



**City of Los Altos Sign Program**

**PHASE 1 • Design Drawings for Sign Fabrication Bid**



October 9, 2015

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# Family of Sign Types

## Design Drawings for Sign Fabrication Bid

### Sign Manufacture and Install:

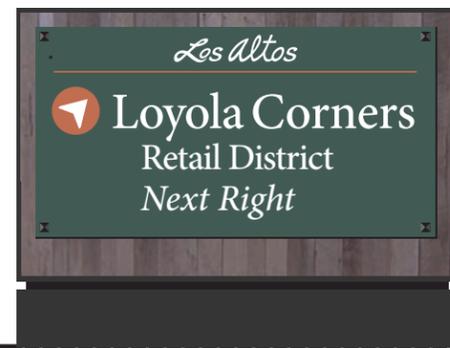
Sign Type A:  
Primary Auto Directional @ Foothill Expressway

Sign Type AA:  
Primary Auto Directional @ El Camino Real

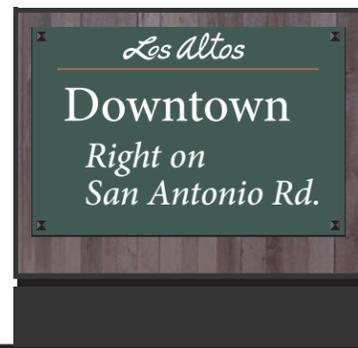
Sign Type B:  
Collector Auto Directional

Sign Type E:  
Post-Mounted Directional

Sign Type PD:  
Downtown Parking Directional



Sign Type A  
Qty 3 Single-sided  
Qty 4 Double-sided



Sign Type AA  
Qty 2 Single-sided

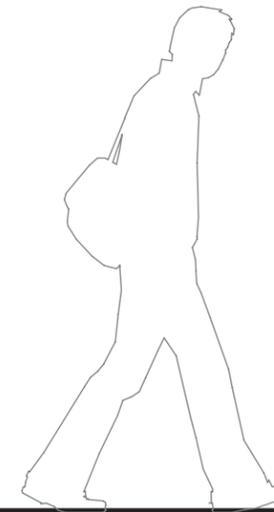


Sign Type B  
Qty 2 Single-sided  
Qty 1 Double-sided

Reverse side appearance of all Single-sided monuments:



Sign Type E  
Qty 5 Single-sided



Sign Type PD  
Qty 9 Double-sided

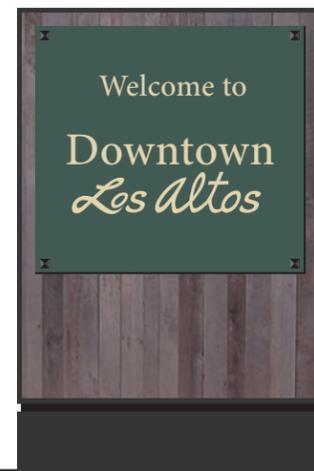
## Family of Sign Types

### Design Drawings for Sign Fabrication Bid

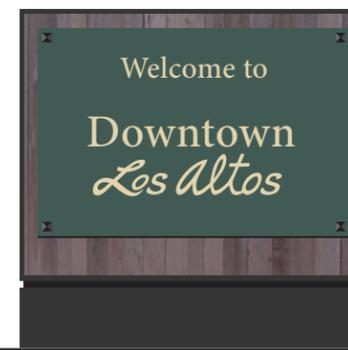
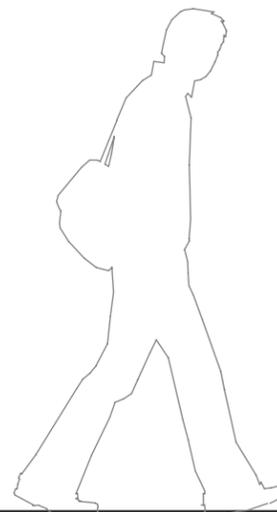
#### Add Alternate 1:

Sign Type D: Downtown Gateway Sign, Tall - at San Antonio (Loc D-1)

Sign Type DD: Downtown Gateway Sign, Short - at Foothill (Loc D-2)



Sign Type D  
Qty 1 Single-sided



Sign Type DD  
Qty 1 Double-sided

## Description & Materials

### Design Drawings for Sign Fabrication Bid

#### GENERAL DESCRIPTION OF PROJECT DESIGN:

This Sign Program has been designed fit into the beautiful Los Altos community with natural heritage materials, functionality and endurance. The signs are designed to evoke the city's agricultural and railroad history with sturdy iron craftsmanship, high quality reclaimed wood and simple, practical sign shapes.

Criteria for fabrication include:

- Sign Performance and Longevity
- Adherence to the program's building specifications
- Quality workmanship

General materials and finishes include:

- Quality reclaimed wood bundled in 3/4" board thickness to mitigate warping. See source spec this page. No environmental contaminants. New wood for sign backgrounds will not be acceptable.
- Steel plate and/or bar stock, square steel posts.
- Steel attachments and fasteners
- Aluminum as noted for sign panels and graphics
- Marine plywood backing material
- Concrete footings
- Powder-coated finishes



#### RECLAIMED WOOD SIGN BACKGROUNDS:

For the beauty and integrity of signs and execution of design intent, use only reclaimed lumber in mixed widths as sourced below.

Use only:

**Mixed-Grey Wood  
Barnwood Bundles  
3/4" thick, mixed widths**

Sourced by:

**Barnwood Industries  
61560 American Lane  
Bend, Oregon 97702**

barnwoodindustries.com  
541.312.1187

Join by channel or tongue-and-groove to prevent gaps forming between boards over time.

Barnwood Industries can also participate by building complete backer panels from the bundles to be shipped to sign fabricator.

Or approved equal.



Design inspiration for steel frames

#### DECORATIVE FASTENER:

"Clavos" or "Decorative Nail" - either of these products at these sources is acceptable, or approved equal.

1-1/2" size - [Martellhardware.com](http://Martellhardware.com)

QTY:	1-9	10-19	20-29	30+
PRICE:	\$3.90	\$3.74	\$3.59	\$3.51

1-3/8" size - [SouthwestBuildingSupply.com](http://SouthwestBuildingSupply.com)

#### 1 3/8" PEWTER SQUARE PYRAMID CLAVOS DECORATIVE NAIL



Our Pewter based Clavos are rust proof and are ideal for use indoors or outdoors. All Clavos decorative nails are available in Pewter, Antique Brass, Antique Copper and Black finishes.

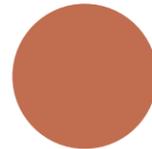
MSRP: \$1.78  
Our Price: \$1.34 each

Width: inches  
Height: inches  
Length: inches  
Weight: Approximately 0.10 Pounds

# Color & Submittal Requirements

## Design Drawings for Sign Fabrication Bid

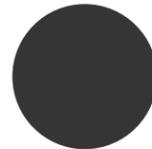
### RAL POWDER COATING SYSTEM COLORS:



**Terracotta:**  
RAL 2001 or 2010



**Green:**  
RAL 6000 OR 6016



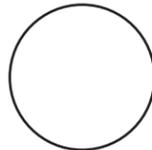
**Black:**  
RAL 7021 OR 7022



**Off White waterjet script letters**  
RAL 1015 or 1013

*Los Altos*

### REFLECTIVE VINYL:



**All sign messages and arrows:**  
3M Reflective White

### FABRICATOR SUBMITTALS REQUIRED:

Every product used in fabrication. Submit samples, including:

- 1 12" x 12" powder coat samples for each color option on aluminum, Satin finish.
- 2 12" x 12" powder coat samples for each Black option on aluminum, Matte finish and Satin finish.
- 3 After selection of approved colors:
  - One Complete Sign Panel for Sign Type B3, including waterjet cut "Los Altos"
  - One Complete Sign Panel for Sign Type E1
- 4 Reclaimed Wood Background: 18'x18" sample of assembled bundle.
- 5 Decorative Fasteners, 1 sign set.
- 6 One completed Sign Type PD
- 7 Shop drawings for every sign type to be provided by fabricator.

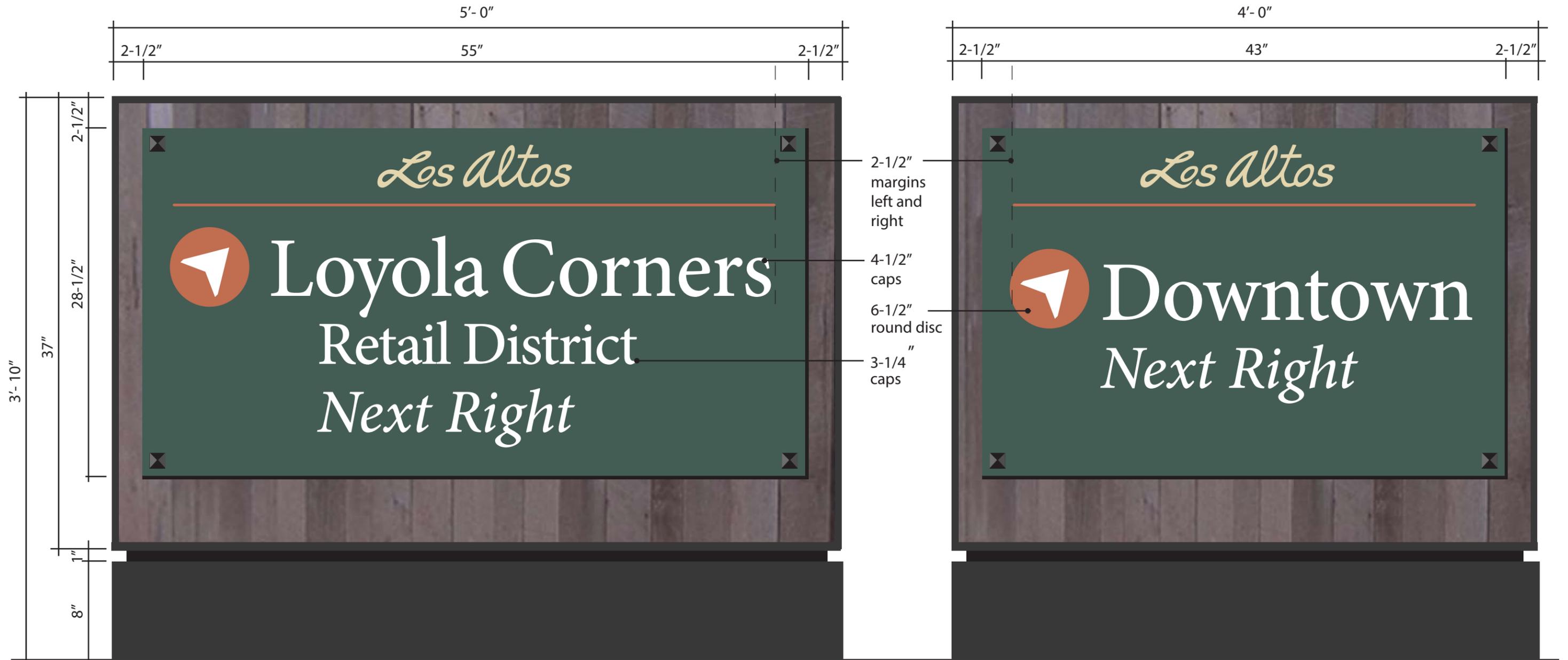
**NOTE:** Graphic layouts for all sign messages will be provided to the awarded fabricator by Explore Creative, in digital format.

## Sign Types A and AA

### Design Drawings for Sign Fabrication Bid

- Aluminum Pan Sign Face with water jet cut "Los Altos" logo, rule and round disc, all powder coated
- Reflective vinyl letters and arrow
- Sign Face mounts to Reclaimed Wood Background framed by powder coated Steel Bar Structure; decorative fastener each corner
- Powder coated Steel Base

SEE **MASTER DETAILS PAGE** FOR END VIEWS, SECTIONS AND OTHER INFORMATION.



**Sign Type A: 5'0 width at Foothill Expressway** Not to Scale  
(Sign numbers A6-A12)

**Sign Type AA: 4'0 width at El Camino Real** Not to Scale  
(Sign numbers A2 and A3)

## Sign Type B

### Design Drawings for Sign Fabrication Bid

- Aluminum Pan Sign Face with water jet cut "Los Altos" logo, rule and round disc, all powder coated
- Reflective vinyl letters and arrow
- Sign Face mounts to Reclaimed Wood Background framed by powder coated Steel Bar Structure; decorative fastener each corner
- Powder coated Steel Base

SEE **MASTER DETAILS PAGE** FOR END VIEWS, SECTIONS AND OTHER INFORMATION.



**Sign Type B** Not to Scale

**Add Alternate 1: Sign Types D and DD**  
**Design Drawings for Sign Fabrication Bid**

All letters are dimensional: 3/8" thick aluminum water jet cut, powder coated "OFF WHITE"  
 SEE **MASTER DETAILS PAGE** FOR END VIEWS, SECTIONS AND OTHER INFORMATION.



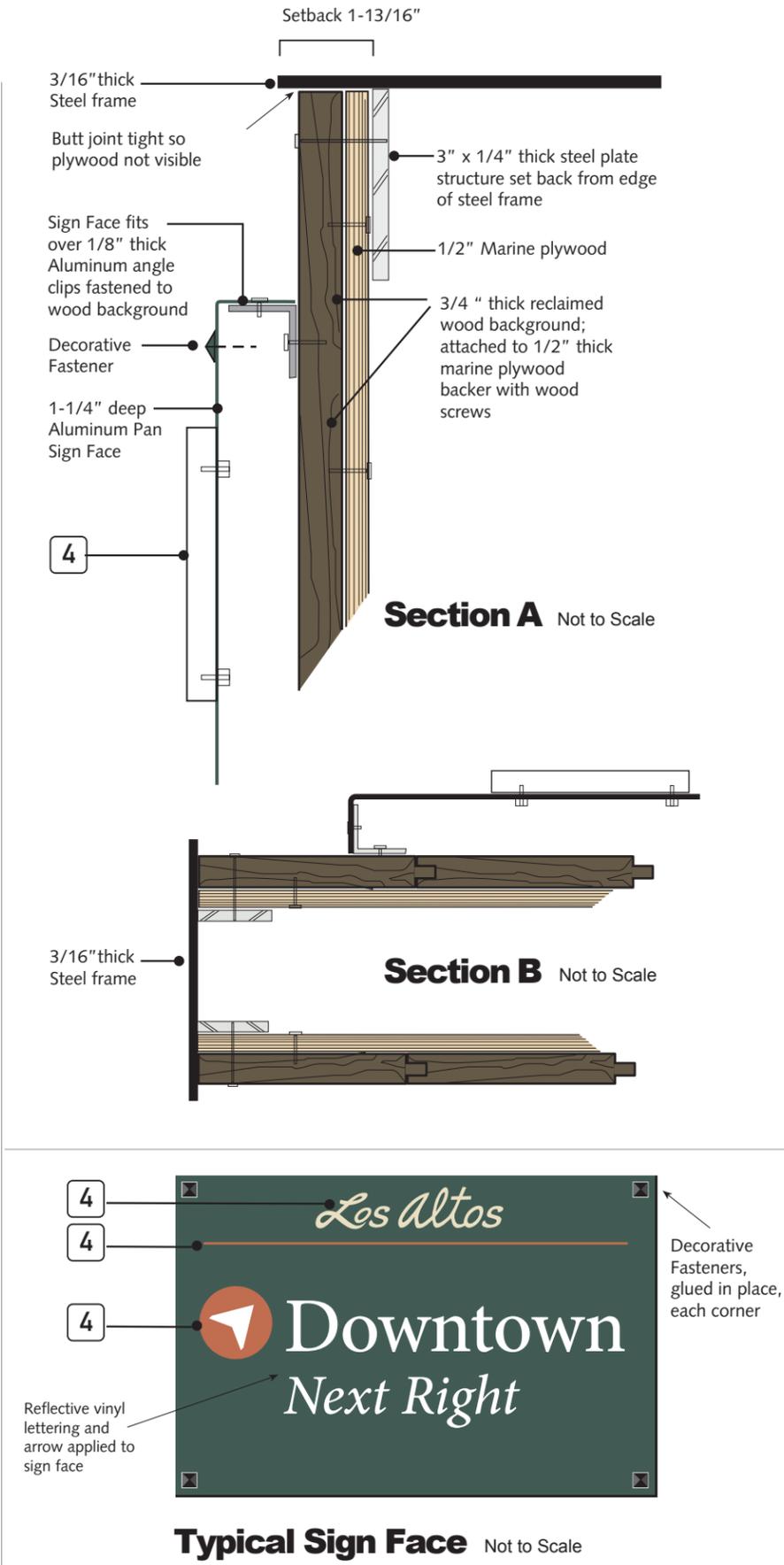
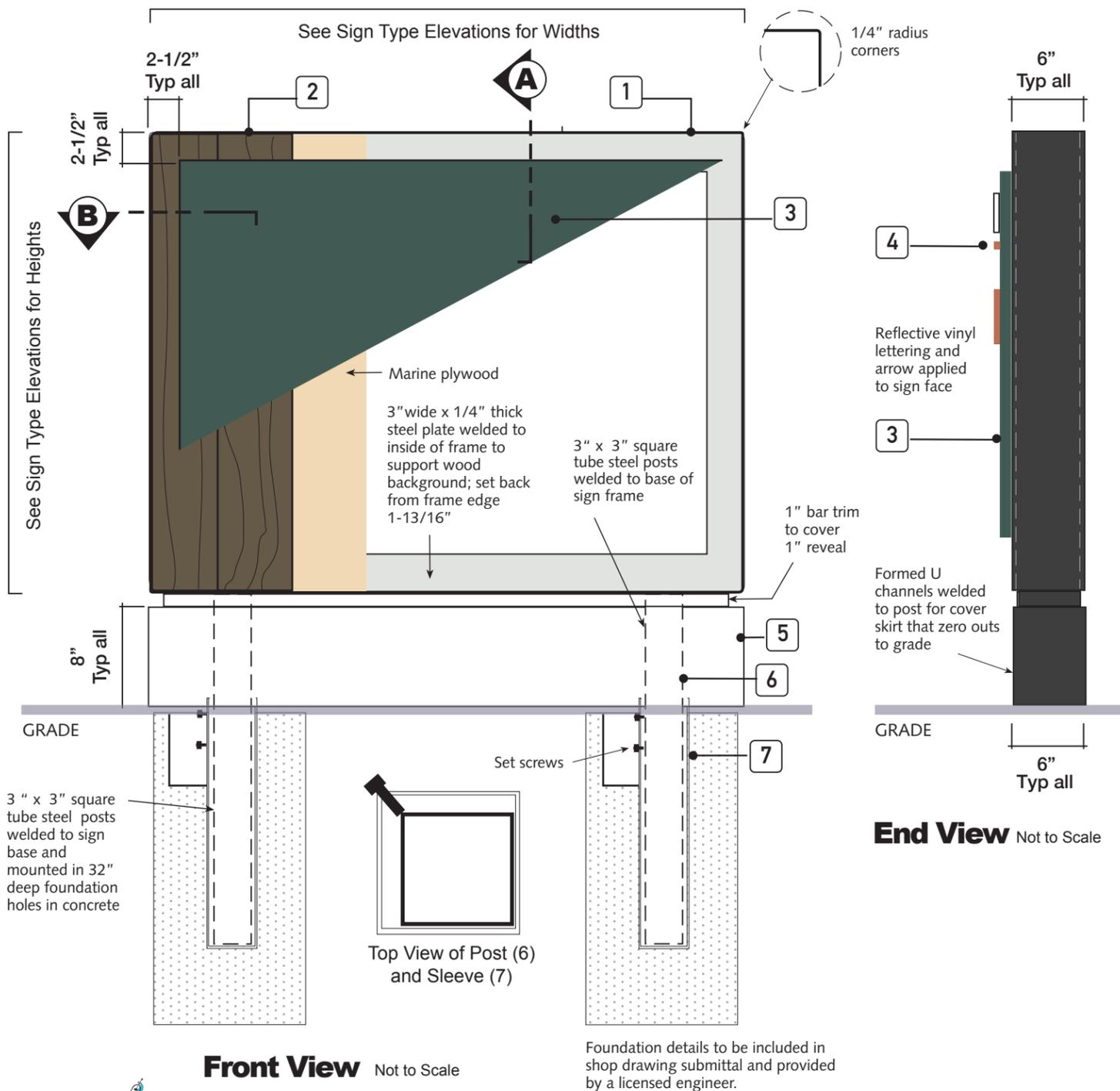
**Sign Type DD - At Foothill (Location D-2)** Not to Scale



**Sign Type D - At San Antonio (Location D-1)** Not to Scale

# Master Details

## Design Drawings for Sign Fabrication Bid



### Sign Specifications and Notes

#### Typical for Sign Types A, AA, B, D, DD

**1. Steel Frame:**  
Fabricate outer sign frame structure from 3/16" thick x 6" wide steel, 1/4" radius all frame corners. On inside of frame, weld steel plate structure: 3" x 1/4" thick, set back from outside frame edge 1-13/16", for attachment of Wood Background Panels. Powder coat entire frame structure BLACK.

**2. Wood Background Panels:**  
Reclaimed wood in vertical slats as specified on page 3 "Materials." NO NEW WOOD will be acceptable. Join slats to conceal shrinking by tongue and groove or shiplap or equal approved method. Back screw to Marine plywood panel; clad and glue wood securely for a flat surface. Completed panels to be fastened with no. 10 dia. self-tapping screws into set back steel bar structure (see note 1.)

**3. Sign Face:**  
Fabricate 1/8" thick Aluminum Pan Sign Faces, 1-1/4" deep return. Weld corners and powder coat GREEN. Fasten raised graphics and apply reflective vinyl lettering. Secure non-structural Decorative Fasteners ("Clavos" or "Mexican nail") to each corner with drill hole and adhesive. Attach panel to "L" bracket clips as shown with flat head screws.

**4. Raised Graphics:**  
Fabricate 3/8" thick aluminum water jet letters for script logo, rule and round discs. Powder coat script "Los Altos" letters OFFWHITE, and rule/discs TERRACOTTA. Attach with drilled and tapped studs/nuts.

**5. Base:**  
Form U-shaped steel perimeter base, weld and miter steel channels (1-1/2"x8"). Attach by welding around perimeter of posts 1" below base of top frame to create base. Cover 1" gap with 1"x1" square tube to create enclosed reveal. Powder coat reveal/base BLACK.

**6. Posts (Breakaway safety solution):**  
Fabricate and weld 2 each, 3"x3" steel posts (1/8" thick wall) to bottom of frame as shown, page 8B. Powder coat posts BLACK with frame structure.

**7. Sleeves:**  
Fabricate 2 each 4"x4" steel sleeves with 2 each 5/8" dia. set screws at corner edges, and weep hole in bottom plate. Sleeves to be concreted into footing with access allowance for set screws. Powder coat sleeves BLACK.

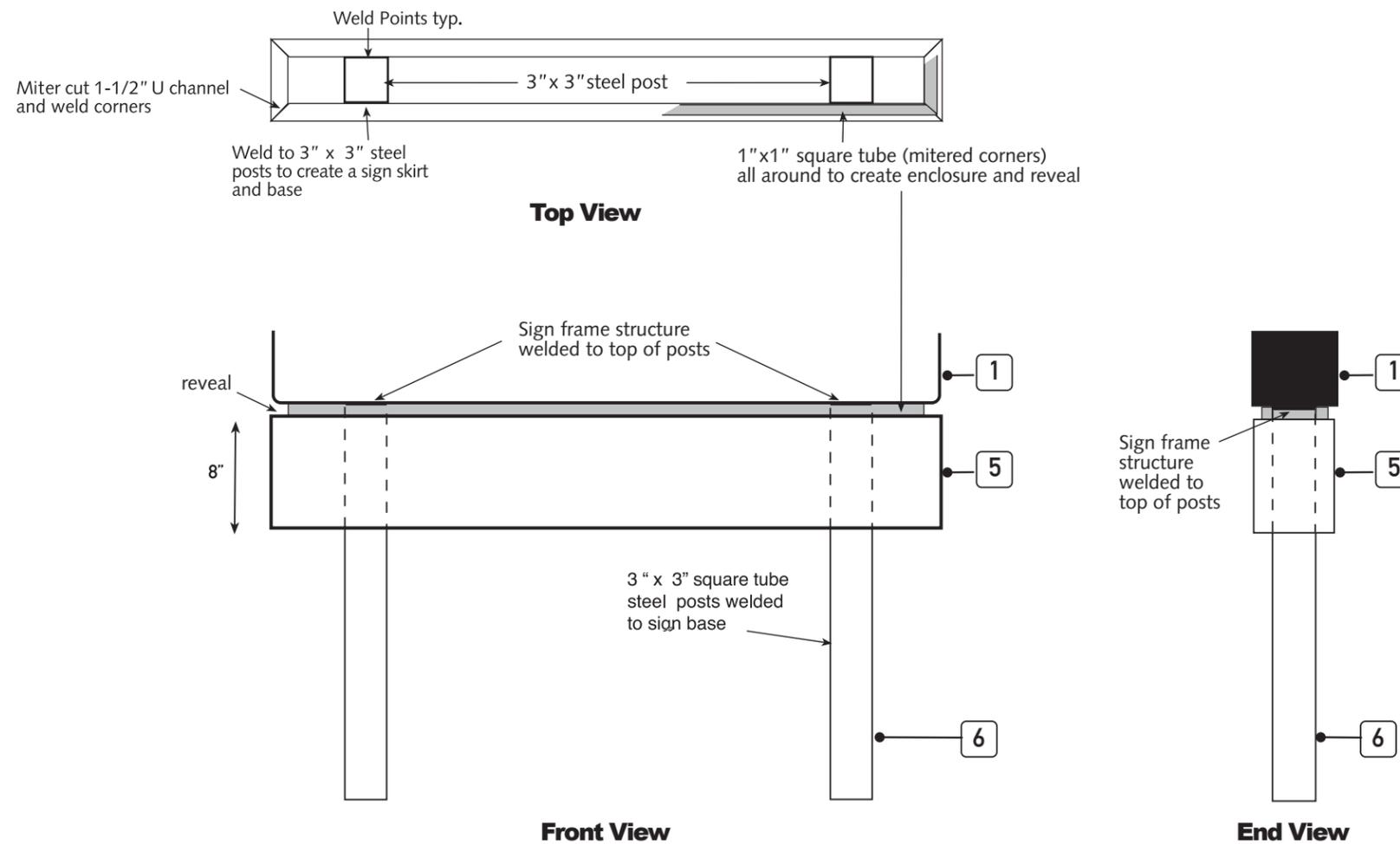
All welds clean and ground.

# Master Details

## Design Drawings for Sign Fabrication Bid

### Base Details Not to Scale

Form U-shaped steel perimeter base, weld and miter steel channels (1-1/2" x 8" ). Attach by welding around perimeter of posts 1" below base of top frame to create base. Cover 1" gap with 1" x 1" square tube to create enclosed reveal. Powder coat reveal/base.



### Sign Specifications and Notes

#### Typical for Sign Types A, AA, B, D, DD

**1. Steel Frame:**  
Fabricate outer sign frame structure from 3/16" thick x 6" wide steel, 1/4" radius all frame corners. On inside of frame, weld steel plate structure: 3" x 1/4" thick, set back from outside frame edge 1-13/16", for attachment of Wood Background Panels. Powder coat entire frame structure BLACK.

**2. Wood Background Panels:**  
Reclaimed wood in vertical slats as specified on page 3 "Materials." NO NEW WOOD will be acceptable. Join slats to conceal shrinking by tongue and groove or shiplap or equal approved method. Back screw to Marine plywood panel; clad and glue wood securely for a flat surface. Completed panels to be fastened with no. 10 dia. self-tapping screws into set back steel bar structure (see note 1.)

**3. Sign Face:**  
Fabricate 1/8" thick Aluminum Pan Sign Faces, 1-1/4" deep return. Weld corners and powder coat GREEN. Fasten raised graphics and apply reflective vinyl lettering. Secure non-structural Decorative Fasteners ("Clavos" or "Mexican nail") to each corner with drill hole and adhesive. Attach panel to "L" bracket clips as shown with flat head screws.

**4. Raised Graphics:**  
Fabricate 3/8" thick aluminum water jet letters for script logo, rule and round discs. Powder coat script "Los Altos" letters OFFWHITE, and rule/discs TERRACOTTA. Attach with drilled and tapped studs/nuts.

**5. Base:**  
Form U-shaped steel perimeter base, weld and miter steel channels (1-1/2"x8" ). Attach by welding around perimeter of posts 1" below base of top frame to create base. Cover 1" gap with 1" x 1" square tube to create enclosed reveal. Powder coat reveal/base BLACK.

**6. Posts (Breakaway safety solution):**  
Fabricate and weld 2 each, 3"x3" steel posts (1/8" thick wall ) to bottom of frame as shown, page 8B. Powder coat posts BLACK with frame structure.

**7. Sleeves:**  
Fabricate 2 each 4"x4" steel sleeves with 2 each 5/8" dia. set screws at corner edges, and weep hole in bottom plate. Sleeves to be concreted into footing with access allowance for set screws. Powder coat sleeves BLACK.

All welds clean and ground.

# Sign Type E

## Design Drawings for Sign Fabrication Bid

### General Description:

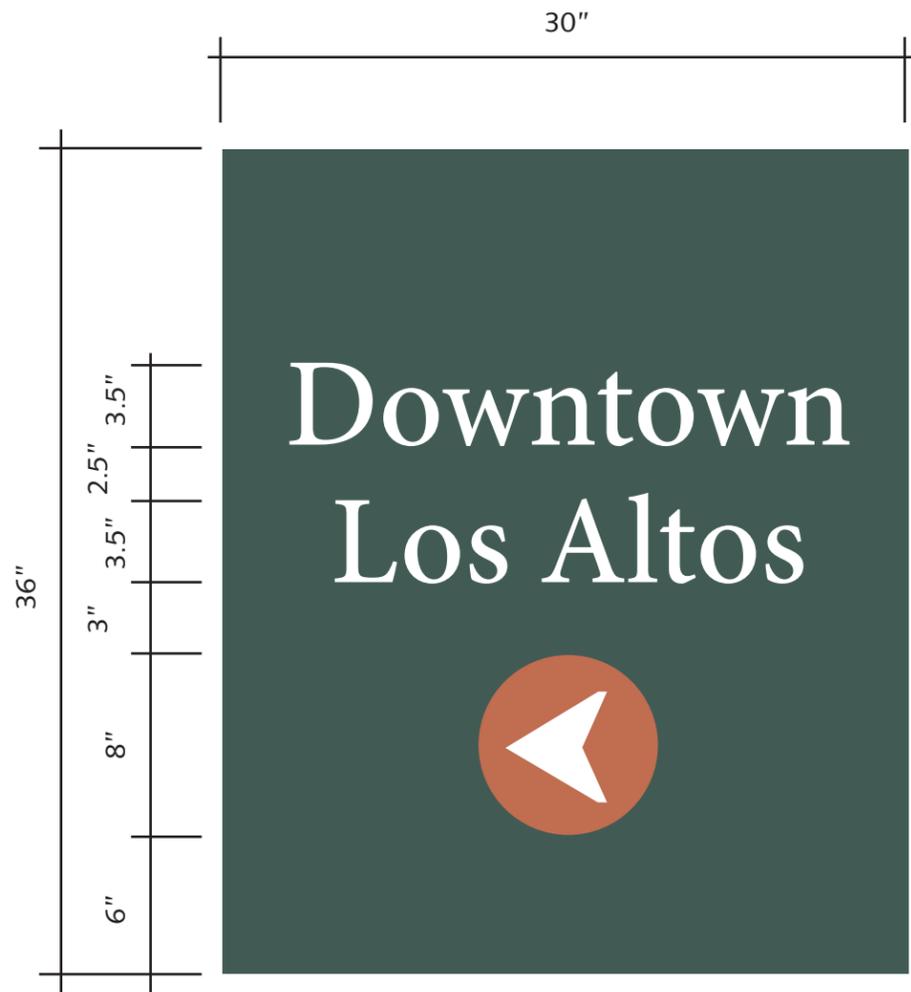
3-1/2" square tube steel post, powder coated BLACK.

1/8" aluminum sign face, GREEN.

Waterjet cut 3/8" thick aluminum circle, TERRACOTTA. Reflective vinyl letters and arrow.

All metals powder coated.

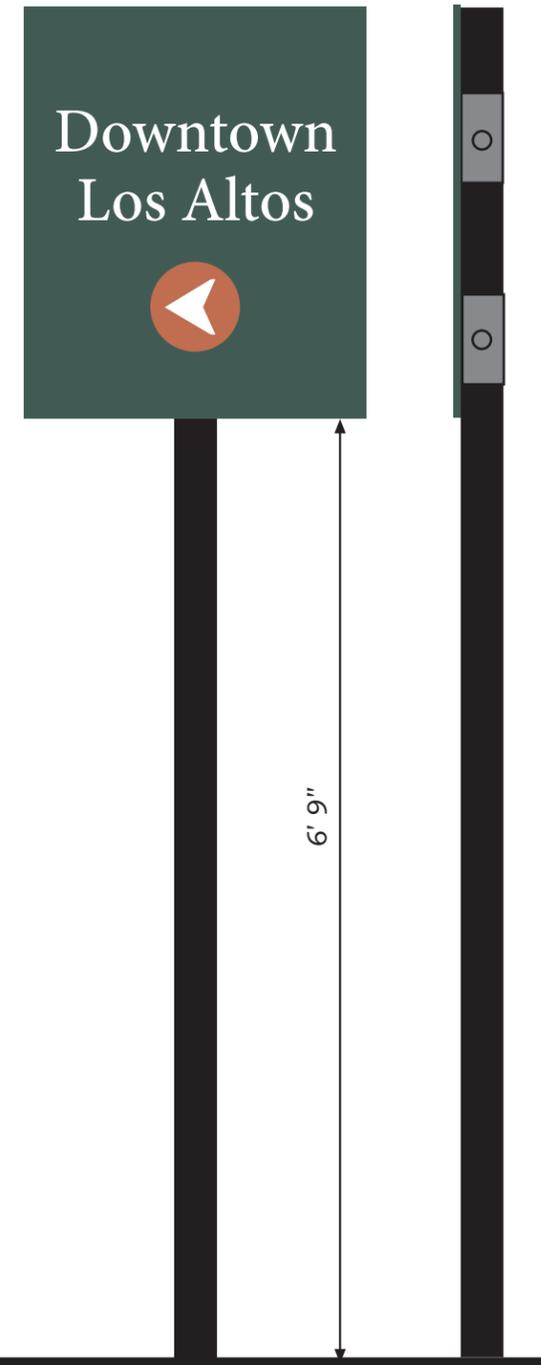
Attach face to post with no visible fasteners on front. Install post in sleeve in concrete foundation.



**2-line layout** Not to Scale



**3-line layout** Not to Scale

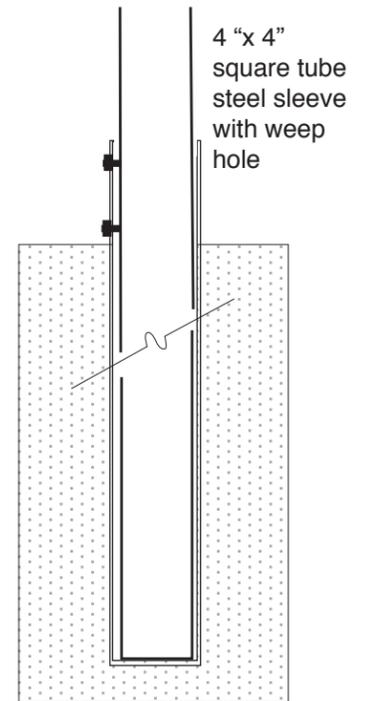


**Front and Side view** Not to Scale

Sleeve:  
Fabricate 4"x4" steel sleeve with 5/8" dia. set screws at corner edges, and weep hole in bottom plate. Sleeves to be concreted into footing with access allowance for set screws. Powder coat sleeves BLACK.

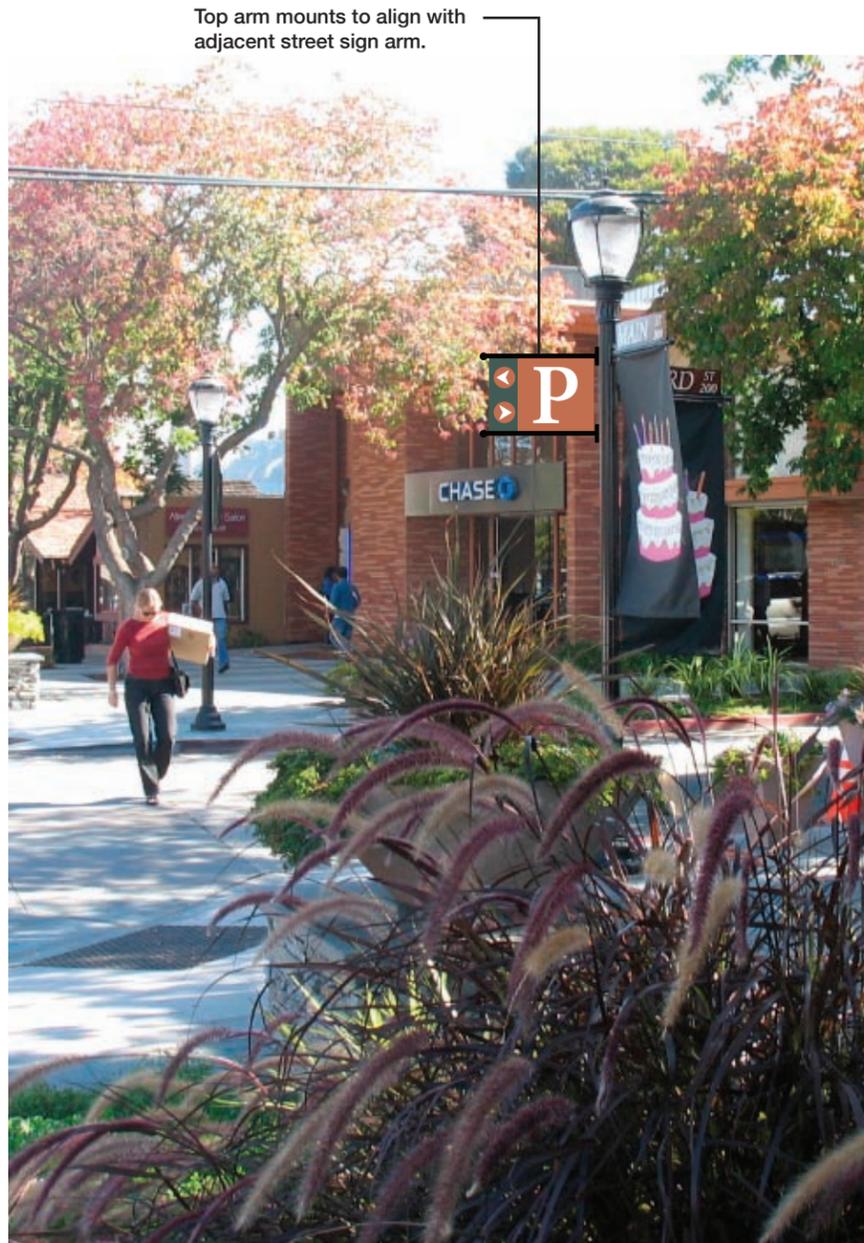


Top View of post, sleeve and set screws

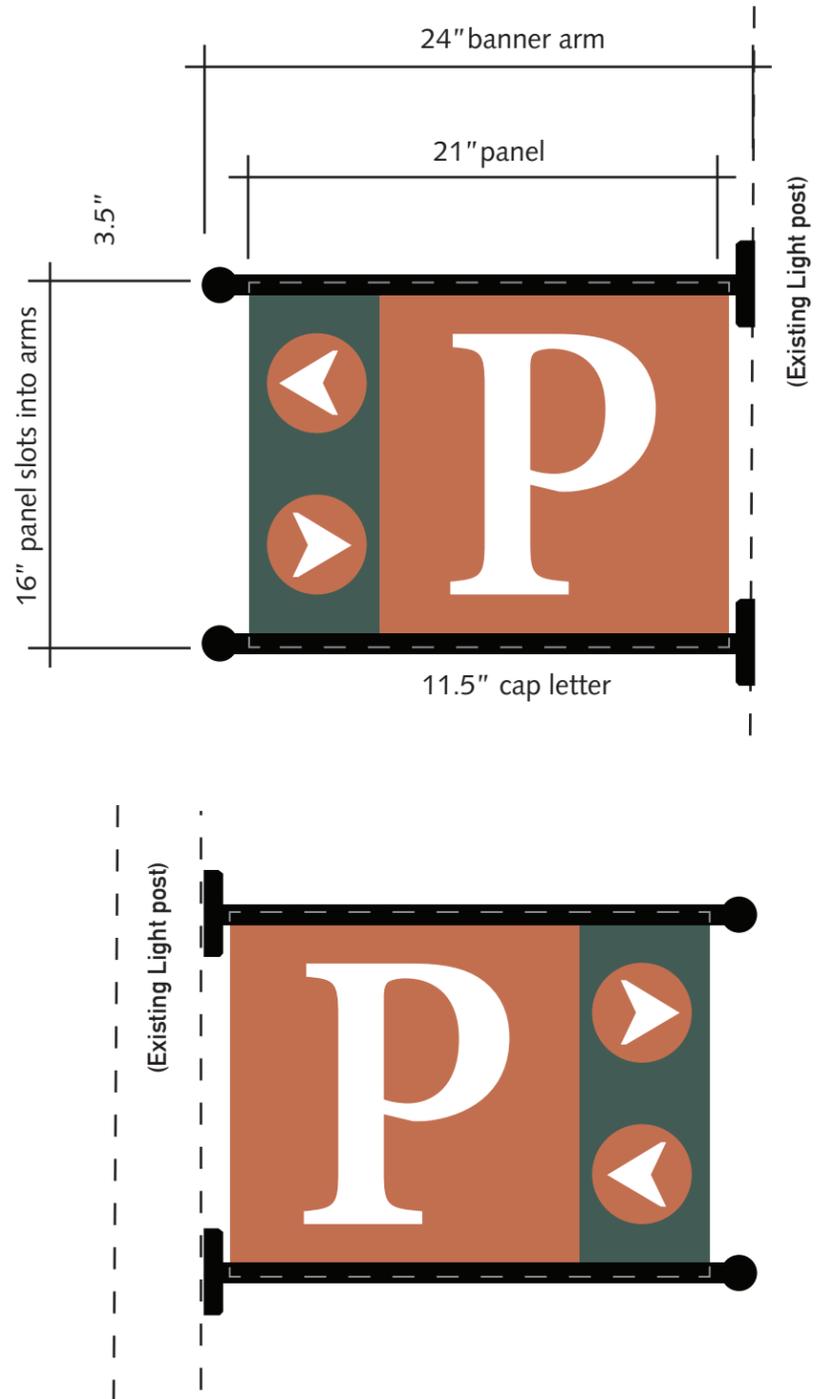


Posts mounted in sleeve in 32" deep foundation holes in concrete

**Sign Type PD - Parking Directional**  
**Design Drawings for Sign Fabrication Bid**



**Sign attached to existing light post** Not to Scale



**Double-sided Panels** Not to Scale

**General Description:**

**Sign Panel:**  
 Fabricate double-sided sign panel from 3/16" thick aluminum, square corners; powder coat finishes GREEN and TERRACOTTA. Reflective vinyl "P" and arrows.

**Sign Arm:**  
 24" Banner Arm product by Sternberg Lighting (see below). Cut slot into each arm to receive sign panel; secure with welds.



Sign arms and attachments to post are designed to match City's existing banner/street sign arms, black finish, furnished by Sternberg Lighting.

Source: Double Banner Arms, [www.sternberglighting.com](http://www.sternberglighting.com)  
 Local rep: Associated Lighting, Oakland (510) 638-3800

# Sign Location & Message Schedule

## Design Drawings for Sign Fabrication Bid

### SIGN SCHEDULE #1: CITYWIDE WAYFINDING

Location No.	Sign Type	Description	Side	Message	Notes
<b>A 2</b>	AA	Primary Auto Directional <i>El Camino near Village Court</i>	1	<i>Los Altos (script)</i>  Downtown Next Right	New El Camino sign
<b>A 3</b>	AA	Primary Auto Directional <i>El Camino near Sherwood</i>	1	<i>Los Altos (script)</i>  Downtown Next Left	New El Camino sign
<b>A 6</b>	A	Primary Auto Directional <i>Foothill near State St.</i>	1	<i>Los Altos (script)</i>  < Downtown	New Foothill sign
<b>A 7</b>	A	Primary Auto Directional <i>Foothill near Tyndall</i>	1	<i>Los Altos (script)</i>  > Civic Center  Downtown Right on Main Street	Replaces existing sign
<b>A 8</b>	A	Primary Auto Directional <i>Foothill near Parma Way</i>	1	<i>Los Altos (script)</i>  Rancho Shopping Center Next Left	Replaces existing sign
<b>A 8</b>			2	<i>Los Altos (script)</i>  Downtown 1 1/4 miles	
<b>A 9</b>	A	Primary Auto Directional <i>Foothill near Manor Way</i>	1	<i>Los Altos (script)</i>  > Loyola Corners Retail District Next Right	Replaces existing sign  Remove other green/grey sign with duplicate message nearby.

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### SIGN SCHEDULE #1: CITYWIDE WAYFINDING

Location No.	Sign Type	Description	Side	Message	Notes
<b>A10</b>	A	Primary Auto Directional <i>Foothill near Miguel</i>	1	<i>Los Altos (script)</i>  Woodland Library Left on Grant	Replaces existing sign
<b>A10</b>			2	<i>Los Altos (script)</i>  > Loyola Corners Retail District	
<b>A11</b>	A	Primary Auto Directional <i>Foothill near Grant</i>	1	<i>Los Altos (script)</i>  Woodland Retail District Next Left	Replaces existing sign
<b>A11</b>			2	<i>Los Altos (script)</i>  ^ Downtown 3 miles > Woodland Library	
<b>A12</b>	A	Primary Auto Directional <i>Foothill at Crist Dr.</i>	1	<i>Los Altos (script)</i>  < Foothill Crossing Shopping Center	New Foothill sign
<b>A12</b>			2	<i>Los Altos (script)</i>  Woodland Retail District Next Right	
<b>B 3</b>	B	Collector Auto Directional <i>San Antonio near Mt. Hamilton</i>	1	<i>Los Altos (script)</i>  < Civic Center  Downtown Right Lane	Replaces existing sign

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### SIGN SCHEDULE #1: CITYWIDE WAYFINDING

Location No.	Sign Type	Description	Side	Message	Notes
<b>B 4</b>	B	Collector Auto Directional <i>San Antonio near Hillview</i>	1	<i>Los Altos (script)</i>  < Library History Museum	Replaces existing sign but at new location in median, opposite Civic Center sign near Library  (MOCKUP)
<b>B 4</b>			2	<i>Los Altos (script)</i>  < Downtown Left on Main Street	(MOCKUP)
<b>B 8</b>	B	Collector Auto Directional <i>El Monte near University</i>	1	<i>Los Altos (script)</i>  Downtown Left on Foothill Expy	
<b>E 2</b>	E	Post-mtd Auto Directional <i>At W. Edith turn lane</i>	1	> Downtown Los Altos	New post
<b>E 3</b>	E	Post-mtd Auto Directional <i>Foothill, south of Main St.</i>	1	> Downtown Los Altos Main Street	New post
<b>E 9</b>	E	Post-mtd Auto Directional <i>Miramonte and A Street</i>	1	> Loyola Corners Retail District	Note current sign clutter problem here. Confirm mounting solution first with City - whether to attach to banner post, or install with new post.
<b>E10</b>	E	Post-mtd Auto Directional <i>Foothill before Fremont exit</i>	1	> Loyola Corners Retail District	New post
<b>E11</b>	E	Collector Auto Directional <i>Fremont exit off of Foothill</i>	1	< Loyola Corners Retail District	New post; County permit

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# Sign Location & Message Schedule

## Design Drawings for Sign Fabrication Bid

### SIGN SCHEDULE #2: DOWNTOWN PARKING

Location No.	Sign Type	Description	Side	Message	Notes
<u>PD 1</u>	PD	Parking Directional Main and Third (NE Corner)	1 & 2	P < >	Sign attaches to existing post
<u>PD 2</u>	PD	Parking Directional Main and Third (SW Corner)	1 & 2	P < >	Sign attaches to existing post
<u>PD 3</u>	PD	Parking Directional Main and Second (NE Corner)	1 & 2	P < >	Sign attaches to existing post
<u>PD 4</u>	PD	Parking Directional Main and Second (SW Corner)	1 & 2	P < >	Sign attaches to existing post
<u>PD 5</u>	PD	Parking Directional State and Second (SW Corner)	1 & 2	P < >	Sign attaches to existing post
<u>PD 6</u>	PD	Parking Directional State and Second (NE Corner)	1 & 2	P < >	Sign attaches to existing post
<u>PD 7</u>	PD	Parking Directional State and Third (SW Corner)	1 & 2	P < >	Sign attaches to existing post

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### SIGN SCHEDULE #2: DOWNTOWN PARKING

Location No.	Sign Type	Description	Side	Message	Notes
<u>PD 8</u>	PD	Parking Directional State and Third (NE Corner)	1 & 2	P < >	Sign attaches to existing post
<u>PD 9</u>	PD	Parking Directional State and Fourth (NE Corner)	1 & 2	P < >	Sign attaches to existing post

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### Add Alternate 1:

### SIGN SCHEDULE #3: DOWNTOWN GATEWAYS

Location No.	Sign Type	Description	Side	Message	Notes
<u>D-1</u>	D	San Antonio Rd. and Main Street	1	Welcome to Downtown Los Altos (script)	New Sign
<u>D-2</u>	DD	Foothill Expressway and Main Street	2	Welcome to Downtown Los Altos (script)	Replaces existing sign

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# Heavy Equipment Operation

Best Management Practices for the Construction Industry



Best Management Practices for the

- Vehicle and equipment operators
- Site supervisors
- General contractors
- Home builders
- Developers

## Doing The Job Right

### Site Planning and Preventive Vehicle Maintenance

- Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks.
- Perform major maintenance, repair jobs, and vehicle and equipment washing off site where cleanup is easier.
- If you must drain and replace motor oil, radiator coolant, or other fluids on site, use drip pans or drop cloths to catch drips and spills. Collect all spent fluids, store in separate containers, and properly dispose as hazardous waste (recycle whenever possible).
- Do not use diesel oil to lubricate equipment parts, or clean equipment. Use only water for any crank cleaning.
- Cover exposed fifth wheel hitch and other oily or greasy equipment during rain events.

### Spill Cleanup

- Clean up spills immediately when they happen.
- Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags) whenever possible and properly dispose of absorbent materials.
- Sweep up spilled dry materials immediately. Never attempt to "wash them away" with water, or bury them.
- Use as little water as possible for dust control. Ensure water used doesn't leave silt or discharge to storm drains.
- Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- Report significant spills to the appropriate local spill response agencies immediately.
- If the spill poses a significant hazard to human health and safety, property or the environment, you must also report it to the State Office of Emergency Services.

### Storm water Pollution from Heavy Equipment on Construction Sites

Poorly maintained vehicles and heavy equipment that leak fuel, oil, antifreeze or other fluids on the construction site are common sources of storm drain pollution. Prevent spills and leaks by isolating equipment from runoff channels, and by watching for leaks and other maintenance problems. Remove construction equipment from the site as soon as possible.

# Landscaping, Gardening, and Pool Maintenance

Best Management Practices for the Construction Industry



Best Management Practices for the

- Landscapers
- Gardeners
- Swimming pool/spa service and repair workers
- General contractors
- Home builders
- Developers
- Homeowners

## Doing The Right Job

### General Business Practices

- Protect stockpiles and landscaping materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Store pesticides, fertilizers, and other chemicals indoors or in a shed or storage cabinet.
- Schedule grading and excavation projects during dry weather.
- Use temporary check dams or ditches to divert runoff away from storm drains.
- Protect storm drains with sandbags or other sediment controls.
- Re-vegetation is an excellent form of erosion control for any site.

### Landscaping/Garden Maintenance

- Use pesticides sparingly, according to instructions on the label. Rinse empty containers, and use rinse water as product. Dispose of rinsed, empty containers in the trash. Dispose of unused pesticides as hazardous waste.
- Collect lawn and garden clippings, pruning waste, and tree trimmings. Chip if necessary, and compost.
- In communities with outside pick-up of yard waste, place clippings and pruning waste at the curb in approved bags or containers. Or, take to a landfill that composts yard waste. No curbside pick-up of yard waste is available for commercial properties.

### Storm Drain Pollution From Landscaping and Swimming Pool Maintenance

Many landscaping activities expose soils and increase the likelihood that earth and garden chemicals will run off into the storm drains during irrigation or when it rains. Swimming pool water containing chlorine and copper-based algicides should never be discharged to storm drains. These chemicals are toxic to aquatic life.

## Doing The Job Right

### General Business Practices

- Do not blow or rake leaves, etc. into the street, or place yard waste in gutters or on dirt shoulders, unless you are piling them for recycling (allowed by San Jose and unincorporated County only). Sweep up any leaves, litter or residue in gutters or on street.
- In San Jose, leave yard waste for curbside recycling pickup in piles in the street, 16 inches from the curb and completely out of the flow line to any storm drain.

### Pool/Fountain/Spa Maintenance

- Never discharge pool or spa water to a street or storm drain. Discharge to a sanitary sewer cleanout.
- If possible, when emptying a pool or spa, let chlorine dissipate for a few days and then recycle/reuse water by draining it into a landscaped area.
- Do not use copper-based algicides. Control algae with chlorine or other alternatives, such as sodium bromide.

### Filter Cleaning

- Never clean a filter in the street or near a storm drain. Rinse cartridge and diatomaceous earth filters onto a dirt area, and spread filter residue into soil. Dispose of spent diatomaceous earth in the garbage.
- If there is no suitable dirt area, call your local wastewater treatment plant for information on discharging backwash or rinse water to the sanitary sewer.

# Roadwork and Paving

Best Management Practices for the Construction Industry



Best Management Practices for the

- Road crews
- Drivers/side-walk/parking lot construction crews
- Seal coat contractors
- Operators of grading equipment, paving machines, dump trucks, concrete mixers
- Construction inspectors
- General contractors
- Home builders
- Developers

## Doing The Job Right

### General Business Practices

- Develop and implement erosion/sediment control plans for roadway embankments.
- Schedule excavation and grading work during dry weather.
- Check for and repair leaking equipment.
- Perform major equipment repairs at designated areas in your maintenance yard, where cleanup is easier. Avoid performing equipment repairs at construction sites.
- When refueling or when vehicle/equipment maintenance must be done on site, designate a location away from storm drains and creeks.
- Do not use diesel oil to lubricate equipment parts or clean equipment.
- Recycle used oil, concrete, broken asphalt, etc. whenever possible, or dispose of properly.

### During Construction

- Avoid paving and seal coating in wet weather, or when rain is forecast, to prevent fresh materials from contacting stormwater runoff.
- Cover and seal catch basins and manholes when applying seal coat, slurry seal, fog seal, or similar materials.
- Protect drainage ways by using earth dikes, sand bags, or other controls to divert or trap and filter runoff.

### Storm Drain Pollution from Roadwork

Road paving, surfacing, and pavement removal happen right in the street, where there are numerous opportunities for asphalt, saw-cut slurry, or excavated material to illegally enter storm drains. Extra planning is required to store and dispose of materials properly and guard against pollution of storm drains, creeks, and the Bay.

## Doing The Job Right

### General Business Practices

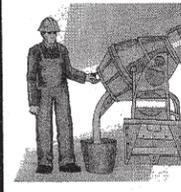
- Never wash excess material from exposed aggregate concrete or similar treatments into a street or storm drain. Collected and recycle, or dispose to dirt area.
- Cover stockpiles (asphalt, sand, etc.) and other construction materials with plastic tarps. Protect from rainfall and prevent runoff with temporary roofs or plastic sheets and berms.
- Park paving machines over drip pans or absorbent material (cloth, rags, etc.) to catch drips when not in use.
- Clean up all spills and leaks using "dry" methods (with absorbent materials, and/or rags), or use up, remove, and properly dispose of contaminated soil.
- Collect and recycle or appropriately dispose of excess abrasive gravel or sand.
- Avoid over-application by water trucks for dust control.

### Asphalt/Concrete Removal

- Avoid creating excess dust when breaking asphalt or concrete.
- After breaking up old pavement, be sure to remove all chunks and pieces. Make sure broken pavement does not come in contact with rainfall or runoff.
- When making saw cuts, use as little water as possible. Shovel or vacuum saw-cut slurry and remove from the site. Cover or protect storm drain inlets during saw-cutting. Sweep up, and properly dispose of, all residues.
- Sweep, never hose down streets to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquor in storm drains.

# Fresh Concrete and Mortar Application

Best Management Practices for the Construction Industry



Best Management Practices for the

- Masons and bricklayers
- Sidewalk construction crews
- Patio construction workers
- Construction inspectors
- General contractors
- Home builders
- Developers
- Concrete delivery/pumping workers

## Doing The Job Right

### General Business Practices

- Wash out concrete mixers only in designated wash-out areas in your yard, away from storm drains and waterways, where the water will flow into a temporary waste pit in a dirt area. Let water percolate through soil and dispose of settled, hardened concrete as garbage. Whenever possible, recycle washout by pumping back into mixers for reuse.
- Wash out chutes onto dirt areas at site that do not flow to streets or drains.
- Always store both dry and wet materials under cover, protected from rainfall and runoff and away from storm drains or waterways. Protect dry materials from wind.
- Secure bags of cement after they are open. Be sure to keep wind-blown cement powder away from streets, gutters, storm drains, rainfall, and runoff.
- Do not use diesel fuel as a lubricant on concrete forms, tools, or trailers.

### Storm Drain Pollution from Fresh Concrete and Mortar Applications

Fresh concrete and cement-related mortars that wash into lakes, streams, or estuaries are toxic to fish and the aquatic environment. Disposing of these materials to the storm drains or creeks can block storm drains, causes serious problems, and is prohibited by law.

## During Construction

- Don't mix up more fresh concrete or cement than you will use in a two-hour period.
- Set up and operate small mixers on tarps or heavy plastic drop cloths.
- When cleaning up after driveway or sidewalk construction, wash fines onto dirt areas, not down the driveway or into the street or storm drain.
- Protect applications of fresh concrete and mortar from rainfall and runoff until the material has dried.
- Wash down exposed aggregate concrete only when the wash water can (1) flow onto a dirt area; (2) drain onto a bermed surface from which it can be pumped and disposed of properly; or (3) be vacuumed from a catchment created by blocking a storm drain inlet. If necessary, divert runoff with temporary berms. Make sure runoff does not reach gutters or storm drains.
- When breaking up pavement, be sure to pick up all the pieces and dispose of properly. Recycle large chunks of broken concrete at a landfill.
- Never bury waste material. Dispose of small amounts of excess dry concrete, grout, and mortar in the trash.
- Never dispose of washout into the street, storm drains, drainage ditches, or streams.

# Preventing Pollution: It's Up to Us

In the Santa Clara Valley, storm drains transport water directly to local creeks and San Francisco Bay without treatment. Storm water pollution is a serious problem for wildlife dependent on our waterways and for the people who live near polluted streams or bay lands. Some common sources of this pollution include spilled oil, fuel, and fluids from vehicles and heavy equipment; construction debris; sediment created by erosion; landscaping runoff containing pesticides or weed killers; and materials such as used motor oil, antifreeze, and paint products that people pour or spill into a street or storm drain.

Thirteen valley municipalities have joined together with Santa Clara County and the Santa Clara Valley Water District to educate local residents and businesses and fight storm water pollution. TO comply with this program, contractors must comply with the practices described in this drawing sheet.

## Spill Response Agencies

DIAL 9-1-1  
State Office of Emergency Services Warning Center (24 hours): 800-852-7550  
Santa Clara County Environmental Health Services: (408) 299-6930

## Local Pollution Control Agencies

County of Santa Clara Pollution Prevention Program: (408) 441-1195  
County of Santa Clara Integrated Waste Management Program: (408) 441-1198  
County of Santa Clara District Attorney Environmental Crimes Hotline: (408) 299-TIPS  
Santa Clara County Recycling Hotline: 1-800-533-8414  
Santa Clara Valley Water District: (408) 265-2600  
Santa Clara Valley Water District Pollution Hotline: 1-888-510-5151  
Regional Water Quality Control Board San Francisco Bay Region: (510) 622-2300  
Palo Alto Regional Water Quality Control Plant: (650) 329-2598  
Serving East Palo Alto Sanitary District, Los Altos, Los Altos Hills, Mountain View, Palo Alto, Stanford

## City of Los Altos

Building Department: (650) 947-2752  
Engineering Department: (650) 947-2780

# General Construction And Site Supervision

Best Management Practices For Construction



Best Management Practices for the

- General contractors
- Site supervisors
- Inspectors
- Home builders
- Developers

### Storm Drain Pollution from Construction Activities

Construction sites are common sources of storm water pollution. Materials and wastes that blow or wash into a storm drain, gutter, or street have a direct impact on local creeks and the Bay. As a contractor, or site supervisor, owner or operator of a site, you may be responsible for any environmental damage caused by your subcontractors or employees.

## Doing The Job Right

### General Principals

- Keep an orderly site and ensure good housekeeping practices are used.
- Maintain equipment properly.
- Cover materials when they are not in use.
- Keep materials away from streets, storm drains and drainage channels.
- Ensure dust control water doesn't leave site or discharge to storm drains.

### Advance Planning To Prevent Pollution

- Schedule excavation and grading activities for dry weather periods. To reduce soil erosion, plant temporary vegetation or place other erosion controls before rain begins. Use the Erosion and Sediment Control Manual, available from the Regional Water Quality Control Board, as a reference.
- Control the amount of runoff crossing your site (especially during excavation) by using berms or temporary or permanent drainage ditches to divert water flow around the site. Reduce storm water runoff velocities by constructing temporary check dams or berms where appropriate.
- Train your employees and subcontractors. Make these best management practices available to everyone who works on the construction site. Inform subcontractors about the storm water requirements and their own responsibilities.

### Good Housekeeping Practices

- Designate one area of the site for auto parking, vehicle refueling, and routine equipment maintenance. The designated area should be well away from streams or storm drain inlets, bermed if necessary. Make major repairs off site.
- Keep materials out of the rain - prevent runoff contamination at the source. Cover exposed piles of soil or construction materials with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.
- Keep pollutants off exposed surfaces. Place trashcans and recycling receptacles around the site to minimize litter.

## Doing The Job Right

### General Business Practices

- Clean up leaks, drips and other spills immediately so they do not contaminate soil or groundwater or leave residue on paved surfaces. Use dry cleanup methods whenever possible. If you must use water, use just enough to keep the dust down.
- Cover and maintain dumpsters. Check frequently for leaks. Place dumpsters under roofs or cover with tarps or plastic sheeting secured around the outside of the dumpster. Never clean out a dumpster by hosing it down on the construction site.
- Set portable toilets away from storm drains. Make sure portable toilets are in good working order. Check frequently for leaks.

### Materials/Waste Handling

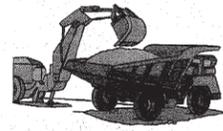
- Practice Source Reduction - minimize waste when you order materials. Order only the amount you need to finish the job.
- Use recyclable materials whenever possible. Arrange for pick-up of recyclable materials such as concrete, asphalt, scrap metal, solvents, degreasers, cleaned vegetation, paper, rock, and vehicle maintenance materials such as used oil, antifreeze, batteries, and tires.
- Dispose of all wastes properly. Many construction materials and wastes, including solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and cleaned vegetation can be recycled. Materials that cannot be recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never bury waste materials or leave them in the street or near a creek or stream bed.

### Permits

- In addition to local building permits, you will need to obtain coverage under the State's General Construction Activity Storm Water Permit if your construction site disturbs one acre or more. Obtain information from the Regional Water Quality Control Board.

# Earth-Moving And Dewatering Activities

Best Management Practices for the Construction Industry



Best Management Practices for the

- Bulldozer, back hoe, and grading machine operators
- Dump truck drivers
- Site supervisors
- General contractors
- Home builders
- Developers

## Doing The Job Right

### General Business Practices

- Schedule excavation and grading work during dry weather.
- Perform major equipment repairs away from the job site.
- When refueling or vehicle/equipment maintenance must be done on site, designate a location away from storm drains.
- Do not use diesel oil to lubricate equipment parts, or clean equipment.

### Practices During Construction

- Remove existing vegetation only when absolutely necessary. Plant temporary vegetation for erosion control on slopes or where construction is not immediately planned.
- Protect down slope drainage courses, streams, and storm drains with wattles, or temporary drainage swales. Use check dams or ditches to divert runoff around excavations. Refer to the Regional Water Quality Control Board's Erosion and Sediment Control Field Manual for proper erosion and sediment control measures.

### Storm Drain Pollution from Earth-Moving Activities and Dewatering

Soil excavation and grading operations loosen large amounts of soil that can flow or blow into storm drains when handled improperly. Sediments in runoff can clog storm drains, smother aquatic life, and destroy habitats in creeks and the Bay. Effective erosion control practices reduce the amount of runoff crossing a site and slow the flow with check dams or roughened ground surfaces. Contaminated groundwater is a common problem in the Santa Clara Valley. Depending on soil type and site history, groundwater pumped from construction sites may be contaminated with toxics (such as oil or solvents) or laden with sediments. Any of these pollutants can harm wildlife in creeks or the Bay, or interfere with wastewater treatment plant operation. Discharging sediment-laden water from a dewatering site into any water of the state without treatment is prohibited.

## Doing The Job Right

### General Business Practices

- Cover stockpiles and excavated soil with secured tarps or plastic sheeting.

### Dewatering Operations

1. Check for Toxic Pollutants
  - Check for odors, discoloration, or an oily sheen on groundwater.
  - Call your local wastewater treatment agency and ask whether the groundwater must be tested.
  - If contamination is suspected, have the water tested by a certified laboratory.
  - Depending on the test results, you may be allowed to discharge pumped groundwater to the storm drain (if no sediments present) or sanitary sewer. OR, you may be required to collect and haul pumped groundwater offsite for treatment and disposal at an appropriate treatment facility.

### Check for Sediment Levels

2. Check for Sediment Levels
  - If the water is clear, the pumping time is less than 24 hours, and the flow rate is less than 20 gallons per minute, you may pump water to the street or storm drain.
  - If the pumping time is more than 24 hours and the flow rate greater than 20 gpm, call your local wastewater treatment plant for guidance.
  - If the water is not clear, solids must be filtered or settled out by pumping to a settling tank prior to discharge. Options for filtering include:
    - Pumping through a perforated pipe sunk part way into a small pit filled with gravel.
    - Pumping from a bucket placed below water level using a submersible pump.
    - Pumping through a filtering device such as a swimming pool filter or filter fabric wrapped around end of suction pipe.
  - When discharging to a storm drain, protect the inlet using a barrier of burlap bags filled with drain rock, or cover inlet with filter fabric anchored under the grate. OR pump water through a grassy swale prior to discharge.

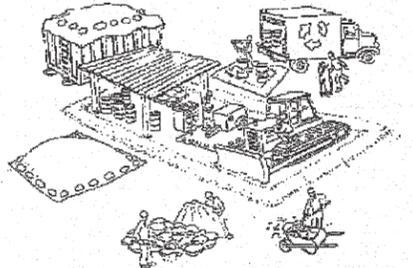
# Blueprint for a Clean Bay

Remember: The property owner and the contractor share ultimate responsibility for the activities that occur on a construction site. You may be held responsible for any environmental damage caused by your subcontractors or employees.

# Best Management Practices for the Construction Industry



## Santa Clara Urban Runoff Pollution Prevention Program



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