Meekland Avenue Corridor Improvements
Alameda County, California

Stormwater Management Plan

Prepared for:

Public Works Agency
Alameda County

Prepared by:

WRECO

June 2023

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Stormwater Management Plan

Submitted to:
Alameda County Public Works Agency

This report has been prepared by or under the supervision of the following Registered Engineer. The Registered Civil Engineer attests to the technical information contained herein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

Chris Sewell P.E.
Registered Civil Engineer

6/30/2023
Date

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EXECUTIVE SUMMARY

The Alameda County Public Works Agency (ACPWA) is proposing to provide a bicycle, pedestrian and motor (multimodal) crossing of San Lorenzo Creek and improve multimodal connectivity along the Meekland Avenue corridor in the community of San Lorenzo in Alameda County (County), California. The Meekland Avenue Corridor Improvements Project (Project) will provide sidewalks and other complete streets and safety improvements to accommodate students and parents walking to school. The Project also will improve American with Disabilities Act (ADA) access by adding ADA-compliant curb ramps and driveway aprons.

The Project is situated in the community of San Lorenzo (Cherryland), in Alameda County, California. The Project proposes multimodal connectivity along the Meekland Avenue corridor between East Lewelling Boulevard and Blossom Way.

The purpose of this *Stormwater Management Plan* (SMP) is to fulfill the ACPWA requirements under the Alameda Countywide Clean Water Program (ACCWP), and to present and document stormwater quality concerns of the proposed Project, as shown in the *50% Improvements of Meekland Avenue Phase II Utility Plans* produced by Wood Rodgers (2022). Additionally, this report will demonstrate an exemption for treatment and hydromodification requirements due to the nature of the street improvements and the implementation of permeable concrete along the Project corridor.

The Project has a total site area of 3.72 acres. The Project proposes to create 0.10 acres of new impervious area (NIA) in the form of new shared-use paths and driveways and 3.32 acres of replaced impervious area (RIA). Total proposed pervious area is 0.30 acres, which includes 0.11 acres of pervious concrete. Thus, a total of 3.42 acres of impervious area is to be created and/or replaced by the Project. The Project is a streetscape project and is exempt from treatment requirements per Provision C.3.b of the regional stormwater National Pollutant Discharge Elimination System (NPDES) Permit, also referred to as the Municipal Regional Stormwater NPDES Permit (MRP).

The Project has no net increase in impervious area based on the proposed pervious areas added and therefore, no Hydromodification Management (HM) controls are required. The Project will have a post-Project impervious surface area of 3.42 acres while the existing impervious surface area of the Project site is 3.43 acres. Additional pervious concrete and proposed landscaping areas of 0.30 acres will be proposed along the site. Therefore, HM will not be required for this Project.

A Temporary Erosion Control Plan is proposed for this Project. The measures included in the plan will prevent pollution of San Lorenzo Creek during Project construction activities.

This Project is owned by the ACPWA and a Stormwater Management Measures Maintenance Agreement (O&M Agreement) is not required. An Operation and Maintenance Manual for the proposed pervious concrete is included under this cover.

ACRONYMS

ACPWA	Alameda County Public Works Agency
ACCWP	Alameda Countywide Clean Water Program
ACFCD	Alameda County Flood Control and Water Conservation District
ADA	Americans with Disabilities Act
Ave.	Avenue
BMPs	Best Management Practices
C3TGM	C.3 Technical Guidance Manual
Caltrans	California Department of Transportation
County	Alameda County
ESRI	Environmental Systems Research Institute
HM	Hydromodification Management
LID	Low Impact Development
MRP	Municipal Regional Stormwater NPDES Permit
NIA	New Impervious Area
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
R/W	right-of-way
RIA	Replaced Impervious Area
SMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan

1 INTRODUCTION

1.1 Project Location and Description

The Alameda County Public Works Agency (ACPWA) is proposing to provide a multimodal crossing of San Lorenzo Creek and improve multimodal connectivity along the Meekland Avenue (Ave.) corridor. The Meekland Avenue Corridor Improvements Project (Project) will increase sidewalk width and other complete streets and safety improvements to accommodate students and parents walking to school. The Project will improve sidewalk access through the addition of Americans with Disabilities Act- (ADA) compliant curb ramps and driveway aprons.

The Project proposes multimodal connectivity along the Meekland Ave. corridor between East Lewelling Boulevard and Blossom Way, in the community of San Lorenzo (Cherryland), Alameda County (County), California. See Figure 1 for the Project location map, Figure 2 for Project vicinity map, and Figure 3 for Project aerial map.

The Project also proposes to replace the existing San Lorenzo Creek Bridge (No. 33C0206). The proposed bridge replacement will include sidewalks, Class II bike facilities, and pavement rehabilitation. This is a federally funded project and work is required to comply with the U.S. Federal Highway Administration, Federal Statewide Transportation Improvement Program (Project No. 2019 TIP-ALA190019), the California Department of Transportation (Caltrans) *Local Assistance Procedure Manual*, the Congestion Mitigation and Air Quality Program and Surface Transportation Program, as well as sales tax and other local funding sources.

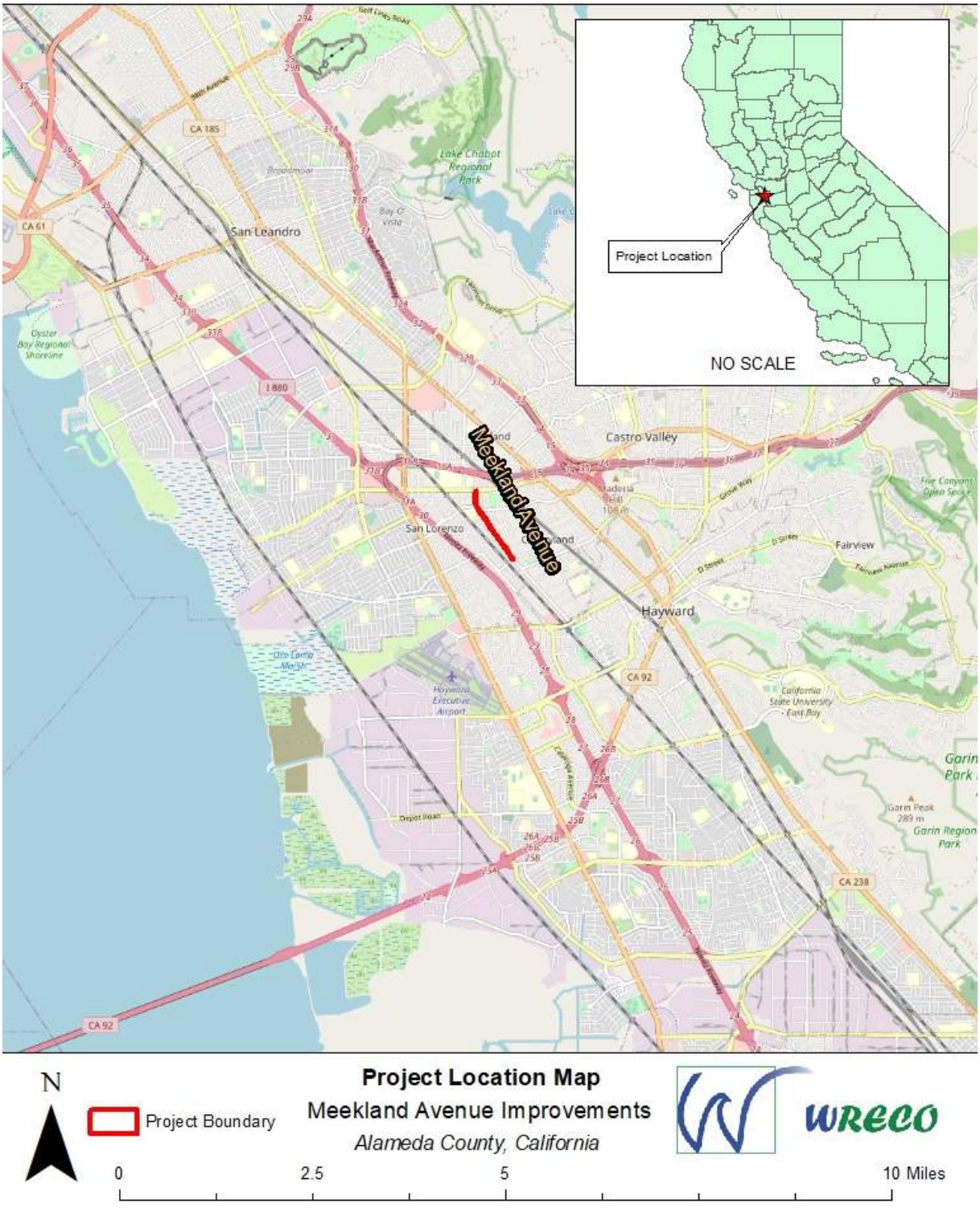

Figure 1. Project Location Map

Source: Environmental Systems Research Institute (ESRI), 2021

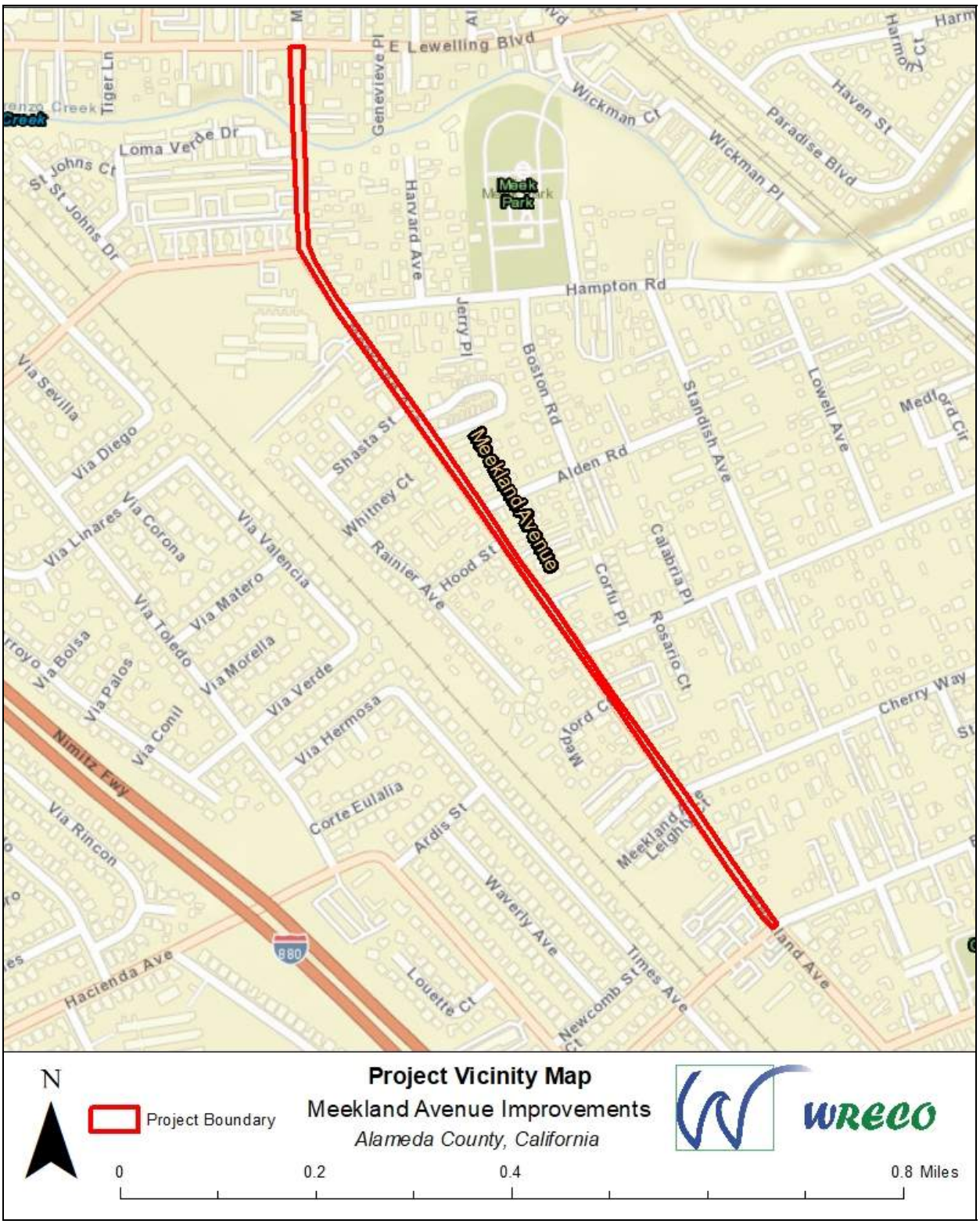

Figure 2. Project Vicinity Map

Source: ESRI, 2021

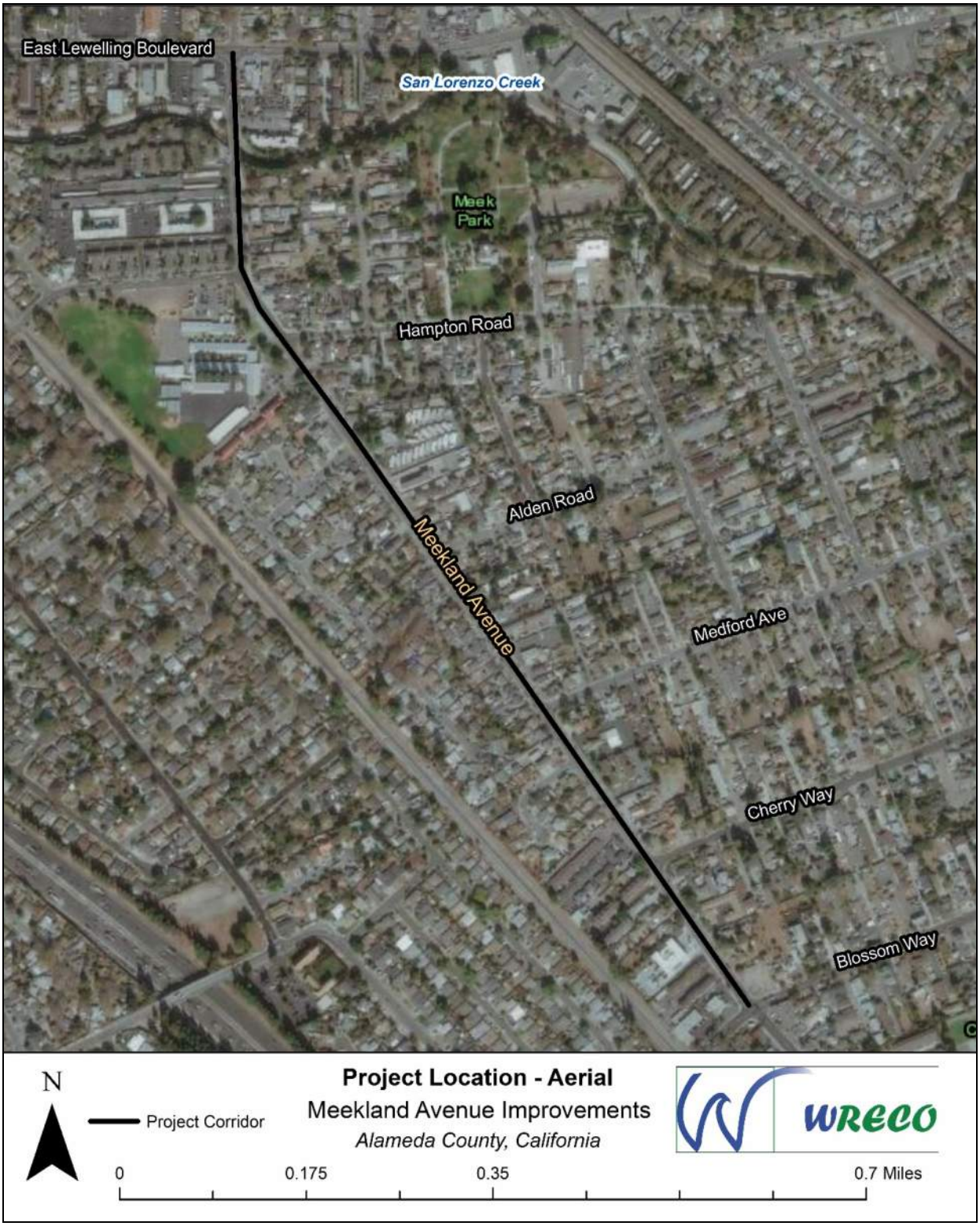

Figure 3. Project Aerial Map

Source: ESRI, 2021

1.1.1 Existing Facilities

The Meekland Ave. corridor is an urban minor arterial comprised of primarily two, 12-foot-wide lanes of traffic with narrow bike lanes and sidewalks on each side. The terrain is generally flat, and the road is posted with a 25-miles-per-hour speed limit.

The Project site includes extensive utilities located overhead and underground running parallel to and within Meekland Ave. An existing storm drain system runs the entire length of the Project and proposed storm drain laterals and an inlet will tie into the existing system.

At the crossing, the public right-of-way (R/W) is approximately 60-feet-wide. San Lorenzo Creek is a United States Army Corps of Engineers' federal flood control waterway with operation and maintenance by the ACFCD.

1.2 Purpose

The purpose of this SMP to fulfill ACPWA's requirements under ACCWP. This report presents and documents stormwater quality and hydromodification concerns and associated mitigations of the proposed Project, as shown in the *50% Improvements of Meekland Avenue Phase II Utility Plans* produced by Wood Rodgers (2022) (Appendix A). Any future changes to those plans may need to be reanalyzed to confirm they meet the design requirements found within the *Alameda County C.3 Technical Guidance Manual* (C3TGM) (2021).

The Project data along with the disturbed soil area are summarized in Table 1. These values are also provided in the Project's Stormwater Requirements Checklist in Appendix B.

Table 1. Project Data

Project Name	Meekland Avenue Corridor Improvements
Project Location	Meekland Ave. from East Lewelling Boulevard to Blossom Way
Project Watershed	San Lorenzo Creek & Estudillo Canal
Development Type	Road project; public project
Project Description	Construction of a multimodal corridor improvement project
Total Project Site Area (acres)	3.72 acres
Total Area of Land Disturbed (acres)	3.72 acres

1.3 Existing Site Features and Conditions

1.3.1 Hydrologic Features

The Project is in the San Lorenzo Creek subbasin (180500040802), in the San Lorenzo Creek – Frontal San Francisco Bay Watershed, within the San Francisco Bay Basin. The San Lorenzo Creek subbasin is 48 square miles in area and drains from the East Bay hills into the San Francisco Bay through San Lorenzo Creek per the ACFCD *Creek & Watershed Map of Western Alameda County in Google Earth* (2014).

According to the ACFCD, the area north of the Meekland Ave. bridge over San Lorenzo Creek is within the Estudillo Creek Watershed and south of the bridge along the Project is within the San Lorenzo Creek Watershed (see Figure 4). Based on the field inspection conducted by WRECO on April 13, 2022, it appears the existing storm drain system at the intersection of Lewelling Boulevard and Meekland Ave. drains south into San Lorenzo Creek. For the purpose of this report, the entire Project lies within the San Lorenzo Creek watershed.

The Project site is primarily pitched to the south from the Meekland Ave. bridge to Paseo Grande. The surface flow on Meekland Ave. south of the intersection of Paseo Grande generally flows north to on- or off-site inlets.

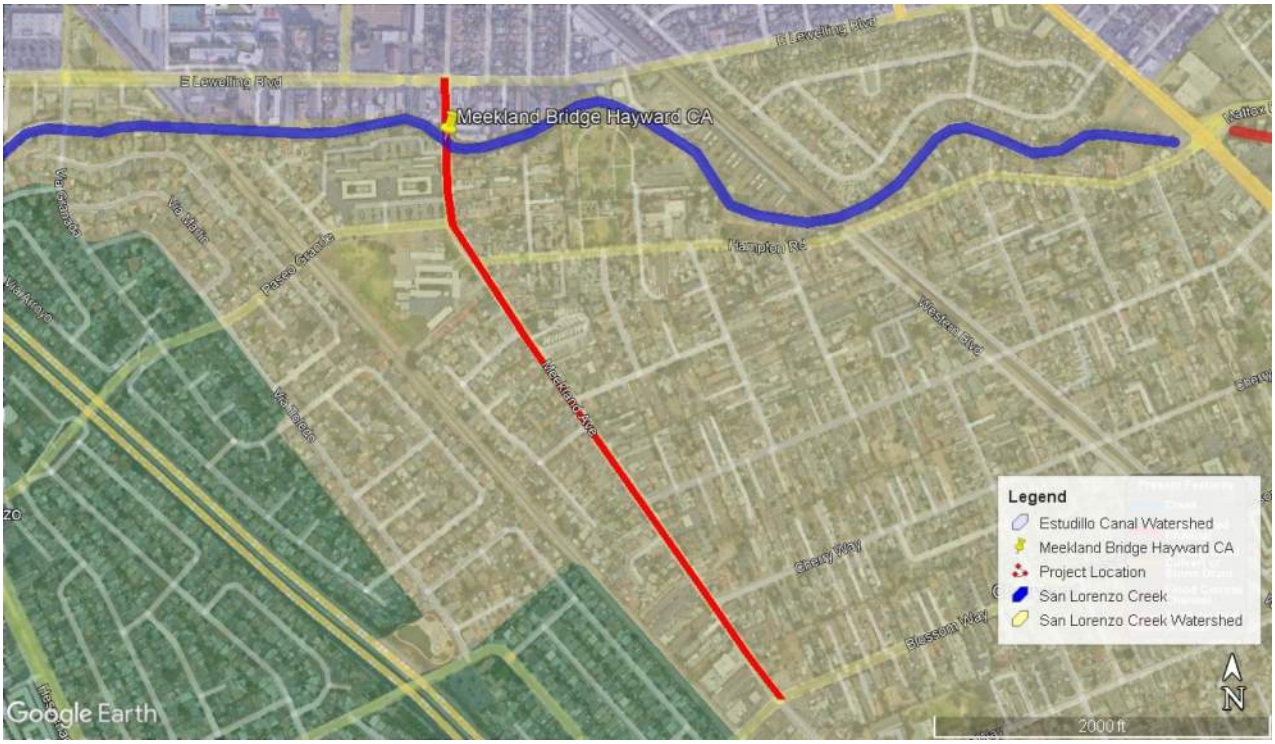

Figure 4. Creek and Watershed Map

Source: ACFCD, 2014

1.3.2 Soil Types

According to data obtained from the Natural Resources Conservation Service (NRCS) and the *Alameda County Hydrology & Hydraulics Manual* (2018), the proposed Project area falls under primarily Hydrologic Soil Group B, which is characterized by moderately low runoff potential and moderate infiltration rate when thoroughly wetted. The soil group maps and NRCS soil Report are shown in Appendix C.

1.3.3 Zoning

Meekland Ave. serves as an arterial street running predominantly in the north-south direction through Alameda County's unincorporated area known as Cherryland. Based on the Alameda

County Community Development Agency's *Cherryland Zoning Map* (2019), adjacent land uses to Meekland Ave. consist of residential and corridor neighborhood commercial. The Project limits are from East Lewelling Boulvard to Blossom Way, and the Project area is within a transportation corridor that is owned by the ACPWA.

See Appendix D for *Cherryland Zoning Map* (2019).

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2 IMPERVIOUS SURFACES

The Project's existing and proposed surfaces are summarized in Table 2 and Table 3. The Project proposes 4,356 square feet of NIA and 5,030 square feet of pervious pavement to off-set the NIA. The Project would result in a net decrease in impervious area, and this is detailed in Table 4.

Table 2. Existing Impervious/Pervious Surfaces

Type of Surface	Area (sq. ft.)	Area (acres)	Surface Description
Total Disturbed Area	162,237	3.72	Total Project Area
Pre-project Impervious	149,590	3.43	Road, sidewalk, driveway
Pre-project Pervious	12,647	0.29	Landscape, Grass, Etc

Table 3. Proposed Impervious/Pervious Surfaces

Type of Surface	Area (sq. ft.)	Area (acres)	Surface Description
Replaced Impervious Area	149,590	3.32	Road, Sidewalk, Driveway
Newly Created Impervious Area	4,356	0.10	Shared use sidewalk/bike path/driveways
Proposed Pervious Area	8,276	0.19	Tree wells & Landscaping
Pervious Concrete	4,644	0.11	-

Table 4. Existing & Proposed Impervious Comparison

Type of Surface	Area (sq. ft.)	Area (acres)
Existing Impervious	149,590	3.43
Post-project Impervious	148,975	3.42
Difference	-4,356	-0.1

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3 C.3 REGULATED PROJECT APPLICABILITY

The Project proposes to create 0.10 acres of NIA to provide sidewalks, ADA access, and other complete streets and safety improvements, and 3.32 acres of replaced impervious area (RIA) in the existing roadway. The Project also proposes to add approximately 0.1 acres of pervious, self-retaining landscape area or post-construction best management practices (BMP). Thus, a total of 3.42 acres of impervious area is to be created and/or replaced by the Project. Typically, projects that create and/or replace more than 10,000 square feet (0.23 acres) of impervious area are required to adhere to stormwater treatment measures per Provision C.3.b requirements of the Municipal Regional Stormwater NPDES Permit (MRP). This Project is a streetscape project and is exempt from treatment requirements per Table 2-1 of the C3TGM (2021).

The qualified treatment exemption discussed above also exempts the Project from the 50% rule and no additional analysis is required.

This exemption is based on the *50% Improvements of Meekland Avenue Phase II Utility Plans* produced by Wood Rodgers (2022). Any future changes to those plans may need to be reanalyzed to confirm the criteria from the C3TGM (2021) for the exemption is still met.

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4 CONSTRUCTION BEST MANAGEMENT PRACTICES

Since the Project disturbs more than 1 acre (43,560 square feet) of land, the ACPWA requires, under the MRP and the State's Construction General Permit, the implementation of a Stormwater Pollution Prevention Plan (SWPPP) for all construction activity that includes clearing, grading, and disturbances to the ground such as stockpiling or excavation. The ACPWA also requires that developers inform all contractors of all construction BMPs and their implementation under the project's SWPPP. If the approved construction BMPs are not implemented, then correction notices, citations, and/or stop orders could be issued by the County.

The proposed locations for construction BMP measures are shown in the Erosion & Sediment Control Plans, which are attached in Appendix A. Locations are subject to revision based on the contractor's proposed staging, which is subject to approval by the ACPWA.

The following construction stormwater BMPs are to be implemented for the Project per the ACPWA Stormwater Requirements Checklist (Appendix B):

- Temporary erosion controls such as temporary cover, drainage inlet protection, fiber rolls, silt fencing, construction entrance, street sweeping, concrete washout facilities, and high-visibility fencing are to be implemented to stabilize all denuded areas until permanent erosion controls are established.
- Delineate with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
- Provide notes, specifications, or attachments describing the following:
    - Construction, operation, and maintenance of erosion and sediment controls, include inspection frequency;
    - Methods and schedule for grading, excavation, filling, clearing of vegetation, and storage and disposal of excavated or cleared material;
    - Specifications for vegetative cover and mulch, include methods and schedules for planting and fertilization; and
    - Provisions for temporary and/or permanent irrigation.
- Perform clearing and earth moving activities only during dry weather.
- Use sediment controls or filtration to remove sediment when dewatering and obtain all necessary permits.
- Protect all storm drain inlets in vicinity of site using sediment controls such as berms, fiber rolls, or filters.
- Trap sediment on-site using BMPs such as sediment basins or traps, earthen dikes or berms, silt fences, check dams, soil blankets or mats, covers for soil stockpiles, etc.
- Divert on-site runoff around exposed areas; divert off-site runoff around the site (e.g., swales and dikes).
- Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.
- Limit construction access routes and stabilize designated access points.

- No cleaning, fueling, or maintaining vehicles on-site, except in a designated area where washwater is contained and treated.
- Store, handle, and dispose of construction materials/wastes property to prevent contact with stormwater.
- Contractor shall train and provide instructions to all employees/subcontractors regarding construction BMPs.
- Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, washwater or sediments, rinse water from architectural copper, and non-stormwater discharges to storm drains and watercourses.

5 SITE DESIGN MEASURES

The following site design strategies were incorporated into the Project design to minimize the overall impervious surfaces of the Project and reduce the size of stormwater measures to be installed.

5.1 Direct Runoff to Pervious Areas and Use of Self-Treating and Self-Retaining Areas

Runoff from the shared-used path, driveways, and roadway will flow through tree wells and pervious concrete, or to pervious landscape areas. The proposed landscape areas for the Project will function as self-treating and self-retaining areas that will not contribute runoff to the Project. The proposed pervious concrete will function as a site design measure. The pervious concrete details are part of the Drainage Plan, and the detail can be viewed in Figure 5 (Appendix A).

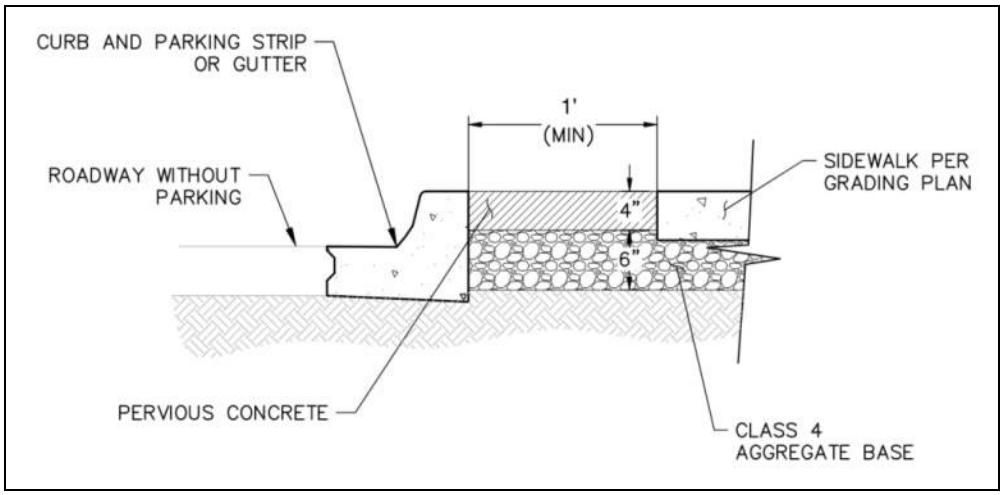

Figure 5. Pervious Pavement Detail

Source: Wood Rodgers (2022)

5.2 Minimization of Land Disturbance and Impervious Surface Creation

The Project extent is limited to existing developed areas and will minimize changes to existing land uses and topography. The Project will also limit land disturbance and impervious surface creation with the following:

- The proposed sidewalks and bikeways are designed to minimum required 4-foot widths.
- Pervious concrete and landscape will be installed throughout the street corridor.

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6 STORMWATER SOURCE CONTROLS

The applicable potential sources of runoff pollutants and their associated source control measures from the ACPWA Stormwater Requirements Checklist (Appendix B) to be included by the Project are listed in Table 5.

Table 5. Source Control Measures

Potential Source of Pollutants	Source Control Measure to be Included in Project
Storm Drains	Mark public and private storm drain inlets with the "No Dumping! Drains to Bay" medallions.
	Mark stormwater treatment measures located in the public R/W with stencils that read "Stormwater Treatment Area – Do not alter landscape."
Landscaping	• Retain as practicable. • Select diverse species appropriate to the site. Select plants that are pest and/or diseases-resistant, drought tolerant, and/or attract beneficial insects. • Minimize use of pesticides and quick-release fertilizers. • Use efficient irrigation system; design to minimize runoff.

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7 STORMWATER TREATMENT EXEMPTION

Provision C.3.b of the MRP excludes specific types of development and redevelopment projects from Provision C.3.c's low-impact development (LID) requirements for stormwater treatment, source controls, and site design measures, even if the thresholds described in Section 2.3.1 of the C3TGM (2021) are met or exceeded.

The Project is considered an "Excluded Road Project" per the following definitions from Table 2-1 of the C3TGM (2021):

- Roadway reconstruction that does not add one or more new lanes of travel (turn lanes are considered lanes of travel);
- Sidewalk projects in the public R/W that are not built as part of new streets or roads; and
- Bicycle lane projects in the public R/W that are not built as part of new streets or roads.

The Project is exempt from treatment measures, and no post-construction BMPs are required.

The need for post-construction BMPs may need to be reanalyzed using the criteria from the C3TGM (2021) if there are any future changes made to the *50% Improvements of Meekland Avenue Phase II Utility Plans* produced by Wood Rodgers (2022).

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8 HYDROMODIFICATION MANAGEMENT EXEMPTION

Per the C3TGM (2021), a project must comply with hydromodification management (HM) requirements if it meets the following applicability criteria:

- The project **creates and/or replaces 1 acre or more of impervious surface**,
- The project **will increase impervious surface** over pre-project conditions, AND
- The project is **located in a susceptible area**, as shown on the default susceptibility map.

The Project has no net increase in impervious area based on the proposed pervious areas added and therefore, no HM controls are required. The proposed Project will have a post-Project impervious surface area of 3.42 acres. The existing impervious surface area of the Project site is 3.43 acres. Thus, the Project would result in a net decrease of 0.1 acres of impervious area; thus, HM will not be required for this Project.

If there are any future changes made to the *50% Improvements of Meekland Avenue Phase II Utility Plans* produced by Wood Rodgers (2022), this exemption should be re-evaluated using the criteria found in the C3TGM (2021).

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9 TRASH CAPTURE

The Project will replace (in-kind) trash capture devices on the existing storm drain system at the intersection of Meekland Ave. and Lewelling Boulevard.

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10 OPERATION & MAINTENANCE MANUAL OPERATION & MAINTENANCE MANUAL

This Project is owned by the ACPWA and a Stormwater Management Measures Maintenance Agreement (O&M Agreement) is not required. An Operation and Maintenance Manual for the proposed pervious concrete is included in Appendix E.

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11 SUMMARY

The Project is a streetscape project and is exempt from treatment requirements per Provision C.3.b of the regional stormwater National Pollutant Discharge Elimination System (NPDES) Permit, also referred to as the Municipal Regional Stormwater NPDES Permit (MRP).

The Project has no net increase in impervious area based on the proposed pervious areas added and therefore, no Hydromodification Management (HM) controls are required. The Project will have a post-Project impervious surface area of 3.42 acres while the existing impervious surface area of the Project site is 3.43 acres. Additional pervious concrete and proposed landscaping areas of 0.30 acres will be proposed along the site. Therefore, HM will not be required for this Project.

This report presents and documents stormwater quality and hydromodification concerns and associated mitigations of the proposed Project, as shown in the *50% Improvements of Meekland Avenue Phase II Utility Plans* produced by Wood Rodgers (2022). Any future changes to those plans may need to be reanalyzed to confirm they meet the design requirements found within the C3TGM (2021).

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12 REFERENCES

Alameda County Community Development Agency (2019). *Cherryland Zoning Map.*

Alameda County Flood Control & Water Conservation District. (2018). *Alameda County Hydrology & Hydraulics Manual.*

Alameda County Flood Control & Water Conservation District, Fugro Consultants, Inc. (2014). *Creek & Watershed Map of Western Alameda County in Google Earth*. Version 2.0. (Last accessed: April 20, 2022).

Alameda Countywide Clean Water Program. (2021). *C.3 Stormwater Technical Guidance.* 3rd Revision. Version 7.1.

Natural Resources Conservation Service (NRCS). Web Soil Survey.
<https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
(Last accessed: November 2021)

Wood Rodgers. (2022). *50% Improvements of Meekland Avenue Phase II Utility Plans.*

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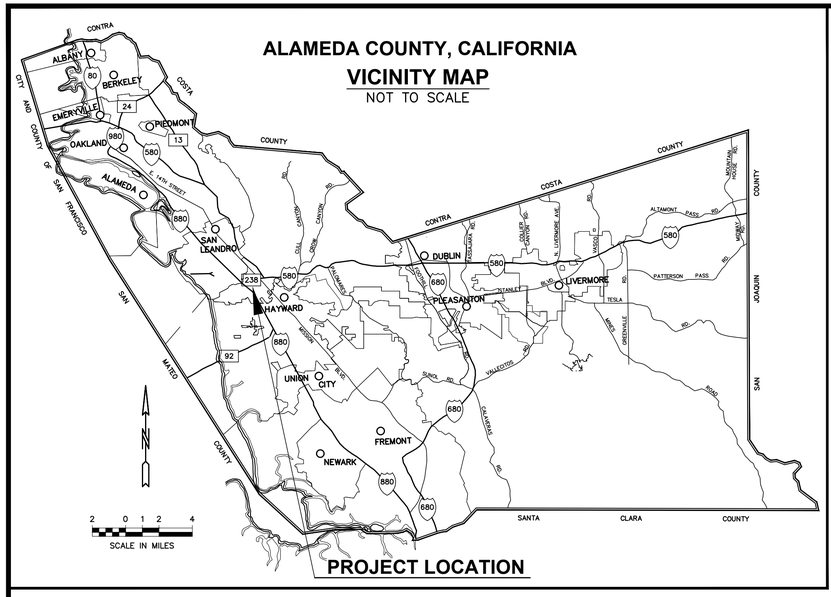
Appendix A 50% Drainage/ E&S Plans and Details



PLANS

FOR THE IMPROVEMENTS OF

MEEKLAND AVENUE
PHASE II
BLOSSOM WAY
TO LEWELLING BLVD

EDEN TOWNSHIP

ALAMEDA COUNTY, CALIFORNIA

FEDERAL PROJECT No. CML-5933(168)

MAY 2022

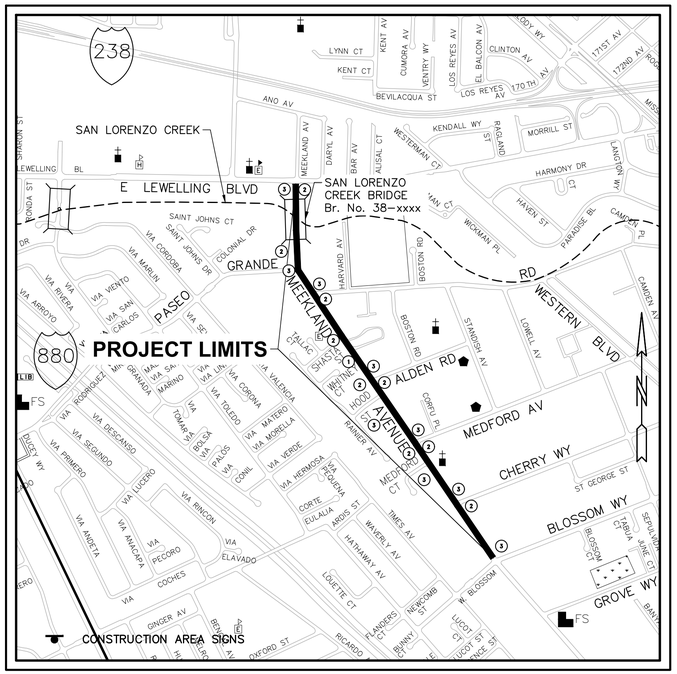
INDEX OF SHEETS

CONVENTIONAL SYMBOLS

- PROPERTY, RIGHT OF WAY AND EASEMENT LINES OTHER THAN THOSE FOR PROJECT
- PROJECT RIGHT OF WAY AND EASEMENT LINES
- CONSTRUCTION CENTER LINE (1+00 + 2+00)
- TRAVERSE OR SURVEY LINE AND MONUMENT
- CENTER LINE
- CENTER LINE OF CHANNEL, CREEK, OR DITCH
- TOE OF FILL OR SLOPE
- TOP OF CUT OR BANK
- CONCRETE CHANNEL
- ROAD
- EDGE OF PAVEMENT (EP)
- PCC EXTRUDED CURB OR AC BERM
- PCC SIDEWALK, CURB GUTTER & DRIVEWAY
- GUARD RAIL OR BARRICADE
- FENCE (SPECIFY TYPE)
- CHAIN–LINK FENCE
- RAILROAD
- BUILDING
- SHRUBBERY
- MAIL BOX
- TREE
- TREE TO BE REMOVED
- CHANNEL SLOPE

EXISTING UTILITIES:

- WATER (W)
- GAS (G)
- SANITARY SEWER (SS)
- OIL (O)
- GASOLINE (GS)
- STORM DRAIN (SD)
- ELECTRICAL UNDERGROUND (UE)
- TELEPHONE UNDERGROUND (UT)
- CABLE TV UNDERGROUND (UCTV)
- TRANSMISSION LINE AND TOWER
- DROP INLET (DI)
- ELECTROLIER
- FIRE HYDRANT
- MANHOLE (MH)
- MONUMENT — EXISTING ◉ PROPOSED ◎
- UTILITY POLES: JOINT POLE (JP), POWER POLE (PP), TELEPHONE POLE (TP), GUY POLE
- RIGHT OF WAY MARKER
- ROADWAY SIGN
- STREET NAME SIGN
- WATER METER (WM)
- WATER VALVE (WV)



LOCATION MAP
NOT TO SCALE

CONSTRUCTION AREA SIGNS

	TYPE	QUANTITY	DESCRIPTION	DIMENSION (in)
1	C30 (CA)	1 (MIN.)	LANE CLOSED	36 x 36
2	G20–2	5	END ROAD WORK	60 x 24
3	W20–1	5	ROAD WORK AHEAD	48 x 48

50% REVIEW INCOMPLETE PLAN

DEAN ZURCHER
PROJECT DESIGN ENGINEER
TBD — –/–/– DATE
REVIEWED BY
TRANSPORTATION
DEPARTMENT

DANIEL WOLDESENBET, Ph.D., P.E.
COUNTY ENGINEER
CIVIL ENGINEER CERTIFICATE NO. 60306

REGISTERED PROFESSIONAL ENGINEER — DANIEL WOLDESENBET — No. 60306 — CIVIL — STATE OF CALIFORNIA

PLAN APPROVAL DATE

FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

REVISIONS

NO.	DESCRIPTION	BY	DATE	APPV'D
1				
2				
3				
4				
5				

APPROVED — REGISTERED PROFESSIONAL ENGINEER — DEAN ZURCHER — No. 86371 — CIVIL — STATE OF CALIFORNIA — APPROVAL DATE:

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST, BLDG. 100-B TEL 916.341.7760
SACRAMENTO, CA 95816 FAX 916.341.7767

DRAWN: C. RODRIGUEZ — CHECKED: D. ZURCHER
DESIGNED: C. RODRIGUEZ — APPROVED: C. HODGE

REVIEWED BY: CONSTRUCTION, MAINTENANCE, REAL ESTATE | DATE: | REVIEWED BY: SURVEY, TRAFFIC, ENVIRONMENTAL | DATE:

APPROVAL RECOMMENDED: — REVIEWED: — REVIEWED:

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

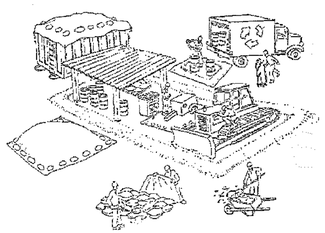
THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

TITLE SHEET

DATE: MAY 2022 — SCALE: 1"=xx'
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 1 OF 41
FILE NO.: U-XXX

J:\Jobs\8781_Alameda Co\8781.004_Meekland Ave Corridor\70_CADD\RDWY\02_Sheets\8781.004 ab001 T&GN.dwg 5-16-22 02:09:08 PM wchong

Pollution Prevention - It's Part of the Plan



Make sure your crews and subs do the job right!

Runoff from streets and other paved areas is a major source of pollution and damage to creeks and the San Francisco Bay. Construction activities can directly affect the health of creeks and the Bay unless contractors and crews plan ahead to keep dirt, debris, and other construction waste away from storm drains and local creeks. Following these guidelines and the project specifications will ensure your compliance with County of Alameda requirements.

Materials storage & spill cleanup

Non-hazardous materials management

- Sand, dirt, and similar materials must be stored at least 10 feet (3 meters) from catch basins. All construction material must be covered with a tarp and contained with a perimeter control during wet weather or when rain is forecasted or when not actively being used within 14 days.
- Use (but don't overuse) reclaimed water for dust control as needed.
- Sweep or vacuum streets and other paved areas daily. Do not wash down streets or work areas with water!
- Recycle all asphalt, concrete, and aggregate base material from demolition activities. Comply with Alameda County Ordinances for recycling construction materials, wood, gyp board, pipe, etc.
- Check dumpsters regularly for leaks and to make sure they are not overfilled. Repair or replace leaking dumpsters promptly.
- Cover all dumpsters with a tarp at the end of every work day or during wet weather.

Hazardous materials management

- Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state, and federal regulations.
- Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecasted.
- Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecasted within 24 hours.
- Be sure to arrange for appropriate disposal of all hazardous wastes.

Spill prevention and control

- Keep a stockpile of spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times.
- When spills or leaks occur, contain them immediately and be particularly careful to prevent leaks and spills from reaching the gutter, street, or storm drain. Never wash spilled material into a gutter, street, storm drain, or creek!
- Dispose of all containment and cleanup materials properly.
- Report any hazardous materials spills immediately! Dial 911 or Alameda County Public Works Agency dispatch at (510) 670-5500

Construction Entrances and Perimeter

- Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking.

Vehicle and equipment maintenance & cleaning

- Inspect vehicles and equipment for leaks frequently. Use drip pans to catch leaks until repairs are made; repair leaks promptly.
- Fuel and maintain vehicles on site only in a bermed area or over a drip pan that is big enough to prevent runoff.
- If you must clean vehicles or equipment on site, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or creeks.
- Do not clean vehicles or equipment on-site using soaps, solvents, degreasers, steam cleaning equipment, etc.

Earthwork & contaminated soils

- Keep excavated soil on the site where it will not collect in the street.
- Transfer to dump trucks should take place on the site, not in the street.
- Use fiber rolls, silt fences, or other control measures to minimize the flow of silt off the site.

- Earth moving activities are only allowed during dry weather by permit and as approved by the County Inspector in the Field.
- Mature vegetation is the best form of erosion control. Minimize disturbance to existing vegetation whenever possible.
- If you disturb a slope during construction, prevent erosion by securing the soil with erosion control fabric, or seed with fast-growing grasses as soon as possible. Place fiber rolls down-slope until soil is secure.
- If you suspect contamination (from site history, discoloration, odor, texture, abandoned underground tanks or pipes, or buried debris), call the Engineer for help in determining what should be done, and manage disposal of cntaminated soil according to their instructions.

Dewatering operations

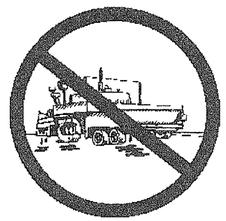
- Effectively manage all run-on, all runoff within the site, and all runoff that discharges from the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance.
- Reuse water for dust control, irrigation, or another on-site purpose to the greatest extent possible.

- Be sure to notify and obtain approval from the Engineer before discharging water to a street, gutter, or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- In areas of known contamination, testing is required prior to reuse or discharge of groundwater. Consult with the Engineer to determine what testing is required and how to interpret results. Contaminated groundwater must be treated or hauled off-site for proper disposal.

Saw cutting

- Always completely cover and barricade storm drain inlets when saw cutting. Use plastic sheeting (Visqueen) to keep slurry out of the storm drain system.
- Shovel, absorb, or vacuum saw-cut slurry and pick up all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- If saw cut slurry enters a catch basin, clean it up immediately.

Paving/asphalt work



- Always cover storm drain inlets and manholes when paving or applying seal coat, tack coat, slurry seal, or fog seal.
- Protect gutters, ditches, and drainage courses with sand/gravel bags, or earthen berms.
- Do not sweep or wash down excess sand from sand sealing into gutters, storm drains, or creeks. Collect sand and return it to the stockpile, or dispose of it as trash.
- Do not use water to wash down fresh asphalt concrete pavement.

Concrete, grout, and mortar storage & waste disposal

- Store concrete, grout, and mortar under cover, on pallets, and away from drainage areas. These materials must never reach a storm drain.
- Wash out concrete equipment/trucks off-site or into contained washout areas that will not allow discharge of wash water onto the underlying soil or onto the surrounding areas.

- Collect the wash water from washing exposed aggregate concrete and remove it for appropriate disposal off site.

Painting

- Never rinse paint brushes or materials in a gutter or street!
- Paint out excess water-based paint before rinsing brushes, rollers, or containers in a sink.
- Paint out excess oil-based paint before cleaning brushes in thinner.
- Filter paint thinners and solvents for reuse whenever possible. Dispose of oil-based paint sludge and unusable thinner as hazardous waste.

Landscape Materials

- Contain, cover, and store on pallets all stockpiled landscape materials (mulch, compost, fertilizers, etc.) during wet weather or when rain is forecasted or when not actively being used within 14 days.
- Discontinue the application of any erodible landscape material within 2 days of forecasted rain and during wet weather.

Storm drain polluters may be liable for fines of $10,000 or more per day!

For references and more detailed information:
www.cleanwaterprogram.org
www.cabmphandbooks.com

50% REVIEW INCOMPLETE PLAN

DEAN ZURCHER
PROJECT DESIGN ENGINEER
TBD -/-/-
REVIEWED BY DATE
TRANSPORTATION
DEPARTMENT

REVIEWED BY:	DATE:	REVIEWED BY:	DATE:
CONSTRUCTION		SURVEY	
MAINTENANCE		TRAFFIC	
REAL ESTATE		ENVIRONMENTAL	

REVISIONS

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APPROVED: REGISTERED PROFESSIONAL ENGINEER — DEAN ZURCHER — No. 86371 — CIVIL — STATE OF CALIFORNIA — APPROVAL DATE:

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

DRAWN: C. RODRIGUEZ | CHECKED: D. ZURCHER | DESIGNED: C. RODRIGUEZ | APPROVED: C. HODGE

REVIEWED: | REVIEWED: | APPROVAL RECOMMENDED:

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

POLLUTION PREVENTION

DATE: MAY 2022 | SCALE: AS SHOWN
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 2 OF 41
FILE NO.: U-XXX

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FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

REVIEWED BY:	DATE:	REVIEWED BY:	DATE:
CONSTRUCTION		SURVEY	
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ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AD	ALGEBRAIC DIFFERENCE
ACP	ASBESTOS CEMENT PIPE
ALT	ALTERNATIVE
APPROX	APPROXIMATE
AS	AGGREGATE SUBBASE
BC	BEGINNING OF HORIZONTAL CURVE
BEG	BEGIN
BKF	BACKFILL
℄	BOUNDARY LINE
BOW, BW	BOTTOM OF WALL
BVC	BEGINNING OF VERTICAL CURVE
BVCE	BEGINNING OF VERTICAL CURVE ELEVATION
BVCS	BEGINNING OF VERTICAL CURVE STATION
BW	BARBED WIRE
B/W	BACK OF SIDEWALK
C-C	CENTER TO CENTER
CF	CUBIC FEET
C&G	CURB AND GUTTER
CIDH	CAST-IN-DRILLED-HOLE
CIP	CAST-IN-PLACE OR CAST IRON PIPE
CIPCP	CAST-IN-PLACE CONCRETE PIPE
℄	CENTERLINE
CL	CLASS OR CHAIN LINK
CLR	CLEAR OR CLEARANCE
CMP	CORRUGATED METAL PIPE
CY	CUBIC YARD
D	DEPTH
DET	DETAIL OR DETOUR
DI	DROP INLET, DRAINAGE INLET
DIA, ø	DIAMETER
D/S	DOWNSTREAM
DWG	DRAWING
DWY	DRIVEWAY
E	EAST OR ELECTRIC
EA	EACH
EASE	EASEMENT
EBMUD	EAST BAY MUNICIPAL UTILITY DISTRICT
EC	END OF HORIZONTAL CURVE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EQ, =	EQUALS
EQ	EQUATION OR EQUALS
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EVC	END OF VERTICAL CURVE
EVCE	END OF VERTICAL CURVE ELEVATION
EVCS	END OF VERTICAL CURVE STATION
EXC	EXCAVATE OR EXCAVATION
EXIST, EX	EXISTING
FC	FACE OF CURB
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL, ℄	FLOW LINE
FO	FIBER OPTIC
FT, '	FEET OR FOOT
G	GAS LINE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GP	GRADING PLANE
GR	GUARD RAILING
H	HEIGHT
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HP	HINGE POINT
ID	INSIDE DIAMETER
IN, "	INCH OR INCHES
INV	INVERT (GRADE ELEVATION)
IRR	IRRIGATION
JP	JOINT POLE
K	RATE OF VERTICAL CURVATURE
L	LENGTH OR LENGTH OF CURVE
LC	LENGTH OF CHORD
LF	LINEAR FOOT OR FEET
LOC	LOCATION
LT	LEFT
MAX	MAXIMUM
MBGR	METAL BEAM GUARD RAILING
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
ℳ	MONUMENT LINE
MON	MONUMENT
N	NORTH
NTS	NOT TO SCALE
OC	ON CENTER OR OVERCROSSING
OD	OUTSIDE DIAMETER
OG	ORIGINAL GROUND
OH	OVERHEAD
PCC	POINT OF COMPOUND CURVE OR PORTLAND CEMENT CONCRETE
PED	PEDESTRIAN
PG&E	PACIFIC GAS & ELECTRIC CO.
PI	POINT OF INTERSECTION
P/L, ℙ	PROPERTY LINE
POC	POINT OF HORIZONTAL CURVE
POT	POINT OF TANGENCY
POVC	POINT OF VERTICAL CURVE
PP	POWER POLE, PLASTIC PIPE OR PIPE PILE
PRC	POINT OF REVERSE CURVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PT	ANGLE POINT
PVMT	PAVEMENT
R	RADIUS OR RADIAL
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
REINF	REINFORCED
REV	REVISED OR REVISION
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RW	RETAINING WALL, REDWOOD
R/W	RIGHT-OF-WAY
S	SLOPE OR SOUTH
SD	STORM DRAIN
SHT	SHEET
SQFT	SQUARE FOOT OR SQUARE FEET
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
SW	SIDEWALK
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SYM	SYMMETRIC OR SYMMETRICAL
T	TANGENT LENGTH OR TELEPHONE
TC	TOP OF CURB
TEL, T	TELEPHONE
TEMP	TEMPORARY
TG	TOP OF GRADE
TOW, TW	TOP OF WALL
TP	TELEPHONE POLE
TS	TRAFFIC SIGNAL, TRANSVERSE OR TUBULAR STEEL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
U/S	UPSTREAM
VAR	VARIES OR VARIABLE
VC	VERTICAL CURVE
VERT	VERTICAL
W	WATER, WEST OR WIDTH
∠	ANGLE
°	DEGREE
Δ	DELTA (ANGLE OF CURVATION)
ø	DIAMETER
=	EQUALS
'	FEET, FOOT OR ANGULAR MINUTES
"	INCH OR ANGULAR SECONDS
ϕ	PHASE (SIGNAL OR ELECTRICAL)

1 / - — DETAIL NUMBER; SHEET NUMBER OR DASH INDICATING SAME SHEET

A / 3 — SECTION LETTER; SHEET NUMBER OR DASH INDICATING SAME SHEET

GENERAL NOTES:

1. ALL WORK IS TO BE DONE UNDER THE DIRECTION OF THE ENGINEER.
2. CALTRANS STANDARD SPECIFICATIONS AND STANDARD PLANS 2018 EDITION, ARE PART OF THESE PLANS.
3. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORK HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF PROPER SHORING OF TRENCHES IN ACCORDANCE WITH THE LATEST OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY IN, ON, OR NEAR THE CONSTRUCTION SITE.
4. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING STRUCTURES AND/OR UTILITIES DURING CONSTRUCTION. PROPER REPAIR SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND THE RESPECTIVE UTILITY COMPANY.
5. ALL PIPELINES AND OTHER UNDERGROUND FACILITIES MAY NOT BE SHOWN. EXISTING UNDERGROUND FACILITIES AS SHOWN ARE APPROXIMATE ONLY AND WERE OBTAINED FROM AVAILABLE UTILITY RECORDS. HOWEVER, THE COUNTY ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY OR COMPLETENESS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITIES AND TO HAVE ALL FACILITIES LOCATED IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AT 811 OR 1-800-227-2600 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION.
6. SLOPES OF ALL EMBANKMENT FILL SHALL BE 2:1 (HORIZONTAL: VERTICAL) UNLESS OTHERWISE NOTED ON PLANS OR AS DIRECTED BY THE ENGINEER. ATTENTION IS DIRECTED TO CALTRANS STANDARD SPECIFICATIONS, SECTION 19, FOR EMBANKMENT CONSTRUCTIONS WHERE APPLICABLE.
7. DUST CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHALL BE FOLLOWED AT ALL TIMES DURING CONSTRUCTION OPERATIONS.
8. EROSION CONTROL SHALL BE PERFORMED ON ALL DISTURBED AREAS.
9. TREES DESIGNATED ⊗ ON THE PLANS ARE TO BE REMOVED UNLESS DIRECTED OTHERWISE IN WRITING BY THE ENGINEER.
10. ALL ELEVATIONS SHOWN ARE FINISHED ELEVATIONS UNLESS STATED OTHERWISE.
11. THE CONTRACTOR SHALL NOT PERFORM WORK OUTSIDE THE RIGHT OF WAY UNLESS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
12. SEE SPECIFICATIONS FOR DETAILS NOT SHOWN HEREIN.

COUNTY OF ALAMEDA STANDARD DETAILS/DESIGN GUIDELINES REVISED 2016

SD-300	SD-512
SD-303	
SD-306	
SD-313	

CALTRANS STANDARD PLANS 2018 EDITION

A3A	A20B-A24F	RSP H51	RS1
A3B	A62D	T3A	RS2
A3C	A62F	T3B	
A10A	A87A	T9	
A10B	A88A	T56	
A10C	A88B	T58	
A10D	D73B-G		
A20A	D77A-B		
RSP A20B			

50% REVIEW INCOMPLETE PLAN

DEAN ZURCHER
PROJECT DESIGN ENGINEER
TBD -/-/-
REVIEWED BY DATE
TRANSPORTATION
DEPARTMENT

REVISIONS

NO.	DESCRIPTION	BY	DATE	APPV'D
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APPROVED — REGISTERED PROFESSIONAL ENGINEER — DEAN ZURCHER — No. 86371 — CIVIL — STATE OF CALIFORNIA — APPROVAL DATE:

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST, BLDG. 100-B TEL 916.341.7760
SACRAMENTO, CA 95816 FAX 916.341.7767
DRAWN: C. RODRIGUEZ
DESIGNED: C. RODRIGUEZ
CHECKED: D. ZURCHER
APPROVED: C. HODGE

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

REVIEWED:
REVIEWED:
APPROVAL RECOMMENDED::

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

NOTES AND ABBREVIATIONS

DATE: MAY 2022
SCALE: NO SCALE
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 3 OF 41
FILE NO.: U-XXX

FOR REDUCED ENGLISH PLANS
ORIGINAL SCALE IS IN INCHES
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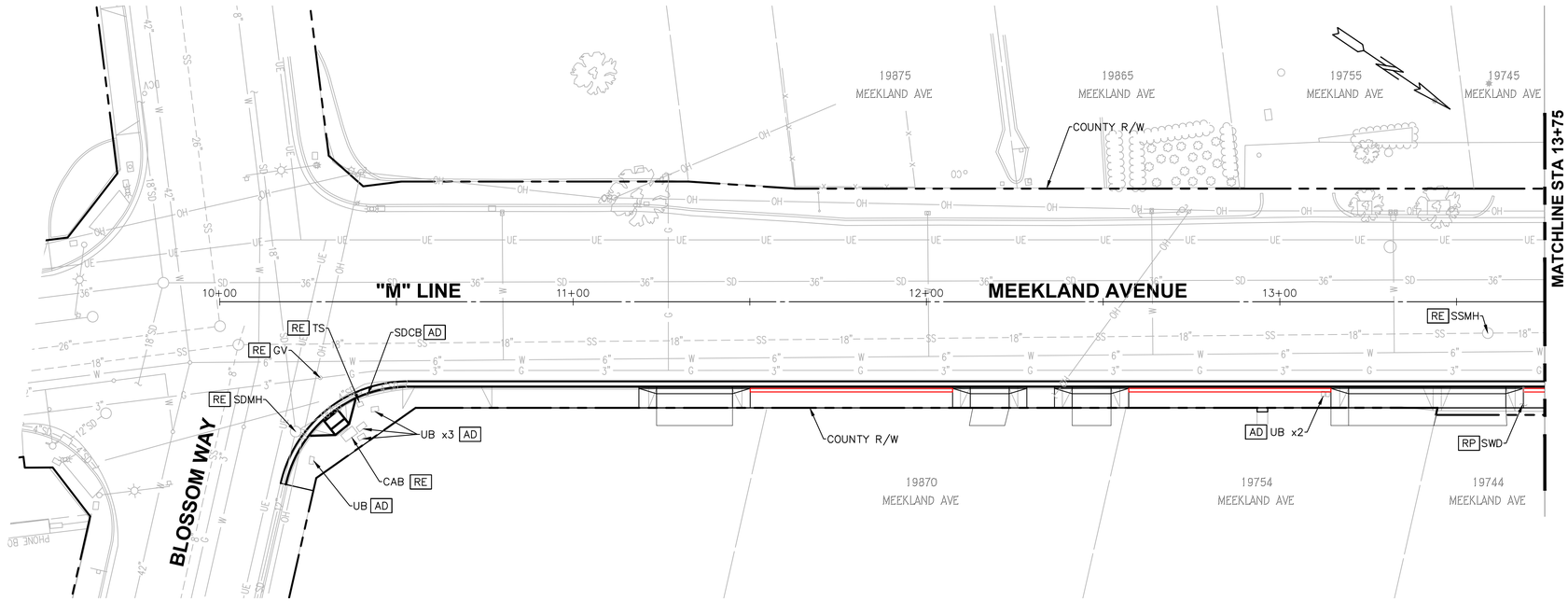

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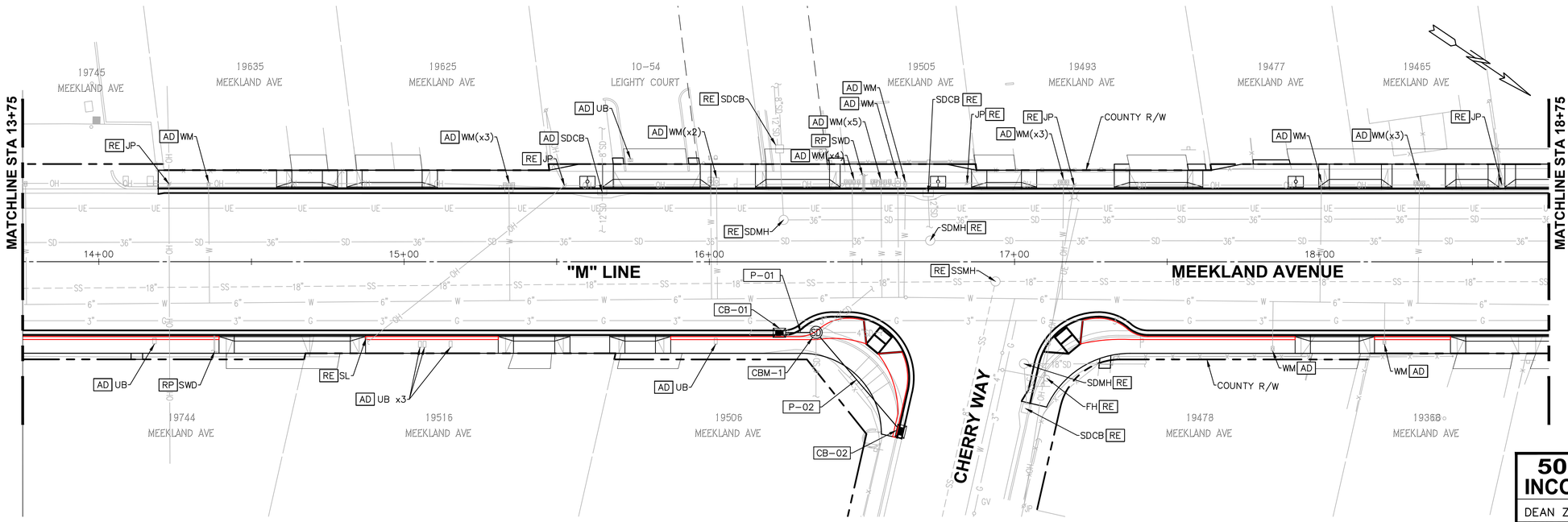

PLAN

SCALE: 1"=20'

LEGEND

AB	ABANDON
AD	ADJUST
CB	CATCH BASIN
CBM	CONVERT CATCH BASIN TO MANHOLE
P	STORM DRAIN PIPE
RE	REMAIN, PROTECT
RL	RELOCATE BY UTILITY, UNLESS OTHERWISE NOTED
RP	REPLACE
X	REMOVE

NOTE: CONTRACTOR TO INSTALL SIDEWALK DRAINS AT THE ENGINEERS DIRECTION AT EACH PARCEL PER ACPWA STD SD-51

ABBREVATIONS

CAB	CABINET
GV	GAS VALVE
JP	JOINT POLE
SDCB	STORM DRAIN CATCH BASIN
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
SWD	SIDEWALK DRAIN
TS	TRAFFIC SIGNAL
UB	UTILITY BOX
WM	WATER METER
WV	WATER VALVE

UTILITY NOTES

1. CONTRACTOR SHALL VERIFY CATCH BASIN LOCATIONS FOR CONFLICT WITH EXISTING UTILITIES PRIOR TO INSTALLATION OF STORM DRAIN PIPE AND CATCH BASINS.
2. CONTRACTOR SHALL ADJUST THE INVERT OF INLETS AND MANHOLES CONSTRUCTED AT EXISTING PIPES TO MATCH THE INVERT OF CONNECTING PIPE.

UTILITY OWNER INFORMATION

GAS	PG&E
ELECTRIC	PG&E
STORM DRAIN	ACPWA
SANITARY SEWER	ORO LOMA SANITARY DISTRICT
TELEPHONE	AT&T
	COMCAST
WATER	EBMUD

50% REVIEW INCOMPLETE PLAN

DEAN ZURCHER
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REVIEWED BY DATE
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DEPARTMENT

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(IN FEET)
1"=20'

FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES
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REVIEWED BY:	DATE:	REVIEWED BY:	DATE:
CONSTRUCTION		SURVEY	
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REAL ESTATE		ENVIRONMENTAL	

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SACRAMENTO, CA 95816 FAX 916.341.7767

CHECKED: D. ZURCHER
APPROVED: C. HODGE
DRAWN: C. RODRIGUEZ
DESIGNED: C. RODRIGUEZ
REVIEWED: REVIEWED:
APPROVAL RECOMMENDED:

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

UTILITY PLAN

DATE: MAY 2022
SCALE: 1"=20'
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 29 OF 41
FILE NO.: U-XXX

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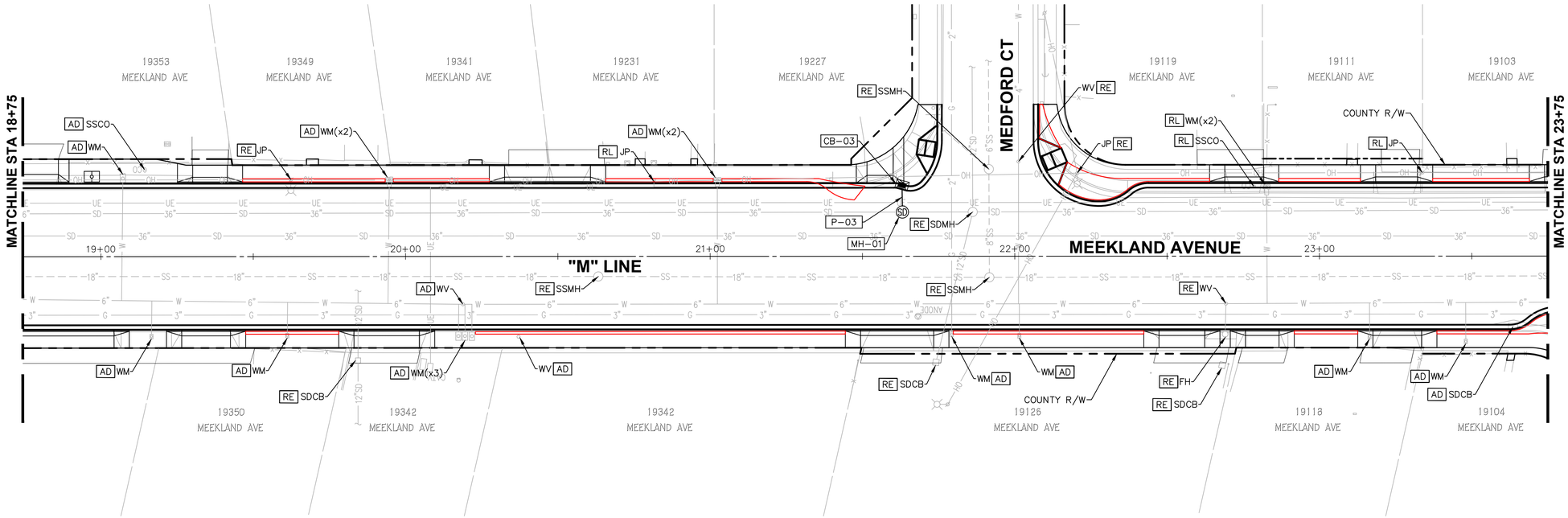

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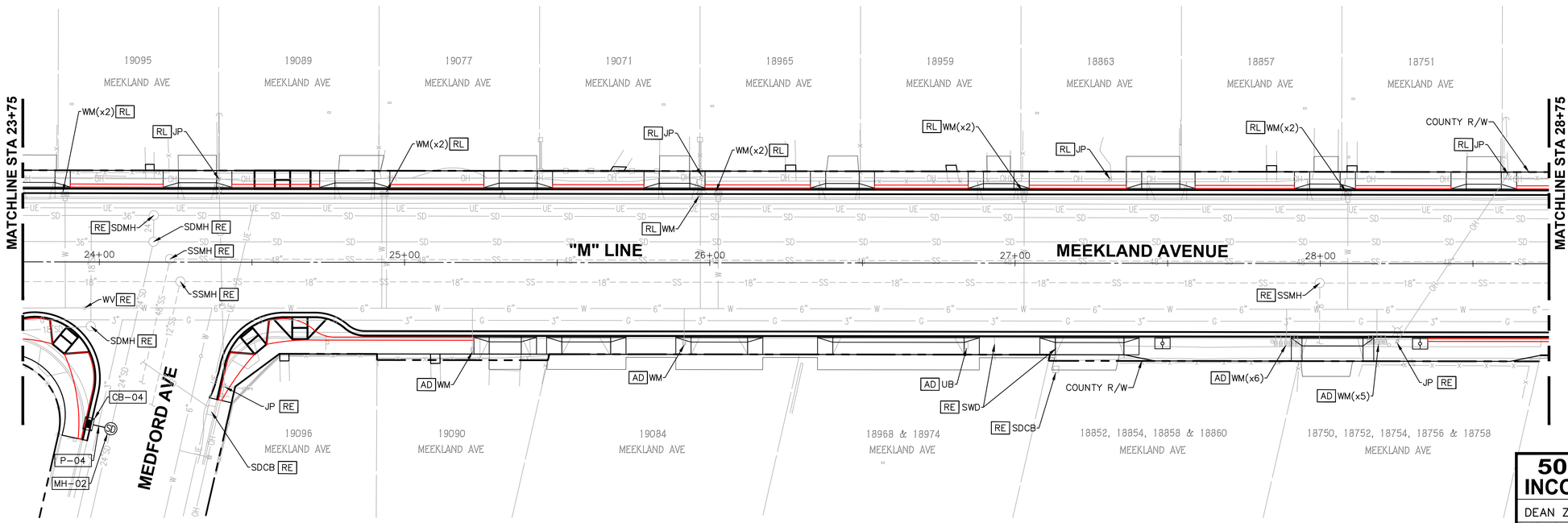

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT COUNTY OFFICE.

PLAN

SCALE: 1"=20'

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(IN FEET)
1"=20'

FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

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COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

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THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD
UTILITY PLAN

50% REVIEW INCOMPLETE PLAN

DEAN ZURCHER
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DEPARTMENT

DATE: MAY 2022
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WORK ORDER NO.: RXXXXX
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SHEET NO.: 30 OF 41
FILE NO.: U-XXX

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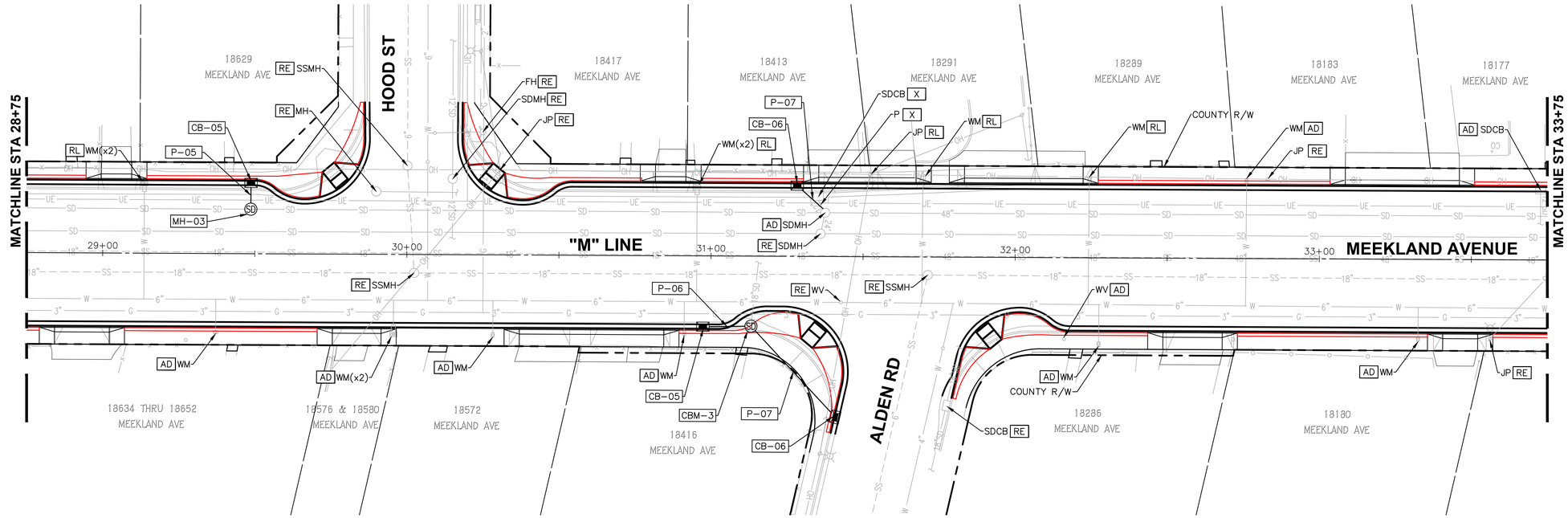

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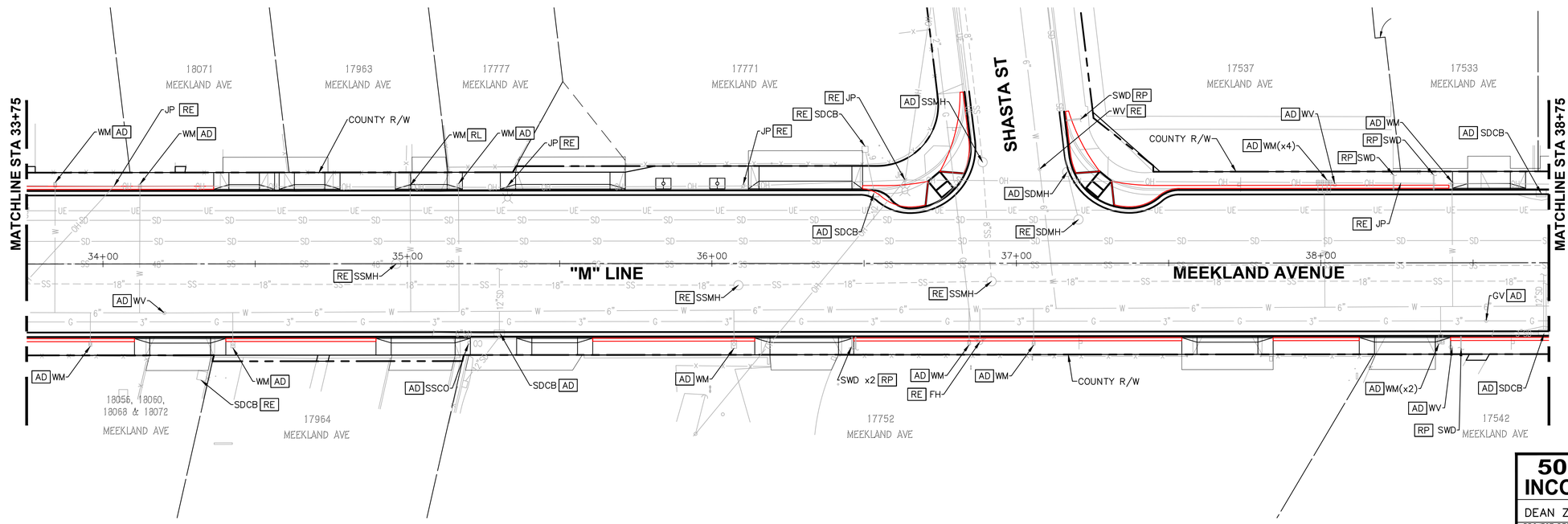

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50% REVIEW INCOMPLETE PLAN

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TRANSPORTATION
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REGISTERED PROFESSIONAL ENGINEER ★ CALIFORNIA ★ DEAN ZURCHER No. 86371 CIVIL STATE OF CALIFORNIA
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APPROVED: C. HODGE

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

REVIEWED: REVIEWED: APPROVAL RECOMMENDED:

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD
UTILITY PLAN

DATE MAY 2022 SCALE 1"=20'
WORK ORDER NO. RXXXXX
SPECIFICATION NO. ####
SHEET NO. 31 OF 41
FILE NO. U-XXX

REVIEWED BY:	DATE:	REVIEWED BY:	DATE:
CONSTRUCTION		SURVEY	
MAINTENANCE		TRAFFIC	
REAL ESTATE		ENVIRONMENTAL	

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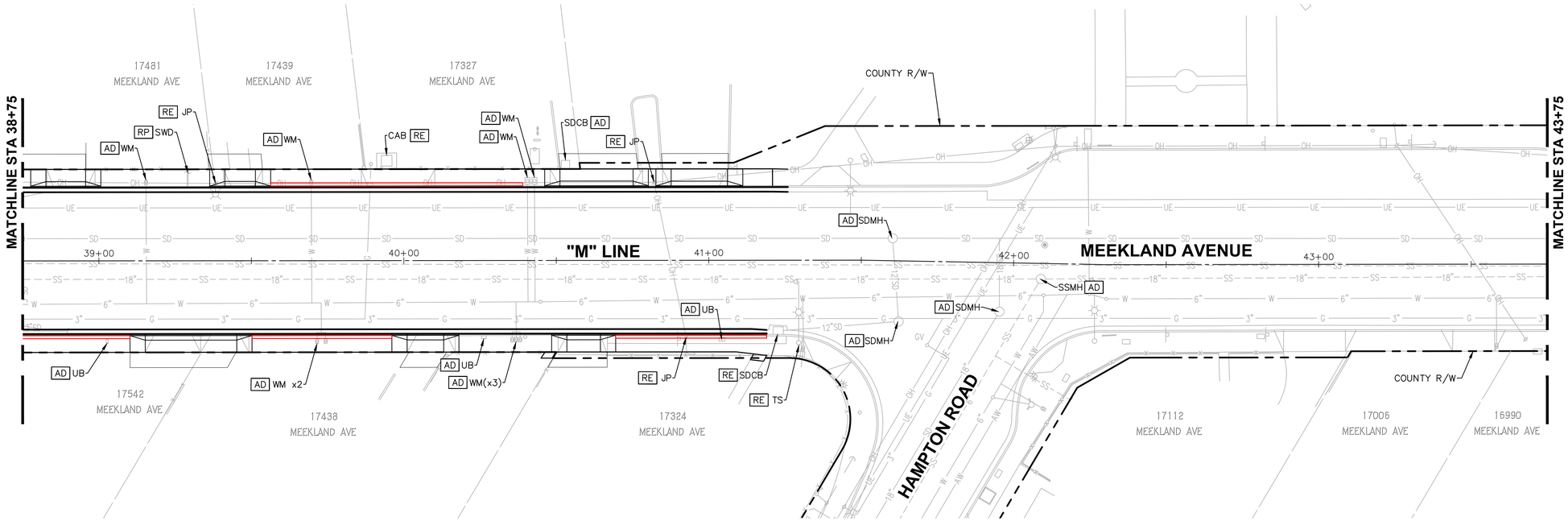
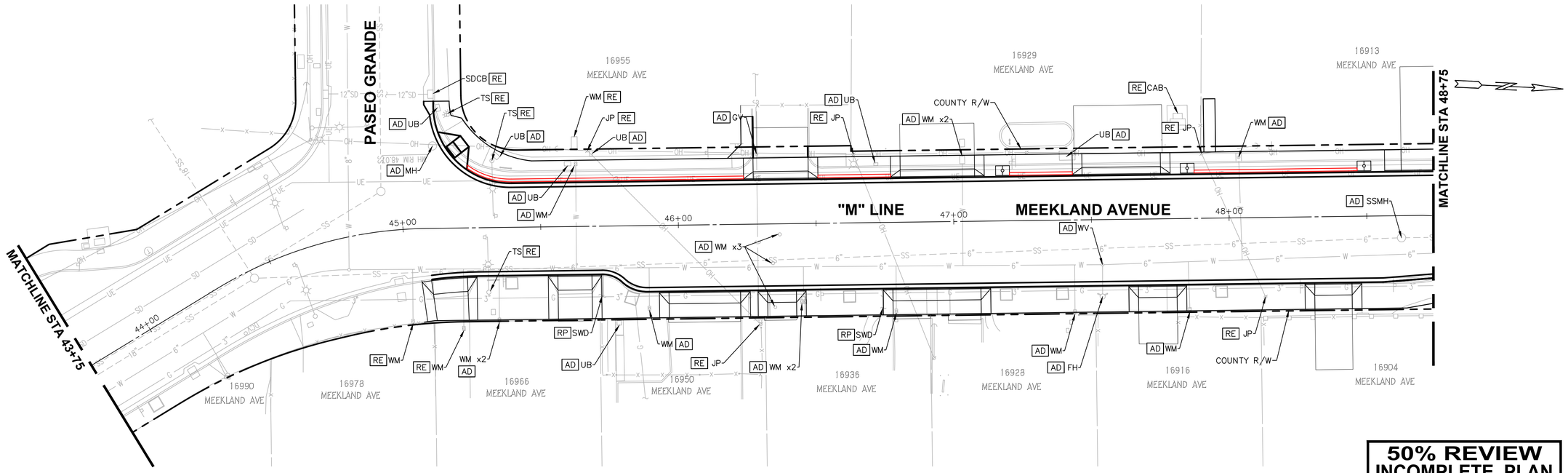


PLAN

SCALE: 1"=20'



PLAN

SCALE: 1"=20'

−40 0 20 40 80 160

(IN FEET)
1"=20'

FOR REDUCED ENGLISH PLANS
ORIGINAL SCALE IS IN INCHES
0 1 2 3

REVIEWED BY:	DATE:
CONSTRUCTION	
MAINTENANCE	
REAL ESTATE	

REVIEWED BY:	DATE:
SURVEY	
TRAFFIC	
ENVIRONMENTAL	

NO.	DESCRIPTION	BY	DATE	APPV'D
1				
2				
3				
4				

REVISIONS

APPROVED: REGISTERED PROFESSIONAL ENGINEER ★ DEAN ZURCHER No. 86371 CIVIL ★ STATE OF CALIFORNIA
APPROVAL DATE:

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST, BLDG. 100-B TEL 916.341.7760
SACRAMENTO, CA 95816 FAX 916.341.7767

DRAWN: C. RODRIGUEZ
DESIGNED: C. RODRIGUEZ
CHECKED: D. ZURCHER
APPROVED: C. HODGE

REVIEWED:
REVIEWED:
APPROVAL RECOMMENDED:

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

UTILITY PLAN

50% REVIEW INCOMPLETE PLAN

DEAN ZURCHER
PROJECT DESIGN ENGINEER
TBD −/−/−
REVIEWED BY DATE
TRANSPORTATION
DEPARTMENT

DATE: MAY 2022
SCALE: 1"=20'
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 32 OF 41
FILE NO.: U-XXX

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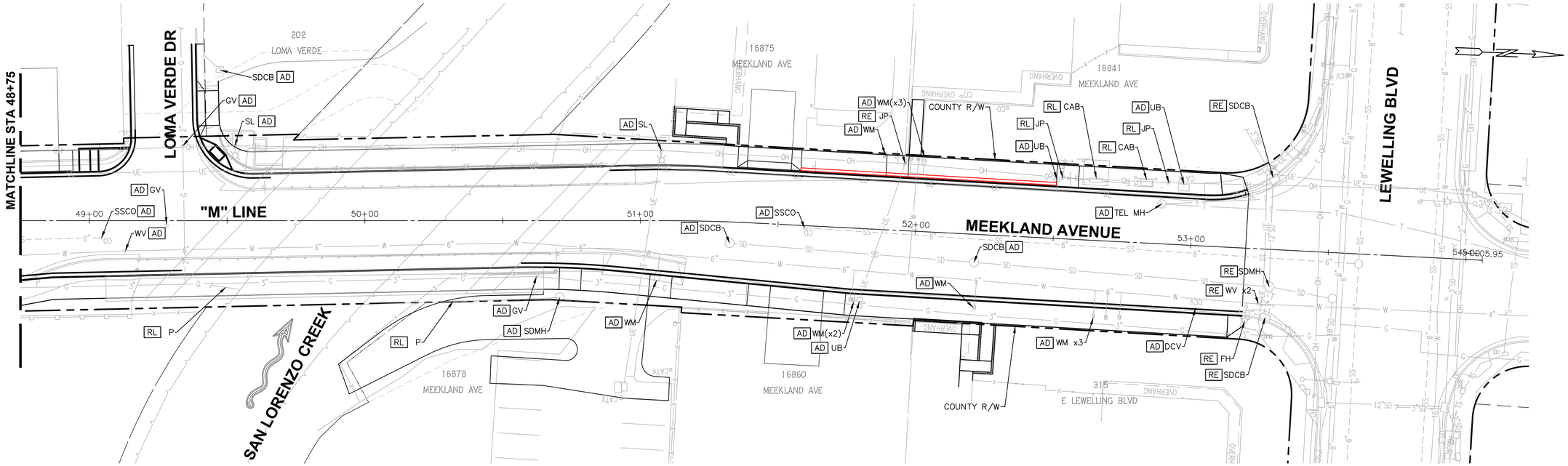

PLAN

SCALE: 1"=20'

	REVIEWED BY:	DATE:
CONSTRUCTION		
MAINTENANCE		
REAL ESTATE		

	REVIEWED BY:	DATE:
SURVEY		
TRAFFIC		
ENVIRONMENTAL		

NO.	DESCRIPTION	BY	DATE	APPV'D

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APPROVED: REGISTERED PROFESSIONAL ENGINEER ★ DEAN ZURCHER No. 86371 CIVIL ★ STATE OF CALIFORNIA

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BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST, BLDG. 100-B SACRAMENTO, CA 95816
TEL 916.341.7760 FAX 916.341.7767

CHECKED: D. ZURCHER
APPROVED: C. HODGE
DRAWN: C. RODRIGUEZ
DESIGNED: C. RODRIGUEZ

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

UTILITY PLAN

REVIEWED:
REVIEWED:
APPROVAL RECOMMENDED::

DATE: MAY 2022
SCALE: 1"=20'
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 33 OF 41
FILE NO.: U-XXX

50% REVIEW INCOMPLETE PLAN

DEAN ZURCHER
PROJECT DESIGN ENGINEER
TBD -/-/-
REVIEWED BY DATE
TRANSPORTATION
DEPARTMENT

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(IN FEET)
1"=20'

FOR REDUCED ENGLISH PLANS
ORIGINAL SCALE IS IN INCHES
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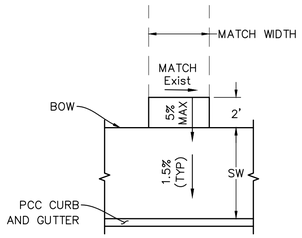
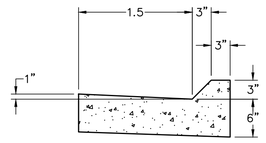
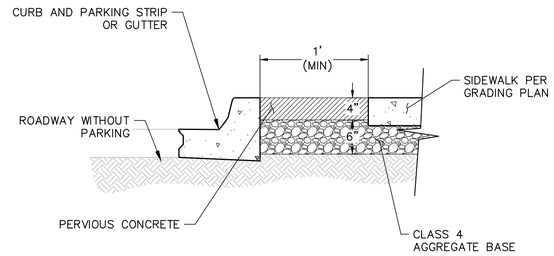


TYPICAL SIDEWALK CONNECTION 1
NTS



LOW PROFILE CURB 2
NTS



PERVIOUS CONCRETE 3
NTS

	REVIEWED BY:	DATE:
CONSTRUCTION		
MAINTENANCE		
REAL ESTATE		

	REVIEWED BY:	DATE:
SURVEY		
TRAFFIC		
ENVIRONMENTAL		

NO.	DESCRIPTION	BY	DATE	APPV'D
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3				
4				
5				

REVISIONS

APPROVED REGISTERED PROFESSIONAL ENGINEER DEAN ZURCHER No. 86371 CIVIL STATE OF CALIFORNIA APPROVAL DATE:

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST. BLDG. 100-B TEL 916.341.7760
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APPROVED: C. HODGE

APPROVAL RECOMMENDED::
REVIEWED:
REVIEWED:

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

CONSTRUCTION DETAILS - MISCELLANEOUS DETAILS

DATE: MAY 2022
SCALE: 1"=xx'
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 28 OF 41
FILE NO.: U-XXX

50% REVIEW
INCOMPLETE PLAN

DEAN ZURCHER
PROJECT DESIGN ENGINEER
TBD -/-/-
REVIEWED BY DATE
TRANSPORTATION
DEPARTMENT

FOR REDUCED ENGLISH PLANS
ORIGINAL SCALE IS IN INCHES
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Appendix B Stormwater Requirements Checklist

Stormwater Requirements Checklist

Municipal Regional Stormwater Permit (MRP 2.0)
Stormwater Controls for Development Projects

Alameda County Public Works Agency
399 Elmhurst Street, Hayward, CA 94544
(510) 670-5480

I. Applicability of C.3 and C.6 Stormwater Requirements

I.A. Enter Project Data *(For "C.3 Regulated Projects," data will be reported in the municipality's stormwater Annual Report.)*

I.A.1 Project Name: Meekland Avenue Corridor Improvement Project

I.A.2 Project Address (include cross street): Meekland Avenue between Lewelling Boulevard and Blossom Way

I.A.3 Project APN: Meekland Ave.

I.A.4 Project Watershed[1]: San Lorenzo Creek Watershed

I.A.5 Applicant Name: Alameda County Public Works

I.A.6 Date Submitted: 05/19/2022

I.A.7 Applicant Address: 399 Elmhurst Street Hayward, CA 94544

I.A.8 Applicant Phone: (510) 670-5480

I.A.9 Applicant Email Address: info@acpwa.org

I.A.10 Development type: (check all that apply)

☒ Residential ☐ Commercial ☐ Industrial ☐ Mixed-Use ☒ Streets, Roads, etc.

☐ 'Redevelopment' as defined by MRP: creating, adding and/or replacing exterior existing impervious surface on a site where past development has occurred[2]

☐ 'Special land use categories' as defined by MRP: (1) auto service facilities[3], (2) retail gasoline outlets, (3) restaurants[3], (4) uncovered parking area (stand-alone or part of a larger project)

I.A.11 Project Description[4]: (Also note any past or future phases of the project.)

Alameda County Public Works is proposing to provide a multimodal crossing for San Lorenzo Creek and improve connectivity along the Meekland Ave. Corridor. The multimodal improvements Will expand sidewalks and add other complete street and safety improvements.

I.A.12 Total Area of Site: 3.72 acres

I.A.13 Slope on Site: 1% or less

I.A.14 Total Area of land disturbed during construction (include clearing, grading, excavating and stockpile area:____ acres.

I.B. Is the project a "C.3 Regulated Project" per MRP Provision C.3.b?

I.B.1 Enter the amount of impervious surface[4] created and/or replaced by the project (if the total amount is 5,000 sq.ft. or more):

Table of Impervious and Pervious Surfaces

Type of Impervious Surface	a Pre-Project Impervious Surface (sq.ft.)	b Existing Impervious Surface to be Replaced[7] (sq.ft.)	C New Impervious Surface to be Created[7] (sq.ft.)	d Post-project pervious surface (sq.ft.)
Roof area(s) – excluding any portion of the roof that is vegetated ("green roof")	0.0	0.0	0.0	N/A
Impervious[5] sidewalks, patios, paths, driveways	149,590	144,619	4,356	
Impervious[5] uncovered parking[6]				
Streets (public)				
Streets (private)				
Totals:	149,590	144,560	**4,356**	
Area of Existing Impervious Surface to remain in place	144,560	N/A		
Total New Impervious Surface *(sum of totals for columns b and c):*	**148,916**			

[1] Watershed is defined by the maps from the Alameda County Flood Control District at http://acfloodcontrol.org/resources/explore-watersheds

[2] Roadway projects that replace existing impervious surface are subject to C.3 requirements only if one or more lanes of travel are added.

[3] Standard Industrial Classification (SIC) codes are in Section 2.3 of the C.3 Technical Guidance (download at www.cleanwaterprogram.org)

[4] Project description examples: 5-story office building, industrial warehouse, residential with five 4-story buildings for 200 condominiums, etc.

[5] Per the MRP, pavement that meets the following definition of pervious pavement is NOT an impervious surface. Pervious pavement is defined as pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3.d.

[6] Uncovered parking includes top level of a parking structure.

[7] "Replace" means to install new impervious surface where existing impervious surface is removed. "Create" means to install new impervious surface where there is currently no impervious surface.

I.B. Is the project a "C.3 Regulated Project" per MRP 2.0 Provision C.3.b? (continued)

		Yes	No	NA
I.B.2	In Item I.B.1, does the Total New Impervious Surface equal 10,000 sq.ft. or more? *If YES, skip to Item I.B.5 and check "Yes." If NO, continue to Item I.B.3.*	☐	☒	☐
I.B.3	Does the Item I.B.1 Total New Impervious Surface equal 5,000 sq.ft. or more, but less than 10,000 sq.ft? *If YES, continue to Item I.B.4. If NO, skip to Item I.B.5 and check "No."*	☐	☒	☐
I.B.4	Is the project a "Special Land Use Category" per Item I.A.10? For uncovered parking, check YES only if there is 5,000 sq.ft or more uncovered parking. *If NO, go to Item I.B.5 and check "No." If YES, go to Item I.B.5 and check "Yes."*	☐	☒	☐
I.B.5	Is the project a C.3 Regulated Project? *If YES, go to Item I.B.6; if NO, continue to Item I.C.*	☐	☒	☐
I.B.6	Does the total amount of Replaced impervious surface equal 50 percent or more of the Pre-Project Impervious Surface? *If YES, stormwater treatment requirements apply to the whole site; if NO, these requirements apply only to the impervious surface created and/or replaced.*	☐	☒	☐
I.B.7	Is the project installing a total of 3,000 sq.ft. or more (excluding private-use patios in single family homes, townhomes, or condominiums) of new pervious pavement systems? (Pervious pavement systems include pervious concrete, pervious asphalt, pervious pavers and grid pavers etc. and are described in the C3 Technical Guidance at www.cleanwaterprogram.org) If YES, stormwater treatment system inspection requirements (C.3.h) apply; (Municipal staff – add this site to your list of sites needing a final inspection at the end of construction and on-going O&M inspections.) If NO, inspection requirements only apply if there are other treatment systems installed on the project.	☐	☒	☐

I.C. Projects that are NOT C.3 Regulated Projects

If you answered NO to Item I.B.5, or the project creates/replaces less than 5,000 sq. ft. of impervious surface, then the project is NOT a C.3 Regulated Project, and stormwater treatment is not required, BUT the municipality may determine that source controls and site design measures are required. Skip to Section II.

I.D. Projects that ARE C.3 Regulated Projects

If you answered YES to Item I.B.5, then the project is a C.3 Regulated Project. The project must include appropriate site design measures and source controls AND hydraulically-sized stormwater treatment measures. Hydromodification management may also be required; refer to Section II to make this determination. If final discretionary approval was granted on or after **DECEMBER 1, 2011**, Low Impact Development (LID) requirements apply, except for "Special Projects." See Section II.

I.E. Identify C.6 Construction-Phase Stormwater Requirements

		Yes	No
I.E.1	Does the project disturb 1.0 acre (43,560 sq.ft.) or more of land? (See Item I.A.14). *If Yes, obtain coverage under the state's Construction General Permit at https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp. Submit to the municipality a copy of your Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP) before a grading or building permit is issued.*	☒	☐
I.E.2	Is the site a "High Priority Site" that disturbs less than 1.0 acre (43,560 sq.ft.) of land? (Municipal staff will make the final determination.) "High Priority Sites" are sites having any of the following criteria: ▪ that require a grading permit, ▪ are adjacent to a creek, ▪ or are otherwise high priority for stormwater protection during construction (see MRP 2.0 Provision C.6.e.ii.(2)(c))	☐	☒
I.E.3	Is the site a "Hillside Site" that disturbs 5,000 sq.ft. or more, but less than 1.0 acre (43,560 sq.ft.) of land? (Municipal staff will make the final determination.) ▪ "Hillside Sites" are located on hillsides, as indicated on a jurisdictional map of hillside development areas or as indicated by meeting jurisdictional hillside development criteria. ▪ If no map or criteria exist, then Hillside Sites are sites with a slope of 15% or more (see I.A.13 above and MRP 2.0 Provision C.6.e.ii.(2)(b)).	☐	☒

➢ NOTE TO APPLICANT: All projects require appropriate stormwater best management practices (BMPs) during construction. Refer to the Section II to identify appropriate construction BMPs.

- NOTE TO MUNICIPAL STAFF: If the answer is "Yes" to I.E.1, I.E.2, or I.E.3, refer this project to construction site inspection staff to be added to their list of projects that require stormwater inspections at least monthly during the wet season (October 1 through April 30) and other times of the year as appropriate.

II. Implementation of Stormwater Requirements

II.A. Complete the appropriate sections for the project. For non-C.3 Regulated Projects, Sections II.B, II.C, and II.D apply. For C.3 Regulated Projects, all sections of Section II apply.

II.B. Select Appropriate Site Design Measures

- *Required for C.3 Regulated Projects.*
- *Starting December 1, 2012, projects that create and/or replace 2,500 - 10,000 sq.ft. of impervious surface, and stand-alone single family homes that create/replace 2,500 sq.ft. or more of impervious surface, must include one of Site Design Measures a through f.*[8]
- *All other projects are encouraged to implement site design measures, which may be required at municipality discretion.*
- *Consult with municipal staff about requirements for your project.*

II.B.1 Is the site design measure included in the project plans?

Yes	No	Plan Sheet No.	
☐	☒		a. Direct roof runoff into cisterns or rain barrels and use rainwater for irrigation or other non-potable use.
☐	☒		b. Direct roof runoff onto vegetated areas.
☒	☐		c. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
☒	☐		d. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
☒	☐		e. Construct sidewalks, walkways, and/or patios with pervious surfaces. Use the specifications in the C3 Technical Guidance (Version 4.1) or for small projects see the BASMAA Pervious Paving Factsheet. For these documents and others go to www.cleanwaterprogram.org and click on "Resources."
☒	☐		f. Construct bike lanes, driveways, and/or uncovered parking lots with pervious surfaces. Use the specifications in the C3 Technical Guidance (Version 4.1) or for small projects see the BASMAA Pervious Paving Factsheet. For these documents and others go to the program website at: www.cleanwaterprogram.org and click on "Resources."
☒	☐		g. Minimize land disturbance and impervious surface (especially parking lots).
☐	☒		h. Maximize permeability by clustering development and preserving open space.
☒	☐		i. Use micro-detention, including distributed landscape-based detention.
☒	☐		j. Protect sensitive areas, including wetland and riparian areas, and minimize changes to the natural topography.
☐	☐		k. Self-treating area (see Section 4.1 of the C.3 Technical Guidance)
☐	☐		l. Self-retaining area (see Section 4.2 of the C.3 Technical Guidance)
☐	☐		m. Plant or preserve interceptor trees (Section 4.5, C.3 Technical Guidance)

[8] See MRP Provision C.3.a.i(6) for non-C.3 Regulated Projects, C.3.c.i(2)(a) for Regulated Projects, C.3.i for projects that create/replace 2,500 to 10,000 sq.ft. of impervious surface and stand-alone single family homes that create/replace 2,500 sq.ft. or more of impervious surface.

II.C. Select appropriate source controls *(Applies to C.3 Regulated Projects; encouraged for other projects. Consult municipal staff.[9])*

Are these features in project?		Features that require source control measures	Source control measures (Refer to Local Source Control List for detailed requirements)	Is source control measure included in project plans?		
Yes	No			Yes	No	Plan Sheet No.
☒	☐	Storm Drain	Mark on-site inlets with the words "No Dumping! Flows to Bay" or equivalent.	☒	☐	29 - 33
☐	☒	Floor Drains	Plumb interior floor drains to sanitary sewer[10] [or prohibit].	☐	☐	
☐	☒	Parking garage	Plumb interior parking garage floor drains to sanitary sewer.[9]	☐	☐	
☒	☐	Landscaping	▪ Retain existing vegetation as practicable. ▪ Select diverse species appropriate to the site. Include plants that are pest- and/or disease-resistant, drought-tolerant, and/or attract beneficial insects. ▪ Minimize use of pesticides and quick-release fertilizers. ▪ Use efficient irrigation system; design to minimize runoff.	☒	☐	TBD
☐	☒	Pool/Spa/Fountain	Provide connection to the sanitary sewer to facilitate draining.[9]	☐	☐	
☐	☒	Food Service Equipment (non-residential)	Provide sink or other area for equipment cleaning, which is: ▪ Connected to a grease interceptor prior to sanitary sewer discharge. [9] ▪ Large enough for the largest mat or piece of equipment to be cleaned. ▪ Indoors or in an outdoor roofed area designed to prevent stormwater run-on and run-off, and signed to require equipment washing in this area.	☐	☐	
☐	☒	Refuse Areas	▪ Provide a roofed and enclosed area for dumpsters, recycling containers, etc., designed to prevent stormwater run-on and runoff. ▪ Connect any drains in or beneath dumpsters, compactors, and tallow bin areas serving food service facilities to the sanitary sewer.[9]	☐	☐	
☐	☒	Outdoor Process Activities [11]	Perform process activities either indoors or in roofed outdoor area, designed to prevent stormwater run-on and runoff, and to drain to the sanitary sewer.[9]	☐	☐	
☐	☒	Outdoor Equipment/ Materials Storage	▪ Cover the area or design to avoid pollutant contact with stormwater runoff. ▪ Locate area only on paved and contained areas. ▪ Roof storage areas that will contain non-hazardous liquids, drain to sanitary sewer[9], and contain by berms or similar.	☐	☐	
☐	☒	Vehicle/ Equipment Cleaning	▪ Roofed, pave and berm wash area to prevent stormwater run-on and runoff, plumb to the sanitary sewer[9], and sign as a designated wash area. ▪ Commercial car wash facilities shall discharge to the sanitary sewer.[9]	☐	☐	
☐	☒	Vehicle/ Equipment Repair and Maintenance	▪ Designate repair/maintenance area indoors, or an outdoors area designed to prevent stormwater run-on and runoff and provide secondary containment. Do not install drains in the secondary containment areas. ▪ No floor drains unless pretreated prior to discharge to the sanitary sewer. [9] ▪ Connect containers or sinks used for parts cleaning to the sanitary sewer. [9]	☐	☐	
☐	☒	Fuel Dispensing Areas	▪ Fueling areas shall have impermeable surface that is a) minimally graded to prevent ponding and b) separated from the rest of the site by a grade break. ▪ Canopy shall extend at least 10 ft in each direction from each pump and drain away from fueling area.	☐	☐	
☐	☒	Loading Docks	▪ Cover and/or grade to minimize run-on to and runoff from the loading area. ▪ Position downspouts to direct stormwater away from the loading area. ▪ Drain water from loading dock areas to the sanitary sewer.[9] ▪ Install door skirts between the trailers and the building.	☐	☐	
☐	☒	Fire Sprinklers	Design for discharge of fire sprinkler test water to landscape or sanitary sewer.[9]	☐	☐	
☐	☒	Miscellaneous Drain or Wash Water	▪ Drain condensate of air conditioning units to landscaping. Large air conditioning units may connect to the sanitary sewer.[9] ▪ Roof drains shall drain to unpaved area where practicable. ▪ Drain boiler drain lines, roof top equipment, all washwater to sanitary sewer [9].	☐	☐	
☐	☒	Architectural Copper	▪ Discharge rinse water to sanitary sewer [9], or collect and dispose properly offsite. See flyer "Requirements for Architectural Copper."	☐	☐	

[9] See MRP Provision C.3.a.i(7) for non-C.3 Regulated Projects and Provision C.3.c.i(1) for C.3 Regulated Projects.
[10] Any connection to the sanitary sewer system is subject to sanitary district approval.
[11] Businesses that may have outdoor process activities/equipment include machine shops, auto repair, industries with pretreatment facilities.

II.D. Implement Construction Best Management Practices (BMPs) *(Applies to all projects – see Provision C.6 for more details.)*

Yes	No	Best Management Practice (BMP)
☒	☐	Attach the municipality's construction BMP plan sheet to project plans and require contractor to implement the applicable BMPs on the plan sheet.
☒	☐	Temporary erosion controls to stabilize all denuded areas until permanent erosion controls are established.
☒	☐	Delineate with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
☒	☐	Provide notes, specifications, or attachments describing the following: ▪ Construction, operation and maintenance of erosion and sediment controls, include inspection frequency; ▪ Methods and schedule for grading, excavation, filling, clearing of vegetation, and storage and disposal of excavated or cleared material; ▪ Specifications for vegetative cover & mulch, include methods and schedules for planting and fertilization; ▪ Provisions for temporary and/or permanent irrigation.
☒	☐	Perform clearing and earth moving activities only during dry weather.
☒	☐	Use sediment controls or filtration to remove sediment when dewatering and obtain all necessary permits.
☒	☐	Protect all storm drain inlets in vicinity of site using sediment controls such as berms, fiber rolls, or filters.
☒	☐	Trap sediment on-site, using BMPs such as sediment basins or traps, earthen dikes or berms, silt fences, check dams, soil blankets or mats, covers for soil stock piles, etc.
☒	☐	Divert on-site runoff around exposed areas; divert off-site runoff around the site (e.g., swales and dikes).
☒	☐	Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.
☒	☐	Limit construction access routes and stabilize designated access points.
☒	☐	No cleaning, fueling, or maintaining vehicles on-site, except in a designated area where washwater is contained and treated.
☒	☐	Store, handle, and dispose of construction materials/wastes properly to prevent contact with stormwater.
☒	☐	Contractor shall train and provide instruction to all employees/subcontractors re: construction BMPs.
☒	☐	Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, washwater or sediments, rinse water from architectural copper, and non-stormwater discharges to storm drains and watercourses.

PROJECTS THAT ARE <u>NOT</u> C.3 REGULATED PROJECTS STOP HERE!

II.E. Biotreatment, Infiltration and Rain Water Harvesting and Use.

MRP 2.0 no longer requires that a feasibility analysis of infiltration and rainwater harvesting be conducted. However, applicants using biotreatment are encouraged to maximize infiltration of stormwater if site conditions allow. If feasible and desired, infiltration and rainwater harvesting may be cost effective solutions depending on the project.

II.F. Stormwater Treatment Measures (Applies to C.3 Regulated Projects)

II.F.1 Check the applicable box and indicate the treatment measures to be included in the project.

Yes	No	
☐	☒	Is the project a Special Project? (See Appendix K of the C.3 Technical Guidance for criteria.) If Yes, complete the Special Projects Worksheet (go to the program website at: www.cleanwaterprogram.org and click on "Resources") and consult with municipal staff about the need to prepare a discussion of the feasibility and infeasibility of 100% LID treatment. Indicate the type of non-LID treatment to be used, the hydraulic sizing method*, and percentage of the amount of runoff specified in Provision C.3.d that is treated: Non-LID Treatment — Hydraulic sizing method* — % of C.3.d amount of runoff treated ☐ Media filter ☐ Tree well filter
☐	☒	Is the project using biotreatment to treat the C.3.d amount of runoff? For more information on infiltration and rainwater harvesting and use of stormwater, refer to the C3 Technical Guidance downloadable at the program website: www.cleanwaterprogram.org If Yes, indicate the biotreatment measures to be used, and the hydraulic sizing method: Biotreatment Measures — Hydraulic sizing method* ☐ Bioretention area ☐ Flow-through planter ☐ Other (specify):
☐	☒	Is the project using infiltration or rainwater harvesting/use? For more information on infiltration and rainwater harvesting and use of stormwater, refer to the C3 Technical Guidance downloadable at the program website: www.cleanwaterprogram.org If Yes, indicate the measures to be used, and hydraulic sizing method: LID Treatment Measure (non-biotreatment) — Hydraulic sizing method* ☐ Rainwater harvesting and use ☐ Bioinfiltration[12] ☐ Infiltration trench ☐ Other (specify):_____

***Hydraulic Sizing Method:** Indicate which of the following Provision C.3.d.i hydraulic sizing methods were used:

1. Volume based approaches – Refer to Provision C.3.d.i.(1):
   1(a) Urban Runoff Quality Management approach, or
   1(b) 80% capture approach (recommended volume-based approach).

2. Flow-based approaches – Refer to Provision C.3.d.i.(2):
   2(a) 10% of 50-year peak flow approach,
   2(b) Percentile rainfall intensity approach, or
   2(c) 0.2-Inch-per-hour intensity approach (this is recommended flow-based approach AND the basis for the 4% rule of thumb described in Section 5.1 of the C.3 Technical Guidance).

3. Combination hydraulic sizing approach -- Refer to Provision C.3.d.i.(3):
   If a combination flow and volume design basis was used, indicate which flow-based and volume-based criteria were used.

[12] See Section 6.1 of the C.3 Technical Guidance for conditions in which bioretention areas provide bioinfiltration.

II.G. Is the project a Hydromodification Management[13] (HM) Project? (Complete this section for C.3 Regulated Projects)

II.G.1 Does the project create and/or replace 1 acre (43,560 sq. ft.) or more of impervious surface? (Refer to Item I.B.1.)

☒ Yes. *Continue to Item II.G.2.*

☐ No. *The project is NOT required to incorporate HM measures. Skip to Item II.G.6 and check "No."*

II.G.2 Is the total impervious area increased over the pre-project condition? (Refer to Item I.B.1.)

☐ Yes. *Continue to Item II.G.3.*

☒ No. *The project is NOT required to incorporate HM measures. Skip to Item II.G.6 and check "No."*

II.G.3 Is the site located in a tidally influenced/depositional area, or in the extreme eastern portion of the county that is not subject to HM requirements? *(See HMP Susceptibility Map in Appendix I of the C.3 Technical Guidance.)*

☐ Yes. *Project is exempt from HM requirements. Attach map indicating project location. Skip to II.G.6 and check "No".*

☒ No. *Continue to II.G.4.*

II.G.4 Is the site located in a high slope zone or special consideration watershed, as shown on the HMP Susceptibility Map?

☐ Yes. *Project is subject to HM requirements. Attach map indicating project location. Skip to II.G.6 and check "Yes."*

☒ No. *Continue to II.G.5.*

II.G.5 For sites located in a white area on the HMP Susceptibility Map, has an engineer or qualified environmental professional determined that runoff from the project flows only through a hardened channel or enclosed pipe along its entire length before emptying into a waterway in the exempt area?

☐ Yes. *Project is exempt from HM requirements. Attach signed statement by qualified professional. Go to II.G.6 and check "No."*

☒ No. *Project is subject to HM requirements. Attach map indicating project location. Go to Item G.6 and check "Yes."*

II.G.6 Is the project a Hydromodification Management Project?

☐ Yes. *The project is subject to HM requirements in Provision C.3.g of the Municipal Regional Stormwater Permit.*

☒ No. *The project is EXEMPT from HM requirements.*

☐ HM requirements are impracticable. *(Attach documentation needed to comply with the impracticability provision in MRP Attachment B.)*

- *If the project is subject to the HM requirements, incorporate in the project flow duration stormwater control measures designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations. The Bay Area Hydrology Model (BAHM) has been developed to size flow duration controls. See www.bayareahydrologymodel.org. Guidance is provided in Chapter 7 of the C.3 Technical Guidance.*

II.H Stormwater Treatment Measure and/HM Control Owner or Operator's Information:

Name: Alameda County Public Works Agency

Address: N/A

Phone: N/A Email: _____

- *Applicant must call for inspection and receive inspection within 45 days of installation of treatment measures and/or hydromodification management controls.*

Name of applicant completing the form: _____

Signature: _____ Date: _____

[13] Hydromodification is the modification of a stream's hydrograph, caused in general by increases in flows and durations that result when land is developed (made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding. Hydromodification management control measures are designed to reduce these effects.

III. For Completion By Municipal Staff

III.1 Alternative Certification: Was the treatment system sizing and design reviewed by a qualified third-party professional that is not a member of the project team or agency staff?

☐ Yes ☐ No Name of Reviewer_____

III.2. Confirm Operations and Maintenance (O&M) Submittal:

The following questions apply to C.3 Regulated Projects and Hydromodification Management Projects.

		Yes	No	N/A
III.2.a	Was maintenance plan submitted?	☐	☐	☐
III.2.b	Was maintenance plan approved?	☐	☐	☐
III.2.c	Was maintenance agreement submitted? (Date executed:_____)	☐	☐	☐

- *Attach the executed maintenance agreement as an appendix to this checklist.*

III.3 Incorporate HM Controls (if required)

Are the applicable items for HM compliance included in the plan submittal?

Yes	No	NA	Documentation for HM Compliance
☐	☐	☐	Site plans with pre- and post-project impervious surface areas, surface flow directions of entire site, locations of flow duration controls and site design measures per HM site design requirement
☐	☐	☐	Soils report or other site-specific document showing soil types at all parts of site
☐	☐	☐	If project uses the Bay Area Hydrology Model (BAHM), a list of model inputs.
☐	☐	☐	If project uses custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves), goodness of fit, and (allowable) low flow rate.
☐	☐	☐	If project uses the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, entity responsible for maintenance).
☐	☐	☐	If the project uses alternatives to the default BAHM approach or settings, a written description and rationale.

- *Municipal staff: Refer to the "Flow Duration Control Review Worksheet for HM Submittals" to review the documentation submitted for HM compliance.*

III.4 Annual Operations and Maintenance (O&M) Submittals:

For C.3 Regulated Projects and Hydromodification Management Projects, indicate the dates on which the Applicant submitted annual reports for project O&M: _____

III.5 Comments:

III.6 Notes:

Section I Notes:_____

Section II Notes:_____

Section III Notes:_____

III.7 Project Close-Out:

III.7.a	Were final Conditions of Approval met?	☐	☐	
III.7.b	Was initial inspection of the completed treatment/HM measure(s) conducted? (Date of inspection:_____)	☐	☐	☐
III.7.c	Was maintenance plan submitted? (Date executed:_____)	☐	☐	☐
III.7.d	Was project information provided to staff responsible for O&M verification inspections? (Date provided to inspection staff:_____)	☐	☐	☐

Name of staff confirming project is closed out:_____

Signature:_____ Date:_____

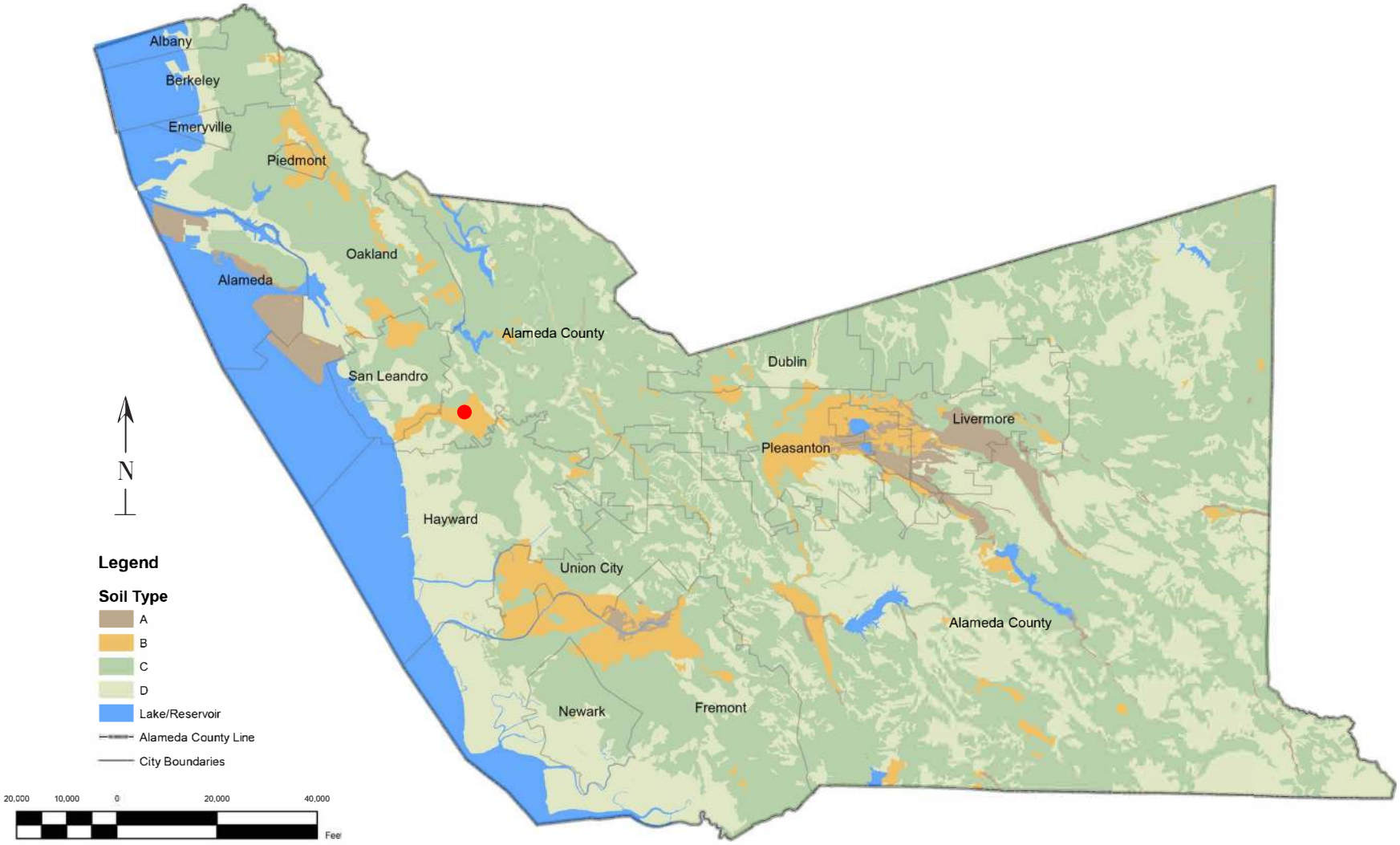
Name of O&M staff receiving information:_____

Signature:_____ Date:_____

Appendices

Appendix A: O&M Agreement
Appendix B: O&M Annual Report Form

Appendix C Soils Group Map



Attachment 9 available for download in GIS file from the Alameda County Flood Control District website.

(NRCS 2015) and (District 2015)

United States Department of Agriculture

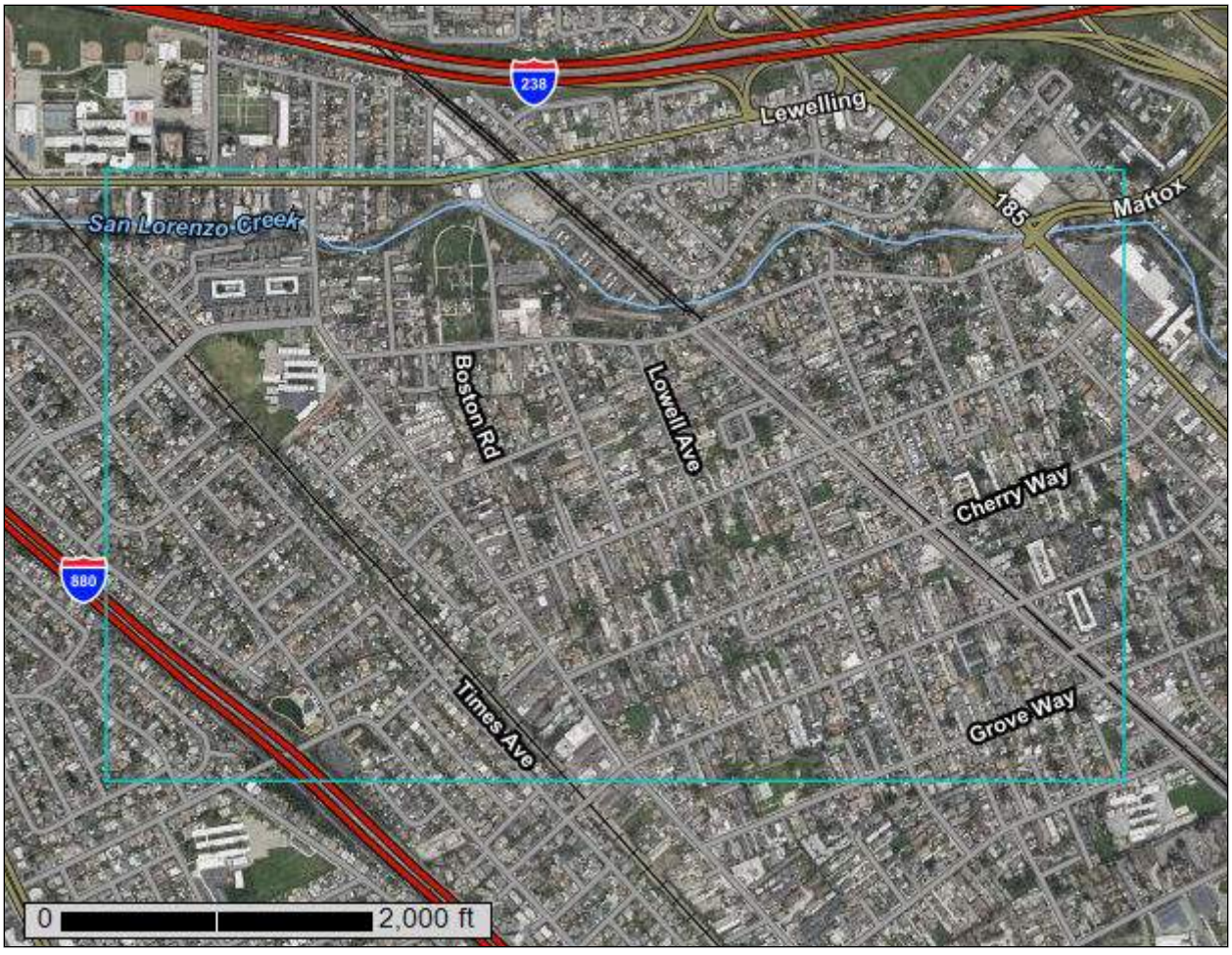
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Alameda County, California, Western Part

Meekland Ave. Corridor Improvement



April 20, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Alameda County, California, Western Part
Survey Area Data: Version 18, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 7, 2021—Mar 27, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
107	Clear Lake clay, drained, 0 to 2 percent slopes, MLRA 14	24.8	4.2%
111	Danville silty clay loam, 0 to 2 percent slopes	7.0	1.2%
120	Los Osos silty clay loam, 9 to 30 percent slopes	2.0	0.3%
161	Yolo silt loam, 0 to 3 percent slopes, dry, MLRA 14	554.8	94.3%
Totals for Area of Interest		**588.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Alameda County, California, Western Part

107—Clear Lake clay, drained, 0 to 2 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2vbt2
Elevation: 10 to 800 feet
Mean annual precipitation: 15 to 31 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Clear lake, drained, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Clear Lake, Drained

Setting

Landform: Basin floors
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Basin alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap - 0 to 6 inches: clay
Bss1 - 6 to 26 inches: clay
Bss2 - 26 to 36 inches: clay
C - 36 to 60 inches: clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 4 percent
Maximum salinity: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum: 7.0
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R014XG905CA - Clayey Bottom
Hydric soil rating: Yes

Minor Components

Unnamed
Percent of map unit: 5 percent
Landform: Alluvial flats
Hydric soil rating: Yes

Campbell, sicl
Percent of map unit: 3 percent
Hydric soil rating: No

Sunnyvale, sic
Percent of map unit: 2 percent
Hydric soil rating: No

111—Danville silty clay loam, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hb63
Elevation: 20 to 1,500 feet
Mean annual precipitation: 12 to 25 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 250 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Danville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Danville

Setting
Landform: Alluvial fans, fan terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sedimentary rock

Typical profile
H1 - 0 to 21 inches: silty clay loam
H2 - 21 to 53 inches: silty clay
H3 - 53 to 80 inches: silty clay loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: R014XG917CA - Dry Loamy Fan
Hydric soil rating: No

Minor Components

Clear lake

Percent of map unit: 5 percent
Landform: Stream terraces
Hydric soil rating: Yes

Botella

Percent of map unit: 5 percent
Hydric soil rating: No

Rincon

Percent of map unit: 5 percent
Hydric soil rating: No

120—Los Osos silty clay loam, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: hb6d
Elevation: 100 to 3,500 feet
Mean annual precipitation: 14 to 35 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 225 to 350 days
Farmland classification: Not prime farmland

Map Unit Composition

Los osos and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Los Osos

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 8 inches: silty clay loam
H2 - 8 to 30 inches: silty clay loam
H3 - 30 to 34 inches: weathered bedrock

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 24 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R015XY009CA - Hills 20-40"ppt
Hydric soil rating: No

Minor Components

Los gatos

Percent of map unit: 4 percent
Hydric soil rating: No

Altamount

Percent of map unit: 4 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Climara

Percent of map unit: 4 percent
Hydric soil rating: No

Montara

Percent of map unit: 3 percent
Hydric soil rating: No

161—Yolo silt loam, 0 to 3 percent slopes, dry, MLRA 14

Map Unit Setting

National map unit symbol: 2w89z
Elevation: 20 to 250 feet
Mean annual precipitation: 15 to 23 inches
Mean annual air temperature: 58 to 60 degrees F
Frost-free period: 300 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Yolo, dry, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yolo, Dry

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium derived from sedimentary rock

Typical profile

A - 0 to 8 inches: silt loam
C1 - 8 to 18 inches: silt loam
C2 - 18 to 34 inches: silt loam
C3 - 34 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.3 to 0.5 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.6 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: B
Ecological site: R014XG917CA - Dry Loamy Fan
Hydric soil rating: No

Minor Components

Sycamore

Percent of map unit: 5 percent
Hydric soil rating: No

Botella

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

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Appendix D Cherryland Zoning Map

Cherryland Zoning

Zoning

- ACBD-AC-DMU, District Mixed Use
- ACBD-AC-OS, Open Space
- ACBD-AO-AC-CMU-C, Corridor Mixed Use Commercial
- ACBD-AO-AC-CMU-R, Corridor Mixed Use Residential
- ACBD-AO-AC-CN, Auto Overlay, Corridor Neighborhood
- C1 Retail Business District
- C2 General Commercial District
- CN Neighborhood Business District
- CO Administrative Office District
- M1 Light Industrial District
- R1 Single Family Residence District
- R1-BE Single Family Residence Density as Specified
- R1-SU Single Family Residence with Secondary Unit
- R2 Two Family Residence District
- R2-BE Two Family Residence Density as Specified
- R3-BE Four Family Residence Density as Specified
- R4 Multiple Residence District
- RS Suburban Residence District
- RS-D15 Suburban Residence Density 1,500 per Unit
- RS-D20 Suburban Residence Density 2,000 per Unit
- RS-D25 Suburban Residence Density 2,500 per Unit
- RS-D3 Suburban Residence Density as Specified
- RS-D35 Suburban Residence Density 3,500 per Unit
- RS-DV Suburban Residence Density Variable
- RS-SU Suburban Residence with Secondary Unit
- PD Planned Development
- Area Boundary
- ACBD Specific Plan
- Interstate
- Railroad
- BART

0 0.125 0.25 0.5 Miles

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ALAMEDA COUNTY
Community Development Agency

Printed 10/10/2019

Appendix E Pervious Pavement O&M

Design Checklist

When installing pervious pavement, the following design criteria should be considered.

- ❑ An open-graded base of crushed stone, which has 35 to 45 percent pore space, is installed below the surface pavement. The recommended base thickness is 6 inches for pedestrian use and 10 inches for driveways to provide adequate structural strength.
- ❑ Slope is flat or nearly flat (not greater than 2 percent).
- ❑ Flow directed to pervious pavement is dispersed so as not to be concentrated at a small area of pavement.
- ❑ No erodible areas drain onto the pavement.
- ❑ The subgrade is uniform and compaction is the minimum required for structural stability.
- ❑ If a subdrain is provided, its outlet elevation is a minimum of 3 inches above the bottom of the base course.
- ❑ A rigid edge is provided to retain granular pavements and unit pavers.
- ❑ If paving is close to a building, a barrier or impermeable liner may be required to keep water away from the building foundation.
- ❑ Pavers have a minimum thickness of 80 mm (3 1/8 inches) and are set in sand or gravel with minimum 3/8-inch gaps between pavers.
- ❑ Proprietary products must be installed per the manufacturer's specifications.
- ❑ The project complies with applicable sections of the current municipal code, including disabled access requirements and site drainage requirements, if applicable.

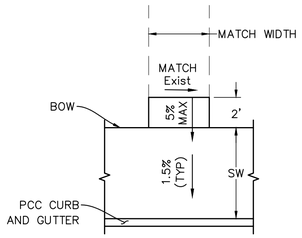
Maintenance Considerations

Once pervious pavement is installed, the following maintenance criteria should be followed:

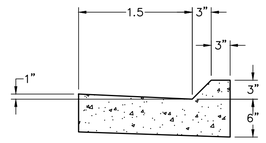
- ❑ The use of leaf blowers on permeable pavement can force dirt and debris into pavement void spaces. Avoid blowing leaves, grass trimmings and other debris across permeable pavement.
- ❑ Remove weeds from pavement and replace missing sand or gravel between pavers as needed.
- ❑ Inspect subdrain outlets (if applicable) yearly to verify they are not blocked.
- ❑ Inspect pavement after rains for ponding or other visible problems. If there are problems with standing water, vacuum sweeping with specialized equipment may be required. Concrete grid pavers do not require sweeping.

Open Joint Pavers

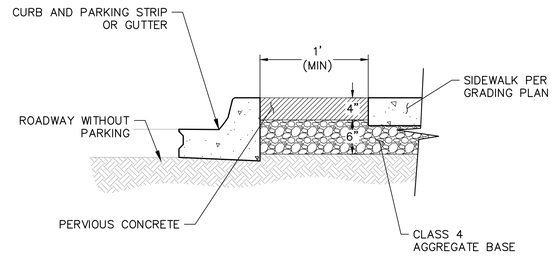
The City of Los Angeles and Geosyntec Consultants are acknowledged for providing text, formatting and various images used in this fact sheet. The Interlocking Concrete Pavement Institute is acknowledged for contributing pavement sections, design details and specifications. The San Mateo Countywide Water Pollution Prevention Program, Santa Clara Valley Urban Runoff Pollution Prevention Program, and City of San Jose are acknowledged for images used in the fact sheet.



TYPICAL SIDEWALK CONNECTION 1
NTS



LOW PROFILE CURB 2
NTS



PERVIOUS CONCRETE 3
NTS

	REVIEWED BY:	DATE:
CONSTRUCTION		
MAINTENANCE		
REAL ESTATE		

	REVIEWED BY:	DATE:
SURVEY		
TRAFFIC		
ENVIRONMENTAL		

NO.	DESCRIPTION	BY	DATE	APPV'D
1				
2				
3				
4				
5				

REVISIONS

APPROVED REGISTERED PROFESSIONAL ENGINEER DEAN ZURCHER No. 86371 CIVIL STATE OF CALIFORNIA APPROVAL DATE:

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST. BLDG. 100-B TEL 916.341.7760
SACRAMENTO, CA 95816 FAX 916.341.7767

DRAWN: C. RODRIGUEZ
DESIGNED: C. RODRIGUEZ
CHECKED: D. ZURCHER
APPROVED: C. HODGE

APPROVAL RECOMMENDED::
REVIEWED:
REVIEWED:

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

THE IMPROVEMENTS OF MEEKLAND AVE
BLOSSOM WAY
TO LEWELLING BLVD

CONSTRUCTION DETAILS - MISCELLANEOUS DETAILS

DATE: MAY 2022
SCALE: 1"=xx'
WORK ORDER NO.: RXXXXX
SPECIFICATION NO.: ####
SHEET NO.: 28 OF 41
FILE NO.: U-XXX

50% REVIEW
INCOMPLETE PLAN

DEAN ZURCHER
PROJECT DESIGN ENGINEER
TBD -/-/-
REVIEWED BY DATE
TRANSPORTATION
DEPARTMENT

FOR REDUCED ENGLISH PLANS
ORIGINAL SCALE IS IN INCHES
0 1 2 3

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