



The Commonwealth of Massachusetts, MassDOT – Highway Division
Accelerated Bridge Program – Project Controls Unit
INTEROFFICE MEMORANDUM

To: Shoukry Elnahal
MassDOT Highway – ABP Director

From: Dennis Lucey
MassDOT Highway – ABP PCU Lead Field Schedule/Cost Analyst

Date: July 6, 2010

Project: Uxbridge, MA, River Road over the Ironstone Brook
Project Info Number 604788

Subject: ABP Program Project Control Schedule

The PCU team has conducted an independent CTD and found the following performance durations to be reasonable and achievable. These durations are based on an advertising date of 10July10 and Notice to Proceed (NTP) date of 07November10. This CTD also suggests a 120 cd bridge closure period.

	Duration	Date
• NTP to Final Traffic Move (Activity MS03)	262cd	27Jul2011
• NTP to Substantial Completion (Activity MS02)	262cd	27Jul2011
• NTP to Final Completion (Activity MS01)	308 cd	10Sep2011
• Suggested duration of roadway closure	120 cd	

The December 2008 Legislative Report indicates that Substantial Completion for this project should occur by the Summer of 2012 (ie: no later than 30-Sep-2012). The substantial completion milestone of this normal CTD schedule is within the date described in the December 2008 Report.

The PCU did not have the following critical documents to determine the durations which could increase the total duration of the project: Dam Safety and Environmental Permit, Dam Safety Design Requirements and Until schedule. In addition this CTD assumes a 6 day-week 10-hour work schedule.

This report describes the basis for the project duration and explains the use of durations, calendars, schedule contingency and the assumptions used in the report. The detailed CTD schedule is also attached.

Following reviews with Farhad Ghom, Morteza Tayarani and Dennis Lucey on during the week of June 28, 2010, the MassDOT staff agreed with the dates provided above.


Our review of the plans, specifications, and estimate resulted in the comments listed in the attached CTD Narrative and detailed CTD Primavera Construction Schedule.

Please sign the document below in the space provided to acknowledge agreement with the dates above. Please return a signed copy to Charisse Rota at the PCU office.

Date: July 6, 2010
Project: Uxbridge, MA, River Road over the Ironstone Brook
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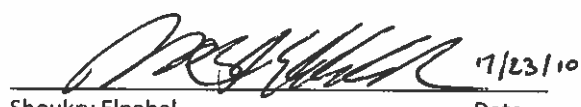
Please contact this office with any questions.

Sincerely,


Dennis Lucey Date
MassDOT Highway – ABP PCU Lead Field Schedule/Cost Analyst

Please sign below as receipt and acknowledgement of letter.


Robert E. Gearheart Date
MassDOT Highway – ABP PCU Director


Shoukry Elnahal Date
MassDOT Highway – ABP Director

- cc: W. Heller – ABP Director of Delivery
T. Donald – ABP Director of Design
S. Elnahal – ABP Director
F. Ghom – ABP Project Manager
R. Gearheart – ABP PCU Manager
M.Tayarani- ABP District 3 Program Manager
PCU: C. Seavey, K. Zaklama, Eduardo Sastre
ProjectInfo Project File



604788 UXBRIDGE, RIVER ROAD OVER THE IRONSTONE BROOK

CONTRACT TIME DETERMINATION NARRATIVE & SCHEDULE

BASED ON 75% DESIGN
VERSION NO. 1

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1 EXECUTIVE SUMMARY

1.1 CTD SUMMARY

The PCU team has conducted an independent CTD and found the following performance durations to be reasonable and achievable. These durations are based on an advertising date of 10July10 and Notice to Proceed (NTP) date of 07November10. This CTD also suggests a 120 cd bridge closure period.

	Duration	Date
• NTP to Final Traffic Move (Activity MS03)	262cd	27Jul2011
• NTP to Substantial Completion (Activity MS02)	262cd	27Jul2011
• NTP to Final Completion (Activity MS01)	308 cd	10Sep2011
• Suggested duration of roadway closure	120 cd	

The December 2008 Legislative Report indicates that Substantial Completion for this project should occur by the Summer of 2012 (ie: no later than 30-Sep-2012). The substantial completion milestone of this normal CTD schedule **is within the date** described in the December 2008 Report.

This report describes the basis for the project duration and explains the use of durations, calendars, schedule contingency and the assumptions used in the report. The detailed CTD schedule is also attached.

1.2 SPECIAL RESTRICTIONS

The following special restrictions are required components of the project:

- The PCU recommends early utility pole relocation during the winter of 2010-2011 in order to avoid potential impacts to the durations presented on this memo.
- In order to achieve the completion dates presented in the December 2008 Legislative report, the Advertisement should be issued no later than 05Sep2011 and the NTP should be issued no later than 03Jan2012.
- In order to prevent delays associated with the proposed completion date slipping through an additional winter slow down period, the Advertisement should be issued no later than 17Oct2010 and the NTP should be issued no later than 15Feb2012.
- When the NTP is being issued, if the proposed completion falls between December 1st and March 15th, then the same number of days beyond December 1st will be extended after March 15th.
- Finally, CEPO should coordinate any date changes with the PCU prior to the advertisement and NTP.

Additionally, the following restrictions should be incorporated into the Special Provisions.

- The PCU suggests the use of an access restraint for 88 cd after NTP. The access restraint is required to allow for the successful relocation of pole utilities prior starting construction. This duration sets the access restraint on February 3, 2011.
- The PCU suggests the use of an access restraint for 142 cd after NTP. The access restraint will limit the start of the road closure until the start of the Spring 2011 Construction Season. This restraint works in tandem with the contract restriction of a roadway closure period of 120 calendar days. This duration sets the access restraint on March 29, 2011.
- The PCU suggests contract incentive to limit the duration of roadway closure to 120 calendar days.

Finally, CEPO should coordinate any date changes with the PCU prior to the advertisement and NTP.

1.3 MILESTONES CHART

The following chart lists the CTD milestones as determined independently by MassDOT and the ABP PCU.

Milestones	Activity ID	Dec. 2008 Legislative Report	PCU CTD (Normal)		
			Seasonal calendars	Based on Design of May 2010	
			Date	Duration to Milestone	
Advertise Date (Adv)	ADV	Fall '09	10Jul10	NA	NA
Notice to Proceed (NTP)	NTP	Winter '10	07Nov10	Adv to NTP	120cd (4m)
Access Restraint for Utility Relocation	AR01	na	03Feb11	NTP to AR01	88cd (3m)
Access Restraint Start Road Closure	AR02	na	29Mar11	NTP to AR02	142cd (5m)
Final Traffic Move (FTM)	MS03	na	27Jul11	NTP to FTM	262cd (9m)
Substantial Completion (SC)	MS02	Summer '12	27Jul11	NTP to SC	262cd (9m)
Final Completion (FC)	MS01	na	10Sep11	NTP to FC	308cd (10m+)

Explanation of dates:

- The **Dec. 2008 Legislative Report** column represents the Seasonal dates presented in the December 2008 Legislative Report.
- The **PCU** or **PCU Normal** column shows the resulting dates from the PCU's CTD calculations using normal crew and resource loading.
- 'cd' for Calendar Days, 'm' for Months (rounded to nearest whole month).
- Final Traffic Move means traffic is moved to the final alignment and configuration and the roadway is opened for its intended purpose.
- Substantial Completions follows the MGL definition: *work required by the contract has been completed except for work having a contract price of less than one per cent of the then adjusted total contract price, or substantially all of the work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the work required by the contract.*

- Final Completion means the punch list is complete and the contractor's documents are closed.

2 PURPOSE

A Contract Time Determination (CTD) schedule is prepared during the design phase of any Accelerated Bridge Program (ABP) project which has an estimated value of over \$1 million, unless directed otherwise by MassDOT ABP staff. The CTD is prepared using Critical Path Method (CPM) scheduling techniques to estimate the duration of the construction portion of the project.

The PCU will develop CTDs at both the 75% and 100%/PSE Design Phase. The two CTDs serve two distinct purposes:

- The CTD at the 75% Design Phase will be the Project Control Schedule that will set the new performance measure that MassDOT ABP will be measured against.
- The CTD at the 100%/PSE Design Phase will serve to set the estimated construction contract duration that will be issued with the Advertisement and Construction Bid Documents.

3 PROJECT DESCRIPTION

This project consists of the removal of the existing superstructure, the asphalt wearing surface, concrete bridge railing, and piers and excavate abutments and wingwalls. This bridge consists of a one span 42 feet back pack bridge structure with two 12 feet lines, two 6 feet sidewalks and two 2 feet shoulders

- The River Road Bridge over Ironstone Brook will be widened approximately 9 feet towards the Blackstone River (to the north).
- The replacement bridge will utilize a new folded plate system design. This design and the need to maintain the existing bridge low chord elevation will require the profile of the road to be raised by approximately 3 feet.
- Profile changes will require full depth construction of the roadway for approximately 250 feet on each approach.

The bridge will be closed during the construction period.

The estimate construction cost is \$2,078,682.18.

Site Photograph:



4 REFERENCES

The CTD was developed using information contained in the following documents:

- A. MASSDOT Accelerated Bridge Project Description – Project 604788
- B. 75% Drawings Set dated Apr10, Included review of PS&E set.
- C. Preliminary Construction Cost Estimate of \$2,078,682.18, based on 75% Design, dated 28Apr10
- D. Reference Data for Production Rates – From PBS&J
- E. RS Means Heavy Construction Cost Data – 24th Edition 2010
- F. Schedule from Charter Communications dated 28May10
- G. Utility coordination meeting from Gannett Fleming dated 23Feb10
- H. Schedule from National Grid dated 4May10

5 METHODOLOGY

After reviewing the referenced information, the scope of work was identified and analyzed. The cost estimate was used as the starting point for the schedule in order to maintain traceability between the two documents. The project scope was further broken down into discrete items of work (activities). The duration of each activity was calculated based on the quantity take offs, previous data, equipment and crew compositions. After defining the activities which represent the scope of the project, logical relationships between the activities were created to reflect the sequence in which the work will be performed. The schedule was then calculated based on the activity durations, and the sequence of the activities. The application of the resources over time was evaluated based on the number of activities worked during the construction of each phase.

6 CRITICAL PATH

The full schedule is listed as an attachment to this report. To provide a quick understanding of the critical path, please find a written description below.

The critical path begins "Project Advertisement", followed by the 120 calendar day duration until Notice to Proceed. In order to limit the amount of time Submittals and purchasing activities are critical until construction begins in September 2010.

Then the critical paths proceed through clear and grubbing, and then the utility poles relocation and then the demolition. It is followed by the, demolition and riprap with the installation of the abutment footing, back pack superstructure and backfill. The critical path goes through all the structure construction finishing with the final paving and stripping of the bridge roadway.

PCU also suggests limiting the road closure period to 120 calendar day, this is supported in the attached schedule.

7 ASSUMPTIONS

The following assumptions were used in the development of this schedule:

7.1 GENERAL

- The Notice to Proceed (NTP) will be given on or about 7Nov10.
- No working hour restrictions between 7am to 4pm during the week.
- Labor, equipment and materials will be available when and as needed.
- PCU anticipates any project permits will be granted as scheduled without impacting the duration.
- **PCU has not included any work related to earth support and dam modifications since they were not submitted at the time of the development of this CTD. These items are critical and could potentially increase the total project duration**
- **PCU has assumed multiple work items may occur on a 6 work-day schedule, utilizing more than 8 hours of work per day, in some cases up 12hr per day.**
- PCU assumes that this project will obtain the hydrology permit for the proposed cofferdam design.
- PCU did not have access to fabrication data for the folding plate system, PCU has assumed fabrication duration like prefabricated panel.
- PCU has assumed that all procurement will be done prior to start construction on March 3, 2011.
- PCU has assumed no low flow restrictions. This information needs to be clarified in the permit.
- **PCU has assumed working concurrently (demolition and construction) at the North and South abutments in order to meet the 120 cd bridge closure.**

7.2 MAINTENANCE OF TRAFFIC

This bridge will closed during the construction.

8 UTILITY COORDINATION

8.1 SCOPE OF UTILITY WORK

The information below has been taken from the utility coordination meeting dated 23Feb10.

National Grid

- National Grid owns pole set in project area.
- Poles will need to be relocated temporarily for crane access and installation of MSE wall and sheeting.
- At least one pole will need to be relocated on each bridge approach (UP #8 and UP #40). National Grid to determine if additional poles need to be relocated.
- Poles will be temporarily relocated along the south side of road and set further back from roadway edge.
- Gannett Fleming will show temporary locations of utility poles on plans as well as final permanent locations.
- MassDOT wants the poles to be relocated prior to the project NTP – estimated to be in late August 2010.
- Some clearing may need to be done for the pole relocations. National Grid should include this in their estimate.
- National Grid's estimate for this work needs to be submitted to MassDOT by the end of March.

Charter Communications

- Charter Communications is located on the National Grid pole line. They will relocate their facilities as the pole line is moved.

ExxonMobil Pipeline

- A Mobil pipeline representative will be on site during major construction tasks for earth excavation and installation of utility lines or guardrail posts.

8.2 ACCESS RESTRAINTS

One access restraint will be required to allow for the relocation of the utility poles before the start of the demolition. This access restraint is depicted in the schedule by Activity AR01 and is shown in the milestone chart above.

9 KEY SUBMITTALS

9.1 FOLDING PLATE BRIDGE ELEMENTS

Timely submission and approval of submittals is critical since it will determine the fabrication and delivery of the structural steel needed to erect the structure of the bridge.

9.2 TRAFFIC CONTROL PLAN

The traffic control plan submittal could have major comments or changes which could affect the duration of the project since you need to have this plan approved to close the bridge.

9.3 DEMOLITION PLAN

The demolition plan submittal could have major comments since it has to be designed by the contractor and has to be approved by MassDOT.

10 RESOURCES

Most of the activities in the schedule require only standard construction equipment which should be readily available when needed. Equipment does not appear to pose any risk to the schedule. Equipment usage was taken into account while developing durations and sequences between activities. This CTD assumes of using multiple crews working concurrently at both sites of the bridge.

The majority of activities on the critical path involve forming, reinforcing, placing concrete, applying waterproofing sealant and asphalt and the installation of back pack bridge. The primary resources required for these activities are carpenters, and cement finishers. Those key resources will be working in crews and completing the work simultaneously.

11 COST

The PCU staff utilized the current available cost and quantity estimate to derive the activity and schedule duration. The major cost elements are listed in the table below (only showing items with total value greater than \$50,000): The total cost was \$2,078,682.18.

Item #	Quantity	Unit	Item Description	Price	Total
160.109	1	LS	INSTRUMENTATION	\$80,000	\$80,000
748	1	LS	MOBILIZATION	\$53,960.01	\$53,960.01
952	102,200	LB	STEEL SHEETING	\$2.10	\$214,620
975.1	105	FT	METAL BRIDGE RAILING (3 RAIL), STEEL (TYPE S3-TL4)	\$500	\$52,500
995.01	1	LS	BRIDGE STRUCTURE, BRIDGE NO. U-02-030	\$606,765	\$606,765
993.31	585	SY	MECHANICALLY STABILIZED EARTH WALL	\$550	\$321,750

12 SCHEDULE CONTINGENCY

The ABP PCU has determined that the project can be completed in the duration provided, the performance durations appear to be reasonable and achievable based on the information known at the time of the development of this document.

13 LIMITATIONS OF OPERATIONS

Operations will be limited by seasonal weather restrictions, maintenance of pedestrian traffic and dam restrictions.

13.1 SEASONAL RESTRICTIONS

13.1.1 WATER ACCESS

- Water Access - Low Flow
 - Water access is only allowed during the period of June 1 to September 30
 - Refer to individual project 401 and 404 Environment Permit for restrictions
 - Reference: Environmental Permit 401 and 404 and Per Kevin Walsh, 2/17/10
- Water Access - Fish Migration
 - Water access is NOT allowed during the period of April 1 to July 15th and from September 15 to October 31.
 - Reference: Environmental Permit 401 and 404 and Per Kevin Walsh, 2/17/10

13.1.2 WINTER

- Concrete
 - No concrete placement, applying of waterproofing sealant or soil compaction will occur between December 15 and March 15.
 - Although the Supplement Specifications do not specifically restrict the periods in which concrete shall be placed, the Spec does indicate that concrete cannot be placed when:
 - See MHD Supplement Specifications -Ed. 1988, Section 901.64 C
 - Reference: Per standard DOT winter shutdown periods, concrete placement is typically restricted between December 15 and March 15.
- Base Paving (HMA)
 - No base paving (HMA) placement will occur between November 15 and April 1.
 - Hot mix asphalt shall not be placed after November 15 or before April 1 without the written permission of the Engineer.
 - Reference: See MHD Supplement Specifications-Ed. 1988, Section 460.63
- Reclaiming Pavement
 - Reclaiming operations shall not commence before April 15 and shall terminate on or before October 15 unless otherwise approved in writing by the Engineer
 - Reference: See MHD Supplement Specifications -Ed. 1988, Section 403.60

13.1.3 LANDSCAPING

- Landscape Calendar #1: Sod

- Sod and seeding can occur during the Spring Season (April 15 to June 1) and Fall Season (August 15 to November 1).
- See MHD Supplement Specifications -Ed. 1988, Section 770.61”

13.1.4 WINTER INEFFICIENCY

1. The weather impact on working efficiency during the winter is estimated according to the collected weather information from weather data from 2003 thru 2008. It is assumed that the project will be shut down in days with severe weather. Severe weather was defined as blowing snow, rain for more than 1 inch, daily temperature below 10 degrees, wind of more than 50 MPH, thunderstorm, and fogs that reduce visibility to less than ¼ miles.
2. The historical data show that the number of days with severe weather on average is as follows:
 1. 1 day/week from December 15 to January 15,
 2. 2 days/week from January 16 to February 15,
 3. 1 day/week from February 16 to March 15.
3. The relevant calendars for concrete and pavement have used the aforementioned data and have reduced number of working days per week.

13.2 OTHER CONSTRUCTION SPECIFICATION GUIDELINES

13.2.1 CONCRETE RESTRICTIONS:

- Per Supplemental Spec, Section 901
 - Minimum cure duration before adding load – 7 calendar days
 - Minimum cure duration for concrete deck before adding waterproofing – 14 calendar days
 - Minimum cure duration before backing filling against abutments – 5 calendar days

14 RISK

The hydrology permit could require additional scope not shown in this CTD. Therefore, this CTD should be revised after obtaining this permit. These requirements could extend the duration of this project. The PCU recommends to revise this duration after reviewing the hydrology design.

This CTD assumes some work will occur during a 6 work-day week, with up to 12 hours of work per day with some concurrent work (use of multiple crews). This information should be disclosed in the Contract Specification in order to avoid any claim during construction.

15 ATTACHMENTS

15.1 DETAILED CONSTRUCTION SCHEDULE – NORMAL (ATTACHED)

Accelerated Bridge Program (ABP) / MassDOT: Highway

Project Name: 604788 Unbridge - River Rd - Bridge Replacement (start 4/1/11 w some 6wd/12hr) - CTD, Project ID 604788-6

Activity ID	Activity Name	OD Start	Finish	Total	2011	2012	2013	2014	2015	2016	2017
Construction											
Milestones											
General											
ADV	Project Advertised	0	10-Jul-10	0							
10210	Procurement Period	120	10-Jul-10	06-Nov-10							
NTP	Notice to Proceed	0	07-Nov-10	3							
11390	Precon Meeting	0	23-Nov-10	40							
AR01	Access Restraint to Start Demolition after Utility Poles are Relocated	0	03-Feb-11	48							
11940	Road Closed	0	29-Mar-11	0							
AR02	Access Restraint to Start Road Closure Period	0	29-Mar-11	0							
MS02	Substantial Completion	0	27-Jul-11	0							
MS03	Final Traffic Move (Road Opened)	0	27-Jul-11	45							
10065	Construction Duration from NTP to Substantial Completion	263	07-Nov-10	27-Jul-11	0						
11860	Duration of Bridge Closure	121	29-Mar-11	27-Jul-11	45						
10040	Punch List	20	28-Jul-11	16-Aug-11	25						
MS01	Final Acceptance	0	10-Sep-11	0							
10132	Project Close-Out (45cd)	45	28-Jul-11	10-Sep-11	0						
10060	Construction Duration from NTP to Final Completion	308	07-Nov-10	10-Sep-11	0						
Preconstruction											
No Step											
11380	Contractor qualify/finds subs	20	08-Nov-10	07-Dec-10	2						
10750	Prepare & submit structure submittals	25	08-Dec-10	13-Jan-11	15						
10760	Prepare & submit substructure submittals	30	08-Dec-10	20-Jan-11	65						
10770	Prepare & submit demolition & dewatering submittals	30	08-Dec-10	20-Jan-11	28						
11150	Prepare & submit railings submittals	30	08-Dec-10	20-Jan-11	60						
10870	Prepare & submit Traffic Plan	30	08-Dec-10	20-Jan-11	28						
11340	Prepare & submit precast panels submittals	30	08-Dec-10	20-Jan-11	2						
10780	MassDOT Review & approve structure submittals	22	14-Jan-11	14-Feb-11	15						
10800	MassDOT Review & approve substructure submittals	22	21-Jan-11	22-Feb-11	65						
10810	MassDOT Review & approve demolition & dewatering submittals	22	21-Jan-11	22-Feb-11	28						
11160	MassDOT Review & approve railings submittals	22	21-Jan-11	22-Feb-11	60						
11030	MassDOT Review & approve Traffic Plan submittals	22	21-Jan-11	22-Feb-11	28						
11350	MassDOT Review & approve precast panels submittals	22	21-Jan-11	22-Feb-11	2						
11090	Fabricate & deliver bridge railings	40	23-Feb-11	20-Apr-11	60						

█ Remaining Level of Effort █ Remaining Work
█ Actual Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone

Layout = ABP01 Standard, Filter = TASK filter: All Activities
 Data Date = 01-May-10, Run Date = 06-Jul-10
 Project Start = 10-Jul-10, Project Finish = 10-Sep-11

Date: _____ Revision: _____ Checked: _____ Approved: _____
 Prepared by: ABP PCU

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Project Name: 604788 Unbridge - River Rd - Bridge Replacement (start 4/1/11 w some 6wd/12hr) - CTD, Project ID 604788-6

Accelerated Bridge Program (ABP) / MassDOT: Highway

Activity ID	Activity Name	OD Start	Finish	Total	2011																			
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov									
10790	Fabricate & deliver structure (Folder Plate & Panels)	55	15-Feb-11	04-May-11	15																			
11380	Fabricate & deliver Precast Abutments	50	23-Feb-11	04-May-11	2																			
Utility Relocation					18																			
General					18																			
173	23-Nov-10	01-Aug-11																						
Utility Relocation Coordination Plan					18																			
11300	Utility Relocation Coordination	20	23-Nov-10	21-Dec-10	40																			
11890	Temp Relocate utility poles & lines (National Grid)	10	22-Dec-10	06-Jan-11	40																			
11140	Temp Relocate utility lines (Charter Communications)	20	07-Jan-11	03-Feb-11	40																			
11900	Final relocation of utility poles & lines (National Grid)	5	12-Jul-11	18-Jul-11	18																			
11970	Final relocation of utility lines (Charter Communications)	10	19-Jul-11	01-Aug-11	18																			
Construction					4																			
Phase I					4																			
Step A					5																			
10850	Control erosion, sedimentation, tree protection & demolition debris protection	3	17-Mar-11	19-Mar-11	7																			
11180	Mobilize to site	5	15-Mar-11	19-Mar-11	0																			
10900	Place sand bags & dewater @ abutment & Debris Protection (South & North)	5	17-Mar-11	22-Mar-11	5																			
10840	Install temporary fences & Detour signs	1	29-Mar-11	29-Mar-11	5																			
Step B					0																			
10820	Clear & grubbing	2	29-Mar-11	30-Mar-11	0																			
10860	Demolition of pavement, concrete deck & railings	2	02-Apr-11	04-Apr-11	0																			
10880	Disassembly of beams	2	05-Apr-11	06-Apr-11	0																			
10890	Excavation (South & North)	5	02-Apr-11	07-Apr-11	0																			
11010	Install temporary sheeting	9	29-Mar-11	07-Apr-11	0																			
Step C					0																			
11870	Install Cofferdam (at Pier only)	3	07-Apr-11	09-Apr-11	0																			
11370	Remove existing piers	2	11-Apr-11	12-Apr-11	0																			
11880	Remove Cofferdams (at Pier only)	2	13-Apr-11	14-Apr-11	0																			
Step D					0																			
10980	Install Cofferdam (at Abutments only)	5	15-Apr-11	21-Apr-11	0																			
10910	Remove abutment & foundation (South side)	3	22-Apr-11	25-Apr-11	0																			
10920	Place & compact crushed stone for working area (South side)	1	26-Apr-11	26-Apr-11	0																			
10960	Remove abutment & foundation (North side)	3	25-Apr-11	27-Apr-11	3																			
10970	Place & compact crushed stone for working area (North side)	1	28-Apr-11	28-Apr-11	3																			
11220	Drill/splice/backfill H piles (South Side)	7	27-Apr-11	04-May-11	0																			
11430	Install Precast Abutment (South Side)	2	05-May-11	06-May-11	2																			
11470	Post-Tension Abutments & Grout (South Side)	2	07-May-11	09-May-11	2																			

Legend:
 Remaining Level of Effort
 Actual Level of Effort
 Actual Work

Remaining Level of Effort: Remaining Work
 Actual Level of Effort: Critical Remaining Work
 Actual Work: Milestone

Layout = ABP01 Standard, Filter = TASK filter: All Activities
 Data Date = 01-May-10, Run Date = 06-Jul-10
 Project Start = 10-Jul-10, Project Finish = 10-Sep-11

Approved: _____
 Checked: _____
 Revision: _____

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Accelerated Bridge Program (ABP) / MassDOT: Highway

Project Name: 604788 Unbridge - River Rd - Bridge Replacement (start 4/1/11 w
some 6wd/12hr) - CTD, Project ID 604788-6

Activity ID	Activity Name	OD	Start	Finish	Total Float	2011												
						Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
11240	Drill/splice/ret/backfill H piles (North Side)		7 03-May-11	10-May-11	0													
11400	Install Precast Abutment (North Side)		2 11-May-11	12-May-11	0													
11460	Post-Tension Abutments & GROUT (North Side)		2 13-May-11	14-May-11	0													
11440	Cure @ abutment (South Side)		7 10-May-11	16-May-11	2													
11920	Install pedestals at abutments		2 15-May-11	16-May-11	2													
11410	Cure @ abutment (North Side)		7 15-May-11	21-May-11	1													
11790	Place geotextile & nrap		3 20-May-11	23-May-11	2													
11930	Cure for pedestals at abutments		7 17-May-11	23-May-11	2													
11810	Remove Cofferdams (at Abutments)		3 23-May-11	25-May-11	0													
Step E																		
11000	Install Folded Plates (beams, panels & safety curbs)		4 26-May-11	31-May-11	0													
11230	FR/P abutments caps & grout (South Side)		6 01-Jun-11	07-Jun-11	0													
11250	FR/P abutments caps & grout (North Side)		6 06-Jun-11	11-Jun-11	0													
11450	Cure period for wall & abutments caps (South Side)		7 08-Jun-11	14-Jun-11	5													
11420	Cure period for wall & abutments caps (North Side)		7 12-Jun-11	14-Jun-11	1													
11270	Install MSE Retaining Walls & Backfill @ abutments & MSE walls		20 16-Jun-11	08-Jul-11	0													
11490	Install precast approach slabs (N&S)		1 11-Jul-11	11-Jul-11	7													
11510	FR/P closure pours		4 07-Jul-11	11-Jul-11	0													
11770	FR/P end posts		4 09-Jul-11	13-Jul-11	1													
11520	Cure period for closure pours		7 12-Jul-11	16-Jul-11	0													
11800	Cure period for end posts		7 14-Jul-11	20-Jul-11	1													
11060	Sub-base at the approaches & roadways		4 18-Jul-11	21-Jul-11	2													
11550	Restore project site		5 20-Jul-11	25-Jul-11	2													
Step F																		
11020	Apply Membrane waterproof		2 16-Jul-11	16-Jul-11	0													
11050	Install Railings		5 15-Jul-11	20-Jul-11	1													
11100	Cure Membrane waterproofing		3 19-Jul-11	21-Jul-11	0													
11040	Base Paving		2 22-Jul-11	23-Jul-11	0													
11070	Top Paving		1 25-Jul-11	25-Jul-11	0													
11540	Stripping & signage		2 26-Jul-11	27-Jul-11	0													
11860	Restore wetland & landscaping		10 22-Aug-11	02-Sep-11	4													

- Install Precast Abutment (North Side)
- Post-Tension Abutments & GROUT (North Side)
- Cure @ abutment (South Side)
- Install pedestals at abutments
- Cure @ abutment (North Side)
- Place geotextile & nrap
- Cure for pedestals at abutments:
- Remove Cofferdams (at Abutments)
- 25-Jul-11, Step E
- Install Folded Plates (beams, panels & safety curbs)
- FR/P abutments caps & grout (South Side)
- FR/P abutments caps & grout (North Side)
- Cure period for wall & abutments caps (South Side)
- Cure period for wall & abutments caps (North Side)
- Install MSE Retaining Walls & Backfill @ abutments & MSE walls
- Install precast approach slabs (N&S)
- FR/P closure pours
- FR/P end posts
- Cure period for closure pours
- Cure period for end posts
- Sub-base at the approaches & roadways
- Restore project site
- 02-Sep-11, Step F
- Apply Membrane waterproof
- Install Railings
- Cure Membrane waterproofing
- Base Paving
- Top Paving
- Stripping & signage
- Restore wetland & landsc

Date	Revision	Checked	Approved

Layout = ABPOT Standard, Filter = TASK (filter: All Activities)
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Project Start = 10-Jul-10, Project Finish = 10-Sep-11

Prepared by AGP PCU

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DOCUMENT CHANGE CONTROL

Document Version	Author	Date	Revision Comments
1.0	Eduardo Sastre	Summer 2010	1 st Draft
1.0	Eduardo Sastre	Summer 2010	Final

DOCUMENT REVIEW AND APPROVAL

Document Version	Reviewer	Date	Comments