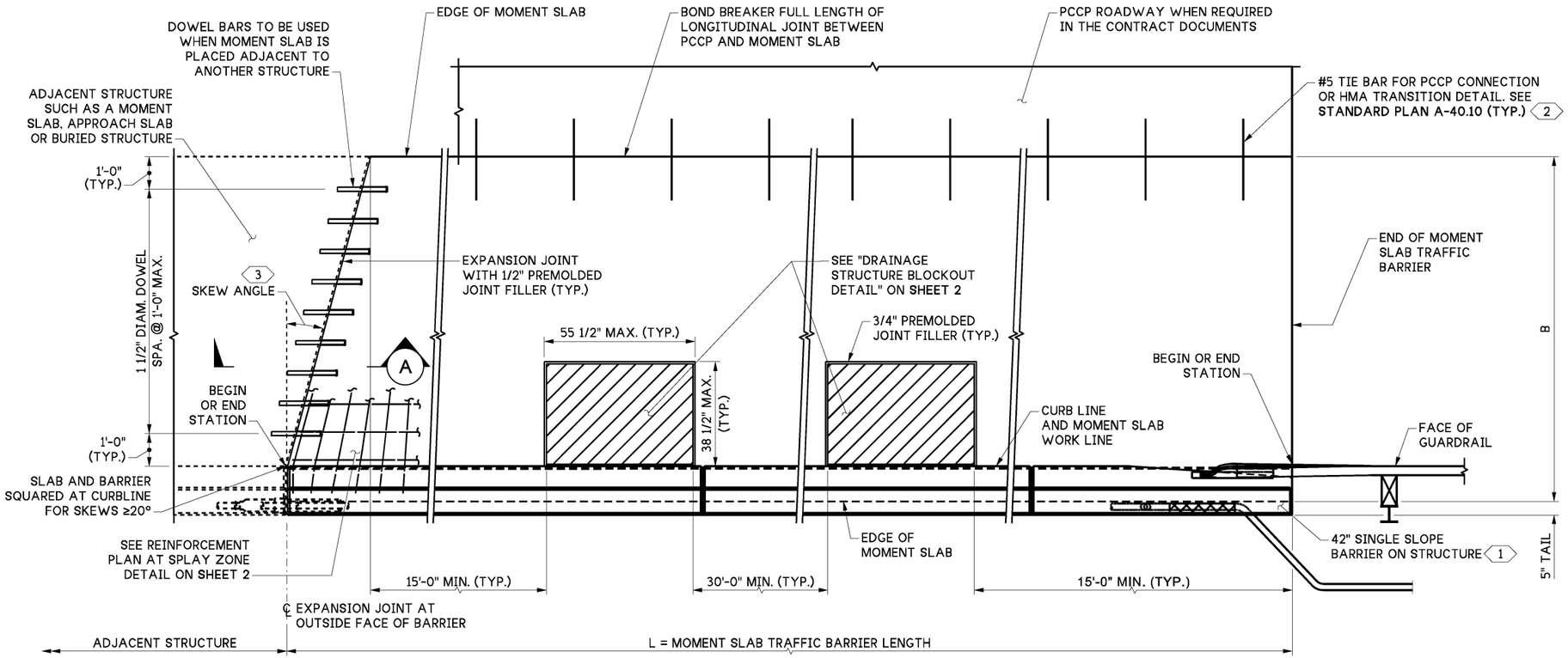
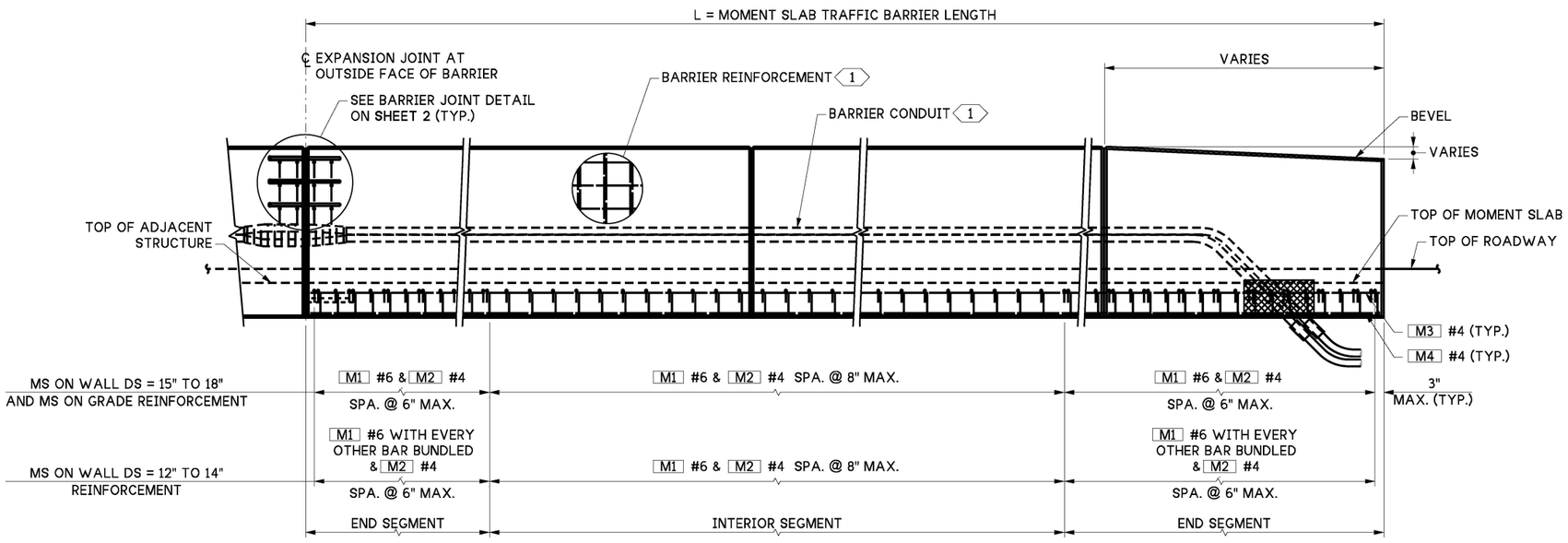
DRAWN BY: NICHOLAS BRUTZMAN



PLAN ~ MOMENT SLAB

EXPANSION JOINT SPACING 120'-0" MAX.



OUTSIDE ELEVATION

FOR TRAFFIC BARRIER DETAILS INCLUDING SEGMENT LENGTHS SEE STANDARD PLAN C-81.10

GENERAL NOTES:

1. All material and workmanship shall be in accordance with requirements of the current edition of the **WSDOT Standard Specifications for Road, Bridge and Municipal Construction (M 41-10)**.
2. The moment slab design has been performed in accordance with the **AASHTO LRFD Bridge Design Specifications** and WSDOT design criteria for moment slabs. Moment slabs shall be constructed in the range of configurations shown for the appropriate soil properties and soil bearing resistances shown. The following design elements are beyond the scope of the moment slab design: global stability of supporting walls or embankment slopes, internal design of supporting walls, and any adjacent structures (connected or otherwise). Any modifications to the details as shown shall require engineering under separate cover. Where adjacent structures are present, refer to those plans for additional connection details.
3. This standard is designed to pair with **Standard Plan C-81.10 42" Single Slope Barrier on Structure (TL-4)**. The tolerance on height allowed in **Standard C-81.10** shall not be used in conjunction with these plans. Construction tolerances for both moment slab and barrier shall be as specified in the **WSDOT Standard Specifications**.
4. Epoxy coat all moment slab reinforcement when there is no roadway or fill on top of moment slab.
5. This standard may be used with or without skew and with or without attachment to adjacent structures, however attachment to adjacent structures is required when present. Attachment to at grade concrete barriers using the barrier joint on **Sheet 2** is required when present.
6. Bridge railing type BP may be attached to the top of the barrier.

KEY NOTES:

1 SEE **STANDARD PLAN C-81.10** FOR DETAILS.

2 PROVIDE TIE BAR TO PCCP OR HMA TRANSITION DETAIL WHEN TOP SURFACE OF MOMENT SLAB IS DRIVING SURFACE.

3 SKEW SHOWN AS REDUCING SLAB AREA. SEE SHEETS 3 AND 4 FOR SKEW REQUIREMENTS.

PATRICK RYAN O'NEILL STATE OF WASHINGTON 53580 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

Patrick Ryan O'Neill

Patrick Ryan O'Neill (Sep 12, 2023 12:55 PDT)

Sep 12, 2023

MOMENT SLAB TRAFFIC BARRIER 42" SINGLE SLOPE (TL-4)

STANDARD PLAN C-81.15-00

SHEET 1 OF 5 SHEETS

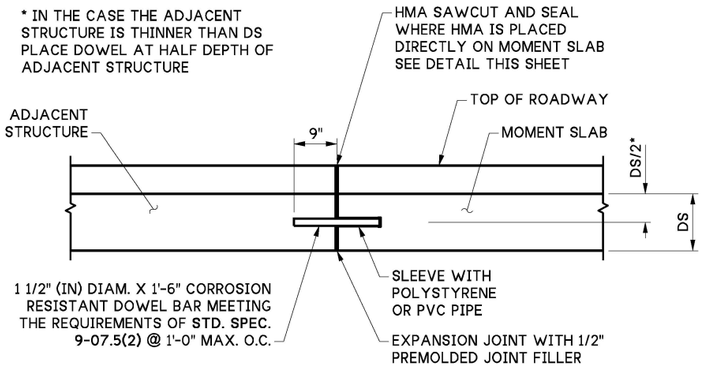
APPROVED FOR PUBLICATION

Mark A Gaines Sep 12, 2023

STATE DESIGN ENGINEER

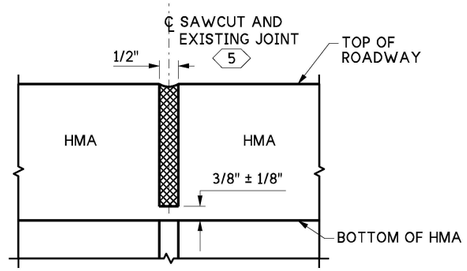
Washington State Department of Transportation

DRAWN BY: NICHOLAS BRUTZMAN

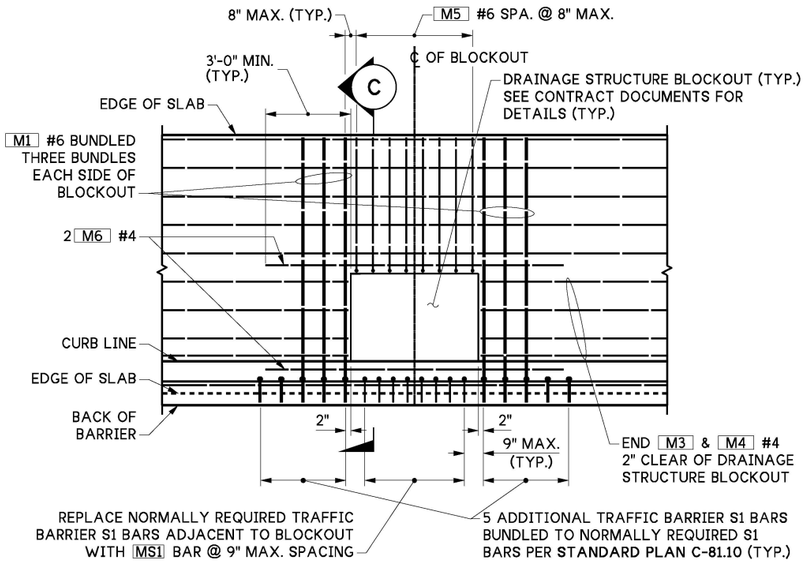


ENSURE THAT NO CONCRETE ENTERS THE SLEEVE DURING CONCRETE PLACEMENT

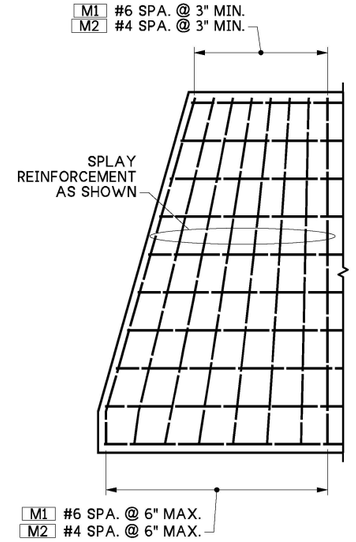
SECTION (A)



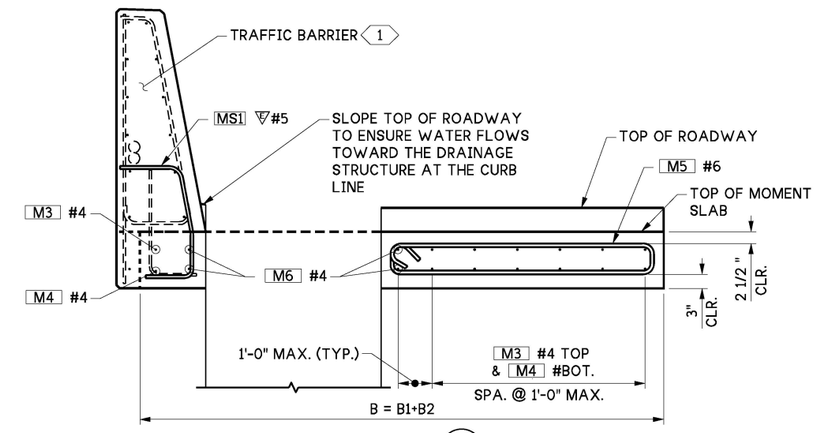
HMA SAWCUT AND SEAL DETAIL



DRAINAGE STRUCTURE BLOCKOUT DETAIL



REINFORCEMENT PLAN AT SPLAY ZONE

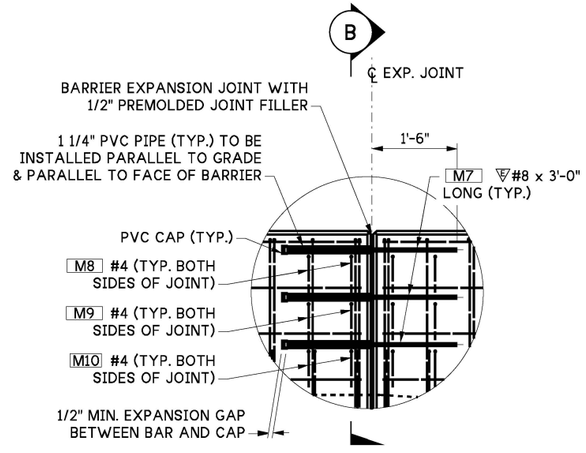


SECTION (C)

MOMENT SLAB ON GRADE SHOWN, OVER WALL SIMILAR

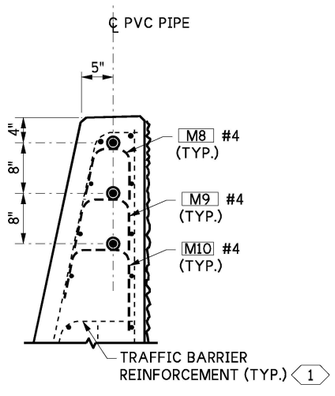
KEY NOTES

1. SEE STANDARD PLAN C-81.10 FOR DETAILS.
4. INCREASE LENGTH NEEDED FOR SPLAY ZONE.
5. SAWCUT SHALL BE AS DESCRIBED IN STANDARD SPECIFICATION SECTION 5-05.3(8) AND SEALED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 5-05.3(8)B.



ENSURE THAT NO CONCRETE ENTERS THE PVC PIPE DURING CONCRETE PLACEMENT

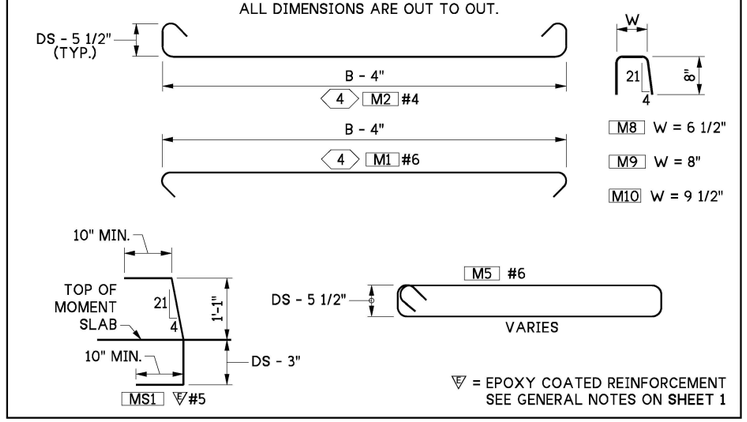
BARRIER JOINT DETAIL



SECTION (B)

BENDING DIAGRAM

ALL DIMENSIONS ARE OUT TO OUT.



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Sep 12, 2023

MOMENT SLAB TRAFFIC BARRIER 42" SINGLE SLOPE (TL-4)

STANDARD PLAN C-81.15-00

SHEET 2 OF 5 SHEETS

APPROVED FOR PUBLICATION

Mark A Gaines Sep 12, 2023

STATE DESIGN ENGINEER

Washington State Department of Transportation

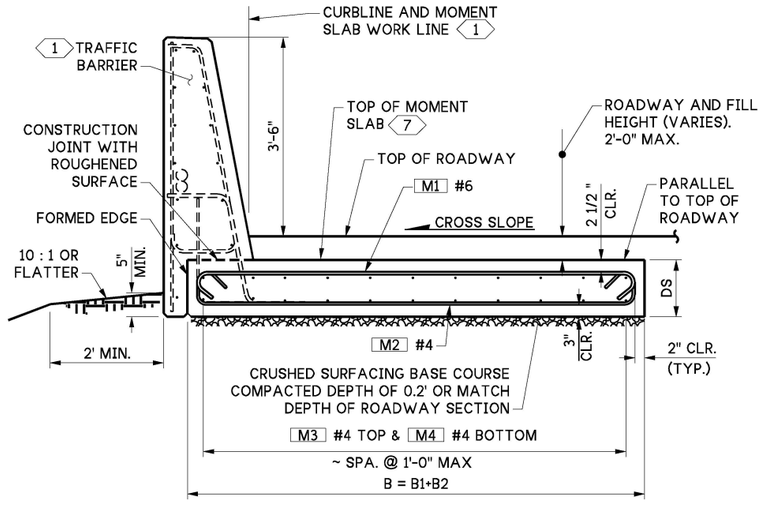
DRAWN BY: NICHOLAS BRUTZMAN

MOMENT SLAB ON GRADE - 42" SS BARRIER

FILL RANGES		0" TO <6" FILL						6" TO <12" FILL						12" TO <18" FILL						18" TO 24" FILL					
NO.	MIN L (FT) ⟨6⟩	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)
1G	12	-	-	-	-	-	-	-	-	-	-	-	-	12	17	30	0	4.56	1.07	12	12	30	0	4.47	1.09
2G	13	-	-	-	-	-	-	12	18	30	0	4.84	0.92	-	-	-	-	-	-	-	-	-	-	-	-
3G	15	12	18	30	0	5.24	0.74	11	14	30	0	4.39	0.86	10	15	30	0	3.99	1.07	10	12	30	0	4.08	1.11
4G	15	-	-	-	-	-	-	12	13	30	0	5.13	0.76	11	12	30	0	4.63	0.91	-	-	-	-	-	-
5G	20	9	18	30	0	3.72	0.88	9	13	30	0	3.63	0.90	8	16	30	0	3.21	1.19	8	12	30	0	3.22	1.23
6G	20	10	14	30	0	4.20	0.72	10	12	30	0	4.49	0.76	9	12	30	0	3.93	0.95	-	-	-	-	-	-
7G	20	11	13	30	0	4.98	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8G	25	9	15	45	0	3.58	0.80	8	15	45	0	3.09	1.02	8	12	45	0	3.18	1.06	7	16	45	0	2.70	1.44
9G	25	10	12	45	0	4.02	0.67	9	12	45	0	3.72	0.83	-	-	-	-	-	-	8	12	45	0	3.46	1.13
10G	30	8	14	45	0	3.14	0.82	7	15	45	0	2.67	1.09	7	12	45	0	2.75	1.13	7	12	45	0	3.00	1.20
11G	30	9	12	45	0	3.79	0.68	8	12	45	0	3.38	0.86	-	-	-	-	-	-	-	-	-	-	-	-
12G	35	7	16	45	1	2.66	0.99	7	12	45	1	2.67	1.02	6	15	45	0	2.29	1.33	6	12	45	0	2.34	1.38
13G	35	8	12	45	1	3.22	0.78	-	-	-	-	-	-	7	12	45	1	2.98	1.08	7	12	45	1	3.21	1.16
14G	40	7	13	45	1	2.69	0.89	6	14	45	0	2.27	1.13	6	12	45	0	2.40	1.18	6	12	45	0	2.61	1.25
15G	40	8	12	45	1	3.55	0.71	7	12	45	1	3.00	0.92	7	12	45	1	3.29	0.99	7	12	45	1	3.50	1.07
16G	45	6	15	45	0	2.25	1.01	6	12	45	0	2.35	1.03	5	18	45	0	1.87	1.56	5	14	45	0	1.87	1.61
17G	45	7	12	45	1	2.83	0.81	7	12	45	1	3.24	0.86	6	12	45	0	2.62	1.09	6	12	45	0	2.82	1.16
18G	45	-	-	-	-	-	-	-	-	-	-	-	-	7	12	45	1	3.52	0.93	7	12	45	1	3.72	1.02
19G	50	6	13	45	0	2.27	0.95	5	18	45	0	1.88	1.37	5	13	45	0	1.83	1.41	5	12	45	0	1.96	1.47
20G	50	7	12	45	1	3.04	0.75	6	12	45	0	2.53	0.96	6	12	45	0	2.79	1.02	7	12	45	1	3.89	0.97
21G	50	-	-	-	-	-	-	7	12	45	1	3.43	0.81	7	12	45	1	3.70	0.89	-	-	-	-	-	-
22G	55	6	12	45	0	2.33	0.89	5	14	45	0	1.82	1.26	5	12	45	0	1.93	1.31	5	12	45	0	2.10	1.38
23G	55	7	12	45	1	3.20	0.72	6	12	45	0	2.68	0.91	7	12	45	1	3.84	0.86	7	12	45	1	4.03	0.94
24G	55	-	-	-	-	-	-	7	12	45	1	3.58	0.78	-	-	-	-	-	-	-	-	-	-	-	-
25G	60	5	16	45	0	1.82	1.16	5	12	45	0	1.83	1.19	5	12	45	0	2.05	1.23	5	12	45	0	2.22	1.31
26G	60	6	12	45	0	2.46	0.83	7	12	45	1	3.71	0.75	7	12	45	1	3.96	0.83	7	12	45	1	4.15	0.92
27G	60	7	12	45	1	3.34	0.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28G	65	5	14	45	0	1.79	1.12	5	12	45	0	1.94	1.12	5	12	45	0	2.16	1.18	4	16	45	0	1.42	1.92
29G	65	6	12	45	0	2.57	0.79	7	12	45	1	3.81	0.73	7	12	45	1	4.06	0.81	5	12	45	0	2.32	1.25
30G	65	7	12	45	1	3.45	0.67	-	-	-	-	-	-	-	-	-	-	-	-	7	12	45	1	4.24	0.90
31G	70	5	13	45	0	1.82	1.08	5	12	45	0	2.03	1.07	4	17	45	0	1.43	1.74	4	12	45	0	1.40	1.79
32G	70	6	12	45	0	2.66	0.76	7	12	45	2	3.86	0.74	5	12	45	0	2.24	1.13	7	12	45	2	4.28	0.91
33G	70	7	12	45	2	3.50	0.67	-	-	-	-	-	-	7	12	45	2	4.10	0.82	-	-	-	-	-	-
34G	75	5	12	45	0	1.83	1.04	4	18	45	0	1.41	1.59	4	14	45	0	1.41	1.64	4	12	45	0	1.48	1.69
35G	75	7	12	45	2	3.59	0.66	5	12	45	0	2.11	1.03	5	12	45	0	2.32	1.10	7	12	45	2	4.35	0.89
36G	75	-	-	-	-	-	-	7	12	45	2	3.94	0.73	7	12	45	2	4.18	0.81	-	-	-	-	-	-
37G	80	5	12	45	0	1.90	0.99	4	16	45	0	1.41	1.51	4	12	45	0	1.42	1.55	4	12	45	0	1.55	1.62
38G	80	7	12	45	2	3.67	0.64	5	12	45	0	2.18	1.00	7	12	45	2	4.24	0.79	7	12	45	2	4.41	0.88
39G	80	-	-	-	-	-	-	7	12	45	2	4.01	0.71	-	-	-	-	-	-	-	-	-	-	-	-
40G	85	4	18	45	0	1.39	1.41	4	14	45	0	1.40	1.44	4	12	45	0	1.48	1.49	4	12	45	0	1.61	1.56
41G	85	5	12	45	0	1.97	0.94	5	12	45	0	2.25	0.97	7	12	45	2	4.30	0.78	7	12	45	2	4.47	0.87
42G	85	7	12	45	2	3.73	0.63	7	12	45	2	4.07	0.70	-	-	-	-	-	-	-	-	-	-	-	-
43G	90	4	17	45	0	1.40	1.36	4	12	45	0	1.37	1.42	4	12	45	0	1.54	1.43	4	12	45	0	1.67	1.51
44G	90	5	12	45	0	2.03	0.90	7	12	45	2	4.13	0.69	7	12	45	2	4.35	0.77	7	12	45	2	4.52	0.85
45G	90	7	12	45	2	3.79	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46G	95	4	15	45	0	1.36	1.35	4	12	45	0	1.42	1.35	4	12	45	0	1.59	1.39	4	12	45	0	1.72	1.47
47G	95	5	12	45	0	2.08	0.88	7	12	45	2	4.17	0.68	7	12	45	2	4.40	0.76	7	12	45	2	4.56	0.85
48G	100	4	14	45	0	1.36	1.32	4	12	45	0	1.47	1.30	4	12	45	0	1.63	1.35	4	12	45	0	1.76	1.43
49G	100	5	12	45	0	2.13	0.86	7	12	45	2	4.22	0.67	7	12	45	2	4.44	0.75	7	12	45	2	4.60	0.84
50G	100	7	12	45	2	3.89	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51G	105	4	13	45	0	1.35	1.31	4	12	45	0	1.48	1.29	4	12	45	0	1.64	1.35	4	12	45	0	1.77	1.43
52G	105	5	12	45	0	2.17	0.84	7	12	45	3	4.23	0.68	7	12	45	3	4.45	0.76	7	12	45	3	4.61	0.85
53G	110	4	13	45	0	1.39	1.25	7	12	45	3	4.27	0.68	7	12	45	3	4.49	0.76	7	12	45	3	4.65	0.84
54G	110	5	12	45	0	2.21	0.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55G	110	7	12	45	3	3.95	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56G	115	4	13	45	0	1.43	1.21	7	12	45	3	4.30	0.67	7	12	45	3	4.52	0.75	7	12	45	3	4.68	0.83
57G	115	5	12	45	0	2.24	0.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58G	120	4	13	45	0	1.46	1.17	7	12	45	3	4.33	0.66	7	12	45	3	4.55	0.74	7	12	45	3	4.70	0.83
59G	120	5	12	45	0	2.28	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60G	120	7	12	45	3	4.02	0.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CROSS SLOPE DEPENDENT ELEMENTS ON GRADE

CROSS SLOPE	φ MIN	B2 (IN)	
		0 TO <18" FILL	18" TO 24" FILL
+8% TO -2%	30°	0	0
>-2% TO -6%	33°	3	4



TYPICAL SECTION MOMENT SLAB ON GRADE

KEY NOTES

⟨1⟩ SEE STANDARD PLAN C-81.10 FOR DETAILS.

⟨6⟩ FOR INTERMEDIATE VALUES OF MOMENT SLAB LENGTH USE A SHORTER LENGTH OPTION WHICH EXTENDS ACTUAL LENGTH PAST THE MINIMUM LENGTH, L, IN THE TABLE.

⟨7⟩ PROVIDE TOP SURFACE TEXTURING WHEN TOP SURFACE OF MOMENT SLAB IS DRIVING SURFACE AS DESCRIBED IN STANDARD SPECIFICATION SECTION 5-05.3(11).

KEY

NO.: THE NUMERIC AND ALPHABETIC DESIGNATION OF THE MOMENT SLAB.

FILL RANGES: THE AMOUNT OF ROADWAY SECTION AND FILL OR BASE COURSE APPLIED ABOVE THE SLAB.

MS TYPE: A COMBINATION OF THE NO. AND THE FILL RANGE. FOR INSTANCE 14G WITH 12" TO <18" FILL IS MS TYPE 14G.12-18.

MIN L (FT): THE MINIMUM LENGTH OF THE MOMENT SLAB MEASURED AS SHOWN ON SHEET 1. LENGTH BETWEEN EXPANSION JOINTS MAY BE INCREASED FROM THE MINIMUMS.

B1 (FT): REQUIRED MINIMUM WIDTH B1, TO BE ADDED TO B2 TO OBTAIN THE MOMENT SLAB WIDTH B.

DS (IN): MINIMUM REQUIRED SLAB THICKNESS.

MAX SKEW: (DEGREE) THE MAXIMUM SKEW ON EITHER END. SKEWS WHICH INCREASE TOTAL MOMENT SLAB AREA MAY BE USED ON A SINGLE END OR BOTH ENDS. SKEWS WHICH DECREASE TOTAL MOMENT SLAB AREA SHALL ONLY BE USED ON ONE END.

#BO: MAXIMUM NUMBER OF DRAINAGE STRUCTURE BLOCKOUTS PERMISSIBLE FOR THE DESIGN OPTION. BLOCK OUT LOCATIONS REQUIRE ANNOTATION WITHIN THE PLANS.

EW (FT): EFFECTIVE WIDTH OF SOIL DEMAND "SOIL (KSF)" FROM THE GOVERNING EXTREME EVENT LIMIT STATE.

SOIL (KSF): THE DEMAND FROM THE GOVERNING EXTREME EVENT LIMIT STATE ON THE SOIL UNDER THE MOMENT SLAB. THIS VALUE SHALL BE EXCEEDED BY THE SOIL'S RESISTANCE, TO BE DETERMINED ON A SITE SPECIFIC BASIS.

CROSS SLOPE: THE PERCENT CROSS SLOPE EXHIBITED BY THE MOMENT SLAB. IN THIS USE +% ARE WHEN THE BARRIER IS ON THE HIGH SIDE OF THE SLAB, -% CROSS SLOPES ARE WHEN THE BARRIER IS ON THE LOW SIDE OF THE SLAB.

φ MIN: SOIL FRICTION ANGLE REQUIRED FOR USE OF THE STANDARD.

B2 (IN): REQUIRED MINIMUM WIDTH B2, TO BE ADDED TO B1 TO OBTAIN THE MOMENT SLAB WIDTH B.

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Patrick Ryan O'Neill
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Sep 12, 2023

MOMENT SLAB TRAFFIC BARRIER 42" SINGLE SLOPE (TL-4)

STANDARD PLAN C-81.15-00

SHEET 3 OF 5 SHEETS

APPROVED FOR PUBLICATION

Mark A Gaines Sep 12, 2023

STATE DESIGN ENGINEER

Washington State Department of Transportation

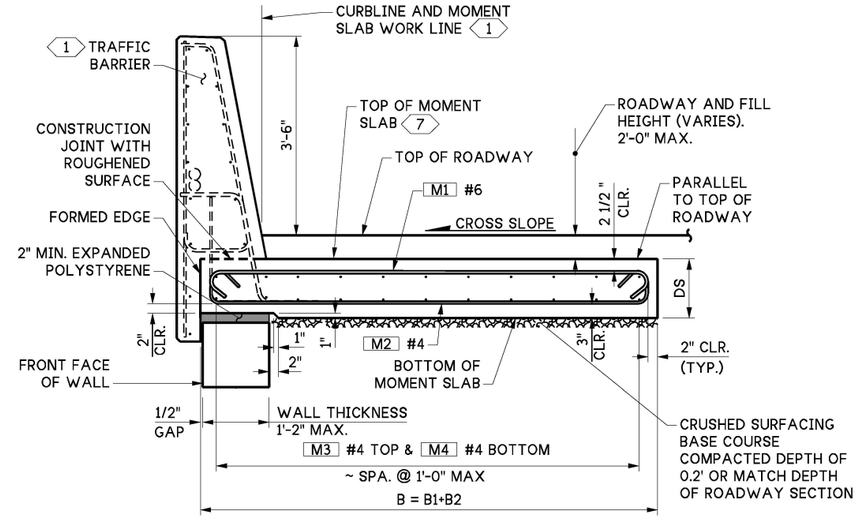
DRAWN BY: NICHOLAS BRUTZMAN

MOMENT SLAB ON WALL - 42" SS BARRIER

FILL RANGES		0" TO <6" FILL						6" TO <12" FILL						12" TO <18" FILL						18" TO 24" FILL					
NO.	MIN L (FT) ⟨6⟩	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)	B1 (FT)	DS (IN)	MAX SKEW (DEGREE)	#BO	EW (FT)	SOIL (KSF)
1W	13	-	-	-	-	-	-	-	-	-	-	-	-	14	17	30	0	3.81	1.48	14	13	30	0	3.81	1.53
2W	14	-	-	-	-	-	-	14	17	30	0	3.96	1.25	-	-	-	-	-	-	-	-	-	-	-	-
3W	15	14	18	30	0	4.04	1.08	13	17	30	0	3.63	1.32	13	13	30	0	3.63	1.36	12	15	30	0	3.30	1.73
4W	15	-	-	-	-	-	-	14	14	30	0	4.06	1.12	14	12	30	0	4.30	1.17	13	12	30	0	3.90	1.43
5W	20	12	16	30	0	3.53	1.07	11	16	30	0	3.07	1.39	11	12	30	0	3.08	1.43	10	15	30	0	2.63	1.95
6W	20	13	13	30	0	3.96	0.90	12	12	30	0	3.56	1.11	-	-	-	-	-	-	11	12	30	0	3.39	1.51
7W	20	14	12	30	0	4.63	0.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8W	25	11	18	45	0	2.82	1.33	11	14	45	0	2.83	1.37	10	15	45	0	2.41	1.82	10	12	45	0	2.47	1.88
9W	25	12	15	45	0	3.25	1.09	12	12	45	0	3.40	1.13	11	12	45	0	3.02	1.43	-	-	-	-	-	-
10W	25	13	12	45	0	3.54	0.96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11W	30	10	17	45	0	2.48	1.41	10	13	45	0	2.50	1.45	9	16	45	0	2.13	2.00	9	12	45	0	2.13	2.06
12W	30	11	13	45	0	2.86	1.16	11	12	45	0	3.26	1.13	10	12	45	0	2.76	1.48	-	-	-	-	-	-
13W	30	12	12	45	0	3.85	0.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14W	35	10	14	45	1	2.56	1.48	9	15	45	1	2.13	1.94	9	12	45	1	2.20	1.95	8	18	45	1	1.74	2.96
15W	35	11	12	45	1	3.19	1.14	10	12	45	1	2.81	1.41	-	-	-	-	-	-	9	12	45	1	2.45	2.01
16W	40	9	16	45	1	2.16	1.72	9	12	45	1	2.17	1.74	8	16	45	1	1.75	2.48	8	12	45	1	1.74	2.55
17W	40	10	12	45	1	2.62	1.34	-	-	-	-	-	-	9	12	45	1	2.49	1.70	-	-	-	-	-	-
18W	45	9	14	45	1	2.19	1.60	8	16	45	1	1.74	2.23	8	12	45	1	1.73	2.28	8	12	45	1	1.95	2.26
19W	45	10	12	45	1	2.87	1.16	9	12	45	1	2.40	1.51	-	-	-	-	-	-	-	-	-	-	-	-
20W	50	8	18	45	1	1.77	2.02	8	14	45	1	1.77	2.06	8	12	45	1	1.90	2.01	7	18	45	1	1.34	3.38
21W	50	9	12	45	1	2.14	1.58	9	12	45	1	2.58	1.38	-	-	-	-	-	-	8	12	45	1	2.11	2.08
22W	55	8	16	45	1	1.75	1.94	8	12	45	1	1.76	1.97	7	18	45	1	1.34	3.04	7	14	45	1	1.33	3.13
23W	55	9	12	45	1	2.30	1.40	-	-	-	-	-	-	8	12	45	1	2.04	1.86	8	12	45	1	2.25	1.95
24W	60	8	15	45	1	1.79	1.84	8	12	45	1	1.88	1.79	7	15	45	1	1.32	2.90	7	12	45	1	1.36	2.92
25W	60	9	12	45	1	2.42	1.28	-	-	-	-	-	-	8	12	45	1	2.15	1.76	-	-	-	-	-	-
26W	65	8	13	45	1	1.70	1.91	7	17	45	1	1.32	2.71	7	13	45	1	1.32	2.78	7	12	45	1	1.45	2.69
27W	65	9	12	45	1	2.53	1.19	8	12	45	1	1.98	1.66	8	12	45	1	2.25	1.68	-	-	-	-	-	-
28W	70	8	13	45	2	1.77	1.93	7	16	45	2	1.31	2.85	7	12	45	2	1.31	2.91	7	12	45	2	1.49	2.74
29W	70	9	12	45	2	2.62	1.22	8	12	45	2	2.05	1.69	-	-	-	-	-	-	-	-	-	-	-	-
30W	75	7	18	45	2	1.27	2.82	7	14	45	2	1.27	2.85	7	12	45	2	1.38	2.68	7	12	45	2	1.56	2.60
31W	75	8	12	45	2	1.74	1.93	8	12	45	2	2.12	1.60	-	-	-	-	-	-	-	-	-	-	-	-
32W	80	7	17	45	2	1.28	2.75	7	13	45	2	1.28	2.77	7	12	45	2	1.45	2.51	7	12	45	2	1.62	2.49
33W	80	8	12	45	2	1.81	1.79	8	12	45	2	2.19	1.53	-	-	-	-	-	-	-	-	-	-	-	-
34W	85	7	16	45	2	1.27	2.72	7	12	45	2	1.27	2.73	7	12	45	2	1.51	2.38	6	16	45	0	0.91	4.15
35W	85	8	12	45	2	1.88	1.68	-	-	-	-	-	-	-	-	-	-	-	-	7	12	45	2	1.68	2.40
36W	90	7	15	45	2	1.25	2.74	7	12	45	2	1.32	2.55	7	12	45	2	1.56	2.27	6	15	45	0	0.92	4.00
37W	90	8	12	45	2	1.93	1.59	-	-	-	-	-	-	-	-	-	-	-	-	7	12	45	2	1.73	2.32
38W	95	7	15	45	2	1.29	2.56	7	12	45	2	1.37	2.41	6	17	45	0	0.90	3.87	6	13	45	0	0.90	4.00
39W	95	8	12	45	2	1.98	1.52	-	-	-	-	-	-	7	12	45	2	1.60	2.18	7	12	45	2	1.77	2.26
40W	100	7	14	45	2	1.26	2.63	7	12	45	2	1.42	2.29	6	16	45	0	0.90	3.79	6	12	45	0	0.90	3.92
41W	100	8	12	45	2	2.02	1.46	-	-	-	-	-	-	7	12	45	2	1.64	2.12	7	12	45	2	1.81	2.20
42W	105	7	14	45	3	1.28	2.70	7	12	45	3	1.43	2.35	6	15	45	0	0.90	3.75	6	12	45	0	0.93	3.74
43W	105	8	12	45	3	2.05	1.50	-	-	-	-	-	-	7	12	45	3	1.66	2.17	7	12	45	3	1.82	2.25
44W	110	7	13	45	3	1.23	2.85	6	18	45	0	0.89	3.62	6	14	45	0	0.89	3.73	6	12	45	0	0.96	3.60
45W	110	8	12	45	3	2.09	1.45	7	12	45	3	1.47	2.25	7	12	45	3	1.69	2.11	7	12	45	3	1.85	2.20
46W	115	7	13	45	3	1.27	2.69	6	17	45	0	0.88	3.64	6	13	45	0	0.88	3.73	6	12	45	0	0.99	3.48
47W	115	8	12	45	3	2.12	1.40	7	12	45	3	1.50	2.17	7	12	45	3	1.72	2.06	7	12	45	3	1.88	2.16
48W	120	7	12	45	3	1.21	2.93	6	16	45	0	0.86	3.69	6	12	45	0	0.86	3.79	6	12	45	0	1.01	3.39
49W	120	-	-	-	-	-	-	7	12	45	3	1.53	2.10	7	12	45	3	1.75	2.02	7	12	45	3	1.91	2.12

CROSS SLOPE DEPENDENT ELEMENTS ON WALL

CROSS SLOPE	φ MIN	B2 (IN)	
		0 TO <12" FILL	12" TO 24" FILL
+8% TO -2%	30°	0	0
>-2% TO -6%	31°	3	4



TYPICAL SECTION MOMENT SLAB ON WALL

KEY NOTES

⟨1⟩ SEE STANDARD PLAN C-81.10 FOR DETAILS.

⟨6⟩ FOR INTERMEDIATE VALUES OF MOMENT SLAB LENGTH USE A SHORTER LENGTH OPTION WHICH EXTENDS ACTUAL LENGTH PAST THE MINIMUM LENGTH, L, IN THE TABLE.

⟨7⟩ PROVIDE TOP SURFACE TEXTURING WHEN TOP SURFACE OF MOMENT SLAB IS DRIVING SURFACE AS DESCRIBED IN STANDARD SPECIFICATION SECTION 5-05.3(11).

KEY

NO.: THE NUMERIC AND ALPHABETIC DESIGNATION OF THE MOMENT SLAB.

FILL RANGES: THE AMOUNT OF ROADWAY SECTION AND FILL OR BASE COURSE APPLIED ABOVE THE SLAB.

MS TYPE: A COMBINATION OF THE NO. AND THE FILL RANGE. FOR INSTANCE 14G WITH 12" TO <18" FILL IS MS TYPE 14G.12-18.

MIN L (FT): THE MINIMUM LENGTH OF THE MOMENT SLAB MEASURED AS SHOWN ON SHEET 1. LENGTH BETWEEN EXPANSION JOINTS MAY BE INCREASED FROM THE MINIMUMS.

B1 (FT): REQUIRED MINIMUM WIDTH B1, TO BE ADDED TO B2 TO OBTAIN THE MOMENT SLAB WIDTH B.

DS (IN): MINIMUM REQUIRED SLAB THICKNESS.

MAX SKEW: (DEGREE) THE MAXIMUM SKEW ON EITHER END. SKEWS WHICH INCREASE TOTAL MOMENT SLAB AREA MAY BE USED ON A SINGLE END OR BOTH ENDS. SKEWS WHICH DECREASE TOTAL MOMENT SLAB AREA SHALL ONLY BE USED ON ONE END.

#BO: MAXIMUM NUMBER OF DRAINAGE STRUCTURE BLOCKOUTS PERMISSIBLE FOR THE DESIGN OPTION. BLOCK OUT LOCATIONS REQUIRE ANNOTATION WITHIN THE PLANS.

EW (FT): EFFECTIVE WIDTH OF SOIL DEMAND "SOIL (KSF)" FROM THE GOVERNING EXTREME EVENT LIMIT STATE.

SOIL (KSF): THE DEMAND FROM THE GOVERNING EXTREME EVENT LIMIT STATE ON THE SOIL UNDER THE MOMENT SLAB. THIS VALUE SHALL BE EXCEEDED BY THE SOIL'S RESISTANCE, TO BE DETERMINED ON A SITE SPECIFIC BASIS.

CROSS SLOPE: THE PERCENT CROSS SLOPE EXHIBITED BY THE MOMENT SLAB, IN THIS USE +% ARE WHEN THE BARRIER IS ON THE HIGH SIDE OF THE SLAB, -% CROSS SLOPES ARE WHEN THE BARRIER IS ON THE LOW SIDE OF THE SLAB.

φ MIN: SOIL FRICTION ANGLE REQUIRED FOR USE OF THE STANDARD.

B2 (IN): REQUIRED MINIMUM WIDTH B2, TO BE ADDED TO B1 TO OBTAIN THE MOMENT SLAB WIDTH B.

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Sep 12, 2023

MOMENT SLAB TRAFFIC BARRIER 42" SINGLE SLOPE (TL-4)

STANDARD PLAN C-81.15-00

SHEET 4 OF 5 SHEETS

APPROVED FOR PUBLICATION

Mark A Gaines Sep 12, 2023

STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: NICHOLAS BRUTZMAN

MOMENT SLAB SCHEDULE - STD. PLAN C-81.15

MS TYPE	BEGIN				END				LENGTH (FT)	CROSS SLOPE %	B (FT)	ACTUAL FILL (IN)	#BO	NOTES
	STATION	OFFSET	SKEW	ATTACH	STATION	OFFSET	SKEW	ATTACH						
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SCHEDULE NOTES:

1. The barrier shall be per **Standard Plan C-81.10** as modified by **C-81.15**.
2. See **Standard Plan C-81.15** for notes and requirements on moment slab including limitations on use and elements which require design.

NOTES TO DESIGNER (NOT FOR TRANSCRIPTION TO PLANS):

1. The contract documents shall provide, at a minimum: MS Type, beginning and ending station, offset, end skew, attachment requirements, total length, cross slope %, B dimension, number and location of blockouts. The schedule on this sheet has been developed which may be used for this purpose (other than blockout locations). Alternative approaches are also acceptable.
2. On projects lacking stationing, "BEGIN" and "END" may be replaced with cardinal directions (north south etc.) or other means of location devised by the engineer.
3. Drainage structure locations need to be shown on and coordinated with the drainage plan sheets.

KEY

MS:	MOMENT SLAB
MS TYPE:	UNIQUE IDENTIFIER FROM A COMBINATION OF THE NO. AND FILL RANGE.
BEGIN OR END	
STATION:	THE STATION AT THE MOMENT SLAB WORK LINE.
OFFSET:	THE OFFSET INCLUDING LT OR RT AT THE MOMENT SLAB WORK LINE.
SKEW:	SKEW OF THE MOMENT SLAB.
ATTACH:	TYPE OF ATTACHMENT, MOST COMMON ARE "STRUCTURE", "GUARDRAIL", "GRADE BARRIER", OR "NONE". "GRADE BARRIER" REFERS TO PRECAST OR CAST IN PLACE BARRIER PLACED ON GRADE.
CROSS SLOPE %:	SUPERELEVATION AT THE MOMENT SLAB.
B (FT):	SLAB WIDTH REPRESENTED BY B1+B2.
ACTUAL FILL:	THE FILL DEPTH (ROADWAY + BASE COURSE) USED ON THE MOMENT SLAB.
#BO:	THE NUMBER OF BLOCKOUTS USED ON THE MOMENT SLAB.
NOTES:	NOTES FOR MOMENT SLAB SUCH AS PAVING QUANTITY TAB CODE OR OTHER.

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MOMENT SLAB TRAFFIC BARRIER 42" SINGLE SLOPE (TL-4)

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SHEET 5 OF 5 SHEETS

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