

DATE: 7-16-2010

Number of pages: 3 (including this page)

**Memo:**

From: Donath Picardo

Ref. Job: I-15; South Layton Interchange, C-986  
Layton Parkway over I-15

Description of request: – Monitoring plan for lowering the bridge and for launching the bridge.

Initiated by: Brandon Squire

Response:

Note: Span 1 Monitoring plan is described below, similar for span 2

Lowering bridge:Survey -

1. Locate monitoring points on the structure at the locations shown in attached plan (4 points at temporary support A and 4 points over abutment #1 at centerline bearings, tolerance = 3").
2. Survey Data 1: Survey the points before raising the bridge on jacks.
3. Survey Data 2: Survey the points within an hour after raising the bridge on jacks (clear off the temporary supports) and after bridge is stabilized (before beginning the removal of temporary supports).
4. Survey Data 3: Survey the points an hour to six hours before starting the lowering operations.
5. Survey Data 4: survey the points when the bridge is resting on top of the top layer of wood blocks and the jacks are completely disengaged.
6. Survey data 5, 6 and 7, approximately at third points of the lowering height (6 feet intervals).
7. Survey data 8 when bridge is resting on skid beams and slide shoe, before launching the bridge.

Checks -

1. The difference in horizontal location of the points between survey data;  
1 and 2 not to exceed 1".  
1 and 3 not to exceed 1 1/2".  
1 and 4 not to exceed 1 1/2",  
1 and 5 not to exceed 2 1/2",  
1 and 6 not to exceed 3 1/2"

2. The maximum relative vertical displacements of the 4 points at temporary support A;  
Of survey data 1: not to exceed 1" and  
Of survey data 2 to 6 not to exceed 1 1/2"  
Of survey data 7 not to exceed 1/2"
3. The maximum relative vertical displacements of the 4 points at abutment #1  
Of survey data 1: not to exceed 1"  
Of survey data 2 to 6 not to exceed 2"  
Of survey data 7 not to exceed 1/2"

Engineer of Record and contractor to evaluate all data from survey data 1 to 8. Also to provide required adjustments or not (if not required) if the above limits are exceeded.

4. Visually inspect jack tower plumbness, jack tower cables and in general all aspects of lowering bridge. Bring to the attention of Contractor and engineer of record for any visual abnormalities.  
Engineer of Record and contractor to evaluate the above abnormalities and provide appropriate adjustments, if required.

#### Launching bridge:

#### Survey -

1. In addition to the lowering bridge monitoring points, provide monitoring points at the tip of all (6 numbers) nose tip at centerline girder, also obtain elevations of the bottom of bottom flange at nose tips.
2. Survey data 1: survey all monitoring points after horizontal adjustment of the bridge and after noses are attached, before commencement of bridge launch.
3. Survey data 2: survey all monitoring points when launch nose marker 1 (marker 1 is 1'-0" from the nose tip) is above centerline temporary support B, before engaging slide shoes at this support (see Step 5-2 of Construction Sequence. Temporary structure plan sheets).
4. Survey data 3: survey all monitoring points when launch nose marker 2 (marker 2 is 12'-0" from the nose tip) is above centerline temporary support B, and after abutment #1 slide shoes are completely disengaged (see Step 6-1).
5. Survey data 4: survey all monitoring points when launch nose marker 1 is above centerline temporary support C, after engaging slide shoes at this support (see Step 7-1).
6. Survey data 5: survey all monitoring points when launch nose marker 2 is above centerline temporary support B, and after temporary support A slide shoes are completely disengaged (see Step 8-1).

Checks -

1. The horizontal offsets (measured normal to centerline girders) between survey data;  
1 and 2 not to exceed 1",  
1 and 4 not to exceed 1",  
1 and 5 not to exceed 1",  
1 and 6 not to exceed 1"
2. The maximum relative vertical displacements of the 6 points at abutment #1  
Of each survey data from 1 to 5: not to exceed 1".
3. The maximum relative vertical displacements of the 6 points at abutment #1  
Of each survey data from 1 to 5: not to exceed 1".
4. The maximum relative vertical displacements of the 6 points at nose tips;  
Of each survey data from 1 to 6: not to exceed 2 1/2".

Engineer of Record and contractor to evaluate all data. Also to provide required adjustments or not (if not required) if the above limits are exceeded.

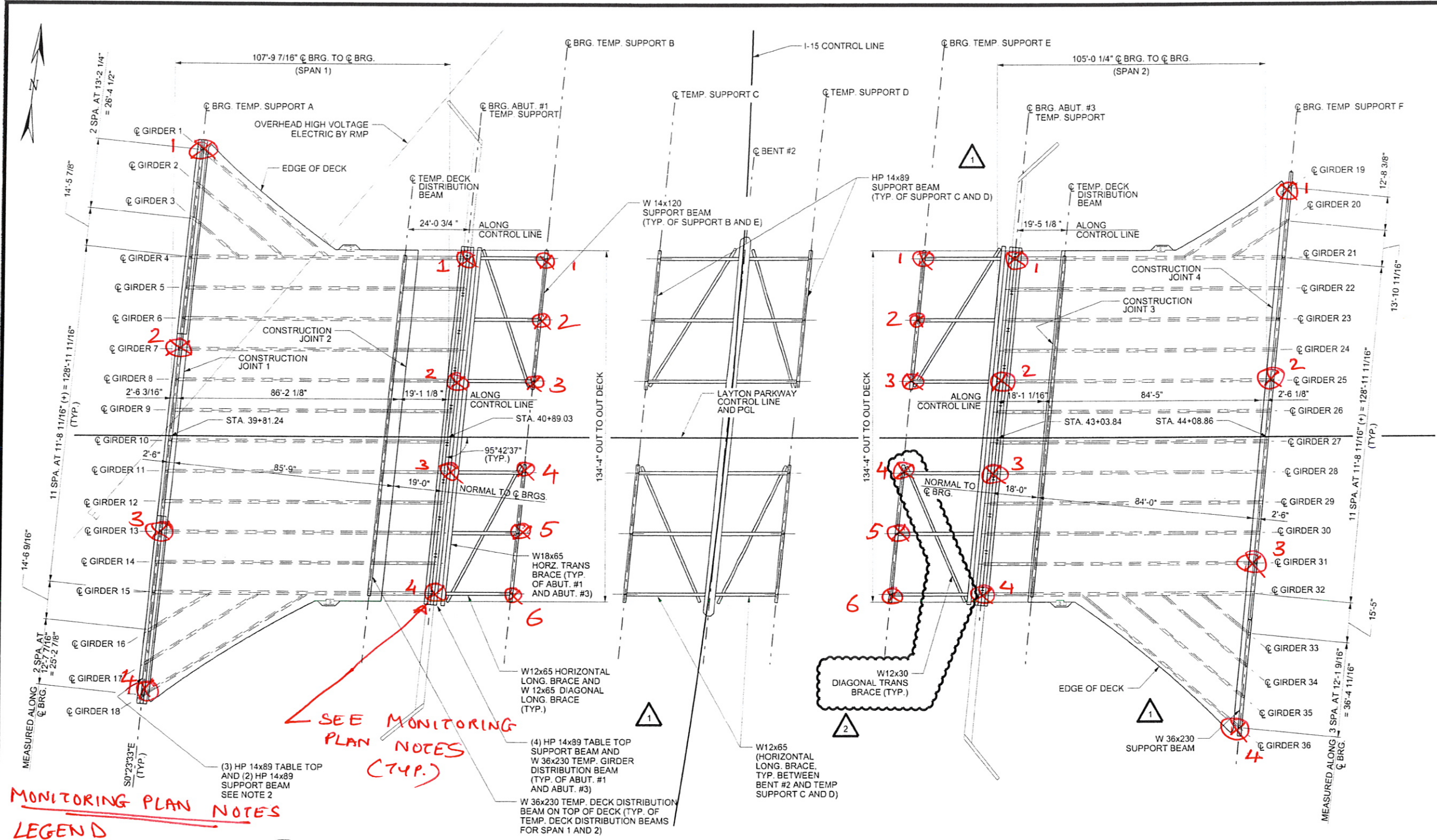
5. Check and Adjust slide shoe elevations at Abutment #1, Temporary Support B and C elevations based on survey data 1, by removing or adding shim plates.
6. At step 5-2 with survey data 2, check nose tip data for horizontal and vertical orientation.
7. At step 6-1 with survey data 3, check nose tip data for horizontal and vertical orientation.
8. At step 7-1 with survey data 4, check nose tip data for horizontal and vertical orientation.
9. At step 8-1 with survey data 5, check nose tip data for horizontal and vertical orientation.
10. Visually inspect all aspects of the bridge launch. Bring to the attention of Contractor and engineer of record for any visual abnormalities. Engineer and contractor to evaluate and make necessary adjustments, if required.



Donath Picardo



POINTS @ ABUT. #1 AND #3, LOCATE AT Q BRG AND Q GIRDER.  
4. POINTS @ NOSE TIPS. LOCATE AT NOSE TIP OR 1'-0" FROM NOSE TIP AND Q GIRDER.



**MONITORING PLAN NOTES**  
**LEGEND**

⊗ - MONITORING POINTS.

**NOTES:**

1. WORK THIS SHEET WITH MONITORING PLAN MEMO.
2. POINTS @ TEMP. SUPP. A AND F MAY BE PLACED AT Q BRG AND Q GIRDER OR Q JACK TOWER LINE 1 AND 3 AND Q GIRDER
- 3.




**TEMPORARY STRUCTURE AND TEMPORARY LOCATION CONSTRUCTION PLAN**

**DESIGN DATA AND GENERAL NOTES**

1. DESIGN LOADING IN ACCORDANCE WITH AASHTO GUIDE DESIGN SPECIFICATIONS FOR BRIDGE TEMPORARY WORKS FIRST EDITION, 1995 WITH INTERIM REVISIONS THROUGH 2008.
2. STEEL DESIGN PER AISC STEEL CONSTRUCTION MANUAL, 13th EDITION
3. CAST-IN-PLACE CONCRETE:  $f'_c = 4.0$  ksi;  $f_y$  (REINF.) = 60 ksi,  $n = 8.0$  (NORMAL-WEIGHT), UNLESS NOTED OTHERWISE.
4. STRUCTURAL STEEL:  $F_y = 50$  ksi UNLESS NOTED OTHERWISE.
5. CONFORM TO THE WELDING REQUIREMENTS OF THE STRUCTURAL BUILDING CODE - STEEL AWS D1.1.
6. USE 70 ksi WELD STRENGTH FOR ALL WELDS.

**NOTES:**

1. SEE "TEMPORARY STRUCTURE FOUNDATION PLAN" FOR LOCATION OF HP 14x89 PILES.
2. SEE "TEMPORARY SUPPORT ELEVATIONS - SPAN 1 AND SPAN 2" AND "TEMPORARY SUPPORT DETAILS 1 TO 3 OF 3" FOR ADDITIONAL TEMPORARY SUPPORT DETAIL.
3. SEE "FRAMING PLAN" AND "GIRDER DETAILS 1 OF 5 TO 5 OF 5" FOR GIRDER DETAILS.
4. SEE "DECK PLAN 1 OF 2 AND 2 OF 2" AND "INTERIOR ABUTMENT DIAPHRAGM" FOR DECK AND INTERIOR ABUTMENT DIAPHRAGM DETAILS.
5. SEE "SCREED ELEVATIONS 1 OF 2 AND 2 OF 2" FOR DECK ELEVATIONS
6. SEE "PARAPET DETAILS 1 OF 2 AND 2 OF 2" FOR PARAPET DETAILS.
7. PRIOR TO PLACING INTERIOR ABUTMENT DIAPHRAGM AND DECK, SURVEY TOP OF GIRDERS AND CONTACT ENGINEER TO DETERMINE IF ADJUSTMENT IS REQUIRED (CAUSED BY STEEL BEAM DEFLECTION OR SETTLEMENT).
8. FOR ADDITIONAL PLATFORMS ATTACHED TO TEMPORARY ABUTMENTS, PLEASE CONSULT WITH ENGINEER.
9. REUSE 1-80 OVER 2300 EAST AND I-80 OVER ECHO DAM ROAD TEMP. STRUCTURE (4), (3), AND (2) HP 14x89 TABLE TOP BEAMS AND THE PILE TOPS (TYPE 1 AND TYPE 2). VERIFY THAT THEY ARE IN GOOD CONDITION.

I-15; SOUTH LAYTON INTERCHANGE		WADSWORTH DESIGN GROUP 71 E. WADSWORTH PARK DRIVE DRAPER, UT 84020		 6955 UNION PARK CENTER SUITE 370 MIDVALE, UTAH 84047							
TEMPORARY STRUCTURE		APPROVAL REC'D		DESIGN JLS 02/19/10		CHECK TEM 02/19/10		2	3/05/10	JLJ	REVISION 2
TEMP. STR. AND LOC. CONSTN. PLAN		DATE		DESIGN ENGR.		DRAWN DAP 02/19/10		1	2/23/10	DAP	REVISION 1
PROJECT NUMBER 116942		APPROVED		DATE		SENIOR BRIDGE ENGR.		NO.	DATE	BY	REMARKS
											REVISIONS
DAVIS COUNTY		TEMP. SPUI		DRG. NO.							
SHT. 2 OF 33											