04-SF-101, KP 12.8–15.7 (PM 8.0–9.8)
04-SF-001, KP 10.9-11.4 (PM 6.8-7.1)
RU 04242 - EA 163700
Project Cost $752.3 million

Superseding Fact Sheet

EXCEPTIONS TO ADVISORY DESIGN STANDARDS

Prepared By: _____
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Caltrans Metric

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1. PROPOSED PROJECT

This Superseding Fact Sheet – Exceptions to Advisory Design Standards replaces the Fact Sheet – Exceptions to Advisory Design Standards that was approved in November 2005 for Alternative 5 – Presidio Parkway. While the approved Fact Sheets for Alternative 5 – Presidio Parkway included several alternatives and options that were under consideration at that time, this Superseding Fact Sheet now addresses the advisory design exceptions required for the Preferred Alternative – Refined Presidio Parkway.

A. Project Description

Doyle Drive is located in the Presidio of San Francisco (the Presidio), in the northern part of the City of San Francisco at the southern approach to the Golden Gate Bridge (see Attachment A). In 1994, when the US Army transferred jurisdiction of the Presidio to the National Park Service (NPS), it became part of the National Park system and Golden Gate National Recreation Area (GGNRA). In 1998, management of the Presidio was divided between two federal agencies: The Presidio Trust (the Trust), the agency responsible for oversight of 80 percent of the Presidio delineated as Area B; and the NPS, which is responsible for management of the coastal portions of the park (the remaining 20 percent) that are delineated as Area A. Doyle Drive lies predominately within the Area B lands managed by the Trust with a small portion at the western end located in Area A on land operated by the Golden Gate Bridge, Highway and Transportation District (GGBHTD). The Presidio has also been designated a National Historic Landmark District (NHLD) since 1962 with the Doyle Drive roadway determined to be a contributing element to that landmark.

Doyle Drive, the southern approach of US 101 to the Golden Gate Bridge, is 2.4 kilometers (1.5 miles) long with six traffic lanes. There are three San Francisco approach ramps which connect to Doyle Drive: one beginning at the intersection of Marina Boulevard and Lyon Street; one at the intersection of Richardson Avenue and Lyon Street; and one where Veterans Boulevard (State Route 1) merges into Doyle Drive approximately 1.6 kilometers (one mile) west of the Marina Boulevard approach. Doyle Drive passes through the Presidio on an elevated concrete viaduct (low-viaduct) and transitions to a high steel truss viaduct (high-viaduct) as it approaches the Golden Gate Bridge Toll Plaza.

The purpose of the South Access to the Golden Gate Bridge - Doyle Drive Project is to replace Doyle Drive in order to improve the seismic, structural, and traffic safety of the roadway within the setting and context of the Presidio of San Francisco and its purpose as a National Park.

The project has been assigned Project Development Category 4A because it will require substantial easements and will not substantially increase traffic capacity. While there were several alternatives under consideration, this Fact Sheet is limited to the mandatory design exceptions required for the Preferred Alternative – Refined Presidio Parkway.

Preferred Alternative - Presidio Parkway

The Preferred Alternative – Presidio Parkway would replace the existing facility with a new six-lane facility and an eastbound auxiliary lane, between the Park Presidio interchange and the new Presidio access at Girard Road. The new facility would have an overall width of up to 45 meters (148 feet), and would incorporate wide landscaped medians and continuous shoulders. To minimize impacts to the park, the footprint of the new facility would include a large portion of the existing facility's footprint east of the Park Presidio interchange. A 390-meter (1,279 feet) high-viaduct would be constructed between the Park Presidio interchange and the San Francisco National Cemetery.

Shallow cut-and-cover tunnels would extend 261 meters (856 feet) past the cemetery to east of Battery Blaney. The facility would then continue towards the Main Post in an open depressed roadway with a wide, heavily landscaped median. From Building 106 (Band Barracks) cut-and-cover tunnels up to 308 meters (1,010 feet) long would extend east of Halleck Street. The facility would then rise slightly on a low level causeway 120 meters (394 feet) long over the site of the proposed Tennessee Hollow restoration and a depressed Girard Road. East of Girard Road the facility would return to existing grade north of the Gorgas warehouses and connect to Richardson Avenue.

The Park Presidio interchange would be reconfigured due to the realignment of Doyle Drive to the south. The exit ramp from southbound Doyle Drive to Veterans Boulevard would be replaced with standard exit ramp geometry and widened to two lanes. The exit ramp from northbound Doyle Drive would be improved to provide standard exit ramp geometry. The northbound Veterans Boulevard connection to northbound Doyle Drive would be rebuilt similarly to the existing direct connector ramp in essentially the same existing configuration with improved exit and entrance geometry.

The Preferred Alternative - Presidio Parkway also includes a diamond interchange for direct access to the Presidio and Marina Boulevard at the eastern end of the project.

Design speeds for mainline Doyle Drive (Route 101) and the Park Presidio Interchange were selected as follows:

- 80 km/h for mainline Doyle Drive (Route 101);
- 80 km/h for exit and entrance noses for all ramps;
- 80 km/h for the “PP-NB” connector ramp from northbound Park Presidio Blvd (Route 1) to northbound Doyle Drive (Route 101);
- 80 km/h for the “SB-PP” connector from southbound Doyle Drive (Route 101) to southbound Park Presidio Blvd (Route 1);
- 50 km/h for the “NB-PP” loop ramp from northbound Doyle Drive (Route 101) to southbound Park Presidio Blvd (Route 1); and
- 80 km/h for the “PP-SB” direct connector ramp alternative from northbound Park Presidio Blvd (Route 1) to southbound Doyle Drive (Route 101).

In addition, at the east end of the project the facility will be designed to ramp standards since mainline vehicles are transitioning speeds from the Girard Road Interchange to the conform with Richardson Avenue. Design speeds will be interpolated from 80 km/h at the Girard Road exit ramp diverge point from southbound Doyle Drive (Route 101) to 55 km/h at the signalized intersection of Richardson Avenue and Lyon Street.

B. Existing Highway

From the east end of the project, Doyle Drive begins on an elevated concrete viaduct and transitions to a high steel truss viaduct as it approaches the Park Presidio Interchange. The facility is a six-lane undivided highway with nonstandard design elements, including: travel lane widths from 2.9 to 3.0 meters (9.5 to 10 feet), no median barrier to separate oncoming traffic, no shoulders for emergency purposes, and exit ramps with tight turning radii. There is a 1.4- to 1.8-meter (4.5- to 6.0-foot) wide sidewalk, currently closed, on the north edge of the roadway, separated from the traffic lanes by a concrete barrier.

There are three approach ramps along the existing facility: one beginning at the intersection of Marina Boulevard and Lyon Street; one at the intersection of Richardson Avenue and Lyon Street; and one where Park Presidio merges into Doyle Drive, approximately one mile west of the Marina Boulevard approach.

The State does not own right of way within the Presidio; instead the State has permits that vary between 18.3 meters wide (60 feet) for aerial structures and 24.4 meters (80 feet) wide for the abutments and at-grade portions of the facility.

Most of Doyle Drive is on aerial structures; as a result, very little at-grade pavement exists within the project limits.

Drainage systems on the two viaducts have also suffered from age and wear. They are subject to frequent blockage, leading to local ponding.

Doyle Drive was constructed in 1936 and it is approaching the end of its useful life, although regular maintenance, seismic retrofit, and partial rehabilitation activities are keeping the structure safe in the short term. However, further structural degradation caused by age and the effects of heavy traffic and exposure to salt air will cause the structures to become seismically and structurally unsafe in the coming years. In addition, the eastern portion of the aging facility is located in a potential liquefaction zone identified on the State of California Seismic Hazard Zones map dated August 2000.

The facility's existing structures are in poor condition. Caltrans' Bridge Maintenance Inventory Report indicates a sufficiency rating of 2 out of 100 for the Presidio Viaduct and 30 for the Marina Viaduct. Both Caltrans and the Federal National Bridge Inventory recommend that the existing structures be replaced. Currently Caltrans is proceeding with an interim rehabilitation project of the high-viaduct that involves removing the existing paint system, removing and replacing various steel elements and connection rivets due to sectional loss, and repainting the steel truss spans and the steel approach spans. This project is intended to extend the service life of the high-viaduct by ten years, until the facility is replaced. The findings of studies associated with this project do not preclude the execution of interim remedial action by the State; the Presidio Viaduct must remain in service throughout the construction of the Doyle Drive Replacement Project, regardless of the alternative that is selected. It is estimated that this deteriorated and vulnerable bridge will need to remain in service until 2012; the interim repairs are expected to maintain the current level of safety and do not constitute a retrofit or rehabilitation.

The severe degradation of the existing structures and the existing nonstandard design elements, especially the lack of a median barrier, create a great urgency to remove and replace the existing facility with structures designed to current seismic standards while applying current geometric standards wherever feasible.

In addition, given the extreme environmental sensitivity of the project's context and setting within the National Park / National Historic Landmark District, there is a need to develop consensus among the various participating agencies: FHWA, Caltrans, SFCTA, the Cooperating Agencies (GGNRA and Presidio Trust), and the GGBHTD in order to advance this project under the guidelines of 49 U.S.C Section 303 (Department of Transportation Act, Section (4f)) and implement the seismic and traffic safety improvements.

This urgency to address seismic and traffic safety, combined with the extreme environmental sensitivity of the context and setting of the National Park / National Historic Landmark District and the need to develop a consensus among the agencies, requires flexibility in applying the design

standards that is still considered safe and comfortable. Therefore, for this project design exceptions are also being considered with regard to the project's context and setting within a National Park / National Historic Landmark District in order to develop the consensus that is necessary to advance the project. Ultimately, the project as proposed is a tremendous seismic and traffic safety improvement over the condition of the existing facility.

The project team including the FHWA, Caltrans, SFCTA, the Cooperating Agencies (GGNRA and Presidio Trust), and the GGBHTD has worked closely together to develop a consensus for the design to seismically upgrade the structures and improve traffic safety that provides for the minimum requirements of traffic operations and balances the design geometry to develop the consensus that is needed to advance the project by minimizing the overall footprint of the facility and impacts to the surrounding environmental/cultural resources while considering traffic handling/construction staging, cost effectiveness, and conforming to adjacent local street and State highway segments.

The facility's existing nonstandard design elements, its context and setting within a National Park / National Historic Landmark District, and the need to develop consensus in order to advance the project all restrict stage construction and the proposed geometry of mainline Doyle Drive (Route 101), the Park Presidio Interchange, Veterans Boulevard (Route 1), and the Girard Road Interchange. Thus the overall footprint of the facility and, consequently, the cross-sectional width of Doyle Drive are restricted by the need to conform with nonstandard lane and shoulder widths at the Toll Plaza, Veterans Boulevard, and Richardson Avenue; the existing cultural/environmental resources within the National Park / National Historic Landmark District; and the need to develop a consensus among the participating agencies.

In addition, the existing compact geometry of the Park Presidio Interchange restricts the configuration of mainline Doyle Drive (Route 101) and mainline Veterans Boulevard (Route 1). Veterans Boulevard (Route 1) approaches the interchange at a descending grade of approximately 6% and then rapidly ascends to tie into mainline Doyle Drive (Route 101). The horizontal curvature of this interchange is also tight. This existing geometry supports operating speeds through the interchange of approximately 30 km/h to 50 km/h. Compounding this existing restrictive geometry is the requirement of the GGBHTD for grades to match the existing mainline Doyle Drive (Route 101) at a minimum of 300 meters to the east of the Toll Plaza. The GGBHTD uses the 300 meters for Toll Plaza operations by revising lane configurations to accommodate the morning and afternoon commutes.

The cultural/environmental resources are numerous along the alignment. Beginning at the Toll Plaza and working toward the conform to Richardson Avenue, the cultural/environmental constraints are as follows:

Historic Officer Housing and endangered species of vegetation are along the southwest quadrant at the Park Presidio Interchange. Endangered species of vegetation are also north of the Park Presidio Interchange. The Cavalry Stables restrict the geometry in the southeast quadrant of the Park Presidio Interchange and extend easterly along the southern side of the High Viaduct.

Historic Stillwell Hall abuts the existing high viaduct between the Park Presidio Interchange and the Battery Bluff. At the Battery Bluff, the Historic Batteries abut the northbound mainline; Lincoln Blvd and the National Cemetery abut the southbound mainline. Lincoln Blvd roughly parallels the southbound mainline from the bluff to Building #106, which is also an historic building that restricts geometry.

Along the northern edge of the northbound mainline between the bluff and the Post Commissary is an area of archaeological resources that must remain undisturbed. The Post Commissary abuts the northbound mainline at nearly the same location across from Building #106.

To the east of Building #106 and the Post commissary is Halleck Street, which must be restored after construction. Halleck Street is also reserved as part of the Historic Rail Corridor, which also includes Girard Road. Directly to the east of Halleck Street, between Halleck Street and the Girard Road Interchange, is the area reserved for the planned Crissy Marsh Expansion and Tennessee Hollow Restoration projects.

As the alignment traverses the area reserved for the planned Crissy Marsh expansion and Tennessee Hollow restoration, it curves toward the south across the Girard Road Interchange and conforms to Richardson Avenue. The historic Mason Street Warehouses are adjacent to the existing Marina Viaduct and in the northeast quadrant of the Girard Road Interchange. The historic Gorgas Warehouses abut the southern edge of the mainline along the curve at Girard Road and continue along Richardson Avenue to the project conform and beyond. The Palace of Fine Arts at the north side of Richardson Avenue further restricts the geometry at the east end of the project.

C. Safety Improvements

The Preferred Alternative proposes to incorporate safety improvements wherever reasonably feasible within the setting and context of a National Park to the standards established in the Highway Design Manual, considering traffic handling, construction staging, cost effectiveness, and conforming with adjacent street and State highway segments. The proposed safety improvements include:

- seismic upgrading of structures
- divided roadbeds for northbound and southbound Doyle Drive
- improved structure vertical clearances and upgrading of bridge rails
- improved geometry including horizontal and vertical curvature, superelevations, stopping sight distances, deceleration lengths, and ramp geometry
- standard 3.6-meter lane widths wherever feasible with 3.3-meter lane widths at constrained locations
- standard shoulders wherever feasible

D. Total Project Cost

The estimated cost for the Preferred Alternative is $752.3 million (year 2007 dollars), $34.8 million (year 2009 dollars) of which is for right of way and mitigation cost, leaving $717.5 million for construction. The estimated costs are based upon 2007 dollars. The balance funding strategy developed for the Doyle Drive Project relies upon a combination of federal, state and local funds. The available funding for the project will determine the scope and the deliverable phases of the project. Construction is scheduled for programming in FY 2009.

2. FEATURES REQUIRING AN EXCEPTION

The Preferred Alternative proposes to replace the existing facility in essentially the same location in order to minimize adverse impacts to adjacent ecological and historical resources. To avoid these important resources several nonstandard design elements are proposed.

Table 1 describes the proposed nonstandard features, and shows the standard for which the exception is requested, the proposed nonstandard value, the reason for the request, and the cost to make standard. The attachment sheets, series AL and AP, indicate the location of each of the nonstandard features identified in Table 1 for each design option in plan and profile. The California Highway Design Manual (HDM) advisory standards to which one or more exceptions are being requested are listed below.

The exception numbers referenced in italics refer to Table 1.

- Index 202.5 (1)&(2): Superelevation Transition General & Runoff – *Exception No. 1;*
- Index 203.5: Compound Curves – *Exception No. 2;*
- Index 203.6: Reversing Curves – *Exception No. 3;*
- Index 204.4: Vertical Curves – *Exception No. 4;*
- Index 502.2: Local Street Interchanges - *Exception No. 5;*
- Index 504.2(2): Freeway Entrance Design - *Exception No. 6;* and
- Index 504.8: Access Control – *Exception No. 7.*

Table 1 - Nonstandard Advisory Design Features for Preferred Alternative - Presidio Parkway

Design Exception Feature No.	Location Attachment C1A	Nonstandard Feature Description	HDM Section Standard / Proposed Nonstandard Values Corresponding Design Speed STD/Non-STD	Reason for Requesting Exception	Cultural/ Environmental Impacts	Added Cost to make Standard (Does not include cost of cultural/ environmental impacts)
1		**202.5(1): Superelevation Transition General** **202.5(2): Superelevation Transition Runoff**				
	B	SB Line STA 115+32 to 116+69	1/3 within curve, 2/3 within tangent / greater than 1/3 within curve 202.5(1) & 202.5(2)	A reversing curve with no tangent is proposed at this location to allow for the alignment to transition from the restrictions at the historic Batteries/National Cemetery while clearing the restriction at historic Building #106. Consequently, the superelevation transition has to occur within the two curves. To attain the standard, a tangent would have to be introduced between the two curves which would impact historic Building #106.	Historic Batteries, National Cemetery, and Building #106	Increase tangent <$1 million
	G	NB-PP Line STA 11+60 to 12+60	1/3 within curve, 2/3 within tangent / greater than 1/3 within curve 202.5(1) & 202.5(2)	The superelevation transition is restricted by the reversing curves in order to fit the loop ramp alignment within the tight interchange geometry, while providing for an adjacent temporary ramp to maintain traffic during stage construction. Consequently, the superelevation transition has to occur within the two curves. To attain the standard transition the tangent would have to be lengthened, which would either increase the footprint of the interchange or cause the exit ramp diverge to move further east with an equivalent shift in the temporary ramp. The temporary ramp would then impact historic Stillwell Hall.	Historic Stillwell Hall	Increase tangent <$1 million
	H	NB-PP Line STA 13+25 to 14+25	1/3 within curve, 2/3 within tangent / greater than 1/3 within curve 202.5(1) & 202.5(2)	The superelevation transition is restricted by the short tangent between reversing curves in order to fit the loop ramp alignment within the tight interchange geometry, while transitioning to the conform at southbound Park Presidio Boulevard. Consequently, the transition is 2/3 within each of the two curves. To attain the standard transition the tangent would have to be lengthened, which would cause the conform point to move further south, which would require reconstruction of southbound Park Presidio Boulevard.		Increase tangent >$7.5 million
	E	SB-PP Line STA 10+96 to 11+70	1/3 within curve, 2/3 within tangent / greater than 1/3 within curve 202.5(1) & 202.5(2)	The superelevation transition is restricted by the short tangent between reversing curves in order to fit the ramp alignment within the tight interchange geometry. Consequently, the transition is approximately 2/3 within each of the two curves. To attain the standard transition, the tangent would have to be lengthened, which would cause the exit ramp diverge to move closer to the Toll Plaza and impact Toll Plaza operations.		Increase tangent <$1 million
	F	PP-NB Line STA 15+06 to 16+06	1/3 within curve, 2/3 within tangent / greater than 1/3 within curve 202.5(1) & 202.5(2)	The superelevation transition is restricted by the short tangent between reversing curves in order to fit the ramp alignment within the tight interchange geometry. Consequently, the transition is approximately 1/2 within each of the two curves. To attain the standard transition, the tangent would have to be lengthened, which would cause the entrance ramp nose to move closer to the Toll Plaza and impact Toll Plaza operations.		Increase tangent <$1 million
	I	SB-GI Line STA 12+20 to 12+65	1/3 within curve, 2/3 within tangent / greater than 1/3 within curve 202.5(1) & 202.5(2)	This is the last curve of the exit ramp alignment as it ties into the intersection with Girard Road and the transition is restricted by the conform. Consequently, the entire transition is within the curve. To attain the standard a tangent would need to be introduced between the end of the curve and the intersection, which would require an equivalent shift of Girard Road to the south. Moving Girard Road to the south to accommodate a standard transition would impact the historic Gorgas Warehouses.	Historic Gorgas Warehouses	Increase tangent <$1 million
2		**203.5: Compound Curves**				
	A	NB Line STA 123+15 to 124+71	R=293.3 m / R=232 m 203.5	The horizontal curvature is restricted by the need to maintain consensus while minimizing the facility's overall footprint within the context and setting of the National Park. Increasing the radius from 232 m to 293.3 m in order to attain the standard of 2/3 of the larger 440 m radius would increase the facility's footprint and encroach on the existing ramp from northbound Doyle Drive to southbound Park Presidio Boulevard and preclude maintaining this ramp movement during stage construction.	Endangered Species, Tennessee Hollow Marsh Expansion	Increase Footprint >$15 million
	F	PP-NB Line STA 15+86 to 16+56	R=340 m / R=210 m 203.5	The horizontal curvature is restricted by the need to maintain the interchange ramp movements during stage construction and minimizing the facility's overall footprint within the context and setting of the National Park. Increasing the radius from 210 m to 340 m in order to attain the standard of 2/3 of the larger 510 m radius would increase the facility's footprint and encroach on the existing ramp from northbound Doyle Drive to southbound Park Presidio Boulevard and preclude maintaining this ramp movement during stage construction.	Endangered Species, Historic Officer Housing, and Cavalry Stables	Increase Footprint >$15 million
	G	NB-PP Line STA 11+33 to 12+05	R=693.3 m / R=150 m 203.5	The compound curvature is restricted by the tight horizontal curvature required for this loop ramp from northbound Doyle Drive to existing southbound Park Presidio Boulevard and the need to minimize the overall footprint of the facility within the context and setting of the National Park, and the surrounding cultural/environmental resources described in section 1.B. Existing Highway. Increasing the radius from 150 m to 693.3 m in order to attain the standard of 2/3 of the larger radius would require additional enlargement of the Interchange footprint, which would impact the cultural/environmental resources described in section 1. B. Existing Highway. The slow operating speed for this loop ramp would mitigate the potential for drivers to over drive the curve.	Endangered Species, Historic Officer Housing, and Cavalry Stables	Increase Footprint >$15 million
	E	SB-PP Line STA 11+50 to 12+89	R=1666.7 m / R=140 m 203.5	The compound curvature is restricted by the tight horizontal curvature required for this loop ramp from southbound Doyle Drive to existing southbound Park Presidio Boulevard and the need to minimize the overall footprint of the facility within the context and setting of the National Park, and the surrounding cultural/environmental resources described in section 1.B. Existing Highway. Increasing the radius from 140 m to 1666.7 m in order to attain the standard of 2/3 of the larger radius would require additional enlargement of the Interchange footprint, which would impact the cultural/environmental resources described in section 1. B. Existing Highway. The slow operating speed for this loop ramp would mitigate the potential for drivers to over drive the curve.	Endangered Species, Historic Officer Housing, and Cavalry Stables	Increase Footprint >$15 million

Table 1 - Nonstandard Advisory Design Features for Preferred Alternative - Presidio Parkway

Design Exception Feature No.	Location Attachment C1A	Nonstandard Feature Description	HDM Section Standard / Proposed Nonstandard Values Corresponding Design Speed STD/Non-STD	Reason for Requesting Exception	Cultural/ Environmental Impacts	Added Cost to make Standard (Does not include cost of cultural/ environmental impacts)
3		**203.6: Reversing Curves**				
	G	NB-PP Line STA PRC 12+05	203.6	This non-standard tangent is directly related to the non-standard superelevation transition that is described in Exception No.1 (Location F) above. Please refer to the justification described therein.	Historic Batteries, National Cemetery, and Historic Building #106	Increase tangent <$1 million
4		**204.4: Vertical Curves**				
	G	NB-PP Line STA 11+31 to 12+36	130m / 105 m 204.4	This vertical curve is restricted by the tight interchange geometry and the need to maintain traffic during stage construction. The proposed vertical curve conforms on the existing vertical curve of northbound Doyle Drive. Consequently, increasing the vertical curve to attain the standard would cause the entrance nose to move further south and require a lengthening of the ramp on the high viaduct.		Increase vertical curve length <$1 million
	L	NB-PP Line STA 14+48 o 15+23	130m / 75 m 204.4	This vertical curve is restricted by the tight interchange geometry and the need to maintain traffic during stage construction. The proposed vertical curve conforms on the existing vertical curve of southbound Park Presidio. Consequently, increasing the vertical curve to attain the standard would cause the entrance nose to move further south and require a reconstruction of the Ruckman Viaduct to raise the existing grade. A detour facility would be required to maintain traffic while reconstructing the Ruckman Viaduct, which would impact the surrounding environmental/cultural resources as described in Section 1.B. Existing Highway.		Reconstruct Ruckman Viaduct >$7.5 million
	E	SB-PP Line STA 10+50 to 11+50	130m / 100 m 204.4	This vertical curve is restricted by the tight interchange geometry and the need to maintain traffic during stage construction. The proposed vertical curve conforms on the existing vertical curve of northbound Park Presidio. Consequently, increasing the vertical curve to attain the standard would cause the entrance nose to move further south and require a reconstruction of the Ruckman Viaduct to raise the existing grade. A detour facility would be required to maintain traffic while reconstructing the Ruckman Viaduct, which would impact the surrounding environmental/cultural resources as described in Section 1.B. Existing Highway.		Reconstruct Ruckman Viaduct >$7.5 million
	N	PP-SB Line STA 10+40 to 11+01	160 m / 61 m 204.4	At this location the ramp is restricted by the tight interchange geometry and the need to conform with northbound Park Presidio Boulevard (Route 1) and southbound Doyle Drive (Route 101). Lengthening this sag curve from 61 m to 160 m to obtain the standard would cause the ramp conform with northbound Route 1 to move more southerly, which would require reconstruction of the Ruckman Viaduct.		Reconstruct Ruckman Viaduct >$7.5 million
	R	PP-SB Line STA 11+81 to 13+01	160 m / 120 m 204.4	At this location the ramp must match the grade of southbound Route 101. Lengthening this crest curve from 120 m to 160 m in order to obtain the standard would require raising the southbound Route 101 High Viaduct structure and increasing the grade of southbound Route 101, which is not recommended since the grade would be increased from an already nonstandard 4.2%. Although this crest vertical curve length is nonstandard, it does have standard stopping sight distance because of the small algebraic difference in grade.		Increase vertical curve length <$1 million
	O	SB-GI Line STA 10+07 to 11+07	160 m / 100 m 204.4	This crest curve is the first curve after the exit ramp diverge and is restricted by the need to tie to southbound Route 101 and the signalized intersection at Girard Road. Increasing the length of this curve from 85 m to 160 m to attain the standard would cause an increase in the grades of southbound Route 101 or a reconfiguration of the Girard Road intersection, which would impact the Historic Gorgas Warehouses. Finally, it should be noted that, although the curve length is not standard, it does have a standard stopping sight distance attributable to the small algebraic difference in grades.	Historic Gorgas Warehouses	Increase vertical curve length <$1 million
	I	SB-GI Line STA 12+57 to 12+77	60 m / 20 m 204.4	This sag curve is the last curve prior to tying to a signalized intersection at Girard Road. Increasing this curve from 20 m to 60 m would require an equivalent shift of Girard Road toward the south, which would impact the Historic Gorgas Warehouses. This sag curve has standard stopping sight distance attributable to the small algebraic difference in grades and the intersection will be signalized and lit.	Historic Gorgas Warehouses	Increase vertical curve length <$1 million
	P	GI-NB Line STA 10+99 to 11+84	160 m / 85 m 204.4	At this location, the ascending on-ramp is rising to meet the descending northbound Route 101, which is on structure. Lengthening this crest curve from 85 m to 160 m in order to obtain the standard would cause a lowering of the northbound mainline to match grades on the structure, which would impinge upon the area reserved for the planned Crissy Marsh expansion and the Tennessee Hollow restoration.	Crissy Marsh expansion and Tennessee Hollow restoration	Increase vertical curve length <$1 million
5		**502.2: Local Street Interchanges**				
	Q	Girard Road Interchange	Use of partial interchanges should be avoided / Partial interchange 502.2	This location is a diamond interchange between Route 101 and Girard Road, the local street. The interchange is partial in that three of the four legs are ramps that connect with a single cross street. However, the fourth leg of the interchange is a local street, Gorgas Avenue. The ramp that is needed to complete the interchange and attain the standard would connect from Girard Road to SB 101, Richardson Avenue. An entrance ramp from Girard Road to SB 101 cannot be constructed without removing the Historic Gorgas Warehouses. The absence of a dedicated entrance ramp from Girard Road to Richardson Avenue is mitigated by the ability of local traffic from the Presidio to access Richardson Avenue from several points along the street grid.	Historic Gorgas Warehouses	Construct entrance ramp <$3 million
6		**504.2(2): Freeway Entrance Design**				
	I	NB-PP Line	Figure 504.2A - 50:1 Convergence 180 m / 110 m 504.2(2)	The ramp's convergence is restricted by the need to conform to southbound Route 1 prior to the Ruckman Viaduct. Increasing the length of convergence would require widening of the Ruckman Viaduct.		Ruckman Widening $3 million
7		**504.8: Access Control**				
	Q	SB-GI Line STA 12+12	Preclude local roads within the ramp intersection / Local road within the ramp intersection 504.8	At this location Gorgas Avenue is opposite the exit ramp terminus at the intersection with Girard Road. The standard cannot be attained because Gorgas Avenue is the existing access to the historic Gorgas Warehouses and this access must be maintained. Gorgas Avenue cannot be closed by rerouting traffic because the adjacent streets are part of a planned historical restoration area and the nearest route is too circuitous. The exit ramp cannot be relocated because the diverge and curvature are restricted by the profile of Halleck Street, which cannot be raised because of the requirement to minimize the fill adjacent to Building #228. The intersection would be signalized and have lighting, pavement delineation, and signage to limit confusion and wrong-way traffic movements into the exit ramp. Moreover, this local road will not affect the operations of the interchange.	Historic Gorgas Warehouses, Halleck Street, and Building #228	Close Gorgas Avenue at Girard Road < $500,000

3. TRAFFIC DATA

Doyle Drive has adequate capacity for current traffic because it is located between two points which effectively act as meters: Golden Gate Bridge Toll Plaza to the west (north) and local streets to the east (south) (Traffic Screening Report, April 2001). The Year 2030 anticipated peak hourly volumes are 4,890 vehicles southbound in the AM and 4,800 vehicles northbound in the PM, with a daily volume of 110,700 vehicles and overall level of service (LOS) of C in the AM peak direction and LOS D in the PM peak direction.

The traffic analysis (Draft Revised Traffic and Transit Operations Report July, 2004) quantitatively measured the effect of this alternative on both traffic intersections and roadway segments for the Base Year 2000 and the Year 2030 future conditions. The future year of 2030 was determined by anticipating completion of construction in 2010 plus 20 years post opening. Although completion of construction is now anticipated in 2012, the design year is 2030 as projections beyond 2030 indicate a level or possible decrease in demand. This design year 2030 was selected as the more conservative approach. For each of these project alternatives, the Authority travel demand model (SF-TDM) was used to generate the expected future traffic demand.

The highest weekday traffic volume observed was between 6:00AM and 9:00AM during the AM peak period, and between 3:30PM and 6:30PM during the PM peak period. The highest weekend traffic volume observed on a Saturday was between 3:30PM and 6:30PM. For traffic operational analyses, these peak periods were converted to peak hour. The peak period to peak hour conversion factors used are:

- AM Peak Hour is 38% of the AM Peak Period; and
- PM Peak Hour is 35% of the PM Peak Period.

Derivation of these conversion factors is based on traffic counts collected on the Golden Gate Bridge, Marina Boulevard, and Richardson Avenue during the morning, midday and evening periods. Table 2 presents Year 2000 and Year 2030 average daily traffic volumes for the Doyle Drive corridor.

Table 2: Years 2000 And 2030 Traffic Volumes for Preferred Alternative

		Year 2000		**Year 2030**	
		Average Daily Traffic Volumes (vehicles)		Average Daily Traffic Volumes (vehicles)	
		PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour
US 101 from Merchant Drive ramps to Veterans Blvd.	SB	63,000		80,200	
		6,150	3,120	6,540	5,606
US 101 from Veterans to Merchant Drive ramps.	NB	60,000		78,900	
		2,994	5,649	5,092	6,355
US 101 from Vaterans to Marina Blvd. access ramps.	SB	53,000		57,100	
		5,203	2,608	4,886	3,493
US 101 from Marina Blvd. access ramps to Veterans	NB	46,000		53,600	
		2,049	4,619	2,940	4,793
Richardson Ave. from Marina Blvd. access ramps to Lyon St.	SB	37,000		35,900	
		3,717	1,734	2,986	2,272
Richardson Ave. from Lyon St. to Marina Blvd. access ramps.	NB	30,000		36,200	
		1,443	2,802	2,143	3,296
Marina Blvd. from Doyle Drive merger to Lyon St.	EB	16,000		15,500	
		1,486	873	1,300	977
Marina Blvd. from Lyon St. to Doyle Drive merger.	WB	17,000		14,600	
		606	1,820	718	1,379
Veterans from US 101 ramps to Veterans tunnel	SB	32,000		38,400	
		2,380	2,251	2,594	2,986
Veterans from Veterans tunnel to US 101 ramps.	NB	35,000		40,600	
		2,379	2,768	2,379	2,834
US 101 between Veterans on-and off-ramps.	SB	41,000		48,600	
		4,217	1,884	4,261	2,878
US 101 between Veterans off- and on-ramps.	NB	36,000		46,800	
		1,601	3,605	2,625	4,135

Source: Final Traffic and Transit Operations Report, December 2004.

4. ACCIDENT ANALYSIS

Accident data for the 3-year period from 2003 to 2006 for the Doyle Drive corridor, ramps and intersections leading up to Doyle Drive are summarized in Tables 3 & 4. Actual (recorded within the study section limits) and average (recorded for similar transportation facilities statewide) accident rates were obtained from Caltrans' Traffic Accident Surveillance and Analysis System (TASAS). TASAS values are expressed in terms of accidents per million vehicle miles (MVM).

The actual accident rates for northbound traffic, southbound traffic and the approach to the Golden Gate Bridge Toll Plaza on Doyle Drive were all below statewide average accident rates. Actual accident rates on all the ramp connections were also below the statewide average accident rates.

Within the Doyle Drive corridor, the prevalent accident types were Sideswipe (30.8%) and Rear End (47.4%). The next highest category was Hit Object (13.7%). These types of accidents are typical of driver error in congested traffic. Median barriers, wider lanes, shoulders, and more standard design elements would improve safety. A median barrier would prevent head-on collisions; wider lanes would alleviate sideswipes, and shoulders would allow disabled vehicles to pull off the traveled way, reducing the need for other drivers to swerve around them. Improvements to the geometry of the ramps, especially Ramp B, would provide smoother transitions for vehicles entering and exiting the roadways, resulting in improved traffic safety. The goal of the project is to implement these safety improvements in a way that has the least impact on the Presidio's natural and cultural resources. There is no apparent correctable pattern of accidents related to the exceptions being requested.

Tables 3 and 4 below provide accident data for the Doyle Drive mainline and ramps.

Table 3: Doyle Drive Accident Data – Highway Segments

	Accidents			Accident Rate	
Highway Location	**Total**	**Fatalities**	**Injuries**	**Actual (MVMT)**	**Average (MVMT)**
NB Doyle Drive: PM 8.052-9.39 (From beginning / end of Richardson Ave. ramps to Presidio Interchange)	42	1	9	0.71	2.54
SB Doyle Drive: PM 8.052-9.39 (From beginning / end of Richardson Ave. ramps to Presidio Interchange)	28	0	8	0.53	2.34
NB/SB Doyle: Drive PM 9.40-9.75 (Combined from Presidio Interchange to PM 9.75, 500 feet east of the Golden Gate Toll Plaza)	98	0	18	1.75	1.95

Table 4: Doyle Drive Accident Data – Ramps

	Accidents			Accident Rate	
Ramp Location	**Total**	**Fatalities**	**Injuries**	**Actual (MVMT)**	**Average (MVMT)**
NB Doyle Drive / SB Highway 1 US 101 PM 9.42	8	0	1	0.87	0.60
SB Doyle Drive / SB Highway 1 US 101 PM 9.46	3	0	2	0.12	0.45
NB Highway 1 / NB Doyle Drive US 101 PM 9.611	4	0	1	0.14	0.55
NB Highway 1 / SB Doyle Drive US 101-9.35	6	0	3	0.66	0.40
Doyle Drive to / from Marina Blvd. US 101 PM 8.440	4	0	2	0.15	0.70

Source: TASAS Table B Selective Accident Rate Calculation Request Activity Report. 01APR2003 to 31MAR2006

SB = Southbound
NB = Northbound
MVMT = Million Vehicle Miles Traveled
PM = Post Mile

5. INCREMENTAL IMPROVEMENTS

There are no practical stages that are intermediate between this proposal and the full standard.

6. FUTURE CONSTRUCTION

There is no future construction planned to bring the conditions described herein to standard.

ATTACHMENTS

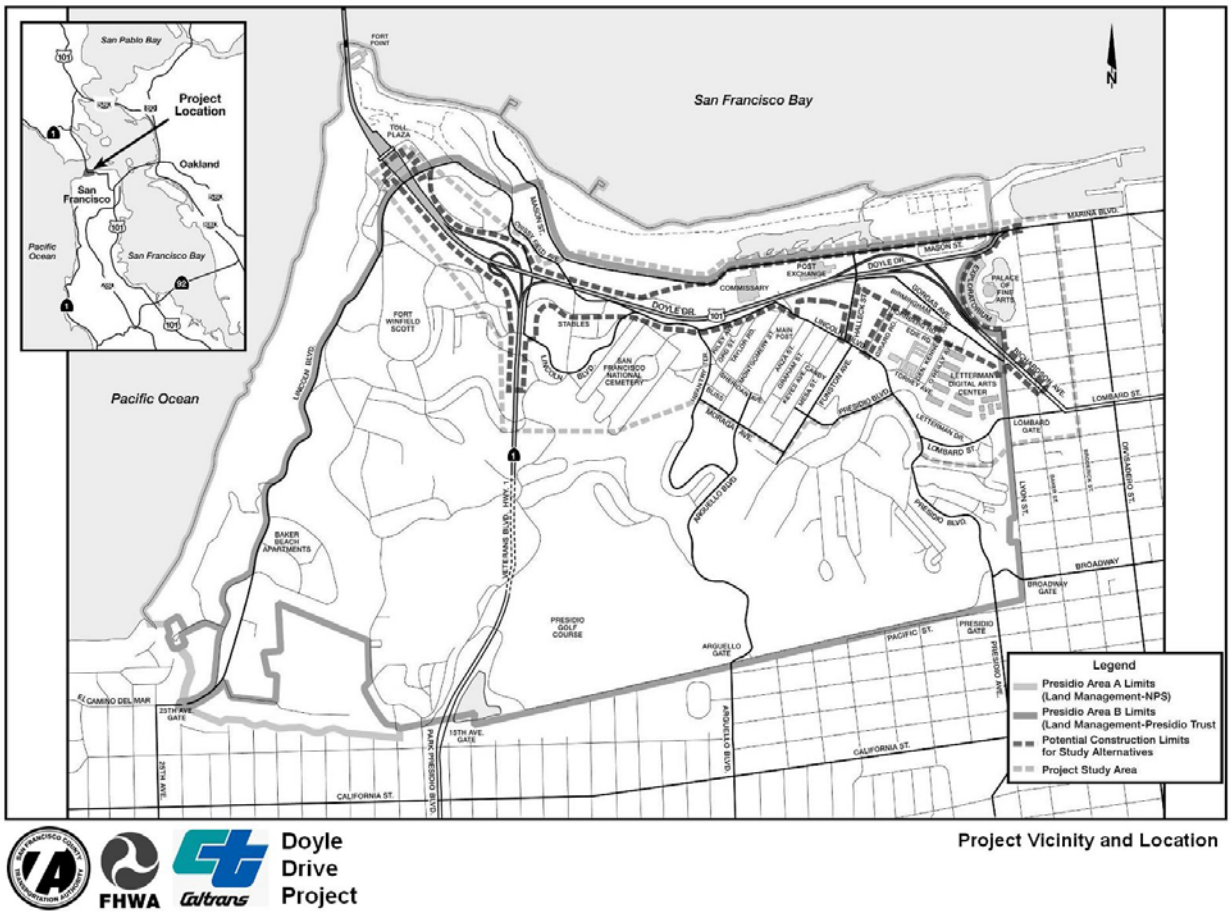
Attachment A – Location Map
Attachment B – Project Area
Attachment Sheets AL-1 through AL-9 – Design Exception Location Layout Sheets
Attachment Sheets AP-1 through AP-7 – Design Exception Location Profile Sheets

04-SF-101, KP 12.8–15.7 (PM 8.0–9.8)
04-SF-001, KP 10.9-11.4 (PM 6.8-7.1)
RU 04242 - EA 163700
Project Cost $752.3 million

Attachment A

Project Location Map

04-SF-101, KP 12.8–15.7 (PM 8.0–9.8)
04-SF-001, KP 10.9-11.4 (PM 6.8-7.1)
RU 04242 - EA 163700
Project Cost $752.3 million



Doyle Drive Project

Project Vicinity and Location

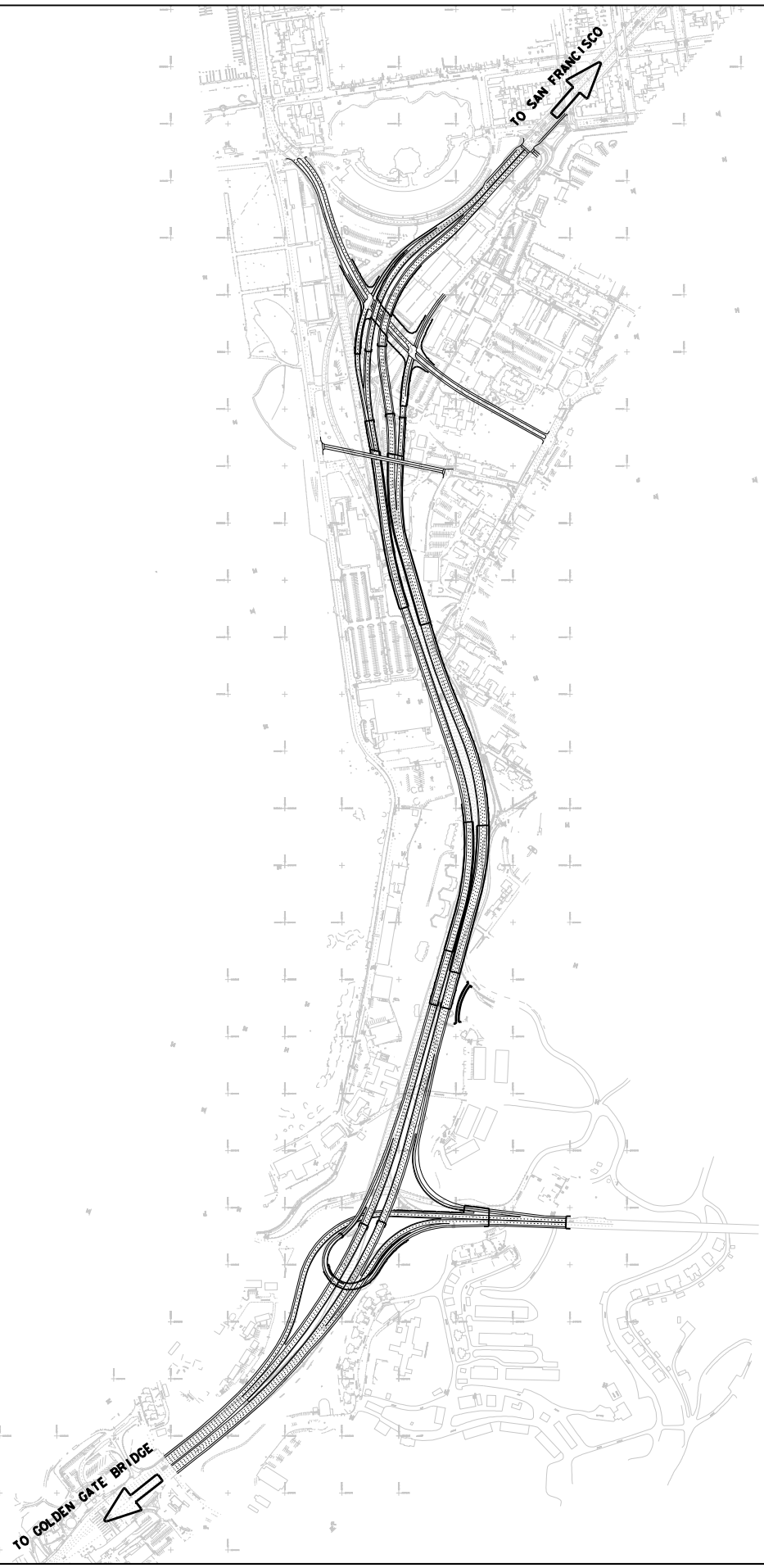
Preferred Alternative – Refined Presidio Parkway

Project Location

04-SF-101, KP 12.8–15.7 (PM 8.0–9.8)
04-SF-001, KP 10.9-11.4 (PM 6.8-7.1)
RU 04242 - EA 163700
Project Cost $752.3 million

Attachment B

Project Area Map



PREFERRED ALTERNATIVE - REFINED PRESIDIO PARKWAY

PROJECT AREA

04-SF-101, KP 12.8–15.7 (PM 8.0–9.8)
04-SF-001, KP 10.9-11.4 (PM 6.8-7.1)
RU 04242 - EA 163700
Project Cost $752.3 million

Attachment Sheets
Design Exception Locations

AL-1 to AL-9: Design Exception Layout
AP-1 to AP-7: Design Exception Profile and Superelevation

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
4	SF	04-SF-101 04-SF-001	KP 12.8-15.7 KP 10.9-11.4		

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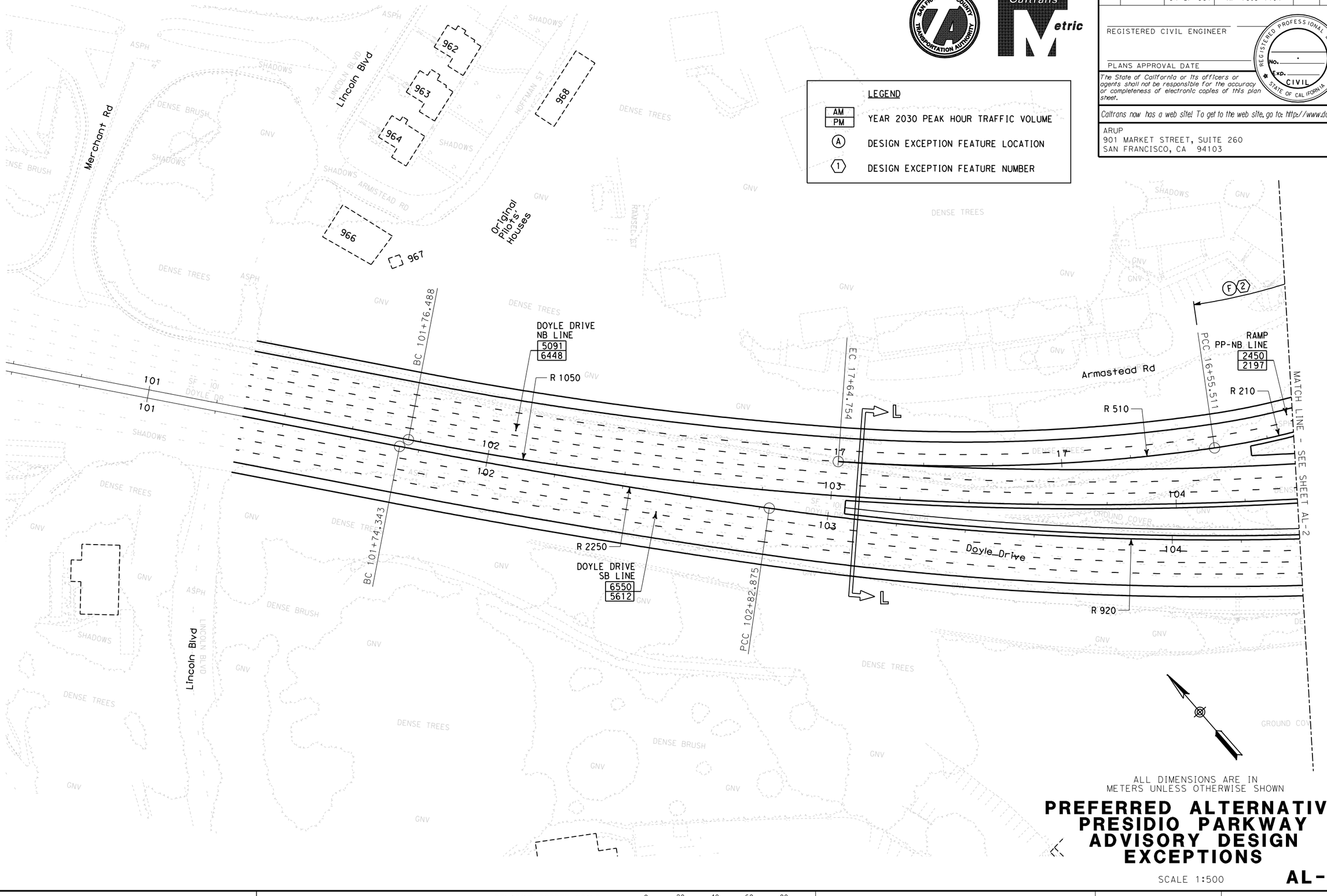
LEGEND

AM / PM	YEAR 2030 PEAK HOUR TRAFFIC VOLUME
(A)	DESIGN EXCEPTION FEATURE LOCATION
(1)	DESIGN EXCEPTION FEATURE NUMBER



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AL-1

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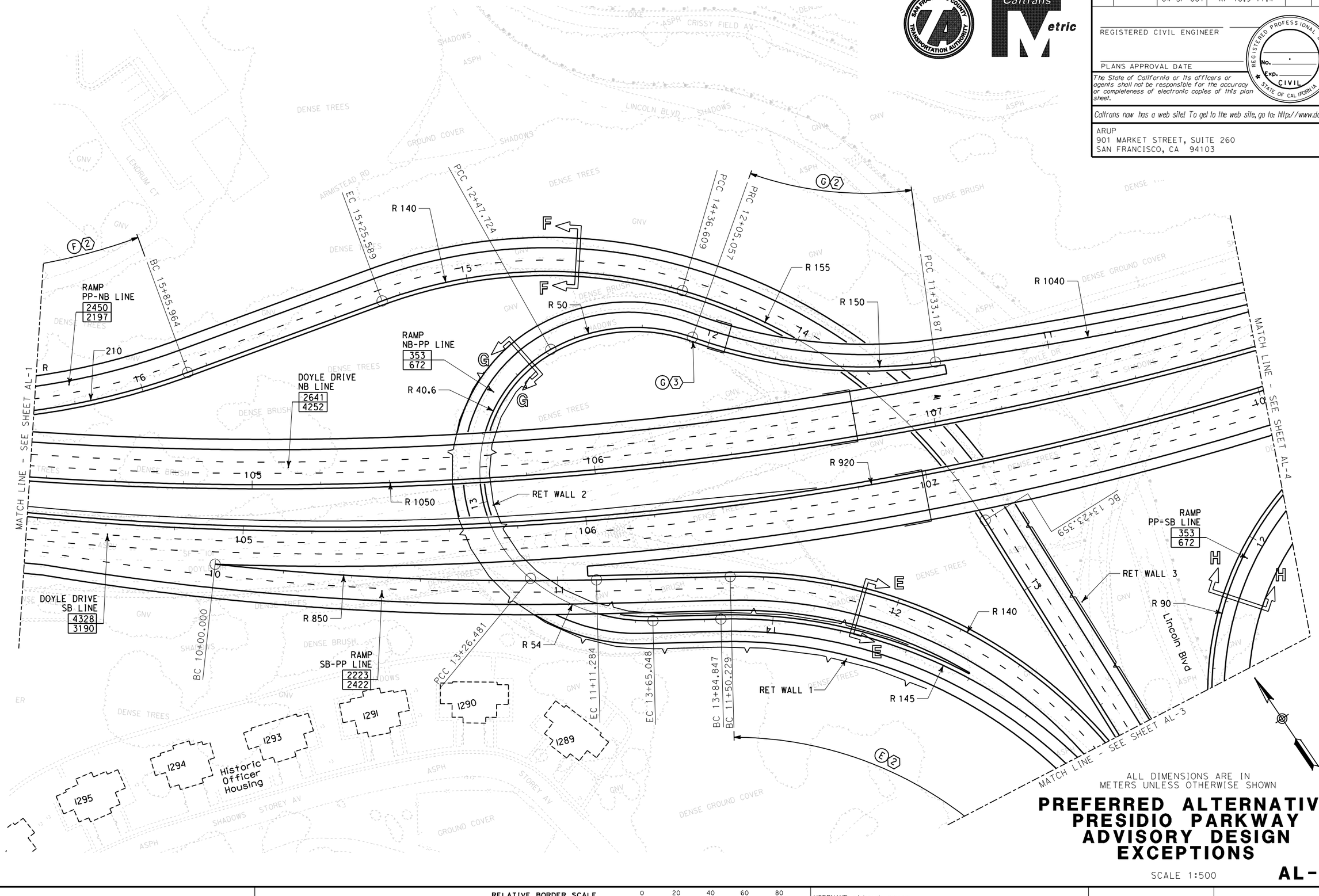

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AL-2

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EA 163700

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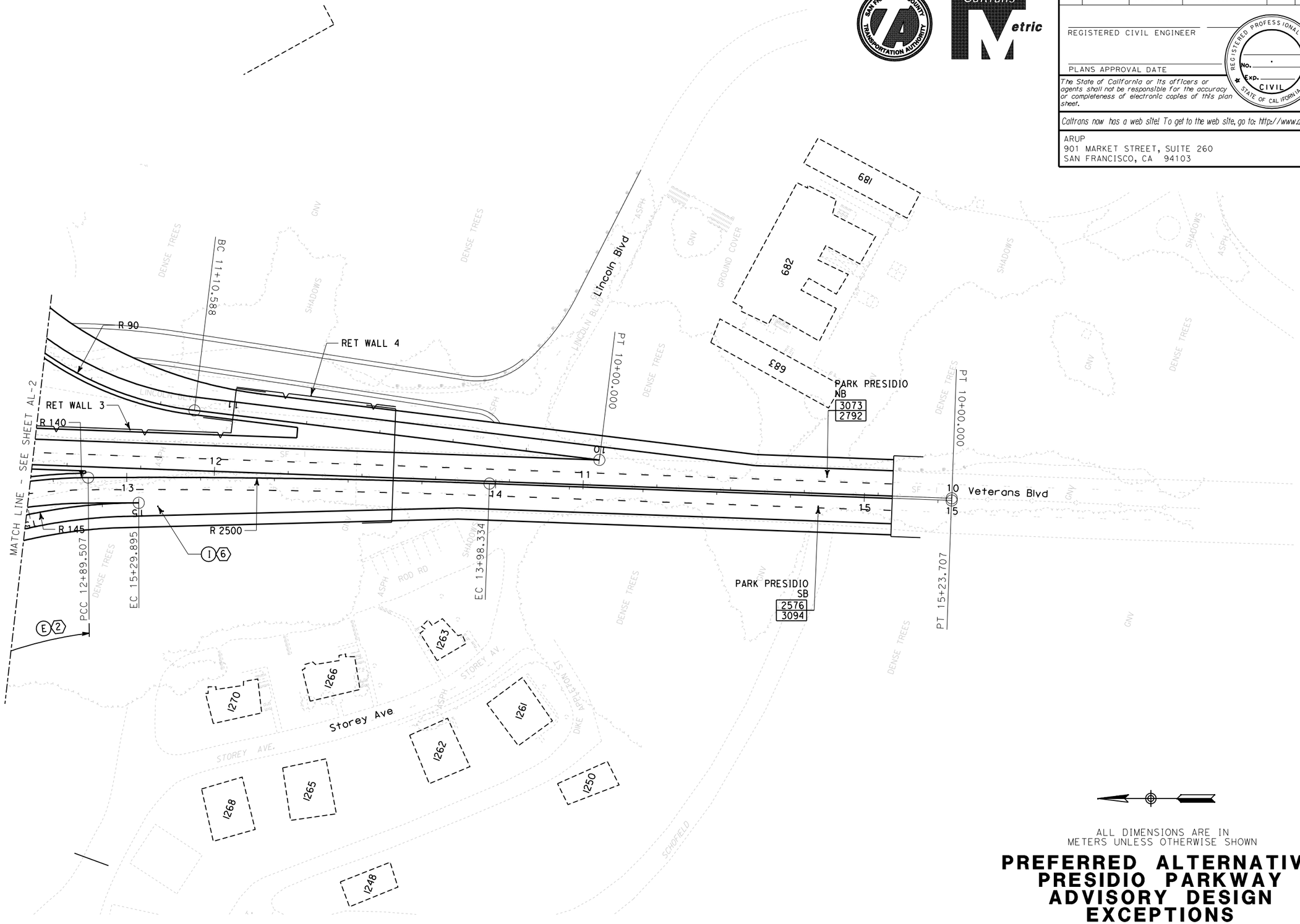

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AL-3

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EA 163700

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Old Mason St

651

662

654

Crissy Field Ave

Stilwell Hall

650

649

645

SHADOWS

DENSE BRUSH

GNV

GROUND COVER

DENSE TREES

DENSE

RAMP
NB-PP LINE
353
672

BC 10+00.000

BC 108+38.256

R 1040

R 1050

R 90

DOYLE DRIVE
NB LINE
2641
4252

Doyle Drive

Battery
Baldwin
(buried)

RET WALL 5

RET WALL 6

108

109

110

111

8

13

14

A

670

669

MATCH LINE - SEE SHEET AL-2

MATCH LINE - SEE SHEET AL-5

RAMP
PP-SB LINE
353
672

EC 108+33.800

EC 12+60.334

DOYLE DRIVE
SB LINE
4328
3190

POE 14+26.810

McDowell Ave

CRISSY FIELD AVE
RE-ALIGNMENT

Lincoln Blvd

Pet
Cemetery

Cavalry
Stables

661

662

667

ASPH

COWLES ST

PATTEN RD

LINCOLN BLVD

INCINERATOR RD

DOYLE DR

CRISSY FIELD AV

BC 11

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AL-4

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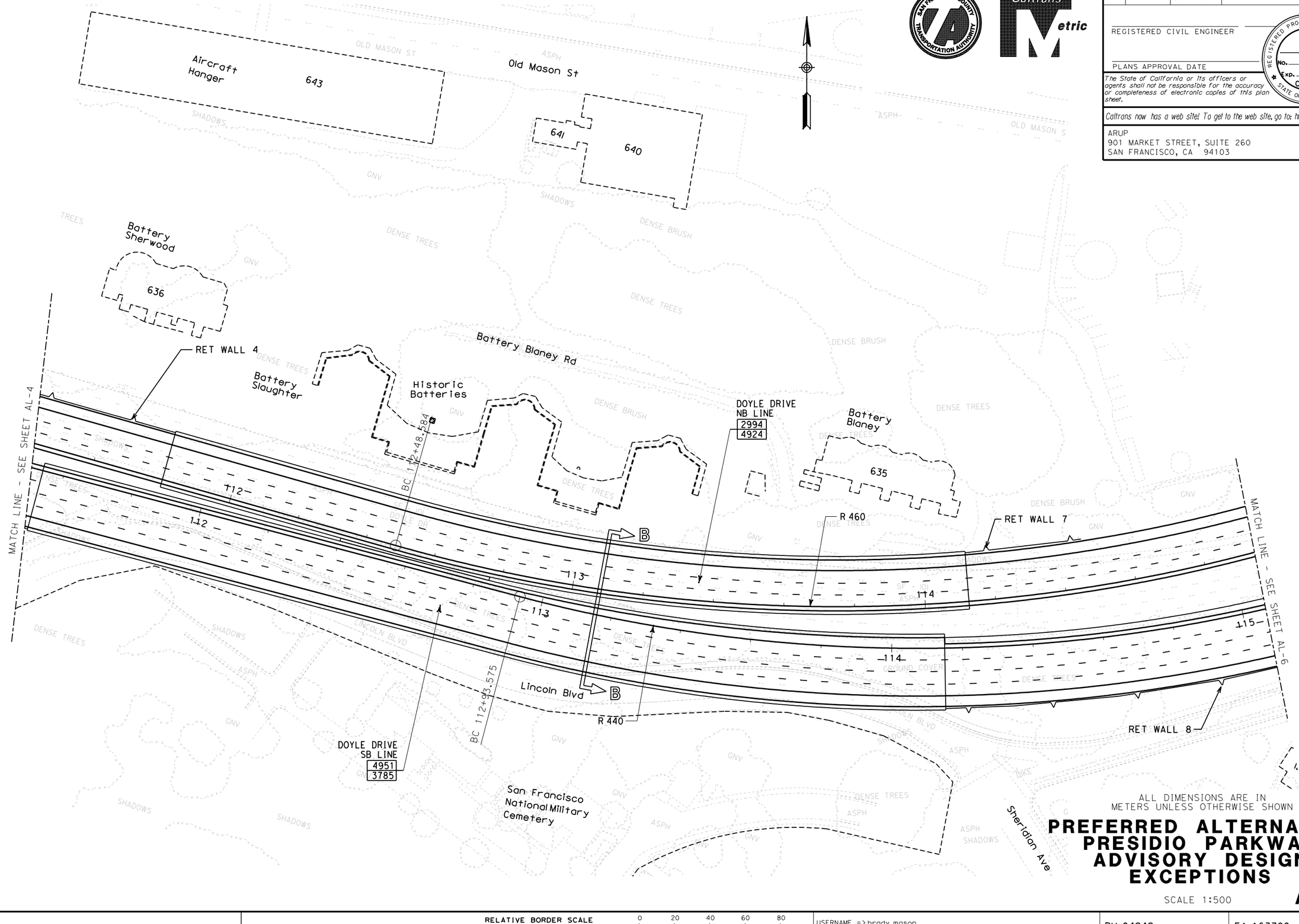

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AL-5

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Post Commissary

DOYLE DRIVE NB LINE
2994
4924

DOYLE DRIVE SB LINE
4951
3785

Doyle Drive

Lincoln Blvd

Riley Ave

Montgomery St

Lincoln Blvd

EC 115+24.643
EC 115+76.309
BC 116+47.100
R 460
R 440
R 1130
RET WALL 8
EC 117+64.256
BC 118+07.740

MATCH LINE - SEE SHEET AL-5

MATCH LINE - SEE SHEET AL-7

632
631
322
108
107
105
106
29

GNV
ASPH
SHADOWS
DENSE TREES
DENSE BRUSH
GROUND COVER
LINCOLN BLVD
DOYLE DR
TAYLOR RD
MILES ST
BANK ST

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AL-6

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RU 04242

EA 163700

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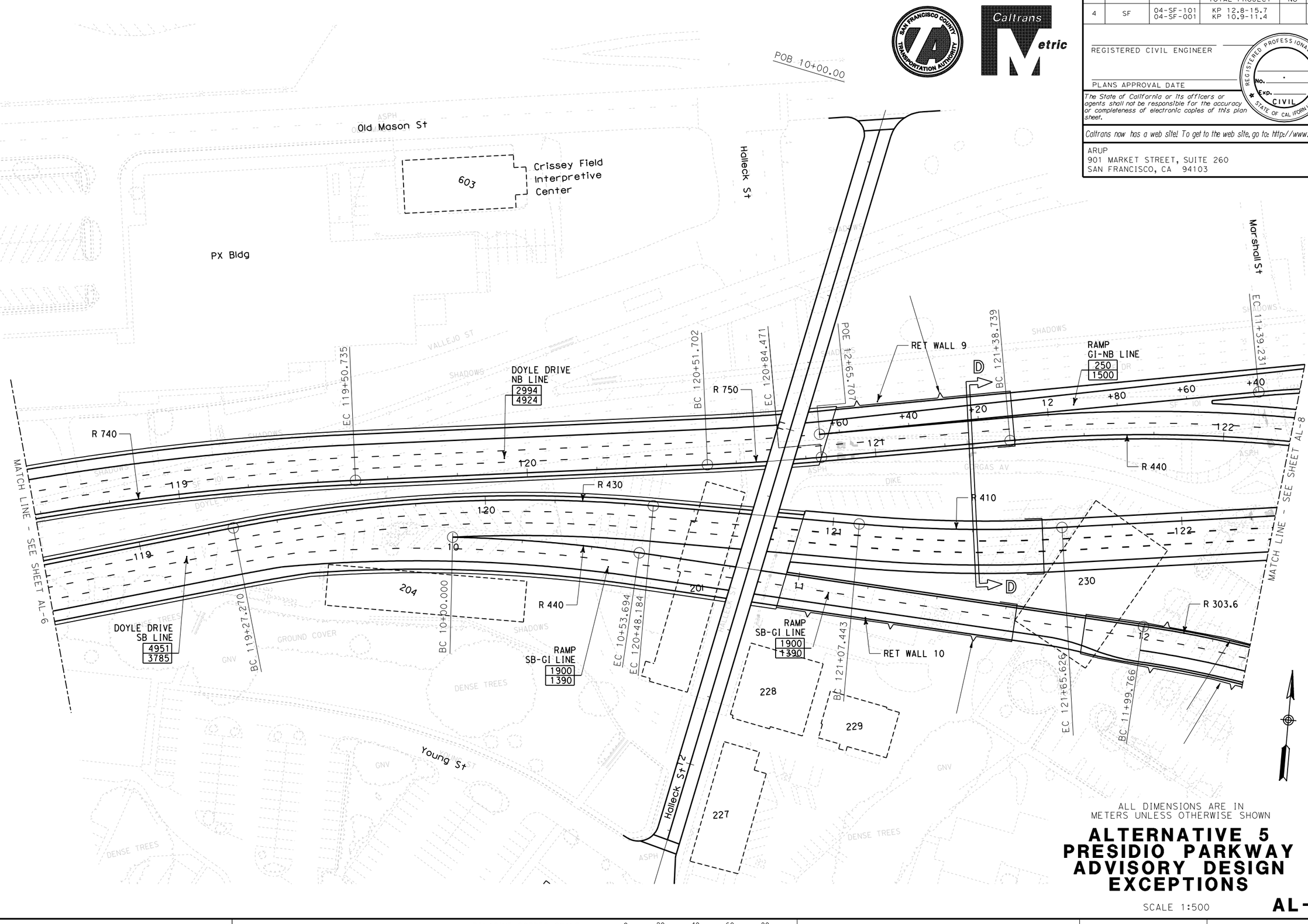

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AL-7

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RU 04242

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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
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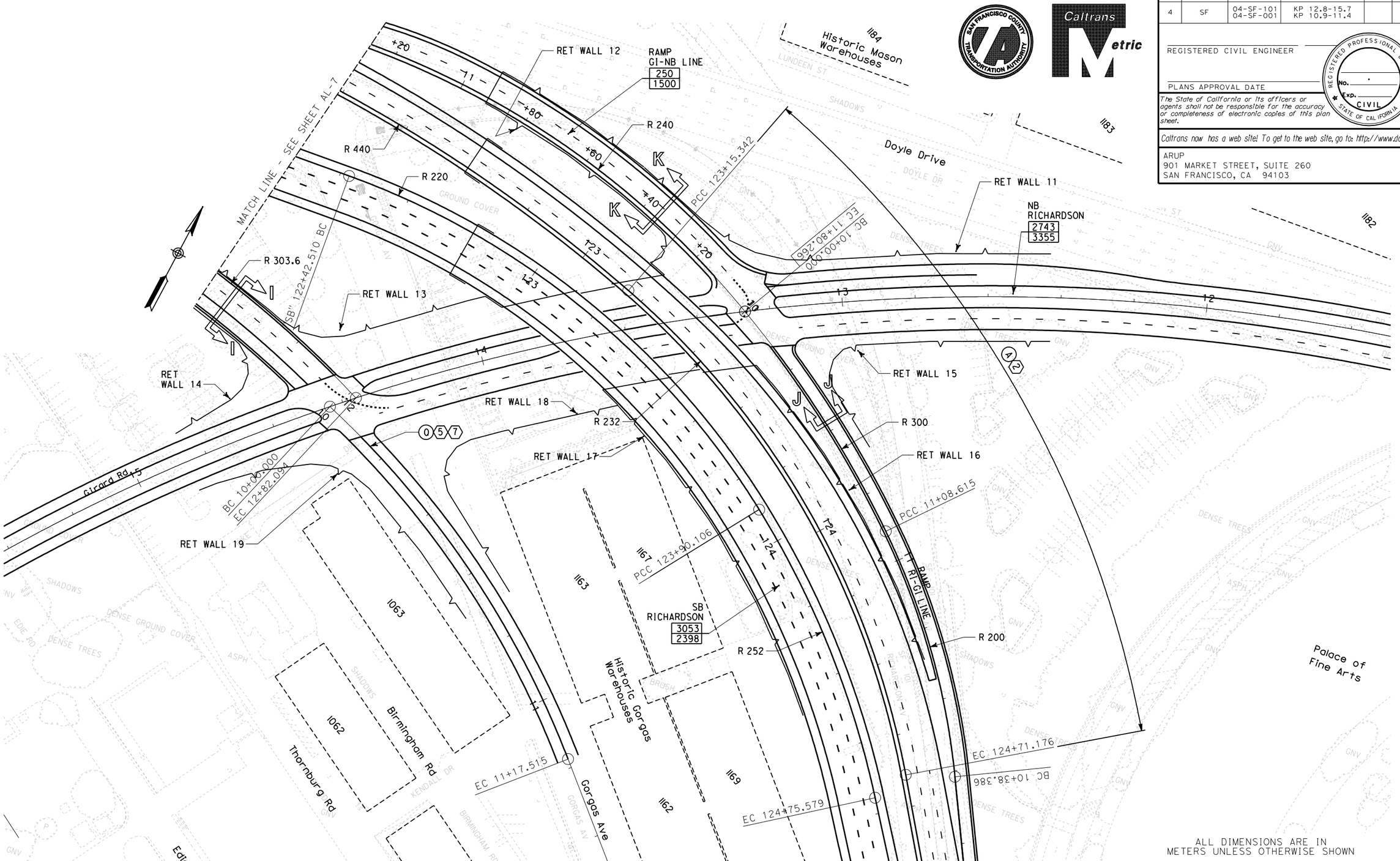

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SCALE 1:500

AL-8

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RU 04242

EA 163700

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
4	SF	04-SF-101 04-SF-001	KP 12.8-15.7 KP 10.9-11.4		

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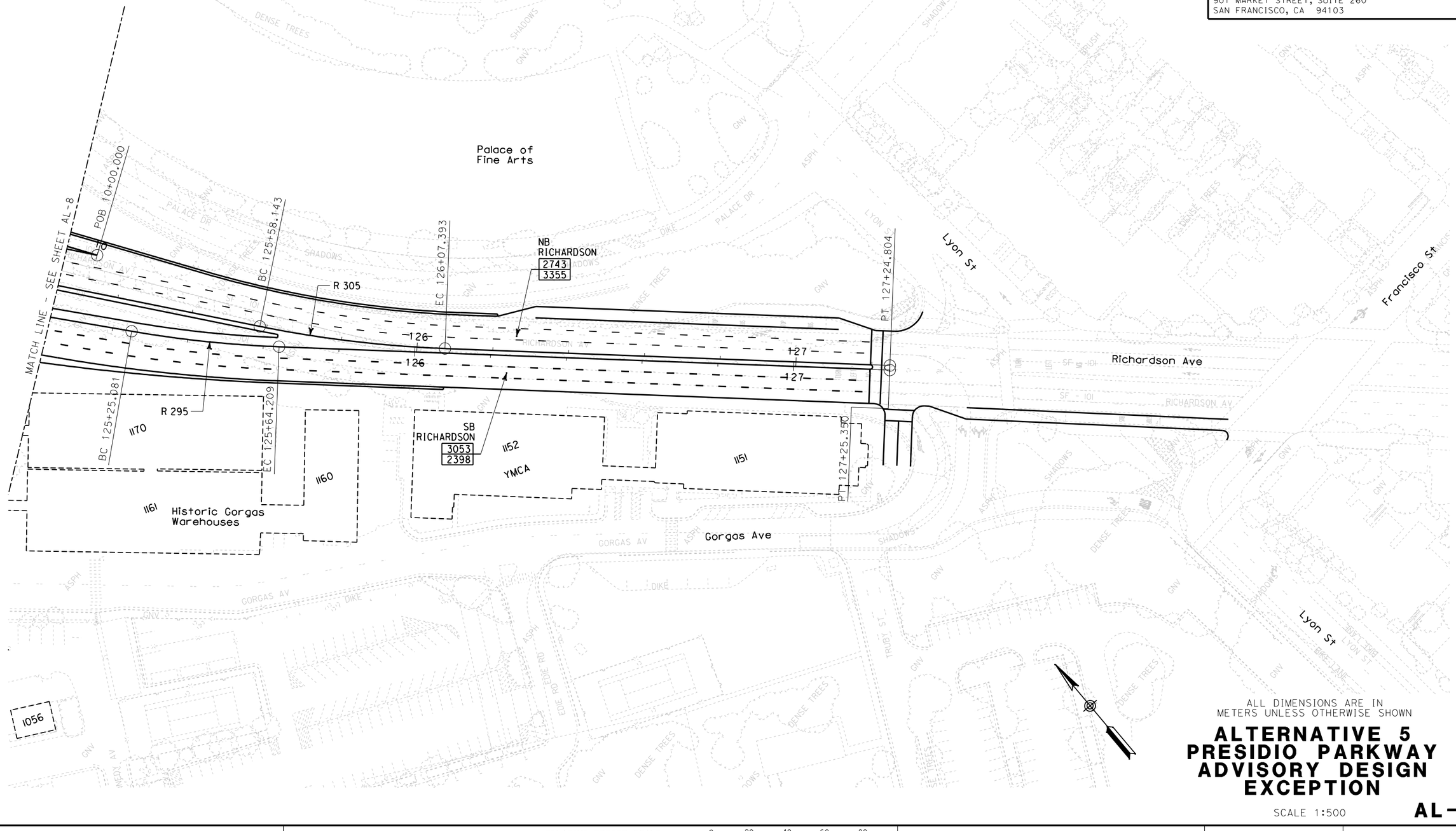

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AL-9

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RU 04242

EA 163700

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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

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SAN FRANCISCO, CA 94103

DATE	REVISED BY
06/07	J. KARN

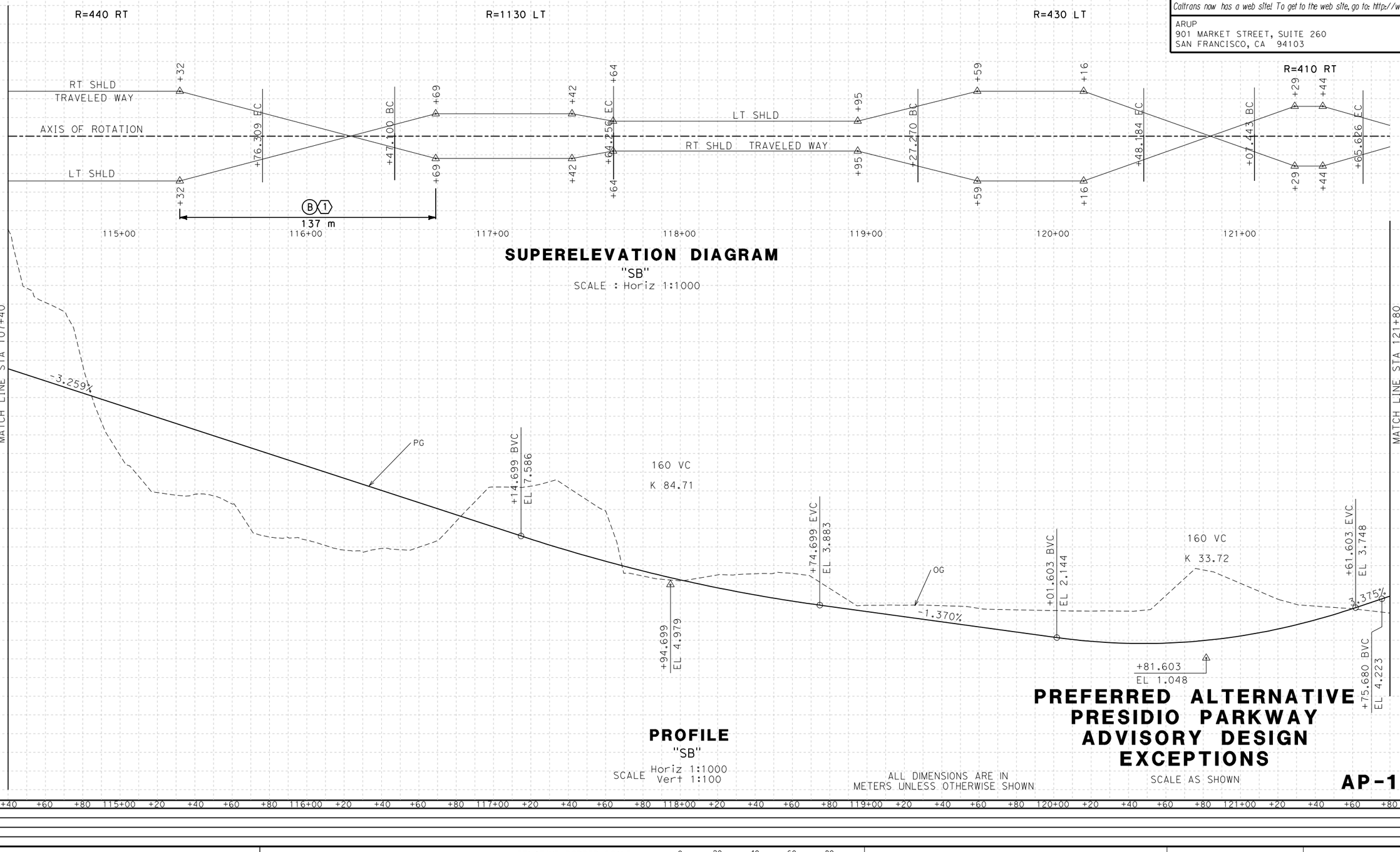
CALCULATED/DESIGNED BY: E. LAM
CHECKED BY: J. KARN

DESIGN OVERSIGHT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

06/07



SUPERELEVATION DIAGRAM

"SB"

SCALE : Horiz 1:1000

PROFILE

"SB"

SCALE Horiz 1:1000
Vert 1:100

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

SCALE AS SHOWN

PREFERRED ALTERNATIVE
PRESIDIO PARKWAY
ADVISORY DESIGN EXCEPTIONS

AP-1

Station +40 +60 +80 115+00 +20 +40 +60 +80 116+00 +20 +40 +60 +80 117+00 +20 +40 +60 +80 118+00 +20 +40 +60 +80 119+00 +20 +40 +60 +80 120+00 +20 +40 +60 +80 121+00 +20 +40 +60 +80

Cu

M: exc / emb

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000

EA 000000

LAST REVISION 00-00-00

DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

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	E. LAM	J. KARN		06/07

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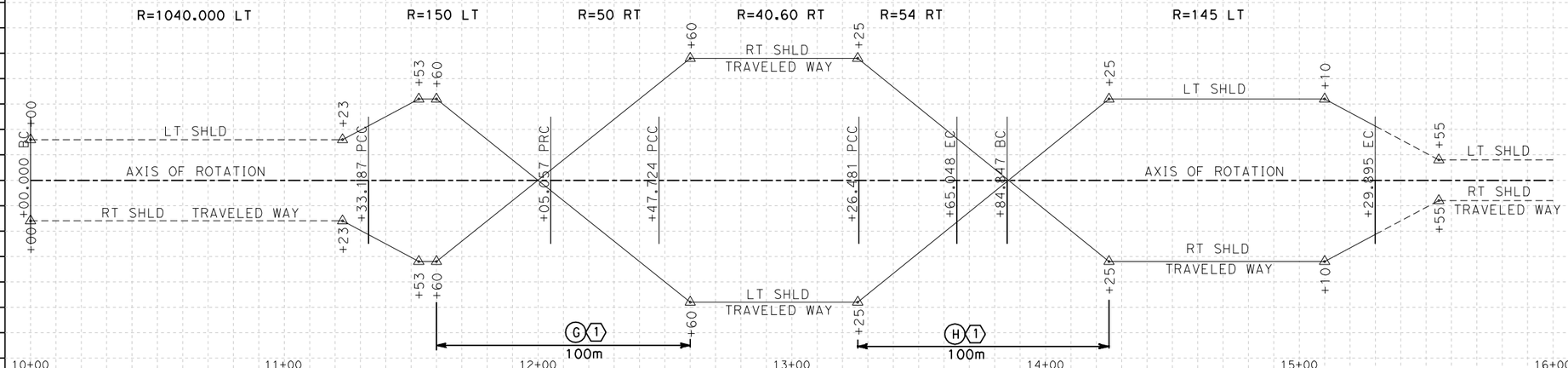
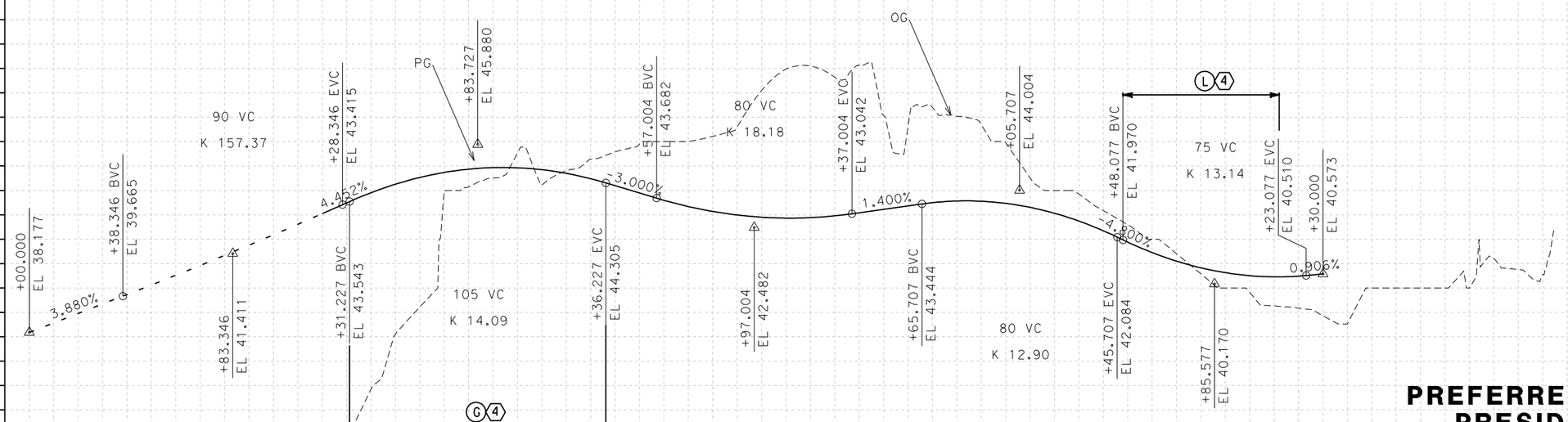


SUPERELEVATION DIAGRAM

"NB-PP"

SCALE : Horiz 1:1000



PROFILE

"NB-PP"

SCALE Horiz 1:1000
Vert 1:100

PREFERRED ALTERNATIVE PRESIDIO PARKWAY ADVISORY DESIGN EXCEPTIONS

SCALE AS SHOWN

AP-2

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

Station 10+00 +20 +40 +60 +80 11+00 +20 +40 +60 +80 12+00 +20 +40 +60 +80 13+00 +20 +40 +60 +80 14+00 +20 +40 +60 +80 15+00 +20 +40 +60 +80 16+00 +20 +40 +60 +80 17+00

Cu

M exc emb

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000

EA 000000

DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

LAST REVISION 00-00-00

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN OVERSIGHT

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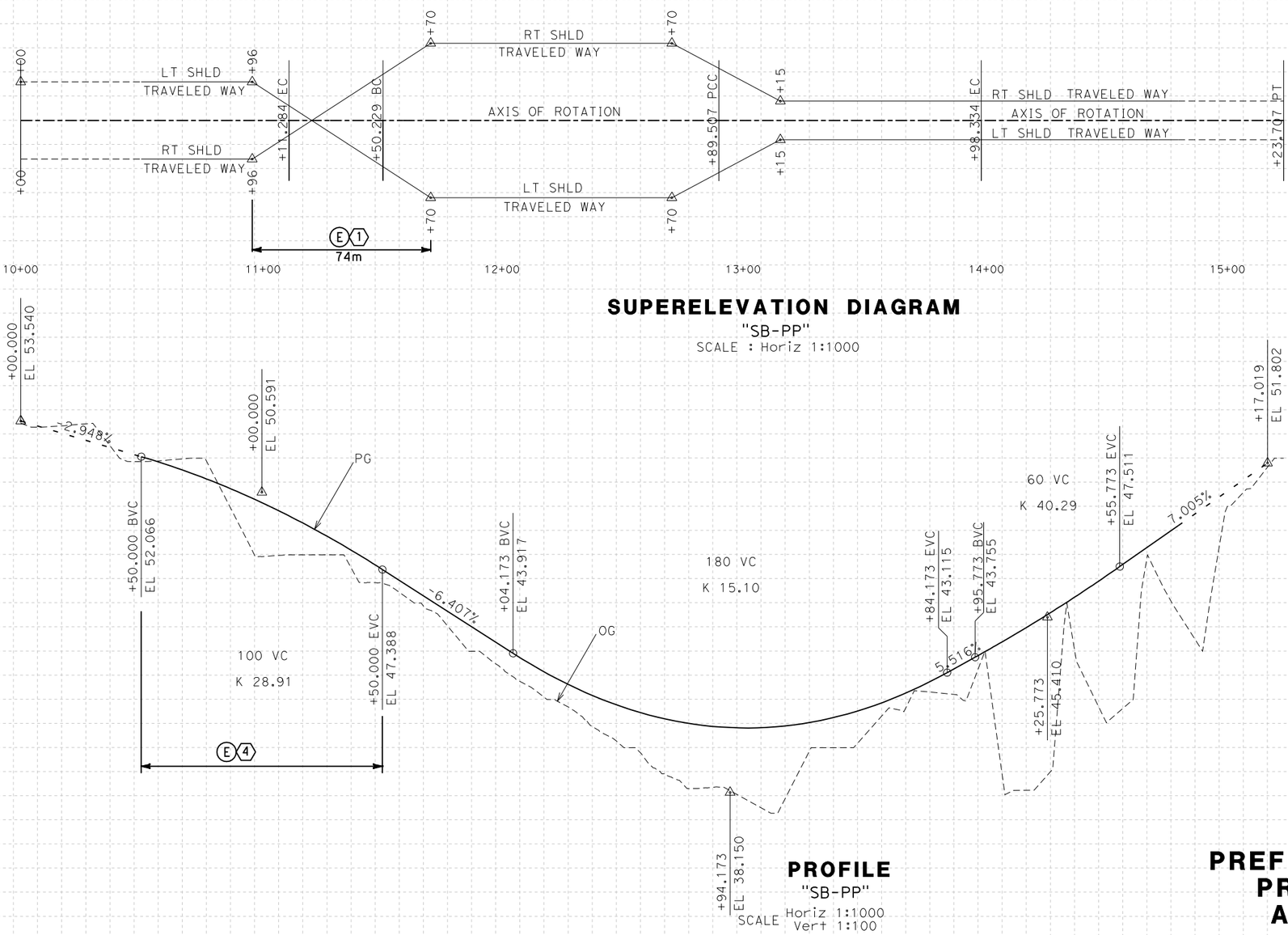
R=850.000 LT | R=140 RT | R=2500 RT



SUPERELEVATION DIAGRAM

"SB-PP"

SCALE : Horiz 1:1000

PROFILE

"SB-PP"

SCALE Horiz 1:1000
Vert 1:100

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

SCALE AS SHOWN

PREFERRED ALTERNATIVE PRESIDIO PARKWAY ADVISORY DESIGN EXCEPTIONS

AP-3

Station: 10+00 +20 +40 +60 +80 11+00 +20 +40 +60 +80 12+00 +20 +40 +60 +80 13+00 +20 +40 +60 +80 14+00 +20 +40 +60 +80 15+00 +20 +40 +60 +80 16+00

Cu | M | Exc | Emb

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000 | EA 000000

LAST REVISION: 00-00-00
DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS

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06/07

R=155 LT R=140 LT R=210 R R=210 RT R=510 RT R=510 RT

+00 +44 CONFORM LT SHLD +68 +43 RT SHLD TRAVELED WAY +06 +06 LT SHLD +56 +01 LT SHLD TRAVELED WAY

+23.359 BC +36.609 PCC +25.589 EC +85.964 BC +55.51 PCC +70 CONFORM

AXIS OF ROTATION

+00 +44 CONFORM RT SHLD TRAVELED WAY +68 +43 LT SHLD +06 +06 RT SHLD TRAVELED WAY +56 +01 RT SHLD TRAVELED WAY

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

F 1 100m

SUPERELEVATION DIAGRAM

"PP-NB"

SCALE : Horiz 1:1000

+00.000 EL 52.258 | +44 CONFORM | +48.082 BVC EL 48.890 | 90 VC K 68.94 | PG | +93.082 EL 45.738 | +38.082 EVC EL 43.173 | +21.905 BVC EL 38.395 | 230 VC K 17.04 | +51.905 EVC EL 40.810 | +42.875 BVC EL 47.905 | 160 VC K 24.73 | +02.875 EVC EL 55.208 | +22.875 EL 54.145 | +70 CONFORM | +30.616 EL 55.57

-7.005% -5.700% 1.880% 1.329%

OG

PROFILE

"PP-NB"

SCALE Horiz 1:1000 Vert 1:100

+36.905 EL 31.840 | +48.273 EL 32.177

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

SCALE AS SHOWN

PREFERRED ALTERNATIVE PRESIDIO PARKWAY ADVISORY DESIGN EXCEPTIONS

AP-4

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Station 10+00 +20 +40 +60 +80 11+00 +20 +40 +60 +80 12+00 +20 +40 +60 +80 13+00 +20 +40 +60 +80 14+00 +20 +40 +60 +80 15+00 +20 +40 +60 +80 16+00 +20 +40 +60 +80 17+00 +20 +40

Cu

M Exc Emb

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000 EA 000000

LAST REVISION 00-00-00 DATE PLOTTED => $DATE TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS

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CALCULATED/ DESIGNED BY
CHECKED BY

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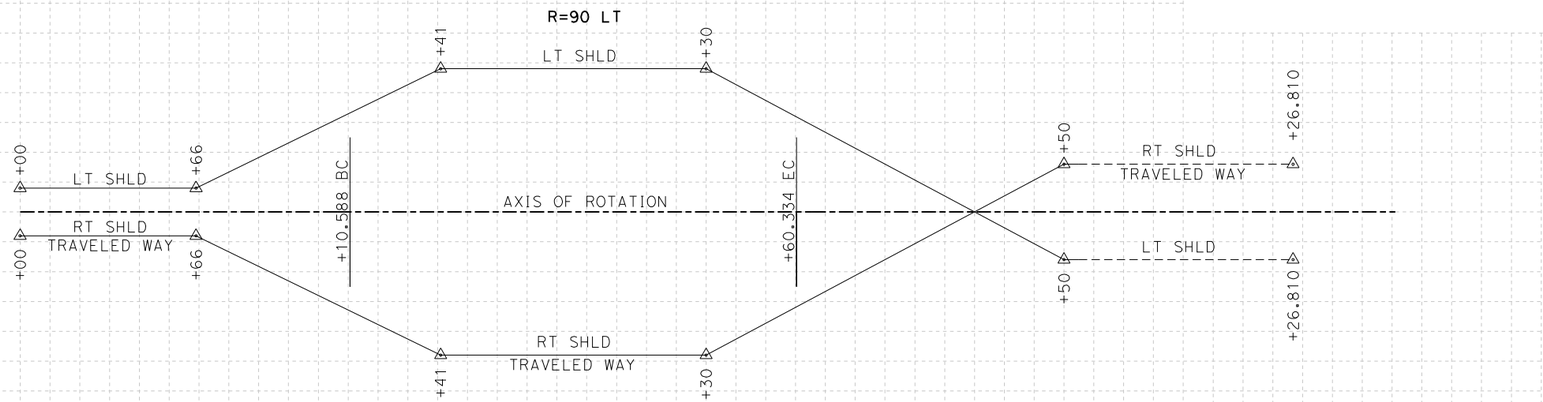
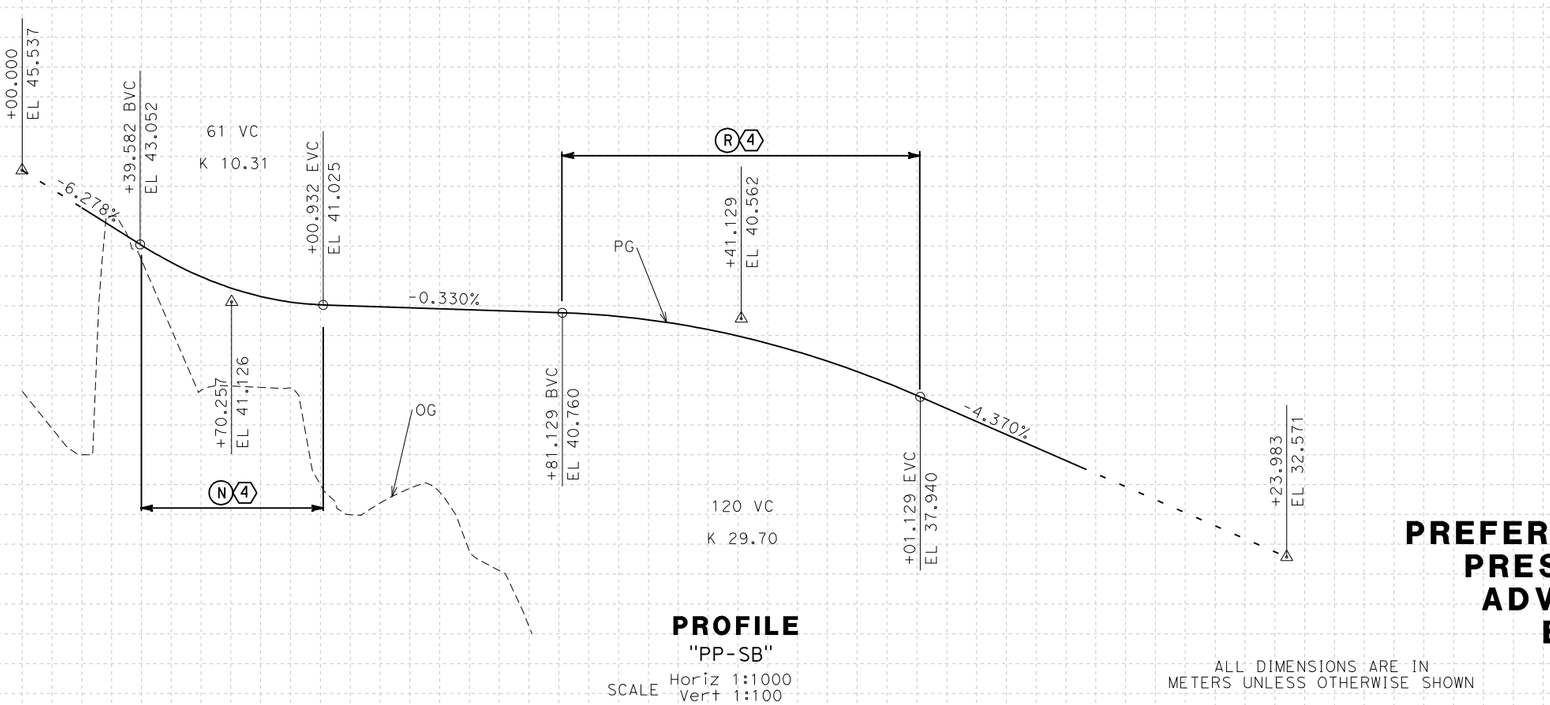


SUPERELEVATION DIAGRAM

"PP-SB"

SCALE : Horiz 1:1000



PROFILE

"PP-SB"

SCALE Horiz 1:1000
Vert 1:100

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

SCALE AS SHOWN

PREFERRED ALTERNATIVE PRESIDIO PARKWAY ADVISORY DESIGN EXCEPTIONS

AP-5

LAST REVISION 00-00-00

DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000

EA 000000

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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	CHECKED BY	J. KARN

DATE REVISED BY	DATE REVISED
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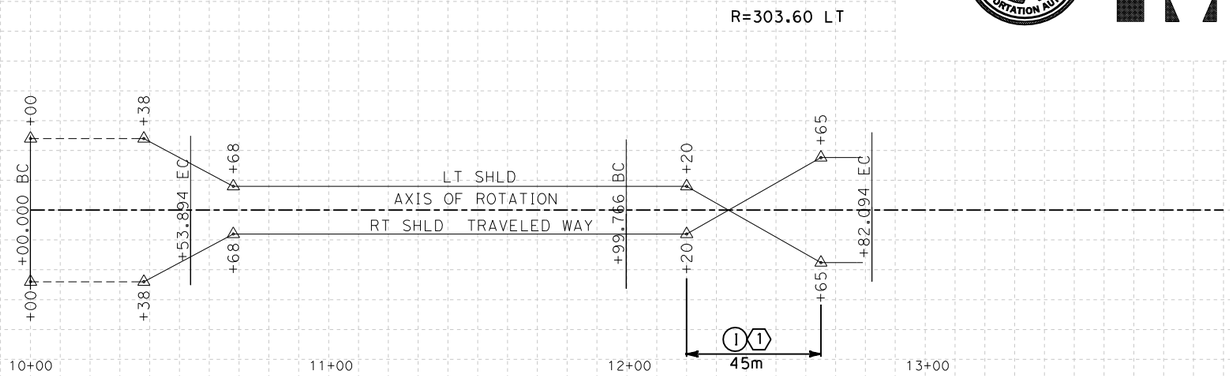
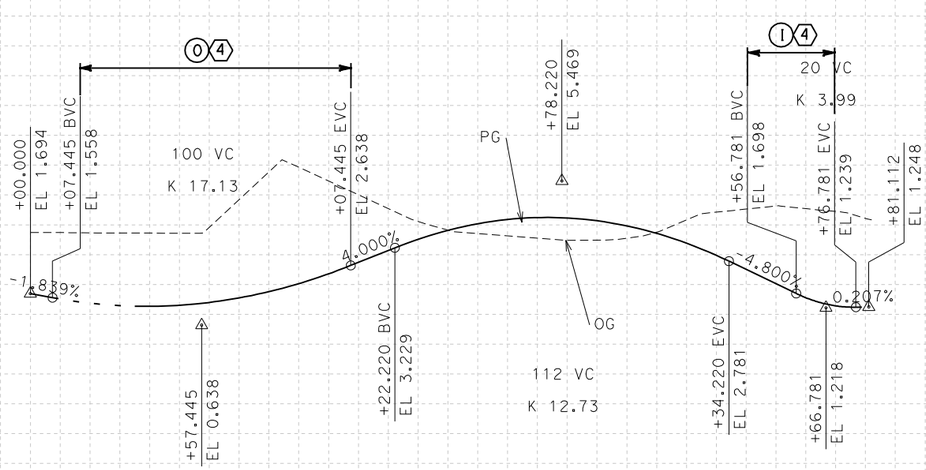


SUPERELEVATION DIAGRAM

"SB-GI"

SCALE : Horiz 1:1000



PROFILE

"SB-GI"

SCALE Horiz 1:1000
Vert 1:100

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

PREFERRED ALTERNATIVE PRESIDIO PARKWAY ADVISORY DESIGN EXCEPTIONS

SCALE AS SHOWN

AP-6

Station: 10+00 +20 +40 +60 +80 11+00 +20 +40 +60 +80 12+00 +20 +40 +60 +80 13+00

Cu | Exc | Emb

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000

EA 000000

LAST REVISION 00-00-00

DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS

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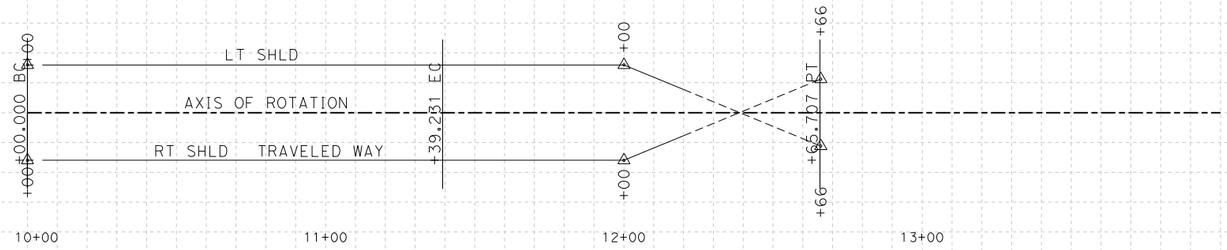
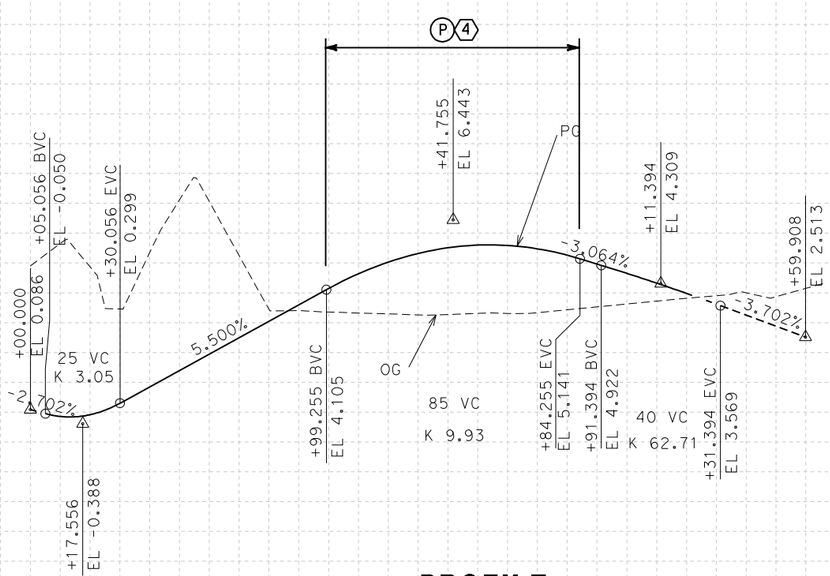


SUPERELEVATION DIAGRAM

"GI-NB" LINE

SCALE : Horiz 1:1000



PROFILE

"GI-NB" LINE

SCALE Horiz 1:1000
Vert 1:100

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

PREFERRED ALTERNATIVE PRESIDIO PARKWAY ADVISORY DESIGN EXCEPTIONS

SCALE AS SHOWN

AP-7

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06/07	

10% 5% 0% -5% -10%

Station: 10+00 +20 +40 +60 +80 11+00 +20 +40 +60 +80 12+00 +20 +40 +60 +80 13+00

Cu | M | Exc | Emb

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000 | EA 000000

LAST REVISION 00-00-00
DATE PLOTTED => $DATE
TIME PLOTTED => $TIME