CiorbaGroup
CONSULTING ENGINEERS

August 9, 2024

Mr. Tyler Quattrocchi, PE
Engineering Project Manager
Village of Schaumburg
714 S. Plum Grove Rd.
Schaumburg, IL 60193

Subject: **Bode Road Force Main Final Design**

Dear Mr. Quattrocchi,

Please find under this transmittal one electronic copy of our Proposal for the Bode Force Main Final Design Project.

Why Ciorba?

Engineering Experience. Ciorba Group has been involved in the assessment, design, and / or construction management of 35 lift station and force main projects within the past 7 years alone. All of the staff presented in this proposal have a passion for the multi-disciplinary tasks needed for excellent lift station and force main design. Key players on our team also have experience as Resident Engineers and Inspectors for lift station and force main projects which translate to thoughtful designs that work during construction.

Local Knowledge. Ciorba Group's involvement with the Bode Lift Station began in the Summar of 2017 as the Phase III Construction Engineer for the *Pumping Station Improvement Program,* designed by another firm. During our inspection, Ciorba pinpointed a pump capacity issue and has been assisting the Village to design, permit, and construct a retrofit to correct the problem. Ciorba partnered with the Village to increase the original 2017 start-up pump capacity of 750 gpm to the current 2024 start-up pump capacity of 1,250 gpm to effectively serve the upstream basin during dry and wet weather.

Proven Success. We encourage you to ask our other municipal clients how we have done.

Client	Ciorba Lift Station Projects	Contact
Village of Buffalo Grove	5 Sites - 4 as Condition Assessment Engineer - 5 as Design Engineer - 4 as Construction Engineer	Kyle Johnson, P.E. Assistant Public Works Director 847.259.2523 KJohnson@vbg.org
Village of Mount Prospect	4 Sites - 4 as Design Engineer - 4 as Construction Engineer - 1 as Public Messaging Support	Casey Botterman Water / Sewer Superintendent 847.870.5640 CBotterman@mountprospect.org
Village of Schaumburg	5 Sites - 2 as Condition Assessment Engineer - 2 as Design Engineer - 3 as Construction Engineer	Brian Wagner Utility Superintendent 847.923.6641 bwagner@schaumburg.com

Should you have any questions about this proposal, please contact me at 773.892.9795 or at lmattson@ciorba.com at any time.

Sincerely,

Ciorba Group, Inc.

Luke A. Mattson, PE
Water Resources Project Manager

8725 W. Higgins Road, Suite 600
Chicago, IL 60631
P 773.775.4009
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ciorba.com

PROJECT UNDERSTANDING

Ciorba Group History with Bode Lift Station and Force Main

Ciorba Group's involvement with the Bode Lift Station began in the Summar of 2017 as the Phase III Construction Engineer for the *Pumping Station Improvement Program*, which included the reconstruction of both the Bode Road and Toys Lift Stations. Ciorba Group enforced the design that was prepared by another Engineering Firm and provided re-design as needed throughout the construction process.

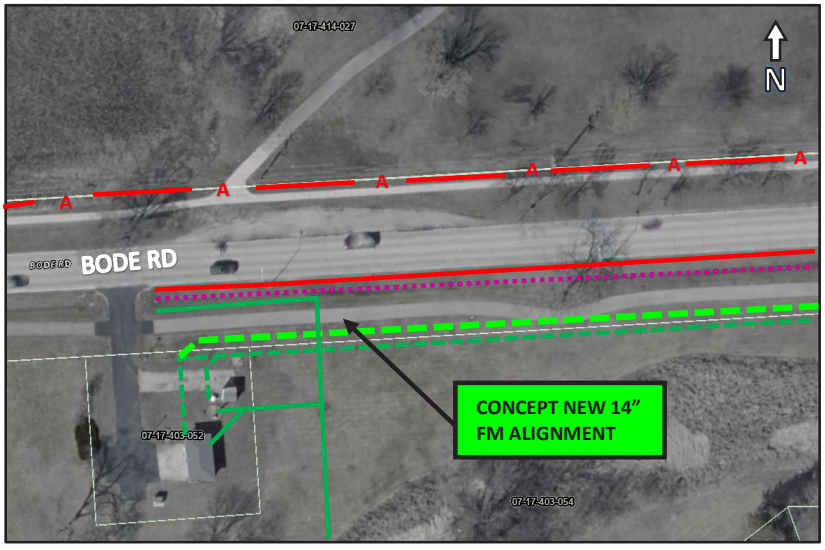
During the startup of the Bode Lift Station, Ciorba Group identified a discrepancy in the pump capacity of the new station compared to the existing station and notified the Village of Schaumburg. We pinpointed the issue as a pump sizing error in the design and spent the next 5-years assisting the Village in coordinating with MWRDGC on a fix to the situation.

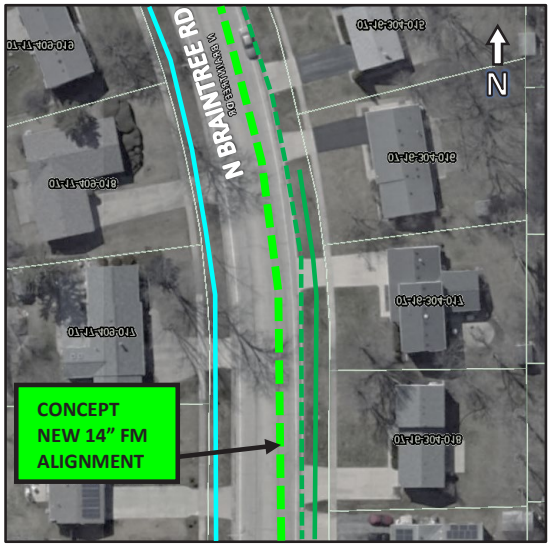
2017 Insertion Value Installed on Existing 14" Force Main

Ciorba Group permitted the retrofit design in 2019 and then again in 2022, and also assisted the Village in closing out the original permit from 2015. We are now in the closing stages of the retrofit construction, addressing punch list items. Throughout this process, Ciorba partnered with the Village to increase the original 2017 start-up pump capacity of 750 gpm to the current 2024 start-up pump capacity of 1,250 gpm to effectively serve the upstream basin during dry and wet weather.

Design Considerations

The Village of Schaumburg delayed the demolition of the original lift station after finding the existing 14" force main to be in poor condition during the inspection as part of a pigging project. Redundancy during construction is of utmost importance. Any disruption to the lift station operation impacts the upstream population of 5,115 people in the 491-acre basin. In addition to the station redundancy, it is necessary to minimize the downtime of the lift stations to two hours. This requires the full reconstruction and testing of the new force main while the station continues to operate. The following exhibits offer a preliminary alignment consideration in order to accomplish this. Snapshots along Bode Road and Braintree Drive are offered.



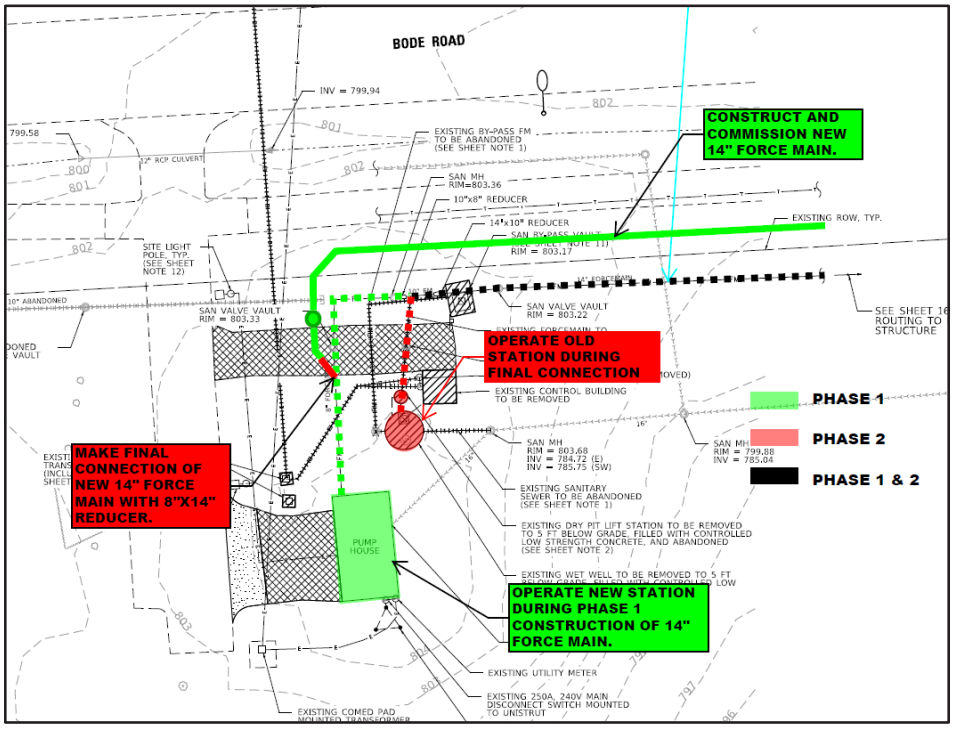


Ex. Force Main
Ex. San. Sewer
Ex. Water Main
Ex. Drainage Ditch
Ex. Elec. (Underground)
A Ex. Elec. (Aerial)

The force main along Bode Road will likely be constructed within the right of way, north and parallel to the existing force main unless there is easement available to the south. The force main along Braintree will likely be located under pavement based the parkways being occupied with existing Village water main, sanitary sewer, and the existing 14" force main that must remain active during construction. Franchise utilities such as gas, electric, and communications are also likely to be located within the parkways.

Ciorba's design will consider both open cut and trenchless construction technologies for the Village's consideration.

Once the force main has been constructed and pressure tested, the connection of the new force main shall be made to the existing 8" force main exiting from the north side of the new lift station. We recommend extending the 14" force main up to the turning point to reduce the length of 8" pipe along the final route. This will result in an increase in the flow rate of the new pumps by reducing friction head loss. The following exhibit illustrates the proposed connection sequence to minimize the down time of the lift stations to less than an hour.



2017 Insertion Valve Installed on Existing 14" Force Main

Permitting

Ciorba Group recently helped the Village close the original MWRDGC permit for the 2017 reconstruction of the lift station (Permit 15-057) by assuming the responsibility of the original design consultant who was no longer able to sign. Ciorba is currently in the process of closing the permit for the retrofit improvement (Permit 2022-0270). This project will require a third MWRD permit for the new force main construction. Ciorba will be able to provide consistency throughout this complex permitting process.

Scope of Work

Ciorba Group agrees with the scope of work identified in the RFP and clarified via Addendum and the following assumptions:

- Hardscape restoration (pavements, curb, sidewalk, driveways) will only be at those locations impacted by the force main work.
- Based on our preliminary assessment of force main alignment, we propose to design the force main without impacting existing ADA ramp locations.
- Specifications will be based on the current editions of the IDOT Standard Specifications and the Standard Specification for Water And Sewer Construction, with specific Special Provisions written to amend these specifications as required. Specifications will not follow the Master Format.

Old Bypass Structure at Bode Lift Station

KEY PERSONNEL

KEY

Ciorba Staff
Subconsultant Staff

- Resume included

QA/QC

- Tony Wolff, PE, CFM

PROJECT MANAGER

- Luke Mattson, PE

SURVEY

- Melissa Contreras, PLS
  Plamen Milenov

WATER RESOURCES

- Corinne Gibbs, PE
  Danielle Hossler, PE

SPECIALTY SERVICES

Geotechnical
Soil and Material
Consultants

Bode Road Lift Station Construction Inspection

Ciorba Group's involvement with the Bode Lift Station began in the Summer of 2017 as the Phase III Construction Engineer for the Pumping Station Improvement Program, which included the reconstruction of both the Bode Road and Toys Lift Stations. Ciorba Group enforced the design that was prepared by another Engineering Firm and provided re-design as needed throughout the construction process.

The scope of construction work for the lift station included the conversion of the wet/dry system to a duplex submersible station. This work also included new process piping, metering, a backup generator, ground level controls, and a prefabricated enclosure building. The work also included the construction of 8" and 16" ductile iron force main.

During construction, Ciorba Group recommended design changes to coordinate multiple control suppliers and integrators to streamline the control equipment in the generator room. Ciorba also recommended process piping changes to offer better operational options for Village public works staff.

During the startup of the Bode Lift Station, Ciorba Group identified a discrepancy in the pump capacity of the new station compared to the existing station and notified the Village of Schaumburg. We pinpointed the issue as a pump sizing error in the design by another consultant and spent the next 5-years assisting the Village in coordinating with MWRDGC on a fix to the situation.

Ciorba Group offered value to the Village of Schaumburg by working to identify cost impacts of the capacity discrepancy for reimbursement.

Lift station type:
Sanitary Sewer
Duplex Submersible
Lift Station

Lift station capacity:
750 GPM @ 55' TDH
2 x 20 HP Pumps

CLIENT
Village of Schaumburg

CONTACT
Mr. Brent McQueen, PE, CFM, CPESC
Engineering Division Manager
847.923.6628

CONSTRUCTION COST
$900,000

PROJECT TEAM
Project Manager/
Resident Engineer
Luke Mattson, PE

SCOPE OF SERVICE
- Construction Observation

Bode Lift Station Retrofit

Ciorba Group provided preliminary engineering, final design, and is currently providing construction inspection for the Bode Lift Station Retrofit. This project is the continuation of the Bode Lift Station Construction Project where Ciorba Group served as the Construction Engineer.

Ciorba Group permitted the retrofit design in 2019 and then again in 2022, and also assisted the Village in closing out the original permit from 2015. We are now in the closing stages of the retrofit construction, addressing punch list items. Throughout this process, Ciorba partnered with the Village to increase the original 2017 start-up pump capacity of 750 gpm to the current 2024 start-up pump capacity of 1,250 gpm to effectively serve the upstream basin during dry and wet weather.

This project consists of the retrofit upgrades of the existing lift station by replacing the original undersized 20 hp pumps with new 34 hp pumps. Due to the increase in horsepower, the retrofit also required the installation of soft starters to limit the in-rush current during pump startup. This electrical and control panel work required modification to the existing pump control panel, SCADA panel, and the mounting of a new starter panel. Demolition work under this project were recently eliminated and have been added to the scope of the Bode Road Force Main Final Design project.

Ciorba Group continues to offer value to the Village of Schaumburg by providing consistent technical and project management support for a facility that began upgrades 7-years ago in 2017.

Lift station type:
Sanitary Sewer
Duplex Submersible
Lift Station

Lift station capacity:
1,250 GPM @ 65' TDH
2x34 HP Pumps

CLIENT
Village of Schaumburg

CONSTRUCTION COST:
$545,000

CONTACT
Mr. Brent McQueen, PE, CFM, CPESC
Engineering Division Manager
847.923.6628

PROJECT TEAM
Project Manager/Project Engineer/ Resident Engineer
Luke Mattson, PE
Water Resource Engineer
Corinne Gibbs, PE
Electrical Engineer
Katrina Lopez, PE
QA/QC Engineer
Tony Wolff, PE, CFM

SCOPE OF SERVICE
- Preliminary Engineering
- Final Design
- Construction Observation

6. Pricing Sheet(s)

NOTICE TO VENDORS: Failure to complete the following Pricing Sheet(s) may be cause for rejection of your submittal. If you are not bidding on an entire group, please provide $0.00 as the cost for such items.

NOTE: Unit prices shall include the cost of delivery (if applicable).

Line Item	Description	Quantity	Unit of Measure	Unit Cost	Total
1	Phase II Design of the Bode Rd Force Main Replacement	1	ls	$ 61,908.97	$ 61,908.97
TOTAL	$ 61,908.97				

Fee Summary

Ciorba Group proposes the following fees to complete **Design Phase** of the Bode Road Force Main Project, including approximately 2,600 feet of 14" force main.

Design Engineering

Ciorba Labor & Overhead Costs:	$ 54,511.22
Ciorba In-House Direct Costs:	$ 422.75
Soil Borings / CCDD Sampling (SMC):	$ 6,975.00
Total Design Engineering Fee:	**$ 61,908.97**

The design fee includes soil borings and soil sampling at 500-foot intervals for the preparation of an LPC-662 package to be provided to the contractors bidding the project for CCDD purposes.

The tables on the following pages provide detailed staff hour and direct cost estimates broken out by task.

Cost Estimate of Consultant Services (Direct Labor Multiple)

Firm Ciorba Group, Inc Date 08/07/24

DBE	ITEM	MANHOURS (A)	PAYROLL (B)	(3+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	TOTAL (C+D+E)	% OF GRAND TOTAL
	Meetings, Data Collection & Coordination	10	$ 631.25	$ 1,893.75	$ 32.75		$ 1,926.50	3%
	Survey	56	$ 2,424.00	$ 7,272.00	$ 390.00		$ 7,662.00	12%
	Water Resources	168	$ 8,594.09	$ 25,782.27	$ -		$ 25,782.27	42%
	Engineering Studies/Plans	40	$ 2,064.95	$ 6,194.84	$ -		$ 6,194.84	10%
	Quantity, Specifications & Estimates	48	$ 2,671.45	$ 8,014.35	$ -		$ 8,014.35	13%
	Construction Engineering / Administration	4	$ 265.63	$ 796.89	$ -		$ 796.89	1%
	QC / QA	8	$ 791.84	$ 2,375.52	$ -		$ 2,375.52	4%
	Project Management & Administration	8	$ 727.20	$ 2,181.60	$ -		$ 2,181.60	4%
	Soil and Material Consultants					$ 6,975.00	$ 6,975.00	11%
	TOTALS	342	$ 18,170.41	$ 54,511.22	$ 422.75	$ 6,975.00	$ 61,908.97	100%

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CONSULTING ENGINEERS

WORK BREAKDOWN STRUCTURE

8/7/2024

		Activity		Grand Total	Project Manager III	Project Manager II	Senior Engineer	Engineer II	Engineer I	Senior Technician
		TOTAL		**342**	**12**	**43**	**153**	**78**	**8**	**48**
1.	**Meetings, Data Collection & Coordination**		**Task Total:**	**10**		**4**	**6**			
	0100	**Meetings**	**Meetings**	**10**		**4**	**6**			
		Meetings with Owner (Water Resources) (2 mtg x 2 hrs/mtg x 2 staff)		8		4	4			
		Meeting Minutes		2			2			
2.	**Survey**		**Task Total:**	**56**					**8**	**48**
	0210	**Field Survey**	**Subtotal:**	**48**					**8**	**40**
		Horizontal Topography		48					8	40
	0220	**Process Survey**	**Subtotal:**	**8**						**8**
		Base Sheet Development		8						8
3.	**Water Resources**		**Task Total:**	**168**		**18**	**94**	**56**		
	0340	**Sanitary Sewer**	**Subtotal:**	**148**		**14**	**82**	**52**		
		Conflict Investigation (Utilities)		12		2	6	4		
		Force Main Design		44		2	28	14		
		Force Main Plan and Profile Shets		40		2	22	16		
		Force Main Details		8		2	4	2		
		Hardscape Restoration Design		20		2	10	8		
		Erosion Control and Landscaping Plans		20		2	10	8		
		Force Main Design Report		4		2	2			
	0360	**Permits**	**Subtotal:**	**20**		**4**	**12**	**4**		
		Permit - IEPA (Water and Sanitary)		8		2	6			
		Permit- MWRDGC		12		2	6	4		
5.	**Engineering Studies/Plans**		**Task Total:**	**40**		**5**	**21**	**14**		
	0560	**Contract Plans**	**Subtotal:**	**40**		**5**	**21**	**14**		
		Title Sheet (x hrs/sheet)		2		1	1			
		Alignment, Ties and Benchmarks (x hrs/sheet)		2			2			
		Summary of Quantities (x hrs/sheet)		4			2	2		
		Plan Revisions		20		2	10	8		
		Disposition of Comments (hrs X submittal X total of # submittals)		12		2	6	4		
7.	**Quantity, Specifications & Estimates**		**Task Total:**	**48**		**10**	**30**	**8**		
	0700	**Quantity, Specifications and Estimates**	**Subtotal:**	**48**		**10**	**30**	**8**		
		Quantity Calculations and BOM (Water Resources)		20		4	8	8		
		Specifications (Water Resources)		18		2	16			
		Estimate of Time		2		2				
		Estimate of Cost		8		2	6			
8.	**Construction Engineering / Administration**		**Task Total:**	**4**		**2**	**2**			
	0840	**Construction Assistance**	**Subtotal:**	**4**		**2**	**2**			
		Assistance During Bidding		4		2	2			
9.	**QC / QA**		**Task Total:**	**8**	**8**					
	0900	**QC / QA**	**Subtotal:**	**8**	**8**					
		Water Resources QC/QA		8	8					
10.	**Project Management & Administration**		**Task Total:**	**8**	**4**	**4**				
	1000	**Project Management & Administration**	**Subtotal:**	**8**	**4**	**4**				
		Project Administration		4	4					
		Project Management		4		4				

DIRECT COSTS SUMMARY

Meetings, Data Collection & Coordination

Description	Unit		Unit Cost	Quantity		Extended Cost	
Vehicle (mileage)	mile	$	0.655	50	$	32.75	
					$	**32.75**	**Total**

Survey

Description	Unit		Unit Cost	Quantity		Extended Cost	
Vehicle (day)	day	$	65.00	6	$	390.00	
					$	**390.00**	**Total**