

17. DIRECTIONS TO THE SITE

Exit I-90 at Hwy 11 North, turn right onto Hwy 531 East (Harmon Road), and continue approximately 1.3 miles to the "C" Plant entrance gate on the left (north side of Highway 531).

18. Nature of Activity (Description of project, include all features)

The current pipeline and diffuser discharge structure will be moved to a new location in Lake Erie. This move will not affect the effluent quality or characteristics. There are two major components to the project: on land pipeline construction and off shore pipeline and diffuser head installation. Details of the proposed project are provided in the attached construction drawings.

1. On land, an existing but unused aboveground pipeline will be removed and a two new 18-inch diameter by 1,930-foot long underground pipes will be installed. This new pipeline will connect the current effluent pipeline from the Cristal Ashtabula Complex to an existing intake conduit.
2. The existing intake conduit will be used in its entirety. A new 34-inch outer diameter pipeline will exit the existing east intake structure and extend an additional 1,198 feet. The 30-inch diameter by 42-foot diffuser head will be installed at the end of the new pipeline.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

This project is intended to reroute an existing NPDES outfall in Lake Erie to a new location situated further to the east and further into the Lake. This outfall will provide a long term solution for the Cristal Ashtabula Complex, that is located further inland, and allow continued operation of the Cristal plants. The current NPDES outfall is operated in conjunction with the First Energy facility located along the Lake Erie shoreline. This facility has been shutdown and, therefore, the outfall location can no longer be used. Cristal is proposing a new outfall location in the Lake in order to continue the discharge of treated wastewater and operation of the Ashtabula facilities.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Construction for this project will result in permanent and temporary impacts to six wetland areas and Lake Erie. These impacts are required to provide access for the construction of the pipeline so the treated effluent discharge can be rerouted from its current location to the new location, as follows:

1. Temporary wetland impacts will occur due to the discharge of permanent earth and rock fill materials during the removal of the unused pipeline and construction of the new underground pipeline; and
2. Lake impacts will occur due to the placement of the new pipeline and diffuser head. The pipeline will be anchored to the lake bottom but concrete anchors. In addition, portions of the pipeline will be supported by piling structures. Also, clean fill material will be added near the intake structure to support the pipeline. During installation, soft sediment may be incidentally displaced during the placement and securing of the concrete anchors and pilings to the lake bottom.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards
Granular fill and riprap - 380 cu yds	Pipeline structures- 323 cu yds	

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 0.14 (Temporary inland) and 0.09 (In Lake)

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Mixing zone studies were completed and the results indicated that the proposed outfall location is the only feasible option. All work conducted will be completed with as little disturbance as possible. All temporary impacts will be removed, or restored to pre-existing conditions, at the completion of the work. Work in Lake Erie will not be conducted during the April 15-June 30 time period, as specified by Ohio Department of Natural Resources Division of Wildlife.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- 25 W Jefferson Street

City - Jefferson State - OH Zip - 44047

b. Address- 800 Cabin Hill Drive

City - Greensburg State - PA Zip - 15601

c. Address- 400 Rouser Road, Suite 300

City - Coraopolis State - PA Zip - 15108

d. Address- 7950 Corporate Boulevard

City - Plain City State - OH Zip - 43064

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

DATE

SIGNATURE OF AGENT

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

CRISTAL C-PLANT EFFLUENT DISCHARGE PIPELINES LAKE RD. TO C PLANT ASHTABULA, OHIO

UTILITY CONTACTS:

DOMINION EAST OHIO
P.O. BOX 5759
CLEVELAND, OHIO 44101
(877) 542-2630

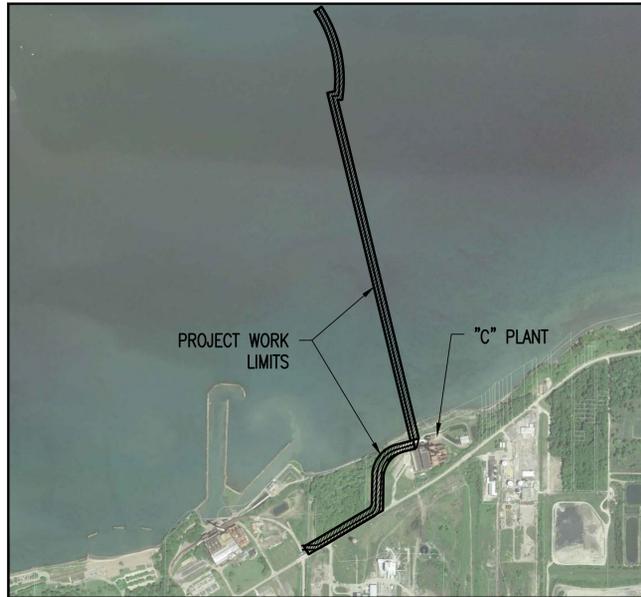
PRAXAIR
39 OLD RIDGEBURY RD.
DANBURY, CT 06810
(800) 772-9247

ASHTABULA COUNTY ENVIRONMENTAL
SERVICES
36 W. WALNUT STREET
JEFFERSON, OHIO 44047
(440) 576-3722

WINDSTREAM COMMUNICATIONS
25900 LAKELAND BLVD.
EUCLID, OHIO
(216) 289-1081

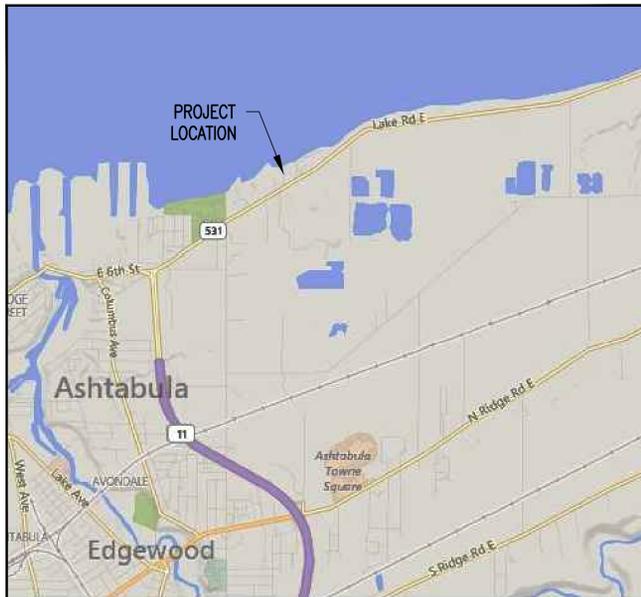
ILLUMINATING CO.
6896 MILLER RD.
BRECKSVILLE, OHIO 44141
(800) 589-3101

AQUA OHIO
8644 STATION ST.
MENTOR, OHIO 44060
(440) 255-3984



SITE MAP

SCALE: NO SCALE



VICINITY MAP

SCALE: NO SCALE



SHEET INDEX:

SHEET	DESCRIPTION
T-1	EFFLUENT DISCHARGE PIPELINES, LAKE ROAD TO C-PLANT COVER SHEET
C-1	EFFLUENT DISCHARGE PIPELINES, LAKE ROAD TO C-PLANT, PLAN & PROFILE, LAKE ROAD
C-2	EFFLUENT DISCHARGE PIPELINES, LAKE ROAD TO C-PLANT, PLAN & PROFILE, HIGHCLIFF DR.
P01	EFFLUENT DISCHARGE PIPELINES, SITE PLAN
C01	EFFLUENT DISCHARGE PIPELINES, LAKE OUTFALL PIPELINE EXTENSION, SITE PLAN
C03	EFFLUENT DISCHARGE PIPELINES, LAKE OUTFALL PIPELINE EXTENSION, PLAN & PROFILE
C04	EFFLUENT DISCHARGE PIPELINES, LAKE OUTFALL PIPELINE EXTENSION, DETAILS
XS04	EFFLUENT DISCHARGE PIPELINES, DIFFUSER STRUCTURAL DETAILS
XS05	EFFLUENT DISCHARGE PIPELINES, PIPE BEND SUPPORT STRUCTURE

PROJECT OWNER:

CRISTAL
2900 MIDDLE RD., PLANT 1
ASHTABULA, OHIO 44004

ENGINEER:

MIDDOUGH INC.
1901 EAST 13TH STREET
CLEVELAND, OHIO 44114

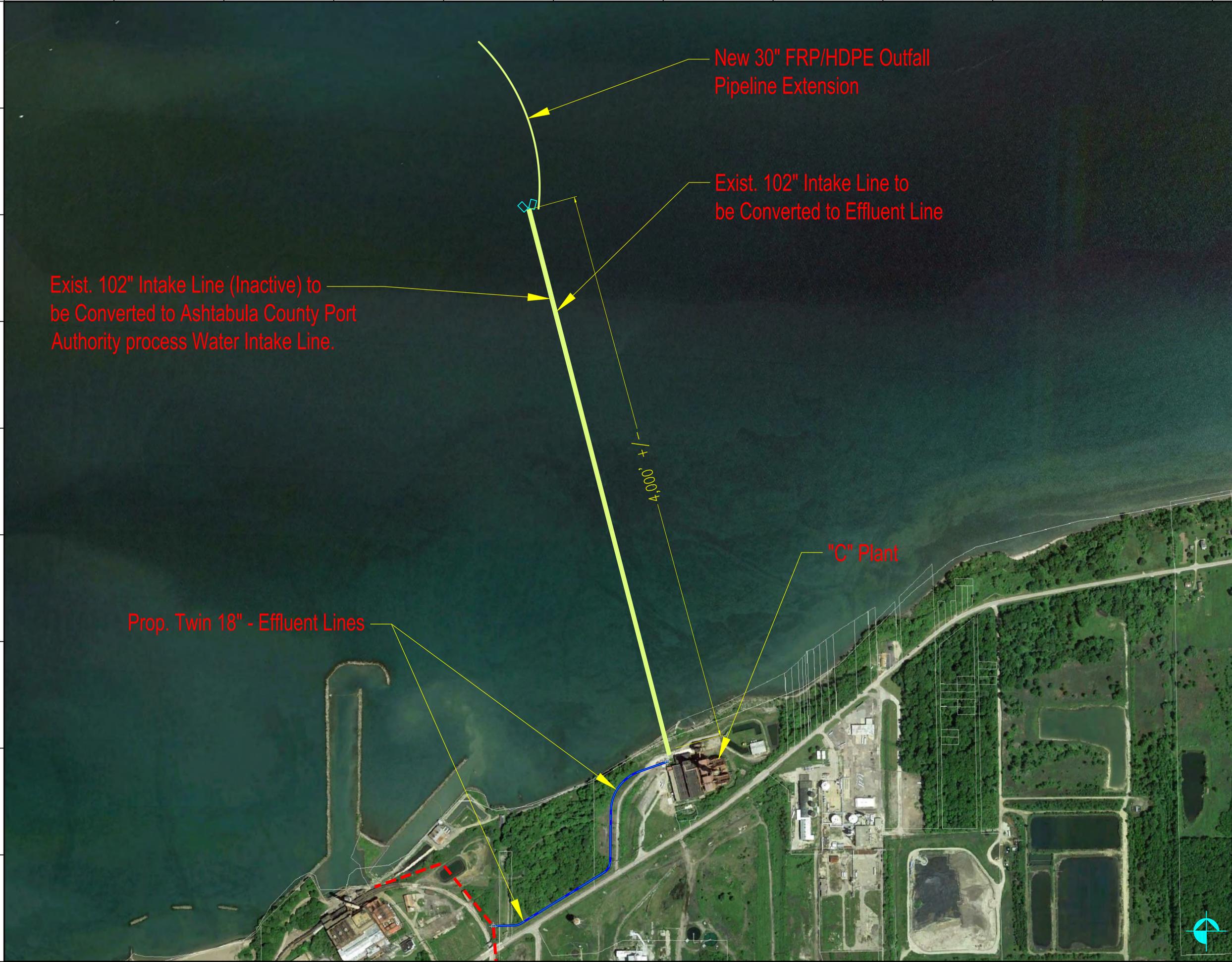


REV.	DATE	DESCRIPTION	BY
B	01/15/16	ISSUED FOR PERMIT	EMJ
A	11-18-15	PRELIMINARY ISSUE	EMJ

CRISTAL		ASHTABULA C-PLANT 2900 MIDDLE RD. ASHTABULA, OH 44004 (440) 994-1400	
EFFLUENT DISCHARGE PIPELINES LAKE ROAD TO C-PLANT COVER SHEET			
DRAWN BY:	EMJ	PROJECT:	DRAWING NUMBER
CHECKED BY:	RAK	DATE:	T-1
APPROVED BY:	NTS	SCALE:	
APPROVED BY:	NTS	SCALE:	

A B C D E F G H I J K L M

1
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New 30" FRP/HDPE Outfall Pipeline Extension

Exist. 102" Intake Line to be Converted to Effluent Line

Exist. 102" Intake Line (Inactive) to be Converted to Ashtabula County Port Authority process Water Intake Line.

4,000'

"C" Plant

Prop. Twin 18" - Effluent Lines

middough.
MIDD. PROJ. # SC1502B

REV.	DATE	DESCRIPTION	BY
A	01/15/2016	ISSUED FOR EXHIBIT	EMJ

CRISTAL
ASHTABULA C-PLANT
2900 MIDDLE RD.
ASHTABULA, OH 44004
(440) 994-1400

EFFLUENT DISCHARGE PIPELINES
LAKE ROAD TO OUTFALL

DRAWN BY:	EMJ	PROJECT:	
CHECKED BY:	RAK	DATE:	01/15/16
APPROVED BY:		SCALE:	1" = 300'
APPROVED BY:		DRAWING NUMBER:	EXHIBIT 1





middough.
MIDD. PROJ. # SC1502B

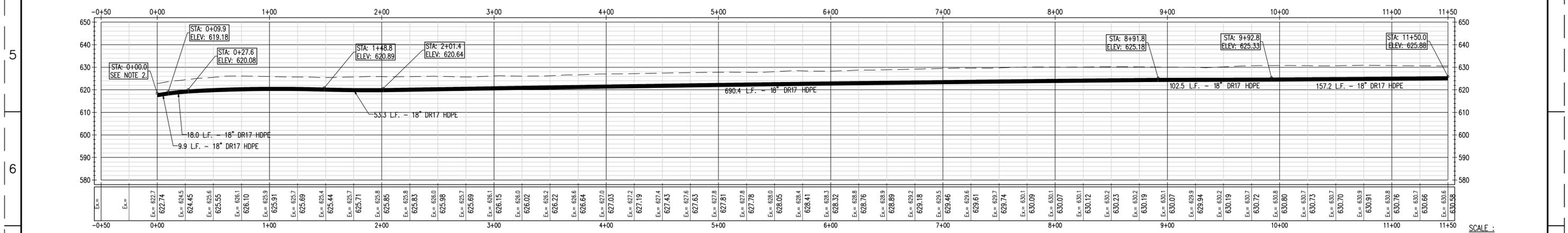
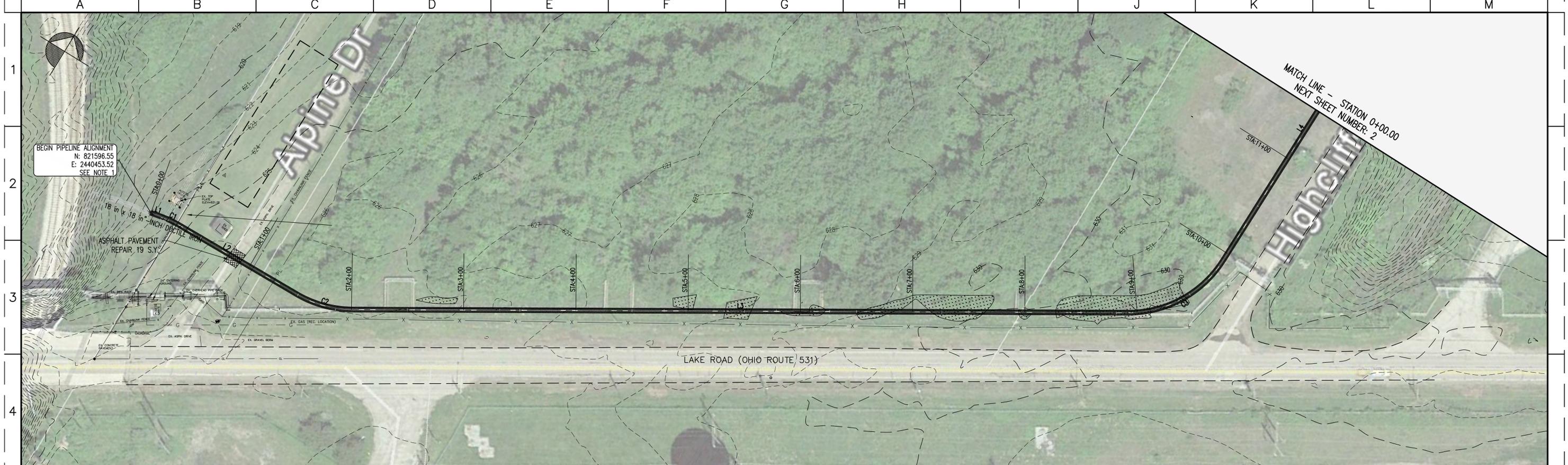
REV.	DATE	DESCRIPTION	BY
A	01/15/2016	ISSUED FOR EXHIBIT	EMJ

CRISTAL ASHTABULA C-PLANT
2900 MIDDLE RD.
ASHTABULA, OH 44004
(440) 994-1400

EFFLUENT DISCHARGE PIPELINES
ASH COMPLEX EFFLUENT LINES

DRAWN BY:	EMJ	PROJECT:	ASHTABULA C-PLANT
CHECKED BY:	RAK	DATE:	01/15/2016
APPROVED BY:		SCALE:	1" = 300'
APPROVED BY:		DRAWING NUMBER:	EXHIBIT 2





EFFLUENT DISCHARGE PIPELINE CL PROFILE

SCALE :
1" = 40' HORIZ.
1" = 20' VERT. (2:1)

EFFLUENT ALIGNMENT - LINE TAG TABLE				
LINE TAG	LENGTH	DIRECTION	START POINT	END POINT
L1	9.85'	N78° 29' 59.61"E	N: 2440453.52 E: 821596.55	N: 2440463.17 E: 821598.51
L2	121.24'	N88° 40' 06.63"E	N: 2440480.78 E: 821600.49	N: 2440601.99 E: 821603.31
L3	690.42'	N58° 33' 58.20"E	N: 2440651.82 E: 821617.96	N: 2441240.91 E: 821978.02
L4	272.76'	N0° 43' 05.40"E	N: 2441288.75 E: 822062.09	N: 2441292.17 E: 822334.83
L5	335.64'	N45° 21' 40.06"E	N: 2441351.63 E: 822474.64	N: 2441590.45 E: 822710.47

EFFLUENT ALIGNMENT - CURVE TAG TABLE							
CURVE TAG	RADIUS	CURVE LENGTH	CHORD LENGTH	CHORD DIRECTION	DELTA	START POINT	END POINT
C1	100.00'	17.75'	17.72'	N83° 35' 03.12"E	10.1686°	N: 821598.5132 E: 2440463.17	N: 821600.4937 E: 2440480.78
C2	100.00'	52.54'	51.94'	N73° 37' 02.42"E	30.1023°	N: 821603.3109 E: 2440601.99	N: 821617.9596 E: 2440651.82
C3	100.00'	100.96'	96.73'	N29° 38' 31.80"E	57.8480°	N: 821978.0210 E: 2441240.91	N: 822062.0919 E: 2441288.75
C4	200.00'	155.83'	151.92'	N23° 02' 22.73"E	44.6430°	N: 822334.8328 E: 2441292.17	N: 822474.6359 E: 2441351.63
C5	200.00'	87.65'	86.95'	N57° 54' 58.96"E	25.1105°	N: 822710.4686 E: 2441590.45	N: 822756.6539 E: 2441664.12

CONSTRUCTION NOTES:

- CONTRACTOR SHALL CONDUCT EXPLORATORY EXCAVATION AT THE LOCATION INDICATED TO EXPOSE THE EXISTING 18" PIPES. SUBJECT TO THE FIELD LOCATIONS AND ELEVATIONS ADJUSTMENTS TO THE PROPOSED ALIGNMENT AND PROFILE AS SHOWN MAY BE REQUIRED. THESE ADJUSTMENTS ARE TO BE INCORPORATED WITHIN ALIGNMENT ELEMENTS L1 AND C1.
- EXISTING PIPES ARE 18" DR17 HDPE AS DETERMINED FROM CRISTAL RECORD DOCUMENTATION. BEGINNING WITH THE PLANT 1 PIPELINE (SOUTH PIPELINE) CUT AND REMOVE THE EXISTING PIPE FROM STA. 0+00 TO AND INCLUDING THE EXISTING ELBOW THAT TURNS NORTH TO THE EXISTING AIR VALVE CHAMBER. CLEAN AND PREPARE PIPE ENDS FOR CONNECTION OF NEW SOUTH PIPELINE. FOLLOW MANUFACTURER GUIDELINES FOR PIPE END PREPARATION.

PIPELINE TESTING:

- PERFORM PIPELINE PRESSURE TESTING, INCLUDING REPAIRS IF REQUIRED, FOR THE INSTALLED PIPELINES TO C-PLANT.
- SCHEDULE THE FOLLOWING WORK WITH CRISTAL OPERATIONS: CONNECT THE PLANT 1 PIPELINE (SOUTH PIPELINE) TO THE PROPOSED PIPELINE TO C-PLANT. CRISTAL TO CONFIRM FLOW CONTINUITY FROM THE PLANT 1 PUMP STATION TO THE NEW PRS.
- CRISTAL WILL NOTIFY THE CONTRACTOR WHEN FLOW CONDITIONS ARE SATISFACTORY AT WHICH TIME THE PLANT 2 (NORTH PIPELINE) TIE-IN SHALL BE CONSTRUCTED AND PRESSURE TESTED. CRISTAL TO CONFIRM FLOW CONTINUITY FROM THE PLANT 2 PUMP STATION TO THE NEW PRS.

PIPELINE TESTING:

- UPON COMPLETION OF THE TIE-IN WORK THE COMPLETE PIPELINES FROM PUMP STATION TO THE NEW PIG RETRIEVAL SLUMP SHALL BE HYDROSTATIC PRESSURE TESTED PER THE REQUIREMENTS OF ASTM F 2164, ASTM F 1412, AWWA MANUAL OF PRACTICE M55 CHAPTER 9, AND PPI HANDBOOK OF POLYETHYLENE PIPE CHAPTER 2. IF THE TEST SECTION FAILS THE CONTRACTOR SHALL REPAIR OR REPLACE ALL DEFECTIVE MATERIALS AND/OR WORKMANSHIP AT NO ADDITIONAL COST TO THE OWNER. AIR TESTING WILL NOT BE PERMITTED. TEST PRESSURE SHALL BE TWICE THE OPERATING PRESSURE.

SURVEY NOTES:

THE HORIZONTAL BASIS FOR THIS SURVEY IS OHIO STATE PLANE, NORTH ZONE, NAD83. THE VERTICAL BASIS FOR THIS SURVEY IS NAD88.

UTILITY NOTE:
THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE BASED ON THE FOLLOWING:
1) THE FIELD SURVEY LOCATION OF OBVIOUS ABOVE GROUND UTILITY EVIDENCE.
2) RECORD PLANS PROVIDED BY RESPONDING UTILITY COMPANIES FROM A PRE-PLANNING OUPS REQUEST, TICKET NUMBER AS24701840-00A MADE ON SEPTEMBER 4TH, 2015.

AS OF SEPTEMBER 22, 2015 THE ONLY RESPONDING UTILITY COMPANY HAS BEEN DOMINION EAST OHIO (EOL).

IF WE ARE PROVIDED ADDITIONAL INFORMATION BY OTHER UTILITY COMPANIES AFTER THE DATE OF THIS SUBMITTAL, OUR OFFICE WILL SEND REVISIONS TO THE SURVEY.

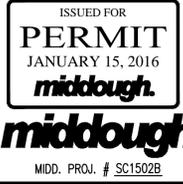
THE UTILITY LOCATIONS ARE SHOWN TO THE BEST OF OUR ABILITY BASED ON THIS INFORMATION, BUT STEPHEN HOVANCSEK & ASSOCIATES, INC. DOES NOT WARRANT THAT THEY ARE SHOWN IN THEIR EXACT LOCATIONS AND MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.



DELINEATED WETLAND - REFER TO:
WETLAND DELINEATION REPORT,
WASTEWATER DISCHARGE PIPELINE RE-ROUTE PROJECT,
LAKE ROAD, ASHTABULA, OHIO.

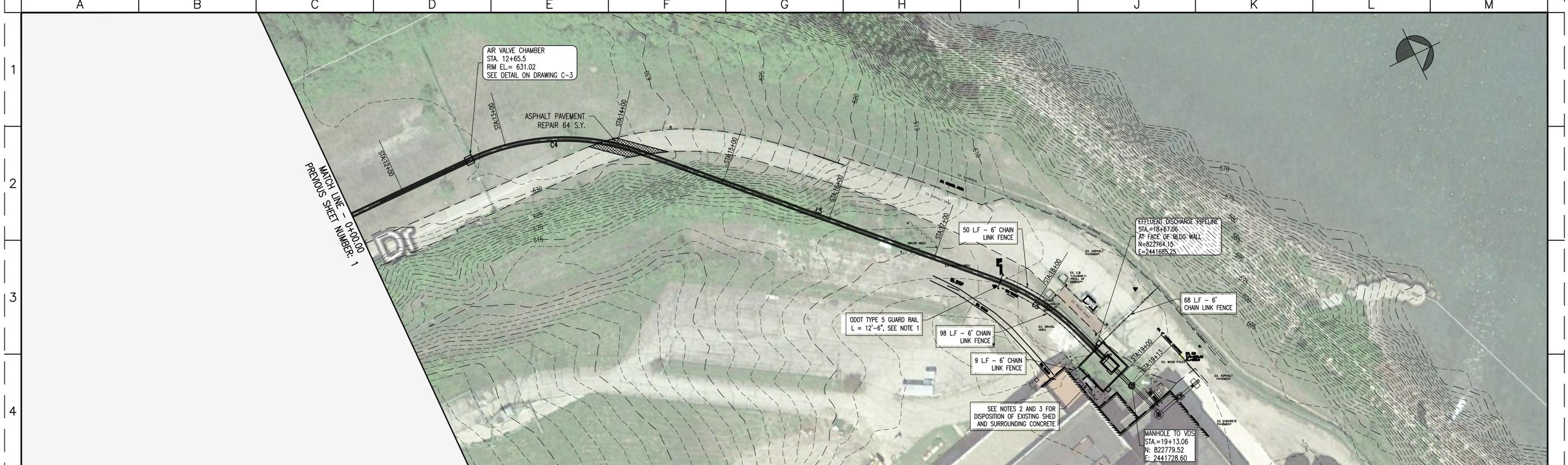
PREPARED FOR: CRISTAL
2900 MIDDLE ROAD, PLANT 1
ASHTABULA, OHIO 44004

DATE: OCTOBER 2015
PREPARED BY: CHAGRIN VALLEY ENGINEERING, LTD.

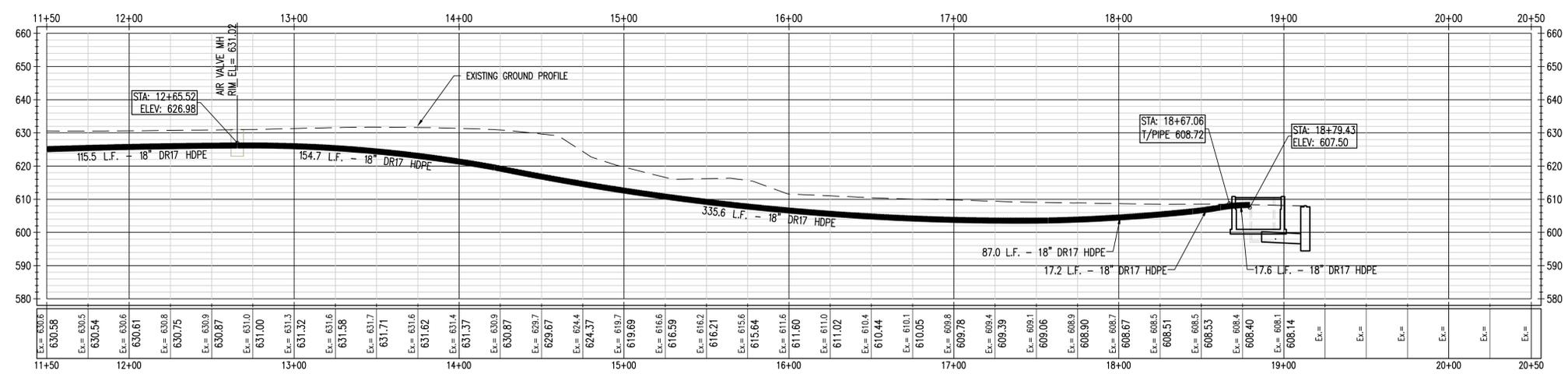


REV.	DATE	ISSUED FOR PERMIT	DESCRIPTION	RAK	BY
0	01-15-16	ISSUED FOR PERMIT			

		ASHTABULA C-PLANT 2900 MIDDLE RD ASHTABULA, OH 44004 (440) 994-1400	
EFFLUENT DISCHARGE PIPELINES LAKE ROAD TO C PLANT PLAN AND PROFILE LAKE ROAD			
DRAWN BY:	RAK	PROJECT: SC1502B	
CHECKED BY:	EMJ	DATE: 10-26-15	DRAWING NUMBER
APPROVED BY:		SCALE: AS NOTED	C-1



- GENERAL NOTES:
1. ODOT TYPE 5 GUARD RAIL SHALL CONFORM TO ODOT STANDARD ROADWAY CONSTRUCTION DRAWINGS GR 1.1 AND GR 2.1 USING WOOD POSTS AND BLOCKOUTS. INSTALL W-BEAM FLARED END SECTION AT BOTH ENDS.
 2. REMOVE EXISTING SHED AND DISPOSE OF AS DIRECTED BY THE OWNER.
 3. DEMOLISH AND REMOVE 76 SQUARE YARDS OF EXISTING CONCRETE AS DIRECTED BY THE OWNER.



EFFLUENT DISCHARGE PIPELINE CL PROFILE

SCALE :
 1" = 40' HORIZ.
 1" = 20' VERT. (2:1)



REV.	DATE	DESCRIPTION	BY
0	01-15-16	ISSUED FOR PERMIT	RAK

		ASHTABULA C-PLANT 2900 MIDDLE RD. ASHTABULA, OH 44004 (440) 994-1400	
EFFLUENT DISCHARGE PIPELINES LAKE ROAD TO C PLANT PLAN & PROFILE HIGHCLIFF DRIVE			
DRAWN BY:	RAK	PROJECT:	
CHECKED BY:	EMJ	DATE:	10/26/15
APPROVED BY:		SCALE:	AS NOTED
APPROVED BY:		DRAWING NUMBER:	C-2