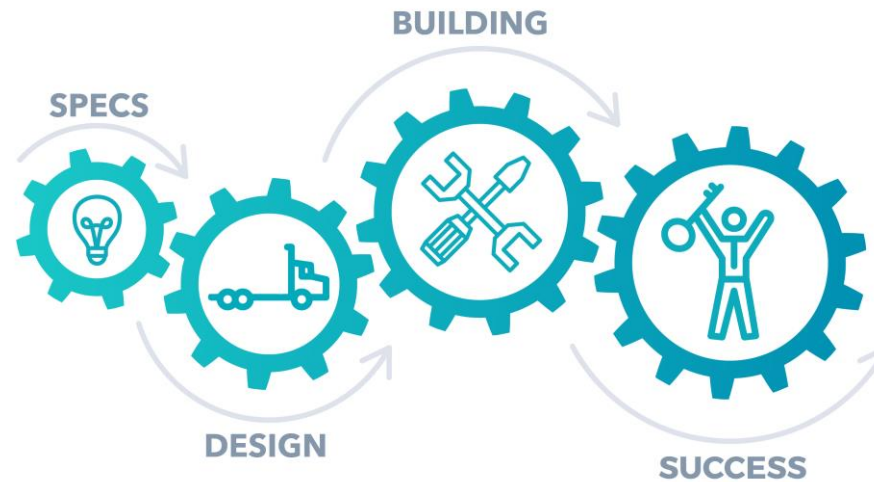




Specs *for* Success

In Manhole Rehabilitation





Karol Giokas, PE

- Senior Project Engineer, RJN Group, Inc
- 27 years engineering from aerospace to underground infrastructure
- 15 years in SSES, I/I analysis, and infrastructure rehabilitation
- PACP/MACP/LACP Certified
- BSME, Washington University in St. Louis
- MME, Villanova University
- Co-Chair, NASSCO Manhole Rehab Com





The Spec Challenge

- Owner juggling competing priorities



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The Spec Challenge

- Owner juggling competing priorities
- Inspections find cool and important stuff



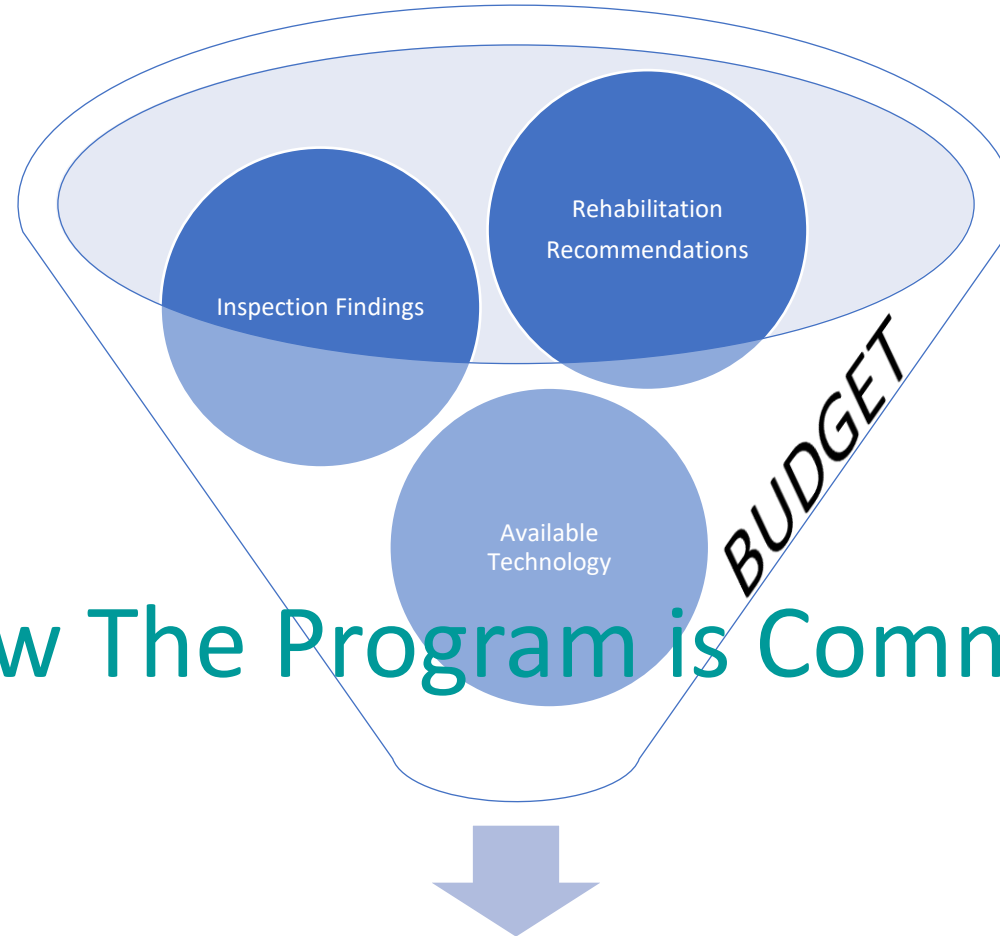


The Spec Challenge

- Owner juggling competing priorities
- Inspections find cool and important stuff
- Producing Good Specifications ...
Zzzzzz...

**But they are Critical to Success of
a Rehabilitation Program!**





Specs are How The Program is Communicated

Rehabilitation Program



Things to establish up front

When

- When to start
 - When to finish
-
- Fiscal Year
 - Weather
 - Local Events
 - School Schedules



Things to establish up front

When

- When to start
- When to finish

Who

- Capability to Self Perform
- What to be contracted





Things to establish up front

When

- When to start
- When to finish

Who

- Capability to Self Perform
- What to be contracted

Where

- Rehab by proximity
- Rehab by type



Things to establish up front

When

- When to start
- When to finish

Who

- Capability to Self Perform
- What to be contracted

Where

- Rehab by proximity
- Rehab by type

How Much

- Multiple programs?
- What goes first



Specification Book

- Front End
- Bid Package
- Contract Documents
- General Conditions
- **Specifications**





FRONT END

- FRONT END IS USUALLY CLIENT SPECIFIC
 - What % is the Bid Bond?
 - Time frame?
 - Lots of Other Stuff
 - Owner Format or Engineer Format

The **City of Anytown** invites you to bid on an anticipated contract for 2022 MANHOLE REHABILITATION PROJECT (hereinafter referred to as the "Project"). The Project can generally be described as the rehabilitation of 65 sanitary manhole structures including frame and cover replacements, grouting and related work as further described in the Contract Documents. The alternate bids 1 and 2 include the additional costs for frame and cover replacement or just cover replacement for 9 manholes. The scope of the Project shall include all equipment, materials, labor, training, warranties and construction and/or installation services necessary to implement the contemplated construction.

BID DEADLINE: Bid proposals must be received prior to **Bid Opening Date at 11:00 am** via online electronic bids only through QuestCDN. If a bid is sent by mail or other delivery system, it will not be accepted and returned unopened to the contractor.

MANDATORY PRE-BID MEETING: All Bidders are required to attend and participate in a **mandatory pre-bid conference** to be held on **XXX at Pre-Bid Time XXX** at City Hall, **Two Community Boulevard, Anytown, TN**. **The Village will disqualify the bid of any company that fails to attend the Pre-Bid Conference.** Representative of Owner will be present to discuss the project.

NOTICE: Bid proposals must be received via online electronic bids through QuestCDN, until the Bid Deadline. To access the electronic bid form, download the project documents and click the online bidding button at the top of the advertisement. Upon opening and examining the submitted Bid Proposals, the City anticipates awarding the Contract for the Work on the Project to the Bidder (or Bidders as the case may be) determined to be the lowest responsible Bidder. The City of Anytown reserves the right to waive any irregularities, technicalities, informalities, and other nonmaterial variances contain in any Bid Proposal and to reject all Bids. The Village reserves the right to hold any received Bid Proposal for a period of ninety (90) days from the opening date set forth above.

BID SECURITY: Yes, 10% of Bid

CONTRACT SECURITY: The successful Bidder will be required to provide performance and payment bonds covering the full amount of the Contract Price or Contract Sum securing full and faithful performance of the Contract and the payment for all labor material furnished by the Bidder or anyone furnishing such under the Bidder's contract or a subcontract of any tier. The successful Bidder will also be required to comply with the requirements under Illinois and federal law applicable to a public works project, including the Illinois Prevailing Wage Act.

CONTRACT DOCUMENTS: Complete digital bidding documents are available at www.questcdn.com. You may download the digital documents for **\$25.00** by inputting Quest project **#####** on the website's Project search page. Please contact QuestCDN at 952-233-1632 or info@questcdn.com for assistance with free membership registration, downloading, and working with this digital project information. **An optional paper set of project plans is also available for a nonrefundable price of \$ <insert price> per set from the City of Anytown Finance Department.** If addenda are issued, you will automatically be notified by e-mail to return to the web site to access them.



BID PACKAGE

- **BID**
 - QUANTITIES/PRICES–LUMP SUM, UNIT RATES, ETC.
- **BID BOND**
- **SIGNATURE PAGE**
- **MISCELLANEOUS FORMS**
 - Debarment
 - Non-Collusion
 - Experience
 - Sub-contractors
 - References
 - Availability
 - Subcontractor Qualification

DISQUALIFICATION OF BIDS

The following will be cause for disqualification of a submitted Bid:

- a. Prices excessively high and/or exceed monies available for the intended purchases;
- b. Failure to submit bid deposit or surety;
- c. Failure to offer to meet specified delivery or performance schedules;
- d. Failure to price out the Bid in conformance to the required format; or qualification of price to protect the Bidder from unknown future market conditions;
- e. Rights of the purchasing agency limited under any contract clause;
- f. Bidder currently listed among "debarred" bidders list. "Debarred" bidders list is a list of vendors who have not complied with the rules and regulations of City|contracts. If you have any questions, please contact Jane Doe, Finance Director;
- g. Reasonable basis to suspect either conflict of interest or collusion among bidders;
- h. Bidder fails to submit required information, literature, samples, or affidavits with bid;
- i. Late bids;
- j. Failure of any authorized person to sign bid; and
- k. Bidder is prohibited by local, state or federal law from entering into public contracts.

CANCELLATION

The City reserves the right to cancel the whole or any part of the Contract if the Bidder fails to perform any of the provisions in the Contract or fails to make delivery within the time stated.

DEFAULT

In case of the default by the Bidder, the City will procure articles or services from other sources and hold the Bidder responsible for any excess cost incurred as provided for in Article 2 of the Uniform Commercial Code.

INSURANCE

The successful Bidder shall carry worker's compensation and commercial general liability insurance in the amounts set forth below and furnish the City with Certificates of Insurance and endorsements prior to commencing with Work. All such insurance shall be carried with companies satisfactory to the City. The Bidder shall have the following obligations with regard to insurance coverage for the Work under the Contract:

- a. All Certificates of Insurance required to be obtained by the Bidder shall provide that coverages under the policies named shall not be canceled, modified, reduced or allowed to expire without at



CONTRACT DOCUMENTS

- CONTRACT
- PAYMENT BOND
- PERFORMANCE BOND
- MISCELLANEOUS FORMS
 - Change Order
 - Maintenance Bond
 - Notice of Award
 - Notice to Proceed
 - Non-segregated facilities
 - Non-Harassment forms
 - Equal Opportunity Employer
 - Iron and Steel usage

EXHIBIT "C"
CONTRACTOR'S CERTIFICATION:
Sexual Harassment Policy

_____, having submitted a bid/proposal for **2022 MANHOLE REHABILITATION PROJECT**, to the Village of Wheeling, hereby certifies that this contract shall be performed in compliance with all requirements of the Illinois Human Rights Act, 775 ILCS 5/1-101 et seq., and that the Contractor and any of its subcontractors shall not engage in any prohibited form of discrimination in employment as defined by the Act. The Contractor further certifies that it and any of its subcontractors shall maintain a policy of equal employment opportunity consistent with the requirements of the Act. The Contractor further certifies that said contractor has a written sexual harassment policy in place in full compliance with 775 ILCS 5/2-105(A) (4). A copy of these policies shall be provided to the Village or Engineer on request.

By: _____
Authorized Agent of Contractor

SUBSCRIBED AND SWORN to before
me this ____ day _____, 20__.

Notary Public



GENERAL CONDITIONS

- LEGAL CONDITIONS GOVERN HOW CONTRACT IS MANAGED
- 3 MAIN FORMATS
 - EJCDC
 - DOT
 - OWNER CONDITIONS
- SUPPLEMENTARY CONDITIONS
 - SUPERSEDE GENERAL CONDITIONS



Illinois Department of Transportation Departmental Policies

D&E-02

Effective Date: July 8, 2015
Scheduled Review Date: July 8, 2020

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

1. POLICY

It is the policy of the Department of Transportation to set standards for the performance of road and bridge construction.

2. PERSONS AFFECTED

This policy affects the Division of Highways.

3. PURPOSE

The purpose of this policy is to provide for the publication of a book prescribing the Standard Specifications for Road and Bridge Construction.

4. GUIDELINES FOR IMPLEMENTATION

The book outlines the general requirements and covenants applicable to all highway construction improvements as well as provisions relating to materials, equipment, and construction requirements for individual items of work (as defined in the book) on road and bridge construction projects awarded by the department.

The book provides detailed requirements on such subjects as:

- A. General Requirements and Covenants



SPECIFICATIONS

- GENERAL SPECIFICATIONS
 - Hours of working
 - Noise
 - Submittals – Data and Material
 - Payment process
 - Utility locates
 - Permits
 - Lots of other stuff!

2020 SEWER REHABILITATION PROGRAM	
MUMFORD	
	PAGE NO.
.....	9
.....	9
.....	9
.....	10

SUBMITTALS

Prior to fabrication of materials, the Contractor shall submit shop drawings of the materials to the Engineer for review. Shop drawings shall consist of complete descriptive literature on the materials including all pertinent dimensions, material specifications, and data. Prior to submitting shop drawings to the Engineer, the Contractor shall first review the shop drawings and make corrections or revisions which are appropriate. The Contractor shall be required to maintain a complete set of shop drawings on the job site at all times while work is in progress and shall make them available to the Engineer upon request.

The CONTRACTOR shall provide copies of the following:

1. Construction progress schedule
 - a. Initial schedule
 - b. Any revision
2. Traffic Control Plan: (1) electronic copy
3. Shop drawings: (1) electronic copy
 - a. Manhole castings data sheet
 - b. External chimney seal
 - c. Internal chimney seal
 - d. Manhole Coating material
 - e. Manhole Grouting material
 - f. Manhole insert data sheet
4. Samples of the cured system as follows:
 - a. Finish texture as determined by the Engineer
5. Pre-construction surface video
6. One set of "red-line" field characterization
7. Other required submittals:

MATERIAL SUBMITTALS

All materials data sheets are to be submitted to the ENGINEER and approved before rehabilitation can proceed. The following list of materials has been approved for use in manhole rehabilitation.

Patching Material. The following are approved for patching material: Quadex Hyperform; or approved equal.

Visible Infiltration. Approved materials to stop visible infiltration are the following: Strong-Plug; Quadex Quad-Plug; or approved equal.

Severe Active Infiltration. Approved materials to stop severe active infiltration are the following: Hydrostop-Flex 40/500; Avanti AV-290; Avanti AV-202; Deneef Denepox 40; or approved equal.

Grout. Grouting installation shall conform to ASTM F2414-04. Grout shall be Avanti AV-100; Avanti AV-202; Avanti AV-275 or approved equal.

Manhole Casting. All closed lids shall conform to the Village Standard in Exhibit F, Frame & Closed Lid Sanitary Standard, or the EJ standard for Bolted cover with the addition of "Village of Wheeling" and "Sanitary" to the cover.

Internal Chimney Seal. SSI Flex-Seal or approved equal.

External Chimney Seal. Shall conform to ASTM C923 and shall be WrapidSeal Canusa-CPS; Infi-Shield Uni-bands or an approved equal.

Adjustment Rings. Shall be precast concrete unless rubber rings are specified by the ENGINEER. Concrete adjustment rings of uniform thickness shall be at least two inches thick. The replacement precast grade adjustment shall provide a structural capacity equal to or greater than the existing specified manhole frame, and shall not affect the opening size or surface appearance. Rubber adjustment rings shall be at least 1" thick and shall be EJ Infra-Riser or approved equal.

Bitumastic Gasket Material shall meet or exceed Federal Specification SS-S-210A. Material shall be EZ-STIK or approved equal.



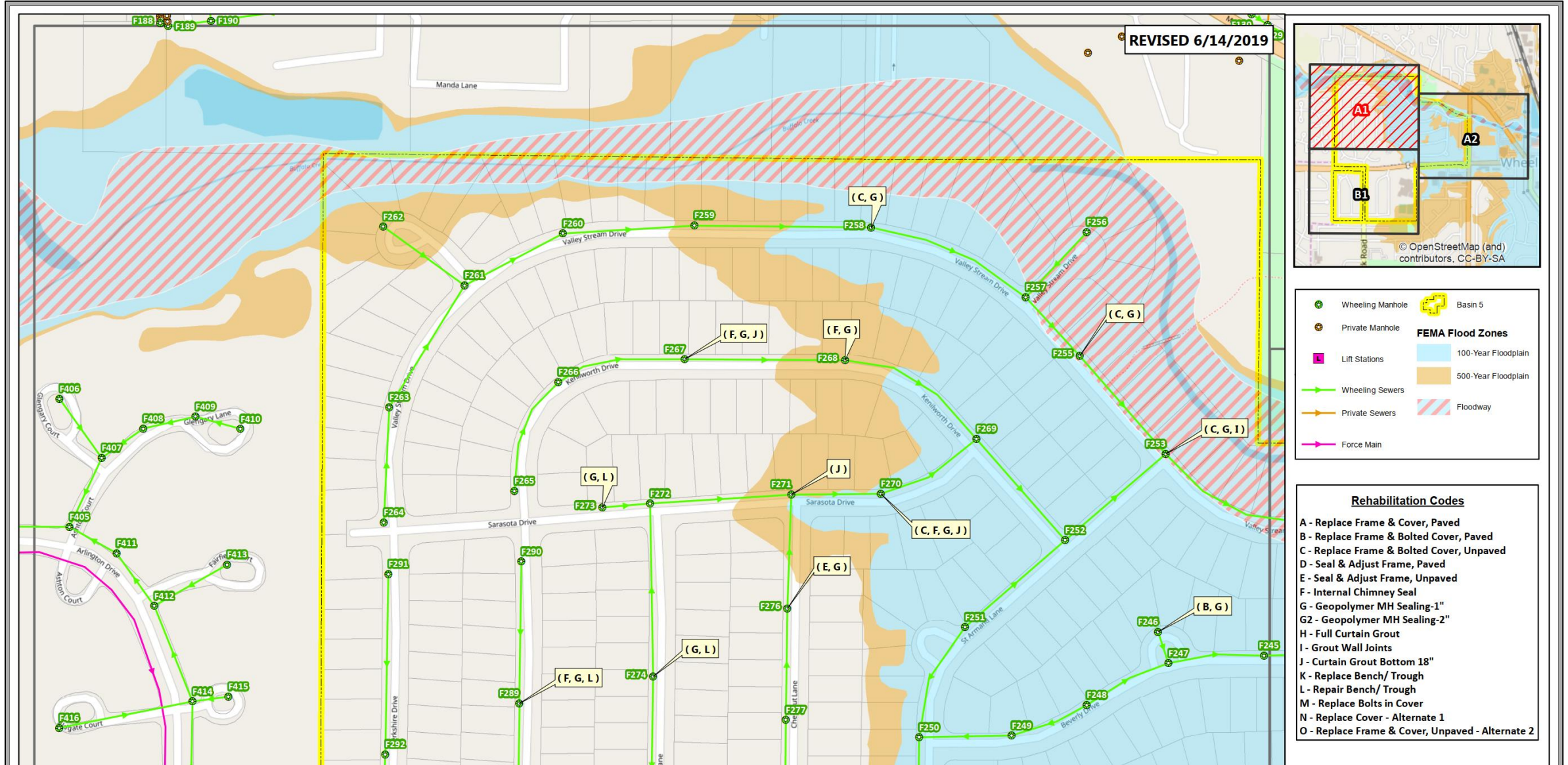
SPECIFICATIONS

- TECHNICAL SPECIFICATIONS
 - What is to be done at each location
 - Instructions to perform each item
 - How is it measured?
 - How is it paid for?
 - What items are not paid for? – incidental



UNDERGROUND CONSTRUCTION TECHNOLOGY

The Underground Utilities Event | July 13-15, 2021 | Music City Center | Nashville, TN





Upper Manhole Repairs

- Replace Bolts in Cover
- Install Cover Insert
- Seal and Adjust Frame (Paved/ Non-Paved)
- Uncover/Raise Buried Manhole (Paved/ Non-Paved)
- Replace Frame and Bolted Cover (Paved/ Non-Paved)
- Replace Frame and Cover (Paved/ Non-Paved)
- Internal Chimney Seal





Lower Manhole Repairs

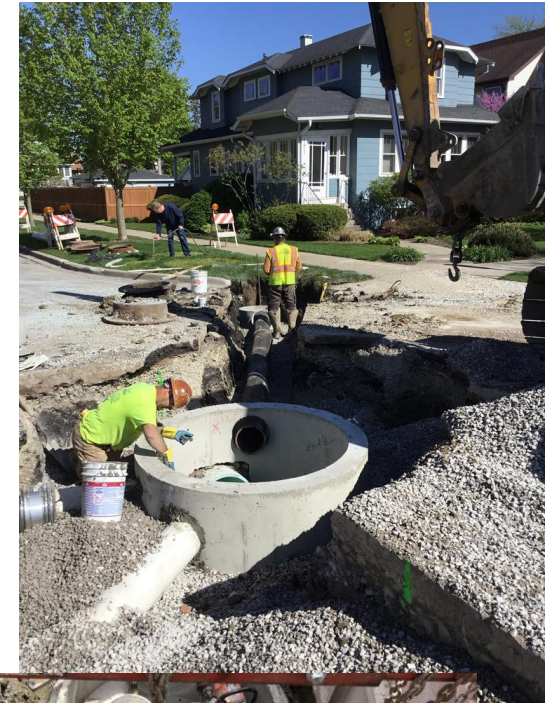
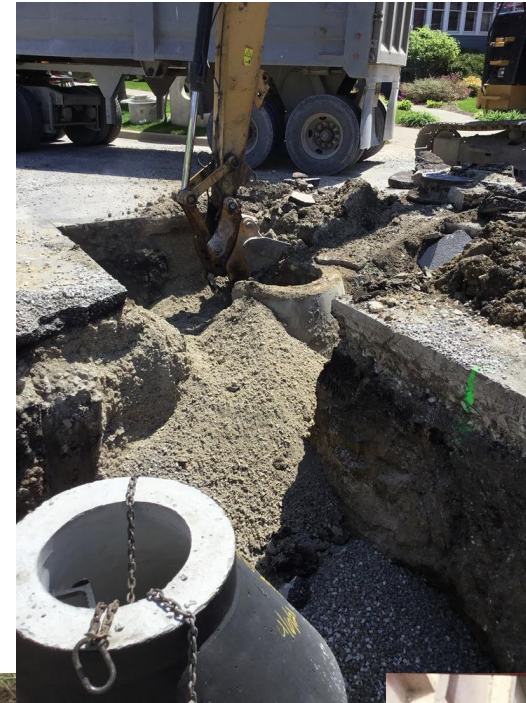
- Lining for Wall Repair
- Lining for Chemical Protection
- Grout Wall Joints, Number of Wall Joints
- Grout Cone
- Grout Bottom 18"
- Full Curtain Grout
- Repair Bench and Trough
- Replace Bench and Trough





Other Manhole Repairs

- Install Barrel Section (Paved/ Non-Paved)
- Partial Reconstruction (Paved/ Non-Paved)
- Replace Manhole (Paved/ Non-Paved)
- Clean Manhole
- Plug Pipe
- Other





Upper Manhole Repairs

- Replace Bolts in Cover
- Install Cover Insert
- Seal and Adjust Frame (Paved/ Non-Paved)
- Uncover/Raise Buried Manhole (Paved/ Non-Paved)
- Replace Frame and Bolted Cover (Paved/ Non-Paved)
- Replace Frame and Cover (Paved/ Non-Paved)
- Internal Chimney Seal





Sample Bid Item Specification

- Replace Frame and Bolted Cover (Paved/ Non-Paved)
 - Reference other items
 - Reference Standards
 - What to do with existing
- Method of Payment
 - What is included
 - Restoration status

ITEMS 1. REPLACE FRAME AND COVER FOR PAVED SURFACES

ITEMS 2 - 3. REPLACE FRAME AND BOLTED COVER FOR PAVED AND UNPAVED SURFACES

Where indicated on the plans, the existing manhole frame and cover shall be replaced with a new frame and cover by the CONTRACTOR. Also included in the REPLACE FRAME AND COVER bid items is the replacement of the adjustment and installation of an external chimney seal as described in the provision “SEAL AND ADJUST MANHOLE FRAME FOR PAVED AND UNPAVED SURFACES”. The new frame and cover shall be the standard Village of Wheeling frame and cover as described in Exhibit F, VILLAGE OF WHEELING STANDARDS, Frame and Closed Lid Sanitary Standard. Bolted covers shall be the standard Village of Wheeling frame and cover: EJ 1050Z1PT 1020APT Assembly lid with seal as described in Exhibit F, VILLAGE OF WHEELING STANDARDS. The EJ standard is shown in Exhibit F. Where required, the existing manhole frame and cover shall be removed and returned to the OWNER and a new manhole frame and cover installed and adjusted by the CONTRACTOR as directed by the ENGINEER.

Method of Measurement and Basis of Payment: This item shall be paid for at the Contract Unit Price per Each for **REPLACE FRAME AND COVER** and **REPLACE FRAME AND BOLTED COVER** for the surface specified and shall include all work necessary for the complete installation of a new frame and cover including measurement, procurement, installation, replacement of adjustment, installation of external chimney seal, returning the original cover to the OWNER and restoration including but not limited to full Depth Patching, PCC Sidewalk, Sod, Driveway Pavement and Curb removal and replacement.



What is Incidental?

- Incidental Items – Not paid for separately
 - Mobilization
 - Traffic Control
 - Bypass
 - Restoration

TOPSOIL SEED AND BLANKET, 6"

This work shall consist of preparing the ground surface, furnishing and applying pulverized topsoil to a six-inch (6") depth, applying fertilizer nutrients and furnishing and placing Class 2A salt tolerant seed (with erosion control blanket). Work shall be undertaken in accordance with Section 211 and Section 250 of the Standard Specifications. Seeding will be inspected 60 days after installation to determine acceptability.

Method of Measurement and Basis of Payment: This work shall be considered **incidental** to the Contract and shall not be compensated for separately.

TOPSOIL AND SOD, 6"

This work shall consist of preparing the ground surface, furnishing and applying pulverized topsoil to a 6" depth, applying fertilizer nutrients and furnishing, placing and staking sod (Article 1081.03(b) in the areas designated by the Engineer. Sod shall be an approved salt tolerant mixture. All work shall be in accordance with the applicable portions of Sections 211 and 252 of the Standard Specifications.

Method of Measurement and Basis of Payment: This work shall be considered **incidental** to the Contract and shall not be compensated for separately.



A Few Other Items...

- Verification
 - Thickness measurement
 - Vacuum Testing
- Pre-Construction Video

- Maintenance Bond Extension





Summary

- Good Specs Communicate
 - What is to be done
 - Where
 - When
 - How

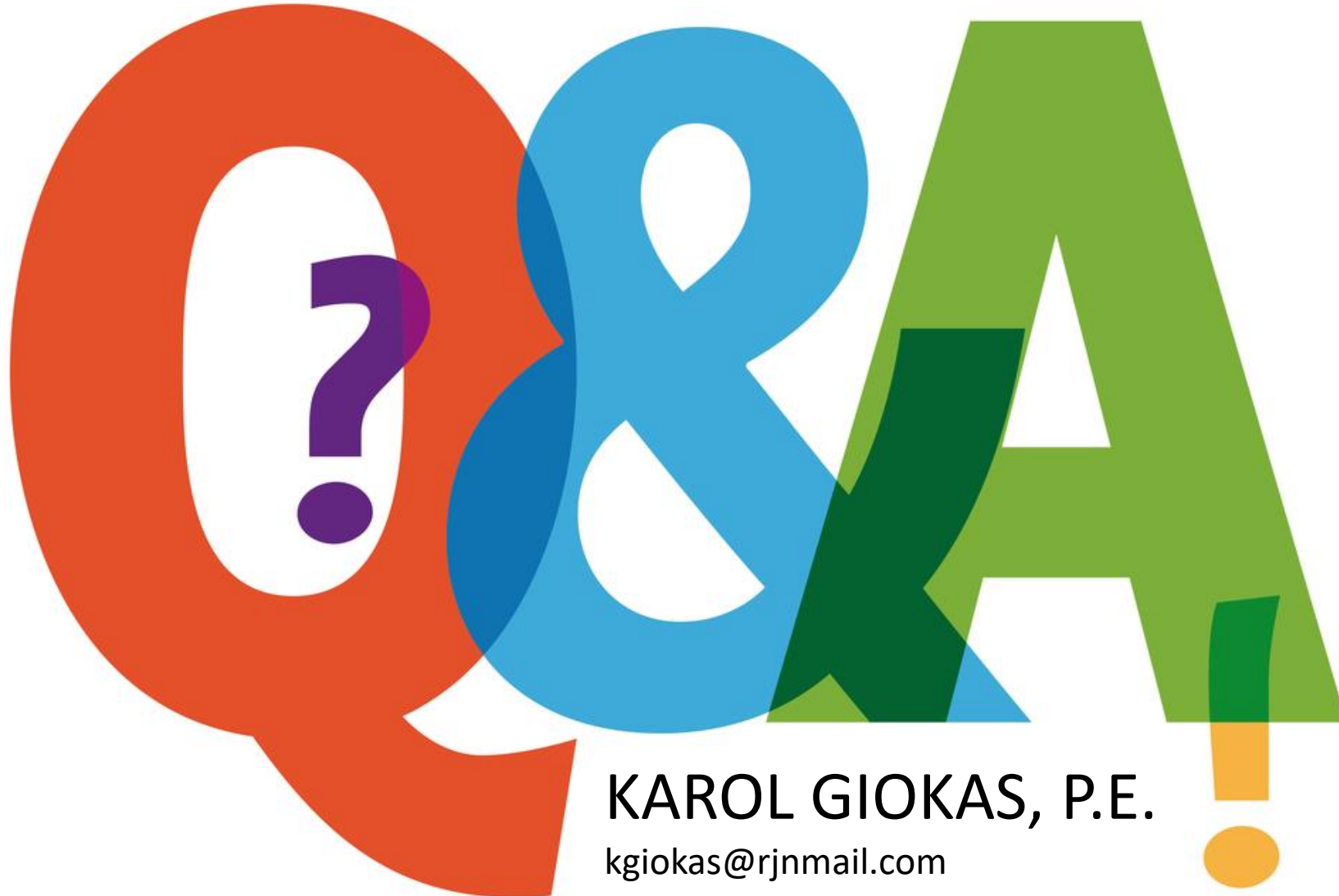
Helping Projects to Succeed





UNDERGROUND CONSTRUCTION TECHNOLOGY

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