

LEGEND FOR PROJECT - AVERAGE RESULTS OF TESTS - 642 SAMPLES TESTED

DESCRIPTION	ODOT CLASS	% AGG.	% C.SAND	% F.SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL	A-1-a(0)	79	8	4	9		NP	NP	8	2
GRAVEL WITH SAND	A-1-b(0)	32	35	18	9	6	NP	NP	7	38
FINE SAND	A-3(0)	2	28	61	6	3	NP	NP	22	2
COARSE AND FINE SAND	A-3a(0)	10	28	41	11	9	NP	NP	18	16
GRAVEL WITH SAND AND SILT	A-2-4(0)	41	16	12	20	11	25	4	12	3
GRAVEL W/ SAND, SILT AND CLAY	A-2-6(1)	26	29	19	11	15	31	16	19	16
SANDY SILT	A-4a(4)	17	14	14	37	17	25	5	14	160
SILT	A-4b(8)	4	7	9	58	22	26	5	17	115
SILT AND CLAY	A-6a(9)	5	7	7	50	31	32	13	17	137
SILTY CLAY	A-6b(11)	3	5	6	48	38	37	17	17	83
ELASTIC CLAY	A-7-5(20)									VISUAL CLASSIFICATION
CLAY	A-7-6(16)	1	2	4	36	58	48	26	24	42
LIMESTONE	- - -									VISUAL CLASSIFICATION
CLAYSTONE	- - -									VISUAL CLASSIFICATION
SANDSTONE	- - -									VISUAL CLASSIFICATION
SHALE	- - -									VISUAL CLASSIFICATION
SILTSTONE	- - -									VISUAL CLASSIFICATION
WEATHERED SILTSTONE	- - -									VISUAL CLASSIFICATION
WEATHERED SANDSTONE	- - -									VISUAL CLASSIFICATION
WEATHERED SHALE	- - -									VISUAL CLASSIFICATION
TOPSOIL	- - -									VISUAL CLASSIFICATION

NOTE. BEDROCK THAT IS INTERBEDDED IS SHOWN AS A COMBINATION OF TWO OF THE ABOVE ROCK PATTERNS.

- TR TOP OF ROCK
- AUGER BORING - PLAN VIEW
- DRIVE SAMPLE AND/OR CORE BORING - PROFILE VIEW
- FREE WATER
- STATIC WATER LEVEL
- STATIC WATER LEVEL (INCLUDES DRILLING WATER)
- WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT
- INDICATES A NON PLASTIC MATERIAL WITH A HIGH WATER CONTENT

NUMBER OF BLOWS FOR "STANDARD PENETRATION" TEST
 W-NUMBER OF BLOWS FOR FIRST 6 INCHES
 X-NUMBER OF BLOWS FOR SECOND 6 INCHES
 Y-NUMBER OF BLOWS FOR THIRD 6 INCHES
 Z-NUMBER OF BLOWS FOR FOURTH 6 INCHES, IF APPLICABLE

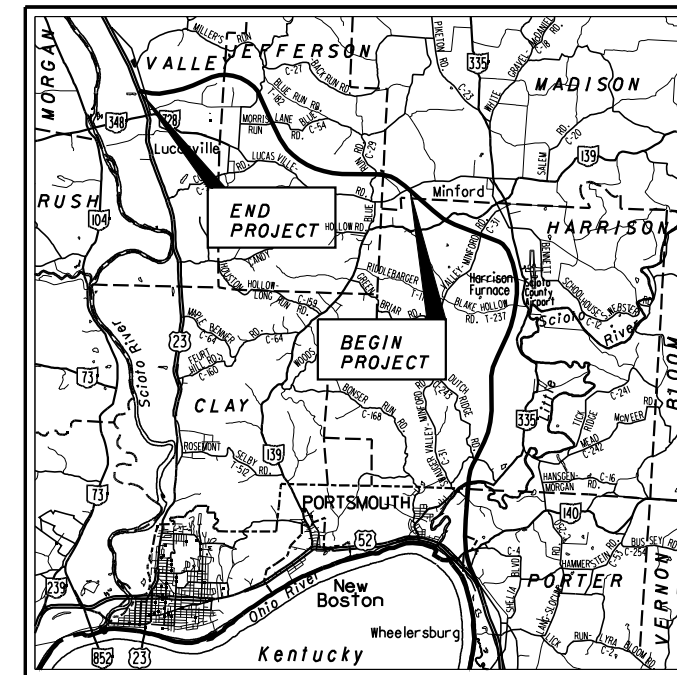
INDICATED NUMBER OF BLOWS (50) TO DRIVE A SPLIT-BARREL SAMPLER A DEPTH OF (n) INCHES OTHER THAN THE NORMAL 6-INCH INCREMENT.

50(n) WEIGHT OF HAMMER

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT e.g. 15

NOTES

ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS, SOIL TESTS, AND BEDROCK BORINGS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET, COLUMBUS, OH 43223 OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET, COLUMBUS, OHIO 43223. THIS WORK WAS PERFORMED UNDER THE SPECIFICATIONS FOR SUBSURFACE INVESTIGATIONS, SEPTEMBER 16, 1996.



LOCATION MAP

LATITUDE: N 38°51'53" LONGITUDE: W 82°53'30"

SCALE IN MILES



PORTION TO BE IMPROVED -----

Recon - A.M.J - 9/27/2004 to 5/26/2006
 Drilling - K.C., D.W., R.B. - 8/4/2004 TO 8/2/2007
 Drafting - R.L.S, R.K.L. - 11/16/2007

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GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF THE SOILS INVESTIGATION FOR THE NORTHERN PORTION (PHASE 2) OF THE PROPOSED STATE ROUTE 823 ROADWAY. PHASE 2 BEGINS AT LUCASVILLE MINFORD ROAD (CR 28) AND ENDS AT U.S. ROUTE 23 NEAR STATE ROUTE 728 IN SCIOTO COUNTY, OHIO. AN INTERCHANGE IS PLANNED AT US 23. A TOTAL OF TEN BRIDGES ARE INCLUDED IN PHASE 2. APPROXIMATELY 7.0 MILES OF NEW ROADWAY AND 2.6 MILES OF NEW RAMPS ARE PLANNED AND 0.4 MILES OF EXISTING ROADWAY WILL BE IMPROVED AS PART OF THE PROJECT.

TWO PRELIMINARY SUBSURFACE EXPLORATIONS WERE PERFORMED IN 2001 THROUGH 2003 TO EVALUATE THE SUBSURFACE CONDITIONS FOR POTENTIAL ALIGNMENTS. A TOTAL OF 46 BORINGS WERE DRILLED AT THAT TIME. FIVE OF THOSE BORINGS WERE LOCATED WITHIN 600 FEET OF THE PROPOSED SR 823 ALIGNMENT. BORINGS PB-35, PB-44, PB-45, PB 46, AND PB-47 ARE INCLUDED IN THE SOIL SUMMARY, BUT THE REMAINING BORINGS FROM THE PRELIMINARY EXPLORATIONS ARE NOT INCLUDED IN THIS REPORT.

THE PROJECT INDEX IS ON SHEET 6.

GEOLOGY AND OBSERVATIONS OF THE PROJECT

A. REGIONAL GEOLOGY

THE LITHOLOGY OF CENTRAL SCIOTO COUNTY IS PRIMARILY COMPOSED OF MISSISSIPPIAN AGED ROCKS INCLUDING SHALE, SILTSTONE, AND SANDSTONE. THE MIDDLE TO UPPER DEVONIAN AGED ROCKS OF THE OHIO SHALE AND OLENTANGY SHALE ARE FOUND WITHIN DEEPER PORTIONS OF THE SCIOTO RIVER VALLEY. THE UPPER DEVONIAN AGED ROCKS ARE UNDIVIDED FROM THE LOWER MISSISSIPPIAN AGED ROCKS IN PREVIOUS MAPPING EFFORTS WITHIN THE COUNTY. THE UNDIVIDED DEVONIAN AND MISSISSIPPIAN AGED ROCKS ARE LOCATED WITHIN PORTIONS OF THE OHIO RIVER VALLEY, SCIOTO RIVER VALLEY, AND SOME OF THE DEEPER TRIBUTARY VALLEYS OF THE MAJOR DRAINAGES. OVERLYING THE DEVONIAN AGED ROCKS, THE FULL MISSISSIPPIAN AGED STRATIGRAPHIC COLUMN IS PRESENT THROUGHOUT MUCH OF SCIOTO COUNTY. SOME OF THE BEST EXPOSURES OF THE MISSISSIPPIAN AGED LOGAN FORMATION ARE FOUND IN SCIOTO COUNTY. ALONG THE HIGHER RIDGELINES IN THE EASTERN AND EAST CENTRAL PORTIONS OF SCIOTO COUNTY, PENNSYLVANIAN AGED ROCKS CAP THE HIGHER HILLTOPS WITH RESIDUAL SOILS OVERLYING THE ROCK.

THE GEOLOGY IS AFFECTED BY BOTH REGIONAL AND LOCAL BEDROCK STRUCTURAL FEATURES. THE CONTROLLING REGIONAL FEATURE IS THE CINCINNATI ARCH, WHICH IS LOCATED TO THE WEST OF THE PROPOSED ALIGNMENT. GENERALLY, THE ROCK STRATA OF THE REGION VARY IN THICKNESS TOWARDS THE ARCH AND THE BEDS APPEAR AT INCREASINGLY HIGHER ELEVATIONS. THERE ARE TWO LOCAL STRUCTURAL FEATURES EVIDENT THAT AFFECT THE BEDROCK SEEN NEAR THE PROPOSED ALIGNMENT, A LOW DOME AND A MONOCLINAL ARCH. THE LOW DOME IS LOCATED WEST OF SCIOTOVILLE ON THE NORTH BANK OF THE OHIO RIVER, RESULTING IN A REVERSAL OF THE LOCAL DIP SEEN IN THE BEDROCK ADJACENT TO THE DOME. THE LOW MONOCLINAL ARCH IS LOCATED IN THE WESTERN PORTION OF THE COUNTY TRENDING NORTH-NORTHEAST AND CROSSING SCIOTO BRUSH CREEK NEAR OTWAY. THIS STRUCTURAL FEATURE MAY INCREASE THE DIP OF THE BEDROCK IN AND ADJACENT TO THE NORTHERN PORTION OF THE PROPOSED ALIGNMENT. THE REGIONAL DIP OF THE BEDDING WITHIN SCIOTO COUNTY RANGES BETWEEN 13 AND 43 FEET PER MILE TO THE EAST SOUTHEAST (APPROXIMATELY E 15°S TO E 20°S).

B. GEOLOGY ALONG PROPOSED SR 823 ALIGNMENT

THE FOLLOWING SECTIONS DESCRIBE THE GENERAL CHARACTERISTICS OF THE LITHOLOGY FOUND WITHIN THE PROPOSED LIMITS OF CONSTRUCTION. THE DESCRIPTIONS ARE ORGANIZED BY AGE OF FORMATION: PENNSYLVANIAN, UPPER MISSISSIPPIAN, AND LOWER MISSISSIPPIAN AND UPPER DEVONIAN-UNDIVIDED.

B.1. PENNSYLVANIAN ROCKS

PENNSYLVANIAN AGED ROCKS FROM THE POTTSVILLE GROUP ARE FOUND CAPPING THE HIGHER RIDGELINES SEEN THROUGHOUT THE PROPOSED ALIGNMENT, EXCEPT TO THE NORTH IN VALLEY TOWNSHIP. THIS UNIT IS MAPPED AS THE PENNSYLVANIAN BREATHITT FORMATION ON THE OPEN-FILE BEDROCK GEOLOGY MAPS COMPILED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES-DIVISION OF GEOLOGICAL SURVEY (ODNR-DGS). THIS NAME ORIGINATED FROM MAPPING EFFORTS OF THE PENNSYLVANIAN POTTSVILLE AND ALLEGHENY GROUPS IN KENTUCKY. THE POTTSVILLE GROUP MEMBERS FOUND WITHIN THE PROPOSED LIMITS OF CONSTRUCTION WILL BE REFERRED TO AS THE BREATHITT FORMATION IN THIS REPORT TO BE CONSISTENT WITH BEDROCK GEOLOGY MAPS PREPARED BY ODNR-DGS.

THE BREATHITT FORMATION IS FOUND AS THIN BANDS GENERALLY FOLLOWING THE TOPOGRAPHIC CONTOURS OF THE HIGHER RIDGELINES. DUE TO THE REGIONAL DIP, THE PENNSYLVANIAN BREATHITT FORMATION IS GENERALLY ABSENT OR FOUND ABOVE AN ELEVATION OF 1000 FEET WITHIN THE NORTHERN AND NORTH-WESTERN PORTION OF THE PROPOSED ALIGNMENT, ABOVE AN ELEVATION OF 850 FEET IN THE CENTRAL PORTION OF THE ALIGNMENT, AND ABOVE AN ELEVATION OF 850 FEET IN THE CENTRAL PORTION OF THE PROPOSED ALIGNMENT. THE TOP OF THE UNDERLYING MISSISSIPPIAN AGED MAXVILLE LIMESTONE IS ASSOCIATED WITH AN EROSIONAL UNCONFORMITY AND THE CONTACT IS PROBABLY UNDULATING AND NON-UNIFORM. THE BREATHITT FORMATION CONSISTS OF CONGLOMERATE, COAL, SHALE, THIN LIMESTONE, SANDSTONE, AND IRON ORES. GENERALLY, SHALE AND SANDSTONE ARE THE DOMINANT LITHOLOGIES WITH OCCASIONAL THIN, BONY COAL BEDS OR BLOSSOMS.

THE PREDOMINATE MARKER BEDS FOUND WITHIN THE BREATHITT FORMATION ARE THE HARRISON ORE, LOCATED IMMEDIATELY OVERLYING THE MISSISSIPPIAN AGED MAXVILLE LIMESTONE, THE SCIOTOVILLE CLAY, THE SHARON ORE, AND THE ANTHONY COAL. OF THESE MEMBERS, THE HARRISON ORE IS THE ONLY MARKER BED THAT IS RELATIVELY CONTINUOUS WITHIN PROPOSED LIMITS OF CONSTRUCTION. THE HARRISON ORE IS DESCRIBED AS BEING CLOSELY ASSOCIATED WITH THE UNDERLYING MISSISSIPPIAN AGED MAXVILLE LIMESTONE, SOMETIMES DESCRIBED AS BEING AN ALTERATION OF THE UNDERLYING LIMESTONE. EVEN WHEN THE MAXVILLE LIMESTONE IS ABSENT, THE HARRISON ORE IS GENERALLY FOUND. THE ORE IS OFTEN BRECCIATED OR CONGLOMERATIC AND IS DESCRIBED AS BEING SEDIMENTARY IN ORIGIN AS OPPOSED TO AN ALTERATION PRODUCT. CONSEQUENTLY, THE MATERIAL COMPRISING THE HARRISON ORE VARIES GREATLY FROM PLACE TO PLACE, BUT IT IS COMMONLY INTERPRETED AS THE BASAL UNIT OF THE PENNSYLVANIAN ROCKS. THE SCIOTOVILLE CLAY IS RELATIVELY CONTINUOUS THROUGHOUT THE ALIGNMENT, WHEREAS THE SHARON ORE AND THE ANTHONY COAL ARE REPORTED WITHIN THE PROPOSED LIMITS OF CONSTRUCTION BUT NEITHER ARE CONTINUOUS OR WELL DEVELOPED.

B.2. UPPER MISSISSIPPIAN ROCKS

UPPER MISSISSIPPIAN AGED ROCKS FROM THE WAVERLY SERIES, CUYAHOGA AND LOGAN FORMATIONS COMPRISE THE MAJORITY OF THE ROCKS WITHIN THE PROPOSED LIMITS OF CONSTRUCTION. THESE TWO FORMATIONS ARE NOT DIVIDED ON THE BEDROCK GEOLOGY MAPS COMPILED BY ODNR-DGS. HOWEVER, FORMAL SUBDIVISIONS DO EXIST AND ARE USED IN THE FOLLOWING DESCRIPTIONS. THESE ROCKS REPRESENT THE MIDDLE AND UPPER PORTION OF THE MISSISSIPPIAN SYSTEM WITHIN THE REGION.

THE MAXVILLE LIMESTONE, OVERLYING THE LOGAN FORMATION, MARKS THE CONTACT WITH THE OVERLYING PENNSYLVANIAN AGED BREATHITT FORMATION. THE MAXVILLE LIMESTONE CONSISTS OF ISOLATED, DISCONTINUOUS POCKETS OF LIMESTONE THAT CAN RANGE FROM VERY PURE TO CHERTY AND IS DISCONTINUOUS DUE TO AN EROSIONAL UNCONFORMITY AT ITS UPPER SURFACE. WHERE THE MAXVILLE LIMESTONE IS ABSENT, THE LOGAN FORMATION MARKS THE UPPER CONTACT WITH THE OVERLYING PENNSYLVANIAN AGED BREATHITT FORMATION.

THE UNDERLYING LOGAN FORMATION VARIES IN THICKNESS IN PART DUE TO THE EROSIONAL UNCONFORMITY AT ITS UPPER BOUNDARY AND CONSISTS PRIMARILY OF GRAY TO BROWN FINE-GRAINED SANDSTONE, SILTSTONE, AND SANDY SHALE, BUT IS CHARACTERIZED BY THE DOMINANCE OF SANDSTONE. THREE MEMBERS OF THE LOGAN ARE IDENTIFIED WITHIN SCIOTO COUNTY. WORKING UP THE STRATIGRAPHIC COLUMN, THEY ARE THE BYER SANDSTONE, THE ALLENSVILLE CONGLOMERATE, AND THE VINTON SANDSTONE. OCCASIONAL IRON ORES ARE PRESENT WITHIN THE LOGAN FORMATION, BUT ARE USUALLY THIN, ISOLATED, AND NODULAR. GENERALLY, THE VINTON MEMBER IS A FINE-GRAINED SANDSTONE WHICH CAN BE FINELY INTERBEDDED WITH SANDY SHALE AND OFTEN CONTAINS ZONES OF FOSSILS AND IRONSTONE CONCRETIONS. THE ALLENSVILLE MEMBER IS A FINE-GRAINED SANDSTONE THAT CAN BE FINELY INTERBEDDED WITH SANDY SHALE WITH SMALL PEBBLES BEDS (1 TO 2 INCHES) THROUGHOUT. THIS MEMBER IS NOT EASILY DISTINGUISHABLE FROM THE BYER MEMBER AND IS OFTEN MISSING WITHIN THE SEQUENCE. THE BYER MEMBER IS GENERALLY A FINE GRAINED SANDSTONE WHICH CAN BE FINELY INTERBEDDED SANDSTONE AND SANDY SHALE OR MASSIVE SANDSTONE.

THE LOGAN FORMATION IS THE DOMINANT ROCK STRATA FOUND WITHIN THE PROPOSED LIMITS OF CONSTRUCTION. THE HILLSIDES IN THE SOUTHERN AND CENTRAL PORTION OF THE PROPOSED ALIGNMENT ARE COMPOSED OF SANDSTONES OF THE LOGAN FORMATION WITH THE EXCEPTION OF THE PENNSYLVANIAN BREATHITT FORMATION CAPPING THE HIGHER RIDGELINES. WITHIN THE NORTHERN PORTION OF THE PROPOSED ALIGNMENT, THE UPPER HALF TO ONE THIRD OF THE HILLSIDES ARE COMPOSED OF THE LOGAN FORMATION. THE LOGAN FORMATION GRADUALLY DESCENDS EASTWARD UNTIL IT PASSES UNDER COVER AT THE APPROXIMATE EASTERN BOUNDARIES OF PORTER, HARRISON, AND MADISON TOWNSHIPS TO THE EAST OF THE PROPOSED ALIGNMENT. EXAMPLES OF THE ROCK STRATA CAN BE SEEN WITHIN SEVERAL ROCK CUTS THROUGHOUT THE AREA ALONG THE OHIO RIVER AND THE LOWER LITTLE SCIOTO RIVER, IN WHICH THE CUTS ARE COMPOSED ENTIRELY OF THE LOGAN FORMATION. FIELD OBSERVATIONS OF ROAD CUTS WITHIN THE LOGAN FORMATION INDICATE THAT TWO REGIONAL JOINT SET ORIENTATIONS ARE FOUND WITHIN THE PROPOSED LIMITS OF CONSTRUCTION. THE MAIN JOINT SET IS NEAR VERTICAL AND TRENDS EAST-WEST. A SECONDARY JOINT SET IS NEAR VERTICAL AND TRENDS NORTH-SOUTH.

THE CUYAHOGA FORMATION, UNDERLYING THE LOGAN FORMATION, CONTAINS GRAY TO BROWN SHALE INTERBEDDED WITH MINOR AMOUNTS OF SANDSTONE AND SILTSTONE WITH OCCASIONAL MASSIVE SANDSTONE BEDS. TWO SANDSTONE MEMBERS OF THE CUYAHOGA FORMATION ARE REPORTED ON THE CURRENT STRATIGRAPHIC COLUMN AS THE BLACK HAND SANDSTONE AND BUENA VISTA SANDSTONE. THE CUYAHOGA FORMATION, HOWEVER, IS CHARACTERIZED BY THE DOMINANCE OF SHALE. STOUT REPORTED THREE MEMBERS WITHIN SCIOTO COUNTY. WORKING UP THE STRATIGRAPHIC COLUMN, THE MEMBERS ARE THE HENLY SILICEOUS SHALE, BUENA VISTA SANDSTONE MEMBER, AND THE PORTSMOUTH SHALE. THE BUENA VISTA SANDSTONE MEMBER DIPS BELOW COVER JUST EAST OF THE SCIOTO RIVER AND ALMOST THE ENTIRE VISIBLE PORTION OF THE CUYAHOGA NEAR THE PROPOSED ALIGNMENT IS COMPOSED OF PORTSMOUTH SHALE. THE PORTSMOUTH SHALE MEMBER OF THE CUYAHOGA FORMATION IS GENERALLY COMPOSED OF BLUE TO GRAY SANDY SHALE WITH OCCASIONAL THIN SANDSTONES OR LAYERS OF CONCRETIONARY IRONSTONE, SELDOM OVER AN INCH OR TWO IN THICKNESS. THE SHALE READILY WEATHERS TO BUFF COLORED FLAKY FRAGMENTS AND SUBSEQUENTLY TO CLAY. AREAS WITHIN THE NORTHWESTERN PORTION OF THE PROPOSED ALIGNMENT UNDERLAIN BY THE PORTSMOUTH SHALE OF THE CUYAHOGA FORMATION EXHIBIT UNDULATING, HUMMOCKY TERRAIN, INDICATIVE OF LANDSLIDES AND EARTH FLOW DUE TO THE HIGH CLAY CONTENT OF THE WEATHERED SHALE. THE CONTACT BETWEEN THE LOGAN AND CUYAHOGA FORMATIONS IS GENERALLY TRANSITIONAL AND MAY BE UP TO 25 FEET IN THICKNESS. THE CUYAHOGA FORMATION GRADUALLY DESCENDS EASTWARD FROM THE SCIOTO RIVER, AND IS ESTIMATED TO PASS UNDER COVER APPROXIMATELY ONE MILE WEST OF CLARKTOWN IN THE CENTRAL PART OF THE COUNTY AND AT SCIOTOVILLE IN THE SOUTH.





B.3. LOWER MISSISSIPPIAN AND UPPER DEVONIAN ROCKS - UNDIVIDED

ALONG PORTIONS OF THE OHIO RIVER AND SCIOTO RIVER VALLEY THE LOWER MISSISSIPPIAN AND UPPER DEVONIAN ROCKS HAVE NOT BEEN DIVIDED IN PREVIOUS MAPPING EFFORTS. PREVIOUS MAPPING EFFORTS COMBINE THE MISSISSIPPIAN AGED SUNBURY SHALE, BEREA SANDSTONE, AND BEDFORD SHALE WITH THE UPPER DEVONIAN AGED ROCKS. HOWEVER, FORMAL SUB-DIVISIONS DO EXIST AND ARE USED IN THE FOLLOWING DESCRIPTIONS. THESE ROCKS ARE POORLY EXPOSED AT THE GROUND SURFACE DUE PRIMARILY TO BURIAL BY GLACIAL OUTWASH, LACUSTRINE SOILS, AND ALLUVIAL DEPOSITS. THE SUNBURY SHALE MAY BE EXPOSED IN THE LOWER SLOPES OF THE HILLS IMMEDIATELY EAST OF THE SCIOTO RIVER, BUT IS UNDER COVER THROUGHOUT THE REST OF THE ALIGNMENT.

GENERALLY, OUTCROPS OF THESE ROCKS ARE NOT SEEN WITHIN OR NEAR THE LIMITS OF CONSTRUCTION AND ARE PRIMARILY FOUND BENEATH THE OVERBURDEN OF THE LARGER STREAM CHANNELS. THE MISSISSIPPIAN AGED SUNBURY SHALE IS LOCATED AT THE CONTACT WITH THE OVERLYING MISSISSIPPIAN CUYAHOGA FORMATION. GENERALLY, THE SUNBURY IS A BROWN TO BLACK CARBONACEOUS SHALE THAT IS THIN, FISSILE, AND PLANAR, OFTEN CONTAINING SMALL PYRITIC CONCRETIONS. THE SUNBURY RANGES IN THICKNESS FROM 10 TO 50 FEET. UNDERLYING THE SUNBURY SHALE, THE MISSISSIPPIAN BEREA SANDSTONE CONSISTS OF GRAY SANDSTONE AND MINOR SHALE AND RANGES IN THICKNESS FROM 10 TO 50 FEET WITH THIN TO THICK BEDDING. THE BOTTOM OF THE GROUP IS COMPOSED OF THE MISSISSIPPIAN AND DEVONIAN AGED BEDFORD SHALE. THE BEDFORD CONTAINS GRAY TO BROWN SHALE WITH INTERBEDDED SANDSTONE BEDS UP TO TWO TO THREE FEET IN THICKNESS. THE SANDSTONE BEDS CONSIST OF THIN PLATY SANDSTONES SELDOM OVER A FRACTION OF AN INCH THICK AND SEPARATED BY THINNER SHALE PARTINGS. THE BEDFORD SHALE OVERLIES THE DEVONIAN AGED OHIO SHALE.

C. QUATERNARY GEOLOGY

SOILS FOUND WITHIN THE LIMITS OF CONSTRUCTION CAN BE DIVIDED INTO THREE GROUPS. FIRST, RESIDUAL AND COLLUVIAL SOILS DERIVED FROM WEATHERING OF UNDER-LYING ROCK AND DOWNSLOPE TRANSPORT. SECOND, THERE ARE LACUSTRINE AND OUTWASH DEPOSITS OF GLACIAL ORIGIN AND FINALLY SOILS CONSISTING OF RECENT ALLUVIAL DEPOSITS. THE RESIDUAL AND COLLUVIAL SOILS ARE FOUND ALONG THE RIDGE TOPS AND HILLSIDES, GLACIAL SOILS ARE TYPICALLY FOUND WITHIN THE MAJOR STREAM VALLEY AND THEIR TRIBUTARIES, AND RECENT ALLUVIAL DEPOSITS ARE FOUND ALONG AND WITHIN STREAM CHANNELS AND VALLEYS.

C.1. RESIDUAL AND COLLUVIAL SOIL

RESIDUAL AND COLLUVIAL SOILS ARE FOUND ON THE RIDGETOPS AND THE HILLSIDES WITHIN THE PROPOSED LIMITS OF CONSTRUCTION. ALONG THE PROPOSED ALIGNMENT, RESIDUAL AND COLLUVIAL SOILS ARE GENERALLY THIN TO MODERATELY DEEP, COVERING MODERATE TO VERY STEEP SLOPES. RESIDUAL AND COLLUVIAL SOILS ON THE HILLSIDES ARE PRONE TO LANDSLIDES.

FOUR SOIL COMPLEXES ARE REPORTED ALONG THE HILLSIDES, CONSISTING OF: SHELOCTA-BROWNSVILLE, SHELOCTA-WHARTON-LATHAM, LATHAM-WHARTON-SHELOCTA, AND SHELOCTA-STEINBURG-LATHAM. THESE COMPLEXES COMBINED MAKE UP APPROXIMATELY 80 PERCENT OF THE SOILS FOUND WITHIN THE COUNTY HAVING SLOPES RANGING FROM 8 TO 70 PERCENT AND ARE COMPOSED OF RESIDUUM AND COLLUVIUM DERIVED FROM SHALE, SILTSTONE, AND SANDSTONE.

C.2. LACUSTRINE SOILS AND GLACIAL OUTWASH

THE TWO TYPES OF GLACIAL SOILS ENCOUNTERED WITHIN THE PROPOSED LIMITS OF CONSTRUCTION ARE LACUSTRINE DEPOSITS AND GLACIAL OUTWASH DEPOSITS.

THE LACUSTRINE SOILS ARE COMMONLY KNOWN AS THE "MINFORD SILTS" OR THE MINFORD COMPLEX. THE SOILS WITHIN THIS GROUP WILL BE REFERRED TO AS THE MINFORD COMPLEX IN THIS REPORT. THESE DEPOSITS ARE PRIMARILY FOUND WITHIN THE LITTLE SCIOTO RIVER VALLEY AND ITS TRIBUTARIES IN THE CENTRAL AND SOUTHERN PORTIONS OF THE PROPOSED ALIGNMENT. THE MINFORD COMPLEX SOILS ARE GENERALLY FOUND BETWEEN ELEVATIONS OF 650 TO 780 FEET. THESE DEPOSITS WERE FORMED DURING THE EARLY TO MIDDLE PLEISTOCENE AGED WHEN THE NORTHWARD FLOWING TEAYS RIVER SYSTEM WAS BLOCKED BY THE SOUTHWARD ADVANCE OF THE KANSAN AGED ICE SHEETS. AS THE GLACIERS ADVANCED, THE COURSE OF THE TEAYS RIVER WAS BLOCKED SOUTH OF CHILLICOTHE AND A LARGE LAKE WAS FORMED FROM THE IMPOUNDMENT OF THE WATERWAYS. AS A RESULT OF THE IMPOUNDMENT, VAST QUANTITIES OF SEDIMENTS WERE DEPOSITED RANGING FROM 10 TO 80 FEET IN THICKNESS, THINNING TOWARDS THE MARGINS.

THE DEPOSITS RANGE FROM A BASAL LAG DEPOSIT, CONSISTING OF SANDS WITH PEBBLES AND COBBLES, TO VERY PLASTIC CLAYS THAT USUALLY HAVE A HIGH WATER CONTENT. THE MINFORD COMPLEX SOILS VARY CONSIDERABLY THROUGHOUT THE AREA OF THE PROPOSED ALIGNMENT, PARTIALLY DUE TO ORIGINAL DEPOSITION AND CHANGE SINCE THE TIME OF FORMATION. WHEN PRESENT, THESE MATERIALS LIE ON OR NEAR BEDROCK. THE MINFORD COMPLEX SOILS HAVE NO REGULAR SUCCESSION, BUT TYPICALLY SANDS AND SANDY SILTS ARE FOUND NEAR THE BEDROCK AND FINE LAMINATED SILTS AND CLAYS ARE FOUND AT THE HIGHER LEVELS OF THE SEQUENCE. OCCASIONALLY, THE MINFORD COMPLEX CONTAINS SANDSTONE COBBLES AND BOULDERS AND QUARTZ PEBBLES IN THE LOWER PARTS OF THE SEQUENCE. THESE COBBLES, BOULDERS, AND PEBBLES WITHIN THE SEQUENCE ARE BELIEVED TO BE OF LOCAL ORIGIN. HOWEVER, THE SILT AND CLAY DEPOSITS ARE PECULIAR FOR OHIO IN THAT THEY TYPICALLY CONTAIN UP TO 50 PERCENT SERICITIC MICA, INDICATING THAT THEY ARE PROBABLY DERIVED FROM A METAMORPHIC SCHIST TERRANE SUCH AS THE PIEDMONT PROVINCE WITHIN THE APPALACHIAN MOUNTAINS. MOST LACUSTRINE DEPOSITS WITHIN OHIO ARE GLACIAL, CONSISTING OF "ROCK FLOUR" DERIVED FROM THE MOVEMENT OF GLACIERS OR ARE COMPOSED OF MATERIALS DERIVED FROM WEATHERED SANDSTONES, SHALES, AND CALCAREOUS ROCKS WHICH DOMINATE THE LITHOLOGY OF THE ROCKS WITHIN OHIO. THIN ALLUVIAL AND/OR GLACIAL OUTWASH DEPOSITS ARE FREQUENTLY FOUND OVERLYING THE MINFORD COMPLEX SOILS. THE TYPE SECTION FOR THE MINFORD COMPLEX SOILS IS LOCATED IN A RAIL CUT ON THE OUTSKIRTS OF THE VILLAGE OF MINFORD, OHIO.

GLACIAL OUTWASH DEPOSITS ARE FOUND ALONG THE SCIOTO RIVER VALLEY OCCUPYING THE VALLEY OF THE PREGLACIAL TEAYS-AGED PORTSMOUTH RIVER AND WITHIN THE OHIO RIVER VALLEY. THE GLACIAL DEPOSITS ARE LATE WISCONSINAN IN AGE AND CONSIST OF SAND AND GRAVEL DEPOSITS WITH SMALL ISOLATED PEAT DEPOSITS. GENERALLY, THESE DEPOSITS ARE SATURATED AT SHALLOW DEPTHS WITH HIGH RECHARGE RATES. SEVERAL SAND AND GRAVEL PITS CAN BE SEEN ALONG EXISTING US 23; WHERE THESE SAND AND GRAVEL DEPOSITS HAVE BEEN OR ARE CURRENTLY BEING EXTRACTED.

FOUR SOIL COMPLEXES ARE REPORTED ALONG THE PREGLACIAL VALLEYS AND ON FLOOD PLAINS, TERRACES, AND FANS CONSISTING OF OMULGA-MONONGAHELA-HAYMOND, WEINBACH-WHEELING-ELKINSVILLE, NOLIN-SHELOCTA-OMULGA, AND TIOGA-SARDINIA-FITCHVILLE. THESE COMPLEXES COMBINE TO MAKE UP APPROXIMATELY 15 PERCENT OF THE SOILS FOUND WITHIN THE COUNTY HAVING SLOPES RANGING FROM 0 TO 40 PERCENT (MAJORITY ARE BETWEEN 0 AND 15 PERCENT) AND ARE FORMED IN COLLUVIUM, LACUSTRINE SEDIMENTS, FLOOD PLAINS, FANS, AND IN PREGLACIAL VALLEYS.

C.3. ALLUVIAL SOILS

GENERALLY, THE LARGEST DEPOSITS OF ALLUVIAL SOILS ARE FOUND ALONG THE LITTLE SCIOTO RIVER AND THE OHIO RIVER. THESE DEPOSITS ARE USUALLY GRANULAR WITH HIGH FINES (CLAY AND SILT) CONTENT. ALLUVIAL SOILS, TO SOME EXTENT, ARE FOUND ALONG ALL OF THE CREEKS AND RIVERS WITHIN THE PROPOSED LIMITS OF CONSTRUCTION. GENERALLY ALLUVIAL DEPOSITS RANGE FROM SILTY CLAY TO COARSE SAND. WHERE BEDROCK IS SHALLOW, ALLUVIAL DEPOSITS MAY CONTAIN COARSE SAND, GRAVEL, AND COBBLES.

TWO SOIL COMPLEXES ARE REPORTED ALONG THE FLOOD PLAINS CONSISTING OF NOLIN-GENESSEE AND STENDAL-CUBA-TIOGA. THESE COMPLEXES COMBINE TO MAKE UP APPROXIMATELY 5 PERCENT OF THE SOILS FOUND WITHIN THE COUNTY HAVING SLOPES RANGING FROM 0 TO 3 PERCENT AND ARE FORMED IN ALLUVIUM WITHIN THE FLOOD PLAINS.

D. OBSERVATIONS AND LAND USAGE

THIRTEEN AREAS OF SLOPE INSTABILITY WERE OBSERVED ALONG THE PROPOSED PHASE 2 ALIGNMENT.

FIELD INDICATORS OF INSTABILITY INCLUDED DISPLACED OR MISSHAPEN TREES, DEBRIS PILES ON LOWER PORTIONS OF THE SLOPE, AND VISIBLE SCARPS. MOST SLOPE INSTABILITY APPEARED TO BE RELATIVELY SHALLOW SOIL CREEP CONTAINED WITHIN THE OVERBURDEN, IN MOST CASES LESS THAN 10 FEET OF COLLUVIAL SOIL. HOWEVER, DRILLING IN SEVERAL OF THESE LANDSLIDES INDICATED SIGNIFICANTLY MORE OVERBURDEN.

IN THE STEEP TERRAIN OF SCIOTO COUNTY, SOIL CREEP IS COMMON AND IS OFTEN EXACERBATED BY CONSTRUCTION OF SIDE HILL LOGGING ROADS AND THE EROSION ASSOCIATED WITH LOGGING ACTIVITIES. ALSO, IN MANY OF THE HOLLOWES AND VALLEYS THAT THE ALIGNMENT CROSSES, SMALL STREAMS GRADUALLY UNDERCUTTING THE TOE OF THE STEEP SLOPES FURTHER DESTABILIZE THE SOIL. IN THE AREAS WHERE SLOPE INSTABILITY WAS OBSERVED, THE UNSTABLE MASS WILL BE STABILIZED BY SPECIAL BENCHING DURING EMBANKMENT CONSTRUCTION OR REMOVED DURING EXCAVATION FOR CUT SLOPES.

AREAS OF SLOPE INSTABILITY WERE FIRST IDENTIFIED USING SURVEY GRADE CONTOUR MAPPING AND AERIAL PHOTOGRAPHY. AREAS OF SLOPE INSTABILITY WERE THEN VERIFIED DURING THE FIELDWORK BY IDENTIFICATION OF SURFACE FEATURES.

LAND USE ALONG THE PROJECT VARIES FROM MANAGED FORESTS AND WOODED AREAS, TO AGRICULTURAL AND RESIDENTIAL USAGE. GENERALLY, ROAD ACCESS AND TOPOGRAPHY DETERMINE THE USE, WITH THE STEEPER, MORE REMOTE TERRAIN FORESTED OR USED AS PASTURE. ALONG THE ROADS, THE VALLEY AND LOW RELIEF LOWLANDS ARE MAINTAINED AS RESIDENTIAL AREAS OR UTILIZED AS CULTIVATED FIELDS.

EXPLORATION

A. SR 823 MAINLINE

THE SUBSURFACE INVESTIGATION FOR THE PHASE 2 MAINLINE CONSISTED OF DRILLING A TOTAL OF 310 BORINGS. THE BORINGS WERE DRILLED BETWEEN APRIL 20, 2005 AND SEPTEMBER 14, 2006. THE BORINGS WERE EXTENDED TO DEPTHS OF 8.0 TO 230.0 FEET AND WERE DRILLED WITH BOTH ATV-MOUNTED AND TRUCK-MOUNTED DRILL RIGS.

B. FLATWOODS FALLEN TIMBER ROAD (CR 184)

THE SUBSURFACE INVESTIGATION FOR FLATWOODS FALLEN TIMBER ROAD WAS BETWEEN STATIONS 748+00 AND 758+00 ON SR 823 AND CONSISTED OF 8 BORINGS DRILLED BETWEEN THE DATES OF MAY 30, 2007 AND JUNE 5, 2007. THE BORINGS WERE EXTENDED TO DEPTHS OF 6.4 TO 75.0 FEET AND WERE DRILLED WITH AN ATV-MOUNTED DRILL RIG.

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C. US 23 INTERCHANGE

THE INITIAL SUBSURFACE INVESTIGATION AT THE U.S. ROUTE 23 INTERCHANGE CONSISTED OF DRILLING 73 BORINGS. BETWEEN MARCH 14, 2005 AND MARCH 22, 2005, 21 BORINGS WERE DRILLED FOR THE PROPOSED BRIDGES IN THE INTERCHANGE AND IDENTIFIED AS BORINGS TR-46 THROUGH TR-61, TR-49A, TR-50A, TR-53A, TR-55A, AND TR-59A. THESE BORINGS WERE DRILLED AND SAMPLED TO THE TOP OF ROCK, AND 10.0 FEET OF ROCK WAS CORED IN EACH BORING. THE DEPTHS OF THESE BORINGS RANGED FROM 25.0 FEET TO 45.0 FEET BELOW THE GROUND SURFACE. BETWEEN JULY 13 AND NOVEMBER 2, 2005, 52 BORINGS, IDENTIFIED AS BORINGS B-1101 THROUGH B-1152, WERE DRILLED AND SAMPLED FOR THE PROPOSED RAMPS AND EMBANKMENTS. THE DEPTHS OF THESE BORINGS RANGED FROM 10.0 FEET TO 49.0 FEET BELOW THE GROUND SURFACE.

A SUPPLEMENTAL DRILLING PROGRAM WAS PERFORMED BASED ON REVISED ALIGNMENTS. SEVEN BORINGS, B-1105A, B-1109A, B-1117A, B-1122A, B-1133A, B-1136A, AND B-1138A, WERE DRILLED FOR THE PROPOSED RAMPS, BETWEEN JULY 11 AND AUGUST 2, 2007. THESE BORINGS WERE DRILLED TO DEPTHS RANGING FROM 16.3 TO 31.7 FEET BELOW THE GROUND SURFACE. FOUR ADDITIONAL BORINGS, B-45 THROUGH B-47, AND B-54, WERE DRILLED FOR THE PROPOSED STRUCTURES, BETWEEN JUNE 14 AND JULY 31, 2007. THESE BORINGS WERE DRILLED TO DEPTHS RANGING FROM 37.0 TO 42.0 FEET BELOW THE GROUND SURFACE. THREE ADDITIONAL BORINGS, C-120, C-121, AND C-123, WERE DRILLED FOR THE PROPOSED CULVERTS, BETWEEN JULY 30 AND AUGUST 1, 2007. THESE BORINGS WERE DRILLED TO DEPTHS RANGING FROM 27.5 TO 32.5 FEET BELOW THE GROUND SURFACE.

INVESTIGATIONAL FINDINGS

A. SR 823 MAINLINE

AT THE GROUND SURFACE, ALL BORINGS EXCEPT THREE ENCOUNTERED TOPSOIL RANGING IN THICKNESS FROM 0.5 TO 14 INCHES, WITH AN AVERAGE THICKNESS OF APPROXIMATELY 4.5 INCHES.

BENEATH THE TOPSOIL LAYERS, BORINGS LOCATED ON THE SLOPES AND DRILLED FOR THE ROADWAY GENERALLY ENCOUNTERED SOILS RANGING FROM GRAVEL WITH SAND (A-1-b) TO SILTY CLAY (A-6b) TO DEPTHS OF 5.0 TO 43.5 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK. GENERAL SOIL CONDITIONS FOR THE PHASE 2 EMBANKMENT FILL AND SOIL CUT SECTIONS ARE OUTLINED BELOW.

STATION 575+00 TO 580+50
IN THIS AREA, BORINGS R-494, AND R-495 GENERALLY ENCOUNTERED VERY STIFF SILT (A-4b) BELOW THE TOPSOIL LAYERS TO DEPTHS RANGING FROM 18.5 TO 38.5 FEET BELOW THE GROUND SURFACE. BELOW THIS LAYER, SANDSTONE WAS ENCOUNTERED BY THE BORINGS.

BORINGS R-497, R-498, AND R-500 GENERALLY ENCOUNTERED VERY STIFF TO HARD SILTY CLAY (A-6b) OR SILT AND CLAY (A-6a) TO DEPTHS RANGING FROM 5.5 TO 8.0 FEET BELOW GROUND SURFACE. BELOW THESE SOIL LAYERS, BEDROCK CONSISTING OF SANDSTONE WAS ENCOUNTERED BY THE BORINGS.

BORING R-499 ENCOUNTERED SEVERELY WEATHERED SANDSTONE BELOW THE TOPSOIL.

STATION 597+00 TO 603+00
IN THIS AREA, BORING R-516, WHICH WAS DRILLED IN THE VALLEY BOTTOM, GENERALLY ENCOUNTERED VERY STIFF SANDY SILT (A-4a) AND HARD SILT (A-4b) TO A DEPTH OF 16.0 FEET BELOW THE GROUND SURFACE, AT THE TOP OF WEATHERED BEDROCK. BELOW THE SOIL LAYERS, SANDSTONE BEDROCK WAS ENCOUNTERED.

BORINGS R-521 AND R-522, WHICH WERE DRILLED ON THE SLOPES, GENERALLY ENCOUNTERED VERY STIFF SILT AND CLAY (A-6a) AND SANDY SILT (A-4a) TO A DEPTH OF 3.5 FEET BELOW GROUND SURFACE, AT THE TOP OF WEATHERED BEDROCK. BELOW THE SOIL LAYERS, SANDSTONE BEDROCK WAS GENERALLY ENCOUNTERED.

BORING R-512 ENCOUNTERED SEVERELY WEATHERED SANDSTONE BELOW THE TOPSOIL.

STATION 609+00 TO 611+50
IN THIS AREA, BORINGS R-526 AND R-528 GENERALLY ENCOUNTERED STIFF TO HARD SANDY SILT (A-4a) TO A DEPTH OF 29.0 FEET BELOW THE GROUND SURFACE, AT THE TOP OF ROCK. R-526 ENCOUNTERED SHALE WITH INTERBEDDED SANDSTONE, WHILE BORING R-528 ENCOUNTERED SANDSTONE BEDROCK.

BORINGS R-529 AND R-530 GENERALLY ENCOUNTERED SOILS CONSISTING OF VERY STIFF SILT AND CLAY (A-6a) OR SANDY SILT (A-4a) TO A DEPTH OF 6.0 FEET BELOW GROUND SURFACE, AT THE TOP OF WEATHERED BEDROCK. BEDROCK ENCOUNTERED IN THESE BORINGS CONSISTED OF SANDSTONE. COMPETENT BEDROCK WAS GENERALLY BENEATH A 3.0-FOOT LAYER OF SEVERELY WEATHERED SANDSTONE BEDROCK.

STATION 616+00 TO 625+50
IN THIS AREA, BORINGS R-537, R-541 THROUGH R-543, R-547, R-548, AND R-553 GENERALLY ENCOUNTERED 3.5 TO 18.5 FEET OF MEDIUM STIFF TO HARD SANDY SILT (A-4a). BELOW THE SOIL LAYERS, BEDROCK CONSISTED OF SANDSTONE, SHALE AND SHALE INTERBEDDED WITH SANDSTONE. BORINGS R-537, R-541, R-543, R-548, AND R-553 ENCOUNTERED A LAYER OF SEVERELY WEATHERED BEDROCK ABOVE MORE COMPETENT ROCK. WHERE PRESENT, THIS LAYER RANGED FROM 1.5 TO 7.5 FEET IN THICKNESS.

BORINGS R-535, R-549, R-550, AND R-556 GENERALLY ENCOUNTERED SOILS CONSISTING OF VERY STIFF SILT AND CLAY (A-6a) & SILTY CLAY (A-6a) TO DEPTHS RANGING FROM 3.5 TO 8.5 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, BORINGS GENERALLY ENCOUNTERED A LAYER OF SEVERELY WEATHERED SANDSTONE AND SHALE BEDROCK, WHICH WAS FOUND TO RANGE IN FROM 1.0 TO 6.6 FEET IN THICKNESS. BELOW THE WEATHERED BEDROCK, SANDSTONE WAS GENERALLY ENCOUNTERED BY THE BORINGS.

BORING R-554 GENERALLY ENCOUNTERED SOILS CONSISTING OF STIFF TO VERY STIFF SILT AND CLAY (A-6a) AND SANDY SILT (A-4a) TO A DEPTH OF 28.5 FEET BELOW THE GROUND SURFACE. BELOW THESE SOIL LAYERS, SANDSTONE BEDROCK WAS ENCOUNTERED.

BORING R-538 GENERALLY ENCOUNTERED SOIL CONSISTING OF VERY STIFF SILT (A-4b) AND SANDY SILT (A-4a) TO A DEPTH OF 16.0 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, BEDROCK CONSISTED OF SHALE INTERBEDDED WITH SANDSTONE.

STATION 633+50 TO 637+50
IN THIS AREA, BORINGS R-565 AND R-568 GENERALLY ENCOUNTERED SOILS CONSISTING OF VERY STIFF SANDY SILT (A-4a) AND SILT (A-4b) TO A DEPTHS RANGING FROM 13.5 TO 16.6 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, A LAYER OF SEVERELY WEATHERED SHALE AND SANDSTONE BEDROCK WAS ENCOUNTERED. THIS LAYER RANGED IN THICKNESS FROM 3.4 TO 4.0 FEET. SANDSTONE WAS ENCOUNTERED BELOW THE WEATHERED BEDROCK.

STATION 657+00 TO 661+00
IN THIS AREA, BORINGS R-598, R-602, R-605, AND R-606 GENERALLY ENCOUNTERED VERY STIFF TO HARD SANDY SILT (A-4a) TO DEPTHS RANGING FROM 8.5 TO 21.0 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, THESE BORINGS ENCOUNTERED BEDROCK CONSISTING OF SHALE, SHALE INTERBEDDED WITH SANDSTONE, AND SANDSTONE.

STATION 670+50 TO 674+50
IN THIS AREA, BORING R-617 ENCOUNTERED VERY STIFF SANDY SILT (A-4a) AND SILT AND CLAY (A-6a) TO A DEPTH OF 18.0 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK. BELOW THE SOIL LAYERS, THIS BORING ENCOUNTERED SANDSTONE BEDROCK

BORING R-618 ENCOUNTERED 25.0 FEET OF VERY STIFF SANDY SILT (A-4a) AND SILT (A-4b). BELOW THESE LAYERS, THIS BORINGS ENCOUNTERED HARD SILTY CLAY (A-6b) TO A DEPTH OF 33.5 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK. BEDROCK CONSISTING OF SANDSTONE AND SHALE WAS ENCOUNTERED BENEATH THE SOIL LAYERS.

STATION 680+50 TO 683+00
IN THIS AREA, BORINGS R-624, AND R-627 THROUGH R-630 GENERALLY ENCOUNTERED COHESIVE AND COHESIONLESS SOILS CONSISTING OF MEDIUM DENSE/HARD SILT (A-4b) TO SANDY SILT (A-4a) TO DEPTHS RANGING FROM 3.5 TO 20.5 FEET BELOW THE GROUND SURFACE. BELOW THESE SOIL LAYERS, BORINGS R-627 AND R-630 ENCOUNTERED A LAYER OF SEVERELY WEATHERED SILTSTONE OR SANDSTONE BEDROCK THAT RANGED FROM 3.5 TO 6.0 FEET IN THICKNESS. SANDSTONE BEDROCK WAS ENCOUNTERED BELOW THE SOIL AND SEVERELY WEATHERED ROCK LAYERS IN ALL BORINGS.

STATION 689+50 TO 702+00
IN THIS AREA, BORINGS R-636, R-639, R-640, R-645, R-648, AND R-650 GENERALLY ENCOUNTERED COHESIVE AND COHESIONLESS SOILS CONSISTING OF VERY STIFF TO MEDIUM DENSE SILT (A-4b) TO SILT AND CLAY (A-6a) TO DEPTHS RANGING FROM 5.5 TO 21.0 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, BORINGS GENERALLY ENCOUNTERED SEVERELY WEATHERED SHALE AND SANDSTONE BEDROCK THAT RANGED FROM 7.0 TO 10.5 FEET IN THICKNESS. SANDSTONE AND SANDSTONE WITH INTERBEDDED SHALE WERE ENCOUNTERED BELOW THE SOIL AND WEATHERED BEDROCK LAYERS.

BORING R-652 ENCOUNTERED SOILS CONSISTING OF HARD SILT (A-4b) TO SANDY SILT (A-4a) TO A DEPTH OF 23.0 FEET BELOW THE GROUND SURFACE. BELOW THIS SOIL LAYER, A LAYER OF SEVERELY WEATHERED SHALE WAS ENCOUNTERED TO A DEPTH OF 31.0 FEET, AT THE TOP OF MORE COMPETENT SHALE AND SANDSTONE BEDROCK.

STATION 714+50 TO 725+00
IN THIS AREA, BORINGS R-668, TR-5, AND TR-6 GENERALLY ENCOUNTERED SOILS CONSISTING OF VERY STIFF SANDY SILT (A-4a) TO SILTY CLAY (A-6b) TO DEPTHS RANGING FROM 5.0 TO 5.5 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, BORINGS R-668 AND TR-5 ENCOUNTERED A LAYER OF SEVERELY WEATHERED BEDROCK TO A DEPTH OF 10.0 FEET, AT THE TOP OF MORE COMPETENT BEDROCK. BORING TR-6 ENCOUNTERED SANDSTONE BEDROCK BELOW THE SOIL LAYERS.

STATION 745+50 TO 753+00
IN THIS AREA, BORINGS R-686, R-689, R-690, AND R-694 GENERALLY ENCOUNTERED SOILS CONSISTING HARD/MEDIUM DENSE SANDY SILT (A-4a) TO SILT AND CLAY (A-6a) TO DEPTHS RANGING FROM 5.0 TO 10.5 FEET BELOW THE GROUND SURFACE. BORINGS R-686 AND R-689 ENCOUNTERED A LAYER OF SEVERELY WEATHERED BEDROCK RANGING IN THICKNESS FROM 2.5 TO 4.5 FEET. BELOW THE SOIL AND WEATHERED ROCK LAYERS, BORINGS R-686 AND R-689 ENCOUNTERED SHALE BEDROCK. SIMILARLY, BORINGS R-690 AND R-694 ENCOUNTERED SANDSTONE BEDROCK.

STATION 761+00 TO 775+00
IN THIS AREA, BORINGS R-707, R-710, R-711, AND R-712 GENERALLY ENCOUNTERED SOILS CONSISTING OF HARD SILT (A-4b) TO SILT AND CLAY (A-6a) TO DEPTHS RANGING FROM 10.0 TO 21.0 FEET BELOW THE GROUND SURFACE, AT THE TOP OF ROCK.

BORINGS R-708, R-710, R-715, R-717 AND R-719 ENCOUNTERED COHESIONLESS SOILS CONSISTING OF MEDIUM DENSE GRAVEL WITH SAND AND SILT (A-2-4) TO SANDY SILT (A-4a) TO DEPTHS RANGING FROM 3.5 FEET TO 16 FEET BELOW THE GROUND SURFACE. IN BORINGS R-708 AND R-715, BELOW THESE LAYERS, THESE BORINGS ENCOUNTERED SILT AND CLAY (A-6a) TO DEPTHS OF 7.0 AND 17.5 FEET, RESPECTIVELY.

BORINGS R-707, R-710, R-711, R-712, R-717 AND R-719 ENCOUNTERED SANDSTONE BEDROCK, WHILE BORINGS R-708 AND R-715 ENCOUNTERED SHALE BEDROCK.

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STATION 790+00 TO 798+75
IN THIS AREA, BORINGS R-736 AND R-739 GENERALLY ENCOUNTERED MEDIUM DENSE SANDY SILT (A-4a) TO DEPTHS RANGING FROM 5.0 TO 18.0 FEET BELOW GROUND SURFACE. BORING R-737 ENCOUNTERED SOILS CONSISTING OF VERY STIFF SILT (A-4b) AND SANDY SILT (A-4a) TO A DEPTH OF 23.0 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK.

BORINGS R-741 AND R-742 GENERALLY ENCOUNTERED SOILS CONSISTING OF HARD SILT (A-4b) AND SILT AND CLAY (A-6a) TO DEPTHS RANGING FROM 10.0 TO 22.5 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK.

BORINGS R-736, R-737 AND R-739 ENCOUNTERED SANDSTONE BEDROCK, WHILE SHALE BEDROCK WAS ENCOUNTERED IN BORINGS R-741 AND R-742.

STATION 810+50 TO 825+50
IN THIS AREA, BORINGS R-766, R-756, R-759, R-762, R-763, AND R-764, GENERALLY ENCOUNTERED SOILS CONSISTING OF MEDIUM DENSE SANDY SILT (A-4a) TO SILTY CLAY (A-6b) TO DEPTHS RANGING FROM 3.0 TO 18.0 FEET BELOW GROUND SURFACE, AT THE TOP OF SEVERELY WEATHERED BEDROCK. THE BORINGS ENCOUNTERED A LAYER OF SEVERELY WEATHERED SHALE BEDROCK RANGING IN THICKNESS FROM 2.0 TO 15.5 FEET. BELOW THE SOIL AND WEATHERED ROCK LAYERS, BORINGS R-766, R-756, AND R-759 ENCOUNTERED SHALE BEDROCK. SIMILARLY, BELOW THESE LAYERS, BORINGS R-762, R-763, AND R-764 ENCOUNTERED SANDSTONE WITH INTERBEDDED SHALE.

STATION 847+50 TO 859+50
IN THIS AREA, BORINGS R-784 AND R-793 GENERALLY ENCOUNTERED SOILS CONSISTING OF HARD SILT AND CLAY (A-6a) TO CLAY (A-7-6) TO DEPTHS RANGING FROM 8.0 TO 16.5 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, THESE BORINGS ENCOUNTERED A LAYER OF SEVERELY WEATHERED BEDROCK RANGING IN THICKNESS FROM 2.5 TO 3.0 FEET. BELOW THE SOIL AND SEVERELY WEATHERED ROCK LAYERS, BORINGS R-784 AND R-793 ENCOUNTERED SANDSTONE AND SHALE BEDROCK, RESPECTIVELY.

BORINGS R-786 AND R-791 GENERALLY ENCOUNTERED SOILS CONSISTING OF HARD SILT (A-4b) TO CLAY (A-7-6) TO DEPTHS RANGING FROM 7.5 TO 8.0 FEET BELOW THE GROUND SURFACE. BELOW THE SOIL LAYERS, THESE BORINGS ENCOUNTERED A LAYER OF SEVERELY WEATHERED SHALE BEDROCK RANGING IN THICKNESS FROM 1.5 TO 2.0 FEET. BELOW THE SOIL AND SEVERELY WEATHERED ROCK LAYERS, BORINGS R-786 AND R-791 ENCOUNTERED SANDSTONE AND SHALE BEDROCK, RESPECTIVELY.

STATION 867+00 TO 872+00
IN THIS AREA, BORING R-796 ENCOUNTERED SOILS CONSISTING OF STIFF TO HARD SILT (A-4b) AND SANDY SILT (A-4a) TO A DEPTH OF 10.0 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK. BORING R-796 ENCOUNTERED SHALE BEDROCK.

BORING R-798 ENCOUNTERED SOILS CONSISTING OF STIFF TO HARD SILT AND CLAY (A-6a) AND SILTY CLAY (A-6b) TO A DEPTH OF 5.5 FEET BELOW THE GROUND SURFACE, AT THE TOP OF WEATHERED BEDROCK. BELOW THE SOIL LAYERS, THIS BORING ENCOUNTERED A LAYER OF SEVERELY WEATHERED SANDSTONE TO A DEPTH OF 10.0 FEET. BELOW THE SOIL AND WEATHERED BEDROCK, THIS BORING ENCOUNTERED SANDSTONE.

BEDROCK WAS ENCOUNTERED IN ALL OF THE BORINGS AND CONFIRMED BY CORING A MINIMUM OF 5 FEET OF BEDROCK. OVERBURDEN IN THE PHASE 2 AREA WAS GENERALLY THIN. BEDROCK WAS TYPICALLY ENCOUNTERED IN THE BORINGS AT DEPTHS RANGING FROM 3.5 TO 38.5 FEET BELOW THE GROUND SURFACE. BEDROCK ENCOUNTERED IN THE BORINGS CORRELATES WELL WITH THE AVAILABLE GEOLOGIC REFERENCES. THE CORES OBTAINED CONSISTED PRIMARILY OF SANDSTONE AND SHALE WITH OCCASIONALLY SILTSTONE AND CLAYSHALE. A LAYER OF SEVERELY WEATHERED TO DECOMPOSED BEDROCK WAS GENERALLY ENCOUNTERED IMMEDIATELY ABOVE THE HIGHER QUALITY ROCK ENCOUNTERED IN THE ROCK CORES. THE LAYER OF SEVERELY WEATHERED ROCK GENERALLY RANGED IN THICKNESS FROM 1 TO 5 FEET.

SEEPAGE WAS OBSERVED IN 36 OF THE BORINGS CONSIDERED FOR THE PHASE 2 EMBANKMENTS AT DEPTHS RANGING FROM 1.0 TO 32.5 FEET BELOW THE GROUND SURFACE. IN GENERAL, GROUNDWATER WAS NOT ENCOUNTERED PRIOR TO THE INTRODUCTION OF WATER FOR CORING OPERATIONS. ONLY 20 OF THE BORINGS NOTED WATER LEVELS PRIOR TO BEGINNING ROCK CORING OPERATIONS. WHERE BORINGS DID ENCOUNTER WATER LEVELS PRIOR TO CORING, DEPTHS RANGED FROM 1.3 TO 42.6 FEET BELOW THE EXISTING GROUND SURFACE. SIMILARLY, 145 BORINGS ENCOUNTERED FINAL WATER LEVELS RANGING FROM 0.5 TO 34.0 FEET BELOW THE GROUND SURFACE.

GROUNDWATER LEVELS MAY FLUCTUATE WITH SEASONAL VARIATIONS AND FOLLOWING PERIODS OF HEAVY OR PROLONGED PRECIPITATION, AND THEREFORE, THE READINGS INDICATED ON THE BORING LOGS MAY NOT BE REPRESENTATIVE OF THE LONG-TERM GROUNDWATER LEVELS.

B. FLATWOODS FALLEN TIMBER ROAD (CR 184)

AT THE SURFACE, THE BORINGS ENCOUNTERED BETWEEN 0.0 AND 4 INCHES OF TOPSOIL AND 6 INCHES OF ASPHALTPAVEMENT. BENEATH THE PAVEMENT AND TOPSOIL LAYERS, THE BORINGS GENERALLY ENCOUNTERED SILT (A-4b), SANDY SILT (A-4a), AND DECOMPOSED SANDSTONE AND SILTSTONE. OVERBURDEN IS GENERALLY THIN WITH BEDROCK CONSISTING OF MEDIUM HARD SANDSTONE ENCOUNTERED AT DEPTHS OF 7.0 TO 20.0 FEET.

C. US 23 INTERCHANGE

SIXTY-TWO OF THE EIGHTY-SEVEN BORINGS DRILLED AT THE U.S. ROUTE 23 INTERCHANGE ENCOUNTERED TOPSOIL AT THE GROUND SURFACE. THE THICKNESS OF TOPSOIL RANGED FROM 1 TO 8 INCHES WITH AN AVERAGE OF APPROXIMATELY 4 INCHES. EIGHTEEN OF THE REMAINING BORINGS ENCOUNTERED ASPHALT CONCRETE PAVEMENT OVER AGGREGATE BASE AT THE GROUND SURFACE. THE THICKNESS OF THE ASPHALT PAVEMENT ENCOUNTERED RANGED FROM 3 TO 8 INCHES WITH AN AVERAGE OF APPROXIMATELY 5.5 INCHES, WHILE THE THICKNESS OF THE AGGREGATE BASE RANGED FROM 4 TO 8 INCHES WITH AN AVERAGE OF APPROXIMATELY 6 INCHES.

UNDERLYING THE TOPSOIL OR PAVEMENT LAYERS, THIRTY-TWO OF THE EIGHTY-SEVEN BORINGS ENCOUNTERED SOIL WHICH WAS IDENTIFIED AS FILL AND/OR POSSIBLE FILL MATERIAL TO DEPTHS OF UP TO 16.0 FEET BELOW THE EXISTING GROUND SURFACE. THE FILL AND/OR POSSIBLE FILL MATERIAL GENERALLY CONSISTED OF COHESIVE SOILS; SOME OF WHICH WERE CONFIRMED BY LABORATORY TESTING TO CONTAIN ORGANIC SOIL. FIVE SAMPLES FROM BORINGS B-1102, B-1103, B-1129, AND B-1150 WERE TESTED TO DETERMINE THE ORGANIC CONTENT. THE RESULTS INDICATE ORGANIC CONTENTS RANGING FROM 3.74 TO 6.12 PERCENT, WHICH ARE CONSIDERED TO BE SLIGHTLY TO MODERATELY ORGANIC.

UNDERLYING THE FILL, POSSIBLE FILL, OR SURFACE MATERIALS, EIGHTY OF THE EIGHTY-SEVEN BORINGS GENERALLY ENCOUNTERED COHESIVE SOILS, CONSISTING OF SILT (A-4b) TO CLAY (A-7-6), TO DEPTHS BETWEEN 5.5 AND 27.5 FEET BELOW THE EXISTING GROUND SURFACE. GRANULAR MATERIAL WAS TYPICALLY ENCOUNTERED BENEATH THESE COHESIVE SOILS TO THE TOP OF BEDROCK. IT SHOULD BE NOTED THAT BEFORE ENCOUNTERING ANY COHESIVE SOILS SEVEN OF THE EIGHTY-SEVEN BORINGS FIRST ENCOUNTERED VERY LOOSE TO DENSE, DAMP TO MOIST, GRAVEL WITH SAND (A-1-b) OR GRAVEL WITH SAND AND SILT (A-2-4) BELOW THE SURFACE MATERIALS.

SEVERAL OF THE BORINGS ENCOUNTERED A WATER-BEARING GRANULAR LAYER OVERLYING BEDROCK. THIS GRANULAR LAYER WAS GENERALLY ENCOUNTERED BENEATH A FINE-GRAINED, COHESIVE LAYER. IT APPEARED THAT THE WATER IN THE GRANULAR LAYER WAS CONFINED UNDER PRESSURE BY THE COHESIVE LAYER. AS A RESULT, WHEN SAMPLING THROUGH THE FINE-GRAINED COHESIVE LAYER INTO THE GRANULAR LAYER, WATER PRESSURE IN THE GRANULAR LAYER WAS RELEASED THROUGH AND AROUND THE AUGERS AND SPLIT-SPOON SAMPLER. THIS SITUATION DEVELOPED A "QUICK" CONDITION AND RESULTED IN WEIGHT-OF-HAMMER (WOH) SPT N-VALUES IN THE UPPER PORTIONS OF THE GRANULAR LAYERS.

SEVENTY-ONE OF THE EIGHTY-SEVEN BORINGS ENCOUNTERED BEDROCK. THE BEDROCK GENERALLY CONSISTED OF MEDIUM HARD TO HARD SANDSTONE. HOWEVER SHALE, SILTSTONE, AND CLAYSTONE WERE ALSO ENCOUNTERED IN BORINGS DRILLED ON THE EASTERN PORTIONS OF THE INTERCHANGE. THE TOP OF BEDROCK WAS ENCOUNTERED AT DEPTHS BETWEEN 13.0 AND 34.5 FEET BELOW THE EXISTING GROUND SURFACE, WITH AN AVERAGE DEPTH TO TOP OF BEDROCK OF 23.9 FEET. IT SHOULD BE NOTED THAT SOME OF THE BEDROCK ENCOUNTERED AT HIGHER ELEVATIONS WERE HIGHLY WEATHERED TO DECOMPOSED AND EXHIBITED A SOIL-LIKE STRUCTURE.

THE RECOVERY IN EACH CORE RUN VARIED BETWEEN 45 AND 100 PERCENT, WITH AN AVERAGE OF 94 PERCENT. THE ROCK QUALITY DESIGNATION (RQD) OF THE BEDROCK RANGED BETWEEN 0 AND 97 PERCENT WITH AN AVERAGE OF 60 PERCENT, INDICATING FAIR QUALITY ROCK.

SEEPAGE WAS OBSERVED IN SIXTY-EIGHT OF THE EIGHTY-SEVEN BORINGS. WHERE OBSERVED, SEEPAGE WAS FIRST ENCOUNTERED AT DEPTHS RANGING FROM 6.0 TO 28.0 FEET BELOW THE GROUND SURFACE. PRIOR TO ROCK CORING OPERATIONS, MEASURABLE WATER LEVELS WERE OBSERVED IN FORTY-EIGHT OF THE BORINGS AT DEPTHS RANGING FROM 8.0 TO 31.0 FEET BELOW THE EXISTING GROUND SURFACE. FINAL WATER LEVELS WERE PRESENT IN SIXTY-SIX OF THE BORINGS AT DEPTHS RANGING FROM 2.0 TO 22.0 FEET BELOW THE GROUND SURFACE. THE FINAL WATER LEVELS INCLUDED WATER THAT WAS USED FOR ROCK CORING AND CONSEQUENTLY MAY NOT BE REPRESENTATIVE OF ACTUAL GROUNDWATER CONDITIONS.

GROUNDWATER LEVELS MAY FLUCTUATE WITH SEASONAL VARIATIONS AND FOLLOWING PERIODS OF HEAVY OR PROLONGED PRECIPITATION. THEREFORE, THE READINGS INDICATED ON THE BORING LOGS MAY NOT BE REPRESENTATIVE OF THE LONG-TERM GROUNDWATER LEVEL.

A PIEZOMETER WAS INSTALLED IN BORING B-46 TO MONITOR THE GROUNDWATER LEVEL IN THE AREA OF FAIRGROUND ROAD. THIS PIEZOMETER WAS SCREENED IN THE GRANULAR LAYERS OVERLYING BEDROCK. READINGS INDICATE THAT THE PHREATIC LEVEL IN THE GRANULAR LAYERS RANGED FROM 0.2 TO 1.8 FEET BELOW THE GROUND SURFACE (EL. 549.5 TO 549.7) THE AVERAGE PHREATIC LEVEL IS APPROXIMATELY 16.0 FEET BELOW THE GROUND SURFACE, CORRESPONDING TO AN ELEVATION OF 549.6.

A PIEZOMETER WAS INSTALLED IN BORING B-54 TO MONITOR THE GROUNDWATER LEVEL IN THE AREA OF THE FORWARD ABUTMENT WALL OF THE STATE ROUTE 823 BRIDGE OVER U.S. ROUTE 23. THIS PIEZOMETER WAS SCREENED IN THE GRANULAR LAYERS OVERLYING BEDROCK. THE GROUNDWATER LEVELS IN THE PIEZOMETER RANGED FROM 20.2 TO 23.5 FEET BELOW THE EXISTING GROUND SURFACE (EL. 518.6 TO 515.3). THE AVERAGE PHREATIC LEVEL WAS APPROXIMATELY 21.4 FEET BELOW THE GROUND SURFACE, CORRESPONDING TO AN ELEVATION OF 517.4.

A PIEZOMETER WAS INSTALLED IN BORING B-1109A TO MONITOR THE GROUNDWATER LEVEL IN THE AREA OF RAMP B. THIS PIEZOMETER WAS SCREENED IN THE GRANULAR LAYERS OVERLYING BEDROCK. READINGS INDICATE THAT THE PHREATIC LEVEL IN THE GRANULAR LAYERS RANGED FROM 0.2 TO 1.8 FEET BELOW THE EXISTING GROUND SURFACE (EL. 532.3 TO 530.7). THE AVERAGE PHREATIC LEVEL IS APPROXIMATELY 1.2 FEET BELOW THE GROUND SURFACE, CORRESPONDING TO AN ELEVATION OF 531.3.

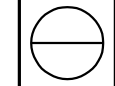


PROJECT INDEX

STATION		PLAN SHEET	PROFILE SHEET	CUT MAX.	FILL EMB. MAX.
FROM	TO				
S. R. 823					
537 + 50	562 + 00	49	50	116.0	37.5
562 + 00	578 + 00	52	53	76.0	43.6
578 + 00	612 + 00	55	56	80.5	86.5
612 + 00	637 + 00	58	59	112.5	85.0
637 + 00	662 + 00	61	62	139.8	102.2
662 + 00	687 + 00	64	65	179.5	77.4
687 + 00	712 + 00	67	68	178.4	144.0
712 + 00	737 + 00	70	71	116.9	73.8
737 + 00	762 + 00	73	74	104.5	86.9
762 + 00	787 + 00	76	77	96.0	104.2
787 + 00	812 + 00	79	80	200.5	103.4
812 + 00	837 + 00	82	83	243.2	85.3
837 + 00	862 + 00	85	86	58.7	61.6
862 + 00	887 + 00	88	89	78.0	19.6
887 + 00	904 + 79.54	91	92	66.1	35.3
C. R. 184 (FLATWOOD FALLEN TIMBER RD.)					
8 + 85.44	28 + 94.28	196	197	5.6	13.7
U. S. 23 RAMP A					
1904 + 10.82	1927 + 00	202	203	--	29.1
1927 + 00	1932 + 01	205	206	--	2.2
U. S. 23 RAMP B					
2598 + 05	2610 + 00	207	208	--	37.3
2610 + 00	2619 + 37.35	210	211	78.9	26.9
U. S. 23 RAMP C					
3884 + 38.51	3909 + 00	213	214	78.8	33.4
3909 + 00	3928 + 38.75	216	217	--	6.0
U. S. 23 RAMP D					
4904 + 10.82	4929 + 00.44	218	219	--	30.2

SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

**NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE**

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class						
			S.R. 823													S.R. 823													
TR-13	537+97.9 36.5 ft. RT	0.0 - 0.5	TOPSOIL										VISUAL	R-467	541+15.1 135.6 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL		
		0.5 - 3.0	GRAY SANDY SILT (A-4a)										VISUAL			0.3 - 6.0	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)										VISUAL		
		3.0 - 8.5	BROWN SILT AND CLAY (A-6a)										VISUAL			6.0 - 11.0	BROWN CLAY (A-7-6)										VISUAL		
		8.5 - 21.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)										VISUAL			11.0 - 12.5	1	0	1	21	77	57	32	30	A-7-6				
		21.0 - 22.5	0	0	1	19	80	53	28	35	A-7-6			12.5 - 22.0	BROWN CLAY (A-7-6)										VISUAL				
		22.5 - 30.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)										VISUAL			22.0 - 26.0	BROWN SILTY CLAY (A-6b)										VISUAL		
		30.0 - 33.5	GRAY AND BROWN SANDY SILT (A-4a)										VISUAL			26.0 - 27.5	2	1	2	45	50	36	17	26	A-6b				
		33.5 - 35.0	5	10	25	48	12	NP	NP	17	A-4a			27.5 - 30.0	BROWN SILTY CLAY (A-6b)										VISUAL				
		35.0 - 40.0	GRAY AND BROWN SANDY SILT (A-4a)										VISUAL			30.0 - 51.5	BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL		
		40.0 - 50.0	GRAY SILTSTONE										VISUAL			51.5 - 52.1	BROWN SANDSTONE										VISUAL		
															52.1 - 59.0	GRAY SHALE										VISUAL			
TR-12	539+22.5 28.9 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL	R-468	541+19.8 1.4 ft. RT	0.0 - 0.2	TOPSOIL										VISUAL		
		0.4 - 3.5	POSSIBLE FILL: BROWN SANDY SILT (A-4a)										VISUAL			0.2 - 6.0	BROWN SILT AND CLAY (A-6a)										VISUAL		
		3.5 - 5.0	30	15	11	27	17	28	9	17	A-4a			6.0 - 11.0	BROWN CLAY (A-7-6)										VISUAL				
		5.0 - 5.5	POSSIBLE FILL: BROWN SANDY SILT (A-4a)										VISUAL			11.0 - 12.5	0	0	1	31	68	50	26	29	A-7-6				
		5.5 - 8.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL			12.5 - 16.0	BROWN CLAY (A-7-6)										VISUAL		
		8.5 - 10.0	0	0	0	11	89	66	39	34	A-7-6			16.0 - 17.5	1	0	0	22	77	52	31	31	A-7-6						
		10.0 - 13.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL			17.5 - 30.0	BROWN CLAY (A-7-6)										VISUAL		
		13.5 - 15.0	0	0	0	10	90	66	48	38	A-7-6			30.0 - 43.5	BROWN SANDY SILT (A-4a)										VISUAL				
		15.0 - 30.0	BROWN AND GRAY CLAY (A-7-6)										VISUAL			43.5 - 48.5	BROWN SILT AND CLAY (A-6a)										VISUAL		
		30.0 - 33.5	GRAY AND BROWN SILTY CLAY (A-6b)										VISUAL			48.5 - 50.0	6	3	4	60	27	32	12	19	A-6a				
		33.5 - 35.0	1	5	8	59	28	38	22	19	A-6b			50.0 - 57.0	BROWN SILT AND CLAY (A-6a)										VISUAL				
		35.0 - 37.0	GRAY AND BROWN SILTY CLAY (A-6b)										VISUAL			57.0 - 62.0	DARK GRAY SANDSTONE										VISUAL		
		37.0 - 40.0	SEVERELY WEATHERED GRAY SHALE										VISUAL																
		40.0 - 50.0	GRAY SANDSTONE										VISUAL																
TR-11	539+75.3 37.2 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL	R-471	543+04.7 2.2 ft. RT	0.0 - 0.7	TOPSOIL										VISUAL		
		0.3 - 8.5	LIGHT BROWN CLAY (A-7-6)										VISUAL			0.7 - 3.5	REDDISH BROWN SANDY SILT (A-4a)										VISUAL		
		8.5 - 10.0	0	0	1	20	79	56	37	30	A-7-6			3.5 - 5.0	6	9	10	50	25	29	9	14	A-4a						
		10.0 - 13.0	LIGHT BROWN CLAY (A-7-6)										VISUAL			5.0 - 6.0	REDDISH BROWN SANDY SILT (A-4a)										VISUAL		
		13.0 - 23.5	GRAY CLAY (A-7-6)										VISUAL			6.0 - 10.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE										VISUAL		
		23.5 - 25.0	0	0	0	14	86	58	33	37	A-7-6			10.0 - 12.0	BROWN SANDSTONE										VISUAL				
		25.0 - 37.0	GRAY CLAY (A-7-6)										VISUAL			12.0 - 30.0	GRAY SANDSTONE										VISUAL		
		37.0 - 38.5	GRAY SILT AND CLAY (A-6a)										VISUAL																
		38.5 - 40.0	0	0	1	50	49	37	15	23	A-6a		R-475	547+07.8 151.0 ft. RT	0.0 - 0.6	TOPSOIL										VISUAL			
		40.0 - 43.0	GRAY SILT AND CLAY (A-6a)										VISUAL			0.6 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL		
		43.0 - 47.0	SEVERELY WEATHERED GRAY SHALE										VISUAL			3.5 - 7.5	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL*		
		47.0 - 57.0	GRAY SANDSTONE										VISUAL			7.5 - 24.0	BROWN AND GRAY SANDSTONE										VISUAL		
															24.0 - 80.0	GRAY SANDSTONE										VISUAL			
R-469	541+09.5 116.7 ft. RT	0.0 - 0.2	TOPSOIL										VISUAL	R-2475	547+07.8 151.0 ft. RT	0.0 - 0.6	TOPSOIL										VISUAL		
		0.2 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL			0.6 - 1.0	BROWN SILT (A-4b)										VISUAL		
		3.5 - 8.5	BROWN SILTY CLAY (A-6b)										VISUAL			1.0 - 2.5	9	17	10	53	11	24	3	11	A-4b				
		8.5 - 11.0	BROWN CLAY (A-7-6)										VISUAL			2.5 - 3.0	BROWN SILT (A-4b)										VISUAL		
		11.0 - 12.5	0	0	0	24	76	59	39	29	A-7-6			3.0 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL				
		12.5 - 16.0	BROWN CLAY (A-7-6)										VISUAL			7.0 - 23.4	BROWN AND GRAY SANDSTONE										VISUAL		
		16.0 - 18.5	BROWN SILT (A-4b)										VISUAL			23.4 - 110.0	GRAY SANDSTONE										VISUAL		
		18.5 - 20.0	0	3	6	68	23	24	6	21	A-4b																		
		20.0 - 20.5	BROWN SILT (A-4b)										VISUAL	R-473	547+36.2 155.7 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL		
		20.5 - 49.0	BROWN SILT AND CLAY (A-6a)										VISUAL			0.4 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL		
		49.0 - 54.0	DARK GRAY SHALE										VISUAL			3.5 - 6.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE										VISUAL		
															6.0 - 14.0	BROWN SANDSTONE										VISUAL			
															14.0 - 80.0	GRAY SANDSTONE										VISUAL			

SOIL PROFILE

SCI - 823 - 10.13



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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class	Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PI	% W.C.					
R-2473	547+36.2 155.7 ft. LT	0.0 - 0.2	TOPSOIL										VISUAL	R-2480	555+20.8 4.6 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL
		0.2 - 3.0	BROWN AND GRAY SILT (A-4b)										VISUAL			0.3 - 1.0	BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL
		3.0 - 5.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE										VISUAL			1.0 - 2.5	8	3	2	57	30	30	12	8		A-6a	
		5.0 - 8.5	BROWN SANDSTONE										VISUAL			2.5 - 3.0	BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL
		8.5 - 18.3	BROWN AND GRAY SANDSTONE										VISUAL			3.0 - 3.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL
		18.3 - 62.6	GRAY AND BROWN SANDSTONE										VISUAL			3.5 - 5.0	3	3	2	46	46	43	22	15		A-7-6	
		62.6 - 115.0	GRAY SANDSTONE										VISUAL			5.0 - 5.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL
R-478	550+94.4 77.0 ft. RT	0.0 - 0.7	TOPSOIL										VISUAL			5.5 - 10.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE										VISUAL
		0.7 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL			10.0 - 21.5	BROWN AND GRAY SANDSTONE										VISUAL
		3.5 - 7.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE										VISUAL			21.5 - 170.0	GRAY SANDSTONE										VISUAL*
REPLACED BY R-2478		7.0 - 12.0	BROWN SANDSTONE										VISUAL	R-482	558+97.4 133.9 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL
		12.0 - 60.0	GRAY SANDSTONE										VISUAL			0.3 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL
R-2478	550+94.4 77.0 ft. RT	0.0 - 0.6	TOPSOIL										VISUAL	REPLACED BY R-2482		3.5 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL
		0.6 - 3.0	BROWN AND BLACK SANDY SILT (A-4a)										VISUAL			5.0 - 7.7	BROWN SANDSTONE										VISUAL
		3.0 - 5.5	BROWN AND GRAY SILT (A-4b)										VISUAL			7.7 - 70.0	DARK GRAY SANDSTONE										VISUAL
		5.5 - 7.5	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE										VISUAL	R-2482	558+97.4 133.9 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL
		7.5 - 12.3	BROWN SANDSTONE										VISUAL			0.3 - 3.0	BROWN SILT (A-4b)										VISUAL
		12.3 - 110.0	GRAY SANDSTONE										VISUAL			3.0 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL
R-476	551+29.9 147.4 ft. LT	0.0 - 0.7	TOPSOIL										VISUAL			5.0 - 110.0	GRAY SANDSTONE										VISUAL
		0.7 - 1.0	BROWN CLAY (A-7-6)										VISUAL	R-484	559+09.2 167.0 ft. RT	0.0 - 0.8	TOPSOIL										VISUAL
		1.0 - 2.5	6	4	3	44	43	44	19	23		A-7-6			0.8 - 1.0	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL	
REPLACED BY R-2476		2.5 - 3.5	BROWN CLAY (A-7-6)										VISUAL			1.0 - 2.5	5	12	8	47	28	29	10	15		A-4a	
		3.5 - 19.8	BROWN SANDSTONE										VISUAL	REPLACED BY R-2484		2.5 - 6.0	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL
		19.8 - 95.0	GRAY SANDSTONE										VISUAL			6.0 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL
R-2476	551+29.9 147.4 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL			10.0 - 12.8	BROWN SANDSTONE										VISUAL
		0.3 - 1.0	BROWN SILTY CLAY (A-6b)										VISUAL			12.8 - 22.0	GRAY SANDSTONE										VISUAL
		1.0 - 2.5	6	5	5	40	44	37	16	20		A-6b			22.0 - 26.4	GRAY SHALE										VISUAL	
		2.5 - 3.0	BROWN SILTY CLAY (A-6b)										VISUAL			26.4 - 32.0	BROWN AND GRAY SANDSTONE										VISUAL
		3.0 - 5.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE										VISUAL			32.0 - 100.0	GRAY SANDSTONE										VISUAL
		5.0 - 18.8	GRAY AND BROWN SANDSTONE										VISUAL	R-2484	559+09.2 167.0 ft. RT	0.0 - 0.4	TOPSOIL										VISUAL
		18.8 - 91.4	GRAY SANDSTONE										VISUAL			0.4 - 1.0	BROWN SILT AND CLAY (A-6a)										VISUAL
		91.4 - 100.0	GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL			1.0 - 2.5	4	4	4	54	34	28	11	11		A-6a	
		100.0 - 130.0	GRAY SANDSTONE										VISUAL			2.5 - 5.5	BROWN SILT AND CLAY (A-6a)										VISUAL
R-480	555+20.8 4.6 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL			5.5 - 10.0	SEVERELY WEATHERED GRAY AND BROWN SANDSTONE										VISUAL
		0.4 - 1.0	BROWN SILT AND CLAY (A-6a)										VISUAL			10.0 - 24.4	GRAY AND BROWN SANDSTONE										VISUAL
		1.0 - 2.5	5	5	3	62	25	29	12	22		A-6a			24.4 - 30.0	GRAY SHALE										VISUAL	
REPLACED BY R-2480		2.5 - 8.5	BROWN SILT AND CLAY (A-6a)										VISUAL			30.0 - 60.0	BROWN AND GRAY SANDSTONE										VISUAL
		8.5 - 10.5	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL			60.0 - 145.0	GRAY SANDSTONE										VISUAL
		10.5 - 19.5	LIGHT GRAY TO BROWN SANDSTONE										VISUAL	R-487	563+29.4 182.9 ft. RT	0.0 - 0.4	TOPSOIL										VISUAL
		19.5 - 135.0	GRAY SANDSTONE										VISUAL*			0.4 - 3.5	BROWN SILTY CLAY (A-6b)										VISUAL
															3.5 - 10.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE										VISUAL	
															10.0 - 24.3	LIGHT BROWN SANDSTONE										VISUAL	
															24.3 - 30.2	GRAY SANDSTONE										VISUAL	
															30.2 - 36.5	BROWN SANDSTONE										VISUAL	
															36.5 - 95.0	GRAY SANDSTONE										VISUAL	

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SOIL PROFILE

SCI - 823 - 10.13

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DRAWN RLS
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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class			
S.R. 823												S.R. 823														
R-2487	563+29.4 182.9 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	R-497	573+16.6 3.8 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	
		0.3 - 5.0	BROWN SILT AND CLAY (A-6a)									VISUAL			0.3 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL*	
		5.0 - 17.5	BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL			3.5 - 5.0	7	1	5	56	31	35	17	19		A-6b	
		17.5 - 25.3	BROWN SANDSTONE									VISUAL			5.0 - 5.5	BROWN SILTY CLAY (A-6b)									VISUAL	
		25.3 - 32.2	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL			5.5 - 21.0	SEVERELY WEATHERED REDDISH BROWN SANDSTONE									VISUAL	
		32.2 - 36.7	BROWN SANDSTONE									VISUAL			21.0 - 22.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL	
		36.7 - 140.0	GRAY SANDSTONE									VISUAL			22.0 - 27.0	GRAY SANDSTONE									VISUAL	
R-488	567+22.7 76.8 ft. LT	0.0 - 0.5	TOPSOIL									VISUAL	R-495	573+23.8 69.5 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	
		0.5 - 3.5	BROWNISH GRAY SANDY SILT (A-4a)									VISUAL			0.3 - 8.5	BROWN AND GRAY SILT (A-4b)									VISUAL	
		3.5 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			8.5 - 10.0	0	1	3	79	17	27	7	25		A-4b	
REPLACED BY R-2488		6.0 - 22.3	BROWN SANDSTONE									VISUAL			10.0 - 18.5	BROWN AND GRAY SILT (A-4b)									VISUAL	
		22.3 - 40.0	GRAY SANDSTONE									VISUAL			18.5 - 33.8	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
R-2488	567+22.7 76.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	R-499	574+08.3 38.3 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL	
		0.3 - 3.0	BROWN SILT (A-4b)									VISUAL			0.5 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
		3.0 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			5.0 - 6.2	LIGHT GRAY/ORANGE SANDSTONE									VISUAL	
		5.0 - 70.0	GRAY SANDSTONE									VISUAL			6.2 - 12.0	LIGHT BROWN SANDSTONE									VISUAL	
R-490	567+32.8 150.2 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL			12.0 - 20.0	BROWNISH YELLOW SANDSTONE									VISUAL*	
		0.3 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL			20.0 - 30.0	DARK GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL	
		6.0 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL														
REPLACED BY R-2490		7.0 - 26.0	BROWN AND GRAY SANDSTONE									VISUAL	R-498	574+13.5 63.6 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL	
		26.0 - 75.0	GRAY SANDSTONE									VISUAL			0.4 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
R-2490	567+32.8 150.2 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL			3.5 - 5.0	1	9	10	48	32	34	14	15		A-6a	
		0.3 - 1.0	BROWN CLAY (A-7-6)									VISUAL			5.0 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL	
		1.0 - 2.5	4	6	6	42	42	41	20	15			6.0 - 12.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
		2.5 - 3.5	BROWN CLAY (A-7-6)									VISUAL			12.0 - 20.0	BROWN SANDSTONE									VISUAL	
		3.5 - 5.0	SEVERELY WEATHERED GRAY AND BROWN SANDSTONE									VISUAL	R-500	574+21.7 117.8 ft. RT	0.0 - 0.8	TOPSOIL									VISUAL	
		5.0 - 35.0	GRAY AND BROWN SANDSTONE									VISUAL			0.8 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL	
		35.0 - 110.0	GRAY SANDSTONE									VISUAL			3.5 - 5.0	9	12	9	40	30	37	17	13		A-6b	
R-492	571+01.2 26.4 ft. LT	0.0 - 0.5	TOPSOIL									VISUAL			5.0 - 8.0	BROWN SILTY CLAY (A-6b)									VISUAL	
		0.5 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			8.0 - 10.0	SEVERELY WEATHERED BROWNISH GRAY SANDSTONE									VISUAL	
		5.0 - 10.4	BROWN SANDSTONE									VISUAL			10.0 - 20.0	BROWN AND GRAY SANDSTONE									VISUAL	
		10.4 - 12.8	BROWNISH GRAY SANDSTONE									VISUAL	TR-10	577+84.9 51.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	
		12.8 - 16.7	BROWN SANDSTONE									VISUAL			0.3 - 1.0	DARK BROWN SANDY SILT (A-4a)									VISUAL	
		16.7 - 20.0	GRAY SANDSTONE									VISUAL			1.0 - 2.5	29	12	7	38	14	25	5	19		A-4a	
R-494	572+28.8 0.6 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL			2.5 - 3.0	DARK BROWN SANDY SILT (A-4a)									VISUAL	
		0.3 - 6.0	BROWN SILT (A-4b)									VISUAL			3.0 - 5.0	SEVERELY WEATHERED LIGHT GRAYISH BROWN SANDSTONE									VISUAL	
		6.0 - 7.5	16	9	6	52	17	25	5	17			5.0 - 7.1	LIGHT BROWN SANDSTONE									VISUAL			
		7.5 - 16.0	BROWN SILT (A-4b)									VISUAL			7.1 - 19.5	GRAY SANDSTONE									VISUAL	
		16.0 - 17.5	9	2	6	63	20	26	7	17		B-13	578+27.42 43.8 ft. Lt	0.0 - 0.3	TOPSOIL									VISUAL		
		17.5 - 38.5	BROWN SILT (A-4b)									VISUAL			0.3 - 1.0	BROWN SILT (A-4b)									VISUAL	
		38.5 - 40.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			1.0 - 2.5	0	3	4	68	25	30	10	15		A-4b	
		40.0 - 45.0	DARK GRAY SANDSTONE									VISUAL			2.5 - 3.5	BROWN SILT (A-4b)									VISUAL	
													3.5 - 5.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			
													5.0 - 15.0	GRAY SANDSTONE									VISUAL			

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SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class			
			S.R. 823													S.R. 823										
TR-9	578+73.6 39.1 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	R-505	585+25.6 79.6 ft. RT	0.0 - 0.7	TOPSOIL									VISUAL	
		0.3 - 1.0	DARK BROWN SILTY CLAY (A-6b)									VISUAL			0.7 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		1.0 - 2.5	0	5	5	52	38	34	17	12	A-6b			3.5 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL		
		2.5 - 3.0	DARK BROWN SILTY CLAY (A-6b)									VISUAL			7.0 - 15.5	BROWN SANDSTONE									VISUAL	
		3.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			15.5 - 30.0	GRAY SANDSTONE									VISUAL	
		6.0 - 7.0	SEVERELY WEATHERED LIGHT BROWN SANDSTONE									VISUAL														
		7.0 - 17.0	GRAY SANDSTONE									VISUAL	R-506	589+15.7 185.8 ft. LT	0.0 - 0.5	TOPSOIL									VISUAL	
TR-8	579+73.0 46.7 ft. LT	0.0 - 0.1	TOPSOIL									VISUAL			0.5 - 11.0	BROWN SILTY CLAY (A-6b)									VISUAL	
		0.1 - 3.5	DARK GRAY SANDY SILT (A-4a)									VISUAL			11.0 - 12.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
		3.5 - 5.0	22	10	7	46	15	25	4	16	A-4a			12.0 - 34.8	BROWN SANDSTONE									VISUAL		
		5.0 - 6.5	DARK GRAY SANDY SILT (A-4a)									VISUAL			34.8 - 110.0	GRAY SANDSTONE									VISUAL	
		6.5 - 7.5	1	11	7	60	21	24	4	22	A-4b	R-508	589+51.1 72.6 ft. RT	0.0 - 0.6	TOPSOIL									VISUAL		
		7.5 - 8.5	BROWN SILT (A-4b)									VISUAL			0.6 - 3.5	BROWN AND GRAY GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	
		8.5 - 10.0	5	13	12	50	20	26	7	13	A-4b			3.5 - 5.0	50	9	6	28	7	NP	NP	18	A-2-4			
		10.0 - 13.5	BROWN SILT (A-4b)									VISUAL			5.0 - 13.5	BROWN AND GRAY GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	
		13.5 - 15.0	SEVERELY WEATHERED LIGHT BROWN SANDSTONE									VISUAL			13.5 - 17.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
		15.0 - 19.3	LIGHT BROWN SANDSTONE									VISUAL			17.0 - 23.4	GRAYISH BROWN SANDSTONE									VISUAL	
		19.3 - 34.5	GRAY SANDSTONE									VISUAL			23.4 - 30.0	GRAY SANDSTONE									VISUAL	
B-14	579+80.2 31.8 ft. RT	0.0 - 0.1	TOPSOIL									VISUAL	R-509	592+24.5 194.2 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL	
		0.1 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL			0.4 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL	
		3.5 - 5.0	10	8	8	49	25	32	14	12	A-6a			3.5 - 7.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL		
		5.0 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL			7.5 - 23.2	BROWN SANDSTONE									VISUAL	
		8.5 - 10.0	17	12	11	45	15	26	5	13	A-4a			23.2 - 37.2	GRAY SANDSTONE									VISUAL		
		10.0 - 14.0	BROWN SANDY SILT (A-4a)									VISUAL			37.2 - 45.9	BROWN SANDSTONE									VISUAL	
		14.0 - 15.0	0	1	5	70	24	30	10	26	A-4b			45.9 - 120.0	GRAY SANDSTONE									VISUAL		
		15.0 - 18.5	MOTTLED BROWN AND GRAY SILT (A-4b)									VISUAL														
		18.5 - 21.5	BROWN SANDSTONE									VISUAL	R-510	592+32.2 157.2 ft. RT	0.0 - 0.7	TOPSOIL									VISUAL	
		21.5 - 28.5	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL			0.7 - 1.0	BROWN SILT (A-4b)									VISUAL	
TR-7	580+57.2 44.9 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL			1.0 - 2.5	3	9	10	53	25	29	8	20	A-4b		
		0.2 - 3.0	DARK GRAY SILT AND CLAY (A-6a)									VISUAL			2.5 - 3.5	BROWN SILT (A-4b)									VISUAL	
		3.0 - 3.5	LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL			3.5 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		3.5 - 5.0	3	14	7	48	28	30	12	16	A-6a			5.5 - 7.2	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL		
		5.0 - 6.5	LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL			7.2 - 16.2	BROWN SANDSTONE									VISUAL	
		6.5 - 10.0	SEVERELY WEATHERED LIGHT BROWN SANDSTONE									VISUAL			16.2 - 95.0	GRAY SANDSTONE									VISUAL	
		10.0 - 13.0	LIGHT BROWN SANDSTONE									VISUAL	PB-35	594+46.0 9.5 ft. LT	0.0 - 4.5	BROWN SANDY SILT (A-4a)									VISUAL	
		13.0 - 24.5	GRAY SANDSTONE									VISUAL			4.5 - 29.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
R-501	581+20.3 161.2 ft. LT	0.0 - 0.8	TOPSOIL									VISUAL			29.5 - 35.5	GRAY SILTSTONE									VISUAL	
		0.8 - 2.1	LIGHT REDDISH BROWN SILTY CLAY (A-6b)									VISUAL			35.5 - 37.6	GRAY SHALE									VISUAL	
		2.1 - 5.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE									VISUAL			37.6 - 50.0	BROWN SANDSTONE									VISUAL	
		5.0 - 30.0	BROWNISH GRAY SANDSTONE									VISUAL			50.0 - 185.2	BROWN AND GRAY SANDSTONE									VISUAL*	
		30.0 - 40.0	GRAY SANDSTONE									VISUAL	R-511	596+18.1 131.3 ft. LT	0.0 - 0.8	TOPSOIL									VISUAL	
R-503	585+03.5 191.6 ft. LT	0.0 - 0.8	TOPSOIL									VISUAL			0.8 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
		0.8 - 3.5	BROWN SILT (A-4b)									VISUAL			5.0 - 18.6	BROWNISH GRAY SANDSTONE									VISUAL	
		3.5 - 5.0	0	4	5	63	28	28	8	11	A-4b			18.6 - 30.0	GRAY SANDSTONE									VISUAL		
		5.0 - 6.0	BROWN SILT (A-4b)									VISUAL			30.0 - 60.0	GRAY TO DARK GRAY SANDSTONE									VISUAL	
		6.0 - 12.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL														
		12.0 - 31.7	BROWN TO BROWNISH GRAY SANDSTONE									VISUAL														
		31.7 - 115.0	GRAY SANDSTONE									VISUAL														

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823								ODOT Class	Boring	Station & Offset	Depth From To	S.R. 823								ODOT Class		
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.					% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.			
R-512	596+62.6 139.4 ft. RT	0.0 - 0.4	TOPSOIL								VISUAL	R-522	603+34.2 57.2 ft. RT	0.0 - 0.7	TOPSOIL								VISUAL		
		0.4 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL			0.7 - 3.5	BROWN SANDY SILT (A-4a)								VISUAL		
		5.0 - 11.0	BROWN SANDSTONE								VISUAL			3.5 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL		
		11.0 - 36.8	GRAY SANDSTONE								VISUAL			5.0 - 13.0	BROWN SANDSTONE								VISUAL		
		36.8 - 45.0	BLUISH GRAY SANDSTONE								VISUAL			13.0 - 25.0	GRAY SANDSTONE								VISUAL		
C-82	599+93.7 241.4 ft. LT	0.0 - 0.3	TOPSOIL								VISUAL	R-523	605+82.4 180.0 ft. LT	0.0 - 0.3	TOPSOIL								VISUAL		
		0.3 - 3.0	DARK BROWN SANDY SILT (A-4a)								VISUAL			0.3 - 3.5	BROWN SILT AND CLAY (A-6a)								VISUAL		
		3.0 - 3.5	BROWN SANDY SILT (A-4a)								VISUAL			3.5 - 7.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE								VISUAL		
		3.5 - 5.0	23	14	6	41	16	25	7	18	A-4a			7.0 - 14.8	BROWN SANDSTONE								VISUAL		
		5.0 - 6.0	BROWN SANDY SILT (A-4a)								VISUAL			14.8 - 17.3	GRAY SHALE INTERBEDDED WITH SANDSTONE								VISUAL		
		6.0 - 7.5	16	7	6	55	16	27	7	20	A-4b			17.3 - 25.3	BROWN SANDSTONE								VISUAL		
		7.5 - 11.0	BROWN SILT (A-4b)								VISUAL			25.3 - 38.1	GRAY SANDSTONE								VISUAL		
		11.0 - 13.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE								VISUAL			38.1 - 45.9	GRAY TO LIGHT BROWN SANDSTONE								VISUAL		
		13.0 - 18.0	GRAY SILTSTONE								VISUAL			45.9 - 70.3	GRAY SANDSTONE								VISUAL		
R-516	599+97.3 5.8 ft. RT	0.0 - 0.4	TOPSOIL								VISUAL	R-525	605+94.0 161.0 ft. RT	0.0 - 0.6	TOPSOIL								VISUAL		
		0.4 - 3.5	BROWN SANDY SILT (A-4a)								VISUAL			0.6 - 1.0	BROWN SILT AND CLAY (A-6a)								VISUAL		
		3.5 - 5.0	11	13	12	48	16	21	2	15	A-4a			1.0 - 2.5	4	2	7	59	28	28	11	19	A-6a		
		5.0 - 8.5	BROWN SANDY SILT (A-4a)								VISUAL			2.5 - 6.0	BROWN SILT AND CLAY (A-6a)								VISUAL		
		8.5 - 10.0	3	12	16	54	15	NP	NP	22	A-4b			6.0 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL		
		10.0 - 16.0	BROWN SILT (A-4b)								VISUAL			7.0 - 28.4	ORANGE TO YELLOWISH LIGHT GRAY SANDSTONE								VISUAL		
		16.0 - 17.5	SEVERELY WEATHERED DARK GRAY SANDSTONE								VISUAL			28.4 - 95.4	GRAY SANDSTONE								VISUAL		
C-83	600+49.4 45.8 ft. LT	0.0 - 0.5	TOPSOIL								VISUAL	R-527	610+04.3 111.9 ft. RT	0.0 - 0.6	TOPSOIL								VISUAL		
		0.5 - 3.0	DARK BROWN SANDY SILT (A-4a)								VISUAL			0.6 - 4.5	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL		
		3.0 - 3.5	BROWN SILT (A-4b)								VISUAL			4.5 - 8.2	BROWN SANDSTONE								VISUAL		
		3.5 - 5.0	16	10	5	51	18	25	7	21	A-4b			8.2 - 20.0	GRAY TO DARK GRAY SANDSTONE								VISUAL		
		5.0 - 5.5	BROWN SILT (A-4b)								VISUAL			R-526	610+33.0 138.8 ft. LT	0.0 - 0.4	TOPSOIL								VISUAL
		5.5 - 6.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)								VISUAL					0.4 - 8.5	BROWN SANDY SILT (A-4a)								VISUAL
		6.0 - 7.5	51	11	7	24	7	25	5	15	A-2-4					8.5 - 16.0	BROWN AND GRAY SANDY SILT (A-4a)								VISUAL
7.5 - 10.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)								VISUAL	16.0 - 18.5	BROWN SILT (A-4b)								VISUAL						
10.0 - 15.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE								VISUAL	18.5 - 21.0	BROWN SILT AND CLAY (A-6a)								VISUAL						
C-84	601+69.4 212.5 ft. RT	0.0 - 0.6	TOPSOIL								VISUAL	R-528	610+42.7 8.3 ft. LT	0.0 - 0.5	TOPSOIL								VISUAL		
		0.6 - 3.0	DARK BROWN SANDY SILT (A-4a)								VISUAL			0.5 - 29.0	BROWN SANDY SILT (A-4a)								VISUAL		
		3.0 - 3.5	BROWN SANDY SILT (A-4a)								VISUAL			29.0 - 39.0	GRAY TO DARK GRAY SANDSTONE								VISUAL		
		3.5 - 5.0	20	11	7	45	17	28	8	18	A-4a			R-529	611+21.4 114.9 ft. LT	0.0 - 0.5	TOPSOIL								VISUAL
		5.0 - 8.0	BROWN SANDY SILT (A-4a)								VISUAL					0.5 - 6.0	BROWN SILT AND CLAY (A-6a)								VISUAL
		8.0 - 10.0	SEVERELY WEATHERED GRAY SILTSTONE								VISUAL					6.0 - 9.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL
10.0 - 15.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE								VISUAL	9.0 - 12.9	BROWN SANDSTONE								VISUAL						
12.5 - 17.5	GRAY SANDSTONE								VISUAL	12.9 - 20.0	GRAY SANDSTONE								VISUAL						
17.5 - 50.0	GRAY TO DARK GRAY SANDSTONE								VISUAL																

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SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

*** DENOTES SAMPLE TAKEN AT OR NEAR GRADE**

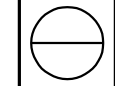
Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class					
			S.R. 823													S.R. 823												
R-530	611+38.6 59.6 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL	R-543	619+09.5 2.6 ft. RT	0.0 - 0.6	TOPSOIL									VISUAL			
		0.5 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			0.6 - 3.5	BROWN SANDY SILT (A-4b)									VISUAL			
		6.0 - 8.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			3.5 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
		8.0 - 12.0	BROWN SANDSTONE									VISUAL			7.0 - 14.0	BROWN SANDSTONE									VISUAL			
		12.0 - 20.0	GRAY SANDSTONE									VISUAL			14.0 - 20.5	GRAY SANDSTONE									VISUAL			
		20.0 - 40.0	DARK GRAY SANDSTONE									VISUAL																
R-533	613+21.1 150.7 ft. RT	0.0 - 0.1	TOPSOIL									VISUAL	R-541	619+15.5 286.2 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			
		0.1 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL			0.3 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL			
		6.0 - 8.5	BROWN SILTY CLAY (A-6b)									VISUAL			8.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
		8.5 - 12.5	SEVERELY WEATHERED BROWN SHALE									VISUAL			10.0 - 20.0	BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL			
		12.5 - 30.0	BROWNISH GRAY SANDSTONE									VISUAL			20.0 - 25.3	GRAY SANDSTONE									VISUAL			
		30.0 - 34.3	BROWNISH GRAY SHALE									VISUAL																
		34.3 - 97.0	GRAY SANDSTONE									VISUAL	R-542	619+64.3 186.3 ft. LT	0.0 - 0.5	TOPSOIL									VISUAL			
R-531	613+55.8 134.4 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL			0.5 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL			
		0.2 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL			8.0 - 10.9	BROWN SANDSTONE									VISUAL			
		6.0 - 7.5	0	3	7	60	30	31	13	10	A-6a			10.9 - 13.0	LIGHT GRAYISH BROWN SHALE									VISUAL				
		7.5 - 12.0	BROWN SILT AND CLAY (A-6a)									VISUAL			13.0 - 15.0	BROWN SANDSTONE									VISUAL			
		12.0 - 32.6	BROWN SANDSTONE									VISUAL			15.0 - 29.5	GRAY SHALE									VISUAL			
		32.6 - 62.0	GRAY SANDSTONE									VISUAL	R-549	621+86.8 21.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			
R-535	616+66.4 5.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			0.3 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL			
		0.3 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL			3.5 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
		3.5 - 8.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			5.0 - 13.6	BROWNISH GRAY SANDSTONE									VISUAL			
		8.5 - 15.2	BROWN SANDSTONE									VISUAL			13.6 - 20.0	GRAY SANDSTONE									VISUAL			
		15.2 - 20.0	GRAY SANDSTONE									VISUAL	R-548	621+88.7 190.4 ft. LT	0.0 - 0.6	TOPSOIL									VISUAL			
C-85	616+68.6 154.5 ft. RT	0.0 - 0.7	TOPSOIL									VISUAL			0.6 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL			
		0.7 - 3.0	FILL: BROWN SANDY SILT (A-4a)									VISUAL			16.0 - 20.0	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL			
		3.0 - 3.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL			20.0 - 30.0	GRAY SANDSTONE									VISUAL			
		3.5 - 5.0	45	20	8	23	4	NP	NP	13	A-2-4	R-550	621+95.3 124.3 ft. RT	0.0 - 0.7	TOPSOIL									VISUAL				
		5.0 - 8.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL			0.7 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL			
		8.5 - 10.0	2	21	8	55	14	23	4	14	A-4b			3.5 - 4.5	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL				
		10.0 - 13.0	BROWN SILT (A-4b)									VISUAL			4.5 - 9.6	BROWN SANDSTONE									VISUAL			
		13.0 - 15.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			9.6 - 20.5	GRAY SANDSTONE									VISUAL			
		15.0 - 20.0	BROWN SANDSTONE									VISUAL	R-547	622+16.1 234.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			
R-538	617+44.9 128.8 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL			0.3 - 10.0	BROWN SANDY SILT (A-4a)									VISUAL			
		0.4 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			10.0 - 20.0	BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL			
		6.0 - 7.5	6	11	9	61	13	NP	NP	13	A-4b	R-551	623+15.5 267.5 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL				
		7.5 - 11.0	BROWN SILT (A-4b)									VISUAL			0.4 - 11.0	BROWN SANDY SILT (A-4a)									VISUAL			
		11.0 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL			11.0 - 17.5	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL			
		16.0 - 19.5	SEVERELY WEATHERED BROWN SHALE									VISUAL			17.5 - 21.2	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL			
		19.5 - 29.5	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL			21.2 - 27.5	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL			
R-537	617+59.3 256.5 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	R-553	623+43.5 184.9 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL			
		0.3 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 18.5	BROWN SANDY SILT (A-4a)									VISUAL			
		8.5 - 13.5	SEVERELY WEATHERED BROWN SHALE									VISUAL			18.5 - 23.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
		13.5 - 15.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			23.5 - 25.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			
		15.0 - 25.0	GRAY SHALE									VISUAL			25.0 - 35.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL			

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SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class	Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PI	% W.C.					
R-554	624+86.4 135.6 ft. LT	0.0 - 1.1 1.1 - 21.0 21.0 - 28.5 28.5 - 30.0 30.0 - 40.0	TOPSOIL BROWN SILT AND CLAY (A-6a) BROWN SANDY SILT (A-4a) SEVERELY WEATHERED GRAY SANDSTONE DARK GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL	R-2562	632+79.7 121.3 ft. LT	0.0 - 0.4 0.4 - 1.0 1.0 - 2.5 2.5 - 5.0 5.0 - 6.5 6.5 - 14.0 14.0 - 70.0	TOPSOIL BROWN SANDY SILT (A-4a) 29 10 5 44 12 21 3 10 BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY SANDSTONE										VISUAL VISUAL A-4a VISUAL VISUAL VISUAL
R-556	625+226.2 95.2 ft. RT	0.0 - 0.3 0.3 - 8.5 8.5 - 13.5 13.5 - 15.0 15.0 - 22.0	TOPSOIL BROWN SILTY CLAY (A-6b) SEVERELY WEATHERED BROWN SANDSTONE SEVERELY WEATHERED GRAY SHALE GRAYISH BROWN SANDSTONE										VISUAL VISUAL VISUAL VISUAL	R-562	632+94.1 132.2 ft. LT	0.0 - 0.3 0.3 - 3.5 3.5 - 9.0 9.0 - 20.0	TOPSOIL BROWN SILT AND CLAY (A-6a) SEVERELY WEATHERED BROWN SANDSTONE BROWNISH GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL
R-2558	629+22.1 122.6 ft. RT	0.0 - 0.3 0.3 - 1.0 1.0 - 2.5 2.5 - 3.0 3.0 - 7.0 7.0 - 16.4 16.4 - 31.6 31.6 - 150.0	TOPSOIL BROWN SANDY SILT (A-4a) 27 14 14 31 14 26 6 14 BROWN SANDY SILT (A-4a) SEVERELY WEATHERED GRAYISH BROWN SANDSTONE BROWN SANDSTONE GRAYISH BROWN SANDSTONE GRAY SANDSTONE										VISUAL VISUAL A-4a VISUAL VISUAL VISUAL VISUAL	R-564	633+06.5 165.6 ft. RT	0.0 - 0.3 0.3 - 4.5 4.5 - 19.9 19.9 - 34.0	TOPSOIL SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE INTERBEDDED WITH SHALE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL
R-558	629+24.7 118.1 ft. RT	0.0 - 0.2 0.2 - 6.0 6.0 - 16.0 16.0 - 17.5 17.5 - 41.3 41.3 - 51.5 51.5 - 55.0 55.0 - 62.0	TOPSOIL BROWN SILT AND CLAY (A-6a) SEVERELY WEATHERED BROWNISH GRAY SHALE GRAY SANDSTONE BROWN SANDSTONE GRAY SANDSTONE BROWNISH ORANGE SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL	R-568	635+84.2 231.7 ft. RT	0.0 - 0.3 0.3 - 3.5 3.5 - 5.0 5.0 - 8.5 8.5 - 16.6 16.6 - 20.0 20.0 - 30.0	TOPSOIL BROWN SANDY SILT (A-4a) 21 18 12 36 13 27 6 13 BROWN SANDY SILT (A-4a) GRAY SANDY SILT (A-4a) SEVERELY WEATHERED GRAY SHALE GRAY SANDSTONE										VISUAL VISUAL A-4a VISUAL VISUAL VISUAL
REPLACED BY R-2558		16.0 - 17.5 17.5 - 41.3 41.3 - 51.5 51.5 - 55.0 55.0 - 62.0	GRAY SANDSTONE BROWN SANDSTONE GRAY SANDSTONE BROWNISH ORANGE SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL	C-86	635+88.0 122.4 ft. RT	0.0 - 0.7 0.7 - 3.5 3.5 - 5.0 5.0 - 8.5 8.5 - 10.0 10.0 - 12.0 12.0 - 19.0	TOPSOIL BROWN GRAVEL WITH SAND (A-1-b) 59 12 11 13 6 NP NP 12 BROWN GRAVEL WITH SAND (A-1-b) 5 8 5 50 32 36 15 17 BROWN SILT AND CLAY (A-6a) GRAY SILTSTONE INTERBEDDED WITH SANDSTONE										VISUAL VISUAL A-1-b VISUAL A-6a VISUAL
R-2560	629+80.0 129.4 ft. LT	0.0 - 0.3 0.3 - 2.5 2.5 - 5.0 5.0 - 28.7 28.7 - 150.0	TOPSOIL BROWN SILT (A-4b) SEVERELY WEATHERED GRAYISH BROWN SANDSTONE GRAYISH BROWN SANDSTONE INTERBEDDED WITH SHALE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL	C-87	636+05.9 105.2 ft. LT	0.0 - 0.6 0.6 - 3.5 3.5 - 5.0 5.0 - 6.0 6.0 - 7.5 7.5 - 12.0 12.0 - 12.5 12.5 - 17.5	TOPSOIL BROWN SANDY SILT (A-4a) 29 16 10 31 14 26 7 7 BROWN SANDY SILT (A-4a) 45 11 8 28 8 26 3 16 BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE GRAY SILTSTONE INTERBEDDED WITH SANDSTONE										VISUAL VISUAL A-4a VISUAL A-4a VISUAL VISUAL
R-560	630+08.0 162.3 ft. LT	0.0 - 0.2 0.2 - 6.0 6.0 - 22.5 22.5 - 29.1 29.1 - 37.5 37.5 - 38.7 38.7 - 49.0 49.0 - 52.5	TOPSOIL BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SHALE BROWNISH GRAY SANDSTONE GRAY SANDSTONE GRAY SHALE INTERBEDDED WITH SANDSTONE BROWN SANDSTONE GRAY SANDSTONE INTERBEDDED WITH SILTSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL	R-2564	632+76.6 124.3 ft. RT	0.0 - 0.3 0.3 - 3.0 3.0 - 5.0 5.0 - 15.7 15.7 - 50.0	TOPSOIL BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL

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SOIL PROFILE

SCI-823-10.13

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
			S.R. 823									
C-88	636+57.7 284.3 ft. LT	0.0 - 0.8	TOPSOIL									VISUAL
		0.8 - 3.5	BROWN SILT (A-4b)									VISUAL
		3.5 - 5.0	15	10	4	51	20	24	6	17	A-4b	
		5.0 - 5.5	BROWN SILT (A-4b)									VISUAL
		5.5 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 10.0	34	20	10	27	10	24	5	11	A-4a	
		10.0 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL
		16.0 - 17.5	1	5	7	67	21	31	9	23	A-4b	
		17.5 - 18.0	BROWN SILT (A-4b)									VISUAL
		18.0 - 19.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		19.5 - 24.5	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL
R-565	636+71.8 233.8 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 6.0	BROWN SILT (A-4b)									VISUAL
		6.0 - 7.5	13	9	6	51	21	23	3	19	VISUAL	
		7.5 - 11.0	BROWN SILT (A-4b)									VISUAL
		11.0 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL
		13.5 - 17.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		17.5 - 27.5	GRAY SANDSTONE									VISUAL
R-2571	638+93.1 105.2 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.0	BROWN SILT (A-4b)									VISUAL
		3.0 - 7.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL
		7.0 - 21.6	BROWN SANDSTONE									VISUAL
		21.6 - 110.0	GRAY SANDSTONE									VISUAL
R-2570	639+00.0 5.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 5.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.0 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		6.0 - 14.1	LIGHT BROWN SANDSTONE									VISUAL
		14.1 - 42.7	BROWN AND GRAY SANDSTONE									VISUAL
		42.7 - 80.0	GRAY SANDSTONE									VISUAL*
R-571	639+21.1 80.4 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		6.0 - 10.0	SEVERELY WEATHERED BROWN SHALE									VISUAL
		10.0 - 20.0	BROWN SANDSTONE									VISUAL
R-570	639+84.2 238.3 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		8.5 - 11.7	SEVERELY WEATHERED GRAY SHALE									VISUAL
		11.7 - 21.7	GRAY SANDSTONE									VISUAL
R-575	642+59.6 188.3 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		8.5 - 10.0	4	4	0	67	25	29	12	9	A-6a	
		10.0 - 13.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		13.5 - 17.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
		17.5 - 25.0	BROWN SHALE									VISUAL
		25.0 - 32.3	GRAY Limestone									VISUAL
		32.3 - 35.6	PINK LIMESTONE									VISUAL
		35.6 - 40.0	BROWN SANDSTONE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
			S.R. 823									
R-574	643+00.3 72.1 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 8.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		8.5 - 15.3	BROWN SANDSTONE									VISUAL
		15.3 - 21.0	GRAY SANDSTONE									VISUAL
R-2574	643+06.8 103.7 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		5.0 - 12.4	BROWN SANDSTONE									VISUAL
		12.4 - 120.0	GRAY SANDSTONE									VISUAL
R-2575	643+21.2 155.6 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL
		0.5 - 5.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.0 - 13.0	BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		13.0 - 24.0	BROWN SANDSTONE									VISUAL
		24.0 - 31.0	GRAY SANDSTONE									VISUAL
		31.0 - 42.7	BROWN SANDSTONE									VISUAL
		42.7 - 150.0	GRAY SANDSTONE									VISUAL
R-2579	646+01.9 141.8 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		3.5 - 8.0	BROWN SANDSTONE									VISUAL
		8.0 - 110.5	GRAY SANDSTONE									VISUAL
R-579	646+03.2 143.1 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 6.0	BROWN SILT (A-4b)									VISUAL
		6.0 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		10.0 - 20.0	GRAY SANDSTONE									VISUAL
			REPLACED BY R-2579									
R-577	646+12.4 112.2 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 6.6	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		6.6 - 20.0	BROWN AND GRAY SANDSTONE									VISUAL
			REPLACED BY R-2577									
R-2577	646+19.0 109.4 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 4.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		4.5 - 6.5	BROWN SILT (A-4b)									VISUAL
		6.5 - 10.2	BROWN AND GRAY SANDSTONE									VISUAL
		10.2 - 81.1	GRAY SANDSTONE									VISUAL
R-576	646+23.8 273.5 ft. RT	0.0 - 0.6	TOPSOIL									VISUAL
		0.6 - 9.2	BROWN SILT AND CLAY (A-6a)									VISUAL
		9.2 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		10.0 - 17.5	BROWN SANDSTONE									VISUAL
		17.5 - 20.0	GRAY SANDSTONE									VISUAL
R-582	650+28.5 110.7 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL
		0.5 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 7.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL
		7.0 - 14.5	BROWN SANDSTONE									VISUAL
		14.5 - 20.0	GRAY SANDSTONE									VISUAL

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
S.R. 823												
R-580	650+57.9 42.9 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		10.0 - 12.8	BROWN SANDSTONE									VISUAL
REPLACED BY R-2580		12.8 - 20.0	GRAY SANDSTONE									VISUAL
R-2580	650+57.9 42.9 ft. LT	0.0 - 3.5	BROWN SILT (A-4b)									VISUAL
		3.5 - 4.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		4.5 - 10.6	BROWN SANDSTONE									VISUAL
		10.6 - 83.0	GRAY SANDSTONE									VISUAL*
		83.0 - 110.9	LIGHT AND DARK GRAY SANDSTONE									VISUAL
R-2584	650+98.8 38.8 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL
		3.0 - 3.5	BROWN AND GRAY SILT (A-4b)									VISUAL
		3.5 - 5.0	6	19	7	52	16	24	4	14	A-4b	
		5.0 - 5.5	BROWN AND GRAY SILT (A-4b)									VISUAL
		5.5 - 6.5	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL
		6.5 - 13.5	BROWN AND GRAY SANDSTONE									VISUAL
		13.5 - 84.6	GRAY SANDSTONE									VISUAL
		84.6 - 110.0	LIGHT AND DARK GRAY SANDSTONE									VISUAL*
R-584	651+00.0 41.8 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
REPLACED BY R-2584		10.0 - 20.0	GRAY SANDSTONE									VISUAL
R-583	651+47.8 80.8 ft. LT	0.0 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		8.5 - 13.5	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL
		13.5 - 15.0	SEVERELY WEATHERED SANDSTONE									VISUAL
		15.0 - 25.0	BROWN SANDSTONE									VISUAL
R-586	652+35.9 3.3 ft. LT	0.0 - 0.1	TOPSOIL									VISUAL
		0.1 - 16.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		16.0 - 17.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
		17.5 - 23.2	BROWNISH GRAY SILTSTONE									VISUAL
		23.2 - 36.5	BROWN SANDSTONE									VISUAL
		36.5 - 51.5	GRAY SANDSTONE									VISUAL
R-590	653+02.4 208.9 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		6.0 - 11.0	SEVERELY WEATHERED BROWN SHALE									VISUAL
REPLACED BY R-2590		11.0 - 27.6	BROWN SHALE									VISUAL
		27.6 - 38.2	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		38.2 - 43.5	ORANGE LIMESTONE									VISUAL
		43.5 - 57.7	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
S.R. 823												
R-2590	653+02.4 208.9 ft. RT	0.0 - 0.1	TOPSOIL									VISUAL
		0.1 - 1.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.5 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		5.0 - 19.0	BROWN SANDSTONE									VISUAL
		19.0 - 29.3	DARK GRAY SANDSTONE									VISUAL
		29.3 - 37.8	GRAY SANDSTONE									VISUAL
		37.8 - 48.9	BROWN SANDSTONE									VISUAL
		48.9 - 147.0	GRAY SANDSTONE									VISUAL
		147.0 - 190.7	LIGHT AND DARK GRAY SANDSTONE									VISUAL
R-2588	653+27.7 61.4 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 5.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE									VISUAL
		5.0 - 15.0	BROWN AND GRAY SANDSTONE									VISUAL
		15.0 - 107.3	GRAY SANDSTONE									VISUAL
		107.3 - 150.0	LIGHT AND DARK GRAY SANDSTONE INTERBEDDED WITH SHA									VISUAL
R-588	653+34.4 59.2 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 4.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		4.0 - 10.0	BROWN SANDSTONE									VISUAL
REPLACED BY R-2588		10.0 - 20.0	BROWN AND GRAY SANDSTONE									VISUAL
R-2594	655+04.8 58.5 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 6.0	BROWN SILT (A-4b)									VISUAL
		6.0 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		7.0 - 13.5	BROWN AND GRAY SANDSTONE									VISUAL
		13.5 - 55.5	GRAY SANDSTONE									VISUAL
		55.5 - 100.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
R-594	655+11.7 49.6 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 6.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		6.5 - 11.7	BROWNISH GRAY SANDSTONE									VISUAL
REPLACED BY R-2594		11.7 - 20.0	GRAYISH BROWN SANDSTONE									VISUAL
R-596	655+12.6 88.5 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		3.5 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 11.0	BROWN SANDY SILT (A-4a)									VISUAL
		11.0 - 15.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		15.0 - 20.5	BROWN SANDSTONE									VISUAL
		20.5 - 29.5	GRAY SANDSTONE									VISUAL
R-593	655+49.8 197.4 ft. LT	0.0 - 0.5	TOPSOIL									VISUAL
		0.5 - 9.5	BROWN SANDY SILT (A-4a)									VISUAL
		9.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		10.0 - 15.0	BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		15.0 - 24.0	GRAY SANDSTONE									VISUAL
R-597	657+27.9 443.5 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 11.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		11.0 - 20.0	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL
		20.0 - 30.0	GRAYISH BLACK SHALE INTERBEDDED WITH SANDSTONE									VISUAL

SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
S.R. 823												
R-598	657+30.0 322.1 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 9.0	BROWN SANDY SILT (A-4a)									VISUAL*
		8.5 - 9.0	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL
		9.0 - 13.5	BROWN SHALE									VISUAL
		13.5 - 26.5	GRAY SHALE INTERBEDDED SANDSTONE									VISUAL
		26.5 - 33.5	GRAY SANDSTONE									VISUAL
R-599	657+30.0 322.1 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 9.1	SEVERELY WEATHERED BROWN SHALE									VISUAL
		9.1 - 19.0	GRAYISH BROWN SHALE									VISUAL
		19.0 - 30.0	GRAY SHALE									VISUAL
		30.0 - 34.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
C-100	658+75.4 237.6 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	14	33	10	25	18	26	8	12	A-4a	
		5.0 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL
		5.5 - 6.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		6.5 - 13.0	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL
C-101	658+78.6 295.1 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 2.5	7	22	14	36	21	25	8	14	A-4a	
		2.5 - 9.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
R-603	659+14.0 434.7 ft. RT	0.0 - 0.7	TOPSOIL									VISUAL
		0.7 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		8.5 - 10.0	SEVERELY WEATHERED GRAY SHALE									VISUAL
		10.0 - 20.0	GRAY SHALE WITH INTERBEDDED SANDSTONE									VISUAL
R-602	659+17.8 5.1 ft. RT	0.0 - 0.8	TOPSOIL									VISUAL
		0.8 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	23	22	11	27	17	27	9	13	A-4a	
		5.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 7.5	26	19	9	31	15	27	9	12	A-4a	
		7.5 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 10.0	SEVERELY WEATHERED BROWN SHALE									VISUAL
		10.0 - 15.3	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL
		15.3 - 20.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
R-600	659+36.0 500.5 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL
		3.5 - 5.0	3	9	5	52	31	36	18	19	A-6b	
		5.0 - 8.5	BROWN SILTY CLAY (A-6b)									VISUAL
		8.5 - 13.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		13.5 - 20.0	SEVERELY WEATHERED GRAYISH BROWN SHALE									VISUAL
		20.0 - 23.0	BROWN SANDSTONE									VISUAL
		23.0 - 30.0	GRAY SANDSTONE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
S.R. 823												
R-606	661+49.9 190.3 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 10.0	34	13	5	34	14	27	8	13	A-4a	
		10.0 - 11.0	BROWN SANDY SILT (A-4a)									VISUAL
		11.0 - 12.5	23	16	6	39	16	27	8	7	A-4a	
		12.5 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL
		13.5 - 18.5	BROWN SANDY SILT (A-4a)									VISUAL
		18.5 - 21.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		21.0 - 23.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		23.0 - 35.0	GRAY SANDSTONE									VISUAL
R-605	661+84.4 117.3 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 2.5	13	10	7	49	21	28	10	13	A-4a	
		2.5 - 10.5	BROWN SANDY SILT (A-4a)									VISUAL
		10.5 - 13.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		13.0 - 18.0	BROWN SANDSTONE									VISUAL
		18.0 - 23.0	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL
R-604	662+28.6 294.1 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 3.5	BROWN SILT (A-4b)									VISUAL
		3.5 - 5.0	9	15	9	51	16	26	4	15	A-4b	
		5.0 - 11.0	BROWN SILT (A-4b)									VISUAL
		11.0 - 12.0	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL
		12.0 - 22.0	GRAYISH BROWN SANDSTONE									VISUAL
R-608	665+40.5 157.0 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		8.5 - 11.0	SEVERELY WEATHERED BROWNISH GRAY SILTSTONE									VISUAL
		11.0 - 12.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		12.0 - 46.0	BROWN SANDSTONE									VISUAL
		46.0 - 49.4	ORANGE LIMESTONE									VISUAL
		49.4 - 57.9	BROWN SANDSTONE									VISUAL
		57.9 - 75.0	GRAY SANDSTONE									VISUAL
R-610	666+70.302 97.8 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		5.0 - 15.1	GRAYISH BROWN SANDSTONE									VISUAL
		15.1 - 18.1	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL
		18.1 - 24.2	BROWN SANDSTONE									VISUAL
		24.2 - 55.0	GRAY SANDSTONE									VISUAL
		55.0 - 75.2	BROWN SANDSTONE									VISUAL
R-2610	666+94.9 19.3 ft. RT	0.0 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		5.0 - 19.6	BROWN SANDSTONE									VISUAL
		19.6 - 45.3	GRAY SANDSTONE									VISUAL
		45.3 - 59.3	BROWN SANDSTONE									VISUAL
		59.3 - 132.3	GRAY SANDSTONE									VISUAL
		132.3 - 135.8	BROWN SANDSTONE									VISUAL
		135.8 - 156.8	GRAY SANDSTONE									VISUAL
		156.8 - 205.0	LT. AND DK. GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL*
		205.0 - 220.5	GRAY SANDSTONE									VISUAL

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SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class				
			S.R. 823													S.R. 823											
R-2612	669+11.2 51.4' ft. LT	0.0 - 0.4	TOPSOIL									VISUAL	C-102	673+34.6 130.8 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL		
		0.4 - 6.0	BROWN SILT (A-4b)									VISUAL			0.3 - 1.0	POSSIBLE FILL: BROWN SANDY SILT (A-4a)									VISUAL		
		6.0 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			1.0 - 2.5	28	21	8	31	12	28	8	17		A-4a		
		10.0 - 30.0	BROWN AND GRAY SANDSTONE									VISUAL			2.5 - 5.5	POSSIBLE FILL: BROWN SANDY SILT (A-4a)									VISUAL		
		30.0 - 57.6	GRAY SANDSTONE									VISUAL			5.5 - 12.5	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL		
		57.6 - 90.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL*															
R-615	669+11.3 84.3 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL	R-618	673+36.1 44.1 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL		
		0.2 - 3.5	BROWN SILT (A-4b)									VISUAL			0.3 - 10.5	BROWN SANDY SILT (A-4a)									VISUAL		
		3.5 - 5.0	10	11	8	51	20	29	9	12	A-4b			10.5 - 11.0	BROWN SILT (A-4b)									VISUAL			
		5.0 - 5.5	BROWN SILT (A-4b)									VISUAL			11.0 - 12.5	2	16	8	53	21	25	6	13		A-4b		
		5.5 - 8.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			12.5 - 13.0	BROWN SILT (A-4b)									VISUAL		
		8.0 - 21.0	LIGHT BROWN SANDSTONE									VISUAL			13.0 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL		
														13.5 - 15.0	26	16	7	39	12	22	3	12	A-4a				
R-612	669+13.4 58.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			15.0 - 20.5	BROWN SANDY SILT (A-4a)									VISUAL		
		0.3 - 1.0	BROWN SILT (A-4b)									VISUAL			20.5 - 21.0	BROWN SILT (A-4b)									VISUAL		
		1.0 - 2.5	11	13	9	50	17	29	7	4	A-4b			21.0 - 22.5	6	17	7	52	18	26	7	16	A-4b				
REPLACED BY R-2612		2.5 - 5.5	BROWN SILT (A-4b)									VISUAL			22.5 - 25.5	BROWN SILT (A-4b)									VISUAL		
		5.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			25.5 - 26.0	BROWN SILTY CLAY (A-6b)									VISUAL		
		10.0 - 20.0	BROWN SANDSTONE									VISUAL			26.0 - 27.5	8	12	6	45	29	35	16	12		A-6b		
														27.5 - 33.5	BROWN SILTY CLAY (A-6b)									VISUAL			
C-104	672+09.0 289.2 ft. LT	0.0 - 1.0	SAND AND GRAVEL									VISUAL			33.5 - 34.0	SEVERELY WEATHERED BROWNISH GRAY SANDSTONE									VISUAL		
		1.0 - 2.5	25	22	12	31	10	22	2	17	A-4a			34.0 - 37.0	BROWN SANDSTONE									VISUAL			
		2.5 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			37.0 - 44.0	GRAY SHALE									VISUAL		
		3.5 - 5.0	24	20	9	32	15	24	6	9	A-4a			44.0 - 48.0	GRAY SANDSTONE									VISUAL			
		5.0 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL															
		8.5 - 15.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL	R-2620	676+80.6 115.7 ft. LT	0.0 - 0.1	TOPSOIL									VISUAL		
														0.1 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			
														3.5 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
C-103	672+67.8 84.7 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL			6.0 - 21.6	BROWN SANDSTONE									VISUAL		
		0.4 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			21.6 - 89.4	GRAY SANDSTONE									VISUAL		
		3.5 - 5.0	20	13	8	43	16	23	5	13	A-4a			89.4 - 117.4	BROWN AND GRAY SANDSTONE									VISUAL			
		5.0 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL			117.4 - 130.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL		
		13.5 - 15.0	12	16	7	49	16	20	3	15	A-4a																
		15.0 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL															
		16.0 - 17.5	BROWN SILTY CLAY (A-6b)									VISUAL	R-620	676+81.1 115.6 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL		
		17.5 - 21.5	1	13	5	44	37	34	16	18	A-6b			0.2 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
		21.5 - 30.2	SEVERELY WEATHERED BROWNISH GRAY SILTSTONE									VISUAL			7.0 - 21.1	BROWN SANDSTONE									VISUAL		
														21.1 - 45.7	GRAY SANDSTONE									VISUAL			
R-616	673+12.7 439.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL															
		0.3 - 8.0	BROWN SILT AND CLAY (A-6a)									VISUAL	R-622	676+93.1 171.8 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL		
		8.0 - 12.5	SEVERELY WEATHERED BROWN SHALE									VISUAL			0.2 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL		
		12.5 - 20.6	BROWN SHALE									VISUAL			7.0 - 33.8	BROWN SANDSTONE									VISUAL		
		20.6 - 35.0	GRAY SHALE									VISUAL	REPLACED BY R-2622		33.8 - 55.5	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL		
		35.0 - 40.5	GRAY SANDSTONE									VISUAL			55.5 - 62.0	BROWNISH ORANGE SANDSTONE									VISUAL		
														62.0 - 65.5	GRAY SANDSTONE									VISUAL			
R-617	673+15.2 228.5 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL															
		0.4 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL															
		8.0 - 18.0	BROWN SILT AND CLAY (A-6a)									VISUAL															
		18.0 - 19.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL															
		19.0 - 28.5	BROWN SANDSTONE									VISUAL															

SOIL PROFILE

SCI-823-10.13



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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class			
			S.R. 823													S.R. 823										
R-2622	676+93.1 1730 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	R-628	680+71.2 152.5 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL	
		0.3 - 1.0	45	12	6	30	7	NP	NP	12	A-4a			0.4 - 1.0	GRAY SANDY SILT (A-4a)									VISUAL		
		0.3 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			1.0 - 2.5	11	8	17	45	19	25	6	18	A-4a	VISUAL	
		6.0 - 7.5	7	6	11	58	18	26	6	11	A-4b			2.5 - 3.0	GRAY SANDY SILT (A-4a)									VISUAL		
		7.5 - 8.5	BROWN SILT (A-4b)									VISUAL			3.0 - 3.5	BROWN SILT (A-4b)									VISUAL	
		8.5 - 9.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			3.5 - 5.0	6	14	8	57	15	25	4	12	A-4b	VISUAL	
		9.0 - 25.1	BROWN SANDSTONE									VISUAL			5.0 - 5.5	BROWN SILT (A-4b)									VISUAL	
		25.1 - 32.4	BROWN AND GRAY SANDSTONE									VISUAL			5.5 - 21.0	BROWN SANDY SILT (A-4a)									VISUAL	
		32.4 - 54.4	GRAY SANDSTONE									VISUAL			21.0 - 22.0	SEVERELY WEATHERED BROWN SHALE									VISUAL	
		54.4 - 62.2	BROWN SANDSTONE									VISUAL			22.0 - 26.5	LIGHT BROWN SANDSTONE									VISUAL	
		62.2 - 169.5	GRAY SANDSTONE									VISUAL			26.5 - 36.5	GRAY SANDSTONE									VISUAL	
		169.5 - 180.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL														
R-2626	679+14.1 149.1 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	R-627	681+58.3 370.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	
		0.3 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL			0.3 - 11.0	BROWN SANDY SILT (A-4a)									VISUAL	
		1.0 - 2.5	0	9	5	50	36	35	16	14	A-6b			11.0 - 17.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL		
		2.5 - 5.5	BROWN SILTY CLAY (A-6b)									VISUAL			17.0 - 27.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL	
		5.5 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL	R-632	683+15.8 172.1 ft. RT	0.0 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		6.0 - 7.5	0	26	12	45	17	29	10	9	A-4a			3.5 - 10.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL		
		7.5 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL			10.5 - 22.0	BROWN SANDSTONE									VISUAL	
		13.5 - 15.0	SEVERELY WEATHERED BROWN SILTSTONE									VISUAL			22.0 - 80.0	GRAY SANDSTONE									VISUAL	
		15.0 - 17.6	BROWN AND GRAY SILTSTONE									VISUAL	R-630	683+28.9 73.3 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL	
		17.6 - 24.8	GRAY SANDSTONE									VISUAL			0.2 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL	
		24.8 - 32.1	LIGHT BROWN SANDSTONE									VISUAL			3.5 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
		32.1 - 140.0	GRAY SANDSTONE									VISUAL			7.0 - 20.5	BROWN SANDSTONE									VISUAL	
R-626	679+14.4 156.2 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	R-633	686+12.1 90.9 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	
		0.3 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 6.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
		6.0 - 11.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			6.5 - 20.2	BROWN SANDSTONE									VISUAL	
REPLACED BY R-2626		11.0 - 18.5	SEVERELY WEATHERED BROWN SILTSTONE									VISUAL			20.2 - 23.5	BROWNISH GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL	
		18.5 - 19.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			23.5 - 36.3	BROWN SANDSTONE									VISUAL	
		19.5 - 24.0	GRAY SANDSTONE									VISUAL			36.3 - 53.1	GRAY SANDSTONE									VISUAL	
		24.0 - 32.0	LIGHT BROWN SANDSTONE									VISUAL			53.1 - 60.0	DARK GRAY SANDSTONE									VISUAL	
		32.0 - 90.9	LIGHT GRAY SANDSTONE									VISUAL			60.0 - 74.0	BROWN SANDSTONE									VISUAL	
R-623	679+22.7 210.5 ft. LT	0.0 - 0.5	TOPSOIL									VISUAL			74.0 - 150.2	GRAY SANDSTONE									VISUAL	
		0.5 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL	R-635	686+18.5 277.2 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	
		6.0 - 9.5	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL			0.3 - 3.0	BROWN SILT (A-4b)									VISUAL	
		9.5 - 23.0	BROWN SHALE INTERBEDDED WITH CLAYSTONE									VISUAL			3.0 - 10.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL	
		23.0 - 33.0	GRAY SANDSTONE									VISUAL			10.5 - 22.0	SEVERELY WEATHERED BROWN AND BLACK SHALE									VISUAL	
R-624	679+48.0 98.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			22.0 - 190.0	GRAY SANDSTONE									VISUAL	
		0.3 - 1.0	BROWN SILT (A-4b)									VISUAL	R-636	690+16.7 79.0 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL	
		1.0 - 2.5	17	17	8	50	8	25	3	11	A-4b			0.4 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL		
		2.5 - 15.0	BROWN SILT (A-4b)									VISUAL			8.5 - 10.0	13	22	11	45	10	25	4	12	A-4a	VISUAL	
		15.0 - 37.5	GRAY SANDSTONE									VISUAL			10.0 - 10.5	BROWN SANDY SILT (A-4a)									VISUAL	
R-629	680+71.1 7.9 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			10.5 - 11.0	BROWN SILT (A-4b)									VISUAL	
		0.3 - 1.0	BROWN SILT (A-4b)									VISUAL			11.0 - 12.5	7	18	9	52	14	22	3	12	A-4b	VISUAL	
		1.0 - 2.5	6	15	5	55	19	27	8	11	A-4b			12.5 - 30.0	BROWN SILT (A-4b)									VISUAL		
		2.5 - 5.0	BROWN SILT (A-4b)									VISUAL			30.0 - 43.5	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE									VISUAL	
		5.0 - 40.0	GRAYISH BROWN SANDSTONE									VISUAL			43.5 - 51.0	GRAY SANDSTONE INTERBEDDED WITH SHALE AND SILTSTON									VISUAL	

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SOIL PROFILE

SCI - 823 - 10.13

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DRAWN RLS
CHECKED AEN

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Table with columns: Boring, Station & Offset, Depth From To, % Agg, % C.S., % F.S., % Silt, % Clay, LL, PI, % W.C., ODOT Class. It contains two main data sections for borings R-641 through R-650 and C-105 through C-106, with soil descriptions and test results.

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DRAWN RLS
CHECKED AEN

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class				
			S.R. 823													S.R. 823											
R-658	706+50.7 313.3 ft. RT	0.0 - 0.2	TOPSOIL										VISUAL	R-666	715+06.6 5.0 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL
		0.2 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL			0.3 - 1.0	BROWN SILT AND CLAY (A-6a)										VISUAL
		7.0 - 29.1	BROWN SANDSTONE										VISUAL			1.0 - 2.5	7	10	9	47	27	32	13	13	A-6a		
		29.1 - 31.8	GRAY SHALE										VISUAL			2.5 - 5.5	BROWN SILT AND CLAY (A-6a)										VISUAL
		31.8 - 44.0	GRAY SANDSTONE										VISUAL			5.5 - 6.0	BROWN SILTY CLAY (A-6b)										VISUAL
		44.0 - 61.3	GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL			6.0 - 7.5	1	8	6	52	33	37	16	15	A-6b		
		61.3 - 230.5	GRAY SANDSTONE										VISUAL			7.5 - 8.5	BROWN SILTY CLAY (A-6b)										VISUAL
															8.5 - 10.0	29	21	9	41	34	14	16	A-6a				
R-659	709+21.3 73.5 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL			10.0 - 11.0	BROWN SILT AND CLAY (A-6a)										VISUAL
		0.3 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL			11.0 - 12.5	0	3	4	58	35	34	14	13	A-6a		
		3.5 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL			12.5 - 18.0	BROWN SILT AND CLAY (A-6a)										VISUAL
		5.0 - 10.6	BROWNISH ORANGE SANDSTONE INTERBEDDED WITH SHALE										VISUAL			18.0 - 23.0	SEVERELY WEATHERED GRAY SILTSTONE										VISUAL
		10.6 - 30.0	BROWN AND GRAY SANDSTONE										VISUAL			23.0 - 33.0	GRAY SILTSTONE										VISUAL
		30.0 - 92.0	GRAY SANDSTONE										VISUAL														
		92.0 - 135.0	GRAY SHALE INTERBEDDED WITH SANDSTONE AND SILTSTON										VISUAL	B-19	716+34.0 52.5 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL
		135.0 - 155.0	GRAY SANDSTONE										VISUAL			0.3 - 1.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL
R-661	709+29.0 237.2 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL			1.0 - 2.5	32	15	9	26	18	34	15	10	A-6a		
		0.3 - 3.0	BROWN SANDY SILT (A-4a)										VISUAL			2.5 - 3.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL
		3.0 - 12.5	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL			3.5 - 5.0	0	12	6	54	28	34	12	13	A-6a		
		12.5 - 19.5	BROWN SANDSTONE										VISUAL			5.0 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL
		19.5 - 100.0	GRAY SANDSTONE										VISUAL			6.0 - 13.9	LIGHT BROWN GRAY SANDSTONE										VISUAL
		100.0 - 129.5	GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL			13.9 - 16.0	GRAY SANDSTONE										VISUAL
		129.5 - 165.9	GRAY SANDSTONE										VISUAL	B-18	716+41.2 59.8 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL
															0.4 - 1.0	MOTTLED BROWN AND GRAY SILT (A-4b)										VISUAL	
R-662	713+21.8 75.0 ft. LT	0.0 - 0.2	TOPSOIL										VISUAL			1.0 - 2.5	5	15	8	50	22	29	10	11	A-4b		
		0.2 - 1.0	BROWN SILT (A-4b)										VISUAL			2.5 - 3.0	MOTTLED BROWN AND GRAY SILT (A-4b)										VISUAL
		1.0 - 2.5	3	12	7	61	17	25	8	19	A-4b			3.0 - 3.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL		
		2.5 - 3.5	BROWN SILT (A-4b)										VISUAL			3.5 - 5.0	14	13	7	43	23	33	12	13	A-6a		
		3.5 - 5.0	BROWN SILTY CLAY (A-6b)										VISUAL			5.0 - 6.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL
		5.0 - 10.0	4	12	7	42	35	38	17	15	A-6b			6.5 - 10.0	SEVERELY WEATHERED LIGHT BROWN AND GRAY SILTSTONE										VISUAL		
		10.0 - 16.7	BROWN SANDSTONE INTERBEDDED WITH SILTSTONE										VISUAL			10.0 - 15.0	GRAY SANDSTONE										VISUAL
		16.7 - 29.1	GRAY SANDSTONE										VISUAL														
		29.1 - 45.3	GRAY SHALE INTERBEDDED WITH SANDSTONE										VISUAL	TR-6	717+67.1 46.6 ft. LT	0.0 - 0.2	TOPSOIL										VISUAL
		45.3 - 55.4	GRAY SANDSTONE										VISUAL			0.2 - 3.0	BROWN SANDY SILT (A-4a)										VISUAL
R-664	713+39.6 126.9 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL			3.0 - 5.0	BROWN SILTY CLAY (A-6b)										VISUAL
		0.3 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL			5.0 - 9.0	BROWNISH GRAY SANDSTONE										VISUAL
		3.5 - 5.0	17	19	8	32	24	30	12	12	A-6a			9.0 - 19.0	GRAY SANDSTONE										VISUAL		
		5.0 - 10.5	BROWN SILT AND CLAY (A-6a)										VISUAL	B-20	717+76.8 36.4 ft. RT	0.0 - 0.2	TOPSOIL										VISUAL
		10.5 - 20.0	SEVERELY WEATHERED GRAYISH BROWN SHALE										VISUAL			0.2 - 1.0	BROWN SILT (A-4b)										VISUAL
		20.0 - 26.9	GRAY SHALE INTERBEDDED WITH SANDSTONE										VISUAL			1.0 - 2.5	5	6	8	62	19	23	3	14	A-4b		
		26.9 - 75.0	GRAY SANDSTONE										VISUAL			2.5 - 3.0	BROWN SILT (A-4b)										VISUAL
															3.0 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL	
															3.5 - 5.0	30	18	13	29	10	24	6	7	A-4a			
															5.0 - 6.5	BROWN SANDY SILT (A-4a)										VISUAL	
															6.5 - 10.0	SEVERELY WEATHERED GRAY SILTSTONE										VISUAL	
															10.0 - 30.0	GRAY SANDSTONE										VISUAL	

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SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

*** DENOTES SAMPLE TAKEN AT OR NEAR GRADE**

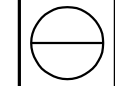
Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class						
			S.R. 823													S.R. 823													
TR-5	718+40.7 5.1 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL	B-23	719+88.3 53.4 ft. LT	0.0 - 0.1	TOPSOIL										VISUAL		
		0.3 - 3.5	BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL			0.1 - 1.5	16	11	7	41	25	32	12	17		A-6a			
		3.5 - 5.0	0	3	3	56	38	37	14	15		A-6a			1.5 - 2.0	BROWN SILT AND CLAY (A-6a)										VISUAL			
		5.0 - 5.5	BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL			2.0 - 2.5	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL		
		5.5 - 10.0	SEVERELY WEATHERED BROWN AND GRAY SHALE										VISUAL			2.5 - 4.0	18	7	5	48	22	25	7	11		A-4a			
		10.0 - 12.4	BROWN AND GRAY SHALE										VISUAL			4.0 - 7.5	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL		
		12.4 - 23.0	GRAY SHALE										VISUAL			7.5 - 9.0	49	11	12	16	12	25	8	10		A-2-4			
PB-44	718+94.7 72.3 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL			9.0 - 9.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)										VISUAL		
		0.4 - 5.5	BROWN SILT AND CLAY (A-6a)										VISUAL			9.5 - 10.0	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL		
		5.5 - 13.0	SEVERELY WEATHERED GRAY SILTSTONE										VISUAL			10.0 - 11.5	7	8	16	49	20	23	6	14		A-4a			
		13.0 - 23.0	GRAY SILTSTONE										VISUAL			11.5 - 15.0	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL		
B-21	719+06.4 32.6 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL			15.0 - 16.5	11	12	20	42	15	24	5	14		A-4a			
		0.3 - 1.5	18	9	4	55	14	24	5	9		A-4b			16.5 - 22.0	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL			
		1.5 - 3.0	BROWN SILT (A-4b)										VISUAL			22.0 - 22.5	BROWN SANDY SILT (A-4a)										VISUAL		
		3.0 - 4.5	WEATHERED BROWN SANDSTONE										VISUAL			22.5 - 24.0	31	18	12	28	11	22	5	13		A-4a			
		4.5 - 5.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)										VISUAL			24.0 - 32.0	BROWN SANDY SILT (A-4a)										VISUAL		
		5.0 - 6.5	0	1	2	56	41	41	18	13		A-7-6			32.0 - 35.5	SEVERELY WEATHERED BROWN SILTSTONE										VISUAL			
		6.5 - 7.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)										VISUAL	R-668	723+09.9 0.1 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL		
		7.0 - 15.0	SEVERELY WEATHERED BROWN SILTSTONE										VISUAL			0.3 - 5.5	BROWN SILT AND CLAY (A-6a)										VISUAL		
		15.0 - 34.5	GRAY SANDSTONE										VISUAL			5.5 - 10.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE										VISUAL		
B-22	719+09.4 41.9 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL			10.0 - 25.0	GRAY SANDSTONE										VISUAL		
		0.3 - 1.0	BROWN SILT AND CLAY (A-6a)										VISUAL					0.0 - 0.5	TOPSOIL										VISUAL
		1.0 - 2.5	12	10	9	40	29	34	14	14		A-6a			0.5 - 3.0	BROWN SANDY SILT (A-4a)										VISUAL			
		2.5 - 4.0	BROWN SILT AND CLAY (A-6a)										VISUAL			3.0 - 20.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL		
		4.0 - 5.0	3	1	5	51	40	38	21	16		A-6b			20.0 - 30.0	BROWN SANDSTONE										VISUAL			
		5.0 - 6.5	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)										VISUAL			30.0 - 40.0	GRAY SANDSTONE										VISUAL		
		6.5 - 7.5	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL																
		7.5 - 7.9	BROWN SANDSTONE										VISUAL	R-672	727+35.1 54.1 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL		
		7.9 - 15.1	BROWN SILTSTONE										VISUAL			0.3 - 6.0	BROWN SILTY CLAY (A-6b)										VISUAL		
		15.1 - 27.5	GRAY SANDSTONE										VISUAL			6.0 - 7.5	1	4	5	52	38	34	17	13		A-6b			
TR-4	719+83.4 53.9 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL			7.5 - 8.5	BROWN SILTY CLAY (A-6b)										VISUAL		
		0.3 - 3.0	BROWN SILTY CLAY (A-6b)										VISUAL			8.5 - 10.0	3	6	6	48	37	35	17	17		A-6b			
		3.0 - 5.5	BROWN AND RED SILT AND CLAY (A-6a)										VISUAL			10.0 - 13.0	BROWN SILTY CLAY (A-6b)										VISUAL		
		5.5 - 6.0	REDDISH BROWN SANDY SILT (A-4a)										VISUAL			13.0 - 30.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE										VISUAL		
		6.0 - 7.5	10	6	21	48	15	25	10	13		A-4a			30.0 - 55.0	GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL			
		7.5 - 13.0	REDDISH BROWN SANDY SILT (A-4a)										VISUAL																
		13.0 - 13.5	BROWN AND GRAY SILT (A-4b)										VISUAL	R-675	730+12.3 95.5 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL		
		13.5 - 15.0	0	6	18	60	16	23	4	16		A-4b			0.3 - 1.0	BROWN SILT AND CLAY (A-6a)										VISUAL			
		15.0 - 17.0	BROWN AND GRAY SILT (A-4b)										VISUAL			1.0 - 2.5	0	10	9	62	19	34	14	12		A-6a			
		17.0 - 18.0	BROWN SILT AND CLAY (A-6a)										VISUAL			2.5 - 3.0	BROWN SILT AND CLAY (A-6a)										VISUAL		
		18.0 - 18.5	BROWN SANDY SILT (A-4a)										VISUAL			3.0 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL		
		18.5 - 20.0	4	21	23	36	16	23	5	10		A-4a			3.5 - 4.5	19	10	10	48	13	29	9	1		A-4a				
		20.0 - 23.0	BROWN SANDY SILT (A-4a)										VISUAL			4.5 - 8.0	BROWN SANDY SILT (A-4a)										VISUAL		
		23.0 - 28.0	BROWN AND GRAY SILTY CLAY (A-6b)										VISUAL			8.0 - 15.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE										VISUAL		
		28.0 - 35.0	SEVERELY WEATHERED GRAY SHALE										VISUAL			15.0 - 30.0	BROWN AND GRAY SANDSTONE										VISUAL		
		35.0 - 45.0	GRAY SHALE										VISUAL			30.0 - 90.0	GRAY SANDSTONE										VISUAL		
															90.0 - 103.0	GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL			
															103.0 - 115.0	GRAY SANDSTONE										VISUAL			

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DRAWN
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SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

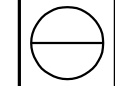
Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class	Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PI	% W.C.					
R-674	730+15.5 118.0 ft. LT	0.0 - 0.3 0.3 - 1.0 1.0 - 2.5 2.5 - 10.5 10.5 - 31.1 31.1 - 55.0	TOPSOIL BROWN SILTY CLAY (A-6b) 0 0 1 53 46 40 17 18 BROWN SILTY CLAY (A-6b) SEVERELY WEATHERED BROWN SANDSTONE GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL A-6b VISUAL VISUAL VISUAL	R-686	744+98.3 86.3 ft. LT	0.0 - 0.3 0.3 - 3.5 3.5 - 5.0 5.0 - 5.5 5.5 - 8.5 8.5 - 10.0 10.0 - 10.5 10.5 - 15.0 15.0 - 25.0 25.0 - 35.0 35.0 - 40.0	TOPSOIL BROWN SILT (A-4b) 3 10 10 61 16 26 5 14 BROWN SILT (A-4b) BROWN SILT AND CLAY (A-6a) 3 6 6 48 37 32 13 13 BROWN SILT AND CLAY (A-6a) SEVERELY WEATHERED GRAYISH BROWN SHALE BROWNISH GRAY SHALE GRAY SHALE GRAY SHALE INTERBEDDED WITH SANDSTONE										VISUAL VISUAL A-4b VISUAL VISUAL A-6a VISUAL VISUAL VISUAL VISUAL VISUAL
R-677	734+00.5 151.0 ft. LT	0.0 - 0.5 0.5 - 8.0 8.0 - 35.0	TOPSOIL SEVERELY WEATHERED BROWN SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL	R-688	745+12.0 92.4 ft. RT	0.0 - 0.3 0.3 - 3.0 3.0 - 8.0 8.0 - 9.3 9.3 - 18.0 18.0 - 40.0	TOPSOIL BROWN SILT AND CLAY (A-6a) SEVERELY WEATHERED BROWN SANDSTONE GRAY SANDSTONE BROWNISH ORANGE SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL
R-679	734+06.2 225.5 ft. RT	0.0 - 0.3 0.3 - 3.5 3.5 - 5.3 5.3 - 15.6 15.6 - 135.0 135.0 - 150.0 150.0 - 160.0	TOPSOIL BROWN FINE SAND (A-3) BROWN SILT AND CLAY (A-6a) BROWN SANDSTONE GRAY SANDSTONE GRAY SHALE INTERBEDDED WITH SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL	R-689	747+17.5 194.4 ft. LT	0.0 - 0.3 0.3 - 9.0 9.0 - 11.5 11.5 - 20.0 20.0 - 35.0	TOPSOIL BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SILTSTONE BROWNISH GRAY SHALE GRAY SHALE										VISUAL VISUAL VISUAL VISUAL VISUAL
R-680	737+95.0 66.1 ft. LT	0.0 - 0.7 0.7 - 5.0 5.0 - 27.0 27.0 - 82.8 82.8 - 110.0	TOPSOIL SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY AND BROWN SANDSTONE GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL VISUAL VISUAL VISUAL	R-690	747+26.8 12.6 ft. LT	0.0 - 0.3 0.3 - 1.0 1.0 - 2.5 2.5 - 3.5 3.5 - 4.5 4.5 - 5.0 5.0 - 21.2 21.2 - 35.0	TOPSOIL BROWN SANDY SILT (A-4a) 12 16 7 49 16 23 3 10 BROWN SANDY SILT (A-4a) 18 16 8 45 13 24 4 11 BROWN SANDY SILT (A-4a) BROWN SANDSTONE BROWNISH GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL A-4a VISUAL A-4a VISUAL VISUAL VISUAL
R-682	738+24.8 280.9 ft. RT	0.0 - 0.8 0.8 - 5.5 5.5 - 8.2 8.2 - 15.0 15.0 - 21.7 21.7 - 35.0 35.0 - 42.5 42.5 - 55.0 55.0 - 63.2 63.2 - 195.0	TOPSOIL BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE BROWNISH GRAY SANDSTONE INTERBEDDED WITH SILTSTONE BROWNISH GRAY SHALE GRAY SANDSTONE BROWN SANDSTONE GRAY AND BROWN SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL	C-107	747+38.0 255.7 ft. LT	0.0 - 0.4 0.4 - 1.0 1.0 - 2.5 2.5 - 3.0 3.0 - 6.0 6.0 - 7.5 7.5 - 11.0 11.0 - 12.5 12.5 - 19.5 19.5 - 21.0 21.0 - 22.5 22.5 - 23.5 23.5 - 32.0	TOPSOIL BROWN SANDY SILT (A-4a) 4 20 14 46 16 22 4 15 BROWN SANDY SILT (A-4a) BROWN SANDY SILT (A-4a) 14 18 18 36 14 24 5 14 BROWN SANDY SILT (A-4a) 6 13 19 45 17 22 5 13 BROWN SANDY SILT (A-4a) BROWN SILT AND CLAY (A-6a) BROWNISH RED SILTY CLAY (A-6b) 0 4 2 47 47 39 18 20 SEVERELY WEATHERED BROWNISH GRAY SILTSTONE										VISUAL VISUAL A-4a VISUAL A-4a VISUAL VISUAL VISUAL VISUAL VISUAL A-6b VISUAL
R-683	742+20.6 45.9 ft. LT	0.0 - 0.3 0.3 - 5.0 5.0 - 12.4 12.4 - 48.0 48.0 - 70.0	TOPSOIL SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE BROWN AND GRAY SANDSTONE GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL VISUAL VISUAL VISUAL*	R-685	742+28.5 191.0 ft. RT	0.0 - 0.2 0.2 - 1.0 1.0 - 2.5 2.5 - 3.5 3.5 - 5.0 5.0 - 15.0 15.0 - 121.0 121.0 - 135.0	TOPSOIL BROWN SANDY SILT (A-4a) 40 6 6 48 NP NP 11 BROWN SANDY SILT (A-4a) BROWN FINE SAND (A-3) BROWN SANDSTONE GRAY SANDSTONE GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL A-4a VISUAL VISUAL VISUAL VISUAL VISUAL
R-685	742+28.5 191.0 ft. RT	0.0 - 0.2 0.2 - 1.0 1.0 - 2.5 2.5 - 3.5 3.5 - 5.0 5.0 - 15.0 15.0 - 121.0 121.0 - 135.0	TOPSOIL BROWN SANDY SILT (A-4a) 40 6 6 48 NP NP 11 BROWN SANDY SILT (A-4a) BROWN FINE SAND (A-3) BROWN SANDSTONE GRAY SANDSTONE GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL A-4a VISUAL VISUAL VISUAL VISUAL VISUAL	R-694	750+13.1 9.8 ft. LT	0.0 - 0.5 0.5 - 3.0 3.0 - 10.0 10.0 - 16.2 16.2 - 35.0	TOPSOIL BROWN SANDY SILT (A-4a) BROWN SANDY SILT (A-4a) BROWN SANDSTONE INTERBEDDED WITH SHALE GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL VISUAL VISUAL VISUAL

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DRAWN
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SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class	Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class		
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PI	% W.C.							
C-108	750+64.5 200.2 ft. RT	0.0 - 0.4 0.4 - 1.0 1.0 - 2.5 2.5 - 11.0 11.0 - 17.5	TOPSOIL BROWN SANDY SILT (A-4a) 21 22 8 36 13 20 3 14 BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE										VISUAL VISUAL VISUAL VISUAL	R-701	759+13.0 122.9 ft. LT	0.0 - 0.3 0.3 - 3.5 3.5 - 5.0 5.0 - 5.5 5.5 - 6.0 6.0 - 7.5 7.5 - 8.0 8.0 - 10.0 10.0 - 80.0	TOPSOIL BROWN GRAVEL WITH SAND AND SILT (A-2-4) 49 13 8 24 6 NP NP BROWN GRAVEL WITH SAND AND SILT (A-2-4) BROWN SANDY SILT (A-4a) 32 23 8 32 5 NP NP BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE GRAY SANDSTONE										VISUAL VISUAL A-2-4 VISUAL VISUAL A-4a VISUAL VISUAL VISUAL		
R-697	753+38.0 20.0 ft. LT	0.0 - 0.3 0.3 - 5.0 5.0 - 21.4 21.4 - 30.0	TOPSOIL SEVERELY WEATHERED LIGHT BROWN SANDSTONE LIGHT BROWN SANDSTONE GRAY SANDSTONE										VISUAL VISUAL* VISUAL VISUAL	R-704	760+36.1 67.7 ft. RT	0.0 - 0.5 0.5 - 3.5 3.5 - 5.0 5.0 - 8.5 8.5 - 10.0 10.0 - 15.0 15.0 - 25.0	TOPSOIL BROWN SANDY SILT (A-4a) 41 13 6 40 24 3 8 BROWN SANDY SILT (A-4a) 25 11 10 44 10 NP NP 8 BROWN SANDY SILT (A-4a) GRAY SANDSTONE										VISUAL VISUAL A-4a VISUAL A-4a VISUAL VISUAL		
R-696	753+38.8 93.8 ft. LT	0.0 - 0.2 0.2 - 3.0 3.0 - 5.0 5.0 - 18.5 18.5 - 30.0	TOPSOIL BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE LIGHT BROWN TO ORANGE SANDSTONE GRAY SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL	R-710	764+11.9 132.1 ft. RT	0.0 - 0.3 0.3 - 1.0 1.0 - 2.5 2.5 - 3.5 3.5 - 4.5 4.5 - 10.0 10.0 - 23.0 23.0 - 25.0	TOPSOIL BROWN SILT (A-4b) 6 13 11 56 14 NP NP 1 BROWN SILT (A-4b) 7 13 12 58 10 NP NP 5 BROWN SILT (A-4b) GRAY SANDSTONE GRAY SHALE										VISUAL VISUAL A-4b VISUAL A-4b VISUAL VISUAL VISUAL		
TR-1	755+78.3 129.7 ft. LT	0.0 - 0.2 0.2 - 3.0 3.0 - 5.5 5.5 - 7.5 7.5 - 19.5	ASPHALT CONCRETE POSSIBLE FILL: BROWN GRAVEL (A-1-a) REDDISH BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL	R-707	764+24.8 214.5 ft. LT	0.0 - 0.5 0.5 - 6.0 6.0 - 7.5 7.5 - 13.5 13.5 - 15.0 15.0 - 18.0 18.0 - 21.0 21.0 - 23.5 23.5 - 25.0 25.0 - 30.0	TOPSOIL BROWN SANDY SILT (A-4a) 5 13 9 53 20 28 7 14 BROWN SANDY SILT (A-4a) 10 19 9 40 22 29 9 14 BROWN SANDY SILT (A-4a) GRAY SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE SEVERELY WEATHERED GRAY SHALE GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL VISUAL A-4b VISUAL A-4a VISUAL VISUAL VISUAL VISUAL VISUAL		
TR-2	756+18.8 2.6 ft. LT	0.0 - 0.2 0.2 - 1.0 1.0 - 5.0 5.0 - 9.8 9.8 - 12.0 12.0 - 16.5	ASPHALT CONCRETE POSSIBLE FILL: BROWN GRAVEL (A-1-a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE REDDISH BROWN SANDSTONE BROWN SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL	R-708	764+30.1 142.1 ft. LT	0.0 - 0.4 0.4 - 3.5 3.5 - 5.0 5.0 - 6.0 6.0 - 13.5 13.5 - 15.0 15.0 - 20.0	TOPSOIL BROWN GRAVEL WITH SAND AND SILT (A-2-4) 50 6 9 35 29 9 11 BROWN GRAVEL WITH SAND AND SILT (A-2-4) BROWN SILT AND CLAY (A-6a) SEVERELY WEATHERED BROWN SANDSTONE GRAY SHALE INTERBEDDED WITH SANDSTONE										VISUAL VISUAL A-2-4 VISUAL VISUAL VISUAL VISUAL		
TR-3	756+38.5 152.0 ft. RT	0.0 - 0.2 0.2 - 1.0 1.0 - 10.5 10.5 - 12.0 12.0 - 16.2 16.2 - 18.1 18.1 - 22.5	ASPHALT CONCRETE POSSIBLE FILL: BROWN GRAVEL (A-1-a) BROWN AND GRAY SILT AND CLAY (A-6a) SEVERELY WEATHERED BROWN SANDSTONE BROWN AND DARK BROWN SANDSTONE DARK GRAY SANDSTONE REDDISH BROWN SANDSTONE										VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL	C-110	765+98.3 191.9 ft. RT	0.0 - 0.3 0.3 - 6.0 6.0 - 7.5 7.5 - 13.0	TOPSOIL GRAY SANDY SILT (A-4a) 21 15 21 29 14 25 9 15 SEVERELY WEATHERED GRAYISH BROWN SANDSTONE										VISUAL VISUAL A-4a VISUAL		
R-703	759+08.6 56.3 ft. RT	0.0 - 0.3 0.3 - 3.5 3.5 - 5.0 5.0 - 8.5 8.5 - 9.5 9.5 - 11.0 11.0 - 15.0 15.0 - 35.0	TOPSOIL BROWN SILT (A-4b) 7 14 12 50 17 32 9 12 BROWN SILT (A-4b) 22 11 11 44 12 27 6 1 BROWN SANDY SILT (A-4a) SEVERELY WEATHERED GRAY SILTSTONE GRAY SANDSTONE										VISUAL VISUAL A-4b VISUAL A-4a VISUAL VISUAL VISUAL																

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

*** DENOTES SAMPLE TAKEN AT OR NEAR GRADE**

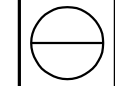
Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class					
			S.R. 823													S.R. 823												
C-109	766+00.9 284.1 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)											R-715	772+13.7 154.9 ft. LT	0.0 - 0.4	TOPSOIL											
		0.5 - 1.0	BROWN SANDY SILT (A-4a)													0.4 - 1.0	BROWN SANDY SILT (A-4a)											
		1.0 - 2.5	25	16	21	26	12	NP	NP	30					1.0 - 2.5	35	6	9	50	NP	NP	7						
		2.5 - 3.5	BROWN SANDY SILT (A-4a)													2.5 - 3.5	BROWN SANDY SILT (A-4a)											
		3.5 - 8.5	BROWN SANDY SILT (A-4a)													3.5 - 5.0	17	6	18	38	21	21	8	8				
		8.5 - 10.0	2	10	25	43	20	22	5	16					5.0 - 8.5	BROWN SANDY SILT (A-4a)												
		10.0 - 18.5	BROWN SANDY SILT (A-4a)													8.5 - 10.0	1	10	7	46	36	35	15	17				
		18.5 - 20.0	19	8	8	45	20	28	10	15					10.0 - 26.0	BROWN AND GRAY SILT AND CLAY (A-6a)												
		20.0 - 24.0	BROWN SILT AND CLAY (A-6a)													26.0 - 30.0	SEVERELY WEATHERED DARK GRAY SHALE											
		24.0 - 32.0	SEVERELY WEATHERED BROWNISH GRAY SILTSTONE													30.0 - 40.0	GRAY SHALE											
R-711	768+10.3 251.7 ft. LT	0.0 - 0.3	TOPSOIL											R-717	772+30.5 139.0 ft. RT	0.0 - 0.5	TOPSOIL											
		0.3 - 3.5	BROWN SILT AND CLAY (A-6a)													0.5 - 1.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)											
		3.5 - 8.5	BROWN SILTY CLAY (A-6b)													1.0 - 2.5	49	11	9	32	NP	NP						
		8.5 - 20.0	BROWN SILT AND CLAY (A-6a)													2.5 - 3.5	BROWN SANDY SILT (A-4a)											
		20.0 - 25.0	BROWNISH GRAY SANDSTONE													3.5 - 5.0	17	13	19	34	17	NP	NP	12				
R-712	768+23.9 132.1 ft. LT	0.0 - 0.3	TOPSOIL													5.0 - 8.5	BROWN SANDY SILT (A-4a)											
		0.3 - 3.5	BROWN SILT AND CLAY (A-6a)													8.5 - 10.0	95	1	1	3	NP	NP	6					
		3.5 - 8.5	BROWN SILTY CLAY (A-6b)													10.0 - 11.0	BROWN GRAVEL (A-1-a)											
		8.5 - 13.5	BROWN SILT AND CLAY (A-6a)													11.0 - 12.5	27	6	28	28	11	NP	NP	13				
		13.5 - 20.0	SEVERELY WEATHERED BROWN SANDSTONE													12.5 - 16.0	BROWN SANDY SILT (A-4a)											
		20.0 - 22.5	GRAY SANDSTONE													16.0 - 19.5	SEVERELY WEATHERED GRAY SHALE											
		22.5 - 25.0	GRAY SHALE													19.5 - 25.0	GRAY SANDSTONE											
C-111	768+73.0 298.4 ft. LT	0.0 - 0.6	TOPSOIL											C-113	772+47.7 222.4 ft. RT	0.0 - 0.5	TOPSOIL											
		0.6 - 1.0	BROWN SANDY SILT (A-4a)													0.5 - 1.0	BROWN SANDY SILT (A-4a)											
		1.0 - 2.5	12	12	12	47	17	20	2	16					1.0 - 2.5	46	9	10	28	8	20	2	14					
		2.5 - 6.0	BROWN SANDY SILT (A-4a)													2.5 - 8.5	BROWN SANDY SILT (A-4a)											
		6.0 - 7.5	3	15	17	49	16	22	4	15					8.5 - 19.0	SEVERELY WEATHERED BROWN AND GRAY SHALE												
		7.5 - 13.5	BROWN SANDY SILT (A-4a)																									
		13.5 - 15.0	1	12	15	47	25	22	6	15																		
		15.0 - 18.5	BROWN SANDY SILT (A-4a)																									
		18.5 - 20.0	1	8	21	49	21	20	5	15																		
		20.0 - 23.5	BROWN SANDY SILT (A-4a)																									
		23.5 - 26.0	BROWNISH GRAY SILT AND CLAY (A-6a)																									
		26.0 - 33.5	BROWN SANDY SILT (A-4a)																									
		33.5 - 39.0	SEVERELY WEATHERED GRAY SHALE																									
C-112	770+68.8 44.8 ft. LT	0.0 - 0.4	TOPSOIL											R-724	777+79.1 0.9 ft. RT	0.0 - 0.2	TOPSOIL											
		0.4 - 1.0	BROWN SANDY SILT (A-4a)													0.2 - 1.0	BROWN AND GRAY SILT AND CLAY (A-6a)											
		1.0 - 2.5	17	8	14	46	15	20	2	16					1.0 - 2.5	0	0	2	72	26	30	14	14					
		2.5 - 5.0	BROWN SANDY SILT (A-4a)													2.5 - 3.0	BROWN AND GRAY SILT AND CLAY (A-6a)											
		5.0 - 8.5	BROWN SANDY SILT (A-4a)													3.0 - 3.5	BROWN AND GRAY SILT (A-4b)											
		8.5 - 10.0	7	20	20	32	21	25	10	15					3.5 - 4.5	0	2	5	72	21	26	6	10					
		10.0 - 18.7	BROWN SANDY SILT (A-4a)													4.5 - 5.0	BROWN AND GRAY SILT (A-4b)											
															5.0 - 15.1	BROWN AND GRAY SANDSTONE												
															15.1 - 30.0	GRAY SANDSTONE												
															30.0 - 32.6	GRAY SANDSTONE INTERBEDDED WITH SHALE												
															32.6 - 49.7	BROWN SANDSTONE												
															49.7 - 150.0	GRAY SANDSTONE												

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DRAWN RLS
CHECKED AEN

SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
S.R. 823												S.R. 823													
R-728	779+28.72 228.5 ft. RT	0.0 - 0.3	TOPSOIL										R-734	787+02.5 195.2 ft. RT	0.0 - 0.2	TOPSOIL									
		0.3 - 1.0	BROWN SANDY SILT (A-4a)												0.2 - 1.0	BROWN SANDY SILT (A-4a)									
		1.0 - 2.5	0	1	37	42	20	21	7	15	A-4a			1.0 - 2.5	23	14	9	54	24	4	13	A-4a			
		2.5 - 3.5	BROWN SANDY SILT (A-4a)												2.5 - 3.5	BROWN SANDY SILT (A-4a)									
		3.5 - 4.0	0	1	53	24	22	NP	NP	12	A-4a			3.5 - 5.0	11	14	11	64	28	9	12	A-4a			
		4.0 - 5.0	BROWN SANDY SILT (A-4a)												5.0 - 6.0	BROWN SANDY SILT (A-4a)									
		5.0 - 15.4	WHITE SANDSTONE												6.0 - 13.5	BROWN AND GRAY SILT AND CLAY (A-6a)									
		15.4 - 19.4	GRAY SANDSTONE												13.5 - 20.0	GRAYISH BROWN SHALE									
		19.4 - 37.5	BROWN SANDSTONE												20.0 - 36.8	BROWN SANDSTONE									
		37.5 - 47.8	GRAY SANDSTONE INTERBEDDED WITH SHALE												36.8 - 100.0	GRAY SANDSTONE									
		47.8 - 50.2	GRAY SANDSTONE																						
		50.2 - 65.7	BROWN SANDSTONE																						
		65.7 - 160.0	GRAY SANDSTONE																						
R-726	779+29.8 53.7 ft. LT	0.0 - 0.2	TOPSOIL										R-732	787+24.8 30.2 ft. LT	0.0 - 0.2	TOPSOIL									
		0.2 - 1.0	BROWN SANDY SILT (A-4a)												0.2 - 4.5	SEVERELY WEATHERED BROWN SANDSTONE									
		1.0 - 2.5	21	8	22	49	NP	NP	8	A-4a			4.5 - 22.5	BROWN SANDSTONE											
		2.5 - 3.5	BROWN SANDY SILT (A-4a)												22.5 - 70.0	GRAY SANDSTONE									
		3.5 - 4.5	27	6	13	38	16	NP	NP	2	A-4a	R-736	790+93.9 56.6 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)										
		4.5 - 5.0	BROWN SANDY SILT (A-4a)												0.2 - 3.5	BROWN SANDY SILT (A-4a)									
		5.0 - 13.1	LIGHT BROWN TO ORANGE SANDSTONE												3.5 - 5.0	23	21	10	39	7	NP	NP	10	A-4a	
		13.1 - 95.0	GRAY SANDSTONE												5.0 - 18.0	BROWN SANDY SILT (A-4a)									
															18.0 - 28.0	SEVERELY WEATHERED BROWN SANDSTONE									
															28.0 - 39.0	GRAY SANDSTONE									
R-729	782+97.1 28.9 ft. LT	0.0 - 0.3	TOPSOIL										R-737	791+23.8 32.3 ft. RT	0.0 - 0.2	TOPSOIL									
		0.3 - 1.0	BROWN SANDY SILT (A-4a)												0.2 - 3.5	BROWN SANDY SILT (A-4a)									
		1.0 - 2.5	46	11	7	36	NP	NP	3	A-4a			3.5 - 5.0	18	17	11	41	13	22	3	12	A-4a			
		2.5 - 3.0	BROWN SANDY SILT (A-4a)												5.0 - 5.5	BROWN SANDY SILT (A-4a)									
		3.0 - 3.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												5.5 - 6.0	BROWN AND GRAY SANDY SILT (A-4a)									
		3.5 - 4.0	59	3	6	24	8	NP	NP	3	A-2-4			6.0 - 7.5	8	21	14	42	15	26	6	7	A-4a		
		4.0 - 5.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												7.5 - 10.5	BROWN AND GRAY SANDY SILT (A-4a)									
		5.0 - 15.0	BROWN AND GRAY SANDSTONE												10.5 - 11.0	BROWN AND GRAY SILT (A-4b)									
		15.0 - 55.0	GRAY SANDSTONE												11.0 - 12.5	3	12	12	58	15	21	2	15	A-4b	
R-731	783+15.2 213.8 ft. RT	0.0 - 0.3	TOPSOIL												12.5 - 13.0	BROWN AND GRAY SILT (A-4b)									
		0.3 - 1.0	BROWN SILT (A-4b)												13.0 - 23.0	BROWN AND GRAY SANDY SILT (A-4a)									
		1.0 - 2.5	0	3	45	52	NP	NP	5	A-4b			23.0 - 24.5	TAN SANDSTONE											
		2.5 - 3.5	BROWN SILT (A-4b)												24.5 - 30.0	BROWN SHALE									
		3.5 - 4.5	0	1	9	90	24	5	6	A-4b			30.0 - 40.5	GRAY SANDSTONE INTERBEDDED WITH SHALE											
		4.5 - 5.0	BROWN SILT (A-4b)										R-741	794+96.9 133.0 ft. RT	0.0 - 0.2	TOPSOIL									
		5.0 - 20.4	LIGHT BROWN SANDSTONE												0.2 - 1.0	FILL: GRAY SILT (A-4b)									
		20.4 - 29.6	GRAY SHALE INTERBEDDED WITH SANDSTONE												1.0 - 2.5	6	14	7	50	23	NP	NP	18	A-4b	
		29.6 - 35.0	GRAY SANDSTONE INTERBEDDED WITH SHALE												2.5 - 8.5	BROWN SILT AND CLAY (A-6a)									
		35.0 - 36.6	GRAY SANDSTONE												8.5 - 9.5	0	4	5	60	31	29	11	9	A-6a	
		36.6 - 53.0	BROWN SANDSTONE												9.5 - 10.0	BROWN SILT AND CLAY (A-6a)									
		53.0 - 150.0	GRAY SANDSTONE												10.0 - 20.0	BROWN SHALE									
															20.0 - 35.0	GRAYISH BROWN SHALE									
													R-742	795+06.9 214.2 ft. RT	0.0 - 0.4	TOPSOIL									
															0.4 - 15.0	BROWN SILT AND CLAY (A-6a)									
															15.0 - 22.5	GRAY SILTY CLAY (A-6b)									
															22.5 - 35.0	GRAY SHALE									

SOIL PROFILE

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DRAWN RLS
CHECKED AEN

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
S.R. 823												S.R. 823													
R-739	795+23.6 134.7 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL	R-747	803+74.1 158.7 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL
		0.2 - 5.0	BROWN SANDY SILT (A-4a)									VISUAL			0.4 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		5.0 - 15.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			5.0 - 23.0	BROWN AND GRAY SANDSTONE									VISUAL
		15.0 - 20.3	BROWN SHALE									VISUAL			23.0 - 40.0	GRAY SHALE									VISUAL
		20.3 - 35.0	GRAY SHALE									VISUAL			40.0 - 63.0	BROWN SANDSTONE									VISUAL
C-81	795+98.7 180.5 ft. LT	0.0 - 0.7	TOPSOIL									VISUAL			63.0 - 135.0	GRAY SANDSTONE									VISUAL
		0.7 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			135.0 - 165.0	GRAYISH BROWN SANDSTONE									VISUAL
		3.5 - 5.0	9	21	10	49	11	23	3	15	A-4a			165.0 - 173.6	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL	
		5.0 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL			173.6 - 181.2	GRAY SANDSTONE									VISUAL
		13.5 - 15.0	28	17	9	35	11	23	3	14	A-4a			181.2 - 200.0	GRAY SHALE									VISUAL	
		15.0 - 23.5	BROWN SANDY SILT (A-4a)									VISUAL	R-744	804+05.8 224.9 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		23.5 - 26.0	BROWN SILT (A-4b)									VISUAL			0.3 - 1.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		26.0 - 27.5	8	15	7	52	18	22	4	15	A-4b			1.0 - 2.5	17	12	37	34	NP	NP	6	A-2-4			
		27.5 - 39.8	BROWN SILT (A-4b)									VISUAL			2.5 - 3.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		39.8 - 42.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL			3.0 - 3.5	BROWN CLAY (A-7-6)									VISUAL
		42.0 - 47.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL			3.5 - 5.0	1	6	11	24	58	42	19	13	A-7-6	
C-80	796+08.3 67.3 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL			5.0 - 8.0	BROWN CLAY (A-7-6)									VISUAL
		0.4 - 3.5	BROWN SILT (A-4b)									VISUAL			8.0 - 15.0	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL
		3.5 - 5.0	0	1	8	61	30	26	10	20	A-4b			15.0 - 24.0	BROWN AND GRAY SHALE AND SANDSTONE									VISUAL	
		5.0 - 13.5	BROWN SILT (A-4b)									VISUAL			24.0 - 32.0	BROWNISH GRAY SANDSTONE									VISUAL
		13.5 - 15.0	0	0	2	66	32	25	8	18	A-4b			32.0 - 51.7	LIGHT BROWN SANDSTONE									VISUAL	
		15.0 - 21.0	BROWN SILT (A-4b)									VISUAL			51.7 - 172.5	GRAY SANDSTONE									VISUAL
		21.0 - 23.5	BROWN SANDY SILT (A-4a)									VISUAL			172.5 - 200.0	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL
		23.5 - 25.0	6	22	9	46	17	29	9	15	A-4a	R-752	809+91.2 16.0 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	
		25.0 - 33.5	BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		33.5 - 37.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			1.0 - 2.5	17	15	8	41	19	27	8	10	A-4a	
		37.0 - 42.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL			2.5 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL*
C-79	796+30.7 314.3 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL			8.0 - 8.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		0.4 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			8.5 - 10.0	10	11	5	42	32	34	13	13	A-6a	
		3.5 - 5.0	39	9	5	47	NP	NP	15		A-4a			10.0 - 13.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL	
		5.0 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL			13.0 - 24.0	SEVERELY WEATHERED GRAY SHALE									VISUAL
		5.5 - 8.5	BROWN AND GRAY SILT (A-4b)									VISUAL			24.0 - 29.0	GRAY SHALE									VISUAL
		8.5 - 10.0	3	11	6	53	27	28	8	18	A-4b														
		10.0 - 18.5	BROWN AND GRAY SILT (A-4b)									VISUAL													
		18.5 - 20.0	0	2	6	63	29	25	7	21	A-4b														
		20.0 - 23.0	BROWN AND GRAY SILT (A-4b)									VISUAL													
		23.0 - 26.0	GRAY AND BROWN SANDY SILT (A-4a)									VISUAL													
		26.0 - 27.5	1	15	4	44	36	30	10	18	A-4a														
		27.5 - 28.5	GRAY AND BROWN SANDY SILT (A-4a)									VISUAL													
		28.5 - 30.0	16	24	7	36	17	24	6	16	A-4a														
		30.0 - 35.5	SEVERELY WEATHERED GRAY SHALE									VISUAL													
		35.5 - 40.5	GRAY SHALE									VISUAL													
R-743	799+00.0 29.3 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL													
		0.3 - 1.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL													
		1.0 - 1.5	47	12	7	27	7	NP	NP	7	A-2-4														
		1.5 - 2.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL													
		2.5 - 4.7	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL													
		4.7 - 7.8	GRAY SANDSTONE									VISUAL													
		7.8 - 20.0	BROWN SANDSTONE									VISUAL*													

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SOIL PROFILE

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DRAWN RLS
CHECKED AEN

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
			S.R. 823									
R-751	810+06.9 67.9 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 2.5	12	4	5	79		29	11	14	A-6a	
		2.5 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 5.0	3	6	7	60	24	29	11	14	A-6a	
		5.0 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.5 - 6.0	BROWN SILT (A-4b)									VISUAL
		6.0 - 7.0	12	12	10	50	16	25	5	10	A-4b	
		7.0 - 8.0	BROWN SILT (A-4b)									VISUAL
		8.0 - 11.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		11.0 - 12.5	5	10	18	46	21	28	12	20	A-6a	
		12.5 - 21.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		21.0 - 22.5	4	10	8	57	21	28	12	20	A-6a	
		22.5 - 23.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		23.5 - 25.0	4	11	5	47	33	36	14	17	A-6a	
		25.0 - 26.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		26.0 - 28.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		28.0 - 34.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
		34.5 - 39.5	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
R-754	810+31.1 111.7 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 7.5	9	13	8	47	23	28	9	4	A-4a	
		7.5 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
		8.0 - 8.5	BROWN SILTY CLAY (A-6b)									VISUAL
		8.5 - 10.0	4	10	6	46	34	36	16	14	A-6b	
		10.0 - 15.5	BROWN SILTY CLAY (A-6b)									VISUAL
		15.5 - 16.0	BROWNISH GRAY SILT AND CLAY (A-6a)									VISUAL
		16.0 - 17.5	5	12	6	44	33	33	12	13	A-6a	
		17.5 - 20.0	BROWNISH GRAY SILT AND CLAY (A-6a)									VISUAL
		20.0 - 40.0	GRAY SHALE									VISUAL
C-78	812+67.9 218.6 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 2.5	26	26	11	28	9	24	5	18	A-4a	
		2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 8.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		8.5 - 10.0	3	6	4	48	39	31	11	18	A-6a	
		10.0 - 17.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		17.5 - 22.5	GRAY SHALE									VISUAL
R-757	814+37.2 273.1 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL
		0.5 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 2.5	0	8	6	52	34	33	10	14	A-4b	
		2.5 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	0	12	8	51	29	28	8	11	A-4b	
		5.0 - 10.5	BROWN SANDY SILT (A-4a)									VISUAL
		10.5 - 11.0	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		11.0 - 12.5	5	5	4	53	33	39	16	11	A-6b	
		12.5 - 17.0	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		17.0 - 30.0	SEVERELY WEATHERED GRAY SHALE									VISUAL
		30.0 - 35.0	GRAY SHALE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
			S.R. 823									
R-756	814+44.1 3.9 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 2.5	23	15	9	36	17	25	6	13	A-4a	
		2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 3.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		3.5 - 5.0	2	13	7	39	39	38	16	18	A-6b	
		5.0 - 5.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		5.5 - 15.0	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL
		15.0 - 32.3	GRAY SHALE									VISUAL
		32.3 - 35.0	GRAY SANDSTONE									VISUAL
R-755	814+47.4 231.2 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 2.5	19	13	6	45	17	24	5	9	A-4a	
		2.5 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	7	17	8	48	20	25	5	12	A-4a	
		5.0 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
		8.0 - 8.5	GRAY SILTY CLAY (A-6b)									VISUAL
		8.5 - 10.0	0	13	7	43	37	38	17	16	A-6b	
		10.0 - 10.5	GRAY SILTY CLAY (A-6b)									VISUAL
		10.5 - 11.0	GRAY SILT AND CLAY (A-6a)									VISUAL
		11.0 - 12.5	4	10	6	48	32	35	15	13	A-6a	
		12.5 - 13.0	GRAY SILT AND CLAY (A-6a)									VISUAL
		13.0 - 16.0	SEVERELY WEATHERED BROWN SHALE									VISUAL
		16.0 - 21.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
		21.5 - 35.0	GRAY SHALE									VISUAL
C-77	816+38.8 120.0 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 2.5	29	18	11	29	13	23	5	12	A-4a	
		2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL
		6.0 - 7.5	1	5	2	47	45	37	16	17	A-6b	
		7.5 - 12.5	BROWN SILTY CLAY (A-6b)									VISUAL
		12.5 - 17.5	GRAY SHALE									VISUAL
R-759	817+79.6 176.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SILT (A-4b)									VISUAL
		1.0 - 2.5	2	4	12	55	27	27	7	10	A-4b	
		2.5 - 3.0	BROWN SILT (A-4b)									VISUAL
		3.0 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 5.0	1	4	6	51	38	36	14	18	A-6a	
		5.0 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.5 - 15.0	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL
		15.0 - 25.0	GRAY SHALE INTERBEDDED WITH SILTSTONE									VISUAL
		25.0 - 35.0	GRAY SANDSTONE									VISUAL

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SOIL PROFILE

SCI-823-10.13



DRAWN: RLS
CHECKED: AEN

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class				
			S.R. 823													S.R. 823											
C-76	818+07.8 239.4 ft. LT	0.0 - 0.3	TOPSOIL										R-762	822+22.5	0.0 - 0.2	TOPSOIL											
		0.3 - 1.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)											164.0 ft. LT	0.2 - 3.0	BROWN SILT (A-4b)											
		1.0 - 2.5	29	24	7	21	19	29	9	12	A-4a			3.0 - 18.5	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE												
		2.5 - 3.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												18.5 - 35.0	GRAY SANDSTONE INTERBEDDED WITH SHALE											
		3.0 - 5.5	BROWN COARSE AND FINE SAND (A-3a)																								
		5.5 - 6.0	GRAY SILTY CLAY (A-6b)										R-763	822+26.1	0.0 - 0.3	TOPSOIL											
		6.0 - 7.5	6	4	3	47	40	37	16	16	A-6b		6.4 ft. LT	0.3 - 3.0	BROWN SILT (A-4b)												
		7.5 - 10.0	GRAY SILTY CLAY (A-6b)												3.0 - 5.0	WEATHERED BROWN SHALE											
		10.0 - 15.0	GRAY SILTSTONE												5.0 - 25.0	BROWN SHALE INTERBEDDED WITH SANDSTONE											
															25.0 - 35.0	GRAY SHALE INTERBEDDED WITH SANDSTONE											
R-760	818+10.1 0.6 ft. RT	0.0 - 0.3	TOPSOIL										R-764	822+46.7	0.0 - 0.3	TOPSOIL											
		0.3 - 1.0	BROWN SILT AND CLAY (A-6a)											107.9 ft. RT	0.3 - 3.0	BROWN SILT (A-4b)											
		1.0 - 2.5	3	12	6	44	36	32	13	11	A-6a			3.0 - 5.5	BROWN SILTY CLAY (A-6b)												
		2.5 - 3.5	BROWN SILT AND CLAY (A-6a)												5.5 - 15.0	SEVERELY WEATHERED BROWN SHALE											
		3.5 - 5.0	0	7	5	48	40	30	12	11	A-6a			15.0 - 23.3	BROWN SHALE												
		5.0 - 5.5	BROWN SILT AND CLAY (A-6a)												23.3 - 65.0	GRAY SHALE											
		5.5 - 6.0	BROWN SILTY CLAY (A-6b)																								
		6.0 - 7.5	0	7	3	47	43	39	16	13	A-6b																
		7.5 - 11.0	BROWN SILTY CLAY (A-6b)										C-75	822+97.9	0.0 - 0.3	TOPSOIL											
		11.0 - 11.5	4	12	6	47	31	38	14	8	A-6a		179.0 ft. LT	0.3 - 1.0	BROWN AND GRAY SANDY SILT (A-4a)												
		11.5 - 12.5	BROWN SILTY CLAY (A-6b)												1.0 - 2.5	25	17	12	34	12	NP	NP	13	A-4a			
		12.5 - 16.0	SEVERELY WEATHERED BROWN SANDSTONE												2.5 - 6.0	BROWN AND GRAY SANDY SILT (A-4a)											
		16.0 - 17.0	SEVERELY WEATHERED GRAY SANDSTONE												6.0 - 8.5	BROWN AND GRAY SANDY SILT (A-4a)											
		17.0 - 26.4	GRAY SANDSTONE												8.5 - 10.0	10	10	7	49	24	30	9	18	A-4a			
		26.4 - 35.0	GRAY SHALE												10.0 - 17.5	BROWN AND GRAY SANDY SILT (A-4a)											
															17.5 - 22.5	GRAY SHALE											
R-758	818+22.0 301.5 ft. LT	0.0 - 0.3	TOPSOIL										C-74	823+68.5	0.0 - 0.3	TOPSOIL											
		0.3 - 1.0	BROWN SILT AND CLAY (A-6a)											13.0 ft. LT	0.3 - 1.0	BROWN SILT (A-4b)											
		1.0 - 2.5	2	9	4	46	39	32	12	19	A-6a			1.0 - 2.5	12	10	4	51	23	24	5	16	A-4b				
		2.5 - 5.5	BROWN SILT AND CLAY (A-6a)												2.5 - 3.0	BROWN SILT (A-4b)											
		5.5 - 15.0	SEVERELY WEATHERED GRAY SHALE												3.0 - 6.0	BROWN SANDY SILT (A-4a)											
		15.0 - 35.0	GRAY SHALE INTERBEDDED WITH SANDSTONE												6.0 - 7.5	16	21	10	37	16	28	9	12	A-4a			
PB-46	820+47.8 165.3 ft. RT	0.0 - 0.5	TOPSOIL												7.5 - 10.5	BROWN SANDY SILT (A-4a)											
		0.5 - 3.0	BROWN COARSE AND FINE SAND (A-3a)												10.5 - 13.5	BROWN AND GRAY SANDY SILT (A-4a)											
		3.0 - 5.5	REDDISH BROWN SILT AND CLAY (A-6a)												13.5 - 15.0	17	7	5	43	28	29	10	18	A-4a			
		5.5 - 24.0	BROWN COARSE AND FINE SAND (A-3a)												15.0 - 22.5	BROWN AND GRAY SANDY SILT (A-4a)											
		24.0 - 30.4	SEVERELY WEATHERED DARK GRAY SHALE												22.5 - 27.5	GRAY SHALE											
		30.4 - 80.0	DARK GRAY SHALE																								
R-761	822+16.3 271.6 ft. LT	0.0 - 0.2	TOPSOIL										C-73	823+86.8	0.0 - 0.3	TOPSOIL											
		0.2 - 1.0	BROWN CLAY (A-7-6)											109.2 ft. RT	0.3 - 1.0	BROWN SANDY SILT (A-4a)											
		1.0 - 2.5	1	6	3	35	55	48	25	17	A-7-6			1.0 - 2.5	13	23	8	43	13	23	3	16	A-4a				
		2.5 - 3.0	BROWN CLAY (A-7-6)												2.5 - 3.0	BROWN SANDY SILT (A-4a)											
		3.0 - 3.5	BROWN SILT AND CLAY (A-6a)												3.0 - 6.0	BROWN AND GRAY SILT AND CLAY (A-6a)											
		3.5 - 5.0	4	10	4	43	39	36	14	12	A-6a			6.0 - 7.5	5	12	6	48	29	29	11	18	A-6a				
		5.0 - 6.0	BROWN SILT AND CLAY (A-6a)												7.5 - 16.0	BROWN AND GRAY SILT AND CLAY (A-6a)											
		6.0 - 7.5	0	5	6	53	36	37	14	10	A-6a			16.0 - 21.0	BROWN SHALE												
		7.5 - 11.0	BROWN SILT AND CLAY (A-6a)																								
		11.0 - 12.0	0	2	3	57	38	36	14	10	A-6a																
		12.0 - 20.0	SEVERELY WEATHERED BROWN SANDSTONE																								
		20.0 - 35.0	GRAY SANDSTONE																								

SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

**NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE**

Boring	Station & Offset	Depth		% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		Boring	Station & Offset	Depth		% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
		From	To													From	To											
S.R. 823													S.R. 823															
R-765	826+09.7 20.2 ft. RT	0.0 - 0.3	0.3 - 3.0	TOPSOIL								VISUAL		R-770	835+09.6 112.6 ft. LT	0.0 - 0.3	0.3 - 1.0	TOPSOIL									VISUAL	
		3.0 - 15.5	15.5 - 28.0	BROWN SILT (A-4b)								VISUAL				1.0 - 2.5	2.5 - 3.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)	52	11	4	33	NP	NP	7	VISUAL		
		28.0 - 30.0	30.0 - 34.0	BROWN SANDY SILT (A-4a)								VISUAL*				3.5 - 6.0	6.0 - 7.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	
		34.0 - 39.0		BROWN AND GRAY SILT AND CLAY (A-6a)								VISUAL				7.5 - 11.0	11.0 - 12.5	BROWN AND GRAY SILT AND CLAY (A-6a)	11	14	6	37	32	32	11	14	VISUAL	
				SEVERELY WEATHERED BROWN AND GRAY SHALE								VISUAL				12.5 - 15.0	15.0 - 18.5	BROWN AND GRAY SILT AND CLAY (A-6a)	2	7	4	49	38	34	14	11	VISUAL	
				SEVERELY WEATHERED GRAY SHALE								VISUAL				18.5 - 20.0	20.0 - 20.5	BROWNISH GRAY SILTY CLAY (A-6b)	1	9	5	45	40	36	16	11	VISUAL	
R-766	827+69.7 7.1 ft. RT	0.0 - 0.3	0.3 - 5.5	TOPSOIL								VISUAL		R-772	835+19.3 64.4 ft. RT	0.0 - 0.4	0.4 - 13.0	TOPSOIL									VISUAL	
		5.5 - 8.0	8.0 - 18.0	BROWN SILT (A-4b)								VISUAL				13.0 - 23.0	23.0 - 24.0	BROWN SANDY SILT (A-4a)									VISUAL	
		18.0 - 22.0	22.0 - 27.0	BROWN SANDY SILT (A-4a)								VISUAL				24.0 - 25.0	25.0 - 56.1	BROWN SILTY CLAY (A-6b)									VISUAL	
				BROWN SILTY CLAY (A-6b)								VISUAL				56.1 - 60.0		BROWN CLAY (A-7-6)									VISUAL	
				SEVERELY WEATHERED GRAY SHALE								VISUAL						SEVERELY WEATHERED GRAY SHALE									VISUAL	
R-769	831+13.4 273.2 ft. RT	0.0 - 0.4	0.4 - 3.0	TOPSOIL								VISUAL		R-774	837+16.8 16.9 ft. RT	0.0 - 0.3	0.3 - 1.0	TOPSOIL									VISUAL	
		3.0 - 5.0	5.0 - 112.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL				1.0 - 2.5	2.5 - 6.0	BROWN SANDSTONE	1	7	5	60	27	29	9	13	VISUAL	
		112.0 - 126.6	126.6 - 130.3	BROWN SANDSTONE								VISUAL				6.0 - 7.5	7.5 - 8.0	GRAY SANDSTONE	0	16	9	57	18	23	3	12	VISUAL	
		130.3 - 140.0	140.0 - 220.0	BROWN SANDSTONE								VISUAL				8.0 - 11.0	11.0 - 12.5	GRAY SANDSTONE									VISUAL	
				GRAY SANDSTONE								VISUAL				12.5 - 21.0	21.0 - 25.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
				GRAY SANDSTONE								VISUAL				25.5 - 28.0	28.0 - 30.0	GRAY SANDSTONE	16	15	10	45	14	23	4	14	VISUAL	
				GRAYISH BROWN SANDSTONE INTERBEDDED WITH SHALE								VISUAL				30.0 - 35.0		BROWN SANDY SILT (A-4a)									VISUAL	
												VISUAL						BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL	
												VISUAL						GRAY SILTY CLAY (A-6b)									VISUAL	
												VISUAL						SEVERELY WEATHERED GRAY SHALE									VISUAL	
												VISUAL						GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL	
R-2767	831+34.8 30.9 ft. RT	0.0 - 0.3	0.3 - 3.5	TOPSOIL								VISUAL		R-773	837+19.8 111.1 ft. LT	0.0 - 0.3	0.3 - 1.0	TOPSOIL									VISUAL	
		3.5 - 5.0	5.0 - 27.5	BROWN SILT (A-4b)								VISUAL				1.0 - 2.5	2.5 - 3.0	BROWN SANDY SILT (A-4a)	42	12	8	38	NP	NP	7	VISUAL		
		27.5 - 84.6	84.6 - 120.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL				3.0 - 6.0	6.0 - 7.5	BROWN SANDY SILT (A-4a)									VISUAL	
		120.0 - 126.6	126.6 - 135.5	BROWN SANDSTONE								VISUAL				7.5 - 10.5	10.5 - 11.0	BROWN AND GRAY SILT (A-4b)	6	11	7	51	25	NP	NP	12	VISUAL	
		135.5 - 230.0		GRAY SANDSTONE								VISUAL				11.0 - 12.5	12.5 - 23.0	BROWN AND GRAY SILT (A-4b)	11	18	9	46	16	27	7	15	VISUAL	
				GRAY SANDSTONE INTERBEDDED WITH SILTSTONE								VISUAL				23.0 - 25.0	25.0 - 35.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL	
				GRAY SILTSTONE								VISUAL						SEVERELY WEATHERED GRAY SHALE									VISUAL	
												VISUAL						GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL	
												VISUAL															VISUAL	
												VISUAL															VISUAL	
												VISUAL															VISUAL	

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SOIL PROFILE

SCI-823-10.13

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
S.R. 823												S.R. 823													
R-776	838+04.9 122.1 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	R-779	842+15.5 128.4 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SILT (A-4b)									VISUAL			0.3 - 1.0	BROWN SILT (A-4b)									VISUAL
		1.0 - 2.5	1	11	7	55	26	26	8	13	A-4b			1.0 - 2.5	0	2	2	67	29	26	8	8	A-4b		
		2.5 - 6.0	BROWN SILT (A-4b)									VISUAL			2.5 - 5.5	BROWN SILT (A-4b)									VISUAL
		6.0 - 7.5	3	13	11	58	15	23	3	13	A-4b			5.5 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL	
		7.5 - 11.0	BROWN SILT (A-4b)									VISUAL			6.0 - 7.5	3	11	6	44	36	33	13	13	A-6a	
		11.0 - 12.5	6	11	9	57	17	NP	NP	14	A-4b			7.5 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		12.5 - 13.0	BROWN SILT (A-4b)									VISUAL			10.5 - 11.0	BROWN SILTY CLAY (A-6b)									VISUAL
		13.0 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL			11.0 - 12.5	6	5	3	47	39	39	18	15	A-6b	
		16.0 - 17.5	22	7	5	48	18	25	5	17	A-4a			12.5 - 15.5	BROWN SILTY CLAY (A-6b)									VISUAL	
		17.5 - 18.0	BROWN SANDY SILT (A-4a)									VISUAL			15.5 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL
		18.0 - 23.5	BROWN SILT AND CLAY (A-6a)									VISUAL			16.0 - 17.5	19	23	9	33	16	28	9	8	A-4a	
		23.5 - 25.0	7	13	6	43	31	33	11	17	A-6a			17.5 - 20.5	BROWN SANDY SILT (A-4a)									VISUAL	
		25.0 - 26.0	BROWN SILT AND CLAY (A-6a)									VISUAL			20.5 - 21.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		26.0 - 30.0	GRAY SILT AND CLAY (A-6a)									VISUAL			21.0 - 22.5	1	4	5	56	34	34	13	16	A-6a	
		30.0 - 35.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			22.5 - 25.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		35.0 - 40.0	GRAY SHALE									VISUAL			25.0 - 42.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
R-775	838+17.4 74.4 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL			42.5 - 48.3	SHALE INTERBEDDED WITH SANDSTONE									VISUAL
		0.3 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL			48.3 - 55.0	GRAY SANDSTONE									VISUAL
		5.5 - 15.5	BROWN SILT AND CLAY (A-6a)									VISUAL	R-777	842+26.9 8.4 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		15.5 - 20.5	BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 5.0	BROWN SILT (A-4b)									VISUAL
		20.5 - 30.0	BROWN SILT AND CLAY (A-6a)									VISUAL			5.0 - 25.0	SILT AND CLAY (A-6a)									VISUAL
		30.0 - 40.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			25.0 - 40.0	GRAY SANDSTONE									VISUAL*
		40.0 - 45.0	GRAY SILTSHALE									VISUAL													
R-778	842+13.8 86.5 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL	R-780	845+93.7 87.9 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.4 - 1.0	BROWN SILT (A-4b)									VISUAL			0.3 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 2.5	2	3	3	68	24	NP	NP	6	A-4b			1.0 - 2.5	2	9	4	44	41	33	11	13	A-6a		
		2.5 - 3.0	BROWN SILT (A-4b)									VISUAL			2.5 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.0 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			6.0 - 7.5	2	7	5	56	30	33	13	10	A-6a	
		3.5 - 4.5	14	10	6	44	26	26	7	11	A-4a			7.5 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		4.5 - 5.0	BROWN SANDY SILT (A-4a)									VISUAL			10.5 - 11.0	BROWN SILTY CLAY (A-6b)									VISUAL
		5.0 - 25.0	BROWN SILTY CLAY (A-6b)									VISUAL			11.0 - 12.5	15	6	4	41	34	40	19	12	A-6b	
		25.0 - 42.5	BROWN AND GRAY SHALE/CLAYSTONE									VISUAL			12.5 - 16.0	BROWN SILTY CLAY (A-6b)									VISUAL
		42.5 - 50.0	GRAY SANDSTONE									VISUAL			16.0 - 17.5	17	9	7	39	28	39	20	11	A-6b	
														17.5 - 20.0	BROWN SILTY CLAY (A-6b)									VISUAL	
														20.0 - 21.0	GRAYISH BROWN SILT AND CLAY (A-6a)									VISUAL	
														21.0 - 22.0	1	30	13	35	21	34	12	9	A-6a		
														22.0 - 23.0	GRAYISH BROWN SILT AND CLAY (A-6a)									VISUAL	
														23.0 - 25.0	SEVERELY WEATHERED GRAY SHALE									VISUAL	
														25.0 - 35.0	GRAY SHALE									VISUAL	

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SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
*** DENOTES SAMPLE TAKEN AT OR NEAR GRADE**

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
S.R. 823												S.R. 823													
R-783	845+96.2 165.7 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	R-786	850+08.9 161.1 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL			0.4 - 1.0	BROWN SILT (A-4b)									VISUAL
		1.0 - 2.5	5	3	2	34	56	40	16	14	A-6b			1.0 - 2.5	0	1	2	73	24	NP	NP	6	A-4b		
		2.5 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL			2.5 - 3.0	BROWN SILT (A-4b)									VISUAL
		6.0 - 7.0	2	1	1	54	42	36	16	10	A-6b			3.0 - 3.5	BROWN CLAY (A-7-6)									VISUAL	
		7.0 - 10.5	BROWN SILTY CLAY (A-6b)									VISUAL			3.5 - 5.0	4	3	1	46	46	41	19	11	A-7-6	
		10.5 - 11.0	GRAYISH BROWN SILT AND CLAY (A-6a)									VISUAL			5.0 - 6.0	BROWN CLAY (A-7-6)									VISUAL
		11.0 - 12.5	2	12	7	44	35	34	12	12	A-6a			6.0 - 7.5	0	0	1	41	58	47	24	12	A-7-6		
		12.5 - 16.0	GRAYISH BROWN SILT AND CLAY (A-6a)									VISUAL			7.5 - 8.0	BROWN CLAY (A-7-6)									VISUAL
		16.0 - 16.5	7	5	4	58	26	29	9	2	A-4b			8.0 - 10.0	SEVERELY WEATHERED BROWN SHALE									VISUAL	
		16.5 - 20.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			10.0 - 27.1	BROWN SHALE									VISUAL
		20.0 - 35.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL			27.1 - 35.0	GRAY SHALE									VISUAL
R-781	846+10.6 13.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	C-70	853+22.0 167.8 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL			0.3 - 1.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		1.0 - 2.5	6	14	8	50	22	30	11	9	A-6a			1.0 - 2.5	12	29	18	41	23	3	8	A-2-4			
		2.5 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL			2.5 - 3.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		5.5 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL			3.0 - 11.0	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL
		6.0 - 7.5	1	8	3	47	41	33	16	13	A-6b			11.0 - 16.0	GRAY SHALE									VISUAL	
		7.5 - 11.0	BROWN SILTY CLAY (A-6b)									VISUAL													
		11.0 - 12.5	2	8	4	38	48	40	20	17	A-6b	R-788	854+06.5 22.2 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL	
		12.5 - 15.5	BROWN SILTY CLAY (A-6b)									VISUAL			0.4 - 1.0	BROWN SILT (A-4b)									VISUAL
		15.5 - 16.0	BROWN SILT AND CLAY (A-6a)									VISUAL			1.0 - 2.5	1	3	2	71	23	28	6	11	A-4b	
		16.0 - 17.5	1	11	7	48	33	34	14	13	A-6a			2.5 - 3.0	BROWN SILT (A-4b)									VISUAL	
		17.5 - 21.0	BROWN SILT AND CLAY (A-6a)									VISUAL			3.0 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		21.0 - 22.0	0	10	6	56	28	33	12	10	A-6a*			3.5 - 5.0	17	22	10	31	20	32	14	15	A-6a		
		22.0 - 25.0	SEVERELY WEATHERED BROWN SHALE									VISUAL			5.0 - 8.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		25.0 - 35.0	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL			8.0 - 10.0	SEVERELY WEATHERED GRAY SHALE									VISUAL
														10.0 - 30.4	GRAY SHALE									VISUAL	
R-784	850+04.9 167.6 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			30.4 - 35.0	GRAY SANDSTONE									VISUAL
		0.3 - 1.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL													
		1.0 - 2.5	9	10	4	49	28	35	15	17	A-6a	R-787	854+07.9 215.6 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL	
		2.5 - 3.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			0.4 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.0 - 3.5	BROWN CLAY (A-7-6)									VISUAL			3.0 - 8.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		3.5 - 5.0	0	1	2	31	66	52	30	22	A-7-6			8.0 - 15.1	BROWN SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL	
		5.0 - 6.0	BROWN CLAY (A-7-6)									VISUAL			15.1 - 17.5	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		6.0 - 7.5	24	1	2	36	37	42	21	14	A-7-6			17.5 - 25.0	BROWNISH GRAY SANDSTONE									VISUAL	
		7.5 - 8.0	BROWN CLAY (A-7-6)									VISUAL			25.0 - 35.0	GRAY SHALE									VISUAL
		8.0 - 11.0	BROWN SILTY CLAY (A-6b)									VISUAL													
		11.0 - 12.0	0	3	2	56	39	40	19	11	A-6b	R-789	854+27.1 216.7 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL	
		12.0 - 16.0	BROWN SILTY CLAY (A-6b)									VISUAL			0.3 - 1.0	BROWN SILT (A-4b)									VISUAL
		16.0 - 16.5	0	4	3	57	36	40	17	10	A-6b			1.0 - 2.5	1	5	6	56	32	28	8	12	A-4b		
		16.5 - 19.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			2.5 - 3.5	BROWN SILT (A-4b)									VISUAL
		19.5 - 30.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL			3.5 - 5.0	2	11	8	55	24	32	9	15	A-4b	
		30.0 - 35.0	GRAY SANDSTONE									VISUAL			5.0 - 5.5	BROWN SILT (A-4b)									VISUAL
														5.5 - 6.0	GRAYISH BROWN SILTY CLAY (A-6b)									VISUAL	
														6.0 - 7.0	0	1	2	42	55	39	19	12	A-6b		
														7.0 - 7.8	GRAY SHALE									VISUAL	
														7.8 - 10.4	GRAY SANDSTONE									VISUAL	
														10.4 - 35.0	GRAY SHALE									VISUAL	

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SOIL PROFILE

SCI - 823 - 10.13



DRAWN: RLS
CHECKED: AEN

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class					
			S.R. 823													S.R. 823												
C-71	854+76.6 46.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	R-790	858+21.5 130.5 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			
		0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL			
		1.0 - 2.5	18	27	12	34	9	NP	NP	11	A-4a			1.0 - 2.5	11	13	15	61	37	18	13	A-6b						
		2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL			2.5 - 3.0	BROWN SILTY CLAY (A-6b)									VISUAL			
		3.0 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL			3.0 - 3.5	BROWN CLAY (A-7-6)									VISUAL			
		3.5 - 5.0	32	18	7	23	20	33	12	14	A-6a			3.5 - 4.5	0	2	4	49	45	42	20	14	A-7-6					
		5.0 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL			4.5 - 5.5	BROWN CLAY (A-7-6)									VISUAL			
		6.0 - 7.5	0	1	3	42	54	42	18	18	A-7-6			5.5 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL				
		7.5 - 8.5	BROWN CLAY (A-7-6)									VISUAL			6.0 - 7.0	0	1	2	48	49	39	16	13	A-6b				
		8.5 - 12.5	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL			7.0 - 8.5	BROWN SILTY CLAY (A-6b)									VISUAL			
		12.5 - 17.5	GRAY SHALE									VISUAL			8.5 - 14.2	GREENISH BROWN SHALE									VISUAL			
														14.2 - 25.0	LIGHT TO DARK BROWN, GRAY SANDSTONE									VISUAL				
C-72	855.75.4 207.5 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL			25.0 - 30.0	LIGHT GRAY SANDSTONE									VISUAL			
		0.2 - 1.0	BROWN SILT (A-4b)									VISUAL			30.0 - 35.0	BROWN SANDSTONE									VISUAL			
		1.0 - 2.5	5	15	7	52	21	28	10	17	A-4b																	
		2.5 - 6.0	BROWN SILT (A-4b)									VISUAL	R-793	858+23.1 180.6 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL			
		6.0 - 7.5	0	3	3	67	27	34	15	28	A-6a			0.3 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL				
		7.5 - 13.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			1.0 - 2.5	14	26	11	30	19	31	13	15	A-6a				
		13.5 - 15.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			2.5 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL			
		15.0 - 20.0	GRAY SHALE									VISUAL			3.0 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL			
														3.5 - 5.0	21	21	10	27	21	36	19	13	A-6b					
C-69	856+43.9 171.5 ft. LT	0.0 - 0.6	TOPSOIL									VISUAL			5.0 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL			
		0.6 - 1.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			6.0 - 6.5	25	10	10	55	NP	NP	8	A-4b					
		1.0 - 2.5	48	20	7	18	7	25	3	14	A-1-b			6.5 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL				
		2.5 - 3.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			8.0 - 10.5	SEVERELY WEATHERED GRAY SHALE									VISUAL			
		3.0 - 3.5	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			10.5 - 19.5	GRAY SHALE									VISUAL			
		3.5 - 5.0	21	21	10	30	18	27	8	14	A-4a			19.5 - 35.0	GRAY SANDSTONE									VISUAL				
		5.0 - 6.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL																
		6.0 - 7.5	33	13	8	30	16	28	8	12	A-4a	R-791	858+46.9 27.5 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL				
		7.5 - 12.5	BROWN SANDSTONE									VISUAL			0.3 - 1.0	BROWN CLAY (A-7-6)									VISUAL			
		12.5 - 17.5	GRAY SHALE									VISUAL			1.0 - 2.5	1	7	4	38	50	47	23	22	A-7-6				
														2.5 - 3.0	BROWN CLAY (A-7-6)									VISUAL				
C-68	857+02.4 40.4 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			3.0 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			
		0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL			3.5 - 5.0	4	7	5	38	46	34	7	18	A-4a				
		1.0 - 2.5	21	21	9	32	17	28	7	16	A-4a			5.0 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL				
		2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL			5.5 - 6.0	BROWN CLAY (A-7-6)									VISUAL			
		3.0 - 5.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			6.0 - 7.5	0	2	5	42	51	44	20	15	A-7-6				
		5.5 - 12.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			7.5 - 9.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			
		12.5 - 17.5	GRAY SHALE									VISUAL			9.0 - 19.0	BROWN SANDSTONE									VISUAL			
														19.0 - 28.6	GRAY AND BROWN SANDSTONE									VISUAL				
C-67	857+27.6 74.7 ft. RT	0.0 - 0.6	TOPSOIL									VISUAL			28.6 - 35.0	GRAY SHALE									VISUAL			
		0.6 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL																
		1.0 - 2.5	12	19	8	43	18	27	6	24	A-4a																	
		2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL																
		3.0 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL																
		5.0 - 12.5	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL																
		12.5 - 17.5	GRAY SHALE									VISUAL																

SOIL PROFILE

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DRAWN RLS
CHECKED AEN

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823								ODOT Class	Boring	Station & Offset	Depth From To	S.R. 823								ODOT Class		
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.					% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.			
R-794	862+28.7 6.5 ft. RT	0.0 - 0.5	TOPSOIL								VISUAL	C-65	869+10.9 17.0 ft. LT	0.0 - 0.2	TOPSOIL								VISUAL		
		0.5 - 1.0	BROWN SILT AND CLAY (A-6a)								VISUAL			0.2 - 1.0	BROWN SILT (A-4b)								VISUAL		
		1.0 - 2.5	0	2	4	62	32	30	13	13	A-6a			1.0 - 2.5	0	2	3	75	20	26	4	28	A-4b		
		2.5 - 3.0	BROWN SILT AND CLAY (A-6a)								VISUAL			2.5 - 3.0	BROWN SILT (A-4b)								VISUAL		
		3.0 - 3.5	BROWN CLAY (A-7-6)								VISUAL			3.0 - 6.0	BROWN SANDY SILT (A-4a)								VISUAL		
		3.5 - 5.0	0	1	12	40	47	43	24	21	A-7-6*			6.0 - 7.5	12	10	8	48	22	28	10	16	A-4a		
		5.0 - 5.5	BROWN CLAY (A-7-6)								VISUAL			7.5 - 8.0	BROWN SANDY SILT (A-4a)								VISUAL		
		5.5 - 6.0	BROWN SANDY SILT (A-4a)								VISUAL			8.0 - 11.0	BROWN AND GRAY SILT AND CLAY (A-6a)								VISUAL		
		6.0 - 7.5	0	0	28	47	25	25	8	16	A-4a			11.0 - 11.5	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL		
		7.5 - 10.5	BROWN SANDY SILT (A-4a)								VISUAL			11.5 - 16.5	GRAY SANDSTONE								VISUAL		
		10.5 - 11.0	BROWN SILT (A-4b)								VISUAL			C-64	869+55.5 124.8 ft. LT	0.0 - 0.3	TOPSOIL								VISUAL
		11.0 - 12.5	0	0	27	51	22	26	8	25	A-4b					0.3 - 1.0	BROWN SILT (A-4b)								VISUAL
		12.5 - 15.5	BROWN SILT (A-4b)								VISUAL					1.0 - 2.5	3	2	3	70	22	28	6	28	A-4b
		15.5 - 16.0	BROWN SANDY SILT (A-4a)								VISUAL					2.5 - 3.0	BROWN SILT (A-4b)								VISUAL
		16.0 - 17.5	14	18	16	40	12	NP	NP	12	A-4a					3.0 - 5.5	BROWN SILT AND CLAY (A-6a)								VISUAL
		17.5 - 18.5	BROWN SANDY SILT (A-4a)								VISUAL					5.5 - 6.0	BROWN GRAVEL WITH SAND (A-1-b)								VISUAL
		18.5 - 22.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL					6.0 - 7.5	52	8	15	25	26	6	12	A-1-b	
22.0 - 24.5	GRAY SHALE INTERBEDDED WITH SANDSTONE								VISUAL	7.5 - 13.5	BROWN GRAVEL WITH SAND (A-1-b)								VISUAL						
24.5 - 32.5	GRAY SHALE								VISUAL	13.5 - 15.0	4	8	9			56	23	25	6	17	A-4b				
32.5 - 35.0	GRAY SANDSTONE								VISUAL	15.0 - 16.0	BROWN SILT (A-4b)								VISUAL						
PB-47	865+87.2 5.1 ft. LT	0.0 - 0.4	TOPSOIL								VISUAL	R-798	870+26.8 10.4 ft. RT			0.0 - 0.8	TOPSOIL								VISUAL
		0.4 - 10.5	BROWN SILT AND CLAY (A-6a)								VISUAL					0.8 - 1.0	BROWN SILT AND CLAY (A-6a)								VISUAL
		10.5 - 20.5	BROWN SANDY SILT (A-4a)								VISUAL*					1.0 - 2.5	2	4	3	62	29	31	12	11	A-6a
		20.5 - 24.5	BROWN COARSE AND FINE SAND (A-3a)								VISUAL					2.5 - 3.0	BROWN SILT AND CLAY (A-6a)								VISUAL
		24.5 - 33.0	INTERBEDDED GRAY SHALE AND SANDSTONE								VISUAL					3.0 - 3.5	BROWN SILTY CLAY (A-6b)								VISUAL
		33.0 - 34.5	GRAY SANDSTONE								VISUAL					3.5 - 5.0	1	3	4	51	41	40	19	13	A-6b
R-795	866+19.3 0.3 ft. LT	0.0 - 0.6	TOPSOIL								VISUAL	R-796	870+36.2 110.4 ft. LT			0.0 - 0.3	TOPSOIL								VISUAL
		0.6 - 1.0	BROWN SILT AND CLAY (A-6a)								VISUAL			0.3 - 1.0	BROWN SILT (A-4b)								VISUAL		
		1.0 - 2.5	0	0	2	66	32	36	15	22	A-6a			1.0 - 2.5	0	1	4	75	20	25	3	28	A-4b		
		2.5 - 5.5	BROWN SILT AND CLAY (A-6a)								VISUAL			2.5 - 3.0	BROWN SILT (A-4b)								VISUAL		
		5.5 - 6.0	BROWN CLAY (A-7-6)								VISUAL			3.0 - 3.5	BROWN SANDY SILT (A-4a)								VISUAL		
		6.0 - 7.5	0	0	17	43	40	42	24	21	A-7-6*			3.5 - 4.5	21	8	10	46	15	22	3	14	A-4a		
		7.5 - 10.5	BROWN CLAY (A-7-6)								VISUAL			4.5 - 10.0	BROWN SANDY SILT (A-4a)								VISUAL		
		10.5 - 11.0	BROWN SILT (A-4b)								VISUAL			10.0 - 25.7	GRAYISH BROWN SHALE								VISUAL		
		11.0 - 12.5	0	0	6	75	19	23	4	26	A-4b			25.7 - 35.0	GRAY SANDSTONE INTERBEDDED WITH SHALE								VISUAL		
		12.5 - 13.0	BROWN SILT (A-4b)								VISUAL			R-799	873+23.0 10.5 ft. RT	0.0 - 0.3	TOPSOIL								VISUAL
		13.0 - 16.0	BROWN SANDY SILT (A-4a)								VISUAL					0.3 - 3.0	REDDISH BROWN SILT (A-4b)								VISUAL
		16.0 - 17.5	8	16	14	45	17	28	8	7	A-4a					3.0 - 8.0	BROWN AND GRAY SILTY CLAY (A-6b)								VISUAL
		17.5 - 18.5	BROWN SANDY SILT (A-4a)								VISUAL					8.0 - 10.0	SEVERELY WEATHERED GRAY SANDSTONE								VISUAL*
		18.5 - 20.0	GRAY SILT AND CLAY (A-6a)								VISUAL					10.0 - 20.0	GRAY SANDSTONE								VISUAL
20.0 - 27.0	GRAY SHALE								VISUAL	C-66	868+30.1 84.4 ft. RT	0.0 - 0.2	TOPSOIL								VISUAL				
27.0 - 35.0	GRAY AND BROWN SANDSTONE								VISUAL			0.2 - 1.0	BROWN SILT (A-4b)								VISUAL				
C-66	868+30.1 84.4 ft. RT	1.0 - 2.5	6	9	6	62	17	34	9			35	A-4b			1.0 - 2.5	6	9	6	62	17	34	9	35	A-4b
		2.5 - 3.0	BROWN SILT (A-4b)									VISUAL	2.5 - 3.0	BROWN SILT (A-4b)								VISUAL			
		3.0 - 6.0	BROWN SILT AND CLAY (A-6a)								VISUAL	3.0 - 6.0	BROWN SILT AND CLAY (A-6a)								VISUAL				
		6.0 - 7.0	80	5	4	11	27	7	6	A-2-4	6.0 - 7.0	80	5	4	11	27	7	6	A-2-4						
		7.0 - 9.0	BROWN AND GRAY GRAVEL WITH SAND AND SILT (A-2-4)								VISUAL	7.0 - 9.0	BROWN AND GRAY GRAVEL WITH SAND AND SILT (A-2-4)								VISUAL				
		9.0 - 14.0	GRAY SANDSTONE								VISUAL	9.0 - 14.0	GRAY SANDSTONE								VISUAL				

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SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

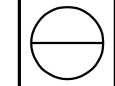
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class	Boring	Station & Offset	Depth From To	S.R. 823										ODOT Class
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PI	% W.C.					
R-801	877+06.0 84.9 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL	R-808	884+13.6 107.6 ft. RT	0.0 - 0.7	TOPSOIL										VISUAL
		0.4 - 8.0	BROWN SILT (A-4b)										VISUAL			0.7 - 1.0	BROWN SILT (A-4b)										VISUAL
		8.0 - 13.0	BROWN SANDY SILT (A-4a)										VISUAL			1.0 - 2.5	0	4	5	69	22	26	6	24	A-4b		
		13.0 - 15.5	GRAYISH BROWN CLAY (A-7-6)										VISUAL			2.5 - 3.0	BROWN SILT (A-4b)										VISUAL
		15.5 - 18.5	BROWN SILT AND CLAY (A-6a)										VISUAL			3.0 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL
		18.5 - 23.5	SEVERELY WEATHERED GRAY SHALE										VISUAL			3.5 - 5.0	0	2	10	62	26	29	12	21	A-6a		
		23.5 - 26.2	GRAY SHALE										VISUAL			5.0 - 8.5	BROWN SILT AND CLAY (A-6a)										VISUAL
		26.2 - 44.1	GRAY SANDSTONE										VISUAL			8.5 - 10.0	0	0	8	66	26	29	11	21	A-6a		
		44.1 - 46.5	GRAY SHALE										VISUAL			10.0 - 16.0	BROWN SILT AND CLAY (A-6a)										VISUAL
R-802	877+14.8 98.5 ft. RT	0.0 - 0.6	TOPSOIL										VISUAL	R-806	884+38.2 121.8 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL
		0.6 - 3.0	DARK BROWN SILT (A-4b)										VISUAL			0.4 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL
		3.0 - 10.5	BROWN SILT AND CLAY (A-6a)										VISUAL			3.5 - 5.0	0	0	2	75	23	32	12	23	A-6a		
		10.5 - 13.0	BROWN AND GRAY SILTY CLAY (A-6b)										VISUAL			5.0 - 5.5	BROWN SILT AND CLAY (A-6a)										VISUAL
		13.0 - 18.0	BROWN CLAY (A-7-6)										VISUAL			5.5 - 6.0	BROWN AND GRAY SILT (A-4b)										VISUAL
		18.0 - 23.0	BROWN SANDY SILT (A-4a)										VISUAL			6.0 - 7.5	0	2	10	58	30	26	10	12	A-4b		
		23.0 - 25.0	BROWN CLAY (A-7-6)										VISUAL			7.5 - 10.5	BROWN AND GRAY SILT (A-4b)										VISUAL
		25.0 - 28.5	SEVERELY WEATHERED GRAY SHALE										VISUAL			10.5 - 11.0	BROWN SILTY CLAY (A-6b)										VISUAL
		28.5 - 32.0	GRAY SHALE										VISUAL			11.0 - 12.5	0	0	2	55	43	37	19	18	A-6b		
		32.0 - 49.9	GRAY SANDSTONE										VISUAL			12.5 - 18.0	BROWN SILTY CLAY (A-6b)										VISUAL
		49.9 - 57.0	GRAY SHALE										VISUAL			18.0 - 21.0	BROWN SANDY SILT (A-4a)										VISUAL
R-803	881+28.1 4.2 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL	B-1115	889+97.4 30.0 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL
		0.3 - 6.0	BROWN SILT (A-4b)										VISUAL			0.3 - 1.0	BROWN SILTY CLAY (A-6b)										VISUAL
		6.0 - 7.5	1	3	5	69	22	24	6	14	A-4b	1.0 - 2.5	4			3	8	43	42	40	22	14	A-6b				
		7.5 - 8.0	BROWN SILT (A-4b)										VISUAL			2.5 - 3.5	BROWN SILTY CLAY (A-6b)										VISUAL
		8.0 - 8.5	BROWN SILTY CLAY (A-6b)										VISUAL			3.5 - 5.0	1	4	12	47	36	33	17	12	A-6b		
		8.5 - 10.0	9	10	9	40	32	37	20	5	A-6b	5.0 - 15.0	BROWN SILTY CLAY (A-6b)										VISUAL				
		10.0 - 15.5	BROWN SILTY CLAY (A-6b)										VISUAL			15.0 - 19.0	SEVERELY WEATHERED GRAY SHALE										VISUAL
		15.5 - 16.0	GRAY SILT AND CLAY (A-6a)										VISUAL			19.0 - 29.0	GRAY SANDSTONE										VISUAL
		16.0 - 17.5	0	1	11	56	32	29	14	7	A-6a																
		17.5 - 23.0	GRAY SILT AND CLAY (A-6a)										VISUAL														
		23.0 - 23.5	GRAY AND BROWN SILT (A-4b)										VISUAL														
		23.5 - 25.0	3	1	22	52	22	23	6	22	A-4b																
		25.0 - 28.0	GRAY AND BROWN SILT (A-4b)										VISUAL														
		28.0 - 35.0	SEVERELY WEATHERED GRAY SANDSTONE										VISUAL														
		35.0 - 46.8	GRAY SANDSTONE										VISUAL														
		46.8 - 56.5	GRAY SHALE										VISUAL														

SOIL PROFILE

SCI-823-10.13



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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

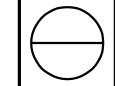
Boring	Station & Offset	Depth From To	S.R. 823									ODOT Class		Boring	Station & Offset	Depth From To	S.R. 823									ODOT Class
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg						% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.			
TR-56	890+95.4 24.6 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL		B-1144	892+85.3 25.8 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.2 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL				0.3 - 3.0	FILL: GRAY AND BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 7.5	0	0	2	57	41	39	20	20		A-6b				3.0 - 3.5	REDDISH BROWN SANDY SILT (A-4a)									VISUAL
		7.5 - 8.0	BROWN SILTY CLAY (A-6b)									VISUAL				3.5 - 5.0	4	14	32	30	20	19	7	9		A-4a
		8.0 - 8.5	BROWN AND GRAY SILT (A-4b)									VISUAL				5.0 - 13.0	REDDISH BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 10.0	0	1	19	55	25	26	10	23		A-4b				13.0 - 13.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		10.0 - 14.1	BROWN AND GRAY SILT (A-4b)									VISUAL				13.5 - 15.0	13	31	30	9	17	32	17	18		A-2-6
		14.1 - 15.0	SEVERELY WEATHERED GRAYISH BROWN SILTSTONE									VISUAL				15.0 - 21.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
15.0 - 25.0	GRAYISH BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL		21.0 - 26.0	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL				
B-1146	891+40.7 12.2 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL		B-1143	893+80.3 3.7 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL
		0.2 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL				0.2 - 10.5	FILL: BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 2.5	0	3	5	50	42	35	15	18		A-6a				10.5 - 11.0	POSSIBLE FILL: BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		2.5 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL				11.0 - 12.5	21	44	19	16	NP	NP	5		A-1-b	
		10.5 - 11.0	DARK BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				12.5 - 27.0	POSSIBLE FILL: BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		11.0 - 12.5	30	29	25	16	NP	NP	14		A-1-b		27.0 - 30.5			GREENISH GRAY SHALE									VISUAL	
		12.5 - 13.0	DARK BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				30.5 - 37.0	BLACK SHALE									VISUAL
		13.0 - 14.5	SEVERELY WEATHERED GRAY SHALE									VISUAL														
14.5 - 19.0	BROWNISH GRAY SHALE									VISUAL		B-1142	894+83.0 33.3 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL		
19.0 - 24.5	GRAY SANDSTONE									VISUAL				0.3 - 8.0	FILL: GRAY SILTY CLAY (A-6b)									VISUAL		
														8.0 - 13.0	FILL: BROWN SILT AND CLAY (A-6a)									VISUAL		
														13.0 - 15.5	FILL: BLACK SANDY SILT (A-4a)									VISUAL		
														15.5 - 16.0	BROWN SILT (A-4b)									VISUAL		
														16.0 - 17.5	0	3	6	62	29	27	9	18		A-4b		
														17.5 - 20.5	BROWN SILT (A-4b)									VISUAL		
														20.5 - 21.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL		
B-1145	891+50.3 32.7 ft. LT	0.0 - 0.2	TOPSOIL									VISUAL		B-1142	894+83.0 33.3 ft. LT	21.0 - 22.5	30	26	16	11	17	34	18	16		A-2-6
		0.2 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL				22.5 - 23.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		3.5 - 5.0	0	1	2	58	39	37	19	20		A-6b				23.0 - 25.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.0 - 10.5	BROWN SILTY CLAY (A-6b)									VISUAL				25.5 - 29.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		10.5 - 11.0	DARK BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				29.0 - 30.0	31	28	12	21	8	24	4	18		A-2-4
		11.0 - 12.5	4	47	33	16	NP	NP	12		A-1-b		30.0 - 31.0			GRAY SANDY SILT (A-4a)									VISUAL	
		12.5 - 14.5	DARK BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				31.0 - 32.5	0	1	37	47	15	26	10	26		A-4a
		14.5 - 19.0	GRAY SHALE									VISUAL				32.5 - 33.5	GRAY SANDY SILT (A-4a)									VISUAL
19.0 - 24.5	GRAY SANDSTONE									VISUAL		33.5 - 34.5	1	1	42	44	12	17	2	25		A-4a				
TR-55	892+28.2 7.5 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL		B-1142	894+83.0 33.3 ft. LT	34.5 - 43.5	SEVERELY WEATHERED BLACK SHALE									VISUAL
		0.3 - 3.0	FILL: BROWN SANDY SILT (A-4a)									VISUAL				43.5 - 45.1	BLACK SHALE									VISUAL
		3.0 - 11.0	BROWN SILT AND CLAY (A-6a)									VISUAL				45.1 - 48.5	GRAY SANDSTONE									VISUAL
		11.0 - 16.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL														
		16.0 - 18.5	BROWNISH GRAY SILT AND CLAY (A-6a)									VISUAL														
		18.5 - 19.5	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL														
		19.5 - 29.5	GRAY SANDSTONE									VISUAL														
TR-55A	892+52.3 7.8 ft. LT	0.0 - 3.0	GRAY SILTY CLAY (A-6b)									VISUAL		TR-52	895+21.1 24.8 ft. LT	0.0 - 0.1	TOPSOIL									VISUAL
		3.0 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL				0.1 - 10.5	GRAY SILTY CLAY (A-6b)									VISUAL
		6.0 - 7.5	22	15	23	21	19	25	11	10		A-6a				10.5 - 11.0	GRAY GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		7.5 - 8.0	BROWN SILT AND CLAY (A-6a)									VISUAL				11.0 - 12.5	66	4	2	18	10	NP	NP	8		A-2-4
		8.0 - 8.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL				12.5 - 13.0	GRAY GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		8.5 - 10.0	4	25	39	16	16	NP	NP	10		A-3a				13.0 - 20.5	GRAY SILT AND CLAY (A-6a)									VISUAL
		10.0 - 13.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL				20.5 - 21.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		13.5 - 15.0	9	38	40	13	NP	NP	20		A-3a		21.0 - 22.5			35	20	17	14	14	33	15	14		A-2-6	
		15.0 - 18.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL				22.5 - 23.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		18.0 - 20.0	SEVERELY WEATHERED GRAY SHALE									VISUAL				23.0 - 25.5	BROWN CLAY (A-7-6)									VISUAL
		20.0 - 30.0	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL				25.5 - 32.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
												32.0 - 35.0	SEVERELY WEATHERED BLACK SHALE									VISUAL				
												35.0 - 40.4	BLACK SHALE									VISUAL				
												40.4 - 45.0	GRAY SANDSTONE									VISUAL				

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SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823									ODOT Class		Boring	Station & Offset	Depth From To	S.R. 823									ODOT Class		
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg						% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.					
B-1141	895+53.5 34.0 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL		TR-49	898+89.3 21.2 ft RT	0.0 - 0.3	AGGREGATE BASE									VISUAL		
		0.2 - 15.5	FILL: GRAY SANDY SILT (A-4a)									VISUAL				0.3 - 13.5	BROWN SILT AND CLAY (A-6a)									VISUAL		
		15.5 - 21.0	FILL: BROWN AND GRAY GRAVEL WITH SAND, SILT, AND CLAY									VISUAL				13.5 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL		
		21.0 - 22.5	57	15	7	8	13	38	20	18		A-2-6				16.0 - 18.5	BROWN SILT AND CLAY (A-6a)									VISUAL		
		22.5 - 28.0	FILL: BROWN AND GRAY GRAVEL WITH SAND, SILT, AND CLAY									VISUAL				18.5 - 28.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
		28.0 - 28.5	BROWN SANDY SILT (A-4a)									VISUAL				28.5 - 32.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL		
		28.5 - 30.0	11	8	27	32	22	27	9	20		A-4a				32.0 - 42.0	GRAY SANDSTONE									VISUAL		
		30.0 - 33.0	BROWN SANDY SILT (A-4a)									VISUAL				B-54	899+03.6 36.8 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL
		33.0 - 42.6	BLACK SHALE									VISUAL						0.4 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		42.6 - 43.0	GRAY SANDSTONE									VISUAL						3.5 - 5.0	0	1	3	65	31	27	8	21		A-4b
												5.0 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL						
TR-51	896+74.9 4.3 ft. RT	0.0 - 0.1	TOPSOIL									VISUAL		TR-49A	899+54.2 10.9 ft. RT	11.0 - 12.5	BROWN SANDY SILT (A-4a)									VISUAL		
		0.1 - 5.5	DARK BROWN SILT AND CLAY (A-6a)									VISUAL				12.5 - 13.0	BROWN SANDY SILT (A-4a)									VISUAL		
		5.5 - 8.0	BROWN SILTY CLAY (A-6b)									VISUAL				13.0 - 13.5	BROWN SILT AND CLAY (A-6a)									VISUAL		
		8.0 - 11.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				13.5 - 15.0	0	1	4	61	34	33	15	25		A-6a		
		11.0 - 12.5	43	28	11	7	11	NP	NP	19		A-1-b				15.0 - 17.0	4	5	7	58	26	25	7	26		A-4b		
		12.5 - 13.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				17.0 - 18.0	BROWN SILT (A-4b)									VISUAL		
		13.0 - 13.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL				18.0 - 18.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
		13.5 - 15.0	12	28	45	15	NP	NP	28		A-3a		18.5 - 20.0			42	36	9	13	9	NP	NP	11		A-1-b			
		15.0 - 18.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL				20.0 - 23.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
		18.0 - 21.0	REDDISH BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL				23.5 - 25.0	0	0	1	43	56	42	20	27		A-7-6		
		21.0 - 22.5	19	19	30	24	8	NP	NP	15		A-2-4				25.0 - 25.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
		22.5 - 23.0	REDDISH BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL				25.5 - 27.5	SEVERELY WEATHERED BLACK SHALE									VISUAL		
		23.0 - 23.5	GRAY CLAY (A-7-6)									VISUAL				27.5 - 30.0	BLACK SHALE									VISUAL		
		23.5 - 25.0	0	0	1	43	56	42	20	27		A-7-6				30.0 - 37.5	GRAY SANDSTONE									VISUAL		
25.0 - 25.5	GRAY CLAY (A-7-6)									VISUAL																		
TR-50	897+47.1 23.7 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL		TR-50A	898+09.3 34.1 ft. LT	0.0 - 0.1	TOPSOIL									VISUAL		
		0.3 - 17.2	BROWN SILT AND CLAY (A-6a)									VISUAL				0.1 - 3.0	FILL: DARK BROWN SANDY SILT (A-4a)									VISUAL		
		17.2 - 21.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL				3.0 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL		
		21.0 - 34.5	GRAY SANDSTONE									VISUAL				8.5 - 10.0	1	4	6	56	33	33	14	23		A-6a		
																10.0 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL		
TR-50A	898+09.3 34.1 ft. LT	10.5 - 11.0	BROWN SILTY CLAY (A-6b)									VISUAL		TR-49A	899+54.2 10.9 ft. RT	15.0 - 16.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
		11.0 - 12.5	32	20	12	18	18	33	16	18		A-6b				16.0 - 17.5	0	0	1	67	32	34	14	27		A-6a		
		12.5 - 18.0	BROWN SILTY CLAY (A-6b)									VISUAL				17.5 - 18.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
		18.0 - 18.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				18.0 - 21.0	BROWN GRAVEL (A-1-a)									VISUAL		
		18.5 - 20.0	16	40	23	21	23	NP	NP	21		A-1-b				21.0 - 22.5	62	16	8	14	NP	NP	10		A-1-a			
		20.0 - 21.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				22.5 - 30.0	BROWN GRAVEL (A-1-a)									VISUAL		
		21.0 - 22.5	42	24	20	14	20	NP	NP	12		A-1-b				30.0 - 35.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL		
		22.5 - 24.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				35.0 - 45.0	GRAY SANDSTONE									VISUAL		
		24.5 - 27.5	SEVERELY WEATHERED BROWNISH GRAY SANDSTONE									VISUAL																
		27.5 - 37.5	GRAY SANDSTONE									VISUAL																

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SOIL PROFILE

SCI-823-10.13

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	S.R. 823								ODOT Class		Boring	Station & Offset	Depth From To	C.R. 184								ODOT Class						
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.						% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.							
B-1140	901+35.7 4.3 ft. LT	0.0 - 0.4	TOPSOIL								VISUAL		B-1703	13+96.6 3.5 ft. LT	0.0 - 0.9	ASPHALT CONCRETE, AGGREGATE BASE								VISUAL						
		0.4 - 3.0	FILL: BROWN SANDY SILT (A-4a)								VISUAL				0.9 - 5.0	FILL: BROWN SANDY SILT (A-4a)								VISUAL*						
		3.0 - 6.0	FILL: BROWN AND GRAY SILT AND CLAY (A-6a)								VISUAL				5.0 - 5.3	FILL: BLACK TO DARK GRAY GRAVEL (A-1-a)								VISUAL						
		6.0 - 7.5	15	10	8	39	28	32	14	19	A-6a				5.3 - 21.0	BROWN SANDY SILT (A-4a)								VISUAL						
		7.5 - 8.5	FILL: BROWN AND GRAY SILT AND CLAY (A-6a)								VISUAL				21.0 - 21.5	SEVERELY WEATHERED GRAY SANDSTONE								VISUAL						
		8.5 - 10.0	1	3	6	55	35	33	15	22	A-6a				21.5 - 26.5	GRAY SANDSTONE								VISUAL						
		10.0 - 10.5	FILL: BROWN AND GRAY SILT AND CLAY (A-6a)								VISUAL				B-1706	17+07.6 121.9 ft. RT	0.0 - 11.0	YELLOWISH BROWN SANDY SILT (A-4a)								VISUAL				
		10.5 - 11.0	BROWN SANDY SILT (A-4a)								VISUAL						11.0 - 13.0	SEVERELY WEATHERED GRAY SILTSTONE								VISUAL				
		11.0 - 12.5	0	2	47	32	19	22	8	19	A-4a						13.0 - 18.0	BROWN SANDSTONE								VISUAL				
		12.5 - 15.5	BROWN SANDY SILT (A-4a)								VISUAL						B-1705	17+36.8 25.2 ft. RT	0.0 - 0.3	TOPSOIL								VISUAL		
		15.5 - 20.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)								VISUAL								0.3 - 13.5	DARK BROWN SANDY SILT (A-4a)								VISUAL		
		20.5 - 21.0	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)								VISUAL								13.5 - 21.5	SEVERELY WEATHERED GRAY SANDSTONE								VISUAL		
		21.0 - 22.5	3	50	40	7	NP	NP	21		A-1-b								21.5 - 26.5	GRAY AND BROWN SANDSTONE								VISUAL		
		22.5 - 34.0	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)								VISUAL								B-28	18+31.5 10.3 ft. RT	0.0 - 5.0	BROWN SANDSTONE								VISUAL
34.0 - 35.0	SEVERELY WEATHERED GRAY SANDSTONE								VISUAL		5.0 - 9.5	BROWN TO GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL									
35.0 - 40.0	GRAY SANDSTONE								VISUAL		9.5 - 69.5	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL									
B-1139	903+92.6 1.5 ft. RT	0.0 - 0.3	TOPSOIL								VISUAL		69.5 - 100.0	GRAY SANDSTONE								VISUAL								
		0.3 - 3.0	FILL: BROWN SILT AND CLAY (A-6a)								VISUAL		PB-45	21+40.8 43.6 ft. LT							0.0 - 0.3	TOPSOIL								VISUAL
		3.0 - 10.5	FILL: GRAY SILTY CLAY (A-6b)								VISUAL										0.3 - 3.0	BROWN SILT AND CLAY (A-6a)								VISUAL
		10.5 - 13.5	BROWN GRAVEL WITH SAND (A-1-b)								VISUAL										3.0 - 8.0	BROWN AND LIGHT GRAY SILT AND CLAY (A-6a)								VISUAL
		13.5 - 15.0	3	53	31	8	5	NP	NP	26	A-1-b				8.0 - 13.0	SEVERELY WEATHERED BROWN SANDSTONE								VISUAL						
		15.0 - 20.5	BROWN GRAVEL WITH SAND (A-1-b)								VISUAL				13.0 - 18.0	SEVERELY WEATHERED GRAY SHALE								VISUAL						
		20.5 - 21.0	BROWN FINE SAND (A-3)								VISUAL				18.0 - 23.1	BROWN AND GRAY SANDSTONE								VISUAL						
		21.0 - 22.5	1	21	69	7	2	NP	NP	24	A-3				23.1 - 36.0	BROWN SANDSTONE								VISUAL						
		22.5 - 23.0	BROWN FINE SAND (A-3)								VISUAL				36.0 - 59.2	GRAY SANDSTONE								VISUAL						
		23.0 - 28.5	BROWN GRAVEL WITH SAND (A-1-b)								VISUAL				59.2 - 79.9	GRAY SILTSTONE								VISUAL						
		28.5 - 30.0	SEVERELY WEATHERED GRAY SANDSTONE								VISUAL				79.9 - 99.5	GRAY SANDSTONE								VISUAL						
		30.0 - 35.0	GRAY SANDSTONE								VISUAL				99.5 - 116.0	INTERBEDDED GRAY SANDSTONE, SILTSTONE AND SHALE								VISUAL						
		B-1702	9+90.9 70.5 ft. LT	0.0 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL		B-30	21+82.4 12.0 ft. LT	0.0 - 3.5	BROWN SILTY CLAY (A-6b)								VISUAL		
				3.5 - 5.0	SEVERELY WEATHERED YELLOWISH BROWN SILTSTONE										VISUAL				3.5 - 5.0	0	5	6	55	34	35	17	15	A-6b		
5.0 - 30.0	BROWN SANDSTONE INTERBEDDED WITH SILTSTONE								VISUAL		5.0 - 8.0	BROWN SILTY CLAY (A-6b)								VISUAL*										
30.0 - 46.8	BROWN AND GRAY SANDSTONE								VISUAL		8.0 - 17.0	BROWN SANDSTONE								VISUAL										
46.8 - 54.2	GRAY SANDSTONE								VISUAL		17.0 - 22.8	BROWN TO GRAY SHALE INTERBEDDED WITH SANDSTONE								VISUAL										
B-1701	10+16.8 5.9 ft. RT	0.0 - 0.7	ASPHALT CONCRETE, AGGREGATE BASE								VISUAL		B-1707	22+92.1 7.1 ft. RT	0.0 - 0.5	ASPHALT CONCRETE								VISUAL						
		0.7 - 3.0	FILL: BROWN GRAVEL (A-1-a)								VISUAL*				0.5 - 2.0	FILL: BROWN SILT AND CLAY (A-6a)								VISUAL						
		3.0 - 8.5	ORANGISH BROWN SILT AND CLAY (A-6a)								VISUAL				2.0 - 2.5	FILL: GRAY SILTY CLAY (A-6b)								VISUAL						
		8.5 - 11.0	GRAY SANDY SILT (A-4a)								VISUAL				2.5 - 11.5	BROWN SILT AND CLAY (A-6a)								VISUAL*						
		11.0 - 15.0	ORANGISH BROWN FINE SAND (A-3)								VISUAL				11.5 - 13.5	GRAY WITH BROWN SANDY SILT (A-4a)								VISUAL						
B-1704	13+76.8 49.1 ft. LT	15.0 - 25.0	BROWN AND GRAY SANDSTONE								VISUAL		B-1709	27+94.8 5.4 ft. LT	0.0 - 0.5	ASPHALT CONCRETE								VISUAL						
		0.0 - 6.0	YELLOWISH BROWN AND LIGHT GRAY SANDY SILT (A-4a)								VISUAL				0.5 - 1.0	FILL: GRAY SANDY SILT (A-4a)								VISUAL						
		6.0 - 7.0	SEVERELY WEATHERED BROWN SILTSTONE								VISUAL				1.0 - 3.5	FILL: BROWN TO GRAY SANDY SILT (A-4a)								VISUAL*						
		7.0 - 12.7	BROWN SANDSTONE								VISUAL				3.5 - 6.4	SEVERELY WEATHERED BROWN SILTSTONE								VISUAL						
		12.7 - 55.0	GRAY SANDSTONE								VISUAL																			

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SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

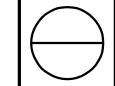
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class				
			U.S 23												U.S 23 RAMP A												
C-120	609+46.0 74.4 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	B-1138A	1906+53.4 25.3 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL		
		0.3 - 3.0	BROWN SILTY CLAY (A-6b)									VISUAL*			0.5 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
		3.0 - 3.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			6.0 - 7.5	0	1	3	65	32	32	13	24	A-6a			
		3.5 - 5.0	1	6	7	53	34	30	11	22	A-6a	7.5 - 8.0			BROWN SILT AND CLAY (A-6a)									VISUAL			
		5.0 - 8.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			8.0 - 10.0	0	0	3	53	44	38	18	25	A-6b			
		8.5 - 10.0	0	0	1	58	41	35	14	23	A-6a	10.0 - 10.5			LIGHT BROWN SILTY CLAY (A-6b)									VISUAL			
		10.0 - 13.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			10.5 - 11.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
		13.5 - 15.0	1	2	3	60	34	35	15	23	A-6a	11.0 - 12.5			47	22	12	13	6	19	3	15	A-1-b				
		15.0 - 15.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			12.5 - 15.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
		15.5 - 18.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			15.5 - 18.5	BROWN AND GRAY COARSE AND FINE SAND (A-3a)									VISUAL		
		18.5 - 20.0	40	41	10	9	10	NP	NP	16	A-1-b	18.5 - 20.0			6	40	40	14	NP	NP	20	A-3a					
		20.0 - 27.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			20.0 - 24.0	BROWN AND GRAY COARSE AND FINE SAND (A-3a)									VISUAL		
		27.0 - 27.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			24.0 - 26.8	SEVERELY WEATHERED GRAY SANDSTONE FRAGMENTS.									VISUAL		
		27.5 - 32.5	GRAY SANDSTONE									VISUAL															
C-121	609+50.3 73.7 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL	B-1138	1906+57.1 23.6 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL		
		0.5 - 3.5	BROWN SILT (A-4b)									VISUAL			0.3 - 5.0	FILL: DARK BROWN SANDY SILT (A-4a)									VISUAL		
		3.5 - 5.0	1	7	11	55	26	25	9	19	A-4b	5.0 - 10.5			BROWN SILTY CLAY (A-6b)									VISUAL			
		5.0 - 8.0	BROWN SILT (A-4b)									VISUAL			10.5 - 13.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
		8.0 - 8.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL			13.0 - 25.0	BROWN AND GRAY COARSE AND FINE SAND (A-3a)									VISUAL		
		8.5 - 10.0	21	23	26	11	19	32	17	24	A-2-6	25.0 - 30.0			GRAY SANDSTONE									VISUAL			
		10.0 - 10.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL			B-1137	1909+15.9 25.8 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		10.5 - 11.0	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL					0.3 - 5.5	FILL: BROWN SANDY SILT (A-4a)									VISUAL
		11.0 - 12.5	22	46	16	16	16	NP	NP	20	A-1-b	5.5 - 10.5					BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
		12.5 - 14.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL					10.5 - 15.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		14.5 - 16.0	BROWN SANDSTONE									VISUAL					15.5 - 24.0	BROWN AND GRAY COARSE AND FINE SAND (A-3a)									VISUAL
		16.0 - 21.3	SEVERELY WEATHERED BROWN AND GRAY SHALE									VISUAL					24.0 - 26.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		21.3 - 21.6	DARK GRAY SHALE									VISUAL					26.0 - 31.0	GRAY SANDSTONE									VISUAL
		21.6 - 26.3	GRAY SANDSTONE									VISUAL															
C-123	619+33.7 102.7 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	B-1136A	1912+56.3 27.4 ft. RT			0.0 - 0.7	TOPSOIL									VISUAL
		0.3 - 3.0	BROWN SILT (A-4b)									VISUAL					0.7 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.0 - 3.5	BROWN CLAY (A-7-6)									VISUAL					3.0 - 6.0	BROWN SILT (A-4b)									VISUAL
		3.5 - 5.0	0	2	5	46	47	43	22	28	A-7-6	6.0 - 8.0					0	0	2	70	28	31	10	25	A-4b		
		5.0 - 8.0	BROWN CLAY (A-7-6)									VISUAL					8.0 - 13.0	BROWN SILT (A-4b)									VISUAL
		8.0 - 8.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL					13.0 - 13.5	BLACK SILT (A-4b)									VISUAL
		8.5 - 10.0	0	0	10	63	27	29	12	26	A-6a	13.5 - 15.0			0	2	6	68	25	NP	NP	36	A-4b				
		10.0 - 10.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			15.0 - 16.0	BROWN FINE SAND (A-3)									VISUAL		
		10.5 - 13.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL			16.0 - 17.5	3	34	54	8	NP	NP	19	A-3				
		13.5 - 15.0	24	61	9	6	9	NP	NP	20	A-1-b	17.5 - 19.5			BROWN FINE SAND (A-3)									VISUAL			
		15.0 - 19.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL			19.5 - 20.5	LIGHT GRAY SILT (A-4b)									VISUAL		
		19.5 - 22.5	BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL			20.5 - 23.0	DARK GRAY SILT (A-4b)									VISUAL		
		22.5 - 27.5	GRAY SANDSTONE									VISUAL			23.0 - 26.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
																26.0 - 27.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL	
																27.5 - 32.5	GRAY SANDSTONE									VISUAL	
		B-1136	1912+58.4 33.2 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL	B-1136	1912+58.4 33.2 ft. RT	0.0 - 0.3	TOPSOIL								
0.3 - 5.5	DARK BROWN SANDY SILT (A-4a)									VISUAL	0.3 - 5.5	DARK BROWN SANDY SILT (A-4a)									VISUAL						
5.5 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL	5.5 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL						
10.5 - 13.0	GRAY SILT (A-4b)									VISUAL	10.5 - 13.0	GRAY SILT (A-4b)									VISUAL						
13.0 - 15.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	13.0 - 15.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL						
15.5 - 20.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL	15.5 - 20.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL						
20.5 - 26.0	GRAY COARSE AND FINE SAND (A-3a)									VISUAL	20.5 - 26.0	GRAY COARSE AND FINE SAND (A-3a)									VISUAL						
26.0 - 27.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL	26.0 - 27.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL						
27.5 - 32.5	GRAY SANDSTONE									VISUAL	27.5 - 32.5	GRAY SANDSTONE									VISUAL						

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
U.S. 23 RAMP A												
B-1135	1917+04.6 8.4 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 6.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		6.5 - 10.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		10.5 - 18.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		18.0 - 28.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		28.5 - 30.0	GRAY GRAVEL WITH SAND (A-1-b)									VISUAL
B-1134	1920+97.5 18.1 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 2.0	0	2	10	59	29	39	15	23	A-6a	
		2.0 - 4.0	0	0	2	55	43	38	19	20	A-6b	
		4.0 - 6.0	0	1	32	47	20	25	9	21	A-4a	
		6.0 - 13.0	BROWN SANDY SILT (A-4a)									VISUAL
		13.0 - 19.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		19.0 - 24.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		24.0 - 25.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		25.0 - 30.0	GRAY SANDSTONE									VISUAL
		B-1133A	1924+81.1 21.8 ft. RT	0.0 - 0.7	TOPSOIL							
0.7 - 3.5	POSSIBLE FILL: BROWN SILT (A-4b)									VISUAL		
3.5 - 5.0	9			8	9	50	24	27	10	14	A-4b	
5.0 - 6.5	POSSIBLE FILL: BROWN SILT (A-4b)									VISUAL		
6.5 - 7.3	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
7.3 - 8.5	BROWN SILTY CLAY (A-6b)									VISUAL		
8.5 - 10.0	0			1	5	47	47	38	19	22	A-6b	
10.0 - 10.5	BROWN SILTY CLAY (A-6b)									VISUAL		
10.5 - 11.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
11.0 - 12.5	0			2	36	38	24	26	12	21	A-6a	
12.5 - 18.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
18.0 - 18.3	0			2	22	52	23	25	8	27	A-4b	
18.3 - 20.0	BROWN CLAY (A-7-6)									VISUAL		
20.0 - 20.3	0			0	2	67	31	41	14	41	A-7-6	
20.3 - 22.0	GRAY SILT (A-4b)									VISUAL		
22.0 - 22.7	0			0	10	63	26	28	7		A-4b	
22.7 - 23.8	0			0	21	62	17	NP	NP	32	A-4b	
23.8 - 24.0	GRAY SILT (A-4b)									VISUAL		
24.0 - 22.7	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL		
24.0 - 25.5	4	65	27	4	27	NP	NP	23	A-1-b			
25.5 - 28.0	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL		
28.0 - 30.0	SEV. WEATH. GRAY SILTSTONE WITH SANDSTONE FRAGS.									VISUAL		
B-1133	1924+94.0 20.4 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 2.0	12	22	20	32	14	24	9	13	A-4a	
		2.0 - 4.0	27	20	11	23	19	30	14	11	A-6a	
		4.0 - 6.0	13	31	18	27	11	20	5	9	A-4a	
		6.0 - 10.5	BROWN SANDY SILT (A-4a)									VISUAL
		10.5 - 18.0	BROWN SANDY SILT (A-4a)									VISUAL
		18.0 - 25.5	GRAY SILTY CLAY (A-6b)									VISUAL
		25.5 - 28.0	GRAY COARSE AND FINE SAND (A-3a)									VISUAL
		28.0 - 30.0	BROWN AND GRAY GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		30.0 - 35.0	GRAY SANDSTONE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
U.S. 23 RAMP A												
B-1132	1928+97.1 7.4 ft. RT	0.0 - 0.8	ASPHALT, AGGREGATE BASE									VISUAL
		0.8 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL
		1.0 - 3.0	16	19	18	27	20	24	9	11	A-4a*	
		3.0 - 5.0	15	24	18	23	20	26	11	13	A-6a	
		5.0 - 7.0	19	31	20	19	11	20	7	7	A-2-4	
		7.0 - 10.0	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
B-1131	1933+06.8 15.9 ft. RT	0.0 - 0.8	ASPHALT, AGGREGATE BASE									VISUAL
		0.8 - 1.0	GRAY COARSE AND FINE SAND (A-3a)									VISUAL
		1.0 - 3.0	16	25	29	18	12	18	4	8	A-3a*	
		3.0 - 5.0	34	19	12	20	15	24	9	8	A-2-4	
		5.0 - 7.0	0	2	11	57	30	30	13	14	A-6a	
		7.0 - 10.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
U.S. 23 RAMP B												
B-1101	2587+78.9 15.8 ft. LT	0.0 - 1.0	ASPHALT, AGGREGATE BASE									VISUAL
		1.0 - 3.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL*
		3.0 - 5.0	32	26	12	20	10	24	6	10	A-2-4	
		5.0 - 7.5	32	35	13	12	9	27	10	13	A-2-4	
7.5 - 10.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
B-1102	2590+60.9 7.0 ft. LT	0.0 - 0.8	ASPHALT, AGGREGATE BASE									VISUAL
		0.8 - 1.0	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		1.0 - 3.0	2	2	10	49	37	35	18	17	A-6b*	
		3.0 - 5.0	0	0	3	65	32	27	10	23	A-4b	
		5.0 - 7.0	0	1	2	64	33	32	12	24	A-6a	
		7.0 - 10.0	BROWN SILT AND CLAY (A-6a)									VISUAL
B-1103	2593+58.6 11.4 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 2.0	18	17	15	31	19	28	11	12	A-6a	
		2.0 - 4.0	0	2	4	50	44	37	17	23	A-6b	
		4.0 - 10.0	GRAY SILTY CLAY (A-6b)									VISUAL
B-1104	2596+29.8 8.3 ft. LT	0.0 - 0.8	ASPHALT, AGGREGATE BASE									VISUAL
		0.8 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 3.0	4	4	8	51	33	31	13	15	A-6a	
		3.0 - 5.0	0	2	17	45	36	33	15	18	A-6a	
		5.0 - 7.0	0	2	4	62	32	32	12	21	A-6a	
		7.0 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL
10.5 - 15.5	BROWN SILTY CLAY (A-6b)									VISUAL		
15.5 - 20.5	BROWN CLAY (A-7-6)									VISUAL		
20.5 - 31.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
31.5 - 36.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL		
36.5 - 41.5	GRAY SANDSTONE									VISUAL		

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

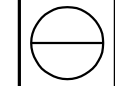
Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
U.S. 23 RAMP B												
B-1105	2597+77.5 24.0 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL
		1.0 - 2.5	3	3	8	56	30	38	16	16	A-6b	
		3.0 - 3.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		3.5 - 5.0	1	3	12	46	38	34	15	19	A-6a	
		5.0 - 6.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		6.0 - 7.5	0	2	6	61	31	30	11	23	A-6a	
		7.5 - 15.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		15.5 - 20.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		20.5 - 30.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		30.0 - 32.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		32.0 - 37.0	GRAY SANDSTONE									VISUAL
		B-1105A	2598+63.3 22.4 ft. LT	0.0 - 0.3	TOPSOIL							
0.3 - 4.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
4.0 - 6.0	1			3	22	43	31	27	11	16	A-6a	
6.0 - 7.5	1			1	3	61	34	32	12	23	A-6a	
7.5 - 7.8	BROWN SILT AND CLAY (A-6a)									VISUAL		
7.8 - 8.0	MOTTLED BROWN AND GRAY SILT (A-4b)									VISUAL		
8.0 - 10.0	2			3	6	57	32	28	10	25	A-4b	
10.0 - 11.5	0			4	5	51	40	34	15	27	A-6a	
11.5 - 12.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL		
12.0 - 14.0	0			2	5	58	35	30	11	23	A-6a	
14.0 - 15.5	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)									VISUAL		
15.5 - 16.0	0			0	2	47	51	38	9	22	A-4a	
16.0 - 18.0	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL		
18.0 - 22.0	0			1	2	42	55	38	17	24	A-6b	
22.0 - 23.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
23.5 - 25.0	39			40	10	11	NP	NP	13	A-1-b		
25.0 - 30.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
30.0 - 31.3	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL		
B-1106	2599+28.3 27.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 2.5	0	0	2	61	37	32	15	17	A-6a	
		2.5 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 5.0	1	2	6	60	31	31	12	18	A-6a	
		5.0 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.5 - 6.0	GRAY SILTY CLAY (A-6b)									VISUAL
		6.0 - 7.5	0	1	4	59	36	34	16	21	A-6b	
		7.5 - 15.5	GRAY SILTY CLAY (A-6b)									VISUAL
		15.5 - 16.0	BROWN CLAY (A-7-6)									VISUAL
		16.0 - 17.5	0	1	2	34	63	47	22	26	A-7-6	
		17.5 - 23.0	BROWN CLAY (A-7-6)									VISUAL
		23.0 - 23.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		23.5 - 25.0	13	57	23	7	23	NP	NP	23	A-1-b	
		25.0 - 30.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		30.0 - 32.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		32.5 - 37.5	GRAY SANDSTONE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
U.S. 23 RAMP B												
B-1107	2600+77.4 34.2 ft. LT	0.0 - 1.0	ASPHALT, AGGREGATE BASE									VISUAL
		1.0 - 2.5	DARK BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		2.5 - 3.0	27	24	20	18	11	23	9	12	A-2-4	
		3.0 - 3.5	BROWN SILT (A-4b)									VISUAL
		3.5 - 5.0	3	1	5	57	34	NP	NP	19	A-4b	
		5.0 - 5.5	BROWN SILT (A-4b)									VISUAL
		5.5 - 6.0	GRAY SILTY CLAY (A-6b)									VISUAL
		6.0 - 7.5	8	5	12	42	33	35	17	21	A-6b	
		7.5 - 10.5	GRAY SILTY CLAY (A-6b)									VISUAL
		10.5 - 21.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		21.0 - 22.5	0	2	5	38	55	46	26	30	A-7-6	
		22.5 - 23.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		23.0 - 23.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
23.5 - 25.0	9	70	14	7	14	NP	NP	26	A-1-b			
25.0 - 28.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
28.0 - 30.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL		
30.0 - 35.0	GRAY SANDSTONE									VISUAL		
B-1108	2602+29.5 35.3 ft. LT	0.0 - 1.0	ASPHALT, AGGREGATE BASE									VISUAL
		1.0 - 2.5	10	18	28	31	13	18	4	14	A-4a	
		2.5 - 3.0	FILL: BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 3.5	FILL: DARK BROWN SILTY CLAY (A-6b)									VISUAL
		3.5 - 5.0	6	4	8	43	39	36	17	20	A-6b	
		5.0 - 5.5	FILL: DARK BROWN SILTY CLAY (A-6b)									VISUAL
		5.5 - 6.0	FILL: GRAY SILT AND CLAY (A-6a)									VISUAL
		6.0 - 7.5	10	4	8	51	27	33	14	21	A-6a	
		7.5 - 8.0	FILL: GRAY SILT AND CLAY (A-6a)									VISUAL
		8.0 - 8.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		8.5 - 10.0	7	6	10	44	33	33	16	18	A-6b	
		10.0 - 12.0	0	1	3	58	38	36	15	15	A-6a	
		12.0 - 12.5	3	0	1	59	37	37	17	32	A-6b	
		12.5 - 14.0	BROWN SILTY CLAY (A-6b)									VISUAL
		14.0 - 16.0	2	4	9	48	37	38	19	28	A-6b	
		16.0 - 18.0	BROWN SILTY CLAY (A-6b)									VISUAL
		18.0 - 20.0	1	4	4	52	39	38	19	24	A-6b	
20.0 - 21.5	BROWN SILTY CLAY (A-6b)									VISUAL		
21.5 - 22.5	2	0	1	25	72	59	36	38	A-7-6			
22.5 - 23.0	BROWN CLAY (A-7-6)									VISUAL		
23.0 - 26.5	GRAY COARSE AND FINE SAND (A-3a)									VISUAL		
26.5 - 28.9	SEVERELY WEATHERED BLACK SILTSTONE									VISUAL		

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SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
U.S. 23 RAMP B												
B-1109A	2602+83.8 5.6 ft. LT	0.0 - 0.5	TOPSOIL									VISUAL
		0.5 - 3.5	POSSIBLE FILL: BROWNISH GRAY SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	13	22	21	28	16	21	5	19		A-4a
		5.0 - 5.5	POSSIBLE FILL: BROWNISH GRAY SANDY SILT (A-4a)									VISUAL
		5.5 - 6.0	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		6.0 - 7.5	3	6	10	33	48	38	17	25		A-6b
		7.5 - 8.0	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		8.0 - 10.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL
		10.0 - 11.3	0	1	3	20	76	57	33	31		A-7-6
		11.3 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL
		13.5 - 15.0	9	8	38	32	13	NP	NP	23		A-4a
		15.0 - 16.0	BROWN SANDY SILT (A-4a)									VISUAL
		16.0 - 16.3	SEVERELY WEATHERED BLACK SHALE									VISUAL
B-1109	2603+75.4 36.5 ft. LT	0.0 - 1.0	ASPHALT, AGGREGATE BASE									VISUAL
		1.0 - 2.5	7	10	11	48	24	27	12	19		A-6a
		2.5 - 3.0	FILL: DARK BROWN SILT AND CLAY (A-6a)									VISUAL
		3.0 - 3.5	FILL: DARK BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	22	15	12	32	19	25	9	14		A-4a
		5.0 - 5.5	FILL: DARK BROWN SANDY SILT (A-4a)									VISUAL
		5.5 - 6.0	POSSIBLE FILL: GRAYISH BROWN SILTY CLAY (A-6b)									VISUAL
		6.0 - 7.5	1	3	7	51	38	35	16	20		A-6b
		7.5 - 8.5	POSSIBLE FILL: GRAYISH BROWN SILTY CLAY (A-6b)									VISUAL
		8.5 - 10.0	1	4	11	47	37	35	16	20		A-6b
		10.0 - 10.5	POSSIBLE FILL: GRAYISH BROWN SILTY CLAY (A-6b)									VISUAL
		10.5 - 11.0	BROWN SANDY SILT (A-4a)									VISUAL
		11.0 - 12.5	33	17	14	24	12	25	8	11		A-4a
		12.5 - 13.0	BROWN SANDY SILT (A-4a)									VISUAL
		13.0 - 13.5	GRAY CLAY (A-7-6)									VISUAL
		13.5 - 15.0	1	3	7	35	54	46	25	29		A-7-6
		15.0 - 18.0	GRAY CLAY (A-7-6)									VISUAL
		18.0 - 18.5	BROWN SANDY SILT (A-4a)									VISUAL
		18.5 - 20.0	3	12	32	39	14	23	6	24		A-4a
		20.0 - 21.0	BROWN SANDY SILT (A-4a)									VISUAL
		21.0 - 22.5	0	1	52	47	NP	NP	29			A-4a
		22.5 - 23.5	BROWN SANDY SILT (A-4a)									VISUAL
		23.5 - 25.0	SEVERELY WEATHERED BLACK SHALE									VISUAL
25.0 - 28.3	BLACK SHALE									VISUAL		
28.3 - 30.0	GRAY SANDSTONE									VISUAL		

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
U.S. 23 RAMP B												
B-1110	2604+76.5 20.7 ft. RT	0.0 - 0.5	TOPSOIL									VISUAL
		0.5 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL
		1.0 - 2.5	1	4	11	57	27	28	16	12		A-6b
		2.5 - 3.0	BROWN SILTY CLAY (A-6b)									VISUAL
		3.0 - 3.5	BROWN SILT (A-4b)									VISUAL
		3.5 - 5.0	0	7	11	60	22	27	10	15		A-4b
		5.0 - 5.5	BROWN SILT (A-4b)									VISUAL
		5.5 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		6.0 - 7.5	3	15	25	28	29	27	11	14		A-6a
		7.5 - 13.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		13.0 - 18.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		18.0 - 23.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		23.0 - 25.0	SEVERELY WEATHERED BLACK SHALE									VISUAL
25.0 - 30.0	BLACK SHALE									VISUAL		
TR-61	2605+26.3 18.1 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.5	FILL: BLACK SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	14	20	26	28	12	26	5	21		A-4a
		5.0 - 5.5	FILL: BLACK SANDY SILT (A-4a)									VISUAL
		5.5 - 8.5	LIGHT BROWN CLAY (A-7-6)									VISUAL
		8.5 - 10.0	8	12	12	29	39	45	30	25		A-7-6
		10.0 - 10.5	LIGHT BROWN CLAY (A-7-6)									VISUAL
		10.5 - 11.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		11.0 - 12.5	9	46	32	13	32	NP	NP	23		A-1-b
		12.5 - 13.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		13.0 - 13.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		13.5 - 15.0	1	22	62	15	62	NP	NP	29		A-3a
		15.0 - 17.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
17.0 - 23.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL		
23.0 - 25.0	SEVERELY WEATHERED BLACK SHALE									VISUAL		
25.0 - 30.5	BLACK SHALE									VISUAL		
30.5 - 35.0	GRAY SANDSTONE									VISUAL		
B-1111	2605+81.7 14.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 5.5	FILL: BROWN SANDY SILT (A-4a)									VISUAL
		5.5 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		10.5 - 13.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		13.0 - 20.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		20.5 - 23.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		23.5 - 25.0	SEVERELY WEATHERED BLACK SHALE									VISUAL
		25.0 - 30.0	BLACK SHALE									VISUAL
		30.0 - 35.0	GRAY SANDSTONE									VISUAL

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class			
U.S. 23 RAMP B												U.S. 23 RAMP B														
TR-60	2607+31.2 19.6 ft. RT	0.0 - 0.1	TOPSOIL									VISUAL	B-45	2610+47.6 5.8 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	
		0.1 - 3.0	FILL: BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 3.5	DARK BROWN SILT (A-4b)									VISUAL	
		3.0 - 3.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			3.5 - 5.0	0	5	18	51	26	22	7	17	A-4b		
		3.5 - 5.0	33	43	11	13	11	NP	NP	8	A-1-b			5.0 - 7.0	0	3	20	49	28	29	18	21	A-6b			
		5.0 - 11.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			7.0 - 8.0	BROWN SILTY CLAY (A-6b)									VISUAL	
		11.0 - 12.5	50	20	9	17	4	NP	NP	10	A-1-b			8.0 - 10.0	30	21	18	17	14	27	11	14	A-2-6			
		12.5 - 18.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			10.0 - 14.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL	
		18.0 - 18.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			14.5 - 16.0	13	43	23	8	13	25	12	14	A-2-6		
		18.5 - 20.0	10	53	20	17	20	NP	NP	25	A-3a			16.0 - 17.5	30	26	17	13	14	29	15	20	A-2-6			
		20.0 - 23.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			17.5 - 18.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL	
		23.0 - 23.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL			18.0 - 18.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	
		23.5 - 25.0	31	27	12	18	12	29	10	22	A-2-4			18.5 - 20.0	47	20	7	17	10	27	10	21	A-2-4			
		25.0 - 25.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL			20.0 - 21.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	
		25.5 - 26.0	REDDISH BROWN COARSE AND FINE SAND (A-3a)									VISUAL			21.0 - 22.0	DECOMPOSED GRAY SHALE									VISUAL	
		26.0 - 27.5	7	14	58	21	58	NP	NP	23	A-3a			22.0 - 34.9	GRAY SHALE									VISUAL		
		27.5 - 28.0	REDDISH BROWN COARSE AND FINE SAND (A-3a)									VISUAL			34.9 - 42.0	BLUE SHALE									VISUAL	
		28.0 - 30.0	SEVERELY WEATHERED BLACK SHALE									VISUAL														
		30.0 - 40.0	BLACK SHALE									VISUAL	TR-59	2610+61.7 45.7 ft. RT	0.0 - 0.2	TOPSOIL									VISUAL	
B-1112	2608+31.5 9.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL			0.2 - 3.0	FILL: BROWN SANDY SILT (A-4a)									VISUAL	
		0.3 - 3.0	FILL: BROWN SILT AND CLAY (A-6a)									VISUAL			3.0 - 11.0	BROWN SILT AND CLAY (A-6a)									VISUAL	
		3.0 - 5.5	FILL: BROWN AND DARK GRAY SANDY SILT (A-4a)									VISUAL			11.0 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL	
		5.5 - 23.0	POSSIBLE FILL: BROWN COARSE AND FINE SAND (A-3a)									VISUAL			13.5 - 18.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
		23.0 - 26.0	POSSIBLE FILL: BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			18.5 - 21.0	SEVERELY WEATHERED GRAY AND BROWN SANDSTONE									VISUAL	
		26.0 - 27.5	26	39	19	13	3	NP	NP	15	A-1-b			21.0 - 31.0	GRAY SANDSTONE									VISUAL		
		27.5 - 33.0	POSSIBLE FILL: BROWN GRAVEL WITH SAND (A-1-b)									VISUAL														
		33.0 - 43.0	BLACK SHALE									VISUAL	B-1113	2610+64.3 16.0 ft. LT	0.0 - 0.4	TOPSOIL									VISUAL	
TR-59A	2609+82.8 15.0 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL			0.4 - 3.5	DARK BROWN SILT AND CLAY (A-6a)									VISUAL	
		0.3 - 3.5	DARK GRAY SANDY SILT (A-4a)									VISUAL			3.5 - 5.0	1	3	11	52	33	31	12	18	A-6a		
		3.5 - 5.0	7	13	26	32	22	22	6	12	A-4a			5.0 - 5.5	DARK BROWN SILT AND CLAY (A-6a)									VISUAL		
		5.0 - 5.5	DARK GRAY SANDY SILT (A-4a)									VISUAL			5.5 - 6.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL	
		5.5 - 6.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			6.0 - 7.5	0	1	12	47	40	41	25	22	A-7-6		
		6.0 - 7.5	15	36	37	12	37	NP	NP	17	A-1-b			7.5 - 8.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		7.5 - 10.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL			8.0 - 8.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL	
		10.5 - 11.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL			8.5 - 10.0	15	15	28	23	19	31	17	17	A-6b		
		11.0 - 12.5	14	25	31	9	21	31	17	17	A-2-6			10.0 - 15.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL		
		12.5 - 21.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL			15.5 - 16.0	GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL	
		21.5 - 25.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			16.0 - 17.5	18	37	25	8	12	29	15	26	A-2-6		
		25.0 - 33.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL			17.5 - 18.0	GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL	
		33.0 - 35.0	BLACK SHALE									VISUAL			18.0 - 44.0	SEVERELY WEATHERED GRAY SHALE									VISUAL	
														44.0 - 49.0	BLACK SHALE									VISUAL		
												TR-58	2611+25.3 14.7 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL		
														0.3 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL		
														6.0 - 7.5	0	0	6	65	29	34	16	22	A-6b			
														7.5 - 8.0	BROWN SILTY CLAY (A-6b)									VISUAL		
														8.0 - 8.5	DARK BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
														8.5 - 10.0	7	34	40	19	40	NP	NP	16	A-3a			
														10.0 - 14.0	DARK BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
														14.0 - 15.0	SEVERELY WEATHERED BROWNISH GRAY SHALE									VISUAL		
														15.0 - 25.0	GRAY SHALE									VISUAL		

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SOIL PROFILE

SCI - 823 - 10.13



DRAWN: RLS
CHECKED: AEN

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	U.S. 23 RAMP B										ODOT Class	Boring	Station & Offset	Depth From To	U.S. 23 RAMP C										ODOT Class			
			% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	% Agg	% C.S.					% F.S.	% Silt	% Clay	LL	PI	% W.C.								
B-47	2611+41.0 16.7 ft. LT	0.0 - 0.4	TOPSOIL										VISUAL	TR-54	3891+87.0 16.7 ft. LT	0.0 - 0.2	TOPSOIL										VISUAL			
		0.4 - 1.0	BROWN SILT AND CLAY (A-6a)										VISUAL			0.2 - 3.5	BROWN SILTY CLAY (A-6b)										VISUAL			
		1.0 - 2.5	0	1	3	56	40	30	11	15						A-6a	3.5 - 5.0	0	0	4	61	35	35	16	22				A-6b	
		2.5 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL			5.0 - 5.5	BROWN SILTY CLAY (A-6b)										VISUAL			
		3.5 - 4.0	BROWN SILT (A-4b)										VISUAL			5.5 - 6.0	BROWN SILT (A-4b)										VISUAL			
		4.0 - 6.0	0	0	4	69	27	26	7	20						A-4b	6.0 - 7.5	0	0	12	67	21	28	10	20				A-4b	
		6.0 - 8.0	0	1	14	63	22	23	6	18						A-4b	7.5 - 8.0	BROWN SILT (A-4b)										VISUAL		
		8.0 - 8.5	BROWN SILT (A-4b)										VISUAL			8.0 - 11.0	DARK BROWN COARSE AND FINE SAND (A-3a)										VISUAL			
		8.5 - 10.0	0	6	4		90		NP	NP	10					A-4b	11.0 - 12.5	7	38	37	18	37	NP	NP	18				A-3a	
		10.0 - 11.0	BROWN SILT (A-4b)										VISUAL			12.5 - 13.6	DARK BROWN COARSE AND FINE SAND (A-3a)										VISUAL			
		11.0 - 12.5	33	9	11	47	11	NP	NP	7						A-4b	13.6 - 15.0	SEVERELY WEATHERED GRAY SHALE										VISUAL		
		12.5 - 13.0	BROWN SANDY SILT (A-4a)										VISUAL			15.0 - 22.6	GRAY SHALE										VISUAL			
		13.0 - 17.0	SEVERELY WEATHERED LIGHT GRAY SHALE										VISUAL			22.6 - 23.5	GRAY SANDSTONE										VISUAL			
17.0 - 37.0	GRAY SHALE										VISUAL	23.5 - 25.0	GRAY SHALE										VISUAL							
TR-57	2611+74.6 27.9 ft. RT	0.0 - 0.3	TOPSOIL										VISUAL	B-1116	3892+65.9 26.2 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL			
		0.3 - 6.0	BROWN SILTY CLAY (A-6b)										VISUAL			0.3 - 3.0	GRAYISH BROWN SANDY SILT (A-4a)										VISUAL			
		6.0 - 7.5	0	0	1	64	35	35	16	23						A-6b	3.0 - 3.5	BROWN SILT (A-4b)										VISUAL		
		7.5 - 8.0	BROWN SILTY CLAY (A-6b)										VISUAL			3.5 - 5.0	0	2	7	66	25	27	9	12				A-4b		
		8.0 - 8.5	BROWN SILT (A-4b)										VISUAL			5.0 - 8.0	BROWN SILT (A-4b)										VISUAL			
		8.5 - 10.0	0	0	10	67	23	29	10	24						A-4b	8.0 - 8.5	REDDISH BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)										VISUAL		
		10.0 - 10.5	BROWN SILT (A-4b)										VISUAL			8.5 - 10.0	11	37	24	12	16	32	17	14				A-2-6		
		10.5 - 11.0	BROWN SILT AND CLAY (A-6a)										VISUAL			10.0 - 18.0	REDDISH BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)										VISUAL			
		11.0 - 12.5	23	15	19	26	17	32	13	19						A-6a	18.0 - 18.5	GRAY SILTY CLAY (A-6b)										VISUAL		
		12.5 - 13.5	BROWN SILT AND CLAY (A-6a)										VISUAL			18.5 - 19.5	1	5	3	53	38	35	16	13				A-6b		
		13.5 - 14.0	0	2	3	64	31	31	11	23						A-6a	19.5 - 20.0	GRAY SILTY CLAY (A-6b)										VISUAL		
		14.0 - 15.0	SEVERELY WEATHERED GRAY SHALE										VISUAL			20.0 - 38.0	SEVERELY WEATHERED GRAY AND BLACK SHALE										VISUAL			
		15.0 - 20.9	GRAY SHALE										VISUAL			38.0 - 48.0	BLACK SHALE										VISUAL			
20.9 - 22.9	GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL																			
22.9 - 25.0	GRAY SHALE										VISUAL																			
B-1114	2612+98.5 14.8 ft. LT	0.0 - 1.0	TOPSOIL										VISUAL	B-46	3892+81.3 20.3 ft. LT	0.0 - 0.3	TOPSOIL										VISUAL			
		1.0 - 2.5	0	1	4	44	51	36	18	16						A-6b	0.3 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL		
		2.5 - 3.5	BROWN SILTY CLAY (A-6b)										VISUAL			3.5 - 5.0	0	1	3	62	34	30	12	20				A-6a		
		3.5 - 5.0	3	4	9	46	38	36	20	14						A-6b	5.0 - 7.0	0	2	4	53	41	36	18	22				A-6b	
		5.0 - 14.7	BROWN SILTY CLAY (A-6b)										VISUAL			7.0 - 8.0	BROWN SILTY CLAY (A-6b)										VISUAL			
		14.7 - 21.5	SEVERELY WEATHERED BROWNISH GRAY SHALE										VISUAL			8.0 - 10.0	23	19	12	28	18	32	15	17				A-6a		
		21.5 - 31.5	GRAY SHALE INTERBEDDED WITH SANDSTONE										VISUAL			10.0 - 10.5	BROWN SILT AND CLAY (A-6a)										VISUAL			
																		10.5 - 11.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)										VISUAL	
																		11.0 - 12.5	17	36	27	7	13	27	13	18				A-2-6
																		12.5 - 16.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)										VISUAL	
																		16.0 - 17.5	28	47	5	4	16	35	17	28				A-2-6
																		17.5 - 18.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)										VISUAL	
																		18.0 - 20.0	SEVERELY WEATHERED GRAY SHALE										VISUAL	
														20.0 - 33.8	GRAY SHALE										VISUAL					
														33.8 - 40.0	BLACK SHALE										VISUAL					
TR-53	3893+05.9 100.7 ft. RT	0.0 - 0.2	TOPSOIL										VISUAL	TR-53	3893+05.9 100.7 ft. RT	0.0 - 0.2	TOPSOIL										VISUAL			
		0.2 - 8.5	BROWN SILT AND CLAY (A-6a)										VISUAL			0.2 - 8.5	BROWN SILT AND CLAY (A-6a)										VISUAL			
		8.5 - 17.5	BROWN COARSE AND FINE SAND (A-3a)										VISUAL			8.5 - 17.5	BROWN COARSE AND FINE SAND (A-3a)										VISUAL			
		17.5 - 19.0	SEVERELY WEATHERED GRAY SILTSTONE										VISUAL			17.5 - 19.0	SEVERELY WEATHERED GRAY SILTSTONE										VISUAL			
		19.0 - 20.0	SANDSTONE										VISUAL			19.0 - 20.0	SANDSTONE										VISUAL			
		20.0 - 29.0	GRAY SANDSTONE										VISUAL			20.0 - 29.0	GRAY SANDSTONE										VISUAL			

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SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
			U.S. 23 RAMP C									
TR-53A	3893+60.3 19.3 ft. RT	0.0 - 0.6	TOPSOIL									VISUAL
		0.6 - 3.0	GRAY SILTY CLAY (A-6b)									VISUAL
		3.0 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	28	16	15	24	17	NP	NP	14	A-4a	
		5.0 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL
		5.5 - 6.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		6.0 - 7.5	21	20	36	23	36	NP	NP	7	A-3a	
		7.5 - 18.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		18.0 - 20.5	DARK BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		20.5 - 22.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
		22.5 - 30.0	GRAY SHALE									VISUAL
		30.0 - 32.5	GRAY SHALE									VISUAL
B-1152	3893+96.5 23.1 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 5.5	FILL: BROWNISH GRAY SILTY CLAY (A-6b)									VISUAL
		5.5 - 8.5	POSSIBLE FILL: BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		8.5 - 10.0	32	43	19	6		NP	NP	4	A-1-b	
		10.0 - 15.5	POSSIBLE FILL: BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		15.5 - 21.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		21.0 - 22.0	SEVERELY WEATHERED GRAY SHALE									VISUAL
		22.0 - 30.0	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL
		30.0 - 32.9	GRAY SHALE									VISUAL
		32.9 - 37.0	BLACK SHALE									VISUAL
B-1117A	3894+54.8 63.4 ft. LT	0.0 - 3.5	POSSIBLE FILL: BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		3.5 - 5.0	10	9	5	42	34	33	13	15	A-6a	
		5.0 - 8.0	POSSIBLE FILL: BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		8.0 - 10.0	23	11	6	30	30	34	14	14	A-6a	
		10.0 - 10.5	POSSIBLE FILL: BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		10.5 - 11.0	POSSIBLE FILL: BROWNISH GRAY SILT (A-4b)									VISUAL
		11.0 - 12.5	1	5	6	57	31	29	10	26	A-4b	
		12.5 - 16.0	POSSIBLE FILL: BROWNISH GRAY SILT (A-4b)									VISUAL
		16.0 - 17.5	0	1	3	63	33	36	21	27	A-6b	
		17.5 - 20.5	BROWN SILTY CLAY (A-6b)									VISUAL
		20.5 - 21.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		21.0 - 22.5	32	28	8	18	14	NP	NP	17	A-2-4	
		22.5 - 26.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		26.5 - 27.0	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL
		27.0 - 30.0	51	16	14	19		NP	NP	9	A-1-b	
		30.0 - 31.7	SEVERELY WEATHERED BLACK SHALE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
			U.S. 23 RAMP C									
B-1117	3895+08.1 7.3 ft. LT	0.0 - 0.7	TOPSOIL									VISUAL
		0.7 - 5.5	POSSIBLE FILL: BROWN AND GRAY SANDY SILT (A-4a)									VISUAL
		5.5 - 15.5	POSSIBLE FILL: GRAY SILTY CLAY (A-6b)									VISUAL
		15.5 - 16.0	BROWN SILT (A-4b)									VISUAL
		16.0 - 17.5	0	2	13	70	15	24	6	22	A-4b	
		17.5 - 18.0	BROWN SILT (A-4b)									VISUAL
		18.0 - 18.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		18.5 - 20.0	53	13	9	15	10	28	9	11	A-2-4	
		20.0 - 25.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		25.5 - 26.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		26.0 - 27.5	32	33	9	17	9	28	12	23	A-2-6	
		27.5 - 28.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		28.5 - 30.0	53	12	9	15	11	31	18	16	A-2-6	
		30.0 - 33.0	GRAY SILT (A-4b)									VISUAL
		33.0 - 43.0	SEVERELY WEATHERED BLACK SHALE									VISUAL
		43.0 - 48.0	BLACK SHALE									VISUAL
B-1118	3896+55.5 6.3 ft. RT	0.0 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 5.0	1	2	5	62	30	33	13	25	A-6a	
		5.0 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.5 - 6.0	BROWN CLAY (A-7-6)									VISUAL
		6.0 - 7.5	0	0	2	31	67	53	30	29	A-7-6	
		7.5 - 11.8	BROWN CLAY (A-7-6)									VISUAL
		11.8 - 12.5	41	16	9	24	10	26	10	17	A-2-4	
		12.5 - 15.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		15.5 - 16.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		16.0 - 17.5	55	12	10	18	5	20	4	15	A-1-b	
		17.5 - 20.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		20.5 - 25.0	SEVERELY WEATHERED BLACK SHALE									VISUAL
		25.0 - 30.6	BLACK SHALE									VISUAL
		30.6 - 35.0	GRAY SANDSTONE									VISUAL
TR-48	3897+72.5 52.7 ft. RT	0.0 - 3.0	FILL: BLACK GRAVEL WITH SAND (A-1-b)									VISUAL
		3.0 - 5.5	FILL: GRAY AND BLACK SILT AND CLAY (A-6a)									VISUAL
		5.5 - 8.0	BROWN SILT (A-4b)									VISUAL
		8.0 - 8.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		8.5 - 10.0	0	0	2	43	55	49	26	24	A-7-6	
		10.0 - 13.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		13.0 - 16.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		16.0 - 17.5	37	27	17	19	17	NP	NP	19	A-1-b	
		17.5 - 18.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		18.5 - 20.0	52	14	15	12	7	NP	NP	15	A-1-b	
		20.0 - 23.5	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		23.5 - 25.0	SEVERELY WEATHERED BLACK SHALE									VISUAL
		25.0 - 30.0	BLACK SHALE									VISUAL
		30.0 - 35.0	GRAY SANDSTONE									VISUAL

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SOIL PROFILE

SCI-823-10.13

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
			U.S. 23 RAMP C													U.S. 23 RAMP C									
TR-47	3898+88.1 20.9 ft. RT	0.0 - 0.1	TOPSOIL										TR-46	3900+40.8	0.0 - 01	TOPSOIL									
		0.1 - 6.0	BROWN AND GRAY CLAY (A-7-6)											47.7 ft. RT	0.1 - 3.5	FILL: BROWN AND BLACK GRAVEL WITH SAND (A-1-b)									
		6.0 - 7.5	0	0	2	48	50	42	21	21	A-7-6			3.5 - 5.0	44	19	13	16	8	26	5	13	A-1-b		
		7.5 - 8.0	BROWN AND GRAY CLAY (A-7-6)												5.0 - 5.5	FILL: BROWN AND BLACK GRAVEL WITH SAND (A-1-b)									
		8.0 - 13.0	BROWN SANDY SILT (A-4a)												5.5 - 8.5	BROWN SILT AND CLAY (A-6a)									
		13.0 - 13.5	BROWN COARSE AND FINE SAND (A-3a)												8.5 - 11.0	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									
		13.5 - 15.0	0	2	83	15	83	NP	NP	36	A-3a			11.0 - 12.5	56	15	9	16	4	NP	NP	9	A-1-b		
		15.0 - 18.0	BROWN COARSE AND FINE SAND (A-3a)												12.5 - 13.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									
		18.0 - 18.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												13.5 - 16.0	BROWN GRAVEL WITH SAND (A-1-b)									
		18.5 - 20.0	30	11	24	22	13	24	6	17	A-2-4			16.0 - 17.5	33	31	13	20	3	NP	NP	14	A-1-b		
		20.0 - 21.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												17.5 - 19.0	BROWN GRAVEL WITH SAND (A-1-b)									
		21.0 - 22.5	DARK GRAY SANDY SILT (A-4a)												19.0 - 23.5	LIGHT BROWN GRAVEL WITH SAND AND SILT (A-2-4)									
		22.5 - 23.0	15	9	35	26	15	22	6	15	A-4a			23.5 - 25.0	30	11	24	25	10	23	5	16	A-2-4		
		23.0 - 23.5	SEVERELY WEATHERED BLACK SHALE												25.0 - 25.5	LIGHT BROWN GRAVEL WITH SAND AND SILT (A-2-4)									
		23.5 - 25.0	29	23	31	12	5	NP	NP	13	A-1-b			25.5 - 27.0	SEVERELY WEATHERED GRAY SANDSTONE										
		25.0 - 26.5	SEVERELY WEATHERED BLACK SHALE												27.0 - 37.0	GRAY SANDSTONE									
		26.5 - 36.5	GRAY SANDSTONE																						
B-1119	3898+99.1 24.8 ft. LT	0.0 - 0.3	TOPSOIL										B-1121	3901+49.8	0.0 - 0.3	TOPSOIL									
		0.3 - 3.0	BROWN SANDY SILT (A-4a)											18.1 ft. LT	0.3 - 1.0	FILL: DARK BROWN SILT AND CLAY (A-6a)									
		3.0 - 5.5	BROWN CLAY (A-7-6)												1.0 - 2.5	16	9	7	38	30	36	13	17	A-6a	
		5.5 - 6.0	BROWN SILTY CLAY (A-6b)												2.5 - 3.5	FILL: DARK BROWN SILT AND CLAY (A-6a)									
		6.0 - 7.5	9	11	32	22	26	30	18	19	A-6b			3.5 - 5.0	7	16	24	31	22	23	9	14	A-4a		
		7.5 - 8.0	BROWN SILTY CLAY (A-6b)												5.0 - 5.5	FILL: BROWN SANDY SILT (A-4a)									
		8.0 - 8.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												5.5 - 6.0	GRAY SILT AND CLAY (A-6a)									
		8.5 - 10.0	46	18	9	18	9	25	8	15	A-2-4			6.0 - 7.5	2	4	6	57	31	37	14	28	A-6a		
		10.0 - 13.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												7.5 - 13.0	GRAY SILT AND CLAY (A-6a)									
		13.0 - 16.0	BROWN COARSE AND FINE SAND (A-3a)												13.0 - 18.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									
		16.0 - 17.5	12	47	22	19	22	NP	NP	20	A-3a			18.0 - 21.5	BROWN COARSE AND FINE SAND (A-3a)										
		17.5 - 18.0	BROWN COARSE AND FINE SAND (A-3a)												21.5 - 25.0	SEVERELY WEATHERED GRAY SANDSTONE									
		18.0 - 18.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												25.0 - 30.0	GRAY SANDSTONE									
		18.5 - 20.0	36	22	11	18	13	NP	NP	15	A-2-4	B-1122	3903+45.0	0.0 - 1.0	ASPHALT, AGGREGATE BASE										
		20.0 - 20.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)											34.5 ft. LT	1.0 - 2.5	FILL: BROWN SANDY SILT (A-4a)									
		20.5 - 21.0	BROWN COARSE AND FINE SAND (A-3a)												2.5 - 3.0	16	19	22	28	15	24	8	16	A-4a	
		21.0 - 22.5	14	6	48	20	12	NP	NP	17	A-3a			3.0 - 3.5	BROWN AND GRAY SILTY CLAY (A-6b)										
		22.5 - 25.0	BROWN COARSE AND FINE SAND (A-3a)												3.5 - 5.0	0	1	4	56	39	34	16	17	A-6b	
		25.0 - 30.0	GRAY SANDSTONE												5.0 - 6.0	BROWN AND GRAY SILTY CLAY (A-6b)									
B-1120	3900+39.5 19.1 ft. RT	0.0 - 0.4	TOPSOIL												6.0 - 7.5	BROWN SILT AND CLAY (A-6a)									
		0.4 - 1.0	BROWN CLAY (A-7-6)												7.5 - 8.0	13	11	8	44	24	29	12	17	A-6a	
		1.0 - 2.5	0	1	2	44	53	41	19	19	A-7-6			8.0 - 10.5	BROWN COARSE AND FINE SAND (A-3a)										
		2.5 - 3.5	BROWN CLAY (A-7-6)												10.5 - 20.5	BROWN SILTY CLAY (A-6b)									
		3.5 - 5.0	0	0	2	49	49	42	18	21	A-7-6			20.5 - 27.5	BROWN AND GRAY GRAVEL WITH SAND, SILT, AND CLAY (A-2-4)										
		5.0 - 5.5	BROWN CLAY (A-7-6)												27.5 - 32.5	GRAY SANDSTONE									
		5.5 - 6.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)																						
		6.0 - 7.5	16	30	20	14	20	35	18	17	A-2-6														
		7.5 - 10.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)																						
		10.5 - 23.0	BROWN GRAVEL WITH SAND (A-1-b)																						
		23.0 - 26.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)																						
		26.0 - 28.5	SEVERELY WEATHERED BROWN SANDSTONE																						
		28.5 - 33.5	GRAY SANDSTONE																						

SOIL PROFILE

SCI-823-10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
U.S. 23 RAMP C												U.S. 23 RAMP C													
B-1122A	3904+16.1 35.8 ft. LT	0.0 - 1.3	ASPHALT CONCRETE PAVEMENT, AGGREGATE BASE									VISUAL	B-1125	3910+29.2 9.3 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		1.3 - 4.0	POSSIBLE FILL: BROWNISH GRAY SILTY CLAY (A-6b)									VISUAL			0.3 - 2.0	FILL: BROWN SANDY SILT (A-4a)									VISUAL*
		4.0 - 5.5	1	1	3	46	49	37	16	23	A-6b			2.0 - 4.0	8	14	11	49	18	27	7	16	A-4a		
		5.5 - 6.5	POSSIBLE FILL: BROWNISH GRAY SILTY CLAY (A-6b)									VISUAL			4.0 - 6.0	1	8	9	53	29	30	11	21	A-6a	
		6.5 - 8.0	POSSIBLE FILL: BROWN FINE SAND (A-3)									VISUAL			6.0 - 8.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		8.0 - 11.0	BROWN SILT AND CLAY (A-6a)									VISUAL			8.0 - 15.5	BROWN SILTY CLAY (A-6b)									VISUAL
		11.0 - 12.5	9	20	11	28	32	30	13	16	A-6a			15.5 - 23.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL	
		12.5 - 13.0	0	1	4	57	38	36	15	29	A-6a			23.0 - 25.0	BROWN SANDY SILT (A-4a)									VISUAL	
		13.0 - 13.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			25.0 - 30.0	GRAY SANDSTONE									VISUAL
		13.5 - 15.0	0	0	2	35	63	45	24	27	A-7-6														
		15.0 - 15.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL	B-1126	3913+97.9 22.7 ft. LT	0.0 - 0.9	ASPHALT, AGGREGATE BASE									VISUAL
		15.5 - 16.0	0	1	4	56	40	34	15	26	A-6a			0.9 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL	
		16.0 - 17.0	0	1	10	57	32	29	11	28	A-6a			1.0 - 3.0	0	1	2	62	35	36	16	17	A-6b*		
		17.0 - 18.0	0	0	3	46	51	39	19	27	A-6b			3.0 - 5.0	8	13	10	37	32	31	13	16	A-6a		
		18.0 - 19.0	0	1	18	58	23	23	5	27	A-4b			5.0 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		19.0 - 20.0	0	0	25	54	21	25	8	28	A-4b			8.5 - 10.0	0	1	11	42	46	34	15	22	A-6a		
		20.0 - 22.0	BROWN SILT (A-4b)									VISUAL			10.0 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		22.0 - 26.5	SEVERELY WEATHERED REDDISH BROWN SANDSTONE									VISUAL			10.5 - 11.0	BROWN SILT (A-4b)									VISUAL
		26.5 - 27.4	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			11.0 - 12.5	0	1	15	58	26	26	8	29	A-4b	
														12.5 - 15.5	BROWN SILT (A-4b)									VISUAL	
B-1123	3904+93.1 34.5 ft. RT	0.0 - 1.0	ASPHALT, AGGREGATE BASE									VISUAL			15.5 - 16.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 2.5	25	12	13	34	16	26	8	14	A-4a			16.0 - 17.5	1	2	4	64	29	33	13	27	A-6a		
		2.5 - 3.0	FILL: GRAY SANDY SILT (A-4a)									VISUAL			17.5 - 20.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.0 - 3.5	FILL: BROWN SILT AND CLAY (A-6a)									VISUAL			20.5 - 21.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	7	6	4	45	38	34	15	19	A-6a			21.0 - 22.5	0	12	48	29	11	NP	NP	29	A-4a		
		5.0 - 6.0	FILL: BROWN SILT AND CLAY (A-6a)									VISUAL			22.5 - 23.0	BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 7.5	4	8	8	47	33	32	13	17	A-6a			23.0 - 23.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL	
		7.5 - 13.0	FILL: BROWN SILT AND CLAY (A-6a)									VISUAL			23.5 - 25.0	5	69	20	6	20	NP	NP	19	A-1-b	
		13.0 - 20.5	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL			25.0 - 27.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL
		20.5 - 27.5	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL			27.5 - 32.5	GRAY SANDSTONE									VISUAL
		27.5 - 32.5	GRAY SANDSTONE									VISUAL													
B-1124	3906+44.7 10.0 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL	B-1127	3916+94.6 11.7 ft. LT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 1.0	FILL: GRAY SILT AND CLAY (A-6a)									VISUAL			0.3 - 2.0	8	9	9	45	29	31	10	16	A-4a*	
		1.0 - 2.5	1	5	11	59	24	34	11	34	A-6a			2.0 - 4.0	6	19	20	33	22	24	8	11	A-4a		
		2.5 - 3.0	FILL: GRAY SILT AND CLAY (A-6a)									VISUAL			4.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 3.5	FILL: GRAY CLAY (A-7-6)									VISUAL			6.0 - 8.0	DARK BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 5.0	0	1	8	48	43	42	21	27	A-7-6			8.0 - 10.0	BROWN SILTY CLAY (A-6b)									VISUAL	
		5.0 - 5.5	FILL: GRAY CLAY (A-7-6)									VISUAL													
		5.5 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL	B-1128	3921+02.4 6.9 ft. LT	0.0 - 1.0	ASPHALT, AGGREGATE BASE									VISUAL
		6.0 - 7.5	0	0	7	52	41	40	20	26	A-6b			1.0 - 3.0	8	2	2	55	33	32	11	16	A-6a*		
		7.5 - 10.5	BROWN SILTY CLAY (A-6b)									VISUAL			3.0 - 5.0	41	23	14	17	5	NP	NP	7	A-1-b	
		10.5 - 11.0	BROWN SANDY SILT (A-4a)									VISUAL			5.0 - 7.0	2	5	10	48	35	31	13	17	A-6a	
		11.0 - 12.5	1	1	36	44	18	20	4	28	A-4a			7.0 - 10.0	GRAY SILTY CLAY (A-6b)									VISUAL	
		12.5 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL													
		13.5 - 15.0	27	14	18	30	11	24	5	15	A-4a	B-1129	3925+05.5 0.2 ft. LT	0.0 - 0.8	ASPHALT, AGGREGATE BASE									VISUAL	
		15.0 - 20.0	BROWN SANDY SILT (A-4a)									VISUAL			0.8 - 1.0	BLACK SILT (A-4b)									VISUAL
		20.0 - 25.0	GRAY SANDSTONE									VISUAL			1.0 - 3.0	6	2	5	55	32	31	6	19	A-4b*	
														3.0 - 5.0	17	32	26	17	8	NP	NP	7	A-3a		
														5.0 - 10.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	

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SOIL PROFILE

SCI - 823 - 10.13



SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
U.S. 23 RAMP C												
B-1130	3928+41.7 5.9 ft. LT	0.0 - 0.8	ASPHALT, AGGREGATE BASE									VISUAL
		0.8 - 1.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		1.0 - 2.5	53	19	10	18	10	NP	NP	5	A-1-b*	
		3.0 - 5.0	BROWN SANDY SILT (A-4a)									VISUAL
		5.0 - 7.5	21	18	22	22	17	24	9	14	A-4a	
		7.5 - 10.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
U.S. 23 RAMP D												
B-1147	4913+98.9 1.2 ft. RT	0.0 - 0.4	TOPSOIL									VISUAL
		0.4 - 5.5	FILL: BROWN SANDY SILT (A-4a)									VISUAL
		5.5 - 13.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		13.0 - 15.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		15.5 - 20.5	BROWN SILTY CLAY (A-6b)									VISUAL
		20.5 - 23.0	GRAY SILT (A-4b)									VISUAL
		23.0 - 25.5	GRAY COARSE AND FINE SAND (A-3a)									VISUAL
		25.5 - 28.0	GRAY GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		28.0 - 33.0	GRAY SANDSTONE									VISUAL
B-1148	4918+00.2 1.5 ft. RT	0.0 - 0.3	TOPSOIL									VISUAL
		0.3 - 3.0	FILL: GRAYISH BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.5 - 10.5	BROWN SILTY CLAY (A-6b)									VISUAL
		10.5 - 13.0	BROWN SANDY SILT (A-4a)									VISUAL
		13.0 - 20.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL
		20.0 - 25.0	GRAY SANDSTONE									VISUAL
B-1149	4921+98.8 3.0 ft. LT	0.0 - 0.9	ASPHALT, AGGREGATE BASE									VISUAL
		0.9 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 3.0	1	4	5	50	40	34	15	18	A-6a*	
		3.0 - 5.0	BROWN SANDY SILT (A-4a)									VISUAL
		5.0 - 7.0	20	12	11	34	23	25	8	14	A-4a	
		7.0 - 10.0	BROWN SILT AND CLAY (A-6a)									VISUAL
B-1150	4926+81.3 0.6 ft. RT	0.0 - 0.9	ASPHALT, AGGREGATE BASE									VISUAL
		0.9 - 1.0	DARK GRAY SANDY SILT (A-4a)									VISUAL
		1.0 - 3.0	7	6	8	48	31	30	10	19	A-4a*	
		3.0 - 5.0	0	2	5	57	36	33	14	16	A-6a	
		5.0 - 10.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
B-1151	4929+67.2 3.5 ft. LT	0.0 - 1.0	ASPHALT, AGGREGATE BASE									VISUAL
		1.0 - 3.0	18	23	32	16	11	NP	NP	10	A-3a*	
		3.0 - 5.0	4	5	7	42	42	38	17	21	A-6b	
		5.0 - 10.0	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL

SOIL PROFILE

SCI-823-10.13

47/220



SUMMARY OF SOIL TEST DATA - SHELBY TUBES

Boring Number	Sample Number	Sample Depth (feet)	ODOT Designation	Type of Test																			
				Gradation					Atterberg Limits		Moisture Content %	Consolidated-undrained				Unconsolidated-undrained		Consolidation				Unit Weights pcf	Unconfined Compression Cohesion (psf)
				% AGG	% Sand		% Fines		LL	PI		Cohesion, (psf)		Friction Angle, (degrees)		Cohesion (psf)	Friction Angle (degrees)	Cc	Cr	Pc	E ₀		
					Coarse	Fine	Silt	Clay				Total	Effective	Total	Effective								
B-45	P-1	5.0 - 7.0	A-6b	0	3	20.4	48.7	27.8	29	18	21	-	-	-	-	744	0	0.09	0.01	4640	0.632	-	-
B-45	P-2	8.0 - 10.0	A-2-6	30.2	21	18	17.2	13.6	27	11	14	745	360	6.9	24.5	-	-	-	-	-	-	-	-
B-46	P-1	5.0 - 7.0	A-6b	0	1.9	4.4	52.7	41	36	18	22	-	-	-	-	-	-	0.24	0.04	4624	0.692	-	-
B-46	P-2	8.0 - 10.0	A-6a	22.7	19	12.4	27.9	17.9	32	15	17	128	0	23.8	35.8	-	-	-	-	-	-	-	-
B-47	P-1	4.0 - 6.0	A-4b	0	0.3	3.9	69.1	26.7	26	7	20	-	-	-	-	1119	0	-	-	-	-	-	-
B-47	P-2	6.0 - 8.0	A-4b	0	0.8	14.2	63.3	21.7	23	6	19	-	-	-	-	1808	0	-	-	-	-	-	-
B-54	ST-1	6.0 - 8.0	A-6a	0.1	1.3	9.1	59.9	29.6	36	15	21	-	-	-	-	-	-	0.17	0.03	4131	0.629	127.8	487
B-54	ST-2	10.0 - 12.0	A-4a	9.1	9.9	8.7	44.7	27.4	27	9	20	-	-	-	-	-	-	-	-	-	-	127.6	267
B-54	ST-3	15.0 - 17.0	A-4b	4.1	4.8	6.6	58	26.4	25	7	26	168	151	17.2	31.7	-	-	-	-	-	-	-	-
B-1105A	ST-1	4.0 - 6.0	A-6a	1.3	2.8	21.8	43.3	30.8	27	11	16	-	-	-	-	-	-	-	-	-	-	-	-
B-1105A	ST-2	8.0 - 10.0	A-4b	1.8	3.2	6	57	32	28	10	25	0	0	22.4	34.9	346	0	-	-	-	-	-	-
B-1105A	ST-3	12.0 - 14.0	A-6a	0	2.3	4.6	58	35.1	30	11	23	-	-	-	-	698	0	-	-	-	-	-	-
B-1105A	ST-4	16.0 - 18.0	A-6b	0	0.7	2.4	42.1	54.8	38	17	24	91	0	20.4	36.8	-	-	-	-	-	-	-	-
B-1108	P-1	10.0 - 12.0	A-6b	0.2	0.9	2.9	58.4	37.5	36	15	15	-	-	-	-	-	-	0.17	0.03	2995	0.639	126.5	1309
B-1108	P-2	14.0 - 16.0	A-6b	2.2	4.2	9	48.2	36.5	38	19	28	-	-	-	-	448	0	-	-	-	-	-	-
B-1108	P-3	18.0 - 20.0	A-6b	1.1	3.8	4.6	51.4	39.1	38	19	24	0	0	22.2	37.4	-	-	0.21	0.05	1.35	0.734	-	-
B-1109A	ST-2	8.0 - 10.0	A-7-6	0.1	0.9	2.6	20	76.4	57	33	31	-	-	-	-	489	0	0.15	0.05	2988	0.883	-	-
B-1122A	ST-1	12.0 - 14.0	A-6a	0	0.8	3.7	57.4	37.9	36	15	34	-	-	-	-	-	-	0.37	0.07	3037	1.108	111.1	418
B-1122A	ST-1	12.0 - 14.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119	523
B-1122A	ST-2	15.0 - 17.0	A-6a	0	0.7	3.6	55.9	39.8	34	15	26	359	327	15.1	31.1	-	-	-	-	-	-	-	-
B-1133A	ST-1	18.0 - 20.0	A-4b	0.3	1.6	22.4	52.3	23.5	25	8	27	-	-	-	-	153	0	-	-	-	-	-	-
B-1133A	ST-2	20.0 - 22.0	A-7-6	0	0.4	1.8	66.8	31	41	14	41	329	0	14.2	35.6	-	-	0.43	0.08	3735	1.108	-	-
B-1133A	ST-3	22.0 - 24.0	A-4b	0.2	0.4	10.5	62.7	26.3	28	7	38	-	-	-	-	161	0	-	-	-	-	-	-
B-1136A	ST-1	6.0 - 8.0	A-4b	0	0.1	2.4	69.9	27.6	31	10	25	-	-	-	-	531	0	0.23	0.05	3401	0.752	-	-
B-1136A	ST-2	8.0 - 10.0	-	-	-	-	-	-	42	23	-	385	0	16.3	35.2	-	-	-	-	-	-	-	-
B-1138A	ST-2	8.0 - 10.0	A-6b	0.2	0.4	2.8	52.7	43.9	38	18	25	-	-	-	-	-	-	0.25	0.05	4756	0.721	-	-

SOIL PROFILE

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SOIL PROFILE
S.R. 823 STA. 537+50 TO STA. 562+00

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BEGIN PHASE II
STA. 537+50

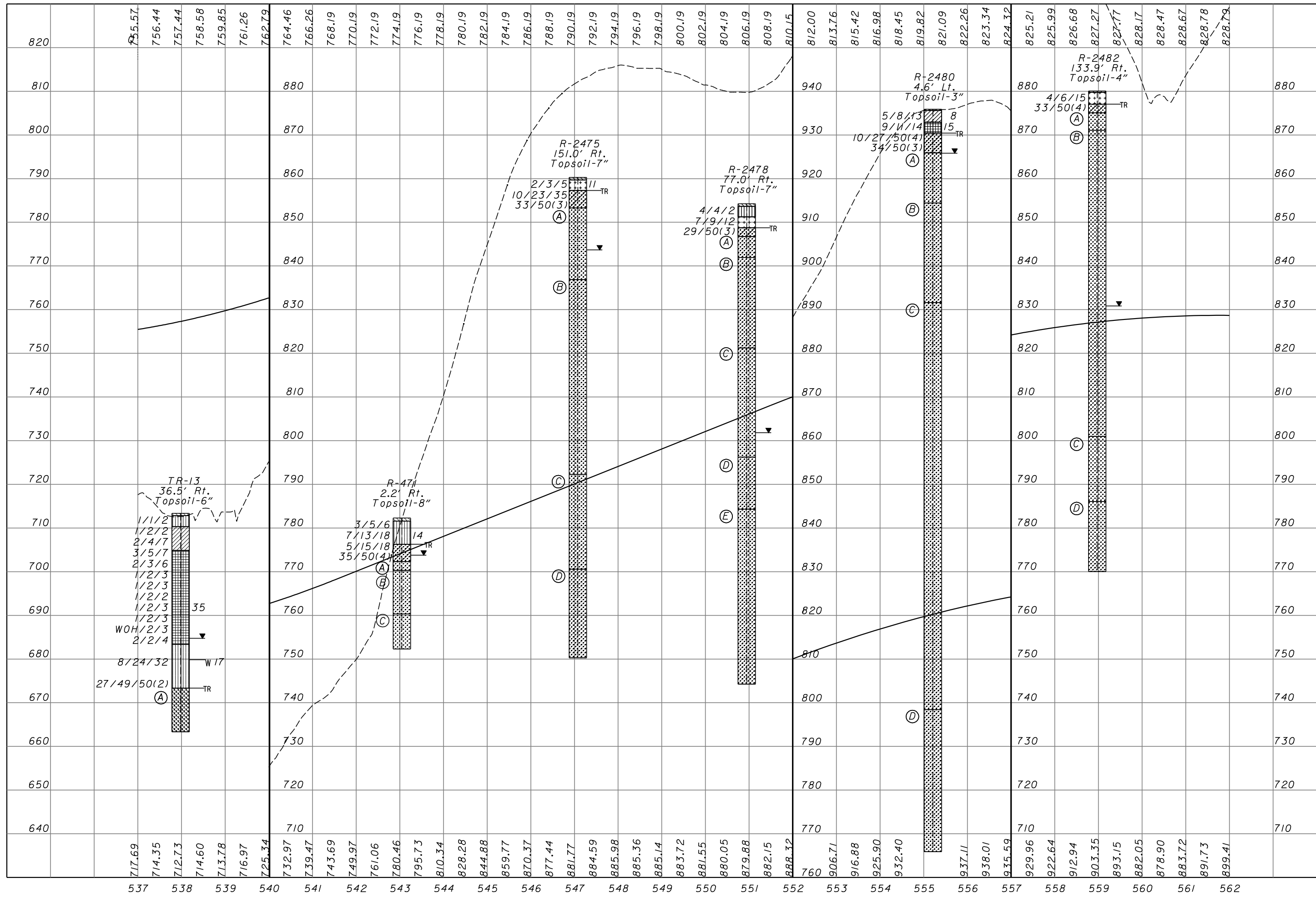
CROSS SECTION INDEX

STATION	SHEET
541+00	94
547+50	95
551+00	96
559+00	97

NOTE: BORINGS TR-11, TR-12, TR-13 AND TR-14
SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

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SOIL PROFILE
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TR-13

R-1 Core Loss = 49%, RQD = 25%

(A) Medium hard gray SILTSTONE; fissile.

R-471

R-1 No Core Loss, RQD = 42%

(A) Medium hard brown SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, broken to highly fractured.

R-2 No Core Loss, RQD = 65%

(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, laminated to thickly bedded, highly fractured; contains few to moderate argillaceous laminations.

R-3 No Core Loss, RQD = 90%

(C) Medium hard gray SANDSTONE; fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, slightly fractured; contains few argillaceous laminations.

R-2475

R-1 Core Loss = 6%, RQD = 70%

(A) Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, arenaceous, argillaceous, medium bedded to thickly bedded, moderately to highly fractured, abundant iron staining.

R-2 No Core Loss, RQD = 90%

(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 93%

R-6 No Core Loss, RQD = 92%

R-7 No Core Loss, RQD = 88%

(C) Medium hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, pyritic, argillaceous, micaceous, laminated to thinly bedded, slightly fractured, contains few to moderate argillaceous laminations.

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 99%

(D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-2478

R-1 No Core Loss, RQD = 68%

(A) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, highly fractured.

(B) Medium hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, micaceous, argillaceous, massive, slightly fractured.

R-2 No Core Loss, RQD = 100%

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

(C) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured, few argillaceous laminae.

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 95%

(D) Medium hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, calcareous.

R-7 No Core Loss, RQD = 100%

(E) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, laminated to massive, unfractured to slightly fractured.

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-2480

R-1 No Core Loss, RQD = 81%

(A) Soft to medium hard brown and gray SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, thickly bedded, moderately fractured to broken, fracture infillings are in micaceous subsurface, iron staining.

R-2 No Core Loss, RQD = 65%

(B) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded, moderately to highly fractured, contains few to abundant argillaceous laminations.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 97%

(C) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded to massive, unfractured to slightly fractured.

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 98%

R-13 No Core Loss, RQD = 100%

(D) Medium hard gray SANDSTONE; very fine grained, slightly weathered, argillaceous, pyritic, micaceous, thickly bedded to massive, unfractured to slightly fractured, contains fine grained sandstone beds.

R-14 No Core Loss, RQD = 100%

R-15 No Core Loss, RQD = 100%

R-16 No Core Loss, RQD = 100%

R-17 No Core Loss, RQD = 100%

R-2482

R-1 No Core Loss, RQD = 78%

(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, highly fractured to broken.

(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, micaceous, argillaceous, massive, slightly fractured.

R-2 No Core Loss, RQD = 100%

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

(C) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, pyritic, argillaceous, laminated to thinly bedded, slightly fractured, contains moderate to abundant argillaceous laminations.

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

(D) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, unfractured to slightly fractured.

R-11 No Core Loss, RQD = 100%

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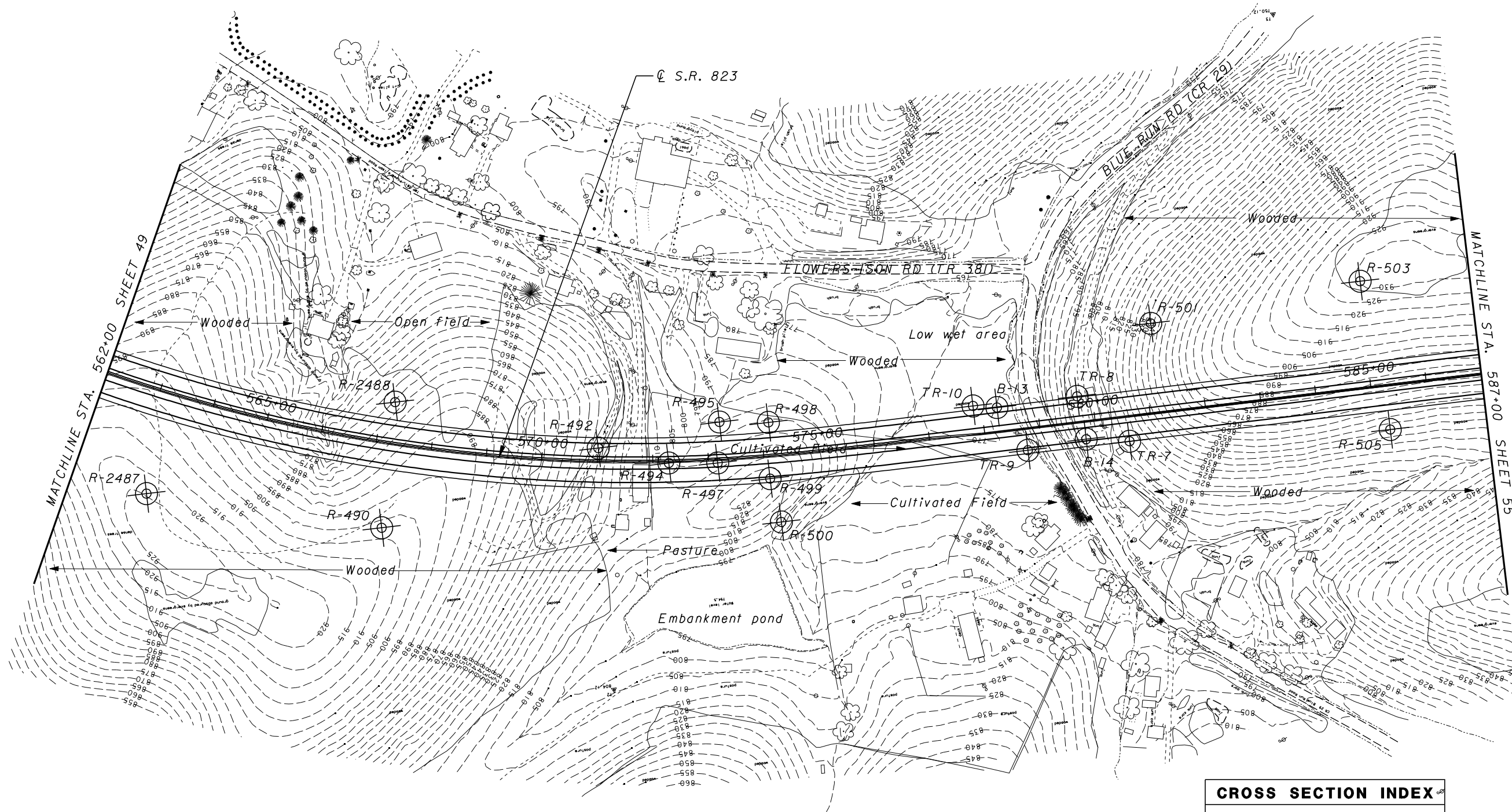
SOIL PROFILE
S.R. 823 STA. 537+00 TO STA. 562+00

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CROSS SECTION INDEX	
STATION	SHEET
567+50	98
573+00	99
574+00	100
585+00	101

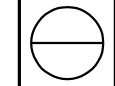
NOTE: BORINGS B-13, B-14, TR-7, TR-8, TR-9, AND TR-10 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.



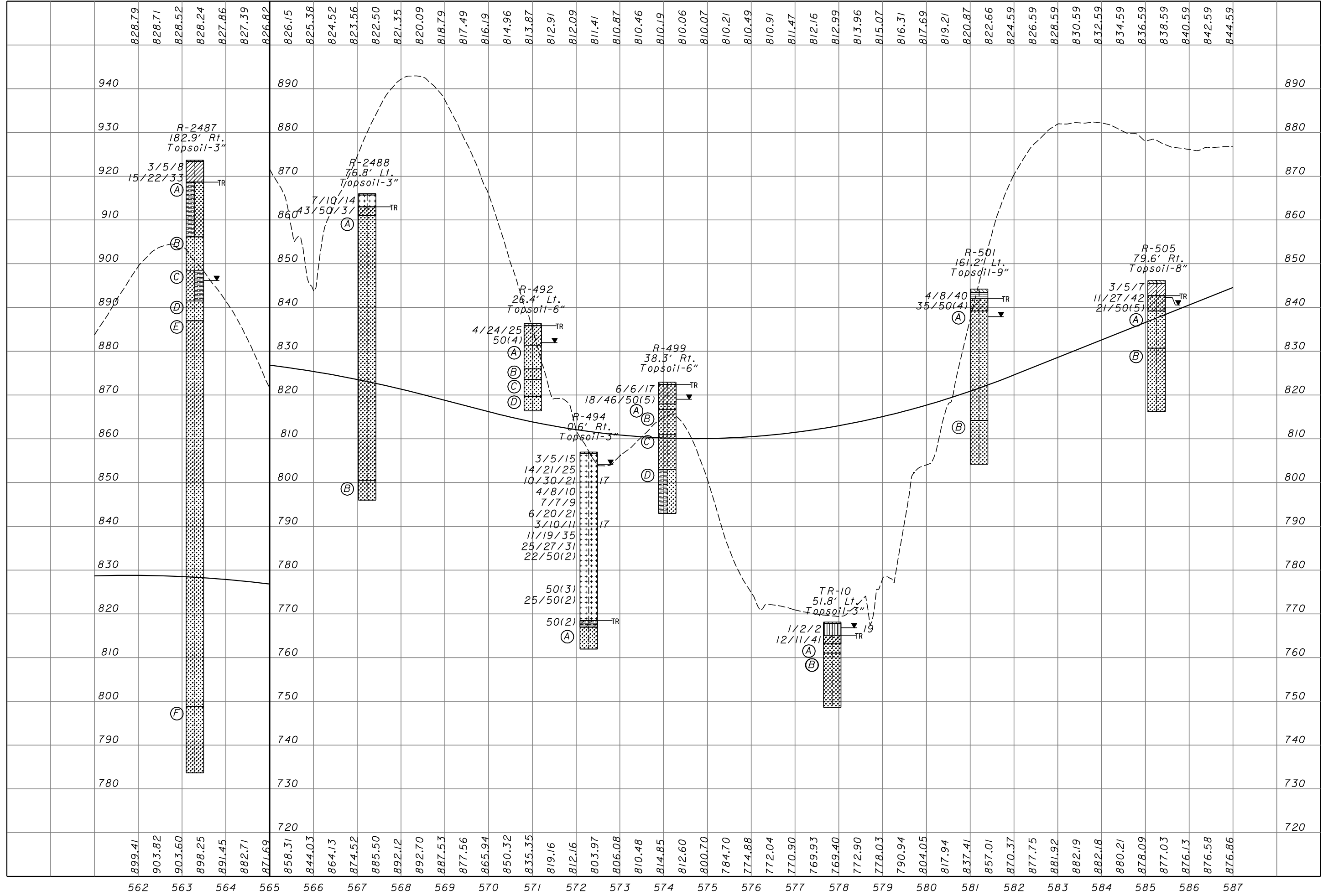
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R-492

- R-1 No Core Loss, RQD = 75%
- (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, decomposed to highly weathered, argillaceous, micaceous, thickly bedded, moderately to highly fractured.
 - (B) Hard brownish gray SANDSTONE; fine grained, slightly weathered, argillaceous, micaceous, pyritic, thickly bedded, slightly fractured.
- R-1 No Core Loss, RQD = 59%
- (C) Medium hard brown SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, thickly bedded, slightly fractured.
 - (D) Medium hard gray SANDSTONE; fine grained, highly to moderately weathered, argillaceous, micaceous, thickly bedded, highly to moderately fractured; contains few argillaceous laminations.

R-494

- R-1 No Core Loss, RQD = 100%
- (A) Medium hard dark gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, slightly fractured, contains few to moderate argillaceous laminations.

R-2488

- R-1 No Core Loss, RQD = 86%
- (A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, thickly bedded to massive, moderately to highly fractured.
- R-2 No Core Loss, RQD = 97%
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 89%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 95%
- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, pyritic, laminated to medium bedded, slightly fractured, contains few to moderate argillaceous laminations; fissile after desiccation in argillaceous zones.

R-499

- R-1 No Core Loss, RQD = 62%
- (A) Medium hard light gray/orange SANDSTONE; fine grained, highly weathered to decomposed, slightly fractured.
 - (B) Medium hard light brown SANDSTONE; very fine to fine grained, slightly to highly weathered to decomposed, argillaceous, micaceous, thinly bedded to thickly bedded, moderately fractured to broken.
- R-2 Core Loss = 77%, RQD = 6%
- (C) Very soft to medium hard brownish yellow SANDSTONE; fine grained, decomposed, broken, argillaceous, micaceous.
- R-3 Core Loss = 25%, RQD = 75%
- (D) Medium hard dark gray SANDSTONE interbedded with SHALE; fine grained, moderately to highly weathered, argillaceous, micaceous, laminated, slightly to moderately fractured.

R-501

- R-1 No Core Loss, RQD = 88%
- (A) Medium hard brownish gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, highly to moderately fractured, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 100%
- R-3 No Core Loss, RQD = 76%
- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, pyritic, micaceous, moderately fractured; contains few to moderate argillaceous laminations.
- R-4 No Core Loss, RQD = 78%

TR-10

- R-1 No Core Loss, RQD = 33%
- (A) Medium hard light brown SANDSTONE; highly weathered, thickly bedded, broken, contains high angle healed fractures.
 - (B) Medium hard to hard gray SANDSTONE; slightly to moderately weathered, micaceous, argillaceous, massive, moderately to slightly fractured.
- R-2 No Core Loss, RQD = 87%

R-505

- R-1 No Core Loss, RQD = 63%
- (A) Medium hard brown SANDSTONE; fine grained, slightly to moderately weathered, argillaceous, micaceous, thickly bedded, slightly to moderately fractured.
- R-2 No Core Loss, RQD = 95%
- (B) Medium hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, argillaceous, micaceous, thickly bedded, slightly fractured, contains few argillaceous laminations.
- R-3 No Core Loss, RQD = 85%

R-2487

- R-1 No Core Loss, RQD = 89%
- (A) Medium hard brown SANDSTONE interbedded with SHALE; fine grained, highly weathered to decomposed, thinly to medium bedded, highly fractured.
- R-2 No Core Loss, RQD = 86%
- (B) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, laminated to medium bedded, moderately fractured, contains few argillaceous laminations.
- R-3 No Core Loss, RQD = 93%
- (C) Soft to medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, moderately to highly weathered.
 - (D) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, slightly fractured.
- R-4 No Core Loss, RQD = 100%
- (E) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- (F) Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered to moderately weathered, argillaceous, pyritic, micaceous, slightly fractured, contains few to moderate argillaceous laminations.
- R-13 No Core Loss, RQD = 98%
- R-14 No Core Loss, RQD = 100%

SOIL PROFILE
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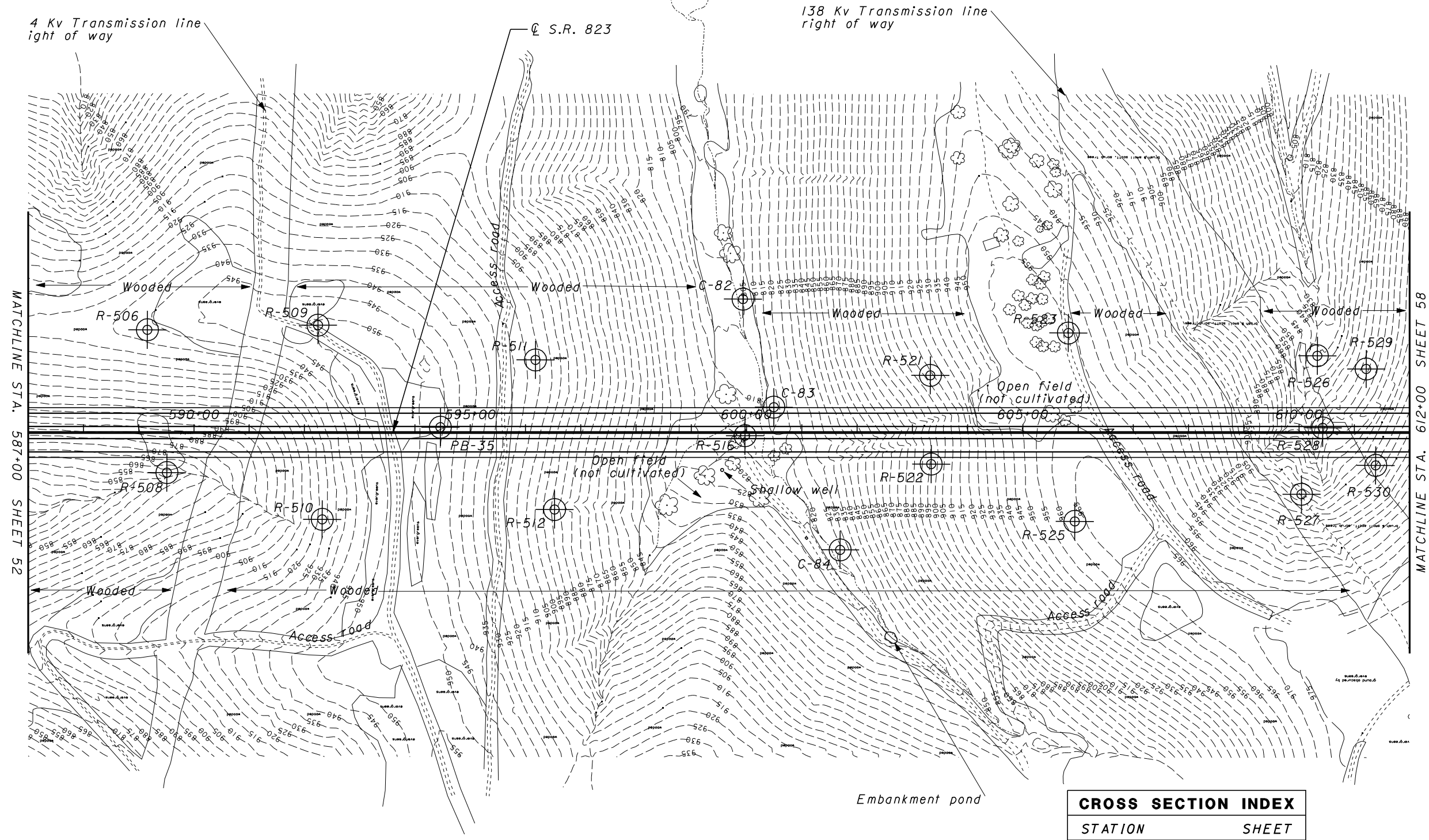
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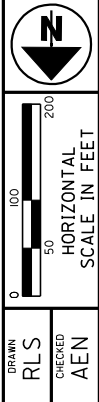


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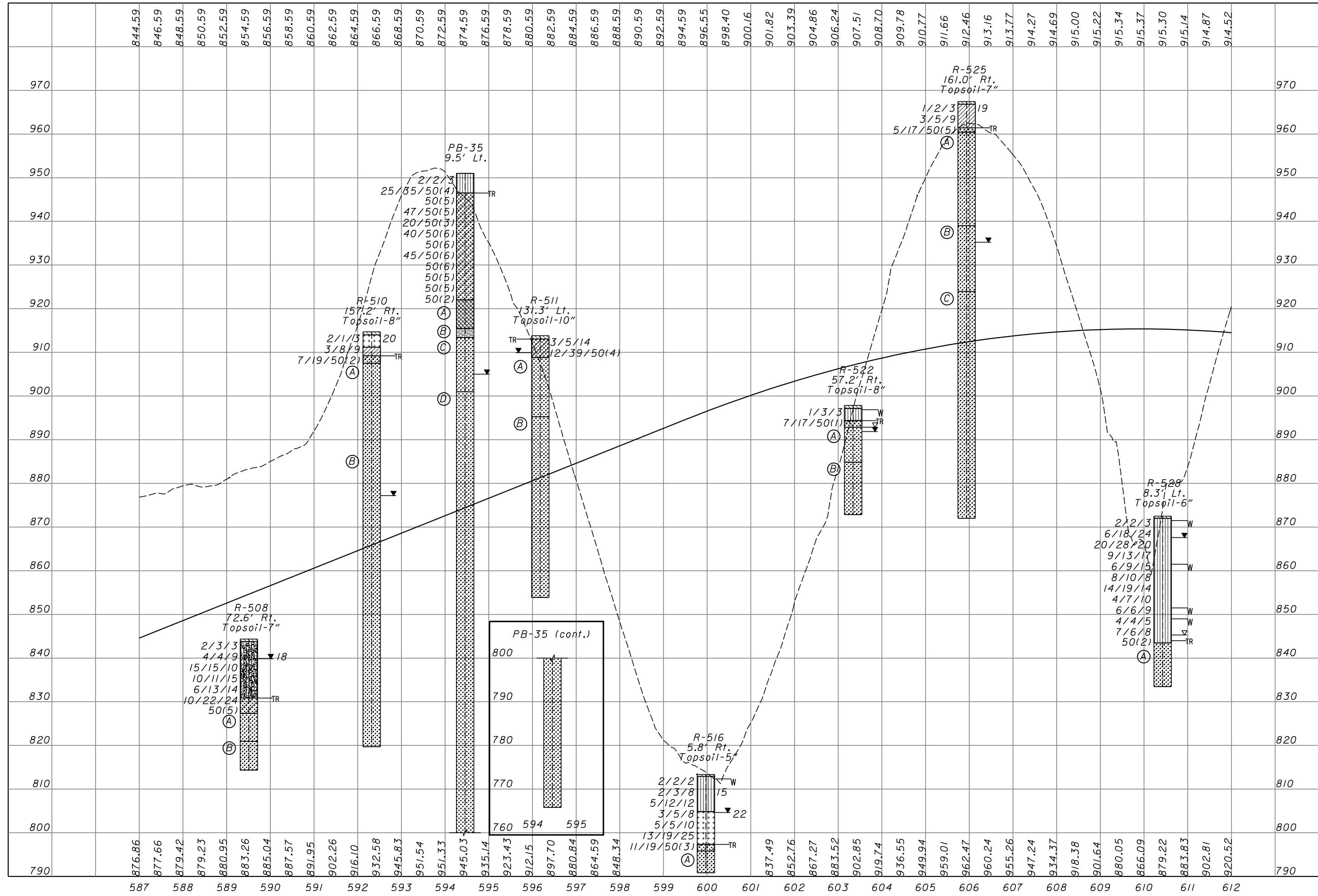


CROSS SECTION INDEX	
STATION	SHEET
589+50	102
592+50	103
596+50	104
600+00	105
603+50	106
606+00	107
610+50	108
611+50	109



SOIL PROFILE
 S.R. 823 STA. 587+00 TO STA. 612+00

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R-508

- R-1 No Core Loss, RQD = 85%
 - (A) Medium hard grayish brown SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, slightly fractured, iron staining in fractures.
- R-2 No Core Loss, RQD = 100%
 - (B) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, slightly fractured.

R-510

- R-1 No Core Loss, RQD = 89%
 - (A) Medium hard brown SANDSTONE; very fine to fine grained, highly to moderately weathered, micaceous, argillaceous, moderately to slightly fractured.
- R-2 Core Loss = 3%, RQD = 93%
- R-3 Core Loss = 2%, RQD = 98%
 - (B) Hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, micaceous, argillaceous, massively bedded, slightly fractured to unfractured.
- R-4 No Core Loss, RQD = 100%
- R-5 Core Loss = 3%, RQD = 97%
- R-6 Core Loss = 3%, RQD = 97%
- R-7 No Core Loss, RQD = 100%
- R-8 Core Loss = 3%, RQD = 97%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%

R-511

- R-1 No Core Loss, RQD = 73%
 - (A) Medium hard brownish gray SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, highly to moderately fractured, iron staining in some fractures, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 86%
 - (B) Medium hard gray SANDSTONE ; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly to massively bedded, slightly fractured to unfractured.
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 97%

R-516

- R-1 Core Loss = 5%, RQD = 88%
 - (A) Medium hard dark gray SANDSTONE, very fine grained, highly to moderately weathered, micaceous, very thinly bedded, moderately fractured; contains moderate argillaceous laminations.

R-522

- R-1 Core Loss = 5%, RQD = 56%
 - (A) Medium hard to hard brown SANDSTONE; fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded to massive, moderately fractured, iron staining in fractures.
 - (B) Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-2 No Core Loss, RQD = 100%

R-528

- R-1 Core Loss = 4%, RQD = 94%
 - (A) Medium hard gray to dark gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, slightly fractured.

R-525

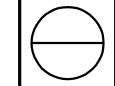
- R-1 No Core Loss, RQD = 77%
 - (A) Very soft rusty orange to yellowish light gray SANDSTONE, very fine to fine grained, argillaceous, highly fractured to broken, thin to medium bedded, highly weathered to decomposed, contains few to moderate argillaceous laminations, contains iron stone.
- R-2 Core Loss = 33%, RQD = 13%
- R-3 No Core Loss, RQD = 77%
- R-4 No Core Loss, RQD = 63%
 - (B) Medium hard gray SANDSTONE; very fine to fine grained, argillaceous, laminated to thin bedded, moderately to highly fractured, moderately to highly weathered, contains moderate argillaceous laminations, contains several ferric/ironstone bands.
- R-5 No Core Loss, RQD = 83%
- R-6 Core Loss = 1%, RQD = 83%
 - (C) Hard gray SANDSTONE; very fine to fine grained, argillaceous, micaceous, pyritic, moderately to slightly weathered, slightly fractured to unfractured, massive.
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%

PB-35

- R-1 Core Loss = 8%, RQD = 92%
 - (A) Medium hard gray SILTSTONE. moderately to severely weathered, micaceous, thinly bedded to laminated, slightly pyritic.
- R-2 No Core Loss, RQD = 98%
 - (B) Soft to medium hard gray SHALE; moderately weathered, thinly bedded.
 - (C) Medium hard brown SANDSTONE; fine grained, moderately weathered, micaceous, thinly to thickly bedded.
- R-3 Core Loss = 3%, RQD = 97%
- R-4 No Core Loss, RQD = 98%
 - (D) Medium hard brown and gray SANDSTONE; fine grained, slightly to moderately weathered, micaceous, thinly to thickly bedded.
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 Core Loss = 2%, RQD = 98%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 95%
- R-13 No Core Loss, RQD = 99%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%
- R-16 Core Loss = 4%, RQD = 96%
- R-17 No Core Loss, RQD = 100%

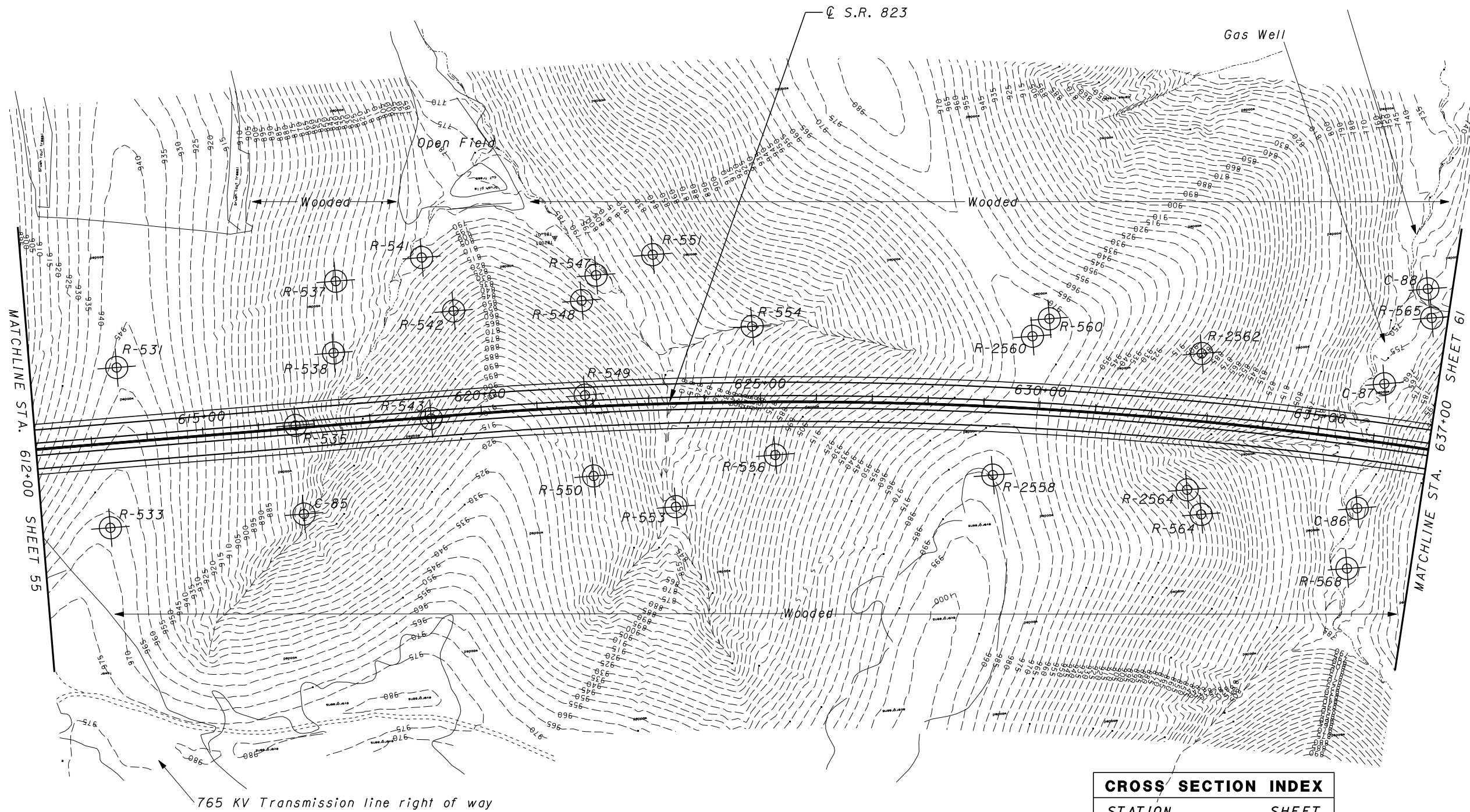
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S.R. 823 STA. 587+00 TO STA. 612+00

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CROSS SECTION INDEX	
STATION	SHEET
613+50	110
617+00	111
619+00	112
622+00	113
623+50	114
625+00	115
629+50	116
633+00	117
636+00	118



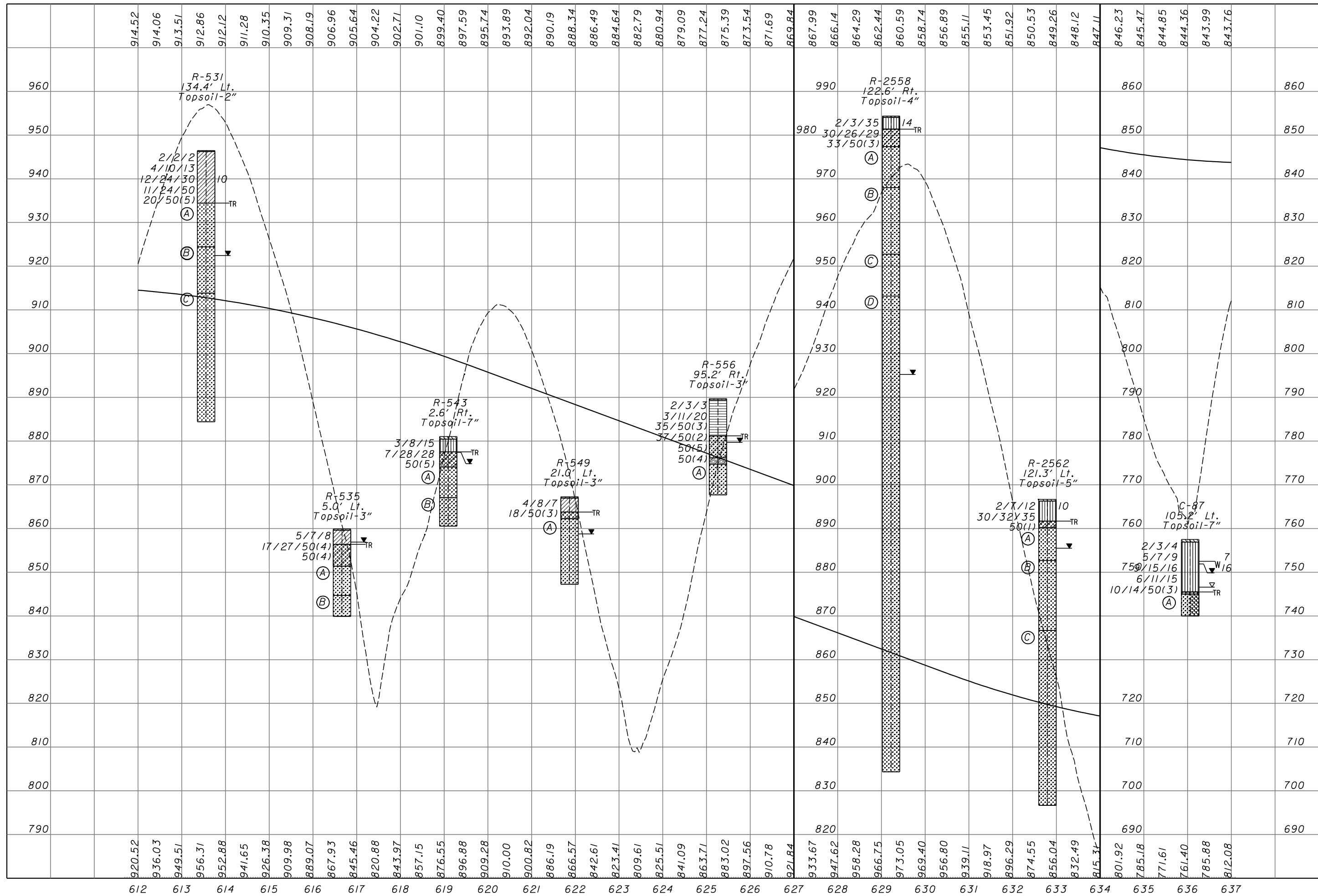
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SOIL PROFILE
S.R. 823 STA. 612+00 TO STA. 637+00

SCI-823-10.13



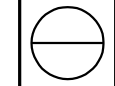
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SOIL PROFILE
S.R. 823 STA. 612+00 TO STA. 637+00

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R-531

- R-1 Core Loss = 4%, RQD = 45%
 - (A) Medium hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, medium to thickly bedded, moderately fractured, iron stained fractures, contains few argillaceous laminae.
- R-2 Core Loss = 2%, RQD = 95%
 - (B) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, thickly bedded, slightly fractured.
- R-3 No Core Loss, RQD = 98%
 - (C) Hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, argillaceous, micaceous, pyritic, massive bedding, slightly fractured to unfractured, contains few argillaceous laminations.
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%

R-549

- R-1 Core Loss = 2%, RQD = 80%
 - (A) Medium hard to hard brownish gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, thinly bedded to thickly bedded, slightly to moderately fractured.
- R-2 No Core Loss, RQD = 87%

R-2562

- R-1 No Core Loss, RQD = 76%
 - (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, massive, highly fractured.
 - (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, slightly fractured.
- R-2 No Core Loss, RQD = 100%
- R-3 No Core Loss, RQD = 97%
 - (C) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, unfractured to slightly fractured.
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%

R-535

- R-1 No Core Loss, RQD = 88%
 - (A) Hard brown SANDSTONE; fine grained, highly weathered, argillaceous, pyritic, micaceous, thickly bedded, slightly to moderately fractured.
 - (B) Medium hard to hard gray SANDSTONE; fine grained, slightly to moderately weathered, argillaceous, pyritic, micaceous, medium bedded, slightly fractured.
- R-2 Core Loss = 11%, RQD = 89%

R-556

- R-1 Core Loss = 4%, RQD = 68%
 - (A) Medium hard grayish brown SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, medium to thickly bedded, slightly to moderately fractured.

R-2558

- R-1 No Core Loss, RQD = 93%
 - (A) Soft to medium hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, thinly bedded to massive, moderately to highly fractured.
- R-2 No Core Loss, RQD = 71%
 - (B) Medium hard grayish brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, laminated to medium bedded, highly fractured.
- R-3 No Core Loss, RQD = 88%
 - (C) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, laminated to medium bedded, slightly fractured, contains moderate to abundant argillaceous laminations.
- R-4 No Core Loss, RQD = 98%
 - (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%

R-543

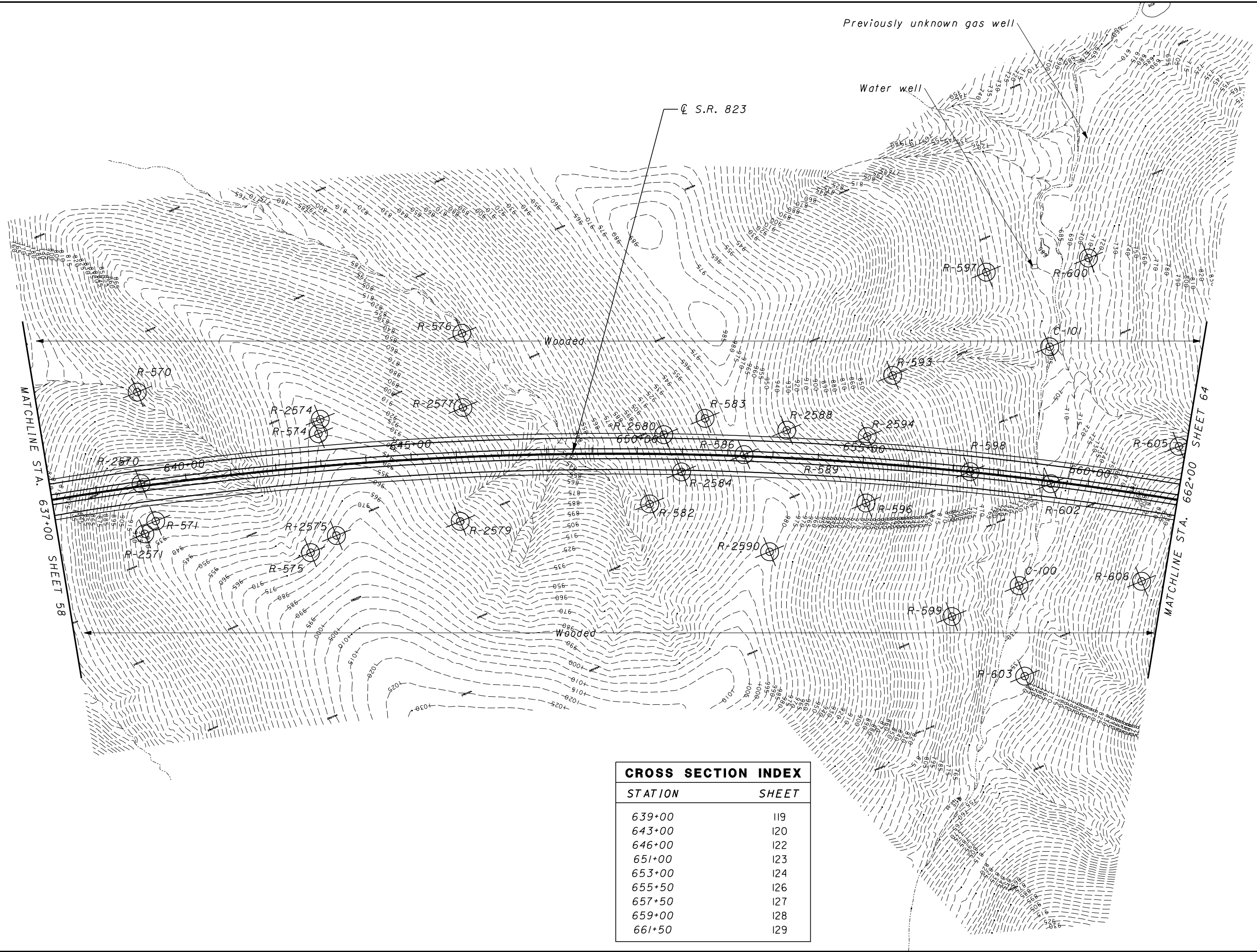
- R-1 No Core Loss, RQD = 51%
 - (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, pyritic, medium bedded to thickly bedded, highly fractured.
- R-2 No Core Loss, RQD = 87%
 - (B) Medium hard dark gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, moderately fractured, iron stained fractures.

C-87

- R-1 No Core Loss, RQD = 83%
 - (A) Hard gray SILTSTONE interbedded with SANDSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, laminated to very thinly bedded, slightly fractured.

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CROSS SECTION INDEX	
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646+00	122
651+00	123
653+00	124
655+50	126
657+50	127
659+00	128
661+50	129



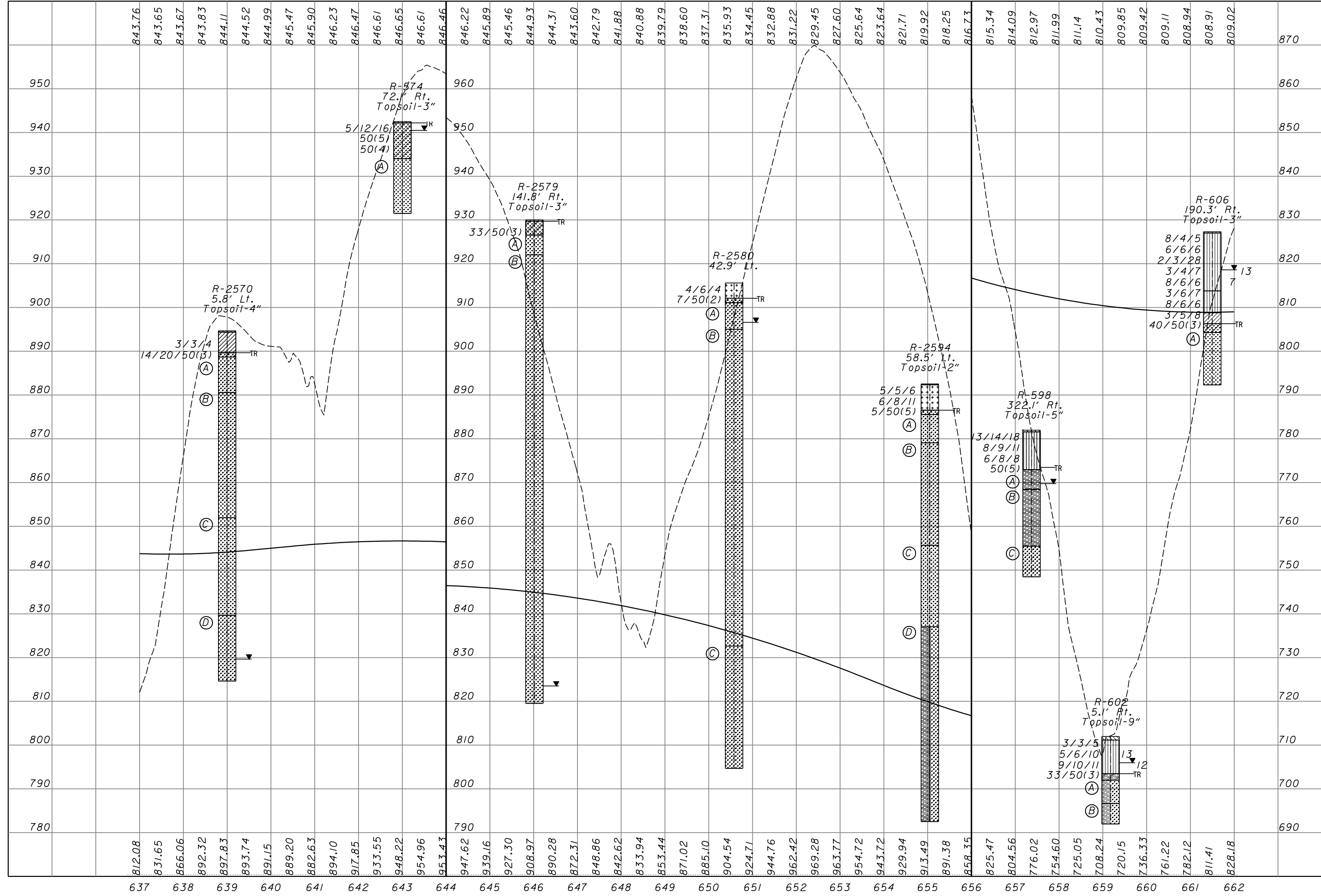
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SOIL PROFILE
S.R. 823 STA. 637+00 TO STA. 662+00

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SOIL PROFILE
S.R. 823 STA. 637+00 TO STA. 662+00

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R-2570

- R-1 No Core Loss, RQD = 51%
- (A) Medium hard light brown SANDSTONE; fine grained, highly weathered, micaceous, thickly bedded, argillaceous, highly fractured to broken, clay infilled seams.
- (B) Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, massive, moderately fractured.
- R-2 Core Loss = 1%, RQD = 86%
- R-3 No Core Loss, RQD = 98%
- R-4 No Core Loss, RQD = 100%
- (C) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, slightly pyritic, massive, slightly fractured.
- R-5 No Core Loss, RQD = 100%
- R-6 Core Loss = 3%, RQD = 95%
- R-7 Core Loss = 17%, RQD = 87%
- (D) Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, laminated to thinly bedded, moderately fractured.
- R-8 No Core Loss, RQD = 100%

R-574

- R-1 No Core Loss, RQD = 100%
- (A) Hard brown SANDSTONE, fine grained, slightly weathered, argillaceous, micaceous, massively bedded, slightly to moderately fractured, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 93%

R-602

- R-1 No Core Loss, RQD = 68%
- (A) Soft gray SHALE interbedded with medium hard gray SANDSTONE; very fine grained, moderately to highly weathered, micaceous, pyritic, thinly laminated, moderately fractured.
- (B) Medium hard to hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thinly bedded, slightly fractured.

R-2579

- R-1 No Core Loss, RQD = 52%
- (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded to massive, highly fractured.
- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, slightly fractured.
- R-2 No Core Loss, RQD = 100%
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 98%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%

R-2594

- R-1 Core Loss = 1%, RQD = 74%
- (A) Hard brown and gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, laminated to massive, highly fractured, contains moderate to abundant argillaceous laminations.
- (B) Very hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, calcareous, massive, slightly fractured, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 100%
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 100%
- (C) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, massive, unfractured to slightly fractured.
- R-5 No Core Loss, RQD = 94%
- R-6 No Core Loss, RQD = 98%
- (D) Very hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, slightly to moderately weathered, calcareous, laminated to thickly bedded, slightly to moderately fractured.
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%

R-598

- R-1 No Core Loss, RQD = 47%
- (A) Soft brown SHALE; very fine grained, decomposed weathered, highly fractured.
- (B) Medium hard gray SHALE interbedded with gray fine grained SANDSTONE; very fine to fine grained, decomposed to highly weathered, micaceous, laminated to thinly bedded, highly fractured.
- R-2 No Core Loss, RQD = 66%
- (C) Hard gray SANDSTONE; fine grained, highly to moderately weathered, argillaceous, micaceous, laminated to thickly bedded, slightly fractured.
- R-3 No Core Loss, RQD = 94%

R-2580

- R-1 No Core Loss, RQD = 80%
- (A) Very hard brown SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, massive, moderately fractured.
- (B) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-2 No Core Loss, RQD = 80%
- R-3 No Core Loss, RQD = 80%
- R-4 No Core Loss, RQD = 80%
- R-5 No Core Loss, RQD = 80%
- R-6 No Core Loss, RQD = 80%
- R-7 No Core Loss, RQD = 80%
- R-8 No Core Loss, RQD = 80%
- (C) Hard light and dark gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, calcareous, laminated to medium bedded, slightly fractured, contains abundant argillaceous laminations.
- R-9 No Core Loss, RQD = 80%
- R-10 No Core Loss, RQD = 80%
- R-11 No Core Loss, RQD = 80%

R-606

- R-1 No Core Loss, RQD = 60%
- (A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, laminated to thickly bedded, moderately fractured, contains few to moderate argillaceous laminations.
- R-2 Core Loss = 22%, RQD = 63%

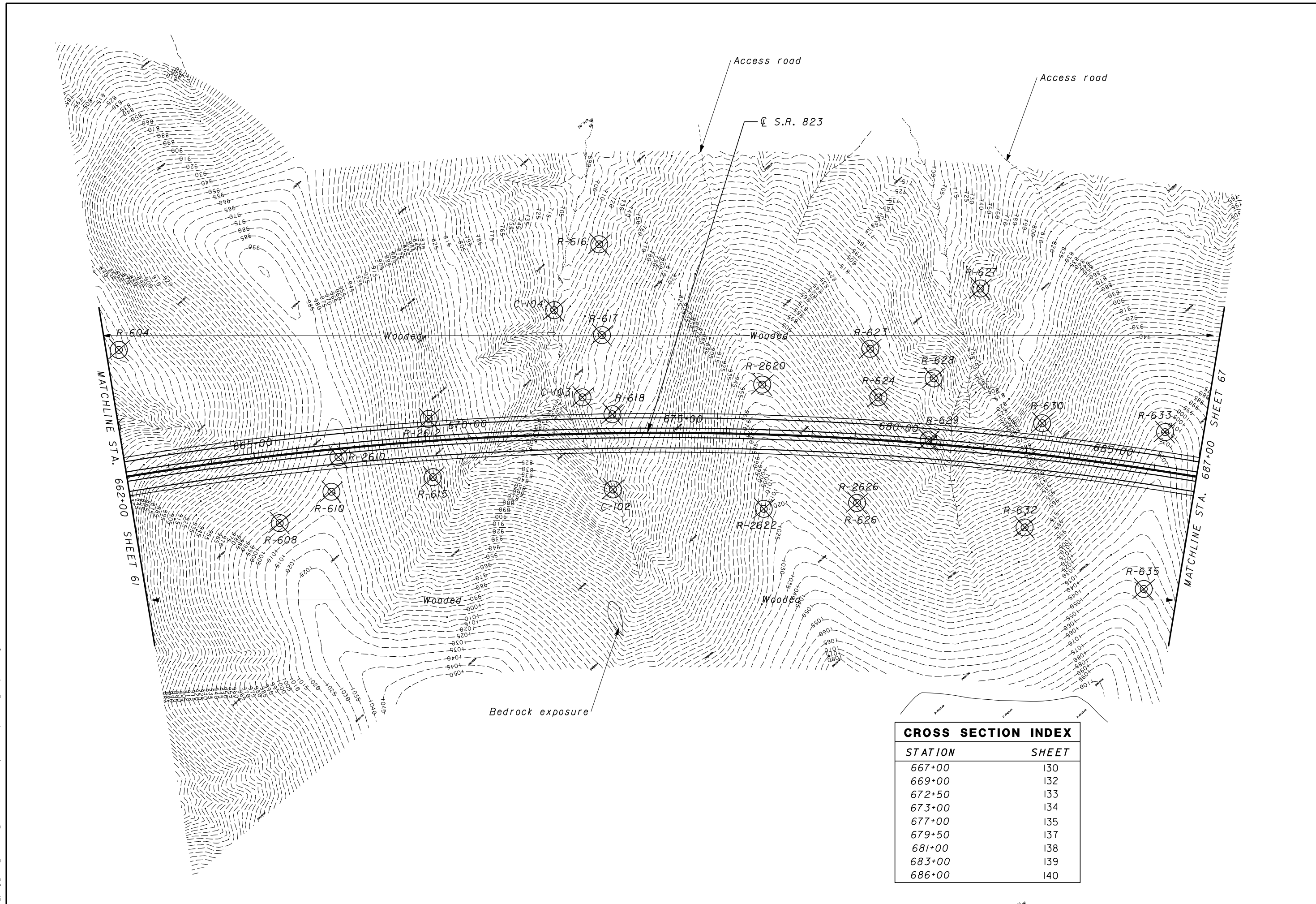
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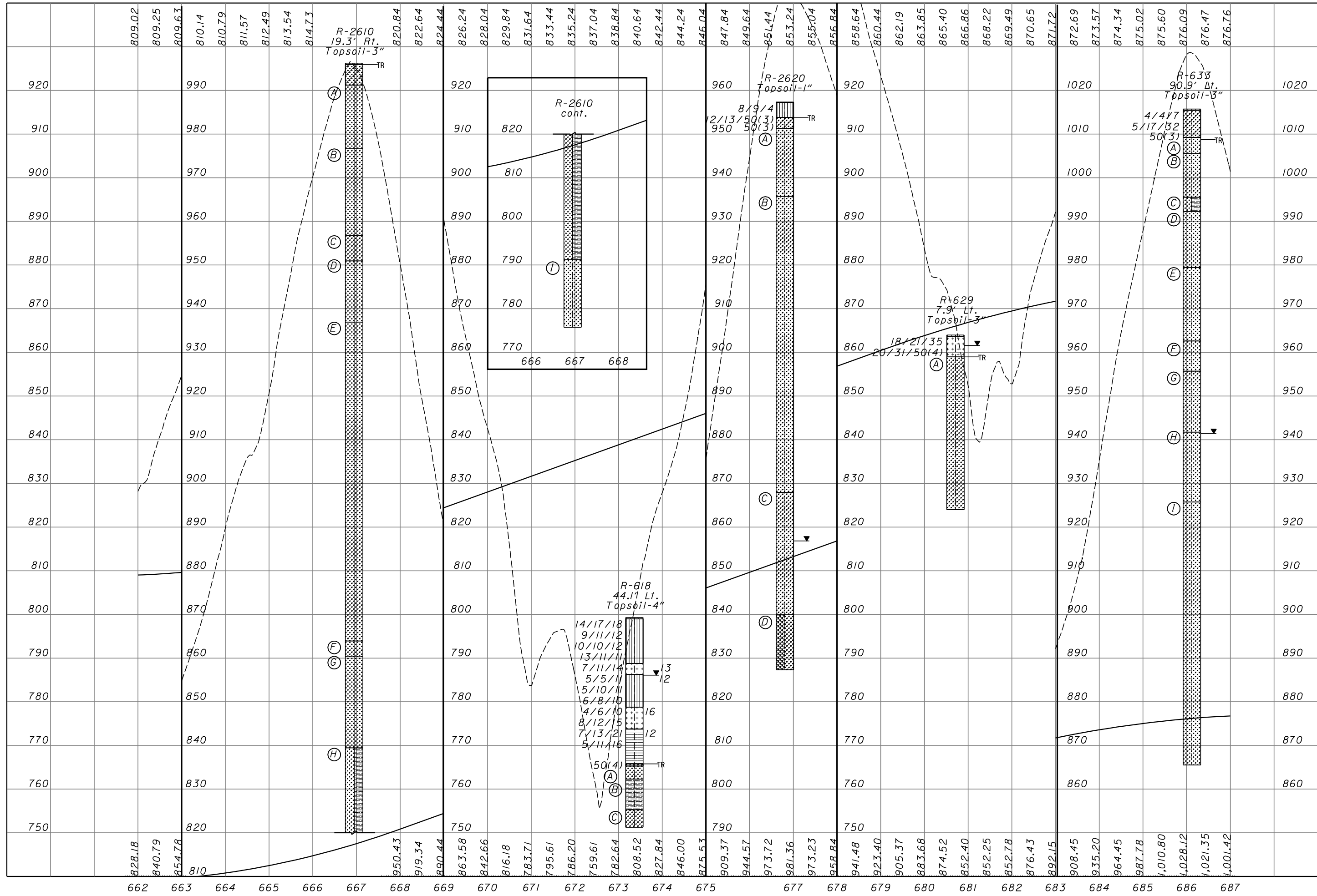


CROSS SECTION INDEX	
STATION	SHEET
667+00	130
669+00	132
672+50	133
673+00	134
677+00	135
679+50	137
681+00	138
683+00	139
686+00	140



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SOIL PROFILE
S.R. 823 STA. 662+00 TO STA. 687+00

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R-2610

R-1 Core Loss = 2%, RQD = 92%

- (A) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, carbonaceous, micaceous, massively bedded, moderately fractured, contains moderate argillaceous laminations.

R-2 Core Loss = 1%, RQD = 93%

- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, laminated to thickly bedded, moderately fractured, contains moderate argillaceous laminations.

R-3 Core Loss = 3%, RQD = 95%

R-4 No Core Loss, RQD = 98%

- (C) Hard to very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.

R-5 No Core Loss, RQD = 93%

- (D) Very hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, calcareous, massive, slightly fractured.

R-6 No Core Loss, RQD = 100%

- (E) Very hard gray SANDSTONE; very fine to fine grained, unweathered to slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured, contains few argillaceous laminations and burrows.

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 Core Loss = 3%, RQD = 97%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 100%

R-13 No Core Loss, RQD = 100%

- (F) Hard to very hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.

R-14 No Core Loss, RQD = 100%

- (G) Very hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, pyritic, massive, unfractured to slightly fractured.

R-15 No Core Loss, RQD = 100%

R-16 No Core Loss, RQD = 98%

- (H) Hard to very hard light and dark gray SANDSTONE interbedded with SHALE; very fine to fine grained, slightly weathered, calcareous, laminated to medium bedded, moderately fractured.

R-17 No Core Loss, RQD = 100%

R-18 No Core Loss, RQD = 100%

R-19 Core Loss = 2%, RQD = 98%

R-20 No Core Loss, RQD = 100%

R-21 No Core Loss, RQD = 100%

- (I) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, slightly fractured.

R-22 No Core Loss, RQD = 100%

R-629

R-1 Core Loss = 6%, RQD = 55%

- (A) Hard grayish brown SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, medium bedded to thickly bedded, moderately fractured to broken.

R-2 No Core Loss, RQD = 78%

R-3 No Core Loss, RQD = 38%

R-4 No Core Loss, RQD = 88%

R-618

R-1 Core Loss = 13%, RQD = 73%

- (A) Soft to medium hard brown SANDSTONE; medium grained, decomposed, argillaceous, very thinly bedded to medium bedded, highly fractured, iron staining.

- (B) Soft to medium hard gray SHALE; very fine grained, highly weathered, arenaceous, very thinly bedded, highly fractured.

R-2 No Core Loss, RQD = 54%

- (C) Medium hard gray SANDSTONE; very fine grained, moderately weathered, argillaceous, medium bedded to thickly bedded, highly fractured; contains moderate argillaceous laminations.

R-2620

R-1 No Core Loss, RQD = 100%

- (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, slightly to moderately fractured.

R-2 No Core Loss, RQD = 100%

- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, massive, slightly fractured, contains few argillaceous laminations.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 90%

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 96%

- (C) Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, argillaceous, micaceous, massive, slightly fractured, iron stained.

R-10 No Core Loss, RQD = 90%

R-11 No Core Loss, RQD = 94%

R-12 No Core Loss, RQD = 95%

- (D) Medium hard to hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, micaceous, thinly laminated to medium bedded, slightly fractured.

R-13 No Core Loss, RQD = 100%

R-633

R-1 No Core Loss, RQD = 80%

- (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, slightly fractured, contains few argillaceous laminations.

R-2 Core Loss = 1%, RQD = 89%

- (B) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, slightly fractured, contains few argillaceous laminations.

R-3 No Core Loss, RQD = 71%

- (C) Soft to medium hard brownish gray SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered, argillaceous, arenaceous, micaceous, thinly laminated to medium bedded, moderately to highly fractured.

- (D) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, highly fractured.

R-4 No Core Loss, RQD = 93%

- (E) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, slightly to moderately fractured, some iron staining; contains moderate to abundant argillaceous laminations.

R-5 No Core Loss, RQD = 79%

R-6 No Core Loss, RQD = 81%

- (F) Medium hard to hard dark gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to massive, slightly fractured.

- (G) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, fossiliferous, thickly bedded to massive, unfractured to slightly fractured, iron stained fossils.

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

- (H) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, thickly bedded to massive, unfractured to slightly fractured.

R-9 No Core Loss, RQD = 100%

- (I) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, very thickly bedded, unfractured to slightly fractured.

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 Core Loss = 2%, RQD = 98%

R-13 No Core Loss, RQD = 100%

R-14 Core Loss = 2%, RQD = 98%

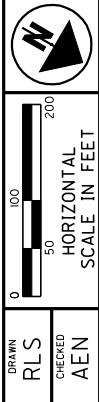
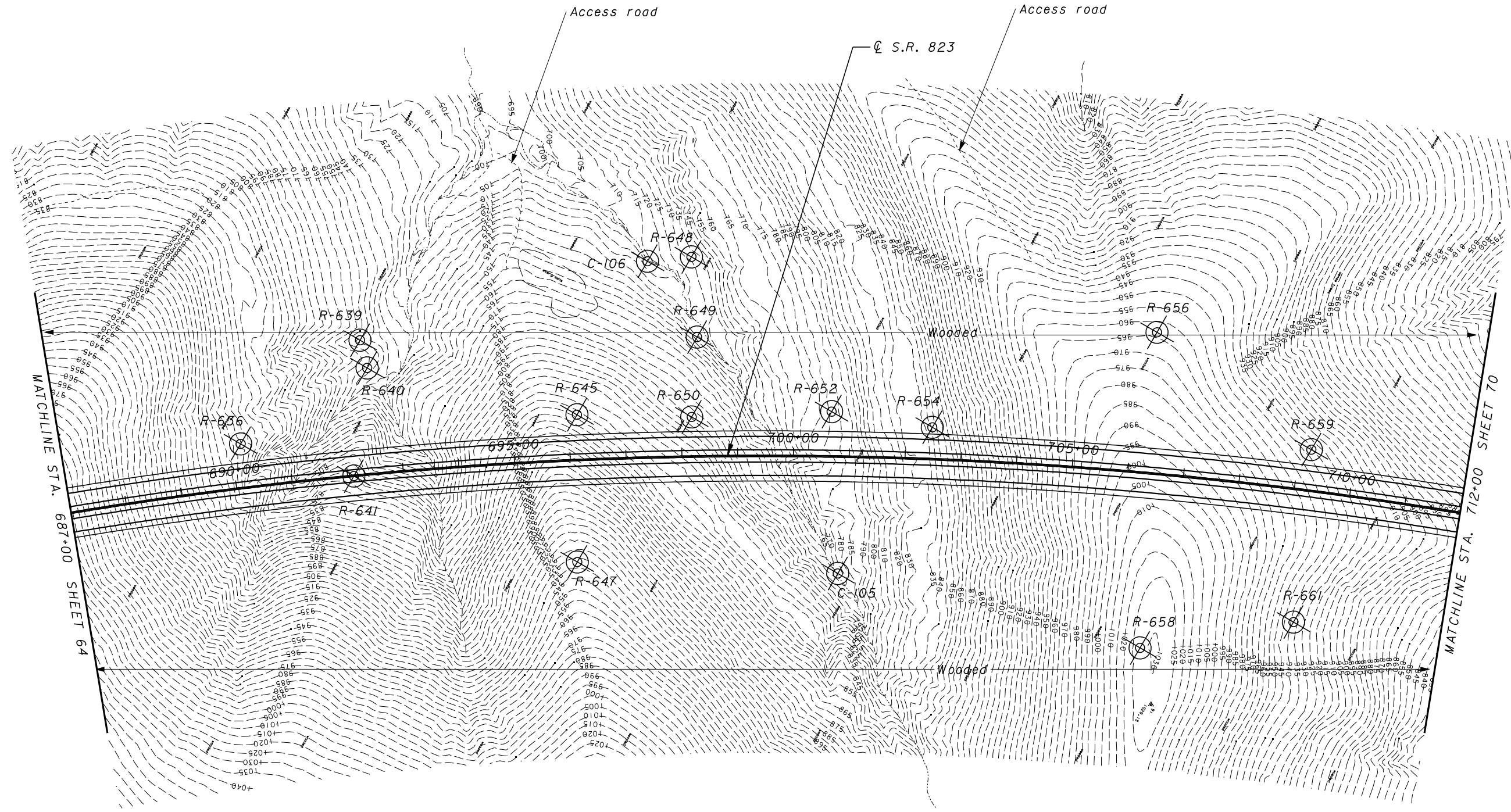
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S.R. 823 STA. 662+00 TO STA. 687+00

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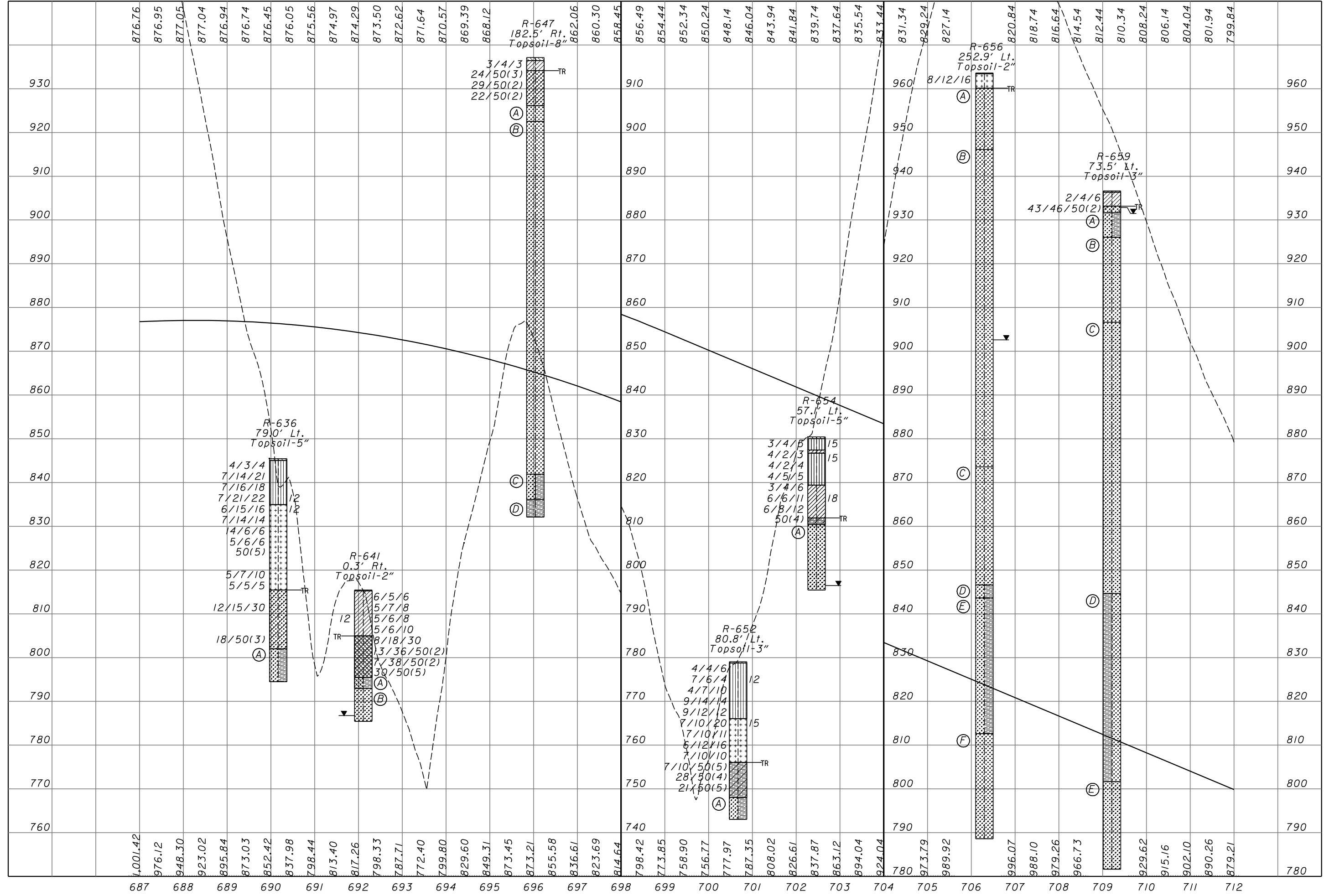


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CHECKED: AEN

SOIL PROFILE
S.R. 823 STA. 687+00 TO STA. 712+00

CROSS SECTION INDEX	
STATION	SHEET
692+50	142
696+00	143
698+00	144
700+50	145
706+50	146
709+50	148

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 AEN

SOIL PROFILE
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R-636

R-1 Core Loss = 72%, RQD = 27%
A Medium hard gray SANDSTONE interbedded with SILTSTONE (turbidites) and SHALE; fine grained, highly weathered, argillaceous, micaceous, thinly bedded to laminated, moderately fractured.

R-647

R-1 No Core Loss, RQD = 88%
A Hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, medium bedded to thinly laminated, moderately fractured.
B Hard gray SANDSTONE; fine grained, slightly weathered, argillaceous, pyritic, micaceous, thickly bedded to massive, slightly fractured.
R-2 No Core Loss, RQD = 94%
R-3 Core Loss = 4%, RQD = 83%
R-4 No Core Loss, RQD = 90%
R-5 Core Loss = 6%, RQD = 86%
R-6 Core Loss = 3%, RQD = 93%
R-7 No Core Loss, RQD = 99%
R-8 No Core Loss, RQD = 100%
R-9 Core Loss = 3%, RQD = 90%
C Medium hard gray SHALE interbedded with gray SANDSTONE; very fine grained, moderately weathered, argillaceous, micaceous, pyritic, thinly bedded to thinly laminated.
R-10 Core Loss = 38%, RQD = 31%
D Medium hard gray SHALE; moderately weathered, micaceous, thinly bedded to thinly laminated, contains moderate to abundant argillaceous laminations.

R-656

R-1 No Core Loss, RQD = 73%
A Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, highly fractured.
R-2 No Core Loss, RQD = 100%
B Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, unfractured to slightly fractured, contains few argillaceous laminations.
R-3 No Core Loss, RQD = 97%
R-4 No Core Loss, RQD = 100%
R-5 No Core Loss, RQD = 100%
R-6 No Core Loss, RQD = 98%
R-7 No Core Loss, RQD = 78%
R-8 No Core Loss, RQD = 94%
R-9 No Core Loss, RQD = 94%
R-10 No Core Loss, RQD = 100%
C Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, laminated to thickly bedded, slightly fractured.
R-11 No Core Loss, RQD = 89%
R-12 No Core Loss, RQD = 88%
D Medium hard gray SANDSTONE interbedded with SHALE; fine grained, moderately weathered, argillaceous, arenaceous, micaceous, laminated bedded, moderately fractured, fissile.
R-13 No Core Loss, RQD = 80%
E Medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, moderately weathered, argillaceous, arenaceous, micaceous, laminated to medium bedded, moderately fractured.
R-14 No Core Loss, RQD = 100%
R-15 No Core Loss, RQD = 100%
R-16 No Core Loss, RQD = 98%
F Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, laminated to medium bedded, moderately fractured, contains few to moderate argillaceous laminations.
R-17 No Core Loss, RQD = 97%
R-18 No Core Loss, RQD = 100%

R-659

R-1 No Core Loss, RQD = 23%
A Soft to medium hard brownish orange SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, thinly laminated to thinly bedded, highly fractured to broken, iron stains.
R-2 No Core Loss, RQD = 74%
B Medium hard brown and gray SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, medium bedded to laminated, moderately fractured, iron staining on fracture surface.
R-3 No Core Loss, RQD = 96%
R-4 No Core Loss, RQD = 100%
C Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded to massive, moderately fractured, iron staining on fracture surface.
R-5 No Core Loss, RQD = 100%
R-6 No Core Loss, RQD = 100%
R-7 No Core Loss, RQD = 100%
R-8 No Core Loss, RQD = 100%
R-9 No Core Loss, RQD = 100%
R-10 No Core Loss, RQD = 100%
D Soft gray SHALE interbedded with SANDSTONE and SILTSTONE; very fine grained, slightly weathered, arenaceous, micaceous, very thinly bedded to thinly laminated, moderately fractured.
R-11 No Core Loss, RQD = 100%
R-12 No Core Loss, RQD = 100%
R-13 No Core Loss, RQD = 100%
R-14 No Core Loss, RQD = 100%
E Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, laminated to medium bedded, slightly fractured, contains moderate argillaceous laminations, fissile.
R-15 No Core Loss, RQD = 100%
R-16 No Core Loss, RQD = 100%

R-641

R-1 Core Loss = 14%, RQD = 33%
A Soft brown SILTSHALE interbedded with SILTSTONE; very fine grained, highly weathered to decomposed, micaceous, very thinly bedded, completely broken, iron staining.
B Medium hard gray SANDSTONE; very fine grained, highly weathered, micaceous, medium bedded to thinly laminated, highly fractured, contains few to moderate argillaceous laminations.

R-654

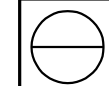
R-1 No Core Loss, RQD = 62%
A Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, highly fractured.
R-2 Core Loss = 2%, RQD = 86%
R-3 Core Loss = 3%, RQD = 74%

R-652

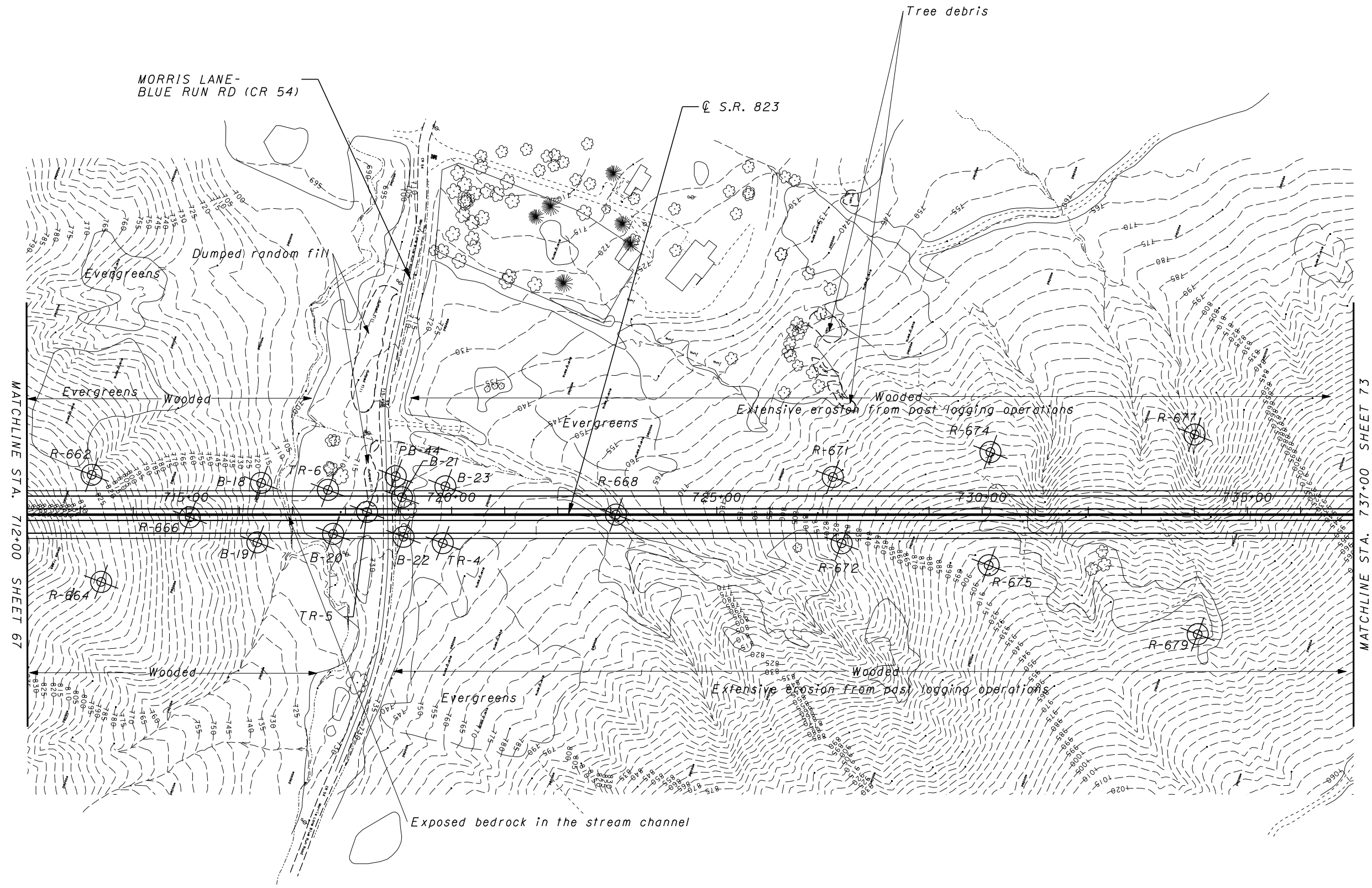
R-1 Core Loss = 17%, RQD = 22%
A Soft to medium hard gray SHALE interbedded with SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly laminated to thinly bedded, highly fractured, arenaceous.

SOIL PROFILE
S.R. 823 STA. 687+00 TO STA. 712+00

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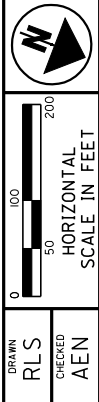


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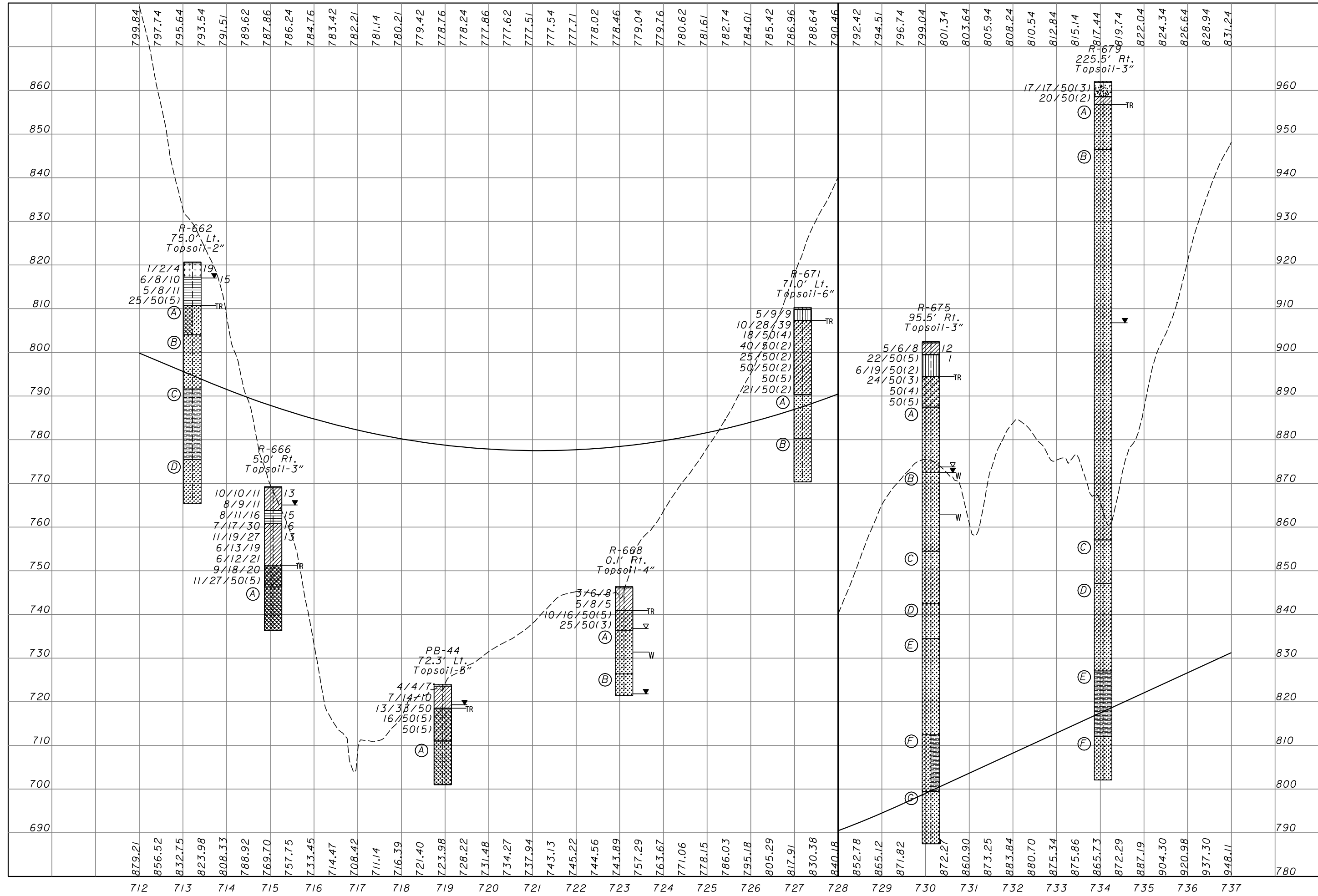
NOTE: BORINGS B-18 TO B-23 AND TR-4 TO TR-6 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

CROSS SECTION INDEX	
STATION	SHEET
713+50	150
727+50	151
730+00	152
734+00	153



SOIL PROFILE
 S.R. 823 STA. 712+00 TO STA. 737+00

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SOIL PROFILE
S.R. 823 STA. 712+00 TO STA. 737+00

SCI-823-10.13

R-662

R-1 No Core Loss, RQD = 42%

- (A) Soft brown SANDSTONE interbedded with SILTSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, broken.
- (B) Medium hard gray SANDSTONE; fine grained, moderately weathered, argillaceous, micaceous, laminated to thickly bedded, moderately fractured, few bands of iron staining, contains moderate to abundant argillaceous laminations.

R-2 Core Loss = 1%, RQD = 82%

R-3 No Core Loss, RQD = 100%

- (C) Medium hard gray SHALE interbedded with SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded, moderately fractured, contains few to moderate argillaceous laminations.

R-4 No Core Loss, RQD = 75%

- (D) Soft to medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded, moderately fractured, contains few to moderate argillaceous laminations.

R-5 No Core Loss, RQD = 100%

R-666

R-1 No Core Loss, RQD = 92%

- (A) Soft gray SILTSTONE; very fine to fine grained, moderately weathered, micaceous, thickly bedded, moderately fractured, contains moderate argillaceous laminations.

R-668

R-1 Core Loss = 35%, RQD = 48%

- (A) Hard gray SANDSTONE; very fine grained, moderately to highly weathered, argillaceous, pyritic, thickly bedded, highly fractured to broken.

R-2 Core Loss = 6%, RQD = 90%

- (B) Medium hard gray SANDSTONE; very fine grained, moderately weathered, argillaceous, thickly bedded to massive, slightly to moderately fractured.

R-671

R-1 Core Loss = 65%, RQD = 10%

- (A) Soft to medium hard brown SANDSTONE; very fine grained, highly weathered to decomposed, argillaceous, thinly bedded to thinly laminated, highly fractured to broken, moderate argillaceous laminations; iron stained throughout.

R-2 No Core Loss, RQD = 62%

- (B) Medium hard gray SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, thinly bedded to very thinly laminated, highly fractured, abundant argillaceous laminations.

R-675

R-1 Core Loss = 11%, RQD = 89%

- (A) Hard brown and gray SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, thickly bedded, moderately to slightly fractured.

R-2 No Core Loss, RQD = 100%

R-3 Core Loss = 6%, RQD = 94%

- (B) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, slightly fractured.

R-4 Core Loss = 10%, RQD = 65%

R-5 Core Loss = 43%, RQD = 5%

- (C) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly bedded, highly fractured, extensive core loss, contains few to moderate argillaceous laminations.

R-6 Core Loss = 25%, RQD = 21%

- (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly bedded, highly fractured, extensive core loss, contains moderate to abundant argillaceous laminations.

R-7 Core Loss = 2%, RQD = 96%

- (E) Medium hard to hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to very thinly bedded, highly fractured, moderate to abundant shale laminations.

R-8 No Core Loss, RQD = 97%

R-9 Core Loss = 7%, RQD = 85%

- (F) Soft to medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered, argillaceous, micaceous, medium bedded to thinly bedded, highly fractured.

R-10 No Core Loss, RQD = 98%

- (G) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, medium bedded to thinly bedded, highly fractured, moderate to abundant argillaceous laminations.

R-11 No Core Loss, RQD = 100%

R-679

R-1 No Core Loss, RQD = 87%

- (A) Hard brown SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous (turbidity), thickly bedded, moderately fractured.

R-2 No Core Loss, RQD = 93%

- (B) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous (turbidity), thickly bedded, unfractured to slightly fractured.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

- (C) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, laminated to medium bedded, slightly fractured, contains few to moderate argillaceous laminations.

R-12 No Core Loss, RQD = 100%

- (D) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, pyritic, thinly bedded, slightly fractured; contains moderate to abundant argillaceous laminations.

R-13 No Core Loss, RQD = 100%

R-14 No Core Loss, RQD = 100%

- (E) Hard gray SHALE moderately interbedded with SANDSTONE layers; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly laminated to medium bedded, slightly fractured.

R-15 No Core Loss, RQD = 100%

- (F) Hard gray SANDSTONE; very fine grained, slightly weathered, argillaceous, micaceous, medium bedded, unfractured to slightly fractured, contains few to moderate argillaceous laminations.

R-16 No Core Loss, RQD = 100%

PB-44

R-1 No Core Loss, RQD = 98%

- (A) Medium hard gray SILTSTONE; moderately weathered, micaceous, thinly bedded to laminated.

R-2 No Core Loss, RQD = 46%

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SOIL PROFILE S.R. 823 STA. 712+00 TO STA. 737+00

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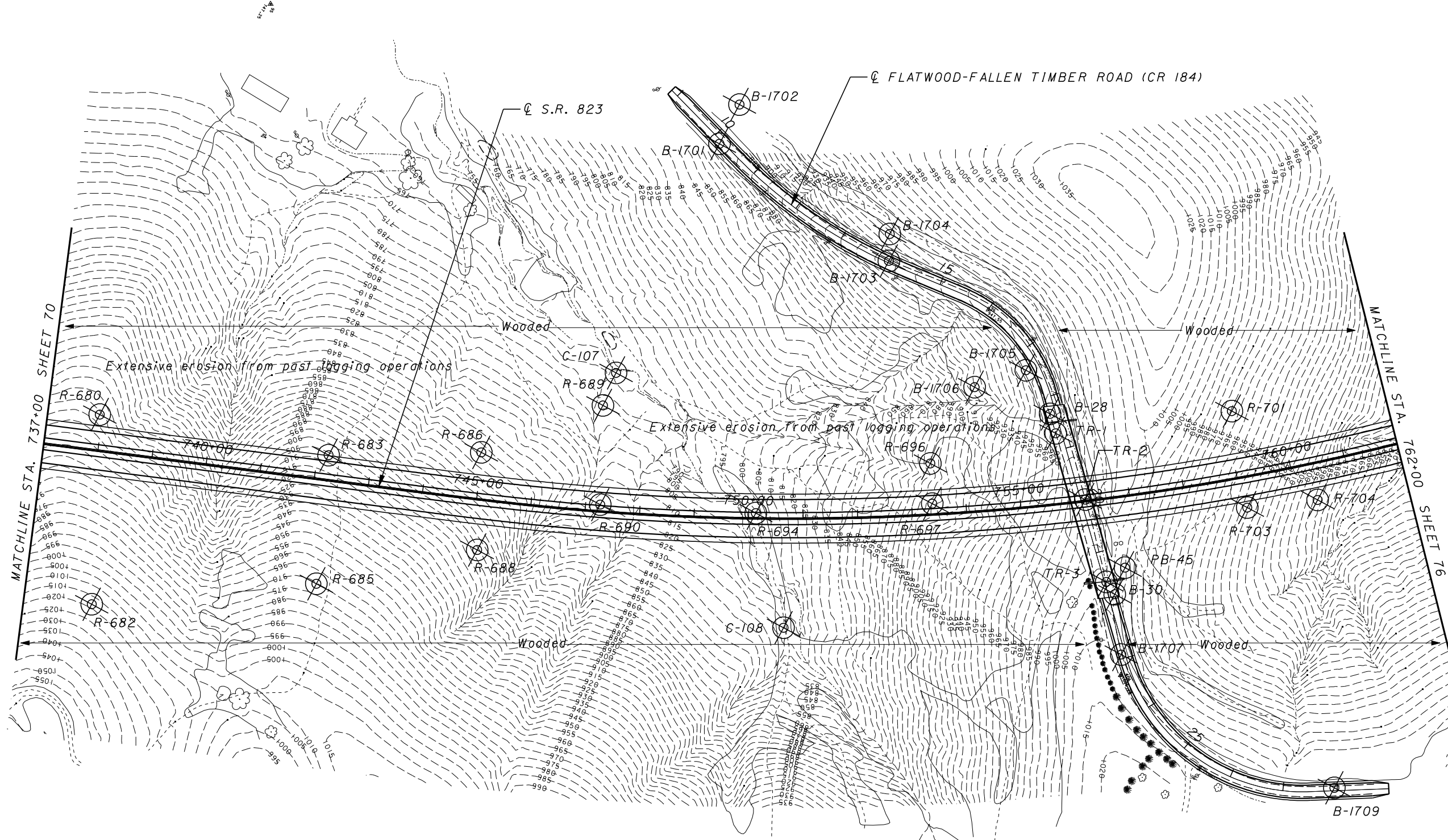




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SOIL PROFILE
S.R. 823 STA. 737+00 TO STA. 762+00

SCI-823-10.13

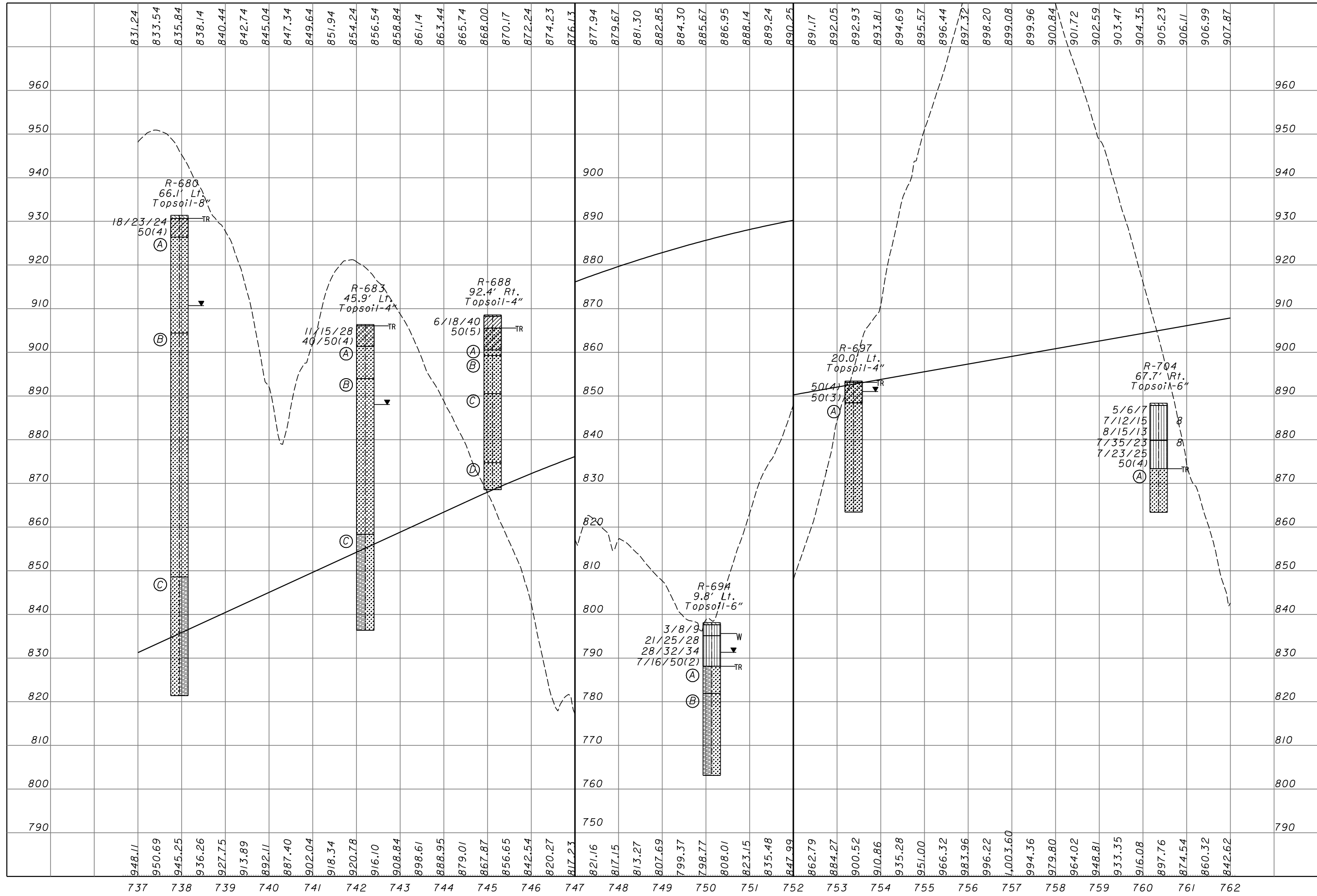


CROSS SECTION INDEX	
STATION	SHEET
738+00	155
742+00	157
745+00	158
747+50	159
753+50	161
759+00	162

NOTE: BORINGS B-1701 TO B-1707, B-1709, AND PB-45 SHOWN ON FLATWOOD-FALLEN TIMBER ROAD PROFILE SHEET 197. BORINGS TR-1 TO TR-3, B-28, AND B-30. SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

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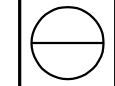


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SOIL PROFILE
S.R. 823 STA. 737+00 TO STA. 762+00

SCI-823-10.13





R-680

- R-1 No Core Loss, RQD = 43%
- Ⓐ *Hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, medium bedded to thickly bedded, moderately to highly fractured, contains few to moderate argillaceous laminations.*
- R-2 Core Loss = 6%, RQD = 41%
- R-3 No Core Loss, RQD = 79%
- Ⓑ *Medium hard gray and brown SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, moderately fractured.*
- R-4 No Core Loss, RQD = 79%
- R-5 No Core Loss, RQD = 82%
- R-6 No Core Loss, RQD = 91%
- R-7 No Core Loss, RQD = 88%
- R-8 No Core Loss, RQD = 89%
- Ⓒ *Hard gray SANDSTONE interbedded with SHALE; fine grained, moderately weathered, argillaceous, micaceous, pyritic, laminated to thinly bedded, moderately fractured.*
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 97%
- R-11 No Core Loss, RQD = 95%

R-683

- R-1 Core Loss = 6%, RQD = 43%
- Ⓐ *Soft brown SANDSTONE; fine grained, highly weathered to decomposed, argillaceous, micaceous, thickly bedded, highly fractured to broken, iron staining.*
 - Ⓑ *Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded to massive, moderately to highly fractured.*
- R-2 No Core Loss, RQD = 77%
- R-3 No Core Loss, RQD = 82%
- R-4 No Core Loss, RQD = 89%
- R-5 No Core Loss, RQD = 85%
- Ⓒ *Medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, slightly to moderately weathered, micaceous, pyritic, very thinly laminated to thinly bedded, moderately fractured.*
- R-6 No Core Loss, RQD = 69%
- R-7 No Core Loss, RQD = 87%

R-694

- R-1 Core Loss = 16%, RQD = 58%
- Ⓐ *Soft to hard brown SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, laminated to medium bedded, highly fractured to broken, iron staining.*
 - Ⓑ *Hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, moderately to highly weathered, argillaceous, thinly laminated to thinly bedded, moderately fractured.*
- R-2 No Core Loss, RQD = 98%
- R-3 No Core Loss, RQD = 93%

R-688

- R-1 Core Loss = 8%, RQD = 60%
- Ⓐ *Medium hard gray SANDSTONE; very fine grained, moderately weathered, argillaceous, micaceous, thinly bedded to very thinly bedded, highly fractured, fissile.*
 - Ⓑ *Hard brownish orange SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, medium bedded to thinly bedded, moderately fractured.*
- R-2 Core Loss = 10%, RQD = 83%
- Ⓒ *Hard gray SANDSTONE; fine grained, slightly to moderately weathered, argillaceous, micaceous, thickly bedded, moderately fractured.*
- R-3 Core Loss = 15%, RQD = 71%
- Ⓓ *Hard gray SANDSTONE; very fine grained, moderately weathered, micaceous, argillaceous, thinly laminated to medium bedded, highly fractured, contains few to moderate argillaceous laminations.*
- R-4 Core Loss = 17%, RQD = 0%

R-697

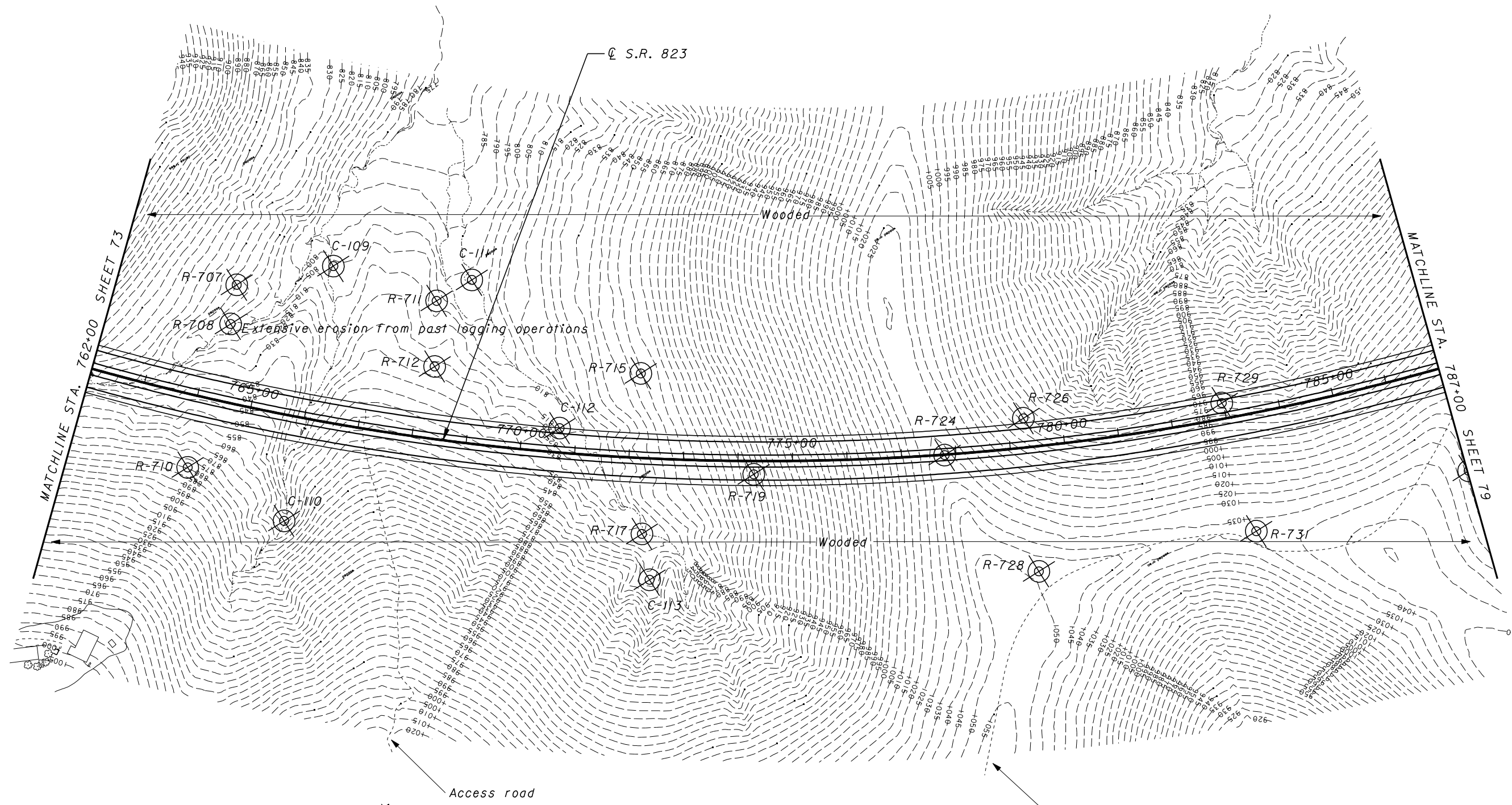
- R-1 No Core Loss, RQD = 74%
- Ⓐ *Hard light brown SANDSTONE; fine grained, moderately to highly weathered, thinly bedded to medium bedded, highly fractured.*
- R-2 Core Loss = 13%, RQD = 76%
- R-3 No Core Loss, RQD = 88%


R-704

- R-1 Core Loss = 77%, RQD = 0%
- Ⓐ *Medium hard to hard gray SANDSTONE fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to medium bedded, highly fractured to broken, 46" of core loss, decomposed rock.*
- R-2 Core Loss = 8%, RQD = 83%



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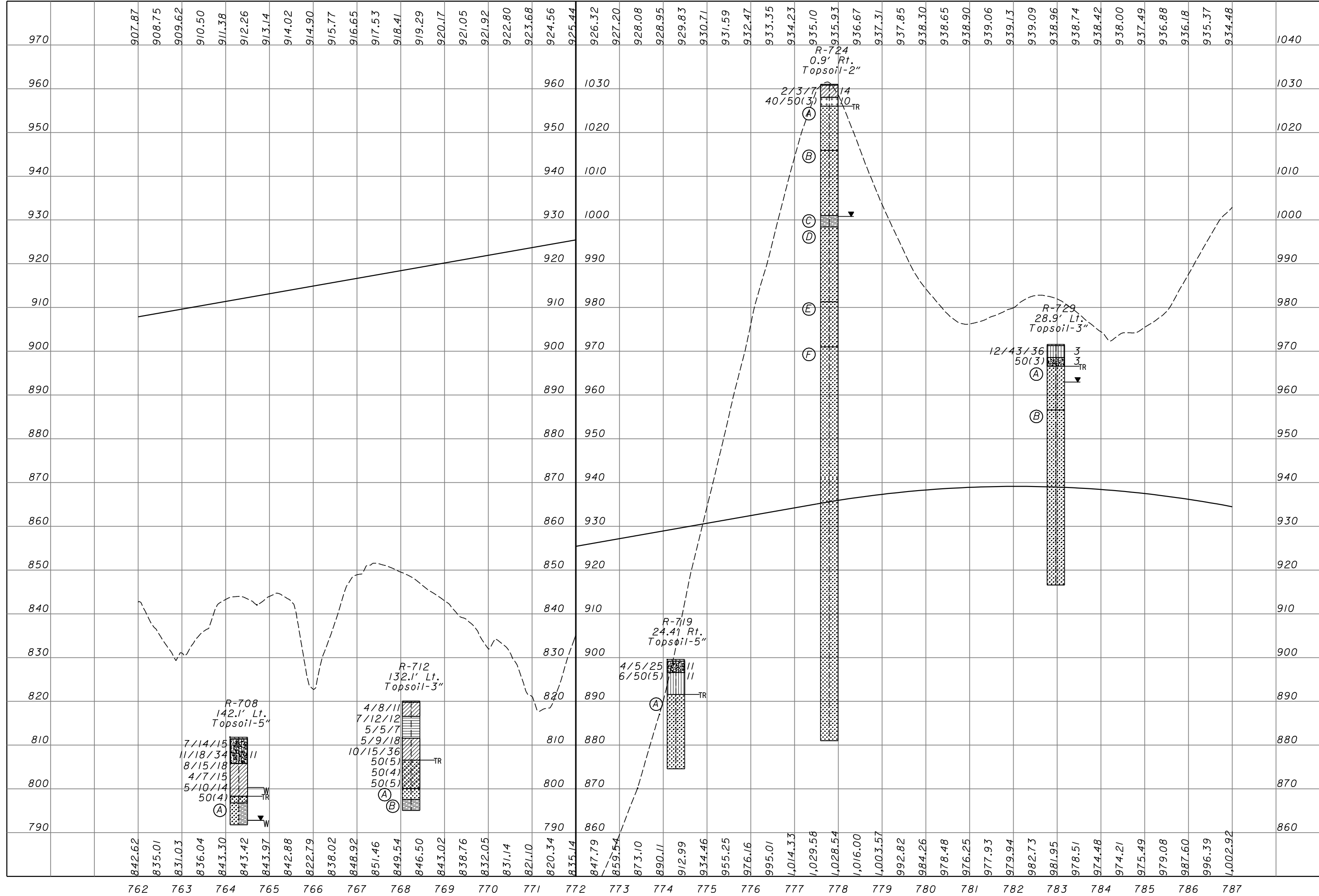
 Slope Instability

CROSS SECTION INDEX	
STATION	SHEET
764+50	163
766+00	164
768+00	165
772+00	166
779+50	167
783+00	169



 HORIZONTAL SCALE IN FEET
 DRAWN: RLS
 CHECKED: AEN

SOIL PROFILE
S.R. 823 STA. 762+00 TO STA. 787+00

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 CHECKED
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SOIL PROFILE
S.R. 823 STA. 762+00 TO 787+00

SCI-823-10.13



R-708

R-1 Core Loss = 38%, RQD = 20%

- (A) Soft gray SHALE interbedded with few SANDSTONE layers; very fine grained, highly weathered, argillaceous, micaceous, thinly laminated to thinly bedded, moderately fractured.

R-712

R-1 No Core Loss, RQD = 53%

- (A) Medium hard gray SANDSTONE; very fine grained, highly weathered, argillaceous, micaceous, very thinly bedded, highly fractured to broken.
- (B) Medium hard gray SHALE; highly weathered, arenaceous, thinly laminated to laminated.

R-719

R-1 Core Loss = 58%, RQD = 8%

- (A) Medium hard to hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, slightly fractured.

R-2 Core Loss = 5%, RQD = 67%

R-724

R-1 No Core Loss, RQD = 47%

- (A) Hard brown and gray SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, laminated to thickly bedded, highly fractured.

R-2 Core Loss = 3%, RQD = 76%

- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, laminated to thickly bedded, highly fractured, moderately to highly fractured, contains few to moderate argillaceous laminations.

R-3 No Core Loss, RQD = 82%

- (C) Hard gray SANDSTONE interbedded with SHALE; fine grained, moderately weathered, argillaceous, micaceous, laminated to thickly bedded, moderately fractured.

- (D) Hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, thickly bedded, moderately fractured, contains moderate argillaceous laminations.

R-4 No Core Loss, RQD = 72%

R-5 No Core Loss, RQD = 83%

- (E) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to massive, slightly fractured, contains few argillaceous laminations.

R-6 Core Loss = 1%, RQD = 99%

- (F) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to massive, unfractured to slightly fractured.

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 100%

R-13 Core Loss = 4%, RQD = 94%

R-14 Core Loss = 3%, RQD = 97%

R-15 No Core Loss, RQD = 100%

R-729

R-1 Core Loss = 15%, RQD = 81%

- (A) Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, arenaceous, micaceous, medium bedded to thickly bedded, slightly fractured.

R-2 No Core Loss, RQD = 96%

- (B) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, arenaceous, micaceous, thickly to massively bedded, moderately fractured, contains few argillaceous laminations.

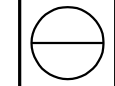
R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 100%

SOIL PROFILE
S.R. 823 STA. 762+00 TO STA. 787+00

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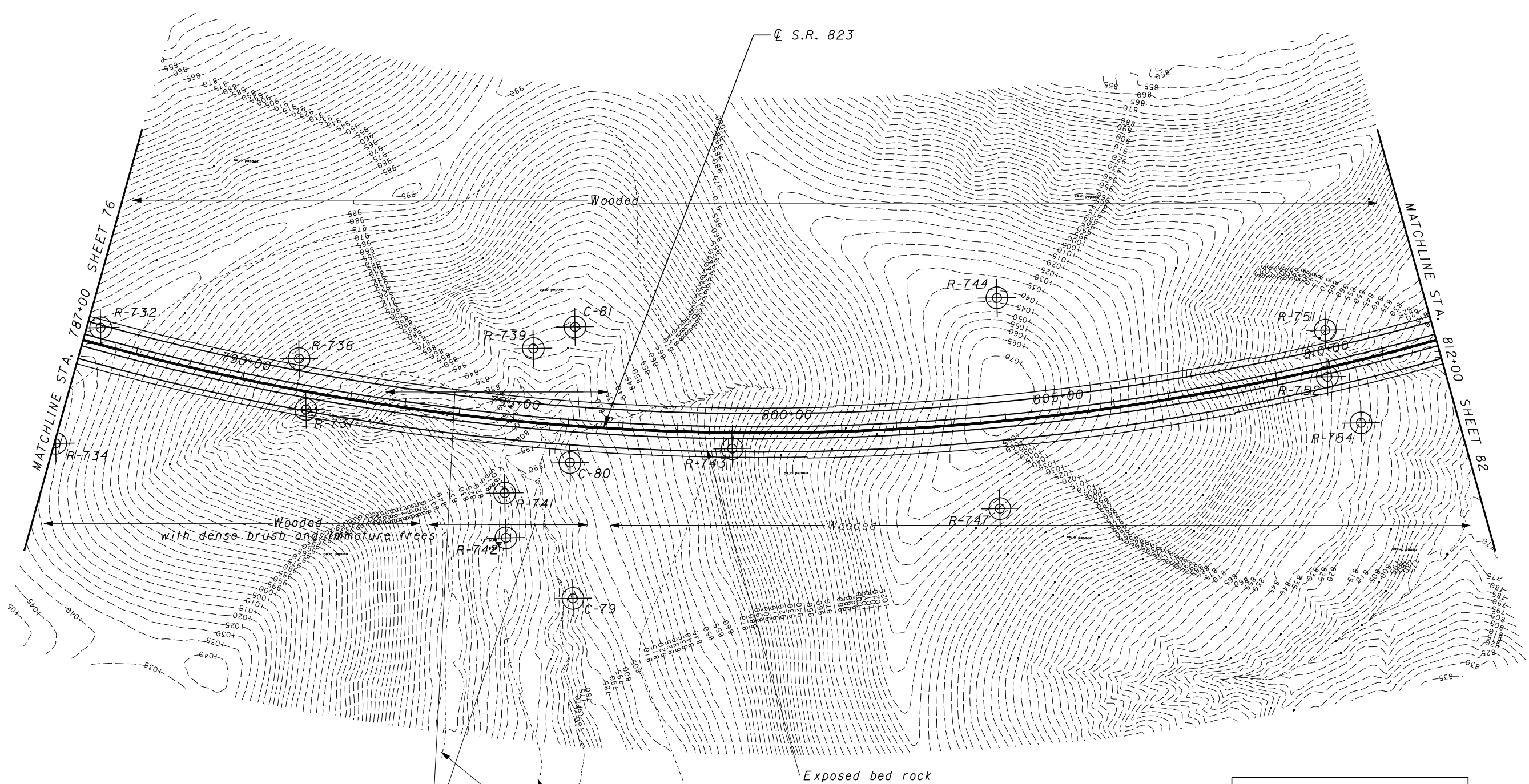


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 HORIZONTAL SCALE IN FEET
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
Dense brush and immature trees

Access roads

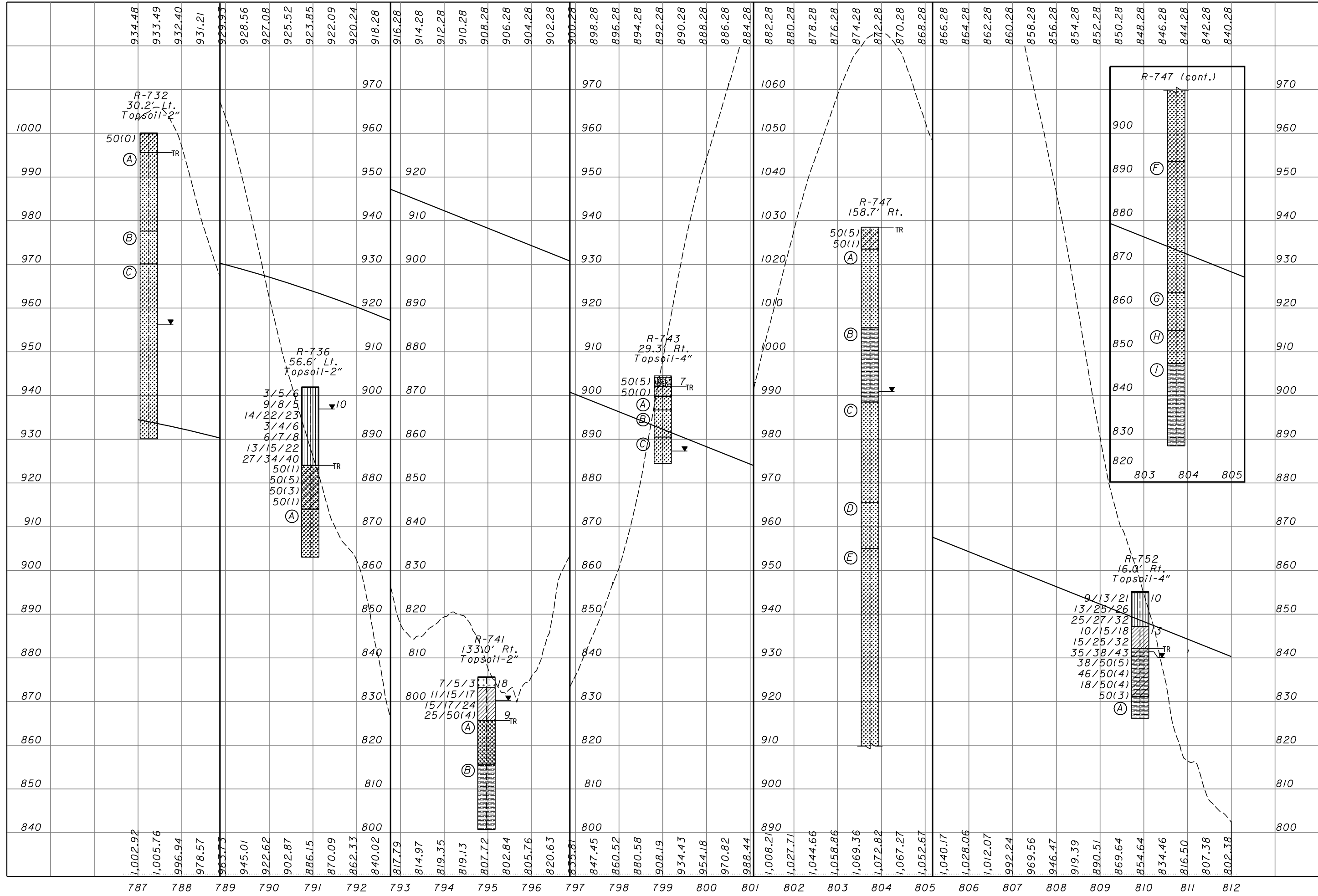
 Slope Instability

CROSS SECTION INDEX	
STATION	SHEET
787+00	170
791+00	171
795+00	172
796+00	173
804+00	174
810+00	176

SOIL PROFILE
 S.R. 823 STA. 787+00 TO STA. 812+00

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DESIGN
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SOIL PROFILE
S.R. 823 STA. 787+00 TO STA. 812+00

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R-732

- R-1 Core Loss = 2%, RQD = 87%
 - Ⓐ Hard brown SANDSTONE; fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded, moderately fractured.
- R-2 No Core Loss, RQD = 95%
 - Ⓑ Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to massive, unfractured to slightly fractured.
- R-3 No Core Loss, RQD = 100%
 - Ⓒ Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, thickly bedded to massive, unfractured to slightly fractured.
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 99%

R-743

- R-1 No Core Loss, RQD = 80%
 - Ⓐ Medium hard gray SANDSTONE; fine grained, moderately weathered, micaceous, argillaceous, medium bedded, moderately fractured.
 - Ⓑ Medium hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, thickly bedded, slightly to moderately fractured.
- R-2 Core Loss = 11%, RQD = 82%
 - Ⓒ Medium hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, thickly bedded, slightly to moderately fractured.

R-747

- R-1 Core Loss = 38%, RQD = 41%
 - Ⓐ Soft to medium hard brown and gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to medium bedded, broken to highly fractured, iron staining.
- R-2 No Core Loss, RQD = 77%
 - Ⓑ Soft to medium hard gray SHALE; highly weathered to decomposed, arenaceous, carbonaceous, laminated to thickly bedded, highly fractured to broken, iron staining.
- R-3 Core Loss = 26%, RQD = 55%
- R-4 Core Loss = 8%, RQD = 76%
 - Ⓒ Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, moderately to highly fractured, contains few argillaceous laminations.
- R-5 Core Loss = 5%, RQD = 82%
- R-6 No Core Loss, RQD = 78%
 - Ⓓ Medium hard to hard gray SANDSTONE; very fine grained, highly to moderately weathered, argillaceous, micaceous, thinly laminated to thinly bedded, moderately fractured, contains few to moderate argillaceous laminations.
- R-7 No Core Loss, RQD = 74%
 - Ⓔ Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded to massive, moderately fractured, contains few argillaceous laminations.
- R-8 No Core Loss, RQD = 92%
- R-9 No Core Loss, RQD = 98%
- R-10 Core Loss = 6%, RQD = 91%
- R-11 No Core Loss, RQD = 96%
- R-12 No Core Loss, RQD = 94%
- R-13 No Core Loss, RQD = 97%
- R-14 No Core Loss, RQD = 91%
 - Ⓕ Hard to very hard grayish brown SANDSTONE; fine grained, highly weathered to decomposed, argillaceous, micaceous, laminated to thinly bedded, moderately fractured to broken, turbidic.
- R-15 No Core Loss, RQD = 97%
- R-16 No Core Loss, RQD = 98%
- R-17 No Core Loss, RQD = 95%
 - Ⓖ Very hard gray SANDSTONE interbedded with few SHALE layers; fine grained, slightly weathered, argillaceous, micaceous, laminated to thinly bedded, slightly fractured, turbidic.
 - Ⓖ Very hard gray SANDSTONE; fine grained, slightly weathered, argillaceous, micaceous, pyritic, laminated to thinly bedded, highly fractured, contains moderate to abundant argillaceous laminations.
- R-18 No Core Loss, RQD = 90%
 - Ⓖ Hard gray SHALE; very fine grained, moderately weathered, argillaceous, micaceous, thinly laminated to thinly bedded, moderately fractured, fissile.
- R-19 No Core Loss, RQD = 98%
- R-20 No Core Loss, RQD = 100%

R-752

- R-1 No Core Loss, RQD = 68%
 - Ⓐ Medium hard gray SHALE; highly weathered, laminated, moderately fractured to broken.

R-736

- R-1 No Core Loss, RQD = 21%
 - Ⓐ Medium hard gray SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, thinly laminated to laminated, highly fractured to broken, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 82%

R-741

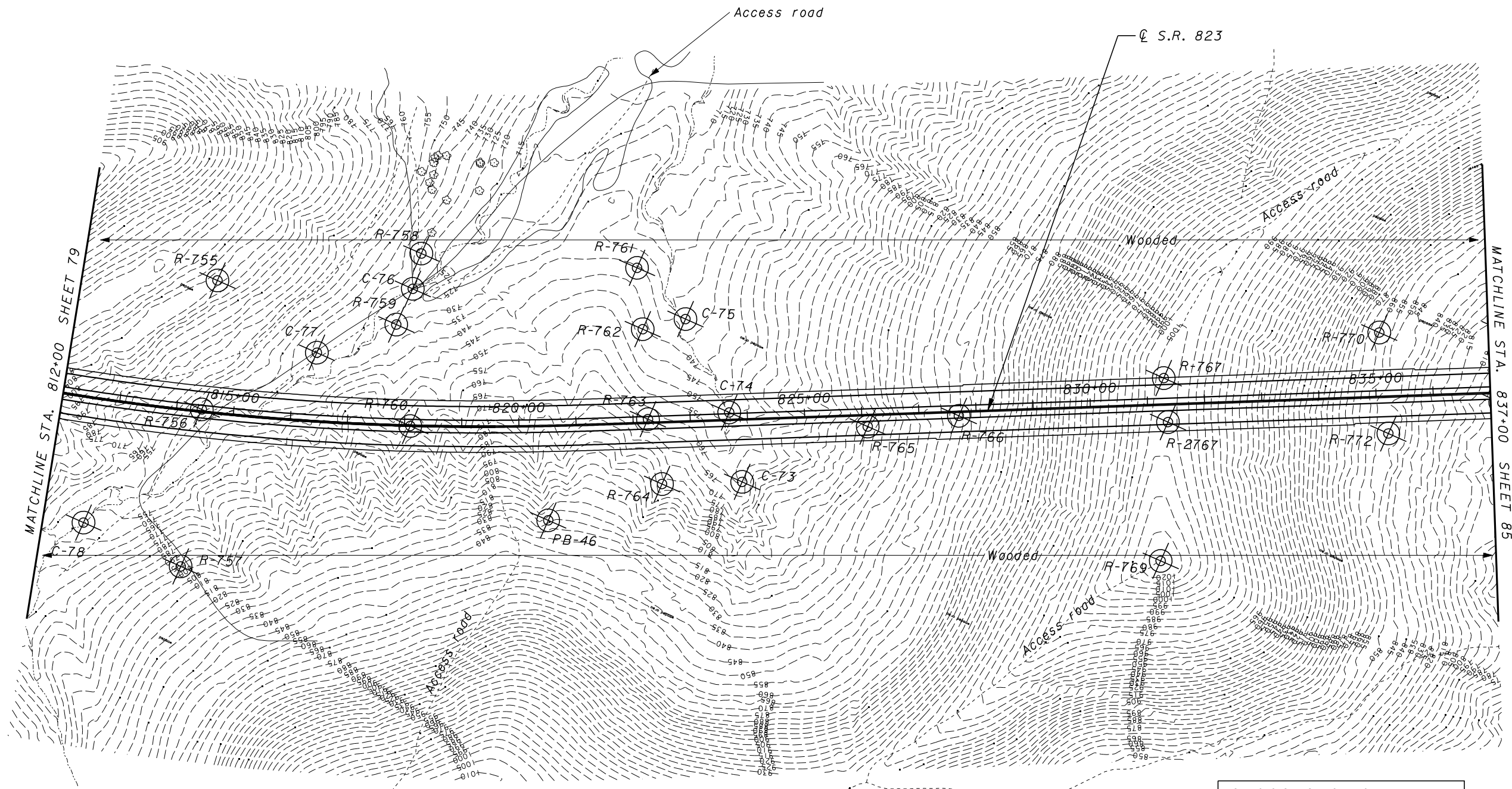
- R-1 Core Loss = 8%, RQD = 71%
 - Ⓐ Medium hard brown SHALE; very fine grained, decomposed, argillaceous, thinly bedded, broken.
- R-2 No Core Loss, RQD = 76%
 - Ⓑ Medium hard grayish brown SHALE; very fine grained, highly weathered to decomposed, argillaceous, thinly laminated to thinly bedded, moderately to highly fractured, iron staining; contains few to moderate argillaceous laminations.
- R-3 No Core Loss, RQD = 100%


SOIL PROFILE
S.R. 823 STA. 787+00 TO STA. 812+00

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 Slope Instability

CROSS SECTION INDEX	
STATION	SHEET
814+50	177
818+00	178
822+00	179
823+50	180
831+00	181
835+00	183



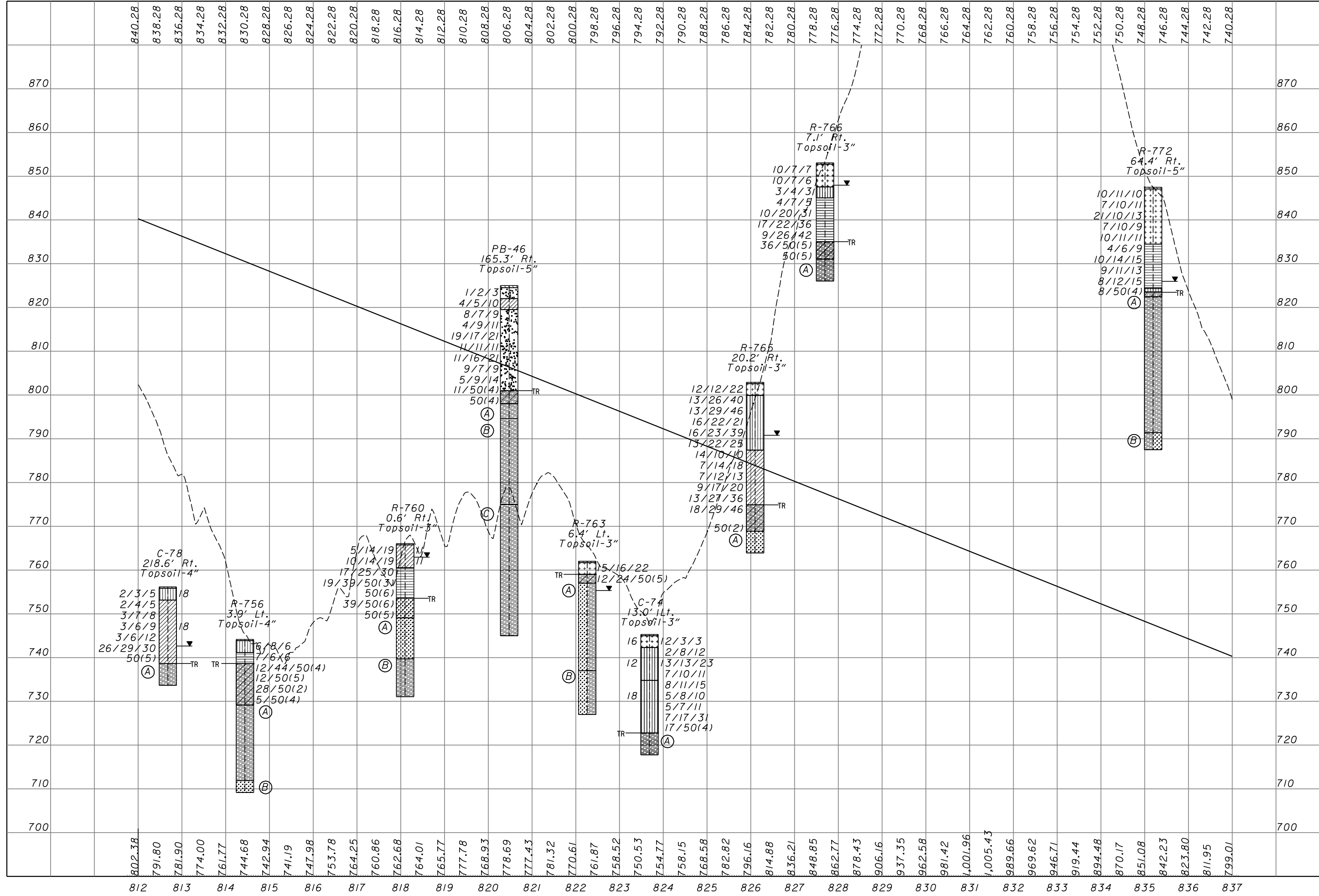
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SOIL PROFILE
S.R. 823 STA. 812+00 TO STA. 837+00

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SOIL PROFILE
S.R. 823 STA. 812+00 TO STA. 837+00

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R-756

R-1 No Core Loss, RQD = 42%

(A) Soft to medium hard gray SHALE; very fine grained, highly weathered to decomposed, micaceous, thinly bedded to medium bedded, highly fractured, contains moderate argillaceous and arenaceous laminations.

R-2 Core Loss = 3%, RQD = 70%

R-3 Core Loss = 3%, RQD = 65%

R-4 No Core Loss, RQD = 97%

(B) Medium hard gray SANDSTONE; very fine grained, moderately weathered, argillaceous, micaceous, medium bedded to thickly bedded, slightly fractured, moderate argillaceous laminations.

R-760

R-1 No Core Loss, RQD = 45%

(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, thickly bedded, moderately fractured, contains moderate argillaceous laminations.

R-2 No Core Loss, RQD = 79%

(B) Medium hard gray SHALE; very fine grained, highly weathered to decomposed, micaceous, thinly laminated, moderately fractured, contains moderate argillaceous laminations.

C-74

R-1 Core Loss = 8%, RQD = 51%

(A) Soft to medium hard gray SHALE; slightly weathered, very thinly bedded, slightly fractured.

R-763

R-1 No Core Loss, RQD = 72%

(A) Soft brown SHALE interbedded with SANDSTONE; very fine grained, decomposed, medium bedded, highly fractured to broken.

R-2 Core Loss = 32%, RQD = 42%

R-3 No Core Loss, RQD = 88%

(B) Soft gray SHALE interbedded with SANDSTONE; very fine grained, highly weathered, thinly laminated to thinly bedded, moderately fractured.

R-765

R-1 No Core Loss, RQD = 97%

(A) Hard gray SANDSTONE; very fine grained, slightly to moderately weathered, argillaceous, micaceous, thinly bedded, slightly fractured, contains moderate argillaceous laminations.

PB-46

R-1 Core Loss = 28%, RQD = 0%

(A) Soft dark gray SHALE; severely weathered to decomposed.

R-2 Core Loss = 4%, RQD = 90%

(B) Medium hard dark gray SHALE; slightly arenaceous, moderately to severely weathered, thinly bedded to laminated, typical low angle fractures with little to no clay infilling.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 88%

(C) Medium hard dark gray SHALE; slightly arenaceous, slightly to moderately weathered, thinly bedded to laminated; contains occasional arenaceous laminations.

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-772

R-1 No Core Loss, RQD = 93%

(A) Soft to medium hard gray SHALE; very fine grained, moderately to highly weathered, argillaceous, micaceous, thinly laminated to thinly bedded, moderately fractured.

R-2 No Core Loss, RQD = 80%

R-3 No Core Loss, RQD = 74%

R-4 No Core Loss, RQD = 100%

(B) Medium hard gray SHALE interbedded with SANDSTONE; very fine grained, moderately weathered, micaceous, argillaceous, thinly laminated to thinly bedded, slightly fractured, iron staining.

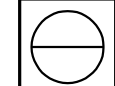
R-766

R-1 No Core Loss, RQD = 80%

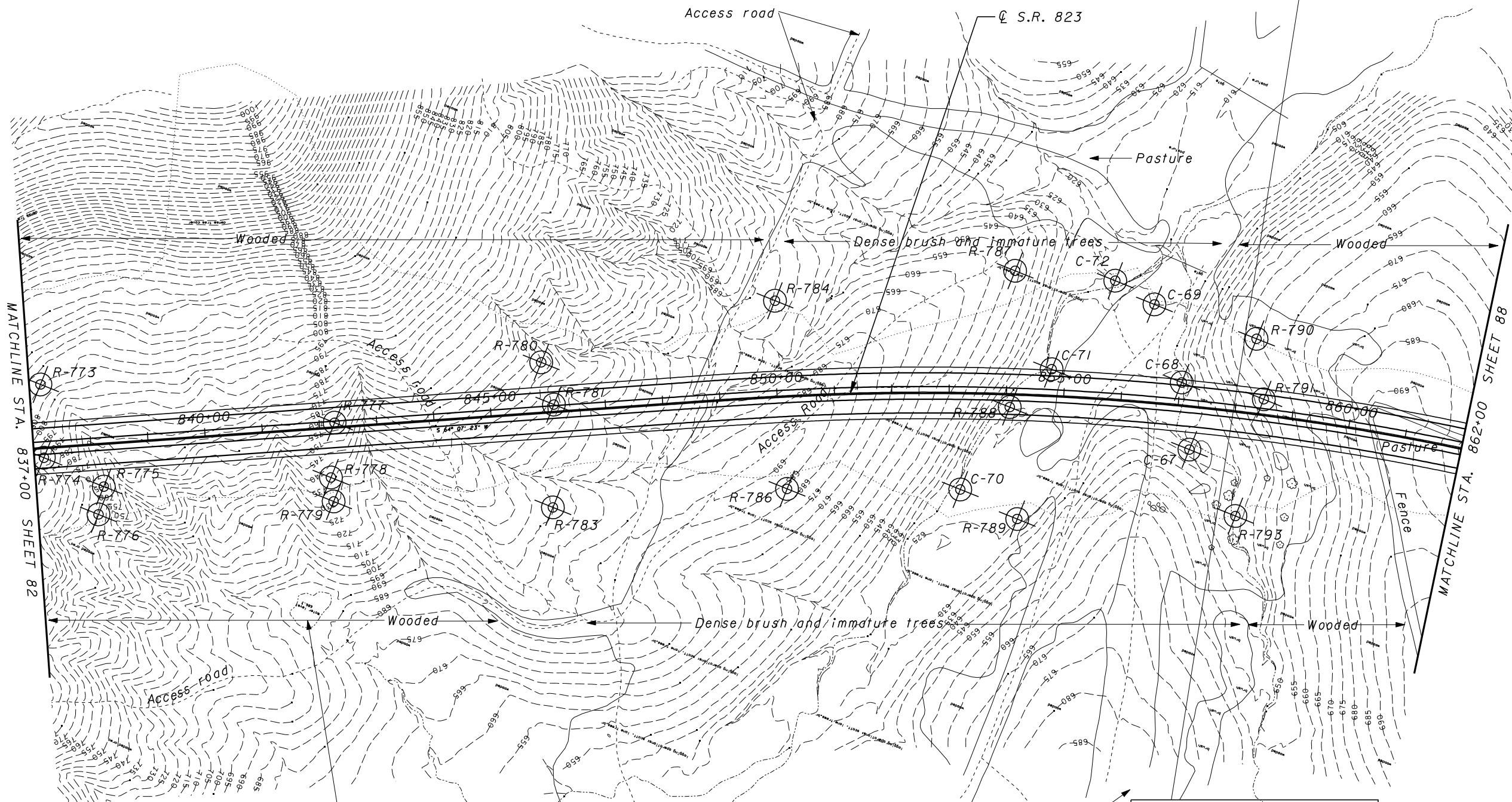
(A) Medium hard gray SHALE; very fine grained, highly weathered, thickly bedded, moderately fractured.

SOIL PROFILE
S.R. 823 STA. 812+00 TO STA. 837+00

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MATCHLINE STA. 837+00 SHEET 82

MATCHLINE STA. 862+00 SHEET 88

 Slope Instability

Excavated embankment pond
 Water level 686.3

138 Kv transmission line right of way

CROSS SECTION INDEX	
STATION	SHEET
837+00	184
838+00	185
842+00	186
846+00	187
850+00	188
854+00	189
857+00	190
858+50	191



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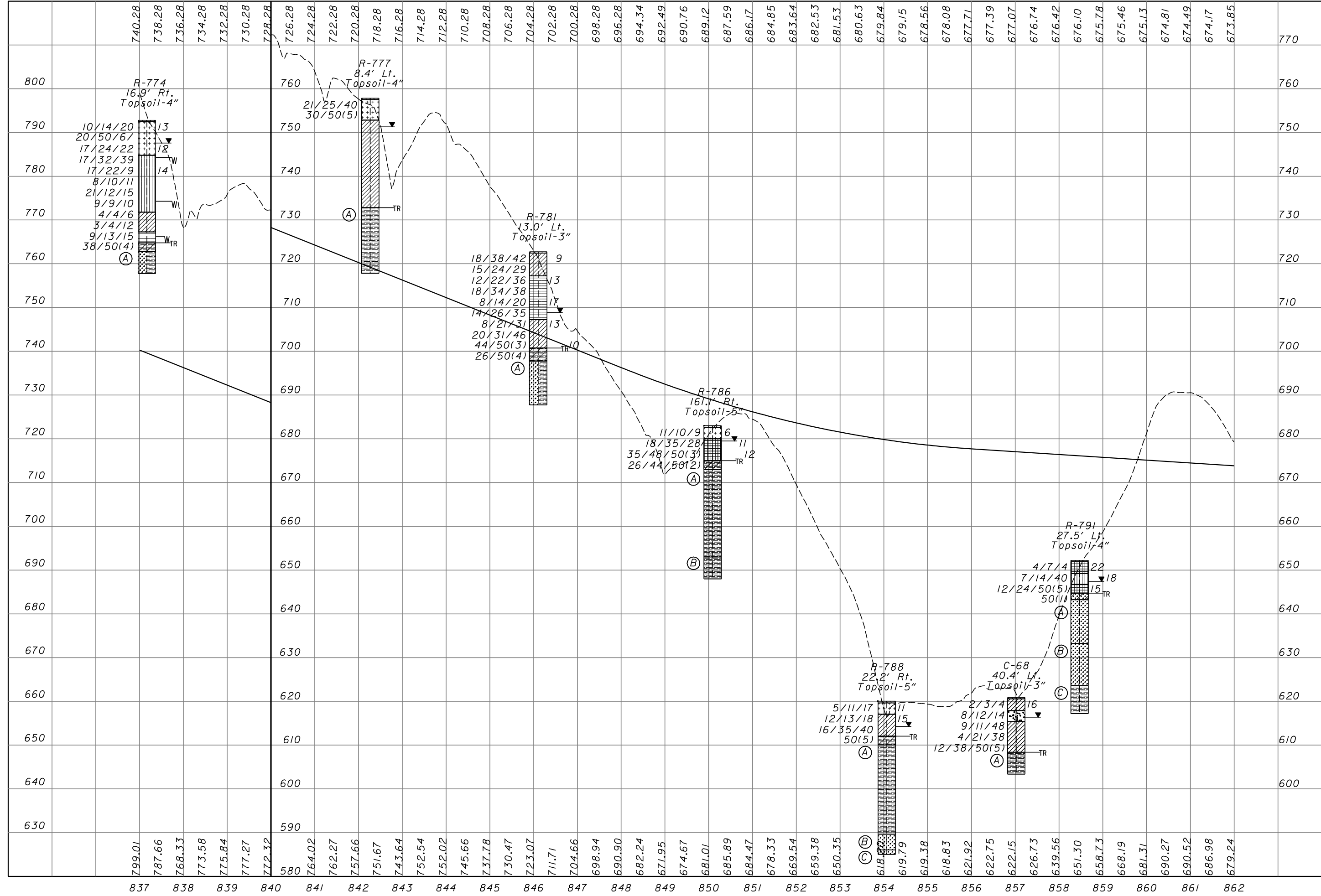
SOIL PROFILE
S.R. 823 STA. 837+00 TO STA. 862+00

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85/220



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 AEN

SOIL PROFILE
S.R. 823 STA. 837+00 TO STA 862+00

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R-774

R-1 No Core Loss, RQD = 75%

- Ⓐ Medium hard gray SHALE interbedded with SANDSTONE; very fine grained, highly weathered to decomposed, micaceous, very thinly bedded to laminated, highly fractured to broken.

R-786

R-1 No Core Loss, RQD = 50%

- Ⓐ Soft to medium hard gray SHALE interbedded with SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, laminated to thinly bedded, moderately fractured.
- R-2 No Core Loss, RQD = 73%
- R-3 No Core Loss, RQD = 95%
- Ⓑ Medium hard gray SHALE; very fine grained, moderately weathered, arenaceous, micaceous, laminated to very thinly bedded, moderately fractured, contains few to moderate arenaceous laminations.

R-791

R-1 No Core Loss, RQD = 58%

- Ⓐ Hard brown SANDSTONE; medium to coarse grained, moderately to highly weathered, micaceous, thickly bedded, highly fractured.
- R-2 No Core Loss, RQD = 83%
- Ⓑ Medium to hard gray and brown SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, medium bedded to thickly bedded, moderately fractured.
 - Ⓒ Medium hard gray SHALE; very fine grained, highly weathered.
- R-3 No Core Loss, RQD = 83%

R-777

R-1 Core Loss = 16%, RQD = 0%
R-2 Core Loss = 46%, RQD = 0%
R-3 No Core Loss, RQD = 84%

- Ⓐ Soft to medium hard gray SANDSTONE; very fine grained, moderately weathered to decomposed, micaceous, pyritic, thinly laminated to laminated, moderately fractured, contains abundant argillaceous laminations, fissle.

R-4 No Core Loss, RQD = 100%

R-788

R-1 No Core Loss, RQD = 100%

- Ⓐ Soft to medium hard gray SHALE; very fine grained, highly to moderately weathered, arenaceous, massive, moderately fractured.
- R-2 Core Loss = 8%, RQD = 89%
- R-3 No Core Loss, RQD = 97%
- Ⓑ Medium hard gray SANDSTONE; very fine grained, argillaceous, micaceous, moderately to highly weathered, contains moderate to abundant argillaceous laminations.
 - Ⓒ Hard gray SANDSTONE; medium grained, slightly weathered, micaceous, medium bedded, unfractured.

R-781

R-1 Core Loss = 5%, RQD = 95%

- Ⓐ Soft to medium hard gray SHALE interbedded with SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, laminated to thinly bedded, moderately fractured.

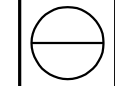
C-68

R-1 No Core Loss, RQD = 100%

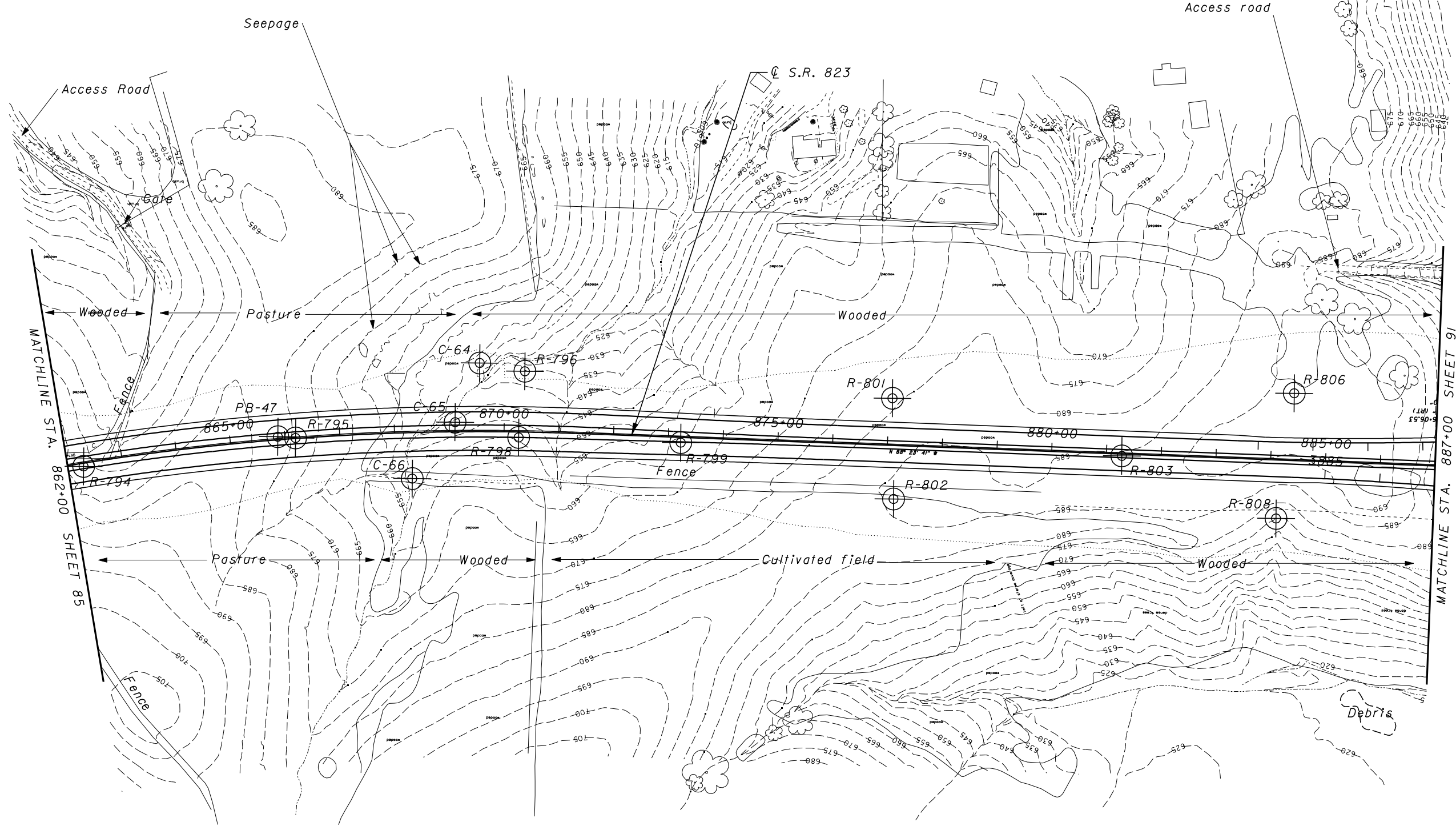
- Ⓐ Soft gray SHALE; highly weathered, micaceous, thinly laminated, slightly fractured.

SOIL PROFILE
S.R. 823 STA. 837+00 TO STA. 862+00

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MATCHLINE STA. 862+00 SHEET 85

MATCHLINE STA. 887+00 SHEET 91

CROSS SECTION INDEX	
STATION	SHEET
869+00	192
870+50	193
877+00	194
884+50	195

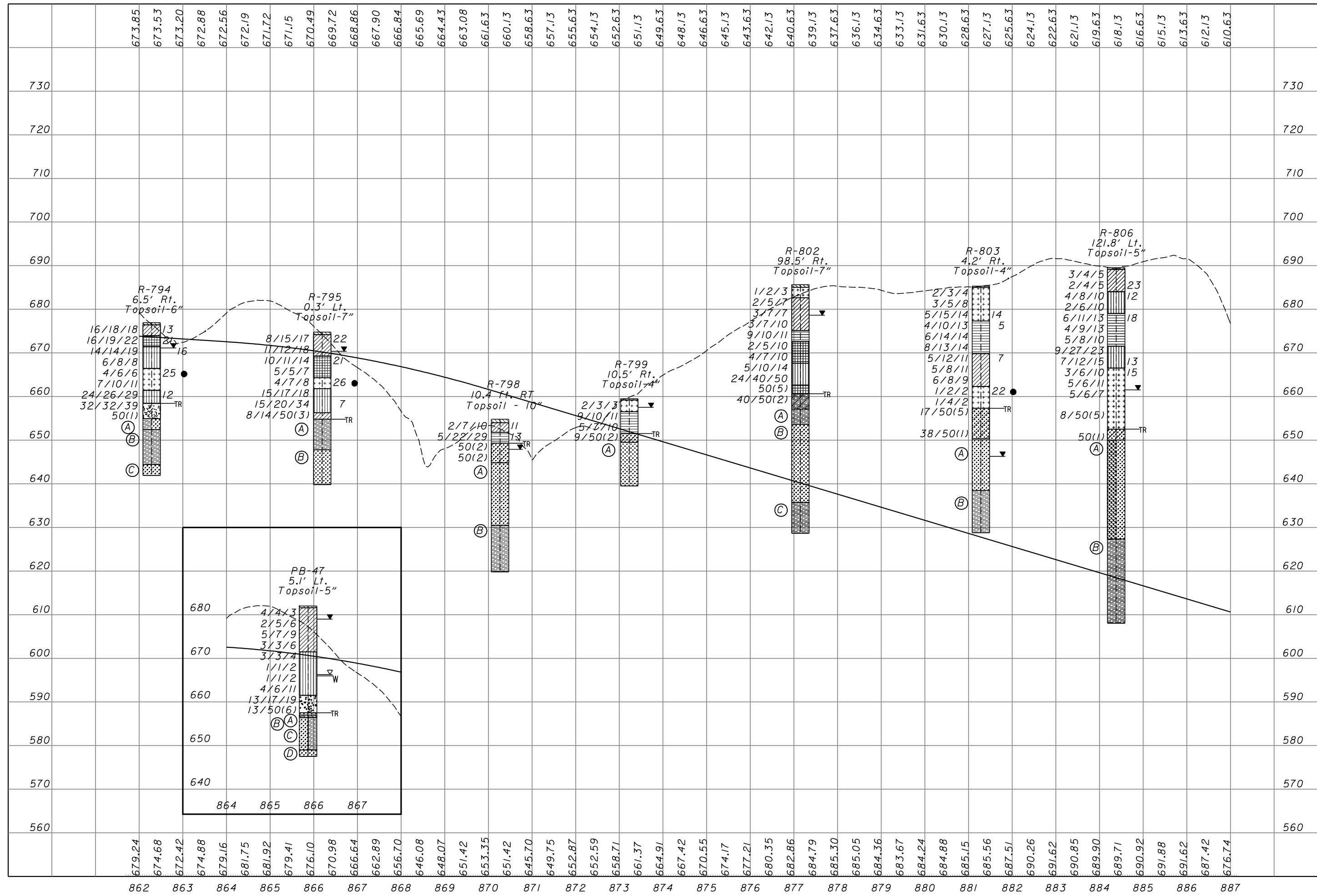
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HORIZONTAL SCALE IN FEET

SOIL PROFILE
S.R. 823 STA. 862+00 TO STA. 887+00

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SOIL PROFILE
S.R. 823 STA. 862+00 TO STA. 887+00

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R-794

- R-1 No Core Loss, RQD = 94%
- Ⓐ Soft to medium hard gray SHALE interbedded with SANDSTONE; very fine grained, highly weathered, micaceous, laminated to thinly bedded, moderately fractured.
 - Ⓑ Soft to medium hard gray SHALE; highly weathered, micaceous, arenaceous, thinly laminated to laminated, moderately fractured.
- R-2 No Core Loss, RQD = 73%
- Ⓒ Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded.

R-798

- R-1 No Core Loss, RQD = 53%
- Ⓐ Hard brownish gray SANDSTONE; very fine to fine grained, highly weathered, micaceous, argillaceous, thinly bedded, highly fractured to broken, contains few to moderate argillaceous laminations.
- R-2 No Core Loss, RQD = 89%
- Ⓑ Medium hard gray SHALE; very fine grained, highly weathered to decomposed, arenaceous, micaceous, thinly laminated to laminated, moderately fractured, contains moderate arenaceous laminations.
- R-3 No Core Loss, RQD = 93%

R-803

- R-1 Core Loss = 28%, RQD = 39%
- Ⓐ Hard to very hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, micaceous, argillaceous, medium bedded to thickly bedded, slightly fractured.
- R-2 No Core Loss, RQD = 88%
- R-3 No Core Loss, RQD = 20%
- Ⓑ Soft to medium hard gray SHALE; very fine grained, highly weathered to decomposed, micaceous, thinly laminated to very thin laminated, highly fractured to broken, few sandstone laminae.

R-795

- R-1 No Core Loss, RQD = 94%
- Ⓐ Soft gray SHALE; decomposed to, highly weathered, slightly fractured, thinly laminated to laminated.
 - Ⓑ Medium hard to hard gray and brown SANDSTONE; highly weathered to moderately weathered, very fine grained to fine grained, argillaceous, micaceous, slightly fractured.
- R-2 No Core Loss, RQD = 83%

R-799

- R-1 No Core Loss, RQD = 73%
- Ⓐ Medium hard to hard gray SANDSTONE; fine grained, moderately weathered, argillaceous, micaceous, medium bedded to thickly bedded, slightly fractured contains few to moderate argillaceous laminations.

R-802

- R-1 No Core Loss, RQD = 60%
- Ⓐ Soft to medium hard gray SHALE; very fine grained, highly weathered, arenaceous, laminated, moderately fractured.
- R-2 No Core Loss, RQD = 81%
- Ⓑ Hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, very thickly bedded, slightly fractured, moderate shale laminae.
- R-3 No Core Loss, RQD = 96%
- Ⓒ Medium hard gray SHALE; fine grained, moderately to highly weathered, arenaceous, moderately fractured along bedding planes, fissile, contains few to moderate arenaceous laminations.
- R-4 No Core Loss, RQD = 100%

PB-47

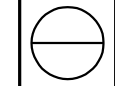
- R-1 No Core Loss, RQD = 83%
- Ⓐ Medium hard brown SANDSTONE.
 - Ⓑ Soft gray CLAY SHALE; weathered.
 - Ⓒ Soft to medium hard gray interbedded SHALE and SANDSTONE; fine to very fine grained, slightly to moderately weathered, thickly bedded to laminated.
 - Ⓓ Medium hard gray SANDSTONE; fine grained, slightly weathered, thin to thickly bedded.

R-806

- R-1 No Core Loss, RQD = 88%
- Ⓐ Soft to hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, medium bedded to thickly bedded, moderately fractured, iron stained.
- R-2 Core Loss = 4%, RQD = 49%
- R-3 No Core Loss, RQD = 53%
- R-4 Core Loss = 2%, RQD = 79%
- Ⓑ Soft gray SHALE; very fine grained, highly weathered, arenaceous, micaceous, thinly laminated to laminated, very fissile, highly fractured to broken.
- R-5 Core Loss = 1%, RQD = 68%

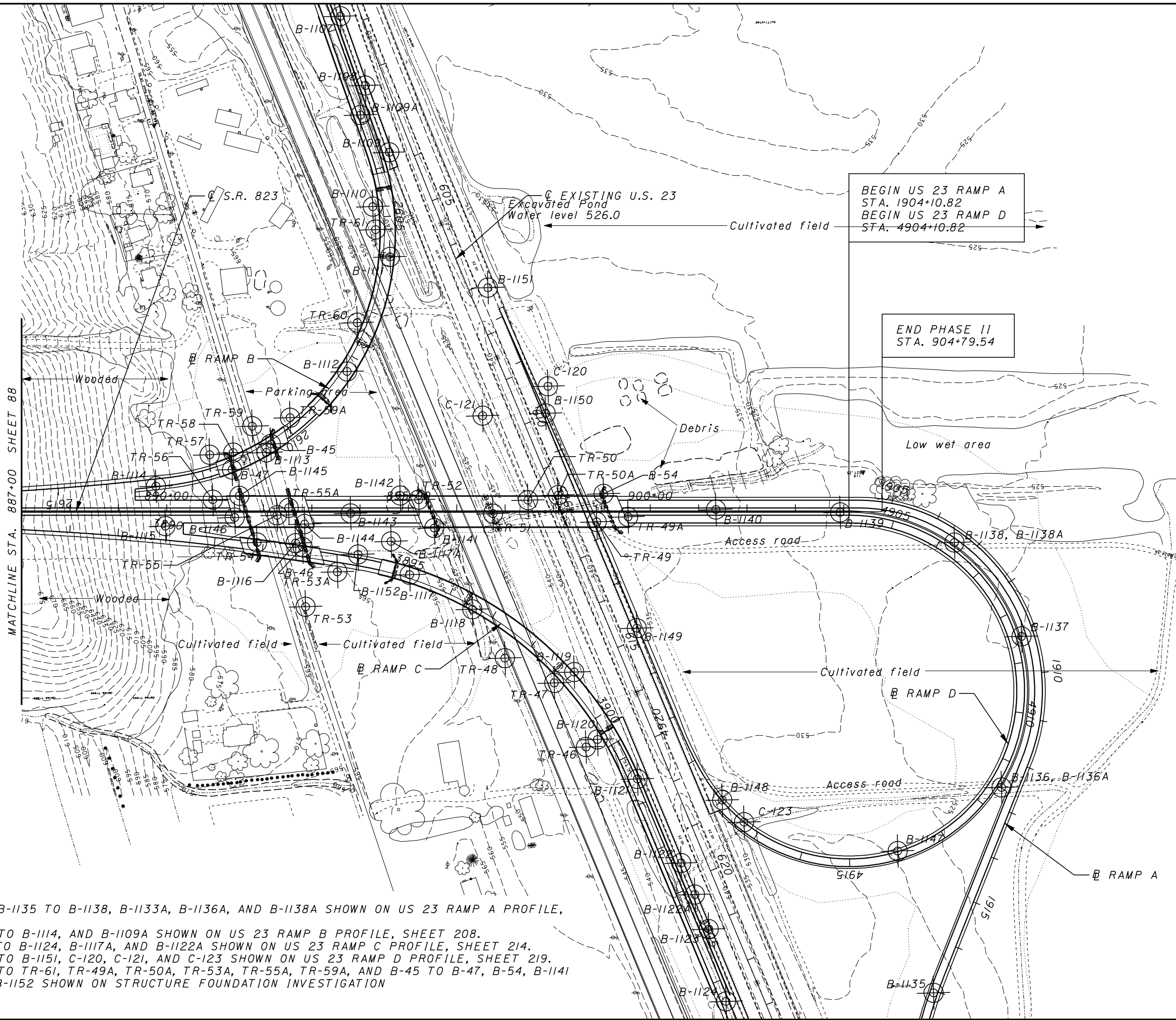
SOIL PROFILE
S.R. 823 STA. 862+00 TO STA. 887+00

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NOTE: BORINGS B-1135 TO B-1138, B-1133A, B-1136A, AND B-1138A SHOWN ON US 23 RAMP A PROFILE, SHEET 203.
 BORINGS B-1107 TO B-1114, AND B-1109A SHOWN ON US 23 RAMP B PROFILE, SHEET 208.
 BORINGS B-1116 TO B-1124, B-1117A, AND B-1122A SHOWN ON US 23 RAMP C PROFILE, SHEET 214.
 BORINGS B-1147 TO B-1151, C-120, C-121, AND C-123 SHOWN ON US 23 RAMP D PROFILE, SHEET 219.
 BORINGS TR-46 TO TR-61, TR-49A, TR-50A, TR-53A, TR-55A, TR-59A, AND B-45 TO B-47, B-54, B-1141 TO B-1146, AND B-1152 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

BEGIN US 23 RAMP A
 STA. 1904+10.82
 BEGIN US 23 RAMP D
 STA. 4904+10.82

END PHASE II
 STA. 904+79.54



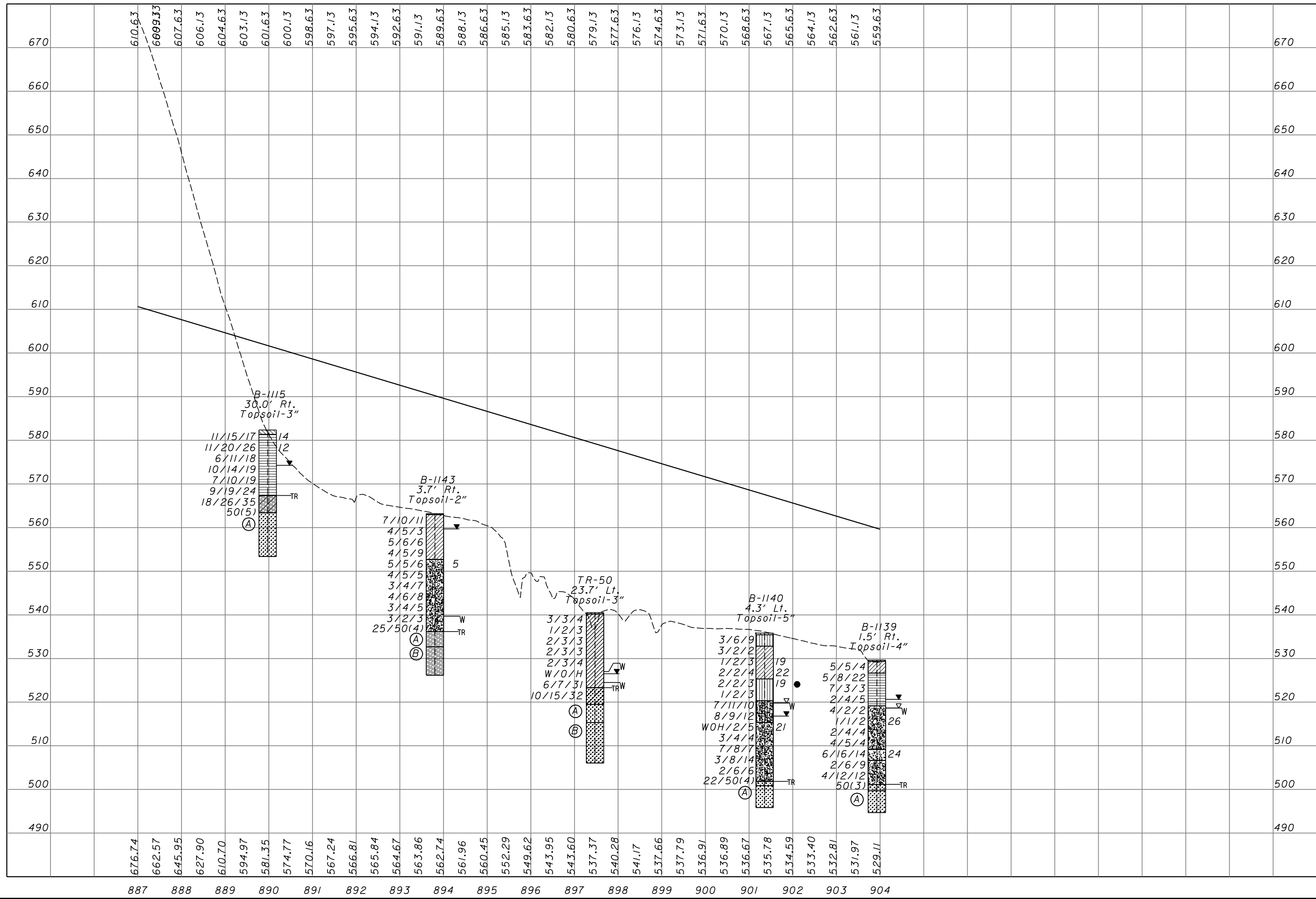
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91/220



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SOIL PROFILE
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B-1115

R-1 Core Loss = 2%, RQD = 71%

- (A) Very soft to soft gray SANDSTONE; very fine grained, highly weathered, micaceous, laminated to thinly bedded, moderately fractured to broken, contains ferric band of very fine sandstone; contains moderate to abundant argillaceous laminations.

B-1143

R-1 No Core Loss, RQD = 81%

- (A) Soft greenish gray SHALE; decomposed, micaceous, thinly laminated, highly fractured.
- (B) Medium hard black SHALE; moderately weathered, carbonaceous, thinly laminated, moderately fractured.

B-1140

R-1 Core Loss = 15%, RQD = 43%

- (A) Hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly bedded to medium bedded, highly fractured.

B-1139

R-1 Core Loss = 7%, RQD = 68%

- (A) Hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly bedded to medium bedded, slightly fractured.

TR-50

R-1 Core Loss = 55%, RQD = 0%

- (A) Soft to medium hard gray SANDSTONE; decomposed, argillaceous, broken.

R-2 Core Loss = 10%, RQD = 53%

- (B) Hard gray SANDSTONE; very fine to fine grained, micaceous, argillaceous, massive, slightly to highly fractured.

R-3 No Core Loss, RQD = 100%

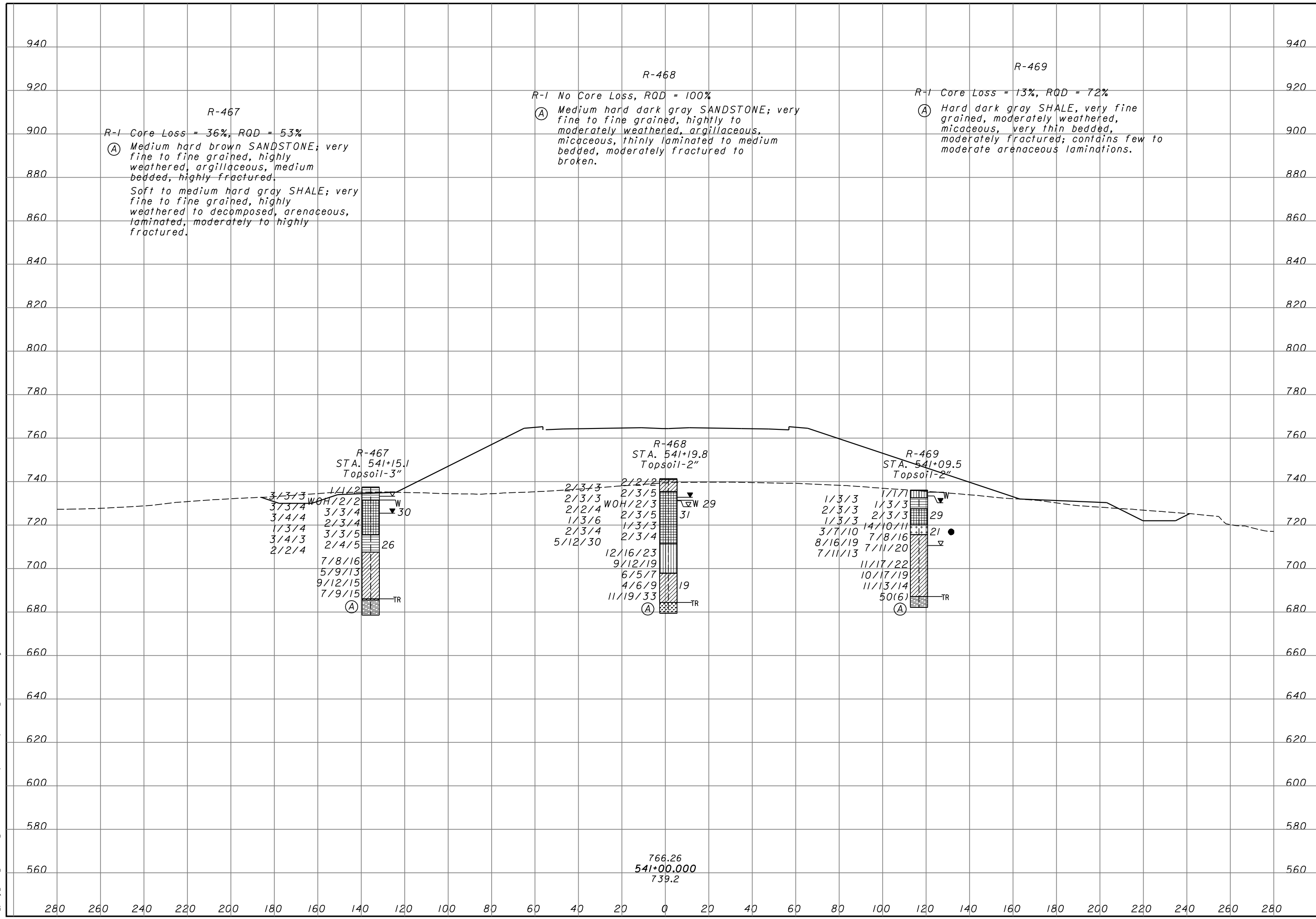
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SOIL PROFILE
S.R. 823 STA. 887+00 TO STA. 904+00

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93/220

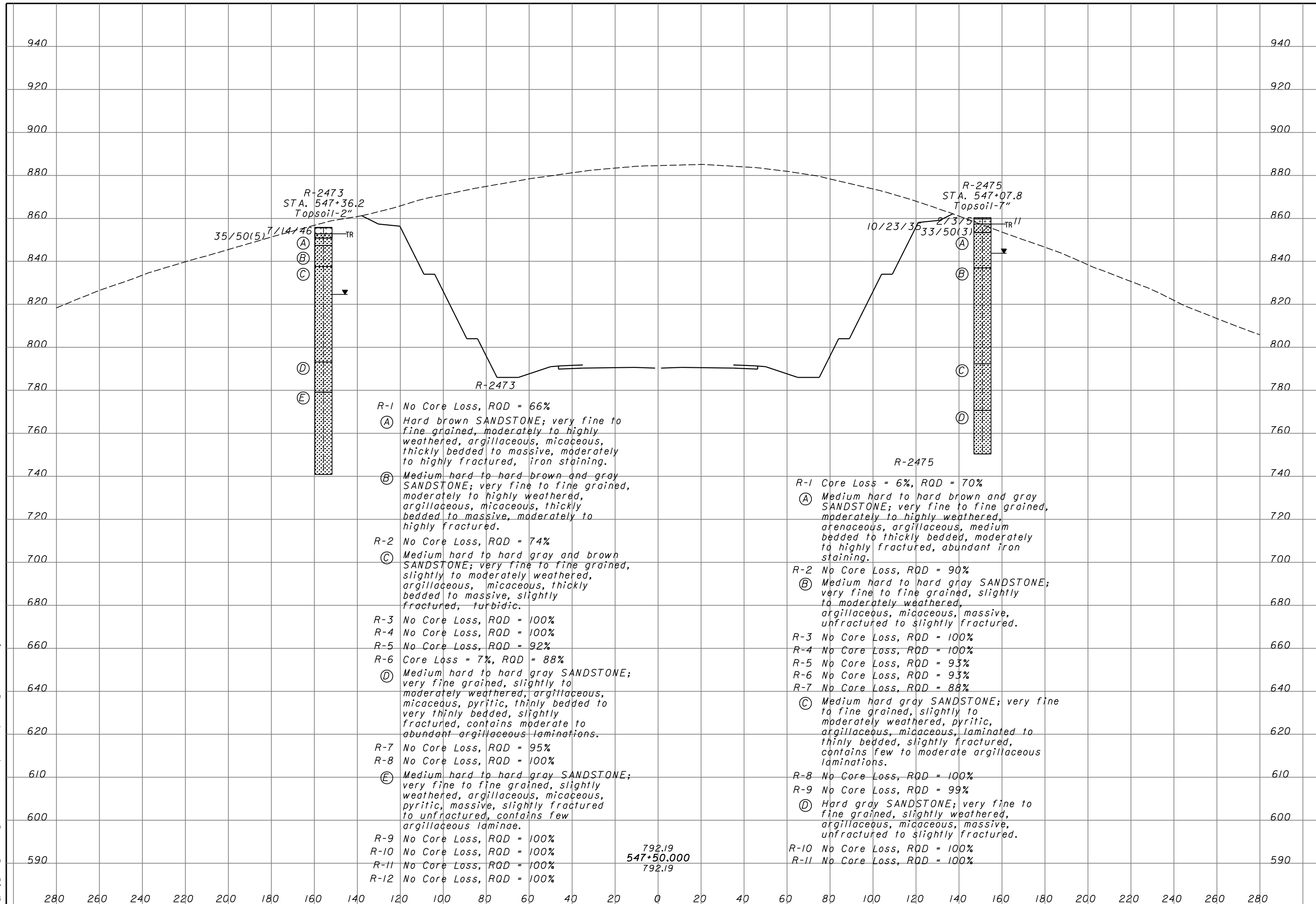




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766.26
 541+00.000
 739.2

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R-2473
STA. 547+36.2
Topsoil-2"

R-2475
STA. 547+07.8
Topsoil-7"

R-1 No Core Loss, RQD = 66%
 (A) Hard brown SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded to massive, moderately to highly fractured, iron staining.
 (B) Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded to massive, moderately to highly fractured.
 R-2 No Core Loss, RQD = 74%
 (C) Medium hard to hard gray and brown SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, thickly bedded to massive, slightly fractured, turbidic.
 R-3 No Core Loss, RQD = 100%
 R-4 No Core Loss, RQD = 100%
 R-5 No Core Loss, RQD = 92%
 R-6 Core Loss = 7%, RQD = 88%
 (D) Medium hard to hard gray SANDSTONE; very fine grained, slightly to moderately weathered, argillaceous, micaceous, pyritic, thinly bedded to very thinly bedded, slightly fractured, contains moderate to abundant argillaceous laminations.
 R-7 No Core Loss, RQD = 95%
 R-8 No Core Loss, RQD = 100%
 (E) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, massive, slightly fractured to unfractured, contains few argillaceous laminae.
 R-9 No Core Loss, RQD = 100%
 R-10 No Core Loss, RQD = 100%
 R-11 No Core Loss, RQD = 100%
 R-12 No Core Loss, RQD = 100%

R-1 Core Loss = 6%, RQD = 70%
 (A) Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, arenaceous, argillaceous, medium bedded to thickly bedded, moderately to highly fractured, abundant iron staining.
 R-2 No Core Loss, RQD = 90%
 (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
 R-3 No Core Loss, RQD = 100%
 R-4 No Core Loss, RQD = 100%
 R-5 No Core Loss, RQD = 93%
 R-6 No Core Loss, RQD = 93%
 R-7 No Core Loss, RQD = 88%
 (C) Medium hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, pyritic, argillaceous, micaceous, laminated to thinly bedded, slightly fractured, contains few to moderate argillaceous laminations.
 R-8 No Core Loss, RQD = 100%
 R-9 No Core Loss, RQD = 99%
 (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
 R-10 No Core Loss, RQD = 100%
 R-11 No Core Loss, RQD = 100%

792.19
547+50.000
792.19

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RLS
CHECKED
AEN

SOIL PROFILE
CROSS SECTION - SR 823 STA. 547+50.00

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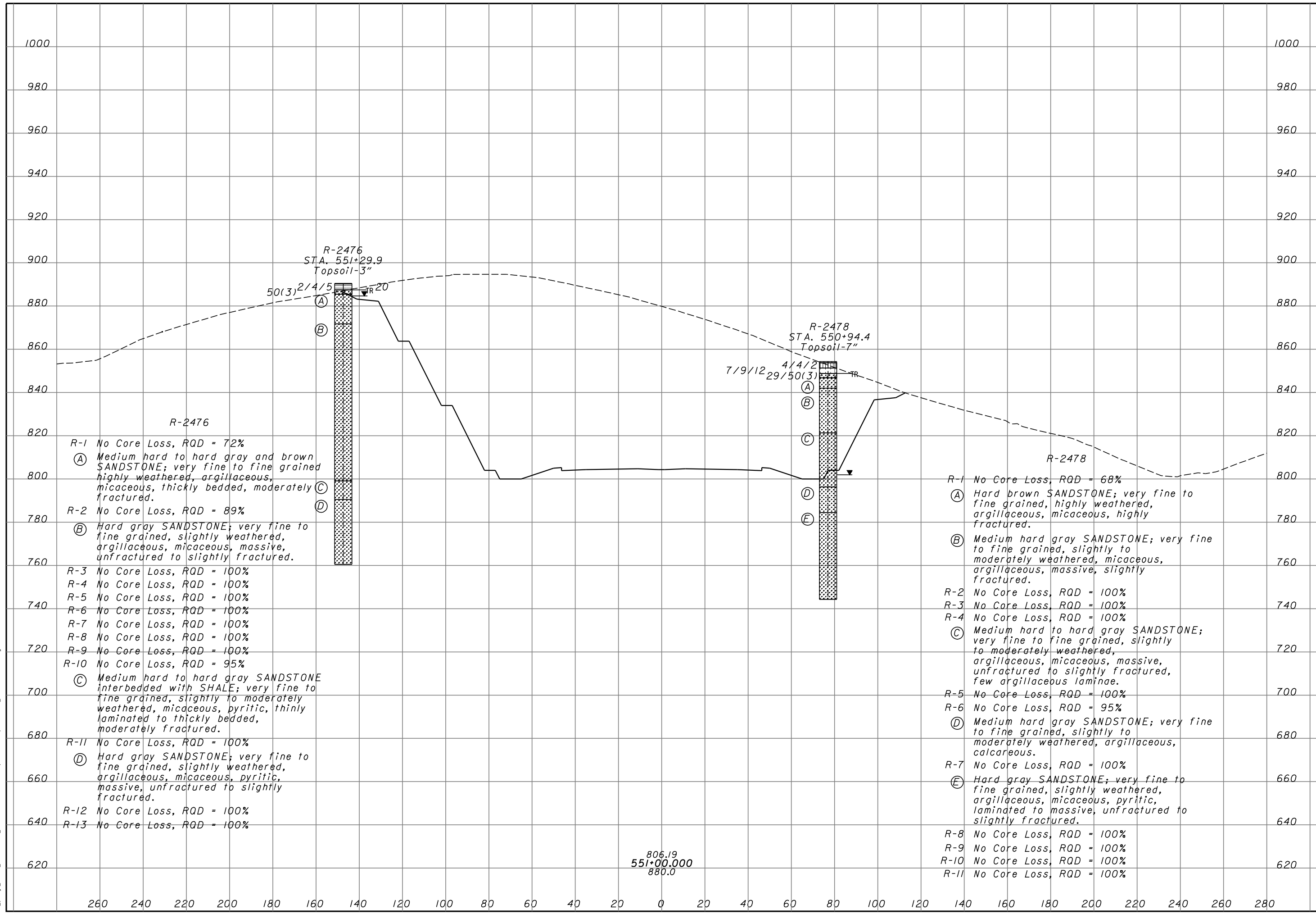
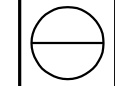
95/220



**SOIL PROFILE
CROSS SECTION - SR 823 STA. 551+00.00**

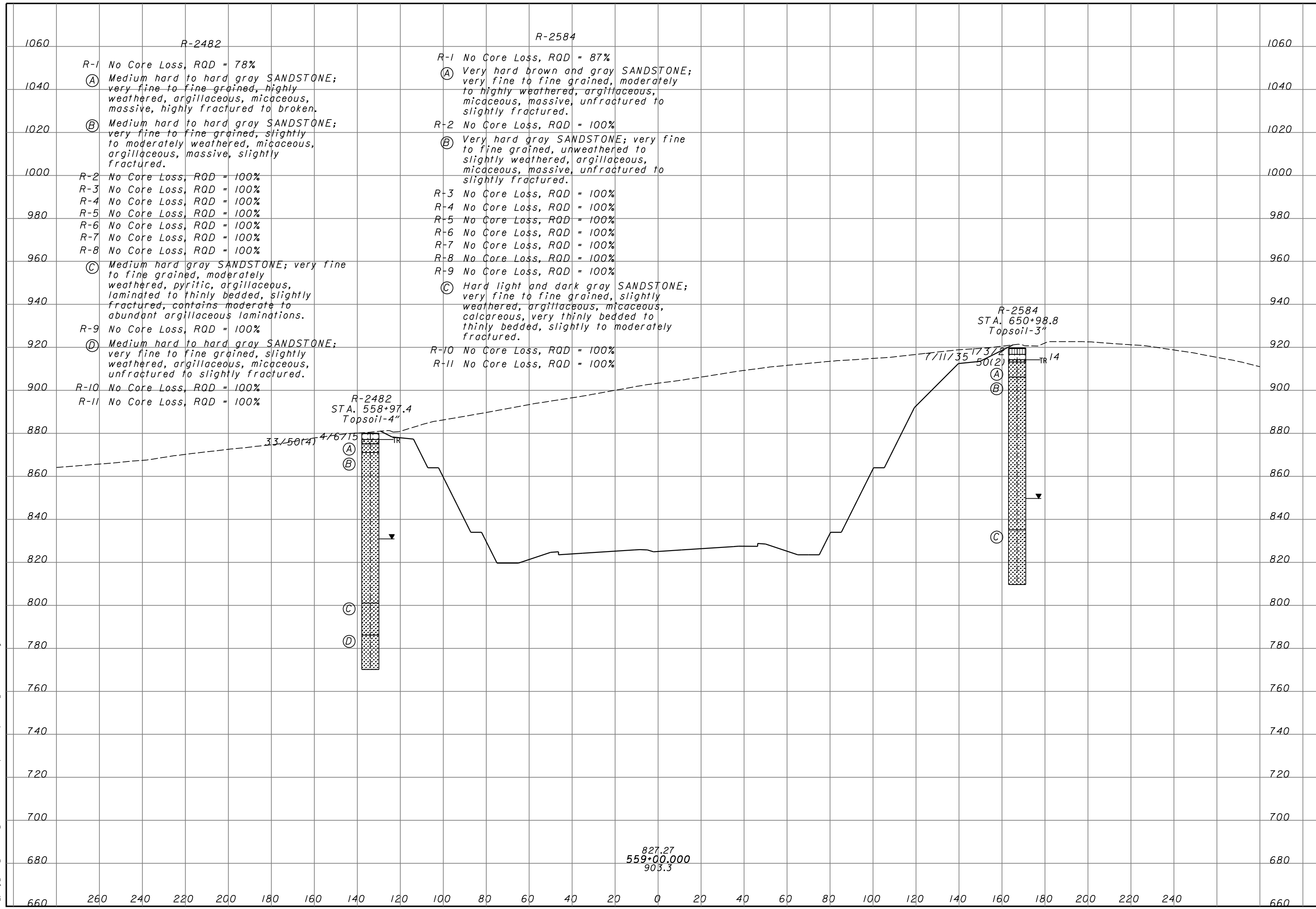
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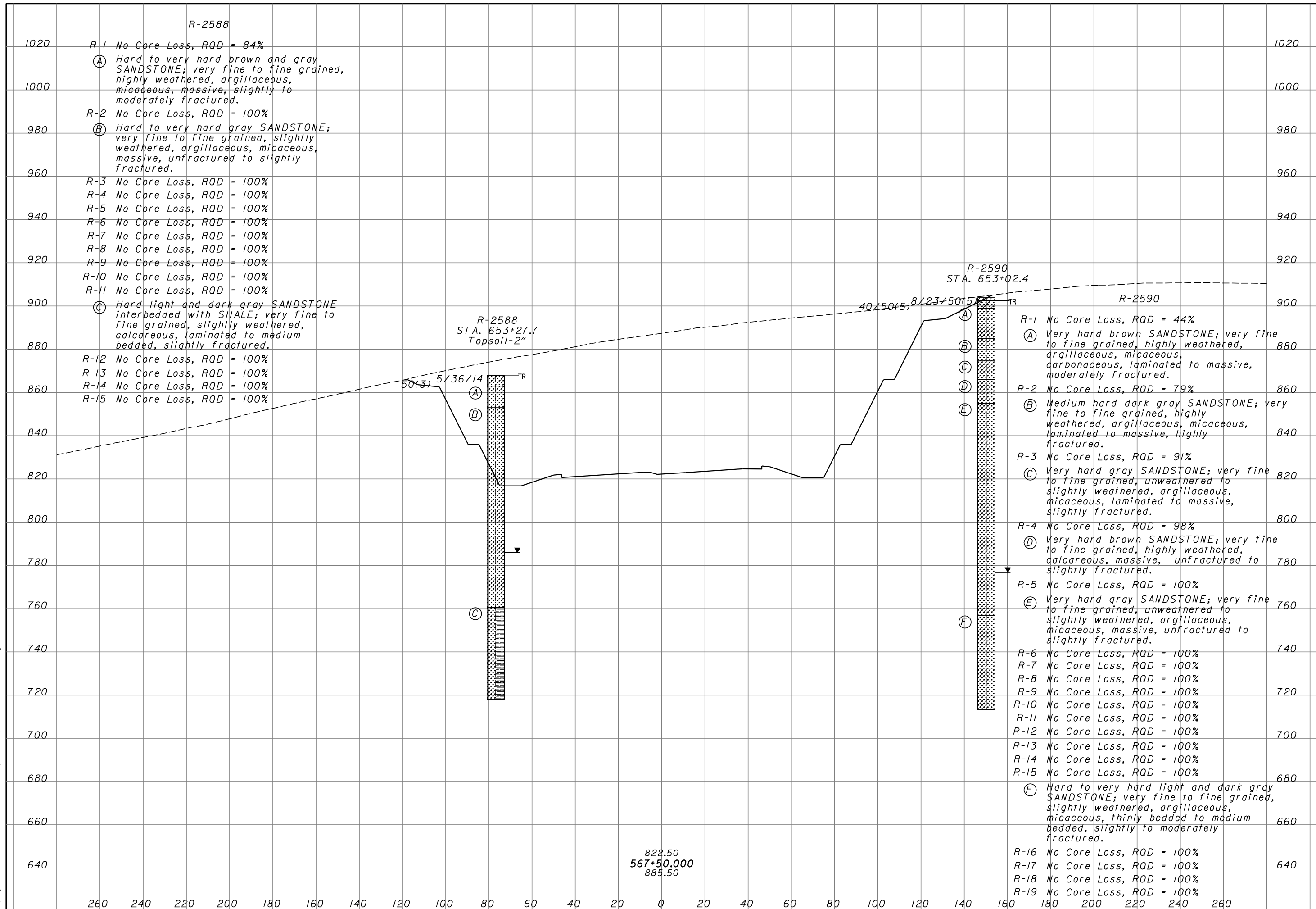
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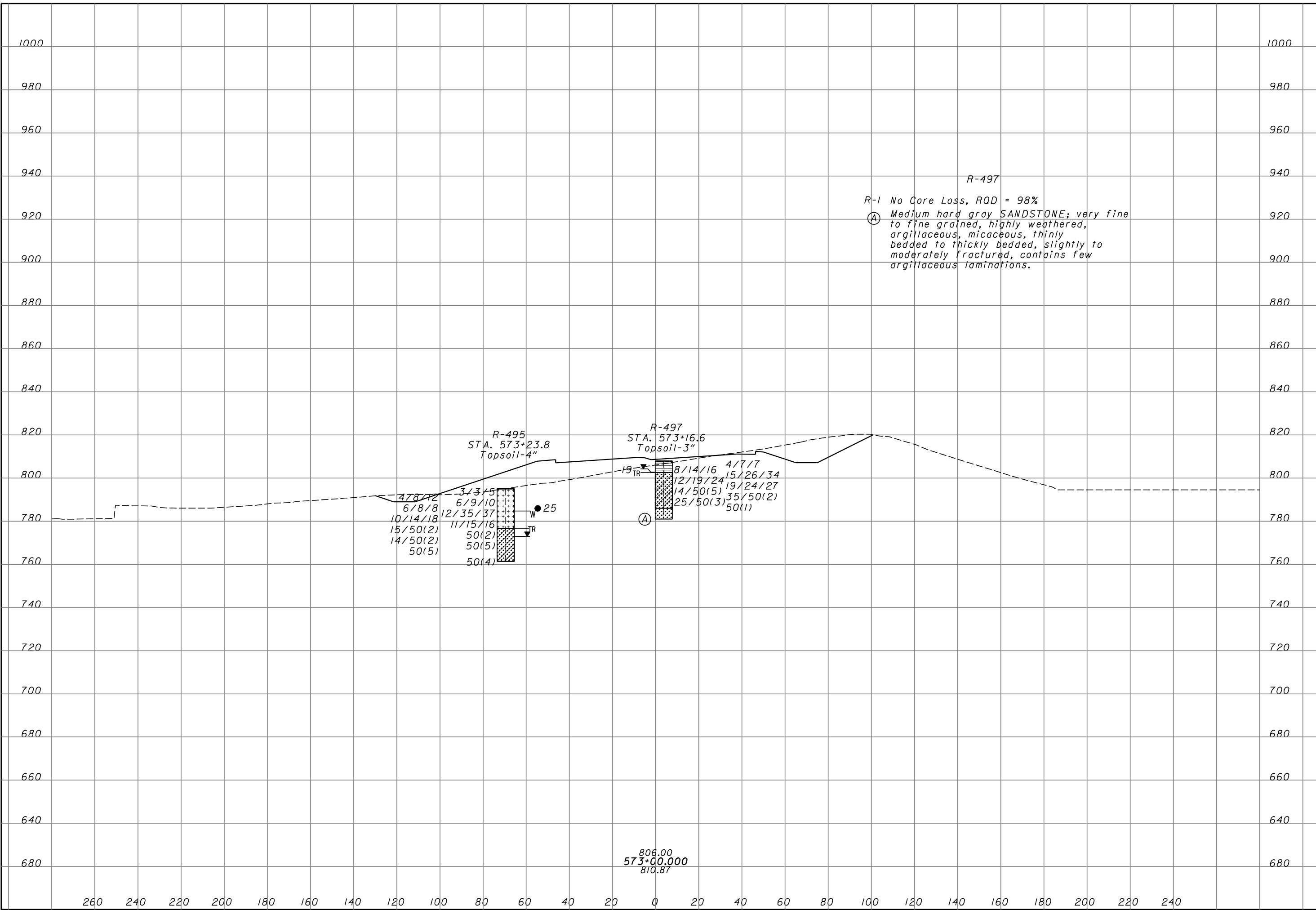
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 559+00.00
 SCI-823-10.13
 97/220

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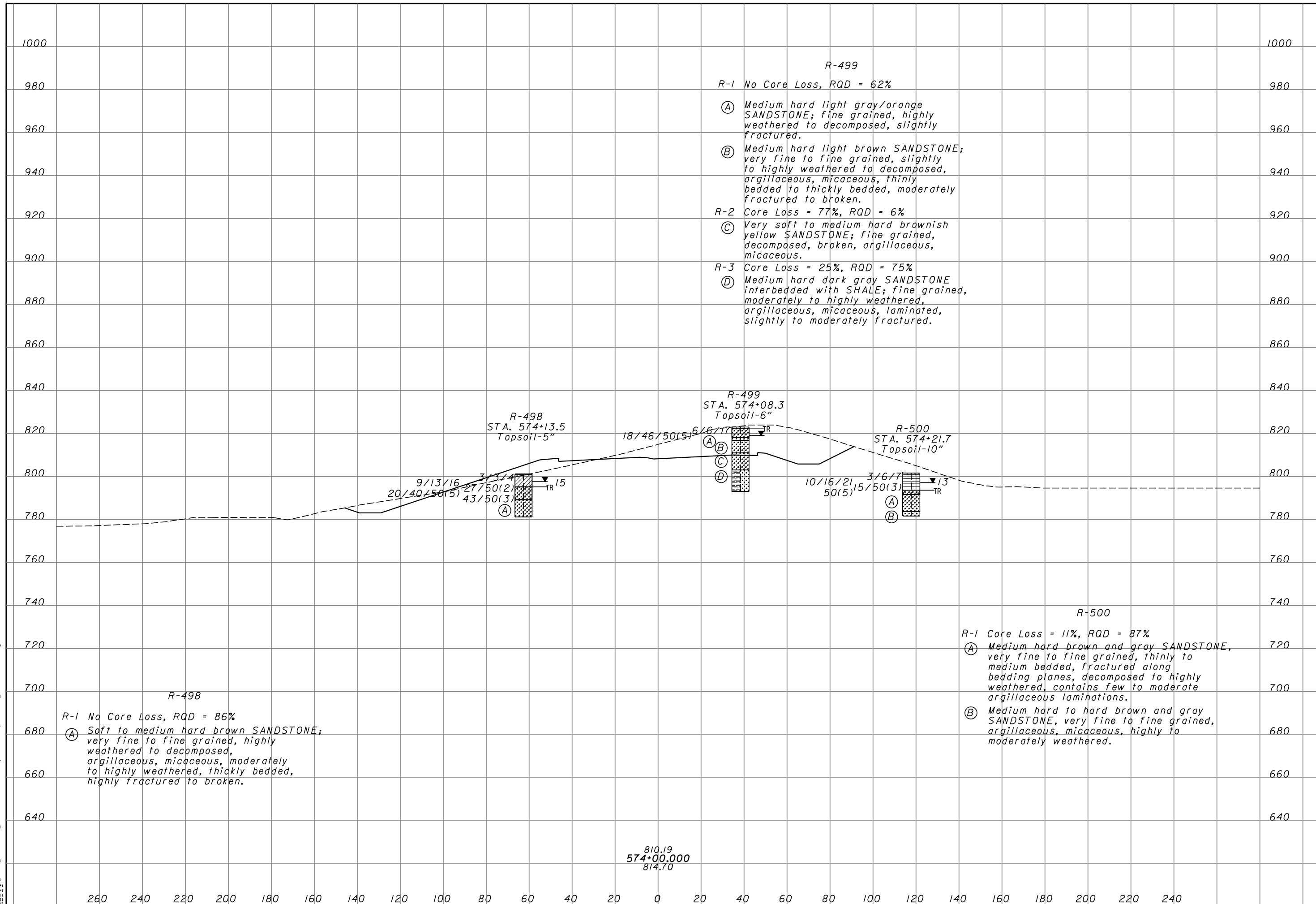
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SCI-823-10.13	98/220

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CROSS SECTION - SR 823 STA. 573+00.00	
SCI-823-10.13	
99/220	⊕

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RLS
CHECKED
AEN

**SOIL PROFILE
CROSS SECTION - SR 823 STA. 574+00.00**

SCI-823-10.13

100/220



R-499

R-1 No Core Loss, RQD = 62%

- Ⓐ Medium hard light gray/orange SANDSTONE; fine grained, highly weathered to decomposed, slightly fractured.
- Ⓑ Medium hard light brown SANDSTONE; very fine to fine grained, slightly to highly weathered to decomposed, argillaceous, micaceous, thinly bedded to thickly bedded, moderately fractured to broken.

R-2 Core Loss = 77%, RQD = 6%

- Ⓒ Very soft to medium hard brownish yellow SANDSTONE; fine grained, decomposed, broken, argillaceous, micaceous.

R-3 Core Loss = 25%, RQD = 75%

- Ⓓ Medium hard dark gray SANDSTONE interbedded with SHALE; fine grained, moderately to highly weathered, argillaceous, micaceous, laminated, slightly to moderately fractured.

R-498
STA. 574+13.5
Topsoil-5"

R-499
STA. 574+08.3
Topsoil-6"

R-500
STA. 574+21.7
Topsoil-10"

R-500

R-1 Core Loss = 11%, RQD = 87%

- Ⓐ Medium hard brown and gray SANDSTONE, very fine to fine grained, thinly to medium bedded, fractured along bedding planes, decomposed to highly weathered, contains few to moderate argillaceous laminations.
- Ⓑ Medium hard to hard brown and gray SANDSTONE, very fine to fine grained, argillaceous, micaceous, highly to moderately weathered.

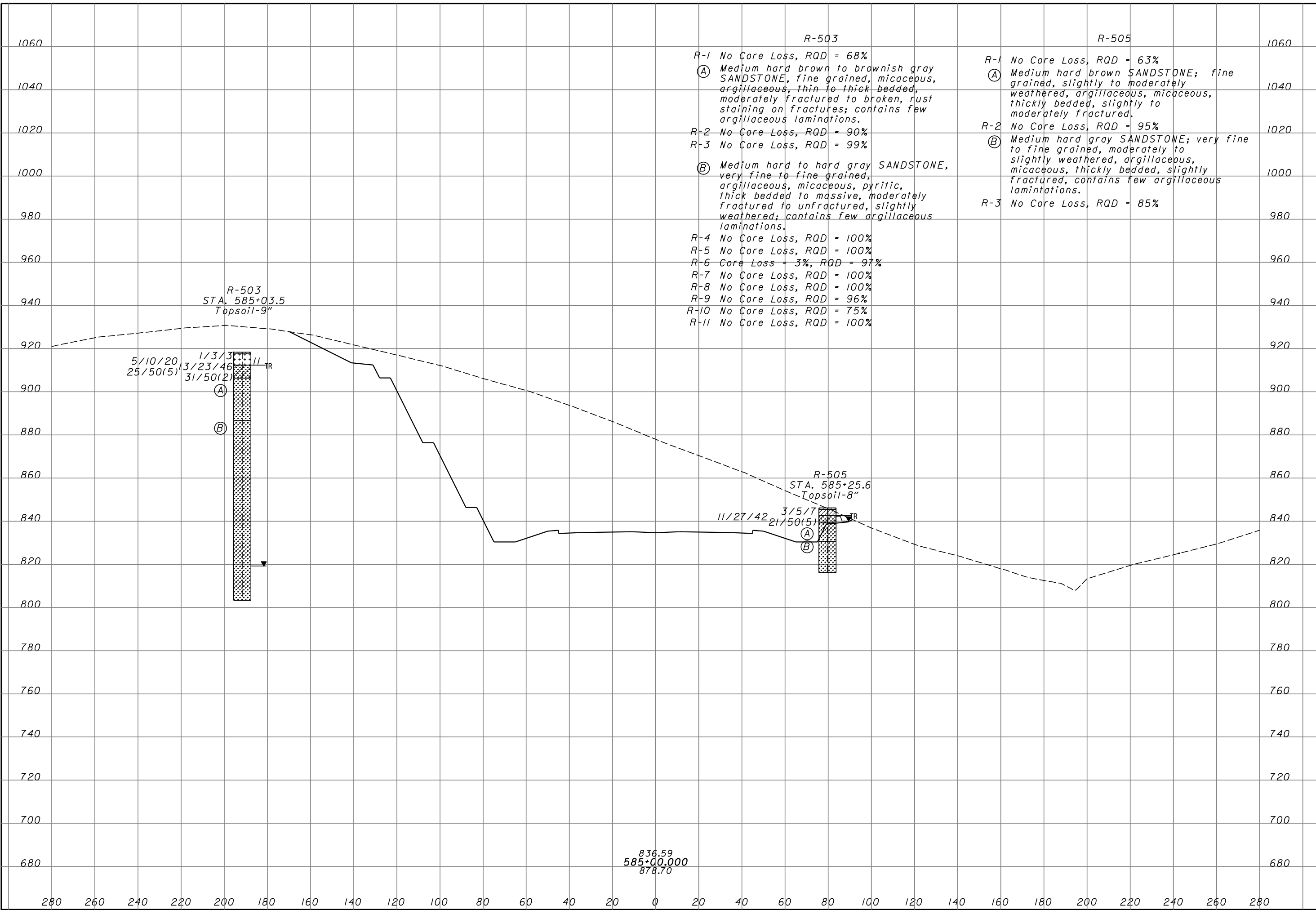
R-498

R-1 No Core Loss, RQD = 86%

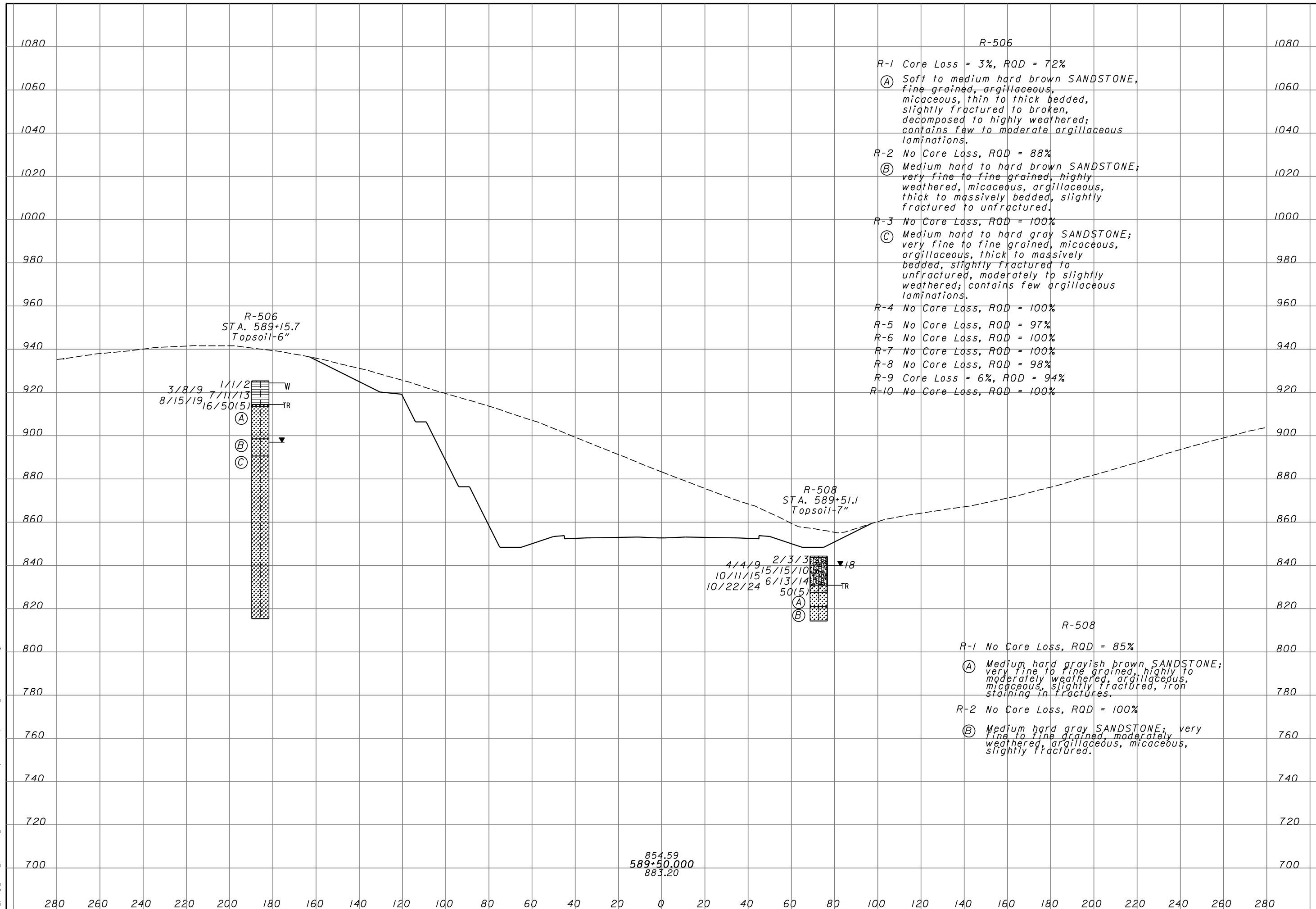
- Ⓐ Soft to medium hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, moderately to highly weathered, thickly bedded, highly fractured to broken.

810.19
574+00.000
814.70

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R-506

R-1 Core Loss = 3%, RQD = 72%

(A) Soft to medium hard brown SANDSTONE, fine grained, argillaceous, micaceous, thin to thick bedded, slightly fractured to broken, decomposed to highly weathered; contains few to moderate argillaceous laminations.

R-2 No Core Loss, RQD = 88%

(B) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, micaceous, argillaceous, thick to massively bedded, slightly fractured to unfractured.

R-3 No Core Loss, RQD = 100%

(C) Medium hard to hard brown SANDSTONE; very fine to fine grained, micaceous, argillaceous, thick to massively bedded, slightly fractured to unfractured, moderately to slightly weathered; contains few argillaceous laminations.

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 97%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 98%

R-9 Core Loss = 6%, RQD = 94%

R-10 No Core Loss, RQD = 100%

R-508

R-1 No Core Loss, RQD = 85%

(A) Medium hard grayish brown SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, slightly fractured, iron staining in fractures.

R-2 No Core Loss, RQD = 100%

(B) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, slightly fractured.

854.59
589+50.000
883.20

DRAWN
RLS
CHECKED
AEN

SOIL PROFILE
CROSS SECTION - SR 823 STA. 589+50.00

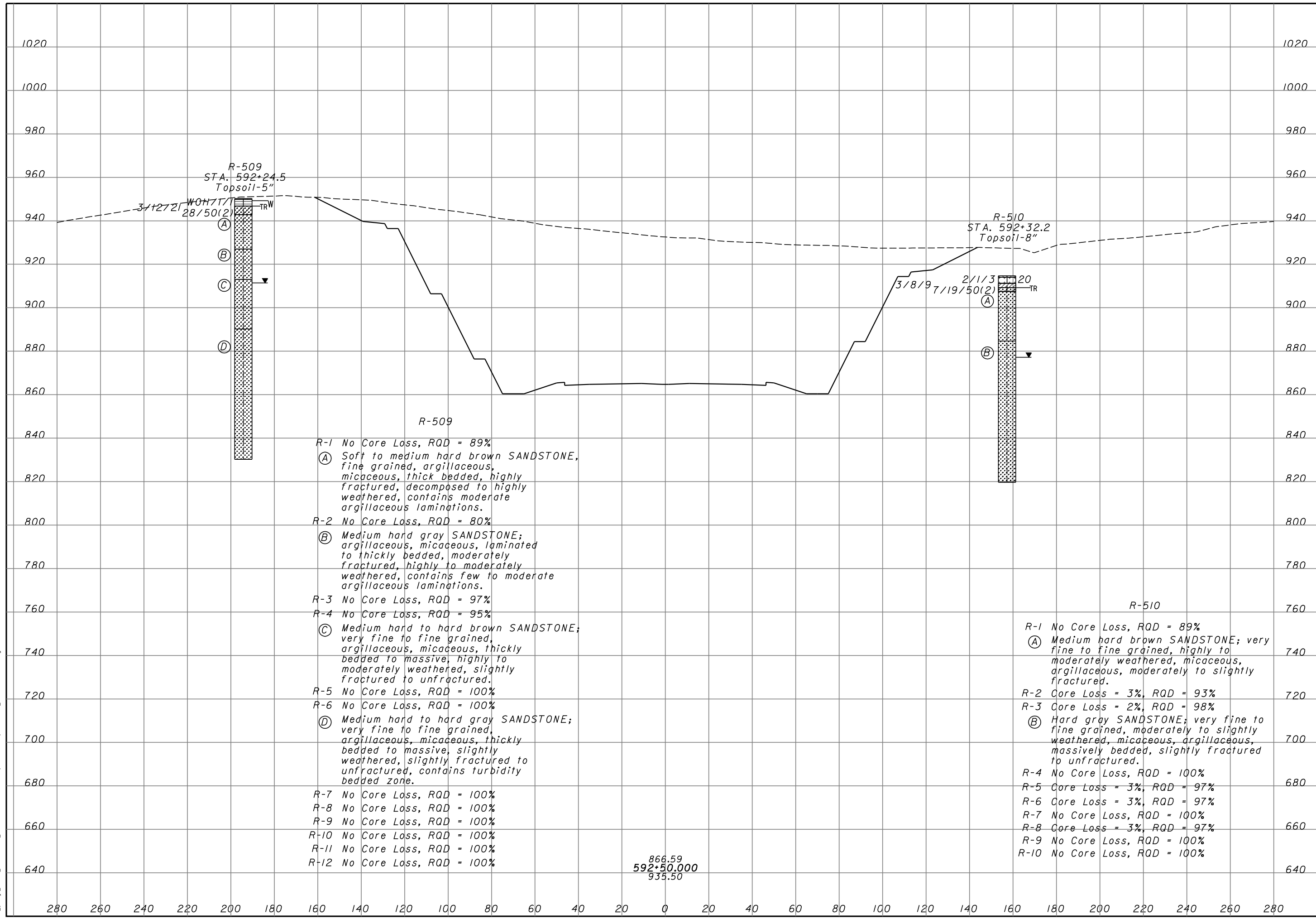
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102/220



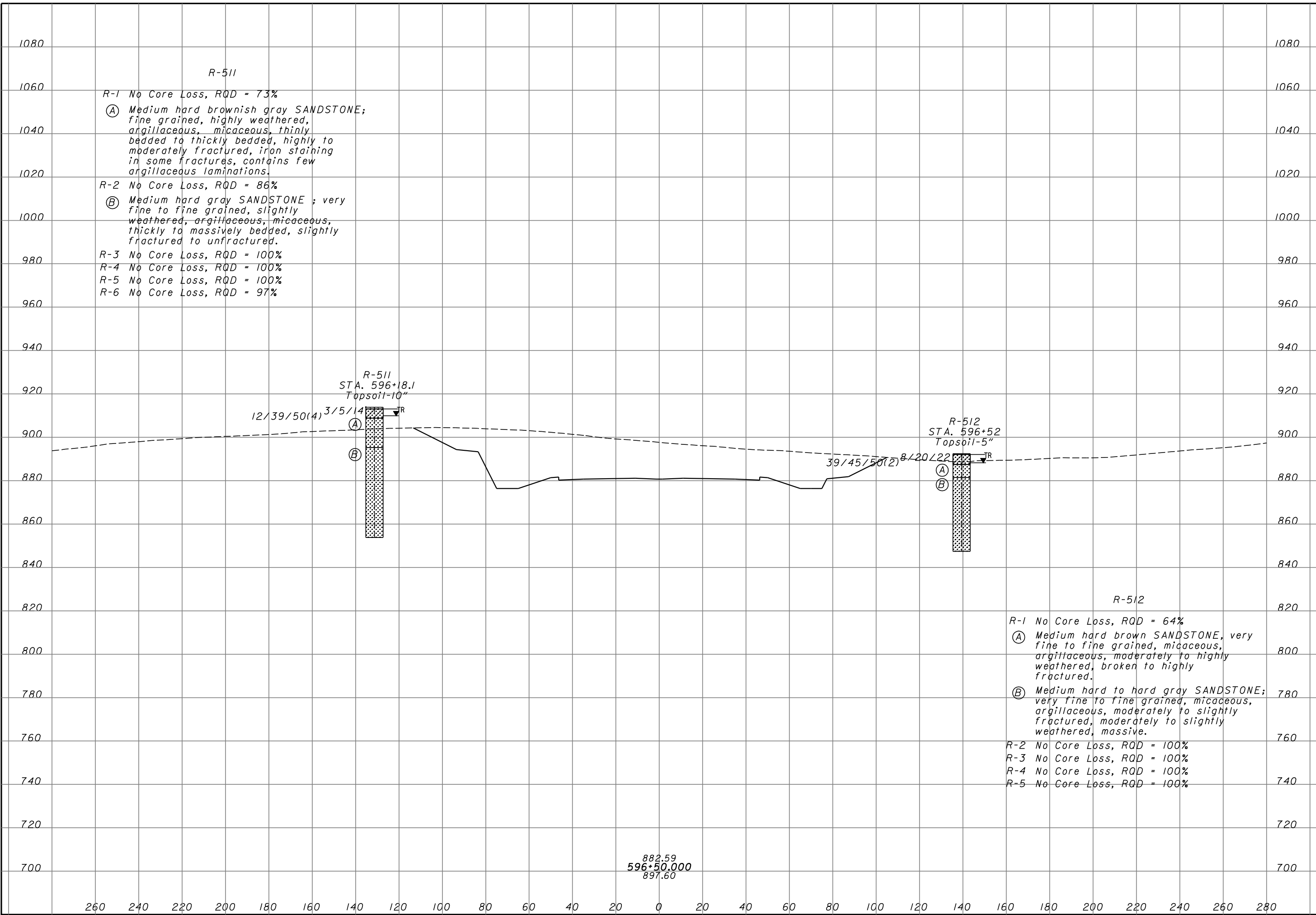
SOIL PROFILE
CROSS SECTION - SR 823 STA. 592+50.00

SCI-823-10.13



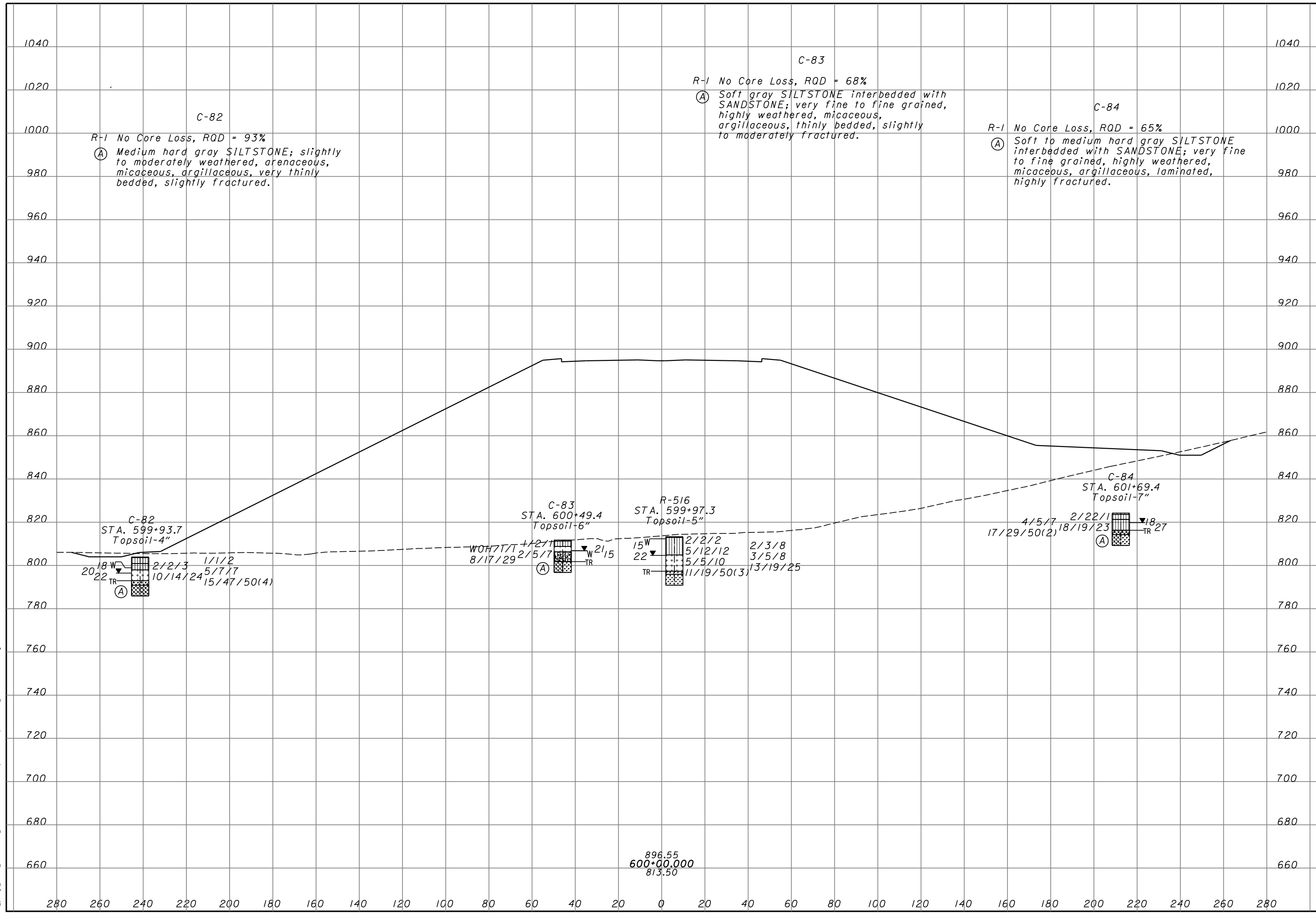
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882.59
 596+50.000
 897.60

DRAWN RLS	SOIL PROFILE
CHECKED AEN	
CROSS SECTION - SR 823 STA. 596+50.00	
SCI-823-10.13	
104/220	



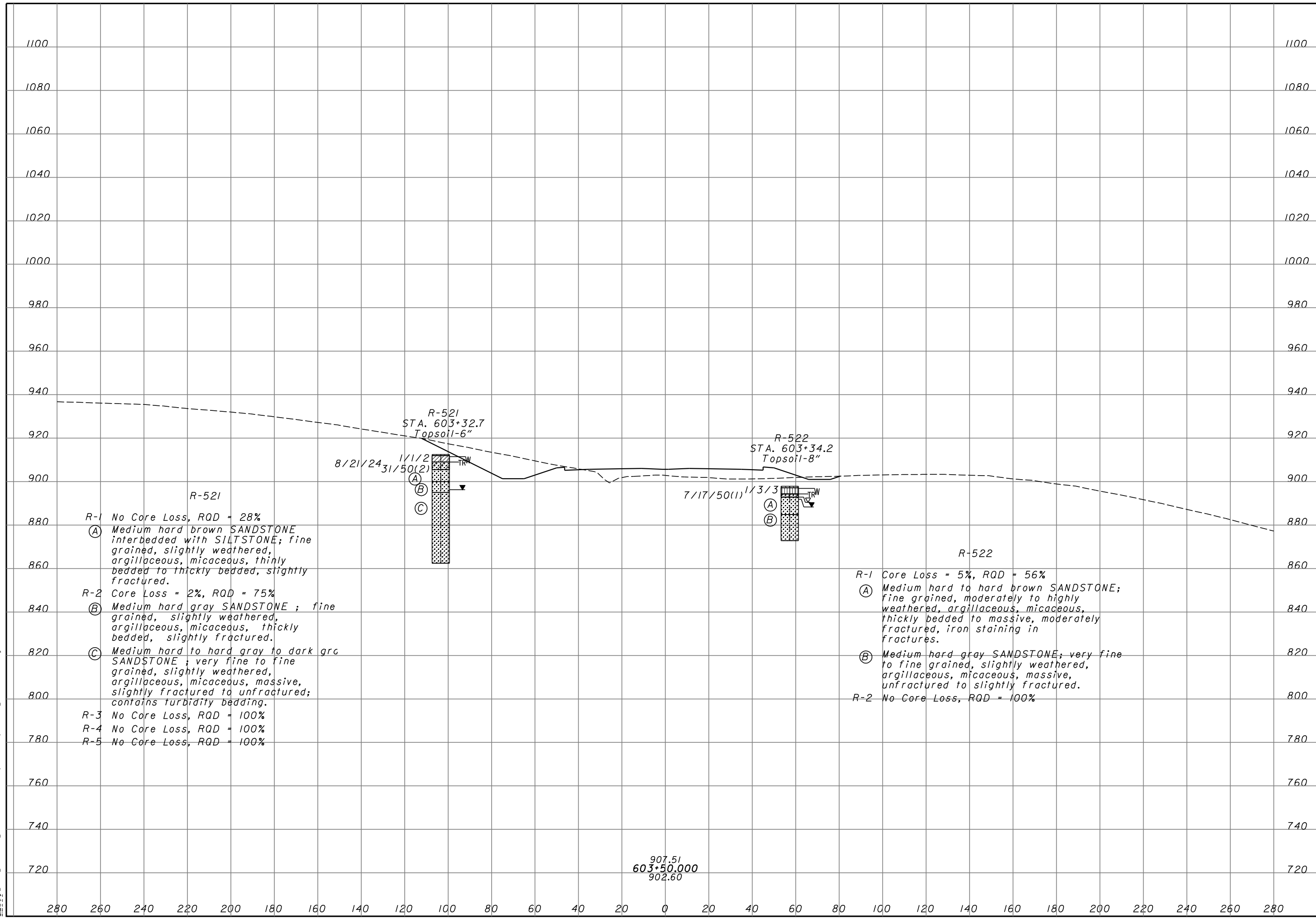
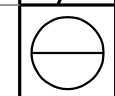
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DRAWN
RLS
CHECKED
AEN

**SOIL PROFILE
CROSS SECTION - SR 823 STA. 603+50.00**

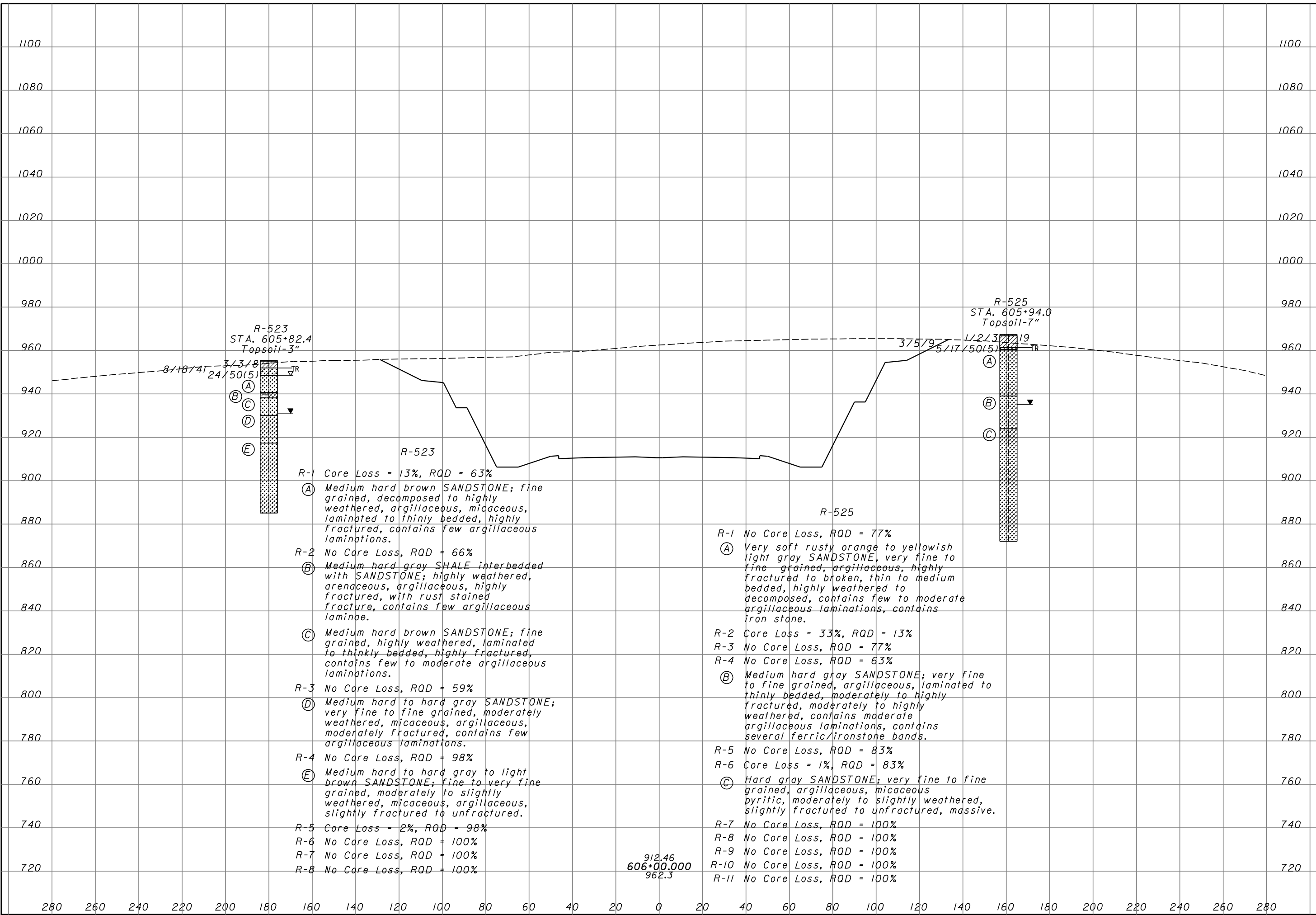
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106/220



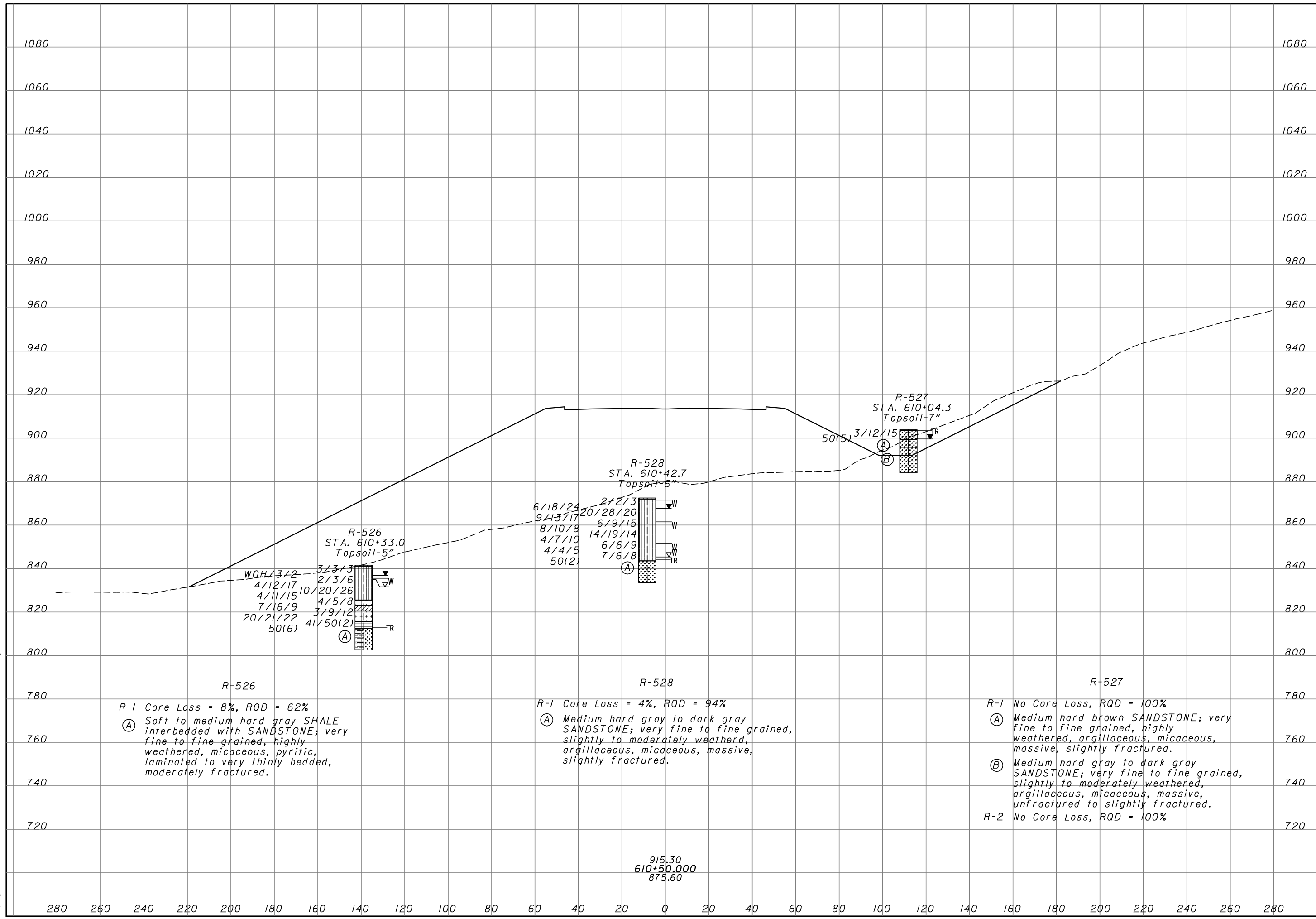
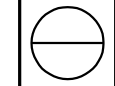
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 610+50.00

SCI-823-10.13



R-526
R-1 Core Loss = 8%, RQD = 62%
Ⓐ Soft to medium hard gray SHALE interbedded with SANDSTONE; very fine to fine grained, highly weathered, micaceous, pyritic, laminated to very thinly bedded, moderately fractured.

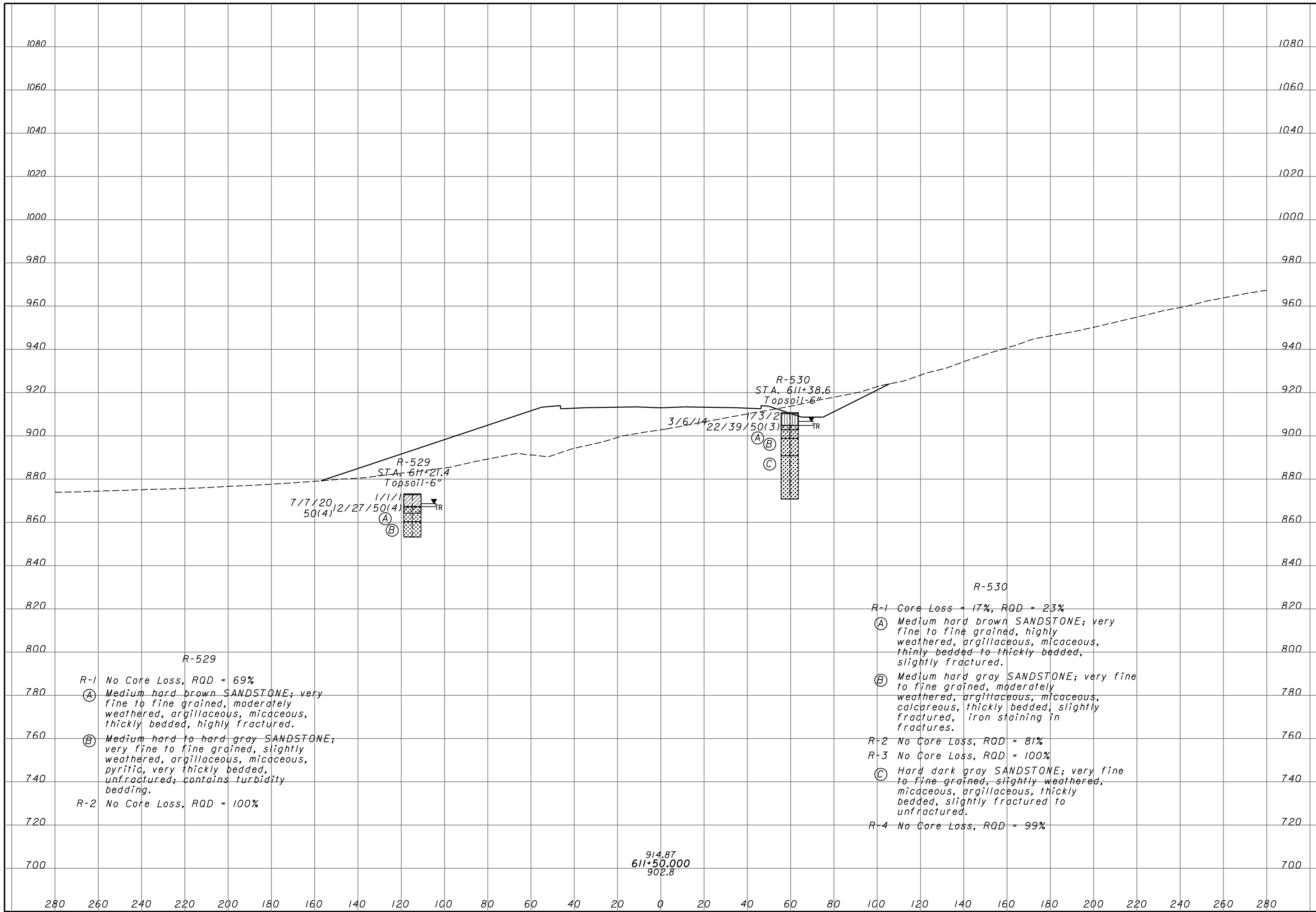
R-528
R-1 Core Loss = 4%, RQD = 94%
Ⓐ Medium hard gray to dark gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, slightly fractured.

R-527
R-1 No Core Loss, RQD = 100%
Ⓐ Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, slightly fractured.
Ⓑ Medium hard gray to dark gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
R-2 No Core Loss, RQD = 100%

915.30
610+50.000
875.60

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SCI-823-10.13	
109/220	

R-529

R-1 No Core Loss, RQD = 69%

(A) Medium hard brown SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, highly fractured.

(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, very thickly bedded, unfractured; contains turbidity bedding.

R-2 No Core Loss, RQD = 100%

R-530

R-1 Core Loss = 17%, RQD = 23%

(A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, slightly fractured.

(B) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, calcareous, thickly bedded, slightly fractured, iron staining in fractures.

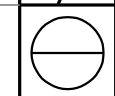
R-2 No Core Loss, RQD = 81%

R-3 No Core Loss, RQD = 100%

(C) Hard dark gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, thickly bedded, slightly fractured to unfractured.

R-4 No Core Loss, RQD = 99%

914.87
 611+50.000
 902.8

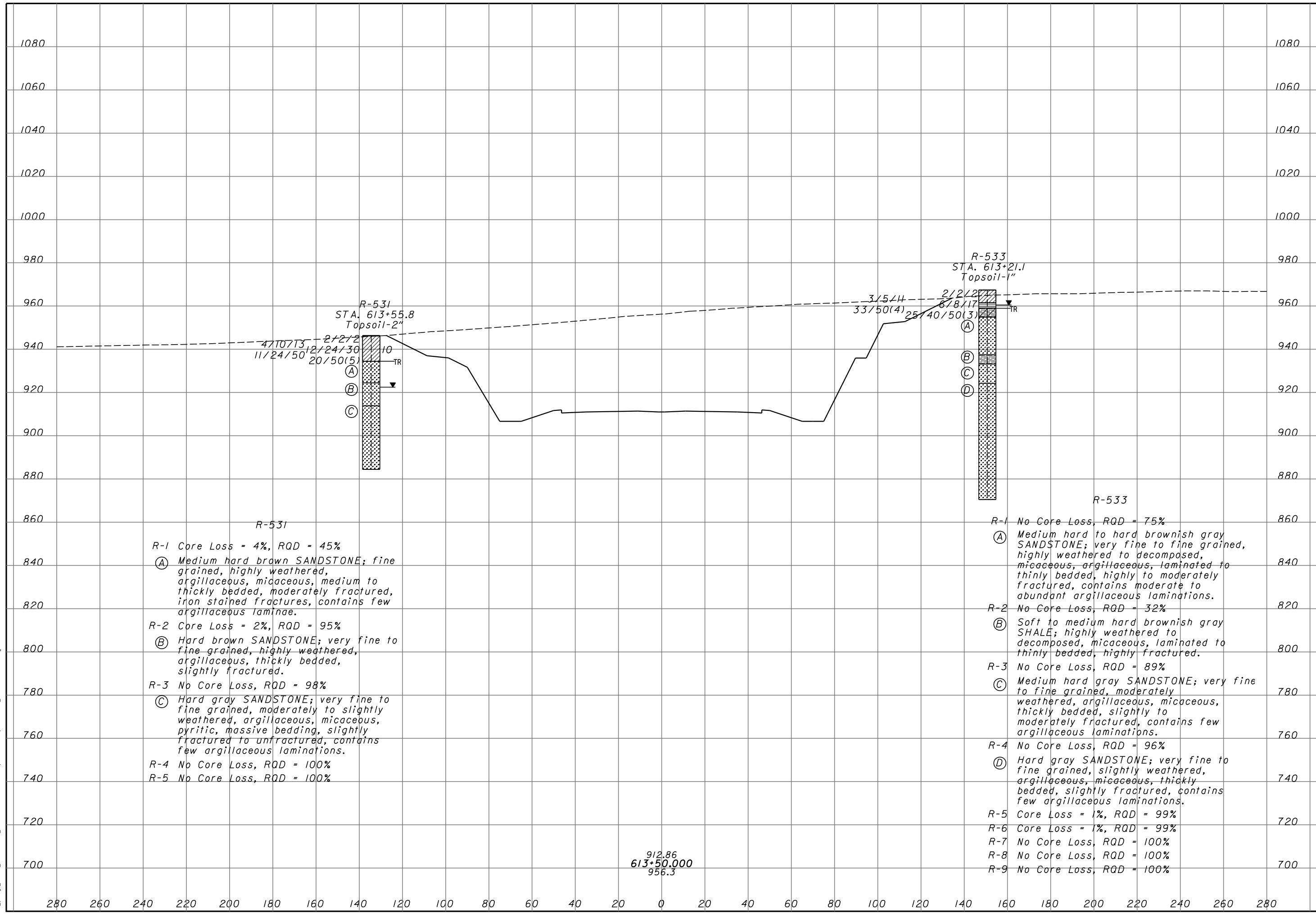
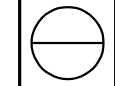


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RLS
CHECKED
AEN

**SOIL PROFILE
CROSS SECTION - SR 823 STA. 613+50.00**

SCI-823-10.13

110/220



R-531
 R-1 Core Loss = 4%, RQD = 45%
 (A) Medium hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, medium to thickly bedded, moderately fractured, iron stained fractures, contains few argillaceous laminae.
 R-2 Core Loss = 2%, RQD = 95%
 (B) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, thickly bedded, slightly fractured.
 R-3 No Core Loss, RQD = 98%
 (C) Hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, argillaceous, micaceous, pyritic, massive bedding, slightly fractured to unfractured, contains few argillaceous laminations.
 R-4 No Core Loss, RQD = 100%
 R-5 No Core Loss, RQD = 100%

R-533
 R-1 No Core Loss, RQD = 75%
 (A) Medium hard to hard brownish gray SANDSTONE; very fine to fine grained, highly weathered to decomposed, micaceous, argillaceous, laminated to thinly bedded, highly to moderately fractured, contains moderate to abundant argillaceous laminations.
 R-2 No Core Loss, RQD = 32%
 (B) Soft to medium hard brownish gray SHALE; highly weathered to decomposed, micaceous, laminated to thinly bedded, highly fractured.
 R-3 No Core Loss, RQD = 89%
 (C) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, slightly to moderately fractured, contains few argillaceous laminations.
 R-4 No Core Loss, RQD = 96%
 (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded, slightly fractured, contains few argillaceous laminations.
 R-5 Core Loss = 1%, RQD = 99%
 R-6 Core Loss = 1%, RQD = 99%
 R-7 No Core Loss, RQD = 100%
 R-8 No Core Loss, RQD = 100%
 R-9 No Core Loss, RQD = 100%

912.86
 613+50.000
 956.3

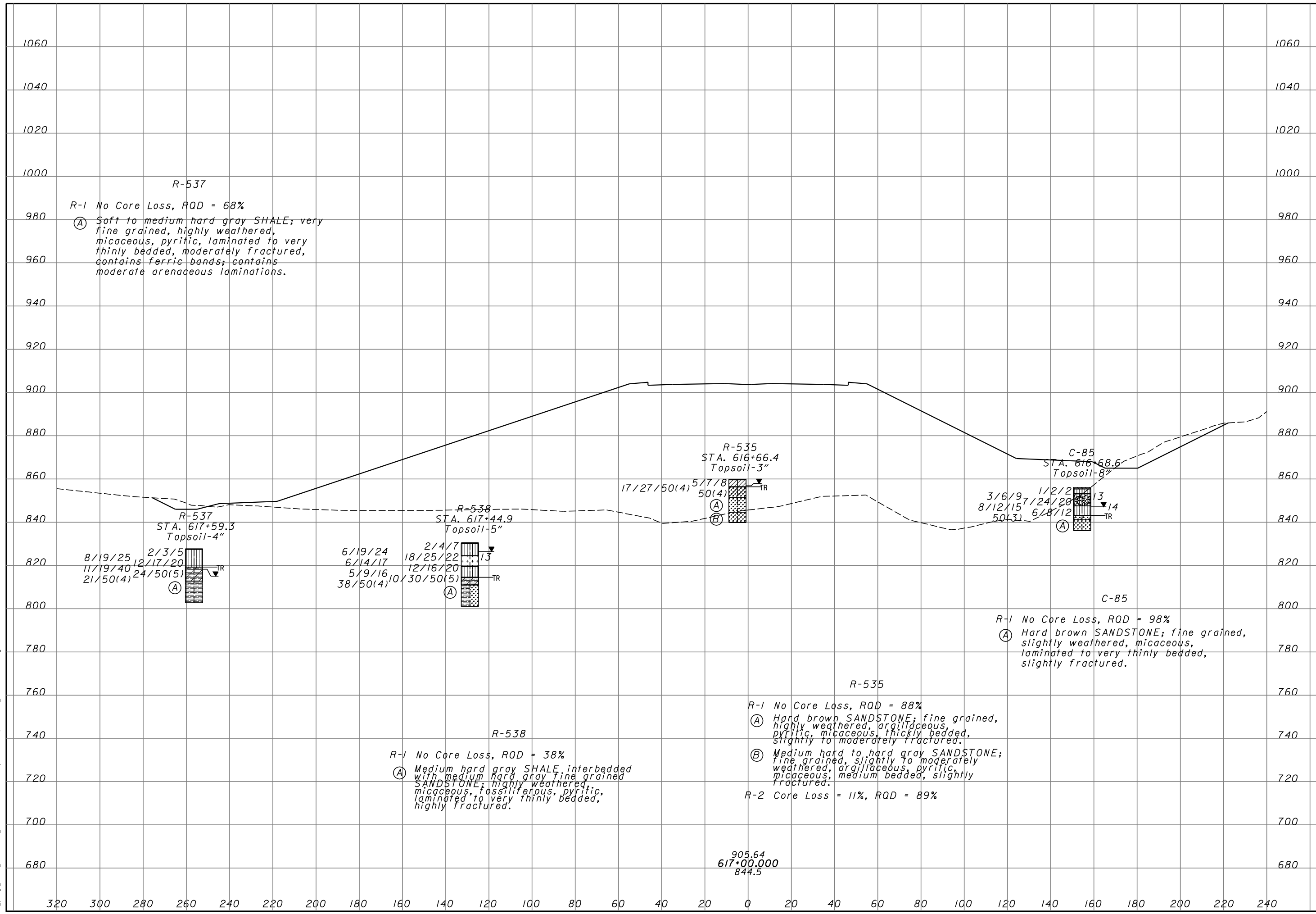
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AEN

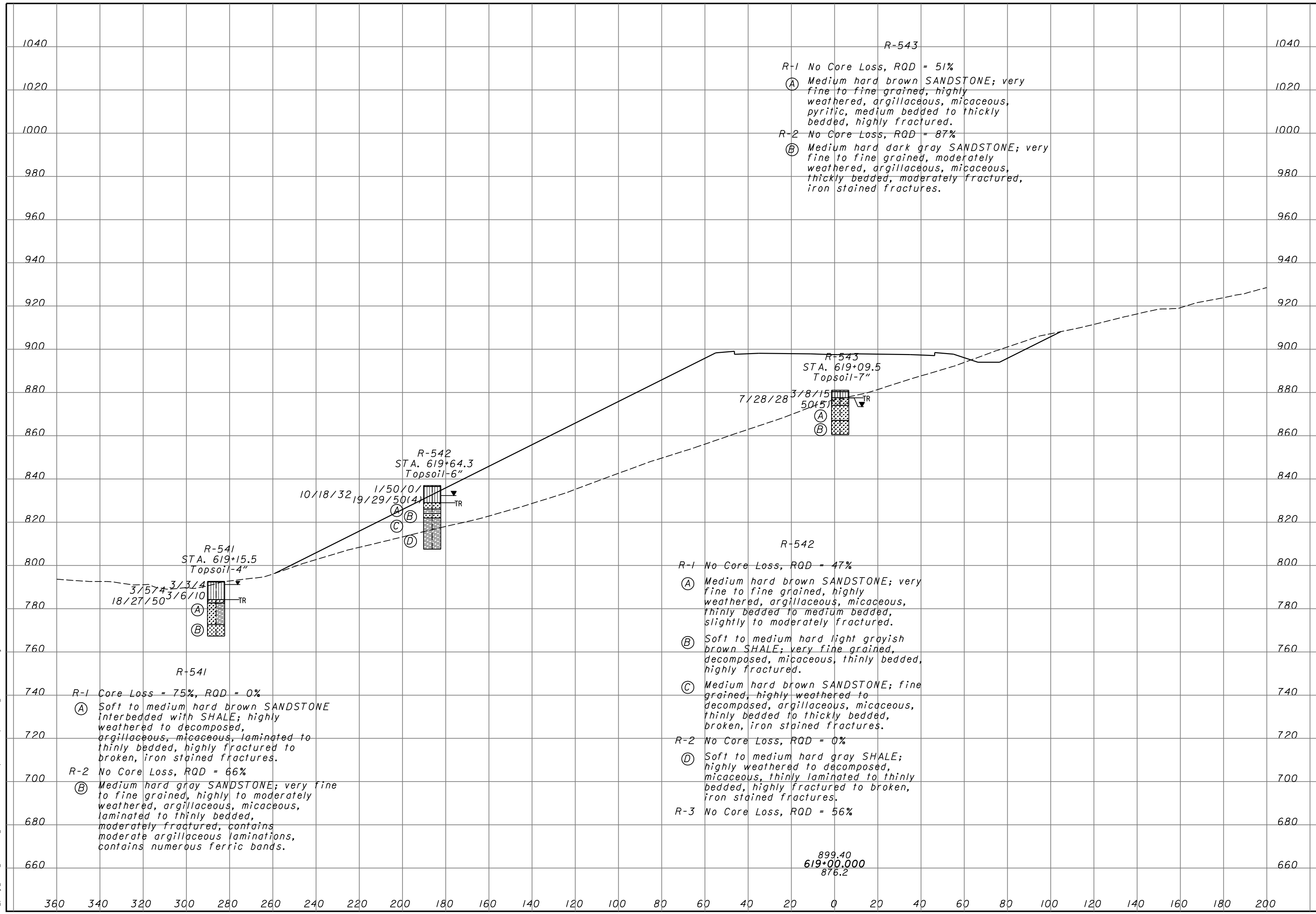
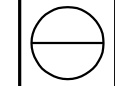
SOIL PROFILE
CROSS SECTION - SR 823 STA. 617+00.00

SCI-823-10.13

111/220



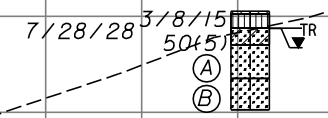
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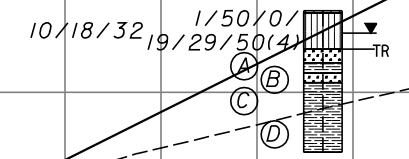
R-543

R-1 No Core Loss, RQD = 51%
 (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, pyritic, medium bedded to thickly bedded, highly fractured.
 R-2 No Core Loss, RQD = 87%
 (B) Medium hard dark gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, moderately fractured, iron stained fractures.

R-543
 STA. 619+09.5
 Topsoil-7"



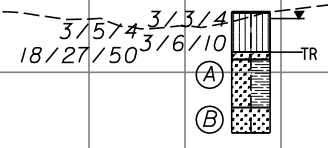
R-542
 STA. 619+64.3
 Topsoil-6"



R-542

R-1 No Core Loss, RQD = 47%
 (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to medium bedded, slightly to moderately fractured.
 (B) Soft to medium hard light grayish brown SHALE; very fine grained, decomposed, micaceous, thinly bedded, highly fractured.
 (C) Medium hard brown SANDSTONE; fine grained, highly weathered to decomposed, argillaceous, micaceous, thinly bedded to thickly bedded, broken, iron stained fractures.
 R-2 No Core Loss, RQD = 0%
 (D) Soft to medium hard gray SHALE; highly weathered to decomposed, micaceous, thinly laminated to thinly bedded, highly fractured to broken, iron stained fractures.
 R-3 No Core Loss, RQD = 56%

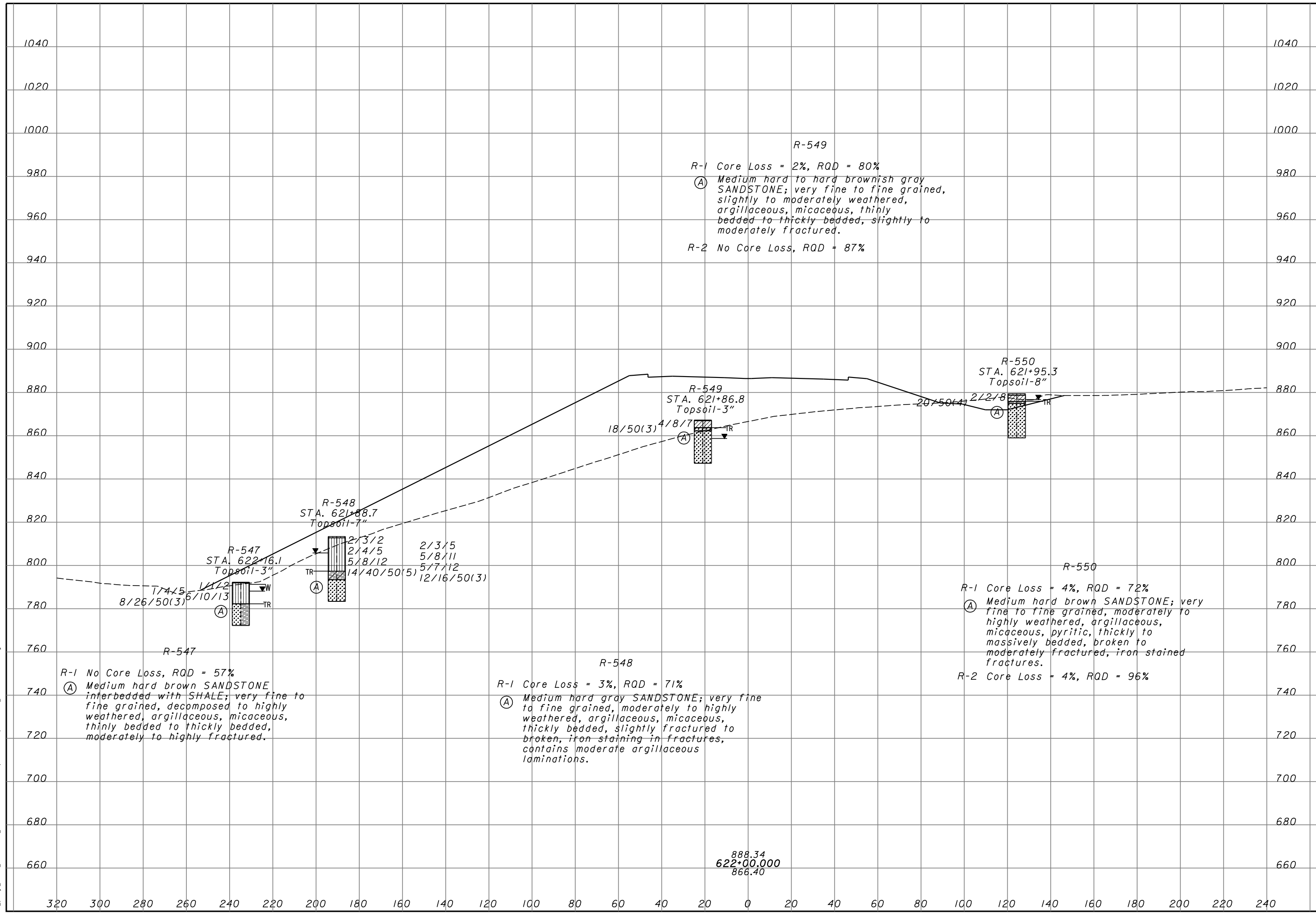
R-541
 STA. 619+15.5
 Topsoil-4"



R-541

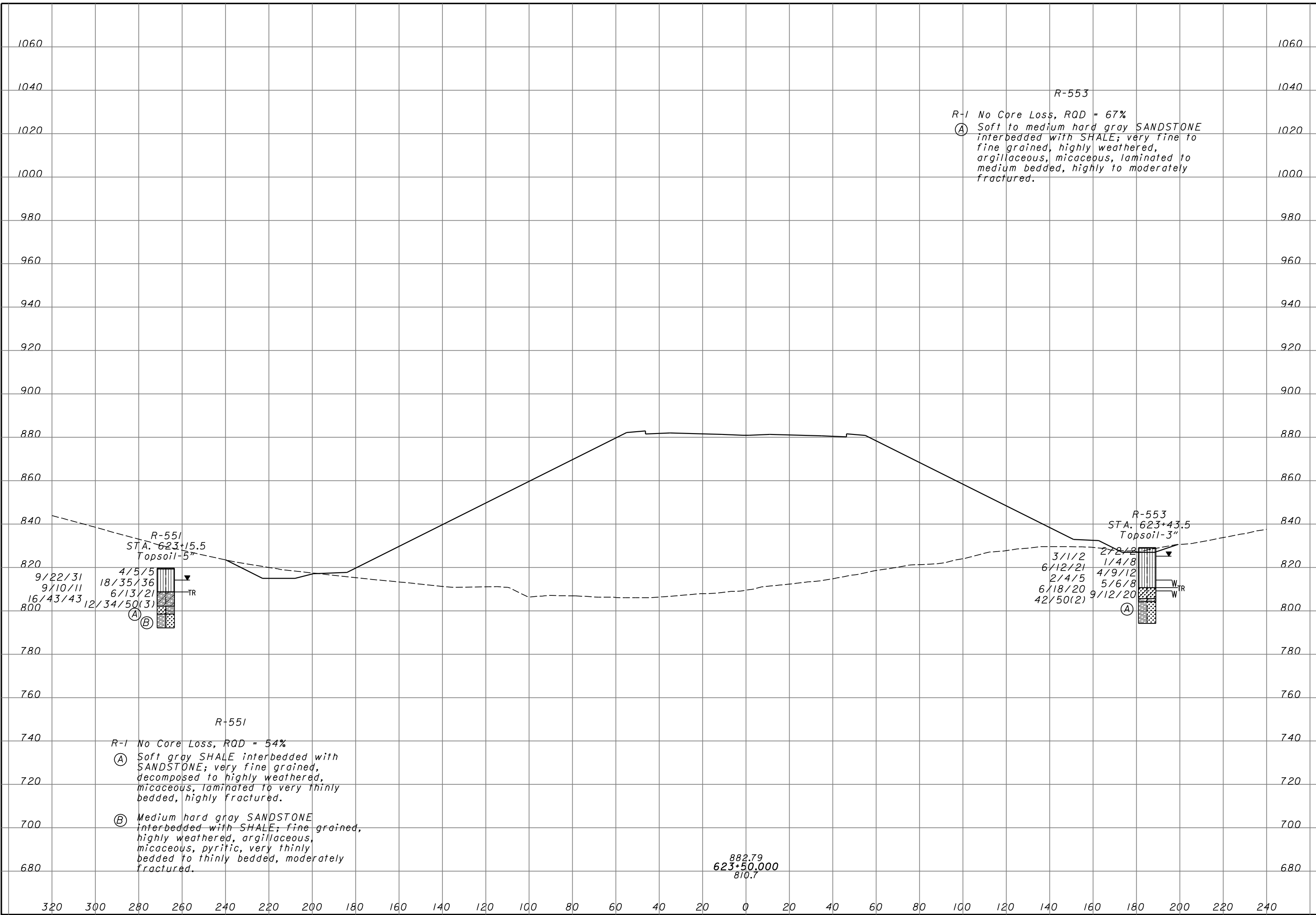
R-1 Core Loss = 75%, RQD = 0%
 (A) Soft to medium hard brown SANDSTONE interbedded with SHALE; highly weathered to decomposed, argillaceous, micaceous, laminated to thinly bedded, highly fractured to broken, iron stained fractures.
 R-2 No Core Loss, RQD = 66%
 (B) Medium hard gray SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, laminated to thinly bedded, moderately fractured, contains moderate argillaceous laminations, contains numerous ferric bands.

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R-553
 R-1 No Core Loss, RQD = 67%
 (A) Soft to medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered, argillaceous, micaceous, laminated to medium bedded, highly to moderately fractured.

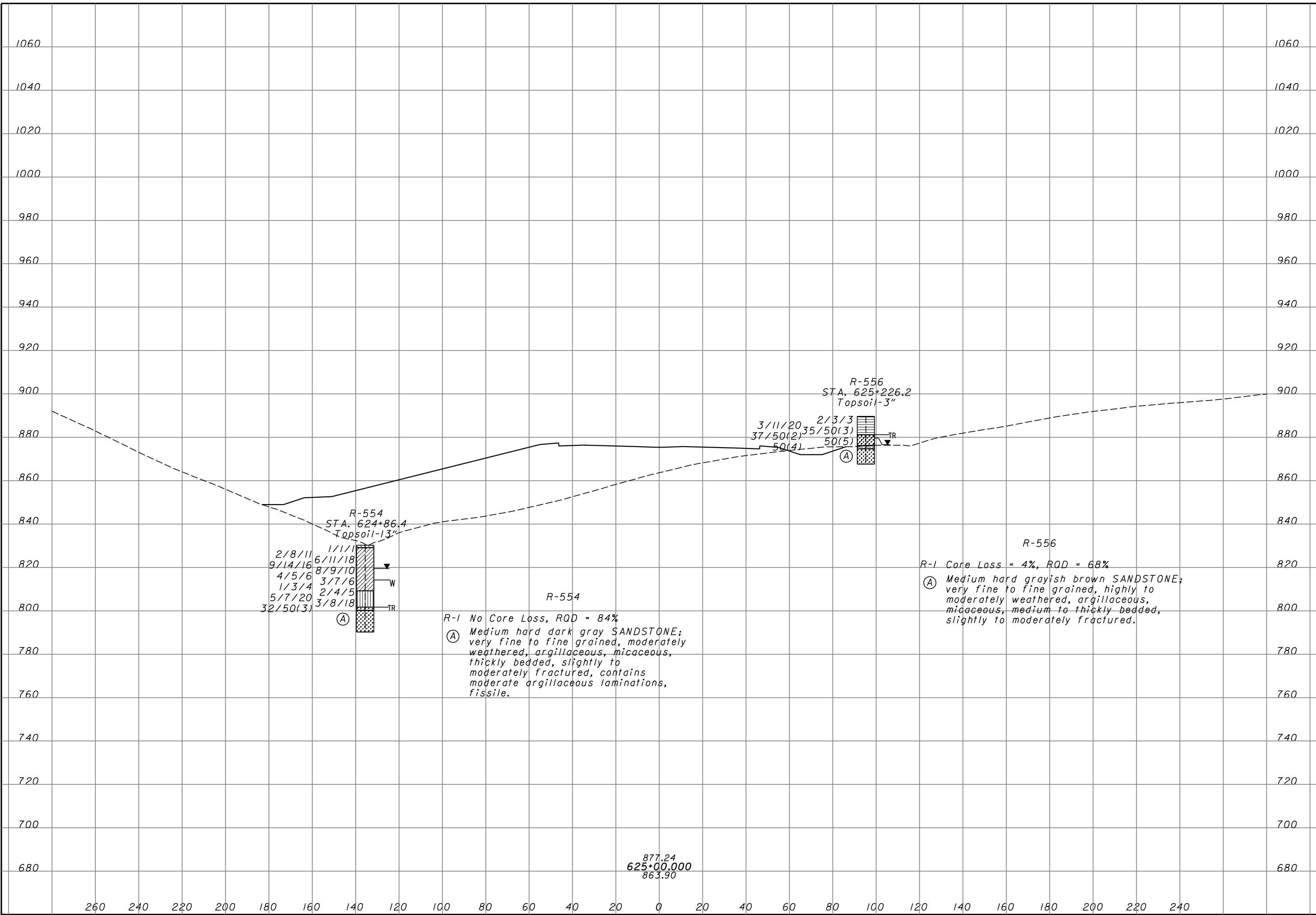
R-551
 STA. 623+15.5
 Topsoil-5"
 9/22/31 4/5/5
 9/10/11 18/35/36
 16/43/43 6/13/21
 12/34/50(3)
 (A) (B)
 TR

R-553
 STA. 623+43.5
 Topsoil-3"
 3/1/2 272/2
 6/12/21 1/4/8
 2/4/5 4/9/12
 6/18/20 5/6/8
 42/50(2) 9/12/20
 (A)
 W
 TR

R-551
 R-1 No Core Loss, RQD = 54%
 (A) Soft gray SHALE interbedded with SANDSTONE; very fine grained, decomposed to highly weathered, micaceous, laminated to very thinly bedded, highly fractured.
 (B) Medium hard gray SANDSTONE interbedded with SHALE; fine grained, highly weathered, argillaceous, micaceous, pyritic, very thinly bedded to thinly bedded, moderately fractured.

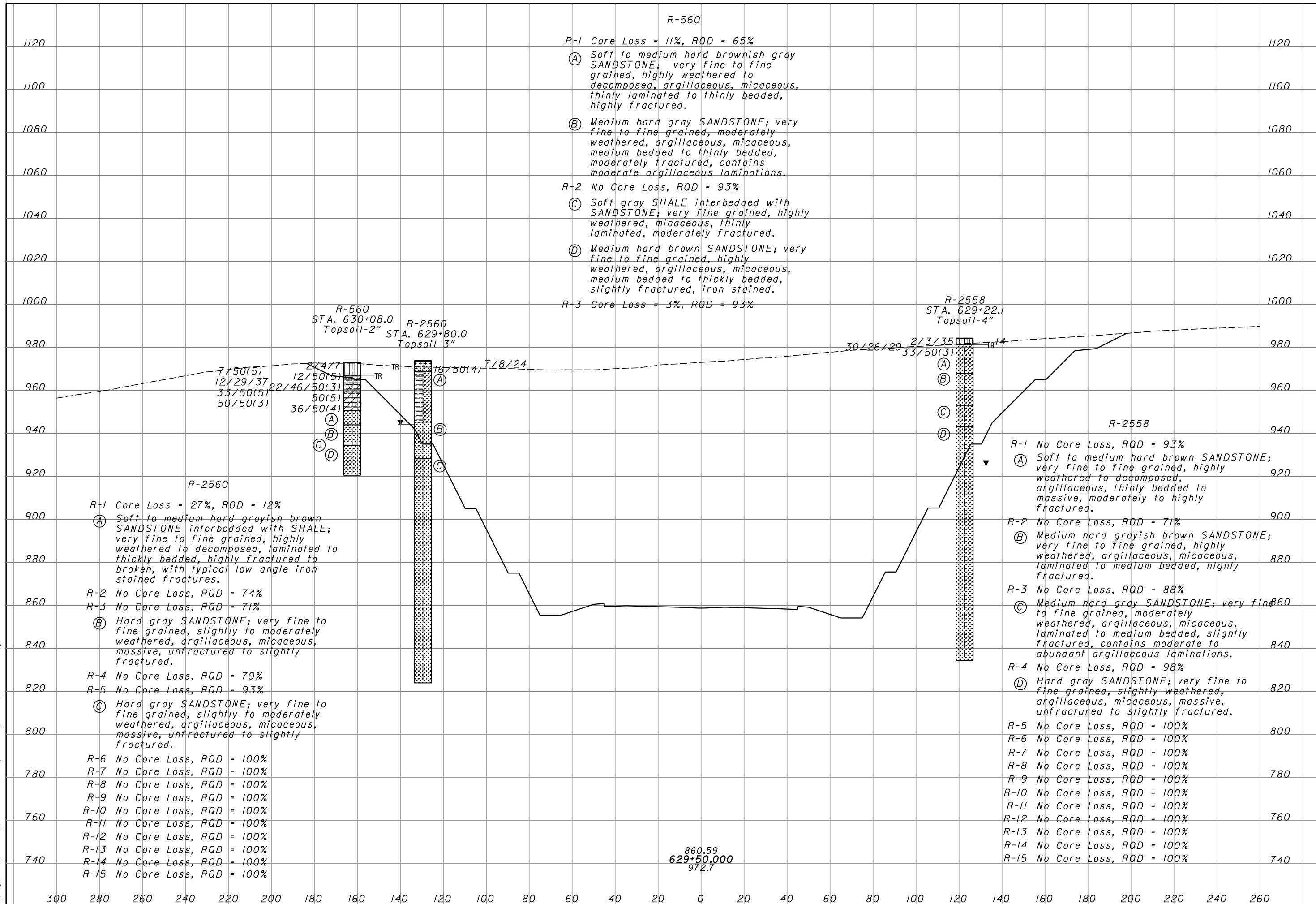
882.79
 623+50.000
 810.7

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 625+00.00
 SCI-823-10.13
 115/220

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R-560
 STA. 630+08.0
 Topsoil-2"

R-2560
 STA. 629+80.0
 Topsoil-3"

R-560
 STA. 630+08.0
 Topsoil-2"

R-2560
 STA. 629+80.0
 Topsoil-3"

R-2558
 STA. 629+22.1
 Topsoil-4"

R-1 Core Loss = 11%, RQD = 65%

(A) Soft to medium hard brownish gray SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, thinly laminated to thinly bedded, highly fractured.

(B) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, medium bedded to thinly bedded, moderately fractured, contains moderate argillaceous laminations.

R-2 No Core Loss, RQD = 93%

(C) Soft gray SHALE interbedded with SANDSTONE; very fine grained, highly weathered, micaceous, thinly laminated, moderately fractured.

(D) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, medium bedded to thickly bedded, slightly fractured, iron stained.

R-3 Core Loss = 3%, RQD = 93%

R-2560

R-1 Core Loss = 27%, RQD = 12%

(A) Soft to medium hard grayish brown SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered to decomposed, laminated to thickly bedded, highly fractured to broken, with typical low angle iron stained fractures.

R-2 No Core Loss, RQD = 74%

R-3 No Core Loss, RQD = 71%

(B) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.

R-4 No Core Loss, RQD = 79%

R-5 No Core Loss, RQD = 93%

(C) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 100%

R-13 No Core Loss, RQD = 100%

R-14 No Core Loss, RQD = 100%

R-15 No Core Loss, RQD = 100%

R-2558

R-1 No Core Loss, RQD = 93%

(A) Soft to medium hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, thinly bedded to massive, moderately to highly fractured.

R-2 No Core Loss, RQD = 71%

(B) Medium hard grayish brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, laminated to medium bedded, highly fractured.

R-3 No Core Loss, RQD = 88%

(C) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, laminated to medium bedded, slightly fractured, contains moderate to abundant argillaceous laminations.

R-4 No Core Loss, RQD = 98%

(D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 100%

R-13 No Core Loss, RQD = 100%

R-14 No Core Loss, RQD = 100%

R-15 No Core Loss, RQD = 100%

860.59
 629+50.00
 972.7

DESIGN
 RLS
 CHECKED
 AEN

SOIL PROFILE
 CROSS SECTION - SR 823 STA. 629+50.00

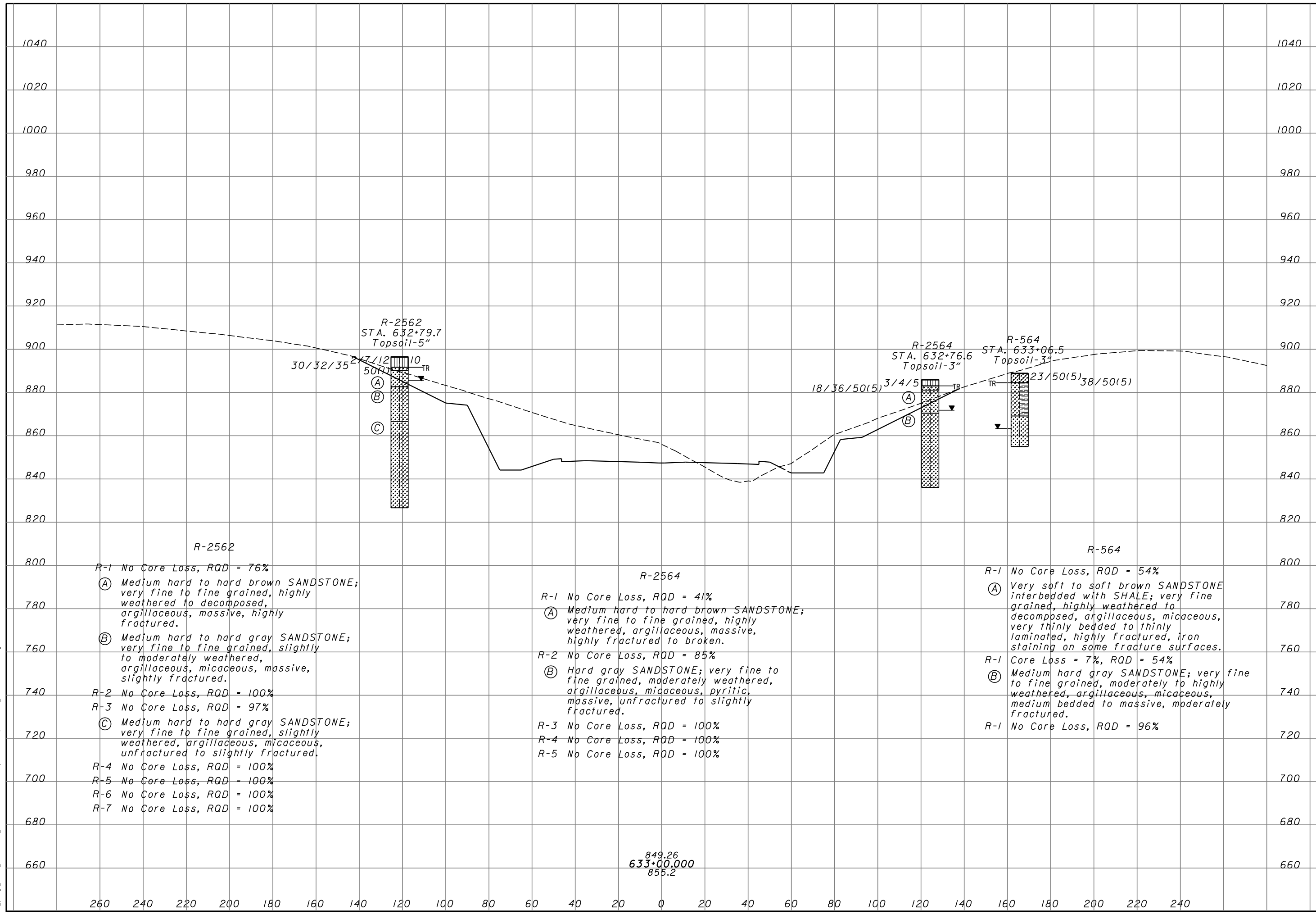
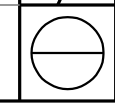
SCI-823-10.13

116/220



SOIL PROFILE
CROSS SECTION - SR 823 STA. 633+00.00

SCI-823-10.13



R-2562

R-1 No Core Loss, RQD = 76%

(A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, massive, highly fractured.

(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, slightly fractured.

R-2 No Core Loss, RQD = 100%

R-3 No Core Loss, RQD = 97%

(C) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, unfractured to slightly fractured.

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-2564

R-1 No Core Loss, RQD = 41%

(A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, massive, highly fractured to broken.

R-2 No Core Loss, RQD = 85%

(B) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, pyritic, massive, unfractured to slightly fractured.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 100%

R-564

R-1 No Core Loss, RQD = 54%

(A) Very soft to soft brown SANDSTONE interbedded with SHALE; very fine grained, highly weathered to decomposed, argillaceous, micaceous, very thinly bedded to thinly laminated, highly fractured, iron staining on some fracture surfaces.

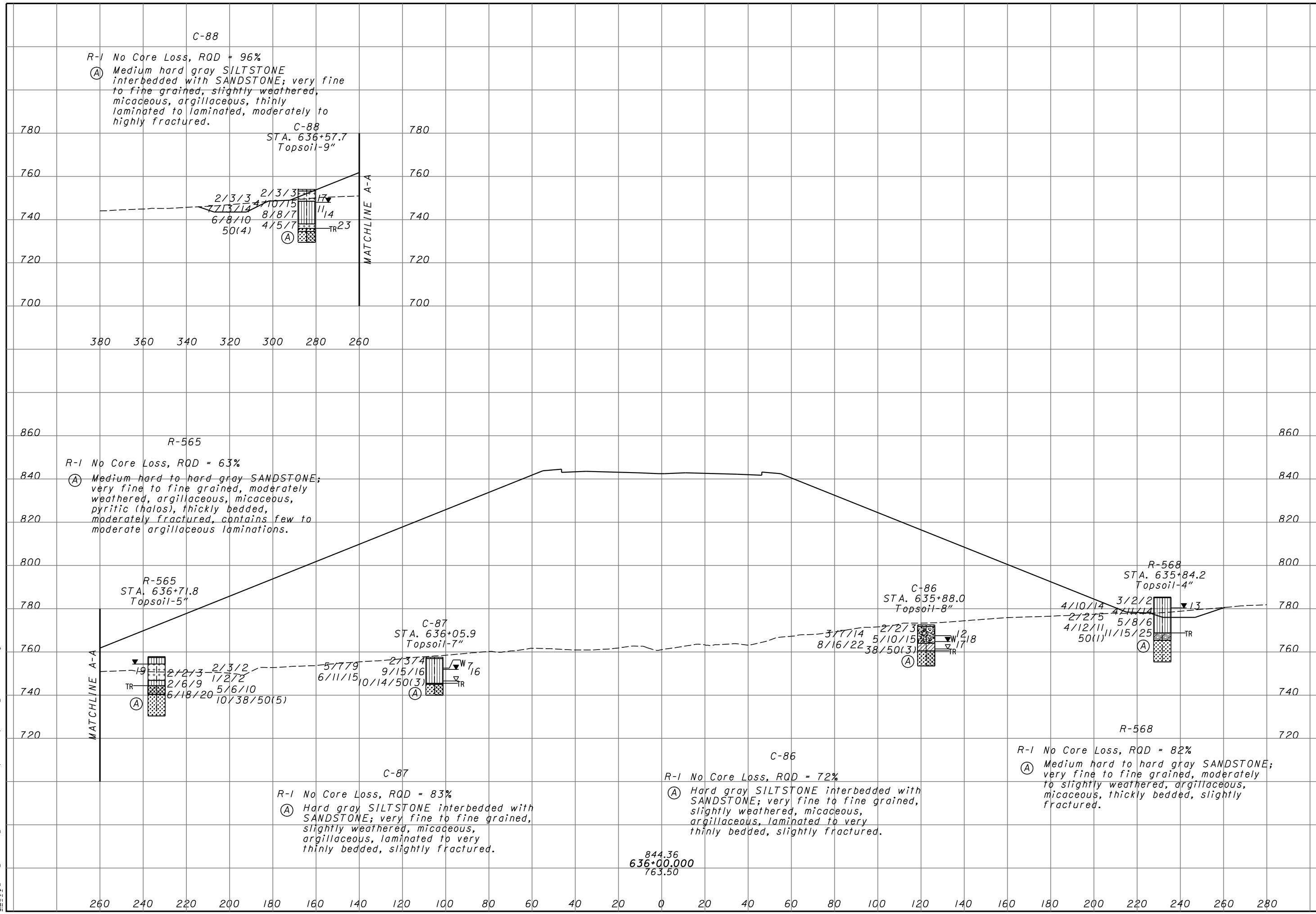
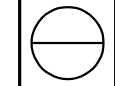
R-1 Core Loss = 7%, RQD = 54%

(B) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, medium bedded to massive, moderately fractured.

R-1 No Core Loss, RQD = 96%

849.26
633+00.000
855.2

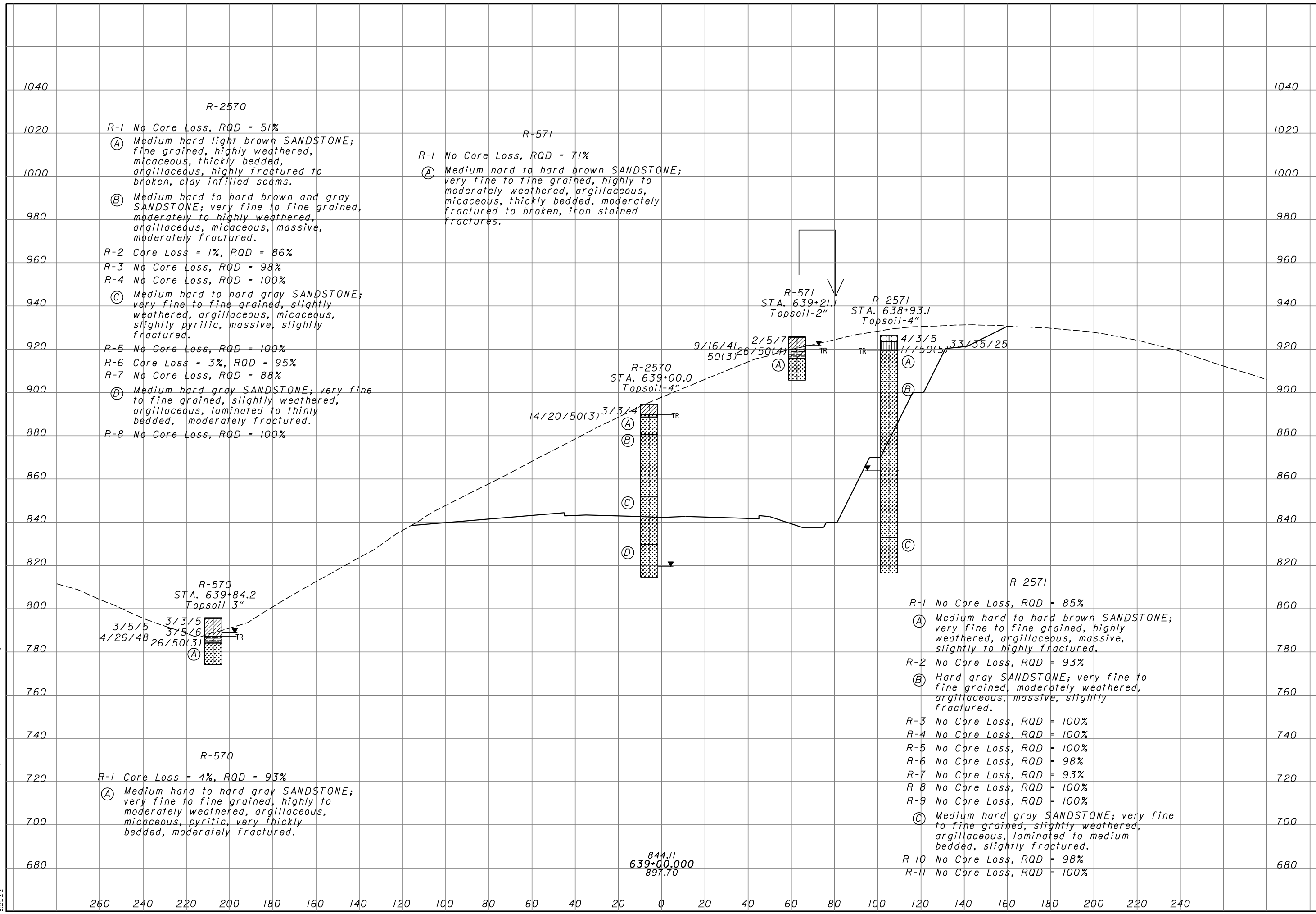
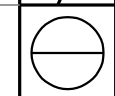
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 639+00.00**

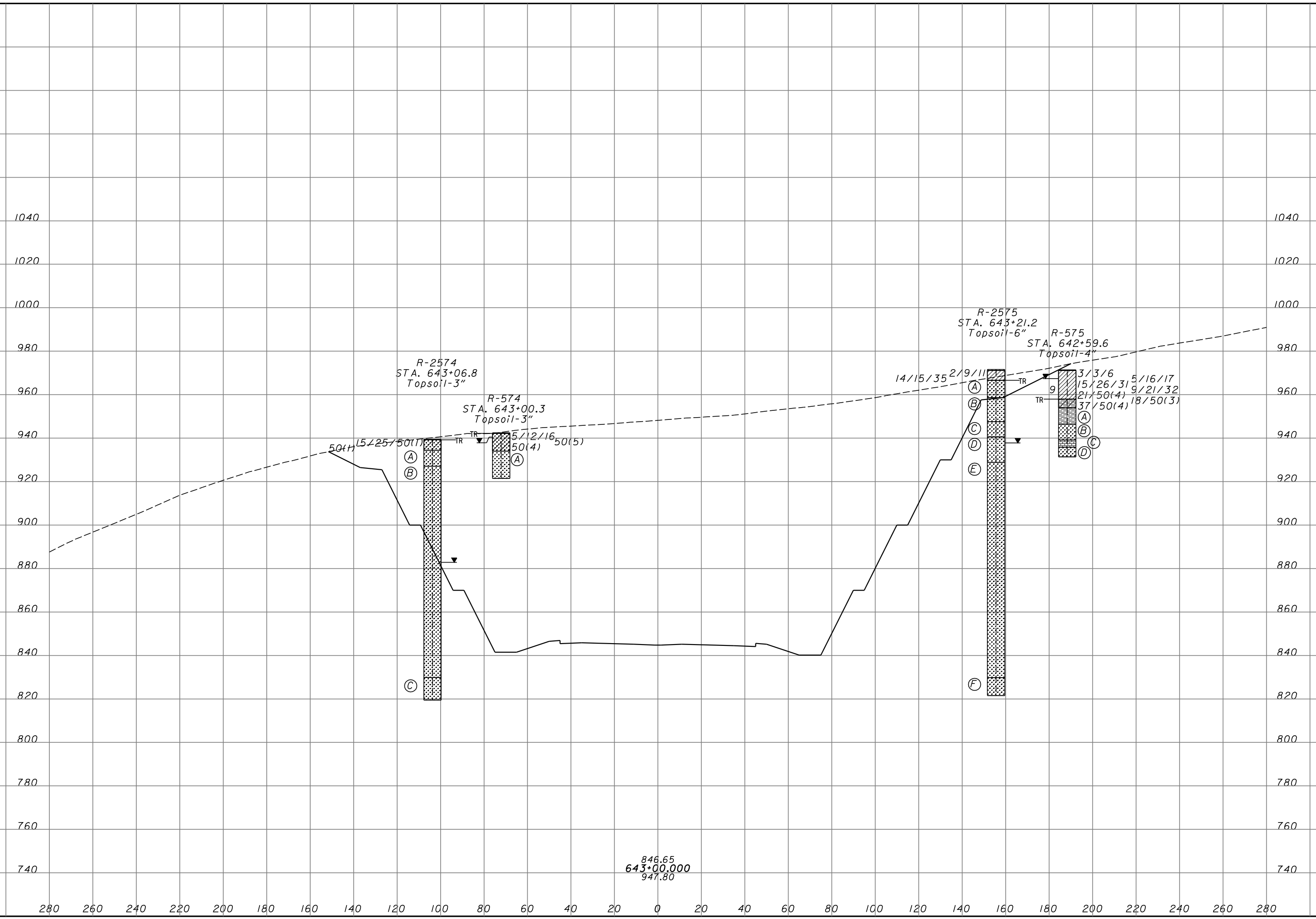
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SOIL PROFILE
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R-2575

- R-1 No Core Loss, RQD = 64%
 - (A) Soft to medium hard brown SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered to decomposed, argillaceous, thinly bedded to medium bedded, highly fractured, with typical low angle iron stained fractures.
- R-2 No Core Loss, RQD = 69%
 - (B) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, laminated to medium bedded, moderately to highly fractured, contains moderate to abundant argillaceous laminations.
- R-3 No Core Loss, RQD = 100%
 - (C) Medium hard to hard gray SANDSTONE; very fine grained, argillaceous, micaceous, massive, slightly fractured, contains few argillaceous laminations.
 - (D) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, massively bedded, slightly fractured.
- R-4 No Core Loss, RQD = 98%
 - (E) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
 - (F) Hard gray SANDSTONE; very fine grained, slightly weathered, argillaceous, pyritic, micaceous, thinly laminated to thin bedded.
- R-15 No Core Loss, RQD = 90%

R-2574

- R-1 No Core Loss, RQD = 96%
 - (A) Hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, thickly bedded, moderately to highly fractured.
 - (B) Hard gray SANDSTONE; fine grained, slightly to moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-2 No Core Loss, RQD = 100%
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 96%
- R-10 No Core Loss, RQD = 94%
- R-11 No Core Loss, RQD = 96%
 - (C) Medium hard gray SANDSTONE; very fine grained, slightly weathered, argillaceous, micaceous, pyritic, laminated to thinly bedded, contains few argillaceous laminations.
- R-12 No Core Loss, RQD = 100%

R-574

- R-1 No Core Loss, RQD = 100%
 - (A) Hard brown SANDSTONE, fine grained, slightly weathered, argillaceous, micaceous, massively bedded, slightly to moderately fractured, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 93%

R-575

- R-1 Core Loss = 8%, RQD = 55%
 - (A) Soft to medium hard brown SHALE; very fine grained, highly weathered, micaceous, laminated to thin bedded, highly fractured, iron stained fractures.
 - (B) Hard gray SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, laminated to medium bedded, slightly to moderately fractured, contains few to moderate argillaceous laminations.
- R-2 Core Loss = 2%, RQD = 98%
 - (C) Very hard pink LIMESTONE; slightly weathered, fossiliferous, argillaceous, micaceous, thickly bedded, slightly fractured.
 - (D) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, fossiliferous, thickly bedded, unfractured, iron stained.
- R-3 No Core Loss, RQD = 100%

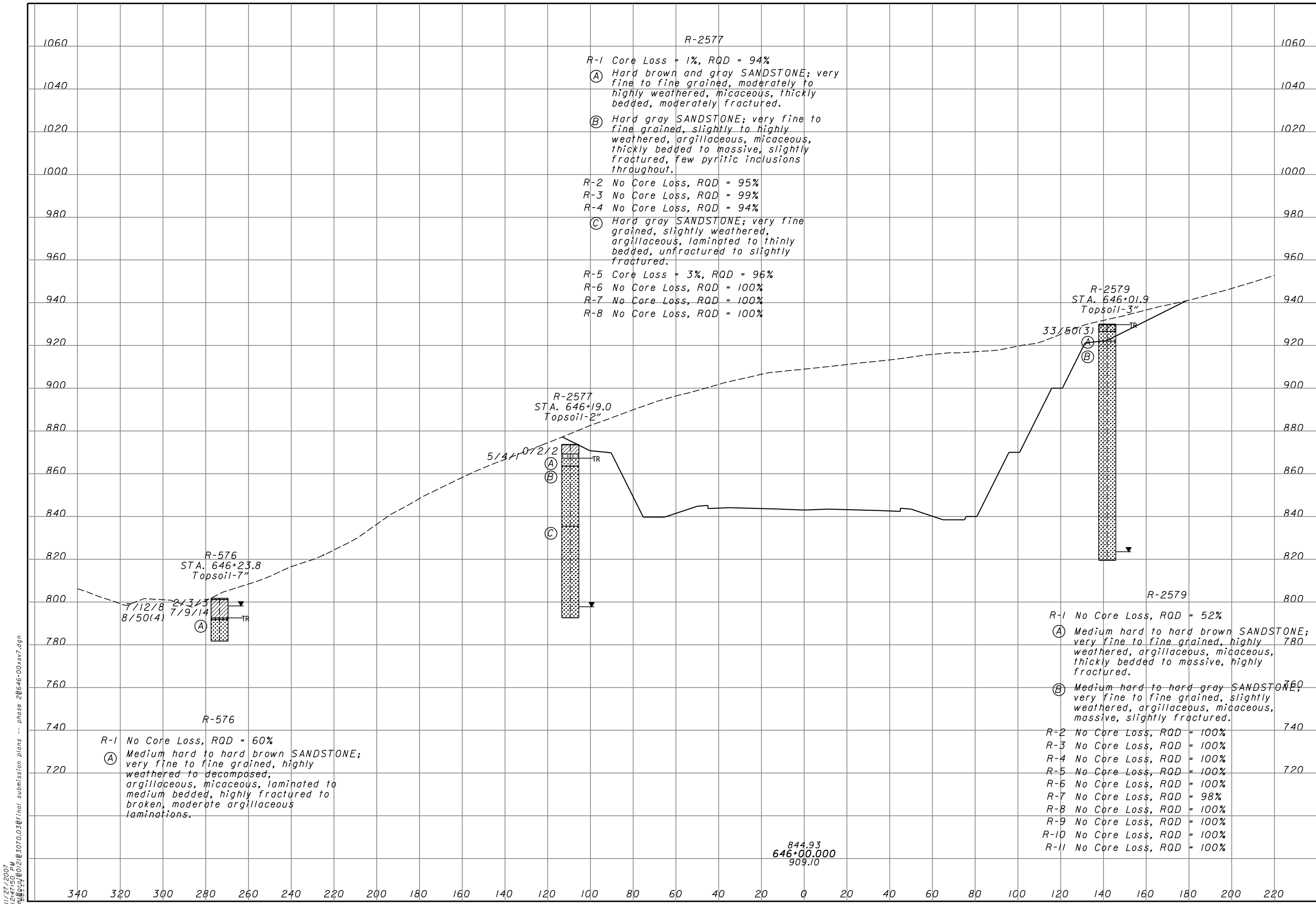
SOIL PROFILE
CROSS SECTION - SR 823 STA. 643+00.00

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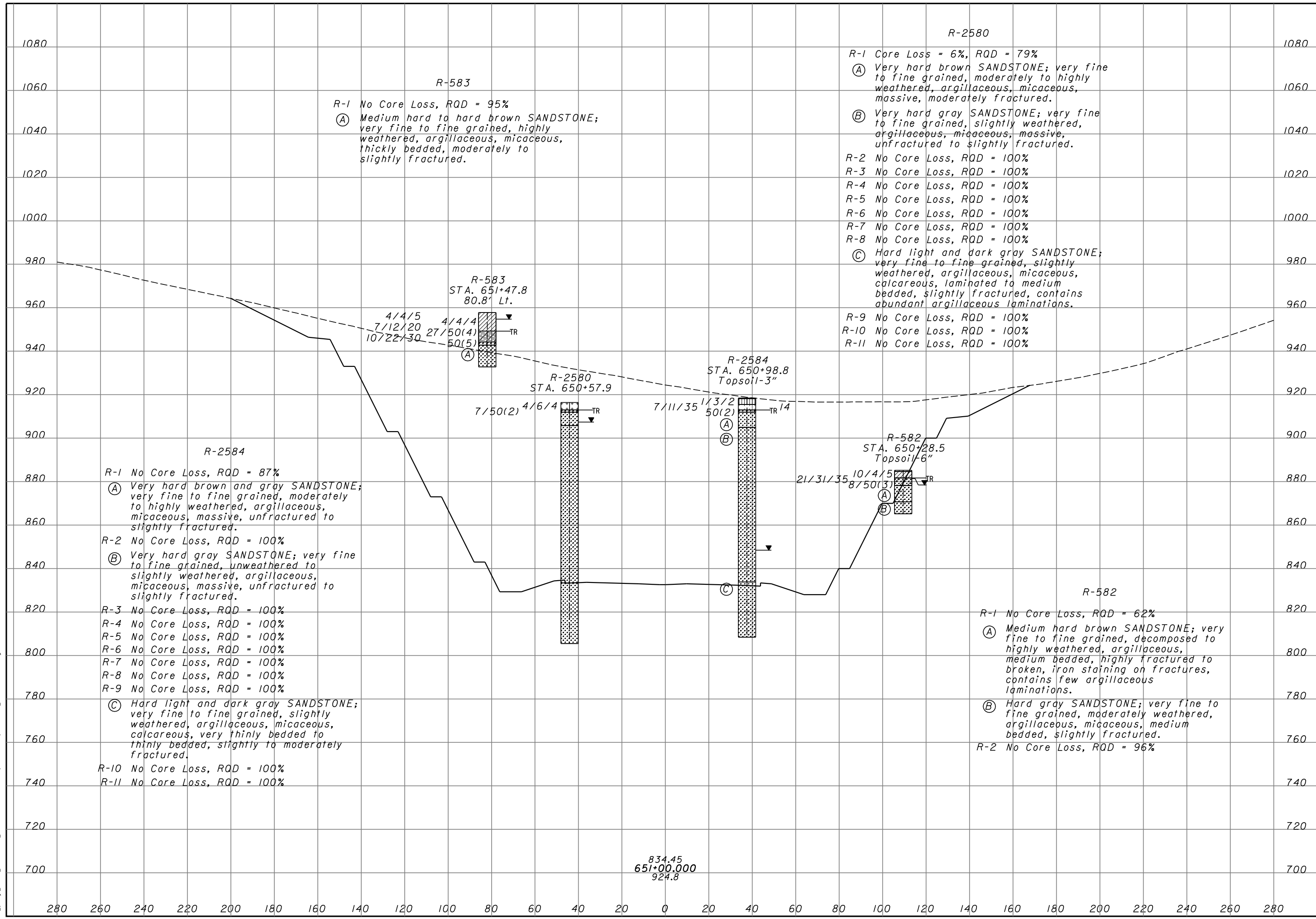
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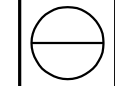


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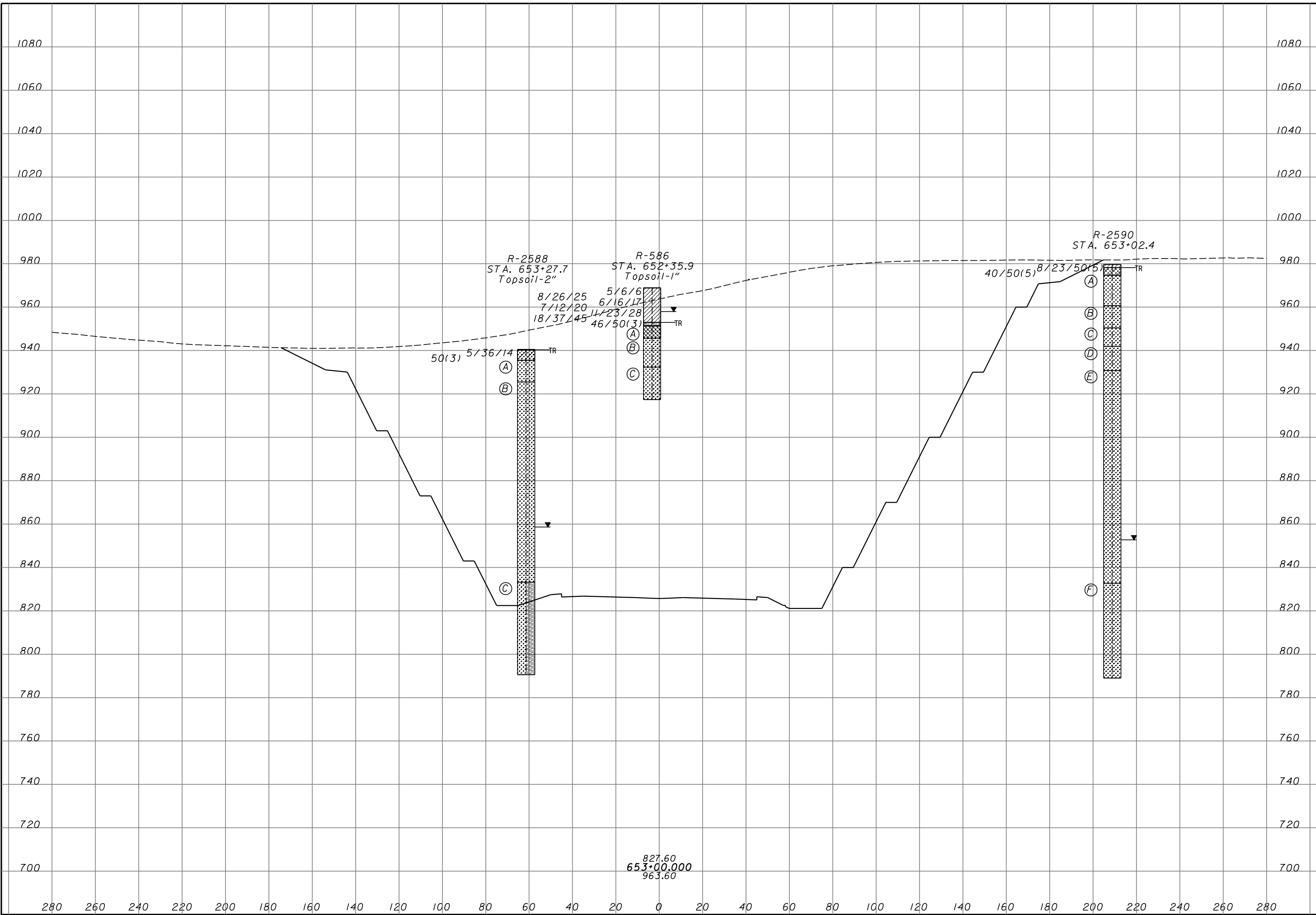


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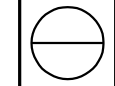
834.45
651+00.000
924.8



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SOIL PROFILE CROSS SECTION - SR 823 STA. 653+00.00
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R-2588

- R-1 No Core Loss, RQD = 84%
 - (A) Hard to very hard brown and gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, slightly to moderately fractured.
- R-2 No Core Loss, RQD = 100%
 - (B) Hard to very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
 - (C) Hard light and dark gray SANDSTONE interbedded with SHALE; very fine to fine grained, slightly weathered, calcareous, laminated to medium bedded, slightly fractured.
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%

R-586

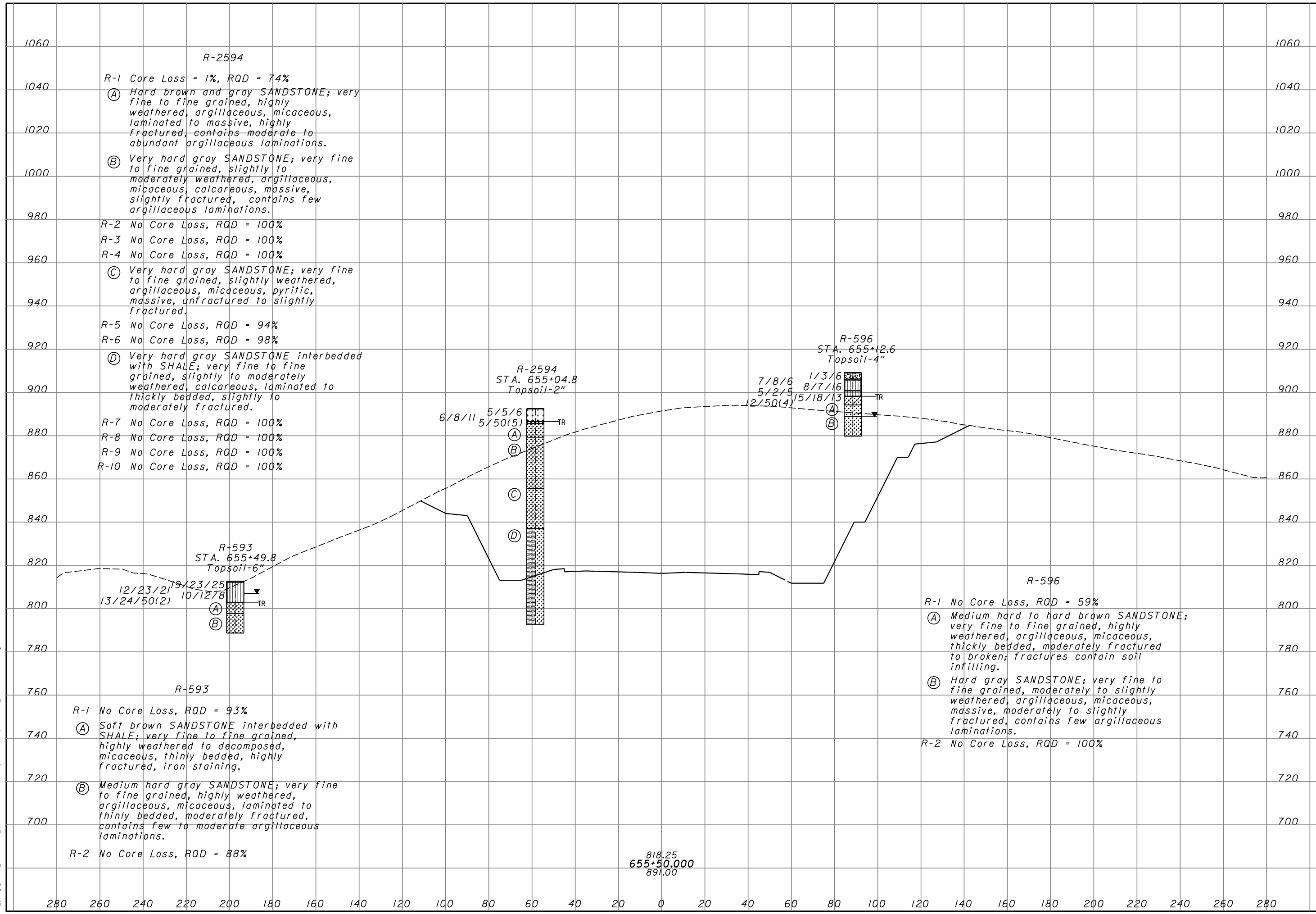
- R-1 No Core Loss, RQD = 85%
 - (A) Medium hard brownish gray SILTSTONE; very fine grained, decomposed to highly weathered, laminated to medium bedded, highly fractured, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 72%
 - (B) Very hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, calcareous, thickly bedded, moderately fractured, iron stained fractures.
- R-3 No Core Loss, RQD = 100%
 - (C) Hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, argillaceous, micaceous, thickly bedded, slightly fractured, contains few argillaceous laminations.
- R-4 No Core Loss, RQD = 100%

R-2590

- R-1 No Core Loss, RQD = 44%
 - (A) Very hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, carbonaceous, laminated to massive, moderately fractured.
- R-2 No Core Loss, RQD = 79%
 - (B) Medium hard dark gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, laminated to massive, highly fractured.
- R-3 No Core Loss, RQD = 91%
 - (C) Very hard gray SANDSTONE; very fine to fine grained, unweathered to slightly weathered, argillaceous, micaceous, laminated to massive, slightly fractured.
- R-4 No Core Loss, RQD = 98%
 - (D) Very hard brown SANDSTONE; very fine to fine grained, highly weathered, calcareous, massive, unfractured to slightly fractured.
- R-5 No Core Loss, RQD = 100%
 - (E) Very hard gray SANDSTONE; very fine to fine grained, unweathered to slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%
 - (F) Hard to very hard light and dark gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly bedded to medium bedded, slightly to moderately fractured.
- R-16 No Core Loss, RQD = 100%
- R-17 No Core Loss, RQD = 100%
- R-18 No Core Loss, RQD = 100%
- R-19 No Core Loss, RQD = 100%

**SOIL PROFILE
CROSS SECTION - SR 823 STA. 655+50.00**

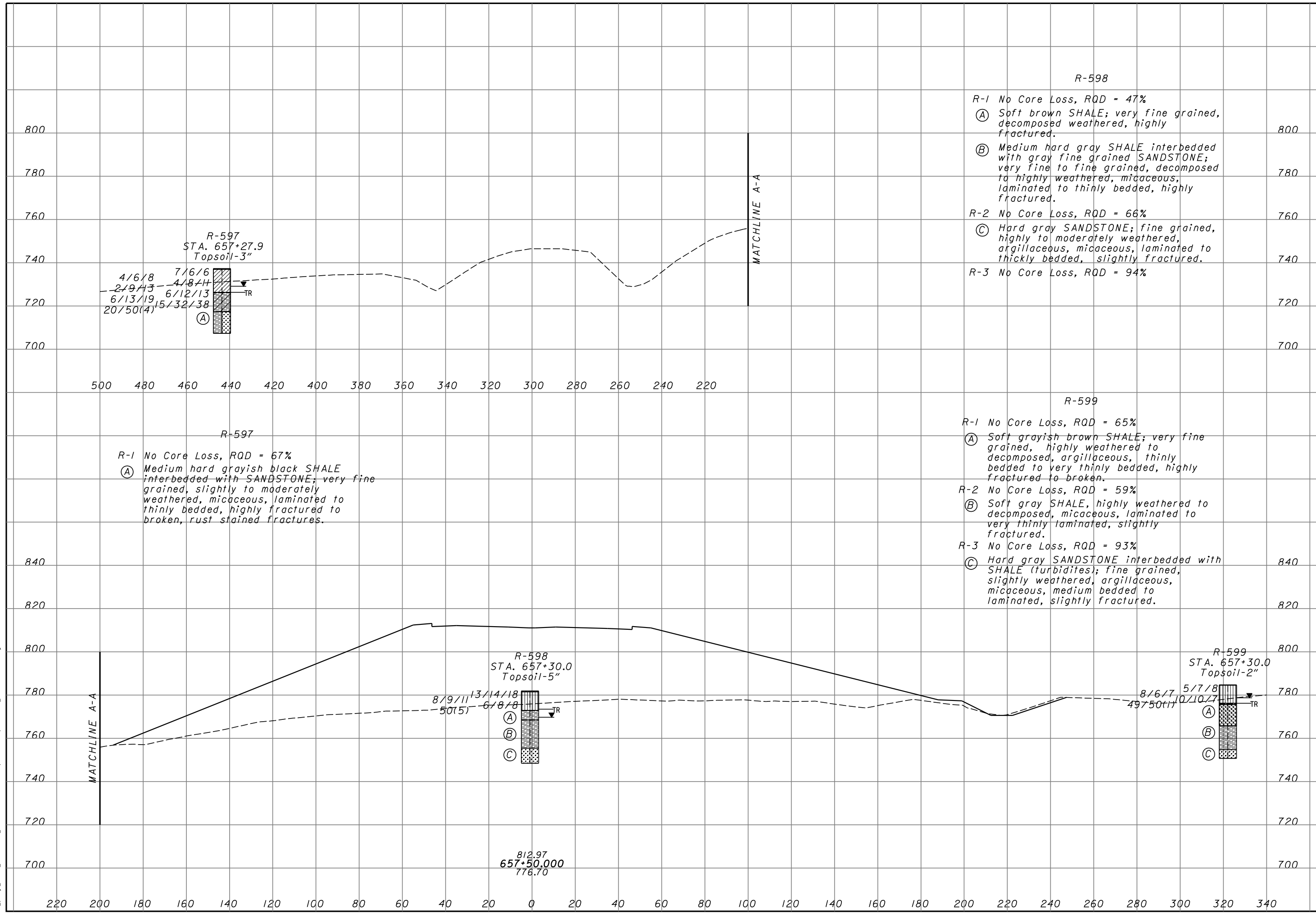
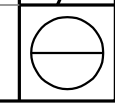
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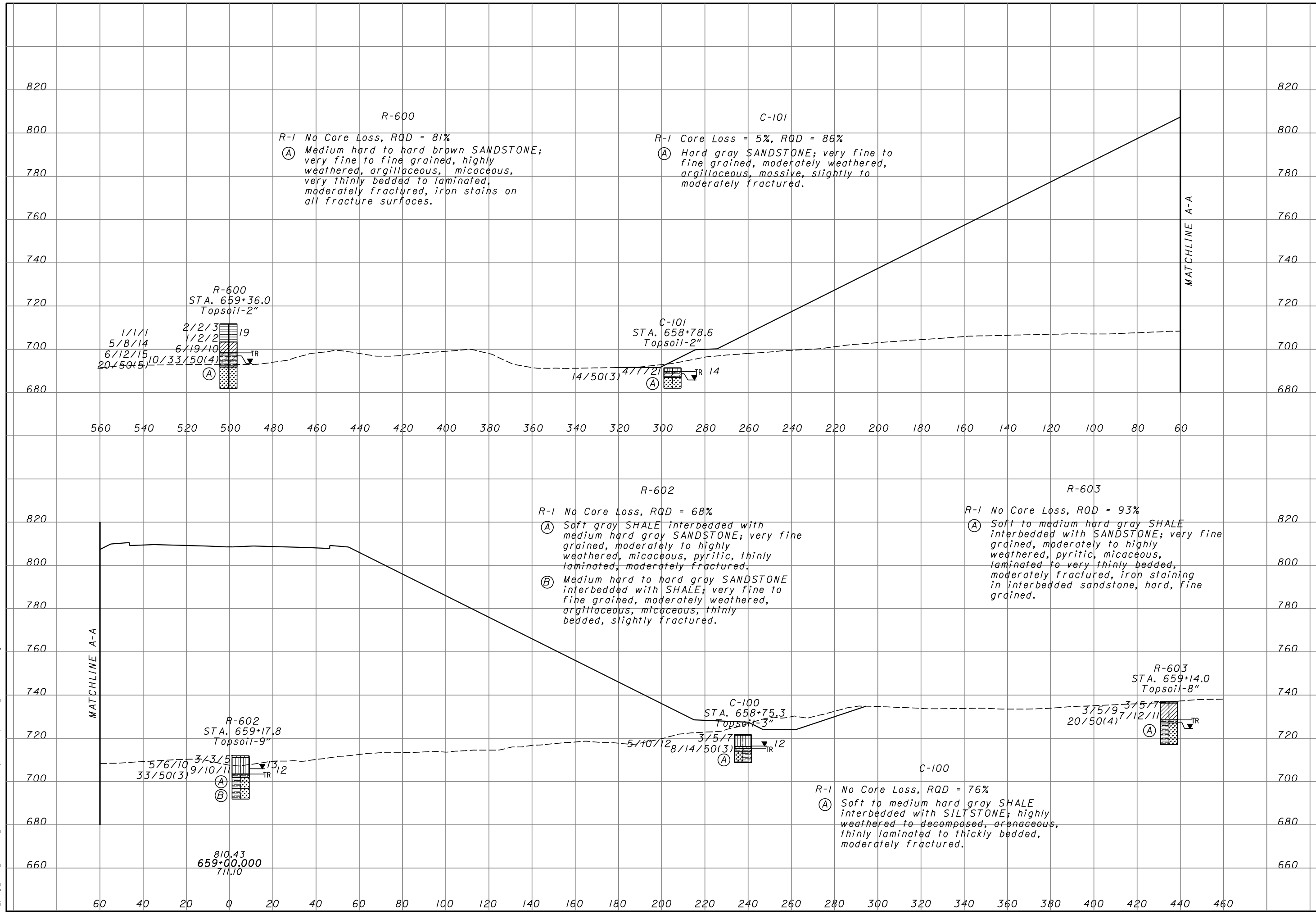
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 657+50.00

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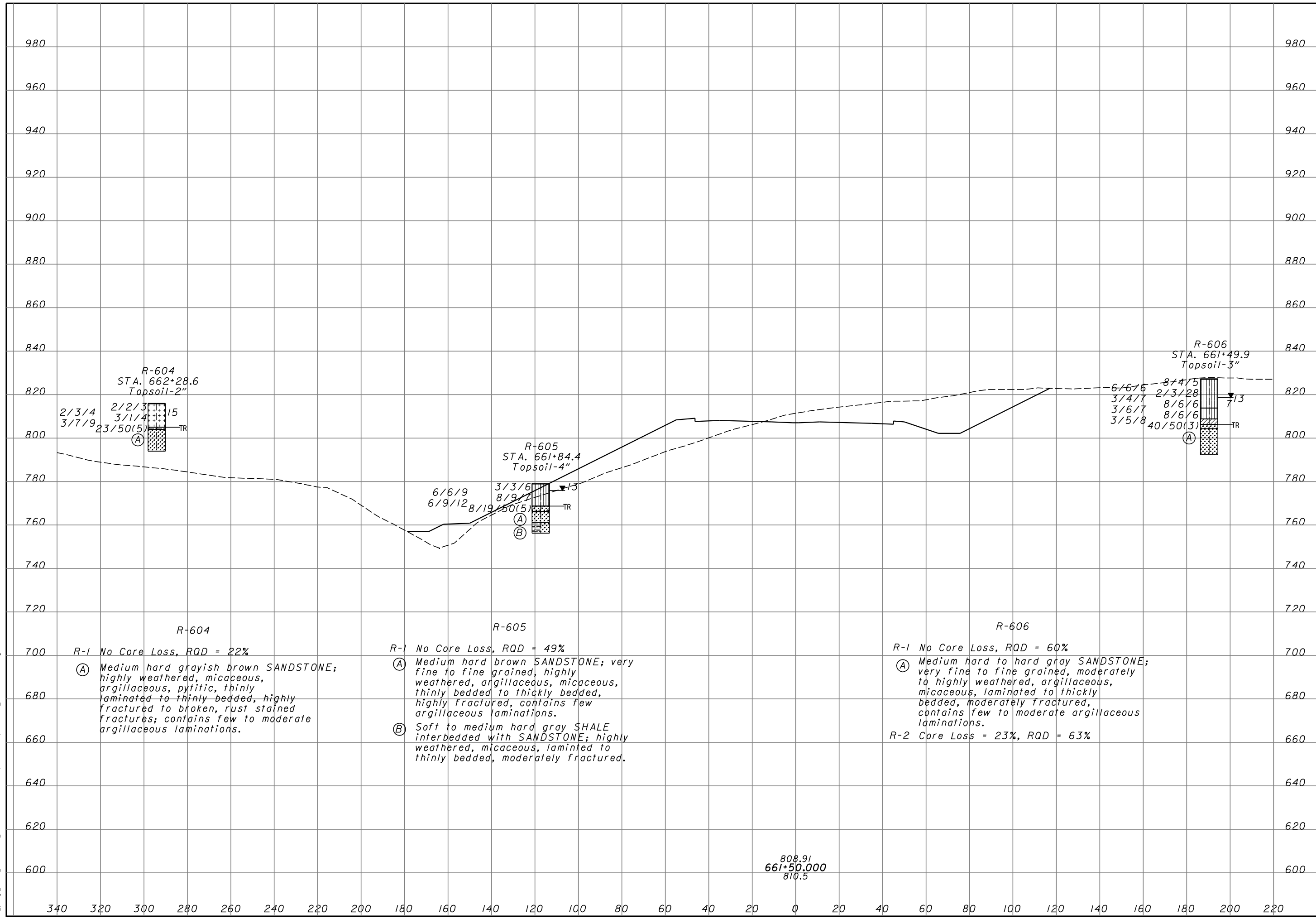
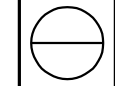
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 661+50.00**

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129/220



R-604
R-1 No Core Loss, RQD = 22%

(A) Medium hard grayish brown SANDSTONE; highly weathered, micaceous, argillaceous, pyritic, thinly laminated to thinly bedded, highly fractured to broken, rust stained fractures; contains few to moderate argillaceous laminations.

R-605
R-1 No Core Loss, RQD = 49%

(A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, highly fractured, contains few argillaceous laminations.

(B) Soft to medium hard gray SHALE interbedded with SANDSTONE; highly weathered, micaceous, laminated to thinly bedded, moderately fractured.

R-606
R-1 No Core Loss, RQD = 60%

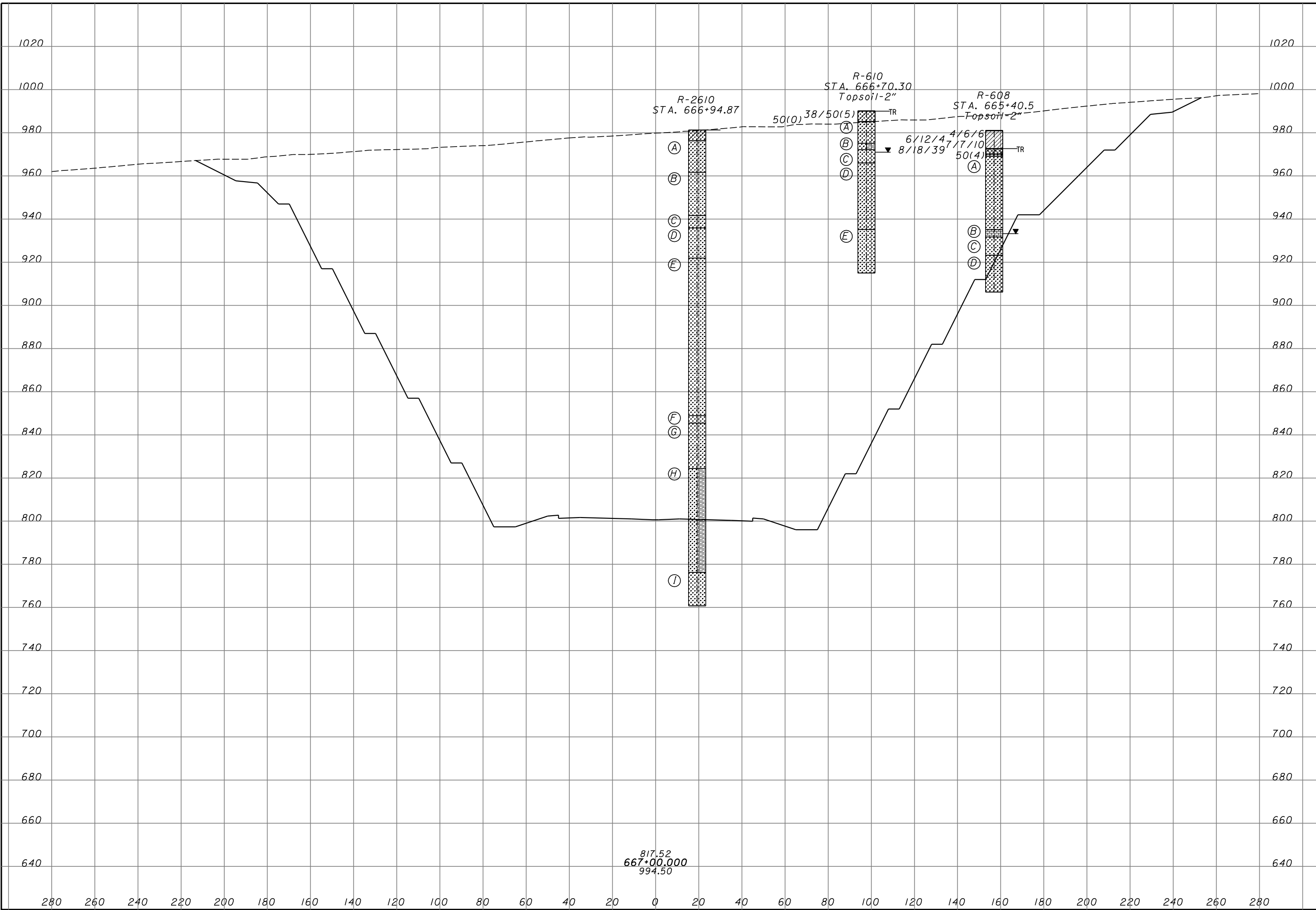
(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, laminated to thickly bedded, moderately fractured, contains few to moderate argillaceous laminations.

R-2 Core Loss = 23%, RQD = 63%

808.91
661+50.000
810.5

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 667+00.00

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R-2610

- R-1 Core Loss = 2%, RQD = 92%
 - (A) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, carbonaceous, micaceous, massively bedded, moderately fractured, contains moderate argillaceous laminations.
- R-2 Core Loss = 1%, RQD = 93%
 - (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, laminated to thickly bedded, moderately fractured, contains moderate argillaceous laminations.
- R-3 Core Loss = 3%, RQD = 95%
- R-4 No Core Loss, RQD = 98%
 - (C) Hard to very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-5 No Core Loss, RQD = 93%
 - (D) Very hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, calcareous, massive, slightly fractured.
- R-6 No Core Loss, RQD = 100%
 - (E) Very hard gray SANDSTONE; very fine to fine grained, unweathered to slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured, contains few argillaceous laminations and burrows.
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 Core Loss = 3%, RQD = 97%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
 - (F) Hard to very hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-14 No Core Loss, RQD = 100%
 - (G) Very hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, pyritic, massive, unfractured to slightly fractured.
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 98%
 - (H) Hard to very hard light and dark gray SANDSTONE interbedded with SHALE; very fine to fine grained, slightly weathered, calcareous, laminated to medium bedded, moderately fractured.
- R-17 No Core Loss, RQD = 100%
- R-18 No Core Loss, RQD = 100%
- R-19 Core Loss = 2%, RQD = 98%
- R-20 No Core Loss, RQD = 100%
- R-21 No Core Loss, RQD = 100%
 - (I) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, slightly fractured.
- R-22 No Core Loss, RQD = 100%

R-610

- R-1 No Core Loss, RQD = 60%
 - (A) Hard grayish brown SANDSTONE; fine grained, slightly weathered, micaceous, carbonaceous, medium bedded to thinly laminated, moderately fractured, iron staining on some fractures.
- R-2 No Core Loss, RQD = 87%
 - (B) Soft gray SHALE interbedded with SANDSTONE; very fine grained, moderately weathered, arenaceous, carbonaceous, micaceous, very thinly bedded to laminated, moderately fractured.
 - (C) Hard brown SANDSTONE; fine grained, slightly weathered, argillaceous, micaceous, medium bedded to laminated, slightly fractured.
- R-3 No Core Loss, RQD = 90%
 - (D) Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly laminated to thickly bedded, moderately fractured, contains moderate to abundant argillaceous laminations.
- R-4 Core Loss = 1%, RQD = 82%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
 - (E) Hard to very hard brown SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, calcareous, thickly bedded, slightly fractured.
- R-7 Core Loss = 1%, RQD = 99%
- R-8 No Core Loss, RQD = 100%

R-608

- R-1 Core Loss = 1%, RQD = 94%
 - (A) Medium hard to hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, medium to thickly bedded to laminated, slightly fractured.
- R-2 No Core Loss, RQD = 61%
- R-3 No Core Loss, RQD = 85%
- R-4 No Core Loss, RQD = 94%
 - (B) Very hard orange LIMESTONE; medium to coarse grained, highly weathered, fossiliferous, thickly bedded, slightly fractured, gypsum, iron staining.
- R-5 No Core Loss, RQD = 98%
 - (C) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, pyritic, argillaceous, micaceous, thickly to massively bedded, slightly fractured, contains iron staining.
 - (D) Medium hard gray SANDSTONE; fine grained, slightly weathered, pyritic, argillaceous, micaceous, thickly bedded, slightly fractured.
- R-6 Core Loss = 1%, RQD = 99%
- R-7 No Core Loss, RQD = 100%

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 667+00.00

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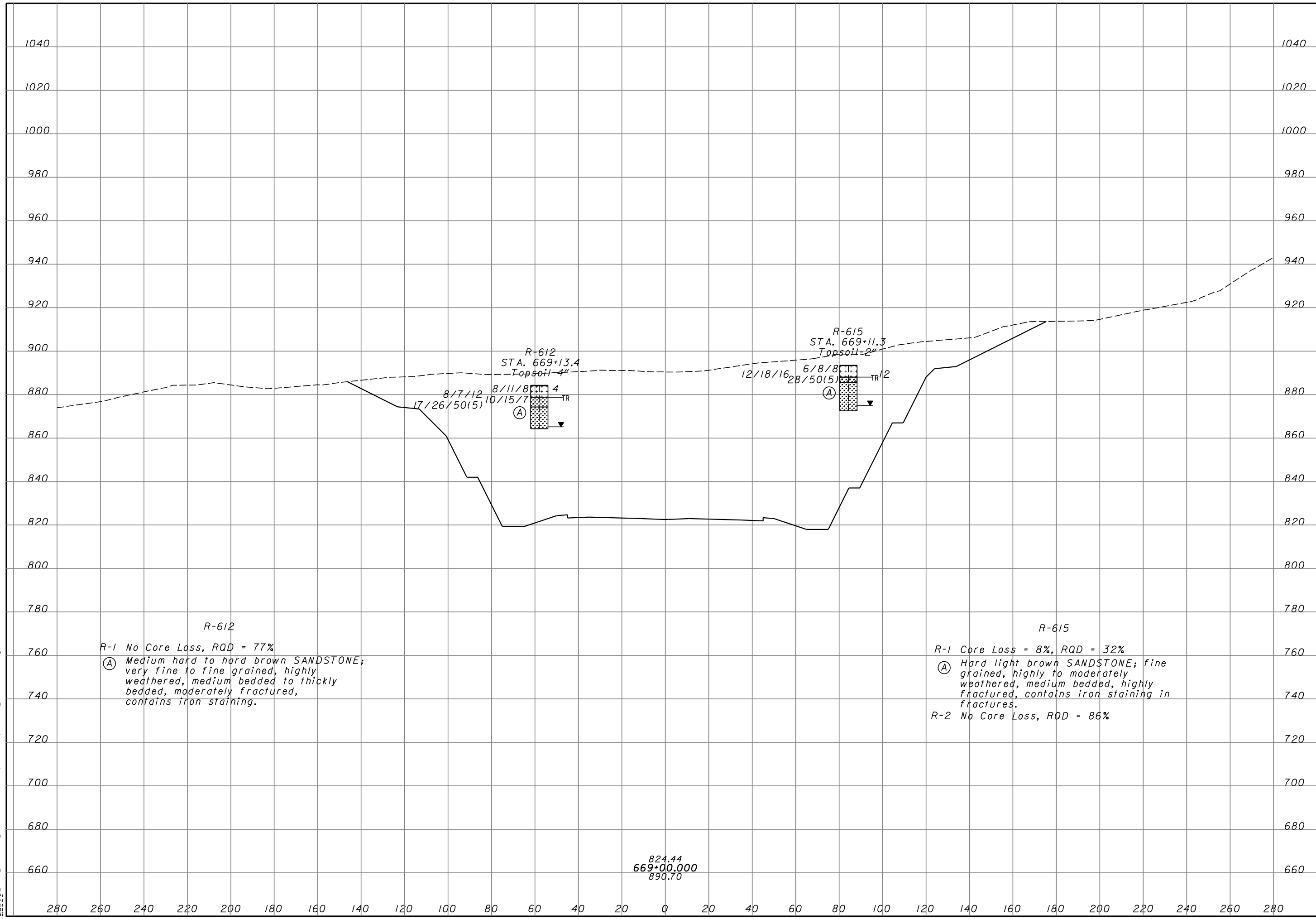
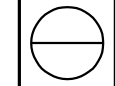


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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 669+00.00**

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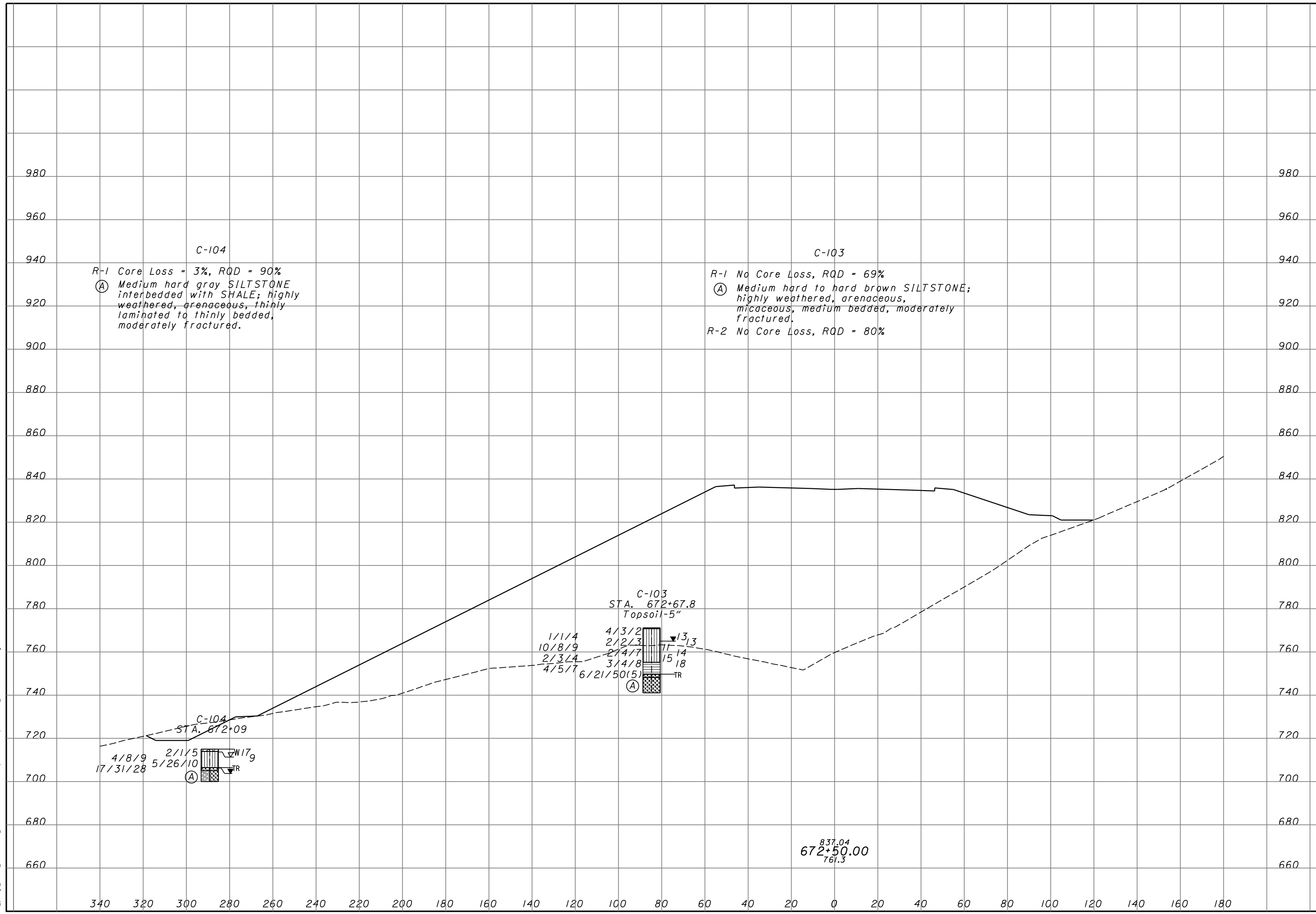


R-612
R-1 No Core Loss, RQD = 77%
(A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, medium bedded to thickly bedded, moderately fractured, contains iron staining.

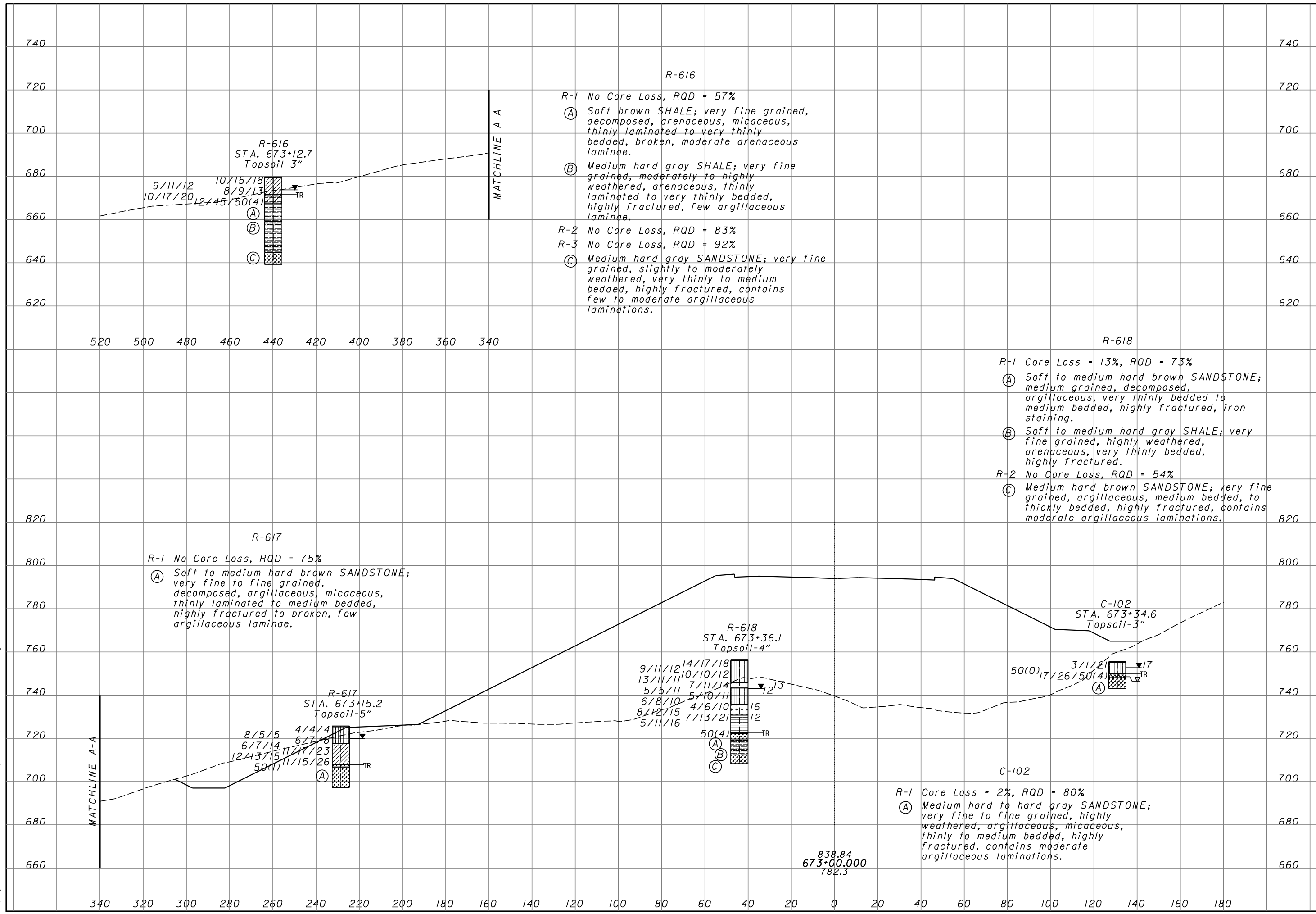
R-615
R-1 Core Loss = 8%, RQD = 32%
(A) Hard light brown SANDSTONE; fine grained, highly to moderately weathered, medium bedded, highly fractured, contains iron staining in fractures.
R-2 No Core Loss, RQD = 86%

824.44
669+00.000
890.70

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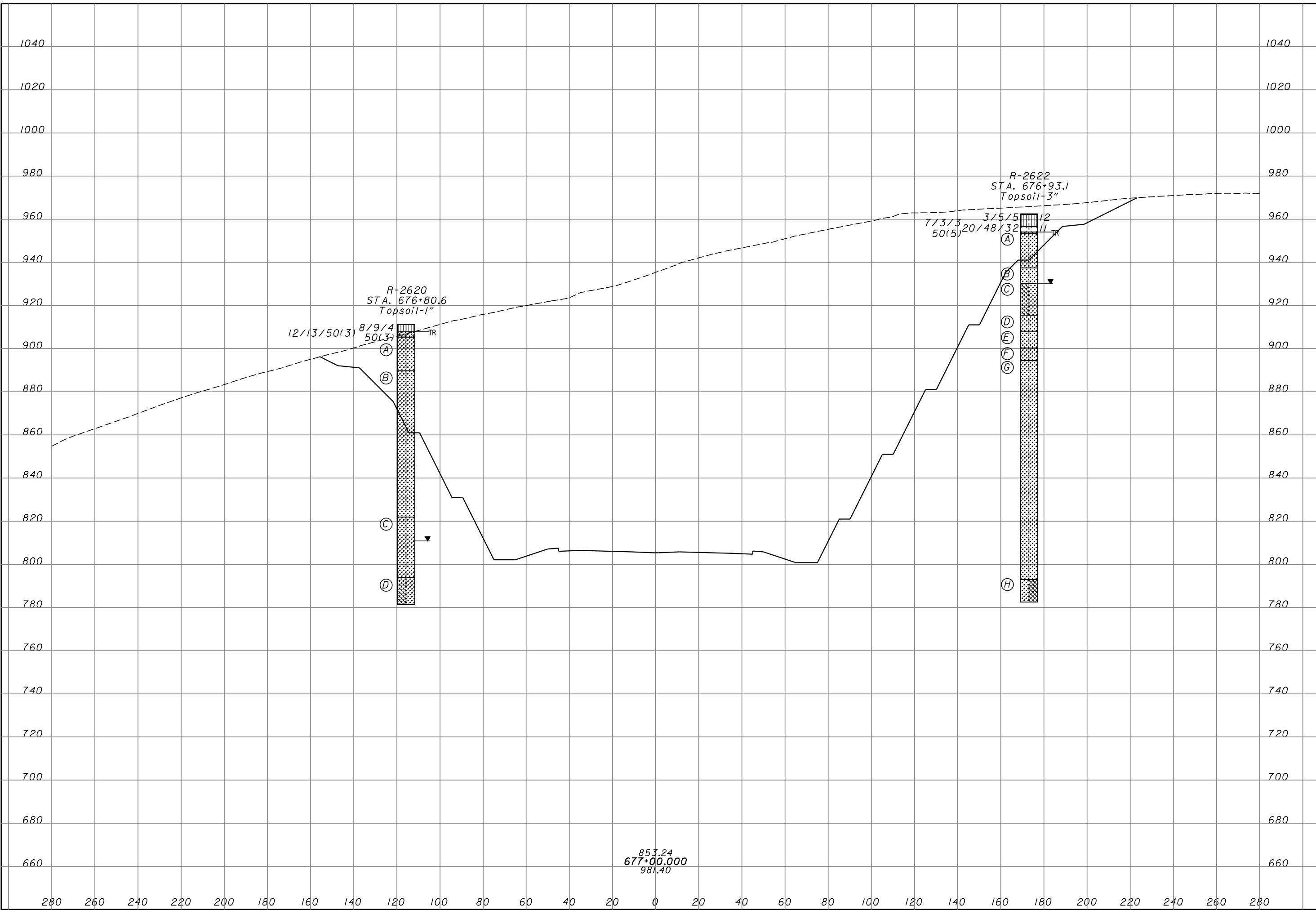


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853.24
677+00.000
981.40

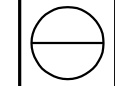
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 677+00.00

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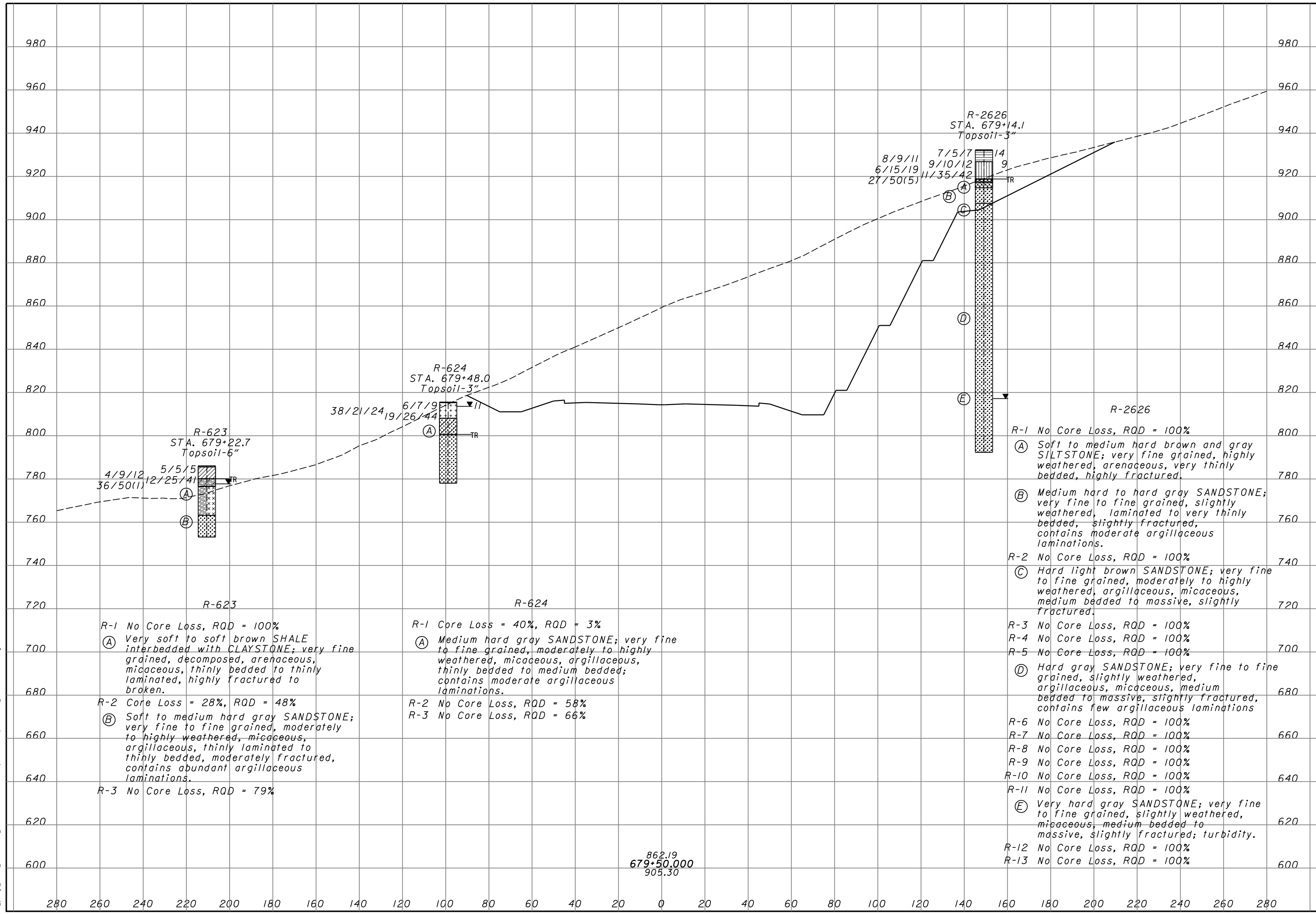


R-2622

- R-1 No Core Loss, RQD = 73%
- (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, micaceous, argillaceous, thinly bedded, moderately to highly fractured, contains iron staining and few argillaceous laminations.
- R-2 No Core Loss, RQD = 65%
- R-3 No Core Loss, RQD = 30%
- (B) Medium hard brown and gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, argillaceous, thinly bedded, highly fractured to broken.
- (C) Soft to medium hard gray SILTSTONE interbedded with SANDSTONE; very fine to fine grained, slightly to moderately weathered, micaceous, thinly laminated to thinly bedded, slightly fractured.
- R-4 No Core Loss, RQD = 96%
- R-5 No Core Loss, RQD = 100%
- (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, pyritic, thinly laminated to massive, slightly fractured, contains few argillaceous laminations.
- R-6 No Core Loss, RQD = 100%
- (E) Hard brown SANDSTONE; fine grained, moderately to highly weathered, micaceous, calcareous, massive, slightly to moderately fractured.
- (F) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, massive, slightly fractured.
- R-7 No Core Loss, RQD = 100%
- (G) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, slightly fractured.
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 95%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 95%
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 100%
- R-17 No Core Loss, RQD = 100%
- (H) Hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, slightly weathered, massive, slightly fractured, turbidity, siltstone beds fissile after dessication.
- R-18 No Core Loss, RQD = 100%

R-2620

- R-1 No Core Loss, RQD = 100%
- (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, slightly to moderately fractured.
- R-2 No Core Loss, RQD = 100%
- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, massive, slightly fractured, contains few argillaceous laminations.
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 90%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 96%
- (C) Medium hard to hard brown and gray SANDSTONE; very fine to fine grained, argillaceous, micaceous, massive, slightly fractured, iron stained.
- R-10 No Core Loss, RQD = 90%
- R-11 No Core Loss, RQD = 94%
- R-12 No Core Loss, RQD = 95%
- (D) Medium hard to hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, micaceous, thinly laminated to medium bedded, slightly fractured.
- R-13 No Core Loss, RQD = 100%



R-623
STA. 679+22.7
Topsoil-6"

4/9/12 5/5/5
36/50(1) 12/25/4

R-1 No Core Loss, RQD = 100%
 (A) Very soft to soft brown SHALE interbedded with CLAYSTONE; very fine grained, decomposed, arenaceous, micaceous, thinly bedded to thinly laminated, highly fractured to broken.

R-2 Core Loss = 28%, RQD = 48%
 (B) Soft to medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly laminated to thinly bedded, moderately fractured, contains abundant argillaceous laminations.

R-3 No Core Loss, RQD = 79%

R-624
STA. 679+48.0
Topsoil-3"

38/21/24 6/7/9 19/26/44

R-1 Core Loss = 40%, RQD = 3%
 (A) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly bedded to medium bedded; contains moderate argillaceous laminations.

R-2 No Core Loss, RQD = 58%
 R-3 No Core Loss, RQD = 66%

R-2626
STA. 679+14.1
Topsoil-3"

8/9/11 7/5/7 14
6/15/19 9/10/12 9
27/50(5) 11/35/42

R-1 No Core Loss, RQD = 100%
 (A) Soft to medium hard brown and gray SILTSTONE; very fine grained, highly weathered, arenaceous, very thinly bedded, highly fractured.

(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, laminated to very thinly bedded, slightly fractured, contains moderate argillaceous laminations.

R-2 No Core Loss, RQD = 100%
 (C) Hard light brown SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, medium bedded to massive, slightly fractured.

R-3 No Core Loss, RQD = 100%
 R-4 No Core Loss, RQD = 100%
 R-5 No Core Loss, RQD = 100%
 (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, medium bedded to massive, slightly fractured, contains few argillaceous laminations

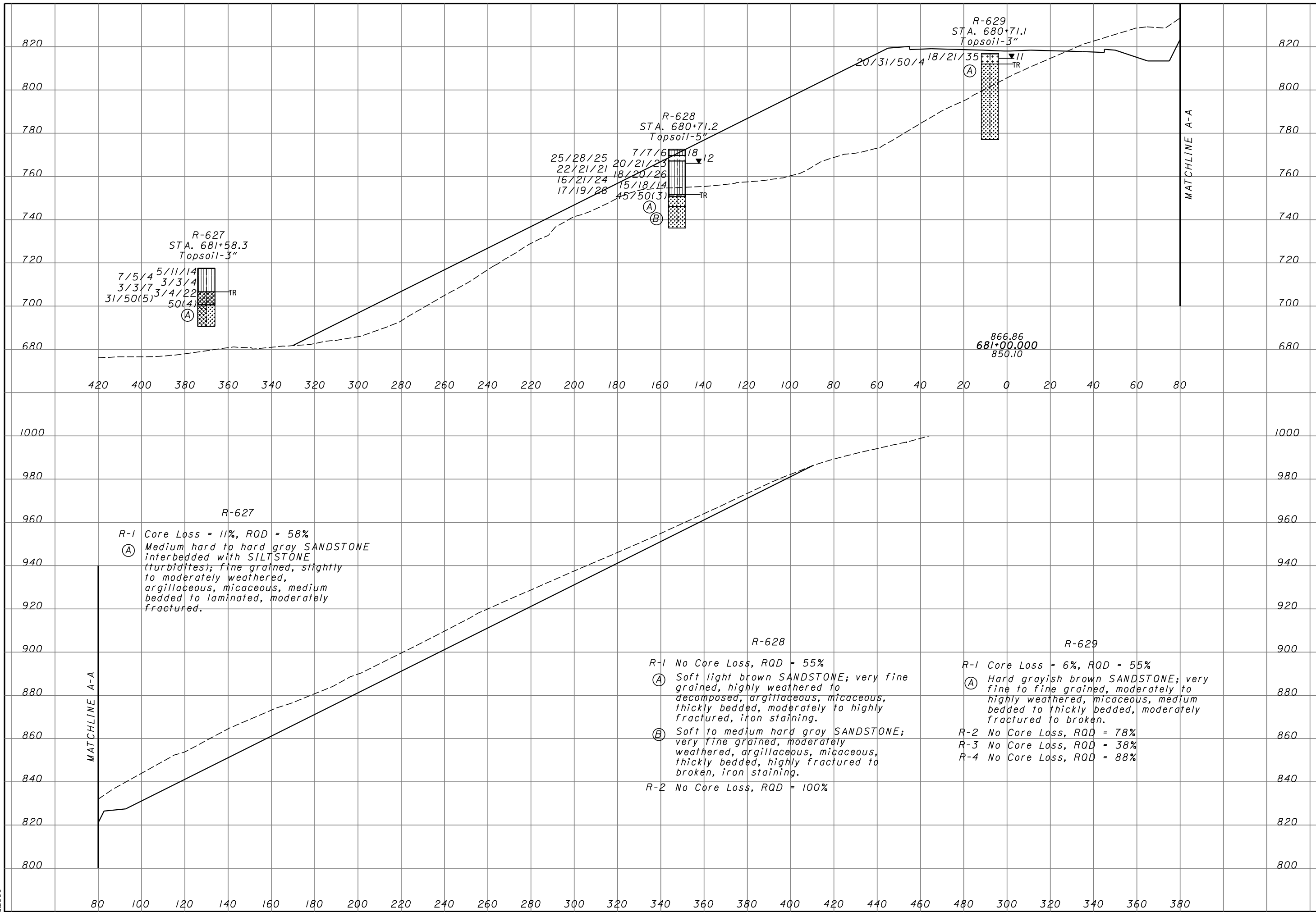
R-6 No Core Loss, RQD = 100%
 R-7 No Core Loss, RQD = 100%
 R-8 No Core Loss, RQD = 100%
 R-9 No Core Loss, RQD = 100%
 R-10 No Core Loss, RQD = 100%
 R-11 No Core Loss, RQD = 100%
 (E) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, medium bedded to massive, slightly fractured; turbidity.

R-12 No Core Loss, RQD = 100%
 R-13 No Core Loss, RQD = 100%

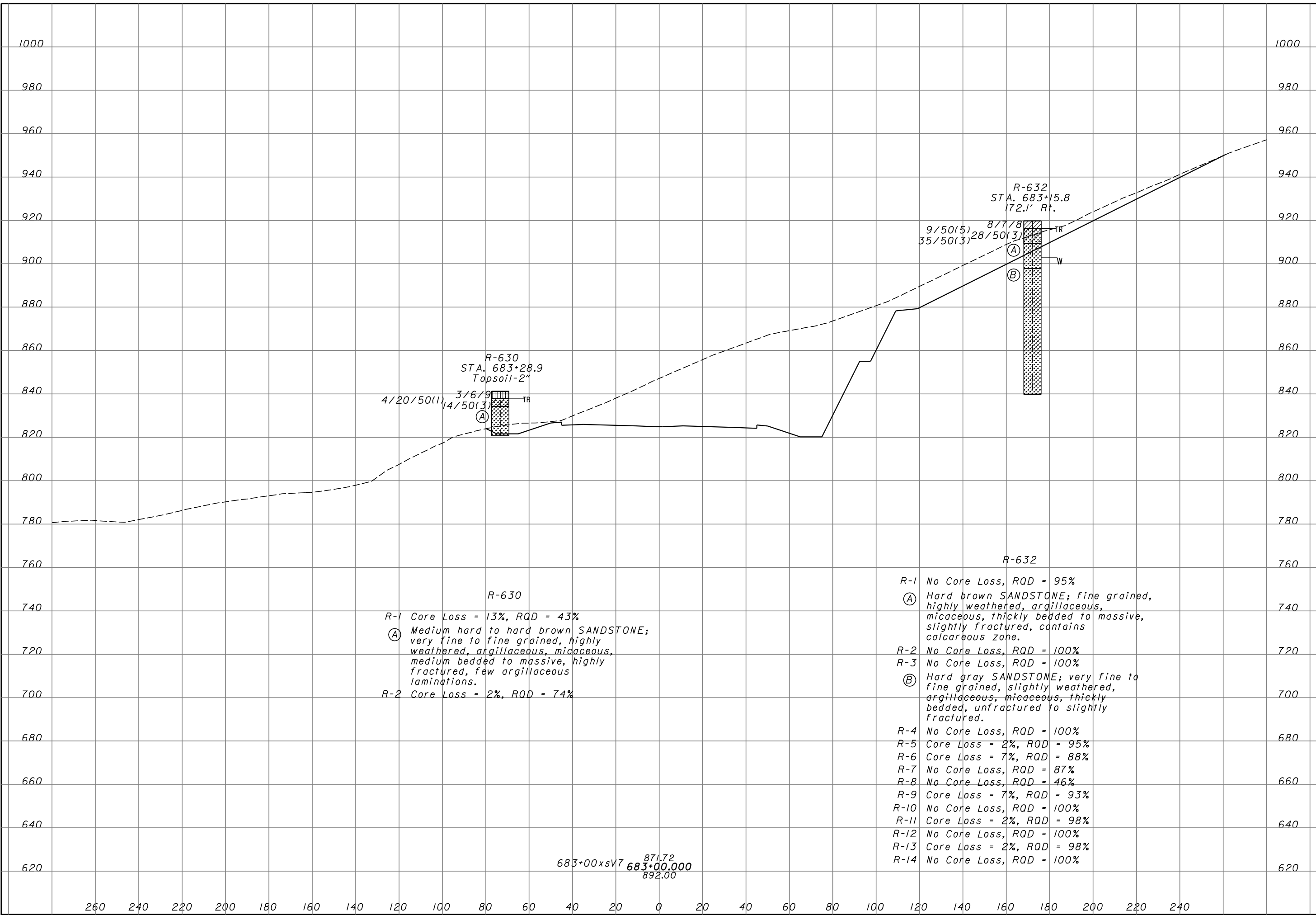
862.19
679+50.000
905.30

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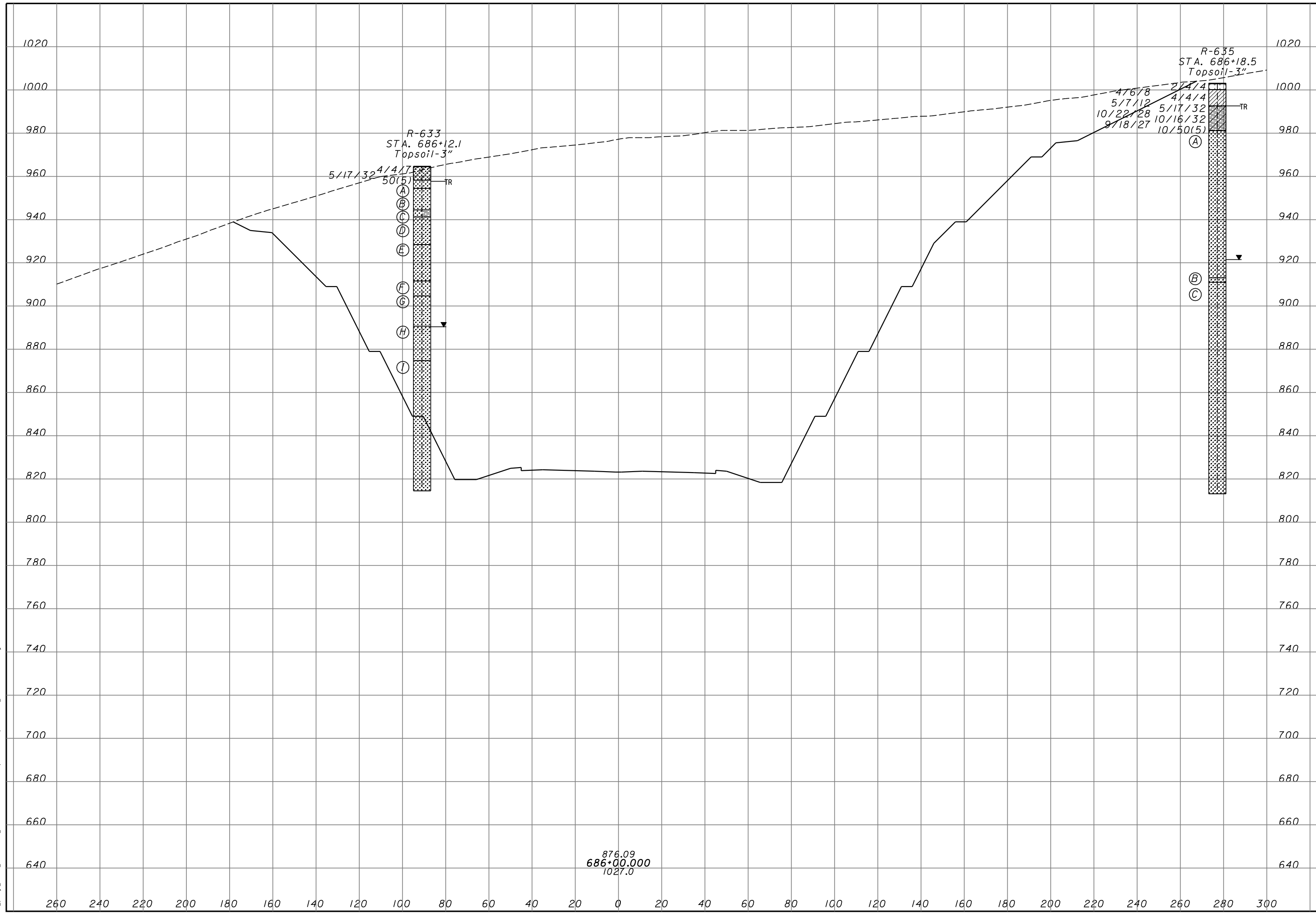
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876.09
686+00.000
1027.0

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RLS

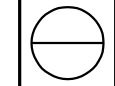
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 686+00.00

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140/220





R-633

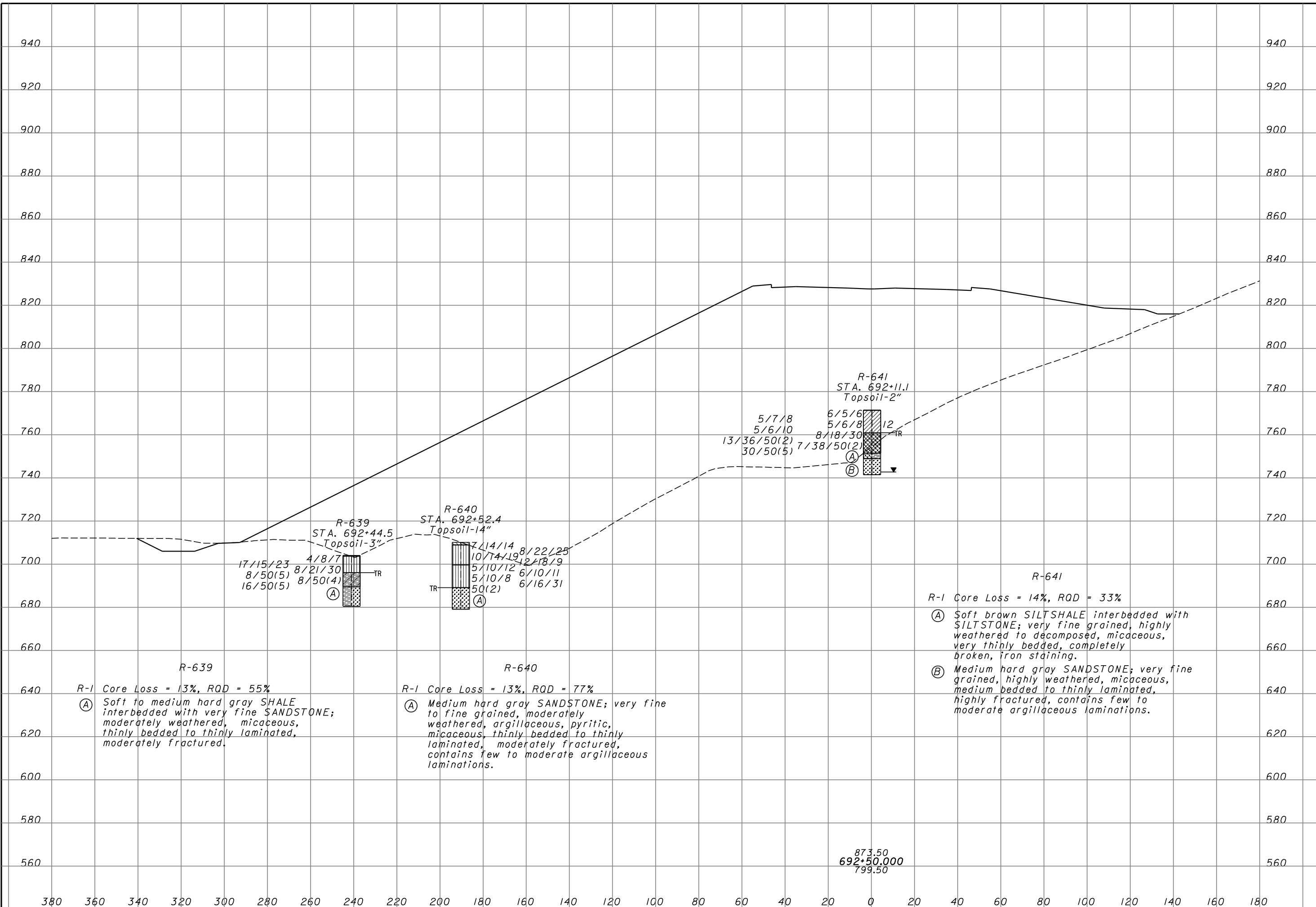
- R-1 No Core Loss, RQD = 80%
 - (A) Medium hard brown SANDSTONE; fine grained, slightly weathered, argillaceous, micaceous, thickly bedded, slightly fractured, cross bedding.
- R-2 Core Loss = 1%, RQD = 89%
 - (B) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, slightly fractured, contains few argillaceous laminations.
- R-3 No Core Loss, RQD = 71%
 - (C) Soft to medium hard brownish gray SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered, argillaceous, arenaceous, micaceous, thinly laminated to medium bedded, moderately to highly fractured.
 - (D) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, highly fractured.
- R-4 No Core Loss, RQD = 93%
 - (E) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, slightly to moderately fractured, some iron staining; contains moderate to abundant argillaceous laminations.
- R-5 No Core Loss, RQD = 79%
- R-6 No Core Loss, RQD = 81%
 - (F) Medium hard to hard dark gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to massive, slightly fractured.
 - (G) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, fossiliferous, thickly bedded to massive, unfractured to slightly fractured, iron stained fossils.
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
 - (H) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, thickly to massive, unfractured to slightly fractured.
- R-9 No Core Loss, RQD = 100%
 - (I) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, very thickly bedded, unfractured to slightly fractured.
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 Core Loss = 2%, RQD = 98%
- R-13 No Core Loss, RQD = 100%
- R-14 Core Loss = 2%, RQD = 98%
- R-15 No Core Loss, RQD = 100%

R-635

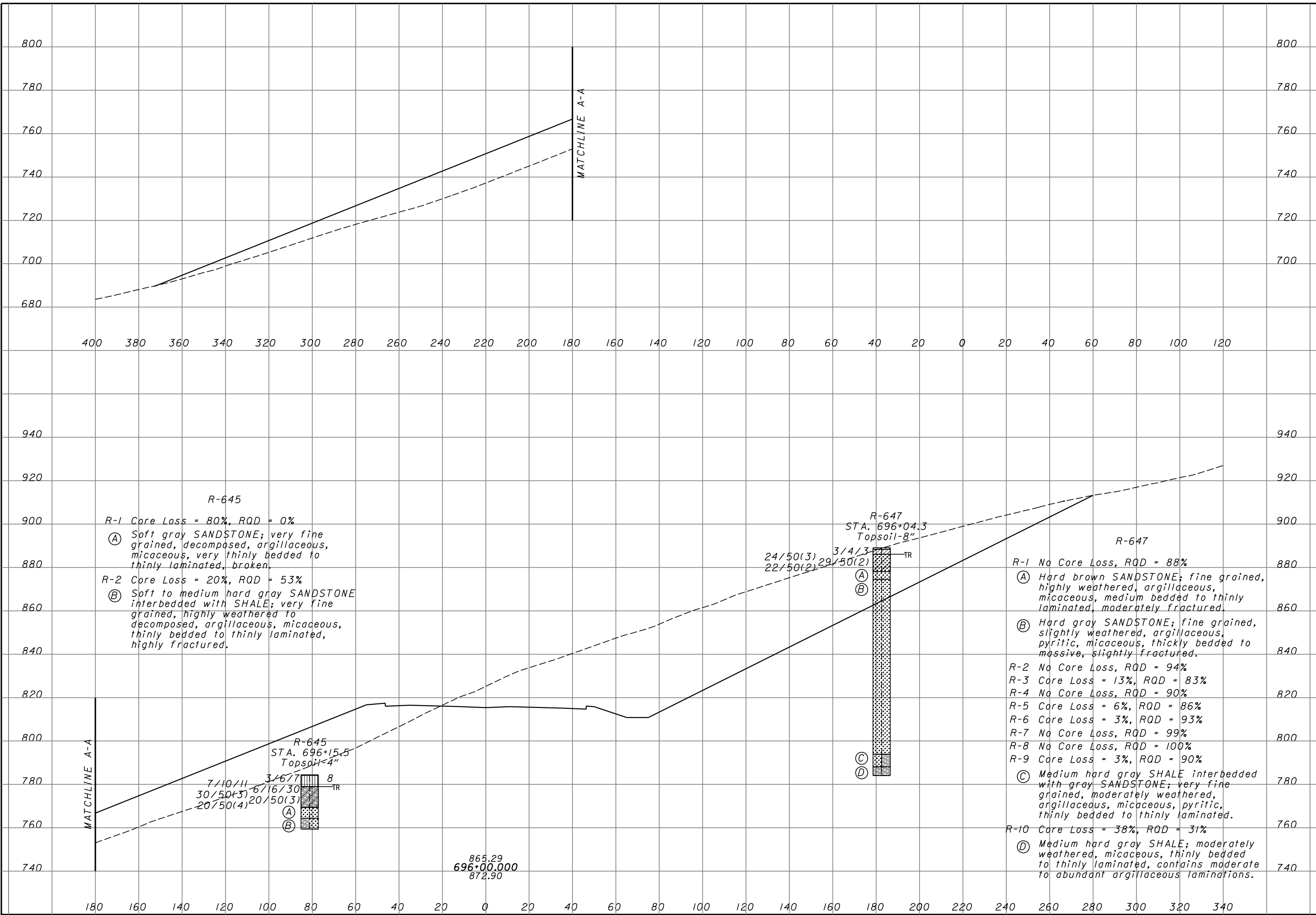
- R-1 No Core Loss, RQD = 72%
 - (A) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded, slightly fractured.
- R-2 No Core Loss, RQD = 87%
- R-3 No Core Loss, RQD = 88%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 97%
- R-6 No Core Loss, RQD = 94%
- R-7 Core Loss = 1%, RQD = 94%
- R-8 Core Loss = 1%, RQD = 99%
 - (B) Medium hard gray SANDSTONE; very fine grained, slightly weathered, argillaceous, pyritic, micaceous, thinly laminated to thickly bedded, slightly fractured, contains moderate to abundant argillaceous laminations.
 - (C) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, pyritic, thickly bedded to massive, micaceous.
- R-9 No Core Loss, RQD = 97%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 Core Loss = 3%, RQD = 97%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 100%
- R-17 No Core Loss, RQD = 100%

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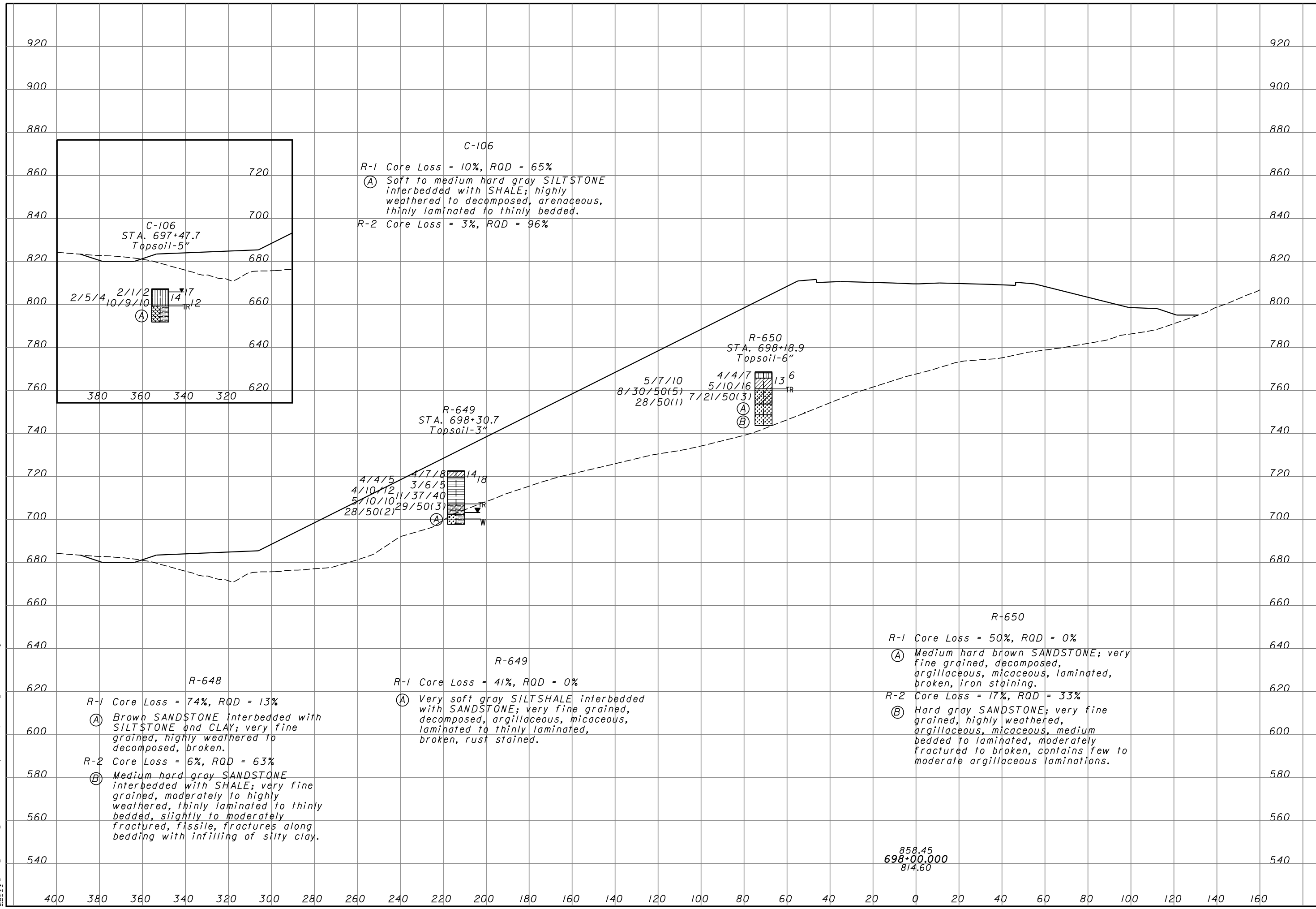
R-645
 R-1 Core Loss = 80%, RQD = 0%
 (A) Soft gray SANDSTONE; very fine grained, decomposed, argillaceous, micaceous, very thinly bedded to thinly laminated, broken.
 R-2 Core Loss = 20%, RQD = 53%
 (B) Soft to medium hard gray SANDSTONE interbedded with SHALE; very fine grained, highly weathered to decomposed, argillaceous, micaceous, thinly bedded to thinly laminated, highly fractured.

R-647
 STA. 696+04.3
 Topsoil-8"
 24/50(3) 3/4/3
 22/50(2) 29/50(2)
 (A)
 (B)
 (C)
 (D)

R-647
 R-1 No Core Loss, RQD = 88%
 (A) Hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, medium bedded to thinly laminated, moderately fractured.
 (B) Hard gray SANDSTONE; fine grained, slightly weathered, argillaceous, pyritic, micaceous, thickly bedded to massive, slightly fractured.
 R-2 No Core Loss, RQD = 94%
 R-3 Core Loss = 13%, RQD = 83%
 R-4 No Core Loss, RQD = 90%
 R-5 Core Loss = 6%, RQD = 86%
 R-6 Core Loss = 3%, RQD = 93%
 R-7 No Core Loss, RQD = 99%
 R-8 No Core Loss, RQD = 100%
 R-9 Core Loss = 3%, RQD = 90%
 (C) Medium hard gray SHALE interbedded with gray SANDSTONE; very fine grained, moderately weathered, argillaceous, micaceous, pyritic, thinly bedded to thinly laminated.
 R-10 Core Loss = 38%, RQD = 31%
 (D) Medium hard gray SHALE; moderately weathered, micaceous, thinly bedded to thinly laminated, contains moderate to abundant argillaceous laminations.

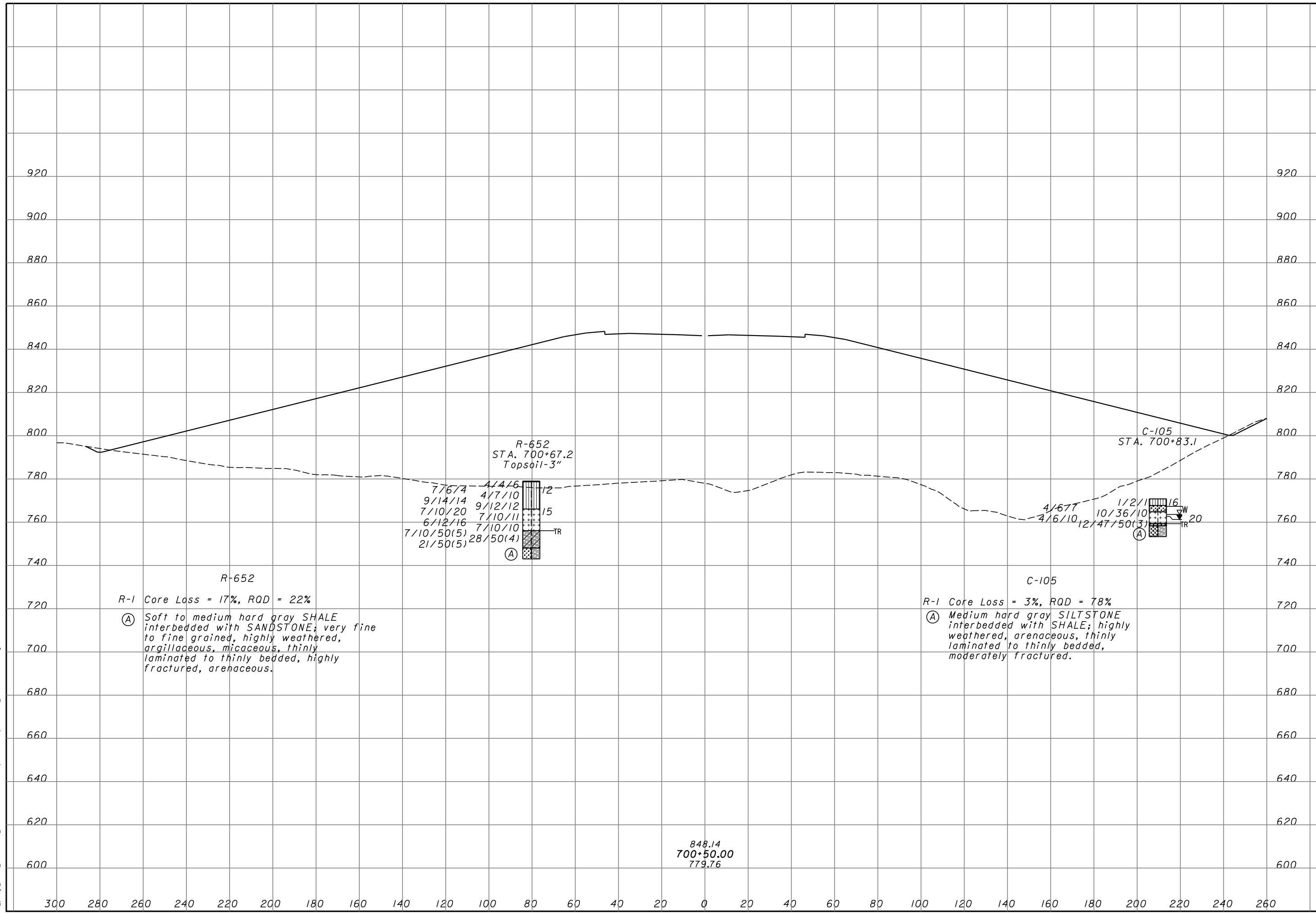
865.29
 696+00.000
 872.90

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 700+50.00

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R-652
R-1 Core Loss = 17%, RQD = 22%

(A) Soft to medium hard gray SHALE interbedded with SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly laminated to thinly bedded, highly fractured, arenaceous.

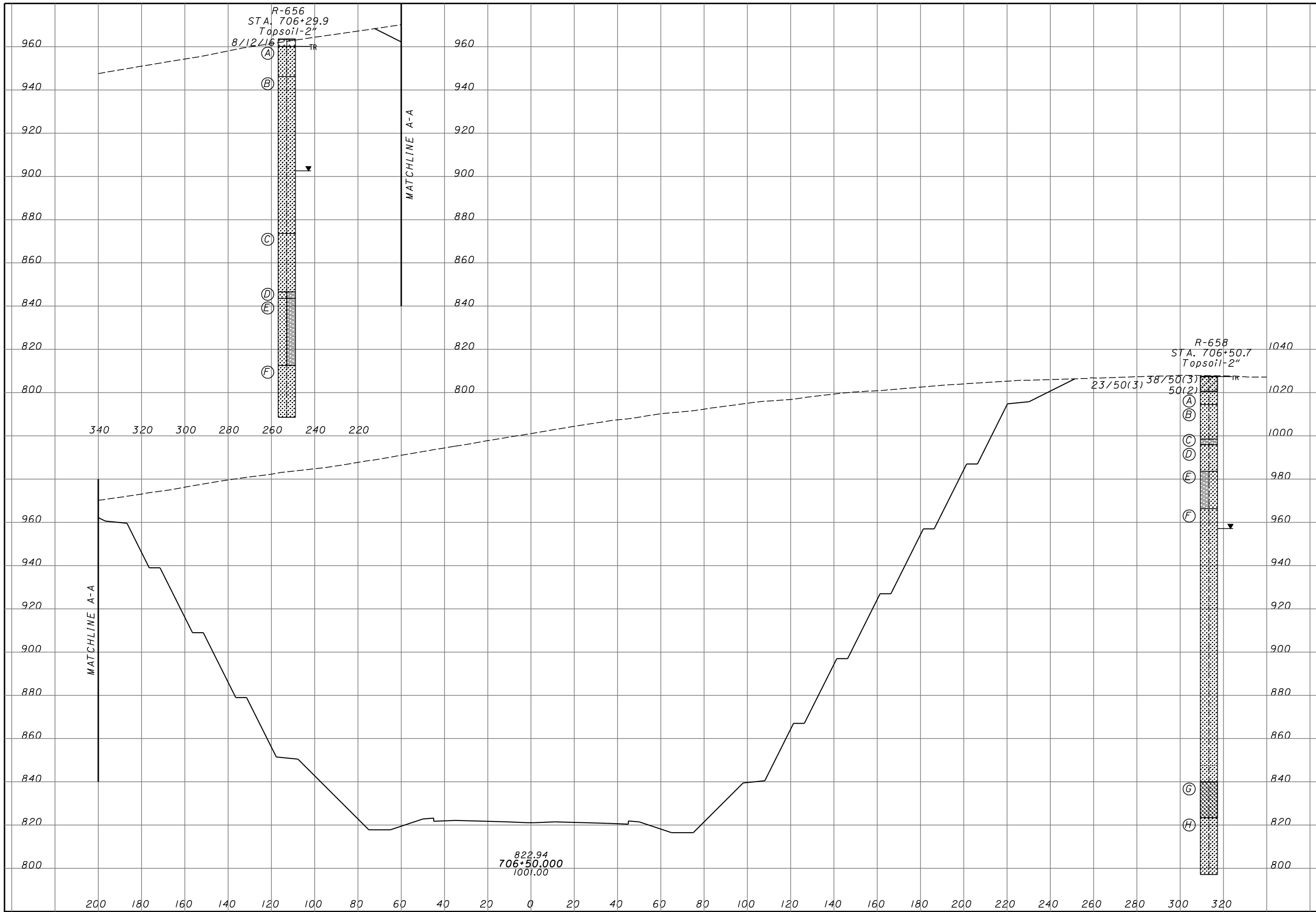
C-105
R-1 Core Loss = 3%, RQD = 78%

(A) Medium hard gray SILTSTONE interbedded with SHALE; highly weathered, arenaceous, thinly laminated to thinly bedded, moderately fractured.

848.14
700+50.00
779.76

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R-656

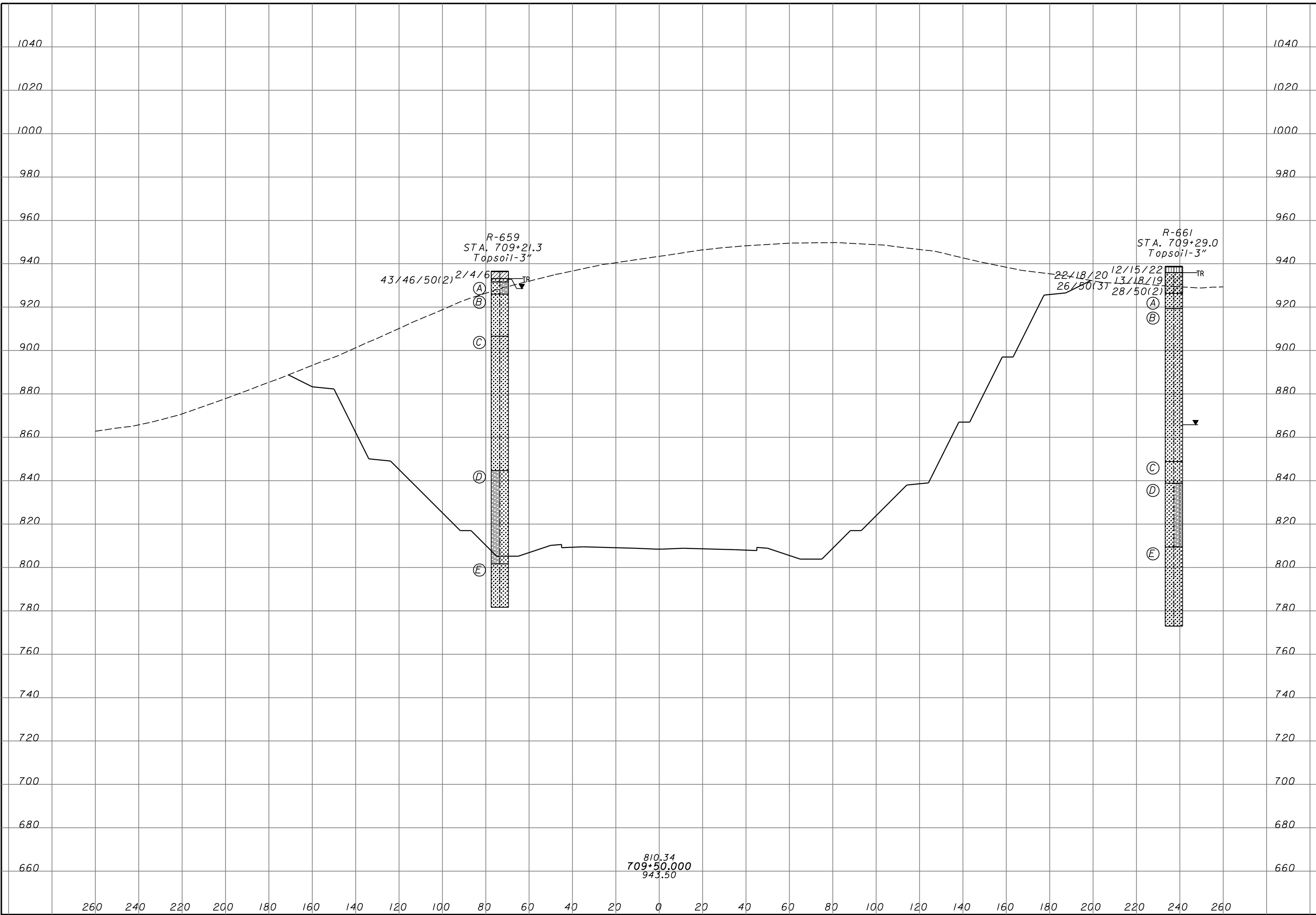
- R-1 No Core Loss, RQD = 78%
- (A) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded, highly fractured.
 - (B) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, unfractured to slightly fractured, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 100%
- (C) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, laminated to thickly bedded, slightly fractured.
- R-3 No Core Loss, RQD = 97%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 98%
- R-7 No Core Loss, RQD = 78%
- R-8 No Core Loss, RQD = 94%
- R-9 No Core Loss, RQD = 94%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 89%
- R-12 No Core Loss, RQD = 88%
- (D) Medium hard gray SANDSTONE interbedded with SHALE; fine grained, moderately weathered, argillaceous, arenaceous, micaceous, laminated bedded, moderately fractured, fissile.
- R-13 No Core Loss, RQD = 80%
- (E) Medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, moderately weathered, argillaceous, arenaceous, micaceous, laminated to medium bedded, moderately fractured.
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 98%
- (F) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, laminated to medium bedded, moderately fractured, contains few to moderate argillaceous laminations.
- R-17 No Core Loss, RQD = 97%
- R-18 No Core Loss, RQD = 100%

R-658

- R-1 No Core Loss, RQD = 68%
- (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, laminated to medium bedded, moderately to highly fractured, interbedded iron stained shale, interbedded siltstone, iron staining in fractures.
 - (B) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, laminated to thickly bedded, slightly fractured, iron stained interbedded siltstone, interbedded shale.
- R-2 No Core Loss, RQD = 95%
- R-3 No Core Loss, RQD = 92%
- (C) Soft gray SHALE; highly weathered, arenaceous, laminated.
 - (D) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, moderately fractured, interbedded iron stained portions, iron stained fractures, contains few argillaceous laminations.
- R-4 No Core Loss, RQD = 92%
- R-5 No Core Loss, RQD = 92%
- (E) Medium hard to hard gray SANDSTONE interbedded with SHALE (turbidites); very fine to fine grained, moderately weathered, argillaceous, micaceous, laminated to thickly bedded, moderately fractured.
- R-6 No Core Loss, RQD = 98%
- (F) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, medium bedded to massive, slightly fractured to unfractured, iron staining.
- R-7 No Core Loss, RQD = 93%
- R-8 Core Loss = 2%, RQD = 98%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 0%
- R-17 No Core Loss, RQD = 100%
- R-18 No Core Loss, RQD = 100%
- R-19 No Core Loss, RQD = 100%
- (G) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, medium bedded to thinly laminated, moderately fractured, contains moderate argillaceous laminations, contains ferric bands.
- R-20 No Core Loss, RQD = 100%
- R-21 Core Loss = 3%, RQD = 97%
- (H) Medium hard gray SANDSTONE; very fine grained, slightly weathered, micaceous, argillaceous, massive, contains few argillaceous laminations.
- R-22 Core Loss = 1%, RQD = 99%
- R-23 No Core Loss, RQD = 100%



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810.34
709+50.000
943.50

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R-659

- R-1 No Core Loss, RQD = 23%
- (A) Soft to medium hard brownish orange SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, thinly laminated to thinly bedded, highly fractured to broken, iron stains.
- R-2 No Core Loss, RQD = 74%
- (B) Medium hard brown and gray SANDSTONE; very fine to fine grained, highly to moderately weathered, argillaceous, micaceous, medium bedded to laminated, moderately fractured, iron staining on fracture surface.
- R-3 No Core Loss, RQD = 96%
- (C) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded to massive, moderately fractured, iron staining on fracture surface.
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 89%
- (D) Soft gray SHALE interbedded with SANDSTONE and SILTSTONE; very fine grained, slightly weathered, arenaceous, micaceous, very thinly bedded to thinly laminated, moderately fractured.
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
- (E) Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, laminated to medium bedded, slightly fractured, contains moderate argillaceous laminations, fissile.
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 100%

R-661

- R-1 No Core Loss, RQD = 69%
- (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, very thinly bedded to massive, moderately fractured.
- R-2 Core Loss = 2%, RQD = 98%
- (B) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, slightly fractured.
- R-3 Core Loss = 2%, RQD = 98%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 Core Loss = 2%, RQD = 98%
- R-9 No Core Loss, RQD = 82%
- (C) Medium hard gray SANDSTONE; very fine grained to fine grained, slightly weathered, pyritic, thinly bedded to thinly laminated, moderately fractured to slightly fractured, contains few to moderate argillaceous laminations.
- R-10 No Core Loss, RQD = 87%
- (D) Medium hard gray SANDSTONE interbedded with SHALE; very fine grained, slightly weathered, thinly laminated to thinly bedded, slightly fractured.
- R-11 No Core Loss, RQD = 94%
- R-12 No Core Loss, RQD = 96%
- R-13 No Core Loss, RQD = 100%
- (E) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, slightly fractured, contains moderate to abundant argillaceous laminations.
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 100%

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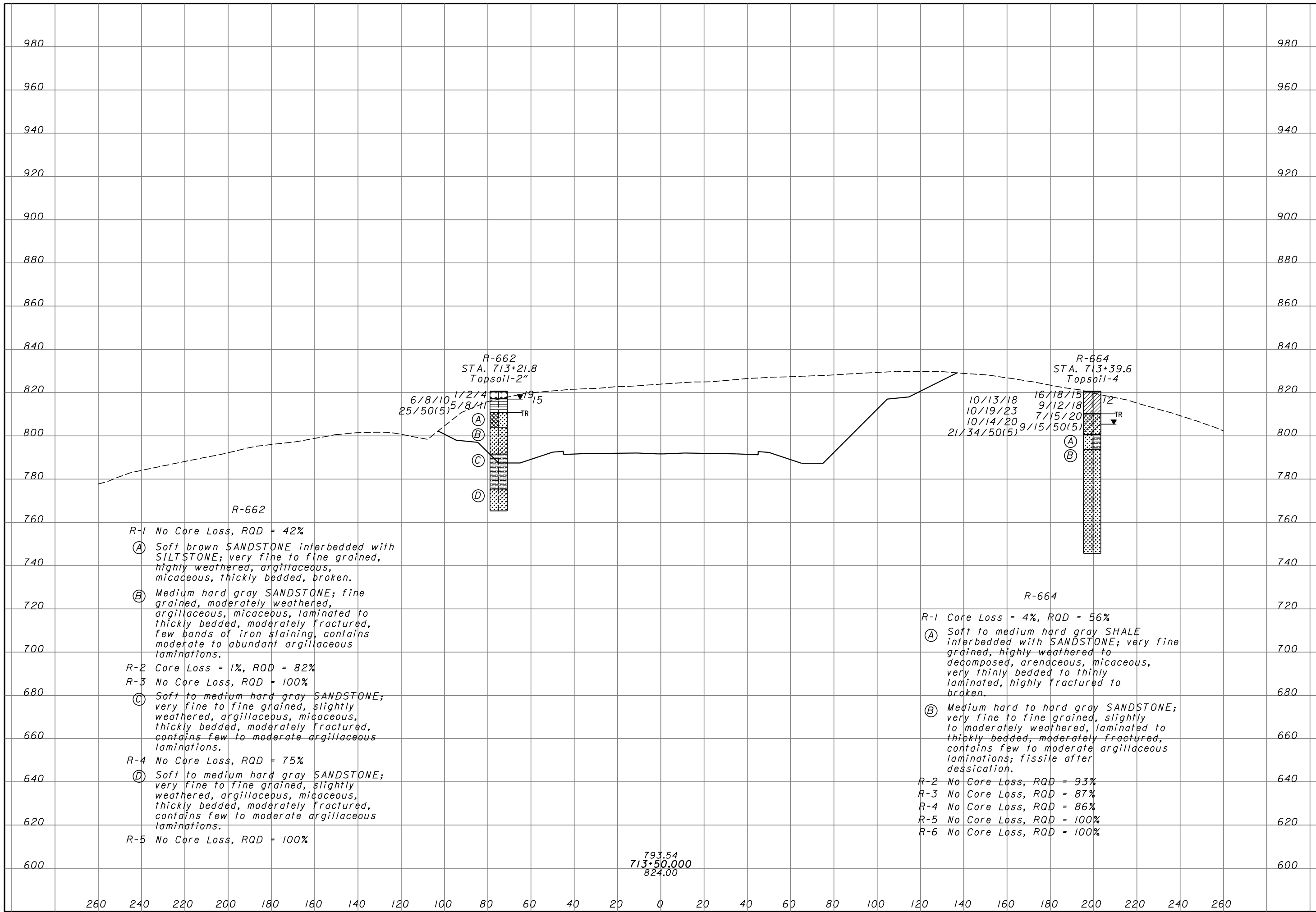
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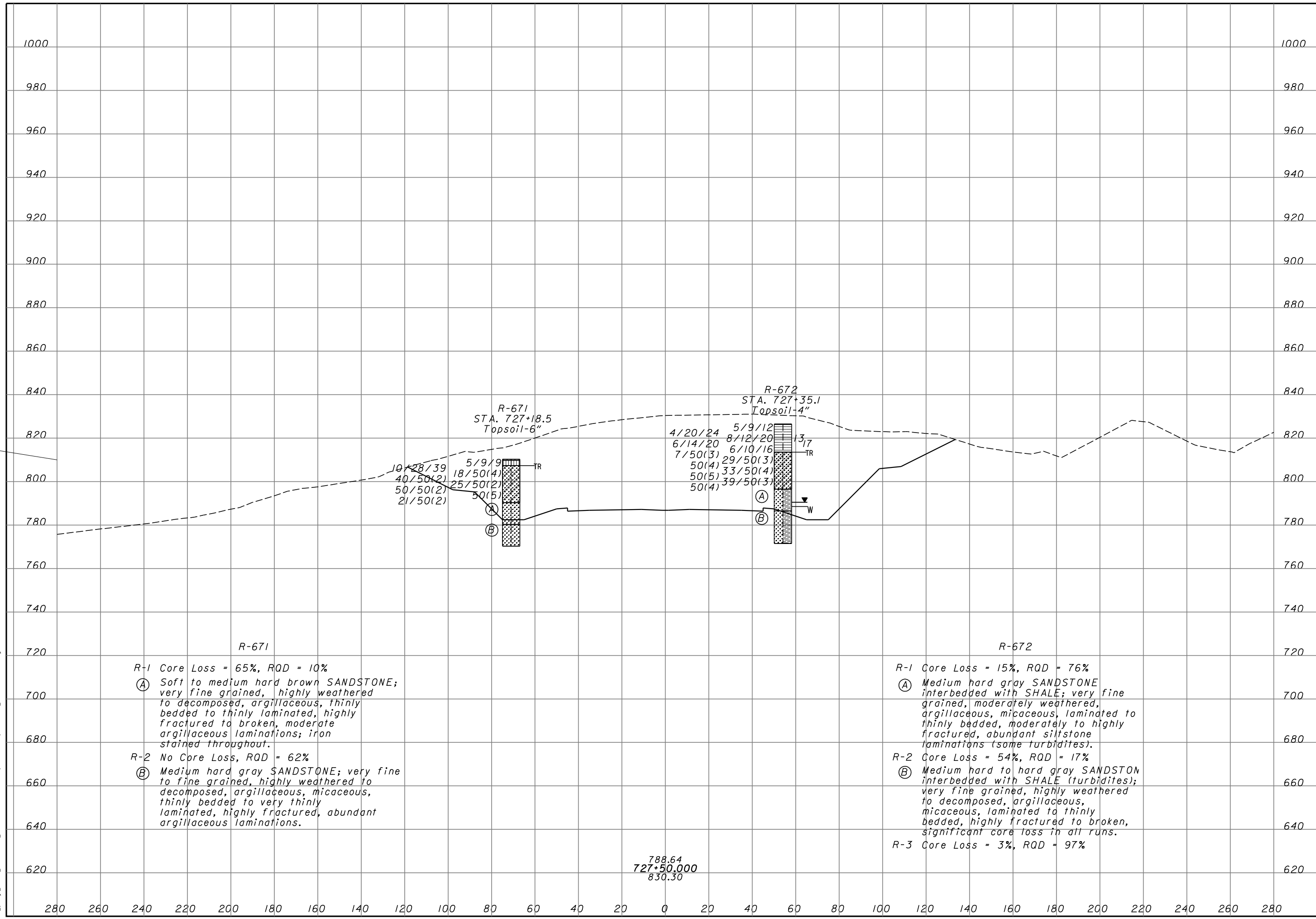
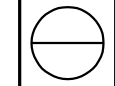


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SOIL PROFILE
CROSS SECTION - SR 823 STA. 727+50.00

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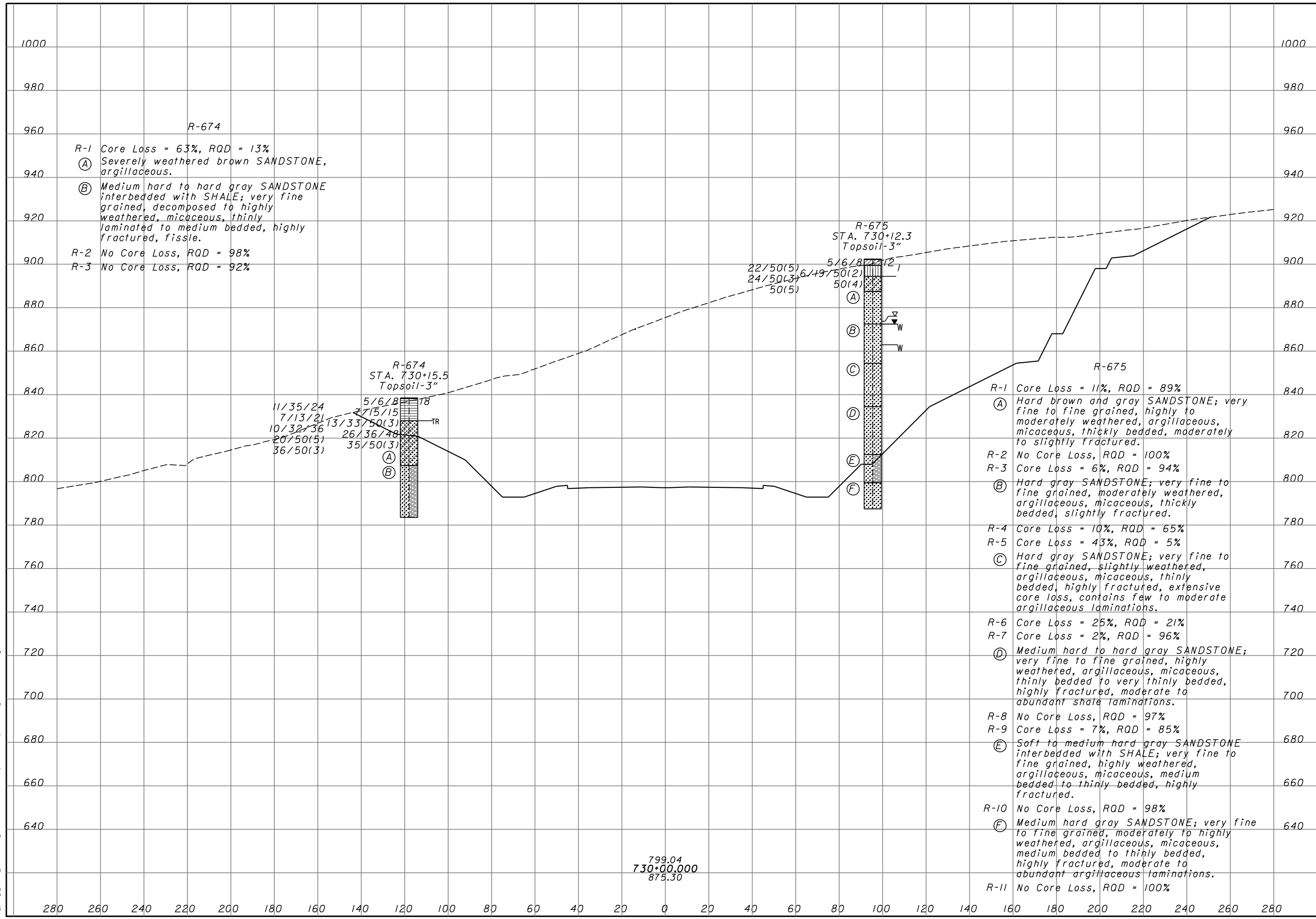
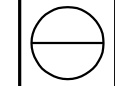
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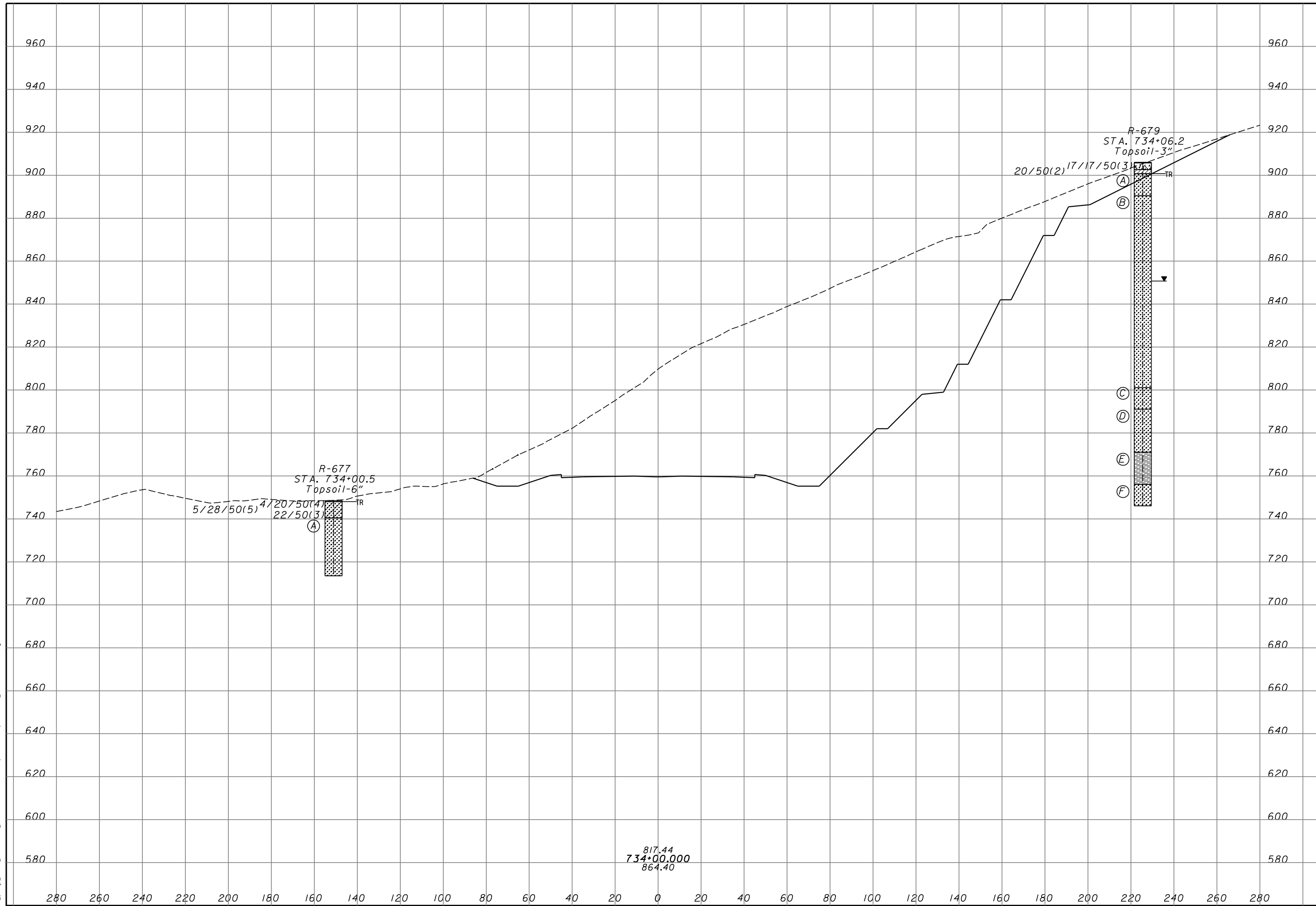
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817.44
734+00.000
864.40

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 734+00.00

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153/220



R-677

R-1 Core Loss = 4%, RQD = 91%

(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, very thickly bedded, slightly fractured, contains few to moderate argillaceous laminations.

R-2 Core Loss = 5%, RQD = 95%

R-3 No Core Loss, RQD = 100%

R-679

R-1 No Core Loss, RQD = 87%

(A) Hard brown SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous (turbidity), thickly bedded, moderately fractured.

R-2 No Core Loss, RQD = 93%

(B) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous (turbidites), thickly bedded, unfractured to slightly fractured.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

(C) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, laminated to medium bedded, slightly fractured, contains few to moderate argillaceous laminations.

R-12 No Core Loss, RQD = 100%

(D) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, pyritic, thinly bedded, slightly fractured; contains moderate to abundant argillaceous laminations.

R-13 No Core Loss, RQD = 100%

R-14 No Core Loss, RQD = 100%

(E) Hard gray SHALE moderately interbedded with SANDSTONE layers; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly laminated to medium bedded, slightly fractured.

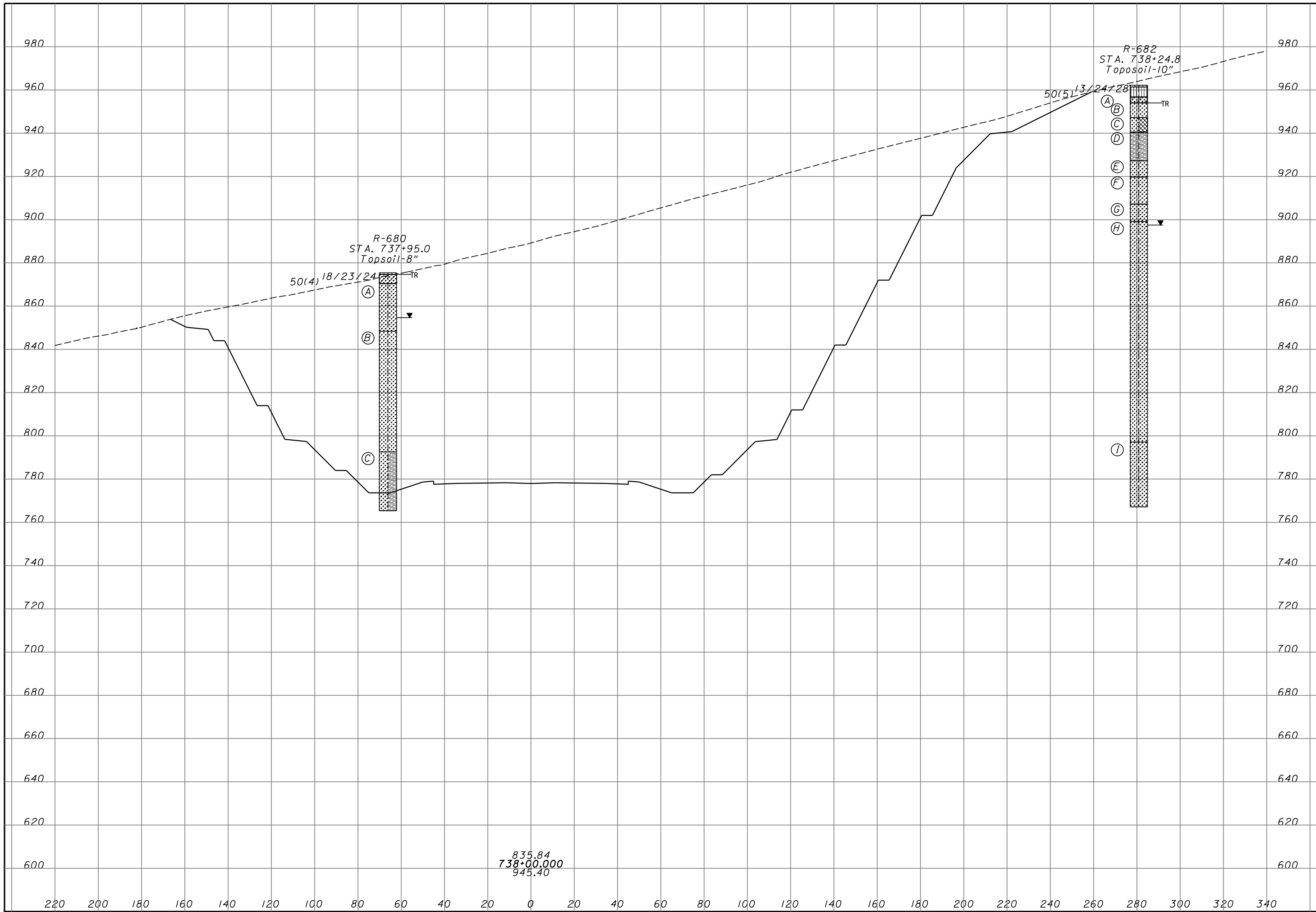
R-15 No Core Loss, RQD = 100%

(F) Hard gray SANDSTONE; very fine grained, slightly weathered, argillaceous, micaceous, medium bedded, unfractured to slightly fractured, contains few to moderate argillaceous laminations.

R-16 No Core Loss, RQD = 100%



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R-680

- R-1 No Core Loss, RQD = 43%
- Ⓐ Hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, medium bedded to thickly bedded, moderately to highly fractured, contains few to moderate argillaceous laminations.
- R-2 Core Loss = 6%, RQD = 41%
- R-3 No Core Loss, RQD = 79%
- Ⓑ Medium hard gray and brown SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded.
- R-4 No Core Loss, RQD = 79%
- R-5 No Core Loss, RQD = 82%
- R-6 No Core Loss, RQD = 91%
- R-7 No Core Loss, RQD = 88%
- R-8 No Core Loss, RQD = 89%
- Ⓒ Hard gray SANDSTONE interbedded with SHALE; fine grained, moderately weathered, argillaceous, micaceous, pyritic, laminated to thinly bedded, moderately fractured.
- R-9 No Core Loss, RQD = 87%
- R-10 No Core Loss, RQD = 97%
- R-11 No Core Loss, RQD = 95%

R-682

- R-1 No Core Loss, RQD = 72%
- Ⓐ Severely weathered brown SANDSTONE; argillaceous.
 - Ⓑ Soft to medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, moderately to highly fractured, iron stained fractures.
- R-2 No Core Loss, RQD = 63%
- Ⓒ Medium hard brownish gray SANDSTONE interbedded with SILTSTONE; fine grained, highly weathered to decomposed, argillaceous, micaceous, laminated to medium bedded, highly fractured.
 - Ⓓ Soft to medium hard brownish gray SHALE; very fine grained, decomposed, argillaceous, micaceous, thinly bedded, highly fractured, iron stained fractures, contains few sandstone beds.
- R-3 Core Loss = 5%, RQD = 88%
- R-4 No Core Loss, RQD = 79%
- Ⓔ Soft to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, laminated to medium bedded, moderately fractured, contains moderate to abundant argillaceous laminations.
 - Ⓕ Very hard brown SANDSTONE; fine grained, calcareous, micaceous, argillaceous, moderately weathered, thickly bedded, slightly fractured.
- R-5 No Core Loss, RQD = 98%
- R-6 No Core Loss, RQD = 73%
- Ⓖ Hard gray and brown SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, laminated to thickly bedded, slightly to moderately fractured, contains few argillaceous laminations.
 - Ⓗ Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-7 No Core Loss, RQD = 95%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 100%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 100%
- R-17 No Core Loss, RQD = 100%
- Ⓙ Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, laminated to medium bedded, slightly fractured, contains moderate to abundant argillaceous laminations, fissile after desiccation, contains ferric bands.
- R-18 No Core Loss, RQD = 100%
- R-19 No Core Loss, RQD = 100%

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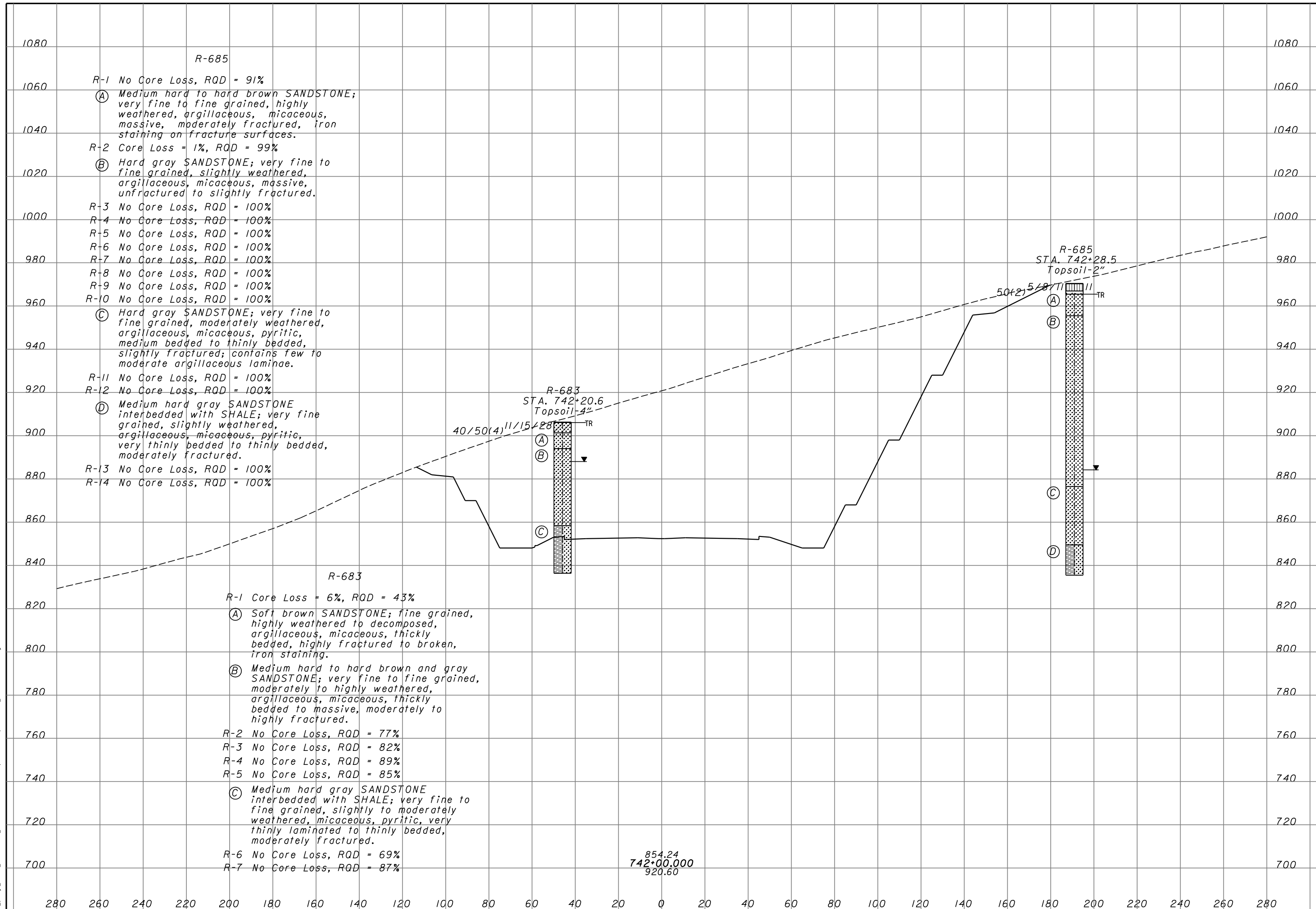
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CROSS SECTION - SR 823 STA. 738+00.00

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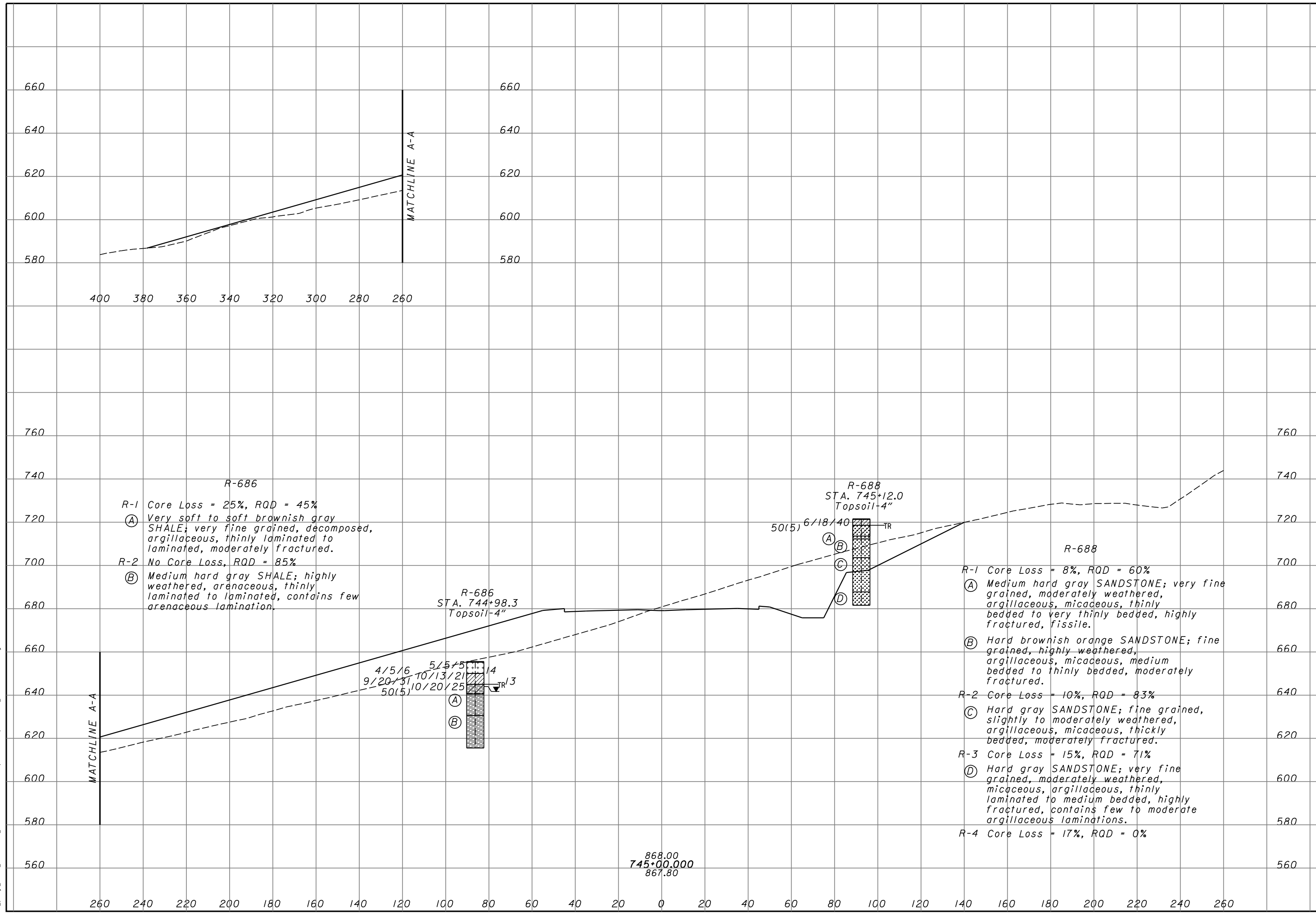
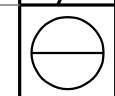
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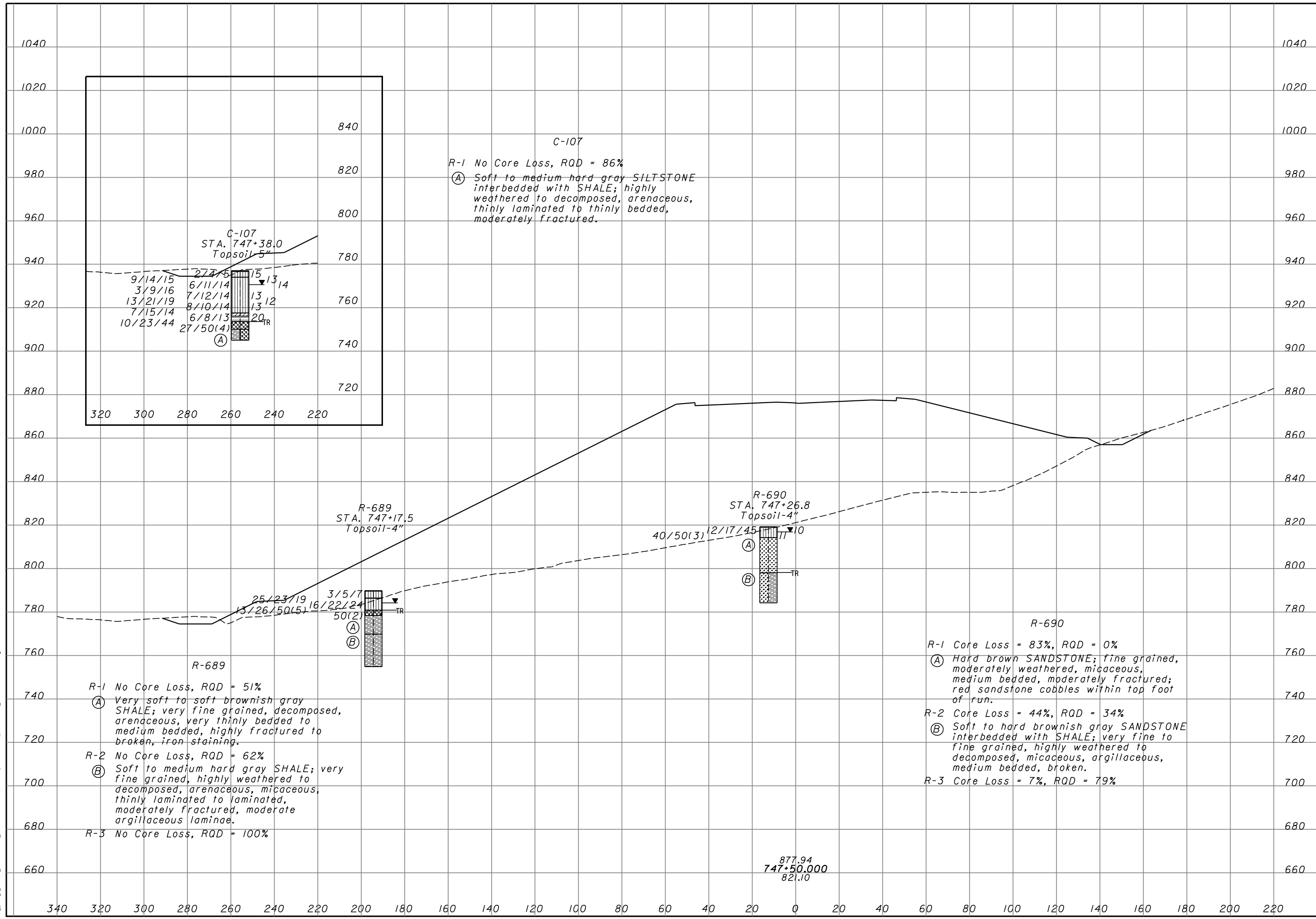
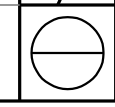


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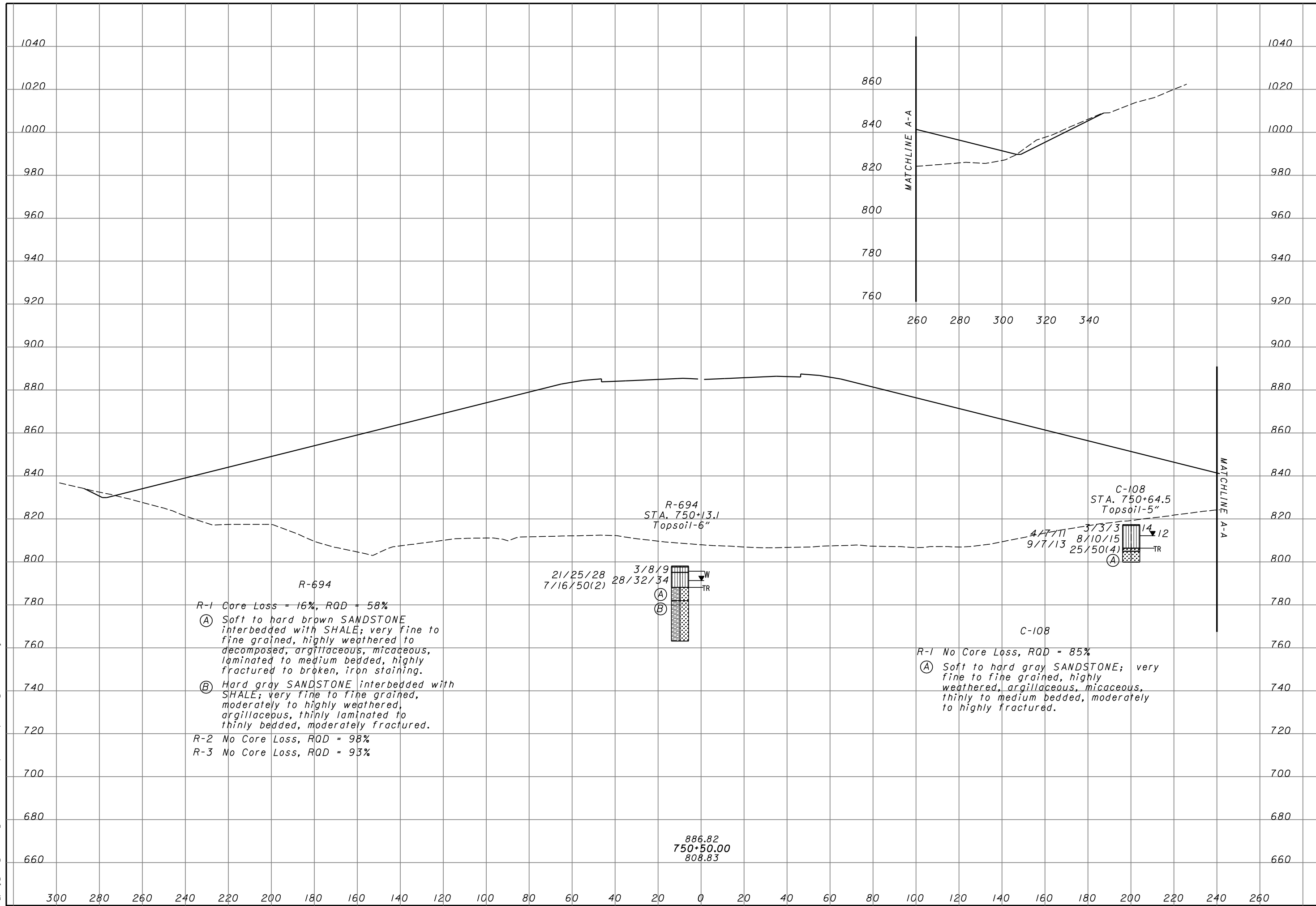
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868.00
745+00.000
867.80



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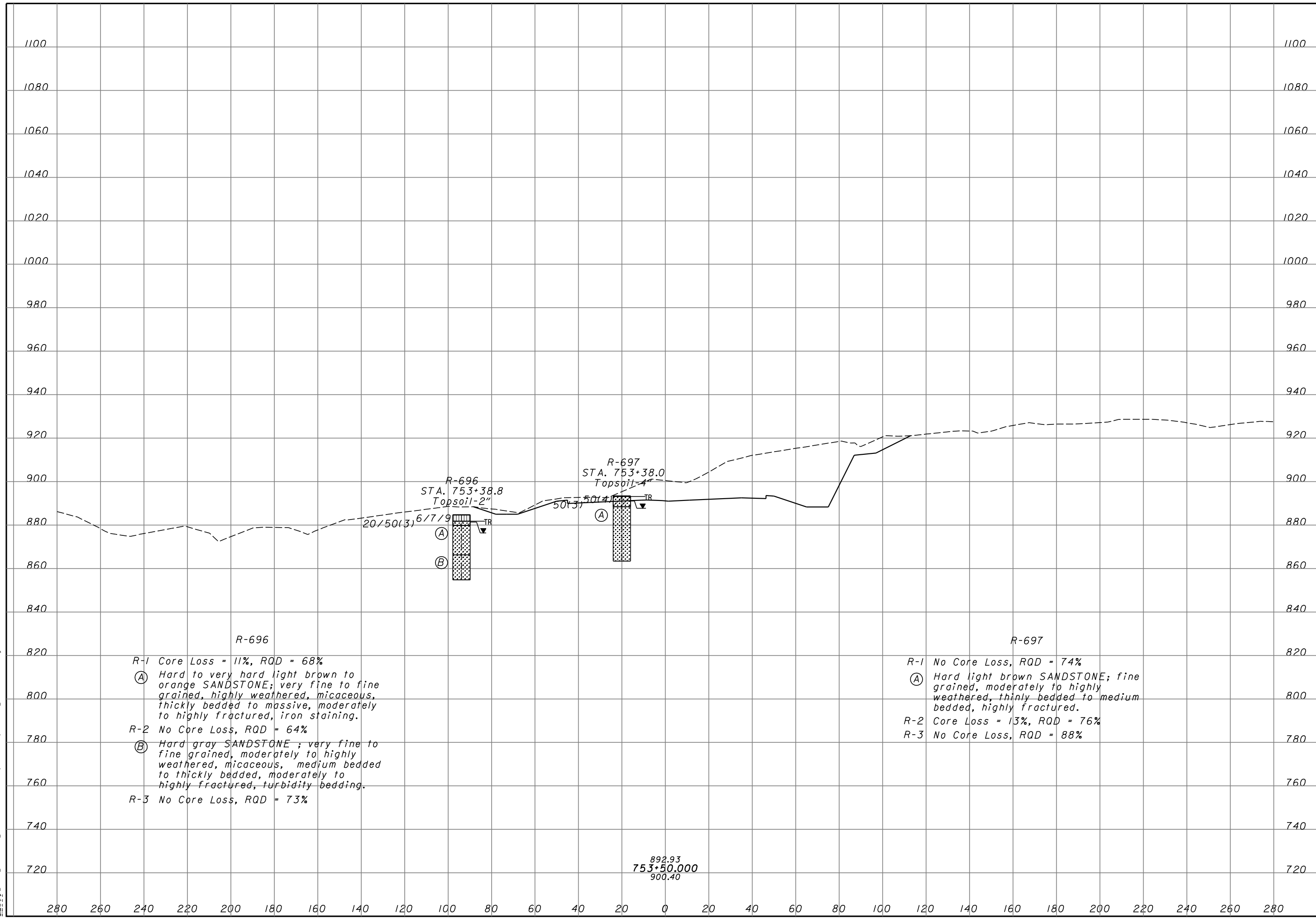
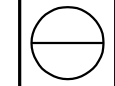


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AEN

**SOIL PROFILE
CROSS SECTION - SR 823 STA. 753+50.00**

SCI-823-10.13

161/220



R-1 Core Loss = 11%, RQD = 68%

(A) Hard to very hard light brown to orange SANDSTONE; very fine to fine grained, highly weathered, micaceous, thickly bedded to massive, moderately to highly fractured, iron staining.

R-2 No Core Loss, RQD = 64%

(B) Hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, medium bedded to thickly bedded, moderately to highly fractured, turbidity bedding.

R-3 No Core Loss, RQD = 73%

R-1 No Core Loss, RQD = 74%

(A) Hard light brown SANDSTONE; fine grained, moderately to highly weathered, thinly bedded to medium bedded, highly fractured.

R-2 Core Loss = 13%, RQD = 76%

R-3 No Core Loss, RQD = 88%

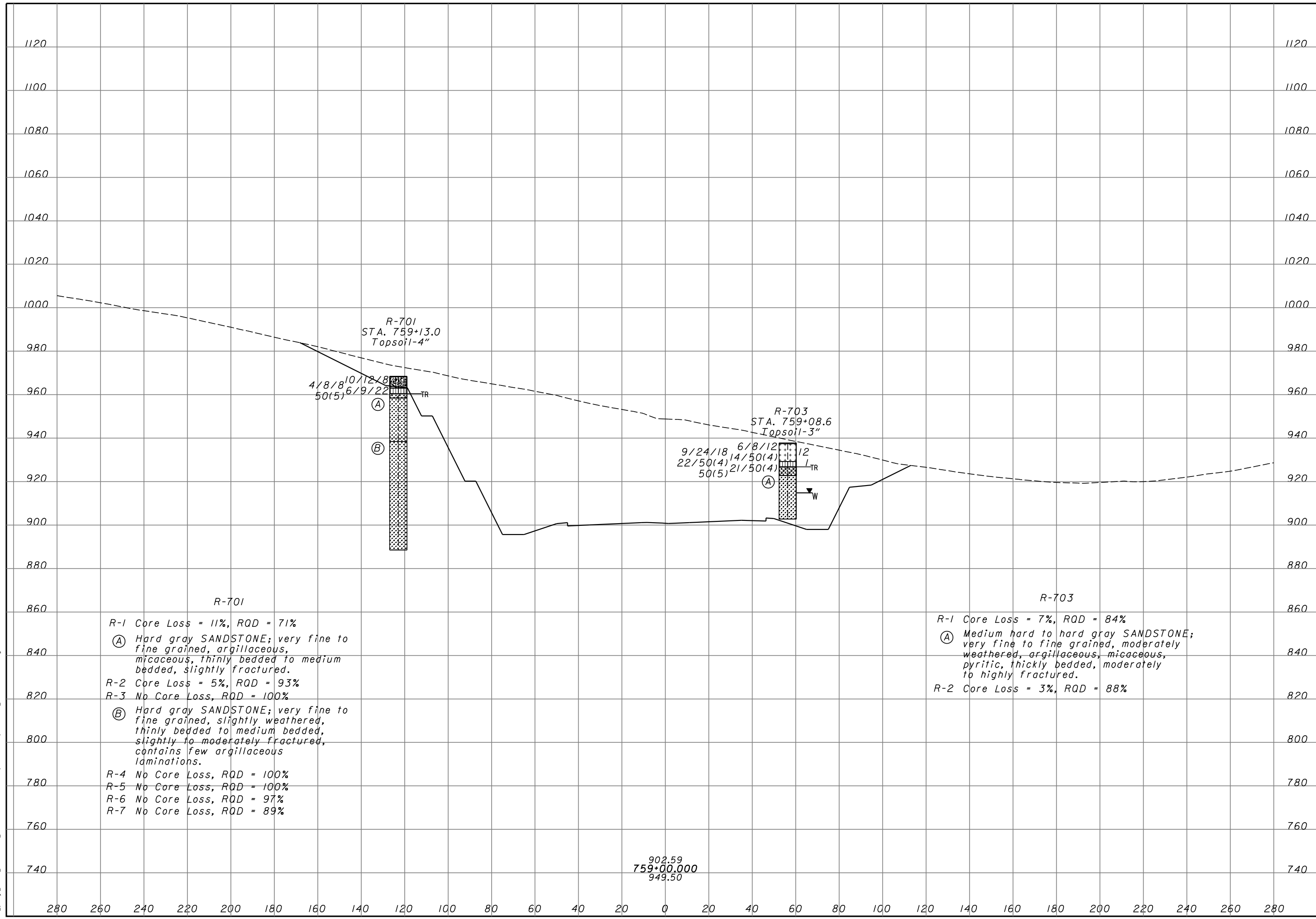
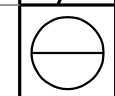
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RLS
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AEN

**SOIL PROFILE
CROSS SECTION - SR 823 STA. 759+00.00**

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162/220



R-701

R-1 Core Loss = 11%, RQD = 71%

Ⓐ Hard gray SANDSTONE; very fine to fine grained, argillaceous, micaceous, thinly bedded to medium bedded, slightly fractured.

R-2 Core Loss = 5%, RQD = 93%

R-3 No Core Loss, RQD = 100%

Ⓑ Hard gray SANDSTONE; very fine to fine grained, slightly weathered, thinly bedded to medium bedded, slightly to moderately fractured, contains few argillaceous laminations.

R-4 No Core Loss, RQD = 100%

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 97%

R-7 No Core Loss, RQD = 89%

R-703

R-1 Core Loss = 7%, RQD = 84%

Ⓐ Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, pyritic, thickly bedded, moderately to highly fractured.

R-2 Core Loss = 3%, RQD = 88%

902.59
759+00.000
949.50

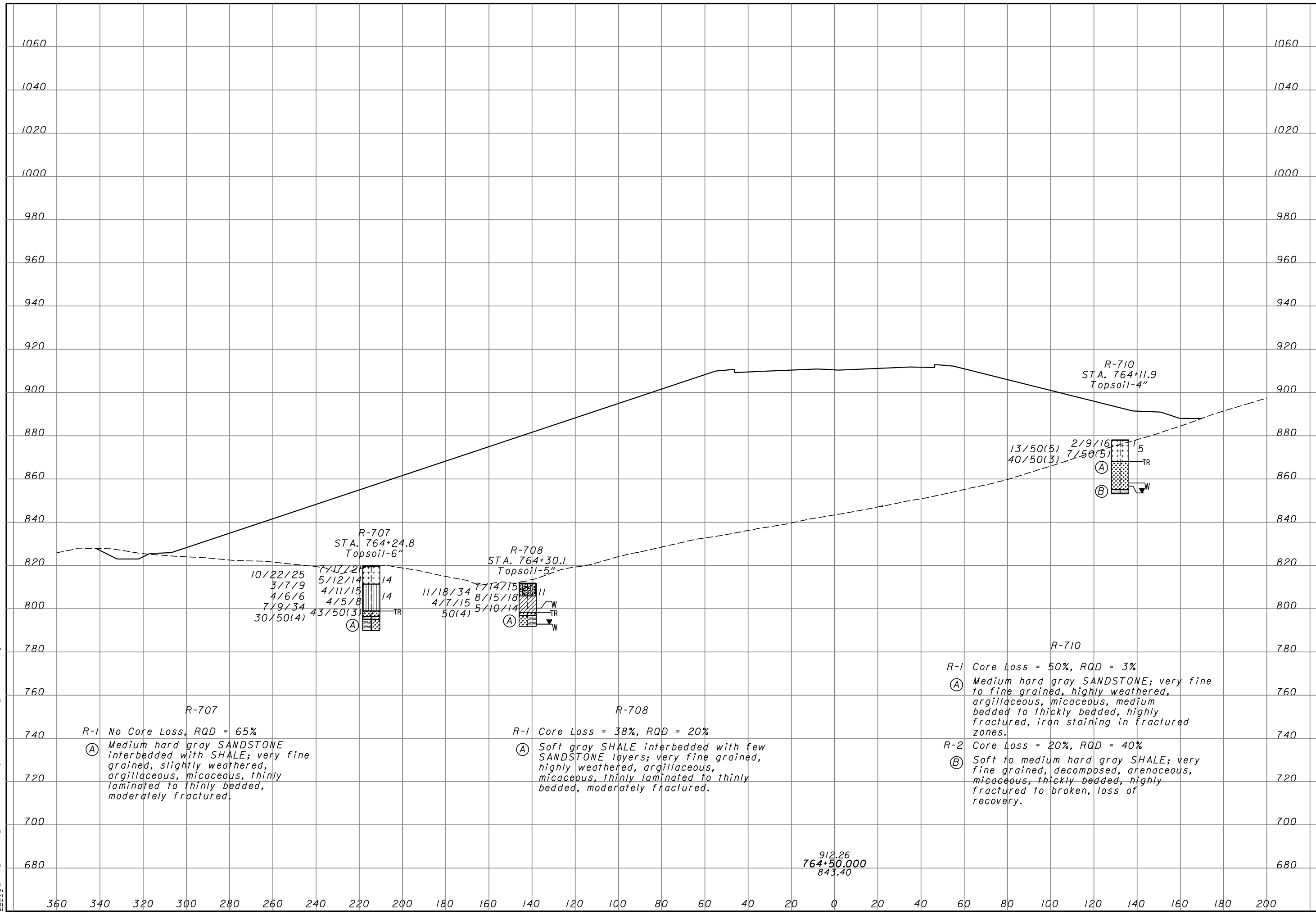
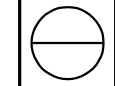
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**SOIL PROFILE
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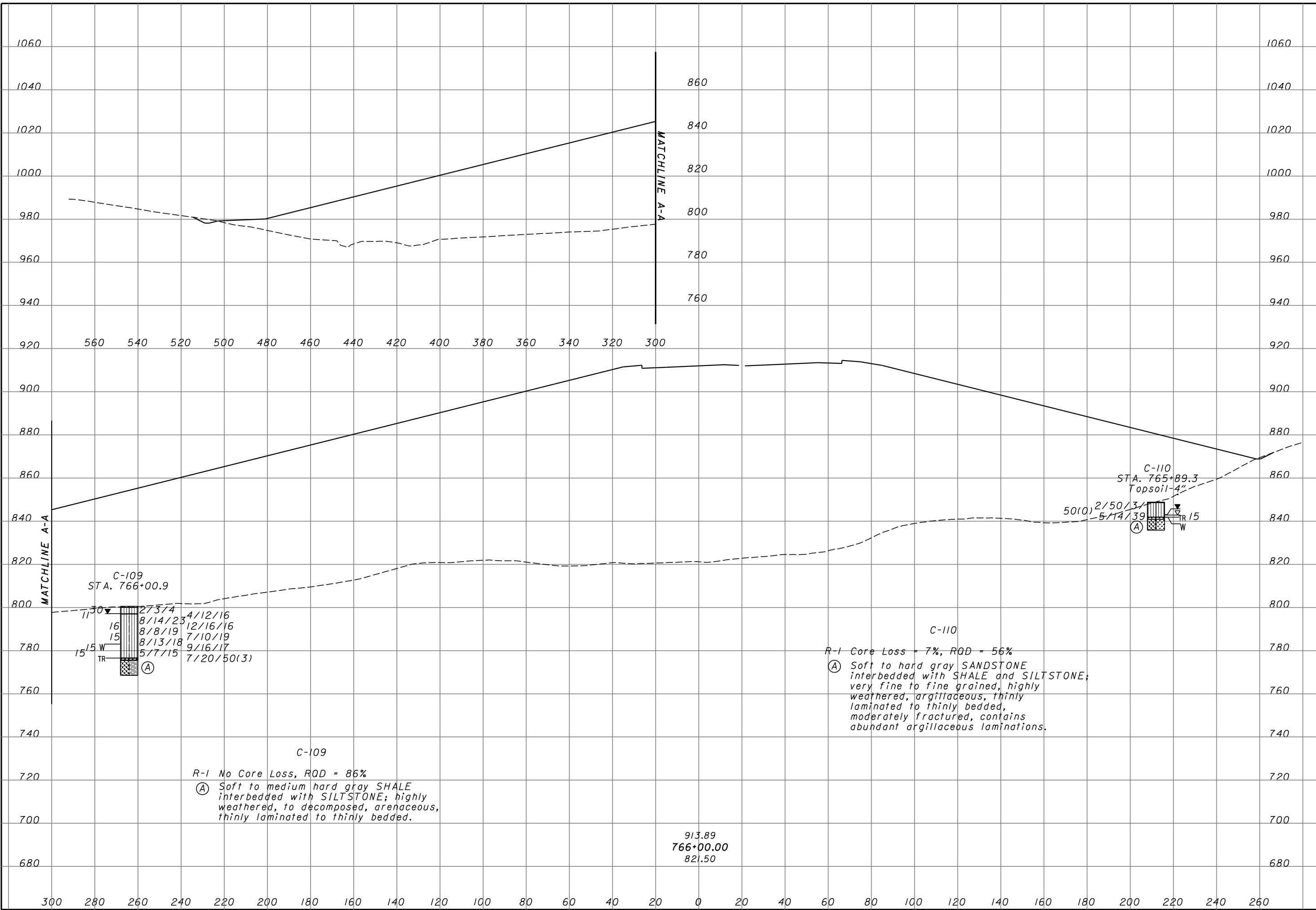
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163/220



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C-109
 STA. 766+00.9

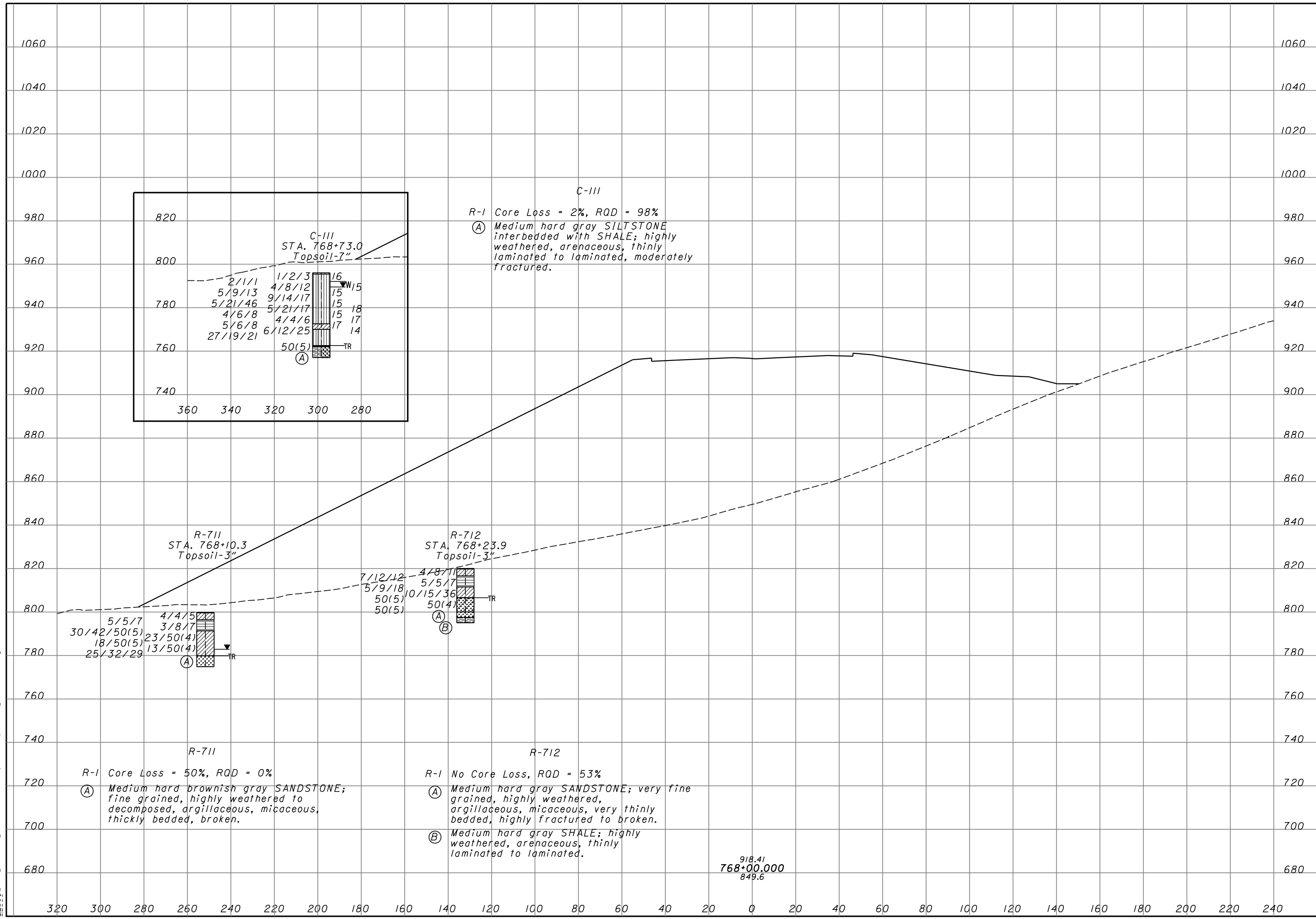
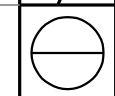
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15	8/8/19	7/10/19	
15	8/13/18	9/16/17	
15	5/7/15	7/20/50(3)	

TR (A)

C-109
 R-1 No Core Loss, RQD = 86%
 (A) Soft to medium hard gray SHALE interbedded with SILTSTONE; highly weathered, to decomposed, arenaceous, thinly laminated to thinly bedded.

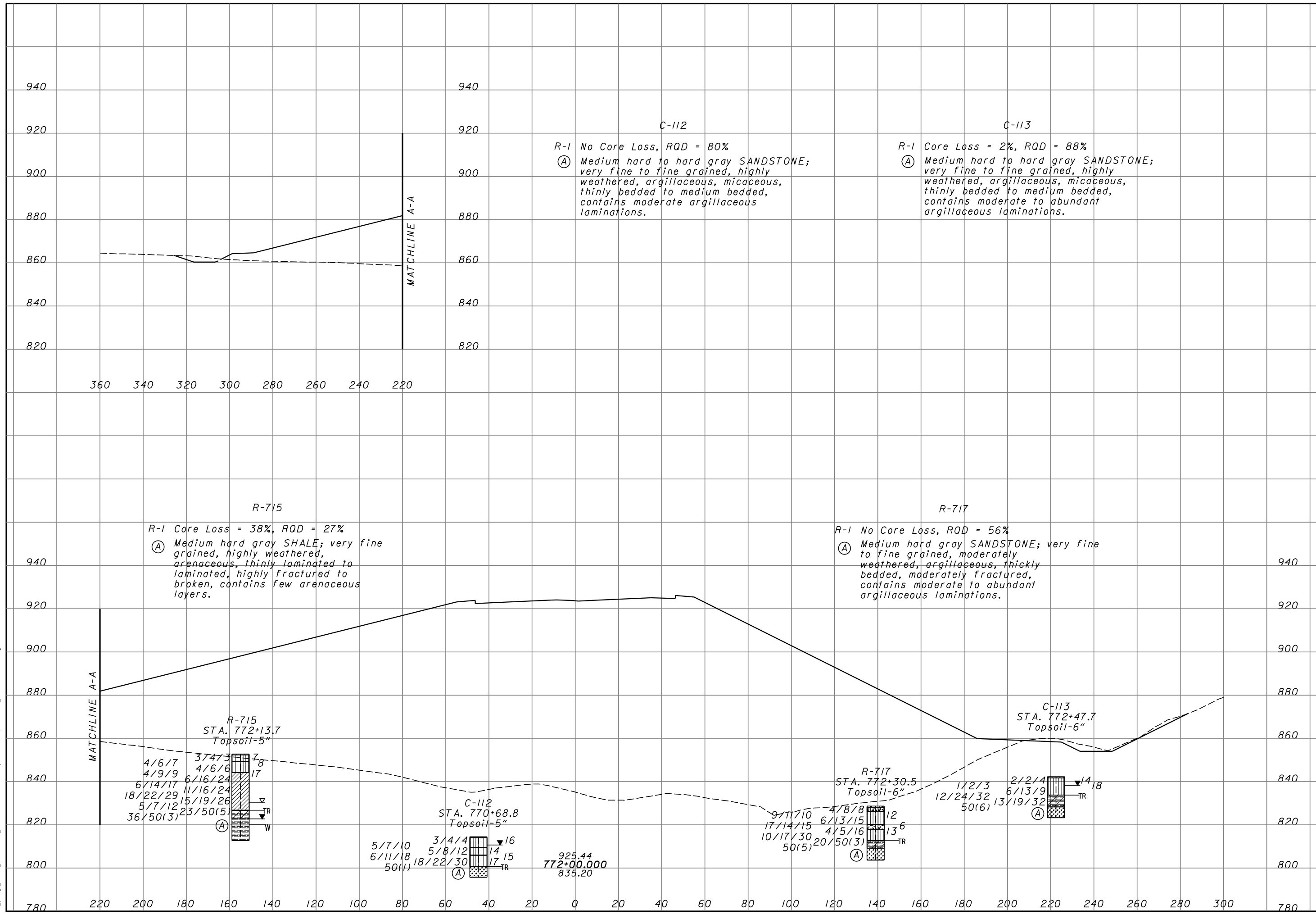
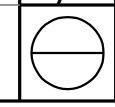
C-110
 R-1 Core Loss = 7%, RQD = 56%
 (A) Soft to hard gray SANDSTONE interbedded with SHALE and SILTSTONE; very fine to fine grained, highly weathered, argillaceous, thinly laminated to thinly bedded, moderately fractured, contains abundant argillaceous laminations.

913.89
 766+00.00
 821.50



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918.41
768+00.000
849.6



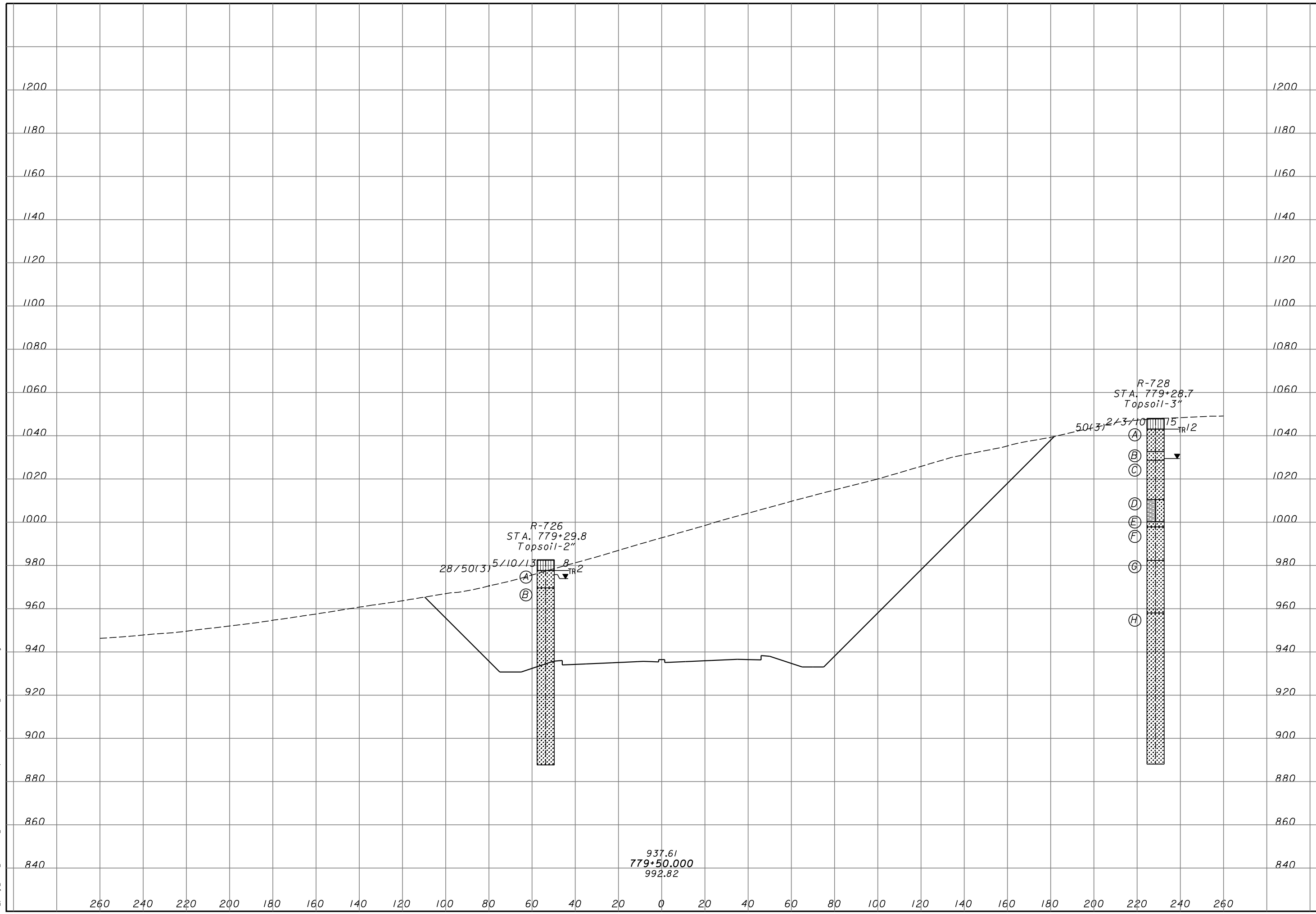
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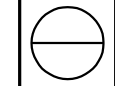
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CROSS SECTION - SR 823 STA. 779+50.00**

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R-726

R-1 Core Loss = 17%, RQD = 67%

(A) Hard light brown to orange SANDSTONE; fine grained, moderately to highly weathered, micaceous, thickly bedded to massive, highly fractured to broken, abundant iron staining.

(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to very thickly bedded, slightly fractured to unfractured.

R-2 No Core Loss, RQD = 100%

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 97%

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-728

R-1 No Core Loss, RQD = 42%

(A) Hard white SANDSTONE; fine to medium grained, highly weathered, thickly bedded, broken to highly fractured, iron staining.

R-2 No Core Loss, RQD = 49%

(B) Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, carbonaceous, medium bedded, highly fractured.

(C) Medium hard brown SANDSTONE; fine grained, highly weathered, carbonaceous, micaceous, medium bedded to thinly bedded, broken, iron staining.

R-3 Core Loss = 3%, RQD = 27%

R-4 Core Loss = 2%, RQD = 80%

(D) Medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, moderately weathered to decomposed, argillaceous, carbonaceous, thinly bedded, moderately fractured to broken, fissile zones.

R-5 Core Loss = 25, RQD = 97%

(E) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, thickly bedded, slightly fractured.

(F) Hard brown SANDSTONE; very fine to fine grained, slightly weathered, calcareous, carbonaceous, laminated to medium bedded, slightly fractured.

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

(G) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, pyritic, laminated to medium bedded, slightly fractured to unfractured.

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

(H) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, thickly bedded to massive, slightly fractured to unfractured.

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 100%

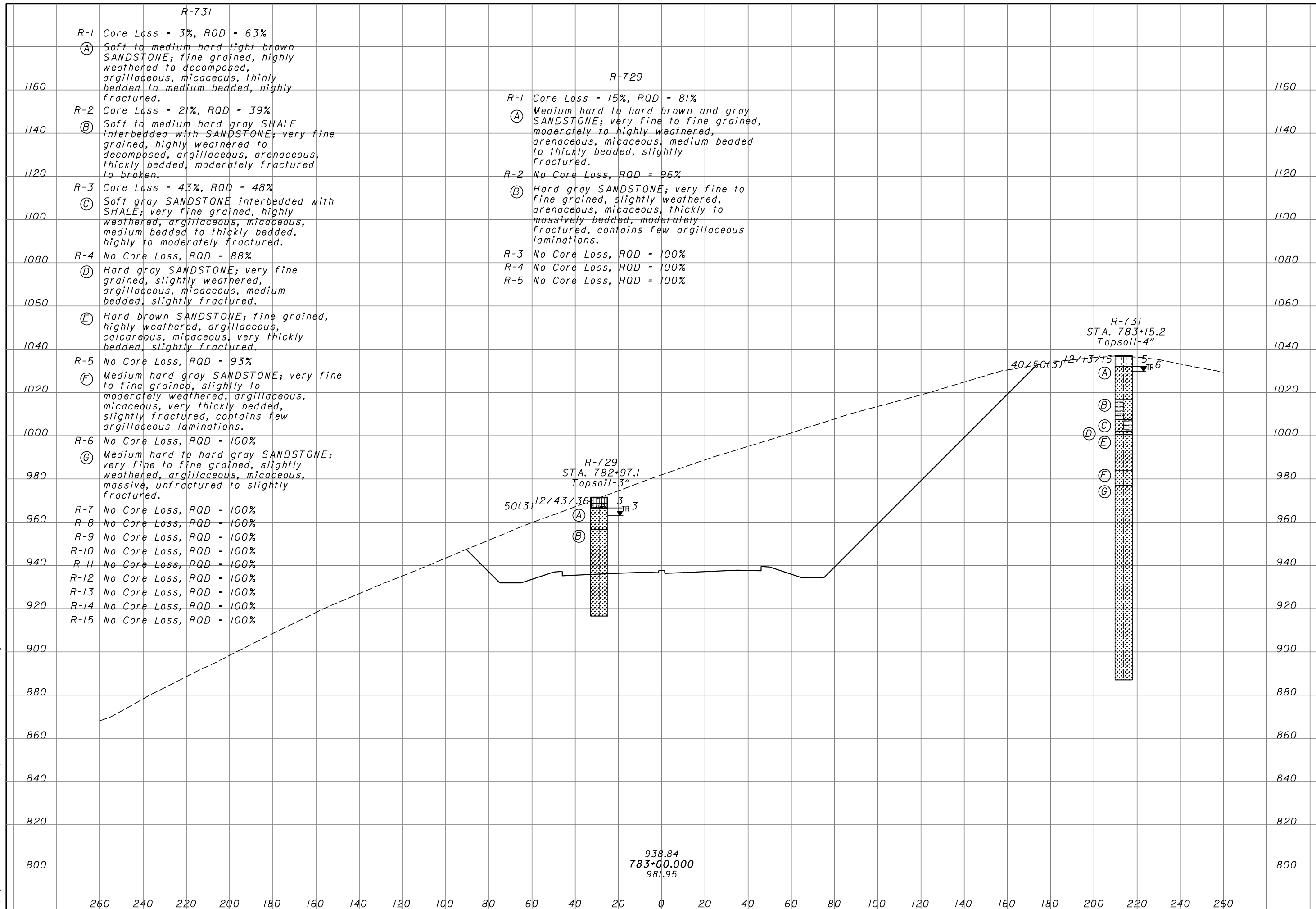
R-13 No Core Loss, RQD = 100%

R-14 No Core Loss, RQD = 100%

R-15 Core Loss = 3%, RQD = 97%

R-16 No Core Loss, RQD = 100%

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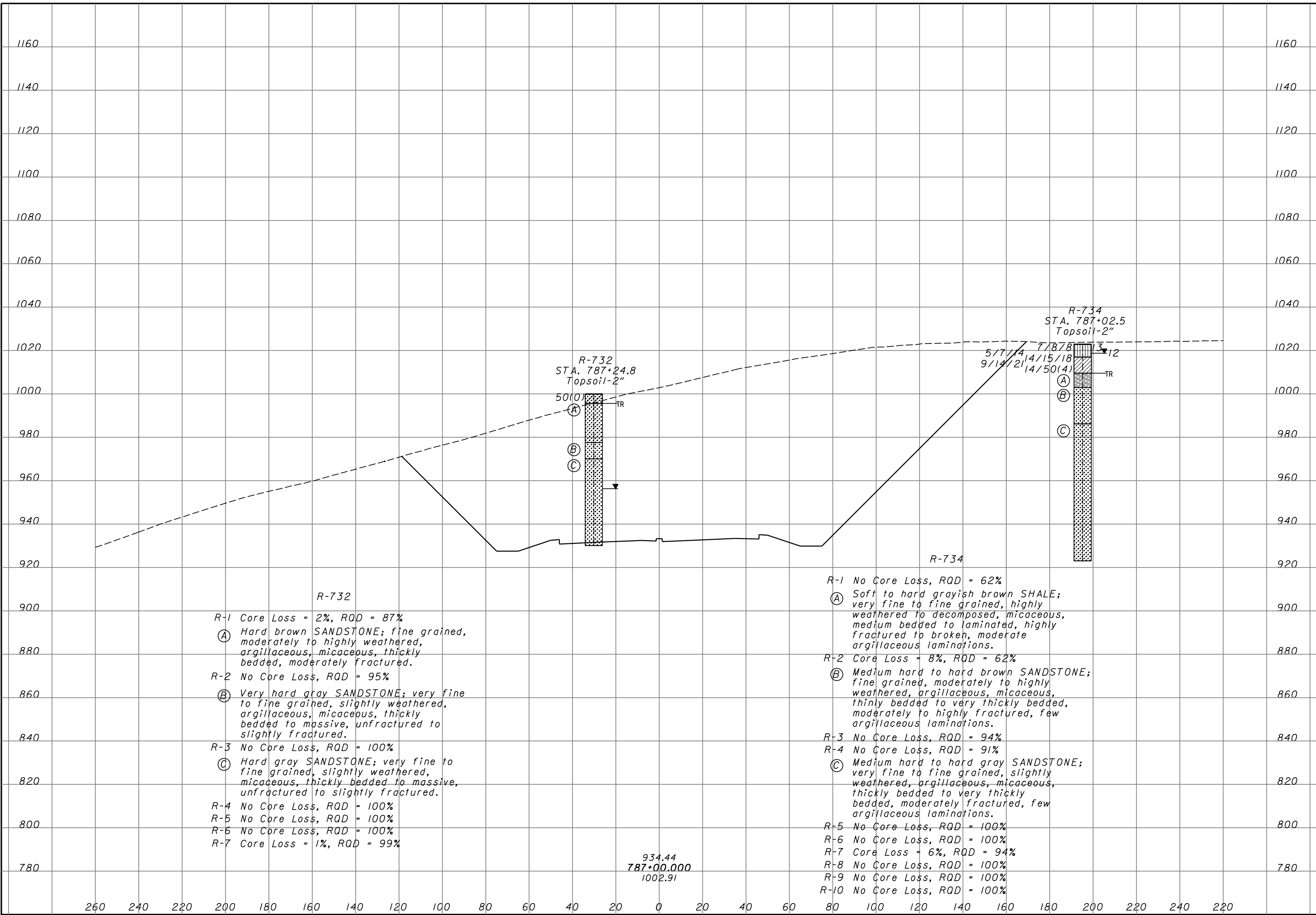
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169/220

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- R-732
- R-1 Core Loss = 2%, RQD = 87%
 - Ⓐ Hard brown SANDSTONE; fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded, moderately fractured.
 - R-2 No Core Loss, RQD = 95%
 - Ⓑ Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to massive, unfractured to slightly fractured.
 - R-3 No Core Loss, RQD = 100%
 - Ⓒ Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, thickly bedded to massive, unfractured to slightly fractured.
 - R-4 No Core Loss, RQD = 100%
 - R-5 No Core Loss, RQD = 100%
 - R-6 No Core Loss, RQD = 100%
 - R-7 Core Loss = 1%, RQD = 99%

- R-734
- R-1 No Core Loss, RQD = 62%
 - Ⓐ Soft to hard grayish brown SHALE; very fine to fine grained, highly weathered to decomposed, micaceous, medium bedded to laminated, highly fractured to broken, moderate argillaceous laminations.
 - R-2 Core Loss = 8%, RQD = 62%
 - Ⓑ Medium hard to hard brown SANDSTONE; fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to very thickly bedded, moderately to highly fractured, few argillaceous laminations.
 - R-3 No Core Loss, RQD = 94%
 - R-4 No Core Loss, RQD = 91%
 - Ⓒ Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to very thickly bedded, moderately fractured, few argillaceous laminations.
 - R-5 No Core Loss, RQD = 100%
 - R-6 No Core Loss, RQD = 100%
 - R-7 Core Loss = 6%, RQD = 94%
 - R-8 No Core Loss, RQD = 100%
 - R-9 No Core Loss, RQD = 100%
 - R-10 No Core Loss, RQD = 100%

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 787+00.00

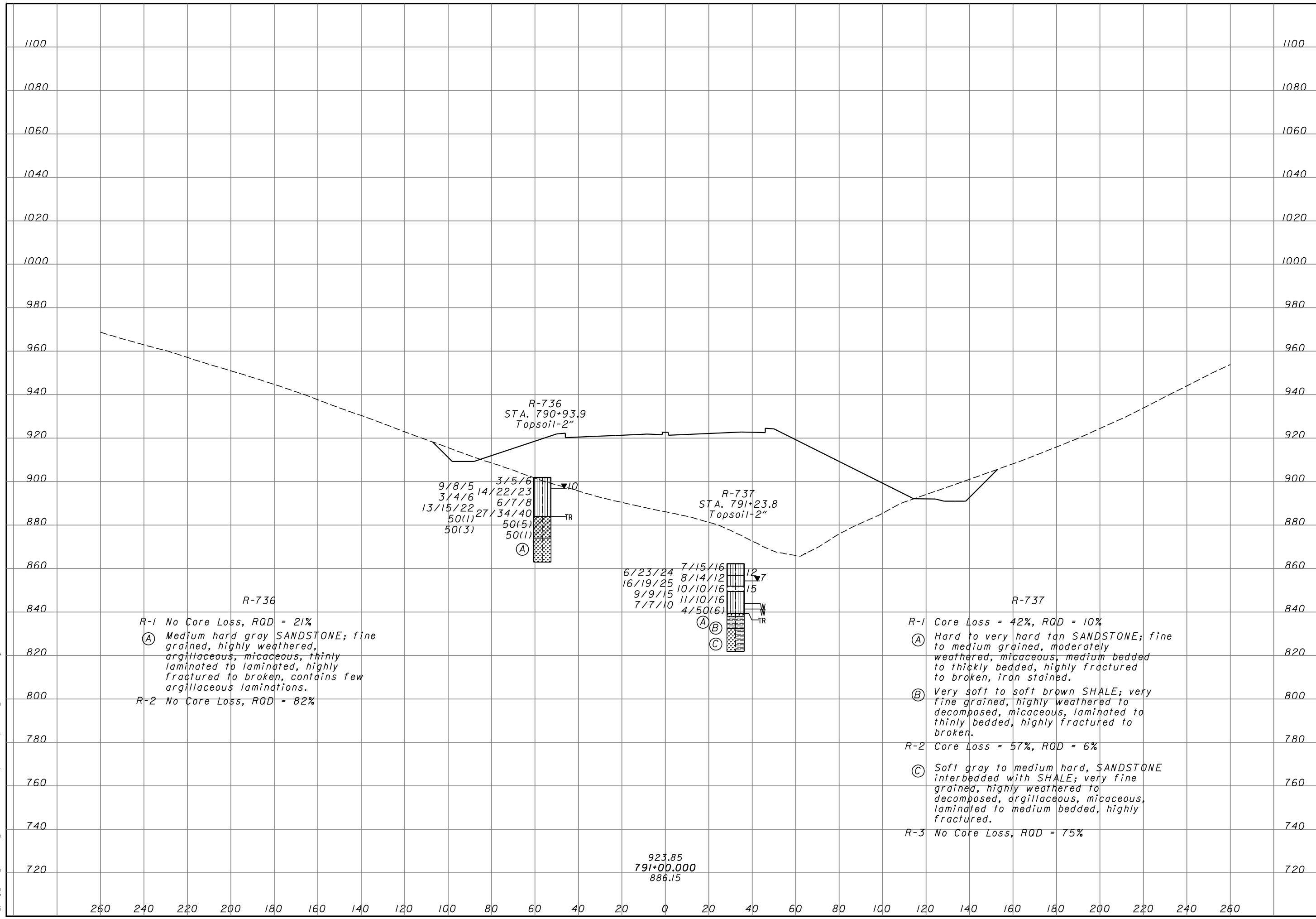
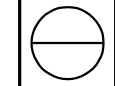
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 791+00.00**

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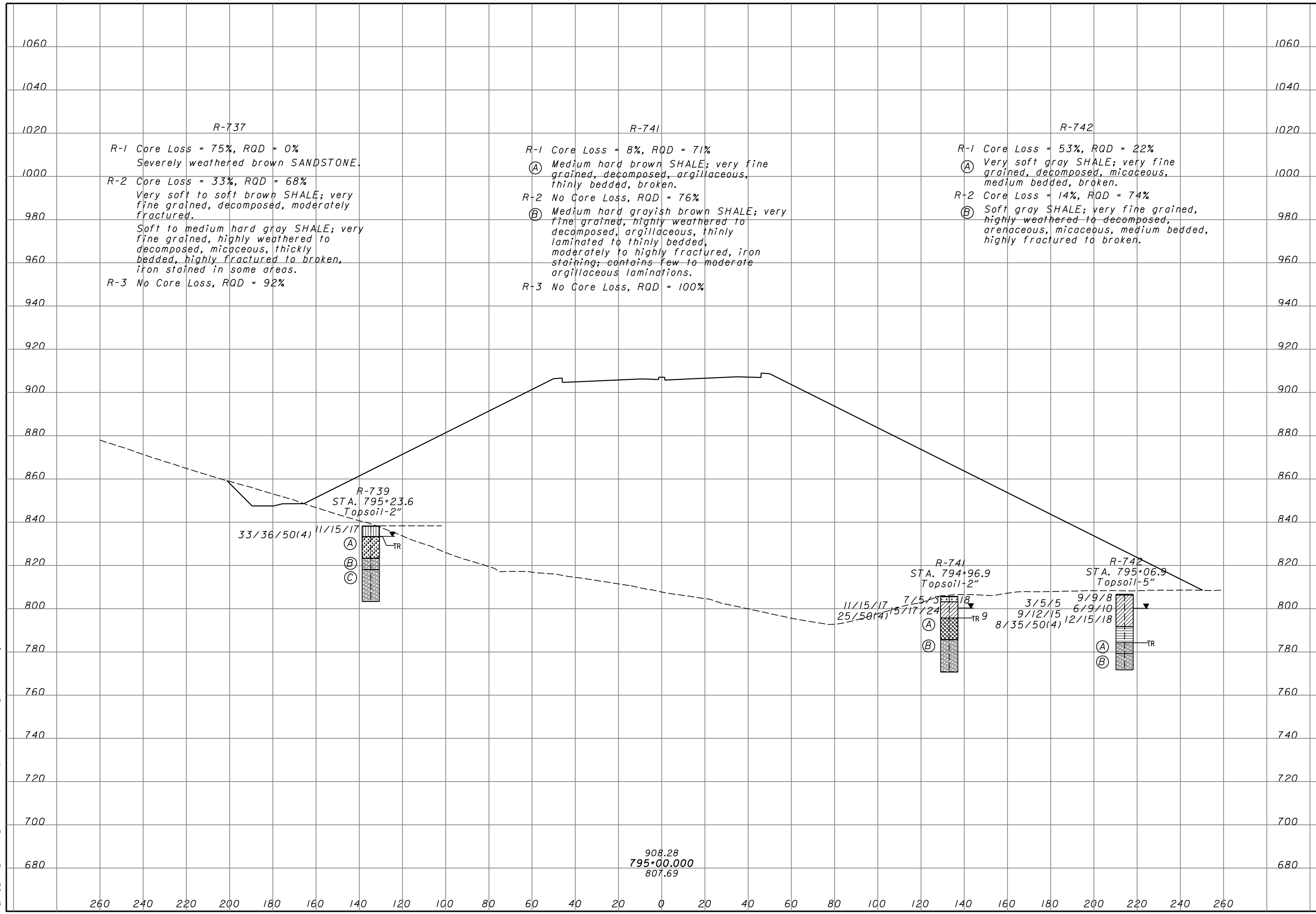
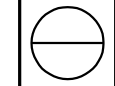
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 795+00.00

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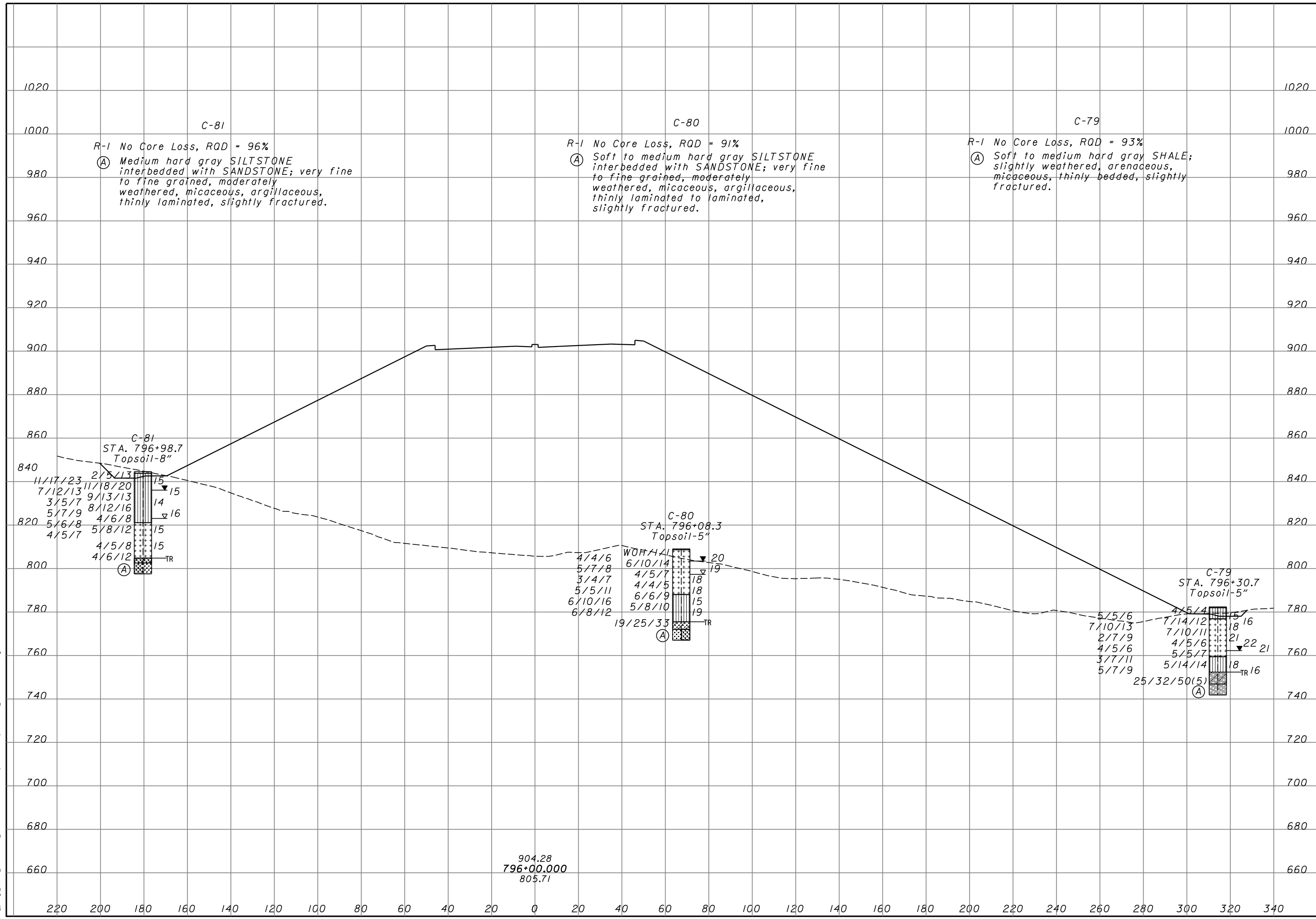
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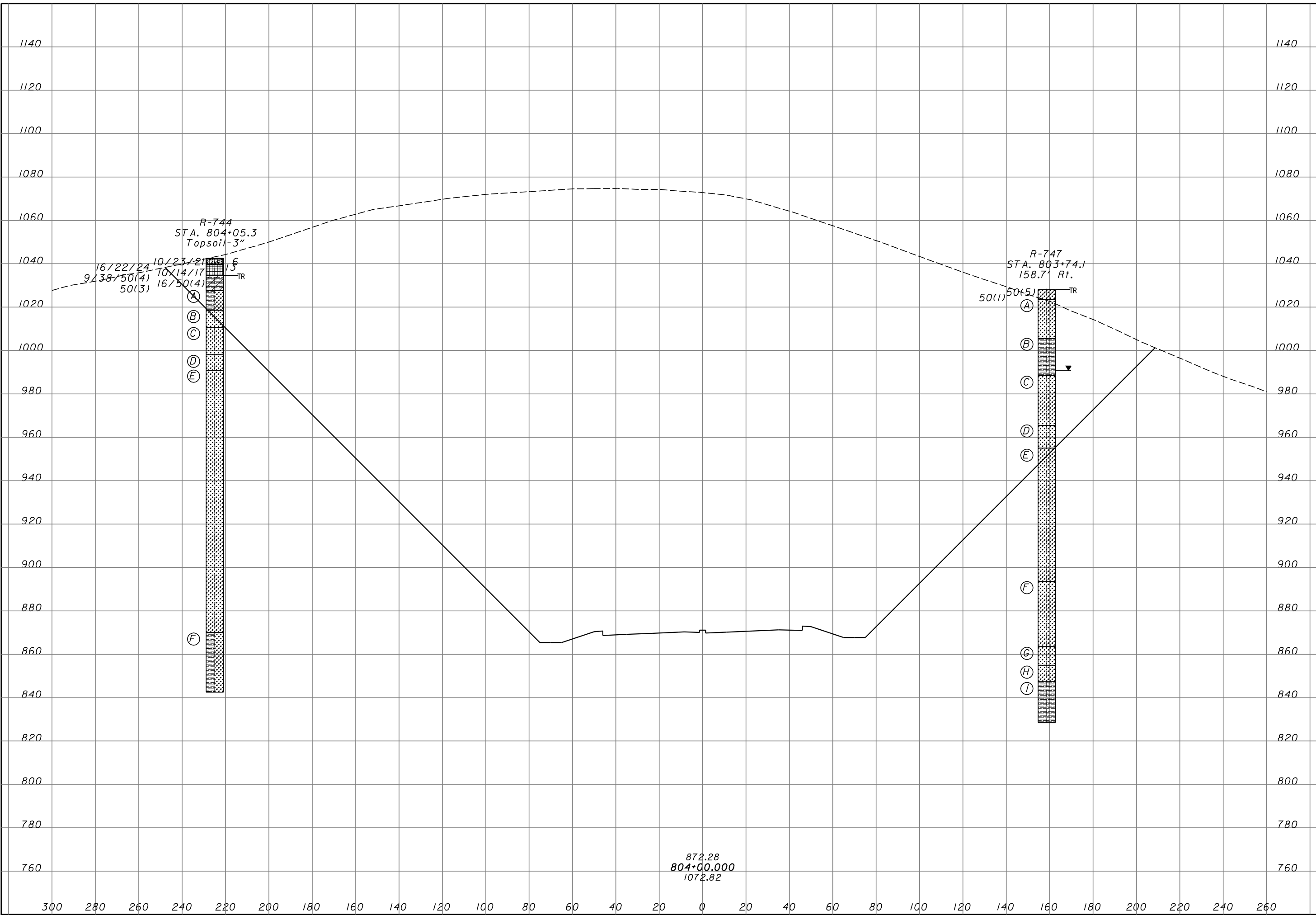
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904.28
796+00.000
805.71

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R-744

R-1A Core Loss = 4%, RQD = 13%

- (A) Soft to medium hard brown and gray SHALE and SANDSTONE; fine grained, highly weathered to decomposed, argillaceous, micaceous, laminated to medium bedded, highly fractured to broken.

R-1B No Core Loss, RQD = 100%

- (B) Medium hard to hard brownish gray SANDSTONE; fine grained, moderately to highly weathered, argillaceous, micaceous, laminated to thickly bedded, slightly to highly fractured.

R-2 No Core Loss, RQD = 69%

- (C) Hard light brown SANDSTONE; fine grained, highly weathered, micaceous, very thickly bedded, unfractured to slightly fractured, iron stained.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

- (D) Hard light brown SANDSTONE; fine to medium grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded, slightly fractured.

- (E) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, argillaceous, very thickly bedded, unfractured to slightly fractured.

R-5 No Core Loss, RQD = 100%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 100%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 100%

R-13 No Core Loss, RQD = 100%

R-14 No Core Loss, RQD = 89%

R-15 Core Loss = 2%, RQD = 98%

R-16 No Core Loss, RQD = 100%

- (F) Soft gray SHALE interbedded with SANDSTONE; very fine grained, slightly to moderately weathered, arenaceous, argillaceous, micaceous, laminated to thickly bedded, slightly fractured.

R-17 No Core Loss, RQD = 100%

R-18 Core Loss = 2%, RQD = 98%

R-19 No Core Loss, RQD = 100%

R-747

R-1 Core Loss = 38%, RQD = 41%

- (A) Soft to medium hard brown and gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to medium bedded, broken to highly fractured, iron staining.

R-2 No Core Loss, RQD = 77%

- (B) Soft to medium hard gray SHALE; highly weathered to decomposed, arenaceous, carbonaceous, laminated to thickly bedded, highly fractured to broken, iron staining.

R-3 Core Loss = 26%, RQD = 55%

R-4 Core Loss = 16%, RQD = 76%

- (C) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, moderately to highly fractured, contains few argillaceous laminations.

R-5 Core Loss = 5%, RQD = 82%

R-6 No Core Loss, RQD = 78%

- (D) Medium hard to hard gray SANDSTONE; very fine grained, highly to moderately weathered, argillaceous, micaceous, thinly laminated to thinly bedded, moderately fractured, contains few to moderate argillaceous laminations.

R-7 No Core Loss, RQD = 74%

- (E) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded to massive, moderately fractured, contains few argillaceous laminations.

R-8 No Core Loss, RQD = 92%

R-9 No Core Loss, RQD = 98%

R-10 Core Loss = 6%, RQD = 91%

R-11 No Core Loss, RQD = 96%

R-12 No Core Loss, RQD = 94%

R-13 No Core Loss, RQD = 97%

R-14 No Core Loss, RQD = 91%

- (F) Hard to very hard grayish brown SANDSTONE; fine grained, highly weathered to decomposed, argillaceous, micaceous, laminated to thinly bedded, moderately fractured to broken, turbidic.

R-15 No Core Loss, RQD = 97%

R-16 No Core Loss, RQD = 98%

R-17 No Core Loss, RQD = 95%

- (G) Very hard gray SANDSTONE interbedded with few SHALE layers; fine grained, slightly weathered, argillaceous, micaceous, laminated to thinly bedded, slightly fractured, turbidic.

- (H) Very hard gray SANDSTONE; fine grained, slightly weathered, argillaceous, micaceous, pyritic, laminated to thinly bedded, highly fractured, contains moderate to abundant argillaceous laminations.

R-18 No Core Loss, RQD = 90%

- (I) Hard gray SHALE; very fine grained, moderately weathered, argillaceous, micaceous, thinly laminated to thinly bedded, moderately fractured, fissile.

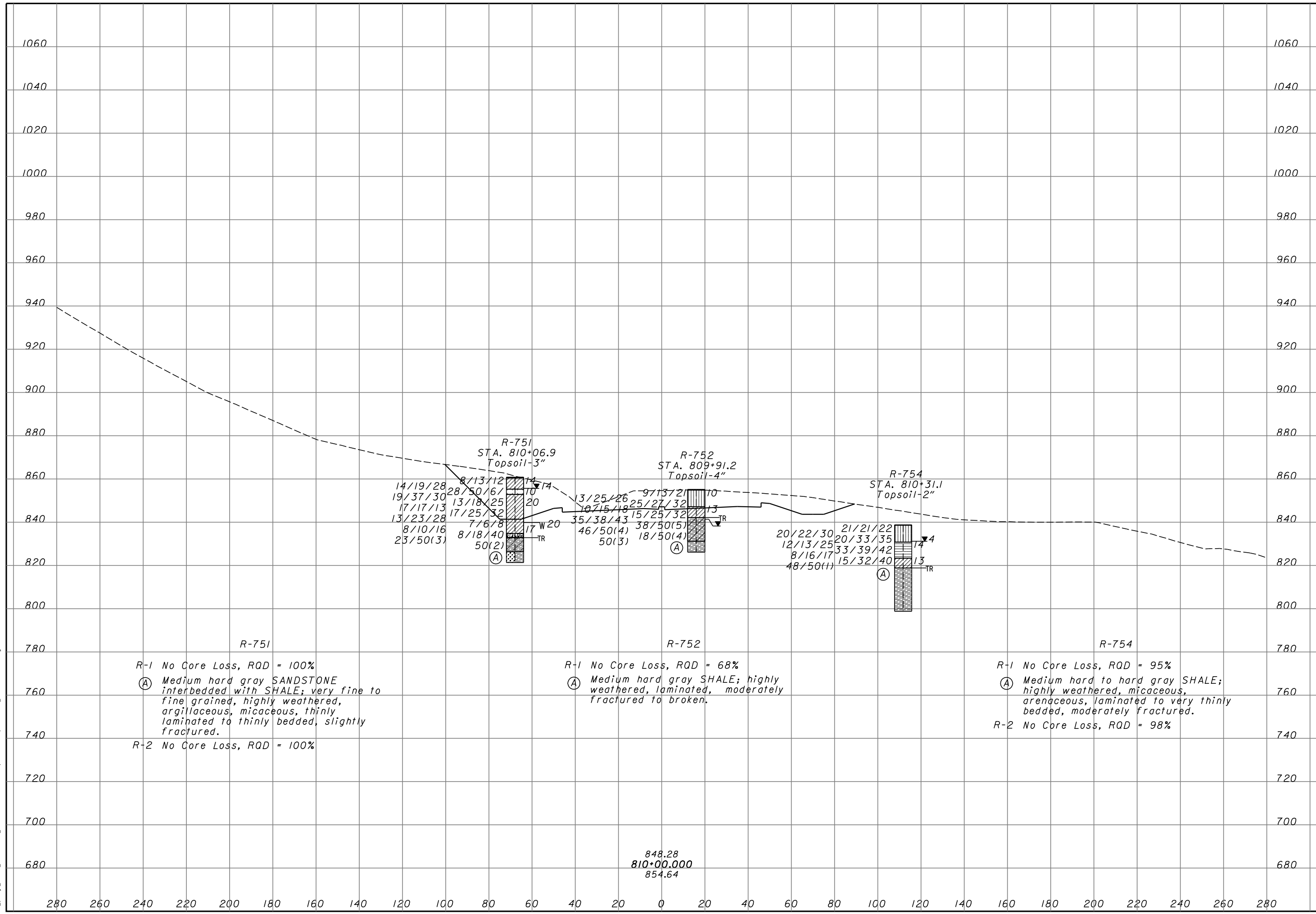
R-19 No Core Loss, RQD = 98%

R-20 No Core Loss, RQD = 100%



SOIL PROFILE
CROSS SECTION - SR 823 STA. 810+00.00

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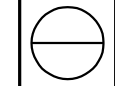
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R-751
R-1 No Core Loss, RQD = 100%
Ⓐ Medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly laminated to thinly bedded, slightly fractured.
R-2 No Core Loss, RQD = 100%

R-752
R-1 No Core Loss, RQD = 68%
Ⓐ Medium hard gray SHALE; highly weathered, laminated, moderately fractured to broken.

R-754
R-1 No Core Loss, RQD = 95%
Ⓐ Medium hard to hard gray SHALE; highly weathered, micaceous, arenaceous, laminated to very thinly bedded, moderately fractured.
R-2 No Core Loss, RQD = 98%

848.28
810+00.000
854.64

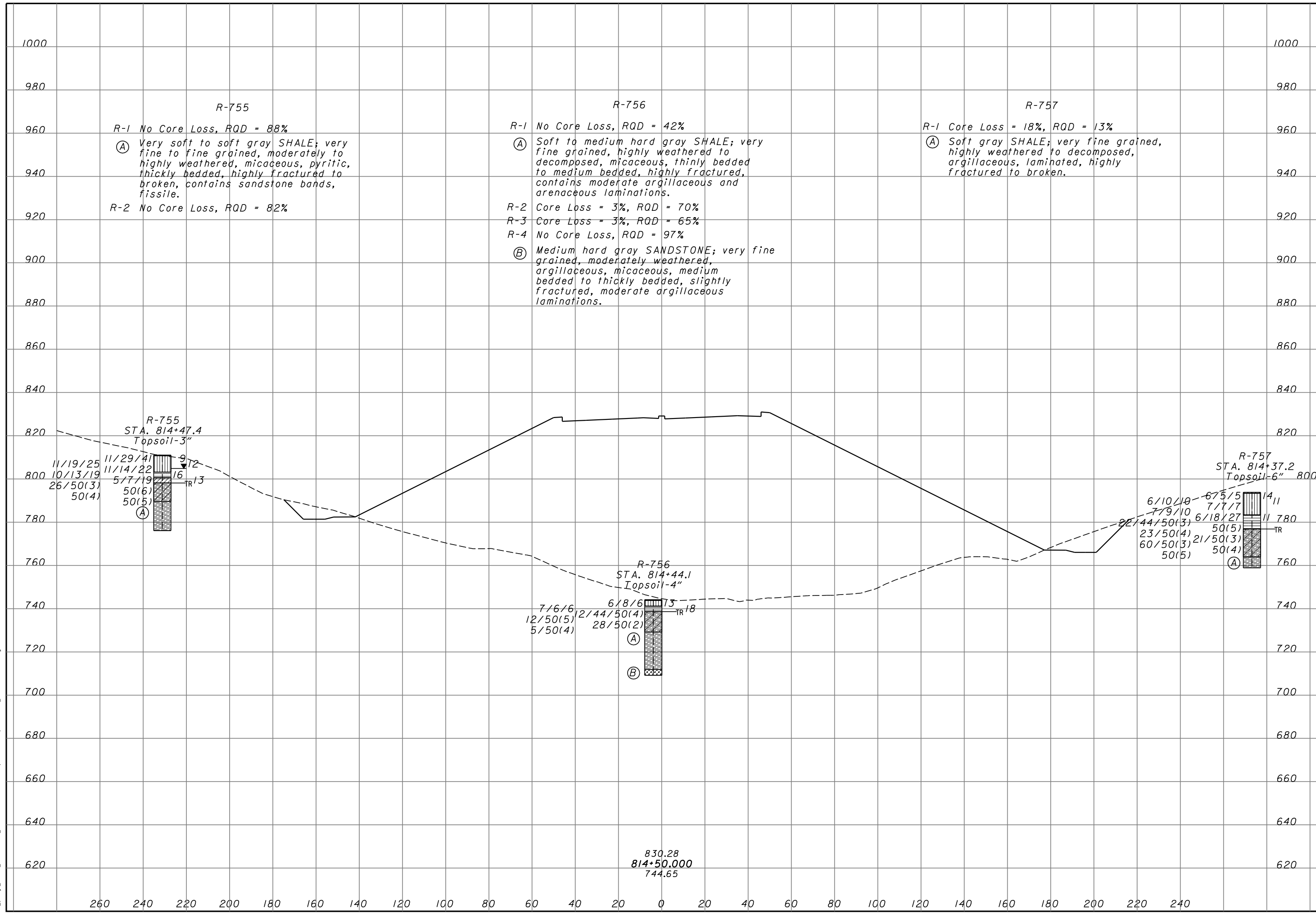
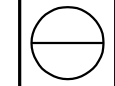


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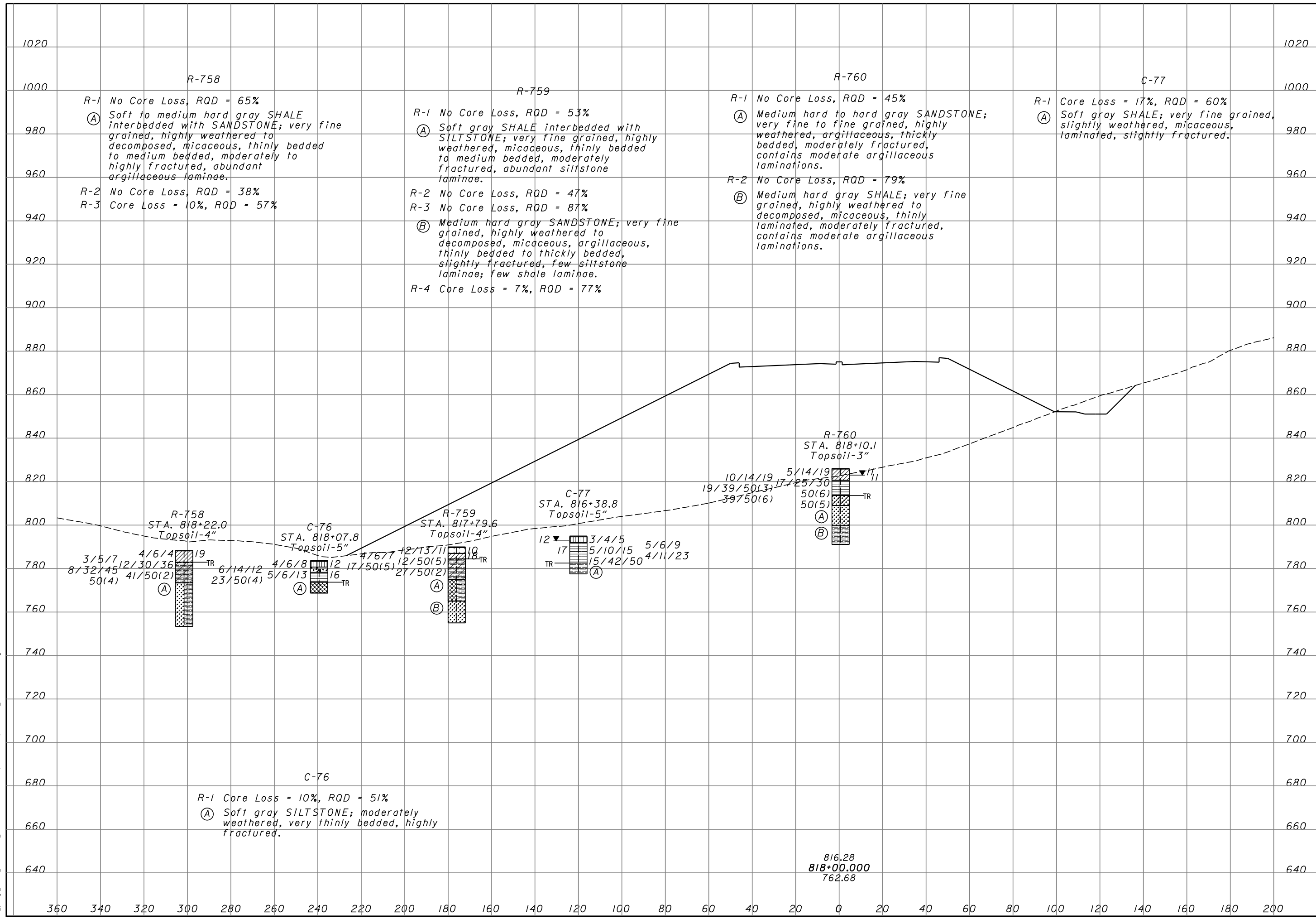
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177/220

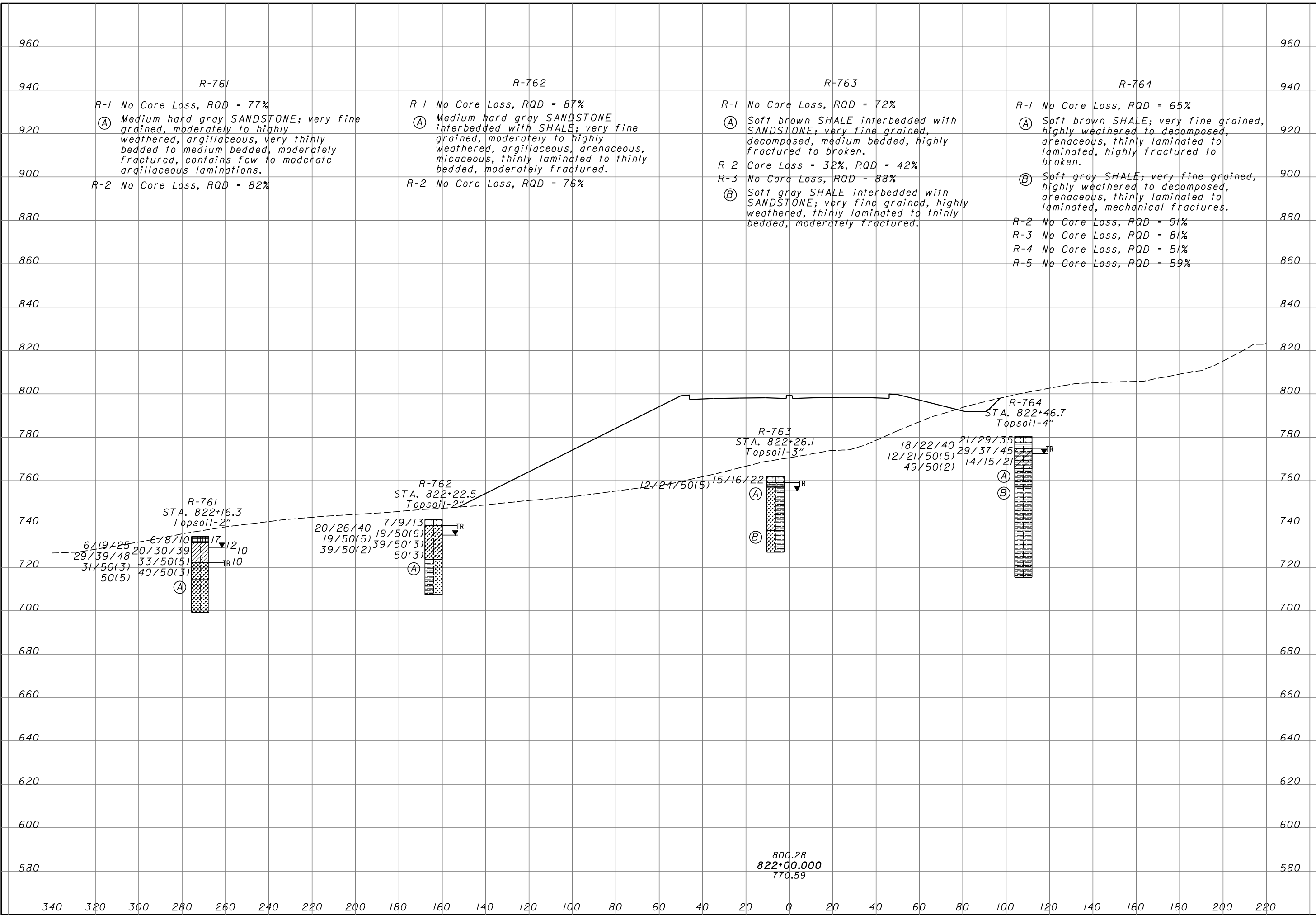


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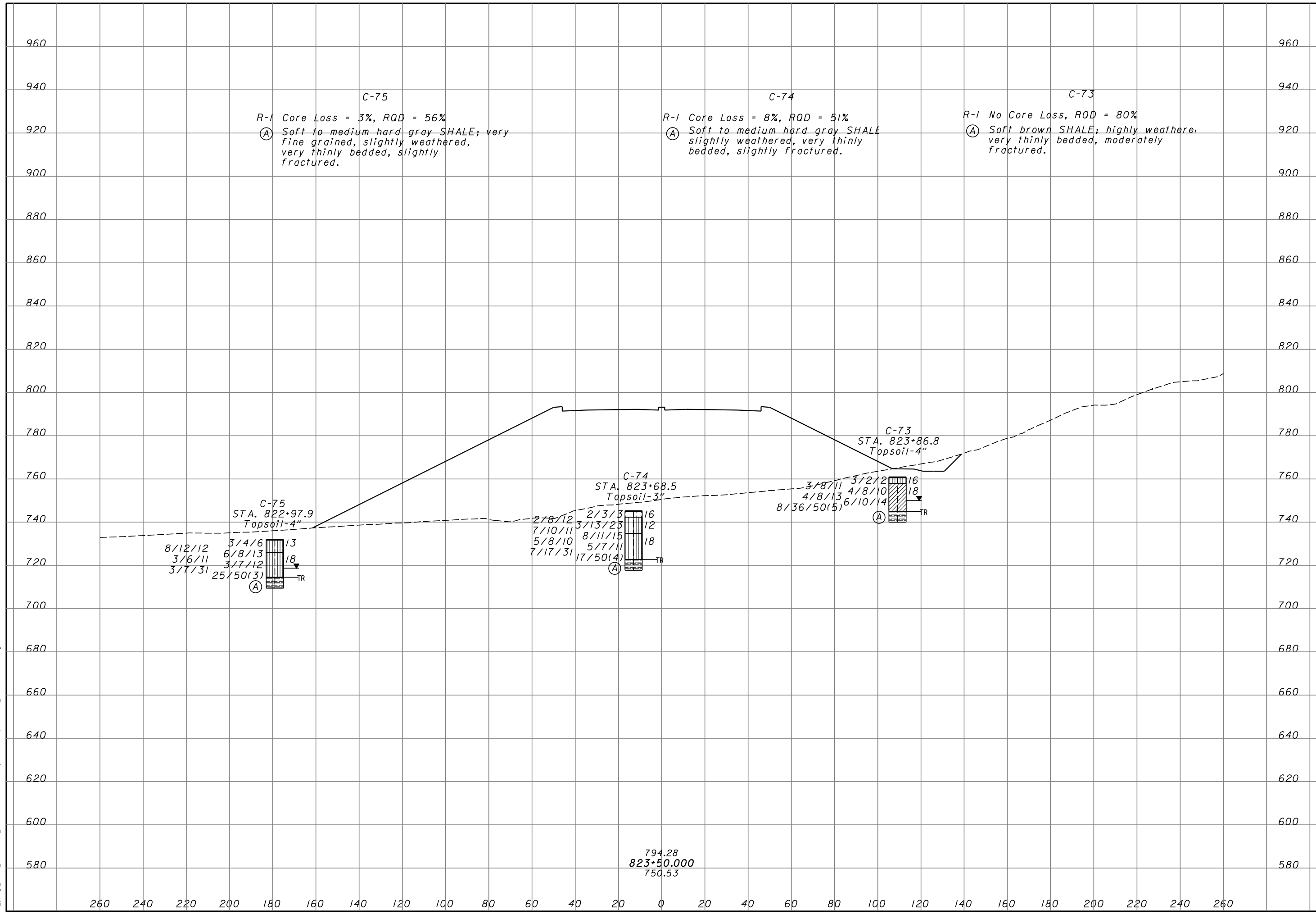
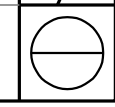
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SOIL PROFILE CROSS SECTION - SR 823 STA. 822+00.00
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 179/220

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 823+50.00

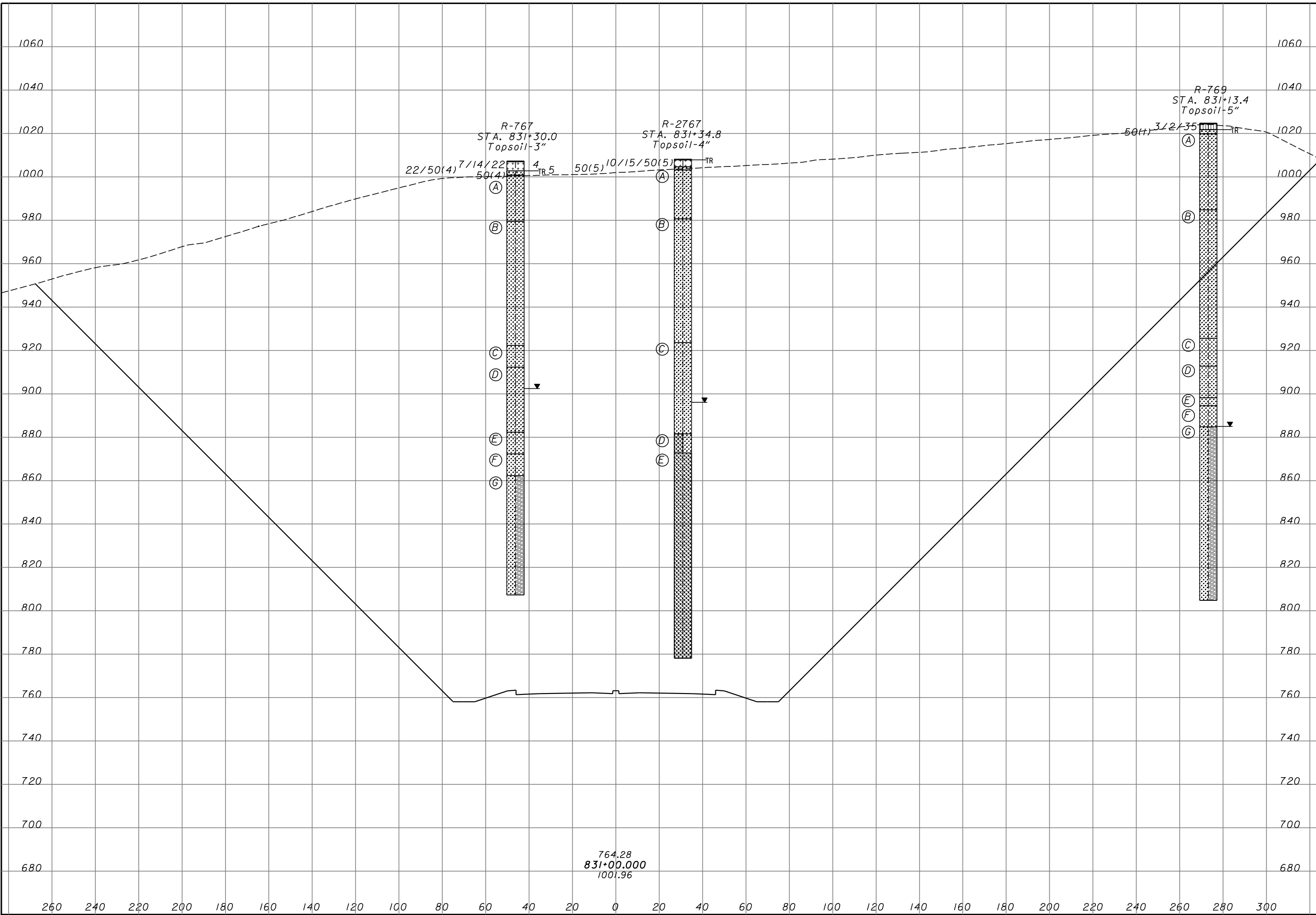
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180/220



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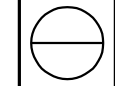
764.28
831+00.000
1001.96

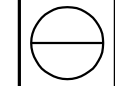
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 831+00.00

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181/220





R-767

- R-1 No Core Loss, RQD = 58%
- (A) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded to massive, moderately to highly fractured, few argillaceous laminations.
- R-2 No Core Loss, RQD = 100%
- R-3 No Core Loss, RQD = 100%
- (B) Hard gray SANDSTONE; fine grained, slightly weathered, argillaceous, micaceous, massive, slightly fractured.
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 85%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- (C) Hard orange SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thickly bedded to massive, moderately fractured, contains moderate to abundant argillaceous laminations.
- R-10 No Core Loss, RQD = 100%
- (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massive, unfractured.
- R-11 Core Loss = 2%, RQD = 98%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- (E) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, pyritic, thinly bedded to medium bedded, unfractured to slightly fractured.
- R-14 No Core Loss, RQD = 100%
- (F) Medium hard gray SANDSTONE interbedded with SHALE; very fine grained, slightly weathered, argillaceous, micaceous, thinly bedded to thinly laminated, slightly fractured, contains abundant argillaceous laminations.
- R-15 No Core Loss, RQD = 100%
- (G) Medium hard gray SANDSTONE interbedded with SHALE; very fine grained, slightly weathered, argillaceous, micaceous, thinly bedded to thinly laminated, slightly fractured, small brown siltstone lenses throughout, fissile.
- R-16 Core Loss = 1%, RQD = 99%
- R-17 No Core Loss, RQD = 100%
- R-18 Core Loss = 2%, RQD = 98%
- R-19 No Core Loss, RQD = 100%
- R-20 No Core Loss, RQD = 100%

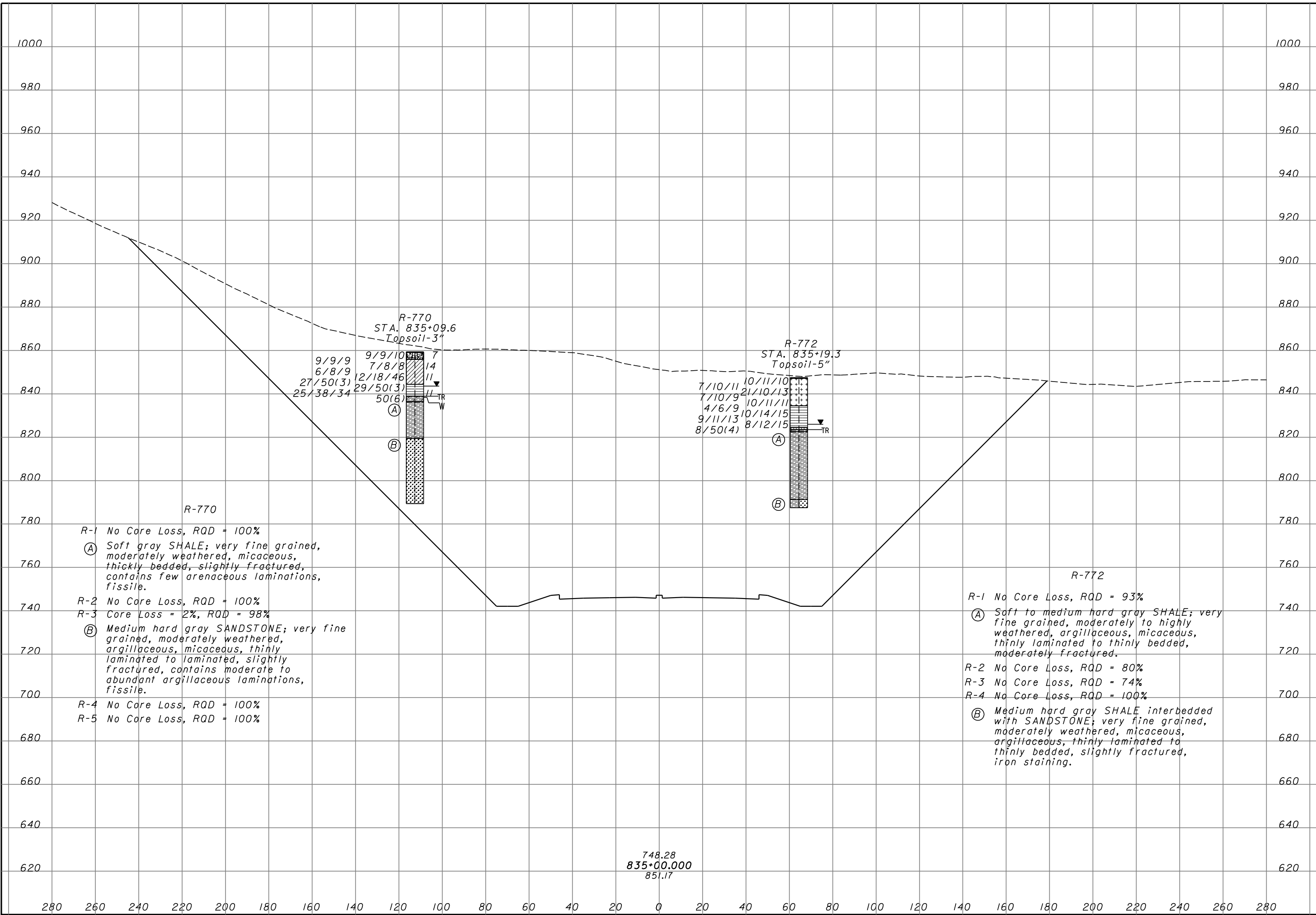
R-2767

- R-1 No Core Loss, RQD = 85%
- (A) Medium hard brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, massive, moderately fractured, iron stained.
- R-2 No Core Loss, RQD = 94%
- R-3 No Core Loss, RQD = 100%
- (B) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, argillaceous, massive, slightly fractured. @ 28.5'-29.3', brown.
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 94%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- (C) Hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, very thinly bedded, slightly fractured, iron stained.
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 91%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 100%
- (D) Medium hard to hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, pyritic, very thinly bedded to thinly bedded, slightly fractured.
- R-14 No Core Loss, RQD = 100%
- (E) Hard gray SILTSTONE; slightly to moderately weathered, micaceous, arenaceous, very thinly bedded, slightly fractured, contains laminations and thin beds of SANDSTONE, becomes fissile after dessication.
- R-15 No Core Loss, RQD = 100%
- R-16 No Core Loss, RQD = 100%
- R-17 No Core Loss, RQD = 100%
- R-18 No Core Loss, RQD = 100%
- R-19 No Core Loss, RQD = 100%
- R-20 No Core Loss, RQD = 100%
- R-21 No Core Loss, RQD = 100%
- R-22 No Core Loss, RQD = 100%
- R-23 No Core Loss, RQD = 100%

R-769

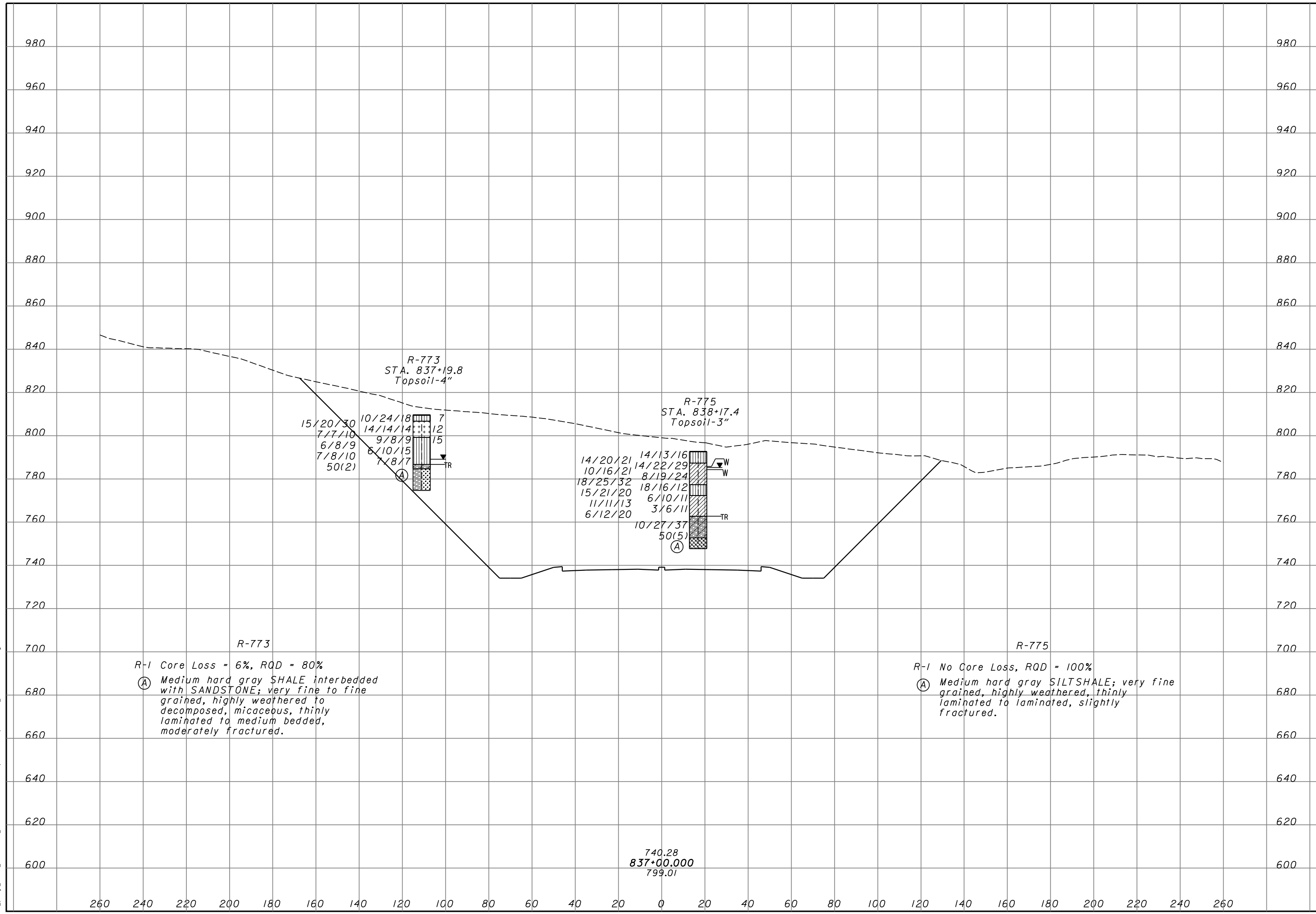
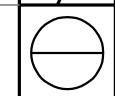
- R-1 Core Loss = 20%, RQD = 22%
- (A) Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, massive, moderately to highly fractured.
- R-2 No Core Loss, RQD = 93%
- R-3 No Core Loss, RQD = 83%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- (B) Hard brown SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, massive, unfractured to slightly fractured.
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 100%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%
- (C) Medium hard to hard brown SANDSTONE; fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded to very thickly bedded, highly fractured to broken.
- R-11 No Core Loss, RQD = 47%
- R-12 No Core Loss, RQD = 95%
- (D) Medium hard to hard gray SANDSTONE; fine to very fine grained, moderately weathered, argillaceous, micaceous, thickly to massively bedded, slightly fractured.
- R-13 No Core Loss, RQD = 90%
- (E) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, medium bedded, moderately fractured.
- R-14 No Core Loss, RQD = 100%
- (F) Hard gray SANDSTONE; fine grained, slightly weathered, argillaceous, micaceous, thickly bedded to very thickly bedded, slightly fractured.
- R-15 No Core Loss, RQD = 53%
- (G) Medium hard to hard grayish brown SANDSTONE interbedded with SHALE; very fine to fine grained, slightly to moderately weathered, micaceous, thinly laminated to thinly bedded, unfractured to slightly fractured, few argillaceous laminae, fissile.
- R-16 No Core Loss, RQD = 99%
- R-17 No Core Loss, RQD = 99%
- R-18 No Core Loss, RQD = 100%
- R-19 No Core Loss, RQD = 96%
- R-20 No Core Loss, RQD = 100%
- R-21 No Core Loss, RQD = 95%
- R-22 Core Loss = 10%, RQD = 82%

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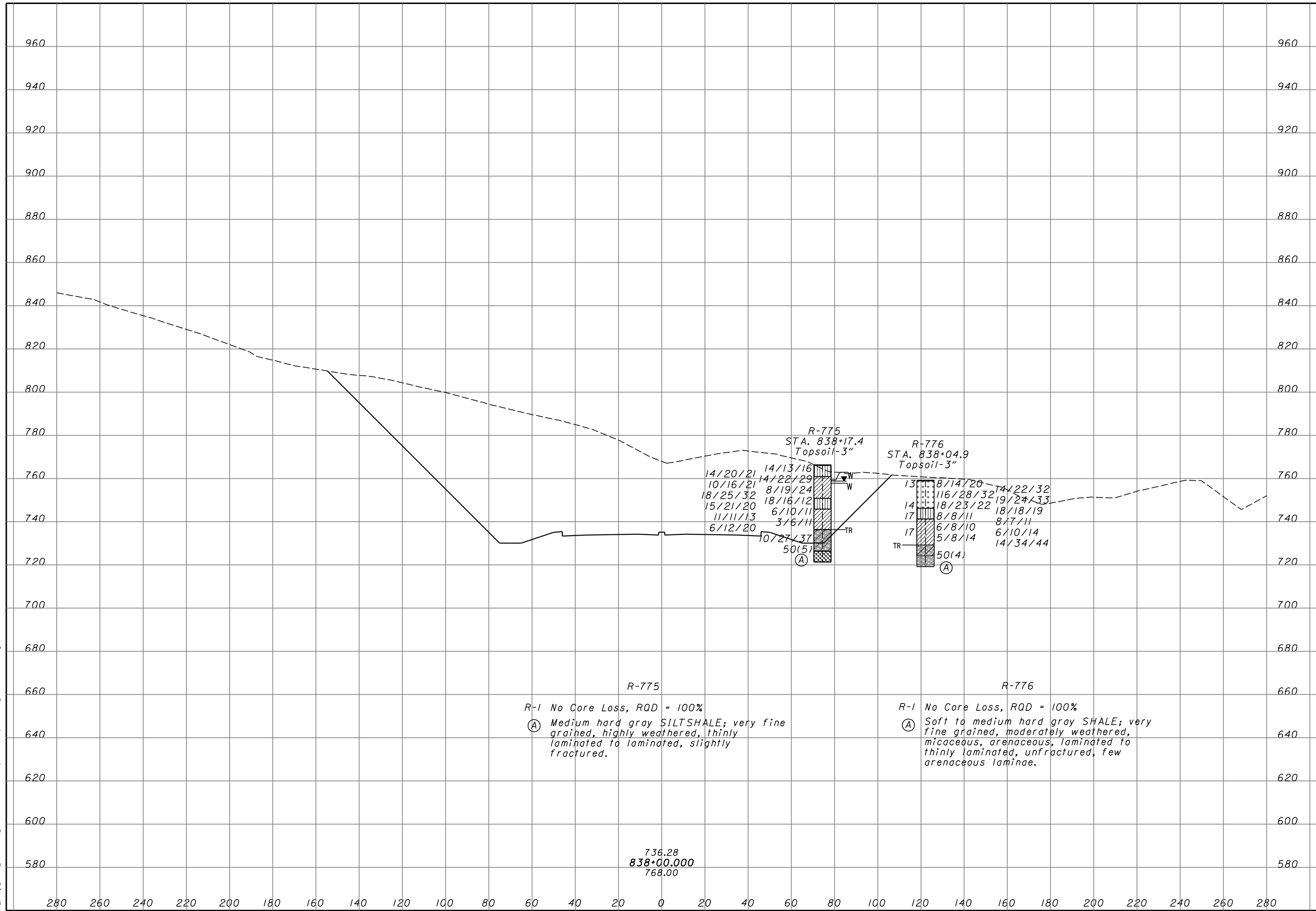
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CROSS SECTION - SR 823 STA. 837+00.00**

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R-775
 R-1 No Core Loss, RQD = 100%
 (A) Medium hard gray SILTSHALE; very fine grained, highly weathered, thinly laminated to laminated, slightly fractured.

R-776
 R-1 No Core Loss, RQD = 100%
 (A) Soft to medium hard gray SHALE; very fine grained, moderately weathered, micaceous, arenaceous, laminated to thinly laminated, unfractured, few arenaceous laminae.

736.28
 838+00.000
 768.00

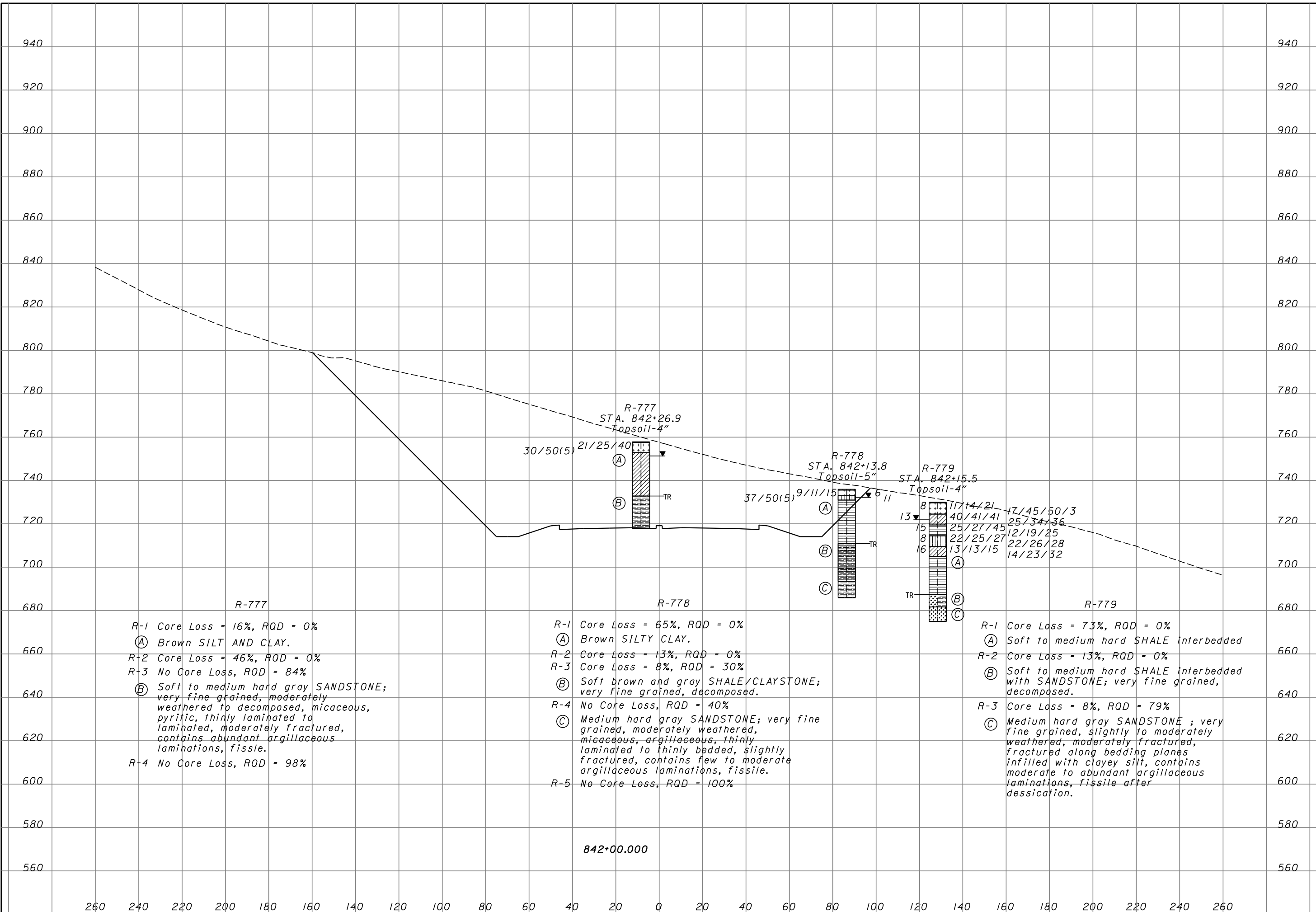
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SOIL PROFILE
 CROSS SECTION - SR 823 STA. 838+00.00

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R-777

R-1 Core Loss = 16%, RQD = 0%
 (A) Brown SILT AND CLAY.

R-2 Core Loss = 46%, RQD = 0%
 R-3 No Core Loss, RQD = 84%
 (B) Soft to medium hard gray SANDSTONE; very fine grained, moderately weathered to decomposed, micaceous, pyritic, thinly laminated to laminated, moderately fractured, contains abundant argillaceous laminations, fissile.

R-4 No Core Loss, RQD = 98%

R-778

R-1 Core Loss = 65%, RQD = 0%
 (A) Brown SILTY CLAY.

R-2 Core Loss = 13%, RQD = 0%
 R-3 Core Loss = 8%, RQD = 30%
 (B) Soft brown and gray SHALE/CLAYSTONE; very fine grained, decomposed.

R-4 No Core Loss, RQD = 40%
 (C) Medium hard gray SANDSTONE; very fine grained, moderately weathered, micaceous, argillaceous, thinly laminated to thinly bedded, slightly fractured, contains few to moderate argillaceous laminations, fissile.

R-5 No Core Loss, RQD = 100%

R-779

R-1 Core Loss = 73%, RQD = 0%
 (A) Soft to medium hard SHALE interbedded

R-2 Core Loss = 13%, RQD = 0%
 (B) Soft to medium hard SHALE interbedded with SANDSTONE; very fine grained, decomposed.

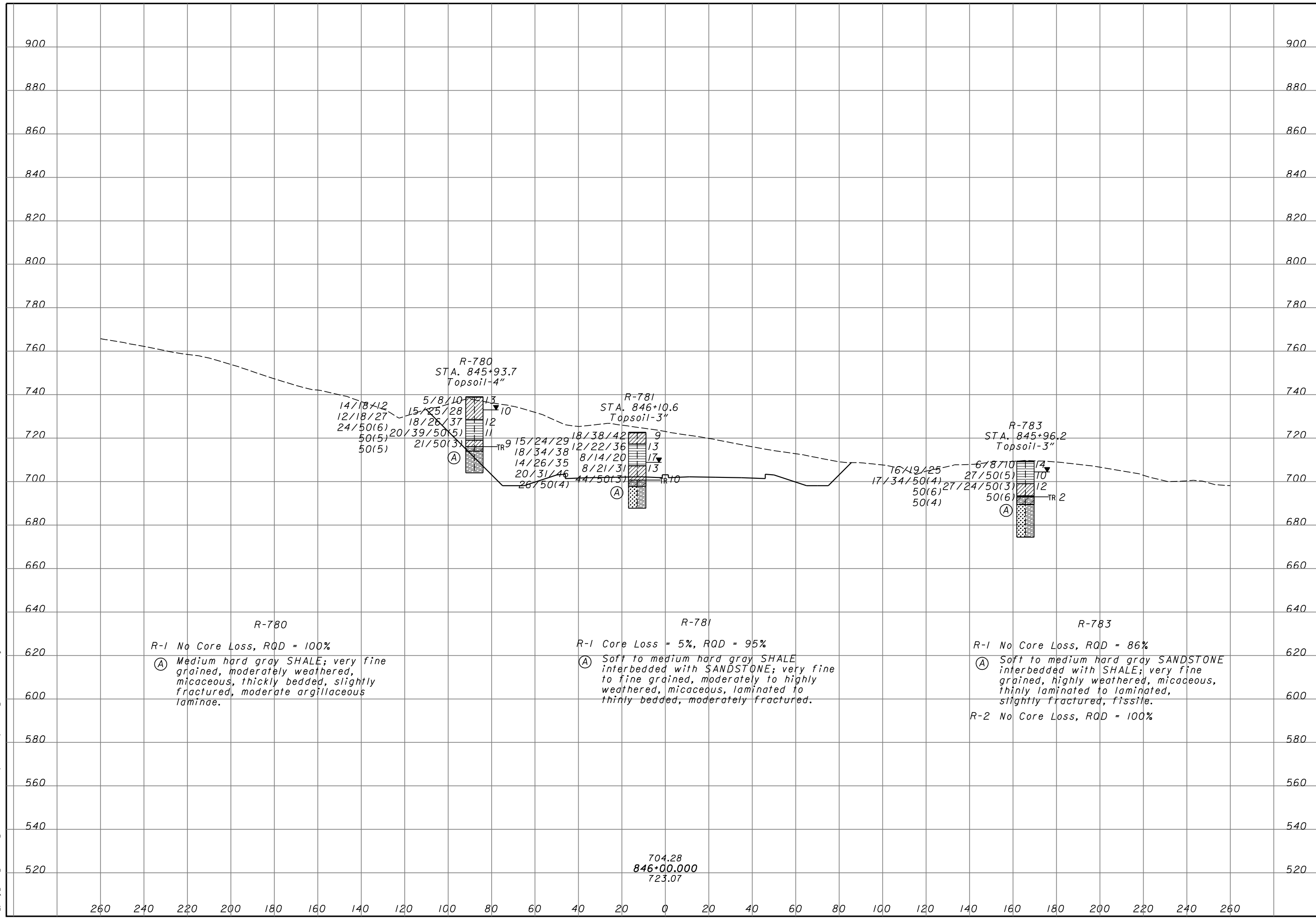
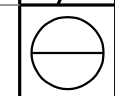
R-3 Core Loss = 8%, RQD = 79%
 (C) Medium hard gray SANDSTONE; very fine grained, slightly to moderately weathered, moderately fractured, fractured along bedding planes infilled with clayey silt, contains moderate to abundant argillaceous laminations, fissile after dessication.

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 846+00.00

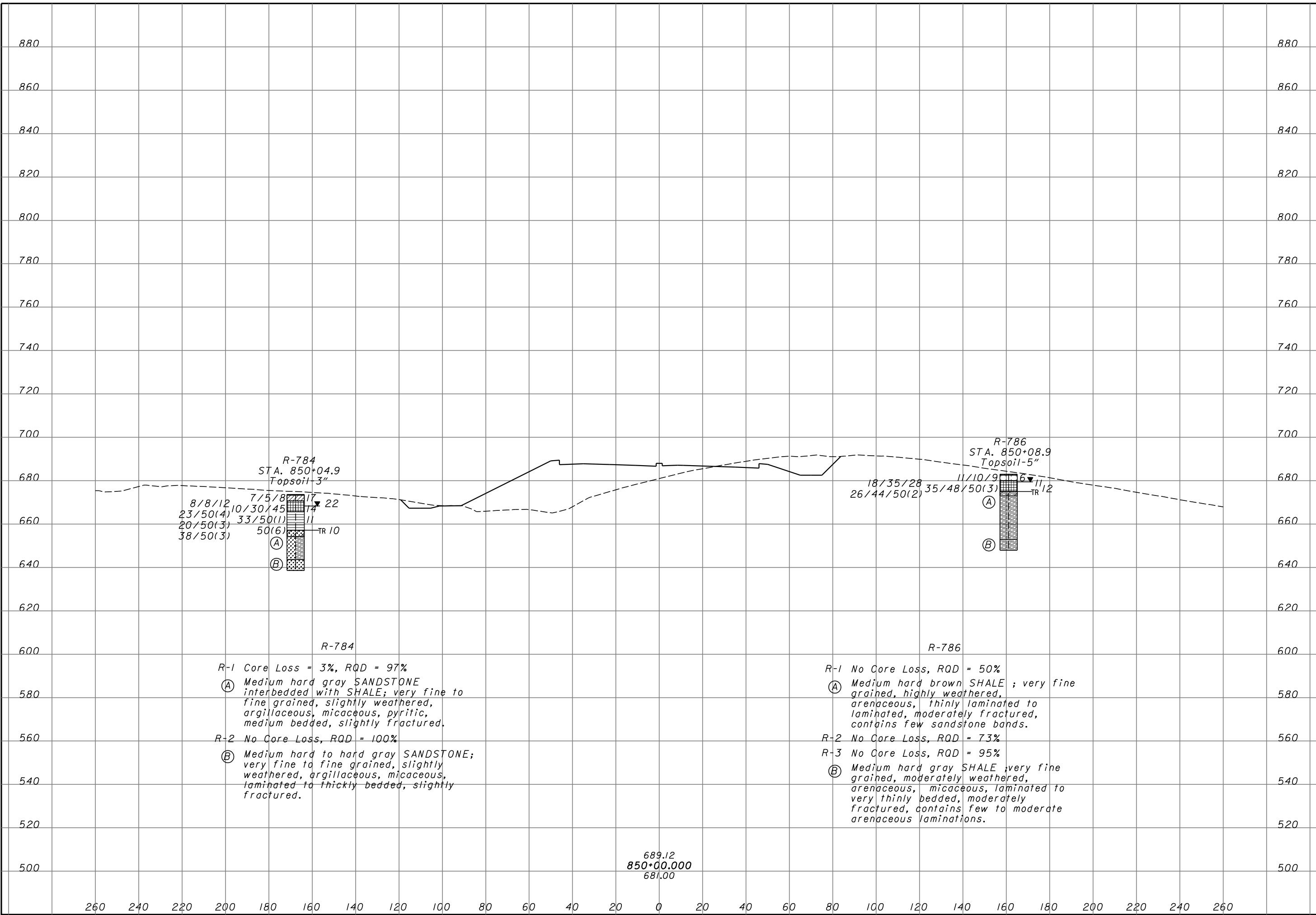
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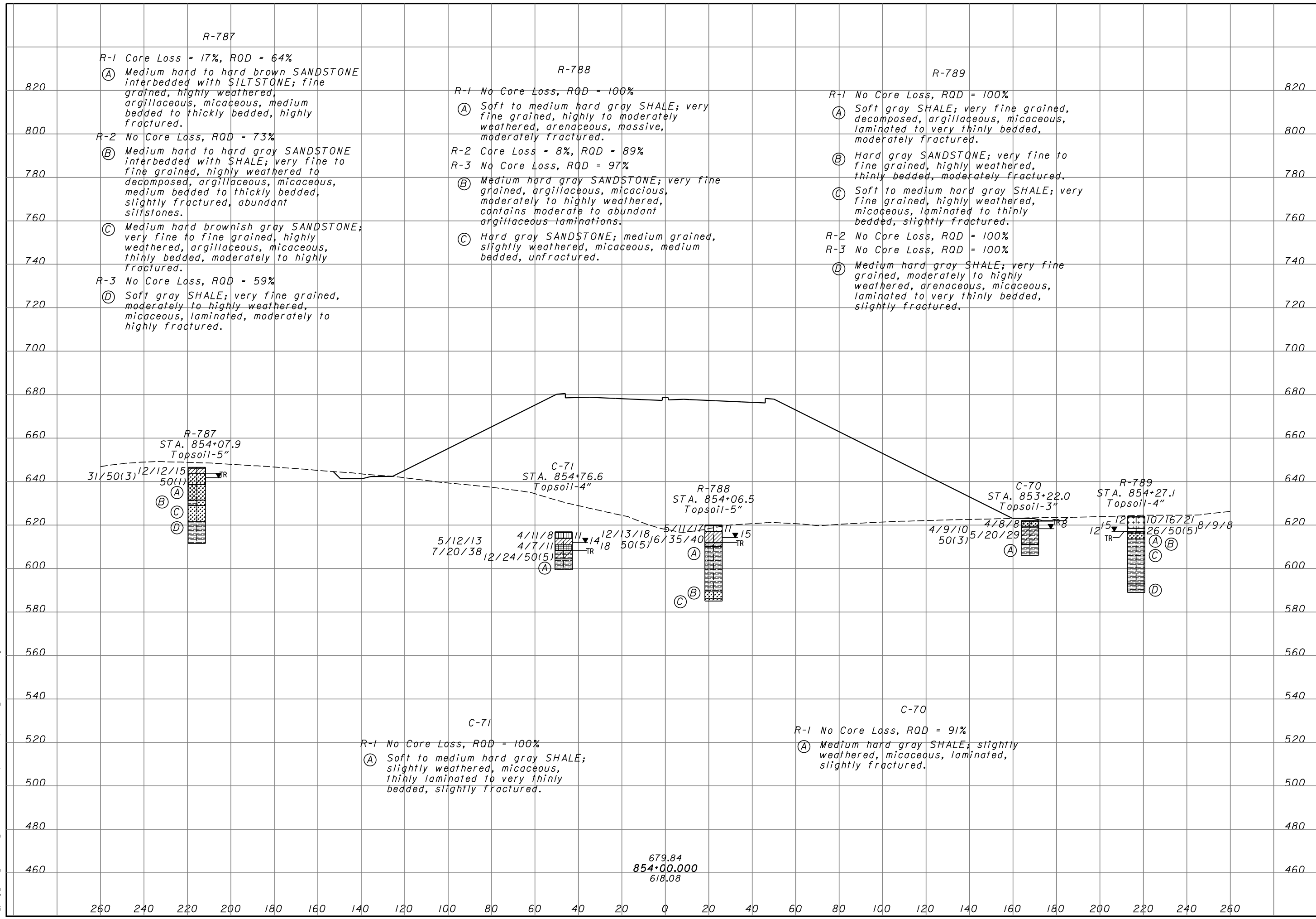
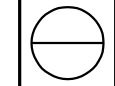
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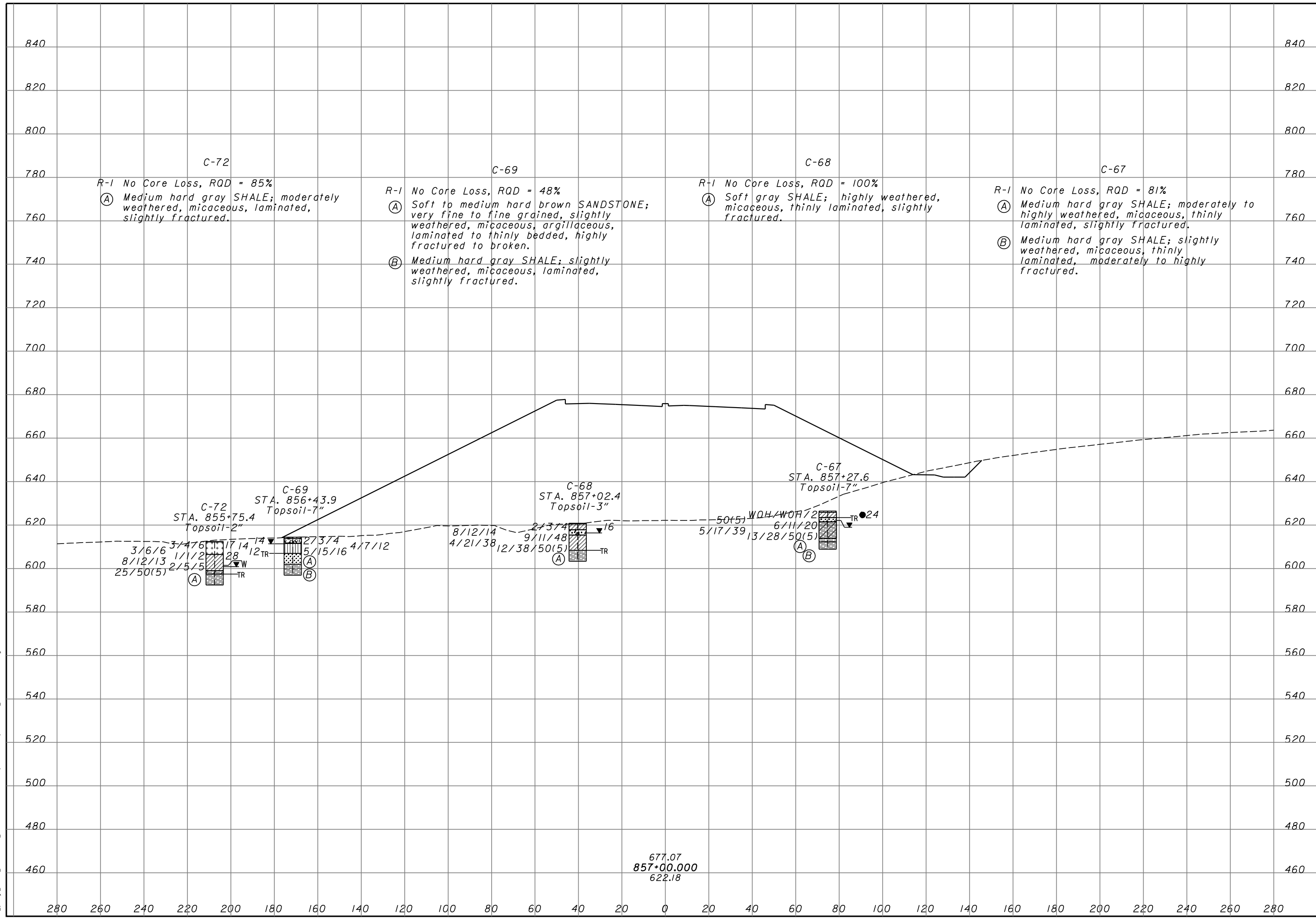
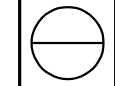
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 857+00.00

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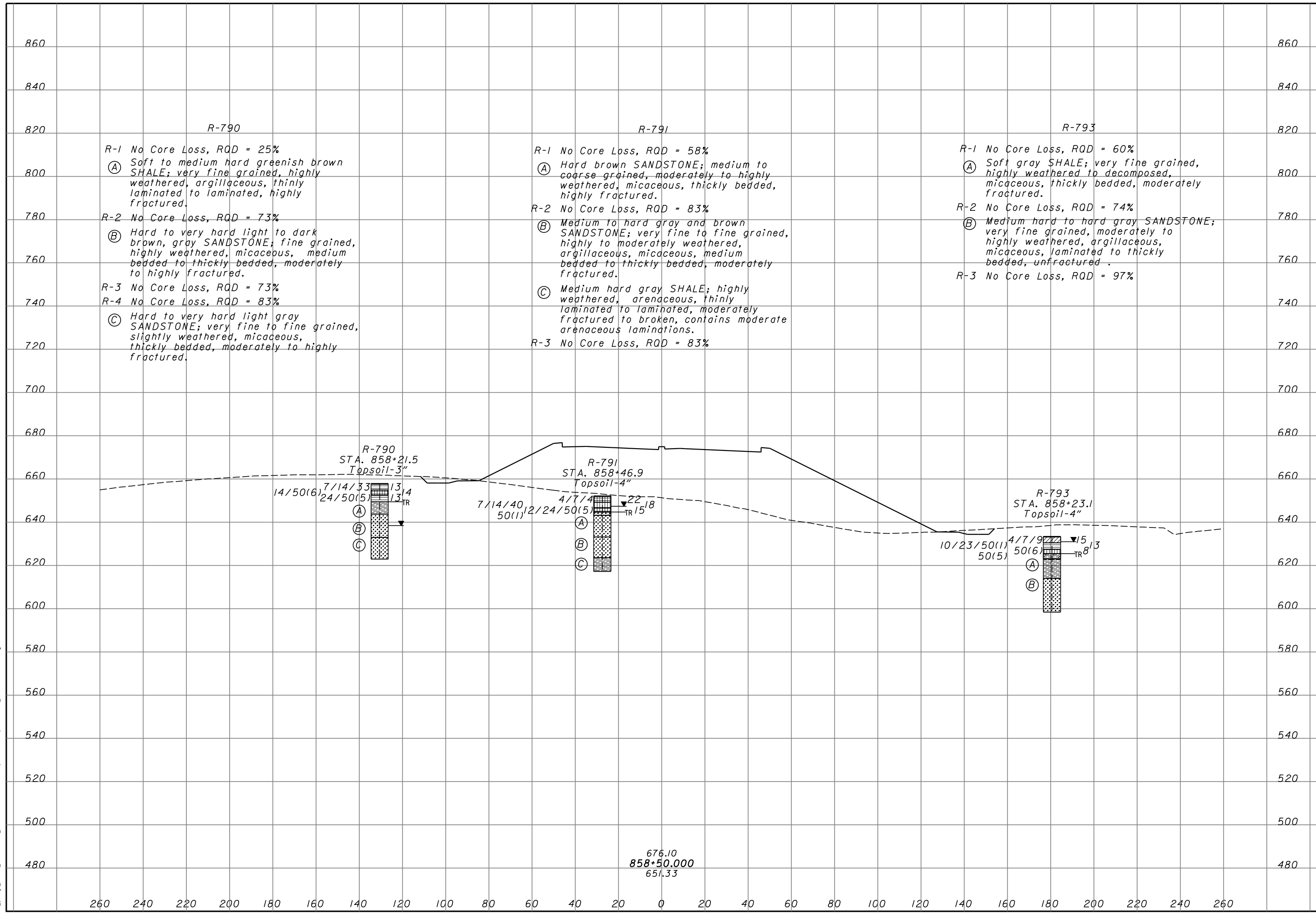
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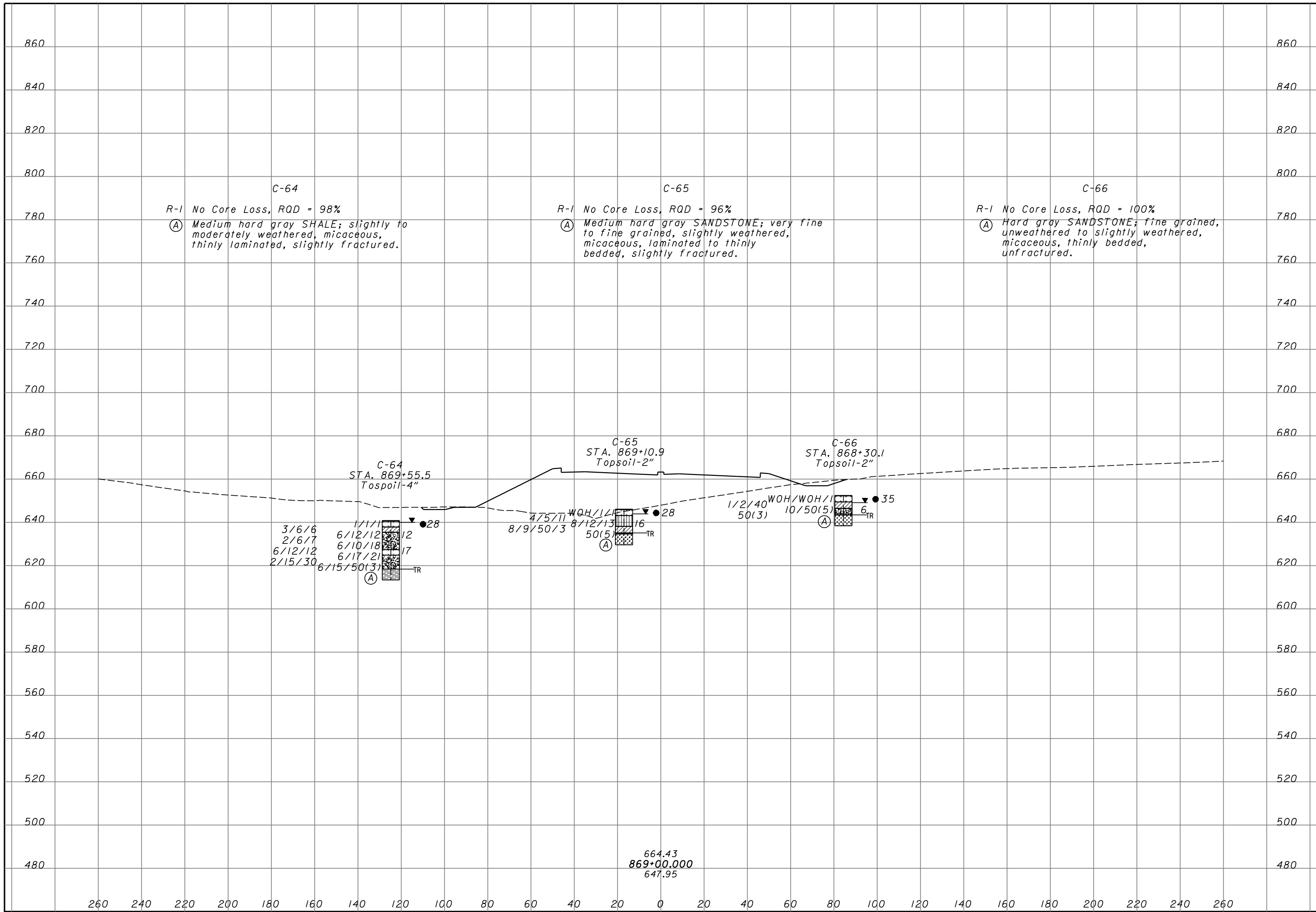
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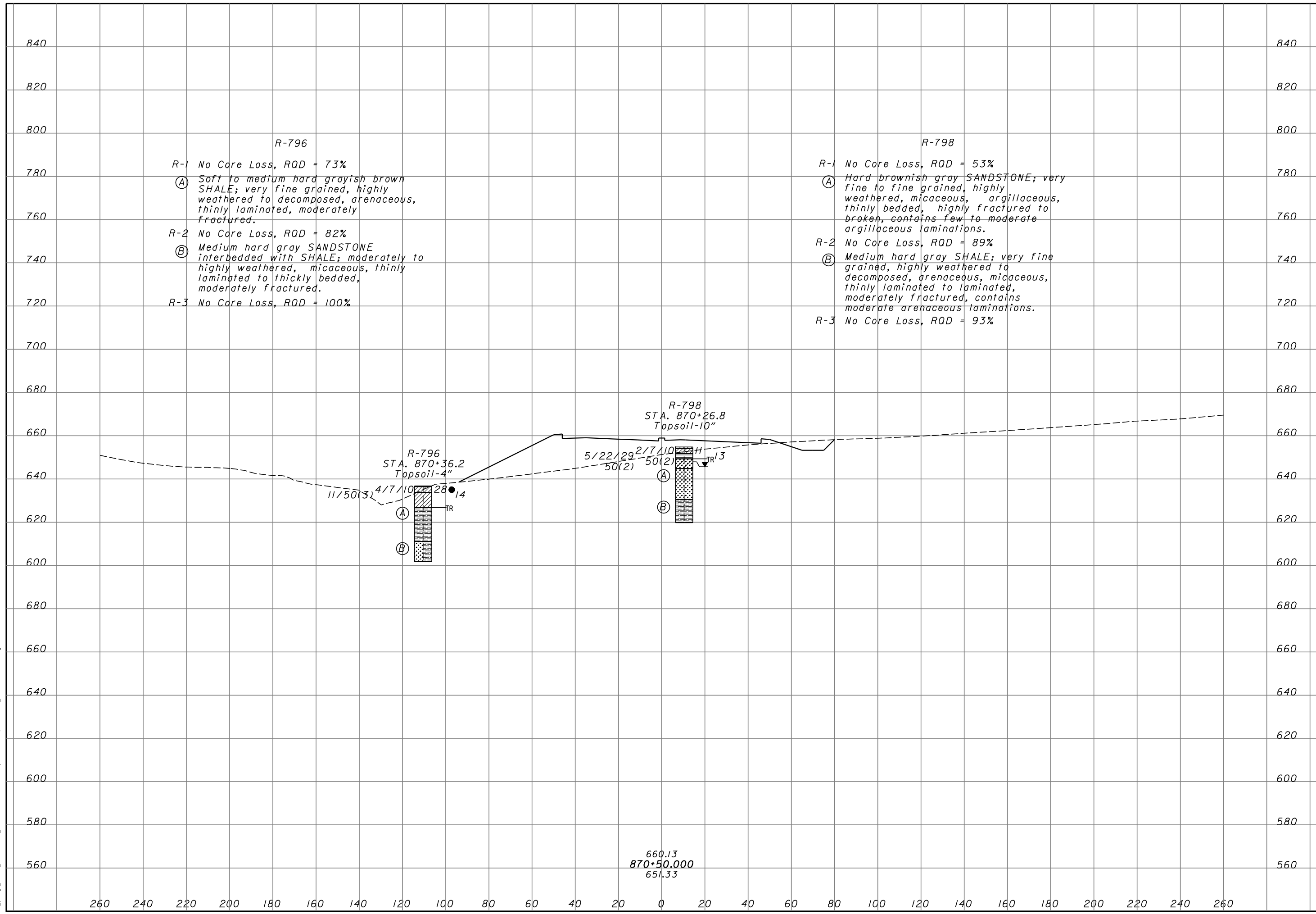
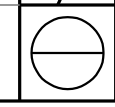
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CROSS SECTION - STA. 869+00.00
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 870+50.00**

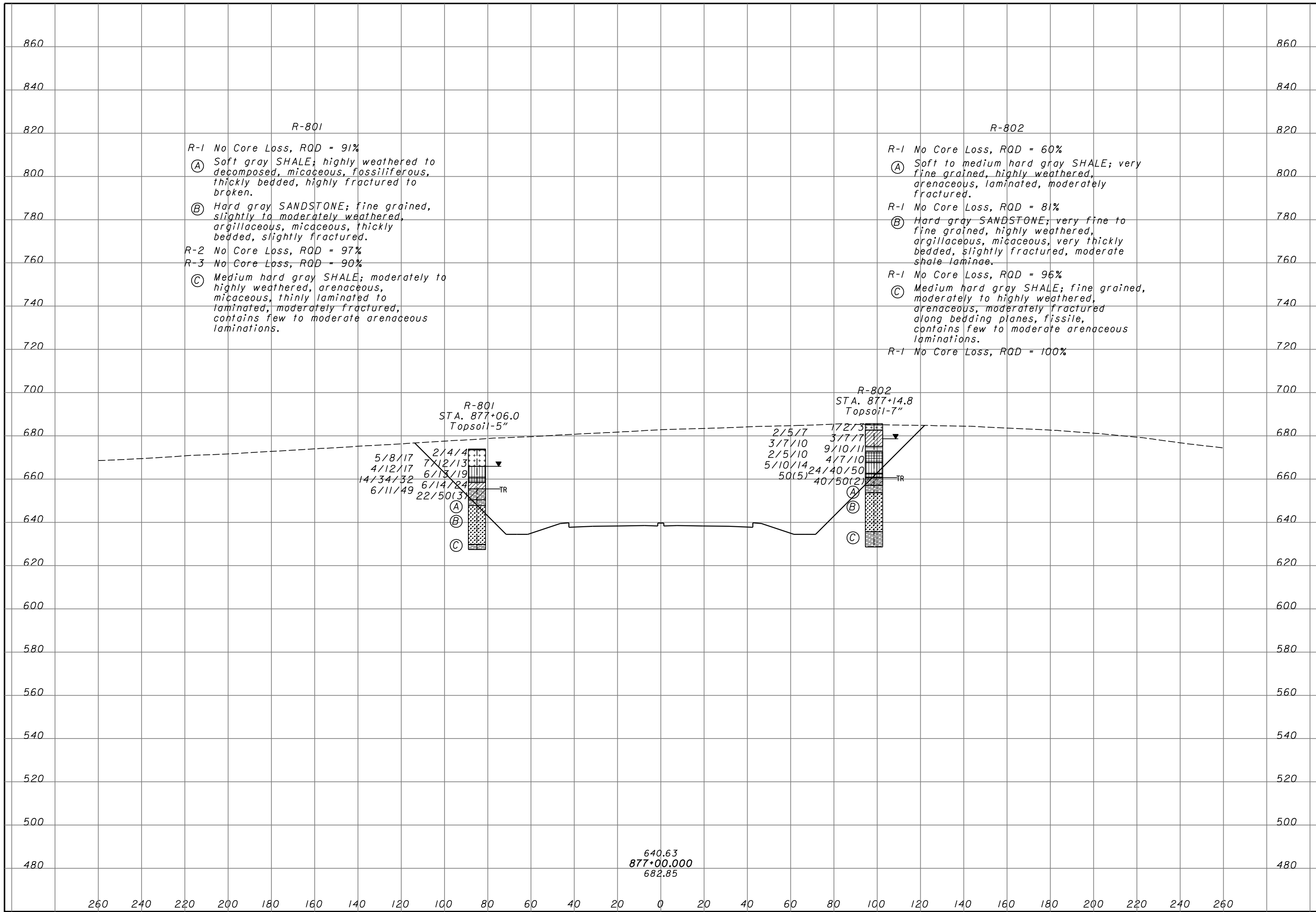
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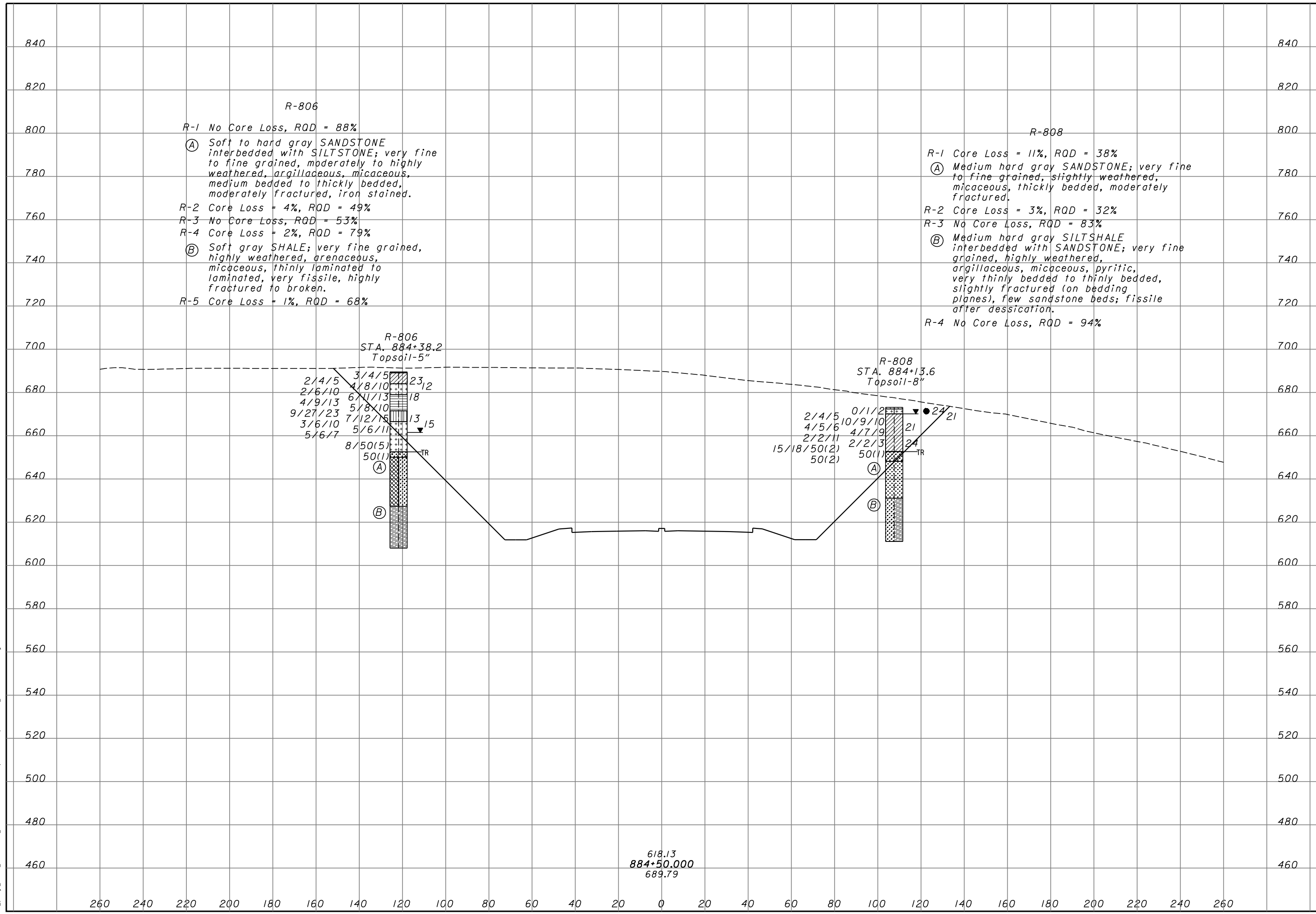
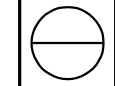
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 884+50.00**


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NOTE: BORINGS B-28, B-30, TR-1, TR-2, AND TR-3 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS. BORINGS R-683 TO R-704 SHOWN ON S.R. 823 PROFILE SHEET XXX.





 HORIZONTAL SCALE IN FEET

DRAWN BY: RLS
 CHECKED BY: AEN

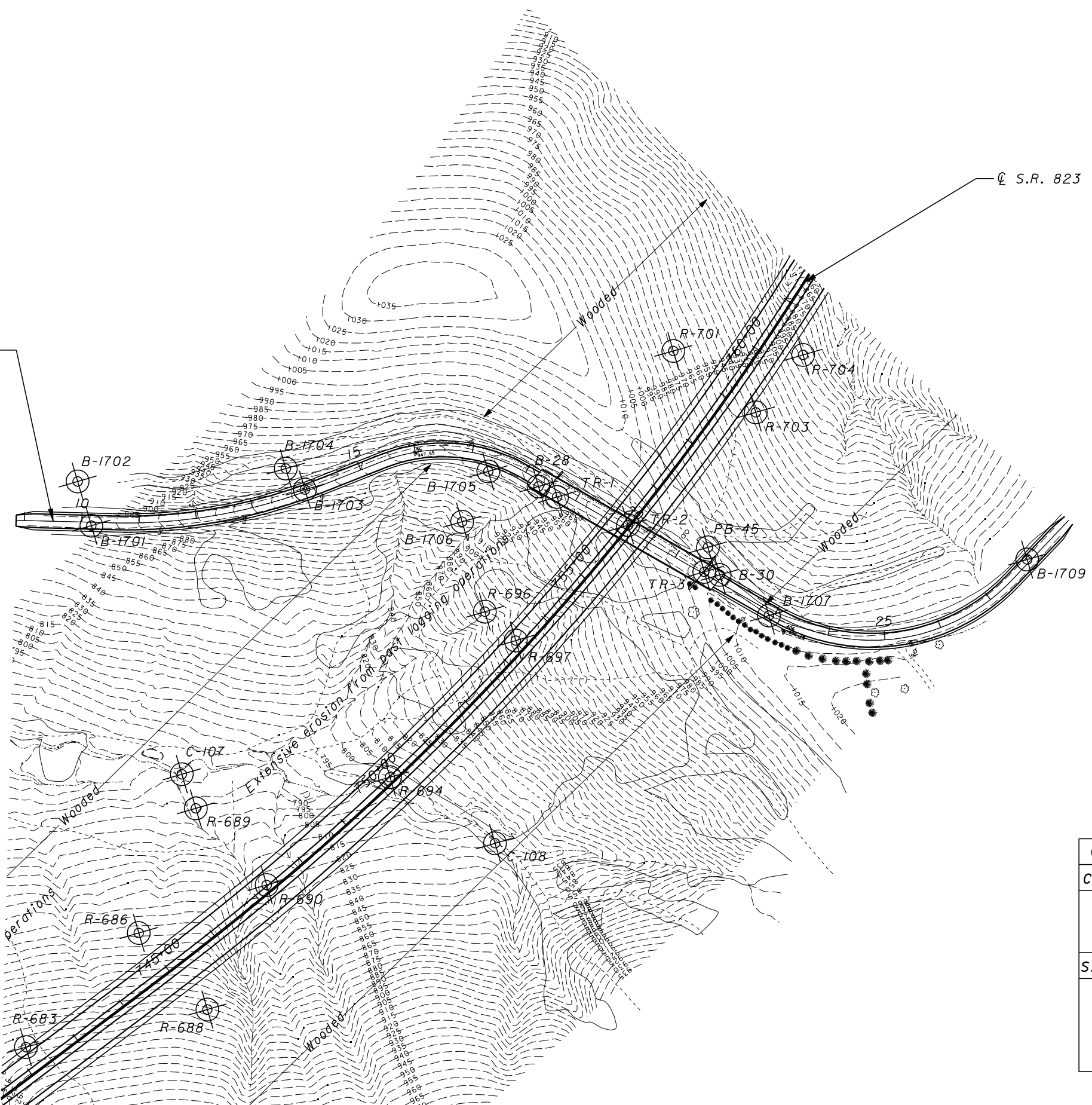
SOIL PROFILE
C.R. 184 STA. 8+85.44 TO STA. 28+94.28

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196/220



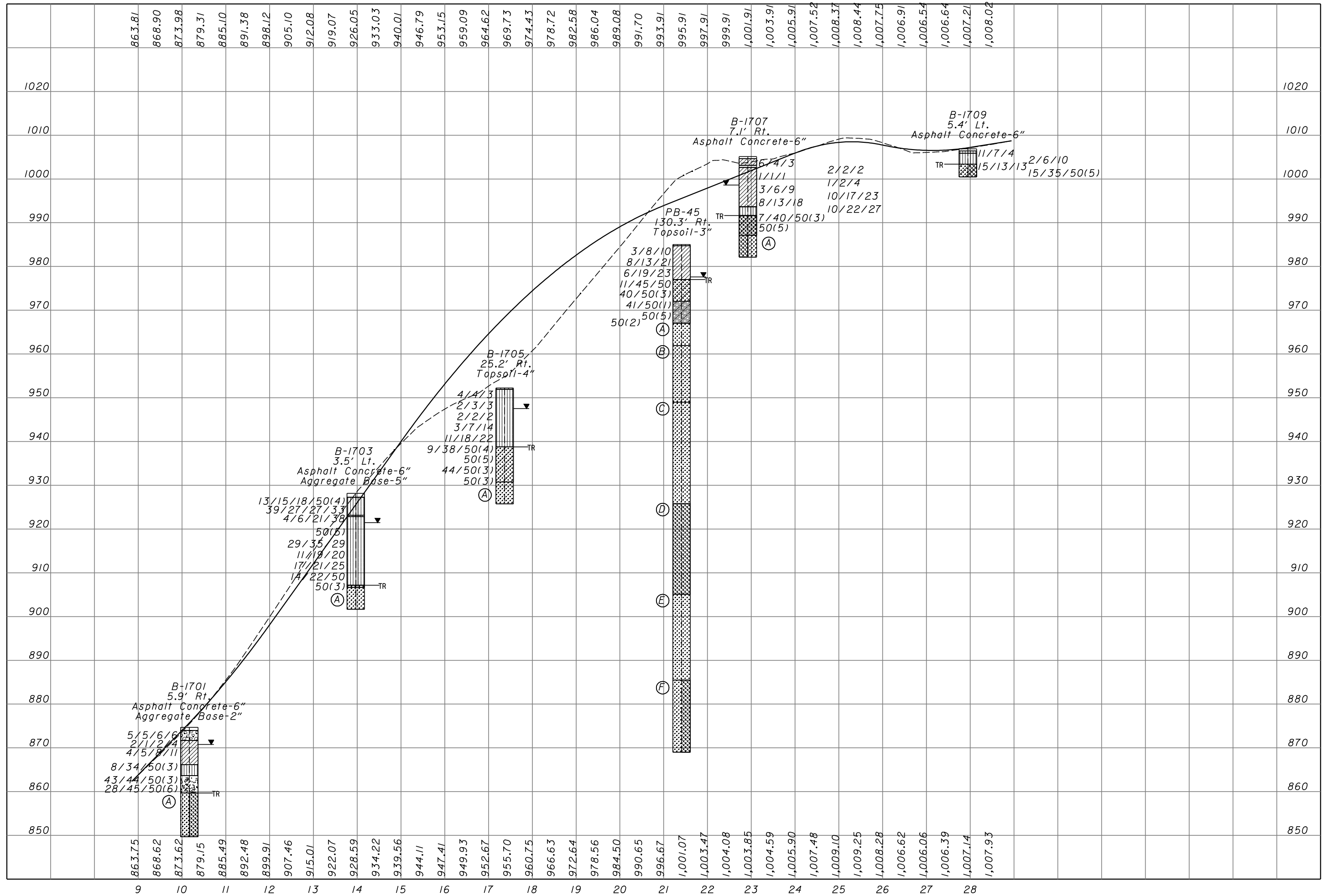
CL FLATWOOD FALLEN TIMBER ROAD
 (C.R. 184)



CROSS SECTION INDEX	
C.R. 184 STATION	SHEET
10+00	199
14+00	200
17+00	201
S.R. 823 STATION	
745+00	158
747+00	159
750+50	160
753+50	161
759+00	162

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SOIL PROFILE
CR 184 STA. 8+85.44 TO STA. 28+94.283

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197/220



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B-1701

R-1 Core Loss = 3%, RQD = 0%

(A) Soft to medium hard brown and gray SANDSTONE and SILTSTONE; very fine to fine grained, highly weathered to decomposed, laminated to thickly bedded, highly fractured to broken.

R-2 No Core Loss, RQD = 55%

B-1703

R-1 No Core Loss, RQD = 85%

(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, laminated to massive, moderately fractured.

B-1705

R-1 No Core Loss, RQD = 75%

(A) Medium hard to hard gray and brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, thinly laminated to medium bedded, highly fractured.

B-1707

R-1 No Core Loss, RQD = 70%

(A) Medium hard gray and brown SILTSTONE interbedded with SANDSTONE; highly weathered to decomposed, arenaceous, thinly bedded to laminated, highly fractured to broken.

PB-45

R-1 Core Loss = 5%, RQD = 86%

(A) Soft to medium hard brown and gray SANDSTONE, argillaceous, thinly to thickly bedded, moderately to severely weathered.

R-2 Core Loss = 3%, RQD = 96%

(B) Medium hard to hard brown SANDSTONE, very fine to fine grained, moderately weathered, thinly to thickly bedded, contains argillaceous clasts.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

(C) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, thinly to thickly bedded, contains dark gray laminae.

R-5 Core Loss = 5%, RQD = 95%

R-6 Core Loss = 3%, RQD = 96%

R-7 Core Loss = 8%, RQD = 92%

R-8 No Core Loss, RQD = 100%

R-9 No Core Loss, RQD = 100%

(D) Medium hard gray SILTSTONE; micaceous, slightly arenaceous, unweathered to slightly weathered, thinly to thickly bedded, contains occasional thin sandstone layer.

R-10 No Core Loss, RQD = 100%

R-11 No Core Loss, RQD = 100%

R-12 No Core Loss, RQD = 100%

R-13 No Core Loss, RQD = 100%

(E) Hard gray SANDSTONE; fine grained, argillaceous, unweathered to slightly weathered, thinly to thickly bedded, slightly pyritic, contains siltstone and shale laminae and clasts.

R-14 No Core Loss, RQD = 100%

R-15 No Core Loss, RQD = 100%

R-16 No Core Loss, RQD = 100%

R-17 No Core Loss, RQD = 100%

(F) Medium hard to hard gray interbedded SANDSTONE, SILTSTONE and SHALE, unweathered to slightly weathered, thinly to thickly bedded.

R-18 No Core Loss, RQD = 100%

R-19 No Core Loss, RQD = 100%

R-20 No Core Loss, RQD = 100%

SOIL PROFILE
CR 184 STA. 8+85.44 TO STA. 28+94.283

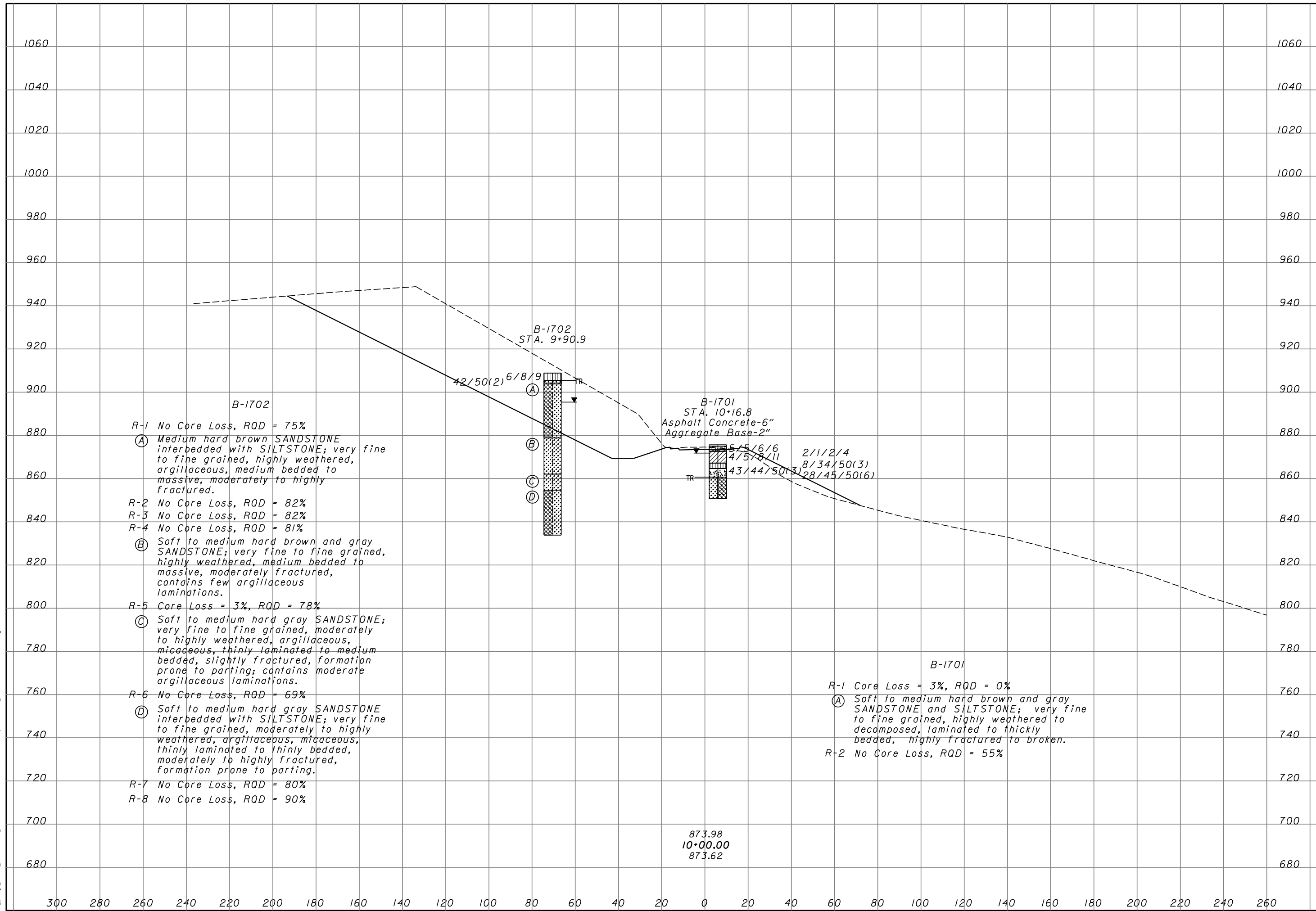
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198/220



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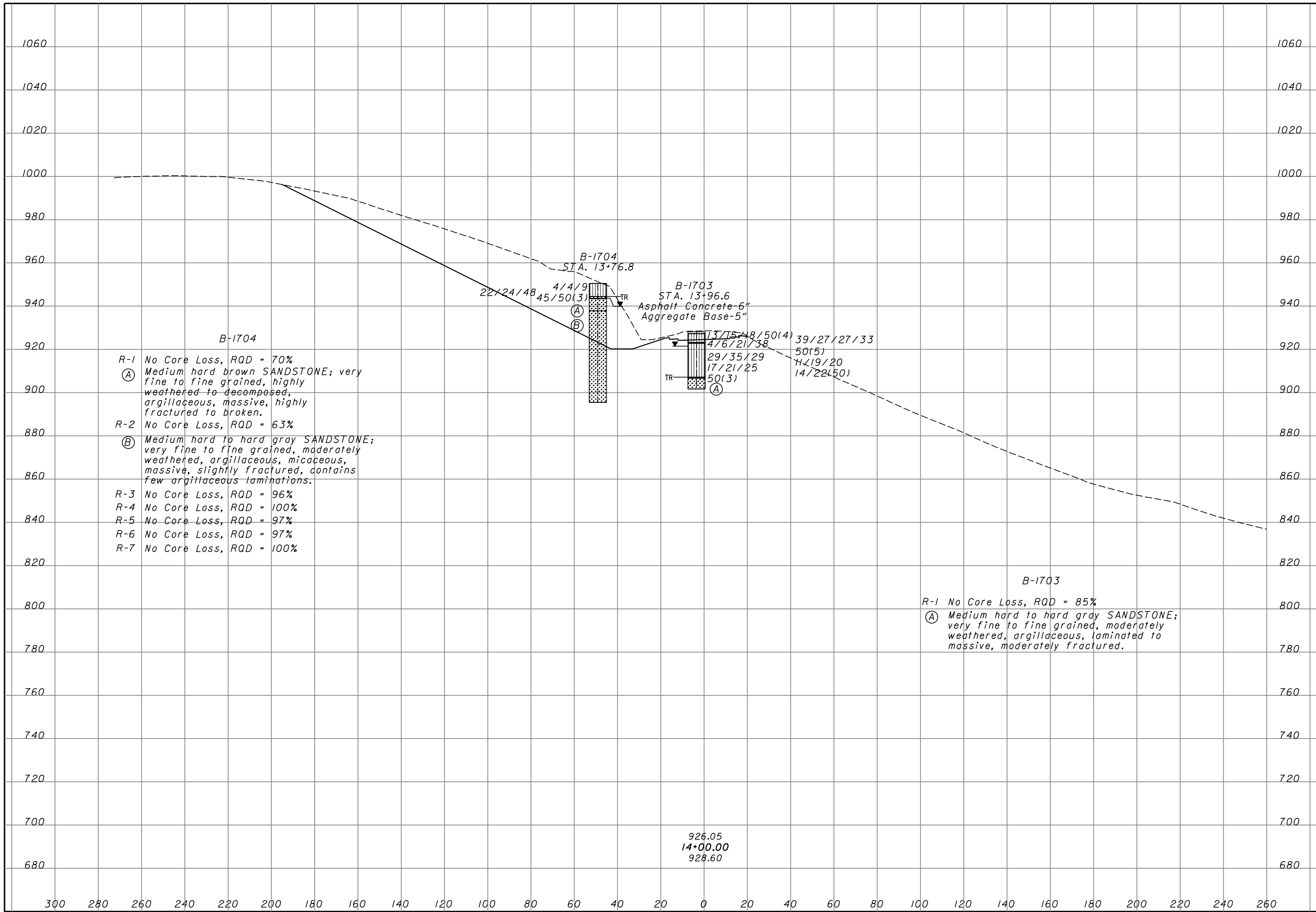
- B-1702
- R-1 No Core Loss, RQD = 75%
 - (A) Medium hard brown SANDSTONE interbedded with SILTSTONE; very fine to fine grained, slightly weathered, argillaceous, medium bedded to massive, moderately to highly fractured.
 - R-2 No Core Loss, RQD = 82%
 - R-3 No Core Loss, RQD = 82%
 - R-4 No Core Loss, RQD = 81%
 - (B) Soft to medium hard brown and gray SANDSTONE; very fine to fine grained, highly weathered, medium bedded to massive, moderately fractured, contains few argillaceous laminations.
 - R-5 Core Loss = 3%, RQD = 78%
 - (C) Soft to medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly laminated to medium bedded, slightly fractured, formation prone to parting; contains moderate argillaceous laminations.
 - R-6 No Core Loss, RQD = 69%
 - (D) Soft to medium hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly laminated to thinly bedded, moderately to highly fractured, formation prone to parting.
 - R-7 No Core Loss, RQD = 80%
 - R-8 No Core Loss, RQD = 90%

- B-1701
STA. 10+16.8
Asphalt Concrete-6"
Aggregate Base-2"
- 5/5/6/6
 - 4/5/8/11
 - 2/1/2/4
 - 8/34/50(3)
 - 43/44/50(3)
 - 28/45/50(6)

- B-1701
- R-1 Core Loss = 3%, RQD = 0%
 - (A) Soft to medium hard brown and gray SANDSTONE and SILTSTONE; very fine to fine grained, highly weathered to decomposed, laminated to thickly bedded, highly fractured to broken.
 - R-2 No Core Loss, RQD = 55%

873.98
10+00.00
873.62

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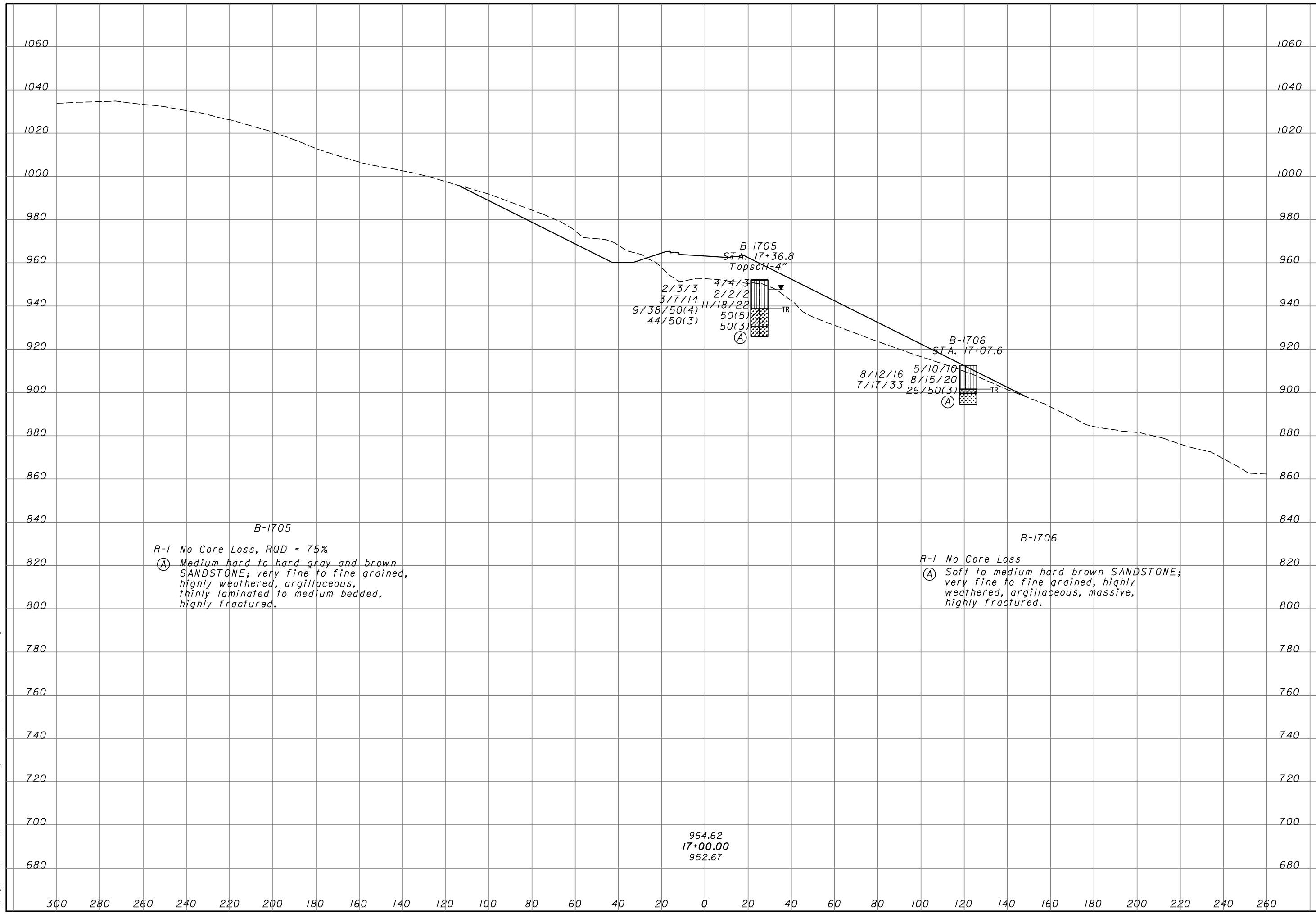
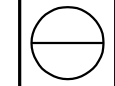
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SOIL PROFILE
CROSS SECTION - C.R. 184 STA. 14+00
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 200/220

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**SOIL PROFILE
CROSS SECTION - C.R. 184 STA. 17+00**

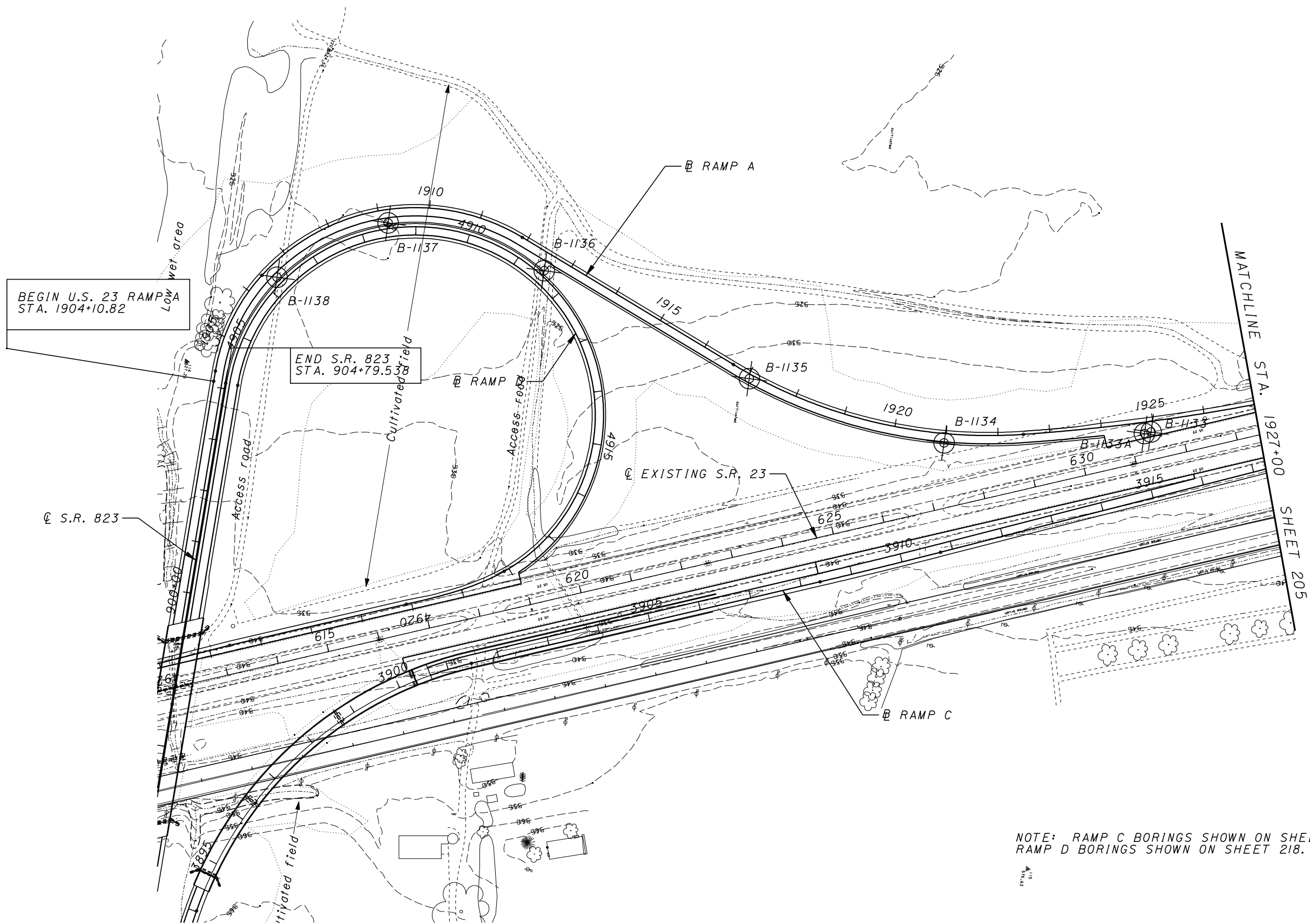
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201/220



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BEGIN U.S. 23 RAMP A
STA. 1904+10.82

END S.R. 823
STA. 904+79.53

NOTE: RAMP C BORINGS SHOWN ON SHEETS 213 AND 216,
RAMP D BORINGS SHOWN ON SHEET 218.

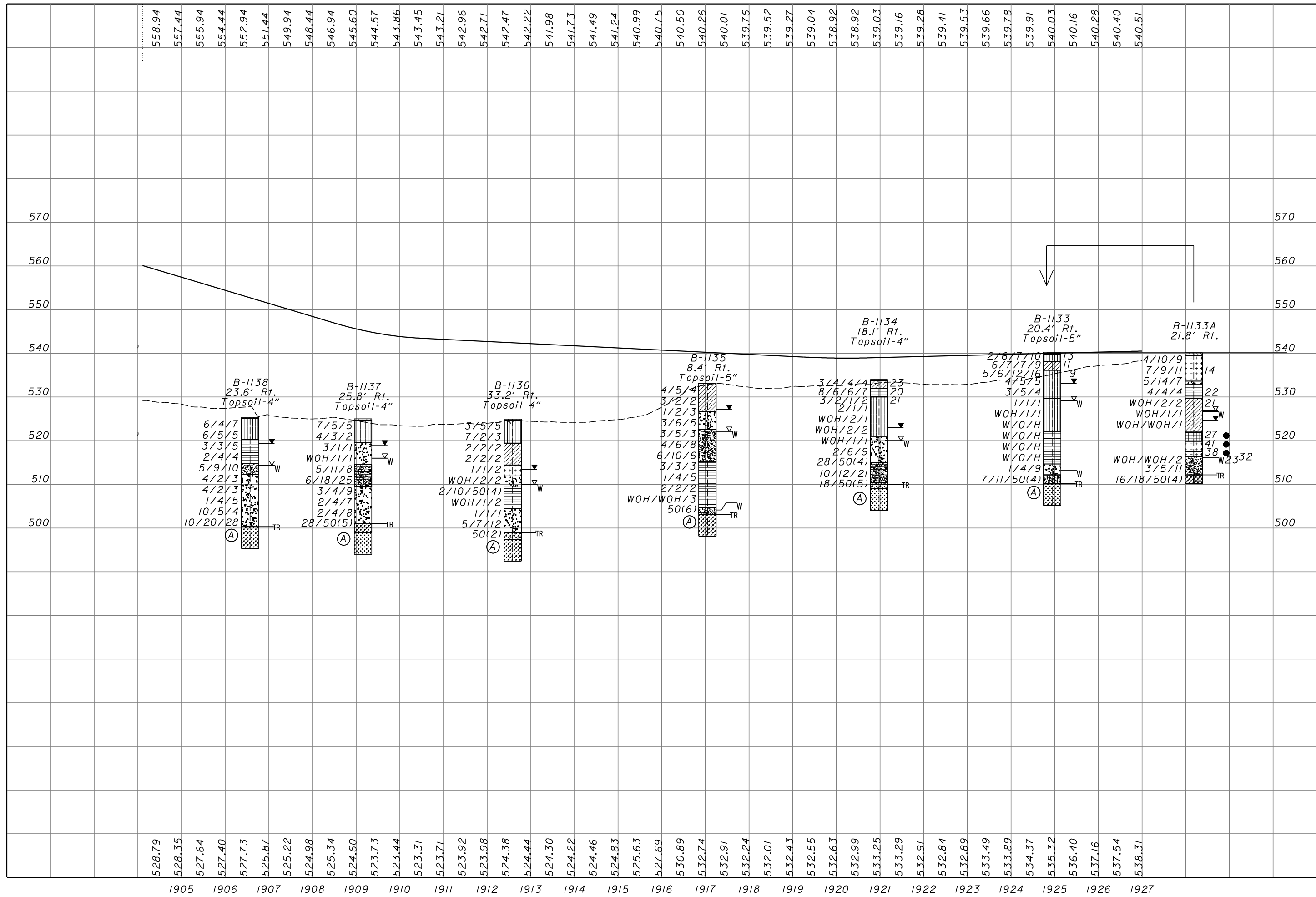


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SOIL PROFILE
RAMP A STA. 1904+10.82 STA. 1927+00

SCI-823-10.13





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B-1138

R-I Core Loss = 20%, RQD = 48%

(A) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, thinly bedded to medium bedded, highly fractured.

B-1137

R-I Core Loss = 15%, RQD = 48%

(A) Medium hard to hard gray SANDSTONE; fine grained, moderately to highly weathered, micaceous, argillaceous, medium bedded, moderately fractured to broken.

B-1136

R-I No Core Loss, RQD = 48%

(A) Hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly bedded to medium bedded, highly fractured.

B-1135

R-I Core Loss = 17%, RQD = 58%

(A) Hard gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, argillaceous, massive, slightly fractured.

B-1134

R-I No Core Loss, RQD = 35%

(A) Medium hard gray SANDSTONE; fine grained, highly weathered to decomposed, micaceous, argillaceous, thinly bedded to medium bedded, highly fractured to broken .

B-1133

R-I Core Loss = 13%, RQD = 33%

(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly bedded to medium bedded, moderately to highly fractured.

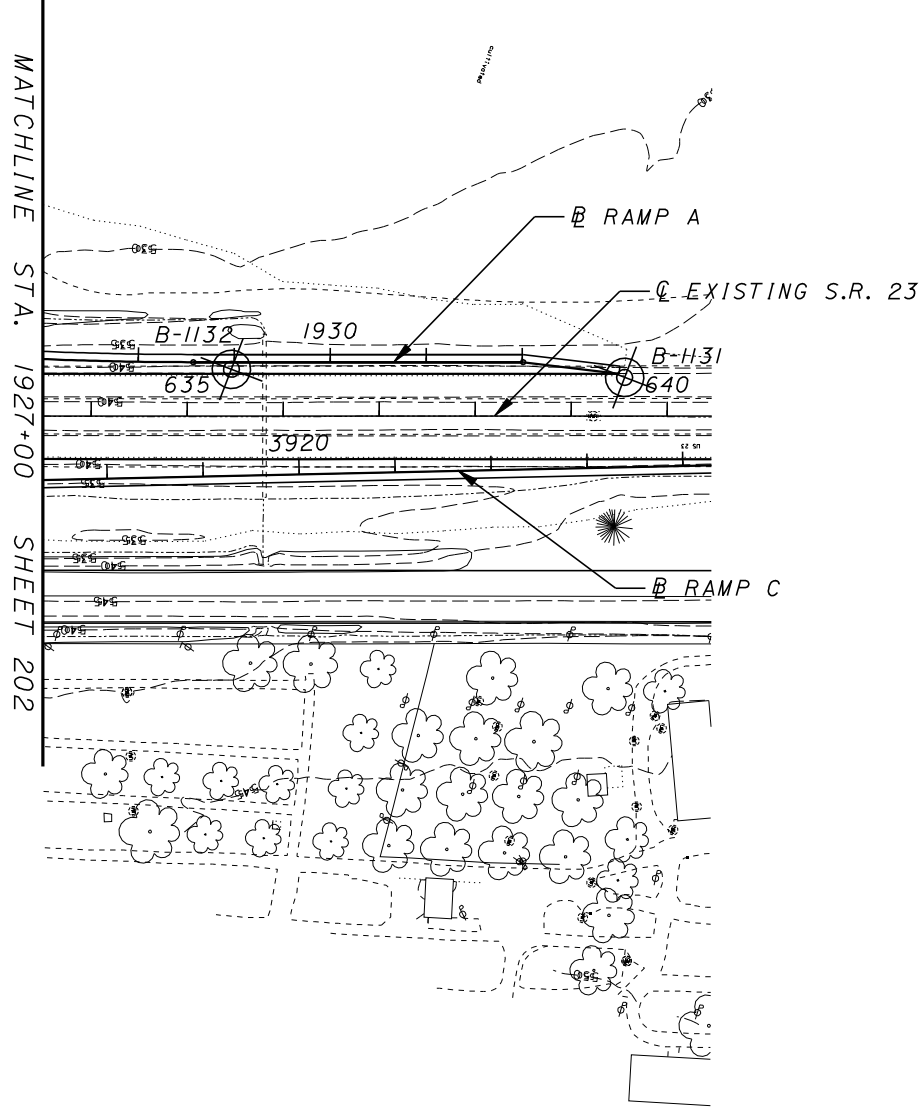
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AEN

SOIL PROFILE
RAMP A STA. 1904+10.82 TO STA. 1927+00

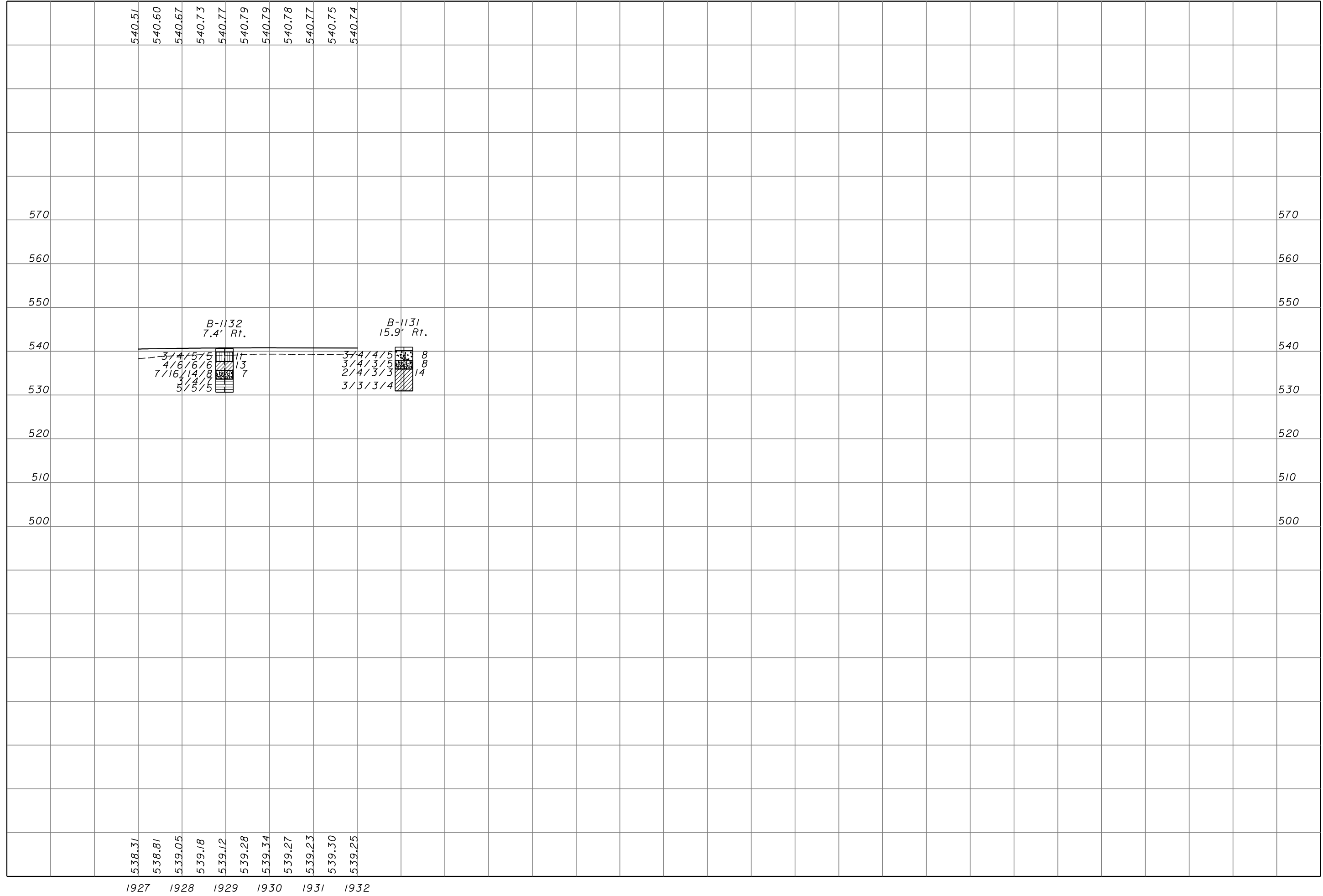
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204/220





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1927 1928 1929 1930 1931 1932

540.51
 540.60
 540.67
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 540.79
 540.79
 540.78
 540.77
 540.75
 540.74

B-1132
 7.4' Rt.

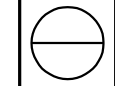
B-1131
 15.9' Rt.

538.31
 538.81
 539.05
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 539.23
 539.30
 539.25

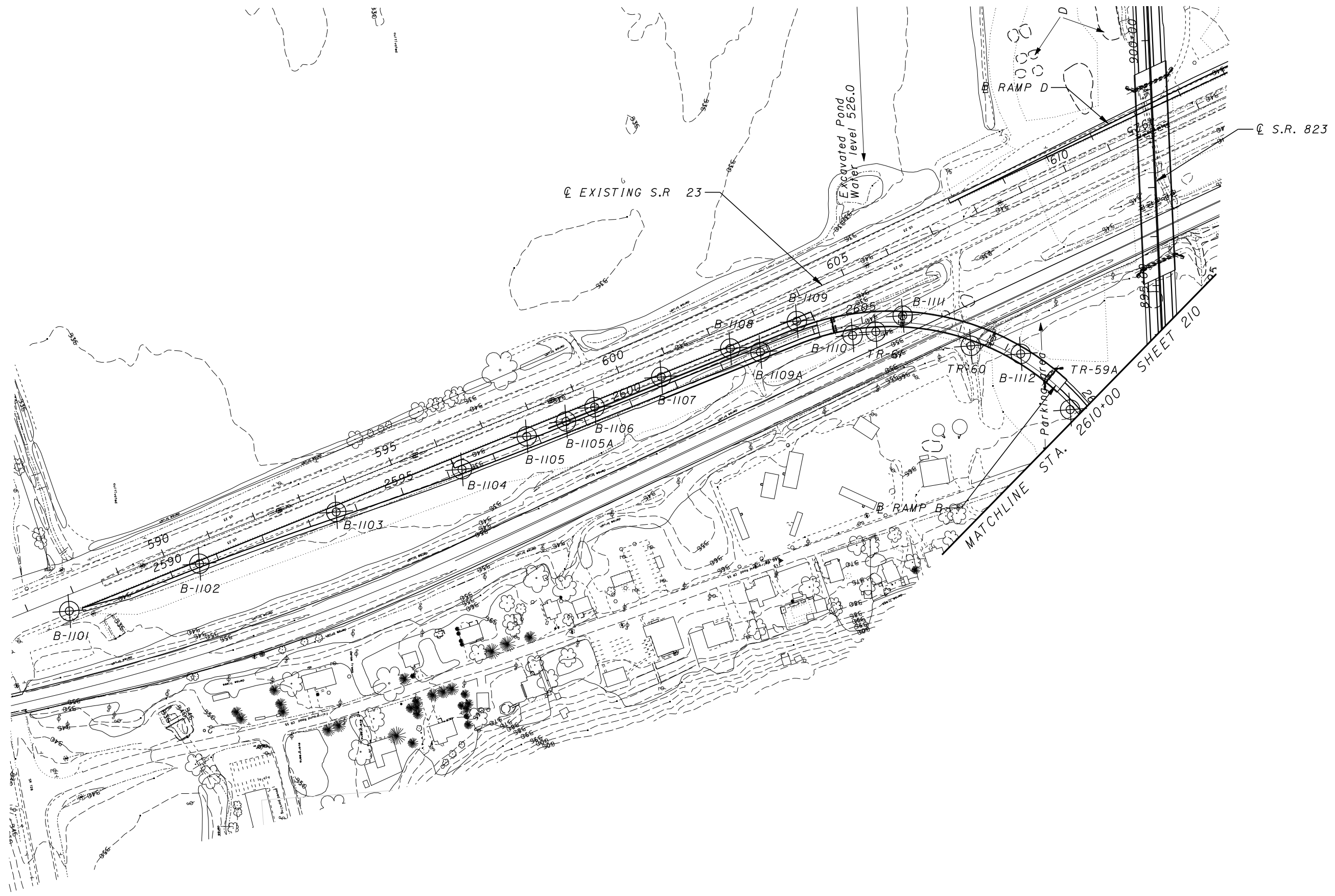
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SOIL PROFILE
RAMP A STA. 1927+00 TO STA 1932+00.995

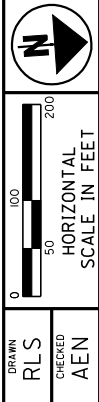
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NOTE: BORINGS B-1110, B-1111, TR-59A, TR-60, AND TR-61
 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.
 RAMP D BORINGS SHOWN ON SHEET 218.



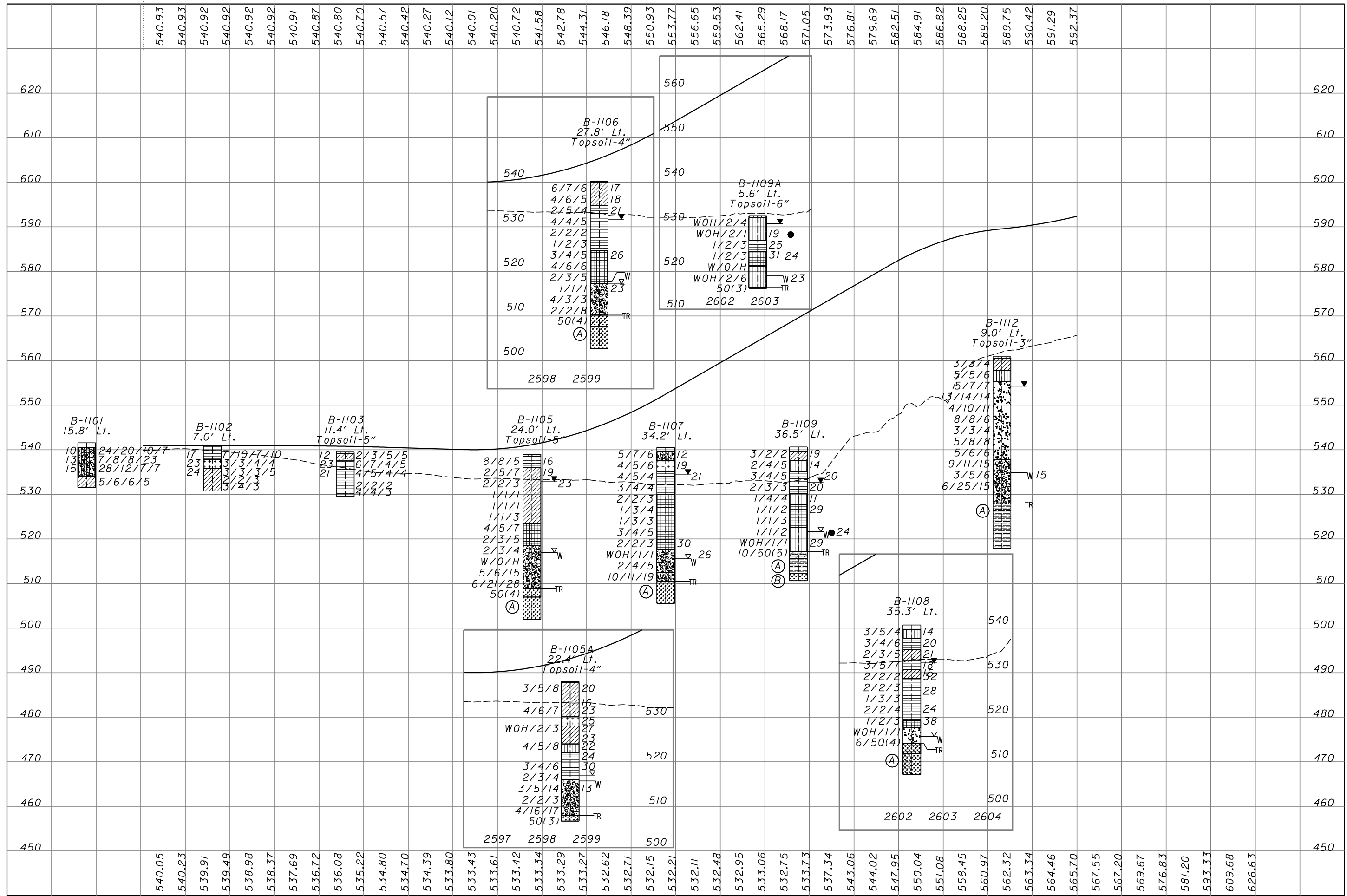
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SOIL PROFILE
RAMP B STA. 2598+05 TO STA. 2610+00

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SOIL PROFILE
 RAMP B STA. 2598+05 TO STA. 2610+00

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 CHECKED: AEN

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B-1105

R-I No Core Loss, RQD = 70%

- Ⓐ Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massively bedded, moderately fractured, iron-staining on high angle fractures.

B-1106

R-I Core Loss = 3%, RQD = 65%

- Ⓐ Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thickly bedded, moderately fractured.

B-1107

R-I Core Loss = 17%, RQD = 20%

- Ⓐ Hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, massive, slightly fractured.

B-1108

R-I Core Loss = 12%, RQD = 78%

- Ⓐ Hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, medium bedded, slightly fractured.

B-1109

R-I No Core Loss, RQD = 77%

- Ⓐ Soft to medium hard black SHALE; very fine grained, moderately weathered to decomposed, carbonaceous, thinly laminated, highly fractured.
- Ⓑ Medium hard to hard gray SANDSTONE; fine grained, highly weathered, micaceous, argillaceous, massive, slightly fractured.

B-1112

R-I No Core Loss, RQD = 83%

- Ⓐ Medium hard black SHALE; moderately to highly weathered, carbonaceous, thinly bedded, moderately fractured.

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RLS

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AEN

SOIL PROFILE
RAMP B STA. 2598+05 TO STA. 2610+00

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209/220



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NOTE: RAMP C BORINGS SHOWN ON SHEETS 213 AND 216.



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CHECKED AEN

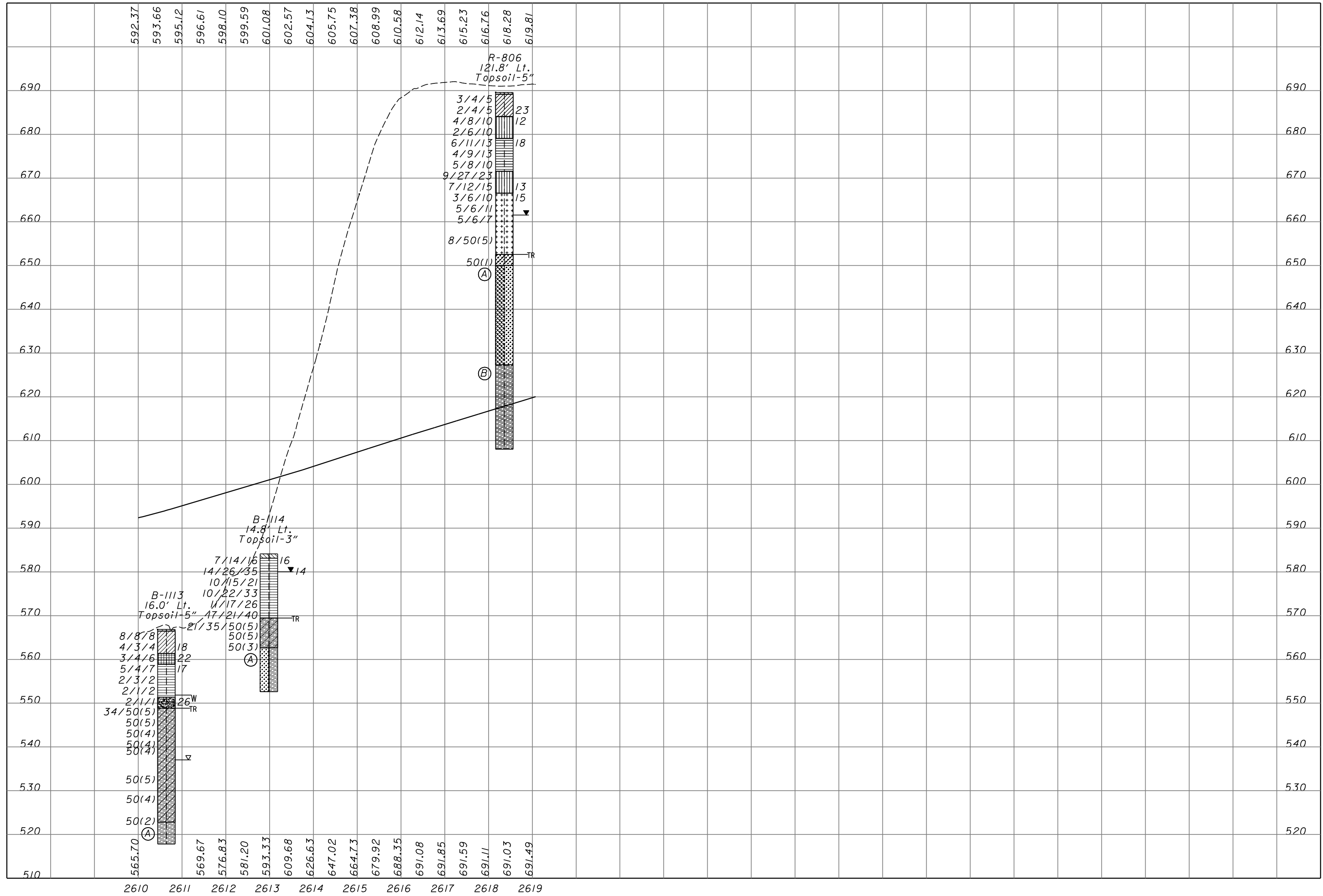
SOIL PROFILE
RAMP B STA. 2610+00 TO STA. 2619+37.35

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210/220



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 CHECKED
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SOIL PROFILE
RAMP B STA. 2610+00 TO STA. 2619+37.35

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B-1113

R-1 Core Loss = 7%, RQD = 58%

Ⓐ Medium hard black SHALE; slightly to moderately weathered, carbonaceous, thinly laminated, slightly fractured.

B-1114

R-1 Core Loss = 6%, RQD = 70%

Ⓐ Soft to medium hard gray SHALE interbedded with SANDSTONE; very fine grained, moderately to highly weathered, micaceous, argillaceous, medium bedded, moderately fractured.

R-806

R-1 No Core Loss, RQD = 88%

Ⓐ Soft to hard gray SANDSTONE interbedded with SILTSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, medium bedded to thickly bedded, moderately fractured, iron stained.

R-2 Core Loss = 4%, RQD = 49%

R-3 No Core Loss, RQD = 53%

R-4 Core Loss = 2%, RQD = 79%

Ⓑ Soft gray SHALE; very fine grained, highly weathered, arenaceous, micaceous, thinly laminated to laminated, very fissile, highly fractured to broken.

R-5 Core Loss = 1%, RQD = 68%

DRAWN
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CHECKED
AEN

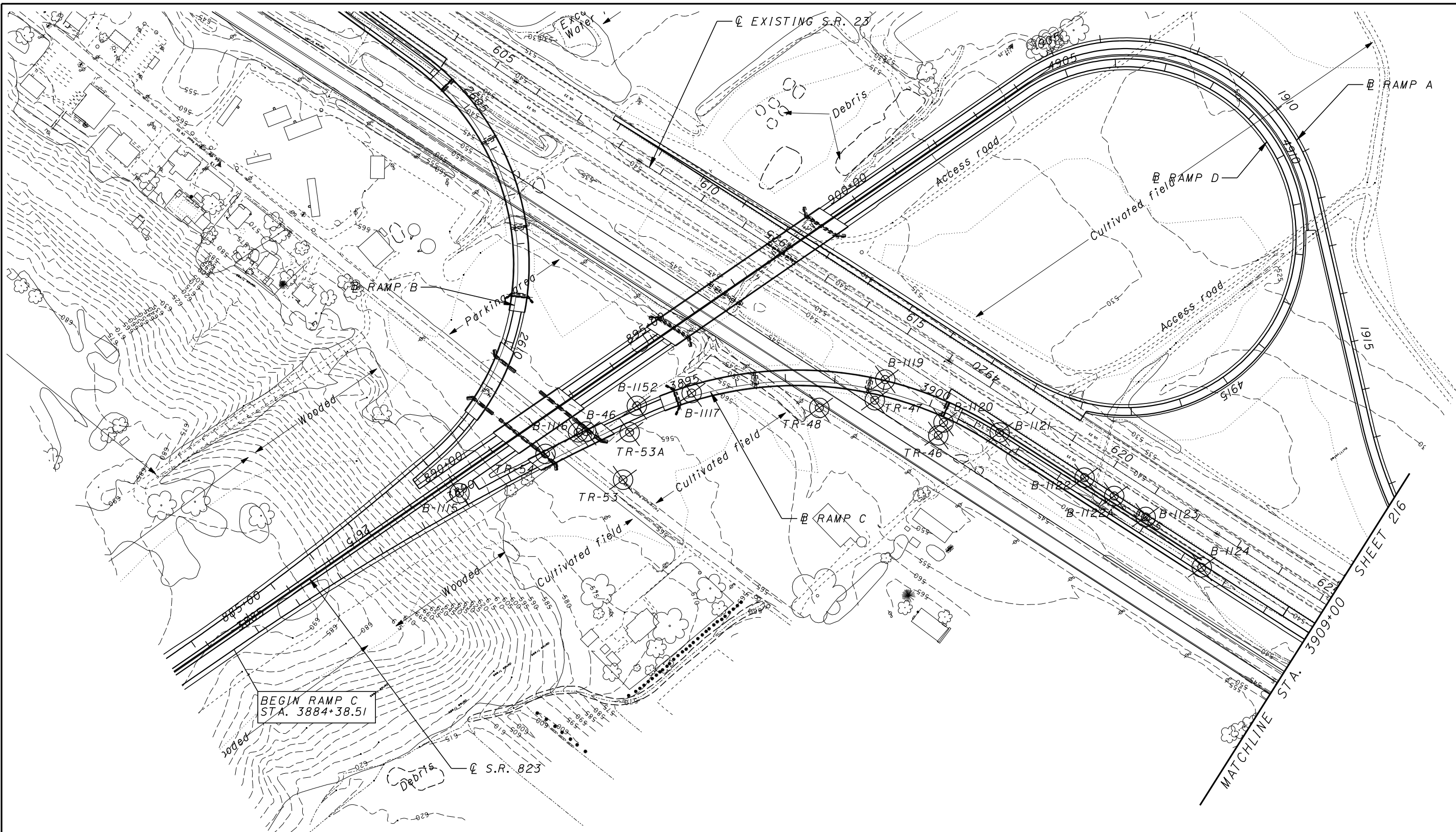
SOIL PROFILE
RAMP B STA. 2610+00 TO STA. 2619+37.35

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212/220



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NOTE: BORINGS B-46, B-1116, B-1117A, B-1152, TR-46 TO TR-48, TR-53, TR-53A, AND TR-54 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS

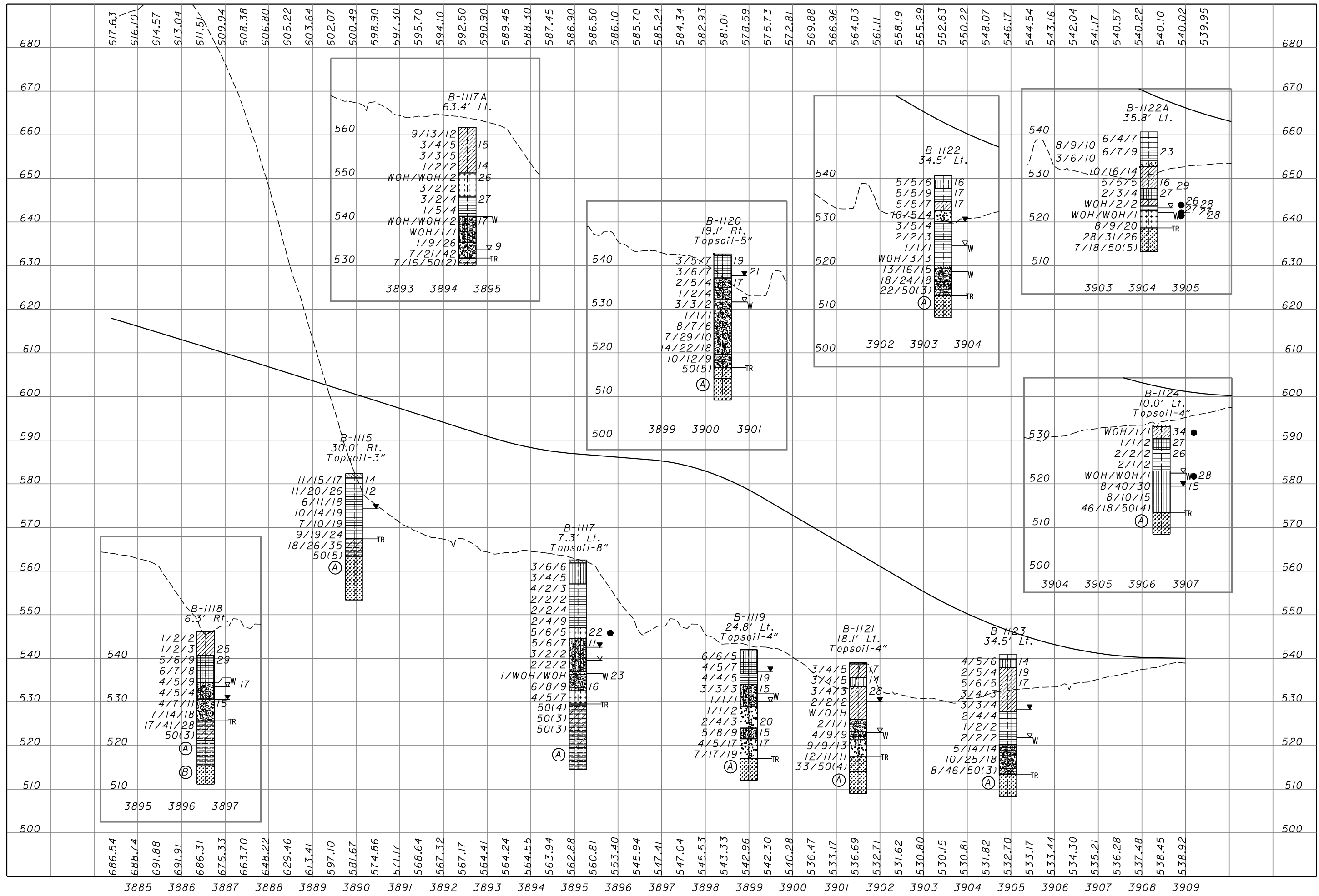
RAMP A BORINGS SHOWN ON SHEETS 202 AND 205
 RAMP B BORINGS SHOWN ON SHEETS 207 AND 210
 RAMP D BORINGS SHOWN ON SHEET 218



 HORIZONTAL SCALE IN FEET
 DRAWN: RLS
 CHECKED: AEN

SOIL PROFILE
RAMP C STA. 3884+38.51 TO STA. 3909+00

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SOIL PROFILE
RAMP C STA. 3884+38.51 TO STA. 3909+00

SCI-823-10.13

B-1115

R-I Core Loss = 2%, RQD = 71%

- Ⓐ Very soft to soft gray SANDSTONE; very fine grained, highly weathered, micaceous, laminated to thinly bedded, moderately fractured to broken, contains ferric band of very fine sandstone; contains moderate to abundant argillaceous laminations.

B-1119

R-I Core Loss = 2%, RQD = 30%

- Ⓐ Very hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to medium bedded, highly fractured, iron-staining

B-1122

R-I Core Loss = 10%, RQD = 65%

- Ⓐ Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly bedded to massive, slightly fractured.

B-1117

R-I No Core Loss, RQD = 28%

- Ⓐ Soft black SHALE; moderately weathered, carbonaceous, laminated, moderately fractured.

B-1120

R-I Core Loss = 10%, RQD = 17%

- Ⓐ Hard gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, argillaceous, laminated to medium bedded, moderately to highly fractured.

B-1123

R-I Core Loss = 17%, RQD = 42%

- Ⓐ Hard gray SANDSTONE; fine grained, moderately to highly weathered, micaceous, argillaceous, medium bedded, highly fractured to broken, iron-staining.

B-1118

R-I No Core Loss, RQD = 78%

- Ⓐ Medium hard black SHALE; moderately weathered, carbonaceous, laminated, slightly to moderately fractured.
- Ⓑ Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, micaceous, thickly bedded, slightly fractured.

B-1121

R-I Core Loss = 5%, RQD = 65%

- Ⓐ Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, medium bedded, moderately fractured.

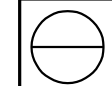
B-1124

R-I Core Loss = 20%, RQD = 70%

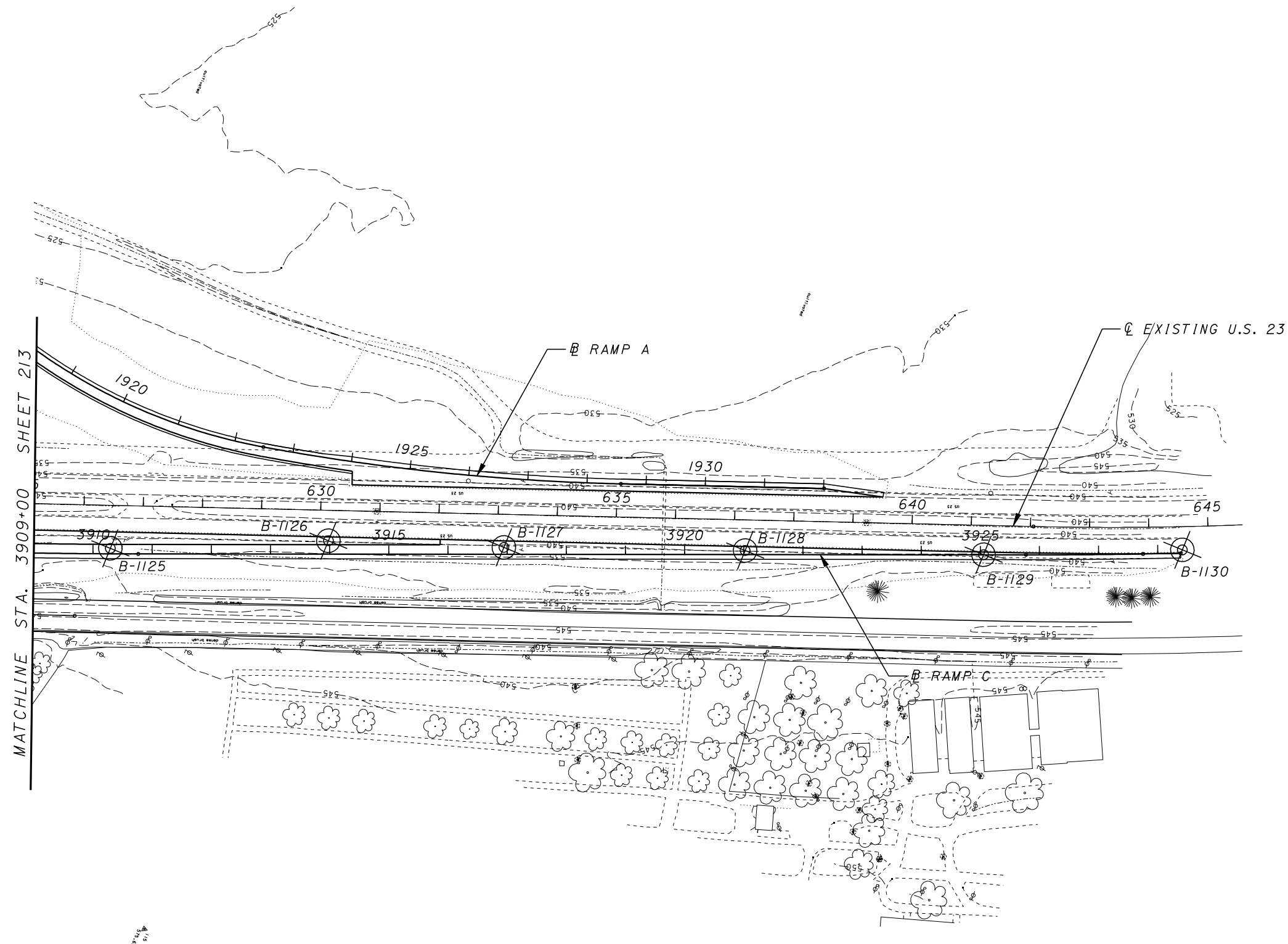
- Ⓐ Hard gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, medium bedded, slightly fractured, iron-staining.



SOIL PROFILE
RAMP C STA. 3884+38.51 TO STA. 3909+00

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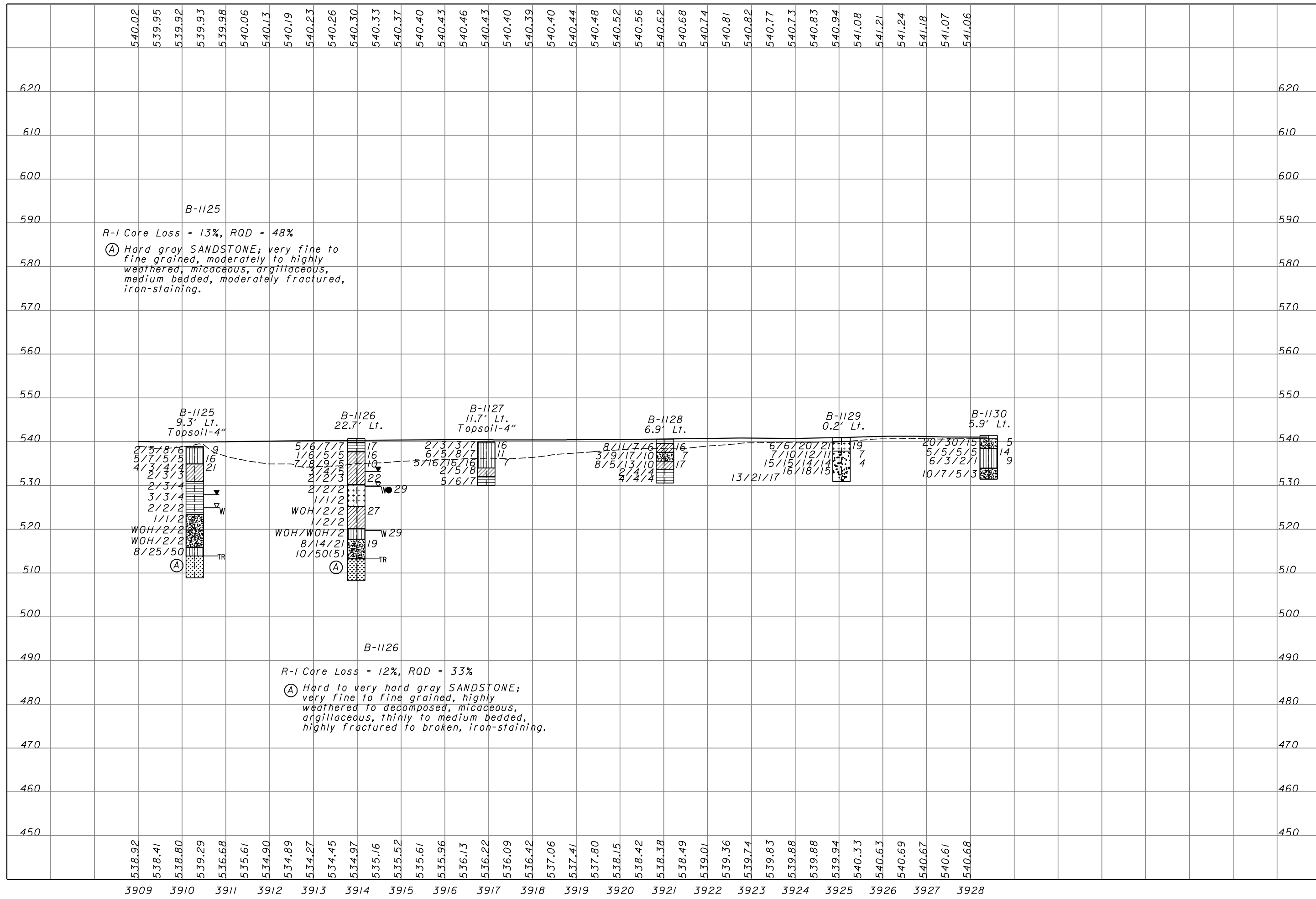
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 HORIZONTAL SCALE IN FEET
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 CHECKED: AEN

SOIL PROFILE
RAMP C STA. 3909+00 TO STA. 3928+38.75

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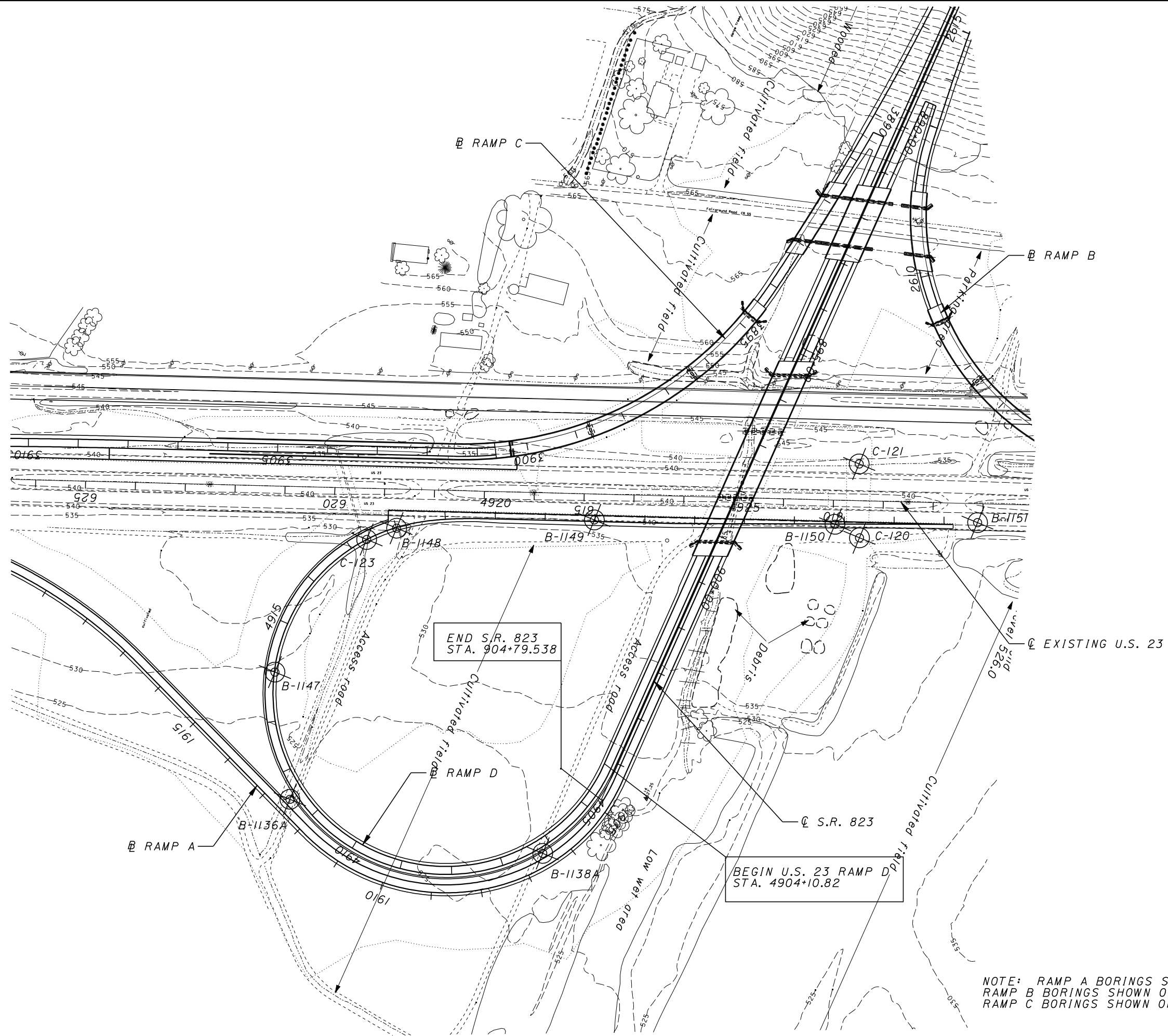


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SOIL PROFILE
RAMP C STA. 3909+00 STA. 3928+38.75

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NOTE: RAMP A BORINGS SHOWN ON SHEETS 202 AND 205.
RAMP B BORINGS SHOWN ON SHEETS 207 AND 210.
RAMP C BORINGS SHOWN ON SHEETS 213 AND 216.



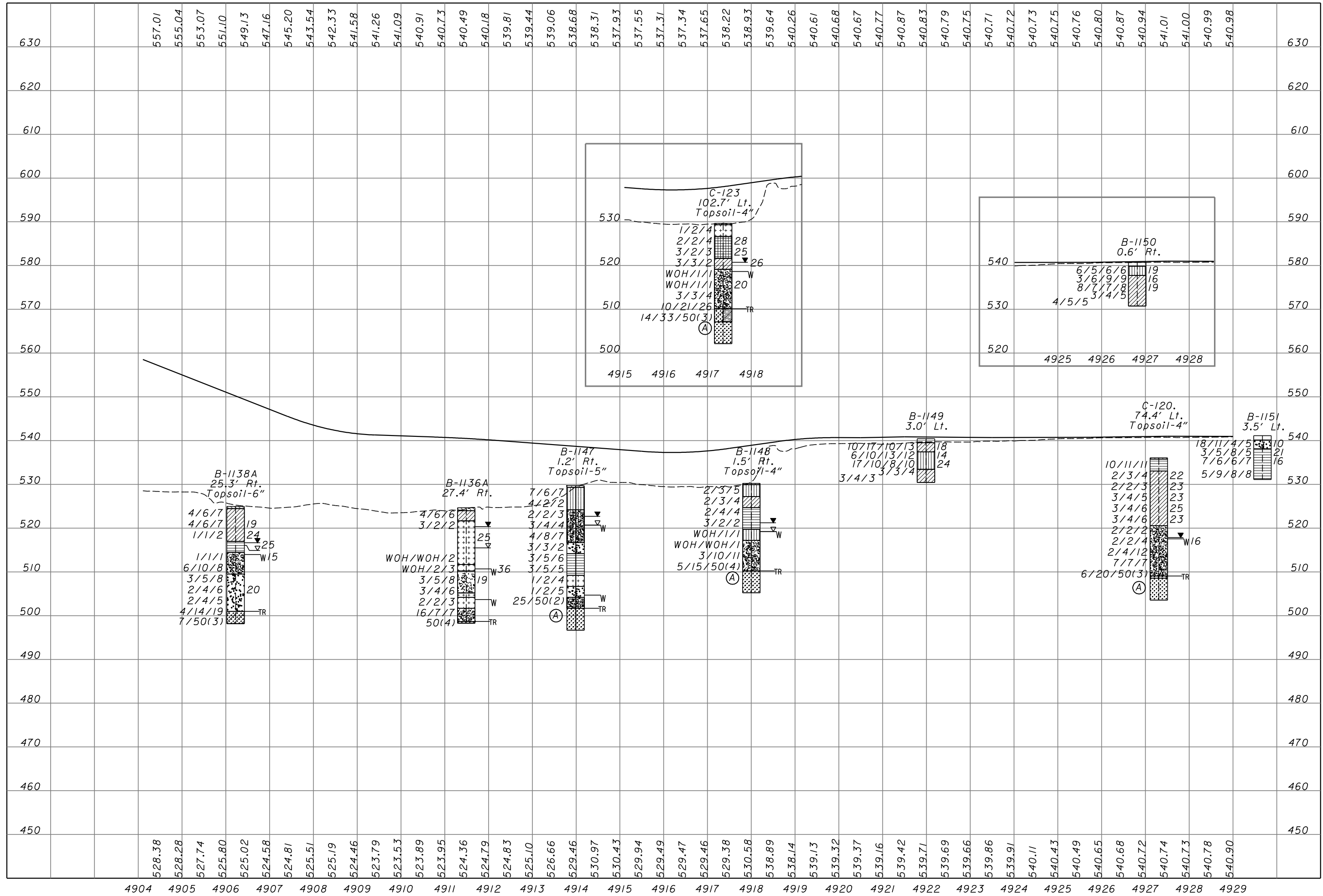
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RAMP D STA. 4904+10.82 TO STA. 4929+00.44

218/220



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DESIGNED
 RLS
 CHECKED
 AEN

SOIL PROFILE
RAMP D STA. 4904+10.820 TO STA. 4929+00.44

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B-1147

R-I Core Loss = 13%, RQD = 43%

(A) Hard gray SANDSTONE; fine grained, moderately to highly weathered, argillaceous, micaceous, massive, highly fractured.

C-123

R-I Core Loss = 8%, RQD = 45%

(A) Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly bedded, moderately fractured, with typical low angle fractures.

B-1148

R-I No Core Loss, RQD = 60%

(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly bedded to medium bedded, highly fractured.

C-120

R-I No Core Loss, RQD = 61%

(A) Medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thinly bedded, moderately fractured, with typical low angle clay-filled fractures.

DRAWN
RLS

CHECKED
AEN

RAMP D STA. 4904+10.820 TO STA. 4929+00.44

SCI-823-10.13

220/220

