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**SEMI-FINAL INSPECTION OF OVERHEAD TRUSS SIGN SUPPORTS  
GALVANIZATION DEFECTS PER BRIDGE SAFETY AND EVALUATION INSPECTIONS**

**SUBMITTAL REVIEW:**

**Walsh Construction Submittal No. 1201235-01-013-01 August 9, 2011**

**REVIEW OF MATCO REPORT AND PROPOSED REPAIR**

(See attached submittal)

Contract Items

#1201235A- Overhead Truss Sign Support

#1201236A – Overhead Truss Sign support (Site 2)

**SUMMARY OF MATCO REPORT CONCLUSIONS:**

- “Matco Services Inc. verifies that the defects and quality concerns mentioned in the report provided by Garg Consulting Services, Inc. Project No. 170-3014 Structure No. 21960 and No. 21959 are valid.”
- “Furthermore due to the age and environmental exposure of the structure it is highly unlikely that areas of dross or other buildup reported by Garg Consulting Services, Inc. (Project No. 170-3014) that do not already exhibit red oxides are a performance concern.”
- “The primary cause(s) of defects were likely due to an improper design for hot dip galvanizing, improper handling, mechanical damage, poor patch work and an inconsistent galvanizing process.”
- “Temporary localized failure of protective systems does not result in high rate localized attack. Carbon steel is anodic with respect to most other materials. Ref: NACE-Corrosionist.”
- “When condition arises different metals are more easily corroded for example missing galvanized coating can create a galvanic corrosion cell and can result in an elevated corrosion rates in those areas.”
- “The corrosion rates were estimated utilizing the above mention data and corresponding work experiences and actual exposure time to roughly predict that all areas exhibiting no galvanized layer will likely corrode at a rate of 15 to 45 (MPY).”
- “The remaining areas with the presences of galvanizing layer will likely perform as intended and expected by our client.”
- “If the product is mechanically sanded or blasted to remove all corrosion products and recoated in areas of concern with approved galvanizing repair products inspected every 2 to 3 years. It is also recommended having a coating inspector present during this process to verify all procedures are followed correctly.”

**REVIEW COMMENTS:**

1. Based on the conclusions of the MATCO inspection and report the defects and concerns raised during the field inspections performed by Bridge Safety and Evaluation have been validated. Areas that exhibit rusting and the appearance of having no galvanizing have been confirmed to have no galvanizing. See figure below for representative photograph of areas found to have no galvanizing.





Photograph to the left is a GARG inspection photo. Photograph to the right is the same area taken by MATCO. See MATCO report, Figure No.8 Upper Left Core sample Structure 21960 and Figure No. 18 Representative photograph showing an area identified as “missing galvanizing” and red rust.

2. With regard to the need to address and repair the defects the MATCO report did not specifically address other areas on both sign structures that exhibit similar rusting as shown in the photographs of structure 21960 above. However, it is implied that the representative photographs can provide a visual basis to compare to other areas of the sign structures. On this premise we have prepared a photograph and repair location key for each sign structure that provides correlation of the BS&E Inspection photographs and the MATCO Core sample locations. They are included here as Plate 1 for Structure 21959 and Plate 2 for Structure 21960. The Plates also include highlighted areas of the structures that would be subject to repair of interior surfaces.
3. The repair procedure provided (quote for services from Tech Painting Company) does not provide enough detail of the means and methods to be employed. In addition the quote for services is limited to a specific area on Structure 21960. Other areas on both structures may require repair.
4. The repair procedure should include complete information on specialized equipment, tools and methods for surface preparation considering the geometry of the interior sections of the structures and limited access.
5. The repair procedure should include complete information on the proposed coating material and its application requirements specifically to achieve the required performance.
6. The repair procedure should include the qualifications of surface preparation and coating application personnel as well as inspection or quality control personnel and procedures to be used to provide the required quality control of the work as recommended in the MATCO report.

Please resubmit with the required information and provide a schedule for completion of this corrective work including all other exterior defects noted on the BS&E and MATCO inspection.

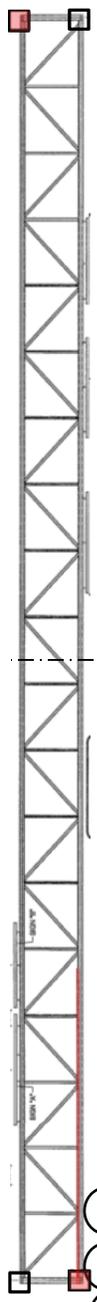


BASELINE I-95

SOUTHBOUND



REAR SIDE



NORTHBOUND



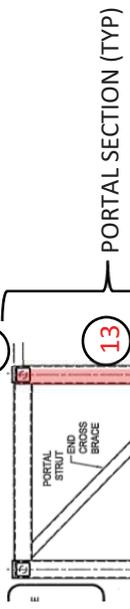
FRONT SIDE

PLAN

LEFT SIDE



Typical BS&E Inspection Photo #



PORTAL SECTION (TYP)

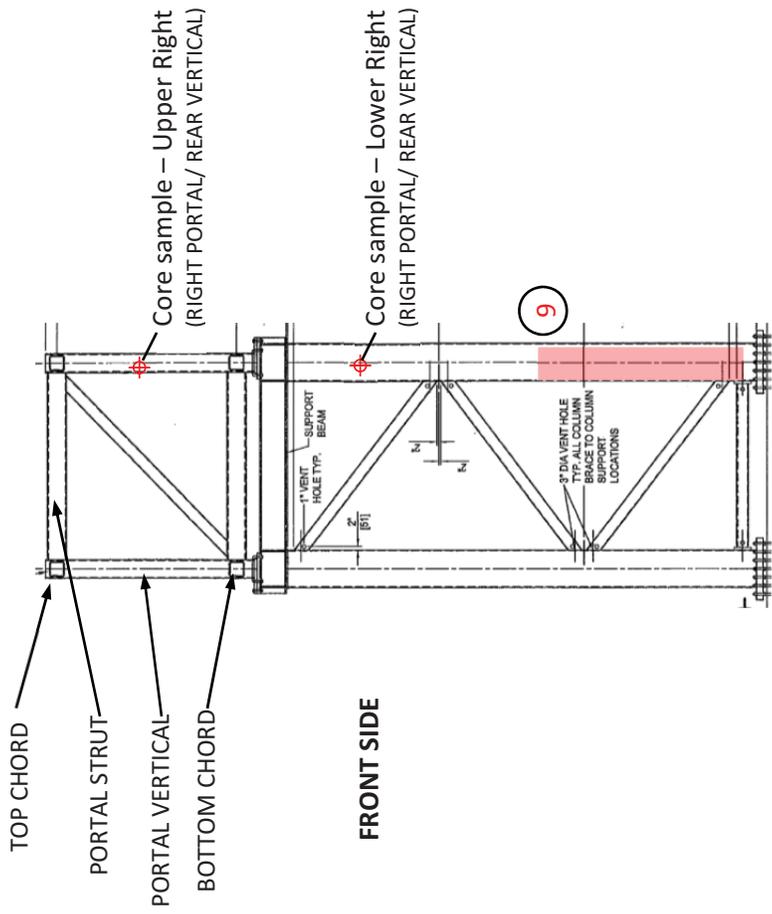
FRONT SIDE

Typical area for repair

TOWER SECTION (TYP)



LEFT SIDE ELEVATION



FRONT SIDE

RIGHT SIDE ELEVATION

**PLATE 1- STRUCTURE NO. 21959**

IDENTIFIED AS SIGN STRUCTURE 95-092-120 ON CONTRACT PLANS  
I-95 STATION 1+272

BASELINE I-95

SOUTHBOUND



9  
18  
17  
8  
LEFT SIDE

REAR SIDE

FRONT SIDE

PLAN

NORTHBOUND

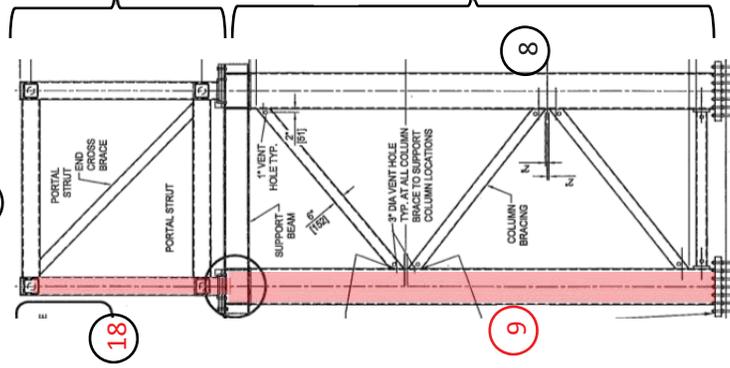


RIGHT SIDE

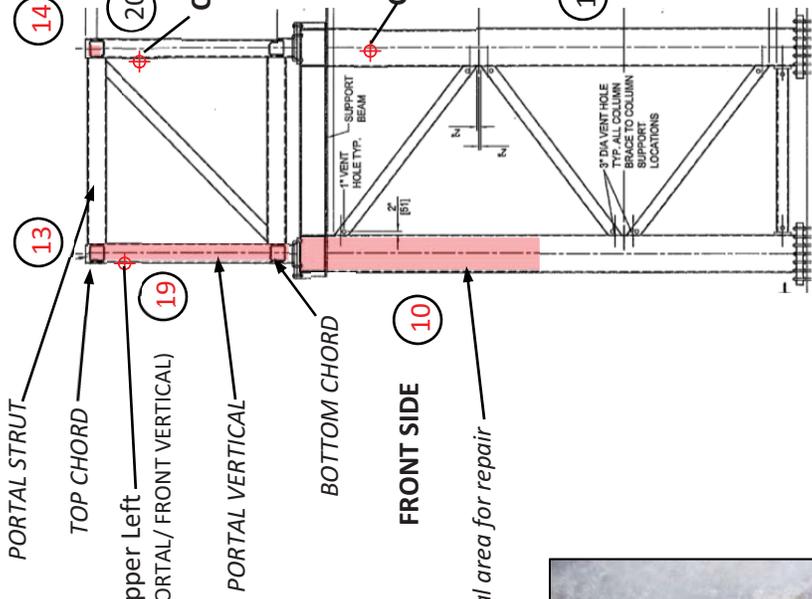
14  
11  
20  
13  
10  
19

Typical BS&E Inspection Photo #

17



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

\* Core sample - Upper Left  
(FRONTFACE/RIGHT PORTAL/ FRONT VERTICAL)

Core sample - Upper Right  
(FRONT FACE /RIGHT PORTAL/  
REAR VERTICAL)

Core sample - Lower Right  
(RIGHT FACE/RIGHT TOWER/  
REAR POST)

Typical area for repair



\* PHOTO #19 - GARG INSPECTION  
NO GALVANIZING ON CORE

NOTE: Photo 18 included for excessive  
dross to be removed for inspection of  
surface below.

PLATE 2- STRUCTURE NO. 21960

IDENTIFIED AS SIGN STRUCTURE 95-092-130 ON CONTRACT PLANS  
I-95 STATION 1+750