290 W. Nationwide Blvd.
Columbus, Ohio 43215

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Columbia Gas of Ohio
A NiSource Company

April 9, 2018

Ms. Barcy F. McNeal
Director, Office of Administration
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215

Re: OPSB Case No. 18-291-GA-BNR
In the Matter of the Construction Notice Application by Columbia Gas of Ohio, Inc. for a Certificate of Environmental Compatibility and Public Need for the Center Ridge Road Replacement Project.

Dear Ms. McNeal:

Columbia Gas of Ohio, Inc. ("Columbia") submits this Construction Notice, pursuant to Ohio Admin. Code 4906-6-03(C) and 4906-6-05, concerning a proposed pipeline relocation known as the Center Ridge Road Replacement Project (the "Project"). The Project involves the relocation and installation of 2,680 feet of 12-inch, coated steel pipeline with a Maximum Allowable Operating Pressure ("MAOP") of 250 psig. Therefore, as required by Ohio Admin. Code 4906-6-05, please be advised of the following:

(1) The name of the project and applicant's reference number, names and reference number(s) of resulting circuits and a brief description of the project, and why the project meets the requirements for a construction notice.

The Project is identified as the Center Ridge Road Replacement Project, which has been classified by the City of Westlake. This project is a mandatory relocation and installation of approximately 2,680 feet of 12-inch coated steel main with an MAOP of 250 psig. Columbia must relocate this portion of high pressure main due to the City of Westlake widening the existing pavement and installing a new waterline where the existing 8-inch pipeline currently resides. Columbia will be open cutting within the public road right-of-way. The location of the Project is shown on **Appendix A**.

The Project meets the requirements of a Construction Notice as it is a pipeline replacement project less than one mile in length as well as a "Replacement or relocation of gas pipeline facilities where the project is required by publicly funded entities and is located on or adjacent to new right-of-way owned by the public entity requiring the project." *See* Appendix B of Rule 4906-1-01 Ohio Admin. Code.

(2) If the proposed construction notice project is an electric power transmission line or gas pipeline, a statement explaining the need for the proposed facility.

Columbia currently utilizes the existing 8-inch pipeline to provide natural gas to the cities of Westlake and Bay Village. The City of Westlake is requiring the relocation of the existing 8-inch pipeline due to the conflicts with the proposed waterline installation right-of-way and pavement widening portion of the Center Ridge Road Corridor Improvement Plans. Columbia is also increasing the size of this line from an 8-inch to a 12-inch, high pressure pipeline. This increase in size is due to existing pressure loss issues in the 8-inch pipe serving Westlake and Bay Village.

(3) The location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the project area.

A map showing the location and proposed work of the Project is attached as **Appendix A**.

(4) The alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

Columbia did not consider any alternative routes for the Project due to the relocation of the pipeline, within the public right-of-way, both pre-construction and post-construction.

(5) Describe the public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

Columbia has not engaged in a formal public information program. In lieu of a formal public information program, the City of Westlake has been educating the public about the Center Ridge Road Replacement Project scope as necessary. Moreover, the relocation will not affect individual customer service, as replacing the mainline will not result in customers losing service.

(6) The anticipated construction schedule and proposed in-service date of the project.

Construction of the 12-inch pipeline relocation is planned to start on July 9, 2018, and the in-service date of the Project is expected to be on or about November 1, 2018.

(7) An area map of not less than 1:24,000 scale clearly depicting the facility's centerline, with clearly marked streets, roads, and highways, and an aerial image.

Please see the map attached as **Appendix A**.

(8) A list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the facility and a list of the additional properties for which such agreements have not been obtained.

The Project is currently, and will be after construction, contained within the public right-of-way of Center Ridge Road in the City of Westlake. Columbia does not need to acquire additional private rights-of-way, easements, options, or land use agreements.

(9) **Technical features of the project.**

(a) Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The 2,680 feet of 12-inch high-pressure main will have an MAOP of 250 psig. Though the pipeline has an MAOP of 250 psig, Columbia anticipates operating

this pipeline at 235 psig. Since the pipeline currently is, and will be after construction, located within public right-of-way of Center Ridge Road, Columbia will not be required to obtain additional land or rights-of-way for the Project, either temporary or permanent.

(b) For electric power transmission lines that are within 100 feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line. The discussion shall include:

(i) Calculated electric and magnetic field strength levels at one meter above ground under the lowest conductors and at the edge of the right-of-way for: (a) Normal maximum loading, (b) Emergency line loading, (c) Winter normal conductor rating.

(ii) A discussion of the applicant's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and right-of-way width.

Not applicable to this Project.

(c) The estimated cost of the project.

The estimated total cost of the Project is approximately $1,100,000.

(d) A listing of the local, state, and federal government agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

Columbia is required to obtain a roadway permit from the City of Westlake prior to beginning construction. While the necessity to obtain other permits is not anticipated, Columbia will obtain any required federal, state, or local permits for the Project.

A copy of the Construction Notice, as filed in Case No. 18-291-GA-BNR, was sent to the following public officials on April 9, 2018, concurrently with submittal to OPSB.

Cuyahoga County

Mr. Armond Budish
Cuyahoga County Executive
2079 East Ninth Street, 8th Floor
Cleveland, Ohio 44115

Ms. Nan Baker
Cuyahoga County Council
2079 East Ninth Street -8th Floor
Cleveland, Ohio 44115

Mr. Dan Brady
President, Cuyahoga County Council
2079 East 9th Street. 8th Floor
Cleveland, Ohio 44115

Mr. Pernel Jones
Vice President, Cuyahoga County Council
2079 East 9th Street. 8th Floor
Cleveland, Ohio 44115

Mr. Edward Kraus - Director
Cuyahoga County Regional Collaboration
2079 East Ninth Street
Cleveland, Ohio 44115

Mr. Michael Dever
Director of Public Works
2079 East Ninth Street
Cleveland, Ohio 44115

Ms. Janine Rybka - Director
Cuyahoga County Soil and Water Conservation District
3311 Perkins Avenue, Suite 100
Cleveland, Ohio 44114

Mr. Brent Eysenback
Cuyahoga County Soil and Water Conservation District
3311 Perkins Avenue, Suite 100
Cleveland, Ohio 44114

City of Westlake

Hon. Dennis Clough
Mayor, City of Westlake
Westlake City Hall
27700 Hilliard Boulevard
Westlake, Ohio 44145

Mr. Bob Kelly, P.E.
Westlake City Engineer
Westlake City Hall
27700 Hilliard Boulevard
Westlake, Ohio 44145

Mr. Michael Killeen
President, Westlake City Council
Westlake City Hall
27700 Hilliard Boulevard
Westlake, Ohio 44145

Brad Lamb
Chairman, City of Westlake Planning Commission
Westlake City Hall
27700 Hilliard Boulevard
Westlake, Ohio 44145

Mr. Paul Quinn III
Director of the City of Westlake
Public Service
Westlake City Hall
27700 Hilliard Boulevard
Westlake, Ohio 44145

(e) A description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the area likely to be disturbed by the project, a statement of findings of the investigation, and a copy of any document produced as a result of the investigation.

The pipeline currently is and will be constructed solely within the public right-of-way. Columbia has not investigated the presence or absence of federal and state designated species on the Project. Columbia has confirmed, however, that the City of Westlake will be clearing any trees in the Project area.

(f) A description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state parks, floodplains, wetlands, designated or proposed wildlife areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that that may be located within the area likely to be disturbed by the project, a statement of findings of the investigation, and a copy of any document produced as a result of the investigation.

The pipeline currently is and will be constructed solely within the public right-of-way and there are no wetlands in the Project area. Also included with this Construction Notice, as **Appendix B**, is an environmental study performed by Westlake Schools.

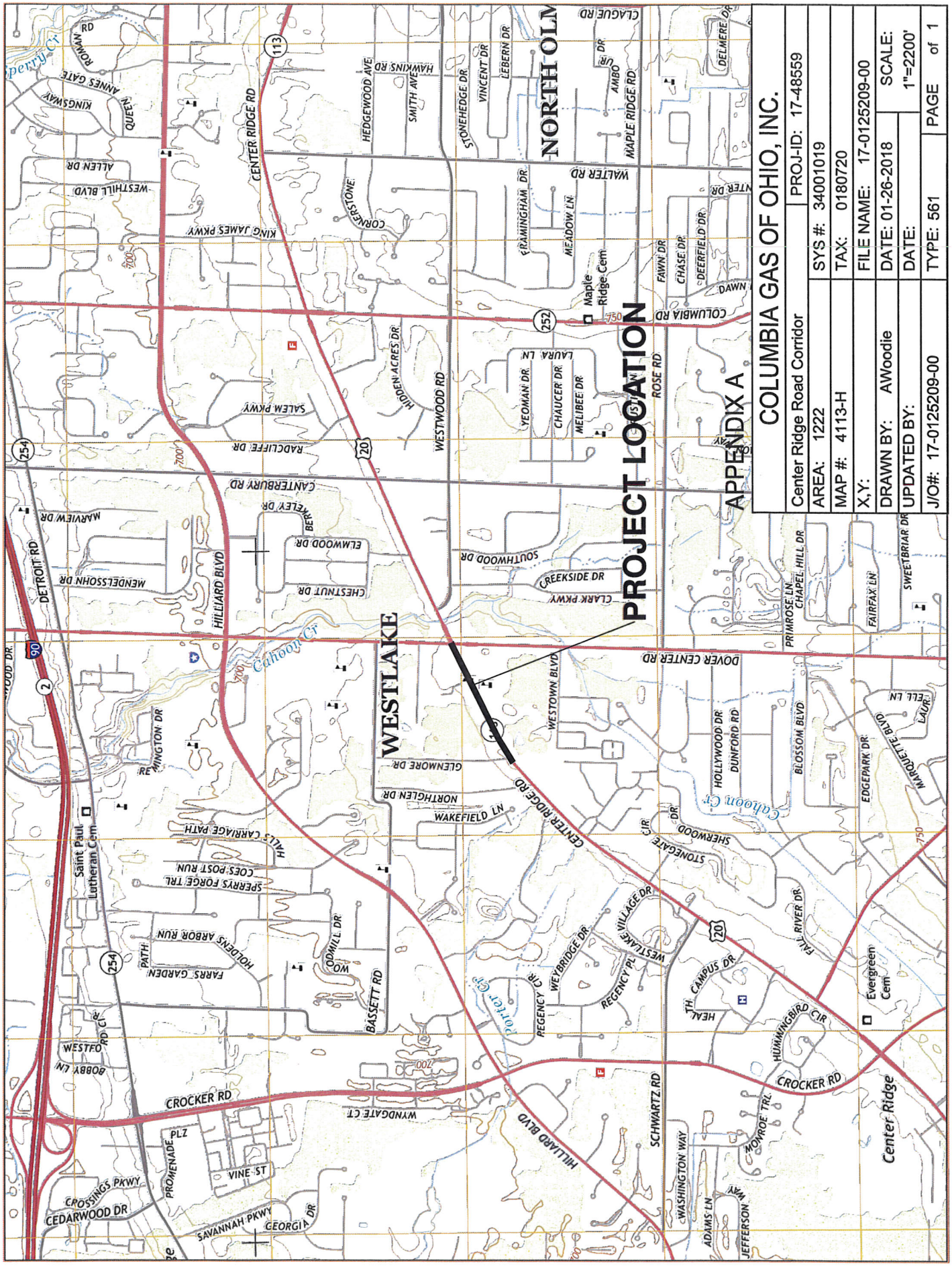
(g) Any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

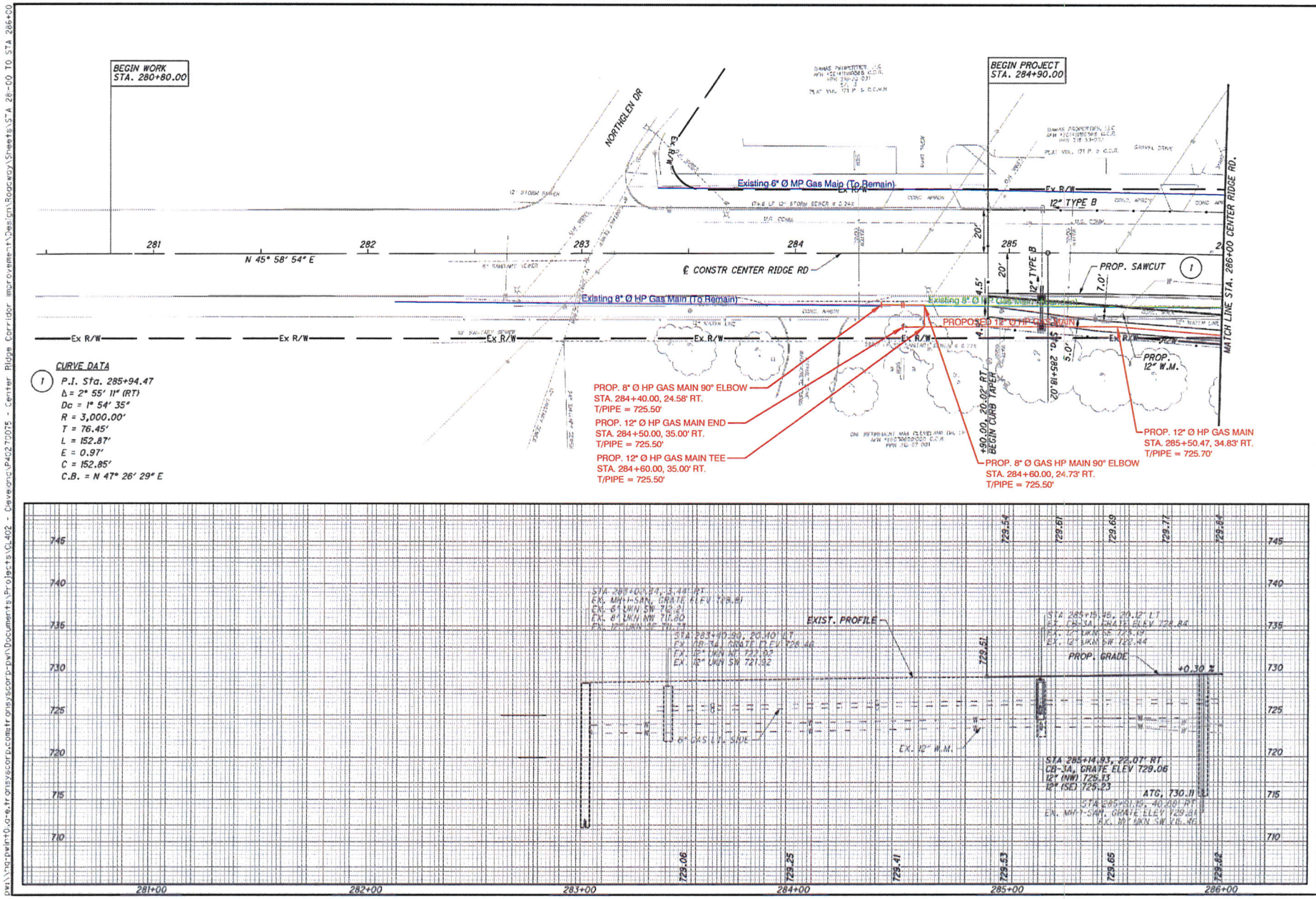
To the best of Columbia's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Should Staff of the Ohio Power Siting Board desire further information or discussion of this application, please do not hesitate to reach out to me at the information listed above.

Respectfully submitted

/s/ *Joseph M. Clark*


PROJECT LOCATION
APPENDIX A
NORTH OLMSTED
WESTLAKE
Center Ridge
CENTER RIDGE RD
CROCKER RD
DOVER CENTER RD
COLUMBIA RD
WESTWOOD RD
HILLIARD BLVD
DETROIT RD
Cahoon Cr
Porter Cr
Perry Cr
Maple Ridge Cem
Saint Paul Lutheran Cem
Evergreen Cem
COLUMBIA GAS OF OHIO, INC.
Center Ridge Road Corridor
PROJ-ID: 17-48559
AREA: 1222
SYS #: 34001019
MAP #: 4113-H
TAX: 0180720
X,Y:
FILE NAME: 17-0125209-00
DRAWN BY: AWoodie
DATE: 01-26-2018
SCALE: 1"=2200'
UPDATED BY:
DATE:
J/O#: 17-0125209-00
TYPE: 561
PAGE of 1



HORIZONTAL SCALE IN FEET

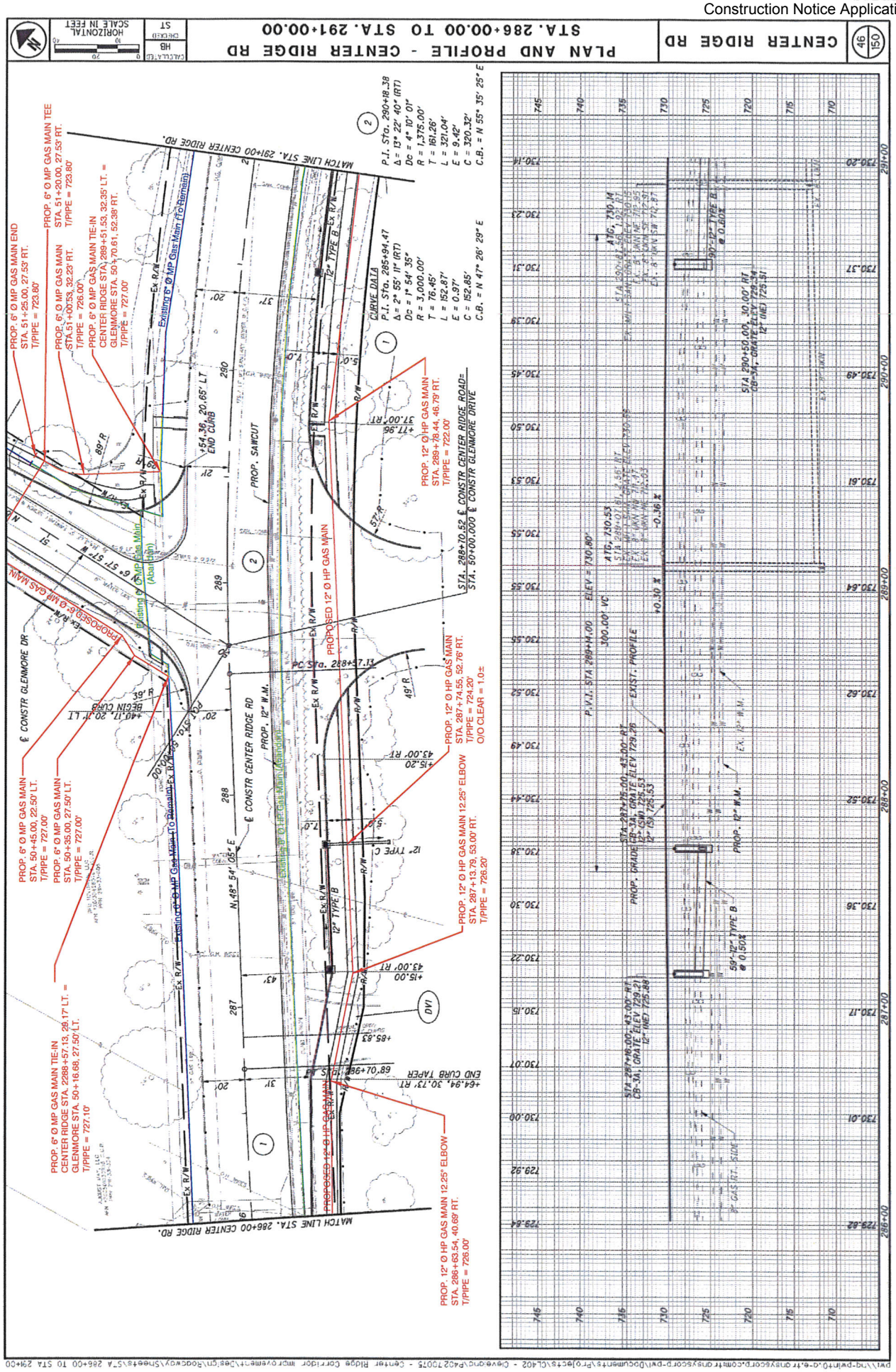
CALCULATED HB
CHECKED ST

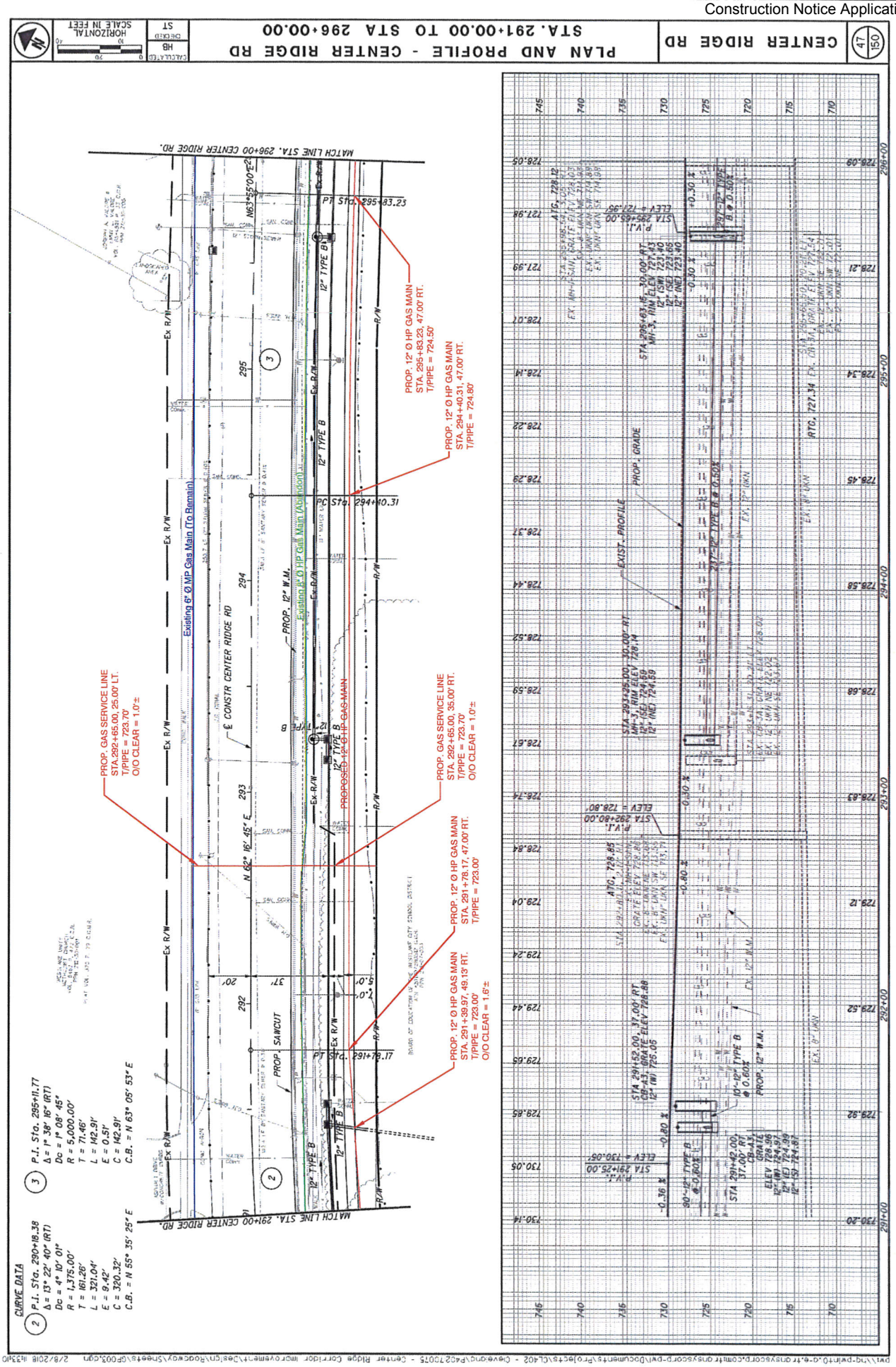
PLAN AND PROFILE - CENTER RIDGE RD
STA. 281+00.00 TO STA. 286+00.00

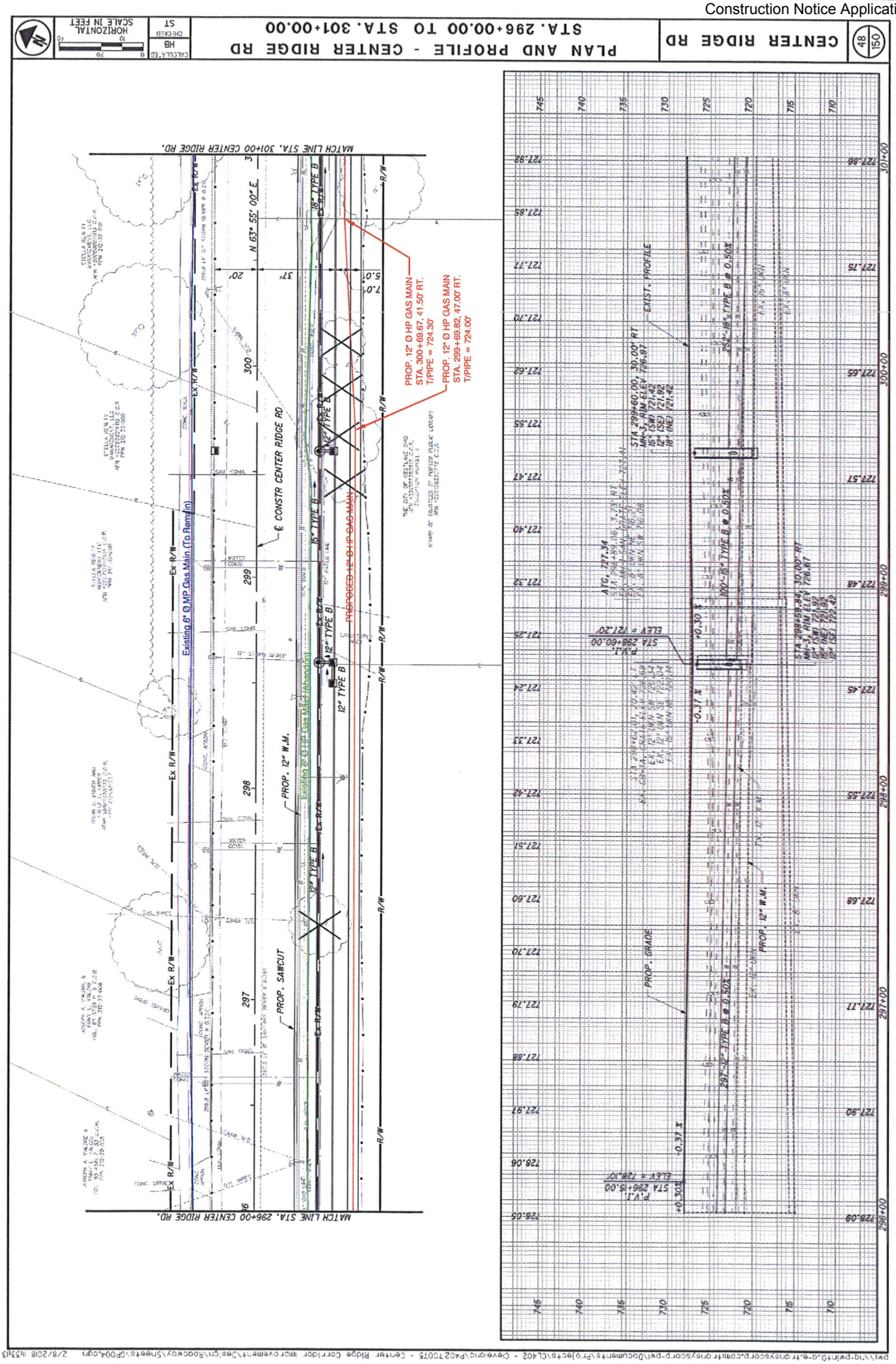
CENTER RIDGE RD

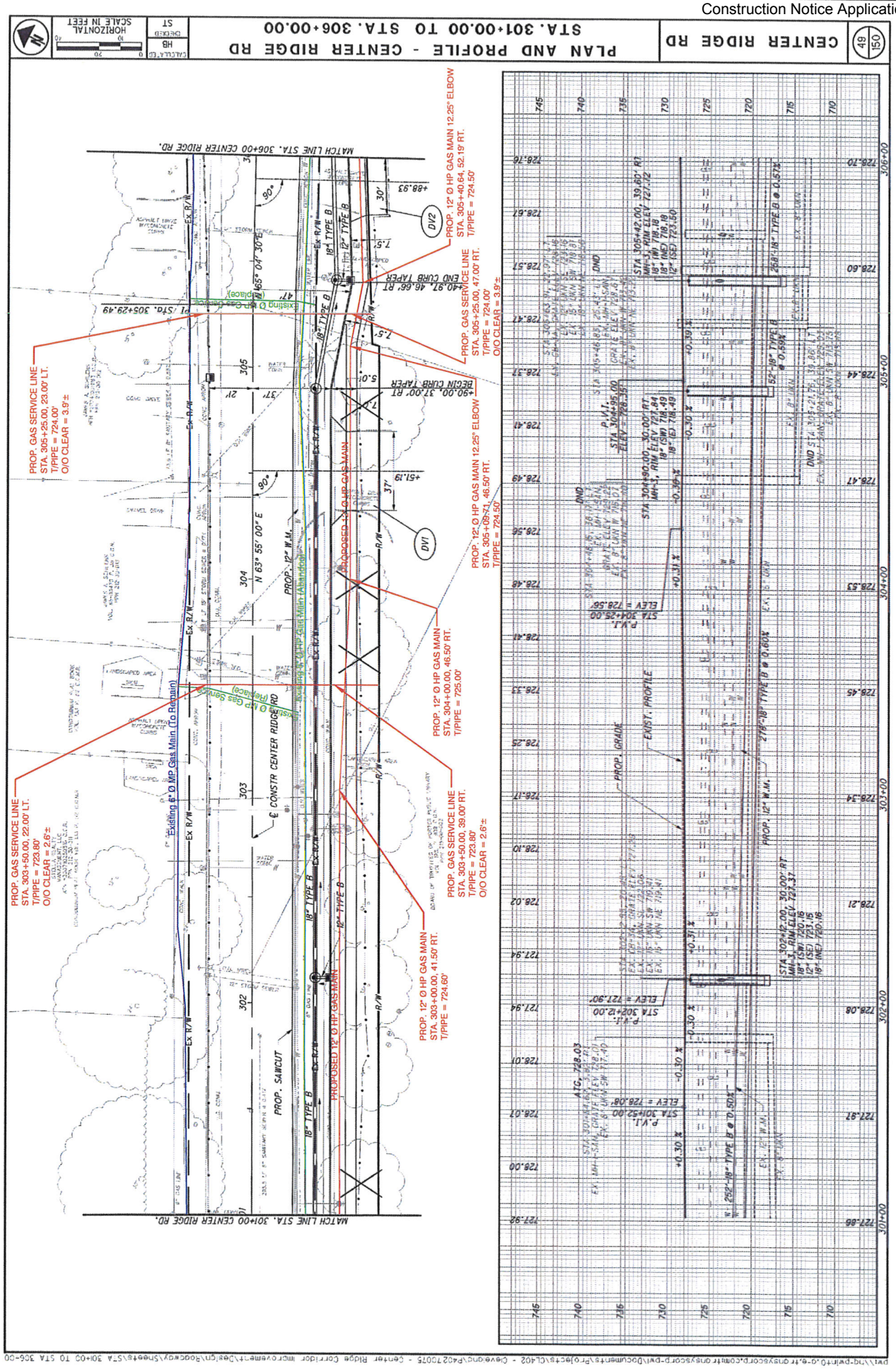
45
150

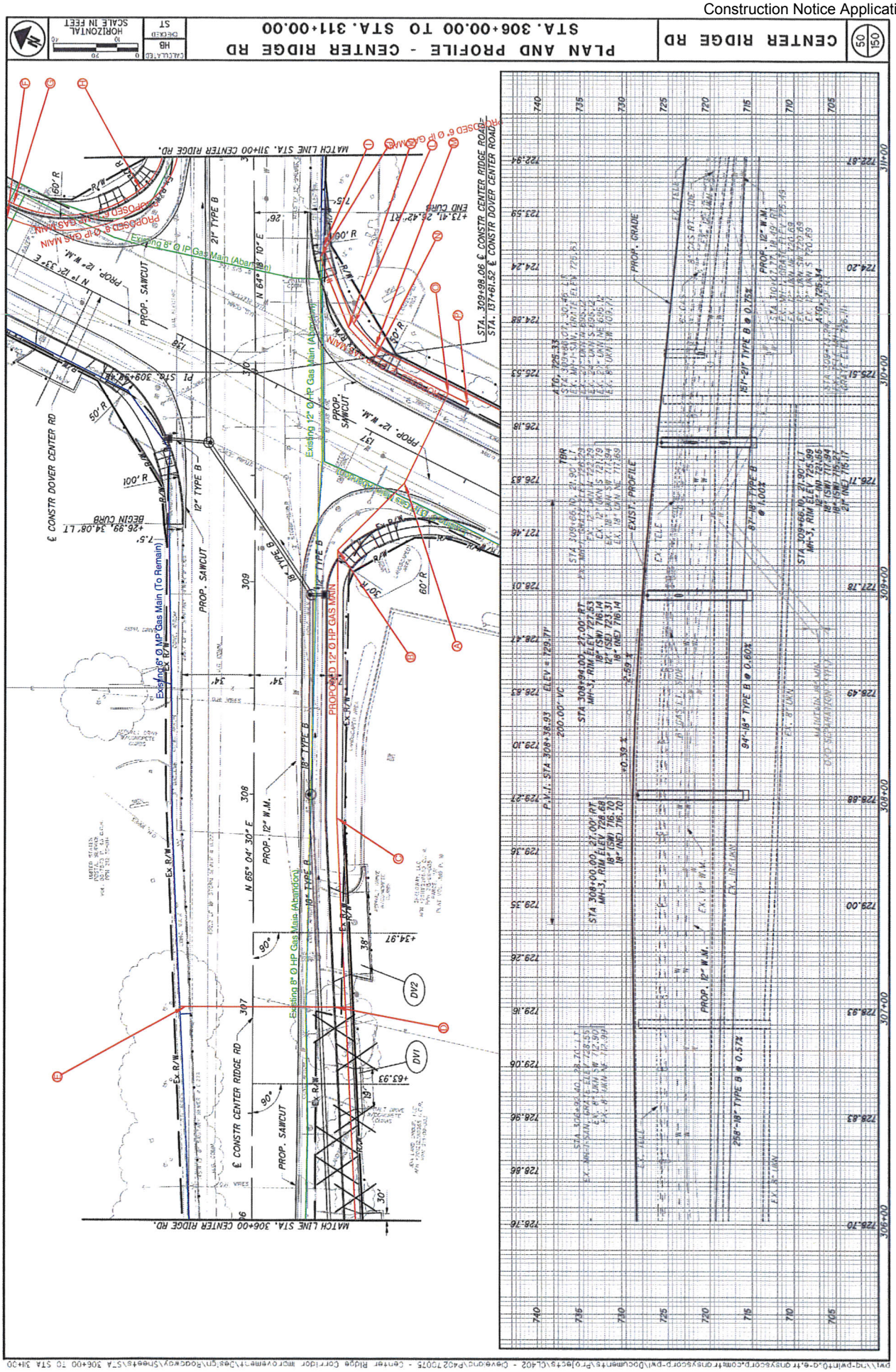
pw:\\hq-pwint0.ge.transystcorp.com:transystcorp-pw\Documents\Projects\VCL402 - Cleveland\P4027075 - Center Ridge Corridor Improvements\Design\Roadway\Sheets\STA 28-00 TO STA 286+00


PLAN AND PROFILE - CENTER RIDGE RD
STA. 286+00.00 TO STA. 291+00.00
CENTER RIDGE RD
46
150
HB
ST
SCALE IN FEET
HORIZONTAL
MATCH LINE STA. 291+00 CENTER RIDGE RD.
MATCH LINE STA. 286+00 CENTER RIDGE RD.
℄ CONSTR GLENMORE DR
℄ CONSTR CENTER RIDGE RD
PROP. 12" W.M.
PROP. SAWCUT
PROPOSED 6" Ø MP GAS MAIN
Existing 6" Ø MP Gas Main (To Remain)
Existing 6" Ø MP Gas Main (Abandon)
Existing 12" Ø HP Gas Main (Abandon)
PROPOSED 12" Ø HP GAS MAIN
PROP. 6" Ø MP GAS MAIN END
STA. 51+25.00, 27.53' RT.
T/PIPE = 723.80'
PROP. 6" Ø MP GAS MAIN TEE
STA. 51+20.00, 27.53' RT.
T/PIPE = 723.80'
PROP. 6" Ø MP GAS MAIN
STA. 51+00.53, 32.23' RT.
T/PIPE = 726.00'
PROP. 6" Ø MP GAS MAIN TIE-IN
CENTER RIDGE STA. 289+51.53, 32.35' LT. =
GLENMORE STA. 50+70.61, 52.38' RT.
T/PIPE = 727.00'
PROP. 6" Ø MP GAS MAIN
STA. 50+45.00, 22.50' LT.
T/PIPE = 727.00'
PROP. 6" Ø MP GAS MAIN
STA. 50+35.00, 27.50' LT.
T/PIPE = 727.00'
PROP. 6" Ø MP GAS MAIN TIE-IN
CENTER RIDGE STA. 2288+57.13, 29.17' LT. =
GLENMORE STA. 50+16.68, 27.50' LT.
T/PIPE = 727.10'
PROP. 12" Ø HP GAS MAIN
STA. 289+78.44, 46.79' RT.
T/PIPE = 722.00'
STA. 288+70.52 ℄ CONSTR CENTER RIDGE ROAD=
STA. 50+00.000 ℄ CONSTR GLENMORE DRIVE
PROP. 12" Ø HP GAS MAIN
STA. 287+74.55, 52.76' RT.
T/PIPE = 724.20'
O/O CLEAR = 1.0±
PROP. 12" Ø HP GAS MAIN 12.25" ELBOW
STA. 287+13.79, 53.00' RT.
T/PIPE = 726.20'
PROP. 12" Ø HP GAS MAIN 12.25" ELBOW
STA. 286+63.54, 40.69' RT.
T/PIPE = 726.00'
CURVE DATA
P.I. Sta. 285+94.47
Δ = 2° 55' 11" (RT)
Dc = 1° 54' 35"
R = 3,000.00'
T = 76.45'
L = 152.87'
E = 0.97'
C = 152.85'
C.B. = N 47° 26' 29" E
P.I. Sta. 290+18.38
Δ = 13° 22' 40" (RT)
Dc = 4° 10' 01"
R = 1,375.00'
T = 161.26'
L = 321.04'
E = 9.42'
C = 320.32'
C.B. = N 55° 35' 25" E
PROP. GRADE
EXIST. PROFILE
P.V.I. STA 289+11.00
ELEV = 730.80'
300.00' VC
STA. 287+75.00, 43.00' RT.
CB-3A, GRATE ELEV 729.26
12" CMP 725.53
12" (S) 725.53
STA. 287+16.00, 43.00' RT.
CB-3A, GRATE ELEV 729.21
12" INV. 725.88
STA 290+50.00, 30.00' RT
CB-3A, GRATE ELEV 729.34
12" INV. 725.81
90'-12" TYPE B
@ 0.50%
50'-12" TYPE B
@ 0.50%
12" TYPE B
12" TYPE C
END CURB TAPER
END CURB
BEGIN CURB
PC Sta. 288+57.13
DV1
ATG. 730.14
ATG. 730.53
ATG. 730.80'
STA 289+01.81, 4.56' RT.
EX. 8" WATER MAIN
EX. 8" GAS MAIN
EX. 8" CONC. SIDEWALK
EX. 12" W.M.
EX. 12" W.M.
PROP. 12" W.M.
BF GAS RT. SIDE
EXISTING 12" HP GAS MAIN
EXISTING 6" MP GAS MAIN
EXISTING 6" MP GAS MAIN
EXISTING 6" M


PLAN AND PROFILE - CENTER RIDGE RD
STA. 291+00.00 TO STA 296+00.00
CENTER RIDGE RD
47
150
CALCULATED HB
DESIGNED ST
HORIZONTAL
SCALE IN FEET
MATCH LINE STA. 296+00 CENTER RIDGE RD.
MATCH LINE STA. 291+00 CENTER RIDGE RD.
PT Sta. 295+83.23
PC Sta. 294+40.31
PT Sta. 291+79.17
N63°55'00"E
N 62° 16' 45" E
CONSTR CENTER RIDGE RD
PROP. 12" W.M.
PROPOSED 12" Ø HP GAS MAIN
Existing 6" Ø MP Gas Main (To Remain)
Existing 6" Ø HP Gas Main (Abandon)
PROP. SAWCUT
12" TYPE B
PROP. 12" Ø HP GAS MAIN
STA. 295+83.23, 47.00' RT.
T/PIPE = 724.50'
PROP. 12" Ø HP GAS MAIN
STA. 294+40.31, 47.00' RT.
T/PIPE = 724.80'
PROP. GAS SERVICE LINE
STA.292+65.00, 25.00' LT.
T/PIPE = 723.70'
O/O CLEAR = 1.0'±
PROP. GAS SERVICE LINE
STA. 292+65.00, 35.00' RT.
T/PIPE = 723.70'
O/O CLEAR = 1.0'±
PROP. 12" Ø HP GAS MAIN
STA. 291+78.17, 47.00' RT.
T/PIPE = 723.00'
PROP. 12" Ø HP GAS MAIN
STA. 291+39.97, 49.13' RT.
T/PIPE = 723.00'
O/O CLEAR = 1.6'±
CURVE DATA
(2) P.I. Sta. 290+18.38
Δ = 13° 22' 40" (RT)
Dc = 4° 10' 01"
R = 1,375.00'
T = 161.26'
L = 321.04'
E = 9.42'
C = 320.32'
C.B. = N 55° 35' 25" E
(3) P.I. Sta. 295+11.77
Δ = 1° 38' 16" (RT)
Dc = 1° 08' 45"
R = 5,000.00'
T = 71.46'
L = 142.91'
E = 0.51'
C = 142.91'
C.B. = N 63° 05' 53" E
EXIST. PROFILE
PROP. GRADE
P.V.I. STA 296+65.00 ELEV = 727.95'
P.V.I. STA 295+63.16 ELEV = 727.43'
P.V.I. STA 292+80.00 ELEV = 726.80'
P.V.I. STA 291+92.00 ELEV = 726.65'
P.V.I. STA 291+25.00 ELEV = 730.06'
ATO. 728.12
ATO. 728.85
RTO. 727.34
-0.30 %
-0.80 %
-0.36 %
PROP. 12" W.M.
10'-12" TYPE B @ 0.60'
90'-12" TYPE B @ 0.60'
GRATE ELEV 728.96
12" (W) 724.97
12" (E) 724.99
12" (S) 724.81
PROP. 12" TYPE B @ 0.50'
EX. 12" UNK.
EX. 8" UNK.


PLAN AND PROFILE - CENTER RIDGE RD
STA. 296+00.00 TO STA. 301+00.00
CENTER RIDGE RD
48
150
HB
ST
HORIZONTAL
SCALE IN FEET
MATCH LINE STA. 301+00 CENTER RIDGE RD.
MATCH LINE STA. 296+00 CENTER RIDGE RD.
N 63° 55' 00" E
℄ CONSTR CENTER RIDGE RD
Existing 6" Ø MP Gas Main (To Remain)
Existing 20" Ø HP Gas Main (Abandon)
PROP. 12" W.M.
PROP. SAWCUT
12" TYPE B
18" TYPE B
PROP. 12" Ø HP GAS MAIN
STA. 300+69.67, 41.50' RT.
T/PIPE = 724.30'
PROP. 12" Ø HP GAS MAIN
STA. 299+69.82, 47.00' RT.
T/PIPE = 724.00'
EXIST. PROFILE
PROP. GRADE
PROP. 12" W.M.
P.V.I.
STA 296+15.00
ELEV = 728.10'
P.V.I.
STA 299+60.00
ELEV = 727.20'
-0.37 %
+0.30 %
-0.17 %
+0.50 %


PLAN AND PROFILE - CENTER RIDGE RD
STA. 301+00.00 TO STA. 306+00.00
CENTER RIDGE RD
49
150
HB
ST
CALCULATED
DESIGNED
HORIZONTAL
SCALE IN FEET
MATCH LINE STA. 306+00 CENTER RIDGE RD.
MATCH LINE STA. 301+00 CENTER RIDGE RD.
PROP. GAS SERVICE LINE
STA. 305+25.00, 23.00' LT.
T/PIPE = 724.00'
O/O CLEAR = 3.9'±
PROP. GAS SERVICE LINE
STA. 303+50.00, 22.00' LT.
T/PIPE = 723.80'
O/O CLEAR = 2.6'±
Existing 6" Ø MP Gas Main (To Remain)
Existing 6" Ø MP Gas Service (Replaced)
Existing 6" Ø MP Gas Service (Replaced)
PROP. 12" Ø HP GAS MAIN 12.25" ELBOW
STA. 305+40.64, 52.19' RT.
T/PIPE = 724.50'
PROP. 12" Ø HP GAS MAIN
STA. 304+00.00, 46.50' RT.
T/PIPE = 725.00'
PROP. GAS SERVICE LINE
STA. 303+50.00, 39.00' RT.
T/PIPE = 723.80'
O/O CLEAR = 2.6'±
PROP. 12" Ø HP GAS MAIN
STA. 303+00.00, 41.50' RT.
T/PIPE = 724.60'
PROP. 12" Ø HP GAS MAIN 12.25" ELBOW
STA. 305+09.71, 46.50' RT.
T/PIPE = 724.50'
PROP. GAS SERVICE LINE
STA. 305+25.00, 47.00' RT.
T/PIPE = 724.00'
O/O CLEAR = 3.9'±
PROP. 12" Ø HP GAS MAIN
STA. 305+42.00, 39.60' RT.
PROPOSED 12" Ø HP GAS MAIN
PROP. SAWCUT
PROP. 12" W.M.
EXIST. PROFILE
PROP. GRADE
P.V.I.
STA 301+52.00
ELEV = 726.08'
P.V.I.
STA 302+12.00
ELEV = 727.90'
P.V.I.
STA 304+25.00
ELEV = 726.56'
P.V.I.
STA 304+95.00
ELEV = 728.35'
P.V.I.
STA 305+42.00, 30.00' RT.
MH-3, RIM ELEV 727.84
18" (SW) 718.49
18" (SE) 718.49
STA 302+12.00, 30.00' RT.
MH-3, RIM ELEV 727.37
18" (SW) 720.16
18" (SE) 720.16
12" (NE) 720.16
ATG. 728.03
DV1
DV2
DND
EX. R/W
R/W
EX. 12" W.M.
EX. 8" GAS
EX. 18" TYPE B
EX. 12" TYPE B
18" TYPE B
12" TYPE B
2x8-18" TYPE B @ 0.50%
2x8-18" TYPE B @ 0.50%
2x8-18" TYPE B @ 0.50%


PLAN AND PROFILE - CENTER RIDGE RD
STA. 306+00.00 TO STA. 311+00.00
CENTER RIDGE RD
HB
ST
HORIZONTAL
SCALE IN FEET
℄ CONSTR DOVER CENTER RD
℄ CONSTR CENTER RIDGE RD
MATCH LINE STA. 306+00 CENTER RIDGE RD.
MATCH LINE STA. 311+00 CENTER RIDGE RD.
Existing 8" Ø MP Gas Main (To Remain)
Existing 8" Ø HP Gas Main (Abandon)
Existing 12" Ø HP Gas Main (Abandon)
PROPOSED 12" Ø HP GAS MAIN
PROPOSED 6" Ø HP GAS MAIN
PROP. SAWCUT
PROP. 12" W.M.
PROP. GRADE
EXIST. PROFILE
EX. TELE
PROP. 12" W.M.
DV1
DV2

Ⓐ PROP. 12" Ø HP GAS MAIN 22.5° ELBOW
STA. 309+46.65, 71.15' RT.
T/PIPE = 721.50'
DEPTH = 4.5'±

Ⓑ PROP. 12" Ø HP GAS MAIN 45° ELBOW
STA. 309+15.00, 39.50' RT.
T/PIPE = 721.50'
DEPTH = 4.5'±

Ⓒ PROP. 12" Ø HP GAS MAIN
STA. 307+88.96, 39.50' RT.
T/PIPE = 723.00'
DEPTH = 4.5'±

Ⓓ PROP. GAS SERVICE LINE
STA. 305+25.00, 47.00' RT.
T/PIPE = 724.60'
O/O CLEAR = 5.5'±

Ⓔ PROP. GAS SERVICE LINE
STA. 307+00.00, 32.00' LT.
T/PIPE = 724.60'
O/O CLEAR = 5.5'±

Ⓕ PROP. 8" Ø IP GAS MAIN
CENTER RIDGE STA. 310+72.25, 117.43' LT. =
DOVER CENTER STA. 138+99.81 13.00' RT.
T/PIPE = 717.40'
DEPTH = 4.5'±

Ⓖ PROP. 6" Ø MP GAS MAIN
CENTER RIDGE STA. 310+78.54, 114.34' LT. =
DOVER CENTER STA. 138+99.90, 20.02' RT.
T/PIPE = 718.40'
DEPTH = 4.0'±

Ⓗ PROP. 6" Ø MP GAS MAIN
STA. 310+84.81, 53.84' LT.
T/PIPE = 719.40'
DEPTH = 3.5'±

Ⓘ PROP. 6" Ø IP GAS MAIN 22.5° ELBOW
CENTER RIDGE STA.310+56.66, 65.86' RT
T/PIPE = 722.40'

Ⓙ PROP. 12" Ø HP GAS MAIN TIE-IN
STA. 310+52.11, 31.12' RT.
T/PIPE = 722.40'

Ⓚ PROP. 12" Ø HP GAS MAIN 45° ELBOW
STA. 310+18.83, 44.38' RT.
T/PIPE = 722.40'

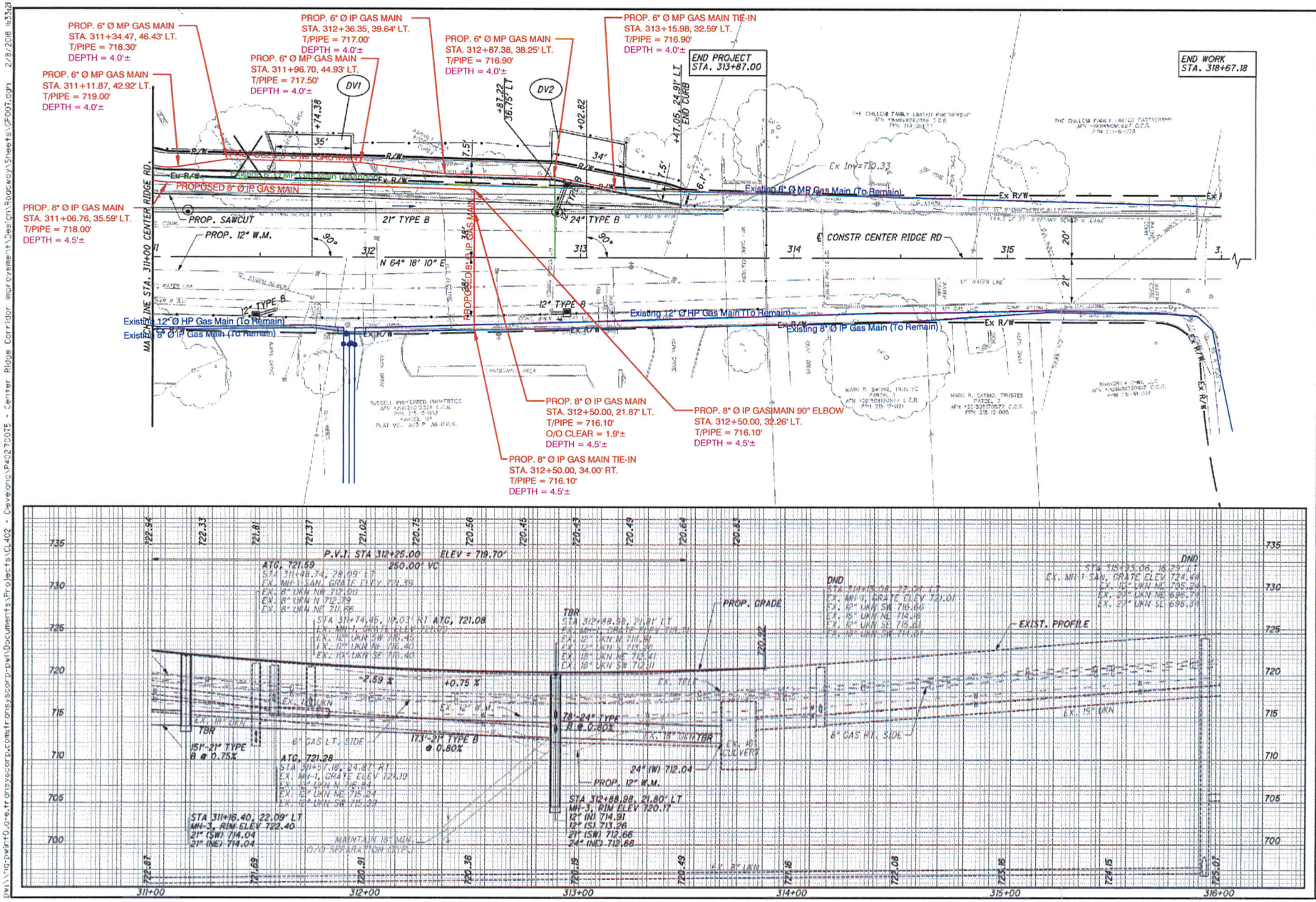
Ⓛ PROP. 6" Ø IP GAS MAIN 22.5° ELBOW
CENTER RIDGE STA.310+20.45, 46.96' RT
T/PIPE = 722.40'

Ⓜ PROP. 6" Ø IP GAS MAIN 45° ELBOW
CENTER RIDGE STA.310+09.54, 56.93' RT =
DOVER CENTER STA. 137+15.94, 36.00' RT.
T/PIPE = 722.40'

Ⓝ PROP. 12" Ø HP GAS MAIN 22.5° ELBOW
STA. 310+5.02, 57.00' RT.
T/PIPE = 722.40'

Ⓞ PROP. 12" Ø HP GAS MAIN TEE
STA. 309+88.68, 91.77' RT.
T/PIPE = 721.50'
DEPTH = 4.5'±

Ⓟ PROP. 12" Ø HP GAS MAIN END
STA. 309+84.28, 100.75' RT.
T/PIPE = 722.40'
DEPTH = 4.5'±



PLAN AND PROFILE - CENTER RIDGE RD
STA. 311+00.00 TO STA. 316+00.00

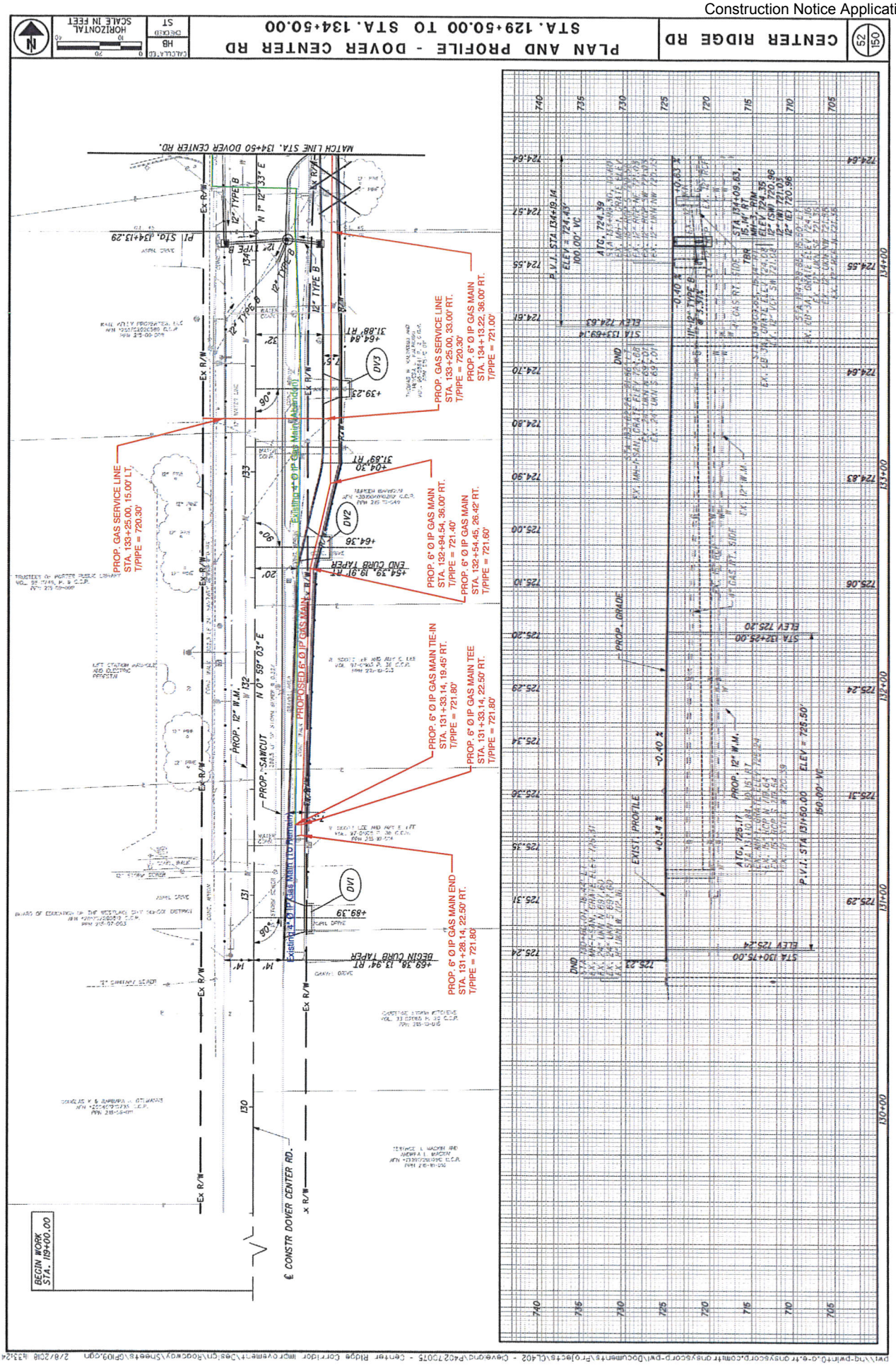
CENTER RIDGE RD

HORIZONTAL SCALE IN FEET

CALCULATED HB
DESIGNED ST

51 / 150

pw:\\ng-pwint0.ge.trongsycorp.com:trongsycorp-pw\Documents\Projects\GL402 - Cleveland\P4027005 - Center Ridge Corridor Improvement\Design\Roadway\Sheets\GP007.dgn 2/8/2018 11:33:21 AM


PLAN AND PROFILE - DOVER CENTER RD
STA. 129+50.00 TO STA. 134+50.00
CENTER RIDGE RD
52
150
HB
ST
HORIZONTAL
SCALE IN FEET
MATCH LINE STA. 134+50 DOVER CENTER RD.
PROP. GAS SERVICE LINE
STA. 133+25.00, 15.00' LT.
T/PIPE = 720.30'
PROP. GAS SERVICE LINE
STA. 133+25.00, 33.00' RT.
T/PIPE = 720.30'
PROP. 6" Ø IP GAS MAIN
STA. 134+13.22, 36.00' RT.
T/PIPE = 721.00'
PROP. 6" Ø IP GAS MAIN
STA. 132+94.54, 36.00' RT.
T/PIPE = 721.40'
PROP. 6" Ø IP GAS MAIN
STA. 132+54.45, 26.42' RT.
T/PIPE = 721.60'
PROP. 6" Ø IP GAS MAIN TIE-IN
STA. 131+33.14, 19.45' RT.
T/PIPE = 721.80'
PROP. 6" Ø IP GAS MAIN TEE
STA. 131+33.14, 22.50' RT.
T/PIPE = 721.80'
PROP. 6" Ø IP GAS MAIN END
STA. 131+28.14, 22.50' RT.
T/PIPE = 721.80'
PROPOSED 6" Ø IP GAS MAIN
Existing 4" Ø IP Gas Main (To Remain)
Existing 4" Ø IP Gas Main (Abandon)
PROP. 12" W.M.
PROP. SAWCUT
END CURB TAPER
BEGIN CURB TAPER
DV1
DV2
DV3
BEGIN WORK
STA. 119+00.00
℄ CONSTR DOVER CENTER RD.
PROP. GRADE
EXIST. PROFILE
P.V.I. STA 131+60.00
ELEV = 725.50'
160.00' VC
P.V.I. STA 134+19.14
ELEV = 724.45'
160.00' VC
STA 132+25.00
ELEV 725.20
STA 130+75.00
ELEV 725.24
STA 133+69.74
ELEV 724.63
STA 134+06.83
ELEV 724.55
-0.40 %
+0.34 %
+0.63 %
DND

PLAN AND PROFILE - DOVER CENTER RD
STA. 134+50.00 TO STA. 139+50.00
CENTER RIDGE RD
53
150
CALCULATED HB
DESIGNED ST
HORIZONTAL
SCALE IN FEET
MATCH LINE STA. 139+50 DOVER CENTER RD.
MATCH LINE STA. 134+50 DOVER CENTER RD.
℄ CONSTR CENTER RIDGE RD
℄ CONSTR DOVER CENTER RD
STA. 137+61.52 ℄ CONSTR DOVER CENTER ROAD
STA. 309+98.06 ℄ CONSTR CENTER RIDGE ROAD
PROPOSED 12" Ø HP GAS MAIN
PROPOSED 6" Ø IP/GAS MAIN
Existing 6" Ø MP Gas Main (To Remain)
Existing 12" Ø HP Gas Main (Abandon)
PROP. SAWCUT
PROP. 12" W.M.
21" TYPE B
18" TYPE B
N 64° 18' 10" E
N 69° 04' 30" E
N 1° 12' 33" E
DV1
DV2
DV3
EXISTING 6" Ø EX. R/W
EXISTING 6" Ø EX. R/W
EXISTING 6" Ø EX. R/W

Ⓐ PROP. 6" Ø IP GAS MAIN TIE-IN
STA. 310+60.89, 32.78' RT.
T/PIPE = 722.40'

Ⓑ PROP. 6" Ø IP GAS MAIN 22.5° ELBOW
CENTER RIDGE STA.310+56.66, 65.86' RT
T/PIPE = 722.40'

Ⓒ PROP. 12" Ø HP GAS MAIN TIE-IN
STA. 310+52.11, 31.12' RT.
T/PIPE = 722.40'

Ⓓ PROP. 12" Ø HP GAS MAIN 45° ELBOW
STA. 310+18.83, 44.38' RT.
T/PIPE = 722.40'

Ⓔ PROP. 6" Ø IP GAS MAIN 22.5° ELBOW
CENTER RIDGE STA.310+20.45, 46.96' RT
T/PIPE = 722.40'

Ⓕ PROP. 6" Ø IP GAS MAIN 45° ELBOW
CENTER RIDGE STA.310+09.54, 56.93' RT =
DOVER CENTER STA. 137+15.94, 36.00' RT.
T/PIPE = 722.40'

Ⓖ PROP. 12" Ø HP GAS MAIN 22.5° ELBOW
STA. 310+5.02, 57.00' RT.
T/PIPE = 722.40'

Ⓗ PROP. 12" Ø HP GAS MAIN TEE
STA. 309+88.68, 91.77' RT.
T/PIPE = 721.50'
DEPTH = 4.5'±

Ⓘ PROP. 12" Ø HP GAS MAIN END
STA. 309+84.28, 100.75' RT.
T/PIPE = 722.40'
DEPTH = 4.5'±

Ⓙ PROP. 12" Ø HP GAS MAIN 22.5° ELBOW
STA. 309+46.65, 71.15' RT.
T/PIPE = 721.50'
DEPTH = 4.5'±

Ⓚ PROP. 12" Ø HP GAS MAIN 45° ELBOW
STA. 309+15.00, 39.50' RT.
T/PIPE = 721.50'
DEPTH = 4.5'±

Ⓛ PROP. 6" Ø MP GAS MAIN TIE-IN
STA. 139+00.00, 33.76' LT.
T/PIPE = 718.40'

Ⓜ PROP. 8" Ø IP GAS MAIN
CENTER RIDGE STA. 310+72.25, 117.43' LT. =
DOVER CENTER STA. 138+99.81 13.00' RT.
T/PIPE = 717.40'
DEPTH = 4.5'±

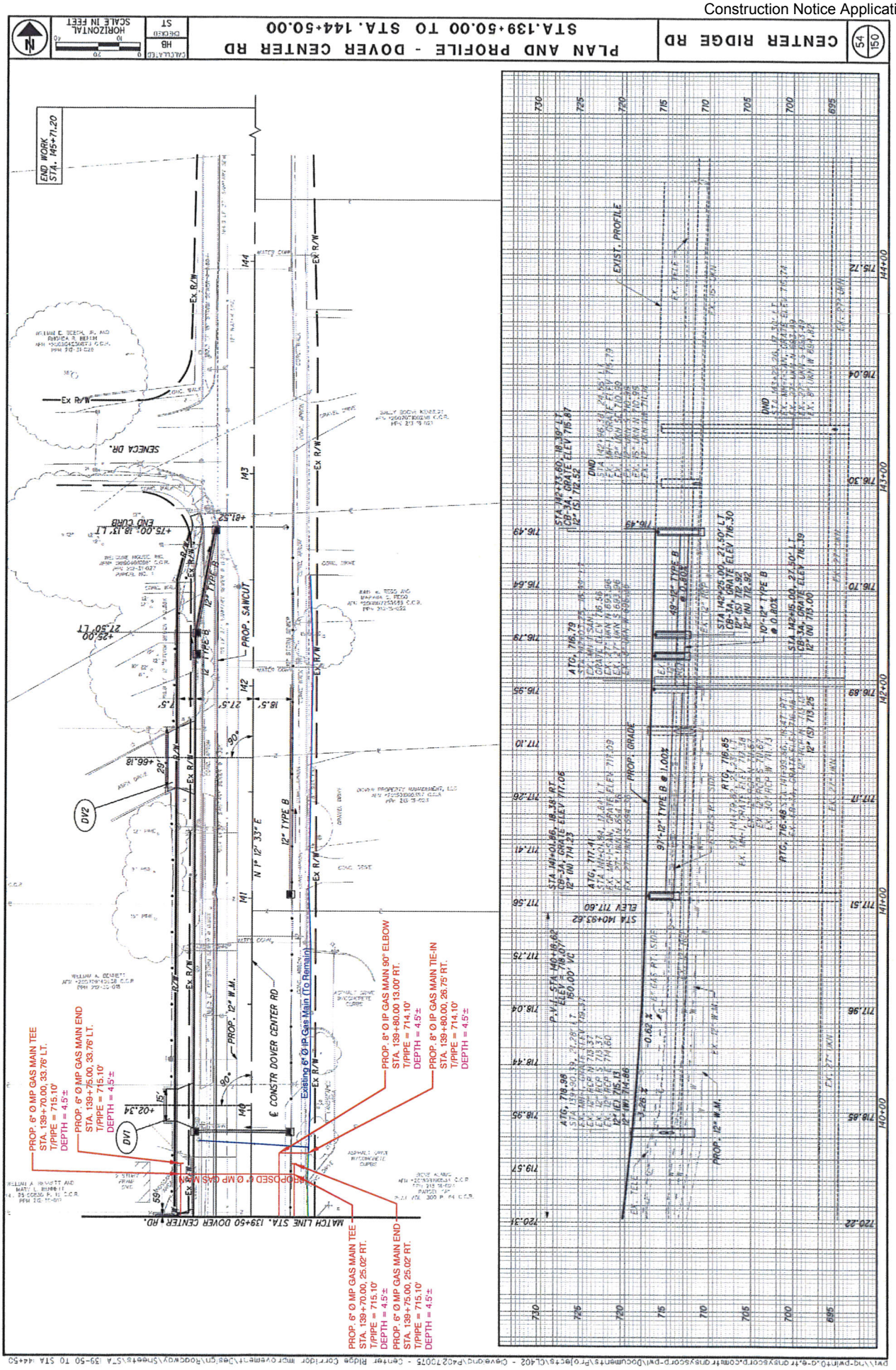
Ⓝ PROP. 6" Ø MP GAS MAIN
CENTER RIDGE STA. 310+78.54, 114.34' LT. =
DOVER CENTER STA. 138+99.90, 20.02' RT.
T/PIPE = 718.40'
DEPTH = 4.0'±

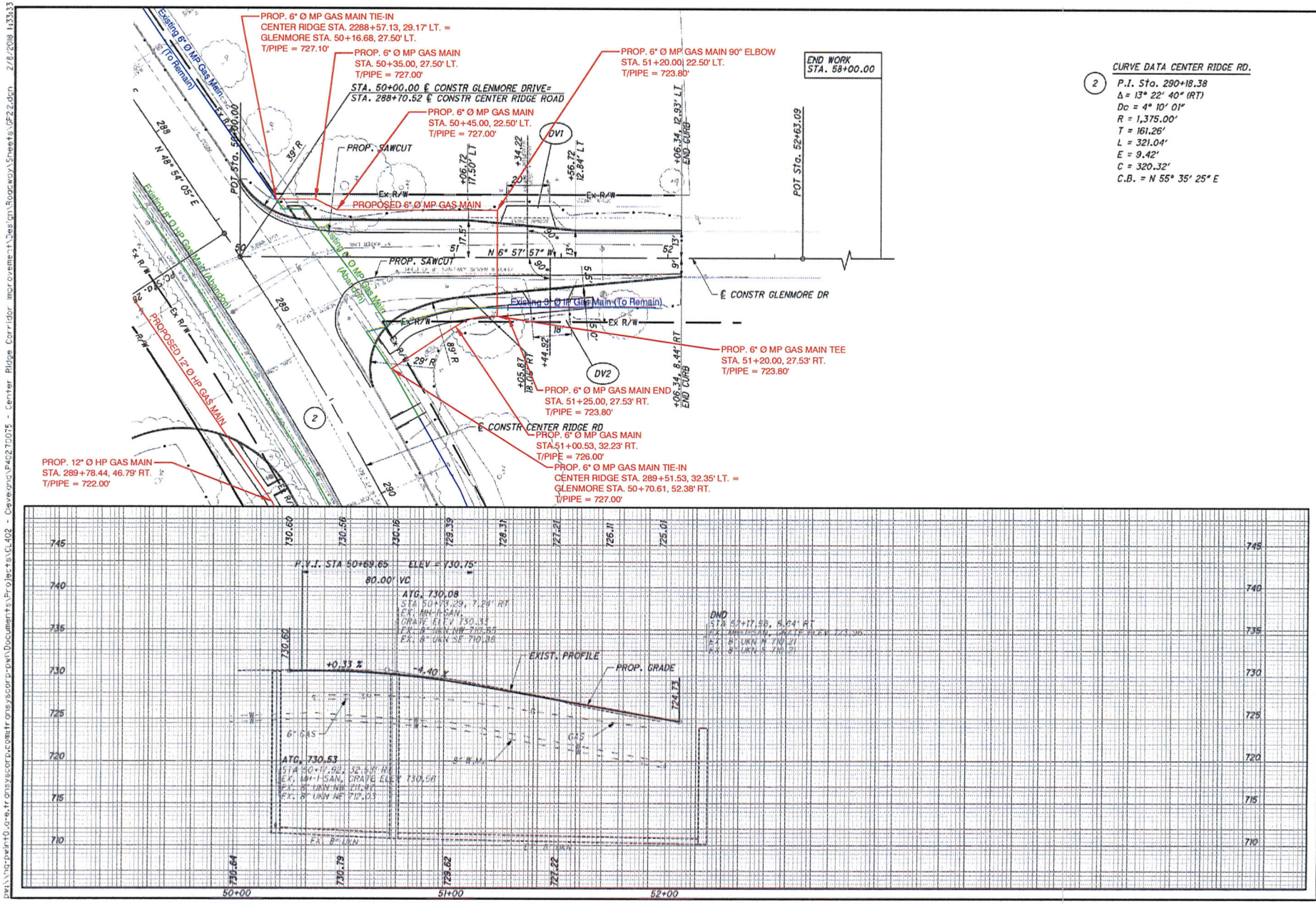
Ⓞ PROP. 6" Ø MP GAS MAIN
STA. 310+84.81, 53.84' LT.
T/PIPE = 719.40'
DEPTH = 3.5'±

Ⓟ PROP. 8" Ø IP GAS MAIN
STA. 311+06.76, 35.59' LT.
T/PIPE = 718.00'
DEPTH = 4.5'±

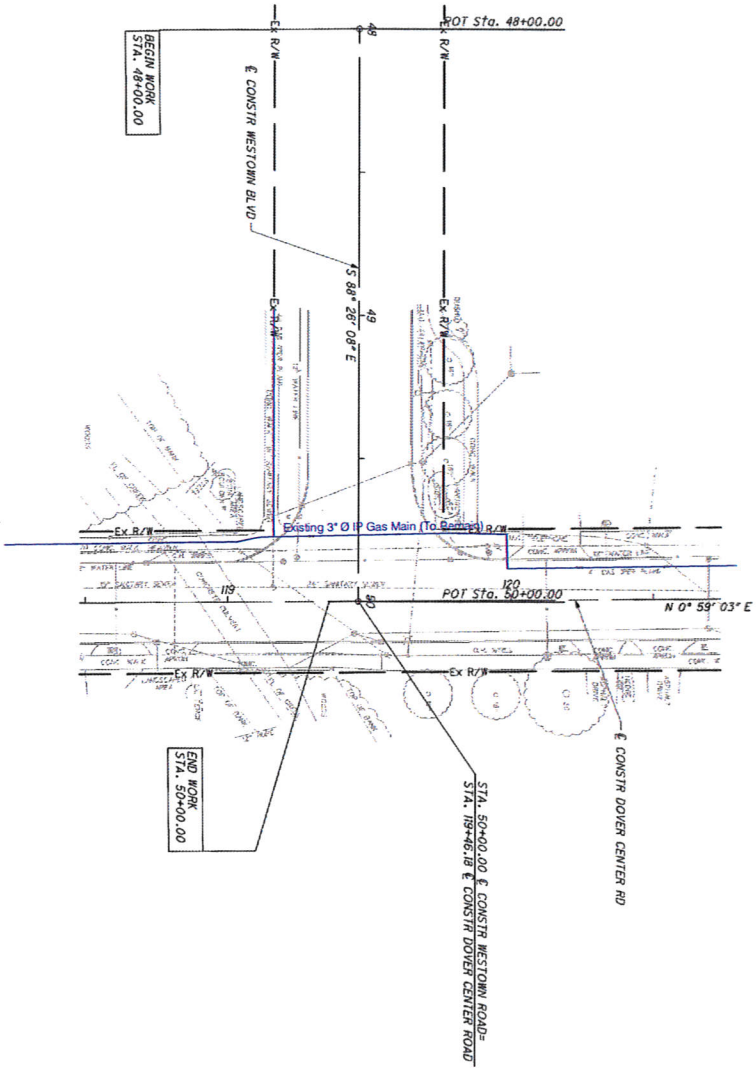
Ⓠ PROP. 6" Ø MP GAS MAIN
STA. 311+11.87, 42.92' LT.
T/PIPE = 719.00'
DEPTH = 4.0'±

Ⓡ PROP. 6" Ø MP GAS MAIN
STA. 311+34.47, 46.43' LT.
T/PIPE = 718.30'
DEPTH = 4.0'±


PLAN AND PROFILE - DOVER CENTER RD
STA.139+50.00 TO STA. 144+50.00
CENTER RIDGE RD
54
150
HB
ST
HORIZONTAL
SCALE IN FEET
END WORK
STA. 145+71.20
SENECA DR.
PROP. SAWCUT
12" TYPE B
N 1° 12' 33" E
℄ CONSTR DOVER CENTER RD
Existing 6" Ø IP Gas Main (To Remain)
PROP. 12" W.M.
PROP. 6" Ø MP GAS MAIN TEE
STA. 139+70.00, 33.76' LT.
T/PIPE = 715.10'
DEPTH = 4.5'±
PROP. 6" Ø MP GAS MAIN END
STA. 139+75.00, 33.76' LT.
T/PIPE = 715.10'
DEPTH = 4.5'±
PROPOSED 6" Ø MP GAS MAIN
PROP. 8" Ø IP GAS MAIN 90° ELBOW
STA. 139+80.00 13.00' RT.
T/PIPE = 714.10'
DEPTH = 4.5'±
PROP. 8" Ø IP GAS MAIN TIE-IN
STA. 139+80.00, 26.75' RT.
T/PIPE = 714.10'
DEPTH = 4.5'±
PROP. 6" Ø MP GAS MAIN TEE
STA. 139+70.00, 25.02' RT.
T/PIPE = 715.10'
DEPTH = 4.5'±
PROP. 6" Ø MP GAS MAIN END
STA. 139+75.00, 25.02' RT.
T/PIPE = 715.10'
DEPTH = 4.5'±
MATCH LINE STA. 139+50 DOVER CENTER RD.
EXIST. PROFILE
PROP. GRADE
PROP. 12" W.M.
139+00
140+00
141+00
142+00
143+00
144+00


PROP. 6" Ø MP GAS MAIN TIE-IN
CENTER RIDGE STA. 2288+57.13, 29.17' LT. =
GLENMORE STA. 50+16.68, 27.50' LT.
T/PIPE = 727.10'
PROP. 6" Ø MP GAS MAIN
STA. 50+35.00, 27.50' LT.
T/PIPE = 727.00'
STA. 50+00.00 ℄ CONSTR GLENMORE DRIVE=
STA. 288+70.52 ℄ CONSTR CENTER RIDGE ROAD
PROP. 6" Ø MP GAS MAIN
STA. 50+45.00, 22.50' LT.
T/PIPE = 727.00'
PROP. 6" Ø MP GAS MAIN 90° ELBOW
STA. 51+20.00, 22.50' LT.
T/PIPE = 723.80'
END WORK
STA. 58+00.00
CURVE DATA CENTER RIDGE RD.
P.I. Sta. 290+18.38
Δ = 13° 22' 40" (RT)
Dc = 4° 10' 01"
R = 1,375.00'
T = 161.26'
L = 321.04'
E = 9.42'
C = 320.32'
C.B. = N 55° 35' 25" E
Existing 6" Ø MP Gas Main (To Remain)
PROP. SAWCUT
PROPOSED 6" Ø MP GAS MAIN
Ex. R/W
POT Sta. 50+00.00
POT Sta. 52+63.09
N 48° 54' 05" E
N 6° 57' 57" W
℄ CONSTR GLENMORE DR
Existing 6" Ø MP Gas Main (Abandon)
Existing 8" Ø HP Gas Main (Abandon)
PROPOSED 12" Ø HP GAS MAIN
Existing 3" Ø HP Gas Main (To Remain)
PROP. 6" Ø MP GAS MAIN TEE
STA. 51+20.00, 27.53' RT.
T/PIPE = 723.80'
PROP. 6" Ø MP GAS MAIN END
STA. 51+25.00, 27.53' RT.
T/PIPE = 723.80'
℄ CONSTR CENTER RIDGE RD
PROP. 6" Ø MP GAS MAIN
STA 51+00.53, 32.23' RT.
T/PIPE = 726.00'
PROP. 6" Ø MP GAS MAIN TIE-IN
CENTER RIDGE STA. 289+51.53, 32.35' LT. =
GLENMORE STA. 50+70.61, 52.38' RT.
T/PIPE = 727.00'
PROP. 12" Ø HP GAS MAIN
STA. 289+78.44, 46.79' RT.
T/PIPE = 722.00'
DV1
DV2
END CURB
P.V.I. STA 50+69.65 ELEV = 730.75'
80.00' VC
ATG. 730.08
EXIST. PROFILE
PROP. GRADE
+0.33 %
-4.40 %
ATG. 730.53
6" GAS
8" W.M.
50+00
51+00
52+00
PLAN AND PROFILE - GLENMORE DR
STA. 50+00.00 TO STA. 52+63.09
CENTER RIDGE RD
55
150
HORIZONTAL SCALE IN FEET
HB
ST

pw:\\hq-pwlc-01.c-e.transysccorp.com:transysccorp-pw\Documents\Projects\CL402 - Cleveland\P402170075 - Center Ridge Corridor Improvement\Design\Roadway\Sheets\CP313.cgn 12/29/2017 5:58:52 P



109 / 69	CENTER RIDGE RD	PLAN - WESTOWN RD STA. 48+00.00 TO STA. 50+00.00	CALCULATED XXX CHECKED XXX HORIZONTAL SCALE IN FEET 0 10 20 40

Pre-Construction Notification (PCN)
NATIONWIDE PERMIT REVIEW

Westlake Elementary School
Westlake, Ohio

Performed for and at the instance of:

David Kocevar
Westlake City Schools
2260 Dover Center Road
Westlake, Ohio 44145

Performed by:

FLICKINGER WETLAND COMPANY, LLC
8530 N Boyle Parkway
Twinsburg, Ohio 44087

September 28, 2017

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FLICKINGER
WETLAND COMPANY, LLC

8530 NORTH BOYLE PARKWAY • TWINSBURG, OHIO 44087

OFFICE: 330.405.4126 • CELL: 440.668.5177 • EMAIL: erik@flickwetlands.com

September 28, 2017

David Kocevar
Westlake City Schools
2260 Dover Center Road Westlake, Ohio
44145

RE: Pre-Construction Notification (PCN)
Westlake Elementary
Westlake, Ohio

Dear Mr. Kocevar,

This PCN has been prepared as an attachment document to the U.S. Army Corps of Engineers 404 application for a permit to fill jurisdictional waters of the U.S. This PCN pertains to the construction of the new Westlake Schools facility on the property currently used as a recreational field south of Center Ridge Road (the "Project").

In the construction of said facility, impacts are proposed to fill 0.50 acre of jurisdictional wetlands. This report provides the information to show compliance with the terms and conditions of Nationwide Permit (NWP) 39. With these documents, we are requesting verification from the district engineer that this project complies with NWP 39 prior to commencing the proposed work.

In response to this NWP verification request and PCN, the district engineer reviews the information submitted by the permittee. If the district engineer determines that the activity complies with the terms and conditions of the NWP, the engineer will notify the permittee. Special conditions may be added to the NWP authorization to ensure that the activity results in minimal individual and cumulative adverse effects on the aquatic environment and other public interest factors. The special conditions are incorporated into the NWP verification, along with the NWP text and the NWP general conditions. The district engineer will respond to NWP verification requests within 45 days of receiving a complete PCN. If no reply is received from the Corps within 45 days, it may be assumed that the Project is authorized, consistent with the information in this PCN.

Included in this report is information to show compliance with the conditions of the USACE NWP 39. This includes evaluation for endangered species, potential designation of onsite streams, 100-year floodplain determinations, water quality management and erosion control methods, assessments of wetlands, and a mitigation proposal.

NAME & LOCATION of PROJECT

The property consists of PP# 21507003, 21507004, 21507005, 21507006, 21509001. It is approximately 26 acres and is located within the City of Westlake, Cuyahoga County, Ohio. It is bordered to the North by Center Ridge Road. Other property boundaries are as indicated on Resource maps (Appendix A) for details.

PROJECT DESCRIPTION

The property is proposed to contain a large educational facility, retention basins, and parking lots. This project will consist of the installation of underground improvements, and paving. **The construction of the Project will result in the filling of 0.50 acres of jurisdictional wetland.** See the Wetland Fill Map in Appendix B for details.

NAMES & ADDRESSES of RESPONSIBLE PARTIES

Applicant:	David Kocevar Westlake City Schools 2260 Dover Center Road Westlake, Ohio 44145
Biological Consultant:	Erik Flickinger Flickinger Wetland Company, LLC 8530 North Boyle Parkway Twinsburg, Ohio 44087 (440) 668-5177
Engineer:	Mr. Rob Blatchford LESKO ARCHITECTURE 27955 Clemens Road, Suite A Cleveland, Ohio 44145

EXISTING SITE DESCRIPTION

This property is located within the Lake Plains Region of northeastern Ohio. The surficial geology of the property was formed by the deposition of medium textured and moderately fine textured glacial till. The primary soils on the property are of the Oshtemo-Urban land-Chili association, nearly level to very steep, well drained soils that formed in stratified, loamy and sandy glacial outwash; on outwash terraces and beach ridges.

STATE HISTORICAL PRESERVATION OFFICE REVIEW

A State Historical Preservation office review was performed. Using the SHPO search function and website it was determined that no structures on this property are listed in the National Register of Historic Places. In addition, a literature review regarding the property is attached (See Appendix F). Based upon historic land use it is unlikely there will be any cultural resources affected.

ENVIRONMENTAL RESOURCE REVIEW

To determine if this parcel may contain Federally listed threatened or endangered species or critical habitat, the Ohio Department of Natural Resources (ODNR) was contacted. The ODNR has reviewed the Natural Heritage maps and files and has found that they have no rare species records with a legal status for this site. Additionally, no existing or proposed state nature preserves or scenic rivers occur at this location. Thus, no impacts to rare species, state nature preserves, or scenic rivers are expected to result from the construction of the Project.

To further investigate if this parcel may contain a federally listed threatened or endangered species or critical habitat within the vicinity of the proposed site, information from the U.S. Fish and Wildlife Service was reviewed. The proposed project lies within the range of three Federally listed endangered species: the Indiana bat, (Myotis sodalis), Kirtlands warbler (Dendroica kirtlandii), and the Piping Plover (Charadirius melodus). Also the federally listed threatened species The Red Knot (Calidris canutus rufa) is within range of the project. However this property is not within the vicinity of any known critical habitat.

100 YEAR FLOODPLAIN

No 100-year floodplains occur on this site, see FEMA map in Appendix E.

WETLAND DELINEATION

Wetland delineation was performed on this property in February 2016. The wetland delineation has yet to be verified by the U.S. Army Corps of Engineers. A verified wetland delineation will be necessary to evaluate the fill of jurisdictional waters that will occur because of this Project.

WATERS ASSESSMENT METHODOLOGY (STREAMS)

To determine the categorization of the wetlands on this property, the Ohio Headwaters Habitat Evaluation Index (HHEI) was utilized. This assessment method has been prepared to appraise the quality of headwaters streams in the field. Using this information, a numeric quantification of a stream is determined. This number is then used to determine a categorization of the stream, using the criteria established by the Ohio EPA. Such assessment is not applicable as there are no stream impacts proposed on the site.

WETLAND ASSESSMENT METHODOLOGY

To determine the categorization of the wetlands on this property, the Ohio Rapid Assessment Method (ORAM) for Wetlands: Version 5.0 was used. The ORAM was designed to quickly appraise the quality of wetlands in the field. This categorization is based on an assessment of the functions and values of the wetlands. The assessment is based on wetland size, hydrology, surrounding land use, buffer width, plant communities, microtopography, and modifications to hydrology, substrate and/or habitat. Using this information, a numeric quantification of each wetland is determined. This number is then used to determine a categorization of the wetlands, using the criteria established by the Ohio Rapid Assessment Workgroup. The ranges determining these categories can be found on the following page in Table 2. The objective in categorizing the wetlands is to make the degree of wetland protection commensurate with the quality of the resource as wetlands vary significantly in their ecological functions.

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM and VIBI scores.

category	ORAM v. 5.0 score	VIBI score
1	0-29.9	0-21
1 or 2 gray zone	30-34.9	----
modified 2	35-44.9	22-44
2	45-59.9	45-66
2 or 3	60-64.9	-----
3	65-100	67-100

The categories range from 1-3, with a category 3 wetland being categorized as having the highest functional value. Wetlands assessed as category 1 have been determined as "Limited quality waters" per the Ohio Wetland Water Quality Standards. That is, these wetlands support minimal habitat, hydrological or recreational/educational functions. This category will have low species diversity, and a predominance of non-native vegetation. The Water Quality Standards have designated Category 2 and 3 wetlands as "General high quality waters." Category 2 wetlands support moderate habitat, hydrological or recreational/educational functions. Wetlands in this category will include those with a dominance of native vegetation and without the presence of threatened or endangered species, and the potential for restoration. Category 3 wetlands support superior habitat, hydrological or recreational/educational functions. These wetlands have high levels of diversity, a high proportion of native species, or the presence of threatened or endangered species. This category includes bogs and fens, Lake Erie Coastal wetlands, and high quality forested wetlands.

Using the above-mentioned assessment method, the desktop review was determined using the ODNR-Natural Heritage Program, for the entire site.

Field assessments were completed to determine a numeric quantification for each wetland. The Wetland Delineation Map (Appendix C) illustrates the location of the wetlands. The chart below gives a summary of the assessment of each wetland. Copies of each assessment can be found in Appendix G.

Table 3. Extent of Water Resources – Wetlands.

Wetland Label	**Area (ac)**	**Quantitative Assessment**	**Category**
W-A	0.81	42.5	2
W-B	0.03	33	2
W-C	0.49	33	2
W-D	0.08	18	1
W-E	0.15	18	1
W-F	0.01	42.5	2
Totals	**1.58**	**--**	**--**

Photographs were taken of the wetlands and can be found in Appendix H.

STORMWATER MANAGEMENT

The development of the site has, and will result in, an increase in the amount of impervious surfaces as compared to pre-development conditions. Therefore, if the development is not designed and managed correctly, the additional impervious surfaces have the potential to cause an increase in the amount of rainfall reaching the receiving water in the form of direct runoff. As a result, the potential does exist that runoff volume and flow peaks to the receiving waters could increase. Suspended sediments found in stormwater runoff could also increase during construction. In association with this, conductivity could increase as well. Conductivity is related to the total dissolved solids that are found in stormwater runoff.

To address these concerns of changing hydrologic conditions and water quality, the applicant has, with assistance from his design professional, developed a comprehensive Stormwater Management Plan for the project. The Stormwater Management Plan will utilize Best Management Practices (BMPs). These methods are intended to control storm water and sediment loads and includes, but is not limited to: silt fencing, straw, geotextile mats on steep grades, seeding soils within 45 days of soil exposure, and establishing vegetation in drainage swales and construction of water quality ponds to manage of the flow of water to the receiving waters such that post-development flows will be consistent with pre-development conditions. Most pollutants (conductivity) in urban runoff are settleable and are associated with total suspended solids. As a result, BMPs designed to remove suspended solids from the runoff will remove the majority of other pollutants as well. These measures will control the volume of water and sediment flowing off the site post-development.

These storm water control measures shall be installed in accordance with city ordinances to ensure that peak post-development rates of surface water runoff from the site do not exceed the peak pre-development rates of runoff. Additionally, preparation of a Storm Water Pollution Prevention Plan (SWPPP) and submittal of a Notice of Intent (NOI) for coverage under the Ohio EPA General Construction Storm Water Permit is required for city approval of the development. Due to the implementation of the foregoing BMPs, no offsite impacts are anticipated as a result of the development of this site.

IMPACTS & AVOIDANCE OF WATER RESOURCES

It is proposed to fill 0.50 acres of wetlands to complete the development in a practicable manner. Due to the relatively small size of the project parcel and associated wetlands avoidance of impacts is not practicable. See the following chart for a breakdown of the impacts and avoidance of the water resources on this site.

Table 4. Summary of Impacts and Avoidance of Water Resources.

Total Wetland	-	1.58 acres
Total Proposed Wetland Impacts	-	0.50 acres
Total Avoided Wetlands	-	1.08 acres
Percentage of Wetlands Avoided	**-**	**68%**
Total Stream On Site	-	120.24 linear feet (lf)
Total Proposed Stream Impacts	-	No Impacts
Total Stream Avoided	-	0 lf
Percentage of Streams Avoided	**-**	**100 %**

Heavy machinery will not be operated in wetlands and streams that are to be avoided. All efforts will be taken to minimize soil disturbance in these areas. Material used for construction will be free from toxic pollutants in toxic amounts. No trash or other unsuitable material will be discharged into waters of the U.S. Any temporary fills will be entirely removed and the affected areas will be returned to the pre-construction conditions. The Project shall be constructed per customary engineering standards. Post-construction maintenance will be conducted as needed per county or township requirements.

Furthermore, no activities will occur in the proximity of a public water supply intake, nor will impoundments of water be created, other than for retention. No effect on navigation will occur because of the construction of this Project.

MITIGATION PLAN

The following chart gives a breakdown of the proposed fill and the mitigation as determined using the OEPA offsite mitigation ratios for each of the fill areas.

Table 5. Wetland Impacts and Mitigation.

Wetland Label	Proposed Fill (ac)	ORAM Category	Jurisdictional or Isolated	Plant Cover	Miti Ratio	Mitigation (ac)
W-A	0.03	2	J	Forested/ Emergent	2.5:1	0.075
W-B	0.03	2	J	Forested/ Emergent	2.5:1	0.075
W-C	0.18	2	J	Forested/ Emergent	2.5:1	0.45
W-D	0.08	1	J	Emergent	1.5:1	0.12
W-E	0.15	1	J	Emergent	1.5:1	0.225
W-F	0.01	2	J	Forested/ Emergent	2.5:1	0.025
Total	**0.50**	**--**	**--**	**--**	**--**	**1.00**

Mitigation is necessary to address the fill of these water resources. In order to address these fills it is proposed to purchase 0.7 acres of Forested and 0.3 acres of Non-Forested wetland credits from the Grand River Lowlands banks operated by Wetlands Preservation, Ltd.. Such mitigation proposal complies with the applicable requirements contained in Ohio's wetland water quality standards

I hope the preceding information will be of help to you as you review the permit application for this important project. Kindly review the application and this PCN at your earliest convenience. Thereafter, please contact me to discuss the permitting of the project in more detail.

Sincerely,

Erik A. Flickinger, President
FLICKINGER WETLAND COMPANY, LLC.

Sources

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Mitsch, William J. and Gosselink, James G. *Wetlands, 2nd Edition.* Van Nostrand Reinhold, New York, N.Y., 1993.

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U.S. Fish and Wildlife Service, 1977. *U.S.G.S., North Olmsted, Ohio 7.5" Quad*. Twin Cities, MN.

U.S. Fish and Wildlife Service. *National List of Plant Species that occur in Wetlands: 1988 Ohio*. Inland Freshwater Ecology Section. U.S. Department of Interior St. Petersburg, Florida, 28 pp., 1988.

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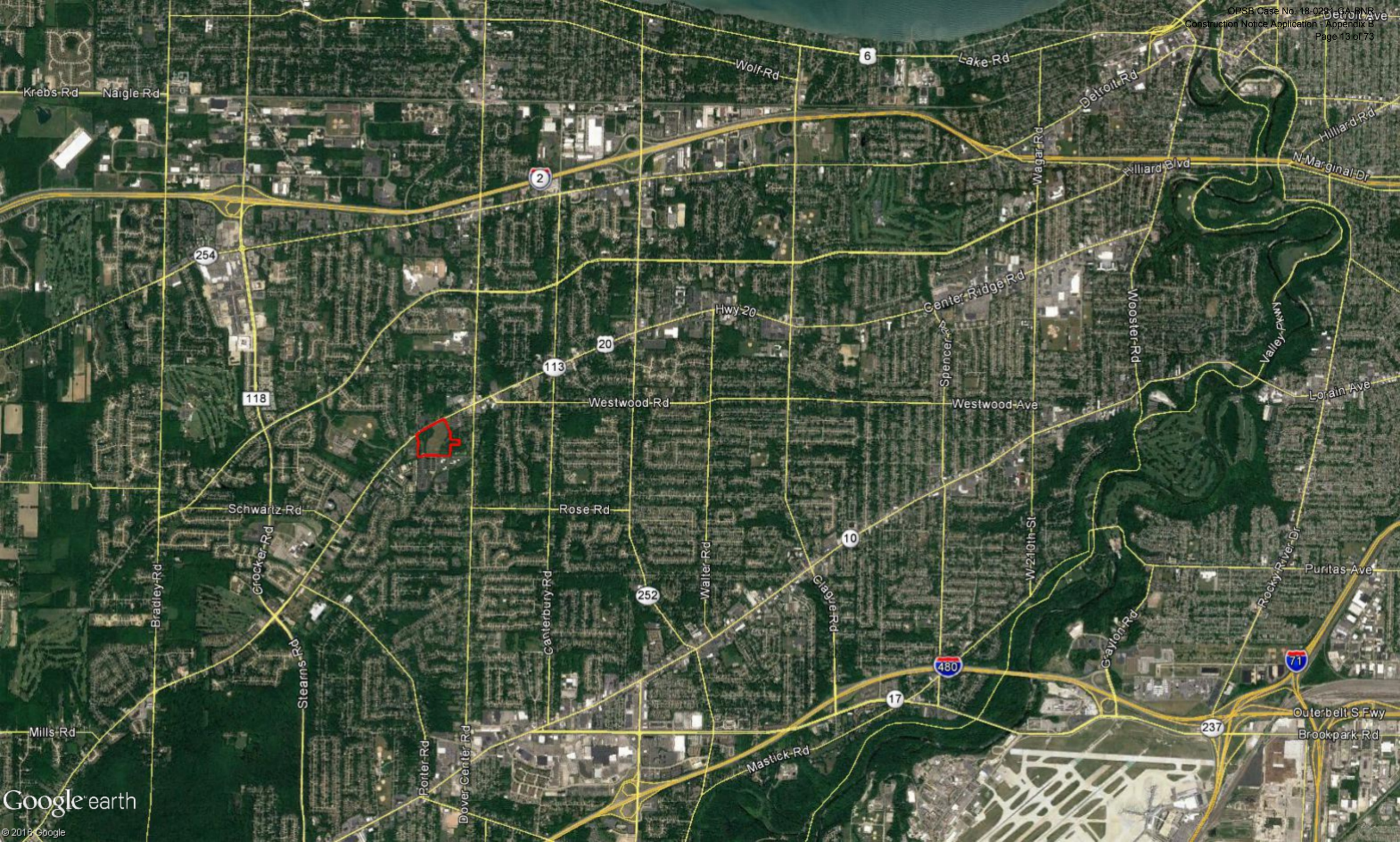
APPENDIX A

Resource Maps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Center Ridge Rd
Hwy 20
20
113
Spencer Rd
Wooster Rd
Valley Pkwy
Lorain Ave
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Westwood Rd
Westwood Ave
Schwartz Rd
Rose Rd
10
Bradley Rd
Crocker Rd
Canterbury Rd
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Walter Rd
Glague Rd
W 210th St
Rocky River Dr
Puritas Ave
Stearns Rd
480
Grayton Rd
71
17
Outerbelt S Fwy
237
Brookpark Rd
Mills Rd
Mastick Rd
Porter Rd
Dover Center Rd
Google earth
© 2018 Google

PSS1C
Glenmore Dr
Northglen Dr
Hwy 20
Center Ridge Rd
Westown Blvd
Village Green Dr
MacIntosh Dr
N Bay Dr
Dover Center Rd
Google earth
© 2016 Google

SSURGO | oh035,oh093 | 0.16 seconds | 0.75 cache ratio | BBOX:(-81.9324, 41.4431) (-81.9191, 41.4492) | 188 acres
As
Glenmore Dr
Northglen Dr
OsB
Hwy 20
Center Ridge Rd
Ua
St
HaA
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MgA
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Village Green Dr
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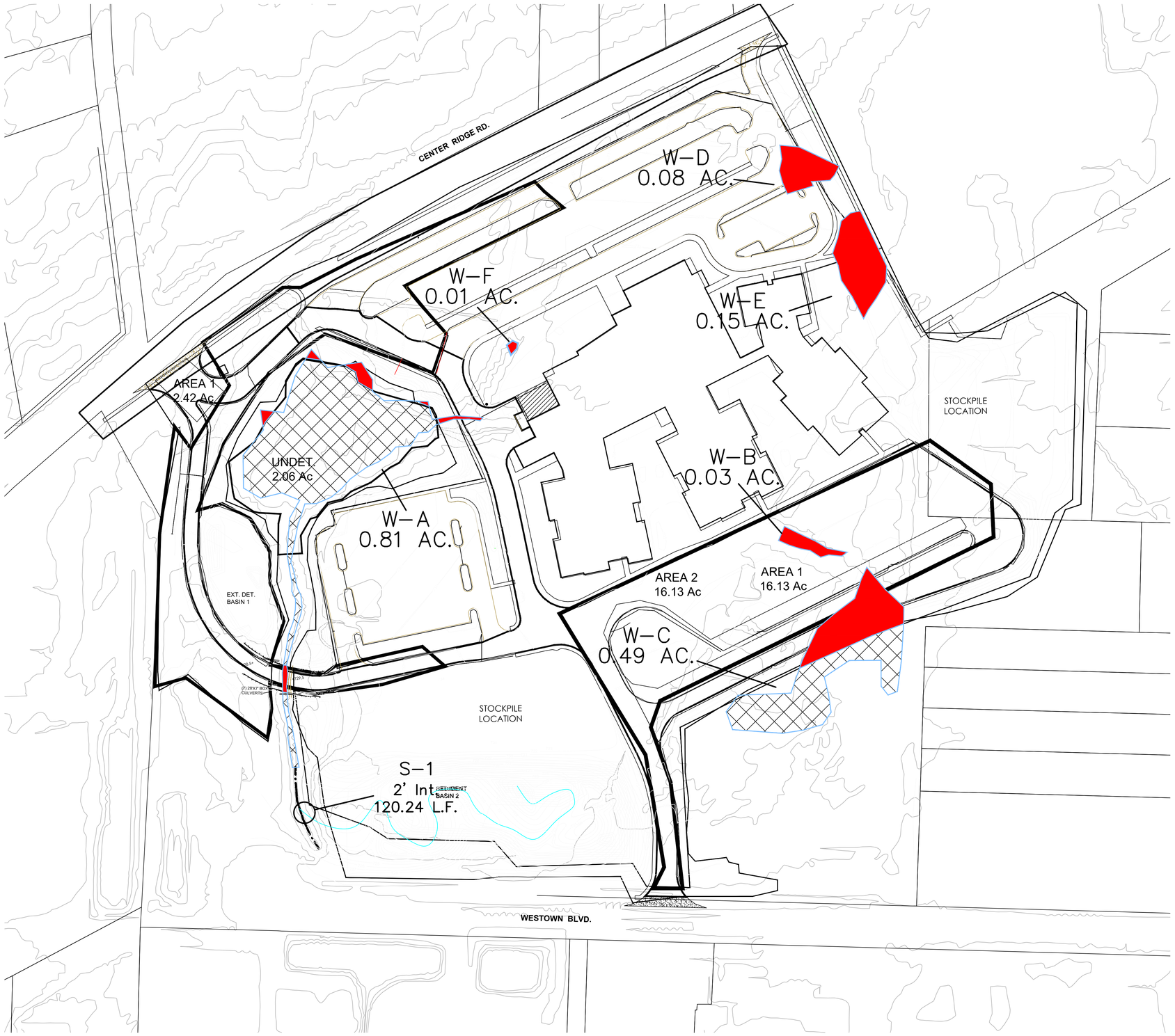
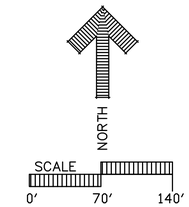
Google earth
© 2016 Google

APPENDIX B

Wetland Fill Map





(7) SAMPLE POINT

WETLAND AREA = 1.58 ACRES

STREAMS = 120.24 LINEAR FEET

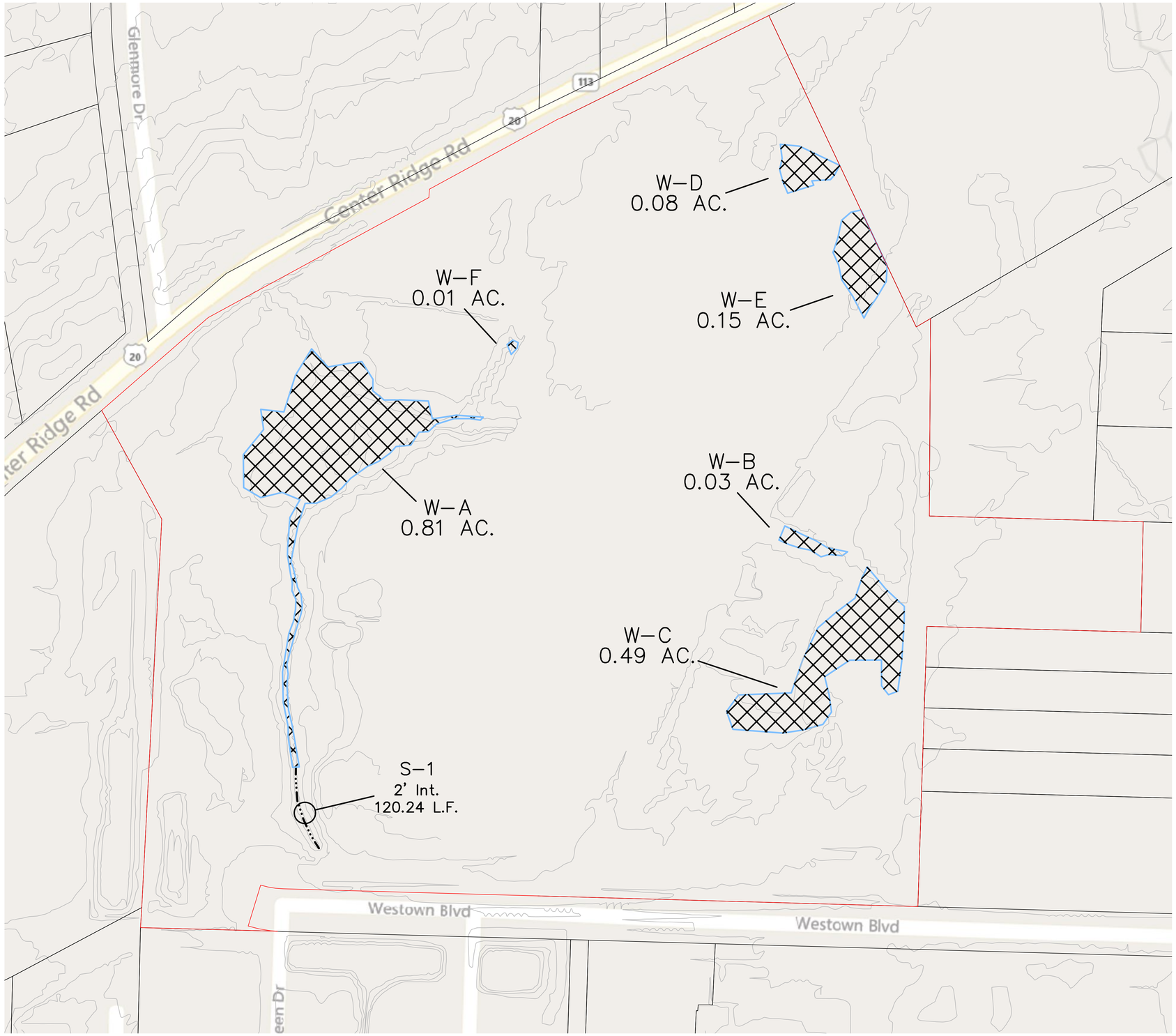
WETLAND FILLS = 0.50 ACRES

Provided that site conditions, methodology or criteria remain constant, these findings will be supported by Flickinger Wetland Company, LLC for five years from the date of this map or verification letter from USACE, whichever is later.

CLIENT Lesko	
PROJECT Westlake Elementary	
TITLE WETLAND DELINEATION	
SCALE 1" = 70'	DATE 9/27/2017
- PREPARED BY - FLICKINGER WETLAND COMPANY, LLC 8530 NORTH BOYLE PARKWAY TWINSBURG, OHIO 44087 (440) 668–5177	JOB no. – DWG. FILE – SHT. no. 1 of 1

APPENDIX C

Delineation Map



NORTH

SCALE
0' 70' 140'

7 SAMPLE POINT

WETLAND AREA = 1.58 ACRES

STREAMS = 120.24 LINEAR FEET

Provided that site conditions, methodology or criteria remain constant, these findings will be supported by Flickinger Wetland Company, LLC for five years from the date of this map or verification letter from USACE, whichever is later.

CLIENT Lesko	
PROJECT Westlake Elementary	
TITLE WETLAND DELINEATION	
SCALE 1" = 70'	DATE 02/23/2017
- PREPARED BY - FLICKINGER WETLAND COMPANY, LLC 8530 NORTH BOYLE PARKWAY TWINSBURG, OHIO 44087 (440) 668–5177	JOB no. – DWG. FILE – – SHT. no. 1 of 1

APPENDIX D

USACE Documents

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

REPLY TO
ATTENTION OF:

July 24, 2017

Regulatory Branch

SUBJECT: Preliminary Jurisdictional Determination for Department of the Army Application No. 2008-00653

Mr. Robert W. Blatchford, Jr.
President
Lesko Architecture
27955 Clemens Road Suite A
Cleveland, Ohio 44145

Dear Mr. Blatchford:

I have reviewed the wetland delineation map you submitted for your request for a wetland boundary verification, for a 26-acre site located south of Center Ridge Road and north of Westown Boulevard, City of Westlake, Cuyahoga County, Ohio.

I have evaluated your submitted wetland delineation map and have determined that the wetland and water boundaries shown on the map accurately represent on-site conditions. Please note that this is a Preliminary Jurisdictional Determination (JD). Preliminary JDs are non-binding written indications that there may be waters of the United States (WOUS) on your parcel and approximate locations of those waters. Preliminary JDs are advisory in nature and may not be appealed.

Pursuant to Regulatory Guidance Letter 16-01, any permit application made in reliance on this Preliminary JD will be evaluated as though all wetlands or waters on the site are regulated by the Corps. Further, all waters, including wetlands will be used for purposes of assessing the area of project related impacts and compensatory mitigation. If you require a definitive response regarding Department of the Army jurisdiction for any or all of the waters identified on the submitted drawings, you may request an approved jurisdictional determination (AJD) from this office. If an AJD is requested, please be aware that this is often a lengthy process and we may require the submittal of additional information.

I have enclosed the Preliminary JD Form with this letter. The form and attached table identifies the extent of waters on the site and specific terms and conditions of the Preliminary JD. Please sign and return a copy of this form to my attention. If you do not respond within 15 days, we will presume concurrence and no additional follow up is necessary prior to finalizing an action.

In accordance with Regulatory Guidance Letter 05-02, “Preliminary jurisdictional determinations are not definitive determinations of areas within regulatory jurisdiction and do

not have expirations dates." However, I strongly recommend that the boundaries of WOUS be re-evaluated by a qualified wetland biologist after five years of the date of this letter. This will ensure that any changes are appropriately identified and you do not inadvertently incur a violation of Federal law while constructing your project or working on your project site.

Lastly, this determination has been conducted only to identify the limits of waters that may be subject to Corps Clean Water Act or Rivers and Harbors Act jurisdiction. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are United States Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resource Conservation Service prior to starting work.

Questions pertaining to this matter should be directed to me at 716-879-4262, by writing to the following address: U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207, or by e-mail at: michael.w.smith@usace.army.mil

Sincerely,

Michael W. Smith
Biologist

Enclosures

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Lesko Architecture	File Number: LRB-2008-00653	Date: 7/24/2017
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Michael W. Smith U.S. Army Corps of Engineers 1776 Niagara Street Buffalo, New York 14207 716-879-4262 michael.w.smith@usace.army.mil	If you only have questions regarding the appeal process you may also contact: Attn: Jacob Siegrist Great Lakes and Ohio River Division CELRD-PD-REG 550 Main Street, Room 10524 Cincinnati, OH 45202-3222 513-684-2699; FAX 513-684-2460

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: July 24, 2017

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:

Mr. Robert W. Blatchford, Jr.
President
Lesko Architecture
27955 Clemens Road Suite A
Cleveland, Ohio 44145

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Buffalo District, Lesko Architecture, LRB-2008-00653

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: Ohio County/parish/borough: Cuyahoga City: Westlake

Center coordinates of site (lat/long in degree decimal format):

Lat.: 41.44607° North Long.: 81.92723° West

Universal Transverse Mercator: Zone 17 (X: 422546.221, Y: 4588691.846)

Name of nearest waterbody: Cahoon Creek

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: July 22, 2017

☒ Field Determination. Date(s): April 28, 2017

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Wetland A	41.446° N	81.928° W	0.81 acres	Wetland	Section 404
Wetland B	41.446° N	81.925° W	0.03 acres	Wetland	Section 404
Wetland C	41.446° N	81.926° W	0.49 acres	Wetland	Section 404
Wetland D	41.447° N	81.926° W	0.08 acres	Wetland	Section 404

Wetland E	41.447° N	81.925° W	0.15 acres	Wetland	Section 404
Stream 1	41.445° N	81.928° W	120.24 linear feet	Non-wetland	Section 404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

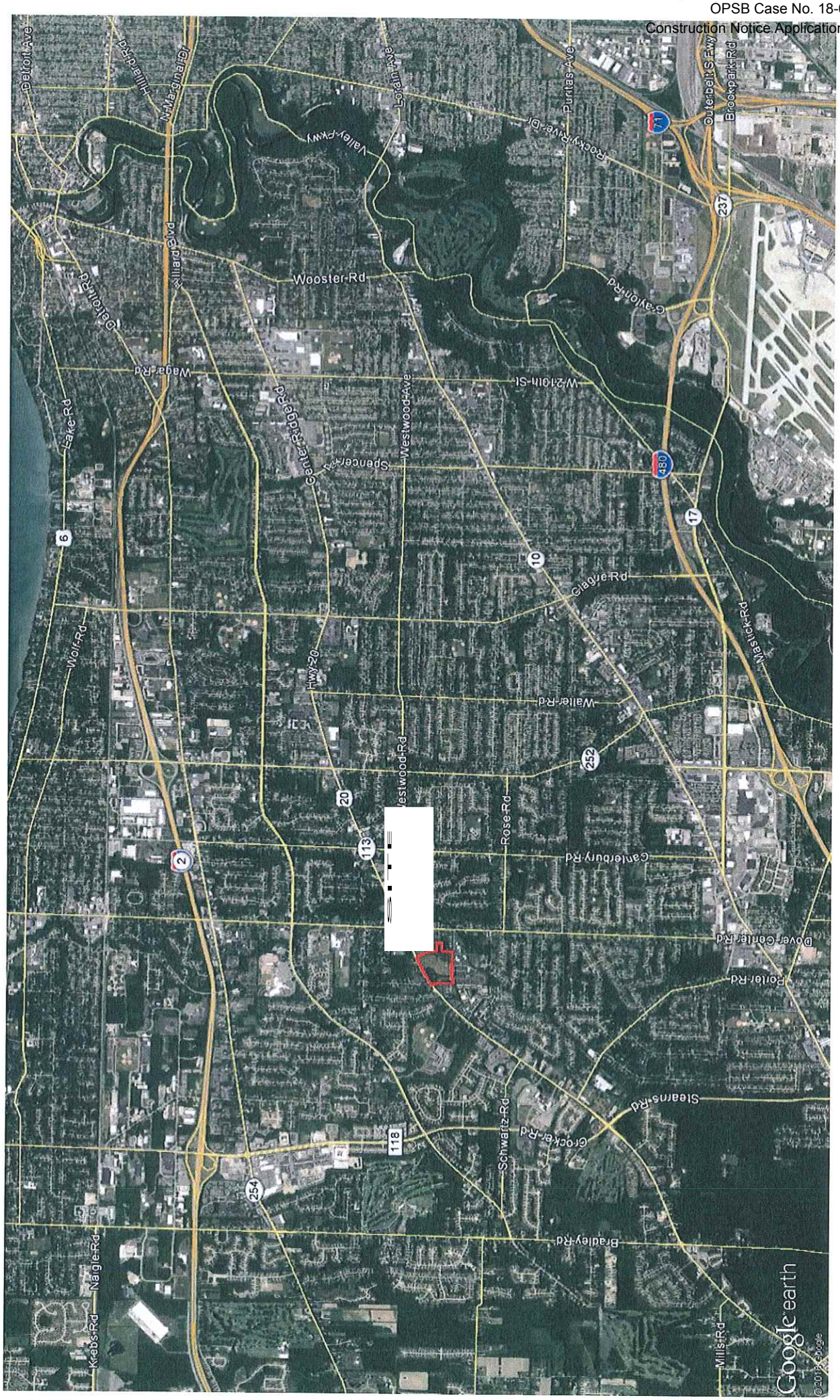
Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

☒ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: Flickinger Wetland Company, LLC
☒ Data sheets prepared/submitted by or on behalf of the PJD requestor.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report. Rationale: _____.
☐ Data sheets prepared by the Corps: _____.
☐ Corps navigable waters' study: _____.
☒ U.S. Geological Survey Hydrologic Atlas: USGS (ORM2).
☒ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: North Olmstead (1:24000).
☒ Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey (NRCS).
☒ National wetlands inventory map(s). Cite name: _____.
☐ State/local wetland inventory map(s): _____.
☒ FEMA/FIRM maps: _____
☐ 100-year Floodplain Elevation is: ____. (National Geodetic Vertical Datum of 1929)
☒ Photographs:
☒ Aerial (Name & Date): Google Earth (4/6/2012, 2/28/2006).
☒ Other (Name & Date): Wetlands Investigation (2/23/2017).
☒ Previous determination(s). File no. and date of response letter: LRB-2007-1427, January 13, 2009.
☐ Other information (please specify): _____.

<u>IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.</u>

_____	_____
Signature and date of Regulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.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Brookpark Rd
Wooster Rd
Gayton Rd
Detroit Rd
Wagar Rd
W 210th St
Lake Rd
Center Ridge Rd
Spencer Rd
Westwood Ave
Clague Rd
Wolf Rd
Hwy 20
Waterloo Rd
Waller Rd
Westwood Rd
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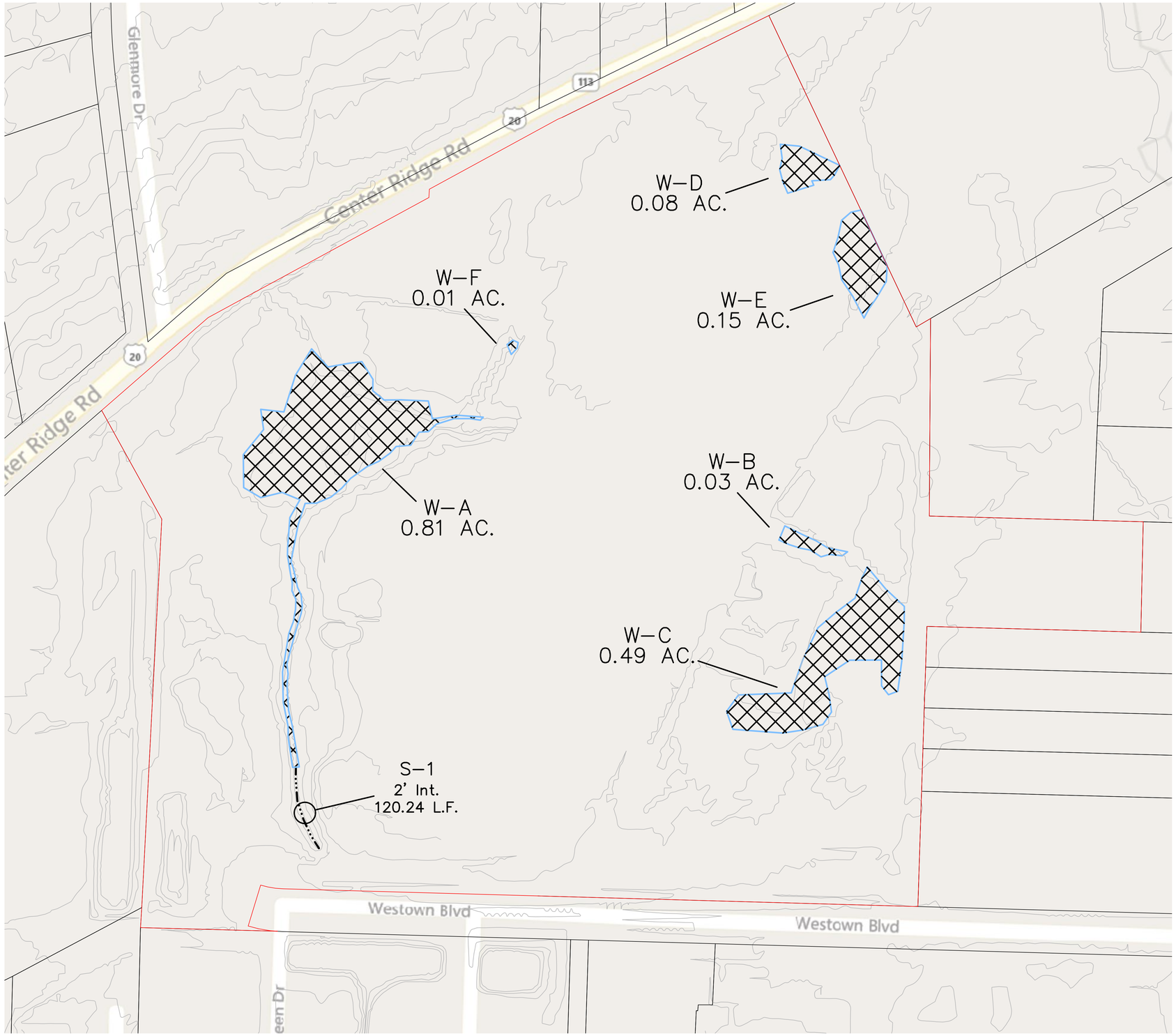


NORTH

SCALE
0′ 70′ 140′

7 SAMPLE POINT

WETLAND AREA = 1.58 ACRES

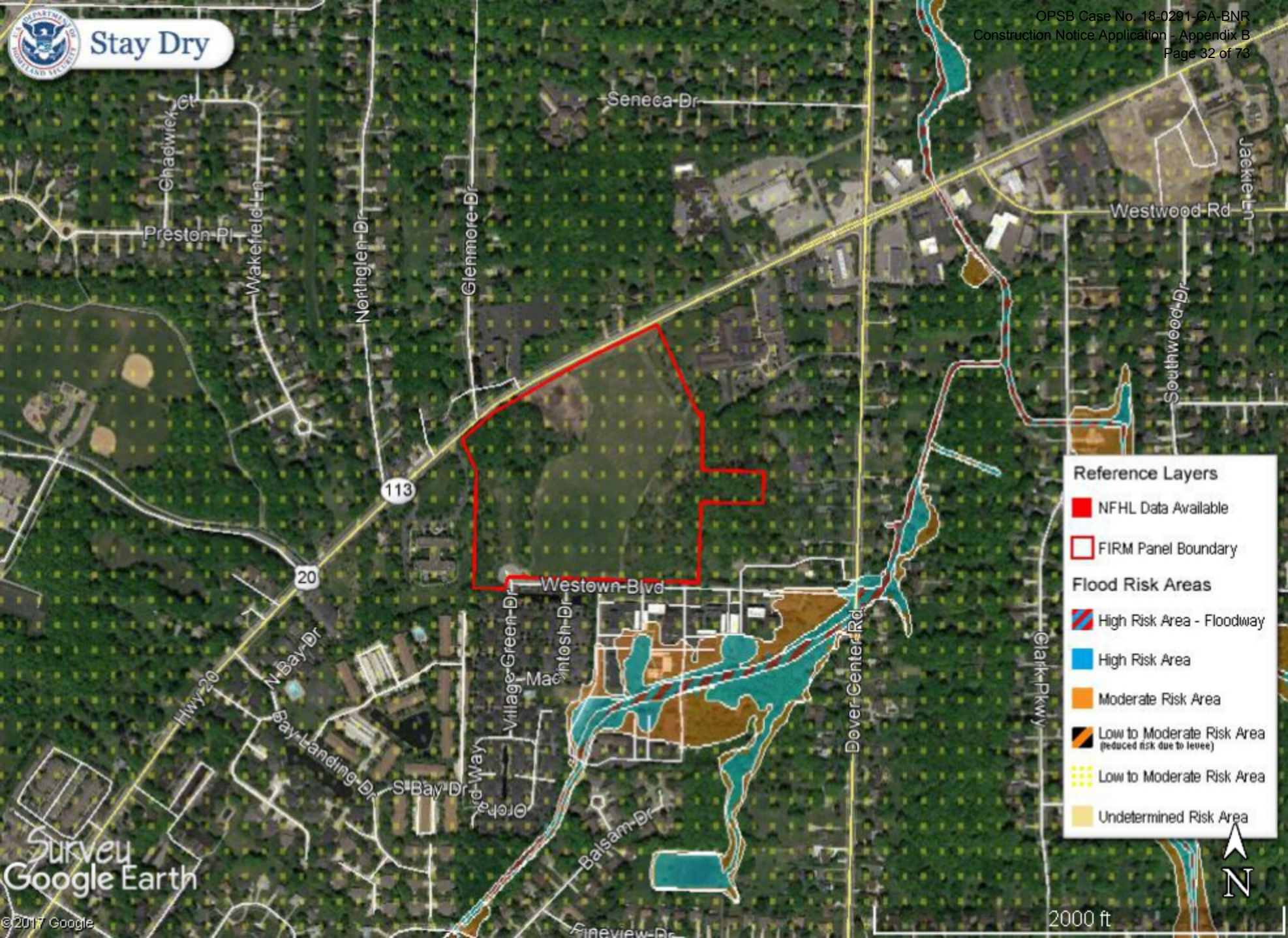
STREAMS = 120.24 LINEAR FEET

Provided that site conditions, methodology or criteria remain constant, these findings will be supported by Flickinger Wetland Company, LLC for five years from the date of this map or verification letter from USACE, whichever is later.

CLIENT Lesko	
PROJECT Westlake Elementary	
TITLE WETLAND DELINEATION	
SCALE 1″ = 70′	DATE 02/23/2017
- PREPARED BY - FLICKINGER WETLAND COMPANY, LLC 8530 NORTH BOYLE PARKWAY TWINSBURG, OHIO 44087 (440) 668–5177	JOB no. – DWG. FILE – – SHT. no. 1 of 1

APPENDIX E

FEMA 100 Year Flood Map


Stay Dry
Seneca Dr
Chadwick Ct
Preston Pl
Wakefield Ln
Northglen Dr
Glenmore Dr
Westwood Rd
Jackie Ln
Southwood Dr
113
20
Westown Blvd
Village Green Dr
MacIntosh Dr
Dover Center Rd
Clark Pkwy
Hwy 20
N Bay Dr
Bay Landing Dr
S Bay Dr
Orchard Way
Balsam Dr
Fineview Dr
Reference Layers
NFHL Data Available
FIRM Panel Boundary
Flood Risk Areas
High Risk Area - Floodway
High Risk Area
Moderate Risk Area
Low to Moderate Risk Area
(reduced risk due to levee)
Low to Moderate Risk Area
Undetermined Risk Area
N
2000 ft
Survey
Google Earth
© 2017 Google

APPENDIX F

Cultural & Environmental Resources

FLICKINGER
WETLAND COMPANY, LLC
8530 NORTH BOYLE PARKWAY • TWINSBURG, OHIO 44087
OFFICE: 330.405.4126 • CELL: 440.668.5177 • EMAIL: erik@flickwetlands.com

9/17/2017

Mike Smith
U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Westlake Schools-Lesko Architecture

Cultural resources discussion.
General condition 20 states, "in cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act have been satisfied." The property consists almost entirely of a previously filled field used for recreational purposes. The entire project area is listed as Urdothent soil unit. The proposed activities on this site include, regrading, underground utility improvements, road construction, and the construction of a school. After review of the Ohio History Connection online mapping data no previously discovered artifacts or historical structures have ever existed on site. There are no structures within the project area. In consideration of the facts listed above it is the opinion of Flickinger Wetland Company that the Westlake Schools project is absent of any potential cultural resources.

Sincerely,

Emmett Messer-Kruse

Emmett Messer-Kruse
FLICKINGER WETLAND COMPANY, LLC

Project home / Resources

Resources

- ENDANGERED SPECIES 5
- MIGRATORY BIRDS 17
- FACILITIES
- WETLANDS ✔

PRINT RESOURCE LIST

Endangered species

Listed species 1 are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

Additional information on endangered species data is provided below.

The following species are potentially affected by activities in this location:

THUMBNAILS LIST

Mammals

NAME	STATUS
Indiana Bat CH Myotis sodalis	Endangered
Northern Long-eared Bat Myotis septentrionalis	Threatened

Birds

NAME	STATUS
Kirtland's Warbler Setophaga kirtlandii (= Dendroica kirtlandii)	Endangered
Piping Plover CH Charadrius melodus	Endangered
Red Knot Calidris canutus rufa	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

APPENDIX G

Quantitative Assessments

Version 5.0	Ohio Rapid Assessment Method for Wetlands	
	Background Information **Scoring Boundary Worksheet** **Narrative Rating** **Field Form Quantitative Rating** **ORAM Summary Worksheet** **Wetland Categorization Worksheet**	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on thepresence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name:	Emmett Messer-Kruse
Date:	8/3/2017
Affiliation:	Flickinger Wetland Company, LLC
Address:	8530 N. Boyle Pkwy. Twinsburg, OH 44087
Phone Number:	(419)-787-7433
e-mail address:	Emmett@flickwetlands.com
Name of Wetland:	W-A, W-F
Vegetation Communit(ies):	Forested, Shrub Scrub
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
See attached.

Lat/Long or UTM Coordinate	41°26'46.61"N 81°55'42.04"W
USGS Quad Name	Westlake
County	Cuyahoga
City/Township	Westlake
Section and Subsection	N/A
Hydrologic Unit Code	41100010204
Site Visit	6/22/2017
National Wetland Inventory Map	PSS1C
Ohio Wetland Inventory Map	N/A
Soil Survey	Ua
Delineation report/map	See Attached

Name of Wetland:	**W-A, W-F**
Wetland Size (acres, hectares):	0.82

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 42.5	**Category: Category 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Nagle Road	**Rater(s):**	Emmett Messer-Kruse	**Date:**	8/3/17

subtotal	max6pts	**Wetland:**	W-A, W-F
2	2		

Final Score	**Category**
42.5	2

Metric 1. Wetland Area (size).

Select one size class and assign score.

		> 50 acres (<20.2ha) (6 pts)
		25 to <50 acres (10.1 to <20.2ha) (5 pts)
2		10 to <25 acres (4 to <10.1ha) (4 pts)
		3 to 10<acres (1.2 to <4ha) (3 pts)
	2	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
		0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
		<0.1 acres (0.04ha) (0 pts)

subtotal	max14pts
6	4

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

		WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
1		MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
	1	NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
		VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

		VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
3		LOW. Old field (>10 years), shrubland, young second growth forest. (5)
	3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
		HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

subtotal	max30pts
24.5	18.5

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
4	1	Precipitation (1)
	3	Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

		100 year floodplain (1)
	1	Between stream/lake and other human use (1)
2	1	Part of wetland/upland (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
2	2	04. to 0.7m (15.7 to 27.6in) (2)
		>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

	4	Semi-to permanently inundated/saturated (4)
	3	Regularly inundated/saturated (3)
3.5		Seasonally inundated (2)
		Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

		None or none apparent (12)
	7	Recovered (7)
7		Recovering (3)
		Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☐	tile	☑	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☐	stormwater input	☐	other - culvert

subtotal	max20pts
38.5	14

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

		None or none apparent (4)
3	3	Recovered (3)
		Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
6	6	Recovered (6)
		Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
	5	Good (5)
5		Moderately good (4)
		Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☐	mowing	☐	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☑	selective cutting	☐	dredging
☐	woody debris removal	☐	farming
☐	toxic pollutants	☑	nutrient enrichment

38.5
Subtotal this page

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Nagle Road	**Rater(s):**	Emmett Messer-Kruse	**Date:**	8/3/17
			Wetland:	W-A, W-F	

38.5
Subtotal1st page

38.5	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

		Bog (10)
		Fen (10)
		Old growth forest (10)
		Mature forested wetland (5)
0		Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
		Lake Erie Coastal/tributary wetland-restricted hydrology (5)
		Lake Plain Sand Prairies (Oak Openings) (10)
		Relict Wet Prairies (10)
		Known occurrence state/federal threatened or endangered species (10)
		Significant migratory songbird/water fowl habitat or usage (10)
		Category 1 Wetland. See question 1 Qualitative Rating - 10

42.5	4
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

	1	Aquatic bed
		Emergent
3	0	Shrub
	2	Forest
		Mudflats
		Open water
		Other _____

6b. Horizontal (plan view) interspersion.

Select only one.

		High (5)
		Moderately high (4)
2		Moderate (3)
	2	Moderately low (2)
		Low (1)
		None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

		Extensive >75% cover (-5)
		Moderate 25-75% cover (-3)
-1	-1	Sparse 5-25% cover (-1)
		Nearly absent <5% cover (0)
		Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

		Vegetated hummocks/tussocks
		Coarse woody debris > 15cm (6in)
0		Standing dead >25cm (10in) dbh
		Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

42.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	4		
	Metric 3. Hydrology	18.5		
	Metric 4. Habitat	14		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	4		
	TOTAL SCORE	42.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Category 2

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands	
	Background Information **Scoring Boundary Worksheet** **Narrative Rating** **Field Form Quantitative Rating** **ORAM Summary Worksheet** **Wetland Categorization Worksheet**	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on thepresence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name:	Emmett Messer-Kruse
Date:	8/3/2017
Affiliation:	Flickinger Wetland Company, LLC
Address:	8530 N. Boyle Pkwy. Twinsburg, OH 44087
Phone Number:	(419)-787-7433
e-mail address:	Emmett@flickwetlands.com
Name of Wetland:	W-B, W-C
Vegetation Communit(ies):	Emergent
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
See attached.

Lat/Long or UTM Coordinate	41°26'42.68"N 81°55'33.48"W
USGS Quad Name	Westlake
County	Cuyahoga
City/Township	Westlake
Section and Subsection	N/A
Hydrologic Unit Code	41100010204
Site Visit	6/22/2017
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	Ua
Delineation report/map	See Attached

Name of Wetland:	**W-B, W-C**
Wetland Size (acres, hectares):	0.35

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.
See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 33	**Category: Category 2**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Nagle Road	**Rater(s):**	Emmett Messer-Kruse	**Date:**	8/3/17

2	2	**Wetland:**	W-B, W-C
subtotal	max6pts		

33	2
Final Score	**Category**

Metric 1. Wetland Area (size).

Select one size class and assign score.

		> 50 acres (<20.2ha) (6 pts)
		25 to <50 acres (10.1 to <20.2ha) (5 pts)
	2	10 to <25 acres (4 to <10.1ha) (4 pts)
		3 to 10<acres (1.2 to <4ha) (3 pts)
	2	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
		0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
		<0.1 acres (0.04ha) (0 pts)

6	4
subtotal	max14pts

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

		WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
	1	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
	1	NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
		VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

		VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
	3	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
	3	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
		HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

18	12
subtotal	max30pts

Metric 3. Hydrology.

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
4	1	Precipitation (1)
	3	Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

		100 year floodplain (1)
		Between stream/lake and other human use (1)
1	1	Part of wetland/upland (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
1		04. to 0.7m (15.7 to 27.6in) (2)
	1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

		Semi-to permanently inundated/saturated (4)
	3	Regularly inundated/saturated (3)
3		Seasonally inundated (2)
		Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

		None or none apparent (12)
		Recovered (7)
3		Recovering (3)
	3	Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☑	tile	☑	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☐	stormwater input	☐	other - culvert

32	14
subtotal	max20pts

Metric 4. Habitat alteration and development.

4a. Substrate disturbance. Score one or dbl check and average.

		None or none apparent (4)
3	3	Recovered (3)
		Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
6	6	Recovered (6)
		Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
	5	Good (5)
5		Moderately good (4)
		Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☐	mowing	☐	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☑	selective cutting	☐	dredging
☐	woody debris removal	☐	farming
☐	toxic pollutants	☑	nutrient enrichment

32

Subtotal this page

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Nagle Road	**Rater(s):**	Emmett Messer-Kruse	**Date:**	8/3/17
			Wetland:	W-B, W-C	

32
Subtotal1st page

32	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

		Bog (10)
		Fen (10)
		Old growth forest (10)
		Mature forested wetland (5)
0		Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
		Lake Erie Coastal/tributary wetland-restricted hydrology (5)
		Lake Plain Sand Prairies (Oak Openings) (10)
		Relict Wet Prairies (10)
		Known occurrence state/federal threatened or endangered species (10)
		Significant migratory songbird/water fowl habitat or usage (10)
		Category 1 Wetland. See question 1 Qualitative Rating - 10

33	1
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

		Aquatic bed
	1	Emergent
1	0	Shrub
		Forest
		Mudflats
		Open water
		Other _____

6b. Horizontal (plan view) interspersion.

Select only one.

		High (5)
		Moderately high (4)
1		Moderate (3)
		Moderately low (2)
	1	Low (1)
		None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

		Extensive >75% cover (-5)
		Moderate 25-75% cover (-3)
-1	-1	Sparse 5-25% cover (-1)
		Nearly absent <5% cover (0)
		Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

		Vegetated hummocks/tussocks
		Coarse woody debris > 15cm (6in)
0		Standing dead >25cm (10in) dbh
		Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

33.0 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	4		
	Metric 3. Hydrology	12		
	Metric 4. Habitat	14		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	33		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Category 2

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands	
	Background Information **Scoring Boundary Worksheet** **Narrative Rating** **Field Form Quantitative Rating** **ORAM Summary Worksheet** **Wetland Categorization Worksheet**	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on thepresence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name:	Emmett Messer-Kruse
Date:	8/3/2017
Affiliation:	Flickinger Wetland Company, LLC
Address:	8530 N. Boyle Pkwy. Twinsburg, OH 44087
Phone Number:	(419)-787-7433
e-mail address:	Emmett@flickwetlands.com
Name of Wetland:	W-D, W-E
Vegetation Communit(ies):	Emergent
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
See attached.

Lat/Long or UTM Coordinate	41°26'49.44"N 81°55'31.93"W
USGS Quad Name	Westlake
County	Cuyahoga
City/Township	Westlake
Section and Subsection	N/A
Hydrologic Unit Code	41100010204
Site Visit	6/22/2017
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	Ua
Delineation report/map	See Attached

Name of Wetland:	**W-D, W-E**
Wetland Size (acres, hectares):	0.23

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.
See Attached.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 18	**Category: Category 1**

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries,
use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	☑	☐
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	☑	☐
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	☑	☐
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	☑	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☑	☐
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	☑	☐

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on Information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means

the wetland is listed in the appropriate State of Ohio database.

#	Question	YES	NO
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 2	☑ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	☐ Wetland is a Category 3 wetland. Go to Question 3	☑ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	☐ Wetland is a Category 3 wetland. Go to Question 4	☑ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	☐ Wetland is a Category 3 wetland. Go to Question 5	☑ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	☐ Wetland is a Category 3 wetland. Go to Question 6	☑ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 7	☑ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	☐ Wetland is a Category 3 wetland. Go to Question 8	☑ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	☐ Wetland is a Category 3 wetland. Go to Question 8b	☑ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9a	☑ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	☐ Go to Question 9b	☑ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	☐ Wetland should be evaluated for possible Category 3 status Go to Question 9d	☑ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	☐ Go to Question 9d	☑ Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	☐ Wetland is a Category 3 wetland. Go to Question 10	☑ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	☐ Wetland should be evaluated for possible Category 3 status. Go to Question 10	☑ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	☐ Wetland is a Category 3 wetland. Go to Question 11	☑ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	☐ Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	☑ Complete Quantitative Rating.

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Nagle Road	**Rater(s):**	Emmett Messer-Kruse	**Date:**	8/3/17

Wetland: W-D, W-E

Final Score	Category
18	2

Metric 1. Wetland Area (size).

subtotal	max6pts		
1	1		

Select one size class and assign score.

	> 50 acres (<20.2ha) (6 pts)
	25 to <50 acres (10.1 to <20.2ha) (5 pts)
1	10 to <25 acres (4 to <10.1ha) (4 pts)
	3 to 10<acres (1.2 to <4ha) (3 pts)
	0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
1	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

subtotal	max14pts	
2	1	

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

	WIDE. Buffers average 50m (164 ft) or more around wetland perimter (7)
0	MEDIUM. Buffers average 25m to <50m (82 to <164 ft) around wetland perimeter (4)
	NARROW. Buffers average 10m to <25m (32 ft to <82 ft) around wetland perimter (1)
0	VERY NARROW. Buffers average <10m (<32ft) around wetland perimter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

	VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
1	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
1	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

subtotal	max30pts	
9	7	

3a. Sources of water. Score all that apply.

		High pH groundwater (5)
		Other groundwater (3)
1	1	Precipitation (1)
		Seasonal/Intermittent surface water (3)
		Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

		100 year floodplain (1)
		Between stream/lake and other human use (1)
1	1	Part of wetland/upland (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

		>0.7 (27.6in) (3)
1		04. to 0.7m (15.7 to 27.6in) (2)
	1	>0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

		Semi-to permanently inundated/saturated (4)
		Regularly inundated/saturated (3)
1		Seasonally inundated (2)
	1	Seasonally saturated in upper 30 cm (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

		None or none apparent (12)
		Recovered (7)
3		Recovering (3)
	3	Recent or no recovery (1)

Check all disturbances observed

☐	ditch	☐	point source (non stormwater)
☐	tile	☑	filling/grading
☐	dike	☐	dirt road
☐	weir	☐	dredging
☐	stormwater input	☐	other - culvert

Metric 4. Habitat alteration and development.

subtotal	max20pts	
17	8	

4a. Substrate disturbance. Score one or dbl check and average.

		None or none apparent (4)
2		Recovered (3)
	2	Recovering (2)
		Recent or no recovery (1)

4c. Habitat alteration. Score one or dbl check and average.

		None or none apparent (9)
3		Recovered (6)
	3	Recovering (3)
		Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

		Excellent (7)
		Very good (6)
		Good (5)
3		Moderately good (4)
	3	Fair (3)
		Poor to fair (2)
		Poor (1)

Check all disturbances observed

☑	mowing	☐	shrub/sapling removal
☐	grazing	☐	herbaceous/aquatic bed removal
☐	clearcutting	☐	sedimentation
☐	selective cutting	☐	dredging
☐	woody debris removal	☐	farming
☐	toxic pollutants	☐	nutrient enrichment

17
Subtotal this page

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Nagle Road	**Rater(s):**	Emmett Messer-Kruse	**Date:**	8/3/17
			Wetland:	W-D, W-E	

17
Subtotal1st page

17	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

		Bog (10)
		Fen (10)
		Old growth forest (10)
		Mature forested wetland (5)
0		Lake Erie Coastal/tributary wetland-unrestricted hydrology (10)
		Lake Erie Coastal/tributary wetland-restricted hydrology (5)
		Lake Plain Sand Prairies (Oak Openings) (10)
		Relict Wet Prairies (10)
		Known occurrence state/federal threatened or endangered species (10)
		Significant migratory songbird/water fowl habitat or usage (10)
		Category 1 Wetland. See question 1 Qualitative Rating - 10

18	1
subtotal	max20pts

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

		Aquatic bed
	1	Emergent
1	0	Shrub
		Forest
		Mudflats
		Open water
		Other _____

6b. Horizontal (plan view) interspersion.

Select only one.

		High (5)
		Moderately high (4)
1		Moderate (3)
		Moderately low (2)
	1	Low (1)
		None (o)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

		Extensive >75% cover (-5)
		Moderate 25-75% cover (-3)
-1	-1	Sparse 5-25% cover (-1)
		Nearly absent <5% cover (0)
		Absent (1)

6d. Microtopoghraphy

Score all present using 1 to 3 scale.

		Vegetated hummocks/tussocks
		Coarse woody debris > 15cm (6in)
0		Standing dead >25cm (10in) dbh
		Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset and either commprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality.
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of hgh quality.
3	Present and comprises significant part or more of wetland's vegetation and is of high quality.

Narrative Description of Vegetation Quality	
low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or distrubance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered spp.
high	A predominance of native species, with nonative spp and/or disturbance tolerant native spp apbsent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened or endangered spp

Mudflat and Open Water Class Quality	
0	Absent
1	Low 0.1 to 1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale	
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

18.0 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	☐	☑	If yes, Category 3.
	Question 2. Threatened or Endangered Species	☐	☑	If yes, Category 3.
	Question 3. High Quality Natural Wetland	☐	☑	If yes, Category 3.
	Question 4. Significant bird habitat	☐	☑	If yes, Category 3.
	Question 5. Category 1 Wetlands	☐	☑	If yes, Category 1.
	Question 6. Bogs	☐	☑	If yes, Category 3.
	Question 7. Fens	☐	☑	If yes, Category 3.
	Question 8a. Old Growth Forest	☐	☑	If yes, Category 3.
	Question 8b. Mature Forested Wetland	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	☐	☑	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	☐	☑	If yes, Category 3
	Question 11. Relict Wet Prairies	☐	☑	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	8		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	18		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	☐ Wetland is categorized as a Category 3 wetland	☑	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	☐ Wetland should be evaluated for possible Category 3 status	☑	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	☐ Wetland is categorized as a Category 1 wetland	☑	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	☑ Wetland is assigned to the appropriate category based on the scoring range	☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	☑	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	☑ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

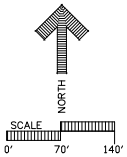
Final Category

Category 1

End of Ohio Rapid Assessment Method for Wetlands.

APPENDIX H

Photographs



3 PHOTO LOCATION

Provided that site conditions, methodology or criteria remain constant, these findings will be supported by Flickinger Wetland Company, LLC for five years from the date of this map or verification letter from USACE, whichever is later.

CLIENT Lesko	
PROJECT Westlake Elementary	
TITLE PHOTO LOCATIONS	
SCALE 1" = 70'	DATE
- PREPARED BY - FLICKINGER WETLAND COMPANY, LLC 8530 NORTH BOYLE PARKWAY TWINSBURG, OHIO 44087 (440) 668-5177	JOB no. – DWG. FILE – – SHT. no. 1 of 1

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Case No(s). 18-0291-GA-BNR

Summary: Notice /Construction Notice Application for the Center Ridge Road Replacement Project electronically filed by Cheryl A MacDonald on behalf of Columbia Gas of Ohio, Inc.