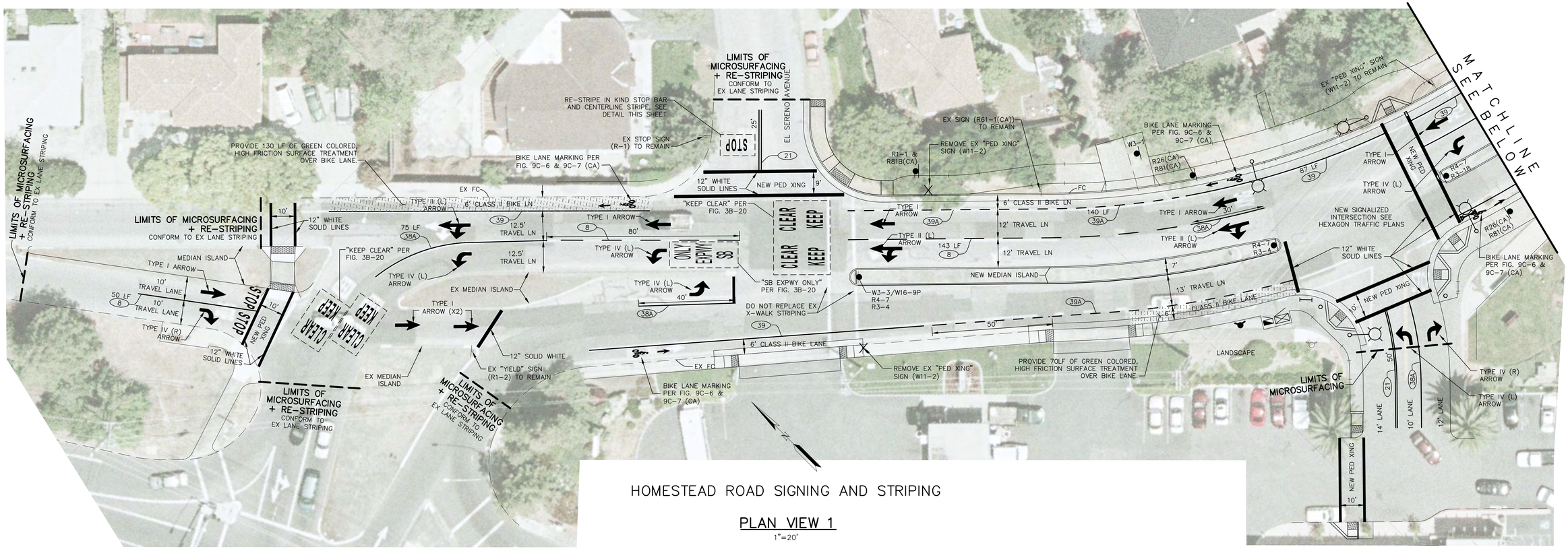
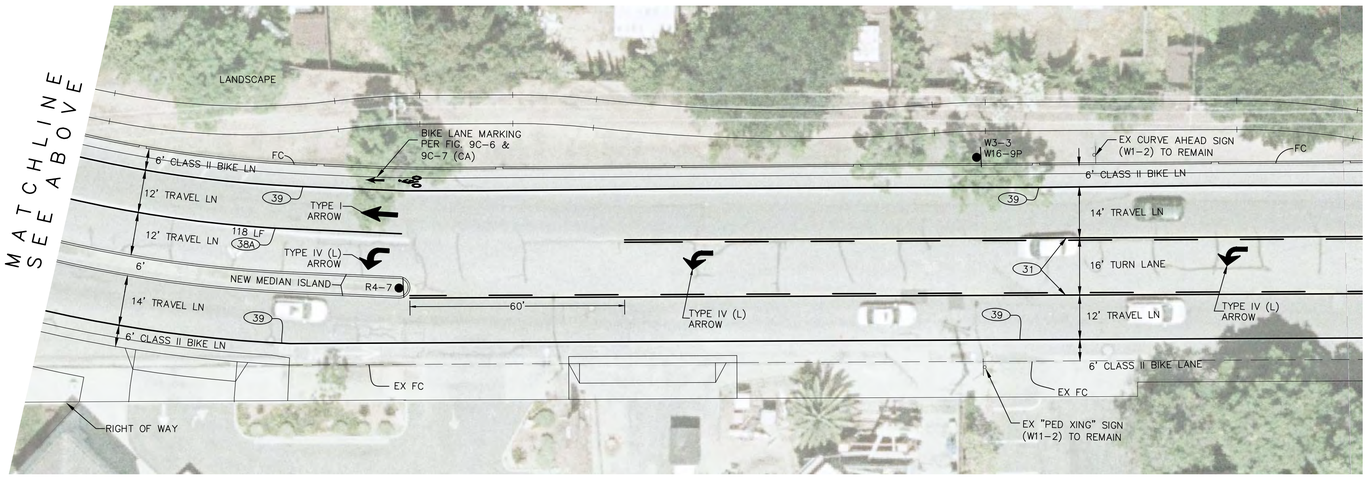
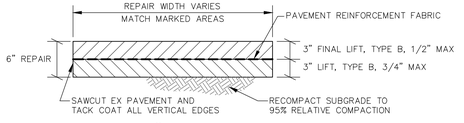


HOMESTEAD ROAD SIGNING AND STRIPING

PLAN VIEW 1

1"=20'





6" DIGOUT DETAIL

NO SCALE

NOTES:

1. CONTRACTOR SHAILL DIG OUT AND REPAIR MARKED AREAS PER THE DIGOUT DETAIL PRIOR TO MICROSURFACING PLACEMENT.
2. CONTRACTOR SHALL MICROSURFACE ALL ASPHALT SURFACES PER THE PROJECT SPECIFICATIONS AND TO THE LIMITS SHOWN ON THE MICROSURFACING AND SIGNING AND STRIPING PLANS PRIOR TO STRIPING PLACEMENT.
3. CONTRACTOR SHALL APPLY STRIPING PER THE PROJECT SPECIFICATIONS AND THE MICROSURFACING AND SIGNING AND STRIPING PLANS.
4. ALL DIGOUTS AND MICROSURFACE TREATMENTS FOR THIS PROJECT ARE PART OF AN ADD ALTERNATIVE BID NO. 1.

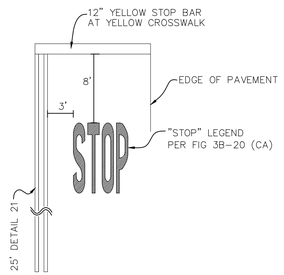
HOMESTEAD ROAD SIGNING AND STRIPING

PLAN VIEW 2

1"=20'

GENERAL SIGNING & STRIPING NOTES

1. ALL SIGNING AND STRIPING SHALL CONFORM TO THE APPROPRIATE PROVISIONS OF PART 2 "SIGNS" AND PART 3 "MARKINGS" OF THE LATEST VERSION (2012) OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CAMUTCD).
2. REMOVE AND REPLACE EXISTING SIGNING AND STRIPING AS SHOWN BETWEEN THE RE-STRIPING LIMITS.
3. EXISTING THERMO STRIPING SHALL BE REMOVED BY GRINDING PRIOR TO MICROSURFACING.



TYPICAL STOP BAR & LEGEND DETAIL

NO SCALE

LEGEND

- (XX) STRIPING DETAIL NUMBER (PER CAMUTCD)
- (8) 4" BROKEN WHITE LINE
- (21) 4" DOUBLE YELLOW SOLID LINE
- (31) TWO-WAY LEFT TURN WITH 4" YELLOW STRIPES
- (38A) 8" SOLID WHITE LINE
- (39) 6" SOLID WHITE LINE AT BIKE LANE
- (39A) 6" BROKEN LINE AT BIKE LANE
- SIGN
- 12" WHITE STRIPE

REGULATORY SIGNS

R1-1	"STOP"
R1-2	"YIELD"
R2-1	SPEED LIMIT (35 MPH)
R3-4	NO U-TURN
R3-18	NO LEFT OR U-TURN
R4-7	KEEP RIGHT
R26(CA)	NO PARKING ANY TIME
R61-1(CA)	INTERSECTION LANE CONTROL
R81(CA)	BIKE LANE
R81B(CA)	END

WARNING SIGNS

W3-1	STOP AHEAD
W3-3	SIGNAL AHEAD
W16-9P	"AHEAD"
W11-2	PEDESTRIAN CROSSING

N

0 20 40 60

SCALE IN FEET: 1"= 20'

DRAWN: LW	DESIGNED: JS	HORIZONTAL SCALE: 1"=20'	ENGINEER OF RECORD
CHECKED: LS	DATE CHECKED: NOV. 28, 2012	VERTICAL SCALE	
APPROVED			
ENGINEER	DATE	CONTRACT NO.	

PREPARED BY:
RJA
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REVISIONS

NO.	DATE	BY	DESCRIPTION	APPR.	DATE

CITY OF LOS ALTOS

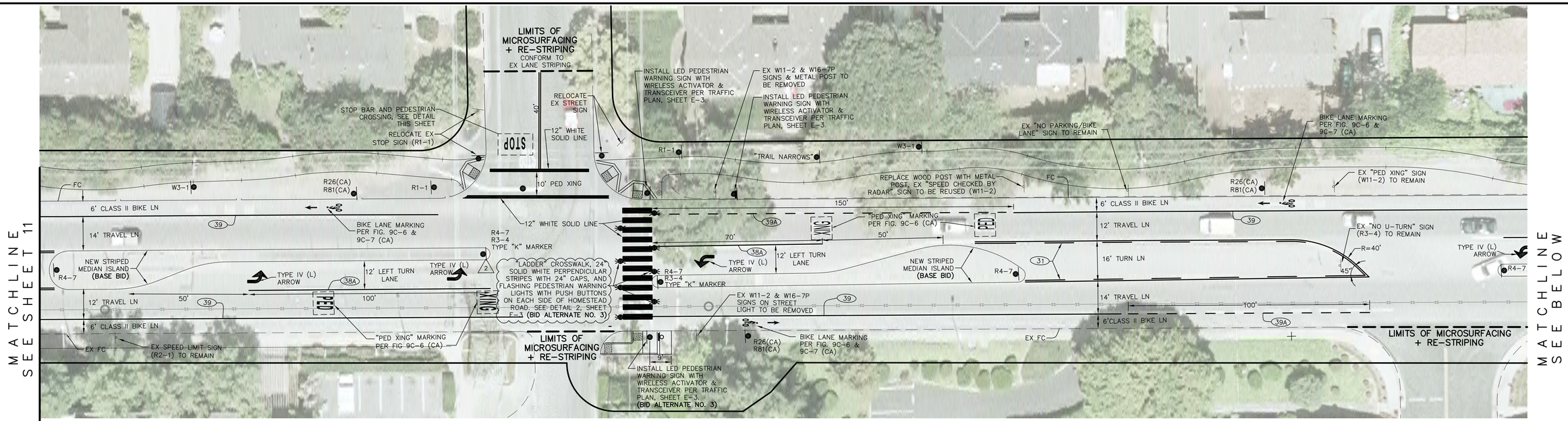
HOMESTEAD ROAD SAFETY IMPROVEMENTS
PROJECT 12-19

MICROSURFACING AND SIGNING AND STRIPING PLAN W. END

PREPARED FOR: CITY OF LOS ALTOS

DRAWING NO. 11

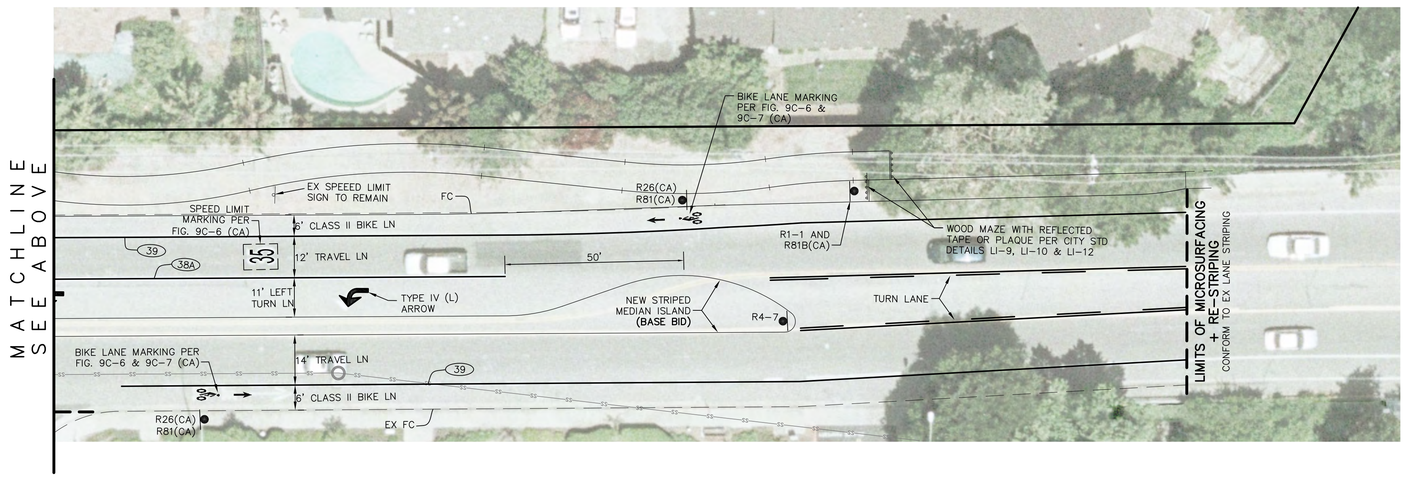
SHT 11 OF 25

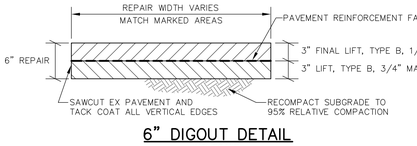


HOMESTEAD ROAD SIGNING AND STRIPING

PLAN VIEW 1

1"=20'





6" DIGOUT DETAIL

NO SCALE

NOTES:

1. CONTRACTOR SHAILL DIG OUT AND REPAIR MARKED AREAS PER THE DIGOUT DETAIL PRIOR TO MICROSURFACING PLACEMENT.
2. CONTRACTOR SHALL MICROSURFACE ALL ASPHALT SURFACES PER THE PROJECT SPECIFICATIONS AND TO THE LIMITS SHOWN ON THE MICROSURFACING AND SIGNING AND STRIPING PLANS PRIOR TO STRIPING PLACEMENT.
3. CONTRACTOR SHALL APPLY STRIPING PER THE PROJECT SPECIFICATIONS AND THE MICROSURFACING AND SIGNING AND STRIPING PLANS.
4. ALL DIGOUTS AND MICROSURFACE TREATMENTS FOR THIS PROJECT ARE PART OF AN ADD ALTERNATIVE BID NO. 1.

HOMESTEAD ROAD SIGNING AND STRIPING

PLAN VIEW 2

1"=20'

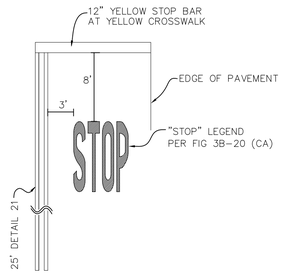
N

0 20 40 60

SCALE IN FEET: 1"= 20'

GENERAL SIGNING & STRIPING NOTES

1. ALL SIGNING AND STRIPING SHALL CONFORM TO THE APPROPRIATE PROVISIONS OF PART 2 "SIGNS" AND PART 3 "MARKINGS" OF THE LATEST VERSION (2012) OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CAMUTCD).
2. REMOVE AND REPLACE EXISTING SIGNING AND STRIPING AS SHOWN BETWEEN THE RE-STRIPING LIMITS.
3. EXISTING THERMO STRIPING SHALL BE REMOVED BY GRINDING PRIOR TO MICROSURFACING.



TYPICAL STOP BAR & LEGEND DETAIL

NO SCALE

LEGEND

- (XX) STRIPING DETAIL NUMBER (PER CAMUTCD)
- (8) 4" BROKEN WHITE LINE
- (21) 4" DOUBLE YELLOW SOLID LINE
- (31) TWO-WAY LEFT TURN WITH 4" YELLOW STRIPES
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- 12" WHITE STRIPE

REGULATORY SIGNS

R1-1	"STOP"
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R2-1	SPEED LIMIT (35 MPH)
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WARNING SIGNS

W3-1	STOP AHEAD
W3-3	SIGNAL AHEAD
W16-9P	"AHEAD"
W11-2	PEDESTRIAN CROSSING

DRAWN	DESIGNED	HORIZONTAL SCALE	ENGINEER OF RECORD
LW	JS	1"=20'	
CHECKED	DATE CHECKED	VERTICAL SCALE	
LS	NOV. 28, 2012		
APPROVED			
		CONTRACT NO.	
ENGINEER	DATE		

PREPARED BY:

RUGGERI-JENSEN-AZAR
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PHONE: (408) 848-0300 FAX: (408) 848-0302

REVISIONS

NO.	DATE	BY	DESCRIPTION	APPR.	DATE
2	2/04/13		ADDENDUM #2, FALLEN LEAF CROSSWALK		

CITY OF LOS ALTOS

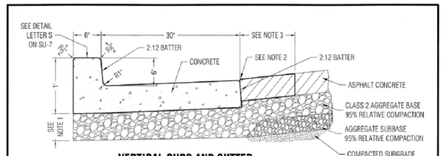
HOMESTEAD ROAD SAFETY IMPROVEMENTS
PROJECT 12-19

MICROSURFACING AND SIGNING AND STRIPING PLAN E. END

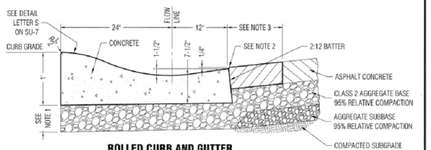
PREPARED FOR: CITY OF LOS ALTOS

DRAWING NO. 12

SHT 12 OF 25



VERTICAL CURB AND GUTTER
SCALE: 1" = 1'



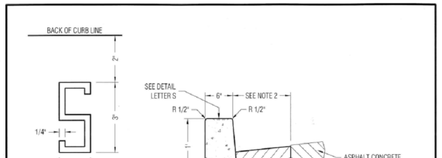
ROLLED CURB AND GUTTER
SCALE: 1" = 1'

NOTES:
1. THICKNESS OF AGGREGATE BASE SHALL BE:
   * FOR NEW STREET SECTION: AS DETERMINED BY EXTENSION OF ROADWAY GRADING PLANE (6" MIN.)
   -OR-
   * FOR EXISTING STREET SECTION: 6"
2. EDGE OF PAVEMENT 1/4" ABOVE LIP (FOR 36" GUTTER, THE LIP SHALL BE 2-1/2" ABOVE FLOWLINE)
3. FOR NEW CURB & GUTTER INSTALLED ADJACENT TO EXISTING PAVEMENT, TWELVE INCHES (12") OF THE AC EDGE SHALL BE SAWCUT, REMOVED AND REPLACED WITH NEW AC PAVEMENT

Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	VERTICAL AND ROLLED CURB AND GUTTER	SU-6

STANDARD DETAILS MAY 2010

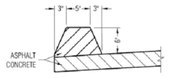


LETTER S
SCALE: NOT TO SCALE

THE LETTER "S" TO BE EMBEDDED 1/4" DEEP ON TOP OF CONCRETE CURB OVER SEWER LATERAL

VERTICAL CURB
SCALE: 1" = 1'

NOTES:
1. THICKNESS OF AGGREGATE BASE SHALL BE:
   * FOR NEW STREET SECTION: AS DETERMINED BY EXTENSION OF ROADWAY GRADING PLANE (6" MIN.).
   -OR-
   * FOR EXISTING STREET SECTION: 6"
2. FOR NEW CURB INSTALLED ADJACENT TO EXISTING PAVEMENT, TWELVE INCHES (12") OF THE AC EDGE SHALL BE SAWCUT, REMOVED AND REPLACED WITH NEW AC PAVEMENT

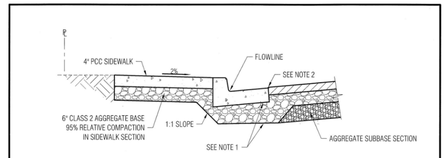


AC CONCRETE BERM
SCALE: 1" = 1'

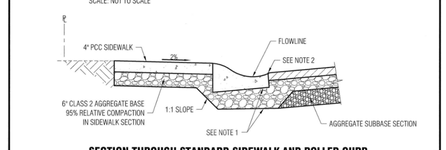
Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	VERTICAL CURB, ASPHALT CONCRETE BERM AND CURB STAMP	SU-7

STANDARD DETAILS MAY 2010



SECTION THROUGH STANDARD SIDEWALK AND VERTICAL CURB
SCALE: NOT TO SCALE



SECTION THROUGH STANDARD SIDEWALK AND ROLLED CURB
SCALE: NOT TO SCALE

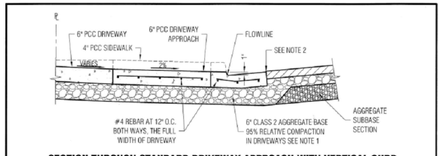
STANDARD CROSS SECTIONS

NOTES:
1. THICKNESS OF AGGREGATE BASE UNDER CURB & GUTTER SHALL BE:
   * FOR NEW STREET SECTION: AS DETERMINED BY EXTENSION OF ROADWAY GRADING PLANE (6" MIN.)
   OR
   * FOR EXISTING STREET SECTION: 6"
2. SEE VERTICAL CURB AND ROLLED CURB AND GUTTER DETAIL SU-6

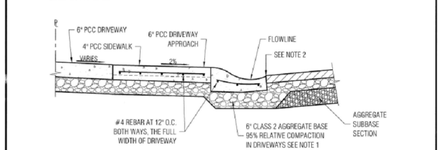
Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	SIDEWALK CROSS-SECTION	SU-8

STANDARD DETAILS MAY 2010



SECTION THROUGH STANDARD DRIVEWAY APPROACH WITH VERTICAL CURB
SCALE: NOT TO SCALE



SECTION THROUGH STANDARD DRIVEWAY APPROACH WITH ROLLED CURB
SCALE: NOT TO SCALE

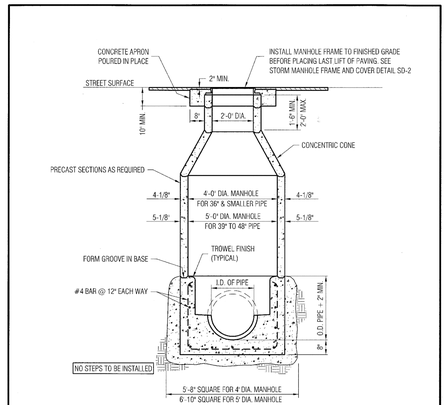
STANDARD CROSS SECTIONS

NOTES:
1. THICKNESS OF AGGREGATE BASE UNDER CURB & GUTTER SHALL BE:
   * FOR NEW STREET SECTION: AS DETERMINED BY EXTENSION OF ROADWAY GRADING PLANE (6" MIN.)
   OR
   * FOR EXISTING STREET SECTION: 6"
2. SEE VERTICAL CURB AND ROLLED CURB AND GUTTER DETAIL SU-6

Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	DRIVEWAY CROSS-SECTION	SU-9

STANDARD DETAILS MAY 2010

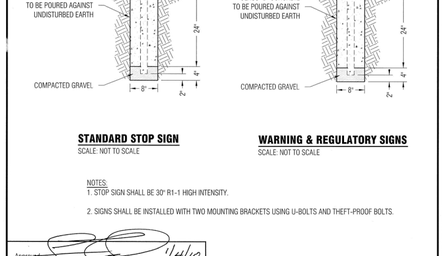


NOTE:
1. LAY PIPE THRU BOTTOM OF MANHOLES. AFTER CONCRETE IN BASE HAS SET, KNOCK OUT PORTION OF PIPE INDICATED WITH DASHED LINES. (FOR BRANCHED BASE SEE SD-3)

Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	STORM DRAIN MANHOLE (CONCENTRIC CONE)	SD-1

STANDARD DETAILS MAY 2010



STANDARD STOP SIGN
SCALE: NOT TO SCALE

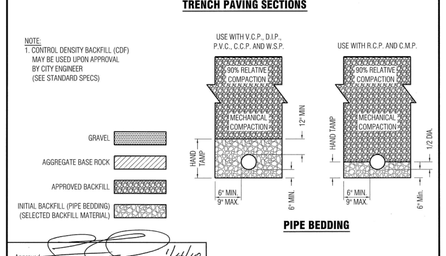
WARNING & REGULATORY SIGNS
SCALE: NOT TO SCALE

NOTES:
1. STOP SIGN SHALL BE 30" R1-1 HIGH INTENSITY.
2. SIGNS SHALL BE INSTALLED WITH TWO MOUNTING BRACKETS USING U-BOLTS AND THEFT-PROOF BOLTS.

Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	STOP, WARNING AND REGULATORY SIGNS	SU-17

STANDARD DETAILS MAY 2010



TRENCH PAVING SECTIONS

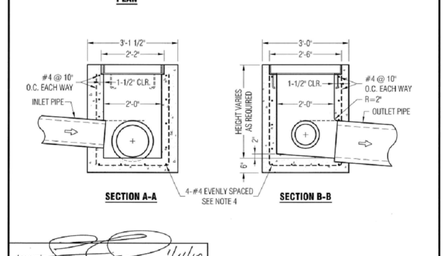
NOTE:
1. CONTROL DENSITY BACKFILL (CDF) MAY BE USED UPON APPROVAL BY CITY ENGINEER (SEE STANDARD SPECS)

PIPE BEDDING

Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	TRENCH PAVING, BACKFILL AND PIPE BEDDING SECTIONS	SU-19

STANDARD DETAILS MAY 2010



PLAN

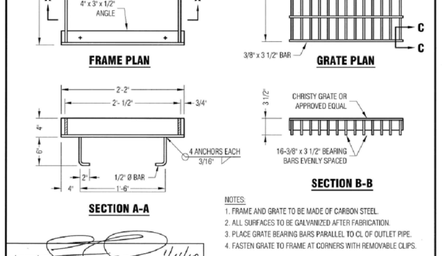
NOTE:
1. OUTLET PIPE SHALL BE MIN. 12" - MAX. 18" DIAMETER.
2. ALL CONCRETE SHALL BE CLASS "A", 3/4" MAX. AGGREGATE, 3,300 PSI.
3. THE CROWN OF THE INLET PIPE SHALL BE SET AT THE SAME ELEVATION OF THE CROWN OF THE OUTLET PIPE.
4. REINFORCING STEEL SHALL BE REQUIRED FOR WALLS GREATER THAN 6' IN DEPTH. BOTTOM REBAR MAT IS REQUIRED REGARDLESS OF HEIGHT OF WALLS.
5. CHRISTY U23 CATCH BASIN (2' x 2' WITH 6" WALLS) OR AN APPROVED EQUAL.
6. SEE NOTES ON SD-6.

SECTION A-A **SECTION B-B**

Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	2' X 2' STORM DRAIN INLET	SD-8

STANDARD DETAILS MAY 2010

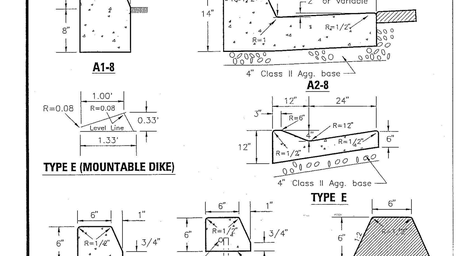


NOTES:
1. FRAME AND GRATE TO BE MADE OF CARBON STEEL.
2. ALL SURFACES TO BE GALVANIZED AFTER FABRICATION.
3. PLACE GRATE BEARING BARS PARALLEL TO CL OF OUTLET PIPE.
4. FASTEN GRATE TO FRAME AT CORNERS WITH REMOVABLE CLIPS.

Approved: City Engineer Date

CITY OF LOS ALTOS, CALIFORNIA	REVISION		ENGINEERING DIVISION	
	Description	Date	2' X 2' STORM DRAIN INLET FRAME & GRATE	SD-9

STANDARD DETAILS MAY 2010



STANDARD CURB SECTIONS

REVISED 3/97

CITY OF CUPERTINO STANDARD DETAILS	APPROVED BY: CITY ENGINEER	DATE: 5/1/97	1-16

DRAWN: LW	DESIGNED: JS	HORIZONTAL SCALE	ENGINEER OF RECORD
CHECKED: LS	DATE CHECKED: NOV. 28, 2012	VERTICAL SCALE	
APPROVED			
ENGINEER DATE		CONTRACT NO.	

PREPARED BY:

RUGGERI-JENSEN-AZAR
ENGINEERS • PLANNERS • SURVEYORS
8055 CAMINO ARROYO GILROY, CA 95020
PHONE: (408) 848-0300 FAX: (408) 848-0302

REVISIONS

NO.	DATE	BY	DESCRIPTION	APPR.	DATE

CITY OF LOS ALTOS

HOMESTEAD ROAD SAFETY IMPROVEMENTS
PROJECT 12-19

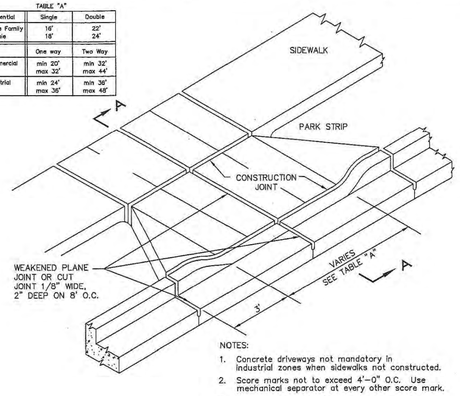
DETAILS SHEET

PREPARED FOR: CITY OF LOS ALTOS

DRAWING NO. 13

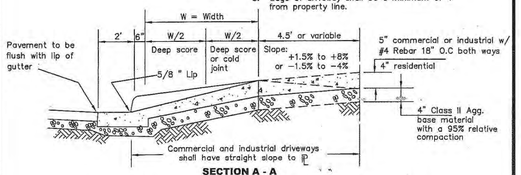
SHT 13 OF 25

TABLE "A"		
Residential	Single	Double
Single Family Multiple	16' 18'	22' 24'
	One way	Two Way
Commercial	min 20' max 32'	min 32' max 44'
Industrial	min 24' max 36'	min 36' max 48'



NOTES:

1. Concrete driveways not mandatory in industrial zones when sidewalks not constructed.
2. Score marks not to exceed 4'-0" O.C. Use mechanical separator at every other score mark.
3. Finish to be light broom.
4. Sidewalk to be replaced when new driveway is placed.
5. Edge of driveway shall be a minimum of 4' from property line.

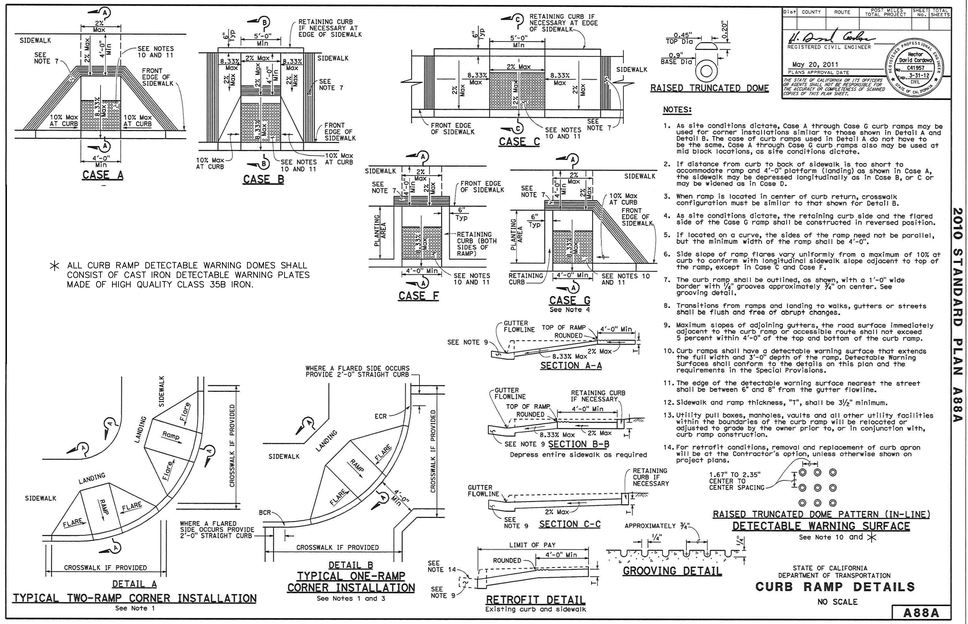


SECTION A - A

DRIVEWAY DETAIL - DETACHED SIDEWALK

REVISED 6/2009

CITY OF CUPERTINO STANDARD DETAILS	APPROVED BY: _____ CITY ENGINEER	DATE: _____	1–20



✳ ALL CURB RAMP DETECTABLE WARNING DOMES SHALL CONSIST OF CAST IRON DETECTABLE WARNING PLATES MADE OF HIGH QUALITY CLASS 35B IRON.

NOTES:

1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
5. If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
6. Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
7. The curb ramp shall be outlined, as shown, with a 1'-0" wide border with ½" grooves approximately ¾" on center. See grooving detail.
8. Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
9. Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
10. Curb ramps shall have a detectable warning surface that extends the full width and 2'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
11. The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
12. Sidewalk and ramp thickness, "T", shall be 3½" minimum.
13. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
14. For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.

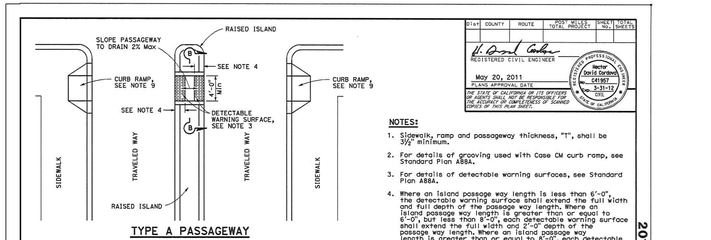
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURB RAMP DETAILS

NO SCALE

A88A

2010 STANDARD PLAN A88A



TYPE A PASSAGEWAY

NOTES:

1. Sidewalk, ramp and passageway thickness, "T", shall be 3½" minimum.
2. For details of grooving used with Case CM curb ramp, see Standard Plan A88A.
3. For details of detectable warning surfaces, see Standard Plan A88A.
4. Where an island passage way length is less than 6'-0", the detectable warning surface shall extend the full width and full depth of the passage way length. Where an island passage way length is greater than or equal to 6'-0", but less than 8'-0", each detectable warning surface shall extend the full width and 2'-0" depth of the passage way length. Where an island passage way length is greater than or equal to 8'-0", each detectable warning surface shall extend the full width and 3'-0" depth of the passage way length.
5. For Case CM curb ramp, the edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
6. Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt changes.
7. Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
8. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
9. For additional curb ramp details, see Standard Plan A88A.

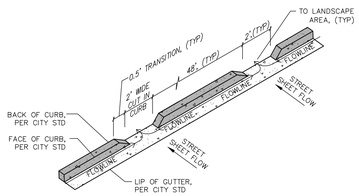
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURB RAMP AND ISLAND PASSAGEWAY DETAILS

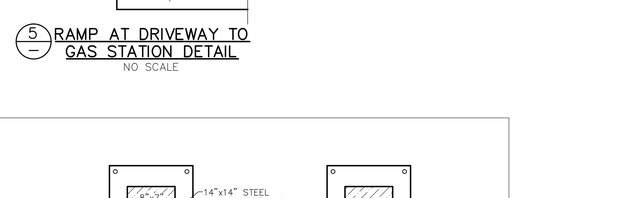
NO SCALE

A88B

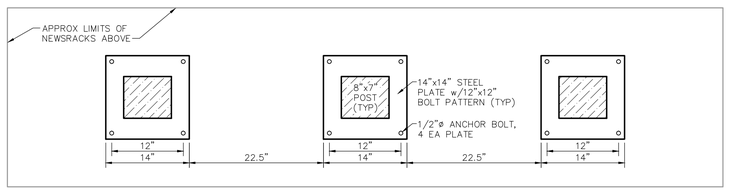
2010 STANDARD PLAN A88B



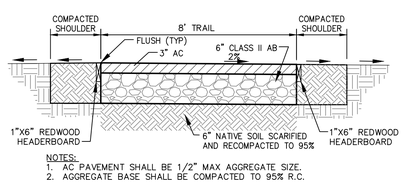
3 CURB CUT DETAIL
NO SCALE



5 RAMP AT DRIVEWAY TO GAS STATION DETAIL
NO SCALE

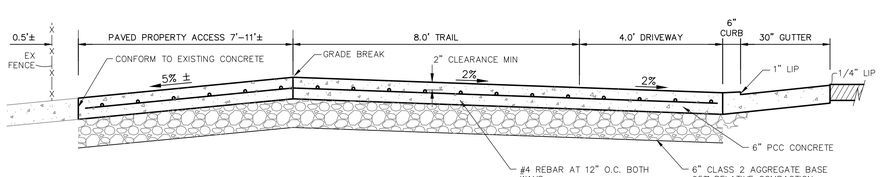


4 NEWSPAPER RACK INSTALLATION DETAIL
NO SCALE

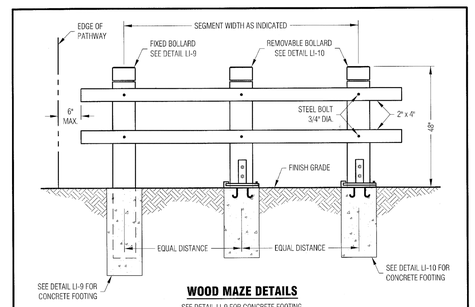


NOTES:
1. AC PAVEMENT SHALL BE 1/2" MAX AGGREGATE SIZE.
2. AGGREGATE BASE SHALL BE COMPACTED TO 95% R.C.

1 8' TRAIL SECTION
NO SCALE



2 DRIVEWAY TO PRIVATE RESIDENCE SECTION DETAIL
NO SCALE



WOOD MAZE DETAILS

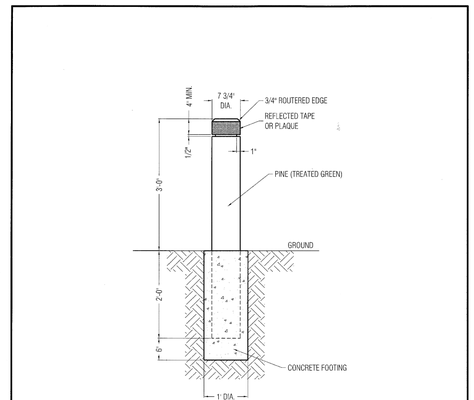
SEE DETAIL LI-9 FOR CONCRETE FOOTING

PLAN VIEW

Approved: _____ City Engineer 1/4/10 Date

CITY OF LOS ALTOS CALIFORNIA INCORPORATED DECEMBER 7, 1952	REVISION (Description / Date)	ENGINEERING DIVISION	
		WOOD MAZE DETAILS	LI-12

STANDARD DETAILS MAY 2010



Approved: _____ City Engineer 1/4/10 Date

CITY OF LOS ALTOS CALIFORNIA INCORPORATED DECEMBER 7, 1952	REVISION (Description / Date)	ENGINEERING DIVISION	
		FIXED BOLLARD	LI-9

STANDARD DETAILS MAY 2010

DRAWN	DESIGNED	HORIZONTAL SCALE	ENGINEER OF RECORD
LW	JS		
CHECKED	DATE CHECKED	VERTICAL SCALE	
LS	NOV. 28, 2012		
APPROVED		CONTRACT NO.	
ENGINEER	DATE		

PREPARED BY:

RUGGERI-JENSEN-AZAR
ENGINEERS ▪ PLANNERS ▪ SURVEYORS
8055 CAMINO ARROYO GILROY, CA 95020
PHONE: (408) 848-0300 FAX: (408) 848-0302

REVISIONS

NO.	DATE	BY	DESCRIPTION	APPR.	DATE

CITY OF LOS ALTOS

HOMESTEAD ROAD SAFETY IMPROVEMENTS
PROJECT 12-19

DETAILS SHEET

PREPARED FOR: CITY OF LOS ALTOS

DRAWING NO. 14

SHT 14 OF 25

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 onsite cleaning.
- ❑ Cover exposed fifth wheel hitches and other oily or greasy equipment during rain events.

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

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

Roadwork and Paving

Best Management Practices for the Construction Industry

Best Management Practices for the

- Road crews
- Driveway/sidewalk/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.

- ❑ Never wash excess material from exposed- aggregate concrete or similar treatments into a street or storm drain. Collect 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 dig 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 most comply with the practices described 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

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 curbside 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 pickup 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 algaecides should never be discharged to storm drains. These chemicals are toxic to aquatic life.

- ❑ 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, 18 inches from the curb and completely out of the flow line to any storm drain.

Pool/Fountain/Spa Maintenance

Draining Pools Or Spas

When it's time to drain a pool, spa, or fountain, please be sure to call your local wastewater treatment plant before you start for further guidance on flow rate restrictions, backflow prevention, and handling special cleaning waste (such as acid wash). Discharge flows shall not exceed 100 gallon per minute.

- ❑ 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 gradually onto a landscaped area.
- ❑ Do not use copper-based algaecides. 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 spade 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 instructions on discharging filter backwash or rinse water to the sanitary sewer.

Painting and Application of Solvents and Adhesives

Best Management Practices for the Construction Industry

Best Management Practices for the

- Homeowners
- Painters
- Paperhangers
- Plasterers
- Graphic artists
- Dry wall crews
- Floor covering installers
- General contractors
- Home builders
- Developers

Doing The Job Right

Handling Paint Products

- ❑ **Keep all liquid paint products and wastes away from the gutter, street, and storm drains.** Liquid residues from paints, thinners, solvents, glues, and cleaning fluids are hazardous wastes and must be disposed of at a hazardous waste collection facility (contact your local stormwater program listed on the back of this brochure).
- ❑ When thoroughly dry, empty paint cans, used brushes, rags, and drop cloths may be disposed of as garbage in a sanitary landfill. Empty, dry paint cans also may be recycled as metal.
- ❑ Wash water from painted buildings constructed before 1978 can contain high amounts of lead, even if paint chips are not present. Before you begin stripping paint or cleaning pre-1978 building exteriors with water under high pressure, test paint for lead by taking paint scrapings to a local laboratory. See Yellow Pages for a state-certified laboratory.
- ❑ If there is loose paint on the building, or if the paint tests positive for lead, block storm drains. Check with the wastewater treatment plant to determine whether you may discharge water to the sanitary sewer. or if you must send it offsite for disposal as hazardous waste.

Storm Drain Pollution from Paints, Solvents, and Adhesives

All paints, solvents, and adhesives contain chemicals that are harmful to wildlife in local creeks, San Francisco Bay, and the Pacific Ocean. Toxic chemicals may come from liquid or solid products or from cleaning residues or rags. Paint material and wastes, adhesives and cleaning fluids should be recycled when possible, or disposed of properly to prevent these materials from flowing into storm drains and watercourses.

Painting Cleanup

- ❑ **Never clean brushes or rinse paint containers into a street, gutter, storm drain, French drain, or stream.**
- ❑ For **water-based paints**, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For **oil-based paints**, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids and residue as hazardous waste.

Paint Removal

- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury or tributyl tin must be disposed of as hazardous wastes. Lead based paint removal requires a state-certified contractor.
- ❑ When stripping or cleaning building exteriors with high-pressure water, block storm drains. Direct wash water onto a dirt area and spade into soil. Or, check with the local wastewater treatment authority to find out if you can collect (mop or vacuum) building cleaning water and dispose to the sanitary sewer. Sampling of the water may be required to assist the wastewater treatment authority in making its decision.

Recycle/Reuse Leftover Paints Whenever Possible

- ❑ Recycle or donate excess **water-based (latex) paint,** or return to supplier.
- ❑ Reuse leftover **oil-based paint**. Dispose of non-recyclable thinners, sludge and unwanted paint, as hazardous waste.
- ❑ Unopened cans of paint may be able to be returned to the paint vendor. Check with the vendor regarding its "buy-back" policy.

Los Altos Municipal Code Requirements

Los Altos Municipal Code Chapter 10.08.390 Non-storm water discharges

A. Unlawful discharges. It shall be unlawful to discharge any domestic waste or industrial waste into storm drains, gutters, creeks, or San Francisco Bay. Unlawful discharges to storm drains shall include, but not be limited to, discharge from toilets; sinks; industrial processes; cooling systems; boilers; fabric cleaning; equipment cleaning; vehicle cleaning; construction activities, including, but not limited to, painting, paving, concrete placement, saw cutting and grading; swimming pools; spas; and fountains, unless specifically permitted by a discharge permit or unless exempted pursuant to guidelines published by the superintendent.

B. Threatened discharges. It shall be unlawful to cause hazardous materials, domestic waste, or industrial waste to be deposited in such a manner or location as to constitute a threatened discharge into storm drains, gutters, creeks or San Francisco Bay. A "threatened discharge" is a condition creating a substantial probability of harm, when the probability and potential extent of harm make it reasonably necessary to take immediate action to prevent, reduce or mitigate damages to persons, property or natural resources. Domestic or industrial wastes that are no longer contained in a pipe, tank or other container are considered to be threatened discharges unless they are actively being cleaned up.

Los Altos Municipal Code Section 10.08.430 Requirements for construction operations.

A. A spill response plan for hazardous waste, hazardous materials and uncontained construction materials shall be prepared and available at the construction sites for all projects where the proposed construction site is equal to or greater than one acre of disturbed soil and for any other projects for which the city engineer determines is necessary to protect surface waters. Preparation of the plan shall be in accordance with guidelines published by the city engineer.

B. A storm water pollution prevention plan shall be prepared and available at the construction sites for all projects greater than one acre of disturbed soil and for any other projects for which the city engineer determines that a storm water management plan is necessary to protect surface waters. Preparation of the plan shall be in accordance with guidelines published by the city engineer.

C. Prior approval shall be obtained from the city engineer or designee to discharge water pumped from construction sites to the storm drain. The city engineer or designee may require gravity settling and filtration upon a determination that either or both would improve the water quality of the discharge. Contaminated groundwater or water that exceeds state or federal requirements for discharge to navigable waters may not be discharged to the storm drain. Such water may be discharged to the sewer, provided that the requirements of Section 10.08.240 are met and the approval of the superintendent is obtained prior to discharge.

D. No cleanup of construction debris from the streets shall result in the discharge of water to the storm drain system; nor shall any construction debris be deposited or allowed to be deposited in the storm drain system. (Prior code § 5-5.643)

Criminal and judicial penalties can be assessed for non-compliance.

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.
- ❑ 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, cleared 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 cleared 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 types 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.

- ❑ 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.

2. Check for Sediment Levels

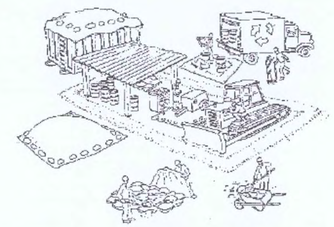
- ❑ If the water is clear, the pumping time is less than 24 hours, and the flow rate is less than 20 gallons per minute, you may pump water to the street or storm drain.
- ❑ If the pumping time is more than 24 hours and the flow rate greater than 20 gpm, call your local wastewater treatment plant for 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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REVISIONS

NO.	DATE	BY	DESCRIPTION	APPR.	DATE

CITY OF LOS ALTOS

HOMESTEAD ROAD SAFETY IMPROVEMENTS
PROJECT 12-19

BLUEPRINT FOR A CLEAN BAY

PREPARED FOR: CITY OF LOS ALTOS

DRAWING NO. 15

SHT 15 OF 25