



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

February 7, 2023

VIA ELECTRONIC MAIL

Mr. R. Daniel Stevens, Director of Administration
Hamilton County Building Corporation
1 Hamilton County Square, Suite 157
Noblesville, Indiana 46060

Dear Mr. Stevens:

Re: 327 IAC 3 Construction
Permit Application
Sanitary Sewer
US 31 Corridor Infrastructure Investment Project
Phase 1A and 2B, Division 2, Water and Sewer
Permit Approval No. 24883
Bakers Corner, Indiana
Hamilton County

The application, plans and specifications, and supporting documents for the above-referenced project have been reviewed and processed in accordance with rules adopted under 327 IAC 3. Enclosed is the Construction Permit (Approval No. 24883), which applies to the construction of the above-referenced proposed sanitary sewer system to be located near the intersection of US 31 and 236th Street in Hamilton County.

Please review the enclosed permit carefully and become familiar with its terms and conditions. In addition, it is imperative that the applicant, consulting architect/engineer (A/E), inspector, and contractor are aware of these terms, conditions, and reporting and testing requirements.

It should be noted that any person affected or aggrieved by the agency's decision in authorizing the construction of the above-referenced facility may, within fifteen (15) days from date of mailing, appeal this permit by filing a request with the Office of Environmental Adjudication for an adjudicatory hearing in accordance with IC 4-21.5-3-7 and IC 13-15-6. The procedure for appeal is outlined in more detail in Part III of the attached construction permit.

Plans and specifications were prepared by Wessler Engineering, Inc., certified by Mr. Derek C. Urban, P.E., and submitted for review on December 9, 2022, with additional information submitted on December 15, 2022, and January 25, 2023.

Any questions concerning this permit may be addressed to Mr. Mike Miles of our staff, at 317/232-548.

Sincerely,

A handwritten signature in cursive script that reads "Kevin D. Czerniakowski".

Kevin D. Czerniakowski, P.E.
Section Chief
Facility Construction and
Engineering Support Section
Office of Water Quality

Project No. M-25685

Enclosures

cc: Hamilton County Health Department
Wessler Engineering, Inc.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AUTHORIZATION FOR CONSTRUCTION OF
SANITARY SEWER SYSTEM
UNDER 327 IAC 3

DECISION OF APPROVAL

The Hamilton County Building Corporation, in accordance with the provisions of IC 13-15 and 327 IAC 3 is hereby issued a permit to construct the sanitary sewer system to be located near the intersection of US 31 and 236th Street in Hamilton County. The permittee is required to comply with requirements set forth in Parts I, II and III hereof. The permit is effective pursuant to IC 4-21.5-3-4(d). If a petition for review and a petition for stay of effectiveness are filed pursuant to IC 13-15-6, an Environmental Law Judge may be appointed for an adjudicatory hearing. The force and effect of any contested permit provision may be stayed at that time.

NOTICE OF EXPIRATION DATE

Authorization to initiate construction of this sanitary sewer system shall expire at midnight one year from the date of issuance of this construction permit. In order to receive authorization to initiate construction beyond this date, the permittee shall submit such information and forms as required by the Indiana Department of Environmental Management. It is requested that this information be submitted sixty (60) days prior to the expiration date to initiate construction. This permit shall be valid for a period of five (5) years from the date below for full construction completion.

Issued on February 7, 2023, for the Indiana Department of Environmental Management.



Kevin D. Czerniakowski, P.E.
Section Chief
Facility Construction and
Engineering Support Section
Office of Water Quality

SANITARY SEWER SYSTEM DESCRIPTION

The proposed project shall provide service for 150 single-family homes, 95 acres of undeveloped light commercial property and 50 acres of underdeveloped commercial property near the referenced project location and the average design flow is 202,000 GPD (768,000 GPD, peak). The proposed project will also provide capacity for expected additional development.

The proposed project shall consist of the following construction:

- Approximately 40 feet of 8-inch diameter PVC (ASTM D3034 SDR-35 and SDR-26) sanitary sewer.
- Approximately 2,924 feet of 10-inch diameter PVC SDR-35 and SDR-26 sanitary sewer.
- Approximately 46 feet of 12-inch diameter PVC SDR-26 sanitary sewer.
- Approximately 4,158 feet of 18-inch diameter PVC ASTM F679 sanitary sewer.
- Approximately 98 feet of 24-inch diameter PVC ASTM F679 sanitary sewer.
- A new sanitary sewer Lift Station No. 1 to be located along the south side of 236th Street approximately 1,000 feet east of the intersection with Dunbar Road. Lift Station No. 1 will contain two (2) submersible pumps and each pump will have a capacity of 550 GPM at 61 feet of total dynamic head (TDH).
- A new Lift Station No. 2 to be located approximately 1,400 feet east and 2,900 feet south of the intersection of US 31 and 236th Street. Lift Station No. 2 will contain two (2) submersible pumps and each pump will have a capacity of 280 GPM at 48 feet of TDH.
- Approximately 3,025 feet of 10-inch diameter HDPE (ASTM F714 DR-11, 200 PSI) and 35 feet of 10-inch diameter ductile iron (AWWA C151, 350 PSI) sanitary sewer force main to be connected to Lift Station No. 1.
- Approximately 3,455 feet of 8-inch diameter HDPE (ASTM F714 DR-11, 200 PSI) sanitary sewer force main to be connected to Lift Station No. 2.
- Small diameter low-pressure sewer system that consists of:
 - Approximately 593 feet of 1.5-inch small diameter HDPE (ASTM D3035 DR 11) and 2,680 feet of 2-inch small diameter HDPE (ASTM D3035 DR-11) pressure pipe.
 - Approximately 19 privately owned and maintained simplex grinder pump stations to be located along 234th Street, Peacock Lane and Hayworth Place. The grinder pumps are necessary because the single-family homes cannot be directly connected to a gravity flow sanitary sewer.

The new sanitary sewer, low-pressure sewer and lift station No. 2 will be connected to Lift Station No. 1. The new 10-inch diameter HDPE DR-11 force main will connect Lift Station No. 1 to the future Bakers Corner Wastewater Treatment Plant to be located near the northwest corner of the intersection of US 31 and 236th Street. A Variance is issued concurrent with this permit in order to allow this construction.

An alternate to the Technical Standards is approved per 327 IAC 3-6-32 for the following:

- The horizontal directional drilling (HDD) installation of the 1.5-inch and 2-inch small diameter HDPE (DR-11, 200 PSI) low-pressure sewer.
- The HDD installation of the 8-inch diameter and 10-inch diameter HDPE DR-11 force mains.

This permit encompasses only the public portion of the low-pressure sewer main. The property owners will be responsible for installing and maintaining the simplex grinder pump stations and service lines up to the connection with the public low-pressure sewer main at the right-of-way (ROW) line after completion of construction.

Inspection during construction of the new sanitary sewer, low-pressure sewer and lift stations will be provided by Wessler Engineering, Inc. Maintenance after completion of construction will be provided by the Hamilton County Building Corporation. Wastewater treatment will be provided by the Hamilton County Building Corporation at the future Bakers Corner Wastewater Treatment Plant.

CONDITIONS AND LIMITATIONS TO THE AUTHORIZATION FOR CONSTRUCTION OF SANITARY SEWERS

During the period beginning on the effective date of this permit and extending until the expiration date, the permittee is authorized to construct the above-described sanitary sewer system. Such construction shall conform to all provisions of State Rule 327 IAC 3 and the following specific provisions:

PART I

SPECIFIC CONDITIONS AND LIMITATIONS TO THE CONSTRUCTION PERMIT

Unless specific authorization is otherwise provided under the permit, the permittee shall comply with the following conditions:

1. Any local permits required for this project, along with easement acquisition, shall be obtained before construction is initiated.

2. If pollution or nuisance conditions are created, immediate corrective action will be taken by the permittee.
3. The separation of sanitary sewers from water mains and drinking water wells must comply with 327 IAC 3-6-9.
4. All gravity sewer pipe must be leak tested using either a hydrostatic test or air test in accordance with 327 IAC 3-6-19(d). If using a hydrostatic test, the rate of exfiltration or infiltration shall not exceed 200 gallons per inch of pipe diameter per linear mile per day. Air test shall be as prescribed.
5. The results of the gravity sewer leakage test and/or force main leakage test on the completed sewer shall be submitted to this office within three months of completion of construction.
6. Deflection tests must be performed on all flexible* pipe after the final backfill has been in place at least 30 days. No pipe shall exceed a vertical deflection of 5%. Deflection test results shall be submitted with the infiltration/exfiltration test results. (*The following are considered nonflexible pipes: vitrified clay pipe, concrete pipe, ductile iron pipe, cast iron pipe, asbestos cement pipe.)
7. Manholes shall be air tested in accordance with ASTM C1244-93, Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test. The manhole test results shall be submitted with the gravity sewer leakage test results.
8. A drop pipe must be provided for all sewers entering a manhole at an elevation of 24 inches or more above the manhole invert.
9. Air relief valves shall be installed at high points in the new force main.
10. The force mains and low-pressure sewer must be pressure and leak tested in accordance with 327 IAC 3-6-19(e).
11. An audio-visual alarm shall be installed for the proposed lift stations and grinder pump stations.

Failure to submit test results within the allotted time period or failure to meet guidelines as set forth in the above conditions could be subject to enforcement proceedings as provided by 327 IAC 3-5-3.

PART II

GENERAL CONDITIONS

1. No significant or material changes in the scope of the plans or construction of this project shall be made unless the following provisions are met:
 - a. Request for permit modification is made 60 days in advance of the proposed significant or material changes in the scope of the plans or construction;
 - b. Submit a detailed statement of such proposed changes;
 - c. Submit revised plans and specifications including a revised design summary; and
 - d. Obtain a revised construction permit from this agency.
2. This permit may be modified, suspended, or revoked for cause including, but not limited to the following:
 - a. Violation of any term or conditions of this permit:
 - b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
3. Nothing herein shall be construed as guaranteeing that the proposed sanitary sewer system shall meet standards, limitations or requirements of this or any other agency of state or federal government, as this agency has no direct control over the actual construction and/or operation of the proposed project.

PART III

NOTICE OF RIGHT TO ADMINISTRATIVE REVIEW

Anyone wishing to challenge this construction permit must do so by filing a Petition for Administrative Review with the Office of Environmental Adjudication (OEA), and serving a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if notice was received by U.S. Mail), and a copy must be served upon IDEM. Addresses are:

Director
Office of Environmental Adjudication
Indiana Government Center North
Room 103
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental
Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

The petition must contain the following information:

1. The name, address and telephone number of each petitioner.
2. A description of each petitioner's interest in the permit.
3. A statement of facts demonstrating that each petitioner is:
 - a. a person to whom the order is directed;
 - b. aggrieved or adversely affected by the permit; or
 - c. entitled to administrative review under any law.
4. The reasons for the request for administrative review.
5. The particular legal issues proposed for review.
6. The alleged environmental concerns or technical deficiencies of the permit.
7. The permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
8. The identity of any persons represented by the petitioner.
9. The identity of the person against whom administrative review is sought.
10. A copy of the permit that is the basis of the petition.
11. A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of the Petitioner's right to seek administrative review of the permit. Examples are:

1. Failure to file a Petition by the applicable deadline;
2. Failure to serve a copy of the Petition upon IDEM when it is filed; or
3. Failure to include the information required by law.

If Petitioner seeks to have a permit stayed during the administrative review, he or she may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. Those who are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding must submit a written request to OEA at the address above.

More information on the review process is available at the website for the Office of Environmental Adjudication at <http://www.in.gov/oea>.



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February 7, 2023

VIA ELECTRONIC MAIL

Mr. R. Daniel Stevens, Director of Administration
Hamilton County Building Corporation
1 Hamilton County Square, Suite 157
Noblesville, Indiana 46060

Dear Mr. Stevens:

Re: Variance Request for Construction Permit
Sanitary Sewer
Phase 1A & 1B, Division 2 – Water & Sewer
Permit Approval No. 24883
Adams & Jackson Townships, Indiana
Hamilton, County

You are hereby notified that your request for a variance, received by this office on December 12, 2022, pursuant to IC 13-14-8-8, from portions of 327 IAC 3-6-4 and 327 IAC 3-6-7, is granted in accordance with the provisions set forth in this letter. IDEM has determined that imposition of these rules at this time on Hamilton County Building Corporation, would cause an undue hardship or burden. The Hamilton County Building Corporation proposes to install sanitary sewers for Phase 1A & 1B, Division 2 – Water & Sewer.

The variance being requested is to approve the construction of the proposed new sewer prior to the completion of the downstream facilities, the proposed wastewater treatment plant is currently being reviewed by IDEM under Project # P-25686 Bakers Corner Wastewater Treatment Plant.

The variance will allow construction to commence on the collection system. The collection system will replace all septic systems throughout the Bakers Corner area. Hamilton County Building Corporation plans to construct both the sewer collection system (Division 2) and the WWTP (Division 1) concurrently and has funding in place to complete both Divisions 1 and 2. The overall project is being funded in part by ARPA grant money that needs to be spent by 2026. Delays in Division 2 would put the funding at risk. In addition, delays in Division 2 would cause delay in the startup of the WWTP (Division 1) because there would be no flow/loading to the new WWTP without construction of Division 2.

No sanitary sewer flow will be connected to the sewer until the WWTP is in operation.

Part A. Scope of Variance

1. This variance only applies to the following project:

<u>Development</u>	<u>Submitter</u>	<u>Connections Granted</u>
Phase 1A & 1B Division 2 Water & Sewer	Hamilton County Building Corporation	150 Single Family Homes, Commercial Areas

2. This variance applies to 327 IAC 3-6-4, 327 IAC 3-6-7, and the following provisions of the certification statements in the wastewater facility construction permit rules:

- a. 327 IAC 3-6-4(b) "Certification of Registered Professional Engineer or Land Surveyor":

"The sewer at the point of connection is physically in existence and operational. Based upon information provided by the owner of the Wastewater System, the ability for this collection system to comply with 327 IAC 3 is not contingent on downstream water pollution/control facility construction that has not been completed and put into operation."

- b. 327 IAC 3-6-4(c) "Capacity Certification":

"I certify that the ability for this collection system to comply with 327 IAC 3 is not contingent on water pollution/control facility construction that has not been completed and put into operation"

Part B. Conditions of Variance

1. The Hamilton County Building Corporation must comply with all requirements of 327 IAC 3 other than those listed in Part A above.
2. Violation of any of the above conditions is grounds for revocation of the variance and may subject the Hamilton County Building Corporation to enforcement action.

Notice of Right to Administrative Review

Anyone wishing to challenge this action must do so by filing a Petition for Administrative Review with the Office of Environmental Adjudication (OEA); and serving a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance this notice (eighteen (18) days if notice was received by U.S. Mail), and a copy must be served upon IDEM. Addresses are:

Director
Office of Environmental Adjudication
Indiana Government Center North
Room N103
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental
Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

The petition must contain the following information:

1. The name, address and telephone number of each petitioner.
2. An identification of each petitioner's interest in the subject of the petition.
3. A statement of facts demonstrating that each petitioner is:
 - a. a person to whom the order is directed;
 - b. aggrieved or adversely affected by the determination; or
 - c. entitled to administrative review under any law.
4. The reasons for the request for administrative review.
5. The particular legal issues proposed for review.
6. The facts, terms, or conditions of the action for which the petitioner requests review.
7. The identity of any persons represented by the petitioner.
8. The identity of the person against whom administrative review is sought.
9. A copy of the action that is the basis of the petition.
10. A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of the Petitioner's right to seek administrative review. Examples are:

1. Failure to file a Petition by the applicable deadline;
2. Failure to serve a copy of the Petition upon IDEM when it is filed; or
3. Failure to include the information required by law.

If Petitioner seeks to have an action stayed during the administrative review, he or she may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. Those who are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding must submit a written request to OEA at the address above.

More information on the review process is available at the website for the Office of Environmental Adjudication at <http://www.in.gov/oea>.

Granting of this variance does not relieve the applicant from the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. Granting of this variance

does not represent a determination that subsequent requests will be considered an undue hardship under the situation, rules and orders that may exist at that time.

If you have any questions regarding this variance decision, please contact Missy Nunnery at 317-232-5579 or by e-mail at munnery@idem.in.gov.

Sincerely,

A handwritten signature in black ink that reads "Kevin D. Czerniakowski". The signature is written in a cursive style with a large, stylized 'K' and 'C'.

Kevin D. Czerniakowski, P.E.
Section Chief
Facility Construction and
Engineering Support Section
Office of Water Quality

cc: Mr. Derek C. Urban, P.E., Wessler Engineering, Inc.

PROJECT NO.
M-25685

INTRA-OFFICE MEMO

FROM: 327 IAC Construction Permit Coordinator
Engineering Plan Review Section
Office of Water Quality

TO: MM

SUBJECT: **Project:** Phase 1A & 1B – Division 2 – Water & Sewer

Location: Bakers Corner, Hamilton County

Units: 150 Single Family Homes, Commercial Properties

Design Flow: 202,000 GPD (Avg), 768,000 GPD (Peak)

Received On: 12/9/2022

Connection To: New 10in force main from lift station 1 shall connect to the proposed Bakers Corner WWTP located at the northwest corner of US 31 and 236th Street

Wastewater Treatment By: Bakers Corner WWTP

Maintenance Provided By: Hamilton County

Signed Application -----	<input checked="" type="checkbox"/>	Signed by applicant for SRF projects (Applicant's Engineer can sign in most cases)
\$ Check-----	<input checked="" type="checkbox"/>	\$100.00 Construction Permit Fee
Sanitary Sewer Design Summary--	<input checked="" type="checkbox"/>	Should match the capacity letter
WWTP Capacity Certification-----	<input checked="" type="checkbox"/>	New one needed if more than one year old
Collection System Capacity Certification	<input checked="" type="checkbox"/>	New one needed if more than one year old
Certification Letter of P.E. or L.S.---	<input checked="" type="checkbox"/>	The supervising P.E. or L.S.
Potentially Affected Person List ----	<input checked="" type="checkbox"/>	Names and addresses on signed and dated form, mailing list and mailing labels (with 65- 42FC code) – 50
Plans and Specifications -----	<input checked="" type="checkbox"/>	Each page must be signed or sealed by an Indiana P.E. or L.S. (if no lift station work is being done) Plan view, Profile view, Details, Specifications (ASTM, SDR, Bedding, Separation, etc.)



**APPLICATION FOR SANITARY SEWER
CONSTRUCTION PERMIT PER 327 IAC 3**

State Form 53159 (R7 / 2-20)

M-25685
Indiana Department of Environmental Management
Office of Water Quality
Facility Construction and Engineering Support Section,
Mail Code 65-42FC
100 North Senate Avenue, Room N1255
Indianapolis, IN 46204-2251

APPLICANT		APPLICANT'S ENGINEER OR LAND SURVEYOR	
Name <input checked="" type="checkbox"/> Mr. or <input type="checkbox"/> Ms. R. Daniel Stevens		Name <input checked="" type="checkbox"/> Mr. or <input type="checkbox"/> Ms. Derek C. Urban	
Name of Organization Hamilton County Building Corporation		Name of Company Wessler Engineering, Inc.	
Address (number and street, city, state, and ZIP) 1 Hamilton County Square, Suite 157, Noblesville, IN 46060		Address (number and street, city, state, and ZIP) 1130 AAA Way, Carmel, IN 46032	
Telephone Number (317) 776-9719		Telephone Number (317) 788-4551	
E-Mail Address Dan.Stevens@hamiltoncounty.in.gov		E-Mail Address dereku@wesslerengineering.com	
NAME AND LOCATION OF PROPOSED FACILITY		PROJECT DESCRIPTION	
Name US 31 Corridor Infrastructure Investment Project Phase 1A and 1B, Division 2 - Water and Sewer		Describe the scope and/or purpose of this project This project will bring sewer service to the Bakers Corner area of Hamilton County and the surrounding area. The project provides sewer service to existing residents that are currently on septic system. It also provides infrastructure for future development in the area. This project will include the installation of gravity sewers, force mains, two (2) lift stations, and water mains. It will also include a WWTP being constructed in Division 1 of the project. The sanitary collections system work includes the installation of approximately 7,300 linear feet of gravity sewers ranging from 8-inch to 24-inch, approximately 3,300 linear feet of low pressure sewer, and approximately 6,600 linear feet for force mains.	
Location or Project Boundaries The area of Hamilton County around the intersection of US 31 and 236 th Street within the proposed Hamilton County Regional Utility District.			
City or Town Adams and Jackson Townships			
County Hamilton			
SOURCE OF FUNDING			
<input type="checkbox"/> IFA's Wastewater State Revolving Fund Loan Program		<input checked="" type="checkbox"/> Local Funds	
<input type="checkbox"/> OCRA's Community Development Block Grant		<input type="checkbox"/> Private Funds	
<input type="checkbox"/> USDA's Rural Development Loan and Grant Assistance		<input checked="" type="checkbox"/> Other: ARPA Funding	
CERTIFICATION AND SIGNATURE			
I swear or affirm, under penalty of perjury as specified by IC 35-44.1-2-1 and other penalties specified by IC 13-30-10 and IC 13-15-7-1(3), that the statements and representations in this application are true, accurate, and complete.			
Printed Name of Person Signing R. Daniel Stevens			
Title Director of Administration			
Signature of Applicant 		Date Signed (month / day / year) 12 / 09 / 2022	

(Please refer to IC 13-30-10 for penalties of submission of false information.)

Check No. 48712
B100.001 12-8-22
Wessler Eng. Inc.

12/9/22

COLLECTION SYSTEM DESIGN SUMMARY**Design Flow – Refer to 327 IAC 3-6-11 for Design Flow Rate Requirements**

Description of Units Served		Design Flow Per Unit	Number of Units	Unit Design Flow
<i>Example: Single family homes</i>		<i>310 gpd/unit</i>	<i>30</i>	<i>9,300 gpd</i>
Single Family Homes		310 (gpd/unit)	150	46,500 gpd
Light Commercial Area (Developable Acres)		1,000 (gpd/unit)	95	95,000 gpd
Commercial Area (Developable Acres)		1,200 (gpd/unit)	50	60,000 gpd
		(gpd/unit)		gpd
		(gpd/unit)		gpd
Average Design Flow				202,000 gpd
Peaking factor	3.8	Peak Design flow		768,000 gpd

Gravity Sewer Pipe☒ Applicable ☐ Not Applicable

Length	Diameter	Material	ASTM or AWWA Standard	SDR or DR	Pressure Class (psi)	Installation Method
<i>Example: 1,525 ft</i>	<i>8-inch</i>	<i>PVC</i>	<i>ASTM D3034</i>	<i>SDR-35</i>	<i>N/A</i>	<i>Open Cut</i>
See attached table	in					
ft	in					
ft	in					
ft	in					
ft	in					

Force Main Pipe and Low Pressure Sewer☒ Applicable ☐ Not Applicable

Length	Diameter	Material	ASTM or AWWA Standard	SDR or DR	Pressure Class (psi)	Installation Method
<i>Example: 1,525 ft</i>	<i>8-inch</i>	<i>PVC</i>	<i>ASTM D2241</i>	<i>SDR-21</i>	<i>200 psi</i>	<i>Open Cut</i>
See attached table	in					
ft	in					
ft	in					
ft	in					
ft	in					

Connection Location(s)

Example: The proposed sanitary sewer shall connect to an existing 8-inch sewer located approximately 10 ft north and 10 ft west of the intersection of Main Street and Park Avenue and to an existing lift station located approximately 20 ft southeast of the intersection of Oak Lane and Maple Drive.


The proposed new 10-inch force main from Lift Station 1 shall connect to the proposed Bakers Corner WWTP located at the northwest corner of US31 and 236th Street, 0.1 miles west of US31 and 0.4 miles north of 236th street.

Inspection / Maintenance

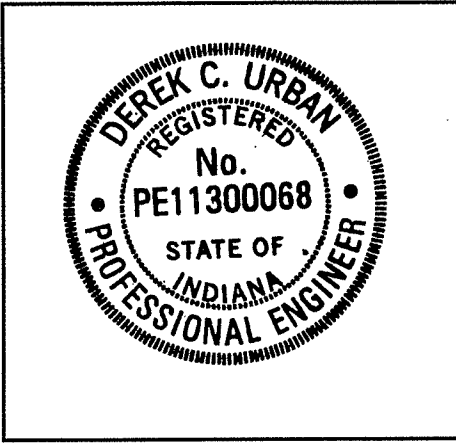
Inspection during construction will be provided by	Wessler Engineering
Maintenance after completion will be provided by	Hamilton County

Wastewater Treatment

12/9/22

Wastewater treatment will be provided by	Hamilton County Building Corporation (Bakers Corner Wastewater Treatment Plant)
Lift Station	
<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable	
1. Location: See attached table for lift station summary	
2. Type of pump (example: submersible, dry pit):	
3. Number of pumps:	
4. Constant or variable speed:	
5. Design pump rate (gpm) and TDH (ft):	
6. Operating volume of the wet well (gal):	
7. Average detention time in the wet well (min):	
8. Type of standby power/pump provisions:	
9. Type of alarm:	
10. Additional information:	
Low Pressure Sewer Grinder Pump Station	
<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable	
1. Number of stations: simplex duplex triplex	
2. Number of residential connections per simplex station (two maximum):	
3. Design pump rate (gpm) at maximum TDH (ft):	
4. Type of alarm:	
5. Privately or utility owned and maintained:	
6. Additional information:	
Vacuum Pump Station	
<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable	
1. Location:	
2. Total volume of vacuum tank (gal):	
3. Operating volume of the vacuum tank (gal):	
4. Number and size (HP) of vacuum pumps:	
5. Number and type of sewage pumps:	
6. Constant or variable speed:	
7. Design pump rate (gpm) and TDH (ft):	
8. Type of standby power/pump provisions:	
9. Type of alarm:	
10. Additional information:	
Certification Seal, Signature, and Date	
Printed Name of Engineer or Land Surveyor Derek C. Urban	
Signature 	Date Signed (month / day / year) 12 / 7 / 2022

12/9/22



A factor of four (4) is prescribed by 327 IAC 3-6-11. However, an alternative peaking factor may be justified by other means (327 IAC 3-6-32) or as provided by Ten State Standards 11.243: **Peaking Factor** = $(18 + \sqrt{P}) / (4 + \sqrt{P})$, where P = population in thousands.

Provide pump and system curves and design calculations for TDH. If connecting to an existing force main, provide upstream lift station pump curves and describe how the proposed flow will affect the lift station performance during simultaneous operation.

For small diameter low-pressure sanitary sewer systems, provide a spreadsheet that includes the maximum expected simultaneous operation of the proposed grinder pumps, maximum expected flow (gpm) and fluid velocity (ft/sec), static head and accumulated friction loss, and expected accumulated total dynamic head (TDH).

The average detention time in the wet well (cycle time between pump on/off settings) should be between 5 and 30 minutes. The cycle time may be calculated from the following equation: **Cycle Time** = $(V / (D - Q)) + (V / Q)$, where D = discharge flow rate out of the wet well (design pump rate) in gpm, Q = inflow rate into wet well (average design flow) in gpm, and V = operating volume of wet well (between pump on/off settings) in gallons.

12/9/22

MILES, MIKE

From: Derek Urban <DerekU@wesslerengineering.com>
Sent: Thursday, December 15, 2022 4:47 PM
To: Nunnery, Malishia (Missy)
Subject: RE: Administrative Deficiency Notice for M-25685 US 31 Corridor Infrastructure Project - Phase 1A and 1B - Division 2 - Water & Sewer
Attachments: IDEM Variance Request Letter_12_12_22.signed1.pdf; Capacity Certification.pdf; PE Certification.Flattened.pdf

Missy,

Attached is the variance request letter along with the revised Capacity Certification and Certification of Registered Professional Engineer.

Thanks!
Derek

Derek Urban, P.E. | Project Manager II
[Wessler Engineering, Inc.](#)
1130 AAA Way Carmel Indiana 46032

P: 317-296-6347
D: 463-777-8051

From: Nunnery, Malishia (Missy) <munnery@idem.IN.gov>
Sent: Monday, December 12, 2022 10:37 AM
To: dan.stevens@hamiltoncounty.in.gov; Derek Urban <DerekU@wesslerengineering.com>; Kate Ziino <KateZ@wesslerengineering.com>; rholden@wesslerengineering.com; wmoore@wesslerengineering.com; agordon@wesslerengineering.com
Cc: MILES, MIKE <MMILES@idem.IN.gov>
Subject: Administrative Deficiency Notice for M-25685 US 31 Corridor Infrastructure Project - Phase 1A and 1B - Division 2 - Water & Sewer
Importance: High

****WARNING: External email, verify sender before opening attachments or clicking on links.****

Good Morning,

Our office received the application submittal for **US 31 Corridor Infrastructure Project - Phase 1A and 1B - Division 2 - Water & Sewer** in Bakers Corner, Indiana. (Adams & Jackson Townships)

The **Administrative Review** found the following deficiency.

It appears that the proposed sanitary sewer(s) are to connect to a sanitary sewer, lift station or Wastewater Treatment Plant which is not currently existing or in operation. If this is the case, this makes the "Capacity Certification" and "Certification of Registered Professional Engineer or Land Surveyor" forms inaccurate as they include language which states all downstream infrastructure in complete and in place. The following steps must be completed before IDEM can issue a construction permit for this project:

1. Request a variance from 327 IAC 3-6-4 and 3-6-7 for the proposed project.

The variance request must include:

- a. Objective of the project
 - b. a justification and/or description of any **hardship(s)** that would be caused by delaying construction of the proposed sewer system until such time as all downstream infrastructure is complete and in place.
 - c. downstream project information (if known) including project name and IDEM project # (if already submitted for construction permitting), status of the project (under construction, still in design phase, etc.), project applicant and/or design engineer
2. The "Capacity Certification" will need to be altered to strike out the sentence: "I certify that the ability for this collection system to comply with 327 IAC 3 is not contingent on water pollution/control facility construction that has not been completed and put into operation." After this form is revised it will need to be re-signed and re-dated. An example "Capacity Certification" is attached.
 3. The "Certification of Registered Professional Engineer or Land Surveyor" will need to be revised to strike out the following sentences: "The sewer at the point of connection is physically in existence and operational. Based upon information provided by the owner of the Wastewater System, the ability for this collection system to comply with 327 IAC 3 is not contingent on downstream water pollution/control facility construction that has not been completed and put into operation." After this form is revised it will need to be re-signed and re-dated. An example "Certification of Registered Professional Engineer or Land Surveyor" is attached.

Submit all Variance Request to Missy Nunnery at munnery@idem.in.gov.

Please note that in the vast majority of cases, this variance request is simply a formality which allows IDEM to issue a construction permit for a proposed sewer system to connect to infrastructure which does not currently exist. The Variance review and approval can occur concurrently with the normal review of the permit application; and is unlikely to delay the issuance of the construction permit.

After a Mike Miles has a chance to review this project, he/she will send any technical comments in a deficiency notice.

At this time we are asking that you allow the facility construction and engineering support section the full 90 days to issue a construction permit (as allowed under our rules) at this time. We strive to issue construction permits earlier than 90 days when we are able to.

Please note that the above deficiencies could result in future projects being deemed incomplete.

Thank you,
Missy

Missy Nunnery
IDEM/OWQ
Facilities Construction and Engineering Support Section

100 N. Senate Ave. N1255
Indianapolis, IN 46204
317-232-5579
munnery@idem.in.gov

COVID-19 Resources:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (available 8:00 am-5:00 pm daily).
- **Anthem NurseLine:** Call 800-337-4770 or visit the [Anthem NurseLine](#) online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP):** Available to ALL state employees and adults in household regardless of health plan participation. Call 800-223-7723 or visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

IDEM values your feedback.

Please take two minutes and complete this brief survey.





More than a Project™

December 12, 2022

Ms. Missy Nunnery
Indiana Department of Environmental Management
Office of Water Quality
Facilities Construction and Engineering Support Section
100 N. Senate Ave. N1255
Indianapolis, IN 46204

Re: Administrative Deficiency Notice for M-25685
US 31 Corridor Infrastructure Project – Phase 1A and 1B
Division 2 – Water & Sewer
Variance Request from 327 IAC 3-6-4 and 3-6-7
Hamilton County, Indiana

Dear Ms. Nunnery,

This letter is in response to the comments included in the Administrative Review issued by your office dated December 12, 2022. Attached please find our revised Capacity Certification and Certification of Registered Professional Engineer or Land Surveyor.

The objective of US 31 Corridor Infrastructure Project – Phase 1A and 1B, Division 2 – Water & Sewer (Division 2) is to bring sewer and water service to the Bakers Corner area of Hamilton County and the surrounding area, which is currently served by septic systems. The sanitary sewer flows will be sent for treatment to the proposed new Bakers Corner Wastewater Treatment Plant (WWTP), details of which are covered in US 31 Corridor Infrastructure Investment Project Phase 1A and 1B, Division 1 – Wastewater Treatment Plant (Division 1). Application for Wastewater Treatment Plant Construction Permit for Division 1 was submitted to IDEM by R. Daniel Stevens of the Hamilton County Building Corporation (Applicant) on December 8th, 2022. The Division 1 project was also designed by Wessler Engineering, Inc.

We request variance from 327 IAC 3-6-4 requirements that *“the ability for this collection system to comply with 327 IAC 3 is not contingent on water pollution treatment/control facility construction that has not been completed and put into operation”*. We also request variance from the 327 IAC 3-6-7 requirement that *“the sanitary sewer or collection system that is the subject of the construction permit application is to connect to a water treatment/control facility that has been completed and put into operation”*. The following is an explanation of the reasons for the variance:

Hamilton County Building Corporation plans to construct both the sewer collection system (Division 2) and the WWTP (Division 1) concurrently and has funding in place to complete both Divisions 1 and 2. The overall project is being funded in part by ARPA grant money that needs to be spent by 2026. Delays in Division 2 would put the funding at risk. In addition, delays in Division 2 would cause delay in the startup of the WWTP (Division 1) because there would be no flow/loading to the new WWTP without construction of Division 2.

No sanitary sewer flow will be connected to the sewer until the WWTP is in operation.



More than a Project™

If you should have further questions or comments, please don't hesitate to contact
Derek C. Urban at (463) 777-8051 or by email at dereku@wesslerengineering.com.

Sincerely,

A handwritten signature in black ink that reads 'Derek C. Urban, PE'. The signature is written in a cursive style with a large, stylized 'D' and 'U'.

Derek C. Urban, P.E.
Project Manager

SG:dcu

CERTIFICATION OF REGISTERED PROFESSIONAL ENGINEER OR LAND SURVEYOR*This form must be filled-out in its entirety with no alterations.*

Name of Applicant: Wessler Engineering
Name of Applicant Representative: Derek Urban
Name of Project: US 31 Corridor Infrastructure Investment Project Phase 1A

CERTIFICATION

I, Derek C. Urban, representing the project applicant, in my capacity as a
(Name of Individual)

registered professional Wessler Engineering, Inc., PE11300068
(Engineer or Land Surveyor) *(Indiana registration number)*

certify the following under penalty of law: The design of this project has been performed under my direction or supervision to assure conformance with 327 IAC 3 and the plans and specifications require the construction of said project to be performed in conformance with 327 IAC 3-6. The peak daily flow rates, in accordance with 327 IAC 3-6-11 generated from within the specific area that will be collected by the proposed collection system that is the subject of the application, plans, and specifications (when functioning as designed and properly installed), will not cause overflowing or bypassing in the same specific area serviced by the proposed collection system other than from NPDES authorized discharge points. The proposed collection system does not include new combined sewers (serving new areas) or a combined sewer extension to existing combined sewers. ~~The sewer at the point of connection is physically in existence and operational. Based upon information provided by the owner of the Wastewater System, the ability for this collection system to comply with 327 IAC 3 is not contingent on downstream water pollution/control facility construction that has not been completed and put into operation.~~ The design of the proposed project meets applicable local rules or laws, regulations and ordinances. The information submitted is true, accurate, and complete, to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Average Design Flow (<i>gallons per day</i>)	202,000
Peak Design Flow (<i>gallons per day</i>)	768,000
Owner of Receiving Collection System	Hamilton County Building Corporation
Name of Wastewater Treatment Plant	Bakers Corner Wastewater Treatment Plant
Signature <i>Derek C. Urban, PE</i>	Date Signed (<i>month / day / year</i>) 12 / 12 / 2022

(Please refer to IC 13-30-10 for penalties of submission of false information.)

CAPACITY CERTIFICATION*This form must be filled-out in its entirety with no alterations.*


Name of Applicant: Hamilton County Building Corporation
Name of Applicant Representative: R. Daniel Stevens
Name of Project: US 31 Corridor Infrastructure Investment Project Phase 1A and 1B, Division 2 - Water and Sewer

CERTIFICATION

I, R. Daniel Stevens, representing the Hamilton County Building Corporation, in my capacity as
 (Name of individual) (Name of municipality or utility)

Director of Administration have the authority to act on behalf of the Hamilton County Building Corporation
 (Title) (Name of municipality or utility)

certify that I have reviewed and understand the requirements of 327 IAC 3 and that the sanitary collection system proposed, with the submission of this application, plans and specifications, meets all requirements of 327 IAC 3. I certify that the daily flow generated in the area that will be collected by the project system will not cause overflowing or bypassing in the collection system other than NPDES authorized discharge points and that there is sufficient capacity in the receiving water pollution treatment/control facility to treat the additional daily flow and remain in compliance with applicable NPDES permit effluent limitations. I certify that the proposed average flow will not result in hydraulic or organic overload. I certify that the proposed collection system does not include new combined sewers or a combined sewer extension to existing combined sewers. ~~I certify that the ability for this collection system to comply with 327 IAC 3 is not contingent on water pollution/control facility construction that has not been completed and put into operation.~~ I certify that the project meets all local rules or laws, regulations and ordinances. The information submitted is true, accurate, and complete, to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Average Design Flow (gallons per day)	202,000
Peak Design Flow (gallons per day)	768,000
Owner of Receiving Collection System	Hamilton County Building Corporation
Name of Wastewater Treatment Plant	Bakers Corner Wastewater Treatment Plant
Mailing Address of Certifying Representative (number and street, city, state, and ZIP code) 1 Hamilton County Square, Suite 157, Noblesville, IN 46060	E-mail Address of Certifying Representative Dan.Stevens@hamiltoncounty.in.gov
I am certifying for the <input checked="" type="checkbox"/> Collection System <input checked="" type="checkbox"/> Treatment Facility	
Signature 	Date Signed (month / day / year) 12 / 12 / 2022

(Please refer to IC 13-30-10 for penalties of submission of false information.)

MILES, MIKE

From: Nunnery, Malishia (Missy)
Sent: Monday, December 12, 2022 10:37 AM
To: dan.stevens@hamiltoncounty.in.gov; dereku@wesslerengineering.com; katez@wesslerengineering.com; rholden@wesslerengineering.com; wmoore@wesslerengineering.com; agordon@wesslerengineering.com
Cc: MILES, MIKE
Subject: Administrative Deficiency Notice for M-25685 US 31 Corridor Infrastructure Project - Phase 1A and 1B - Division 2 - Water & Sewer
Attachments: Variance Request Guideline.pdf
Importance: High
Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning,

Our office received the application submittal for **US 31 Corridor Infrastructure Project - Phase 1A and 1B - Division 2 - Water & Sewer** in Bakers Corner, Indiana. (Adams & Jackson Townships)

The **Administrative Review** found the following deficiency.

It appears that the proposed sanitary sewer(s) are to connect to a sanitary sewer, lift station or Wastewater Treatment Plant which is not currently existing or in operation. If this is the case, this makes the "Capacity Certification" and "Certification of Registered Professional Engineer or Land Surveyor" forms inaccurate as they include language which states all downstream infrastructure in complete and in place. The following steps must be completed before IDEM can issue a construction permit for this project:

1. Request a variance from 327 IAC 3-6-4 and 3-6-7 for the proposed project.
The variance request must include:
 - a. Objective of the project
 - b. a justification and/or description of any **hardship(s)** that would be caused by delaying construction of the proposed sewer system until such time as all downstream infrastructure is complete and in place.
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in existence and operational. Based upon information provided by the owner of the Wastewater System, the ability for this collection system to comply with 327 IAC 3 is not contingent on downstream water pollution/control facility construction that has not been completed and put into operation.” After this form is revised it will need to be re-signed and re-dated. An example “Certification of Registered Professional Engineer or Land Surveyor” is attached.

Submit all Variance Request to Missy Nunnery at munnery@idem.in.gov.

Please note that in the vast majority of cases, this variance request is simply a formality which allows IDEM to issue a construction permit for a proposed sewer system to connect to infrastructure which does not currently exist. The Variance review and approval can occur concurrently with the normal review of the permit application; and is unlikely to delay the issuance of the construction permit.

After a Mike Miles has a chance to review this project, he/she will send any technical comments in a deficiency notice.

At this time we are asking that you allow the facility construction and engineering support section the full 90 days to issue a construction permit (as allowed under our rules) at this time. We strive to issue construction permits earlier than 90 days when we are able to.

Please note that the above deficiencies could result in future projects being deemed incomplete.

Thank you,
Missy

Missy Nunnery
IDEM/OWQ
Facilities Construction and Engineering Support Section
100 N. Senate Ave. N1255
Indianapolis, IN 46204
317-232-5579
munnery@idem.in.gov

COVID-19 Resources:

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- **Anthem Employee Assistance Program (EAP):** Available to ALL state employees and adults in household regardless of health plan participation. Call 800-223-7723 or visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

IDEM values your feedback.

Please take two minutes and complete this brief survey.



Variance Request

It appears that the proposed sanitary sewer(s) are to connect to a sanitary sewer, lift station or Wastewater Treatment Plant which is not currently existing or in operation. If this is the case, this makes the "Capacity Certification" and "Certification of Registered Professional Engineer or Land Surveyor" forms inaccurate as they include language which states all downstream infrastructure in complete and in place. The following steps must be completed before IDEM can issue a construction permit for this project:

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 - b. a justification and/or description of any hardship(s) that would be caused by delaying construction of the proposed sewer system until such time as all downstream infrastructure is complete and in place.
 - c. downstream project information (if known) including project name and IDEM project # (if already submitted for construction permitting), status of the project (under construction, still in design phase, etc.), project applicant and/or design engineer
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This form must be filled-out in its entirety with no alterations.

CERTIFICATION

I, _____, representing the _____, in my capacity as
(Name of individual) *(Name of municipality or utility)*

_____ have the authority to act on behalf of the _____
(Title) *(Name of municipality or utility)*

Average Design Flow (<i>gallons per day</i>)		
Peak Design Flow (<i>gallons per day</i>)		
Owner of Receiving Collection System		
Name of Wastewater Treatment Plant		
Mailing Address of Certifying Representative (<i>number and street, city, state, and ZIP code</i>)		E-mail Address of Certifying Representative
I am certifying for the <input type="checkbox"/> Collection System <input type="checkbox"/> Treatment Facility		
Signature		Date Signed (<i>month / day / year</i>) / /

CERTIFICATION OF REGISTERED PROFESSIONAL ENGINEER OR LAND SURVEYOR*This form must be filled-out in its entirety with no alterations.*

Name of Applicant:
Name of Applicant Representative:
Name of Project:

CERTIFICATION

I, _____, representing the project applicant, in my capacity as a

(Name of Individual)
 registered professional _____, _____
(Engineer or Land Surveyor) *(Indiana registration number)*

certify the following under penalty of law: The design of this project has been performed under my direction or supervision to assure conformance with 327 IAC 3 and the plans and specifications require the construction of said project to be performed in conformance with 327 IAC 3-6. The peak daily flow rates, in accordance with 327 IAC 3-6-11 generated from within the specific area that will be collected by the proposed collection system that is the subject of the application, plans, and specifications (when functioning as designed and properly installed), will not cause overflowing or bypassing in the same specific area serviced by the proposed collection system other than from NPDES authorized discharge points. The proposed collection system does not include new combined sewers (serving new areas) or a combined sewer extension to existing combined sewers. ~~The sewer at the point of connection is physically in existence and operational. Based upon information provided by the owner of the Wastewater System, the ability for this collection system to comply with 327 IAC 3 is not contingent on downstream water pollution/control facility construction that has not been completed and put into operation.~~ The design of the proposed project meets applicable local rules or laws, regulations and ordinances. The information submitted is true, accurate, and complete, to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Average Design Flow (<i>gallons per day</i>)	
Peak Design Flow (<i>gallons per day</i>)	
Owner of Receiving Collection System	
Name of Wastewater Treatment Plant	
Signature	Date Signed (<i>month / day / year</i>) / /

(Please refer to IC 13-30-10 for penalties of submission of false information.)

CAPACITY CERTIFICATION*This form must be filled-out in its entirety with no alterations.*

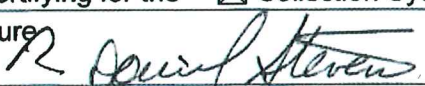
Name of Applicant: Hamilton County Building Corporation
Name of Applicant Representative: R. Daniel Stevens
Name of Project: US 31 Corridor Infrastructure Investment Project Phase 1A and 1B, Division 2 - Water and Sewer

CERTIFICATION

I, R. Daniel Stevens, representing the Hamilton County Building Corporation, in my capacity as
(Name of individual) (Name of municipality or utility)

Director of Administration have the authority to act on behalf of the Hamilton County Building Corporation
(Title) (Name of municipality or utility)

certify that I have reviewed and understand the requirements of 327 IAC 3 and that the sanitary collection system proposed, with the submission of this application, plans and specifications, meets all requirements of 327 IAC 3. I certify that the daily flow generated in the area that will be collected by the project system will not cause overflowing or bypassing in the collection system other than NPDES authorized discharge points and that there is sufficient capacity in the receiving water pollution treatment/control facility to treat the additional daily flow and remain in compliance with applicable NPDES permit effluent limitations. I certify that the proposed average flow will not result in hydraulic or organic overload. I certify that the proposed collection system does not include new combined sewers or a combined sewer extension to existing combined sewers. I certify that the ability for this collection system to comply with 327 IAC 3 is not contingent on water pollution/control facility construction that has not been completed and put into operation. I certify that the project meets all local rules or laws, regulations and ordinances. The information submitted is true, accurate, and complete, to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Average Design Flow (gallons per day)	202,000
Peak Design Flow (gallons per day)	768,000
Owner of Receiving Collection System	Hamilton County Building Corporation
Name of Wastewater Treatment Plant	Bakers Corner Wastewater Treatment Plant
Mailing Address of Certifying Representative <small>(number and street, city, state, and ZIP code)</small> 1 Hamilton County Square, Suite 157, Noblesville, IN 46060	E-mail Address of Certifying Representative Dan.Stevens@hamiltoncounty.in.gov
I am certifying for the <input checked="" type="checkbox"/> Collection System <input checked="" type="checkbox"/> Treatment Facility	
Signature 	Date Signed (month / day / year) 12 / 7 / 2022

(Please refer to IC 13-30-10 for penalties of submission of false information.)

12/9/22


CERTIFICATION OF REGISTERED PROFESSIONAL ENGINEER OR LAND SURVEYOR*This form must be filled-out in its entirety with no alterations.*

Name of Applicant: Wessler Engineering
Name of Applicant Representative: Derek Urban
Name of Project: US 31 Corridor Infrastructure Investment Project Phase 1A

CERTIFICATION

I, Derek C. Urban, representing the project applicant, in my capacity as a
(Name of Individual)
 registered professional Wessler Engineering, Inc., PE11300068
(Engineer or Land Surveyor) *(Indiana registration number)*

certify the following under penalty of law: The design of this project has been performed under my direction or supervision to assure conformance with 327 IAC 3 and the plans and specifications require the construction of said project to be performed in conformance with 327 IAC 3-6. The peak daily flow rates, in accordance with 327 IAC 3-6-11 generated from within the specific area that will be collected by the proposed collection system that is the subject of the application, plans, and specifications (when functioning as designed and properly installed), will not cause overflowing or bypassing in the same specific area serviced by the proposed collection system other than from NPDES authorized discharge points. The proposed collection system does not include new combined sewers (serving new areas) or a combined sewer extension to existing combined sewers. The sewer at the point of connection is physically in existence and operational. Based upon information provided by the owner of the Wastewater System, the ability for this collection system to comply with 327 IAC 3 is not contingent on downstream water pollution/control facility construction that has not been completed and put into operation. The design of the proposed project meets applicable local rules or laws, regulations and ordinances. The information submitted is true, accurate, and complete, to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Average Design Flow (<i>gallons per day</i>)	202,000
Peak Design Flow (<i>gallons per day</i>)	768,000
Owner of Receiving Collection System	Hamilton County Building Corporation
Name of Wastewater Treatment Plant	Bakers Corner Wastewater Treatment Plant
Signature 	
Date Signed (<i>month / day / year</i>) 12 / 7 / 22	

(Please refer to IC 13-30-10 for penalties of submission of false information.)

12/9/22

IDENTIFICATION OF POTENTIALLY AFFECTED PERSONS

Please list any and all persons whom you have reason to believe have a substantial or proprietary interest in this matter, or could otherwise be considered to be potentially affected under law. Failure to notify a person who is later determined to be potentially affected could result in voiding IDEM's decision on procedural grounds. To ensure conformance with Administrative Orders and Procedures Act (AOPA) and to avoid reversal of a decision, please list all such parties. The letter on the opposite side of this form will further explain the requirements under the AOPA. Attach additional names and addresses on a separate sheet of paper, as needed.

Name See Attached Mailing Labels	
Address (<i>number and street</i>)	
City	
State	ZIP Code

Name	
Address (<i>number and street</i>)	
City	
State	ZIP Code

Name	
Address (<i>number and street</i>)	
City	
State	ZIP Code

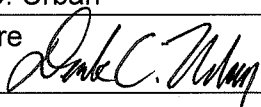
Name	
Address (<i>number and street</i>)	
City	
State	ZIP Code

Name	
Address (<i>number and street</i>)	
City	
State	ZIP Code

Name	
Address (<i>number and street</i>)	
City	
State	ZIP Code

CERTIFICATION

I certify that to the best of my knowledge I have listed all potentially affected parties, as defined by IC 4-21.5-3-5.

Proposed Facility Name US 31 Corridor Infrastructure Investment Project Phase 1A and 1B, Division 2 - Water and Sewer	City Adams and Jackson Townships
Printed Name of Person Signing Derek C. Urban	County Hamilton
Signature 	Date Signed (<i>month / day / year</i>) 12 / 07 / 2022

12/9/22



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Use Avery Template 5160

65-42FC
Robert Holden
1130 AAA Way
Carmel, IN 46032

65-42FC
Kelei D. Waltz
2398 236th St.
Cicero, IN 46034

65-42FC
Aaron J. & Lidiya I. Kusel
11807 Gray Rd.
Carmel, IN 46033

65-42FC
Victor J. DBA Orton Bakers Corner
Storage
1201 E 236th St.
Arcadia IN, 46030

65-42FC
Grace Enterprises LLC
2133 E 226th St.
Cicero, IN 46034

65-42FC
Michael E. Pickett
23790 Dunbar Rd.
Arcadia, IN 46030

65-42FC
Philip E. & Marlita Beth Waggoner
Trustees of Philip E Waggoner Lvg Trust
1087 E 236th St.
Sheridan, IN 46069

65-42FC
Board of Commissioners of Hamilton
County
1700 S 10 St.
Noblesville, IN 46060

65-42FC
Jacob R. & Safiyyah Y. Talley H&W
1079 E 236th St.
Sheridan, IN 46069

65-42FC
Paige & Rose Properties
7731 Mansfield Way
Ingalls, IN 46048

65-42FC
Eric C. & Susan R. Deal
1131 E 234th St.
Sheridan, IN 46069

65-42FC
Dale A. & Michael E. CoTrustees Ronald
& Janice Pickett Irrv Trust
1061 E 236th St.
Sheridan, IN 46069

65-42FC
Cody Robison
1127 E 234th St.
Sheridan, IN 46069

65-42FC
Stacey Michelle & Michael Jeremy
Summers H&W
1119 E 234th St.
Sheridan, IN 46069

65-42FC
James W. & Nona J. Nash H&W
1115 E 234th St.
Sheridan, IN 46069

65-42FC
Teresa A. Myers
1123 E 234th St.
Sheridan, IN 46069

65-42FC
Thomas A. & Christine Affolder
23401 Dunbar Rd.
Sheridan, IN 46069

65-42FC
Bruce Rowland
1109 E 234th St.
Sheridan, IN 46069

65-42FC
Jason A. & Andrea N Gilkey H&W
1114 E 234th St.
Sheridan, IN 46069

65-42FC
Dale Pickett
23380 Dunbar Rd.
Sheridan, IN 46069

65-42FC
Sheree L. & Steve R. Green
1551 E 236th St.
Arcadia, IN 46030

65-42FC
Betty L. Cody
23395 Dunbar Rd.
Sheridan, IN 46069

65-42FC
Godby Properties LP
14550 Mundy Dr.
Noblesville, IN 46060

65-42FC
Anissa J. Womack
1563 E 236th St.
Arcadia, IN 46030

65-42FC
Marinell Parkhurst
1561 E 236th St.
Arcadia, IN 46030

65-42FC
Darrell R & Michelle L Schiedel
1641 E 236th St.
Arcadia, IN 46030

65-42FC
Gerald W & Anita K Hobson
1621 E 236th St.
Arcadia, IN 46030

65-42FC
Robert L & Jessica L Grady H&W
1671 E 236th St.
Arcadia, IN 46030

65-42FC
Gerard A Sr. Trustee of Gerard A
Goodbold Sr. Living Trust
2130 E 226th St.
Cicero, IN 46034

65-42FC
David L & Pamela A Archer
1651 236th St.
Arcadia, IN 46030



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65-42FC
Ceiling Pro Inc.
1641 236th St.
Arcadia, IN 46030

65-42FC
Joseph D & Cecilia A Keller H&W
PO Box 597
Cicero, IN 46034

65-42FC
Alan K Waltz
28455 N SR 19
Atlanta, IN 46031

65-42FC
Wire, Thomas & Sandra Keystone Trust
1167 Wayne St
Noblesville, IN 46060

65-42FC
Martin Diversified Services LLC
17437 Carey Rd #225
Westfield, IN 46074

65-42FC
Gemini Property Group LLC
1318 E 236th St
Arcadia, IN 46030

65-42FC
Riley Real Estate Holdings LLC
10560 Brooks School Rd
Fishers, IN 46037

65-42FC
Orahood, Douglas R & Susan D
1820 226th St E
Cicero, IN 46034

65-42FC
Dorothy Pik Chun Chan
1580 Quail Glen Ct.
Carmel, IN 46032

65-42FC
Mahvash K LLC
9950 Spring Mill Rd.
Carmel, IN 46290

65-42FC
Judith A Boyd
1552 E 236th St
Arcadia, IN 46030

65-42FC
William R & Michelle H Markusfeld
Lemay
2115 E 236th St.
Cicero, IN 46034

65-42FC
State of Indiana
100 N Senate Ave. Room N642
Indianapolis, IN 46204

65-42FC
Michael A & Joni S Summe
1558 E 236th St
Arcadia, IN 46030

65-42FC
Estefany M Burgos, Lesly Bibiana
Burgos, & Jorge Omar Zaleta JTRS
1554 E 236th St
Arcadia, IN 46030

65-42FC
James R & Sarah L Borse CoTrustees
Borse Family Trust
7363 Johnson Rd.
Indianapolis, IN 46250

65-42FC
Green, Lou Anne Trustee Mary Lou
Pickett Lvg Trust Share
1060 E 236th St
Sheridan, IN 46069

65-42FC
Nader & Claire Rezkalla Family Rev
Trust
12143 Admirals Landing Blvd.
Indianapolis, IN 46236

65-42FC
Daniel & Janie Spearman
1556 E 236th St
Arcadia, IN 46030

65-42FC
Tsuru LLC
7846 N 900 E
Sheridan, IN 46069



LETTER OF TRANSMITTAL

DATE: 12/8/22		JOB NO: 244721
TO: Indiana Department of Environmental Management	FROM: Derek C. Urban	
Office of Water Quality, Facility Construction and Engineering Support Section, Mail Code 65-42FC	Wessler Engineering	
100 North Senate Avenue, Rm. N1255	1130 AAA Way	
Indianapolis, Indiana 46204	Carmel, IN 46032	
	PHONE:	(317) 788-4551
	E-MAIL:	dereku@wesslerengineering.com
RE: US31 Corridor Infrastructure Investment Project Phase 1A and 1B, Division 2 - Water and Sewer		

WE ARE SENDING YOU THE FOLLOWING ITEMS: ☒ Attached ☐ Under Separate Cover via

COPIES	DATE	NO.	DESCRIPTION
1	12/8/22	1	Construction Permit Application for Sanitary Sewer
1	12/8/22	2	Project Manual for the Sanitary Sewer
1	12/8/22	3	Design plans for the Sanitary Sewer
1	12/8/22	4	Check in the amount of \$100 for the application fee
1	12/8/22	5	List of Potentially Affected Persons and mailing labels
1	12/8/22	.	Calculations

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> For approval | <input type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit copies for approval |
| <input type="checkbox"/> For your use | <input type="checkbox"/> Approved as noted | <input type="checkbox"/> Submit copies for distribution |
| <input type="checkbox"/> As requested | <input type="checkbox"/> Returned for corrections | <input type="checkbox"/> Return corrected prints |
| <input type="checkbox"/> For review and comment | | |
| <input type="checkbox"/> For Bids due | | |

REMARKS:

Please accept this Application for Sanitary Sewer Construction Permit on behalf of Hamilton County Building Corporation.

Please contact Derek C. Urban for any questions on the submittal at (463) 777-8051 or dereku@wesslerengineering.com

Received by:

Derek C. Urban, PE

COPY TO: File, Client	NAME: Derek C. Urban
	TITLE: Project Manager

IDEM-WATER QUALITY

DEC 08

RECEIVED

12/9/22

Gravity Sewer Pipe								
Length		Diameter		Material	ASTM or AWWA Standard	SDR or DR	Pressure Class (psi)	Installation Method
20	ft.	8	in.	PVC	ASTM D3034	SDR 26	N/A	Open Cut
20	ft.	8	in.	PVC	ASTM D3034	SDR 35	N/A	Open Cut
2,124	ft.	10	in.	PVC	ASTM D3034	SDR 26	N/A	Open Cut
800	ft.	10	in.	PVC	ASTM D3034	SDR 35	N/A	Open Cut
46	ft.	12	in.	PVC	ASTM D3034	SDR 26	N/A	Open Cut
348	ft.	18	in.	PVC	ASTM F679	PS 46	N/A	Open Cut
3,810	ft.	18	in.	PVC	ASTM F679	PS 115	N/A	Open Cut
98	ft.	24	in.	PVC	ASTM F679	PS 115	N/A	Open Cut
Force Main Pipe and Low Pressure Sewer								
Length		Diameter		Material	ASTM or AWWA Standard	SDR or DR	Pressure Class (psi)	Installation Method
593	ft.	1.5	in.	HDPE	ASTM D3035	DR 11	200 psi	HDD
2,680	ft.	2	in.	HDPE	ASTM D3035	DR 11	200 psi	HDD
120	ft.	8	in.	HDPE	ASTM F714	DR 11	200 psi	HDD
3,020	ft.	8	in.	HDPE	ASTM F714	DR 11	200 psi	Open Cut
315	ft.	8	in.	HDPE	ASTM F714	DR 11	200 psi	In Casing
685	ft.	10	in.	HDPE	ASTM F714	DR 11	200 psi	HDD
2,340	ft.	10	in.	HDPE	ASTM F714	DR 11	200 psi	Open Cut
35	ft.	10	in.	DI	AWWA C151	PC 350	350 psi	Open Cut

Lift Station 1		
1.	Location:	South side of 236th Street, approximately 1,000 feet east of Dunbar Road
2.	Type of pump (example: submersible, dry pit):	Submersible
3.	Number of Pumps:	2
4.	Constant or variable speed:	Constant Speed
5.	Design pump rate (gpm) and TDH (ft):	550 gpm and 61' TDH
6.	Operating volume of the wet well (gal):	2,174 gal
7.	Average detention time in the wet well (min):	21
8.	Type of standby power/pump provisions:	New 80 kW emergency generator. Bypass pump connections to wet well and valve vault.
9.	Type of alarm:	Audio and Visual High Level Alarm
10.	Additional information:	N/A
Lift Station 2		
1.	Location:	East side of new Englewood Road being built by INDOT. Approximately 1,400 feet east of US 31, and approximately 2,900 feet south of 236th Street.
2.	Type of pump (example: submersible, dry pit):	Submersible
3.	Number of Pumps:	2
4.	Constant or variable speed:	Constant Speed
5.	Design pump rate (gpm) and TDH (ft):	280 gpm at 48' TDH
6.	Operating volume of the wet well (gal):	1,190
7.	Average detention time in the wet well (min):	22
8.	Type of standby power/pump provisions:	New 50 kW emergency generator. Bypass pump connections to wet well and valve vault.
9.	Type of alarm:	Audio and Visual High Level Alarm
10.	Additional information:	N/A

Lift Station 2

Type of Flow	Number of Units	Units	Design Flow Per Unit	ADF (GPD)
Commercial	50	Developable Acres	1,200	60,000
Light Commercial	45	Developable Acres	1,000	45,000
Average Flow (gpd)				105,000
Population Equivalent				1.05
Peaking Factor				3.8
Peak Flow (gpd)				399,000
Peak Flow (gpm)				277
Pump Capacity (gpd)				403,200
Pump Capacity (gpm)				280

Lift Station 1

Type of Flow	Number of Units	Units	Design Flow Per Unit	ADF (GPD)
Residential	150	Single Family Homes	310	46,500
Light Commercial	50	Developable Acres	1,000	50,000
Average Flow (gpd)				97,000
Population Equivalent				0.97
Peaking Factor				3.8
Peak Flow from LS 1 Basin (gpd)				368,600
Peak Flow from LS 1 Basin (gpm)				256
Peak Flow from LS 2 (gpd)				399,000
Peak Flow from LS 2 (gpm)				277
Total Peak Flow (gpd)				768,000
Total Peak Flow (gpm)				533
Pump Capacity (gpm)				550

Note:

Developable acreage assumes that 30% of the gross acreage will not be developed, and a further 20% of the gross acreage is used for roads, drainage, etc.

Line A - Buildout

Line	Type of Flow	Number of Units	Units	Design Flow Per Unit	ADF (GPD)
Line A	Residential	834	Single Family Homes	310	258,540
Line A	Residential	138	Single Family Homes	310	42,780
Line A	Residential	185	Single Family Homes	310	57,350
Line A	Residential	69	Single Family Homes	310	21,390
Line A	Residential	76	Single Family Homes	310	23,560
Line A	Residential	127	Single Family Homes	310	39,370
Line A	Residential	42	Single Family Homes	310	13,020
Line A	Residential	539	Single Family Homes	310	167,090
Line A	Light Commercial	89.6	Developable Acres	1,000	89,600
Line A	Light Commercial	138.4	Developable Acres	1,000	138,400
Average Flow (gpd)					852,000
Population Equivalent					8.52
Peaking Factor					3.0
Peak Flow (gpd)					2,556,000

Line B - Buildout of 18"

Line	Type of Flow	Number of Units	Units	Design Flow Per Unit	ADF (GPD)
Line C	Existing Residential	11	Single Family Homes	310	3,410
Lines D, G	Existing Residential	9	Single Family Homes	310	2,790
Line B	Light Commercial	63.1	Developable Acres	1,000	63,100
Line B	Light Commercial	33.1	Developable Acres	1,000	33,100
Line B	Light Commercial	23.8	Developable Acres	1,000	23,800
additional	Light Commercial	260	Developable Acres	1,000	260,000
Average Flow Line B Basin (gpd)					387,000
Population Equivalent					3.87
Peaking Factor					3.3
Peak Flow Line B Basin (gpd)					1,277,100
Peak Flow from LS 2 at Buildout (gpm)					700
Peak Flow from LS 2 at Buildout (gpd)					1,008,000
Total Peak Flow (gpm)					2,285,100

Line F - Buildout

Line	Type of Flow	Number of Units	Units	Design Flow Per Unit	ADF (GPD)
Line F	Light Commercial	67	Developable Acres	1000	67,000
Line F	Commercial	56	Developable Acres	1200	67,200
Average Flow (gpd)					135,000
Population Equivalent					1.35
Peaking Factor					3.7
Peak Flow (gpd)					499,500

Note:

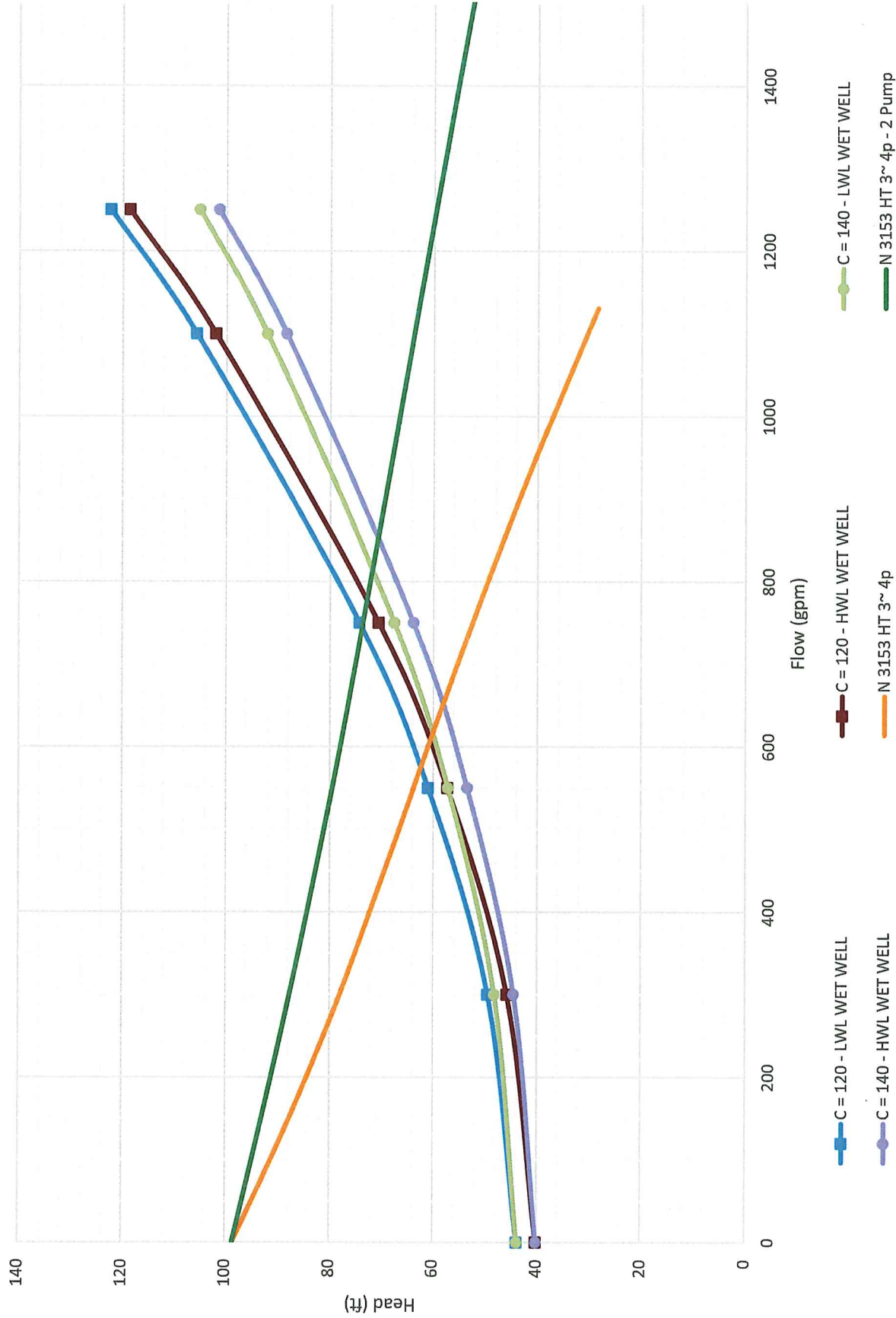
Developable acreage assumes that 30% of the gross acreage will not be developed, and a further 20% of the gross acreage is used for roads, drainage, etc.

Project Location:	Bakers Corner, Indiana			Calculated by: TPH			
Pump Location:	Lift Station 1			Date: August 9, 2022			
Project #:	244721.04.001			Checked by: 0			
				Date: January 0, 1900			
Wet Well High Water Level:	875.90			C Factor #1: 120			
Wet Well Low Water Level:	872.20			C Factor #2: 140			
Max Downstream Elevation:	916.00			Pump Centerline: 871.00			
TOTAL DYNAMIC HEAD							
				FLOW			
	gpm	0	300	550	750	1100	1250
	mgd	0.000	0.432	0.792	1.080	1.584	1.800
Flow Scenarios	cfs	0.000	0.668	1.225	1.671	2.451	2.785
C = 120 - LWL WET WELL		43.810	49.459	60.992	74.274	105.751	122.359
C = 120 - HWL WET WELL		40.110	45.759	57.292	70.574	102.051	118.659
C = 140 - LWL WET WELL		43.810	48.189	57.172	67.544	92.151	105.149
C = 140 - HWL WET WELL		40.110	44.489	53.472	63.844	88.451	101.449
NPSH _A = S - H _s + (P _{atm} - P _{vp}) x 2.31 / SG							
	Specific Gravity	1.00					
	Liquid Vapor Pressure (at 70-degree F), psi	0.363					
	Pressure Head, psi	14.7					
	At Low Wet Well Level	34.32	34.32	34.32	34.32	34.32	34.32
Number of Pumps Running		1	1	1	1	1	1
SUCTION LOSSES							
STATION LOSSES							
Pipe Section Pump Column/Valves							
Pipe Material	Ductile Iron - 250 psi						
Pipe Diameter, in	8						
Pipe Diameter, ft	0.67						
Inside Diameter, ft:	0.69						
Pipe Length, ft	71.00						
Percentage of Flow		100%	100%	100%	100%	100%	100%
Flow (cfs)		0.00	0.67	1.23	1.67	2.45	2.79
Velocity (fps)		0.00	1.77	3.24	4.42	6.48	7.36
Velocity Head (ft) = V ² /2g		0.00	0.05	0.16	0.30	0.65	0.84
Minor Losses	Qty	K	Total				
	90 Degree Bend	2	0.3				
	45 Degree Bend	0	0.2				
	Plug Valve	1	0.8				
	Check Valve	1	2.5				
	Reducer 4x8	1	0.5				
	Reducer 8x10	1	0.5				
	Tee (Branch)	2	1.8				
	Total	8.5		0.00	0.41	1.38	2.57
				0.00	0.13	0.41	0.73
h _L = ((4.73L)/(d ^{4.87}))*((Q ₁ /C) ^{1.852})				0.00	0.13	0.41	0.73
Total losses for section (C = 120)				0.00	0.54	1.79	3.30
h _L = ((4.73L)/(d ^{4.87}))*((Q ₁ /C) ^{1.852})				0.00	0.10	0.31	0.55
Total losses for section (C = 140)				0.00	0.51	1.69	3.12
Total Station Losses (C = 120)				0.00	0.54	1.79	3.30
Total Station Losses (C = 140)				0.00	0.51	1.69	3.12

TOTAL DYNAMIC HEAD				FLOW						
				gpm	0	300	550	750	1100	1250
				mgd	0.000	0.432	0.792	1.080	1.584	1.800
				cfs	0.000	0.668	1.225	1.671	2.451	2.785
Flow Scenarios										
DISCHARGE (SYSTEM) LOSSES										
FM before Low Pressure Tie-in										
Pipe Material	HDPE IPS DR 11									
Pipe Diameter, in	10									
Pipe Diameter, ft	0.83									
Inside Diameter, ft:	0.72									
Pipe Length, ft	680									
Percentage of Flow				100%	100%	100%	100%	100%	100%	100%
Flow (cfs)				0.00	0.67	1.23	1.67	2.45	2.79	
Velocity (fps)				0.00	1.63	2.98	4.07	5.97	6.78	
Velocity Head (ft) = V ² /2g				0.00	0.04	0.14	0.26	0.55	0.71	
Minor Losses			Qty	K	Total					
		90 Degree Bend	0	0.3	0					
		45 Degree Bend	3	0.2	0.6					
		8x10 Reducer	1	0.0	0.03					
		Exit	0	1.0	0					
		Total	0.63		0.00	0.03	0.09	0.16	0.35	0.45
$h_L = ((4.73L)/(d^{4.87})) * ((Q_1/C)^{1.852})$					0.00	1.04	3.20	5.69	11.56	14.65
Total losses for section (C = 120)					0.00	1.07	3.29	5.85	11.91	15.10
$h_L = ((4.73L)/(d^{4.87})) * ((Q_1/C)^{1.852})$					0.00	0.78	2.41	4.28	8.69	11.01
Total losses for section (C = 140)					0.00	0.81	2.50	4.44	9.04	11.46
FM after Low Pressure Tie-in										
Pipe Material	HDPE IPS DR 11									
Pipe Diameter, in	10									
Pipe Diameter, ft	0.83									
Inside Diameter, ft:	0.72									
Pipe Length, ft	2410									
Percentage of Flow				100%	100%	100%	100%	100%	100%	100%
Flow (cfs)				0.02	0.69	1.25	1.70	2.48	2.81	
Velocity (fps)				0.06	1.69	3.04	4.13	6.03	6.84	
Velocity Head (ft) = V ² /2g				0.00	0.04	0.14	0.26	0.56	0.73	
Minor Losses			Qty	K	Total					
		90 Degree Bend	1	0.3	0.3					
		45 Degree Bend	5	0.2	1					
		8x10 Reducer	0	0.0	0					
		Exit	1	1.0	1					
		Total	2.30		0.00	0.10	0.33	0.61	1.30	1.67
$h_L = ((4.73L)/(d^{4.87})) * ((Q_1/C)^{1.852})$					0.01	3.95	11.78	20.71	41.74	52.77
Total losses for section (C = 120)					0.01	4.05	12.11	21.32	43.04	54.44
$h_L = ((4.73L)/(d^{4.87})) * ((Q_1/C)^{1.852})$					0.01	2.97	8.85	15.57	31.37	39.67
Total losses for section (C = 140)					0.01	3.07	9.18	16.18	32.67	41.34
Total Discharge Loss, ft (C = 120)					0.01	5.12	15.40	27.17	54.94	69.54
Total Discharge Loss, ft (C = 140)					0.01	3.88	11.68	20.62	41.70	52.80
TOTAL DYNAMIC HEAD CALCULATIONS										
Static Head (@ Max Static Head)					43.80	43.80	43.80	43.80	43.80	43.80
Total Dynamic Head (calculation check)										
(Static Head + Discharge Losses)				Max WSE	43.81	48.92	59.20	70.97	98.74	113.34
C = 120 - LWL WET WELL										
Pump Centerline				871						
Static Suction Head (Well WSE - Pump Center Line)					1.20	1.20	1.20	1.20	1.20	1.20
Static Discharge Head (Discharge Elev. - Pump Center Line))					45.00	45.00	45.00	45.00	45.00	45.00
Total Dynamic Suction Head					1.20	1.20	1.20	1.20	1.20	1.20
(Static Suction Head - Suction Losses)										
Total Dynamic Discharge Head					45.01	50.66	62.19	75.47	106.95	123.56
(Static Discharge Head + Station + Discharge Losses)										
TOTAL DYNAMIC HEAD					43.81	49.46	60.99	74.27	105.75	122.36
Total Dynamic Head = Total Dynamic Discharge Head - Total Dynamic Suction Head										

TOTAL DYNAMIC HEAD			FLOW				
Flow Scenarios	gpm	0	300	550	750	1100	1250
	mgd	0.000	0.432	0.792	1.080	1.584	1.800
	cfs	0.000	0.668	1.225	1.671	2.451	2.785
C = 120 - HWL WET WELL							
Pump Centerline	871						
Static Suction Head (Well WSE - Pump Center Line)		4.90	4.90	4.90	4.90	4.90	4.90
Static Discharge Head (Discharge Elev. - Pump Center Line))		45.00	45.00	45.00	45.00	45.00	45.00
Total Dynamic Suction Head (Static Suction Head - Suction Losses)		4.90	4.90	4.90	4.90	4.90	4.90
Total Dynamic Discharge Head (Static Discharge Head + Station + Discharge Losses)		45.01	50.66	62.19	75.47	106.95	123.56
TOTAL DYNAMIC HEAD		40.11	45.76	57.29	70.57	102.05	118.66
Total Dynamic Head = Total Dynamic Discharge Head - Total Dynamic Suction Head							
C = 140 - LWL WET WELL							
LOW WATER WET WELL WSE SCENARIO							
Pump Centerline	871						
Static Suction Head (Well WSE - Pump Center Line)		1.20	1.20	1.20	1.20	1.20	1.20
Static Discharge Head (Discharge Elev. - Pump Center Line))		45.00	45.00	45.00	45.00	45.00	45.00
Total Dynamic Suction Head (Static Suction Head - Suction Losses)		1.20	1.20	1.20	1.20	1.20	1.20
Total Dynamic Discharge Head (Static Discharge Head + Station + Discharge Losses)		45.01	49.39	58.37	68.74	93.35	106.35
TOTAL DYNAMIC HEAD		43.81	48.19	57.17	67.54	92.15	105.15
Total Dynamic Head = Total Dynamic Discharge Head - Total Dynamic Suction Head							
C = 140 - HWL WET WELL							
Pump Centerline	871						
Static Suction Head (Well WSE - Pump Center Line)		4.90	4.90	4.90	4.90	4.90	4.90
Static Discharge Head (Discharge Elev. - Pump Center Line))		45.00	45.00	45.00	45.00	45.00	45.00
Total Dynamic Suction Head (Static Suction Head - Suction Losses)		4.90	4.90	4.90	4.90	4.90	4.90
Total Dynamic Discharge Head (Static Discharge Head + Station + Discharge Losses)		45.01	49.39	58.37	68.74	93.35	106.35
TOTAL DYNAMIC HEAD		40.11	44.49	53.47	63.84	88.45	101.45
Total Dynamic Head = Total Dynamic Discharge Head - Total Dynamic Suction Head							

Hamilton Co. US 31 Corridor - LS 1
- Submersible Pumps



Project Location:	Hamilton County, LS 1	Calculated by:	TPH
Project:	US31 Corridor Wastewater Infrastructure Investment Project	Date:	August 9, 2022
Project #:	244721.04.001	Checked by:	DCU
		Date:	November 11, 2022

Pump Cycle Times

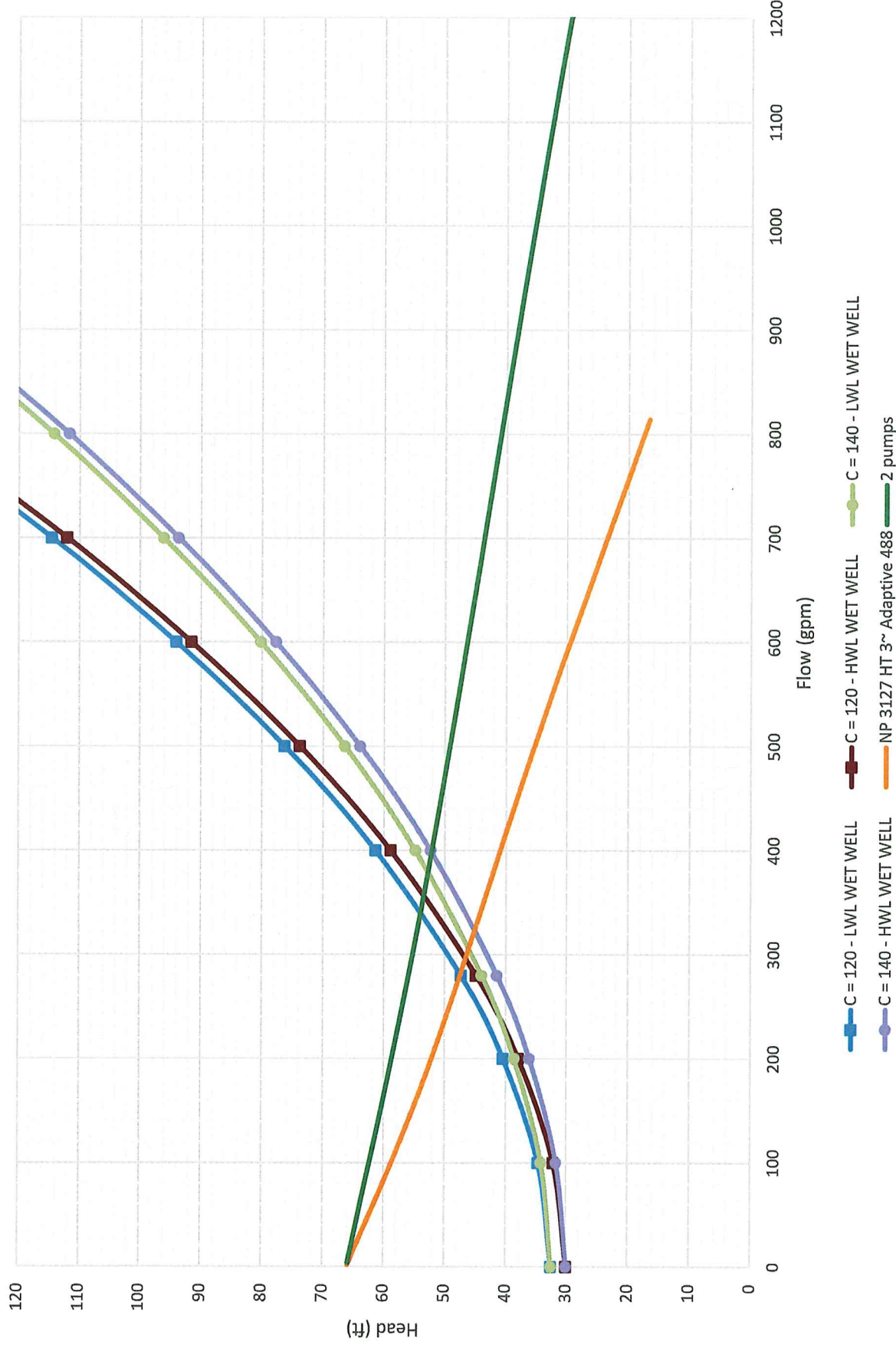
Design	
Circular Duplex Wetwell	
Number of Pumps	2
Wetwell Diameter (ft)	10
Wetwell Storage (gal/ft)	587.5
Influent Rate (gpm, avg)	140
Influent Rate (gpd, avg.)	202,000
Influent Rate (gpm, peak)	533
Influent Rate (gpd, peak)	768,000
Pump Rate (gpm)	550
Pump On (elev.)	875.90
Pump Off (elev.)	872.20
Fill Time (minutes, avg.)	15.5
Pump Run Time (minutes, avg.)	5.3
Total Cycle Time (minutes, avg.)	20.8
Cycles per Hour (avg.)	2.9
Cycles per Hour per Pump (avg.)	1.4
Fill Time (minutes, peak)	4.1
Pump Run Time (minutes, peak)	130.2
Total Cycle Time (minutes, peak)	134.2
Cycles per Hour (peak)	0.4
Cycles per Hour per Pump (avg.)	0.2
Fill Time (minutes, 1/2 pump)	7.9
Pump Run Time (minutes, 1/2 pump)	7.9
Total Cycle Time (minutes, 1/2 pump)	15.8
Cycles per Hour (1/2 pump)	3.8
Cycles per Hour per Pump (avg.)	1.9

Project Location: Hamilton County, LS 2		Calculated by: AJP											
Pump Location: US31 Corridor Wastewater Infrastructure Investment Project		Date: June 9, 2022											
Project #: 244721.04.001		Checked by: 0											
		Date: January 0, 1900											
Wet Well High Water Level: 881.00		C Factor #1: 120											
Wet Well Low Water Level: 878.50		C Factor #2: 140											
Max Downstream Elevation: 911.00		Pump Centerline: 876.17											
TOTAL DYNAMIC HEAD													
		FLOW											
		0	100	200	280	400	500	600	700	800	900		
gpm		0.000	0.144	0.288	0.403	0.576	0.720	0.864	1.008	1.152	1.296		
mgd		0.000	0.223	0.446	0.624	0.891	1.114	1.337	1.560	1.783	2.005		
cfs		0.000	0.223	0.446	0.624	0.891	1.114	1.337	1.560	1.783	2.005		
Flow Scenarios													
C = 120 - LWL WET WELL		32,500	34,683	40,440	47,364	61,411	76,334	94,092	114,625	137,874	163,777		
C = 120 - HWL WET WELL		30,000	32,183	37,940	44,864	58,911	73,834	91,592	112,125	135,374	161,277		
C = 140 - LWL WET WELL		32,500	34,183	38,630	43,984	54,881	66,454	80,252	96,205	114,284	134,447		
C = 140 - HWL WET WELL		30,000	31,683	36,130	41,484	52,381	63,954	77,752	93,705	111,784	131,947		
NPSH _A = S - H _a + (P _{atm} - P _{vp}) × 2.31 / SG													
		Specific Gravity	1.00										
		Liquid Vapor Pressure (at 70-degree F), psi	0.363										
		Pressure Head, psi	14.7										
		At Low Wet Well Level	35.45	35.45	35.45	35.45	35.45	35.45	35.45	35.45	35.45	35.45	
Number of Pumps Running			1	1	1	1	1	1	1	1	1	1	
SUCTION LOSSES		N/A - Submersible Configuration											
STATION LOSSES													
Pipe Section Pump Column/Values													
Pipe Material		Ductile Iron - 250 psi											
Pipe Diameter, in		6											
Pipe Diameter, ft		0.50											
Inside Diameter, ft:		0.52											
Pipe Length, ft		55.00											
Percentage of Flow			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Flow (cfs)			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
Velocity (fps)			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
Velocity Head (ft) = V ² / 2g			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
Minor Losses			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
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			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
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			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
			0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01	
			0.00	1.06	2.11	2.96	4.22	5.28	6.34	7.39	8.45	9.50	
			0.00	0.02	0.07	0.14	0.28	0.43	0.62	0.85	1.11	1.40	
			100%										

TOTAL DYNAMIC HEAD										
FLOW										
DISCHARGE (SYSTEM) LOSSES										
Flow Scenarios	0	100	200	280	400	500	600	700	800	900
gpm	0.000	0.144	0.288	0.403	0.576	0.720	0.864	1.008	1.152	1.296
mgd	0.000	0.223	0.446	0.624	0.891	1.114	1.337	1.560	1.783	2.005
cfs										
Pipe Section wise to Discharge										
Pipe Material	HDPE IPS DR 11									
Pipe Diameter, in	8									
Pipe Diameter, ft	0.58									
Inside Diameter, ft:	3,350.00									
Pipe Length, ft										
Percentage of Flow	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Flow (Gfs)	0.00	0.22	0.45	0.62	0.89	1.11	1.34	1.56	1.78	2.01
Velocity (fps)	0.00	0.84	1.69	2.36	3.37	4.21	5.06	5.90	6.74	7.58
Velocity Head (ft) = V ² / 2g	0.00	0.01	0.04	0.09	0.18	0.28	0.40	0.54	0.71	0.89
Minor Losses										
	Qty K Total									
	90 Degree Bend 2 0.3 0.6									
	45 Degree Bend 8 0.2 1.6									
	8x6 Reducer (Expansion) 1 0.4 0.4									
	Exit 1 1.0 1									
	Total 3.63									
$h_{L} = ((4.73L)/(d^{4.87})) * ((Q_1/C)^{1.852})$										
Total losses for section (C = 120)	0.00	0.00	0.16	0.31	0.64	1.00	1.44	1.96	2.56	3.24
$h_{L} = ((4.73L)/(d^{4.87})) * ((Q_1/C)^{1.852})$	0.00	0.00	0.16	0.31	0.64	1.00	1.44	1.96	2.56	3.24
Total losses for section (C = 140)	0.00	0.00	0.16	0.31	0.64	1.00	1.44	1.96	2.56	3.24
$h_{L} = ((4.73L)/(d^{4.87})) * ((Q_1/C)^{1.852})$	0.00	0.00	0.16	0.31	0.64	1.00	1.44	1.96	2.56	3.24
Total Discharge Loss, ft (C = 120)	0.00	0.00	0.16	0.31	0.64	1.00	1.44	1.96	2.56	3.24
Total Discharge Loss, ft (C = 140)	0.00	0.00	0.16	0.31	0.64	1.00	1.44	1.96	2.56	3.24
TOTAL DYNAMIC HEAD CALCULATIONS										
Static Head (@ Max Static Head)	32.50	32.50	32.50	32.50	32.50	32.50	32.50	32.50	32.50	32.50
Total Dynamic Head (calculation check)	32.50	34.50	39.75	46.02	58.72	72.17	88.14	106.57	127.40	150.58
(Static Head + Discharge Losses)										
C = 120 - LWL WET WELL										
Pump Centerline	876.2									
Static Suction Head (Well WSE - Pump Center Line)	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33
Static Discharge Head (Discharge Elen. - Pump Center Line))	34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83
Total Dynamic Suction Head	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33
(Static Suction Head - Suction Losses)										
Total Dynamic Discharge Head	34.83	37.01	42.77	49.69	63.74	78.66	96.42	116.96	140.20	166.11
(Static Discharge Head + Station + Discharge Losses)										
TOTAL DYNAMIC HEAD	32.50	34.68	40.44	47.36	61.41	76.33	94.09	114.63	137.87	163.78
Total Dynamic Head = Total Dynamic Discharge Head - Total Dynamic Suction Head										

TOTAL DYNAMIC HEAD										
Flow Scenarios	FLOW									
	0	100	200	280	400	500	600	700	800	900
	gpm	0.000	0.144	0.288	0.403	0.576	0.720	0.864	1.008	1.296
C = 120 - HWL WET WELL	cfs	0.000	0.223	0.446	0.624	0.891	1.114	1.337	1.560	2.005
Pump Centerline										
Static Suction Head (Well WSE - Pump Center Line)	876.2	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83
Static Discharge Head (Discharge Elen. - Pump Center Line))		34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83
Total Dynamic Suction Head (Static Suction Head - Suction Losses)		4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83
Total Dynamic Discharge Head (Static Discharge Head + Station + Discharge Losses)		34.83	37.01	42.77	49.69	63.74	78.66	96.42	116.96	166.11
TOTAL DYNAMIC HEAD										
Total Dynamic Head - Total Dynamic Discharge Head - Total Dynamic Suction Head		30.00	32.18	37.94	44.86	58.91	73.83	91.59	112.13	161.28
C = 140 - LWL WET WELL										
LOW WATER WET WELL WSE SCENARIO										
Pump Centerline										
Static Suction Head (Well WSE - Pump Center Line)	876.2	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33
Static Discharge Head (Discharge Elen. - Pump Center Line))		34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83
Total Dynamic Suction Head (Static Suction Head - Suction Losses)		2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33
Total Dynamic Discharge Head (Static Discharge Head + Station + Discharge Losses)		34.83	36.51	40.96	46.31	57.21	68.78	82.58	98.54	136.78
TOTAL DYNAMIC HEAD										
Total Dynamic Head - Total Dynamic Discharge Head - Total Dynamic Suction Head		32.50	34.18	38.63	43.98	54.88	66.45	80.25	96.21	134.45
C = 140 - HWL WET WELL										
Pump Centerline										
Static Suction Head (Well WSE - Pump Center Line)	876.2	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83
Static Discharge Head (Discharge Elen. - Pump Center Line))		34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83	34.83
Total Dynamic Suction Head (Static Suction Head - Suction Losses)		4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83
Total Dynamic Discharge Head (Static Discharge Head + Station + Discharge Losses)		34.83	36.51	40.96	46.31	57.21	68.78	82.58	98.54	136.78
TOTAL DYNAMIC HEAD										
Total Dynamic Head - Total Dynamic Discharge Head - Total Dynamic Suction Head		30.00	31.68	36.13	41.48	52.38	63.95	77.75	93.71	131.95

Hamilton County - US 31 Corridor - Lift Station 2 - Submersible Pumps



Project Location:	Hamilton County, LS 2	Calculated by: AJP
Project:	US31 Corridor Wastewater Infrastructure Investment Project	Date: June 9, 2022
Project #:	244721.04.001	Checked by: DCU
		Date: November 11, 2022

Pump Cycle Times

Circular Duplex Wetwell

Number of Pumps 2

Wetwell Diameter (ft)

Wetwell Storage (gal/ft) 9

Influent Rate (gpm, avg)

Influent Rate (gpd, avg.) 475.9

Influent Rate (gpm, peak)

Influent Rate (gpd, peak) 73

Pump Rate (gpm)

Pump On (elev.) 105,000

Pump Off (elev.) 277

Fill Time (minutes, avg.) 399,000

Pump Run Time (minutes, avg.) 280

Total Cycle Time (minutes, avg.) 881.00

Cycles per Hour (avg.) 878.50

Cycles per Hour per Pump (avg.) 16.3

Fill Time (minutes, peak)

Pump Run Time (minutes, peak)

Total Cycle Time (minutes, peak)

Cycles per Hour (peak)

Cycles per Hour per Pump (avg.) 4.3

Fill Time (minutes, 1/2 pump)

Pump Run Time (minutes, 1/2 pump)

Total Cycle Time (minutes, 1/2 pump)

Cycles per Hour (1/2 pump)

Cycles per Hour per Pump (avg.) 8.5

Duplex

MILES, MIKE

From: Nunnery, Malishia (Missy)
Sent: Monday, December 12, 2022 10:37 AM
To: dan.stevens@hamiltoncounty.in.gov; dereku@wesslerengineering.com; katez@wesslerengineering.com; rholden@wesslerengineering.com; wmoore@wesslerengineering.com; agordon@wesslerengineering.com
Cc: MILES, MIKE
Subject: Administrative Deficiency Notice for M-25685 US 31 Corridor Infrastructure Project - Phase 1A and 1B - Division 2 - Water & Sewer
Attachments: Variance Request Guideline.pdf
Importance: High
Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning,

Our office received the application submittal for **US 31 Corridor Infrastructure Project - Phase 1A and 1B - Division 2 - Water & Sewer** in Bakers Corner, Indiana. (Adams & Jackson Townships)

The **Administrative Review** found the following deficiency.

It appears that the proposed sanitary sewer(s) are to connect to a sanitary sewer, lift station or Wastewater Treatment Plant which is not currently existing or in operation. If this is the case, this makes the "Capacity Certification" and "Certification of Registered Professional Engineer or Land Surveyor" forms inaccurate as they include language which states all downstream infrastructure in complete and in place. The following steps must be completed before IDEM can issue a construction permit for this project:

1. Request a variance from 327 IAC 3-6-4 and 3-6-7 for the proposed project.

The variance request must include:

- a. Objective of the project
 - b. a justification and/or description of any **hardship(s)** that would be caused by delaying construction of the proposed sewer system until such time as all downstream infrastructure is complete and in place.
 - c. downstream project information (if known) including project name and IDEM project # (if already submitted for construction permitting), status of the project (under construction, still in design phase, etc.), project applicant and/or design engineer
2. The "Capacity Certification" will need to be altered to strike out the sentence: "I certify that the ability for this collection system to comply with 327 IAC 3 is not contingent on water pollution/control facility construction that has not been completed and put into operation." After this form is revised it will need to be re-signed and re-dated. An example "Capacity Certification" is attached.
 3. The "Certification of Registered Professional Engineer or Land Surveyor" will need to be revised to strike out the following sentences: "The sewer at the point of connection is physically

in existence and operational. Based upon information provided by the owner of the Wastewater System, the ability for this collection system to comply with 327 IAC 3 is not contingent on downstream water pollution/control facility construction that has not been completed and put into operation.” After this form is revised it will need to be re-signed and re-dated. An example “Certification of Registered Professional Engineer or Land Surveyor” is attached.

Submit all Variance Request to Missy Nunnery at munnery@idem.in.gov.

Please note that in the vast majority of cases, this variance request is simply a formality which allows IDEM to issue a construction permit for a proposed sewer system to connect to infrastructure which does not currently exist. The Variance review and approval can occur concurrently with the normal review of the permit application; and is unlikely to delay the issuance of the construction permit.

After a Mike Miles has a chance to review this project, he/she will send any technical comments in a deficiency notice.

At this time we are asking that you allow the facility construction and engineering support section the full 90 days to issue a construction permit (as allowed under our rules) at this time. We strive to issue construction permits earlier than 90 days when we are able to.

Please note that the above deficiencies could result in future projects being deemed incomplete.

Thank you,
Missy

Missy Nunnery
IDEM/OWQ
Facilities Construction and Engineering Support Section
100 N. Senate Ave. N1255
Indianapolis, IN 46204
317-232-5579
munnery@idem.in.gov

COVID-19 Resources:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (available 8:00 am-5:00 pm daily).
- **Anthem NurseLine:** Call 800-337-4770 or visit the [Anthem NurseLine](#) online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP):** Available to ALL state employees and adults in household regardless of health plan participation. Call 800-223-7723 or visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

IDEM values your feedback.

Please take two minutes and complete this brief survey.



Variance Request

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 - b. a justification and/or description of any ***hardship(s)*** that would be caused by delaying construction of the proposed sewer system until such time as all downstream infrastructure is complete and in place.
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M-25685

WESSLER

ENGINEERING

LETTER OF TRANSMITTAL

DATE:		JOB NO:
TO: Indiana Dept. of Environmental Mgmt.	FROM:	
Office of Water Quality	Wessler Engineering	
Facilities Const. & Eng. Support Section	6219 South East Street	
100 North Senate Avenue	Indianapolis, IN 46227	
Indianapolis, Indiana 46204-2251	PHONE:	(317) 788-4551
	E-MAIL:	dereku@wesslerengineering.com
RE: Project No. M-25685		

WE ARE SENDING YOU THE FOLLOWING ITEMS: ☒ Attached ☐ Under Separate Cover via

COPIES	DATE	NO.	DESCRIPTION
1			Response Letter

THESE ARE TRANSMITTED as checked below:

- | | | |
|---|---|---|
| <input type="checkbox"/> For approval | <input type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit copies for approval |
| <input type="checkbox"/> For your use | <input type="checkbox"/> Approved as noted | <input type="checkbox"/> Submit copies for distribution |
| <input type="checkbox"/> As requested | <input type="checkbox"/> Returned for corrections | <input type="checkbox"/> Return corrected prints |
| <input type="checkbox"/> For review and comment | | |
| <input type="checkbox"/> For Bids due | | |

REMARKS:

Please accept this response to the Deficiency Notice dated 12/15/2022 for Project No. M-25685, Sanitary Sewer Construction Permit Application for US 31 Corridor Infrastructure Investment Project, Phase 1A & 1B, Division 2 – Water & Sewer.

IDEM-WATER QUALITY

JAN 25 2023

RECEIVED

Received by:

COPY TO:	NAME: Derek Urban
	TITLE: PM

January 5, 2023

Indiana Department of Environmental Management
Office of Water Quality
Facilities Construction and Engineering Support Section
100 North Senate Avenue, Room N1255
Indianapolis, Indiana 46204-2251

Re: Response to Deficiency Notice for Sanitary Sewer Construction Permit Application
US 31 Corridor Infrastructure Investment Project, Phase 1A & 1B, Division 2 – Water & Sewer
Hamilton County, Project No. M-25685

Dear Mr. Miles:

Below is our response to the Deficiency Notice for Sanitary Sewer Construction Permit Application for the US 31 Corridor Infrastructure Investment Project, Phase 1A & 1B, Division 2 – Water & Sewer project.

1. *Technical Deficiency Comment 1: The Sanitary Sewer Design Summary states that Hamilton County will provide the maintenance after completion of construction. However, the submitted plan sheets do not show the location of the grinder pump stations on the proposed low-pressure sewer lines. Will the individual property owners be responsible for installing and maintaining the grinder pump stations, control panels and service laterals up to the line in the public right-of-way (ROW)? Please clarify for our information.*

Response: The individual property owners will be responsible for installing and maintaining the grinder pump stations, control panels, and service laterals from the building to the public right-of-way/easement line. Maintenance of the system downstream of the service connection at the right-of-way/easement line will be the responsibility of Hamilton County.

2. *Technical Deficiency Comment 2: The submitted plan sheets and project specification manual do not contain information on the grinder pumps. Will the individual property owners be allowed to select the grinder pumps? Will the local sewer utility inspect the grinder pump connections?*

Response: The property owner to select grinder pumps from options in the Hamilton County grinder pump standard. Hamilton County currently allows for semi-progressive cavity pumps E-One Extreme Series or Zoeller 815 Shark.

Hamilton County will inspect the grinder pump connections at the ROW/easement line.

If you have any questions or comments, please feel free to contact me at (317) 788-4551 or email at DerekU@wesslerengineering.com.



More than a Project™

Sincerely,

WESSLER ENGINEERING

Derek C. Urban, P.E.
Project Manager

cc: Dan Stevens, File



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

December 15, 2022

VIA ELECTRONIC MAIL

Mr. R. Daniel Stevens, Director of Administration
Hamilton County Building Corporation
1 Hamilton County Square, Suite 157
Noblesville, Indiana 46060

Dear Mr. Stevens:

Re: Deficiency Notice for
Construction Permit Application
Sanitary Sewer
US 31 Corridor Infrastructure Investment Project
Phase 1A & 1B, Division 2 – Water & Sewer
Bakers Corner, Indiana
Hamilton County
Project No. M-25685

This will acknowledge the receipt of plans and specifications on December 9, 2022, in connection with your application for a Construction Permit pursuant to 327 IAC 3 for the above-referenced project.

Your application has been found to be deficient. The following administrative and technical items are required to complete your application for a Construction Permit. Please be advised that if all deficiency items are not corrected or resolved within sixty (60) days of the date of this letter, your application can be denied on the basis of incompleteness. The responses to the deficiency items should be mailed to the following address:

Indiana Department of Environmental Management
Office of Water Quality
Facility Construction and Engineering Support Section
100 North Senate Avenue, Room N1255
Indianapolis, Indiana 46204-2251

I. ADMINISTRATIVE EVALUATION

Upon review of your application, no administrative deficiencies were noted

If you have any questions concerning the administrative accuracy of this application, please contact Missy Nunnery at 317/232-5579 or by email at munnery@idem.in.gov.

II. TECHNICAL REVIEW

This Office offers the following technical comments:

1. The Sanitary Sewer Design Summary states that Hamilton County will provide the maintenance after completion of construction. However, the submitted plan sheets do not show the location of the grinder pump stations on the proposed low-pressure sewer lines. Will the individual property owners be responsible for installing and maintaining the grinder pump stations, control panels and service laterals up to the line in the public right-of-way (ROW)? Please clarify for our information.
2. The submitted plan sheets and project specification manual do not contain information on the grinder pumps. Will the individual property owners be allowed to select the grinder pumps? Will the local sewer utility inspect the grinder pump connections? Please clarify for our information.

If you have any questions regarding the technical matters of your application, please contact me at 317/317/232-6548 or by email at mmiles@idem.in.gov.

Sincerely,



Mike Miles
Project Engineer
Facility Construction and
Engineering Support Section
Office of Water Quality

cc: Mr. Derek C. Urban, P.E., Wessler Engineering, Inc.

MILES, MIKE

From: MILES, MIKE
Sent: Thursday, December 15, 2022 11:24 AM
To: Dan.Stevens@hamiltoncounty.in.gov
Cc: dereku@wesslerengineering.com; Nunnery, Malishia (Missy)
Subject: US 31 Corridor Infrastructure Investment Project, Bakers Corner, Hamilton County, IDEM Project No. N-25685
Attachments: Hamilton Co -Bakers Corner, Div 2, M-25685.pdf

Tracking:	Recipient	Delivery
	Dan.Stevens@hamiltoncounty.in.gov	
	dereku@wesslerengineering.com	
	Nunnery, Malishia (Missy)	Delivered: 12/15/2022 11:24 AM
	Czerniakowski, Kevin	Delivered: 12/15/2022 11:24 AM

Dear Mr. Stevens;

This e-mail serves to transmit the attached Deficiency Notice for the above-referenced construction permit application. The attached Deficiency Notice is the official notice, and a paper copy will not be sent via the US mail. Please review the Deficiency Notice and provide an appropriate response within the designated time.

If you have questions, please contact the sender.

COVID-19 Resources:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (available 8:00 am-5:00 pm daily).
- **Anthem NurseLine:** Call 800-337-4770 or visit the [Anthem NurseLine](#) online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP):** Available to full-time state employees and their household members regardless of health plan participation. Call 800-223-7723 or visit [anthemeap.com](#) (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

Mike Miles
Project Engineer
IDEM OWQ Facility Construction Section
317 /232-6548
mmiles@idem.IN.gov



Indiana Department of Environmental Management



IDEM values your feedback.

Please take two minutes and complete this brief survey.



Project Location: Bakers Corner, IN

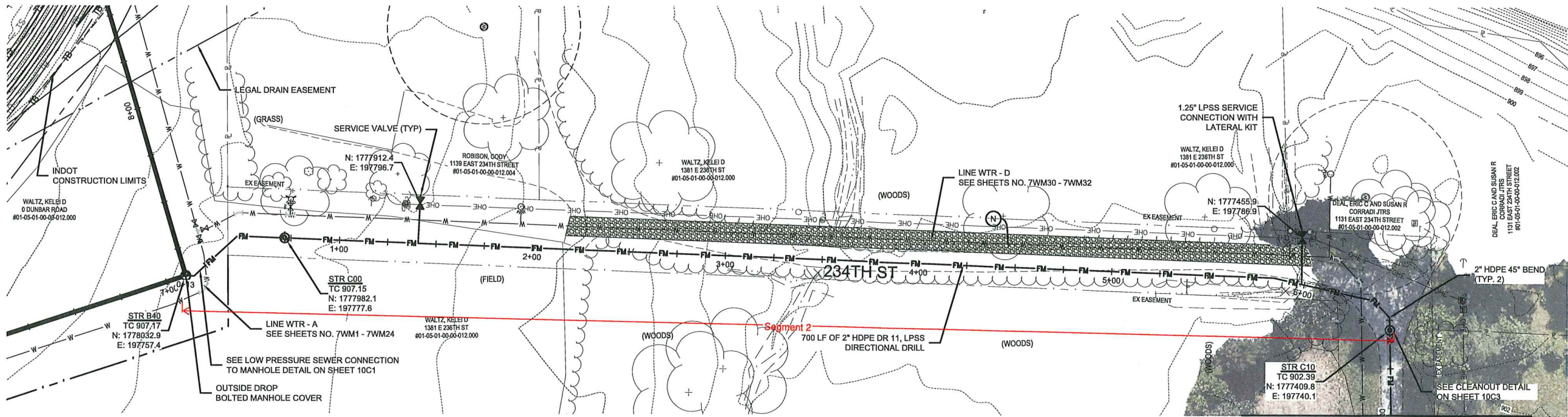
Project Name: Hamilton County Regional Utility District

Line C Hydraulic Analysis - 9/29/22

Assumptions: AN + B = Q
Gal./EDU= 310
A= 0.775 Constant
N= EDU's Number of EDU's on a given pipe segment
B= 11 GPM for one pump
Pipe Type: 310 HDPE DR 11

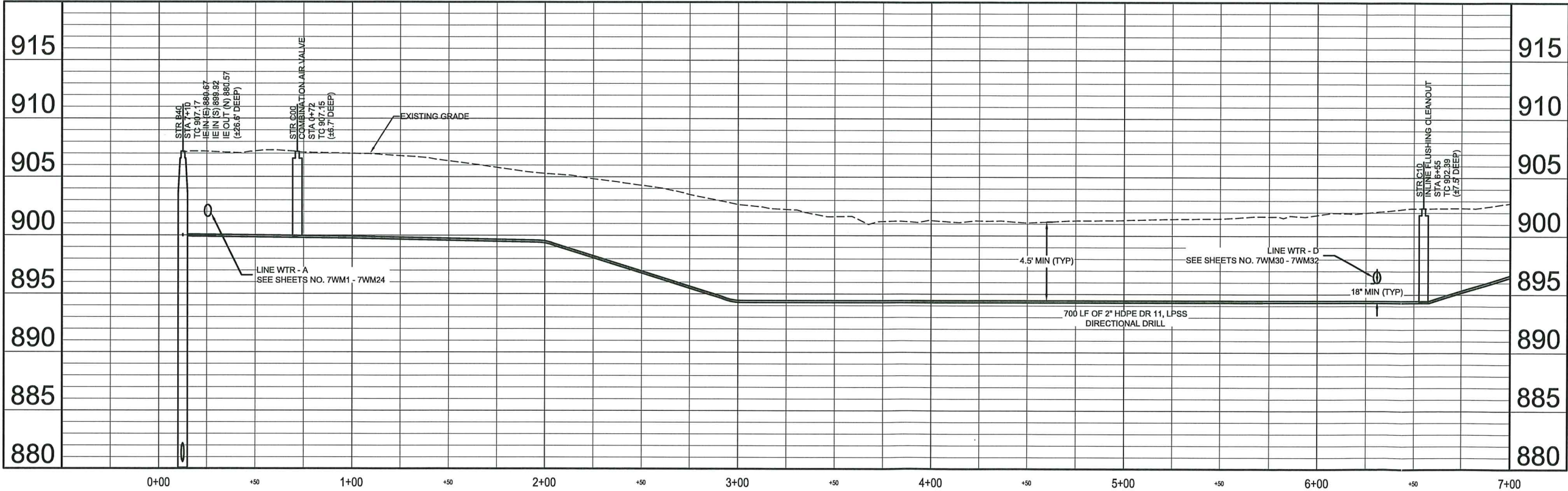
Hazen-Williams "C" Factor																							
						120																	
PIPE SEGMENT NUMBER	FLows INTO SEGMENT	NUMBER OF (EDU's)	ACCUM EDU's CONNECTED	LOW DATUM In Segment	CONTROL DATUM of Segment	PIPE LENGTH (FEET)	Max Sim Ops	MAX FLOW (GAL/MIN)	PIPE SIZE (INCH)	PIPE ID (INCHES)	MAX VELOCITY (FT/SEC)	FRICTION FACTOR (FT/C.FT)	FR LOSS THIS PIPE (FEET)	ACCUM FL (FEET)	MAX HEAD REQUIRED (FEET)	PIPE SEGMENT NUMBER	ACC NUMBER OF HOUSES	AVERAGE DAILY FLOW	VOLUME PER 100 LIN FEET	PIPE SEGMENT VOLUME	FLUID CHANGES PER DAY	SEGMENT RETENTION TIME	HOURS TO DISCHARGE
0											0.00 0												0.00 0.00
1.0	2.00	8	8	894.00	914.60	1,238.00	3	33.00	2.00	1.943	3.57	3.81	47.18	89.07	109.67	1	8.0	2480	15.40	190.68	13.01	1.8453	2.6144
2.0	0.00	2	10	894.00	900.00	645.00	4	44.00	2.00	1.943	4.76	6.49	41.88	41.88	47.88	2	10.0	3100	15.40	99.34	31.21	0.7691	0.7691

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PLAN - LINE C
SCALE: 1" = 30'

NOTES:
1. 234TH STREET IS A PRIVATE ROAD.



PROFILE - LINE C
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

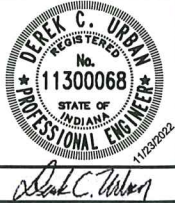
KEYED NOTES

- D ASPHALT ROAD REPAIR
- D₁ ASPHALT COMMERCIAL DRIVE REPAIR
- D₂ ASPHALT DRIVE REPAIR
- N CRUSHED STONE SURFACE REPAIR
- X POTENTIAL UTILITY CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION.
- S 1" NEW SERVICE METER AND METER PIT
- P BORE/RECEIVING PIT
- F₆ TEMPORARY SILT FENCE OR FILTER TUBE
- I INLET PROTECTION
- T REMOVE EXISTING TREE

LEGEND

- ASPHALT ROAD REPAIR
- NEW ASPHALT DRIVE
- CONCRETE DRIVE REPAIR
- CRUSHED STONE DRIVE REPAIR
- INLET PROTECTION
- CONCRETE WASHOUT
- EROSION CONTROL BLANKET
- TEMPORARY SILT FENCE
- FILTER TUBE

SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	TPH				
	APPROVED BY	DCU				
	ISSUE DATE					
	NOVEMBER 2022					
	PROJECT NUMBER					
	244721-04-001					



US 31 CORRIDOR INFRASTRUCTURE INVESTMENT PROJECT PHASE 1A AND 1B
DIVISION 2 - WATER AND SEWER
HAMILTON COUNTY, INDIANA

NEW SANITARY - PLAN AND PROFILE - LINE - C

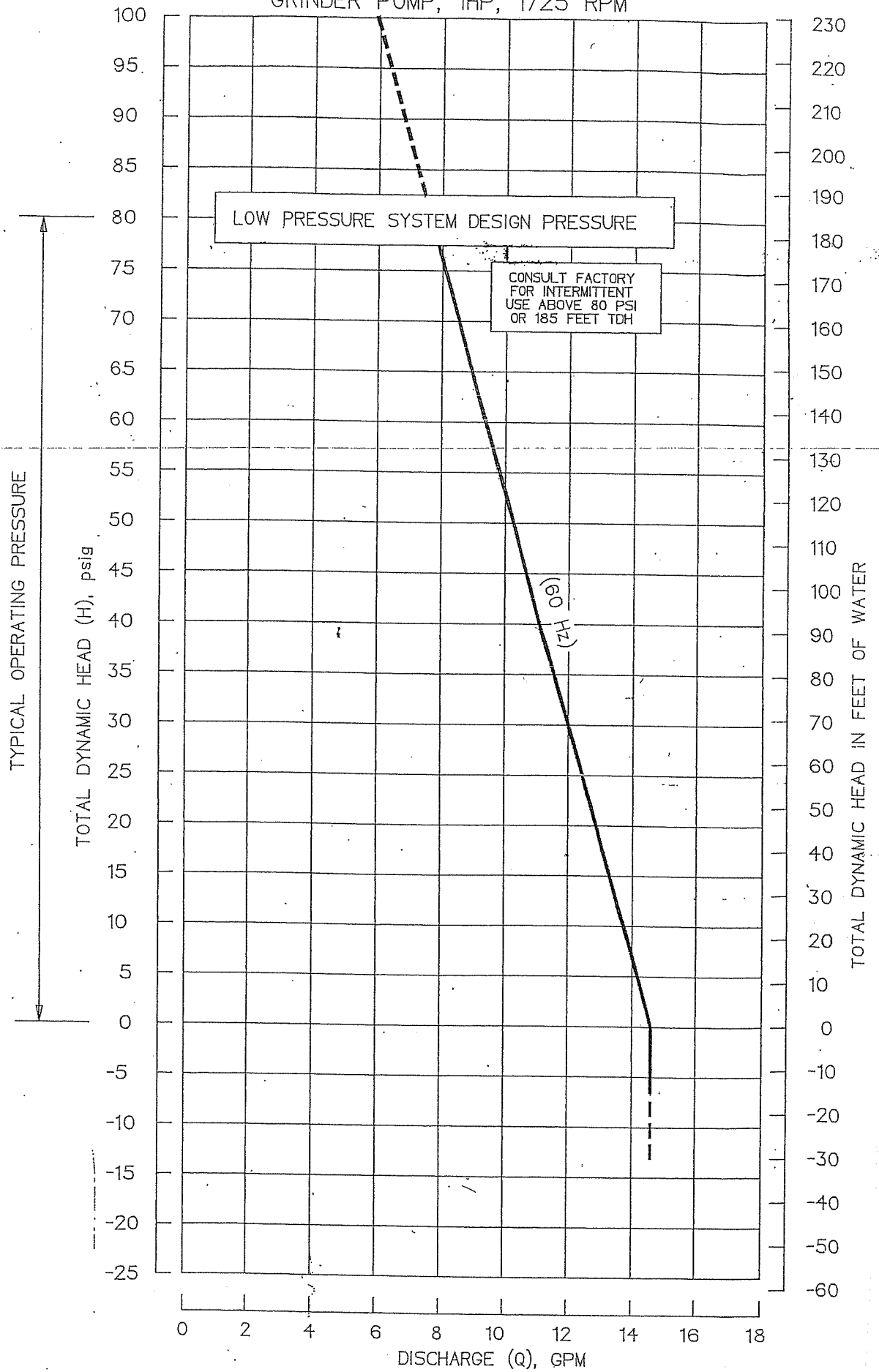
SHEET NO.

2PP7

PAGE NO.

E|ONE SPD PUMP PERFORMANCE CURVE

GRINDER PUMP, 1HP, 1725 RPM

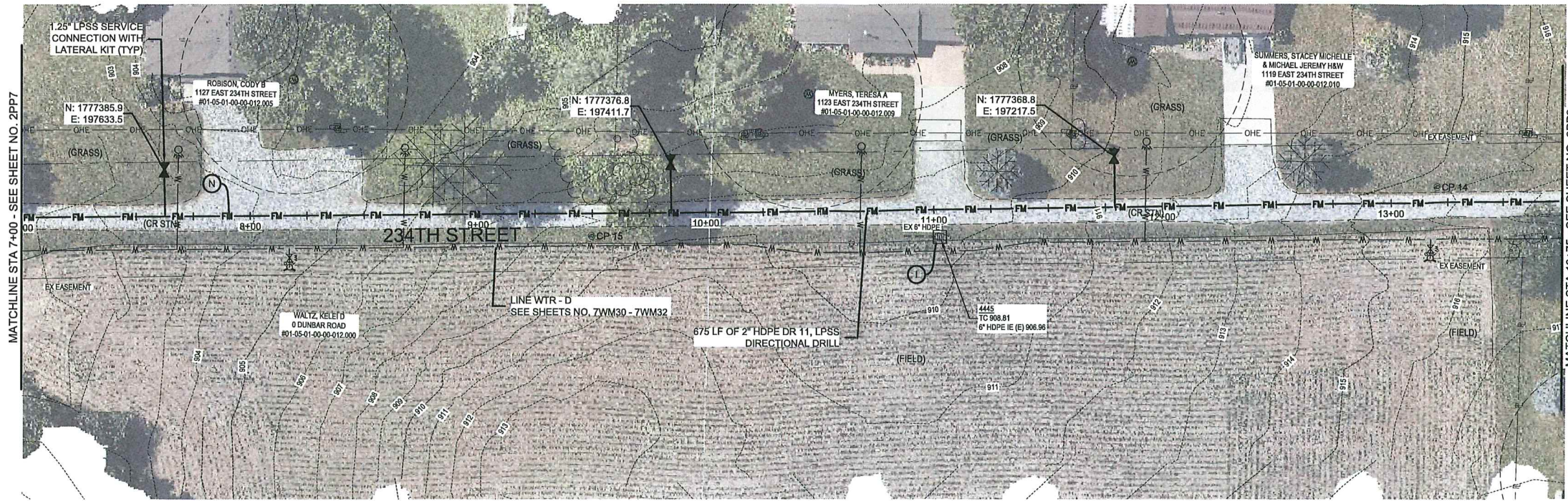




0 15 30 60 FT
1"=30'

KEYED NOTES

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SEGMENT 1

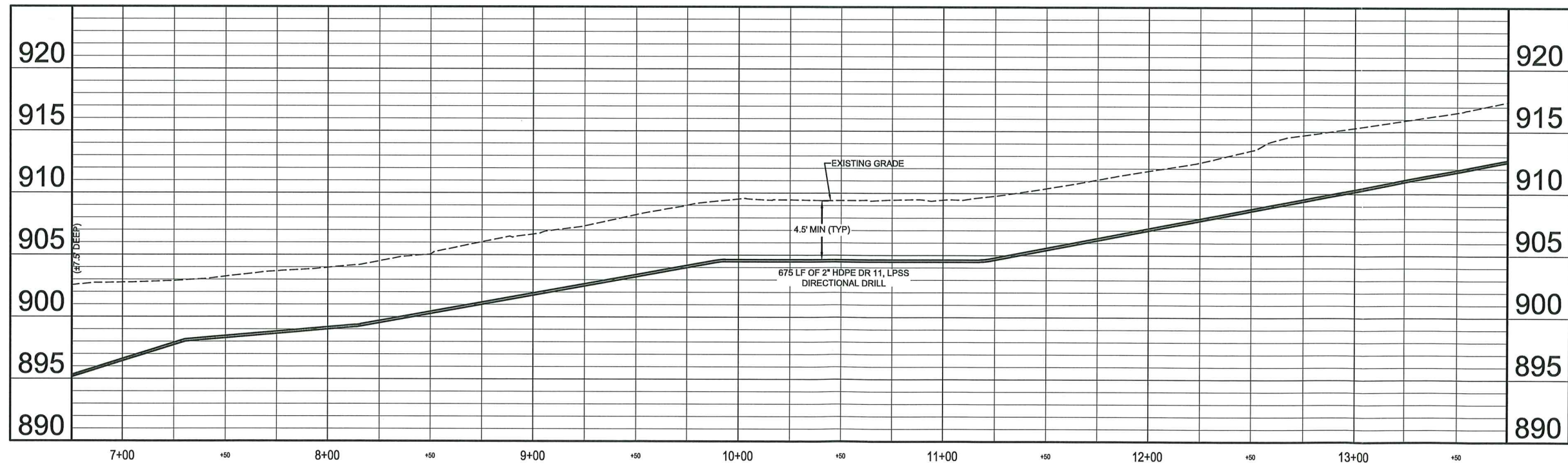
PLAN - LINE C

SCALE: 1" = 30'

NOTES:
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LEGEND

- ASPHALT ROAD REPAIR
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PROFILE - LINE C

HORIZ SCALE: 1" = 30'

VERT SCALE: 1" = 5'

SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	TPH				
	APPROVED BY	DCU				
	ISSUE DATE					
	NOVEMBER 2022					
	PROJECT NUMBER	244721-04-001				



W
WESSLER
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US 31 CORRIDOR INFRASTRUCTURE INVESTMENT PROJECT PHASE 1A AND 1B
DIVISION 2 - WATER AND SEWER

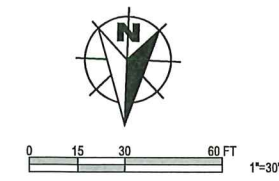
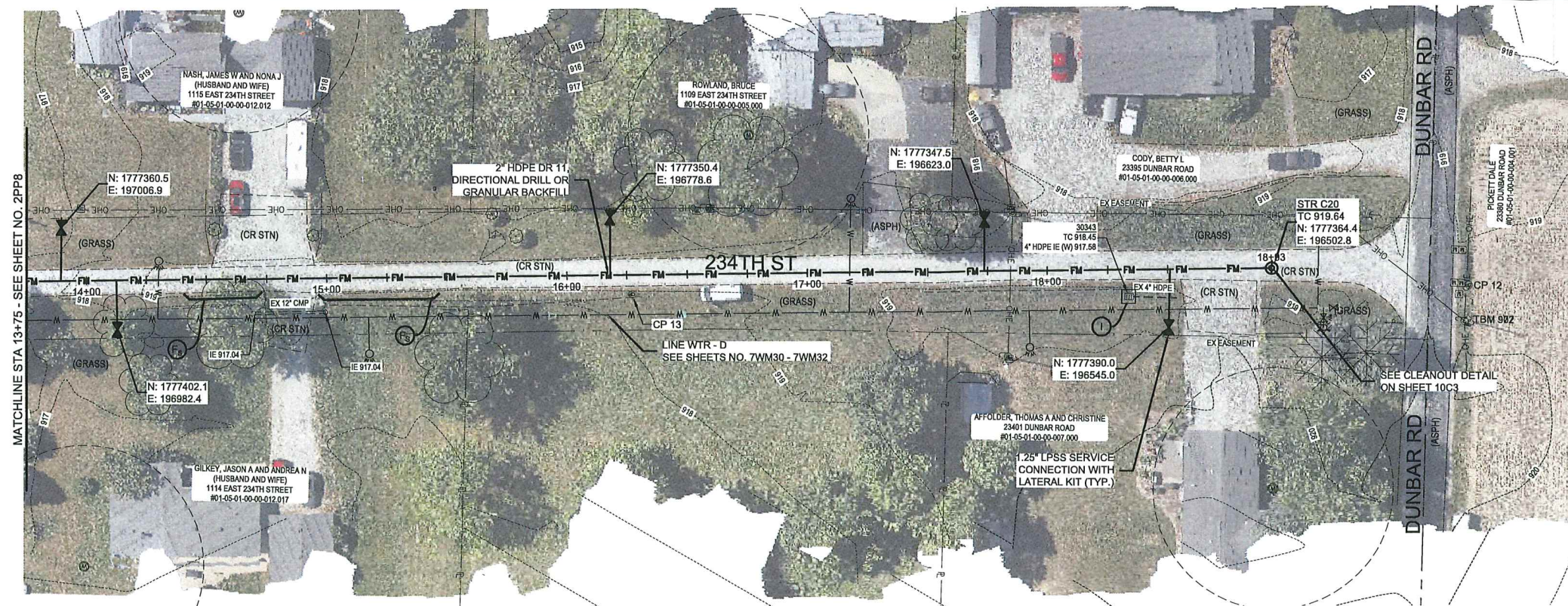
HAMILTON COUNTY, INDIANA

NEW SANITARY - PLAN AND PROFILE - LINE - C

SHEET NO.

2PP8

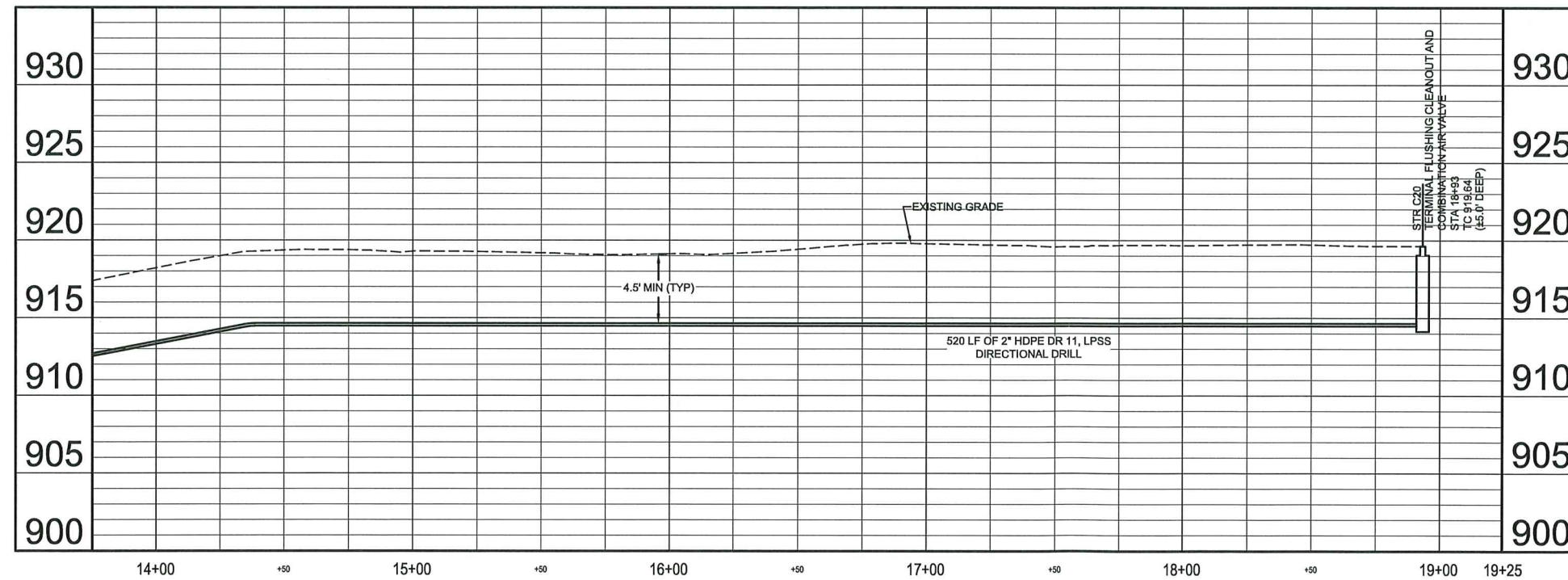
PAGE NO.



- KEYED NOTES**
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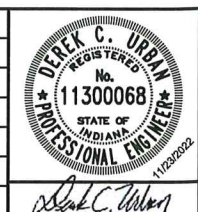
PLAN - LINE C
SCALE: 1" = 30'



- LEGEND**
- ASPHALT ROAD REPAIR
 - NEW ASPHALT DRIVE
 - CONCRETE DRIVE REPAIR
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PROFILE - LINE C
HORIZ SCALE: 1" = 30'
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SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	TPH				
	APPROVED BY	DCU				
	ISSUE DATE	NOVEMBER 2022				
	PROJECT NUMBER	244721-04-001				



US 31 CORRIDOR INFRASTRUCTURE INVESTMENT PROJECT PHASE 1A AND 1B
DIVISION 2 - WATER AND SEWER
HAMILTON COUNTY, INDIANA

NEW SANITARY - PLAN AND PROFILE - LINE - C

SHEET NO.
2PP9

PAGE NO.

Drawing: J:\Hamilton County\Projects\244721-04\244721-04-001-SAN.dwg | Layout: 2PP9 | Plotted: 11/22/22 @ 11:20:08 | LastSavedBy: Jason W

Project Location: **Bakers Corner, IN**

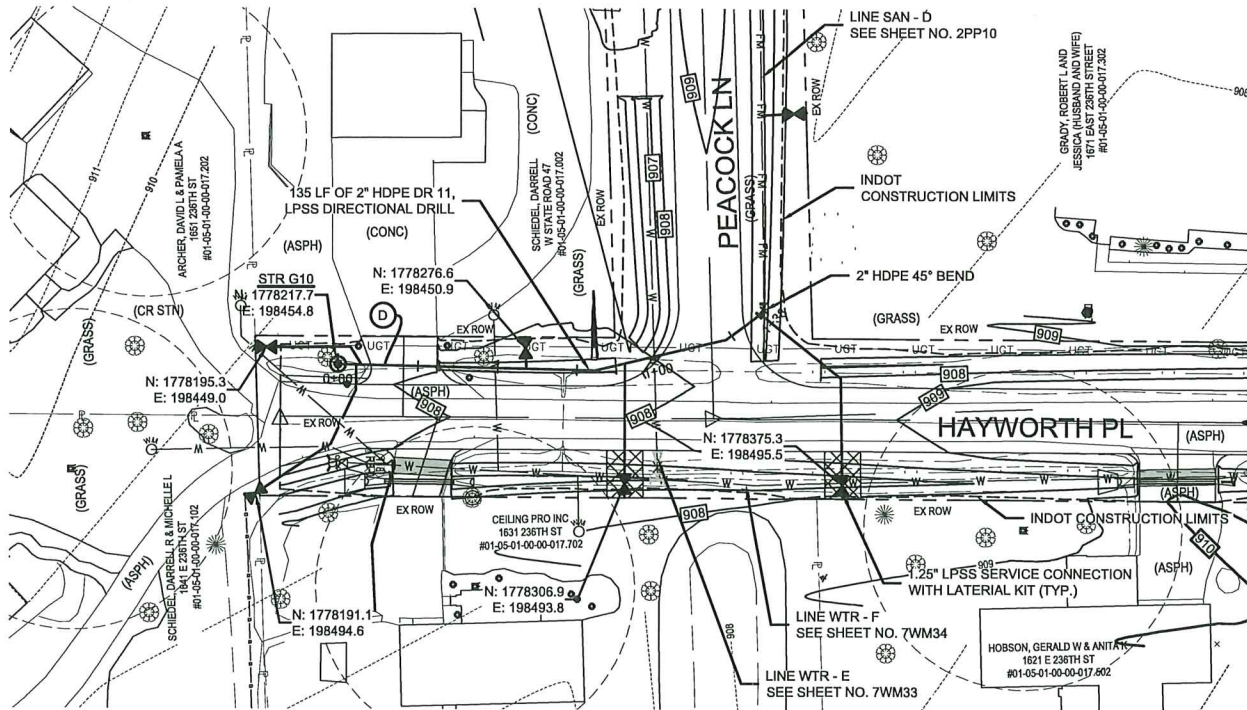
Project Name: **Hamilton County Regional Utility District**

Line D & G Hydraulic Analysis - 9/29/22

Assumptions: **AN + B = Q**
Gal./EDU= **310**
A= **0.775** Constant
N= EDU's Number of EDU's on a given pipe segment
B= **11** GPM for one pump
Pipe Type: **310** **HDPE DR 11**

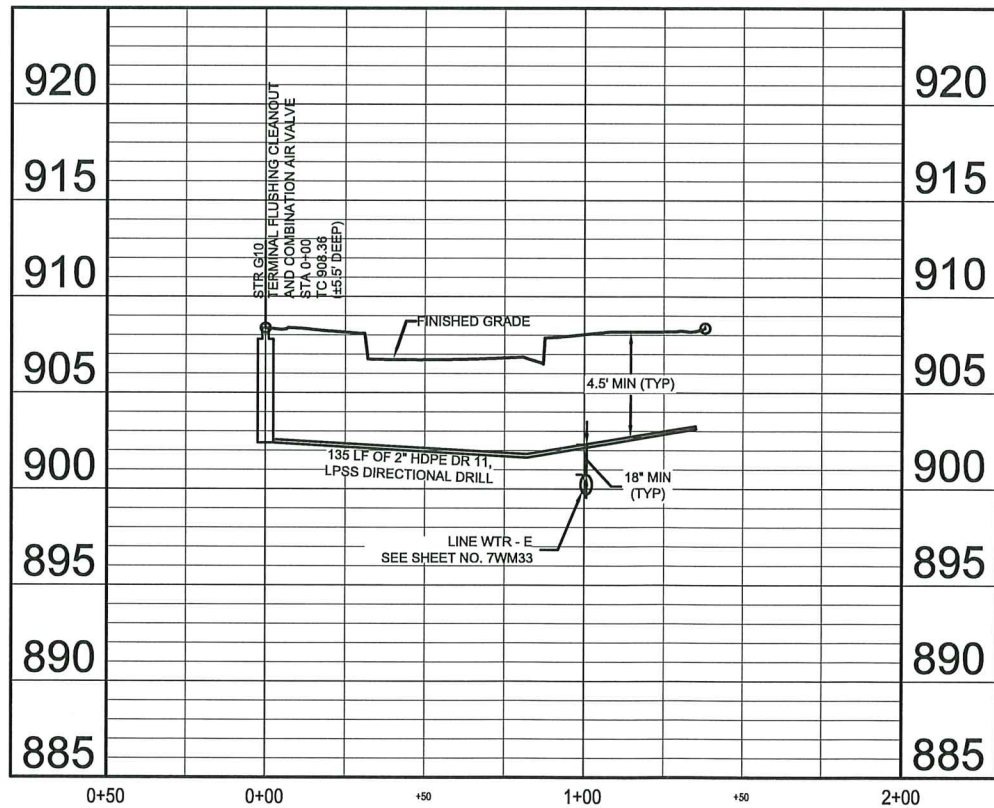
Hazen-Williams "C" Factor				B= 11																		GPM for one pump								
				120																			310				HDPE DR 11			
PIPE SEGMENT NUMBER	FLOW INTO SEGMENT	NUMBER OF (EDU's)	ACCUM EDU's CONNECTED	LOW DATUM In Segment	CONTROL DATUM of Segment	PIPE LENGTH (FEET)	Max Sim Ops	MAX FLOW (GAL/MIN)	PIPE SIZE (INCH)	PIPE ID (INCHES)	MAX VELOCITY (FT/SEC)	FRICTION FACTOR (FT/C.FT)	FR LOSS THIS PIPE (FEET)	ACCUM FL (FEET)	MAX HEAD REQUIRED (FEET)	PIPE SEGMENT NUMBER	ACC NUMBER OF HOUSES	AVERAGE DAILY FLOW	VOLUME PER 100 LIN FEET	PIPE SEGMENT VOLUME	FLUID CHANGES PER DAY	SEGMENT RETENTION TIME	HOURS TO DISCHARGE							
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1.0	2.00	5	5	901.50	903.50	135.00	3	33.00	2.00	1.943	3.57	3.81	5.15	28.97	30.97	1	5.0	1550	15.40	20.79	74.55	0.3220	1.2991							
2.0	3.00	1	6	899.50	901.50	225.00	3	33.00	2.00	1.943	3.57	3.81	8.58	23.82	25.82	2	6.0	1860	15.40	34.65	53.67	0.4472	0.9771							
3.0	0.00	3	9	894.00	899.50	400.00	3	33.00	2.00	1.943	3.57	3.81	15.25	15.25	20.75	3	9.0	2790	15.40	61.61	45.29	0.5300	0.5300							

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PLAN - LINE G
SCALE: 1" = 30'

SEGMENT 3



PROFILE - LINE G
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

KEYED NOTES

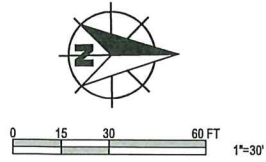
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- D₂ ASPHALT DRIVE REPAIR
- N CRUSHED STONE SURFACE REPAIR
- X POTENTIAL UTILITY CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION.
- S 1" NEW SERVICE METER AND METER PIT
- P BORE/RECEIVING PIT
- F_s TEMPORARY SILT FENCE OR FILTER TUBE
- I INLET PROTECTION
- T REMOVE EXISTING TREE

LEGEND

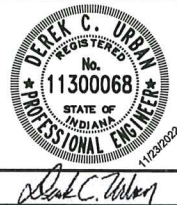
- ASPHALT ROAD REPAIR
- NEW ASPHALT DRIVE
- CONCRETE DRIVE REPAIR
- CRUSHED STONE DRIVE REPAIR
- INLET PROTECTION
- CONCRETE WASHOUT
- EROSION CONTROL BLANKET
- TEMPORARY SILT FENCE
- FILTER TUBE

NOTES:

1. EXISTING FEATURES ON THIS SHEET ARE BASED ON INDOT DRAWINGS, CONTRACTOR R-41346.
2. FINISHED GRADE IS BASED ON DESIGN SURFACE. ROAD WORK WILL BE SUBSTANTIALLY COMPLETE PRIOR TO CONSTRUCTION MATCH EXISTING GRADE WITH STRUCTURES.

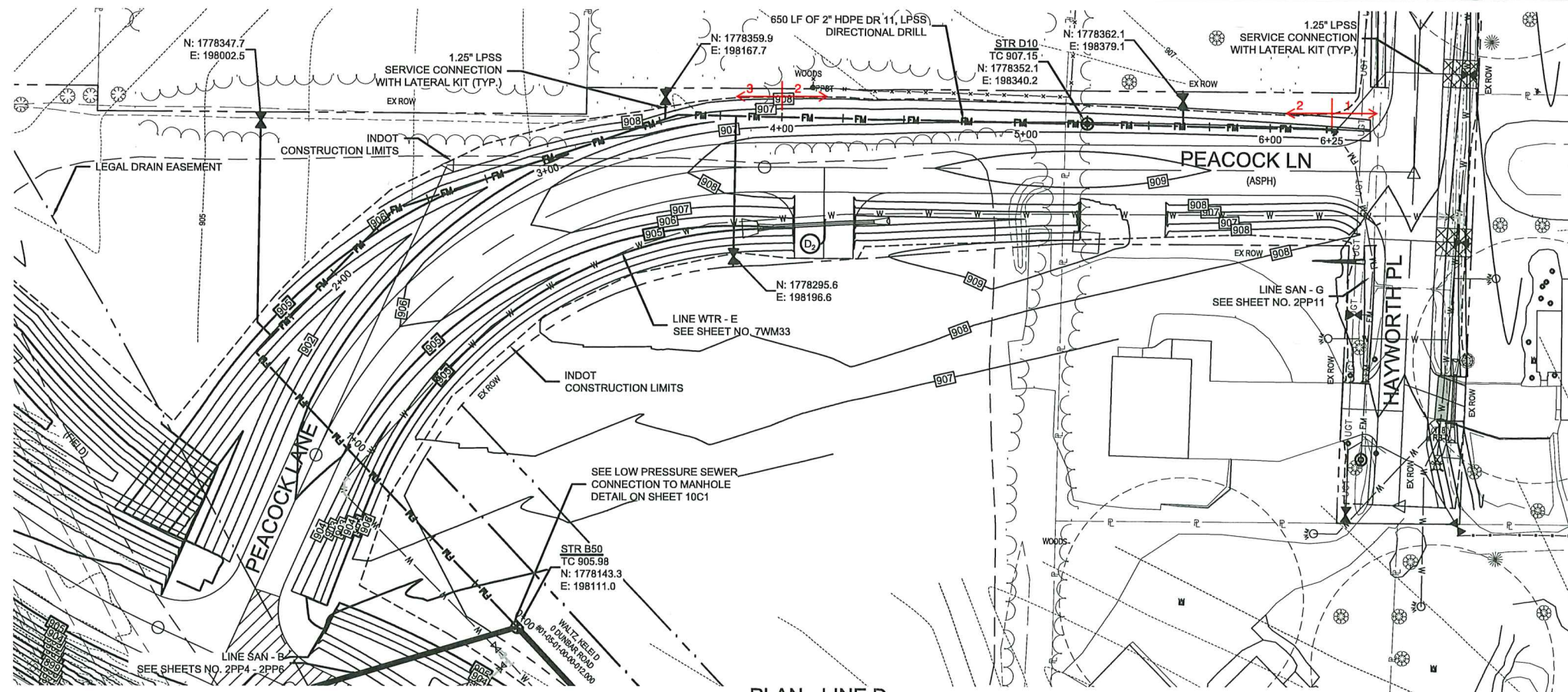


SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING 	CHECKED BY	TPH				
	APPROVED BY	DCU				
	ISSUE DATE					
	NOVEMBER 2022					
	PROJECT NUMBER					
	244721-04-001					



US 31 CORRIDOR INFRASTRUCTURE INVESTMENT PROJECT PHASE 1A AND 1B
DIVISION 2 - WATER AND SEWER
HAMILTON COUNTY, INDIANA
NEW SANITARY - PLAN AND PROFILE - LINE - G

SHEET NO.
2PP11
PAGE NO.



PLAN - LINE D
SCALE: 1" = 30'

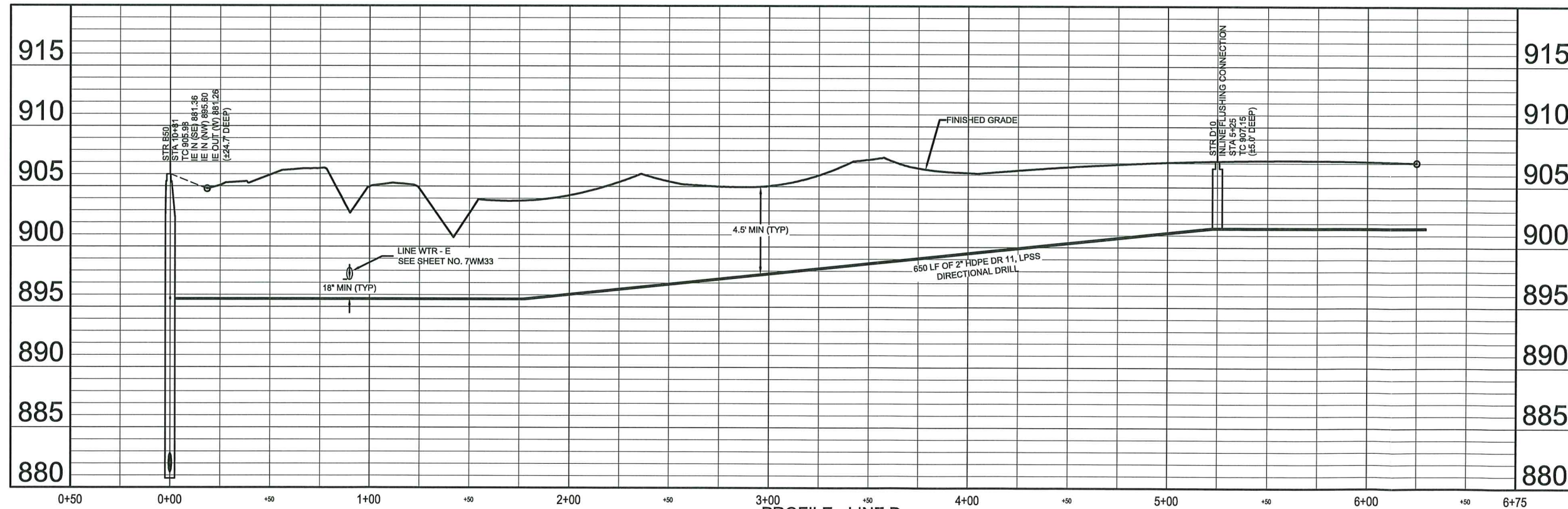
KEYED NOTES

- D ASPHALT ROAD REPAIR
- D₁ ASPHALT COMMERCIAL DRIVE REPAIR
- D₂ ASPHALT DRIVE REPAIR
- N CRUSHED STONE SURFACE REPAIR
- X POTENTIAL UTILITY CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION.
- S 1" NEW SERVICE METER AND METER PIT
- P BORE/RECEIVING PIT
- F_s TEMPORARY SILT FENCE OR FILTER TUBE
- I INLET PROTECTION
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LEGEND

- ASPHALT ROAD REPAIR
- NEW ASPHALT DRIVE
- CONCRETE DRIVE REPAIR
- CRUSHED STONE DRIVE REPAIR
- INLET PROTECTION
- CONCRETE WASHOUT
- EROSION CONTROL BLANKET
- TEMPORARY SILT FENCE
- FILTER TUBE

- NOTES:
- EXISTING FEATURES ON THIS SHEET ARE BASED ON INDOT DRAWINGS, CONTRACT R-41346.
 - FINISHED GRADE IS BASED ON DESIGN SURFACE. ROAD WORK WILL BE SUBSTANTIALLY COMPLETE PRIOR TO CONSTRUCTION MATCH EXISTING GRADE WITH STRUCTURES.



PROFILE - LINE D
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	TPH				
	APPROVED BY	DCU				
	ISSUE DATE					
	NOVEMBER 2022					
	PROJECT NUMBER					
	244721-04-001					



US 31 CORRIDOR INFRASTRUCTURE INVESTMENT PROJECT PHASE 1A AND 1B
DIVISION 2 - WATER AND SEWER

HAMILTON COUNTY, INDIANA

NEW SANITARY - PLAN AND PROFILE - LINE - D

SHEET NO.

2PP10

PAGE NO.