CHANGE ORDER NO.: 6

Owner:	Town of Bristol	Owner's Project No.:	WW22532001
Engineer:	Commonwealth Engineers, Inc.	Engineer's Project No.:	S22145
Contractor:	Crosby Construction	Contractor's Project No.:	24105-01
Project:	WWTP Improvement Project		
Contract Name:	WWTP Improvement Project		
Date Issued:		Effective Date of Change Order:	

The Contract is modified as follows upon execution of this Change Order:

Description: Chemical Pump Extended Warranty, Headworks XP Exit Light, Parshall Flume Installation, Headworks Channel Modification, Air Piping Canopy

Attachments: Change Order Breakdown Memo, RFI-38, RFI-55, WCD 10, WCD 11, WCD 13

Change in Contract Price	**Change in Contract Times [State Contract Times as either a specific date or a number of days]**
Original Contract Price: $ 24,293,749.00	Original Contract Times: Calendar days – Part 1 Substantial Completion: 450 Ready for final payment: 30
[~~Increase~~] [**Decrease**] from previously approved Change Orders No. 1 to No. 5: $ 222,612.70	[**Increase**] [~~Decrease~~] from previously approved Change Orders No. 1 to No. 6 Substantial Completion: 90 Ready for final payment: 0
Contract Price prior to this Change Order: $ 24,071,136.30	Contract Times prior to this Change Order: Substantial Completion: 540 Ready for final payment: 30
[Increase] ~~[Decrease]~~ this Change Order: $ 23,013.51	~~[Increase] [Decrease]~~ this Change Order for Part 1: Substantial Completion: n/a Ready for final payment: n/a
Contract Price incorporating this Change Order: $ 24,094,149.81	Contract Times with all approved Change Orders: Substantial Completion: 540 Ready for final payment: 30

Town of Bristol
WWTP Improvements Project
Change Order #6

Recommended by Engineer (if required)		Accepted by Contractor	
By:	Amy Mundorf	By:	Russell Jacobs
Title:	Project Engineer	Title:	Vice President
Date:	12/4/25	Date:	12/4/2025
Authorized by Owner		**Approved by Funding Agency (if applicable)**	
By:		By:	
Title:		Title:	
Date:		Date:	

COMMONWEALTH ENGINEERS, INC.

A wealth of resources to master a common goal.

December 4, 2025

Mike Yoder
Town of Bristol
303 E Vistula St
Bristol, IN 46507

RE: Job Number S22145
WWTP Improvement Project
Proposed Change Order No. 6

Dear Mr. Yoder:

Enclosed, please find the proposed Change Order No. 6 (CO #6) for the Town of Bristol's consideration and approval.

This CO #6 includes a contract cost increase of $23,013.51 and no additional contract days for Part 1, resulting in a new total contract price of $24,094,149.81 and time to substantial completion of Part 1 at 540 days.

Recommendation

We have reviewed the items of additional cost and determined them to be fairly priced. This proposed change order consists of the following items:

- Chemical Pump Extended Warranty
- Headworks XP Exit Lights
- Parshall Flume Installation
- Headworks Channel Modification
- Blower Canopy Revisions

Further details can be found in the attached memorandum. We recommend acceptance of this change order. The table below provides a summary of components included within this change order:

Description	Cost Change	Time Extension (Days)	Summary Notes
Chemical Pump Extended Warranty	$5,716.50	0	Chemical pump warranty will start earlier than originally intended due to earlier installation for use while the chemical room is being constructed; a 1-year warranty extension to bring the end date approximately to the original end date.
Headworks XP Exit Light	$9,646.00	0	Replacement of specified headworks exit sign with explosion-rated exit signs suitable for classified spaces.
Parshall Flume Installation	$3,906.63	0	Revisions to headworks channel and
Headworks Channel Modification	$2,903.88	0	Extension of the headworks channel separation wall by 1 foot to properly divide channels and anchor the flume.
Blower Canopy Revisions	$840.50	0	Adjustment of the SBR Basin 3 air line elevation, requiring revisions to the guardrail and blower canopy design.
Total:	**$23,013.51**	**0**	

If you have any questions, please feel free to contact us.

Sincerely,

COMMONWEALTH ENGINEERS, INC.

Amy Mendoza

Amy Mendoza, P.E.

COMMONWEALTH ENGINEERS, INC.
A wealth of resources to master a common goal.

100 East Wayne St., Suite 315
South Bend, IN 46601
PH: (574) 800-7177

CHANGE ORDER SUMMARY MEMORANDUM

DATE: December 4, 2025

SUBJECT: Wastewater Treatment Plant Improvements
Work Item Breakdown for Change Order No. 6

Change Order No. 6 for this project includes a cost increase and time extension for items further explained below. The Engineer has reviewed the costs submitted by the Contractor and considers them fair. The time extension is required to better coordinate with other projects occurring in the project area.

The attached request for change includes the resulting increase associated with the items described below.

1) **RFI-38 Chemical Pump Extended Warranty**
The new ferric chloride pump skid will be installed temporarily in the existing chemical building to enable ferric chloride dosing at the new SBR before the new administration building containing the new chemical room is constructed. The 1-year warranty period for this pump will begin approximately 10 months earlier than originally planned at startup of Part 2 of the project. The Town wishes to purchase an additional 1-year extended warranty for the pump skid. The total cost for this item is $5,716.50. The Town/Engineer negotiated pricing of this extended warranty with the Contractor, resulting in the extended warranty covering parts only and excludes installation/labor. All parties agreed on these terms.

2) **RFI-55 Headworks XP Exit Light**
During construction, it was identified that the headworks exit signs specified were not rated for classified spaces. The additional cost associated with this change covers the procurement of explosive-rated exit signs. The change results in an additional $9,646 in project costs and no additional contract time.

3) **WCD 10 Parshall Flume Installation**
The planned installation elevations for the Parshall flumes were found to be too high for proper placement. In the headworks channel, the flume elevation was approximately 1.5 inches too high, requiring removal of a portion of the channel to achieve proper fit. In the

post-aeration structure, the effluent flume elevation was approximately 3 inches too high. The Engineer directed the removal of 3 inches of concrete from the channel. The Town authorized this work to take place tracking time and material (T&M) expended. The work has been completed and Contractor submitted T&M records. These modifications result in an added cost of $3,906.63 with no impact to contract time.

4) **WCD 11 Headworks Channel Modification**
A discrepancy between the process and structural drawings resulted in the channel wall separating the headworks screen channel and bypass channel being constructed 1 foot too short. This issue was identified when the Contractor noted that the flume would extend beyond the end of the wall. The separation wall is required to properly divide the channels prior to the sump and anchor the flume. To correct this, the wall was extended by 1 foot. The Town authorized this work to take place tracking time and material (T&M) expended. The work has been completed and Contractor submitted T&M records. This change results in an added cost of $2,903.88 with no impact to contract time.

5) **WCD 13 Blower Canopy Revisions**
The blower canopy for the SBR is designed to cover the new air piping entering SBR Basin 3. The Engineer requested the Contractor raise the air line to match the elevations of the other basins. This adjustment required revisions to the aluminum guardrail at the top of the SBR basin and revisions to the blower canopy. The Contractor's supplier required additional engineering effort to revise the canopy design. This change results in an added cost of $840.50 with no impact on contract time.

The table below provides a summary of components included within this change order:

Description	Cost Change	Adjustment in Contract Time (Calendar Days)
Chemical Pump Extended Warranty	$5,716.50	0
Headworks XP Exit Light	$9,646.00	0
Parshall Flume Installation	$3,906.63	0
Headworks Channel Modification	$2,903.88	0
Air Piping Canopy	$840.50	0
Total:	**$23,013.51**	**0**

RFI-38 CHEMICAL PUMP EXTENDED WARRANTY

Commonwealth Engineers
7256 Company Drive
Indianapolis, Indiana 46237
P: (317) 888-1177

Project: S22145 Bristol - Wastewater Treatment Plant Improvements
Bristol, Indiana 46507

RFI #RFI-38: Existing Chem Room

Revision	0	**Status**	Closed on 08/11/25
To	Amy Mendoza (Commonwealth Engineers Inc. (CP)) Darren Wells (Commonwealth Engineers, Inc. - North) *(Response Required)*	**From**	Russell Jacobs (Robert E. Crosby) 2805 Freeman Street?Fort Wayne Fort Watne, Indiana 46802
Date Initiated	May 12, 2025	**Due Date**	Jul 28, 2025
Location		**Project Stage**	Course of Construction
Cost Impact	TBD	**Schedule Impact**	
Spec Section	DS 00 - General Requirements	**Cost Code**	
Drawing Number		**Reference**	
Linked Drawings			
Received From	Russell Jacobs (Robert E. Crosby)		
Copies To	Jeff Carlson (Commonwealth Engineers, Inc. - North), Baylee Girdham (Commonwealth Engineers Inc. - South Bend), Russell Jacobs (Robert E. Crosby), Zack Lambert (Commonwealth Engineers Inc. (CP)), Dan Lauer (Robert E. Crosby), Chris Markley (Robert E. Crosby), Mike Mattingly (Robert E. Crosby), Amy Mendoza (Commonwealth Engineers Inc. (CP)), Luke Parrish (Robert E. Crosby), Cody Powers (Commonwealth Engineers Inc. - South Bend), Darren Wells (Commonwealth Engineers, Inc. - North)		

Activity

Question

Question from Russell Jacobs Robert E. Crosby *on Monday, May 12, 2025 at 03:21 PM EDT*

See attached

Information requested regarding existing Ferric chloride and the temp feed line(s) routed to the new SBR Process

Attachments
Existing Chem Room.pdf

Official Response

Response from Amy Mendoza Commonwealth Engineers Inc. (CP) *on Monday, Aug 11, 2025 at 08:27 AM EDT*

This item (extended pump warranty) will be included in the next combined change order.

Official Response

Response from Russell Jacobs Robert E. Crosby *on Monday, Jul 21, 2025 at 12:34 PM EDT*

Attached is the revised pricing for the extended warranty period, as requested.
Please note that the extended warranty for the Chemical Pump Skid covers **parts only**. Labor for part installation or replacement is **not included** under the extended warranty

Attachments
RFI# 38 Extended Warranty Estimate 2023.pdf

Official Response

Response from Amy Mendoza Commonwealth Engineers Inc. (CP) *on Thursday, Jul 10, 2025 at 04:50 PM EDT*

Per email correspondence, the Contractor has the following revised plan:

"It is our intent to install the new pump skid within the existing chemical room. However, we may opt to stub the line up outside the chemical room and penetrate through the masonry wall. Please note that any external exposed carrier piping will be heat traced accordingly."

This is acceptable to the Engineer.

The Town would like to proceed with adding the extended warranty via next CO, but the vendor offered a reduced cost by removing the cost of one service trip from cost of warranty (two were originally included), and the Owner would pay for the service trip if it is necessary. Please provide final pricing of this to include in CO.

Official Response

Response from Russell Jacobs Robert E. Crosby *on Tuesday, Jun 10, 2025 at 03:49 PM EDT*

The New Chemical Pump skid is available.

In lieu of utilizing the existing chemical building as referenced below we propose the following:

Mount chem skid in the SBR pipe gallery. Run temporary poly chem lines to permanent feed line. Provide 275-gallon IBC caged poly tote and place in SBR pipe Gallery (Owner to provide Ferric Chloride and manage/control chem system)
Relocate Chem skid once control room/Chemical room is complete

Extended warranty on Chemical Skid $6,890.00 (if required)
Additional Start up $1,800.00 (if required)

Official Response

Response from Amy Mendoza Commonwealth Engineers Inc. (CP) *on Friday, May 30, 2025 at 11:40 AM EDT*

It is not anticipated that the existing ferric chloride pump can be used to temporarily dose at the new SBR. Contractor shall check the lead time on the new chemical pumps to determine if they can be received prior to completion of Part 1 of Contract. Temporary chemical feed lines shall be set up between the existing chemical building and connected to Line PM-B temporarily. If this occurs during winter, the temporary line will either need to be buried or jacketed/heat traced. Contractor to submit proposed temporary line and tie-in method for Engineer review.

The approx. location of the ex. chemical building relative to the improvements and new Chemical feed line PM-B is shown in the attached pdf.

Attachments
EX. Chem Bldg. Location and PM-B.pdf

All Replies

Response from Amy Mendoza Commonwealth Engineers Inc. (CP) *on Monday, Aug 11, 2025 at 08:27 AM EDT*

This item (extended pump warranty) will be included in the next combined change order.

Response from Russell Jacobs Robert E. Crosby *on Monday, Jul 21, 2025 at 12:34 PM EDT*

Attached is the revised pricing for the extended warranty period, as requested.
Please note that the extended warranty for the Chemical Pump Skid covers **parts only**. Labor for part installation or replacement is **not included** under the extended warranty

Attachments
RFI# 38 Extended Warranty Estimate 2023.pdf

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The approx. location of the ex. chemical building relative to the improvements and new Chemical feed line PM-B is shown in the attached pdf.

Attachments
EX. Chem Bldg. Location and PM-B.pdf

7/18/2025		Description:							RFI 38 Chemical System							Job:	24105	
Description	**Qty.**	**B**	**H**	**L**	**TOT.**	**UM**	**Crew**	**MH**	**UM**	**UPL**	**Labor**	**UPM**	**Materials**	**UP JE**	**Job Exp.**	**UPS**	**Subcontracts**	**Totals**
Project Manager							PM	2	HR	$ 225	450							450
Site Supervision / As-Builts											0							0
Layout / As-Builts											0							0
Tools / Equipment											0							0
Dumpster / Cleanup											0							0
Mobilization											0							0
Temp. Utilities / Fuel											0							0
Winter Protection											0							0
Testing											0							0
											0		0					0
BL Anderson											0		0					0
Extended Warranty											0		0				4900	4900
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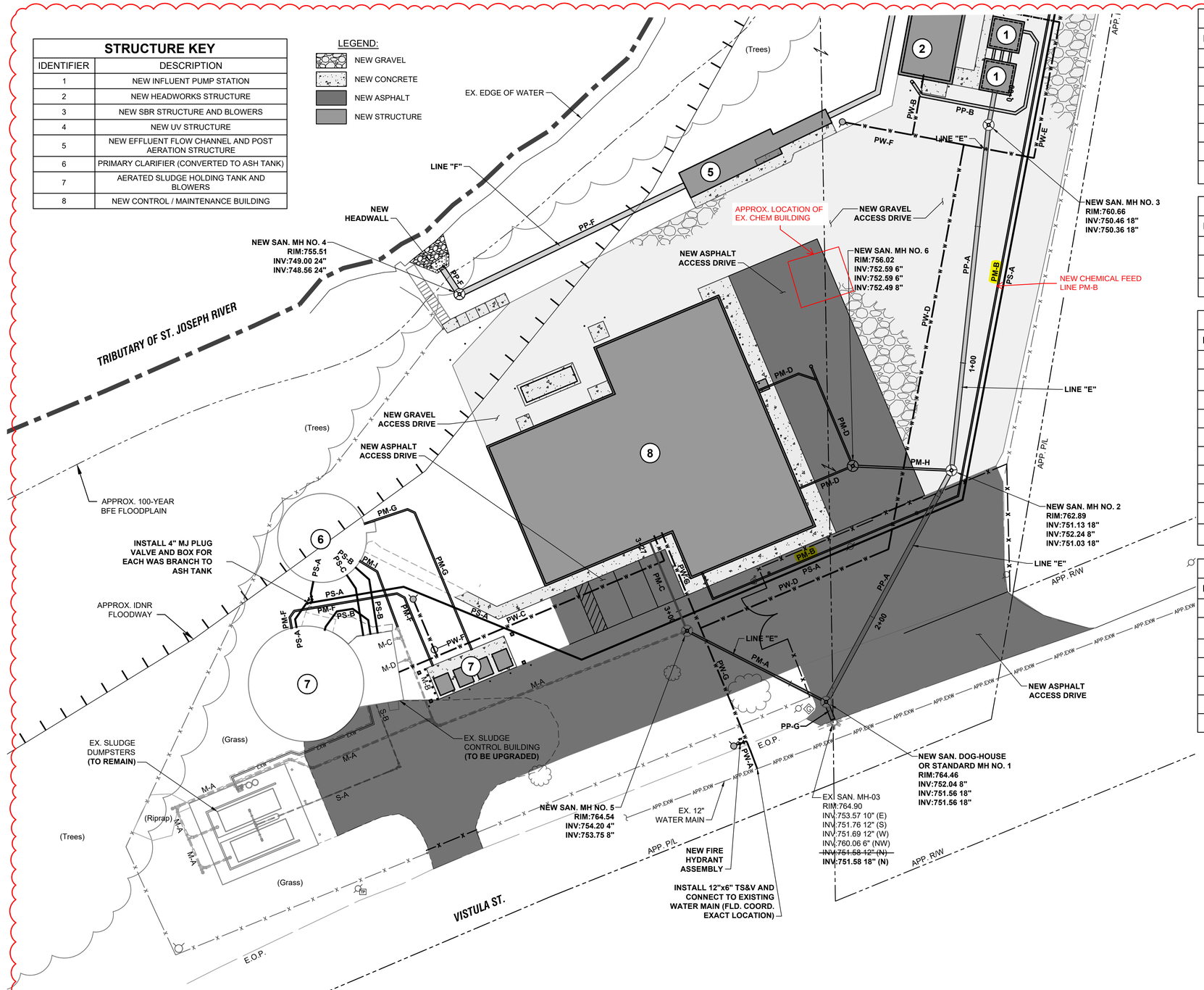
Subtotal											450		0		0		4900	5350
Sucontractor Bond																0	0	0
Sales Tax (If YES, Tax General Conditions ONLY)											Tax Exempt (YES or NO):		**YES**		----------------------->	7%	0	0
Project Insurance																0	0	0
Builders Risk																	0	0
Job Bond																1%	54	54
Architectural																0%	0	0
Sub Total											450		0		0		4954	5404
OverHead & Profit															L&M Columns	15%	68	68
OverHead & Profit															Subcontractor Column	5%	245	245
Total Job											450		0		0		5267	$5,716.50

STRUCTURE KEY

IDENTIFIER	DESCRIPTION
1	NEW INFLUENT PUMP STATION
2	NEW HEADWORKS STRUCTURE
3	NEW SBR STRUCTURE AND BLOWERS
4	NEW UV STRUCTURE
5	NEW EFFLUENT FLOW CHANNEL AND POST AERATION STRUCTURE
6	PRIMARY CLARIFIER (CONVERTED TO ASH TANK)
7	AERATED SLUDGE HOLDING TANK AND BLOWERS
8	NEW CONTROL / MAINTENANCE BUILDING

LEGEND:
- NEW GRAVEL
- NEW CONCRETE
- NEW ASPHALT
- NEW STRUCTURE



SITE PIPING IMPROVEMENTS PLAN - SOUTH PORTION

SCALE: 1"=20'-0"

0 20' 40'

NEW PROCESS PIPING LEGEND

IDENTIFIER	DESCRIPTION
PP-A	18" INFLUENT SEWER TO INFLUENT PUMP STATION (SEE LINE "E")
PP-B	12" FORCE MAIN TO HEADWORKS
PP-C	16" PRELIMINARY EFFLUENT TO SBR'S
PP-D	24" SBR EFFLUENT TO UV
PP-E	24" UV EFFLUENT TO EFFLUENT FLOW CHANNEL
PP-F	24" PLAT EFFLUENT TO OUTFALL
PP-G	18" INFLUENT FROM EX. SAN. MH-03 TO NEW SAN. MH NO. 1 (7 LF @ 0.30% SLOPE)

NEW SLUDGE PIPING LEGEND

IDENTIFIER	DESCRIPTION
PS-A	4" WAS TO ASH TANKS
PS-B	4" WASTE SLUDGE TO POLYMER FLOCCULATOR (SLUDGE CONTROL BUILDING)
PS-C	4" DECANT TO EX. M-C LINE (SLUDGE CONTROL BUILDING)

NEW MISCELLANEOUS PIPING LEGEND

IDENTIFIER	DESCRIPTION
PM-A	8" SEWER FROM NEW SAN. MH NO. 5 TO NEW SAN. MH NO. 1
PM-B	(3) 1" TUBING FOR FERRIC INSIDE 8" HDPE CASING TO SBR PIPE GALLERY
PM-C	4" BUILDING SEWER LINE TO NEW SAN. MH NO. 5
PM-D	6" BUILDING SEWER LINE TO NEW SAN. MH NO. 6
PM-E	6" AIR LINE FROM SBR BLOWERS TO SBR'S
PM-F	6" AIR LINE FROM ASH BLOWERS 1 AND 2 TO ASH TANK NO. 1
PM-G	6" AIR LINE FROM ASH BLOWERS 3 AND 4 TO ASK TANK NO. 2
PM-H	8" SEWER LINE FROM NEW MH NO. 06 TO NEW SAN. MH NO. 2
PM-I	6" DRAIN LINE FROM AERATED SLUDGE HOLDING TANK TO EX. DRAIN LINE M-B
PM-J	12" RCP FROM NEW STORM INLET TO NEW END SECTION

NEW WATER PIPING LEGEND

IDENTIFIER	DESCRIPTION
PW-A	NEW 6" WATER SUPPLY
PW-B	NEW 1" TO NEW HEADWORKS BUILDING
PW-C	NEW 3" TO ASH CONTROL BUILDING
PW-D	NEW 3" TO HEADWORKS
PW-E	NEW 2" TO SBR PIPE GALLERY
PW-F	NEW 2" TO YARD HYDRANT
PW-G	NEW 3" TO CONTROL BUILDING

CONFORMED SET
DATE: 06/2024

1-ADD 2

COMMONWEALTH ENGINEERS, INC.
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https://commonwealthengineers.com/
OFFICE LOCATIONS IN:
INDIANAPOLIS, IN. (2)
EVANSVILLE, IN.
FORT WAYNE, IN.
CROWN POINT, IN.
BOWLING GREEN, KY.
SOUTH BEND, IN.

DARREN S. WELLS
REGISTERED
No. 10100200
STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 12/21/2023 Date

TOWN OF BRISTOL
ELKHART COUNTY, INDIANA
WASTEWATER TREATMENT PLANT IMPROVEMENTS PROJECT

Indiana811 Know what's below. 811 before you dig. 1-800-382-5544 (ITS THE LAW)

No.	Submittal / Revision	By	Date
1	REPLACE SHEET - ADD 2	DSW	01/24/24

Designed By:	Drawn By:	Checked By:
DSW	JAJ	AR
Issue Date: 12/21/2023	Project No: S22145	Scale: AS SHOWN

SITE PIPING IMPROVEMENTS PLAN - SOUTH PORTION

Drawing No: **C-05**

Sheet: 23 OF 216

File: Z:\SHARED\IN CLIENTS A-L\BRISTOL\D S22145 WWTP IMPROVEMENTS\06 CADD\A CURRENT FILES\1 DRAWINGS\07-EX SITE IMPROVEMENTS.DWG
Saved: 6/13/2024 2:19:45 PM Plotted: 6/13/2024 2:26:24 PM Current User: Max Goldstein LastSavedBy: mgoldstein

Part 8 of the Detailed Specifications, Section 00 General Requirements - 3.05 Sequencing sub section 9a States: **Existing chemical feed facilities to temporarily remain in service –temporary feed line(s) shall be routed to the new SBR process**.

Please provide clarification regarding the above statement.

Pictures showing existing Ferric Chloride room and existing pump system

RFI-55 HEADWORKS XP EXIT LIGHTS

Commonwealth Engineers
7256 Company Drive
Indianapolis, Indiana 46237
P: (317) 888-1177

Project: S22145 Bristol - Wastewater Treatment Plant Improvements
Bristol, Indiana 46507

RFI #RFI-55: headworks XP exit lights

Revision	0	**Status**	Closed on 10/14/25
To	Darren Wells (Commonwealth Engineers, Inc. - North) *(Response Required)* Steve Dugan (Commonwealth Engineers Inc. (Indy)) *(Response Required)* Amy Mendoza (Commonwealth Engineers Inc. (CP))	**From**	Russell Jacobs (Robert E. Crosby) 2805 Freeman Street?Fort Wayne Fort Watne, Indiana 46802
Date Initiated	Oct 3, 2025	**Due Date**	Oct 10, 2025
Location		**Project Stage**	Course of Construction
Cost Impact	$9,646.00	**Schedule Impact**	Yes (Unknown)
Spec Section		**Cost Code**	
Drawing Number		**Reference**	
Linked Drawings			
Received From	Russell Jacobs (Robert E. Crosby)		
Copies To	Jeff Carlson (Commonwealth Engineers, Inc. - North), Procore Commonwealth (Commonwealth Engineers Inc. (Indy)), Jason Gibson (Commonwealth Engineers Inc. (Indy)), Baylee Girdham (Commonwealth Engineers Inc. - South Bend), Russell Jacobs (Robert E. Crosby), Zack Lambert (Commonwealth Engineers Inc. (CP)), Dan Lauer (Robert E. Crosby), Chris Markley (Robert E. Crosby), Mike Mattingly (Robert E. Crosby), Amy Mendoza (Commonwealth Engineers Inc. (CP)), Luke Parrish (Robert E. Crosby), Cody Powers (Commonwealth Engineers Inc. - South Bend), Darren Wells (Commonwealth Engineers, Inc. - North)		

Activity

Question

Question from Russell Jacobs Robert E. Crosby *on Friday, Oct 3, 2025 at 08:48 AM EDT*
See attahed Pricing associated with Exit lighting upgared

Attachments
Headworks Exit Light change to XP Estimate 2023.pdf

Official Response

Response from Amy Mendoza Commonwealth Engineers Inc. (CP) *on Tuesday, Oct 14, 2025 at 10:25 AM EDT*
Engineer has reviewed pricing and finds it fair. We will include this in an upcoming CO.

All Replies

Response from Amy Mendoza Commonwealth Engineers Inc. (CP) *on Tuesday, Oct 14, 2025 at 10:25 AM EDT*
Engineer has reviewed pricing and finds it fair. We will include this in an upcoming CO.

Date: 9/26/2025 Description: Upgrade exit devices in Haedworks to Explosion Proof Job:

Description	Qnty.	B	H	L	TOT.	UM	Crew	MH	UM	UPL	Labor	UPM	Materials	UP JE	Job Exp.	UPS	Subcontracts	Totals
Project Manager							PM	1	HR	$ 225	225							225
Site Supervision / As-Builts										$ 95.00	0							0
Layout / As-Builts										$ 78.00	0							0
Tools / Equipment										$ 78.00	0							0
Dumpster / Cleanup										$ 78.00	0							0
Mobilization										$ 78.00	0							0
Temp. Utilities / Fuel										$ 78.00	0							0
Winter Protection										$ 78.00	0							0
Testing										$ 78.00	0							0
Headworks Building											0		0					0
Exit light upgrade to XP	1										0		0				8854	8854
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Subtotal											225		0		0		8854	9079
Sucontractor Bond																0	0	0
Sales Tax (If YES, Tax General Conditions ONLY)											**Tax Exempt (YES or NO):**		**YES**		------------------->	7%	0	0
Project Insurance																0	0	0
Builders Risk																	0	0
Job Bond																1%	91	91
Architectural																0%	0	0
Sub Total											225		0		0		8945	9170
OverHead & Profit															L&M Columns	15%	34	34
OverHead & Profit															Subcontractor Column	5%	443	443
Total Job											225		0		0		9421	9646

RE Crosby
Fort Wayne, In
9.26.2025

Job: Bristol headworks XP exit lights

We are pleased to submit the following bid for the above-described job. Our number includes all needed labor and material for the following items.

- Replace (2) LE exit lights with EX exit lights in headworks
- Drawing E2-1 show installing LE exit fixtures in headworks dumpster room and screener room these areas are class 1 div 1 locations the exit lights will need to be EX fixtures

Labor: $.00
Materials: $8,854.00
Total: $8,854.00

D&D ELECTRIC, 8230 W. OLD ROAD 30, ETNA GREEN, IN 46524
T: 574.858.0238 F: 574.858.6005
WWW.DND-ELECTRIC.COM

WCD 10 PARSHALL FLUME INSTALLATION

COMMONWEALTH ENGINEERS, INC.
A wealth of resources to master a common goal.

Environmental Engineers & Consultants
7256 Company Drive
Indianapolis, IN 46237
PH : (317) 888-1177 FAX: (317) 887-8641

WORK CHANGE DIRECTIVE #10

TO: Russell Jacobs, Crosby Construction

FROM: Amy Mendoza, P.E., Commonwealth Engineers, Inc.
Jacob Ullom, P.E., CE Solutions, Inc.

CC: Darren Wells, P.E., Commonwealth Engineers, Inc.

DATE: July 22, 2025

SUBJECT: Town of Bristol, Indiana Wastewater Treatment Plant Improvements, Work Change Directive No. 10

Issue:

1. The planned location for the Parshall flume in the headworks channel is approximately 1.5 inches too high for the flume to be installed.

2. The planned location for the effluent Parshall flume in the post aeration structure is approximately 3 inches too high for the flume to be installed. Installation details are shown correctly on the process drawing sheet D2-02.

Work Directive:

1. The Engineer is open to considering removing a portion of the headworks flume to fit it in the headworks channel. Engineer is requesting Contractor suggest option(s) for making this work by adjusting the flume without impacting the flow portion of the flume.

2. The Engineer has determined the best solution to the effluent Parshall flume installation is to remove 3 inches of concrete from the channel. It is anticipated that rebar will be reached when removing this concrete. The exposed rebar shall be coated with Sika FerroGard 903 following the manufacturer's recommendations and the flume shall be grouted into place as originally planned. Extreme caution shall be taken to not damage the lower mat of rebar. Contractor shall verify extent of concrete that is removed and report this to CEI and CES via RPR.

The Contractor shall review this Work Change Directive No. 10 and notify the Engineer if any additional clarifications are necessary regarding this issue prior to submitting their proposal for the work, if applicable.

Attachments:

- Sika FerroGard 903 Product Data Sheet

BUILDING TRUST

PRODUCT DATA SHEET

Sika® FerroGard®-903

Penetrating, corrosion inhibiting, impregnation coating for hardened concrete

PRODUCT DESCRIPTION

Sika® FerroGard®-903 is a corrosion inhibiting impregnation coating for hardened concrete surfaces. It is designed to penetrate the surface and then to diffuse in vapor or liquid form to the steel reinforcing bars embedded in the concrete. Sika® FerroGard®-903 forms a protective layer on the steel surface which inhibits corrosion caused by the presence of chlorides as well as by carbonation of concrete.

How it works

Sika® FerroGard®-903 is a combination of amino alcohols, and organic and inorganic inhibitors that protects both the anodic and cathodic parts of the corrosion cell. This dual action effect dramatically delays the initiation of corrosion and greatly reduces the overall corrosion activity. Sika Sika® FerroGard®-903 protects the embedded steel by depositing a physical barrier in the form of a protective layer on the surface of the steel reinforcement. This barrier inhibits corrosion of the steel.

USES

Sika® FerroGard®-903 is recommended for all steel-reinforced, prestressed, precast, post tensioned or marine concrete. Use of Sika® FerroGard®-903:

- Steel-reinforced concrete, bridges and highways exposed to corrosive environments (deicing salts, weathering)
- Building facades and balconies
- Steel-reinforced concrete in or near a marine environment
- Parking garages
- Piers, piles, and concrete dock structures
- As part of Sika's system approach for buildings and civil engineering structures

CHARACTERISTICS / ADVANTAGES

Sika® FerroGard®-903 offers owners, specifiers, port authorities, DOTs, and engineers, a new technology in corrosion inhibition that can easily be applied to the surface of existing concrete to extend the service life of any reinforced concrete structure.

- Protects against the harmful effects of corrosion by penetrating the surface of even the most dense concrete and diffusing to the steel to inhibit corrosion.
- Enhances the durability of reinforced concrete.
- Does not require concrete removal.
- Environmentally sound.
- Does not contain calcium nitrite.
- Easily applied by either spray or roller to all existing reinforced concrete.
- Can be applied to reinforced concrete that already exhibits corrosion.
- Adds additional benefits when used prior to protective coatings in concrete restoration systems.
- Water based for easy handling and application.
- Not a vapor barrier; allows vapor diffusion.
- FerroGard has been proven effective in both laboratory (ASTM G109/Cracked Beams) and field analysis.
- ANSI/NSF Standard 61 potable water approved

PRODUCT INFORMATION

Packaging	5 gallon pails with spout, 55 gallon drums.
Appearance / Color	Pale Yellow
Shelf Life	18 months minimum in original, unopened container
Storage Conditions	Store at 40–95 °F (4–35 °C). Protect from freezing. If frozen, discard.
Density	1.13 (9.4 lbs./gal.)
pH-Value	11 (±1)
Viscosity	15 cps

TECHNICAL INFORMATION

Penetration Depth

Key Criteria	Performance Level	Test Method/Institute
Corrosion Inhibition	Sika® FerroGard®-903 corrosion inhibitors delay the onset of corrosion and reduce the rate of corrosion by 65% versus control specimen after 1 year.	1
Penetration Rate in hardened concrete	Sika® FerroGard®-903 penetrates independently of orientation (horizontal, vertical, overhead) at a rate of 1/10 to 4/5 inches (2.5 to 20 mm)per day, depending on the density of the concrete.	2
Depth of Penetration	Sika® FerroGard®-903 penetrates up to 3 inches (76 mm) in 28 days.	2
Protective layer on steel	Sika® FerroGard®-903 forms a protective layer on the reinforcing steel of high integrity measured at as much as 100 Å in thickness	3
Displacement of chlorides from steel surface	Sika® FerroGard®-903 forms a continuous film on the reinforcing steel and displaces chloride ions from the steel surface.	3
Corrosion Rate Field Monitoring	Reduction of corrosion rates in excess of 65%.	4

Test Method/Institute:

[1] Cracked Concrete Beam Test (adapted from ASTM G109)
[2] Secondary Neutron Mass Spectroscopy (SNMS) / Institute for Radiochemistry, Karlsruhe (Germany), Prof. Dr. J. Goschnick.
[3] X-ray Photon Spectroscopy (XPS) and Secondary Ion Mass Spectroscopy (SIMS) / Brundle and Associates, San Jose, CA and University Heidelberg (Germany), Prof. M. Grunze.
[4] Performance of Corrosion Inhibitors in Practice, Graeme Jones, C-Probe Technologies Ltd., 2000

APPLICATION INFORMATION

Coverage

For normal concrete, application is 200 ft.²/gal. each coat. A minimum of two coats is always recommended. For dense concrete, application may exceed 300 ft.2/gal. Therefore, more than two coats may be required to achieve the **total application rate: 100 ft.²/gal.**

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Before applying Sika® FerroGard®-903 be sure the

surface is clean and sound. Remove all dirt, dust, oil, grease, efflorescence or existing coatings from concrete surface by steam cleaning, waterblasting or slightly sandblasting. Allow concrete surface to dry prior to application of Sika® FerroGard®-903. The dryer the surface the better the penetration and effectiveness.

APPLICATION

Sika® FerroGard®-903 is applied by roller, brush or spray on concrete surfaces. When spraying, use a conventional airless spray system or hand-pressure equipment. **A minimum of two coats is always recommended**. Dense substrates may require more coats. Waiting time between coats of Sika® FerroGard®-903 is at least 1 hour. Allow a minimum of one day to allow Sika FerroGard 903 to dry and penetrate.
When Sika® FerroGard®-903 is used prior to the application of a repair mortar, concrete overlay, protective coating, Sikafloor system or any other application, care must be taken to remove any residue remaining on the surface from the application of Sika® FerroGard®-903. Clean the substrate in such a manner (i.e. push the water in one direction away and off from the surface to be overcoated) to completely remove any residue. Horizontal surfaces require pressure washing (2,000 psi minimum) to remove the residue. Vertical surfaces may be rinsed with water or pressure washed. The use of Sika Armatec 110 EpoCem as a bonding agent prior to the application of repair mortars or concrete overlays is suggested. Drying times depend on environmental conditions, absorbency of the substrate and maximum recommended moisture content for the subsequently applied system.

LIMITATIONS

- Minimum ambient and substrate temperatures 35 °F.
- Do not apply when temperature is expected to fall below 35 °F within 12 hours.
- If the applied surfaces will be submerged after the application of Sika® FerroGard®-903, a waterproofing coating must be applied prior to submersion.
- Substrate should be as dry as possible prior to the application.
- Protect glass, wood, brick, galvanized steel, copper and exposed aluminum during the application.
- Maximum chloride content of concrete structures intended to be treated with Sika® FerroGard®-903 is 6 lbs./y^3 (measured at the level of the reinforcing steel). For levels up to 10 lbs./y^3, consult technical service.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

OTHER RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates (“SIKA”), the user must always read and follow the warnings and instructions on the product’s most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA’s Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product’s shelf life. User determines suitability of product for intended use and assumes all risks. User’s and/or buyer’s sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: +1-800-933-7452
Fax: +1-201-933-6225
usa.sika.com

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Description: RFI 44 WCD 10 Flume installing details Job: 24105

Description	Qnty.	B	H	L	TOT.	UM	Crew	MH	UM	UPL	Labor	UPM	Materials	UP JE	Job Exp.	UPS	Subcontracts	Totals
Project Manager							PM	2	HR	$ 225	450							450
Site Supervision / As-Builts								7	HR	$ 125	875							875
Layout / As-Builts											0							0
Tools / Equipment											0				555			555
Dumpster / Cleanup											0							0
Mobilization											0							0
Temp. Utilities / Fuel											0							0
Winter Protection											0							0
Testing											0							0
Carpenter								17.5	HR	$ 85.00	1488		0					1488
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Subtotal											2813		0		555		0	3368
Sucontractor Bond																0	0	0
Sales Tax (If YES, Tax General Conditions ONLY)											Tax Exempt (YES or NO):		**YES**		---------------------->	7%	0	0
Project Insurance																0	0	0
Builders Risk																	0	0
Job Bond																1%	34	34
Architectural																0%	0	0
Sub Total											2813		0		555		34	3402
OverHead & Profit															L&M Columns	15%	505	505
OverHead & Profit															Subcontractor Column	5%	0	0
Total Job											2813		0		555		539	$3,906.63

WCD 11 HEADWORKS CHANNEL MODIFICATION

COMMONWEALTH ENGINEERS, INC.
A wealth of resources to master a common goal.

Environmental Engineers & Consultants
7256 Company Drive
Indianapolis, IN 46237
PH : (317) 888-1177 FAX: (317) 887-8641

WORK CHANGE DIRECTIVE #11

TO: Russell Jacobs, Crosby Construction

FROM: Amy Mendoza, P.E., Commonwealth Engineers, Inc.
Jacob Ullom, P.E., CE Solutions, Inc.

CC: Darren Wells, P.E., Commonwealth Engineers, Inc.

DATE: August 14, 2025

SUBJECT: Town of Bristol, Indiana Wastewater Treatment Plant Improvements, Work Change Directive No. 11

Issue:

1. The channel wall separating the headworks screen channel and bypass channel was constructed 1 foot too short due to a discrepancy between the process and structural drawings on the length of the channel wall prior to the sump. The issue was noticed when the Contractor asked about installing the flume with one foot of the flume extending beyond the end of the channel wall.

2. The channel separation wall is necessary to separate the channels prior to the sump.

Work Directive:

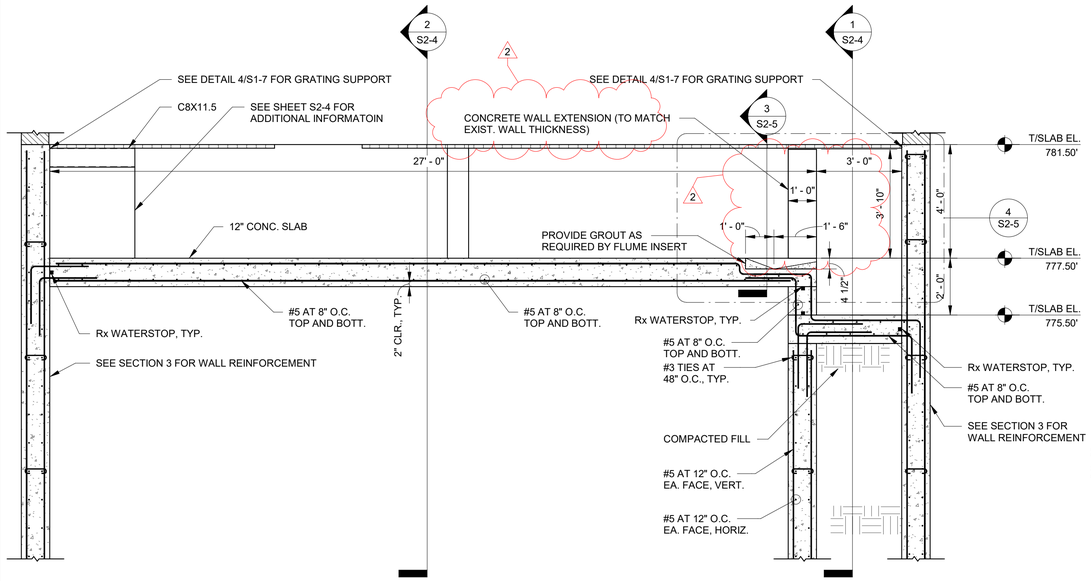
1. The channel wall shall be extended by 1 foot following the attached revised plan sheet S2-5.

2. The flume shall be installed against the extended wall.

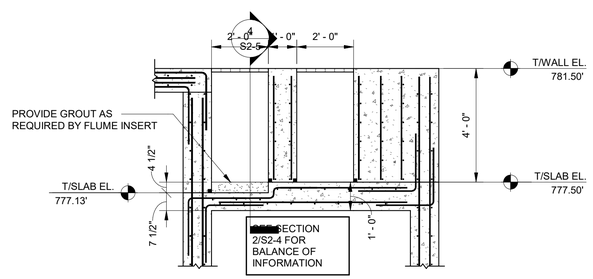
The Contractor shall review this Work Change Directive No. 11 and notify the Engineer if any additional clarifications are necessary regarding this issue prior to submitting their proposal for the work.

Attachments:

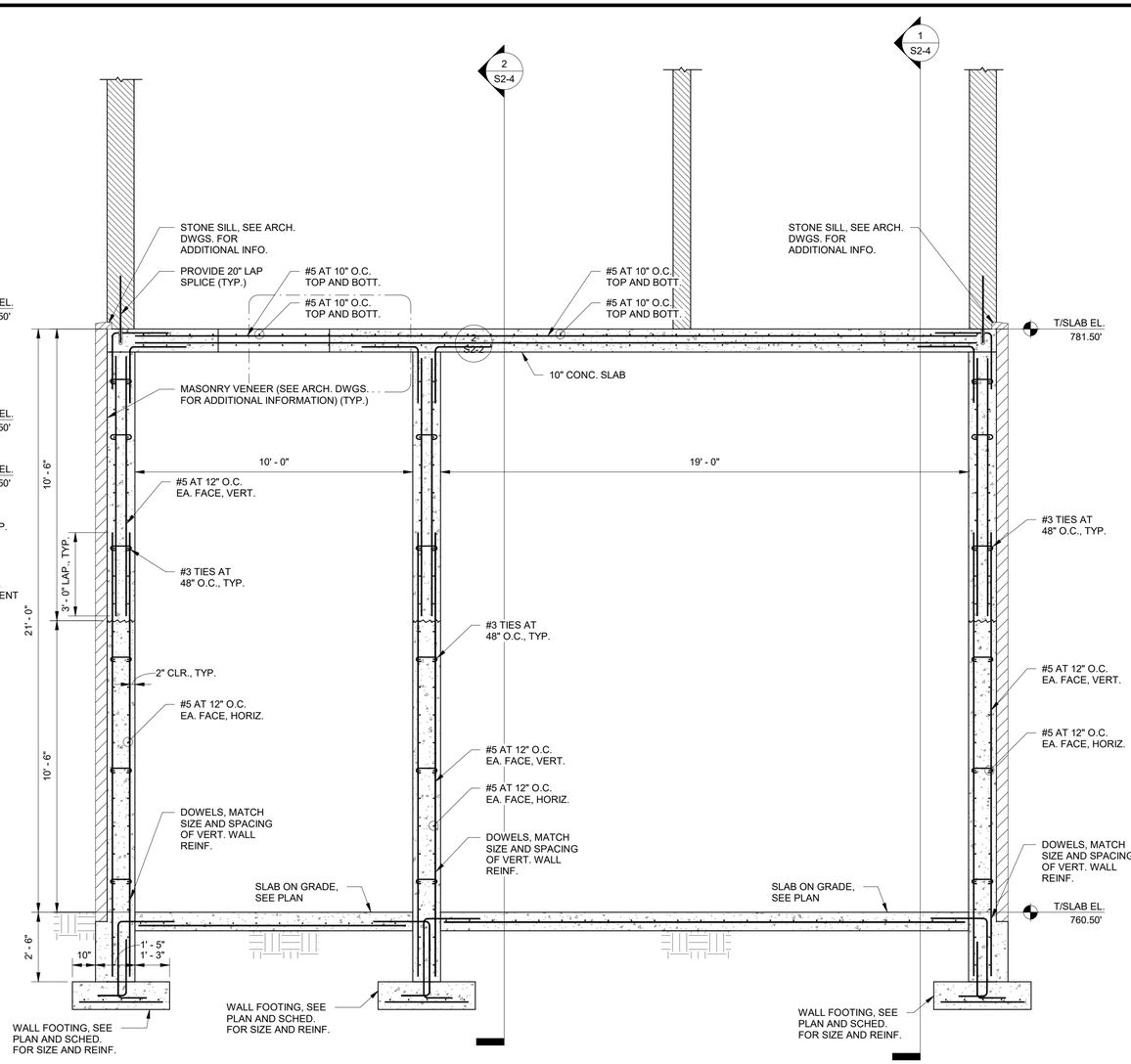
- Revised structural drawing S2-5



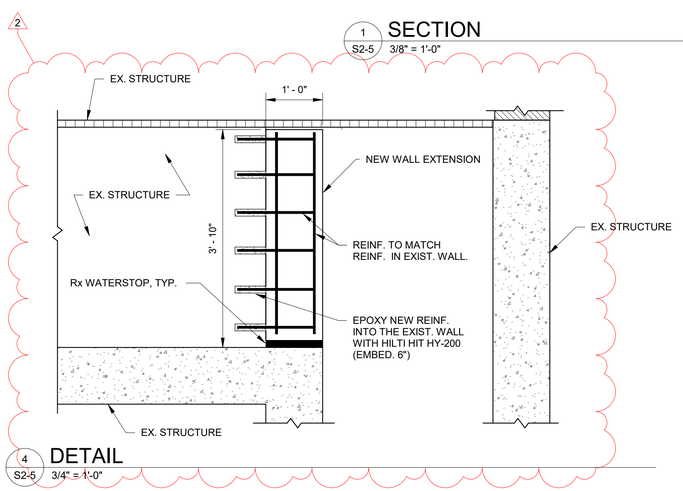
2 S2-5 SECTION
3/8" = 1'-0"



3 S2-5 SECTION
3/8" = 1'-0"



1 S2-5 SECTION
3/8" = 1'-0"



4 S2-5 DETAIL
3/4" = 1'-0"

CONFORMED SET DATE: 06/2024

COMMONWEALTH ENGINEERS, INC.
https://commonwealthengineers.com/
OFFICE LOCATIONS IN: (2)
INDIANAPOLIS, IN.
EVANSVILLE, IN.
FORT WAYNE, IN.
CROWN POINT, IN.
BOWLING GREEN, KY.
SOUTH BEND, IN.

JACOB JAMES ULLOM REGISTERED No. PE12000743 STATE OF INDIANA PROFESSIONAL ENGINEER
12-21-23
Signature Date

CE Solutions structural engineers
8770 North St., Ste. 300 | Fishers, IN 46038
317.818.5353
ceindy.com

TOWN OF BRISTOL
ELKHART COUNTY, INDIANA
WASTEWATER UTILITY
IMPROVEMENTS PROJECT

Indiana 811 Know what's below. Call before you dig. 1-800-382-5544 (ITS THE LAW)

No.	Submittal / Revision	By	Date
1	RFI #18		01/02/25
2	WALL EXTENSION		08/13/25

Designed By:	Drawn By:	Checked By:
PE	CAD	PM
Issue Date:	Project No:	Scale:
12/21/23	23-173	As indicated

NEW HEADWORKS SECTIONS AND DETAILS
SECTIONS AND DETAILS

Drawing No:
S2-5
Sheet: 109 OF 216

Saved: 8/14/2025 10:54:00 AM Current Local File: C:\Users\jjullom\Documents\23-173_S2_Headworks Bldg_V23_jjullom.rvt

Description:							RFI 46 WCD 11 Headworks Channel wall modification									Job:	24105	
Description	**Qnty.**	**B**	**H**	**L**	**TOT.**	**UM**	**Crew**	**MH**	**UM**	**UPL**	**Labor**	**UPM**	**Materials**	**UP JE**	**Job Exp.**	**UPS**	**Subcontracts**	**Totals**
Project Manager							PM	2	HR	$ 225	450							450
Site Supervision / As-Builts								2	HR	$ 125	250							250
Layout / As-Builts											0							0
Tools / Equipment											0				400			400
Dumpster / Cleanup											0							0
Mobilization											0							0
Temp. Utilities / Fuel											0							0
Winter Protection											0							0
Testing											0							0
Carpenter								16.5	HR	$ 85.00	1403		0					1403
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Subtotal											2103		0		400		0	2503
Sucontractor Bond																0	0	0
Sales Tax (If YES, Tax General Conditions ONLY)													**Tax Exempt (YES or NO):**	**YES**	---------->	7%	0	0
Project Insurance																0	0	0
Builders Risk																	0	0
Job Bond																1%	26	26
Architectural																0%	0	0
Sub Total											2103		0		400		26	2529
OverHead & Profit															L&M Columns	15%	375	375
OverHead & Profit															Subcontractor Column	5%	0	0
Total Job											2103		0		400		401	$2,903.88

WCD 13 BLOWER CANOPY

COMMONWEALTH ENGINEERS, INC.
A wealth of resources to master a common goal.

Environmental Engineers & Consultants
7256 Company Drive
Indianapolis, IN 46237
PH : (317) 888-1177 FAX: (317) 887-8641

WORK CHANGE DIRECTIVE #13

TO: Russell Jacobs, Crosby Construction

FROM: Amy Mendoza, P.E., Commonwealth Engineers, Inc.

CC: Darren Wells, P.E., Commonwealth Engineers, Inc.

DATE: August 25, 2025

SUBJECT: Town of Bristol, Indiana Wastewater Treatment Plant Improvements, Work Change Directive No. 13

Issue:

The submittal for the new blower canopy had the height of the high side of the blower canopy conflicting with the new air line to SBR basin #3. Additionally, the Engineer prefers to raise the air line to approximately match the air lines for the other basins. These revisions will require the aluminum guardrail on the top of the SBR basin to be revised as the brackets are in conflict with the adjusted blower canopy.

Work Directive:

1. Contractor shall raise the high side of the blower canopy to 14'-10" and connect the canopy to the top of wall. Note, we recommend confirming plan elevations with field surveying. Since there are potential differences in the field, Engineer is not taking any liability if this dimension causes issues with other elements of the project.

2. New center line of the SBR #3 blower piping shall be 774.00. This elevation can be lowered down 1-2 inches as needed for constructability.

3. The aluminum guardrails shall be revised as submitted by the Contractor (attached) adjusting the handrail installation details at SBR #3 along the blower canopy.

The Contractor shall review this Work Change Directive No.13 and notify the Engineer if any additional clarifications are necessary regarding this issue prior to submitting their proposal for the work.

Attachments:

- Revised aluminum handrail submittal

Description: RFI 48 WCD #13 Blower Canopy re Engineering Job: 24105

Description	Qnty.	B	H	L	TOT.	UM	Crew	MH	UM	UPL	Labor	UPM	Materials	UP JE	Job Exp.	UPS	Subcontracts	Totals
Project Manager							PM	2	HR	$ 225	450							450
Site Supervision / As-Builts											0							0
Layout / As-Builts											0							0
Tools / Equipment											0							0
Dumpster / Cleanup											0							0
Mobilization											0							0
Temp. Utilities / Fuel											0							0
Winter Protection											0							0
Testing											0							0
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Re-engineering	1										0						300	300
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Subtotal											450		0		0		300	750
Sucontractor Bond																0	0	0
Sales Tax (If YES, Tax General Conditions ONLY)											Tax Exempt (YES or NO):		YES		------------------------>	7%	0	0
Project Insurance																0	0	0
Builders Risk																	0	0
Job Bond																1%	8	8
Architectural																0%	0	0
Sub Total											450		0		0		308	758
OverHead & Profit															L&M Columns	15%	68	68
OverHead & Profit															Subcontractor Column	5%	15	15
Total Job											450		0		0		391	$840.50