



IX Center Sanitary Sewer

RFP Supplement – Scope of Work Overview

Cleveland – Hopkins International Airport
Cleveland, OH
Scope of Work Overview for Design-Build RFP

November 2018



Project Overview

The intent of the Project is the elimination of the sanitary crossing underneath the runway from IX Center to NASA.

This shall be accomplished by the installation of a new gravity sanitary sewer from Point A to the south along the western edge of the western IX Center parking lot. The new sewer would connect to the existing public gravity sewer along Aerospace Parkway near Point G. The depth of the new gravity sewer will vary from 10 feet to 20 feet deep along the route as shown in Figure A-8.

The existing sewer system near Point G is owned by the local municipality (The City of Brook Park). This connection will need to be coordinated with and approved by the City of Brook Park. The capacity of the existing sanitary sewer NEORSD system on Sheldon Ave may need to be investigated as part of final design.

Quantities Assumed:

- 15 @ 6-foot diameter manholes
- 1200 feet of 8-inch diameter sanitary sewer approximately 15' deep
- 3,700 feet of 24-inch diameter gravity sewer installed at a depth ranging from 6-20 feet by open cut
- 3 @ connections to existing structures
- Flow fill of existing pipes and structures that are called for abandonment. The diameter and lengths of pipe are 15-inch – 2300 feet, 12-inch – 2900 feet, and 6-inch – 500 feet. The sewer vault interior dimensions are 50 feet by 10 feet by 6 feet.

Allowances to be included in the proposals, invoicing as needed on a force account 'time and material' basis with 15% markup allowed:

- 1,000 cubic yards of contaminated soils excavation, handling, and disposal, \$50,000
- All permit fees, \$75,000
- Unknown utility coordination and restoration, \$100,000
- Preparation of easement descriptions, \$10,000

Scope of Services

1. Pre-design Work

- 1.1. Survey – The Design-Builder shall perform or acquire a topographic survey that will generally describe the project area. This survey shall be used as the base-mapping for the sanitary sewer design drawings. The survey should also show the I-X Center lease limits. As part of the previously completed study, topographic survey of the receiving sanitary sewer system was completed and is available with this RFP.
- 1.2. Geotech – The Design-Builder shall perform or acquire a geotechnical investigation to determine the characteristics of the soils in the project area. The geotechnical investigation shall be conducted at six (6) locations along the sewer route as follows:

- 1.2.1.6" diameter soil cores Drilling in Overburden with standard Soil Sampling to a depth of 30 feet
- 1.2.2. Particle-Size Analysis of Soils in accordance with ASTM C 136 and C 117.
- 1.2.3. Particle-Size Analysis of Soils (Hydrometer Analysis) in accordance with ASTM D 422.
- 1.2.4. Natural Moisture Content in accordance with ASTM D 2216 (Method A). Sample obtained from test pits at a depth of 1.5 feet, unless otherwise specified.
- 1.2.5. Specific Gravity of Soils in accordance with ASTM D 854.
- 1.2.6. Liquid Limit, Plastic Limit and Plasticity Index of Soils in accordance with ASTM D 4318
- 1.2.7. Moisture-Density Relationship of Soils Test in accordance with ASTM D 1557 (Modified Proctor)
- 1.3. Flow Monitoring – The Design-Builder shall conduct flow monitoring in the sanitary sewer downstream of the I-X Center during a peak event chosen by the I-X Center. The results of this flow monitoring will be used to design the diameter of the new sanitary sewer. Flow monitoring should be conducted for a period of not less than 36 hours during an event at the I-X Center. The peak design flow identified during the flow monitoring shall be added to the expected future sewer flow from new buildings. The sum will be the design flow for the new sewer.
- 1.4. Soil Constituent Testing – Design-Builder shall enlist a geotechnical firm to test soils every 1000' along proposed pipe route, depth of testing shall be a minimum 2' below pipe. Report shall be submitted to the Owner prior to start of construction.
- 1.5. Identification of Required Easements – The proposed sewer alignment will likely cross the lease limits of the I-X Center and may cross other legal property easements. The Design-Builder shall:
 - 1.5.1. Identify any and all entities from which easements will be required to construct the new sewer
 - 1.5.2. Prepare metes-and-bounds descriptions of any and all required easements
- 1.6. Identification of Potential Utility Conflicts – the Design-Builder shall coordinate with DPC staff as well as other public and private utility owners to identify potential infrastructure conflicts with the new sewer. The Design-Builder shall identify the party responsible for any necessary utility relocations.
2. Permitting – The Design-Builder shall coordinate with all authorities having jurisdiction over the new sewer project. The Design-Builder shall identify entities, identify fees, prepare applications, submit applications, revise applications, and secure permits as required to construct the project. The permitting entities include:
 - 2.1. City of Brook Park
 - 2.2. NorthEast Ohio Regional Sewer District (NEORS D)
 - 2.3. Ohio EPA (PTI, NPDES)

- 2.4. City of Cleveland Building and Housing (SWP3 review)
- 2.5. FAA (Form 7460-1)
- 2.6. Others as needed
3. Design – the Design-Builder shall prepare design drawings and specifications as needed to construct the project. Drawings and specifications shall be prepared by an engineer licensed to perform work in the State of Ohio and stamped and sealed accordingly.
 - 3.1. Sanitary Sewer – a new sanitary sewer shall be designed in general conformance to the sketches included in this RFP. The new sanitary sewer shall be capable of safely conveying the design flow described above.
 - 3.1.1. Sewer Infrastructure Requirements – all infrastructure shall meet all applicable codes
 - 3.1.2. Materials – all materials shall meet the applicable codes of the authority having jurisdiction
 - 3.1.3. 10-State Standards – all new infrastructure shall meet or exceed 10-State Standards
 - 3.2. Abandonment of Infrastructure – the Design-Builder shall prepare plans to abandon the existing sanitary sewer and related infrastructure downstream of the point of connection of the new sewer and upstream of the first sanitary sewer manhole outside (northwest of) the AOA. It should be noted that an abandoned structure similar to a septic tank is among this infrastructure. It should also be noted that the Design-Builder shall prepare a CSPP (See 7.2) prior to entering the AOA.
4. Plan Review – the Design-Builder shall submit plans to the DPC for review at the 30%, 60%, and 90% levels of completion. The Design-Builder shall include all time necessary to revise the design based on comments from the DPC in their bid.
5. Construction of Infrastructure – the Design-Builder shall implement the designs shown on the approved plans, including but not limited to the following:
 - 5.1. New Sanitary Sewer
 - 5.2. Abandonment of Existing Infrastructure – filling existing pipes and structures with controlled low strength material.
 - 5.3. Restoration of Disturbed and/or Damaged Surfaces
 - 5.4. Maintenance of Traffic (as needed)
6. Quality Assurance and Documentation
 - 6.1. Construction Administration - The Construction Administrator shall be a full-time employee of the Design-Builder, or a consultant engaged by the Design-Builder. The Program Administrator shall have a minimum of five (5) years of experience in airport and/or highway construction and shall have had prior quality control experience on a project of comparable size and scope as the contract.

6.2. Construction Observation - The Design-Builder shall establish a Quality Control Program to perform quality control inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Design-Builder to establish an effective level of quality control.

7. Other Requirements

7.1. Schedule – The Design-Builder shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM). As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration.

The Design-Builder shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Design-Builder of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

The Design-Builder shall complete all work within 8 months of a notice to proceed.

7.2. Construction Phasing – The Design-Builder shall develop and submit a Construction Safety Phasing Plan (CSPP) in accordance with FAA Advisory Circular AC 150/5370-2F or latest edition.

7.3. Technical Specifications and standard details shall be in accordance with the local jurisdiction where applicable. If no local specifications and standard details apply, use Ohio Department of Transportation specifications.

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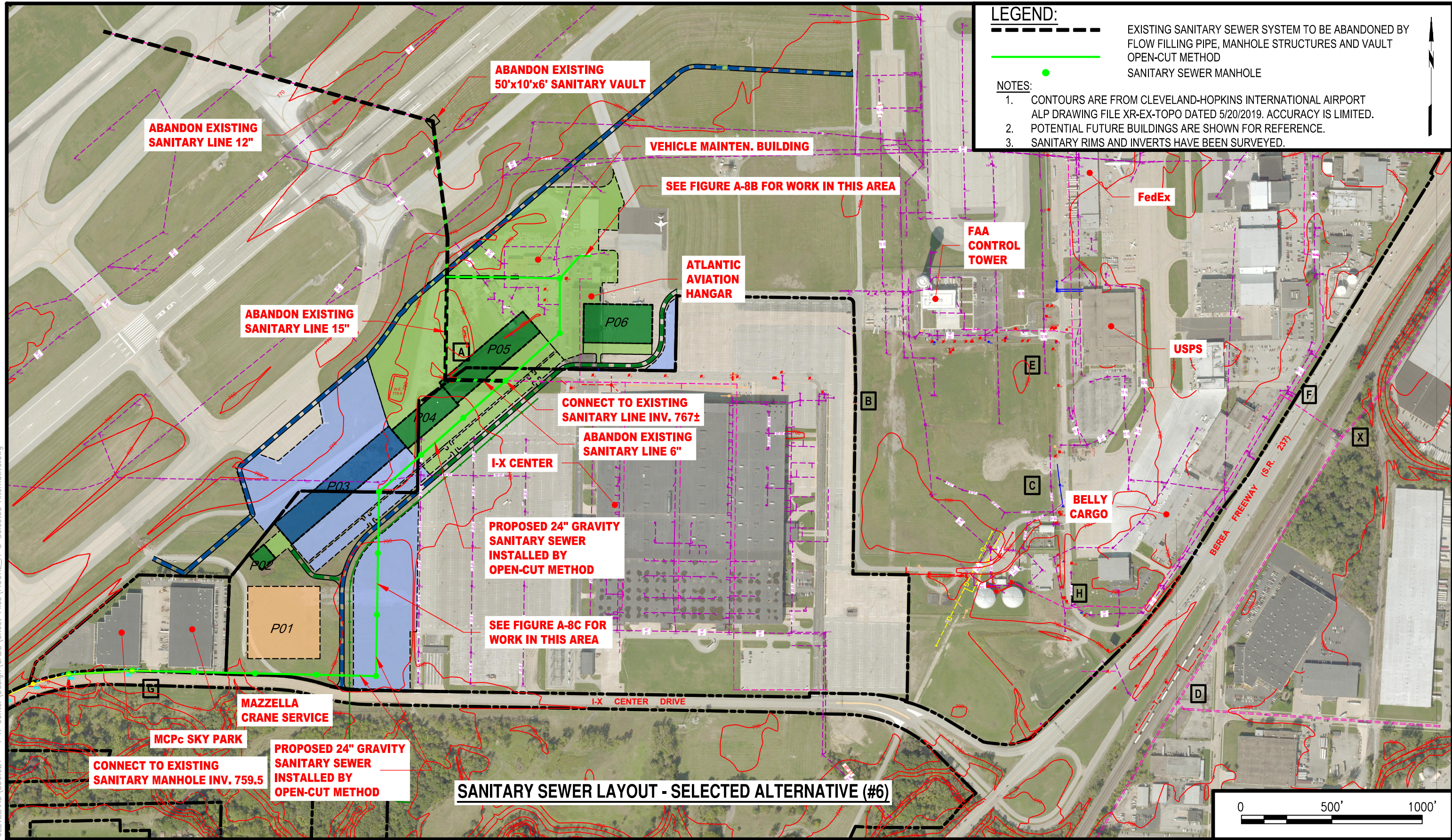
LEGEND:

--- EXISTING SANITARY SEWER SYSTEM TO BE ABANDONED BY FLOW FILLING PIPE, MANHOLE STRUCTURES AND VAULT OPEN-CUT METHOD

— SANITARY SEWER MANHOLE

NOTES:

1. CONTOURS ARE FROM CLEVELAND-HOPKINS INTERNATIONAL AIRPORT ALP DRAWING FILE XR-EX-TOPO DATED 5/20/2019. ACCURACY IS LIMITED.
2. POTENTIAL FUTURE BUILDINGS ARE SHOWN FOR REFERENCE.
3. SANITARY RIMS AND INVERTS HAVE BEEN SURVEYED.



SANITARY SEWER LAYOUT - SELECTED ALTERNATIVE (#6)

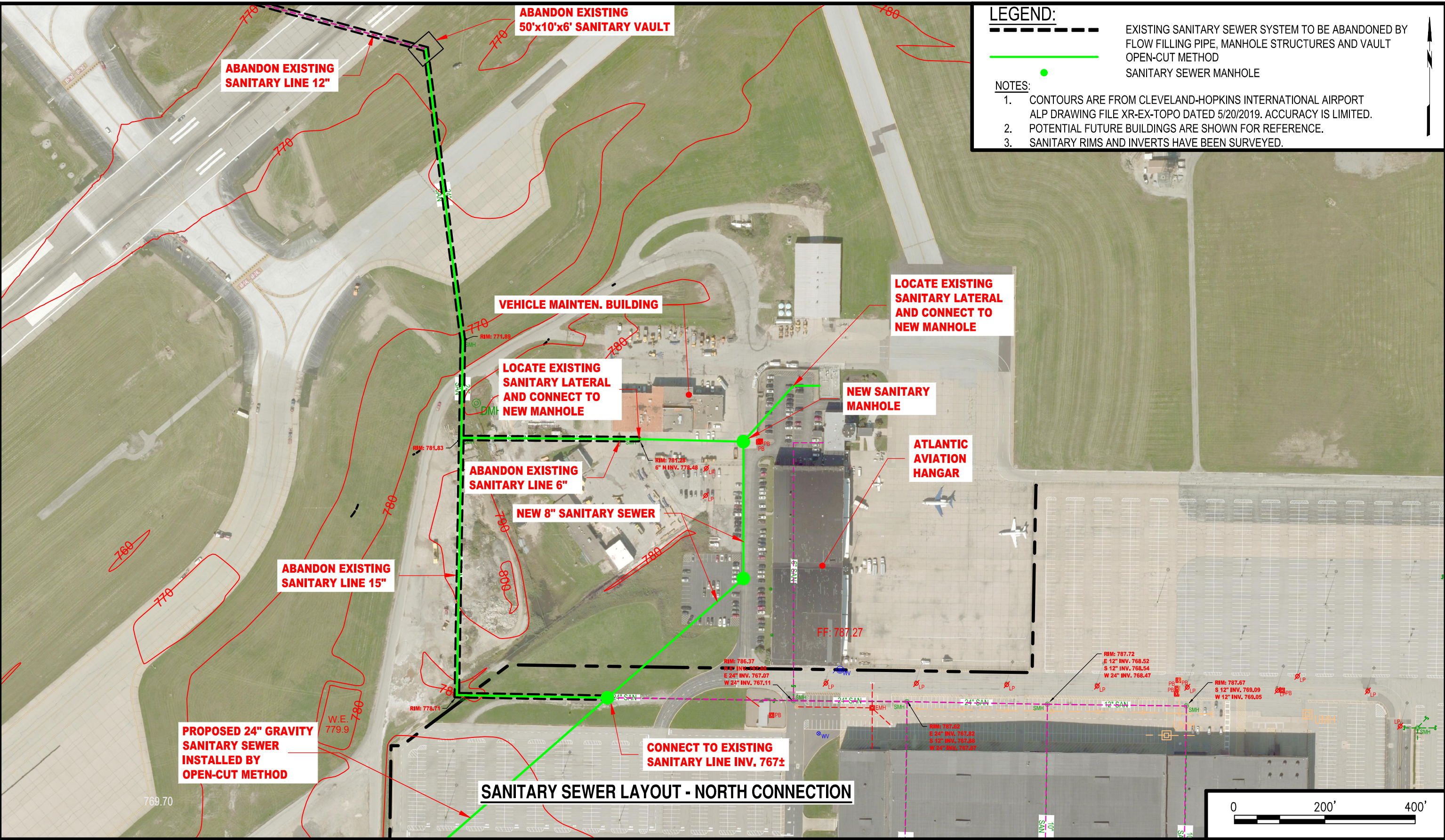


**I-X CENTER SANITARY SEWER PROJECT
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CLEVELAND, OHIO**



**FIGURE
A-8**

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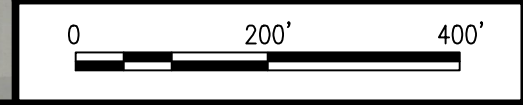


LEGEND:

- EXISTING SANITARY SEWER SYSTEM TO BE ABANDONED BY FLOW FILLING PIPE, MANHOLE STRUCTURES AND VAULT OPEN-CUT METHOD
- SANITARY SEWER MANHOLE

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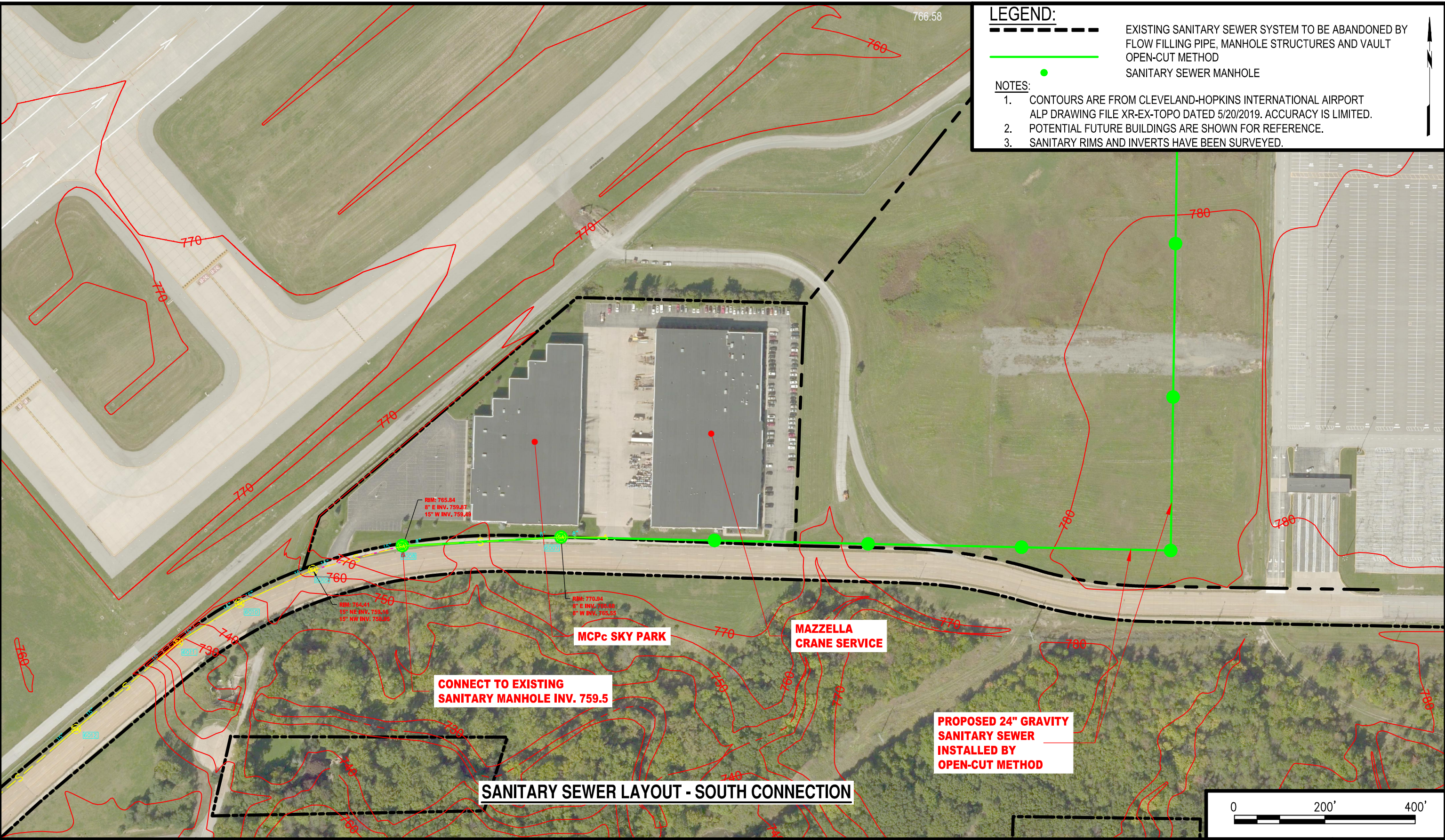


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**FIGURE
 A-8B**

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**FIGURE
A-8C**