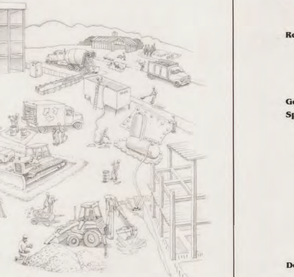
BEST MANAGEMENT PRACTICES

Blueprint for a Clean Bay

Best Management Practices to Prevent Stormwater Pollution from Construction-Related Activities



BASMAA
Bay Area Stormwater Management Agencies Association

The Bay Area Stormwater Management Agencies Association (BASMAA), a consortium of Bay Area municipalities from Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Solano, and Sonoma Counties, developed this booklet as a resource for all general contractors, home builders, and subcontractors working on construction sites.

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Introduction

Stormwater pollution is a national environmental problem. In California, stormwater runoff is a major source of water pollution. To help combat the problems of stormwater pollution, federal and state governments have developed a program for monitoring and permitting discharges to municipal storm drain systems, creeks, and water bodies such as San Francisco Bay.

Municipalities in the Bay Area are required by the Clean Water Act to develop stormwater management programs that include requirements for construction activities. Your construction project will need to comply with local municipal requirements. If your construction activity will disturb one acre or more, you must also obtain coverage under the General Construction Activity Permit (see Requirements for Dischargers).

Blueprint for a Clean Bay is an introductory guide to stormwater quality control on construction sites. It contains several principles and techniques that you can use to help prevent stormwater pollution. BASMAA has developed this booklet as a resource for all general contractors, home builders, and subcontractors working on construction sites.

Blueprint for a Clean Bay is not a design manual or a Stormwater Pollution Prevention Plan (SWPPP) (see Requirements for Dischargers). For more information on the General Permit, designing stormwater quality controls, or producing a Stormwater Pollution Prevention Plan, please refer to:

- the California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook for Construction,
- the Regional Water Quality Control Board's (RWQCB) Guidelines for Construction Projects, or
- consult your local program or the State Water Resources Control Board (SWRCB) (see below).

Please note that this booklet is concerned only with the management of construction sites and activities during construction.

Stormwater Pollution

Storm Drain System

Stormwater or runoff from sources like sprinklers and hoses flows over the ground into the storm drain system. In the San Francisco Bay Area, storm drain systems consist of gutters, storm drains, underground pipes, open channels, culverts, and creeks. Storm drain systems are designed to drain directly to the Bay, Delta, or Pacific Ocean with no treatment.

Pollution From Construction Sites

Stormwater runoff is part of a natural hydrologic process. However, land development and construction activities can significantly alter natural drainage patterns and pollute stormwater runoff. Runoff picks up pollutants as it flows over the ground or paved areas and carries these pollutants into the storm drain system. Common sources of pollutants from construction sites include: sediments from soil erosion; construction materials and waste (e.g., paint, solvents, concrete, drywall); landscaping runoff containing fertilizers and pesticides; and spilled oil, fuel, and other fluids from construction vehicles and heavy equipment.

Adverse Effects from Stormwater Pollution

Stormwater pollution is a major source of water pollution in California. It can cause declines in fisheries, damage habitats, and limit water recreation activities. Stormwater pollution poses a serious threat to the overall health of the ecosystem.

For more information on stormwater requirements, call the State Water Resources Control Board's Stormwater Information Line at (916) 341-5537 or your local program.

Requirements for Dischargers

Municipal Stormwater Program

Municipalities in the Bay Area are required by federal regulations to develop programs to control discharge of pollutants to the storm drain system, including the discharge of pollutants from construction sites and areas of new development or significant redevelopment. As a result, your development and construction projects are subject to new requirements designed to improve stormwater quality such as, expanded plan check and review, contract specifications, stormwater treatment measures, runoff monitoring, and increased site inspection. For more information on municipal requirements, please contact the municipal representative listed on the back cover of this booklet.

Projects Equal To Or Greater Than 1 Acre

If your construction activity will disturb one acre or more, you must obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the SWRCB for stormwater discharges associated with construction activity. To obtain coverage under the General Permit, a Notice of Intent (NOI) must be filed with the SWRCB. The General Construction Permit requires you to prepare and carry out a "Stormwater Pollution Prevention Plan" or SWPPP. Your SWPPP must identify appropriate stormwater pollution prevention measures or best management practices (BMPs), like the ones described in this booklet, to reduce pollutants in stormwater discharges from the construction site both during and after construction is complete. A best management practice or BMP is defined as any program, technology, process, practice, operating method, measure, or device that controls, prevents, removes, or reduces pollution. The General Permit also requires permanent stormwater quality controls (see BASMAA's Start at the Source manual and CASQA's BMP Handbooks New Development and Redevelopment for examples). You should keep a copy of your SWPPP readily available onsite throughout construction.

Projects Less Than 1 Acre

If your project is less than one acre, you may still need to use BMPs to comply with local municipal requirements. Check with the local stormwater program listed on back cover), or planning or engineering department for details.

Best Management Practices

General Practices

The following are some general principles that can significantly reduce pollution from construction activity and help make compliance with stormwater regulations easy:

- Identify all storm drains, drainage swales and creeks located near the construction site and make sure all subcontractors are aware of their locations to prevent pollutants from entering them.
- Clean up leaks, drips, and other spills immediately so they do not contact stormwater.
- Refuel vehicles and heavy equipment in one designated location on the site and take care to clean up spills immediately.
- Wash vehicles at an appropriate off-site facility. If equipment must be washed on-site, do not use soaps, solvents, degreasers, or steam cleaning equipment, and prevent wash water from entering the storm drain. If possible, direct wash water to a low point where it can evaporate and/or infiltrate.
- Never wash down pavement or surfaces where materials have spilled. Use dry cleanup methods whenever possible.
- Avoid contaminating clean runoff from areas adjacent to your site by using berms and/or temporary or permanent drainage ditches to divert water flow around the site. Reduce stormwater runoff velocities by constructing temporary check dams and/or berms where appropriate.
- Protect all storm drain inlets using filter fabric cloth or other best management practices to prevent sediments from entering the storm drainage system during construction activities.
- Keep materials out of the rain — prevent runoff pollution at the source. Schedule clearing or heavy earth moving activities for periods of dry weather. Cover exposed piles of soil, construction materials and wastes with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.

For more information on the General Permits, call the State Water Resources Control Board's Stormwater Information Line at (916) 341-5537 or your local program.

Best Management Practices

- Keep pollutants off exposed surfaces. Place trash cans around the site to reduce litter. Dispose of non-hazardous construction wastes in covered dumpsters or recycling receptacles.
- Practice source reduction — reduce waste by ordering only the amount you need to finish the job.
- Do not over-apply pesticides or fertilizers and follow manufacturers instructions for mixing and applying materials.
- Recycle leftover materials whenever possible. 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 are recyclable (check with the local planning or building department for more information).
- Dispose of all wastes properly. Materials that cannot be reused or recycled must be taken to an appropriate landfill or may require disposal as hazardous waste. Never throw debris into channels, creeks or into wetland areas. Never store or leave debris in the street or near a creek where it may contact runoff.
- Illegal dumping is a violation subject to a fine and/or time in jail. Be sure that trailers carrying your materials are covered during transit. If not, the hauler may be cited and fined.
- Train your employees and inform subcontractors about the stormwater requirements and their own responsibilities.

Specific Practices

following is a summary of specific best management practices for erosion and sediment control and contractor activities. For more information on erosion and sediment control BMPs and their design, please refer to the RWQCB Erosion and Sediment Control Field Manual (August 2002), the CASQA Stormwater Best Management Practice Handbook for Construction (January 2003), and the Association of Bay Area Governments (ABAG) Manual of Standards for Erosion & Sediment Control Measures (May 1995).

Erosion Prevention and Sediment Control

Prevent erosion

Soil erosion is the process by which soil particles are removed from the land surface, by wind, water and/or gravity. Soil particles removed by stormwater runoff are pollutants that when deposited in local creeks, lakes, Bay or Delta, can have negative impacts on aquatic habitat. Exposed soil after clearing, grading, or excavation is easily eroded by wind or water. The following practices will help prevent erosion from occurring on the construction site:

- Plan the development to fit the topography, soils, drainage pattern and natural vegetation of the site.
- Delineate clearing limits, easements, setbacks, sensitive or critical areas, trees, drainage courses, and buffer zones to prevent excessive or unnecessary disturbances and exposure.
- Phase grading operations to reduce disturbed areas and time of exposure.
- Avoid excavation and grading during wet weather.
- Limit on-site construction routes and stabilize construction entrance(s) and exit(s).
- Remove existing vegetation only when absolutely necessary.
- Construct diversion dikes and drainage swales to channel runoff around the site.
- Use berms and drainage ditches to divert runoff around exposed areas. Place diversion ditches across the top of cut slopes.

Best Management Practices

- Plant vegetation on exposed slopes. Where replanting is not feasible, use erosion control blankets (e.g., jute or straw matting, glass fiber or excelsior matting, mulch netting).
- Consider slope terracing with cross drains to increase soil stability.
- Cover stockpiled soil and landscaping materials with secured plastic sheeting and divert runoff around them.
- As a back-up measure, protect drainage courses, creeks, or catch basins with fiber rolls, silt fences, sand/gravel bags and/or temporary drainage swales.
- Once grading is completed, stabilize the disturbed areas using permanent vegetation as soon as possible. Use temporary erosion controls until vegetation is established.
- Conduct routine inspections of erosion control measures especially before and immediately after rainstorms, and repair if necessary.

Control sediment

Sedimentation is defined as the process of depositing sediments carried away by runoff. Sediments consist of soil particles, clays, sands, and other minerals. The purpose of sediment control practices is to remove sediments from stormwater before they are transported off-site or reach a storm drain inlet or nearby creek. The most effective sediment control practices reduce runoff velocity and trap or detain runoff allowing sediments to settle out.

- Use terracing, rip-rap, sand/gravel bags, rocks, fiber rolls, and/or temporary vegetation on slopes to reduce runoff velocity and trap sediments. Do not use asphalt rubble or other demolition debris for this purpose.
- Use check dams in temporary drains and swales to reduce runoff velocity and promote sedimentation.
- Protect storm drain inlets from sediment-laden runoff. Storm drain inlet protection devices include sand/gravel bag barriers, filter fabrics, block and gravel filters, catch basin filter inserts, excavated drop inlet sediment traps, or a combination of these.
- Collect and detain sediment-laden runoff in sediment traps (an excavated or bermed area or constructed device) to allow sediments to settle out prior to discharge.
- Use sediment controls and filtration to remove sediments from dewatering discharges.
- Prevent construction vehicle tires from tracking soil onto adjacent streets by constructing a temporary stone pad with a filter fabric underliner near the site exit where dirt and mud can be removed.
- When cleaning sediments from streets, driveways and paved areas on construction sites, use dry sweeping methods where possible. If water must be used to flush pavement, collect runoff to settle out sediments and protect storm drain inlets.

Note: Performance of erosion and sediment controls is dependent on proper installation, routine inspections and maintenance of the controls. Straw bale barriers are an example of a BMP that has not been as effective as expected due to improper use. Most of the BMPs described above are temporary and if left alone can quickly fall into disrepair and/or become ineffective. Routine inspections and maintenance, particularly before and after a storm event, must be part of any erosion and sediment control plan.

The RWQCB's Field Manual, the CASQA Stormwater Best Management Practice Handbook for Construction, and the ABAG Manual of Standards for Erosion and Sediment Control provide specific details and design criteria for erosion and sediment control plans.

Drainage swales channel runoff around a construction site. Planting temporary vegetation on freshly graded areas, and trenching and staking fiber rolls and/or silt fences downslope are common techniques for preventing erosion and controlling sediment.

Best Management Practices

Make sure equipment repair area is bermed or well away from creeks and storm drains.

General Site Maintenance

Prevent spills and leaks

Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other fluids on the construction site are common sources of stormwater pollution and soil contamination. Construction material spills can also cause serious problems. Careful site planning, preventive maintenance, and good materials handling practices can eliminate most spills and leaks.

- Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks.
- Designate specific areas of the construction site, well away from creeks or storm drain inlets, for vehicle and equipment parking and routine maintenance.
- Perform major maintenance, repair jobs and vehicle and equipment washing off-site when feasible, or in designated and controlled areas on-site.
- 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 labeled separate containers, and recycle whenever possible. Note that in order to be recyclable, such liquids must not be mixed with other fluids. Non-recycled fluids generally must be disposed of as hazardous wastes.

Clean up spills immediately after they happen

When vehicle fluids or materials such as paints or solvents are spilled, cleanup should be immediate, automatic, and routine.

- Sweep up spilled dry materials (e.g., cement, mortar, or fertilizer) immediately. Never attempt to "wash them away" with water, or bury them. Use only minimal water for dust control.
- Clean up liquid spills on paved or impermeable surfaces using "dry" cleanup methods (e.g., absorbent materials like cat litter, sand or rags).

Clean up spills on dirt areas by removing contaminated soil.

- Clean up spills on dirt areas by digging up and properly disposing of the contaminated soil.
- Report significant spills to the appropriate spill response agencies immediately (See reference list on the back cover of this booklet for more information).

Note: Used cleanup rags that have absorbed hazardous materials must either be sent to a certified industrial laundry or dry cleaner, or disposed of through a licensed hazardous waste disposal company.

Best Management Practices

Store materials under cover

Wet and dry building materials with the potential to pollute runoff should be stored under cover and/or surrounded by berms when rain is forecast or during wet weather.

- Store stockpiled materials and wastes under a temporary roof or secured plastic sheeting or tarp.
- Berm around storage areas to prevent contact with runoff.
- Plaster or other powders can create large quantities of suspended solids in runoff, which may be toxic to aquatic life and cause serious environmental harm even if the materials are inert. Store all such potentially polluting dry materials —especially open bags— under a temporary roof or inside a building, or cover securely with an impermeable tarp. By properly storing dry materials, you may also help protect air quality, as well as water quality.
- Store containers of paints, chemicals, solvents, and other hazardous materials in accordance with secondary containment regulations and under cover during rainy periods.

Store building materials under cover. Make sure dumpsters are properly covered to keep out rain.

Cover and maintain dumpsters

Open and/or leaking dumpsters can be a source of stormwater pollution.

- Cover open dumpsters with plastic sheeting or a tarp. Secure the sheeting or tarp around the outside of the dumpster. If your dumpster has a cover, close it.
- If a dumpster is leaking, contain and collect leaking material. Return the dumpster to the leasing company for repair/exchange.
- Do not clean dumpsters on-site. Return to leasing company for periodic cleaning, if necessary.

Collect and properly dispose of paint removal wastes

Paint removal wastes include chemical paint stripping residues, paint chips and dust, sand blasting material and wash water. These wastes contain chemicals that are harmful to the wildlife in our creeks and the water bodies they flow to. Keep all paint wastes away from storm drains.

- Non-hazardous paint chips and dust from 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 or tributyl tin must be disposed of as a hazardous waste.
- When stripping or cleaning building exteriors with high-pressure water, cover or berm storm drain inlets. If possible (and allowed by your local wastewater treatment plant), collect (mop or vacuum) building cleaning water and discharge to the sanitary sewer. Alternatively, discharge non-contaminated wash water onto a dirt area and spade into the soil. Be sure to shovel or sweep up any debris that remains in the gutter and dispose of as garbage.

Clean up paints, solvents, adhesives, and cleaning solutions properly

Although many paint materials can and should be recycled, liquid residues from paints, thinners, solvents, glues, and cleaning fluids are hazardous wastes. When they are thoroughly dry, empty paint cans, used brushes, rags, absorbent materials, and drop cloths are no longer hazardous and may be disposed of as garbage.

- Never clean brushes or rinse paint containers into a street, gutter, storm drain, or creek.
- For water-based paints, paint out brushes to the extent possible and rinse to a drain leading to the sanitary sewer (i.e., indoor plumbing).
- For oil-based paints, paint out brushes to the extent possible, and filter and reuse thinners and solvents. Dispose of unusable thinners and residue as hazardous waste.
- Recycle, return to supplier or donate unwanted water-based (latex) paint. You may be able to recycle clean empty dry paint cans as metal (check with the local planning or building department for more information).
- Dried latex paint may be disposed of in the garbage.
- Unwanted paint (that is not recycled), thinners, and sludges must be disposed of as hazardous waste.
- More and more paint companies are recycling excess latex paint (check with the local planning or building department for more information).

Keep fresh concrete and cement mortars out of gutters, storm drains, and creeks

Concrete and cement-related mortars that wash into gutters and storm drains are toxic to fish and the aquatic environment.

- Locate mortar/stucco mixers inside bermed areas to avoid discharge to street or storm drains.
- Avoid mixing excess amounts of fresh concrete or cement mortar.
- Store dry and wet materials under cover, protected from rainfall and runoff.
- Wash out concrete transit mixers only in designated wash-out areas where the water will flow into settling ponds or onto dirt or stockpiles of aggregate base or sand. Pump water from settling ponds to the sanitary sewer, where allowed. Whenever possible, recycle washout by pumping back into mixers for reuse. Never dispose of washout into the street, storm drains, drainage ditches or creeks.
- Whenever possible, return contents of mixer barrel to the yard for recycling. Dispose of small amounts of excess concrete, grout, and mortar in the trash.

Service and maintain portable toilets

Leaking portable toilets are a potential health and environmental hazard.

- Inspect portable toilets for leaks.
- Be sure the leasing company adequately maintains, promptly repairs, and replaces units as needed.
- The leasing company must have a permit to dispose of waste to the sanitary sewer.
- Do not place on or near storm drain inlets.

Dispose of cleared vegetation properly

Cleared vegetation, tree trimmings, and other plant material can cause environmental damage if it gets into creeks. Such "organic" material requires large quantities of oxygen to decompose, which reduces the oxygen available for fish and other aquatic life.

- Do not dispose of plant material in a creek or drainage facility or leave it in a roadway where it can clog storm drain inlets.
- Avoid disposal of plant material in trash dumpsters or mixing it with other wastes. Compost plant material or take it to a landfill or other facility that composts yard waste (check with the local planning or building department for more information).

Recycle yard waste and tree prunings at a landfill that chips and composts plant material.

Best Management Practices

- Keep pollutants off exposed surfaces. Place trash cans around the site to reduce litter. Dispose of non-hazardous construction wastes in covered dumpsters or recycling receptacles.
- Practice source reduction — reduce waste by ordering only the amount you need to finish the job.
- Do not over-apply pesticides or fertilizers and follow manufacturers instructions for mixing and applying materials.
- Recycle leftover materials whenever possible. 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 are recyclable (check with the local planning or building department for more information).
- Dispose of all wastes properly. Materials that cannot be reused or recycled must be taken to an appropriate landfill or may require disposal as hazardous waste. Never throw debris into channels, creeks or into wetland areas. Never store or leave debris in the street or near a creek where it may contact runoff.
- Illegal dumping is a violation subject to a fine and/or time in jail. Be sure that trailers carrying your materials are covered during transit. If not, the hauler may be cited and fined.
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Erosion Prevention and Sediment Control

Prevent erosion

Soil erosion is the process by which soil particles are removed from the land surface, by wind, water and/or gravity. Soil particles removed by stormwater runoff are pollutants that when deposited in local creeks, lakes, Bay or Delta, can have negative impacts on aquatic habitat. Exposed soil after clearing, grading, or excavation is easily eroded by wind or water. The following practices will help prevent erosion from occurring on the construction site:

- Plan the development to fit the topography, soils, drainage pattern and natural vegetation of the site.
- Delineate clearing limits, easements, setbacks, sensitive or critical areas, trees, drainage courses, and buffer zones to prevent excessive or unnecessary disturbances and exposure.
- Phase grading operations to reduce disturbed areas and time of exposure.
- Avoid excavation and grading during wet weather.
- Limit on-site construction routes and stabilize construction entrance(s) and exit(s).
- Remove existing vegetation only when absolutely necessary.
- Construct diversion dikes and drainage swales to channel runoff around the site.
- Use berms and drainage ditches to divert runoff around exposed areas. Place diversion ditches across the top of cut slopes.

Demolition Waste Management

Make sure all demolition waste is properly disposed of

Demolition debris that is left in the street or pushed over a bank into a creek bed or drainage facility causes serious problems for flood control, storm drain maintenance, and the health of our environment. Different types of materials have different disposal requirements or recycling options.

- Materials that can be recycled from demolition projects include: metal framing, wood, concrete, asphalt, and plate glass.
- Materials that can be salvaged for reuse from old structures include: doors, banisters, floorboards, windows, 2x4s, and other old, dense lumber.
- Unusable, unrecyclable debris should be confined to dumpsters, covered at night and during wet weather, and taken to a landfill for disposal.
- Hazardous debris such as asbestos must be handled in accordance with specific laws and regulations and disposed of as a hazardous waste. For more information of asbestos handling and disposal regulations, contact the Bay Area Air Quality Management District.
- Arrange for an adequate debris disposal schedule to ensure that dumpsters do not overflow.
- Most local planning or building departments have lists of recycling and disposal services for construction and demolition debris.

Roadwork and Pavement Construction

Plan roadwork and pavement construction to avoid stormwater pollution

Road paving, surfacing, and asphalt removal happen right in the street, with numerous opportunities for stormwater pollution from the asphalt mix, saw-cut slurry, or excavated material. Properly proportioned asphalt mix and well-compacted pavement avoid a host of water pollution problems.

- Apply concrete, asphalt, and seal coat during dry weather to prevent contaminants from contacting stormwater runoff.
- Cover storm drain inlets and manholes when paving or applying seal coat, slurry, surface seal, fog seal, etc.
- Always park paving machines over drip pans or absorbent materials, since they tend to drip continuously.
- When making saw-cuts in pavement, use as little water as possible. Cover catch basin completely with filter fabric during the sawing operation and contain the slurry by placing sand/gravel bags around the catch basin. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site.
- 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.
- Allow aggregate rinse to settle, and pump the water to the sanitary sewer if allowed by your local wastewater authority.
- Never wash sweepings from exposed aggregate concrete into a street or storm drain. Collect and return to aggregate base stockpile, or dispose with trash.
- Recycle broken concrete and asphalt (check with the local planning or building department for more information).

Contaminated Ponded Stormwater, Groundwater, and Soil Guidance

Look for ponded stormwater, groundwater, and/or soil contamination

Ponded stormwater, groundwater and soil may become contaminated if exposed to hazardous materials. If any of the following conditions apply, contaminated ponded stormwater, groundwater, and/or soil may be present and pose a potential health and environmental hazard:

- The project site is in an area of previous commercial/industrial activity;
- There is a history of illegal dumping on the site or adjacent properties;
- The construction site is subject to a Superfund, state, or local cleanup order;
- Ponded stormwater, groundwater and/or water generated by dewatering exhibits an oily-sheen and/or smells of petroleum;
- Soil appears discolored, smells of petroleum and/or exhibits other unusual properties;
- Abandoned underground storage tanks, drums, or other buried debris are encountered during construction activities; or
- Spills have occurred on the site or adjacent properties involving pesticides and herbicides; fertilizers; detergents; plaster and other products; petroleum products such as fuel, oil, and grease; or other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Take appropriate action

Ponded stormwater, groundwater, or water generated by dewatering that is contaminated cannot be discharged to a street, gutter, or storm drain. If contamination is suspected, the water should be contained and held for testing. Call the appropriate local agency and/or the Regional Water Quality Control Board for further guidance (See reference list on the back cover of this booklet for more information).

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.

Pollution Control Agencies and Sources of Information

Storm water quality management programs

Alameda Countywide Clean Water Program
951 Turner Court, Hayward, CA 94545
(510) 670-5543
www.cleanwaterprogram.com

Contra Costa Clean Water Program
255 Glacier Drive, Martinez, CA
94553-4897 (925) 313-2392
(800) NO DUMPING
www.cccleanwater.org

Fairfield-Suisun Urban Runoff Management Program
1010 Chadbourne Road
Fairfield, CA 94534 (707) 429-8930
www.fsurf.com

Marin County Stormwater Pollution Prevention Program
5504 Civic Center Drive, Room 304,
San Rafael, CA 94903 (415) 499-6528
www.mcstoppp.org

San Francisco Stormwater Management Program
3801 3rd Street, Suite 600
San Francisco, CA 94124 (415) 695-7339
http://stormwater.sfwater.org

San Mateo Countywide Water Pollution Prevention Program
555 County Center, Fifth Floor
Redwood City, CA 94063
(650) 363-4381
www.flowstobay.org

Santa Clara Valley Urban Runoff Pollution Prevention Program
111 West Evelyn Ave., Ste. 110
Sunnyvale, CA 94086 (408) 734-2482
www.scvurppp.org

Sonoma County Water Agency
Administration Building
404 Aviation Blvd.
Santa Rosa, CA 95403
(707) 526-5370
www.scwa.ca.gov

Vallejo Sanitation and Flood Control District
450 Ryder Street, Vallejo, CA 94590
(707) 644-8949
www.vsfcd.com

Bay Area Stormwater Management Agencies Association (BASMAA)
1515 Clay Street, Suite 1400,
Oakland, CA 94612 (510) 622-2326
(888) BayWise www.basmaa.org

Agencies to call in the event of a spill

You are required by law to report all significant releases or suspected significant releases of hazardous materials, including oil.

To report a spill, call the following agencies:

1. Dial 911 or your local emergency response number.

2. Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

For spills of "Federal Reportable Quantities" of oil, chemicals, or other hazardous materials to land, air, or water, notify the National Response Center (800-424-8802). If you are not sure whether the spill is of a "reportable quantity," call the federal Environmental Protection Agency (800) 424-9346 for clarification.

For further information, see *California Hazardous Material Spill/ Release Notification Guidance* (State Office of Emergency Services, Hazardous Materials Division).

Agencies to call if you find or suspect contaminated soil or groundwater

Regional Water Quality Control Board:

San Francisco Bay Region
(510) 622-2300

Central Valley Region
(916) 464-3291

California Environmental Protection Agency (Cal EPA), Department of Toxic Substances Control (DTSC)
(510) 540-2122

Documents and available resources

From State Water Resources Control Board (SWRCB)
(916) 341-5537
www.waterboards.ca.gov

General Construction Activity Storm Water Permit

From Friends of the San Francisco Estuary
(510) 622-2337
www.abag.ca.gov/bayarea/sfep

Field Manual

Guidelines for Construction Projects

Hold On to Your Dirt – Video

Keep it Clean – Video

From Association of Bay Area Governments (ABAG)
(510) 464-7900
www.abag.ca.gov

Manual of Standards for Erosion and Sediment Control Measures

From Cal EPA, DTSC
(800) 72TOXIC
www.dtsc.ca.gov

Waste Minimization for the Building Construction Industry - Fact Sheet

From California Stormwater Quality Association (CASQA)
www.cabmphandbooks.com

Stormwater Best Management Practice Handbook – Construction

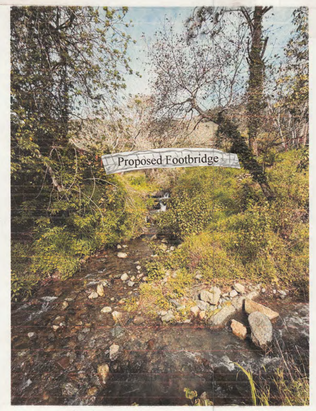
THANKS

BASMAA adapted this booklet from one originally developed and generously shared by the Santa Clara Valley Nonpoint Source Pollution Control Program.

Illustrations by John Finger

Printed on Recycled Paper

SITE PHOTOS



LOOK'G NORTH @

FITZHENRY & BLACKROCK CONFLUENCE AWAY FROM EASKOOT CREEK

SHEET INDEX

Michael Allen Mitchell Draughtsman:
1. Project Data, Vicinity Map, Sheet Index & Project Consultants.
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3. Site Plan at Proposed Bridge & Approaches.
4. Floor Plans at Bridge & Bridge Abutments.
5. Bridge Building Elevations.
6. Bridge Building Elevations & Sections.

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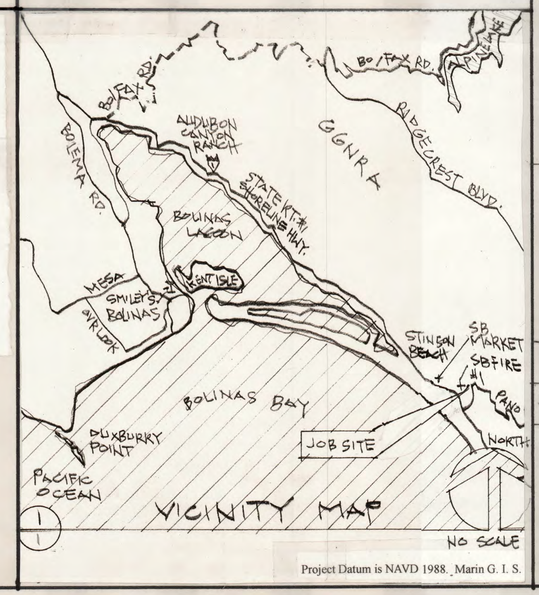
1 of 1 Record Survey.
1 of 4 Topo Map Overall Project Site.
2 of 4 Topo Map South West Project Bridge Site.
3 of 4 Topo Map North West Project Bridge Site & Existing Meadow.
4 of 4 Topo Map South East Project Barn & Milk House Rebuild.
Richard J. Souza, Professional Engineer:
C1.0 Civil Grading & Drainage Plan.
Julia Benz Wetlands Science:
HR1 Habitat Restoration Site Plan.



Project Datum is NAVD 1988. Marin G. I. S.

Project Data

The Code Editions Used for this project are the: 2022 C.B.C., or 2022 C.R.C., 2022 C.M.C., 2022 C.P.C., 2022 C. Elec. C., 2022 C. Energy C., & 2022 C.F.C.

Zoning: C-R1
Project Longitude & Latitude: N. 37.899 W. 122.637
Flood Zones: AE & X

Development Associated with New Bridge:
6' x 30' compacted road base sloped gravel path at Willow approach to bridge.
18 linear feet of 8" thk ret wall. Max ht 3' above (e) grade at Willow Bridge approach.
2 - lengths of 30 linear feet (e) saved site spoils field stones dry stacked path borders. Field stone borders not to exceed 18" above (e) grade while tapering flush to grade at the Willow Bridge approach.
100 sq ft cedar bd decking at landing & ramp over (e) conc SBCC Patio.
100 sq ft conc slab at landing, ramp & stairs over (e) conc at SBCC Patio.
1.5'W x 0.5"D x 34"Tall flat bar handrails Ramp, Landing & Stairs at SBCC Patio side of Bridge.

New 238 sq ft Bridge:
2 - 8'L x 2'W x 3'D conc. grade beam Bridge abutments.
4 - 2' diameter x 30'D drilled conc. piers. = 3.5 cu yd/pier
All plates & hardware to be stainless steel.
2 - 34' long arched & curved 6" x 30" ext. cedar glulam beams.
6'W x 34'L 3 x 8 p.t. deck joist.
7'W x 34'L Bridge with 3 x 8 cedar board planking.
72' of Bridge guard rail shaped from 3 x 6 cedar railing cap with stainless steel guard rail stanchions.
Stainless steel hog wire screens w/max. 4" openings at Bridge guard railing.

Creekside Restoration:
From North side State Rt. #1 to past north end of the SBCC Chapel. Restore as per plan.
Approx. 360 linear feet restoration of the Easkoot, Black Rock & Fitzhenry creek banks, channels, adjacent meadow & wetland areas.

Project Consultants

Miller Pacific Engineering Group_____Geotechnical Engineering Consultants
Phelps Land Surveyors_____Topo Map & Record Survey
Richard Souza, Professional Engineer_____Civil Engineering
JB Botany & Wetland Science_____Biological Assessment & Habitat Restoration Design
LAK Associates, LLC_____Planning Consultants
Michael Allen Mitchell_____Design & Draughting
Colin Busby, Basin Research_____Archaeology Review

MICHAEL MITCHELL DESIGN & DRAUGHTING P.O. Box 695 STINSON BEACH CALIFORNIA 94970 (415) 868-0449

PLANNING SET

DATE: 4.10.26

DRAWN: MAM

1

NOTES

The Code Editions used for this project are the:
2022 C.B.C., or the 2022 C.R.C., 2022 C.M.C., 2022 C.P.C,
2022 C. Elec. C., 2022 C. Energy C., 2022 C.F.C.

Zoning: C-R1
Project Longitude & Latitude: N. 37.899 W. 122.637
See Phelps & Associates Land Surveyors for Topo Map.
Project Datum is NAVD 1988. Marin G. I. S.

See Richard j. Souza, Professional Engineer Civil Engineering drawing C1.0 for: Erosion Control & Site Prep Plan, Grading Plan, Storm Drainage Treatment Plan & Prelim Utilities Plan.

The design engineer shall certify to the County in writing upon the completion of work that all grading & drainage improvements were installed in accordance with the approved plans & field directions. Certification letters shall reference building permit #'s, or #'s for specific work being certified, the address of the property & the A.P. #, and shall be signed & stamped by the certifying professional.

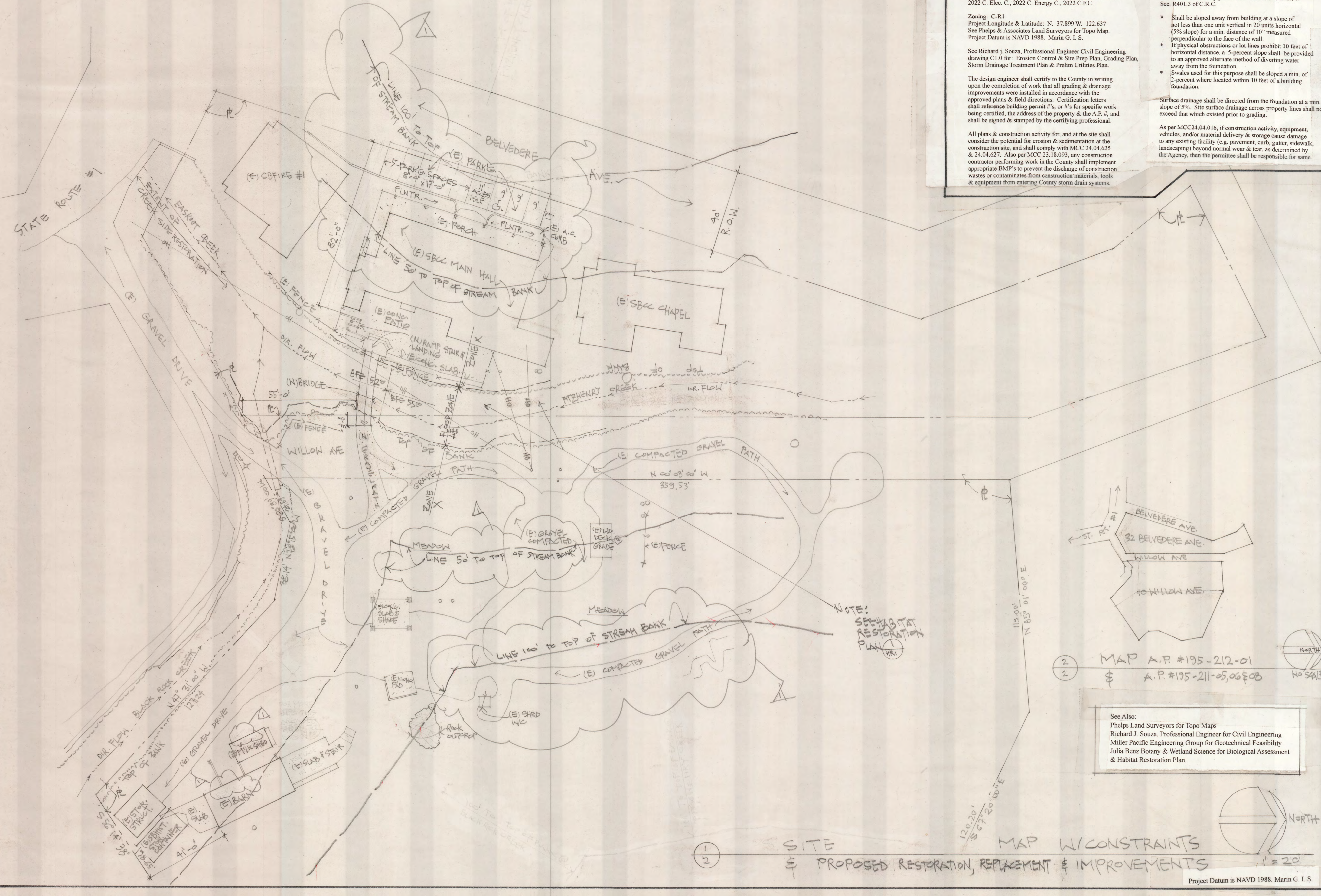
All plans & construction activity for, and at the site shall consider the potential for erosion & sedimentation at the construction site, and shall comply with MCC 24.04.625 & 24.04.627. Also per MCC 23.18.093, any construction contractor performing work in the County shall implement appropriate BMP's to prevent the discharge of construction wastes or contaminates from construction materials, tools & equipment from entering County storm drain systems.

Site Grading. The ground immediately adjacent to the foundation shall comply with Sec. 1804.3 of C.B.C., or Sec. R401.3 of C.R.C.

* Shall be sloped away from building at a slope of not less than one unit vertical in 20 units horizontal (5% slope) for a min. distance of 10" measured perpendicular to the face of the wall.
* If physical obstructions or lot lines prohibit 10 feet of horizontal distance, a 5-percent slope shall be provided to an approved alternate method of diverting water away from the foundation.
* Swales used for this purpose shall be sloped a min. of 2-percent where located within 10 feet of a building foundation.

Surface drainage shall be directed from the foundation at a min. slope of 5%. Site surface drainage across property lines shall not exceed that which existed prior to grading.

As per MCC24.04.016, if construction activity, equipment, vehicles, and/or material delivery & storage cause damage to any existing facility (e.g. pavement, curb, gutter, sidewalk, landscaping) beyond normal wear & tear, as determined by the Agency, then the permittee shall be responsible for same.



See Also:
Phelps Land Surveyors for Topo Maps
Richard J. Souza, Professional Engineer for Civil Engineering
Miller Pacific Engineering Group for Geotechnical Feasibility
Julia Benz Botany & Wetland Science for Biological Assessment & Habitat Restoration Plan.

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CALIFORNIA
94970
415 868 0949

PLANNING SET

PROPOSE: FOOTBRIDGE, CREEKSIDE RESTORATION
STINSON BEACH COMMUNITY CENTER INC.
32 BELVEDERE AVE. & 10 WILLOW AVE., AP. #'S 195-212-01 & 195-211-05, 06 & 08
STINSON BEACH, CALIFORNIA

△ 8.21.25

DATE: 4.10.26

DRAWN: MAM

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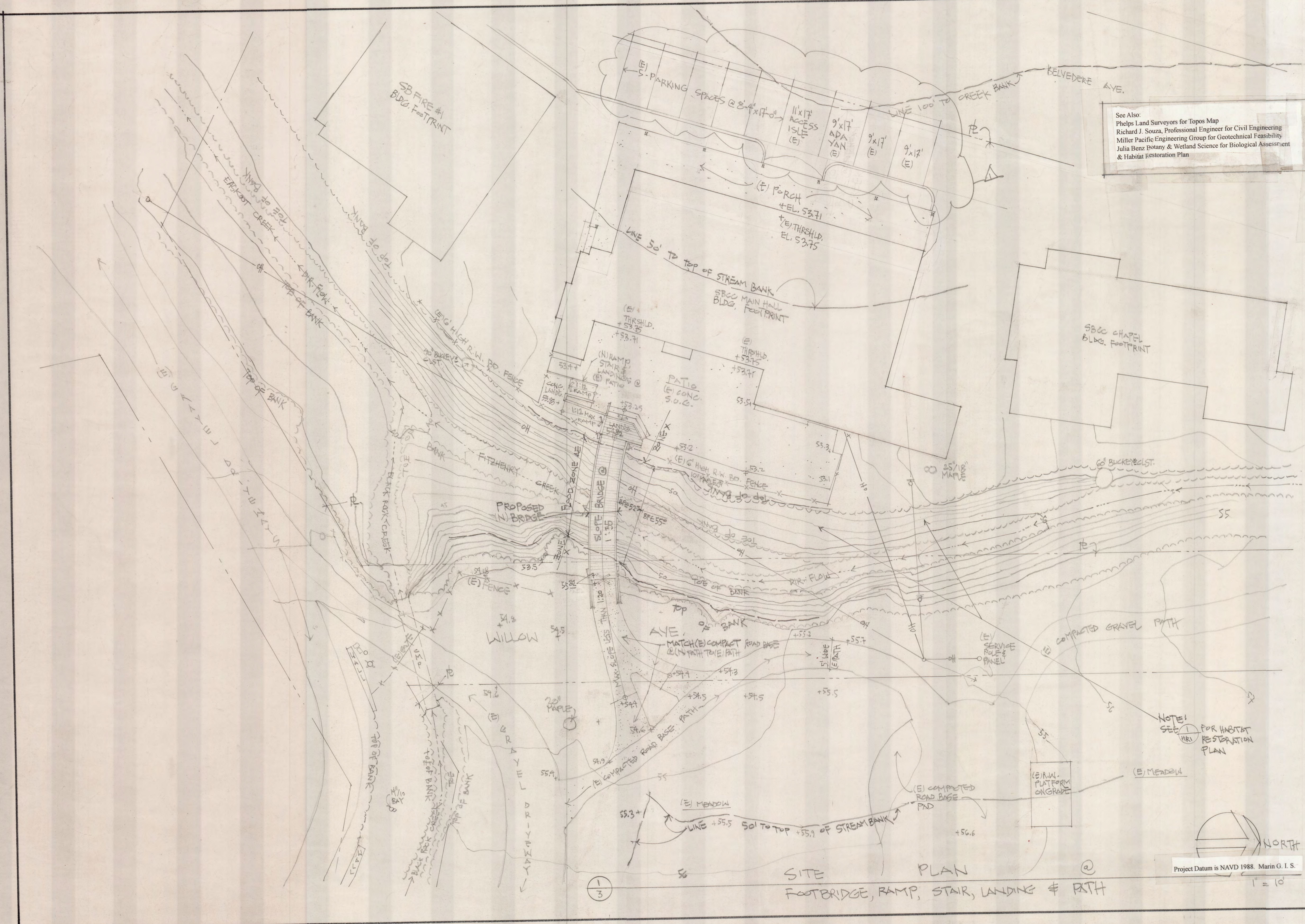
See Also:
Phelps Land Surveyors for Topos Map
Richard J. Souza, Professional Engineer for Civil Engineering
Miller Pacific Engineering Group for Geotechnical Feasibility
Julia Benz Botany & Wetland Science for Biological Assessment
& Habitat Restoration Plan
BELVEDERE AVE.
LINE 100' TO CREEK BANK
(E) 5-PARKING SPACES @ 8'-4" x 17'-0"
11'x17' ACCESS ISLE (E)
9'x17' ADA VAN (E)
9'x17' (E)
9'x17' (E)
SB FIRE #1 BLDG. FOOTPRINT
(E) PORCH
+EL. 53.71
+(E) THRSHLD. EL. 53.75
LINE 50' TO TOP OF STREAM BANK
SBCC MAIN HALL BLDG. FOOTPRINT
SBCC CHAPEL BLDG. FOOTPRINT
EASKOOT CREEK
TOP OF BANK
TOE OF BANK
DIR. FLOW
(E) 6' HIGH R.W. BD. FENCE
PATIO (E) CONC. S.O.G.
(N) RAMP, STAIR & LANDINGS @ (E) PATIO
FITZHENRY CREEK
PROPOSED (N) BRIDGE
FLOOD ZONE AE
SLOPE BRIDGE @ 1:35
60' BUCKEYE CLST.
25"/18" MAPLE
(E) GRAVEL DRIVEWAY
BLACK ROCK CREEK
(E) FENCE
WILLOW AVE.
MATCH (E) COMPACT ROAD BASE @ (N) PATH TO (E) PATH
(E) COMPACTED ROAD BASE PATH
(N) COMPACTED GRAVEL PATH
(E) SERVICE POLE & PANEL
20" MAPLE
14"/10" BAY
(E) R.W. PLATFORM ON GRADE
(E) COMPACTED ROAD BASE PAD
(E) MEADOW
LINE 50' TO TOP OF STREAM BANK
NOTE: SEE 1/HR1 FOR HABITAT RESTORATION PLAN
NORTH
Project Datum is NAVD 1988. Marin G. I. S.
SITE PLAN @ 1" = 10'
FOOTBRIDGE, RAMP, STAIR, LANDING & PATH
1/3

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PLANNING SET

PROPOSE: FOOTBRIDGE, CREEKSIDE RESTORATION
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32 BELVEDERE AVE. & 10 WILLOW AVE., AP. #S 195-212-01 & 195-211-05, 06 & 08
STINSON BEACH, CALIFORNIA

△1 8 21 26

DATE: 4.10.26

DRAWN: MAM

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See Also:
Phelps Land Surveyors for Topo Maps
Richard J. Souza, Professional Engineer for Civil Engineering
Miller Pacific Engineering Group for Geotechnical Feasibility
Julia Benz Botany & Wetland Science for Biological Assessment & Habitat Restoration Plan.

2/4 FLOOR PLAN @ BRIDGE ABUTTMENTS & LOW WALL 1/4" = 1'-0"

1/4 FLOOR PLAN @ BRIDGE, LANDGS., RAMP, PATH ON GRADE & SITE FEATURES 1/4" = 1'-0"

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PLANNING SET

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STINSON BEACH COMMUNITY CENTER INC.
32 BELVEDERE AVE. & 10 WILLOW AVE., AP. #'S 195-212-01 & 195-211-03, 06 & 08
STINSON BEACH CALIFORNIA

△ 8.21.16

DATE: 4.10.16

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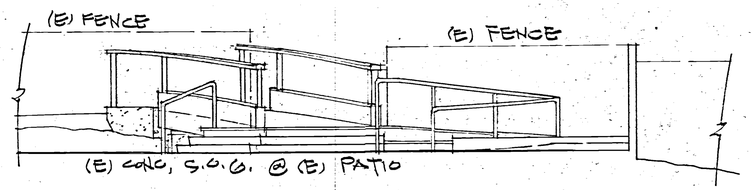
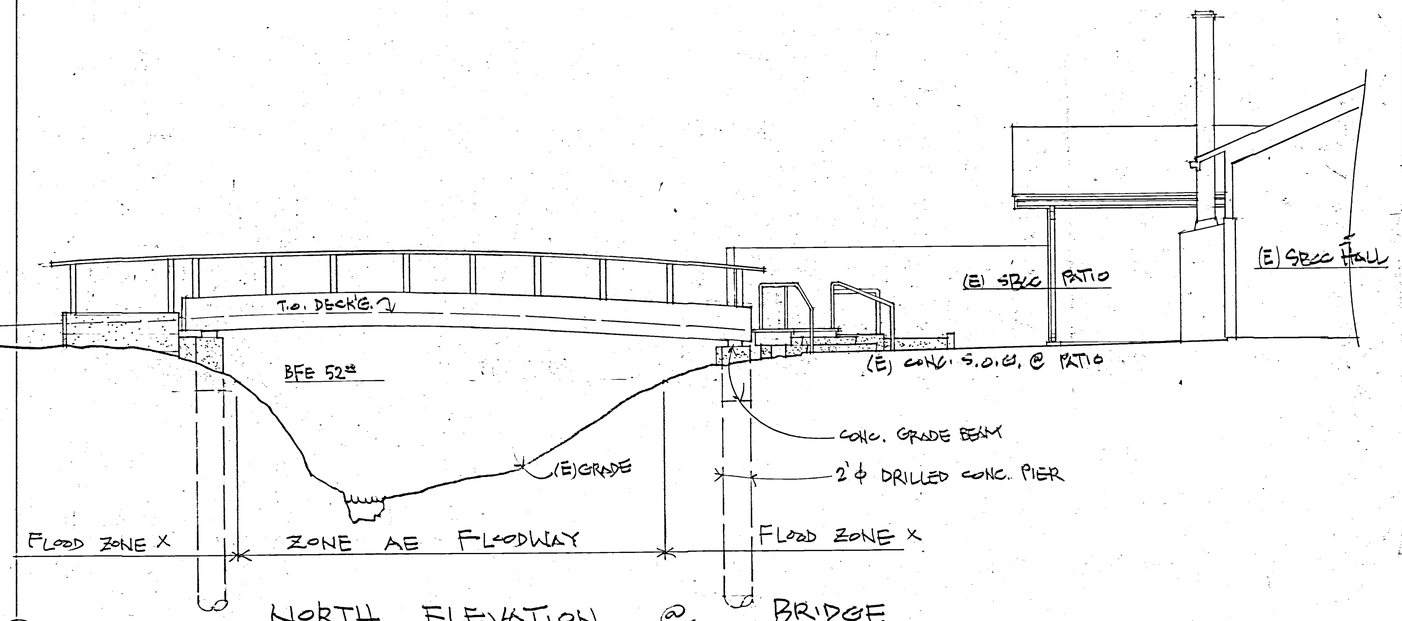


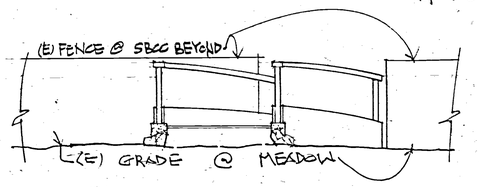
4/5 WEST ELEVATION @ BRIDGE, SBCC RAMP & STAIR 1/4"=1'-0"



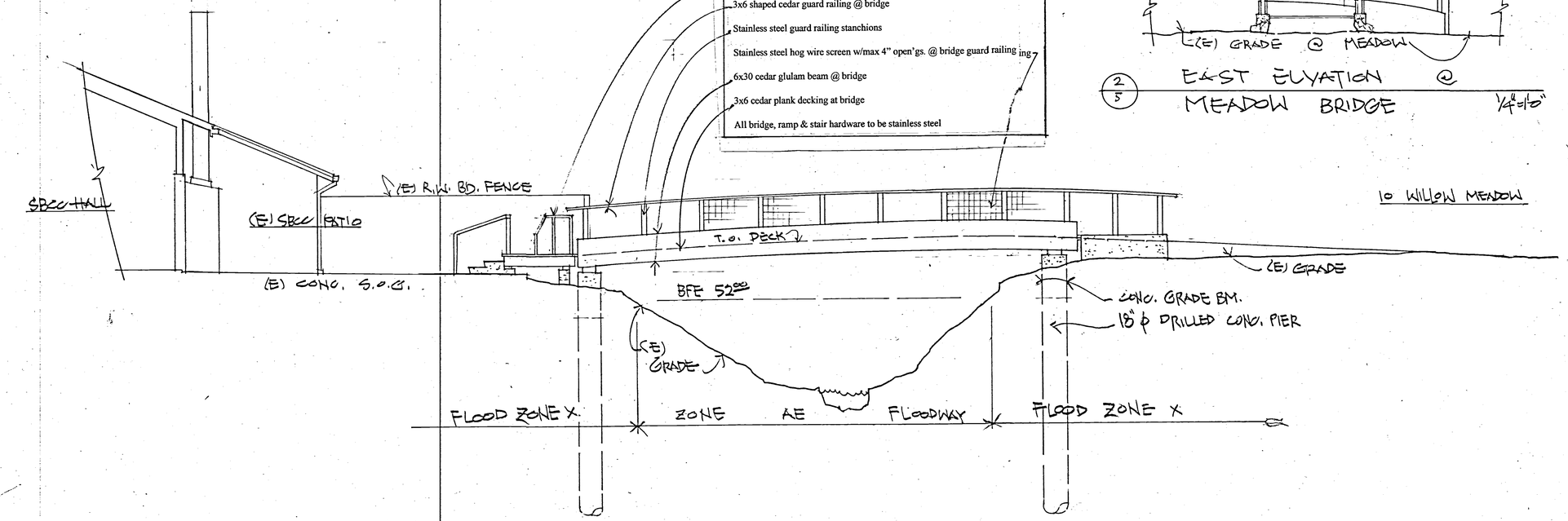
3/5 NORTH ELEVATION @ BRIDGE

1/4"=1'-0"

Typical Building Materials
Paint 0.5" x 1.5" flat bar hand rails matte black at ramp & stair
3x6 shaped cedar guard railing @ bridge
Stainless steel guard railing stanchions
Stainless steel hog wire screen w/max 4" open'gs. @ bridge guard railing
6x30 cedar glulam beam @ bridge
3x6 cedar plank decking at bridge
All bridge, ramp & stair hardware to be stainless steel



2/5 EAST ELEVATION @ MEADOW BRIDGE 1/4"=1'-0"



10 WILLOW MEADOW

1/5 SOUTH ELEVATION @ BRIDGE

1/4"=1'-0"

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P.O. Box 695
STINSON BEACH
CALIFORNIA
94970
(415) 868-0449

PLANNING SET

PROPOSE: FOOTBRIDGE & CREEKSIDE RESTORATION, STINSON BEACH COMMUNITY CENTER LLC. 10 WILLOW MEADOW & 20 BELVEDERE AVE. A.P. #'S 195-212-01 & 195-211-05, 06 & 08 STINSON BEACH, CALIFORNIA

1 8.21.26

DATE: 4.10.26

DRAWN: MAM

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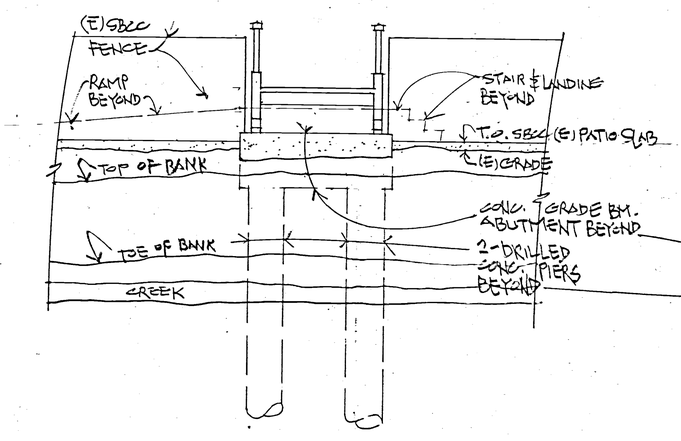
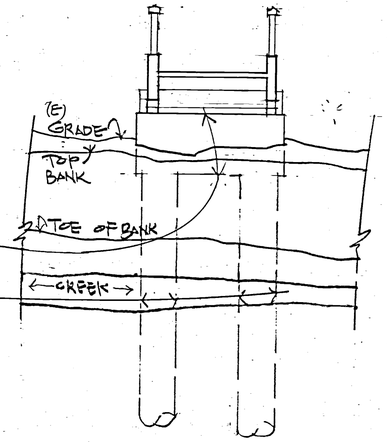


3/6 SECTION LOOK'G. WEST

1/4"=1'-0"

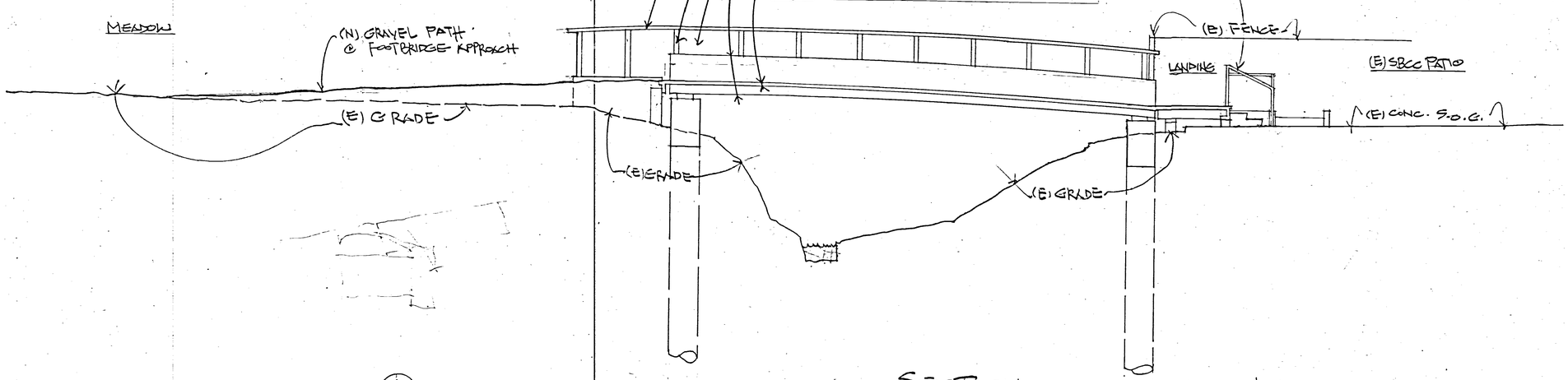


2/6 SECTION LOOK'G. EAST

1/4"=1'-0"

Typical Building Materials

- Paint 0.5" x 1.5" flat bar hand rails matte black at ramp & stair
- 3x6 shaped cedar guard railing @ bridge
- Stainless steel guard railing stanchions
- Stainless steel hog wire screen w/max 4" open'gs. @ bridge guard railing
- 6x30 cedar glulam beam @ bridge
- 3x6 cedar plank decking at bridge
- All bridge, ramp & stair hardware to be stainless steel



1/6 SECTION LOOK'G SOUTH

1/4"=1'-0"

Project Datum is NAVD 1988. Marin G. I. S.

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94970
(415) 868-0449

PLANNING SET

PROPOSE: FOOTBRIDGE @ CREEKSIDE RESTORATION
STINSON BEACH COMMUNITY CENTER
AT BELVEDERE AVE. & WILLOW AVE.
STINSON BEACH CALIFORNIA
A.P. #'S 195-212-01 & 195-211-05, 06 & 08

4 8.21.26

DATE: 4.10.26

DRAWN: MAM

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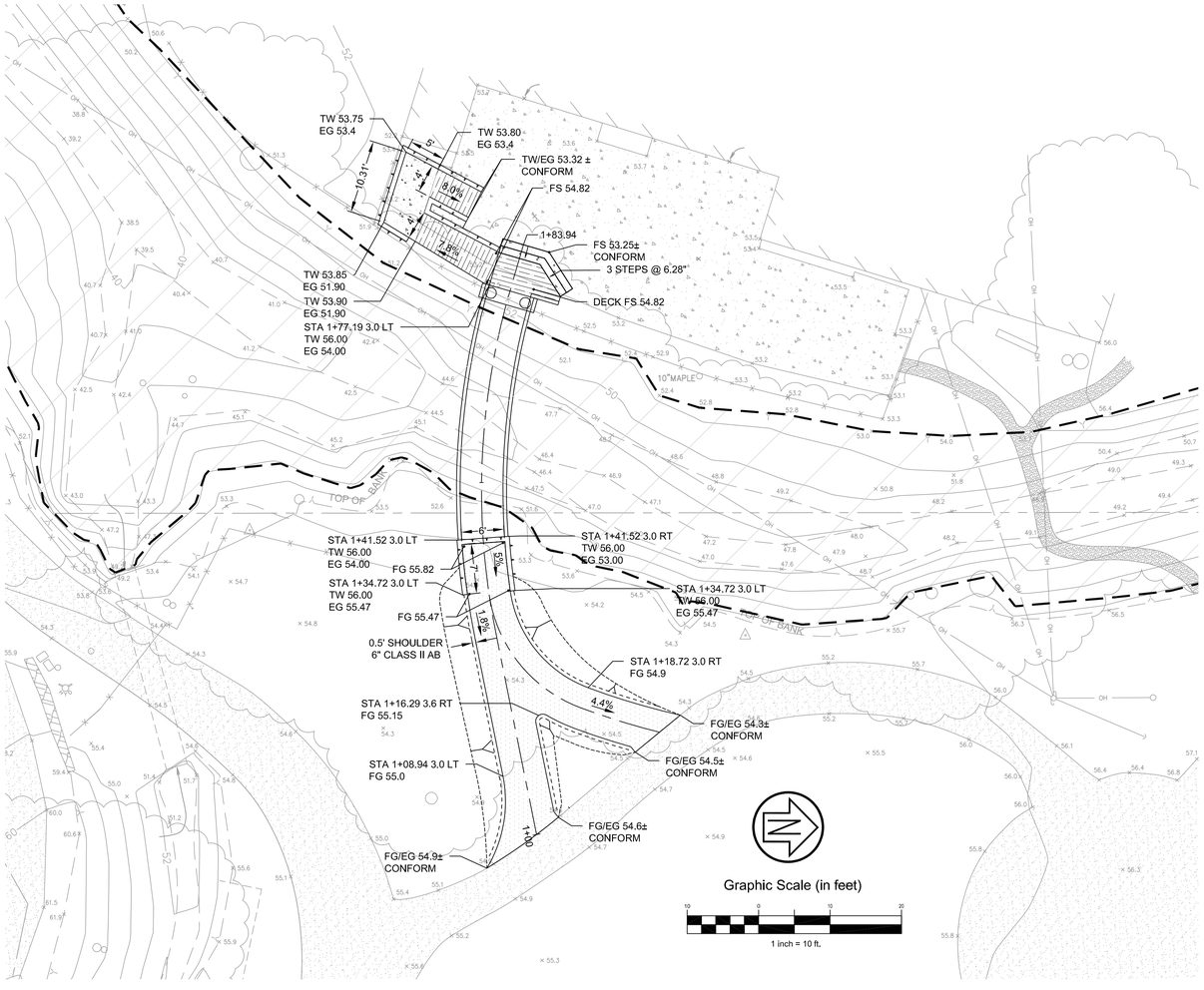
NONPROFIT ORGANIZATION
STINSON BEACH COMMUNITY CENTER
CIVIL GRADING DESIGN PLAN
32 BELVEDERE AVE



SITE PLAN VIEW
1-inch - 10 fT

GENERAL NOTES:

1. ALL WORK SHOWN ON THESE PLANS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH, ALL CONSTRUCTION DOCUMENTS REFERENCED IN THE CONTRACT.
2. CALL U.S.A. NORTH (UNDERGROUND SERVICE ALERT) BY DIALING 811 AND FOLLOW U.S.A. NORTH PROTOCOL BEFORE DIGGING. CONTRACTOR SHALL NOTIFY U.S.A. NORTH TO LOCATE UNDERGROUND UTILITIES. THE LOCATION FOR UTILITIES SHOWN ON THESE PLANS IS APPROXIMATE AND MAY NOT BE COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATION AND DEPTH WHERE REQUIRED TO PROTECT THE UTILITY. THIS VERIFICATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY.
3. CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL TRAFFIC CONTROL AND PUBLIC SAFETY IN ACCORDANCE WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD), THE STATE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS. CONTRACTOR SHALL PROVIDE SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR EACH ROAD TO THE ENGINEER FOR ACCEPTANCE PRIOR TO STARTING WORK.
4. CONTRACTOR SHALL BE RESPONSIBLE TO KEEP STREETS, ACCESS ROADS, AND SITE WITHIN THE CONSTRUCTION WORK AREA CLEAN AT ALL TIMES, INCLUDING SWEEPING AT THE END OF EACH DAY, IF NECESSARY.
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE DRAINAGE OF THE SITE DURING CONSTRUCTION.
6. CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, AND EQUIPMENT, FOR INSTALLATION, IMPLEMENTATION, AND MAINTENANCE OF ALL WATER POLLUTION CONTROL PROGRAM MEASURES THROUGHOUT THE PROJECT DURATION. SURFACE WATER IS CLASSIFIED AS ANY BODY OF WATER ABOVE GROUND.
7. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTION. DISCREPANCIES BETWEEN THE ACTUAL CONDITIONS AND THOSE SHOWN ON THESE PLANS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
8. RETAINING WALL, BRIDGE, ABUTMENT, FOUNDATION, HANDRAILING, AND CONCRETE STEP DESIGN BY OTHERS.
9. SCARIFY, MOISTURE CONDITION 8" OF SUBGRADE BELOW NEW PATHWAY AND CONCRETE FLATWORK TO 90% RELATIVE COMPACTION OR AS APPROVED BY THE ENGINEER. COMPACT CLASS II AB TO 95% RELATIVE COMPACTION.
10. FIELD SURVEY PERFORMED BY PHELPS & ASSOCIATES. SEE TOPOGRAPHIC MAP DATED AUG-2023 AND REVISED JAN-2024.

LEGEND

	APPROXIMATE TREE DRIP LINE
X	FENCE LINE
OH	OVERHEAD LINES
	TOP OF BANK
	FLOW LINE
	SURVEY CONTROL POINT
	JOINT POLE
	GUY ANCHOR
	FIRE HYDRANT
	HOSE BIB
AB	AGGREGATE BASE
ER	ELECTRIC RISER
IG	INVERT GRADE
WV	WATER VALVE
CMP	CORRUGATED METAL PIPE
WM	WATER METER
EB	ELECTRIC BOX
AC	ASPHALTIC CONCRETE
CLST	CLUSTER
CONC	CONCRETE
	FLOODWAY, PER FEMA FLOOD PANEL 06041C0444E – REVISED 8/15/2017
	6" CLASS II AB PATHWAY
	5" CONCRETE OVER 4" CLASS II
	BRIDGE & RAMP BY OTHERS

GRADING QUANTITIES

CUT: 5 CUBIC YARDS
FILL :1 CUBIC YARD
NET: 4 CUBIC YARD (OFF HAUL)

THE EARTHWORK QUANTITIES ABOVE ASSUME FULL BUILD OUT. GRADING QUANTITIES HAVE NOT BEED ADJUSTED TO ACCOUNT FOR:

- CLEARING AND GRUBBING
- BULKING OR SHRINKAGE
- OVER-EXCAVATION AS MAY BE REQUIRED BY GEOTECHNICAL ENGINEER
- CONSTRUCTION METHODS
- PIERS

811 Know what's below. Call before you dig.

811 Know what's below. Call before you dig.

Rev	Date	Description

Checked
Drawn
Designed

STINSON BEACH COMMUNITY CENTER
GRADING PLAN
A.P.N 195-211-05
32 Belvedere Ave

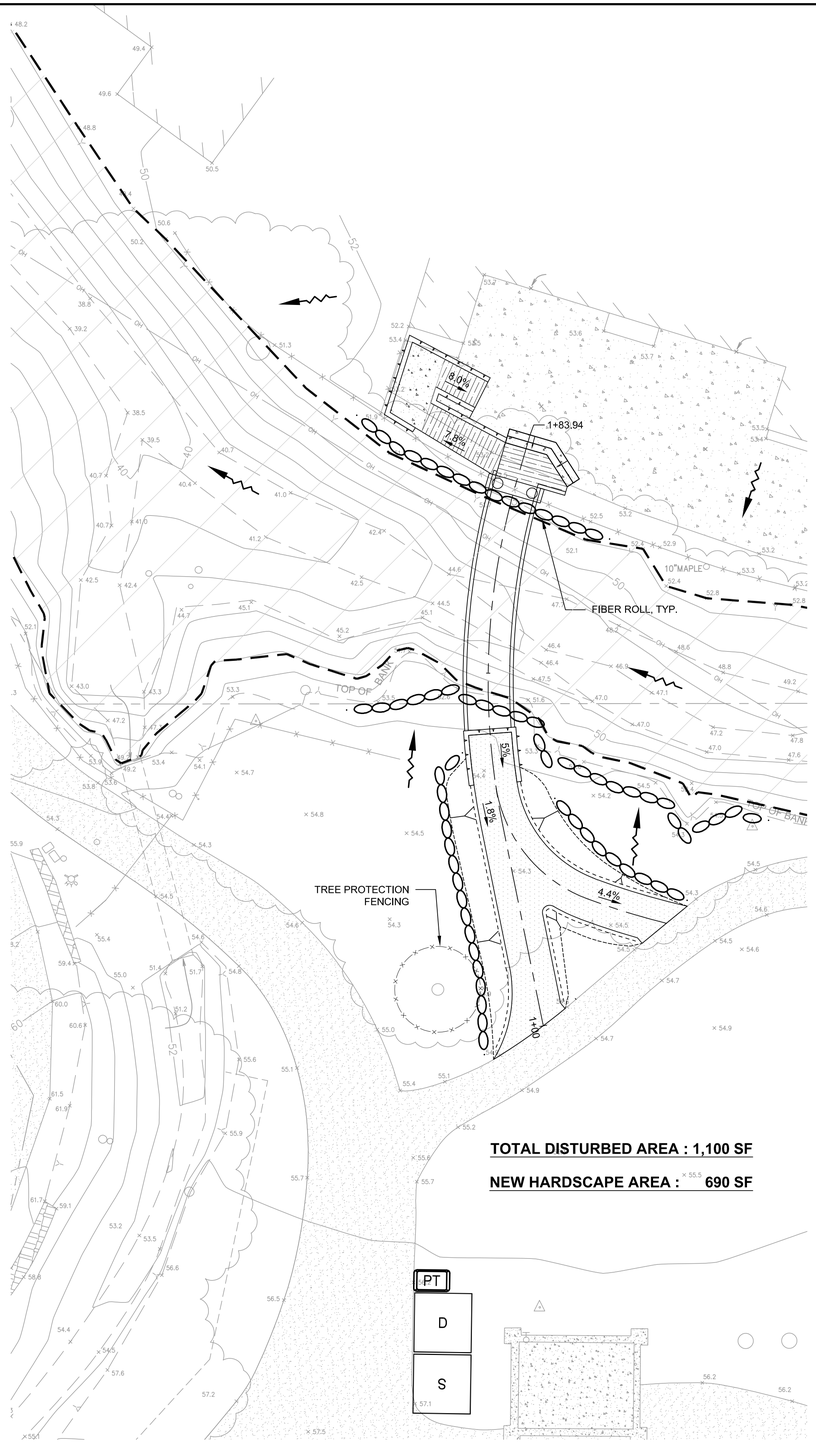
Town Of
Stinson Beach
County Of
Marin
State Of
California

Prepared Under the Direction of:

REGISTERED PROFESSIONAL ENGINEER
RICHARD J. SOUZA
No. 67892
CIVIL
STATE OF CALIFORNIA

Sheet
C1.0

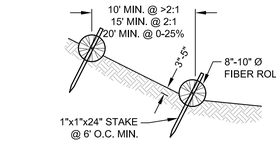
Scale:	as shown
Date:	8/27/2026
Project Number:	
Plan File:	



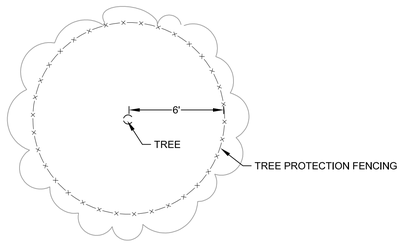
TOTAL DISTURBED AREA : 1,100 SF

NEW HARDSCAPE AREA : 690 SF

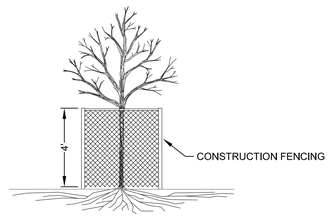
SITE PLAN VIEW
1-inch - 10 fT



1 FIBER ROLL INSTALLATION DETAILS
SCALE: NTS



PLAN VIEW



SECTION VIEW

NOTE:
1. PROVIDE TEMPORARY TREE PROTECTION FENCING AT THE LIMITS SHOWN ON THE PLANS, CONSISTING OF SCH 40 PVC POSTS WITH ORANGE PLASTIC MESH FENCING, SECURELY INSTALLED AND MAINTAINED IN PLACE FOR THE DURATION OF CONSTRUCTION.

2 TREE PROTECTION DURING CONSTRUCTION
SCALE: N.T.S.

EROSION CONTROL LEGEND

EXISTING

FIBER ROLLS

BANK CUT FOR FOUNDATION

DIRECTION OF FLOW OR SLOPE

EXISTING DIRECTION OF FLOW OR SLOPE

WD — CONCRETE WASHDOWN AREA

D — DELIVERY AREA

S — NON HAZARDOUS STORAGE

PT — PORTABLE TOILET WITH LINER

POLLUTION CONTROL NOTES:

1. FUTURE FINISH GRADING SHALL DIRECT ALL STORM WATER RUNOFF TO THE STREETS OR INLETS AS SHOWN ON PLANS AND ULTIMATELY TO THE COUNTY-MAINTAINED STORM DRAIN SYSTEM. ALL STORM WATER FROM THIS SITE IS INTENDED TO BE DIRECTED TO THE COUNTY STORM DRAINS.
2. IF SIGNIFICANT SEDIMENT OR OTHER VISUAL SYMPTOMS OF IMPURITIES ARE NOTICED IN THE STORM WATER, CONTACT THE CIVIL ENGINEER IMMEDIATELY.
3. CONTRACTOR IS RESPONSIBLE FOR INSPECTION AND RESTORATION OF ALL ASPECTS OF THIS PLAN. SEDIMENT ON SIDEWALKS AND GUTTERS SHALL BE REMOVED BY SHOVEL OR BROOM AND PLACED IN REAR LOT OR OTHER STOCKPILES.
4. CATCH BASIN TOPS SHALL BE STAMPED TO READ, "NO DUMPING - FLOWS TO BAY".
5. ALL DUMPSTERS OR OTHER TRASH STORAGE ENCLOSURES SHALL BE UTILIZED SOLELY FOR NON-HAZARDOUS MATERIALS.
6. ALL EMPLOYEES, CONTRACTORS, AND SUBCONTRACTORS ARE RESPONSIBLE FOR CONFORMING TO THE ELEMENTS SHOWN ON THE PLANS OR RELATED DOCUMENTS. ANY CONTRACTOR PLANNING TO DO WORK ON-SITE SHALL BE RESPONSIBLE FOR OBTAINING AND REVIEWING ALL INFORMATION PRIOR TO START OF WORK AND EDUCATING ALL OF THEIR EMPLOYEES OR SUBCONTRACTORS AS TO THE CONTENTS OF THIS PLAN.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND FILING ALL PLANS WITH RELATED AGENCIES ASSOCIATED WITH THEIR WORK. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PERMITS FOR STORAGE OF HAZARDOUS MATERIALS, BUSINESS PLANS, PERMITS FOR STORAGE OF FLAMMABLE LIQUIDS, GRADING PERMITS, OR OTHER PLANS OR PERMITS REQUIRED BY MARIN COUNTY, THE COUNTY OF MARIN, OR OTHER AGENCIES. ALL PROPERTY OWNERS, CONTRACTORS, OR SUBCONTRACTORS WORKING ON-SITE ARE INDIVIDUALLY RESPONSIBLE FOR OBTAINING AND SUBMITTING ANY BUSINESS PLANS OR PERMITS REQUIRED BY COUNTY, STATE OR LOCAL AGENCIES.
8. CONTRACTOR MAY RELOCATE STORAGE, DELIVERY, OR WASH-OUT AREAS, TO SUIT THEIR OPERATIONS. RELOCATED LOCATION TO BE SHOWN ON PLANS MAINTAINED AT JOBSITE. CONTACT CIVIL ENGINEER FOR ANY PLAN REVISIONS. PLAN REVISIONS SHALL BE SUBMITTED TO COUNTY IF REQUESTED. CONTRACTOR TO MAINTAIN SECONDARY CONTAINMENT AS NECESSARY TO PROHIBIT POLLUTION AND TOXIC MATERIALS FROM ENTERING STORM DRAIN.
9. AFTER COMPLETION OF THE CURB, GUTTER, AND PAVING, OR CONCRETE V-DITCHES THE SILT FILTERS SHALL BE MODIFIED TO BURLAP SACKS FILLED WITH 3/4" DRAIN ROCK OR OTHER ACCEPTED BMP POSITIONED SURROUNDING EACH CATCH BASIN.

EROSION CONTROL NOTES:

1. NO VEHICLES SHALL BE ALLOWED TO TRACK OR SPREAD SOIL FROM THE CONSTRUCTION AREAS ONTO EXISTING PAVED PUBLIC STREETS. ANY VEHICLE OPERATING WITHIN THE PROJECT AREA AND OFF THE PAVED STREET SHALL CROSS A CONSTRUCTION ENTRANCE AS SHOWN HEREIN. THE ENTRANCE MAY BE MODIFIED BY THE CONTRACTOR TO FACILITATE HIS OPERATIONS.
2. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE OPERABLE DURING THE RAINY SEASON, OCTOBER 1ST TO APRIL 15TH. NO GRADING WILL OCCUR BETWEEN OCTOBER 1ST AND APRIL 15TH, UNLESS AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS.
3. CHANGES TO THE PLANS TO MEET FIELD CONDITIONS WILL BE MADE ONLY WITH THE APPROVAL OF, OR AT THE DIRECTION OF THE COUNTY. CHANGES MADE TO SUIT FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CIVIL ENGINEER AND THE COUNTY ENGINEER.
4. DURING THE RAINY SEASON, ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE WILL BE MAINTAINED SO THAT A MINIMUM OF SEDIMENT-LADEN RUNOFF ENTERS THE STORM DRAIN SYSTEM AND SHALL REMAIN IN EFFECT UNTIL THE IMPROVEMENTS ARE ACCEPTED BY THE COUNTY, AND ALL SLOPES ARE STABILIZED FROM EROSION.
5. STRAW AND TACKIFIER WILL BE APPLIED BY OCTOBER 1ST TO ALL DISTURBED AREAS. ALL EXPOSED SLOPES ADJACENT TO PUBLIC RIGHTS OF WAY SHALL ALSO RECEIVE STRAW AND TACKIFIER. STRAW AND TACKIFIER TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE MINIMUM.
6. THIS PLAN ASSUMES THE COMPLETION OF GRADING AND STORM DRAIN FACILITIES. IF FACILITIES ARE NOT COMPLETED, CONTACT THE CIVIL ENGINEER FOR PLAN REVISIONS.

URBAN RUNOFF POLLUTION NOTES:

1. STABILIZE ALL DENUDED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND APRIL 1.
2. REMOVE SPOILS PROMPTLY AND AVOID STOCKPILING OF FILL MATERIALS WHEN RAIN IS FORECAST. IF RAIN THREATENS, STOCK-PILED SOILS AND OTHER MATERIALS SHALL BE TARPED, AT THE REQUEST OF THE COUNTY ENGINEER.
3. STORE, HANDLE AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES SO AS TO PREVENT THEIR ENTRY TO THE STORM DRAIN SYSTEM. CONTRACTOR MUST NOT ALLOW CONCRETE, WASHWATERS, SLURRIES, PAINT OR OTHER MATERIALS TO ENTER CATCH BASINS OR TO ENTER SITE RUNOFF.
4. USE FILTRATION OR OTHER MEASURES TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.
5. NO CLEANING, FUELING OR MAINTAINING VEHICLES ON SITE SHALL BE PERMITTED IN ANY MANNER THAT ALLOWS DELETERIOUS MATERIALS TO ENTER CATCH BASINS OR TO ENTER SITE RUNOFF.
6. IN THE EVENT GRADING OPERATIONS ARE SUSPENDED BY WEATHER CONDITIONS AND IF THE STORM DRAIN SYSTEM IS INCOMPLETE, INSTALL ADDITIONAL ROCK FILTERS AND OTHER FACILITIES AS DIRECTED BY COUNTY AND ENGINEER.
7. CONTRACTOR TO RELOCATE CONCRETE WASHDOWN, VEHICLE STORAGE DELIVERY, AND NON HAZARDOUS WASTE AREAS AS NECESSARY TO FACILITATE THEIR OPERATION AND PROMOTE POLLUTION CONTROL.

BMP IMPLEMENTATION SCHEDULE:

1. ALL BMP'S TO BE INSTALLED PRIOR TO A QUALIFIED STORM EVENT..
2. PERIMETER CONTROL, EXISTING INLET PROTECTION, AND CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF COST.
3. ALL OTHER BMP'S SHALL BE INSTALLED AT COMPLETION OF CONSTRUCTION OF EACH INLET.

	BMP	GENERAL DESCRIPTION
	EROSION CONTROL BMPS	
A	PRESERVE EXISTING VEGETATION	EXISTING VEGETATION SHOULD BE PRESERVED AS MUCH AS POSSIBLE. CASQA: EC-2.
	SEDIMENT CONTROL BMPS	
B	FIBER ROLLS (E.G. STRAW WATTLES)	USE FIBER ROLLS ALONG CONTOURS OF SHORT SLOPES 3:1 OR FLATTER, KEYED INTO GROUND AT LEAST 3-INCHES DEEP (TYPICALLY 25 FEET APART). USE WILDLIFE-FRIENDLY FIBER ROLLS MADE OF BIODEGRADABLE NATURAL MATERIALS. AVOID USING FIBER ROLLS MADE WITH PLASTIC NETTING OR FIXED APERTURE NETTING. CASQA: SE-5.
C	DRAIN INLET PROTECTION	USE GRAVEL BAGS, (OR SIMILAR PRODUCT) AROUND DRAIN INLETS LOCATED BOTH ONSITE AND IN GUTTER AS A LAST LINE OF DEFENSE. CASQA: SE-10 OR CALTRANS SC-10.
	GOOD HOUSEKEEPING BMPS	
D	CONCRETE WASHOUTS	CONSTRUCT A CONCRETE WASHOUT SITE PLACED AT LEAST 50 FEET AWAY FROM STORM DRAINS, WATERBODIES, OR OTHER DRAINAGES. IDEALLY, PLACE ADJACENT TO STABILIZED ENTRANCE. CLEAN AS NEEDED AND REMOVE AT END OF PROJECT. CASQA: WM-8.
E	STOCKPILE MANAGEMENT	COVER ALL STOCKPILES AND LANDSCAPE MATERIAL AND BERM PROPERLY WITH FIBER ROLLS OR SAND BAGS. KEEP BEHIND SILT FENCE, AWAY FROM WATERBODIES. AVOID USE OF PLASTIC SHEETING WHERE POSSIBLE TO KEEP PLASTIC FROM ENTERING WATERBODIES. CASQA: WM-3.
F	HAZARDOUS MATERIAL MANAGEMENT	HAZARDOUS MATERIALS MUST BE KEPT IN CLOSED CONTAINERS THAT ARE COVERED AND UTILIZE SECONDARY CONTAINMENT, NOT DIRECTLY ON SOIL. CASQA: WM-6.
G	SANITARY WASTE MANAGEMENT	PLACE PORTABLE TOILETS NEAR STABILIZED SITE ENTRANCE, BEHIND THE CURB AND AWAY FROM GUTTERS, STORM DRAIN INLETS, AND WATERBODIES. ALL PORTABLE BATHROOMS SHOULD HAVE OVERFLOW PAN/TRAY (MOST VENDORS PROVIDE THESE). CASQA: WM-9.
H	EQUIPMENT AND VEHICLE MAINTENANCE	PAVEMENT EQUIPMENT FLUID LEAKS ONTO GROUND BY PLACING DRIP PANS OR PLASTIC TARPS UNDER EQUIPMENT. CASQA: NS-8, NS-9, AND NS-10.
I	DRAINING SEDIMENT LADEN WATER FROM EQUIPMENT	REMOVE EQUIPMENT FROM SITE WITHOUT DRAINING. PROVIDE A TANK TO TRANSFER TO OR SUBMIT PLAN TO KEEP DISCHARGE OUT OF STORM DRAIN SYSTEM.

Know what's below. Call before you dig.

Rev	Date	Description	Designed	Drawn	Checked

STINSON BEACH COMMUNITY CENTER

EROSION CONTROL PLAN

32 Belvedere Ave

A.P.N 195-211-05

Town Of
Stinson Beach

County Of
Marin

State Of
California

Prepared Under the Direction of:

REGISTERED PROFESSIONAL ENGINEER
RICHARD J. SOUZA
No. 67892
CIVIL
STATE OF CALIFORNIA

Sheet
C1.0

Scale:	as shown
Date:	1/15/2026
Project Number:	
Plan File:	