08-SBd-215-11.35/11.95
EA 0E420 – 0800000083
800.100/HE11
July 2019

Draft Project Report
To Authorize Public Release of the Draft Environmental Document

On Route 215

Between 1.6 miles north of State Route 210

And 2.5 miles south of Palm Avenue

I have reviewed the right-of-way information contained in this report and the Right-of-Way Data Sheet attached hereto, and find the data to be complete, current and accurate:

P.M.
REBECCA GUIRADO
Deputy District Director, Right of Way

APPROVAL RECOMMENDED:

FOR EMAD MAKAR
Project Manager

CONCURRED BY:

AT
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Deputy District Director, Environmental Planning

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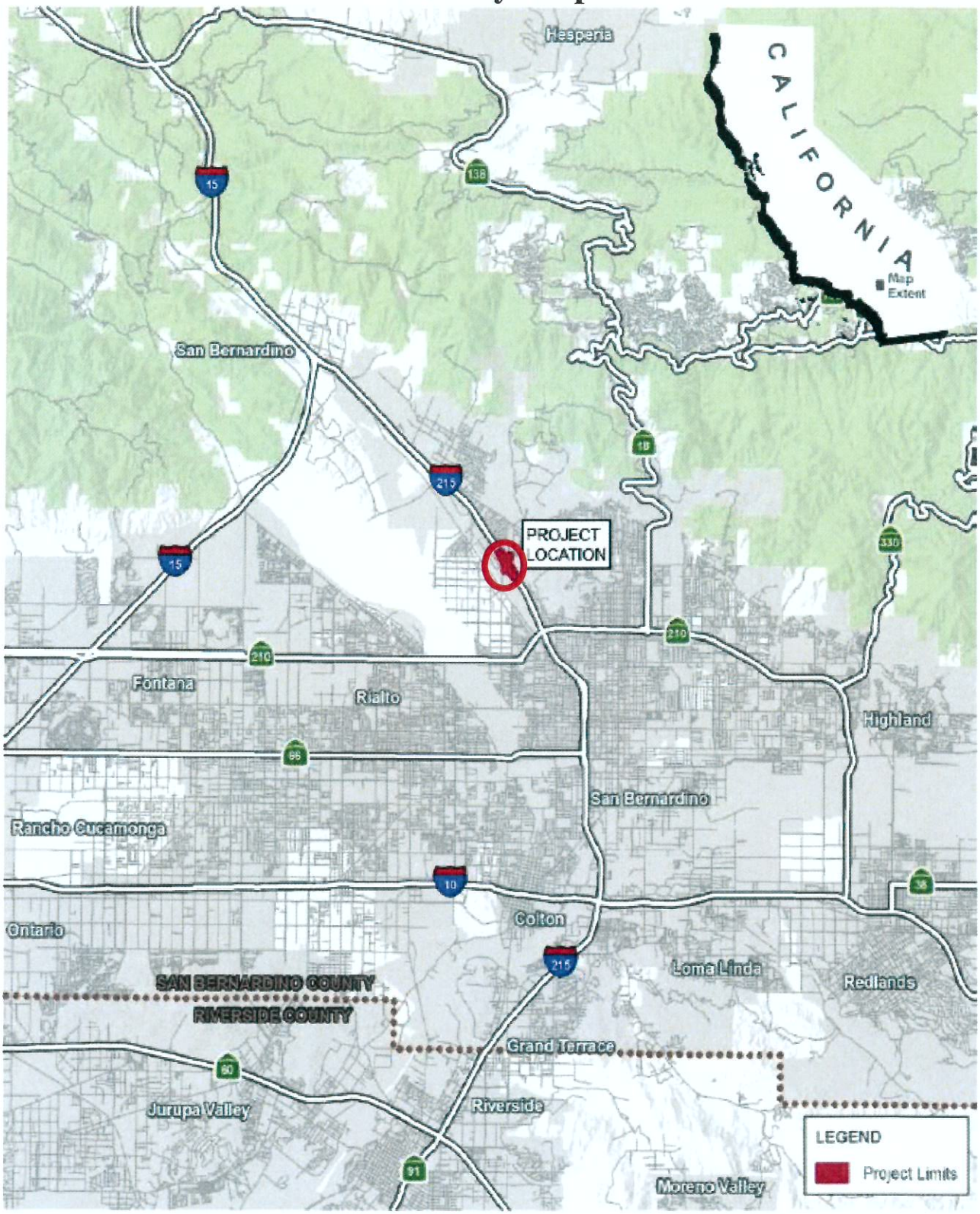
PROJECT APPROVED:

MICHAEL D. BEAUCHAMP
District Director

7/12/2019
Date

Vicinity Map



I-215: PM 11.35/11.95
EA No: 0E420

This Draft Project Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

7-10-2019

JULIAN HERNANDEZ, P.E.
Project Engineer
HDR Engineering, Inc.

DATE

Submitted By:

7/10/19

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7/11/2019

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Date

Table of Contents

1. INTRODUCTION

Project Description

The San Bernardino County Transportation Authority (SBCTA), in cooperation with the California Department of Transportation (Caltrans) and the City of San Bernardino (City), is proposing to improve the Interstate 215 (I-215) / University Parkway Interchange in the City of San Bernardino. Caltrans is the Lead Agency under the California Environmental Quality Act (CEQA) as well as the Lead Agency under the National Environmental Policy Act (NEPA), as assigned by the Federal Highway Administration (FHWA), in accordance with NEPA (42 United States Code [USC] 4321 et seq.); and the Council on Environmental Quality (CEQ) Regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508).

A total of two alternatives are being evaluated as part of this Draft Project Report (DPR). These two alternatives include Alternative 1 - No Build and Alternative 2 - Build Alternative, which consists of a Diverging Diamond Interchange (DDI). With the DDI, the existing intersections at the southbound and northbound ramp terminals would be replaced with Directional Crossover Intersections (DCI) to divide and transpose the directions of local road traffic along University Parkway, see Attachment B for proposed engineering plans.

A DDI is a viable alternative due to its ability to improve traffic flow for multiple movements within the constrained area, and because it would allow free left-turn and right-turn movements at the on-ramp terminals. At this interchange, the southbound (SB) On-Ramp receives a significantly high volume of vehicles coming from the California State University, San Bernardino (CSUSB); and therefore, providing these free movements would improve the flow of traffic in the area.

The Project limits are located within Caltrans and City right-of-way (R/W). The areas within and immediately adjacent to the Project limits are predominately developed and generally consist of commercial/retail land uses. The existing interchange serves as a main point of access for students, faculty, and visitors of CSUSB.

Improvements would not require the disturbance of adjacent building structures. No widening would be required for the I-215 bridge structure, and R/W impacts would be limited to temporary construction easements. The proposed work would include paving; demolishing and constructing new curb, gutter, sidewalks and walkways; as well as some driveway relocations along University Parkway. With the proposed DDI design, no impacts are anticipated to any major utility lines; the only adjustments required would be for landscaping and irrigation lines, drainage inlets, and traffic signals at the ramp termini.

The Project will be funded by a combination of local, state, and federal funds. Caltrans will provide oversight through the construction phase of the Project. Construction is scheduled to commence in mid-2021 and will be completed by mid-2022.

A Project Study Report-Project Development Support (PSR-PDS) was approved on October 7, 2016. The PSR-PDS referenced assignment of Project Development Category 4A (Projects requiring substantial new right-of-way or substantially increasing traffic capacity) in accordance with Chapter 8, Section 5 of the Caltrans Project Development Procedures Manual (PDPM). The PSR-PDS included a DDI Alternative and a Partial Cloverleaf Alternative, with the Cloverleaf Alternative requiring a substantial amount of right of way acquisition.

At the beginning of the Project Approval and Environmental Document (PA/ED) phase, the Project Development Team (PDT) elected to drop the Partial Cloverleaf Alternative from further consideration due to the additional R/W requirements, impacts to private properties, utility relocations, the need to widen the I-215 southbound bridge, impacts to local and freeway traffic, enlarged Project footprint, increased cost, community impacts, and significant delays to Project schedule.

Since the DDI does not require permanent right of way acquisitions and does not increase the interchange traffic capacity, this Project has been assigned to Project Development Category 4B during the PA/ED phase and the Project Category Approval letter is included in Attachment H. The following table provides a summary for the Project.

Table 1-1 Project Summary

Project Limits	08-SBd-215-11.35/11.95	
Number of Alternatives	2 (including No-Build)	
	Current Cost Estimate:	**Escalated Cost Estimate:**
Capital Outlay Support	$4 M	
Capital Outlay Construction	$8.2 M	$9.6 M
Capital Outlay Right-of-Way	$0.5 M	$0.55 M
Funding Source	Local, State & Federal	
Funding Year	2020/2021	
Type of Facility	Freeway Interchange	
Number of Structures	1 (existing), University Parkway OC	
Environmental Determination or Document	Initial Study / Categorical Exclusion (IS/CE) leading to a Negative Declaration / CE (ND/CE)	
Legal Description	In the City of San Bernardino from 1.6 miles north of State Route 210 to 2.5 miles south of Palm Avenue	
Project Development Category	4B	

2. RECOMMENDATION

It is recommended that this Draft Project Report be approved and that the draft CEQA environmental document (Attachment E), Initial Study with Proposed Negative Declaration (IS), be approved to circulate for public review and comment.

3. BACKGROUND

Project History

The Project sponsors and proponents are the City of San Bernardino and SBCTA. SBCTA is the lead agency for the Project Approval and Environmental Document (PA/ED), Plans Specifications and Estimate (PS&E), and construction phases. The City of San Bernardino is the representing local agency and has led the PSR/PDS phase of the Project, which was completed and approved in October of 2016. Since CSUSB is within the vicinity of the Project, its local circulation has been considered and coordinated during the PSR/PDS and PA/ED phases.

The PSR/PDS evaluated the No Build Alternative and two build alternatives: partial cloverleaf and DDI interchange configurations. The Traffic Engineering Performance Assessment (TEPA) analyses completed during that phase concluded that in 2040 the partial cloverleaf would only provide mitigation to peak hour operational deficiencies for the SB On-Ramp, but that the DDI alternative would provide mitigation to peak hour operational deficiencies for all the traffic movements. As such, the DDI alternative was determined to be the most viable alternative due to its lower risk and the ability to address the current operational deficiencies while reducing the Project duration, cost and impacts.

Community Interaction

Caltrans has been involved since the initiation of the PSR-PDS and will continue to provide oversight and feedback as active members of the Project Development Team for the PA&ED, PS&E and construction phases of the Project. During the PA/ED phase, FHWA has also expressed interest in staying involved in the development of the Project because DDIs are considered innovative design and because this would be one of the first DDIs in California.

Meetings between Caltrans, SBCTA, and CSUSB have been held quarterly to discuss the status of the Project. A public open house will be held as part of the community outreach, and all comments from the public will be either documented by a court reporter or received in writing. During the same event, the Project will be explained to the public so they know what to expect in terms of how to navigate through the DDI.

During the PSR-PDS, bicycle advocacy groups were contacted, including the Inland Empire Biking Alliance, Redlands Water Bottle Transit Company, and Ride Yourself Fit, to provide them with information about the Project.

Existing Facility

I-215 is a 54.5 mile long north-south interstate highway with a southern terminus in the City of Murrieta at Interstate 15 (I-15) and northern terminus in the City of San Bernardino at I-15. I-215 is an auxiliary route of I-15 and is a four lane freeway with 5 feet (') inside and 8' outside shoulders, and approximately 25' of unpaved median width within the Project limits. I-215 is part of the National Highway System and the Rural and Single Interstate Routing System as identified by the Department of Defense and FHWA.

I-215 is an access-controlled route with a 45' unpaved median, four 12' lanes through the interchange (two in each direction) and 10' inside and outside shoulders. South of the

interchange there are four general purpose (GP) lanes in the northbound (NB) direction from which Lane Number Four is an auxiliary lane that drops at the University Parkway NB Off-Ramp, and Lane Number Three drops with a taper past the ramp's exit nose. After the off-ramp only two GP lanes continue in the NB direction. In the southbound direction there are two GP lanes through the interchange and a third GP lane is added as a continuation of the SB On-Ramp from University Parkway. The third lane continues up to the SR-210 interchange where it gets dropped at the EB and WB connectors.

University Parkway (formerly known as Devil Canyon Road and later on as State Street) is a Major Arterial that begins on the west side of I-215 as a continuation of North State Street past its overcrossing at Cajon Boulevard (formerly Historic Route 66) and the BNSF railroad, and it ends on the east side of I-215 at the CSUSB campus. University Parkway is a four-lane facility on the west side of I-215 and six-lane on the east side, with a posted speed of 50 miles per hour (MPH). This arterial serves as the main access road from the I-215 to CSUSB and the various commercial and residential land uses along University Parkway. Although the City of San Bernardino 2005 General Plan shows University Parkway as a bicycle route between Cajon Boulevard and the CSUSB campus, currently there are no designated bike lanes within the Project limits. There are existing bike lanes beyond the Project limits between North State Street/North Varsity Avenue and the CSUSB campus.

The University Parkway Interchange was constructed in 1964 as a compact diamond interchange and is located on I-215 at Post Mile 11.6, approximately 1.6 miles north of the State Route 210 (SR-210) / I-215 Freeway Interchange and about 2.5 miles south of the Palm Avenue Interchange. The existing I-215 bridge structure was constructed with vertical abutment walls and has a span of approximately 82' over University Parkway, with a current minimum vertical clearance of 15'-1".

The terrain within the Project area is generally flat with some rolling hills on the southeast side of I-215 and elevations that range between 1430' and 1488' above mean sea level (amsl). The NB On-Ramp currently provides a single GP lane. The SB On-Ramp provides two GP lanes for a length of approximately 230', beyond which the right lane is dropped over a 600' long (50:1) taper. Both on-ramps are unmetered, and no enforcement openings areas exist within the median of the freeway or at the on-ramp entrances. The NB Off-Ramp provides a dual lane exit from I-215, both of which are striped as right turn lanes at the intersection approach. A third lane is added along the inside of the NB Off-Ramp which provides a shared-through left lane at the intersection approach. The SB Off-Ramp provides a single lane exit from I-215 that becomes a shared thru-left lane at the intersection approach and has a 380' right turning pocket that opens up prior to the intersection.

Park and Ride Lots do not exist within the Project limits. The nearest railroad facility is located approximately a half mile to the west of I-215 and runs parallel to the freeway. The railroad is grade-separated and lies outside the limits of this Project. There are no local roads running parallel to I-215 that could serve as frontage roads between this and the nearest interchanges.

Within the Project limits there are existing storm drain facilities located throughout the edges of the roadways. Overside drains (OSD) and pipe culverts capture the roadway runoff along I-215 and direct it to a series of drainage swales and ditches, which further convey the runoff to the regional 75 inch (") reinforced concrete pipe (RCP) drainage system. This system then conveys the runoff to Macy Basin, located to the southwest of the Project site. This system

extends beyond the interchange to Kendall Drive and collects water from the catch basins along University Parkway. There are no Best Management Practice (BMP) devices within the Project limits, and the stormwater from private properties generally drains to University Parkway to then be collected by the nearest catch basins.

4. PURPOSE AND NEED

4A. Problem, Deficiencies, Justification

Purpose

The purpose of the Project is to plan for projected regional population growth, increased CSUSB enrollments, and traffic demands at the existing I-215 / University Parkway Interchange for the planning design year of 2040. The Project proposes to reconfigure the interchange to improve traffic operations. The objectives of the Project are to:

- Support anticipated regional growth and proposed local-area projects;
- Relieve congestion by providing improved signalized intersection operational efficiency through the interchange area; and
- Improve vehicular, bicycle, and pedestrian access through the freeway ramp intersections accommodating all modes of transportation (Complete Streets).

Need

Extensive recent commercial and industrial development within the vicinity of the Project has contributed to growth in traffic within the Project limits and surrounding area and has resulted in congestion and operational deficiencies at the University Parkway interchange. In addition, the anticipated increase in student population resulting from the planned expansion of CSUSB within the next 10 years will generate additional traffic that will further increase congestion at the interchange. The interchange is the primary freeway access for CSUSB, as well as a number of businesses and area residents. The existing operating conditions are expected to further worsen without any implementation of improvements.

4B. Regional and System Planning

Identify Systems

I-215 is part of the National Highway System and the Rural and Single Interstate Routing System as identified by the Department of Defense and FHWA. The improvements proposed by this Project are consistent with state, regional and local mobility goals, and are being coordinated with the applicable governmental, regulatory, and local agencies in the area. The Project is consistent with the local circulation elements of the 2005 City of San Bernardino General Plan, which classifies University Parkway as a Major Arterial.

State Planning

The following table shows the current and future projects included in the 2012 Caltrans District 8 Transportation Concept Report (TCR) for Interstate 215. The first project from the list is set

to occur prior to the construction of the DDI improvements and coordination has started to preclude any work that later on would be removed by this Project for the new interchange configuration. The second project in the table is also shown in the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) project list. This Project does not preclude the implementation of any of these planned future improvements.

Table 4-1 Caltrans District 8 TCR Future Projects

ID	Location	Scope of Work	Status
EA 1H340	Various interchange locations along I-215 and SR-210	Individual Portland Cement Concrete (PCC) slab replacement, curb ramp upgrades and replacing asphalt with Jointed Plain Concrete Pavement (JPCP) paving at ramp terminals.	RTL
RTP 4H01008 (Financially constrained)	I-215 between SR-210 and I-15	Construct one high occupancy vehicle lane (HOV) in each direction of I-215. The opening year is listed as 2035 in the RTP, but currently no funding sources have been identified for this project. This project is identified as Segment Number 10 in Caltrans TCR Concept - 2035 Facility. In this report additional mixed flow (MF) lanes are also proposed, for a total of three MF lanes and one HOV lane in each direction of travel.	Planning
EA 47642	Various locations along I-215 and SR-259	Work with various Transportation Management System (TMS) elements along I-215 and SR-259 in San Bernardino County to install Fiber Optic Communication Systems, connecting the fiber to existing elements such as irrigation control cabinets, closed circuit television, wireless vehicle detection system (WVDS), traffic signals, and changeable message signs with maintenance vehicle pullouts, connecting power to existing WVDS stations, and upgrading WVDS and closed circuit television.	PS&E

Regional Planning

The following table shows the current and future projects included in the Final 2019 Federal Transportation Improvement Program (FTIP) and the 2016 SCAG RTP/SCS project list. The Project does not preclude the implementation of any of these planned future improvements.

Table 4-2 SCAG RTP/SCS Future Projects

ID	Location	Scope of Work	Status
FTIP SBD59023	Campus Pkwy-Pepper/Linden Drive	Construct a four lane roadway between Kendall Drive and I-215. No opening year is listed in the RTP, and no funding sources have been identified for this project.	Planning
RTP 4M01045 (Financially constrained)	I-215/Campus Pkwy Interchange	Construct a new interchange at I-215 and Campus Parkway. The opening year is listed as 2040 in the RTP, but currently no funding sources have been identified for this project.	Planning

Local Planning

The City of San Bernardino 2005 General Plan shows University Parkway as a bicycle route between Cajon Boulevard and the CSUSB campus; however, currently there are no designated bike lanes within the Project limits. Beyond the Project limits there are existing bike lanes between North State/North Varsity Avenue and the CSUSB campus. The Project will provide shoulders along University Parkway within the interchange to allow continuity for bicyclists along the local road.

CSUSB has plans to expand and increase its student population within the next 10 years. The interchange is the primary freeway access for CSUSB, local businesses and area residents. Other agencies such as the California Coastal Conservancy and the South Coast Air Quality Management District do not show any projects proposed within or in the immediate vicinity of the Project. This Project is compatible with local and regional plans and will improve the traffic operations and local access through the interchange.

Transit Operator Planning

This Project is not anticipated to impact transit services. Omnitrans is the local transit agency that operates Bus Route 11 in this area, which runs between CSUSB campus and the San Bernardino Transit Center. The nearest bus stops on University Parkway for this route are near North State/North Varsity Avenue and south of Hallmark Parkway. There are no known future projects by Omnitrans within or in the immediate vicinity of the Project.

The existing University Parkway SB and NB On-Ramps to I-215 are unmetered and are included as low priority planned locations in the 2017 Caltrans Ramp Metering Development Plan. This Project proposes to install the ramp metering equipment to provide that feature.

4C. Traffic

Current and Forecasted Traffic

This section provides a summary of the current and forecasted traffic volumes under current (2017), opening year (2020), and horizon year (2040) for the No-Build and Build Alternatives. This summary is based on information from the Project's Traffic Operation Analysis Report (TOAR) approved in November of 2018.

Existing Conditions (2017)

Existing traffic counts at the driveways, roadway segments, and freeway facilities were collected in Spring of 2017 (March 3-8) when CSUSB and other schools were in session and are used in the development of future forecasts. Counts were collected for morning (AM) and afternoon (PM) peak periods during Tuesday, Wednesday, and Thursday. Traffic counts from previous studies were used as appropriate.

The California Department of Transportation (Caltrans) Performance Measurement System (PeMS) data has been used to collect freeway counts for the same days of the week for freeway analysis. Daily traffic data was also collected to confirm the peak hours of the day and identify operational characteristics of the roadway along University Parkway. The truck traffic volume is 7.5 percent (%) along this segment of I-215 and 2% along University Parkway. Existing (2017) freeway mainline and ramp counts were extracted from PeMS and are summarized in Tables 4-3 and 4-4, and are also shown in Figure 4-1.

Table 4-3 Existing (2017) I-215 Freeway AM/PM Peak Hour Volumes

Freeway Segment	Segment Type	AM Peak Hour	PM Peak Hour
Northbound			
North of University Pkwy On-Ramp	Basic	1,435	2,945
University Pkwy On-Ramp	Ramp	125	180
Between University Pkwy Off-Ramp and University Pkwy On-Ramp	Basic	1,310	2,765
University Pkwy Off-Ramp	Ramp	2,015	2,100
South of University Pkwy Off-Ramp	Basic	3,325	4,865
Southbound			
North of University Pkwy Off-Ramp	Basic	3,180	1,955
University Pkwy Off-Ramp	Ramp	165	145
Between University Pkwy Off-Ramp and University Pkwy On-Ramp	Basic	3,015	1,810
University Pkwy On-Ramp	Ramp	1,755	1,795
South of University Pkwy On-Ramp	Basic	4,770	3,605

Note: Volumes do not include Passenger Car Equivalents (PCE)

Table 4-4 Existing (2017) I-215 Freeway Mainline Segment Average Daily Traffic (ADT)

Freeway Segment	Existing 2017 ADT	AM Peak Hour Directional Split Percentage (NB/SB)	PM Peak Hour Directional Split Percentage (NB/SB)
North of University Pkwy On-Ramp	56,000	55/45	43/57
South of University Pkwy Off-Ramp	76,000	55/45	43/57
NB University Pkwy On-Ramp	5,200	n/a	n/a
NB University Pkwy Off-Ramp	16,000	n/a	n/a
SB University Pkwy On-Ramp	18,000	n/a	n/a
SB University Pkwy Off-Ramp	4,000	n/a	n/a

Note: NB=Northbound, SB=Southbound

Figure 4-1 Existing (2017) Volumes

2020 and 2040 Volumes

Horizon Year 2040 freeway volumes were developed based on SBTAM travel demand model base and forecast year model volumes. Opening Year 2020 traffic volumes were interpolated between existing count volumes and 2040 forecast volumes.

2020 and 2040 volumes under No Build and Build (DDI) Alternatives are identical since the geometrics at the interchange would not impact traffic patterns, and the demand at the interchange would remain consistent in either case. The traffic operational analysis does not include the future I-215/Pepper-Linden-Campus Interchange in forecasts, which allows for the highest 2040 volumes in the case that this proposed interchange is never constructed.

Projected ADTs and intersection peak hour turning movement volumes under the Opening Year 2020 and Horizon Year 2040 are displayed in Figures 4-2 through 4-5.

Figure 4-2 Opening Year (2020) Volumes No Build Conditions

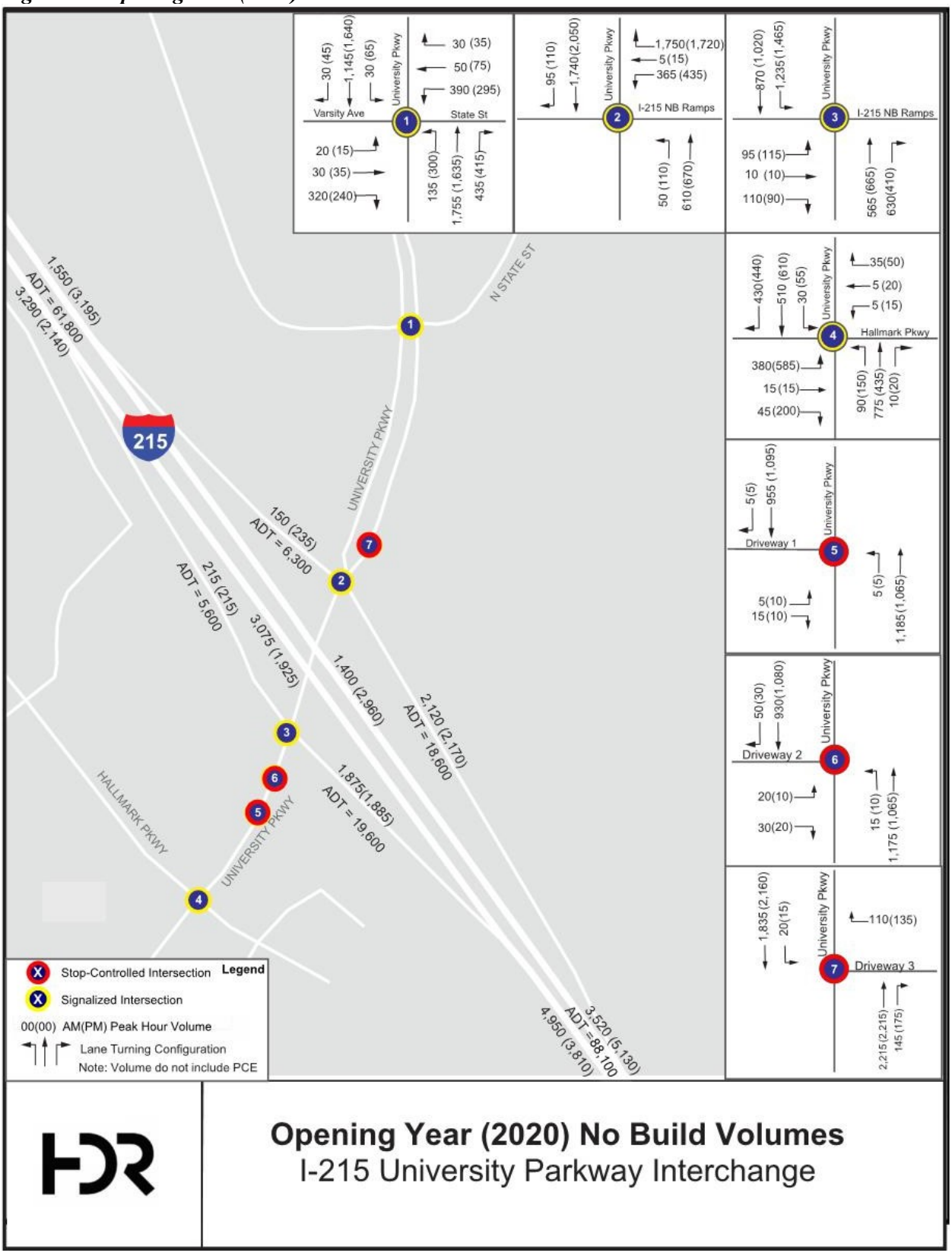


Figure 4-3 Opening Year (2020) Volumes Build Conditions

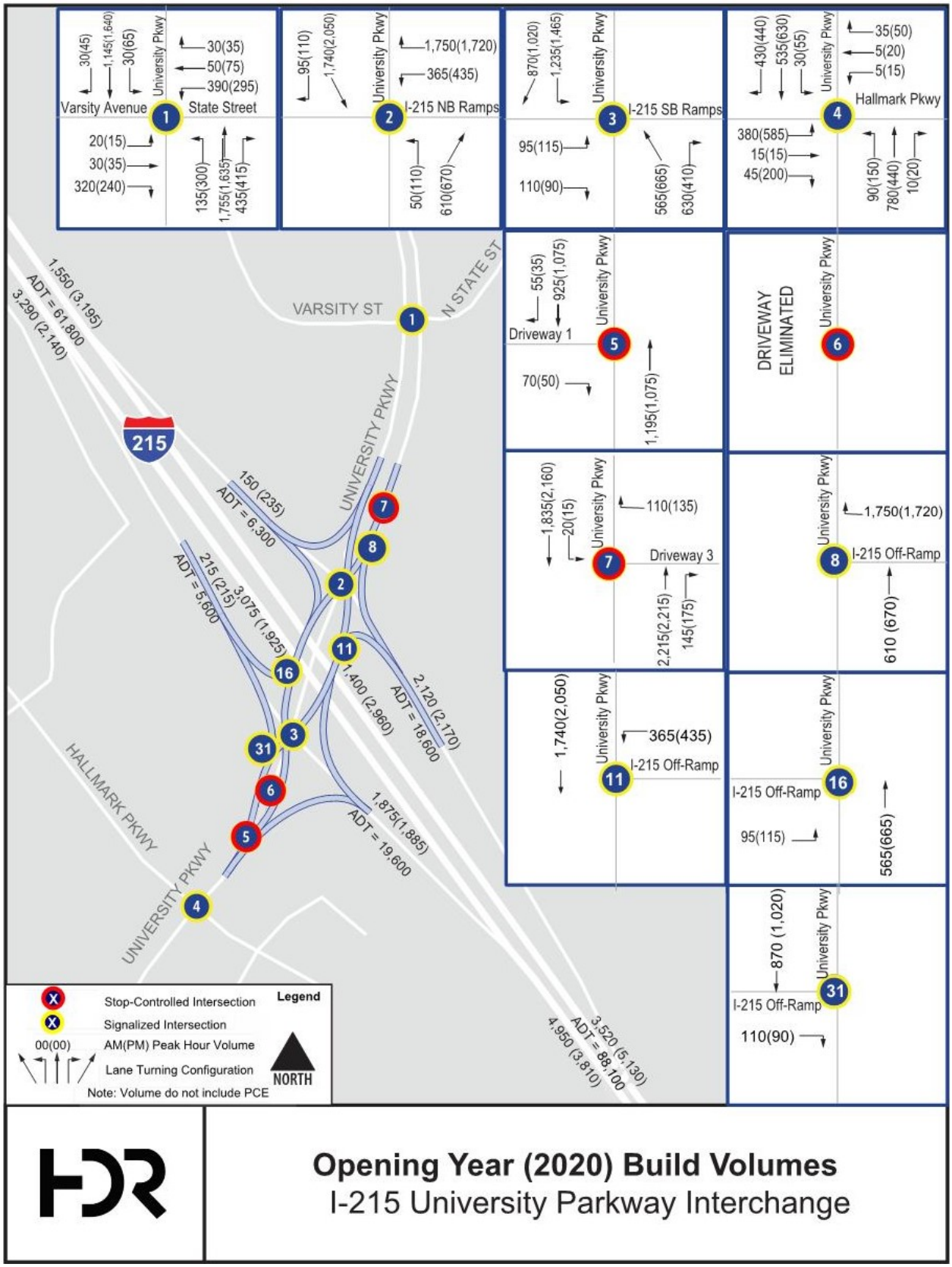


Figure 4-4 Horizon Year (2040) Volumes No Build Conditions

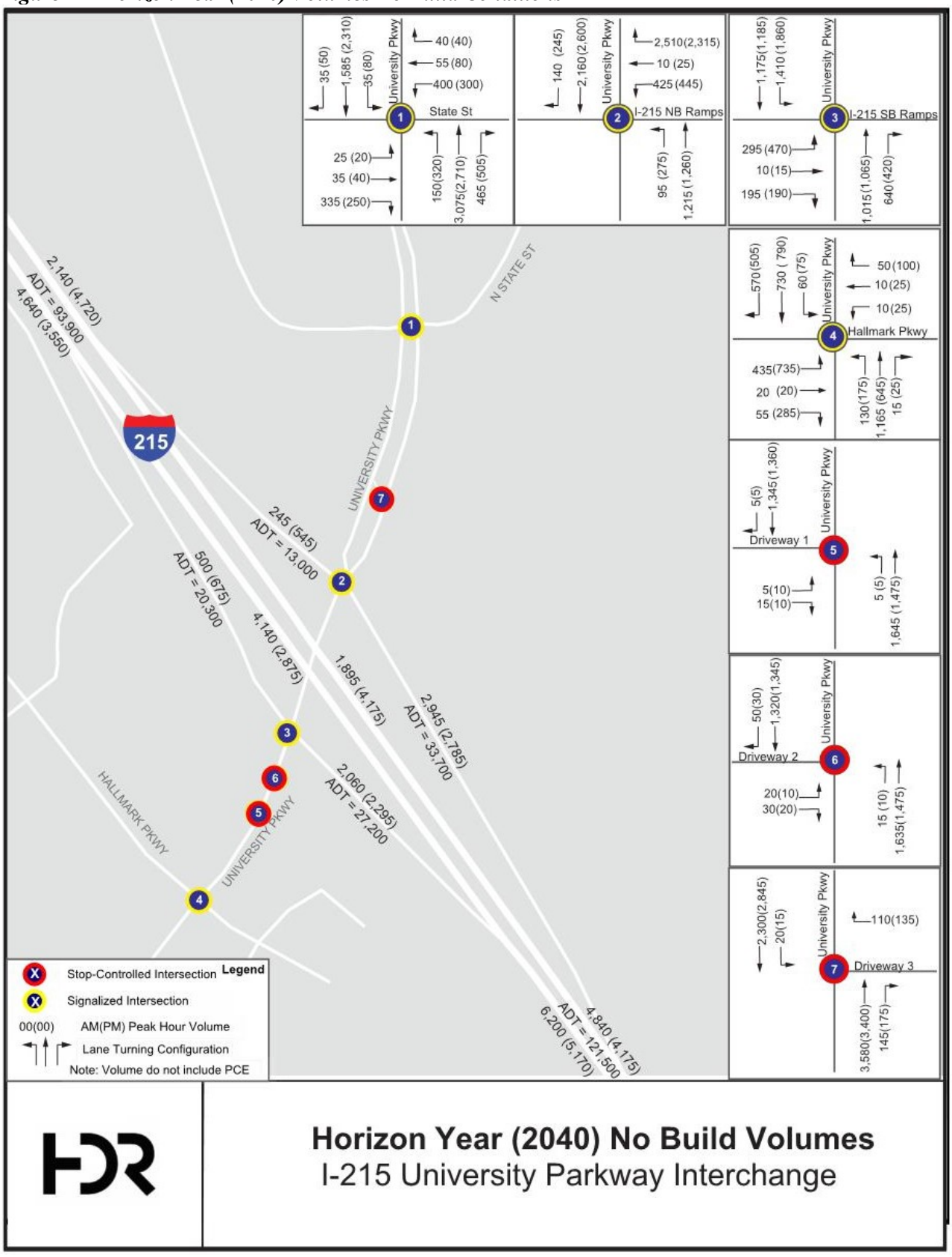
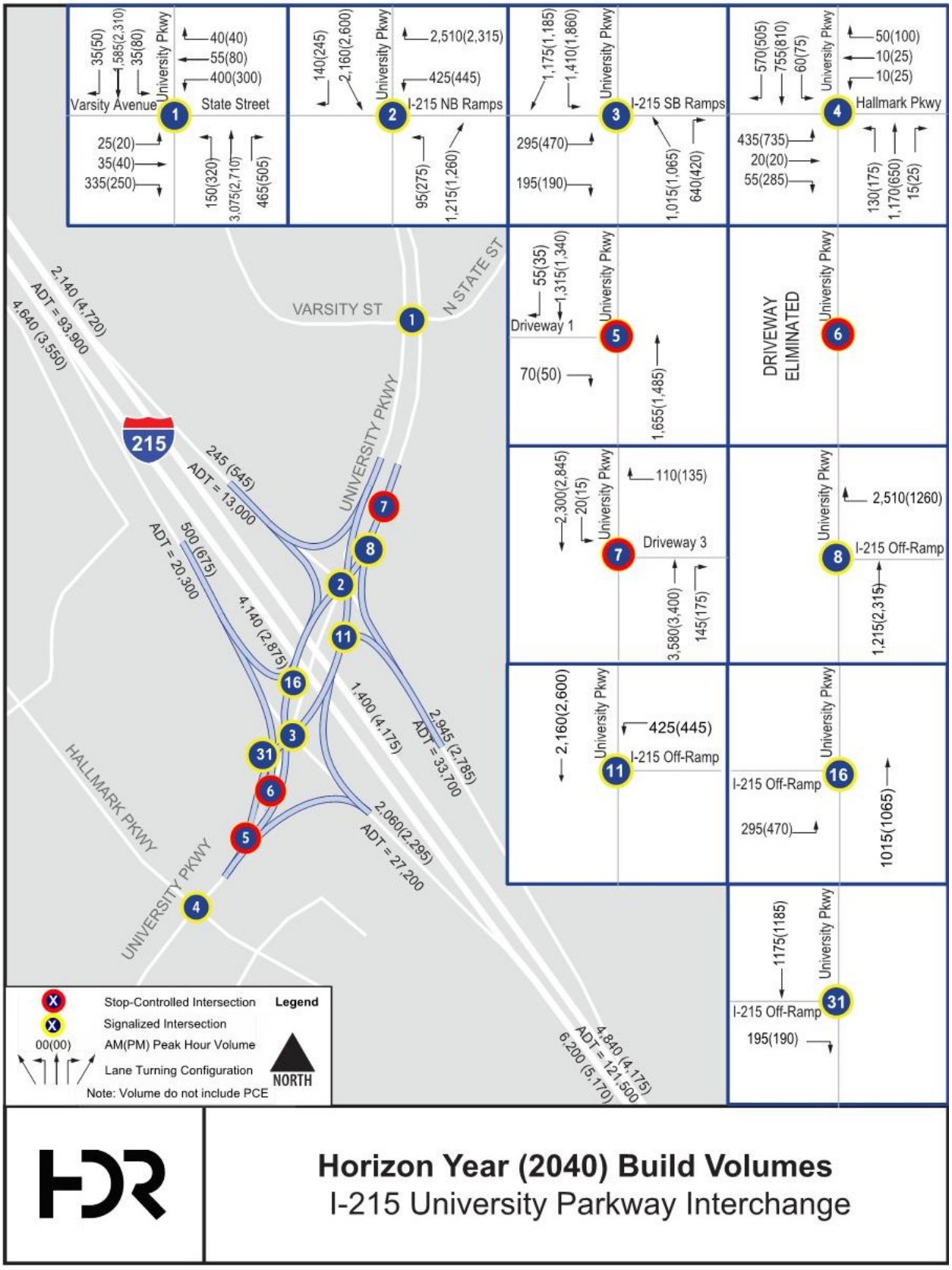


Figure 4-5 Horizon Year (2040) Volumes Build Conditions



Collision Analysis

Traffic accident data was assembled from Caltrans' Traffic Accident and Surveillance Analysis Systems (TASAS) for a 36 month period from September 2012 through August 2015. Tables 4-5 and 4-7 provide a summary of Caltrans' TASAS Table B. Table B provides actual and average accident rates for highways, ramps, and intersections. TASAS Selective Accident Retrieval (TSAR) provides a summary of type of accident by location. TSAR data for the study area can be found in Tables 4-6 and 4-8.

Table 4-5 shows that the rates for fatal accidents along the northbound and southbound I-215 mainline (PM 10.050 to 14.091) are higher compared to the statewide average accident rate. As shown in Table 4-6, the majority of accidents that occurred along I-215 at the interchange are identified as rear-ends. The primary collision factor for these accidents was due to speeding.

Table 4-7 shows that the accident rates at I-215 Northbound Off-Ramp (PM 11.443) and On-Ramp (PM 11.816) are higher than the average statewide accident rates. Table 4-8 shows that the majority of accidents that occurred at the Northbound Off-Ramp have been identified as rear-ends, and that at the On-Ramp the majority of accidents have been identified as broadside and hit object. The primary collision factor for these accidents was due to speeding.

Along University Parkway, the intersections at North Varsity Avenue/North State Street and at the I-215 NB Ramps account for the largest number of accidents within the study area. As shown in Table 4-9, the majority of accidents that occurred are identified as rear-ends; and the primary collision factor of the accidents is due to speeding. There are no reported pedestrian or bike accidents within the interchange.

It can be concluded that rear end accidents are common at these locations whose accident rates exceed the State averages, and that speeding is the primary collision factor. The DDI will reduce speeds along University Avenue through the interchange with the crossover geometry and reverse curves, and it will provide continuity for turning movements at the SB and NB On-Ramps. This in turn will improve traffic operations at the ramp terminals and alleviate congestion and queuing at the ramps with less traffic signal phases. The DDI reduces the number of conflict points from 26 to 14 for a conventional diamond interchange. The Highway Safety Manual Crash Modification Factor also predicts a 33% reduction in total crashes and a 41% reduction in fatal/severe injury crashes with the conversion to a DDI.

Table 4-5 I-215 Mainline TASAS Accident Data Summary

PM (post mile)	Location	Accident Rates					
		Actual			Average		
		Fatal	F+I	Total	Fatal	F+I	Total
I-215 Northbound							
PM 10.050-14.091	JCT RTE 210 to Palm Avenue	**0.007**	0.14	0.5	0.004	0.22	0.69
I-215 Southbound							
PM 10.050-14.091	Palm Avenue to JCT RTE 210	**0.015**	**0.27**	0.52	0.004	0.22	0.69

Source: Caltrans District 8 TASAS Table B (September 2012 to August 2015)
Notes: the accident rate is the number of accidents per million vehicle-miles.
Bold indicates an actual accident rate that is higher than the average accident rate for the ramp.

Table 4-6 Freeway Mainline Type of Accident for I-215

PM (post mile)	Location	Accident Type	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturn	Auto-pedestrian	Other	Not Stated	Invalid	TOTAL
I-215 Northbound													
10.05 to 14.09	JCT RTE 210 to Palm Avenue	*Percentage*	0.0%	17.9%	**43.3%**	1.5%	**32.8%**	3.0%	1.5%	0.0%	0.0%	0.0%	100%
I-215 Southbound													
10.05 to 14.09	Palm Avenue to JCT RTE 210	*Percentage*	0.0%	14.5%	**29.0%**	2.9%	**37.7%**	13.0%	1.4%	1.4%	0.0%	0.0%	100%

Source: Caltrans District 8 TASAS Selective Accident Retrieval (TSAR) (September 2012 to August 2015)
Bold indicates most occurring accident
Blue Bold indicates second most occurring accident

Table 4-7 Freeway Ramp TASAS Accident Data Summary

PM (post mile)	Location	Accident Rates					
		Actual			Average		
		Fatal	F+I	Total	Fatal	F+I	Total
I-215 Northbound							
11.443	University Parkway Off-Ramp	0	**0.63**	**1.37**	0.003	0.35	1.01
11.816	University Parkway On-Ramp	0	0.18	**1.05**	0.002	0.22	0.63
I-215 Southbound							
11.458	University Parkway On-Ramp	0	0.1	0.56	0.002	0.22	0.63
11.857	University Parkway Off-Ramp	0	0	0.69	0.003	0.35	1.01

Source: Caltrans District 8 TASAS Table B (September 2012 to August 2015)

Notes: the accident rate is the number of accidents per million vehicle-miles.

Bold indicates an actual accident rate that is higher than the average accident rate for the ramp.

Table 4-8 I-215 Freeway Ramp Type of Accident

PM (post mile)	Location	Accident Type	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturn	Auto-pedestrian	Other	Not Stated	Invalid	TOTAL
I-215 Northbound													
11.443	University Parkway Off-Ramp	*Percentage*	0.0%	4.2%	**87.5%**	4.2%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
11.816	University Parkway On-Ramp	*Percentage*	0.0%	16.7%	16.7%	**33.3%**	**33.3%**	0.0%	0.0%	0.0%	0.0%	0.0%	100%
I-215 Southbound													
11.458	University Parkway On-Ramp	*Percentage*	0.0%	**63.6%**	27.3%	9.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
11.857	University Parkway Off-Ramp	*Percentage*	0.0%	0.0%	**66.7%**	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Source: Caltrans District 8 TASAS Selective Accident Retrieval (TSAR) (September 2012 to August 2015)

Bold indicates most occurring accident

Blue Bold indicates second most occurring accident

Table 4-9 SWITRS Type of Accident along University Parkway

Intersection	Accident Type	Head-on	Sideswipe	Rear End	Broadside	Hit Object	Overturn	Auto-pedestrian	Other	Not Stated	Invalid	TOTAL
North Varsity Ave/North State St & University Pkwy	*Percentage*	0.0%	**12.5%**	**25.0%**	**25.0%**	**25.0%**	0.0%	12.5%	0.0%	0.0%	0.0%	100 %
Hallmark Pkwy & University Pkwy	*Percentage*	0.0%	0.0%	**66.7%**	0.0%	**33.3%**	0.0%	0.0%	0.0%	0.0%	0.0%	100 %
NB 215 & University Pkwy	*Percentage*	0.0%	0.0%	**77.8%**	0.0%	**22.2%**	0.0%	0.0%	0.0%	0.0%	0.0%	100 %
SB 215 & University Pkwy	*Percentage*	0.0%	**40.0%**	**40.0%**	0.0%	0.0%	**20.0%**	0.0%	0.0%	0.0%	0.0%	100 %

Source: Statewide Integrated Traffic Records System (SWITRS) (September 2012 to August 2015)
Bold indicates most occurring accident
Blue Bold indicates second most occurring accident

5. ALTERNATIVES

5A. Viable Alternatives

A total of two alternatives are being evaluated in this report. These two alternatives include Alternative 1 - No Build and Alternative 2 - Build Alternative.

Alternative 1: No Build

Under this alternative, the interchange would remain in its existing configuration, and no improvements would be performed. As the CSUSB enrollment increases and the local and regional development continue, the traffic demand will also increase, and the traffic operational characteristics will further deteriorate. This deterioration will result in an increase in congestion, vehicle delay, collision rates, vehicle-operating costs, and vehicle emissions.

There is no capital costs associated with this alternative since no improvements would take place, but this alternative does not address or alleviate the forecasted operational issues of the interchange. Therefore, it does not meet the Purpose and Need to support the anticipated regional growth, nor does it improve the traffic operations and vehicular, bicycle and pedestrian access.

Alternative 2: Build Alternative

This alternative proposes to replace the existing University Parkway tight diamond interchange with a DDI configuration. A DDI is a viable alternative due to its ability to improve traffic flow for multiple movements within the constrained area because it would allow free left-turn and right-turn movements at the on-ramp terminals. The off-ramp terminals will be signalized with no turns allowed in red. The proposed improvements will improve the flow of traffic at the interchange as the ramp signals for the DDI require fewer phases to operate compared to a signal for a standard four-way intersection.

Proposed Engineering Features

The proposed DDI layout design would replace the existing ramp intersections at University Parkway with Directional Crossover Intersections (DCI) to divide and transpose the directions of local road traffic between the crossover intersections (see the engineering plans included in Attachment B).

The existing University Parkway undercrossing will remain in place with no widening required for the existing I-215 bridge structure, and the existing vertical clearance will be maintained. The improvements generally consist of ramp widening and partial pavement reconstruction/asphalt overlay along University Parkway including new curbs, gutters, walkways, raised islands, traffic signals, ramp metering, signs, striping, minor utility relocations, drainage system upgrades, and driveway modifications. The improvements would occur within previously disturbed soils of the existing interchange and would not impact adjacent building structures.

Along University Parkway between the SB and NB ramp terminals, the existing sidewalks and portions of the adjacent travel lanes will be removed and replaced by a new section of asphalt pavement, with the sawcut lines being approximately 13' away from the faces of the existing bridge abutment walls. The abutment walls will be protected with concrete barriers, and a 1' buffer will be provided from the edge of travel way to the barriers. Beyond the DCIs, the sidewalk reconstruction along University Avenue will only extend to where the lanes match the existing street configuration.

The existing AC pavement at the off-ramp terminals will be replaced with Jointed Plain Concrete Pavement (JPCP) as recommended in section 626.1(3) of the Caltrans Highway Design Manual (HDM) to preclude pavement failure such as rutting or shoving from vehicular braking, turning movements, and oil dripping from vehicles. Asphalt pavement will be used beyond the JPCP ramp terminals where ramp realignment or widening occurs, as well as at proposed Maintenance Vehicle Pullout (MVP) locations. Cold milling and asphalt overlay will be used to resurface the remaining portions of the ramps.

Although the ramp terminals will be reconfigured, the ramp alignments and connections to the I-215 freeway will remain in place, with the exception of the NB On-Ramp where a slight re-alignment is needed to accommodate the widening needed to provide one general purpose lane and one high occupancy vehicle lane (HOV). This realignment is needed so that the grading limits do not overlap with the existing drainage ditch along the right side of the ramp while maintaining the entrance to the I-215 mainline at its current location.

The proposed street and ramp profiles follow the existing longitudinal grades. This minimizes the amount of excavation and fill needed for ramp widening and avoids the need for retaining walls, although it is expected that retaining concrete barriers would be needed at certain locations where the side slopes would be steeper than 2:1. These isolated slope locations would be covered with hardscaping to prevent erosion.

Along University Parkway, the existing longitudinal grades are between 1.80% and 1.35% on the west side of the I-215 undercrossing and between 2.83% and 0.35% on the east side. Along the ramps, the longitudinal grades are well below the 8% maximum mandated in the Highway Design Manual (HDM). Grades along the ramps vary between 1.99% and 1.58% for the NB On-Ramp, 3.27% to -1.01% for the NB Off-Ramp, -4.00% to 1.80% for the SB On-Ramp, and -2.50% to 2.06% for the SB off-ramp.

The striping of the ramp entrances and exits to and from the I-215 will be slightly adjusted to provide the standard angles of convergence & divergence set forth in the Highway Design Manual (HDM). No changes are proposed along the mainline of I-215.

Two existing driveways to private properties will be modified to meet Caltrans access control standards beyond the curb returns of the new ramp connectors. The first driveway is the one closest to the existing SB Off-Ramp intersection that currently serves the Jack in the Box property. The proposed layout requires the closure of this driveway as it would be located partly within the new ramp connection to westbound (WB) University Parkway. The existing driveway located approximately 50' to the

west of the one impacted would be used as a single common access for both Jack in the Box and the businesses located next to it (Verizon and other retail stores), provided that their parking lots are currently connected. The second driveway requiring modifications is the one closest to the existing NB On-Ramp that currently serves the Scottish Rite. The proposed layout requires the relocation of this driveway by approximately 145' to the east because the existing driveway would be located partly within the new ramp connection from WB University Parkway to the NB On-Ramp. It should be noted that the existing driveway is a secondary access for this property that is currently not used, and that another driveway at North Varsity Avenue serves as the property's main point of access.

Typical Sections

The proposed lane configuration for the first segment of University Parkway between the intersection at Hallmark Parkway and the DCI at the SB ramp termini is similar to the existing condition. Two 12' to 13' thru lanes are proposed for each direction of travel plus 12' right and 11' left turn pockets for the eastbound (EB) direction at the intersection with Hallmark Parkway. Currently there are no striped shoulders within this segment, and there is no existing or proposed sidewalk on the EB side of the road. The existing sidewalk on the WB side will be maintained. The Project adds a 5' striped outside shoulder on the westbound side of the street; however, no shoulder is proposed along the eastbound side consistent with the existing condition due to street width limitations and the close proximity of underground utility lines and electric vault behind the existing curb.

In the next segment between the DCIs of the SB and NB ramp termini, the thru lanes are transposed to the opposite side of the road. For this segment that includes the area below the I-215 bridge, two thru lanes are provided for the EB direction with a 12' inside lane, an 11' outside lane, and a 1' shoulder next to the concrete barrier protecting the north bridge abutment wall. A single lane connection to the NB On-Ramp is provided from the outside lane past the bridge limits. In the WB direction, three lanes are proposed as follows:

- The outside lane adjacent to the south bridge abutment wall is 11' wide with a 1' outside shoulder next to the concrete barrier protecting the abutment wall; this lane becomes a dedicated left turn lane to the SB On-Ramp.
- The middle lane is 11' wide, which becomes a shared thru-left at the southbound intersection approach
- The inside lane is a 12' wide thru lane.

The existing sidewalks within this segment will be removed and replaced by an 8' wide median pedestrian pathway that will have concrete barriers and 4.5' shoulders on either side of the pedestrian pathway. These shoulders continue across the DCIs along the outsides of the roadway and increase to a width of 5' where provided beyond the ramp intersections. Marked crosswalks with pedestrian signals connect the median pedestrian pathway with the raised islands at the DCIs, and then with the sidewalks located beyond this segment. The concrete barriers to protect the bridge abutment walls will extend beyond the bridge limits and will wrap around the cone of the fill slopes.

In the last segment between the NB ramp DCI and North State Street/North Varsity Avenue, the proposed lane configuration is similar to the current condition:

- Three thru lanes will be provided for the WB direction of travel, in which the inside and middle lanes are both 12’ wide and the right lane is 12’ to 16’ wide.
- For the EB direction, the inside lane is 12’ to 14’ wide, and the middle and outside lanes are 12’ wide. The existing left and right turn lane pockets will be preserved.

The existing sidewalks on both sides of the road will be maintained or slightly modified to accommodate the new DDI layout configuration. University Parkway will generally have a crowned section with 1.5% cross slopes at the DCIs and below the I-215 Bridge, which provides the following benefits compared to using a 2% cross slope:

- A slight increase in the comfortable speed resulting from driving along crossover curves with adverse superelevation
- Minimizes the algebraic difference between the cross slopes of the westbound and eastbound roadbeds, providing a more comfortable ride at the crossovers
- Helps in keeping the profiles of the ramp connections higher and closer to the existing ground elevations. This helps to avoid steeper grades on the ramps, which also increases the sight distance at sag curves and eliminates the need for additional excavation that could result in potential utility impacts

Right of Way

It is anticipated that construction activities and laydown areas will be contained within the existing State and public R/W. Temporary construction easements (TCE) will be required for the driveway modifications described previously in the proposed engineering features section. Additionally, the access control limits will be extended to provide 100’ beyond the beginning/end of new ramp connectors, except at the SB Off-Ramp where only 50’ is provided due to the proximity of the existing driveway that will be protected in place to serve as common access for the Verizon retail plaza and the Jack in the Box property.

Drainage

The natural topography at the University Parkway interchange is generally flat. The topography of I-215 within the freeway right-of-way consists of grass covered rolling hills. Existing side slopes outside the I-215 roadbed consist of 2:1 cut or fill slopes. Drainage flows along University Parkway in a southerly direction. On I-215, stormwater flows both to the unpaved median and the outsides of the roadway where it is conveyed via asphalt concrete overside drains into ditches that run in a south-easterly direction.

Project runoff is conveyed via storm drain systems directly to downstream local and regional flood control facilities. Flows and volumes in those facilities are based on substantially greater watershed areas than the project site. The proposed improvements will increase impervious surface area by 1.50 acres, which will increase the volume and/or velocity of runoff in the regional storm drain facilities downstream. However, there will be negligible impacts to the downstream channels due to this increase in flow

velocity and/or volume. This determination was made by comparing the increase in impervious area to the total watershed area of the Hydrologic Sub-Area (HSA), #801.52 (124,791 ac). The increased percentage of runoff for the current Build Alternative is summarized below in Table 5-1.

Table 5-1 Percentage Increase

Net Increase in Impervious Area (Acres)	HSA 801.52 Area (Acres)	% Increase in HSA
1.47	124,791	0.001178

Since the Project will add paved areas to improve the freeway ramps, some existing local systems will need modifications to convey the stormwater flows to the Macy Basin regional system. The local and regional facilities are located within public right of way, and the impacts to private properties adjacent to the Project will be minor. The flows from these adjacent properties will remain consistent with the existing drainage patterns. Increase in sediment loading is not anticipated, and this Project does not cause hydraulic changes to a stream or channel. During the PS&E phase, detailed hydrology and hydraulic calculations will be prepared to further assess if there are any significant impacts to the existing systems and identify any necessary mitigation to be considered. The following is a general list of improvements needed to utilize the existing drainage systems:

- Relocation, extension, and adjustment of systems as necessary;
- Inserting additional inlets or overside drains where required;
- Construction of concrete aprons around inlets and outlets that will be located in the infield areas between the ramps and the mainline to prevent debris build-up and clogging; and
- Abandonment or removal of systems which are no longer serviceable.

Generally the existing drainage patterns will be maintained within the Project limits. The only location where the pattern will be modified is at the terminus of the existing SB On-Ramp. The depressed area along the outside of the ramp currently accepts surface runoff from the ramp and drainage from the other side of I-215, which is conveyed under the freeway via an existing double 24” pipe system. The runoff collected within the depression adjacent to the SB On-Ramp is then conveyed along an earthen swale into the existing University Parkway curb & gutter. The runoff is then conveyed along the curb and gutter to a catch basin that ultimately discharges the stormwater to the Macy detention basin. In the proposed design, a new 42” RCP system will connect the existing double 24” pipes with the existing 75” RCP that runs along University Parkway and that eventually discharges onto Macy basin. This improvement will remove the stormwater flow currently discharged onto the street during rain events.

Along the ramps, some runoff will sheet flow onto adjacent unpaved areas and be treated by proposed treatment BMP devices such as Design Pollution Prevention Infiltration Areas (DPPIA) and infiltration swales. Portions of the freeway in which stormwater is currently conveyed by existing drainage systems to the new infiltration swale locations will also be treated.

Structures

The existing I-215 bridge structure will be protected in place, and there are no new structures or structural modifications proposed by this Project.

Traffic Operations

The Build Alternative is expected to operate at LOS D or better under the 2020 (opening) and 2040 (design) years. However, certain locations of the DDI are forecasted to operate at LOS F starting in the year 2033. A Horizon Year Exception Memo for this condition has been documented and approved on January 28, 2019. Within the interchange, the locations where the movements are not expected to provide an LOS of E or better starting in year 2033 are summarized below.

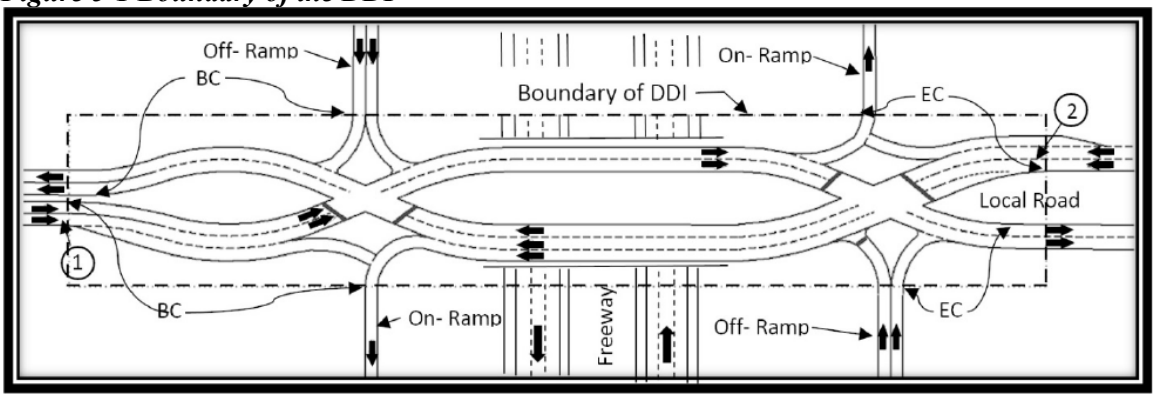
- University Pkwy WB thru movement at DCI for SB ramps: LOS F
- University Pkwy EB thru movement at DCI for NB ramps: LOS F
- NB Off-Ramp left and right turn movements at DCI: LOS F

Overall, compared to the No Build Alternative, the intersections are forecasted to operate with an improvement in level of service and reduction in average delay under the future Build Alternative.

Nonstandard Design Features

The proposed DDI design was developed in accordance with Caltrans Design Information Bulletin (DIB) 90 "Diverging Diamond Interchange" dated December 14, 2017; the technical publication "Diverging Diamond Interchange Informational Guide" (Guide) from FHWA; Caltrans HDM; and Caltrans Ramp Metering Design Manual (RMDM). The DIB90 provides guidance and relevant standards specific to the design within the boundary of the DDI. Within the boundary of the DDI, the DIB90 design standards govern over any other standards. As shown in Figure 5-1 below, the boundary of the DDI is defined by the area between the beginning of curve (BC) and the end of curve (EC) of the first and last horizontal curves along the local street and at the ramp terminals.

Figure 5-1 Boundary of the DDI



Source: Caltrans Design Information Bulletin (DIB) 90, December 14, 2017

DDI design involves balancing and optimizing performance objectives for all users, right-of-way and utility impacts, environmentally sensitive areas, maintenance needs, constructability, and costs among other considerations. Although every attempt was made to minimize the number of nonstandard design features, there are some constraints and existing conditions that make it infeasible to provide a design that meets all the design standards. The following tables provide a summary of the Project features requiring approval to Boldface and Underlined design standards. More details about these exceptions and their corresponding justifications have been documented in the Project's Design Standard Decision Document (DSDD) approved on March 12, 2019.

Table 5-2 Summary of Boldface Standards Requiring Approval

DSDD Design Feature #, Description and Design Document Index	Location	Standard	Existing	Proposed	Discussion / Justification
Feature #1 Stopping Sight Distance HDM 201.1	1. SB On-Ramp crest curve	430' (50 MPH)	307'	307'	Constrained location, addressing would impact R/W, schedule, env. studies
	2. NB On-Ramp terminal	150' (25 MPH)	>150'	115'	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
	3. NB Off-Ramp left turn connector	150' (25 MPH)	>150'	110'	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
	4. SB On-Ramp	150' (25 MPH)	>150'	125'	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
Feature #2 Shoulder Width HDM 302.1 & DIB90 2.8	1. NB Off-Ramp right shoulder	8'	2'	8' to 2'	Constrained location, addressing would impact R/W, schedule, env. studies
	2. University Pkwy EB left shoulder under existing bridge	2'	N/A	1'	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
	3. University Pkwy WB left shoulder under existing bridge	2'	N/A	1'	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
Feature #3 Intersection Spacing HDM 504.3(3) & DIB90 2.13	1. University Pkwy between Hallmark Pkwy and SB DCI	400'	437'	372'	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
	2. University Pkwy between SB and NB DCIs	400'	338'	143'	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
Feature #4 Intersection Sight Distance DIB90 2.4	1. NB Off-Ramp right turn lanes	529' (comb. truck)	100'	353'	Constrained location, ISD meets requirement for passenger vehicles
	2. SB Off-Ramp right turn lane	529' (comb. truck)	207'	353'	Constrained location, ISD meets requirement for passenger vehicles
Feature #1 (District Delegated) Shoulder Width HDM 308.1	1. University Pkwy between Hallmark Pkwy and SB DCI	3'+gutter pan width	0'	0' to 8'	Constrained location, addressing would impact R/W, utilities, schedule, env. studies

Table 5-3 Summary of Underlined Standards Requiring Approval

DSDD Design Feature #, Description and Design Document Index	Location	Standard	Existing	Proposed	Discussion / Justification
Feature #1 Vertical Curves HDM 204.4 & HDM 504.2(5)(a)	1. Sag curve at right turn connection between WB University Pkwy & NB On-Ramp	200’	N/A	100’	Short connector alignment, addressing would impact R/W, utilities, schedule, environmental studies
	2. Crest curve at left turn connection between NB Off-Ramp and WB University Pkwy	200’	N/A	80’	Short connector alignment, addressing would impact R/W, utilities, schedule, environmental studies
	3. Sag curve at left turn connection between NB Off-Ramp and WB University Pkwy	100’	N/A	92’	Short connector alignment, addressing would impact R/W, utilities, schedule, environmental studies
	4. Crest curve at right turn connection between EB University Pkwy & SB On-Ramp	200’	N/A	80’	Short connector alignment, addressing would impact R/W, utilities, schedule, environmental studies
	5. Sag curve at right turn connection between EB University Pkwy & SB On-Ramp	200’	N/A	80’	Short connector alignment, addressing would impact R/W, utilities, schedule, environmental studies
Feature #2 Side Slope Standards HDM 304.1	1. Fill slope behind enforcement area at NB On-Ramp	4:1 or flatter	5:1	3:1	Constrained location, addressing would impact existing concrete channel, schedule, environmental studies
Feature #3 Lane Drops, HDM 504.3(1)(d) & 504.3(2)(c)	1. SB On-Ramp	30:1 to 50:1	50:1	15:1	Constrained location, addressing would impact R/W, schedule, environmental studies
Feature #4 Single Lane Ramps HDM 504.3(5)	1. SB Off-Ramp	Two lanes if ramp L>1,000’	1 Lane (Ramp L=1,041’)	1 Lane (Ramp L=1,041’)	Addressing would impact schedule & env. studies. RT turn pocket extended to help RT turn movements go around LT turn queue
Feature #5 Access Control HDM 504.8	1. University Pkwy next to SB Off-Ramp	100’	17’	50’	Constrained location in fully developed area, addressing would impact R/W, schedule, environmental studies
Feature #6 Angle of Intersection DIB90 2.10	1. University Pkwy DCI at SB ramps	40° Min.	N/A	33°00’00”	Constrained location, addressing would impact I-215 bridge, schedule, env. studies
	2. University Pkwy DCI at NB ramps	40° Min.	N/A	36°45’23”	Same as previous
Feature #7 Pedestrian Facilities (Min. width) DIB90 2.15	1. University Pkwy center pedestrian path	10’	N/A	8’	Constrained location, addressing would impact I-215 bridge, schedule, env. studies

Other DDI design criteria listed in the DIB such as tangent length through crossover was unpractical for the existing conditions and constraints of this interchange. In order to develop the best DDI design solution for the Project site, two design variations were initially evaluated from which a hybrid version was consolidated and included in the first GAD submittal.

After receiving feedback from the Caltrans PDT reviewers, another five design variations were developed using a combination of different tangent lengths, angles of intersection, and radii for the DCIs to show the impacts that each of these had on Project footprint, number of reverse curves, traffic operations, right-of-way, existing utilities, cost and schedule. The current layout design in the engineering plans included in Attachment B is what the PDT concurred with as the best design variation that would minimize impacts that would provide a smooth drive through the DDI.

Interim Features

There are no interim features for this Project.

High-Occupancy Vehicle (Bus and Carpool) Lanes

Currently there are no existing HOV lanes in this segment of I-215. As previously discussed in Section 4B of this document, the Caltrans District 8 TCR and SCAG's RTP/RCS include a separate project (RTP 4H01008) that proposes to add HOV lanes for both directions of I-215 between SR-210 and I-15. That future project is financially constrained, and although the opening year is listed as 2035, currently no funding sources have been identified for that project.

Ramp Metering

The existing on-ramps are unmetered, but this Project proposes to install the ramp metering equipment to provide that feature. The opening and design year LOS results reported in the traffic section of this document and in the Project's TOAR assume that the ramp metering will be implemented.

California Highway Patrol (CHP) Enforcement Area

Enforcement areas will be added as part of this Project near the entrances to the I-215 from the NB-On and SB-On ramps. Currently there are no existing CHP enforcement areas along this segment of I-215, and none will be added by this Project. It is unknown if these features will be added by future projects.

Park-and-Ride Facilities

Currently there are no existing Park-and-Ride lots in the vicinity of this interchange, and none are proposed as part of this Project because its purpose is to improve the traffic operations of the interchange.

Utility and Other Owner Involvement

Table 5-4 below includes a list of existing utilities located on University Parkway and within the Project limits. These utilities have been identified from field visits and the best information available from maps and as-built plans provided by utility companies and from previous improvement projects.

Table 5-4 Existing Utilities

Utility Description	**Owner**
Electric UG lines	SCE
8" HP Gas	SCG
8" Sewer	City of San Bernardino
Telecommunication UG lines	Frontier
Telecommunication UG lines	Verizon Business
8" Water	SBMWD
16" Water	SBMWD
108" Water	CALDWR

Abbreviations

CALDWR: California Department of Water Resources
HP: High Pressure
SBMWD: San Bernardino Municipal Water Department
SCE: Southern California Edison
SCG: Southern California Gas
UG: Underground

From these only the 8" HP gas line is classified as a high priority utility and positive location of the line was accomplished by potholing as required by the Caltrans PDPM. More detailed information about the existing utilities will be included in the final design plans.

There are no existing overhead utility lines along University Parkway, but there are high voltage transmission lines crossing the I-215 freeway near the exit to the NB Off-Ramp and the entrance from the SB On-Ramp. However, these lines are fairly high above the roadway because the support towers are located on the hills adjacent to the I-215 freeway; therefore, no conflicts are expected with the proposed work by this Project.

Since the construction of the DDI only requires some pavement replacement and shallow excavations, it is anticipated that only a small number of utility impacts or relocations will be required. These impacts include the relocation and adjustment of water valves and back flow preventers, irrigation systems, pull boxes, traffic signals and related appurtenances, street signs, manhole lids and covers, and drainage inlets. The installation of traffic signals and overhead signs will be done at locations that avoid conflicts with existing underground utilities.

Railroad Involvement

No railroad agencies will be involved since there are no existing railroad facilities within or immediately adjacent to the Project.

Highway Planting

Replacement Highway Planting will be planned based on the Route 215 San Bernardino Master Plan. Landscaping plans, including hardscaping, will be prepared to identify all opportunities to use areas within the State right of way for full landscaping consistent with the I-215 San Bernardino Master Plan.

This will include landscaping for graded areas with plant species consistent with adjacent vegetation and enhancement of Project structures (ramps, concrete barriers and existing bridge abutment walls). Landscape improvements outside of Caltrans right of way will be designed per the City standards.

Erosion Control

Generally the existing cut and fill slopes within the Project limits are flat enough to allow re-vegetation and limit erosion. The new cut and fill areas will be minimal, and the proposed slopes will vary from 4:1 to 2:1 with some minor exceptions. These exceptions include some small slope areas to be graded at 1.5:1 at the ends of the existing I-215 bridge abutment walls, and at the right-turn terminal of the NB off-ramp to keep the improvements within the existing right of way. Retaining barriers and hardscaping cover will be used to provide stability and erosion control at these locations.

Along the ramps, some stormwater runoff will sheet flow onto adjacent unpaved areas to then be treated by proposed treatment BMP devices such as Design Pollution Prevention Infiltration Areas and infiltration swales. Hydroseeding with a native seed mix will be applied on new slopes and BMP areas to prevent erosion.

The Project will be scheduled to minimize or avoid soil-disturbing work during the rainy season. The temporary construction site BMPs to be used in this Project include: fiber rolls, drainage inlet protection, concrete washout and silt fence.

Noise Barriers

This Project does not meet the criteria for a Type I or Type II Project as defined in the Caltrans Traffic Noise Analysis Protocol (May 2011), and therefore no Noise Study Report is required. Further details are provided in section 6H below.

Non-motorized and Pedestrian Facilities

The proposed Project will accommodate pedestrians and bicyclists along University Parkway. Sidewalk facilities maintain existing access patterns, serving businesses with current access on both sides of University Parkway. The curb returns and curb ramps will be reconstructed within the interchange for the new DDI layout. The Project will remove the abutment-adjacent sidewalks located between the SB and NB ramp intersections, and will replace them with an 8’ wide median pedestrian pathway that will connect with the existing sidewalks beyond the ramp terminals.

The 4.5’ right shoulders within the core of the DDI can serve as Class II Bikeways (bike lanes) for bicyclists to travel along each direction of travel on University Parkway. These bike lanes would begin on the west side of the interchange and

continue towards the CSUSB campus. Approaching Hallmark Parkway and continuing southwest a Class III Bikeway (bike route) will be maintained which is consistent with the existing conditions and the City's General Plan.

Needed Roadway Rehabilitation and Upgrading

The existing interchange is over fifty years old and since it was first built in the mid 1960's, it has had partial improvements implemented by different projects to accommodate the ever growing traffic demands. The proposed improvements by this Project are needed to improve the traffic operations of the interchange to accommodate the forecasted traffic demands.

University Parkway and the freeway ramps are currently paved with asphalt concrete pavement and show signs of normal wear and tear. Alligator, block, longitudinal and transverse cracking are noticeable on the existing pavement, especially along University Parkway. The pavement of the ramps seems to be in better condition and appears to have been maintained more frequently.

One of the projects previously discussed in Section 4B of this report (EA 1H340) is scheduled to occur before the DDI construction and involves the replacement of the existing asphalt pavement with JPCP at the off-ramp terminals, as well as the reconstruction of the existing curb ramps to make them ADA compliant. PDT coordination has started to preclude any work that later on would be removed by this Project for the new interchange configuration.

Needed Structure Rehabilitation and Upgrading

The only existing structure within the Project area is the I-215 Bridge, and this Project does not propose any work for the rehabilitation or upgrading of that structure.

Cost Estimate

The estimated cost for the Project is $8.7 million. Since the existing I-215 undercrossing structure at University Parkway will be protected in place, there are no costs for structure items. In addition, utility relocations to accommodate the DDI are expected to be minor. The total capital outlay cost estimate is summarized in the following table. A detailed breakdown of this estimate is provided in Attachment C of this report.

Table 5-5 Preliminary Cost Estimate

Preliminary Estimate	Current	Escalated
Roadway	$8,186,300	$9,576,813
Structures	$0	$0
Right of Way	$503,500	$544,586
Total	$8,690,000	$10,122,000

Right-of-Way Data

Permanent right of way acquisitions are not required by this Project as all of the proposed improvements will be constructed within the existing right of way.

Temporary Construction Easements will be required for removal and relocation of private driveways. The estimated cost for TCEs are included in the cost estimate above and in the Right of Way Data Sheet included in Attachment D of this report.

Effects of Projects Funded by Others on State Highway

The San Bernardino County Transportation Authority is the Project Sponsor, and funding will be provided by a combination of local, state and federal funds. Caltrans will provide oversight through the construction phase of the Project. No impacts to mainline freeway operations are expected as a result of construction activities, and all the existing lanes in both directions of travel will remain open during the construction of the Project. The proposed work on the ramps and on University Parkway will be staged in a way to provide continuous access to motorists, pedestrians and bicyclists. More details about staging will be provided during final design.

5B. Rejected Alternatives

In the PSR-PDS, a partial cloverleaf interchange with a southbound loop On-Ramp was evaluated in addition to the DDI and the no-build alternatives. However, compared to the DDI, a partial cloverleaf interchange would require permanent right-of-way takes from adjacent properties as well as the reconstruction of the I-215 bridge structure to increase its span over University Parkway in order to accommodate this type of interchange. For these reasons and because the partial cloverleaf does not improve the operations for all the movements of the interchange, it was dropped from the list of viable alternatives. The DDI alternative was developed as part of the Value Analysis (VA) study to reduce impacts to businesses and the community.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. **Hazardous Waste**

As previously discussed, the proposed Project improvements would occur within areas of previously disturbed soils within the existing I-215 University Parkway Interchange. No building structures would be disturbed as part of the proposed Project, including the existing I-215 bridge structure at the University Parkway undercrossing. Right-of-way requirements would include temporary construction easements for private property driveway modifications.

The Initial Site Assessment (ISA) did not find evidence of recognized environmental conditions (RECs), historical RECs, or controlled RECs within the ISA Study Area, which includes the Project limits and a 300' radius. The scope of an ISA is limited to anecdotal and visual evidence of potential RECs, and does not include verification of RECs based on Phase II soil and/or groundwater sampling. Therefore, the following Preliminary Site Investigations (PSI) are recommended to verify the presence or absence of these potential RECs; and if present, to provide appropriate recommendations for remediation activities during construction.

Aerially-Deposited Lead

A site investigation and soil sampling was conducted on December 10, 2018 to evaluate for the presence of aerially deposited lead (ADL) in unpaved areas within the Project limits, where future soil disturbance is anticipated. In general, soil samples were collected at approximate depths of 0.5', 1.5', and 3' below ground surface (bgs) at each location. These depth intervals are based on the expected depths of soil disturbance during construction activities. To classify the soil on the Project, the Site was analyzed as two units consisting of northbound and southbound segments.

The ADL Report concluded that for both northbound and southbound segments, soil generated from excavation to depths ranging from 0' to 3' bgs is considered Caltrans soil type 'X' and is non-hazardous acceptable for residential reuse. Based upon these results and the anticipated shallow depth of excavation, hazardous soil is not expected to be generated during excavation for the Project.

Paint and Thermoplastic Striping

Yellow paint used for lane striping and pavement marking may contain hazardous levels of lead chromate. Striping and pavement marking materials along I-215 removed by the Project will be sampled and analyzed for lead chromate prior to disposal. Yellow traffic striping and pavement markings characterized as hazardous waste will be disposed at a DTSC-permitted Class I disposal facility.

In addition to the PSIs identified above, the designated contractor would be responsible for preparing the following plans, permit, and approvals prior to beginning construction to protect worker health and safety, the public, and the environment.

- Health and Safety Plan
- Contaminant Management Plan

- Construction Contingency Plan
- Lead Compliance Plan
- Obtain a National Pollutant Discharge Elimination System (NPDES) General Construction Permit
- Obtain approval from landfills to accept any impacted soil that would require disposal at an off-site landfill

6B. Value Analysis

In October 2009 a VA Study was conducted by the City of San Bernardino in coordination with Caltrans District 8. During the study, ten additional alternatives were explored. Some of these alternatives included a single point urban interchange, a new interchange at Campus Avenue, and multiple variations of a partial cloverleaf interchange. These alternatives were not considered for further analysis due to excessive cost, right of way and utility impacts, or failure to meet the need and purpose of the Project.

6C. Resource Conservation

The Project is listed in SCAG's 2016-2040 RTP/Sustainable Communities Strategy. The proposed Project is not considered a major project in terms of energy consumption, and the differences in energy consumption between the Build and No Build alternatives are not considered to be substantial. The proposed Project is intended to improve traffic flow and to reduce congestion and delays at the ramps and along University Parkway. As such, carbon dioxide emissions may be reduced as a result of the improved traffic operations of the interchange.

Existing asphalt pavement can be ground up and used as new base material. Clean concrete rubble may also be crushed and combined with new materials for reuse in base or minor concrete as appropriate. Traffic signal equipment, sign panels, and sign posts can be reused or salvaged if in optimal condition. Low energy consumption devices will be installed as necessary (e.g. LED lighting).

6D. Right-of-Way Issues

Right-of-Way Required

Permanent right of way acquisitions are not required for the new DDI interchange configuration because it is anticipated that construction activities and laydown areas will be contained within the existing State and public R/W. Temporary construction easements will be required for the driveway modifications as described previously in the proposed engineering features section. In addition, the access control limits will be extended to provide 100’ beyond the beginning/end of new ramp connectors, with the exception of the SB Off-Ramp where only 50’ is provided due to the proximity of the existing driveway that will be protected in place to serve as common access for the Verizon retail plaza and the Jack in the Box property. The cost of TCEs is included in the preliminary cost estimate for the Project.

Relocation Impact Studies

This Project will not displace any person or business since all the improvements will be completed within the existing right of way, and access will be provided to the local businesses and private properties during and after completion of the Project.

Airspace Lease Areas

Airspace lease areas have not been assessed for this Project.

6E. Environmental Compliance

The anticipated environmental approval for CEQA is an Initial Study (IS) with an anticipated Negative Declaration (ND). For NEPA, it is a Categorical Exclusion (CE). The IS/CE has been prepared in accordance with Caltrans' environmental procedures, as well as State CEQA guidelines. Under Caltrans' assumption of responsibility pursuant to 23 U.S.C. 326, this Project has been determined eligible for a 23 CFR USC 326 Categorical Exclusion (CE) in compliance with NEPA. The IS, included in Attachment E, was signed on July 10, 2019.

Wetlands and Flood Plains

The Biological Survey Area (BSA) supports concrete and un-vegetated earthen ephemeral ditches constructed in uplands for the purpose of draining freeway and adjacent infrastructure. Therefore, no avoidance and minimization measures or compensatory mitigation are proposed for potential Project impacts to these resources. Should the agencies determine that the concrete and un-vegetated earthen ephemeral ditches are jurisdictional, then the following permits and authorizations for any proposed impacts to these features would be required:

- USACE – Section 404 Nationwide Permit
- CDFW – Section 1600 Streambed Alteration Agreement
- RWQCB – Section 401 Water Quality Certification

According to Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) Number 06071C7940J, the Project is located within an area classified as Zone X, which is outside of the 100-year floodplain zone. The Project area drains to a detention basin known as Macy Basin, located approximately 1,600' southwest of the Project. Macy Basin is classified as Zone A, which is within the 100-year floodplain zone with a one percent annual chance of flood. Macy Basin is outside of the Project limits.

Other Environmental Discussion

The following is a list of the Environmental Technical Studies completed for this Project. The conclusions from each are discussed in this or other sections of the report.

- Air Quality Report (AQR) – See Section 6F below.
- Community Impact Assessment (CIA) Technical Memorandum

Based on the analysis in this document it was concluded that the Project would include improvements in street lighting; traffic signal modifications; minor paving; minor utility relocations; additional signage; restriping, additional turn lanes; and bicycle, pedestrian, and median streetscape improvements. Therefore, the Project would not negatively impact the surrounding community, and would provide health and safety related community benefits such as improving non-motorized access through the I-215/University Parkway interchange.

- Historic Property Survey Report (HPSR) including the Archeological Survey Report (ASR)

  This report determined that a "Finding of No Historic Properties Affected" is appropriate because there are no historic properties within the Area of Potential Effect (APE). The report also determined that there are resources in the Project area that are not significant resources under CEQA.

- Initial Site Assessment (ISA)

  The findings in the ISA identified two recognized environmental conditions (RECs) that may warrant additional investigation. These RECs are:

  ADL - Previously undisturbed soil areas and any unpaved areas within Caltrans R/W along the shoulders of I-215 have the potential to contain ADL soils.

  PTS - Yellow paint used for lane striping and pavement marking along I-215 within Caltrans R/W may contain lead chromate.

- Natural Environment Study Minimal Impact (NESMI)

  Endangered Species: The California Department of Fish and Wildlife (CDFW) authorizes take of endangered, threatened, or candidate species through Sections 2081 and 2080.1 of the CFG Code. With implementation of certain measures described in the NESMI document, the Project under the Build Alternative would not result in direct impacts to Coastal California Gnatcatcher (CAGN) or contribute towards the overall decline of the CAGN population. No plant or wildlife species that are solely state listed endangered, threatened or candidate species will be impacted by the Project; therefore, no Incidental Take Permit under Section 2081 is required.

  Invasive Species: A total of 9 non-native plants were identified within the BSA. Of these, 8 are listed on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory; two with a moderate rating, one with a limited to moderate rating, four with a limited rating, and one on the watch list. In compliance with Executive Order (EO) 13112, weed control will be performed to minimize the importation of non-native plant material during and after construction. Eradication strategies would be employed should an invasion occur. Measures addressing invasive species abatement and eradication will be included in the Project design and contract specifications.

  Migratory Birds: Habitat to support nesting for birds protected under the Migratory Bird Treaty Act (MBTA) occurs throughout the BSA. Implementation of Measures described in the NESMI document will be implemented to avoid impacts to birds

nesting in vegetation within and adjacent to Project work areas.

- Paleontological Identification Report (PIR) / Paleontological Evaluation Report (PER)

  The majority of the Project-related ground disturbance will be surficial and will be restricted to previously disturbed areas, areas with historic development, and agricultural use. Exceptions to this include excavations of up to 15' associated with the installation of traffic signal pole and overhead signage foundations. Ground disturbances in areas that are immediately underlain by Quaternary alluvium (Qya) that are less than 5' bgs have a low potential to encounter fossil resources, while excavations greater than 5' bgs reach geologic strata with high paleontological sensitivity and therefore have a high potential to encounter fossil resources. However, by implementing the management recommendations outlined in the PIR/PER, adverse impacts to paleontological resources can be reduced to a less than significant level pursuant to the requirements of CEQA.

- Visual Impacts Assessment (VIA)

  The proposed Project will not result in adverse visual changes. The proposed Project will not create additional light and glare beyond that created by the existing infrastructure. Although temporary adverse visual impacts are anticipated during construction, the proposed Project will not create adverse permanent visual impacts within the Project limits and surrounding area. The DDI would encourage and provide safe mobility for all motorist and non-motorist users consistent with the City of San Bernardino's General Plan, University District Specific Plan, and would integrate key elements of Caltrans' Complete Streets directive. With the implementation of the measures identified in the VIA document, visual impacts caused by the proposed Project would be avoided or minimized.

- Water Quality Technical Memorandum (WQTM)

  The WQTM recommends the following avoidance and minimization measures to minimize impacts to water resources and water quality:

  Compliance with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with construction and land disturbance activities (Construction General Permit) by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential to impact water quality.

  Implement Design Pollution Prevention BMPs such as preservation of existing vegetation and slope/surface protection systems (permanent soil stabilization), as well as concentrated flow conveyance systems such as concrete ditches, oversize drains, inlets, down drains, and storm drain pipes.

An Environmental Certification will be required during the PA/ED phase. A revalidation of the ND/CE may be needed if changes in Project scope or alternatives; or in environmental laws, regulations, or guidelines occur during the PS&E phase. Caltrans is the Lead Agency for both CEQA and NEPA. See Attachment E for signature page of the approved environmental document.

6F. Air Quality Conformity

The proposed Project is in the San Bernardino County portion of the South Coast Air Basin, which includes all of Orange County and the non-desert portions of Riverside, San Bernardino, and Los Angeles counties. The proposed Project is included in SCAG's final adopted 2019 FTIP as Project Number SBD59204.

Air quality conformity is not required as the Project is exempt from project-level conformity requirements (40 CFR 93.126).

An Air Quality Report has been completed for the Project and was approved on September 18, 2018. The report concluded that the proposed Project would not generate new vehicular traffic trips since it would not construct new homes or businesses. In addition, the proposed Project would not increase the traffic volumes along I-215, University Parkway, or any of the freeway ramps. It is anticipated that the proposed Project will improve traffic operations at the interchange, which would reduce fuel emissions and yield air quality benefits to the region. Therefore, the proposed Project would have no effect on the regional criteria pollutant, MSAT, or GHG emissions. During Project construction, the implementation of exhaust and fugitive dust emission control measures will reduce construction-related air quality impacts.

6G. Title VI Considerations

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color or national origin in programs or activities receiving federal financial assistance. Federal-aid recipients, sub-recipients and contractors are required to prevent discrimination and ensure nondiscrimination in all of their programs, activities and services whether these programs, activities and services are federally funded or not. The California Department of Transportation is proud of its longstanding policy to ensure that social impacts to communities and people are recognized early and continually throughout the transportation decision-making process, from the very first thought about a transportation plan to post-construction operations and maintenance.

The Project will improve the operational efficiency of the interchange while also providing adequate access and roadway facilities for all users including pedestrians, people with disabilities, bicyclists, motorists, and transit riders. Such facilities include:

- Ramped curbs at intersections and crosswalk locations
- Pedestrian sidewalks and a pedestrian pathway
- Raised islands that serve as refuge areas for pedestrians
- A Class II bike path for bicyclists
- Continuous access to shopping, private properties, and bus stops

6H. Noise Abatement Decision Report

General

According to the guidelines in the Caltrans Traffic Noise Analysis Protocol (May 2011), this Project does not qualify as a Type I project because of the following reasons:

1. The proposed Project would not construct a highway on a new location;
2. The proposed Project would not physically alter the existing highway where:
    a. The distance between the traffic noise source and the closest receptor is halved. The only sensitive land use in the area of the Project limits is the Motel 6 located at the southeastern quadrant of the I-215/University Interchange. The distance to this sensitive land use would be reduced from approximately 180' to 130', a reduction of 28%. Therefore, the proposed Project would not substantially alter the horizontal alignment;
    b. The vertical alignment and existing shielding near the Motel 6 would not be substantially altered by the proposed Project;
3. The proposed Project would not increase the number of through-traffic lanes;
4. The proposed Project would not construct any auxiliary lanes;
5. The existing interchange currently has ramps in all four quadrants. Therefore, the proposed Project would not be moving or constructing ramps to complete an existing partial interchange;
6. The proposed Project would not be restriping any existing pavement for the purpose of adding additional travel or auxiliary lanes;
7. The proposed Project would not construct or alter an existing weigh station, rest stop, rideshare lot, or toll plaza.

In addition, as the proposed Project would not be constructing retrofit noise abatement, it is not a Type II project. Therefore, the proposed Project is a Type III project and no noise analysis is required.

Results of the Noise Study Report

Not applicable to this Project.

Factors in the Noise Abatement Decision Report

Not applicable to this Project.

Non-acoustical Factors Relating to Feasibility

Not applicable to this Project.

Preliminary Noise Abatement Decision

Not applicable to this Project.

Secondary Effects of Abatement

Not applicable to this Project.

6I. Life-Cycle Cost Analysis

A Life-Cycle Cost Analysis (LCCA) was not deemed necessary by the PDT members during a meeting held on November 15 of 2017 because the proposed paving is generally limited to ramp widening, sliver widening, relatively short segments (<1,000 linear feet) of pavement replacement, and asphalt grinding and overlay. However, a Preliminary Materials Report (PMR) will be completed for the Project.

6J. Reversible Lanes

Reversible lanes are not applicable to this Project.

7. OTHER CONSIDERATIONS AS APPROPRIATE

Public Hearing Process

Meetings between representatives from Caltrans, SBCTA, and CSUSB have been held to discuss the status of the Project. A public open house will be held as part of the community outreach, and all comments from the public will be either documented by a court reporter or received in writing. During the same event, the Project will be explained to the public so they know what to expect in terms of the direction of traffic and how to navigate through the DDI.

During final design, the City of San Bernardino will verify that design elements are consistent with the vision for the City regarding aesthetic enhancements, landscaping, streetscapes, materials, colors, and signage consistent with the San Bernardino General Plan Urban Design Element, University District Specific Plan. In addition, during final design a conceptual plan will ensure consistency with the I-215 San Bernardino Master Plan guidelines, guidelines within the Urban Design Element of the San Bernardino General Master Plan and the University Specific Plan.

Route Matters

Freeway Agreements and New Connections

The I-215 freeway is an existing access-controlled route and the Project does not propose any new connections or permanent closures of the existing local roads. Therefore, a new freeway agreement is not required.

Route Adoptions

According to the Caltrans PDPM route adoptions are required for any of the following situations:

- A new alignment for an existing route
- Establishment of a location for an unconstructed route
- Conversion of a conventional highway to a freeway or a controlled access highway
- Designating a traversable highway
- Temporary connections

Since none of the above apply to this Project, there are no route adoptions needed.

Relinquishments

The Project does not include the removal of a State Highway (either in whole or in part) from the State Highway System (SHS). Therefore, there are no relinquishments proposed by this Project.

Permits

As previously discussed in section 6E - Environmental Compliance, it is anticipated that the Project will **not** require permits or approvals from the following agencies due to its low impacts:

- California Department of Fish and Wildlife
- Regional Water Quality Control Board
- U.S. Army Corps of Engineers

An encroachment permit from the San Bernardino County Flood Control District may be required after approval of Project Report and Final Environmental Document for construction and modification of drainage systems within the Project limits.

Cooperative Agreements

SBCTA is the lead agency for funding and administration of the Project and has a cooperative agreement with Caltrans for the current PA/ED phase. A cooperative agreement also exists between SBCTA and the City of San Bernardino for the PA/ED, PS&E, R/W, and construction phases of the Project.

Caltrans is the Lead Agency under the California Environmental Quality Act (CEQA) as well as the Lead Agency under the National Environmental Policy Act (NEPA), as assigned by FHWA, in accordance with NEPA (42 United States Code [USC] 4321 et seq.); and the Council on Environmental Quality (CEQ) Regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508).

Other Agreements

Besides Caltrans and SBCTA, the City of San Bernardino and CSUSB are the two stakeholders most directly involved with the development of the Project. Although no formal agreements exist, these two stakeholders have been contacted on a regular basis to keep them updated on the progress of the Project.

Report on Feasibility of Providing Access to Navigable Rivers

Not applicable as there are no navigable rivers within the Project limits or in the immediate vicinity.

Public Boat Ramps

Not applicable to this Project for the same reason mentioned above.

Transportation Management Plan

The proposed Project is anticipated to improve traffic operations at the interchange. However, during construction, temporary impacts on traffic could occur. Implementation of a Transportation Management Plan (TMP) during construction would be required and would include measures to mitigate construction-related traffic impacts. A preliminary TMP data sheet has been prepared as part of the PA/ED phase of the Project and is included in Attachment F. Some of the key elements recommended in the TMP include the following:

- Public Information/Public Awareness Campaign
- Traveler Information Strategies

- Incident Management
- Construction Strategies
- Demand Management
- Alternative Route Strategies

No full closures are expected to be needed during construction; therefore, no detours will be required. Temporary lane closures will be needed to phase the Project construction but vehicular (including school buses and emergency response vehicles), pedestrian, and bicyclist access along the road and to/from private properties will be maintained at all times.

Project construction is not anticipated to impact transit services. The only bus stop located within the Project limits is on WB University Parkway approximately 170' south of the intersection at North Varsity Avenue. The bus stop will be protected in place to remain operational during construction of the Project. There are no existing HOV lanes or park-and-ride lots in the Project area.

Temporary lane closures of more than 10 consecutive days may be required at the off-ramp terminals where the existing AC pavement will be replaced with concrete pavement. Normally a 30-day curing period is required for new concrete but the contractor may opt to use rapid setting concrete. However, doing so may reduce the lifespan of the concrete. The conceptual staging and traffic handling strategy is discussed in the next section below.

Stage Construction

One of the goals of the Project is to provide continuous access to and from the freeway ramps, driveways, private properties, businesses, and CSUSB campus at all times. It is recommended to schedule the construction operations to occur during the school breaks, weekends, and/or night time to minimize the impacts to traffic. The need for a flag man and signal operation engineer at site during construction will be evaluated during final design for the stage construction, detours, and traffic handling plans.

The existing flat areas located next to the ramps and within the Caltrans right of way provide opportunities for potential staging laydown areas. Detailed stage construction plans will be included in the PS&E package, but a conceptual description of the different stages of construction for the DDI interchange is described below.

- Prior to commencing the work, the appropriate construction and temporary signs will be installed to inform and warn motorists about the construction activities that will be taking place.
- Any utility relocation needed for the Project would take place as the first order of work. That way the areas needed for the construction of the DDI will be clear of obstructions prior to the beginning of construction.
- Once the utility relocations are completed, k-rail would be installed on the ramps to construct portions of the proposed layout, drainage systems, and off-ramp terminal concrete pavement located outside of the existing travel way.

- Temporary ramp lane closures would be implemented and the traffic would be shifted to the newly paved/widened areas to reconstruct or resurface the existing pavement, and to construct the remaining portions of raised islands, drainage systems, off-ramp terminal concrete pavement, and the installation of overhead signs and traffic signal equipment. Temporary pavement could also be used to provide continuous access to traffic.
- The sidewalk along the existing south abutment wall of University Parkway between the ramp intersections could be removed and replaced with paving plus the concrete barrier that will protect the bridge abutment wall.
- All the lane widths would be temporarily reduced and the lanes shifted to the outside to construct the median pedestrian pathway. In the meantime, pedestrian access would be maintained along the existing sidewalk on the north side of the road.
- Pedestrians would then be directed to the new pedestrian pathway to construct the remaining improvements along the existing north abutment wall of University Parkway between the ramp intersections.
- Final grading of BMPs, signing and striping would be completed last.

Accommodation of Oversize Loads

I-215 traverses over University Parkway and has no height restrictions for oversize load vehicles. The existing bridge that spans over University Parkway has a minimum vertical clearance of 15'-1", and the Project will not modify the bridge structure or its current vertical clearance.

The radii of horizontal curves at ramp terminals and at the crossovers of the DDI were selected based on the existing right of way available as well as truck turning analysis to accommodate the standard Caltrans STAA truck template. Lane widening was also applied at these locations to prevent large vehicles from encroaching onto adjacent lanes or the shoulders that will serve as bike lanes.

Graffiti Control

The Project does require the construction of new retaining walls and a graffiti removal specification could be included during final design for aesthetic maintenance during construction of the proposed concrete barriers and the existing bridge abutment walls which have mural paintings that portray that this is part of the University District of CSUSB.

The median pedestrian pathway can also help to control graffiti because the bridge abutment walls will be on the left side of the road travel way where the shoulders are reduced to 1', thus making graffiti challenging.

Asset Management

There are no outstanding issues carried over from the project initiation.

Complete Streets

As defined by the Complete Streets Program, a complete street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility. Every complete street looks different according to its context, community preferences, types of road users and their needs.

Key Complete Street elements are integrated as part of the proposed DDI design, and will allow for connectivity within the interchange to be maintained for all modes of transportation, including motorists, trucks, emergency vehicles, transit vehicles, bicycles, and pedestrians.

The proposed elements contributing to the Complete Street directive include striping, pavement markings, signalized pedestrian crossings, street lighting, shoulders along University Parkway that can be used as class II bike lanes, increased signage for pedestrians and bicycle movements within the DDI and along University Parkway, and the addition of safety concrete barriers along the sides of the median pedestrian pathway. These inherent design features to the DDI design would encourage walking and bicycling by providing facilities for pedestrians and bicyclists.

Climate Change Considerations

The Project is listed in SCAG's 2016-2040 RTP / SCS and is not considered a major project in terms of energy consumption as the difference in energy consumption between the Build and No Build conditions is not considered to be substantial. Therefore, an analysis related to energy is not anticipated to be necessary.

The Project is intended to reduce traffic congestion and delays along University Parkway at the I-215 ramp intersections, which would result in a reduction in vehicle hours traveled, improved traffic flow, and carbon dioxide emissions. The proposed facilities for pedestrians and bicyclists encourage alternative modes of transportation that do not generate greenhouse gas emissions.

Broadband and Advance Technologies

According to Caltrans' website for wired broadband facilities on State Highway right of way, California Governor's Executive Order S-23-06 Twenty-First Century Government directed the establishment of the California Broadband Task Force, of which Caltrans is a member, to bring together public and private stakeholders to better facilitate broadband installation, identify opportunities for increased broadband adoption, and enable access to and deployment of new advanced communication technologies.

The preliminary utility research during the PSR and PA/ED phases identified the existence of fiber optic lines along University Parkway owned by telecommunication companies. No impacts are anticipated to these lines and the facilities will be protected in place.

One of the future projects listed in Table 4-1 (EA 47642) proposes to install a fiber

optic communication system along I-215 between I-10 and I-15 in the County of San Bernardino, and connect existing elements such as irrigation Controller Cabinets (ICC), Closed Circuit Television (CCTV), Wireless Vehicle Detections Systems (WVDS), Traffic Signals (TS), and Changeable Message Signs (CMS) with Maintenance Vehicle Pullout (MVP). The project also proposes to connect power to existing WVDS stations and upgrade the WVDS and CCTV.

Other Appropriate Topics

There are no other appropriate topics that would influence the approval of the Project.

8. FUNDING, PROGRAMMING AND ESTIMATE

Funding

It has been determined that this Project is eligible for federal-aid funding. As shown in the FTIP, this Project will be funded by Section 129 Surface Transportation Priorities, local funds from the Federal Surface Transportation Program (STP), developer fees, and San Bernardino County Measure I.

Programming

The Project is included in SCAG's project listing of the Final 2019 FTIP. The Project will be funded by a combination of the following local, state, and federal funds:

- Section 129 – Surface Transportation Priorities (STP)
- STP Local
- Developer fees
- County of San Bernardino Measure I

The following table provides a summary of programmed dollar amounts for each funding source listed in the FTIP.

Table 8-1 Programmed Dollar Amounts

Fiscal Year Estimate								
Fund	ENG	R/W	CON	Total	Prior	18/19	19/20	Total
In thousands of dollars ($1,000)								
Highway Infrastructure Program (HIP)			3,054	3,054				3,054
Section 129 – Surface Transportation Priorities	735			735	735			735
STP Local	910	612	425	1,947	910	612	425	1,947
Developer Fees	24	16	1,375	1,415	24	16	1,375	1,415
SBD County Measure I	126	84	7,326	7,536	126	84	7,326	7,536
SBD59204 Total	1,795	712	12,180	14,687	1,795	712	12,180	14,687

The support cost ratio is 45.9%. SBCTA will allocate additional funding sources to cover any differences between the programmed funding shown in the table and the actual cost of the Project.

Estimate

The overall Project cost is estimated to be $8.7 million. The major cost items include the pavement structural section with the associated drainage improvements, the overhead sign structures, and traffic signals. The complete Project cost estimate is provided in Attachment C.

9. DELIVERY SCHEDULE

The following table has the current key dates for the Project delivery schedule.

Table 9-1 Project Delivery Schedule

Project Milestones		Milestone Date (Month/Day/Year)	Milestone Designation (Target/Actual)
PROGRAM PROJECT	M015		
BEGIN ENVIRONMENTAL	M020	6/26/2017	Actual
CIRCULATE DPR & DED EXTERNALLY	M120	8/2019	Target
COMPLETE PA/ED	M200	10/2019	Target
RIGHT OF WAY CERTIFICATION	M410	11/2020	Target
COMPLETE PROJECT PS&E	M380	11/2020	Target
PS&E TO DOE	M377	11/2020	Target
READY TO LIST	M460	11/2020	Target
AWARD	M495	5/2021	Target
APPROVE CONTRACT	M500	6/2021	Target
CONTRACT ACCEPTANCE	M600	7/2022	Target
END PROJECT EXPENDITURES	M800	7/2022	Target
FINAL PROJECT CLOSEOUT	M900	3/2023	Target

10. RISKS

Based on the Caltrans Project Risk Management Handbook this Project has a risk Level 2 because the total cost lies in the range of $5 to $100 million. General risks associated with this Project include, but are not limited to, drivers being unfamiliar with DDIs, encountering hazardous materials during construction, potential for conflicts with the existing high pressure gas line (classified as a high priority utility), potential for encountering unmapped/unknown utilities, coordination risks, and funding risks.

Some of the mitigation measures for these risks include public information and awareness, including provisions and specifications for the proper handling of hazardous waste, and ground penetration radar (GPR) scan and potholing to identify all existing utilities in areas subject to excavation. More details about the Project risks and mitigation measures are provided in the risk register included in Attachment G-.

11. EXTERNAL AGENCY COORDINATION

Coordination with the following agencies is expected to be required during the PA/ED and PS&E phases of the Project.

Federal Highway Administration (FHWA)

During the PSR-PDS phase this Project was identified as a "High Profile Project" (the term has recently changed to "Project of Division Interest" or PoDI) per the memo signed by FHWA and Caltrans representatives, dated May 22, 2008. The PSR included a partial cloverleaf and the DDI as build alternatives, it was expected that a modified interstate access report would be needed; requiring consultation with FHWA to determine the level of documentation needed for acceptability and approval. However, during the PA/ED phase, the DDI has been selected as the Build Alternative due to its low impacts and improved traffic operations; and because it eliminates the need for modifications to the interstate access as the existing ramp entrances and exits to the I-215 freeway will remain in place.

Even though the Project will not modify access to and from the interstate facility, the Federal Highway Administration is interested in staying involved during the progress of the PA/ED and PS&E phases of the Project because DDIs are considered innovative design and because this would be one of the first DDIs in California.

Per the current Joint Stewardship and Oversight Agreement (Agreement) between the Caltrans and FHWA, dated May 28, 2015, this project is considered to be a Project of Division Interest. A Project of Division Interest Responsibilities List has been signed and agreed upon for this project on 5/17/2019. However, should any future situation / circumstance that will potentially declassify the project as a Project of Division Interest arises, Caltrans shall notify FHWA and reassess this project using the PoDI selection outlined in the Agreement.

San Bernardino County Flood Control District

Encroachment Permit for construction activities to modify connections to the existing 75" RCP regional drainage system.

Local Agency

Encroachment permits and cooperative agreements with the City of San Bernardino.

12. PROJECT REVIEWS

Headquarters Project Delivery Coordinator Luis Betancourt Date 3/22/2019
Project Manager Emad Makar Date 3/22/2019
District Design Liaison/FHWA/ADA Sergio Avila Date 3/22/2019
Traffic Safety Review Kevin Chen Date 3/22/2019
Constructability Reviewer Sadique Hossain Date 3/22/2019
Traffic Operations Haissam Yahya Date 3/22/2019
Design Oversight Donald Calvert Date 3/22/2019

13. PROJECT PERSONNEL

The table below contains the list of individuals that are actively part of the Project Development Team.

Table 13-1 Project Personnel

Organization	Name	Title	Phone #
SBCTA	Paula Beauchamp	Director of Project Delivery	909-884-8276
SBCTA	Paul Melocoton	Project Manager	909-884-8276
SBCTA	Dennis Saylor	Project Manager	909-884-8276
Caltrans	Emad Makar	Project Manager	909-383-4978
Caltrans	Justine Niu	Design Oversight Branch Chief	909-806-3202
Caltrans	Donald Calvert	Design Oversight Engineer	909-806-3244
Caltrans	Haissam Yahya	Traffic Operations	909-383-4065
Caltrans	Antonia Toledo	Environmental Lead	909-383-6934
Caltrans	Paul Mim Mack	Right of Way Local Programs	909-806-3998
Caltrans	Kimberly Cherry	Public Information	909-383-6290
Caltrans	Sergio E. Avila	District Design Liaison /FHWA/ADA	909-383-1554
HDR	Mark Hager	Project Manager	951-320-7343
HDR	Julian Hernandez	Roadway Engineer	951-320-7325
HDR	Angie Kung	Environmental Lead	949-241-6192
HDR	June Duan	Traffic Lead	714-730-2335

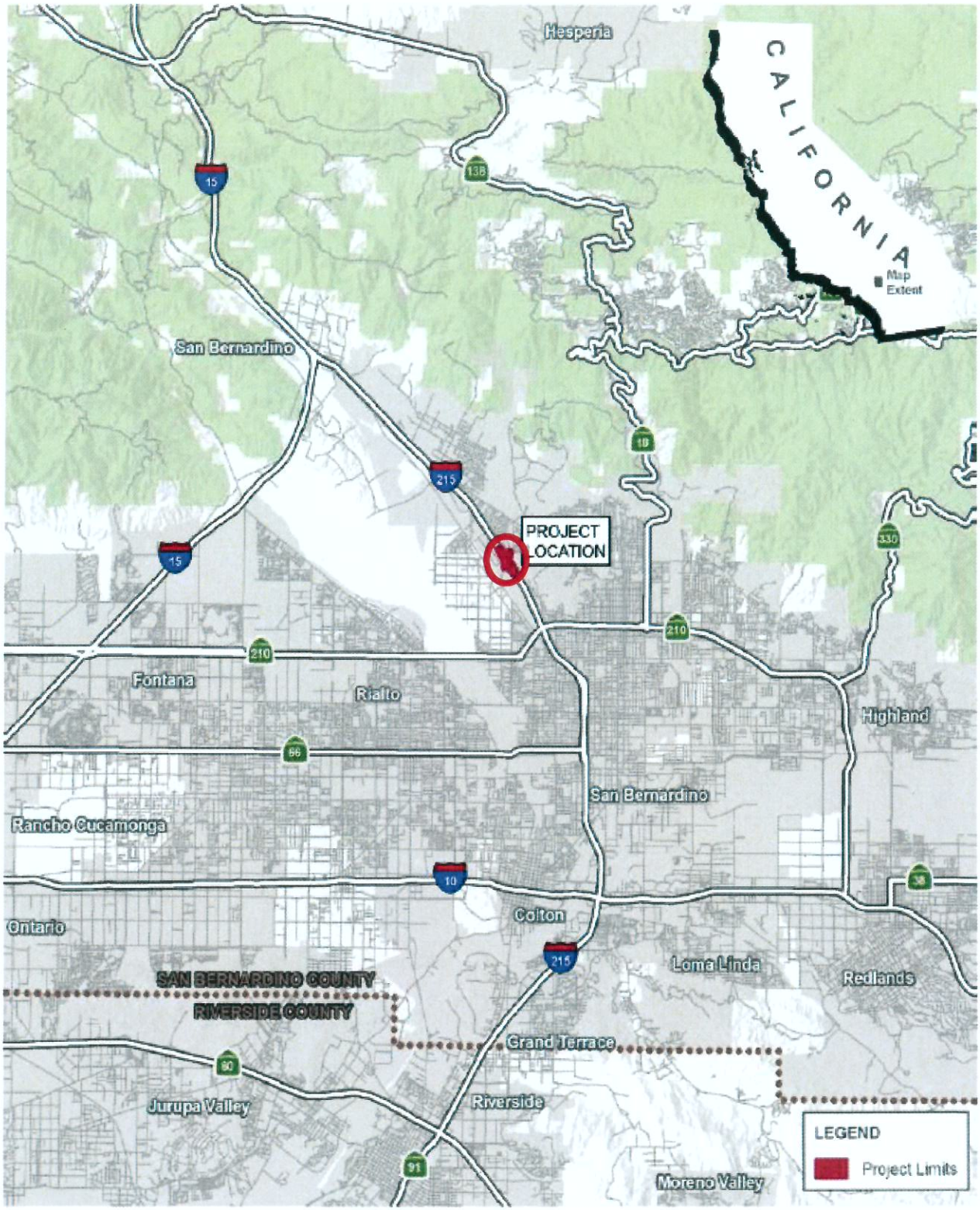
14. ATTACHMENTS

Description (number of pages)

A. Location Map (1)
B. Engineering Plans (17)
C. Cost Estimate (10)
D. Right of Way Data Sheet (6)
E. Signature Page of Approved Environmental Document (2)
F. Transportation Management Plan (5)
G. Risk Register (1)
H. Project Category Approval (1)

Attachment A

Location Map



I-215: PM 11.35/11.95
EA No: 0E420

ATTACHMENT B

Engineering Plans

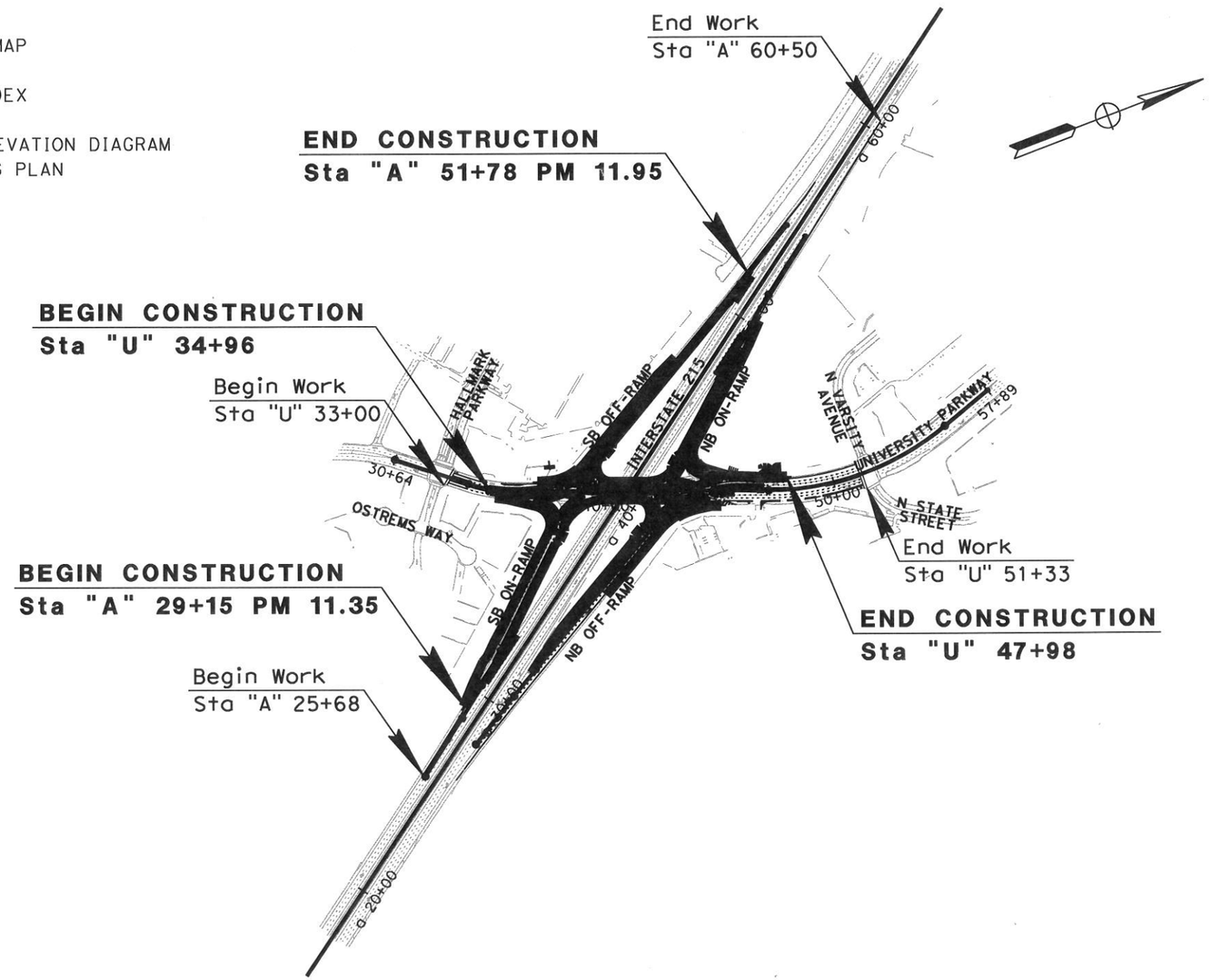
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	1	27

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT REPORT EXHIBITS FOR
INTERSTATE 215 AT UNIVERSITY PARKWAY
DIVERGING DIAMOND INTERCHANGE PROJECT
IN THE CITY OF SAN BERNARDINO
FROM 1.6 MILES NORTH OF STATE ROUTE 210
TO 2.5 MILES SOUTH OF PALM AVENUE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018

INDEX OF PLANS



MARK S. HAGER
PROJECT MANAGER
REGISTERED CIVIL ENGINEER
DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	08-0E4200
PROJECT ID	0800000083

PROJECT MANAGER: MARK HAGER
DESIGN MANAGER: JULIAN HERNANDEZ

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NOT FOR CONSTRUCTION

LAST REVISION | DATE PLOTTED => 5/13/2019

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	2	27

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING,INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

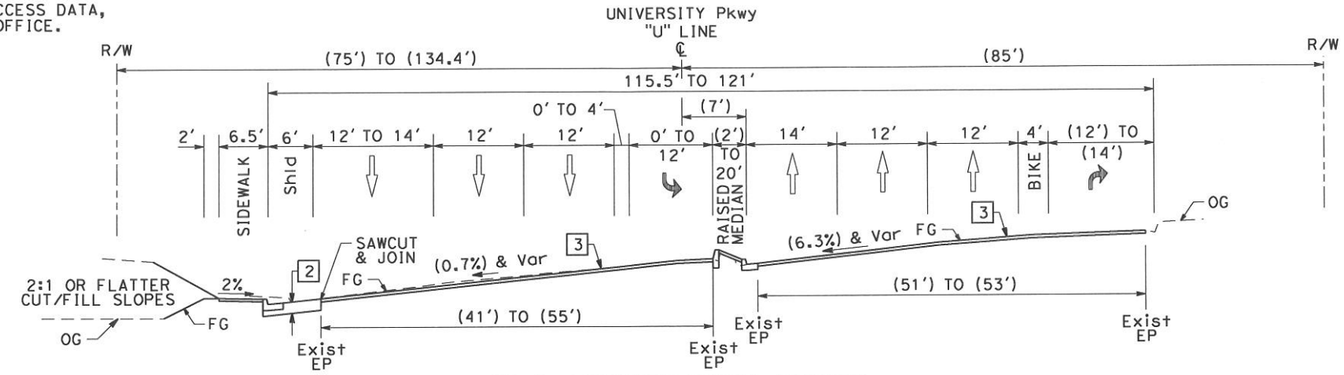
NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

LEGEND:

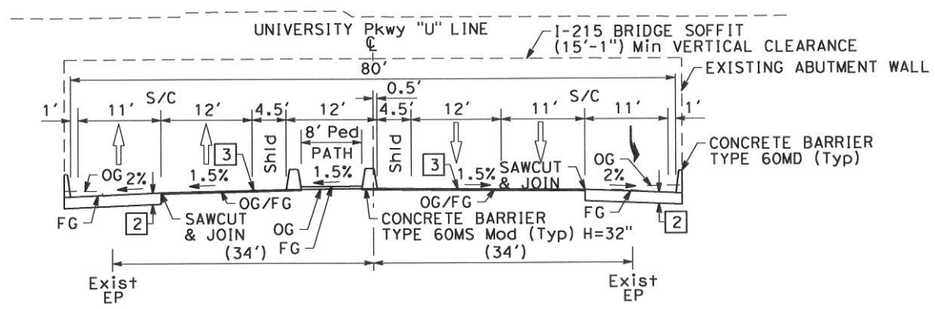
STRUCTURAL SECTIONS

1	1.00' JPCP 0.35' LCB 1.15' Subgrade	CONCRETE PAVING
2	0.20' RHMA-G 0.45' HMA 1.10' AB Class 2 1.00' Subgrade	ASPHALT PAVING
3	0.20' RHMA-G	ASPHALT OVERLAY



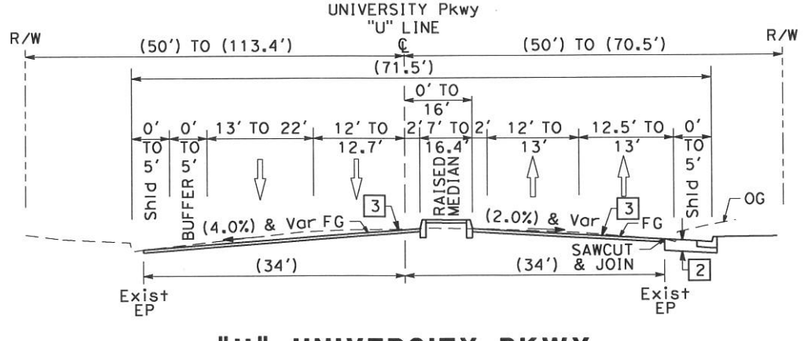
"U" UNIVERSITY PKWY

TYPICAL SECTION
STATION "U" 45+50.00 TO 47+98.20



"U" UNIVERSITY PKWY

TYPICAL SECTION
STATION "U" 40+00.00 TO 41+40.00



"U" UNIVERSITY PKWY

TYPICAL SECTION
STATION "U" 35+00.00 TO 37+47.45

DESIGN DESIGNATION (UNIVERSITY PKWY)

ADT (2020) = 59,700	D (2020) = 50%
ADT (2040) = 117,300	D (2040) = 50%
DHV = 6,420	T=2%
$ESAL_{20}$ = 6,888,300	TI_{20}=11.5
V= 29 MPH	

TYPICAL CROSS SECTIONS

NO SCALE

X-1

NOT FOR CONSTRUCTION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY
REVISED BY
DATE REVISED
LAST REVISION
DATE PLOTTED = 5/6/2019
USERNAME =>user

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	3	27

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING, INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

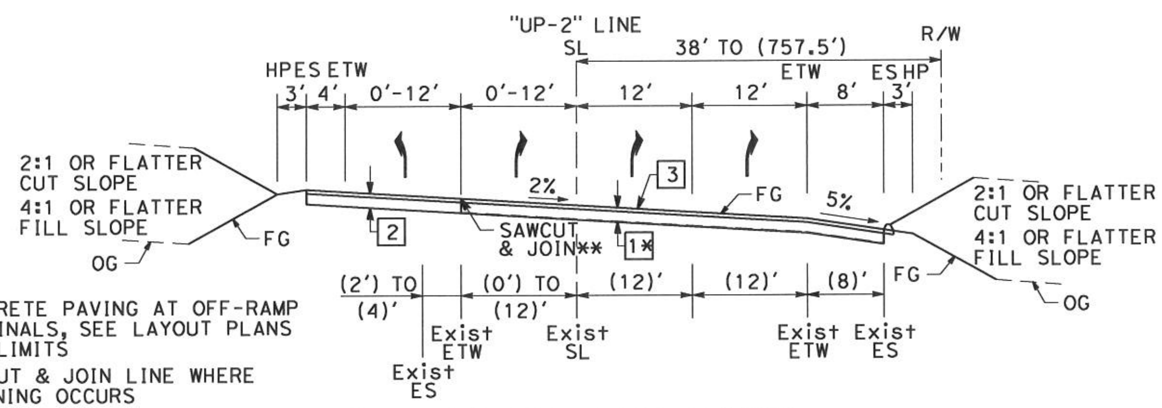
LEGEND:

STRUCTURAL SECTIONS

No.	Section	Type
1	1.00′ JPCP 0.35′ LCB 1.15′ Subgrade	CONCRETE PAVING
2	0.20′ RHMA-G 0.45′ HMA 1.10′ AB Class 2 1.00′ Subgrade	ASPHALT PAVING
3	0.20′ RHMA-G	ASPHALT OVERLAY

DESIGN DESIGNATION (ROUTE 215)

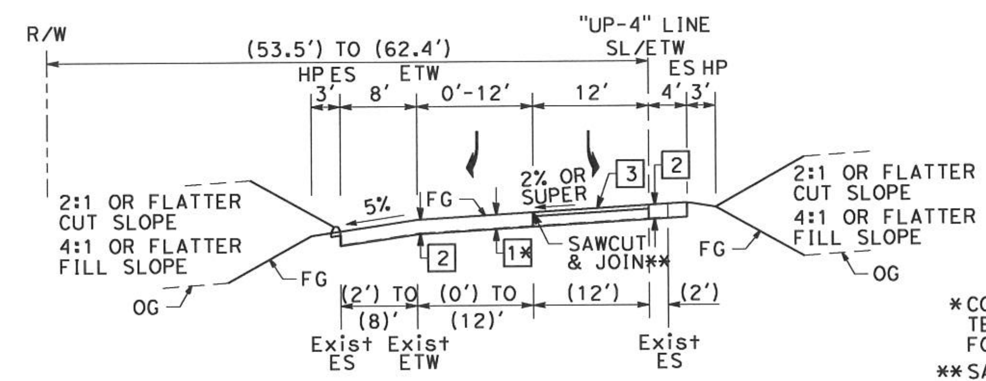
ADT (2020) = 88,100 D (2020) = 58%
ADT (2040) = 121,500 D (2040) = 58%
DHV = 11,040 T=7.5%
$ESAL_{20}$ = 42,846,700 TI_{20}=14
V= 70 MPH
CLIMATE REGION: INLAND VALLEY



*CONCRETE PAVING AT OFF-RAMP TERMINALS, SEE LAYOUT PLANS FOR LIMITS
**SAWCUT & JOIN LINE WHERE WIDENING OCCURS

"UP-2" NB OFF-RAMP

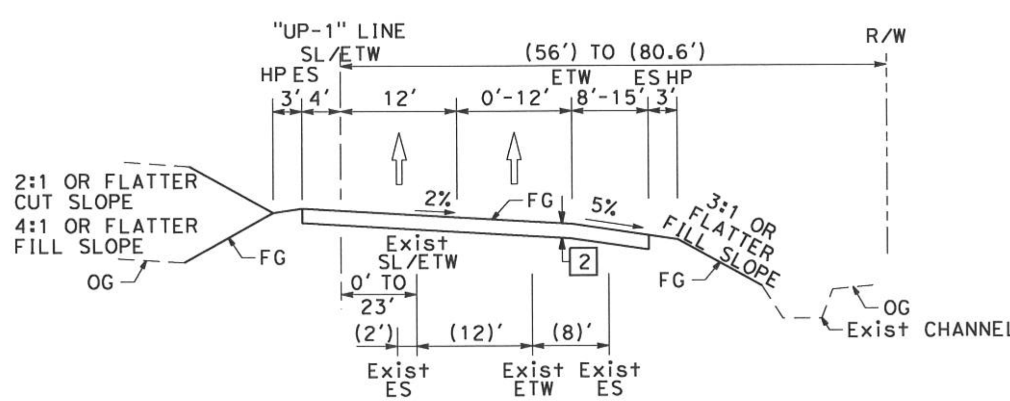
TYPICAL SECTION
STATION "UP-2" 229+70.00 TO 240+13.65



*CONCRETE PAVING AT OFF-RAMP TERMINALS, SEE LAYOUT PLANS FOR LIMITS
**SAWCUT & JOIN LINE WHERE WIDENING OCCURS

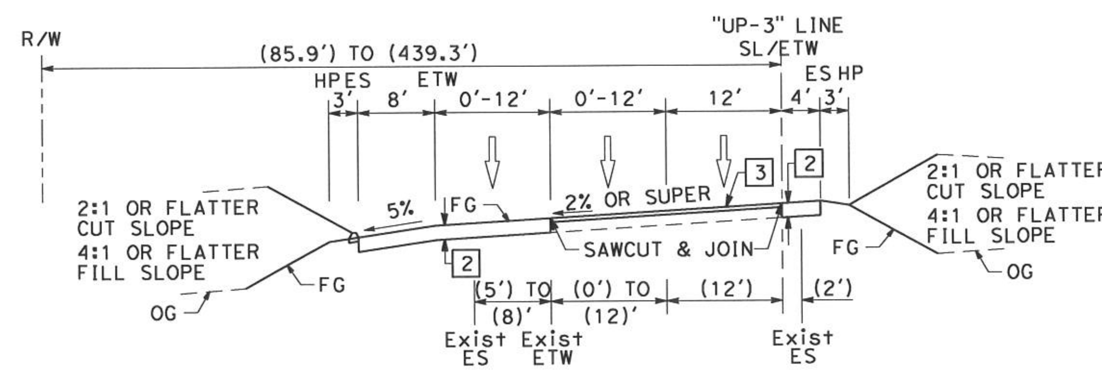
"UP-4" SB OFF-RAMP

TYPICAL SECTION
STATION "UP-4" 441+36.61 TO 451+78.00



"UP-1" NB ON-RAMP

TYPICAL SECTION
STATION "UP-1" 114+21.58 TO 120+30.00



"UP-3" SB ON-RAMP

TYPICAL SECTION
STATION "UP-3" 329+15.00 TO 337+60.86

TYPICAL CROSS SECTIONS

NO SCALE

NOT FOR CONSTRUCTION

X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR MARK HAGER

CALCULATED-DESIGNED BY CHECKED BY

JULIAN HERNANDEZ

REVISED BY DATE REVISED

USERNAME => user RELATIVE BORDER SCALE 0 1 2 3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	4	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

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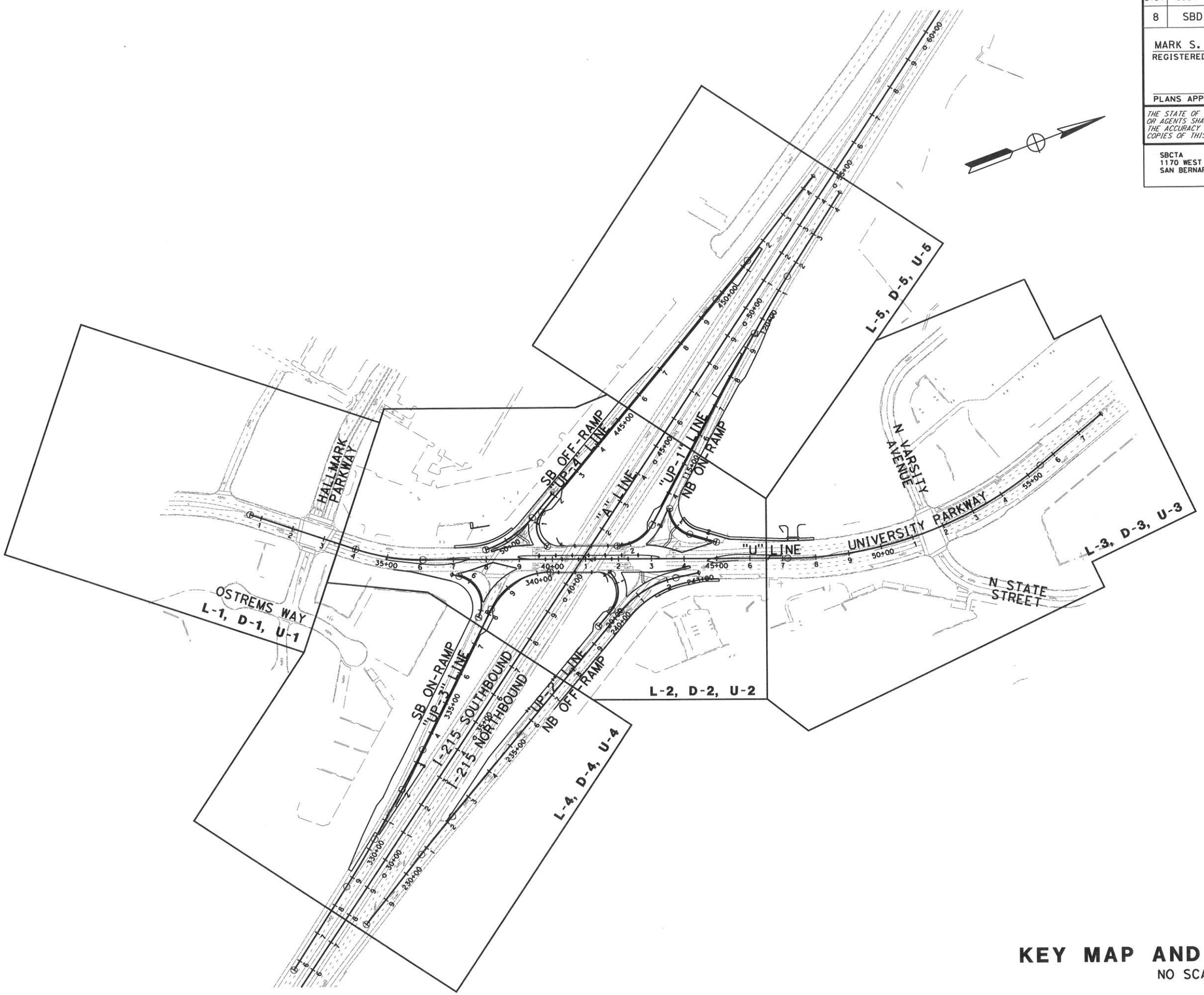
SAN BERNARDINO, CA 92410

HDR ENGINEERING,INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110



KEY MAP AND LINE INDEX
NO SCALE

K-1

NOT FOR CONSTRUCTION

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY:
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

USERNAME =>user

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	5	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

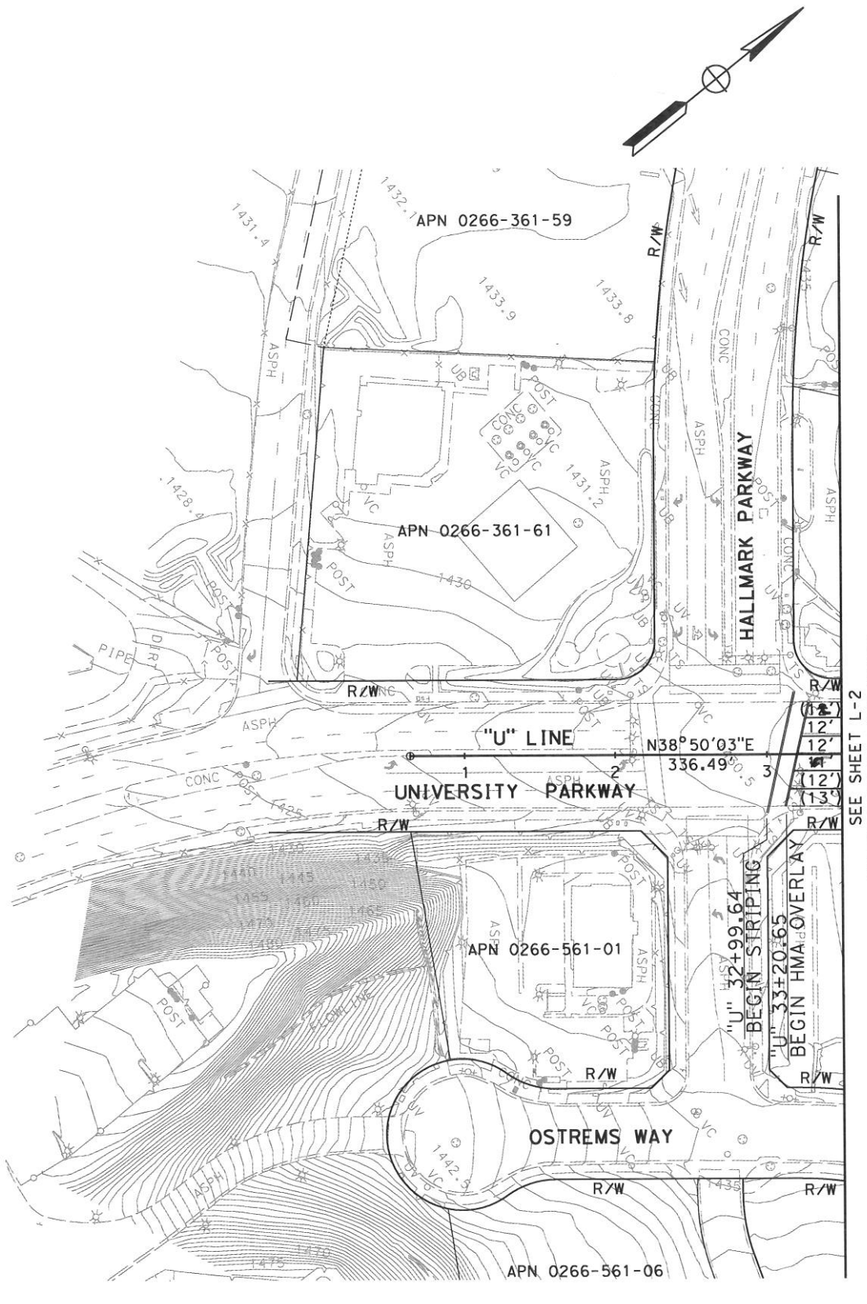
HDR ENGINEERING,INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. ONLY NONSTANDARD ABBREVIATIONS ARE LISTED IN THE LEGEND.

LEGEND:

MF	MIXED FLOW LANE
TL	TANGENT LENGHT
⇨	DIRECTION OF TRAVEL (EXISTING LANE)
➡	DIRECTION OF TRAVEL (NEW LANE)
- - - - - - - - -	FILL GRADING LINE
— — — — — —	CUT GRADING LINE
|||||||||||	EXISTING R/W WITH ACCESS CONTROL
	CONCRETE BARRIER
	TRAFFIC SIGNAL
	MIDWEST GUARDRAIL SYSTEM (MGS)
	HOT MIX ASPHALT (HMA) PAVING
	JOINTED PLAIN CONCRETE PAVEMENT (JPCP)
	ROCK BLANKET
	HARDSCAPING



LAYOUT
SCALE: 1" = 50'

L-1

NOT FOR CONSTRUCTION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY
REVISED BY
DATE REVISED
LAST REVISION
DATE PLOTTED =>2/8/2019
USERNAME =>user

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	6	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

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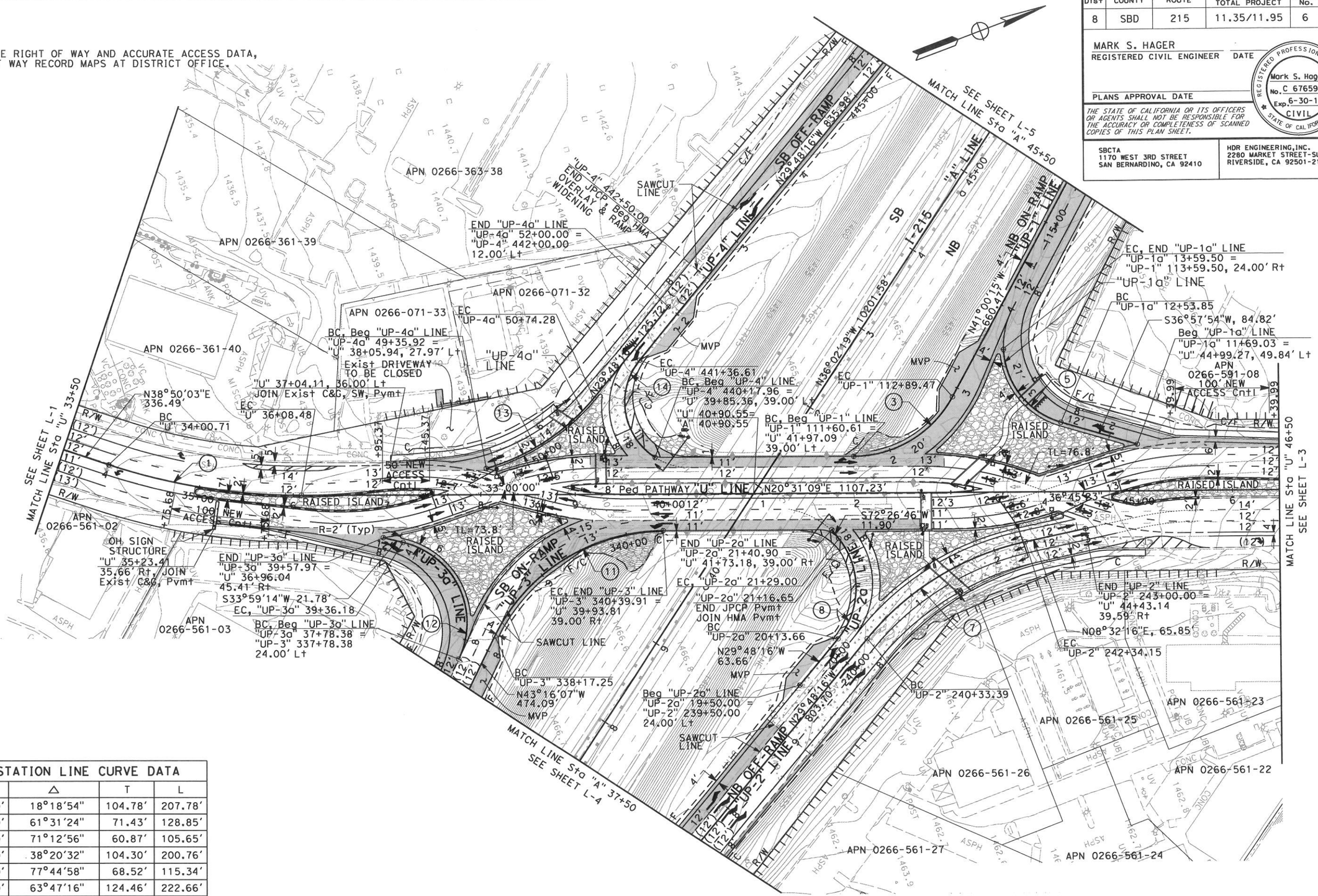
SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING,INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



CENTER/STATION LINE CURVE DATA				
NO.	R	Δ	T	L
(1)	650.00'	18°18'54"	104.78'	207.78'
(3)	120.00'	61°31'24"	71.43'	128.85'
(5)	85.00'	71°12'56"	60.87'	105.65'
(7)	300.00'	38°20'32"	104.30'	200.76'
(8)	85.00'	77°44'58"	68.52'	115.34'
(11)	200.00'	63°47'16"	124.46'	222.66'
(12)	88.00'	102°44'39"	110.13'	157.80'
(13)	230.00'	34°28'05"	71.35'	138.36'
(14)	70.00'	97°07'10"	79.29'	118.65'

LAYOUT
SCALE: 1" = 50'

NOT FOR CONSTRUCTION

L-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY
CHECKED BY
JULIAN HERNANDEZ
REVISED BY
DATE REVISED
LAST REVISION
DATE PLOTTED =>
USERNAME =>user

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

CENTER/STATION LINE CURVE DATA				
NO.	R	△	T	L
(2)	1200.00'	39°44'12"	433.64'	832.24'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	7	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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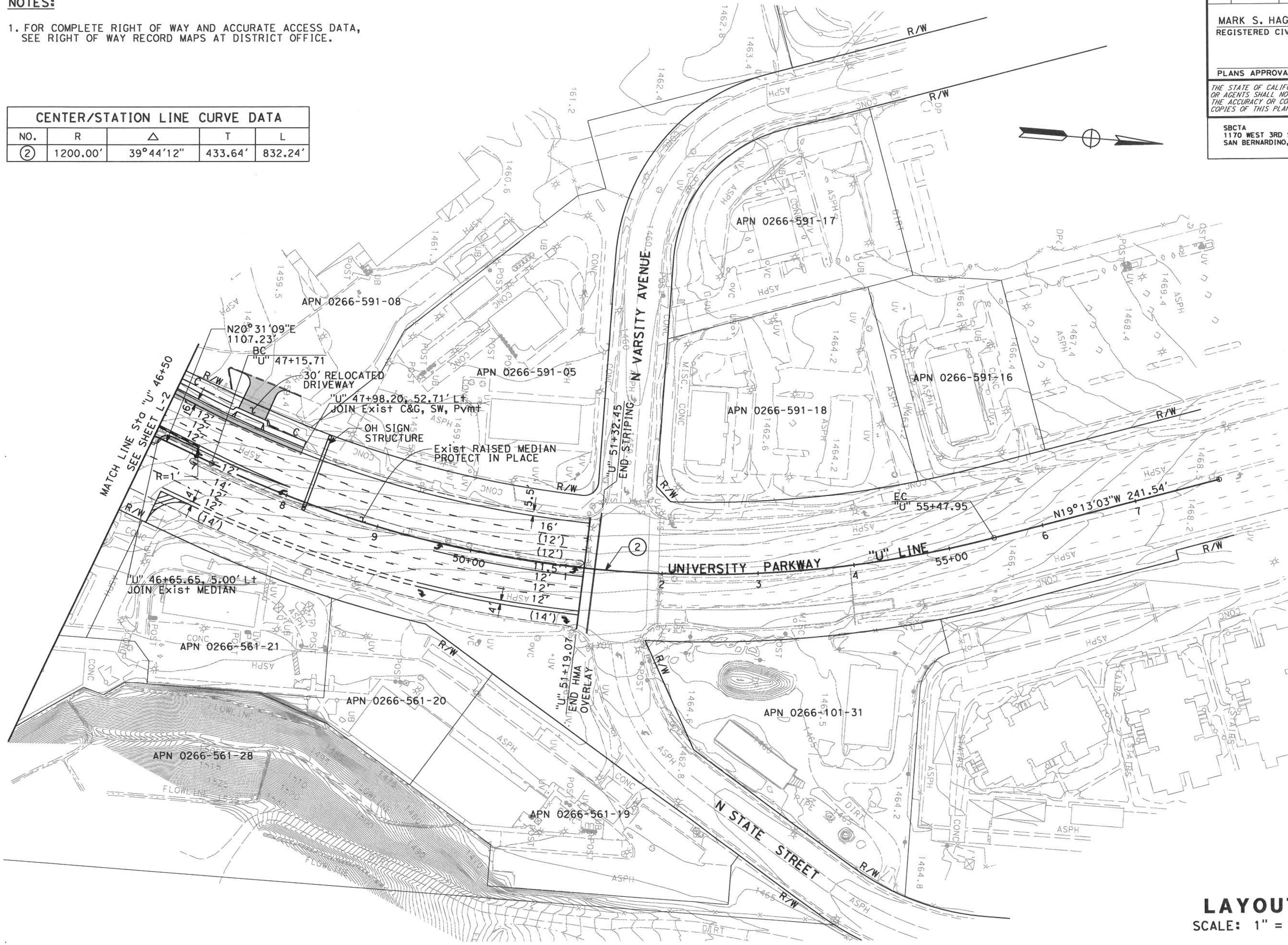
SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING,INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110



LAYOUT

SCALE: 1" = 50'

NOT FOR CONSTRUCTION

L-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER

CALCULATED-DESIGNED BY: JULIAN HERNANDEZ

CHECKED BY

REVISED BY

DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	8	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

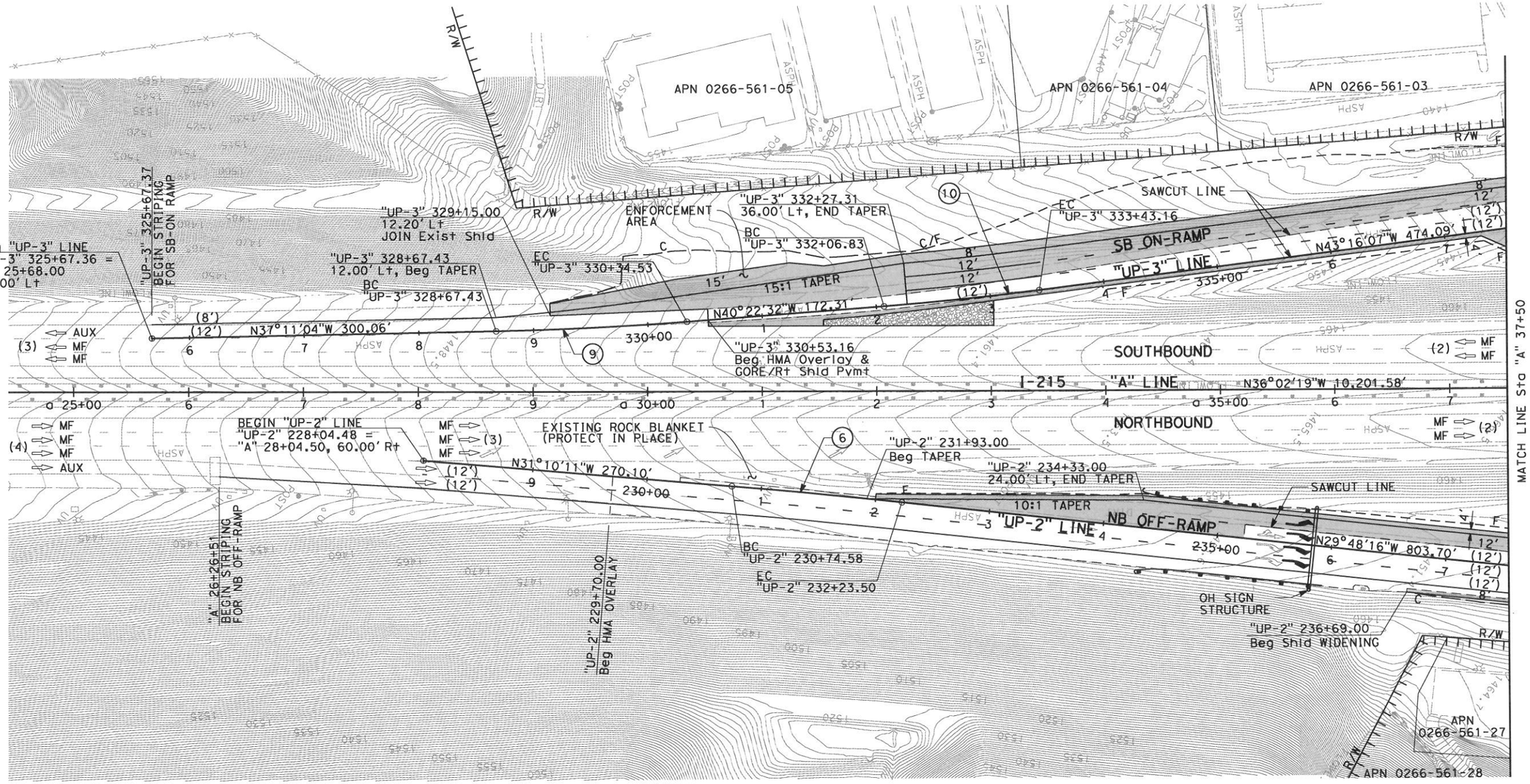
SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING, INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

CENTER/STATION LINE CURVE DATA				
NO.	R	Δ	T	L
(6)	6250.00′	1°21′55"	74.46′	148.92′
(9)	3000.00′	3°11′29"	83.57′	167.10′
(10)	2700.00′	2°53′35"	68.18′	136.33′



LAYOUT
SCALE: 1" = 50′

NOT FOR CONSTRUCTION

L-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY: JULIAN HERNANDEZ
DATE REVISED

USERNAME =>user
RELATIVE PLOTTER SCALE 0 1 2 3
LAST REVISION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	9	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

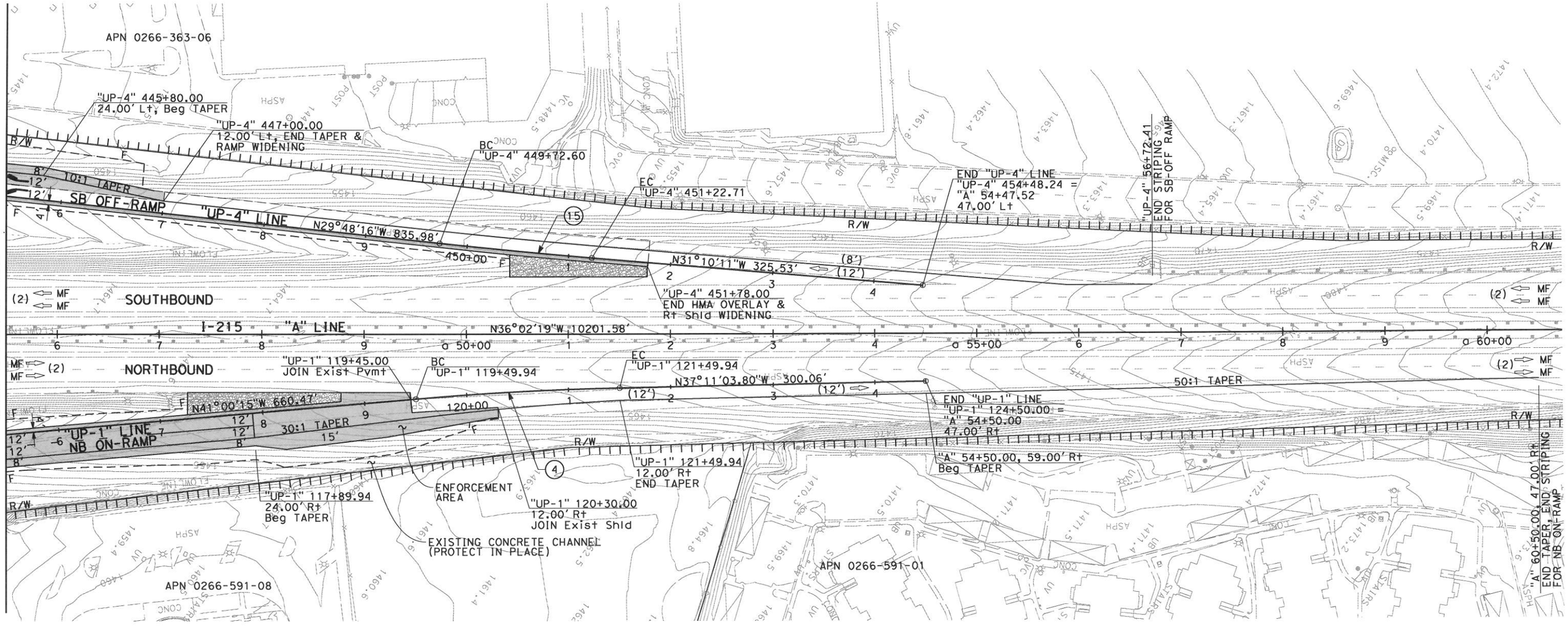
SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING, INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

CENTER/STATION LINE CURVE DATA				
NO.	R	△	T	L
④	3000.00′	3°49′11"	100.04′	200.00′
⑮	6300.00′	1°21′55"	75.06′	150.11′



LAYOUT

SCALE: 1" = 50′

L-5

NOT FOR CONSTRUCTION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY
REVISED BY
DATE REVISED
LAST REVISION
DATE PLOTTED => 2/8/2019
USERNAME =>user

NOTES:

1. ALL ELEVATIONS ARE BASED ON NGVD 1929.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	10	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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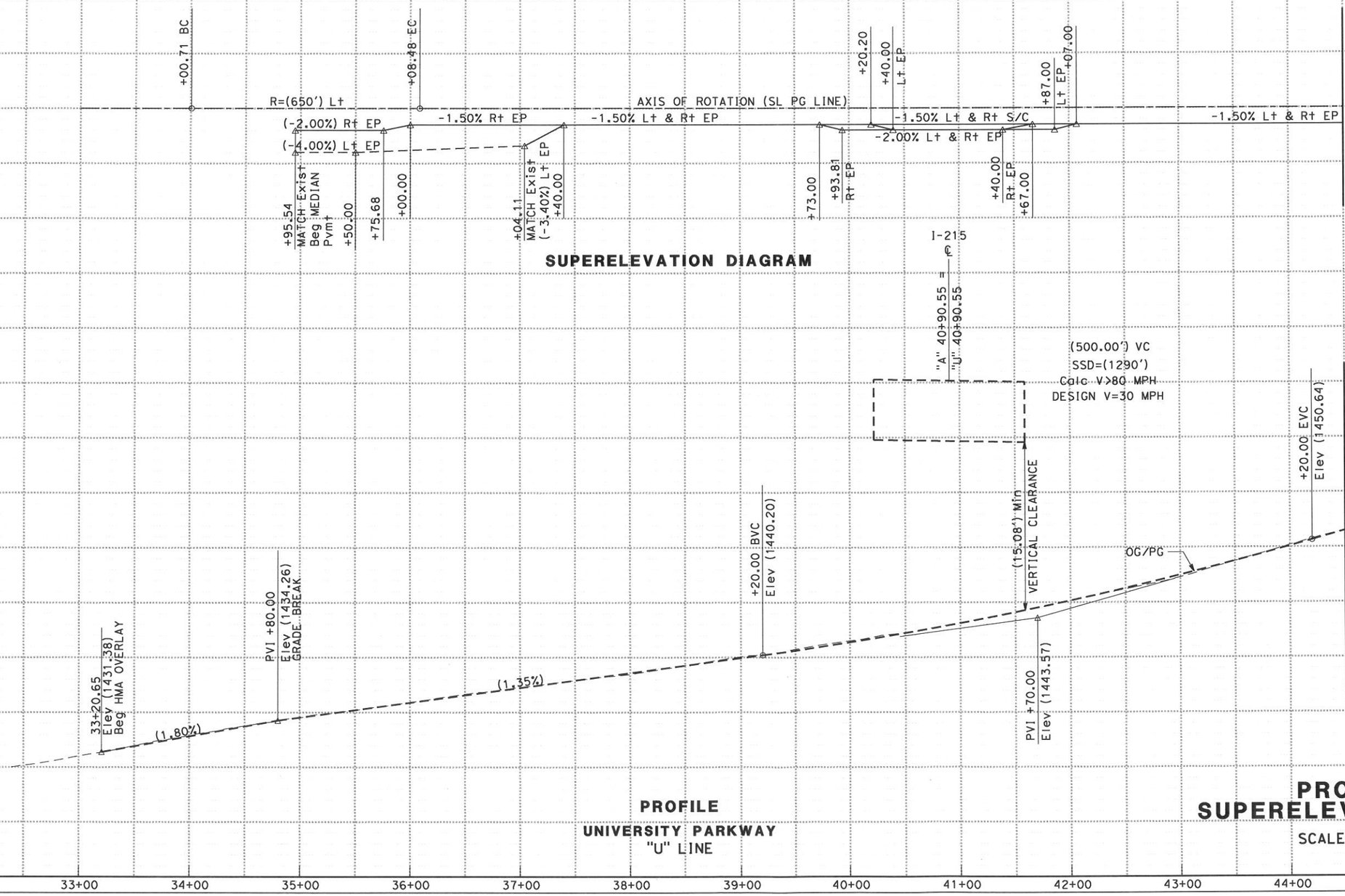
SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING,INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110



SUPERELEVATION DIAGRAM

PROFILE
UNIVERSITY PARKWAY
"U" LINE

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-1

STATION	33+00	34+00	35+00	36+00	37+00	38+00	39+00	40+00	41+00	42+00	43+00	44+00	TOTAL
CY Exc													
CY Emb													

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY
DR
REVISED BY
DATE REVISED
USERNAME =>user
RELATIVE PLOTTER SCALE 0 1 2 3
PROJECT NUMBER & PHASE
LAST REVISION DATE PLOTTED =>2/8/2019

NOTES:

1. ALL ELEVATIONS ARE BASED ON NGVD 1929.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	11	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

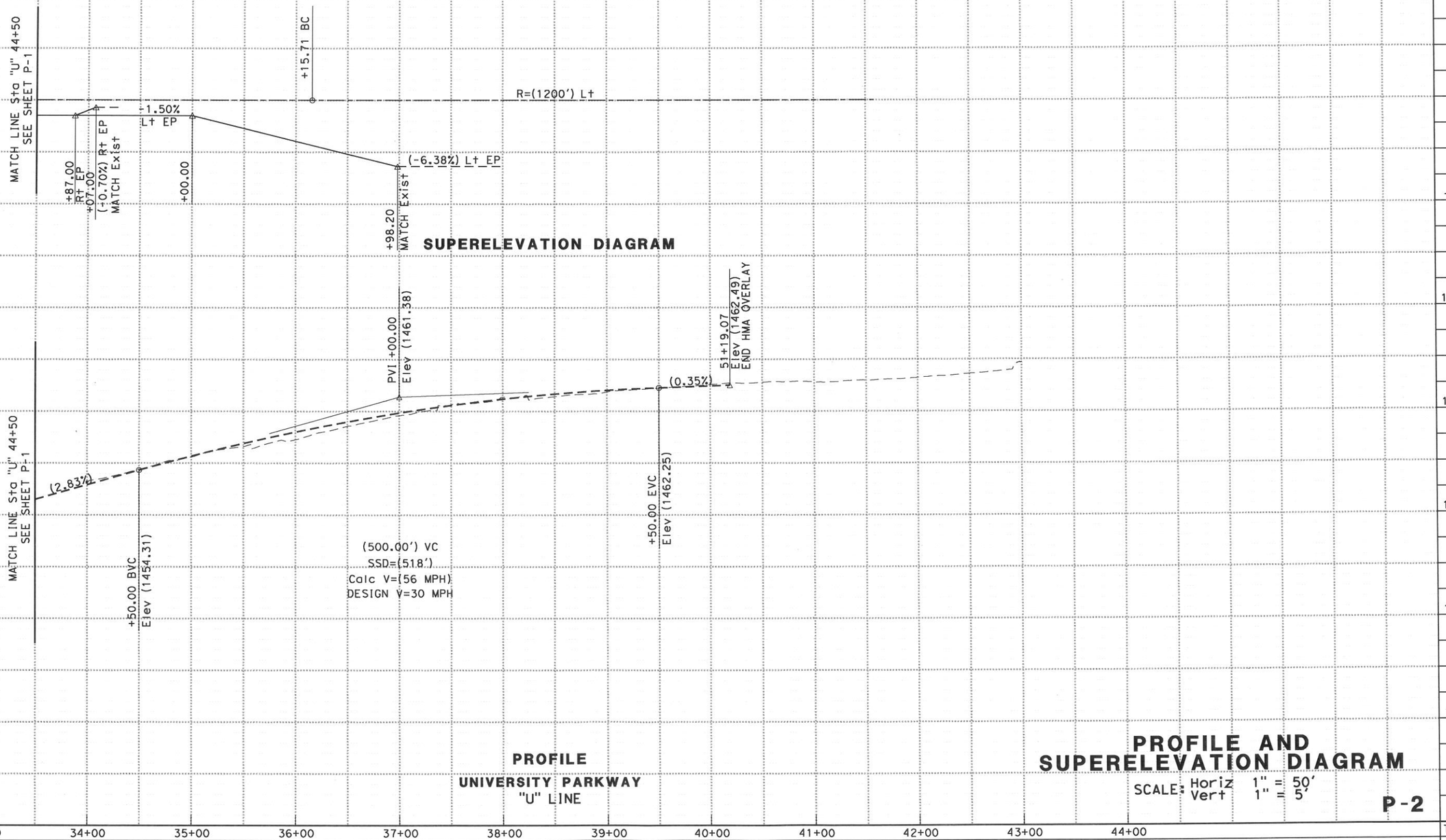
Mark S. Hager No. C 67659 Exp. 6-30-19 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

SBCTA
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING, INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110



SUPERELEVATION DIAGRAM

PROFILE
UNIVERSITY PARKWAY
"U" LINE

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NOT FOR CONSTRUCTION

CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER

CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY

REVISED BY | DATE REVISED

STATION | TOTAL
CY Exc
Emb

USERNAME =>user

LAST REVISION | DATE PLOTTED => 12/6/2018

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	12	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

SBCTA
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RIVERSIDE, CA 92501-2110

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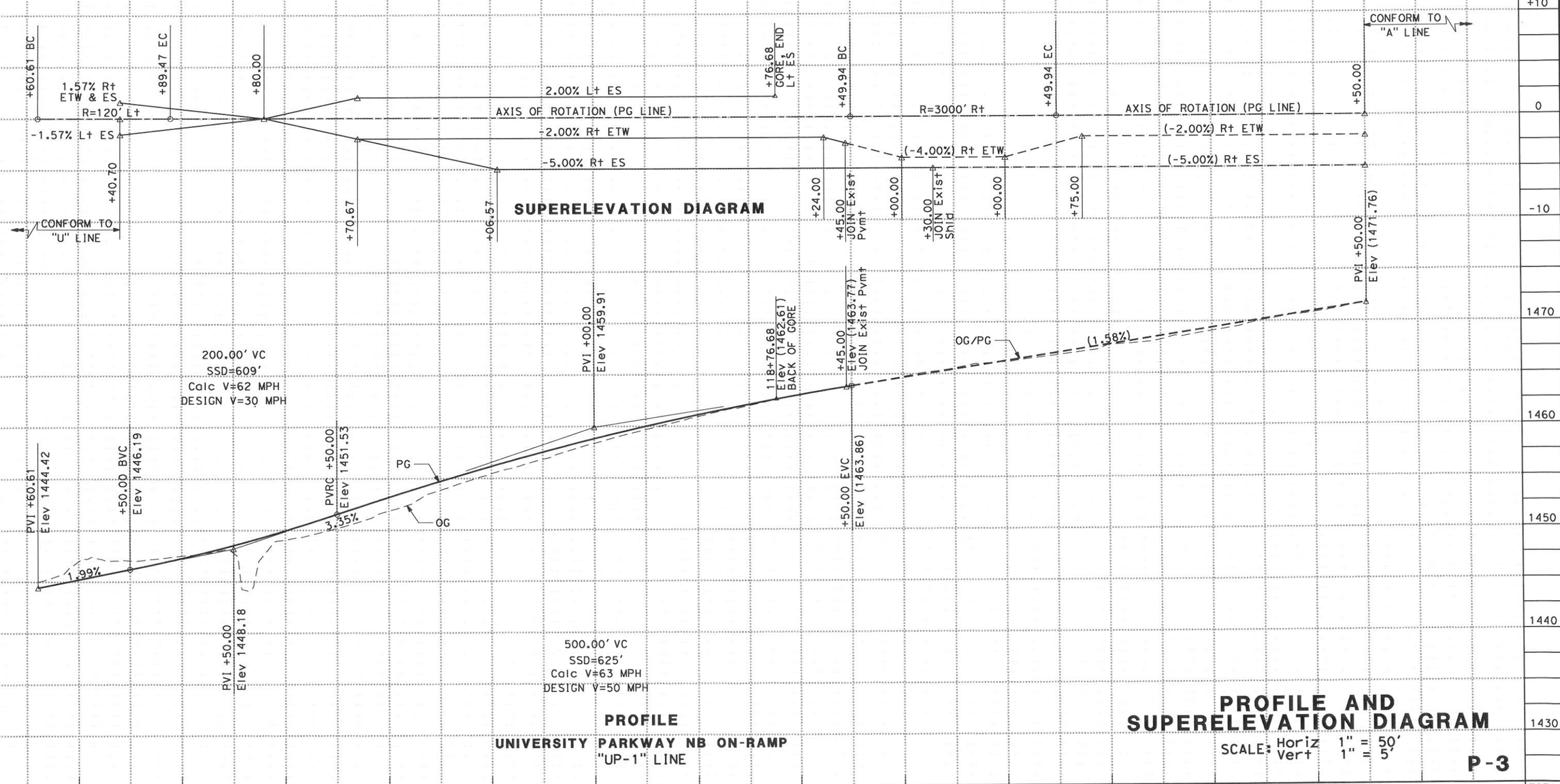

PROFILE
UNIVERSITY PARKWAY NB ON-RAMP
"UP-1" LINE

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-3

STATION	112+00	113+00	114+00	115+00	116+00	117+00	118+00	119+00	120+00	121+00	122+00	123+00	124+00	125+00	TOTAL
CY Exc															
CY Emb															

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
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CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
LAST REVISION DATE PLOTTED =3/8/2019
USERNAME =>user

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	13	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

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SAN BERNARDINO, CA 92410

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2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

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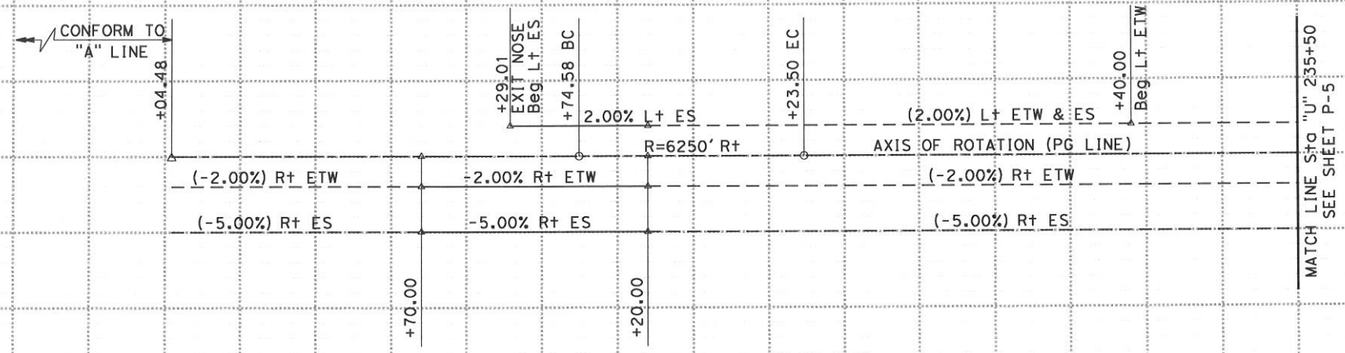
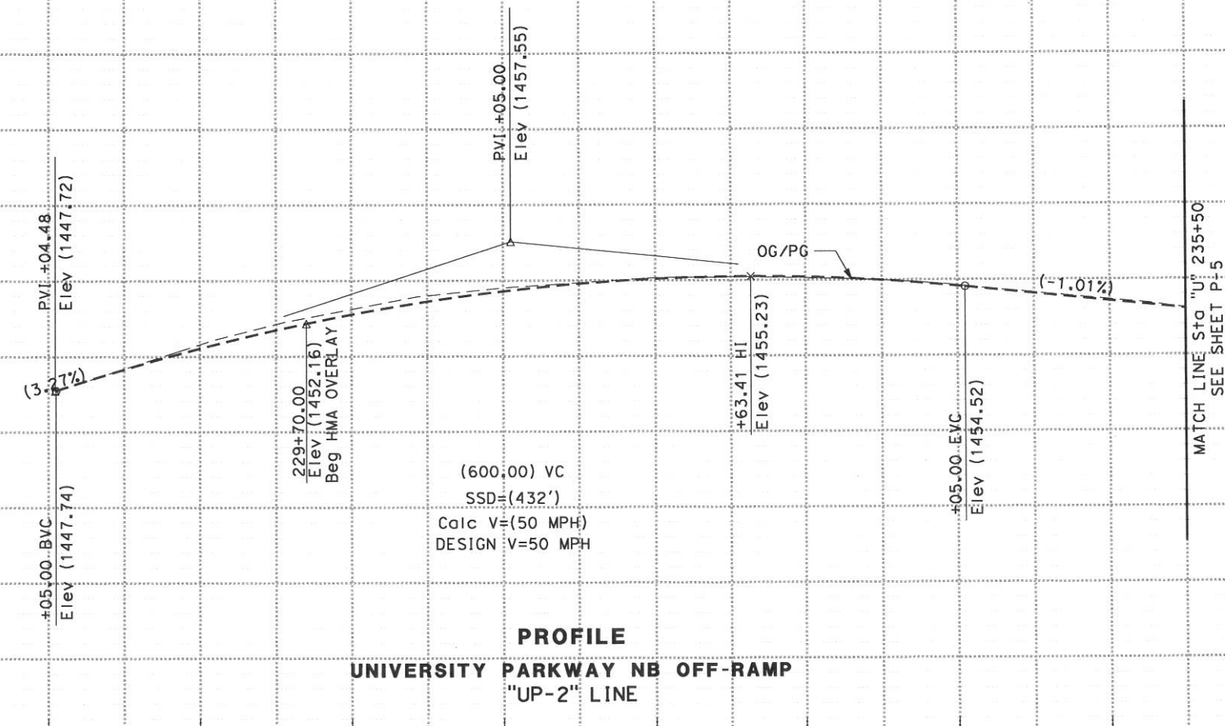


SUPERELEVATION DIAGRAM



PROFILE
UNIVERSITY PARKWAY NB OFF-RAMP
"UP-2" LINE

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-4

STATION	227+00	228+00	229+00	230+00	231+00	232+00	233+00	234+00	235+00	TOTAL
CY Exc										
CY Emb										

+10 0 -10 1470 1460 1450 1440 1430

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NOT FOR CONSTRUCTION
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY
CHECKED BY
JULIAN HERNANDEZ
REVISED BY
DATE REVISED
LAST REVISION DATE PLOTTED =>2/8/2019
USERNAME =>user

NOTES:

1. ALL ELEVATIONS ARE BASED ON NGVD 1929.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	14	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark S. Hager
No. C 67659
Exp. 6-30-19
CIVIL
STATE OF CALIFORNIA

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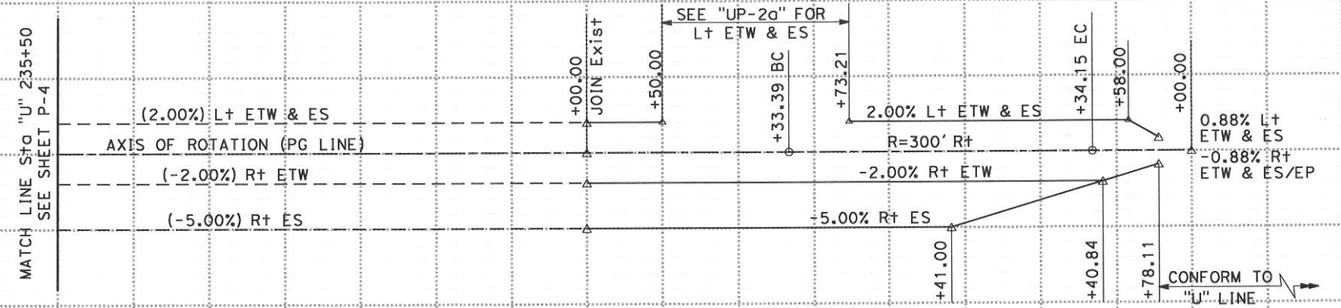
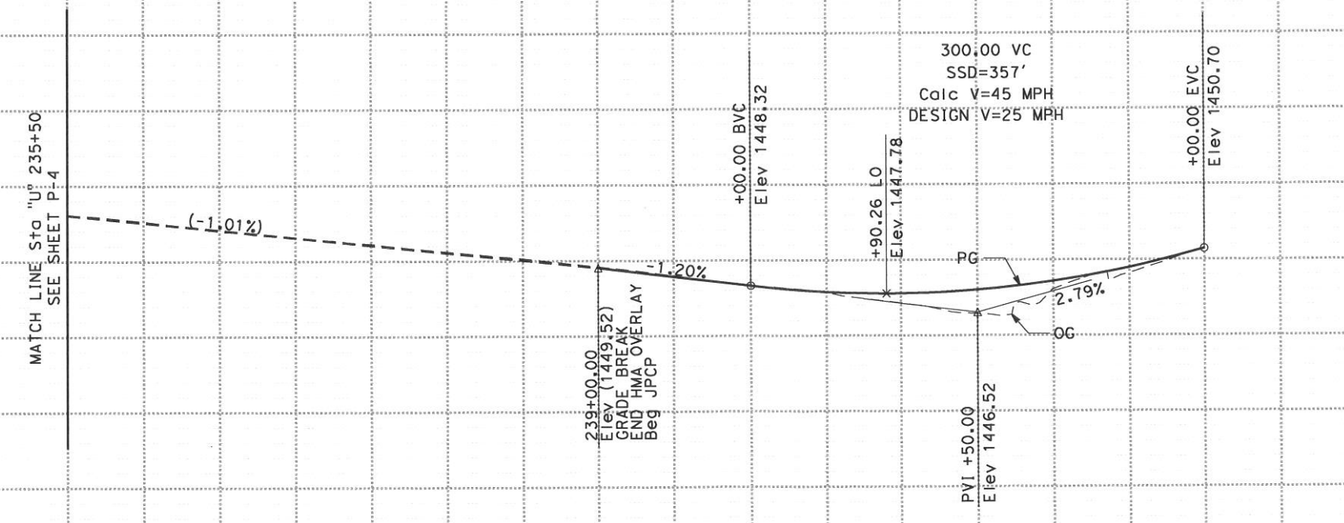


SUPERELEVATION DIAGRAM



PROFILE
UNIVERSITY PARKWAY NB OFF-RAMP
"UP-2" LINE

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NOT FOR CONSTRUCTION
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY
REVISED BY
DATE REVISED

STATION: 235+00 | 236+00 | 237+00 | 238+00 | 239+00 | 240+00 | 241+00 | 242+00 | 243+00
CY Exc
CY Emb
TOTAL

USERNAME =>user

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	15	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

Mark S. Hager No. C 67659 Exp. 6-30-19 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN BERNARDINO, CA 92410

HDR ENGINEERING, INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

NOT FOR CONSTRUCTION

CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER

CALCULATED-DESIGNED BY / CHECKED BY: JULIAN HERNANDEZ

REVISED BY / DATE REVISED

NOTES:

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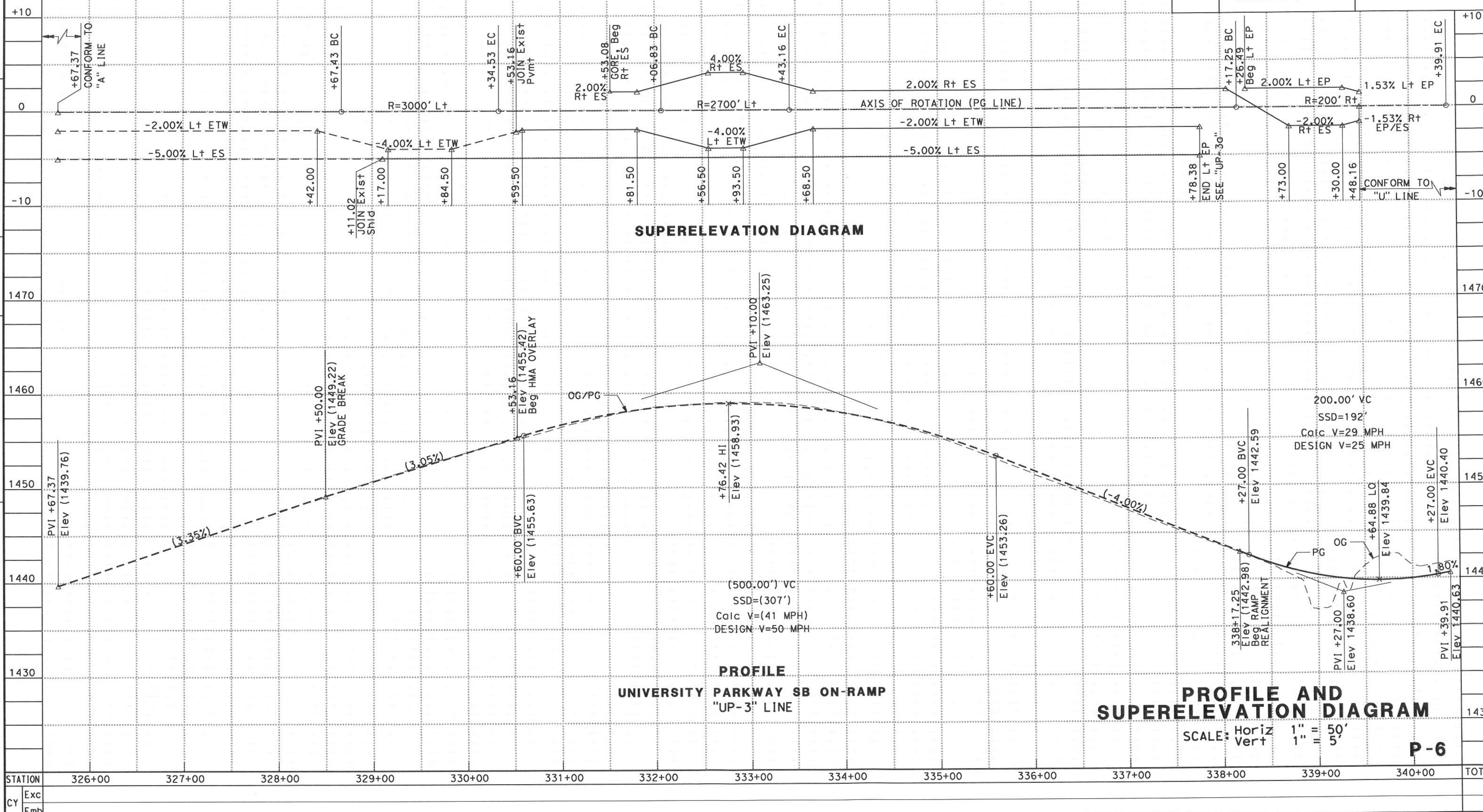

PROFILE

UNIVERSITY PARKWAY SB ON-RAMP
"UP-3" LINE

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-6

NOTES:

1. ALL ELEVATIONS ARE BASED ON NGVD 1929.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	16	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Mark S. Hager — No. C 67659 — Exp. 6-30-19 — CIVIL — STATE OF CALIFORNIA

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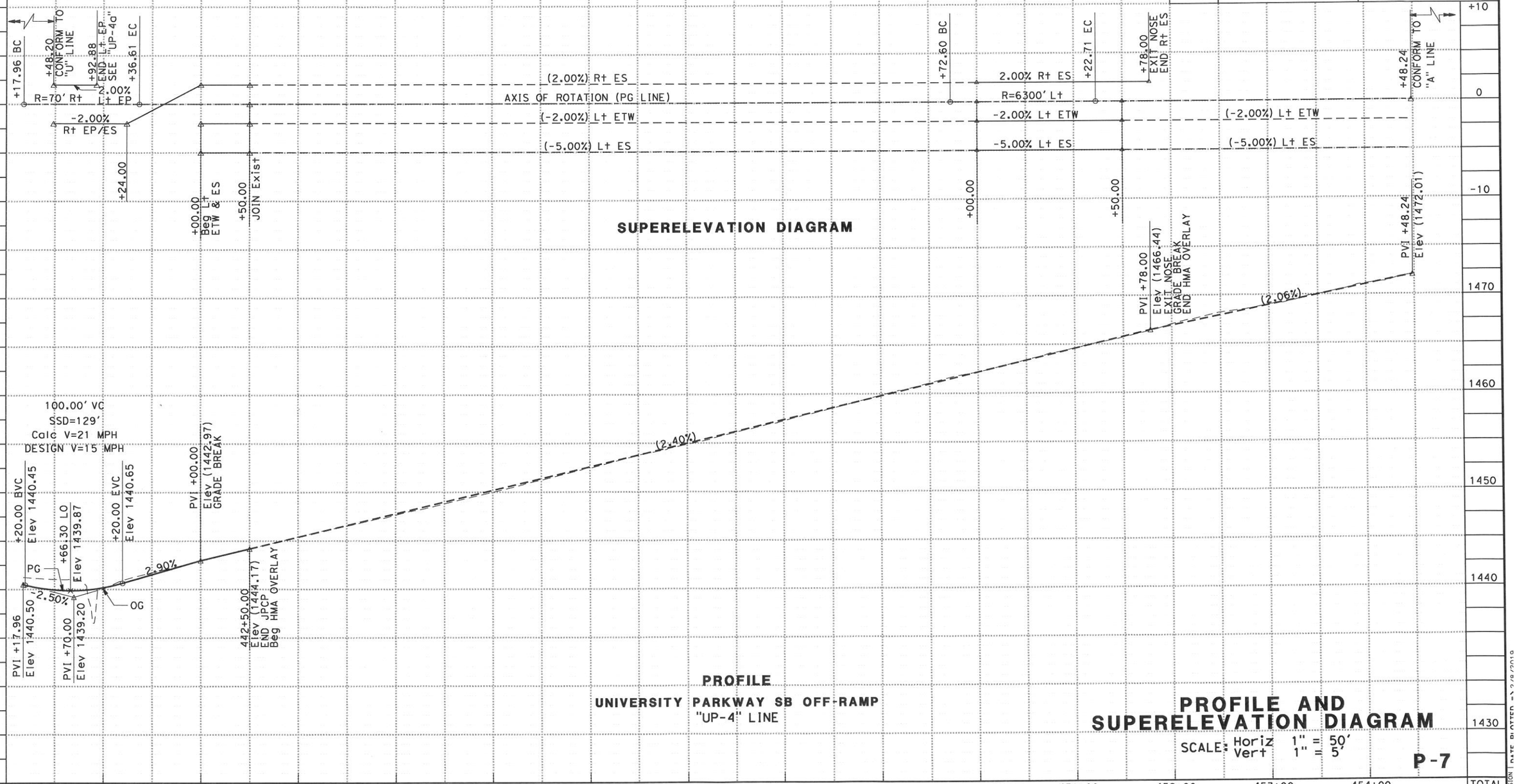
1170 WEST 3RD STREET
SAN BERNARDINO, CA 92410

HDR ENGINEERING,INC.
2280 MARKET STREET-SUITE 100
RIVERSIDE, CA 92501-2110



PROFILE
UNIVERSITY PARKWAY SB OFF-RAMP
"UP-4" LINE

SUPERELEVATION DIAGRAM

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-7

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY:
SUPERVISOR:
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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USERNAME =>user

LAST REVISION | DATE PLOTTED =>2/8/2019

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	SBD	215	11.35/11.95	17	27

MARK S. HAGER
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Mark S. Hager — No. C 67659 — Exp. 6-30-19 — CIVIL — STATE OF CALIFORNIA

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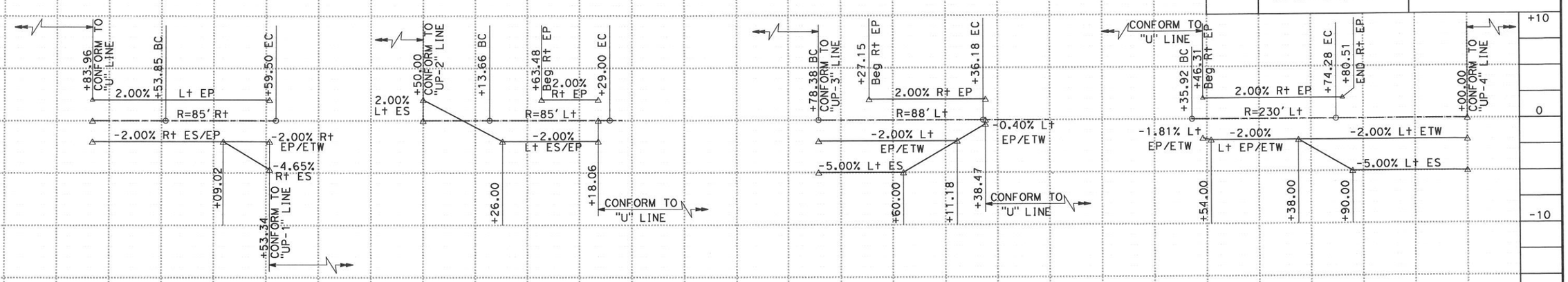
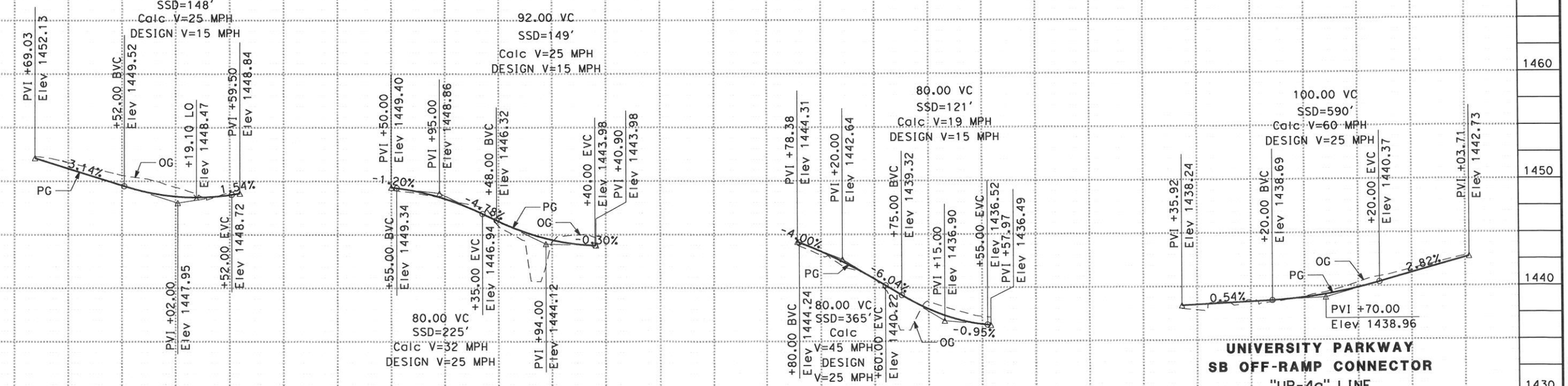


SUPERELEVATION DIAGRAMS



UNIVERSITY PARKWAY
NB ON-RAMP CONNECTOR
"UP-1a" LINE

UNIVERSITY PARKWAY
NB OFF-RAMP CONNECTOR
"UP-2a" LINE

UNIVERSITY PARKWAY
SB ON-RAMP CONNECTOR
"UP-3a" LINE

UNIVERSITY PARKWAY
SB OFF-RAMP CONNECTOR
"UP-4a" LINE

PROFILES

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-8

STATION	11+00	12+00	13+00	14+00	20+00	21+00	22+00	38+00	39+00	40+00	49+00	50+00	51+00	52+00	TOTAL
CY Exc															
CY Emb															

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NOT FOR CONSTRUCTION
CONSULTANT FUNCTIONAL SUPERVISOR: MARK HAGER
CALCULATED-DESIGNED BY: JULIAN HERNANDEZ
CHECKED BY
REVISED BY
DATE REVISED
LAST REVISION DATE PLOTTED => 2/8/2019
USERNAME =>user

ATTACHMENT C

Cost Estimate

PROJECT

PLANNING COST ESTIMATE

EA: 08-0E420 PID: 08-00000083

EA: 08-0E420

PID: 08-00000083

District-County-Route: 08-SBd-215

PM: 11.35 - 11.95

Type of Estimate : Project Approval / Environmental Document (PA/ED)

Program Code : RTP ID SBD59204

Project Limits : I-215 PM 11.35 - 11.95

Project Description: Interstate 215 at University Parkway Interchange

Scope : Change existing interchange layout from compact diamond to diverging diamond configuration

Alternative : Single Build Alternative

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 8,186,300	$ 9,576,813
TOTAL STRUCTURES COST	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 8,186,300	$ 9,576,813
TOTAL RIGHT OF WAY COST	$ 503,500	$ 544,586
TOTAL CAPITAL OUTLAY COSTS	**$ 8,690,000**	**$ 10,122,000**
PR/ED SUPPORT	$ 940,000	$ 940,000
PS&E SUPPORT	$ 804,000	$ 804,000
RIGHT OF WAY SUPPORT	$ 220,000	$ 220,000
CONSTRUCTION SUPPORT	$ 2,021,000	$ 2,021,000
TOTAL SUPPORT COST	**$ 3,985,000**	**$ 3,985,000**
TOTAL PROJECT COST	**$ 12,700,000**	**$ 14,150,000**

If Project has been programmed enter Programmed Amount

	Month	/ Year
Date of Estimate (Month/Year)	6	/ 2019
Estimated Construction Start (Month/Year)	7	/ 2021
Number of Working Days =	120	
Estimated Mid-Point of Construction (Month/Year)	12	/ 2021
Estimated Construction End (Month/Year)	6	/ 2022
Number of Plant Establishment Days	30	

Estimated Project Schedule

PID Approval	October-16
PA/ED Approval	October-19
PS&E	Nov-20
RTL	November-20
Begin Construction	July-21

Reviewed by District O.E. or Cost Estimate Certifier

Office Engineer / Cost Estimate Certifier	Date	Phone

Approved by Project Manager

Project Manager	Date	Phone
For Emad Makar	7/11/19	909-388-7189

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	Earthwork	$	212,400
2	Pavement Structural Section	$	2,221,900
3	Drainage	$	372,700
4	Specialty Items	$	116,700
5	Environmental	$	673,900
6	Traffic Items	$	1,779,200
7	Detours	$	140,000
8	Minor Items	$	110,400
9	Roadway Mobilization	$	281,400
10	Supplemental Work	$	120,100
11	State Furnished	$	511,800.00
12	Time-Related Overhead	$	281,400.00
13	Roadway Contingency	$	1,364,400.00
	TOTAL ROADWAY ITEMS	$	**8,186,300**

Estimate Prepared By :	Julian Hernandez	6/20/2019	(951) 320-7325
	Project Engineer	Date	Phone
Estimate Reviewed By :	Mark Hager	6/21/2019	(951) 320-7343
	Project Manager	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	4,586	x	30.00	=	$	137,580
19010X	Roadway Excavation (Type X) ADL	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY	3,720	x	8.00	=	$	29,760
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
160103	Clearing & Grubbing	ACRE	15	x	3,000.00	=	$	45,000
170101	Develop Water Supply	LS		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Some Item	Unit						

TOTAL EARTHWORK SECTION ITEMS $ 212,400

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement (1')	CY	1,244	x	204.87	=	$	254,858
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390101	Asphalt Concrete Pavement	TON		x		=	$	-
390132	Hot Mix Asphalt (Type A, 0.45')	TON	3,752	x	92.62	=	$	347,510
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	1,667	x	110.00	=	$	183,370
390137	Rubberized Hot Mix Asphalt Overlay (0.2')	TON	2,811	x	110.00	=	$	309,210
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
280000	Lean Concrete Base (0.35')	CY	435	x	315.00	=	$	137,025
260203	Class 2 Aggregate Base (1.1')	CY	4,685	x	75.00	=	$	351,375
250201	Class 2 Aggregate Subbase (1')	CY	4,259	x	55.00	=	$	234,245
XXXXXX	Subgrade (1.15')	TON/CY		x		=	$	-
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON	4	x	880.00	=	$	3,520
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
730020	Minor Concrete (Curb)	CY	72	x	585.00	=	$	42,120
731504	Minor Concrete (Curb and Gutter)	CY	121	x	475.00	=	$	57,475
731521	Minor Concrete (Sidewalk, 4")	CY	133	x	575.00	=	$	76,475
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	CY		x		=	$	-
731502	Minor Concrete (Miscellaneous Construction)	CY		x		=	$	-
394073	Place Hot Mix Asphalt Dike (Type D)	LF	610	x	20.00	=	$	12,200
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153121	Remove Concrete	CY		x		=	$	-
150772	Remove Curb	LF	1,141	x	10.00	=	$	11,410
150854	Remove Concrete Pavement	CY		x		=	$	-
153140	Remove Concrete Sidewalk	SQYD		x		=	$	-
153142	Remove Concrete Island (Portions)	CY		x		=	$	-
153215	Remove Concrete (Curb and Gutter)	LF	1,514	x	20.00	=	$	30,280
153211	Remove Concrete Sidewalk and Driveway	CY	129	x	125.00	=	$	16,125
153240	Remove Concrete (Curb, Gutter, and Sidewalk)	CY		x		=	$	-
150770	Remove Asphalt Concrete Pavement	SQFT		x		=	$	-
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD	347	x	75.00	=	$	26,025
398200	Cold Plane Asphalt Concrete Pavement	SQYD	21,541	x	3.80	=	$	81,856
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
832070	Vegetation Control (Minor Concrete)	SQYD	156	x	180.00	=	$	28,080
390100	Prime Coat	TON	17	x	1,100.00	=	$	18,700

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 2,221,900

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	LF	482	x	40.00	=	$	19,280
150820	Modify Inlet	EA	1	x	3,000.00	=	$	3,000
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA	1	x	2,500.00	=	$	2,500
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA	1	x	750.00	=	$	750
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
650010	12" Reinforced Concrete Pipe	LF	43	x	90.00	=	$	3,870
650014	18" Reinforced Concrete Pipe	LF	646	x	130.00	=	$	83,980
650030	42" Reinforced Concrete Pipe	LF	408	x	340.00	=	$	138,720
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$	-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$	-
7050XX	XX" Steel Flared End Section	EA		x		=	$	-
707117	36" Precast Pipe Inlet	EA	22	x	500.00	=	$	11,000
703233	Grated Line Drain	LF	180	x	240.00	=	$	43,200
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$	-
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
	Curb Inlet Catch Basin	EA	8	x	8,000.00	=	$	64,000
	Overside Drain	EA	2	x	1,200.00	=	$	2,400
XXXXXX	Additional Drainage	LS		x		=	$	-

TOTAL DRAINAGE ITEMS $ 372,700

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS		x		=	$	-
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832005	Midwest Guard Rail System	LF	250	x	40.00	=	$	10,000
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA	2	x	4,500.00	=	$	9,000
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
839701	Concrete Barrier (Type 60M)	LF	150	x	210.00	=	$	31,500
839704	Concrete Barrier (Type 60MD)	LF	275	x	100.00	=	$	27,500
839727	Concrete Barrier (Type 60MS Modified)	LF	645	x	60.00	=	$	38,700
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	SQFT		x		=	$	-
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL SPECIALTY ITEMS $ 116,700

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
	Biological Mitigation	LS		x		=	$	-		
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-		
141000	Temporary Fence (Type ESA)	LF	968	x	6.00	=	$	5,808		
								Subtotal Environmental Mitigation	$	*5,808*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
20XXXX	Highway Planting	ACRE	0.8	x	50,000.00	=	$	50,000		
20XXXX	Irrigation System	ACRE	0.8	x	50,000.00	=	$	50,000		
204099	Plant Establishment Work	LS		x		=	$	-		
204101	Extend Plant Establishment Work	LS		x		=	$	-		
20XXXX	Follow-up Landscape Project	LS		x		=	$	-		
150685	Remove Irrigation Facility	LS		x		=	$	-		
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-		
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-		
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-		
200114	Rock Blanket	SQFT	10,914	x	12.00	=	$	130,968		
200113	Rock Mulch (raised medians)	SQFT	30,199	x	5.00	=	$	150,995		
200122	Weed Germination	SQYD		x		=	$	-		
208304	Water Meter	EA		x		=	$	-		
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-		
20890X	Extend X" Conduit (Use for Extension of Irrigation	LF		x		=	$	-		
								Subtotal Landscape and Irrigation	$	*381,963*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost		
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-		
210350	Fiber Rolls	LF		x		=	$	-		
210360	Compost Sock	LF		x		=	$	-		
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-		
21025X	Bonded Fiber Matrix	SQFT/ACRE		x		=	$	-		
210300	Hydromulch	SQFT		x		=	$	-		
210420	Straw	SQFT		x		=	$	-		
210430	Hydroseed	SQFT	50,600	x	0.12	=	$	6,072		
210600	Compost	SQFT		x		=	$	-		
210630	Incorporate Materials	SQFT		x		=	$	-		
								Subtotal Erosion Control	$	*6,072*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost		
130300	Prepare SWPPP	LS	1	x	5,000.00	=	$	5,000		
130200	Prepare WPCP	LS		x		=	$	-		
130100	Job Site Management	LS	1	x	10,000.00	=	$	10,000		
130330	Storm Water Annual Report	EA	2	x	2,000.00	=	$	4,000		
130310	Rain Event Action Plan (REAP)	EA	12	x	500.00	=	$	6,000		
130320	Storm Water Sampling and Analysis Day	EA	12	x	500.00	=	$	6,000		
130520	Temporary Hydraulic Mulch	SQYD	104,839	x	0.50	=	$	52,420		
130550	Temporary Hydroseed	SQYD		x		=	$	-		
130505	Move-In/Move-Out (Temporary Erosion Control)	EA	13	x	1,000.00	=	$	13,000		
130640	Temporary Fiber Roll	LF	10,000	x	4.00	=	$	40,000		
130650	Temporary Gravel Bag Berm	LF	2,260		9.00		$	20,340		
130680	Temporary Silt Fence	LF	11,252		3.00		$	33,756		
130900	Temporary Concrete Washout	LS	1	x	4,000.00	=	$	4,000		
130710	Temporary Construction Entrance	EA	4	x	4,450.00	=	$	17,800		
130610	Temporary Check Dam	LF	2,129	x	10.00	=	$	21,290		
130620	Temporary Drainage Inlet Protection	EA	44	x	350.00	=	$	15,400		
130730	Street Sweeping	LS	1	x	30,000.00	=	$	30,000		
131103	Water Quality Sampling and Analysis Day	EA	1	x	500.00	=	$	500		
131104	Water Quality Monitoring Report	EA	1	x	500.00	=	$	500		
								Subtotal NPDES	$	*280,006*

								TOTAL ENVIRONMENTAL	$	**673,900**

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS	1	x	5,000.00	=	$	5,000		
066596	Additional Water Pollution Control**	LS	1	x	1,500.00	=	$	1,500		
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-		
066916	Annual Construction General Permit Fees	LS	1	x	1,000.00	=	$	1,000		
								Subtotal Supplemental Work for NDPS	$	*7,500*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting	LS	2	x	375,000.00	=	$	750,000
860990	Closed Circuit Television System	LS		x		=	$	-
870510	Ramp Metering System	LS	1	x	200,000.00	=	$	200,000
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
560213	Furnish Sign Structure (Lightweight)	EA	1	x	120,000.00	=	$	120,000
560214	Install Sign Structure (Lightweight)	EA	1	x	15,000.00	=	$	15,000
560218	Furnish Sign Structure (Truss)	EA	2	x	130,000.00	=	$	260,000
560219	Install Sign Structure (Truss)	EA	2	x	17,000.00	=	$	34,000
490605	36" Cast-in-drilled-holr Conc Piling (Sign Foundation)	LF	120	x	1,000.00	=	$	120,000
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
870600	Traffic Monitoring Station System	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements Di	LS	1	x	5,000.00	=	$	5,000
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Some Item	LS		x		=	$	-

Subtotal Traffic Electrical $ 1,504,000

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA	1	x	535.50	=	$	536
566012	Roadside Sign - Two Post	EA	3	x	765.00	=	$	2,295
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF	6,327	x	1.18	=	$	7,466
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150748	Remove Roadside Sign Panel	EA	5	x	104.10	=	$	521
150742	Remove Roadside Sign	EA	48	x	208.30	=	$	9,998
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
XXXXXX	Paint Traffic Stripe	LF	23,846	x	1.16	=	$	27,661
XXXXXX	Paint Yellow Traffic Stripe	LF	3,456	x	1.16	=	$	4,009
XXXXXX	Remove Traffic Signal	EA	13	x		=	$	-
840515	Thermoplastic Pavement Marking (Type IV (L) Arrow)	SQFT	120	x	4.78	=	$	574
840515	Thermoplastic Pavement Marking (Type IV ('R) Arrow)	SQFT	75	x	4.78	=	$	359
840515	Thermoplastic Pavement Marking (Type III (L) Arrow)	SQFT	252	x	4.78	=	$	1,205
840515	Thermoplastic Pavement Marking (Type III ('R) Arrow)	SQFT	546	x	4.78	=	$	2,610
840515	Thermoplastic Pavement Marking (Type I 18'-0" Arrow)	SQFT	500	x	4.78	=	$	2,390
840515	Thermoplastic Pavement Marking (Type II (L) Arrow)	SQFT	90	x	4.78	=	$	430
840515	Thermoplastic Pavement Marking (Diamond Symbol)	SQFT	108	x	4.78	=	$	516
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility	LF		x		=	$	-
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanc	SQFT		x		=	$	-
120090	Construction Area Signs	LS		x		=	$	-
84XXXX	Permanent Pavement Delineation	LS		x		=	$	-

Subtotal Traffic Signing and Striping $ 60,569

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
128651	Portable Changeable Message Signs	EA	4	x	$ 3,500	=	$	14,000
	C40/10A Double Fine Sign - black and white	LS	1	x	$ 600	=	$	600

Subtotal Traffic Management Plan $ 14,600

560219	Install Sign Structure (Truss)	EA	2	x	17,000.00	=	$	34,000
490605	36" Cast-in-drilled-holr Conc Piling (Sign Foundation)	LF	120	x	1,000.00	=	$	120,000
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
870600	Traffic Monitoring Station System	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements Di	LS	1	x	5,000.00	=	$	5,000
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Some Item	LS		x		=	$	-

Subtotal Traffic Electrical $ 1,504,000

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA	1	x	535.50	=	$	536
566012	Roadside Sign - Two Post	EA	3	x	765.00	=	$	2,295

TOTAL TRAFFIC ITEMS

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON		x		=	$	-
26020X	Class 2 Aggregate Base	TON/CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
129000	Temporary Railing (Type K)	LS	1	x	45,000.00	=	$	45,000
128601	Temporary Signal System	LS	1	x	60,000.00	=	$	60,000
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
80010X	Temporary Fence (Type X)	LF		x		=	$	-
	Signed Detours	LS	1	x	20,000.00	=	$	20,000
	Adjust Signals	LS	1	x	15,000.00	=	$	15,000

TOTAL DETOURS $ **140,000**

SUBTOTAL SECTIONS 1 through 7 $ 5,516,800

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items					
ADA Items			1.0%	$	55,168
8B - Bike Path Items					
Bike Path Items			1.0%	$	55,168
8C - Other Minor Items					
Other Minor Items			0.0%	$	-
Total of Section 1-7	$	5,516,800	x 2.0%	= $	110,336

TOTAL MINOR ITEMS $ **110,400**

SECTIONS 9: MOBILIZATION

Item code							
999990	Total Section 1-8	$	5,627,200	x 5%	= $	281,360

TOTAL MOBILIZATION $ **281,400**

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)			Cost
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$	-
066094	Value Analysis	LS		x		=	$	-
066070	Maintain Traffic	LS		x		=	$	-
066919	Dispute Resolution Board	LS		x		=	$	-
066921	Dispute Resolution Advisor	LS		x		=	$	-
066015	Federal Trainee Program	LS		x		=	$	-
066610	Partnering	LS		x		=	$	-
066204	Remove Rock and Debris	LS		x		=	$	-
066222	Locate Existing Crossover	LS		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

*Cost of **NPDES** Supplemental Work specified in Section 5D* = $ 7,500

Total Section 1-8 $ 5,627,200 2% = $ 112,544

TOTAL SUPPLEMENTAL WORK $ **120,100**

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS	1	x	180,000.00	=	$180,000
066063	Traffic Management Plan - Public Information	LS	1	x	100,000.00	=	$100,000
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS	1	x	54,000.00	=	$54,000
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS	1	x	121,440.00	=	$121,440
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	Unit		x		=	$0

Total Section 1-8 $ 5,627,200 1% = $ 56,272

TOTAL STATE FURNISHED $511,800

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization $5,627,200 (used to calculate TRO)

Total Construction Cost (excluding TRO and Contingency) $6,540,500 (used to check if project is greater than $5 million excluding contingency)

Estimated Time-Releated Overhead (TRO) Percentage (0% to 10%) = **5%**

Item code		Unit	Quantity		Unit Price ($)		Cost
070018	Time-Related Overhead	WD	120	X	$2,345	=	$281,400

TOTAL TIME-RELATED OVERHEAD $281,400

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12 $ 6,821,900 x **20%** = $1,364,380

TOTAL CONTINGENCY $1,364,400

II. STRUCTURE ITEMS

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	-		-		-
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Bridge Number	-		-		-
Structure Type	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$100		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Structures Contingency Percentage	10%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: _____ _____

XXXXXXXXXXXXXXXX ------ Division of Structures — Date

EA: 08-0E420 PID: 08-00000083

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	$	488,000
	A2)	SB-1210	$	0
B)		Acquisition of Offsite Mitigation	$	0
C)	C1)	Utility Relocation (State Share)	$	0
	C2)	Potholing (Design Phase)	$	0
D)		Railroad Acquisition	$	0
E)		Clearance / Demolition	$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)	$	0
G)		Title and Escrow	$	0
H)		Environmental Review	$	0
I)		Condemnation Settlements 0%	$	0
J)		Design Appreciation Factor 0%	$	0
K)		Utility Relocation (Construction Cost)	$	15,500

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$503,500**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$544,586**
N)	**RIGHT OF WAY SUPPORT**	**$220,000**

Support Cost Estimate Prepared By _____ Project Coordinator[1] Phone

Utility Estimate Prepared By _____ Utiliy Coordinator[2] Phone

R/W Acquistion Estimate Prepared By _____ Right of Way Estimator[3] Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

ATTACHMENT D

Right of Way Data Sheet

To: District Division Chief
Division of Right of Way and Land Surveys

Date: 2/6/2019

Co. SBd Rte. I-215
Expense Authorization 0E420

Attention: District Branch Chief
R/W Local Programs

Subject: **RIGHT OF WAY DATA SHEET - LOCAL PUBLIC AGENCIES**

Project Description:

Right of way necessary for the subject project will be the responsibility of SBCTA

The information in this data sheet was developed by HDR Engineering Inc.

I. *Right of Way Engineering*

Will Right of Way Engineering be required for this project?

- No ____
- Yes X (Submit a copy of the *Right of Way Engineering Surveys and Mapping Services checklist for Locally Funded Projects*. This checklist includes, but is not limited to, the following items.)

  - Hard copy (base map) ____
  - Appraisal map ____
  - Acquisition Documents ____
  - Property Transfer Documents ____
  - R/W Record Map ____
  - Record of Survey ____

  The final Right of Way Requirements have not been established at this time.

II. *Engineering Surveys*

1. Is any surveying or photogrammetric mapping required?

   No ____ Yes X (Complete the following.)

2. Datum Requirements

   Yes X Project will adhere to the following criteria:
   - Horizontal - datum policy is NAD 83, CA-HPGN, EPOCH 1991.35 and English system of units and measures.
   - Vertical - datum policy is NAVD 88.
   - Units - metric is not required.

   No ____ Provide an explanation on additional page.

3. Will land survey monument perpetuation be scoped into the project, if required?

   Yes X

   No ____ Provide explanation on additional page.

III. ***Parcel Information (Land and Improvements)***

Are there any property rights required within the proposed project limits?

No _____ Yes __X__ (Complete the following.)

	Part Take	Full Take	Estimate $
A. Number of Vacant Land Parcels	0	0	$ 0
B. Number of Single Family Residential Units	0	0	$ 0
C. Number of Multifamily Residential Units	0	0	$ 0
D. Number of Commercial/Industrial Parcels	1	0	$ 475,900
E. Number of Farm/Agricultural Parcels	0	0	$ 0
F. Permanent and/or Temporary Easements	2	0	$ 12,100
G. Other Parcels (define in "Remarks" section)	0	0	$ 0
Totals	3	0	$ 488,000

Provide a general description of the right of way and excess lands required (zoning, use, improvements, critical, or sensitive parcels, etc.).

No full take acquisitions are required by this Project and the infields between the ramps and the I-215 freeway will be used for staging areas. Excess land beyond the terminal of the SB off-ramp will be relinquished to properties adjoining the Project. Temporary construction easements required for private property driveway modifications. The numbers listed above only represent the number of access rights taken away from the owner(s), not the actual R/W. The estimates include an allowance for potential loss of goodwill and damages.

IV. ***Dedications***

Are there any property rights which have been acquired, or anticipate will be acquired, through the "dedication" process for the Project?

No __X__ Yes _____ (Complete the following.)

Number of dedicated parcels ___0___

Have the dedication parcel(s) been accepted by the municipality involved?

N/A

V. ***Excess Lands / Relinquishments***

Are there Caltrans property rights which may become excess lands or potential relinquishment areas?

No _____ Yes __X__ (Provide an explanation on additional page.)

VI. ***Relocation Information***

Are relocation displacements anticipated?

No __X__ Yes _____ (Complete the following.)

A. Number of Single Family Residential Units	0	
Estimated RAP Payments		$ 0
B. Number of Multifamily Residential Units	0	
Estimated RAP Payments		$ 0
C. Number of Business/Nonprofit	0	
Estimated RAP Payments		$ 0
D. Number of Farms	0	
Estimated RAP Payments		$ 0
E. Other (define in the "Remarks" section)	0	
Estimated RAP Payments		$ 0
Totals	0	$ 0

VII. ***Utility Relocation Information***

Do you anticipate any utility facilities or utility rights of way to be affected?

No _____ Yes __X__ (Complete the following.)

		Estimated Relocation Expense		
Facility	Owner	State Obligation	Local Obligation	Utility Owner Obligation
A. Water meter	City of San Bernardino	$0	$6,000	$0
B. Water valve	City of San Bernardino	$0	$1,500	$0
C. Water valve cover	City of San Bernardino	$0	$1,000	$0
D. Pull box	Verizon	$0	$3,000	$0
E. Pull box	SCE	$0	$4,000	$0
Totals		$0 *	$15,500	$0
Number of facilities			5	

*This amount reflects the estimated total financial obligation by the State.

Any additional information concerning utility involvement on this project?

Coordination with Southern California Gas will be established during the final design and construction phases due to the existence of an 8-inch high pressure gas line along University Parkway, which is considered a high priority utility. Positive location of the gas line will be performed but no impacts are anticipated since only partial paving and resurfacing is proposed along University Parkway, and new traffic signals or signal equipment will be placed at locations that avoid conflicts with the gas line.

Explanation for Section V - Excess Lands/Relinquishments

There is currently a triangular portion of excess land located on the northwest corner of University Parkway and the I-215 southbound off-ramp where the State R/W line is approximately 113 feet from the street centerline and up to 44 feet behind the back of proposed sidewalk. Moving towards the southwest along University Parkway the right of way line gets closer to the back of sidewalk to end at a constant offset of 50 feet from the street center line.

Within this area being considered for relinquishment there is currently parkway landscaping that has been installed by the property owners within the State R/W and two existing driveways serve the business outlined by name and number based on their observed occupancy in 2018: Jack-in-the-Box (4020) and a strip mall (4-plex) with Verizon Wireless (4404), Honey's Fashion (4008), Mimi's Donuts (4012), and Family Dentistry (4016) in the small retail center. The Project will eliminate the driveway closest to the ramp terminal and the intent is to relinquish part of the triangular excess land to both the strip mall and Jack-in-the-Box properties to mitigate potential impacts to access and parking. An easement will be maintained from the relinquished property for utility owner access.

View 1 – I-215 SB Off-Ramp terminal at University Parkway looking southwesterly to the business area and first driveway.

View 2- Business frontage showing the Jack-in-the-Box drive thru and strip mall complex with four businesses.

VIII. ***Rail Information***

Are railroad facilities or railroad rights of way affected?

No __X__ Yes _____ (Complete the following.)

Describe railroad facilities or railroad rights of way affected.

N/A

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A. N/A	N/A	N/A
B. N/A	N/A	N/A

Discuss types of agreements and rights required from the railroads. Are grade crossings that require services contracts, or grade separations that require construction and maintenance agreements involved?

N/A

IX. ***Clearance Information***

Are there improvements that require clearance?

No __X__ Yes _____ (Complete the following.)

A. Number of Structures to be Demolished 0
Estimated Cost of Demolition $ 0

X. ***Hazardous Materials/Waste***

Are there any site(s) and/or improvements(s) in the Project Limits that are known to contain

hazardous materials? None __X__ Yes _____ (Explain in the "Remarks" section.)

Are there any site(s) and/or improvement(s) in the Project Limits that are suspected to contain

hazardous waste? None __X__ Yes _____ (Explain in the "Remarks" section.)

XI. ***Project Scheduling***

	Proposed lead time	Completion date
* Preliminary Engineering, Surveys	2 (months)	11-2019
* R/W Engineering Submittals	3 (months)	01-2020
* R/W Appraisals/Acquisition	10 (months)	11-2020
Proposed Environmental Clearance		10-2019
Proposed R/W Certification		11-2020

XII. ***Proposed Funding***

	Local	State	Federal	Other
Acquisition	$488,000			
Utilities	$15,500			
Relocation Assistance Program	N/A			
R/W Support	$120,000			
Cost (Eng. Appraisals, etc.)	$100,000			

XIII. ***Remarks***

Project Sponsor Consultant
Prepared by:

Julian Hernandez, P.E.

Roadway Engineer
HDR Engineering Inc.

2/25/2019
Date

Project Sponsor
Reviewed and Approved by:

Paul Melocoton

Project Manager
SBCTA

2/27/19
Date

Caltrans
Reviewed and approved based on information provided to date:

Jackie Williams

Caltrans District Branch Chief
Local Programs
Division of Right of Way

3-5-19
Date

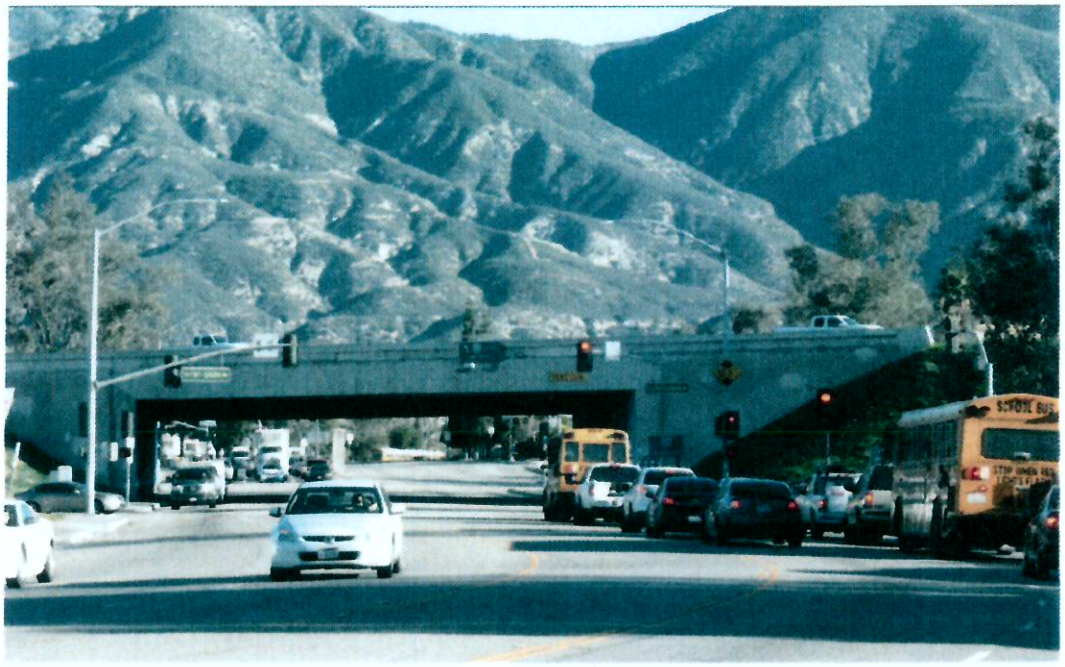
ATTACHMENT E

Signature Page of Approved Environmental Document

I-215/University Parkway Interchange Improvement Project

CITY OF SAN BERNARDINO
SAN BERNARDINO COUNTY, CALIFORNIA
District 08-SBd-215 PM11.35/11.95
EA: 08-0E420
PN: 0800000083

Initial Study with Proposed Negative Declaration



Prepared by the
State of California Department of Transportation

Caltrans

July 2019

SCH # _____
215-PM 11.35/11.95
EA 0E4200
Project No. 0800000083

Interstate 215 (I-215)/University Parkway Interchange Improvement Project
I-215 from Postmile 11.35 to Postmile 11.95 and University Parkway from North Varsity Street to Hallmark Parkway, in the City of San Bernardino, San Bernardino County, CA

Draft Initial Study with Proposed Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C), 49 USC 303, and/or 23 USC 138

THE STATE OF CALIFORNIA
Department of Transportation

and

San Bernardino County Transportation Authority

Cooperating Agencies: City of San Bernardino
Responsible Agencies: California Department of Transportation, San Bernardino County Transportation Authority

7/10/19
Date of Approval

David Bricker
Deputy District Director
District 8 Division of Environmental Planning
California Department of Transportation

The following persons may be contacted for more information about this document:

Antonia Toledo
Senior Environmental Planner
Caltrans District 8
464 West 4th Street
San Bernardino, CA 92401

Timothy Watkins
San Bernardino County Transportation Authority
1170 W. 3rd Street, 2nd Floor
San Bernardino, CA 92410

ATTACHMENT F

Transportation Management Plan

For DTM use	Caltrans District 8 (Riverside & San Bernardino)	
Developer	TMP Data Sheet (Ver. Mar. 2018)	

Transportation Management Plan (TMP) Data Sheet is for PID, PSR, PR and PS&E considering DTM's requirements. The validity of this TMP expire at the same time the associated LRCs expires.

The TMP Data Sheet includes background & signature, TMP elements & TMP estimate

Requester: *Complete section (A) & (B) of this page only*

Requester: Submit separate request for each roadway (Type the information in the cells below with yellow background ONLY)

TMP receiver: Please note that

Project shall not be certified without the approval of the Lane Requirement Charts (LRCs)

& the TMP by the DTM

4) Requester's info.

- Date of request	5/9/2019	2 - Department	Oversight Proj.
- Full name	Julian Hernandez	4 - Phone No.	951-320-7325
- email address	julian.hernandez@hdrinc.com		
- Project Manager's name	Mark Hager		
- Project Manager's email	mark.hager@hdrinc.com		

B) Project information

		1-EA#/ID#	0E420/0800000083
County/Route	SBD/215	3-phase/sub object	1/160
Post mile (From-To)	11.35/11.95		
Short description of job	construct diverging diamond interchange at Univeristy Parkway		

Construction period per WPS			
Estimated start date	07/12/21	8-# of working days	220
Estimated end date	06/02/22	9-Estimated Proj. cost	$ 8,690,000

10- Requester: Use section (H), in the bottom of the page, to add any other information that helps developing the TMP

1- Documents to send — *Requester: Please attach the location map in jpeg/pdf format to your E-mail*

2- If hard copies are requested, Send or bring them to the DTM office located on the south side of 11th. Floor, Attn: Al Afaneh. Questions: call 383-6262

13- E-mail the request to: al_afaneh@dot.ca.gov

Following is for DTM use >>>>>>>>>>> Developer: Fill info in green cells only

C) BACKGROUND INFORMATION					
		Date request received	05/09/19	Job assigned to	Andy Quach
# of working days	220				
Estimated Project cost ($)	8,690,000	Per E-mail dated	05/09/19		
TMP estimate($)	**$295,440**	Equal to **3.40%**	Of the project cost		

D) IMPACT	High	Medium	Low	N/A	Developer: (*Briefly, explain the high impact/mitigation):*
State Hwy.			x		
Local road		x			
Ramp/connector		x			

E) Developer: Complete the info

Developed by	Andy D. Quach	Original signed by:	Andy Quach	Date	5/13/2019
Title	Transportation Engineer - Civil				
E-mail	andy.d.quach@dot.ca.gov				
Phone/Fax	909-806-3901				

F) Approved by		Original signed by:	Al Afaneh	Date	05/13/19
Name:	Al Afaneh				
Title	District Traffic Manager				
E-mail	al.afaneh@dot.ca.gov				
Phone/Fax	909-383-6262				

G) District's info:

Department of Transportation		
District:	8	
Address:	464 W. Fourth St., San Bernardino, Ca., 92401-1400	
Operations, DTM, MS >>>>	711	

DTM is located on the North side of 7th. Fl. Enter from the open door & turn left. MS: 711

H) Remarks

A review of traffic volumes requires mainline closure and ramp closures to be done at night. Extended 10-day or longer ramp closures may be needed for ramp paving operations. COZEEP may be needed for nighttime offramp closures. Motorist information and public information should be used to reduce demands during extended ramp closures.
TMP revised on 6/21/19 by requester to update construction dates and project construction cost.

TMP Elements	EA #/ID#	0E420/0800000083	Date	5/13/2019

Note: A checkmark in the box means you need to include this in the project unless staging, material, or work hour changes eliminate the need for the item. A ? in front means TMP anticipates this - please check into this. A blank box means the item is not needed at this time based on the information received.

Public Affairs officer's 1st. & last name		Phone number

1 Public Information/Public Awareness Campaign (PAC).

Developer: Remember to obtain the estimate from Public affairs by contacting Terri Kasinga. Procedure is in the file under 3- TMP matters

Estimated Cost

$ 100,000

BEES 066063 (Traffic Management Plan-Public Information). Cost to be reduced by Public Affairs (PA) and Construction Liaison (CL) only. Show under **State Furnished** as the **total** of PA+CL.

- 1.1 ☐ Include Rideshare information in PA/CL project material to encourage vehicles reduction in work area
- 1.2 ☑ Brochures and Mailers
- 1.3 ☑ Media Releases (& minority media sources)
- 1.4 ☐ Paid Advertising
- 1.5 ☐ Public Meetings/PAC Mtgs./Speakers Bureau (show cost also for room rental)
- 1.6 ☐ Hand deliver notices to vicinity
- 1.7 ☐ Broadcast fax service
- 1.8 ☐ Telephone Hotline OR
- 1.9 ☐ 1-800-COMMUTE (The telephone number is shown on CS-Info signs) -
- 1.10 ☐ Visual Information (videos, slide shows, etc.)
- 1.11 ☐ Local cable TV and News
- 1.12 ☑ Traveler Information System (Internet)
- 1.13 ☑ Internet, E-mail, Social Media
- 1.14 ☑ Notification to targeted groups:
  - ☐ Revised Transit Schedules/maps
  - ☐ Rideshare organizations
  - ☑ schools
  - ☐ organizations representing people with disabilities
  - ☐ bicycle organizations
- 1.15 ☐ Include PA/CL/Consultant resources in WPS
- 1.16 ☐ Commercial traffic reporters/feeds - e.g. brief Traffic Information people (TIP) group
- 1.17 ☐ Insert SSP's

  "A representative of the Contractor, at Superintendent level or higher, and authorized to commit the Contractor, shall attend and participate in all Public Awareness Campaign meetings. Time commitment for the meeting(s) varies from two to four hours per month."
- 1.18 ☐ Other

Section 1 Total	$ 100,000

2 Traveler Information Strategies

Project team needs to coordinate with Traffic Design!

- 2.1 ☑ Existing Overhead Changeable Message Signs (Stationary)

  ☐ New Installation (Stationary) - BEES 860532 CHANGEABLE MESSAGE SIGN SYSTEM - list locations

- 2.2 ☐ Portable Changeable Message Signs (PCMS) - BEES 066578

  This strategy is in addition to Traffic Design's PCMS for regular traffic handling within the project limits and is used for advising motorists to divert at remote advance decision points - outside the usual project limits. This also allows for advanced motorist information - e.g. a week ahead. Their placement may need to be cleared **environmentally.** Placement should be of sufficient distance prior to decision points as determined by the Resident Engineer.

  # of PCMS ☐ Unit cost/month $ 1,000.00 Months needed ☐ $ -

- 2.3 ☑ Lane Closure System Website
- 2.4 ☑ Caltrans Highway Information Network (CHIN)
- 2.5 ☐ Radar Speed Message Sign (Specter sign) BEES 066064 (approx. EA @ $30,000)
- 2.6 ☐ Bicycle and pedestrian information, e.g. Detour maps
- 2.7 ☐ Automated Workzone Information System (AWIS) BEES 120105
  - consult with TMP Developer prior to updating SSP 12-3.35A(1) for AWIS
  - refer to Section 12-3.35, page 156 to 158 of the 2015 Standard Spec.

TMP Elements	EA #/ID#	0E420/0800000083	Date	5/13/2019

2.8 ☐ Other

Section 2 Total	$ -

3 Incident Management

3.1 CHP's Construction or Maintenance Zone Enhanced Enforcement Program – COZEEP or MAZEEP. BEES 066062 - show under "State or Agency furnished" in the Cost Estimate.

Make sure to consider the LC hours and add CHP driving time to/from their office

Day COZEEP: To protect active closures

	hours/day	CHP vehicles	# of officers.	Rate/Hr.	
0	0	1	1	$ 100	$ -

Night COZEEP: To protect active closures

# of nights		hours/night	CHP vehicles	# of officers. Nights need 2 per car	Rate/Hr.	
30		9	1	2	$ 100	$ 54,000

3.2 **Freeway Service Patrol (FSP) for Construction (CFSP)** $/hr./truck $55

BEES 066065 - show under "State or Agency furnished" in the Cost Estimate

Short duration or remote area CFSP usually is bid with much higher hourly rates. If enhancement of program FSP feasible, CFSP could tie into the lower long-term FSP rates.

	# of trucks	# of days	Hours per day	
A For service within the regular FSP hours				$0
For service outside the regular FSP hours				
B Extended Peak hour coverage	1	200	8	$88,000
C Support during night closures				$0
D Weekend support				$0

Local agency (SAFE) support 8% $7,040

8% of truck cost

CFSP CHP support 5% $0

5% of truck cost only if within regular FSP and area

Equipment/Supplies 10% $8,800

% of truck cost unless more detail available

Consult with the Inland Empire division of CHP or the border division in the southern Riverside county to select the method which is acceptable for the B,C,D that are outside the regular FSP hours or area.

Method 1

CFSP/CHP support 20% $17,600

20% of truck cost or

CFSP Dispatcher @

# of days		# of nights	hours	# of FSP	Rate	# of FSP vehicles	
			0		$ 45.00		$ -
			0				

CFSP CHP Officers (See Cozeep rate)

# of days		# of nights	hours	# of officers	Rate	# of CHP vehicles	
0		0	0	1	$ 45.00	0	$ -
0		0	0	2	0	0	$ -

☐ Cooperative Agreement or Task Order with SAFE for $95,040

☐ Task Order with CHP (State-wide Master Agreement for FSP support). for $17,600

☐ Contact District FSP Coordinator for task orders.

☐ Service Contract

☐ Local Agency will arrange CFSP with SAFE

☐ Local Agency will arrange CFSP administration with CHP

TMP Elements	EA #/ID#	0E420/0800000083	Date	5/13/2019

3.2 Total $121,440

3.3 ☐ Other

Section 3 Total	$ 175,440

4 Construction Strategies

Contact DTM, at 909-383-6262, to get Delay Calculations, Lane Requirement Charts (LRC), Table Z and Special events list. Inform DTM of any concerns/commitments regarding special LC days, times, seasons, events; environmental restrictions; if work may be affected by snow and low or high temperatures. E.g. excessive heat may delay HMA operations lane openings which may increase traffic impact when vehicles overheat in the queue; etc. If traffic volumes vary significantly between seasons, consider 2 sets of LRCs to avoid CCOs.

4.1 This TMP presumes that work is planned as below. If different, TMP needs to be revised. The Project Engineer shall ensure all appropriate lane requirement charts are included.

- ☑ Off peak
- ☑ Night
- ☑ Weekend

4.2 Expected facility closures and requirements

- ☑ Flagging
- ☑ Shoulder
- ☑ Lane
- ☑ Street
- ☑ Ramp
- ☐ Connector*
- ☑ Extended Weekend Closures*
- ☑ Total Facility Closures*

*Consult with TMP developer and the DTM regarding COZEEP & other costs. Provide proposed detour and traffic diversion plans for review.

CAUTION: If the Lane Requirement Chart (LRC) for full mainline closures, of one or both directions on a highway or freeway, does not show the maximum number of allowable closures, the PS&E shall not be certified by DTM/TMP.

4.3 ☑ Coordinate with adjacent ongoing and planned construction projects - also on detour routes.

4.4 ☐ BEES 066008 Incentives

4.5 ☐ Strictly enforce construction CPM schedule

4.6 ☑ 10-Min. Delay Penalty — Contact DTM at 909-838-6262 for 10 Min. Delay Penalty Calculations.

4.7 ☐ Other

Section 4 Total	$ -

5 Demand Management (DM)

Project team needs to coordinate with RCTC/SANBAG/CVAG

Traffic diversion may increase available work hours.

5.1 ☐ A co-op will be executed - mentioned in PSR or PR.

☐ Instead of a co-op, 15% is added to the cost of DM elements since the payment to the local agency will be routed through the contractor.

Instead of a co-op, the local agency will make their own arrangements with RCTC/SANBAG/CVAG.

PA/CL or local agency need to inform commuters through RCTC/SANBAG. Funds part of PA/CL.

5.2 ☐ HOV Lanes/Ramps (New or Convert)

5.3 ☐ Park-and-Ride Lots

5.4 ☐ Parking Management/Pricing (Coordination with local agency is required)

5.5 ☐ BEES 066067 Rideshare Promotion

5.6 ☐ Other

Section 5 Total	$ -

6 Alternate Route Strategies

Caution - signed detours may require environmental clearance. Traffic diversion may increase available work hours. Please work with Traffic Design. BEES 066060 - ADITIONAL TRAFFIC CONTROL

6.1 ☐ Add Capacity to Freeway connector

6.2 ☐ Ramp Closures

6.3 ☐ Temporary Highway Lanes or Shoulder Use

6.4 ☐ Parking Restrictions

6.5 ☐ Street Improvements

- ☐ State R/W - Signals, Widen, etc.
- ☐ Local R/W - Signals, Widen, etc. co-op or permit may be needed

6.6 ☐ Local Street USE - co-op or Permit may be needed

6.7 ☐ Traffic Control Officers (see 3.1 COZEEP)

6.8 ☑ Signed detour - using State routes $ 10,000

6.9 ☑ Signed detour - using local streets and roads. Coordinate with corresponding local agency. $ 10,000

6.10 ☐ Adjust signals

6.11 ☐ Temporary bicycle or pedestrian facilities

6.12 ☐ Other

Section 6 Total	$ 20,000

TMP Estimate

Developed by	Andy D. Quach	EA#/ID#	0E420/0800000083	Date	5/13/2019

TMP developer: Amounts under the cost column will automatically be copied from the TMP elements

TMP Elements	Cost
1. Public Information	$100,000
2. Motorist Information Strategies	$0
3. Incident Management	$175,440
4. Construction Strategies	$0
5. Demand Management (DM)	$0
6. Alternate Route Strategies	$20,000
Total TMP Estimate	$ 295,440

ATTACHMENT G

Risk Register

LEVEL 2 - RISK REGISTER		Project Name:	I-215 University Pkwy Interchange Improvements		DIST- EA	08-0E420	Project Manager	Mark S. Hager						
Risk Identification							Risk Assessment						Risk Response	
Status	ID #	Type	Category	Title	Risk Statement	Current status/assumptions	Probability	Cost Impact	Cost Score	Time Impact	Time Score	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active	08-0E420-01	Threat	Design	DDI interchanges are new to drivers in California	Drivers are unfamiliar with DDIs and may incur in wrong way movements	Active	2-Low	2 -Low	4	2 -Low	4	This will be one of the first DDIs ever built in California and drivers are unfamiliar with this type of interchange	Mitigate	Educate and inform the public so they get familiar with the proposed interchange. Appropriate signing and striping would help direct traffic in the right direction.	PDT	1/31/2018
Active	08-0E420-02	Threat	Construction	Hazardous Materials	Hazardous materials in surrounding soil and lead paint encountered during construction will require an on-site storage area and potential additional costs to dispose.	Active	2-Low	2 -Low	4	2 -Low	4	Since the freeway has been in operations since 1960's hazardous materials and lead paint could be encountered during construction.	Mitigate	Include specifications for proper storage and disposal of hazardous waste in the PS&E phase	PM / Project Engineer / Contractor	1/31/2019
Active	08-0E420-03	Threat	Construction	Buy America / Map 21	Federally funded projects are required to meet the buy America / Map 21 requirements.	Active	2-Low	2 -Low	4	4 -Moderate	8	Ordering American products may require additional time for production and delivery, and the prices may be higher	Accept	Provisions will be added during PS&E to meet requirements. In the construction schedule the contractor should take into account the lead time required to get products delivered.	PM / Project Engineer / Contractor	1/31/2019
Active	08-0E420-04	Threat	Design	Truck turns	Large trucks have the potential to encroach into adjacent lanes and shoulders when traversing curves	Active	3-Moderate	2 -Low	6	1 -Very Low	3	Large trucks (STAA) require lane widening at curved alignments with radius of 300' or less	Accept	Truck turning templates have been used to determine the 13' minimum lane widths and 313' curve radii provided at crossover intersections, and the 300' curves at multilane ramp terminals.	Designer	1/31/2019
Retired	08-0E420-05	Threat	R/W	Additional R/W	A DDI with standard tangent length and angle of intersection would result in impacts to R/W and utilities	Active	1-Very Low	1 -Very Low	1	1 -Very Low	1	A DDI design with standard tangent legths and angle of intersection at the crossovers (DCIs) would require additional right of way and utility relocations	Avoid	Several design variations were evaluated to come up with the current DDI layout which maximizes tangent lengths and crossover intersection angles as much as possible, but that also avoids the need for additional right of way and minimizes utility relocations.	Designer	1/31/2019
Retired	08-0E420-06	Threat	R/W	Access Control	In order to meet access control requirements some driveway relocations are needed	Active	1-Very Low	1 -Very Low	1	1 -Very Low	1	The existing driveways to the Jack in the Box and to the Scottish Rite properties are too close or within the ramp proper of the proposed ramps.	Accept	Driveway relocations have been included as part of the design to meet access control requirements	PDT / Designer	1/31/2019
Active	08-0E420-07	Threat	Construction	High priority utilities	Deep excavations may impact existing utilities	Active	2-Low	8 -High	16	8 -High	16	Existing 8" HP gas line is classified as high risk utility and deep excavations could impact it. Other utility impacts should be avoided.	Mitigate	Positive location of the gas line and other utilities will be conducted to prevent potential conflicts with the proposed work.	PM / Project Engineer	1/31/2018
Active	08-0E420-08	Threat	Construction	Unmapped / unknown utilities	Unknown / unmapped utilities could be encountered during construction.	Active	3-Moderate	2 -Low	6	2 -Low	6	There is a possibility that unknown / unmapped utilities are encountered during construction.	Mitigate	Ground penetration radar scans and potholing are recommended prior to construction to identify all utilities in the areas subject to excavation or where foundation piles will be placed.	PM / Project Engineer / Contractor	2/1/2019
Active	08-0E420-09	Threat	Organizational	Coordination and Funding	Project coordination and potential to not secure the funding required for construction.	Active	2-Low	2 -Low	4	3 -Low	6	There is a possibility that lack of coordination could result in schedule delays and that due dates to secure funding are missed.	Mitigate	Ensure that the due dates are met to apply for funding for construction of the Project.	PM / Lead Agency	2/21/2019

ATTACHMENT H

Project Category Approval

January 2, 2019

Ms. Christy Connors
Deputy District Director, Design
Caltrans, District 8
464 W. 4th Street
San Bernardino, CA 92401

Dear Ms. Connors,

Subject: Interstate 215 (I-215) University Parkway Interchange – EA 0E420
Project Category Assignment 4B

The I-215 University Parkway Interchange project proposes to reconstruct the existing tight diamond interchange configuration into a Diverging Diamond Interchange (DDI) configuration. The project includes ramp improvements, minor drainage improvements, and construction of new signs and traffic signals. The proposed improvements would also reconfigure two existing driveways.

A Project Study Report-Project Development Support (PSR-PDS) was approved on October 7, 2016. The PSR-PDS referenced assignment of Project Development Category 4A (Projects requiring substantial new right-of-way or substantially increasing traffic capacity) in accordance with Chapter 8, Section 5 of the Caltrans Project Development Procedures Manual (PDPM). The PSR-PDS then included a DDI alternative and a Partial Cloverleaf Alternative, which would require a substantial amount of right of way acquisition. At the start of the Project Approval and Environmental Document (PA/ED) phase, the project development team dropped the partial cloverleaf alternative from further consideration. Based on a review of the latest DDI geometry in the conceptually approved Geometric Approval Drawings (GAD) and right-of-way requirements mapping, the San Bernardino County Transportation Authority (SBCTA) is requesting to change the category description to **Project Development Category 4B** (Projects that do not require substantial new right-of-way and do not substantially increase traffic capacity). This determination is needed to support the Project Report (PR) that is being prepared for the Project.

The Category 4B is recommended for the following considerations:

1. The project does not require additional permanent right of way
2. The project will not increase interchange traffic capacity

Should you need any additional information, please contact Paul Melocoton, Project Manager, at (909) 884-8276.

Sincerely,

FOR
Paula Beauchamp
Director of Project Delivery

Cc: Justine Niu, Caltrans
Emad Makar, Caltrans

Approved:

01/09/19
Christy Connors
Deputy District Director
Design
Date