Washington State Department of Transportation

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December 3, 2025

Patrick Prendergast, P.E.
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Bothell, WA 98011

WSDOT SL No. 9727-209

Reference: **Contract No. 9727**
I-405, Brickyard to SR 527 Improvement Project

Subject: **Interpretive Engineering Decision for Waterproofing**

Mr. Prendergast:

WSDOT transmits the enclosed Interpretive Engineering Decision regarding Waterproofing for vertical elements at Brickyard West, Brickyard East, and Canyon Park BRT station. The decision clarifies the Contract requirements and documents WSDOT's determination related to below-grade waterproofing and watertight elevator pits for these structures.

As discussed in recent correspondence and reviews, certain drawing revisions and submittals removed or did not indicate below-grade membrane waterproofing and omitted a watertight pit design. Under the Contract, Sound Transit prescriptive specifications require membrane waterproofing and its location and extent shown on the Contract Drawings (Appendix S07, ST 07 10 00 and ST 07 13 53), and hydraulic elevator pits shall be waterproof and verified sealed prior to installation to "prevent the entry of ground water...and the release of fluids" (ST 14 24 00, S21 DCM 25.4.1.J).

As presented in the enclosed Interpretive Engineering Decision regarding Waterproofing, the current design and affected submittals must be updated to clearly indicate required sheet-applied membrane waterproofing and to deliver watertight elevator pits in conformance with the Contract.

If Skanska does not agree with the WSDOT Engineer's written determination, Skanska may pursue the protest procedures in accordance with RFP Chapter 1 General Provisions, Section 1-04.5 Procedure, Protest, and Dispute by the Design-Builder.

If you have any questions, please contact Evelyn Pao at (425) 495-1577.

Sincerely,

Daniel Holmquist

Daniel Holmquist
Deputy Project Director
DH:za

Enclosures: Interpretive Engineering Decision regarding Waterproofing

cc: D. Case, D. Holmquist, J. Slavicek, S. Berriz, B. Kane, N. Bergeman, R. Gehrlein, E-File

WSDOT POSITION PAPER

Waterproofing Issue

I-405, Brickyard to SR 527 Improvement Project

Submitted by: Washington State Department of Transportation

Date: December 2, 2025

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1. Introduction

This paper examines the waterproofing issue for the vertical elements at Brickyard West, Brickyard East, and Canyon Park. These structures include below-grade slabs, below-grade walls, and elevator pits that interact with groundwater conditions. For the Brickyard Pedestrian Bridges and Towers (BY East and BY West), the design groundwater elevation (DGWE) is 278.60 feet per Geotechnical DP#7 (Table 5.9). For Canyon Park, the DGWE is 117.50 feet. The Design-Builder later stated a DGWE of 275.00 feet for Brickyard in email; we note that claim for context, but it does not change the BY East/West Contract basis used in this evaluation.

As the design advanced, earlier architectural drawings at BY West showed membrane waterproofing at below-grade elements. Prior to RFC, those callouts were removed through RFI 00627. At BY East, sheet BT230-AVX150 does not show waterproofing or waterstop callouts, and no other East sheets indicate membrane extents. For Canyon Park, we will confirm the pit elevation and identify the relevant foundation/section sheets.

Accordingly, this paper sets out (1) the governing requirements from the Contract documents, (2) a chronology of the design and review record (including RFIs and an NCI), (3) the current drawing evidence for each site, and (4) the steps needed to clearly indicate and deliver compliant below-grade waterproofing and watertight elevator pits.

2. Relevant Contractual Requirements

2.1. RFP Chapter 1, General Provisions

General Provisions Section 1-03.2 - Order of Precedence:

> *"Additional details and more stringent requirements contained in a lower priority document will control unless the requirements of the lower priority document present an actual conflict with the requirements of the higher level document."*
>
> *"In the event of a conflict among any Mandatory Standards, the order of precedence designated in the Technical Requirements regarding said standards shall prevail. The Technical Requirements shall take precedence over all Mandatory Standards listed within the Technical Requirements."*
>
> *Contract Documents include: "General Provisions — RFP Chapter 1 … Technical Requirements — RFP Chapter 2 … and all other RFP documents listed as Contract Documents in Appendix A1."* (includes S07 Vertical Construction Specifications and S21 Design Criteria Manual)

2.2. Appendix S07 - ST Vertical Specifications

Prescriptive Specifications:

> *"The Prescriptive Specifications are Sound Transit Standard Specifications and the Design-Builder shall coordinate and incorporate them into the Design-Builder's Construction Documents."*

Specifications for Submittals:

"Changes to the Prescriptive Specifications shall require a request for change during the design and construction phase. These requests from the Design-Builder shall state reasons for such change and receive written approval from Sound Transit."

03 15 13 — Waterstops Part 2.01.C:

"Self-Expanding Butyl Strip Waterstops for use on hycrete concrete… Below grade use shall be limited to Hycrete concrete locations where complete waterproofing membranes are provided on the exterior of the concrete."

07 10 00 — Waterproofing Part 1 General:

"The extent and location of 'Waterproofing' Work is shown in the Contract Documents."

"This section specifies requirements for membrane waterproofing at bottom slab and exteriors."

07 13 53 — Elastomeric Sheet Membrane Waterproofing Part 1.01 Summary:

"This section includes the requirements for sheet-applied elastomeric membrane waterproofing. Typical applications include but are not limited to waterproofing of below grade walls and foundations, and plaza decks. The location and extent of membrane waterproofing are indicated on the Contract Drawings."

14 24 00 — Hydraulic Elevators — 1.01.B Hoistway and Pit:

"Waterproof pit. Dry sump with flush grate. Provide pump or indirect drain to remove accumulated liquid."

14 24 00 — Hydraulic Elevators – Part 3.01.A Examinations:

"Hoistway and pit to be evaluated and confirmed as sealed and waterproofed prior to commencing installation of elevator equipment."

2.3. Appendix S21 - ST Design Criteria Manual

DCM 25.4.1.J.2.a - Elevator Pits:

"Pits shall be constructed to prevent the entry of ground water into the elevator and to prevent the release of fluids from the pit."

2.4. Washington State Building Code (IBC 2021, Chapter 18 — key context)

1805.3.1 Floors:

"Waterproofing shall be accomplished by placing a membrane … or other approved materials under the slab."

1805.3.2 Walls:

"Waterproofing shall be applied from the bottom of the wall to not less than 12 inches above the maximum elevation of the ground-water table. The remainder of the wall shall be dampproofed."

3. Discussion and Chronology

2025-08-27 - RFI 00565. In a follow-up to a constructability review meeting, the Design-Builder asked to remove WPR-1/WPR-2 below-grade membrane callouts and rely on hydrophilic waterstops and an admixture ahead of RFC. AECOM approved the change and Sound Transit recommended Hydrotite.

2025-10-15 - RFI 00627. AECOM confirmed removing waterproofing as requested. WSDOT did not concur, citing ST 03 15 13: below-grade waterstops are permitted only where complete exterior membranes are provided. The Design-Builder was asked to either restore membrane extents on the drawings or propose an approved alternative that satisfies the specification.

2025-10-30 - NCI 009727-00414,001. WSDOT documented non-compliance at BY West because waterstops were retained while exterior membranes had been removed, contrary to ST 03 15 13. The NCI requested corrective action to bring drawings and submittals into alignment (waterstops only where exterior membranes are provided). It established a formal mechanism to track resolution before proceeding.

2025-11-03 - Sound Transit email re ST 14 24 00 Hydraulic Elevators SMR. Sound Transit asked if the revised Hydraulic Elevators spec pit/well-hole language (e.g., double casing for the jack well and incorporating a water stop ring and hydrophilic waterstop at the casing) aligns with the DB's proposed pit details. The purpose was to confirm that the elevator pit and jack well must be watertight and that acceptance requires the pit to be confirmed sealed and waterproofed before installation.

2025-11-10 - WSDOT email to Skanska urging compliance for Brickyard West/East/Canyon Park elevator structures. It affirmed that for the Brickyard Pedestrian Bridges and Towers (BY East/West) the DGWE basis is 278.60 feet (DP#7) and that Sound Transit specifications will apply.

2025-11-20 - Design-Builder email. The Design-Builder asserted a DGWE of 275.00 feet and argued that damp proofing, admixture, and hydrophilic waterstops would be sufficient.

4. Affected Submittals and Exhibits

ST 03 15 13 - Waterstops - Shop drawings, details

ST 07 10 00 - Waterproofing - Sheet membrane waterproofing system (product data, details)

ST 07 13 53 - Elastomeric Sheet Membrane Waterproofing — Updated RFC drawings indicating membrane extents (locations/extent shown on Contract Drawings)

ST 07 13 53 - Elastomeric Sheet Membrane Waterproofing — QA/field testing plan (flood test or electronic leak detection) per Section 3.05

ST 14 24 00 - Hydraulic Elevators; DCM 25.4.1.J — Elevator Pits — Elevator pit waterproofing details (joints, penetrations, waterstops)

Geotech DP#7 - Table 5.9 Design Groundwater Elevation (DGWE) Summary

5. WSDOT Position

- Precedence: Under GP 1-03.2, the Contract's Technical Requirements and S07/S21 govern and take

precedence over Mandatory Standards; more-stringent requirements in lower-tier documents control unless they actually conflict with higher-tier documents.

- Membranes required: S07 07 10 00 and 07 13 53 require sheet membrane waterproofing at bottom slabs and exterior walls; drawing locations/extent are part of the Contract.
- Waterproof elevator pits: DCM 25.4.1.J (prevent entry/release) and S07 14 24 00 (waterproofed pit; verification before installation) require a watertight, waterproofed pit with proof prior to elevator install.
- Pit verification: Per ST 14 24 00, the hoistway and pit shall be evaluated and confirmed sealed and waterproofed before elevator installation, with acceptance witnessed/recorded by the Owner/Engineer. Verification shall be documented (form ID/date).
- Hycrete: S07 03 15 13 Part 2.01.C anticipates Hycrete concrete in locations where complete exterior membranes are provided; Hycrete is not a substitute for membranes absent written ST approval.
- Code: Even if DGWE is below slabs (IBC damp proofing allowance), Contract requirements are stricter and control for these elements; IBC “other approved materials” does not displace explicit membrane requirements without an approved substitution.
- Drawings: Under ST 07 13 53, the Contract Drawings must indicate the location and extent of membrane waterproofing. Where a sheet omits these (e.g., BY East BT230-AVX150), the drawings shall be corrected to show extents.
- DGWE basis: BY East/West = 278.60 feet (Geotechnical DP#7). Canyon Park = 117.50 feet. The DB’s claim of 275.00 feet does not change the Contract obligations or the requirements above.
- RFI changes: RFI-driven drawing edits (e.g., removal of membrane callouts) do not override the Contract; GP 1-03.2 and the Technical Requirements control.
- NCI resolution: NCI 009727-00414,001 must be resolved.

6. Conclusion

Under GP 1-03.2, the Contract’s more-stringent requirements will govern. For these vertical elements, ST 07 10 00 and ST 07 13 53 require sheet-applied membrane waterproofing and require the Contract Drawings to show membrane location and extent. The elevator pit must be waterproof and verified prior to installation (ST 14 24 00, Part 3.01.A), and it must be constructed to provide a dry sump with a pump or indirect drain (ST 14 24 00, Part 1.01.B.l) and to prevent both the entry of ground water and the release of fluids (DCM 25.4.1.J). Code allowances do not relax these obligations; any change to Sound Transit’s prescriptive specifications must be processed as a formal request and receive written Sound Transit approval Appendix S07 Vertical Construction Specifications.

Accordingly, the Design-Builder shall:

- Provide sheet membrane waterproofing at required below-grade slabs/walls and show the location and extent on the Contract Drawings per ST 07 13 53.
- Align waterstop use with ST 03 15 13: below grade, waterstops are used only where complete exterior membranes are provided.

- Respond to NCI 009727-00414,001 with updated drawings, submittals, and waterproofing verification plan and obtain written closure before proceeding.
- Deliver a sealed, watertight elevator pit and document the verification before installing elevator equipment.

7. List of Attachments

7.1. Brickyard East - BT230-AVX150 - Shaft Sections

7.2. Brickyard West - BT230-AED200 - Section Details

7.3. Brickyard West - BT230-AED350 - Section Details

7.4. Brickyard West - BT230-AED360 - Below Grade Details

7.5. RFI 00565 - BRT Below Grade Waterproofing Removal

7.6. RFI 00627 - BRT Below Grade Waterproofing Revisions Missed Prior to RFC

7.7. NCI 009727-00414,001 - Non-Compliance Issue Report

7.8. Email 2025-11-03 - 14 24 00 SMR (Hydraulic Elevators)

7.9. S07 Sound Transit Vertical Construction Specifications

7.9.1. Applicable Specifications – BY BRT Station & CP BRT Station

7.9.2. Prescriptive Specifications

7.9.3. Changes to the Prescriptive Specifications

7.9.4. ST 07 10 00; ST 07 13 53; ST 03 15 13, 2.01.C; ST 14 24 00, 3.01.A

7.10. S21 Sound Transit Design Criteria Manual

7.10.1. DCM 25.4.1.J

7.11. Geotechnical DP#7 — Table 5.9 Design Groundwater Elevation (DGWE) Summary

7.12. WABC 1805.3.1/1805.3.2

Outlook

[EXTERNAL] FW: C9727 BY to 527: 16.03 RFI 00565 BRT Below Grade Waterproofing Removal - WSDOT Response #2

From Balash, Michael <michael.balash@hdrinc.com>
Date Mon 11/3/2025 12:51 PM
To Berriz, Sonia (Consultant) <Sonia.Berriz@consultant.wsdot.wa.gov>; Holmquist, Dan (Consultant) <Dan.Holmquist@consultant.wsdot.wa.gov>
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2 attachments (326 KB)
RFI_00565_BRT_Below_Grade_Waterproofing_Removal_WSDOT Response #2.pdf; 14 24 00 SMR Form and Hydraulic Elevators Spec.pdf;

Sonia/Dan – I wanted to bring to your attention the question #4 and how it may conflict with the specification modification submitted for ST approval (attached). Note the revised sub-sections from the 14 24 00 SMR below related to our discussion on the well hole tying into the footing penetration, and well hole being watertight. Does the specification allow for the "incorporate water stop ring in the elevator pit construction" and hydrophilic waterstop around the casing?

f. An elevator well hole shall be provided as required. Access to the well hole location is the responsibility of the installer. Refer to the structural drawings for possible concrete foundation location under the elevator pit. No additional compensation beyond the contract amount will be allowed for this condition. Proper disposal of the well hole spoils is the responsibility of the installer. Provide double casing for elevator well hole, as shown on the Contract Drawings. The cylinder well, including the casings shall be sunk into the ground. Utilize a Schedule 40 PVC watertight well hole liner and incorporate water stop ring in the elevator pit construction. Well hole shall be provided by the installer and coordinated with the Contractor.

~~f.~~g. ~~Equalization: Provide direct mechanical means of equalizing position and speed of plungers. If speed and position of cylinders are not synchronized the elevator shall self-correct by auto-lowering to lowest floor and restarting. If after two attempts to readjust the position and or speed the plungers are not synchronized the elevator shall shut down~~Jack unit shall be set plumb in the well hole and then the annular space between the jack unit and PVC liner shall be filled with clean, dry sand to within 4 inches of the PVC liner. Provide a pressure sensitive, mechanically actuated seismic safety valve, conforming to the code, when seismic provisions are provided. Connect valve directly to jack assembly inlet.

Michael Balash, PE
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From: Alpuche, Nancy <nancy.alpuche@wsdot.wa.gov>
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Subject: C9727 BY to 527: 16.03 RFI 00565 BRT Below Grade Waterproofing Removal - WSDOT Response #2

Hello all,

Please see attached for RFI 00565 BRT Below Grade Waterproofing Removal – WSDOT Response #2.

Thanks,

Nancy Alpuche
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