STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PERMIT ENGINEERING EVALUATION REPORT (PEER)

DOT TR-0112 (REV 12/2023)

FOR CALTRANS USE ONLY
TRACKING NO.
DIST/CO/RTE/PM

1. DESCRIBE THE PROPOSED IMPROVEMENTS AND MODIFICATIONS ON THE STATE HIGHWAY SYSTEM.

See Attachment A

2. WHY ARE THE PROPOSED IMPROVEMENTS/MODIFICATIONS NEEDED. (PURPOSE AND NEED)

See Attachment A

3. DESCRIBE THE IMPACTS ON THE STATE HIGHWAY SYSTEM DUE TO THE PROPOSED PROJECT.

See Attachment A

4. SIGNALIZATION OF INTERSECTIONS

SIGNALIZATION INVOLVED ☒ YES (NEW) ☐ NO ☐ YES (MODIFICATION)

If yes, signal warrants met	☒ YES	☐ NO*	☐ N/A
Capacity analysis OK	☒ YES	☐ NO*	☐ N/A
Safety analysis OK	☒ YES	☐ NO*	☐ N/A
Ownership/Maintenance Provisions OK	☒ YES	☐ NO*	☐ N/A
Pedestrian Facilities ADA compliance	☒ YES	☐ NO*	☐ N/A

* Comments, Supporting documents on attached sheet(s)

5. PROJECT COMPLIANT WITH ALL APPLICABLE CALTRANS DESIGN STANDARDS

☐ YES ☒ NO (See Field #5 Instructions in pg. 2)

PERMIT PROPOSAL RECOMMENDED

☐ Yes, as submitted ☐ Yes, with conditions described above

☐ No, as described above

PREPARING REGISTERED ENGINEER'S STAMP

REGISTERED PROFESSIONAL ENGINEER
Syed Raza
No. C53579
Exp. 06/30/25
CIVIL
STATE OF CALIFORNIA

I attest to the technical information contained herein and have judged the qualifications of all technical specialists providing engineering data upon which recommendations, conclusions, and decisions were based.

PREPARED BY (Applicant's Engineer)	TITLE	DATE	SIGNATURE
Syed Raza	Project Manager	09/10/2024	, Registered Civil Engineer
APPROVED BY (Caltrans Engineer)	TITLE	DATE	SIGNATURE
Jiaqian Li	District Permit Engineer	09/23/2024	

ATTACHMENT A

1. DESCRIBE THE PROPOSED IMPROVEMENTS AND MODIFICATIONS ON THE STATE HIGHWAY SYSTEM

A. Introduction

The San Bernardino County Transportation Authority (SBCTA), in cooperation with the City of San Bernardino (City) and the California Department of Transportation (Caltrans) District 8 proposes improvements to the State Route 210 (SR-210)/Waterman Avenue interchange located in the City of San Bernardino, California. Waterman Avenue becomes State Route 18 (SR-18) north of the interchange.

B. Background

SR-210 is an urban freeway that begins at Interstate 5 (I-5) in Los Angeles County and ends at Interstate 10 (I-10) in the City of Redlands. Within District 8, the limits of SR-210 are from the Los Angeles/San Bernardino County Line to I-10. It traverses the foothill cities of Upland, Rancho Cucamonga, Fontana, Rialto, San Bernardino, Highland, and Redlands. It is primarily a commuter route serving the residents of the Inland Empire and High Desert to employment centers in the Los Angeles and Pasadena area. It also serves as one of the primary access routes to the San Bernardino mountains and several other interstate and state highways.

Waterman Avenue is a north-south street that begins at Barton Road in the City of San Bernardino and turns into SR-18 at the SR-210 interchange. It traverses through the communities/cities of Crestline, Lake Arrowhead, Running Springs, Big Bear Lake, Big Bear City, Lucerne Valley, Apple Valley, Victorville, and Adelanto ending in the community of Liano in Los Angeles County west of I-5 in the high desert. It serves as one of the primary routes to the San Bernadino Mountains and has the most direct access to many recreational destinations.

SR-210 is one of the busiest freeways in California with an Average Daily Traffic (ADT) of over 371,000 vehicles per day (vpd) near Pasadena transitioning to an ADT between 162,000 and 168,000 at the SR-210/Waterman Avenue Interchange. The ADT on SR-18 at the interchange was 27,500 vpd. This interchange also has a moderate amount of truck traffic with the latest Caltrans data indicating a 5% truck volume on SR-210. (Source: Caltrans Truck traffic on California State Highway (2020-AADT Truck).

C. Existing Facility

Within the project limits, SR-210 is an eight-lane depressed freeway, consisting of four general purpose lanes in each direction. The fourth eastbound general purpose lane ends just east of the gore point of the SR-18 exit ramp. The fourth westbound general purpose lane begins east of SR-18 off-ramp and ends at the I-215 connectors. The mainline traffic is separated by an unpaved median with two runs of a single thrie beam. The existing

interchange configuration is a tight half-diamond in the eastbound direction. The eastbound off-ramp is a single lane at the gore point widening to two lanes (one left and one sharing left/through/right) at the intersection with Waterman Avenue while the eastbound on-ramp is a single lane for the entire length. The eastbound ramps are traffic signal controlled. The westbound direction is an isolated hook ramp with on and off-ramps on 30th Street, east and west of Waterman Avenue. The westbound off-ramp begins as a single lane at the gore point widening to two lanes (one left and one right) at the intersection with 30th Street. The westbound on-ramp has two lanes narrowing to a single lane before merging with the mainline. Both westbound ramp intersections are controlled by a traffic signal and neither entrance ramp is currently metered.

The interchange was constructed in 1968. The overcrossing bridge (BR. No. 54-0770) is a two-span concrete box girder bridge with open-end abutments. It is 239'1" long and 89' 8" wide. The minimum vertical clearance for the overcrossing is 15' 5" which is less than the standard vertical clearance of 16' 6". The lane configuration on the bridge consists of two through lanes in each direction with a back-to-back left-turn lane. A narrow raised median separates the two directions of traffic. There are five-foot sidewalks on either side of the bridge.

D. Proposed Improvements

The project is in the City of San Bernardino (City) at the State Route 210 (SR-210)/Waterman Avenue Interchange in San Bernardino County. The San Bernardino County Transportation Authority (SBCTA) in cooperation with the City and Caltrans is proposing the following improvements at the interchange.

- Widen the eastbound (EB) on-ramp.
- Remove the existing raised median along Waterman Avenue on the Waterman Avenue Bridge from the south EB ramps to 30th St.
- Restripe Waterman Avenue from the south of EB ramps to 30th Street to accommodate dual left turns on Waterman Avenue to EB on-ramp and westbound (WB) 30th Street.
- Reconstruct curb and gutter at the southeast corner of Waterman/EB ramp intersection.
- Reconstruct curb ramps at the southeast and northeast corners of Waterman/EB ramp intersection and southeast and southwest corners of Waterman Ave and 30th St.
- Modify traffic signals at the intersections of Waterman/EB ramps and Waterman/30th St.
- Install ramp metering system at the SR-210 EB on-ramp.

The project will widen the SR-210 EB on-ramp at Waterman Avenue interchange from one to two lanes and restripe the overcrossing (OC) bridge to provide two left-turn, one through, and one through/right-turn lane in the northbound direction and two left-turn and one through lane in the southbound direction. These improvements are expected to improve traffic flow and relieve congestion related to short left-turn lanes and the increase in traffic on the EB on-ramp. The project begins at Post Mile (PM) R24.215 along SR-210 at the EB on-ramp and ends at PM R24.383. It is also located on State Route 18 (SR-18)

beginning at PM T6.15 and ending at PM T6.236. (See Appendix A). A set of roadway plans are attached in Appendix B.

E. Construction Cost

The number of proposed working days for the project is 120. The construction cost for the proposed improvements including supplemental funds, State furnished material, and a 5% contingency is estimated to be $ 5,316,666. A detailed cost estimate is attached in Appendix C.

2. WHY ARE THE PROPOSED IMPROVEMENTS/MODIFICATIONS NEEDED (PURPOSE AND NEED)

A. Purpose and Need

Purpose

The purpose of the project is to alleviate existing congestion and queues at the SR-210/Waterman Avenue Interchange. The existing interchange experiences severe recurring congestion and queues at the EB on-ramp that extend into the Waterman Avenue Bridge and long queues at the left-turn lane to 30th street. The long queues on the Waterman Avenue Bridge are due to short left-turn lanes and heavy turning movements.

Need

The project is needed to address operational deficiencies in the existing condition and identify required changes to improve traffic operations at the interchange.

Alternative 1: No Build

This Alternative does not propose any modifications to the interchange and will not meet the purpose and need of the project.

Alternative 2: Widen On-Ramp and Add Left-Turn Lanes

The project will widen the SR-210 EB on-ramp at Waterman Avenue interchange from one lane to two and restripe the overcrossing bridge to provide two left-turn, one through, and one through/right-turn lane in the northbound direction and two left-turn and one through lane in the southbound direction.

3. DESCRIBE THE IMPACTS ON THE STATE HIGHWAY SYSTEM DUE TO THE PROPOSED PROJECT

The following sections discuss the impact on drainage, operations, maintenance, environment, safety, and right of way of the State Highway System due to the proposed project:

A. Impact on Drainage

The proposed outside widening at the EB on-ramp will impact the existing drainage inlets located along the ramp. The existing outside side slope on the EB on-ramp is 4:1. A

concrete retaining wall will be constructed along the existing slope to allow the widening of the on-ramp. A concrete swale will be added at the top of the retaining wall to capture the flow from the adjancent 2:1 slope.

To address the drainage impacts from widening at the northbound on-ramp, four new inlets are proposed between Station 18+68.50 and Station 25+50.00 to contain the runoff within the outside shoulder. An 18 inch corrugated steel pipe (CSP) storm drain is proposed under the shoulder to connect the four new inlets to the existing 18 inches CSP culvert that crosses SR-210 at Station 18+68.50 and Station 26+56.50.

All drainage impacts from the project will be mitigated by the proposed improvements included as part of the project.

B. Impact on Operations

The proposed ramp improvements will increase the capacity and operational efficiency of the interchange as two additional turning lanes will be provided on the bridge and the EB on-ramp will be widened to two lanes. The additional turn lanes will help accommodate the forecasted total increase in traffic volume, as shown in Table 1.

Table 1 – Existing, Opening, and Horizon Year Intersection Total Peak Hour Volumes (Vehicle Per Hour)

Intersection	2022	2025 (Opening)		2045 (Horizon)	
	Exist.	No-Build	Build	No-Build	Build
AM PEAK					
Waterman Ave & 30th St	2380	3280	3280	3611	3611
Waterman Ave & SR-210 EB on/off	2029	2596	2596	2858	2858
PM PEAK					
Waterman Ave & 30th St	3007	3608	3608	3969	3969
Waterman Ave & SR-210 EB on/off	2417	2809	2809	3092	3092

Table 2 shows vehicle classification data for the interchange broken down by passenger cars, trucks (two, three, and four or more axles), bicycles, and pedestrians. As can be seen, the vast majority (over 97%) of the vehicles at the intersections consist of passenger cars, and a few bicycles or pedestrians were observed during the field data collection.

Table 2 - Vehicle Percentage

Intersection	Passenger Veh No. (%)	Heavy Veh No. (%)	Pedestrian No.	Bicycle No.
AM Peak Hour				
Waterman Ave & 30th St	2356 (99.0%)	24 (1.0%)	2	1
Waterman Ave & SR-210 EB on/off	2013 (99.0%)	16 (1.0%)	7	2
PM Peak Hour				
Waterman Ave & 30th St	2998 (99.7%)	9 (0.3%)	0	0
Waterman Ave & SR-210 EB on/off	2407 (99.6%)	10 (0.4%)	15	2

The results of the traffic analysis performed for various scenarios are summarized in Table 3.

Table 3 - Summary of Level of Service

Intersection	2022		2025				2045			
	Existing		No-Build		Build		No-Build		Build	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
	AM Peak Hour									
Waterman Ave & 30th St	C	20.2	C	31.8	C	23.8	D	44.3	C	26.5
Waterman Ave & SR-210 EB on/off	C	23.6	D	38.4	C	27.4	**E**	**63.8**	C	20.9
	PM Peak Hour									
Waterman Ave & 30th St	B	19.6	C	26.1	C	21.5	C	33.0	C	22.7
Waterman Ave & SR-210 EB on/off	**E**	**68.7**	**F**	**83.4**	C	32.6	**F**	**108.8**	C	26.4

Existing (2022) Conditions
For existing conditions, the EB on-ramp intersection was found to operate at a Level Of Service (LOS) C in the AM and a LOS E in the PM. The storage length were found to be inadequate and spillover conditions were observed.

Opening Year (2025) Conditions
For opening year No Build conditions, the EB on-ramp intersection was found to operate at a LOS D in the AM and a LOS F in the PM. The storage length were found to be inadequate and spillover conditions were observed.

For opening year Build conditions, the EB on-ramp intersection was found to be adequate with LOS C. The proposed storage lengths were found to be sufficient to accommodate the 95th percentile queue length during both the AM and PM peak hours.

Horizon Year (2045) Conditions
For the horizon year No Build conditions, the EB on-ramp ramp intersection was found to deteriorate to LOS E during the AM peak hour and LOS F during the PM peak hour with an increase in delay.

For the horizon year build conditions, the overall LOS at the EB on-ramp intersection was found to operate at an acceptable LOS C during the AM and PM peak hours.

Transportation Management Plan (TMP) Data Sheet
Not Required.

C. Impact on Maintenance

The scope of work for the project includes several maintenance-related items of work that are expected to reduce future preventive maintenance efforts required of Caltrans. This will

also help reduce maintenance worker exposure to performing routine maintenance at the interchange. The following items are included in the project scope of work:

- Pavement rehabilitation (grind and overlay) of existing lane at EB on-ramp
- Construct new lane and shoulders on EB on-ramp
- Restripe overcrossing bridge and on-ramp to help improve visibility
- Reconstruct curb ramps to comply with current ADA standards
- Install new retro-reflective mast arm and ground-mounted signs
- Reconstruct Traffic Signals at the Waterman Ave & SR-210 EB on-ramp
- Install safety lighting
- Construct new dikes

D. Impact on Environment

The project is located in a disturbed area and based on the scope of work, the project has no possibility of any significant impacts on the environment. To assess potential impacts to the environment, the following technical studies were prepared for the project:

- Aerially Deposited Lead (ADL) Investigation Report
- Air Quality Technical Memorandum
- Natural Environment Study-Minimal Impacts
- Historical Resources Compliance Report
- Paleontological Identification Report/Paleontological Evaluation Report
- Phase I Environmental Site Assessment Report
- Traffic Operations Analysis Report (Date of Approval: February 2023)

Environmental Compliance
SBCTA is the lead agency under the California Environmental Quality Act (CEQA).

The CEQA Categorical Exemption (CE) for the project was completed in July 25, 2023 and is attached as Appendix E. Since there is no federal nexus nor are there any federal funds proposed, compliance to National Environmental Policy Act (NEPA) is not required.

E. Collision Analysis

An analysis was performed using collision data provided by Caltrans to assess the collision rates. The Traffic Accident Surveillance and Analysis System (TASAS) – Transportation System Network (TSN) Table B data for the eastbound SR-210/Waterman Avenue ramp intersection, and Waterman Avenue /30th Street Intersection for the period from July 1, 2020, to June 30, 2023, are presented in Table 4 below:

Table 4 - Summary of Actual and Average Accident Rates from 7/1/2020 to 6/30/2023

TASAS – TSN Selective ACCIDENT RATE CALCULATION (Table B)						
Location	Actual (Per Million Vehicles)			Average (Per Million Vehicles)		
	Fatal	Fatal+Injury	Total	Fatal	Fatal+Injury	Total
Waterman Ave & 30th St	0.00	0.05	0.18	0.002	0.16	0.33
Waterman Ave & SR-210 EB on/off	0.00	0.02	0.02	0.002	0.16	0.33

One collisions was reported at the intersection of eastbound SR-210/Waterman Avenue ramp intersection and a total of 7 collisions at the intersection of Waterman Avenue/30th Street. The fatal, fatal plus injury, and total actual crash rates were found to be below the average collision rates for similar facilities statewide.

Table 5 shows the type of collisions at each intersection. At Waterman Avenue /30th Street intersection, the types of collisions included rear-end (1), hit object (1), sideswipe (1), head-on (2), broadside (1), and overturn (1). Rear-end collision type was reported at eastbound SR-210/Waterman/ ramp intersection.

Table 5 - Type of Collision

Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-ped	Other	Not Stated
Waterman Ave & 30th St								
2	1	1	1	1	1	0	0	0
Waterman Ave & SR-210 EB on/off								
0	0	1	0	0	0	0	0	0

Table 6 shows the Primary Collision Factor (PCF) of the collisions. PCF at Waterman/30th Street intersection consisted of Improper Turn (3), Speeding (1), and Other Violations (3). The only PCF at eastbound SR-210/Waterman ramp intersection is Speeding (1).

Table 6 - Primary Collision Factor

HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
Waterman Ave & 30th St										
0	0	0	3	1	3	0	0	0	0	0
Waterman Ave & SR-210 EB on/off										
0	0	0	0	1	0	0	0	0	0	0

HBD = Influence of Alcohol
ESS = Speeding
UNK = Unknown
FTC = Following To Close
OV = Other Violation
FA = Fell Asleep
FTY = Failure To Yield
ID = Improper Driving
NS = Not Stated
IT = Improper Turn
OTD =Other Than Driver

The Collision Analysis indicated that the actual collision rates are well below the statewide average for similar facilities. The scope of work for the project includes the following safety related items of work that are expected to further enhance safety at the interchange:

- Widen SR-210/Waterman Avenue eastbound on-ramp from one to two lanes and install ramp meters.
- Increase the storage length on the NB and SB left turn lanes.
- Restripe Waterman Avenue to provide two left-turn, one through, and one through/right turn lane in the NB direction and two left-turn and one through lane in the SB direction.
- Upgrade existing curb ramps in the project area to current Americans with Disabilities Act (ADA) standards.

F. Impact on Roadway Geometrics

Truck Turning Template
A Truck turning template for both intersections has been prepared and is attached as Appendix D.

Stormwater Data Report
A Stormwater Data Report has been prepared for the project and is attached as Appendix I. The total disturbed area (DSA) for this project is 0.70 Acres. Construction site BMPs will be used on this project and are described on pages 5-7 of the report. The permanent BMPs are described beginning on page 8. A 402 NPDES Certification is not expected for this project.

Multi-Modal Features
There are existing sidewalks on both sides of the Waterman Avenue and the overcrossing bridge.

There are eight existing curb ramps within the project limits (four at each intersection). However, some of these curb ramps do not meet current ADA standards. All nonstandard curb ramps are proposed to be upgraded to current standards as part of the project.

There are currently no bike lanes on either side of Waterman Avenue including the bridge. Per the City of San Bernardino General Plan, Waterman Avenue is designated as a Class III bicycle route with no delineated bike lanes. Therefore, no bike lanes are proposed as part of the project.

G. Impact on Right-of-Way and Utilities

The project will not have any impact on the right of way as no new right-of-way is required to make any of the improvements proposed as part of the project. The following utilities are located within the project area:

- 6-inch Southern California Gas (SCG) line crossing SR-210 at the Waterman Avenue bridge
- Frontier fiber optic line
- Frontier telephone line
- 30 inch San Bernardino Muncipal Water District line
- 16 inch San Bernardino Muncipal Water District line
- 16 inch San Bernardino Muncipal Water District line
- MCI overhead cable
- SCE overhead electric line

None of the other existing utilities are in conflict with the project and will be protected in place. There are no railroads within the project limits.

4. SIGNALIZATION OF INTERSECTIONS SIGNALIZATION INVOLVED

The project will modify the traffic signal at the EB SR-210/Waterman Avenue ramp intersection eliminating the traffic signal in the median and adding a new mast arm to accommodate the proposed lane additions on Waterman Avenue and the on-ramp. In addition, the traffic signal at Waterman/30th Street will also be modified.

5. PROJECT COMPLIANT WITH ALL APPLICABLE CALTRANS DESIGN STANDARDS

The project has the following existing or proposed delegated boldface or underlined design nonstandards features:

1. 11-foot lane width on Waterman Avenue across the bridge (boldface, new)
2. 1-foot, 2-foot and 3-6 foot shoulder on the bridge (boldface, new)
3. 15-foot 5-inch existing vertical clearance at the Waterman Avenue Overcrossing (boldface, existing)
4. Corner sight distance (underlined, new)
5. Horizontal clearance to a fixed object (underlined, new)

The EB on-ramp is in a constraint area and will require the construction of a retaining wall to add an additional lane and avoid right of way acquisition that would impact a local road and private properties. The available right of way width was maximized to be able to construct a standard 10-foot shoulder on the right side next to the retaining wall and a 2-foot shoulder is used on the left side of the on-ramp. Table 302.1 of the Highway Design Manual allows the use of a 2-foot inside shoulder width if a restrictive condition exists. A meeting was held with Sergio Avila (District Design Liaison) on June 24, 2024, and he concurred that a restrictive condition exists at this location and a 2-foot shoulder can be used.

A Design Standard Decision Document (DSDD) has been prepared to justify the existing and proposed nonstandard features. The DSDD was approved by Caltrans on 09/10/2024. The signature page of the DSDD is attached as Appendix H.

APPENDICES

Appendix A	Project Location Map
Appendix B	Contract Plans (Title Sheet, Typical Sections, Layouts, and Profiles)
Appendix C	Cost Estimate
Appendix D	Truck Turn Template
Appendix E	CEQA Categorical Exemption
Appendix F	Notice Of Exemption (NOE)
Appendix G	Temporary Water Pollution Control Plan
Appendix H	Design Standard Decision Document (Signature Page)
Appendix I	Storm Water Data Report

APPENDIX A

Project Location Map

Project Location

N.T.S.

APPENDIX B

Contract Plans
(Title Sheet, Typical Sections, Layouts, and Profiles)

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE

EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

ENGINEER'S NOTICE TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES AND/OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THESE LOCATIONS ARE APPROXIMATED AND SHALL BE CONFIRMED BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENT CAN BE MADE IN THE ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT ON RECORD OR NOT SHOWN ON THESE PLANS.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE UTILITIES SHOWN/NOT SHOWN. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ALL UTILITIES SHOWN ON THESE PLANS AND/OR ANY OTHER UNDERGROUND FACILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. CALL UNDERGROUND SERVICE ALERT (U.S.A.) 1-800-277-2600 AT LEAST 2 WORKING DAYS PRIOR TO WORK.

UNDEGROUND UTILITIES AND STRUCTURES

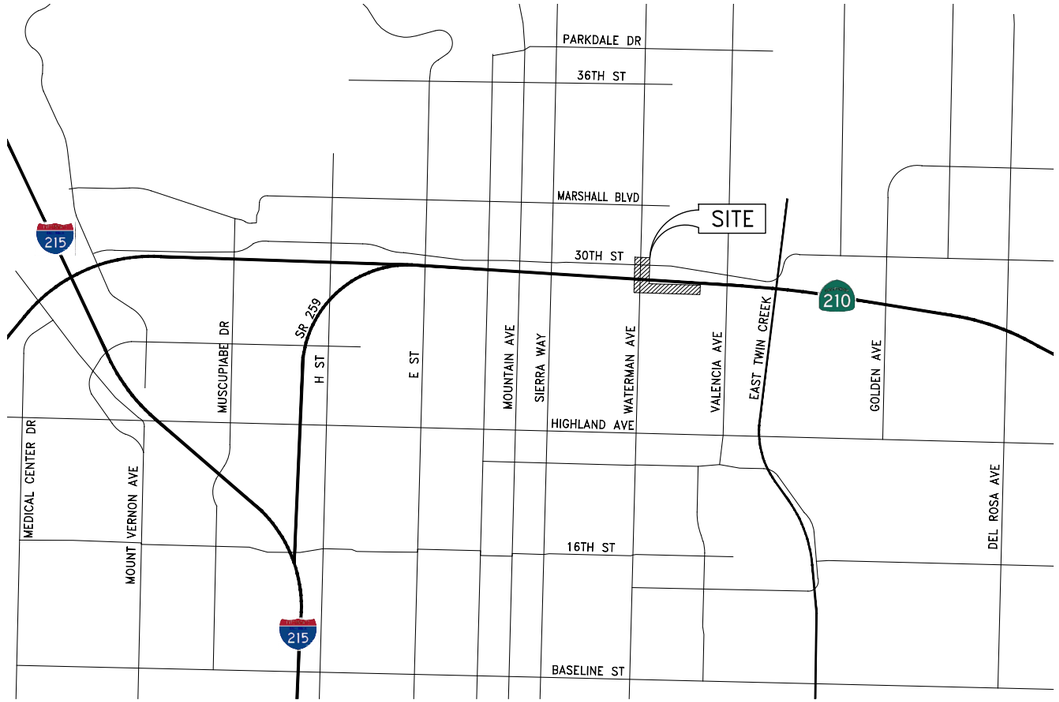
1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN APPROXIMATELY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE AND AND ALL UNDERGROUND UTILITIES.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UNDERGROUND SERVICE ALERT (PHONE: 800.227.2600) 48 HOURS IN ADVANCE OF ANY EXCAVATION FOR THE MARK-OUT OF THE LOCATION OF THE UTILITIES AND NOTIFICATION OF COMMENCEMENT OF WORK.
3. CONTRACTOR WILL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY. NOTIFY THE ENGINEER OF WORK IF ANY DISCREPANCIES IN UTILITY LINE LOCATIONS ARE FOUND.
4. LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK.
5. CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

ENGINEER OF RECORD

EXP WAS RETAINED AS THE ENGINEER OF RECORD FOR THE DEVELOPMENT AND PROCESSING OF THESE PLANS FOR CONSTRUCTION PURPOSES. SAID PLANS HAVE BEEN REVIEWED AND APPROVED BY THE LOCAL GOVERNING AGENCY TO BE CONSTRUCTIBLE BASED ON LOCAL INDUSTRY STANDARDS. THIS DOES NOT MEAN, HOWEVER, THAT EVERY HORIZONTAL DIMENSION OR VERTICAL ELEVATION NECESSARY FOR CONSTRUCTION IS DELINEATED ON SAID DRAWINGS. ANY PART OF THESE DRAWINGS THAT IS TO BE USED IN STAKING THE PROPERTY HAS BEEN PREPARED BY EXP WITH THE EXPECTATION AND ASSUMPTION THAT ANY STAKING, WHETHER BY EXP, OWNER OR A THIRD PARTY, WILL BE PERFORMED UNDER THE SUPERVISION AND CONTROL OF A LICENSED LAND SURVEYOR AND WILL INCLUDE ON-SITE INTERPRETATION, VERIFICATION, CROSS-CHECKING AND FIELD CORRECTIONS OF PLANS, DRAWINGS, SURVEY INFORMATION AND ELECTRONIC DATA AT THE TIME OF ACTUAL STAKING OF THE PROPERTY PRIOR TO CONSTRUCTION.

CALTRANS ENCROACHMENT PERMIT NOTES

1. THE CONTRACTOR SHALL APPLY AND OBTAIN AN ENCROACHMENT PERMIT FROM CALTRANS BEFORE BEGINNING ANY WORK WITHIN STATE RIGHT OF WAY.
2. ALL WORK WITHIN THE STATE RIGHT OF WAY SHALL BE COMPLETED IN ACCORDANCE WITH 2023 CALTRANS STANDARD PLANS, REVISED STANDARD PLANS AND SPECIFICATIONS AND THE 2014 CALIFORNIA MUTCD.
3. ALL DISTRIBUTED AREAS IN THE STATE RIGHT OF WAY MUST BE TREATED FOR EROSION CONTROL (HYDRO-SEEDING OR EQUIVALENT OR AS DIRECTED STATE'S REPRESENTIVE). THE RESPONSIBILITY FOR MAINTAINING EROSION CONTROL WILL NOT BE RELEASED UNTIL THE SEEDING IS WELL ESTABLISHED. THE CONTRACTOR WILL BE RESPONSIBLE FOR CALTRANS COST OF CLEANING ANY DRAINAGE STRUCTURES OR CHANNEL CLUTTERED WITH DEBRIS AND OR SILT CAUSED BY THE CONSTRUCTION PROJECT.
4. NO EQUIPMENT OR MATERIALS MAY BE STORED IN THE STATE RIGHT OF WAY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ANY STATE DRAINAGE FACILITY WHICH IS CONNECTED TO OR DIRECTLY AFFECTED BY THE CONTRACTORS OPERATION SHALL BE OPERATIONAL PRIOR TO FINAL ACCEPTANCE OF THE PERMIT WORK BY THE STATE. ADEQUATE CLEAN OUTS AND ACCESS OPENINGS SHALL BE MAINTENANCE AND REPAIR WORK AS NEEDED. THIS WORK SHALL BE FURNISHED AT NO COST TO THE STATE.
6. WHERE SURVEY MONUMENTS EXIST. SUCH MONUMENTS SHALL BE PROTECTED OR SHALL BE REFERENCED AND RESET PURSUANT TO BUSINESS AND PROFESSIONS CODE. SECTION 8700 TO 8805 (LAND SURVEYOR'S ACT).
7. ALL SIGNS, ROADSIDE MARKERS, ELECTROLIERS, SHALL BE PROTECTED AND OR REPLACED IN KIND, AT NO COST TO THE STATE, IN ACCORDANCE WITH THE CURRENT STATE STANDARD PLANS AND THE LATEST EDITION OF THE MUTCD.
8. ALL FENCES RELOCATED TO FACILITATE THE CONSTRUCTION OF THIS PROJECT INSIDE THE STATE RIGHT OF WAY SHALL BE REPLACED WITH TYPE CL-6 FENCE AS SHOWN IN THE STATE'S STANDARD PLANS.
9. ALL SIGNING, STRIPING AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE 2014 CALIFORNIA MUTCD AND THE SPECIAL PROVISIONS. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED ON THE PLANS.
10. ALL CONFLICTING STRIPING AND PAVEMENT MARKINGS NOT SHOWN ON THE PLANS SHALL BE REMOVED FROM THE PAVEMENT BY SANDBLASTING OR GRINDING BY THE CONTRACTOR.
11. DAMAGE CAUSED BY THE CONTRACTOR'S OPERATION, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE DAMAGED FACILITIES PROMPTLY IN ACCORDANCE WITH STATE SPECIFICATIONS AND/OR AS DIRECTED BY THE STATE REPRESENTATIVE.
12. DURING PAYMENT OPERATIONS, A DROP OFF OF NO MORE THAN 0.17' SHALL BE LEFT IN PLACE DURING NON-WORK HOURS. DROP OFF GREATER THAN 0.17' SHALL BE TAPER AT A 4:1 SLOPE WITH APPROPRIATE MATERIALS AS DIRECTED BY THE ENGINEERING OR STATE REPRESENTATIVE.



VICINITY MAP
N.T.S.

BASIS OF BEARING

THE COORDINATES SHOWN HEREON ARE BASED UPON THE CALIFORNIA COORDINATE SYSTEM OF 1983, CCS83, ZONE 6, (2010.00 EPOCH) IN ACCORDANCE WITH THE CALIFORNIA PUBLIC RESOURCES CODE SECTIONS 8801-8819; SAID COORDINATES ARE BASED LOCALLY UPON FIELD-OBSERVED TIES TO THE FOLLOWING NATIONAL GEODETIC SURVEY NETWORK, CONTINUALLY OPERATING REFERENCE STATIONS(CORS), OR EQUIVALENT STATIONS:

STATION	NORTHING	EASTING
EWPP	1860639.63	6705286.98
P470	1991209.57	6744367.98

ALL DISTANCES SHOWN HEREON ARE GRID DISTANCES, AND ARE IN U.S. SURVEY FOOT. GROUND DISTANCES CAN BE OBTAINED BY MULTIPLYING GRID DISTANCES BY A COMBINED FACTOR OF 1.0000777642.

BENCHMARK

THE ELEVATIONS SHOWN HEREON ARE BASED UPON THE NATIONAL GEODETIC SURVEY BENCHMARK DESIGNATION P 522, (YEAR 2018). DESCRIBED BY COAST AND GEODETIC SURVEY 1968 AT SAN BERNARDINO. IN THE NORTHWEST QUADRANT OF THE INTERSECTION OF WATERMAN AVENUE AND 30TH STREET, ABOUT 375 FEET NORTH OF THE CENTER OF THE SAN BERNARDINO CROSSTOWN FREEWAY-WATERMAN AVENUE OVERPASS. 85.0 FEET NORTH OF THE CENTER OF 30TH STREET, 40.5 FEET WEST OF THE CENTER OF WATERMAN AVENUE, 20.5 FEET NORTH-NORTHEAST OF TRAFFIC SIGNAL POLE NUMBER L-509, AND 3.6 FEET WEST OF THE EAST EDGE OF THE STREET CURB. IT IS CEMENTED IN A DRILL HOLE IN THE SOUTHWEST CORNER OF A LARGE CONCRETE AND STEEL STORM DRAIN, 0.3 FOOT SOUTHWEST OF THE SOUTHWEST CORNER OF A SQUARE MAN-HOLE COVER. ELEV. = 1236.12FT.

PRESERVATION OF MONUMENTS AND BENCHMARKS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR CIVIL ENGINEER AS REQUIRED BY THE PROFESSIONAL LAND SURVEYORS ACT (BUSINESS AND PROFESSIONS CODE SECTION 8771).

SHEET INDEX

SEAL

REGISTERED PROFESSIONAL ENGINEER
SYED S. RAZA
NO. C53579
CIVIL
STATE OF CALIFORNIA

DIGALERT
DIAL TOLL FREE
1-800-277-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

CITY OF SAN BERNARDINO

Azzam Jabsheh — 8/12/2024

AZZAM JABSHEH
CITY ENGINEER
R.C.E 61198 Exp. 6/30/2025

DATE

SR-210/WATERMAN AVENUE INTERCHANGE

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

PREPARED BY	REVISIONS	MADE	APPROVED	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	△			NO.: P 522 ELEV.: 1236.12'		WATER		
Syed S. Raza 08/12/2024	△			LOCATION: SEE ABOVE		ENVIROMENTAL		
SIGNATURE DATE	△					FIRE		
	△					PLANNING		
	△					TRAFFIC		
	△					SERVICES		

RECOMMENDED BY:

R. S. "Sal" Chavez
DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

08/12/2024
DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

PROJECT NO.

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

TITLE SHEET

SHEET 1 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD\...LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\EC\EC-CV-01-WATERMAN AVENUE.DWG 5/9/2024 9:34:20 PM

ABBREVIATIONS

AC	ASPHALT CONCRETE
AP	ANGLE POINT
AITS	ALTERNATIVE IN-LINE TERMINAL SYSTEM
BEG.	BEGIN
BC	BEGIN CURVE
BCR	BEGIN CURB RETURN
BVC	BEGIN VERTICAL CURVE
CB	CATCH BASIN
C&G	CURB & GUTTER
CONST.	CONSTRUCTION
CONC.	CONCRETE
CONT.	CONTINUE
DWS	DETECTABLE WARNING SURFACE
EC	END CRUVE
ECR	END CURB RETURN
ELEC.	ELECTRICAL
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVEL WAY
EVC	END VERTICAL CURVE
EX.	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
FS	FINISH SURFACE
FH	FIRE HYDRANT
GB	GRADE BREAK
GL	GUTTER LIP
HP	HIGH POINT
LCB	LEAN CONCRETE BASE
LOC	LENGTH OF CURVE
LOL	LAYOUT LINE
LT	LEFT
LP	LOW POINT
MIN.	MINIMUM
MH	MANHOLE
MGS	MIDWEST GUARD RAIL
N.T.S.	NOT TO SCALE
PB	PULL BOX
PPB	PEDESTRIAN PUSH BUTTON
PCC	PORTLAND CEMENT CONCRETE
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PP	POWER POLE
PR.	PROPOSED
PRC	POINT OF REVERSE CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
RS	ROAD SIGN
RT	RIGHT
R/W	RIGHT OF WAY
SD	STORM DRAIN
SL	STREET LIGHT
STA.	STATION
SW	SIDEWALK
SWR	SEWER LINE
SMH	SEWER MANHOLE
TAN	TANGENT
TC	TOP OF CURB
TELE.	TELEPHONE
TS	TRAFFIC SIGNAL
TYP.	TYPICAL
VC	VERTICAL CURVE
VP	VENT PIPE
WM	WATER METER
WV	WATER VALVE
WTR	WATER LINE

LEGEND

- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- PROPOSED CURB & GUTTER
- PROPOSED AC DIKE
- PROPOSED RETAINING WALL
- PROPOSED GUARD RAIL
- PROPOSED EDGE OF PAVEMENT
- SAWCUT
- DAYLIGHT LINE
- EXISTING CURB & GUTTER
- NEW AC PAVEMENT
- GRIND & OVERLAY
- NEW CONC. IMPROVEMENTS
- REMOVE EX. COBBLE STONE SURFACE
- REMOVE EX. SIDEWALK
- REMOVE EX. AC PAVEMENT
- 1225 PROPOSED ELEVATION
- (1225) EXISTING ELEVATION

CALTRANS PAVING NOTES

1. HOT MIX ASPHALT (HMA) SHALL BE TYPE A, WITH 3/4-INCH AGGREGATE GRADATION AND PG 64-10, ASPHALT BINDER AND BE CONSTRUCTED IN LIFTS BETWEEN 0.20' AND 0.35' ACCORDING TO CALTRANS 2023 STANDARD SPECIFICATION, SECTION 39 AND NON-STANDARD SPECIAL PROVISION 39-2.02.
2. PRIME COAT SHALL BE APPLIED TO THE BASE PRIOR TO PLACING THE HOT MIX ASPHALT, PRIME COAT SHALL CONFORM TO THE LATEST PROVISIONS IN THE STANDARD SPECIFICATIONS SECTION 94 AND THE CALTRANS STANDARD SPECIAL PROVISION 39-2.01C(3)(C).
3. TACK COAT SHALL BE APPLIED TO EXISTING PAVEMENT INCLUDING PLANED SURFACES BETWEEN LAYERS OF HMA AND VERTICAL SURFACES OF CURBS, GUTTERS AND CONSTRUCTION JOINTS. TACK COAT MUST COMPLY WITH THE SPECIFICATIONS FOR ASPHALTIC EMULSION IN STANDARD SPECIFICATIONS SECTION 94, /"ASPHALTIC EMULSION" OR ASPHALT BINDER IN SECTION 92, "ASPHALTS".
4. RELATIVE COMPACTION OF 95 PERCENT SHALL BE OBTAINED FOR A MINIMUM DEPTH OF 2.5 FEET BELOW THE FINISHED GRADE FOR THE WIDTH OF THE TRAVELED WAY AND 3 FEET ON EACH SIDE ACCORDING TO STANDARD SPECIFICATION SECTION 19, "EARTHWORK".
5. AGGREGATE BASE (AB) SHOULD BE CLASS 2 AND CONSTRUCTED ACCORDING TO STANDARD SPECIFICATION SECTION 26 "AGGREGATE BASES".
6. RUBBERIZED HOT MIX ASPHALT (RHMA-G) SHALL BE TYPE G WITH 3/4-INCH AGGREGATE GRADATION AND PG 64-16 ASPHALT BINDER AND BE CONSTRUCTED IN ONE LIFT OF 0.20' ACCORDING TO CALTRANS 2023 STANDARD SPECIFICATION SECTION 39 AND STANDARD SPECIAL PROVISION 39-2.03.
7. IMPORT MATERIAL SHOULD HAVE A MINIMUM R-VALUE OF 50 AND A PLASTICITY INDEX OF LESS THAN 12. THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS"

CONSTRUCTION NOTES

1. PLACE 0.20' RHMA-G OVER 0.50' HMA TYPE A OVER 0.70' CLASS II AGGREGATE BASE
2. CONSTRUCT 0.67' CURB & GUTTER PER CALTRANS 2023 STD. PLAN A87A, A2-8
3. CONSTRUCT EDGE OF PAVEMENT PER EDGE OF PAVEMENT DETAIL ON SHEET 3
4. REFINISH BRIDGE DECK PER CALTRANS 2023 STD. SPECIFICATIONS SECTION 60-4.02 REFINISHING BRIDGE DECKS
5. CONSTRUCT CURB RAMP PER CALTRANS (DIB) 82-06, BLENDED TRANSITION
6. CONSTRUCT CURB RAMP PER CALTRANS 2023 STD. PLAN A88A, CASE B
7. CONSTRUCT PCC SIDEWALK PER SPPWC 2021 STD. PLAN 113-2
8. CONSTRUCT MINOR CONCRETE VEGETATION CONTROL GUARDRAIL SYSTEM PER CALTRANS 2023 STD. PLAN A77N5A
9. CONSTRUCT MINOR CONCRETE VEGETATION CONTROL GUARDRAIL SYSTEM END TREATMENT PER CALTRANS 2023 STD. PLAN A77N6
10. CONSTRUCT CURB TRANSITION PER PCC CURB TO EDGE OF PAVEMENT TRANSITION DETAIL ON SHEET 3
11. PROTECT IN PLACE (ITEM NOTED IN PLAN)
12. SAWCUT EXISTING PAVEMENT
13. COLD PLANE 0.20' EXISTING AC PAVEMENT AND RHMA-G OVERLAY 0.20' (MIN) PER DETAIL 1 ON SHEET 3
14. INSTALL GUARD RAIL AND POST PER CALTRANS 2023 STD. PLAN A77L2 & A77N2 & A77N3
15. REMOVE AND DISPOSE OF EXISTING PCC SIDEWALK
16. REMOVE AND DISPOSE OF EXISTING AC PAVEMENT
17. REMOVE AND DISPOSE OF EXISTING PCC CURB AND STEEL REBAR
18. REMOVE AND DISPOSE OF EXISTING PCC CURB & GUTTER
19. REMOVE AND DISPOSE OF EXISTING AC DIKE
20. REMOVE AND DISPOSE OF EXISTING COBBLE STONE SURFACE
21. REMOVE/RELOCATE EXISTING TRAFFIC SIGNAL ITEM PER SIGNAL AND LIGHTING SYSTEMS PLANS
22. REMOVE/RELOCATE EXISTING STREET LIGHT PER PER SIGNAL AND LIGHTING SYSTEMS PLANS
23. REMOVE/RELOCATE EXISTING TRAFFIC SIGN PER PAVEMENT DELINEATION PLANS
24. REMOVE AND DISPOSE OF EXISTING TREES
25. COLD PLANE 0.20' EXISTING AC PAVEMENT AND RHMA-G OVERLAY 0.20' (MIN) PER DETAIL 2 ON SHEET 3
26. COLD PLANE 0.20' EXISTING AC PAVEMENT AND RHMA-G OVERLAY 0.20' (MIN) PER DETAIL 3 ON SHEET 3
27. INSTALL GUARD RAIL TRANSITION RAILING PER CALTRANS 2023 STD. PLAN A77U4
28. INSTALL GUARD RAIL CONNECTION PER CALTRANS 2023 STD. PLAN A77U3A & A77U3B
29. CONSTRUCT AC DIKE PER CALTRANS 2023 STD. PLAN A87B TYPE F
30. CONSTRUCT RETAINING WALL PER RETAINING WALL PLAN
31. ADJUST EXISTING MANHOLE TO GRADE
32. COLD PLANE 0.20' EXISITNG AC PAVEMENT AND RHMA-G OVERLAY VARIABLE DEPTH LEVELING COURSE
33. CONSTRUCT CURB RAMP PER CALTRANS 2023 STD. PLAN A88A, CASE F
34. SAWCUT EXISTING CONCRETE
35. CONSTRUCT 32"X48" CLEAR GROUND SPACE AT 2.0% MAX SLOPE
36. REMOVE AND DISPOSE OF EXISTING CHAINLINK FENCE

SEAL

REGISTERED PROFESSIONAL ENGINEER SYED S. RAZA NO. C55579 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL TOLL FREE 1-800-277-2600 AT LEAST TWO DAYS BEFORE YOU DIG UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3
CALTRANS PERMIT NO. 08-23-N-MC-1118			

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C55579	1			NO.: P 522 ELEV.: 1236.12'		WATER		
	2			LOCATION: SEE TITLE SHEET		ENVIROMENTAL		
	3					FIRE		
	4					PLANNING		
	5					TRAFFIC		
08/12/2024						SERVICES		
SIGNATURE DATE								

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE

EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

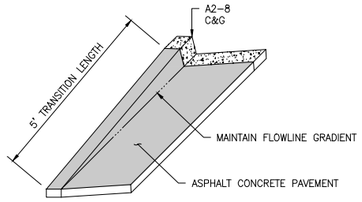
GENERAL NOTES

PROJECT NO.

SHEET 2 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\EC-GN-01-WATERMAN AVENUE.DWG 2/26/2024 7:40:55 PM



⑩ PCC CURB TO EDGE OF PAVEMENT TRANSITION
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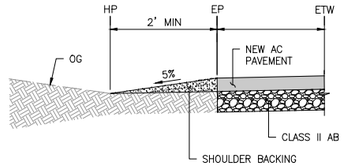
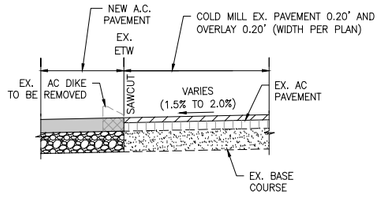


③ EDGE OF PAVEMENT DETAIL
N.T.S



⑬ COLD MILL/OVERLAY JOINT DETAIL 1
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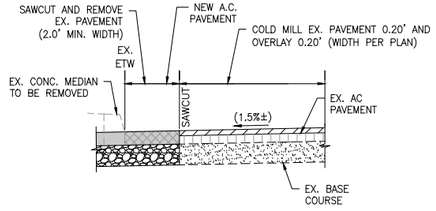

㉕ COLD MILL/OVERLAY JOINT DETAIL 2
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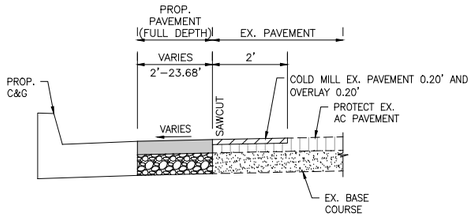
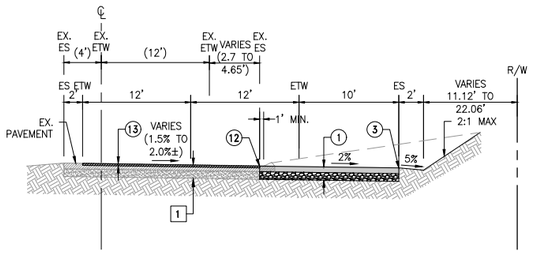


㉖ COLD MILL/OVERLAY JOINT DETAIL 3
N.T.S

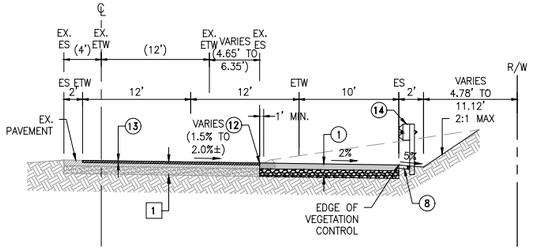
EXISTING PAVEMENT STRUCTURAL SECTIONS

[1] 0.35' AC
0.50' CL 2 AB

[2] 0.35' AC
0.45' CL 2 AB



EB ON RAMP WATERMAN AVE/SR-210
TYPICAL SECTION
STA. 10+84.34 TO STA. 11+45.12
N.T.S.



EB ON RAMP WATERMAN AVE/SR-210
TYPICAL SECTION
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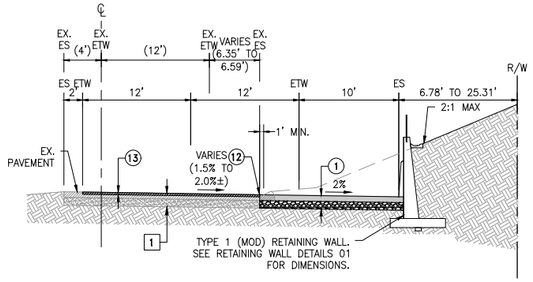

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TYPICAL SECTION
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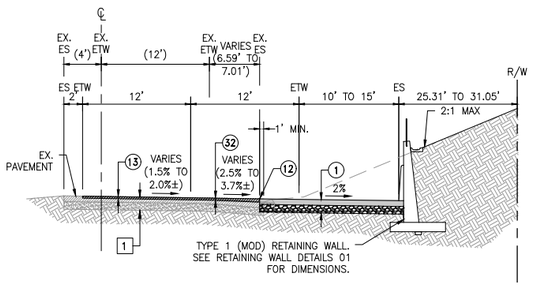

EB ON RAMP WATERMAN AVE/SR-210
TYPICAL SECTION
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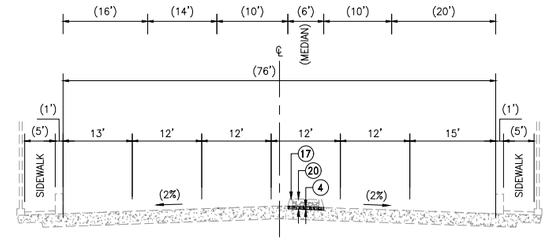

WATERMAN AVE OVERCROSSING
TYPICAL SECTION
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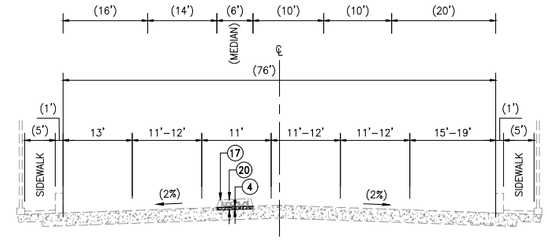

WATERMAN AVE OVERCROSSING
TYPICAL SECTION
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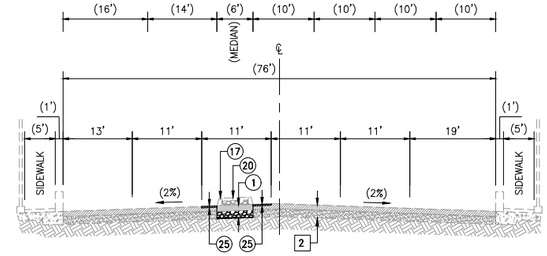

WATERMAN AVE OVERCROSSING
TYPICAL SECTION
STA. 15+18.54 TO STA. 16+49.98
N.T.S.

EB ON RAMP WATERMAN AVE/SR-210
TYPICAL SECTION
STA. 16+50.00 TO STA. 19+00.00
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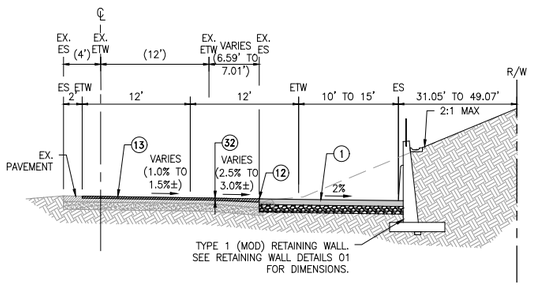


EB ON RAMP WATERMAN AVE/SR-210
TYPICAL SECTION
STA. 19+00.00 TO 21+32.21
N.T.S.

SEAL

REGISTERED PROFESSIONAL ENGINEER SYED S. RAZA NO. C53579 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL TOLL FREE 1-800-277-2600 AT LEAST TWO DAYS BEFORE YOU DIG UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

PREPARED BY	REVISIONS	MADE	APPROVED	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	△			NO.: P 522 ELEV.: 1236.12'		WATER		
08/12/2024	△			LOCATION: SEE TITLE SHEET		ENVIROMENTAL		
SIGNATURE DATE	△					FIRE		
	△					PLANNING		
	△					TRAFFIC		
	△					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

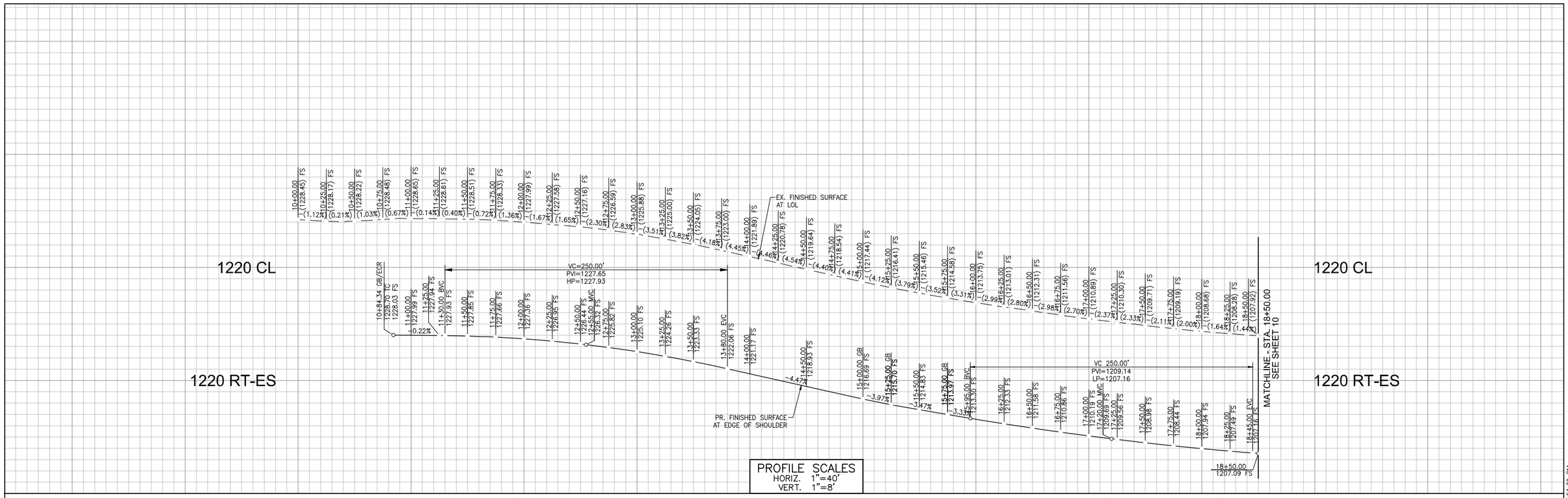
TYPICAL SECTIONS & CONSTRUCTION DETAILS

PROJECT NO.

SHEET 3 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD\...\LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\EC\EC-DT-01-WATERMAN AVENUE.DWG 6/25/2024 9:19:41 PM



CONSTRUCTION NOTES

1. PLACE 0.20' RHMA-G OVER 0.50' HMA TYPE A OVER 0.70' CLASS II AGGREGATE BASE.
3. CONSTRUCT EDGE OF PAVEMENT PER EDGE OF PAVEMENT DETAIL ON SHEET 3
4. REFINISH BRIDGE DECK PER CALTRANS 2023 STD. SPECIFICATIONS SECTION 60-4.02 REFINISHING BRIDGE DECKS
5. CONSTRUCT CURB RAMP PER CALTRANS (DIB) 82-06, BLENDED TRANSITION
8. CONSTRUCT MINOR CONCRETE VEGETATION CONTROL GUARDRAIL SYSTEM PER CALTRANS 2023 STD. PLAN A77N5A
9. CONSTRUCT MINOR CONCRETE VEGETATION CONTROL GUARDRAIL SYSTEM END TREATMENT PER CALTRANS 2023 STD. PLAN A77N6
10. CONSTRUCT CURB TRANSITION PER PCC CURB TO EDGE OF PAVEMENT TRANSITION DETAIL ON SHEET 3
11. PROTECT IN PLACE (ITEM NOTED IN PLAN)
12. SAWCUT EXISTING PAVEMENT
13. COLD PLANE 0.20' EXISITNG AC PAVEMENT AND RHMA-G OVERLAY 0.20' (MIN) PER DETAIL 1 ON SHEET 3
14. INSTALL GUARD RAIL AND POST PER CALTRANS 2023 STD. PLAN A77L2 & A77N2 & A77N3
15. REMOVE AND DISPOSE OF EXISTING PCC SIDEWALK
27. INSTALL GUARD RAIL TRANSITION RAILING PER CALTRANS 2023 STD. PLAN A77U4
28. INSTALL GUARD RAIL CONNECTION PER CALTRANS 2023 STD. PLAN A77U3A & A77U3B
30. CONSTRUCT RETAINING WALL PER RETAINING WALL PLAN

LEGEND

- PROPOSED RETAINING WALL
- PROPOSED GUARD RAIL
- NEW AC PAVEMENT
- GRIND & OVERLAY
- NEW CONC. IMPROVEMENTS

1" = 40'

40 0 40 80 120

EB ON-RAMP
WATERMAN AVE./SR-210

SEAL

REGISTERED PROFESSIONAL ENGINEER SYED S. RAZA NO. C53579 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL TOLL FREE 1-800-277-2600 AT LEAST TWO DAYS BEFORE YOU DIG UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3
CALTRANS PERMIT NO. 08-23-N-MIC-1118			

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	1			NO.: P 522 ELEV.: 1236.12'		WATER		
	2			LOCATION: SEE TITLE SHEET		ENVIROMENTAL		
	3					FIRE		
	4					PLANNING		
08/12/2024	5					TRAFFIC		
SIGNATURE DATE	6					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

PROJECT NO.

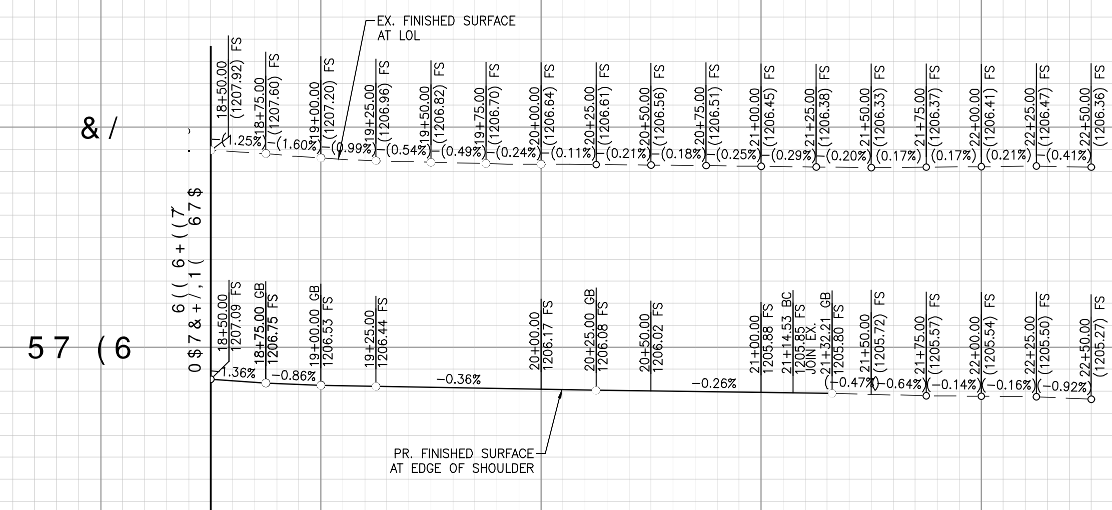
STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

SHEET 9 OF 66

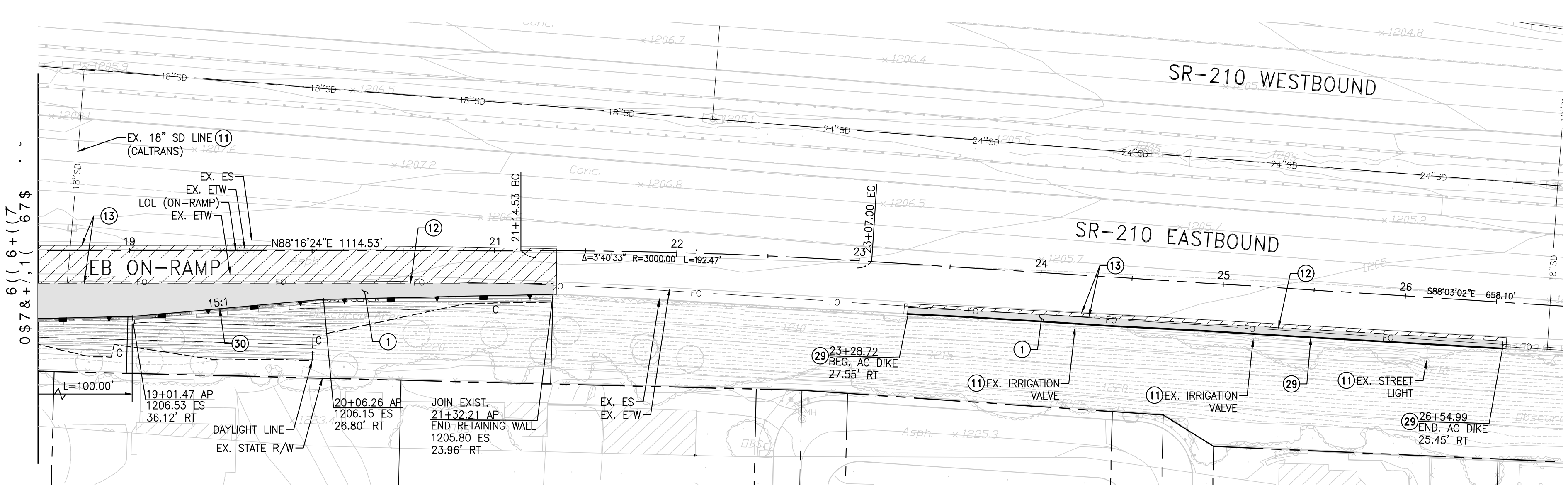
ROADWAY PLAN AND PROFILE

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\EC\EC-PP-01-WATERMAN AVENUE.DWG 6/25/2024 9:51:39 PM



PROFILE SCALES
HORIZ. 1"=40'
VERT. 1"=8'



CONSTRUCTION NOTES

1. PLACE 0.20' RHMA-G OVER 0.50' HMA TYPE A OVER 0.70' CLASS II AGGREGATE BASE.
11. PROTECT IN PLACE (ITEM NOTED IN PLAN)
12. SAWCUT EXISTING PAVEMENT
13. COLD PLANE 0.20' EXISITNG AC PAVEMENT AND RHMA-G OVERLAY 0.20' (MIN) PER DETAIL 1 ON SHEET 3
29. CONSTRUCT AC DIKE PER CALTRANS 2023 STD. PLAN A87B TYPE F
30. CONSTRUCT RETAINING WALL PER RETAINING WALL PLAN

LEGEND

PROPOSED RETAINING WALL
NEW AC PAVEMENT
GRIND & OVERLAY

1" = 40'
40 0 40 80 120

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

SEAL: REGISTERED PROFESSIONAL ENGINEER SYED S. RAZA NO. C53579 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL TOLL FREE 1-800-277-2600 AT LEAST TWO DAYS BEFORE YOU DIG

PREPARED BY: SYED S. RAZA C53579
SIGNATURE — DATE 08/12/2024

REVISIONS | MADE BY DATE | APPROVED BY DATE

BENCHMARK DATA: NO.: P 522 ELEV.: 1236.12'
LOCATION: SEE TITLE SHEET

REFERENCE DRAWINGS

REVIEWED BY STAFF | BY | DATE: WATER, ENVIROMENTAL, FIRE, PLANNING, TRAFFIC, SERVICES

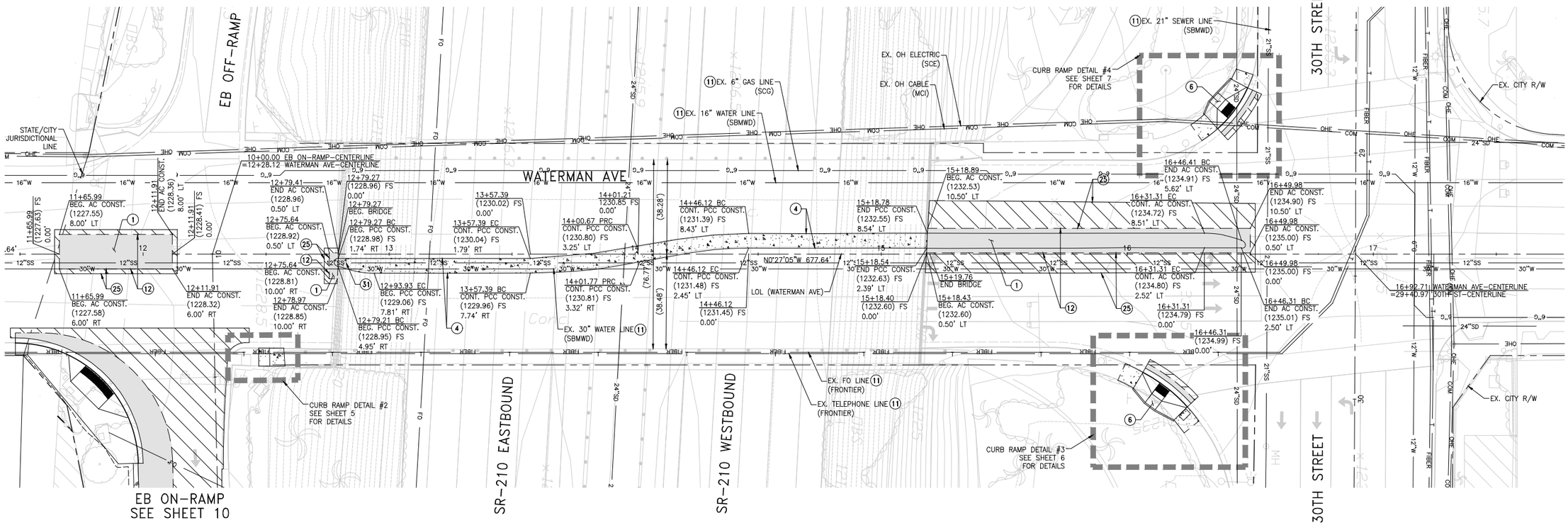
RECOMMENDED BY: DIRECTOR OF PROJECT DELIVERY SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY — DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY
STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

ROADWAY PLAN AND PROFILE

PROJECT NO.
SHEET 10 OF 66
DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\EC\EC-PP-01-WATERMAN AVENUE.DWG 6/25/2024 9:51:39 PM



WATERMAN AVE. OVERCROSSING

CONSTRUCTION NOTES

1. PLACE 0.20' RHMA-G OVER 0.50' HMA TYPE A OVER 0.70' CLASS II AGGREGATE BASE
4. REFINISH BRIDGE DECK PER CALTRANS 2023 STD. SPECIFICATIONS SECTION 60-4.02 REFINISHING BRIDGE DECKS
6. CONSTRUCT CURB RAMP PER CALTRANS 2023 STD. PLAN A88A, CASE B
11. PROTECT IN PLACE (ITEM NOTED IN PLAN)
12. SAWCUT EXISTING PAVEMENT
25. COLD PLANE 0.20' EXISITNG AC PAVEMENT AND RHMA-G OVERLAY 0.20' (MIN) PER DETAIL 2 ON SHEET 3
31. ADJUST EXISTING MANHOLE TO GRADE

LEGEND

- NEW AC PAVEMENT
- GRIND & OVERLAY
- NEW CONC. IMPROVEMENTS

1" = 20'

SEAL

REGISTERED PROFESSIONAL ENGINEER SYED S. RAZA NO. C53579 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL TOLL FREE 1-800-277-2600 AT LEAST TWO DAYS BEFORE YOU DIG UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3
CALTRANS PERMIT NO. 08-23-N-MC-1118			

PREPARED BY	REVISIONS	MADE	APPROVED	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	1			NO.: P 522 ELEV.: 1236.12'		WATER		
08/12/2024	2			LOCATION: SEE TITLE SHEET		ENVIROMENTAL		
SIGNATURE DATE	3					FIRE		
	4					PLANNING		
	5					TRAFFIC		
	6					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

ROADWAY PLAN AND PROFILE

PROJECT NO.

SHEET 11 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\EC\EC-PP-01-WATERMAN AVENUE.DWG 2/29/2024 8:28:20 AM

APPENDIX C

Cost Estimate

San Bernardino County Transportation Authority
SR-210/Waterman Avenue Cost Estimate

Engineer's Estimate of Probable Construction Cost

Date Printed: 6/27/2024
Project No.: 08-23-N-MC-1118
EA No.: N/A
Prepared By: JLC

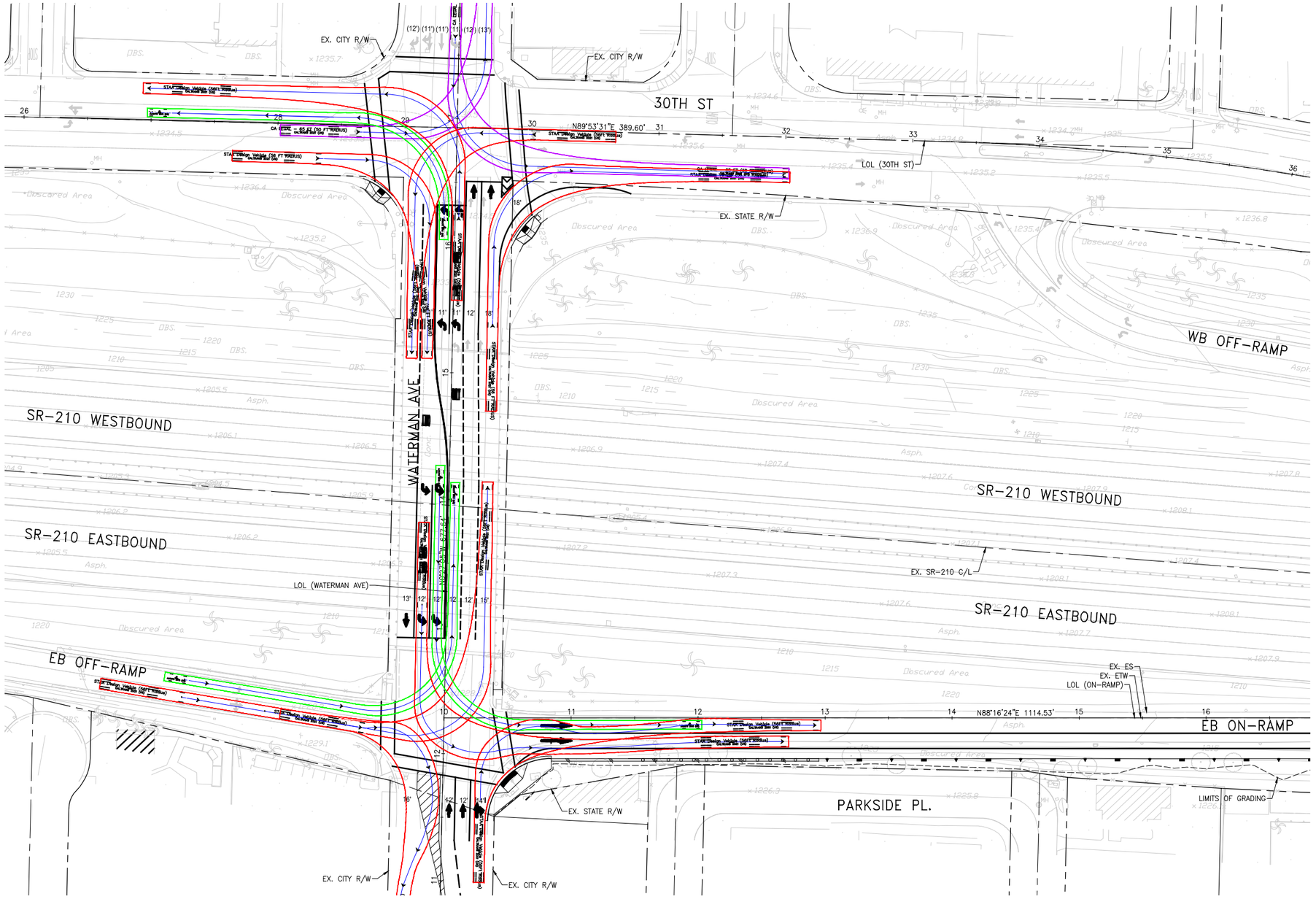
Item No.	Item Code		Contract Roadway Item	Unit	Quantity	Unit Cost	Amount*
1	070030		LEAD COMPLIANCE PLAN	LS	1	$ 5,000.00	$ 4,500.00
2	080050		PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	1	$ 5,000.00	$ 4,500.00
3	090105		TIME-RELATED OVERHEAD (LS)	WD	200	$ 2,144.71	$ 428,942.40
4	090205		DISPUTE RESOLUTION BOARD ON-SITE MEETING	EA	3	$ 6,000.00	$ 16,200.00
5	090210		HOURLY OFF-SITE DISPUTE-RESOLUTION-BOARD-RELATED TASKS	HR	20	$ 200.00	$ 3,600.00
6	010746		6" PLASTIC PIPE (DRAIN)	LF	12	$ 210.00	$ 2,268.00
7	100100		DEVELOP WATER SUPPLY	LS	1	$ 30,000.00	$ 27,000.00
8	120090		CONSTRUCTION AREA SIGNS	LS	1	$ 5,000.00	$ 4,500.00
9	120100		TRAFFIC CONTROL SYSTEM	LS	1	$ 50,000.00	$ 45,000.00
10	120120		TYPE III BARRICADE	EA	13	$ 190.00	$ 2,223.00
11	120198		PLASTIC DRUMS	EA	119	$ 110.00	$ 11,781.00
12	120320		TEMPORARY BARRIER SYSTEM	LF	1,970	$ 33.00	$ 58,509.00
13	129100		TEMPORARY CRASH CUSHION MODULE	EA	2	$ 757.00	$ 1,362.60
14	130100		JOB SITE MANAGEMENT	LS	1	$ 55,000.00	$ 49,500.00
15	130201		WATER POLLUTION CONTROL PROGRAM	LS	1	$ 1,700.00	$ 1,530.00
16	130500		TEMPORARY EROSION CONTROL BLANKET	SQYD	1,160	$ 4.70	$ 4,906.80
17	130620		TEMPORARY DRAINAGE INLET PROTECTION	EA	10	$ 240.00	$ 2,160.00
18	130640		TEMPORARY FIBER ROLL	LF	1,415	$ 6.00	$ 7,641.00
19	130680		TEMPORARY SILT FENCE	LF	1,772	$ 6.00	$ 9,568.80
20	130710		TEMPORARY CONSTRUCTION ENTRANCE	EA	2	$ 3,000.00	$ 5,400.00
21	130900		TEMPORARY CONCRETE WASHOUT	LS	1	$ 3,000.00	$ 2,700.00
22	140003		ASBESTOS COMPLIANCE PLAN	LS	1	$ 5,000.00	$ 4,500.00
23	141103		REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	LF	930	$ 1.50	$ 1,255.50
24	146002		CONTRACTOR-SUPPLIED BIOLOGIST (LS)	LS	1	$ 25,000.00	$ 22,500.00
25	170103		CLEARING AND GRUBBING (LS)	LS	1	$ 75,000.00	$ 67,500.00
26	180106		DUST PALLIATIVE	LS	1	$ 5,000.00	$ 4,500.00
27	190101		ROADWAY EXCAVATION	CY	3,050	$ 35.00	$ 96,075.00
28	190185		SHOULDER BACKING	TON	5	$ 45.00	$ 202.50
29	192037	F	STRUCTURE EXCAVATION (RETAINING WALL)	CY	5,032	$ 130.00	$ 588,744.00
30	193013	F	STRUCTURE BACKFILL (RETAINING WALL)	CY	3,808	$ 135.00	$ 462,672.00
31	202006		SOIL AMENDMENT	CY	68	$ 85.00	$ 5,202.00
32	202038		PACKET FERTILIZER	EA	132	$ 3.00	$ 356.40
33	204096		MAINTAIN EXISTING LANDSCAPED AREA	LS	1	$ 12,000.00	$ 10,800.00
34	204006		PLANT (GROUP F)	EA	197	$ 54.00	$ 9,574.20
35	204011		PLANT (GROUP K)	EA	21	$ 660.00	$ 12,474.00
36	204038		PLANT (GROUP U)	EA	9	$ 210.00	$ 1,701.00
37	204099		PLANT ESTABLISHMENT WORK (6-MONTHS)	LS	1	$ 20,000.00	$ 18,000.00
38	205035		WOOD MULCH 2" (14,500 SQFT)	CY	149	$ 60.00	$ 8,046.00
39	205029A		GRAVEL MULCH TYPE 1 (4"-6") - GOLD - 6" DEPTH	SQFT	2,108	$ 5.00	$ 9,486.00
40	206400		CHECK AND TEST EXISTING IRRIGATION FACILITIES	LS	1	$ 1,500.00	$ 1,350.00
41	206559		CONTROL AND NEUTRAL CONDUCTORS (ARMOR-CLAD)	LS	1	$ 17,500.00	$ 15,750.00
42	206562		1" REMOTE CONTROL VALVE	EA	3	$ 775.00	$ 2,092.50
43	206564		1 1/2" REMOTE CONTROL VALVE	EA	7	$ 755.00	$ 4,756.50
44	206569A		4" ELECTRIC REMOVE CONTROL VALVE (MASTER)	EA	1	$ 2,250.00	$ 2,025.00
45	208442		FLOW SENSOR	EA	1	$ 1,750.00	$ 1,575.00
46	208445		TREE WELL SPRINKLER ASSEMBLY	EA	61	$ 160.00	$ 8,784.00
47	208446		RISER SPRINKLER ASSEMBLY (GEAR DRIVEN)	EA	70	$ 80.00	$ 5,040.00
48	208590		6" GATE VALVE	EA	1	$ 3,500.00	$ 3,150.00
49	208594	F	3/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	1,900	$ 6.00	$ 10,260.00
50	208595	F	1" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	525	$ 7.50	$ 3,543.75
51	208597	F	1 1/2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	440	$ 9.00	$ 3,564.00
52	208598		2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	400	$ 10.50	$ 3,780.00
53	208602	F	6" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	710	$ 25.00	$ 15,975.00
54	208683		BALL VALVE	EA	4	$ 400.00	$ 1,440.00
55	208762		12" CORRUGATED STEEL PIPE CONDUIT (.064" THICK)	LF	20	$ 350.00	$ 6,300.00
56	260203		CLASS 2 AGGREGATE BASE (CY)	CY	480	$ 85.00	$ 36,720.00
57	390100		PRIME COAT	TON	4	$ 1,200.00	$ 4,320.00
58	390132		HOT MIX ASPHALT (TYPE A)	TON	667	$ 135.00	$ 81,040.50
59	390137		RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	TON	267	$ 150.00	$ 36,045.00
60	397005		TACK COAT	TON	5	$ 800.00	$ 3,600.00
61	398099		REMOVE ASPHALT CONCRETE DIKE	LF	1,034	$ 15.00	$ 13,959.00
62	398300		REMOVE BASE AND SURFACING	CY	315	$ 200.00	$ 56,700.00
63	394090		PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	SQYD	35	$ 150.00	$ 4,725.00
64	398200		COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	3,016	$ 15.00	$ 40,716.00
65	510060	F	STRUCTURAL CONCRETE, RETAINING WALL	CY	1,144	$ 800.00	$ 823,680.00
66	510094	F	STRUCTURAL CONCRETE, DRAINAGE INLET	CY	6	$ 4,240.00	$ 22,896.00
67	510501		MINOR CONCRETE (VEGETATION CONTROL)	CY	3	$ 700.00	$ 1,890.00
68	510526		MINOR CONCRETE (BACKFILL)	CY	14	$ 625.00	$ 7,875.00
69	520103	F	BAR REINFORCING STEEL (RETAINING WALL)	LB	111,045	$ 1.50	$ 149,910.75
70	600039		REFINISH BRIDGE DECK	SQFT	1,460	$ 50.00	$ 65,700.00
71	600114		BRIDGE REMOVAL (PORTION)	LS	1	$ 50,000.00	$ 45,000.00

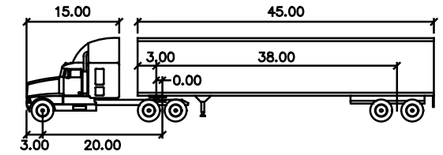
Item No.	Item Code		Contract Roadway Item	Unit	Quantity	Unit Cost	Amount*
72	620301		DPP INFILTRATION AREA (ROCK INFILL)	CY	39	$ 175.00	$ 6,142.50
73	650014		18" REINFORCED CONCRETE PIPE	LF	405	$ 220.00	$ 80,190.00
74	666916		ANNUAL CONSTRUCTION GENERAL PERMIT FEES	EA	1	$ 1,025.00	$ 922.50
75	681132		GEOCOMPOSITE DRAIN	SQFT	6,271	$ 15.00	$ 84,658.50
76	703233		GRATED LINE DRAIN	LF	50	$ 350.00	$ 15,750.00
77	710262		CAP INLET	EA	1	$ 2,815.00	$ 2,533.50
78	723095		ROCK SLOPE PROTECTION (20 LB, CLASS I, METHOD B) (CY)	CY	3	$ 415.00	$ 1,120.50
79	729011		ROCK SLOPE PROTECTION FABRIC (CLASS 8)	SQYD	12	$ 210.00	$ 2,268.00
80	730040		MINOR CONCRETE (GUTTER) (LF)	LF	838	$ 30.00	$ 22,626.00
81	730070		DETECTABLE WARNING SURFACE	SQFT	154	$ 25.00	$ 3,465.00
82	731509		MINOR CONCRETE (CONCRETE MOW STRIP	CY	4	$ 750.00	$ 2,700.00
83	731627		MINOR CONCRETE (CURB, SIDEWALK AND CURB RAMP)	CY	45	$ 550.00	$ 22,275.00
84	731710		REMOVE CONCRETE CURB (LF)	LF	845	$ 30.00	$ 22,815.00
85	731820		REMOVE CONCRETE (SIDEWALK AND DRIVEWAY)	CY	145	$ 130.00	$ 16,965.00
86	731840		REMOVE CONCRETE (CURB AND GUTTER)	LF	280	$ 25.00	$ 6,300.00
87	750001	F	MISCELLANEOUS IRON AND STEEL	LB	1,630	$ 6.50	$ 9,535.50
88	803050		REMOVE CHAIN LINK FENCE	LF	88	$ 20.00	$ 1,584.00
89	810120		REMOVE PAVEMENT MARKER	EA	120	$ 2.50	$ 270.00
90	810190		GUARD RAILING DELINEATOR	EA	20	$ 95.00	$ 1,710.00
91	810230		PAVEMENT MARKER (RETROREFLECTIVE)	EA	145	$ 6.50	$ 848.25
92	820113		TREATMENT BEST MANAGEMENT PRACTICE MARKER	EA	4	$ 250.00	$ 900.00
93	820250		REMOVE ROADSIDE SIGN	EA	17	$ 212.00	$ 3,243.60
94	820750		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-UNFRAMED)	SQFT	73	$ 23.00	$ 1,511.10
95	820760		FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-UNFRAMED)	SQFT	20	$ 22.50	$ 405.00
96	820780		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-FRAMED)	SQFT	23	$ 34.00	$ 703.80
97	820840		ROADSIDE SIGN - ONE POST	EA	6	$ 570.00	$ 3,078.00
98	820860		INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	1	$ 215.00	$ 193.50
99	832006		MIDWEST GUARDRAIL SYSTEM (STEEL POST)	LF	150	$ 50.00	$ 6,750.00
100	839521	F	CABLE RAILING	LF	838	$ 50.00	$ 37,710.00
101	839543		TRANSITION RAILING (TYPE WB-31)	EA	1	$ 400.00	$ 360.00
102	839578		END CAP (TYPE TC)	EA	1	$ 4,000.00	$ 3,600.00
103	839584		ALTERNATIVE IN-LINE TERMINAL SYSTEM	EA	1	$ 4,000.00	$ 3,600.00
104	839643		CONCRETE BARRIER (TYPE 60MD)	LF	838	$ 100.00	$ 75,420.00
105	840516		THERMOPLASTIC PAVEMENT MARKING (ENHANCED WET NIGHT VISIBILITY)	SQFT	1,460	$ 12.00	$ 15,768.00
106	846007		6" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT	LF	5,070	$ 1.50	$ 6,844.50
107	846009		8" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT	LF	850	$ 2.00	$ 1,530.00
108	846030		REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	3,110	$ 1.00	$ 2,799.00
109	846035		REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	810	$ 4.00	$ 2,916.00
110	870510		RAMP METERING SYSTEM	LS	1	$ 141,000.00	$ 126,900.00
111	872133		MODIFYING SIGNAL AND LIGHTING SYSTEMS (WATERMAN AVE./EB RAMPS)	LS	1	$ 126,000.00	$ 113,400.00
112	872133		MODIFYING SIGNAL AND LIGHTING SYSTEMS (WATERMAN AVE./30TH	LS	1	$ 120,000.00	$ 108,000.00
113	999990		MOBILIZATION	LS	1	$ 421,385.60	$ 421,385.60
			Contract Roadway Items Subtotal				**$ 4,743,241.55**
Item No.	**Item Code**		**Supplemental Work**	**Unit**	**Quantity**	**Unit Cost**	
114	066070		MAINTAIN TRAFFIC	LS	1	$ 10,000.00	$ 10,000.00
115	066595		WATER POLLUTION CONTROL MAINTENANCE SHARING	LS	1	$ 5,000.00	$ 5,000.00
116	066596		ADDITIONAL WATER POLLUTION CONTROL	LS	1	$ 5,000.00	$ 5,000.00
117	066597		STORM WATER SAMPLING AND ANALYSIS	LS	1	$ 5,000.00	$ 5,000.00
118	66208		REPAIR EXISTING IRRIGATION SYSTEM	LS	1	$ 5,000.00	$ 5,000.00
119	066610		PARTNERING	LS	1	$ 12,000.00	$ 12,000.00
120	66670		PAYMENT ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS	LS	1	$ 5,000.00	$ 5,000.00
121	66860		MAINTAIN EXISTING ELECTRICAL SYSTEM	LS	1	$ 5,000.00	$ 5,000.00
122	66921		DISPUTE RESOLUTION ADVISOR	LS	1	$ 4,000.00	$ 4,000.00
123	066940A		GRAFFITI REMOVAL	LS	1	$ 5,000.00	$ 5,000.00
			Supplemental Work Subtotal				**$ 61,000.00**
Item No.	**Item Code**		**Agency Furnished Material and Expenses**	**Unit**	**Quantity**	**Unit Cost**	
124	066062		COZEEP CONTRACT	LS	1	$ 25,000.00	$ 25,000.00
125	066063		TRANSPORTATION MANAGEMENT PLAN - PUBLIC INFORMATION	LS	1	$ 1,000.00	$ 1,000.00
126	066310		MODULE TRAFFIC CONTROL SYSTEM, MODEL 2070E	LS	1	$ 2,500.00	$ 2,500.00
127	066331		CABINET TRAFFIC CONTROL MODEL 332LS CABINET	LS	1	$ 7,400.00	$ 7,400.00
128	066348		BATTERY BACK UP SYSTEM MODEL GT-BBS GREEN TECHNOLOGY	LS	1	$ 1,200.00	$ 1,200.00
129	066916		ANNUAL CONSTRUCTION GENERAL PERMIT FEE	EA	1	$ 1,000.00	$ 1,000.00
			Agency Furnished Material and Expenses Subtotal				**$ 38,100.00**

Contract Roadway Items Subtotal	**$ 4,743,241.55**
Supplemental Work Subtotal	**$ 61,000.00**
State Furnished Material and Expenses Subtotal	**$ 38,100.00**
Total	**$ 4,842,341.55**
Contingency 10%	**$ 474,324.15**
Grand Total	**$ 5,316,665.70**

APPENDIX D

Truck Turn Template

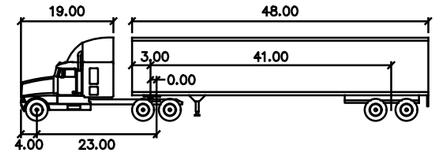




CA LEGAL – 65 FT (50 FT RADIUS)

feet

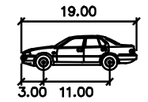
Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		
Vehicle Path			
Vehicle Swept			



STAA Design Vehicle (56Ft Radius)

feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.1
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		
Vehicle Path			
Vehicle Swept			



AASHTO Passenger Vehicle

feet

Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6
Vehicle Path	
Vehicle Swept	

1" = 40'

40 0 40 80 120

SEAL

REGISTERED PROFESSIONAL ENGINEER SYED S. RAZA NO. C53579 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL TOLL FREE 1-800-227-2600 AT LEAST TWO DAYS BEFORE YOU DIG UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579 DRAFT SIGNATURE DATE	△			NO.: P 522 ELEV.: 1236.12' LOCATION: SEE ABOVE		WATER ENVIROMENTAL FIRE PLANNING TRAFFIC SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE

EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

WATERMAN AVE AT SR-210 TRUCK TURNING EXHIBIT

PROJECT NO.

SHEET 1 OF 1

DRAWING NO.

NOT FOR CONSTRUCTION

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0440 EXHIBITS\EC-EM-TRUCK TURNING TEMPLATE-JC WORKING.DWG 6/6/2024 8:18:33 AM

APPENDIX E

CEQA Categorical Exemption

FORM 201 – CEQA EXEMPTION DETERMINATION FORM

Project Title:	State Route (SR-) 210/Waterman Avenue Interchange Improvement Project	**SBCTA X**	**SBCOG ☐**
Project Location:	Waterman Avenue at SR-210 (Postmile R24.22), Eastbound On-Ramp		
Project Description:	The San Bernardino County Transportation Authority (SBCTA), in cooperation with the City of San Bernardino, proposes to improve the State Route 210 (SR-210) and Waterman Avenue Interchange in the City of San Bernardino (Project). The Project will add two southbound left turn lanes on Waterman Avenue to the eastbound on-ramp. The Project will also widen the eastbound on-ramp by adding an approximately 700 foot auxiliary lane to receive vehicles and allow safe weaving between vehicles from both left turn lanes. The additional auxiliary lane will converge with the existing lane into one lane prior to merging with the mainline. The Project will construct a retaining wall adjacent to the eastbound on-ramp, remove the raised median curb on the Waterman Avenue Bridge, and lanes will also be re-striped at the Waterman Avenue and East 30th Street intersection to allow for two left-turn lanes in the northbound direction. The proposed improvements will not result in expansion of use or capacity of the existing interchange facility.		
Project Background:	The purpose of the Project is to alleviate congestion at the SR-210/Waterman Avenue Interchange. The existing interchange experiences congestion due to queues of vehicles turning left to the eastbound on-ramp that extend and impair the through lanes on the Waterman Avenue bridge. This is due to a short left-turn lane and heavy turning movements during the peak period. The Project will improve local traffic operations along Waterman Avenue and facilitate freeway access.		

SBCTA CEQA Determination

Based on an examination of the proposed action and supporting information, the Project is:

☐ **Exempt by Statute.** (PRC 21080[b]; 14 CCR 15260 et seq.)

☐ **Categorically Exempt. Class** (PRC 21084; 14 CCR 15300 et seq.) Based on an examination of this proposal and supporting information, the following statements are true and exceptions do not apply:

- If this project falls within exempt class 3, 4, 5, 6 or 11, it does not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law.
- There will not be a significant cumulative effect by this project and successive projects of the same type in the same place, over time.
- There is not a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances.
- This project does not damage a scenic resource within an officially designated state scenic highway.
- This project is not located on a site included on any list compiled pursuant to Govt. Code § 65962.5 -Cortese List.
- This project does not cause a substantial adverse change in the significance of a historical resource.

☒ **Exempt by Common Sense Exemption.** [This project does not fall within an exempt class, but it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment (14 CCR 15061[b][3].)

Approval

R. S.	7/24/2023		July 25, 2023
Recommended for Approval	Date	Approved by Department Director	Date
Juanda L. Daniel	7/25/2023		
Approval as to Form	Date		

Reference additional information, as appropriate on continuation sheet (e.g., CE checklist, additional studies and design conditions).

Project Title: State Route (SR-) 210/Waterman Avenue Interchange Improvement Project

Additional Information/Environmental Commitments:

The following technical documents were prepared to assess if there are any potential significant impacts as defined under the California Environmental Quality Act (CEQA):

- Aerially Deposited Lead (ADL) Investigation Report (Date of Approval: June 2023)
- Air Quality Technical Memorandum (Date of Approval: April 2023)
- Natural Environment Study-Minimal Impacts (Date of Approval: April 2023)
- Historical Resources Compliance Report (Date of Approval: April 2023)
- Paleontological Identification Report/Paleontological Evaluation Report (Date of Approval: April 2023)
- Phase I Environmental Site Assessment Report (Date of Approval: April 2023)
- Traffic Operations Analysis Report (Date of Approval: February 2023)

Based on all the technical analyses performed on the proposed action, SBCTA is making the determination that the Project will not have a significant impact on the environment. The results of the analyses are summarized below.

Air Quality

The proposed Project has no federal nexus and therefore is exempt from the requirement to demonstrate transportation conformity. No interagency consultation is required.

Results of the criteria pollutant emissions calculations demonstrate that construction-related daily emissions for the criteria and precursor pollutants will be below South Coast Air Quality Management District (SCAQMD) significance thresholds for all criteria pollutants. The construction-related effect on air quality is short term in duration and will not result in long-term adverse conditions. Standard best management practices will be implemented to minimize construction-related air quality emissions.

Sensitive receptors are approximately 50 feet from the Project site. However, localized diesel particular matter (DPM) emissions will be less than the SCAQMD thresholds. The very low level of PM2.5 emissions coupled with the short-term duration of construction activity will result in an overall low level of DPM concentrations in the Project area. Furthermore, compliance with the CARB airborne toxic control measures anti-idling measure, which limits idling to no more than five (5) minutes at any location for diesel-fueled commercial vehicles, further minimized DPM emissions in the Project area. Sensitive receptors will be exposed to emissions below thresholds.

No geologic features that are normally associated with naturally occurring asbestos (i.e., serpentine rock or ultramafic rock near fault zones) are present in or near the Project area. Therefore, the impact from naturally occurring asbestos during Project construction will be minimal to none.

The purpose of the Project is to improve traffic operations and local circulation at the SR-210/Waterman Avenue. The Project improvements will not change the local traffic volumes or regional vehicle miles traveled. Therefore, the improvements will not increase operational-related GHG emissions within the Project area.

Minimization measures shall be implemented as standard best management practices. Based on the evaluations conducted, in conjunction with the referenced measures being implemented, the proposed Project has no potential to result in significant impacts related to air quality.

Biological Resources

A survey of the Biological Study Area (BSA) for the potential presence of special-status plant and animal species and associated habitat was conducted on December 22, 2022. Based on the field survey, the Project will have no effect on federally-listed species or on any designated critical habitat. Section 7 consultation with U.S. Fish and Wildlife Service will not be required for this Project. In addition, and based on the field survey and lack of suitable habitat within the Project area, the Project will have "no take" of State-listed species as threatened, endangered, or candidate for endangered under Section 2081 of the California Fish and Game Code. Furthermore, no National Marine Fisheries Service (NMFS) resources occur within the BSA, including

mapped critical habitat as designated by NMFS; therefore, no NMFS resources will be affected by Project activities. No species permits are required.

Project-related work will not take place within any potentially jurisdictional drainage feature; therefore, no jurisdictional waters permits are required.

Minimization measures will be implemented to minimize the spread and importation of nonnative plant material and to ensure the Project does not result in impacts to nesting birds, respectively.

Based on the evaluations conducted, in conjunction with the above-referenced measures being implemented, the proposed Project has no potential to result in significant impacts related to biological resources or jurisdictional waters.

Cultural Resources

Records obtained from the Eastern Information Center (EIC) of the California Historical Resources Information System did not identify any previously recorded cultural resources within the Project Area Limits (PAL). In addition, the archaeological field survey conducted for the Project did not identify any prehistoric or historical-era resources over 50 years old within the PAL.

The Route 18/210 Separation (Bridge No. 54-0770) was previously determined not eligible for inclusion in the National Register of Historic Places and/or not eligible for registration as California Historical Landmarks and those determinations remain valid.

Deep excavations proposed for the Project (such as the retaining wall) will occur within previously constructed artificial slope because there is an approximately 20-foot elevation difference between the surrounding neighborhood and the pavement of the below-grade SR-210. The excavation proposed for the Project will occur within this artificial slope; therefore, the potential to impact cultural resources is determined to be low.

A Finding of No State-owned Historical Resources Affected is appropriate for this undertaking because there are no State-owned historical resources within the PAL. It has also been determined that there are No Historical Resources within the PAL.

Minimization measures will be implemented to avoid impacts to cultural resources.

Based on the evaluations conducted, the proposed Project has no potential to result in significant impacts to cultural resources.

Hazardous Materials

The Phase I Environmental Site Assessment (ESA) prepared for the proposed Project revealed no Recognized Environmental Conditions (REC) associated with the Project. However, the Phase I ESA recommends sampling be conducted prior to demolition to determine whether asbestos is present in the concrete center median. In addition, the Phase I ESA recommends further evaluation for potential presence of aerially deposited lead (ADL) in shallow soils in unpaved portions of the Project area.

Minimization measures will be implemented as best management practices to avoid hazardous materials related impacts.

Based on the evaluations conducted, in conjunction with the above-referenced measures being implemented, the proposed Project has no potential to result in significant impacts related to hazardous materials/waste.

Paleontological Resources

Geologic mapping of the region indicates that most of the Project area is underlain by recent alluvial surficial deposits of Holocene age. Below the Holocene deposits are potentially Pleistocene alluvial deposits that are approximately 1.8 million years to approximately 11,000 years old. Older alluvium has been found to be fossiliferous in the local area and have yielded paleontological resources. However, the

proposed Project is not expected to impact any surface or subsurface native *in situ* sediments because Project construction activities will be limited to areas of disturbance from the original construction of the existing freeway facilities. Standard best practices will be used during construction such as workers environmental awareness training and procedures will be outlined in the unlikely event that paleontological resources are uncovered during construction-related excavation activities.

Minimization measure will be implemented to address unforeseen discovery of paleontological resources should they be unearthed during construction.

Based on the evaluations conducted, the proposed Project has no potential to result in significant impacts related to paleontological resources.

Traffic

The traffic operations analysis was conducted for Existing (2022) Conditions and for the Project alternatives including the No Build Alternative under both Opening Year (2025) and Horizon Year (2045). Key findings of the Project's Traffic Operations Analysis Report include the following:

- For Existing (2022) Conditions, the intersection of eastbound SR-210/Waterman Avenue was found to operate at level of service (LOS) C and E during the AM and PM peak hours respectively. The intersection of Waterman Avenue/30th Street was found to operate at a satisfactory LOS C or better. The queue analysis indicated that except for the eastbound and southbound left-turn at SR-210/Waterman Avenue ramp intersection, the storage length for the other turning movements were found to be adequate.
- For Opening Year (2025) no-build conditions, the intersection of eastbound SR-210/Waterman Avenue was found to operate at LOS C and F during the AM and PM peak hours, respectively. The queue analysis indicated that except for the eastbound and southbound left turn at SR-210/Waterman Avenue ramp intersection, the storage length for the other turning movements were found to be adequate.
- For Horizon Year (2045) no-build conditions, Waterman Avenue & Eastbound SR-210 ramp intersection was found to approach capacity with a LOS E during the AM peak hour and failed with LOS F during the PM peak hour. The intersection of Waterman Avenue and 30th Street operated satisfactorily during both AM and PM peak hours with LOS D and C respectively. The queue length for most of the turning movements at both intersections were longer than the existing storage length.

Because the Project is an operational improvement which will only add left turn lanes and an approximately 700-foot aux lane on eastbound on-ramp to SR-210 from Waterman Avenue, the Project will not likely lead to a measurable and substantial increase in vehicle miles traveled (VMT). For these reasons, a VMT analysis is not necessary.

Based on the analyses conducted, the proposed Project has no potential to result in significant impacts related to traffic.

Enclosures:

- Attachment 1 – Project Improvements

Attachment 1 – Project Improvements

LEGEND

- EXISTING CENTERLINE
- EXISTING RIGHT-OF-WAY
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- PROPOSED CURB
- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL
- VEHICLE TURNING TRAJECTORY

0 40' 80'

WATERMAN AVE ON-RAMP(EB) EXHIBIT

SR-210/WATERMAN AVE INTERCHANGE

SCALE:	1"=40'
DATE:	10/14/21
DESIGNED:	JLC
CHECKED:	–
PLN CK REF:	–
F.B.	–

exp. 451 E. VENDERBILT WAY SUITE 375 SAN BERNARDINO, CA. 92408 PH: (909) 751-3250

W.O.	–
SHEET	1
OF	3 SHEETS
DWG. NO.	

E:\SBD_LOCAL\DATA\RFP\SR-210 WATERMAN AVE INTERCHANGE EB RAMP WIDENING\EXHIBITS\EC-EM-WATERMAN AVE EB RAMP WIDENING - ALT-2.DWG 12/29/2022 6:06:56 PM

MATCHLINE - SEE SHEET 1

MATCHLINE - SEE SHEET 3

LEGEND

- EXISTING CENTERLINE
- EXISTING RIGHT-OF-WAY
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- PROPOSED CURB
- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL

0 40' 80'

WATERMAN AVE ON-RAMP(EB) EXHIBIT

SR-210/WATERMAN AVE INTERCHANGE

SCALE:	1"=40'
DATE:	10/14/21
DESIGNED:	JLC
CHECKED:	–
PLN CK REF:	–
F.B.	–

exp. 451 E. VENDERBILT WAY SUITE 375 SAN BERNARDINO, CA. 92408 PH: (909) 751-3250

W.O.	–
SHEET	2
OF	3 SHEETS
DWG. NO.	

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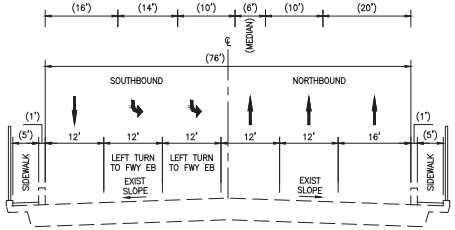

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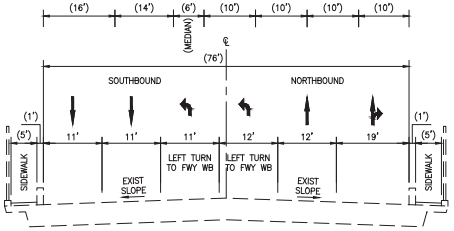

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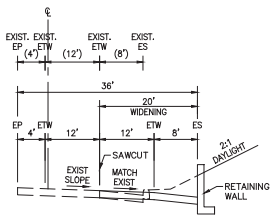
N.T.S.



SECTION C-C
N.T.S.

LEGEND

- EXISTING CENTERLINE
- EXISTING RIGHT-OF-WAY
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- PROPOSED CURB
- PROPOSED EDGE OF PAVEMENT
- PROPOSED RETAINING WALL

0 40' 80'

WATERMAN AVE ON-RAMP(EB) EXHIBIT

SR-210/WATERMAN AVE INTERCHANGE

SCALE:	1"=40'
DATE:	10/14/21
DESIGNED:	JLC
CHECKED:	–
PLN CK REF:	–
F.B.	–

exp. 451 E. VENDERBILT WAY SUITE 375 SAN BERNARDINO, CA. 92408 PH: (909) 751-3250

W.O. –
SHEET 3
OF 3 SHEETS
DWG. NO.

APPENDIX F

Notice Of Exemption (NOE)

State of California - Department of Fish and Wildlife

2023 ENVIRONMENTAL DOCUMENT FILING FEE CASH RECEIPT

DFW 753.5a (REV. 01/01/23) Previously DFG 753.5a

Print StartOver Save

RECEIPT NUMBER:
36 — 07262023 — 623

STATE CLEARINGHOUSE NUMBER *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY	LEAD AGENCY EMAIL	DATE
SBCTA		07262023

COUNTY/STATE AGENCY OF FILING	DOCUMENT NUMBER
San Bernardino	

PROJECT TITLE

State Route 210 Waterman Avenue Interchange Improvement Project

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL	PHONE NUMBER
SBCTA		(909) 884-8276

PROJECT APPLICANT ADDRESS	CITY	STATE	ZIP CODE
1170 W. 3rd Street, Floor 2	San Bernardino	CA	92410

PROJECT APPLICANT *(Check appropriate box)*

☑ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,839.25	$	0.00
☐ Mitigated/Negative Declaration (MND)(ND)	$2,764.00	$	0.00
☐ Certified Regulatory Program (CRP) document - payment due directly to CDFW	$1,305.25	$	

☐ Exempt from fee
- ☐ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach previously issued cash receipt copy)

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$	0.00
☑ County documentary handling fee		$	50.00
☐ Other		$	

PAYMENT METHOD:

☑ Cash ☐ Credit ☐ Check ☐ Other **TOTAL RECEIVED** $ 50.00

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
X	Lisa Arredondo, Deputy Clerk

ORIGINAL - PROJECT APPLICANT COPY - CDFW/ASB COPY - LEAD AGENCY COPY - COUNTY CLERK DFW 753.5a (Rev. 01/01/2023)

State of California - Department of Fish and Wildlife

2023 ENVIRONMENTAL DOCUMENT FILING FEE CASH RECEIPT

DFW 753.5a (REV. 01/01/23) Previously DFG 753.5a

NOTICE

Each project applicant shall remit to the county clerk the environmental filing fee before or at the time of filing a Notice of Determination (Pub. Resources Code, § 21152; Fish & G. Code, § 711.4, subdivision (d); Cal. Code Regs., tit. 14, § 753.5). Without the appropriate fee, statutory or categorical exemption, or a valid No Effect Determination issued by the California Department of Fish and Wildlife (CDFW), the Notice of Determination is not operative, vested, or final, and shall not be accepted by the county clerk.

COUNTY DOCUMENTARY HANDLING FEE

The county clerk may charge a documentary handling fee of fifty dollars ($50) per filing in addition to the environmental filing fee (Fish & G. Code, § 711.4, subd. (e); Cal. Code Regs., tit. 14, § 753.5, subd. (g)(1)). A county board of supervisors shall have the authority to increase or decrease the fee or charge, that is otherwise authorized to be levied by another provision of law, in the amount reasonably necessary to recover the cost of providing any product or service or the cost of enforcing any regulation for which the fee or charge is levied (Gov. Code, § 54985, subd. (a)).

COLLECTION PROCEDURES FOR COUNTY GOVERNMENTS

Filing Notice of Determination (NOD):

- ☐ Collect environmental filing fee or copy of previously issued cash receipt. *(Do not collect fee if project applicant presents a No Effect Determination signed by CDFW. An additional fee is required for each separate environmental document. An addendum is not considered a separate environmental document. Checks should be made payable to the county.)*
- ☐ Issue cash receipt to project applicant.
- ☐ Attach copy of cash receipt and, if applicable, previously issued cash receipt, to NOD.
- ☐ Mail filing fees for **CRP** document to CDFW prior to filing the NOD or equivalent final approval (Cal. Code Regs. Tit. 14, § 753.5 (b)(5)). The CRP should request receipt from CDFW to show proof of payment for filing the NOD or equivalent approval. Please mail payment to address below made attention to the Cash Receipts Unit of the Accounting Services Branch.

If the project applicant presents a **No Effect Determination** signed by CDFW, also:

- ☐ Attach No Effect Determination to NOD *(no environmental filing fee is due)*.

Filing Notice of Exemption (NOE) *(Statutorily or categorically exempt project (Cal. Code Regs., tit. 14, §§ 15260-15285, 15300-15333))*

- ☐ Issue cash receipt to project applicant.
- ☐ Attach copy of cash receipt to NOE *(no environmental filing fee is due)*.

Within 30 days after the end of each month in which the environmental filing fees are collected, each county shall summarize and record the amount collected on the monthly State of California Form No. CA25 (TC31) and remit the amount collected to the State Treasurer. Identify the remittance on Form No. CA25 as "Environmental Document Filing Fees" per Fish and Game Code section 711.4.

The county clerk shall mail the following documents to CDFW on a monthly basis:

- ✓ A photocopy of the monthly State of California Form No. CA25 (TC31)
- ✓ CDFW/ASB copies of all cash receipts (including all voided receipts)
- ✓ A copy of all CDFW No Effect Determinations filed in lieu of fee payment
- ✓ A copy of all NODs filed with the county during the preceding month
- ✓ A list of the name, address and telephone number of all project applicants for which an NOD has been filed. If this information is contained on the cash receipt filed with CDFW under California Code of Regulations, title 14, section 753.5, subdivision (e)(6), no additional information is required.

DOCUMENT RETENTION

The county shall retain two copies of the cash receipt (for lead agency and county clerk) and a copy of all documents described above for at least 12 months.

RECEIPT NUMBER

The first two digits automatically populate by making the appropriate selection in the County/State Agency of Filing drop down menu.
The next eight digits automatically populate when a date is entered.
The last three digits correspond with the sequential order of issuance for each calendar year. For example, the first receipt number issued on January 1 should end in 001. If a county issued 252 receipts for the year ending on December 31, the last receipt number should end in 252. CDFW recommends that counties and state agencies 1) save a local copy of this form, and 2) track receipt numbers on a spreadsheet tabbed by month to ensure accuracy.

DO NOT COMBINE THE ENVIRONMENTAL FEES WITH THE STATE SHARE OF FISH AND WILDLIFE FEES.

Mail to:
California Department of Fish and Wildlife
Accounting Services Branch
P.O. Box 944209
Sacramento, California 94244-2090

Print Form

Notice of Exemption

Appendix E

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk
County of: San Bernardino
385 N. Arrowhead Ave
San Bernardino, CA 92415

From: (Public Agency): SBCTA
1170 W. 3rd Street, Floor 2
San Bernardino, CA 92410
(Address)

Project Title: State Route 210 Waterman Avenue Interchange Improvement Project

Project Applicant: San Bernardino County Transportation Authority (SBCTA)

Project Location - Specific:

State Route 210 and Waterman Avenue Interchange

Project Location - City: San Bernardino Project Location - County: San Bernardino

Description of Nature, Purpose and Beneficiaries of Project:

Improve local traffic operations and freeway access by adding a left turn to the eastbound on-ramp from southbound Waterman Avenue and adding an approximately 700-foot auxiliary lane on the southbound onramp to allow vehicles to safely weave, accelerate, and merge with the SR-210 mainline

Name of Public Agency Approving Project: SBCTA

Name of Person or Agency Carrying Out Project: SBCTA

Exempt Status: **(check one):**

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: Common Sense Exemption 14CCR 1506(b)(3)
- ☐ Statutory Exemptions. State code number: _____

Reasons why project is exempt:

The project does not fall within an exempt class, however, based on various technical studies performed, it can be seen with certainty that the project will not have a significant effect on the environment.

CLERK OF THE BOARD OF SUPERVISORS
COUNTY OF SAN BERNARDINO CALIFORNIA
2023 JUL 27 AM 11:28

Lead Agency Contact Person: Paul Melocoton Area Code/Telephone/Extension: (909) 884-8276

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes • No

Signature: _____ Date: 7/25/23 Title: Director of Project Delivery

• Signed by Lead Agency Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: _____

DATE FILED & POSTED
Posted On: 07/26/2023
Removed On: 09/07/2023
Receipt No: 36.07262023.623

Revised 2011

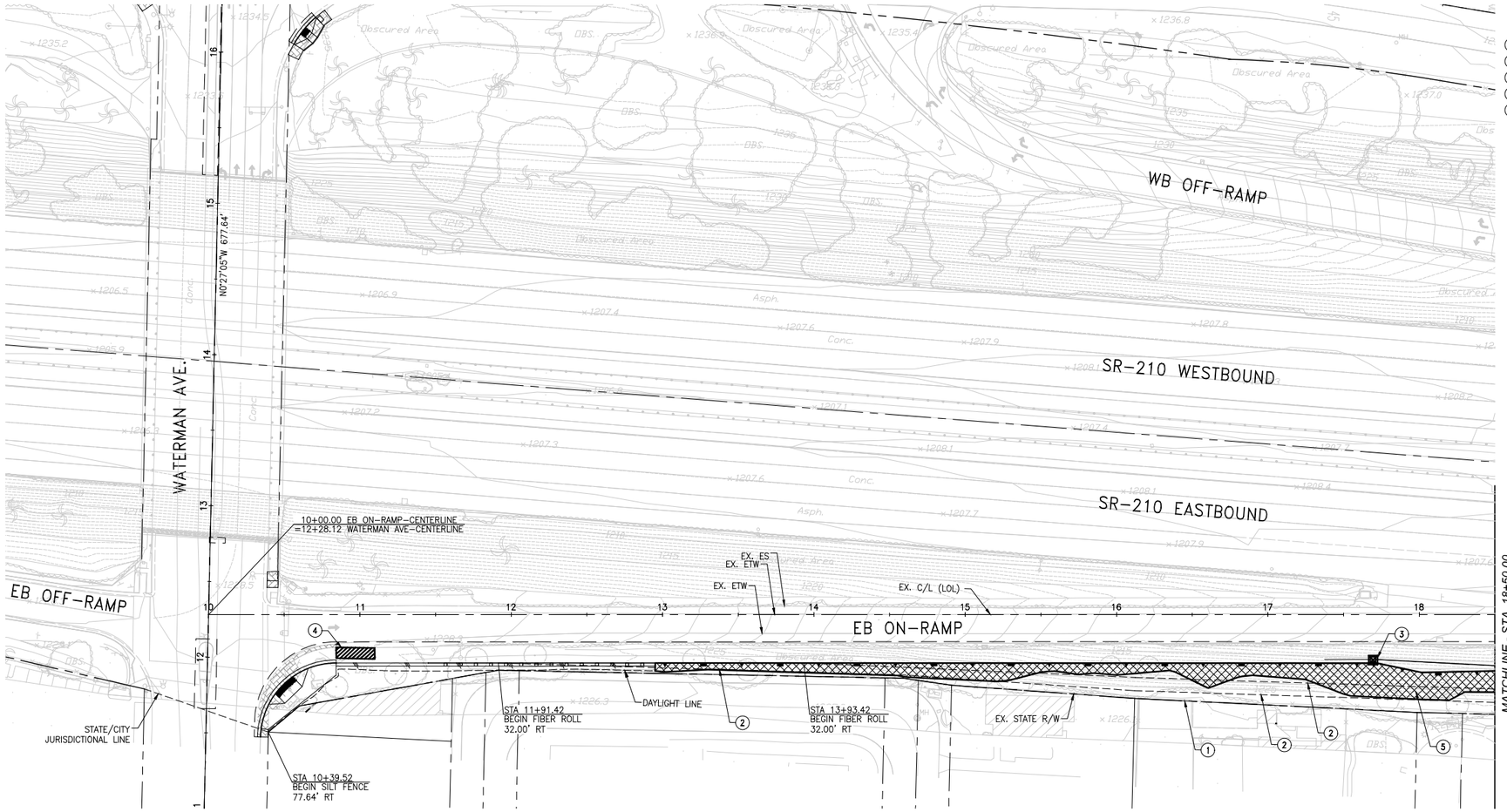
J

APPENDIX G

Temporary Water Pollution Control Plan

GENERAL NOTES

1. FOR ACCURATE RIGHT-OF-WAY DATA, CONTACT RIGHT-OF-WAY ENGINEERING AT THE CALTRANS DISTRICT OFFICE.
2 TEMPORARY WATER POLLUTION CONTROL PLANS ARE INTENDED TO BE USED AS A GUIDELINE ONLY. CONTRACTOR SHALL PREPARE SWPPP (DEVELOPED BY A QUALIFIED SWPPP DEVELOPER) TO COMPLY WITH THE WATER POLLUTION CONTROL REQUIREMENTS.



CONSTRUCTION NOTES

1. INSTALL TEMPORARY SILT FENCE PER CALTRANS STD. PLAN T51
2. INSTALL TEMPORARY FIBER ROLL PER CALTRANS STD. PLAN T56
3. INSTALL TEMPORARY INLET PROTECTION TYPE 3A PER CALTRANS STD. PLAN T62
4. INSTALL CONSTRUCTION ENTRANCE PER CALTRANS STD. PLAN T58
5. INSTALL TEMPORARY EROSION CONTROL BLANKET PER CALTRANS STD. PLAN T55

LEGEND

- TEMPORARY SILT FENCE
- TEMPORARY FIBER ROLL
- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY INLET PROTECTION
- TEMPORARY EROSION CONTROL BLANKET

EB ON-RAMP
WATERMAN AVE./SR-210

1" = 40'
40 0 40 80 120

SEAL

REGISTERED PROFESSIONAL ENGINEER SYED S. RAZA NO. C53579 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL TOLL FREE 1-800-277-2600 AT LEAST TWO DAYS BEFORE YOU DIG UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

PREPARED BY	REVISIONS	MADE	APPROVED	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	△			NO.: P 522 ELEV.: 1236.12'		WATER		
08/12/2024	△			LOCATION: SEE TITLE SHEET		ENVIROMENTAL		
SIGNATURE DATE	△					FIRE		
	△					PLANNING		
	△					TRAFFIC		
	△					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

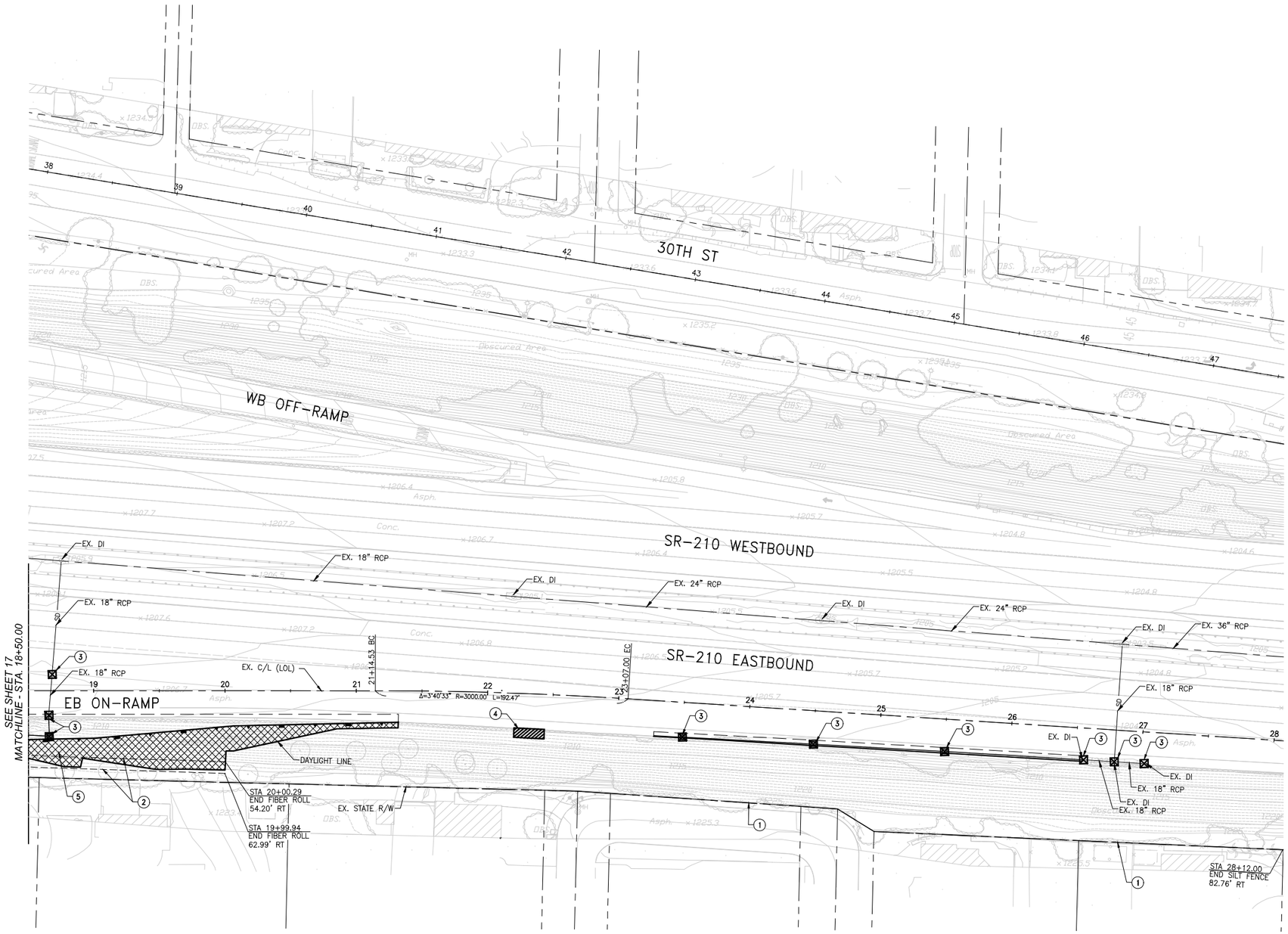
TEMPORARY WATER POLLUTION CONTROL PLAN

PROJECT NO.

SHEET 17 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\DR\DR-WPC-01-WATERMAN AVENUE.DWG 1/5/2024 1:28:24 PM



CONSTRUCTION NOTES

1. INSTALL TEMPORARY SILT FENCE PER CALTRANS STD. PLAN T51
2. INSTALL TEMPORARY FIBER ROLL PER CALTRANS STD. PLAN T56
3. INSTALL TEMPORARY INLET PROTECTION TYPE 3A PER CALTRANS STD. PLAN T62
4. INSTALL CONSTRUCTION ENTRANCE PER CALTRANS STD. PLAN T58
5. INSTALL EROSION CONTROL BLANKET PER CALTRANS STD. PLAN T55

LEGEND

- TEMPORARY SILT FENCE
- TEMPORARY FIBER ROLL
- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY INLET PROTECTION
- TEMPORARY EROSION CONTROL BLANKET

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

SHEET No.	TEMPORARY SILT FENCE	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY FIBER ROLL	TEMPORARY CONSTRUCTION ENTRANCE	TEMPORARY EROSION CONTROL BLANKET
	LF	EA	LF	EA	SQYD
17	810	1	1,115	1	630
18	962	9	300	1	530
TOTAL	1,772	10	1,415	2	1,160

SEAL

REGISTERED PROFESSIONAL ENGINEER
SYED S. RAZA
NO. C53579
CIVIL
STATE OF CALIFORNIA

DIGALERT
DIAL TOLL FREE
1-800-277-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

1" = 40'
40 0 40 80 120

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	1			NO.: P 522 ELEV.: 1236.12'		WATER		
	2			LOCATION:		ENVIROMENTAL		
	3			SEE TITLE SHEET		FIRE		
	4					PLANNING		
08/12/2024	5					TRAFFIC		
SIGNATURE DATE	6					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE

EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

TEMPORARY WATER POLLUTION CONTROL PLAN

PROJECT NO.

SHEET 18 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD__LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\DR\DR-WPC-01-WATERMAN AVENUE.DWG 1/5/2024 1:28:24 PM

APPENDIX H

Design Standard Decision Document
(Signature Page)

08-SBd-18 PM T6.15/T6.236
08-SBd-210-PM R24.215/R24.383
Permit No. 08-23-N-MC-1118
Project Cost: $ 5,316,666

DESIGN STANDARD DECISION DOCUMENT

Prepared By:

SYED RAZA, Project Manager — 08/19/2024 Date
EXP U.S. Services INC.

Submitted By:

JIAQIAN LI, District Permit Engineer — 09/04/2024 Date — 909-746-3587 TELEPHONE
San Bernardino County/Encroachment Permit Group

☒ Includes exceptions to District-delegated **Boldface** Design Standards (Section II)
☒ Includes exceptions to Underlined Design Standards (Section III)
☐ Concurs with exceptions to Non-delegated **Boldface** Design Standards (Section I)
☒ Approved By:

JESUS GALVAN, Deputy District Director for Design — 09/10/2024 Date

☐ Includes exceptions to Non-delegated **Boldface** Design Standards (Section I)
☒ Signature Not Required
Approved By:

AMY FONG, Project Delivery Coordinator — Date
Headquarters – Division of Design

APPENDIX I

Storm Water Data Report

Long Form – Stormwater Data Report Template

Dist-County-Route: 08-SBd-210,18
Post Mile Limits: R24.2/R24.4, T6.1/T6.3
Type of Work: Ramp widening
Project ID (EA): Permit No. 08-23-N-MC-1118

Phase: ☐ PID ☐ PA/ED ☒ PS&E

Applicable Caltrans Post Construction Treatment Requirement: 2012 ☐ 2022 ☒
Regional Water Quality Control Board(s): Santa Ana RWQCB (Region 8)
Total Disturbed Soil Area: 0.70 Acres PCTA: 0.44 Acres
Alternative Compliance (acres):0 ATA 2 (50% Rule)? Yes ☐ No ☒
Estimated Const. Start Date: 10/1/2024 Estimated Const. Completion Date: 4/1/2025
Risk Level: RL 1 ☐ RL 2 ☐ RL 3 ☐ WPCP ☒ Other: _____
Is (M)WELO applicable? Yes ☒ No ☐
Is the Project within a TMDL watershed? Yes ☐ No ☒
Does the project require trash treatment? Yes ☐ No ☒
Notification of ADL reuse (if yes, provide date): Yes ☒ Date: 5/8/2023 No ☐

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.

Luis Betancourt — *09/11/2024*
Luis Betancourt P.E., Registered Project Engineer — Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

REGISTERED PROFESSIONAL ENGINEER
Luis Betancourt
No. C43806
Exp. 06/30/25
CIVIL
STATE OF CALIFORNIA

[Stamp Required at PS&E only]

Tan Nguyen — 09/12/2024
Tan D. Nguyen, District Encroachment Permits Office – SW Coordinator — *Date*

Donald Larson — 9/12/24
Donald Larson, District Maintenance Stormwater Coordinator — *Date*

Almabeth Anderson — 9/12/2024
Almabeth Anderson, Designated Landscape Architect Representative — *Date*

Gregory Clark — 09-20-2024
Greg Clark, District/Regional Design SW Coordinator or Designee — *Date*

1. Project Description

In January 2022, San Bernardino County Transportation Authority (SBCTA) entered into an agreement with the City of San Bernardino (City) to initiate the State Route 210 (SR 210) at Waterman Avenue Interchange Project (Project). The project is comprised of the following major facilities:

- Eastbound SR 210 entrance ramp widening,
- Retaining wall, and
- Sidewalk and ADA ramps

The Project will improve traffic operations and local circulation at the SR 210/Waterman Avenue intersection with East 30th Street and the eastbound SR 210 entrance ramp. The eastbound on-ramp will be widened to two lanes and will include a retaining wall. The bridge will be striped to provide dual northbound and southbound left-turn lanes at the intersection.

Total disturbed soil area: DSA= 0.70 Acres

Total disturbed soil area Total disturbed soil area (DSA) was determined by delineating areas of work in project master files or CAD. DSA includes areas for roadside clearing and grubbing, new pavement, grading, guardrail, retaining wall, dike, curbs, ADA ramps, drainage, and construction of BMPs triggered by the project.

New impervious surface

Net New Impervious: NNI = 0.33 ac (14,400 sq.ft), where NIS = NNI+RIS

Replaced impervious surface: RIS= 0.11 ac (4,778 sq.ft)

New impervious surface is calculated as the sum of net new impervious (NNI) area, replaced impervious surface (RIS), and any additional treatment area (ATA) of existing BMPs. It has been determined that there are no existing BMPs within the project limits, therefore, ATA equals zero.

Net New Impervious (NNI) was computed based on the project's roadway plans. It comprises the additional surface caused by the widening. The area of NNI, 0.33 ac (14,400 sq.ft) was found by delineating the new surface in CAD.

Replace impervious surface (RIS) would be computed based on the difference between the depth of existing pavement sections found in as-builts and the depth of the new or proposed pavement section. When the new section is equal or greater than the existing section, the project would have RIS. For this project, there is no full-depth replacement of any existing impervious pavements.

See following TABLE 1 for DSA, NIS, NNI and RIS.

TABLE 1

Route	PM	Description	DSA (Acre)	NNI (Acre)	RIS (Acre)	NIS=NNI+RIS (Acre)
210	R24.2/R24.4	Ramp widening	0.70	0.33	0.11	0.44
Total			**0.70**	0.33	0.11	0.44

Post Construction Treatment Area: PCTA= 0.44 Ac (19,178 sq.ft)

This value was calculated based on new impervious areas taken by the proposed hardscape surface areas.

- The NNI for this project is not greater than 50% of the total post project impervious area, therefore only the NIS will be included for the post construction treatment area.
- There are no existing Treatment BMPs that lie within the project area.
- The NIS of the project exceeds the threshold treatment requirement of 10,000 sq.ft, which requires treatment.

2. Site Data and Stormwater Quality Design Issues

Regional Water Quality Control Board Jurisdiction

The project is located within the jurisdiction of the Santa Ana Regional Water Quality Control Board – Regional 8 (SARWQCB) boundary. Storm water runoff from this project discharges to the Santa Ana River Watershed.

Receiving Water body/bodies

The receiving water bodies for the project area are East Twin Creek, Warm Creek, Upper Santa Ana River and Pacific Ocean.

The following watershed information is based on Calwater Watershed database:

- Watershed – Upper Santa Ana River
- Subwatershed – Warm Creek – Santa Ana River
- Hydrologic Unit (HU) name - Santa Ana River
- Hydrologic Area (HA) name - Upper Santa Ana River
- Hydrologic Sub-Area (HSA) name – Bunker Hill

303(d) List

Table 2 summarizes the impaired receiving waters within the project limits that are listed in the State Water Quality Control Board's 2020/2022 Integrated Report (303d listed waters), their pollutants and TMDL status.

TABLE 2

Water Body	Pollutant	Status
East Twin Creek	N/A	Not Listed

Beneficial uses include:

- REC 1 - Water Contract Recreation

Drinking Water Reservoirs and/or Recharge Facilities/Groundwater

Based on historical groundwater elevations, groundwater is expected to be deeper than approximately 75.0 to 80.0 feet below ground surface.

Statewide Trash TMDL Consideration

The project limits are not within a Significant Trash Generating Area, therefore, trash capture devices are not required.

401 Water Quality Certifications

401 Certification is not expected for this project.

402 NPDES Certification

402 Certification is not expected for this project.

Right-of-Way Requirement

There are no anticipated right-of-way acquisition requirements for the project.

Hazardous Waste and Aerially Deposited Lead (ADL) Requirement

According to the approved Aerially Deposited Lead (ADL) Investigation Report dated May 8, 2023, soil in the vicinity of ADL boring location L2 is considered to be classified as Type R-1, which means that they are acceptable for reuse within the project area provided they are covered with pavement or at least 1 foot of the unregulated material from the remainder of the project area. If soils are to be removed from the vicinity of location L2 and transported offsite, they should be handled and disposed of as non-RCRA, California designated hazardous waste (Type Z-2) and must be disposed of at an appropriately permitted California Class I disposal facility. See attached ADL Sample Location Map.

The extents of the Type R-1/Z-2 lead-impacted soil are estimated to be midway between sample location L2 and locations L1 and L3 (approximately 230 feet), and to extend up to 10-feet south of the paved onramp. The approximate extents of the impacted soil area are indicated on the attached Lead Impacted Soil Locations Map. Elevated lead concentrations were detected in samples from 3 feet bgs. If excavations extend beyond this depth, then supplemental sampling may be warranted at that time for further waste profiling purposes.

Climate

The climate of the project is classified as Mediterranean. It is mostly arid, hot and dry during summer months, with moderate temperatures occurring during winter months. The average annual precipitation near the proposed project is about 18.45 inches (Caltrans Water Quality Planning Tool). Most rainfall occurs in the region during winter and early spring. Per Caltrans Statewide Storm Water Management Plan, July 2012 version, Caltrans adopts a year-round rainy season for all projects. Since the project is in the Santa Ana Region, the water quality flow rainfall intensity for the project is 0.2 in/hr. The water quality volume station used in the Basin Sizer was San Bernardino F S 226 Station. The Unit Basin Storage Volume depth for the 85th percentile 24-hour rainfall is 0.80 in.

Soil Characteristics

Based on Natural Resources Conservation Service (NRCS), the soils in the project area are primarily Hanford coarse sandy loam with hydrologic soil group A.

Soils are classified into four hydrologic soil groups (HSGs) by the National Resources Conservation Service (NRCS) Soils data, Soil Conservation Service, “A” through “D,” with Soil Type A having the highest infiltration rate and Type D the lowest.

Dry Weather Flow

Dry weather flow is limited to irrigation of landscape areas within the project limits.

Reduction of Potential Stormwater Impacts

The project will lead to minimal stormwater impacts on the downstream receiving waters. However, as described in the Caltrans Storm Water Management Plan (SWMP), Best Management Practices (BMPs) will be designed and implemented to reduce the discharge of pollutants from the Caltrans storm drain system to the Maximum Extent Practicable (MEP). Permanent treatment controls will be implemented to address the stormwater impacts caused by this project. Additionally, temporary pollution controls will be implemented during the early construction phases to provide additional protection and to address any construction stormwater impacts.

Slope Stabilization

Existing slopes will only be disturbed when necessary. Minimization of cut and fill areas will be considered to reduce slope lengths and retaining wall will be incorporated to reduce steepness of slopes. Soils or formations that will be particularly difficult to restabilize will be avoided. Cut and fill areas will be minimized to allow re-vegetation and limit erosion to pre-construction rates. Concentrated flow from the site will be directed to stabilized drains from this project site.

3. Construction Site BMPs to be used on Project

- The Construction General Permit (CGP Order No. 2022-0057-DWQ, NPDES No. CAS000002) has been implemented on this project. CGP takes a risk-based approach from the basis of sediment discharge and receiving water risk; This project has a Risk Level 1.
- The project will address the short-term impacts to water quality during construction using construction BMPs. The design of all construction BMPs will comply with the design requirements found in the Caltrans Site Best Management Practices (BMP) Manual. The project construction site BMPs were quantified based on proposed work for the project and guidance from the Construction BMPs Manual.

Construction Site BMP Strategy

The project construction period is scheduled to cover approximately 24 months. Disturbed Soil Areas (DSA) are projected in accordance with the project's pollution control measures. The construction site BMP strategy for this project consists of the following temporary and permanent measures:

- Soil Stabilization Measures
- Sediment Control Measures
- Wind Erosion Control
- Tracking Control
- Non-Storm Water Management Measures
- General Construction Site Management

There would be earth-disturbing activities for the landscaping project. However, the areas of construction will not be left in bare condition for a long period of time.

Temporary concrete washouts would be used to collect concrete waste generated by construction activities such as landscape concrete mowstrips and rock blankets. Concrete waste management would be implemented during these activities and would comply with Caltrans Standard Specifications.

Construction site management includes spill prevention and control, material management, waste management and non-stormwater management. Job site management would be used throughout the duration of the project to protect water quality. There is potential for wind erosion which could be adequately addressed through job site management or the other construction site BMP's such as spraying water to control dust, in compliance with Caltrans, local and statewide drought ordinances.

Various waste management, material handling, and other housekeeping BMPs would be used throughout the duration of the Project. Stockpiles of various kinds are anticipated and shall be maintained with the appropriate BMPs. Measures would also be taken to prevent and reduce trash from entering storm drain inlets.

Construction Site Best Management Practice (BMPs) with separate bid item

The following Construction Site BMPs will be paid as separate bid items:

Bid Code	Bid Item
130100	Job Site Management
130201	Prepare Water Pollution Control Program
130620	Temporary Drainage Inlet Protection
130500	Temporary Erosion Control Blanket
130640	Temporary Fiber roll
130680	Temporary Silt Fence
130710	Temporary Construction Entrance
130900	Temporary Concrete Washout
066595	Water Pollution Control Maintenance Sharing
066596	Additional Water Pollution Control

Construction Site Best Management Practice (BMPs) with lump sum bid item

The following Construction Site BMPs will be paid as a lump sum under the Job Site Management:

- NS-1: Water Conservation Practices
- NS-7: Portable Water/Irrigation
- NS-8: Vehicle and Equipment Cleaning
- NS-9: Vehicle and Equipment Fueling
- NS-10: Vehicle and Equipment Maintenance
- NS-12: Concrete Curing
- NS-14: Concrete Finishing
- SC-7: Street Sweeping
- WE-1: Wind Erosion Control
- WM-1: Material Delivery and Storage
- WM-2: Material Use
- WM-3: Stockpile Management
- WM-4: Spill Prevention and Control
- WM-5: Solid Waste Management
- WM-6: Hazardous Waste Management
- WM-7: Contaminated Soil Management
- WM-8: Concrete Waste Management
- WM-9: Sanitary/ Septic Waste Management
- WM-10: Liquid Waste Management

Storm Water Pollution Prevention Plan (SWPPP)

The Construction BMPs will be implemented to reduce pollutants in storm water discharges and eliminate non-storm water discharges during the construction phase of the project. SWPPP incorporates the requirements of National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit, and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Order No. 2022-0033-DWQ, NPDES No. CAS00003) and NPDES General Permit, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity (Order No. No.2022-0057-DWQ, NPDES No. CAS000002). Since this project disturbs less than one acre of soil, WPCP must be submitted for this project.

4. Maintenance BMPs

- Maintenance access to the DPPIAs will be provided as part of this project.

5. Other Water Quality Requirements and Agreements

- No agreements or negotiated understandings with the Santa Ana RWQCB have been made.

6. Permanent BMPs

As mentioned in Section 1, the project produces 0.44 acres (19,178 sq.ft) of NIS, all within the Santa Ana River watershed. There are two proposed treatment BMPs: two Design Pollution Prevention Infiltration Areas (DPPIA) off the Waterman Avenue eastbound on-ramp (as shown on attached BMP Treatment Area Exhibits).

The required PCTA for this project is 0.44 acres. However, the treatment BMPs being implemented will treat a total of 0.56 acres, therefore all the post-construction treatment area will be treated.

The Post Construction Treatment Balance will therefore be 0.12 acres (0.56 acres – 0.44 acres = 0.12 acres)

Rapid Stability Assessment

- Per Caltrans Stormwater Quality Handbooks Project Planning and Design Guide, RSA is not required for the project because there are no live streams and no designated Water of the United States within the project area.

Design Pollution Prevention (DPP) BMP Strategy

- The project will create any new slopes at 2:1 and flatter sideslopes as shown on the roadway plans.
- The project reduces the amount of impervious areas as best as possible, captures runoff in existing and proposed drainage systems.
- DPP Infiltration Areas will be implemented for this project to promote natural infiltration.

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

- The project will increase the new impervious surface by adding new roadway pavement from ramp widening. The impervious areas proposed may increase the volume or velocity of the stormwater discharge.
- The project will modify the existing slopes.
- No significant hydraulic changes are expected downstream.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

- Areas of cut and retaining wall will be required along the on-ramp widening. Cut areas are shown on the roadway plans. The project will modify the existing slopes.
- Landscape Plans are included as part of the project.

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

- The widening of the on-ramp will require the creation and modification of dikes and storm drain systems. However, no significant hydraulic changes are expected downstream.
- Typical conveyances will be directed by dikes, curbs and gutters throughout the project area as shown on the roadway plans.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

- The project will require removal of existing vegetation. When it is feasible, the existing vegetation will be preserved; otherwise, where disturbances are unavoidable, the disturbed vegetation will be replaced per Caltrans replacement planting policy.
- There are no Environmentally Sensitive Area (ESA) within the project limits.
- There are no critical areas such as floodplains, wetlands, problem soils, and steep slopes within the project limits.

Treatment BMP Strategy

- There are no TDCs for Santa Ana River.
- The project limits are not within a Significant Trash Generating Area, therefore, trash capture devices are not required.
- The Treatment BMPs that are feasible and being considered for the project site are Design Pollution Prevention Infiltration Areas (DPPIAs). See Table E-2 in Checklist T-1, Part 1 for chosen Treatment BMPs.
- The goal of the proposed treatment BMP strategy is to treat 100% of the Water Quality Volume/Water Quality Flow (WQV/WQF) generated from new impervious surfaces (NIS) within the project limits. The NIS comprises of the net new impervious surface (NNI) and the replaced impervious surfaces (RIS). The proposed BMPs treat more than 100% of the NIS volume through a combination of treating the NNI, RIS and existing impervious area.
- See attached BMP plan showing proposed treatment BMPs within the proposed project limits.
- Due to the site conditions, DPP Infiltration Areas will infiltrate 100% of the WQV generated by the PCTA. The underlying soil conditions (HSG A) have the ability to promote infiltration.
- According to Basin Sizer, 0.80 in. and 0.2 in./hr should be used to determine the WQV/WQF for this geographical location.
- The following is a WQV calculation example for the proposed project's NIS area. The WQV would equate to:

$WQV = V_R = R_V*(P/12)*A$

Where:

V_R = Runoff Volume (ft^3)

R_V = Volumetric Runoff Coefficient (unitless) per PPDG Table 5-2

P = Precipitation Depth (in) per Basin Sizer

A = Contributing Drainage Area (ft^2)

For post project conditions, the NIS area of 0.44 acres equates to:

WQV = 0.89 x (0.80/12) x 0.44 acres = 0.0261 acre-ft (1,137 cf)

Gross Solids Removal Devices (GSRDs), Checklist T-1, Parts 1 and 7

- As mentioned above, the project limits are not within a Significant Trash Generating Area, therefore, trash capture devices are not required.

DPP Infiltration Areas (DPPIA), Checklist T-1, Parts 1 and 11

- DPP Infiltration Areas (DPPIAs) are being considered for the project.
- The infiltration tool was used as recommended by the PPDG to determine that the soil not be amendment. Additional information on the calculations and results is provided in Table E-2 of Checklist T-1, part 1.
- DPPIA locations are listed below and shown on the BMP Plan.

Route	PM	Site	Treatment BMP Type	Estimated Pervious CDA (ac)	Estimated Impervious CDA (ac)	Estimated Impervious CDA WQV (cf)	Estimated Treated WQV (cf)	Percent Treated
210	R24.2	Eastbound On-Ramp Left	DPPIA-1	0	0.45	1,163	1,092	93.9%
210	R24.2	Eastbound On-Ramp Right	DPPIA-2	0.01	0.15	388	366	94.3%
			Total	0.01	0.60	1,551	1,458	94.0%

DPPIA WQV was calculated using the paved area of the Waterman Avenue Overcrossing and I-210 EB on-ramp. These paved areas will allow flows over the shoulder down to the DPPIA areas of the on-ramps (Pervious Areas).

Total WQV (Imp) = 0.89 x (0.80/12) x 0.60 ac = 0.0356 acre-ft (1,551 cf)

Total WQV (Perv) = 0.89 x (0.80/12) x 0.01 ac = 0.0006 acre-ft (26.1 cf)

Total Rainfall Volume = 2,082 cf

Total Infiltration Volume = 1,769 cf

Total Treated Volume = 1,458 cf

DPPIA area = 4,661 sq. ft.

Table E-1. Overall Project Treatment Summary Table[1]		
	PCTA (ac)[2]	A = 0.44
Total Area to be Treated	Treated Impervious Area (CT RW) (ac)	B = 0.56
	Treated Impervious Area (Outside CT RW) (ac)[3]	C = 0
	PCTA Balance (ac)[4]	D = (B+C) – A = (0.56+0)-0.44 = 0.12

[1] This table is provided as an example. The table may be edited, altered, or removed as applicable or as directed by the District/Regional Design Stormwater Coordinator.

[2] Provide treatment for ATA 1 even if NIS is less than 10,000 ft².

[3] Requires RWQCB approval. Coordinate with District/Regional NPDES Coordinator.

[4] If less than 0, additional treatment must be identified.

Required Attachments

- Project Location Map
- Evaluation Documentation Form
- Construction Site Consideration Form
- Risk Level Determination Documentation
- Checklist SW-1
- Checklist CS-1, Parts 1-6
- SWDR Attachment for SMART Input
- Method Demonstration Form (MDF)
- SWDR Summary Spreadsheets
- Construction Site BMPs Cost Estimate

Supplemental Attachments

- Checklist DPP-1, Parts 1–5 (Design Pollution Prevention BMPs)
- Checklist T-1, Part 1 and Part 11 (DPPIA)
- Treatment BMPs Sizing Calculations
- BMP Map
- Pervious, Impervious, Replaced Impervious & DSA Areas Exhibit
- MWELO Excel Worksheet
- ADL Sample Location and Lead Impacted Soil Location Maps
- Drainage Plans
- Temporary Water Pollution Control Plans and Quantities

REQUIRED ATTACHMENTS

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE

EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

ENGINEER'S NOTICE TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES AND/OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THESE LOCATIONS ARE APPROXIMATED AND SHALL BE CONFIRMED BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENT CAN BE MADE IN THE ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT ON RECORD OR NOT SHOWN ON THESE PLANS.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE UTILITIES SHOWN/NOT SHOWN. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ALL UTILITIES SHOWN ON THESE PLANS AND/OR ANY OTHER UNDERGROUND FACILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. CALL UNDERGROUND SERVICE ALERT (U.S.A.) 1–800–277–2600 AT LEAST 2 WORKING DAYS PRIOR TO WORK.

UNDEGROUND UTILITIES AND STRUCTURES

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN APPROXIMATELY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE AND AND ALL UNDERGROUND UTILITIES.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UNDERGROUND SERVICE ALERT (PHONE: 800.227.2600) 48 HOURS IN ADVANCE OF ANY EXCAVATION FOR THE MARK–OUT OF THE LOCATION OF THE UTILITIES AND NOTIFICATION OF COMMENCEMENT OF WORK.
3. CONTRACTOR WILL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY. NOTIFY THE ENGINEER OF WORK IF ANY DISCREPANCIES IN UTILITY LINE LOCATIONS ARE FOUND.
4. LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK.
5. CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

ENGINEER OF RECORD

EXP WAS RETAINED AS THE ENGINEER OF RECORD FOR THE DEVELOPMENT AND PROCESSING OF THESE PLANS FOR CONSTRUCTION PURPOSES. SAID PLANS HAVE BEEN REVIEWED AND APPROVED BY THE LOCAL GOVERNING AGENCY TO BE CONSTRUCTIBLE BASED ON LOCAL INDUSTRY STANDARDS. THIS DOES NOT MEAN, HOWEVER, THAT EVERY HORIZONTAL DIMENSION OR VERTICAL ELEVATION NECESSARY FOR CONSTRUCTION IS DELINEATED ON SAID DRAWINGS. ANY PART OF THESE DRAWINGS THAT IS TO BE USED IN STAKING THE PROPERTY HAS BEEN PREPARED BY EXP WITH THE EXPECTATION AND ASSUMPTION THAT ANY STAKING, WHETHER BY EXP, OWNER OR A THIRD PARTY, WILL BE PERFORMED UNDER THE SUPERVISION AND CONTROL OF A LICENSED LAND SURVEYOR AND WILL INCLUDE ON–SITE INTERPRETATION, VERIFICATION, CROSS–CHECKING AND FIELD CORRECTIONS OF PLANS, DRAWINGS, SURVEY INFORMATION AND ELECTRONIC DATA AT THE TIME OF ACTUAL STAKING OF THE PROPERTY PRIOR TO CONSTRUCTION.

CALTRANS ENCROACHMENT PERMIT NOTES

1. THE CONTRACTOR SHALL APPLY AND OBTAIN AN ENCROACHMENT PERMIT FROM CALTRANS BEFORE BEGINNING ANY WORK WITHIN STATE RIGHT OF WAY.
2. ALL WORK WITHIN THE STATE RIGHT OF WAY SHALL BE COMPLETED IN ACCORDANCE WITH 2023 CALTRANS STANDARD PLANS, REVISED STANDARD PLANS AND SPECIFICATIONS AND THE 2014 CALIFORNIA MUTCD.
3. ALL DISTRIBUTED AREAS IN THE STATE RIGHT OF WAY MUST BE TREATED FOR EROSION CONTROL (HYDRO–SEEDING OR EQUIVALENT OR AS DIRECTED STATE'S REPRESENTIVE). THE RESPONSIBILITY FOR MAINTAINING EROSION CONTROL WILL NOT BE RELEASED UNTIL THE SEEDING IS WELL ESTABLISHED. THE CONTRACTOR WILL BE RESPONSIBLE FOR CALTRANS COST OF CLEANING ANY DRAINAGE STRUCTURES OR CHANNEL CLUTTERED WITH DEBRIS AND OR SILT CAUSED BY THE CONSTRUCTION PROJECT.
4. NO EQUIPMENT OR MATERIALS MAY BE STORED IN THE STATE RIGHT OF WAY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ANY STATE DRAINAGE FACILITY WHICH IS CONNECTED TO OR DIRECTLY AFFECTED BY THE CONTRACTORS OPERATION SHALL BE OPERATIONAL PRIOR TO FINAL ACCEPTANCE OF THE PERMIT WORK BY THE STATE. ADEQUATE CLEAN OUTS AND ACCESS OPENINGS SHALL BE MAINTENANCE AND REPAIR WORK AS NEEDED. THIS WORK SHALL BE FURNISHED AT NO COST TO THE STATE.
6. WHERE SURVEY MONUMENTS EXIST. SUCH MONUMENTS SHALL BE PROTECTED OR SHALL BE REFERENCED AND RESET PURSUANT TO BUSINESS AND PROFESSIONS CODE. SECTION 8700 TO 8805 (LAND SURVEYOR'S ACT).
7. ALL SIGNS, ROADSIDE MARKERS, ELECTROLIERS, SHALL BE PROTECTED AND OR REPLACED IN KIND, AT NO COST TO THE STATE, IN ACCORDANCE WITH THE CURRENT STATE STANDARD PLANS AND THE LATEST EDITION OF THE MUTCD.
8. ALL FENCES RELOCATED TO FACILITATE THE CONSTRUCTION OF THIS PROJECT INSIDE THE STATE RIGHT OF WAY SHALL BE REPLACED WITH TYPE CL–6 FENCE AS SHOWN IN THE STATE'S STANDARD PLANS.
9. ALL SIGNING, STRIPING AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE 2014 CALIFORNIA MUTCD AND THE SPECIAL PROVISIONS. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED ON THE PLANS.
10. ALL CONFLICTING STRIPING AND PAVEMENT MARKINGS NOT SHOWN ON THE PLANS SHALL BE REMOVED FROM THE PAVEMENT BY SANDBLASTING OR GRINDING BY THE CONTRACTOR.
11. DAMAGE CAUSED BY THE CONTRACTOR'S OPERATION, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE DAMAGED FACILITIES PROMPTLY IN ACCORDANCE WITH STATE SPECIFICATIONS AND/OR AS DIRECTED BY THE STATE REPRESENTATIVE.
12. DURING PAYMENT OPERATIONS, A DROP OFF OF NO MORE THAN 0.17' SHALL BE LEFT IN PLACE DURING NON–WORK HOURS. DROP OFF GREATER THAN 0.17' SHALL BE TAPER AT A 4:1 SLOPE WITH APPROPRIATE MATERIALS AS DIRECTED BY THE ENGINEERING OR STATE REPRESENTATIVE.

VICINITY MAP

N.T.S.

BASIS OF BEARING

THE COORDINATES SHOWN HEREON ARE BASED UPON THE CALIFORNIA COORDINATE SYSTEM OF 1983, CCS83, ZONE 6, (2010.00 EPOCH) IN ACCORDANCE WITH THE CALIFORNIA PUBLIC RESOURCES CODE SECTIONS 8801–8819; SAID COORDINATES ARE BASED LOCALLY UPON FIELD–OBSERVED TIES TO THE FOLLOWING NATIONAL GEODETIC SURVEY NETWORK, CONTINUALLY OPERATING REFERENCE STATIONS(CORS), OR EQUIVALENT STATIONS:

STATION	NORTHING	EASTING
EWPP	1860639.63	6705286.98
P470	1991209.57	6744367.98

ALL DISTANCES SHOWN HEREON ARE GRID DISTANCES, AND ARE IN U.S. SURVEY FOOT. GROUND DISTANCES CAN BE OBTAINED BY MULTIPLYING GRID DISTANCES BY A COMBINED FACTOR OF 1.0000777642.

BENCHMARK

THE ELEVATIONS SHOWN HEREON ARE BASED UPON THE NATIONAL GEODETIC SURVEY BENCHMARK DESIGNATION P 522, (YEAR 2018). DESCRIBED BY COAST AND GEODETIC SURVEY 1968 AT SAN BERNARDINO. IN THE NORTHWEST QUADRANT OF THE INTERSECTION OF WATERMAN AVENUE AND 30TH STREET, ABOUT 375 FEET NORTH OF THE CENTER OF THE SAN BERNARDINO CROSSTOWN FREEWAY–WATERMAN AVENUE OVERPASS. 85.0 FEET NORTH OF THE CENTER OF 30TH STREET, 40.5 FEET WEST OF THE CENTER OF WATERMAN AVENUE, 20.5 FEET NORTH–NORTHEAST OF TRAFFIC SIGNAL POLE NUMBER L–509, AND 3.6 FEET WEST OF THE EAST EDGE OF THE STREET CURB. IT IS CEMENTED IN A DRILL HOLE IN THE SOUTHWEST CORNER OF A LARGE CONCRETE AND STEEL STORM DRAIN, 0.3 FOOT SOUTHWEST OF THE SOUTHWEST CORNER OF A SQUARE MAN–HOLE COVER. ELEV. = 1236.12FT.

PRESERVATION OF MONUMENTS AND BENCHMARKS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR CIVIL ENGINEER AS REQUIRED BY THE PROFESSIONAL LAND SURVEYORS ACT (BUSINESS AND PROFESSIONS CODE SECTION 8771).

SHEET INDEX

SEAL

REGISTERED PROFESSIONAL ENGINEER
SYED S. RAZA
NO. C53579
CIVIL
STATE OF CALIFORNIA

DIGALERT
DIAL TOLL FREE
1–800–277–2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

CITY OF SAN BERNARDINO

Azzam Jabsheh — 8/12/2024

AZZAM JABSHEH
CITY ENGINEER
R.C.E 61198 Exp. 6/30/2025

DATE

SR–210/WATERMAN AVENUE INTERCHANGE

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579 08/12/2024 SIGNATURE DATE	△ △ △ △ △ △			NO.: P 522 ELEV.: 1236.12' LOCATION: SEE ABOVE		WATER ENVIROMENTAL FIRE PLANNING TRAFFIC SERVICES		

RECOMMENDED BY:

R. S. "Sal" Chavez
DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

08/12/2024
DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

TITLE SHEET

PROJECT NO.

SHEET 1 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR–210WATERMAN AVENUE INTERCHANGE PROJECT\0460 CAD\0420 SHEETS\ECI–CV–01–WATERMAN AVENUE.DWG 5/9/2024 9:34:20 PM

DATE: August 2024

Project ID (EA): 08-23-N-MC-1118

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL Compliance Units)?		✓	If **Yes**, go to 8. If **No**, continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If **Yes**, continue to 4. If **No**, go to 9.
4.	As defined in the WQAR or ED, does the project: a. discharge to Areas of Special Biological Significance (ASBS), or b. discharge to a TMDL watershed where Caltrans is named stakeholder, or c. have other pollution control requirements for surface waters within the project limits?		✓ ✓ ✓	If **Yes to any**, contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. _____*(Dist./Reg. Coordinator initials)* If **No** to all, continue to 5.
5.	Are any existing Treatment BMPs partially or completely removed? (ATA Condition 1, Section 4.4.1)		✓	If **Yes**, go to 8 **AND** continue to 6. If **No**, continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If **Yes**, go to 9. If **No**, continue to 7.
7.	Does the project result in an increase of one acre or more of new impervious surface (NIS)?	✓		If **Yes**, go to 8. *NIS = 0.44 ac (19,178 sq.ft) > 10,000 sq.ft* If **No**, go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. _____ *(Dist./Reg. Design SW Coord. Initials)* _____*(Project Engineer Initials)* _____ *(Date)*	Document for Project Files by completing this form and attaching it to the SWDR.		

DATE: August 2024

Project ID / EA: 08-23-N-MC-1118

Project Evaluation Process for the Consideration of Construction Site BMPs

No.	Criteria	Yes ✓	No ✓	Supplemental Information
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	✓		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Review CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the RW, etc.?	✓		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Review CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	✓		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Review CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	✓		If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Review CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?		✓	If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	✓		If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with stormwater; be dispersed by wind; be dumped and/or spilled into storm drain systems?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6.

Sediment Risk Factor Worksheet	Entry

A) R Factor

Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.

http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm

R Factor Value	40.31

B) K Factor (weighted average, by area, for all site soils)

The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.

Site-specific K factor guidance

K Factor Value	0.20

C) LS Factor (weighted average, by area, for all slopes)

The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.

LS Table

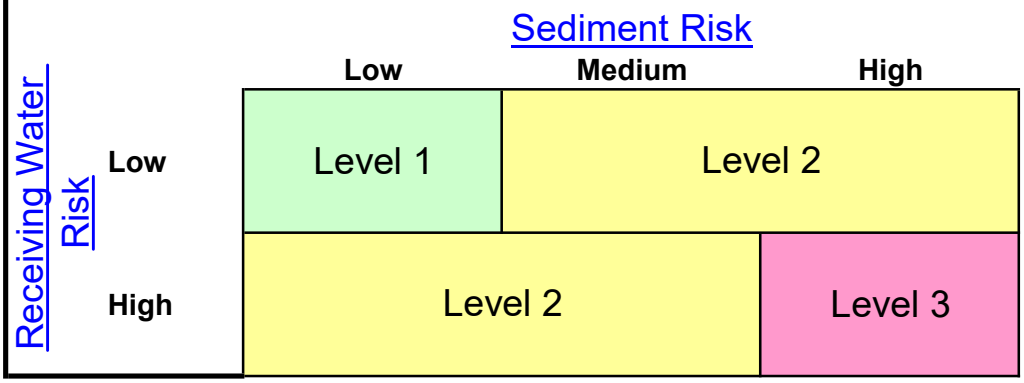
LS Factor Value	1.19

Watershed Erosion Estimate (=RxKxLS) in tons/acre	9.59378
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment**? For help with impaired waterbodies please check the attached worksheet or visit the link below: 2006 Approved Sediment-impared WBs Worksheet http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml **OR**	**no**	**Low**
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? http://www.ice.ucdavis.edu/geowbs/asp/wbquse.asp		

Annabeth Anderson

Combined Risk Level Matrix



Project Sediment Risk:	**Low**
Project RW Risk:	**Low**
Project Combined Risk:	**Level 1**

3 Click the "Calculate R Factor" button below.

Calculate R Factor

Facility Information

Start Date: 10/01/2024	**Latitude:** 34.1452
End Date: 04/01/2025	**Longitude:** -117.2786

Calculation Results

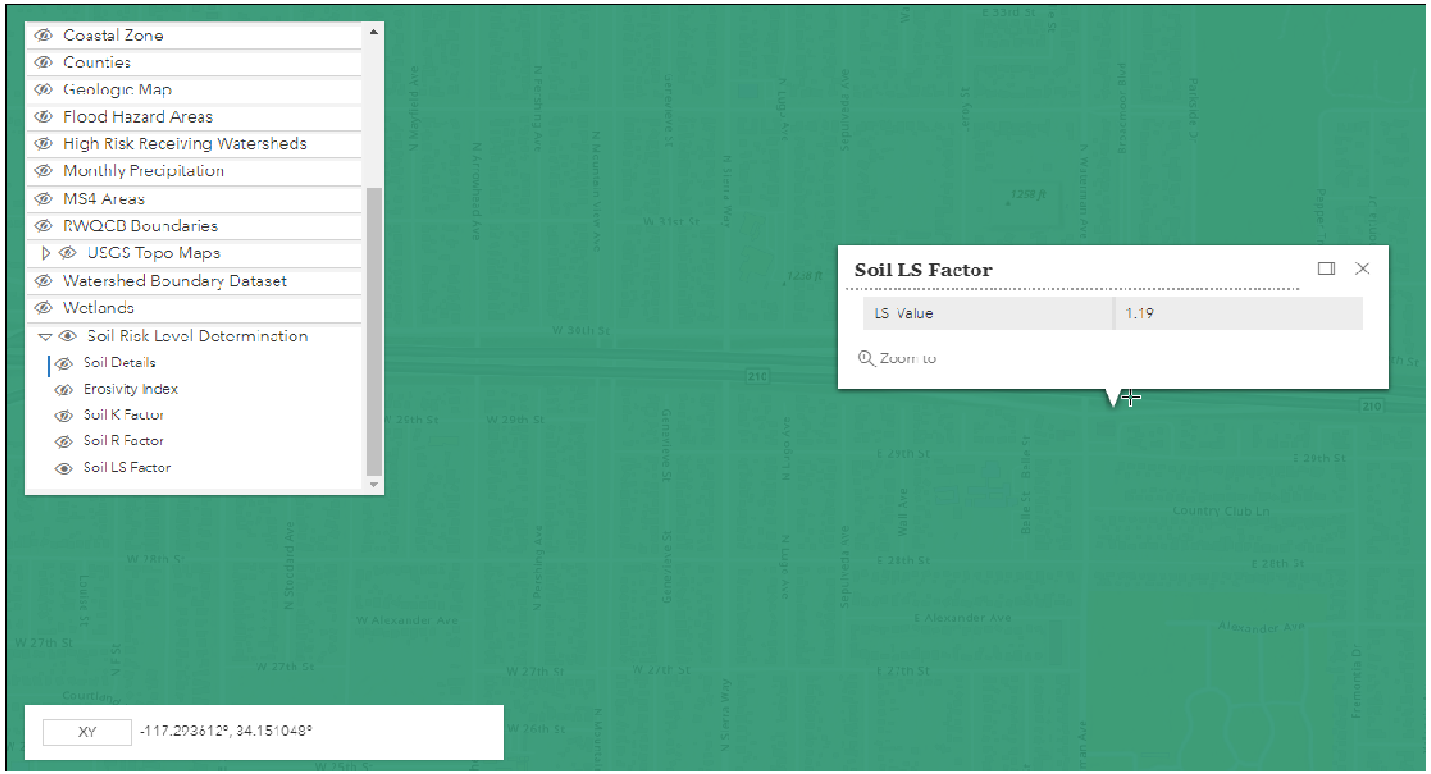
Rainfall erosivity factor (R Factor) = 40.31

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

LS Factor = 1.19

Caltrans Water Quality Planning Tool

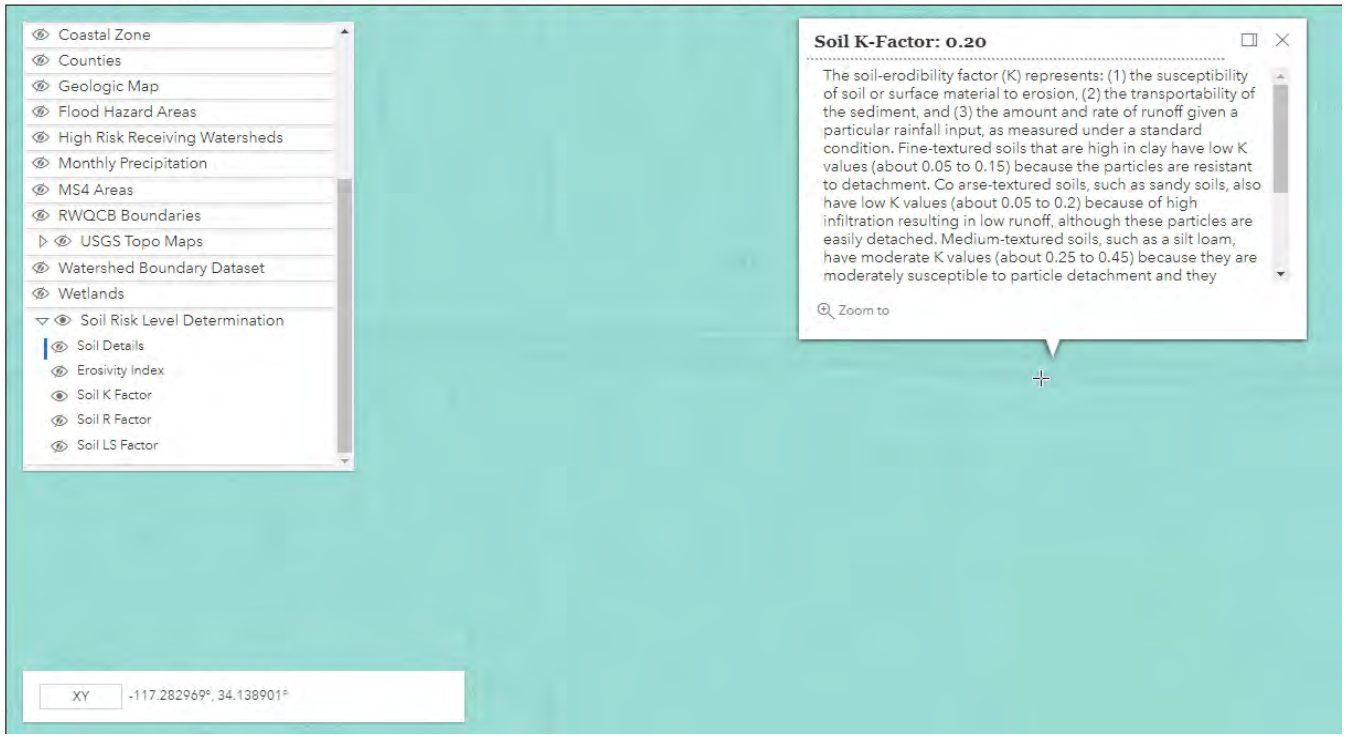
The Water Quality Planning Tool was created to help planners and designers comply with environmental permits. It uses a map interface to find information based on a project's location. **This application is bei**



K Factor = 0.2

Caltrans Water Quality Planning Tool

The Water Quality Planning Tool was created to help planners and designers comply with environmental permits. It uses a map interface to find information based on a project's location. **This application is being u**



Checklist SW-1, Site Data Sources

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect available project reports and any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 6.4.3.2. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
Water Quality	
• http://svctenvims.dot.ca.gov/wqpt.aspx	June 2023
• https://www.epa.gov/npdes/rainfall-erosivity-factor-calculator-small-construction-site	June 2023
• http://www.dot.ca.gov/design/hsd/ppdg/PPDG-Final_2017-07.pdf	June 2019
Geotechnical/Groundwater	
• https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels	June 2023
•	
•	
Topographic	
• Project Topographic Survey	April 2023
•	
•	
Hydraulic	
•	
•	
•	
Climatic	
• http:/cdc.ncdc.noaa.gov/climatenormals/clim20/state-pdf/ca/pdf	June 2023
• http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx	June 2023
•	
Other Data Categories	
•	
•	
•	

Construction Site BMPs

Checklist CS-1, Part 1

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Temporary Soil Stabilization

General Parameters

1. How many rainy seasons are anticipated between begin and end of construction? Year Round
2. What is the total disturbed soil area for the project? (ac) 0.70
3. Consult your District/Regional Design Stormwater Coordinator for the minimum required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. ☐Complete

Scheduling

4. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres? ☐Yes ☒No

   (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.) ☐Complete

   (b) Edit specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete. ☐Complete

   (c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal. ☐Complete

Preservation of Existing Vegetation

5. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the construction limits? (Verify the completion of DPP-1, Part 5) ☐Yes ☒No

   (a) Verify the protection of ESAs through delineation on all project plans. ☐Complete

   (b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP. ☐Complete

6. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed or existing Treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.) ☐Yes ☒No

   (a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans. ☐Complete

   (b) Protect with high visibility plastic fence or other BMP. ☐Complete

7. If yes for 5, 6, or both, then designate ESA fencing as a separate contract bid line item, *if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5).* ☐Complete

Slope Protection

8. Provide a temporary soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District Landscape Architect.)

   (a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Straw Mulch, Geotextiles, Mats, Plastic Covers, and **Erosion Control Blankets**, Wood Mulching, other BMPs or a combination to cover the DSA throughout the project's rainy season. ☒Complete

   (b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☒Complete

   (c) Designate as a separate contract bid line item. ☒Complete

Slope Interrupter Devices

9. For projects with temporary erosion control requirements, provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length, in accordance with CGP requirements.

   (a) Select **Fiber Rolls** or other BMPs to protect slopes throughout the project's rainy season. ☒Complete

   (b) For slope inclination of 4:1 (h:v) and flatter, Fiber Rolls or other BMPs shall be placed along the contour and spaced 20 ft on center. ☒Complete

   (c) For slope inclination between 4:1 (h:v) and 2:1 (h:v), Fiber Rolls or other BMPs shall be placed along the contour and spaced 15 ft on center. ☒Complete

   (d) For slope inclination of 2:1 (h:v) and greater, Fiber Rolls or other BMPs shall be placed along the contour and spaced 10 ft on center. ☒Complete

(e) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest alternate increase.) ☒Complete

(f) Designate as a separate contract bid line item. ☒Complete

Channelized Flow

10. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the RW (off-site run-on). **N/A** ☐Complete

(a) Utilize Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Earth Dikes/Swales, Ditches, Outlet Protection/Velocity Dissipation, Slope Drains, Check Dams, or other BMPs to convey concentrated flows in a non-erosive manner. ☐Complete

(b) Designate as a separate contract bid line item, as appropriate. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 2

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Sediment Control

Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.? ☐Yes ☒No

   (a) Select linear sediment barrier such as High-Visibility Fence, Fiber Rolls, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.) ☐Complete

   (b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☐Complete

   (c) Designate as a separate contract bid line item. ☐Complete

Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities? ☒Yes ☐No

   (a) Utilize linear sediment barriers such as Earth Dike/Drainage Swales and Lined Ditches, **Fiber Rolls**, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item, as appropriate. ☒Complete

Storm Drain Inlets

3. Do existing or proposed drainage inlets exist within the construction limits? ☒Yes ☐No

   (a) Select **Drainage Inlet Protection** to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item. ☒Complete

4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in Drainage Inlet Protection - Type 2? ☐Yes ☒No

(a) Include with other types of Drainage Inlet Protection. ☐Complete

Sediment/Desilting Basin

5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? ☐Yes ☒No

(a) Consider feasibility for desilting basin allowing for available right-of-way within the construction limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible. ☐Complete

(b) If feasible, design desilting basin(s) per the guidance in the *CASQA Construction BMP Guidance Handbook* to maximize capture of sediment-laden runoff. ☐Complete

(c) Designate as a separate contract bid item ☐Complete

6. Is ATS to be used for controlling sediment? ☐Yes ☒No

(a) If yes, then will desilting basin or other means of natural storage be used? ☐Yes ☐No

(b) If no, then plan for storage tanks sufficient to hold treatment volume. ☐Complete

7. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.) **Construction of DPPIAs will be completed last** ☐Yes ☒No

(a) Edit specifications for permanent Treatment BMP work to be implemented in a manner that will allow its use as a Construction Site BMP. ☐Complete

Sediment Trap

8. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge? ☐Yes ☒No

(a) Design sediment traps in accordance with the *CASQA Construction BMP Guidance Handbook*. ☐Complete

(b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 3

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Tracking Controls

Stabilized Construction Entrance/Exit

1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.) ☒Yes ☐No

   (a) Identify and designate these entrance/exit points as **stabilized construction entrances**. ☒Complete

   (b) Designate as a separate contract bid line item. ☒Complete

Tire/Wheel Wash

2. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.) ☐Yes ☒No

   (a) Designate as a separate contract bid line item. ☐Complete

Stabilized Construction Roadway

3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.) ☐Yes ☒No

   (a) Designate these temporary access roads as stabilized construction roadways. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Street Sweeping and Vacuuming

1. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.) ☒Yes ☐No

   (a) Designate as a separate contract bid line item. ☒Complete

Construction Site BMPs

Checklist CS-1, Part 4

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Wind Erosion Controls

Wind Erosion Control

1. Is the project located in an area where standard dust control practices in accordance with *Standard Specifications*, Section 14-903: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? *(Note: Dust control by water truck application is paid for for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)* ☒Yes ☐No

   (a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Geotextiles, Mats, Plastic Covers, and **Erosion Control Blankets**, Wood Mulching or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item. ☒Complete

Construction Site BMPs

Checklist CS-1, Part 5

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Non-Stormwater Management

Temporary Stream Crossing & Clear Water Diversion

1. Will construction activities occur within a water body or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.) ☐Yes ☒No

   (a) Select from types offered in Temporary Stream Crossing to provide access through watercourses consistent with permits and agreements.[1] ☐Complete

   (b) Select from types offered in Clear Water Diversion to divert watercourse consistent with permits and agreements.[1] ☐Complete

   (c) Designate as a separate contract bid line item(s). ☐Complete

Other Non-Stormwater Management BMPs

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as **Water Conservation Practices**, Dewatering Operations, **Paving and Grinding Operations**, **Potable Water/Irrigation**, **Vehicle and Equipment Cleaning**, **Vehicle and Equipment Fueling**, **Vehicle and Equipment Maintenance**, **Concrete Curing**, Material and Equipment Use Over Water, **Concrete Finishing**, and Structure Demolition/Removal Over or Adjacent to Water.[1] ☒Complete

   (b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☒Complete

[1] *Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 and 401 permits and Dept. of Fish and Game 1601 Streambed alteration Agreements.*

Construction Site BMPs

Checklist CS-1, Part 6

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Waste Management & Materials Pollution Control

Concrete Waste Management

1. Does the project include concrete placement or mortar mixing? ☒Yes ☐No

   (a) Select from types offered in Concrete Waste Management to provide concrete washout facilities. In addition, consider **portable concrete washouts** and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd^3 or if requested by Construction. ☒Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as **Material Delivery and Storage, Material Use, Spill Prevention and Control, Solid Waste Management, Hazardous Waste Management, Contaminated Soil Management, Sanitary/Septic Waste Management, and Liquid Waste Management** ☒Complete

   (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☒Complete

Temporary Stockpiles (Soil, Materials, and Wastes)

3. Are stockpiles of soil, etc. anticipated during construction? ☒Yes ☐No

   (a) Verify that costs for stockpile management and associated sediment control and temporary soil stabilization BMPs for temporary stockpiles are identified in the contract documents. Designate as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☒Complete

DESIGN INFORMATION FOR CONSTRUCTION

The following information is based on the PS&E design plans and specifications. If contract amendments or change orders are made after the design is complete, then the information should be updated by construction, as appropriate.

Project ID (EA): (Caltrans Permit No. 08-23-N-MC-1118)

Enter the following data into the CGP SMARTS Notice of Intent-Site Information page.

1. **Total site size** (acres); for project area use Caltrans RW x post mile limits (begin-end) on plan sheets.

Total site size 10.6 acres

2. Enter **latitude and longitude** in decimal degrees to 5 significant figures. Use a location from the center of the project. This information can be obtained from Survey information, GPS units, Google earth, CT Earth, or other mapping software.

Latitude: 34.14470

Longitude: -117.27781

3. **Total Area to be Disturbed** (total Disturbed Soil Area (DSA)): This information is already calculated and can be taken from SWDR Section 1. Describe in acres.

DSA 0.70 acres

4. **Imperviousness before Construction (percentage)** - This is calculated as the total impervious area of the project area divided by the total project area (see total site size), multiplied by 100. The impervious area is all paved areas or hard surfaces within the project limits.

Impervious area before construction % (1.80/10.6)*100=17.0%

5. **Percent of total disturbed (percentage)**; This should be calculated by dividing the total disturbed soil area by the total project area and multiply by 100.

Percent of Total disturbed area % (0.70/10.6)*100= 6.6%

6. **Imperviousness after Construction (percentage)**, This should be calculated by adding all impervious area paved and hard surfaces based on the final design within project limits from above and dividing by the total project area from above multiply by 100.

Impervious area after construction % (2.13/10.6)*100=20.1%

7. **Mile Post Marker**, enter the approximate post mile at the center of the project or take the average of the "begin" and "end" post mile markers from the title sheet.
Mile post Marker PMR24.3

8. **Is the construction site part of a larger common plan of development**? Yes or No; in most cases mark No for Caltrans projects, as this is intended for developers (in accordance with the EPA definitions referenced by the CGP in 40 CFR title 22). This clarification is based on direction from the State Board, see Appendix G for the definition of common plan of development. Coordinate with the District/Regional Design Stormwater Coordinator to determine if there is a special case project where the common plan of development applies. No X

9. **Name of development**. Mark "Not Applicable (N/A)" in most cases.

Name of plan or development: N/A

10. **Estimated Construction Commencement Date**, 10/01/2024. The PE provides the estimated construction start date from the cover of the SWDR. The actual construction start date should be used to input into SMARTS. After the contract is awarded, the RE will use an updated start date (if different) when entering in SMARTS. The RE needs to be aware of the original date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the actual start date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Estimated Construction Commencement Date, 10/01/2024.

11. **Estimated Complete Grading Date/Complete Project Date**; The PE provides the estimated construction completion date from the cover of the SWDR to be used for both of these inputs. After the contract is awarded, the RE will use an updated completion date (if different) when entering in SMARTS. The RE needs to be aware of the original completion date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the completion date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Estimated Complete Grading Date/Complete Project: 04/01/2025. Use the same date for both inputs, unless instructed otherwise.

12. **Does the Stormwater from the construction site discharge directly or indirectly into waters of the United States.**

Indirect discharge _Y__ - If yes, list name(s) of receiving water(s) Santa Ana River Reach 4

Direct discharge _N__ - If yes, list name(s) of receiving water(s)

13. **Risk Level**; the combined project risk level is calculated using the sediment risk factor and the water body risk factor to give one overall project risk level. Use the Caltrans risk level determination guidance, (see the Stormwater design web page). Attach all risk calculations.

R factor value _40.31__

K factor value__0.20___

LS factor value__1.19__

Receiving water risk comes from the state water resources control board mapping of water bodies for 303-d listing or TMDLs for sediment or water body with the beneficial use of cold and spawn and migratory. The input will either be high= yes and low=no;

Receiving water risk__no____, (yes or no)

The dates used for determining the project risk level and other design elements of the project required for CGP compliance are dependent on having the same sediment risk factor. This is a critical element for compliance, as modifying the estimated construction dates may cause the sediment risk factor to change and ultimately modify the overall project risk factor. This could impact the projects CGP compliance requirements and the assumptions used for the design documents and engineers estimate.

14. **Post Construction**: The PE provides project information related to Municipal Separate Storm Sewer System (MS4) areas.

Is the project located within a permitted Phase I or Phase II MS4 area? This will usually be answered Yes for all projects. Yes

Does the Phase I or Phase II MS4 have an approved Stormwater Management Plan (SWMP) that includes post-construction requirements? This will usually be answered Yes for all projects. Yes

Contact the District/Regional NPDES Coordinator with any questions.

15. Provide electronic copy of plan sheets in .pdf format that can be loaded to SMARTS, burn a CD for the RE to use for the project. The Title sheet can be used as the site map.

16. Methodology for obtaining the CGP NOT decided by the PDT, see SWDR Section 6 text for methodology text and computational proof as appropriate, circle one. See SWRCB bulletin for details: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/bulletin_2013_1.pdf

a. 70% final cover method: Attach photo documentation _____Y_____

b. RUSLE II: Attach computational proof and photo documentation _____

c. Other custom method if coordinated with local regional board, attach photo documentation or other proof as necessary.

70% Final Cover Method

This form documents the selected method for demonstrating final stabilization as required under Section II.D., "Conditions for Termination of Coverage," of the Construction General Permit (Order No. 2022-0057-DWQ, NPDES No. CAS000002) and Technical Bulletin 2013.1.

Project Description

Project EA/ID: 08-23-N-MC-1118
Dist-County-Route: 08-SBd-215/18
Post Mile Limits: R24.2/R24.4, T6.1/T6.3
Project Type: Ramp Widening

Project Risk Level: RL1
Sediment Risk: Low
Receiving Water Risk: Low

Caltrans uses the following definition for "70% Final Cover Method:

Upon the completion of all construction activities, especially all soil disturbing activities, the CGP allows the 70% Final Cover Method to be used to demonstrate final stabilization. Cover is defined as: a uniform (e.g., evenly distributed, without large bare soil areas) long-term, vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or100% of the disturbed soil areas are covered with inert materials (i.e., minor paving, rock, gravel).

The Technical Bulletin provides additional information on this method and indicates that final stabilization may consist of planting (i.e., seeds, cuttings, nursery stock, etc) in combination with short-term, degradable erosion control practices (e.g., rolled erosion control products, hydro mulch, fiber rolls, compost, etc). The selected method for permanent vegetation must establish within three years.

This project has 0.70 acres of total DSA due to widening of the ramp roadway and construction of retaining wall. Various slope and surface protection measures will be used to address site soil stabilization and reduce deposition of sediments in the adjacent surface waters. Typical measures include application of soil stabilizers, and rock slope protection. This project will be constructed to minimize erosion, including cut and fill slopes flat enough to allow re-vegetation and limit erosion to pre-construction rates. The preservation of desirable existing vegetation will be maximized for erosion and sediment control.

By providing permanent vegetation and/or non-degradable materials for the DSA, the site will not pose any additional sediment discharge risk than it did prior to the commencement of construction activity.

Syed Raza, PE, August 19, 2024

Prepared by (name, title, date)

(scroll down to Page 2
and edit for your project)

SWDR Summary Spreadsheet

1	2	3	4	5	6	7	8	9
SWDR Signed Date	District	EA/Project ID	County	Route	Beginning Postmile	End Postmile	Project Description	Project Phase
Pending	8	08-23-6-DD-1084	SBD	210,18	R24.2 T6.1	R24.4 T6.3	Ramp Widening	PS&E

10	11	12	13	14	15	16	17	18
Long SWDR	Pollution Program	DSA (ac)	Net New Impervious (NNI) (ac)	Replaced Impervious Surface (RIS)(ac)	New Impervioius Surface (NIS=NNI +RIS)(ac)	ATA Condition 1	ATA Condition 2	Post Constriction Treatment ARE (PCTA=NIS+ ATA1+ATA2) (ac)
Yes	WPCP	0.70	0.33	0.11	0.44	0	0	0.44

19	20	21	22	23	24	25	26	27
TMDL Compliance Unit (ac)	Treated NIS Inside CT R/W (ac)	Treated NIS Outside CT R/W (ac)	Treated Stabilize area (ac)	Model Water Efficient Landscape Ordinance (MWELO)	Rapid Stability Assessment (RSA)	Percent Treated Area	Project's Watershed	Water bodies Affected (303)d List
0	0.56	0	0	Yes	No	94%	Santa Ana River Reach 4	None

28	29	30	31	32	33	34	35
CT TMDL Waterbodies	MS4 Area	Bio-filtraion Strip	Bio-filtration Swale	Detention Basin	Infiltration Basin	Gross Solids Removal Device (GSRD)	Design Pullotion Prevention Infiltration Area (DPPIA)
N/A	San Bernardino	None	None	None	None	None	2

36	37	38	39	40	41
Infiltration Trench	Austin Sand Fiter	Delaware Sand Filter	Traction Sand Trap (TST)	Fish Passage	Other BMP
None	None	None	None	None	-

42	43	44
Construction Start Date	Construction End Date	SWDR Comments
October 2024	April 2025	

SR-210/WATERMAN AVENUE IMPROVEMENT PROJECT

EASTBOUND ON-RAMP WIDENING

CONSTRUCTION SITE BMPs COST ESTIMATE

ITEM NO.	ITEM CODE	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT
1	130100	JOB SITE MANAGEMENT	LS	1	$55,000.00	$55,000.00
2	130201	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	1	$1,700.00	$1,700.00
3	130500	TEMPORARY EROSION CONTROL BLANKET	SQYD	1,160	$4.70	$5,452.00
4	130680	TEMPORARY SILT FENCE	LF	1,772	$6.00	$10,632.00
5	130620	TEMPORARY DRAINAGE INLET PROTECTION	EA	10	$240.00	$2,400.00
6	130640	TEMPORARY FIBER ROLL	LF	1,415	$6.00	$8,490.00
7	130710	TEMPORARY CONSTRUCTION ENTRANCE	EA	2	$3,000.00	$6,000.00
8	130900	TEMPORARY CONCRETE WASHOUT	LS	1	$3,000.00	$3,000.00
9	066595	WATER POLLUTION CONTROL MAINTENANCE SHARING	LS	1	$5,000.00	$5,000.00
10	066596	ADDITIONAL WATER POLLUTION CONTROL	LS	1	$5,000.00	$5,000.00
					TOTAL	$102,674.00

SUPPLEMENTAL ATTACHMENTS

Design Pollution Prevention BMPs
Checklist DPP-1, Part 1

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Consideration of Design Pollution Prevention BMPs

Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will the project increase velocity or volume of downstream flow?	☒Yes	☐No	☐NA
Will the project discharge to unlined channels?	☐Yes	☒No	☐NA
Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?	☐Yes	☒No	☐NA

If Yes was answered to any of the above questions, consider ***Downstream Effects Related to Potentially Increased Flow***, complete the Checklist DPP-1, Part 2.

Slope/Surface Protection Systems

Will the project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA

If Yes was answered to the above question, consider ***Slope/Surface Protection Systems***, complete the Checklist DPP-1, Part 3.

Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?	☒Yes	☐No	☐NA
Will project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA
Will it be necessary to direct or intercept surface runoff?	☒Yes	☐No	☐NA
Will cross drains be modified?	☐Yes	☒No	☐NA

If Yes was answered to any of the above questions, consider ***Concentrated Flow Conveyance Systems***; complete the Checklist DPP-1, Part 4.

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

It is the goal of the Stormwater Program to maximize the protection of desirable existing vegetation, soils, and stream buffer areas to provide erosion and sediment control benefits on all projects. ☒Complete

Consider ***Preservation of Existing Vegetation, soils, and stream buffer areas***, complete the Checklist DPP-1, Part 5.

Design Pollution Prevention BMPs
Checklist DPP-1, Part 2

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Downstream Effects Related to Potentially Increased Flow

1.	Review total paved area and reduce to the maximum extent practicable.	☒ Complete
2.	Review channel lining materials and design for stream bank erosion control. **N/A**	☐ Complete
	(a) See Chapters 860 and 870 of the HDM.	☐ Complete
	(b) Consider channel erosion control measures within the construction limits as well as downstream. Consider scour velocity. If erosion control measures are required downstream of construction limits obtain the appropriate permits and right of way documents to include work within the construction limits.	☐ Complete
3.	Include, where appropriate, energy dissipation devices at culvert outlets. **N/A**	☐ Complete
4.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour. **N/A**	☐ Complete
5.	Include, if appropriate, peak flow attenuation basins or devices to reduce peak discharges. **N/A**	☐ Complete
6.	Calculate the water quality volume infiltrated within the project limits. These calculations will be used in the Checklist T-1, Part 1.	☒ Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 3

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Slope / Surface Protection Systems

1.	What are the proposed areas of cut and fill? (attach plan or map) **see roadway plans**	☒Complete
2.	Were benches or terraces provided on high cut and fill slopes to shorten slope length?	☐Yes ☒No
3.	Were concentrated flows collected in stabilized drains or channels?	☐Yes ☒No
4.	Are new or disturbed slopes > 4:1 horizontal:vertical (h:v)?	☒Yes ☐No
	If Yes, District Landscape Architect is responsible for an erosion control strategy and may prepare an erosion control plan.	
5.	Are new or disturbed slopes > 2:1 (h:v)?	☐Yes ☒No
	If Yes, DES Geotechnical Design unit must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Stormwater Coordinator for slopes steeper than 2:1 (h:v).	

VEGETATED SURFACES

1.	Identify existing vegetation.	☒Complete
2.	Evaluate site to determine soil types, appropriate vegetation and planting strategies.	☒Complete
3.	How long will it take for permanent vegetation to establish?	☒Complete
4.	Plan transition BMPs from construction to permanent establishment.	☒Complete
5.	Have vegetated areas and supporting permanent irrigation systems been designed to comply with the Model Water Efficient Landscape Ordinance (MWELO)?	☒Yes ☐No
6.	Minimize overland and concentrated flow depths and velocities.	☒Complete

HARD SURFACES

1.	Are hard surfaces minimized?	☒Yes ☐No
	Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems.	☒Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 4

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Concentrated Flow Conveyance Systems

Ditches, Berms, Dikes and Swales

1. Consider Ditches, Berms, Dikes, and Swales as per Topics 813, 834.3, 835, and Chapter 860 of the HDM. ☒Complete
2. Review existing and proposed conditions to remove any dike not required for slope stability, erosion control, and water conveyance. ☒Complete
3. Evaluate risks due to erosion, overtopping, flow backups or washout. ☒Complete
4. Consider outlet protection where localized scour is anticipated. **N/A** ☐Complete
5. Examine the site for run-on from off-site sources. **None** ☒Complete
6. Consider permissible shear and velocity when selecting lining material (See Table 865.2 in the HDM). **N/A** ☐Complete

Overside Drains

1. Consider downdrains, as per Index 834.4 of the HDM. **N/A** ☐Complete
2. Consider paved spillways for side slopes flatter than 4:1 h:v. **N/A** ☐Complete

Flared Culvert End Sections

1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM. **N/A** ☐Complete

Outlet Protection/Velocity Dissipation Devices

1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM. **N/A** ☐Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems. **N/A** ☐Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 5

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

1. Review Preservation of Property, (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation, soils, and stream buffer areas. ☒Complete
2. Has all vegetation, soils, and stream buffer areas to be retained been coordinated with Environmental, and identified and defined in the contract plans? ☒Yes ☐No
3. Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling? ☒Complete
4. Have impacts to preserved vegetation, soils, and stream buffer areas been considered while work is occurring in disturbed areas? ☒Yes ☐No
5. Are all areas to be preserved delineated on the plans? ☐Yes ☒No

Treatment BMPs
Checklist T-1, Part 1

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

Consideration of Treatment BMPs

This checklist is used for projects that require the consideration of Approved Treatment BMPs, as determined from the process described in Section 4 (Treatment Consideration) and the Evaluation Documentation Form (EDF). This checklist will be used to determine which Treatment BMPs should be considered for each BMP contributing drainage area within the project. Supplemental data will be needed to verify siting and design applicability for final incorporation into a project.

Complete this checklist for each phase of the project. This will help to determine if any changes to the BMP strategy are necessary, based on site specific information gathered during later phases. Use the responses to the questions as the basis of developing the narrative in Section 6 of the Stormwater Data Report to document that Treatment BMPs have been appropriately considered and/or incorporated.

Before evaluating an area for treatment capabilities or to incorporate a Treatment BMP, calculate the numeric sizing requirement for each contributing drainage area (WQV from the 85th percentile 24-hour storm event or WQF rate). Soil and geometric information for the project area will be necessary to use this Checklist.

Identify the overall project PCTA

Refer to Section 4.4 Treatment Areas for more information on defining these areas.

PCTA = NNI + RIS + ATA (1 Impervious) + ATA (2)

NNI = Net New Impervious Area

RIS = Replaced Impervious Surface

ATA (1 Impervious) = Additional Treatment Area required for existing Treatment BMPs that were removed or modified as part of the project

ATA (2) = Additional Treatment Area required when NNI is 50 percent or greater than total project impervious

What is the PCTA for the project? 0.44 Acres (A in Table E-1)

The PCTA is the impervious area required to be treated by the project. The PE is to incorporate BMPs until the summation of the treated impervious area of all the BMPs is equivalent to the PCTA for the Project.

Once this area and any ATA 1 (Pervious) has been treated, the project is in compliance with the post construction treatment requirement.

Total Maximum Daily Load (TMDL) Retrofit Projects

If the project is installing Treatment BMPs to only address TMDL requirements, then there is no required PCTA. The Treatment BMPs for a TMDL retrofit project should be designed to treat the impervious and pervious contributing drainage areas, as they are both eligible for compliance unit (CU) credits.

Overall Project Evaluation

Answer all questions, unless otherwise directed.

A. Overall Project Consideration

1. Is the project in a watershed with prescriptive Treatment BMP requirements in an adopted TMDL implementation plan or are there any other requirements for project area (e.g., District, Regional Board, Lawsuit)? ☐ Yes ☒ No

   If Yes, consult the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to determine if there are written agreements related to specific Treatment BMPs. In this case, determine if the rest of this checklist needs to be followed to address other post construction requirements. If not, document BMP(s) in the Individual Treatment BMP Summary Table, provide information on the basis of the BMP requirement and any regulatory coordination in the SWDR narrative, and complete Table E-2. Otherwise, continue.

   If No, continue.

2. Does the receiving water have a TMDL for litter/trash, or is there a region specific requirement related to trash? ☐ Yes ☒ No

   If Yes, first evaluate BMPs that can treat other pollutants and are considered to be full capture devices (GSRDs or other) for litter/trash. If other BMPs cannot be sited, consult with the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to determine if standalone full capture devices (GSRDs or other) are required to be incorporated. If standalone devices are required and no other Treatment BMPs are being considered, go to question 6 of “Individual BMP Evaluation”.

   If No, continue.

3. Is the project located in an area that uses traction sand more than twice a year? ☐ Yes ☒ No

   If Yes, first consider BMPs that can treat other pollutants and can capture traction sand. If other BMPs cannot be sited, consult the District/Regional Design Stormwater Coordinator to determine if standalone traction sand trap devices should be incorporated.

   If standalone devices are required and no other Treatment BMPs are being considered, go to question 6 of “Individual BMP Evaluation”. Otherwise, continue with this checklist to identify Treatment BMPs that provide traction sand and other pollutant removal, or to design Treatment BMPs in series.

   If No, continue.

B. Dual Purpose Facilities

Does the project have (or propose to include) any dual purpose facilities that could meet treatment requirements (e.g., Dry Weather Flow Diversion, flood control basins, etc.)? ☐ Yes ☒ No

If Yes and 100 percent of the PCTA and ATA 1 (Pervious) will be treated by the dual purpose facility, go to question 6 of "Individual BMP Evaluation".

If Yes, but 100 percent of the PCTA and ATA 1 (Pervious) has not been addressed, continue.

If No, continue.

C. Evaluate overall project area for infiltration opportunities using existing and proposed roadside surfaces (DPP Infiltration Areas). Assure the DPP Infiltration Area is stabilized to handle highway drainage design flows, for both sheet and concentrated flows (See HDM Section 800).

Document DPP Infiltration Areas on the "Individual Treatment BMP Summary Table" located at the end of this checklist.

1. Based on site conditions, do the DPP Infiltration Areas infiltrate 100 percent of the WQV generated by the PCTA and ATA 1 (Pervious) for the project? ☒ Yes ☐ No

   Yes, go to question 6 of "Individual BMP Evaluation".

   If No, account for area infiltrated and continue.

2. Can infiltration for these areas be increased by using soil amendments or other means? ☐ Yes ☐ No

   If Yes, and 100 percent of the WQV generated by the PCTA and ATA 1 (Pervious) is infiltrated, go to question 6 of "Individual BMP Evaluation".

   If Yes, but 100 percent of the WQV generated by the PCTA and ATA 1 (Pervious) is not infiltrated, continue with this checklist to identify Treatment BMPs that will treat the remaining PCTA and ATA 1 (Pervious).

   If No, continue.

Individual BMP Evaluation

Answer the following questions for each Treatment BMP location being considered. The following process must be followed until the PCTA and ATA 1 (Pervious) or desired treatment area (Alternative Compliance or TMDL CUs) has been achieved; for TMDL CUs, consider both impervious and pervious contributing drainage areas. Use the Individual Treatment BMP Summary Table at the end of the checklist to summarize the selected BMP(s) based on the findings of the following questions for each BMP contributing drainage area.

1. Infiltration Devices (Infiltration Basin, Trench, or other device)

   a. Can 100 percent of the BMP contributing drainage area WQV (or remaining WQV, if in series with a DPP Infiltration Area or other BMP) be infiltrated? ☐ Yes ☐ No

      If Yes, go to question 6.

      If No, continue.

2. Biofiltration Devices (Biofiltration Strips and Swales)

   a. Is this a TMDL retrofit project or is the project within a TMDL watershed or 303(d) impaired receiving water body area? ☐ Yes ☐ No

      If Yes, when designing the biofiltration device, determine the percent WQV infiltrated from both the impervious and pervious BMP contributing drainage areas. Consider using existing or amended soils:

      i. If infiltration is >50 percent, continue to b.

      ii. If infiltration is ≤50 percent, go to question 3.

      If No, continue to b.

   b. Can biofiltration devices be designed to: ☐ Yes ☐ No

      i. Treat 100 percent of the WQF/WQV (or remainder, if in series with a DPP Infiltration Area or other BMP) from the BMP contributing drainage area, and

      ii. Meet the siting and design criteria of the Caltrans biofiltration device design guidance.

      If Yes, continue to c.

      If No, go to question 3.

   c. Biofiltration devices are considered to be an effective method of treatment, go to question 6.

3. Earthen type BMPs (Detention Devices, Media Filters, or other devices)

   a. Is this a TMDL retrofit project or is the project within a TMDL watershed or 303(d) impaired receiving water body area? ☐ Yes ☐ No

   If Yes, when designing the earthen type BMP, determine the percent WQV infiltrated from both the impervious and pervious BMP contributing drainage area. Consider using existing or amended soils:

   i. If infiltration is >50 percent, continue to b.

   ii. If infiltration is ≤50 percent, go to question 4.

   If No, continue to b.

   b. Can earthen type BMPs (standalone or in series with other approved Treatment BMPs) be designed to: ☐ Yes ☐ No

   iii. Treat 100 percent of the WQV (or remainder, if in series with a DPP Infiltration Area or other BMP) from the BMP contributing drainage area, and

   iv. Meet the criteria of the Caltrans design guidance for the treatment device being considered.

   If Yes, continue to c.

   If No, go to question 4.

   c. Earthen type BMPs are considered to be an effective method of treatment, go to question 6.

4. Targeted Design Constituent (TDC)

   This approach will compare the effectiveness of individual BMPs and allow the PE to use judgment when evaluating BMP feasibility (site constraints, safety, maintenance requirements, life-cycle costs, etc.).

   a. Does the project discharge to a 303(d) impaired receiving water or a receiving water in a TMDL watershed where Caltrans is a named stakeholder? ☐ Yes ☐ No

      If Yes, is the identified pollutant(s) considered to be a TDC (check all that apply below)? Continue to b. ☐ Yes ☐ No

      ☐ sediments
      ☐ phosphorus
      ☐ nitrogen
      ☐ copper (dissolved or total)
      ☐ lead (dissolved or total)
      ☐ zinc (dissolved or total)
      ☐ general metals (dissolved or total)[1]

      If No or if no TDC is identified, use Matrix A to select BMPs and go to question 5.

   b. Treating Only Sediment. Is sediment a TDC? ☐ Yes ☐ No

      If Yes, use Matrix A to select BMPs and go to question 5.

      If No, continue to c.

   c. Treating Only Metals. Are copper, lead, zinc, or general metals listed TDCs? ☐ Yes ☐ No

      If Yes, use Matrix B to select BMPs, and go to question 5.

      If No, continue to d.

   d. Treating Only Nutrients. Are nitrogen and/or phosphorus listed TDCs? ☐ Yes ☐ No

      If Yes, use Matrix C to select BMPs, and go to question 5.

      If No, continue e.

   e. Treating both Metals and Nutrients. Is copper, lead, zinc, or general metals AND nitrogen or phosphorous a TDC? ☐ Yes ☐ No

      If yes, use Matrix D to select BMPs, and go to question 5.

      If No, continue.

[1] General metals is a designation used by Regional Water Boards when specific metals have not yet been identified as causing the impairment.

BMP Selection Matrix A: General Purpose Pollutant Removal			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Strip: HRT > 5 Austin filter (concrete) Austin filter (earthen) Delaware filter	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Swale	Austin filter (concrete) Delaware filter
HRT = hydraulic residence time (min) All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			

BMP Selection Matrix B: Any metal is the TDC, but not nitrogen or phosphorous			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Strip: HRT > 5 Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
HRT = hydraulic residence time (min) All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			

BMP Selection Matrix C: Phosphorous and / or nitrogen is the TDC, but no metals are the TDC

Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter*	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			
*Delaware filters would be ranked in Tier 2 if the TDC is nitrogen only, as opposed to phosphorous only or both nitrogen and phosphorous.			

BMP Selection Matrix D: Any metal, plus phosphorous and / or nitrogen are the TDCs			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter*	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			
*In cases where earthen BMPs also infiltrate, Delaware filters are ranked in Tier 2 if the TDC is nitrogen only, but they are Tier 1 for phosphorous only or both nitrogen and phosphorous.			

5. Does the project discharge to a 303(d) receiving water that is listed for mercury or low dissolved oxygen? ☐ Yes ☐ No

   If Yes, contact the District/Regional NPDES Coordinator to determine if standing water in a Delaware Media Filter or Wet Basin would be a risk to downstream water quality. Continue to question 6.

   If No, continue to question 6.

6. Identify the Treatment BMPs being considered and complete the Individual Treatment BMP Summary Table and Overall Project Treatment Summary Table on the following pages. Refer to Appendix B of the PPDG and review the checklists identified below for every Treatment BMP under consideration. ☒ Complete

   Document the basis of design in the SWDR narrative and complete Table E-2.

   __X__ DPP Infiltration Areas: Checklist T-1, Part 11

   ____ Infiltration Devices: Checklist T-1, Part 2

   ____Biofiltration Strips and Biofiltration Swales: Checklist T-1, Part 3

   ____ Detention Devices: Checklist T-1, Part 4

   ____ Traction Sand Traps: Checklist T-1, Part 5

   ____ Dry Weather Diversion: Checklist T-1, Part 6

   ____ GSRDs: Checklist T-1, Part 7

   ____ Media Filter [Austin Sand Filter and Delaware Filter]: Checklist T-1, Part 8

   Note:

   Multi-Chamber Treatment Train (MCTT) is not listed here because Caltrans has found that other approved BMPs are equally effective and more sustainable due to lower life cycle costs.

   Wet Basins are not listed here due to feasibility issues due to site feasibility and issues with long term operation and maintenance.

   MCTT and Wet Basins may be considered or implemented upon the recommendation of the District/Regional Design Stormwater Coordinator.

7. Prepare cost estimate, including right-of-way, and identify any pertinent site specific determination of feasibility for selected Treatment BMPs and include in the SWDR for approval. ☒ Complete

Individual Treatment BMP Summary Table

☒ Complete

List the selected BMPs based on the findings of this checklist and the treated areas associated with each BMP in Table E-2. For projects with multiple BMPs, add rows (if needed), or attach a separate sheet displaying the following information.

Each BMP must be tracked in Table E-2. Districts may use a modified table based upon their needs. See Section 6.6 for additional information.

Table E-2. Individual Treatment BMP Summary Table[1]

BMP Identifier-Number	BMP Type	Treated Impervious Area (CT RW) (ac)	Treated Impervious Area (Outside CT RW) (ac)	Treated Pervious Area (CT RW) (ac)	Treated Pervious Area (Outside CT RW) (ac)	Treated WQV/WQF (%)
DPPIA-1	Infiltration Area	0.42	0	0	0	93.9%
DPPIA-2	Infiltration Area	0.14	0	0.01	0	94.3%
Total Area to be Treated (acre)		0.56 (B in Table E-1)	0 (C in Table E-1)			

[1] The treated areas identified in this table are a product of the BMP CDA and Treated WQV/WQF (%).

Treatment BMPs

Checklist T-1, Part 11

Prepared by: Syed Raza Date: August 2024 District-Co-Route: 08-SBd-210,18

PM: R24.2/24.4, T6.1/6.3 Project ID (or EA): 08-23-N-MC-1118 RWQCB: Santa Ana, R8

DPP Infiltration Areas

Feasibility[1]

1.	Does local Basin Plan or other local ordinance provide influent limits on quality of water that can be infiltrated, and would infiltration pose a threat to groundwater quality?	☐Yes	☒No
2.	Does infiltration at the site compromise the integrity of any slopes in the area?	☐Yes	☒No
	If "Yes" to any question above, DPP Infiltration Areas are not feasible; stop here and consider other approved Treatment BMPs.		
3.	Are DPP Infiltration Areas proposed at sites where known contaminated soils or groundwater plumes exist? If "Yes", consult with District/Regional NPDES Coordinator about how to proceed.	☐Yes	☒No
4.	If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of these Treatment BMPs into the project.	☐Complete	

Design Elements

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1.	Has native soil gradation and infiltration rate been determined (see Design Guidance for more detail)? (Must be completed for PS&E level design.) *	☒Yes	☐No
2.	Has the infiltration rate of the DPP Infiltration Area been calculated and maximized through amendments where appropriate? **	☐Yes	☒No
3.	Is the DPP Infiltration Area capacity sufficient to capture the WQV, or portion thereof? **	☒Yes	☐No
	If "No", document the percentage and amount of the WQV captured.	☐ Complete	
4.	Is a surface reinforcing material required?	☐Yes	☒No
	If "Yes", select material based on the permissible shear and velocity (refer to HDM Chapter 860 and Table 865.2).*	☐ Complete	

[1] *This feasibility evaluation is applicable to areas that are being modified for infiltration as part of the project treatment strategy. For existing areas within the project limits that are being delineated as DPP Infiltration Areas, proceed to the Design Elements section.*

Caltrans Infiltration Tool

Stormwater BMP design using the 85th percentile, 24-hour storm

version 4.0.02

PROJECT SUMMARY

Project Information

Project Name:	210 Waterman Ave		
District-Co-Route:	08-SB-210	*PM:*	R24.2/R24.4
Project ID (EA):		*RWQCB:*	Santa Ana
Prepared by:	RL	*Date:*	June 13, 2024

Analysis Information

Design Rainfall Depth (PCP):	0.8 in	*(85th percentile, 24-hr)*
Rainfall Distribution:	CA-5	*(24-hr distribution)*
Dimensionless Unit Hydrograph:	PRF 484 (Default)	
Results Display Units:	U.S. Customary	

RESULTS

Summary

Areas	*w/o Amdt*	*Final*	
Impervious Area (Aimp):	0.6	0.6	ac
Pervious Area (Aperv):	0.01	0.01	ac
Total Area (At):	0.61	0.61	ac
Volumes	*w/o Amdt*	*Final*	
Rainfall Volume (Vrain):	2082	2082	ft^3
Abstraction Volume (Vabs):	240	240	ft^3
Incidental Volume (Vinc):	1842	1842	ft^3
Infiltration Volume (Vinf):	1766	1769	ft^3
Flow-Through Treated Volume (Vftt):	0	0	ft^3
Bypass Volume (Vbp):	76	73	ft^3
Runoff Volume (Vroff):	0	0	ft^3
PPDG Inputs	*w/o Amdt*	*Final*	
Total Treated Volume (Vtt):	1456	1458	ft^3
Total Treated Area (Att):	NC	NC	ac

Comments

Caltrans Infiltration Tool

Stormwater BMP design using the 85th percentile, 24-hour storm

version 4.0.02

DRAINAGE AREA ANALYSIS

Drainage Area Information

Project Name:	210 Waterman Ave		
District-Co-Route:	08-SB-210	*PM:*	R24.2/R24.4
Project ID (EA):		*RWQCB:*	Santa Ana
DA Name (ID):	DPPIA-1		
Prepared by:	RL	*Date:*	June 13, 2024

Analysis Information

Design Rainfall Depth (PCP):	0.8	in	*(85th percentile, 24-hr)*
Rainfall Distribution:	CA-5		
Dimensionless Unit Hydrograph:	PRF 484 (Default)		
Results Display Units:	U.S. Customary		

RESULTS

Summary

Areas	*w/o Amdt*	*Final*	
Impervious Area (Aimp):	0.45	0.45	ac
Pervious Area (Aperv):	0.00	0.00	ac
Total Area (At):	0.45	0.45	ac
Volumes	*w/o Amdt*	*Final*	
Rainfall Volume (Vrain):	1474	1474	ft^3
Abstraction Volume (Vabs):	141	141	ft^3
Incidental Volume (Vinc):	1333	1333	ft^3
Infiltration Volume (Vinf):	1260	1260	ft^3
Flow-Through Treated Volume (Vftt):	0	0	ft^3
Bypass Volume (Vbp):	73	73	ft^3
Runoff Volume (Vroff):	0	0	ft^3
Treated Areas	*w/o Amdt*	*Final*	
Total Treated Volume (Vtt):	1092	1092	ft^3
Total Treated Area (Att):	NC	NC	ac

Comments

SURFACE MODELS

Runoff Area [ID:1]

Surface Type:	Runoff Area	SID:	1
Name :	DPPIA-1		
Description:	Waterman Ave		
Drains to Surface:	DPP Infiltration Area [ID:2]	DTID:	2

	w/o Amdt	*Final*	[units]
Runoff Area Design Inputs			
Impervious Area (Aimp):	19602	19602	ft²
Pervious Area (Aperv):	0	0	ft²
Time of Concentration (Tc):	5	5	*min*
Volumetric Runoff Coef (Rv):			*(optional)*

Results

Areas	*w/o Amdt*	*Final*	
Impervious Area (Aimp):	0.45	0.45	ac
Pervious Area (Aperv):	0.00	0.00	ac
Total Area (At):	0.45	0.45	ac
Contributing Drainage Area (Acd):	0.00	0.00	ac
Volumes	*w/o Amdt*	*Final*	
Runon Volume (Vron):	0	0	ft³
Rainfall Volume (Vrain):	1,307	1,307	ft³
Abstraction Volume (Vabs):	141	141	ft³
Incidental Volume (Vinc):	1,165	1,165	ft³
Infiltration Volume (Vinf):	0	0	ft³
Flow-Through Treated Volume (Vftt):	0	0	ft³
Bypass Volume (Vbp):	1,165	1,165	ft³
Runoff Volume (Vroff):	1,165	1,165	ft³
PPDG Inputs	*w/o Amdt*	*Final*	
Total Treated Volume (Vtt):	0	0	ft³
Total Treated Area (Att):	NC	NC	ac

DPP Infiltration Area [ID:2]

BMP Type:	DPP Infiltration Area	SAID:	2
BMP Identifier Number:	DPPIA-1		
Description:	Waterman Ave		
Drains to Surface:	DPP Infiltration Area [ID:2]	DTID:	**SELF!**

	w/o Amdt	*Final*	[units]
DPPIA Design Inputs			
Area (Abmp):	2514.3	2514.3	ft²
Existing Soil Characteristics			
HSG Soil Type:	A		
Infiltration Rate (Ies):			in/hr

Bulk Density (ρes):			g/cm³
Specific Gravity of Particles (Ges):			-

Amendment Characteristics----------

Amendment Type:	None		
Infiltration Rate (Ia):			in/hr
Bulk Density (ρa):			g/cm³
Specific Gravity of Particles (Ga):			-

Amended & Compacted Soil Characteristics----------

Placement Depth (Da):			in
Incorporation Depth (Di):			in
Void Ratio (Eas):			-

Results----------

Areas	*w/o Amdt*	*Final*	
Impervious Area (Aimp):	0.00	0.00	ac
Pervious Area (Aperv):	0.00	0.00	ac
Total Area (At):	0.00	0.00	ac
Contributing Drainage Area (Acd):	0.45	0.45	ac
Volumes	*w/o Amdt*	*Final*	
Runon Volume (Vron):	1,165	1,165	ft³
Rainfall Volume (Vrain):	168	168	ft³
Abstraction Volume (Vabs):	0	0	ft³
Incidental Volume (Vinc):	168	168	ft³
Infiltration Volume (Vinf):	1,260	1,260	ft³
Flow-Through Treated Volume (Vftt):	0	0	ft³
Bypass Volume (Vbp):	73	73	ft³
Runoff Volume (Vroff):	73	73	ft³
PPDG Inputs	*w/o Amdt*	*Final*	
Total Treated Volume (Vtt):	1,092	1,092	ft³
Total Treated Area (Att):	NC	NC	ac

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Caltrans Infiltration Tool

Stormwater BMP design using the 85th percentile, 24-hour storm

version 4.0.02

DRAINAGE AREA ANALYSIS

Drainage Area Information

Project Name:	210 Waterman Ave		
District-Co-Route:	08-SB-210	*PM:*	R24.2/R24.4
Project ID (EA):		*RWQCB:*	Santa Ana
DA Name (ID):	DPPIA-2		
Prepared by:	RL	*Date:*	June 13, 2024

Analysis Information

Design Rainfall Depth (PCP):	0.8	in	*(85th percentile, 24-hr)*
Rainfall Distribution:	CA-5		
Dimensionless Unit Hydrograph:	PRF 484 (Default)		
Results Display Units:	U.S. Customary		

RESULTS

Summary

Areas	*w/o Amdt*	*Final*	
Impervious Area (Aimp):	0.15	0.15	ac
Pervious Area (Aperv):	0.01	0.01	ac
Total Area (At):	0.16	0.16	ac
Volumes	*w/o Amdt*	*Final*	
Rainfall Volume (Vrain):	608	608	ft^3
Abstraction Volume (Vabs):	99	99	ft^3
Incidental Volume (Vinc):	509	509	ft^3
Infiltration Volume (Vinf):	506	509	ft^3
Flow-Through Treated Volume (Vftt):	0	0	ft^3
Bypass Volume (Vbp):	3	0	ft^3
Runoff Volume (Vroff):	0	0	ft^3
Treated Areas	*w/o Amdt*	*Final*	
Total Treated Volume (Vtt):	363	366	ft^3
Total Treated Area (Att):	NC	NC	ac

Comments

SURFACE MODELS

Runoff Area [ID:1]

Surface Type:	Runoff Area	SID:	1
Name :	DPPIA-2		
Description:	Waterman Ave EB On-Ramp		
Drains to Surface:	DPP Infiltration Area [ID:2]	DTID:	2

	w/o Amdt	*Final*	[units]
Runoff Area Design Inputs			
Impervious Area (Aimp):	6534	6534	ft^2
Pervious Area (Aperv):	435.6	435.6	ft^2
Time of Concentration (Tc):	5	5	*min*
Volumetric Runoff Coef (Rv):			*(optional)*

Results

Areas	*w/o Amdt*	*Final*	
Impervious Area (Aimp):	0.15	0.15	ac
Pervious Area (Aperv):	0.01	0.01	ac
Total Area (At):	0.16	0.16	ac
Contributing Drainage Area (Acd):	0.00	0.00	ac
Volumes	*w/o Amdt*	*Final*	
Runon Volume (Vron):	0	0	ft^3
Rainfall Volume (Vrain):	465	465	ft^3
Abstraction Volume (Vabs):	99	99	ft^3
Incidental Volume (Vinc):	366	366	ft^3
Infiltration Volume (Vinf):	0	0	ft^3
Flow-Through Treated Volume (Vftt):	0	0	ft^3
Bypass Volume (Vbp):	366	366	ft^3
Runoff Volume (Vroff):	366	366	ft^3
PPDG Inputs	*w/o Amdt*	*Final*	
Total Treated Volume (Vtt):	0	0	ft^3
Total Treated Area (Att):	NC	NC	ac

DPP Infiltration Area [ID:2]

BMP Type:	DPP Infiltration Area	SAID:	2
BMP Identifier Number:	DPPIA-2		
Description:	Waterman Ave EB On-Ramp		
Drains to Surface:	DPP Infiltration Area [ID:2]	DTID:	**SELF!**

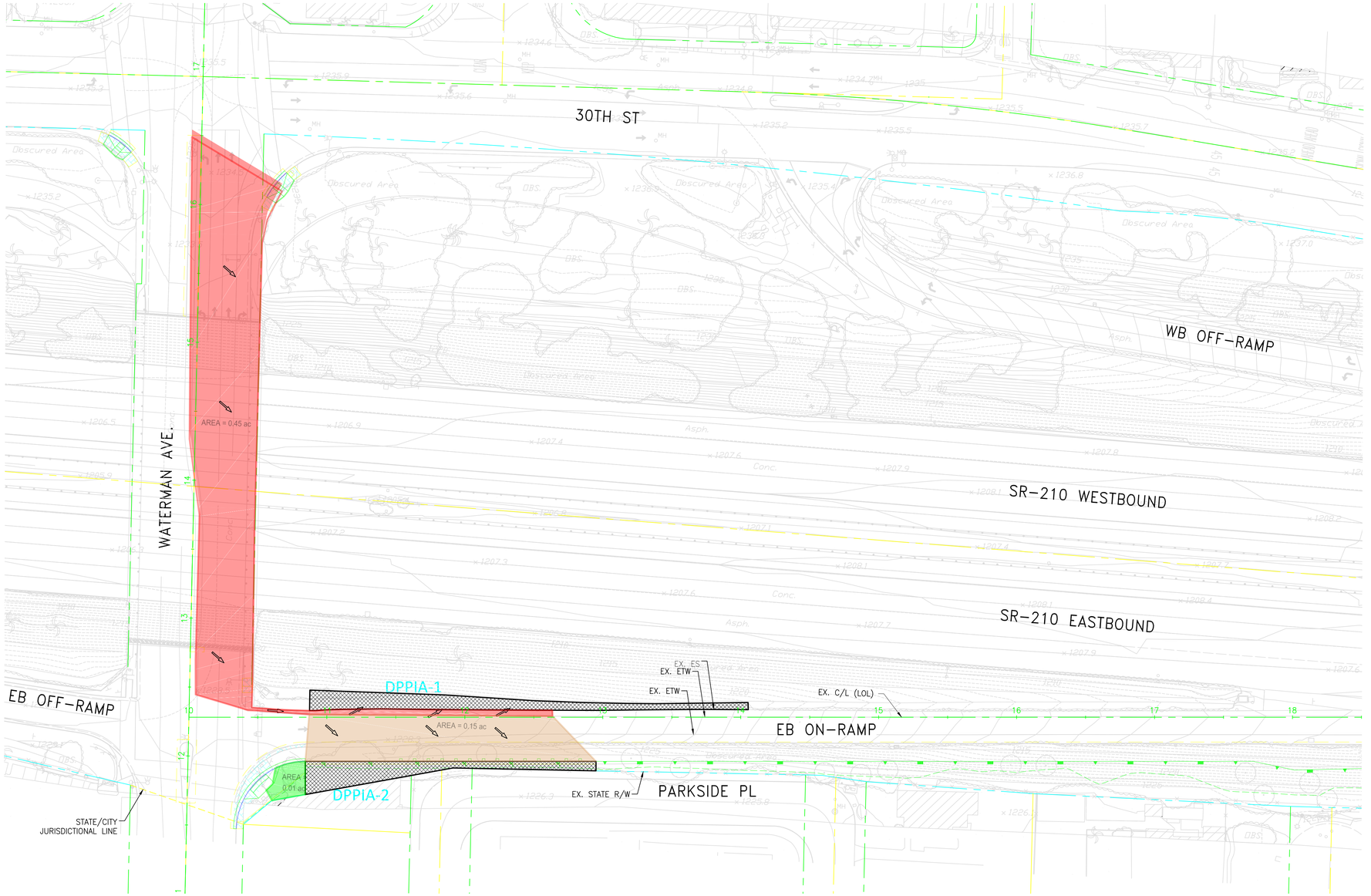
	w/o Amdt	*Final*	[units]
DPPIA Design Inputs			
Area (Abmp):	2147	2147	ft^2
Existing Soil Characteristics			
HSG Soil Type:	A		
Infiltration Rate (Ies):			in/hr

Bulk Density (ρes):			g/cm³
Specific Gravity of Particles (Ges):			-
Amendment Characteristics----------			
Amendment Type:	Gravel		
Infiltration Rate (Ia):			in/hr
Bulk Density (ρa):			g/cm³
Specific Gravity of Particles (Ga):			-
Amended & Compacted Soil Characteristics----------			
Placement Depth (Da):	0	6	in
Incorporation Depth (Di):	0	6	in
Void Ratio (Eas):			-

Results----------

Areas	*w/o Amdt*	*Final*	
Impervious Area (Aimp):	0.00	0.00	ac
Pervious Area (Aperv):	0.00	0.00	ac
Total Area (At):	0.00	0.00	ac
Contributing Drainage Area (Acd):	0.16	0.16	ac
Volumes	*w/o Amdt*	*Final*	
Runon Volume (Vron):	366	366	ft³
Rainfall Volume (Vrain):	143	143	ft³
Abstraction Volume (Vabs):	0	0	ft³
Incidental Volume (Vinc):	143	143	ft³
Infiltration Volume (Vinf):	506	509	ft³
Flow-Through Treated Volume (Vftt):	0	0	ft³
Bypass Volume (Vbp):	3	0	ft³
Runoff Volume (Vroff):	3	0	ft³
PPDG Inputs	*w/o Amdt*	*Final*	
Total Treated Volume (Vtt):	363	366	ft³
Total Treated Area (Att):	NC	NC	ac

==========



LEGEND

- DPPIA LIMITS
- IMPERVIOUS AREA TO DPPIA-1 = 0.45 ac
- IMPERVIOUS AREA TO DPPIA-2 = 0.15 ac
- PERVIOUS AREA TO DPPIA-2 = 0.01 ac

EB ON-RAMP
WATERMAN AVE./SR-210

1" = 40'

40 0 40 80 120

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3
CALTRANS PERMIT NO. 08-23-N-MC-1118			

SEAL

REGISTERED PROFESSIONAL ENGINEER — SYED S. RAZA — NO. C53579 — CIVIL — STATE OF CALIFORNIA

DIGALERT — DIAL TOLL FREE 1-800-277-2600 — AT LEAST TWO DAYS BEFORE YOU DIG — UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	△			NO.: P 522 ELEV.: 1236.12' LOCATION: SEE TITLE SHEET		WATER		
	△					ENVIROMENTAL		
	△					FIRE		
	△					PLANNING		
SIGNATURE DATE	△					TRAFFIC		
	△					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

BMP MAP

PROJECT NO.

SHEET OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\DR\DR-BMP MAP-WATERMAN AVENUE.DWG 12/26/2023 3:29:56 PM

LEGEND

- IMPERVIOUS AREA = 14,400 SF = 0.33 AC
- PERVIOUS AREA = 11,460 SF = 0.26 AC
- REPLACED IMPERVIOUS AREA = 4,778 SF = 0.11 ac
- DISTURBED SOIL AREA (DSA) = 30,652 SF = 0.70 ac

EX. CITY R/W

REPLACED IMPERVIOUS AREA 413 SF

EX. CITY R/W

30TH ST

N89°53'31"E 389.60'

EX. C/L

EX. STATE R/W

DISTURBED SOIL AREA 413 SF

REPLACED IMPERVIOUS AREA 465 SF

DISTURBED SOIL AREA 465 SF

REPLACED IMPERVIOUS AREA 1,339 SF

DISTURBED SOIL AREA 1,339 SF

45' 45'

WATERMAN AVE

N0°27'05"W 677.64'

WB ON-RAMP

30TH ST

SR-210 WESTBOUND

EX. SR-210 C/L

DISTURBED SOIL AREA 205 SF

REPLACED IMPERVIOUS AREA 205 SF

IMPERVIOUS PAVEMENT AREA 14,400 SF

SR-210 EASTBOUND

EX. ES
EX. ETW
EX. C/L

DISTURBED SOIL AREA 643 SF

REPLACED IMPERVIOUS AREA 643 SF

N88°16'24"E 1114.53'

EB ON-RAMP

Δ=3°40'33" R=3000.00' L=192.47'

PARKSIDE PL.

REPLACED IMPERVIOUS AREA 1,713 SF

PERVIOUS GRADING AREA 11,460 SF

DISTURBED SOIL AREA 27,587 SF

EX. STATE R/W

EX. CITY R/W

EX. CITY R/W

1" = 40'

40 0 40 80 120

SEAL

REGISTERED PROFESSIONAL ENGINEER
SYED S. RAZA
NO. C53579
CIVIL
STATE OF CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-6-DD-1084

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	△			NO.: P 522 ELEV.: 1236.12'		WATER		
	△			LOCATION: SEE ABOVE		ENVIROMENTAL		
	△					FIRE		
	△					PLANNING		
	△					TRAFFIC		
SIGNATURE DATE	△					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE

EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS
PERVIOUS, IMPERVIOUS, REPLACED IMPERVIOUS & DSA AREAS EXHIBIT

PROJECT NO.

SHEET 1 OF 1

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210\WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0440 EXHIBITS\EC-EM-PERVIOUS AND IMPERVIOUS AREAS-WATERMAN AVENUE.DWG 9/12/2023 12:02:10 PM

IRRIGATION QUANTITY (LATERAL SUPPLY SIDE OF CONTROL VALVE)

CONTOLLER LETTER	VALVE NUMBER	PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) ¾" LF	1" LF	1½" LF	DRIP IRRIGATION TUBING – LF	CHECK VALVE EA	SPRINKLER ASSEMBLY TREE WELL EA	RISER (GEAR DRIVEN) EA	POP–UP (GEAR DRIVEN) EA	RISER EA	POP–UP EA
A	1	200	10	–			9	–			
	2	160	75	20			–	14			
	3	190	75	10			–	14			
	4	140	70	85			–	9			
	5	140	70	95			–	9			
	6	450	20	–			28	–			
	7	140	70	45			–	8			
	8	100	25	100			–	8			
	9	140	70	85			–	8			
	10	240	40	–			24	–			
SUBTOTAL	A	1,900	525	440			61	70			

IRRIGATION QUANTITY (MAIN SUPPLY SIDE OF CONTROL VALVE)

SHEET No.	IRRIGATION CONTROLLER 24–40 STATION (WALL MOUNTED)	BACKFLOW PREVENTER ASSEMBLY	FLOW SENSOR	WYE STRAINER ASSEMBLY	ARMOR CLAD WIRES	PRESSURE REGULATING VALVE	REMOTE CONTROL VALVE	ELECTRIC REMOTE CONTROL VALVE (MASTER)	BALL VALVE	GATE VALVE	(SUPPLY LINE) PLASTIC PIPE (SCH.40)	PLASTIC PIPE (CLASS 200)
		–	3"	–	–	–	1"	1.5"	4"	2"	6"	2"	6"
	EA	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	LF	LF
IP–1	1 (EXIST.)	EXIST.	1	–	19,590	–	2	4	1	3	1	400	410
IP–2	–	–	–	–	5,700	–	1	3	–	1	–	–	300
TOTAL	–	–	1	–	25,290	–	3	7	1	4	1	400	710

NOTE:
ALL WORK IN CONNECTION TO HIGHWAY PLANTING SHALL COMPLY WITH THE PROVISIONS IN SECTION 20–LANDSCAPE AND SECTION 21–EROSION CONTROL OF THE 2023 CALTRANS STANDARD SPECIFICATIONS, PLANS AND DETAILS.

RECOMMENDED IRRIGATION SCHEDULING

Project Name:	I-210 and Waterman Ave.
Client Name:	S.B.C.T.A.
Tract / APN No.:	
Date:	May 26, 2023
POC No.:	A
Soil Type:	SANDY LOAM
Infiltration Rate:	0.75
Available Water:	0.15
Depletion Factor:	30%

Reference Evapotranspiration Rate			
Winter (Dec.-Feb.)	Spring (Mar.-May)	Summer (Jun.-Aug.)	Fall (Sep.-Nov.)
7.19 in.	16.10 in.	22.74 in.	12.89 in.

CIMIS Station No.: 251
Location: Highland - San Bernardino

Station No.	Plant Type	WUCOLS Crop Coeff.	Root Depth (inch)	Root Zone Avail. Water (inch)	Irrigation Head type	PR (in/hr)	DU (%)	Winter (Dec.-Feb.) Run Time (min)	Winter # of Cycle	Winter Days per Week	Spring (Mar.-May) Run Time (min)	Spring # of Cycle	Spring Days per Week	Summer (Jun.-Aug.) Run Time (min)	Summer # of Cycle	Summer Days per Week	Fall (Sep.-Nov.) Run Time (min)	Fall # of Cycle	Fall Days per Week	Maximum Run Time (min.)
1	SHRUBS	0.2	18 in.	0.81	BUBBLER	0.6	81%	2	1	1	4	1	2	6	1	2	3	1	1	75
2	SHRUBS	0.2	18 in.	0.81	ROTOR	0.4	81%	3	1	1	6	1	2	9	1	2	5	1	1	113
3	SHRUBS	0.2	18 in.	0.81	ROTOR	0.4	81%	3	1	1	6	1	2	9	1	2	5	1	1	113
4	SHRUBS	0.2	18 in.	0.81	ROTOR	0.4	81%	3	1	1	6	1	2	9	1	2	5	1	1	113
5	SHRUBS	0.2	18 in.	0.81	ROTOR	0.4	81%	3	1	1	6	1	2	9	1	2	5	1	1	113
6	TREES	0.2	36 in.	1.62	BUBBLER	1.2	81%	1	1	1	2	1	1	3	1	1	2	1	1	38
7	SHRUBS	0.2	18 in.	0.81	ROTOR	0.4	81%	3	1	1	6	1	2	9	1	2	5	1	1	113
8	SHRUBS	0.2	18 in.	0.81	ROTOR	0.4	81%	3	1	1	6	1	2	9	1	2	5	1	1	113
9	SHRUBS	0.2	18 in.	0.81	ROTOR	0.4	81%	3	1	1	6	1	2	9	1	2	5	1	1	113
10	TREES	0.2	36 in.	1.62	ROTOR	1.2	81%	1	1	1	2	1	1	3	1	1	2	1	1	38

THIS RECOMMENDED IRRIGATION SCHEDULE IS MEANT TO BE USED AS A GUIDELINE ONLY, AND DOES NOT TAKE THE PLACE OF PROPER, ONGOING SYSTEM MANAGEMENT. DIFFERING SITE AND CLIMATIC CONDITIONS MAY REQUIRE ADJUSTMENTS NOT REFLECTED IN THIS SCHEDULE.

NOTE: INCREASE IRRIGATION RUN TIME BY 40% DURING PRE–ESTABLISHMENT PERIOD. ADJUST RUN TIME AS NECESSARY.

Pressure Loss Calculation

Client Name:	S.B.C.T.A.
Project Name:	I-210 AND WATERMAN AVE.
Water Meter / POC No.:	POC #1 - EXISTING
Domestic / Recycled:	Domestic
POC Elevation:	1,225 ft.
Static Pressure:	82.7 psi
Water Source & Phone #:	SBMWD (909) 384-5141
Date:	May 26, 2023
Valve Station No.:	A-9
Valve Flow Rate:	30.5 gpm
Highest Elevation Served:	1,225 ft.

Equipment	Size	Flow	Length / Qty.	PSI Loss
Water Meter	4 in.	250.0 gpm	N/A	4.7 psi
Backflow Preventer	4 in.	250.0 gpm	N/A	12.0 psi
Mainline (PVC)	6 in.	250.0 gpm	1,900 ft.	3.7 psi
Master Valve	4 in.	250.0 gpm	N/A	0.0 psi
Flow Meter	4 in.	250.0 gpm	N/A	N/A
Gate Valve	6 in.	250.0 gpm	3	0.3 psi
Remote Control Valve	1 1/2 in.	30.5 gpm	N/A	3.6 psi
Lateral Line	VARIES	VARIES	VARIES	4.0 psi
Fittings (Estimate 10%)	N/A	N/A	N/A	2.8 psi
			Elevation Change	0.0 psi
			Pressure Req. to Operate Heads	45.0 psi
			Total Pressure Required	76.1 psi
			Booster Pump	0.0 psi
			Available Residual Pressure	6.6 psi

California Water Efficient Landscape Worksheet - POC#1

Reference Evapotranspiration (ET_o): 58.92 — Project Type: Non-Residential — 0.45

Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
Low water shrubs	0.2	Bubbler	0.81	0.25	113.00	27.90	1,019.24
Low water shrubs	0.2	Overhead	0.75	0.27	21,689.00	5,783.73	211,282.09
Low water trees	0.2	Bubbler	0.81	0.25	2,041.00	503.95	18,409.52
				Totals	23,843.00	6,315.59	230,710.85
Special Landscape Areas							
	[redacted]			1		0.00	0.00
				1		0.00	0.00
				1		0.00	0.00
				1		0.00	0.00
				Totals	0.00	0.00	0.00
						ETWU Total	230,710.85
						Maximum Allowed Water Allowance (MAWA)[e]	391,947.45

SEAL

LICENSED LANDSCAPE ARCHITECT — KIM S. RHODES — 3867 — Signature: Kim S. Rhodes — Expiration: 09–30–2024 — Date: 5/8/2024 — STATE OF CALIFORNIA

DIGALERT — DIAL TOLL FREE 1–800–277–2600 — AT LEAST TWO DAYS BEFORE YOU DIG — UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3
CALTRANS PERMIT NO. 08-23-N-MC-1118			

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE	RECOMMENDED BY:
KIM S. RHODES PLA 3867	△			NO.: P 522 ELEV.: 1236.12'		WATER			
	△					ENVIROMENTAL			
	△			LOCATION: SEE TITLE SHEET		FIRE			CITY ENGINEER
	△					PLANNING			
	△					TRAFFIC			DATE
Kim S. Rhodes 5/8/2024	△					SERVICES			
SIGNATURE DATE									

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE
INTERCHANGE IMPROVEMENT PLANS

IRRIGATION CALCULATIONS

PROJECT NO.

SHEET 64 OF 66

DRAWING NO.

REVISED/PLOTTED: P:\E\EXP00000008\04ODCAD\SHEETS\LA\ALI–EXP00000008–IRRIGATION.DWG 5/8/2024 5:16:32 PM

ADL SAMPLE LOCATION MAP

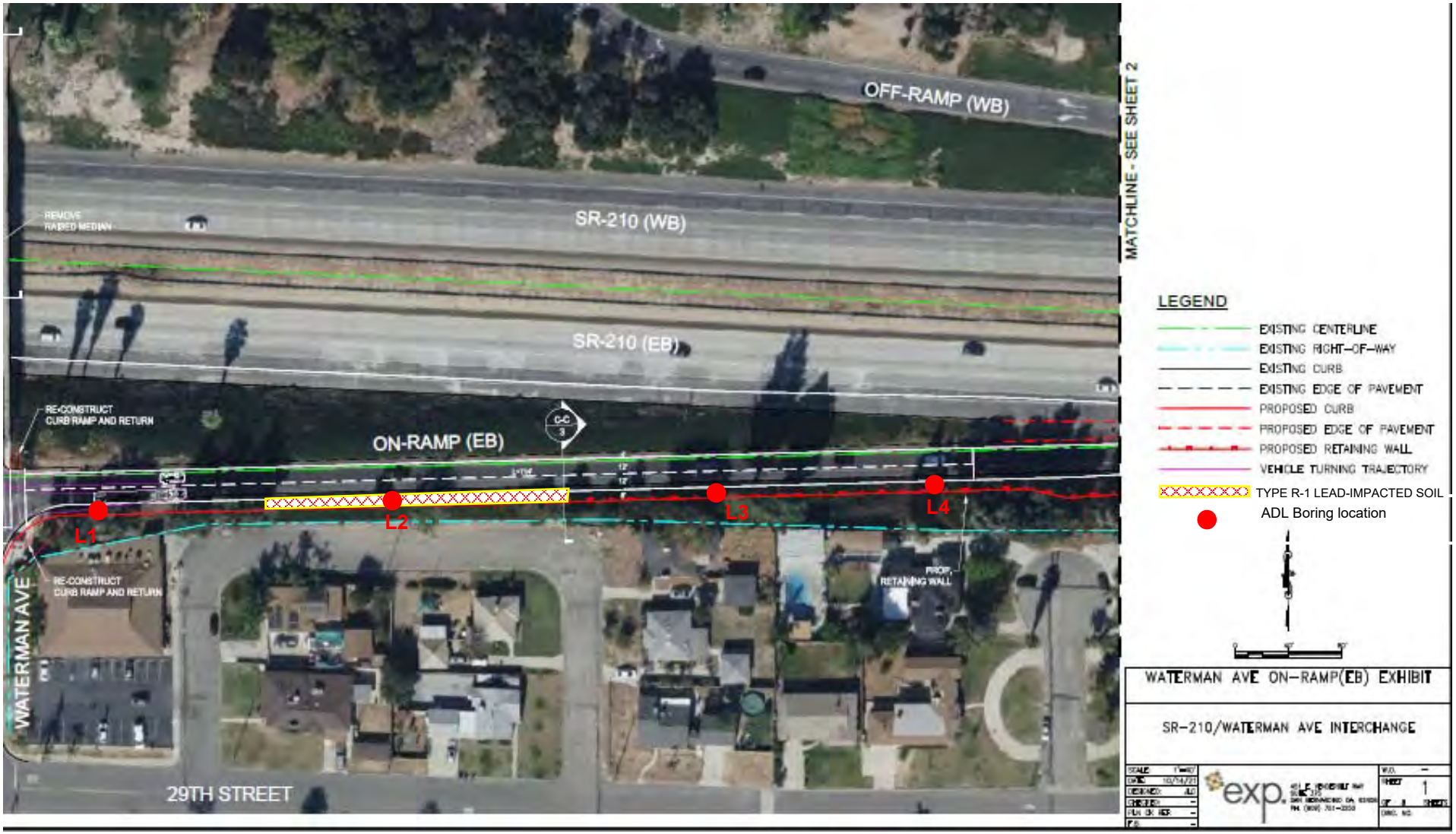
EXP
SR-210 and Waterman Avenue Interchange Project
San Bernardino, California

Converse Consultants

Project No:

22-16-131-01

FIGURE **2**



LEAD IMPACTED SOIL LOCATIONS

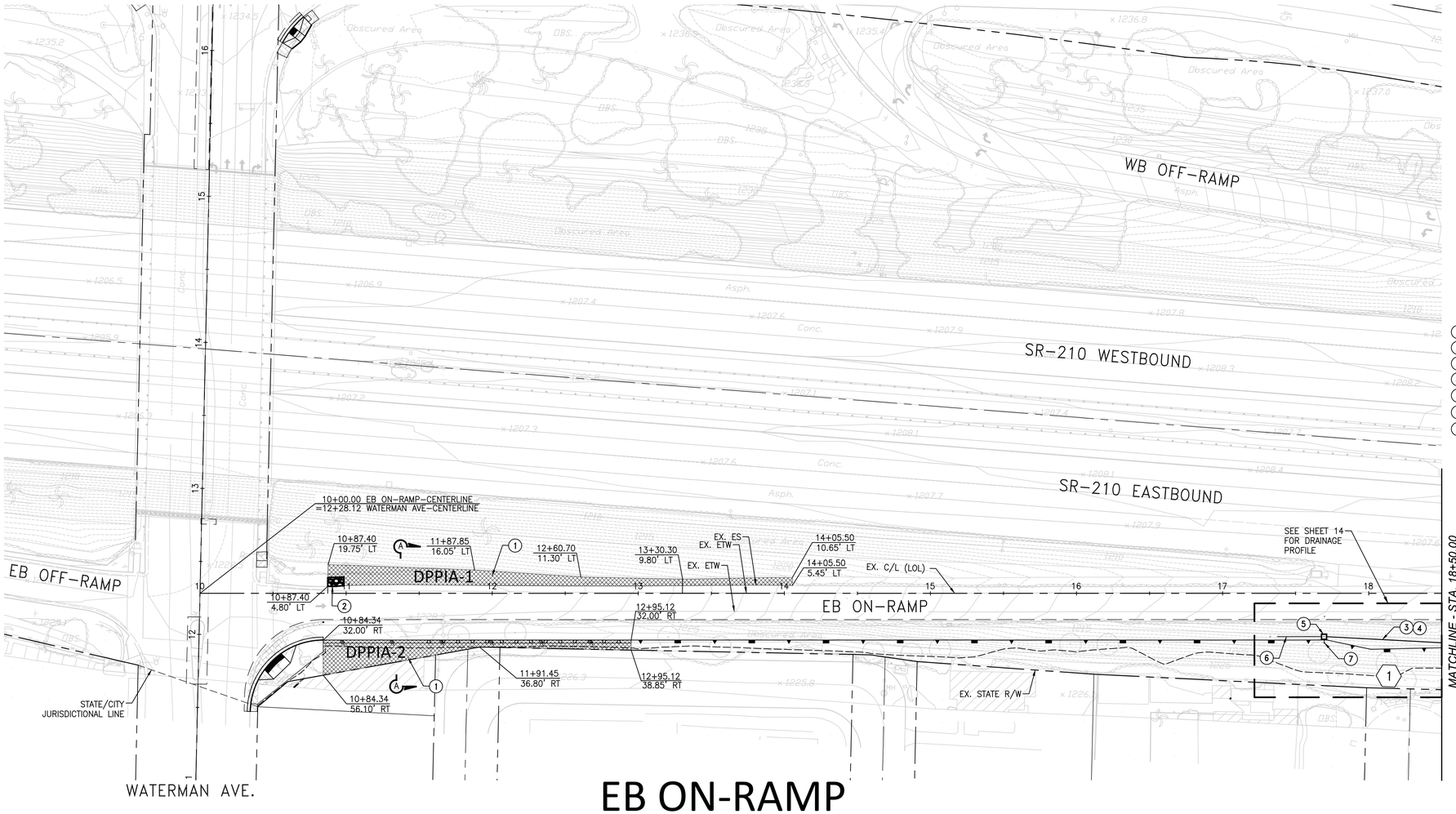
EXP
SR-210 and Waterman Avenue Interchange Project
San Bernardino, California

Project No:

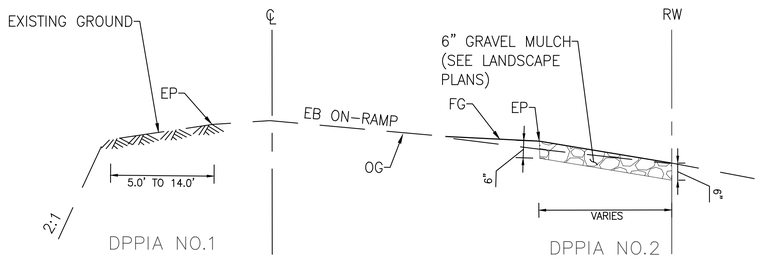
22-16-131-01

Converse Consultants

FIGURE **3**



EB ON-RAMP
WATERMAN AVE./SR-210



SECTION A-A
NTS

GENERAL NOTES

FOR ACCURATE RIGHT-OF-WAY DATA, CONTACT RIGHT-OF-WAY ENGINEERING AT THE CALTRANS DISTRICT OFFICE.

CONSTRUCTION NOTES

1. CONSTRUCT DPPIA PER DETAIL ON THIS SHEET
2. CONSTRUCT ROCK SLOPE PROTECTION (RSP) PER DETAIL ON SHEET 15
3. CONSTRUCT 18" RCP
4. STRUCTURE EXCAVATION AND BACKFILL PER CALTRANS STD. PLANS A62D
5. CONSTRUCT G1 INLET PER CALTRANS STD. PLAN D72B & D72G WITH GRATE TYPE 24-12 PER CALTRANS STD. PLAN D77A
6. GLD PER CALTRANS STD. PLAN D98H
7. 6" PLASTIC PIPE RISER WITH GRATE PER CALTRANS STD. PLAN B3-6

LEGEND

- DPPIA LIMITS
- RSP
- (1) CONSTRUCTION NOTE
- 1 DRAINAGE SYSTEM NUMBER

ABBREVIATIONS

DPPIA - DESIGN POLLUTION PREVENTION INFILTRATION AREA
DI - DRAINAGE INLET
EX - EXISTING
RCP - REINFORCED CONCRETE PIPE
RSP - ROCK SLOPE PROTECTION
R/W - RIGHT OF WAY

SEAL

REGISTERED PROFESSIONAL ENGINEER
SYED S. RAZA
NO. C53579
CIVIL
STATE OF CALIFORNIA

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AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

1" = 40'
40 0 40 80 120

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3
CALTRANS PERMIT NO. 08-23-N-MC-1118			

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE	RECOMMENDED BY:
SYED S. RAZA C53579	△			NO.: P 522 ELEV.: 1236.12' LOCATION: SEE TITLE SHEET		WATER			
	△					ENVIROMENTAL			
	△					FIRE			
	△					PLANNING			
SIGNATURE 08/12/2024	△					TRAFFIC			
DATE	△					SERVICES			

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

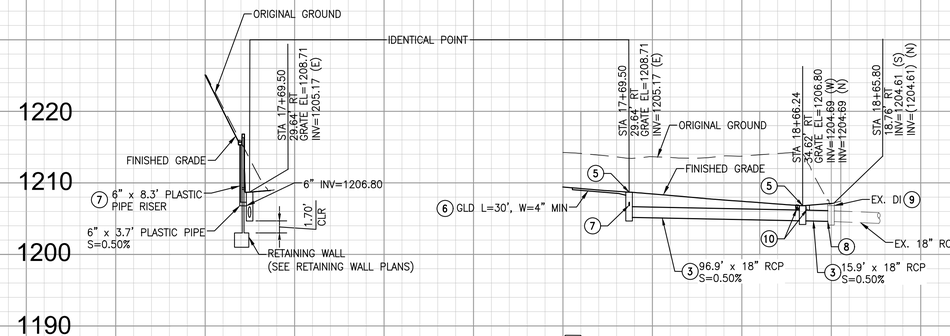
STORM DRAIN PLAN AND PROFILE

PROJECT NO.

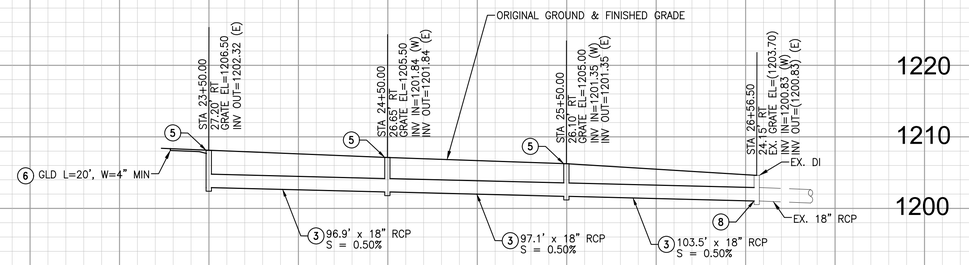
SHEET 13 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCAL\DATA\SR-210\WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\DR\DR-PP-01 - WATERMAN AVENUE.DWG 9/5/2024 9:19:22 PM

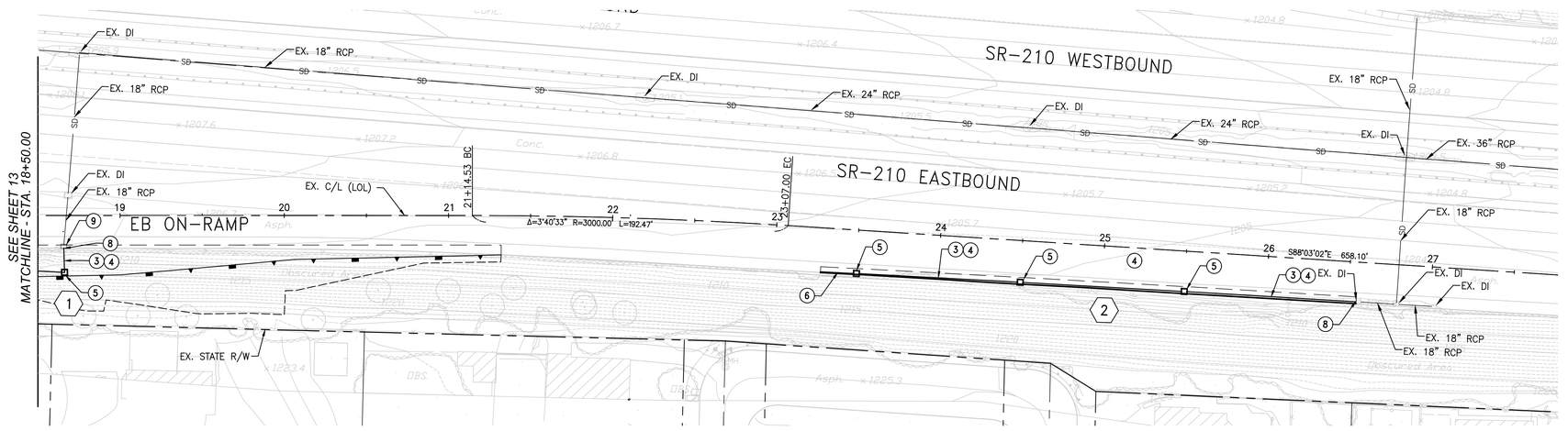


DRAINAGE SYSTEM 1



DRAINAGE SYSTEM 2

PROFILE SCALES
HORZ. 1" = 40'
VERT. 1" = 10'



1" = 40'
40 0 40 80 120

CONSTRUCTION NOTES

3. CONSTRUCT 18" RCP
4. STRUCTURE EXCAVATION AND BACKFILL PER CALTRANS STD. PLAN A62D
5. CONSTRUCT G1 INLET PER CALTRANS STD. PLAN D72B & D72G WITH GRATE TYPE 24-12 PER CALTRANS STD. PLAN D77A
6. GLD PER CALTRANS STD. PLAN D98H
7. 6" PLASTIC PIPE RISER
8. CONNECT TO EXISTING DI PER DETAIL ON SHEET 15
9. CAP DI PER DETAIL ON SHEET 15
10. CONCRETE BACKFILL (L=2') PER DETAIL SHEET 15

DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DPP INFILTRATION AREA	ROCK SLOPE PROTECTION (20 LB, CLASS I, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	STRUCTURAL CONCRETE, DRAINAGE INLET	6" PLASTIC PIPE	18" REINFORCED CONCRETE PIPE	GRATED LINE DRAIN	CAP INLET	MISCELLANEOUS IRON & STEEL	MINOR CONCRETE (BACKFILL)	24-12" FRAMES, GRATES & COVERS (N)	JOINT TYPE (N)	DESCRIPTION
		CY	CY	SQYD	CY	LF	LF	LF	EA	LB	CY	EA	-	
13		39.00												DPPIA
13	1		72.00	18.00										RSP
13	1				1.11					326		1		G1 DI
13	1						93.9						S	18" RCP
13	1							30.0						GLD
13	1					12.0								6" PLASTIC PIPE
14	2				4.35					1304		4		G1 DI
14	2						310.9				0.95		S	18" RCP
14	2							20.0						GLD
14	2								1					CAP DI
		39.00	72.00	18.00	5.46	12.0	404.8	50.0	1	1,630	0.95	5		TOTAL

SEAL

REGISTERED PROFESSIONAL ENGINEER
SYED S. RAZA
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UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3

CALTRANS PERMIT NO. 08-23-N-MC-1118

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE
SYED S. RAZA C53579	△			NO.: P 522 ELEV.: 1236.12'		WATER		
	△			LOCATION: SEE TITLE SHEET		ENVIROMENTAL		
	△					FIRE		
	△					PLANNING		
	△					TRAFFIC		
SIGNATURE 08/12/2024 DATE	△					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE

EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

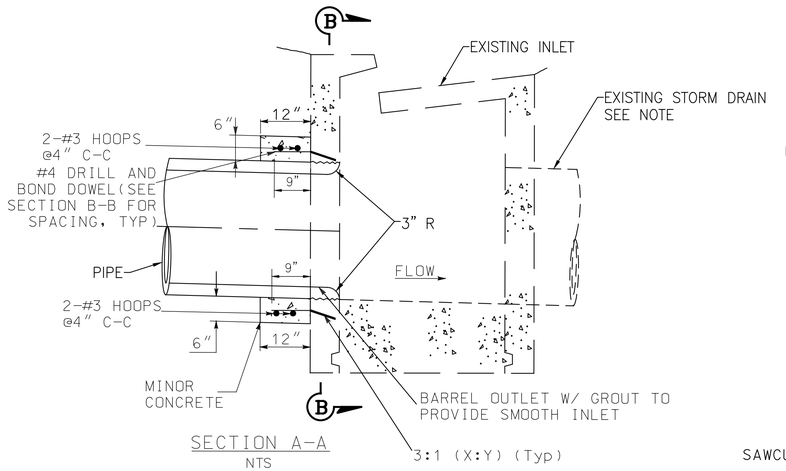
STORM DRAIN PLAN AND PROFILE

PROJECT NO.

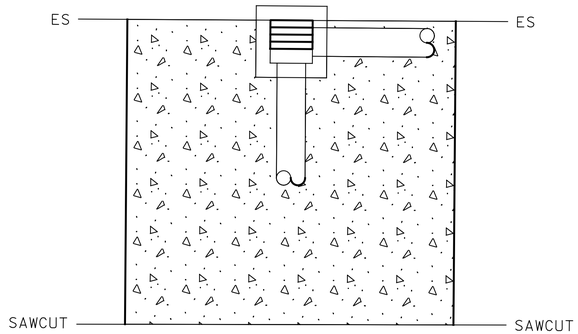
SHEET 14 OF 66

DRAWING NO.

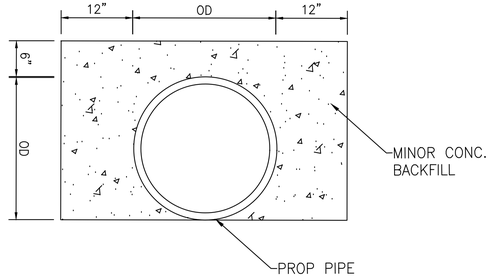
REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\DR\DR-PP-01-WATERMAN AVENUE.DWG 6/21/2024 7:43:14 AM



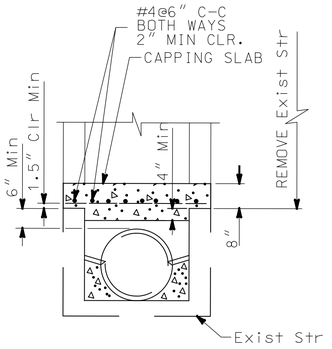
SECTION A-A
NTS



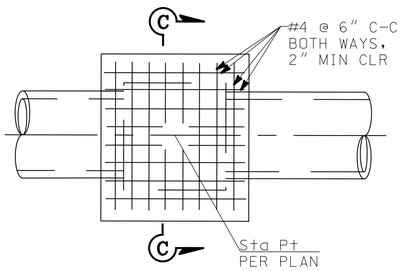
LOW CLEARANCE SLAB



CONCRETE BACKFILL
NTS

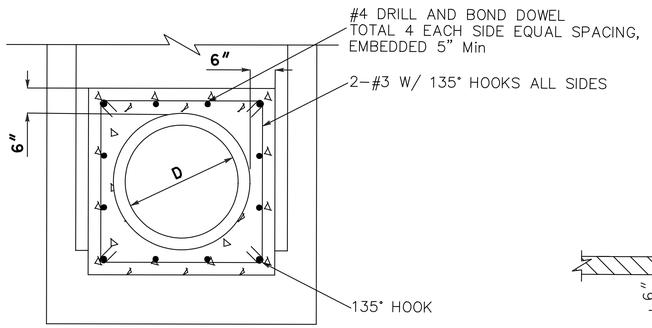


SECTION C-C
NTS

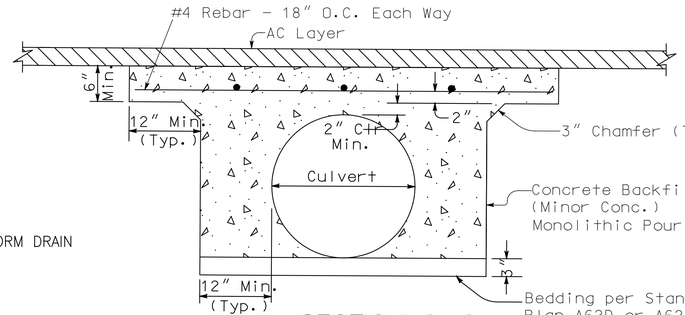


PLAN
NTS

CAP INLET



SECTION B-B
NTS



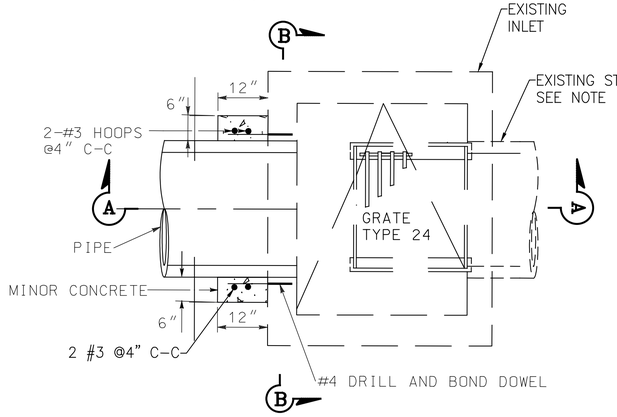
SECTION C-C
See Note 1

LEGEND:

- Minor Concrete
- Aspahlt Concrete

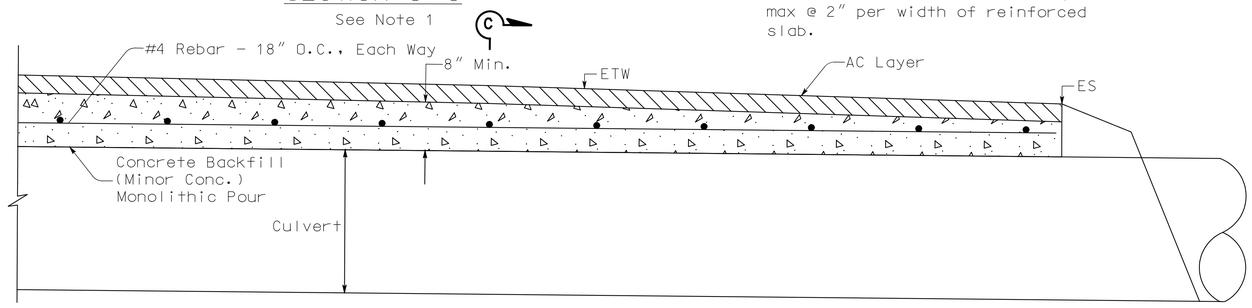
Notes:

1. Maximum RCP diameter 48"
2. Rebar to be epoxy-coated.
3. Longitudinal Joint saw cut depth max @ 2" per width of reinforced slab.

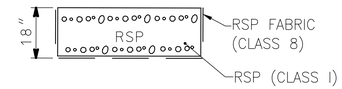


PLAN
NTS

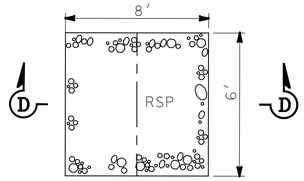
JOIN EXISTING INLET



CULVERT
Profile



SECTION D-D
NTS



PLAN
NTS

ROCK SLOPE
PROTECTION
(RSP)

NOTE: EXISTING INLET AND PIPES SHOWN ARE FOR ILLUSTRATION PURPOSE ONLY. ACTUAL SITE CONDITION MAY VARY.

SEAL

REGISTERED PROFESSIONAL ENGINEER
SYED S. RAZA
NO. C53579
CIVIL
STATE OF CALIFORNIA

DIGALERT
DIAL TOLL FREE
1-800-277-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DISTRICT	COUNTY	ROUTE	POST MILE TOTAL PROJECT
08	SBd	210, 18	R24.2/R24.4, T6.1/6.3
CALTRANS PERMIT NO. 08-23-N-MC-1118			

PREPARED BY	REVISIONS	MADE BY DATE	APPROVED BY DATE	BENCHMARK DATA	REFERENCE DRAWINGS	REVIEWED BY STAFF	BY	DATE	RECOMMENDED BY:
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	△			LOCATION:		ENVIROMENTAL			
	△			SEE TITLE SHEET		FIRE			
	△					PLANNING			
08/12/2024	△					TRAFFIC			
SIGNATURE DATE	△					SERVICES			DIRECTOR OF PROJECT DELIVERY SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

STORM DRAIN DETAIL SHEET 1

PROJECT NO.

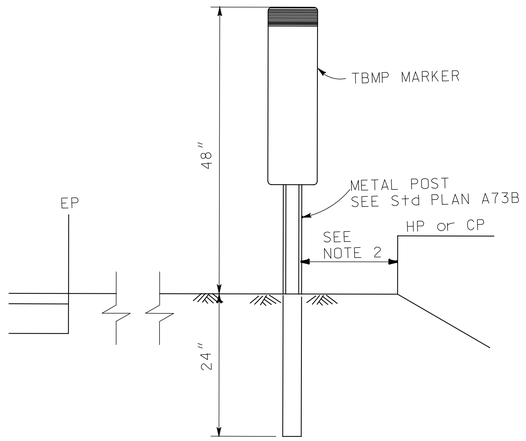
SHEET 15 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCAL\DATA\SR-210\WATERMAN AVENUE INTERCHANGE PROJECT\24400 CAD\24420 SHEETS\DR\DR-PP-01-WATERMAN AVENUE.DWG 5/9/2024 9:54:34 PM

NOTES:

1. PLACE TBMP MARKERS ALONG PERPENDICULAR LINE FROM START AND END LOCATIONS.
2. PLACE TBMP MARKERS 1' FROM EDGE OF HP OR AS DIRECTED BY THE ENGINEER.
3. FOR DETAILS ON TBMP MARKERS NOT SHOWN REFER TO PLAN A73B.
4. BEFORE INSTALLATION OF TBMP MARKERS, COORDINATE THE PLACEMENT LOCATION WITH CALTRANS DISTRICT 8 MAINTENANCE STORMWATER COORDINATOR.



TREATMENT BEST MANAGEMENT PRACTICE MARKER

DRAINAGE SYSTEM	DRAINAGE UNIT	ALIGNMENT	LOCATION	TREATMENT BEST MANAGEMENT PRACTICE MARKER	SIDE		STENCIL INFORMATION								TBMP NAME	DESCRIPTION	SHEET
			STATION	EA	Rt	Lt	COUNTY	DIRECTION	ROUTE	BEGIN PM	BEGIN LONG,LAT	END PM	END LONG,LAT				
–	–	LOL	10+87.45	1		X	SBD	E	210	24.228	–117.27842°,34.14472°				DPPIA 1	Design Pollution Prevention Infiltration Area	13
–	–	LOL	14+05.50	1		X	SBD	E	210			24.288	–117.27734°,34.14459°		DPPIA 1	Design Pollution Prevention Infiltration Area	13
–	–	LOL	10+84.34	1	X		SBD	E	210	24.228	–117.27842°,34.14472°				DPPIA 2	Design Pollution Prevention Infiltration Area	13
–	–	LOL	12+95.12	1	X		SBD	E	210			24.268	–117.27771°,34.14463°		DPPIA 2	Design Pollution Prevention Infiltration Area	13
TOTAL				4													

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	△					PLANNING			
08/12/2024	△					TRAFFIC			DIRECTOR OF PROJECT DELIVERY SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY
SIGNATURE DATE	△					SERVICES			DATE

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

STORM DRAIN DETAIL SHEET 2

PROJECT NO.

SHEET 16 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCAL\DATA\SR-210\WATERMAN AVENUE INTERCHANGE PROJECT\Q4400 CAD\Q4420 SHEETS\DR\DR-PP-01-WATERMAN AVENUE.DWG 5/9/2024 9:54:34 PM

GENERAL NOTES

1. FOR ACCURATE RIGHT-OF-WAY DATA, CONTACT RIGHT-OF-WAY ENGINEERING AT THE CALTRANS DISTRICT OFFICE.
2 TEMPORARY WATER POLLUTION CONTROL PLANS ARE INTENDED TO BE USED AS A GUIDELINE ONLY. CONTRACTOR SHALL PREPARE SWPPP (DEVELOPED BY A QUALIFIED SWPPP DEVELOPER) TO COMPLY WITH THE WATER POLLUTION CONTROL REQUIREMENTS.

CONSTRUCTION NOTES

1. INSTALL TEMPORARY SILT FENCE PER CALTRANS STD. PLAN T51
2. INSTALL TEMPORARY FIBER ROLL PER CALTRANS STD. PLAN T56
3. INSTALL TEMPORARY INLET PROTECTION TYPE 3A PER CALTRANS STD. PLAN T62
4. INSTALL CONSTRUCTION ENTRANCE PER CALTRANS STD. PLAN T58
5. INSTALL TEMPORARY EROSION CONTROL BLANKET PER CALTRANS STD. PLAN T55

LEGEND

- TEMPORARY SILT FENCE
- TEMPORARY FIBER ROLL
- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY INLET PROTECTION
- TEMPORARY EROSION CONTROL BLANKET

EB ON-RAMP
WATERMAN AVE./SR-210

1" = 40'

40 0 40 80 120

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CALTRANS PERMIT NO. 08-23-N-MC-1118			

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08/12/2024	△					TRAFFIC		
SIGNATURE DATE	△					SERVICES		

RECOMMENDED BY:

DIRECTOR OF PROJECT DELIVERY
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DATE

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STATE ROUTE 210 AT WATERMAN AVENUE INTERCHANGE
EASTBOUND RAMP WIDENING AND STREET RESTRIPING IMPROVEMENT PLANS

TEMPORARY WATER POLLUTION CONTROL PLAN

PROJECT NO.

SHEET 17 OF 66

DRAWING NO.

REVISED/PLOTTED: E:\SBD_LOCALDATA\SR-210WATERMAN AVENUE INTERCHANGE PROJECT\0400 CAD\0420 SHEETS\DR\DR-WPC-01-WATERMAN AVENUE.DWG 1/5/2024 1:28:24 PM