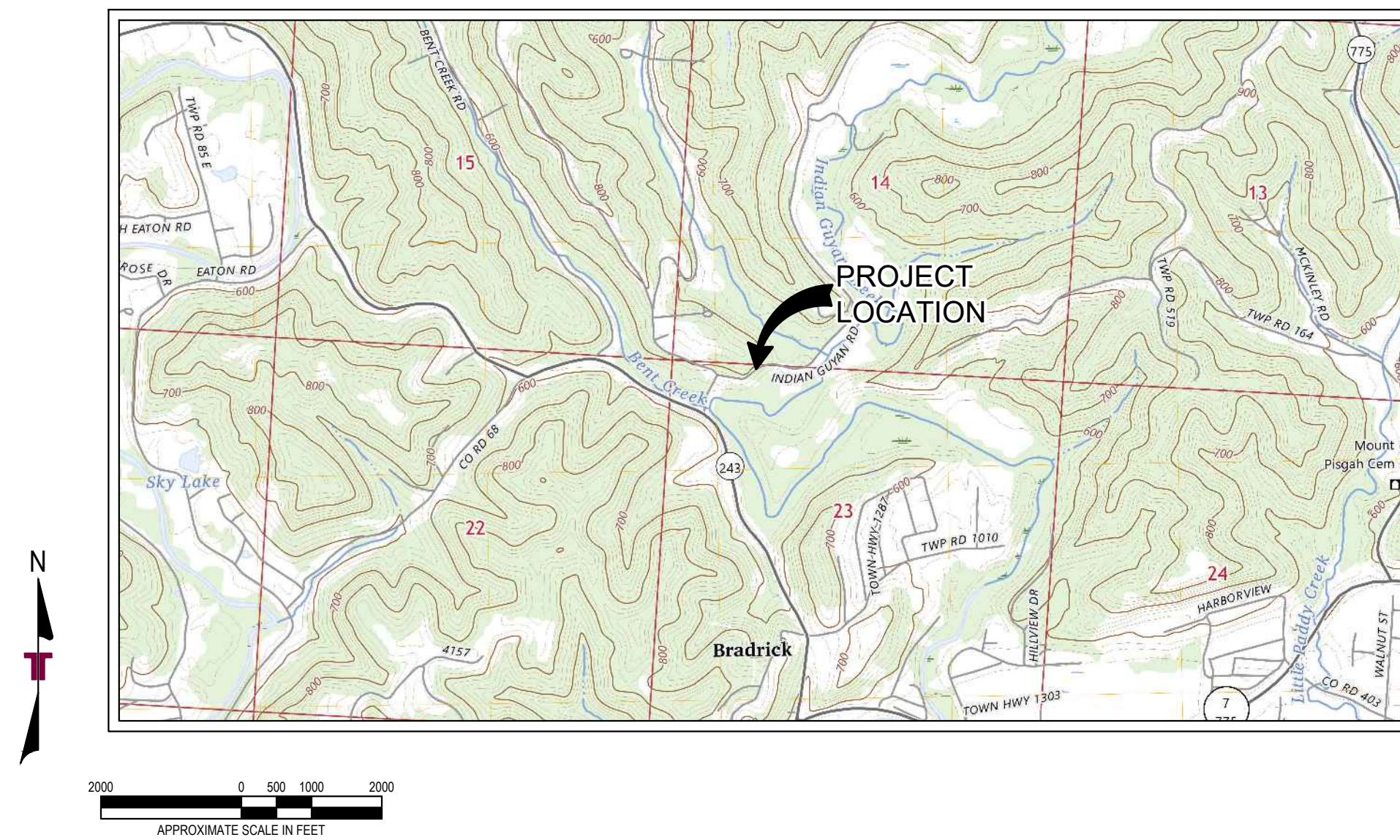


DRILLED SHAFT RETAINING WALL INDIAN GUYAN ROAD (CR 69) SLIDE

LAWRENCE COUNTY ENGINEER
3001 SOUTH 6TH STREET
IRONTON, OHIO 45638

SITE VICINITY MAP



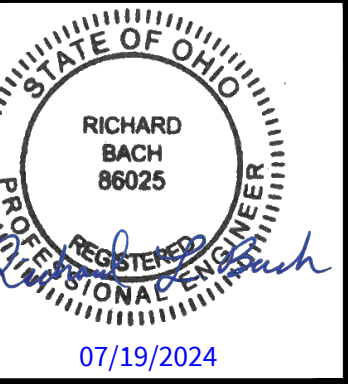
- SHEET INDEX**
 SHEET 1 - COVER AND TITLE SHEET
 SHEET 2 - PLAN AND PROFILE
 SHEET 3 - DETAILS AND SCHEDULES
 SHEET 4 - BORING LOGS AND CONSTRUCTION NOTES

GENERAL DRAWING NOTES
 1. THESE PLANS ARE SIZED FOR 36 INCHES BY 24 INCHES PAPER.
 2. THESE PLANS ARE INTENDED TO BE PRINTED IN COLOR.
 3. THE BID DRAWINGS ARE TO AN APPROXIMATE SCALE BASED ON SITE TOPOGRAPHIC MAPPING WHILE REASONABLE ATTEMPTS WERE MADE TO PROVIDE THE BIDDERS WITH ACCURATE SCALED PLANS THAT REFLECT CURRENT CONDITIONS. MINOR ERRORS ARE EVIDENT. THE BIDDERS SHOULD VERIFY QUANTITIES BY PERFORMING A THOROUGH SITE VISIT AND OBTAINING HIS OWN TAKE OFF OF REQUIRED QUANTITIES FOR THE WORK ON THE PROJECT. TERRACON WILL NOT BE RESPONSIBLE FOR ADDITIONAL COSTS RESULTING FROM THE BIDDER NOT PERFORMING A THOROUGH SITE VISIT.

REV.	DATE	BY	DESCRIPTION

COVER AND TITLE SHEET
 INDIAN GUYAN SLIDE
LAWRENCE COUNTY ENGINEER
 INDIAN GUYAN ROAD (CR 69)
 LAWRENCE COUNTY, OHIO

Terracon
 Explore with us
 611 LUNKEN PARK DRIVE
 PH: (513) 321-5816
 CINCINNATI, OHIO 45226
 FAX: (513) 321-4540

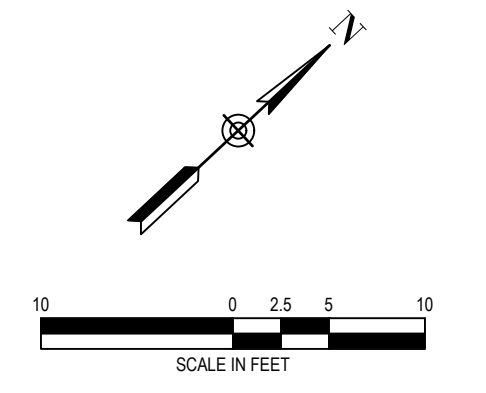
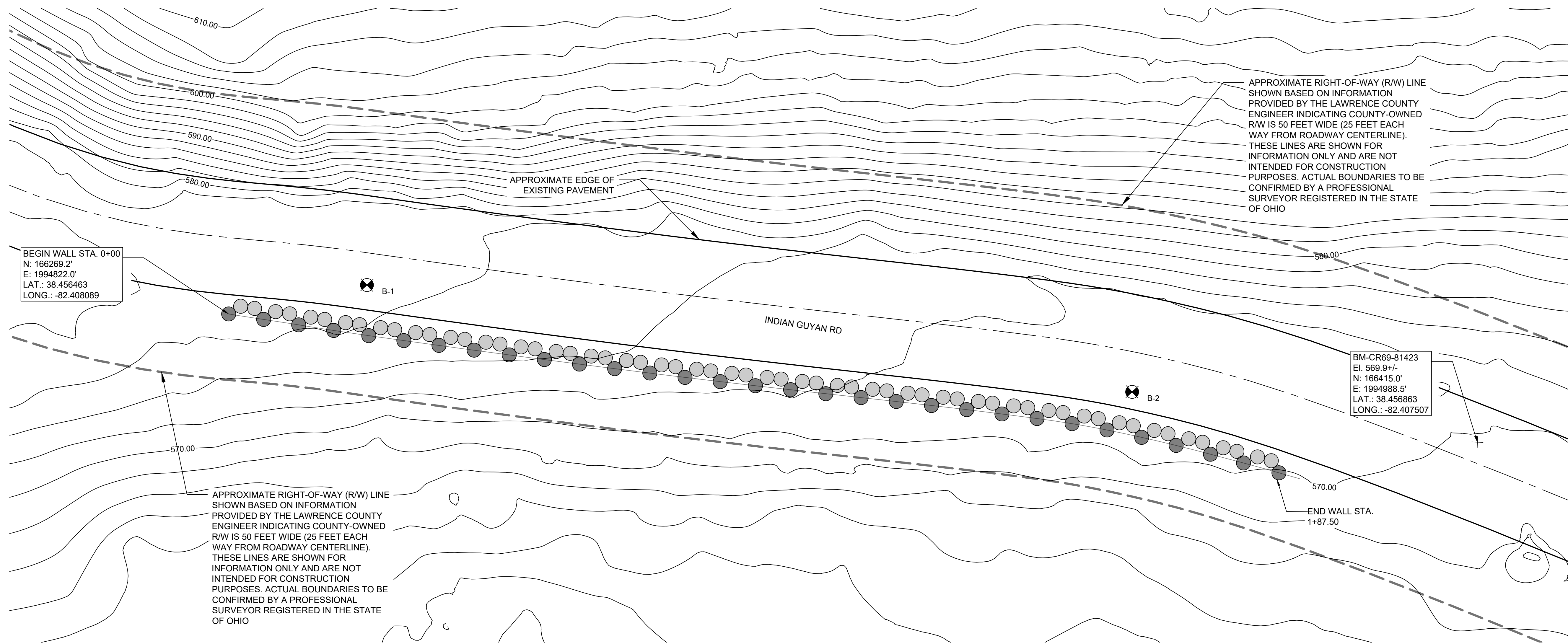


SHEET 1

DESIGNED BY:	RLB
DRAWN BY:	BCM
APP'D BY:	DIWV
SCALE:	AS SHOWN
DATE:	7/2/24
JOB NO.:	N1225363B
ACAD NO.:	N1225363B
SHEET NO.:	1 OF 4

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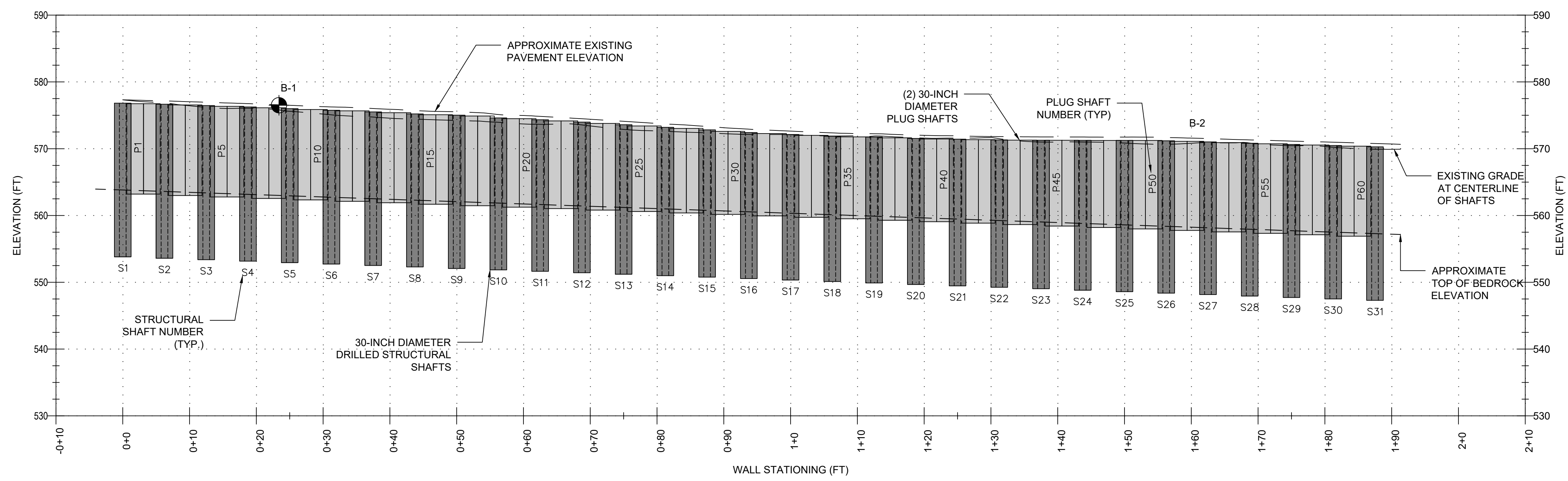
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NOTE:
BASEMAP DERIVED FROM LIDAR SCAN OF THE PROJECT SITE PERFORMED BY TERRACON ON 08/14/2023. LIDAR SCAN UTILIZED A ROCK R360 RUNNING IN SLAM MODE AND WAS PROCESSED INTO TOPOGRAPHY USING ROCK CLOUD.

COORDINATES BASED ON OHIO STATE PLANE, SOUTH ZONE, US FOOT EPSG: 3754

- INDICATES 30"Ø REINFORCED DRILLED SHAFT LOCATIONS
- INDICATES 30"Ø PLUG SHAFT LOCATIONS



REV	DATE	BY	DESCRIPTION
1	7/19/24	BCM	ADD COORDINATES FOR BASEPOINT AND RET WALL START POINT

PLAN AND PROFILE

INDIAN GUYAN SLIDE

LAWRENCE COUNTY ENGINEER

INDIAN GUYAN ROAD (CR 69)

LAWRENCE COUNTY, OHIO

Terracon
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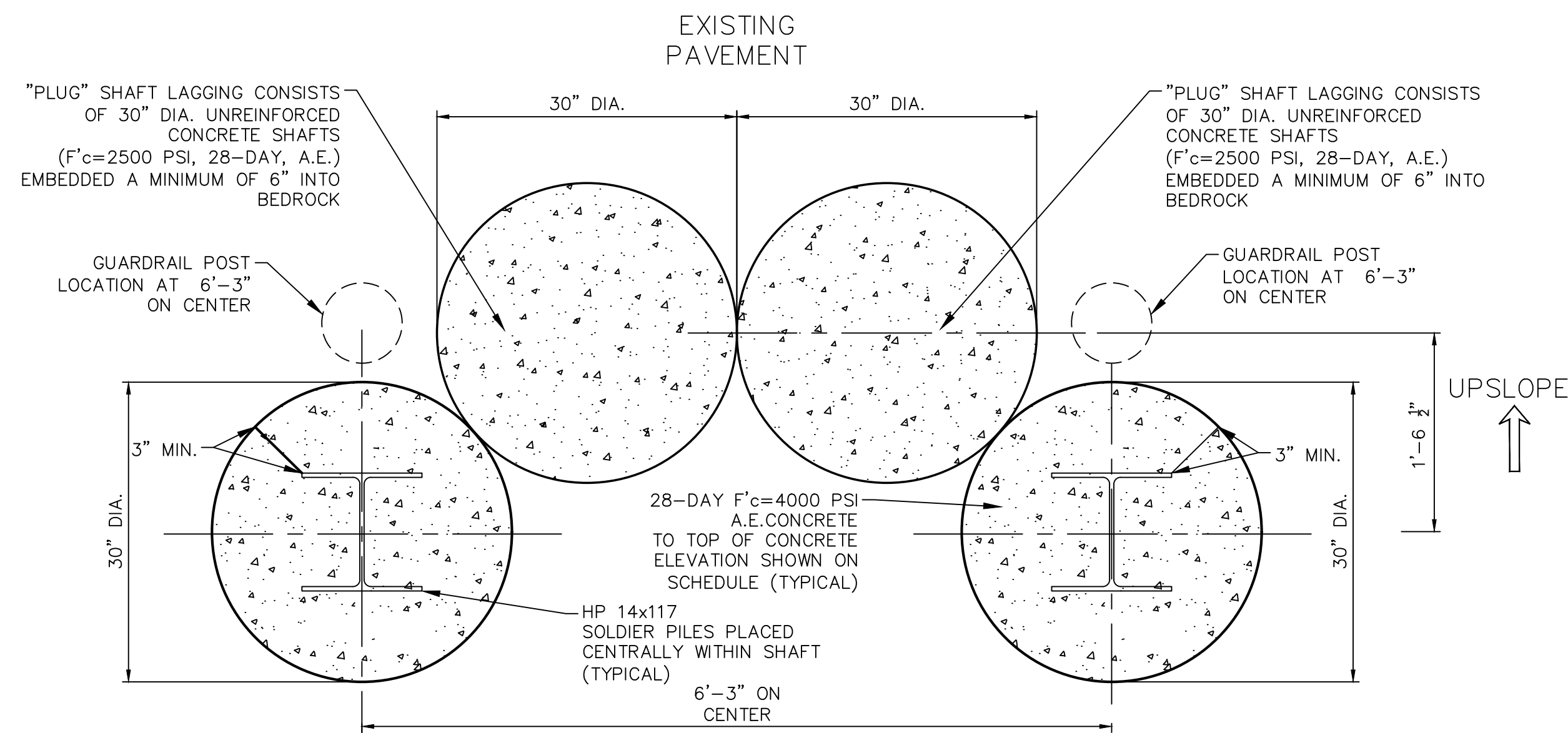
611 LUNKEN PARK DRIVE
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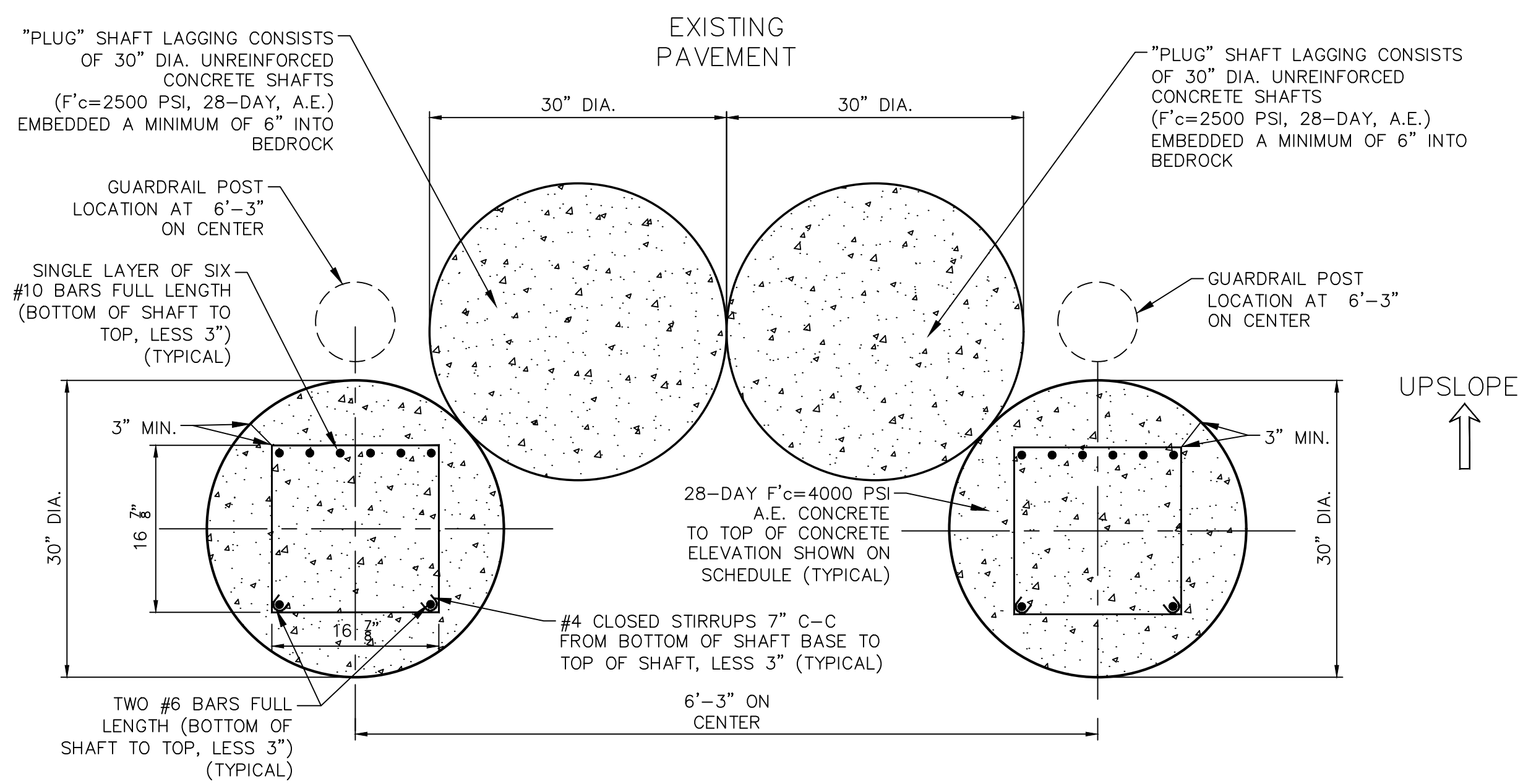
STATE OF OHIO
RICHARD BACH
86025
REGISTERED PROFESSIONAL ENGINEER
07/19/2024

SHEET 2

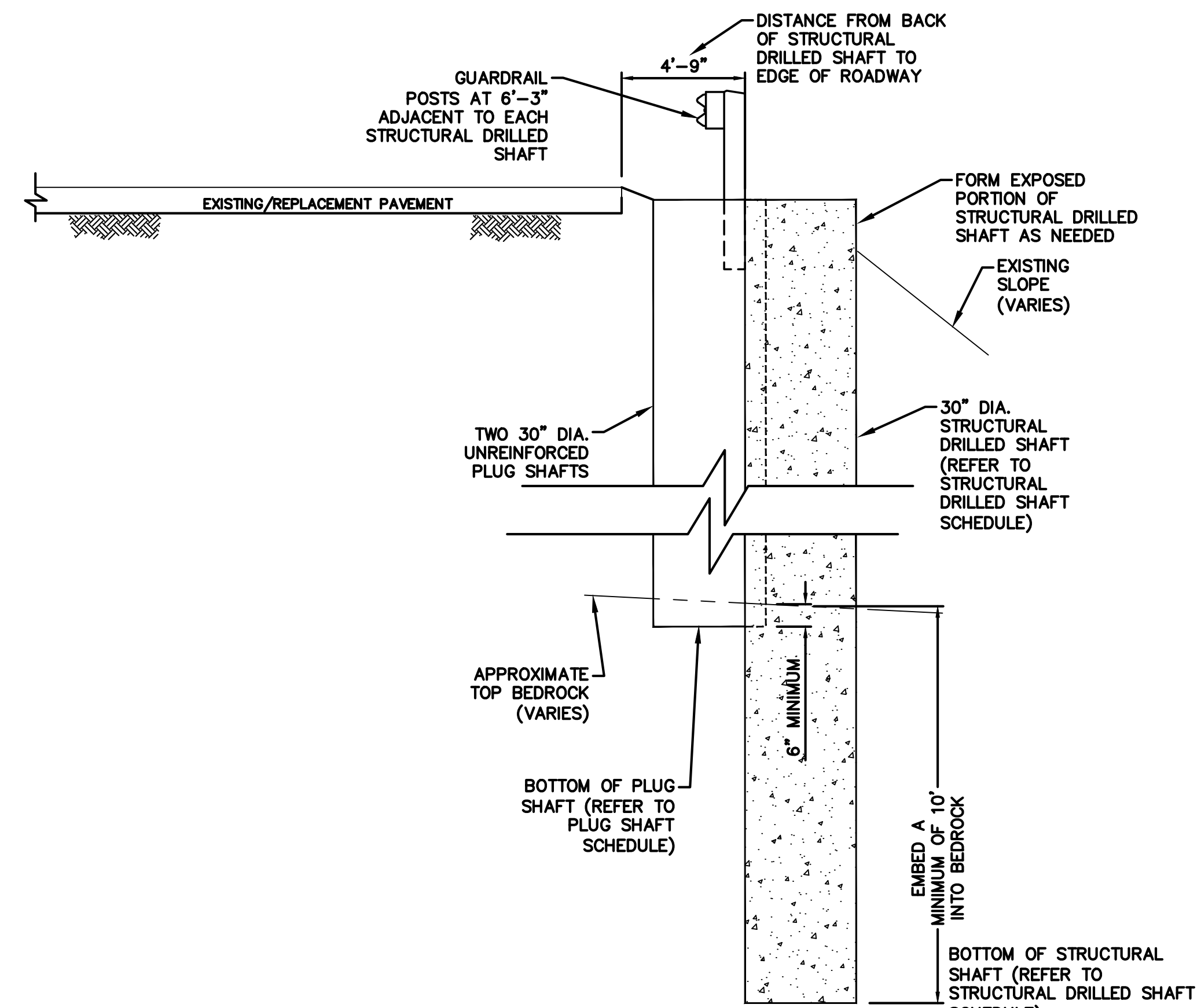
DESIGNED BY:	RLB
DRAWN BY:	BCM
APPVD BY:	DWW
SCALE:	AS SHOWN
DATE:	7/2/24
JOB NO:	N1225363B
ACAD NO:	N1225363B.DWG
SHEET NO.:	2 OF 4



ALTERNATE 1: STRUCTURAL DRILLED SHAFT WITH HP 14x117 REINFORCEMENT DETAIL AND "PLUG" SHAFT LAGGING
SCALE: 1"=1'



ALTERNATE 2: STRUCTURAL DRILLED SHAFT WITH STEEL REINFORCEMENT CAGE DETAIL AND "PLUG" SHAFT LAGGING
SCALE: 1"=1'



DRILLED SHAFT RETAINING WALL SECTION (TYPICAL)
SCALE: NOT TO SCALE

PLUG SHAFT SCHEDULE				
Shaft No.	Diameter	Approx. Top of Shaft Concrete Elevation ⁽¹⁾	Estimated Drilled Shaft Bottom Elevation	Estimated Drilled Shaft Length ⁽²⁾
	inches	feet	feet	feet
P1	30	576.7	563.2	13.5
P2	30	576.7	563.2	13.5
P3	30	576.6	563.0	13.6
P4	30	576.6	563.0	13.6
P5	30	576.4	562.8	13.6
P6	30	576.4	562.8	13.6
P7	30	576.1	562.6	13.6
P8	30	576.1	562.6	13.6
P9	30	575.9	562.3	13.5
P10	30	575.9	562.3	13.5
P11	30	575.7	562.1	13.6
P12	30	575.7	562.1	13.6
P13	30	575.4	561.9	13.5
P14	30	575.4	561.9	13.5
P15	30	575.1	561.7	13.4
P16	30	575.1	561.7	13.4
P17	30	574.9	561.5	13.4
P18	30	574.9	561.5	13.4
P19	30	574.5	561.3	13.2
P20	30	574.5	561.3	13.2
P21	30	574.2	561.0	13.1
P22	30	574.2	561.0	13.1
P23	30	573.8	560.8	13.0
P24	30	573.8	560.8	13.0
P25	30	573.4	560.6	12.8
P26	30	573.4	560.6	12.8
P27	30	573.0	560.4	12.7
P28	30	573.0	560.4	12.7
P29	30	572.6	560.2	12.4
P30	30	572.6	560.2	12.4
P31	30	572.3	559.9	12.3
P32	30	572.3	559.9	12.3
P33	30	572.0	559.7	12.3
P34	30	572.0	559.7	12.3
P35	30	571.8	559.5	12.3
P36	30	571.8	559.5	12.3
P37	30	571.6	559.3	12.3
P38	30	571.6	559.3	12.3
P39	30	571.5	559.1	12.4
P40	30	571.5	559.1	12.4
P41	30	571.4	558.9	12.5
P42	30	571.4	558.9	12.5
P43	30	571.3	558.6	12.7
P44	30	571.3	558.6	12.7
P45	30	571.3	558.4	12.8
P46	30	571.3	558.4	12.8
P47	30	571.2	558.2	13.0
P48	30	571.2	558.2	13.0
P49	30	571.2	558.0	13.3
P50	30	571.2	558.0	13.3
P51	30	571.1	557.8	13.3
P52	30	571.1	557.8	13.3
P53	30	570.9	557.6	13.4
P54	30	570.9	557.6	13.4
P55	30	570.7	557.3	13.4
P56	30	570.7	557.3	13.4
P57	30	570.6	557.1	13.4
P58	30	570.6	557.1	13.4
P59	30	570.4	556.9	13.5
P60	30	570.4	556.9	13.5

STRUCTURAL DRILLED SHAFT SCHEDULE							
Shaft No.	Diameter	Retaining Wall Station	Approx. Top of Shaft Concrete Elevation ⁽¹⁾	Approx. Top of Bedrock Elevation ⁽²⁾	Minimum Socket Length into Bedrock ⁽²⁾	Estimated Drilled Shaft Bottom Elevation	Estimated Drilled Shaft Length ⁽²⁾
	inches	Feet	Feet	Feet	Feet	Feet	Feet
S1	30	0+00.00	576.8	553.8	10	543.8	33.0
S2	30	0+06.25	576.7	553.6	10	543.6	33.1
S3	30	0+12.50	576.5	553.4	10	543.4	33.1
S4	30	0+18.75	576.3	553.2	10	543.2	33.1
S5	30	0+25.00	576.0	553.0	10	543.0	33.1
S6	30	0+31.25	575.8	552.7	10	542.7	33.0
S7	30	0+37.50	575.5	552.5	10	542.5	33.0
S8	30	0+43.75	575.2	552.3	10	542.3	32.9
S9	30	0+50.00	575.0	552.1	10	542.1	32.9
S10	30	0+56.25	574.6	551.9	10	541.9	32.8
S11	30	0+62.50	574.4	551.6	10	541.6	32.7
S12	30	0+68.75	574.0	551.4	10	541.4	32.6
S13	30	0+75.00	573.6	551.2	10	541.2	32.4
S14	30	0+81.25	573.2	551.0	10	541.0	32.2
S15	30	0+87.50	572.8	550.8	10	540.8	32.1
S16	30	0+93.75	572.4	550.6	10	540.6	31.9
S17	30	1+00.00	572.1	550.3	10	540.3	31.8
S18	30	1+06.25	571.9	550.1	10	540.1	31.8
S19	30	1+12.50	571.7	549.9	10	539.9	31.8
S20	30	1+18.75	571.5	549.7	10	539.7	31.9
S21	30	1+25.00	571.4	549.5	10	539.5	32.0
S22	30	1+31.25	571.3	549.3	10	539.3	32.1
S23	30	1+37.50	571.3	549.0	10	539.0	32.2
S24	30	1+43.75	571.3	548.8	10	538.8	32.5
S25	30	1+50.00	571.3	548.6	10	538.6	32.7
S26	30	1+56.25	571.2	548.4	10	538.4	32.8
S27	30	1+62.50	571.0	548.2	10	538.2	32.9
S28	30	1+68.75	570.8	547.9	10	537.9	32.9
S29	30	1+75.00	570.6	547.7	10	537.7	32.9
S30	30	1+81.25	570.5	547.5	10	537.5	33.0
S31	30	1+87.50	570.3	547.3	10	537.3	33.0

1) TOP OF DRILLED SHAFT CONCRETE ELEVATION IS 6 INCHES BELOW THE APPROXIMATE EDGE OF ROADWAY SURFACE ELEVATION.
2) STRUCTURAL SHAFTS SHOULD EXTEND A MINIMUM OF 10 FEET INTO BEDROCK. ACTUAL LENGTH TO BE DETERMINED BY CONDITIONS IN THE FIELD.

REV	DATE	BY	DESCRIPTION

DETAILS AND SCHEDULES
INDIAN GUYAN SLIDE
LAWRENCE COUNTY ENGINEER
INDIAN GUYAN ROAD (CR 69)
LAWRENCE COUNTY, OHIO

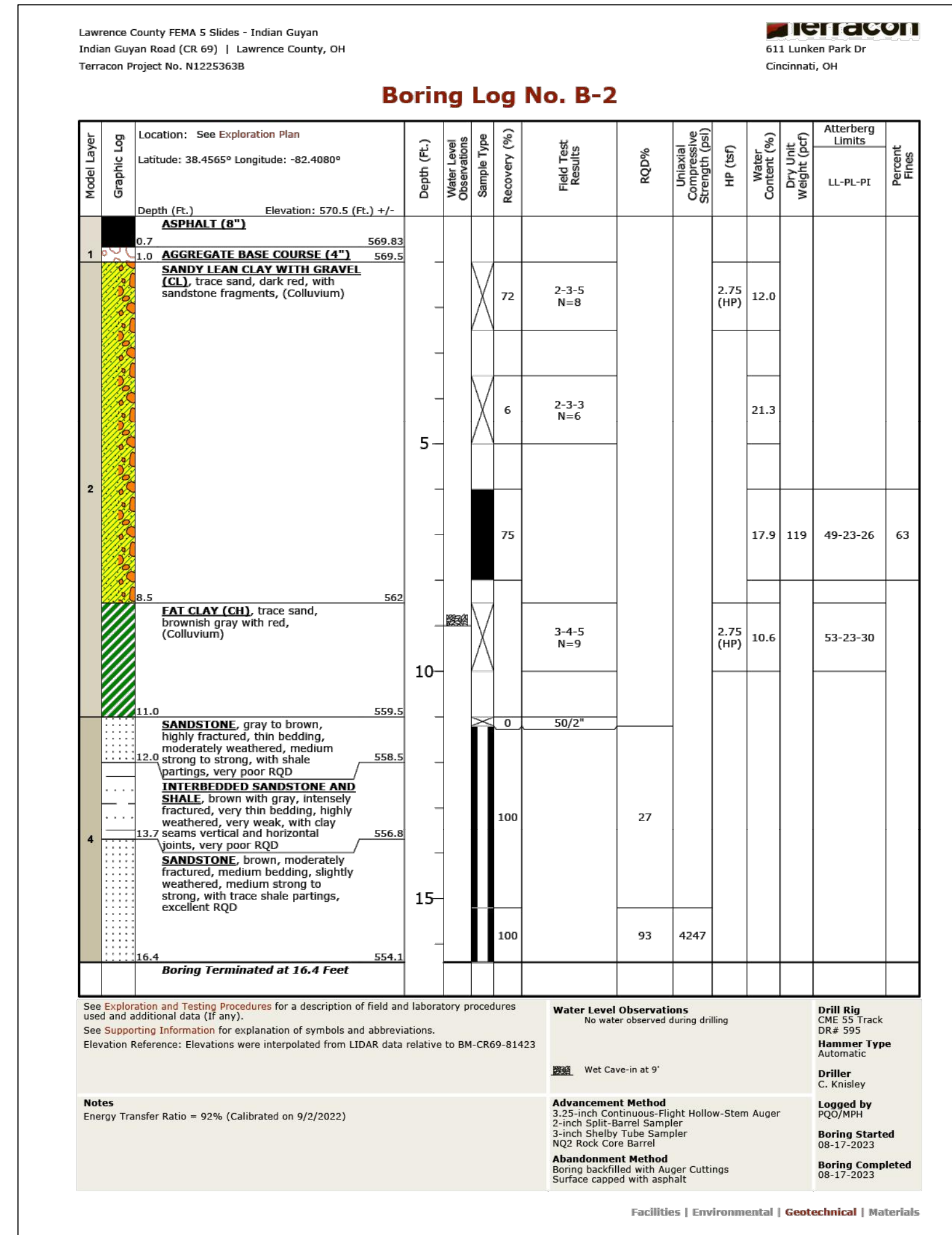
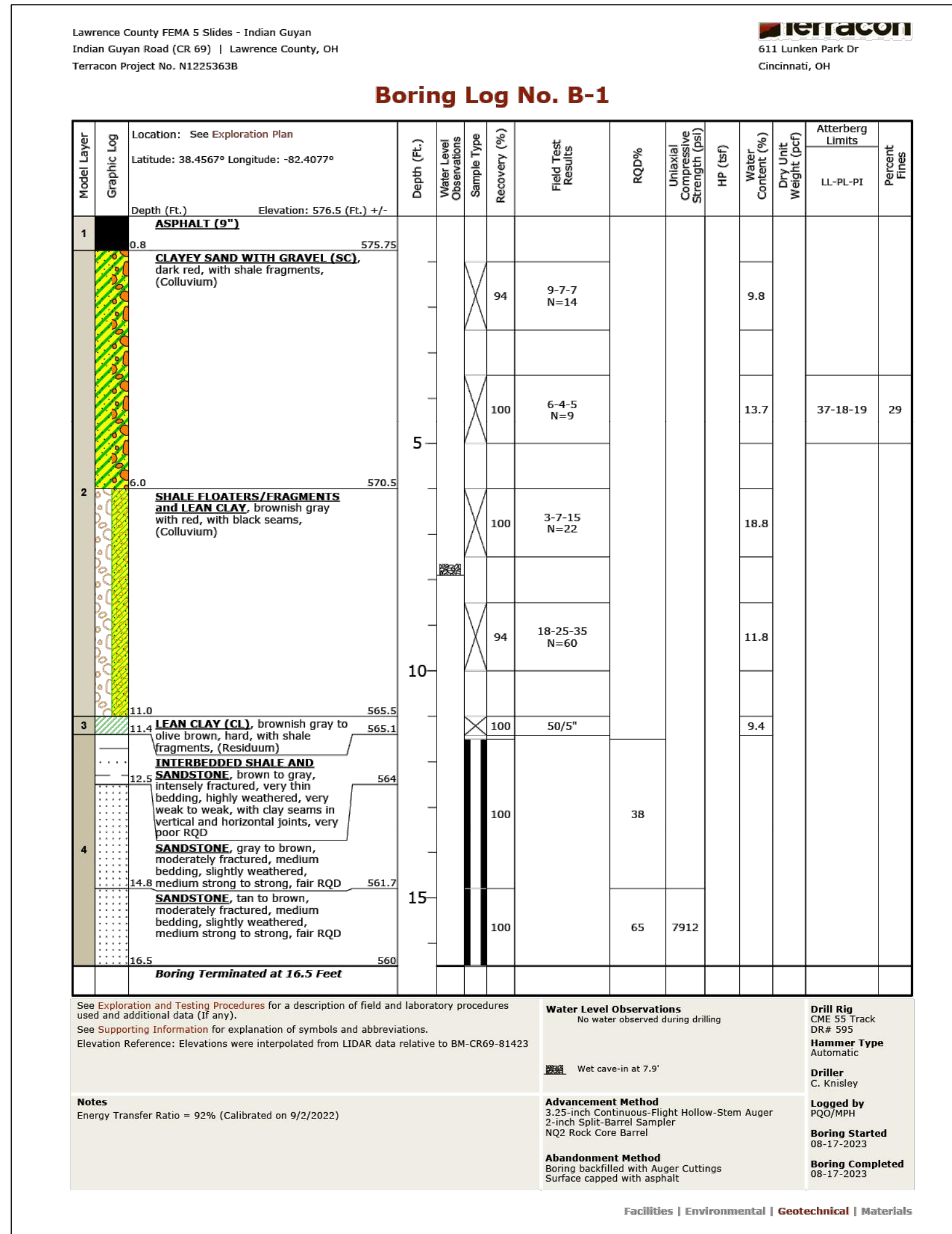
terracon
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FAX: (513) 321-4540
6111 LUNKEN PARK DRIVE
PH: (513) 321-5816

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER
RICHARD BACH
86025
07/19/2024

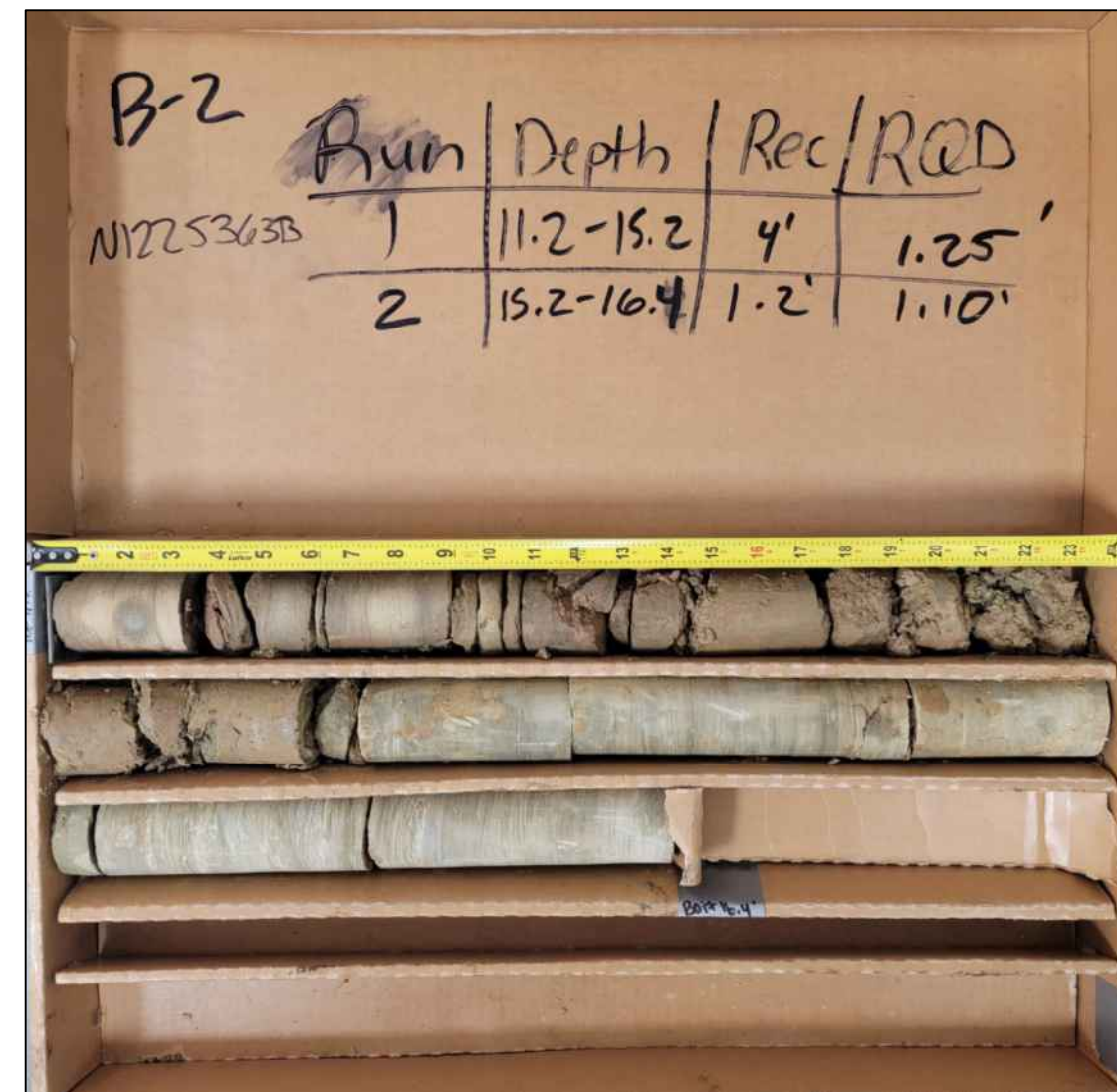
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DESIGNED BY:	RLB
DRAWN BY:	BCM
APPVD BY:	DWW
SCALE:	AS SHOWN
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ACAD NO.:	N1225363B.DWG
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ROCK CORE B-1



ROCK CORE B-2

DRILLED SHAFT CONSTRUCTION NOTES

DRILLED SHAFT INSTALLATION

- CONSTRUCT THE 30-INCH DIAMETER DRILLED STRUCTURAL SHAFT RETAINING WALL WITH PLUG SHAFTS USING ROLLED STEEL SECTION (ALTERNATE 1) OR STEEL REINFORCING CAGES (ALTERNATE 2) AS SHOWN AND DESCRIBED ON PLANS. THE PURPOSE OF THIS WORK IS TO REMEDIATE LATERAL MOVEMENT ON THE DOWNSLOPE (SOUTH) SIDE OF INDIAN GUYAN ROAD (CR 69), HOWEVER, PLEASE NOTE THAT CONTINUED MOVEMENT OF THE SLOPE DOWNSLOPE OF THIS WALL SHOULD BE EXPECTED. OWNER SHALL MONITOR WALL AND PROJECT AREA FOR FUTURE MOVEMENT THAT MAY COMPROMISE THE WALL. TERRACON SHOULD BE CONTACTED IN SUCH CASE TO REVIEW.
- CONTRACTOR IS RESPONSIBLE FOR STAKING OF THE DRILLED SHAFT LOCATIONS, CLEARING OVERHEAD AND UNDERGROUND UTILITIES AND PROVIDING ACCESS FOR EQUIPMENT.
- THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS THAT ARE REQUIRED FOR THIS WORK PRIOR TO THE PERFORMANCE OF THIS WORK.
- THE CONTRACTOR SHALL COORDINATE A STAGING AREA, ACCEPTABLE TO TERRACON AND THE OWNER, FOR STOCKPILING MATERIALS, INCLUDING DRILLING AND EXCAVATION SPOILS.
- THE CONTRACTOR SHALL DEVELOP A MAINTENANCE OF TRAFFIC CONTROL (MOT) PLAN AND ESTABLISH THE WORK ZONE WITHIN THE LIMITS OF THE ROADWAY IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD). THESE SHALL BE COORDINATED WITH THE OWNER PRIOR TO CONSTRUCTION.
- THE REINFORCED DRILLED SHAFT RETAINING WALL WILL CONSIST OF STRUCTURAL DRILLED SHAFTS SPACED APPROXIMATELY 6 FEET -3 INCHES (6'-3") ON CENTER, AS SHOWN ON THE SITE PLAN DRAWING. APPROXIMATE LENGTH OF DRILLED SHAFTS ARE SHOWN ON THE SHAFT SCHEDULE TABLE; HOWEVER, ACTUAL EMBEDMENT DEPTHS WILL BE BASED ON ACTUAL FIELD CONDITIONS AS DETERMINED BY THE GEOTECHNICAL CONSULTANT (OR GEOTECHNICAL REPRESENTATIVE).
- THE SHAFTS SHALL BE LOCATED AS SHOWN ON PLAN WITHIN 6 IN. OF PLAN LOCATION. THE OUT-OF-PLUMB TOLERANCE SHALL BE 1.5 PERCENT OF THE SHAFT LENGTH. A MINIMUM 3 IN. CONCRETE COVER BETWEEN THE REINFORCING STEEL AND THE EXTERIOR (SIDES AND TOP) OF THE DRILLED SHAFT SHALL BE PROVIDED. PLASTIC BOTTOM BOLSTERS AND SPACERS SHALL BE PROVIDED TO MAINTAIN THE PROPER CLEAR COVER IN THE DRILLED SHAFTS.
- REINFORCEMENT FOR THE STRUCTURAL SHAFTS SHALL CONSIST EITHER OF ROLLED STEEL SECTIONS HAVING YIELD STRENGTH OF 50 KSI OR A REINFORCING CAGE HAVING A STEEL YIELD STRENGTH OF 50 KSI. ROLLED STEEL SECTIONS SHOULD CONSIST OF HP14X117, AS NOTED ON THESE PLANS. THE CONFIGURATION OF THE REINFORCING CAGE OPTION HAS BEEN SHOWN ON THE PLANS AND CONSISTS OF A 16 7/8 IN. X 16 7/8 IN. SQUARE CAGE WITH A SINGLE LAYER OF SIX #10 BARS ON THE TENSION SIDE.
- THE PRE-DRILLED SHAFT WILL BE BACKFILLED WITH CONCRETE TO THE TOP OF SHAFT CONCRETE ELEVATION. THE TOP OF SHAFT CONCRETE ELEVATION SHALL BE ABOUT 6 INCHES BELOW THE TOP OF BUILT-UP PAVEMENT ELEVATION. STRUCTURAL SHAFT CONCRETE (28 DAYS f'_c = 4000 PSI, MAXIMUM SLUMP = 6 ± 1 INCHES, AIR ENTRAINMENT = 5% TO 8%) SHALL BE PLACED USING FREE FALL METHOD OF PLACEMENT. THE CONCRETE SHALL BE DIRECTED THROUGH THE CENTER OF THE REINFORCING STEEL CAGE OR AROUND THE EDGE OF THE ROLLED STEEL SECTION SO AS NOT TO STRIKE THE REINFORCING DURING FREEFALL AND TO AVOID CAUSING SEGREGATION OF THE CONCRETE. CONCRETE SHALL BE PLACED INTO EACH SHAFT EXCAVATION ON THE SAME DAY THAT THE DRILLING IS COMPLETED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COSTS ASSOCIATED WITH NOT FILLING THE DRILLED SHAFT WITH CONCRETE THE SAME DAY THAT THE SHAFT WAS DRILLED. COLD JOINTS SHALL NOT BE USED IN THE DRILLED SHAFTS WITHOUT PRIOR WRITTEN APPROVAL FROM TERRACON. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES WITHIN ACI 301, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE", AND WHEN NECESSARY SHALL IMPLEMENTS THE PRACTICES OUTLINED WITHIN ACI 305, "HOT WEATHER CONCRETING", OR ACI 306, "COLD WEATHER CONCRETING".
- TEMPORARY STEEL CASING SHOULD BE ON-SITE AND USED WHEREVER REQUIRED TO STABILIZE LOOSE OR CAVING MATERIALS, OR TO SEAL OFF WATER BEARING ZONES ENCOUNTERED DURING CONSTRUCTION. IT IS COMMON TO ENCOUNTER PERCHED WATER AT THE SOIL-ROCK INTERFACE AND WITHIN THE BEDROCK BASED ON OUR EXPERIENCE.
- IF BEDROCK IS ENCOUNTERED MORE THAN 1.0 FT. BELOW ANTICIPATED TOP OF BEDROCK ELEVATIONS (SEE SHAFT SCHEDULE), TERRACON SHALL BE NOTIFIED IMMEDIATELY TO REVIEW AND PROVIDE ADDITIONAL RECOMMENDATIONS. LONGER OR ADDITIONAL REINFORCING MAY BE REQUIRED IN THIS CASE.
- EACH STRUCTURAL SHAFT SHALL BE SOCKETED A MINIMUM OF 10 FEET INTO BEDROCK AS DESCRIBED ON THE PLANS.
- A TRAFFIC/CONSTRUCTION SURCHARGE OF 250 PSF WAS INCLUDED IN THE DESIGN CONSIDERATIONS.
- THE CONTRACTOR SHALL MAINTAIN A RECORD OF EACH SHAFT DRILLED, WHICH WILL INCLUDE AS A MINIMUM: SHAFT NUMBER, GROUND ELEVATION, TOP OF SHAFT CONCRETE ELEVATION, TOP OF BEDROCK ELEVATIONS, AS-BUILT ROCK SOCKET LENGTH, DRILLED SHAFT BOTTOM ELEVATION, DATE DRILLED, DATE COMPLETED, AND WEATHER CONDITIONS.
- IT IS ANTICIPATED THAT WATER MAY ENTER SOME OF THE SHAFT EXCAVATIONS. THE DEPTH OF PONDED WATER AT THE BOTTOM OF THE SHAFT EXCAVATIONS SHOULD NOT EXCEED 3 INCHES, PRIOR TO PLACING CONCRETE. IF THE WATER CANNOT BE PUMPED DOWN, TREMIE PLACEMENT METHODS WILL BE REQUIRED.
- THE DRILLED SHAFT EXCAVATIONS SHOULD BE INSPECTED BY TERRACON TO CONFIRM THAT THE DRILLED SHAFTS ARE SOCKETED INTO BEDROCK ACCORDING TO DESIGN, AND THAT THE DRILLED SHAFTS HAVE BEEN CONSTRUCTED PER SPECIFICATIONS.
- SHAFT SPOILS SHALL BE REMOVED FROM THE SITE (NOT WASTED ON THE HILLSIDE). NO FILL PLACEMENT SHOULD BE ALLOWED DOWNSLOPE OF THE WALL FACE.

PLUG SHAFT INSTALLATION

- PAIRS OF 30-INCH DIAMETER PLUG SHAFTS CONSISTING OF UNREINFORCED CONCRETE (28 DAYS f'_c = 2500 PSI, MAXIMUM SLUMP = 6 ± 1 INCHES) AS NOTED ON THE CROSS-SECTION DETAILS WILL ACT AS LAGGING FOR THE DRILLED SHAFT RETAINING WALL.
- PLUG SHAFT INSTALLATION FOR SHAFT WALL SHALL BEGIN AFTER THE STRUCTURAL SHAFT ELEMENTS HAVE GAINED STRENGTH (AT LEAST 1 DAY AFTER PLACEMENT OF STRUCTURAL SHAFT CONCRETE).
- THE TOP OF THE PLUG SHAFT CONCRETE SHALL BE ABOUT 6 INCHES BELOW THE EDGE OF BUILT-UP PAVEMENT (DESIGNED BY OTHERS).
- THE BOTTOM OF PLUG SHAFTS INSTALLED SHOULD EXTEND AT LEAST TO THE BOTTOM OF PLUG SHAFT ELEVATIONS SHOWN IN THE PLUG SHAFT SCHEDULE. ACTUAL BOTTOM OF PLUG SHAFT ELEVATIONS WILL NEED TO BE ADJUSTED TO EXTEND A MINIMUM OF 6 INCHES INTO BEDROCK.
- PLUG SHAFT SPOILS SHALL BE REMOVED FROM THE SITE (NOT WASTED ON THE HILLSIDE).

EMBANKMENT FILL AND OTHER CONSTRUCTION CONSIDERATIONS

- NEW EMBANKMENT FILL MAY BE PLACED ON UPSLOPE SIDE OF SHAFTS TO RETAIN GRADE NEXT TO THE EDGE OF PAVEMENT. SONOTUBES OR EQUIVALENT WILL BE REQUIRED IN SOME AREAS, DUE TO THE STEEPLY SLOPING HILLSIDE BELOW THE WALL. FILL SHOULD BE PLACED AND COMPACTED PER ODOT SPECIFICATIONS (ITEM 203).
- PATCH AND REPLACE PAVEMENT PER LAWRENCE COUNTY SPECIFICATIONS.
- CONSTRUCTION OF THE PROPOSED GUARDRAIL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE GUARDRAIL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ODOT CMS ITEMS 606 AND 710.15.
- DISTURBED AREAS SHALL BE RESTORED WITH SEED AND STRAW AND SHALL BE COVERED WITH A TEMPORARY EROSION CONTROL BLANKET/MAT THAT IS INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING WALL INSTALLATION AND FINAL GRADING.

FIELD QUALITY CONTROL

OWNER WILL COORDINATE FIELD CONSTRUCTION INSPECTION AND REPORTING THROUGH IN-HOUSE PERSONNEL OR TERRACON. DOCUMENTATION SHALL INCLUDE THE FOLLOWING AT EACH SHAFT:

- GROUND ELEVATION
- AS-BUILT SHAFT DIAMETER AND TOP AND BOTTOM OF STRUCTURAL AND PLUG SHAFT ELEVATIONS.
- TOP OF BEDROCK ELEVATION.
- DESCRIPTION OF ENCOUNTERED SOIL AND BEDROCK MATERIALS.
- DESCRIPTION, LOCATION, AND DIMENSIONS OF ANY OBSTRUCTIONS.
- FINAL TOP CENTERLINE LOCATION AND DEVIATIONS FROM REQUIREMENTS.
- VARIATION OF SHAFT FROM PLUMB.
- DRILLED SHAFT EXCAVATING METHOD.
- LENGTH OF ROCK SOCKET INTO BEDROCK.
- LEVELNESS OF SHAFT BOTTOM AND ADEQUACY OF CLEANOUT.
- GROUND-WATER CONDITIONS AND WATER INFILTRATION RATE, DEPTH, AND PUMPING.
- DESCRIPTION, DIAMETER, AND TOP AND BOTTOM ELEVATIONS OF TEMPORARY OR PERMANENT CASINGS.
- DESCRIPTION OF SOIL OR WATER MOVEMENT, SIDEWALL STABILITY, LOSS OF GROUND, AND MEANS OF CONTROL.
- DATE AND TIME OF STARTING AND COMPLETING DRILLED SHAFT EXCAVATION.
- POSITION OF REINFORCING STEEL.
- CONCRETE PLACEMENT METHOD, INCLUDING DELAYS.
- ELEVATION OF CONCRETE DURING REMOVAL OF CASINGS.
- LOCATIONS OF CONSTRUCTION JOINTS, IF ANY.
- REMARKS, UNUSUAL CONDITIONS ENCOUNTERED, AND DEVIATIONS FROM REQUIREMENTS.

CONCRETE: SAMPLING AND TESTING OF CONCRETE FOR QUALITY CONTROL SHALL INCLUDE THE FOLLOWING:

- SAMPLING FRESH CONCRETE: ASTM C 172, EXCEPT MODIFIED FOR SLUMP TO COMPLY WITH ASTM C 94/C 94M.
 - SLUMP: ASTM C 143/C 143M; ONE TEST AT POINT OF PLACEMENT FOR EACH SET OF COMPRESSIVE-STRENGTH TEST SPECIMENS.
 - CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40° F (4.4° C) AND BELOW AND WHEN 80° F (27° C) AND ABOVE, AND ONE TEST FOR EACH SET OF COMPRESSIVE-STRENGTH TEST SPECIMENS.
 - COMPRESSIVE TEST SPECIMENS: ASTM C 31/C 31M; ONE SET OF FIVE STANDARD CYLINDERS FOR EACH COMPRESSIVE-STRENGTH TEST, UNLESS OTHERWISE INDICATED. MOLD AND STORE CYLINDERS FOR LABORATORY-CURED TEST SPECIMENS.
 - COMPRESSIVE-STRENGTH TESTS: ASTM C 39; ONE SET OF FIVE CYLINDERS FOR EACH 100 CY OF CONCRETE PLACED, OR A MINIMUM OF ONE SET PER DAY. ONE SPECIMEN WILL BE TESTED AT 7 DAYS. 2 SPECIMENS WILL BE TESTED AT 28 DAYS, AND TWO SPECIMENS WILL BE RETAINED IN RESERVE FOR LATER TESTING IF REQUIRED. THE LOCATION OF THE CONCRETE TEST SPECIMEN SHALL BE NOTED (SHAFT NUMBER).
 - CONCRETE AIR CONTENT: ASTM C231; ONE TEST FOR EACH SET OF COMPRESSIVE STRENGTH TEST SPECIMENS.
- STRENGTH LEVEL OF CONCRETE WILL BE CONSIDERED SATISFACTORY IF AVERAGES OF 3 SETS OF CONSECUTIVE STRENGTH TEST RESULTS EQUAL OR EXCEED SPECIFIED COMPRESSIVE STRENGTH AND NO INDIVIDUAL STRENGTH TEST RESULT FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI AND SLUMP OF 6 ± 1 INCHES.

DESCRIPTION

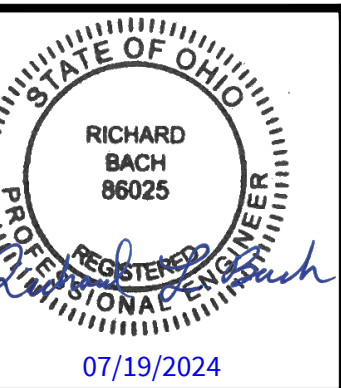
BORING LOGS AND CONSTRUCTION NOTES

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LAWRENCE COUNTY ENGINEER
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LAWRENCE COUNTY, OHIO



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07/19/2024

SHEET 4

DESIGNED BY:	RLB
DRAWN BY:	BCM
APP'D BY:	DWW
SCALE:	AS SHOWN
DATE:	7/2/24
JOB NO:	N1225363B
ACAD NO:	N1225363B.DWG
SHEET NO.:	4 OF 4