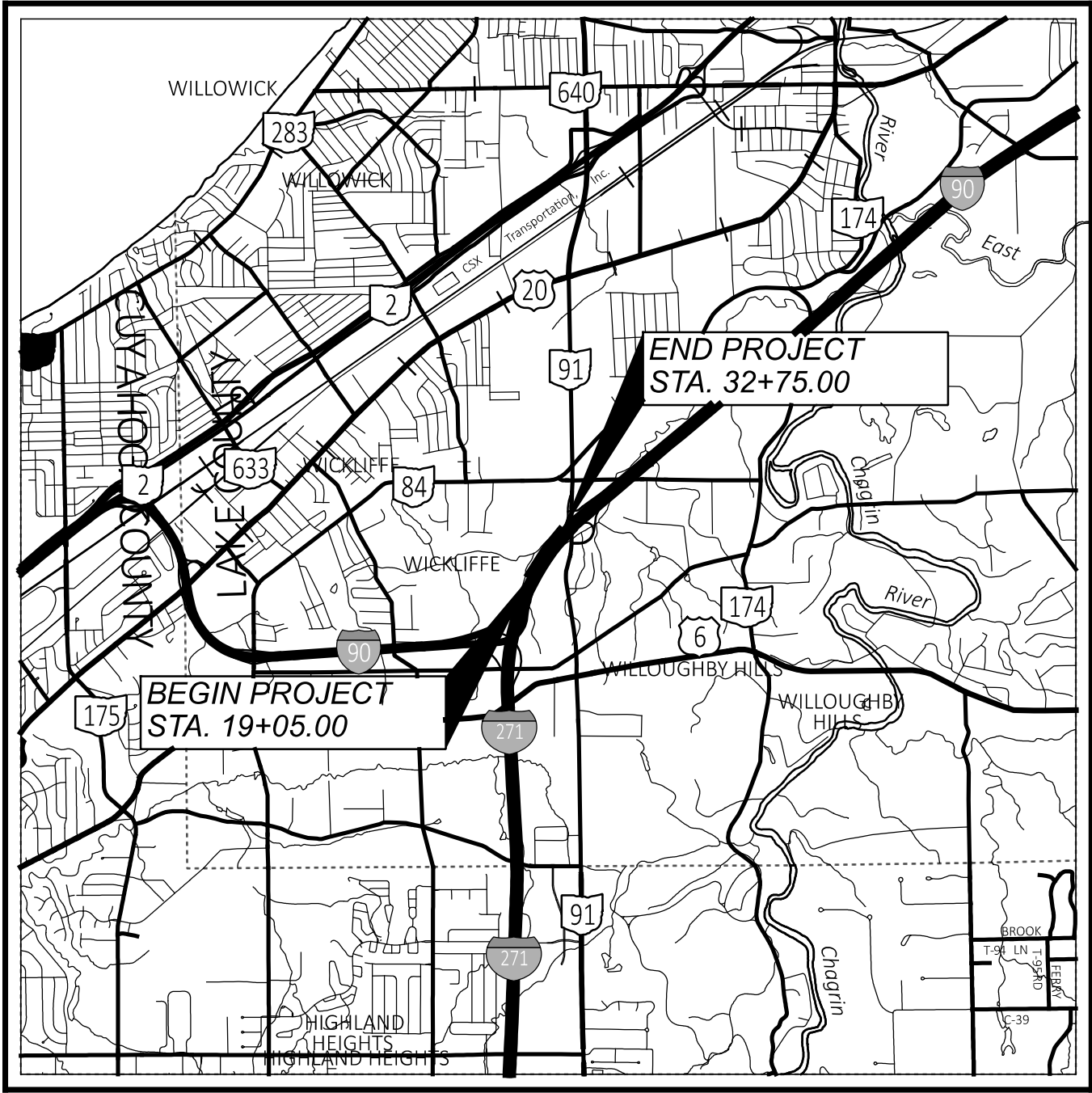


LAK-90-02.93

MODEL: Sheet PAPER: 34x22 (in.) DATE: 3/19/2025 TIME: 10:58:20 AM USER: USD5701749 pvc:\wsp-us-pw-bentley.com\wsp-us-pw-02\Documents\OH - OHIO Projects\112663\400-Engineering\Roadway\Sheets\112663_G1101.dgn



LOCATION MAP

LATITUDE: 41°35'54.75" LONGITUDE: -81°26'33.67"



PORTION TO BE IMPROVED	=====
INTERSTATE HIGHWAY	=====
FEDERAL ROUTES	=====
STATE ROUTES	=====
COUNTY & TOWNSHIP ROADS	=====
OTHER ROADS	=====

DESIGN DESIGNATION

CURRENT ADT (2024)	83176
DESIGN YEAR ADT (2044)	N/A
DESIGN HOURLY VOLUME (2044)	N/A
DIRECTIONAL DISTRIBUTION	88%
TRUCKS (24 HOUR B&C)	12%
DESIGN SPEED	65
LEGAL SPEED	60
DESIGN FUNCTIONAL CLASSIFICATION:	
1-INTERSTATE	
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE REQUIRED

ADA DESIGN WAIVERS

NONE

UNDERGROUND UTILITIES

Contact Two Working Days
Before You Dig


Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)



PLAN PREPARED BY:

WSP USA, Inc.
1660 W 2nd St,
Suite 820
Cleveland, OH 44113

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LAK-90-02.93

CITY OF WILLOUGHBY HILLS

LAKE COUNTY

INDEX OF SHEETS:

TITLE SHEET	P.01
TYPICAL SECTIONS	P.02-P.03
GENERAL NOTES	P.04-P.05
MAINTENANCE OF TRAFFIC	P.06-P.15
GENERAL SUMMARY	P.16-P.17
SUBSUMMARIES	P.18
PROJECT SITE PLAN	P.19
PLAN	P.20-P.22
CROSS-SECTIONS	P.23-P.51
CULVERT DETAILS	P.52-P.54
DRILLED SHAFT RETAINING WALL	P.55-P.64
SOIL NAIL RETAINING WALL	P.65-P.68
TEMPORARY ACCESS ROAD	P.69-P.71
GEOTECHNICAL PROFILE - LANDSIDE	P.72-P.131

FEDERAL PROJECT NUMBER

E241070

RAILROAD INVOLVEMENT

N/A

PROJECT DESCRIPTION

SLOPE REPAIR ADJACENT TO INTERSTATE 90 WORK
TO INCLUDE STABILIZE THE HILLSIDE, REPAIR SLIDES
AT BASE OF EMBANKMENT, CLEANOUT CHANNEL
LOCATED AT BASE OF EMBANKMENT AND REPAIR/
CLEAN DRAINAGE FACILITIES.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	2.2 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.3 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	2.5 ACRES

LIMITED ACCESS


THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND
HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION
OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION
5511.02 OF THE OHIO REVISED CODE.

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF
TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN
THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL
SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN
THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS
IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY
AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC
WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.


John Picuri, P.E., P.S.
District 12 Deputy Director


Pamela Boratyn
Director, Department of Transportation

STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
MGS-1.1	7/21/21				800-2023	7/19/24
MGS-2.1	1/17/18				807	1/21/22
					832	7/19/24
					850	7/21/23
DM-1.1	7/17/20					
DM-2.1	1/18/13					
HW-2.1	7/15/22					
HW-2.2	7/20/18					
MT-95.40	7/21/23					
MT-99.30	1/17/20					
MT-99.20	4/19/19					
MT-101.70	7/19/24					
MT-101.75	7/21/23					
MT-102.10	7/21/23					



WATERWAY PERMIT
CONDITIONS
3/14/2025

ENGINEER'S SEAL

ROADWAY



ENGINEER'S SEAL

GEOTECHNICAL



ADDENDUM 1
3/19/25

TITLE SHEET

DESIGN AGENCY



WSP USA, Inc.
1660 W. 2nd Street,
Suite 820
Cleveland, OH 44113

DESIGNER

BLM

REVIEWER

SIG 12/03/24

PROJECT ID

112663

SHEET

P.01

TOTAL

131

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS, EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

ELECTRIC:

ILLUMINATING CO. (FIRST ENERGY)
1910 WEST MARKET STREET, BLDG 1
AKRON, OH 44313
ATTN: DAVID MILLER
millerdl@firstenergycorp.com
PH: (800) - 589-3101

GAS:

DOMINION ENERGY OHIO
ATTN: 2ND FLOOR RELOCATION DESIGN
320 SPRINGSIDE DR., SUITE 320
EMAIL: RELOCATION@DOMINIONENERGY.COM
PH: 330-664-2409
FAX: 888-504-0126

EXISTING PLANS

EXISTING PLANS ENTITLED LAK-90-3.14, 1960 CUY/ LAK271-14.09/0.00, LAK-90-11.38, PID 000219 AND LAK-90-02.90, D12 CU FY 2018 MAY BE INSPECTED IN THE ODOT DISTRICT 12 OFFICE IN GARFIELD HEIGHTS.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 7 PM AND 7 AM DURING WEEKDAYS AND 7 PM AND 8 AM ON THE WEEKENDS. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE TABLE BELOW ON THIS SHEET FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: 18

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011)
epoch 2010.00
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
2 STANDARD PARALLEL
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE
COMBINED SCALE FACTOR: 0.99995045
ORIGIN OF COORDINATE SYSTEM: 0,0 AT LAT N 39° 27' 01.76097",
LONG W 89° 28' 32.98476"

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

CONTROL POINT	STATION OFFSET "± R/W I.R. 90"	NORTHING "GROUND"	EASTING "GROUND"	ELEVATION +/-	NORTHING "GRID"	EASTING "GRID"
100	STA. 109+40.09, 150.05' LT	705906.5543	2257641.7199	759.000	705871.5783	2257529.8593
101	STA. 103+35.98, 139.10' LT	705385.7527	2257313.7258	770.409	705350.8026	2257201.8814
102	STA. 93+75.18, 149.51' LT	704521.5942	2256854.9978	789.131	704486.6869	2256743.1761

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT-OF-WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRUCT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING (CONT.)

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. EXCEPT AS INDICATED ON SHEET , USE OF THESE AREAS FOR DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS, EXCAVATION OF BORROW MATERIAL AND PLACEMENT OF PORTABLE PLANTS IS PROHIBITED. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS, AS DEFINED ABOVE, WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER.

CLEARING AND GRUBBING

A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

REMOVE ALL STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF STUMPS TO BE REMOVED.

ITEM 201 - STUMP REMOVED, 18" 3 EACH

THE CONTRACTOR IS ADVISED THAT TREE CUTTING FOR THE PROJECT WILL BE PERFORMED UNDER PID 120364. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES TO BE REMOVED FROM THE PROJECT SITE.

ITEM 201 - TREE REMOVED, 18" 5 EACH

IT IS RECOMMENDED THAT THE CONTRACTOR PERFORM A SITE VISIT PRIOR TO BIDDING TO REVIEW THE EXISTING CONDITIONS FOR CLEARING AND GRUBBING NEEDS FOR THE PROJECT.

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF SECTION 203.05.

ITEM 623 - PRECONSTRUCTION SURVEY MONUMENT VERIFICATION AND REPORT

CONTRACTOR TO PROVIDE PRECONSTRUCTION SURVEY MONUMENT VERIFICATION PER SPEC. 623.04.

ENDANGERED BAT HABITAT REMOVAL

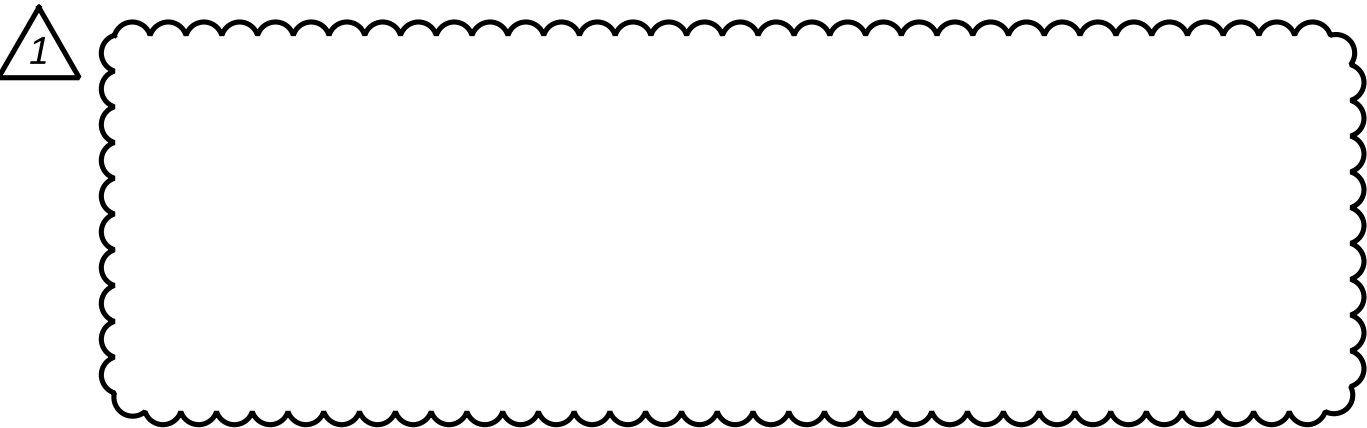
THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT, AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT (ESA). FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK 3 INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

PRIOR TO CONSTRUCTION, TREES SHOULD BE CUT DOWN UNDER PID 120364 WITHIN CONSTRUCTION LIMITS. HOWEVER, TREES WILL NEED TO BE REMOVED VIA THIS PROJECT.


STAGING AREAS

THERE ARE NO SPECIFIC AREAS GIVEN IN THE PLANS FOR THE CONTRACTOR TO USE AS A STAGING AREA(S). IF THE CONTRACTOR WANTS TO USE AN AREA(S) FOR STAGING, REGARDLESS IF IT FALLS WITHIN THE PROJECT LIMITS OR NOT, THE CONTRACTOR IS TO USE THE RIGHT OF WAY E-PERMITTING SYSTEM AT [HTTPS://ODHCP.BEMCORP.NET/ACCOUNTS/ACCOUNT/ACCOUNT](https://odhcp.bemcorp.net/accounts/account/account) IN ORDER TO APPLY FOR A PERMIT PER SECTION 107.02 OF THE CMS. FOR SPECIFIC PERMITTING QUESTIONS, THE CONTRACTOR CAN CONTACT THE DISTRICT PERMITTING OFFICE, (MELVIN SAFFORD) AT 216-584-2137, (ANDREW TOMKO) AT 216-584-2195 OR AT DISTRICT12PERMITS@DOT.OHIO.GOV.

IF A PERMIT IS GRANTED, ALL CONDITIONS OF THE PERMIT SHALL BE MET IN ADDITION TO THE REQUIREMENTS OF 104.04 OF THE CMS, AT NO ADDITIONAL COST TO THE STATE. IF THE PROJECT ENGINEER DEEMS THAT ALL THE CONDITIONS OF THE PERMIT WERE NOT MET, THEN 10% OF THE CONTRACT BID AMOUNT FOR MOBILIZATION SHALL BE WITHHELD UNTIL ALL THE CONDITIONS OF THE PERMIT ARE SATISFIED.



SHEET NUM.													PART. 01/IMS/66	ALT (X)	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P.05	P.06	P.07	P.08	P.18	P.51	P.52	P.54	P.57	P.58	P.59	P.60	P.67								
													LS		201	11000	LS		ROADWAY	P.04
						1	1						2		202	20011	2	EACH	HEADWALL REMOVED, AS PER PLAN	P.05
				51									51		202	23000	51	SY	PAVEMENT REMOVED	
						50							50		202	34900	50	FT	PIPE REMOVED	
				100									100		202	38000	100	FT	GUARDRAIL REMOVED	
					1,116								1,116		203	10000	1,116	CY	EXCAVATION	
					100								100		203	20000	100	CY	EMBANKMENT	
LS													LS		203	98500	LS		ROADWAY, MISC.:CONTRACTOR ACCESS	P.05
1													1		209	15001	1	STA	RESHAPING UNDER GUARDRAIL, AS PER PLAN	P.05
				100									100		606	15050	100	FT	GUARDRAIL, TYPE MGS	
																			EROSION CONTROL	
				96									96		601	38000	96	FT	PAVED GUTTER, TYPE 1-4	
							195						195		601	21060	195	SY	TIED CONCRETE BLOCK MAT WITH TYPE 2 UNDERLAYMENT	
						228							228		601	32110	228	CY	ROCK CHANNEL PROTECTION, TYPE B WITH AGGREGATE FILTER	
2													2		659	00100	2	EACH	SOIL ANALYSIS TEST	
522													522		659	00300	522	CY	TOPSOIL	
4,698													4,698		659	10000	4,698	SY	SEEDING AND MULCHING	
235													235		659	14000	235	SY	REPAIR SEEDING AND MULCHING	
235													235		659	15000	235	SY	INTER-SEEDING	
0.63													0.63		659	20000	0.63	TON	COMMERCIAL FERTILIZER	
0.98													0.98		659	31000	0.98	ACRE	LIME	
25.37													25.37		659	35000	25.37	MGAL	WATER	
													LS		832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
													LS		832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
													LS		832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
													35,000		832	30000	35,000	EACH	EROSION CONTROL	
																			DRAINAGE	
						0.76							0.76		602	20000	0.76	CY	CONCRETE MASONRY	
							8.64						8.64		602	20001	8.64	CY	CONCRETE MASONRY, AS PER PLAN	P.05
						50							50		611	16201	50	FT	36" CONDUIT, TYPE A, AS PER PLAN, 707.04 (0.138)	P.52
						LS							LS		611	97300	LS		CONDUIT, MISC.: PACP INSPECTION	P.52
																			PAVEMENT	
				62									62		254	01000	62	SY	PAVEMENT PLANING, ASPHALT CONCRETE (1.0" DEPTH)	
				834									834		254	01000	834	SY	PAVEMENT PLANING, ASPHALT CONCRETE (1.5" DEPTH)	
				75									75		407	20000	75	GAL	NON-TRACKING TACK COAT	
4													4		441	70801	4	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449), (UNDER GUARDRAIL), AS PER PLAN	P.05
				35									35		442	22101	35	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (449), AS PER PLAN, PG64-22, 1-1/2"	P.08
				0.57									0.57		618	40600	0.57	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
													LS		503	11101	LS		MISCELLANEOUS STRUCTURE	
					2,049								296		503	21100	2,345	CY	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	P.57
									94.19				94.19		507	00400	94.19	FT	UNCLASSIFIED EXCAVATION	
													1,456		509	10001	1,456	LB	STEEL PILES, MISC.:W24x 207, FURNISHED	P.57
													1,456		509	10001	1,456	LB	EPOXY COATED STEEL REINFORCEMENT, AS PER PLAN	P.67
													386		518	20000	386	SY	PREFABRICATED GEOCOMPOSITE DRAIN	
													156		518	39800	156	FT	4" PERFORATED CORRUGATED PLASTIC PIPE	
													3,476		520	10000	3,476	SF	PNEUMATICALLY PLACED CONCRETE SHOTCRETE	
													2,146		524	95000	2,146	FT	DRILLED SHAFTS, MISC.:PLUG PILE 36" DIAMETER, UNREINFORCED	P.57
													240		SPECIAL	53051100	240	EACH	RETAINING WALL, SOIL NAIL	P.67
													3		SPECIAL	53051110	3	EACH	RETAINING WALL, SOIL NAIL VERIFICATION TEST	P.67
													6		SPECIAL	53051120	6	EACH	RETAINING WALL, SOIL NAIL PROOF TEST	P.67
									2,112	1,891			4,003	X	507	00400	4,003	FT	MISCELLANEOUS STRUCTURE ALTERNATES	
									720	720			1,440	X	524	94705	1,440	FT	STEEL PILES, MISC.: W24x146, FURNISHED (ALTERNATE 1)	P.57
									1,497.82	1,183.45			2,681.27	X	524	94803	2,681.27	FT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK, AS PER PLAN (ALTERNATE 1)	P.57
																			DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN (ALTERNATE 1)	P.57
									720	720			1,440	X	524	94705	1,440	FT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK, AS PER PLAN (ALTERNATE 2)	57
									1,497.82	1,183.45			2,681.27	X	524	94803	2,681.27	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN (ALTERNATE 2)	57

 ADDENDUM 1
3/19/25

GENERAL SUMMARY

DESIGN AGENCY



WSP USA, Inc.
1660 W. 2nd Street,
Suite 820
Cleveland, OH 44113

DESIGNER

BLM

REVIEWER

DDS 12/03/24

PROJECT ID

112663

SHEET

P.16

TOTAL

131