

Cambridge BRO 1448(39)
CPM Schedule Narrative
1/12/2014

The preconstruction period prior to April 15, 2015 will consist of providing the agency all required submissions required for review and acceptance before construction activities begin as detailed in the schedule.

Once construction activities have begun and prior to the BCP the precast abutments will be constructed and readied for setting in place. There will be a Superintendent on site with crews of 3-5 workers. We don't anticipate any significant challenges during this time. **We opted not to drive piles until the BCP period utilizing a driving ring to maintain alignment of the piles.**

The BCP will begin on July 15, 2015. The biggest challenges will be weather related. Rain events or extreme heat that may prohibit concrete and paving operations. Lightning events that may delay crane operations. Crew sizes will be in the 4-6 person range and equipment will mostly consist of cranes, excavators, dump trucks and other specialty equipment related to individual tasks. This is detailed in the notes of the schedule. The final phase of the BCP is primarily reliant on subcontractor operations (sheet membrane, paving, and guardrail) and the challenges will be scheduling and weather.

Post BCP operations should wrap up quickly with activities consisting of final paving if not accomplished during the BCP, signs, road shoulder stabilization, clean up and exit from the site prior to September 4, 2015.

In addressing the comments to our initial schedule submission.

1. Preconstruction meeting was changed to "Kick off meeting".
2. Submittal drawings were added for Next Beams, Bridge Guard Rails and Bridge Bearings. Submittals for Special Provision Contractor Constructed Precast Abutments; the Concrete Mix design, the lift plan(shipping, handling, installation..) and QC Plan will be included with the Abutment Fabrications as called for in the special provision and as documented in the notes for the Abutment Drawings in our first submittal.
3. The review duration for the Precast Abutments was corrected to 21 days.
4. The Abutment cure time was corrected to 7 days. These specifics will be covered in more detail with our Abutment Fabrication Drawings Submittal.
5. As noted above we opted not to drive piles prior to the BCP.
6. The dates for the trial batch of Rapid set concrete was moved back to allow for the maximum of 7 days.
7. The schedule was adjusted to show stone fill having predecessors with pile cavities poured and cured prior to placement.
8. 24 hour Cavity cure corrected to indicate 24 hour cure period.
9. Bridge Post Anchor plate assembly task added prior to closure pour.
10. Granular backfill task added to schedule after closure pour completed and cured.
11. Approach slabs tasks removed from schedule.
12. Asphaltic Plug Joint task added after final paving.
13. Line striping task removed from schedule.

14. Aggregate shoulder work task added to schedule.

ID	Task Mode	Task Name	Duration	Start	Finish	Sep 14, '14		Oct 26, '14		Dec 7, '14		Jan 18, '15		Mar 1, '15		Apr 12, '15		May 24, '15		Jul 5, '15		Aug 16, '15	
						S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F
1	✓	Bid Opening	0 days	Fri 10/10/14	Fri 10/10/14			◆ 10/10															
2	✓	Notice of Award	0 days	Wed 10/29/14	Wed 10/29/14			◆ 10/29															
3	📅	Kick Off Meeting	0 days	Mon 12/8/14	Mon 12/8/14					◆ 12/8													
4	✓	Notice to Proceed	0 days	Tue 11/18/14	Tue 11/18/14					◆ 11/18													
5	✓	CPM Submittal	13.5 days	Mon 12/8/14	Tue 12/23/14																		
6		CPM Acceptance/Rejected	14 days	Wed 12/24/14	Fri 1/9/15																		
7	📅	CPM Resubmittal	1 day	Tue 1/13/15	Tue 1/13/15																		
8		CPM Resubmittal Review	14 days	Tue 1/13/15	Fri 1/30/15																		
9	📅	Bridge Bearings Submittal	1 day?	Tue 12/9/14	Tue 12/9/14																		
10		Bridge Bearings Review	12 days	Tue 12/9/14	Wed 12/24/14																		
11	📅	Bridge Bearing Resubmittal	1 day	Tue 1/6/15	Tue 1/6/15																		
12		Bearing Resubmittal Review	2 days	Tue 1/6/15	Thu 1/8/15																		
13	📅	Bridge Railings Resubmittal	1 day?	Wed 1/7/15	Wed 1/7/15																		
14		Bridge Railings Resubmittal Review	14 days	Wed 1/7/15	Mon 1/26/15																		
15	📅	ESPC Plan Submittal	30 days	Mon 12/8/14	Tue 1/13/15																		
16		ESPC Acceptance	21 days	Tue 1/13/15	Mon 2/9/15																		
17	📅	Traffic Plan Submittal	40 days	Mon 12/8/14	Mon 1/26/15																		
18	📅	Traffic Plan Acceptance	21 days	Mon 2/2/15	Thu 2/26/15																		
19	📅	Next Beam Submittal	1 day	Mon 12/1/14	Mon 12/1/14																		
20		Next Beam Review	14 days	Mon 12/1/14	Thu 12/18/14																		

Project: Cambridge 1448(39) CP Date: Tue 1/13/15	Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress	
	Split		Inactive Milestone		Manual Summary		Deadline			
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						S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F
21		Next Beam Resubmittal	1 day	Mon 1/19/15	Mon 1/19/15																		
22		Next Beam Resubmittal Review	14 days	Mon 1/19/15	Thu 2/5/15																		
23		Rapid Set Mix Design	1 day	Fri 1/30/15	Fri 1/30/15																		
24		Rapid Set Mix Review	21 days	Fri 1/30/15	Thu 2/26/15																		
25		Abutment Drawings	50 days	Mon 12/8/14	Fri 2/6/15																		
26		Abut Drawings Acceptance	21 days	Mon 3/9/15	Thu 4/2/15																		
27		WEAP Submittal	1 day	Mon 3/9/15	Mon 3/9/15																		
28		Submit Pile Welding Procedures	1 day?	Mon 3/9/15	Mon 3/9/15																		
29		Submit Pile Alignment Plan	1 day	Mon 3/9/15	Mon 3/9/15																		
30		WEAP Review	21 days	Mon 3/9/15	Fri 4/3/15																		
31		Pile Welding Review	21 days	Mon 3/9/15	Fri 4/3/15																		
32		Pile Alignment Review	21 days	Mon 3/9/15	Fri 4/3/15																		
33		Install Engineer's Trailer	22 days	Mon 3/30/15	Fri 4/24/15																		
34		Schedule Update	1 day	Wed 4/15/15	Wed 4/15/15																		
35		Install Construction Signs	2 days	Thu 4/16/15	Fri 4/17/15																		
36		Install Project Demarcation	4 hrs	Mon 4/20/15	Mon 4/20/15																		
37		Install Silt Fence	1 day	Tue 4/21/15	Tue 4/21/15																		
38		Clearing and Grubbing	2 days	Tue 4/21/15	Thu 4/23/15																		
39		Submit Next Beam Lift Plan	1 day	Fri 5/1/15	Fri 5/1/15																		
40		Next Beam Lift Review	21 days	Fri 5/15/15	Wed 6/10/15																		

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						S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F
41		Abutments preproduction meeting	1 day	Thu 5/7/15	Thu 5/7/15																		
42		Schedule Update	1 day	Fri 5/15/15	Fri 5/15/15																		
43		Build precast area(s)	5 days	Fri 5/8/15	Thu 5/14/15																		
44		Build Abutment #1	10 days	Fri 5/15/15	Wed 5/27/15																		
45		Abutment 1 Cure time	7 days	Wed 5/27/15	Fri 6/5/15																		
46		Build abutment #2	10 days	Fri 5/29/15	Wed 6/10/15																		
47		Abutment 2 Cure Time	7 days	Wed 6/10/15	Fri 6/19/15																		
48		Certified Letter For BCP	1 day	Mon 6/1/15	Mon 6/1/15																		
49		Acceptance of BCP Period	1 day	Mon 6/1/15	Tue 6/2/15																		
50		Schedule Update	1 day	Mon 6/15/15	Mon 6/15/15																		
51		Install Filter Curtain	1 day	Mon 7/13/15	Mon 7/13/15																		
52		Begin Bridge Closure	0 days	Wed 7/15/15	Wed 7/15/15																		
53		Sawcut bridge deck	4 hrs	Wed 7/15/15	Wed 7/15/15																		
54		Removal of Guard Rails	4 hrs	Wed 7/15/15	Wed 7/15/15																		
55		Remove deck	8 hrs	Wed 7/15/15	Thu 7/16/15																		
56		Schedule Update	1 day	Wed 7/15/15	Wed 7/15/15																		
57		Trial Batch Rapid Set Concrete	1 day	Wed 7/15/15	Wed 7/15/15																		
58		Remove Abut #1	8 hrs	Thu 7/16/15	Fri 7/17/15																		
59		Excavate for Abut #1	4 hrs	Fri 7/17/15	Fri 7/17/15																		
60		Remove Abut #2	8 hrs	Fri 7/17/15	Fri 7/17/15																		

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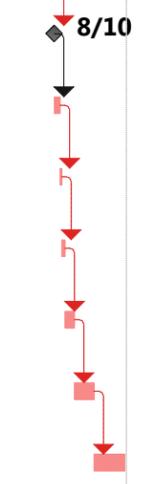
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						S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F
61		Excavate for Abut #2	4 hrs	Fri 7/17/15	Sat 7/18/15																		
62		Drive Pile Abut #1 P1/P2	10 hrs	Fri 7/17/15	Sat 7/18/15																		
63		Drive Pile Abut #1 P3/P4	10 hrs	Sat 7/18/15	Mon 7/20/15																		
64		Drive Pile Abut #2 P5/P6	10 hrs	Mon 7/20/15	Mon 7/20/15																		
65		Drive Pile Abut #2 P7/P8	10 hrs	Mon 7/20/15	Tue 7/21/15																		
66		Set Abutment #2	4 hrs	Tue 7/21/15	Wed 7/22/15																		
67		Set Abutment #1	4 hrs	Wed 7/22/15	Wed 7/22/15																		
68		Pour Pile Cavities	8 hrs	Wed 7/22/15	Thu 7/23/15																		
69		24 HR Pile Cavity Cure	24 hrs	Thu 7/23/15	Sat 7/25/15																		
70		Place Stone Fill	8 hrs	Sat 7/25/15	Sat 7/25/15																		
71		Set Next 1	6 hrs	Sat 7/25/15	Sat 7/25/15																		
72		Set Next 2	6 hrs	Sat 7/25/15	Mon 7/27/15																		
73		Set Next 3	6 hrs	Mon 7/27/15	Mon 7/27/15																		
74		Form Flange Connections	8 hrs	Mon 7/27/15	Tue 7/28/15																		
75		Pour Flange Connections	8 hrs	Tue 7/28/15	Tue 7/28/15																		
76		Form Closure Pour #1	12 hrs	Tue 7/28/15	Wed 7/29/15																		
77		Form Closure Pour #2	12 hrs	Wed 7/29/15	Thu 7/30/15																		
78		Set Anchor Plate Assembly	4 hrs	Thu 7/30/15	Fri 7/31/15																		
79		Closure Pour	8 hrs	Thu 7/30/15	Fri 7/31/15																		
80		Backfill Abutment #1	12 hrs	Fri 7/31/15	Sat 8/1/15																		



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						S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F
81		Backfill Abutment #2	12 hrs	Wed 10/29/14	Thu 10/30/14																		
82		Excavate for approaches	12 hrs	Sat 8/1/15	Mon 8/3/15																		
83		Install approach base Abut #1	8 hrs	Mon 8/3/15	Tue 8/4/15																		
84		Install approach base Abut #2	8 hrs	Tue 8/4/15	Tue 8/4/15																		
85		Install Sheet Membrane	8 hrs	Tue 8/4/15	Wed 8/5/15																		
86		Pave approach and deck	8 hrs	Wed 8/5/15	Thu 8/6/15																		
87		Install North Bridge Rail	10 hrs	Thu 8/6/15	Fri 8/7/15																		
88		Install South Bridge Rail	10 hrs	Fri 8/7/15	Fri 8/7/15																		
89		Install East Approach Rail	8 hrs	Fri 8/7/15	Sat 8/8/15																		
90		Install West Approach Guard Rail	10 hrs	Sat 8/8/15	Mon 8/10/15																		
91		Open Bridge - Close Detour	0 days	Mon 8/10/15	Mon 8/10/15																		
92		Finish Paving	2 days	Mon 8/10/15	Tue 8/11/15																		
93		Install Bridge Expansion Joint	4 hrs	Tue 8/11/15	Wed 8/12/15																		
94		Install Aggregate Shoulders in Place	1 day	Wed 8/12/15	Wed 8/12/15																		
95		Install Traffic Signs	2 days	Wed 8/12/15	Fri 8/14/15																		
96		Topsoil & Seeding	2 days	Fri 8/14/15	Tue 8/18/15																		
97		Clean up and exit site	5 days	Tue 8/18/15	Mon 8/24/15																		



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25 Abutment Drawings

Included in this item is;

QC Plan

Lift Plan

Concrete Mix Design

53 Sawcut bridge deck

Work Hours 7 a.m. - 7 p.m.

Crew Size (1)

Equipment Conc. Saw

54 Removal of Guard Rails

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Gradall, Flatbed

55 Remove deck

Work Hours 7 a.m. - 7 p.m.

Crew Size (5)

Equipment Excavator, Hyd. Hammer, Dump Trucks (2)

58 Remove Abut #1

Work Hours 7 a.m. - 7 p.m.

Crew Size (5)

Equipment Excavator, Hyd. Hammer, Dump Trucks (2)

59 Excavate for Abut #1

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Excavator, Dump Trucks (2)

60 Remove Abut #2

Work Hours 7 a.m. - 7 p.m.

Crew Size (5)

Equipment Excavator, Hyd. Hammer, Dump Trucks (2)

61 Excavate for Abut #2

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Excavator, Dump Trucks (2)

62 Drive Pile Abut #1 P1/P2

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Crane, Pile Hammer, Welder

Driving Ring for alignment of piles.

63 Drive Pile Abut #1 P3/P4

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Crane, Pile Hammer, Welder

Driving Ring for alignment of piles.

64 Drive Pile Abut #2 P5/P6

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Crane, Pile Hammer, Welder

Driving Ring for alignment of piles.
65 Drive Pile Abut #2 P7/P8
Work Hours 7 a.m. - 7 p.m.
Crew Size (4)
Equipment Crane, Pile Hammer, Welder
Driving Ring for alignment of piles.

66 Set Abutment #2
Work Hours 7 a.m. - 7 p.m.
Crew Size (5)
Equipment Crane, Excavator

67 Set Abutment #1
Work Hours 7 a.m. - 7 p.m.
Crew Size (5)
Equipment Crane, Excavator

68 Pour Pile Cavities
Work Hours 7 a.m. - 7 p.m.
Crew Size (5)
Equipment Concrete Pump Truck

Possible Delays: Weather

70 Place Stone Fill
Work Hours 7 a.m. - 7 p.m.
Crew Size (4)
Equipment Excavator, Dump Trucks

71 Set Next 1
Work Hours 7 a.m. - 7 p.m.
Crew Size (5)
Equipment Cranes(2)

Possible Delays - Thunderstorms

72 Set Next 2
Work Hours 7 a.m. - 7 p.m.
Crew Size (5)
Equipment Cranes(2)

Possible Delays - Thunderstorms

73 Set Next 3
Work Hours 7 a.m. - 7 p.m.
Crew Size (5)
Equipment Cranes(2)

Possible Delays - Thunderstorms

74 Form Flange Connections
Work Hours 7 a.m. - 7 p.m.
Crew Size (6)

Equipment Gradall

75 Pour Flange Connections

Work Hours 7 a.m. - 7 p.m.

Crew Size (6)

Equipment

Possible Delays - Weather

76 Form Closure Pour #1

Work Hours 7 a.m. - 7 p.m.

Crew Size (6)

Equipment Gradall

77 Form Closure Pour #2

Work Hours 7 a.m. - 7 p.m.

Crew Size (6)

Equipment Gradall

78 Set Anchor Plate Assemblies

Work Hours 7 a.m. - 7 p.m.

Crew Size (6)

Equipment Gradall

79 Closure Pour

Work Hours 7 a.m. - 7 p.m.

Crew Size (6)

Equipment Conc. Pump Truck

Possible Delays - Weather

80 Backfill Abutment #1

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Excavator, Dump Trucks (2)

81 Backfill Abutment #2

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Excavator, Dump Trucks (2)

82 Excavate for approaches

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Excavator, Dump Trucks (2)

83 Install approach base Abut #1

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Excavator, Dump Trucks (2) Compactor

84 Install approach base Abut #2

Work Hours 7 a.m. - 7 p.m.

Crew Size (4)

Equipment Excavator, Dump Trucks (2) Compactor

85 Install Sheet Membrane
Subcontractor

Possible Delay Scheduling

86 Pave approach and deck
Subcontractor

Possible Delays Weather, Scheduling

87 Install North Bridge Rail
Subcontractor

88 Install South Bridge Rail
Subcontractor

89 Install East Approach Rail
Subcontractor

90 Install West Approach Guard Rail
Subcontractor