From: Stephen Njoloma,  
      Isabelle Lamb  

Date: September 6, 2011  

To: Salah Al-Tamimi  
    Sound Transit  

SUBJECT: LR 0177-09 N125 90% DESIGN SUBMITTAL  

As the prime Jacobs Associates, attests the following:  
The drawing and specifications for the subject submittal level have been satisfactorily completed to the level necessary to represent the 90% milestone.  
Currently there are eight (8) Civil to Systems open Interface Control Documents (ICD’s) for the 90% submittal which will be resolved by 100%, they are listed below:  

<table>
<thead>
<tr>
<th>ICD</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD 122</td>
<td>Pending Verification</td>
<td>Responsible Contract for procuring, power service, and installation of conduit sleeves for N125 tunnel emergency lighting UPS in the UW Station.</td>
</tr>
<tr>
<td>ICD 153</td>
<td>Open</td>
<td>Submittal of cross passage checklists as required by the Project Integration Plan.</td>
</tr>
<tr>
<td>ICD 176</td>
<td>Open</td>
<td>Addition to N125 of Green LED Exit Sign lights with integral batteries connected to the 480/277 panel in the cross passage.</td>
</tr>
<tr>
<td>ICD 180</td>
<td>Open</td>
<td>NFPA 130 requirements for fire resistive and low smoke cabling in the tunnel projects meeting UL 2196 testing criteria.</td>
</tr>
<tr>
<td>ICD 183</td>
<td>Open</td>
<td>Addition of tunnel drainage inlet plan view with reinforcement details to Contract Drawings. Refer to U230 Field Clarification 00039 for further details.</td>
</tr>
<tr>
<td>ICD 184</td>
<td>Open</td>
<td>Submitting Interface Block Diagrams for Tunnel N120 and N130 soon to be N125 as per Project Integration Plan for your review and approval.</td>
</tr>
<tr>
<td>ICD 196</td>
<td>Open</td>
<td>Request for Systems EMI design criteria for civil routing design by N125 Civil Design team.</td>
</tr>
<tr>
<td>ICD 201</td>
<td>Open</td>
<td>Submittal of Equipment Matrix for N125 as required by Project Integration Implementation Plan for review and approval.</td>
</tr>
</tbody>
</table>

JA QA have audited and released this package.
The subject design submittal package meets the contractual requirements and has been verified as such. Attached to this letter is our Outstanding Issues memo, which highlights the elements of the design which we believe need further attention.

Attachment: Outstanding Issues Memo

cc: Ahmad Fazel
    Tim McClure
    Aniekan Usoro
    Don Davis
    Phil Harrison

Stephen Njoloma

Isabelle Lamb
MEMORANDUM

DATE:         September 7, 2012
TO:           Salah Al-Tamimi
FROM:         Isabelle Lamb, Andy Mencke and Stephen Njoloma
SUBJECT:      LR 0177-09 N125 90% Design Submittal: Outstanding Issues List Memo
COPIES:       Adams, Davis, Marwaha, Moravec, Abey, Melvin, Rozalski

Introduction
This memorandum documents the unresolved “open issues” for the N125 Contract 90% Design package. This document has been prepared in accordance with Section 3.4.5 of the North Link Final Design Quality Manual. The open issues will be resolved as part of the on-going work for the 100% design submittal. The scope of work associated with N125 generally involves:

- Installation of temporary construction fences, site grading, utility revisions and protections, and installation of new access routes for construction, emergency services including SFD and pedestrian traffic at the Maple Leaf Portal, Roosevelt Station and U District Station sites.

- Installation of long-term construction walls, installation of support of excavation systems, and excavation of the Maple Leaf Portal as well as the Roosevelt Station and U District Station boxes.

- Construction of running tunnels, cross passages, low-point sump, tunnel invert and structures, raceways, walkways, and tunnel utilities from the Maple Leaf Portal to UW Station.

- Removal of TBM cutter heads and site restoration at the UW Station site.

Contract-wide “Open Issues”
The following summarizes global contract issues currently under consideration which will be resolved as the design progresses to the 100% submittal:

- Development of construction monitoring programs and mitigation measures for ground borne noise and vibration at the UW Campus. This development will be informed by input and agreement with UW on acceptable thresholds during construction.
Incorporation of new project names in all contract submittals. Sound Transit in collaboration with all stakeholders renamed the project from North Link to Northgate Link Extension. Additionally Brooklyn Station and North Portal were renamed to U District Station and Maple Leaf Portal respectively. The N125 design has updated all drawings and specifications with new project names for the 90% submittal. However, calculations, supporting documents, and memos will be updated with new Sound Transit project naming prior during the 100% design phase.

Several of the Division 01 Specification will require input from Sound Transit Contracts, Outreach and Construction Management during the 100% design phase. Sound Transit has provided the N125 design team with updated guide specification list and content for Division 01 Specifications. The N125 team has included these revised guide specifications in the 90% submittal and will continue to progress them to 100% design level.

The design for the tunnel connection to the UW Station requires continuing coordination with Sound Transit CAD and U250 to ensure the latest field design changes are incorporated.

Coordination of cross passage surface impacts and incorporation into Contract Documents is ongoing. Review and analysis of cross passage ground improvement options and associated surface impacts will continue. During the 100% design phase, review of other construction impacts such as dewatering discharge requirements and surface impacts due to construction work for ground improvement.

**Design Tasks and Issues**

The following summarizes design tasks and issues to be resolved in the last phase of design. They are organized by discipline and include short descriptions where appropriate.

**Tunnel Structural**

- **Cross Passages**
  1. Finalize specification language for surface impacts during cross passage construction.
  2. Finalize cross passage surface access and restoration details on UW campus.
- **Tunnel Sections and Track Data**
  1. Finalize N180 requirements for floating slab side bracket bolt and loading to confirm anchorage depth and coordination with walkway reinforcement.
- **Groundborne Noise and Vibration**
  1. Incorporate detailed specifications regarding a vibration monitoring plan during construction for the segment of the alignment on UW property. As noted above, this input will be based on final agreement between ST and UW.

**Right-of-Way**

- Update transit-way easement to include EMI ductbank crossing.
- Revise temporary construction easements at UW campus for cross passage and EMI monitoring system construction work limits.

**Civil**

- Continued coordination with WSDOT regarding Maple Leaf Portal design documents.
- Continued coordination with Structural and Systems for required EMI routing details.
• Continued coordination with U250 on the termination of EMI routing at UW Station.
• Continued coordination for grading, retaining wall, and tree protection for the pedestrian walkway on the Koh property.
• Finalize performance requirements for landscaping, tree protection, and restoration specification that will relate to non-specific construction impacts associated with cross passage construction, EMI equipment installation, and other ROW civil work along the alignment.
• Incorporate SDOT feedback on sidewalk and ramp grading revisions.
• Coordinate NPDES Permit number and requirements with Sound Transit.
• Request Sound Transit acceptance of deviation for 10-inch combined sewer in NE 66th St. with less than 2 ft of clearance from bottom of pipe to N150 top of station top waterproofing.
• Resolve existing base map conditions for UW TBM site based on revisions associated with the U250 and Husky Stadium projects.
• Continued coordination with SPU on 42-inch water transmission main specifications quality control.

Site Access and Traffic Engineering

• UW concurrence on drop-off locations for the UW Tower building and annexes.
• Finalize terms to incorporate into the Contract Documents based on pending resolution between the University Manor Apartments and Sound Transit on access and staging needs.
• SDOT input to complete the 1st Avenue MOT at Maple Leaf Portal.
• SPU input to identify and complete design to mitigate garbage collection impacts during construction along NE 66th and NE 67th Street.
• Final SDOT concurrence on all planned street and sidewalk closures at the U District and Roosevelt Station sites. Need to coordinate SDOT approval of structure under 1st Ave NE at Maple Leaf Portal
• Finalize SDOT approval and permit of relocation of the Health Sciences shuttle.
• Finalize SDOT input on modifications to on-street parking during construction.

Mechanical

• Finalize Sound Transit approval on the Freeze Protection Memo.
• Finalize Maple Leaf Portal valve room and standpipe routing into tunnel and coordination with follow-on N160 Contract.
• Finalize coordination with U250 “As-Built” drawings for tunnel connections to the UW Station including details for HVAC and sprinkler system protection and reinstallation during TBM cutterhead retrieval.

Electrical

• Finalize temporary power supply the U District Station. Three options are currently under review by SCL and Sound Transit. Option 3 which requires augmenting temporary power with a feed from Roosevelt Station through the tunnels is shown for the 90% submittal.
• Finalize the relocation of the 26 kV ductbank crossing under I-5 and through the Maple Leaf Portal site. The decision on which option to be used is pending SCL exploration.
• Input from SCL regarding the possibility to upgrade the temporary power at the Maple Leaf Portal site to support two TBMs. This decision will inform final contract documents on the available temporary power for tunneling at the Maple Leaf Portal.
• Finalize coordination with U250 “As-Built” drawings for tunnel connections to the UW Station.
• Finalize Maple Leaf Portal finish structure penetrations and coordinate with follow-on N160 Contract.
• Short Circuit Calculations and Final Selective Coordination Calculations were not included because their execution depends on equipment and feeder data from Station Power Distribution System feeding particular panelboards in the tunnels. Design of Station power systems has been stopped at 60% level at which data required for tunnel short circuit and selective coordination calculations are not available.
• SCL coordination and input to complete U District and Roosevelt Temporary Power One-Line Diagrams and site plans.

Lighting
• Design for relocation work on the WSDOT lighting cabinet in the vicinity of 1st Avenue NE and NE 95th Street.

Landscape
• Agreement with UW on final alignment for the EMI trench between Mason Road and Montlake Boulevard. This agreement will allow for final coordination of tree root areas and protection.
• Detailed landscape and tree protection and restoration criteria for cross passage surface access plans and specifications.
• Direction from Sound Transit on which standards should govern in the Products portion of the irrigation and planting restoration specification.
• Direction from Sound Transit on the preferred approach for addressing the typical one-year warranty for maintaining landscape in cases where restoration work will occur adjacent to private properties rather than on ST properties as is standard.
Status of Open ICDs

Eight ICDs remain open. Those open items result from responses not posted, responses that have generated additional questions, or responses that have not been reviewed and approved by Sound Transit. Many issues require only a closeout meeting to verify completeness of design team responses. None of the open issues represent impediments to the continued design progress. These issues will be resolved in the early stages of the 100% design effort.

Conclusions

Several design issues have not been addressed by the N125 90% design and are considered to be “open”. The most significant issues to be agreed and resolved include, continuing discussions with third parties, namely SCL, University of Washington and WSDOT to confirm final design input, surface impacts associated with construction of cross passages and continued coordination and interface with U830, N140, N150, N160 and N180 Contracts.

Additionally, we will continue to review and include any pertinent design input from the on-going construction work for the Sound Transit U-Link Project. It is anticipated that all the issues raised in this memorandum will be resolved by the 100% level.

SMN