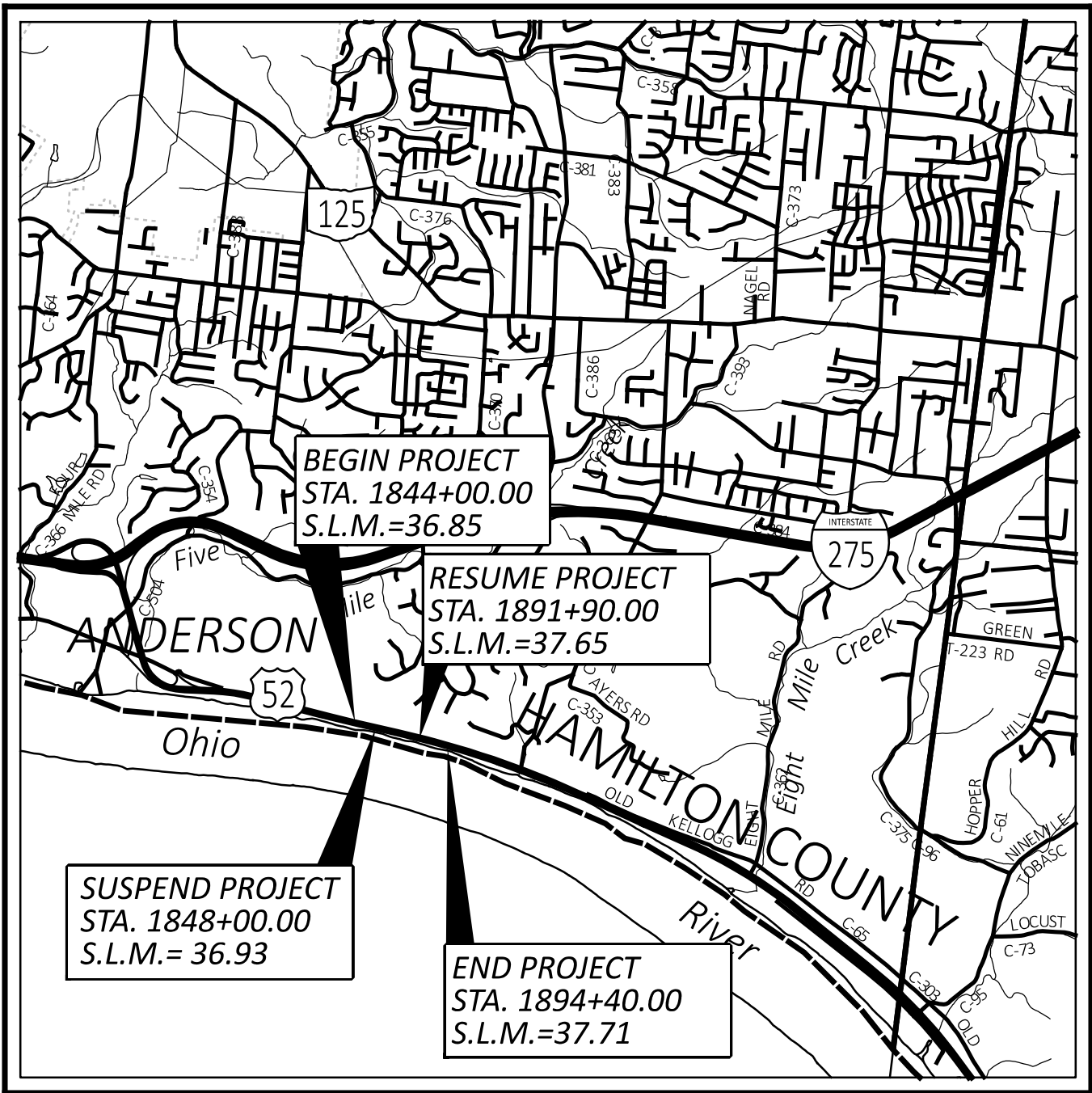




LOCATION MAP

LATITUDE: 39°02'33" LONGITUDE: -84°22'34"



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

DESIGN DESIGNATION

CURRENT ADT (2025)	14,000
DESIGN YEAR ADT (2045)	15,000
DESIGN HOURLY VOLUME (2045)	2,000
DIRECTIONAL DISTRIBUTION	70%
TRUCKS (24 HOUR B&C)	2%
DESIGN SPEED	65 MPH
LEGAL SPEED	60 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
03 PRINCIPAL ARTERIAL (URBAN)	
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE

UNDERGROUND UTILITIES

Contact Two Working Days
Before You Dig

OHIO811.org
Before You Dig

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

PLAN PREPARED BY:

Stantec

10200 Alliance Road,
Suite 300
Cincinnati, OH 45242
(513) 842-8200

ENGINEER'S SEAL:

Digitally signed by Shadix, Steve
Date: 2025.01.27 17:45:28
-05'00'

ENGINEER'S SEAL:

Sturdevant, Michael
2025.01.27
08:23:42-05'00'

SHEET P.32 TO P.39

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/19/24	TC-41.20	10/18/13			800-2023 7/19/24	
BP-5.1	7/15/22	TC-42.20	10/18/13			832 7/19/24	
		TC-52.20	1/15/21			821 4/20/12	
DM-1.1	7/17/20	TC-61.30	7/19/24			878 1/21/22	
DM-1.2	7/16/21	TC-65.10	1/17/14			921 7/19/24	
DM-4.3	1/15/16	TC-65.11	1/19/24				
DM-4.4	1/15/16	TC-71.10	4/21/23				
MGS-1.1	7/16/21	RM-4.2	7/19/24				
MGS-2.1	1/19/18						
MGS-4.3	1/18/13						
MT-95.40	7/21/23						
MT-101.70	7/19/24						
MT-101.75	7/21/23						

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
HAM-US 52-36.85

ANDERSON TOWNSHIP
HAMILTON COUNTY

INDEX OF SHEETS:

TITLE SHEET	P.1
TYPICAL SECTIONS	P.2-P.3
GENERAL NOTES	P.4
MAINTENANCE OF TRAFFIC	P.5-P.12
GENERAL SUMMARY	P.13-P.14
CALCULATIONS	P.15-P.16
PLAN AND PROFILE	P.17-P.18
CROSS SECTIONS	P.19-P.27
TRAFFIC CONTROL	P.28-P.31
RETAINING WALL	P.32-P.39
GEOTECHNICAL PROFILE - RETAINING WALL	P.40-P.60

FEDERAL PROJECT NUMBER

E240804

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

EROSION OF THE EMBANKMENT TOE BY THE OHIO RIVER HAS CAUSED DISTRESS TO GUARDRAIL AND PAVEMENT SHOULDER ON THE SOUTH SIDE OF US 52 AT TWO LOCATIONS. PROJECT WILL INSTALL TWO DRILLED SHAFT WALLS TO RE-ESTABLISH THE ROADWAY.

EARTH DISTURBED AREAS

HAM-52-36.85	
PROJECT EARTH DISTURBED AREA:	0.26 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.26 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)
* ROUTINE MAINTENANCE PROJECT	

HAM-52-37.65	
PROJECT EARTH DISTURBED AREA:	0.20 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.26 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)
* ROUTINE MAINTENANCE PROJECT	

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 REQUIRE THE PART TIME CLOSING OF THE HIGHWAY TO TRAFFIC, AS NOTED ON SHEET P.5. DURING WHICH TIME DETOURS WILL BE PROVIDED AS SHOWN HEREIN. PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

Tammy K. Campbell, P.E.
District 08 Deputy Director

Pamela Boratyn
Director, Department of Transportation

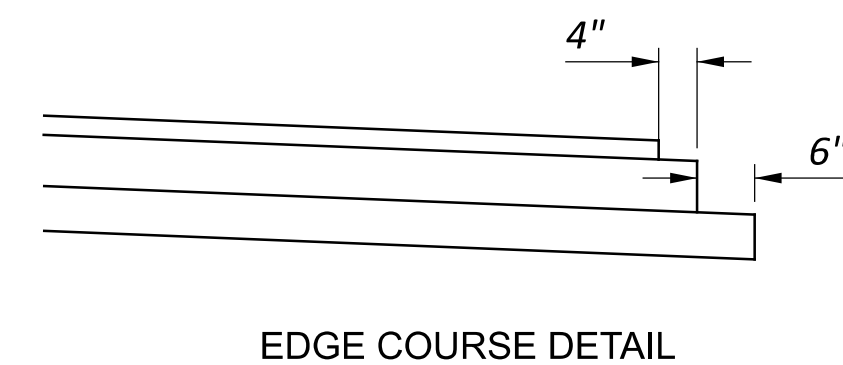
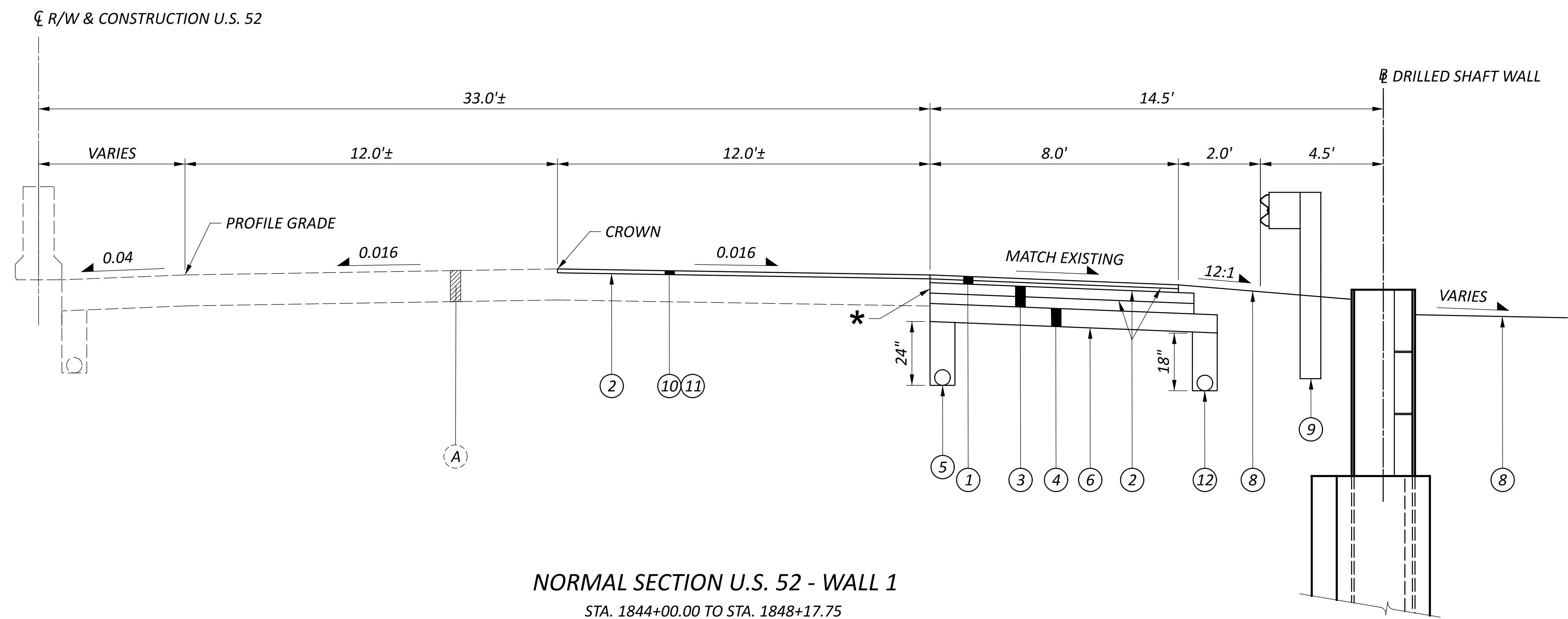
HAM-52-36.85

MODEL: Sheet PAPER SIZE: 34x22 (in.) DATE: 1/8/2025 TIME: 3:27:38 PM USER: sparker
 pw:\vhohdoto-pw.bentley.com\hohdoto-pw-02\Documents\01 Active Projects\District 08\Hamilton116046\401-Engineering_SanteeRoadway\Sheets\116046_GY001.dgn

- ① ITEM 441 - 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22, (USE 2 LIFTS)
- ② ITEM 407 - NON-TRACKING TACK COAT
- ③ ITEM 301 - 8" ASPHALT CONCRETE BASE, PG64-22, (449), (USE 2 LIFTS)
- ④ ITEM 304 - 7" AGGREGATE BASE
- ⑤ ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN
- ⑥ ITEM 204 - SUBGRADE COMPACTION
- ⑦ ITEM 609 - COMBINATION CURB AND GUTTER, TYPE 2
- ⑧ ITEM 659 - SEEDING AND MULCHING
- ⑨ ITEM 606 - GUARDRAIL, TYPE MGS QUARTER POST SPACING
- ⑩ ITEM 254 - 1.5" PAVEMENT PLANING, ASPHALT CONCRETE
- ⑪ ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22
- ⑫ ITEM 605 - 6" BASE PIPE UNDERDRAIN
- Ⓐ EXISTING PAVEMENT (±4" ASPHALT OVER ±8" CONCRETE)
- Ⓑ EXISTING PAVEMENT (±2" ASPHALT OVER ±6" CONCRETE OVER ±4" SUBBASE)

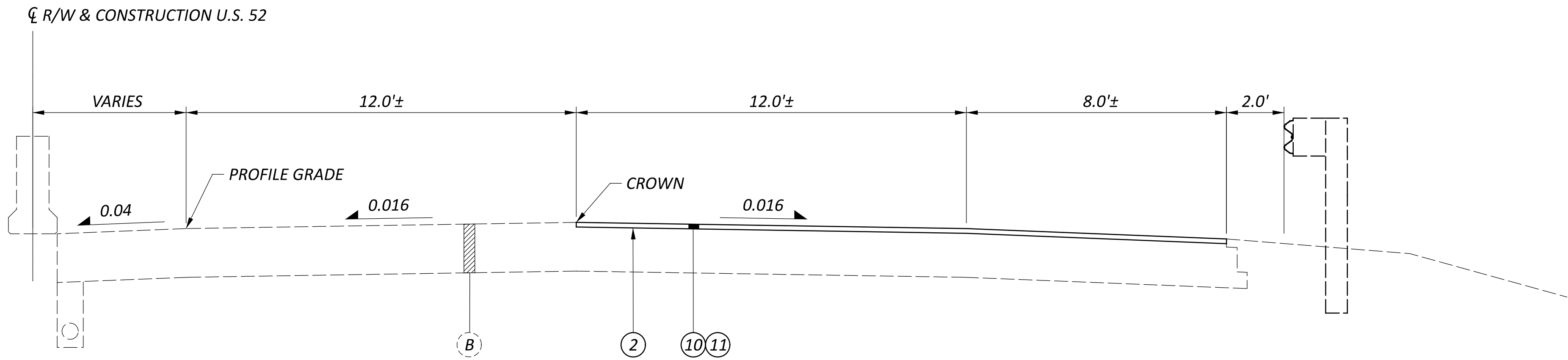


STA. 1830+28.00 TO STA. 1844+00.00
STA. 1848+17.75 TO STA. 1848+40.00

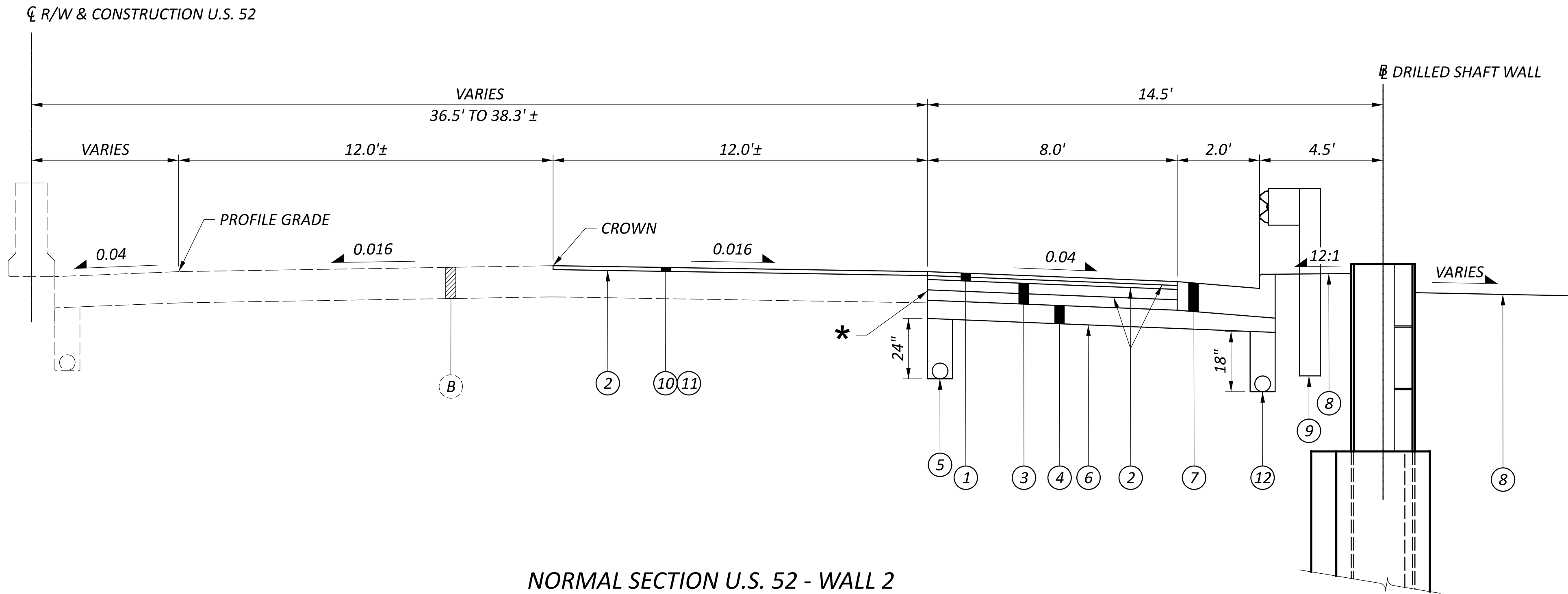


* SAWCUT AT WHITE STRIPE OR SOUND PAVEMENT

FOR LEGEND SEE SHEET P.2



RESURFACING SECTION U.S. 52 - WALL 2
STA. 1877+60.00 TO STA. 1891+90.00
STA. 1894+40.00 TO STA. 1894+80.00



NORMAL SECTION U.S. 52 - WALL 2
STA. 1891+90.00 TO STA. 1894+40.00

* SAWCUT AT WHITE STRIPE OR SOUND PAVEMENT

UTILITIES

THERE ARE NO UNDERGROUND UTILITIES SHOWN ON THIS PLAN. THE NATURE OF THE WORK REQUIRED BY THIS PROJECT WILL NOT AFFECT ANY KNOWN UNDERGROUND UTILITIES THAT EXIST UNDER, OR ADJACENT TO, THE WORK AREA.

EXISTING PLANS

EXISTING PLANS MAY BE INSPECTED IN THE ODOT DISTRICT 8 OFFICE IN LEBANON.

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 9 PM AND 8 AM. 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. THIS PROJECT SHALL COMPLY WITH ALL LOCAL NOISE ORDINANCES.

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.

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.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

DRINKING WATER PROTECTION AREA

THIS PROJECT IS LOCATED IN A DRINKING WATER PROTECTION AREA. IN ORDER TO MINIMIZE THE POTENTIAL FOR CONTAMINATION, THE CONTRACTOR SHALL UTILIZE PROPER CONTAINMENT AND DIKING IN REFUELING AREAS. FUELS, TOXIC/HAZARDOUS MATERIALS, AND CHEMICALS SHALL NOT BE STORED NEAR DRAINAGE WAYS, DITCHES OR STREAMS. A SPILL KIT IS TO BE MAINTAINED ON-SITE THROUGHOUT CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL IMMEDIATELY TAKE STEPS TO MITIGATE ANY EVENT, SUCH AS A SPILL OF FUELS, OILS, OR CHEMICALS, THAT COULD THREATEN TO CONTAMINATE THE DRINKING WATER SUPPLY. ANY SUCH SPILL OR EVENT SHALL BE REPORTED IMMEDIATELY TO THE GREATER CINCINNATI WATER WORKS (513-591-7970). IF THE SPILL IS A REPORTABLE AMOUNT (PER OHIO EPA'S RELEASE REPORTING REQUIREMENTS), THE CONTRACTOR SHALL CONTACT THE ANDERSON TOWNSHIP FIRE DEPARTMENT (513-688-8400) OR THE OHIO EPA'S SPILLS HOTLINE 1-800-282-9378 FOR CLEAN-UP OF THE SPILL.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE 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: 30" X 5/8" IRON PIN W/ CAP

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: 18

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD 83 (2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL
COORDINATE SYSTEM: OHIO STATE PLANE: SOUTH ZONE
COMBINED SCALE FACTOR: 1.00000000000
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 CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

CONTROL POINTS						
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESC.
T2	386178.678	1435453.355	504.498	1843+18.179	46.930 R	IPINS
VRS1	386044.118	1435973.696	500.192	1848+55.635	45.563 R	IPINS
T4	384984.691	1440191.160	497.973	1892+04.800	51.145 R	IPINS
VRS3	384908.308	1440442.202	497.457	1894+67.795	51.467 R	IPINS

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

ITEM 659 - COMMERCIAL FERTILIZER..... 0.14 TON
ITEM 659 - LIME..... 0.21 ACRES
ITEM 659 - WATER..... 6 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM SPECIAL STRUCTURES: CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTING

ALL CONCRETE SHALL BE TESTED. ALL TESTING, INSPECTION AND QUALITY CONTROL FOR CONCRETE, NOT INCLUDED UNDER QC/QA PAY ITEMS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE A CONCRETE TESTING CONSULTANT WITH PREVIOUS EXPERIENCE AND FAMILIARITY IN ODOT PROCEDURES, CONCRETE TESTING REQUIREMENTS AND CONCRETE TESTING DOCUMENTATION. AT LEAST 30 DAYS PRIOR TO CONCRETE PLACEMENT, SUBMIT TO THE ENGINEER FOR APPROVAL, THE PROPOSED CONCRETE TESTING CONSULTANT ALONG WITH THE RESUMES OF THE PROPOSED TESTING PERSONNEL.

TESTING CONCRETE FOR STRUCTURES AND PORTLAND CEMENT CONCRETE PAVEMENT SHALL BE PERFORMED AS OUTLINED IN CONSTRUCTION AND MATERIAL SPECIFICATIONS 455.

THROUGH THE CONTRACTOR, THE CONSULTANT SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONCRETE PLACED IS IN ACCORDANCE WITH THE SPECIFICATIONS. SUCH WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE ODOT CONSTRUCTION INSPECTION MANUAL OF PROCEDURES FOR CONCRETE. THE CONCRETE CONSULTANT SHALL PROVIDE THE NECESSARY TRAINED TECHNICIAN(S) AND EQUIPMENT AND SHALL FURNISH THE PROJECT ENGINEER WITH TWO (2) COPIES OF ALL TEST RESULTS WITHIN 24 HOURS AFTER COMPLETION OF CONCRETE PLACEMENT.

THE TECHNICIANS SHALL BE ACI LEVEL 1 CERTIFIED AND WILL BE REQUIRED TO DEMONSTRATE HIS/HER COMPETENCE AND EXPERIENCE LEVELS TO THE ENGINEER PRIOR TO BEGINNING WORK. THE ENGINEER WILL ORDER THE CONTRACTOR TO REPLACE ANY TECHNICIAN THAT IS NOT VERSED IN THE REQUIRED TESTING PROCEDURE.

THE TECHNICIAN SHALL VERBALLY NOTIFY THE ODOT PROJECT ENGINEER OF ANY FAILING TESTS AND SHALL SUBMIT FOLLOW-UP WRITTEN NOTIFICATION TO THE PROJECT ENGINEER OF REMEDIAL ACTION(S) TAKEN. TESTS SHALL BE TAKEN AS SPECIFIED WITHIN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, CONCRETE MANUAL OR APPROPRIATE SUPPLEMENTAL SPECIFICATION AS LISTED IN THE PROPOSAL GOVERNING THE PROJECT. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAKE IMMEDIATE CORRECTIONS OR ADJUSTMENTS TO THE CONCRETE MIX VIA DIRECT COMMUNICATION WITH THE CONCRETE SUPPLIER'S PLANT PERSONNEL TO MAINTAIN UNINTERRUPTED COMPLIANCE WITH THE SPECIFICATIONS UPON NOTIFICATION OF CONCRETE MIX NON-COMPLIANCE BY THE CONSULTANT TECHNICIAN. THE PROJECT ENGINEER MAY REQUIRE MORE FREQUENT TESTING AS CONDITIONS WARRANT.

UPON COMPLETION OF DAILY CONCRETE PLACEMENT(S), THE CONCRETE CONSULTANT SHALL PROVIDE THE PROJECT ENGINEER WITH DAILY TEST REPORTS, TE-45'S, INSPECTORS DAILY REPORT AND SUPPORTING DOCUMENTATION FOR EACH ITEM OF CONCRETE WORK PERFORMED SEPARATED BY MIX DESIGN. SUBSEQUENTLY, UPON COMPLETION OF AN ENTIRE CONCRETE SPECIFICATION ITEM, THE CONCRETE CONSULTANT SHALL ALSO PROVIDE THE PROJECT ENGINEER WITH TWO (2) COPIES OF AN ADDITIONAL INSPECTION REPORT BY A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO, WHICH CONTAINS THE TESTING RESULTS SUMMARY FOR EACH ITEM BY CONTRACT REFERENCE NUMBER AND THE CONSULTANT'S CONCLUSIONS RELATIVE TO SPECIFICATION COMPLIANCE FOR ALL CONCRETE TESTING WORK.

ITEM SPECIAL STRUCTURES: CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTING (CONTINUED)

THE ODOT PROJECT ENGINEER RESERVES THE RIGHT TO MAKE UNANNOUNCED QUALITY-CONTROL TESTS TO VERIFY PROCEDURES USED AND RESULTS BEING OBTAINED BY THE CONTRACTOR. THE CONCRETE TECHNICIAN SHALL WORK UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO, WHO WILL MONITOR THE CONCRETE TEST RESULTS. THE FINAL INSPECTION REPORTS FOR EACH COMPLETED ITEM SHALL BE SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO, CERTIFYING THAT ALL CONCRETE TESTS PROVIDED BY THE CONTRACTOR MET APPLICABLE CONTRACT REQUIREMENTS. A FINAL REPORT ISSUED BY THE CONSULTING FIRM SHALL CONTAIN A CERTIFIED STATEMENT OF COMPLIANCE WITH ODOT SPECIFICATIONS AND ANY OTHER CONCLUSIONS REGARDING THE CONCRETE MATERIALS INCORPORATED INTO THE PROJECT. SUCH STATEMENT SHALL BE SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO. AND, THE CONCRETE CONSULTANT SHALL BE REQUIRED TO ATTEND MONTHLY PROGRESS MEETINGS AS REQUIRED BY THE PROJECT ENGINEER.

ADDITIONALLY, THE CONTRACTOR SHALL BE REQUIRED TO KEEP A POSTED LIST OF BEAM AND CYLINDER IDENTIFICATION NUMBERS FOR THE PURPOSE OF IDENTIFYING THE CORRESPONDING PLACEMENT LOCATION AND CONCRETE SPECIFICATION ITEM.

PAYMENT SHALL BE BID AS LUMP SUM FOR ITEM SPECIAL STRUCTURES: CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTION. THE ITEM WILL BE PAID FOR AS FOLLOWS:

UPON APPROVAL OF CONSULTANT 20%
PROGRESSIVE EQUIVALENT PAYMENTS 50%
UPON SUBMISSION OF FINAL REPORT 30%

THE TECHNICIAN SHALL HAVE THE FULL EFFECT AND AUTHORITY OF AN ODOT PROJECT INSPECTOR IN DETERMINING ACCEPTABILITY OF MATERIAL AND CONCRETE PLACEMENT PRACTICES.

DESIGN AGENCY



Stantec
1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

116046

SHEET

P.4

TOTAL

60

ITEM 614 - MAINTAINING TRAFFIC

MAINTAIN A MINIMUM OF 1-12' LANE OF TRAFFIC AT ALL TIMES, EXCEPT RAMP AND LANE CLOSURES MAY BE PERFORMED IN ACCORDANCE WITH THE LANE VALUE CONTRACT TABLE, BY USE OF THE EXISTING AND COMPLETED PAVEMENT.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR SPECIAL EVENTS:

- MEMORIAL DAY
- FOURTH OF JULY (OBSERVED)
- LABOR DAY

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR SPECIAL EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER THE LANE VALUE CONTRACT (PN 127).

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.]

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

ITEM 614 - MAINTAINING TRAFFIC (CONTINUED)

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
ROAD CLOSURES	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ITEM 614 - BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 - BARRIER REFLECTOR, TYPE 1
(BIDIRECTIONAL) _____ 15 EACH

ITEM 614 - OBJECT MARKER, ONE-WAY _____ 15 EACH

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

EXISTING TRAFFIC CONTROL

EXISTING SHOULDER CLOSURE SIGNS, PORTABLE CONCRETE BARRIER AND ATTENUATORS ARE ODOT OWNED AND WILL BECOME THE RESPONSIBILITY AND PROPERTY OF THE CONTRACTOR WHEN THE CONTRACT IS SIGNED, UNLESS STATED OTHERWISE IN THIS NOTE.

WITHIN 30 CALENDER DAYS OF THE SIGNED CONTRACT, THE PROPOSED MOT SIGNS SHOWN ON SHEET P.6 TO P.11 AND THE EXISTING SHOULDER CLOSURE SIGNS INCLUDING SUPPORTS SHALL BE REMOVED. SIGNS FURNISHED BY CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY SIGNS BROUGHT ON THE PROJECT, WHICH HAVE BEEN PREVIOUSLY USED ELSEWHERE, WILL NOT BE ACCEPTED. THE EXISTING SHOULDER CLOSURE SIGNS ARE NOT PERMITTED TO BE REUSED.

WITHIN 30 CALENDER DAYS OF THE SIGNED CONTRACT, INSTALL THE LONG-TERM LANE CLOSURE INCLUDING PORTABLE BARRIER NECESSARY TO PERFORM THE SLIDE REPAIR WORK DETAILED IN THESE PLANS. THE EXISTING PORTABLE CONCRETE BARRIER MAY BE REUSED IF IT IS IN ACCEPTABLE CONDITION. MARGINAL AND UNACCEPTABLE BARRIER SHALL BE REMOVED.

WITHIN 7 CALENDAR DAYS OF THE SIGNED CONTRACT, INSTALL 2 WORK ZONE IMPACT ATTENUATORS TO REPLACE THE EXISTING IMPACT ATTENUATORS LOCATED AT EACH SHOULDER CLOSURE. COORDINATE THIS WORK WITH THE PROJECT ENGINEER/ODOT-HAMILTON COUNTY. ODOT FORCES WILL REMOVE THE EXISTING ATTENUATOR WITHIN THE CONTRACTOR'S SHORT TERM LANE CLOSURE USED FOR INSTALLATION.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK:

ITEM 614 - WORK ZONE IMPACT ATTENUATOR,
24" WIDE HAZARDS, (BIDIRECTIONAL) _____ 2 EACH

ITEM 614 - DETOUR SIGNING

A LUMP SUM QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO INCLUDE FURNISHING, INSTALLING, AND REMOVING THE DETOUR SIGNING AND ASSOCIATED SIGN SUPPORTS.

ITEM 614 - DETOUR SIGNING _____ LUMP SUM

DESIGN AGENCY



Stantec
1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

116046

SHEET

P.5

TOTAL

60

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

FOR OPERATIONS WITHOUT POSITIVE PROTECTION OCCURING WITHIN 10 FEET OF AN OPEN TRAVELED LANE THAT MEET ALL OF THE FOLLOWING CRITERIA:

ON A MULTI-LANE DIVIDED INTERSTATE, OTHER FREEWAY OR EXPRESSWAY; AND
AN AUTHORIZED SPEED LIMIT OF 45 MPH OR GREATER THAT IS IN EFFECT AT THE TIME OF THE OPERATION; AND
AADT OF 50,000 (OR AADT OF 30,000 WITH 25% OR HIGHER PERCENT TRUCKS)

"WITHOUT POSITIVE PROTECTION" MEANS USE OF DRUMS, CONES, SHADOW VEHICLE, ETC, WITHOUT PROTECTION FROM PORTABLE BARRIER OR OTHER RIGID BARRIER ALONG THE WORK AREA. THIS PHRASE DOES NOT APPLY TO CASES WHERE POSITIVE PROTECTION IS REQUIRED. MOBILE OPERATIONS ARE REGARDED AS "WITHOUT POSITIVE PROTECTION" FOR WORK ZONES USING A COMBINATION OF BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES (CONES, DRUMS, ETC), THE DESIGNATION SHALL BE BASED UPON THE TYPE OF DEVICES USED IN THE AREA THAT WORKERS ARE LOCATED.

IF MULTIPLE ACTIVE LOCALIZED QUALIFYING WORK AREAS OCCUR WITHOUT POSITIVE PROTECTION, PER MAINLINE TRAFFIC DIRECTION, PROVIDE A UNIFORMED LEO AND OFFICIAL PATROL CAR IN ADVANCE OF:

THE FIRST ACTIVE WORK AREA THAT DRIVERS WILL ENCOUNTER; OR
THE ACTIVE WORK AREA Laterally CLOSEst TO THE OPEN TRAVELED LANE; OR
OTHER LOCATION AS APPROVED BY THE ENGINEER.

THE UNIFORMED LEO AND OFFICIAL PATROL CAR MAY RELOCATE AMONG THE LISTED LOCATIONS AS APPROPRIATE AS THE OPERATIONS PROCEED IN THE LOCALIZED QUALIFYING WORK AREAS.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONTINUED)

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE THAT SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT

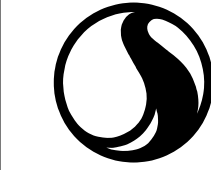
LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 40 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

DESIGN AGENCY



Stantec

1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

116046

SHEET

P.6

TOTAL

60

- LEGEND
- 

DIRECTION OF TRAVEL
- 

REMOVAL OF EXISTING MARKINGS
- 

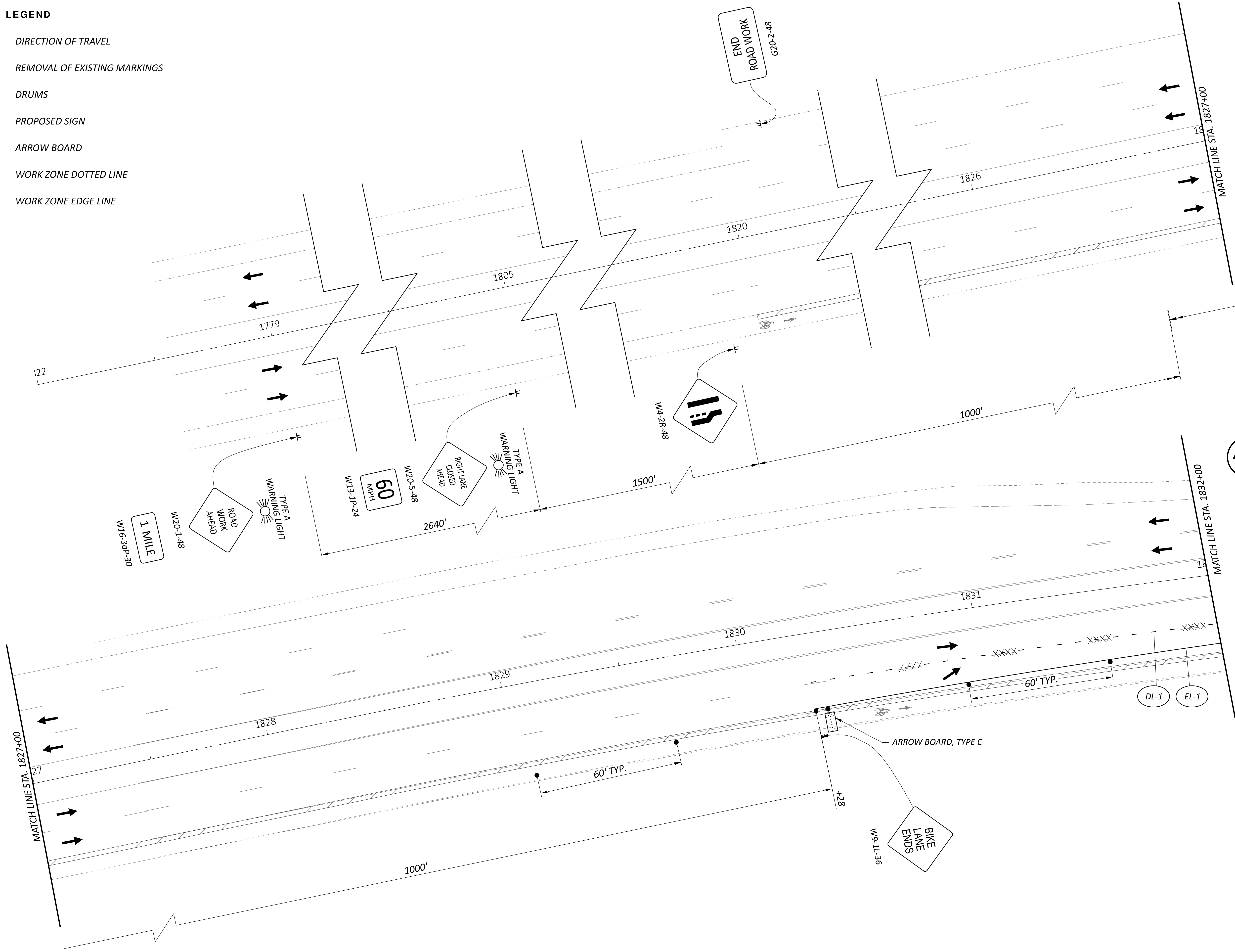
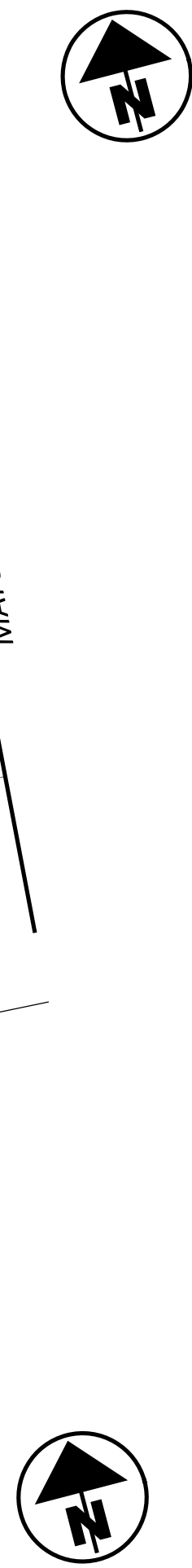
DRUMS
- 

PROPOSED SIGN
- 

ARROW BOARD
- 

WORK ZONE DOTTED LINE
- 

WORK ZONE EDGE LINE



MAINTENANCE OF TRAFFIC
S.R. 52 - 36.85

DESIGN AGENCY



Stantec
1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

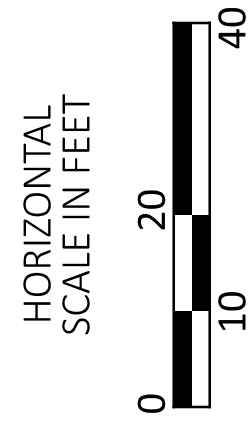
116046

SHEET

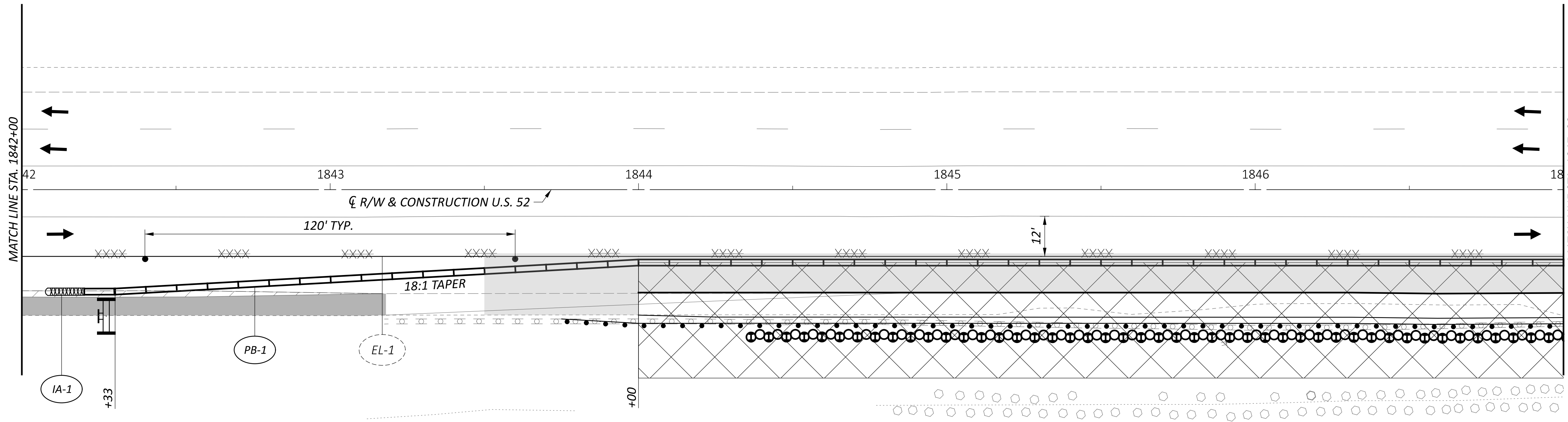
P.7

TOTAL

60

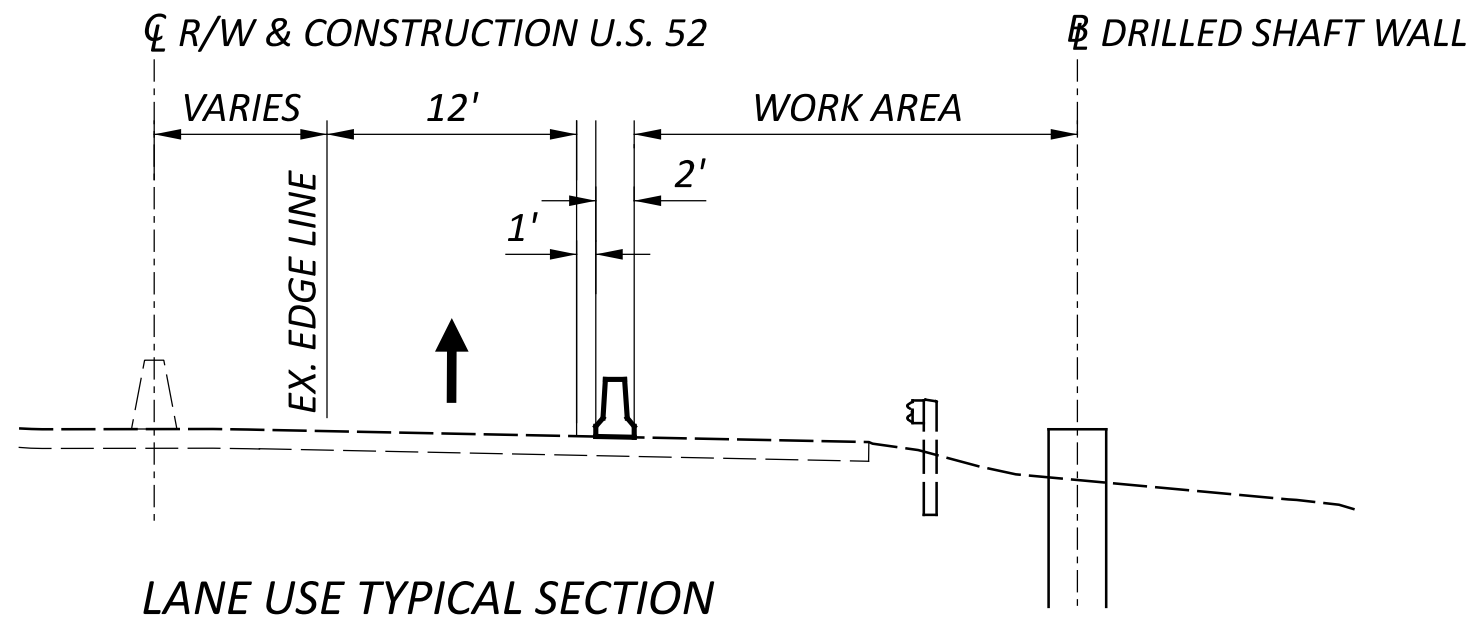
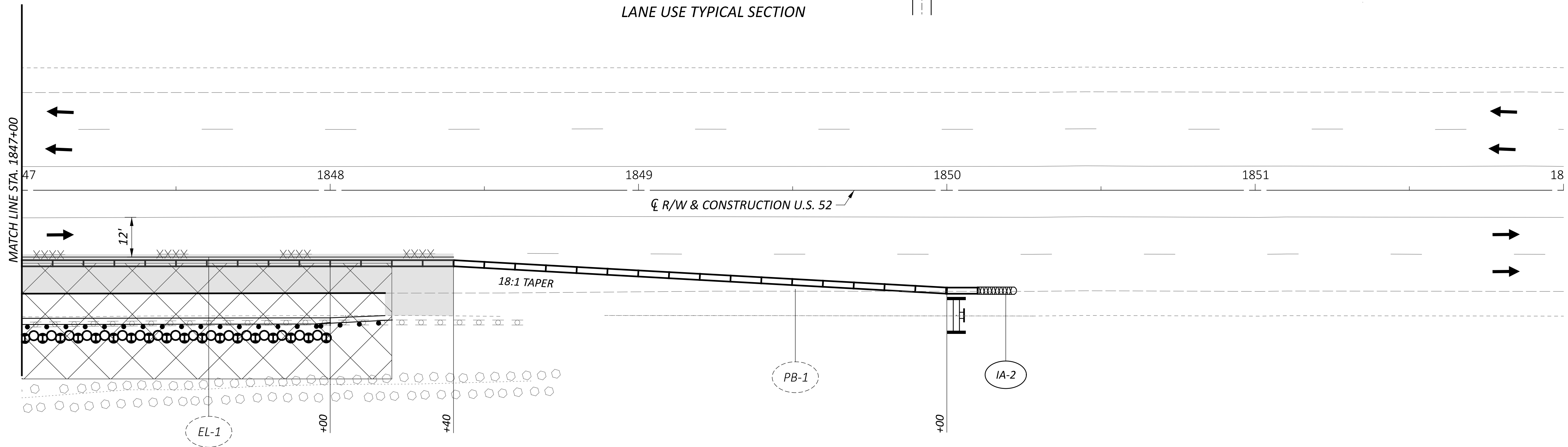
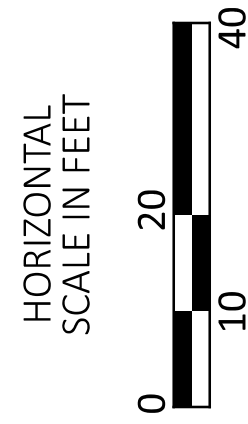


The logo for Stantec Design Agency features a stylized circular emblem with a black and white swirl design. Below the emblem, the text "Stantec" is written in a large, bold, sans-serif font. Underneath "Stantec", the address "1500 LAKE SHORE DRIVE SUITE 100 COLUMBUS, OH 43204" is listed, followed by the phone number "(614) 486-4383". A horizontal line separates the contact information from the project details. Below the line, the roles "DESIGNER" and "REVIEWER" are listed, followed by the names "ZTM" and "TCM" respectively. The project ID "PROJECT ID 116046" is displayed in a large, bold font. At the bottom, a table shows the sheet count: "SHEET P.8" and "TOTAL 60".



LEGEND

- | | | | |
|--|------------------------------|--|--|
| | DIRECTION OF TRAVEL | | PORTABLE CONCRETE BARRIER |
| | REMOVAL OF EXISTING MARKINGS | | WORK ZONE DOTTED LINE |
| | DRUMS | | EXISTING BIKE LANE CONFLICT ZONE MARKING |
| | TYPE III BARRICADE | | WORK ZONE DOTTED LINE |
| | IMPACT ATTENUATOR | | WORK ZONE EDGE LINE |



MAINTENANCE OF TRAFFIC
S.R. 52 - 36.85

DESIGN AGENCY



1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

116046

SHEET

P.9

TOTAL

60

- 

DIRECTION OF TRAVEL
- 

REMOVAL OF EXISTING MARKINGS
- 

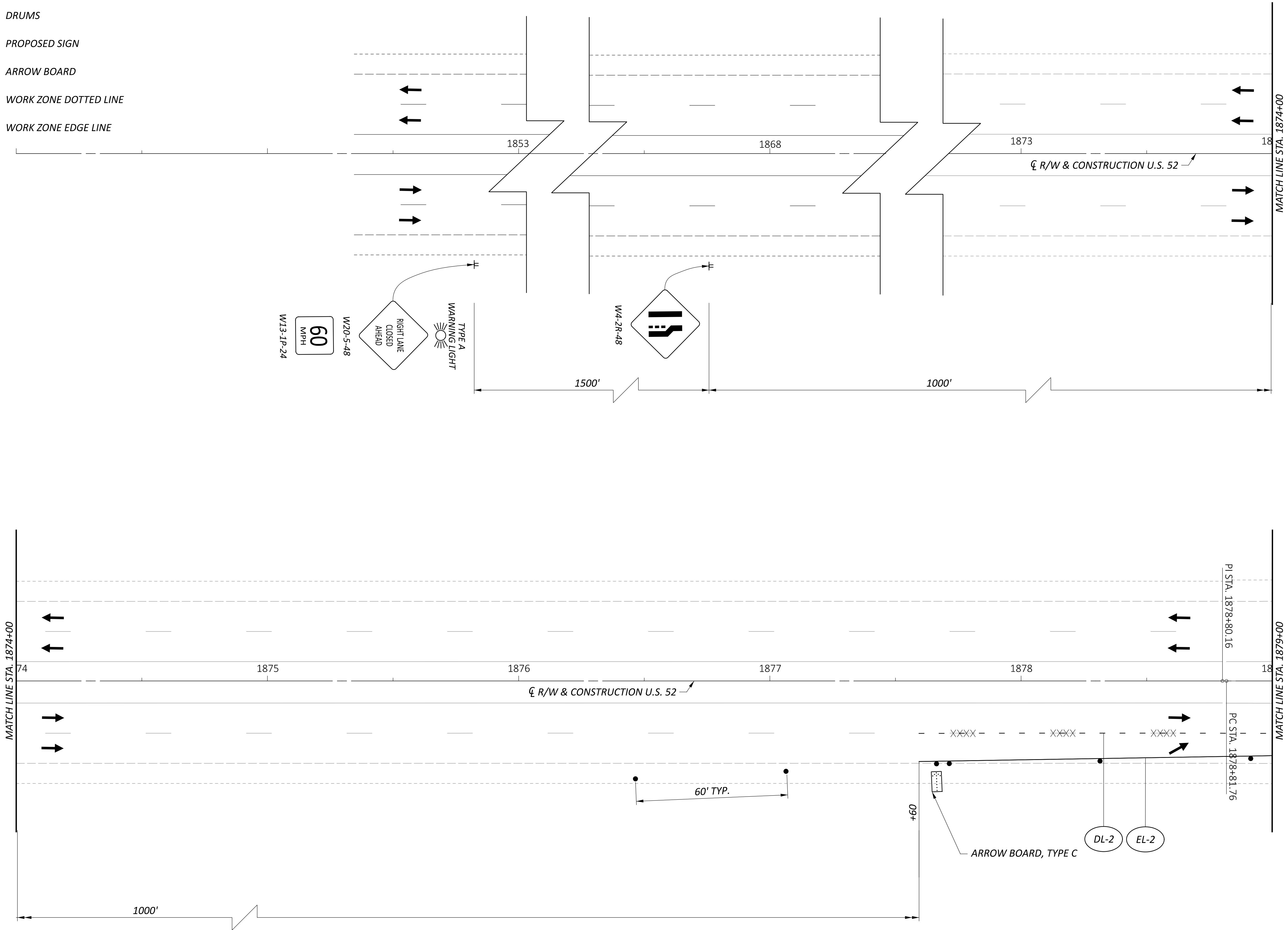
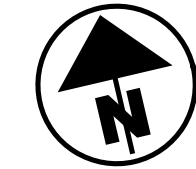
DRUMS
- 

PROPOSED SIGN
- 

ARROW BOARD
- 

WORK ZONE DOTTED LINE
- 

WORK ZONE EDGE LINE



MAINTENANCE OF TRAFFIC
S.R. 52 - 37.65

DESIGN AGENCY



Stantec
1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

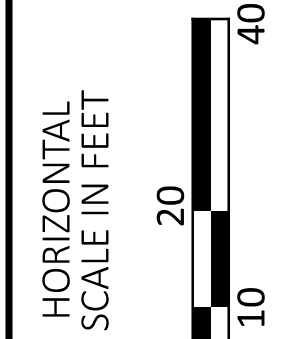
116046

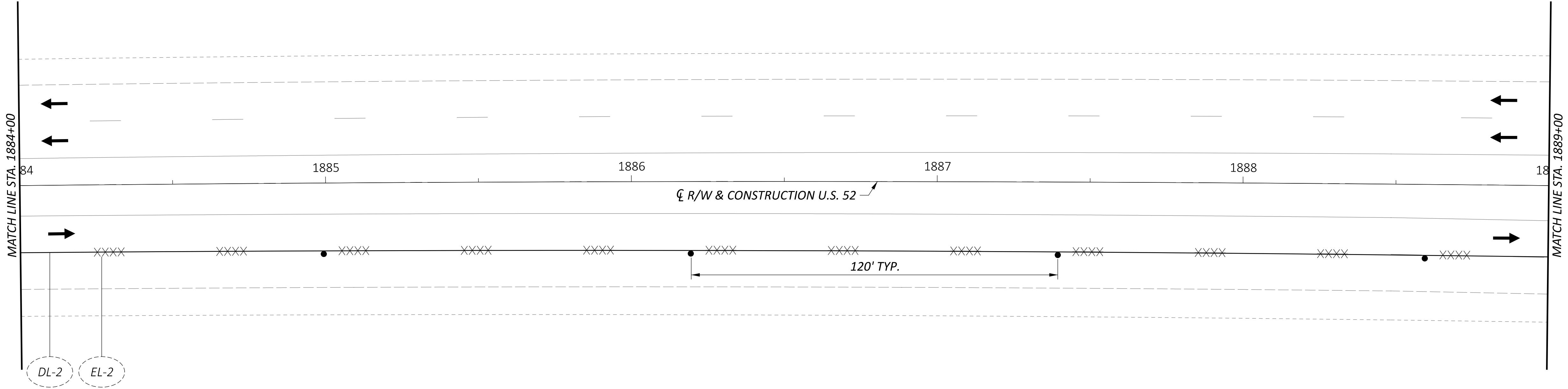
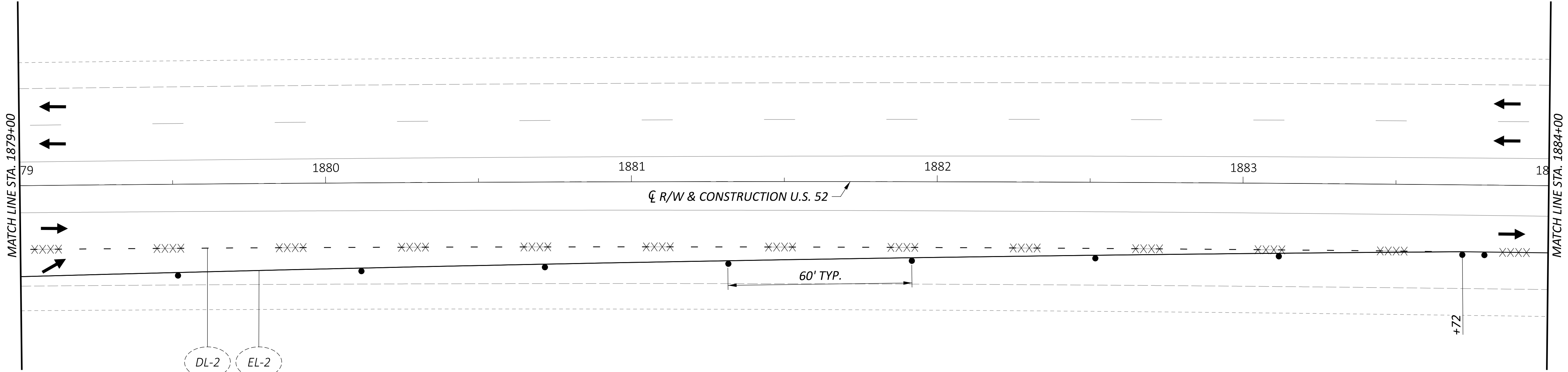
SHEET

P.10

TOTAL

60



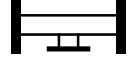


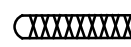
- LEGEND**
- DIRECTION OF TRAVEL
 - REMOVAL OF EXISTING MARKINGS
 - DRUMS
 - WORK ZONE DOTTED LINE
 - WORK ZONE EDGE LINE

- 

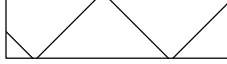
DIRECTION OF TRAVEL
- 

REMOVAL OF EXISTING MARKINGS
- 

DRUMS
- 

TYPE III BARRICADE
- 

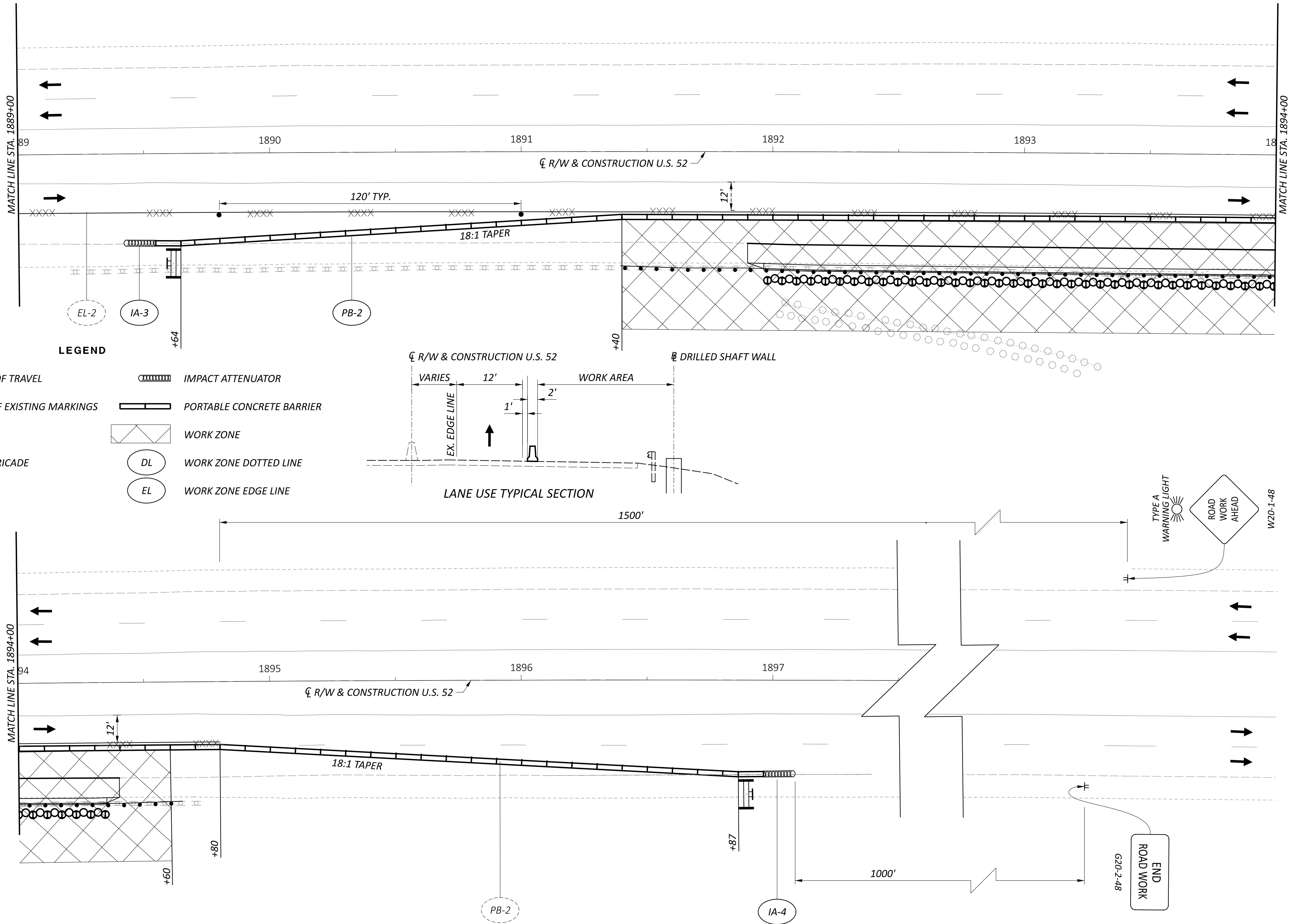
IMPACT ATTENUATOR
- 

PORTABLE CONCRETE BARRIER
- 

WORK ZONE
- 

WORK ZONE DOTTED LINE
- 

WORK ZONE EDGE LINE



MAINTENANCE OF TRAFFIC
S.R. 52 - 37.65

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	6	15	16	35	37	38	39					01/STR/01						
LS													LS	201	11000	LS		ROADWAY	
				504									504	202	23000	504	SY	CLEARING AND GRUBBING	
			775										775	202	38000	775	FT	PAVEMENT REMOVED	
			121										121	203	10000	121	CY	GUARDRAIL REMOVED	
			87										87	203	20000	87	CY	EXCAVATION	
																		EMBANKMENT	
				708									708	204	10000	708	SY		
				1									1	204	45000	1	HOUR	SUBGRADE COMPACTION	
			50										50	606	15150	50	FT	PROOF ROLLING	
			725										725	606	15250	725	FT	GUARDRAIL, TYPE MGS HALF POST SPACING	
													LS	878	25000	LS		GUARDRAIL, TYPE MGS QUARTER POST SPACING	
																		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	
			25										25	601	21050	25	SY	EROSION CONTROL	
			1,080										1,080	659	10000	1,080	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	
0.14													0.14	659	20000	0.14	TON	SEEDING AND MULCHING	
0.21													0.21	659	31000	0.21	ACRE	COMMERCIAL FERTILIZER	
6													6	659	35000	6	MGAL	LIME	
																		WATER	
													10,000	832	30000	10,000	EACH	EROSION CONTROL	
			668										668	605	11100	668	FT	DRAINAGE	
			668										668	605	14000	668	FT	6" SHALLOW PIPE UNDERDRAINS	
			62										62	611	00510	62	FT	6" BASE PIPE UNDERDRAINS	
			2										2	611	99710	2	EACH	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
																		PRECAST REINFORCED CONCRETE OUTLET	
				7,316									7,316	254	01000	7,316	SY	PAVEMENT	
				150									150	301	56000	150	CY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"	
				139									139	304	20000	139	CY	ASPHALT CONCRETE BASE, PG64-22, (449), 8"	
				719									719	407	20000	719	GAL	AGGREGATE BASE, 7"	
				354									354	441	50000	354	CY	NON-TRACKING TACK COAT	
																		ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
													250	609	12000	250	FT		
																		COMBINATION CURB AND GUTTER, TYPE 2	
																		TRAFFIC CONTROL	
			45										45	621	00100	45	EACH	RPM	
			45										45	621	54000	45	EACH	RAISED PAVEMENT MARKER REMOVED	
			8										8	626	00110	8	EACH	BARRIER REFLECTOR, TYPE 2 (UNIDIRECTIONAL)	
			28.5										28.5	630	03100	28.5	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
			12										12	630	80100	12	SF	SIGN, FLAT SHEET	
			1										1	630	84900	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
			1										1	630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			0.7										0.7	644	00104	0.7	MILE	EDGE LINE, 6"	
			0.67										0.67	644	00204	0.67	MILE	LANE LINE, 6"	
			1,290										1,290	644	00700	1,290	FT	TRANSVERSE/DIAGONAL LINE	
			3										3	644	01630	3	EACH	BIKE LANE SYMBOL MARKING	
			1,456										1,456	644	60000	1,456	SF	GREEN COLORED PAVEMENT FOR BIKE LANES	
					2,400								2,400	507	00400	2,400	FT	RETAINING WALLS (001 & 002)	
													1,424	507	00400	1,424	FT	STEEL PILES, MISC.: SOLDIER PILES W24x162	32
LS						1,424							LS	511	81200	LS		STEEL PILES, MISC.: SOLDIER PILES W27x129	32
													249	511	81300	249	EACH	CONCRETE, MISC.: CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTING	4
							60	249					60	518	21200	60	CY	CONCRETE, MISC.: PRECAST CONCRETE PANEL	32
																		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
					1,501	752							2,253	524	94703	2,253	FT	DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK, AS PER PLAN	32
					640	420							1,060	524	94705	1,060	FT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK, AS PER PLAN	32
					1,113	513							1,626	524	95000	1,626	FT	DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED	32
					3								3	524	95000	3	FT	DRILLED SHAFTS, MISC.: EXTENSION	32

GENERAL SUMMARY

DESIGN AGENCY



Stantec

1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

116046

SHEET

TOTAL

P.13

60

MODEL: Sheet PAPER SIZE: 34x22 (in.) DATE: 1/8/2025 TIME: 3:28:32 PM USER: sparker
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GENERAL SUMMARY

DESIGN AGENCY  Stantec 1500 LAKE SHORE DRIVE, SUITE 100 COLUMBUS, OH 43204 (614) 486-4383	
DESIGNER ZTM	
REVIEWER TCM 09/13/24	
PROJECT ID 116046	
SHEET P.14	TOTAL 60

ROADWAY AND DRAINAGE SUBSUMMARY													
SHEET NO.	REF NO.	STATION		SIDE	202	601	605		606		611		626
					GUARDRAIL REMOVED	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	6" SHALLOW PIPE UNDERDRAIN	6" BASE PIPE UNDERDRAIN	GUARDRAIL, TYPE MGS QUARTER POST SPACING	GUARDRAIL, TYPE MGS HALF POST SPACING	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	PRECAST REINFORCED CONCRETE OUTLET	BARRIER REFLECTOR, TYPE 2, UNIDIRECTIONAL
		FROM	TO		FT	SY	FT	FT	FT	FT	FT	EACH	EACH
17	R-1	1843+75.00	1848+25.00	RT	450.0								
18	R-2	1891+40.00	1894+65.00	RT	325.0								
17	GR-1	1843+75.00	1848+25.00	RT					425.0	25.0			5
18	GR-2	1891+40.00	1894+65.00	RT					300.0	25.0			3
17	D-1	1848+00.00		RT		1.8							
18	D-2	1891+90.00		RT		23.2							
17	UD-1	1844+00.00	1848+17.75	RT				418					
17	UD-2	1844+00.00	1848+17.75	RT			418				22	1	
18	UD-3	1891+90.00	1894+40.00	RT				250					
18	UD-4	1891+90.00	1894+40.00	RT			250				40	1	
TOTALS CARRIED TO GENERAL SUMMARY					775.0	25	668	668	725.0	50.0	62	2	8

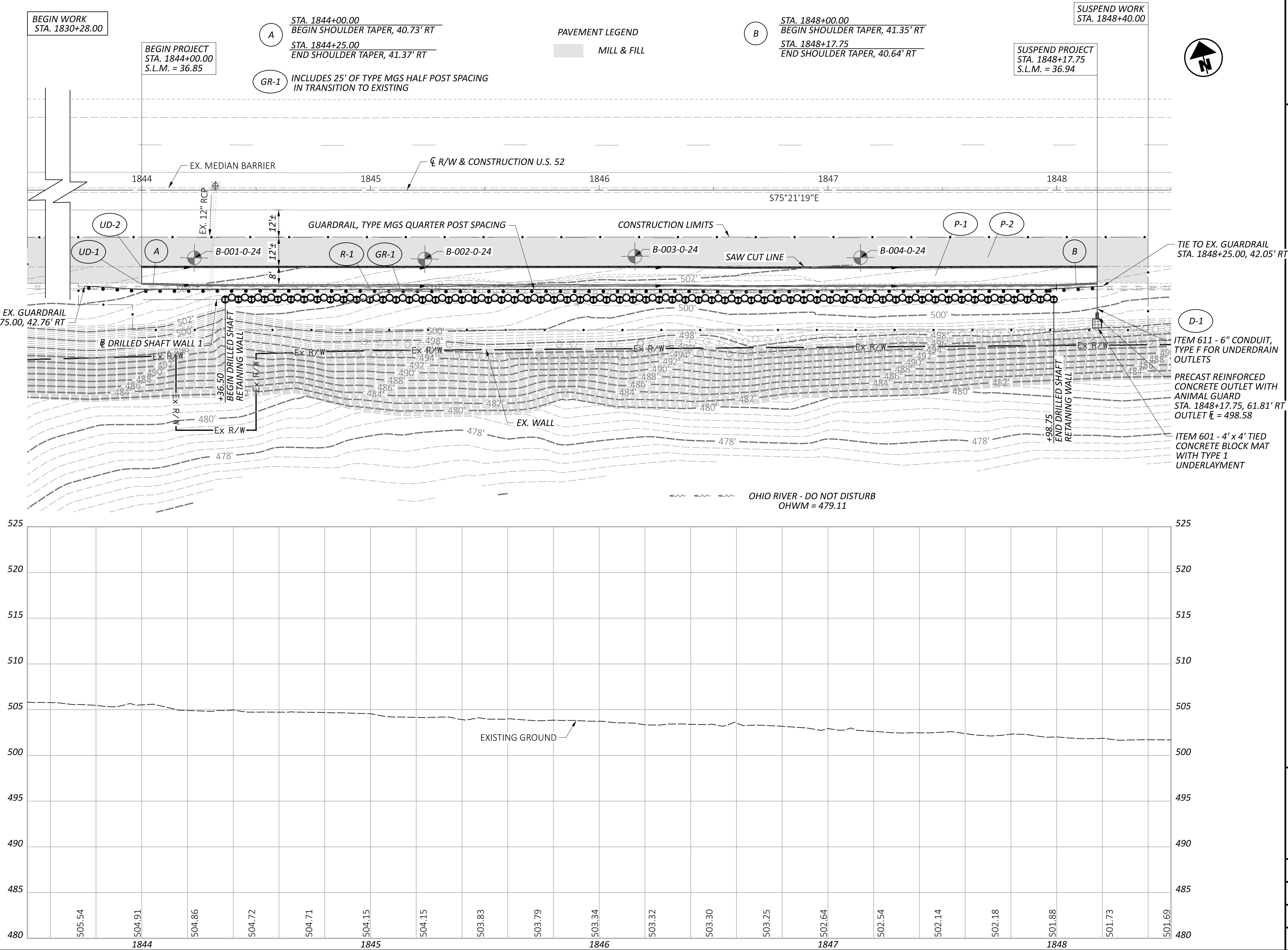
TRAFFIC CONTROL QUANTITIES										
SHEET NO.	REF NO.	STATION		621		644				
				RPM, TWO-WAY WHITE/RED	RAISED PAVEMENT MARKER REMOVED	EDGE LINE, 6"	TRANSVERSE / DIAGONAL LINE	BIKE LANE SYMBOL MARKING	LANE LINE, 6"	GREEN COLORED PAYMENT FOR BIKE LANES
		FROM	TO	EACH	EACH	MI	FT	EACH	MI	SF
28-29	EL-1	1830+28.00	1848+40.00			0.34				
28-29	EL-2	1877+60.00	1894+80.00			0.33				
28-29	LL-1	1830+28.00	1848+40.00	23	23				0.34	
28-29	LL-2	1877+60.00	1894+80.00	22	22				0.33	
28-29	TW-1	1830+28.00	1843+18.00				1290			
28	BA-1	1830+68.00						1		
28	BA-2	1836+23.00						1		
28	BA-3	1839+36.00						1		
29	BL-1	1841+36.00	1843+18.00							1456
29	BL-2	1843+18.00	1844+90.00			0.03				
TOTALS CARRIED TO GENERAL SUMMARY				45	45	0.70	1290	3	0.67	1456

EARTHWORK AND SEEDING TABLE				
STATION		203	203	659
		EXCAVATION	EMBANKMENT	SEEDING AND MULCHING
FROM	TO	CY	CY	SY
S.R. - 36.85				
1844+00.00	1844+50.00	8	2	51
1844+50.00	1845+00.00	9	5	95
1845+00.00	1845+50.00	9	9	111
1845+50.00	1846+00.00	9	11	108
1846+00.00	1846+50.00	10	10	109
1846+50.00	1847+00.00	10	6	105
1847+00.00	1847+50.00	8	3	98
1847+50.00	1848+00.00	9	2	92
S.R. - 37.65				
1891+90.00	1892+00.00	2	1	9
1892+00.00	1892+50.00	12	6	62
1892+50.00	1893+00.00	12	6	67
1893+00.00	1893+50.00	8	10	71
1893+50.00	1894+00.00	8	12	67
1894+00.00	1894+40.00	7	4	35
TOTALS CARRIED TO GENERAL SUMMARY		121	87	1080

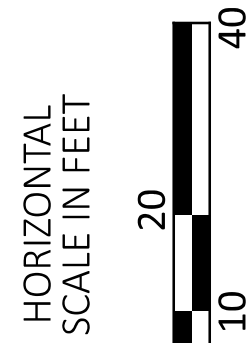
SIGNING SUBSUMMARY									
SHEET NO.	REF NO.	STATION	SIDE	CODE	SIZE (INCHES)	630			
						GROUND MOUNTED SUPPORT, NO. 3 POST	SIGN, FLAT SHEET	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
29	R-1	1845+90.00	RT					1	1
29	S-1	1848+10.00	RT	R2-1-48	36x48	14.0 / 14.5	12		
TOTALS CARRIED TO GENERAL SUMMARY						28.5	12	1	1

MAINTENANCE OF TRAFFIC QUANTITIES							
REF NO.	SHEET NO.	STATION		614			622
				WORK ZONE IMPACT ATTENUATOR 24" HAZARDS, (BIDIRECTIONAL)	WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I, WHITE	WORK ZONE DOTTED LINE, CLASS I, 6", 740.06, TYPE I	PORTABLE BARRIER, UNANCHORED
		FROM	TO	EACH	MILE	FT	FT
DL-1	7-8	1830+28.00	1836+37.00			609	
DL-2	10-11	1877+60.00	1883+72.00			612	
EL-1	7-9	1830+28.00	1848+40.00		0.34		
EL-2	10-12	1877+60.00	1894+80.00		0.33		
PB-1	9	1842+33.00	1850+00.00	2			767
PB-2	12	1889+64.00	1896+87.00	2			723
TOTALS CARRIED TO GENERAL SUMMARY				4	0.67	1221	1490

PAVEMENT CALCULATIONS															
REF NO.	STATION		AREA / CADD AREA	SIDE	202	204		254	301	304	407		441		609
					PAVEMENT REMOVED	SUBGRADE COMPACTION	PROOF ROLLING	1.5" PAVEMENT PLANING, ASPHALT CONCRETE	8" ASPHALT CONCRETE BASE, PG64-22, (449)	7" AGGREGATE BASE	NON-TRACKING TACK COAT (AREA X 0.055 /9) X 3	NON-TRACKING TACK COAT (AREA X 0.085 / 9)	1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	3" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	COMBINATION CURB AND GUTTER, TYPE 2
	FROM	TO			SF	SY	SY	HR	SY	CY	CY	GAL	GAL	CY	CY
	S.R. 52 - 36.85														
P-1	1844+00.00	1848+17.75	3328	RT	287	409	0.50		86	80	62			31	
P-2	1830+28.00	1848+40.00	33234	RT				3693				314	154		
	S.R. 52 - 37.65														
P-3	1891+90.00	1894+40.00	2478	RT	217	299	0.50		64	59	45			23	
P-4	1877+60.00	1894+80.00	32605	RT				3623				308	151		
TOTALS					504	708	1.0	7316	150	139	107	622	305	54	250
TOTALS CARRIED TO GENERAL SUMMARY					504	708	1.0	7316	150	139	729		359		250



PLAN AND PROFILE - 36.85
STA. 1843+50.00 TO STA. 1848+50.00



MODEL: CLP_2 - Plan 1 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 1/8/2025 TIME: 3:29:02 PM USER: sparker
pw:\ohiodot-pw\bartleye.com\ohiodot-pw-02\Documents\01 Active Projects\District 08\Hamilton\116046\401-Engineering, Stantec\Roadway\Sheets\116046 GP002.dgn

RESUME WORK
STA. 1877+60.00

RESUME PROJECT
STA. 1891+90.00
S.L.M. 37.65

STA. 1891+90.00
BEGIN SHOULDER TAPER 1 & 2, 44.28' RT

STA. 1891+96.50
END SHOULDER TAPER 1, 47.07' RT
BEGIN CURB

STA. 1892+15.00
END SHOULDER TAPER 2, 44.99' RT

PAVEMENT LEGEND

 MILL & FILL

END PROJECT
STA. 1894+40.00
S.L.M. 37.71

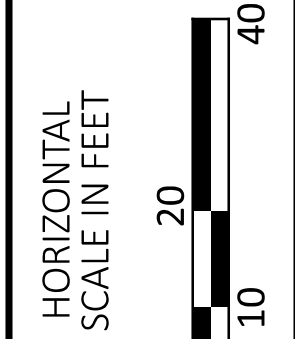
END WORK
STA. 1894+80.00

STA. 1894+30.00
BEGIN SHOULDER TAPER 1, 45.93' RT

STA. 1894+35.00
BEGIN SHOULDER TAPER 2, 48.30' RT

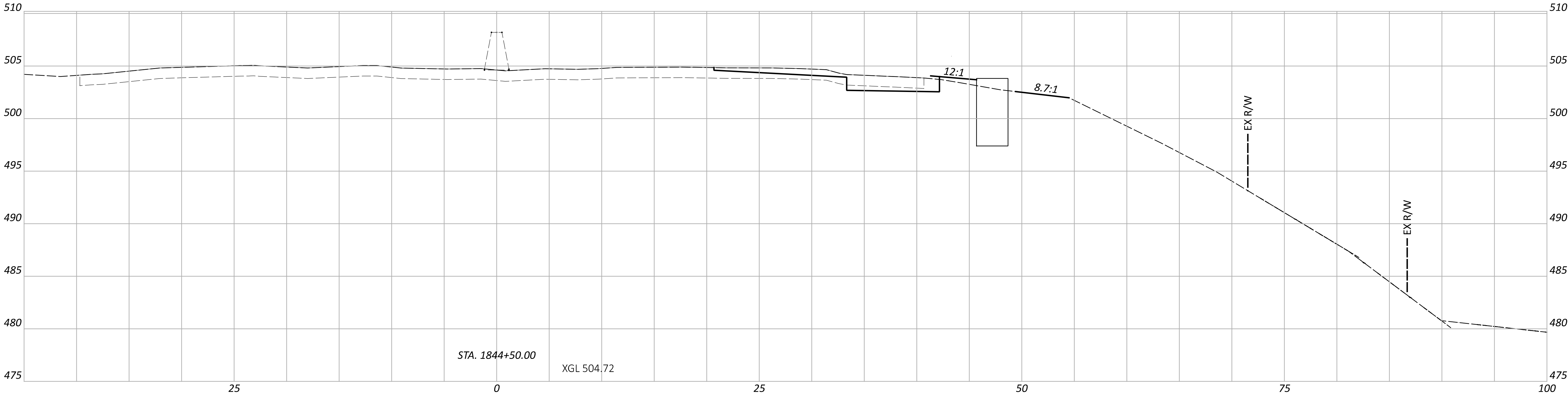
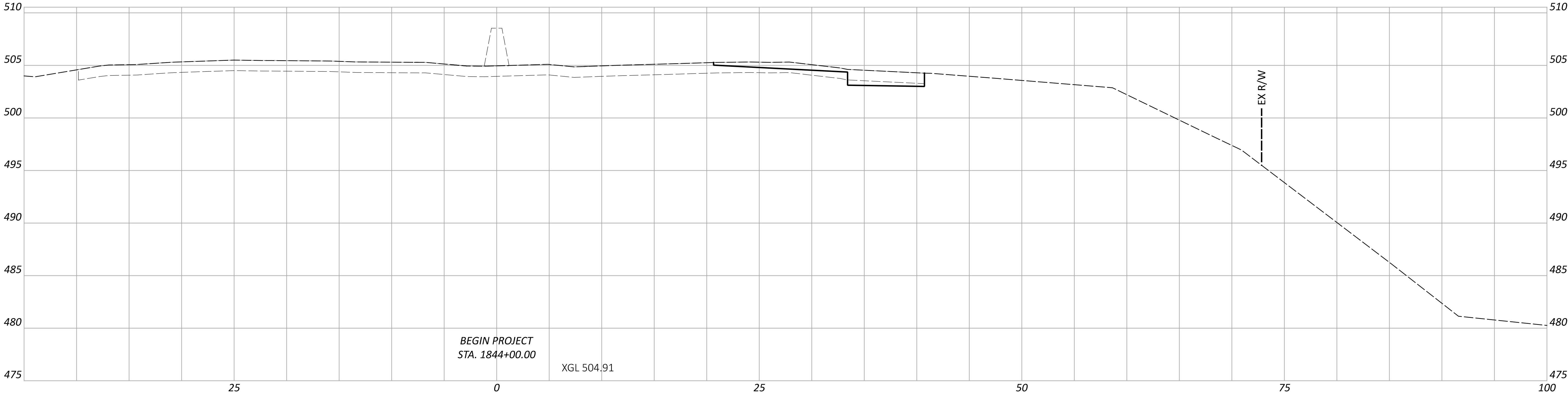
STA. 1894+40.00
END CURB

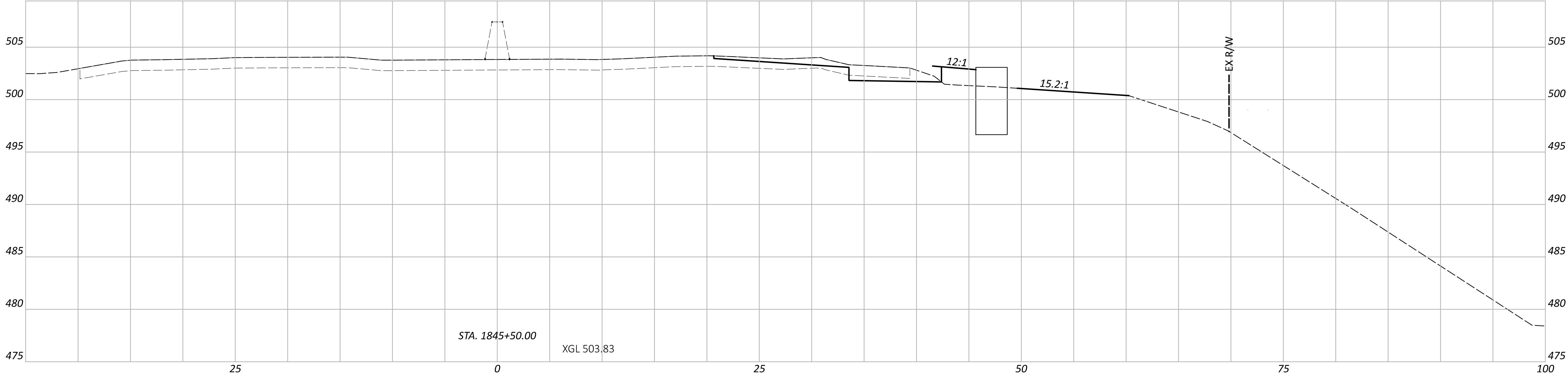
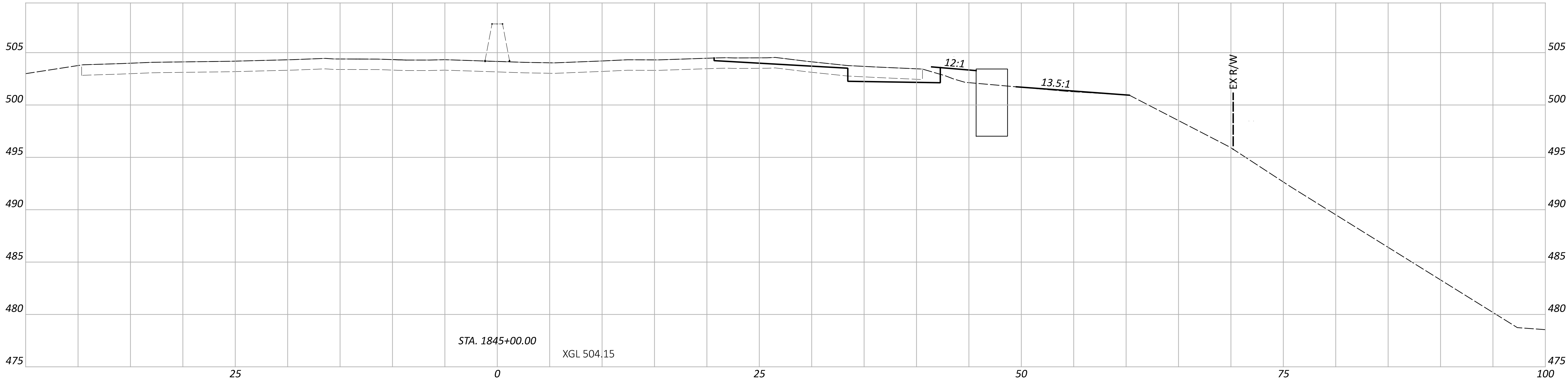
STA. 1894+40.00
END SHOULDER TAPER 1 & 2, 45.67' RT



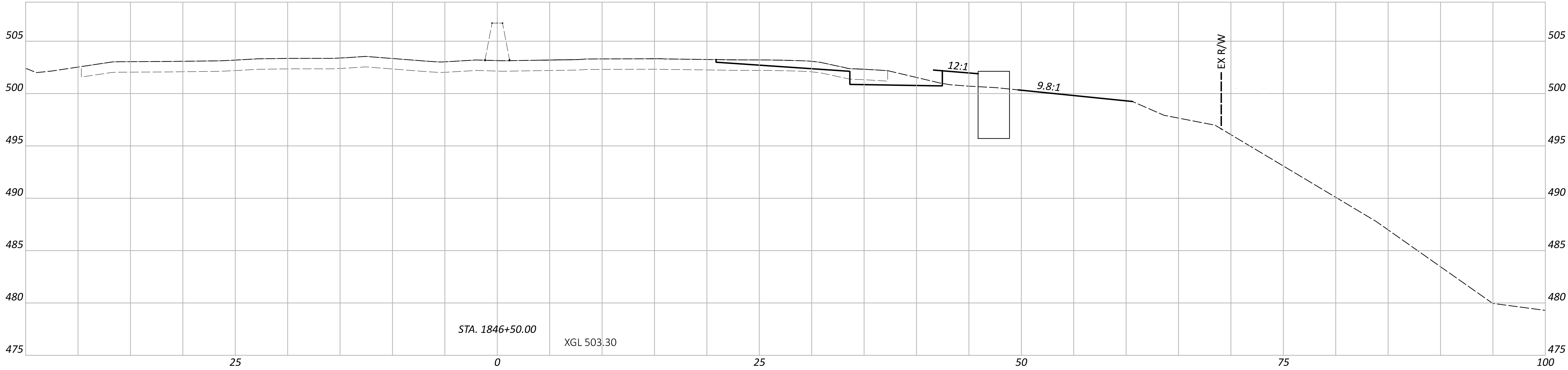
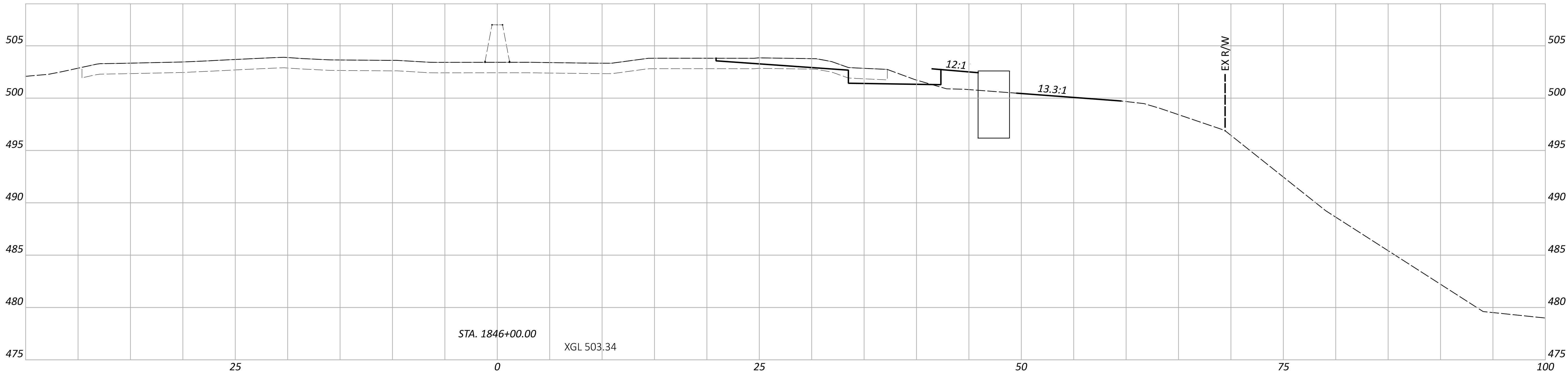
PLAN AND PROFILE - 37.65
STA. 1891+00.00 TO STA. 1896+00.00



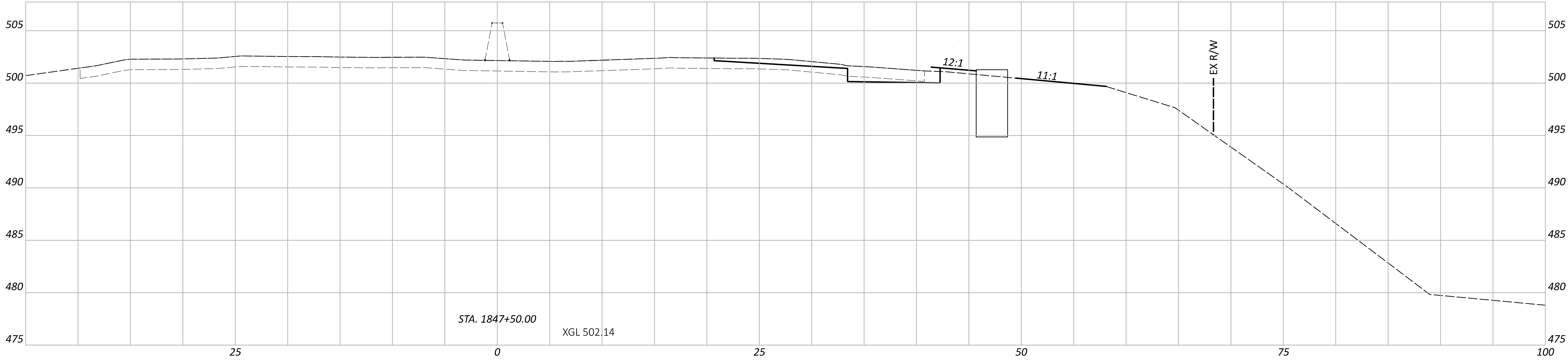
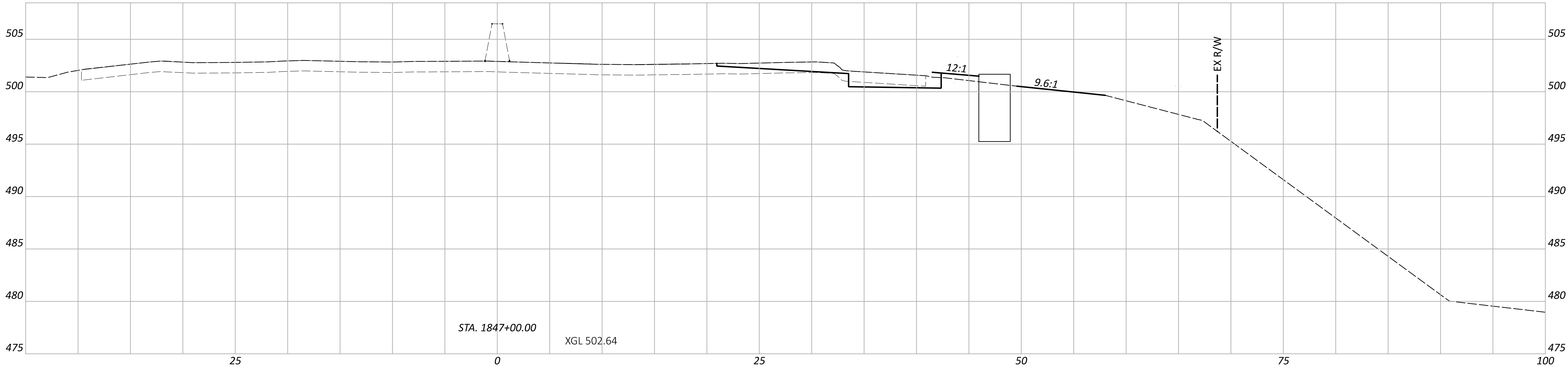




CROSS SECTIONS - 36.85
STA. 1845+00.00 TO STA. 1845+50.00



CROSS SECTIONS - 36.85
STA. 1846+00.00 TO STA. 1846+50.00



CROSS SECTIONS - 36.85
STA. 1847+00.00 TO STA. 1847+50.00

DESIGN AGENCY



Stantec
1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

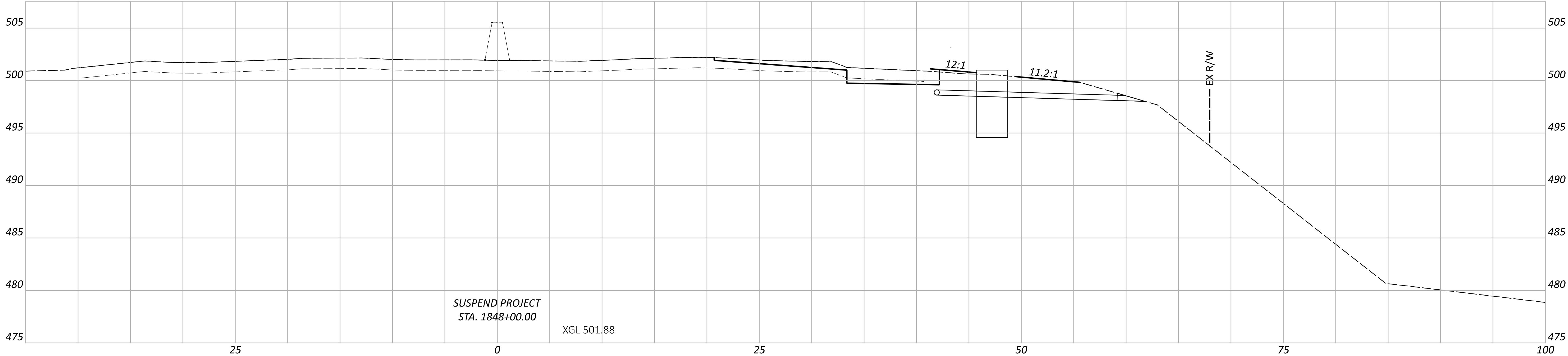
116046

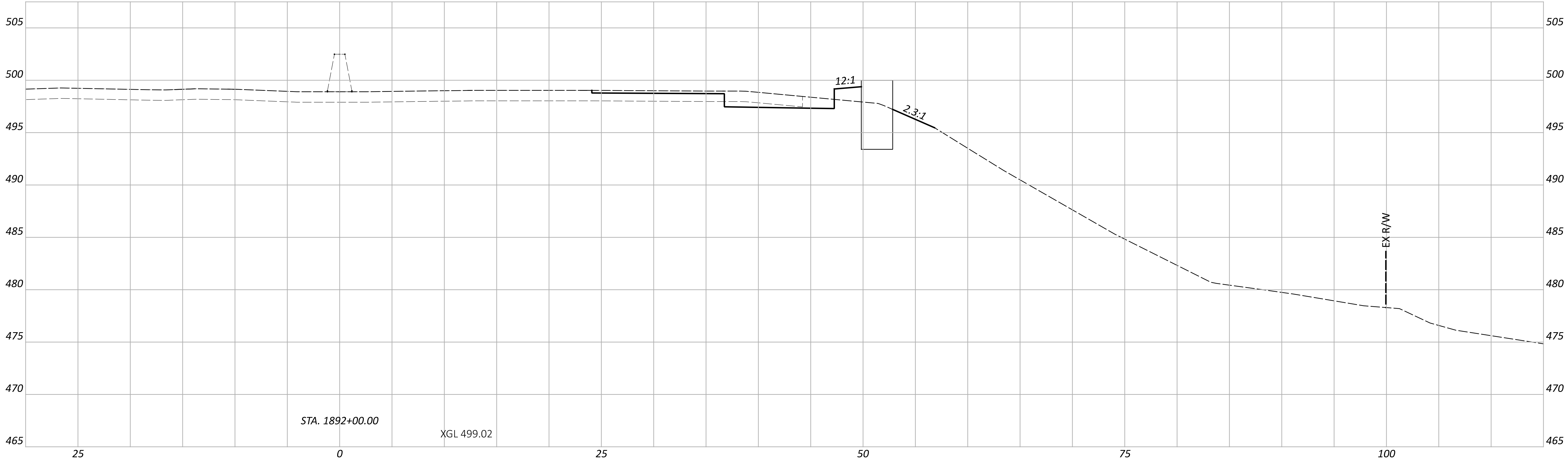
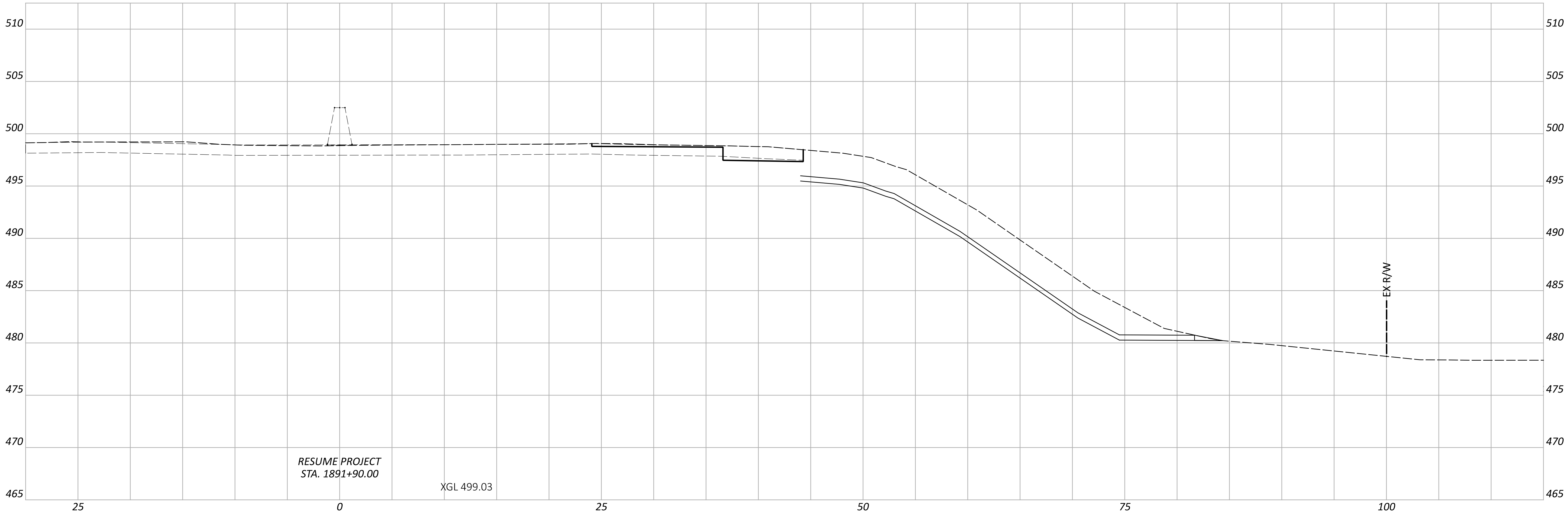
SHEET

P.22

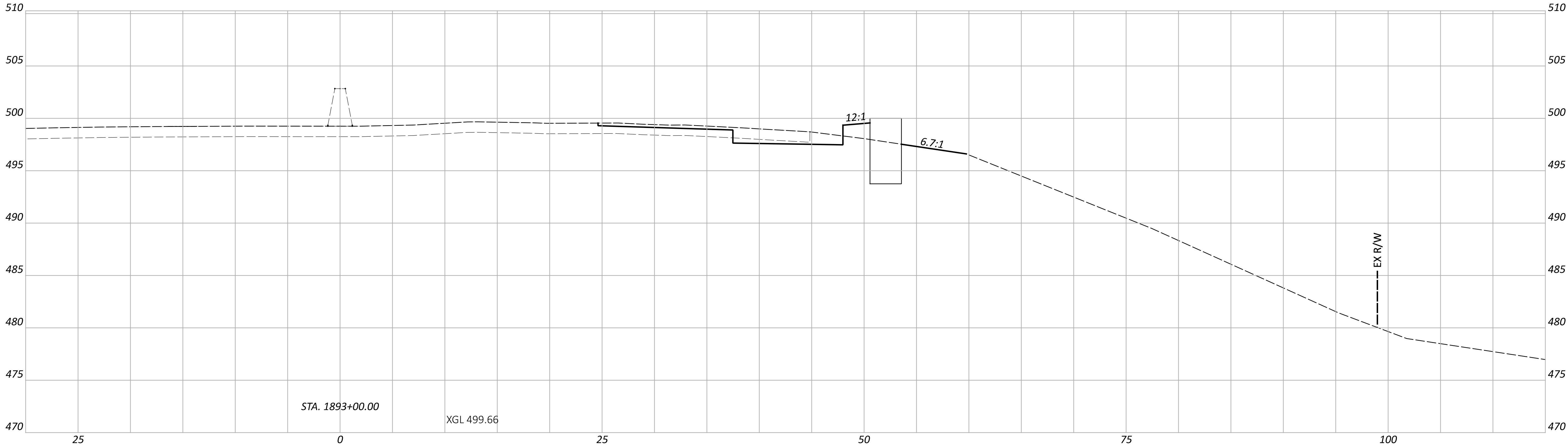
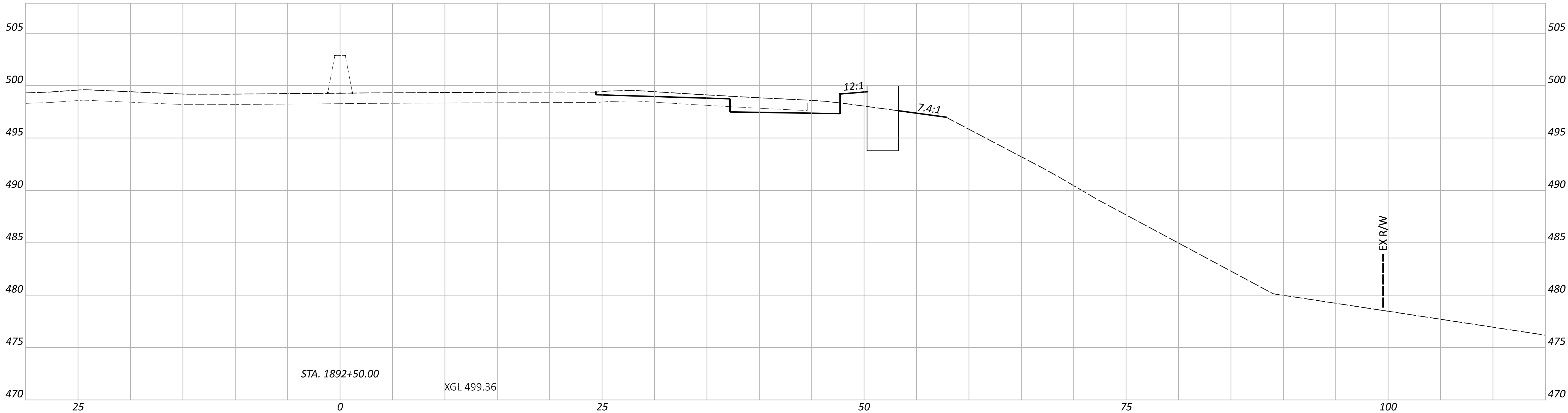
TOTAL

60

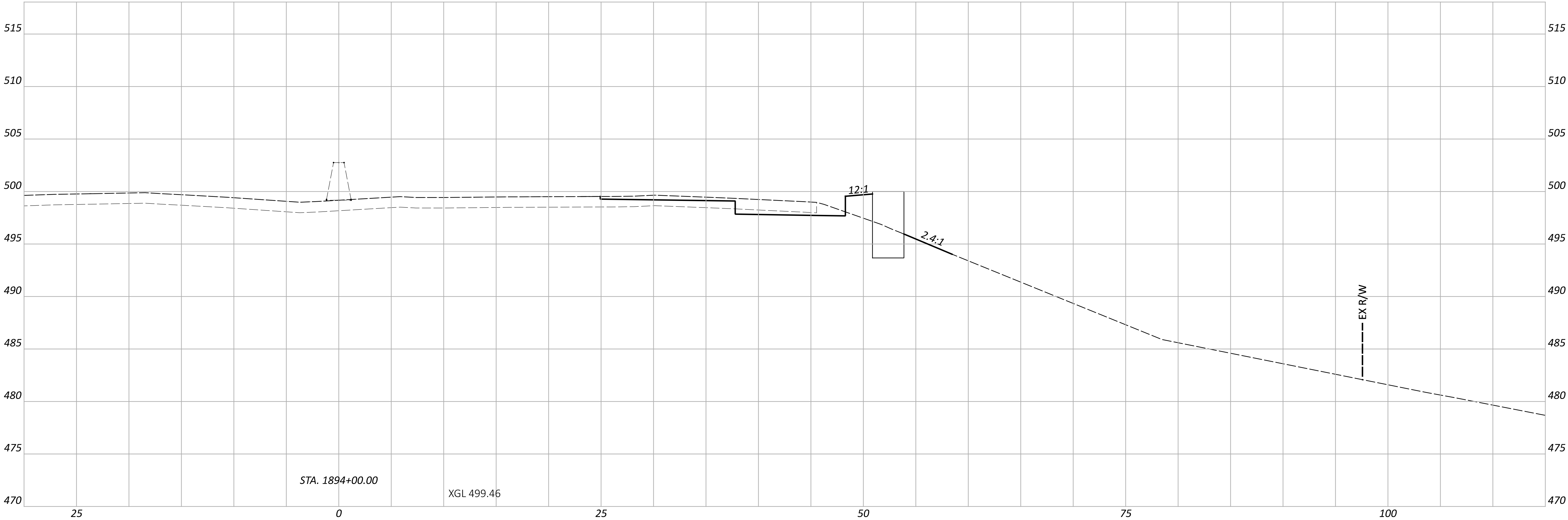
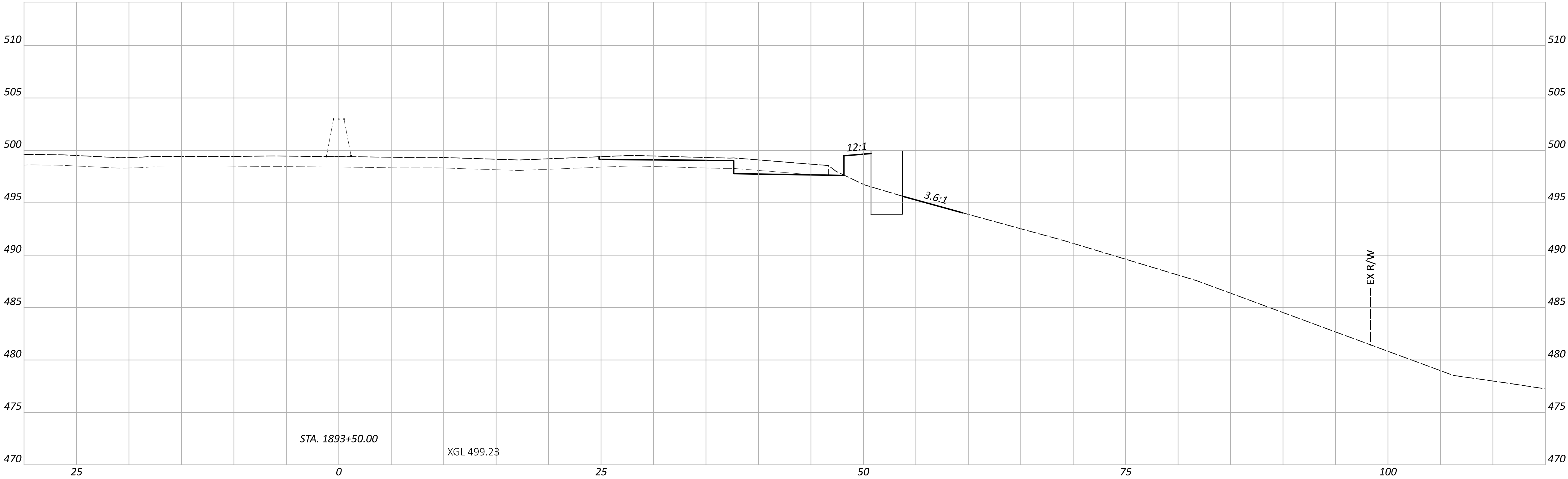




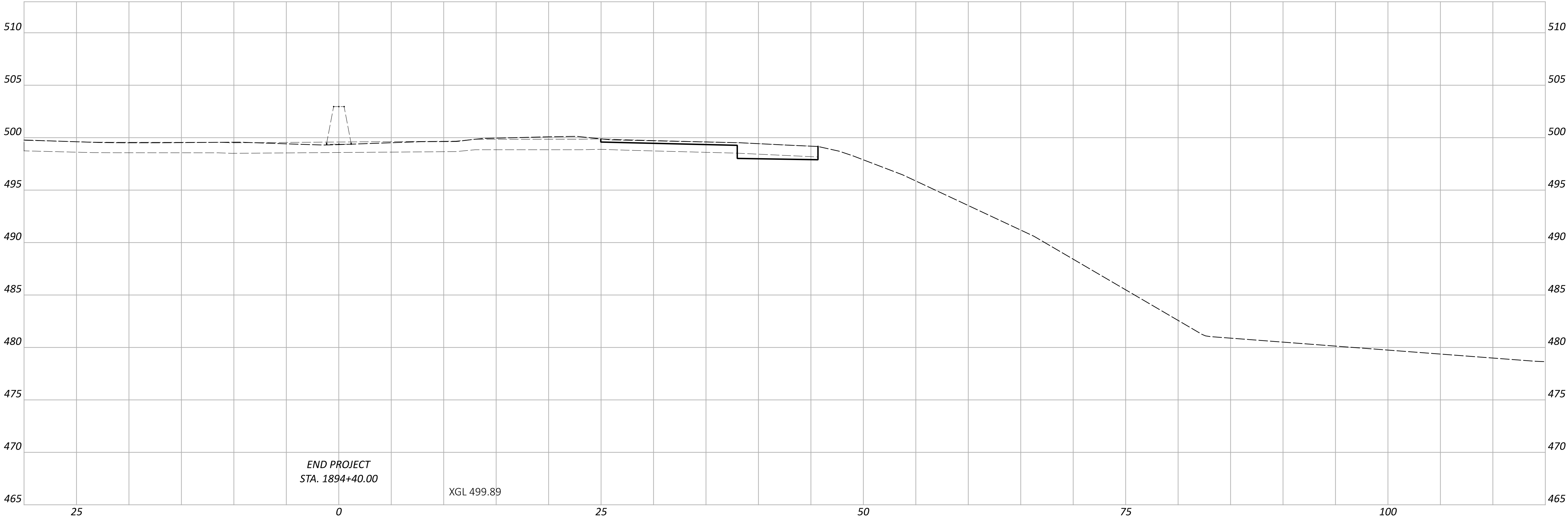
CROSS SECTIONS - 37.65
STA. 1891+90.00 TO STA. 1892+00.00



CROSS SECTIONS - 37.65
STA. 1892+50.00 TO STA. 1893+00.00



CROSS SECTIONS - 37.65
STA. 1893+50.00 TO STA. 1894+00.00



ITEM 642 - EDGE LINE, 6"

ITEM 621 - RPM

ITEM 642 - LANE LINE, 6"

BL

BIKE LANE CONFLICT ZONE MARKING

ITEM 642 - TRANSVERSE MARKINGS (WHITE)

DIRECTION OF TRAVEL

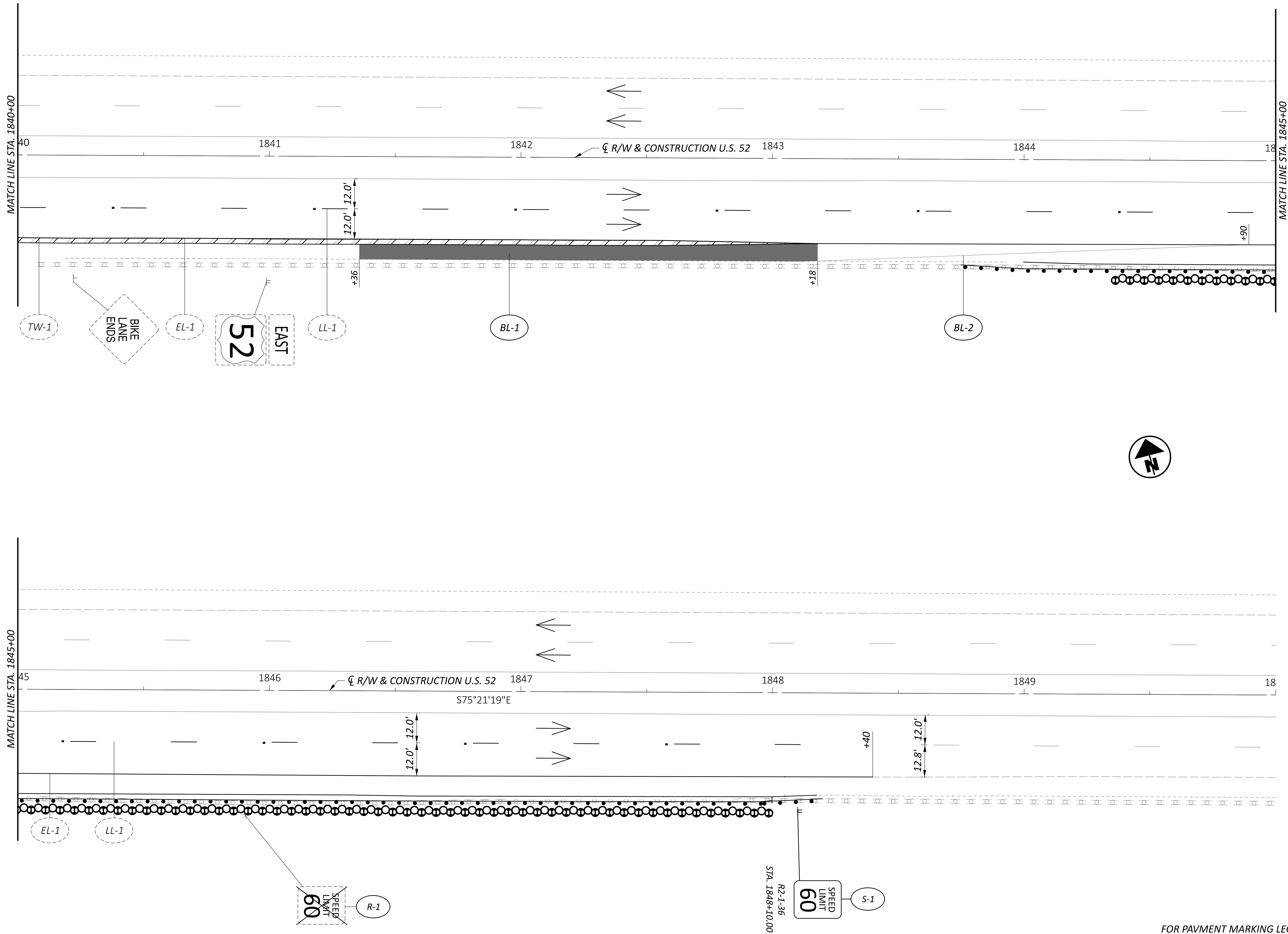
BIKE LANE MARKING



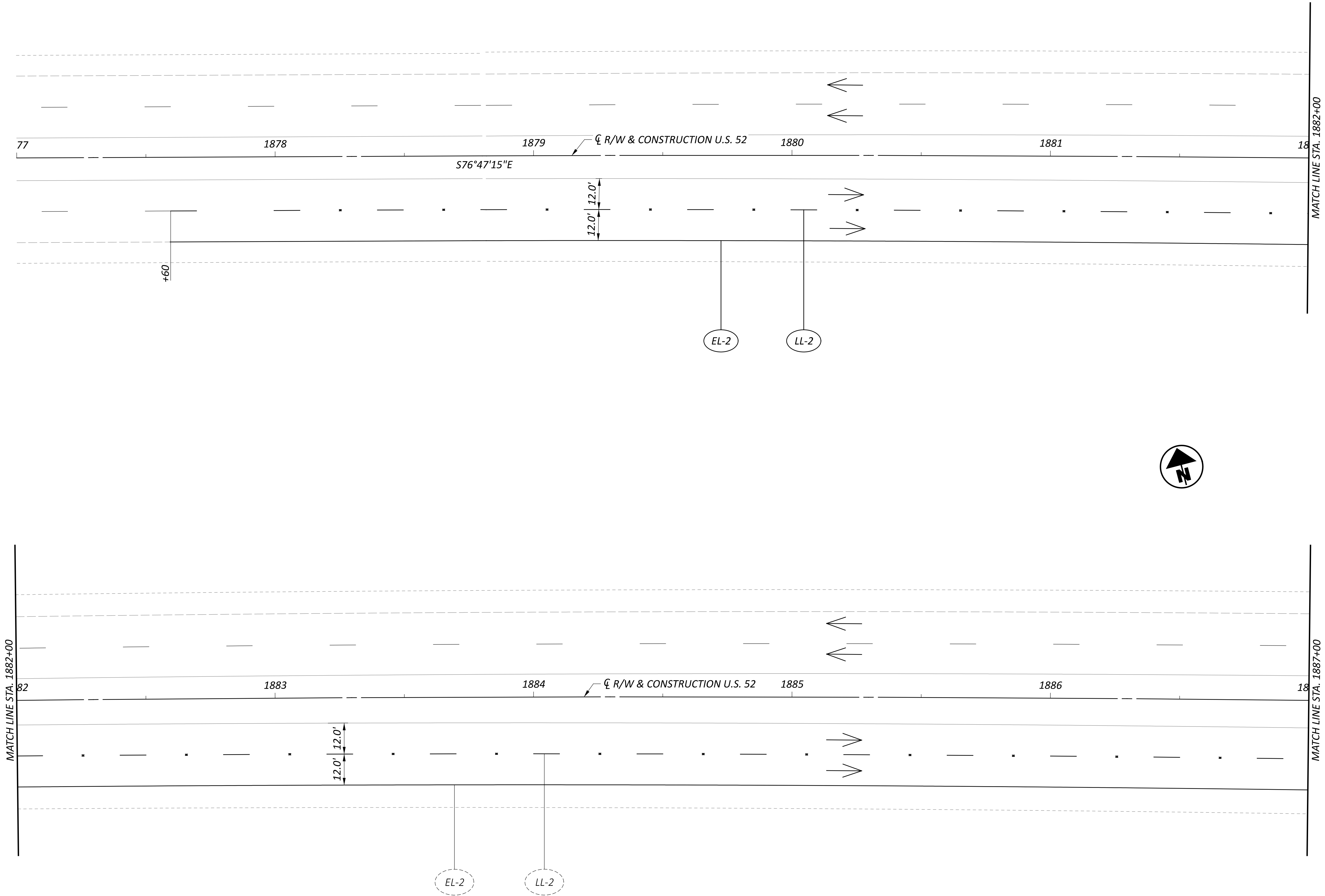
HORIZONTAL
SCALE IN FEET

A horizontal scale bar with a black background. It has white markings at 0, 10, 20, and 40 feet. The segments between 0 and 10, 10 and 20, and 20 and 40 are each divided into four smaller segments by thin white lines.

TRAFFIC CONTROL
STA. 1830+00.00 TO STA. 1840+00.00



FOR PAVMENT MARKING LEGEND, SEE SHEET 28



FOR PAVMENT MARKING LEGEND, SEE SHEET 28

DESIGN AGENCY

Stantec

1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

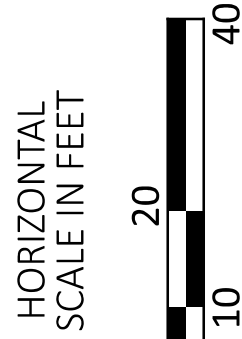
PROJECT ID

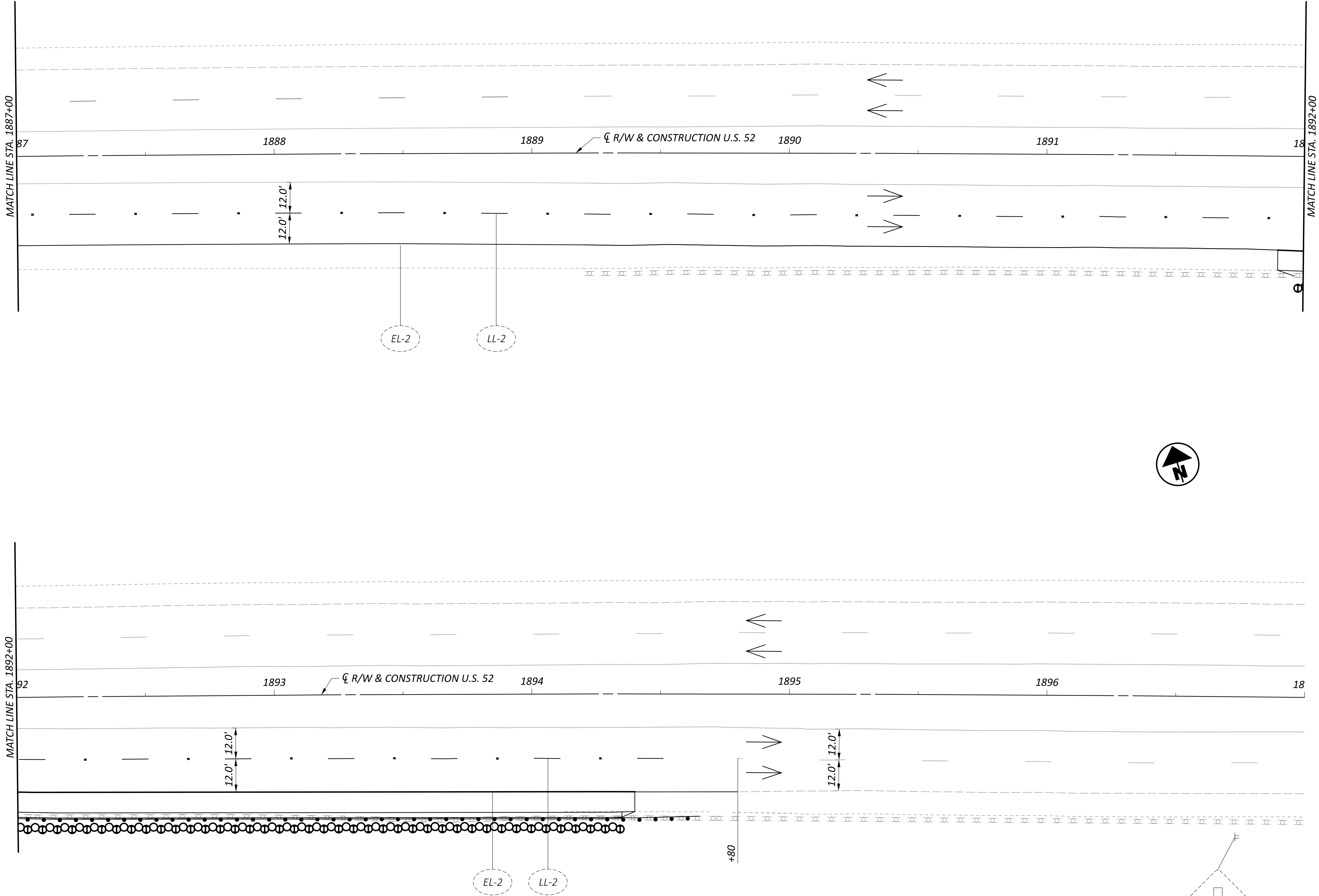
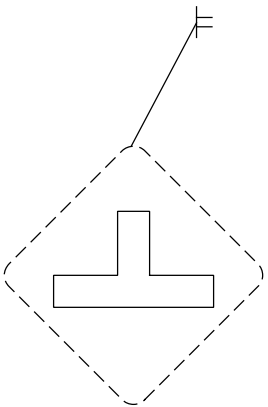
116046

SHEET	TOTAL
P.30	60

TRAFFIC CONTROL

STA. 1877+00.00 TO STA. 1887+00.00





FOR PAVMENT MARKING LEGEND, SEE SHEET 28

TRAFFIC CONTROL
STA. 1887+00.00 TO STA. 1897+00.00

DESIGN AGENCY



1500 LAKE SHORE DRIVE,
SUITE 100
COLUMBUS, OH 43204
(614) 486-4383

DESIGNER

ZTM

REVIEWER

TCM 09/13/24

PROJECT ID

116046

SHEET

P.31

TOTAL

60



GENERAL NOTES

DESIGN SPECIFICATIONS

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN DATA:

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI
(CONCRETE LAGGING)
CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.5 KSI
(DRILLED SHAFT)
STRUCTURAL STEEL - ASTM A572 GRADE 50
YIELD STRENGTH - 50 KSI
REINFORCING STEEL - ASTM A615 OR A996 GRADE 60
MIN. YIELD STRENGTH - 60 KSI

ITEM 507, STEEL PILES, MISC.: SOLDIER PILES W24x162
ITEM 507, STEEL PILES, MISC.: SOLDIER PILES W27x129

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER PILES INTO DRILLED HOLES. FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50. DO NOT FIELD WELD OR SPLICE THOSE PARTS OF THE STEEL SOLDIER PILES THAT WILL BE ABOVE GROUND.

THE INDIVIDUAL LENGTHS SHOWN IN THE DRILLED SHAFT SUMMARY TABLES AND THE TOTAL LENGTHS SHOWN IN THE ESTIMATED QUANTITIES ARE CALCULATED FROM THE ESTIMATED TOP OF ROCK ELEVATIONS AND THE ACTUAL LENGTH OF EACH STEEL BEAM MAY VARY. THE CONTRACTOR SHOULD ANTICIPATE THAT THE STEEL BEAMS WILL NEED TO BE TRIMMED OR SPLICED TO THE ACTUAL TOP OF THE ROCK. THE CONTRACTOR MAY WANT TO ORDER ADDITIONAL LENGTH OF EACH TYPE OF STEEL BEAM FOR SPLICING.

MEASUREMENT FOR PAYMENT WILL BE LIMITED TO THE DISTANCE BETWEEN THE TOP OF WALL ELEVATION AND THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. THE STATE WILL PAY FOR SOLDIER PILES AT THE CONTRACT UNIT PRICE PER FOOT OF ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES W24x162 OR STEEL PILES, MISC.: SOLDIER PILES W27X129.

ITEM 524, DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK, AS PER PLAN
ITEM 524, DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SOLDIER PILE AND LAGGING WALLS. THE DRILLED SHAFTS ARE REINFORCED WITH SOLDIER PILES INSTEAD OF REINFORCING STEEL CAGES. THE SOLDIER PILES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT. FURNISH AND INSTALL DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFTS WITHIN 3 INCHES OF THE PLAN LOCATION IN THE HORIZONTAL PLANE. IF FIELD CONDITIONS INDICATE GREATER DEPTHS, NOTIFY THE ENGINEER FOR FURTHER EVALUATION.

PLACE THE SOLDIER PILE VERTICALLY WITHIN THE HOLE SO IT IS NOT INCLINED MORE THAN 1" BETWEEN THE TOP AND BOTTOM. PLACE THE SOLDIER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF CONSTRUCTION. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

USE CLASS QC5 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 SOLDIER PILE IS ACCEPTABLE.

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE SOLDIER PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES.

DO NOT DISPOSE OF DRILLED SHAFT SPOILS OR DRILLING FLUIDS DOWN SLOPE OR STORE ON THE ROADWAY. DRILLING SPOILS SHALL BE REMOVED FROM THE SITE THE SAME DAY THEY ARE EXCAVATED.

PLACE PRECAST LAGGING SO THAT THE SOLDIER PILE FLANGE OVERLAPS THE END OF THE LAGGING BY AT LEAST 3 INCHES AT BOTH ENDS OF THE LAGGING.

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 48 HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY OTHER SEQUENCE THAT MEETS THIS CRITERIA IS PERMISSIBLE. CASING MAY BE REQUIRED FOR THE CONSTRUCTION OF THE DRILLED SHAFTS.

CARE SHALL BE EXERCISED AS TO COVERING UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PREVENT A PERSON OR ANIMAL FROM FALLING IN. NO DRILLED SHAFT EXCAVATION SHALL BE LEFT UN-POURED OVERNIGHT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE DRILLED SHAFTS AND PLACE CONCRETE PANELS. ANY TEMPORARY GRADING, EXCAVATION, EMBANKMENT, AGGREGATE, DRAINAGE, CASING, SHEETING, ETC. NEEDED TO COMPLETE THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. THE COST OF ANY EXCAVATION AND SUBSEQUENT REPLACEMENT OF EMBANKMENT (PER ITEM 203 EMBANKMENT) SHALL BE INCLUDED IN THE VARIOUS BID ITEMS FOR THE DRILLED SHAFTS AND CONCRETE PANELS. NO SEPARATE PAYMENT WILL BE MADE.

PAYMENT IS FULL COMPENSATION FOR CONSTRUCTING THE DRILLED SHAFTS, INCLUDING FURNISHING AND PLACING CONCRETE AND ITEM 613 LSM BACKFILL FROM TOP OF THE CONCRETE TO THE EXISTING GROUND SURFACE AT THE C/L OF THE PILE AND REMOVAL OF CONCRETE AND LSM FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE PRECAST LAGGING.

METHOD OF MEASUREMENT: DRILLED SHAFTS ABOVE BEDROCK WILL BE MEASURED AS THE ACTUAL DRILLED LENGTH OF THE DRILLED SHAFT FROM THE DRILLING PLATFORM ELEVATION TO THE TOP OF INTERBEDDED GRAY SHALE AND LIMESTONE, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL NOT CONSIDER COMPENSATION FOR DRILLED SHAFTS ABOVE BEDROCK WHEN THE DRILLING PLATFORM EXTENDS BELOW THE EXISTING GROUNDLINE. DRILLED SHAFT LENGTH INTO BEDROCK WILL BE MEASURED FROM THE TOP OF INTERBEDDED GRAY SHALE AND LIMESTONE IN EACH SHAFT TO THE FINAL TIP ELEVATION, AS DETERMINED BY THE ENGINEER.

ITEM 511, CONCRETE, MISC.: PRECAST CONCRETE PANEL

THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST REINFORCED CONCRETE PANELS BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A PRECAST CONCRETE MANUFACTURER CERTIFIED UNDER SUPPLEMENT 1073. PROVIDE CONCRETE WITH A 28-DAY DESIGN STRENGTH OF AT LEAST 4000 PSI ACCORDING TO CMS 499. PROVIDE EPOXY COATED REINFORCING STEEL ACCORDING TO CMS 709.00. IN LIEU OF EPOXY COATING, A CORROSION INHIBITING CONCRETE ADMIXTURE MAY BE USED AT THE SPECIFIED DOSAGE RATE. A QUALIFIED PRODUCT LIST OF CORROSION INHIBITING ADMIXTURES IS ON FILE AT THE LABORATORY. MANUFACTURERS SHOULD RECOGNIZE THAT THE CORROSION INHIBITOR MAY AFFECT THE STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE MANUFACTURER'S CHOICE TO USE ONE OF THESE CORROSION INHIBITORS DOES NOT ALLEVIATE MEETING ALL DESIGN REQUIREMENTS. DO NOT ALLOW THE DIMENSIONS OF THE REINFORCING STEEL TO VARY BY MORE THAN ¼INCH. PERMANENTLY MARK EACH PANEL TO INDICATE THE FACE TO 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.

SEAL EACH PANEL PER ITEM 512 WITH EPOXY URETHANE SEALER TO THE LIMITS INDICATED IN THE PLANS. SEAL PANELS PRIOR TO DELIVERY TO THE SITE. PAYMENT FOR SEALER TO BE INCLUDED IN COST FOR PRECAST CONCRETE PANELS.

THE DEPARTMENT WILL PAY FOR PRECAST LAGGING AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 511, CONCRETE, MISC.: PRECAST CONCRETE PANEL.

FINAL GRADING
CONTRACTOR SHALL GRADE AS NECESSARY IN FRONT OF THE DRILLED SHAFT WALL TO ENSURE POSITIVE DRAINAGE AWAY FROM THE FACE OF THE WALL. NO DEPRESSIONS WHICH MAY HOLD WATER SHALL BE PERMITTED TO REMAIN.

ALL FINAL GRADING, EXCAVATION, EMBANKMENT, AND SEEDING AND MULCHING, UNLESS OTHERWISE NOTED IN THE PLANS, SHALL BE INCLUDED IN VARIOUS BID ITEMS FOR THE DRILLED SHAFTS AND CONCRETE PANELS.

ITEM 524, DRILLED SHAFTS, MISC.: EXTENSION
THIS WORK CONSISTS OF FURNISHING AND PLACING UNREINFORCED CONCRETE WITHIN THE DRILLED SHAFT ABOVE THE TOP OF DRILLED SHAFT ELEVATION AS REQUIRED TO SUPPORT THE PRECAST CONCRETE PANELS.

PAYMENT FOR THIS ITEM SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THE WORK.

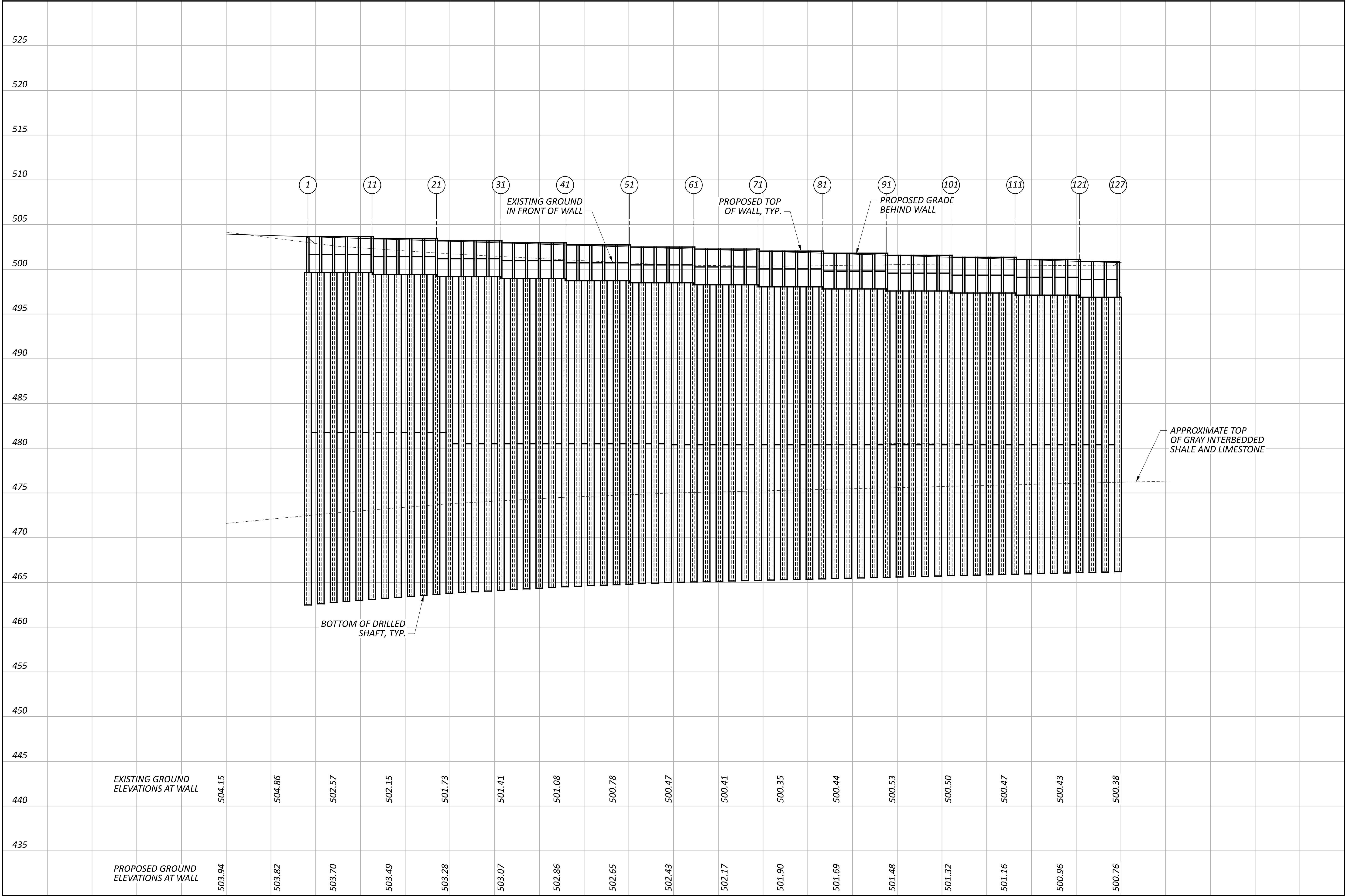
ITEM 524, DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED

THE SHAFTS ARE TO BE UNREINFORCED NON-STRUCTURAL "PLUG PILES" SERVING THE PURPOSE OF LAGGING.

THIS WORK SHALL BE AS PER ITEM 524 EXCEPT A REINFORCING CAGE WILL NOT BE USED IN THE SHAFT. EACH PLUG PILE SHALL BE CENTERED BETWEEN EACH REINFORCED 36" DIAMETER DRILLED SHAFT AND DRILLED TO THE ELEVATION SHOWN AND BACKFILLED WITH UNREINFORCED CLASS QC5 CONCRETE.

CASING MAY BE REQUIRED FOR THE CONSTRUCTION OF THE PLUG PILES. ADJACENT PLUG PILES SHALL NOT BE OPEN SIMULTANEOUSLY. PLUG PILES SHALL NOT BE DRILLED UNTIL THE CONCRETE IN ADJACENT PLUG PILES OR DRILLED SHAFTS HAS CURED 48 HOURS.

PAYMENT FOR LABOR, EQUIPMENT AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE PER FOOT CONTRACT PRICE FOR ITEM 524, DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED, AS PER PLAN



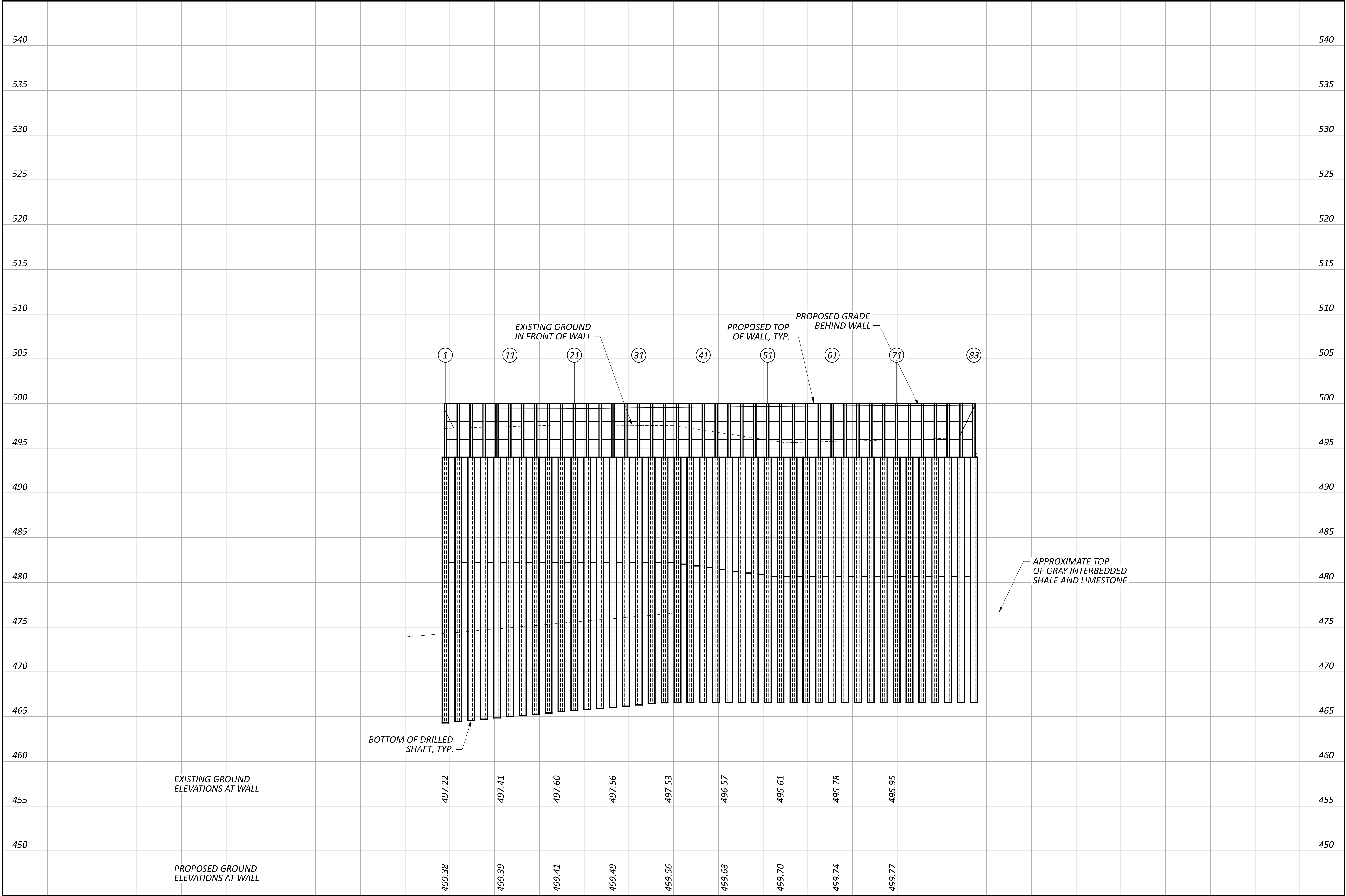
WALL 1 ELEVATION
STA. 1844+36.50 TO STA. 1845+77.37

SHAFT NO.	STATION	OFFSET FROM SAWCUT LINE RIGHT	TOP OF DRILLED SHAFT ELEVATION	APPROX. BOTTOM OF DRILLED SHAFT ELEVATION	TOP OF STEEL BEAM ELEVATION	ESTIMATED TOP OF ROCK ELVATION	ITEM 524				ITEM 507
							DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK AS PER PLAN	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK AS PER PLAN	DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED	DRILLED SHAFTS, MISC.:EXTENSION	STEEL PILES, MISC.: SOLDIER PILES W24x162
		FT.					FT.	FT.	FT.	FT.	FT.
1	1844+36.50	14.50	499.64	462.50	503.64	472.50	27.14	10.00	---	0.00	41.14
2	1844+39.37	13.65	499.64	481.76	---	---	---	---	17.88	---	---
3	1844+42.25	14.50	499.64	462.64	503.64	472.64	27.00	10.00	---	0.00	41.00
4	1844+45.12	13.65	499.64	481.76	---	---	---	---	17.88	---	---
5	1844+48.00	14.50	499.64	462.78	503.64	472.78	26.86	10.00	---	0.00	40.86
6	1844+50.87	13.65	499.64	481.76	---	---	---	---	17.88	---	---
7	1844+53.75	14.50	499.64	462.88	503.64	472.88	26.76	10.00	---	0.00	40.76
8	1844+56.62	13.65	499.64	481.76	---	---	---	---	17.88	---	---
9	1844+59.50	14.50	499.64	463.00	503.64	473.00	26.65	10.00	---	0.00	40.65
10	1844+62.37	13.65	499.64	481.76	---	---	---	---	17.88	---	---
11	1844+65.25	14.50	499.42	463.11	503.64	473.11	26.31	10.00	---	0.22	40.53
12	1844+68.12	13.65	499.42	481.76	---	---	---	---	17.66	---	---
13	1844+71.00	14.50	499.42	463.23	503.42	473.23	26.20	10.00	---	0.00	40.20
14	1844+73.87	13.65	499.42	481.76	---	---	---	---	17.66	---	---
15	1844+76.75	14.50	499.42	463.34	503.42	473.34	26.08	10.00	---	0.00	40.08
16	1844+79.62	13.65	499.42	481.76	---	---	---	---	17.66	---	---
17	1844+82.50	14.50	499.42	463.46	503.42	473.46	25.97	10.00	---	0.00	39.97
18	1844+85.37	13.65	499.42	481.76	---	---	---	---	17.66	---	---
19	1844+88.25	14.50	499.42	463.57	503.42	473.57	25.85	10.00	---	0.00	39.85
20	1844+91.12	13.65	499.42	481.76	---	---	---	---	17.66	---	---
21	1844+94.00	14.50	499.19	463.69	503.42	473.69	25.50	10.00	---	0.23	39.74
22	1844+96.87	13.65	499.19	481.76	---	---	---	---	17.43	---	---
23	1844+99.75	14.50	499.19	463.80	503.19	473.80	25.39	10.00	---	0.00	39.39
24	1845+02.62	13.65	499.19	480.50	---	---	---	---	18.69	---	---
25	1845+05.50	14.50	499.19	463.81	503.19	473.81	25.38	10.00	---	0.00	39.38
26	1845+08.37	13.65	499.19	480.50	---	---	---	---	18.69	---	---
27	1845+11.25	14.50	499.19	463.89	503.19	473.89	25.30	10.00	---	0.00	39.30
28	1845+14.12	13.65	499.19	480.50	---	---	---	---	18.69	---	---
29	1845+17.00	14.50	499.19	463.97	503.19	473.97	25.22	10.00	---	0.00	39.22
30	1845+19.87	13.65	499.19	480.50	---	---	---	---	18.69	---	---
31	1845+22.75	14.50	498.96	464.05	503.19	474.05	24.91	10.00	---	0.23	39.14
32	1845+25.62	13.65	498.96	480.50	---	---	---	---	18.46	---	---
33	1845+28.50	14.50	498.96	464.13	502.96	474.13	24.83	10.00	---	0.00	38.83
34	1845+31.37	13.65	498.96	480.50	---	---	---	---	18.46	---	---
35	1845+34.25	14.50	498.96	464.21	502.96	474.21	24.75	10.00	---	0.00	38.75
36	1845+37.12	13.65	498.96	480.50	---	---	---	---	18.46	---	---
37	1845+40.00	14.50	498.96	464.29	502.96	474.29	24.67	10.00	---	0.00	38.67
38	1845+42.87	13.65	498.96	480.50	---	---	---	---	18.46	---	---
39	1845+45.75	14.50	498.96	464.37	502.96	474.37	24.59	10.00	---	0.00	38.59
40	1845+48.62	13.65	498.96	480.50	---	---	---	---	18.46	---	---
41	1845+51.50	14.50	498.73	464.52	502.96	474.52	24.21	10.00	---	0.23	38.44
42	1845+54.37	13.65	498.73	480.50	---	---	---	---	18.23	---	---
43	1845+57.25	14.50	498.73	464.58	502.73	474.58	24.15	10.00	---	0.00	38.15
44	1845+60.12	13.65	498.73	480.50	---	---	---	---	18.23	---	---
45	1845+63.00	14.50	498.73	464.64	502.73	474.64	24.10	10.00	---	0.00	38.10
46	1845+65.87	13.65	498.73	480.50	---	---	---	---	18.23	---	---
47	1845+68.75	14.50	498.73	464.69	502.73	474.69	24.04	10.00	---	0.00	38.04
48	1845+71.62	13.65	498.73	480.50	---	---	---	---	18.23	---	---
49	1845+74.50	14.50	498.73	464.75	502.73	474.75	23.98	10.00	---	0.00	37.98
50	1845+77.37	13.65	498.73	480.50	---	---	---	---	18.23	---	---
SUBTOTAL SHAFTS 1-50							635.82	250.00	453.34	0.91	986.73

SHAFT NO.	STATION	OFFSET FROM SAWCUT LINE RIGHT	TOP OF DRILLED SHAFT ELEVATION	APPROX. BOTTOM OF DRILLED SHAFT ELEVATION	TOP OF STEEL BEAM ELEVATION	ESTIMATED TOP OF ROCK ELVATION	ITEM 524				ITEM 507
							DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK AS PER PLAN	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK AS PER PLAN	DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED	DRILLED SHAFTS, MISC.:EXTENSION	STEEL PILES, MISC.: SOLDIER PILES W24x162
		FT.					FT.	FT.	FT.	FT.	FT.
51	1845+80.25	14.50	498.50	464.81	502.73	474.81	23.69	10.00	---	0.23	37.92
52	1845+83.12	13.65	498.50	480.50	---	---	---	---	18.00	---	---
53	1845+86.00	14.50	498.50	464.87	502.50	474.87	23.64	10.00	---	0.00	37.64
54	1845+88.87	13.65	498.50	480.50	---	---	---	---	18.00	---	---
55	1845+91.75	14.50	498.50	464.92	502.50	474.92	23.58	10.00	---	0.00	37.58
56	1845+94.62	13.65	498.50	480.50	---	---	---	---	18.00	---	---
57	1845+97.50	14.50	498.50	464.98	502.50	474.98	23.52	10.00	---	0.00	37.52
58	1846+00.37	13.65	498.50	480.38	---	---	---	---	18.12	---	---
59	1846+03.25	14.50	498.50	465.02	502.50	475.02	23.48	10.00	---	0.00	37.48
60	1846+06.12	13.65	498.50	480.38	---	---	---	---	18.12	---	---
61	1846+09.00	14.50	498.27	465.05	502.50	475.05	23.22	10.00	---	0.23	37.45
62	1846+11.87	13.65	498.27	480.38	---	---	---	---	17.89	---	---
63	1846+14.75	14.50	498.27	465.09	502.27	475.09	23.18	10.00	---	0.00	37.18
64	1846+17.62	13.65	498.27	480.38	---	---	---	---	17.89	---	---
65	1846+20.50	14.50	498.27	465.12	502.27	475.12	23.15	10.00	---	0.00	37.15
66	1846+23.37	13.65	498.27	480.38	---	---	---	---	17.89	---	---
67	1846+26.25	14.50	498.27	465.16	502.27	475.16	23.11	10.00	---	0.00	37.11
68	1846+29.12	13.65	498.27	480.38	---	---	---	---	17.89	---	---
69	1846+32.00	14.50	498.27	465.19	502.27	475.19	23.08	10.00	---	0.00	37.08
70	1846+34.87	13.65	498.27	480.38	---	---	---	---	17.89	---	---
71	1846+37.75	14.50	498.04	465.23	502.27	475.23	22.81	10.00	---	0.23	37.04
72	1846+40.62	13.65	498.04	480.38	---	---	---	---	17.66	---	---
73	1846+43.50	14.50	498.04	465.26	502.04	475.26	22.78	10.00	---	0.00	36.78
74	1846+46.37	13.65	498.04	480.38	---	---	---	---	17.66	---	---
75	1846+49.25	14.50	498.04	465.30	502.04	475.30	22.74	10.00	---	0.00	36.74
76	1846+52.12	13.65	498.04	480.38	---	---	---	---	17.66	---	---
77	1846+55.00	14.50	498.04	465.33	502.04	475.33	22.71	10.00	---	0.00	36.71
78	1846+57.87	13.65	498.04	480.38	---	---	---	---	17.66	---	---
79	1846+60.75	14.50	498.04	465.36	502.04	475.36	22.68	10.00	---	0.00	36.68
80	1846+63.62	13.65	498.04	480.38	---	---	---	---	17.66	---	---
81	1846+66.50	14.50	497.81	465.40	502.04	475.40	22.41	10.00	---	0.23	36.64
82	1846+69.37	13.65	497.81	480.38	---	---	---	---	17.43	---	---
83	1846+72.25	14.50	497.81	465.43	501.81	475.43	22.38	10.00	---	0.00	36.38
84	1846+75.12	13.65	497.81	480.38			---	---	17.43	---	---
85	1846+78.00	14.50	497.81	465.47	501.81	475.47	22.34	10.00	---	0.00	36.34
86	1846+80.87	13.65	497.81	480.38			---	---	17.43	---	---
87	1846+83.75	14.50	497.81	465.50	501.81	475.50	22.31	10.00	---	0.00	36.31
88	1846+86.62	13.65	497.81	480.38			---	---	17.43	---	---
89	1846+89.50	14.50	497.81	465.54	501.81	475.54	22.27	10.00	---	0.00	36.27
90	1846+92.37	13.65	497.81	480.38			---	---	17.43	---	---
91	1846+95.25	14.50	497.58	465.57	501.81	475.57	22.01	10.00	---	0.23	36.24
92	1846+98.12	13.65	497.58	480.38			---	---	17.20	---	---
93	1847+01.00	14.50	497.58	465.61	501.58	475.61	21.97	10.00	---	0.00	35.97
94	1847+03.87	13.65	497.58	480.38			---	---	17.20	---	---
95	1847+06.75	14.50	497.58	465.64	501.58	475.64	21.94	10.00	---	0.00	35.94
96	1847+09.62	13.65	497.58	480.38			---	---	17.20	---	---
97	1847+12.50	14.50	497.58	465.68	501.58	475.68	21.91	10.00	---	0.00	35.91
98	1847+15.37	13.65	497.58	480.38			---	---	17.20	---	---
99	1847+18.25	14.50	497.58	465.71	501.58	475.71	21.87	10.00	---	0.00	35.87
100	1847+21.12	13.65	497.58	480.38			---	---	17.20	---	---
SUBTOTAL SHAFTS 51-100							568.77	250.00	441.14	1.15	919.92

SHAFT NO.	STATION	OFFSET FROM SAWCUT LINE RIGHT	TOP OF DRILLED SHAFT ELEVATION	APPROX. BOTTOM OF DRILLED SHAFT ELEVATION	TOP OF STEEL BEAM ELEVATION	ESTIMATED TOP OF ROCK ELVATION	ITEM 524				ITEM 507
							DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK AS PER PLAN	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK AS PER PLAN	DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED	DRILLED SHAFTS, MISC.:EXTENSION	STEEL PILES, MISC.: SOLDIER PILES W24x162
		FT.					FT.	FT.	FT.	FT.	FT.
101	1847+24.00	14.50	497.35	465.74	501.58	475.74	21.61	10.00	---	0.23	35.84
102	1847+26.87	13.65	497.35	480.38	---	---	---	---	16.97	---	---
103	1847+29.75	14.50	497.35	465.78	501.35	475.78	21.57	10.00	---	0.00	35.57
104	1847+32.62	13.65	497.35	480.38	---	---	---	---	16.97	---	---
105	1847+35.50	14.50	497.35	465.81	501.35	475.81	21.54	10.00	---	0.00	35.54
106	1847+38.37	13.65	497.35	480.38	---	---	---	---	16.97	---	---
107	1847+41.25	14.50	497.35	465.85	501.35	475.85	21.50	10.00	---	0.00	35.50
108	1847+44.12	13.65	497.35	480.38	---	---	---	---	16.97	---	---
109	1847+47.00	14.50	497.35	465.88	501.35	475.88	21.47	10.00	---	0.00	35.47
110	1847+49.87	13.65	497.35	480.38	---	---	---	---	16.97	---	---
111	1847+52.75	14.50	497.12	465.92	501.35	475.92	21.20	10.00	---	0.23	35.43
112	1847+55.62	13.65	497.12	480.38	---	---	---	---	16.74	---	---
113	1847+58.50	14.50	497.12	465.95	501.12	475.95	21.17	10.00	---	0.00	35.17
114	1847+61.37	13.65	497.12	480.38	---	---	---	---	16.74	---	---
115	1847+64.25	14.50	497.12	465.99	501.12	475.99	21.13	10.00	---	0.00	35.13
116	1847+67.12	13.65	497.12	480.38	---	---	---	---	16.74	---	---
117	1847+70.00	14.50	497.12	466.02	501.12	476.02	21.10	10.00	---	0.00	35.10
118	1847+72.87	13.65	497.12	480.38	---	---	---	---	16.74	---	---
119	1847+75.75	14.50	497.12	466.05	501.12	476.05	21.07	10.00	---	0.00	35.07
120	1847+78.62	13.65	497.12	480.38	---	---	---	---	16.74	---	---
121	1847+81.50	14.50	496.89	466.09	501.12	476.09	20.80	10.00	---	0.23	35.03
122	1847+84.37	13.65	496.89	480.38	---	---	---	---	16.51	---	---
123	1847+87.25	14.50	496.89	466.12	500.89	476.12	20.77	10.00	---	0.00	34.77
124	1847+90.12	13.65	496.89	480.38	---	---	---	---	16.51	---	---
125	1847+93.00	14.50	496.89	466.16	500.89	476.16	20.73	10.00	---	0.00	34.73
126	1847+95.87	13.65	496.89	480.38	---	---	---	---	16.51	---	---
127	1847+98.75	14.50	496.89	466.19	500.89	476.19	20.70	10.00	---	0.00	34.70
SUBTOTAL SHAFTS 101-127							296.35	140.00	218.08	0.69	493.04
SUBTOTAL SHAFTS 51-100							568.77	250.00	441.14	1.15	919.92
SUBTOTAL SHAFTS 1-50							635.82	250.00	453.34	0.91	986.73
TOTAL CARRIED TO GENERAL SUMMARY							1501	640	1113	3	2400

WALL 1 DRILLED SHAFT ELEVATIONS (2)



WALL 2 ELEVATION
STA. 1891+98.00 TO STA. 1894+34.28

SHAFT NO.	STATION	OFFSET FROM SAWCUT LINE RIGHT	TOP OF DRILLED SHAFT ELEVATION	APPROX. BOTTOM OF DRILLED SHAFT ELEVATION	TOP OF STEEL BEAM ELEVATION	ESTIMATED TOP OF ROCK ELVATION	ITEM 524				ITEM 507
							DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK AS PER PLAN	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK AS PER PLAN	DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED	DRILLED SHAFTS, MISC.:EXTENSION	STEEL PILES, MISC.: SOLDIER PILES W27x129
		FT.					FT.	FT.	FT.	FT.	FT.
1	1891+98.00	14.50	494.00	464.30	500.00	474.30	19.70	10.00	---	0.00	35.70
2	1892+00.90	13.65	494.00	482.25	---	---	---	---	11.75	---	---
3	1892+03.76	14.50	494.00	464.44	500.00	474.44	19.56	10.00	---	0.00	35.56
4	1892+06.67	13.65	494.00	482.25	---	---	---	---	11.75	---	---
5	1892+09.52	14.50	494.00	464.58	500.00	474.58	19.42	10.00	---	0.00	35.42
6	1892+12.41	13.65	494.00	482.25	---	---	---	---	11.75	---	---
7	1892+15.29	14.50	494.00	464.71	500.00	474.71	19.29	10.00	---	0.00	35.29
8	1892+18.17	13.65	494.00	482.25	---	---	---	---	11.75	---	---
9	1892+21.05	14.50	494.00	464.85	500.00	474.85	19.15	10.00	---	0.00	35.15
10	1892+23.93	13.65	494.00	482.25	---	---	---	---	11.75	---	---
11	1892+26.81	14.50	494.00	464.99	500.00	474.99	19.01	10.00	---	0.00	35.01
12	1892+29.70	13.65	494.00	482.25	---	---	---	---	11.75	---	---
13	1892+32.57	14.50	494.00	465.13	500.00	475.13	18.87	10.00	---	0.00	34.87
14	1892+35.46	13.65	494.00	482.25	---	---	---	---	11.75	---	---
15	1892+38.34	14.50	494.00	465.27	500.00	475.27	18.73	10.00	---	0.00	34.73
16	1892+41.22	13.65	494.00	482.25	---	---	---	---	11.75	---	---
17	1892+44.10	14.50	494.00	465.40	500.00	475.40	18.60	10.00	---	0.00	34.60
18	1892+46.99	13.65	494.00	482.25	---	---	---	---	11.75	---	---
19	1892+49.86	14.50	494.00	465.54	500.00	475.54	18.46	10.00	---	0.00	34.46
20	1892+52.75	13.65	494.00	482.25	---	---	---	---	11.75	---	---
21	1892+55.63	14.50	494.00	465.67	500.00	475.67	18.33	10.00	---	0.00	34.33
22	1892+58.51	13.65	494.00	482.25	---	---	---	---	11.75	---	---
23	1892+61.39	14.50	494.00	465.80	500.00	475.80	18.21	10.00	---	0.00	34.21
24	1892+64.27	13.65	494.00	482.25	---	---	---	---	11.75	---	---
25	1892+67.15	14.50	494.00	465.92	500.00	475.92	18.08	10.00	---	0.00	34.08
26	1892+70.04	13.65	494.00	482.25	---	---	---	---	11.75	---	---
27	1892+72.91	14.50	494.00	466.05	500.00	476.05	17.95	10.00	---	0.00	33.95
28	1892+75.80	13.65	494.00	482.25	---	---	---	---	11.75	---	---
29	1892+78.68	14.50	494.00	466.17	500.00	476.17	17.83	10.00	---	0.00	33.83
30	1892+81.56	13.65	494.00	482.25	---	---	---	---	11.75	---	---
31	1892+84.44	14.50	494.00	466.30	500.00	476.30	17.70	10.00	---	0.00	33.70
32	1892+87.33	13.65	494.00	482.25	---	---	---	---	11.75	---	---
33	1892+90.20	14.50	494.00	466.43	500.00	476.43	17.57	10.00	---	0.00	33.57
34	1892+93.09	13.65	494.00	482.25	---	---	---	---	11.75	---	---
35	1892+95.97	14.50	494.00	466.55	500.00	476.55	17.45	10.00	---	0.00	33.45
36	1892+98.38	13.65	494.00	482.25	---	---	---	---	11.75	---	---
37	1893+01.73	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
38	1893+04.61	13.65	494.00	482.05	---	---	---	---	11.95	---	---
39	1893+07.49	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
40	1893+10.38	13.65	494.00	481.85	---	---	---	---	12.15	---	---
41	1893+13.26	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
42	1893+16.14	13.65	494.00	481.65	---	---	---	---	12.35	---	---
43	1893+19.02	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
44	1893+21.90	13.65	494.00	481.45	---	---	---	---	12.55	---	---
45	1893+24.78	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
46	1893+27.67	13.65	494.00	481.25	---	---	---	---	12.75	---	---
47	1893+30.54	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
48	1893+33.43	13.65	494.00	481.05	---	---	---	---	12.95	---	---
49	1893+36.31	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
50	1893+39.19	13.65	494.00	480.85	---	---	---	---	13.15	---	---
SUBTOTAL SHAFTS 1-50							455.70	250.00	299.35	0.00	855.70

SHAFT NO.	STATION	OFFSET FROM SAWCUT LINE RIGHT	TOP OF DRILLED SHAFT ELEVATION	APPROX. BOTTOM OF DRILLED SHAFT ELEVATION	TOP OF STEEL BEAM ELEVATION	ESTIMATED TOP OF ROCK ELVATION	ITEM 524				ITEM 507
							DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK AS PER PLAN	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK AS PER PLAN	DRILLED SHAFTS, MISC.: PLUG PILE, 36" DIAMETER, UNREINFORCED	DRILLED SHAFTS, MISC.:EXTENSION	STEEL PILES, MISC.: SOLDIER PILES W27x129
		FT.					FT.	FT.	FT.	FT.	FT.
51	1893+42.07	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
52	1893+44.95	13.65	494.00	480.65	---	---	---	---	13.35	---	---
53	1893+47.83	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
54	1893+50.72	13.65	494.00	480.65	---	---	---	---	13.35	---	---
55	1893+53.60	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
56	1893+56.48	13.65	494.00	480.65	---	---	---	---	13.35	---	---
57	1893+59.36	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
58	1893+62.24	13.65	494.00	480.65	---	---	---	---	13.35	---	---
59	1893+65.12	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
60	1893+68.01	13.65	494.00	480.65	---	---	---	---	13.35	---	---
61	1893+70.89	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
62	1893+73.77	13.65	494.00	480.65	---	---	---	---	13.35	---	---
63	1893+76.65	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
64	1893+79.53	13.65	494.00	480.65	---	---	---	---	13.35	---	---
65	1893+82.41	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
66	1893+85.30	13.65	494.00	480.65	---	---	---	---	13.35	---	---
67	1893+88.18	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
68	1893+91.06	13.65	494.00	480.65	---	---	---	---	13.35	---	---
69	1893+93.94	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
70	1893+96.82	13.65	494.00	480.65	---	---	---	---	13.35	---	---
71	1893+99.70	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
72	1894+02.59	13.65	494.00	480.65	---	---	---	---	13.35	---	---
73	1894+05.46	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
74	1894+08.35	13.65	494.00	480.65	---	---	---	---	13.35	---	---
75	1894+11.23	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
76	1894+14.11	13.65	494.00	480.65	---	---	---	---	13.35	---	---
77	1894+16.99	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
78	1894+19.88	13.65	494.00	480.65	---	---	---	---	13.35	---	---
79	1894+22.75	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
80	1894+25.65	13.65	494.00	480.65	---	---	---	---	13.35	---	---
81	1894+28.52	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
82	1894+31.40	13.65	494.00	480.65	---	---	---	---	13.35	---	---
83	1894+34.28	14.50	494.00	466.60	500.00	476.60	17.40	10.00	---	0.00	33.40
SUBTOTAL SHAFTS 51-83							295.80	170.00	213.60	0.00	567.80
SUBTOTAL SHAFTS 1-50							455.70	250.00	299.35	0.00	855.70
TOTAL CARRIED TO GENERAL SUMMARY							752	420	513	0	1424

WALL 2 DRILLED SHAFT ELEVATIONS
STA. 1891+98.00 TO STA. 1894+34.28

DESIGN AGENCY



10200 Alliance Road,
Suite 300
Cincinnati, OH 45242
(513) 842-9200

DESIGNER

MRS

REVIEWER

EDA 09/13/24

PROJECT ID

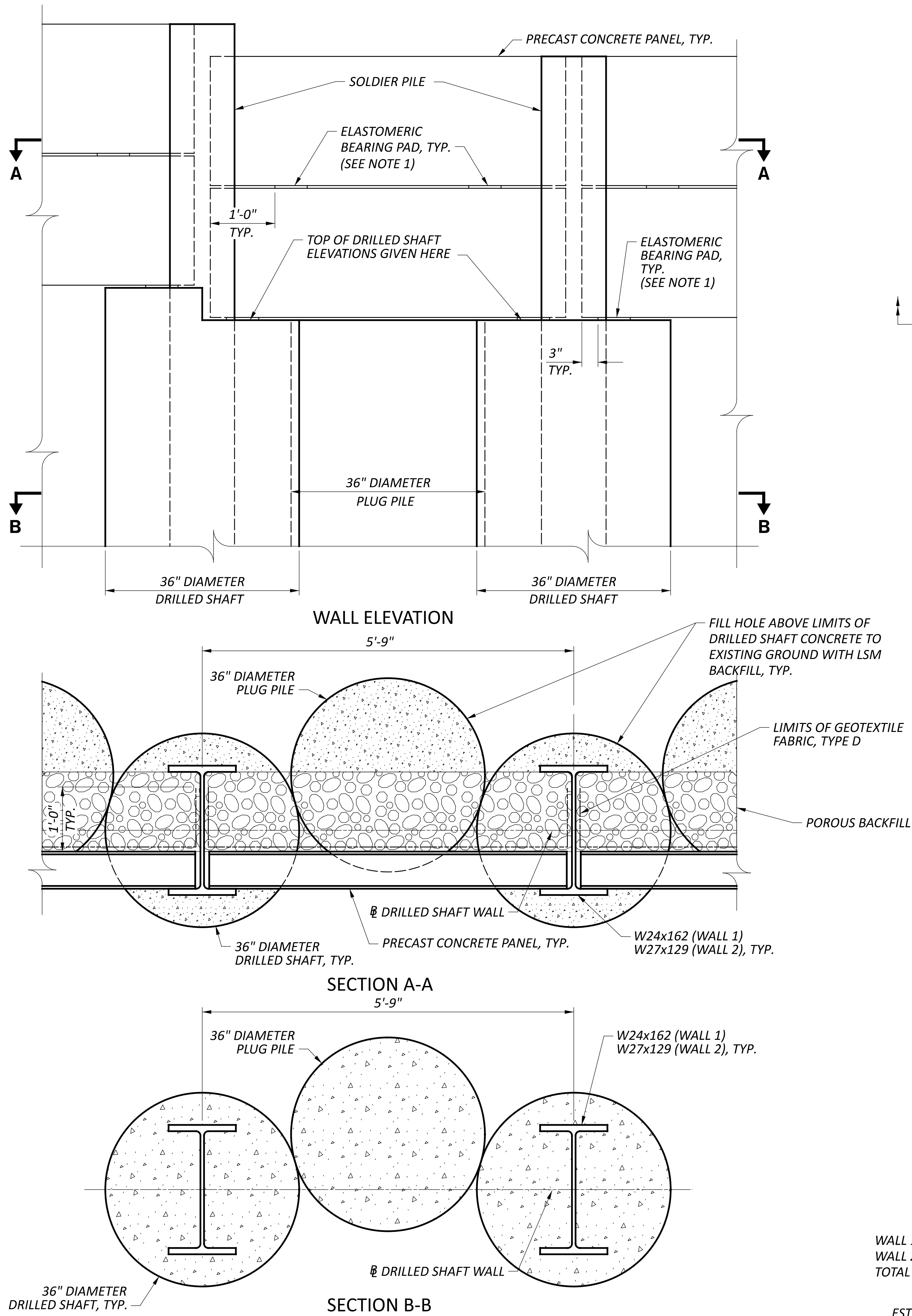
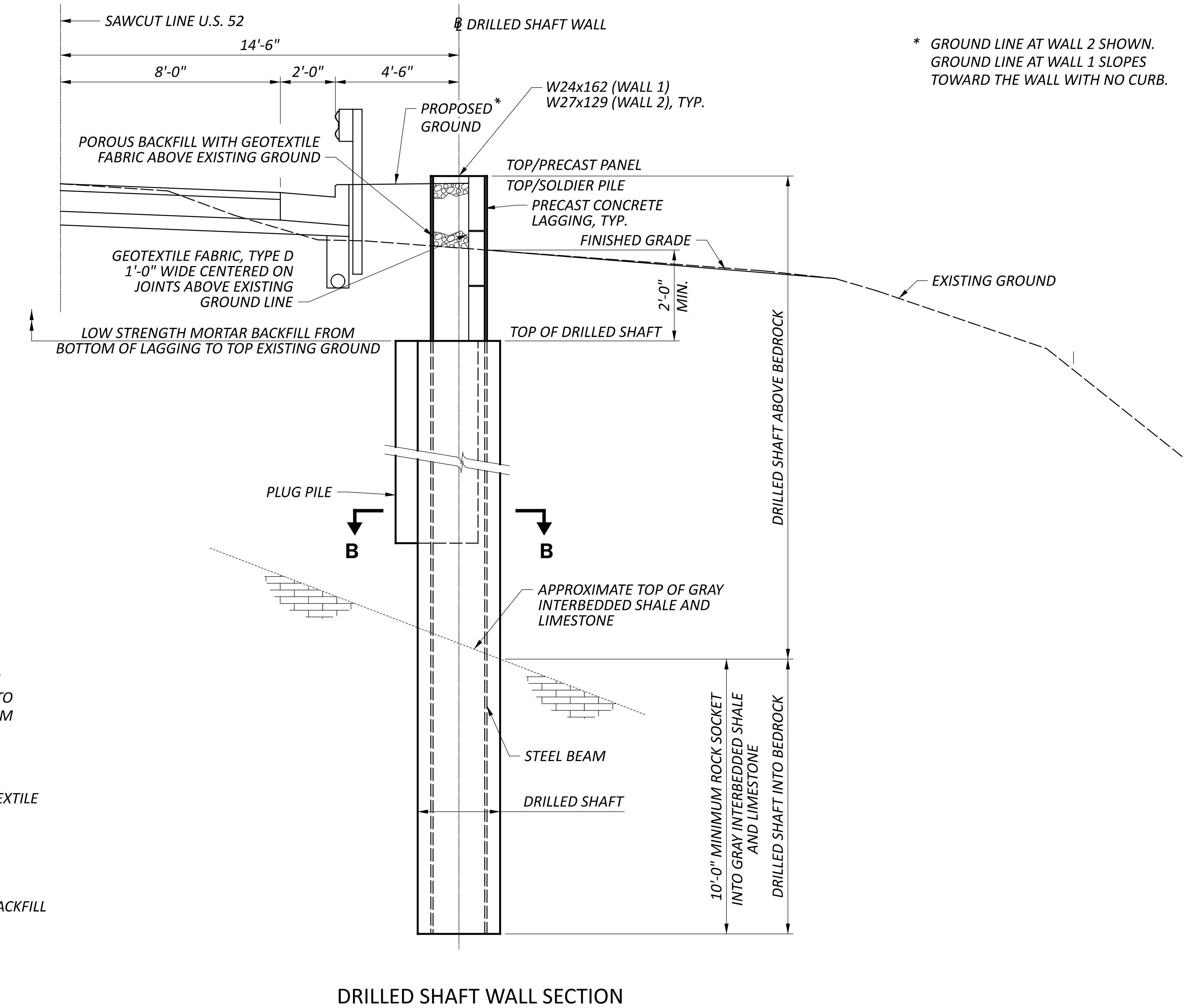
116046

SHEET

P.37

TOTAL

60

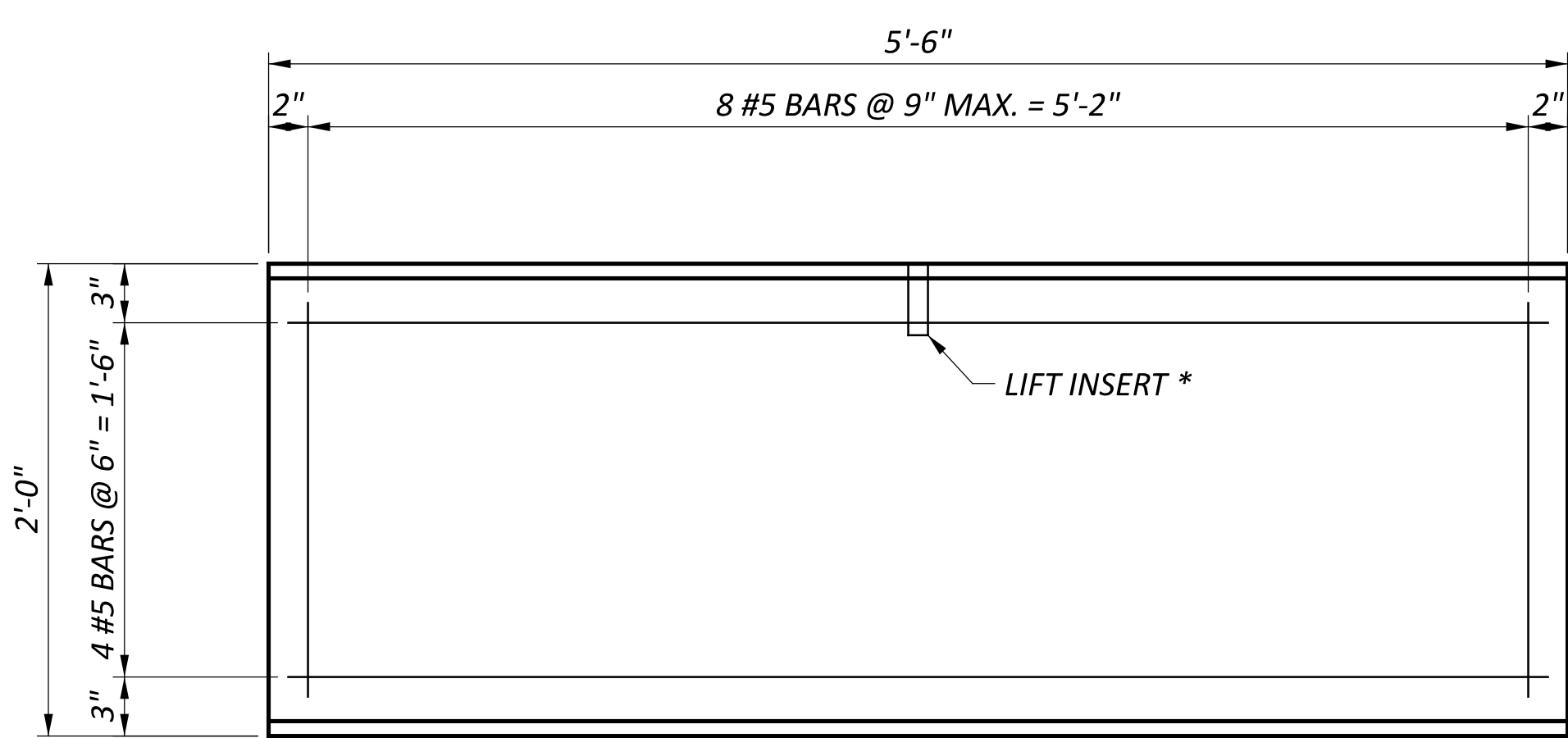


POROUS BACKFILL WITH GEOTEXTILE FABRIC

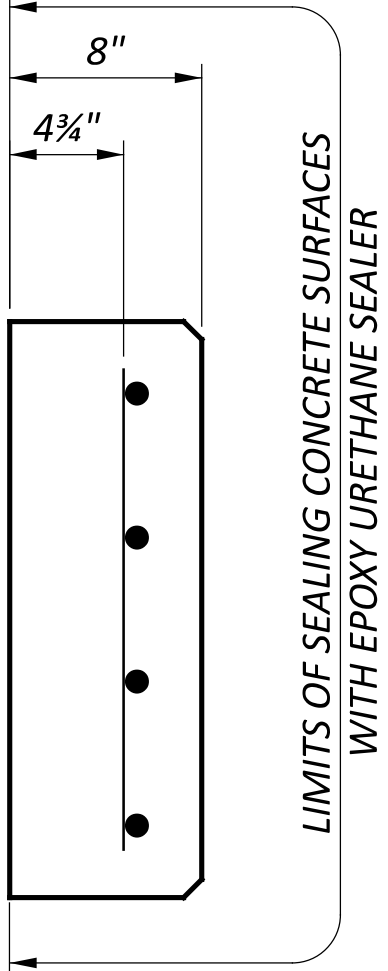
WALL 1 -	5.75 FT X 63 SPACES X 1.25 FT X 1.25 FT / 27 CF/CY =	21 CY
WALL 2 -	5.75 FT X 41 SPACES X 3.00 FT X 1.50 FT / 27 CF/CY =	39 CY
TOTAL		60 CY

ESTIMATED QUANTITIES ABOVE CARRIED TO GENERAL SUMMARY

- NOTES:
- ELASTOMERIC BEARINGS SHALL BE 1/2"X 6"X 6", 70 DUROMETER PER CMS 711.21 TYPE PEP AND ARE INCLUDED FOR PAYMENT WITH ITEM 610, RETAINING WALL, MISC.: PRECAST CONCRETE PANEL FOR PAYMENT.
 - SECURE PRECAST CONCRETE PANELS AGAINST PILE FLANGE UNTIL VOID IS FILLED WITH POROUS BACKFILL.
 - GEOTEXTILE FABRIC, TYPE D IS INCLUDED FOR PAYMENT WITH ITEM 518, POROUS BACKFILL WITH GEOTEXTILE FABRIC.
 - FOR PRECAST CONCRETE PANEL DETAILS, SEE SHEET 39/60.
 - FOR DRILLED SHAFT AND PLUG PILE ELEVATIONS, SEE SHEETS 34/60, 35/60 AND 37/60.



PRECAST CONCRETE PANEL
126 PANELS REQUIRED - WALL 1
123 PANELS REQUIRED - WALL 2
TOTAL QUANTITY OF 249 PANELS
CARRIED TO GENERAL SUMMARY



* LIFT INSERT LOCATION AND DESIGN TO BE DETERMINED
BY THE PRECAST PANEL MANUFACTURER.

PROJECT DESCRIPTION

THIS PROJECT, HAM-52-36.85, IS THE EXPLORATION FOR TWO LANDSLIDES LOCATED ALONG THE SOUTH SIDE OF US ROUTE 52 BETWEEN KELLOGG AVENUE AND ASHBURY ROAD IN HAMILTON COUNTY, OHIO AT SLM 36.85 AND 37.65. DRILLED SHAFT WALLS ARE RECOMMENDED TO STABILIZE THE ROADWAY AT EACH LOCATION.

HISTORIC RECORDS

THE ODOT TRAFFIC INFORMATION MANAGEMENT SYSTEM (TIMS) PROVIDES DOCUMENTATION FOR TWO GEOTECHNICAL EXPLORATIONS PERFORMED WITHIN ONE MILE OF THE PROJECT. INFORMATION FROM THESE EXPLORATIONS IS NOT PRESENTED IN THESE DRAWINGS; HOWEVER, THE INFORMATION WAS USED TO UNDERSTAND THE GENERAL SUBSURFACE PROFILE OF THE PROJECT AREA.

THE HAM-52-34.84 PROJECT WAS FOR GEOHAZARD REMEDIATION THAT WAS LOCATED BETWEEN THE TWO LANDSLIDES IDENTIFIED FOR THIS PROJECT. THE EXPLORATION CONSISTED OF FOUR BORINGS DRILLED IN 1973. THE OVERBURDEN SOILS PREDOMINANTLY CLASSIFIED AS SILT AND CLAY (A-6A) AND SILTY CLAY WITH STONE FRAGMENTS (A-6B). BEDROCK WAS ENCOUNTERED AT DEPTHS BETWEEN 20 TO 24 FEET AND WAS DESCRIBED AS GRAY LIMESTONE AND SHALE.

THE HAM-52-37.88/37.99 PROJECT FOR STRUCTURAL FOUNDATION EXPLORATION (CULVERT) WAS LOCATED APPROXIMATELY 0.3 MILES EAST OF THE SITE AND CONSISTED OF FOUR BORINGS ADVANCED ALONG US 52 IN 2009. THE OVERBURDEN SOILS PREDOMINANTLY CLASSIFIED AS SILTY CLAY (A-6B), CLAY (A-7-6), GRAVEL AND/OR STONE FRAGMENTS (A-1-A), AND GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT (A-2-6). BEDROCK WAS ENCOUNTERED AT DEPTHS OF 29.6 AND 33.0 FEET IN TWO BORINGS.

GEOLOGY

THE PROJECT SITE IS LOCATED WITHIN THE OUTER BLUEGRASS PHYSIOGRAPHIC REGION. THE OUTER BLUEGRASS REGION IS DESCRIBED AS A DISSECTED PLATEAU OF CARBONATE ROCKS, WITH CAVES AND OTHER KARST FEATURES RELATIVELY COMMON IN PORTIONS OF THE REGION. THE REGION CONSISTS OF ORDOVICIAN AND SILURIAN AGE DOLOMITES, LIMESTONES, AND CALCAREOUS SHALES UNDERLYING SILT-LOAM COLLUVIUM. THE OVERBURDEN SOILS AT THE PROJECT SITE ARE UNDERLAIN PRIMARILY BY SEDIMENTARY BEDROCK OF THE POINT PLEASANT AND KOPE FORMATION FROM THE ORDOVICIAN GROUP. THE BEDROCK FROM THESE FORMATIONS IS COMPRISED OF INTERBEDDED LIMESTONE AND SHALE.

RECONNAISSANCE

PRIOR TO THE FIELD EXPLORATION, ODOT MARKED THE BORINGS AND STANTEC CARRIED OUT DESKTOP REVIEW TO MAKE OBSERVATIONS AND EVALUATE SITE CONDITIONS. THE LAND SURROUNDING THE PROJECT SITE CAN BE DESCRIBED AS RURAL WITH SOME RESIDENTIAL BUILDINGS IN THE VICINITY. THE PAVEMENT WAS OBSERVED TO BE GENERALLY IN FAIR CONDITION; HOWEVER, THE RIGHT EASTBOUND LANE HAD CRACKS AND THE SHOULDER HAD BEEN REPAVED DUE TO SETTLEMENT CAUSED BY THE LANDSLIDE AT BOTH LOCATIONS. PREVIOUS REPAIRS CONSISTING OF DRILLED SHAFTS WERE LOCATED AT THE DOWNHILL SLOPE ABOUT 15 TO 25 FEET FROM THE EDGE OF THE ROADWAY AT EACH LOCATION. THE ROAD SURFACE WAS APPROXIMATELY 100 FEET NORTH OF THE OHIO RIVER. THE LANDSLIDE AFFECTS APPROXIMATELY 175 FEET AND 100 FEET OF THE ROADWAY AT SLM 36.85 AND 37.65, RESPECTIVELY. THE BANKS OF THE RIVER WERE WELL VEGETATED.

SUBSURFACE EXPLORATION

S&ME WAS CONTRACTED BY STANTEC TO ADVANCE SEVEN BORINGS TO OBTAIN GEOTECHNICAL DATA FOR THE PROPOSED LANDSLIDE STABILIZATION. THE BORINGS WERE ADVANCED ALONG THE EASTBOUND SHOULDER OF THE ROAD. THE BORINGS WERE ADVANCED IN ACCORDANCE WITH THE ODOT SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS (SGE). THE BORINGS WERE PERFORMED WITH A CME 550X (R50) TRUCK MOUNTED DRILL RIG USING 3¼-INCH INSIDE DIAMETER (ID) HOLLOW STEM AUGERS TO ADVANCE THE BORINGS THROUGH SOIL. STANDARD PENETRATION TEST (SPT) SAMPLING WAS PERFORMED CONTINUOUSLY UNTIL THE BEDROCK WAS ENCOUNTERED. A MINIMUM 10 FEET OF BEDROCK WAS CORED PRIOR TO TERMINATION. THE ENERGY RATIO (ER) OF THE CME 550X AUTOMATIC HAMMER AND DRILL ROD SYSTEM WERE MEASURED TO BE 78.7 PERCENT ON MARCH 31, 2021.

EXPLORATION FINDINGS

LANDSLIDE AT SLM 36.85

BORINGS B-001-0-24 THROUGH B-004-0-24 WERE ADVANCED TO OBTAIN SUBSURFACE INFORMATION FOR THE LANDSLIDE LOCATED NEAR SLM 36.85. THE SURFACE MATERIALS ENCOUNTERED IN THESE BORINGS CONSISTED OF 3 TO 4 INCHES OF ASPHALT FOLLOWED BY 8 INCHES OF CONCRETE. BELOW THE SURFACE MATERIALS, THE ENCOUNTERED SOIL WAS PRIMARILY FINE-GRAINED, TYPICALLY CLASSIFYING AS CLAY (A-7-6). ISOLATED SAMPLES CLASSIFIED AS SANDY SILT (A-4A), SILT AND CLAY (A-6A), AND SILTY CLAY (A-6B). THE FINE-GRAINED SOILS WERE DESCRIBED AS STIFF TO HARD, BROWN TO GRAY, DAMP TO MOIST, AND MODERATELY PLASTIC. THINNER LAYERS (TYPICALLY 1.5 FEET THICK) OF COARSE-GRAINED SOILS WERE ALSO ENCOUNTERED AT VARIOUS DEPTHS. THESE COARSE-GRAINED MATERIALS WERE VISUALLY DESCRIBED OR CLASSIFIED AS GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-B), GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4), AND GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY (A-2-6). THE SOILS WERE DESCRIBED AS LOOSE TO VERY DENSE, BROWN TO GRAY, AND DAMP TO MOIST.

BEDROCK WAS ENCOUNTERED AT DEPTHS RANGING FROM 26.5 TO 31.0 FEET. A LAYER OF HIGHLY WEATHERED SHALE UP TO ABOUT 5 FEET THICK WAS AUGERED PRIOR TO CORING. THE CORED BEDROCK WAS DESCRIBED AS INTERBEDDED GRAY SHALE AND LIMESTONE. THE SHALE WAS DESCRIBED AS WEAK, SEVERELY TO HIGHLY WEATHERED, AND THIN BEDDED. THE LIMESTONE WAS DESCRIBED AS MODERATELY STRONG, MODERATELY WEATHERED, AND MEDIUM BEDDED. A MINIMUM OF 10 FEET OF BEDROCK WAS CORED PRIOR TO TERMINATION. CORE RECOVERIES RANGED FROM 81 TO 100 PERCENT AND RQD VALUES VARIED FROM 22 TO 71 PERCENT. GROUNDWATER WAS ENCOUNTERED DURING DRILLING AT DEPTHS RANGING BETWEEN 23.0 AND 27.0 FEET IN B-001-0-24 THROUGH B-003-0-24. GROUNDWATER WAS NOT OBSERVED IN B-004-0-24 DURING DRILLING.

EXPLORATION FINDINGS (CONTINUED)

LANDSLIDE AT SLM 37.65

BORINGS B-005-0-24 THROUGH B-007-0-24 WERE ADVANCED TO OBTAIN SUBSURFACE INFORMATION FOR THE LANDSLIDE LOCATED NEAR SLM 37.65. THE SURFACE MATERIALS ENCOUNTERED IN THESE BORINGS CONSISTED OF 2 INCHES OF ASPHALT, 6 TO 7 INCHES OF CONCRETE, AND 3 TO 4 INCHES OF SUBBASE. BELOW THE SURFACE MATERIALS, THE ENCOUNTERED SOIL WAS PRIMARILY FINE-GRAINED, TYPICALLY CLASSIFYING AS CLAY (A-7-6), WITH ONE SAMPLE CLASSIFYING AS SILTY CLAY (A-6B). THE FINE-GRAINED SOILS WERE DESCRIBED AS STIFF TO HARD, BROWN TO GRAY, DAMP TO MOIST AND MODERATELY TO HIGHLY PLASTIC. IN B-006-0-24 AND B-007-0-24, THINNER LAYERS (1.5 TO 3.0 FEET) OF COARSE-GRAINED SOILS WERE ENCOUNTERED AT VARIOUS DEPTHS. THESE COARSE-GRAINED MATERIALS WERE VISUALLY DESCRIBED OR CLASSIFIED AS GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY (A-2-6). THE SOILS WERE DESCRIBED AS LOOSE TO VERY DENSE, BROWN TO GRAY, AND DRY TO DAMP.

BEDROCK WAS ENCOUNTERED AT DEPTHS RANGING FROM 17.5 TO 20.5 FEET. A 1-TO-3-FOOT-THICK LAYER OF WEATHERED SHALE WAS AUGERED PRIOR TO CORING. THE CORED BEDROCK WAS DESCRIBED AS INTERBEDDED GRAY SHALE AND LIMESTONE. THE SHALE WAS DESCRIBED AS WEAK, SEVERELY TO HIGHLY WEATHERED, AND THIN BEDDED. THE LIMESTONE WAS DESCRIBED AS MODERATELY STRONG, MODERATELY WEATHERED, AND MEDIUM BEDDED. A MINIMUM OF 10 FEET OF BEDROCK WAS CORED PRIOR TO TERMINATION. CORE RECOVERIES RANGED FROM 29 TO 100 PERCENT AND RQD VALUES VARIED FROM 0 TO 93 PERCENT. GROUNDWATER WAS NOT OBSERVED DURING DRILLING.

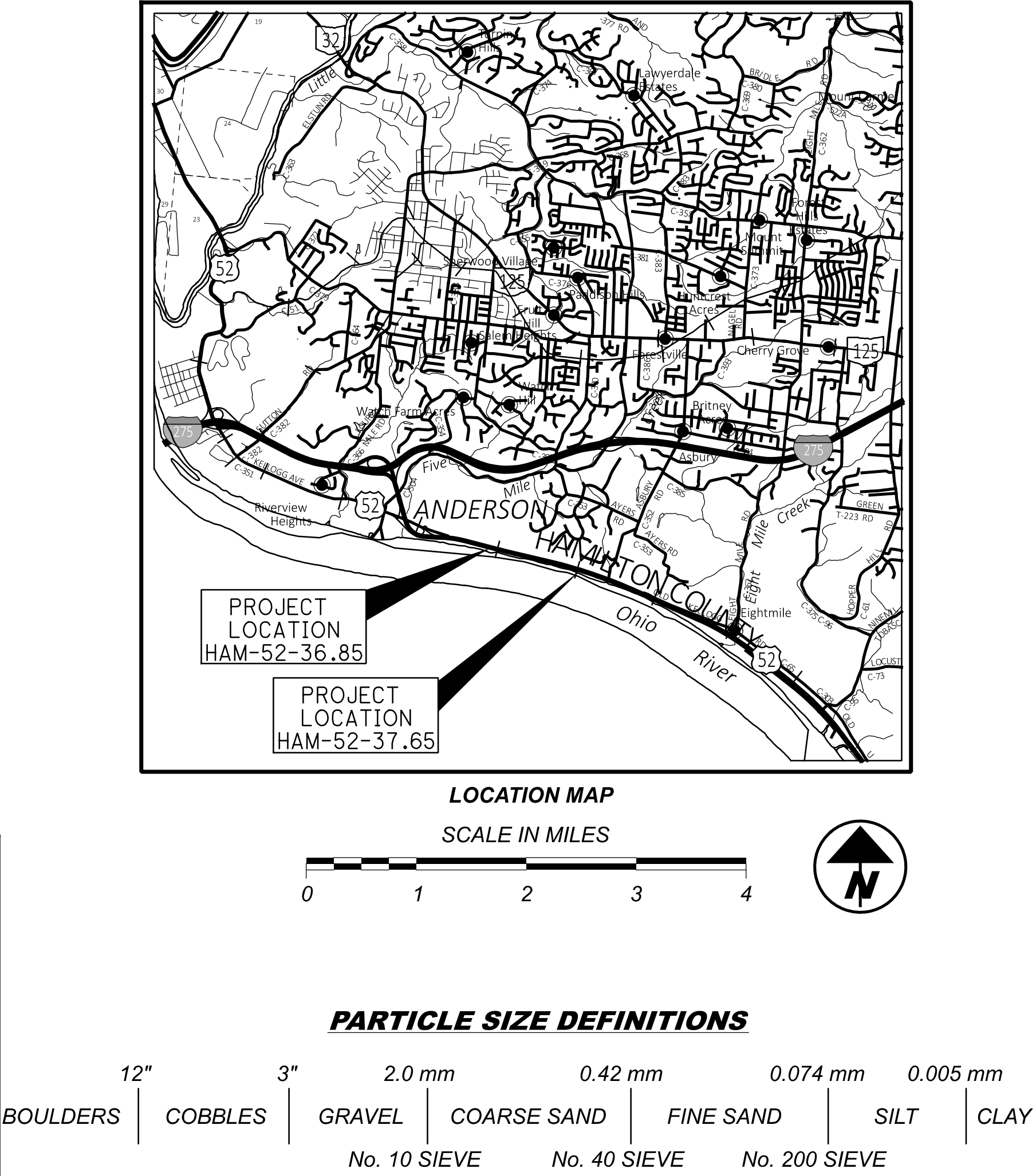
SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2024.

AVAILABLE INFORMATION

THE SOIL, BEDROCK, AND GROUNDWATER INFORMATION COLLECTED FOR THIS SUBSURFACE EXPLORATION THAT CAN BE CONVENIENTLY DISPLAYED ON THE SOIL PROFILE SHEETS HAS BEEN PRESENTED. GEOTECHNICAL REPORTS, IF PREPARED, ARE AVAILABLE FOR REVIEW ON THE OFFICE OF CONTRACT SALES WEBSITE.

LEGEND			
	DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	0 2
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4	0 1
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT & CLAY	A-2-6	2 8
	SANDY SILT	A-4a	1 0
	SILT AND CLAY	A-6a	0 2
	SILTY CLAY	A-6b	1 1
	CLAY	A-7-6	27 64
	TOTAL		31 78
	LIMESTONE	VISUAL	
	SHALE	VISUAL	
	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL	
	CONCRETE = X = APPROXIMATE THICKNESS	VISUAL	
	BORING LOCATION - PLAN VIEW.		
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
WC	INDICATES WATER CONTENT IN PERCENT.		
N ₆₀	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.		
X/Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.		
W—	INDICATES FREE WATER ELEVATION.		
TR	INDICATES TOP OF ROCK.		
SS	INDICATES A SPLIT SPOON SAMPLE.		
NP	INDICATES A NON-PLASTIC SAMPLE.		
UCR	UNCONFINED COMPRESSIVE STRENGTH (ROCK) SHOWN IN (PSI).		



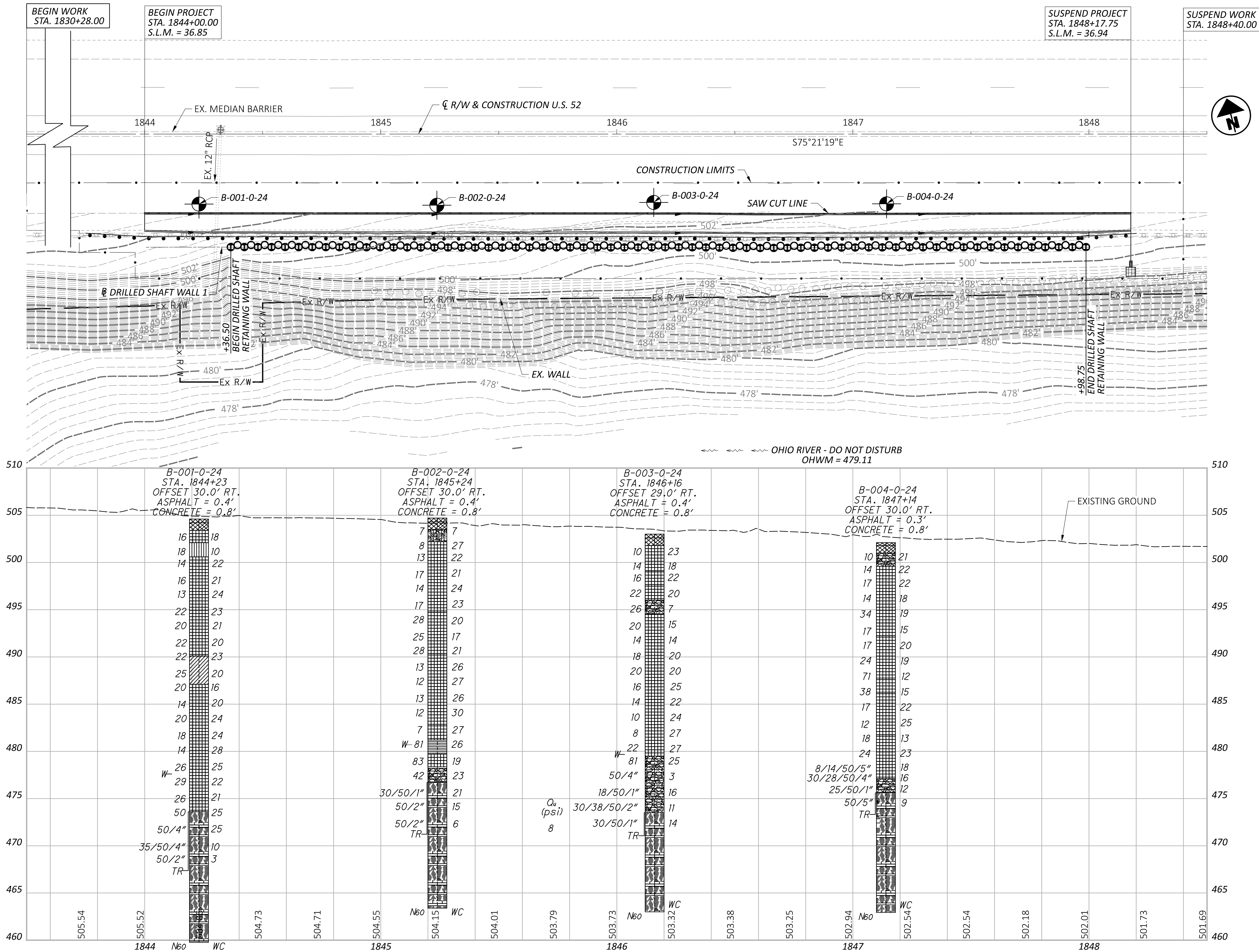
DESKTOP REVIEW. - RL 02/10/2024

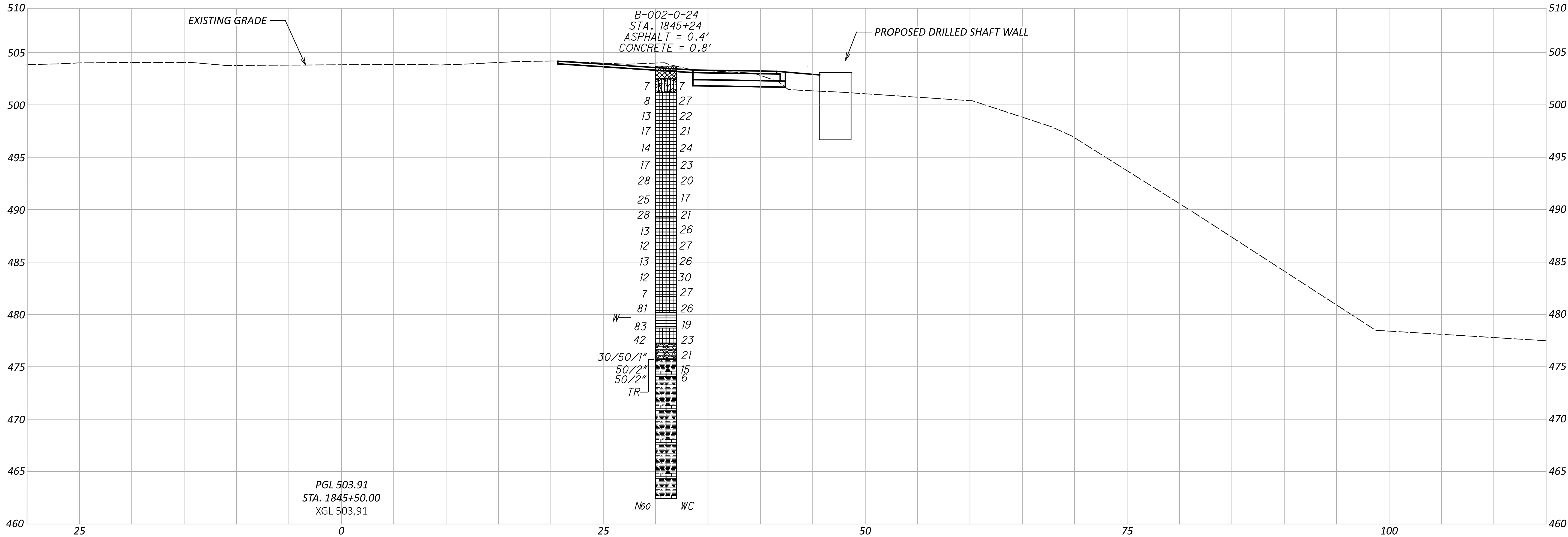
DRILLING - BK & SM (S&ME) 02/27/2024-03/05/2024

DRAWN - MJ 04/2024

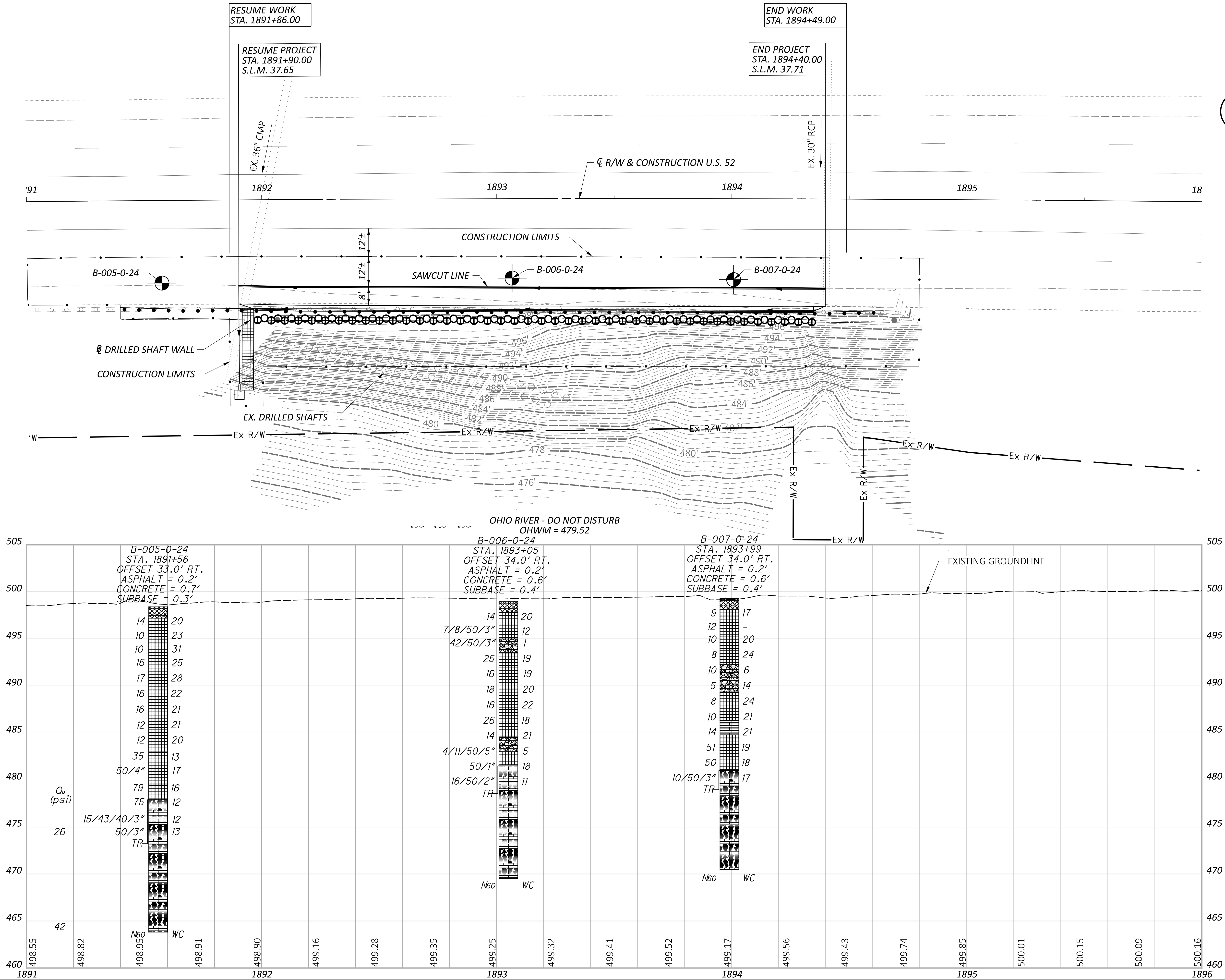
REVIEWED - EMK 04/19/2024

BEDROCK TEST SUMMARY				
EXPLOR. ID	SAMPLE ELEV. (FT.)	SAMPLE DEPTH (FT.)	QU (PSI)	LITHOLOGY
SLM 36.85 B-001-0-24	466.3'-465.9'	38.3'-38.7'	499	SHALE
B-003-0-24	471.1'-470.7'	31.9'-32.3'	8	SHALE
SLM 37.65 B-005-0-24	472.9'-472.3'	25.5'-26.1'	26	SHALE
B-005-0-24	463.4'-462.9'	34.0'-34.6'	42	SHALE

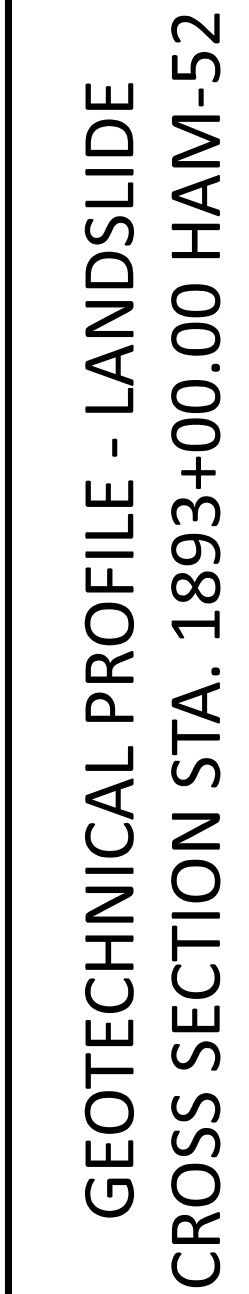




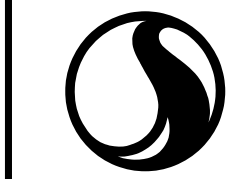
GEOTECHNICAL PROFILE - LANDSLIDE
CROSS SECTION STA. 1845+50.00 HAM-52



GEOTECHNICAL PROFILE - LANDSLIDE
HAM-52-37.65 - STA. 1891+00.00 TO 1896+00.00



DESIGN AGENCY



Stantec
1500 LAKE SHORE DRIVE

DESIGNER
COLUMBUS, OH 43204
(614) 486-4383

REVIEWER

EMK 04/19/24

PROJECT ID

116046

SUBSET	TOTAL
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5	21
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SHEET	TOTAL
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P.44 | 60

HAM-52-(36.85)(37.65)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 9/18/2024 TIME: 8:35:28 AM USER: Mjennings
pw: \\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 08\Hami

PROJECT: HAM-52-36.85				DRILLING FIRM / OPERATOR: S&ME / B. KEYNON				DRILL RIG: S&ME CME 550X (R50)				STATION / OFFSET: 1844+23, 30' RT.				EXPLORATION N																															
TYPE: GEOHAZARD EXPLORATION				SAMPLING FIRM / LOGGER:S&ME / S. MARAHATTA				HAMMER: CME AUTOMATIC				ALIGNMENT: US 52				B-001-0-24																															
PID: 116046 SFN: N/A				DRILLING METHOD: 3-1/4" HSA / NQ2				CALIBRATION DATE: 3/31/21				ELEVATION: 504.6 (MSL) EOB: 44.8 ft.				PAGE																															
START: 2/27/24 END: 2/27/24				SAMPLING METHOD: SPT				ENERGY RATIO (%): 78.7				LAT / LONG: 39.045069, -84.376600				1 OF 1																															
MATERIAL DESCRIPTION AND NOTES								ELEV.		DEPTHS		SPT/ RQD		REC SAMPLE ID		HP (tsf)		GRADATION (%)		ATTERBERG		HOLE SEALED																									
								504.6																																							
ASPHALT (4 INCHES) CONCRETE (8 INCHES) VERY STIFF, BROWN AND GRAY, CLAY, TRACE SAND, SOME GRAVEL, SLIGHTLY ORGANIC, MOIST STIFF, BROWN AND GRAY, SANDY SILT, LITTLE CLAY, LITTLE GRAVEL, DAMP HARD, BROWN AND GRAY, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, MOIST TO DAMP								504.2		1		4		67		SS-1		3.50																													
								503.6		2		6		16																																	
								502.1		3		7		18		SS-2		-		14		9		34		28		15		23		14		9		10		A-4a (2)									
								500.6		4		3		7		14		SS-3		4.50		-		-		-		-		-		-		-		22		A-7-6 (V)									
										5		4		7		56		4.50		-		-		-		-		-		-		21		A-7-6 (20)													
								494.6		6		4		16		67		SS-4		4.50		10		6		2		33		49		58		26		32		21		A-7-6 (20)							
										7		3		8		56		SS-5		4.50		-		-		-		-		-		-		-		24		A-7-6 (V)									
										8		4		6		22		44		SS-6		4.50		-		-		-		-		-		-		23		A-7-6 (V)									
HARD TO VERY STIFF, BROWN AND GRAY, CLAY, SOME SILT, LITTLE LIMESTONE FRAGMENTS, TRACE SAND, MOIST TO DAMP										9		4		22		44		SS-6		4.50		-		-		-		-		-		23		A-7-6 (V)													
										10		4		20		67		SS-7		4.50		-		-		-		-		-		-		-		21		A-7-6 (V)									
										11		5		10		67		SS-8		4.50		13		4		2		33		48		22		26		20		A-7-6 (16)									
										12		7		22		67		SS-8		4.50		10		4		2		33		48		22		26		20		A-7-6 (16)									
HARD TO STIFF, BROWN AND GRAY, SILT AND CLAY, TRACE LIMESTONE FRAGMENTS, MOIST								490.1		13		4		22		67		SS-9		4.00		-		-		-		-		-		23		A-7-6 (V)													
										14		8		9		22		SS-10		4.50		-		-		-		-		-		-		-		20		A-6a (V)									
										15		9		25		22		SS-11		4.50		-		-		-		-		-		-		-		16		A-6a (V)									
										16		4		10		22		SS-12		4.00		-		-		-		-		-		-		-		20		A-7-6 (V)									
trace limestone floaters encountered from 22 to 23.5 feet								487.1		17		7		20		22		SS-13		0.75		2		5		3		44		46		20		26		24		A-7-6 (16)									
										18		6		14		33		SS-14		0.50		-		-		-		-		-		-		-		24		A-7-6 (V)									
										19		5		8		44		SS-15		0.50		-		-		-		-		-		-		-		28		A-7-6 (V)									
										20		7		20		44		SS-16		1.75		-		-		-		-		-		-		-		25		A-7-6 (V)									
STIFF TO HARD, OLIVE BROWN AND GRAY, CLAY, SOME SILT, TRACE SAND, LITTLE LIMESTONE FRAGMENTS, MOIST								478.1		21		6		18		22		SS-17		4.50		-		-		-		-		-		22		A-7-6 (V)													
										22		4		8		33		SS-18		-		40		6		3		22		29		47		21		26		21		A-7-6 (10)							
										23		5		6		26		44		SS-19		-		-		-		-		-		-		-		25		A-7-6 (V)									
										24		9		11		56		SS-20		4.50		-		-		-		-		-		-		-		25		A-7-6 (V)									
VERY STIFF TO HARD, BROWN AND GRAY, CLAY, "AND" LIMESTONE FRAGMENTS, SOME SILT, TRACE SAND, DAMP TO MOIST								473.6		25		8		29		56		SS-21		-		-		-		-		-		-		22		A-7-6 (V)													
										26		10		12		67		SS-22		-		-		-		-		-		-		-		-		22		A-7-6 (V)									
										27		10		26		67		SS-23		-		-		-		-		-		-		-		-		21		26		21		A-7-6 (10)					
										28		10		10		50		SS-24		-		-		-		-		-		-		-		-		25		A-7-6 (V)									
INTERBEDDED SHALE (80%) AND LIMESTONE (20%), RQD 40% REC. 90%; SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, FINE GRAINED, THIN BEDDED; LIMESTONE, GRAY, MODERATELY WEATHERED, MODERATELY STRONG TO STRONG.										29		19		56		SS-25		-		-		-		-		-		-		-		25		A-7-6 (V)													
										30		50/4"		-		100		SS-26		4.50		-		-		-		-		-		-		-		25		A-7-6 (V)									
										31		35		50/4"		80		SS-27		-		-		-		-		-		-		-		-		10		Rock (V)									
										32		50/4"		-		100		SS-28		-		-		-		-		-		-		-		-		3		Rock (V)									
FROM 38.3 FT. TO 38.7 FT., UCR = 499 PSI										33		60/2"		-		100		NQ-RC-1		-		-		-		-		-		-		-		CORE													
										34				22		83		NQ-RC-2		-		-		-		-		-		-		-		-		-		CORE									
										35						53		100		NQ-RC-3		-		-		-		-		-		-		-		-		CORE									
										36																												CORE									
										37																								CORE													
										38																												CORE									
										39																												CORE									
										40																												CORE									
										41																								CORE													
										42																												CORE									
										43																												CORE									
										44																												CORE									
								459.7		EOb																																					
NOTES: NONE																																															
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH: TREMIED BENTONITE GROUT																																															

1	Location / Orientation	B-001-0-24		Photographer: Suman Marahatta	Date: 3/8/2024
	Remarks	34 to 44.83 feet			

Handwritten notes on the box lid:

Run	Depth (ft)	Ree (mch)	RQD (mch)
1	34-35.5 (19")	15"	$4'' = \frac{4}{19} = 21.05\%$
2	35.5-40.5 (10")	60"	$32'' = \frac{32}{60} = 53.33\%$
3	40.5-44.83 (5")	42"	$16'' = \frac{16}{42} = 38\%$

Additional handwritten notes: 3rd = 44.83, RQD 41.5% 30" = 60"

HAM-52-(36.85)(37.65)

MODEL Sheet PAPER SIZE: 34x22 (in.) DATE: 9/18/2024 TIME: 8:37:35 AM USER: Mlemings
pw:\hohodot-pw.bentley.com\hohodot-pw-02\Documents\01 Active Projects\District 08\Hamilton\116046\401-Engineering_Santac\Geotechnical\Sheets\116046_YL002.dgn

PROJECT: HAM-52-36.85				DRILLING FIRM / OPERATOR: S&ME / B. KEYNON				DRILL RIG: S&ME CME 550X (R50)				STATION / OFFSET: 1845+24, 30' RT.				EXPLORATION IN																					
TYPE: GEOHAZARD EXPLORATION				SAMPLING FIRM / LOGGER:S&ME / S. MARAHATTA				HAMMER: CME AUTOMATIC				ALIGNMENT: US 52				B-002-0-24																					
PID: 116046 SFN: N/A				DRILLING METHOD: 3-1/4" HSA / NQ2				CALIBRATION DATE: 3/31/21				ELEVATION: 503.7 (MSL) EOB: 411.3 ft.				PAGE																					
START: 2/28/24 END: 2/28/24				SPT				ENERGY RATIO (%): 78.7				LAT / LONG: 39.045003, -84.376256				1 OF 1																					
MATERIAL DESCRIPTION AND NOTES				ELEV.		DEPTHS		REC SAMPLE		GRADATION (%)		ATTERBERG		ODOT		HOLE																					
				503.7				ID		GR CS FS SI CL LL PL		WC		CLASS (GI)																							
ASPHALT (4 INCHES) CONCRETE (8 INCHES) LOOSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT, SLIGHTLY ORGANIC, DRY STIFF TO HARD, BROWN AND GRAY, CLAY, "AND" SILT, TRACE GRAVEL, TRACE SAND, MOIST TO DAMP				503.4		1																															
				502.7		2		7		22		SS-1						A-2-4 (V)																			
				501.2		3		8		56		SS-2		1.75		8		7		2		42		41		48		23		25		27		A-7-6 (16)			
						4		4		13		33		SS-3		1.75		-		-		-		-		-		-		-		22		A-7-6 (V)			
HARD, BROWN AND GRAY, CLAY, SOME SILT, TRACE SAND, DAMP						5		6																													
						6		7		17		67		SS-4		4.50		-		-		-		-		-		-		21		A-7-6 (V)					
						8		5		14		100		SS-5		4.25		-		-		-		-		-		-		24		A-7-6 (V)					
						9		3		5		17		28		SS-6		4.50		-		-		-		-		-		23		A-7-6 (V)					
VERY STIFF TO HARD, BROWN AND GRAY, CLAY, SOME SILT, LITTLE GRAVEL, TRACE SAND, DAMP TO MOIST						10		8		28		33		SS-7		2.50		-		-		-		-		-		-		20		A-7-6 (V)					
						11		5		8		25		33		SS-8		4.50		16		7		2		31		44		51		24		17		A-7-6 (17)	
						13		3		10		28		56		SS-9		4.50		-		-		-		-		-		-		21		A-7-6 (V)			
						14		11		3		5		13		56		SS-10		3.50		-		-		-		-		-		26		A-7-6 (V)			
slightly organics soil from 17.5 to 19 feet						16		3		4		12		100		SS-11		2.50		-		-		-		-		-		27		A-7-6 (V)					
						17		3		5																											
						18		3		5		13		67		SS-12		1.75		-		-		-		-		-		-		26		A-7-6 (V)			
						19		3		5		12		67		SS-13		0.50		-		-		-		-		-		-		30		A-7-6 (V)			
STIFF, RED BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE ORGANICS, MOIST						20		5		4																											
						21		3		2		7		67		SS-14		1.50		1		3		3		50		43		47		20		27		A-7-6 (16)	
						22		13		32		81		67		SS-15		2.00		-		-		-		-		-		-		26		A-7-6 (V)			
						23		30		18		83		67		SS-16		-		42		8		7		26		17		36		16		19		A-6b (4)	
HARD, BROWN AND GRAY, SILTY CLAY, AND LIMESTONE FRAGMENTS, LITTLE SAND, MOIST						24		29		34																											
						25		29		42		67		SS-17		-		30		7		4		30		29		43		18		25		23		A-7-6 (11)	
						26		19		13																											
						27		30		50/1"		-		57		SS-18		-		-		-		-		-		-		-		21		A-2-6 (V)			
VERY DENSE, BROWN AND GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY, WET						28		60/2"		-		100		SS-19		-		-		-		-		-		-		-		15		Rock (V)					
						29																															
						30		60/2"		-		100		SS-20		-		-		-		-		-		-		-		-		6		Rock (V)			
						31																															
INTERBEDDED SHALE (68%) AND LIMESTONE (32%), RQD 55.5% REC. 100%; SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, FINE GRAINED, THIN BEDDED; LIMESTONE, GRAY, MODERATELY WEATHERED, MODERATELY STRONG TO STRONG.						32		61		100		RC-1 NQ-RC-1																				CORE					
						33																															
						34																															
						35																															
						36				60		100		RC-2 NQ-RC-2																				CORE			
						37																															
						38																															
						39																															
						40				42		100		RC-3 NQ-RC-3																				CORE			
						41				EoB																											
NOTES: NONE																																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; TREMIED BENTONITE GROUT																																					

2	Location / Orientation	B-002-0-24		Photographer: Suman Marahatta	Date: 3/8/2024
	Remarks	30.2 to 41.3 feet			

PROJECT: HAM-52-36.85			DRILLING FIRM / OPERATOR: S&ME / B. KEYNON			DRILL RIG: S&ME CME 550X (R50)			STATION / OFFSET: 1846+16, 29' RT.			EXPLORATION ID: B-003-0-24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
TYPE: GEOHAZARD EXPLORATION			SAMPLING FIRM / LOGGER:S&ME / S. MARAHATTA			HAMMER: CME AUTOMATIC			ALIGNMENT: US 52			PAGE 1 OF 1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
PID: 116046 SFN: N/A			DRILLING METHOD: 3-1/4" HSA / NQ2			CALIBRATION DATE: 3/31/21			ELEVATION: 503.0 (MSL) EOB: 40.0 ft.			LAT / LONG: 39.044948, -84.375940																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
START: 2/29/24 END: 2/29/24			SAMPLING METHOD: SPT			ENERGY RATIO (%): 78.7			GRADATION (%)			ATTERBERG																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
MATERIAL DESCRIPTION AND NOTES			ELEV.			SPT/ RQD			REC SAMPLE (%)			HP (tsf)			GR			CS			FS			SI			CL			LL			PL			PI			WC			ODOT CLASS (GI)			HOLE SEALED																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
ASPHALT (4 INCHES) CONCRETE (8 INCHES) VERY STIFF, BROWN AND GRAY, CLAY, TRACE SAND, TRACE GRAVEL, SLIGHTLY ORGANIC, DAMP HARD, BROWN AND GRAY, CLAY, SOME SILT, SOME SAND, SOME GRAVEL, DAMP HARD, BROWN AND GRAY, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP HARD, BROWN, CLAY, SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP MEDIUM DENSE, BROWN AND GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY, DAMP STIFF, BROWN, CLAY, SOME SILT, SOME LIMESTONE FRAGMENTS, TRACE SAND, DAMP STIFF, BROWN AND GRAY, CLAY, "AND" SILT, LITTLE LIMESTONE FRAGMENTS, TRACE SAND, MOIST TO DAMP VERY STIFF TO STIFF, RED BROWN, CLAY, SOME SILT, TRACE LIMESTONE FRAGMENTS, TRACE SAND, MOIST STIFF TO HARD, BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE LIMESTONE FRAGMENTS, MOIST TO WET VERY DENSE, BROWN AND GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY, DAMP Limestone floaters encountered INTERBEDDED SHALE (70%) AND LIMESTONE (30%), RQD 58.7% REC. 100%; SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, FINE GRAINED, THIN BEDDED; LIMESTONE, GRAY, MODERATELY WEATHERED, MODERATELY STRONG TO STRONG. FROM 31.9 FT. TO 32.3 FT., UCR = 8 PSI			503.0			1			33			2.50			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-			-		

NOTES: NONE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; TREMIED BENTONITE GROUT

3	Location / Orientation	B-003-0-24
	Remarks	29.5 to 40 feet

29.5'

30.3'

35.3'

40.0'

23780169
B-03

Run	Depth	Rec	RQD
1	29.5-30.37 (10")	10"	$\frac{6}{10} = 60\%$
2	30.37-35.33 (60")	60"	$\frac{45}{60} = 75\%$
3	35.33-40	56"	$\frac{32}{56} = 57.14\%$

Photographer: Suman Marahatta

Date: 3/8/2024

PROJECT: HAM-52-36.85				DRILLING FIRM / OPERATOR: S&ME / B. KEYNON				DRILL RIG: S&ME CME 550X (R50)				STATION / OFFSET: 1847+14, 30' RT.				EXPLORATION ID									
TYPE: GEOHAZARD EXPLORATION				SAMPLING FIRM / LOGGER:S&ME / S. MARAHATTA				HAMMER: CME AUTOMATIC				ALIGNMENT: US 52				B-004-0-24									
PID: 116046 SFN: N/A				DRILLING METHOD: 3-1/4" HSA / NQ2				CALIBRATION DATE: 3/31/21				ELEVATION: 502.1 (MSL) EOB: 39.2 ft.				PAGE									
START: 3/1/24 END: 3/1/24				SAMPLING METHOD: SPT				ENERGY RATIO (%): 78.7				LAT / LONG: 39.044883, -84.375603				1 OF 1									
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED			
ASHPHALT (3 INCHES) CONCRETE (8 INCHES) LOOSE, BROWN AND GRAY, GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY, DAMP HARD, BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, DAMP TO MOIST				502.1																					
				501.8	1		3																		
				501.2	2		4	10	33	SS-1	-	-	-	-	-	-	-	-	-	-	-	-	21	A-2-6 (V)	
				499.6	3		5	14	44	SS-2	4.50	0	1	2	46	51	51	24	27	22	A-7-6 (17)				
					4		3	5	17	89	SS-3	4.50	-	-	-	-	-	-	-	-	22	A-7-6 (V)			
					5		4	5	8																
					6		4	5	14	100	SS-4	4.50	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)		
					7		2	5	34	89	SS-5	4.50	-	-	-	-	-	-	-	-	-	19	A-7-6 (V)		
HARD, BROWN AND GRAY, CLAY, SOME SILT, TRACE GRAVEL, TRACE SAND, DAMP				493.6	8		5	21																	
					9		4	6	17	78	SS-6	4.00	5	3	34	53	56	23	33	15	A-7-6 (19)				
				492.1	10		3	5	17	67	SS-7	4.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)			
					11		5	8																	
					12		5	7	24	100	SS-8	4.50	-	-	-	-	-	-	-	19	A-7-6 (V)				
					13		8	14	71	56	SS-9	4.50	-	-	-	-	-	-	-	-	12	A-7-6 (V)			
				487.6	14		13	11	38	44	SS-10	-	46	6	3	19	26	51	19	32	15	A-7-6 (9)			
				486.1	15		9	6	17	89	SS-11	2.50	2	3	2	48	45	49	22	27	22	A-7-6 (17)			
VERY STIFF, BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, SLIGHTLY ORGANIC, DAMP					16		3	3	12	100	SS-12	2.75	-	-	-	-	-	-	-	25	A-7-6 (V)				
					17		4	6	18	100	SS-13	-	39	5	7	29	20	41	19	22	13	A-7-6 (7)			
				483.1	18		13	9	24	100	SS-14	2.50	-	-	-	-	-	-	-	-	23	A-7-6 (V)			
					19		8	14	-	24	SS-15	4.50	-	-	-	-	-	-	-	-	18	A-7-6 (V)			
					20		30	28	-	25	SS-16	4.50	-	-	-	-	-	-	-	16	A-7-6 (V)				
					21		25	-	14	SS-17	-	-	-	-	-	-	-	-	-	-	12	A-2-6 (V)			
					22		50/1"																		
				477.1	23		50/5"		80	SS-18	4.50	-	-	-	-	-	-	-	-	-	9	Rock (V)			
VERY DENSE, BROWN AND GRAY, GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY, SOME LIMESTONE FRAGMENTS, DRY INTERBEDDED SHALE (70%) AND LIMESTONE (30%), RQD 59.2%, REC. 100%; SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, FINE GRAINED, THIN BEDDED; LIMESTONE, GRAY, MODERATELY WEATHERED, MODERATELY STRONG TO STRONG.				475.6	24																				
					25																				
					26																				
					27																				
					28																				
					29		71		100	RC-1 NQ-RC-1													CORE		
					30																				
					31																				
					32																				
					33		57		100	RC-2 NQ-RC-2													CORE		
					34																				
					35																				
					36																				
					37		58		100	RC-3 NQ-RC-3													CORE		
					38																				
				462.9	39																				

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; TREMIED BENTONITE GROUT

GEOTECHNICAL PROFILE - LANDSLIDE
ROCK CORE PHOTO BORING B-004-0-24

PROJECT: HAM-52-36.85			DRILLING FIRM / OPERATOR: S&ME / B. KEYNON			DRILL RIG: S&ME CME 550X (R50)			STATION / OFFSET: 1891+56, 33' RT.			EXPLORATION ID								
TYPE: GEOHAZARD EXPLORATION			SAMPLING FIRM / LOGGER:S&ME / S. MARAHATTA			HAMMER: CME AUTOMATIC			ALIGNMENT: US 52			B-005-0-24								
PID: 116046 SFN: N/A			DRILLING METHOD: 3-1/4" HSA / NQ2			CALIBRATION DATE: 3/31/21			ELEVATION: 498.4 (MSL) EOB: 34.6 ft.			PAGE								
START: 3/4/24 END: 3/4/24			SAMPLING METHOD: SPT			ENERGY RATIO (%): 78.7			LAT / LONG: 39.042159, -84.360360			1 OF 1								
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC SAMPLE (%)	HP (tsf)	GRADATION (%)						ATTERBERG		ODOT CLASS (GI)	HOLE SEALED		
									GR	CS	FS	SI	CL	LL	PL	PI			WC	
ASPHALT (2 INCHES) CONCRETE (7 INCHES) SUBBASE (3 INCHES) STIFF, BROWN AND GRAY, CLAY, "AND" SILT, LITTLE GRAVEL, LITTLE SAND, MOIST VERY STIFF, BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, SLIGHTLY ORGANIC, MOIST TO DAMP			498.4																	
			498.3	1	4	33	SS-1	1.25	16	12	6	36	30	45	19	26	20	A-7-6 (13)		
			497.7	2	5	14														
			497.4	3	5	10	33	SS-2	2.00	-	-	-	-	-	-	-	23	A-7-6 (V)		
			495.9	4	2	10	67	SS-3	3.25	-	-	-	-	-	-	-	31	A-7-6 (V)		
				5	3	5														
				6	3	16	67	SS-4	3.50	0	2	42	56	61	25	36	25	A-7-6 (20)		
				7	4	17	50	SS-9	3.00	-	-	-	-	-	-	-	28	A-7-6 (V)		
				8	5	8														
				9	4	16	78	SS-6	4.25	0	2	49	49	51	21	30	22	A-7-6 (18)		
HARD, BROWN AND GRAY, CLAY, "AND" SILT, TRACE SAND, MOIST			489.9	10	3	16	100	SS-7	4.50	-	-	-	-	-	21	A-7-6 (V)				
				11	4	8														
				12	3	12	78	SS-8	4.50	1	0	2	61	36	47	20	21	A-7-6 (16)		
				13	1	12	100	SS-9	4.50	-	-	-	-	-	-	-	20	A-7-6 (V)		
				14	3	6														
				15	2	35	67	SS-10	4.50	44	6	4	25	21	44	18	26	13	A-7-6 (7)	
				16	12	15														
				16	50/4"	-	100	SS-11	4.50	-	-	-	-	-	-	-	17	A-7-6 (V)		
				17																
				18	28	79	56	SS-12	4.50	-	-	-	-	-	-	-	16	A-7-6 (V)		
HARD, BROWN AND GRAY, CLAY, SOME SILT, "AND" LIMESTONE FRAGMENTS, LITTLE SAND, DAMP			479.4	19	31	75	83	SS-13	4.50	-	-	-	-	-	12	A-7-6 (V)				
				20	27	30														
				21	15	43	120	SS-14	4.50	-	-	-	-	-	-	12	Rock (V)			
				21	50/3"	-														
				22	50/3"	-	-	SS-15	-	-	-	-	-	-	-	13	Rock (V)			
				23																
				24	28	100	RC-1 NQ-RC-1										CORE			
				25																
				26																
				27	53	100	RC-2 NQ-RC-2										CORE			
FROM 25.5 FT. TO 26.1 FT., UCR = 26 PSI				28																
				29																
				30																
				31																
				32	53	100	RC-3 NQ-RC-3										CORE			
				33																
				34																
				EOB																
			FROM 34.0 FT. TO 34.6 FT., UCR = 42 PSI			463.9														

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; TREMIED BENTONITE GROUT

5	Location / Orientation	B-005-0-24
	Remarks	23.5 to 34.583 feet



Run	Depth	Rec. (inches)	ADD
①	23.5-25 (18")	18"	518 = 27.78%
②	25-30 (60")	60"	32 = 53.33%
③	30-34.583 (110")	55"	25 = 53.72%

Date: 3/8/2024

Photographer: Suman Marahatta

PROJECT: HAM-52-36.85		DRILLING FIRM / OPERATOR: S&ME / B. KEYNON		DRILL RIG: S&ME CME 550X (R50)		STATION / OFFSET: 1893+05, 34' RT.		EXPLORATION ID	
TYPE: GEOHAZARD EXPLORATION		SAMPLING FIRM / LOGGER: S&ME / S. MARAHATTA		HAMMER: CME AUTOMATIC		ALIGNMENT: US 52		B-006-0-24	
PID: 116046	SFN: N/A	DRILLING METHOD: 3-1/4" HSA / NQ2		CALIBRATION DATE: 3/31/21		ELEVATION: 499.0 (MSL)		EOB: 29.5 ft.	
START: 3/5/24	END: 3/5/24	SAMPLING METHOD: SPT		ENERGY RATIO (%): 78.7		LAT / LONG: 39.042054, -84.359854		PAGE	
MATERIAL DESCRIPTION		ELEV.		SPT/ RQD		REC SAMPLE ID		HP (tsf)	
AND NOTES		DEPTHS		GR CS FS SI CL		ATTERBERG		ODOT CLASS (GI)	
ASPHALT (2 INCHES)		499.0		1		GR CS FS SI CL		LL PI WC	
CONCRETE (6 INCHES)		498.9		2		GR CS FS SI CL		LL PI WC	
SUBBASE (4 INCHES)		498.2		3		GR CS FS SI CL		LL PI WC	
VERY STIFF TO HARD, BROWN AND GRAY, CLAY, "AND" SILT, LITTLE GRAVEL, LITTLE SAND, DAMP		498.0		4		GR CS FS SI CL		LL PI WC	
VERY DENSE, BROWN AND GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY, DRY		495.0		7		GR CS FS SI CL		LL PI WC	
HARD, BROWN AND GRAY, CLAY, SOME SILT, LITTLE GRAVEL, TRACE SAND, MOIST		493.5		8		GR CS FS SI CL		LL PI WC	
VERY STIF TO HARD, BROWN AND GRAY, CLAY, "AND" SILT, TRACE GRAVEL, TRACE SAND, DAMP		492.0		9		GR CS FS SI CL		LL PI WC	
slightly organic from 7 to 8.5 feet				10		GR CS FS SI CL		LL PI WC	
HARD, BROWN, CLAY, SOME SILT, TRACE SAND, LITTLE GRAVEL, MOIST		487.5		11		GR CS FS SI CL		LL PI WC	
HARD, RED BROWN, CLAY, "AND" SILT, TRACE SAND, SLIGHTLY ORGANIC, MOIST		486.0		12		GR CS FS SI CL		LL PI WC	
VERY DENSE, BROWN AND GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY, DAMP		484.5		13		GR CS FS SI CL		LL PI WC	
Limestone floaters encountered		483.0		14		GR CS FS SI CL		LL PI WC	
HARD, BROWN, CLAY, MOIST		481.5		15		GR CS FS SI CL		LL PI WC	
Limestone floaters encountered				16		GR CS FS SI CL		LL PI WC	
INTERBEDDED SHALE (72%) AND LIMESTONE (28%), RQD 37.2%, REC: 93%;				17		GR CS FS SI CL		LL PI WC	
SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, FINE GRAINED, THIN BEDDED; LIMESTONE, GRAY, MODERATELY WEATHERED, MODERATELY STRONG TO STRONG.				18		GR CS FS SI CL		LL PI WC	
				19		GR CS FS SI CL		LL PI WC	
				20		GR CS FS SI CL		LL PI WC	
				21		GR CS FS SI CL		LL PI WC	
				22		GR CS FS SI CL		LL PI WC	
				23		GR CS FS SI CL		LL PI WC	
				24		GR CS FS SI CL		LL PI WC	
				25		GR CS FS SI CL		LL PI WC	
				26		GR CS FS SI CL		LL PI WC	
				27		GR CS FS SI CL		LL PI WC	
				28		GR CS FS SI CL		LL PI WC	
				29		GR CS FS SI CL		LL PI WC	
				EOB		GR CS FS SI CL		LL PI WC	
						GR CS FS SI CL		LL PI WC	
						GR CS FS SI CL		LL PI WC	
						GR CS FS SI CL		LL PI WC	
						GR CS FS SI CL		LL PI WC	
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						GR CS FS SI CL		LL PI WC	
						GR CS FS SI CL		LL PI WC	
						GR CS FS SI CL		LL PI WC	

6	Location / Orientation	B-006-0-24		Photographer: Suman Marahatta	Date: 3/8/2024
	Remarks	18.75 to 29.5 feet			

Handwritten notes on the paper inside the box:

B-06
23780169

Run	Length	Reclined	RQD
①	18.75-20 (15")	10	$\frac{10}{15} = 66\%$
②	20-25 (60")	60"	$\frac{25}{60} = 35\%$
③	25-29.5 (54")	50"	$\frac{25}{54} = 50\%$

PROJECT: HAM-52-36.85		DRILLING FIRM / OPERATOR: S&ME / B. KEYNON				DRILL RIG: S&ME CME 550X (R50)		STATION / OFFSET: 1893+99, 34' RT.				EXPLORATION ID: B-007-0-24								
TYPE: GEOHAZARD EXPLORATION		SAMPLING FIRM / LOGGER:S&ME / S. MARAHATTA				HAMMER: CME AUTOMATIC		ALIGNMENT: US 52				PAGE 1 OF 1								
PID: 116046 SFN: N/A		DRILLING METHOD: 3-1/4" HSA / NQ2				CALIBRATION DATE: 3/31/21		ELEVATION: 499.3 (MSL) EOB: 28.8 ft.				LAT / LONG: 39.041982, -84.359535								
START: 3/5/24 END: 3/5/24		SAMPLING METHOD: SPT				ENERGY RATIO (%): 78.7														
MATERIAL DESCRIPTION AND NOTES		ELEV.		DEPTHS		SPT/ RQD		REC SAMPLE HP		GRADATION (%)		ATTERBERG		HOLE SEALED						
		499.3						ID		GR		CS FS SI CL LL PL		WC						
ASPHALT (2 INCHES) CONCRETE (6 INCHES) SUBBASE (4 INCHES) STIFF, BROWN AND GRAY, CLAY, SOME SILT, TRACE GRAVEL, SLIGHTLY ORGANIC, MOIST		499.1	1	5																
		498.4	2	4	9	50	SS-1	2.00	-	-	-	-	-	17	A-7-6 (V)					
		498.3	3	15	12	0	SS-2	-	-	-	-	-	-	-	A-7-6 (V)					
		495.3	4	5	4	10	67	SS-3	2.75	6	4	3	37	50	20	A-7-6 (18)				
		493.8	5	4	4	3	8	33	SS-4	1.75	-	-	-	-	24	A-7-6 (V)				
STIFF, BROWN, CLAY, SOME SILT, TRACE GRAVEL, MOIST LOOSE TO VERY LOOSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY, DAMP		492.3	6	3	3	33	SS-5	-	63	14	4	12	7	29	15	14	6	A-2-6 (0)		
			7	3	4	10	33	SS-6	-	-	-	-	-	-	-	-	14	A-2-6 (V)		
		489.3	8	2	5	33	SS-7	2.00	8	6	5	36	45	48	20	28	24	A-7-6 (17)		
			9	3	10	83	SS-8	2.50	-	-	-	-	-	-	-	-	21	A-7-6 (V)		
		486.3	10	2	3	5	100	SS-9	1.50	9	3	11	48	29	36	17	19	21	A-6b (12)	
STIFF, RED BROWN, SILTY CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, MOIST HARD, BROWN, CLAY, SOME SILT, SOME LIMESTONE FRAGMENTS, TRACE SAND, MOIST		484.8	11	3	14	67	SS-10	4.00	26	3	3	30	38	57	21	36	19	A-7-6 (17)		
			12	5	23	51	67	SS-11	4.50	-	-	-	-	-	-	-	18	A-7-6 (V)		
			13	12	50	67	SS-12	4.50	-	-	-	-	-	-	-	-	17	A-7-6 (V)		
		481.0	14	10	50/3"	-	89	SS-12	4.50	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
			15	0		29	RC-1	NQ-RC-1											CORE	
INTERBEDDED SHALE (82%) AND LIMESTONE (18%), RQD 39.4%, REC. 89%; SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, FINE GRAINED, THIN BEDDED; LIMESTONE, GRAY, MODERATELY WEATHERED, MODERATELY STRONG TO STRONG.			16																CORE	
			17	30		85	RC-2	NQ-RC-2												CORE
			18																	CORE
			19																	CORE
			20																	CORE
			21																	CORE
			22																	CORE
			23																	CORE
			24																	CORE
			25																	CORE
			26																	CORE
			27																	CORE
			28																	CORE
			29																	CORE
			30																	CORE

7	Location / Orientation	B-007-0-24	Photographer: Suman Marahatta	Date: 3/8/2024
	Remarks	18.25 to 28.233 feet		

Form No. TR-D7012C-01
Revision No. : 1LexC
Revision Date: 12/12/23

UNIAXIAL COMPRESSIVE STRENGTH
OF ROCK



Quality Assurance

ASTM D7012 Method C

S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505			
Project No.:	23780169	Report Date:	03/21/24
Project Name:	HAM-52-36.85 Landslide	Test Date(s):	03/20/24
Client Name:	Stantec		
Client Address:	10200 Alliance Rd Suite 300, Blue ash, OH 45242	Received Date:	03/12/24
Location:	B-001-0-24	Depth, ft:	38.33 - 38.705
Sample Description:	Gray Shale		

Angle of load relative to lithology: Approximately perpendicular

Moisture Content

4.6 %

Dry Unit Weight

144.7 pcf

Compressive Strength

499 psi

Before Test

After Test

Strain rate: 0.015 in/min.

Notes / Deviations / References:

J. Folsom
Technical Responsibility

Draft
Signature

Lab Services Manager
Position

3/21/2024
Date

Form No. TR-D7012C-01
Revision No. : 1LexC
Revision Date: 12/12/23

UNIAXIAL COMPRESSIVE STRENGTH
OF ROCK



Quality Assurance

ASTM D2166

S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505			
Project No.:	23780169	Report Date:	03/21/24
Project Name:	HAM-52-36.85 Landslide	Test Date(s):	03/14/24
Client Name:	Stantec		
Client Address:	10200 Alliance Rd Suite 300, Blue Ash, OH 45242	Received Date:	03/12/24
Location:	B-003-0-24	Depth, ft:	31.946 - 32.33
Sample Description:	Gray Shale		

Angle of load relative to lithology: Approximately perpendicular

Moisture Content

16.7 %

Dry Unit Weight

113.3 pcf

Compressive Strength

8 psi

Before Test

Picture Not Taken

After Test

Strain rate: 0.04 in/min.

Notes / Deviations / References: Test specimen was not prepared in accordance with the ASTM standard method for preparing rock core specimens for testing. Test results for specimens not prepared in accordance with this method may differ from test results obtained from specimens meeting this requirement. Sample was too soft to prepare and run as a rock core specimen so it was run using ASTM D2166.

J. Folsom
Technical Responsibility

Draft
Signature

Lab Services Manager
Position

3/21/2024
Date



10200 Alliance Road,
Suite 300
Cincinnati, OH 45242
(513) 842-8200

DESIGNER
MSJ

REVIEWER
EMK 08-07-24

PROJECT ID
116046

SUBSET TOTAL
20 21

SHEET TOTAL
P.59 60

HAM-52-(36.85)(37.65)

MODEL: l16046 Sheet+ PAPER(SIZE: 34x22 (in.) DATE: 9/18/2024 TIME: 9:01:02 AM USER: wlenning
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Form No. TR-D7012C-01
Revision No. : 1LexC
Revision Date: 12/12/23

**UNIAXIAL COMPRESSIVE STRENGTH
OF ROCK**
ASTM D2166


Quality Assurance

S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505

Project No.:	23780169	Report Date:	03/21/24
Project Name:	HAM-52-36.85 Landslide	Test Date(s):	03/14/24
Client Name:	Stantec		
Client Address:	10200 Alliance Rd Suite 300, Blue Ash, OH 45242	Received Date:	03/12/24
Location:	B-005-0-24	Depth, ft:	25.5 - 26.1
Sample Description:	Gray Shale		

Angle of load relative to lithology: Approximately perpendicular

Test Results			
Moisture Content	13.4 %	Dry Unit Weight	125.6 pcf
Compressive Strength	26 psi		

Before Test
Picture Not Taken


After Test

Strain rate: 0.05 in/min.

Notes / Deviations / References: Test specimen was not prepared in accordance with the ASTM standard method for preparing rock core specimens for testing. Test results for specimens not prepared in accordance with this method may differ from test results obtained from specimens meeting this requirement. Sample was too soft to prepare and run as a rock core specimen so it was run using ASTM D2166.

J. Folsom
Technical Responsibility

Draft
Signature

Lab Services Manager
Position

3/21/2024
Date

Form No. TR-D7012C-01
Revision No. : 1LexC
Revision Date: 12/12/23

**UNIAXIAL COMPRESSIVE STRENGTH
OF ROCK**
ASTM D2166


Quality Assurance

S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505

Project No.:	23780169	Report Date:	03/21/24
Project Name:	HAM-52-36.85 Landslide	Test Date(s):	03/14/24
Client Name:	Stantec		
Client Address:	10200 Alliance Rd Suite 300, Blue Ash, OH 45242	Received Date:	03/12/24
Location:	B-005-0-24	Depth, ft:	34.0-34.583
Sample Description:	Gray Shale		

Angle of load relative to lithology: Approximately perpendicular

Test Results			
Moisture Content	21.4 %	Dry Unit Weight	117.1 pcf
Compressive Strength	42 psi		

Before Test
Picture Not Taken


After Test

Strain rate: 0.05 in/min.

Notes / Deviations / References: Test specimen was not prepared in accordance with the ASTM standard method for preparing rock core specimens for testing. Test results for specimens not prepared in accordance with this method may differ from test results obtained from specimens meeting this requirement. Sample was too soft to prepare and run as a rock core specimen so it was run using ASTM D2166.

J. Folsom
Technical Responsibility

Draft
Signature

Lab Services Manager
Position

3/21/2024
Date

SOIL PROFILE - LANDSLIDE
LABORATORY TEST DATA

DESIGN AGENCY



10200 Alliance Road,
Suite 300
Cincinnati, OH 45242
(513) 842-8200

DESIGNER
MSJ

REVIEWER
EMK 08-07-24

PROJECT ID
116046

SUBSET	TOTAL
21	21

SHEET	TOTAL
P.60	60