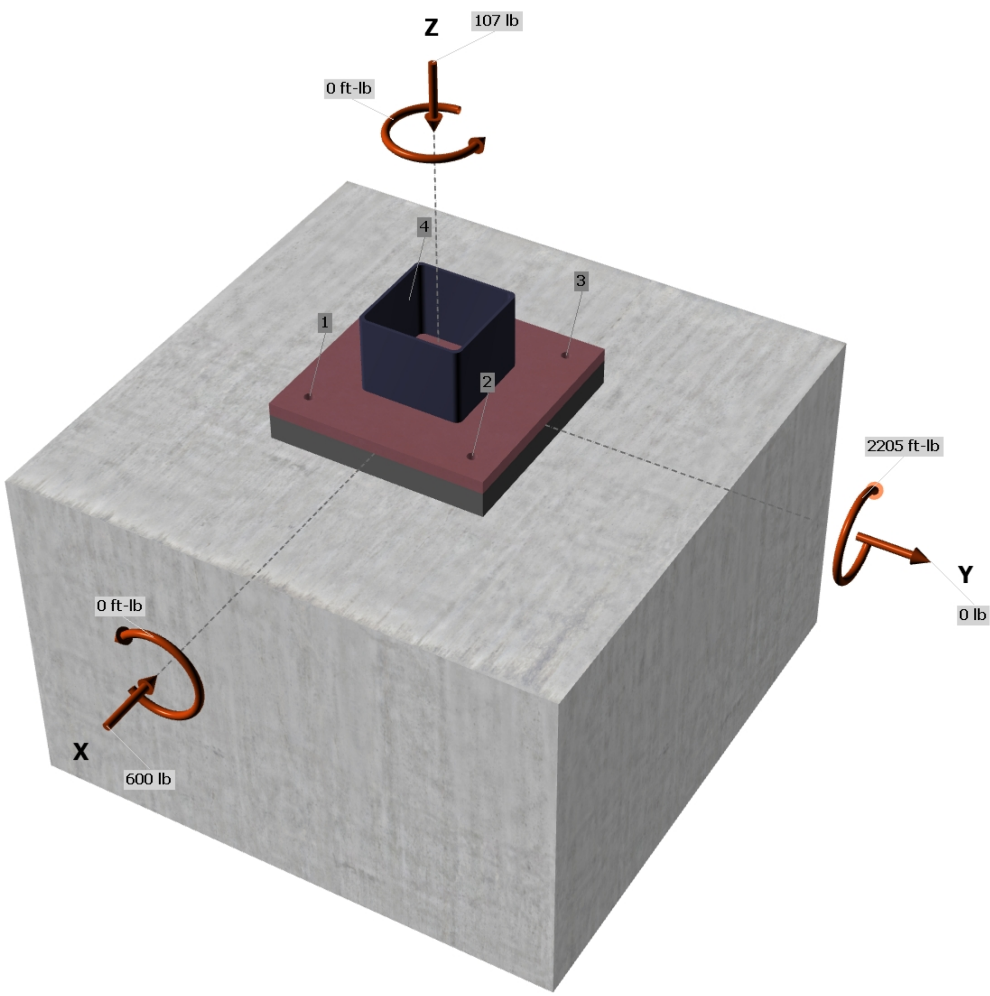


Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: not set
Seismic design: Yes
Anchors subjected to sustained tension: Not applicable
Ductility section for tension: 17.10.5.3 (d) is satisfied
Ductility section for shear: 17.10.6.3 (c) is satisfied
Ω_0 factor: not set
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: Yes

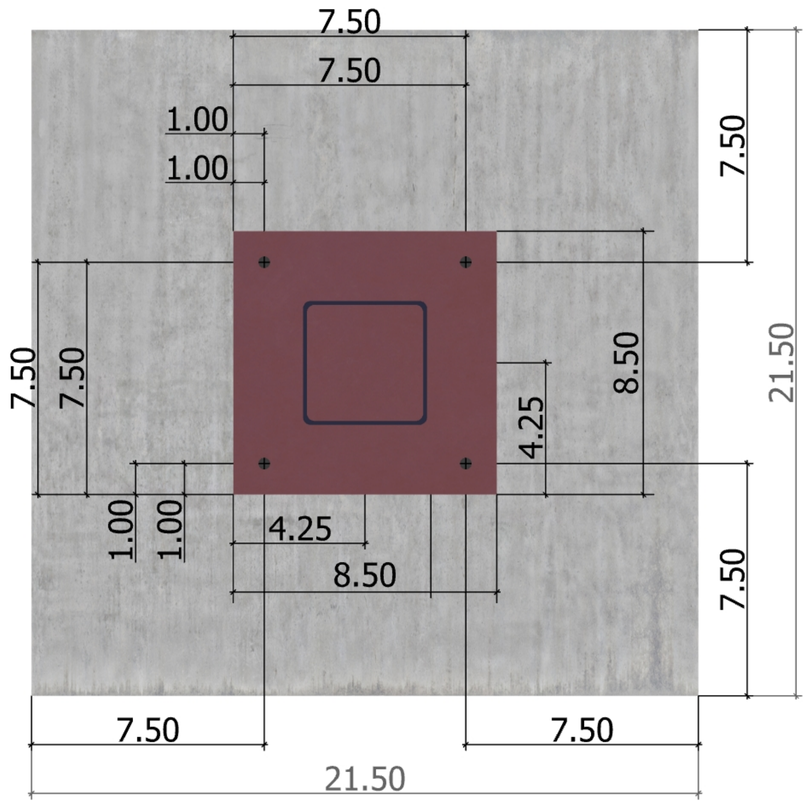
Strength level loads:

N_{ua} [lb]:	-107
V_{uax} [lb]:	-600
V_{uay} [lb]:	0
M_{ux} [ft-lb]:	0
M_{uy} [ft-lb]:	-2205
M_{uz} [ft-lb]:	0

<Figure 1>



<Figure 2>

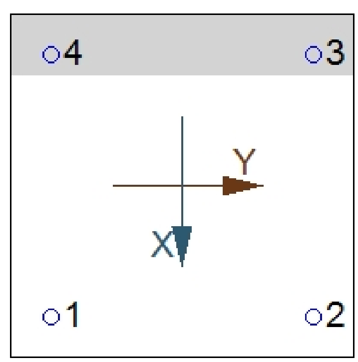


3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	1862.2	-150.0	0.0	150.0
2	1862.2	-150.0	0.0	150.0
3	0.0	-150.0	0.0	150.0
4	0.0	-150.0	0.0	150.0
Sum	3724.4	-600.0	0.0	600.0

Maximum concrete compression strain (‰): 0.14
Maximum concrete compression stress (psi): 595
Resultant tension force (lb): 3724
Resultant compression force (lb): 3831
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00
Eccentricity of resultant shear forces in x-axis, e'_{Vx} (inch): 0.00
Eccentricity of resultant shear forces in y-axis, e'_{Vy} (inch): 0.00

<Figure 3>



4. Steel Strength of Anchor in Tension (Sec. 17.6.1)

N_{sa} (lb)	ϕ	ϕN_{sa} (lb)
5815	0.75	4361

5. Concrete Breakout Strength of Anchor in Tension (Sec. 17.6.2)

$N_b = k_c\lambda_a\sqrt{f'_c}h_{ef}^{1.5}$ (Eq. 17.6.2.2.1)

k_c	λ_a	f'_c (psi)	h_{ef} (in)	N_b (lb)
24.0	1.00	2500	5.000	13416

$0.75\phi N_{cbg} = 0.75\phi\,(A_{Nc}/A_{Nco})\Psi_{ec,N}\Psi_{ed,N}\Psi_{c,N}\Psi_{cp,N}N_b$ (Sec. 17.5.1.2 & Eq. 17.6.2.1a)

A_{Nc} (in^2)	A_{Nco} (in^2)	$c_{a,min}$ (in)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	$0.75\phi N_{cbg}$ (lb)
322.50	225.00	7.50	1.000	1.000	1.00	1.000	13416	0.70	10096

6. Pullout Strength of Anchor in Tension (Sec. 17.6.3)

$0.75\phi N_{pn} = 0.75\phi\Psi_{c,P}N_p = 0.75\phi\Psi_{c,P}8A_{brg}f'_c$ (Sec. 17.5.1.2, Eq. 17.6.3.1 & 17.6.3.2.2a)

$\Psi_{c,P}$	A_{brg} (in^2)	f'_c (psi)	ϕ	$0.75\phi N_{pn}$ (lb)
1.0	0.30	2500	0.70	3140

7. Steel Strength of Anchor in Shear (Sec. 17.7.1)

V_{sa} (lb)	ϕ_{grout}	ϕ	$\phi_{grout}\phi V_{sa}$ (lb)
3490	0.8	0.65	1815

8. Concrete Breakout Strength of Anchor in Shear (Sec. 17.7.2)

Shear perpendicular to edge in x-direction:

$V_{bx} = \min|7(l_e/d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.7.2.2.1a & Eq. 17.7.2.2.1b)

l_e (in)	d_a (in)	λ_a	f'_c (psi)	c_{a1} (in)	V_{bx} (lb)
3.00	0.375	1.00	2500	14.00	17017

$\phi V_{cbgx} = \phi\,(A_{Vc}/A_{Vco})\Psi_{ec,V}\Psi_{ed,V}\Psi_{c,V}\Psi_{h,V}V_{bx}$ (Sec. 17.5.1.2 & Eq. 17.7.2.1b)

A_{Vc} (in^2)	A_{Vco} (in^2)	$\Psi_{ec,V}$	$\Psi_{ed,V}$	$\Psi_{c,V}$	$\Psi_{h,V}$	V_{bx} (lb)	ϕ	ϕV_{cbgx} (lb)
451.50	882.00	1.000	0.807	1.200	1.000	17017	0.70	5906

Shear parallel to edge in y-direction:

$V_{bx} = \min|7(l_e/d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.7.2.2.1a & Eq. 17.7.2.2.1b)

l_e (in)	d_a (in)	λ_a	f'_c (psi)	c_{a1} (in)	V_{bx} (lb)
3.00	0.375	1.00	2500	7.50	6673

$\phi V_{cbgy} = \phi\,(2)(A_{Vc}/A_{Vco})\Psi_{ec,V}\Psi_{ed,V}\Psi_{c,V}\Psi_{h,V}V_{bx}$ (Sec. 17.5.1.2, 17.7.2.1(c) & Eq. 17.7.2.1b)

A_{Vc} (in^2)	A_{Vco} (in^2)	$\Psi_{ec,V}$	$\Psi_{ed,V}$	$\Psi_{c,V}$	$\Psi_{h,V}$	V_{bx} (lb)	ϕ	ϕV_{cbgy} (lb)
241.88	253.13	1.000	1.000	1.200	1.000	6673	0.70	10712

9. Concrete Pryout Strength of Anchor in Shear (Sec. 17.7.3)

$\phi V_{cpg} = \phi k_{cp}N_{cbg} = \phi k_{cp}(A_{Nc}/A_{Nco})\Psi_{ec,N}\Psi_{ed,N}\Psi_{c,N}\Psi_{cp,N}N_b$ (Sec. 17.5.1.2 & Eq. 17.7.3.1b)

k_{cp}	A_{Nc} (in^2)	A_{Nco} (in^2)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕV_{cpg} (lb)
2.0	462.25	225.00	1.000	1.000	1.000	1.000	13416	0.70	38589

10. Results

Interaction of Tensile and Shear Forces (Sec. R17.8)

Tension	Factored Load, N_{ua} (lb)	Design Strength, ϕN_n (lb)	Ratio	Status
Steel	1862	4361	0.43	Pass
Concrete breakout	3724	10096	0.37	Pass

Pullout	**1862**	**3140**	**0.59**	**Pass (Governs)**

Shear	Factored Load, V_{ua} (lb)	Design Strength, $øV_n$ (lb)	Ratio	Status
Steel	150	1815	0.08	Pass
T Concrete breakout x-	**600**	**5906**	**0.10**	**Pass (Governs)**
|| Concrete breakout y+	300	10712	0.03	Pass
Pryout	600	38589	0.02	Pass

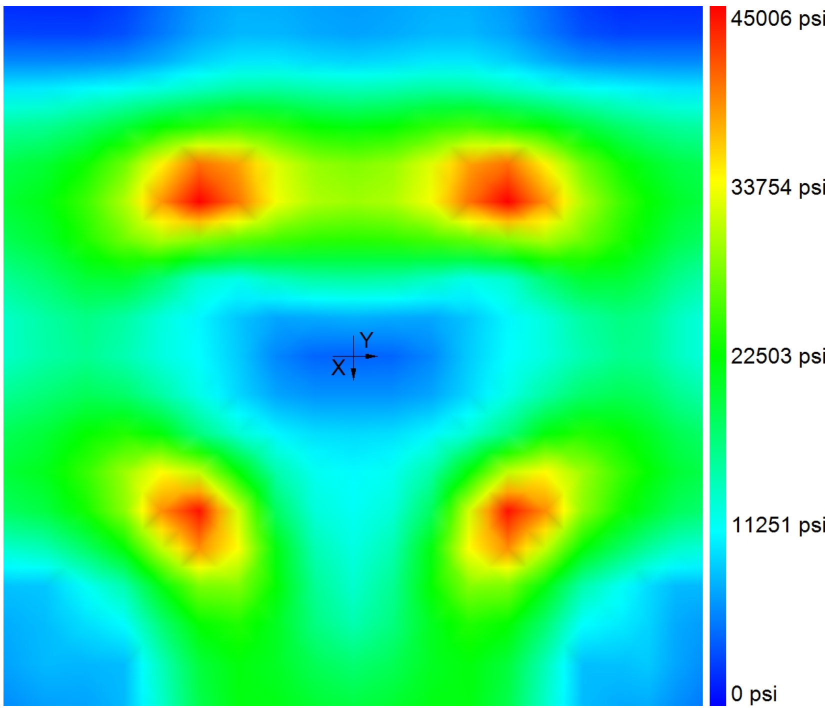
Interaction check	$(N_{ua}/\phi N_{ua})^{5/3}$	$(V_{ua}/\phi V_{ua})^{5/3}$	Utilization Ratio	Permissible	Status
Sec. R17.8	0.42	0.02	44.1%	1.0	Pass

3/8"Ø Heavy Hex Bolt, F1554 Gr. 55 with hef = 8.000 inch meets the selected design criteria.

Base Plate Thickness

Steel	**50000 psi**
Maximum stress	**45006 psi**
Calculated plate thickness	**0.343 inch**

Stress distribution



For ACI and CSA design methods, maximum base plate stress is limited to 0.9 times yield stress.
For ETAG and EN-1992-4 design method, maximum base plate stress is limited to yield stress divide by 1.5.
Plate stress is derived using Von Mises theory.

$$\sigma_{xx} = \frac{F_{xx}}{t} + \frac{6M_{xx}}{t^2} \text{ (@ bottom) or } \sigma_{xx} = \frac{F_{xx}}{t} - \frac{6M_{xx}}{t^2} \text{ (@ top)}$$

$$\sigma_{yy} = \frac{F_{yy}}{t} + \frac{6M_{yy}}{t^2} \text{ (@bottom) or } \sigma_{yy} = \frac{F_{yy}}{t} - \frac{6M_{yy}}{t^2} \text{ (@ top)}$$

$$\sigma_{xy} = \frac{F_{xy}}{t} + \frac{6M_{xy}}{t^2} \text{ (@bottom) or } \sigma_{xy} = \frac{F_{xy}}{t} - \frac{6M_{xy}}{t^2} \text{ (@ top)}$$

$$\sigma_{xz} = \frac{V_x}{t}$$

$$\sigma_{yz} = \frac{V_y}{t}$$

$\sigma_{xx}, \sigma_{yy}, \sigma_{xy}$ as follows:

$$S_1 = \frac{\sigma_{xx} + \sigma_{yy}}{2} + \sqrt{\left(\frac{\sigma_{xx} - \sigma_{yy}}{2}\right)^2 + \sigma_{xy}^2}$$

$$S_2 = \frac{\sigma_{xx} + \sigma_{yy}}{2} - \sqrt{\left(\frac{\sigma_{xx} - \sigma_{yy}}{2}\right)^2 + \sigma_{xy}^2}$$

$$S_3 = 0$$

$$\sigma_{Von\,Mises} = \sqrt{\frac{(S_1 - S_2)^2 + (S_1 - S_3)^2 + (S_2 - S_3)^2}{2}}$$

11. Warnings

- Per designer input, ductility requirements for tension have been determined to be satisfied – designer to verify.

- Per designer input, ductility requirements for shear have been determined to be satisfied – designer to verify.

- Designer must exercise own judgement to determine if this design is suitable.

MISSION STRUCTURE ENGINEERING	PROJECT : Las Positas College		PAGE :
	CLIENT :		DESIGN BY :
	JOB NO. :	DATE :	REVIEW BY :

Eccentric Footing Design Based on ACI 318-19

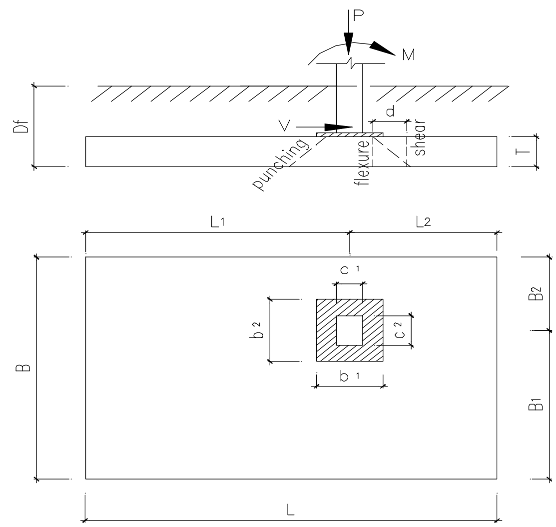
EWF.01 0.9DL+W Spread Ftg.

INPUT DATA

COLUMN WIDTH	c_1	=	2	in
COLUMN DEPTH	c_2	=	2	in
BASE PLATE WIDTH	b_1	=	5	in
BASE PLATE DEPTH	b_2	=	5	in
FOOTING CONCRETE STRENGTH	f_c'	=	2.5	ksi
REBAR YIELD STRESS	f_y	=	60	ksi
AXIAL DEAD LOAD	P_{DL}	=	1.791	k
AXIAL LIVE LOAD	P_{LL}	=	0	k
LATERAL LOAD (0=WIND, 1=SEISMIC)		=	0	Wind,SD
WIND AXIAL LOAD	P_{LAT}	=	0	k, SD
WIND MOMENT LOAD	M_{LAT}	=	2.82	ft-k, SD
WIND SHEAR LOAD	V_{LAT}	=	0.6	k, SD
SURCHARGE	q_s	=	0	ksf
SOIL WEIGHT	w_s	=	0.11	kcf
FOOTING EMBEDMENT DEPTH	D_f	=	1.5	ft
FOOTING THICKNESS	T	=	12	in
ALLOWABLE SOIL PRESSURE	Q_a	=	2	ksf
FOOTING WIDTH	B_1	=	2	ft
	B_2	=	2	ft
FOOTING LENGTH	L_1	=	2	ft
	L_2	=	2	ft
REINFORCING SIZE		#	4	

DESIGN SUMMARY

FOOTING WIDTH	B	=	4.00	ft
FOOTING LENGTH	L	=	4.00	ft
FOOTING THICKNESS	T	=	12	in
LONGITUDINAL REINF., TOP	1 # 4			
LONGITUDINAL REINF., BOT.	4 # 4 @ 14 in o.c.			
TRANSVERSE REINF., BOT.	4 # 4 @ 14 in o.c.			



THE FOOTING DESIGN IS ADEQUATE.

ANALYSIS

DESIGN LOADS AT TOP OF FOOTING (IBC 1605.2 & ACI 318 5.3)

CASE 1:	DL + LL	P	=	2	kips	1.2 DL + 1.6 LL	Pu	=	2	kips
		M	=	0	ft-kips		Mu	=	0	ft-kips
		e	=	0.0	ft, fr cl ftg		eu	=	0.0	ft, fr cl ftg
CASE 2:	DL + LL + 0.6(1.3) W	P	=	2	kips	1.2 DL + LL + 1.0 W	Pu	=	2	kips
		M	=	2	ft-kips		Mu	=	3	ft-kips
		V	=	0	kips		Vu	=	1	kips
		e	=	1.4	ft, fr cl ftg		eu	=	1.3	ft, fr cl ftg
CASE 3:	DL + LL + 0.6(0.65) W	P	=	2	kips	0.9 DL+ 1.0 W	Pu	=	2	kips
		M	=	2	ft-kips		Mu	=	3	ft-kips
		V	=	0	kips		Vu	=	1	kips
		e	=	0.9	ft, fr cl ftg		eu	=	1.7	ft, fr cl ftg

CHECK OVERTURNING FACTOR (2021 IBC 1605.2.1, 1808.3.1, & ASCE 7-22 12.13.4)

M_R / M_O = 3.0 **>** F = 1.0 / 0.9 = 1.11 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,T - P_{LAT}L_2$ = 3 k-ft

P_{ftg} = (0.15 kcf) T B L = 2.40 k, footing weight

P_{soil} = $w_s\,(D_f - T)\,B\,L$ = 0.88 k, soil weight

M_R = $P_{DL}L_2 + 0.5\,(P_{ftg} + P_{soil})\,L$ = 10 k-ft

FOR REVERSED LATERAL LOADS,

M_R / M_O = 2.7 **>** F = 1.0 / 0.9 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,D_f - P_{LAT}L_1$ = 4 k-ft

M_R = $P_{DL}L_1 + 0.5\,(P_{ftg} + P_{soil})\,L$ = 10 k-ft

CHECK SLIDING (2021 IBC 1807.2.3)

1.5 ($V_{Lat,\,ASD}$) = 0.54 kips **<** $\mu\,\Sigma W$ = 1.68 kips **[Satisfactory]**

Where ` μ = 0.4

(cont'd)

CHECK SOIL BEARING CAPACITY (ACI 318 13.3.1.1)

Service Loads	CASE 1		CASE 2		CASE 3		
P	1.8		1.8		1.8		k
e	0.0		1.6		1.0		ft (from center of footing)
q_s B L	0.0		0		0.0		k, (surcharge load)
(0.15-w_s)T B L	0.6		0.6		0.4		k, (footing increased)
Σ P	2.4		2.4		2.2		k
e_L	0.0	< L/6	1.2	> L/6	0.9	> L/6	ft
e_B	0.0	< B/6	0.0	< B/6	0.0	< B/6	ft
q_L	0.6		2.0		1.3		k / ft
q_{max}	0.2		0.5		0.3		ksf
q_{allow}	2.0		2.7		2.7		ksf

Where

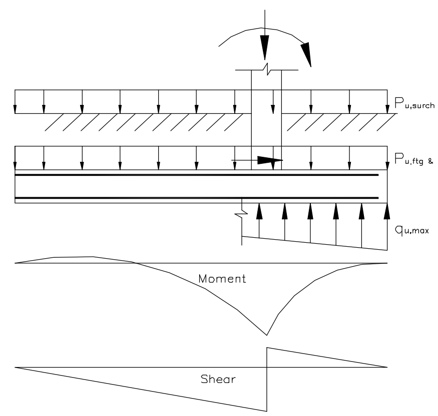
$$q_L = \begin{cases} \dfrac{(\Sigma P)\left(1+\dfrac{6e_L}{L}\right)}{L}, & for \quad e_L \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P)}{3(0.5L-e_L)}, & for \quad e_L > \dfrac{L}{6} \end{cases} \qquad q_{MAX} = \begin{cases} \dfrac{q_L\left(1+\dfrac{6e_B}{B}\right)}{B}, & for \quad e_B \le \dfrac{B}{6} \\ \dfrac{2q_L}{3(0.5B-e_B)}, & for \quad e_B > \dfrac{B}{6} \end{cases}$$

[Satisfactory]

DESIGN FLEXURE & CHECK FLEXURE SHEAR
(ACI 318 13, 21, & 22)

$$q_{u,MAX} = \begin{cases} \dfrac{(\Sigma P_u)\left(1+\dfrac{6e_u}{L}\right)}{BL}, & for \quad e_u \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P_u)}{3B(0.5L-e_u)}, & for \quad e_u > \dfrac{L}{6} \end{cases} \qquad \rho_{MAX} = \frac{0.85\beta_1 f'_c}{f_y}\frac{\varepsilon_u}{\varepsilon_u+\varepsilon_t}$$

$$\rho = \frac{0.85f'_c\left(1-\sqrt{1-\dfrac{M_u}{0.383bd^2f'_c}}\right)}{f_y} \qquad \rho_{MIN} = MIN\left(0.0018\frac{T}{d}\ ,\ \frac{4}{3}\rho\right)$$



FACTORED SOIL PRESSURE

Factored Loads	CASE 1		CASE 2		CASE 3		
P_u	2.1		2.1		1.6		k
e_u	0.0		1.6		2.1		ft
γ q_s B L	0.0		0.0		0.0		k, (factored surcharge load)
γ[0.15T + w_s(D_f - T)]BL	3.9		3.9		3.0		k, (factored footing & backfill loads)
Σ P_u	6.1		6.1		4.6		k
e_u	0.0	< L/6	0.6	< L/6	0.7	> L/6	ft
$q_{u,\,max}$	0.380		0.701		0.608		ksf

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **1**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.50	1.00	1.50	1.85	2.15	2.50	3.00	3.50	4.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	-0.3	-1.1	-2.1	-3.2	-4.3
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	2.1	2.1	2.1	2.1	2.1
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.5	-1.1	-1.7	-2.3	-3.1	-4.4	-6.0	-7.9
$V_{u,ftg\ \&\ fill}$ (k)	0	0.5	1.0	1.5	1.8	2.1	2.5	3.0	3.4	3.9
$q_{u,soil}$ (ksf)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
$M_{u,soil}$ (ft-k)	0	0.2	0.8	1.7	2.6	3.5	4.8	6.8	9.3	12.2
$V_{u,soil}$ (k)	0	-0.8	-1.5	-2.3	-2.8	-3.3	-3.8	-4.6	-5.3	-6.1
Σ M_u (ft-k)	**0**	**0.1**	**0.3**	**0.6**	**0.9**	**0.9**	**0.6**	**0.3**	**0.1**	**0**
Σ V_u (kips)	**0**	**-0.3**	**-0.5**	**-0.8**	**-1.0**	**1.0**	**0.8**	**0.5**	**0.3**	**0**

(cont'd)

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **2**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.50	1.00	1.50	1.85	2.15	2.50	3.00	3.50	4.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	3.1	2.3	1.3	0.2	-0.9
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	2.1	2.1	2.1	2.1	2.1
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.5	-1.1	-1.7	-2.3	-3.1	-4.4	-6.0	-7.9
$V_{u,ftg\ \&\ fill}$ (k)	0	0.5	1.0	1.5	1.8	2.1	2.5	3.0	3.4	3.9
$q_{u,soil}$ (ksf)	0.06	0.14	0.22	0.30	0.36	0.40	0.46	0.54	0.62	0.70
$M_{u,soil}$ (ft-k)	0	0.0	0.2	0.6	1.1	1.6	2.4	4.0	6.0	8.8
$V_{u,soil}$ (k)	0	-0.2	-0.6	-1.1	-1.5	-2.0	-2.6	-3.6	-4.8	-6.1
Σ M_u (ft-k)	**0**	**-0.1**	**-0.3**	**-0.5**	**-0.6**	**2.4**	**1.7**	**0.8**	**0.2**	**0**
Σ V_u (kips)	**0**	**0.3**	**0.4**	**0.4**	**0.3**	**2.3**	**2.0**	**1.5**	**0.8**	**0**

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **3**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.50	1.00	1.50	1.85	2.15	2.50	3.00	3.50	4.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	3.2	2.6	1.8	1.0	0.2
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.6	1.6	1.6	1.6	1.6
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.4	-0.8	-1.3	-1.7	-2.3	-3.3	-4.5	-5.9
$V_{u,ftg\ \&\ fill}$ (k)	0	0.4	0.7	1.1	1.4	1.6	1.8	2.2	2.6	3.0
$q_{u,soil}$ (ksf)	0.00	0.08	0.15	0.23	0.28	0.33	0.38	0.46	0.53	0.61
$M_{u,soil}$ (ft-k)	0	2.7	4.6	5.9	6.5	6.8	7.0	6.9	6.4	5.7
$V_{u,soil}$ (k)	0	-1.1	-2.1	-2.9	-3.3	-3.7	-4.0	-4.3	-4.5	-4.6
Σ M_u (ft-k)	**0**	**2.6**	**4.3**	**5.1**	**5.3**	**8.3**	**7.3**	**5.4**	**2.9**	**0**
Σ V_u (kips)	**0**	**-0.7**	**-1.3**	**-1.7**	**-2.0**	**-0.5**	**-0.5**	**-0.5**	**-0.3**	**0**

DESIGN FLEXURE

Location	$M_{u,max}$		d (in)	ρ_{min}	ρ_{reqD}	ρ_{max}	s_{max}	use	ρ_{provD}
Top Longitudinal	0.6	ft-k	9.75	0.0000	0.0000	0.0129	no limit	1 # 4	0.0004
Bottom Longitudinal	8.3	ft-k	8.75	0.0007	0.0005	0.0129	18	4 # 4 @ 14 in o.c.	0.0019
Bottom Transverse	0	ft-k / ft	8.50	0.0001	0.0001	0.0129	18	4 # 4 @ 14 in o.c.	0.0020

[Satisfactory]

CHECK FLEXURE SHEAR

Direction	$V_{u,max}$		$\phi V_c = 2\ \phi\ b\ d\ (f_c')^{0.5}$		check $V_u < \phi\ V_c$
Longitudinal	2.3	k	32	k	**[Satisfactory]**
Transverse	0.2	k / ft	8	k / ft	**[Satisfactory]**

CHECK PUNCHING SHEAR (ACI 318 13.2.7.2, 22.6.4.1, 22.6.4.3, & 8.4.2.3)

$$v_u(psi) = \frac{P_u - R}{A_P} + \frac{0.5\gamma_v M_u b_1}{J}$$

$$A_P = 2\left(b_1 + b_2\right)d$$

$$\phi v_c(psi) = \phi\left(2 + y\right)\sqrt{f_c'}$$

$$J = \left(\frac{d b_1^3}{6}\right)\left[1 + \left(\frac{d}{b_1}\right)^2 + 3\left(\frac{b_2}{b_1}\right)\right]$$

$$\gamma_v = 1 - \frac{1}{1 + \frac{2}{3}\sqrt{\frac{b_1}{b_2}}}$$

$$y = MIN\left(2, \frac{4}{\beta_c}, 40\frac{d}{b_0}\right)$$

$$R = \frac{P_u b_1 b_2}{A_f}$$

$$A_f = BL$$

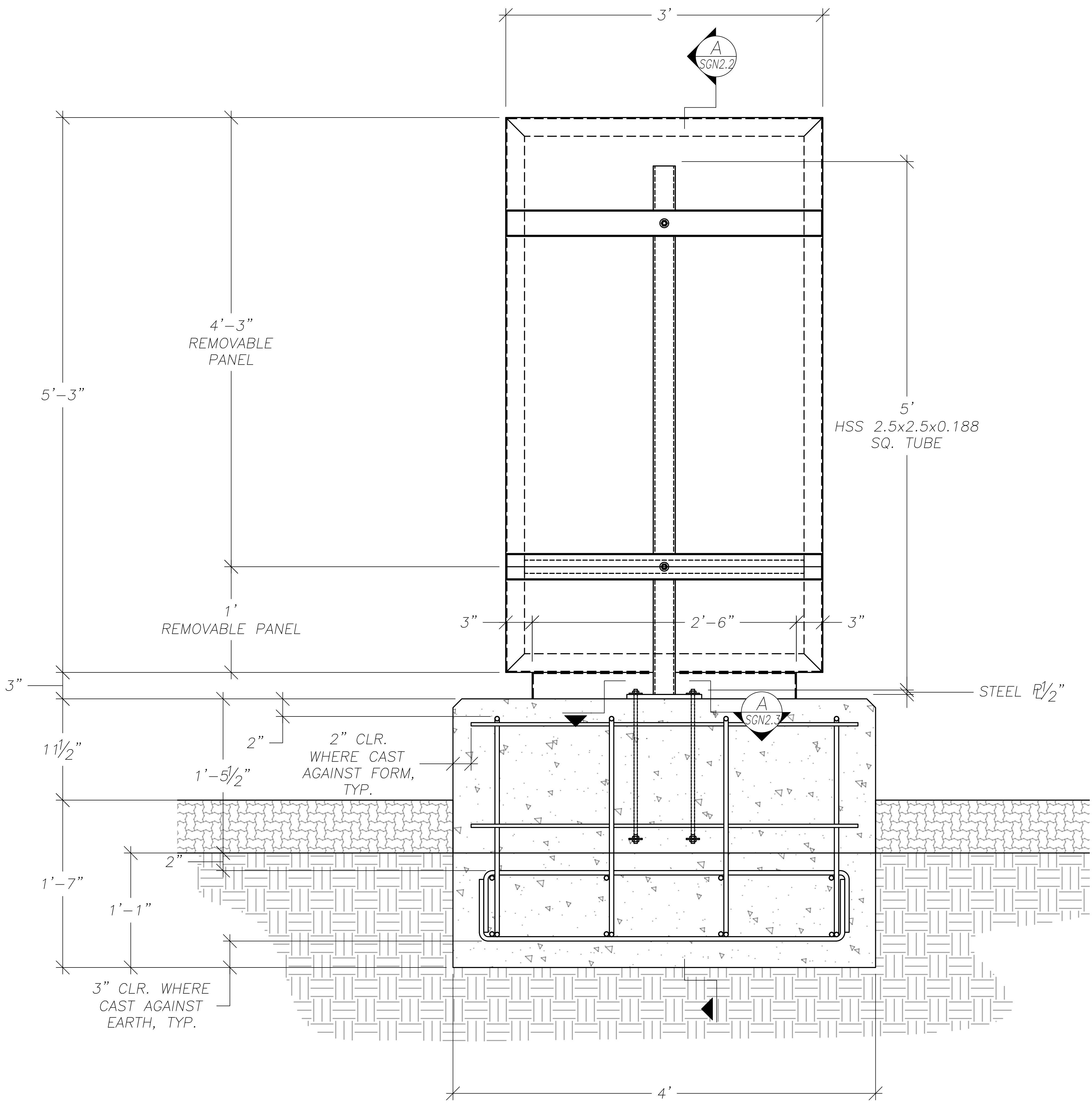
$$b_0 = \frac{A_P}{d}, b_1 = \left(0.5c_1 + 0.5b_1 + d\right), b_2 = \left(0.5c_2 + 0.5b_2 + d\right)$$

Case	P_u	M_u	b_1	b_2	b_0	γ_v	β_c	y	A_f	A_p	R	J	$v_{u\ (psi)}$	$\phi\ v_c$
1	2.1	0.0	12.0	12.0	0.3	0.4	1.0	2.0	16.0	2.8	0.1	0.5	4.9	150.0
2	2.1	2.8	12.0	12.0	0.3	0.4	1.0	2.0	16.0	2.8	0.1	0.5	5.0	150.0
3	1.6	2.8	12.0	12.0	0.3	0.4	1.0	2.0	16.0	2.8	0.1	0.5	3.8	150.0

[Satisfactory]

where ϕ = 0.75 , (ACI 318 21.2)

NOTE: PEDESTAL/PLINTH TO BE FORMED W/ BOARD FORM OR BOARD FORM LINER. PATTERN T.B.D.



A

EWF.02 ELEVATION

SCALE: 1"=1'

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INFO@MISSIONSTRUCTURE.COM
510.593.5022

ISSUED FOR	REV	DATE
1st Submission	0	1/15/26

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PROJECT INFORMATION

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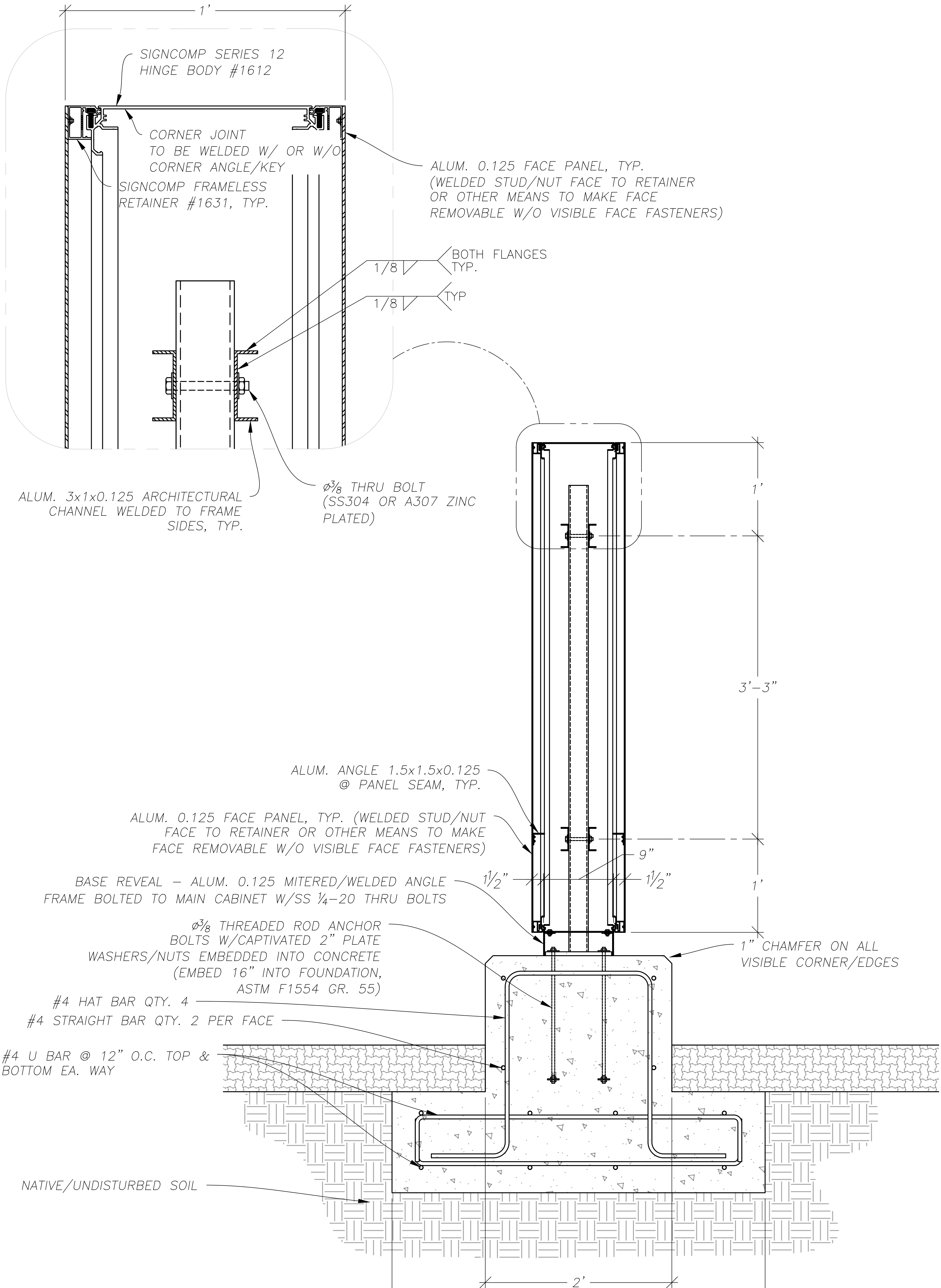
PROJECT NUMBER

DRAWING TITLE

EWF.02
Elevation

DRAWING NUMBER

SGN2.1



A

EWF.02 SECTION

SCALE: 1"=1'

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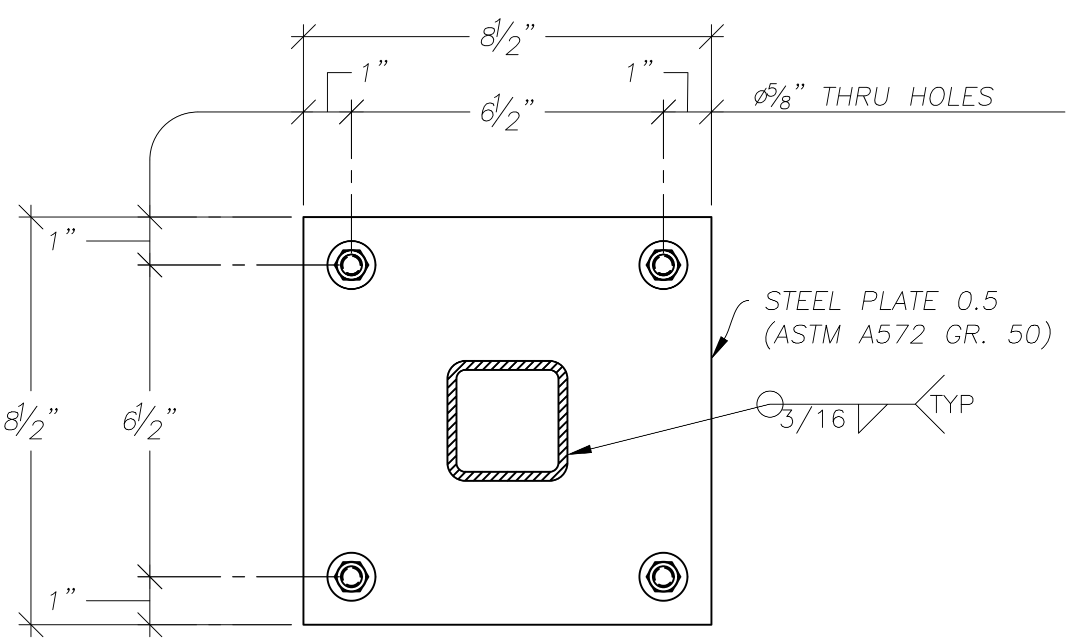
PROJECT NUMBER

DRAWING TITLE

EWF.02
Section

DRAWING NUMBER

SGN2.2



NOTE: MAY USE TRIANGULAR STIFFENER/GUSSET FOR IMPROVED FIT UP

A BASEPLATE TYPE 1

SCALE: 3"=1'

NOTE: APPLY HEAVY EPOXY PRIMER TO ALL SURFACES OF BASEPLATES

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PROJECT NUMBER

DRAWING TITLE

EWF.02
Details

DRAWING NUMBER

SGN2.3

MISSION STRUCTURE ENGINEERING

Project	Las Positas College	By	MB	Sheet No.
Location	Livermore, CA	Date	2025-11-25	1 / 5
Section	Freestanding EWF.02			Job No.

Freestanding Monument Sign

Project Location:
3000 Campus Hill Drive
Livermore, CA 94551

for

Shannon-Leigh Associates, LLC
1455 Hays Street
San Leandro, CA 94577

LICENSED PROFESSIONAL ENGINEER
MICHAEL CLARK BENNETT
C 90708
CIVIL
STATE OF CALIFORNIA

Scope of design:

Design of freestanding monument sign anchorage & foundation. Design includes load analysis, base plate/anchor bolt design & footing design. Design Criteria based on geotechnical report by Ninyo & Moore dated November 22, 2023.

Current Codes Which Shall Apply (As applicable to project):

CBC 2025, ASCE 7-22, AISC 360-22, ACI 318-19, AA ADM1 2020,

Dead Load

Total Sign Weight: $DL = \text{Total Weight} = 150.625\ \text{lbf}$

Alum. Cabinet Weight: $DL_{cab} = \text{Weight.F14} = 95.625\ \text{lbf}$

Seismic Load (Full Sign Mass)

Seismic Loads

Seismic Loads of Non-Building Structures

ASCE 7-16 Chapter 15

Seismic Base Shear: $V_B = C_s * W_p$

Response Modification Factor: $R = 3$

Spectral Acceleration, Short Period: $SDS = 1.36$

Importance Factor: $I = 1.25$

Seismic Weight: $W_p = 150.625\ \text{lbf}$

Seismic Response Coefficient: $C_s = \dfrac{SDS}{\dfrac{R}{I}} = 0.567$

Seismic Base Shear: $V_B = C_s * W_p = 85.354\ \text{lbf}$

Overstrength Factor, Ω (where applicable): $OS = 1.75$

Load Distribution

Per ASCE Chapter 29

Top of Sign Height: $h = s = 6.5\ \text{ft}$

Cabinet Height: $h_c = \text{Weight.C2} = 5.5\ \text{ft}$

Pedestal Height: $h_p = 1\ \text{ft}$

Sign Height: $s = h_c + h_p = 6.5\ \text{ft}$

Sign Width (Breadth): $B = \text{Weight.E2} = 3\ \text{ft}$

Number of Posts: $n_p = 1$

Gross Sign Area: $A_g = s * B = 19.5\ \text{ft}^2$

Tributary Area (single post): $A_n = A_g = 19.5\ \text{ft}^2$

Moment Arm (@ baseplate): $arm_1 = 1.05 * \left(\frac{h_c}{2}\right) = 2.888\ ft$

Moment Arm (@ top of ftg.): $arm_T = 1.05 * \left(\frac{s}{2}\right) + 0.5\ ft = 3.913\ ft$

Wind Pressure: $p_w = 25\ psf$

Wind Load Section 1: $W_{l1} = p_w * A_n = 487.5\ lbf$

Wind Moment Section 1: $M_{w1} = W_{l1} * arm_1 = 1407.7\ lbf * ft$ (Wind controls acting on sign face)

Wind Torsion: $T_w = 0.2 * B * W_{l1} = 292.5\ ft * lbf$

Seismic Load on Section 1 (alum. cab.): $EQ_{s1} = EQ2.C_s * DL = 85.354\ lbf$

Seismic Load Section 1 w/ Over strength: $EQ_{s1os} = EQ_{s1} * EQ2.OS = 149.370\ lbf$

EQ Lateral Shear Force @ baseplate: $V_{1eq} = EQ_{s1} = 85.354\ lbf$

EQ Lateral Force Moment: $M_{1eq} = V_{1eq} * arm_1 = 246.460\ lbf * ft$

EQ Lateral Force w/ OS: $V_{1eqos} = EQ_{s1os} = 149.370\ lbf$

EQ Lateral Force Moment w/OS: $M_{1eqos} = V_{1eqos} * arm_1 = 431.305\ lbf * ft$

<u>LRFD Load Combinations (as applicable-anchorage)</u>

LC: 0.9 DL + 1.0 W

Deal Load: $DL_{min} = \frac{0.9 * (DL_{cab})}{n_p} = 86.063\ lbf$

Shear Wind: $V_{1w1} = W_{l1} = 487.5\ lbf$

Moment Wind: $M_{1w1} = V_{1w1} * arm_1 = 1407.656\ lbf * ft$

LC: 1.2 DL + 1.0 W

Deal Load: $DL_{max} = \frac{1.2 * (DL_{cab})}{n_p} = 114.75\ lbf$

Shear Wind: $V_{1w2} = W_{l1} = 487.5\ lbf$

Moment Wind: $M_{1w2} = V_{1w2} * arm_1 = 1407.656\ lbf * ft$

LC: 0.9 DL - 1.0 E_v + E_{mh}

Dead Load: $DL_{eqmin} = \frac{0.9 * (DL_{cab})}{n_p} = 86.063\ lbf$

Vertical Seismic: $E_{v1} = \frac{-0.2 * EQ2.SDS * (DL_{cab})}{n_p} = -26.01\ lbf$

Shear EQ: $V_{1eq1} = \frac{EQ_{s1os}}{n_p} = 149.370\ lbf$

Moment EQ: $M_{1eq1} = \left(\frac{EQ_{s1os}}{n_p}\right) * arm_1 = 431.305\ lbf * ft$

LC: 1.2 DL + 1.0 E_v + E_{mh}

Dead Load: $DL_{1eqmax} = \dfrac{1.2 * (DL_{cab})}{n_p} = 114.75\ \text{lbf}$

Vertical Seismic: $E_{v2} = \dfrac{0.2 * EQ2.SDS * (DL_{cab})}{n_p} = 26.01\ \text{lbf}$

Shear EQ: $V_{eq2} = \dfrac{EQ_{s1os}}{n_p} = 149.370\ \text{lbf}$

Moment EQ: $M_{eq2} = \dfrac{EQ_{s1os} * arm_1}{n_p} = 431.305\ \text{lbf} * \text{ft}$

ASD Load Combinations
(Note: Omit axial loads on post-no restoring moment weld design)

LC: DL + 0.6 W

LC: DL + 0.7 $(E_v + E_{mh})$

Convert to ASD/service level loads

Vertical Load, ASD: $DL_{S1} = DL = 150.625\ \text{lbf}$
Wind Pressure, ASD: $p_{wasd} = p_w * 0.6 = 15\ \text{psf}$
Wind Load, ASD: $W_{lasd} = p_{wasd} * A_n = 292.5\ \text{lbf}$
Wind Force Moment, ASD: $M_{wasd} = arm_1 * W_{lasd} = 844.594\ \text{ft} * \text{lbf}$
Wind Torsion, ASD: $T_{ASD} = T_w * 0.6 = 175.5\ \text{ft} * \text{lbf}$

Max. Vertical Load, ASD: $DL_{eqasd} = \dfrac{DL_{S1} + 0.7 * 0.2 * EQ2.SDS * DL_{S1}}{n_p} = 179.304\ \text{lbf}$

Seismic Load, ASD: $EQ_{asd} = \dfrac{EQ2.V_B * 0.7}{n_p} = 59.748\ \text{lbf}$

Seismic Load w/ OS, ASD: $EQ_{osasd} = EQ_{asd} * EQ2.OS = 104.559\ \text{lbf}$
Seismic Force Moment, ASD: $M_{eqasd} = arm_1 * EQ_{asd} = 172.522\ \text{ft} * \text{lbf}$
Seismic Force Moment w/ OS, ASD: $M_{eqasdos} = EQ_{osasd} * arm_1 = 301.914\ \text{lbf} * \text{ft}$

Weld Connection From Post to Base Plate

Tube Depth: $d_{tube} = 2\ \text{in}$
Tube Breadth: $b_{tube} = 2\ \text{in}$
Tube Wall Thickness: $t_{tube} = 0.188\ \text{in}$

Weld Line Section Modulus: $S_w = d_{tube} * b_{tube} + \frac{d_{tube}^{\ 2}}{3} = 5.333\ in^2$

Weld Line Area: $A_w = d_{tube} * 2 + b_{tube} * 2 = 8\ in$

Fillet Weld Design (AISC 360 Section J2.4 or ADM J.2)

Weld to resist loads V & M.
Material = "Steel"

Weld Group Configuration: Type = "sq 2x2x0.188"

Input Weld Shear Load: $V = W_{lasd} = 292.5\ lbf$

Input Weld Moment Load: $M = M_{wasd} = 844.594\ ft * lbf$

Weld Line Section Modulus (bending): $S_w = Report1.S_w = 5.333\ in^2$

Weld Line Section Modulus (shear): $A_w = Report1.A_w = 8\ in$

Required Strength: $R = \sqrt{\left(\frac{V}{A_w}\right)^2 + \left(\frac{M}{S_w}\right)^2} = 1900.7\ \frac{lb}{in}$

Weld Electrode Tensile Strength: $f_u = 70\ ksi$

Weld Factor of Safety: $\Omega_w = 2$

Strength of Weld per inch:

$$R_n = \begin{cases} \left(\dfrac{0.707 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{if Material == "Steel"} \\ \left(\dfrac{0.707 * 0.85 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{otherwise} \end{cases} = 927.9\ \frac{lb}{in}$$

Required Size of Weld: $a_{req} = RoundUp\left(\frac{R}{R_n}\right) = $ 3/16" Weld Leg Size

Foundation Loads

Spread Footing Foundation

Nominal loads for allowable capacities per geotechnical report. Seismic Loads to have omega/overstrength applied (cantilever foundation system). Design provided in design worksheet to follow.

Width of Footing: $W_{ftg} = 4\ ft$

Length of Footing: $l_{ftg} = 4\ ft$

Width of Pedestal: $W_{ped} = 2\ ft$

Length of Pedestal: $l_{ped} = 4\ ft$

Height of Pedestal: $H_{ped} = 18\ in$

Weight of Concrete Pedestal: $Wt_{ped} = W_{ped} * l_{ped} * H_{ped} * 150\ pcf = 1800\ lbf$

LC: 0.9 DL + W
(nominal values for foundation software shown below)

Vertical Force: $A_1 = 0.9 * \left(DL + Wt_{ped}\right) = 1755.563\ lbf$

Horizontal Force: $P_1 = \left(B * s * p_w\right) = 487.5\ lbf$

Moment: $M_1 = P_1 * arm_T = 1907.344\ lbf * ft$

LC: 0.9 DL + $\left(E_v + E_{mh}\right)$
(nominal values for foundation software shown below)

DL Vertical Force: $A_2 = 0.9 * \left(DL + Wt_{ped}\right) = 1755.563$ lbf

EQ Vertical Force: $A_3 = \left(-0.2 * EQ2.SDS * \left(DL + Wt_{ped}\right)\right) = -530.57$ lbf

Horizontal Forces:

Sign Cabinet: $P_2 = EQ2.V_B * EQ2.OS = 149.370$ lbf

Sign Cabinet moment arm: $a_2 = arm_T = 3.913$ ft

Sign Cabinet moment: $M_2 = P_2 * a_2 = 584.409$ lbf * ft

Combined EQ Axial: $A_{eq} = A_2 + A_3 = 1224.992$ lbf

Combined EQ Shear: $V_{eq} = P_2 = 149.370$ lbf

Combined EQ Moment: $M_{eq} = M_2 = 584.409$ lbf * ft

Weight Takeoff

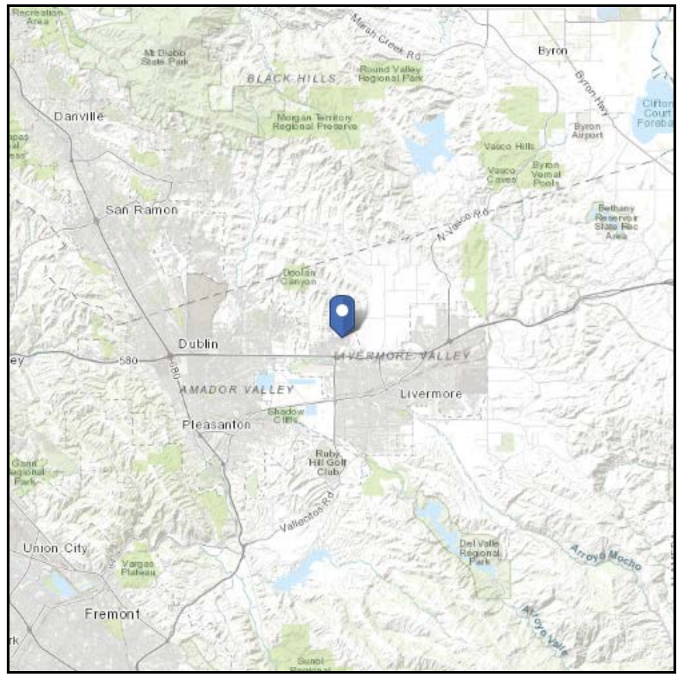
	Height:	5.5 ft	Width:		3 ft	
Component	Unit Wt	Unit Qty	Wt	Qty		Weight
Skin	2 psf	16.5 ft^2	33 lbf		2	66 lbf
Post	10 plf	5.5 ft	55 lbf		1	55 lbf
Channel Extrusion	1.5 plf	17 ft	25.5 lbf		1	25.5 lbf
Misc Framing/Stiffeners	0.25 psf	16.5 ft^2	4.125 lbf		1	4.125 lbf

Cabinet Wt.:	95.63 lbf
Total:	150.6 lbf

ASCE Hazards Report

Address:
Las Positas College - 3000 Campus Hill Drive
Livermore,

Standard:	ASCE/SEI 7-22	**Latitude:**	37.710873
Risk Category:	III	**Longitude:**	-121.80058
Soil Class:	D - Stiff Soil	**Elevation:**	480.38484203241944 ft (NAVD 88)



Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	79 Vmph
300-year MRI	87 Vmph
700-year MRI	93 Vmph
1,700-year MRI	99 Vmph
3,000-year MRI	103 Vmph
10,000-year MRI	113 Vmph
100,000-year MRI	129 Vmph
1,000,000-year MRI	147 Vmph

Data Source:	ASCE/SEI 7-22, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Nov 24 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

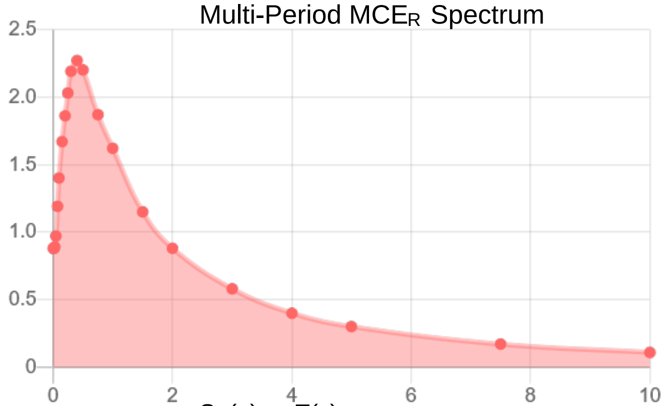
Site Soil Class: D - Stiff Soil

Results:

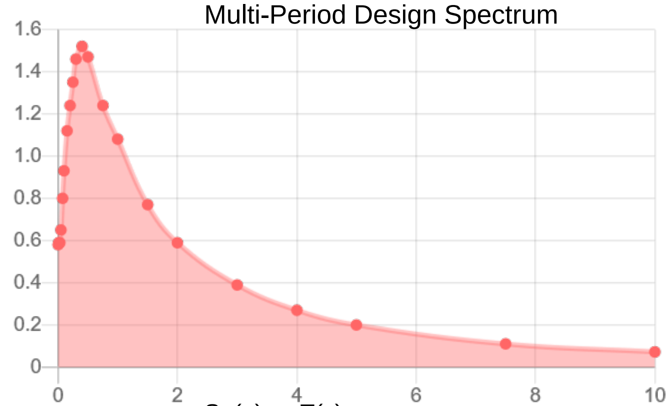
PGA_M :	0.73	T_L :	8
S_{MS} :	2.05	S_S :	2.13
S_{M1} :	1.62	S_1 :	0.81
S_{DS} :	1.36	V_{S30} :	260
S_{D1} :	1.08		

Seismic Design Category: E

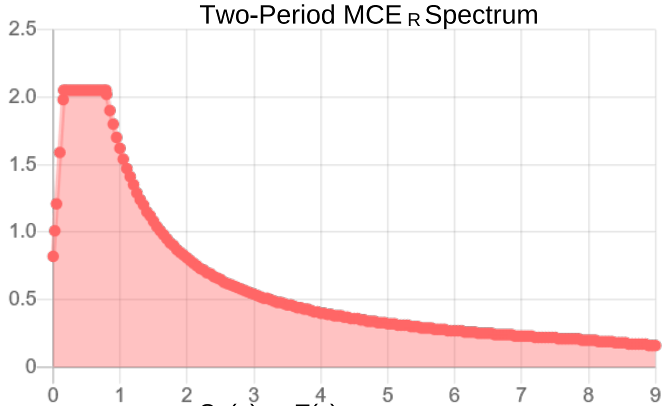
Multi-Period MCE_R Spectrum



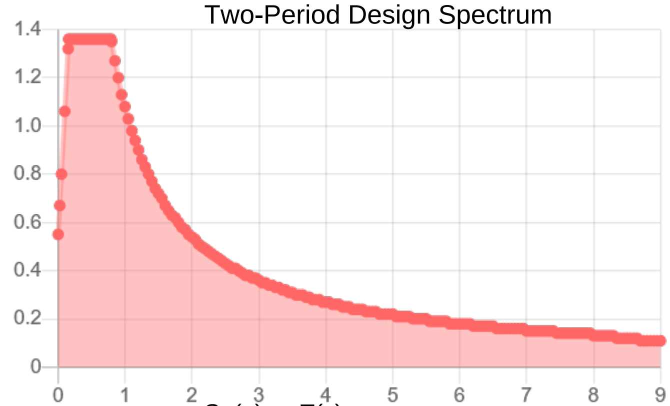
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Mon Nov 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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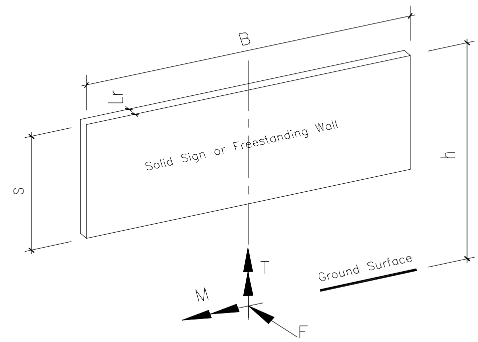
MISSION STRUCTURE ENGINEERING	PROJECT : Las Positas College		PAGE :
	CLIENT : Shannon Leigh		DESIGN BY :
	JOB NO. :	DATE :	REVIEW BY :

Wind Analysis for Freestanding Wall & Sign Based on ASCE 7-22 — **Monument Sign Wind Pressure**

INPUT DATA

Exposure category (B, C or D)		=	C	
Importance factor, 1.0 only, (Table 1.5-2)	I_w	=	1.00	
Basic wind speed (ASCE 7 26.5.1)	V =	99	mph, (159.32 kph)	
Topographic factor (26.8 & Table 26.8-1)	K_{zt}	=	1	Flat
Height of top	h =	11	ft, (3.35 m)	
Vertical dimension (for wall, s = h)	s =	11	ft, (3.35 m)	
Horizontal dimension	B =	4	ft, (1.22 m)	
Dimension of return corner	L_r =	0	ft, (0.00 m)	



DESIGN SUMMARY

Max horizontal wind pressure	p	=	25 psf, (1177 N/m^2)
Max total horizontal force at centroid of base	F	=	1.08 kips, (5 kN)
Max bending moment at centroid of base	M	=	6.54 ft-kips, (9 kN-m)
Max torsion at centroid of base	T	=	0.87 ft-kips, (1 kN-m)

ANALYSIS

Velocity pressure

q_h K_d = $(0.00256\ K_z K_{zt} K_e V^2)\ K_d$ = **18.13** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 277), K_e = **1.00** , (Tab. 26.9-1 page 275)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 277) = **0.85**

K_d = wind directionality factor. (Tab. 26.6-1, page 274) = **0.85**

h = height of top = **11.00** ft

Wind Force Case A: resultant force though the geometric center (Sec. 29.3.1)

$p = q_h\ K_d\ G\ C_N$	=	**25**	psf
$F = p\ A_s$	=	**1.08**	kips
M = F (h - 0.5s) for sign, F (0.55h) for wall	=	**6.54**	ft-kips
T =	=	**0.00**	ft-kips

where: G = gust effect factor. (Sec. 26.9) = **0.85**

C_f = net force coefficient. (Fig. 29.3-1, page 301) **1.60**

A_s = B s = **44.0** ft^2

Wind Force Case B: resultant force at 0.2 B offset of the geometric center (Sec. 29.3.1)

p = Case A	=	**25**	psf
F = Case A	=	**1.08**	kips
M = Case A	=	**6.54**	ft-kips
T = 0.2 F B	=	**0.87**	ft-kips

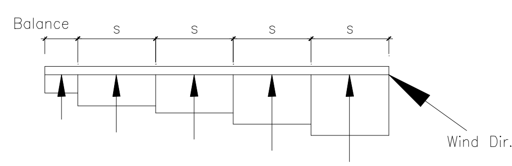
Wind Force Case C: resultant force different at each region (Sec. 29.4.1)

$p = q_h\ G\ C_f$

$F = \Sigma\ p\ A_s$

M = Σ [F (h - 0.5s) for sign, F (0.55h) for wall]

$T = \Sigma\ T_s$



Distance	C_f	P_i	A_{si}	F_i	M_i	T_i
(ft)	(Fig. 29.3-1)	(psf)	(ft^2)	(kips)	(ft-kips)	(ft-kips)
4.0	1.800	28	44	1.22	7.38	0.00
4.0	1.200	18	0	0.00	0.00	0.00
Σ				**1.22**	**7.38**	**0.00**

<== Case C may not be considered, footnote 3 of Fig. 6-20

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HSS (Tube, Pipe) Member Design with Torsional Loading Based on AISC 360-10/16 — **EWF.02 Post DL+W**

INPUT DATA & DESIGN SUMMARY

MEMBER SHAPE (Tube or Pipe) & SIZE		HSS2X2X3/16	< ==	Tube
STEEL YIELD STRESS	F_y =	46	ksi, (317 MPa)	
TORSIONAL FORCE	T_r =	0.293	ft-kips, (0 kN-m), ASD	
AXIAL COMPRESSION FORCE	P_r =	0.151	kips, (1 kN), ASD	
STRONG AXIS EFFECTIVE LENGTH	kL_x =	10	ft, (3.05 m)	
WEAK AXIS EFFECTIVE LENGTH	kL_y =	10	ft, (3.05 m)	
STRONG AXIS BENDING MOMENT	M_{rx} =	0.845	ft-kips, (1 kN-m), ASD	
STRONG AXIS BENDING UNBRACED LENGTH	L_b =	5.5	ft, (1.68 m), (AISC 360 F2.2.c)	
STRONG DIRECTION SHEAR LOAD, ASD	V_{strong} =	0.293	kips, (1 kN)	
WEAK AXIS BENDING MOMENT	M_{ry} =	0	ft-kips, (0 kN-m), ASD	
WEAK DIRECTION SHEAR LOAD, ASD	V_{weak} =	0	kips, (0 kN)	

THE DESIGN IS ADEQUATE.

ANALYSIS

CHECK TORSIONAL CAPACITY (AISC 360 H3.1)

$$T_c = \frac{1}{\Omega_T} T_n = \frac{1}{\Omega_T} \begin{cases} \left[2(B-t)(H-t)t - 4.5(4-\pi)t^3\right] \begin{bmatrix} 0.6F_y \ , \ for \ \frac{h}{t} \le 2.45\sqrt{\frac{E}{F_y}} \\ 0.6F_y 2.45\sqrt{\frac{E}{F_y}}\frac{t}{h} \ , \ for \ \frac{h}{t} \le 3.07\sqrt{\frac{E}{F_y}} \\ 0.458\frac{E\pi^2}{(h/t)^2}, \ for \ \frac{h}{t} \le 260 \end{bmatrix} , \ for \ HSS \ Tube \\ \frac{\pi(D-t)^2 t}{2} Max\left[\frac{1.23E}{\sqrt{\frac{L}{D}}\left(\frac{D}{t}\right)^{(5/4)}} \ , \ \frac{0.60E}{\left(\frac{D}{t}\right)^{(3/2)}}\right] , \ for \ HSS \ Pipe \end{cases} = 1.7 \text{ ft-kips}$$

> T_r **[Satisfactory]**

Where	B	H	h	t	D	E
	2.00	2.00	1.44	0.19		29000

Ω_T = 1.67 ,ASD

CHECK COMBINED COMPRESSION AND BENDING CAPACITY (AISC 360 H1)

$$\begin{cases} \frac{P_r}{P_c} + \frac{8}{9}\left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \ , \ for \ \frac{P_r}{P_c} \ge 0.2 \\ \frac{P_r}{2P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \ , \ for \ \frac{P_r}{P_c} < 0.2 \end{cases} = 0.47 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

Where					
$P_c = P_n / \Omega_c$ =	11	/ 1.67 =	6.69	kips, (AISC 360 Chapter E)	
			>	P_r	**[Satisfactory]**
$M_{cx} = M_n / \Omega_b$ =	3.06	/ 1.67 =	1.83	ft-kips, (AISC 360 Chapter F)	
			>	M_{rx}	**[Satisfactory]**
$M_{cy} = M_n / \Omega_b$ =	3.06	/ 1.67 =	1.83	ft-kips, (AISC 360 Chapter F)	
			>	M_{ry}	**[Satisfactory]**

CHECK SHEAR CAPACITY (AISC 360 G2)

$V_{n,strong} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{strong} =	0.3	kips	**[Satisfactory]**
$V_{n,weak} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{weak} =	0.0	kips	**[Satisfactory]**

CHECK COMBINED TORSION, SHEAR, COMPRESSION, AND BENDING CAPACITY (AISC 360 H3.2)

$$\begin{cases} \frac{P_r}{P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) + \left[Max\left(\frac{V_{strong}}{V_{c,strong}} \ , \ \frac{V_{weak}}{V_{c,weak}}\right) + \frac{T_r}{T_c}\right]^2 \ , \ for \ \frac{T_r}{T_c} > 0.2 \\ Torsion \ \ Neglected \ , \ for \ \frac{T_r}{T_c} \le 0.2 \end{cases} = 0.0 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

MISSION STRUCTURE ENGINEERING	PROJECT :	Las Positas College	PAGE :	
	CLIENT :		DESIGN BY :	
	JOB NO. :	DATE :	REVIEW BY :	

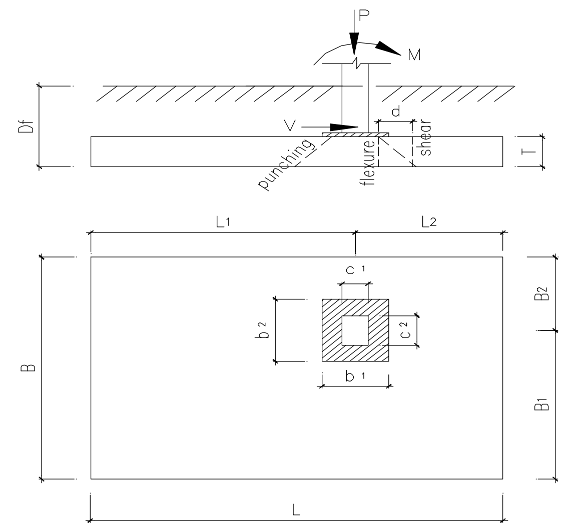
Eccentric Footing Design Based on ACI 318-19 — EWF.02 0.9DL+W Spread Ftg.

INPUT DATA

COLUMN WIDTH	c_1	=	2	in
COLUMN DEPTH	c_2	=	2	in
BASE PLATE WIDTH	b_1	=	5	in
BASE PLATE DEPTH	b_2	=	5	in
FOOTING CONCRETE STRENGTI	f_c'	=	2.5	ksi
REBAR YIELD STRESS	f_y	=	60	ksi
AXIAL DEAD LOAD	P_{DL}	=	1.755	k
AXIAL LIVE LOAD	P_{LL}	=	0	k
LATERAL LOAD (0=WIND, 1=SEISMIC)		=	0	Wind,SD
WIND AXIAL LOAD	P_{LAT}	=	0	k, SD
WIND MOMENT LOAD	M_{LAT}	=	1.908	ft-k, SD
WIND SHEAR LOAD	V_{LAT}	=	0.488	k, SD
SURCHARGE	q_s	=	0	ksf
SOIL WEIGHT	w_s	=	0.11	kcf
FOOTING EMBEDMENT DEPTH	D_f	=	1.5	ft
FOOTING THICKNESS	T	=	12	in
ALLOWABLE SOIL PRESSURE	Q_a	=	2	ksf
FOOTING WIDTH	B_1	=	2	ft
	B_2	=	2	ft
FOOTING LENGTH	L_1	=	2	ft
	L_2	=	2	ft
REINFORCING SIZE		#	4	

DESIGN SUMMARY

FOOTING WIDTH	B	=	4.00	ft
FOOTING LENGTH	L	=	4.00	ft
FOOTING THICKNESS	T	=	12	in
LONGITUDINAL REINF., TOP	1 # 4			
LONGITUDINAL REINF., BOT.	4 # 4 @ 14 in o.c.			
TRANSVERSE REINF., BOT.	4 # 4 @ 14 in o.c.			



THE FOOTING DESIGN IS ADEQUATE.

ANALYSIS

DESIGN LOADS AT TOP OF FOOTING (IBC 1605.2 & ACI 318 5.3)

CASE 1:	DL + LL	P	=	2	kips	1.2 DL + 1.6 LL	Pu	=	2	kips
		M	=	0	ft-kips		Mu	=	0	ft-kips
		e	=	0.0	ft, fr cl ftg		eu	=	0.0	ft, fr cl ftg
CASE 2:	DL + LL + 0.6(1.3) W	P	=	2	kips	1.2 DL + LL + 1.0 W	Pu	=	2	kips
		M	=	2	ft-kips		Mu	=	2	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	1.0	ft, fr cl ftg		eu	=	0.9	ft, fr cl ftg
CASE 3:	DL + LL + 0.6(0.65) W	P	=	2	kips	0.9 DL+ 1.0 W	Pu	=	2	kips
		M	=	1	ft-kips		Mu	=	2	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	0.6	ft, fr cl ftg		eu	=	1.2	ft, fr cl ftg

CHECK OVERTURNING FACTOR (2021 IBC 1605.2.1, 1808.3.1, & ASCE 7-22 12.13.4)

M_R / M_O = 4.2 **>** F = 1.0 / 0.9 = 1.11 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,T - P_{LAT} L_2$ = 2 k-ft

P_{ftg} = (0.15 kcf) T B L = 2.40 k, footing weight

P_{soil} = $w_s\,(D_f - T)$ B L = 0.88 k, soil weight

M_R = $P_{DL} L_2 + 0.5\,(P_{ftg} + P_{soil})$ L = 10 k-ft

FOR REVERSED LATERAL LOADS,

M_R / M_O = 3.8 **>** F = 1.0 / 0.9 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,D_f - P_{LAT} L_1$ = 3 k-ft

M_R = $P_{DL} L_1 + 0.5\,(P_{ftg} + P_{soil})$ L = 10 k-ft

CHECK SLIDING (2021 IBC 1807.2.3)

1.5 ($V_{Lat, ASD}$) = 0.4392 kips < $\mu\,\Sigma W$ = 1.66 kips **[Satisfactory]**

Where ` μ = 0.4

(cont'd)

CHECK SOIL BEARING CAPACITY (ACI 318 13.3.1.1)

Service Loads	CASE 1		CASE 2		CASE 3		
P	1.8		1.8		1.8		k
e	0.0		1.2		0.8		ft (from center of footing)
q_s B L	0.0		0		0.0		k, (surcharge load)
$(0.15\text{-}w_s)$T B L	0.6		0.6		0.4		k, (footing increased)
Σ P	2.4		2.4		2.1		k
e_L	0.0	< L/6	0.9	> L/6	0.6	< L/6	ft
e_B	0.0	< B/6	0.0	< B/6	0.0	< B/6	ft
q_L	0.6		1.4		1.0		k / ft
q_{max}	0.1		0.4		0.3		ksf
q_{allow}	2.0		2.7		2.7		ksf

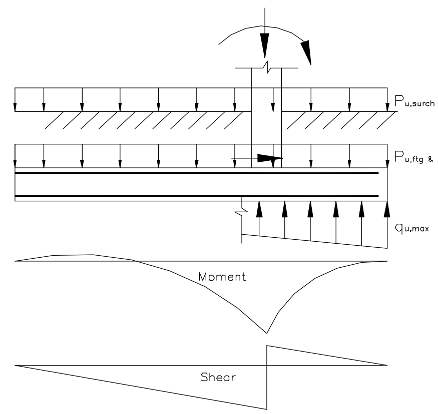
Where

$$q_L = \begin{cases} \dfrac{(\Sigma P)\left(1+\dfrac{6e_L}{L}\right)}{L}, & for \quad e_L \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P)}{3(0.5L-e_L)}, & for \quad e_L > \dfrac{L}{6} \end{cases} \qquad q_{MAX} = \begin{cases} \dfrac{q_L\left(1+\dfrac{6e_B}{B}\right)}{B}, & for \quad e_B \le \dfrac{B}{6} \\ \dfrac{2q_L}{3(0.5B-e_B)}, & for \quad e_B > \dfrac{B}{6} \end{cases}$$

[Satisfactory]

DESIGN FLEXURE & CHECK FLEXURE SHEAR
(ACI 318 13, 21, & 22)

$$q_{u,MAX} = \begin{cases} \dfrac{(\Sigma P_u)\left(1+\dfrac{6e_u}{L}\right)}{BL}, & for \quad e_u \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P_u)}{3B(0.5L-e_u)}, & for \quad e_u > \dfrac{L}{6} \end{cases} \qquad \rho_{MAX} = \frac{0.85\beta_1 f'_c}{f_y}\frac{\varepsilon_u}{\varepsilon_u+\varepsilon_t}$$



$$\rho = \frac{0.85 f'_c\left(1-\sqrt{1-\dfrac{M_u}{0.383bd^2 f'_c}}\right)}{f_y} \qquad \rho_{MIN} = MIN\left(0.0018\frac{T}{d}\ ,\ \frac{4}{3}\rho\right)$$

FACTORED SOIL PRESSURE

Factored Loads	CASE 1		CASE 2		CASE 3		
P_u	2.1		2.1		1.6		k
e_u	0.0		1.1		1.5		ft
γ q_s B L	0.0		0.0		0.0		k, (factored surcharge load)
γ[0.15T + $w_s(D_f$ - T)]BL	3.9		3.9		3.0		k, (factored footing & backfill loads)
Σ P_u	6.0		6.0		4.5		k
e_u	0.0	< L/6	0.4	< L/6	0.5	< L/6	ft
$q_{u,\,max}$	0.378		0.602		0.508		ksf

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **1**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.50	1.00	1.50	1.85	2.15	2.50	3.00	3.50	4.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	-0.3	-1.1	-2.1	-3.2	-4.2
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	2.1	2.1	2.1	2.1	2.1
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.5	-1.1	-1.7	-2.3	-3.1	-4.4	-6.0	-7.9
$V_{u,ftg\ \&\ fill}$ (k)	0	0.5	1.0	1.5	1.8	2.1	2.5	3.0	3.4	3.9
$q_{u,soil}$ (ksf)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
$M_{u,soil}$ (ft-k)	0	0.2	0.8	1.7	2.6	3.5	4.7	6.8	9.3	12.1
$V_{u,soil}$ (k)	0	-0.8	-1.5	-2.3	-2.8	-3.2	-3.8	-4.5	-5.3	-6.0
Σ M_u (ft-k)	**0**	**0.1**	**0.3**	**0.6**	**0.9**	**0.9**	**0.6**	**0.3**	**0.1**	**0**
Σ V_u (kips)	**0**	**-0.3**	**-0.5**	**-0.8**	**-1.0**	**1.0**	**0.8**	**0.5**	**0.3**	**0**

(cont'd)

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **2**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.50	1.00	1.50	1.85	2.15	2.50	3.00	3.50	4.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	2.1	1.3	0.3	-0.8	-1.8
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	2.1	2.1	2.1	2.1	2.1
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.5	-1.1	-1.7	-2.3	-3.1	-4.4	-6.0	-7.9
$V_{u,ftg\ \&\ fill}$ (k)	0	0.5	1.0	1.5	1.8	2.1	2.5	3.0	3.4	3.9
$q_{u,soil}$ (ksf)	0.15	0.21	0.27	0.32	0.36	0.39	0.43	0.49	0.55	0.60
$M_{u,soil}$ (ft-k)	0	0.1	0.4	0.9	1.5	2.1	3.1	4.8	7.0	9.7
$V_{u,soil}$ (k)	0	-0.4	-0.8	-1.4	-1.9	-2.3	-2.9	-3.9	-4.9	-6.0
ΣM_u (ft-k)	**0**	**0.0**	**-0.1**	**-0.2**	**-0.2**	**2.0**	**1.4**	**0.6**	**0.2**	**0**
ΣV_u (kips)	**0**	**0.1**	**0.1**	**0.1**	**-0.1**	**1.9**	**1.6**	**1.2**	**0.7**	**0**

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **3**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.50	1.00	1.50	1.85	2.15	2.50	3.00	3.50	4.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	2.2	1.6	0.8	0.0	-0.8
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.6	1.6	1.6	1.6	1.6
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.4	-0.8	-1.3	-1.7	-2.3	-3.3	-4.5	-5.9
$V_{u,ftg\ \&\ fill}$ (k)	0	0.4	0.7	1.1	1.4	1.6	1.8	2.2	2.6	3.0
$q_{u,soil}$ (ksf)	0.06	0.11	0.17	0.23	0.27	0.30	0.34	0.40	0.45	0.51
$M_{u,soil}$ (ft-k)	0	0.0	0.2	0.5	0.9	1.3	1.9	3.1	4.6	6.7
$V_{u,soil}$ (k)	0	-0.2	-0.5	-0.9	-1.2	-1.5	-2.0	-2.7	-3.6	-4.5
ΣM_u (ft-k)	**0**	**-0.1**	**-0.2**	**-0.3**	**-0.4**	**1.7**	**1.2**	**0.6**	**0.2**	**0**
ΣV_u (kips)	**0**	**0.2**	**0.3**	**0.3**	**0.2**	**1.6**	**1.4**	**1.1**	**0.6**	**0**

DESIGN FLEXURE

Location	$M_{u,max}$		d (in)	ρ_{min}	ρ_{reqD}	ρ_{max}	s_{max}	use	ρ_{provD}
Top Longitudinal	0.4	ft-k	9.75	0.0000	0.0000	0.0129	no limit	1 # 4	0.0004
Bottom Longitudinal	2.0	ft-k	8.75	0.0002	0.0001	0.0129	18	4 # 4 @ 14 in o.c.	0.0019
Bottom Transverse	0	ft-k / ft	8.50	0.0001	0.0001	0.0129	18	4 # 4 @ 14 in o.c.	0.0020

[Satisfactory]

CHECK FLEXURE SHEAR

Direction	$V_{u,max}$		$\phi V_c = 2\ \phi\ b\ d\ (f_c')^{0.5}$		check $V_u < \phi\ V_c$
Longitudinal	1.9	k	32	k	**[Satisfactory]**
Transverse	0.2	k / ft	8	k / ft	**[Satisfactory]**

CHECK PUNCHING SHEAR (ACI 318 13.2.7.2, 22.6.4.1, 22.6.4.3, & 8.4.2.3)

$$v_u(psi) = \frac{P_u - R}{A_P} + \frac{0.5\gamma_v M_u b_1}{J} \qquad A_P = 2(b_1 + b_2)d \qquad \phi v_c(psi) = \phi(2+y)\sqrt{f_c'}$$

$$J = \left(\frac{d b_1^3}{6}\right)\left[1 + \left(\frac{d}{b_1}\right)^2 + 3\left(\frac{b_2}{b_1}\right)\right] \qquad \gamma_v = 1 - \frac{1}{1 + \frac{2}{3}\sqrt{\frac{b_1}{b_2}}} \qquad y = MIN\left(2, \frac{4}{\beta_c}, 40\frac{d}{b_0}\right)$$

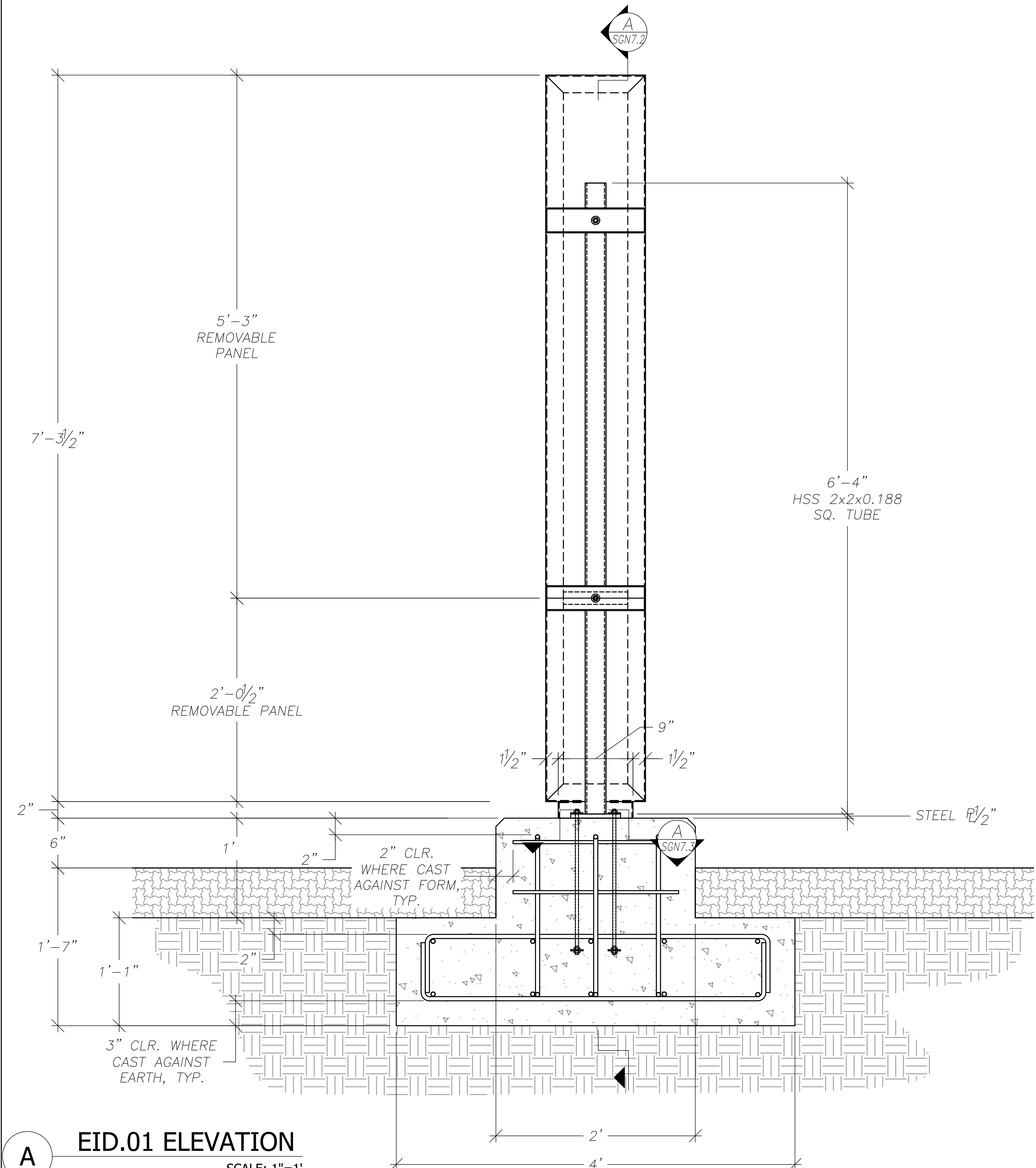
$$R = \frac{P_u b_1 b_2}{A_f} \qquad A_f = BL \qquad b_0 = \frac{A_P}{d}, b_1 = (0.5c_1 + 0.5b_1 + d), b_2 = (0.5c_2 + 0.5b_2 + d)$$

Case	P_u	M_u	b_1	b_2	b_0	γ_v	β_c	y	A_f	A_p	R	J	$v_{u\ (psi)}$	$\phi\ v_c$
1	2.1	0.0	12.0	12.0	0.3	0.4	1.0	2.0	16.0	2.8	0.1	0.5	4.8	150.0
2	2.1	1.9	12.0	12.0	0.3	0.4	1.0	2.0	16.0	2.8	0.1	0.5	4.9	150.0
3	1.6	1.9	12.0	12.0	0.3	0.4	1.0	2.0	16.0	2.8	0.1	0.5	3.7	150.0

[Satisfactory]

where ϕ = 0.75 , (ACI 318 21.2)

NOTE: PEDESTAL/PLINTH TO BE FORMED W/ BOARD FORM OR BOARD FORM LINER. PATTERN T.B.D.



A EID.01 ELEVATION

SCALE: 1"=1'

MISSION STRUCTURE ENGINEERING

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INFO@MISSIONSTRUCTURE.COM
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ISSUED FOR	REV	DATE
1st Submission	0	1/15/26

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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

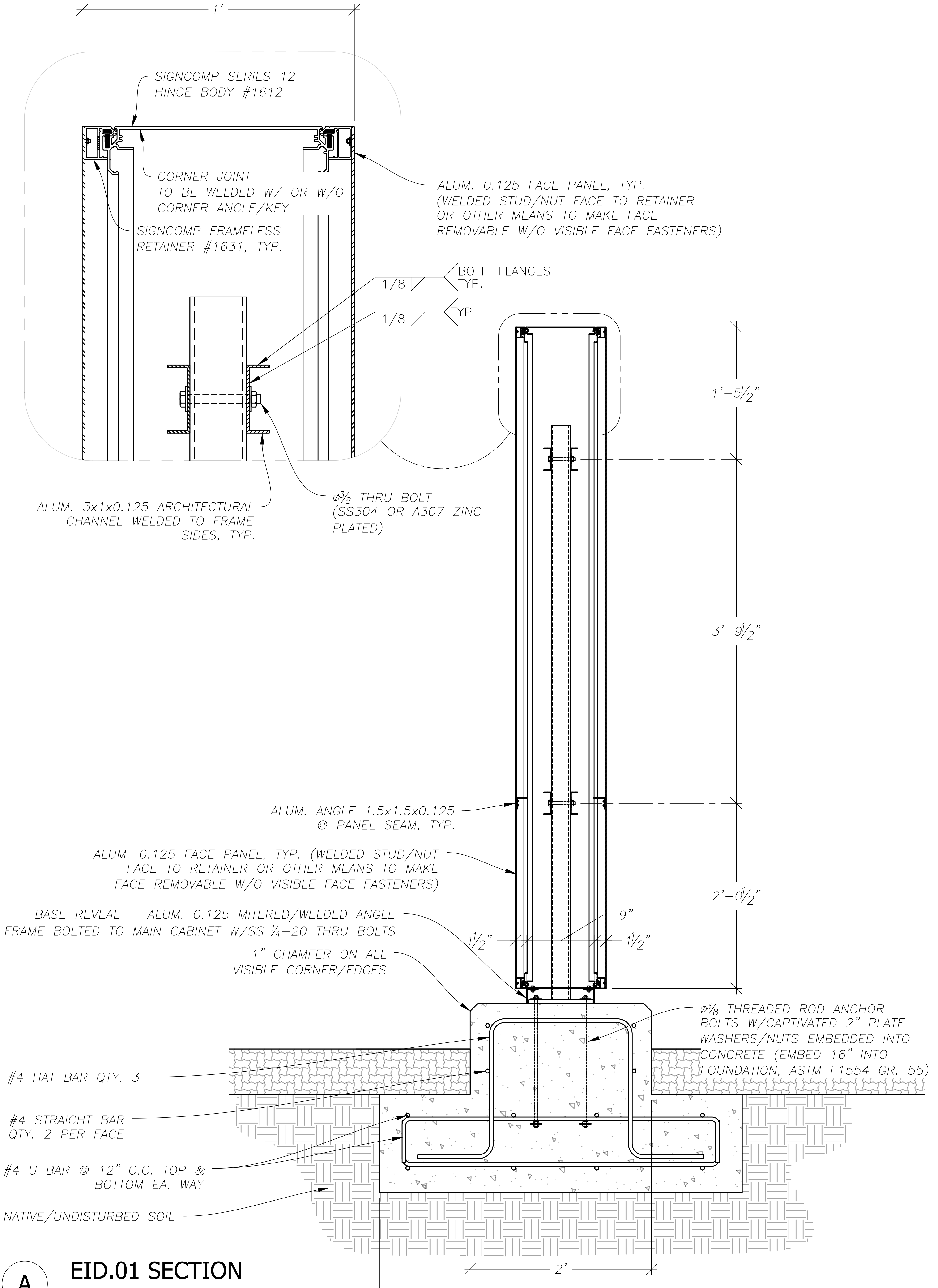
PROJECT NUMBER

DRAWING TITLE

EID.01
Elevation

DRAWING NUMBER

SGN7.1



A **EID.01 SECTION**
SCALE: 1"=1'

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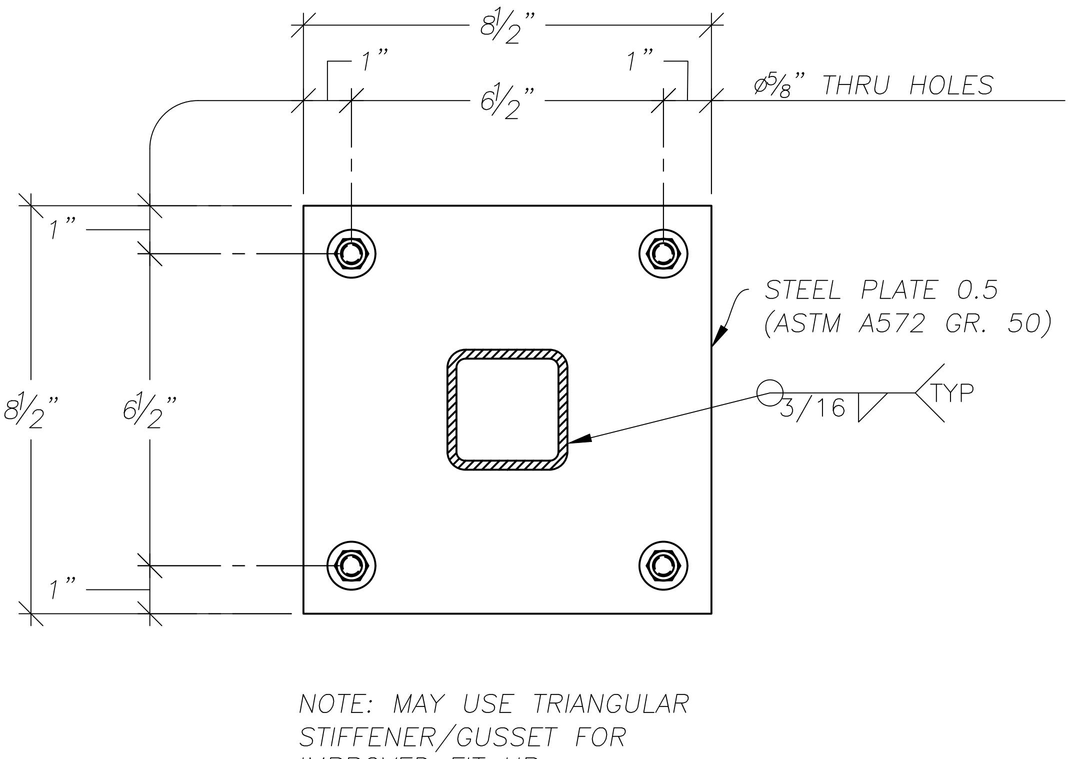
PROJECT NUMBER

DRAWING TITLE
EID.01
Section

DRAWING NUMBER
SGN7.2



NOTE: MAY USE TRIANGULAR STIFFENER/GUSSET FOR IMPROVED FIT UP

A **BASEPLATE TYPE 1**

SCALE: 3"=1'

NOTE: APPLY HEAVY EPOXY PRIMER TO ALL SURFACES OF BASEPLATES

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ISSUED FOR	REV	DATE
1st Submission	0	1/15/26

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PROJECT NUMBER

DRAWING TITLE

EID.01
Details

DRAWING NUMBER

SGN7.3

MISSION STRUCTURE ENGINEERING	Project	Las Positas College	By	MB	Sheet No. 1 / 5
	Location	Livermore, CA	Date	2025-11-25	
	Section	Freestanding EID.01			Job No.

Freestanding Monument Sign

Project Location:
3000 Campus Hill Drive
Livermore, CA 94551

for

Shannon-Leigh Associates, LLC
1455 Hays Street
San Leandro, CA 94577

LICENSED PROFESSIONAL ENGINEER
MICHAEL CLARK BENNETT
C 90708
CIVIL
STATE OF CALIFORNIA

Scope of design:

Design of freestanding monument sign anchorage & foundation. Design includes load analysis, base plate/anchor bolt design & footing design. Design Criteria based on geotechnical report by Ninyo & Moore dated November 22, 2023.

Current Codes Which Shall Apply (As applicable to project):

CBC 2025, ASCE 7-22, AISC 360-22, ACI 318-19, AA ADM1 2020,

Dead Load

Total Sign Weight: $DL = \text{Total Weight} = 132.375\ \text{lbf}$

Alum. Cabinet Weight: $DL_{cab} = \text{Weight.F14} = 57.375\ \text{lbf}$

Seismic Load (Full Sign Mass)

Seismic Loads

Seismic Loads of Non-Building Structures

ASCE 7-16 Chapter 15

Seismic Base Shear: $V_B = C_s * W_p$

Response Modification Factor: $R = 3$

Spectral Acceleration, Short Period: $SDS = 1.36$

Importance Factor: $I = 1.25$

Seismic Weight: $W_p = 132.375\ \text{lbf}$

Seismic Response Coefficient: $C_s = \dfrac{SDS}{\frac{R}{I}} = 0.567$

Seismic Base Shear: $V_B = C_s * W_p = 75.013\ \text{lbf}$

Overstrength Factor, Ω (where applicable): $OS = 1.75$

Load Distribution

Per ASCE Chapter 29

Top of Sign Height: $h = s = 8\ \text{ft}$

Cabinet Height: $h_c = \text{Weight.C2} = 7.5\ \text{ft}$

Pedestal Height: $h_p = 0.5\ \text{ft}$

Sign Height: $s = h_c + h_p = 8\ \text{ft}$

Sign Width (Breadth): $B = \text{Weight.E2} = 1\ \text{ft}$

Number of Posts: $n_p = 1$

Gross Sign Area: $A_g = s * B = 8\ \text{ft}^2$

Tributary Area (single post): $A_n = A_g = 8\ \text{ft}^2$

Moment Arm (@ baseplate): $arm_1 = 1.05 * \left(\frac{h_c}{2}\right) = 3.938\ ft$

Moment Arm (@ top of ftg.): $arm_T = 1.05 * \left(\frac{s}{2}\right) + 0.5\ ft = 4.7\ ft$

Wind Pressure: $p_w = 25\ psf$

Wind Load Section 1: $W_{l1} = p_w * A_n = 200\ lbf$

Wind Moment Section 1: $M_{w1} = W_{l1} * arm_1 = 787.5\ lbf * ft$ (Wind controls acting on sign face)

Wind Torsion: $T_w = 0.2 * B * W_{l1} = 40\ ft * lbf$

Seismic Load on Section 1 (alum. cab.): $EQ_{s1} = EQ2.C_s * DL = 75.013\ lbf$

Seismic Load Section 1 w/ Over strength: $EQ_{s1os} = EQ_{s1} * EQ2.OS = 131.272\ lbf$

EQ Lateral Shear Force @ baseplate: $V_{1eq} = EQ_{s1} = 75.013\ lbf$

EQ Lateral Force Moment: $M_{1eq} = V_{1eq} * arm_1 = 295.362\ lbf * ft$

EQ Lateral Force w/ OS: $V_{1eqos} = EQ_{s1os} = 131.272\ lbf$

EQ Lateral Force Moment w/OS: $M_{1eqos} = V_{1eqos} * arm_1 = 516.883\ lbf * ft$

LRFD Load Combinations (as applicable-anchorage)

LC: 0.9 DL + 1.0 W

Deal Load: $DL_{min} = \frac{0.9 * (DL_{cab})}{n_p} = 51.638\ lbf$

Shear Wind: $V_{1w1} = W_{l1} = 200\ lbf$

Moment Wind: $M_{1w1} = V_{1w1} * arm_1 = 787.5\ lbf * ft$

LC: 1.2 DL + 1.0 W

Deal Load: $DL_{max} = \frac{1.2 * (DL_{cab})}{n_p} = 68.85\ lbf$

Shear Wind: $V_{1w2} = W_{l1} = 200\ lbf$

Moment Wind: $M_{1w2} = V_{1w2} * arm_1 = 787.5\ lbf * ft$

LC: 0.9 DL - 1.0 E_v + E_{mh}

Dead Load: $DL_{eqmin} = \frac{0.9 * (DL_{cab})}{n_p} = 51.638\ lbf$

Vertical Seismic: $E_{v1} = \frac{-0.2 * EQ2.SDS * (DL_{cab})}{n_p} = -15.606\ lbf$

Shear EQ: $V_{1eq1} = \frac{EQ_{s1os}}{n_p} = 131.272\ lbf$

Moment EQ: $M_{1eq1} = \left(\frac{EQ_{s1os}}{n_p}\right) * arm_1 = 516.883\ lbf * ft$

LC: 1.2 DL + 1.0 E_v + E_{mh}

Dead Load: $DL_{1eqmax} = \frac{1.2 * \left(DL_{cab}\right)}{n_p} = 68.85 \text{ lbf}$

Vertical Seismic: $E_{v2} = \frac{0.2 * EQ2.SDS * \left(DL_{cab}\right)}{n_p} = 15.606 \text{ lbf}$

Shear EQ: $V_{eq2} = \frac{EQ_{s1os}}{n_p} = 131.272 \text{ lbf}$

Moment EQ: $M_{eq2} = \frac{EQ_{s1os} * arm_1}{n_p} = 516.883 \text{ lbf} * \text{ft}$

ASD Load Combinations
(Note: Omit axial loads on post-no restoring moment weld design)

LC: DL + 0.6 W

LC: DL + 0.7 $\left(E_v + E_{mh}\right)$

Convert to ASD/service level loads

Vertical Load, ASD: $DL_{S1} = DL = 132.375 \text{ lbf}$

Wind Pressure, ASD: $p_{wasd} = p_w * 0.6 = 15 \text{ psf}$

Wind Load, ASD: $W_{lasd} = p_{wasd} * A_n = 120 \text{ lbf}$

Wind Force Moment, ASD: $M_{wasd} = arm_1 * W_{lasd} = 472.5 \text{ ft} * \text{lbf}$

Wind Torsion, ASD: $T_{asd} = T_w * 0.6 = 24 \text{ ft} * \text{lbf}$

Max. Vertical Load, ASD: $DL_{eqasd} = \frac{DL_{S1} + 0.7 * 0.2 * EQ2.SDS * DL_{S1}}{n_p} = 157.579 \text{ lbf}$

Seismic Load, ASD: $EQ_{asd} = \frac{EQ2.V_B * 0.7}{n_p} = 52.509 \text{ lbf}$

Seismic Load w/ OS, ASD: $EQ_{osasd} = EQ_{asd} * EQ2.OS = 91.890 \text{ lbf}$

Seismic Force Moment, ASD: $M_{eqasd} = arm_1 * EQ_{asd} = 206.753 \text{ ft} * \text{lbf}$

Seismic Force Moment w/ OS, ASD: $M_{eqasdos} = EQ_{osasd} * arm_1 = 361.818 \text{ lbf} * \text{ft}$

Weld Connection From Post to Base Plate

Tube Depth: $d_{tube} = 2 \text{ in}$

Tube Breadth: $b_{tube} = 2 \text{ in}$

Tube Wall Thickness: $t_{tube} = 0.188 \text{ in}$

Weld Line Section Modulus: $S_w = d_{tube} * b_{tube} + \frac{d_{tube}^{\ 2}}{3} = 5.333 \text{ in}^2$

Weld Line Area: $A_w = d_{tube} * 2 + b_{tube} * 2 = 8\ in$

Fillet Weld Design (AISC 360 Section J2.4 or ADM J.2)

Weld to resist loads V & M.
Material = "Steel"

Weld Group Configuration: Type = "sq 2x2x0.188"

Input Weld Shear Load: $V = W_{lasd} = 120\ lbf$

Input Weld Moment Load: $M = M_{wasd} = 472.5\ ft * lbf$

Weld Line Section Modulus (bending): $S_w = Report1.S_w = 5.333\ in^2$

Weld Line Section Modulus (shear): $A_w = Report1.A_w = 8\ in$

Required Strength: $R = \sqrt{\left(\frac{V}{A_w}\right)^2 + \left(\frac{M}{S_w}\right)^2} = 1063.2\ \frac{lb}{in}$

Weld Electrode Tensile Strength: $f_u = 70\ ksi$

Weld Factor of Safety: $\Omega_w = 2$

Strength of Weld per inch:

$$R_n = \begin{cases} \left(\dfrac{0.707 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{if Material == "Steel"} \\ \left(\dfrac{0.707 * 0.85 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{otherwise} \end{cases} = 927.9\ \frac{lb}{in}$$

Required Size of Weld: $a_{req} = RoundUp\left(\frac{R}{R_n}\right) = 2/16"$ Weld Leg Size

Foundation Loads

Spread Footing Foundation

Nominal loads for allowable capacities per geotechnical report. Seismic Loads to have omega/overstrength applied (cantilever foundation system). Design provided in design worksheet to follow.

Width of Footing: $W_{ftg} = 3\ ft$

Length of Footing: $l_{ftg} = 3\ ft$

Width of Pedestal: $W_{ped} = 2\ ft$

Length of Pedestal: $l_{ped} = 2\ ft$

Height of Pedestal: $H_{ped} = 12\ in$

Weight of Concrete Pedestal: $Wt_{ped} = W_{ped} * l_{ped} * H_{ped} * 150\ pcf = 600\ lbf$

LC: 0.9 DL + W
(nominal values for foundation software shown below)

Vertical Force: $A_1 = 0.9 * \left(DL + Wt_{ped}\right) = 659.138\ lbf$

Horizontal Force: $P_1 = \left(B * s * p_w\right) = 200\ lbf$

Moment: $M_1 = P_1 * arm_T = 940\ lbf * ft$

LC: $0.9\ DL + \left(E_v + E_{mh}\right)$

(nominal values for foundation software shown below)

DL Vertical Force: $A_2 = 0.9 * \left(DL + Wt_{ped}\right) = 659.138\ lbf$

EQ Vertical Force: $A_3 = \left(-0.2 * EQ2.SDS * \left(DL + Wt_{ped}\right)\right) = -199.206\ lbf$

Horizontal Forces:

Sign Cabinet: $P_2 = EQ2.V_B * EQ2.OS = 131.272\ lbf$

Sign Cabinet moment arm: $a_2 = arm_T = 4.7\ ft$

Sign Cabinet moment: $M_2 = P_2 * a_2 = 616.978\ lbf * ft$

Combined EQ Axial: $A_{eq} = A_2 + A_3 = 459.932\ lbf$

Combined EQ Shear: $V_{eq} = P_2 = 131.272\ lbf$

Combined EQ Moment: $M_{eq} = M_2 = 616.978\ lbf * ft$

Weight Takeoff

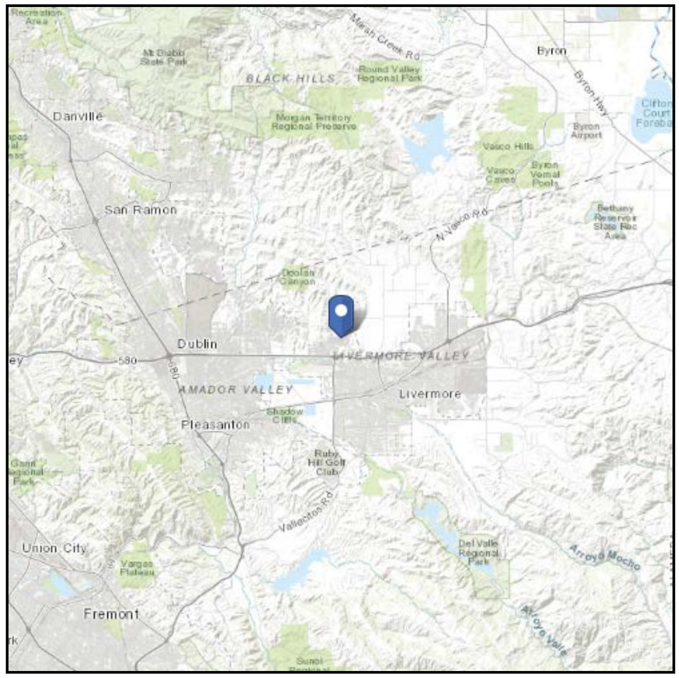
	Height:	7.5 ft	Width:	1 ft	
Component	Unit Wt	Unit Qty	Wt	Qty	Weight
Skin	2 psf	7.5 ft^2	15 lbf	2	30 lbf
Post	10 plf	7.5 ft	75 lbf	1	75 lbf
Channel Extrusion	1.5 plf	17 ft	25.5 lbf	1	25.5 lbf
Misc Framing/Stiffeners	0.25 psf	7.5 ft^2	1.875 lbf	1	1.875 lbf
				Cabinet Wt.:	57.38 lbf
				Total:	132.4 lbf

ASCE Hazards Report

Address:
Las Positas College - 3000 Campus Hill Drive
Livermore,

Standard: ASCE/SEI 7-22
Risk Category: III
Soil Class: D - Stiff Soil

Latitude: 37.710873
Longitude: -121.80058
Elevation: 480.38484203241944 ft (NAVD 88)



Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	79 Vmph
300-year MRI	87 Vmph
700-year MRI	93 Vmph
1,700-year MRI	99 Vmph
3,000-year MRI	103 Vmph
10,000-year MRI	113 Vmph
100,000-year MRI	129 Vmph
1,000,000-year MRI	147 Vmph

Data Source:	ASCE/SEI 7-22, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Nov 24 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

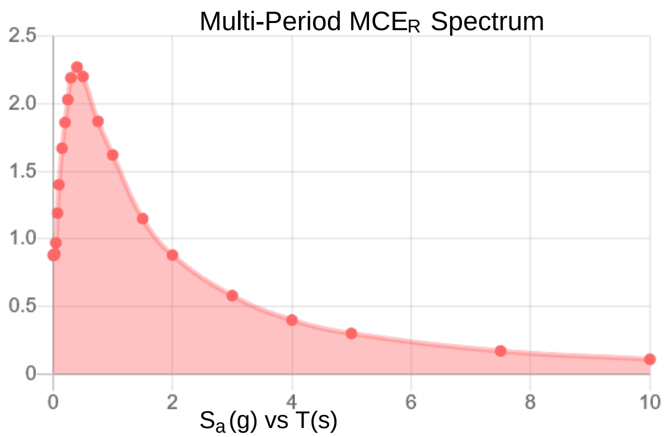
Seismic

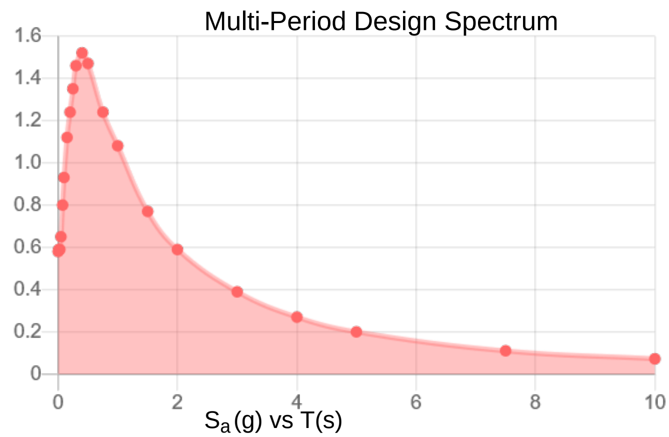
Site Soil Class: D - Stiff Soil

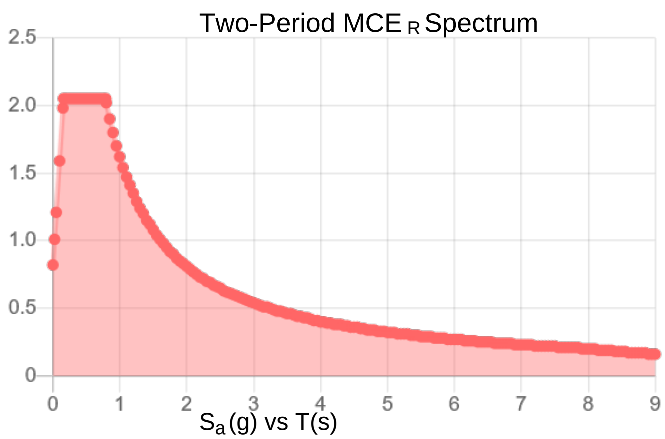
Results:

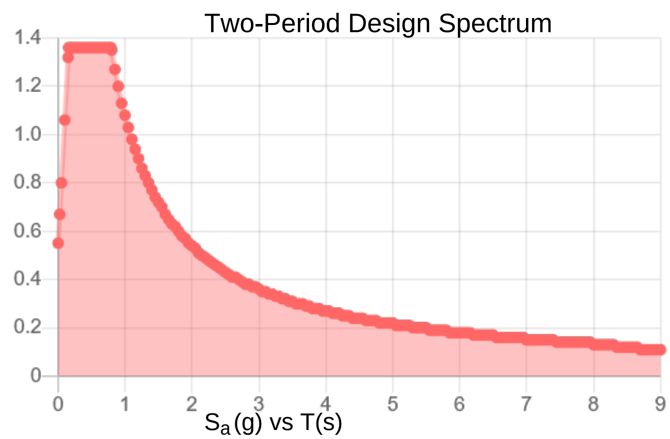
PGA_M :	0.73	T_L :	8
S_{MS} :	2.05	S_S :	2.13
S_{M1} :	1.62	S_1 :	0.81
S_{DS} :	1.36	V_{S30} :	260
S_{D1} :	1.08		

Seismic Design Category: E









MCE$_R$ Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Mon Nov 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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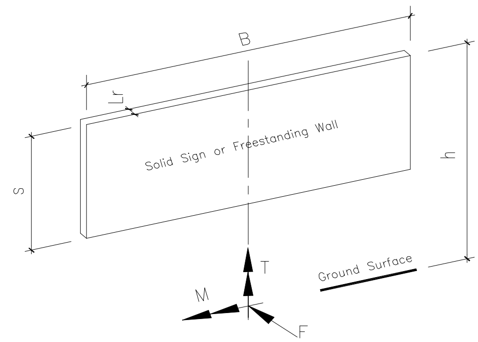
	CLIENT : Shannon Leigh	DESIGN BY :
	JOB NO. : DATE :	REVIEW BY :

Wind Analysis for Freestanding Wall & Sign Based on ASCE 7-22 — **Monument Sign Wind Pressure**

INPUT DATA

Exposure category (B, C or D)		=	C	
Importance factor, 1.0 only, (Table 1.5-2)	I_w	=	1.00	
Basic wind speed (ASCE 7 26.5.1)	V =		99	*mph, (159.32 kph)*
Topographic factor (26.8 & Table 26.8-1)	K_{zt}	=	1	Flat
Height of top	h =		11	*ft, (3.35 m)*
Vertical dimension (for wall, s = h)	s =		11	*ft, (3.35 m)*
Horizontal dimension	B =		4	*ft, (1.22 m)*
Dimension of return corner	L_r =		0	*ft, (0.00 m)*



DESIGN SUMMARY

Max horizontal wind pressure	p	=	25 *psf, (1177 N/m^2)*
Max total horizontal force at centroid of base	F	=	1.08 *kips, (5 kN)*
Max bending moment at centroid of base	M	=	6.54 *ft-kips, (9 kN-m)*
Max torsion at centroid of base	T	=	0.87 *ft-kips, (1 kN-m)*

ANALYSIS

Velocity pressure

q_h K_d = $(0.00256\ K_z K_{zt} K_e V^2)\ K_d$ = **18.13** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 277), K_e = **1.00** , (Tab. 26.9-1 page 275)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 277) = **0.85**

K_d = wind directionality factor. (Tab. 26.6-1, page 274) = **0.85**

h = height of top = **11.00** ft

Wind Force Case A: resultant force though the geometric center (Sec. 29.3.1)

$p = q_h\ K_d\ G\ C_N$	=	**25**	psf
$F = p\ A_s$	=	**1.08**	kips
M = F (h - 0.5s) for sign, F (0.55h) for wall	=	**6.54**	ft-kips
T =	=	**0.00**	ft-kips

where: G = gust effect factor. (Sec. 26.9) = **0.85**

C_f = net force coefficient. (Fig. 29.3-1, page 301) **1.60**

A_s = B s = **44.0** ft^2

Wind Force Case B: resultant force at 0.2 B offset of the geometric center (Sec. 29.3.1)

p = Case A	=	**25**	psf
F = Case A	=	**1.08**	kips
M = Case A	=	**6.54**	ft-kips
T = 0.2 F B	=	**0.87**	ft-kips

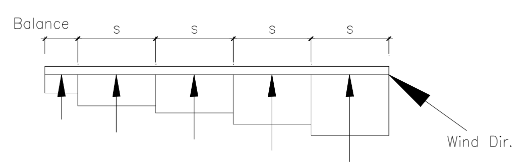
Wind Force Case C: resultant force different at each region (Sec. 29.4.1)

$p = q_h\ G\ C_f$

$F = \Sigma\ p\ A_s$

$M = \Sigma$ [F (h - 0.5s) for sign, F (0.55h) for wall]

$T = \Sigma\ T_s$



Distance	C_f	P_i	A_{si}	F_i	M_i	T_i
(ft)	(Fig. 29.3-1)	(psf)	(ft^2)	(kips)	(ft-kips)	(ft-kips)
4.0	1.800	28	44	1.22	7.38	0.00
4.0	1.200	18	0	0.00	0.00	0.00
Σ				**1.22**	**7.38**	**0.00**

<== Case C may not be considered, footnote 3 of Fig. 6-20

MISSION STRUCTURE ENGINEERING	PROJECT :	Las Positas		PAGE :	
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HSS (Tube, Pipe) Member Design with Torsional Loading Based on AISC 360-10/16 **EID.01 Post DL+W**

INPUT DATA & DESIGN SUMMARY

MEMBER SHAPE (Tube or Pipe) & SIZE		HSS2X2X3/16	< == **Tube**
STEEL YIELD STRESS	F_y =	46	ksi, (317 MPa)
TORSIONAL FORCE	T_r =	0.024	ft-kips, (0 kN-m), ASD
AXIAL COMPRESSION FORCE	P_r =	0.133	kips, (1 kN), ASD
STRONG AXIS EFFECTIVE LENGTH	kL_x =	12	ft, (3.66 m)
WEAK AXIS EFFECTIVE LENGTH	kL_y =	12	ft, (3.66 m)
STRONG AXIS BENDING MOMENT	M_{rx} =	0.473	ft-kips, (1 kN-m), ASD
STRONG AXIS BENDING UNBRACED LENGTH	L_b =	7	ft, (2.13 m), (AISC 360 F2.2.c)
STRONG DIRECTION SHEAR LOAD, ASD	V_{strong} =	0.12	kips, (1 kN)
WEAK AXIS BENDING MOMENT	M_{ry} =	0	ft-kips, (0 kN-m), ASD
WEAK DIRECTION SHEAR LOAD, ASD	V_{weak} =	0	kips, (0 kN)

THE DESIGN IS ADEQUATE.

ANALYSIS

CHECK TORSIONAL CAPACITY (AISC 360 H3.1)

$$T_c = \frac{1}{\Omega_T} T_n = \frac{1}{\Omega_T}\begin{cases} \left[2(B-t)(H-t)t - 4.5(4-\pi)t^3\right]\begin{bmatrix} 0.6F_y \ , \ for \ \frac{h}{t} \le 2.45\sqrt{\frac{E}{F_y}} \\ 0.6F_y 2.45\sqrt{\frac{E}{F_y}}\frac{t}{h} \ , \ for \ \frac{h}{t} \le 3.07\sqrt{\frac{E}{F_y}} \\ 0.458\frac{E\pi^2}{(h/t)^2}, \ for \ \frac{h}{t} \le 260 \end{bmatrix} , \ for \ HSS \ Tube \\ \frac{\pi(D-t)^2 t}{2} Max\left[\frac{1.23E}{\sqrt{\frac{L}{D}}\left(\frac{D}{t}\right)^{(5/4)}} \ , \ \frac{0.60E}{\left(\frac{D}{t}\right)^{(3/2)}}\right] , \ for \ HSS \ Pipe \end{cases} = 1.7 \text{ ft-kips}$$

> T_r **[Satisfactory]**

Where	B	H	h	t	D	E
	2.00	2.00	1.44	0.19		29000

Ω_T = 1.67 ,ASD

CHECK COMBINED COMPRESSION AND BENDING CAPACITY (AISC 360 H1)

$$\begin{cases} \frac{P_r}{P_c} + \frac{8}{9}\left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \ , \ for \ \frac{P_r}{P_c} \ge 0.2 \\ \frac{P_r}{2P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \ , \ for \ \frac{P_r}{P_c} < 0.2 \end{cases} = 0.27 < 1.3$$

[Satisfactory]
(2021 IBC, 1605.3.2)

Where $P_c = P_n / \Omega_c$ =	8	/ 1.67 =	4.65	kips, (AISC 360 Chapter E)	
			>	P_r	**[Satisfactory]**
$M_{cx} = M_n / \Omega_b$ =	3.06	/ 1.67 =	1.83	ft-kips, (AISC 360 Chapter F)	
			>	M_{rx}	**[Satisfactory]**
$M_{cy} = M_n / \Omega_b$ =	3.06	/ 1.67 =	1.83	ft-kips, (AISC 360 Chapter F)	
			>	M_{ry}	**[Satisfactory]**

CHECK SHEAR CAPACITY (AISC 360 G2)

$V_{n,strong} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{strong} =	0.1	kips	**[Satisfactory]**
$V_{n,weak} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{weak} =	0.0	kips	**[Satisfactory]**

CHECK COMBINED TORSION, SHEAR, COMPRESSION, AND BENDING CAPACITY (AISC 360 H3.2)

$$\begin{cases} \frac{P_r}{P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) + \left[Max\left(\frac{V_{strong}}{V_{c,strong}} \ , \ \frac{V_{weak}}{V_{c,weak}}\right) + \frac{T_r}{T_c}\right]^2 \ , \ for \ \frac{T_r}{T_c} > 0.2 \\ Torsion \ \ Neglected \ , \ for \ \frac{T_r}{T_c} \le 0.2 \end{cases} = 0.0 < 1.3$$

[Satisfactory]
(2021 IBC, 1605.3.2)

MISSION STRUCTURE ENGINEERING	PROJECT : Las Positas College		PAGE :
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Eccentric Footing Design Based on ACI 318-19

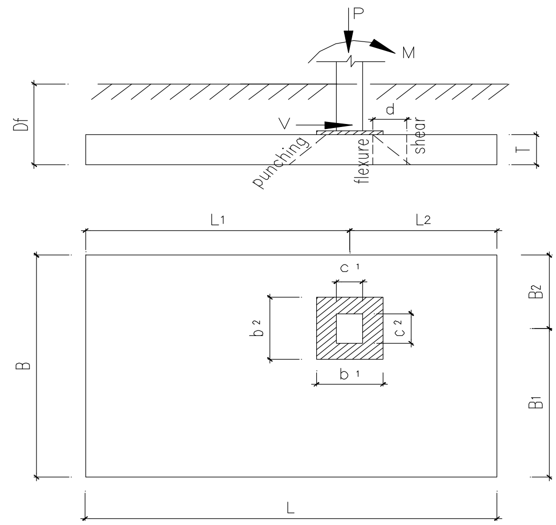
EID.01 0.9DL+W Spread Ftg.

INPUT DATA

COLUMN WIDTH	c_1	=	2	in
COLUMN DEPTH	c_2	=	2	in
BASE PLATE WIDTH	b_1	=	5	in
BASE PLATE DEPTH	b_2	=	5	in
FOOTING CONCRETE STRENGTH	f_c'	=	2.5	ksi
REBAR YIELD STRESS	f_y	=	60	ksi
AXIAL DEAD LOAD	P_{DL}	=	0.659	k
AXIAL LIVE LOAD	P_{LL}	=	0	k
LATERAL LOAD (0=WIND, 1=SEISMIC)		=	0	Wind,SD
WIND AXIAL LOAD	P_{LAT}	=	0	k, SD
WIND MOMENT LOAD	M_{LAT}	=	0.94	ft-k, SD
WIND SHEAR LOAD	V_{LAT}	=	0.2	k, SD
SURCHARGE	q_s	=	0	ksf
SOIL WEIGHT	w_s	=	0.11	kcf
FOOTING EMBEDMENT DEPTH	D_f	=	1.5	ft
FOOTING THICKNESS	T	=	12	in
ALLOWABLE SOIL PRESSURE	Q_a	=	2	ksf
FOOTING WIDTH	B_1	=	1.5	ft
	B_2	=	1.5	ft
FOOTING LENGTH	L_1	=	1.5	ft
	L_2	=	1.5	ft
REINFORCING SIZE		#	4	

DESIGN SUMMARY

FOOTING WIDTH	B	=	3.00	ft
FOOTING LENGTH	L	=	3.00	ft
FOOTING THICKNESS	T	=	12	in
LONGITUDINAL REINF., TOP	1 # 4			
LONGITUDINAL REINF., BOT.	3 # 4 @ 15 in o.c.			
TRANSVERSE REINF., BOT.	3 # 4 @ 15 in o.c.			



THE FOOTING DESIGN IS ADEQUATE.

ANALYSIS

DESIGN LOADS AT TOP OF FOOTING (IBC 1605.2 & ACI 318 5.3)

CASE 1:	DL + LL	P	=	1	kips	1.2 DL + 1.6 LL	Pu	=	1	kips
		M	=	0	ft-kips		Mu	=	0	ft-kips
		e	=	0.0	ft, fr cl ftg		eu	=	0.0	ft, fr cl ftg
CASE 2:	DL + LL + 0.6(1.3) W	P	=	1	kips	1.2 DL + LL + 1.0 W	Pu	=	1	kips
		M	=	1	ft-kips		Mu	=	1	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	1.2	ft, fr cl ftg		eu	=	1.2	ft, fr cl ftg
CASE 3:	DL + LL + 0.6(0.65) W	P	=	1	kips	0.9 DL+ 1.0 W	Pu	=	1	kips
		M	=	1	ft-kips		Mu	=	1	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	0.8	ft, fr cl ftg		eu	=	1.6	ft, fr cl ftg

CHECK OVERTURNING FACTOR (2021 IBC 1605.2.1, 1808.3.1, & ASCE 7-22 12.13.4)

M_R / M_O = 3.3 **>** F = 1.0 / 0.9 = 1.11 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,T - P_{LAT}L_2$ = 1 k-ft

P_{ftg} = (0.15 kcf) T B L = 1.35 k, footing weight

P_{soil} = $w_s\,(D_f - T)$ B L = 0.50 k, soil weight

M_R = $P_{DL}L_2 + 0.5\,(P_{ftg} + P_{soil})$ L = 4 k-ft

FOR REVERSED LATERAL LOADS,

M_R / M_O = 3.0 **>** F = 1.0 / 0.9 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,D_f - P_{LAT}L_1$ = 1 k-ft

M_R = $P_{DL}L_1 + 0.5\,(P_{ftg} + P_{soil})$ L = 4 k-ft

CHECK SLIDING (2021 IBC 1807.2.3)

1.5 ($V_{Lat,\,ASD}$) = 0.18 kips **<** $\mu\,\Sigma W$ = 0.80 kips **[Satisfactory]**

Where ` μ = 0.4

(cont'd)

CHECK SOIL BEARING CAPACITY (ACI 318 13.3.1.1)

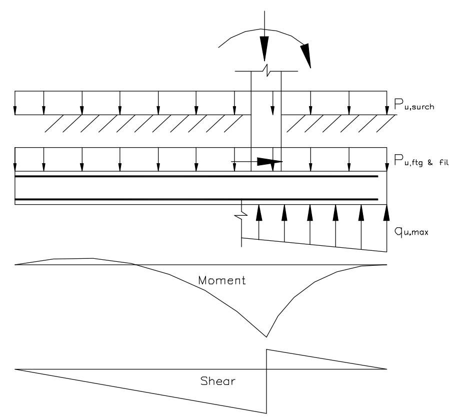
Service Loads	CASE 1		CASE 2		CASE 3		
P	0.7		0.7		0.7		k
e	0.0		1.5		0.9		ft (from center of footing)
q_s B L	0.0		0		0.0		k, (surcharge load)
$(0.15\text{-}w_s)$T B L	0.4		0.4		0.2		k, (footing increased)
Σ P	1.0		1.0		0.9		k
e_L	0.0	< L/6	0.9	> L/6	0.7	> L/6	ft
e_B	0.0	< B/6	0.0	< B/6	0.0	< B/6	ft
q_L	0.3		1.2		0.7		k / ft
q_{max}	0.1		0.4		0.2		ksf
q_{allow}	2.0		2.7		2.7		ksf

Where

$$q_L = \begin{cases} \dfrac{(\Sigma P)\left(1+\dfrac{6e_L}{L}\right)}{L}, & for \quad e_L \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P)}{3(0.5L-e_L)}, & for \quad e_L > \dfrac{L}{6} \end{cases} \qquad q_{MAX} = \begin{cases} \dfrac{q_L\left(1+\dfrac{6e_B}{B}\right)}{B}, & for \quad e_B \le \dfrac{B}{6} \\ \dfrac{2q_L}{3(0.5B-e_B)}, & for \quad e_B > \dfrac{B}{6} \end{cases}$$

[Satisfactory]

DESIGN FLEXURE & CHECK FLEXURE SHEAR
(ACI 318 13, 21, & 22)



$$q_{u,MAX} = \begin{cases} \dfrac{(\Sigma P_u)\left(1+\dfrac{6e_u}{L}\right)}{BL}, & for \quad e_u \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P_u)}{3B(0.5L-e_u)}, & for \quad e_u > \dfrac{L}{6} \end{cases} \qquad \rho_{MAX} = \frac{0.85\beta_1 f'_c}{f_y}\frac{\varepsilon_u}{\varepsilon_u+\varepsilon_t}$$

$$\rho = \frac{0.85 f'_c\left(1-\sqrt{1-\dfrac{M_u}{0.383bd^2 f'_c}}\right)}{f_y} \qquad \rho_{MIN} = MIN\left(0.0018\frac{T}{d}\ ,\ \frac{4}{3}\rho\right)$$

FACTORED SOIL PRESSURE

Factored Loads	CASE 1		CASE 2		CASE 3		
P_u	0.8		0.8		0.6		k
e_u	0.0		1.4		1.9		ft
γ q_s B L	0.0		0.0		0.0		k, (factored surcharge load)
γ[0.15T + w_s(D_f - T)]BL	2.2		2.2		1.7		k, (factored footing & backfill loads)
Σ P_u	3.0		3.0		2.3		k
e_u	0.0	< L/6	0.4	< L/6	0.5	> L/6	ft
$q_{u,\,max}$	0.334		0.587		0.504		ksf

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **1**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.38	0.75	1.13	1.35	1.65	1.88	2.25	2.63	3.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	-0.1	-0.3	-0.6	-0.9	-1.2
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.2	-0.5	-0.7	-1.0	-1.3	-1.9	-2.5	-3.3
$V_{u,ftg\ \&\ fill}$ (k)	0	0.3	0.6	0.8	1.0	1.2	1.4	1.7	1.9	2.2
$q_{u,soil}$ (ksf)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
$M_{u,soil}$ (ft-k)	0	0.1	0.3	0.6	0.9	1.4	1.8	2.5	3.5	4.5
$V_{u,soil}$ (k)	0	-0.4	-0.8	-1.1	-1.4	-1.6	-1.9	-2.3	-2.6	-3.0
Σ M_u (ft-k)	**0**	**0.0**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.0**	**0**
Σ V_u (kips)	**0**	**-0.1**	**-0.2**	**-0.3**	**-0.4**	**0.4**	**0.3**	**0.2**	**0.1**	**0**

(cont'd)

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **2**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.38	0.75	1.13	1.35	1.65	1.88	2.25	2.63	3.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	1.0	0.8	0.5	0.3	0.0
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.2	-0.5	-0.7	-1.0	-1.3	-1.9	-2.5	-3.3
$V_{u,ftg\ \&\ fill}$ (k)	0	0.3	0.6	0.8	1.0	1.2	1.4	1.7	1.9	2.2
$q_{u,soil}$ (ksf)	0.08	0.14	0.21	0.27	0.31	0.36	0.40	0.46	0.52	0.59
$M_{u,soil}$ (ft-k)	0	0.0	0.1	0.3	0.4	0.7	1.0	1.6	2.4	3.4
$V_{u,soil}$ (k)	0	-0.1	-0.3	-0.6	-0.8	-1.1	-1.3	-1.8	-2.4	-3.0
Σ M_u (ft-k)	**0**	**0.0**	**-0.1**	**-0.2**	**-0.2**	**0.7**	**0.5**	**0.3**	**0.1**	**0**
Σ V_u (kips)	**0**	**0.2**	**0.2**	**0.2**	**0.2**	**0.9**	**0.8**	**0.6**	**0.3**	**0**

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **3**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.38	0.75	1.13	1.35	1.65	1.88	2.25	2.63	3.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	1.1	0.9	0.7	0.5	0.3
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	0.0	-0.2	-0.4	-0.5	-0.7	-1.0	-1.4	-1.9	-2.5
$V_{u,ftg\ \&\ fill}$ (k)	0	0.2	0.4	0.6	0.7	0.9	1.0	1.2	1.5	1.7
$q_{u,soil}$ (ksf)	0.00	0.06	0.13	0.19	0.23	0.28	0.31	0.38	0.44	0.50
$M_{u,soil}$ (ft-k)	0	1.0	1.7	2.2	2.4	2.6	2.7	2.6	2.5	2.2
$V_{u,soil}$ (k)	0	-0.5	-1.0	-1.4	-1.6	-1.8	-1.9	-2.1	-2.2	-2.3
Σ M_u (ft-k)	**0**	**1.0**	**1.6**	**1.9**	**1.9**	**2.9**	**2.6**	**1.9**	**1.1**	**0**
Σ V_u (kips)	**0**	**-0.3**	**-0.6**	**-0.8**	**-0.8**	**-0.3**	**-0.3**	**-0.3**	**-0.2**	**0**

DESIGN FLEXURE

Location	$M_{u,max}$		d (in)	ρ_{min}	ρ_{reqD}	ρ_{max}	s_{max}	use	ρ_{provD}
Top Longitudinal	0.2	ft-k	9.75	0.0000	0.0000	0.0129	no limit	1 # 4	0.0006
Bottom Longitudinal	2.9	ft-k	8.75	0.0003	0.0002	0.0129	18	3 # 4 @ 15 in o.c.	0.0019
Bottom Transverse	0	ft-k / ft	8.50	0.0000	0.0000	0.0129	18	3 # 4 @ 15 in o.c.	0.0020

[Satisfactory]

CHECK FLEXURE SHEAR

Direction	$V_{u,max}$		$\phi V_c = 2\ \phi\ b\ d\ (f_c')^{0.5}$		check $V_u < \phi\ V_c$
Longitudinal	0.9	k	24	k	**[Satisfactory]**
Transverse	0.1	k / ft	8	k / ft	**[Satisfactory]**

CHECK PUNCHING SHEAR (ACI 318 13.2.7.2, 22.6.4.1, 22.6.4.3, & 8.4.2.3)

$$v_u(psi) = \frac{P_u - R}{A_P} + \frac{0.5\gamma_v M_u b_1}{J} \qquad A_P = 2(b_1 + b_2)d \qquad \phi v_c(psi) = \phi(2+y)\sqrt{f_c'}$$

$$J = \left(\frac{d b_1^3}{6}\right)\left[1 + \left(\frac{d}{b_1}\right)^2 + 3\left(\frac{b_2}{b_1}\right)\right] \qquad \gamma_v = 1 - \frac{1}{1 + \frac{2}{3}\sqrt{\frac{b_1}{b_2}}} \qquad y = MIN\left(2, \frac{4}{\beta_c}, 40\frac{d}{b_0}\right)$$

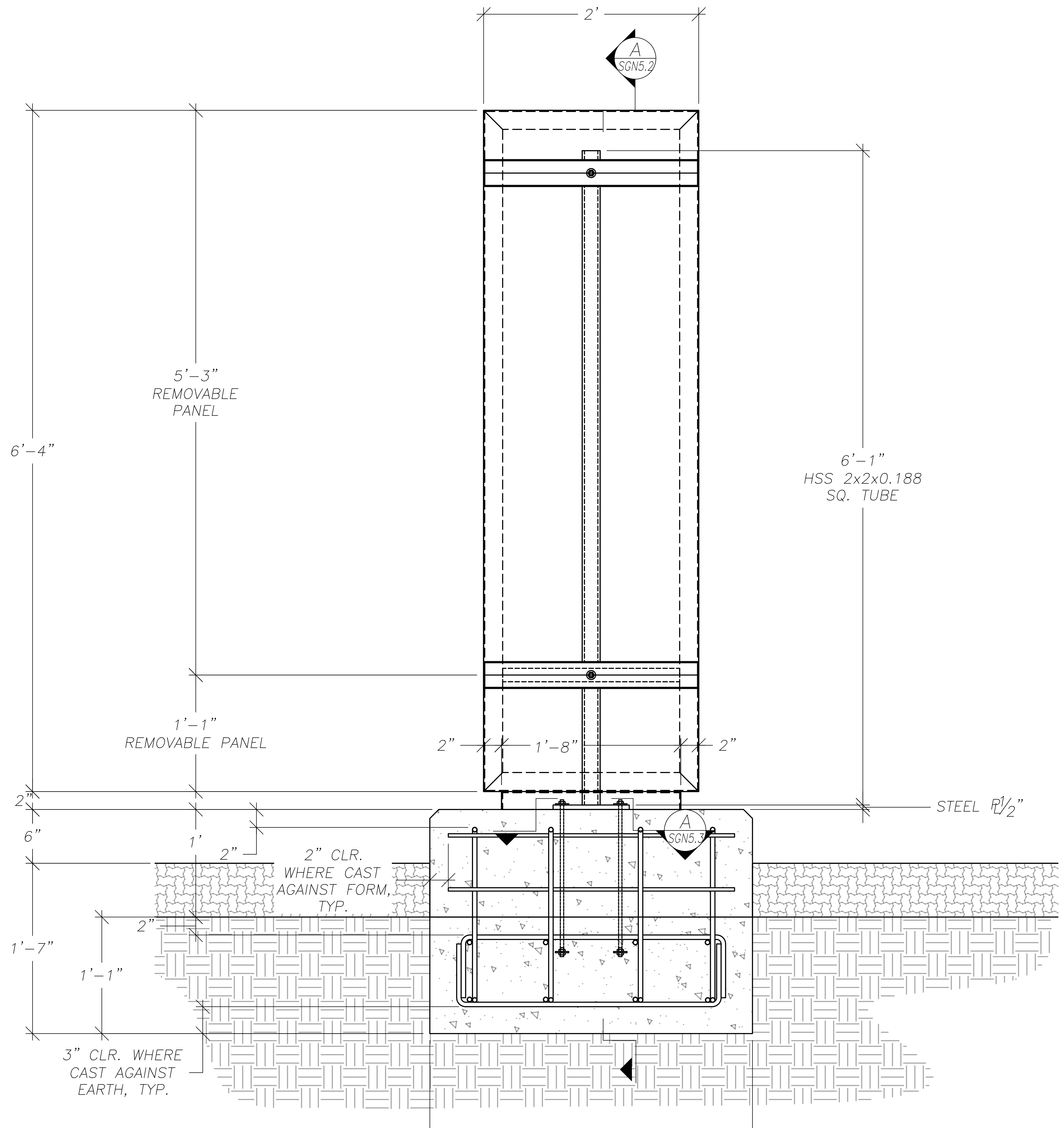
$$R = \frac{P_u b_1 b_2}{A_f} \qquad A_f = BL \qquad b_0 = \frac{A_P}{d}, b_1 = (0.5c_1 + 0.5b_1 + d), b_2 = (0.5c_2 + 0.5b_2 + d)$$

Case	P_u	M_u	b_1	b_2	b_0	γ_v	β_c	y	A_f	A_p	R	J	$v_{u\ (psi)}$	$\phi\ v_c$
1	0.8	0.0	12.0	12.0	0.3	0.4	1.0	2.0	9.0	2.8	0.1	0.5	1.7	150.0
2	0.8	0.9	12.0	12.0	0.3	0.4	1.0	2.0	9.0	2.8	0.1	0.5	1.7	150.0
3	0.6	0.9	12.0	12.0	0.3	0.4	1.0	2.0	9.0	2.8	0.1	0.5	1.3	150.0

[Satisfactory]

where ϕ = 0.75 , (ACI 318 21.2)

NOTE: PEDESTAL/PLINTH TO BE FORMED W/ BOARD FORM OR BOARD FORM LINER. PATTERN T.B.D.



A

EWF.10 ELEVATION

SCALE: 1"=1'

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1st Submission	0	1/15/26

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C 90708
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SHANNON LEIGH
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510. 969. 7870 info@shannonleigh.net

PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

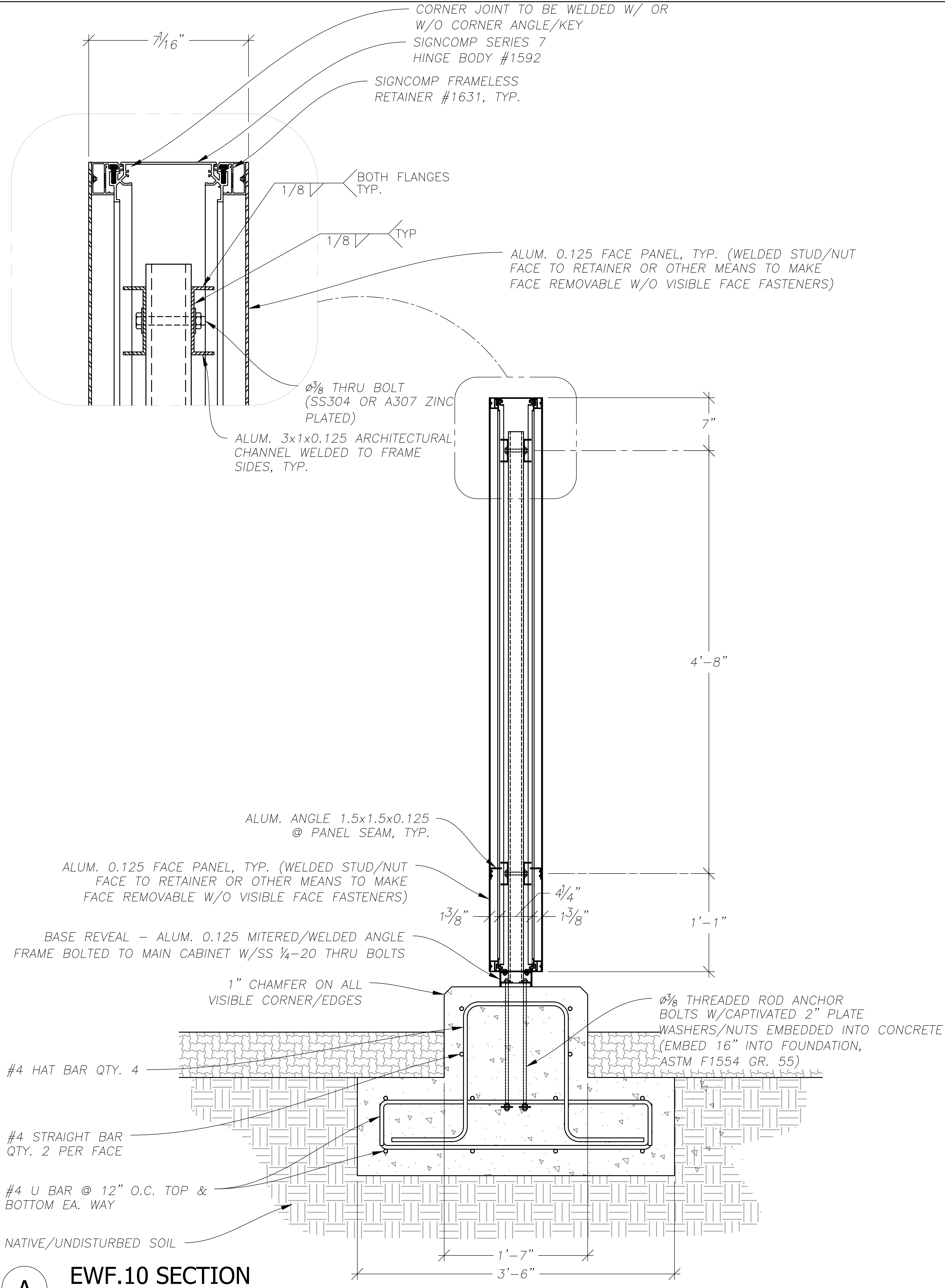
PROJECT NUMBER

DRAWING TITLE

EWF.10
Elevation

DRAWING NUMBER

SGN5.1



A **EWF.10 SECTION**

SCALE: 1"=1'

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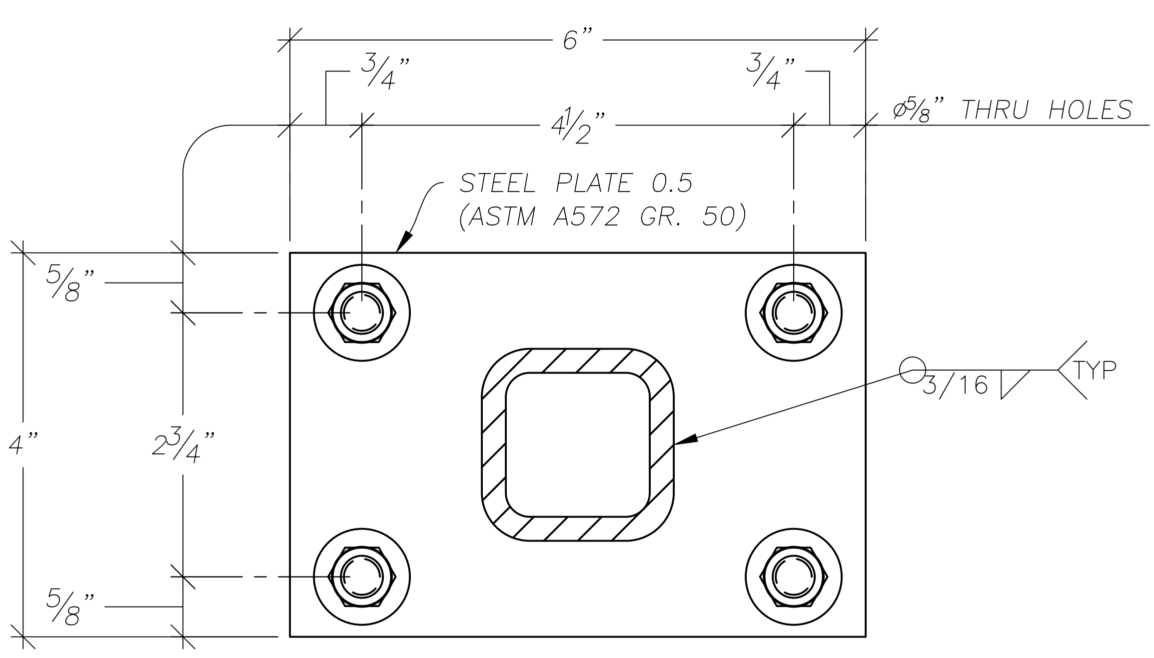
PROJECT NUMBER

DRAWING TITLE

EWF.10
Section

DRAWING NUMBER

SGN5.2



NOTE: MAY USE TRIANGULAR STIFFENER/GUSSET FOR IMPROVED FIT UP

A BASEPLATE TYPE 2

SCALE: 6"=1'

NOTE: APPLY HEAVY EPOXY PRIMER TO ALL SURFACES OF BASEPLATES

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1st Submission	0	1/15/26

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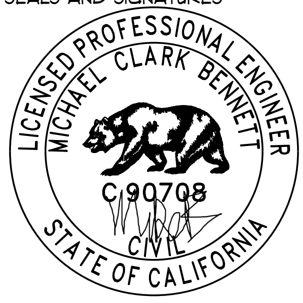

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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

PROJECT NUMBER

DRAWING TITLE

EWF.10
Details

DRAWING NUMBER

SGN5.3

Freestanding Monument Sign

Project Location:
3000 Campus Hill Drive
Livermore, CA 94551

for

Shannon-Leigh Associates, LLC
1455 Hays Street
San Leandro, CA 94577

LICENSED PROFESSIONAL ENGINEER
MICHAEL CLARK BENNETT
C 90708
CIVIL
STATE OF CALIFORNIA

Scope of design:

Design of freestanding monument sign anchorage & foundation. Design includes load analysis, base plate/anchor bolt design & footing design. Design Criteria based on geotechnical report by Ninyo & Moore dated November 22, 2023.

Current Codes Which Shall Apply (As applicable to project):

CBC 2025, ASCE 7-22, AISC 360-22, ACI 318-19, AA ADM1 2020,

Dead Load

Total Sign Weight: $DL = \text{Total Weight} = 145.75\ \text{lbf}$

Alum. Cabinet Weight: $DL_{cab} = \text{Weight.F14} = 80.75\ \text{lbf}$

Seismic Load (Full Sign Mass)

Seismic Loads

Seismic Loads of Non-Building Structures

ASCE 7-16 Chapter 15

Seismic Base Shear: $V_B = C_s * W_p$

Response Modification Factor: $R = 3$

Spectral Acceleration, Short Period: $SDS = 1.36$

Importance Factor: $I = 1.25$

Seismic Weight: $W_p = 145.75\ \text{lbf}$

Seismic Response Coefficient: $C_s = \dfrac{SDS}{\frac{R}{I}} = 0.567$

Seismic Base Shear: $V_B = C_s * W_p = 82.592\ \text{lbf}$

Overstrength Factor, Ω (where applicable): $OS = 1.75$

Load Distribution

Per ASCE Chapter 29

Top of Sign Height: $h = s = 7\ \text{ft}$

Cabinet Height: $h_c = \text{Weight.C2} = 6.5\ \text{ft}$

Pedestal Height: $h_p = 0.5\ \text{ft}$

Sign Height: $s = h_c + h_p = 7\ \text{ft}$

Sign Width (Breadth): $B = \text{Weight.E2} = 2\ \text{ft}$

Number of Posts: $n_p = 1$

Gross Sign Area: $A_g = s * B = 14\ \text{ft}^2$

Tributary Area (single post): $A_n = A_g = 14\ \text{ft}^2$

Moment Arm (@ baseplate): $arm_1 = 1.05 * \left(\frac{h_c}{2}\right) = 3.413\ ft$

Moment Arm (@ top of ftg.): $arm_T = 1.05 * \left(\frac{s}{2}\right) + 0.5\ ft = 4.175\ ft$

Wind Pressure: $p_w = 25\ psf$

Wind Load Section 1: $W_{l1} = p_w * A_n = 350\ lbf$

Wind Moment Section 1: $M_{w1} = W_{l1} * arm_1 = 1194.4\ lbf * ft$ (Wind controls acting on sign face)

Wind Torsion: $T_w = 0.2 * B * W_{l1} = 140\ ft * lbf$

Seismic Load on Section 1 (alum. cab.): $EQ_{s1} = EQ2.C_s * DL = 82.592\ lbf$

Seismic Load Section 1 w/ Over strength: $EQ_{s1os} = EQ_{s1} * EQ2.OS = 144.535\ lbf$

EQ Lateral Shear Force @ baseplate: $V_{1eq} = EQ_{s1} = 82.592\ lbf$

EQ Lateral Force Moment: $M_{1eq} = V_{1eq} * arm_1 = 281.844\ lbf * ft$

EQ Lateral Force w/ OS: $V_{1eqos} = EQ_{s1os} = 144.535\ lbf$

EQ Lateral Force Moment w/OS: $M_{1eqos} = V_{1eqos} * arm_1 = 493.227\ lbf * ft$

<u>LRFD Load Combinations (as applicable-anchorage)</u>

LC: 0.9 DL + 1.0 W

Deal Load: $DL_{min} = \frac{0.9 * (DL_{cab})}{n_p} = 72.675\ lbf$

Shear Wind: $V_{1w1} = W_{l1} = 350\ lbf$

Moment Wind: $M_{1w1} = V_{1w1} * arm_1 = 1194.375\ lbf * ft$

LC: 1.2 DL + 1.0 W

Deal Load: $DL_{max} = \frac{1.2 * (DL_{cab})}{n_p} = 96.9\ lbf$

Shear Wind: $V_{1w2} = W_{l1} = 350\ lbf$

Moment Wind: $M_{1w2} = V_{1w2} * arm_1 = 1194.375\ lbf * ft$

LC: 0.9 DL - 1.0 E_v + E_{mh}

Dead Load: $DL_{eqmin} = \frac{0.9 * (DL_{cab})}{n_p} = 72.675\ lbf$

Vertical Seismic: $E_{v1} = \frac{-0.2 * EQ2.SDS * (DL_{cab})}{n_p} = -21.964\ lbf$

Shear EQ: $V_{1eq1} = \frac{EQ_{s1os}}{n_p} = 144.535\ lbf$

Moment EQ: $M_{1eq1} = \left(\frac{EQ_{s1os}}{n_p}\right) * arm_1 = 493.227\ lbf * ft$

LC: 1.2 DL + 1.0 E_v + E_{mh}

Dead Load: $DL_{1eqmax} = \dfrac{1.2 * \left(DL_{cab}\right)}{n_p} = 96.9 \text{ lbf}$

Vertical Seismic: $E_{v2} = \dfrac{0.2 * EQ2.SDS * \left(DL_{cab}\right)}{n_p} = 21.964 \text{ lbf}$

Shear EQ: $V_{eq2} = \dfrac{EQ_{s1os}}{n_p} = 144.535 \text{ lbf}$

Moment EQ: $M_{eq2} = \dfrac{EQ_{s1os} * arm_1}{n_p} = 493.227 \text{ lbf} * \text{ft}$

ASD Load Combinations
(Note: Omit axial loads on post-no restoring moment weld design)

LC: DL + 0.6 W

LC: DL + 0.7 $\left(E_v + E_{mh}\right)$

Convert to ASD/service level loads

Vertical Load, ASD: $DL_{S1} = DL = 145.75 \text{ lbf}$

Wind Pressure, ASD: $p_{wasd} = p_w * 0.6 = 15 \text{ psf}$

Wind Load, ASD: $W_{lasd} = p_{wasd} * A_n = 210 \text{ lbf}$

Wind Force Moment, ASD: $M_{wasd} = arm_1 * W_{lasd} = 716.625 \text{ ft} * \text{lbf}$

Wind Torsion, ASD: $T_{asd} = T_w * 0.6 = 84 \text{ ft} * \text{lbf}$

Max. Vertical Load, ASD: $DL_{eqasd} = \dfrac{DL_{S1} + 0.7 * 0.2 * EQ2.SDS * DL_{S1}}{n_p} = 173.501 \text{ lbf}$

Seismic Load, ASD: $EQ_{asd} = \dfrac{EQ2.V_B * 0.7}{n_p} = 57.814 \text{ lbf}$

Seismic Load w/ OS, ASD: $EQ_{osasd} = EQ_{asd} * EQ2.OS = 101.175 \text{ lbf}$

Seismic Force Moment, ASD: $M_{eqasd} = arm_1 * EQ_{asd} = 197.291 \text{ ft} * \text{lbf}$

Seismic Force Moment w/ OS, ASD: $M_{eqasdos} = EQ_{osasd} * arm_1 = 345.259 \text{ lbf} * \text{ft}$

Weld Connection From Post to Base Plate

Tube Depth: $d_{tube} = 2 \text{ in}$

Tube Breadth: $b_{tube} = 2 \text{ in}$

Tube Wall Thickness: $t_{tube} = 0.188 \text{ in}$

Weld Line Section Modulus: $S_w = d_{tube} * b_{tube} + \dfrac{d_{tube}^{\,2}}{3} = 5.333 \text{ in}^2$

Weld Line Area: $A_w = d_{tube} * 2 + b_{tube} * 2 = 8\ in$

Fillet Weld Design (AISC 360 Section J2.4 or ADM J.2)

Weld to resist loads V & M.
Material = "Steel"

Weld Group Configuration: Type = "sq 2x2x0.188"

Input Weld Shear Load: $V = W_{lasd} = 210\ lbf$

Input Weld Moment Load: $M = M_{wasd} = 716.625\ ft * lbf$

Weld Line Section Modulus (bending): $S_w = Report1.S_w = 5.333\ in^2$

Weld Line Section Modulus (shear): $A_w = Report1.A_w = 8\ in$

Required Strength: $R = \sqrt{\left(\frac{V}{A_w}\right)^2 + \left(\frac{M}{S_w}\right)^2} = 1612.6\ \frac{lb}{in}$

Weld Electrode Tensile Strength: $f_u = 70\ ksi$

Weld Factor of Safety: $\Omega_w = 2$

Strength of Weld per inch:

$$R_n = \begin{cases} \left(\dfrac{0.707 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{if Material == "Steel"} \\ \left(\dfrac{0.707 * 0.85 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{otherwise} \end{cases} = 927.9\ \frac{lb}{in}$$

Required Size of Weld: $a_{req} = RoundUp\left(\frac{R}{R_n}\right) =$ 2/16" Weld Leg Size

Foundation Loads

Spread Footing Foundation

Nominal loads for allowable capacities per geotechnical report. Seismic Loads to have omega/overstrength applied (cantilever foundation system). Design provided in design worksheet to follow.

Width of Footing: $W_{ftg} = 3\ ft$

Length of Footing: $l_{ftg} = 3\ ft$

Width of Pedestal: $W_{ped} = 2\ ft$

Length of Pedestal: $l_{ped} = 3\ ft$

Height of Pedestal: $H_{ped} = 12\ in$

Weight of Concrete Pedestal: $Wt_{ped} = W_{ped} * l_{ped} * H_{ped} * 150\ pcf = 900\ lbf$

LC: 0.9 DL + W
(nominal values for foundation software shown below)

Vertical Force: $A_1 = 0.9 * \left(DL + Wt_{ped}\right) = 941.175\ lbf$

Horizontal Force: $P_1 = \left(B * s * p_w\right) = 350\ lbf$

Moment: $M_1 = P_1 * arm_T = 1461.25\ lbf * ft$

LC: $0.9\ DL + \left(E_v + E_{mh}\right)$
(nominal values for foundation software shown below)

DL Vertical Force: $A_2 = 0.9 * \left(DL + Wt_{ped}\right) = 941.175\ lbf$

EQ Vertical Force: $A_3 = \left(-0.2 * EQ2.SDS * \left(DL + Wt_{ped}\right)\right) = -284.444\ lbf$

Horizontal Forces:
Sign Cabinet: $P_2 = EQ2.V_B * EQ2.OS = 144.535\ lbf$

Sign Cabinet moment arm: $a_2 = arm_T = 4.175\ ft$

Sign Cabinet moment: $M_2 = P_2 * a_2 = 603.435\ lbf * ft$

Combined EQ Axial: $A_{eq} = A_2 + A_3 = 656.731\ lbf$

Combined EQ Shear: $V_{eq} = P_2 = 144.535\ lbf$

Combined EQ Moment: $M_{eq} = M_2 = 603.435\ lbf * ft$

Weight Takeoff

Component	Unit Wt	Unit Qty	Wt	Qty	Weight
	Height:	6.5 ft	Width:	2 ft	
Skin	2 psf	13 ft^2	26 lbf	2	52 lbf
Post	10 plf	6.5 ft	65 lbf	1	65 lbf
Channel Extrusion	1.5 plf	17 ft	25.5 lbf	1	25.5 lbf
Misc Framing/Stiffeners	0.25 psf	13 ft^2	3.25 lbf	1	3.25 lbf

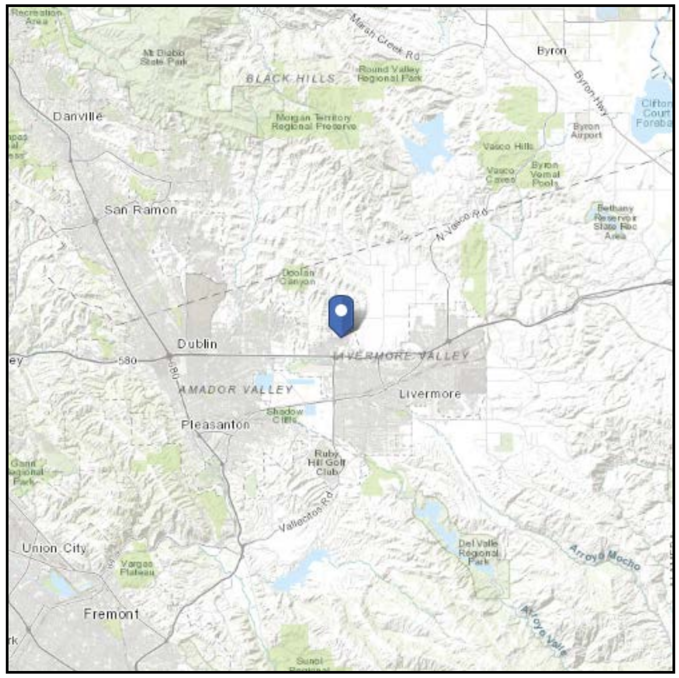
Cabinet Wt.:	80.75 lbf
Total:	145.8 lbf

ASCE Hazards Report

Address:
Las Positas College - 3000 Campus Hill Drive
Livermore,

Standard: ASCE/SEI 7-22
Risk Category: III
Soil Class: D - Stiff Soil

Latitude: 37.710873
Longitude: -121.80058
Elevation: 480.38484203241944 ft (NAVD 88)



Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	79 Vmph
300-year MRI	87 Vmph
700-year MRI	93 Vmph
1,700-year MRI	99 Vmph
3,000-year MRI	103 Vmph
10,000-year MRI	113 Vmph
100,000-year MRI	129 Vmph
1,000,000-year MRI	147 Vmph

Data Source: ASCE/SEI 7-22, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Nov 24 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

Seismic

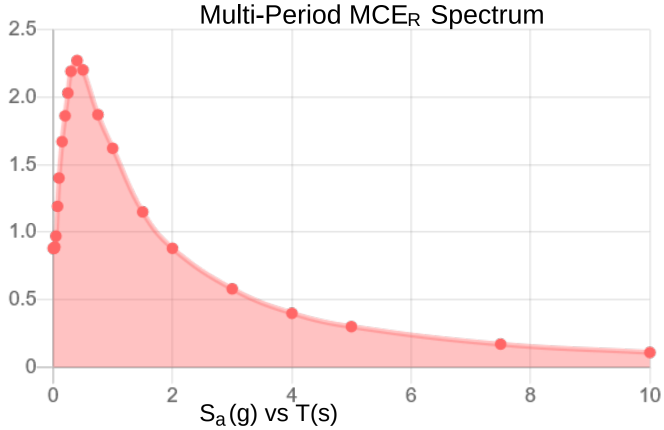
Site Soil Class: D - Stiff Soil

Results:

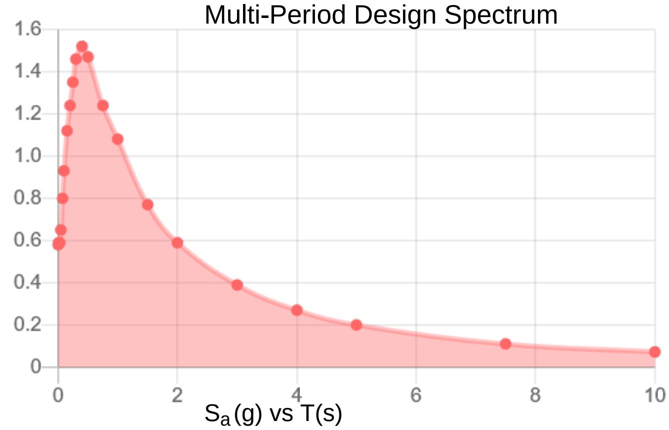
PGA_M :	0.73	T_L :	8
S_{MS} :	2.05	S_S :	2.13
S_{M1} :	1.62	S_1 :	0.81
S_{DS} :	1.36	V_{S30} :	260
S_{D1} :	1.08		

Seismic Design Category: E

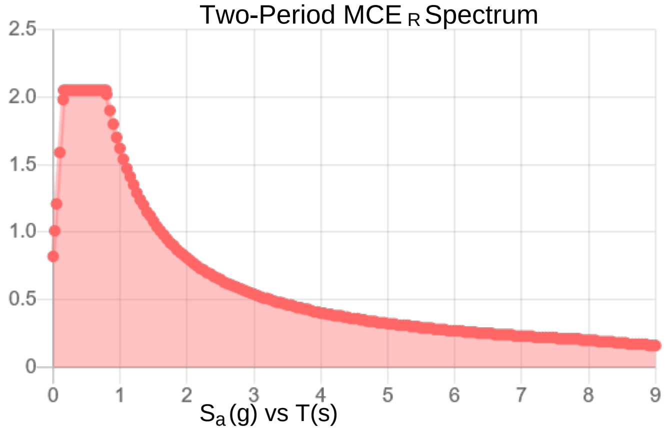
Multi-Period MCE_R Spectrum



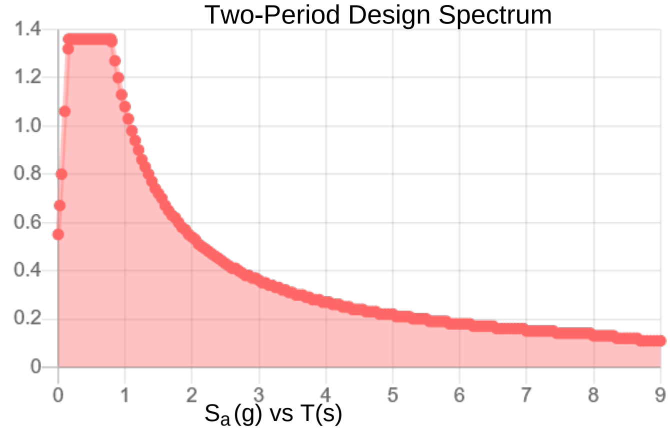
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Mon Nov 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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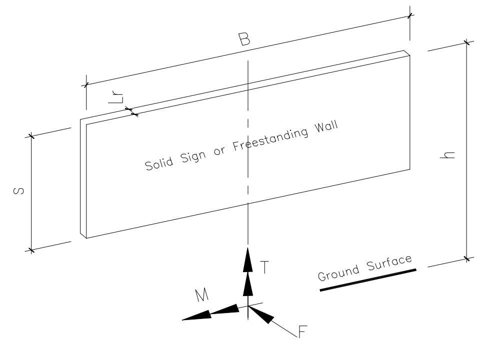
PROJECT : Las Positas College
CLIENT : Shannon Leigh
JOB NO. : DATE :
PAGE :
DESIGN BY :
REVIEW BY :

Wind Analysis for Freestanding Wall & Sign Based on ASCE 7-22 | **Monument Sign Wind Pressure**

INPUT DATA

Exposure category (B, C or D)	=	C	
Importance factor, 1.0 only, (Table 1.5-2)	I_w =	1.00	
Basic wind speed (ASCE 7 26.5.1)	V =	99	*mph, (159.32 kph)*
Topographic factor (26.8 & Table 26.8-1)	K_{zt} =	1	Flat
Height of top	h =	11	*ft, (3.35 m)*
Vertical dimension (for wall, s = h)	s =	11	*ft, (3.35 m)*
Horizontal dimension	B =	4	*ft, (1.22 m)*
Dimension of return corner	L_r =	0	*ft, (0.00 m)*



DESIGN SUMMARY

Max horizontal wind pressure	p	=	25 *psf, (1177 N/m^2)*
Max total horizontal force at centroid of base	F	=	1.08 *kips, (5 kN)*
Max bending moment at centroid of base	M	=	6.54 *ft-kips, (9 kN-m)*
Max torsion at centroid of base	T	=	0.87 *ft-kips, (1 kN-m)*

ANALYSIS

Velocity pressure

q_h K_d = (0.00256 $K_z K_{zt} K_e V^2$) K_d = **18.13** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 277), K_e = **1.00** , (Tab. 26.9-1 page 275)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 277) = **0.85**

K_d = wind directionality factor. (Tab. 26.6-1, page 274) = **0.85**

h = height of top = **11.00** ft

Wind Force Case A: resultant force though the geometric center (Sec. 29.3.1)

$p = q_h K_d G C_N$ = **25** psf

$F = p A_s$ = **1.08** kips

M = F (h - 0.5s) for sign, F (0.55h) for wall = **6.54** ft-kips

T = = **0.00** ft-kips

where: G = gust effect factor. (Sec. 26.9) = **0.85**

C_f = net force coefficient. (Fig. 29.3-1, page 301) **1.60**

A_s = B s = **44.0** ft^2

Wind Force Case B: resultant force at 0.2 B offset of the geometric center (Sec. 29.3.1)

p = Case A = **25** psf

F = Case A = **1.08** kips

M = Case A = **6.54** ft-kips

T = 0.2 F B = **0.87** ft-kips

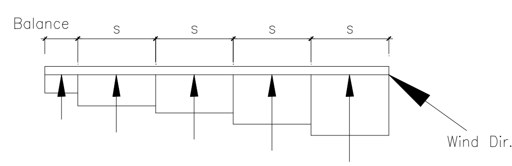
Wind Force Case C: resultant force different at each region (Sec. 29.4.1)

$p = q_h G C_f$

$F = \Sigma p A_s$

M = Σ [F (h - 0.5s) for sign, F (0.55h) for wall]

$T = \Sigma T_s$



Distance (ft)	C_f (Fig. 29.3-1)	P_i (psf)	A_{si} (ft^2)	F_i (kips)	M_i (ft-kips)	T_i (ft-kips)
4.0	1.800	28	44	1.22	7.38	0.00
4.0	1.200	18	0	0.00	0.00	0.00
Σ				**1.22**	**7.38**	**0.00**

<== Case C may not be considered, footnote 3 of Fig. 6-20

PROJECT :	Las Positas		PAGE :
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JOB NO. :		DATE :	REVIEW BY :

HSS (Tube, Pipe) Member Design with Torsional Loading Based on AISC 360-10/16 — **EWF.10 Post DL+W**

INPUT DATA & DESIGN SUMMARY

MEMBER SHAPE (Tube or Pipe) & SIZE		HSS2X2X3/16	< ==	Tube
STEEL YIELD STRESS	F_y =	46	ksi, (317 MPa)	
TORSIONAL FORCE	T_r =	0.084	ft-kips, (0 kN-m), ASD	
AXIAL COMPRESSION FORCE	P_r =	0.145	kips, (1 kN), ASD	
STRONG AXIS EFFECTIVE LENGTH	kL_x =	12	ft, (3.66 m)	
WEAK AXIS EFFECTIVE LENGTH	kL_y =	12	ft, (3.66 m)	
STRONG AXIS BENDING MOMENT	M_{rx} =	0.717	ft-kips, (1 kN-m), ASD	
STRONG AXIS BENDING UNBRACED LENGTH	L_b =	6.5	ft, (1.98 m), (AISC 360 F2.2.c)	
STRONG DIRECTION SHEAR LOAD, ASD	V_{strong} =	0.21	kips, (1 kN)	
WEAK AXIS BENDING MOMENT	M_{ry} =	0	ft-kips, (0 kN-m), ASD	
WEAK DIRECTION SHEAR LOAD, ASD	V_{weak} =	0	kips, (0 kN)	

THE DESIGN IS ADEQUATE.

ANALYSIS

CHECK TORSIONAL CAPACITY (AISC 360 H3.1)

$$T_c=\frac{1}{\Omega_T}T_n=\frac{1}{\Omega_T}\begin{cases}\left[2(B-t)(H-t)t-4.5(4-\pi)t^3\right]\begin{bmatrix}0.6F_y\ ,\ for\ \frac{h}{t}\le 2.45\sqrt{\frac{E}{F_y}}\\ 0.6F_y 2.45\sqrt{\frac{E}{F_y}}\frac{t}{h}\ ,\ for\ \frac{h}{t}\le 3.07\sqrt{\frac{E}{F_y}}\\ 0.458\frac{E\pi^2}{(h/t)^2},\ for\ \frac{h}{t}\le 260\end{bmatrix}\ ,\ for\ HSS\ Tube\\ \frac{\pi(D-t)^2t}{2}Max\left[\frac{1.23E}{\sqrt{\frac{L}{D}}\left(\frac{D}{t}\right)^{(5/4)}}\ ,\ \frac{0.60E}{\left(\frac{D}{t}\right)^{(3/2)}}\right]\ ,\ for\ HSS\ Pipe\end{cases} = 1.7\ \text{ft-kips}$$

> T_r **[Satisfactory]**

Where	B	H	h	t	D	E
	2.00	2.00	1.44	0.19		29000

Ω_T = 1.67 ,ASD

CHECK COMBINED COMPRESSION AND BENDING CAPACITY (AISC 360 H1)

$$\begin{cases}\frac{P_r}{P_c}+\frac{8}{9}\left(\frac{M_{rx}}{M_{cx}}+\frac{M_{ry}}{M_{cy}}\right)\ ,\ for\ \frac{P_r}{P_c}\ge 0.2\\ \frac{P_r}{2P_c}+\left(\frac{M_{rx}}{M_{cx}}+\frac{M_{ry}}{M_{cy}}\right)\ ,\ for\ \frac{P_r}{P_c}<0.2\end{cases} = 0.41 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

Where $P_c = P_n / \Omega_c$ = 8 / 1.67 = 4.65 kips, (AISC 360 Chapter E)
> P_r **[Satisfactory]**

$M_{cx} = M_n / \Omega_b$ = 3.06 / 1.67 = 1.83 ft-kips, (AISC 360 Chapter F)
> M_{rx} **[Satisfactory]**

$M_{cy} = M_n / \Omega_b$ = 3.06 / 1.67 = 1.83 ft-kips, (AISC 360 Chapter F)
> M_{ry} **[Satisfactory]**

CHECK SHEAR CAPACITY (AISC 360 G2)

$V_{n,strong} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{strong} =	0.2	kips	**[Satisfactory]**
$V_{n,weak} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{weak} =	0.0	kips	**[Satisfactory]**

CHECK COMBINED TORSION, SHEAR, COMPRESSION, AND BENDING CAPACITY (AISC 360 H3.2)

$$\begin{cases}\frac{P_r}{P_c}+\left(\frac{M_{rx}}{M_{cx}}+\frac{M_{ry}}{M_{cy}}\right)+\left[Max\left(\frac{V_{strong}}{V_{c,strong}}\ ,\ \frac{V_{weak}}{V_{c,weak}}\right)+\frac{T_r}{T_c}\right]^2\ ,\ for\ \frac{T_r}{T_c}>0.2\\ Torsion\ \ Neglected\ ,\ for\ \frac{T_r}{T_c}\le 0.2\end{cases} = 0.0 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

MISSION STRUCTURE ENGINEERING	PROJECT :	Las Positas College	PAGE :	
	CLIENT :		DESIGN BY :	
	JOB NO. :	DATE :	REVIEW BY :	

Eccentric Footing Design Based on ACI 318-19

EWF.10 0.9DL+W Spread Ftg.

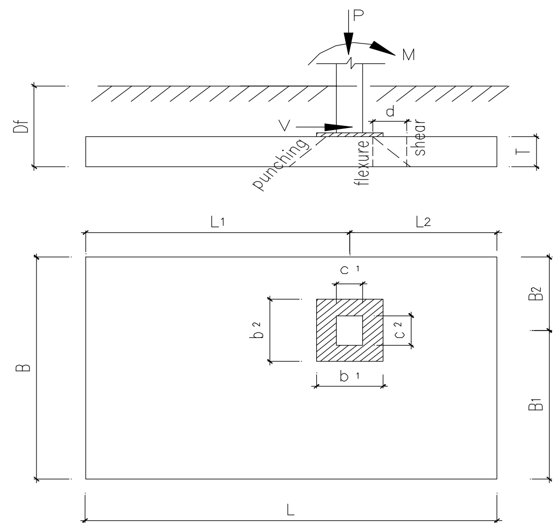
INPUT DATA

COLUMN WIDTH	c_1	=	2	in
COLUMN DEPTH	c_2	=	2	in
BASE PLATE WIDTH	b_1	=	5	in
BASE PLATE DEPTH	b_2	=	5	in
FOOTING CONCRETE STRENGTI	f_c'	=	2.5	ksi
REBAR YIELD STRESS	f_y	=	60	ksi
AXIAL DEAD LOAD	P_{DL}	=	0.941	k
AXIAL LIVE LOAD	P_{LL}	=	0	k
LATERAL LOAD (0=WIND, 1=SEISMIC)		=	0	Wind,SD
WIND AXIAL LOAD	P_{LAT}	=	0	k, SD
WIND MOMENT LOAD	M_{LAT}	=	1.462	ft-k, SD
WIND SHEAR LOAD	V_{LAT}	=	0.35	k, SD
SURCHARGE	q_s	=	0	ksf
SOIL WEIGHT	w_s	=	0.11	kcf
FOOTING EMBEDMENT DEPTH	D_f	=	1.5	ft
FOOTING THICKNESS	T	=	12	in
ALLOWABLE SOIL PRESSURE	Q_a	=	2	ksf
FOOTING WIDTH	B_1	=	1.5	ft
	B_2	=	1.5	ft
FOOTING LENGTH	L_1	=	1.5	ft
	L_2	=	1.5	ft
REINFORCING SIZE		#	4	

THE FOOTING DESIGN IS ADEQUATE.

DESIGN SUMMARY

FOOTING WIDTH	B	=	3.00	ft
FOOTING LENGTH	L	=	3.00	ft
FOOTING THICKNESS	T	=	12	in
LONGITUDINAL REINF., TOP	1 # 4			
LONGITUDINAL REINF., BOT.	3 # 4 @ 15 in o.c.			
TRANSVERSE REINF., BOT.	3 # 4 @ 15 in o.c.			



ANALYSIS

DESIGN LOADS AT TOP OF FOOTING (IBC 1605.2 & ACI 318 5.3)

CASE 1:	DL + LL	P	=	1	kips	1.2 DL + 1.6 LL	Pu	=	1	kips
		M	=	0	ft-kips		Mu	=	0	ft-kips
		e	=	0.0	ft, fr cl ftg		eu	=	0.0	ft, fr cl ftg
CASE 2:	DL + LL + 0.6(1.3) W	P	=	1	kips	1.2 DL + LL + 1.0 W	Pu	=	1	kips
		M	=	1	ft-kips		Mu	=	1	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	1.4	ft, fr cl ftg		eu	=	1.3	ft, fr cl ftg
CASE 3:	DL + LL + 0.6(0.65) W	P	=	1	kips	0.9 DL+ 1.0 W	Pu	=	1	kips
		M	=	1	ft-kips		Mu	=	1	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	0.9	ft, fr cl ftg		eu	=	1.7	ft, fr cl ftg

CHECK OVERTURNING FACTOR (2021 IBC 1605.2.1, 1808.3.1, & ASCE 7-22 12.13.4)

M_R / M_O = 2.3 **>** F = 1.0 / 0.9 = 1.11 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\, T - P_{LAT} L_2$ = 2 k-ft

P_{ftg} = (0.15 kcf) T B L = 1.35 k, footing weight

P_{soil} = $w_s\, (D_f - T)$ B L = 0.50 k, soil weight

M_R = $P_{DL} L_2 + 0.5\,(P_{ftg} + P_{soil})\, L$ = 4 k-ft

FOR REVERSED LATERAL LOADS,

M_R / M_O = 2.1 **>** F = 1.0 / 0.9 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\, D_f - P_{LAT} L_1$ = 2 k-ft

M_R = $P_{DL} L_1 + 0.5\,(P_{ftg} + P_{soil})\, L$ = 4 k-ft

CHECK SLIDING (2021 IBC 1807.2.3)

1.5 ($V_{Lat,\,ASD}$) = 0.315 kips **<** $\mu\, \Sigma W$ = 0.92 kips **[Satisfactory]**

Where ` μ = 0.4

(cont'd)

CHECK SOIL BEARING CAPACITY (ACI 318 13.3.1.1)

Service Loads	CASE 1	CASE 2	CASE 3	
P	0.9	0.9	0.9	k
e	0.0	1.6	1.1	ft (from center of footing)
q_s B L	0.0	0	0.0	k, (surcharge load)
(0.15-w_s)T B L	0.4	0.4	0.2	k, (footing increased)
Σ P	1.3	1.3	1.2	k
e_L	0.0 < L/6	1.2 > L/6	0.9 > L/6	ft
e_B	0.0 < B/6	0.0 < B/6	0.0 < B/6	ft
q_L	0.4	2.8	1.2	k / ft
q_{max}	0.1	0.9	0.4	ksf
q_{allow}	2.0	2.7	2.7	ksf

Where

$$q_L = \begin{cases} \dfrac{(\Sigma P)\left(1+\dfrac{6e_L}{L}\right)}{L}, & for \quad e_L \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P)}{3(0.5L - e_L)}, & for \quad e_L > \dfrac{L}{6} \end{cases} \qquad q_{MAX} = \begin{cases} \dfrac{q_L\left(1+\dfrac{6e_B}{B}\right)}{B}, & for \quad e_B \le \dfrac{B}{6} \\ \dfrac{2q_L}{3(0.5B - e_B)}, & for \quad e_B > \dfrac{B}{6} \end{cases}$$

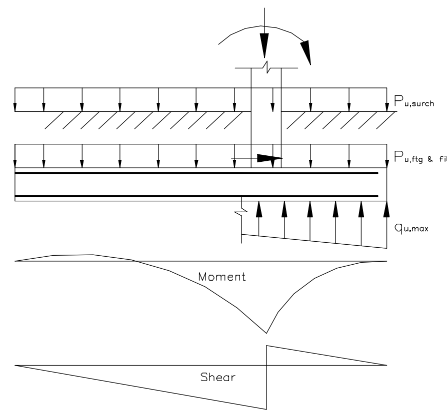
[Satisfactory]

DESIGN FLEXURE & CHECK FLEXURE SHEAR

(ACI 318 13, 21, & 22)

$$q_{u,MAX} = \begin{cases} \dfrac{(\Sigma P_u)\left(1+\dfrac{6e_u}{L}\right)}{BL}, & for \quad e_u \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P_u)}{3B(0.5L - e_u)}, & for \quad e_u > \dfrac{L}{6} \end{cases} \qquad \rho_{MAX} = \frac{0.85\beta_1 f'_c}{f_y}\frac{\varepsilon_u}{\varepsilon_u + \varepsilon_t}$$

$$\rho = \frac{0.85 f'_c\left(1-\sqrt{1-\dfrac{M_u}{0.383bd^2 f'_c}}\right)}{f_y} \qquad \rho_{MIN} = MIN\left(0.0018\frac{T}{d}\ ,\ \frac{4}{3}\rho\right)$$



FACTORED SOIL PRESSURE

Factored Loads	CASE 1	CASE 2	CASE 3	
P_u	1.1	1.1	0.8	k
e_u	0.0	1.6	2.1	ft
γ q_s B L	0.0	0.0	0.0	k, (factored surcharge load)
γ[0.15T + w_s(D_f - T)]BL	2.2	2.2	1.7	k, (factored footing & backfill loads)
Σ P_u	3.3	3.3	2.5	k
e_u	0.0 < L/6	0.5 > L/6	0.7 > L/6	ft
$q_{u,\ max}$	0.371	0.776	0.717	ksf

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **1**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.38	0.75	1.13	1.35	1.65	1.88	2.25	2.63	3.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	-0.2	-0.4	-0.8	-1.3	-1.7
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.2	-0.5	-0.7	-1.0	-1.3	-1.9	-2.5	-3.3
$V_{u,ftg\ \&\ fill}$ (k)	0	0.3	0.6	0.8	1.0	1.2	1.4	1.7	1.9	2.2
$q_{u,soil}$ (ksf)	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
$M_{u,soil}$ (ft-k)	0	0.1	0.3	0.7	1.0	1.5	2.0	2.8	3.8	5.0
$V_{u,soil}$ (k)	0	-0.4	-0.8	-1.3	-1.5	-1.8	-2.1	-2.5	-2.9	-3.3
Σ M_u (ft-k)	**0**	**0.0**	**0.1**	**0.2**	**0.3**	**0.3**	**0.2**	**0.1**	**0.0**	**0**
Σ V_u (kips)	**0**	**-0.1**	**-0.3**	**-0.4**	**-0.5**	**0.5**	**0.4**	**0.3**	**0.1**	**0**

(cont'd)

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **2**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.38	0.75	1.13	1.35	1.65	1.88	2.25	2.63	3.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	1.6	1.4	1.0	0.5	0.1
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.2	-0.5	-0.7	-1.0	-1.3	-1.9	-2.5	-3.3
$V_{u,ftg\ \&\ fill}$ (k)	0	0.3	0.6	0.8	1.0	1.2	1.4	1.7	1.9	2.2
$q_{u,soil}$ (ksf)	0.00	0.10	0.19	0.29	0.35	0.43	0.48	0.58	0.68	0.78
$M_{u,soil}$ (ft-k)	0	1.5	2.5	3.3	3.6	3.8	3.9	3.8	3.6	3.2
$V_{u,soil}$ (k)	0	-0.8	-1.5	-2.1	-2.4	-2.7	-2.9	-3.2	-3.3	-3.3
Σ M_u (ft-k)	**0**	**1.4**	**2.3**	**2.8**	**2.9**	**4.5**	**4.0**	**2.9**	**1.6**	**0**
Σ V_u (kips)	**0**	**-0.5**	**-0.9**	**-1.2**	**-1.4**	**-0.4**	**-0.4**	**-0.4**	**-0.2**	**0**

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **3**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.38	0.75	1.13	1.35	1.65	1.88	2.25	2.63	3.00
$M_{u,col}$ (ft-k)	0	0	0	0	0	1.7	1.5	1.2	0.9	0.5
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	0.0	-0.2	-0.4	-0.5	-0.7	-1.0	-1.4	-1.9	-2.5
$V_{u,ftg\ \&\ fill}$ (k)	0	0.2	0.4	0.6	0.7	0.9	1.0	1.2	1.5	1.7
$q_{u,soil}$ (ksf)	0.00	0.00	0.18	0.27	0.32	0.39	0.45	0.54	0.63	0.72
$M_{u,soil}$ (ft-k)	0	0.0	1.9	2.4	2.6	2.7	2.7	2.6	2.3	1.9
$V_{u,soil}$ (k)	0	0.0	-1.2	-1.7	-1.9	-2.2	-2.3	-2.5	-2.5	-2.5
Σ M_u (ft-k)	**0**	**0.0**	**1.7**	**2.0**	**2.1**	**3.6**	**3.2**	**2.3**	**1.3**	**0**
Σ V_u (kips)	**0**	**0.2**	**-0.8**	**-1.1**	**-1.2**	**-0.4**	**-0.4**	**-0.4**	**-0.2**	**0**

DESIGN FLEXURE

Location	$M_{u,max}$		d (in)	ρ_{min}	ρ_{reqD}	ρ_{max}	s_{max}	use	ρ_{provD}
Top Longitudinal	0.0	ft-k	9.75	0.0000	0.0000	0.0129	no limit	1 # 4	0.0006
Bottom Longitudinal	4.5	ft-k	8.75	0.0005	0.0004	0.0129	18	3 # 4 @ 15 in o.c.	0.0019
Bottom Transverse	0	ft-k / ft	8.50	0.0000	0.0000	0.0129	18	3 # 4 @ 15 in o.c.	0.0020

[Satisfactory]

CHECK FLEXURE SHEAR

Direction	$V_{u,max}$		$\phi V_c = 2\ \phi\ b\ d\ (f_c')^{0.5}$		check $V_u < \phi\ V_c$
Longitudinal	1.4	k	24	k	**[Satisfactory]**
Transverse	0.2	k / ft	8	k / ft	**[Satisfactory]**

CHECK PUNCHING SHEAR (ACI 318 13.2.7.2, 22.6.4.1, 22.6.4.3, & 8.4.2.3)

$$v_u(psi) = \frac{P_u - R}{A_P} + \frac{0.5\gamma_v M_u b_1}{J}$$

$$A_P = 2\left(b_1 + b_2\right)d$$

$$\phi v_c(psi) = \phi\left(2 + y\right)\sqrt{f_c'}$$

$$J = \left(\frac{d b_1^3}{6}\right)\left[1 + \left(\frac{d}{b_1}\right)^2 + 3\left(\frac{b_2}{b_1}\right)\right]$$

$$\gamma_v = 1 - \frac{1}{1 + \frac{2}{3}\sqrt{\frac{b_1}{b_2}}}$$

$$y = MIN\left(2, \frac{4}{\beta_c}, 40\frac{d}{b_0}\right)$$

$$R = \frac{P_u b_1 b_2}{A_f}$$

$$A_f = BL$$

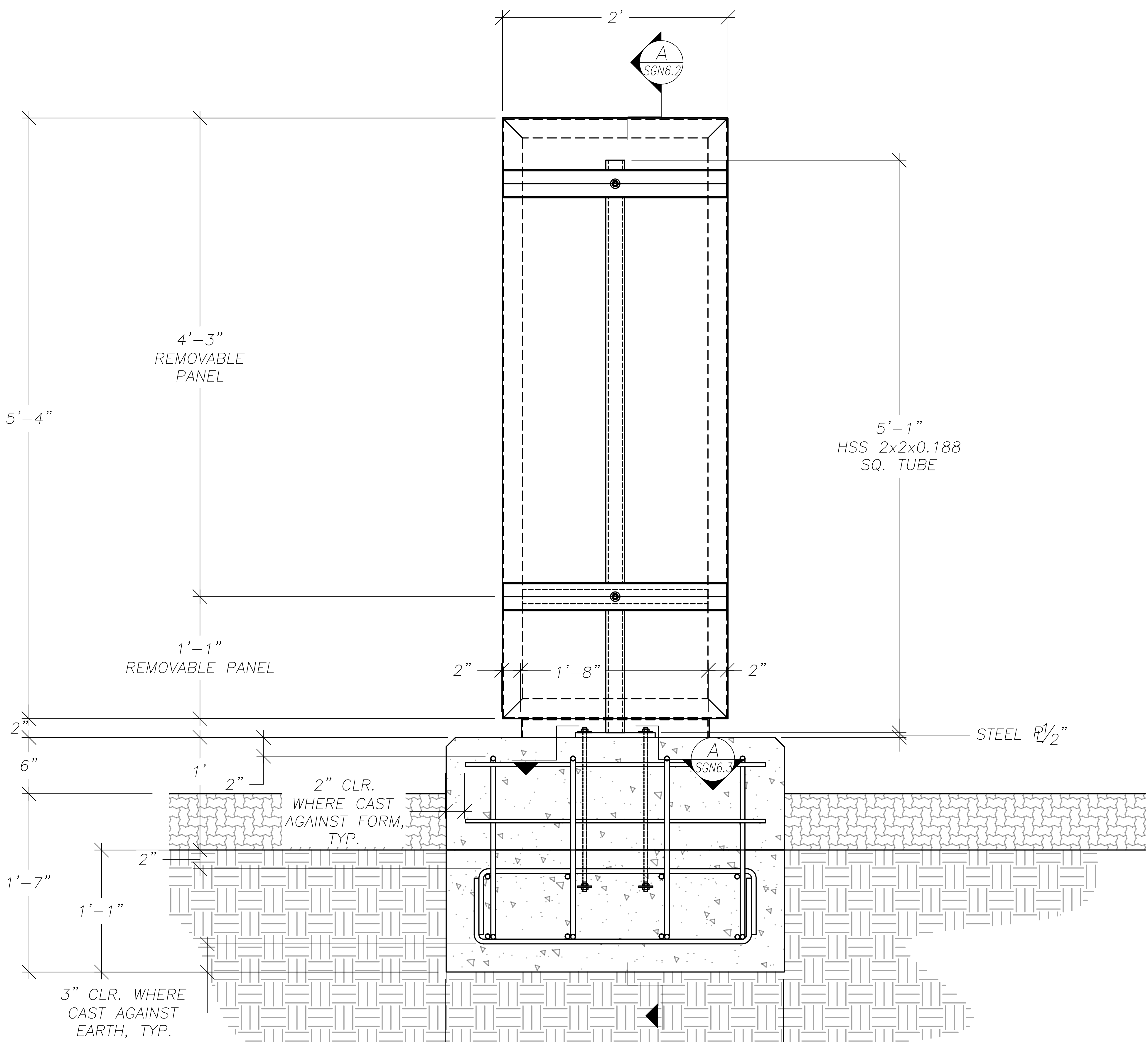
$$b_0 = \frac{A_P}{d}, b_1 = \left(0.5c_1 + 0.5b_1 + d\right), b_2 = \left(0.5c_2 + 0.5b_2 + d\right)$$

Case	P_u	M_u	b_1	b_2	b_0	γ_v	β_c	y	A_f	A_p	R	J	$v_{u\ (psi)}$	$\phi\ v_c$
1	1.1	0.0	12.0	12.0	0.3	0.4	1.0	2.0	9.0	2.8	0.1	0.5	2.5	150.0
2	1.1	1.5	12.0	12.0	0.3	0.4	1.0	2.0	9.0	2.8	0.1	0.5	2.5	150.0
3	0.8	1.5	12.0	12.0	0.3	0.4	1.0	2.0	9.0	2.8	0.1	0.5	1.9	150.0

[Satisfactory]

where ϕ = 0.75 , (ACI 318 21.2)

NOTE: PEDESTAL/PLINTH TO BE FORMED W/ BOARD FORM OR BOARD FORM LINER. PATTERN T.B.D.



A

EWF.11 ELEVATION

SCALE: 1"=1'

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ISSUED FOR	REV	DATE
1st Submission	0	1/15/26

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510. 969. 7870 info@shannonleigh.net

PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

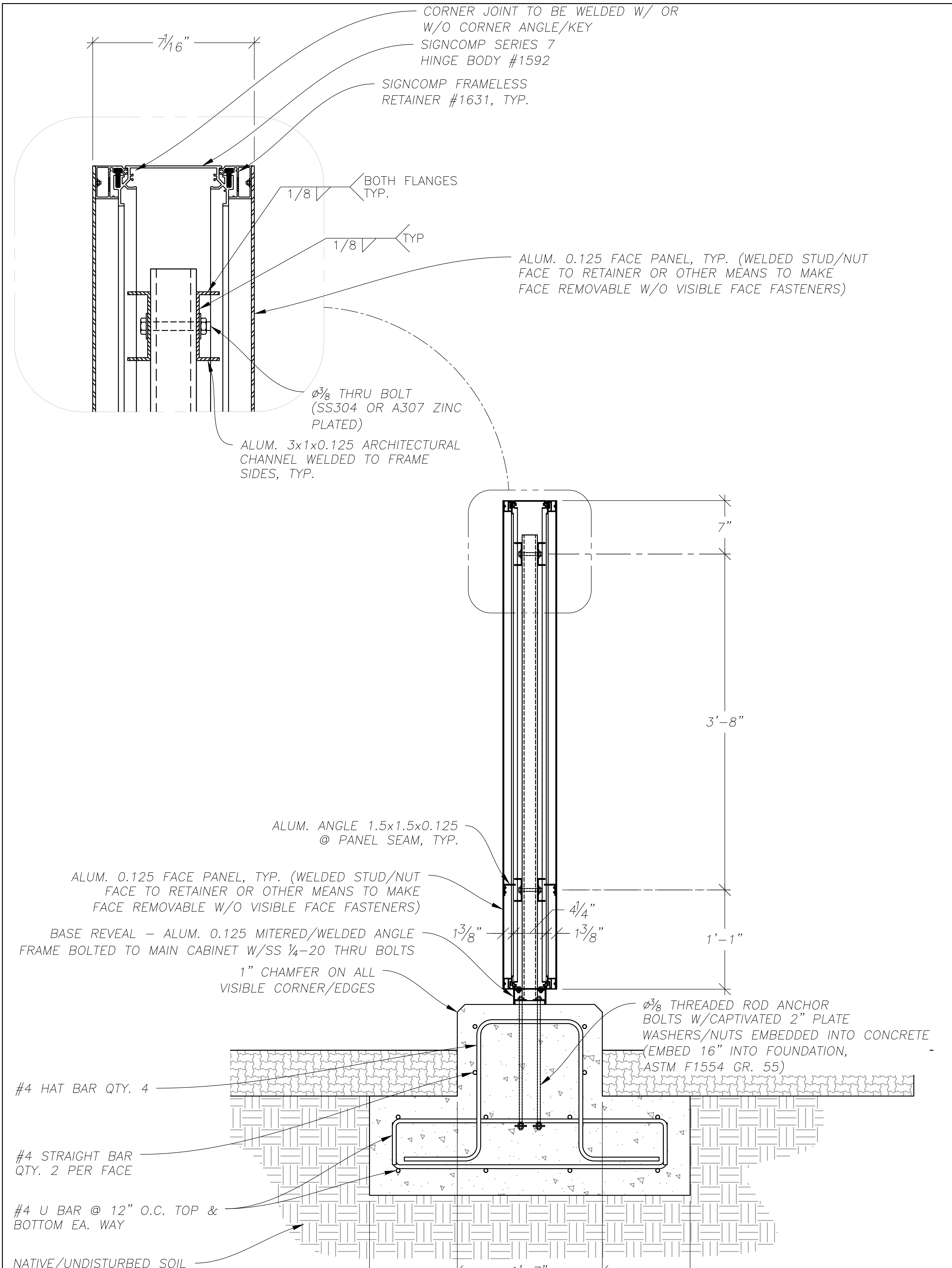
PROJECT NUMBER

DRAWING TITLE

EWF.11
Elevation

DRAWING NUMBER

SGN6.1



A

EWF.11 SECTION

SCALE: 1"=1'

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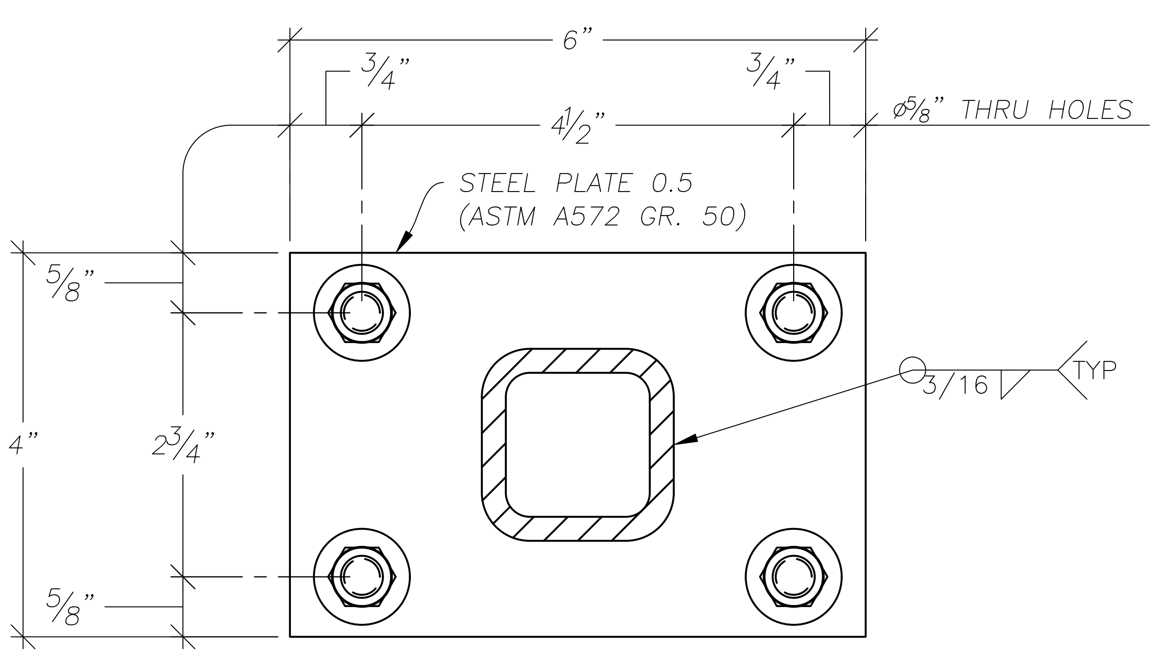
PROJECT NUMBER

DRAWING TITLE

EWF.11
Section

DRAWING NUMBER

SGN6.2



NOTE: MAY USE TRIANGULAR
STIFFENER/GUSSET FOR
IMPROVED FIT UP

A BASEPLATE TYPE 2

SCALE: 6"=1'

NOTE: APPLY HEAVY EPOXY
PRIMER TO ALL SURFACES OF
BASEPLATES

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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

PROJECT NUMBER

DRAWING TITLE

EWF.11
Details

DRAWING NUMBER

SGN6.3

Freestanding Monument Sign

Project Location:
3000 Campus Hill Drive
Livermore, CA 94551

for

Shannon-Leigh Associates, LLC
1455 Hays Street
San Leandro, CA 94577

LICENSED PROFESSIONAL ENGINEER
MICHAEL CLARK BENNETT
C 90708
CIVIL
STATE OF CALIFORNIA

Scope of design:
Design of freestanding monument sign anchorage & foundation. Design includes load analysis, base plate/anchor bolt design & footing design. Design Criteria based on geotechnical report by Ninyo & Moore dated November 22, 2023.

Current Codes Which Shall Apply (As applicable to project):
CBC 2025, ASCE 7-22, AISC 360-22, ACI 318-19, AA ADM1 2020,

Dead Load
Total Sign Weight: $DL = \text{Total Weight} = 124.25\ \text{lbf}$
Alum. Cabinet Weight: $DL_{cab} = \text{Weight.F14} = 69.25\ \text{lbf}$

Seismic Load (Full Sign Mass)
Seismic Loads
Seismic Loads of Non-Building Structures
ASCE 7-16 Chapter 15
Seismic Base Shear: $V_B = C_s * W_p$
Response Modification Factor: $R = 3$
Spectral Acceleration, Short Period: $SDS = 1.36$
Importance Factor: $I = 1.25$
Seismic Weight: $W_p = 124.25\ \text{lbf}$

Seismic Response Coefficient: $C_s = \dfrac{SDS}{\dfrac{R}{I}} = 0.567$

Seismic Base Shear: $V_B = C_s * W_p = 70.408\ \text{lbf}$

Overstrength Factor, Ω (where applicable): $OS = 1.75$

Load Distribution
Per ASCE Chapter 29

Top of Sign Height: $h = s = 6\ \text{ft}$
Cabinet Height: $h_c = \text{Weight.C2} = 5.5\ \text{ft}$
Pedestal Height: $h_p = 0.5\ \text{ft}$
Sign Height: $s = h_c + h_p = 6\ \text{ft}$
Sign Width (Breadth): $B = \text{Weight.E2} = 2\ \text{ft}$

Number of Posts: $n_p = 1$

Gross Sign Area: $A_g = s * B = 12\ \text{ft}^2$

Tributary Area (single post): $A_n = A_g = 12\ \text{ft}^2$

Moment Arm (@ baseplate): $arm_1 = 1.05 * \left(\dfrac{h_c}{2}\right) = 2.888\ \text{ft}$

Moment Arm (@ top of ftg.): $arm_T = 1.05 * \left(\frac{s}{2}\right) + 0.5\ ft = 3.65\ ft$

Wind Pressure: $p_w = 25\ psf$

Wind Load Section 1: $W_{l1} = p_w * A_n = 300\ lbf$

Wind Moment Section 1: $M_{w1} = W_{l1} * arm_1 = 866.3\ lbf * ft$ (Wind controls acting on sign face)

Wind Torsion: $T_w = 0.2 * B * W_{l1} = 120\ ft * lbf$

Seismic Load on Section 1 (alum. cab.): $EQ_{s1} = EQ2.C_s * DL = 70.408\ lbf$

Seismic Load Section 1 w/ Over strength: $EQ_{s1os} = EQ_{s1} * EQ2.OS = 123.215\ lbf$

EQ Lateral Shear Force @ baseplate: $V_{1eq} = EQ_{s1} = 70.408\ lbf$

EQ Lateral Force Moment: $M_{1eq} = V_{1eq} * arm_1 = 203.304\ lbf * ft$

EQ Lateral Force w/ OS: $V_{1eqos} = EQ_{s1os} = 123.215\ lbf$

EQ Lateral Force Moment w/OS: $M_{1eqos} = V_{1eqos} * arm_1 = 355.782\ lbf * ft$

<u>LRFD Load Combinations (as applicable-anchorage)</u>

LC: 0.9 DL + 1.0 W

Deal Load: $$DL_{min} = \frac{0.9 * (DL_{cab})}{n_p} = 62.325\ lbf$$

Shear Wind: $V_{1w1} = W_{l1} = 300\ lbf$

Moment Wind: $M_{1w1} = V_{1w1} * arm_1 = 866.25\ lbf * ft$

LC: 1.2 DL + 1.0 W

Deal Load: $$DL_{max} = \frac{1.2 * (DL_{cab})}{n_p} = 83.1\ lbf$$

Shear Wind: $V_{1w2} = W_{l1} = 300\ lbf$

Moment Wind: $M_{1w2} = V_{1w2} * arm_1 = 866.25\ lbf * ft$

LC: 0.9 DL - 1.0 $E_v + E_{mh}$

Dead Load: $$DL_{eqmin} = \frac{0.9 * (DL_{cab})}{n_p} = 62.325\ lbf$$

Vertical Seismic: $$E_{v1} = \frac{-0.2 * EQ2.SDS * (DL_{cab})}{n_p} = -18.836\ lbf$$

Shear EQ: $$V_{1eq1} = \frac{EQ_{s1os}}{n_p} = 123.215\ lbf$$

Moment EQ: $$M_{1eq1} = \left(\frac{EQ_{s1os}}{n_p}\right) * arm_1 = 355.782\ lbf * ft$$

LC: 1.2 DL + 1.0 $E_v + E_{mh}$

Dead Load: $$DL_{1eqmax} = \frac{1.2 * (DL_{cab})}{n_p} = 83.1\ lbf$$

Vertical Seismic: $E_{v2} = \dfrac{0.2 * EQ2.SDS * (DL_{cab})}{n_p} = 18.836\ lbf$

Shear EQ: $V_{eq2} = \dfrac{EQ_{s1os}}{n_p} = 123.215\ lbf$

Moment EQ: $M_{eq2} = \dfrac{EQ_{s1os} * arm_1}{n_p} = 355.782\ lbf * ft$

ASD Load Combinations
(Note: Omit axial loads on post-no restoring moment weld design)

LC: DL + 0.6 W

LC: DL + 0.7 $(E_v + E_{mh})$

Convert to ASD/service level loads

Vertical Load, ASD: $DL_{S1} = DL = 124.25\ lbf$

Wind Pressure, ASD: $p_{wasd} = p_w * 0.6 = 15\ psf$

Wind Load, ASD: $W_{lasd} = p_{wasd} * A_n = 180\ lbf$

Wind Force Moment, ASD: $M_{wasd} = arm_1 * W_{lasd} = 519.75\ ft * lbf$

Wind Torsion, ASD: $T_{asd} = T_w * 0.6 = 72\ ft * lbf$

Max. Vertical Load, ASD: $DL_{eqasd} = \dfrac{DL_{S1} + 0.7 * 0.2 * EQ2.SDS * DL_{S1}}{n_p} = 147.907\ lbf$

Seismic Load, ASD: $EQ_{asd} = \dfrac{EQ2.V_B * 0.7}{n_p} = 49.286\ lbf$

Seismic Load w/ OS, ASD: $EQ_{osasd} = EQ_{asd} * EQ2.OS = 86.250\ lbf$

Seismic Force Moment, ASD: $M_{eqasd} = arm_1 * EQ_{asd} = 142.313\ ft * lbf$

Seismic Force Moment w/ OS, ASD: $M_{eqasdos} = EQ_{osasd} * arm_1 = 249.047\ lbf * ft$

Weld Connection From Post to Base Plate

Tube Depth: $d_{tube} = 2\ in$

Tube Breadth: $b_{tube} = 2\ in$

Tube Wall Thickness: $t_{tube} = 0.188\ in$

Weld Line Section Modulus: $S_w = d_{tube} * b_{tube} + \dfrac{d_{tube}^{\ 2}}{3} = 5.333\ in^2$

Weld Line Area: $A_w = d_{tube} * 2 + b_{tube} * 2 = 8\ in$

Fillet Weld Design (AISC 360 Section J2.4 or ADM J.2)
Weld to resist loads V & M.
Material = "Steel"

Weld Group Configuration: Type = "sq 2x2x0.188"

Input Weld Shear Load: $V = W_{lasd} = 180\ lbf$

Input Weld Moment Load: $M = M_{wasd} = 519.75\ ft * lbf$

Weld Line Section Modulus (bending): $S_w = Report1.S_w = 5.333\ in^2$

Weld Line Section Modulus (shear): $A_w = Report1.A_w = 8\ in$

Required Strength: $R = \sqrt{\left(\frac{V}{A_w}\right)^2 + \left(\frac{M}{S_w}\right)^2} = 1169.7\ \frac{lb}{in}$

Weld Electrode Tensile Strength: $f_u = 70\ ksi$

Weld Factor of Safety: $\Omega_w = 2$

Strength of Weld per inch:

$$R_n = \begin{cases} \left(\dfrac{0.707 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{if Material == "Steel"} \\ \left(\dfrac{0.707 * 0.85 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{otherwise} \end{cases} = 927.9\ \frac{lb}{in}$$

Required Size of Weld: $a_{req} = RoundUp\left(\frac{R}{R_n}\right) = 2/16"$ Weld Leg Size

Foundation Loads

Spread Footing Foundation

Nominal loads for allowable capacities per geotechnical report. Seismic Loads to have omega/overstrength applied (cantilever foundation system). Design provided in design worksheet to follow.

Width of Footing: $W_{ftg} = 3\ ft$

Length of Footing: $l_{ftg} = 3\ ft$

Width of Pedestal: $W_{ped} = 2\ ft$

Length of Pedestal: $l_{ped} = 3\ ft$

Height of Pedestal: $H_{ped} = 12\ in$

Weight of Concrete Pedestal: $Wt_{ped} = W_{ped} * l_{ped} * H_{ped} * 150\ pcf = 900\ lbf$

LC: 0.9 DL + W

(nominal values for foundation software shown below)

Vertical Force: $A_1 = 0.9 * \left(DL + Wt_{ped}\right) = 921.825\ lbf$

Horizontal Force: $P_1 = \left(B * s * p_w\right) = 300\ lbf$

Moment: $M_1 = P_1 * arm_T = 1095\ lbf * ft$

LC: $0.9\ DL + \left(E_v + E_{mh}\right)$

(nominal values for foundation software shown below)

DL Vertical Force: $A_2 = 0.9 * \left(DL + Wt_{ped}\right) = 921.825\ lbf$

EQ Vertical Force: $A_3 = \left(-0.2 * EQ2.SDS * \left(DL + Wt_{ped}\right)\right) = -278.596\ lbf$

Horizontal Forces:

Sign Cabinet: $P_2 = EQ2.V_B * EQ2.OS = 123.215\ lbf$

Sign Cabinet moment arm: $a_2 = arm_T = 3.65$ ft

Sign Cabinet moment: $M_2 = P_2 * a_2 = 449.733$ lbf * ft

Combined EQ Axial: $A_{eq} = A_2 + A_3 = 643.229$ lbf

Combined EQ Shear: $V_{eq} = P_2 = 123.215$ lbf

Combined EQ Moment: $M_{eq} = M_2 = 449.733$ lbf * ft

Weight Takeoff

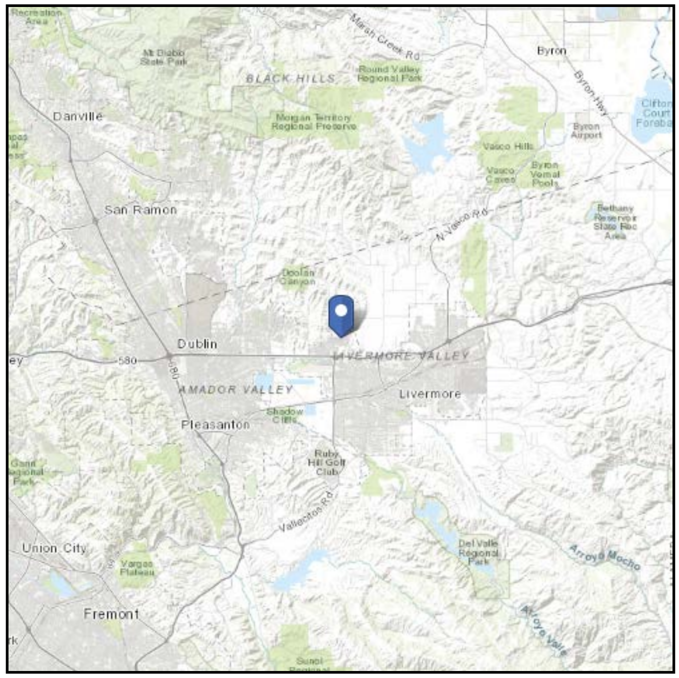
	Height:	5.5 ft	Width:	2 ft	
Component	Unit Wt	Unit Qty	Wt	Qty	Weight
Skin	2 psf	11 ft^2	22 lbf	2	44 lbf
Post	10 plf	5.5 ft	55 lbf	1	55 lbf
Channel Extrusion	1.5 plf	15 ft	22.5 lbf	1	22.5 lbf
Misc Framing/Stiffeners	0.25 psf	11 ft^2	2.75 lbf	1	2.75 lbf

Cabinet Wt.:	69.25 lbf
Total:	124.3 lbf

ASCE Hazards Report

Address:
Las Positas College - 3000 Campus Hill Drive
Livermore,

Standard:	ASCE/SEI 7-22	**Latitude:**	37.710873
Risk Category:	III	**Longitude:**	-121.80058
Soil Class:	D - Stiff Soil	**Elevation:**	480.38484203241944 ft (NAVD 88)



Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	79 Vmph
300-year MRI	87 Vmph
700-year MRI	93 Vmph
1,700-year MRI	99 Vmph
3,000-year MRI	103 Vmph
10,000-year MRI	113 Vmph
100,000-year MRI	129 Vmph
1,000,000-year MRI	147 Vmph

Data Source:	ASCE/SEI 7-22, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Nov 24 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

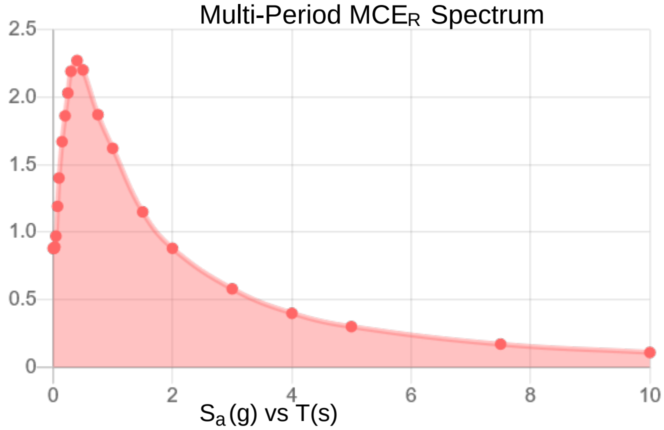
Site Soil Class: D - Stiff Soil

Results:

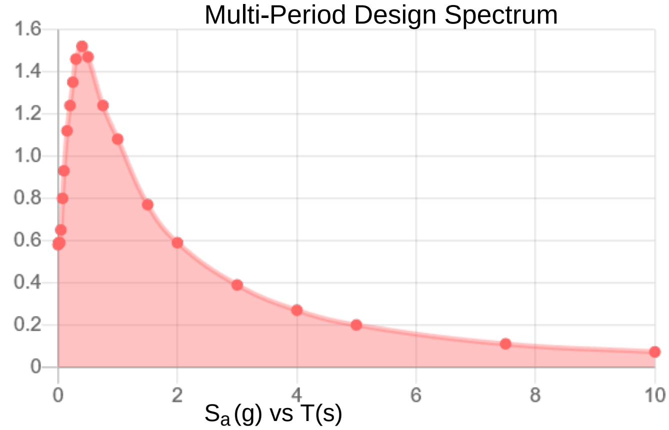
PGA_M :	0.73	T_L :	8
S_{MS} :	2.05	S_S :	2.13
S_{M1} :	1.62	S_1 :	0.81
S_{DS} :	1.36	V_{S30} :	260
S_{D1} :	1.08		

Seismic Design Category: E

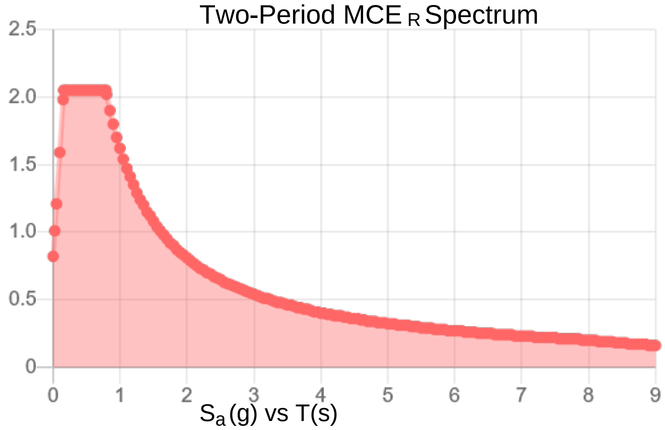
Multi-Period MCE_R Spectrum



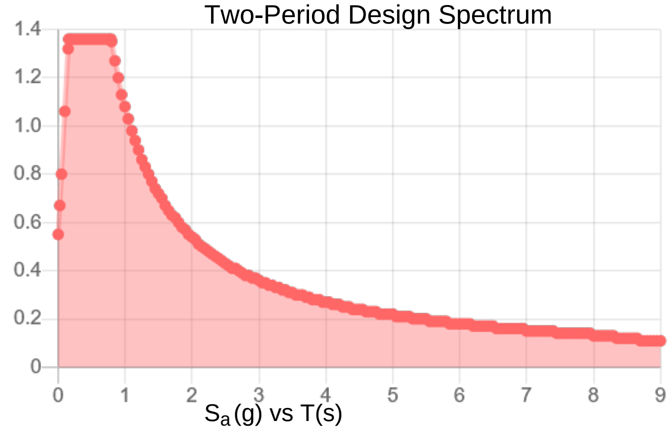
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Mon Nov 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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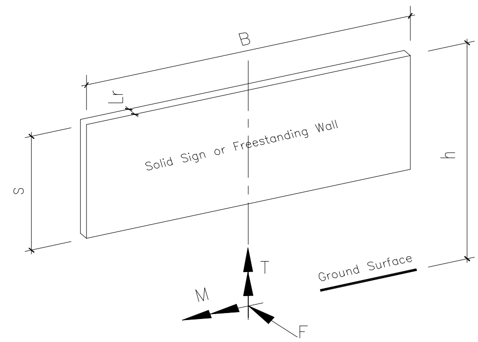
MISSION STRUCTURE ENGINEERING

PROJECT :	Las Positas College	PAGE :	
CLIENT :	Shannon Leigh	DESIGN BY :	
JOB NO. :	DATE :	REVIEW BY :	

Wind Analysis for Freestanding Wall & Sign Based on ASCE 7-22 — **Monument Sign Wind Pressure**

INPUT DATA

Exposure category (B, C or D)		=	C	
Importance factor, 1.0 only, (Table 1.5-2)	I_w	=	1.00	
Basic wind speed (ASCE 7 26.5.1)	V =		99	*mph, (159.32 kph)*
Topographic factor (26.8 & Table 26.8-1)	K_{zt}	=	1	Flat
Height of top	h =		11	*ft, (3.35 m)*
Vertical dimension (for wall, s = h)	s =		11	*ft, (3.35 m)*
Horizontal dimension	B =		4	*ft, (1.22 m)*
Dimension of return corner	L_r =		0	*ft, (0.00 m)*



DESIGN SUMMARY

Max horizontal wind pressure	p	=	25	*psf, (1177 N/m²)*
Max total horizontal force at centroid of base	F	=	1.08	*kips, (5 kN)*
Max bending moment at centroid of base	M	=	6.54	*ft-kips, (9 kN-m)*
Max torsion at centroid of base	T	=	0.87	*ft-kips, (1 kN-m)*

ANALYSIS

Velocity pressure

q_h K_d = $(0.00256\, K_z K_{zt} K_e V^2)\, K_d$ = **18.13** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 277), K_e = **1.00** , (Tab. 26.9-1 page 275)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 277) = **0.85**

K_d = wind directionality factor. (Tab. 26.6-1, page 274) = **0.85**

h = height of top = **11.00** ft

Wind Force Case A: resultant force though the geometric center (Sec. 29.3.1)

$p = q_h$ K_d $G\ C_N$	=	**25**	psf
$F = p\ A_s$	=	**1.08**	kips
M = F (h - 0.5s) for sign, F (0.55h) for wall	=	**6.54**	ft-kips
T =	=	**0.00**	ft-kips

where: G = gust effect factor. (Sec. 26.9) = **0.85**

C_f = net force coefficient. (Fig. 29.3-1, page 301) **1.60**

A_s = B s = **44.0** ft^2

Wind Force Case B: resultant force at 0.2 B offset of the geometric center (Sec. 29.3.1)

p = Case A	=	**25**	psf
F = Case A	=	**1.08**	kips
M = Case A	=	**6.54**	ft-kips
T = 0.2 F B	=	**0.87**	ft-kips

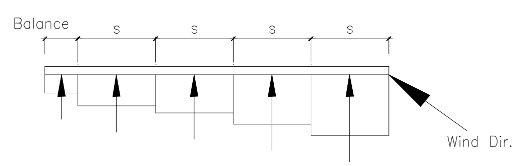
Wind Force Case C: resultant force different at each region (Sec. 29.4.1)

$p = q_h\ G\ C_f$

$F = \Sigma\ p\ A_s$

M = Σ [F (h - 0.5s) for sign, F (0.55h) for wall]

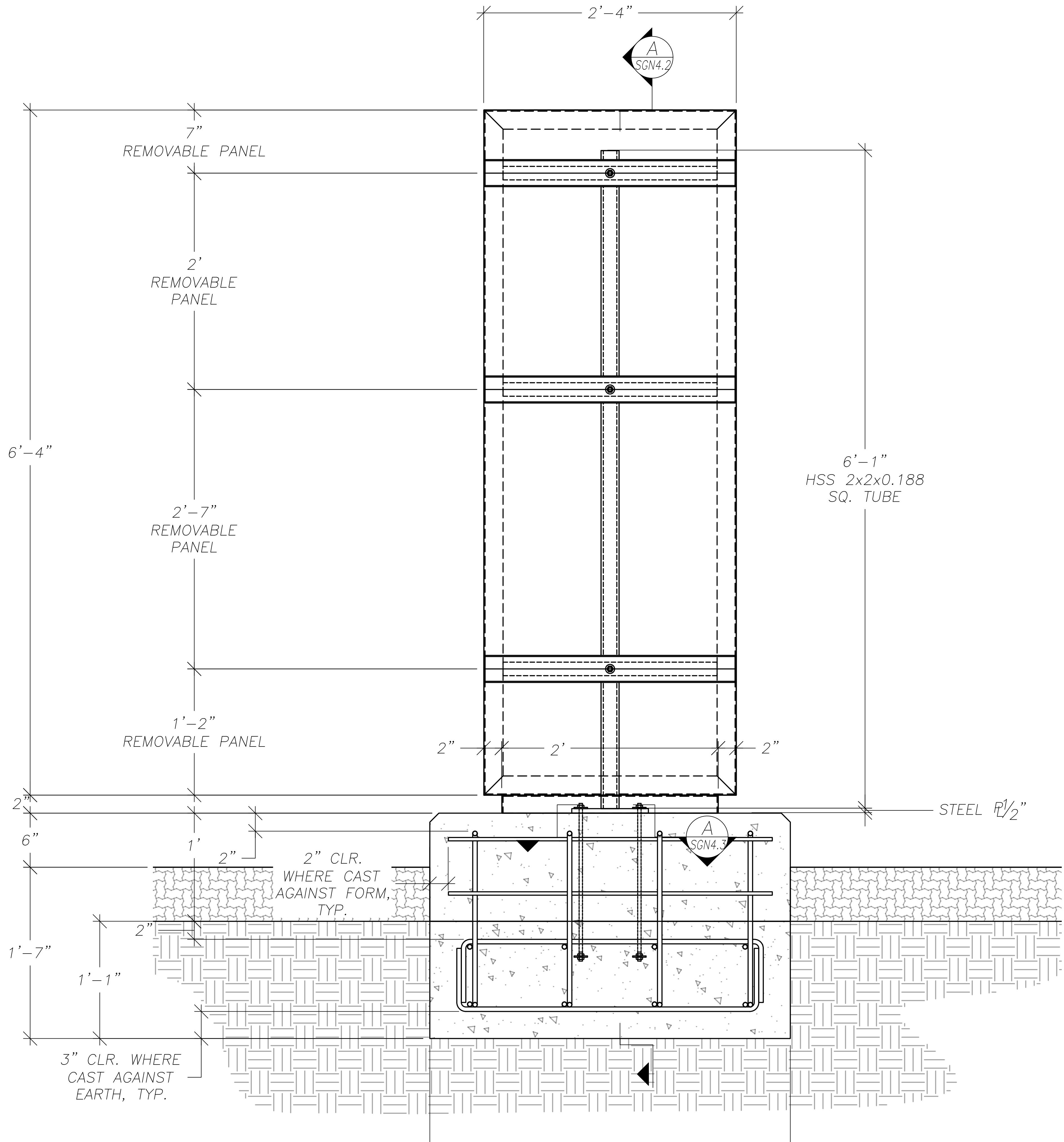
$T = \Sigma\ T_s$



Distance	C_f	P_i	A_{si}	F_i	M_i	T_i
(ft)	(Fig. 29.3-1)	(psf)	(ft^2)	(kips)	(ft-kips)	(ft-kips)
4.0	1.800	28	44	1.22	7.38	0.00
4.0	1.200	18	0	0.00	0.00	0.00
Σ				**1.22**	**7.38**	**0.00**

<== Case C may not be considered, footnote 3 of Fig. 6-20

NOTE: PEDESTAL/PLINTH TO BE FORMED W/ BOARD FORM OR BOARD FORM LINER. PATTERN T.B.D.



A

EWF.20 ELEVATION

SCALE: 1"=1'

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ISSUED FOR	REV	DATE
1st Submission	0	1/15/26

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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

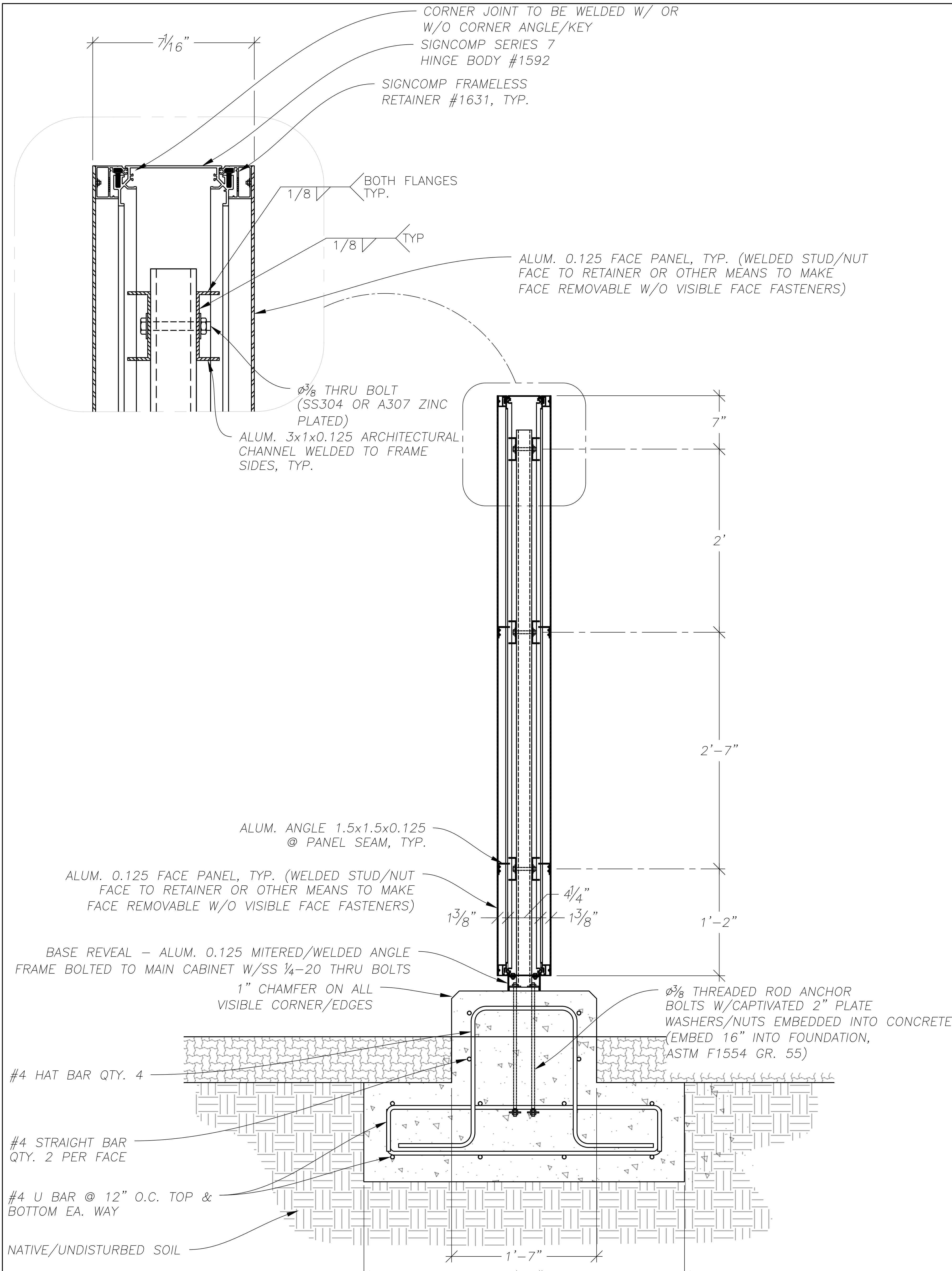
PROJECT NUMBER

DRAWING TITLE

EWF.20
Elevation

DRAWING NUMBER

SGN4.1



A

EWF.20 SECTION

SCALE: 1"=1'

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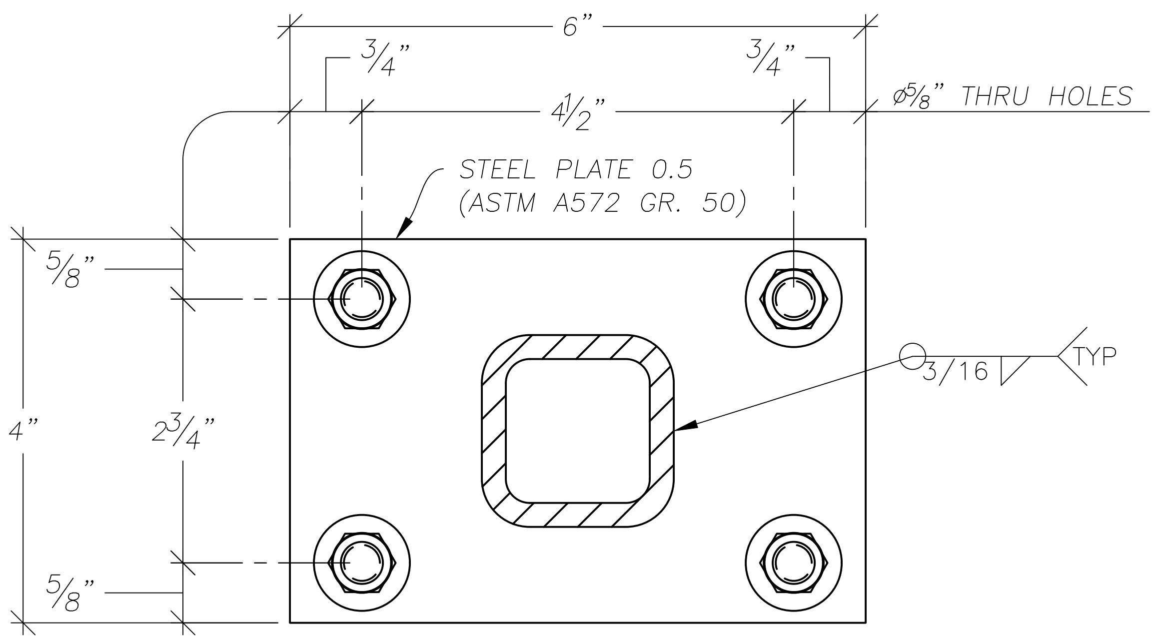
PROJECT NUMBER

DRAWING TITLE

EWF.20
Section

DRAWING NUMBER

SGN4.2



NOTE: MAY USE TRIANGULAR STIFFENER/GUSSET FOR IMPROVED FIT UP

A

BASEPLATE TYPE 2

SCALE: 6"=1'

NOTE: APPLY HEAVY EPOXY PRIMER TO ALL SURFACES OF BASEPLATES

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PROJECT INFORMATION

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551

PROJECT NUMBER

DRAWING TITLE

EWF.20
Details

DRAWING NUMBER

SGN4.3

Freestanding Monument Sign

Project Location:
3000 Campus Hill Drive
Livermore, CA 94551

for

Shannon-Leigh Associates, LLC
1455 Hays Street
San Leandro, CA 94577

Scope of design:

Design of freestanding monument sign anchorage & foundation. Design includes load analysis, base plate/anchor bolt design & footing design. Design Criteria based on geotechnical report by Ninyo & Moore dated November 22, 2023.

Current Codes Which Shall Apply (As applicable to project):

CBC 2025, ASCE 7-22, AISC 360-22, ACI 318-19, AA ADM1 2020,

Dead Load

Total Sign Weight: $DL = \text{Total Weight} = 155.856\ \text{lbf}$

Alum. Cabinet Weight: $DL_{cab} = \text{Weight.F14} = 90.856\ \text{lbf}$

Seismic Load (Full Sign Mass)

Seismic Loads

Seismic Loads of Non-Building Structures

ASCE 7-16 Chapter 15

Seismic Base Shear: $V_B = C_s * W_p$

Response Modification Factor: $R = 3$

Spectral Acceleration, Short Period: $SDS = 1.36$

Importance Factor: $I = 1.25$

Seismic Weight: $W_p = 155.856\ \text{lbf}$

Seismic Response Coefficient: $C_s = \dfrac{SDS}{\frac{R}{I}} = 0.567$

Seismic Base Shear: $V_B = C_s * W_p = 88.319\ \text{lbf}$

Overstrength Factor, Ω (where applicable): $OS = 1.75$

Load Distribution

Per ASCE Chapter 29

Top of Sign Height: $h = s = 7\ \text{ft}$

Cabinet Height: $h_c = \text{Weight.C2} = 6.5\ \text{ft}$

Pedestal Height: $h_p = 0.5\ \text{ft}$

Sign Height: $s = h_c + h_p = 7\ \text{ft}$

Sign Width (Breadth): $B = \text{Weight.E2} = 2.33\ \text{ft}$

Number of Posts: $n_p = 1$

Gross Sign Area: $A_g = s * B = 16.31\ \text{ft}^2$

Tributary Area (single post): $A_n = A_g = 16.31\ \text{ft}^2$

Moment Arm (@ baseplate): $arm_1 = 1.05 * \left(\frac{h_c}{2}\right) = 3.413\ ft$

Moment Arm (@ top of ftg.): $arm_T = 1.05 * \left(\frac{s}{2}\right) + 0.5\ ft = 4.175\ ft$

Wind Pressure: $p_w = 25\ psf$

Wind Load Section 1: $W_{l1} = p_w * A_n = 407.75\ lbf$

Wind Moment Section 1: $M_{w1} = W_{l1} * arm_1 = 1391.4\ lbf * ft$ (Wind controls acting on sign face)

Wind Torsion: $T_w = 0.2 * B * W_{l1} = 190.012\ ft * lbf$

Seismic Load on Section 1 (alum. cab.): $EQ_{s1} = EQ2.C_s * DL = 88.319\ lbf$

Seismic Load Section 1 w/ Over strength: $EQ_{s1os} = EQ_{s1} * EQ2.OS = 154.557\ lbf$

EQ Lateral Shear Force @ baseplate: $V_{1eq} = EQ_{s1} = 88.319\ lbf$

EQ Lateral Force Moment: $M_{1eq} = V_{1eq} * arm_1 = 301.387\ lbf * ft$

EQ Lateral Force w/ OS: $V_{1eqos} = EQ_{s1os} = 154.557\ lbf$

EQ Lateral Force Moment w/OS: $M_{1eqos} = V_{1eqos} * arm_1 = 527.427\ lbf * ft$

LRFD Load Combinations (as applicable-anchorage)

LC: 0.9 DL + 1.0 W

Deal Load: $DL_{min} = \frac{0.9 * (DL_{cab})}{n_p} = 81.771\ lbf$

Shear Wind: $V_{1w1} = W_{l1} = 407.75\ lbf$

Moment Wind: $M_{1w1} = V_{1w1} * arm_1 = 1391.447\ lbf * ft$

LC: 1.2 DL + 1.0 W

Deal Load: $DL_{max} = \frac{1.2 * (DL_{cab})}{n_p} = 109.027\ lbf$

Shear Wind: $V_{1w2} = W_{l1} = 407.75\ lbf$

Moment Wind: $M_{1w2} = V_{1w2} * arm_1 = 1391.447\ lbf * ft$

LC: 0.9 DL - 1.0 $E_v + E_{mh}$

Dead Load: $DL_{eqmin} = \frac{0.9 * (DL_{cab})}{n_p} = 81.771\ lbf$

Vertical Seismic: $E_{v1} = \frac{-0.2 * EQ2.SDS * (DL_{cab})}{n_p} = -24.713\ lbf$

Shear EQ: $V_{1eq1} = \frac{EQ_{s1os}}{n_p} = 154.557\ lbf$

Moment EQ: $M_{1eq1} = \left(\frac{EQ_{s1os}}{n_p}\right) * arm_1 = 527.427\ lbf * ft$

LC: 1.2 DL + 1.0 $E_v + E_{mh}$

Dead Load: $DL_{1eqmax} = \frac{1.2 * (DL_{cab})}{n_p} = 109.027$ lbf

Vertical Seismic: $E_{v2} = \frac{0.2 * EQ2.SDS * (DL_{cab})}{n_p} = 24.713$ lbf

Shear EQ: $V_{eq2} = \frac{EQ_{s1os}}{n_p} = 154.557$ lbf

Moment EQ: $M_{eq2} = \frac{EQ_{s1os} * arm_1}{n_p} = 527.427$ lbf * ft

ASD Load Combinations
(Note: Omit axial loads on post-no restoring moment weld design)

LC: DL + 0.6 W

LC: DL + 0.7 $(E_v + E_{mh})$

Convert to ASD/service level loads

Vertical Load, ASD: $DL_{S1} = DL = 155.856$ lbf

Wind Pressure, ASD: $p_{wasd} = p_w * 0.6 = 15$ psf

Wind Load, ASD: $W_{lasd} = p_{wasd} * A_n = 244.65$ lbf

Wind Force Moment, ASD: $M_{wasd} = arm_1 * W_{lasd} = 834.868$ ft * lbf

Wind Torsion, ASD: $T_{asd} = T_w * 0.6 = 114.007$ ft * lbf

Max. Vertical Load, ASD: $DL_{eqasd} = \frac{DL_{S1} + 0.7 * 0.2 * EQ2.SDS * DL_{S1}}{n_p} = 185.531$ lbf

Seismic Load, ASD: $EQ_{asd} = \frac{EQ2.V_B * 0.7}{n_p} = 61.823$ lbf

Seismic Load w/ OS, ASD: $EQ_{osasd} = EQ_{asd} * EQ2.OS = 108.190$ lbf

Seismic Force Moment, ASD: $M_{eqasd} = arm_1 * EQ_{asd} = 210.971$ ft * lbf

Seismic Force Moment w/ OS, ASD: $M_{eqasdos} = EQ_{osasd} * arm_1 = 369.199$ lbf * ft

Weld Connection From Post to Base Plate

Tube Depth: $d_{tube} = 2$ in

Tube Breadth: $b_{tube} = 2$ in

Tube Wall Thickness: $t_{tube} = 0.188$ in

Weld Line Section Modulus: $S_w = d_{tube} * b_{tube} + \frac{d_{tube}^2}{3} = 5.333\ in^2$

Weld Line Area: $A_w = d_{tube} * 2 + b_{tube} * 2 = 8\ in$

Fillet Weld Design (AISC 360 Section J2.4 or ADM J.2)

Weld to resist loads V & M.
Material = "Steel"

Weld Group Configuration: Type = "sq 2x2x0.188"

Input Weld Shear Load: $V = W_{lasd} = 244.65\ lbf$
Input Weld Moment Load: $M = M_{wasd} = 834.868\ ft * lbf$

Weld Line Section Modulus (bending): $S_w = Report1.S_w = 5.333\ in^2$
Weld Line Section Modulus (shear): $A_w = Report1.A_w = 8\ in$

Required Strength: $R = \sqrt{\left(\frac{V}{A_w}\right)^2 + \left(\frac{M}{S_w}\right)^2} = 1878.7\ \frac{lb}{in}$

Weld Electrode Tensile Strength: $f_u = 70\ ksi$
Weld Factor of Safety: $\Omega_w = 2$

Strength of Weld per inch:

$$R_n = \begin{cases} \left(\frac{0.707 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{if Material == "Steel"} \\ \left(\frac{0.707 * 0.85 * f_u * 0.6 * \left(\frac{1\ in}{16}\right)}{\Omega_w}\right) & \text{otherwise} \end{cases} = 927.9\ \frac{lb}{in}$$

Required Size of Weld: $a_{req} = RoundUp\left(\frac{R}{R_n}\right) =$ 3/16" Weld Leg Size

Foundation Loads

Spread Footing Foundation

Nominal loads for allowable capacities per geotechnical report. Seismic Loads to have omega/overstrength applied (cantilever foundation system). Design provided in design worksheet to follow.

Width of Footing: $W_{ftg} = 3.33\ ft$
Length of Footing: $l_{ftg} = 3.33\ ft$
Width of Pedestal: $W_{ped} = 2\ ft$
Length of Pedestal: $l_{ped} = 3.33\ ft$
Height of Pedestal: $H_{ped} = 12\ in$
Weight of Concrete Pedestal: $Wt_{ped} = W_{ped} * l_{ped} * H_{ped} * 150\ pcf = 999\ lbf$

LC: 0.9 DL + W
(nominal values for foundation software shown below)
Vertical Force: $A_1 = 0.9 * \left(DL + Wt_{ped}\right) = 1039.371\ lbf$
Horizontal Force: $P_1 = \left(B * s * p_w\right) = 407.75\ lbf$
Moment: $M_1 = P_1 * arm_T = 1702.356\ lbf * ft$

LC: 0.9 DL + $\left(E_v + E_{mh}\right)$
(nominal values for foundation software shown below)

DL Vertical Force: $A_2 = 0.9 * \left(DL + Wt_{ped}\right) = 1039.371$ lbf

EQ Vertical Force: $A_3 = \left(-0.2 * EQ2.SDS * \left(DL + Wt_{ped}\right)\right) = -314.121$ lbf

Horizontal Forces:

Sign Cabinet: $P_2 = EQ2.V_B * EQ2.OS = 154.557$ lbf

Sign Cabinet moment arm: $a_2 = arm_T = 4.175$ ft

Sign Cabinet moment: $M_2 = P_2 * a_2 = 645.277$ lbf * ft

Combined EQ Axial: $A_{eq} = A_2 + A_3 = 725.250$ lbf

Combined EQ Shear: $V_{eq} = P_2 = 154.557$ lbf

Combined EQ Moment: $M_{eq} = M_2 = 645.277$ lbf * ft

Weight Takeoff

Component	Unit Wt	Unit Qty	Wt	Qty	Weight
	Height:	6.5 ft	Width:	2.33 ft	
Skin	2 psf	15.1 ft^2	30.29 lbf	2	60.58 lbf
Post	10 plf	6.5 ft	65 lbf	1	65 lbf
Channel Extrusion	1.5 plf	17.66 ft	26.49 lbf	1	26.49 lbf
Misc Framing/Stiffeners	0.25 psf	15.1 ft^2	3.786 lbf	1	3.786 lbf

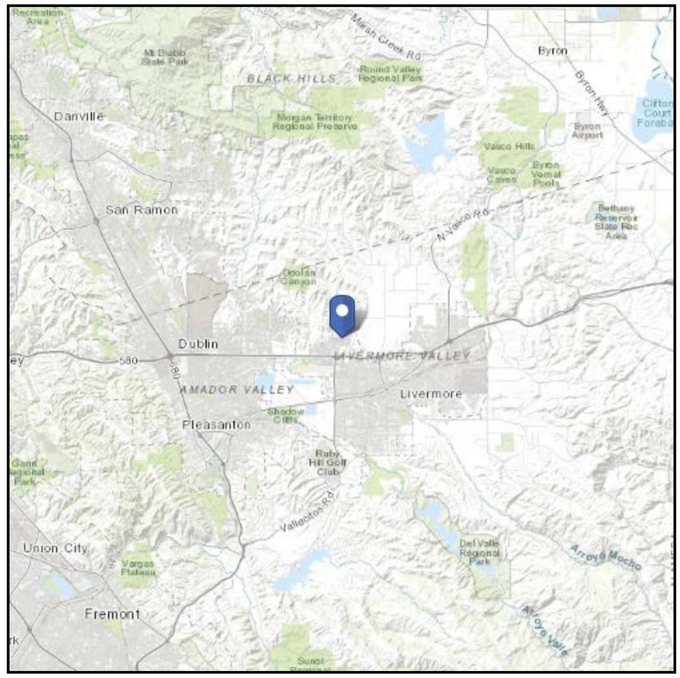
Cabinet Wt.:	90.86 lbf
Total:	155.9 lbf

ASCE Hazards Report

Address:
Las Positas College - 3000 Campus Hill Drive
Livermore,

Standard: ASCE/SEI 7-22
Risk Category: III
Soil Class: D - Stiff Soil

Latitude: 37.710873
Longitude: -121.80058
Elevation: 480.38484203241944 ft (NAVD 88)



Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	79 Vmph
300-year MRI	87 Vmph
700-year MRI	93 Vmph
1,700-year MRI	99 Vmph
3,000-year MRI	103 Vmph
10,000-year MRI	113 Vmph
100,000-year MRI	129 Vmph
1,000,000-year MRI	147 Vmph

Data Source: ASCE/SEI 7-22, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Nov 24 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

Seismic

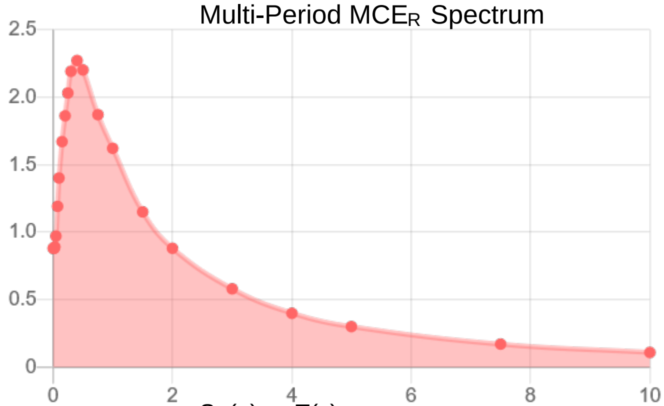
Site Soil Class: D - Stiff Soil

Results:

PGA_M :	0.73	T_L :	8
S_{MS} :	2.05	S_S :	2.13
S_{M1} :	1.62	S_1 :	0.81
S_{DS} :	1.36	V_{S30} :	260
S_{D1} :	1.08		

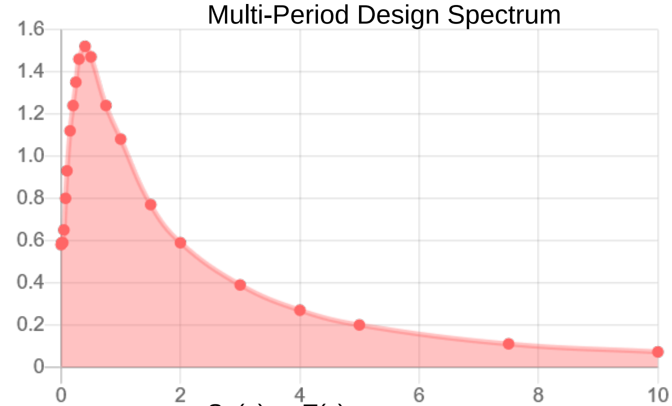
Seismic Design Category: E

Multi-Period MCE_R Spectrum



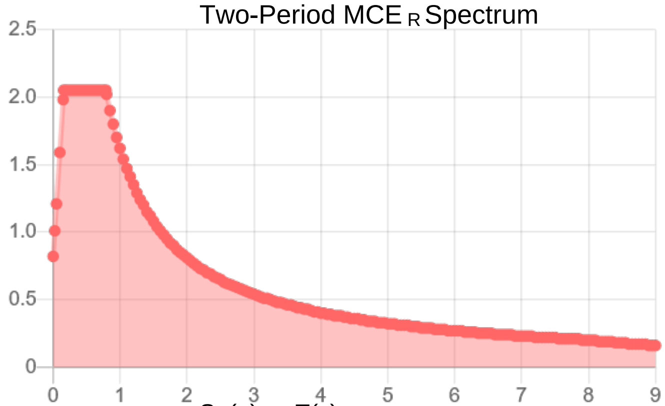
S_a(g) vs T(s)

Multi-Period Design Spectrum



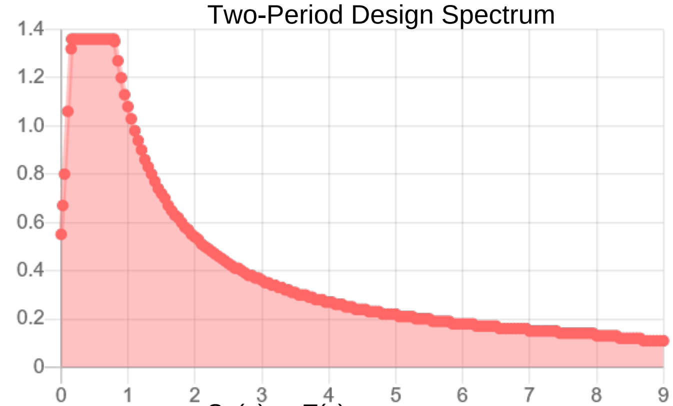
S_a(g) vs T(s)

Two-Period MCE_R Spectrum



S_a(g) vs T(s)

Two-Period Design Spectrum



S_a(g) vs T(s)

MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Mon Nov 24 2025**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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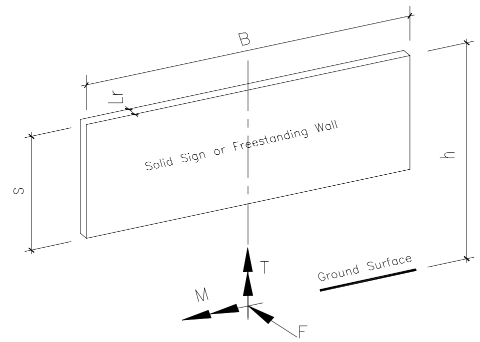
	JOB NO. :	DATE :	REVIEW BY :	

Wind Analysis for Freestanding Wall & Sign Based on ASCE 7-22 — **Monument Sign Wind Pressure**

INPUT DATA

Exposure category (B, C or D)	=	C	
Importance factor, 1.0 only, (Table 1.5-2)	I_w =	1.00	
Basic wind speed (ASCE 7 26.5.1)	V =	99	mph, (159.32 kph)
Topographic factor (26.8 & Table 26.8-1)	K_{zt} =	1	Flat
Height of top	h =	11	ft, (3.35 m)
Vertical dimension (for wall, s = h)	s =	11	ft, (3.35 m)
Horizontal dimension	B =	4	ft, (1.22 m)
Dimension of return corner	L_r =	0	ft, (0.00 m)



DESIGN SUMMARY

Max horizontal wind pressure	p	=	25 psf, (1177 N/m^2)
Max total horizontal force at centroid of base	F	=	1.08 kips, (5 kN)
Max bending moment at centroid of base	M	=	6.54 ft-kips, (9 kN-m)
Max torsion at centroid of base	T	=	0.87 ft-kips, (1 kN-m)

ANALYSIS

Velocity pressure

$q_h K_d = (0.00256 K_z K_{zt} K_e V^2) K_d$ = **18.13** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 277), K_e = **1.00** , (Tab. 26.9-1 page 275)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 277) = **0.85**

K_d = wind directionality factor. (Tab. 26.6-1, page 274) = **0.85**

h = height of top = **11.00** ft

Wind Force Case A: resultant force though the geometric center (Sec. 29.3.1)

$p = q_h K_d G C_N$	=	**25**	psf
$F = p A_s$	=	**1.08**	kips
M = F (h - 0.5s) for sign, F (0.55h) for wall	=	**6.54**	ft-kips
T =	=	**0.00**	ft-kips

where: G = gust effect factor. (Sec. 26.9) = **0.85**

C_f = net force coefficient. (Fig. 29.3-1, page 301) **1.60**

A_s = B s = **44.0** ft^2

Wind Force Case B: resultant force at 0.2 B offset of the geometric center (Sec. 29.3.1)

p = Case A	=	**25**	psf
F = Case A	=	**1.08**	kips
M = Case A	=	**6.54**	ft-kips
T = 0.2 F B	=	**0.87**	ft-kips

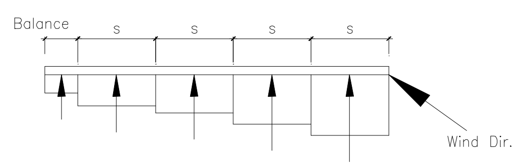
Wind Force Case C: resultant force different at each region (Sec. 29.4.1)

$p = q_h G C_f$

$F = \Sigma\, p A_s$

$M = \Sigma$ [F (h - 0.5s) for sign, F (0.55h) for wall]

$T = \Sigma\, T_s$



Distance (ft)	C_f (Fig. 29.3-1)	P_i (psf)	A_{si} (ft^2)	F_i (kips)	M_i (ft-kips)	T_i (ft-kips)
4.0	1.800	28	44	1.22	7.38	0.00
4.0	1.200	18	0	0.00	0.00	0.00
Σ				**1.22**	**7.38**	**0.00**

<== Case C may not be considered, footnote 3 of Fig. 6-20

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	CLIENT :			DESIGN BY :	
	JOB NO. :		DATE :	REVIEW BY :	

HSS (Tube, Pipe) Member Design with Torsional Loading Based on AISC 360-10/16 — **EWF.20 Post DL+W**

INPUT DATA & DESIGN SUMMARY

MEMBER SHAPE (Tube or Pipe) & SIZE		**HSS2X2X3/16**	< == **Tube**
STEEL YIELD STRESS	F_y =	**46**	ksi, (317 MPa)
TORSIONAL FORCE	T_r =	**0.114**	ft-kips, (0 kN-m), ASD
AXIAL COMPRESSION FORCE	P_r =	**0.155**	kips, (1 kN), ASD
STRONG AXIS EFFECTIVE LENGTH	kL_x =	**12**	ft, (3.66 m)
WEAK AXIS EFFECTIVE LENGTH	kL_y =	**12**	ft, (3.66 m)
STRONG AXIS BENDING MOMENT	M_{rx} =	**0.835**	ft-kips, (1 kN-m), ASD
STRONG AXIS BENDING UNBRACED LENGTH	L_b =	**6.5**	ft, (1.98 m), (AISC 360 F2.2.c)
STRONG DIRECTION SHEAR LOAD, ASD	V_{strong} =	**0.245**	kips, (1 kN)
WEAK AXIS BENDING MOMENT	M_{ry} =	**0**	ft-kips, (0 kN-m), ASD
WEAK DIRECTION SHEAR LOAD, ASD	V_{weak} =	**0**	kips, (0 kN)

THE DESIGN IS ADEQUATE.

ANALYSIS

CHECK TORSIONAL CAPACITY (AISC 360 H3.1)

$$T_c = \frac{1}{\Omega_T} T_n = \frac{1}{\Omega_T}\begin{cases}\left[2(B-t)(H-t)t - 4.5(4-\pi)t^3\right]\begin{bmatrix} 0.6F_y \;,\; for\;\; \frac{h}{t} \le 2.45\sqrt{\frac{E}{F_y}} \\ 0.6F_y 2.45\sqrt{\frac{E}{F_y}}\frac{t}{h} \;,\; for\;\; \frac{h}{t} \le 3.07\sqrt{\frac{E}{F_y}} \\ 0.458\frac{E\pi^2}{(h/t)^2},\; for\;\; \frac{h}{t} \le 260 \end{bmatrix} \;,\; for\;\; HSS\;\; Tube \\ \frac{\pi(D-t)^2 t}{2} Max\left[\frac{1.23E}{\sqrt{\frac{L}{D}}\left(\frac{D}{t}\right)^{(5/4)}} \;,\; \frac{0.60E}{\left(\frac{D}{t}\right)^{(3/2)}}\right] \;,\; for\;\; HSS\;\; Pipe \end{cases} = \begin{matrix}1.7 \\ \text{ft-kips}\end{matrix}$$

> T_r **[Satisfactory]**

Where	B	H	h	t	D	E
	2.00	2.00	1.44	0.19		29000

Ω_T = 1.67 ,ASD

CHECK COMBINED COMPRESSION AND BENDING CAPACITY (AISC 360 H1)

$$\begin{cases}\frac{P_r}{P_c} + \frac{8}{9}\left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \;,\; for\;\; \frac{P_r}{P_c} \ge 0.2 \\ \frac{P_r}{2P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) \;,\; for\;\; \frac{P_r}{P_c} < 0.2 \end{cases} = 0.47 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

Where $P_c = P_n / \Omega_c$ =	8	/ 1.67 =	4.65	kips, (AISC 360 Chapter E)	
			>	P_r	**[Satisfactory]**
$M_{cx} = M_n / \Omega_b$ =	3.06	/ 1.67 =	1.83	ft-kips, (AISC 360 Chapter F)	
			>	M_{rx}	**[Satisfactory]**
$M_{cy} = M_n / \Omega_b$ =	3.06	/ 1.67 =	1.83	ft-kips, (AISC 360 Chapter F)	
			>	M_{ry}	**[Satisfactory]**

CHECK SHEAR CAPACITY (AISC 360 G2)

$V_{n,strong} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{strong} =	0.2	kips	**[Satisfactory]**
$V_{n,weak} / \Omega_v$ =	13.8 / 1.67 =	8.3	kips	>	V_{weak} =	0.0	kips	**[Satisfactory]**

CHECK COMBINED TORSION, SHEAR, COMPRESSION, AND BENDING CAPACITY (AISC 360 H3.2)

$$\begin{cases}\frac{P_r}{P_c} + \left(\frac{M_{rx}}{M_{cx}} + \frac{M_{ry}}{M_{cy}}\right) + \left[Max\left(\frac{V\,strong}{V_{c,strong}} \;,\; \frac{V\,weak}{V_{c,weak}}\right) + \frac{T_r}{T_c}\right]^2 \;,\; for\;\; \frac{T_r}{T_c} > 0.2 \\ Torsion\;\; Neglected \;,\; for\;\; \frac{T_r}{T_c} \le 0.2 \end{cases} = 0.0 < 1.3$$

[Satisfactory] (2021 IBC, 1605.3.2)

1.Project information

Project description:
Location: EWF.20 0.9DL+W
Design name: Design

Comment:

2. Input Data & Anchor Parameters

General
Design method:ACI 318-19
Units: Imperial units

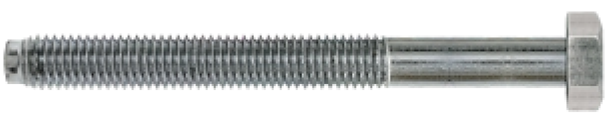
Anchor Information:
Anchor type: Cast-in-place
Material: F1554 Grade 55
Diameter (inch): 0.375
Effective Embedment depth, h_{ef} (inch): 12.000
Anchor category: -
Anchor ductility: Yes
h_{min} (inch): 13.13
C_{min} (inch): 2.25
S_{min} (inch): 2.25

Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 24.00
State: Cracked
Compressive strength, f'_c (psi): 2500
$\Psi_{c,V}$: 1.2
Reinforcement condition: B tension, B shear
Supplemental edge reinforcement: Not applicable
Reinforcement provided at corners: Yes
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: No
Ignore 6do requirement: No
Build-up grout pad: Yes

Base Plate
Length x Width x Thickness (inch): 4.25 x 6.00 x 0.50
Yield stress: 50000 psi

Profile type/size: 2-1/2X2-1/2X3/16

Recommended Anchor
Anchor Name: Heavy Hex Bolt - 3/8"Ø Heavy Hex Bolt, F1554 Gr. 55

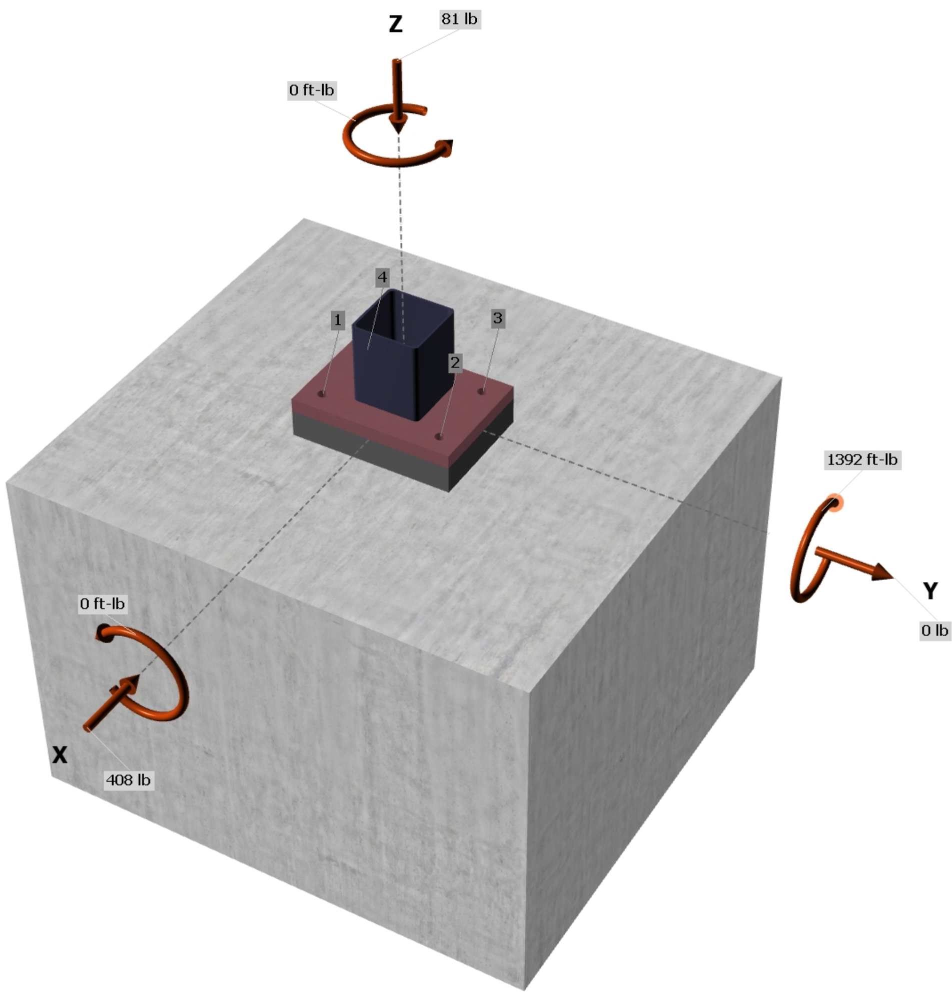


Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: not set
Seismic design: No
Anchors subjected to sustained tension: Not applicable
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: Yes

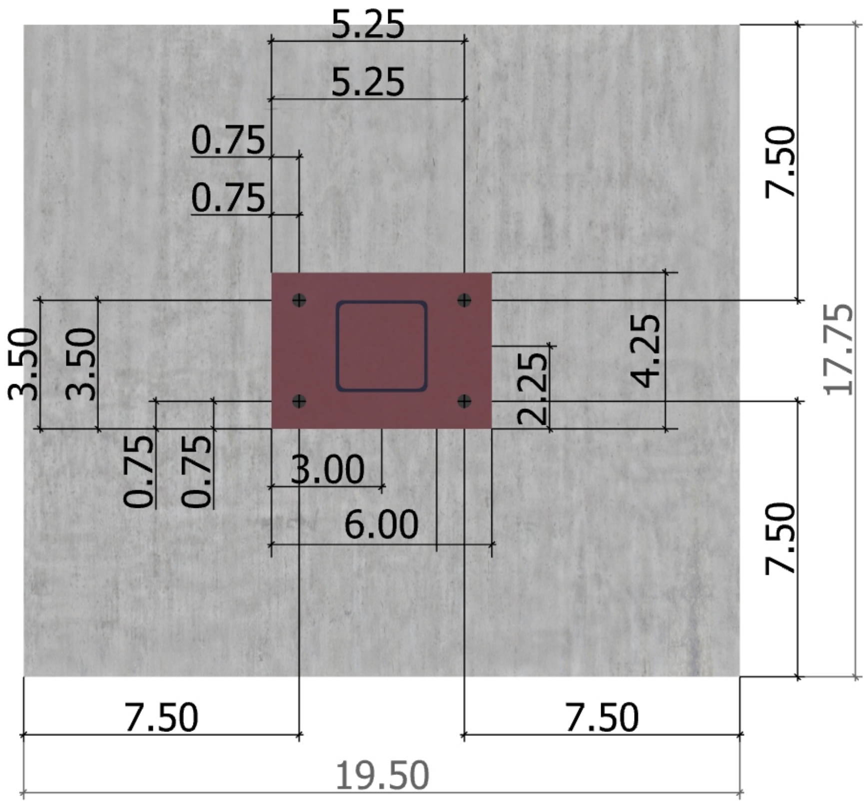
Strength level loads:

N_{ua} [lb]:	-81
V_{uax} [lb]:	-408
V_{uay} [lb]:	0
M_{ux} [ft-lb]:	0
M_{uy} [ft-lb]:	-1392
M_{uz} [ft-lb]:	0

<Figure 1>



<Figure 2>

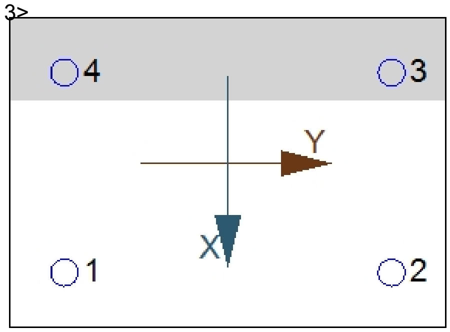


3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	2653.2	-102.0	0.0	102.0
2	2653.2	-102.0	0.0	102.0
3	0.0	-102.0	0.0	102.0
4	0.0	-102.0	0.0	102.0
Sum	5306.4	-408.0	0.0	408.0

Maximum concrete compression strain (‰): 0.37
Maximum concrete compression stress (psi): 1591
Resultant tension force (lb): 5306
Resultant compression force (lb): 5387
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00
Eccentricity of resultant shear forces in x-axis, e'_{Vx} (inch): 0.00
Eccentricity of resultant shear forces in y-axis, e'_{Vy} (inch): 0.00

<Figure 3>



4. Steel Strength of Anchor in Tension (Sec. 17.6.1)

N_{sa} (lb)	ϕ	ϕN_{sa} (lb)
5815	0.75	4361

5. Concrete Breakout Strength of Anchor in Tension (Sec. 17.6.2)

$N_b = 16\lambda_a\sqrt{f'_c}h_{ef}^{5/3}$ (Eq. 17.6.2.2.1)

λ_a	f'_c (psi)	h_{ef} (in)	N_b (lb)
1.00	2500	6.833	19685

$\phi N_{cbg} = \phi\,(A_{Nc}/A_{Nco})\,\Psi_{ec,N}\,\Psi_{ed,N}\,\Psi_{c,N}\,\Psi_{cp,N}N_b$ (Sec. 17.5.1.2 & Eq. 17.6.2.1a)

A_{Nc} (in^2)	A_{Nco} (in^2)	$c_{a,min}$ (in)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕN_{cbg} (lb)
346.13	420.25	7.50	1.000	0.920	1.00	1.000	19685	0.70	10436

6. Pullout Strength of Anchor in Tension (Sec. 17.6.3)

$\phi N_{pn} = \phi\Psi_{c,P}N_p = \phi\Psi_{c,P}8A_{brg}f'_c$ (Sec. 17.5.1.2, Eq. 17.6.3.1 & 17.6.3.2.2a)

$\Psi_{c,P}$	A_{brg} (in^2)	f'_c (psi)	ϕ	ϕN_{pn} (lb)
1.0	0.30	2500	0.70	4186

7. Steel Strength of Anchor in Shear (Sec. 17.7.1)

V_{sa} (lb)	ϕ_{grout}	ϕ	$\phi_{grout}\phi V_{sa}$ (lb)
3490	0.8	0.65	1815

8. Concrete Breakout Strength of Anchor in Shear (Sec. 17.7.2)

Shear perpendicular to edge in x-direction:

$V_{bx} = \min|7(l_e/d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.7.2.2.1a & Eq. 17.7.2.2.1b)

l_e (in)	d_a (in)	λ_a	f'_c (psi)	c_{a1} (in)	V_{bx} (lb)
3.00	0.375	1.00	2500	10.25	10661

$\phi V_{cbgx} = \phi\,(A_{Vc}/A_{Vco})\,\Psi_{ec,V}\,\Psi_{ed,V}\,\Psi_{c,V}\,\Psi_{h,V}V_{bx}$ (Sec. 17.5.1.2 & Eq. 17.7.2.1b)

A_{Vc} (in^2)	A_{Vco} (in^2)	$\Psi_{ec,V}$	$\Psi_{ed,V}$	$\Psi_{c,V}$	$\Psi_{h,V}$	V_{bx} (lb)	ϕ	ϕV_{cbgx} (lb)
299.81	472.78	1.000	0.846	1.200	1.000	10661	0.70	4806

Shear parallel to edge in y-direction:

$V_{bx} = \min|7(l_e/d_a)^{0.2}\sqrt{d_a}\lambda_a\sqrt{f'_c}c_{a1}^{1.5};\ 9\lambda_a\sqrt{f'_c}c_{a1}^{1.5}|$ (Eq. 17.7.2.2.1a & Eq. 17.7.2.2.1b)

l_e (in)	d_a (in)	λ_a	f'_c (psi)	c_{a1} (in)	V_{bx} (lb)
3.00	0.375	1.00	2500	7.50	6673

$\phi V_{cbgy} = \phi\,(2)(A_{Vc}/A_{Vco})\,\Psi_{ec,V}\,\Psi_{ed,V}\,\Psi_{c,V}\,\Psi_{h,V}V_{bx}$ (Sec. 17.5.1.2, 17.7.2.1(c) & Eq. 17.7.2.1b)

A_{Vc} (in^2)	A_{Vco} (in^2)	$\Psi_{ec,V}$	$\Psi_{ed,V}$	$\Psi_{c,V}$	$\Psi_{h,V}$	V_{bx} (lb)	ϕ	ϕV_{cbgy} (lb)
199.69	253.13	1.000	1.000	1.200	1.000	6673	0.70	8843

9. Concrete Pryout Strength of Anchor in Shear (Sec. 17.7.3)

$\phi V_{cpg} = \phi k_{cp}N_{cbg} = \phi k_{cp}(A_{Nc}/A_{Nco})\,\Psi_{ec,N}\,\Psi_{ed,N}\,\Psi_{c,N}\,\Psi_{cp,N}N_b$ (Sec. 17.5.1.2 & Eq. 17.7.3.1b)

k_{cp}	A_{Nc} (in^2)	A_{Nco} (in^2)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕV_{cpg} (lb)
2.0	346.13	225.00	1.000	1.000	1.000	1.000	19685	0.70	25189

10. Results

Interaction of Tensile and Shear Forces (Sec. R17.8)

Tension	Factored Load, N_{ua} (lb)	Design Strength, ϕN_n (lb)	Ratio	Status
Steel	2653	4361	0.61	Pass
Concrete breakout	5306	10436	0.51	Pass

Pullout	**2653**	**4186**	**0.63**	**Pass (Governs)**

Shear	Factored Load, V_{ua} (lb)	Design Strength, $øV_n$ (lb)	Ratio	Status
Steel	102	1815	0.06	Pass
T Concrete breakout x-	**408**	**4806**	**0.08**	**Pass (Governs)**
|| Concrete breakout y+	204	8843	0.02	Pass
Pryout	408	25189	0.02	Pass

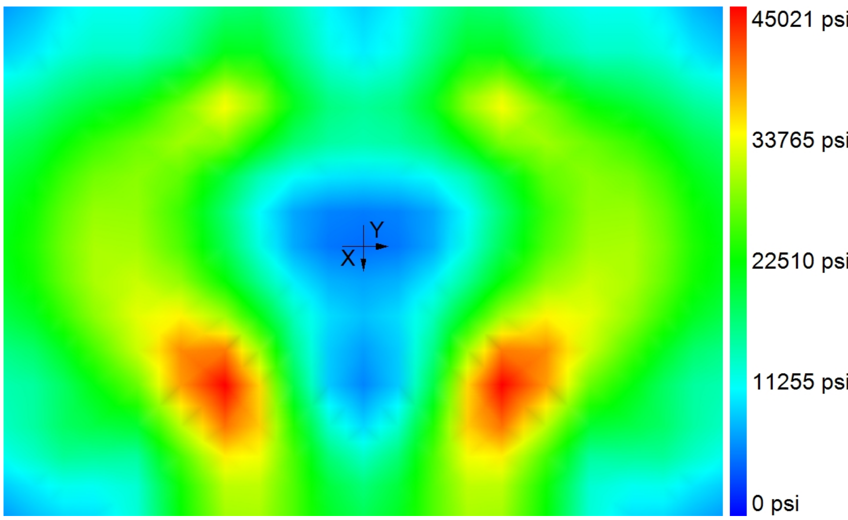
Interaction check	$(N_{ua}/\phi N_{ua})^{5/3}$	$(V_{ua}/\phi V_{ua})^{5/3}$	Utilization Ratio	Permissible	Status
Sec. R17.8	0.47	0.02	48.4%	1.0	Pass

3/8"Ø Heavy Hex Bolt, F1554 Gr. 55 with hef = 12.000 inch meets the selected design criteria.

Base Plate Thickness

Steel	**50000 psi**
Maximum stress	**45021 psi**
Calculated plate thickness	**0.356 inch**

Stress distribution



For ACI and CSA design methods, maximum base plate stress is limited to 0.9 times yield stress.
For ETAG and EN-1992-4 design method, maximum base plate stress is limited to yield stress divide by 1.5.
Plate stress is derived using Von Mises theory.

$$\sigma_{xx} = \frac{F_{xx}}{t} + \frac{6M_{xx}}{t^2} \text{ (@ bottom) or } \sigma_{xx} = \frac{F_{xx}}{t} - \frac{6M_{xx}}{t^2} \text{ (@ top)}$$

$$\sigma_{yy} = \frac{F_{yy}}{t} + \frac{6M_{yy}}{t^2} \text{ (@bottom) or } \sigma_{yy} = \frac{F_{yy}}{t} - \frac{6M_{yy}}{t^2} \text{ (@ top)}$$

$$\sigma_{xy} = \frac{F_{xy}}{t} + \frac{6M_{xy}}{t^2} \text{ (@bottom) or } \sigma_{xy} = \frac{F_{xy}}{t} - \frac{6M_{xy}}{t^2} \text{ (@ top)}$$

$$\sigma_{xz} = \frac{V_x}{t}$$

$$\sigma_{yz} = \frac{V_y}{t}$$

$\sigma_{xx}, \sigma_{yy}, \sigma_{xy}$ as follows:

$$S_1 = \frac{\sigma_{xx} + \sigma_{yy}}{2} + \sqrt{\left(\frac{\sigma_{xx} - \sigma_{yy}}{2}\right)^2 + \sigma_{xy}^{\ 2}}$$

$$S_2 = \frac{\sigma_{xx} + \sigma_{yy}}{2} - \sqrt{\left(\frac{\sigma_{xx} - \sigma_{yy}}{2}\right)^2 + \sigma_{xy}^{\ 2}}$$

$$S_3 = 0$$

$$\sigma_{Von\,Mises} = \sqrt{\frac{(S_1 - S_2)^2 + (S_1 - S_3)^2 + (S_2 - S_3)^2}{2}}$$

11. Warnings

- Calculated concrete compression stress exceeds the permissible bearing stress of Φ 0.85f'c per ACI 318 Section 22.8.3.

- Designer must exercise own judgement to determine if this design is suitable.

MISSION STRUCTURE ENGINEERING	PROJECT :	Las Positas College	PAGE :	
	CLIENT :		DESIGN BY :	
	JOB NO. :	DATE :	REVIEW BY :	

Eccentric Footing Design Based on ACI 318-19 — EWF.20 0.9DL+W Spread Ftg.

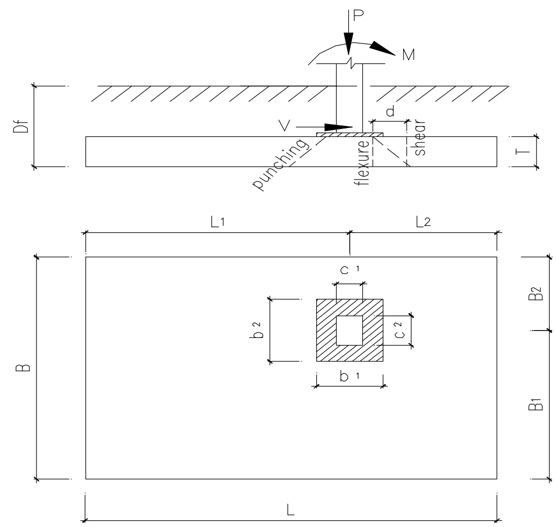
INPUT DATA

COLUMN WIDTH	c_1	=	2	in
COLUMN DEPTH	c_2	=	2	in
BASE PLATE WIDTH	b_1	=	5	in
BASE PLATE DEPTH	b_2	=	5	in
FOOTING CONCRETE STRENGTI	f_c'	=	2.5	ksi
REBAR YIELD STRESS	f_y	=	60	ksi
AXIAL DEAD LOAD	P_{DL}	=	1.039	k
AXIAL LIVE LOAD	P_{LL}	=	0	k
LATERAL LOAD (0=WIND, 1=SEISMIC)		=	0	Wind,SD
WIND AXIAL LOAD	P_{LAT}	=	0	k, SD
WIND MOMENT LOAD	M_{LAT}	=	1.703	ft-k, SD
WIND SHEAR LOAD	V_{LAT}	=	0.408	k, SD
SURCHARGE	q_s	=	0	ksf
SOIL WEIGHT	w_s	=	0.11	kcf
FOOTING EMBEDMENT DEPTH	D_f	=	1.5	ft
FOOTING THICKNESS	T	=	12	in
ALLOWABLE SOIL PRESSURE	Q_a	=	2	ksf
FOOTING WIDTH	B_1	=	1.6	ft
	B_2	=	1.6	ft
FOOTING LENGTH	L_1	=	1.6	ft
	L_2	=	1.6	ft
REINFORCING SIZE		#	4	

THE FOOTING DESIGN IS ADEQUATE.

DESIGN SUMMARY

FOOTING WIDTH	B	=	3.20	ft
FOOTING LENGTH	L	=	3.20	ft
FOOTING THICKNESS	T	=	12	in
LONGITUDINAL REINF., TOP	1 # 4			
LONGITUDINAL REINF., BOT.	3 # 4 @ 16 in o.c.			
TRANSVERSE REINF., BOT.	3 # 4 @ 16 in o.c.			



ANALYSIS

DESIGN LOADS AT TOP OF FOOTING (IBC 1605.2 & ACI 318 5.3)

CASE 1:	DL + LL	P	=	1	kips	1.2 DL + 1.6 LL	Pu	=	1	kips
		M	=	0	ft-kips		Mu	=	0	ft-kips
		e	=	0.0	ft, fr cl ftg		eu	=	0.0	ft, fr cl ftg
CASE 2:	DL + LL + 0.6(1.3) W	P	=	1	kips	1.2 DL + LL + 1.0 W	Pu	=	1	kips
		M	=	1	ft-kips		Mu	=	2	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	1.4	ft, fr cl ftg		eu	=	1.4	ft, fr cl ftg
CASE 3:	DL + LL + 0.6(0.65) W	P	=	1	kips	0.9 DL+ 1.0 W	Pu	=	1	kips
		M	=	1	ft-kips		Mu	=	2	ft-kips
		V	=	0	kips		Vu	=	0	kips
		e	=	0.9	ft, fr cl ftg		eu	=	1.8	ft, fr cl ftg

CHECK OVERTURNING FACTOR (2021 IBC 1605.2.1, 1808.3.1, & ASCE 7-22 12.13.4)

M_R / M_O = 2.4 **>** F = 1.0 / 0.9 = 1.11 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,T - P_{LAT}L_2$ = 2 k-ft

P_{ftg} = (0.15 kcf) T B L = 1.54 k, footing weight

P_{soil} = $w_s\,(D_f - T)\,B\,L$ = 0.56 k, soil weight

M_R = $P_{DL}L_2 + 0.5\,(P_{ftg} + P_{soil})\,L$ = 5 k-ft

FOR REVERSED LATERAL LOADS,

M_R / M_O = 2.2 **>** F = 1.0 / 0.9 **[Satisfactory]**

Where M_O = $M_{LAT} + V_{LAT}\,D_f - P_{LAT}L_1$ = 2 k-ft

M_R = $P_{DL}L_1 + 0.5\,(P_{ftg} + P_{soil})\,L$ = 5 k-ft

CHECK SLIDING (2021 IBC 1807.2.3)

1.5 ($V_{Lat, ASD}$) = 0.3672 kips < $\mu\,\Sigma W$ = 1.03 kips **[Satisfactory]**

Where ` μ = 0.4

(cont'd)

CHECK SOIL BEARING CAPACITY (ACI 318 13.3.1.1)

Service Loads	CASE 1		CASE 2		CASE 3		
P	1.0		1.0		1.0		k
e	0.0		1.7		1.1		ft (from center of footing)
q_s B L	0.0		0		0.0		k, (surcharge load)
$(0.15\text{-}w_s)$T B L	0.4		0.4		0.2		k, (footing increased)
Σ P	1.4		1.4		1.3		k
e_L	0.0	< L/6	1.2	> L/6	0.9	> L/6	ft
e_B	0.0	< B/6	0.0	< B/6	0.0	< B/6	ft
q_L	0.5		2.7		1.2		k / ft
q_{max}	0.1		0.9		0.4		ksf
q_{allow}	2.0		2.7		2.7		ksf

Where

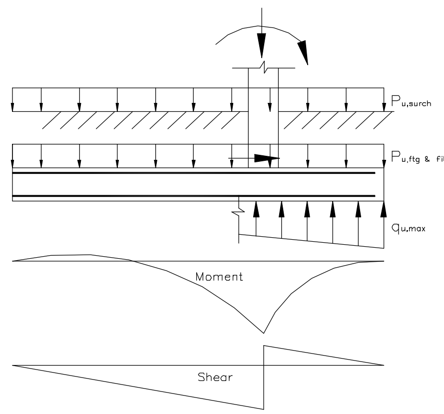
$$q_L = \begin{cases} \dfrac{(\Sigma P)\left(1+\dfrac{6e_L}{L}\right)}{L}, & for \quad e_L \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P)}{3(0.5L-e_L)}, & for \quad e_L > \dfrac{L}{6} \end{cases} \qquad q_{MAX} = \begin{cases} \dfrac{q_L\left(1+\dfrac{6e_B}{B}\right)}{B}, & for \quad e_B \le \dfrac{B}{6} \\ \dfrac{2q_L}{3(0.5B-e_B)}, & for \quad e_B > \dfrac{B}{6} \end{cases}$$

[Satisfactory]

DESIGN FLEXURE & CHECK FLEXURE SHEAR
(ACI 318 13, 21, & 22)

$$q_{u,MAX} = \begin{cases} \dfrac{(\Sigma P_u)\left(1+\dfrac{6e_u}{L}\right)}{BL}, & for \quad e_u \le \dfrac{L}{6} \\ \dfrac{2(\Sigma P_u)}{3B(0.5L-e_u)}, & for \quad e_u > \dfrac{L}{6} \end{cases}$$

$$\rho_{MAX} = \frac{0.85\beta_1 f'_c}{f_y}\frac{\varepsilon_u}{\varepsilon_u+\varepsilon_t}$$



$$\rho = \frac{0.85 f'_c\left(1-\sqrt{1-\dfrac{M_u}{0.383bd^2 f'_c}}\right)}{f_y}$$

$$\rho_{MIN} = MIN\left(0.0018\frac{T}{d} \;,\; \frac{4}{3}\rho\right)$$

FACTORED SOIL PRESSURE

Factored Loads	CASE 1		CASE 2		CASE 3		
P_u	1.2		1.2		0.9		k
e_u	0.0		1.7		2.3		ft
γ q_s B L	0.0		0.0		0.0		k, (factored surcharge load)
$\gamma[0.15T + w_s(D_f - T)]BL$	2.5		2.5		1.9		k, (factored footing & backfill loads)
Σ P_u	3.8		3.8		2.8		k
e_u	0.0	< L/6	0.6	> L/6	0.7	> L/6	ft
$q_{u, max}$	0.368		0.755		0.690		ksf

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **1**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.40	0.80	1.20	1.45	1.75	2.00	2.40	2.80	3.20
$M_{u,col}$ (ft-k)	0	0	0	0	0	-0.2	-0.5	-1.0	-1.5	-2.0
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.3	-0.6	-0.8	-1.2	-1.6	-2.3	-3.1	-4.0
$V_{u,ftg\ \&\ fill}$ (k)	0	0.3	0.6	0.9	1.1	1.4	1.6	1.9	2.2	2.5
$q_{u,soil}$ (ksf)	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
$M_{u,soil}$ (ft-k)	0	0.1	0.4	0.8	1.2	1.8	2.4	3.4	4.6	6.0
$V_{u,soil}$ (k)	0	-0.5	-0.9	-1.4	-1.7	-2.1	-2.4	-2.8	-3.3	-3.8
Σ M_u (ft-k)	**0**	**0.0**	**0.1**	**0.3**	**0.4**	**0.4**	**0.3**	**0.1**	**0.0**	**0**
Σ V_u (kips)	**0**	**-0.2**	**-0.3**	**-0.5**	**-0.6**	**0.6**	**0.5**	**0.3**	**0.2**	**0**

(cont'd)

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **2**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.40	0.80	1.20	1.45	1.75	2.00	2.40	2.80	3.20
$M_{u,col}$ (ft-k)	0	0	0	0	0	1.9	1.6	1.1	0.6	0.1
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	-0.1	-0.3	-0.6	-0.8	-1.2	-1.6	-2.3	-3.1	-4.0
$V_{u,ftg\ \&\ fill}$ (k)	0	0.3	0.6	0.9	1.1	1.4	1.6	1.9	2.2	2.5
$q_{u,soil}$ (ksf)	0.00	0.09	0.19	0.28	0.34	0.41	0.47	0.57	0.66	0.75
$M_{u,soil}$ (ft-k)	0	1.8	3.1	4.0	4.3	4.6	4.7	4.6	4.4	3.9
$V_{u,soil}$ (k)	0	-0.9	-1.7	-2.3	-2.7	-3.0	-3.3	-3.5	-3.7	-3.8
Σ M_u (ft-k)	**0**	**1.7**	**2.8**	**3.4**	**3.5**	**5.3**	**4.7**	**3.5**	**1.9**	**0**
Σ V_u (kips)	**0**	**-0.6**	**-1.0**	**-1.4**	**-1.5**	**-0.4**	**-0.4**	**-0.4**	**-0.3**	**0**

FOOTING MOMENT & SHEAR AT LONGITUDINAL SECTIONS FOR CASE **3**

Section	0	0.25 L_1	0.50 L_1	0.75 L_1	Col_L	Col_R	0.25 L_2	0.50 L_2	0.75 L_2	L
X_u (ft, dist. from left of footing)	0	0.40	0.80	1.20	1.45	1.75	2.00	2.40	2.80	3.20
$M_{u,col}$ (ft-k)	0	0	0	0	0	2.0	1.7	1.4	1.0	0.6
$V_{u,col}$ (k)	0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9
$P_{u,surch}$ (klf)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$M_{u,surch}$ (ft-k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$V_{u,surch}$ (k)	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$P_{u,ftg\ \&\ fill}$ (klf)	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
$M_{u,ftg\ \&\ fill}$ (ft-k)	0	0.0	-0.2	-0.4	-0.6	-0.9	-1.2	-1.7	-2.3	-3.0
$V_{u,ftg\ \&\ fill}$ (k)	0	0.2	0.5	0.7	0.9	1.0	1.2	1.4	1.7	1.9
$q_{u,soil}$ (ksf)	0.00	0.00	0.17	0.26	0.31	0.38	0.43	0.52	0.60	0.69
$M_{u,soil}$ (ft-k)	0	0.0	2.3	2.9	3.1	3.2	3.2	3.1	2.8	2.4
$V_{u,soil}$ (k)	0	0.0	-1.4	-1.9	-2.2	-2.4	-2.6	-2.8	-2.9	-2.8
Σ M_u (ft-k)	**0**	**0.0**	**2.1**	**2.4**	**2.5**	**4.3**	**3.8**	**2.8**	**1.5**	**0**
Σ V_u (kips)	**0**	**0.2**	**-0.9**	**-1.2**	**-1.3**	**-0.5**	**-0.5**	**-0.4**	**-0.3**	**0**

DESIGN FLEXURE

Location	$M_{u,max}$		d (in)	ρ_{min}	ρ_{reqD}	ρ_{max}	s_{max}	use	ρ_{provD}
Top Longitudinal	0.0	ft-k	9.75	0.0000	0.0000	0.0129	no limit	1 # 4	0.0005
Bottom Longitudinal	5.3	ft-k	8.75	0.0005	0.0004	0.0129	18	3 # 4 @ 16 in o.c.	0.0018
Bottom Transverse	0	ft-k / ft	8.50	0.0000	0.0000	0.0129	18	3 # 4 @ 16 in o.c.	0.0018

[Satisfactory]

CHECK FLEXURE SHEAR

Direction	$V_{u,max}$		$\phi V_c = 2\ \phi\ b\ d\ (f_c')^{0.5}$		check $V_u < \phi\ V_c$
Longitudinal	1.5	k	25	k	**[Satisfactory]**
Transverse	0.2	k / ft	8	k / ft	**[Satisfactory]**

CHECK PUNCHING SHEAR (ACI 318 13.2.7.2, 22.6.4.1, 22.6.4.3, & 8.4.2.3)

$$v_u(psi) = \frac{P_u - R}{A_P} + \frac{0.5\gamma_v M_u b_1}{J} \qquad A_P = 2(b_1 + b_2)d \qquad \phi v_c(psi) = \phi(2+y)\sqrt{f_c'}$$

$$J = \left(\frac{d b_1^3}{6}\right)\left[1 + \left(\frac{d}{b_1}\right)^2 + 3\left(\frac{b_2}{b_1}\right)\right] \qquad \gamma_v = 1 - \frac{1}{1 + \frac{2}{3}\sqrt{\frac{b_1}{b_2}}} \qquad y = MIN\left(2, \frac{4}{\beta_c}, 40\frac{d}{b_0}\right)$$

$$R = \frac{P_u b_1 b_2}{A_f} \qquad A_f = BL \qquad b_0 = \frac{A_P}{d}, b_1 = (0.5c_1 + 0.5b_1 + d), b_2 = (0.5c_2 + 0.5b_2 + d)$$

Case	P_u	M_u	b_1	b_2	b_0	γ_v	β_c	y	A_f	A_p	R	J	$v_{u\ (psi)}$	$\phi\ v_c$
1	1.2	0.0	12.0	12.0	0.3	0.4	1.0	2.0	10.2	2.8	0.1	0.5	2.8	150.0
2	1.2	1.7	12.0	12.0	0.3	0.4	1.0	2.0	10.2	2.8	0.1	0.5	2.8	150.0
3	0.9	1.7	12.0	12.0	0.3	0.4	1.0	2.0	10.2	2.8	0.1	0.5	2.1	150.0

[Satisfactory]

where ϕ = 0.75 , (ACI 318 21.2)