

UTILITIES:
THERE ARE NO KNOWN UNDERGROUND, OR OVERHEAD UTILITIES, WITHIN THE PROJECT CONSTRUCTION LIMITS.

SURVEYING PARAMETERS:
PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET P.2 FOR THE 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: IRON PIN & CAP

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID18

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE (SOUTH) ZONE
COMBINED SCALE FACTOR: 1.00000451
PROJECT ADJUSTMENT FACTOR (MULTIPLIER): 0.99999549

ORIGIN OF COORDINATE SYSTEM: 0,0

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 C&MS 623.

UNITS ARE IN U.S. SURVEY FEET.

PRIMARY PROJECT CONTROL INFORMATION						
PT. #	CL CONST. RETAINING WALL		GRID COORDINATES U.S. SURVEY FEET		ELEV.	DESCRIPTION
	STATION	OFFSET	NORTHING	EASTING		
CP01			470913.182	1812804.758	726.08	HUBSET
CP02			470968.602	1812929.870	737.76	HUBSET
CP03	16+26.60	121.27' LT.	471675.265	1813647.523	642.13	IPINS
CP04			471504.884	1814012.994	649.05	IPINS
CP05			471492.175	1814290.825	653.77	IPINS

CLEARING AND GRUBBING:
ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, 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.

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.

EXCAVATION SEQUENCING:
ALL EXCAVATION WORK AND ALL SPECIAL BENCHING EXCAVATION WORK SHALL BE PERFORMED FROM THE TOP OF THE SLOPE AND PROCEED DOWNWARD TO HELP PREVENT FURTHER SHORT-TERM DESTABILIZATION OF THE EXISTING SLOPES.

ADDITIONALLY, THIS WORK SHALL BE PERFORMED PROGRESSIVELY FROM ONE END OF THE PROJECT LIMITS TO THE OTHER. NO MORE THAN A 50 FOOT LENGTH OF THE EXCAVATION SHALL REMAIN OPEN AT ANY TIME. THE EXCAVATION SHALL BE BACKFILLED AS SOON AS PRACTICAL TO THE FURTHEST EXTENT.

SPECIAL BENCHING SLOPE DRAINS
PLACE SPECIAL BENCHING SLOPE DRAINS AT THE LOCATIONS SHOWN ON THE PLAN & PROFILE AND CROSS-SECTION SHEETS. THESE DRAINS SHALL CONSIST OF ITEM 203 GRANULAR EMBANKMENT, AS PER PLAN (NO.8 AGGREGATE), ITEM 690 GEOTEXTILE FABRIC, 712.09 TYPE A, AND ITEM 611 CONDUIT TYPE E, 707.31 (PERFORATED). THE TYPE E CONDUIT SHALL BE PERFORATED AS PER CONDUIT FOR ITEM 605 UNCLASSIFIED PIPE UNDERDRAINS. THE GRANULAR EMBANKMENT SHALL BE PLACED IN LIFTS AS THE SPECIAL BENCHING BACKFILL IS CONSTRUCTED. TRANSVERSE OUTLET DRAINS SHALL BE PROVIDED AT THE LOCATIONS SHOWN ON THE PLAN AND PROFILE AND CROSS-SECTION SHEETS. THESE OUTLET DRAINS SHALL CONSIST OF ITEM 611 CONDUIT TYPE F, 707.33 WITH ITEM 611 PRECAST REINFORCED CONCRETE OUTLETS.

STA.	BENCH / PIPE INVERT ELEVATION					BENCH / PIPE INVERT ELEVATION				
	675'	685'	695'	705'	715'	675'	685'	695'	705'	715'
	OUTLET RIGHT OFFSET					BEGIN DRAIN PIPE RIGHT OFFSET				
11+00		0.00^	16.77*	49.57*			24.73^	46.90	71.90	
11+50		0.00^	0.00	28.86*	61.60*		10.33^	31.54	56.54	81.54
12+00		0.00	11.21*	44.10*	76.99*		27.27	52.27	77.27	102.27
12+50		0.00	12.42*	45.23*	78.05*		28.46	53.46	78.46	103.46
13+00	0.00^	0.00	14.35*	46.31*		13.88^	34.56	59.56	84.56	
13+50	0.00^	0.00	24.63*	56.47*		17.94^	41.63	66.63	91.63	
14+00	0.00	0.00	27.83*	60.04*		24.51	49.51	74.51	99.51	
14+50	0.00^	0.00	22.89*	55.13*		11.02^	35.12	60.12	85.12	
15+00	0.00^	0.00	38.64*	59.10*		14.29^	33.58	58.58	83.58	
15+50		0.00	19.25*	65.71*			35.65	60.65	85.65	
16+00		0.00^	14.36*				36.29^	57.31		
16+50			0.00	28.45*				26.09	51.09	
17+00										

*DENOTES CONCRETE OUTLET PER DM-1.1
^DENOTES APPROXIMATE BENCH ELEVATION

THE FOLLOWING QUANTITIES ARE PROVIDED FOR DRAINAGE AND CARRIED TO THE GENERAL SUMMARY:

ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN (NO. 8 AGGREGATE) 1,102 CY
ITEM 611 - 6" CONDUIT, TYPE E, 707.31 (PERFORATED) 1,558 FT
ITEM 611 - 6" CONDUIT, TYPE F, 707.33 1,282 FT
ITEM 611 - PRECAST REINFORCED CONCRETE OUTLET 24 EACH
ITEM 690 - SPECIAL - GEOTEXTILE FABRIC, 712.09 TYPE A 5,142 SY

ITEM 203, GRANULAR EMBANKMENT, AS PER PLAN (NO. 8 AGGREGATE):
THE CONTRACTOR SHALL PLACE NO. 8 AGGREGATE WITH METHODS CONFORMING TO CMS 203 FOR GRANULAR EMBANKMENT AND THE ODOT GEOTECHNICAL DESIGN MANUAL FOR SLOPE STABILIZATION.

PAYMENT FOR LABOR, EQUIPMENT, AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE PER CUBIC YARD CONTRACT PRICE FOR ITEM 203, GRANULAR EMBANKMENT, AS PER PLAN (NO. 8 AGGREGATE).

ITEM 203, EMBANKMENT, AS PER PLAN:
THE SOILS COMPRISING THE EXISTING SLOPE IN THE AREA OF THE SLOPE REPAIR ARE ANTICIPATED TO BE HIGH IN MOISTURE CONTENT. THE CONTRACTOR SHALL EXPECT TO PROVIDE MEANS AND METHODS TO MOISTURE CONDITION THE SOILS TO ACHIEVE NECESSARY COMPACTION PER ITEM 203.

ADDITIONALLY, GROUNDWATER AND/OR SPRINGS WILL BE PRESENT IN THE SLOPE AND THE CONTRACTOR SHALL PROVIDE MEANS AND METHODS TO CONTROL GROUNDWATER DURING EXCAVATION AND SUBSEQUENT EMBANKMENT PLACEMENT. NO ADDITIONAL PAYMENT WILL BE CONSIDERED FOR SOIL MOISTURE CONDITIONING, GROUNDWATER CONTROL, OR COMPACTION OF THE EMBANKMENT TO ACHIEVE THE FINAL GRADES.

ITEM 203 - EARTHWORK
THE FOLLOWING QUANTITIES ARE PROVIDED FOR EARTHWORK AND CARRIED TO THE GENERAL SUMMARY:

ITEM 203 - EXCAVATION, AS PER PLAN 10,995 CY
ITEM 203 - EMBANKMENT, AS PER PLAN 16,756 CY

ITEM 659 - SEEDING AND MULCHING:
THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS AND HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 659 - SEEDING AND MULCHING 5,232 SY
ITEM 659 - REPAIR SEEDING AND MULCHING 262 SY
ITEM 659 - COMMERCIAL FERTILIZER 0.71 TON
ITEM 659 - WATER 15 MGAL
ITEM 659 - LIME 1.09 ACRE

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT OF WAY LINES. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 832 - EROSION CONTROL:
THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 832 - EROSION CONTROL 50,000 EACH

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 9th EDITION, INCLUDING THE ODOT GEOTECHNICAL DESIGN MANUAL, JANUARY 2023, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN DATA:
CONCRETE CLASS (QC1) - COMPRESSIVE STRENGTH 4.0 KSI (DRILLED SHAFTS AND PANELS)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
STRUCTURAL STEEL - ASTM A572 GRADE (50) - YIELD STRENGTH (50) KSI

ITEM 507, STEEL PILES, MISC.: W36X282 STEEL BEAM, FURNISHED, AS PER PLAN:
THIS WORK SHALL CONSIST OF FURNISHING STRUCTURAL STEEL MEMBERS THAT CONFORM TO ASTM A572, GRADE 50 AND CMS 711.01. DO NOT FIELD WELD OR SPLICE THOSE PARTS OF THE STRUCTURAL STEEL MEMBERS THAT WILL BE ABOVE GROUND.

SHOP WELD STIFFENER PLATES TO STEEL PILES BEFORE GALVANIZING AS SHOWN ON THE PLANS. GALVANIZE PORTION OF STEEL PILES AND STIFFENER PLATES EXTENDED ABOVE DRILLED SHAFTS PER CMS 711.02. GALVANIZE LAGGING BRACKETS PER CMS 711.02 AND FIELD WELD LAGGING BRACKETS TO STEEL PILES AS SHOWN ON THE PLANS.

THE DEPARTMENT WILL MEASURE STEEL BEAMS ALONG THE AXIS OF THE STEEL BEAM FROM THE TOP OF SHAFT ELEVATION TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR STEEL BEAMS AT THE CONTRACT UNIT PRICE PER FOOT ITEM 507, STEEL PILES, MISC.: W36X282 STEEL BEAM, FURNISHED, AS PER PLAN.

ITEM 511, CONCRETE, MISC.: PRECAST REINFORCED CONCRETE LAGGING PANEL:
THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST CONCRETE PANELS TO FUNCTION AS LAGGING FOR THE RETAINING WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A PRECAST CONCRETE MANUFACTURER CERTIFIED UNDER SUPPLEMENT 1073. PROVIDE CONCRETE ACCORDING TO CMS 499 EXCEPT WITH 28-DAY DESIGN STRENGTH OF AT LEAST 4,000 PSI AND AIR ENTRAINMENT OF 4 TO 8 PERCENT. PROVIDE EPOXY COATED REINFORCING STEEL ACCORDING TO CMS 709.00. PERMANENTLY MARK EACH PANEL TO INDICATE WHICH FACE WILL BE PLACED AGAINST THE SOIL. PLACE THE PANEL BETWEEN THE FLANGES OF THE SOLDIER PILES AND BEARING AGAINST THE FLANGES ON THE EXPOSED SIDE OF THE WALL. PAYMENT INCLUDES MATERIAL SUPPLY AND INSTALLATION.

THE CONTRACTOR SHALL INSTALL PRECAST CONCRETE PANELS AS SHOWN IN THE PLANS AND CONFORMING TO CMS 511. THE CONTRACTOR SHALL COMPLY WITH CMS 501 TO DETERMINE A METHOD FOR TEMPORARY SUPPORT OF THE PRECAST PANEL.

THE FOLLOWING PANEL STYLES AND QUANTITIES SHALL BE INCLUDED:

PANEL SUMMARY	PANEL STYLE						
	1A	1	2A	2	3	4	5
QUANTITY	60	83	1	161	81	66	41

ALL BOTTOM PRECAST CONCRETE PANELS REQUIRE A NEOPRENE PREFORMED BEARING PAD AT EACH END BETWEEN THE BOTTOM OF PRECAST PANEL AND THE BEARING SURFACE OF THE DRILLED SHAFTS OR THE LAGGING BRACKET SUPPORTS. THE BEARING PAD SHALL BE 3/8" THICK AND 7 INCHES BY 7 INCHES. THE BEARING PADS SHALL CONFORM TO ODOT CMS SECTION 711.21, PREFORMED BEARING PADS.

PAYMENT FOR LABOR, EQUIPMENT, AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 511, CONCRETE, MISC.: PRECAST PREINFORCED CONCRETE LAGGING PANEL FOR PAYMENT.

ITEM 524, DRILLED SHAFTS, 48" DIAMETER, ABOVE BEDROCK, AS PER PLAN:
ITEM 524, DRILLED SHAFTS, 48" DIAMETER, INTO BEDROCK, AS PER PLAN:
THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SLOPE STABILIZATION STRUCTURES. THE DRILLED SHAFTS ARE REINFORCED WITH STRUCTURAL STEEL MEMBERS INSTEAD OF REINFORCING STEEL CAGES. FURNISH AND INSTALL THE DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION. THE DESIGN IS BASED ON A MAXIMUM DEPTH FROM TOP OF SHAFT TO BED ROCK AS FOLLOWS:

SHAFTS	MAXIMUM DEPTH TO BEDROCK FROM TOP OF WALL
1-149	33.25'

IF FIELD CONDITIONS INDICATE GREATER DEPTHS, NOTIFY THE ENGINEER FOR FURTHER EVALUATION.

USE CLASS QC1 CONCRETE ACCORDING TO CMS 511. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE STRUCTURAL STEEL MEMBER IS ACCEPTABLE.

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE STRUCTURAL STEEL MEMBER IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE REQUIRED TOLERANCES.

SEQUENCE OF INSTALLATION: THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO DRILLED SHAFT IS INSTALLED ADJACENT TO EITHER AN OPEN DRILLED SHAFT EXCAVATION OR A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 24 HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY OTHER SEQUENCE THAT MEETS THIS CRITERIA IS PERMISSIBLE.

PROTECTION OF UNATTENDED OPEN SHAFTS: CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PREVENT A PERSON OR ANIMAL FROM FALLING IN.

ACCESS: ANY TEMPORARY GRADING, AGGREGATE, DRAINAGE, SHEETING, ETC. NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE DRILLED SHAFTS, THE COST OF ANY EXCAVATION AND SUBSEQUENT REPLACEMENT OF EMBANKMENT NOT QUANTIFIED IN THE PLANS SHALL BE INCLUDED IN THE VARIOUS BID ITEMS FOR THE DRILLED SHAFTS AND CONCRETE PANELS. NO SEPARATE PAYMENT WILL BE MADE.

PAYMENT: PAYMENT FOR LABOR, EQUIPMENT AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE PER FOOT CONTRACT PRICE FOR ITEM 524, DRILLED SHAFTS, 48" DIAMETER, ABOVE BEDROCK, AS PER PLAN AND ITEM 524, DRILLED SHAFTS, 48" DIAMETER, INTO BEDROCK, AS PER PLAN.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE DRILLED SHAFTS ABOVE BEDROCK, AS PER PLAN, ALONG THE AXIS OF THE DRILLED SHAFT FROM THE TOP OF PROPOSED SHAFT TO THE TOP OF BEDROCK, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL MEASURE DRILLED SHAFTS INTO BEDROCK, AS PER PLAN, ALONG THE AXIS OF THE DRILLED SHAFT FROM THE TOP OF BEDROCK TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER.

ITEM 601 PAVED GUTTER, TYPE 1-6, AS PER PLAN:
IN ADDITION TO THE REQUIREMENTS OF ODOT SCD DM-2.1, THE PAVED GUTTER SHALL HAVE MODIFIED DIMENSIONS AS SHOWN ON SHEET P.28/61.

PAYMENT FOR LABOR, EQUIPMENT, AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE PER FOOT CONTRACT PRICE FOR ITEM 601, PAVED GUTTER, TYPE 1-6, AS PER PLAN.

