



# TECHNICAL MEMORANDUM

Received  
Planning Division  
02/07/2024

**Client:** City of Beaverton  
**Project:** North Transmission Line Intertie Project  
**Project File:** BEAV 0230038.00.0400.0402  
**Project Manager:** Kyle Pettibone, PE  
**Composed by:** David Nichols, PE  
**Reviewed by:** Kyle Pettibone, PE  
**Subject:** No-Rise Certification  
**Date:** October 26, 2023



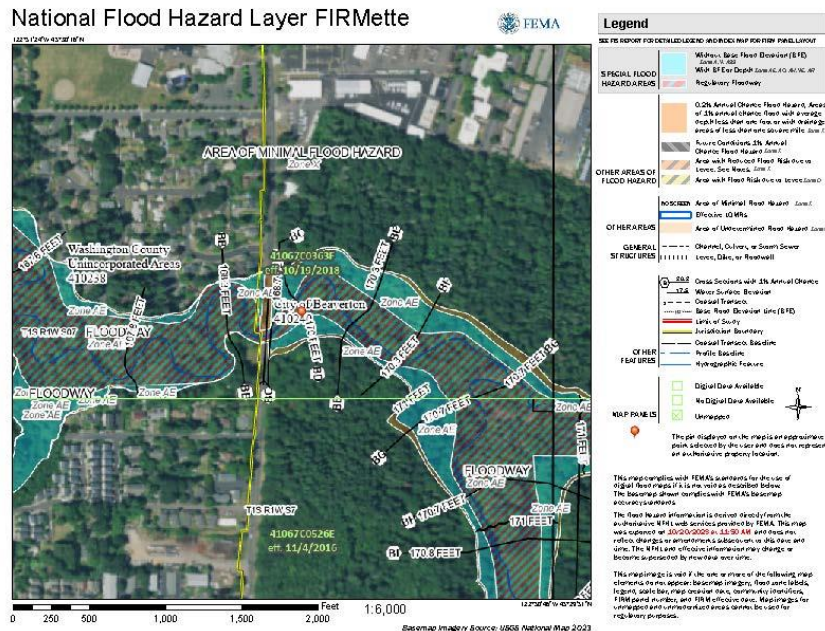
EXPIRES: 12/31/2024

## Background

This technical memorandum summarizes the floodplain impact analysis performed for the City of Beaverton (City) in support of a proposal to construct Segment 1 of the North Transmission Line Intertie (NTLI) 24-inch water transmission pipeline in Beaverton, Oregon. Segment 1, as planned, involves installation of approximately 11,760 feet of 24-inch transmission main line; 6,190 feet of 16-, 12-, and 8-inch distribution mains; a metering station; pressure reducing stations; and 2 trenchless crossings under aquatic resources.

The analysis was performed for the trenchless crossing site under Beaverton Creek, the only location within the Segment 1 project alignment where work activities will occur in a regulated flood zone. The project site is located at approximately 45.500832 degrees N, -122.851910 degrees W, in Tualatin Hills Nature Park, immediately upstream of where Beaverton Creek flows under SW 170<sup>th</sup> Avenue. The project is located inside the mapped floodplain shown in the effective 2018 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) floodplain Zone AE for Washington County, and project elements are proposed for construction inside the regulatory floodway.

Figure 1: FEMA FIRMette Project Flood Zones



As the project area is mapped in a regulatory floodway, the project is subject to Beaverton Development Code (BDC) Section 60.10 requiring a FEMA No-Rise Certification. Typically, a No-Rise Certification includes a detailed hydraulic model study as justification for the finding of No-Rise associated with projects that encroach the floodway. The proposed project has a small area of receiving pit excavation located within the regulatory floodway. This receiving pit will be restored to existing grades, will not constitute an encroachment, and will not modify flood conveyance at the site. Therefore, modeling is not necessary. If a modeling exercise was carried out, the proposed conditions model definition would be identical to the existing conditions. Project work in the Special Flood Hazard Area (SFHA) includes installation of:

- 24-inch water main pipe (approximately 100 feet of open trench);
- 24-inch pipe cased in a 36-inch steel pipe and grouted solid (approximately 136 feet directionally bored under Beaverton Creek);
- Temporary boring (600 square feet (sf) by 22 feet deep) and receiving (225 sf by 22 feet deep) pits on either side of the creek; and
- Temporary staging areas north (10,264 sf) and south (5,886 sf) of the creek.

All material generated by temporary excavation to open trenches and bore under Beaverton Creek will be replaced to match existing grades. Removal and fill volumes within the regulatory floodway are detailed in **Table 1**.

**Table 1**  
**Cut And Fill Volumes at Beaverton Creek Project Site**

Cut/Fill Action and Material	Quantity in FEMA Floodway (cy)
Temporary Cut (Sediment)	110.0
Permanent Fill (Pipe, Fittings, Casement)	1.0
Permanent Fill (Sediment)	109.0
Off-site Haul (Sediment)	1.0

During construction of this project, 1.0 cubic yard (cy) of excess sediment will be displaced by pipe and casing within the regulatory floodway. This material will be hauled offsite or otherwise disposed of outside of FEMA flood zones.

## Conclusion

In summary, this project will not pose a risk for increasing the base flood elevation due to the following design parameters:

- Site excavations are all temporary and excavated material will be replaced to match existing grade contours at the conclusion of the project (**Attachments 1 and 2**).
- Work within Beaverton Creek will be avoided through the use of directional drilling construction techniques.
- There is no above-ground infrastructure included in the proposed design.
- Imported material (pipe, fittings, and encasements) will be balanced by haul and disposal of excavated material outside of any FEMA SFHA.
- Disturbed areas will be revegetated after the project, which will lead to similar hydraulic roughness characteristics over time.
- Following revegetation, the site topography and roughness in the SFHA will be left unchanged from existing conditions, and there will be no change in the flood carrying capacity of the site.

The project will not alter the flood carrying capacity for the portion of the watercourse within the project site and is compliant with BDC.

## Engineering No-Rise Certification

This analysis was performed by a duly qualified engineer licensed to practice in the State of Oregon, David Nichols, PE.

**Attachments 1 and 2** support the fact that the proposed NTLI Segment 1 project will not impact the 100-year flood elevations, floodway elevations, or floodway widths on the published sections of Beaverton Creek in the Flood Insurance Study performed for the City on October 19, 2018. In addition, the NTLI Segment 1 project will not impact the 100-year flood elevations, floodway elevations, or floodway widths at unpublished cross-sections in the vicinity of the proposed development.

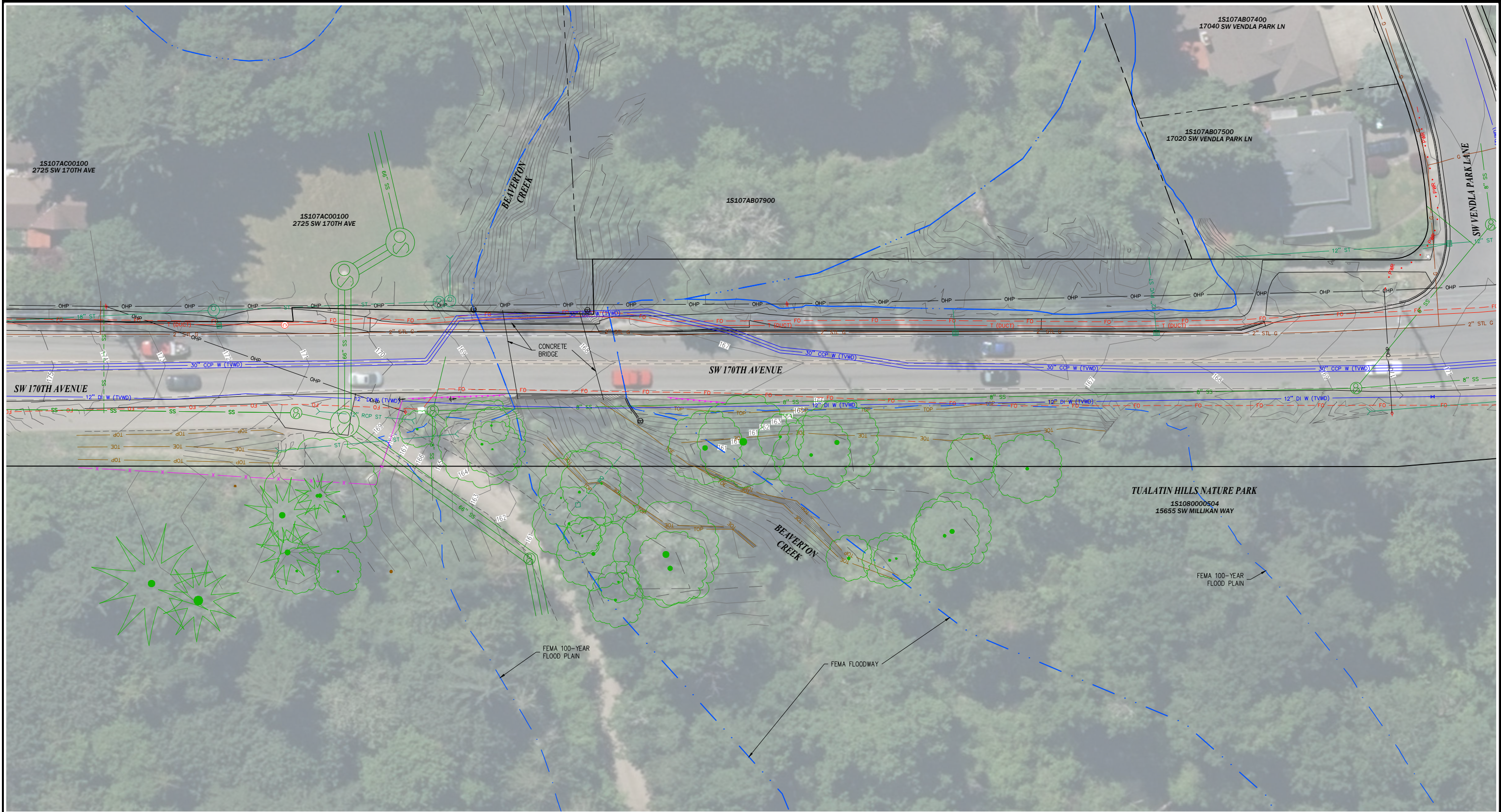
## Attachments

Attachment 1 – Existing Contours

Attachment 2 – Proposed Contours

## ATTACHMENT 1 - EXISTING CONDITIONS





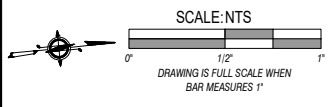
**NOTES**

1. ELEVATIONS ARE BASED ON THE NGVD 29 VERTICAL DATUM.

**PLAN VIEW**  
1" = 40'

**NO RISE CERTIFICATION - EXISTING CONDITIONS**

**NORTH TRANSMISSION LINE INTERTIE - SEGMENT 1**

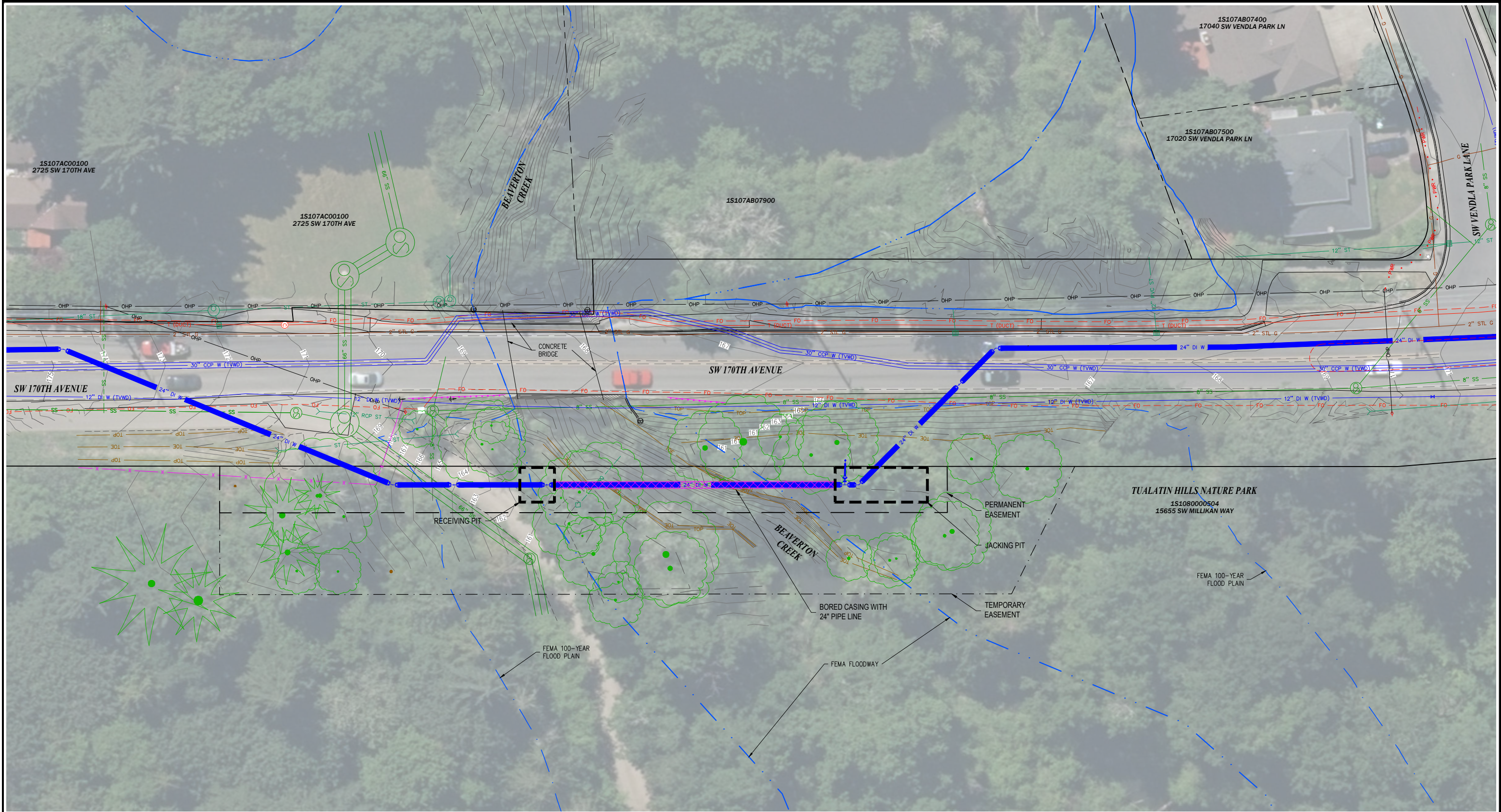


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## ATTACHMENT 2 - PROPOSED CONDITIONS





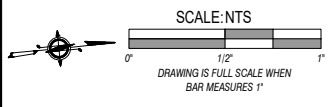
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