alcosan
allegheny county sanitary authority

September 30, 2025

CONTRACT NO. 1797

OHIO RIVER TUNNEL

ADDENDUM No. 4

All bidders bidding **Contract No. 1797** shall read and take note of this **Addendum No. 4.** The Contract Documents for **Contract No. 1797 – Ohio River Tunnel** are hereby revised and/or clarified as stated below.

Acknowledgement of Contract No. 1797; Addendum No. 4

The Acknowledgement attached to **Addendum No. 4** is to be signed and returned immediately via email to ORT.bids@alcosan.org and acknowledged with Bidder's Proposal.

Kimberly Kennedy

Kimberly Kennedy P.E.

Director of Engineering and Construction

ACKNOWLEDGEMENT OF

CONTRACT NO. 1797 – OHIO RIVER TUNNEL

***** return via email to ORT.bids@alcosan.org *****

ADDENDUM No. 4

FIRM NAME: _____

SIGNATURE: _____

TITLE: _____

DATE: _____

September 30, 2025
CONTRACT NO. 1797
OHIO RIVER TUNNEL
ADDENDUM No. 4

ATTENTION:
BIDS DUE: 11:00 A.M., prevailing time, on Monday, January 26, 2026
DEADLINE FOR QUESTIONS: 5:00 P.M., Friday, December 19, 2025
DEADLINE FOR CORE SHED VISITS: Wednesday, December 17, 2025

This Addendum No. 004 consists of 34 total pages including the following attachments:

- Attachment A – APPENDIX A – TECHNICAL SPECIFICATIONS, Section 01 45 23, Attachment 2 – *ATACHMENT 2 – List of Utilities for Inspection and Cleaning* (7 pages, Revised 09/25/2025)
- Attachment B – APPENDIX E – SUPPLEMENTAL INFORMATION, Section 10 *Utility Inspection Coverage Exhibits* (8 pages)
- Attachment C – APPENDIX B – CONTRACT DRAWINGS (6 pages)
    - Revised ORT-ST-200 (Sheet 117 of 770) (1 page)
    - Revised ORT-ST-300 (Sheet 130 of 770) (1 page)
    - Revised ORT-ST-400 (Sheet 141 of 770) (1 page)
    - Revised ORT-ST-600 (Sheet 159 of 770) (1 page)
    - Revised ORT-ST-700 (Sheet 169 of 770) (1 page)
    - Revised ORT-ST-800 (Sheet 179 of 770) (1 page)

ATTENTION BIDDERS
The following additions to and modifications of the Contract Documents will be included in and become part of the Contract for the Allegheny County Sanitary Authority (ALCOSAN) Ohio River Tunnel. Bidders are instructed to take the following into account in rendering any Bid for this work

The Bidder is responsible for verifying that he/she has received and reviewed all of the pages of the Contract Documents as well as all of the pages and attachments of all addenda. The Bidder shall verify all pages with the table of contents in the Contract Documents and the first page of all Addenda. Receipt of this Addendum No. 3 must be noted on the Bid Form. These items modify the portions of the documents specifically noted; all other provisions of the Contract Documents shall remain in effect.

CONTRACT NO. 1797
OHIO RIVER TUNNEL
ADDENDUM NO. 4

A. QUESTIONS & ANSWERS FROM RFI'S SENT TO ORT.bids@alcosan.org

Q1 *Specifications from Section: 01 45 23 - Paragraph 3.3.G.2 (Sheet: 590 of 2656) states that "Complete internal video survey for all underground sewer utilities and culverts within the limits and distances specified in this Section."*

Specifications from Section: 31 71 16 - Paragraph 1.2.G (Sheet: 2046 of 2656) states that "Blast Zone of Influence... For tunnel excavation by blasting, a zone within 200 feet from centerline... For shaft excavation by blasting, a zone within 300-foot radius from the blast face"

Contract Drawings do not encompass the full zone of influence depicting all utilities which require internal video surveys. Please provide a comprehensive sewer utility map within the extents of the prescribed Zones of Influence as necessary for Bidders to accurately price the Work.

A1 **Replace Specification Section 01-45-23, Attachment 2 in it's entirety with Specification Section 01 45 23, Attachment 2 REVISED 09/25/2025 (see Attachment A of this Addendum). Exhibits have been added to APPENDIX E – SUPPLEMENTAL INFORMATION for each site; (see Attachment B of this Addendum).**

Q2 *Note 8 on contract drawing A58-ST-403 references record drawings contained in Volume 6 of the Contract Documents. Please provide Volume 6 of the Contract Documents.*

A2 **APPENDIX B – CONTRACT DRAWINGS, A58-ST-403 DELETE reference to "VOLUME 6 OF CONTRACT" in Note 8 (Sheet 404 of 770) and REPLACE with "APPENDIX E OF BID". Additional "Volume 6" Contract Document deletions are noted below for each "Volume 6" reference to be deleted and replaced with "Appendix E" text.**

Q3 *Section C on contract drawings ORT-ST-410 makes reference to "#8 Warped Bars Spaced Equally." Please provide details and a definition of a "Warped Bar".*

A3 **Response to be provided with future addendum.**

Q4 *On previous ALCOSAN projects, Contractors receive 100% participation credit for materials supplied by a qualified Minority or Women's Business. Please confirm.*

A4 **Confirmed.**

Q5 *What are the required photographic, UAV and security webcam requirements on this project?*

A5 **Please reference Specification Section 01 45 23 - Pre-Construction and Post-Construction Inspections and Section 01 32 33 - Construction Photographs for photo and video requirements.**

Q6 *Article 1.14 and Table 1-1 in specification 01 32 13 requires the contractor to evaluate existing utilities, (for which limited structural and condition data is provided) design any mitigative measures determined necessary as a result of this evaluation and implement said measures all as incidental to the lump sum contract price. This approach places undue risk on the contractor for scope that cannot be accurately priced and will lead to large contingency allowances. To help reduce overall cost to ALCOSAN, will consideration be given to assigning this design scope to the EOR and adding mitigative work to the bid documents or moving all such related work to an allowance item?*

A6 **Out of scope repair or relocation of utilities will be paid for from allowance bid items.**

Q7 *Article 1.8(F) in specification section 01 35 26 calls for a safety manager or deputy safety manager to be present at each site during every shift that work is occurring. Providing such a quantity of qualified safety professionals required to cover multiple shifts across eight sites will prove challenging at best. Will ALCOSAN consider reducing this requirement to a minimum of two safety professionals per shift across the project or similar?*

A7 **A Safety Manager or Deputy Safety Manager at each work site is not required but will be required for each shift. Each work site shall have a Competent Person as defined by OSHA.**

Q8 *Please provide drawings of the existing floor plan for the former auto dealership building at site CCT-O07A that will be made available to the contractor for temporary offices and other purposes.*

A8 **Response to be provided with future addendum.**

Q9 *Please confirm if the maximum permissible round for all non-TBM tunnels is 8-feet per 31 71 16 – 3.6.K, outside areas where shorter rounds are explicitly required. Will longer rounds (10-14 feet) be allowed dependent on tunnel size, rock quality, and/or other site-specific factors?*

A9 **Maximum permissible round requirements for Non-TBM Tunnels remain as stated in the Contract Documents. No substitutions or alternatives will be considered during the bidding process. These can be submitted post-award of the contract for consideration, but bidders should bid the plans and specifications as received.**

Q10 *31 74 19-1.2.B - Will the Owner consider removing the prohibition that "the dry mix process IS NOT allowed on the project?" Considering the additional limitations on shooting wet mix*

within 90 minutes of batch time and 01 32 13 restricting ready-mix transport to Regular Working Hours, the contractor's timeframe for shotcreting will be severely restricted.

A10 **No substitutions or alternatives will be considered during the bidding process. These can be submitted post-award of the contract for consideration, but bidders should bid the plans and specifications as received.**

Q11 *31 74 19 - 2.1.C - Please clarify the statement that "Welded Wire Fabric (WWF) shall be used for reinforcing all shotcrete." Does this statement only apply where the contract drawings indicate reinforced shotcrete, as some details specify plain shotcrete without reinforcement (such as for Tunnel Support Type 1).*

A11 **The cited statement is exclusively applicable for the areas where reinforced shotcrete is required.**

Q12 *Shotcrete temperature restriction 31 74 19 - 3.5.O. "No shotcrete may be placed within 24 hours when the surface or atmospheric or air temperature is or will be less than 50 degrees F or more than 90 degrees F." Please confirm this applies to the temperature at the point of placement (such as tunnel heading). Please consider replacing this section with the recommendations of ACI 506.2 - 3.4.4, 3.4.5, & 3.4.6.*

A12 **No substitutions or alternatives will be considered during the bidding process. These can be submitted post-award of the contract for consideration, but bidders should bid the plans and specifications as received.**

Q13 *31 74 19 – 3.5.P requires contractor to "shoot wet mix shotcrete within 90 minutes of batching." A correctly designed shotcrete mix with appropriate admixtures and agitation can be viable for far longer than 90 minutes. We request this provision be removed if the contractor can validate through testing that an acceptable product can be placed with a longer duration from batching to placement.*

A13 **No substitutions or alternatives will be considered during the bidding process. These can be submitted post-award of the contract for consideration, but bidders should bid the plans and specifications as received.**

Q14 *31 74 19 - 3.7 - Please clarify if continuous moisture curing is mandated for all shotcrete surfaces including tunnels and shafts.*

A14 **DELETE APPENDIX A – TECHNICAL SPECIFICATIONS, Section 31 74 19 -16, section 3.7.C in it's entirety. DELETE the word "moisture" from APPENDIX A – TECHNICAL SPECIFICATIONS, Section 31 74 19 – 16, section 3.7.B.**

Q15 *Drawing ORT-ST-200-O41 (sheet 117 of 770) plan view identifies a 3'-0" min diameter secant pile (typ). However, Detail 1 on the same sheet identifies a 3'-6" diameter pile. Further, the detail show a center to center pile distance of 2'-4", but laying out with 3'-6" piles nets an overlap of only 1'2" and not the required 1'-4" overlap. Please advise.*

A15 **The following APPENDIX B – CONTRACT DRAWINGS have been revised: ORT-ST-200, ORT-ST-300, ORT-ST-400, ORT-ST-600, ORT-ST-700 AND ORT-ST-800. See Attachment C of this Addendum.**

Q16 *Drawing ORT A48-CI-302 (Sheet 355 of 770) Keynote J state "Contractor to rehabilitate concrete wall full height and width. See Volume 6- supplemental information for drawing for rehabilitation of Norfolk Southern retaining wall prepared by AECOM and dated 11/15/2024." I was not able to locate these document in Appendix E Supplemental Information, And believe this work has been done. Please confirm that wall rehab is complete and that the ORT contractor will not be required to do any work on the railroad retaining wall.*

A16 **APPENDIX B – CONTRACT DRAWINGS, A48-CI-302 DELETE reference to "VOLUME 6" in Key Note J (Sheet 355 of 770) and REPLACE with "APPENDIX E". APPENDIX B – CONTRACT DRAWINGS, A48-CI-302 DELETE "REHABILITATE" in Key Note J (Sheet 355 of 770) and REPLACE with "PROTECT".**

Q17 *Specification 31 23 19 1.2D specifies "The primary means of seepage control in NSF excavations on the Project is to install deep groundwater cut-off SOEs and ground treatment as shown on the Contract Drawings." No SOE have been shown for shallow structures, i.e VDs. Please confirm that this requirement does not apply to shallow structures.*

A17 **Contractor must implement appropriate means and methods to control seepage in excavations for shallow structures based on the ground and groundwater conditions anticipated. Contractor should refer to APPENDIX C – GBR and APPENDIX D - GDR.**

B. CHANGES TO CONTRACT DOCUMENTS

1. Specifications Section 01 35 26, 1.8 F – DELETE "each work site during" as shown below in RED.

   The Safety Manager or a qualified and approved deputy shall be present at ~~each work site during~~ each shift and at all times when work is being conducted on-site.

2. **TECHNICAL SPECIFICATIONS Section 31 74 19, 3.7.C – DELETE in it's entirety. TECHNCIAL SPECIFICATIONS Section 31 74 19, 3.7.B - DELETE the word "moisture".**

   3.7 CURING

   A. Immediately after finishing, the shotcrete shall be cured continuous for a minimum of seven (7) consecutive days or for the time necessary to attain 70 percent of the specified minimum compressive strength, whichever period is less.

~~B.~~ Complete ~~moisture~~ curing by sprinkling, intermittent light hosing, or other methods approved by the Owner.

~~C. Do not use natural curing in lieu of the requirements of this Section.~~

3. Article 2 Paragraph 2.07 CONTRACT AND EXECUTION, ADD the following after Subparagraph 5:

A Notice to Proceed will be sent by Owner by electronic letter to the Awarded Bidder and shall be effective the date of receipt of the email. The Awarded Bidder will commence performance immediately upon receipt of the Notice to Proceed. The Awarded Bidder should not order any materials or equipment or make any financial commitments concerning this Contract until receiving the Notice to Proceed. Awarded Bidders that do Work or prepare to do Work prior to receiving the Owner's Notice to Proceed are proceeding at their own risk.

4. Article 2 Paragraph 2.31 PROJECT STABILIZATION AGREEMENT AND LETTER OF ASSENT, ADD the following after subparagraph 3:

The Contractor shall also require each Subcontractor to execute a copy of the Letter of Assent. The Contractor must be sure that each of its Subcontractors has furnished an executed copy of the Letter of Assent to the CM before the Subcontractor starts work on the Project. The Contractor shall abide by, and ensure that each Subcontractor abides by the terms of the Project Labor Agreement.

5. Article 4 Paragraph 5 [page 4-3] REPLACE in its entirety with the following.

The Contractor by executing this Agreement represents and warrants that it has read, and fully understands, each and every clause in each of the Contract Documents, including:

a. Legal Notice
b. Bid Form and Bid Bond
c. Certificate of Minority and Women’s Business Enterprise Participation
d. Non-Collusion Affidavit
e. Certificate of Compliance with the Pennsylvania Steel Products Procurement Act
f. Bidder's Qualification Statement
g. Information for Bidders
h. General Contract Conditions
i. Supplemental Contract Conditions
j. Certificate of Safety Procedures Compliance
k. Contract Agreement
l. Bonds, Certificates and Statements

m. Prevailing Minimum Wage Predetermination
n. Appendix A - Technical Specifications
o. Appendix B - Contract Drawings
p. Appendix C - Geotechnical Baseline Report
q. Appendix D - Geotechnical Data Report
r. Exceptions submitted by the Bidder and accepted in writing by the Owner
s. Addenda

6. Below are changes to the contract to address the change from "Volume 6" to "Appendix E". Reference to "Volume 6" in the Contract Documents should be deleted and replaced with reference to "APPENDIX E" of the Bid Documents as follows:
   a) APPENDIX B - CONTRACT DRAWINGS, ORT-GN-010 DELETE reference to "VOLUME 6 OF THE CONTRACT" in General note 15 (Sheet 10 of 770) and REPLACE with "APPENDIX E OF BID"
   b) APPENDIX B - CONTRACT DRAWINGS, O27-CI-104 DELETE "CONTRACT DOCUMENTS VOLUME 6" in Note 3 (Sheet 194 of 770) and REPLACE with "APPENDIX E OF BID".
   c) APPENDIX B – CONTRACT DRAWINGS, O41-CI-203 DELETE reference to "VOLUME 6" in Note 3 (Sheet 302 of 770) and REPLACE with "APPENDIX E"
   d) APPENDIX B – CONTRACT DRAWINGS, A48-CI-302 DELETE reference to "VOLUME 6" in Key Note J (Sheet 355 of 770) and REPLACE with "APPENDIX E"
   e) APPENDIX B – CONTRACT DRAWINGS, A58-ST-403 DELETE reference to "VOLUME 6 OF CONTRACT" in Note 8 (Sheet 404 of 770) and REPLACE with "APPENDIX E OF BID"
   f) APPENDIX A – TECHNICAL SPECIFICATIONS, Section 02 73 40 – 9 - DELETE reference to "Volume 6" in Section 3.5 Item C and REPLACE with "Appendix E"
   g) APPENDIX A – TECHNICAL SPECIFICATIONS, Section 02 82 20 – 22 DELETE reference to "Volume 6 of the Contract" in Section 3.4 Item A.1. and REPLACE with "Appendix E of the Bid"
   h) APPENDIX D – GEOTECHNICAL DATA REPORT, Appendix E (Page 4 of 14) DELETE "Volume 6" and REPLACE with "Appendix E"

7. APPENDIX A – Specification Section 01 45 23, Attachment 2:
   a) DELETE ATACHMENT 2 – List of Utilities for Inspection and Cleaning (4 pages) and ADD *ATTACHMENT 2 - List of Utilities for Inspection and Cleaning* (7 pages, Revised 09/25/2025), which is Attachment A to this Addendum.

8. APPENDIX E – ADD *Section 10 Utility Inspection Coverage Exhibits* to APPENDIX E Table of Contents (page 8 of 10153). ADD *Utility Inspection Coverage Exhibits* (8 pages) to Section 10, which is Attachment B to this Addendum.

9. APPENDIX B – CONTRACT DRAWINGS
    a) DELETE ORT-ST-200 (Sheet 117 of 770) and ADD Revised ORT-ST-200 (Sheet 117 of 770), which is Attachment C to this Addendum.
    b) DELETE ORT-ST-300 (Sheet 130 of 770) and ADD Revised ORT-ST-300 (Sheet 130 of 770), which is Attachment C to this Addendum.
    c) DELETE ORT-ST-400 (Sheet 141 of 770) and ADD Revised ORT-ST-400 (Sheet 141 of 770), which is Attachment C to this Addendum.
    d) DELETE ORT-ST-600 (Sheet 159 of 770) and ADD Revised ORT-ST-600 (Sheet 159 of 770), which is Attachment C to this Addendum.
    e) DELETE ORT-ST-700 (Sheet 169 of 770) and ADD Revised ORT-ST-700 (Sheet 169 of 770), which is Attachment C to this Addendum.
    f) DELETE ORT-ST-800 (Sheet 179 of 770) and ADD Revised ORT-ST-800 (Sheet 179 of 770), which is Attachment C to this Addendum.

Addendum No. 4

Attachment A

APPENDIX A – TECHNICAL SPECIFICATIONS, Section 01 45 23, Attachment 2

ATTACHMENT 2 – List of Utilities for Inspection and Cleaning **(7 pages, Revised 09/25/2025)**

ATTACHMENT 2 - List of Utilities for Inspection and Cleaning*									Revised 09/25/2025
Site	Facility(s)	Facility Owner	Description		Existing Constructed Access	Extent(s) of Inspection/Cleaning			
			Type/ Dia.	Exposure to river pool		Upstream (US)	Downstream (DS)	Approx. Dimension(s)	Estimated Sediment / Debris
O27	Existing O27 Combined Sewer Flow Regulator	ALCOSAN	Concrete structure with hydro-mechanical equipment	Partially below normal river pool. Internal flap gate. Gate condition unknown.	Manhole(s) at grade	Structure inlet(s)	Structure outlet(s)	30 feet x 25 feet x 20 feet (WxLxD)	<=5% full
O27	Existing O27 Combined Sewer Outfall	ALCOSAN	144-inch dia. brick sewer	Fully below normal river pool. No flap gate.	None	Manhole, ALCOSAN MH 044B002	Outfall, ALCOSAN OF 044BO27	350 feet (L)	<=50% full
O27	Existing Sanitary Sewer	ALCOSAN	144-inch dia. unk sewer	--	--	Manhole, ALCOSAN MH ADC044B027B	Manhole, ALCOSAN MH ADC044B027C	16 feet (L)	--
O27	Existing Sanitary Sewer	Unknown	15-inch dia. PVC sewer	--	--	Manhole, Unknown MH 075P001	Junction, Unknown JCT 044B001	266 feet (L)	--
O41	Existing O41 Combined Sewer Flow Regulator	ALCOSAN	Concrete structure with hydro-mechanical equipment	Partially below normal river pool. Internal flap gate. Gate condition unknown.	Manhole(s) at grade	Structure inlet(s)	Structure outlet(s)	6 feet x 15 feet x 15 feet (WxLxD)	<=5% full
O41	Existing Storm Sewer	PWSA	24-inch dia. RCP sewer	--	--	Manhole, PWSA MH 007F059	Manhole, PennDOT MH 007F078	142 feet (L)	--
O41	Existing Storm Sewer	PennDOT	48-inch dia. RCP sewer	--	--	Manhole, PennDOT MH 007F097	Manhole, PennDOT MH 007F078	126 feet (L)	--
O41	Existing Storm Sewer	PennDOT	18-inch dia. RCP sewer	--	--	Manhole, PennDOT MH 007F005	Manhole, PennDOT MH 007F078	41 feet (L)	--
O41	Existing Storm Sewer	PennDOT	30-inch dia. RCP sewer	--	--	Manhole, PennDOT MH 007F064	Manhole, PennDOT MH 007F078	193 feet (L)	--
O41	Existing Storm Sewer	PennDOT	18-inch dia. RCP sewer	--	--	Manhole, PennDOT MH 007F006	Manhole, PennDOT MH 007F078	95 feet (L)	--
O41	Existing Storm Sewer	PennDOT	54-inch dia. RCP sewer	--	--	Manhole, PennDOT MH 007F078	Outfall, ALCOSAN OF 007KO40	471 feet (L)	--
O41	Existing Combined Sewer	PWSA	18-inch dia. VCP sewer	--	--	Manhole, PWSA MH 007F051	Manhole, ALCOSAN MH ADC007F040	211 feet (L)	--
O41	Existing Outfall Sewer	ALCOSAN	18-inch dia. VCP sewer	--	--	Manhole, ALCOSAN MH ADC007F040	Manhole, PennDOT MH 007F074	73 feet (L)	--
O41	Existing Sanitary Sewer	PWSA	15-inch dia. PVC sewer	--	--	Manhole, PWSA MH 007G130	Manhole, ALCOSAN MH ADC007F040	788 feet (L)	--
O41	Existing Combined Sewer	ALCOSAN	8-inch dia. VCP sewer	--	--	Manhole, ALCOSAN MH ADC007F041	Manhole, PWSA MH 007F073	329 feet (L)	--
O41	Existing Combined Sewer	PWSA	24-inch dia. BR sewer	--	--	Manhole, PWSA MH 007G108	Manhole, ALCOSAN MH ADC007F041	414 feet (L)	--

*Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

ATTACHMENT 2 - List of Utilities for Inspection and Cleaning*										Revised 09/25/2025
Site	Facility(s)	Facility Owner	Description		Existing Constructed Access	Extent(s) of Inspection/Cleaning				
			Type/ Dia.	Exposure to river pool		Upstream (US)	Downstream (DS)	Approx. Dimension(s)	Estimated Sediment / Debris	
O41	Existing Combined Sewer	PWSA	15-inch dia. VCP sewer	--	--	Manhole, PWSA MH 007F007	Manhole, PWSA MH 007F008	34 feet (L)	--	
O41	Existing Combined Sewer	PWSA	36-inch dia. RCP & 48-inch dia. BR sewer	--	--	Manhole, PWSA MH 007F063	Manhole, ALCOSAN MH ADC007F041	225 feet (36-inch) & 33 feet (48-inch) (L)	--	
A48	Existing Combined Sewer	PWSA	54"x72" brick Sewer	Above normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, PWSA MH 008F002	Junction, PWSA JCT 008F092	633 feet (L)	<=10% full	
A48	Existing A48 Combined Sewer	PWSA	108-inch dia. brick sewer w/gunite lining	Above normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, PWSA MH 008F074	Manhole, PWSA MH 008G134	785 feet (L)	<=10% full	
A48	Existing Combined Sewer	PWSA	15-inch dia. VCP sewer	--	--	Manhole, PWSA MH 008F003	Manhole, PWSA MH 008F059	93 feet (L)	--	
A48	Existing Combined Sewer	PWSA	36-inch dia. UNK & 108-inch dia. BR sewer	--	--	Manhole, PWSA MH 008G067	Manhole, PWSA MH 008G070	306 feet (36-inch) & 39 feet (108-inch) (L)	--	
A48	Existing Combined Sewer	PWSA	48-inch dia. RCP sewer	--	--	Manhole, PWSA MH 008G080	Manhole, PWSA MH 008G070	16 feet (L)	--	
A48	Existing Combined Sewer	PWSA	18-inch dia. RCP & 24-inch dia. RCP sewer	--	--	Endcap, PWSA EC 008F004	Manhole, PWSA MH 008G074	17 feet (18-inch) & 361 feet (24-inch) (L)	--	
A48	Existing Combined Sewer	PennDOT	21-inch dia. RCP, 24-inch dia. RCP, 27-inch, & 30-inch RCP sewer	--	--	Manhole, PennDOT MH 008F083	Manhole, PennDOT MH 008G137	233 feet (21-inch), 151 feet (24-inch), 246 feet (27-inch), & 83 feet (30-inch) (L)	--	
A48	Existing Storm Sewer	PWSA	15-inch dia. PVC & 14-inch dia. DIP sewer	--	--	Manhole, PWSA MH 008F109	54"x72" Brick Sewer Connection	24 feet (15-inch) & 31 feet (14-inch) (L)	--	
A48	Existing Combined Sewer	PWSA	15-inch dia. VCP sewer	--	--	Manhole, PWSA MH 008F058	Junction, PWSA JCT 008F071	21 feet (L)	--	

*Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

ATTACHMENT 2 - List of Utilities for Inspection and Cleaning*									Revised 09/25/2025
Site	**Facility(s)**	**Facility Owner**	**Description**		**Existing Constructed Access**	**Extent(s) of Inspection/Cleaning**			
			Type/ Dia.	**Exposure to river pool**		**Upstream (US)**	**Downstream (DS)**	**Approx. Dimension(s)**	**Estimated Sediment / Debris**
A58	Existing A58 Combined Sewer (Madison Ave.)	ALCOSAN	102-inch dia. brick sewer w/gunite lining	Below normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, ALCOSAN MH 009A100	A58 Outfall, ALCOSAN OF ACSO009EA58	651 feet (L)	<=10% full
A58	Existing Combined Sewer Outfall (Voeghtly St.)	PennDOT	10-foot x 12-foot (HxW) reinforced concrete box culvert	Varies from fully (at outfall) to partially (upstream) below normal river pool. No flap gate.	None	Manhole, Unknown MH 009A0099	Manhole, Unknown MH 009E087	1051 feet (L)	<=50% full
A58	Existing Combined Sewer (E. Lacock St.)	PWSA	15-inch dia. VCP sewer	Below normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, PWSA MH 009A071	Direct connection to existing A58 Combined Sewer (Madison Ave.), PWSA JCT009A015	205 feet (L)	<=10% full
A58	Existing Combined Sewer (Voeghly St.)	PWSA	15-inch dia. VCP sewer	Below normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, PWSA MH 009A009	Manhole, PWSA MH 009E064	537 feet (L)	<=10% full
A58	Existing Combined Sewer	Unknown	15-inch dia. UNK sewer	--	--	End Cap, Unknown EC 009A004	Manhole, PWSA MH 009A016	74 feet (L)	--
A58	Existing Combined Sewer	PWSA	15-inch dia. VCP sewer	--	--	Manhole, PWSA MH 009A015	Manhole, PWSA MH 009B026	327 feet (L)	--
A58	Existing Combined Sewer	PWSA	15-inch dia. VCP sewer	--	--	Manhole, PWSA MH 009B038	Junction, PWSA JCT 009E027	292 feet (L)	--
AS1	Existing Combined Sewer (Warfield Street)	PWSA	24-inch dia. VCP Sewer	MH invert above normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, PWSA MH 009B022	Manhole, PWSA MH 009B036	451 feet (L)	<=5% full
AS1	Existing Combined Sewer (Carpenter Way)	PWSA	15-inch dia. VCP Sewer	MH invert above normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, PWSA MH 024P150	Manhole, PWSA MH 009B022	572 feet (L)	<=5% full

*Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

ATTACHMENT 2 - List of Utilities for Inspection and Cleaning*									Revised 09/25/2025
Site	**Facility(s)**	**Facility Owner**	**Description**		**Existing Constructed Access**	**Extent(s) of Inspection/Cleaning**			
			Type/ Dia.	**Exposure to river pool**		**Upstream (US)**	**Downstream (DS)**	**Approx. Dimension(s)**	**Estimated Sediment / Debris**
AS1	Existing Combined Sewer (Carpenter Way)	PWSA	15-inch dia. VCP Sewer	MH invert above normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Endcap, PWSA EC 009B003	Manhole, PWSA MH 009B022	103 feet (L)	<=5% full
AS1	Existing Combined Sewer	ALCOSAN	8-inch dia. VCP Sewer	--	--	Manhole, ALCOSAN MH A-59Z-02	Manhole, ALCOSAN MH ADC009BA59A	255 feet (L)	--
AS1	Existing Combined Sewer	PWSA	15-inch dia. VCP Sewer	--	--	Manhole, PWSA MH 009B026	Manhole, PWSA MH 009B027	129 feet (L)	--
AS1	Existing Combined Sewer	PWSA	15-inch dia. VCP Sewer	--	--	Manhole, PWSA MH 009B076	Manhole, PWSA MH 009B027	562 feet (L)	--
O14	Existing O14 Combined Sewer Flow Regulator	ALCOSAN	Concrete structure with hydro-mechanical equipment	Partially below normal river pool. Internal flap gate. Gate condition unknown.	Manhole(s) at grade	Structure inlet(s)	Structure outlet(s)	35 feet x 35 feet x 15 feet (WxLxD)	<=5% full
O14	Existing O14 Combined Sewer (East)	ALCOSAN	42-inch dia. RCP sewer	Below normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, ALCOSAN MH N03	Manhole, ALCOSAN MH O-14-PS	385 feet (L)	<=10% full
O14	Existing O14 Combined Sewer (West)	ALCOSAN	48-inch dia. RCP sewer	Below normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, ALCOSAN MH 1A	Manhole, ALCOSAN MH O-14-PS	537 feet (L)	<=10% full
O14	Existing Combined Sewer (Riverside St.)	PWSA	15-inch dia. VCP sewer & 30-inch dia. RCP sewer	Below normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, PWSA MH 007P029	Manhole, ALCOSAN MH 1D	625 feet (15-inch) & 12 feet (30-inch) (L)	<=10% full
O14	Existing Combined Sewer Outfall	ALCOSAN	48-inch dia. RCP sewer	--	--	Manhole, ALCOSAN MH O-14-PS	Outfall, ALCOSAN OF O-14	160 feet (L)	--
O14	Existing Combined Sewer Outfall	ALCOSAN	42-inch dia. RCP sewer	--	--	Manhole, ALCOSAN MH O-14-PS	Outfall, ALCOSAN OF O-14A	155 feet (L)	--
O14	Existing Combined Sewer	PWSA	24-inch dia.VCP sewer	--	--	Manhole, PWSA MH 006B043	Manhole, ALCOSAN MH N02	676 feet (L)	--

*Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

ATTACHMENT 2 - List of Utilities for Inspection and Cleaning*									Revised 09/25/2025
Site	Facility(s)	Facility Owner	Description		Existing Constructed Access	Extent(s) of Inspection/Cleaning			
			Type/ Dia.	Exposure to river pool		Upstream (US)	Downstream (DS)	Approx. Dimension(s)	Estimated Sediment / Debris
O14	Existing Combined Sewer	ALCOSAN	54-inch dia. RCP sewer	--	--	Manhole, ALCOSAN MH O-14-PS	Manhole, ALCOSAN MH ADC007P014A	13 feet (L)	--
O06A	Existing Combined Sewer (Shingiss St, south of Ella St.)	McKees Rocks	12-inch dia. VCP sewer	Below normal river pool. Downstream river backflow controlled by Ella St. pump station.	Manhole(s) at grade	Manhole, MROCK MH 0287	Manhole, MROCK MH 0324	834 feet (L)	<=25% full
O06A	Existing Combined Sewer	McKees Rocks	60-inch dia. brick sewer	Below normal river pool. Downstream river backflow controlled by Ella St. pump station.	Manhole(s) at grade	Manhole, MROCK MH 0340	Manhole, MROCK MH 0295A	696 feet (L)	<=25% full
O06A	Existing Combined Sewer	McKees Rocks	15-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0292	Manhole, MROCK MH 0340A	254 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	12-inch dia. VCP sewer	--	--	Manhole, Unknown UK_MH-1	Manhole, MROCK MH 0295	193 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	12-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0322	Manhole, MROCK MH 0295	289 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	12-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0332	Manhole, MROCK MH 0334	376 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	12-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0320	Manhole, MROCK MH 0335	389 feet (L)	--

*Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

ATTACHMENT 2 - List of Utilities for Inspection and Cleaning*									Revised 09/25/2025
Site	Facility(s)	Facility Owner	Description		Existing Constructed Access	Extent(s) of Inspection/Cleaning			
			Type/ Dia.	Exposure to river pool		Upstream (US)	Downstream (DS)	Approx. Dimension(s)	Estimated Sediment / Debris
O06A	Existing Combined Sewer	McKees Rocks	18-inch RCP & 18-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0282	Manhole, MROCK MH 0283	170 feet (RCP) & 143 feet (VCP) (L)	--
O06A	Existing Combined Sewer	McKees Rocks	12-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0464	Manhole, MROCK MH 0328	417 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	15-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0318	Manhole, MROCK MH 0328	227 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	18-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0326	Dropshaft, ALCOSAN DS O-06	1267 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	18-inch & 36-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0285	Manhole, MROCK MH 0329	991 feet (18-inch) & 5 feet (36-inch) (L)	--
O06A	Existing Combined Sewer	McKees Rocks	36-inch dia. CP sewer	--	--	Manhole, MROCK MH 0535	Manhole, MROCK MH 0329	222 feet (L)	--
O06A	Existing Combined Sewer	McKees Rocks	36-inch & 24-inch & 18-inch dia. VCP sewer	--	--	Manhole, MROCK MH 0329	Outfall, MROCK O-06	44 feet (36-inch) & 60 feet (24-inch) & 395 feet (18-inch) (L)	--
O06A	Existing Combined Sewer	McKees Rocks	36-inch dia. UNK sewer	--	--	Manhole, MROCK MH 0329A	Outfall, MROCK OF Robb St PS	473 feet (L)	--

*Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

ATTACHMENT 2 - List of Utilities for Inspection and Cleaning*									Revised 09/25/2025
Site	Facility(s)	Facility Owner	Description		Existing Constructed Access	Extent(s) of Inspection/Cleaning			
			Type/ Dia.	Exposure to river pool		Upstream (US)	Downstream (DS)	Approx. Dimension(s)	Estimated Sediment / Debris
O07	Existing Combined Sewer	McKees Rocks	24-inch dia. VCP sewer	Below normal river pool. Flap gate at downstream flow regulator outfall. Gate condition unknown.	Manhole(s) at grade	Manhole, MROC MH 0366A	C-04 flow regulator, ALCOSAN C-04-00	483 feet (L)	<=25% full
O07	Existing Combined Sewer	McKees Rocks	18-inch dia. VCP sewer	--	--	Manhole, MROC MH 0376	Manhole, MROC MH 0370	258 feet (L)	--
O07	Existing Combined Sewer	ALCOSAN	8-inch dia. CAS sewer	--	--	Manhole, ACSA MH C-03A-00	Regulator, ASCA RG C-04-00	24 feet (L)	--
O07	Existing Combined Sewer	ALCOSAN	36-inch & 34-inch dia. RCP sewer	--	--	Manhole, ACSA MH C-03A-00	Outfall, ASCA OF C-03A-OVF	17 feet (36-inch) & 15 feet (34-inch) (L)	--
O07	Existing Combined Sewer	ALCOSAN	8-inch dia. CAS sewer	--	--	Regulator, ACSA RG C-03-00	Manhole, ACSA MH C-03A-00	181 feet (L)	--
O07	Existing Combined Sewer	PWSA	18-inch dia. VCP sewer	--	--	Regulator, ACSA RG C-03-00	Manhole, PWSA MH 043S001	149 feet (L)	--
O07	Existing Combined Sewer	ALCOSAN & PWSA	8-inch dia. CAS & 15-inch dia. UNK sewer	--	--	Manhole, PWSA MH 043S013	Regulator, ACSA RG C-03-00	102 feet (8-inch) & 98 feet (15-inch) (L)	--

*Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

Addendum No. 4

Attachment B

APPENDIX E – SUPPLEMENTAL INFORMATION

Section 10 Utility Inspection Coverage Exhibits (8 pages)

N

Preble Ave

Preble Ave

DWT

ALCOSAN INTERCEPTOR

MH 075P001

MH 075P002

MH 075P003

CCT

300'

MH ADC044B027C

MH ADC044B027B

MH 044B002

OF 044BO27

MH ADC044B027A

Westhall St

JCT 044B001

ORT

Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of Influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

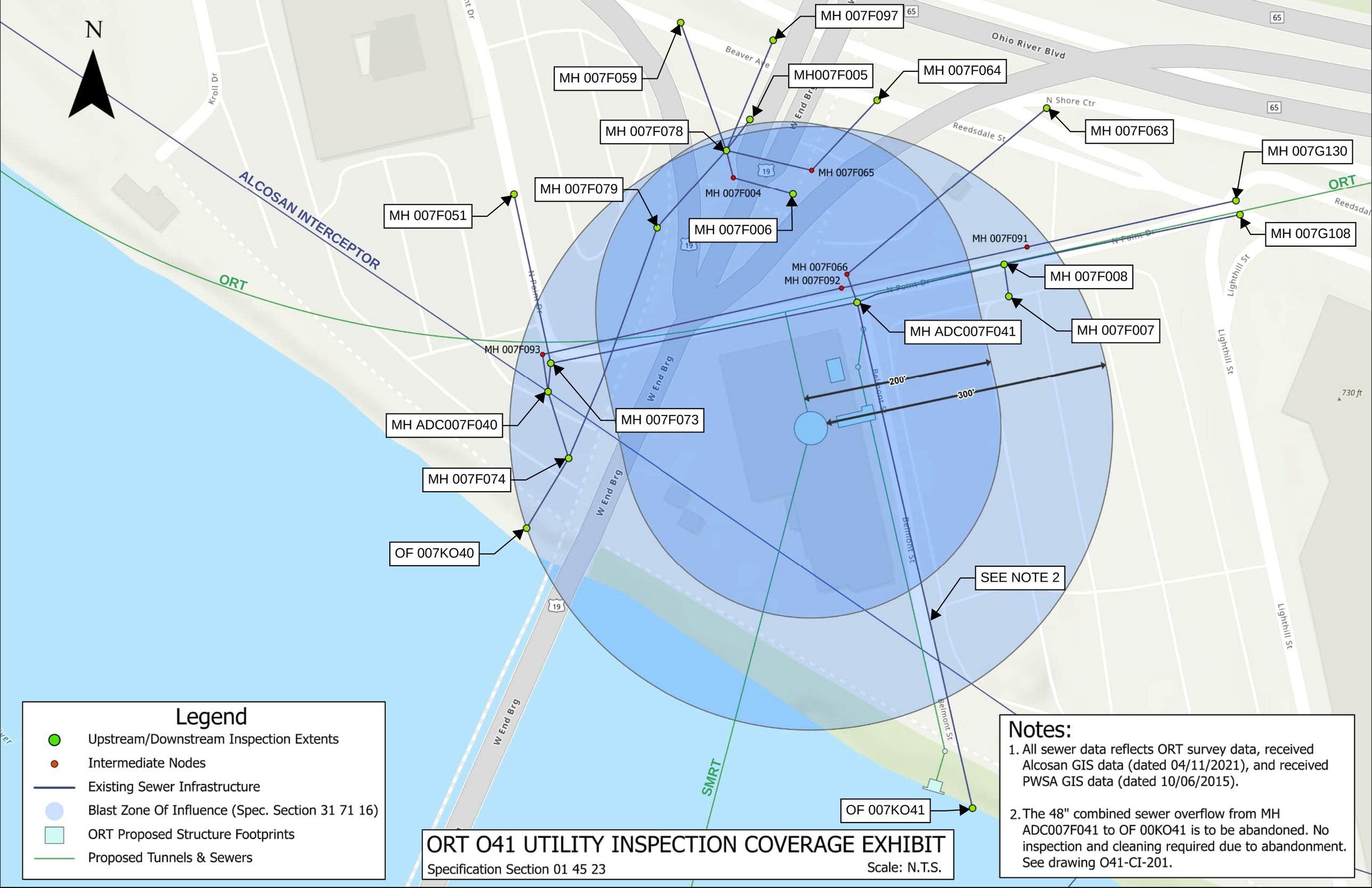
ORT O27 UTILITY INSPECTION COVERAGE EXHIBIT

Specification Section 01 45 23

Scale: N.T.S.

Notes:

1. Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).



Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of Influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

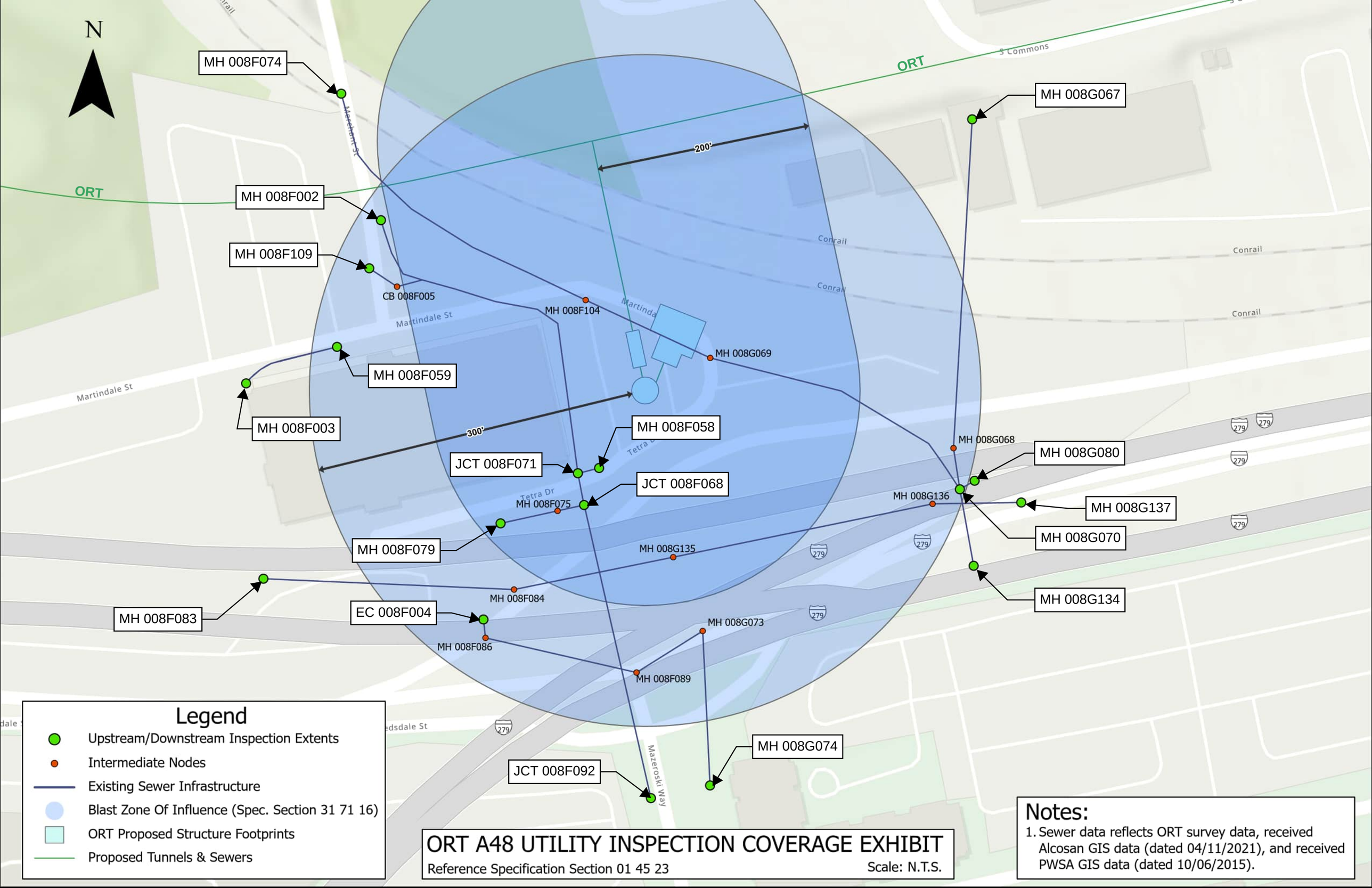
ORT O41 UTILITY INSPECTION COVERAGE EXHIBIT

Specification Section 01 45 23

Scale: N.T.S.

Notes:

1. All sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).
2. The 48" combined sewer overflow from MH ADC007F041 to OF 00KO41 is to be abandoned. No inspection and cleaning required due to abandonment. See drawing O41-CI-201.



Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of Influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

ORT A48 UTILITY INSPECTION COVERAGE EXHIBIT

Reference Specification Section 01 45 23 — Scale: N.T.S.

Notes:

1. Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

MH 009B026
MH 009B025
MH 009B038
MH 009A100
EC 009A004
MH 009A099
MH 009A016
MH 009A015
JCT 009A015
MH 009A014
MH 009A097
MH 009A013
MH 009A071
MH 009F073
JCT 009E027
MH 009A011
MH 009A012
MH 009A096
MH ADC009EA58
MH 009A010
OF ACSO009EA58
300'
200'
MH 009E063
MH 009E087
MH 009E064
MH 009A009
ORT
ALCOSAN INTERCEPTOR
Progress St
Madison Ave
Progress Way
Voeghtly St
E Larock St
River Ave
Saw Mill Run Blvd
East St
N
28
279
579

Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

ORT A58 UTILITY INSPECTION COVERAGE EXHIBIT

Specification Section 01 45 23 Scale: N.T.S.

Notes:

1. Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

N

MH 024P150

MH ADC009BA59A

MH 024P151

300'

MH 009B023

MH 009B076

MH A-59-Z-02

MH 009B030

MH 009B022

EC 009B003

MH 009B029

MH 009B024

MH 009B028

MH 009B027

MH 009B026

MH 009B036

ORT

ALCOSAN INTERCEPTOR

S Canal St

Chesboro St

Carpenter Way

Progress St

Warfield St

Saw Mill Way

Bolin Way

Chestnut St

River Ave

28

579

Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of Influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

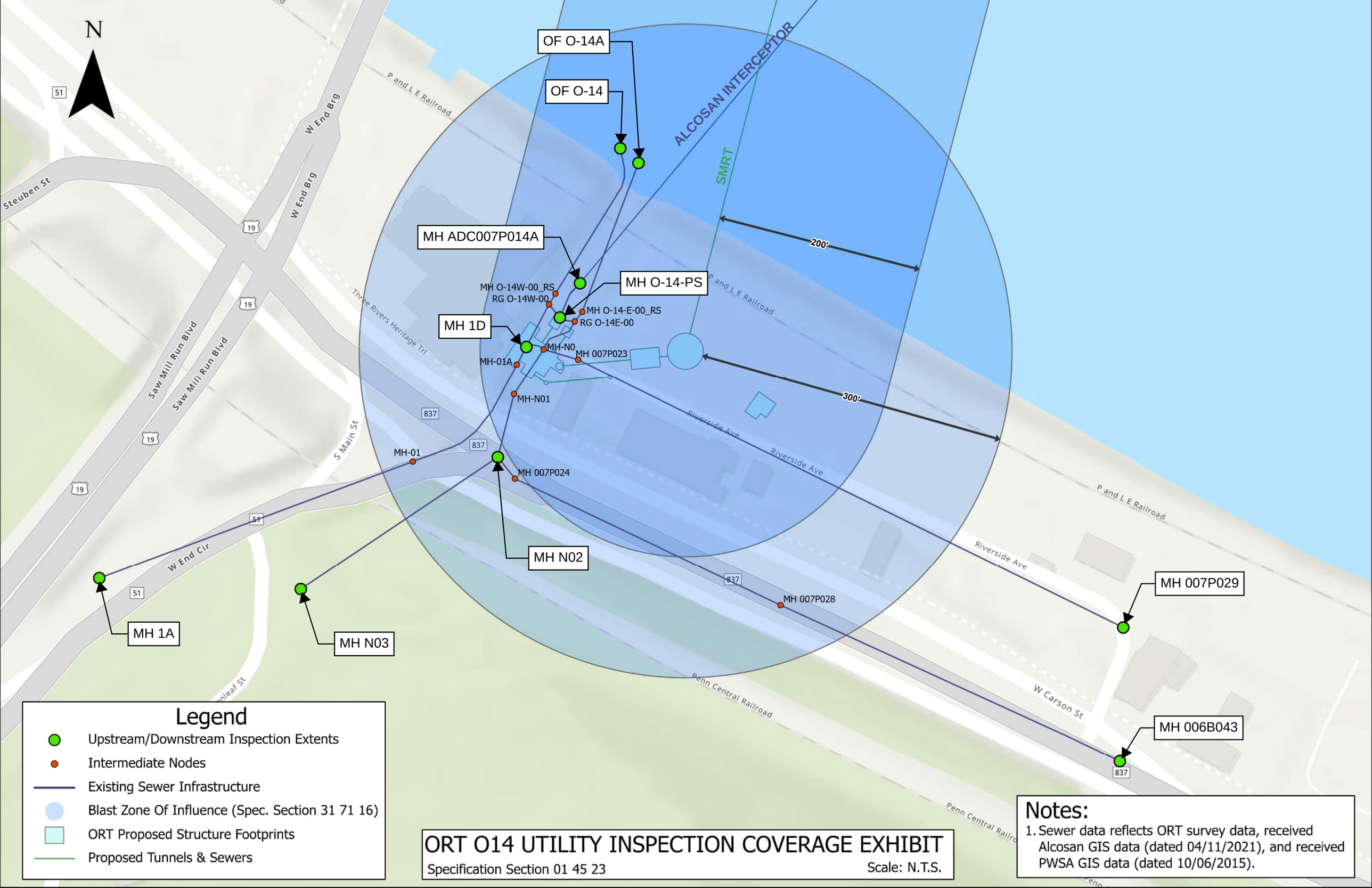
ORT AS1 UTILITY INSPECTION COVERAGE EXHIBIT

Specification Section 01 45 23

Scale: N.T.S.

Notes:

1. Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).



Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of Influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

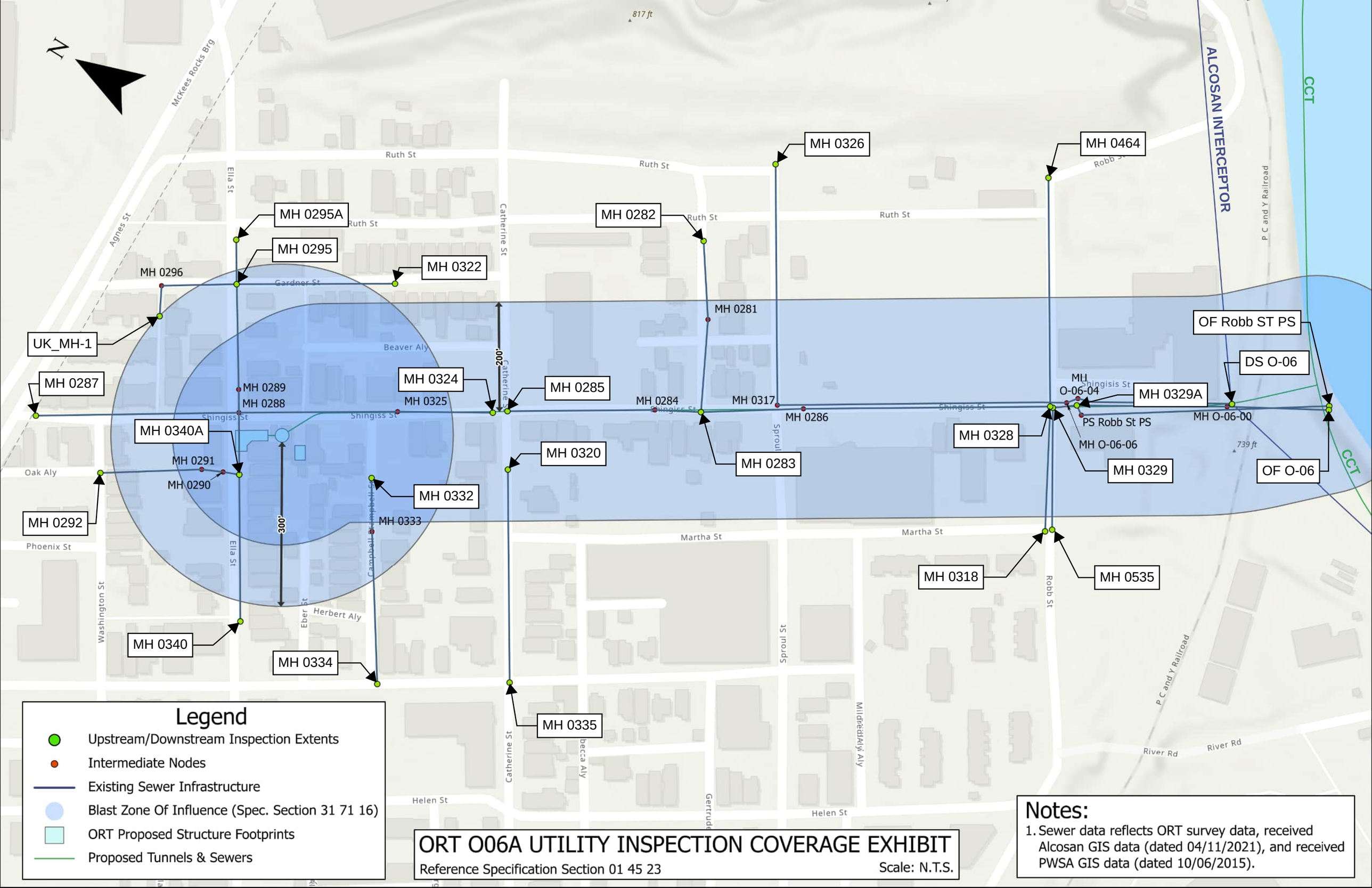
ORT O14 UTILITY INSPECTION COVERAGE EXHIBIT

Specification Section 01 45 23

Scale: N.T.S.

Notes:

1. Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).



Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of Influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

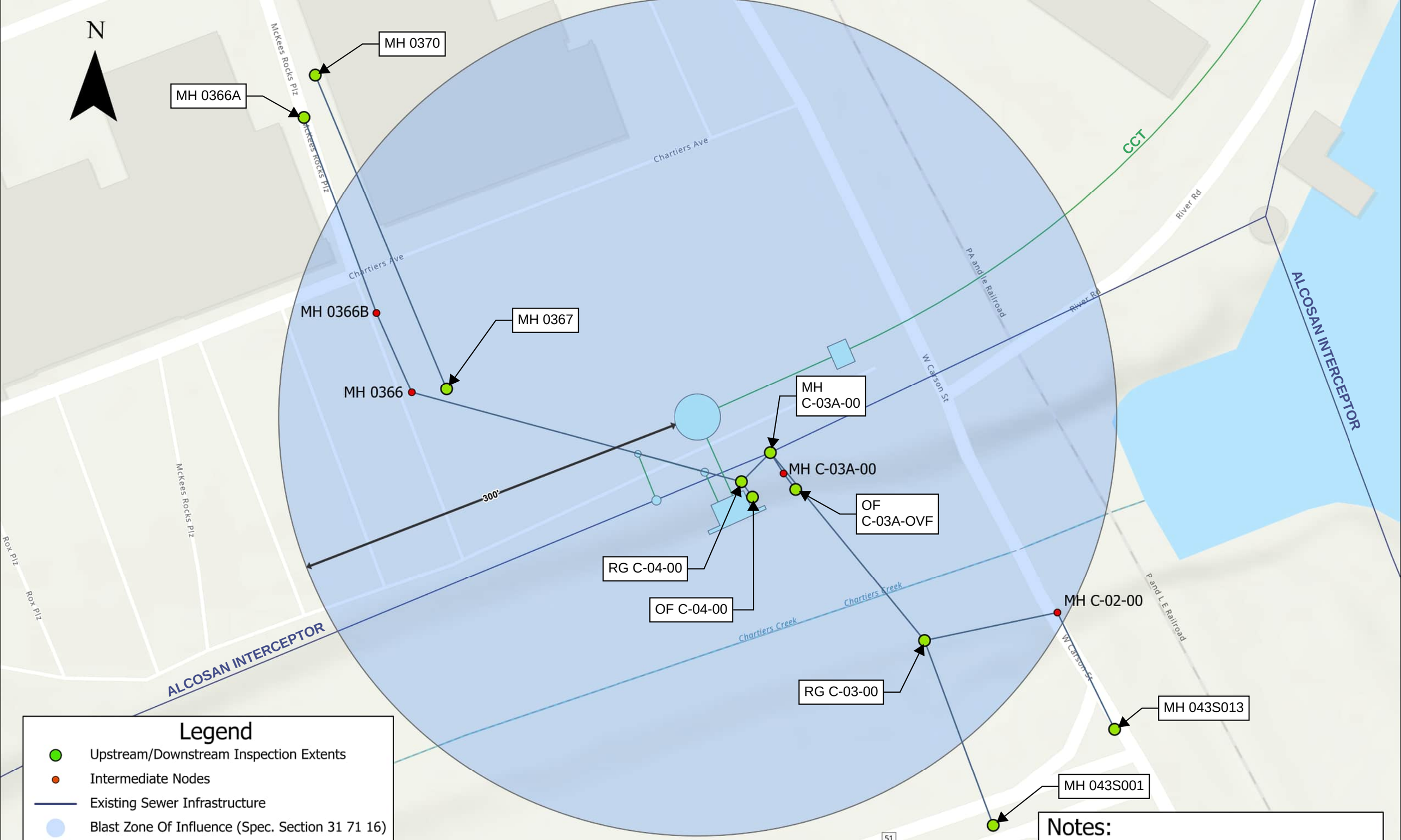
ORT O06A UTILITY INSPECTION COVERAGE EXHIBIT

Reference Specification Section 01 45 23

Scale: N.T.S.

Notes:

1. Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).



Legend

- Upstream/Downstream Inspection Extents
- Intermediate Nodes
- Existing Sewer Infrastructure
- Blast Zone Of Influence (Spec. Section 31 71 16)
- ORT Proposed Structure Footprints
- Proposed Tunnels & Sewers

ORT O07 UTILITY INSPECTION COVERAGE EXHIBIT

Specification Section 01 45 23 — Scale: N.T.S.

Notes:

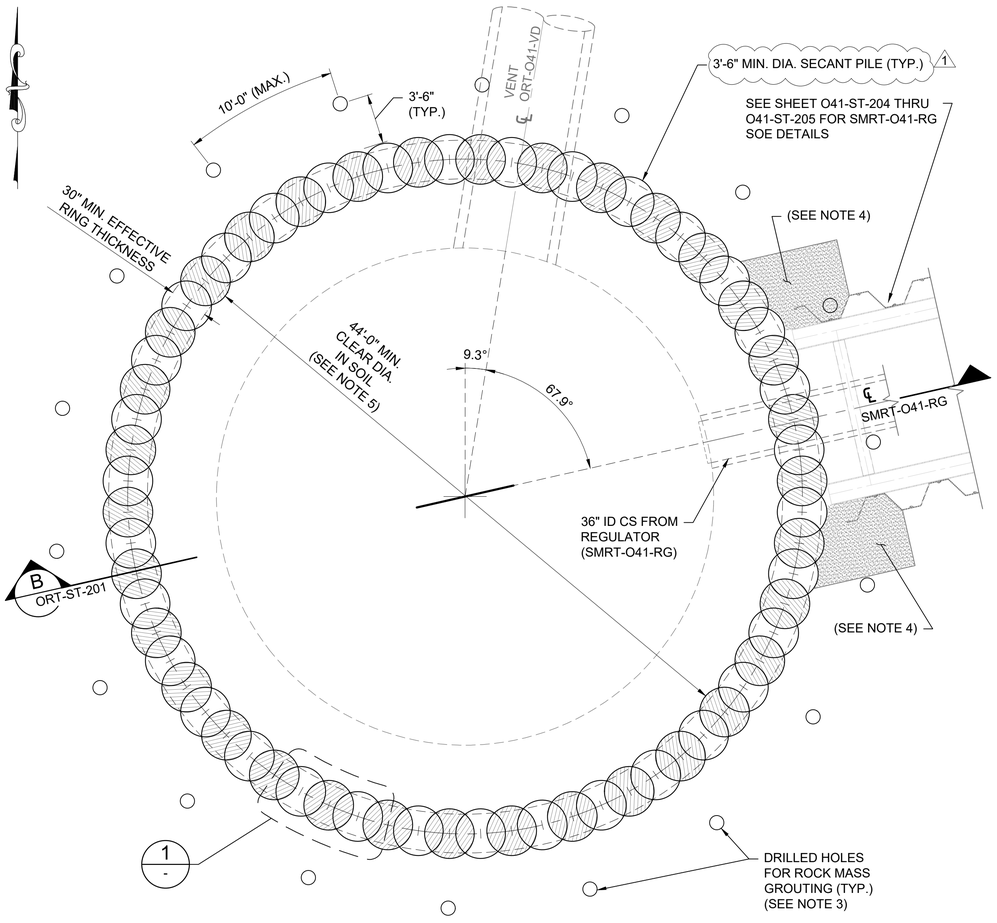
1. Sewer data reflects ORT survey data, received Alcosan GIS data (dated 04/11/2021), and received PWSA GIS data (dated 10/06/2015).

Addendum No. 4

Attachment C

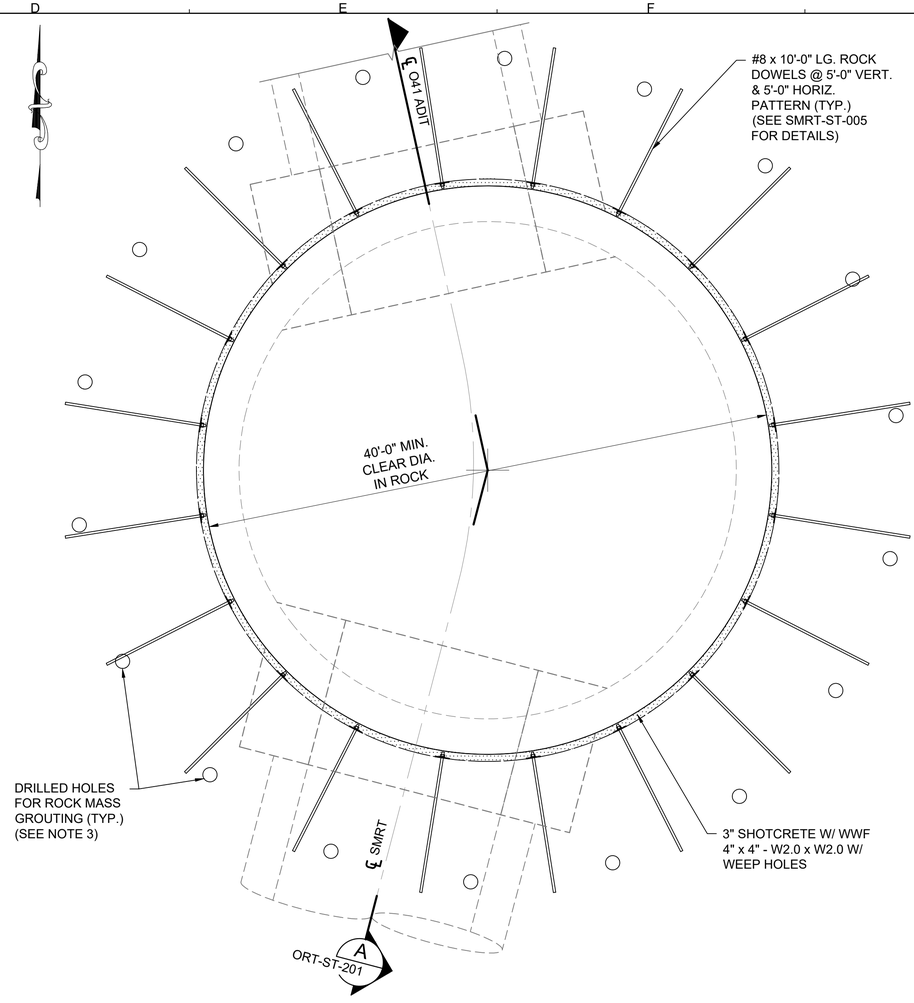
APPENDIX B – CONTRACT DRAWINGS

- Revised ORT-ST-200 (Sheet 117 of 770) (1 page)
- Revised ORT-ST-300 (Sheet 130 of 770) (1 page)
- Revised ORT-ST-400 (Sheet 141 of 770) (1 page)
- Revised ORT-ST-600 (Sheet 159 of 770) (1 page)
- Revised ORT-ST-700 (Sheet 169 of 770) (1 page)
- Revised ORT-ST-800 (Sheet 179 of 770) (1 page)



SHAFT INITIAL SUPPORT IN SOIL (GROUND SURFACE TO EL. 659.0)

SCALE: 3/16" = 1'-0"

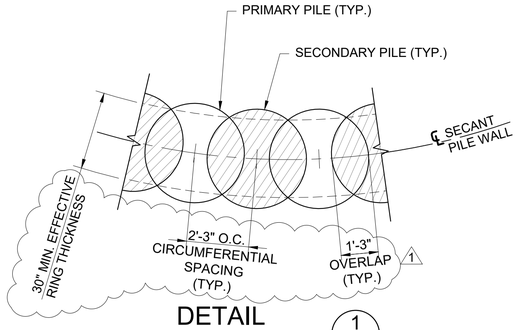


SHAFT INITIAL SUPPORT IN ROCK (EL. 659.0 TO EL. 571.29)

SCALE: 3/16" = 1'-0"

NOTES

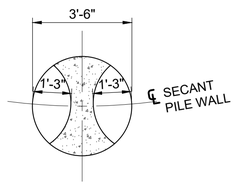
1. CONTRACTOR SHALL DESIGN AND INSTALL A CONTINUOUS FLOOD PROTECTION WALL AROUND THE ENTIRE PERIMETER OF THE SHAFT, AS REQUIRED PER SPECIFICATION SECTION 31 75 00.
2. SEE GEOTECHNICAL BASELINE REPORT (GBR) FOR SITE SPECIFIC SOIL AND GROUNDWATER CONDITIONS.
3. GROUTING IS REQUIRED AROUND THE PERIMETER OF THE SHAFT AND BELOW THE SHAFT BASE TO REDUCE ROCK MASS PERMEABILITY PRIOR TO EXCAVATING THE SHAFT. SPACING OF THE GROUTING HOLES SHALL NOT EXCEED THE DISTANCE SHOWN IN THIS DRAWING. LOCATION OF GROUTING HOLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL DESIGN AND INSTALL THIS GROUND IMPROVEMENT BASED ON THE ANTICIPATED GROUND AND GROUNDWATER CONDITIONS PROVIDED IN THE GBR AND IN ACCORDANCE WITH REQUIREMENTS INCLUDED IN THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL ALSO PERFORM LOCALIZED GROUTING AS NEEDED DURING ROCK EXCAVATION TO CONTROL ANY RESIDUAL FLOWS THAT ARE NOT SEALED OFF BY THE REQUIRED GROUND IMPROVEMENT.
4. FOR GROUND IMPROVEMENT ZONE AT SMRT-O41-RG CONNECTION, REFER TO SHEETS O41-ST-200 THROUGH O41-ST-205.
5. REFER TO TECHNICAL SPECIFICATIONS FOR SECANT PILES INSTALLATION TOLERANCES. CONTRACTOR SHALL INSTALL THE SOE SYSTEMS WITHIN THE REQUIRED INSTALLATION TOLERANCES SO THAT THE CLEAR DIMENSIONS AND EFFECTIVE RING THICKNESS SHOWN ON THIS SHEET ARE MET.
6. REFER TO SHEET O41-CI-203 FOR CONTROL POINTS COORDINATES.
7. CONTRACTOR IS REQUIRED TO INSTALL THE SHAFT FINAL LINING UP TO THE UNDERSIDE OF TOP SLAB PRIOR TO EXCAVATING THE O41 REGULATOR STRUCTURE (ORT-O41-RG) AND INSTALLING THE 36-INCH CONSOLIDATION SEWER FROM O41-RG AND THE 72-INCH VENTILATION PIPE THROUGH THE SHAFT SECANT PILES. IF THE CONTRACTOR ELECTS TO EXCAVATE THE REGULATOR STRUCTURE OR CUT THE PIPE OPENINGS PRIOR TO INSTALLING THE SHAFT PERMANENT LINING, A SUPPORT AND FRAMING DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE OWNER. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ALL APPLICABLE RE-DESIGNS AND SHALL PROVIDE ADDITIONAL STRUCTURAL REINFORCEMENT OR OTHER MODIFICATIONS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PROVIDE THE NECESSARY REINFORCEMENT OR CENTRALIZERS TO SUPPORT AND MAINTAIN THE TOE GROUTING PVC PIPES AND INCLINOMETER CASINGS IN PLACE WHILE POURING CONCRETE IN SECONDARY PILES.



DETAIL

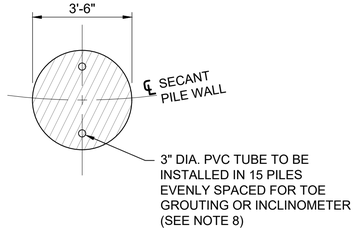
SCALE: 3/8" = 1'-0"

1
-



PRIMARY PILE DETAIL

SCALE: 3/8" = 1'-0"



SECONDARY PILE DETAIL

SCALE: 3/8" = 1'-0"

Designed by:	REVISION			
HTV/SZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	9/26/25	PILE DIMENSION UPDATES	ANC
RGR				
Checked by:				
ANC				

MOTT MACDONALD
Two Allegheny Center
Nova Tower 2, Suite 1301
Pittsburgh, PA 15212
(412) 497 - 2900

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ZHENQI CAI — ENGINEER — No. PE090706

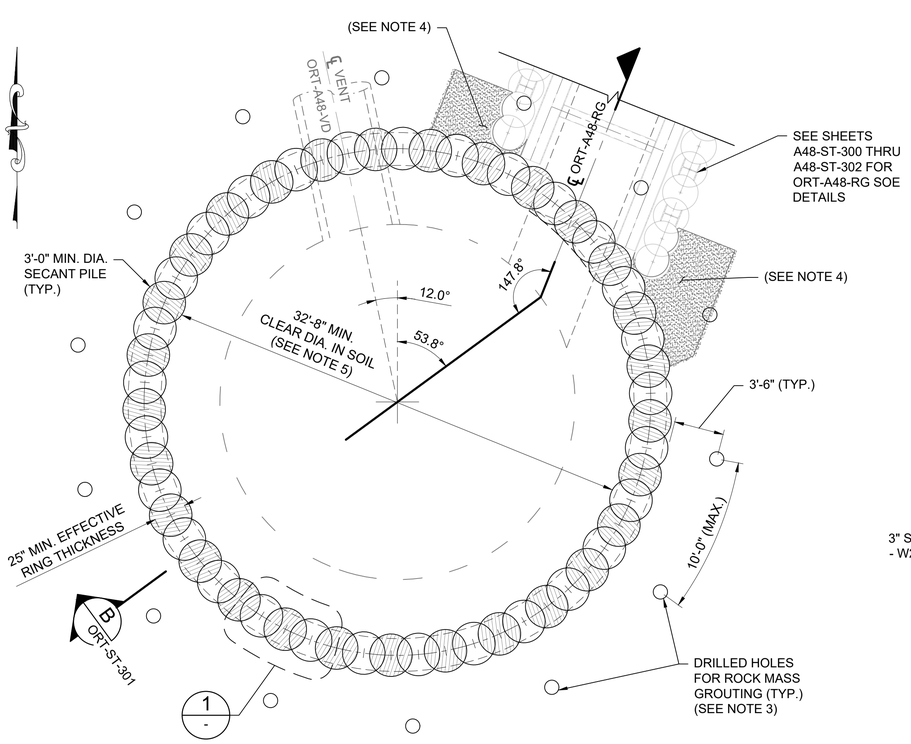
ARLETTA SCOTT WILLIAMS
EXECUTIVE DIRECTOR, ALCOSAN
3300 PREBLE AVE.
PITTSBURGH, PA 15233
(412) 766 - 4810
www.alcosan.org

ALLEGHENY COUNTY SANITARY AUTHORITY (ALCOSAN)
OHIO RIVER TUNNEL (ORT)

ORT-ST-200
O41 DROP SHAFT
SUPPORT OF EXCAVATION - SHEET 1 OF 2

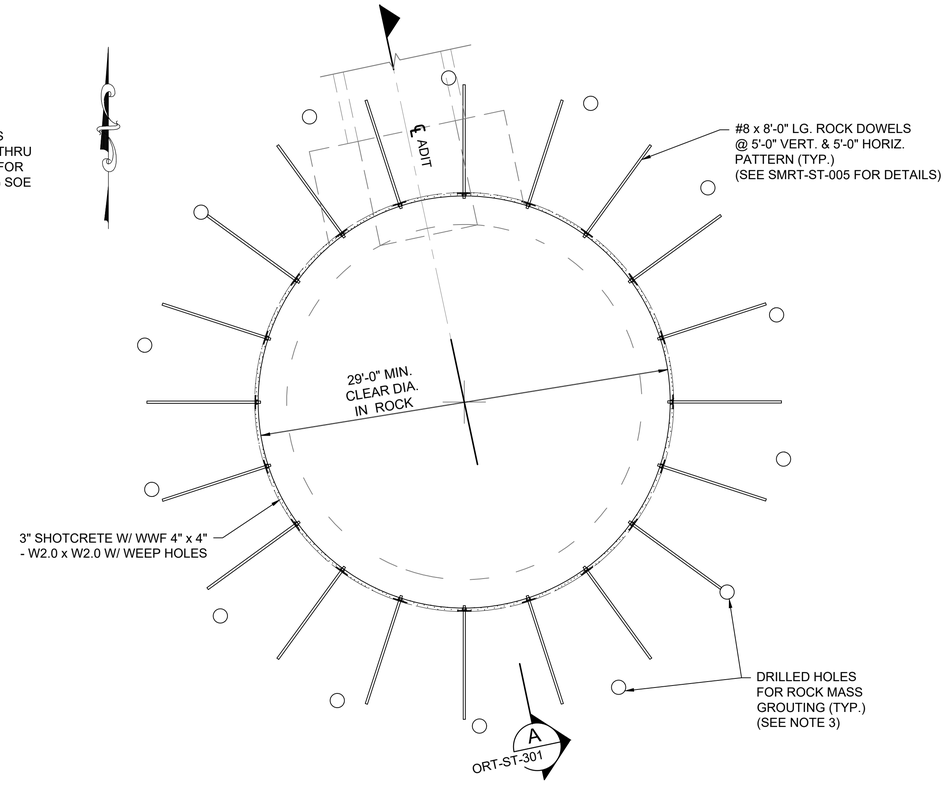
Contract: 1797
File: ORT-ST-200.dwg
Date: 07/30/2025
Sheet: 117 OF 770

FILE NAME:C:\Users\PLE92466\DC\ACCDocs\Matt MacDonald\507105621 - ALCOSAN Ohio River Tunnel Design - T&M\Project Files\1 - ORT\05-StructuralSheets - ORT-ST-200 LAST SAVED BY: PLE92466 PLOT DATE:9/25/2025 10:04:37 AM



SHAFT INITIAL SUPPORT IN SOIL (GROUND SURFACE TO EL. 685.73)

SCALE: 3/16" = 1'-0"

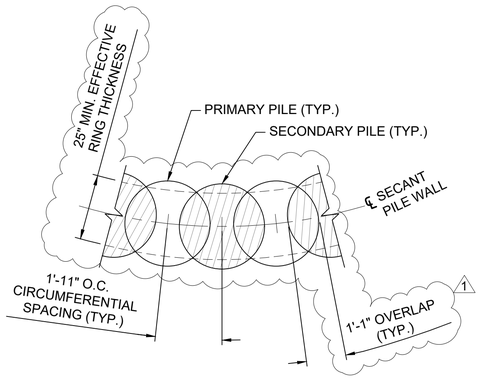


SHAFT INITIAL SUPPORT IN ROCK (EL. 685.73 TO EL. 578.53)

SCALE: 3/16" = 1'-0"

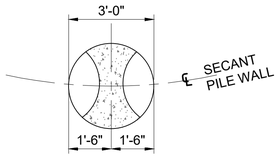
NOTES

1. CONTRACTOR SHALL DESIGN AND INSTALL A CONTINUOUS FLOOD PROTECTION WALL AROUND THE ENTIRE PERIMETER OF THE SHAFT, AS REQUIRED PER SPECIFICATION SECTION 31 75 00.
2. SEE GEOTECHNICAL BASELINE REPORT (GBR) FOR SITE SPECIFIC SOIL AND GROUNDWATER CONDITIONS.
3. GROUTING IS REQUIRED AROUND THE PERIMETER OF THE SHAFT AND BELOW THE SHAFT BASE TO REDUCE ROCK MASS PERMEABILITY PRIOR TO EXCAVATING THE SHAFT. SPACING OF THE GROUTING HOLES SHALL NOT EXCEED THE DISTANCE SHOWN IN THIS DRAWING. LOCATION OF GROUTING HOLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL DESIGN AND INSTALL THIS GROUND IMPROVEMENT BASED ON THE ANTICIPATED GROUND AND GROUNDWATER CONDITIONS PROVIDED IN THE GBR AND IN ACCORDANCE WITH REQUIREMENTS INCLUDED IN THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL ALSO PERFORM LOCALIZED GROUTING AS NEEDED DURING ROCK EXCAVATION TO CONTROL ANY RESIDUAL FLOWS THAT ARE NOT SEALED OFF BY THE REQUIRED GROUND IMPROVEMENT.
4. FOR GROUND IMPROVEMENT ZONE AT ORT-A48-RG CONNECTION, REFER TO SHEETS A48-ST-300 THROUGH A48-ST-305.
5. REFER TO TECHNICAL SPECIFICATIONS FOR SECANT PILES WALLS INSTALLATION TOLERANCES. CONTRACTOR SHALL INSTALL THE SOE SYSTEMS WITHIN THE REQUIRED INSTALLATION TOLERANCES SO THAT THE CLEAR DIMENSIONS AND EFFECTIVE RING THICKNESS SHOWN IN THIS DRAWING ARE MET.
6. REFER TO SHEET A48-CI-303 FOR CONTROL POINTS COORDINATES.
7. CONTRACTOR IS REQUIRED TO INSTALL THE SHAFT FINAL LINING UP TO THE UNDERSIDE OF TOP SLAB PRIOR TO EXCAVATING THE A48 REGULATOR STRUCTURE (ORT-A48-RG) AND INSTALLING THE 72-INCH CONSOLIDATION SEWER AND THE 42-INCH VENT PIPE THROUGH THE SHAFT SECANT PILES. IF THE CONTRACTOR ELECTS TO EXCAVATE THE REGULATOR STRUCTURE OR CUT THE PIPE OPENINGS PRIOR TO INSTALLING THE SHAFT PERMANENT LINING, A SUPPORT AND FRAMING DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE OWNER. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ALL APPLICABLE RE-DESIGNS AND SHALL PROVIDE ADDITIONAL STRUCTURAL REINFORCEMENT OR OTHER MODIFICATIONS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PROVIDE THE NECESSARY REINFORCEMENT OR CENTRALIZERS TO SUPPORT AND MAINTAIN THE TOE GROUTING PVC PIPES AND INCLINOMETER CASINGS IN PLACE WHILE POURING CONCRETE IN SECONDARY PILES.



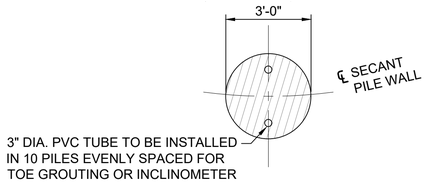
DETAIL 1

SCALE: 3/8" = 1'-0"



PRIMARY PILE DETAIL

SCALE: 3/8" = 1'-0"



SECONDARY PILE DETAIL

SCALE: 3/8" = 1'-0"

Designed by: HTV/SZ	REVISION			
	REV No.	DATE	DESCRIPTION	APPV
	1	9/26/25	PILE DIMENSION UPDATES	ANC
Drawn by: RGR				
Checked by: ANC				

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ZHENQI CAI — ENGINEER — No. PE090706

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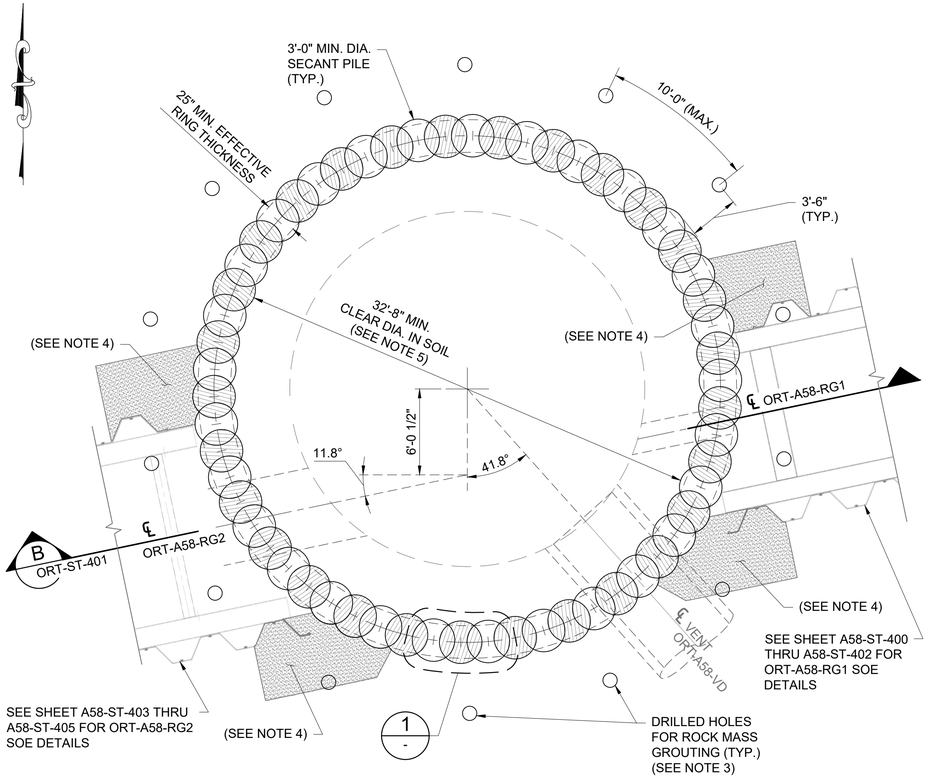
ALLEGHENY COUNTY SANITARY AUTHORITY (ALCOSAN)
OHIO RIVER TUNNEL (ORT)

ORT-ST-300
A48 DROP SHAFT
SUPPORT OF EXCAVATION SHEET 1 OF 2

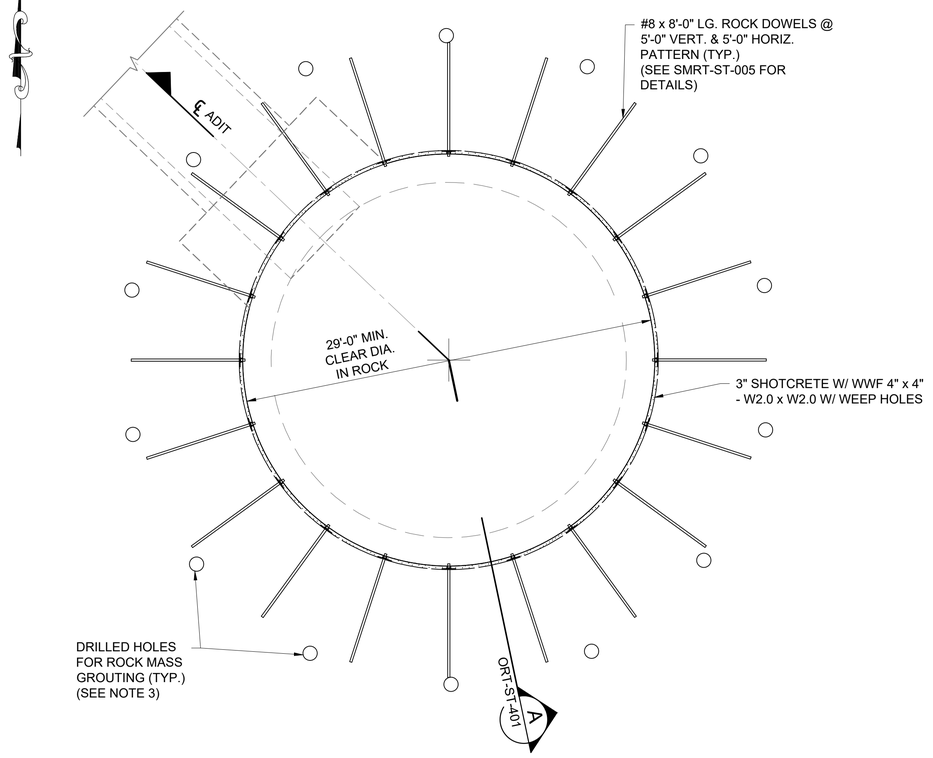
Contract: 1797
File: ORT-ST-300.dwg
Date: 07/30/2025
Sheet: 130 OF 770

FILE NAME:C:\Users\PLE92466\DC\ACCDocs\Mott MacDonald\507105621 - ALCOSAN Ohio River Tunnel Design - T&M\Project Files\1 - ORT\05-Structural\Sheets - ORT-ST-300 LAST SAVED BY: PLE92466 PLOT DATE:9/25/2025 10:01:18 AM



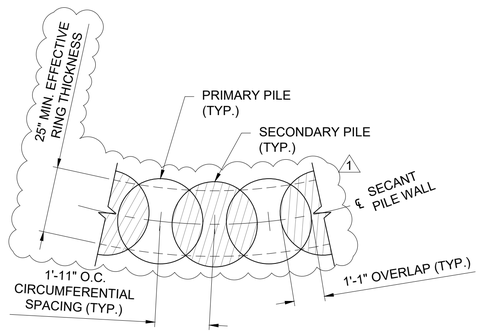
SHAFT INITIAL SUPPORT IN SOIL (GROUND SURFACE TO EL. 662.0)

SCALE: 3/16" = 1'-0"



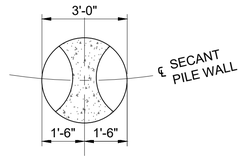
SHAFT INITIAL SUPPORT IN ROCK (EL. 662.0 TO EL. 582.83)

SCALE: 3/16" = 1'-0"



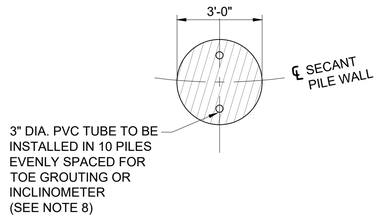
DETAIL 1

SCALE: 3/8" = 1'-0"



PRIMARY PILE DETAIL

SCALE: 3/8" = 1'-0"



SECONDARY PILE DETAIL

SCALE: 3/8" = 1'-0"

NOTES

1. CONTRACTOR SHALL DESIGN AND INSTALL A CONTINUOUS FLOOD PROTECTION WALL AROUND THE ENTIRE PERIMETER OF THE SHAFT, AS REQUIRED PER SPECIFICATION SECTION 31 75 00.
2. SEE GEOTECHNICAL BASELINE REPORT (GBR) FOR SITE SPECIFIC SOIL AND GROUNDWATER CONDITIONS.
3. GROUTING IS REQUIRED AROUND THE PERIMETER OF THE SHAFT AND BELOW THE SHAFT BASE TO REDUCE ROCK MASS PERMEABILITY PRIOR TO EXCAVATING THE SHAFT. SPACING OF THE GROUTING HOLES SHALL NOT EXCEED THE DISTANCE SHOWN IN THIS DRAWING. LOCATION OF GROUTING HOLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL DESIGN AND INSTALL THIS GROUND IMPROVEMENT BASED ON THE ANTICIPATED GROUND AND GROUNDWATER CONDITIONS PROVIDED IN THE GBR AND IN ACCORDANCE WITH REQUIREMENTS INCLUDED IN THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL ALSO PERFORM LOCALIZED GROUTING AS NEEDED DURING ROCK EXCAVATION TO CONTROL ANY RESIDUAL FLOWS THAT ARE NOT SEALED OFF BY THE REQUIRED GROUND IMPROVEMENT.
4. FOR GROUND IMPROVEMENT ZONE AT ORT-A58-RG1 AND ORT-A58-RG2 CONNECTIONS, REFER TO SHEETS A58-ST-400 THROUGH A58-ST-411.
5. REFER TO TECHNICAL SPECIFICATIONS FOR SECANT PILES INSTALLATION TOLERANCES. CONTRACTOR SHALL INSTALL THE SOE SYSTEMS WITHIN THE REQUIRED INSTALLATION TOLERANCES SO THAT THE CLEAR DIMENSIONS AND EFFECTIVE RING THICKNESS SHOWN IN THIS DRAWING ARE MET.
6. REFER TO SHEET A58-CI-403 FOR CONTROL POINTS COORDINATES.
7. CONTRACTOR IS REQUIRED TO INSTALL THE SHAFT FINAL LINING UP TO THE UNDERSIDE OF TOP SLAB PRIOR TO EXCAVATING THE A58 REGULATOR STRUCTURES (ORT-A58-RG1 AND A58-RG2) AND INSTALLING THE 3'-0" AND 5'-6" CONNECTIONS, AND THE 60" ID VENT PIPE THROUGH THE SHAFT SECANT PILES. IF THE CONTRACTOR ELECTS TO EXCAVATE THE REGULATOR STRUCTURE OR CUT THE PIPE OPENINGS PRIOR TO INSTALLING THE SHAFT PERMANENT LINING, A SUPPORT AND FRAMING DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE OWNER. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ALL APPLICABLE RE-DESIGNS AND SHALL PROVIDE ADDITIONAL STRUCTURAL REINFORCEMENT OR OTHER MODIFICATIONS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PROVIDE THE NECESSARY REINFORCEMENT OR CENTRALIZERS TO SUPPORT AND MAINTAIN THE TOE GROUTING PVC PIPES AND INCLINOMETER CASINGS IN PLACE WHILE POURING CONCRETE IN SECONDARY PILES.

FILE NAME:C:\Users\PLE92466\DC\ACCDocs\Mott MacDonald\507105621 - ALCOSAN Ohio River Tunnel Design - T&M\Project Files\1 - ORT\05-Structural\Sheets - ORT-ST-400 LAST SAVED BY: PLE92466 PLOT DATE:9/25/2025 8:17:53 AM

Designed by: HTV/SZ
Drawn by: RGR
Checked by: ANC

REVISION			
REV No.	DATE	DESCRIPTION	APPV
1	9/26/25	PILE DIMENSION UPDATES	ANC

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ZHENQI CAI — ENGINEER — No. PE090706

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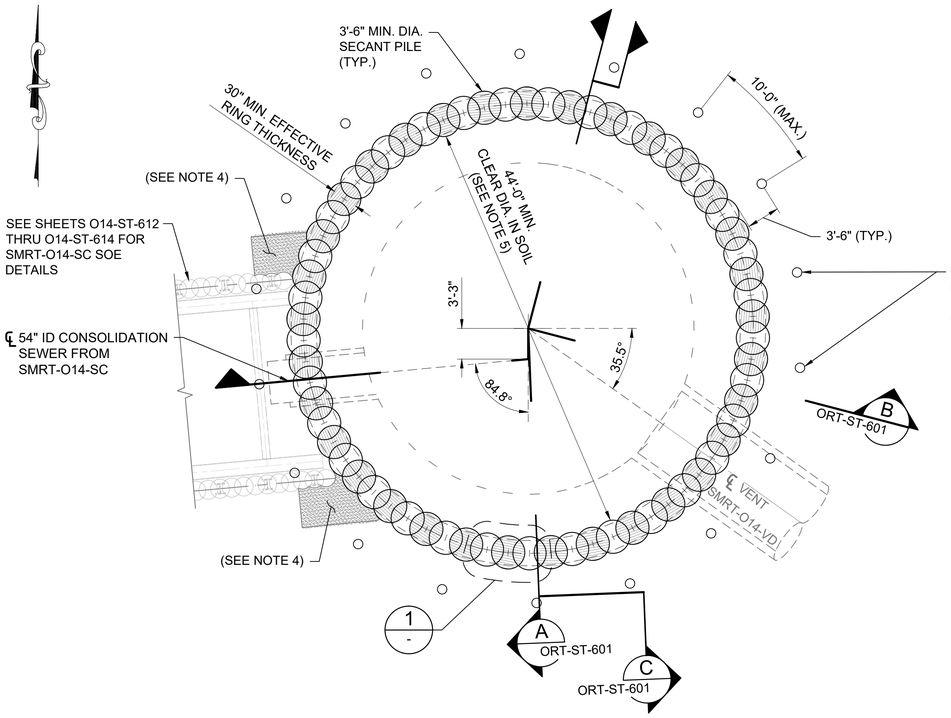
ALLEGHENY COUNTY SANITARY AUTHORITY (ALCOSAN)
OHIO RIVER TUNNEL (ORT)

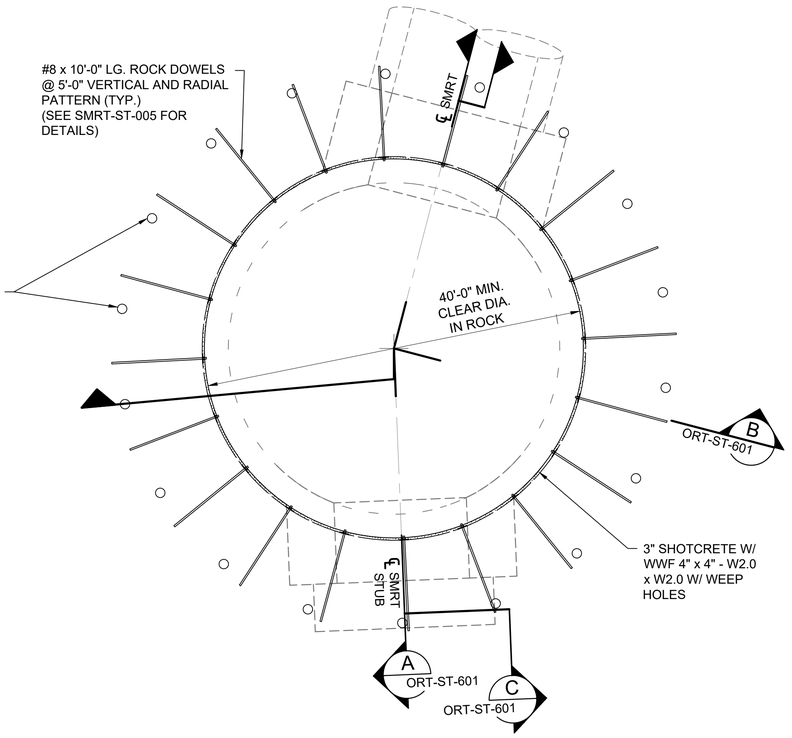
ORT-ST-400
A58 DROP SHAFT
SUPPORT OF EXCAVATION - SHEET 1 OF 2

Contract: 1797
File: ORT-ST-400.dwg
Date: 07/30/2025
Sheet: 141 OF 770



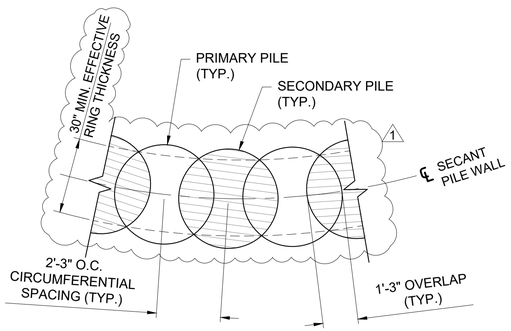
SHAFT INITIAL SUPPORT IN SOIL (GROUND SURFACE TO EL. 675.90)

SCALE: 1/8" = 1'-0"



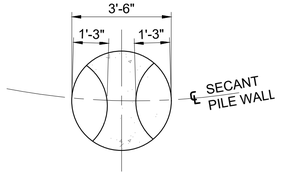
SHAFT INITIAL SUPPORT IN ROCK (EL. 675.90 TO EL. 576.25)

SCALE: 1/8" = 1'-0"



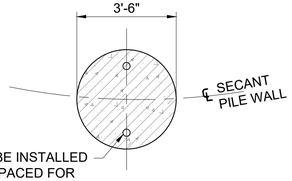
DETAIL 1/-

SCALE: 3/8" = 1'-0"



PRIMARY SECANT PILE DETAIL

SCALE: 3/8" = 1'-0"



SECONDARY SECANT PILE DETAIL

SCALE: 3/8" = 1'-0"

NOTES

1. CONTRACTOR SHALL DESIGN AND INSTALL A CONTINUOUS FLOOD PROTECTION WALL AROUND THE ENTIRE PERIMETER OF THE SHAFT AS REQUIRED PER SPECIFICATION SECTION 31 75 00.
2. SEE GEOTECHNICAL BASELINE REPORT (GBR) FOR SITE SPECIFIC SOIL AND GROUNDWATER CONDITIONS.
3. GROUTING IS REQUIRED AROUND THE PERIMETER OF THE SHAFT AND BELOW THE SHAFT BASE TO REDUCE ROCK MASS PERMEABILITY PRIOR TO EXCAVATING THE SHAFT. SPACING OF THE GROUTING HOLES SHALL NOT EXCEED THE DISTANCE SHOWN IN THIS DRAWING. LOCATION OF GROUTING HOLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL DESIGN AND INSTALL THIS GROUND IMPROVEMENT BASED ON THE ANTICIPATED GROUND AND GROUNDWATER CONDITIONS PROVIDED IN THE GBR AND IN ACCORDANCE WITH REQUIREMENTS INCLUDED IN THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL ALSO PERFORM LOCALIZED GROUTING AS NEEDED DURING ROCK EXCAVATION TO CONTROL ANY RESIDUAL FLOWS THAT ARE NOT SEALED OFF BY THE REQUIRED GROUND IMPROVEMENT.
4. FOR GROUND IMPROVEMENT ZONE AT SMRT-O14-SC CONNECTION, REFER TO SHEETS O14-ST-612 & O14-ST-614.
5. REFER TO TECHNICAL SPECIFICATIONS FOR SECANT PILES INSTALLATION TOLERANCES. CONTRACTOR SHALL INSTALL THE SOE SYSTEMS WITHIN THE REQUIRED INSTALLATION TOLERANCES SO THAT THE CLEAR DIMENSIONS AND EFFECTIVE RING THICKNESS SHOWN IN THIS DRAWING ARE MET.
6. REFER TO SHEET O14-CI-604 FOR CONTROL POINTS COORDINATES.
7. CONTRACTOR IS REQUIRED TO INSTALL THE SHAFT FINAL LINING UP TO THE UNDERSIDE OF TOP SLAB PRIOR TO EXCAVATING THE O14-SC STRUCTURE AND INSTALLING THE 54" ID CONSOLIDATION SEWER, AND THE 96" ID VENT PIPE THROUGH THE SHAFT SECANT PILES. IF THE CONTRACTOR ELECTS TO EXCAVATE THE REGULATOR STRUCTURE OR CUT THE PIPE OPENING PRIOR TO INSTALLING THE SHAFT PERMANENT LINING, A SUPPORT AND FRAMING DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE OWNER. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ALL APPLICABLE RE-DESIGNS AND SHALL PROVIDE ADDITIONAL STRUCTURAL REINFORCEMENT OR OTHER MODIFICATIONS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PROVIDE THE NECESSARY REINFORCEMENT OR CENTRALIZERS TO SUPPORT AND MAINTAIN THE TOE GROUTING PVC PIPES AND INCLINOMETER CASINGS IN PLACE WHILE POURING CONCRETE IN SECONDARY PILES.

Designed by:	REVISION			
HTV/SZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	9/26/25	PILE DIMENSION UPDATES	ANC
RGR				
Checked by:				
ANC				

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ZHENQI CAI — ENGINEER — No. PE096706

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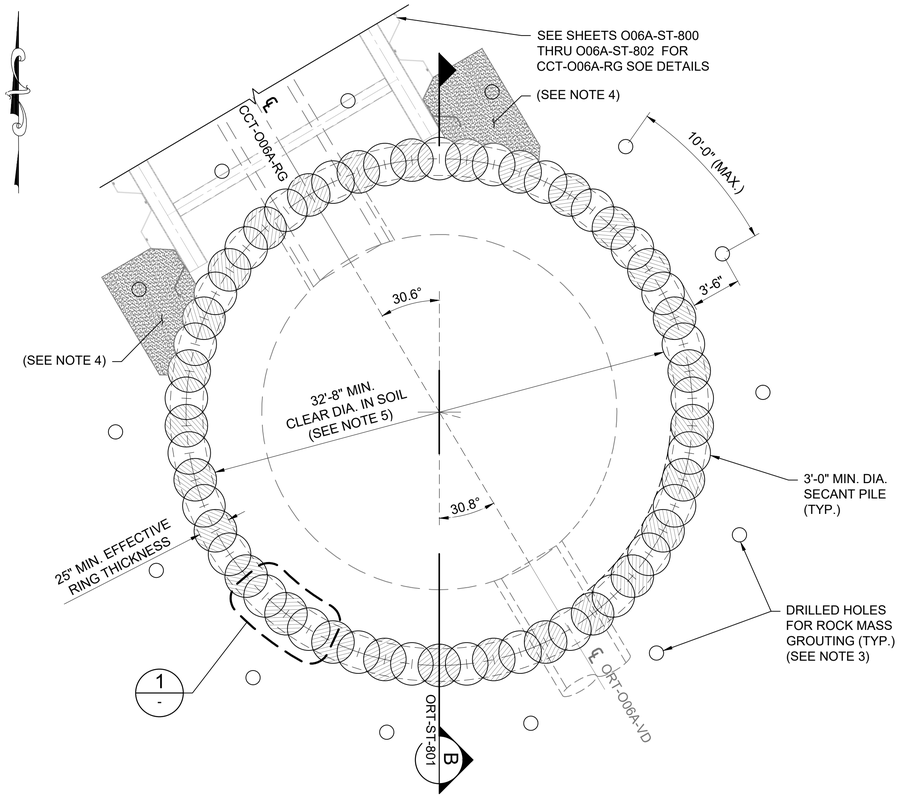
ALLEGHENY COUNTY SANITARY AUTHORITY (ALCOSAN)
OHIO RIVER TUNNEL (ORT)

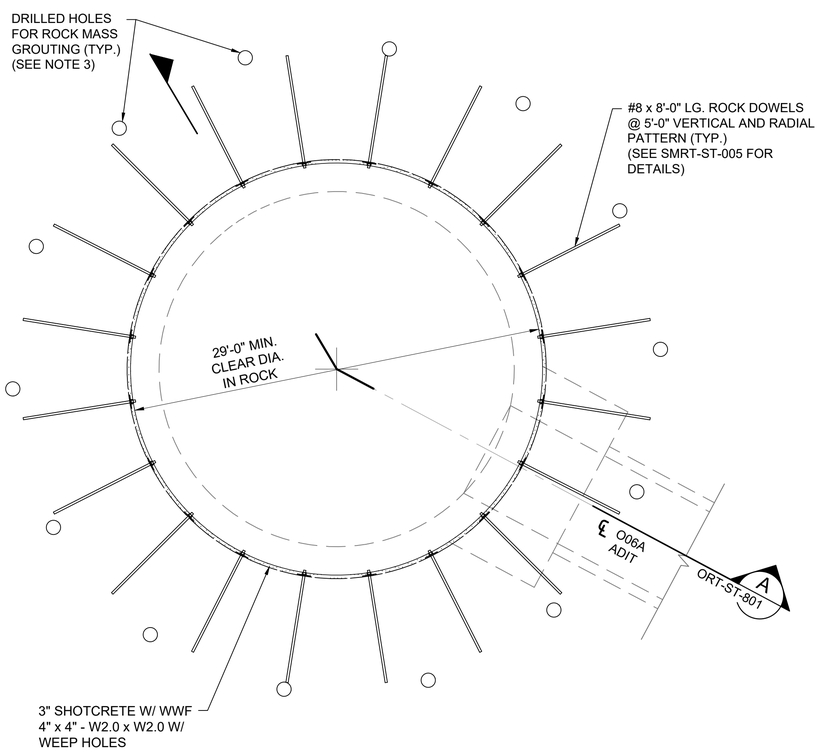
ORT-ST-600
O14 DROP SHAFT
SUPPORT OF EXCAVATION - SHEET 1 OF 2

Contract:	1797
File:	ORT-ST-600.dwg
Date:	07/30/2025
Sheet:	159 OF 770



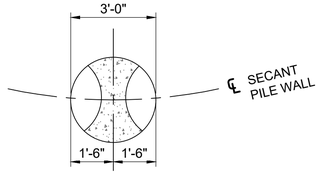
SHAFT INITIAL SUPPORT IN SOIL (GROUND SURFACE TO EL. 659.50)

SCALE: 3/16" = 1'-0"



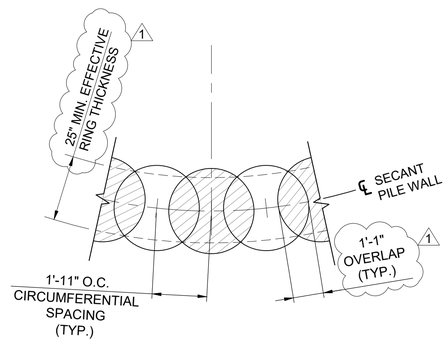
SHAFT INITIAL SUPPORT IN ROCK (EL. 659.50 TO EL. 587.00)

SCALE: 3/16" = 1'-0"



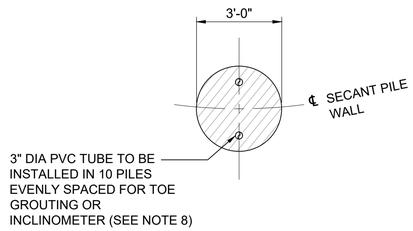
PRIMARY PILE DETAIL

SCALE: 3/8" = 1'-0"



DETAIL 1 -

SCALE: 3/8" = 1'-0"



SECONDARY PILE DETAIL

SCALE: 3/8" = 1'-0"

NOTES

1. CONTRACTOR SHALL DESIGN AND INSTALL A CONTINUOUS FLOOD PROTECTION WALL AROUND THE ENTIRE PERIMETER OF THE SHAFT AS REQUIRED PER SPECIFICATIONS SECTION 31 75 00.
2. SEE GEOTECHNICAL BASELINE REPORT (GBR) FOR SITE SPECIFIC SOIL AND GROUNDWATER CONDITIONS.
3. GROUTING IS REQUIRED AROUND THE PERIMETER OF THE SHAFT AND BELOW THE SHAFT BASE TO REDUCE ROCK MASS PERMEABILITY PRIOR TO EXCAVATING THE SHAFT. SPACING OF THE GROUTING HOLES SHALL NOT EXCEED THE DISTANCE SHOWN IN THIS DRAWING. LOCATION OF GROUTING HOLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL DESIGN AND INSTALL THIS GROUND IMPROVEMENT BASED ON THE ANTICIPATED GROUND AND GROUNDWATER CONDITIONS PROVIDED IN THE GBR AND IN ACCORDANCE WITH REQUIREMENTS INCLUDED IN THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL ALSO PERFORM LOCALIZED GROUTING AS NEEDED DURING ROCK EXCAVATION TO CONTROL ANY RESIDUAL FLOWS THAT ARE NOT SEALED OFF BY THE REQUIRED GROUND IMPROVEMENT.
4. FOR GROUND IMPROVEMENT ZONE AT CCT-O06A-RG CONNECTION, REFER TO SHEETS O06A-ST-800 THROUGH O06A-ST-805.
5. REFER TO TECHNICAL SPECIFICATIONS FOR SECANT PILES INSTALLATION TOLERANCES. CONTRACTOR SHALL INSTALL THE SOE SYSTEMS WITHIN THE REQUIRED INSTALLATION TOLERANCES SO THAT THE CLEAR DIMENSIONS AND EFFECTIVE RING THICKNESS SHOWN ON THIS SHEET ARE MET.
6. REFER TO SHEET O06A-CI-803 FOR CONTROL POINTS COORDINATES.
7. CONTRACTOR IS REQUIRED TO INSTALL THE SHAFT FINAL LINING UP TO THE UNDERSIDE OF THE SLAB PRIOR TO EXCAVATING THE O06A REGULATOR STRUCTURE (CCT-O06A-RG) AND INSTALLING THE 60" ID CONSOLIDATION SEWER, AND THE 54" ID VENT PIPE THROUGH THE SHAFT SECANT PILES. IF THE CONTRACTOR ELECTS TO EXCAVATE THE REGULATOR STRUCTURE OR CUT THE PIPE OPENING PRIOR TO INSTALLING THE SHAFT PERMANENT LINING, A SUPPORT AND FRAMING DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE OWNER. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ALL APPLICABLE RE-DESIGNS AND SHALL PROVIDE ADDITIONAL STRUCTURAL REINFORCEMENT OR OTHER MODIFICATIONS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PROVIDE THE NECESSARY REINFORCEMENT OR CENTRALIZERS TO SUPPORT AND MAINTAIN THE TOE GROUTING PVC PIPES AND INCLINOMETER CASINGS IN PLACE WHILE POURING CONCRETE IN SECONDARY PILES.

Designed by: HTV/SZ	REVISION			
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Drawn by: RGR				
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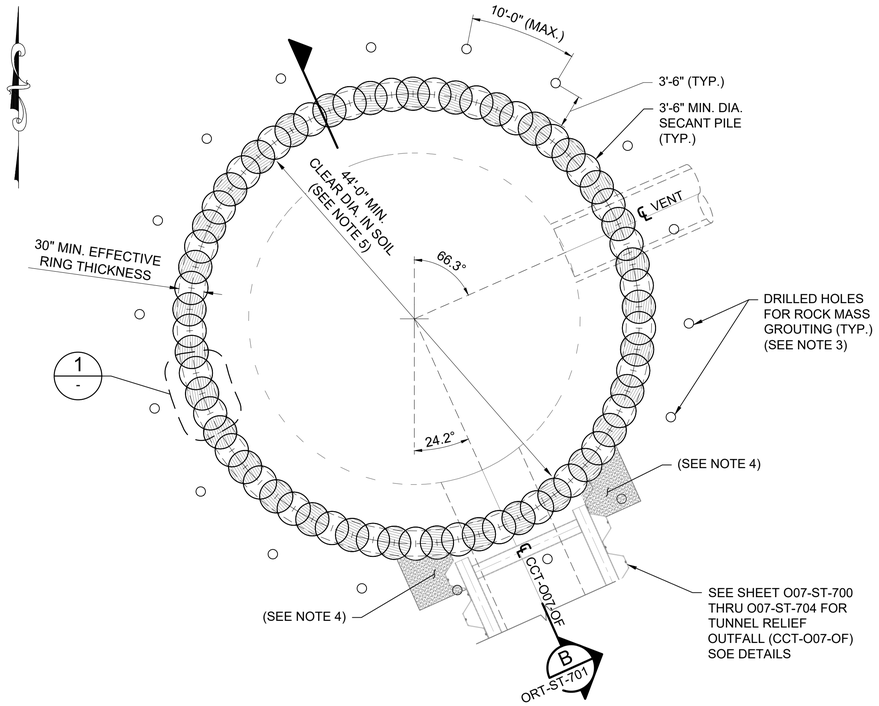
ALLEGHENY COUNTY SANITARY AUTHORITY (ALCOSAN)
OHIO RIVER TUNNEL (ORT)

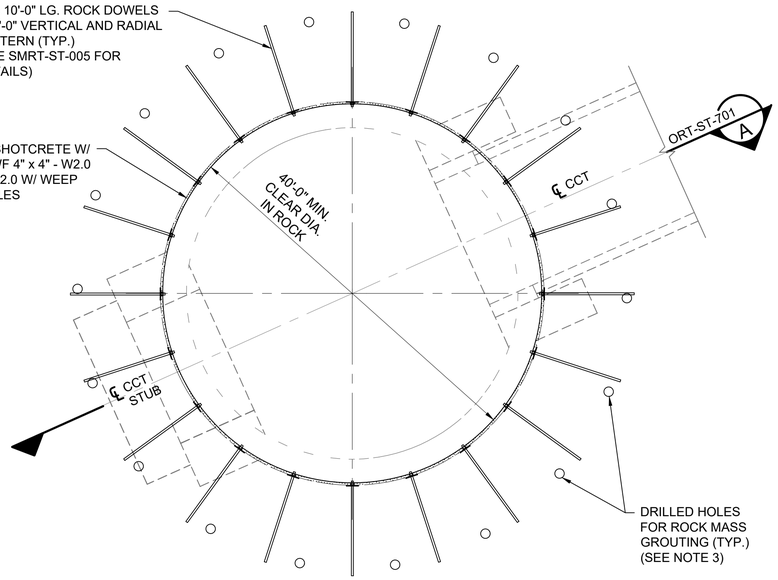
ORT-ST-800
O06A DROP SHAFT
SUPPORT OF EXCAVATION - SHEET 1 OF 2

Contract: 1797
File: ORT-ST-800.dwg
Date: 07/30/2025
Sheet: 179 OF 770



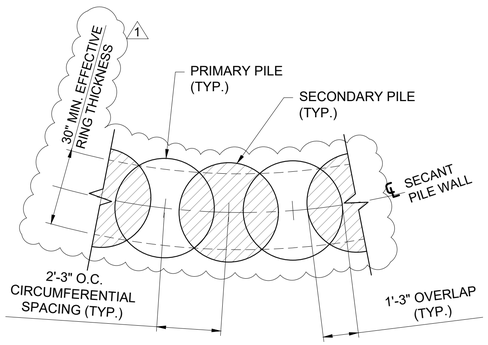
SHAFT INITIAL SUPPORT IN SOIL (GROUND SURFACE TO EL. 669.50)

SCALE: 1/8" = 1'-0"



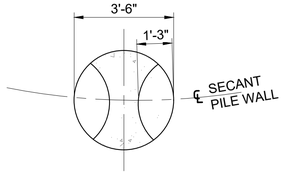
SHAFT INITIAL SUPPORT IN ROCK (EL. 669.50 TO EL. 565.84)

SCALE: 1/8" = 1'-0"



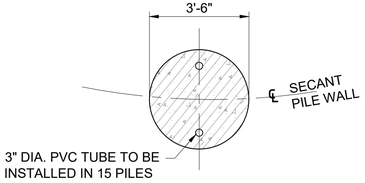
DETAIL 1/-

SCALE: 3/8" = 1'-0"



PRIMARY PILE DETAIL

SCALE: 3/8" = 1'-0"



SECONDARY PILE DETAIL

SCALE: 3/8" = 1'-0"

NOTES

1. CONTRACTOR SHALL DESIGN AND INSTALL A CONTINUOUS FLOOD PROTECTION WALL AROUND THE ENTIRE PERIMETER OF THE SHAFT AS REQUIRED PER SPECIFICATION SECTION 31 75 00.
2. SEE GEOTECHNICAL BASELINE REPORT (GBR) FOR SITE SPECIFIC SOIL AND GROUNDWATER CONDITIONS.
3. GROUTING IS REQUIRED AROUND THE PERIMETER OF THE SHAFT AND BELOW THE SHAFT BASE TO REDUCE ROCK MASS PERMEABILITY PRIOR TO EXCAVATING THE SHAFT. SPACING OF THE GROUTING HOLES SHALL NOT EXCEED THE DISTANCE SHOWN IN THIS DRAWING. LOCATION OF GROUTING HOLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL DESIGN AND INSTALL THIS GROUND IMPROVEMENT BASED ON THE ANTICIPATED GROUND AND GROUNDWATER CONDITIONS PROVIDED IN THE GBR AND IN ACCORDANCE WITH REQUIREMENTS INCLUDED IN THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL ALSO PERFORM LOCALIZED GROUTING AS NEEDED DURING ROCK EXCAVATION TO CONTROL ANY RESIDUAL FLOWS THAT ARE NOT SEALED OFF BY THE REQUIRED GROUND IMPROVEMENT.
4. FOR GROUND IMPROVEMENT ZONE AT TUNNEL RELIEF OUTFALL CONNECTION, REFER TO SHEETS O07-ST-700 THROUGH O07-ST-704.
5. REFER TO TECHNICAL SPECIFICATIONS FOR SECANT PILES INSTALLATION TOLERANCES. CONTRACTOR SHALL INSTALL THE SOE SYSTEMS WITHIN THE REQUIRED INSTALLATION TOLERANCES SO THAT THE CLEAR DIMENSIONS AND EFFECTIVE RING THICKNESS SHOWN IN THIS DRAWING ARE MET.
6. REFER TO SHEET O07-CI-703 FOR CONTROL POINTS COORDINATES.
7. CONTRACTOR IS REQUIRED TO INSTALL THE SHAFT FINAL LINING UP TO THE UNDERSIDE OF TOP SLAB PRIOR TO EXCAVATING THE O07 OUTFALL (CCT-O07-OF) AND INSTALLING THE 9'-0" x 9'-0" TUNNEL RELIEF OUTFALL, AND THE 66" ID VENT PIPE THROUGH THE SHAFT SECANT PILES. IF THE CONTRACTOR ELECTS TO EXCAVATE THE O07-OF OR CUT THE PIPE OPENINGS PRIOR TO INSTALLING THE SHAFT PERMANENT LINING, A SUPPORT AND FRAMING DESIGN MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE OWNER. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ALL APPLICABLE RE-DESIGNS AND SHALL PROVIDE ADDITIONAL STRUCTURAL REINFORCEMENT OR OTHER MODIFICATIONS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PROVIDE THE NECESSARY REINFORCEMENT OR CENTRALIZERS TO SUPPORT AND MAINTAIN THE TOE GROUTING PVC PIPES AND INCLINOMETER CASINGS IN PLACE WHILE POURING CONCRETE IN SECONDARY PILES.

Designed by:	REVISION			
HTV/SZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	9/26/25	PILE DIMENSION UPDATES	ANC
RGR				
Checked by:				
ANC				

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ALLEGHENY COUNTY SANITARY AUTHORITY (ALCOSAN)
OHIO RIVER TUNNEL (ORT)

ORT-ST-700
O07 ACCESS SHAFT
SUPPORT OF EXCAVATION - SHEET 1 OF 2

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