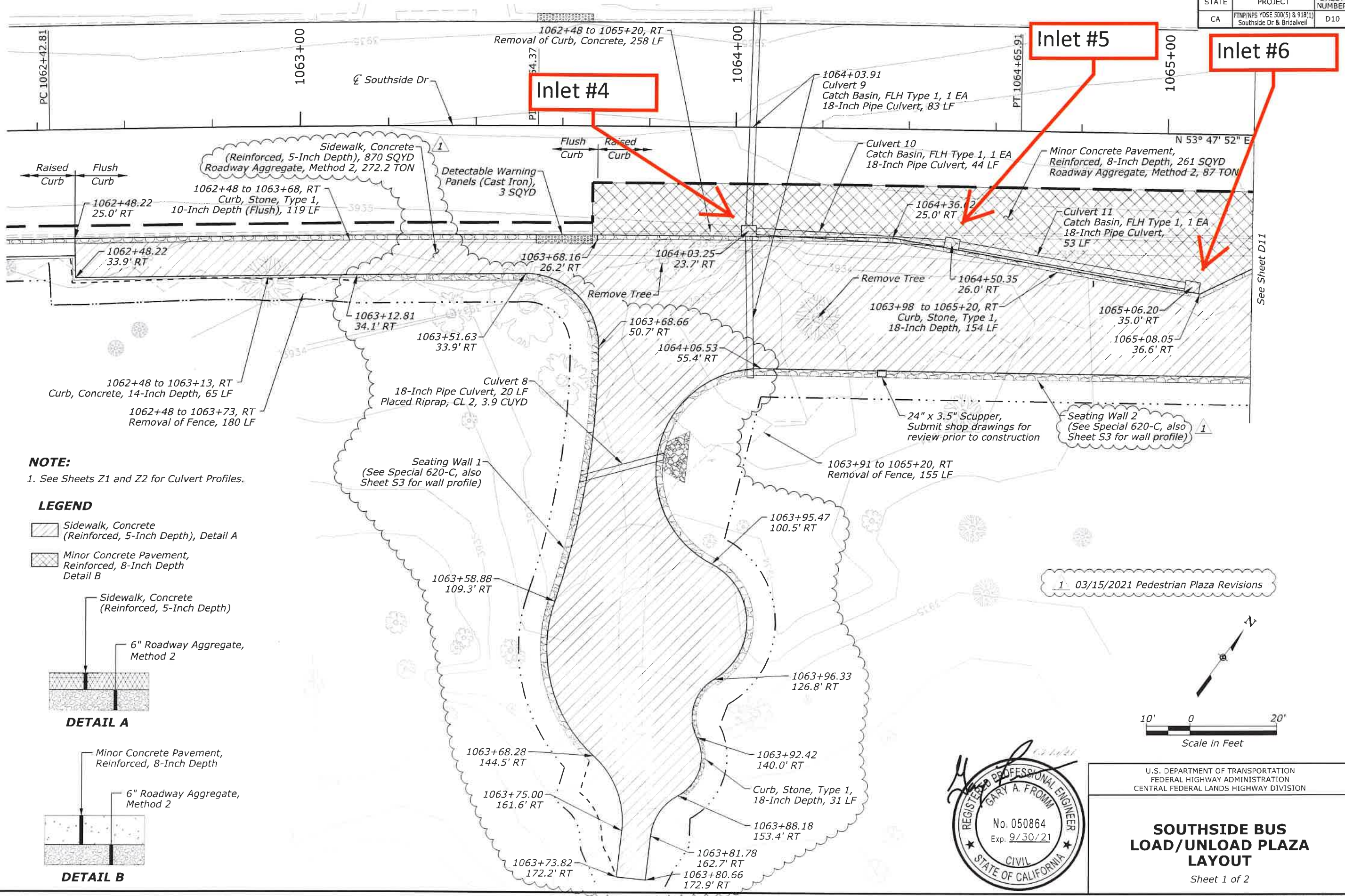


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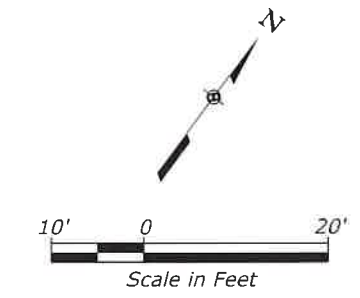
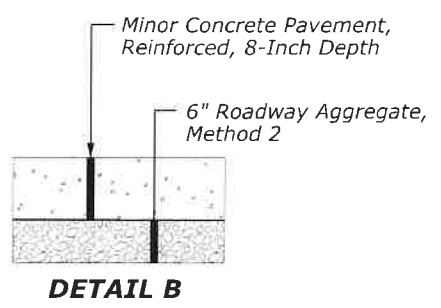
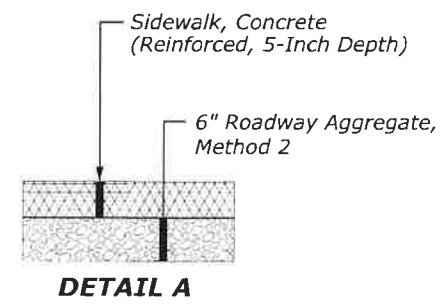
STATE	PROJECT	SHEET NUMBER
CA	FINP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	D10



NOTE:
1. See Sheets Z1 and Z2 for Culvert Profiles.

LEGEND

- Sidewalk, Concrete (Reinforced, 5-Inch Depth), Detail A
- Minor Concrete Pavement, Reinforced, 8-Inch Depth Detail B



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**SOUTHSIDE BUS
LOAD/UNLOAD PLAZA
LAYOUT**
Sheet 1 of 2



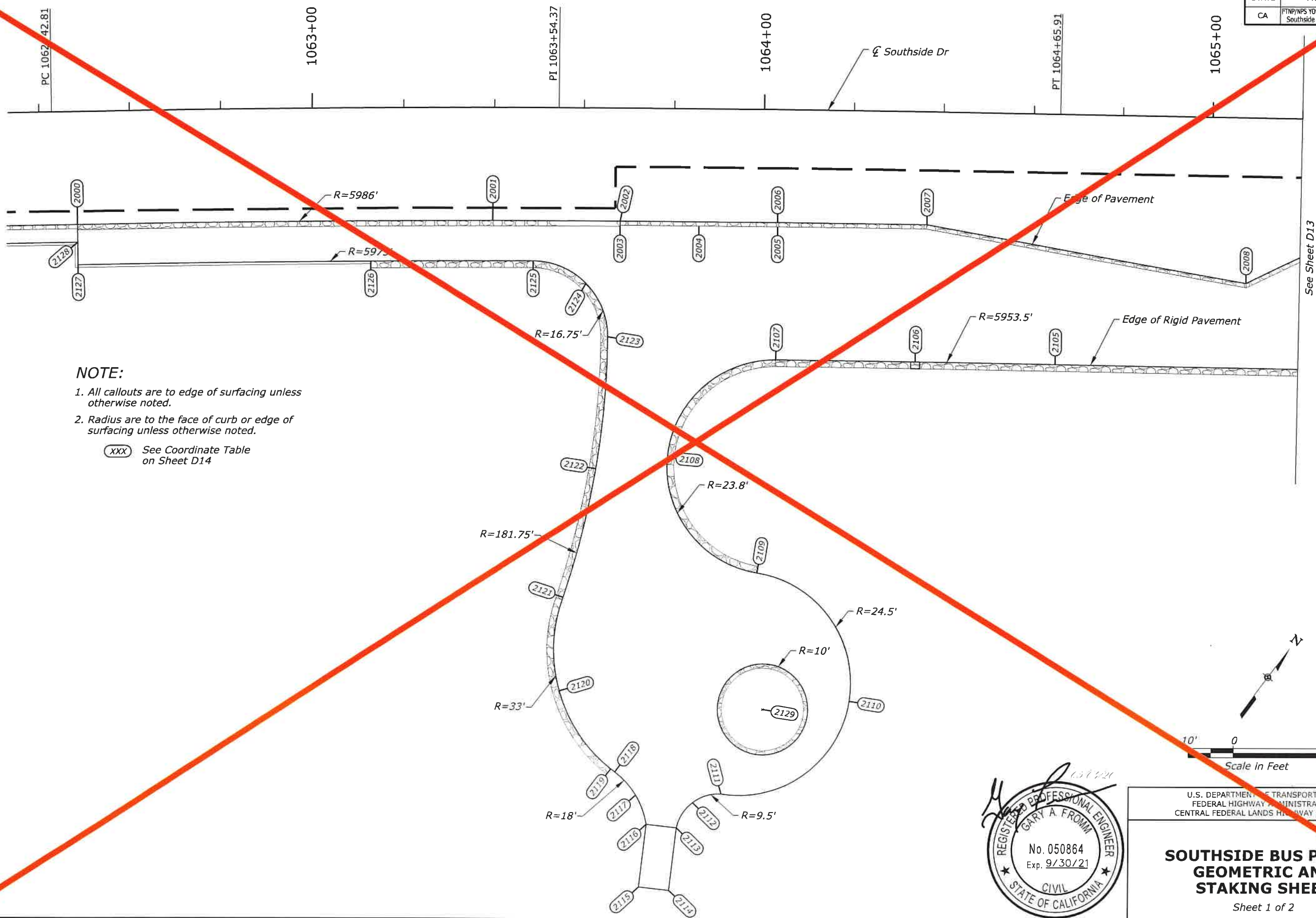
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5/1/2020

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(S) & 918(S) Southside Dr & Bridal	D12



NOTE:
1. All callouts are to edge of surfacing unless otherwise noted.
2. Radius are to the face of curb or edge of surfacing unless otherwise noted.
(XXX) See Coordinate Table on Sheet D14



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**SOUTHSIDE BUS PLAZA
GEOMETRIC AND
STAKING SHEET**

Sheet 1 of 2

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3/22/2021

PC 1062+42.81

1063+00

PI 1063+54.37

1064+00

PT 1064+65.91

1065+00

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	D12

Southside Dr

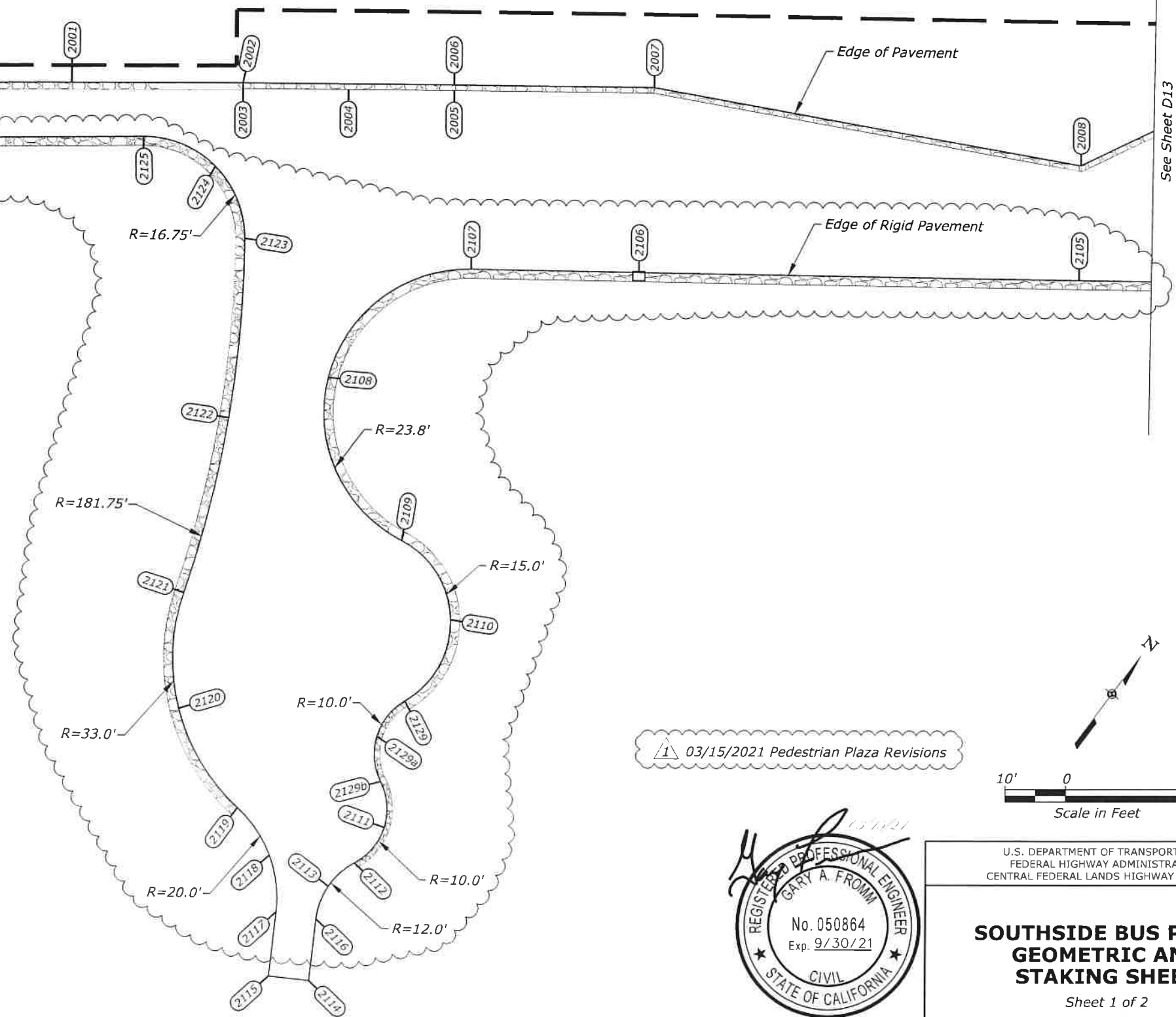
Edge of Pavement

Edge of Rigid Pavement

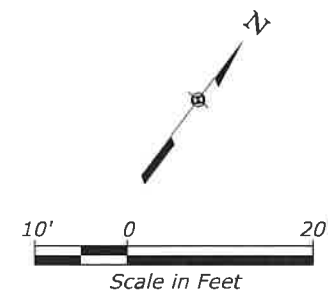
See Sheet D13

NOTE:
1. All callouts are to edge of surfacing unless otherwise noted.
2. Radius are to the face of curb or edge of surfacing unless otherwise noted.

(xxx) See Coordinate Table on Sheet D14



1 03/15/2021 Pedestrian Plaza Revisions



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SOUTHSIDE BUS PLAZA GEOMETRIC AND STAKING SHEET

Sheet 1 of 2

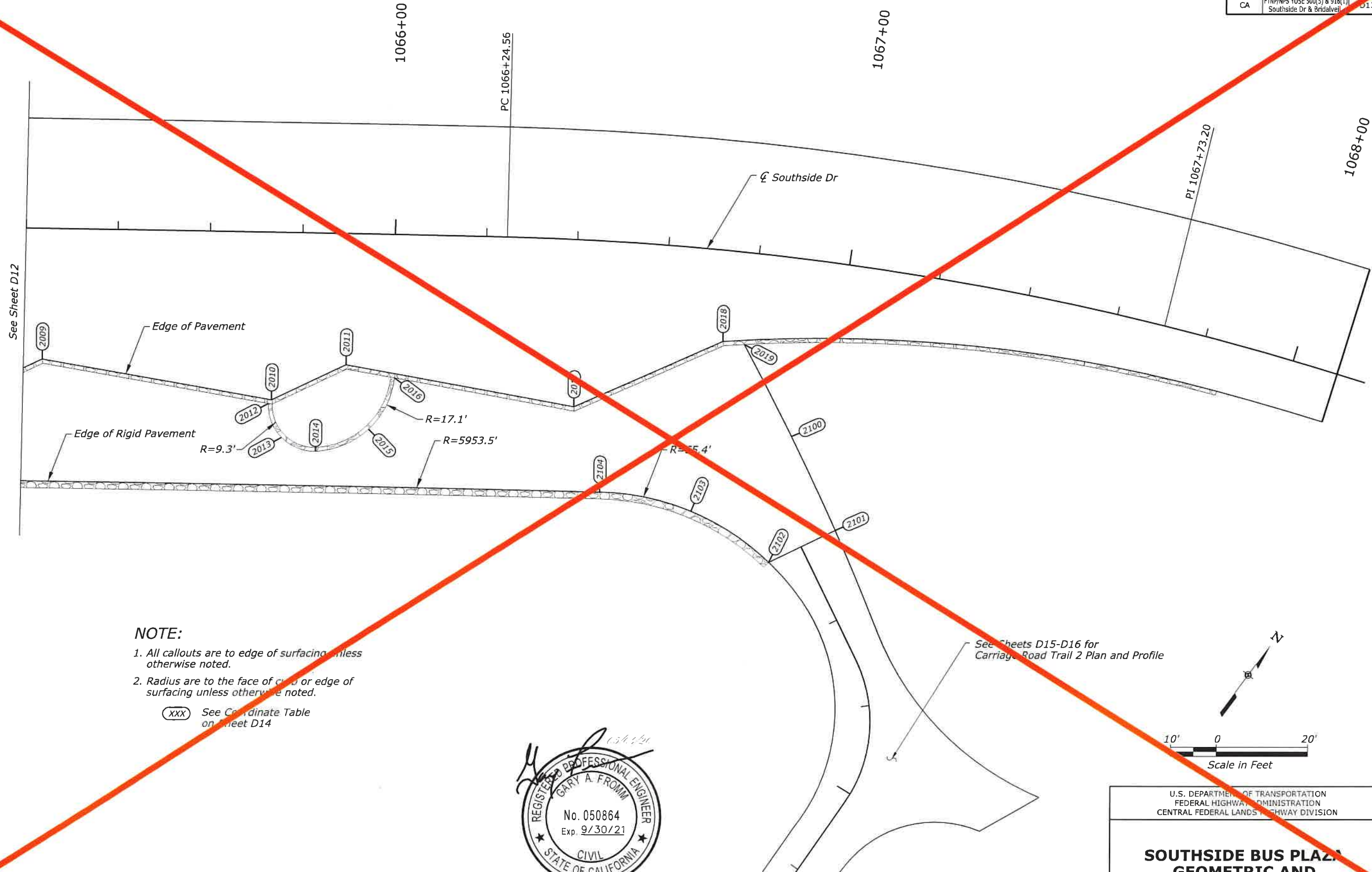
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5/4/20

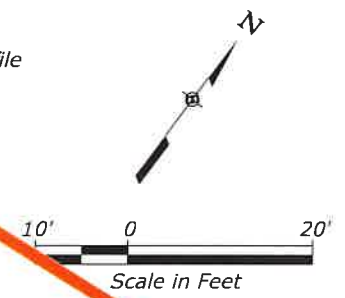
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	D13



NOTE:
1. All callouts are to edge of surfacing unless otherwise noted.
2. Radius are to the face of curb or edge of surfacing unless otherwise noted.
(XXX) See Coordinate Table on Sheet D14



See Sheets D15-D16 for Carriage Road Trail 2 Plan and Profile



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FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**SOUTHSIDE BUS PLAZA
GEOMETRIC AND
STAKING SHEET**
Sheet 2 of 2

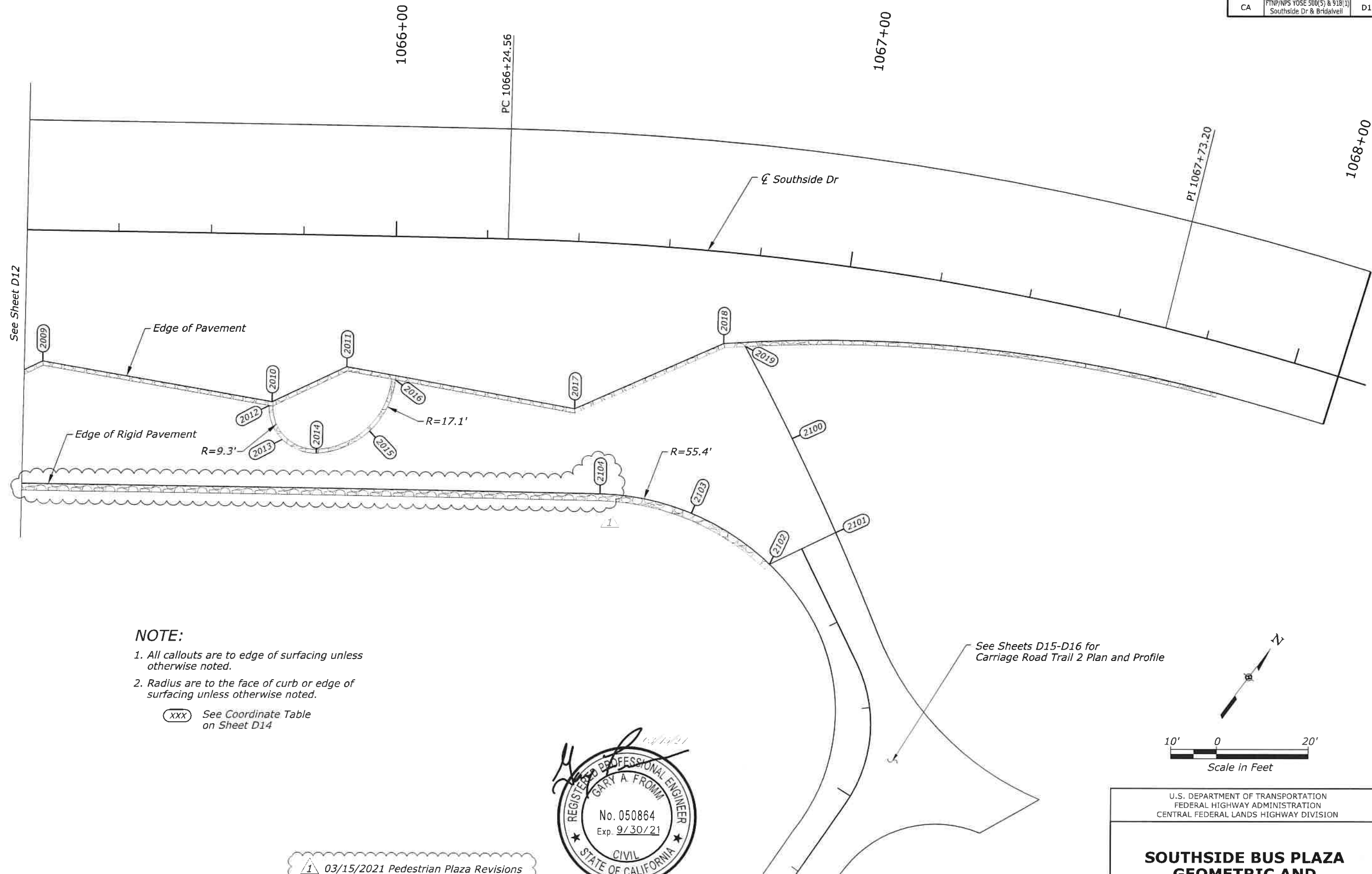
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3/9/2021

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	D13



1 03/15/2021 Pedestrian Plaza Revisions

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**SOUTHSIDE BUS PLAZA
GEOMETRIC AND
STAKING SHEET**
Sheet 2 of 2

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	D14

COORDINATE TABLE - SOUTHSIDE BUS PLAZA				
Point Number	Northing	Easting	Elevation	Description
2000	2085768.60	6807771.20	3934.98	
2001	2085824.49	6807843.15	3934.96	
2002	2085841.65	6807865.70	3935.05	
2003	2085840.72	6807866.40	3935.05	
2004	2085851.45	6807880.20	3935.27	
2005	2085861.93	6807894.18	3935.47	
2006	2085862.65	6807893.61	3934.81	
2007	2085882.49	6807920.28	3934.89	
2008	2085915.29	6807984.64	3935.04	
2009	2085931.18	6807992.85	3935.31	
2010	2085954.18	6808037.96	3935.62	
2011	2085970.07	6808046.18	3936.12	
2012	2085953.14	6808037.94	3936.29	
2013	2085948.97	6808044.74	3936.21	
2014	2085951.01	6808052.46	3936.42	
2015	2085961.90	6808058.69	3936.64	
2016	2085974.19	6808056.28	3936.93	
2017	2085993.07	6808091.29	3936.66	
2018	2086024.32	6808108.46	3937.72	
2019	2086026.69	6808112.61	3938.47	
2100	2086016.96	6808133.14	3938.03	
2101	2086006.44	6808153.28	3938.26	
2102	2085992.07	6808145.96	3937.95	
2103	2085990.51	6808125.60	3937.48	
2104	2085981.69	6808107.19	3936.88	
2105	2085875.23	6807961.74	3935.23	
2106	2085856.84	6807936.75	3935.15	
2107	2085838.32	6807911.86	3935.37	
2108	2085806.43	6807906.07	3936.50	
2109	2085798.34	6807937.45	3936.85	
2110	2085788.36	6807970.88	3937.25	
2111	2085754.96	6807960.83	3937.34	
2112	2085749.61	6807956.94	3937.33	
2113	2085743.01	6807957.51	3937.37	
2114	2085731.05	6807964.67	3936.71	
2115	2085727.61	6807958.94	3936.64	
2116	2085739.58	6807951.77	3937.34	
2117	2085742.28	6807945.99	3937.26	
2118	2085744.53	6807939.24	3937.20	
2119	2085744.52	6807938.11	3937.19	
2120	2085751.08	6807918.57	3936.97	
2121	2085767.92	6807906.67	3936.76	
2122	2085794.93	6807895.03	3936.51	
2123	2085819.70	6807879.18	3935.43	
2124	2085826.15	6807868.11	3934.90	
2125	2085822.88	6807855.73	3934.90	
2126	2085801.11	6807827.35	3934.79	
2127	2085761.60	6807776.73	3934.90	
2128	2085765.52	6807773.63	3934.95	
2129	2085775.27	6807956.76	N/A	

NOTE:
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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

GEOMETRIC AND STAKING
COORDINATE TABLE
SOUTHSIDE BUS PLAZA

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STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	D14

COORDINATE TABLE - SOUTHSIDE BUS PLAZA				
Point Number	Northing	Easting	Elevation	Description
2000	2085768.60	6807771.20	3934.98	
2001	2085824.49	6807843.15	3934.96	
2002	2085841.65	6807865.70	3935.05	
2003	2085840.72	6807866.40	3935.05	
2004	2085851.45	6807880.20	3935.27	
2005	2085861.93	6807894.18	3935.31	
2006	2085862.65	6807893.61	3934.81	
2007	2085882.49	6807920.28	3934.89	
2008	2085915.29	6807984.64	3935.04	
2009	2085931.18	6807992.85	3935.31	
2010	2085954.18	6808037.96	3935.62	
2011	2085970.07	6808046.18	3936.12	
2012	2085953.14	6808037.94	3936.29	
2013	2085948.97	6808044.74	3936.21	
2014	2085951.01	6808052.46	3936.42	
2015	2085961.89	6808058.69	3936.64	
2016	2085974.19	6808056.28	3936.93	
2017	2085993.07	6808091.29	3936.66	
2018	2086024.32	6808108.46	3937.72	
2019	2086026.69	6808112.61	3938.47	
2100	2086016.96	6808133.14	3938.03	
2101	2086006.44	6808153.28	3938.26	
2102	2085992.07	6808145.96	3937.95	
2103	2085990.51	6808125.60	3937.48	
2104	2085981.65	6808107.13	3936.88	
2105	2085900.00	6807995.86	3935.25	
2106	2085856.70	6807936.85	3935.15	
2107	2085840.25	6807914.43	3935.24	
2108	2085811.68	6807906.64	3936.00	
2109	2085797.64	6807932.71	3936.84	
2110	2085792.25	6807947.06	3937.01	
2111	2085758.58	6807959.12	3936.80	
2112	2085751.02	6807958.80	3936.70	
2113	2085745.35	6807957.72	3936.69	
2114	2085731.05	6807964.67	3936.71	
2115	2085727.61	6807958.94	3936.64	
2116	2085739.84	6807959.41	3936.68	
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2118	2085743.48	6807946.86	3936.54	
2119	2085746.43	6807937.94	3936.48	
2120	2085753.37	6807920.27	3936.37	
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NOTE:
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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

GEOMETRIC AND STAKING
COORDINATE TABLE
SOUTHSIDE BUS PLAZA

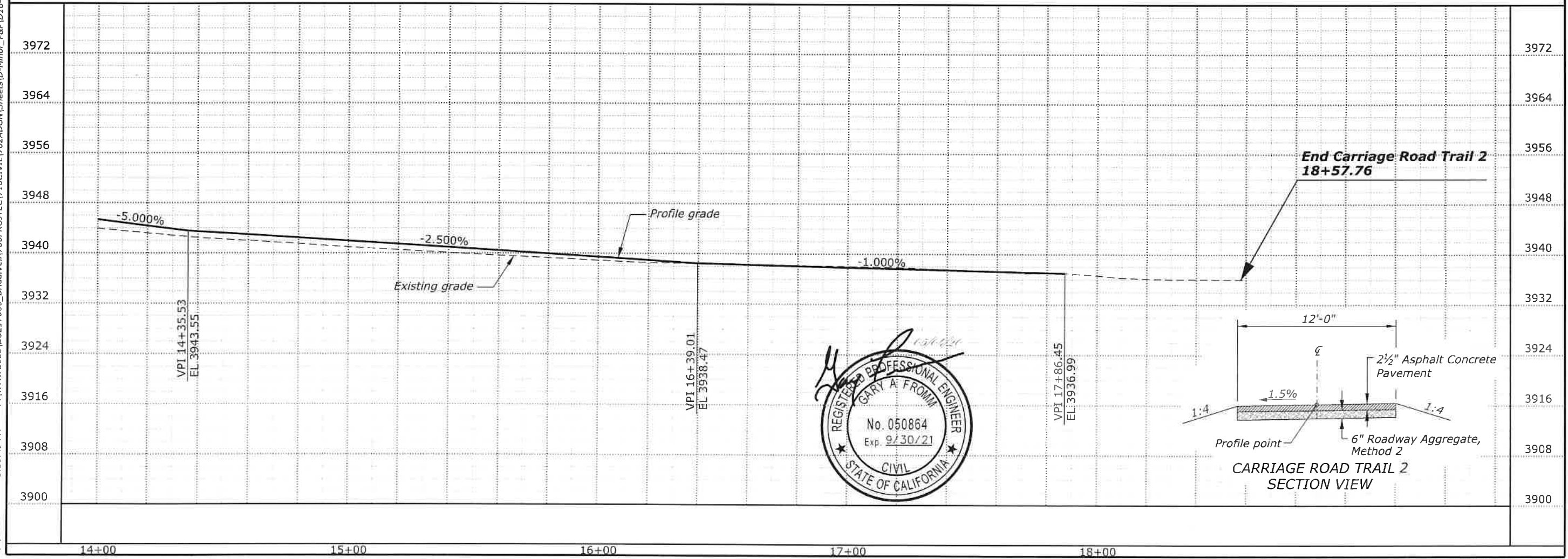
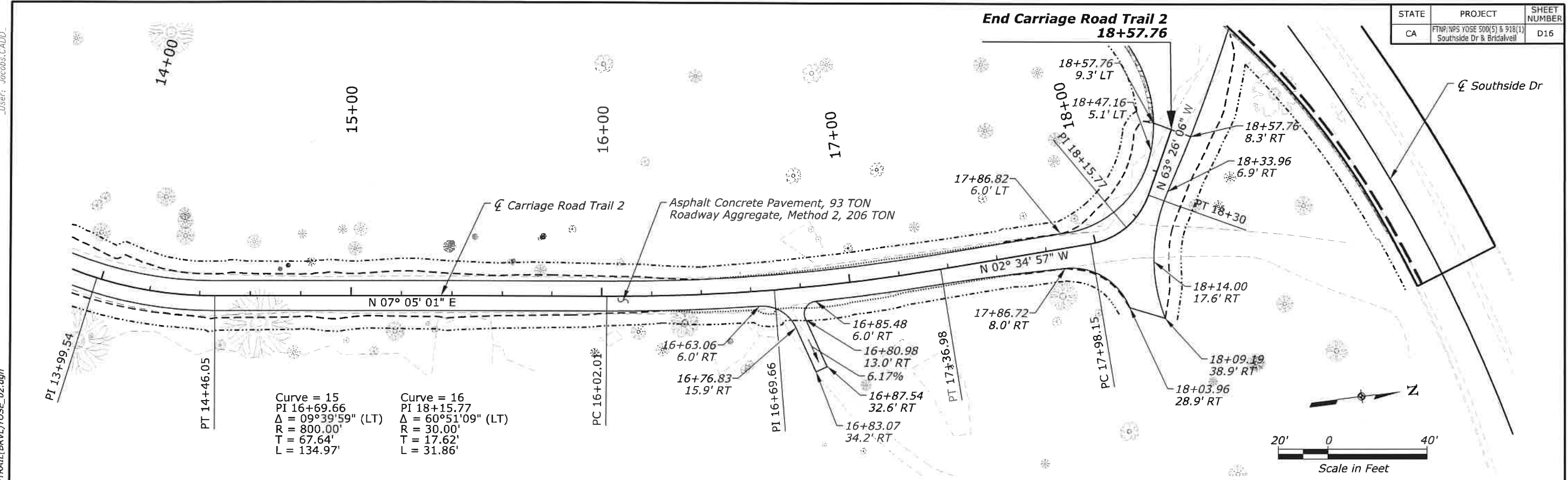
03/15/2021 Pedestrian Plaza Revisions

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STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	D16



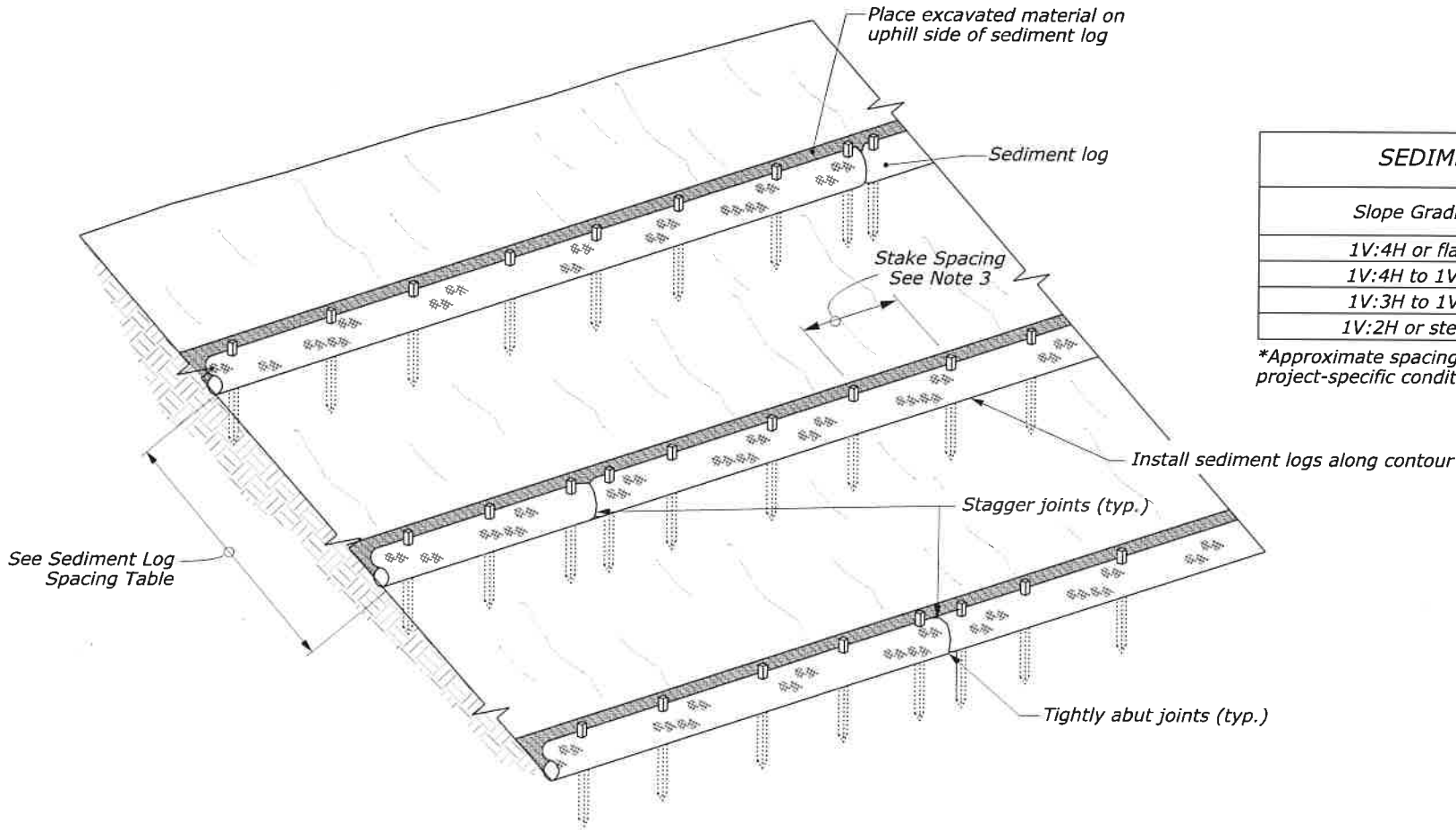
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CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E1

NOTE:

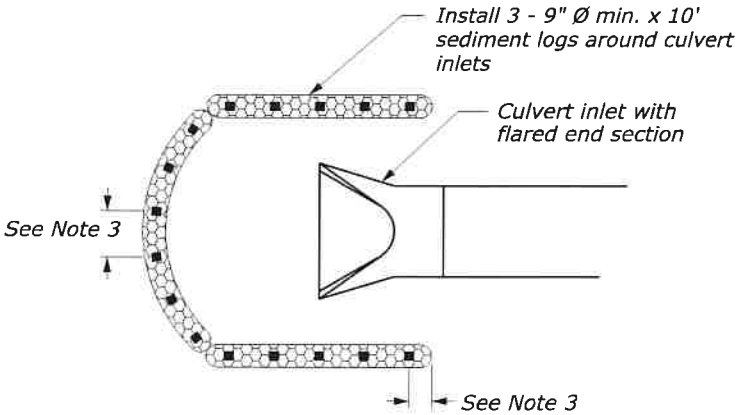
1. Repair all rills or gullies and properly compact prior to installation.
2. Install sediment logs along slope contours. For any 20' section of sediment log, do not allow the sediment log to vary more than 5% from level.
3. Stake sediment logs in place with 1" x 1" or 1" Ø wood stakes. Space stakes 4' o.c. max. Stake sediment logs at each end.
4. Drive stakes into undisturbed soil at least 12" deep. Expose stakes 2" above top of sediment log.
5. For sediment logs on bare soil, construct trenches parallel to the contour. Place sediment logs in continuous contact with trench bottom and sides. Tamp soil backfill against upstream side of sediment log to ensure storm water is forced to flow through sediment log rather than under it.
6. Sediment logs may be overlapped according to the manufacturer's recommendations.

SEDIMENT LOG SPACING TABLE*	
Slope Gradient	9" Ø Sediment Log Maximum spacing (ft)
1V:4H or flatter	60
1V:4H to 1V:3H	45
1V:3H to 1V:2H	30
1V:2H or steeper	15

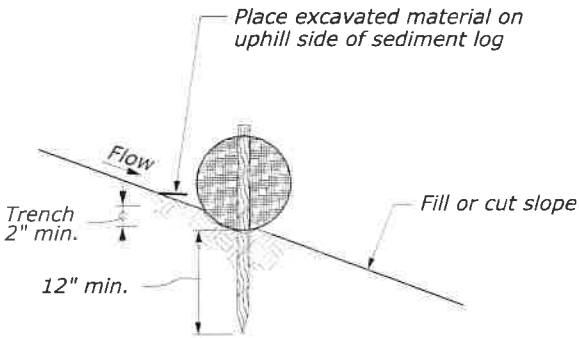
*Approximate spacing shown. Adjust spacing as needed due to project-specific conditions.



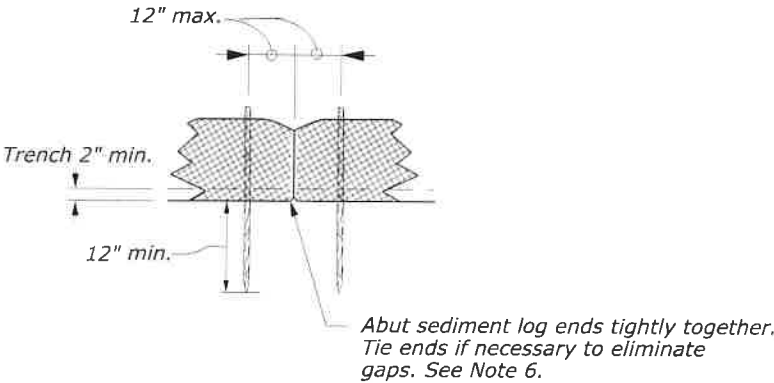
SEDIMENT LOG SLOPE LAYOUT



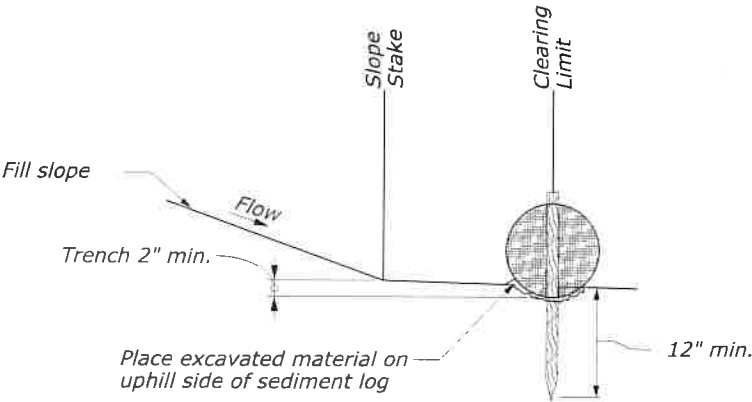
SEDIMENT LOG AT CULVERT INLET



STAKE DETAIL

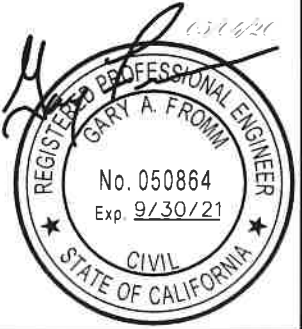


FIBER ROLL JOINT DETAIL



SEDIMENT LOG AS PERIMETER CONTROL INSTALLATION DETAIL

NO SCALE



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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

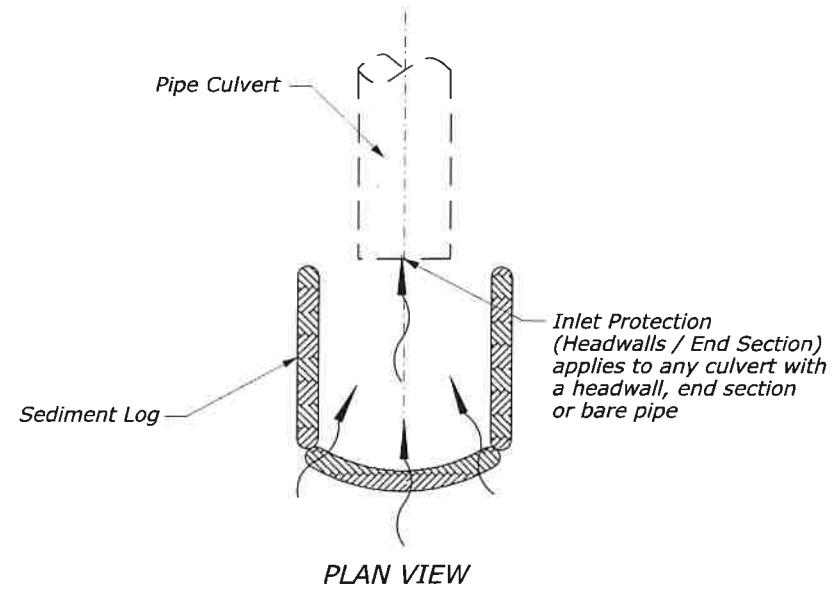
SEDIMENT LOG

SPECIAL
157-A

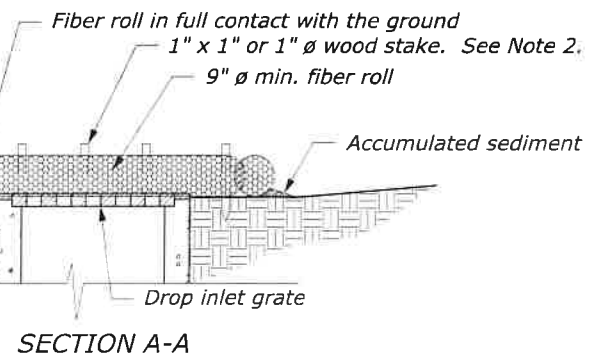
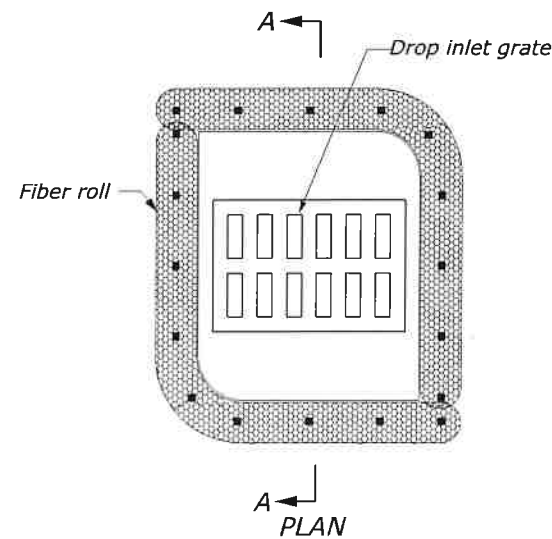
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS VOSE 500(5) & 918(1) Southside Dr & Bridalveil	E2

NOTE:

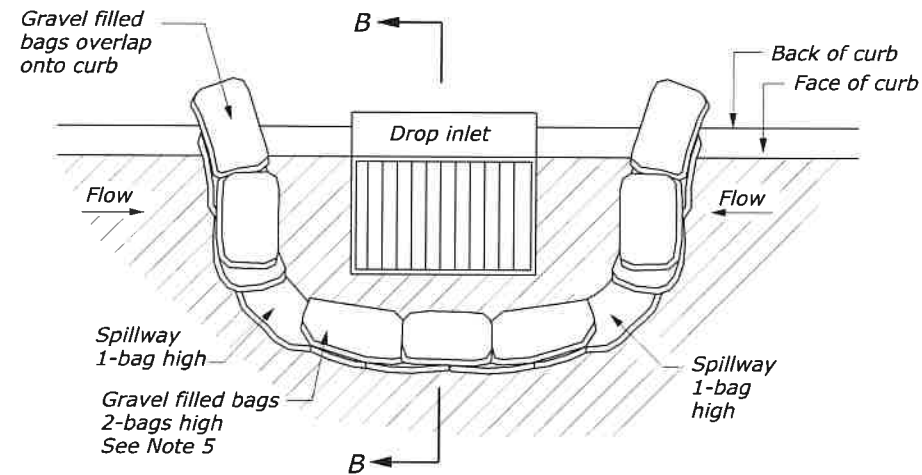
1. Select the inlet protection device to fit field conditions as approved by the CO.
2. Install fiber roll with stakes spaced no more than 24" on center. Drive stakes 12" (min.) into undisturbed soil.
3. Approximate finished dimension of gravel bags is 12" x 18".
4. Maximum top of gravel bag spillway elevation = Top of curb minus 1".
5. Pack gravel filled bags tightly together end to end to ensure no sediment flows between or underneath the bags. Where tight fit is unachievable, install geotextile filter, class 2, type C along the upstream face of the bags. Place fabric over the top of the bags to the spillway elevation. Anchor the fabric by placing the next layer of bags on top of it. Extend the geotextile fabric a minimum of 18" upstream of the bags. Cover geotextile fabric to the top of the fabric with clean, silt-free coarse aggregate between 2" and 3" in diameter.



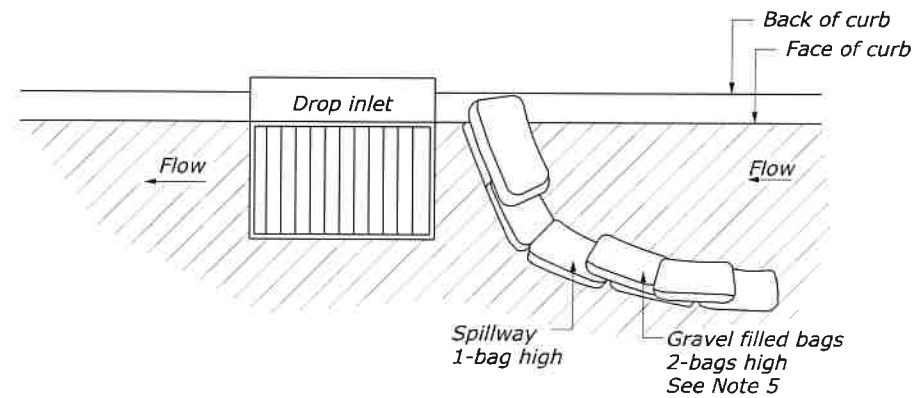
**FIBER ROLL INLET PROTECTION (TYPE A)
(HEADWALLS / END SECTIONS)**



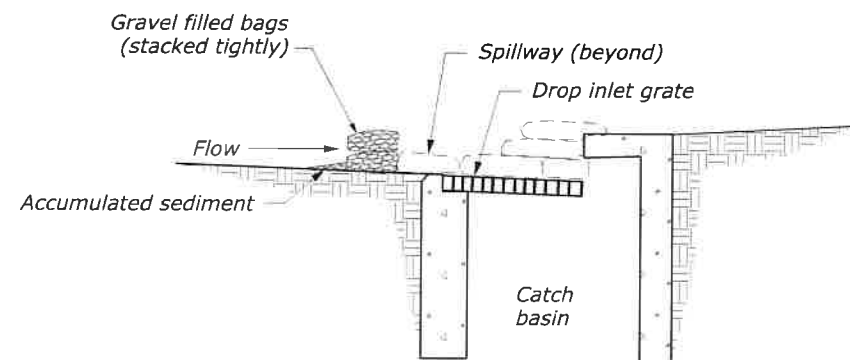
**FIBER ROLL
INLET PROTECTION (TYPE A)
(DROP INLET)**



PLAN VIEW - INLET AT SAG

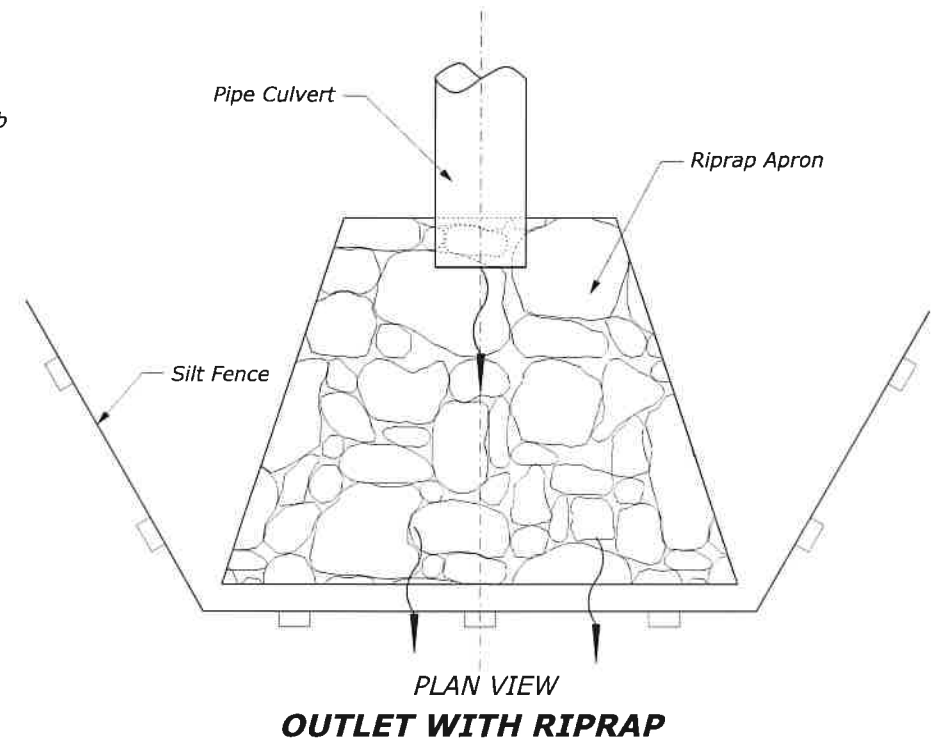


PLAN VIEW - INLET ON GRADE



SECTION B-B

**GRAVEL BAG BERM
DROP INLET PROTECTION (TYPE B)**



OUTLET WITH RIPRAP



NO SCALE

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FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

**TEMPORARY INLET
PROTECTION**

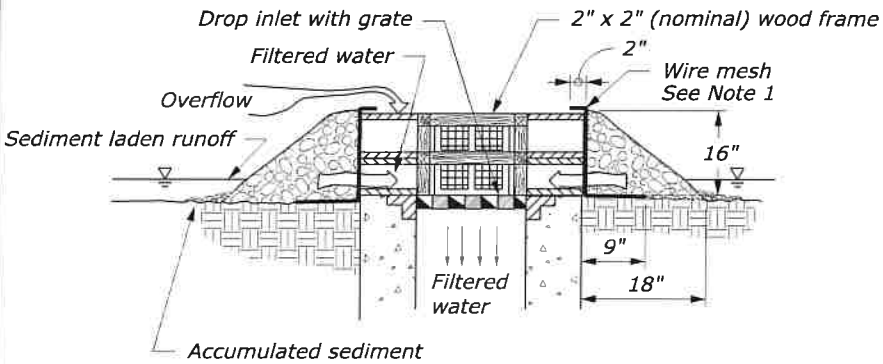
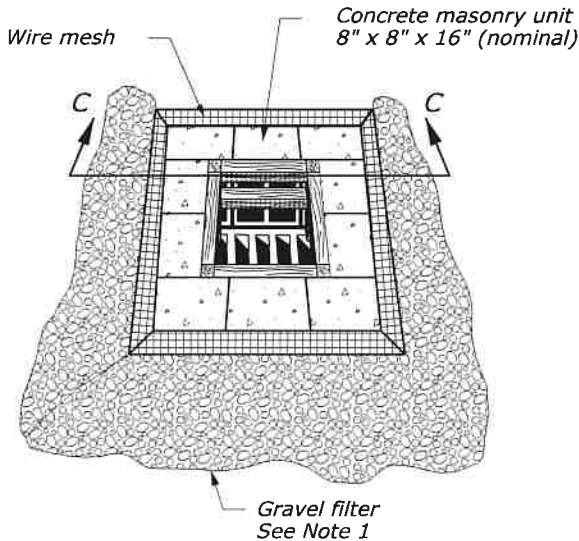
Sheet 1 of 2

SPECIAL
157-51A

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E3

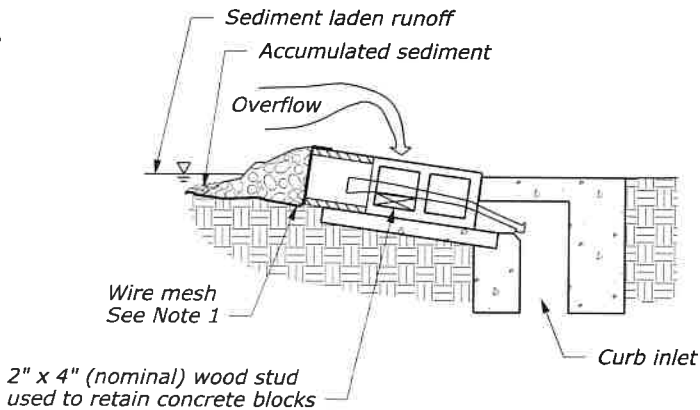
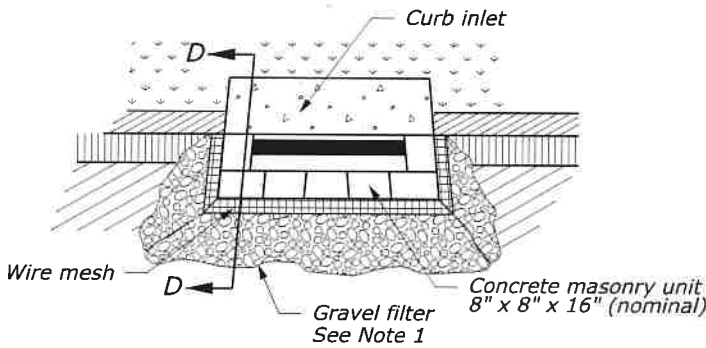
NOTE:

- For Type D1 and D2 gravel filter, use clean, silt-free coarse aggregate between 2" and 3" in diameter. Use wire mesh with 1/2" x 1/2" openings.
- Inlet protection device (Type E) may consist of continuous filter tubing filled with gravel or other prefabricated filter material. Install device according to manufacturer's recommendations.
- Dimensions may vary to fit field conditions.



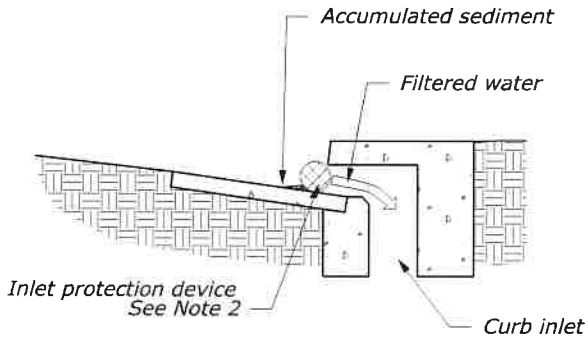
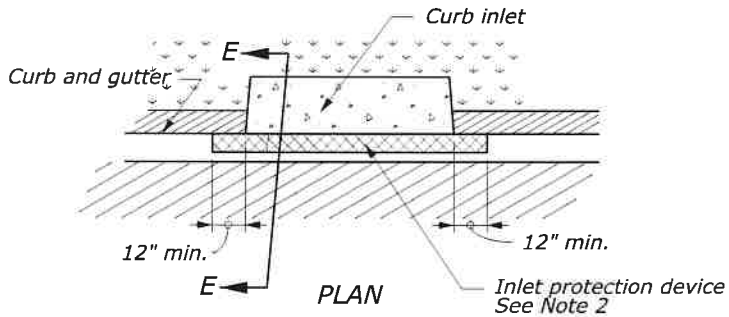
SECTION C-C

**BLOCK AND GRAVEL
DROP INLET PROTECTION (TYPE D1)**



SECTION D-D

**BLOCK AND GRAVEL
CURB INLET PROTECTION (TYPE D2)**



SECTION E-E

**INLET PROTECTION DEVICE
CURB INLET PROTECTION (TYPE E)**



NO SCALE

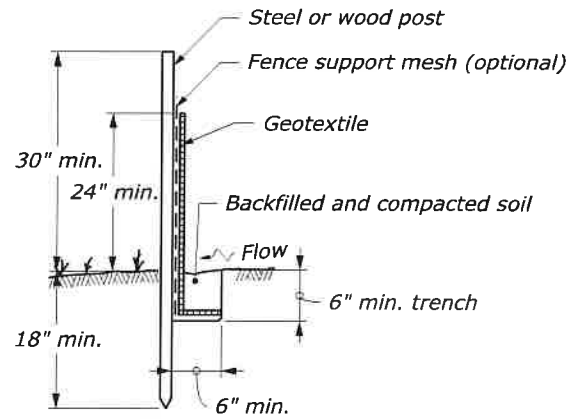
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

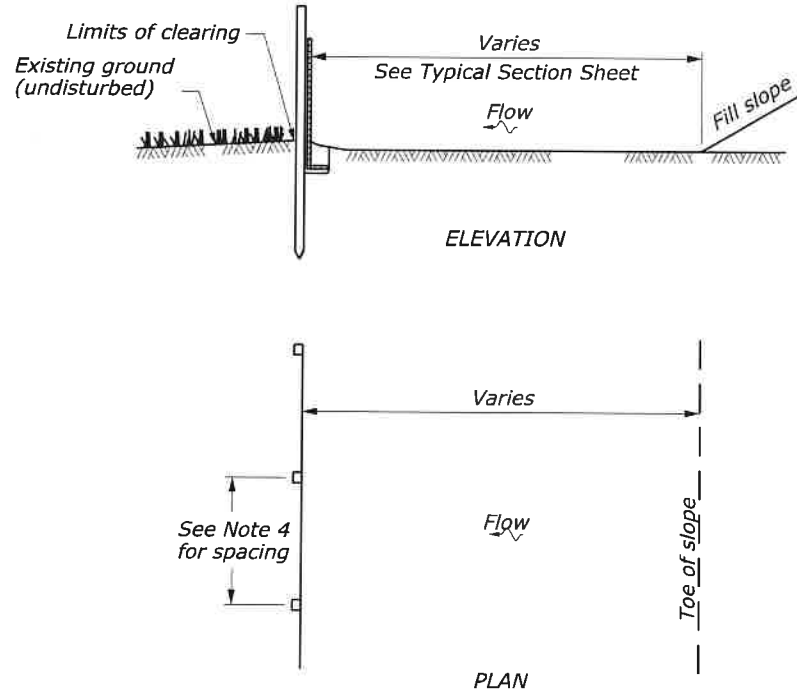
**TEMPORARY INLET
PROTECTION**
Sheet 2 of 2

SPECIAL
157-51B

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E4



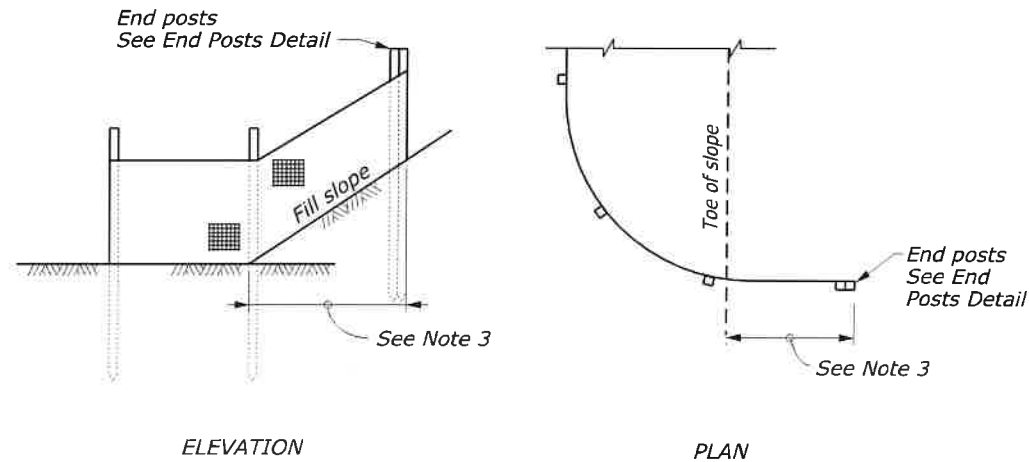
POST AND GEOTEXTILE INSTALLATION DETAIL



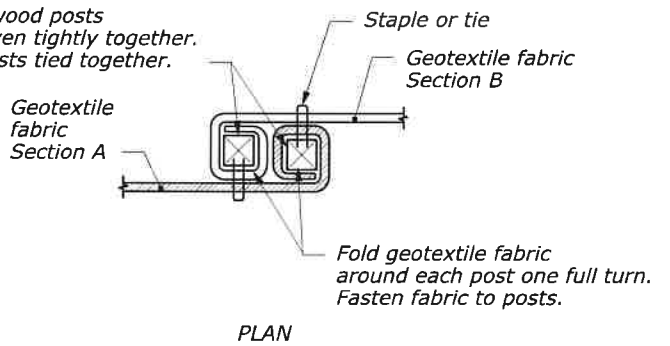
SILT FENCE INSTALLATION AT TOE OF FILL

NOTE:

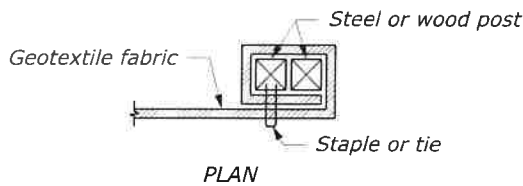
1. Silt fence may be installed using machine slicing as approved by the CO. Install machine-sliced silt fence according to the manufacturer's recommendations.
2. Install silt fence to follow the ground contours as closely as possible.
3. As the slope is constructed, curve the silt fence up the slope to prevent water from running around the ends.
4. Post spacing with fence support mesh = 10 ft. (max.)
Post spacing without fence support mesh = 6 ft. (max.)



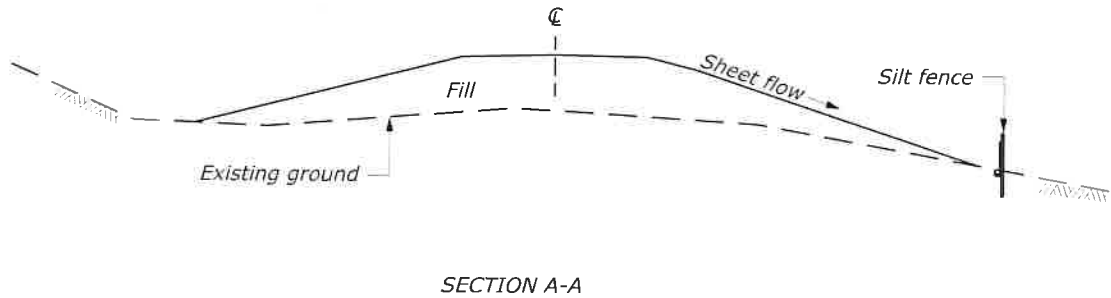
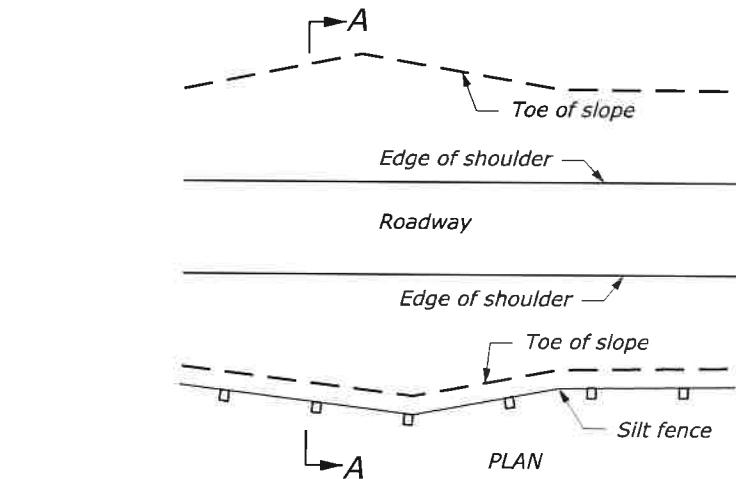
END DETAIL



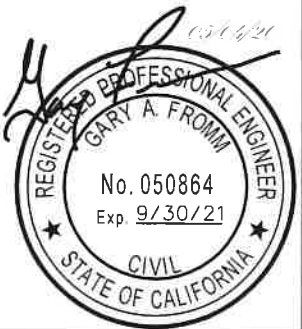
POSTS AT JOINTS



END POSTS DETAIL



SILT FENCE AS PERIMETER CONTROL



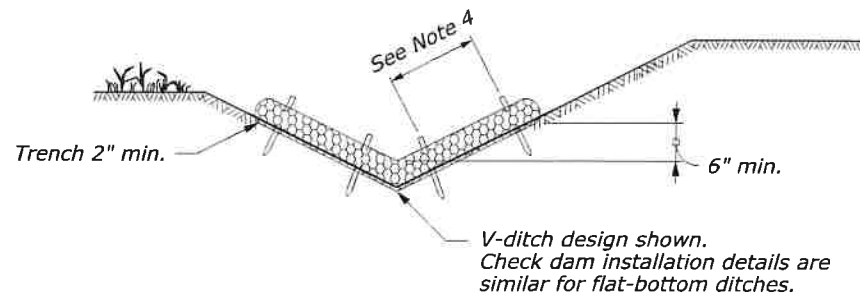
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
SILT FENCE	
DETAIL APPROVED FOR USE REVISED: 08/2014	DETAIL C157-50

NO SCALE

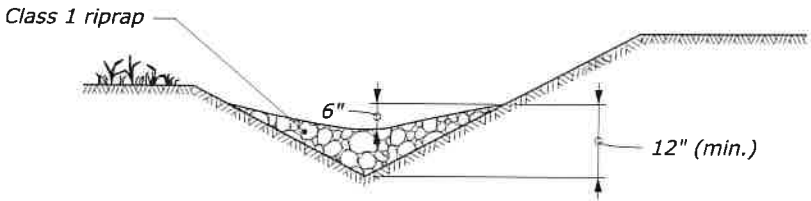
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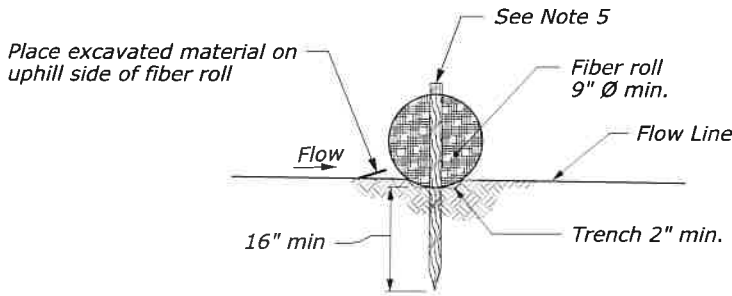
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E5



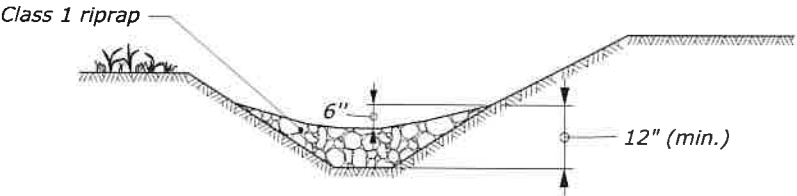
CROSS SECTION



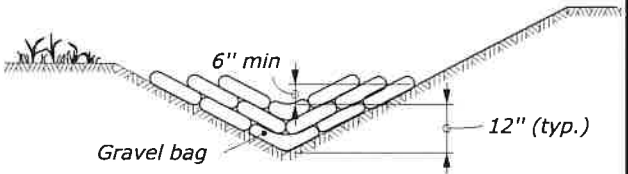
V-DITCH
CROSS SECTION



FIBER ROLL
STAKING DETAIL



FLAT-BOTTOM DITCH
CROSS SECTION



CROSS SECTION



PLAN

FIBER ROLL CHECK DAM SPACING* (See Note 7)	
DITCH GRADE	CHECK DAM SPACING (max.) (ft)
2%	150
3%	100
4%	80
5%	60

* Spacing calculated based on 9" Ø min sediment log. Do not use sediment log check dams on ditch grades steeper than 5%.

FIBER ROLL CHECK DAM

RIPRAP CHECK DAM SPACING (See Note 7)	
DITCH GRADE	CHECK DAM SPACING (max.) (ft)
2%	150
3%	100
4%	80
5%	60
6%	50

RIPRAP CHECK DAM

GRAVEL BAG CHECK DAM SPACING* (See Note 7)	
DITCH GRADE	CHECK DAM SPACING (max.) (ft)
2%	150
3%	100
4%	80
5%	60
6%	50

* Do not use gravel bag check dams on ditch grades steeper than 6%

GRAVEL BAG CHECK DAM



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
CHECK DAM	
DETAIL APPROVED FOR USE 6/1/2011 REVISED: 06/2014	DETAIL C157-53

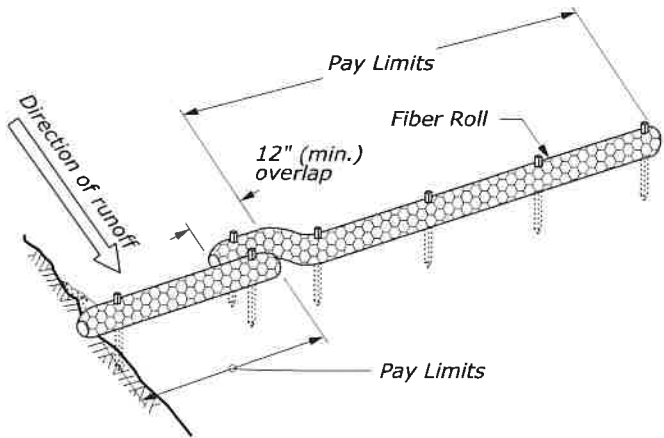
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STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E6

NOTE:

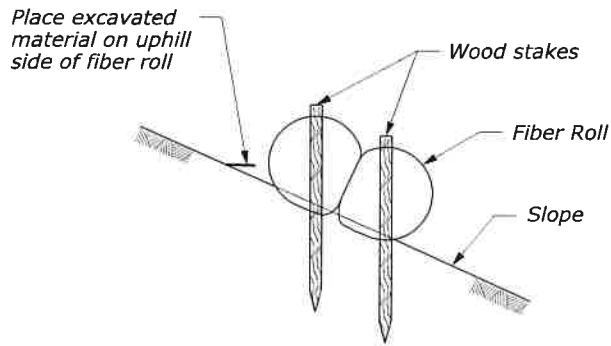
1. Repair all rills or gullies and properly compact prior to installation.
2. Install fiber rolls along slope contours. For any 20' section of fiber roll, do not allow the fiber roll to vary more than 5% from level.
3. Stake fiber rolls in place with 1" x 1" or 1" Ø wood stakes. Space stakes 4' o.c. max. on slopes and 2' o.c. max. culverts. Stake fiber rolls 6-inches from each end.
4. Drive stakes into undisturbed soil at least 12" deep. Expose stakes 2" above top of fiber roll.
5. For fiber rolls on bare soil, construct trenches parallel to the contour. Place fiber rolls in continuous contact with trench bottom and sides. Tamp soil backfill against upstream side of fiber roll to ensure storm water is forced to flow through fiber roll rather than under it.
6. Place fiber rolls all the way around the inlet when the disturbance is on both the road and around the culvert and all water entering the culvert is crossing the disturbance.



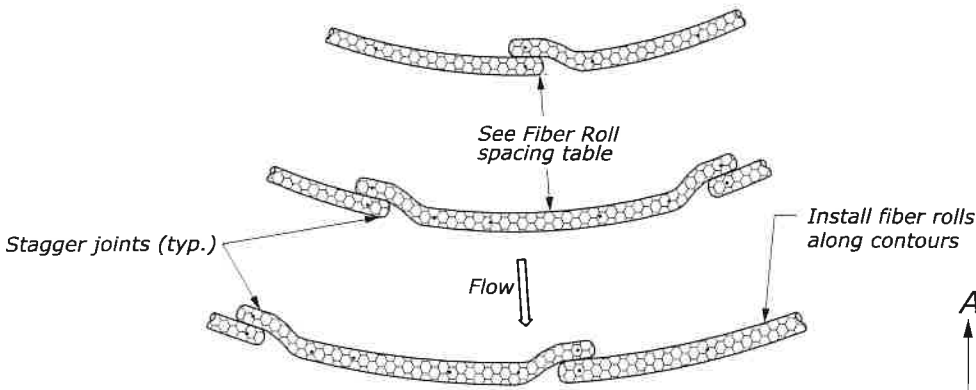
FIBER ROLL JOINT DETAIL

FIBER ROLL SPACING TABLE*	
Slope Gradient	9" Ø Fiber Roll Maximum spacing (ft)
1V:4H or flatter	60
Between 1V:4H and 1V:3H	45
Between 1V:3H and 1V:2H	30
1V:2H or steeper	15

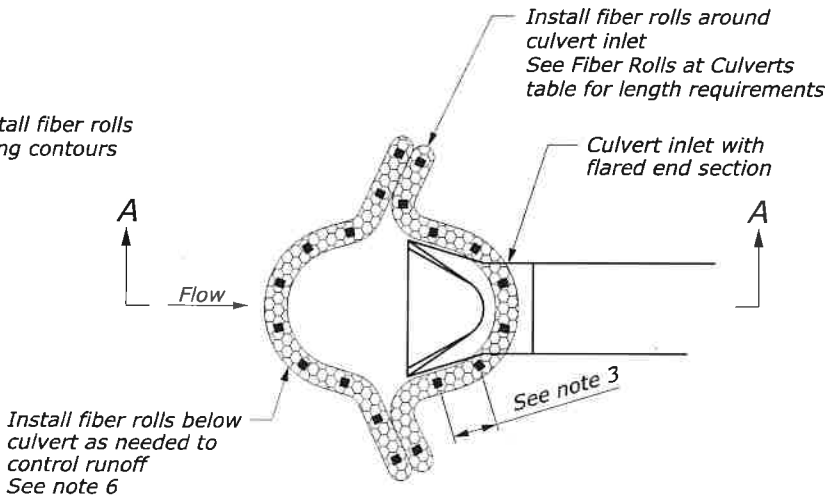
*Approximate spacing shown. Adjust spacing as needed due to project-specific conditions.



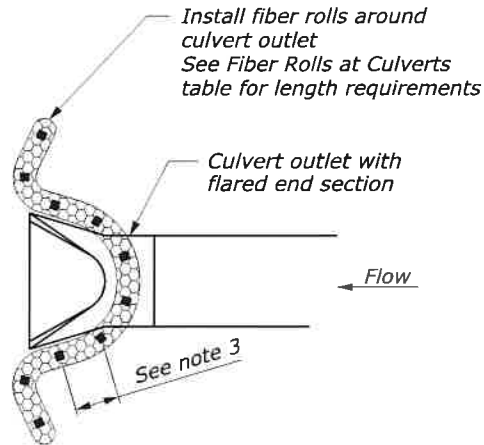
FIBER ROLL LAPPING DETAIL



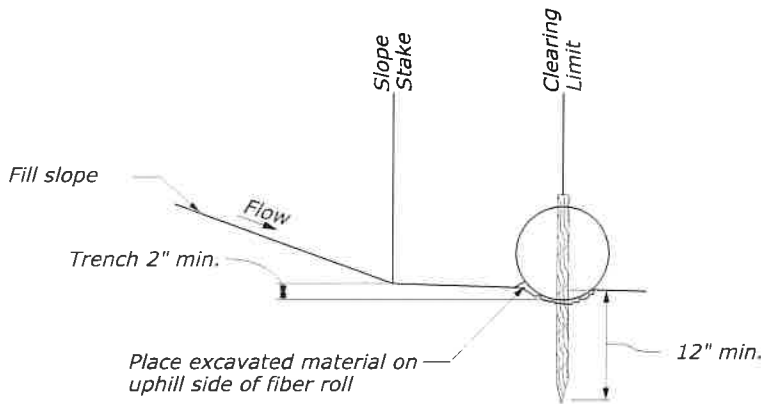
FIBER ROLL SLOPE LAYOUT



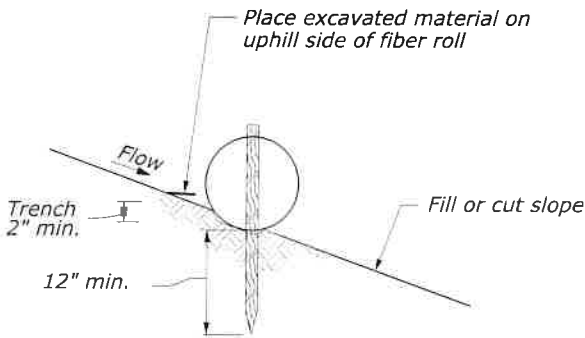
FIBER ROLL AT CULVERT INLET



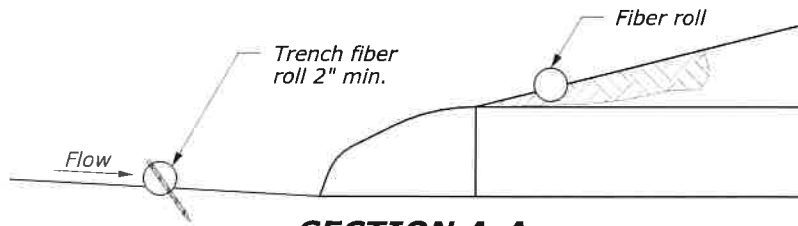
FIBER ROLL AT CULVERT OUTLET



FIBER ROLL AS PERIMETER CONTROL INSTALLATION DETAIL



STAKE DETAIL



SECTION A-A

FIBER ROLLS AT CULVERTS*	
Culvert Size	9" Ø Fiber Roll length (ft)
24" or smaller	10
30" to 48"	20
54" or larger	30

*Approximate length shown for rolls across the top of the culvert inlet only. Adjust length as needed due to project-specific conditions.

NO SCALE

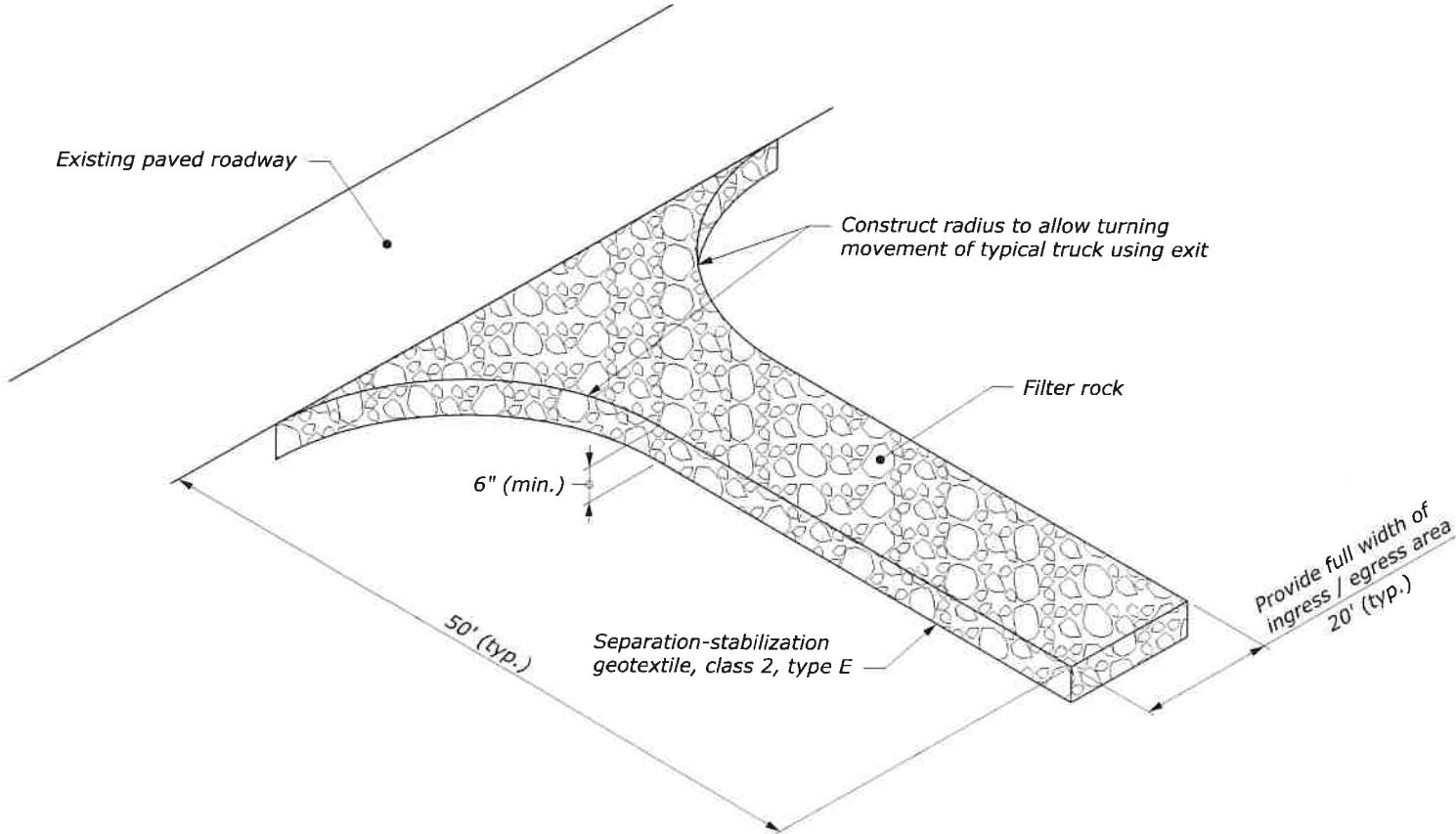
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
FIBER ROLL	
DETAIL APPROVED FOR USE 01/2011 REVISED: 12/2017	DETAIL C157-55



STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E7

NOTE:

- 1. Use this entrance for construction vehicles only.
- 2. Construct drainage ditches along entrance as directed. Provide temporary drainage culvert where entrance crosses existing drainage ditches.
- 3. Minimize tracking onto paved roadway by removing built up sediment.
- 4. Adjust length to fit field conditions as approved.

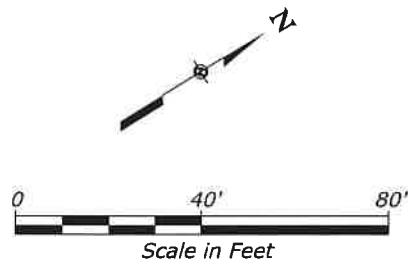


STABILIZED CONSTRUCTION EXIT



U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION WESTERN FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY STANDARD	
STABILIZED CONSTRUCTION EXIT	
DETAIL APPROVED FOR USE --/----	STANDARD
REVISED: 7/2016	W157-19

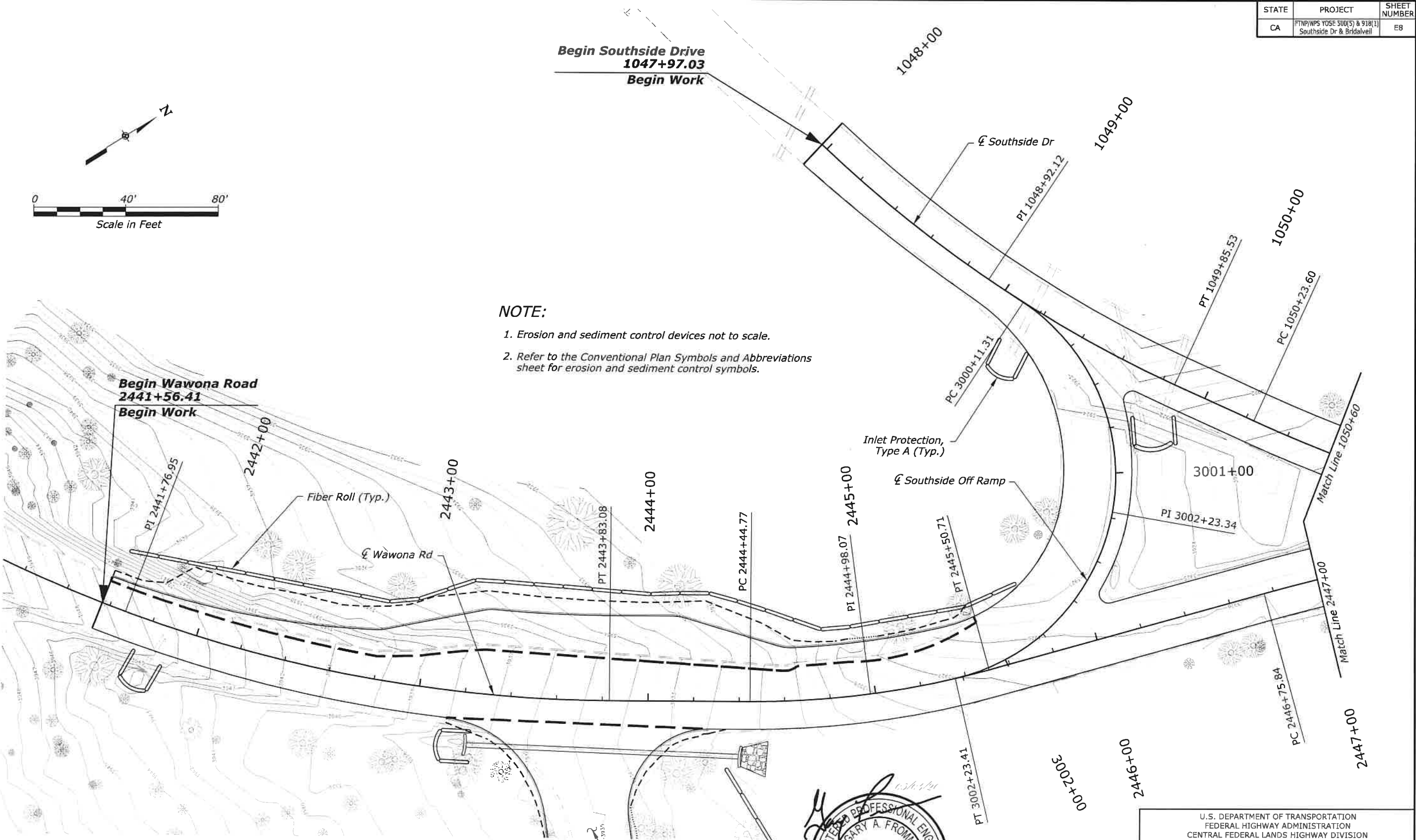
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E8



Begin Southside Drive
1047+97.03
Begin Work

- NOTE:**
1. Erosion and sediment control devices not to scale.
 2. Refer to the Conventional Plan Symbols and Abbreviations sheet for erosion and sediment control symbols.

Begin Wawona Road
2441+56.41
Begin Work



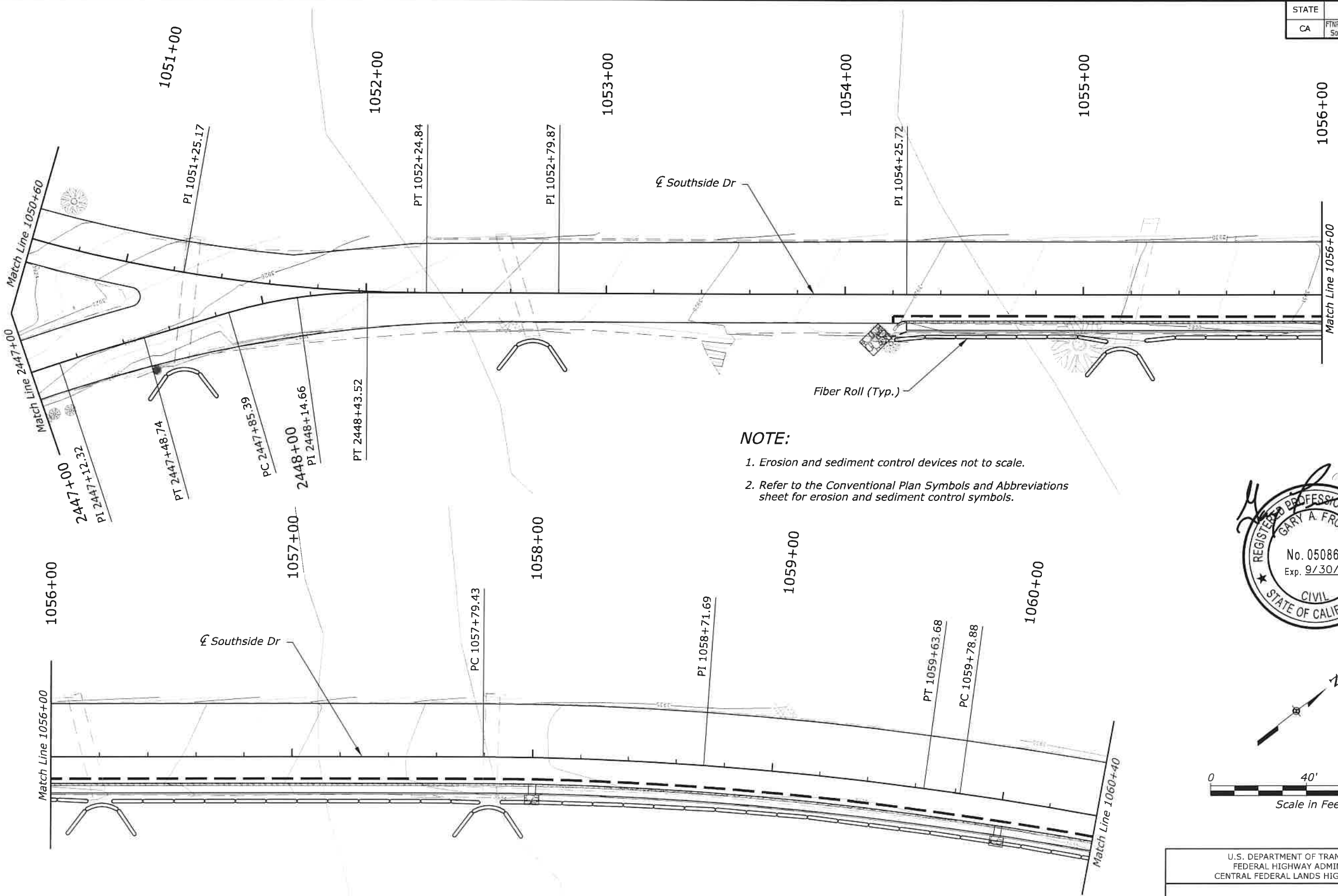
See Sheet E11



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**EROSION AND SEDIMENT
CONTROL
2441+56.41 TO 2447+00
(1050+60)**

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E9



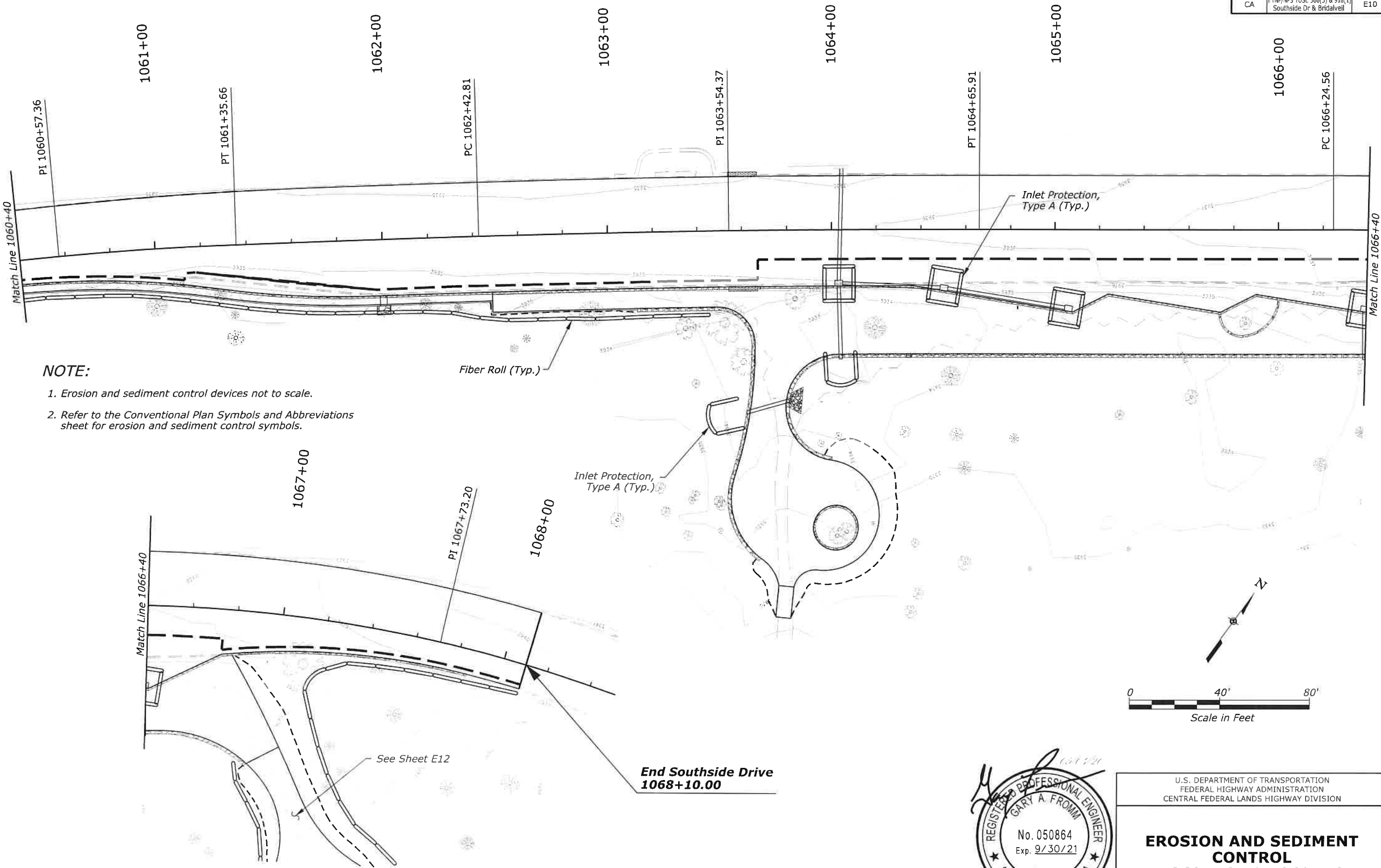
- NOTE:**
- 1. Erosion and sediment control devices not to scale.
 - 2. Refer to the Conventional Plan Symbols and Abbreviations sheet for erosion and sediment control symbols.

0 40' 80'
Scale in Feet

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

EROSION AND SEDIMENT CONTROL
1050+60 TO 1060+40
(2447+00)

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E10



NOTE:

1. Erosion and sediment control devices not to scale.
2. Refer to the Conventional Plan Symbols and Abbreviations sheet for erosion and sediment control symbols.

**End Southside Drive
1068+10.00**



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

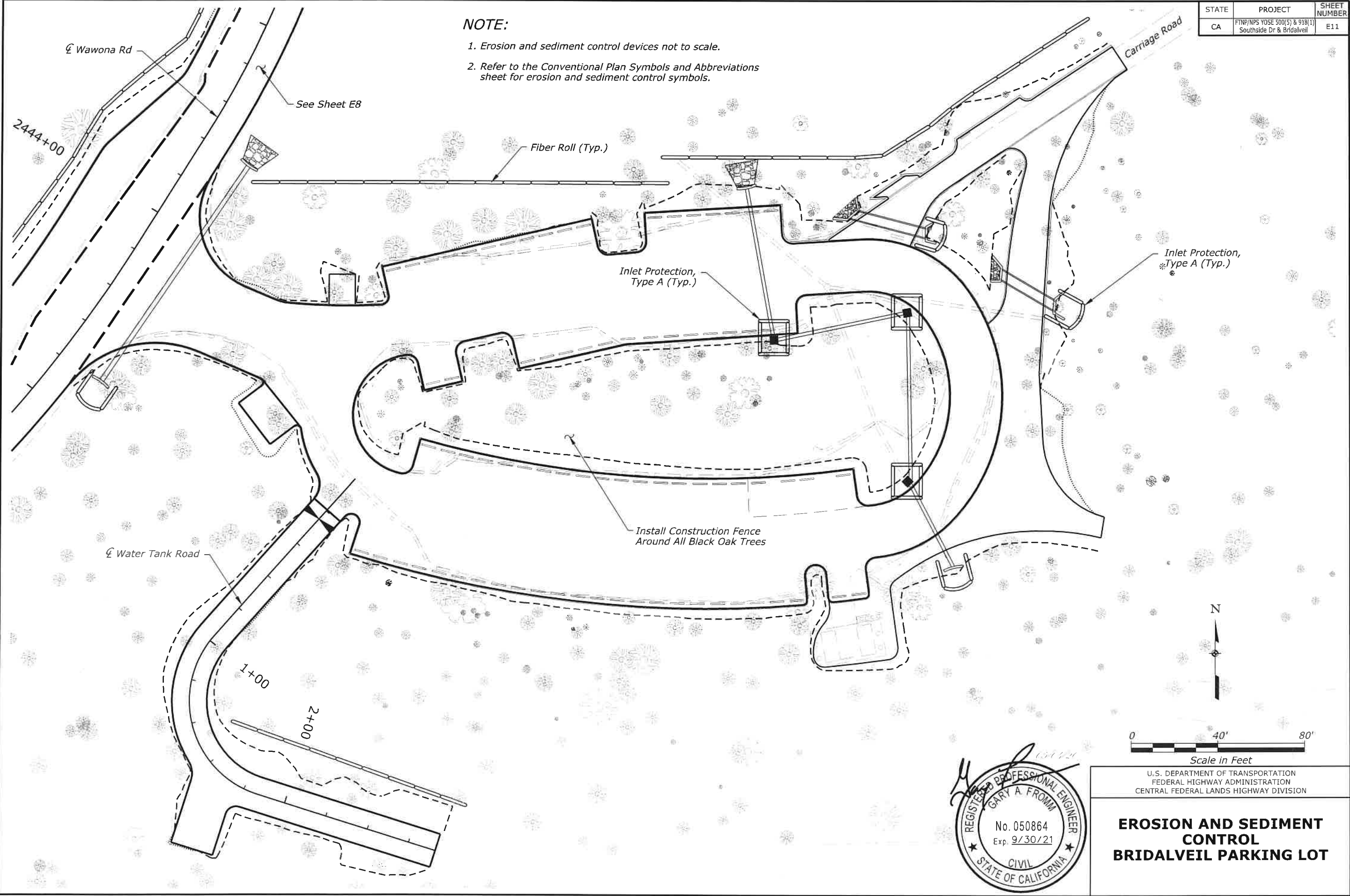
**EROSION AND SEDIMENT
CONTROL
1060+40 TO 1068+10**

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STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	E11

NOTE:
1. Erosion and sediment control devices not to scale.
2. Refer to the Conventional Plan Symbols and Abbreviations sheet for erosion and sediment control symbols.



**EROSION AND SEDIMENT CONTROL
BRIDALVEIL PARKING LOT**

NPS PMS NO.: 215798 TIC NO.:

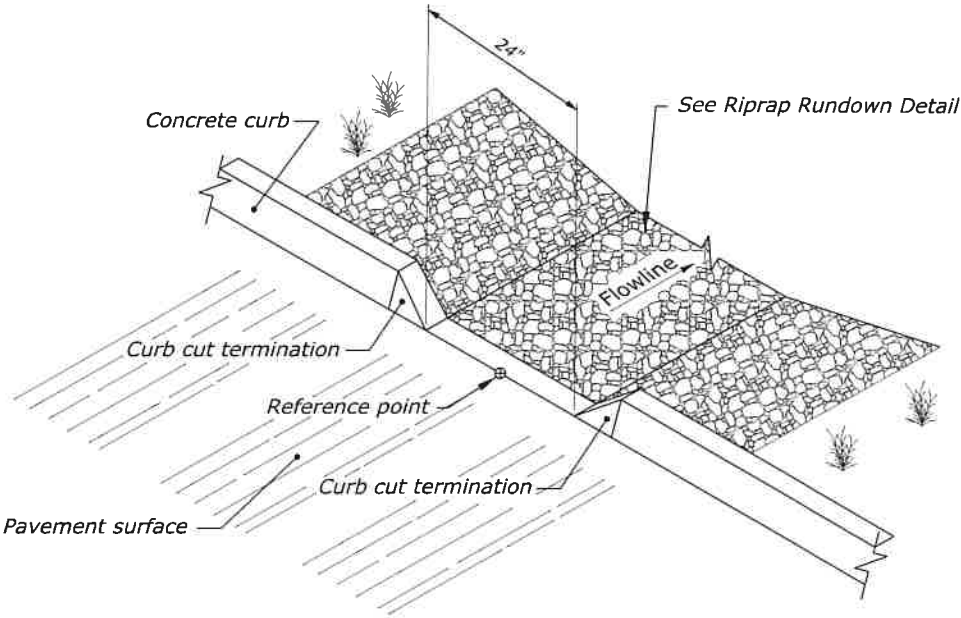
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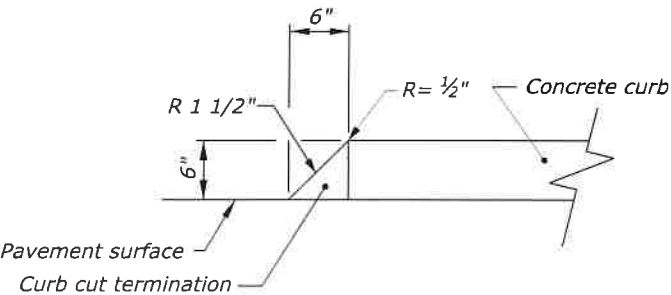
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	G1

NOTE:

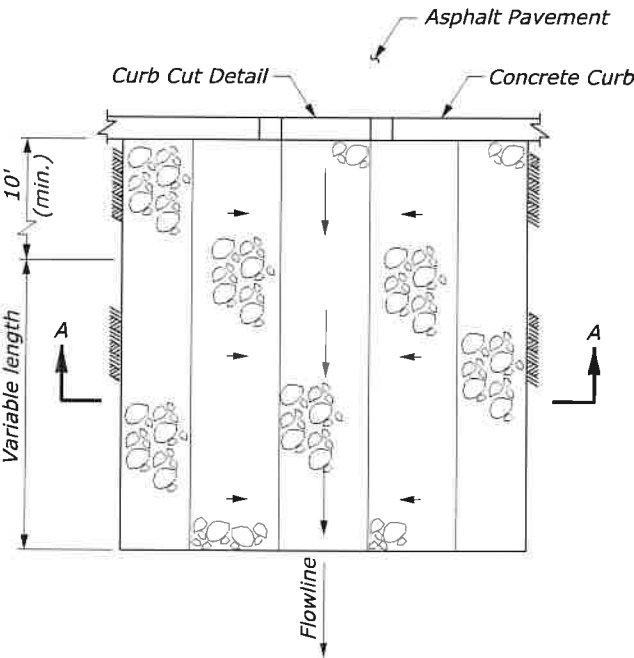
1. For additional locations at CO's discretion.



CURB CUT DETAIL



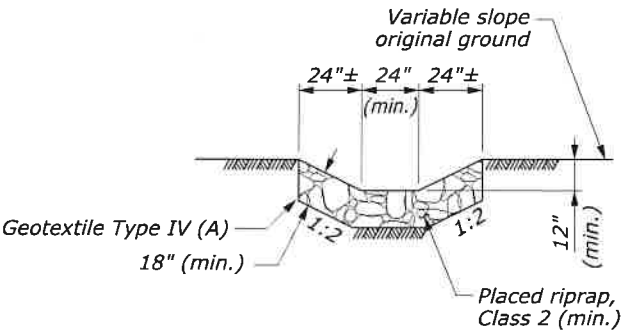
CURB CUT TERMINATION



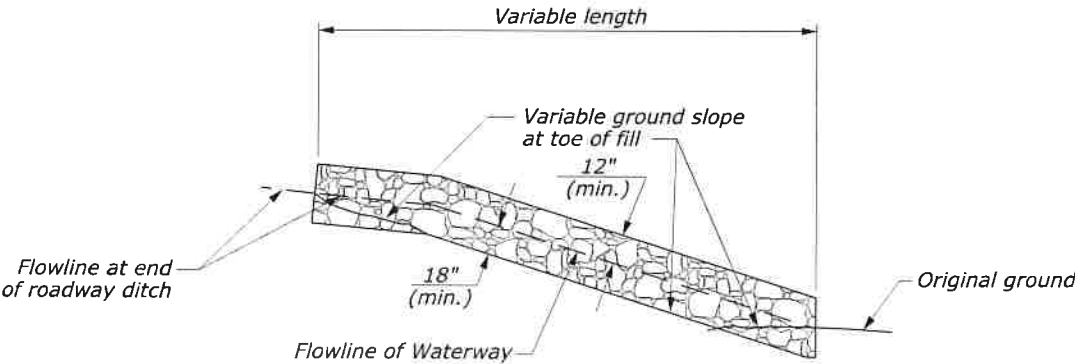
PLAN VIEW

NOTE:

1. Excavation for placement of riprap will not be measured for payment.
2. Furnish geotextile materials conforming to Subsection 714.01 (a).



SECTION A-A



ELEVATION

RIPRAP RUNDOWN DETAIL



NO SCALE

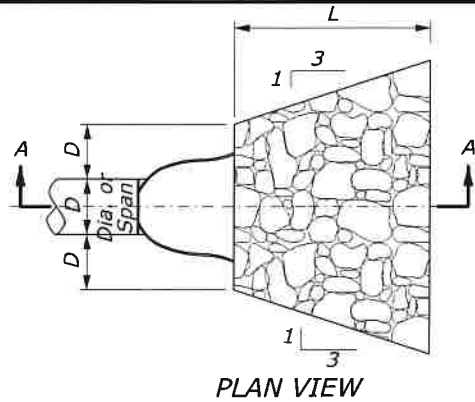
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

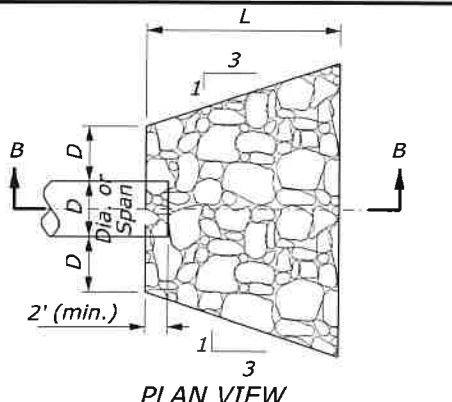
**CURB CUT WITH
RIPRAP RUNDOWN
DETAIL**

SPECIAL
251-A

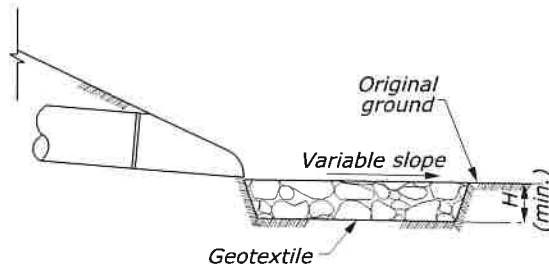
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	G2



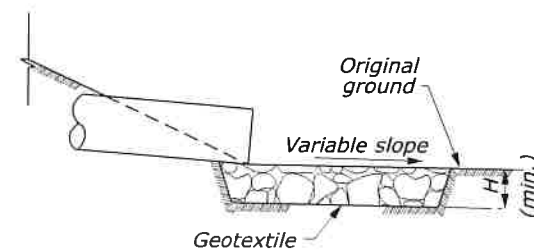
PLAN VIEW
CULVERT WITH STANDARD
END SECTION



PLAN VIEW
CULVERT WITHOUT STANDARD
END SECTION

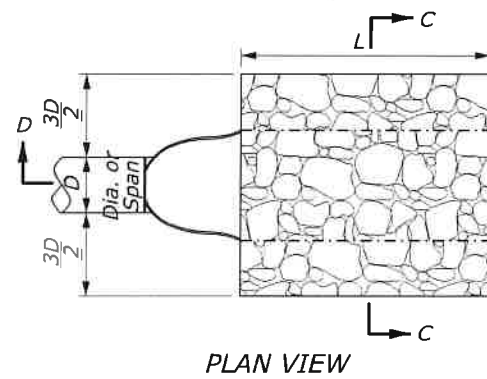


SECTION A-A

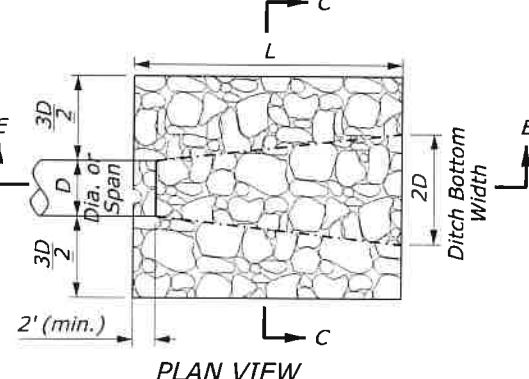


SECTION B-B

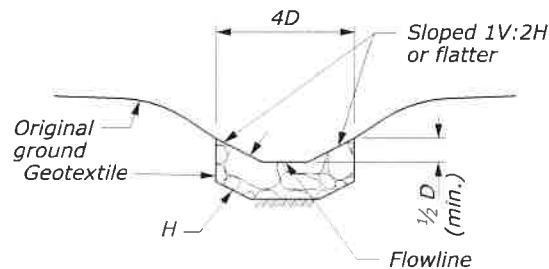
**PROTECTIVE APRON AT CULVERT OUTLET
WITHOUT DITCH**



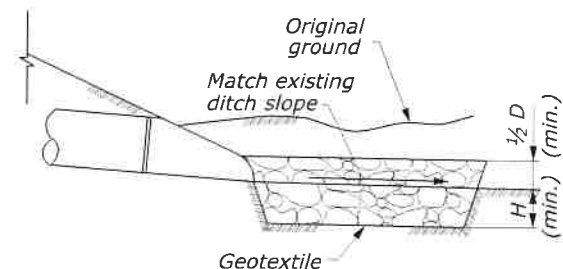
PLAN VIEW
CULVERT WITH STANDARD
END SECTION



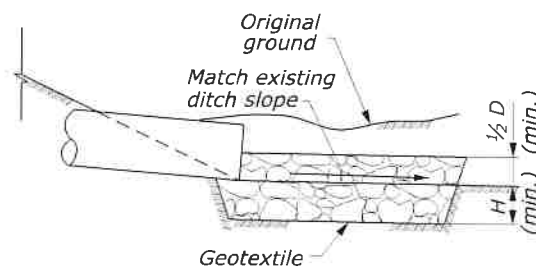
PLAN VIEW
CULVERT WITHOUT STANDARD
END SECTION



SECTION C-C



SECTION D-D



SECTION E-E

**PROTECTIVE APRON AT CULVERT OUTLET
WITH DITCH**

OUTLET WITHOUT DITCH PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES						
	CULVERT SIZE D (inches)	RIPRAP CLASS	LENGTH OF APRON L (feet)	DEPTH OF APRON H (feet)	ESTIMATED RIPRAP QUANTITY (CY)	ESTIMATED GEOTEXTILE QUANTITY (SY)
WITH END SECTION	12	2	4	1.5	1	5
	18	2	6	1.5	2.2	9
	24	2	8	1.5	3.9	14
	30	3	12.5	2	10.9	28
	36	3	16	2	15.6	37
	42	4	21	2.5	34.1	63
WITHOUT END SECTION	48	4	24	2.5	44.5	79
	12	2	6	1.5	1.7	8
	18	2	8	1.5	3.2	12
	24	2	10	1.5	5.2	17
	30	3	14.5	2	13.3	33
	36	3	17	2	18.5	43
	42	4	23	2.5	38.7	70
	48	4	26	2.5	49.8	87

NOTE:

1. Use for aprons serving culverts with slopes of less than 10%.
2. Furnish geotextile conforming to Subsection 714.01(a).
3. Excavation for placement of riprap will not be measured for payment.

OUTLET WITH DITCH PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES						
	CULVERT SIZE D (inches)	RIPRAP CLASS	LENGTH OF APRON L (feet)	DEPTH OF APRON H (feet)	ESTIMATED RIPRAP QUANTITY (CY)	ESTIMATED GEOTEXTILE QUANTITY (SY)
WITH END SECTION	12	2	4	1.5	0.9	5
	18	2	6	1.5	2	8
	24	2	8	1.5	3.6	13
	30	3	12.5	2	9.3	24
	36	3	15	2	13.4	32
	42	4	21	2.5	27.3	53
WITHOUT END SECTION	48	4	24	2.5	35.6	65
	12	2	6	1.5	1.4	6
	18	2	8	1.5	2.7	10
	24	2	10	1.5	4.5	15
	30	3	14.5	2	10.8	27
	36	3	17	2	15.2	36
	42	4	23	2.5	29.9	57
	48	4	26	2.5	38.6	70



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

**PLACED RIPRAP
AT CULVERT OUTLETS**

SPECIAL
251-B

NO SCALE

NPS PMIS NO: 215798 TIC NO:

Friction angle, $\phi = 45^\circ$
Cohesion, $c = 0$
Bulk unit weight, $\gamma = 150.0 \text{ lbf/ft}^3$
Allowable bearing pressure = 4 ksf

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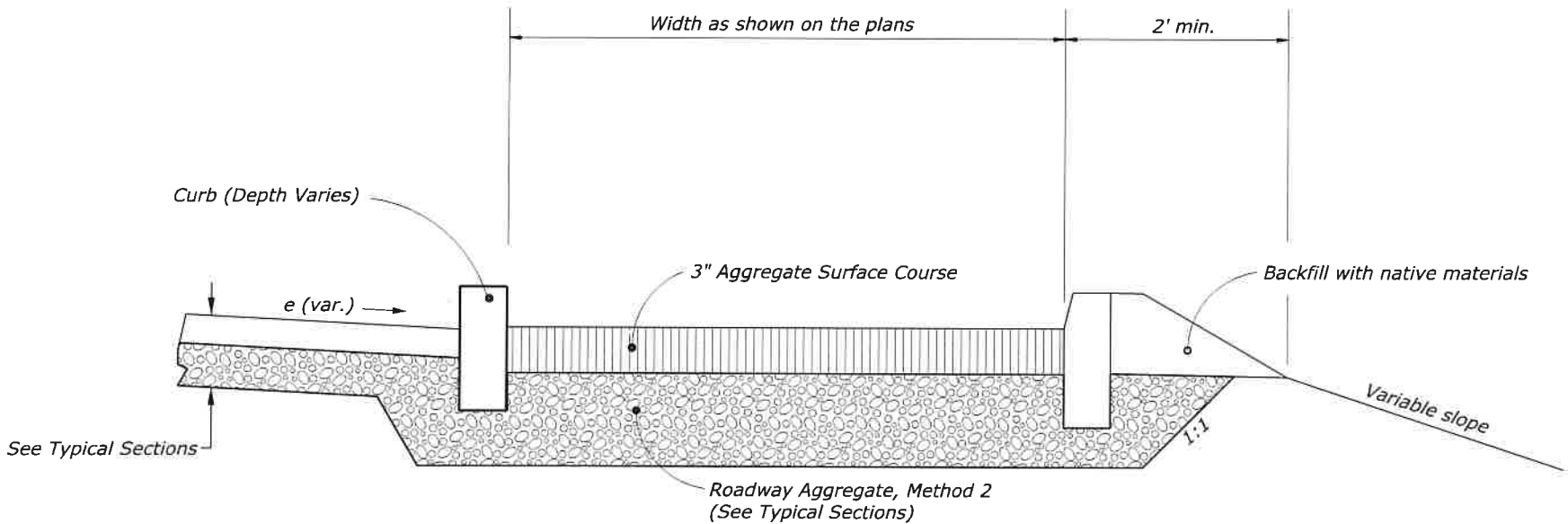
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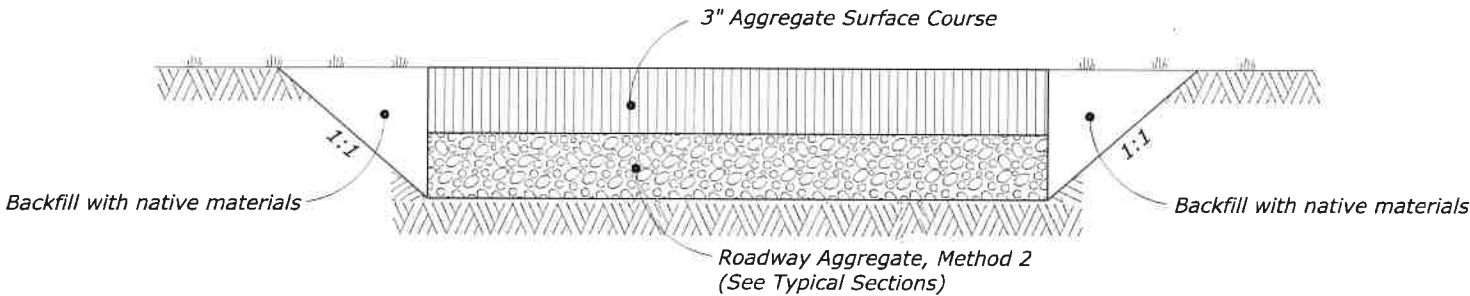
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	H1

NOTE:

1. Trail excavation & backfill is subsidiary to the Roadway Aggregate, Method 2 and Aggregate Surface Course pay items.



PEDESTRIAN TRAIL ADJACENT TO CURB



PEDESTRIAN TRAIL

NO SCALE



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

**AGGREGATE SURFACE COURSE
PEDESTRIAN TRAIL**

SPECIAL
302-A

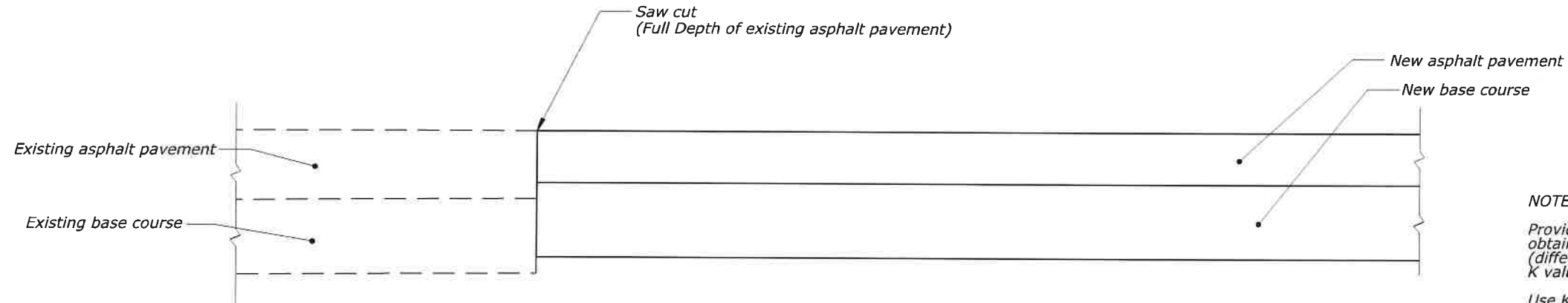
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STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	K1



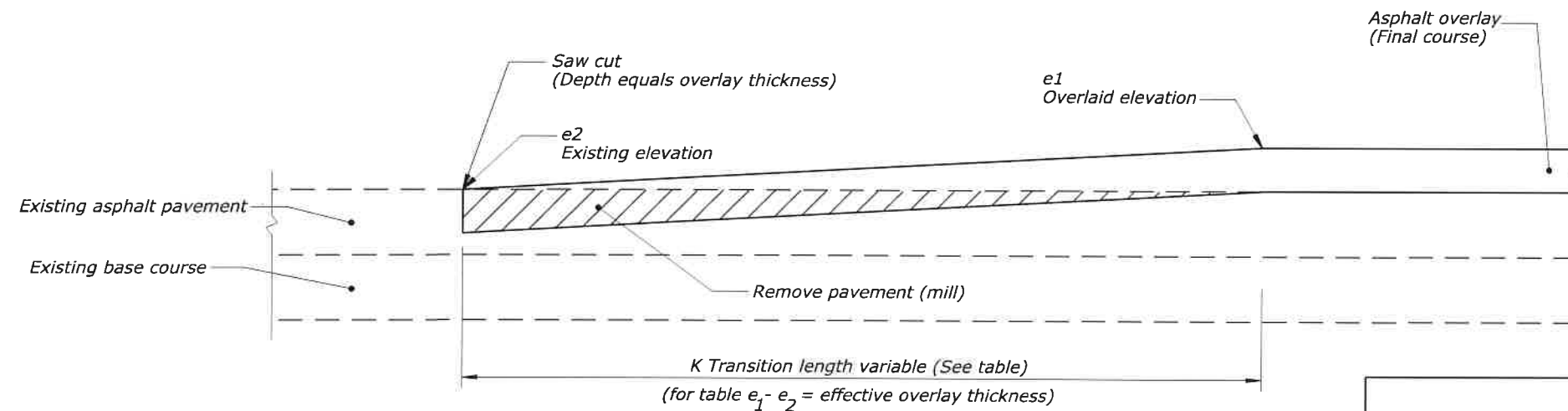
NEW PAVEMENT

NOTE :

Provide a transition length in feet that is not less than the value obtained by multiplying the effective overlay thickness in inches (difference between the existing and overlaid elevations) by the K value from the Table for the posted speed of the roadway.

Use $K*[e1-e2]=T$, or $K*[d1-d2]=T$ (whichever applies), to obtain the transition length.
(Minimum transition length=30 feet)

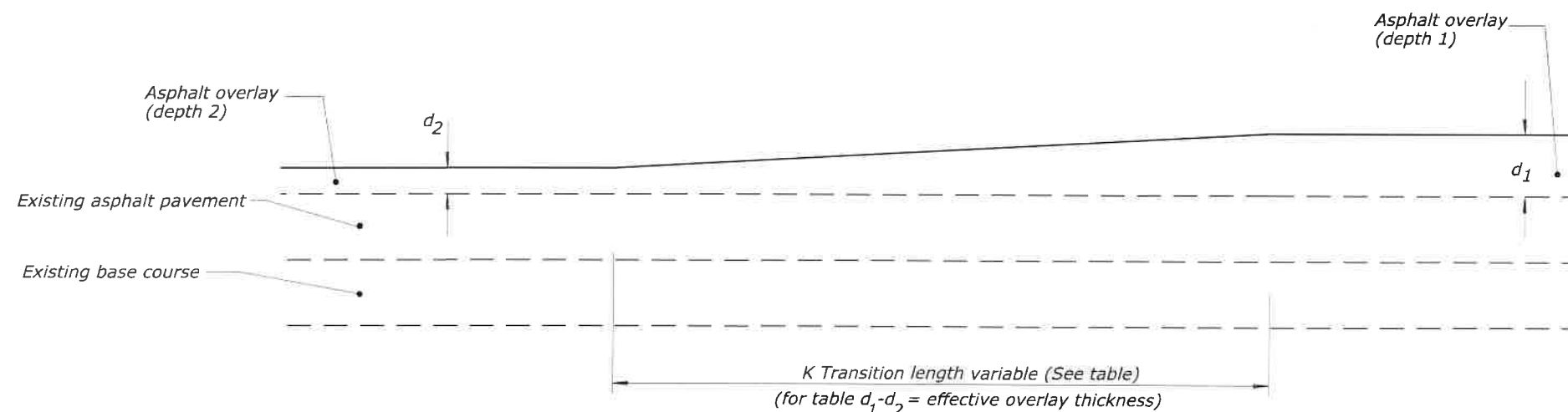
Example :
If the posted speed is 55 MPH
Effective overlay thickness = 2 inches
Then the minimum transition length =
2 inches x 42.5 ft./in. = 85 feet.



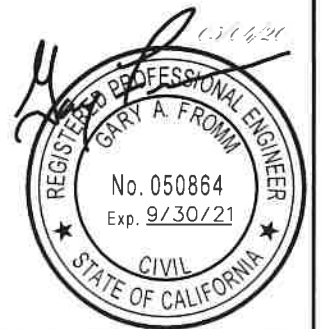
OVERLAY

K VALUE TABLE (ft/in)										
POSTED SPEED (MPH) *	30	35	40	45	50	55	60	65	70	75
K	30	32.5	35	37.5	40	42.5	45	47.5	50	52.5

* Use a K Value of 30 for speeds less than 30 MPH.



OVERLAY - DEPTH TRANSITIONS



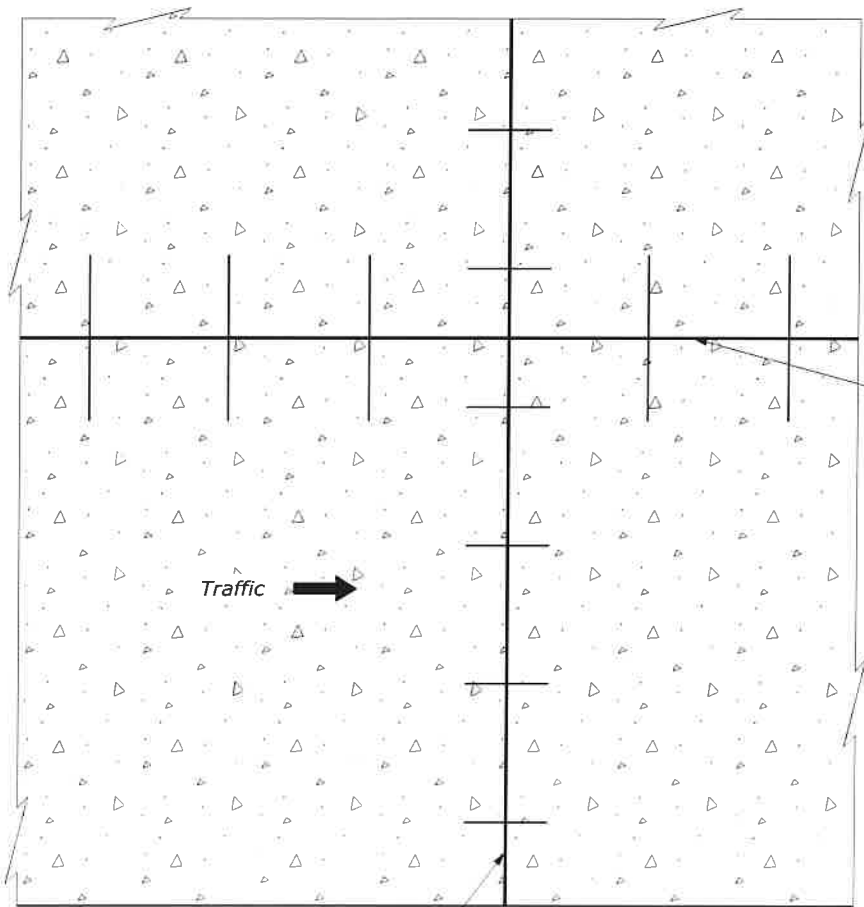
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION	
U.S. CUSTOMARY DETAIL	
PAVEMENT TRANSITIONS	
DETAIL APPROVED FOR USE APPROVED: FEBRUARY 2013	DETAIL E401-01

NO SCALE

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	R1

NOTE:

1. Provide the same type of dowel assemblies and tie bars for joints in plain portland cement concrete pavement as shown for joints in reinforced pavement.
2. See Detail Standard 501-2 for joint and joint sealing details.
3. Lap longitudinal and transverse reinforcement not less than 15 inches.



Transverse joint

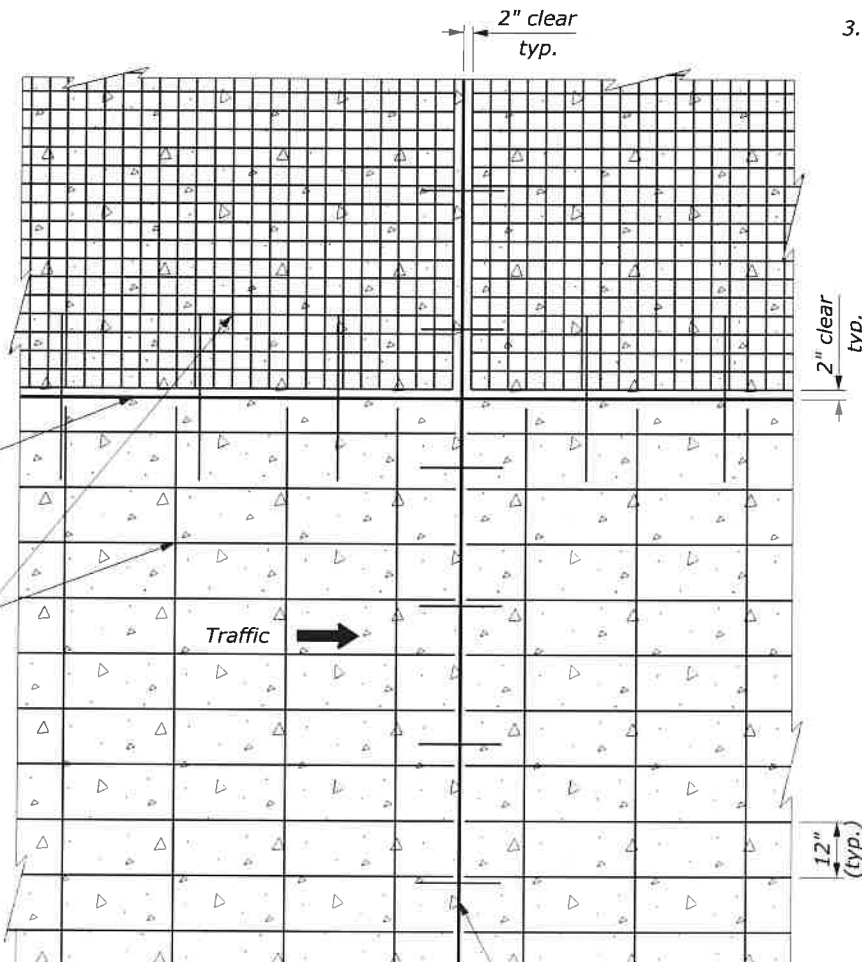
PLAN



See Note 2

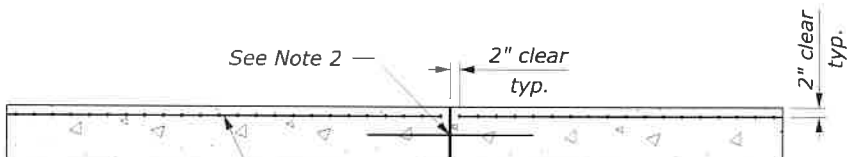
PROFILE

PLAIN MINOR CONCRETE PAVEMENT



24"
(typ.)

PLAN



See Note 2

PROFILE

Slab reinforcement 4" x 4" - W6 x W6
welded wire reinforcement or No. 4 bars

REINFORCED MINOR CONCRETE PAVEMENT

PAVEMENT THICKNESS (in)	TRANSVERSE JOINT SPACING (ft)
$T < 6$	10
$6 \leq T < 12$	15



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

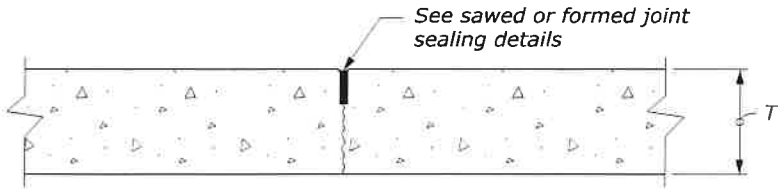
U.S. CUSTOMARY STANDARD

MINOR CONCRETE PAVEMENT

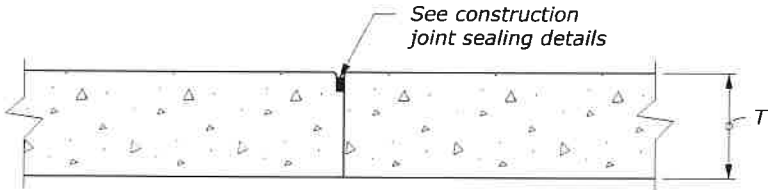
STANDARD APPROVED FOR USE --/--	STANDARD
REVISED: DRAFT: 3/2016	501-1

NO SCALE

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	R2

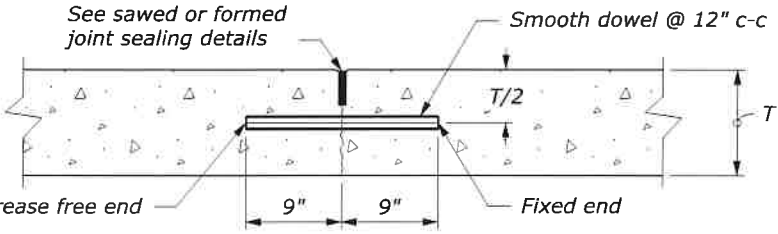


CONTRACTION JOINT
UNDOWELED - TRANSVERSE and
UNTIED - LONGITUDINAL

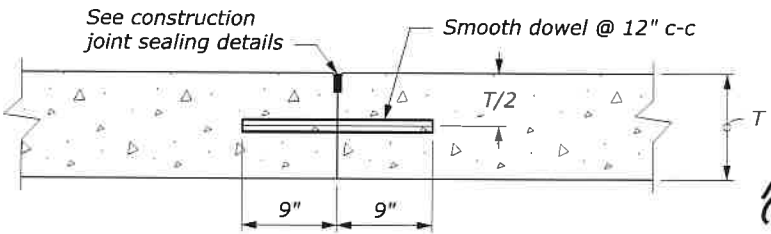


CONSTRUCTION JOINT
PLAIN - TRANSVERSE or LONGITUDINAL

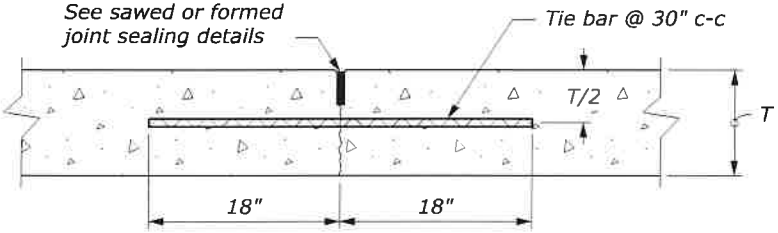
- NOTE:**
1. Use epoxy-coated material for all tie bars, dowels, and other steel used in the construction of concrete pavement.
 2. Deformed reinforcing bars or hook bolts may be used for tie bars.
 3. Do not place tie bars within 15 inches of transverse joints.
 4. Install isolation joints when abutting a fixed structure. Use expansion joint material extending the full depth and length of the concrete surface.
 5. Transverse and longitudinal construction joints are not included in the joint layout plan. Use transverse and longitudinal construction joints sparingly. Submit planned construction joint locations to the CO for approval.
 6. For construction joints, if tie bars and dowels are not set into concrete during placement, drill and anchor the tie bars and dowels into the existing concrete construction with epoxy resin.
 7. Maintain joint sealant shape factor of 1:1; except when silicone sealant is used maintain the width to depth shape factor of 2:1 or as recommended by sealant manufacturer.
 8. See Section 712 for joint material requirements.
 9. See Standards 501-1 or 502-1 for reinforcement details.



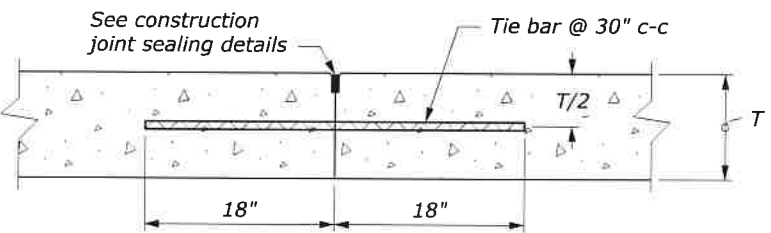
CONTRACTION JOINT
DOWELED - TRANSVERSE



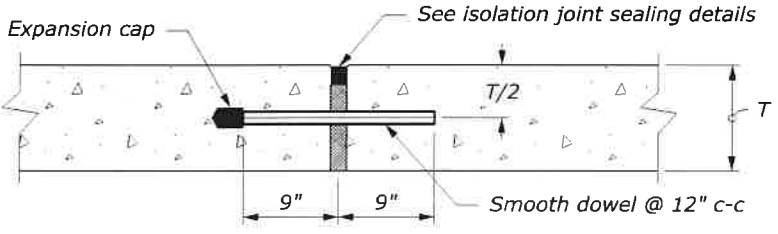
CONSTRUCTION JOINT
DOWEL BUTT - TRANSVERSE



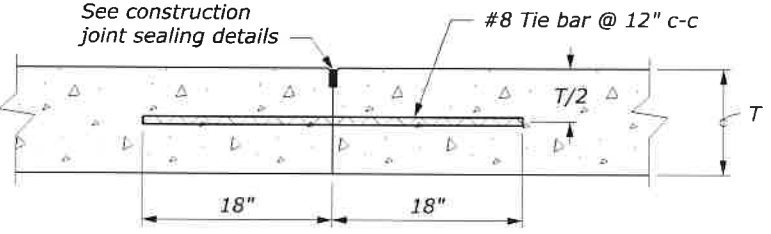
CONTRACTION JOINT
TIED - LONGITUDINAL



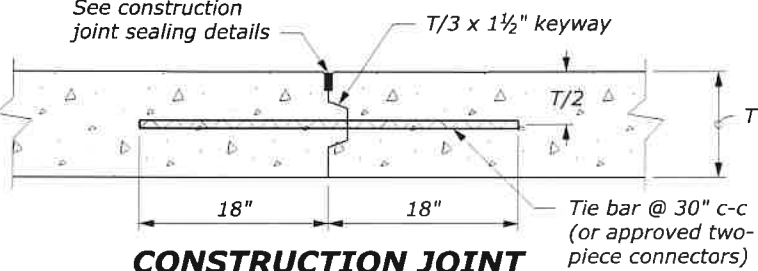
CONSTRUCTION JOINT
TIED BUTT - LONGITUDINAL



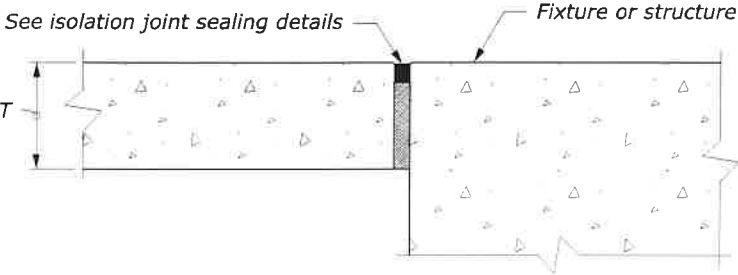
ISOLATION/EXPANSION JOINT
DOWELED - TRANSVERSE



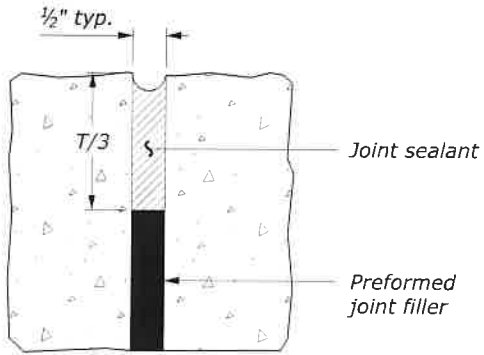
CONSTRUCTION JOINT
TIED BUTT - TRANSVERSE



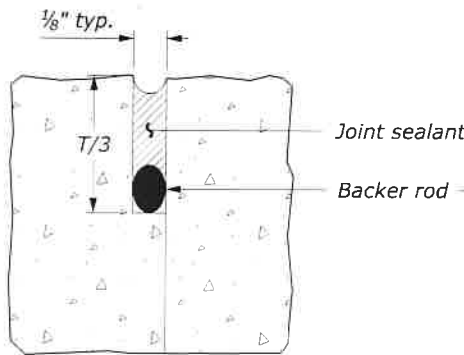
CONSTRUCTION JOINT
KEYWAY - LONGITUDINAL



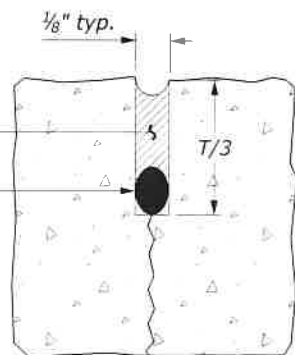
ISOLATION JOINT
UNDOWELED - LONGITUDINAL



ISOLATION JOINT



CONSTRUCTION JOINT



SAWED OR FORMED JOINT

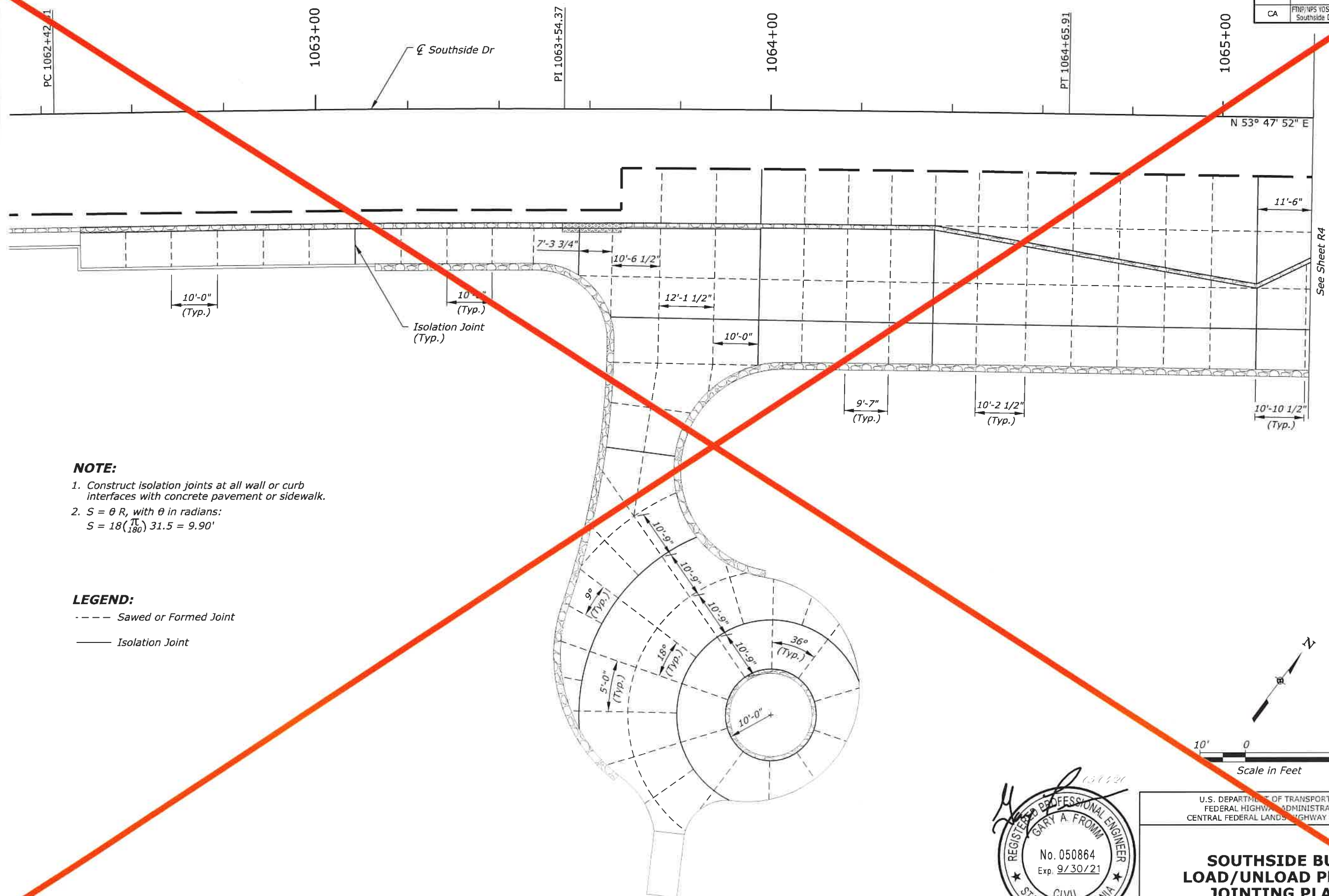
MINOR CONCRETE PAVEMENT JOINT SEALING DETAILS

BAR SIZES		
PAVEMENT THICKNESS (T) (in)	TIE BAR	DOWEL BAR DIAMETER (in)
T ≤ 8	#5	1
8 < T ≤ 10	#5	1 1/4
10 < T ≤ 12	#6	1 1/2

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY OFFICE	
U.S. CUSTOMARY STANDARD	
MINOR CONCRETE PAVEMENT JOINTS	
STANDARD APPROVED FOR USE --/--	STANDARD
REVISED: DRAFT: 3/2016	501-2

NO SCALE

STATE	PROJECT	SHE NUMBER
CA	FTNP/HPS YOSE 500(S) & 915 Southside Dr & Bridge	R3



NOTE:

1. Construct isolation joints at all wall or curb interfaces with concrete pavement or sidewalk.
2. $S = \theta R$, with θ in radians:

$$S = 18\left(\frac{\pi}{180}\right) 31.5 = 9.90'$$

LEGEND:

- - - - Sawed or Formed Joint
 ——— Isolation Joint



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

SOUTHSIDE BUS LOAD/UNLOAD PLAZA JOINTING PLAN

Sheet 1 of 2

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03/15/2021

03/15/2021

PC 1062+42.81

1063+00

PI 1063+54.37

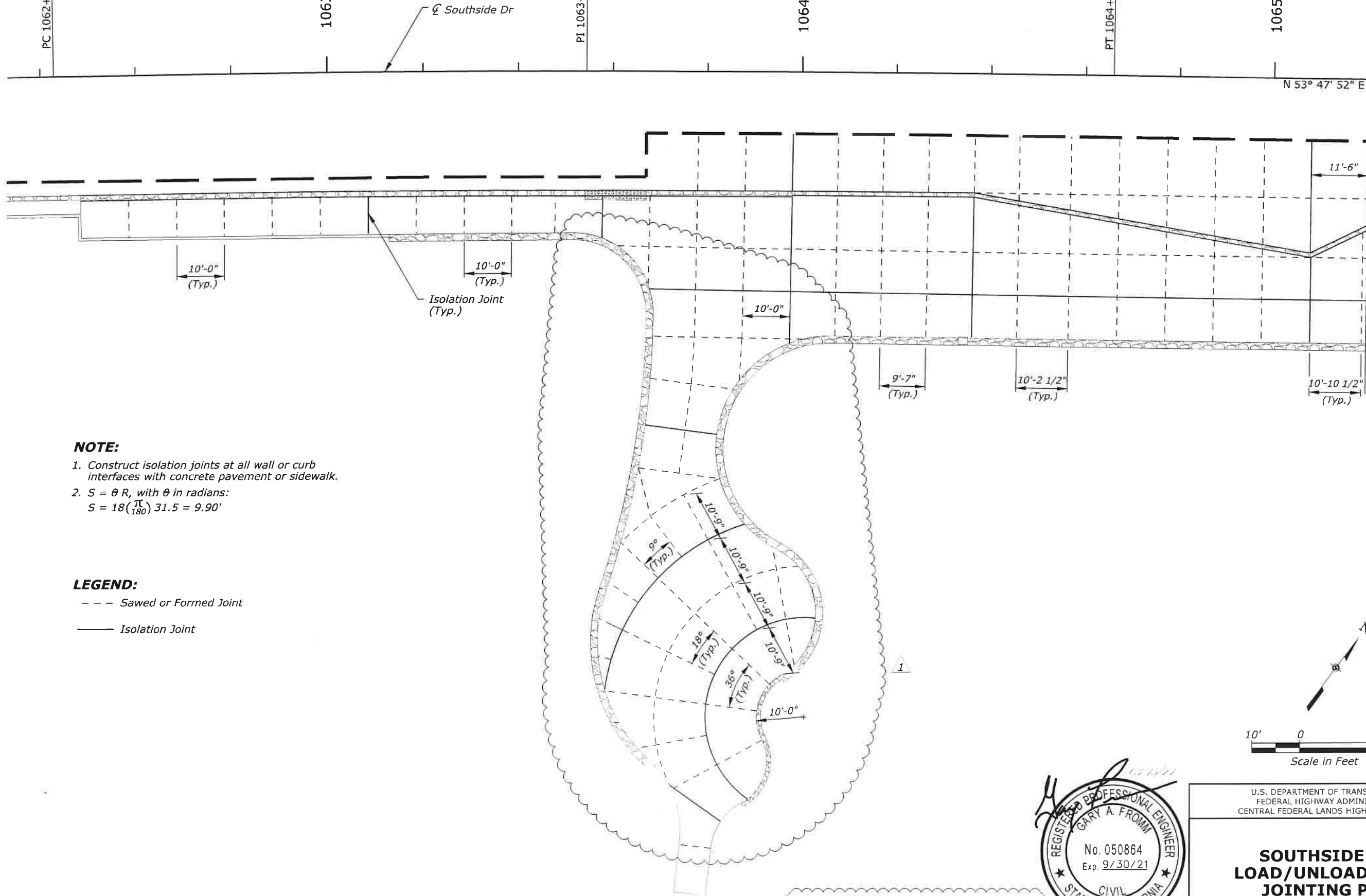
1064+00

PT 1064+65.91

1065+00

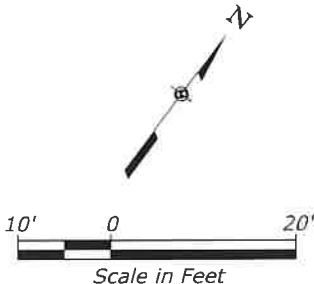
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSEMITE(5) & 918(1) Southside Dr & Bridalveil	R3

N 53° 47' 52" E



NOTE:
1. Construct isolation joints at all wall or curb interfaces with concrete pavement or sidewalk.
2. $S = \theta R$, with θ in radians:
 $S = 18(\frac{\pi}{180}) 31.5 = 9.90'$

LEGEND:
--- Sawed or Formed Joint
—— Isolation Joint

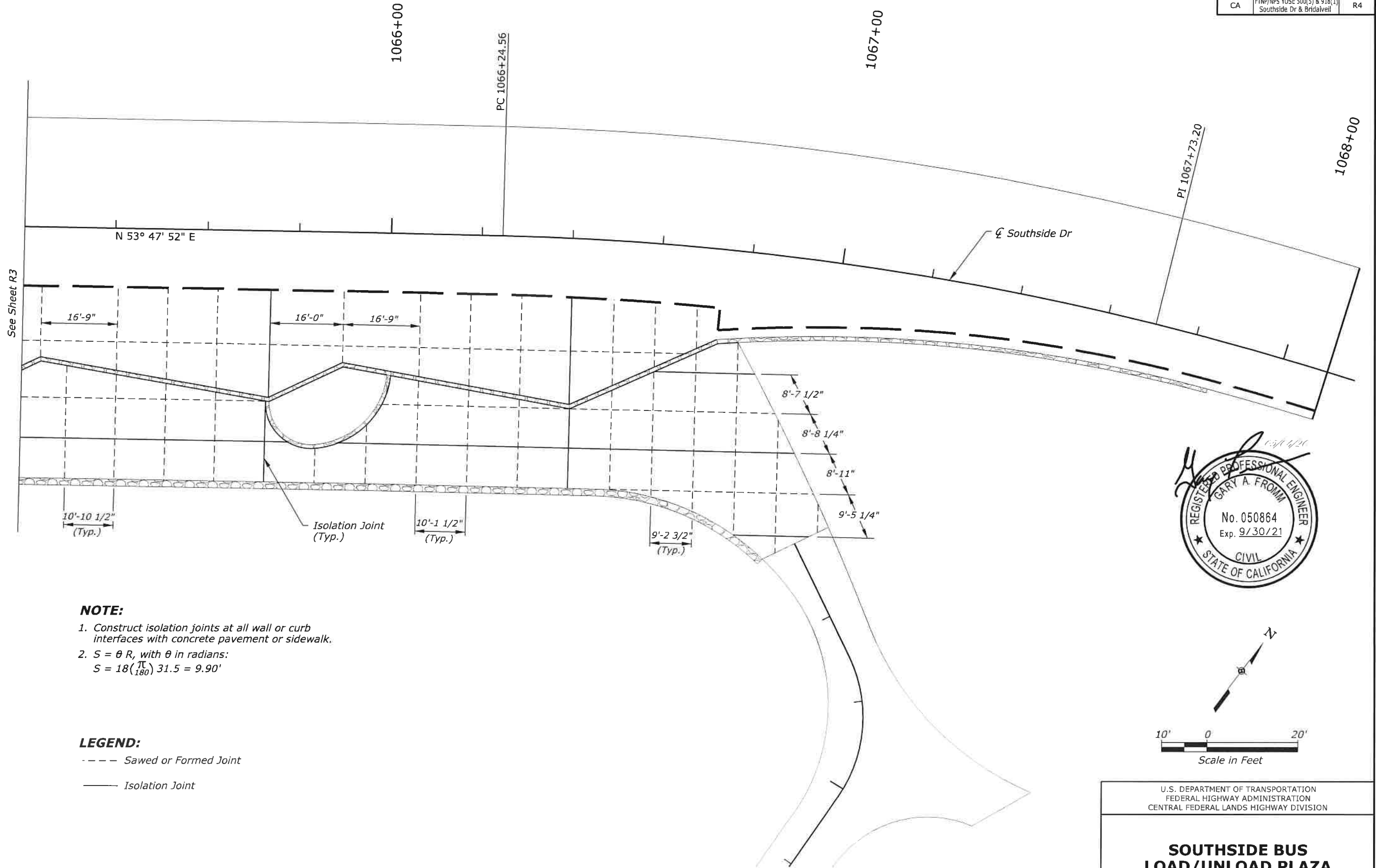


1 03/15/2021 Pedestrian Plaza Revisions

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**SOUTHSIDE BUS
LOAD/UNLOAD PLAZA
JOINTING PLAN**
Sheet 1 of 2

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	R4

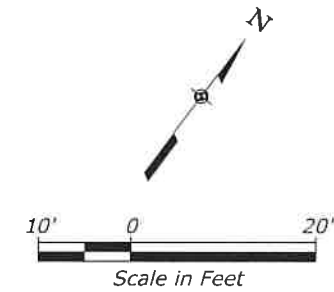


NOTE:

1. Construct isolation joints at all wall or curb interfaces with concrete pavement or sidewalk.
2. $S = \theta R$, with θ in radians:
 $S = 18 \left(\frac{\pi}{180} \right) 31.5 = 9.90'$

LEGEND:

- - - - Sawed or Formed Joint
- Isolation Joint



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

**SOUTHSIDE BUS
LOAD/UNLOAD PLAZA
JOINTING PLAN**

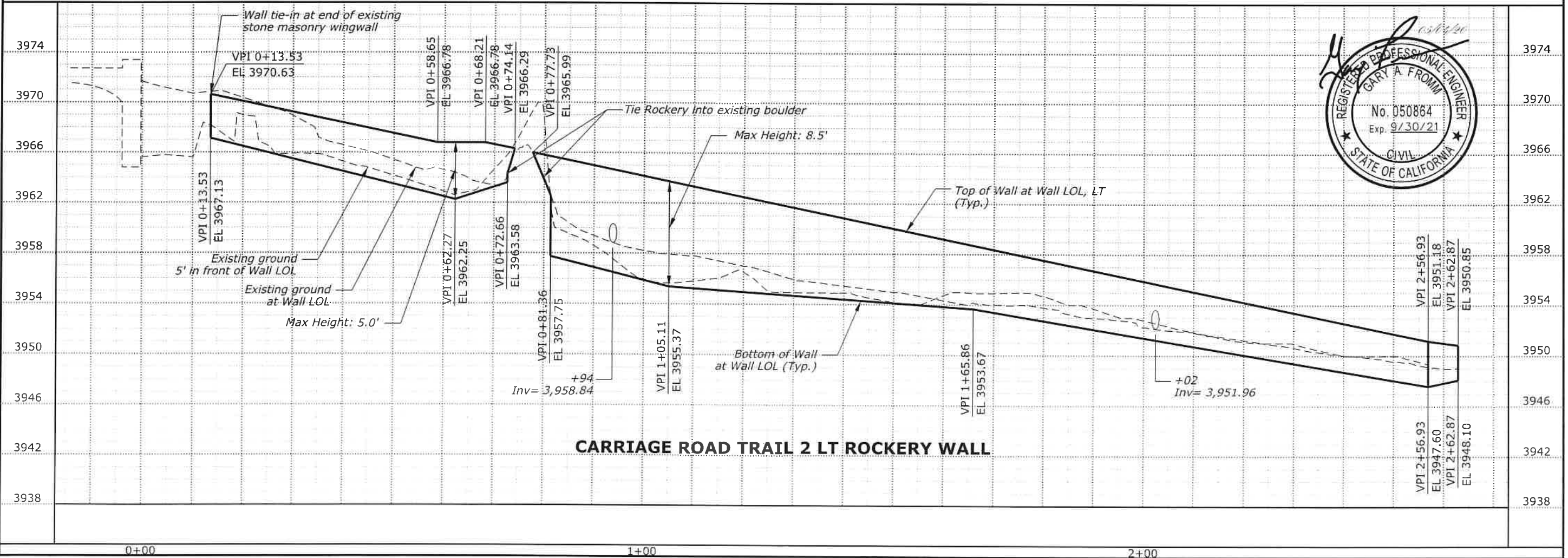
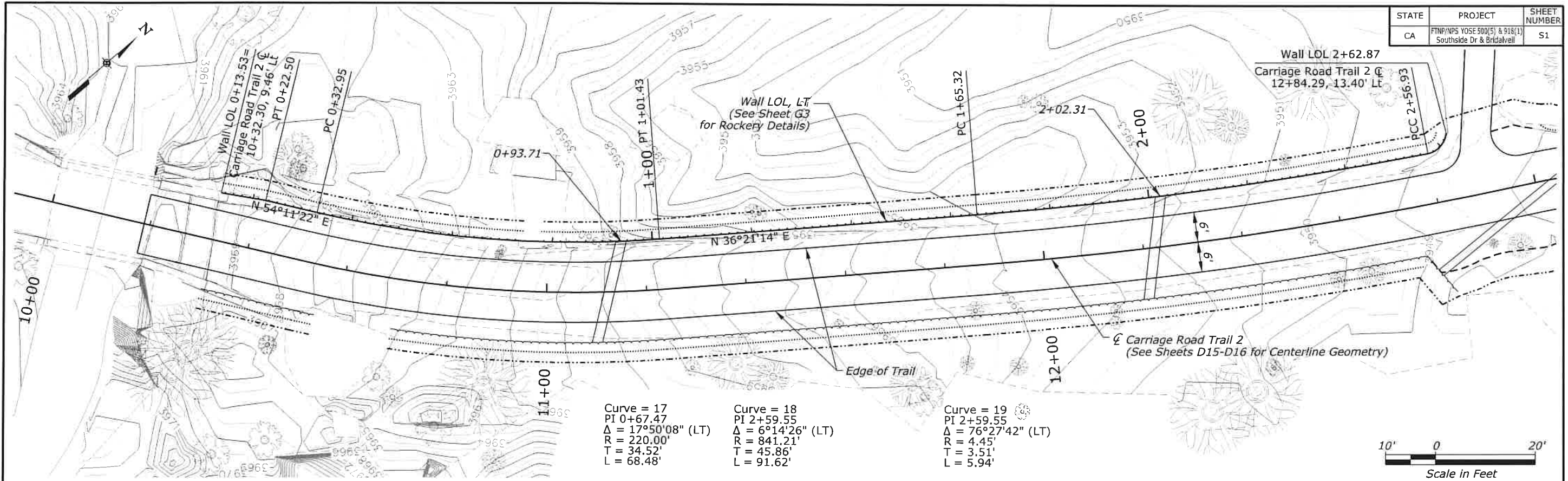
Sheet 2 of 2

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5/4/2020



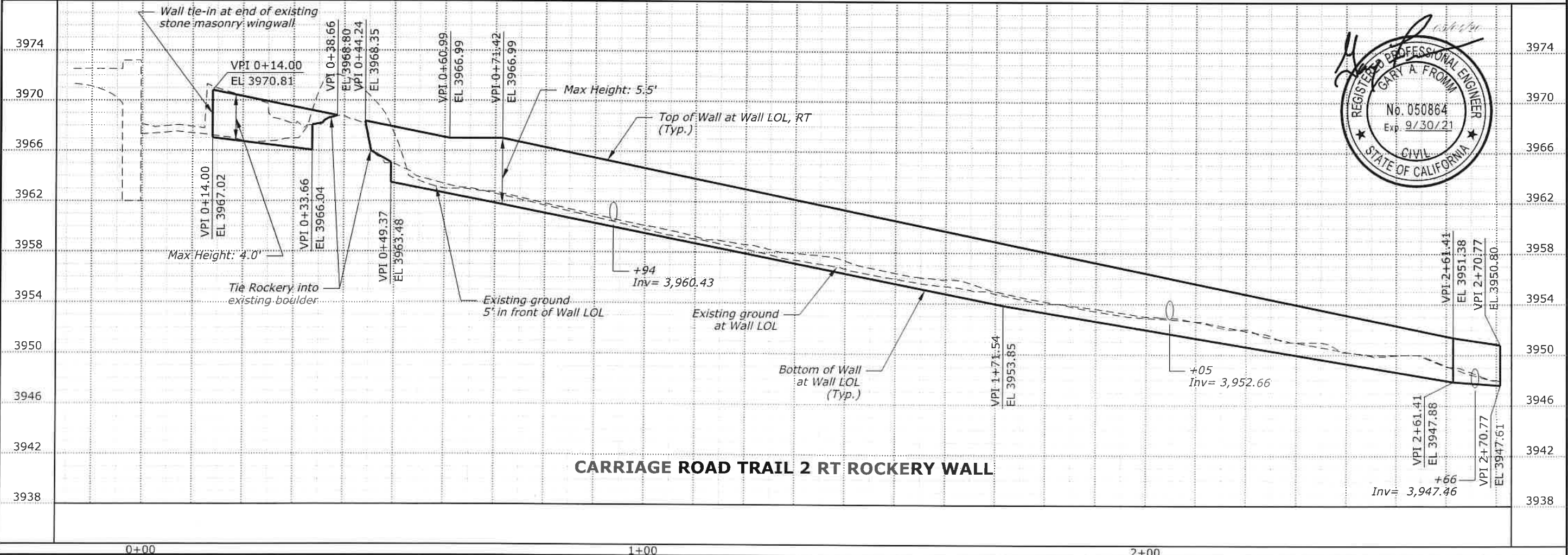
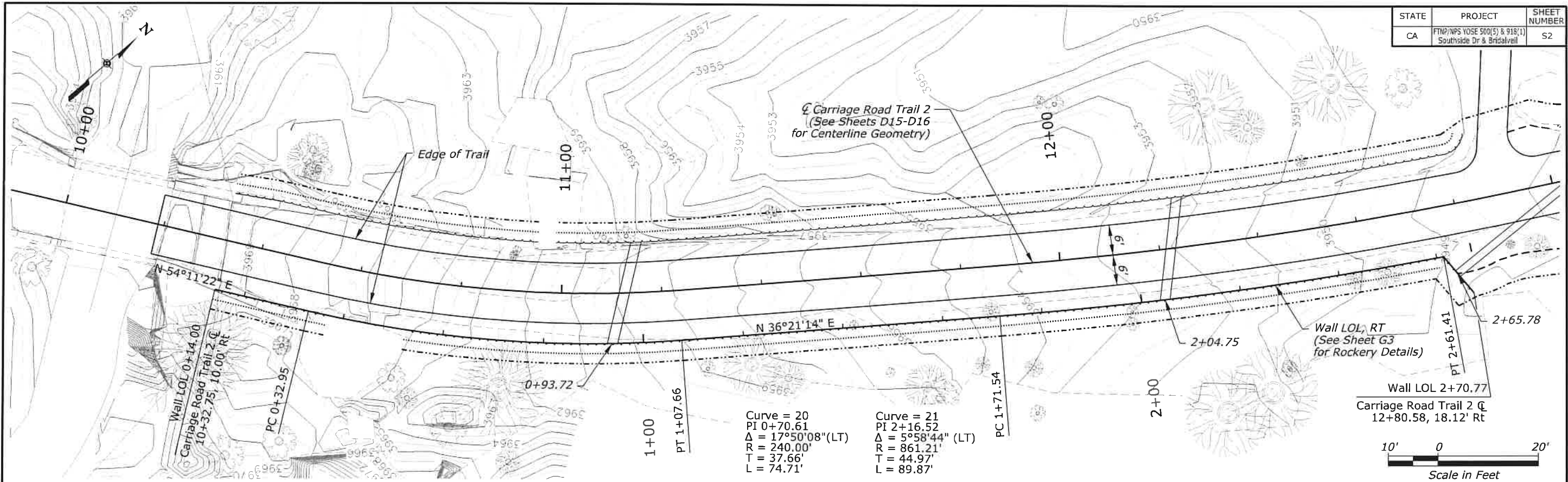
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5/4/2020

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	S2

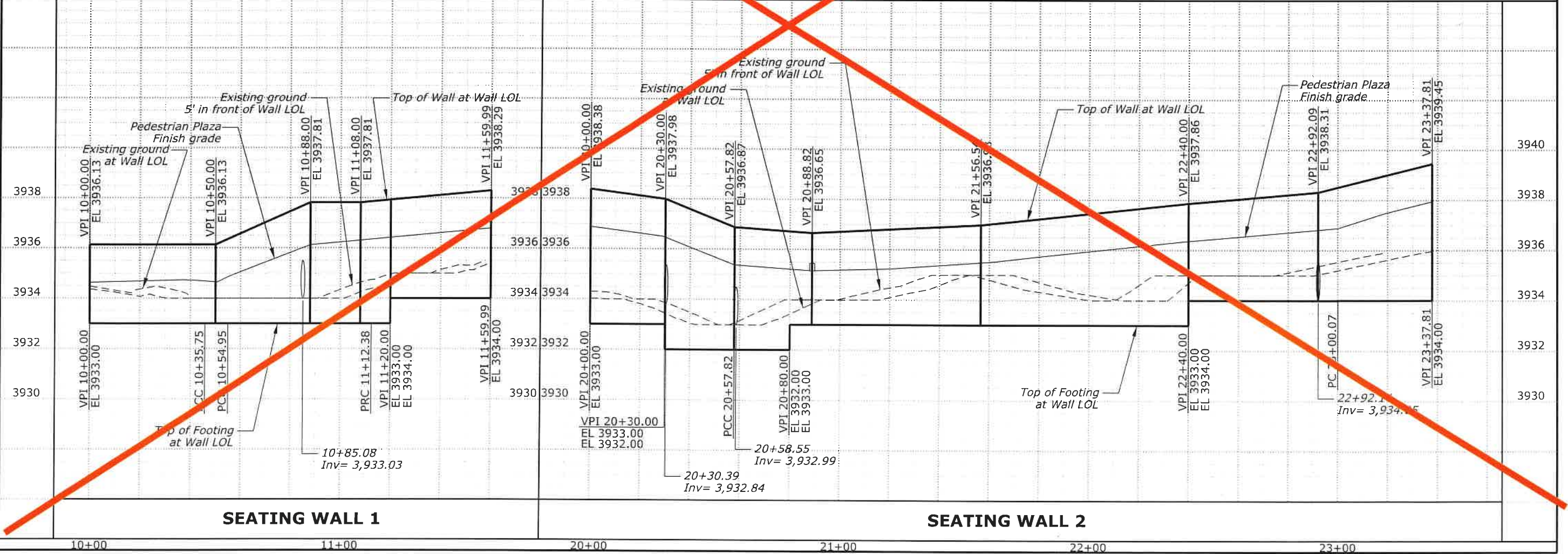
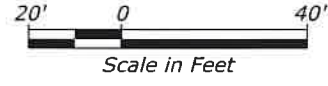
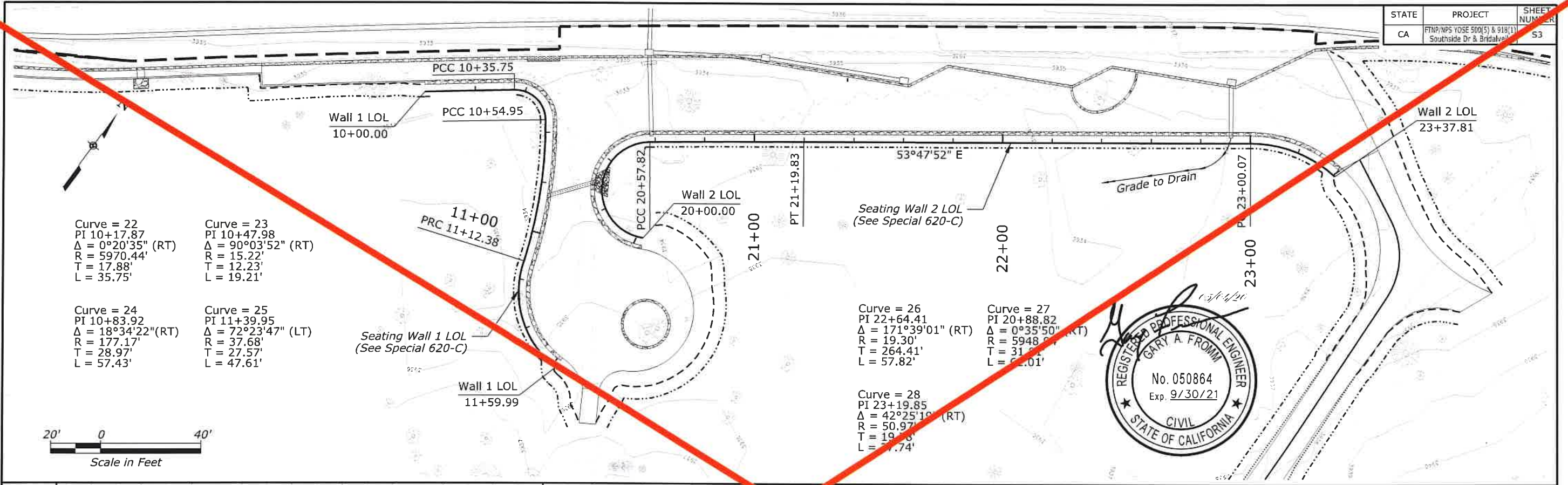


CARRIAGE ROAD TRAIL 2 RT ROCKERY WALL

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STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	S3



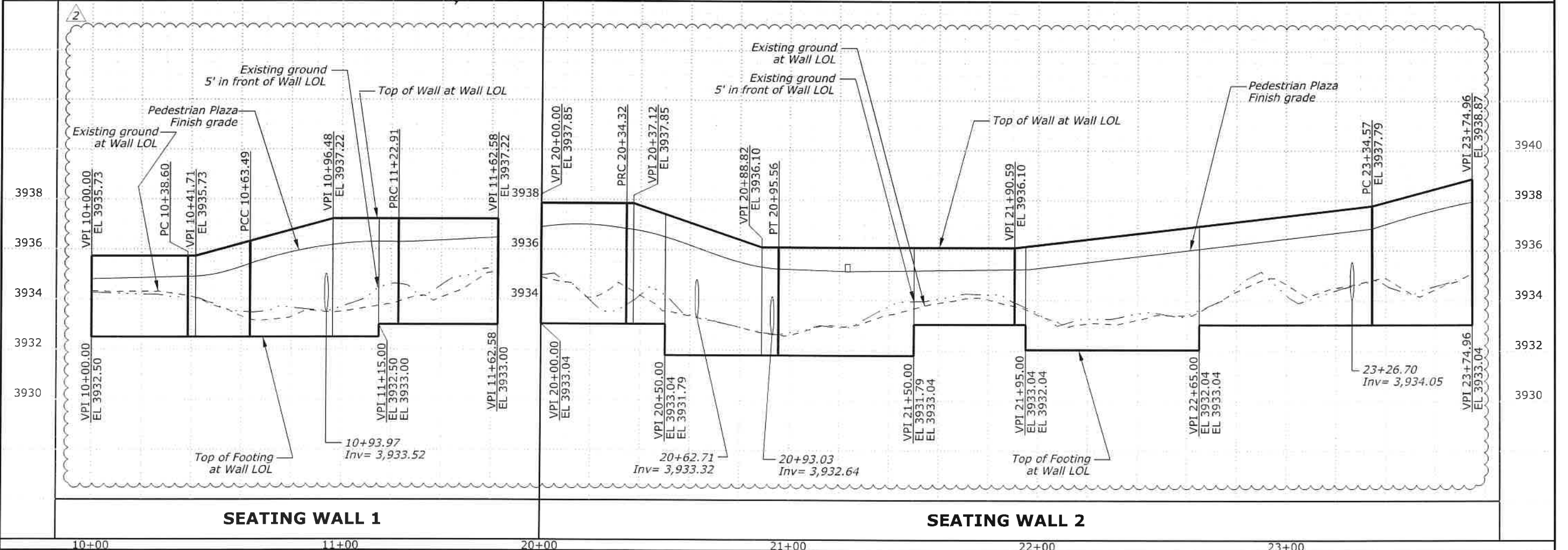
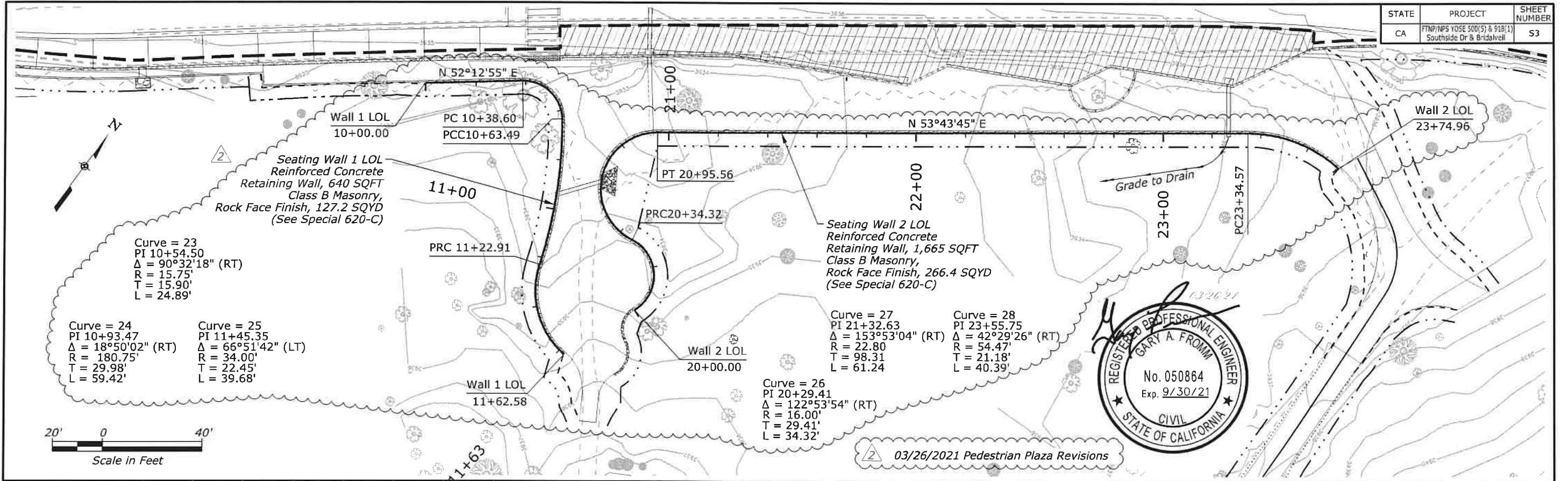
SEATING WALL 1

SEATING WALL 2

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3/26/2021



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METAL ROUND PIPE CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE FOR HELICAL LOCKSEAM AND WELDED SEAM PIPE CULVERT

STEEL																
PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	2½" x ½" CORRUGATIONS					3" x 1" CORRUGATIONS					5" x 1" CORRUGATIONS				
		METAL THICKNESS (INCH/GAGE)														
		0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8
MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)																
12	12	100	100	100	100	100										
15	12	100	100	100	100	100										
18	12	100	100	100	100	100										
21	12	100	100	100	100	100										
24	12	100	100	100	100	100										
30	12	85	100	100	100	100										
36	12	71	89	100	100	100	81	100	100	100	100					
42	12	61	76	100	100	100	70	87	100	100	100					
48	12	53	66	93	100	100	61	76	100	100	100	54	68	95	100	100
54	12		59	83	100	100	54	68	95	100	100	48	60	85	100	100
60	12			74	97	100	49	61	86	100	100	43	54	76	98	100
66	12				87	100	44	55	78	100	100	39	49	69	89	100
72	12				80	97	40	51	71	92	100	36	45	63	82	100
78	12					87	37	47	66	85	100	33	42	58	75	92
84	12					75	35	43	61	78	96	31	39	54	70	86
90	12						32	40	57	73	90	29	36	51	65	80
96	12							38	53	69	84		34	48	61	75
102	18							36	50	65	79		32	45	57	71
108	18								47	61	75			42	54	67
114	18								45	58	71			40	52	63
120	18								43	55	67			38	49	60
126	18									52	64				47	57
132	18									50	61				44	54
138	18									48	58				42	52
144	18										56					50

ALUMINUM														
PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	2⅔" x ½" CORRUGATIONS					3" x 1" CORRUGATIONS							
		METAL THICKNESS (INCH/GAGE)												
		0.060/16	0.075/14	0.105/12	0.135/10	0.164/8	0.060/16	0.075/14	0.105/12	0.135/10	0.164/8			
MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)														
12	12	100	100	100	100	100								
15	12	100	100	100	100	100								
18	12	100	100	100	100	100								
21	12	88	100	100	100	100								
24	12	77	97	100	100	100								
30	12	62	77	100	100	100	71	89	100	100	100			
36	12	52	64	90	100	100	59	74	100	100	100			
42	12	44	55	77	99	100	51	64	89	100	100			
48	12			67	87	100	44	56	78	100	100			
54	18			54	71	88	39	50	69	93	100			
60	18				57	72	35	45	62	83	98			
66	18					58	32	40	56	76	89			
72	18					45	30	37	55	70	82			
78	24							34	48	64	75			
84	24								44	59	70			
90	24								41	62	65			
96	24								38	51	61			
102	24									46	55			
108	24									42	50			
114	24										45			
120	24											40		

NOTE:

- When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
- Fill heights exceeding 100 feet require special analysis by the CO.
- The fill heights in the table are for helical lockseam and welded seam pipe only. Fill heights for culvert pipe with annular corrugations are more restrictive than those of helical lockseam and welded seam pipe. Obtain approval before furnishing annular corrugation pipe.
- Measure minimum cover from the top of the pipe culvert to the subgrade for flexible pavements, and to the top of the pavement for rigid pavements. Measure maximum fill height from the top of the pipe to the top of the pavement for both flexible and rigid pavement.

METAL PIPE ARCH CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE FOR HELICAL LOCKSEAM AND WELDED SEAM PIPE CULVERT

STEEL																		
PIPE ARCH SIZE SPAN x RISE INCHES	EQUI- VALENT DIAMETER INCHES	MINIMUM CORNER RADIUS INCHES	MINIMUM COVER INCHES	2 $\frac{2}{3}$ " x $\frac{1}{2}$ " CORRUGATIONS					3" x 1" CORRUGATIONS					5" x 1" CORRUGATIONS				
				METAL THICKNESS (INCH/GAGE)														
				0.064/16 0.079/14 0.109/12 0.138/10 0.168/8 0.079/14 0.109/12 0.138/10 0.168/8 0.079/14 0.109/12 0.138/10 0.168/8														
				MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)														
17 x 13	15	3	12	13														
21 x 15	18	3	12	12														
24 x 18	21	3	12	13														
28 x 20	24	3	12	13														
35 x 24	30	3	12	12														
42 x 29	36	3.5	12	12														
49 x 33	42	4	12		12													
57 x 38	48	5	12			12												
60 x 46	54	8	15							21					21			
64 x 43	54	6	12			12												
66 x 51	60	9	15							21					21			
71 x 47	60	7	12				12											
73 x 55	66	12	18							20					20			
77 x 52	66	8	12					12										
81 x 59	72	14	18						17						17			
83 x 57	72	9	12					12										
87 x 63	78	14	18						17						17			
95 x 67	84	16	18						17						17			
103 x 71	90	16	18							17					17			
112 x 75	96	18	21							16					16			
117 x 79	102	18	21							16					16			
128 x 83	108	18	24								16					16		
137 x 87	114	18	24								16					16		
142 x 91	120	18	24									16						16

ALUMINUM														
PIPE ARCH SIZE SPAN x RISE INCHES	EQUI- VALENT DIAMETER INCHES	MINIMUM CORNER RADIUS INCHES	MINIMUM COVER INCHES	2 ² / ₃ " x 1 ¹ / ₂ " CORRUGATIONS				3" x 1" CORRUGATIONS						
				METAL THICKNESS (INCH/GAGE)										
				0.060/16	0.075/14	0.105/12	0.135/10	0.060/16	0.075/14	0.105/12	0.135/10			
				MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)										
17 x 13	15	3	12	13										
21 x 15	18	3	12	12										
24 x 18	21	3	12	13										
28 x 20	24	3	12		13									
35 x 24	30	3	12		12									
42 x 29	36	3.5	15			12								
49 x 33	42	4	15			12								
57 x 38	48	5	15				12							
60 x 46	54	8	15					21						
64 x 43	54	6	18				12							
66 x 51	60	9	18					21						
73 x 55	66	12	18						20					
81 x 59	72	14	21								17			
87 x 63	78	14	21								17			
95 x 67	84	16	24								17			
103 x 71	90	16	24									17		

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	T2

COUPLING BANDS FOR METAL PIPE CULVERT ^[1]

CORRUGATION SIZE ^[2] INCHES	ROUND PIPE DIAMETER INCHES	PIPE ARCH SPAN × RISE INCHES	MINIMUM BAND WIDTH (INCHES)		
			ANNULAR CORRUGATED BANDS ^[3]	HELICALLY CORRUGATED BANDS ^[4]	SEMI- CORRUGATED BANDS ^[5]
1½ × ¼	underdrain ^[6]	-	10.5	7	10.5
	12 to 36	17 × 13 to 42 × 29	7	12	
2⅔ × ½	42 to 72	49 × 33 to 83 × 57	10.5	12	
	78 to 84	-	10.5	12	10.5
3 × 1	36 to 72	60 × 46 to 81 × 59	12	14	10.5
	78 to 144	87 × 64 to 142 × 91	12	14	10.5
5 × 1	36 to 72	60 × 46 to 81 × 59	20	22	
	78 to 144	87 × 64 to 142 × 91	20	22	

^[1] Fabricate annular, helical and semi-corrugated type coupling bands from the same metal as the connecting pipe. Provide coupling bands not more than 3 nominal sheet thicknesses thinner than the thickness of the pipe to be connected, and no thinner than 0.052 inch for steel or 0.048 inch for aluminum. Fasten coupling bands with the following diameter of bolt: ⅜" for 18" round culvert (21" × 15" pipe arch) or less; ½" for 21" round culvert (24" × 18" pipe arch) or more.

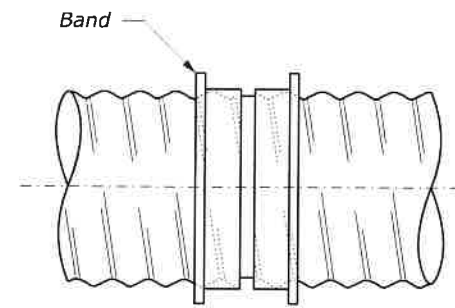
^[2] For helically corrugated pipe with rerolled ends, the nominal corrugations size refers to the dimension of the end corrugation in the pipe.

^[3] Use annular corrugated bands with pipes having annular corrugations or with helical pipe having rerolled end to form annular corrugations. A 10.5 inch band is acceptable on pipe ends rerolled with 2⅔" × ½" corrugations. A 12 inch band is acceptable on pipe ends rerolled with 3" × 1" pipe corrugations.

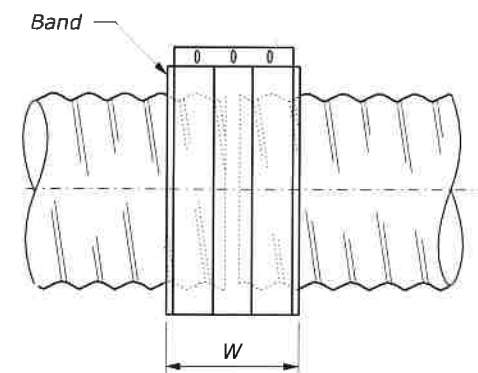
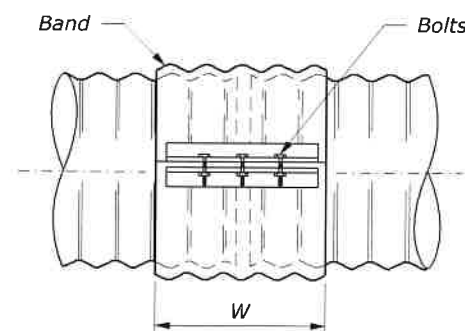
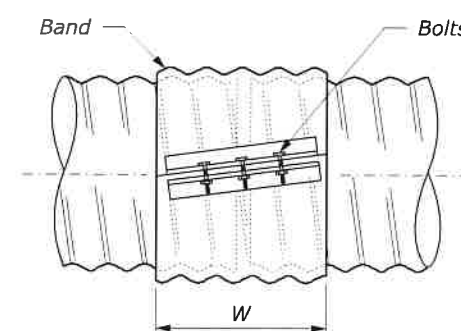
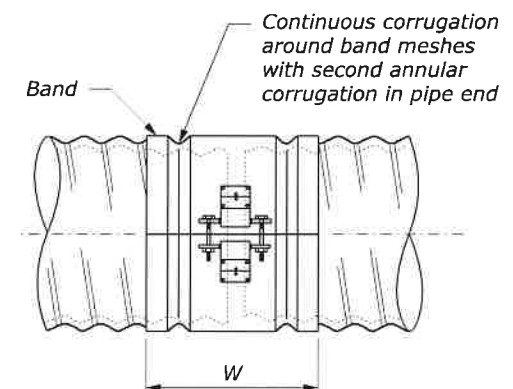
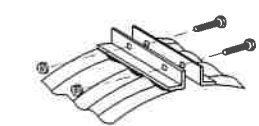
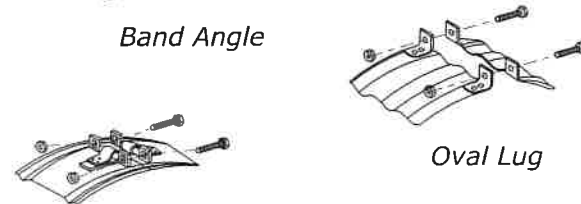
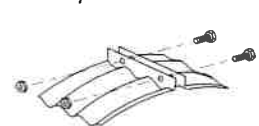
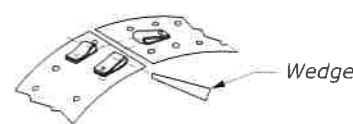
^[4] Use helical corrugated bands with pipes having helically corrugated ends.

^[5] The minimum band widths shown for 3" × 1" and 5" × 1" corrugated sizes apply to 2⅔" × ½" corrugations on rerolled pipe ends.

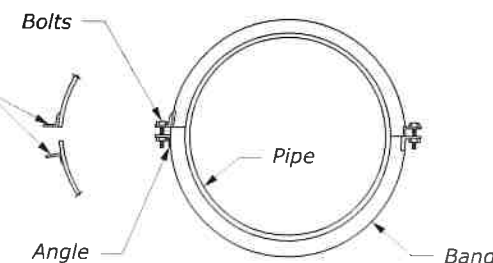
^[6] Smooth sleeve-type couplers and flat bands may be used for pipe diameters of 12" or less. Use a matching metal having a nominal thickness of not less than 0.040 inch for steel, or 0.036 inch for aluminum, or a plastic with an equivalent strength to metal.

**SLEEVE JOINT**

Smoothen sleeve with center stop.
Stab type joint

SMOOTH SLEEVE BAND**FLAT BAND****SIDE VIEW****SIDE VIEW****SIDE VIEW****Band Angle****Oval Lug****Bar & Strap****Integral Flange****Wedge and Strap****STANDARD BAND CONNECTIONS**

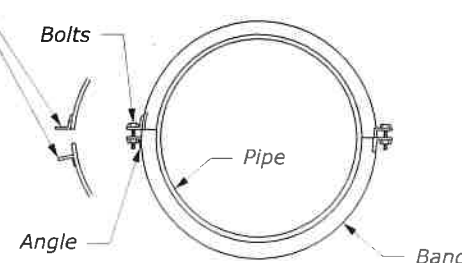
Rivet, spot weld, or fillet weld at crest of corrugation at heel and toe of angle

**END VIEW**

Second angle connection optional to 42" diameter, required above 42" diameter

ANNULAR BAND

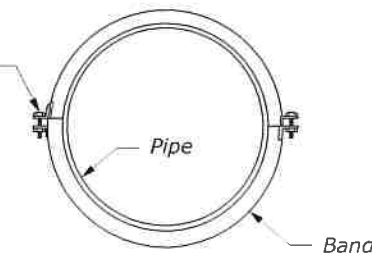
Rivet, spot weld, or fillet weld at crest of corrugation at heel and toe of angle

**END VIEW**

Second angle connection optional to 42" diameter, required above 42" diameter

HELICAL BAND

Bolt, bar and strap connector

**END VIEW****SEMI-CORRUGATED BAND**

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD

**METAL PIPE CULVERT
COUPLING BAND**

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

STANDARD
602-2

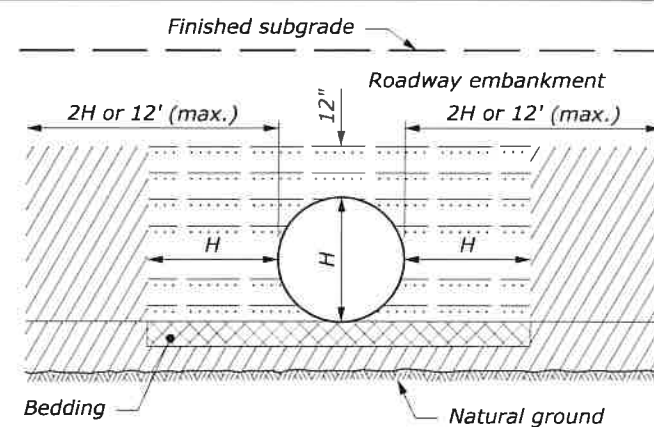
NO SCALE

NOTE:

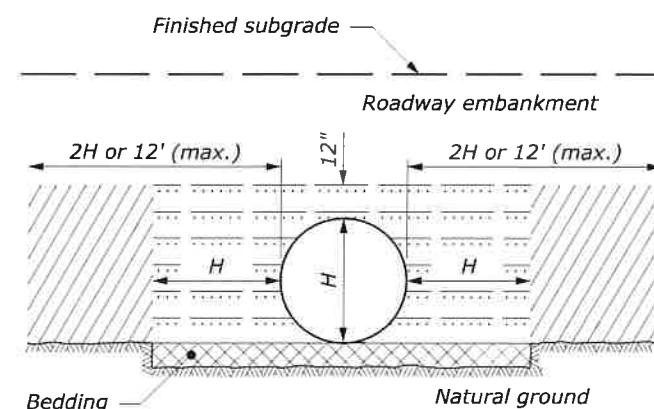
- Watertight pipe joints are not required unless specified in the Special Contract Requirements.
- Other types of coupling bands or fastening devices that comply with the joint performance criteria of AASHTO Standard specifications for Highway Bridges, Division II Section 26 may be used.



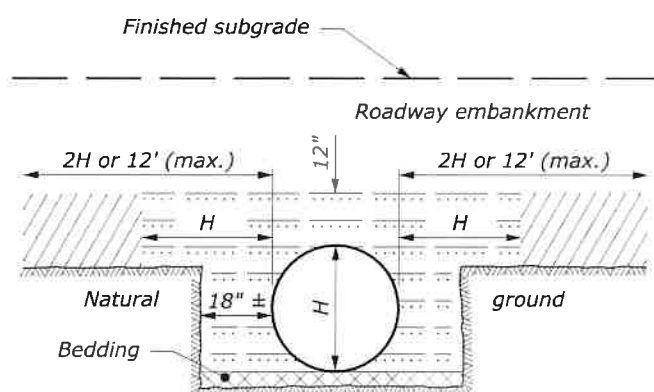
STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	T3



ABOVE NATURAL GROUND



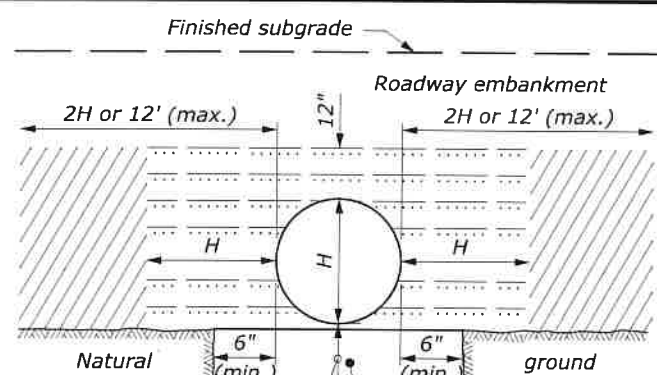
ON NATURAL GROUND



ABOVE AND BELOW NATURAL GROUND

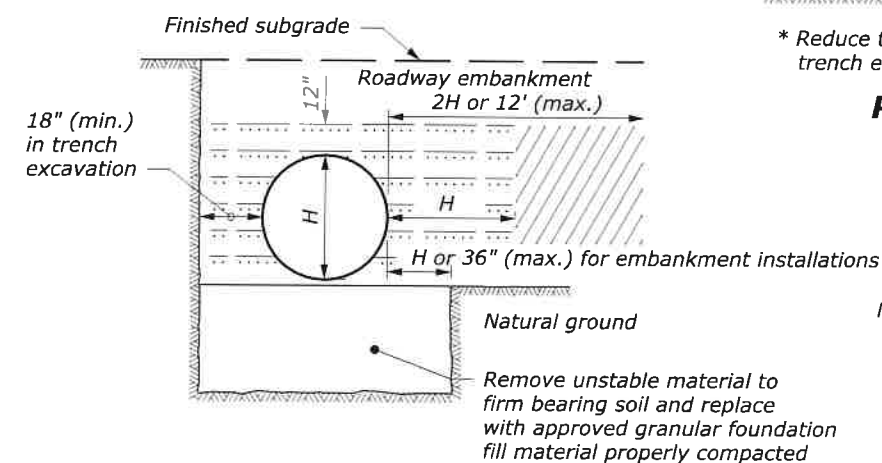
LEGEND:

- | | |
|---|---|
|  | <i>Bedding material (uncompacted)</i> |
|  | <i>Embankment material placed in layers not exceeding 6" compacted depth.</i> |
|  | <i>Compacted backfill material placed in layers not exceeding 6" compacted depth; or lean concrete backfill in accordance with Section 614.</i> |
|  | <i>Impermeable backfill material.</i> |

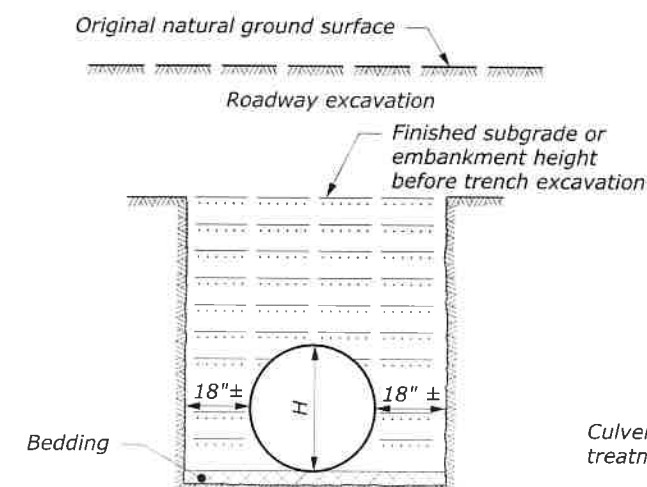


*1/2"/foot of cover,
12" (min.), 24" (max.)* — *Remove unyielding material
and replace with selected fine
compressible material. Lightly
compact in layers not over
6" in uncompacted depth.*

ON UNYIELDING MATERIAL

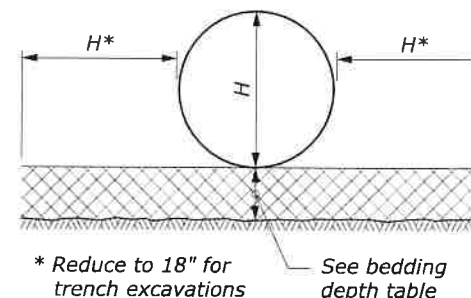


ON UNSTABLE MATERIAL



**BELOW NATURAL GROUND OR
TRENCH EXCAVATION IN EMBANKMENT**

BEDDING DEPTH	
PIPE SIZE (H)	DEPTH
12" to 54"	4"
> 54"	6"

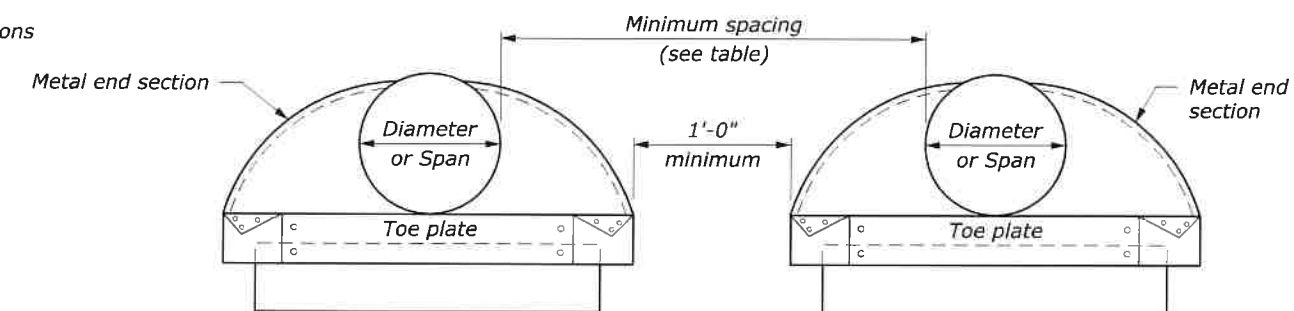


PIPE BEDDING

<i>MINIMUM SPACING</i>	
<i>DIAMETER or SPAN</i>	<i>SPACING</i>
<i>UP to 48"</i>	<i>24"</i>
<i>48" and UP</i>	<i>Half diameter or span or 36", whichever is less</i>

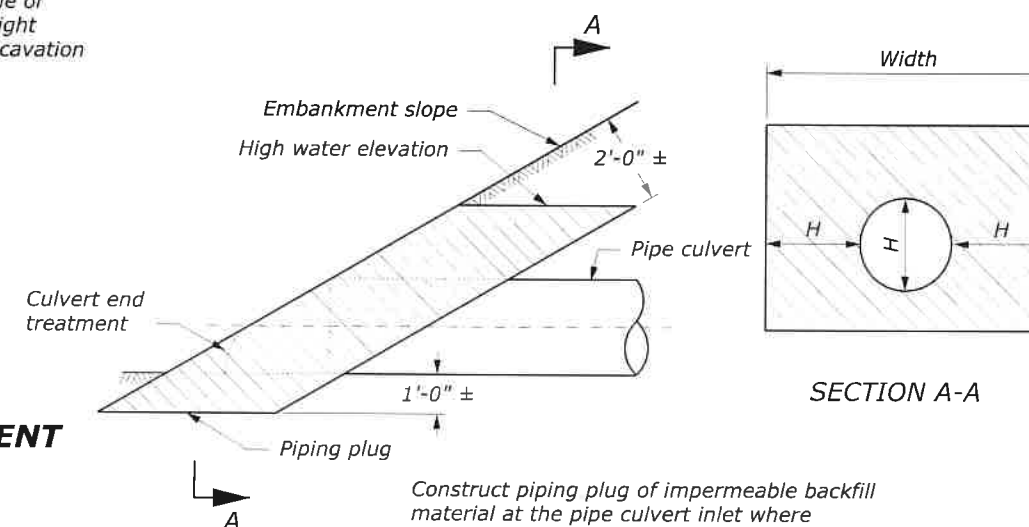
NOTE:

1. When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
2. H equals the diameter of all round pipe culverts or the rise dimension of all pipe arch culverts.
3. See Section 704 for bedding and backfill requirements.



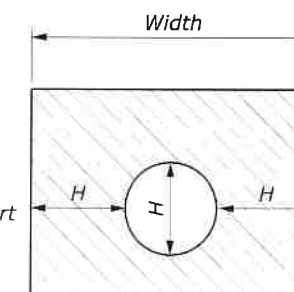
ELEVATION

MULTIPLE PIPE INSTALLATION



PIPING PLUG

NO SCALE



SECTION A-A



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY OFFICE

U.S. CUSTOMARY STANDARD

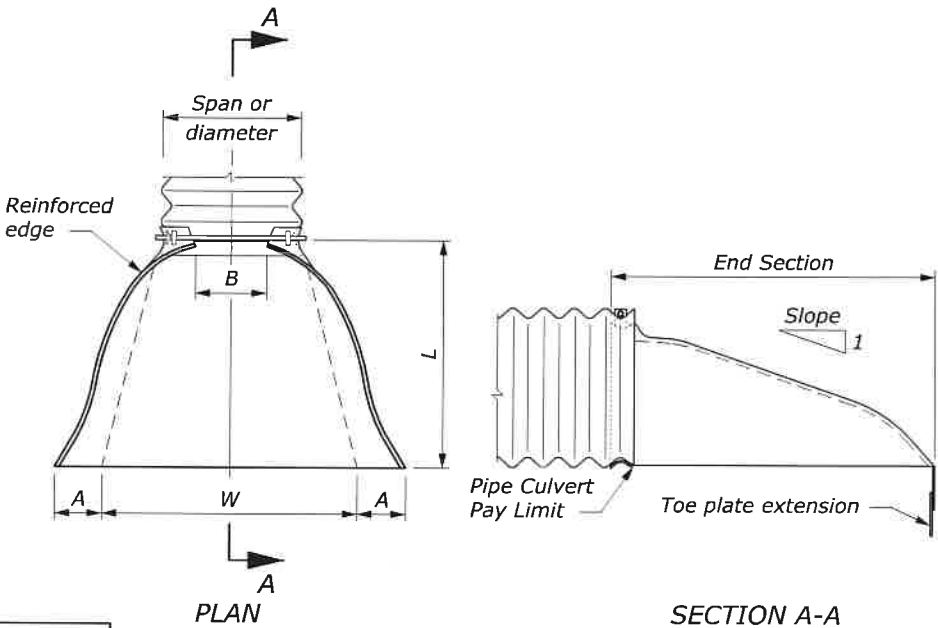
METAL AND PLASTIC PIPE CULVERT BEDDING

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005 10/2017 1/2018STANDARD
602-3

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	T4

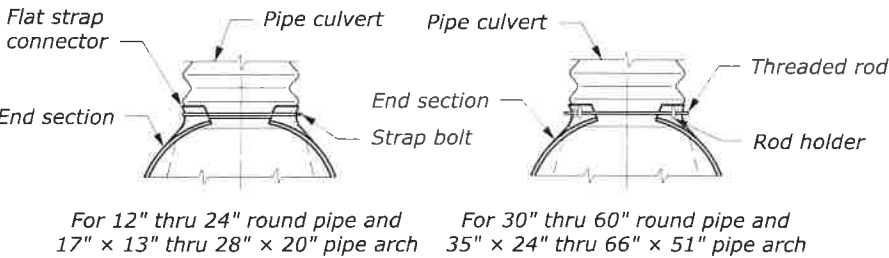
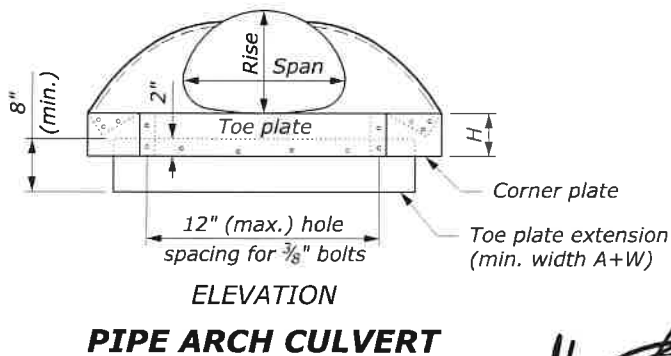
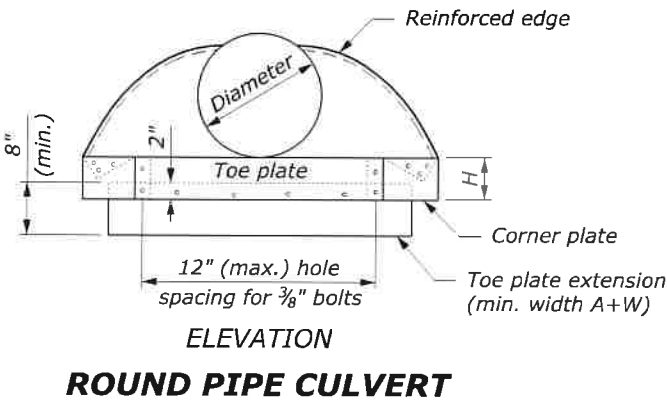
END SECTIONS FOR ROUND PIPE CULVERT

PIPE SIZE DIAMETER INCHES	METAL THICKNESS				DIMENSIONS INCHES					SLOPE Approx.
	STEEL		ALUMINUM		A (min)	B (max)	H (min)	L (±2")	W (max)	
12	0.064	16	0.060	16	5	7	6	21	44	2¼
15	0.064	16	0.060	16	6	8	6	26	52	2¼
18	0.064	16	0.060	16	7	10	6	31	58	2½
21	0.064	16	0.060	16	8	12	6	36	66	2½
24	0.064	16	0.060	16	9	13	6	41	72	2½
30	0.079	14	0.075	14	11	16	8	51	88	2½
36	0.079	14	0.075	14	13	19	9	60	105	2
42	0.109	12	0.105	12	15	25	10	69	122	2½
48	0.109	12	0.105	12	17	29	12	78	131	2
54	0.109	12	0.105	12	17	33	12	84	143	2
60	0.109	12	0.105	12	17	36	12	87	157	1⅞
66	0.109	12	0.105	12	17	39	12	87	162	1⅞
72	0.109	12	0.105	12	17	44	12	87	169	1½
78	0.109	12	0.105	12	17	48	12	87	178	1⅜
84	0.109	12	0.105	12	17	52	12	87	184	1½
90	0.109	12	0.105	12	17	58	12	87	188	1¼
96	0.109	12	0.105	12	17	58	12	87	197	1⅞

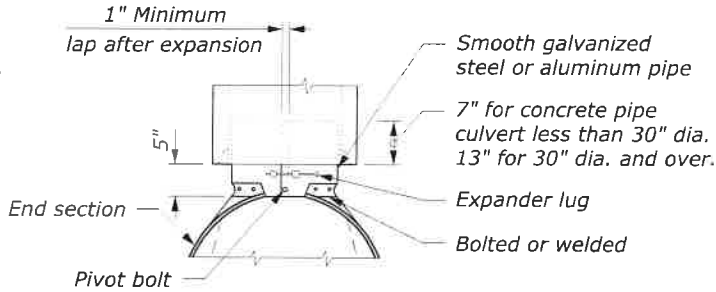


ROUND OR PIPE ARCH CULVERT

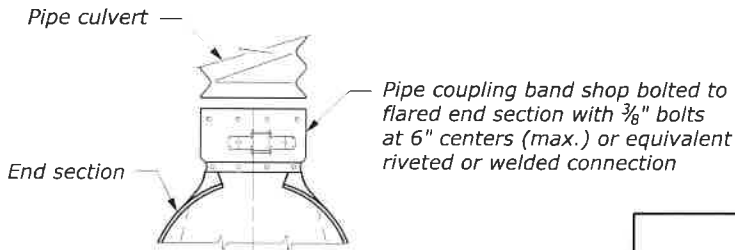
PIPE SIZE SPAN × RISE INCHES	EQUI- VALENT DIAM. (INCHES)	METAL THICKNESS				DIMENSIONS INCHES					SLOPE Approx.
		STEEL		ALUMINUM		A (min)	B (max)	H (min)	L (±2")	W (max)	
17 × 13	15	0.064	16	0.060	16	7	9	6	19	30	2½
21 × 15	18	0.064	16	0.060	16	7	10	6	23	36	2½
24 × 18	21	0.064	16	0.060	16	8	12	6	28	42	2½
28 × 20	24	0.064	16	0.060	16	9	14	6	32	48	2½
35 × 24	30	0.079	14	0.075	14	10	16	8	39	60	2½
42 × 29	36	0.079	14	0.075	14	12	18	9	46	75	2½
49 × 33	42	0.109	12	0.105	12	13	21	12	53	85	2½
57 × 38	48	0.109	12	0.105	12	18	26	12	63	90	2½
60 × 46	54	0.109	12	0.105	12	18	34	12	70	102	2
64 × 43	54	0.109	12	0.105	12	18	30	12	70	102	2
66 × 51	60	0.109	12	0.105	12	18	33	12	77	116	1½
71 × 47	60	0.109	12	0.105	12	18	33	12	77	114	1½
73 × 55	66	0.109	12	0.105	12	18	36	12	77	126	1½
77 × 52	66	0.109	12	0.105	12	18	36	12	77	126	1½
81 × 59	72	0.109	12	0.105	12	18	39	12	77	138	1½
83 × 57	72	0.109	12	0.105	12	18	39	12	77	138	1½
87 × 63	78	0.109	12	0.105	12	20	38	12	77	148	1½
95 × 67	84	0.109	12	0.105	12	20	34	12	87	162	1½
103 × 71	90	0.109	12	0.105	12	20	38	12	87	174	1½
112 × 75	96	0.109	12	0.105	12	20	40	12	87	174	1½



DESIGN A
CONNECTION TO ANNULAR
CORRUGATED METAL PIPE



DESIGN B
CONNECTION TO CONCRETE
PIPE INLET END



DESIGN C
CONNECTION TO METAL PIPE
OR OUTLET END OF CONCRETE PIPE

NOTE:

1. Variations in design and dimensions are permitted to allow for manufacturer's standards.
2. Fabricate the diameter of the end section of Design B to match the inside diameter of the concrete pipe culvert.
3. Design C may be used in lieu of design A for all metal pipe culvert sizes. Coupling bands may be any acceptable type for the pipe culvert specified.
4. Fabricate multiple piece bodies with lap seams tightly joined by 3/8" rivets or bolts. Fabricate end section center panels for 60" and larger diameter pipe and equivalent pipe arch from 0.138 inch steel or 0.135 inch aluminum.
5. On end section center panels for 66" and larger equivalent pipe arch provide 2½" x 2½" x ¼" angle reinforcement bolted or riveted under the center panel seam.
6. Supplement the reinforced edges of end sections for 60" and larger diameter pipe and 66" and larger equivalent pipe arch with 2½" x 2½" x ¼" stiffener angles attached with bolts or rivets.
7. Fabricate connector section, corner plate and toe plate extensions from the same metal thickness as the panel body. Use toe plate extension where shown on the plans.
8. Warp embankment slopes to match the slope of the flared end sections.



U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY OFFICE	
U.S. CUSTOMARY STANDARD	
METAL END SECTIONS	
STANDARD APPROVED FOR USE 12/1993 REVISED: 4/1994 6/2005 10/2007 3/2016	STANDARD 602-4

NO SCALE

1. Disregard Note 5 on D83A.

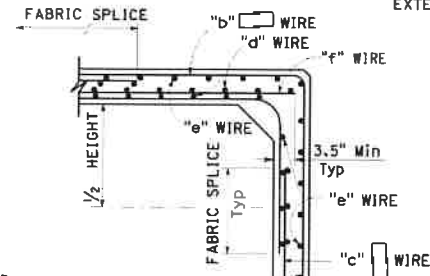


Diagram illustrating the dimensions and components of a welded wire mesh joint:

- 0.5" Min**: Minimum dimension for the top edge.
- 2" Max Typ**: Typical maximum dimension for the top edge.
- SEE NOTE 5**: Reference to external sealing band.
- EXTERNAL SEALING BAND**: Label for the band around the joint.
- GROOVE END**: Label for the end of the mesh.
- "b" WIRE**: Label for the top wire.
- "e" WIRE**: Label for the middle wire.
- "d" WIRE**: Label for the bottom wire.
- "a" WIRE**: Label for the bottom wire.
- 0.5" Clr Typ**: Typical clearance dimension for the bottom edge.
- 3.75" Min**: Minimum dimension for the bottom edge.
- 0.75 T₁ Max**: Maximum dimension for the bottom edge.
- LOCATION OF RESILIENT TYPE JOINT MATERIAL, IF USED**: Label for the joint material.

Diagram illustrating the cross-section of a joint assembly. The assembly consists of a RUBBER ELEMENT, a MASTIC ELEMENT, and a PROTECTIVE FILM ELEMENT. The width of the assembly varies, as indicated by the text "WIDTH VARIES - SEE TABLE". The location of the joint is marked by a vertical line, and the exterior surface is labeled.

Diagram of a rectangular inverted flycatcher showing dimensions and labels:

- SPAN, S**: Horizontal dimension across the top.
- HEIGHT, H**: Vertical dimension on the left side.
- 0.75" Min CHAMFER (OPTIONAL)**: Label pointing to the top-left corner.
- ROOF-SEE NOTE 1**: Label pointing to the top edge.
- WALL**: Label pointing to the right vertical edge.
- SEE NOTE 2**: Label pointing to the bottom-right corner.
- INVERT FLY**: Text inside the rectangle.

TABLE	
SPAN	EXTERNAL SEALING BAND WIDTH
4'-6'	9"
7'-8'	11"
10'-12'	13"

SPAN, S			8'								10'								12'																			
HEIGHT, H			4'		5'		6'		7'		8'		5'		6'		7'		8'		9'		10'		6'		7'		8'		9'		10'		11'		12'	
MAXIMUM EARTH COVER			10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"	10"	20"
CONCRETE (INCH)	ROOF	T ₁	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	
	SIDE WALL	T ₂	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	
	INVERT	T ₃	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	8.5"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	10"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	
		"d"	.55	.87	.56	.90	.57	.92	.58	.93	.58	.94	.66	1.07	.63	1.10	.69	1.13	.70	1.14	.70	1.16	.73	1.21	.21	.24	.77	1.27	.24	.29	.27	.31	.78	1.32	.29	1.32		
		"b"	.37	.59	.35	.55	.33	.52	.33	.52	.36	.54	.66	1.04	.67	.40	.64	.43	.67	.40	.64	.43	.67	.48	.67	.51	.85	.85	.81	.49	.77	.81	.74	.77	.53	.79	.74	.79
MINIMUM WELDED WIRE FABRIC (inch ² /ft ²)		"c"	.11	.11	.11	.11	.20	.31	.31	.42	.38	.62	.11	.11	.11	.11	.22	.31	.36	.42	.40	.62	.54	.86	.11	.11	.11	.23	.30	.37	.42	.42	.60	.54	.82	.42	1.06	
		"d"	.19	.11	.19	.11	.20	.11	.20	.11	.20	.11	.20	.11	.21	.11	.21	.11	.21	.11	.21	.11	.20	.11	.20	.11	.21	.11	.22	.11	.22	.11	.22	.11	.22	.11	.21	
		"e"	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	
		"f"	.44	.76	.45	.79	.37	.61	.27	.52	.20	.31	.55	.96	.56	.99	.47	.81	.34	.73	.31	.53	.16	.30	.62	1.10	1.10	1.13	.64	.97	1.13	.87	.97	.71	.40	.50	.87	.26
* QUANTITY	Conc	CY/LF	.78	.83	.88	.94	.99	1.10	1.17	1.23	1.29	1.35	1.41	1.56	1.63	1.70	1.78	1.85		1.93	2.00																	
	Reinf	LB/LF	93	129	97	133	105	148	117	161	131	189	133	191	138	196	148	212	191	225	176	253	201	282	174	255	179	261	191	279	207	293	223	323	249	357	281	393
** SOIL PRESSURE (ksf)			2.5	4.6	2.5	4.6	2.5	4.6	2.5	4.6	2.5	4.6	3.8	4.6	3.8	4.7	3.8	4.7	4.6	4.7	3.9	4.7	3.9	4.8	3.6	4.7	3.7	4.7	3.7	4.8	3.7	4.8	3.7	4.8	3.7	4.8	3.7	4.8

1. The inside and outside surfaces of the RCB roof shall be marked "TOP".
2. H1 minimum shall equal the wall thickness. H1 maximum shall be 8" for spans through 8' and 14" for spans over 8'.
3. Quantities are approximate and for design purposes only.
4. For design and details not shown see Standard Plan D83B.
5. ~~For external sealing band applications see Standard Plan A626.~~
6. Soil pressures shown are factored per AASHTO LRFD and include soil weight of fill over box, self weight of box and live load where applicable.

NO SCALE

NO SCALE

PRECAST REINFORCED CONCRETE BOX CULVERT

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5/4/2020

STATE	PROJECT	SHEET NUMBER
CA	FTNP/NPS YOSE 500(5) & 918(1) Southside Dr & Bridalveil	T6

DESIGN NOTES:**Specifications:**

AASHTO LRFD Bridge Design Specifications,
4th Edition with California Amendments.

Earth load:

Earth pressures for two conditions:
140 pcf Vert, 42 pcf Horiz
140 pcf Vert, 140 pcf Horiz

Unit stresses:

$f'_c = 5.0 \text{ ksi}$
 $f_y = 65.0 \text{ ksi}$ for weld wire fabric
 $n = 7$

Shear:

Based on

$$V_c = (2.14\sqrt{f'_c} + 4600 \frac{A_s V_u d_v}{b d_s M_u}) b d_s \leq 4.0 \sqrt{f'_c} b d_s \text{ (Pounds)}$$

V_c shall not be less than $3.00 \sqrt{f'_c} b d_s$
for frame members and $2.5 \sqrt{f'_c} b d_s$
for simply supported members.

Exclusion:

Axial loading on the members has
not been considered.

GENERAL NOTES:**Designation:**

Standard single or multiple precast box culverts are shown on the plans as span, times height with maximum cover over roof thus: 8' x 5' RCB with 10'-0" or double 10' x 5' RCB with 20'-0", followed by alternatives.

Alternatives:**Single cell:**

Standard dimensions of AASHTO Material Specification 'M259' or 'M273'.

Multiple cell:

Constructed by placing single cells adjacent to each other. Inlet and outlet ends of culvert will be rounded unless square ends are designated. Parapet will be shown unless designated in plans. Such designation may be different for inlet and outlet ends.

Limitations:

Where the overfill is less than 12", Precast RCB culverts are not to be used. Precast RCB culverts are not to be used in siphon or pressurized installations unless appropriate "watertight" jointing is provided.

Special reinforcement coverage:

Precast RCB culvert standard plans are not to be used in a corrosive environment or where there is a severe abrasive flow condition or freeze-thaw locations.

Special design:

Required for culvert with different conditions, loads or design bearing pressures greater than those given on these plans. Required for culverts where end details need higher skew angles, higher parapets or barrier sections.

CONSTRUCTION NOTES:**Cutoff walls:**

4'-0" Cutoff walls are to be provided at inlet and/or outlet unless channel is lined and unless otherwise shown. These walls are to be extended if scour conditions warrant. See Standard Plans D84, D85 and D86A.

Wingwalls:

Wingwalls shall be cast-in-place and shall conform to standard plan details for box culvert wingwalls. See Standard Plans D84, D85 and D86A.

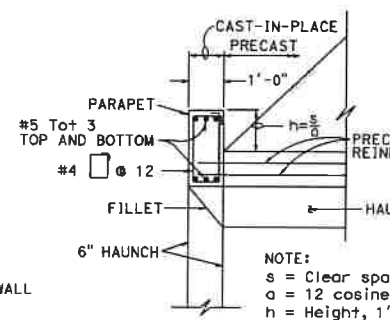
Earthwork:

See Standard Plan A626.

Construction loads:

Strutting may be required near temporary ends. For construction loads on culverts, See Standard Plan D88.

SPAN	PARAPET "P" BARS			
	0° TO 15°	16° TO 30°	31° TO 45°	
4'-0"	#5	#5	#5	
5'-0"	#5	#5	#6	
6'-0"	#6	#6	#6	
7'-0"	#7	#7	#7	
8'-0"	#7	#7	#8	
10'-0"	#8	#8	#9	
12'-0"	#9	#9	#10	

BARRIER PARAPET REINFORCEMENT

SECTION A-A
(Standard Height Parapet)

TYPICAL CULVERT END DETAILS

For wall and invert reinforcement not shown, See "End Elevation" detail.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PRECAST REINFORCED
CONCRETE BOX CULVERT
MISCELLANEOUS DETAILS**

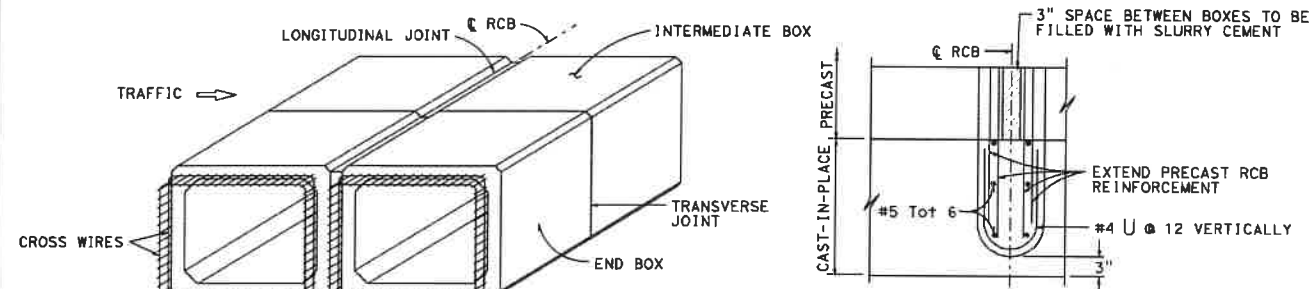
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D83B

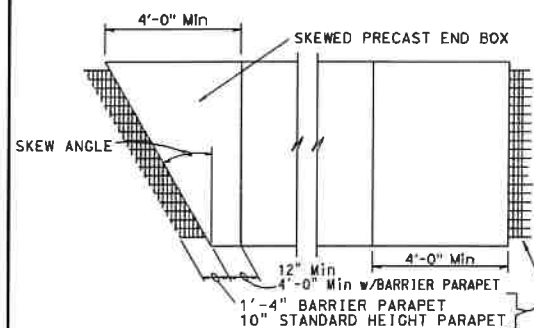
**NOTE:**

- See Special 620-B for Stone Masonry details.

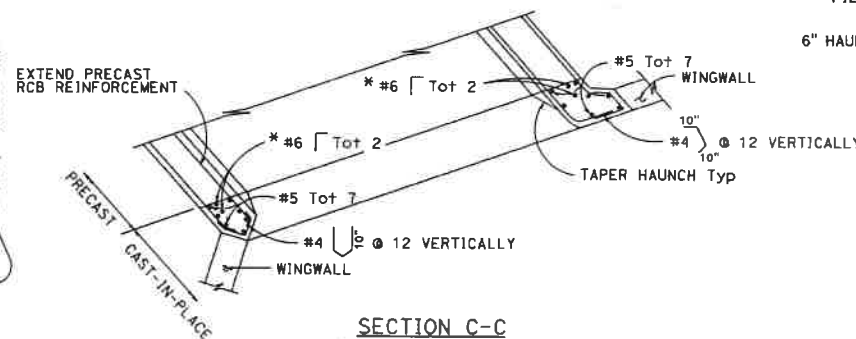
2015 STANDARD PLAN D83B

**PRECAST RCB TERMINOLOGY**

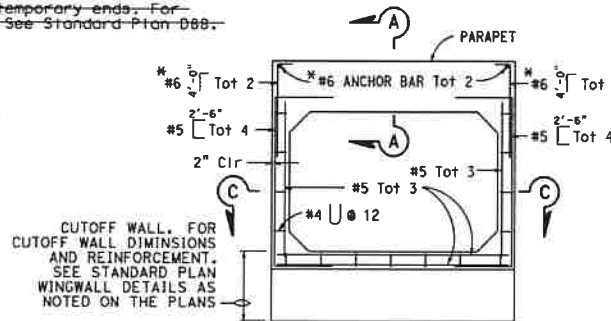
NOTE: Inner and outer reinforcement to be exposed as required to tie to cast-in-place construction. A minimum of two cross wires shall be exposed on all sides.

**PARTIAL PLAN VIEW**

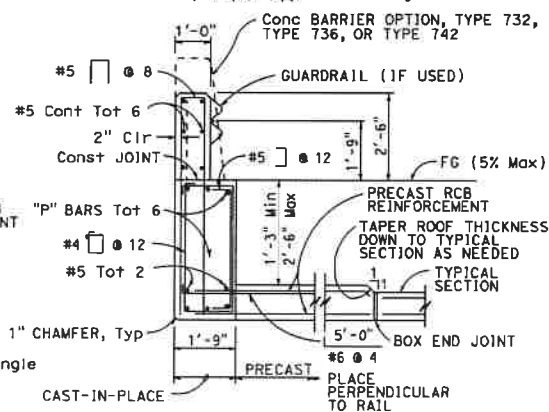
For illustrative purposes only.
For correct skew direction see plans.

**SECTION C-C**

* Reinforcing required for barrier parapet application only.

**CAST-IN-PLACE END ELEVATION**

* Reinforcing required for barrier parapet application only.



SECTION A-A
(Barrier Parapet)

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

**PRECAST REINFORCED
CONCRETE BOX CULVERT
MISCELLANEOUS DETAILS**

SPECIAL
602-B