

LEGEND FOR PROJECT - AVERAGE RESULTS OF TESTS - 443 SAMPLES TESTED

DESCRIPTION	ODOT CLASS	% AGG.	% C.SAND	% F.SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL WITH SAND	A-1-a(0)									
GRAVEL WITH SAND	A-1-b(0)	30	35	22	13		NP	NP	7	2
GRAVEL WITH SAND AND SILT	A-2-4(0)	20	11	40	13	16	26	9	13	4
GRAVEL W/ SAND, SILT AND CLAY	A-2-6									
FINE SAND	A-3(0)	0	11	83	6		NP	NP	15	7
COARSE AND FINE SAND	A-3a(0)	0	7	77	16		NP	NP	13	24
SANDY SILT	A-4a(4)	13	12	19	38	18	24	6	13	72
SILT	A-4b(8)	3	4	11	62	20	26	7	17	73
SILT AND CLAY	A-6a(8)	3	4	12	48	33	31	13	21	57
SILTY CLAY	A-6b(10)	3	2	10	47	38	36	18	22	31
ELASTIC CLAY	A-7-5(18)	1	1	2	14	82	60	29	34	8
CLAY	A-7-6(19)	0	1	2	20	77	58	34	30	165

VISUALLY CLASSIFIED MATERIALS

WEATHERED CLAY SHALE	CLAYSTONE
WEATHERED SANDSTONE	SANDSTONE
WEATHERED SILTSTONE	SHALE
WEATHERED SHALE	SILTSTONE
WEATHERED INTERBEDDED SANDSTONE/SHALE	INTERBEDDED SANDSTONE/SILTSTONE
BRECCIA	INTERBEDDED SANDSTONE/SHALE
CLAY SHALE	TOPSOIL

- 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

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

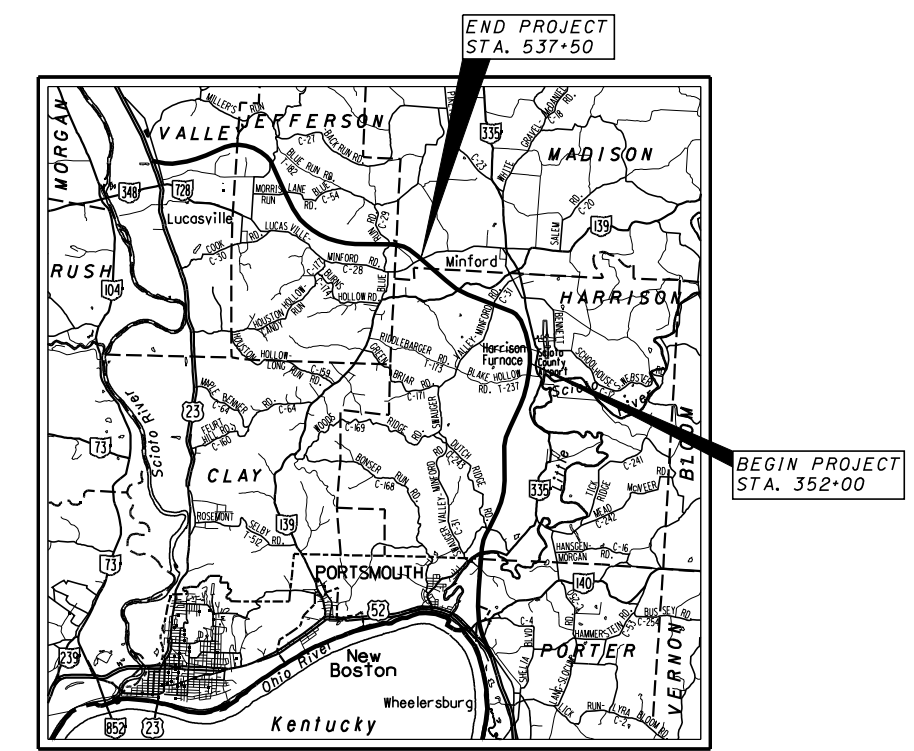
WGH WEIGHT OF HAMMER

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

- CLEAR CUT AREA
- AREA OF SLOPE INSTABILITY

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.



- PORTION TO BE IMPROVED
- INTERSTATE & DIVIDED HIGHWAY
- UNDIVIDED STATE & FEDERAL ROUTES
- OTHER ROADS

GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF THE SOILS INVESTIGATION FOR THE CENTER PORTION (PHASE I) OF THE PROPOSED STATE ROUTE 823 ROADWAY. PHASE I BEGINS APPROXIMATELY 2400 FEET SOUTH OF EXISTING SHUMWAY HOLLOW ROAD (TOWNSHIP ROAD 234) AND ENDS ESSENTIALLY AT AND INCLUDES LUCASVILLE MINFORD ROAD (PROPOSED STATE ROUTE 728) IN SCIOTO COUNTY, OHIO. INTERCHANGES ARE PLANNED AT SHUMWAY HOLLOW ROAD AND LUCASVILLE MINFORD ROAD AND THREE BRIDGES ARE INCLUDED IN PHASE I. APPROXIMATELY 3.4 MILES OF NEW ROADWAY AND 3.4 MILES OF NEW RAMPS ARE PLANNED AND 1.2 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 THIS TIME. HOWEVER, ONLY ONE OF THESE BORINGS, PB-33, WAS LOCATED WITHIN 600 FEET OF THE PROPOSED SR 823 ALIGNMENT. BORING PB-33 IS 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 5.

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 760 FEET IN THE SOUTHERN 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 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. 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 1 MILE WEST OF CLARKTOWN IN THE CENTRAL PART OF THE COUNTY AND AT SCIOTOVILLE IN THE SOUTH.

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SOIL PROFILE

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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, THESE ROCKS NOT SEEN OUTCROPPING WITHIN THE NEAR OR WITHIN 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 CONSISTS 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 UNDERLYING 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

ONE AREA WITHIN THE SHUMWAY HOLLOW INTERCHANGE AREA SHOWED RECENT SIGNS OF SIGNIFICANT INSTABILITY NEAR OR WITHIN THE LIMITS OF CONSTRUCTION. SLOPE INSTABILITY WAS CHARACTERIZED AS EITHER AN ACTIVE LANDSLIDE OR SOIL CREEP. ACTIVE LANDSLIDES WERE CHARACTERIZED AS MOVEMENTS OF OVERBURDEN THICKNESSES OF TWO FEET OR MORE DOWN SLOPE AND SHOWED INDICATIONS OF RECENT ACTIVITY. SLOPE INSTABILITY AND MOVEMENT IN AREAS WITH AN OVERBURDEN THICKNESS OF LESS THAN TWO FEET IS CHARACTERIZED AS SOIL CREEP. IN THE STEEP TERRAIN OF SCIOTO COUNTY, SOIL CREEP IS COMMON. LANDSLIDES AND SOIL CREEP WERE FIRST IDENTIFIED USING AERIAL PHOTOGRAPHY AND THEN VERIFIED DURING THE FIELDWORK. ALL SLOPE INSTABILITY APPEARED TO BE RELATIVELY SHALLOW AND CONTAINED WITHIN THE OVERBURDEN.

THE AERIAL PHOTOGRAPHY SHOWED HUMMOCKY TERRAIN FROM STATION 352+00 CONTINUING TO STATION 356+00. THIS AREA EXHIBITED SIGNS OF RECENT INSTABILITY. THIS IS MOST LIKELY DUE TO EROSION AND SHALLOW SOIL CREEP ALONG THE STEEP DRAINAGE CHANNELS OF INTERMITTENT STREAMS IN THE AREA.

THE LAND USAGE ALONG THE PROPOSED STATE ROUTE 823 ALIGNMENT IS PRIMARILY FOREST WITH SOME PASTURE AND CULTIVATED FIELDS. SOME RESIDENTIAL AND AGRICULTURAL DEVELOPMENT IS PRESENT ALONG THE CROSSROADS.

EXPLORATION

A. SR 823 MAINLINE

THE SUBSURFACE INVESTIGATION FOR THE PHASE I MAINLINE CONSISTED OF DRILLING A TOTAL OF 164 BORINGS. THE BORINGS WERE DRILLED BETWEEN JULY 9, 2004 AND SEPTEMBER 14, 2006. THE BORINGS WERE EXTENDED TO DEPTHS OF 8.0 TO 173.0 FEET AND WERE DRILLED WITH BOTH ATV-MOUNTED AND TRUCK-MOUNTED DRILL RIGS.

B. SHUMWAY HOLLOW ROAD INTERCHANGE (TR 234)

THE SUBSURFACE INVESTIGATION FOR THE SHUMWAY HOLLOW ROAD INTERCHANGE WAS BETWEEN STATIONS 352+00 AND 416+00 ON SR 823 CONSISTED OF 107 BORINGS DRILLED BETWEEN THE DATES OF JULY 27, 2004 AND SEPTEMBER 27, 2006. THE BORINGS WERE EXTENDED TO DEPTHS OF 6.0 TO 85.0 FEET AND WERE DRILLED WITH BOTH ATV-MOUNTED AND TRUCK-MOUNTED DRILL RIGS.

C. LUCASVILLE-MINFORD ROAD INTERCHANGE (CR 28)

THE SUBSURFACE INVESTIGATION FOR THE LUCASVILLE-MINFORD ROAD INTERCHANGE (STATIONS 509+50 TO 542+00) CONSISTED OF DRILLING EIGHT BORINGS, B-1201 TO B-1208, ON LUCASVILLE-MINFORD ROAD AND 27 BORINGS, B-1209 TO B-1235, FOR THE RAMPS BETWEEN THE DATES OF JULY 21 AND SEPTEMBER 30, 2005. THE BORINGS WERE EXTENDED TO DEPTHS BETWEEN 10.0 AND 110.0 FEET AND WERE DRILLED WITH BOTH ATV-MOUNTED AND TRUCK-MOUNTED DRILL RIGS. AN ADDITIONAL 22 BORINGS, R-446 TO R-469, WERE DRILLED FOR THE MAINLINE EMBANKMENT; FOUR BORINGS, TR-11 TO TR-14, WERE DRILLED FOR THE PROPOSED BRIDGE OVER LUCASVILLE-MINFORD ROAD; AND 11 BORINGS, C-22, C-23, AND C-55 TO C-63, WERE DRILLED FOR CULVERTS IN THE INTERCHANGE AREA BETWEEN THE DATES OF MAY 27, 2004 AND SEPTEMBER 6, 2006. THESE ADDITIONAL BORINGS RANGED IN DEPTH FROM 20.0 TO 125.0 FEET.

BORINGS R-449, R-451, R-452, R-455, AND R-457 WERE REDRILLED TO GREATER DEPTHS OF 120.0 TO 155.0 FEET BETWEEN OCTOBER 19 AND OCTOBER 31, 2005 DUE TO A CHANGE IN THE PROFILE GRADE. THESE BORINGS WERE REDESIGNATED R-2449, R-2451, R-2452, R-2455, AND R-2457, RESPECTIVELY.

INVESTIGATIONAL FINDINGS

A. SR 823 MAINLINE

AT THE SURFACE, THE BORINGS ENCOUNTERED TOPSOIL RANGING IN THICKNESS FROM 1 TO 12 INCHES. THE AVERAGE THICKNESS OF TOPSOIL WAS 5 INCHES.

BENEATH THE TOPSOIL LAYERS, BORINGS LOCATED ON THE SLOPES AND DRILLED FOR THE ROADWAY GENERALLY ENCOUNTERED SOILS RANGING FROM SILT (A-4B) TO CLAY (A-7-6) TO DEPTHS OF 5 TO 50 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK. SOIL CONDITIONS FOR SELECTED PHASE I FILL SECTION BORINGS ARE OUTLINED BELOW.

FOR THE SECTION BETWEEN STATIONS 434+00 AND 449+00, BORING R-379 GENERALLY ENCOUNTERED HARD SILT (A-4b) TO A DEPTH OF 11.0 FEET BELOW THE GROUND SURFACE. BENEATH THIS LAYER, VERY STIFF SANDY SILT (A-4a) WAS ENCOUNTERED TO A DEPTH OF 18.0 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK.

FOR THE SECTION BETWEEN STATIONS 457+00 AND 479+00, BORING R-393 GENERALLY ENCOUNTERED COHESIVE AND COHESIONLESS MEDIUM DENSE/VERY STIFF SANDY SILT (A-4a) TO A DEPTH OF 30.0 FEET BELOW THE GROUND SURFACE. BENEATH THIS LAYER, VERY STIFF SILT (A-4b) WAS ENCOUNTERED TO A DEPTH OF 38.5 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK.

FOR THE SECTION BETWEEN STATIONS 483+50 AND 497+50, BORING B-10 GENERALLY ENCOUNTERED STIFF SILT (A-4b) TO A DEPTH OF 8.5 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK.

BETWEEN STATIONS 504+00 AND 507+50, THE SOIL IS VERY THIN. BORING R-439 GENERALLY ENCOUNTERED LOOSE TO MEDIUM STIFF SANDY SILT (A-4a) TO A DEPTH OF 4.5 FEET BELOW THE GROUND SURFACE, AT THE TOP OF BEDROCK.

BEDROCK WAS ENCOUNTERED IN MANY OF THE BORINGS AND CONFIRMED BY CORING IN 76 BORINGS. BEDROCK ENCOUNTERED IN THE BORINGS CORRELATES WELL WITH THE AVAILABLE GEOLOGIC REFERENCES. THE CORES OBTAINED CONSIST PRIMARILY OF SANDSTONE AND OCCASIONALLY SHALE, 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 3 FEET. THE BEDROCK ENCOUNTERED IN THE CORES GENERALLY CONSISTED OF MEDIUM HARD TO HARD, FINE-GRAINED SANDSTONE, WHICH IS SLIGHTLY TO HIGHLY WEATHERED.

SEEPAGE WAS OBSERVED IN SEVERAL BORINGS AT DEPTHS RANGING FROM 5 TO 58.5 FEET BELOW THE GROUND SURFACE. GROUNDWATER CONDITIONS FOR SELECTED PHASE I FILL SECTIONS ARE OUTLINED BELOW.

BETWEEN STATIONS 434+00 AND 449+00, NO SEEPAGE OR GROUNDWATER LEVELS WERE OBSERVED IN ANY OF THE BORINGS PRIOR TO ADDING DRILLING WATER FOR CORING OPERATIONS. FINAL WATER LEVELS (INCLUDING DRILLING WATER) WERE MEASURED FROM 3.5 TO 17 FEET BELOW THE GROUND SURFACE.

BETWEEN STATIONS 457+00 AND 479+00, SEEPAGE WAS ENCOUNTERED IN 9 BORINGS. IN THESE BORINGS, SEEPAGE WAS FIRST ENCOUNTERED RANGING FROM 2.5 TO 19 FEET BELOW THE GROUND SURFACE. GROUNDWATER LEVELS WERE OBSERVED IN TWO BORINGS PRIOR TO ADDING DRILLING WATER FOR CORING OPERATIONS. IN BOTH BORINGS, GROUNDWATER WAS ENCOUNTERED AT 20 FEET BELOW THE GROUND SURFACE. FINAL WATER LEVELS (INCLUDING DRILLING WATER) WERE MEASURED FROM 0.5 TO 17.4 FEET BELOW THE GROUND SURFACE.

BETWEEN STATIONS 483+50 AND 497+50, SEEPAGE WAS ENCOUNTERED IN 4 BORINGS. IN THESE BORINGS, SEEPAGE WAS FIRST ENCOUNTERED RANGING FROM 3 TO 6.3 FEET BELOW THE GROUND SURFACE. NO GROUNDWATER LEVELS WERE OBSERVED IN ANY OF THE BORINGS PRIOR TO ADDING DRILLING WATER FOR CORING OPERATIONS. FINAL WATER LEVELS (INCLUDING DRILLING WATER) WERE MEASURED FROM 1.6 TO 16.3 FEET BELOW THE GROUND SURFACE.

BETWEEN STATIONS 504+00 AND 507+50, NO SEEPAGE OR GROUNDWATER LEVELS WERE OBSERVED IN ANY OF THE BORINGS PRIOR TO ADDING DRILLING WATER FOR CORING OPERATIONS. FINAL WATER LEVELS (INCLUDING DRILLING WATER) WERE MEASURED FROM 4.8 TO 6.8 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. SHUMWAY HOLLOW ROAD INTERCHANGE (TR 234)

THE SOILS AT THE SHUMWAY HOLLOW ROAD INTERCHANGE SITE ARE OF THE MINFORD SILT COMPLEX, GENERALLY COMPRESSIBLE, HIGHLY PLASTIC CLAYS. AT THIS SITE, THE MINFORD DEPOSITS ARE RELATIVELY THICK, EXTENDING TO BEDROCK THAT WAS ENCOUNTERED AT DEPTHS OF 2 TO 74 FEET BELOW THE GROUND SURFACE. MORE DETAILS REGARDING THE SUBSURFACE CONDITIONS ARE PRESENTED IN THE FOLLOWING PARAGRAPHS.

AT THE SURFACE, THE INTERCHANGE BORINGS ENCOUNTERED 2 TO 12 INCHES OF TOPSOIL. THE AVERAGE THICKNESS OF TOPSOIL WAS 6 INCHES. BELOW THE TOPSOIL THE BORINGS ENCOUNTERED BROWN SANDY SILT (A-4a), SILT (A-4b), BROWN SILT AND CLAY (A-6a), BROWN SILT (A-4b), OR BROWN SILTY CLAY (A-6b) TO DEPTHS OF 2 TO 21 FEET OVERLYING BROWN OR GRAY STIFF TO HARD ELASTIC CLAY (A-7-5) AND CLAY (A-7-6) TO DEPTHS OF 8 TO 57 FEET. IN MANY OF THE BORINGS, A LAYER OF DENSE SILT, SAND, OR GRAVEL WAS ENCOUNTERED BENEATH THESE SOILS. THE GRANULAR MATERIAL, WHEN ENCOUNTERED, RANGED IN THICKNESS BETWEEN 2 AND 19.5 FEET. WEATHERED SILTSTONE, SHALE, OR SANDSTONE WAS ENCOUNTERED BENEATH THE GRANULAR LAYERS.

BORINGS WERE ALSO TAKEN ALONG THE PROPOSED ALIGNMENT OF RELOCATED SHUMWAY HOLLOW ROAD, BETWEEN STATIONS 10+91 AND 41+17. THESE BORINGS WERE DRILLED TO DEPTHS OF 15.5 TO 85 FEET. THE BORINGS ENCOUNTERED 3 TO 13 INCHES OF ASPHALT CONCRETE AND AGGREGATE BASE OVERLYING GRANULAR AND COHESIVE TOP LAYERS CONSISTING MAINLY OF GRAVEL WITH SAND AND SILT (A-2-4), SANDY SILT (A-4a), SILT (A-4b), SILT AND CLAY (A-6a), SILTY CLAY (A-6b). BENEATH THE TOP SOIL LAYERS, THE BORINGS ENCOUNTERED MINFORD SILTS UNDERLAIN BY ROCK TO THE COMPLETION DEPTH OF THE BORINGS.

BEDROCK WAS ENCOUNTERED IN MANY OF THE BORINGS AND CONFIRMED BY CORING IN 104 BORINGS. THE BEDROCK CONSISTED MAINLY OF MEDIUM HARD TO HARD SLIGHTLY TO HIGHLY WEATHERED SILTSTONE, SHALE, OR SANDSTONE. THE RQD OF THE CORED SAMPLES RANGED FROM 12% TO 100% WITH AN AVERAGE OF 80%.

SEEPAGE WAS ENCOUNTERED IN 59 BORINGS BETWEEN APPROXIMATE DEPTHS OF 3.5 AND 60.0 FEET. THERE WERE NO MEASURABLE WATER LEVELS IN 38 BORINGS PRIOR TO ROCK CORING. MEASURABLE WATER LEVELS PRIOR TO ROCK CORING WHEN ENCOUNTERED RANGED BETWEEN DEPTHS OF 8.5 AND 42.0 FEET. WATER WAS USED DURING ROCK CORING AND MASKED ANY SEEPAGE ZONES THAT MIGHT EXIST IN THE ROCK. MEASURABLE WATER LEVELS WERE PRESENT IN 96 BORINGS UPON THE COMPLETION OF CORING BETWEEN APPROXIMATE DEPTHS OF 0.8 AND 53.5 FEET.

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 LEVEL.

C. LUCASVILLE-MINFORD ROAD INTERCHANGE (CR 28)

AT THE GROUND SURFACE, THE INTERCHANGE BORINGS ENCOUNTERED BETWEEN 1 AND 11 INCHES OF TOPSOIL. THE AVERAGE THICKNESS OF TOPSOIL WAS 4 INCHES.

BELOW THE TOPSOIL THE BORINGS GENERALLY ENCOUNTERED STIFF TO VERY STIFF SANDY SILT (A-4a), SILT AND CLAY (A-6a), AND SILTY CLAY (A-6a) TO DEPTHS OF 1.5 TO 15.0 FEET OVERLYING STIFF TO VERY STIFF CLAY (A-7-6) TO DEPTHS OF 3.0 TO 73.5 FEET. THE CLAY (A-7-6) WAS CONSIDERED SOFT TO MEDIUM STIFF IN APPROXIMATELY 20 OF THE BORINGS, GENERALLY AT DEPTHS BELOW 15.0 FEET. A MEDIUM DENSE TO DENSE SANDY SILT (A-4a) OR STIFF TO HARD SANDY SILT (A-4a) AND SILT AND CLAY (A-6a) WERE GENERALLY ENCOUNTERED BELOW THE CLAY (A-7-6). MEDIUM DENSE TO VERY DENSE GRANULAR LAYERS WERE ENCOUNTERED IN ONLY SEVENTEEN OF THE BORINGS, PRIMARILY THOSE DRILLED AT CULVERT LOCATIONS. THESE GRANULAR LAYERS WERE GENERALLY ENCOUNTERED AT DEPTHS BELOW 20.0 FEET.

A MEDIUM STIFF TO STIFF ELASTIC CLAY (A-7-5) WAS ENCOUNTERED IN BORINGS B-1203, B-1213, AND C-57 AT DEPTHS BETWEEN 3.0 AND 18.0 FEET. A MEDIUM STIFF TO HARD OR MEDIUM DENSE TO VERY DENSE SILT (A-4b) WAS ALSO ENCOUNTERED IN SEVERAL OF THE BORINGS, BUT GENERALLY AT LEAST 5 FEET ABOVE OR BELOW THE PROPOSED GRADE. FOUR BORINGS ALONG LUCASVILLE-MINFORD ROAD, B-1203, B-1204, B-1207, AND B-1208, ENCOUNTERED SILT (A-4b) WITHIN 5 FEET OF SUBGRADE.

BORINGS WERE ALSO TAKEN ALONG LUCASVILLE-MINFORD ROAD FOR IMPROVEMENTS TO THE ROADWAY. THESE BORINGS WERE DRILLED TO DEPTHS OF 10.0 FEET EACH. THESE BORINGS ENCOUNTERED 3 TO 5 INCHES OF ASPHALT OVERLYING 5 TO 8 INCHES OF AGGREGATE BASE. BENEATH THE PAVEMENT LAYERS, THE BORINGS ENCOUNTERED PRIMARILY STIFF TO VERY STIFF SANDY SILT (A-4a) AND SILT AND CLAY (A-6a) TO THE COMPLETION DEPTHS OF THE BORINGS. A MEDIUM DENSE OR MEDIUM STIFF TO VERY STIFF SILT (A-4b) WAS ENCOUNTERED IN BORINGS B-1203, B-1204, B-1207, AND B-1208 WITHIN FIVE FEET OF SUBGRADE.

A LAYER OF WEATHERED SHALE, SILTSTONE, OR SANDSTONE WAS ENCOUNTERED ABOVE COMPETENT BEDROCK. THE TOP OF BEDROCK VARIED BETWEEN 3.4 AND 79.5 FEET AND WAS CONFIRMED BY CORING IN 47 OF THE 72 BORINGS. THE BEDROCK CONSISTED PRIMARILY OF MEDIUM HARD TO HARD SANDSTONE WITH A LESSER AMOUNTS OF SOFT TO MEDIUM HARD SHALE AND SILTSTONE. THE ROCK QUALITY DESIGNATION (RQD) VARIED BETWEEN 25 AND 100 PERCENT BUT GENERALLY WAS GREATER THAN 80 PERCENT.

SEEPAGE WAS GENERALLY FIRST ENCOUNTERED IN THE BORINGS AT DEPTHS BETWEEN 10.5 AND 68.5 FEET, PRIMARILY IN THE AREAS WHERE EMBANKMENT FILL WILL BE PLACED AT THE INTERCHANGE. BORINGS DRILLED IN ROCK CUT SECTIONS GENERALLY DID NOT ENCOUNTER SEEPAGE. IN THE BORINGS WHERE SEEPAGE WAS OBSERVED, THE WATER LEVEL PRIOR TO CORING WAS AT DEPTHS BETWEEN 4.3 AND 74.0 FEET. AT THE COMPLETION OF DRILLING, THE FINAL WATER LEVEL WAS AT DEPTHS BETWEEN 0.5 AND 78.4 FEET. THESE FINAL WATER LEVEL READINGS INCLUDE WATER ADDED DURING ROCK CORING, AND THEREFORE, DO NOT NECESSARILY REFLECT ACTUAL GROUNDWATER CONDITIONS.



CROSS SECTION INDEX

PROJECT INDEX

FROM	TO	PLAN VIEW SHEET	PROFILE SHEET	CUT MAX. (ft.)	FILL EMB. MAX. (ft.)
<i>S.R. 823</i>					
352+00	377+00	34	35	23.0	51.3
377+00	402+00	36	37	--	45.3
402+00	427+00	38	39	93.4	56.2
427+00	452+00	41	42	131.5	69.1
452+00	477+00	44	45	92.6	72.4
477+00	502+00	46	47	82.6	71.0
502+00	527+00	49	50	120.3	32.9
527+00	537+50	52	53	43.5	41.5
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW</i>					
10+24	35+00	54	55	43.8	12.6
35+00	41+17	54	57	--	37.0
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP A</i>					
383+83	403+00	58	60	2.3	51.2
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP B</i>					
366+00	384+65	59	61	--	65.7
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP C</i>					
366+50	384+46	59	62	21.0	39.0
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP D</i>					
384+21	409+50	58	63	31.9	50.6
<i>S.R. 335</i>					
8+26	15+74	54	64	--	--
<i>C.R. 28 - LUCASVILLE MINFORD ROAD</i>					
10+00	37+89	65	65	< 0.5	1.9
<i>C.R. 28 - LUCASVILLE MINFORD ROAD - RAMP A</i>					
514+00	537+36	67	68	107.8	12.5
<i>C.R. 28 - LUCASVILLE MINFORD ROAD - RAMP B</i>					
514+50	531+46	67	70	28.6	10.8
<i>C.R. 28 - LUCASVILLE MINFORD ROAD - RAMP C</i>					
506+30	531+00	67	71	65.2	13.2
531+00	537+50	67	72	--	43.0
<i>C.R. 28 - LUCASVILLE MINFORD ROAD - RAMP D</i>					
517+50	544+77	67	73	101.4	13.0

ROADWAY	STATION	SHEET
<i>S.R. 823</i>	354+00	75
	357+50	76
	364+00	77
	375+50	78
	387+50	79
	391+00	80
	395+00	81
	404+00	82
	407+00	83
	411+00	84
	412+00	85
	414+00	86
	416+50	87
	420+50	88
	424+00	89
	428+00	90
	432+00	91
	434+00	92
438+00	93	
440+00	94	
447+00	95	
448+00	96	
452+00	97	
455+50	98	
459+00	99	
463+00	100	
467+00	101	
472+00	102	
474+00	103	
481+00	104	
485+00	105	
497+00	106	
498+00	107	
501+50	108	
504+50	109	
508+50	110	
512+00	111	
516+00	112	
520+00	114	
524+00	115	
529+00	116	
533+00	117	
535+50	118	
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW</i>	12+00	119
	15+00	120
	26+00	121
	27+00	122
	32+50	123
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP A</i>	391+00	124
	<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP B</i>	
	383+50	125
	<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP C</i>	
379+00	126	
<i>T.R. 234 - RELOCATED SHUMWAY HOLLOW - RAMP D</i>		
386+00	127	
390+00	128	
394+00	129	
398+00	130	
<i>C.R. 28 - LUCASVILLE MINFORD ROAD - RAMP A</i>		
525+00	131	
534+50	132	
<i>C.R. 28 - LUCASVILLE MINFORD ROAD - RAMP C</i>		
508+00	133	
522+00	134	
<i>C.R. 28 - LUCASVILLE MINFORD ROAD - RAMP D</i>		
525+00	135	

SOIL PROFILE

SCI-823-6.81



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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						
			SR-823													SR-823													
R-209	353+46.5 29.0 ft RT	0.0 - 0.2	TOPSOIL (VISUAL)											R-214	364+08.0 54.8 ft LT	0.0 - 0.2	TOPSOIL (VISUAL)												
		0.2 - 3.0	BROWN SANDY SILT (A-4a)													0.2 - 3.5	BROWN AND GRAY SANDY SILT (A-4a)												
		3.0 - 8.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE.													3.5 - 5.0	20	8	14	41	17	25	7	15		A-4a			
		8.0 - 20.0	GRAY SANDSTONE													5.0 - 5.5	BROWN AND GRAY SANDY SILT (A-4a)												
																5.5 - 6.5	SEVERELY WEATHERED GRAY AND BROWN SANDSTONE.												
																6.5 - 20.0	GRAY AND BROWN SANDSTONE												
C-7	353+85.2 100.6 ft LT	0.0 - 0.2	TOPSOIL (VISUAL)													0.0 - 0.3	TOPSOIL (VISUAL)												
		0.2 - 2.0	BROWN SILT AND CLAY (A-6a)													0.3 - 1.0	BROWN SANDY SILT (A-4a)												
		2.0 - 7.0	GRAY SANDSTONE													1.0 - 2.5	5	22	19	46	8	NP	NP	10		A-4a			
C-8	353+88.2 75.5 ft RT	0.0 - 0.2	TOPSOIL (VISUAL)													2.5 - 4.0	BROWN SANDY SILT (A-4a)												
		0.2 - 2.0	BROWN SILT AND CLAY (A-6a)													4.0 - 8.0	BROWN AND GRAY SANDSTONE												
		2.0 - 3.0	BROWN SANDSTONE													8.0 - 15.0	GRAY SANDSTONE												
		3.0 - 8.0	GRAY SANDSTONE																										
C-9	353+89.5 152.3 ft RT	0.0 - 0.3	TOPSOIL (VISUAL)													0.0 - 0.2	TOPSOIL (VISUAL)												
		0.3 - 3.0	BROWN SANDY SILT (A-4a)													0.2 - 3.0	BROWN SANDY SILT (A-4a)												
		3.0 - 4.4	BROWN SANDSTONE													3.0 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE												
		4.4 - 8.0	GRAY SANDSTONE													5.0 - 10.0	GRAY SANDSTONE												
R-210	357+50.8 44.4 ft LT	0.0 - 0.2	TOPSOIL (VISUAL)													0.0 - 0.2	TOPSOIL (VISUAL)												
		0.2 - 5.5	BROWN SILT AND CLAY (A-6a)													0.2 - 3.0	BROWN SILT AND CLAY (A-6a)												
		5.5 - 11.0	BROWN AND GRAY CLAY (A-7-6)													3.0 - 11.0	BROWN CLAY (A-7-6)												
		11.0 - 12.5	0	0	0	9	91	64	40	32					11.0 - 12.5	0	1	1	15	83	63	39	31		A-7-6				
		12.5 - 26.3	BROWN AND GRAY CLAY (A-7-6)													12.5 - 15.5	BROWN CLAY (A-7-6)												
		26.3 - 28.5	BROWN GRAVEL WITH SAND (A-1-b)													15.5 - 21.0	BROWN COARSE AND FINE SAND (A-3a)												
		28.5 - 30.0	11	51	32	6	NP	NP	6					21.0 - 22.5	0	1	82	17	NP	NP	9			A-3a					
		30.0 - 32.0	BROWN GRAVEL WITH SAND (A-1-b)													22.5 - 25.5	ORANGISH BROWN COARSE AND FINE SAND (A-3a)												
		32.0 - 37.0	BROWN SANDY SILT (A-4a)													25.5 - 32.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												
		37.0 - 40.5	SEVERELY WEATHERED GRAY SANDSTONE.													32.0 - 42.0	LIGHT GRAY SANDSTONE												
		40.5 - 50.5	GRAY SANDSTONE																										
R-211	357+51.4 147.6 ft RT	0.0 - 5.5	REDDISH BROWN SANDY SILT (A-4a)													0.0 - 0.3	TOPSOIL (VISUAL)												
		5.5 - 6.0	BROWN SILT AND CLAY (A-6a)													0.3 - 5.5	ORANGISH BROWN SILT AND CLAY (A-6a)												
		6.0 - 7.5	20	12	18	28	22	32	15	16					5.5 - 8.5	ORANGISH BROWN COARSE AND FINE SAND (A-3a)													
		7.5 - 10.5	BROWN SILT AND CLAY (A-6a)													8.5 - 10.0	3	32	53	12	NP	NP	17		A-3a				
		10.5 - 15.5	SEVERELY WEATHERED BROWN SANDSTONE.													10.0 - 15.5	ORANGISH BROWN COARSE AND FINE SAND (A-3a)												
		15.5 - 25.5	GRAYISH BROWN SANDSTONE													15.5 - 17.5	BROWN AND GRAY GRAVEL WITH SAND AND SILT (A-2-4)												
																17.5 - 18.5	SEVERELY WEATHERED BROWN SANDSTONE.												
																18.5 - 28.5	GRAY SANDSTONE												
R-213	361+59.9 15.3 ft RT	0.0 - 3.0	LIGHT BROWN SILT AND CLAY (A-6a)													0.0 - 0.3	TOPSOIL (VISUAL)												
		3.0 - 6.0	BROWN CLAY (A-7-6)													0.3 - 3.0	LIGHT BROWN SILT AND CLAY (A-6a)												
		6.0 - 7.5	0	1	9	23	67	65	43	26					3.0 - 3.5	BROWN CLAY (A-7-6)													
		7.5 - 20.5	BROWN CLAY (A-7-6)													3.5 - 5.0	0	0	0	5	95	72	46	25		A-7-6			
		20.5 - 21.0	ORANGISH BROWN COARSE AND FINE SAND (A-3a)													5.0 - 6.0	BROWN CLAY (A-7-6)												
		21.0 - 22.5	0	0	87	10	3	NP	NP	20					6.0 - 7.5	0	0	1	2	97	74	47	38		A-7-6 *				
		22.5 - 25.5	ORANGISH BROWN COARSE AND FINE SAND (A-3a)													7.5 - 21.8	BROWN CLAY (A-7-6)												
		25.5 - 30.5	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE.													21.8 - 23.5	BROWN FINE SAND (A-3)												
		30.5 - 40.5	GRAY SANDSTONE; VERY FINE SANDSTONE													23.5 - 25.0	0	6	88	6	NP	NP	4		A-3				
R-215	363+95.9 162.4 ft RT	0.0 - 0.2	TOPSOIL (VISUAL)													25.0 - 32.0	BROWN FINE SAND (A-3)												
		0.2 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE.													32.0 - 38.5	DARK BROWN COARSE AND FINE SAND (A-3a)												
		5.0 - 20.0	GRAY AND BROWN SANDSTONE													38.5 - 48.5	GRAY SANDSTONE												

SOIL PROFILE

SCI-823-6.81

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SUMMARY OF SOIL TEST DATA

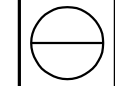
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* 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				
			SR-823													SR-823											
R-221	370+97.1 106.2 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)										VISUAL	C-1	376+71.1 257.9 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)										VISUAL
		0.2 - 6.0	BROWN CLAY (A-7-6)										VISUAL			0.5 - 1.0	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL
		6.0 - 7.5	0	0	1	10	89	68	42	34	A-7-6			1.0 - 2.5	14	16	14	45	11	24	3	19	A-4a				
		7.5 - 8.0	BROWN CLAY (A-7-6)										VISUAL			2.5 - 4.5	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL
		8.0 - 8.5	LIGHT BROWN COARSE AND FINE SAND (A-3a)										VISUAL			4.5 - 9.5	GRAY SANDSTONE										VISUAL
		8.5 - 10.0	0	0	84	16	NP	NP	1	A-3a		R-321	379+12.0 6.0 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)										VISUAL		
		10.0 - 21.0	LIGHT BROWN COARSE AND FINE SAND (A-3a)										VISUAL			0.4 - 6.0	BROWN SILTY CLAY (A-6b)										VISUAL
		21.0 - 31.0	LIGHT BROWN SANDSTONE										VISUAL			6.0 - 7.5	0	1	57	42	35	16	19	A-6b			
C-4	373+36.6 249.8 ft. RT	0.0 - 0.5	TOPSOIL (VISUAL)										VISUAL			7.5 - 8.0	BROWN SILTY CLAY (A-6b)										VISUAL
		0.5 - 1.0	DARK GRAY SILT (A-4b)										VISUAL			8.0 - 13.0	ORANGISH BROWN COARSE AND FINE SAND (A-3a)										VISUAL
		1.0 - 2.5	5	11	11	58	15	29	5	16	A-4b			13.0 - 13.5	LIGHT BROWN CLAY (A-7-6)										VISUAL		
		2.5 - 3.5	DARK GRAY SILT (A-4b)										VISUAL			13.5 - 15.0	0	1	2	22	75	59	35	40	A-7-6		
		3.5 - 5.0	15	15	22	35	13	19	2	10	A-4a			15.0 - 15.5	LIGHT BROWN CLAY (A-7-6)										VISUAL		
		5.0 - 5.5	MOTTLED BROWN AND GRAY SANDY SILT (A-4a)										VISUAL			15.5 - 18.5	BROWN SANDY SILT (A-4a)										VISUAL
		5.5 - 10.5	BROWN SANDSTONE										VISUAL			18.5 - 25.0	GRAY SANDSTONE										VISUAL
C-3	374+20.8 131.2 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)										VISUAL	B-4	383+66.6 64.9 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)										VISUAL
		1.0 - 2.5	0	3	12	65	20	22	5	16	A-4b			0.3 - 3.5	BROWN SILT AND CLAY (A-6a)										VISUAL		
		2.5 - 3.5	BROWN SILT (A-4b)										VISUAL			3.5 - 5.0	3	6	8	44	39	29	13	15	A-6a		
		3.5 - 5.0	9	25	19	32	15	21	2	12	A-4a			5.0 - 6.0	BROWN CLAY (A-7-6)										VISUAL		
		5.0 - 6.5	BROWN SANDY SILT (A-4a)										VISUAL			6.0 - 7.5	3	2	4	27	64	45	25	23	A-7-6		
		6.5 - 8.6	BROWN AND GRAY SANDSTONE										VISUAL			7.5 - 8.0	BROWN SILT AND CLAY (A-6a)										VISUAL
		8.6 - 20.0	GRAY SANDSTONE										VISUAL			8.0 - 8.2	2	5	8	43	42	31	14	18	A-6a		
R-318	375+20.0 48.4 ft. RT	0.0 - 0.3	ASPHALT CONCRETE (VISUAL)										VISUAL			8.2 - 10.0	0	8	89	3	NP	NP	-	A-3			
		0.3 - 5.5	BROWNISH GRAY SILT (A-4b)										VISUAL			10.0 - 13.5	BROWN FINE SAND (A-3)										VISUAL
		5.5 - 9.0	SEVERELY WEATHERED GRAY SANDSTONE										VISUAL			13.5 - 15.0	0	0	83	17	NP	NP	18	A-3a			
		9.0 - 19.0	GRAY SANDSTONE										VISUAL			15.0 - 22.5	BROWN COARSE AND FINE SAND (A-3a)										VISUAL
															22.5 - 25.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)										VISUAL	
															25.5 - 30.5	GRAY SANDSTONE										VISUAL	
R-317	375+24.5 159.5 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)										VISUAL	B-3	383+71.2 1.7 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)										VISUAL
		0.3 - 3.0	BROWN SANDY SILT (A-4a)										VISUAL			0.4 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL
		3.0 - 8.5	BROWN SILT AND CLAY (A-6a)										VISUAL			3.5 - 4.5	2	5	9	48	36	25	10	13	A-4a		
		8.5 - 13.0	BROWN GRAVEL WITH SAND (A-1-b)										VISUAL			4.5 - 6.0	BROWN CLAY (A-7-6)										VISUAL
		13.0 - 15.0	SEVERELY WEATHERED BROWNISH GRAY SANDSTONE										VISUAL			6.0 - 7.5	0	1	2	11	86	63	36	26	A-7-6		
		15.0 - 25.0	GRAY SANDSTONE										VISUAL			7.5 - 8.0	BROWN CLAY (A-7-6)										VISUAL
C-2	376+14.9 174.2 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)										VISUAL			8.0 - 10.0	0	0	1	9	90	60	34	31	A-7-6		
		0.4 - 1.0	BROWN SANDY SILT (A-4a)										VISUAL			10.0 - 12.0	0	0	3	26	71	44	25	28	A-7-6		
		1.0 - 2.5	15	15	16	35	19	23	7	12	A-4a			12.0 - 14.0	BROWN CLAY (A-7-6)										VISUAL		
		2.5 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL			14.0 - 16.0	BROWN COARSE AND FINE SAND (A-3a)										VISUAL
		3.5 - 5.0	5	9	18	48	20	23	5	13	A-4a			16.0 - 17.5	0	1	80	19	NP	NP	10	A-3a					
		5.0 - 6.0	BROWN SANDY SILT (A-4a)										VISUAL			17.5 - 30.0	BROWN COARSE AND FINE SAND (A-3a)										VISUAL
		6.0 - 7.5	2	6	16	47	29	25	8	13	A-4a			30.0 - 35.0	GRAY SANDSTONE										VISUAL		
		7.5 - 8.5	BROWN SANDY SILT (A-4a)										VISUAL														
		8.5 - 10.0	1	8	29	45	17	24	3	18	A-4a																
		10.0 - 10.3	BROWN SANDSTONE										VISUAL														
		10.3 - 20.0	GRAY SANDSTONE										VISUAL														

SOIL PROFILE

SCI-823-6.81



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				
			SR-823													SR-823											
TR-26	384+04.3 126.8 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)										B-2	384+73.7	0.0 - 0.3	TOPSOIL (VISUAL)											
		1.0 - 3.5	BROWN CLAY (A-7-6)											2.2 ft. RT	0.3 - 3.0	BROWN SILT AND CLAY (A-6a)											
		3.5 - 5.0	0	2	38	12	48	44	25	20	A-7-6			3.0 - 3.5	BROWN CLAY (A-7-6)												
		5.0 - 5.5	BROWN CLAY (A-7-6)												3.5 - 5.0	2	1	3	11	83	60	38	23	A-7-6			
		5.5 - 6.0	BROWN COARSE AND FINE SAND (A-3a)												5.0 - 6.0	BROWN CLAY (A-7-6)											
		6.0 - 7.5	0	0	81	19	NP	NP	16	A-3a			6.0 - 8.0	1	0	0	14	85	67	40	23	A-7-6					
		7.5 - 20.5	BROWN COARSE AND FINE SAND (A-3a)												8.0 - 8.5	BROWN CLAY (A-7-6)											
		20.5 - 23.0	GRAY GRAVEL WITH SAND (A-1-b)												8.5 - 10.0	4	2	2	9	83	61	31	33	A-7-5			
		23.0 - 30.0	GRAY SANDSTONE												10.0 - 11.0	BROWN CLAY (A-7-6)											
		30.0 - 33.0	GRAY SANDSTONE												11.0 - 12.5	0	2	4	24	70	52	30	23	A-7-6			
														12.5 - 13.0	5	1	2	12	80	78	54	31	A-7-6				
TR-25	384+41.0 4.4 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)												13.0 - 16.2	BROWN CLAY (A-7-6)											
		0.5 - 3.5	BROWN SILT AND CLAY (A-6a)												16.2 - 18.5	BROWN COARSE AND FINE SAND (A-3a)											
		3.5 - 5.0	4	6	13	37	40	35	13	15	A-6a			18.5 - 20.0	0	0	85	15	NP	NP	8	A-3a					
		5.0 - 5.5	BROWN SILT AND CLAY (A-6a)												20.0 - 32.0	BROWN COARSE AND FINE SAND (A-3a)											
		5.5 - 6.0	BROWN CLAY (A-7-6)												32.0 - 37.0	GRAY SANDSTONE											
		6.0 - 7.5	0	0	1	11	88	66	40	27	A-7-6																
		7.5 - 18.0	BROWN CLAY (A-7-6)										R-323	387+22.9	0.0 - 1.0	TOPSOIL (VISUAL)											
		18.0 - 28.0	BROWN FINE SAND (A-3)											111.9 ft. LT	1.0 - 3.0	BROWN SILT AND CLAY (A-6a)											
		28.0 - 30.0	BROWN GRAVEL WITH SAND (A-1-b)												3.0 - 6.0	BROWN AND GRAY CLAY (A-7-6)											
		30.0 - 32.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE												6.0 - 7.5	0	0	1	7	92	61	37	32	A-7-6			
		32.0 - 42.0	GRAY SANDSTONE												7.5 - 26.0	BROWN AND GRAY CLAY (A-7-6)											
														26.0 - 42.0	GRAY CLAY (A-7-6)												
TR-24	384+43.9 147.1 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)												42.0 - 43.5	LIGHT BROWN COARSE AND FINE SAND (A-3a)											
		1.0 - 6.0	BROWN SILT AND CLAY (A-6a)												43.5 - 45.0	0	0	85	15	NP	NP	7	A-3a				
		6.0 - 27.0	BROWN CLAY (A-7-6)												45.0 - 53.5	LIGHT BROWN COARSE AND FINE SAND (A-3a)											
		27.0 - 34.0	BROWN FINE SAND (A-3)												53.5 - 57.0	GRAY COARSE AND FINE SAND (A-3a)											
		34.0 - 37.0	GRAY SILTY CLAY (A-6b)												57.0 - 67.0	GRAY SANDSTONE											
		37.0 - 43.5	SEVERELY WEATHERED GRAY SANDSTONE																								
		43.5 - 53.5	GRAY SANDSTONE										R-326	387+27.3	0.0 - 0.3	TOPSOIL (VISUAL)											
B-1	384+73.4 61.7 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)											122.5 ft. RT	0.3 - 3.5	BROWN SILT AND CLAY (A-6a)											
		0.4 - 4.0	BROWN SILT (A-4b)												3.5 - 5.0	8	7	12	53	20	33	12	13	A-6a			
		4.0 - 5.0	2	0	1	30	67	59	39	21	A-7-6			5.0 - 8.0	BROWN SILT AND CLAY (A-6a)												
		5.0 - 6.0	BROWN CLAY (A-7-6)												8.0 - 11.0	BROWN CLAY (A-7-6)											
		6.0 - 7.5	5	0	0	4	91	70	44	34	A-7-6			11.0 - 12.5	0	2	2	20	76	58	35	28	A-7-6				
		7.5 - 8.0	BROWN CLAY (A-7-6)												12.5 - 13.0	BROWN CLAY (A-7-6)											
		8.0 - 10.0	0	0	1	13	86	52	26	28	A-7-6			13.0 - 13.5	BROWN FINE SAND (A-3)												
		10.0 - 12.5	BROWN CLAY (A-7-6)												13.5 - 15.0	0	5	89	6	NP	NP	2	A-3				
		12.5 - 14.5	0	0	2	19	79	52	28	30	A-7-6			15.0 - 20.5	BROWN FINE SAND (A-3)												
		14.5 - 18.0	BROWN CLAY (A-7-6)												20.5 - 28.0	ORANGISH BROWN COARSE AND FINE SAND (A-3a)											
		18.0 - 19.5	0	0	1	24	75	49	23	28	A-7-6			28.0 - 28.5	GRAY SILT AND CLAY (A-6a)												
		19.5 - 20.0	0	0	1	21	78	59	36	30	A-7-6			28.5 - 30.0	0	11	9	38	42	37	15	32	A-6a				
		20.0 - 21.5	BROWN CLAY (A-7-6)												30.0 - 33.5	GRAY SILT AND CLAY (A-6a)											
		21.5 - 23.5	LIGHT BROWN COARSE AND FINE SAND (A-3a)												33.5 - 43.5	GRAY SANDSTONE											
		23.5 - 25.0	0	0	80	20	NP	NP	10	A-3a																	
		25.0 - 28.5	LIGHT BROWN COARSE AND FINE SAND (A-3a)																								
		28.5 - 37.5	BROWN GRAVEL WITH SAND (A-1-b)																								
		37.5 - 42.5	GRAY SANDSTONE																								

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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	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class							
			SR-823													SR-823														
R-328	391+22.6 2.1 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)											R-333	395+25.2	0.0 - 0.3	TOPSOIL (VISUAL)													
		0.3 - 1.0	BROWN SILT AND CLAY (A-6a)												132.0 ft. RT	0.3 - 11.0	BROWN AND GRAY SILT AND CLAY (A-6a)													
		1.0 - 2.5	7	9	19	43	22	30	13	11	A-6a				11.0 - 12.5	0	1	3	74	22	33	15	26	A-6a						
		2.5 - 3.0	BROWN SILT AND CLAY (A-6a)													12.5 - 15.5	BROWN AND GRAY SILT AND CLAY (A-6a)													
		3.0 - 16.0	BROWN AND GRAY CLAY (A-7-6)													15.5 - 21.0	BROWN AND GRAY CLAY (A-7-6)													
		16.0 - 17.5	0	0	0	13	87	62	38	31	A-7-6				21.0 - 22.5	0	1	0	3	96	72	47	36	A-7-6						
		17.5 - 30.0	BROWN AND GRAY CLAY (A-7-6)													22.5 - 32.0	BROWN AND GRAY CLAY (A-7-6)													
		30.0 - 47.0	BROWN FINE SAND (A-3)													32.0 - 38.5	LIGHT BROWN FINE SAND (A-3)													
		47.0 - 48.5	GRAY SILTY CLAY (A-6b)													38.5 - 40.0	0	0	90	10	NP	NP	6	A-3						
		48.5 - 50.0	0	0	0	60	40	39	17	29	A-6b				40.0 - 47.0	LIGHT BROWN FINE SAND (A-3)														
		50.0 - 51.0	GRAY SILTY CLAY (A-6b)													47.0 - 51.5	GRAY SILT (A-4b)													
		51.0 - 61.0	GRAY SANDSTONE													51.5 - 61.5	GRAY SANDSTONE													
R-329	391+25.0 98.3 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)											R-335	399+23.9	0.0 - 0.3	TOPSOIL (VISUAL)													
		1.0 - 3.5	BROWN SANDY SILT (A-4a)												6.0 ft. RT	0.3 - 3.5	LIGHT BROWN SILTY CLAY (A-6b)													
		3.5 - 5.0	12	12	17	33	26	27	10	12	A-4a				3.5 - 5.0	1	5	5	66	23	35	17	19	A-6b						
		5.0 - 5.5	BROWN SANDY SILT (A-4a)													5.0 - 8.0	LIGHT BROWN SILTY CLAY (A-6b)													
		5.5 - 11.0	BROWN AND GRAY CLAY (A-7-6)													8.0 - 13.0	BROWN CLAY (A-7-6)													
		11.0 - 13.0	0	0	0	40	60	72	44	40	A-7-6				13.0 - 13.5	1	6	2	38	53	27	12	32	A-6a						
		13.0 - 23.0	BROWN AND GRAY CLAY (A-7-6)													13.5 - 15.0	0	0	0	41	59	84	56	37	A-7-6					
		23.0 - 37.0	BROWN FINE SAND (A-3)													15.0 - 28.0	BROWN CLAY (A-7-6)													
		37.0 - 38.5	GRAY SILT AND CLAY (A-6a)													28.0 - 38.0	LIGHT BROWN FINE SAND (A-3)													
		38.5 - 39.5	0	6	6	47	41	33	12	29	A-6a				38.0 - 44.0	GRAY SILT (A-4b)														
		39.5 - 40.5	GRAY SILT AND CLAY (A-6a)													44.0 - 54.0	GRAY SANDSTONE													
		40.5 - 50.5	GRAY SANDSTONE																											
R-331	395+20.9 89.9 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)											R-339	402+78.4	0.0 - 1.0	TOPSOIL (VISUAL)													
		0.3 - 5.5	BROWN SANDY SILT (A-4a)												57.1 ft. LT	1.0 - 3.0	BROWN COARSE AND FINE SAND (A-3a)													
		5.5 - 8.0	BROWN AND GRAY CLAY (A-7-6)													3.0 - 3.5	BROWN AND GRAY CLAY (A-7-6)													
		8.0 - 10.0	0	0	0	50	50	63	39	39	A-7-6				3.5 - 5.0	1	1	1	52	45	70	41	33	A-7-6						
		10.0 - 23.5	BROWN AND GRAY CLAY (A-7-6)													5.0 - 13.5	BROWN AND GRAY CLAY (A-7-6)													
		18.0 - 23.5	GRAY CLAY (A-7-6)													13.5 - 15.0	0	0	1	47	52	58	34	33	A-7-6					
		23.5 - 25.0	0	0	1	9	90	65	37	36	A-7-6				15.0 - 18.0	BROWN AND GRAY CLAY (A-7-6)														
		25.0 - 27.5	GRAY CLAY (A-7-6)													18.0 - 28.0	ORANGISH BROWN FINE SAND (A-3)													
		27.5 - 42.0	BROWN AND GRAY CLAY (A-7-6)													28.0 - 33.5	GRAY SILTY CLAY (A-6b)													
		42.0 - 47.0	BROWN FINE SAND (A-3)													33.5 - 39.5	GRAY SANDSTONE													
		47.0 - 48.5	GRAY SILT AND CLAY (A-6a)																											
		48.5 - 50.0	0	0	2	65	33	36	15	28	A-6a																			
		50.0 - 52.0	GRAY SILT AND CLAY (A-6a)																											
		52.0 - 55.0	BROWN AND BLACK COARSE AND FINE SAND (A-3a)																											
		55.0 - 55.4	BROWN SANDSTONE																											
		55.4 - 65.0	GRAY SANDSTONE																											

SOIL PROFILE

SCI-823-6.81



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DRAWN RLS
CHECKED AEN

SUMMARY OF SOIL TEST DATA

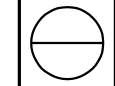
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* 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				
SR-823												SR-823															
C-19	403+22.2 213.0 ft. LT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL	R-343	407+19.5 114.1 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL		
		0.6 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL			0.4 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL		
		1.0 - 2.5	13	23	20	31	13	21	3	9	A-4a	5.5 - 13.0			BROWN AND GRAY CLAY (A-7-6)									VISUAL			
		2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL			13.0 - 15.0	0	0	5	53	42	58	38	28	A-7-6			
		3.0 - 6.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL			15.0 - 16.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		6.0 - 7.5	5	0	0	7	88	65	39	34	A-7-6	16.0 - 17.5			0	1	2	20	77	47	25	31	A-7-6				
		7.5 - 13.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL			17.5 - 23.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		13.5 - 15.0	2	0	0	12	86	57	33	33	A-7-6	23.5 - 25.5			BROWN AND BLACK CLAY (A-7-6)									VISUAL			
		15.0 - 16.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL			25.5 - 28.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
		16.5 - 17.5	1	3	4	20	72	66	40	33	A-7-6	28.5 - 30.0			0	2	85	13	NP	NP	12	A-3a					
		17.5 - 18.5	1	5	8	31	55	45	21	27	A-7-6	30.0 - 37.0			BROWN COARSE AND FINE SAND (A-3a)									VISUAL			
		18.5 - 20.0	0	0	1	63	36	34	13	29	A-6a	37.0 - 43.5			BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			
		20.0 - 21.0	BROWN SILT AND CLAY (A-6a)									VISUAL			43.5 - 53.5	GRAY SANDSTONE									VISUAL		
		21.0 - 22.5	0	0	1	62	37	34	12	35	A-6a	R-341			407+19.9 108.1 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	
		22.5 - 23.0	0	0	1	71	28	28	7	34	A-4b					1.0 - 3.5	BROWN CLAY (A-7-6)									VISUAL	
		23.0 - 24.5	BROWN SILT (A-4b)													VISUAL	3.5 - 5.0	0	1	2	13	84	71	48	21	A-7-6	
		24.5 - 25.0	1	9	24	45	21	22	5	18	A-4a					5.0 - 21.0	BROWN CLAY (A-7-6)									VISUAL	
25.0 - 27.0	BROWN SANDY SILT (A-4a)									VISUAL	21.0 - 33.5		GRAY CLAY (A-7-6)									VISUAL					
27.0 - 32.0	GRAY SANDSTONE									VISUAL	33.5 - 35.0		0	0		0	69	31	78	52	39	A-7-6					
C-20	404+01.2 45.8 ft. RT	0.0 - 3.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)										VISUAL	35.0 - 37.0		GRAY CLAY (A-7-6)									VISUAL		
		3.0 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL	37.0 - 38.5		BROWN SILT (A-4b)									VISUAL		
		3.5 - 5.0	12	25	15	32	16	26	7	12	A-4a		38.5 - 40.0	0		3	25	51	21	24	9	25	A-4b				
		5.0 - 8.0	BROWN SANDY SILT (A-4a)										VISUAL	40.0 - 42.0		BROWN SILT (A-4b)									VISUAL		
		8.0 - 10.0	0	0	5	18	77	51	21	31	A-7-5		42.0 - 43.5	GRAY SILTY CLAY (A-6b)									VISUAL				
		10.0 - 10.5	BROWN ELASTIC CLAY (A-7-5)										VISUAL	43.5 - 45.0		0	0	0	61	39	36	16	32	A-6b			
		10.5 - 11.0	BROWN SILT AND CLAY (A-6a)										VISUAL	45.0 - 47.0		GRAY SILTY CLAY (A-6b)									VISUAL		
		11.0 - 12.5	3	3	16	30	48	36	15	30	A-6a		47.0 - 52.0	BROWN GRAVEL WITH SAND (A-1-b)									VISUAL				
		12.5 - 14.0	BROWN SILT AND CLAY (A-6a)										VISUAL	52.0 - 55.0		SEVERELY WEATHERED GRAY SANDSTONE.									VISUAL		
		14.0 - 19.0	BROWN FINE SAND (A-3)										VISUAL	55.0 - 65.0		GRAY SANDSTONE									VISUAL		
		19.0 - 20.0	0	2	81	17	NP	NP	27	A-3a	R-342		407+21.2 2.4 ft. RT	0.0 - 0.4		TOPSOIL (VISUAL)									VISUAL		
		20.0 - 28.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		0.4 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL			
		28.0 - 29.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL		3.0 - 11.0	BROWN CLAY (A-7-6)									VISUAL			
		29.0 - 34.0	GRAY SANDSTONE									VISUAL		11.0 - 12.5	0	0	0	4	96	75	50	37	A-7-6				
		C-21	404+41.6 187.4 ft. RT	0.0 - 0.7	TOPSOIL (VISUAL)									VISUAL	12.5 - 30.0	BROWN CLAY (A-7-6)									VISUAL		
				0.7 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL	37.0 - 38.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
				3.5 - 5.0	9	25	21	30	15	22		4		12	A-4a	38.5 - 40.0	0	3	80	17	NP	NP	9	A-3a			
5.0 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL		40.0 - 42.0		BROWN COARSE AND FINE SAND (A-3a)									VISUAL				
5.5 - 8.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		42.0 - 47.0		BROWN AND GRAY GRAVEL WITH SAND, SILT, AND CLAY (A-2-1)									VISUAL				
8.5 - 10.0	0			0	81	19	NP	NP	12	A-3a		47.0 - 48.5		SEVERELY WEATHERED GRAY SANDSTONE									VISUAL				
10.0 - 15.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		48.5 - 58.5		GRAY SANDSTONE									VISUAL				
15.0 - 20.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		R-348		411+16.9 167.4 ft. RT	0.0 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL		
20.5 - 21.5	GRAY SILT AND CLAY (A-6a)									VISUAL					8.0 - 16.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL		
21.5 - 22.7	0			0	1	62	37	34	12	35					A-6a	16.0 - 18.5	GRAY CLAY (A-7-6)									VISUAL	
22.7 - 23.5	0			0	1	71	28	28	7	34					A-4b	18.5 - 20.0	0	0	1	10	89	53	31	36	A-7-6		
23.5 - 24.3	GRAY SILT (A-4b)									VISUAL					20.0 - 23.0	GRAY CLAY (A-7-6)									VISUAL		
24.3 - 29.3	GRAY SANDSTONE									VISUAL					23.0 - 26.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
R-343	407+19.5 114.1 ft. RT			0.0 - 0.4	TOPSOIL (VISUAL)										VISUAL	26.0 - 27.5	0	1	76	23	NP	NP	18	A-3a			
				0.4 - 5.5	BROWN SANDY SILT (A-4a)										VISUAL	27.5 - 28.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
				5.5 - 13.0	BROWN AND GRAY CLAY (A-7-6)										VISUAL	28.5 - 38.7	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL	
				13.0 - 15.0	0	0	5	53	42	58	38		28		A-7-6	38.7 - 48.7	GRAY SANDSTONE									VISUAL	
		15.0 - 16.0	BROWN AND GRAY CLAY (A-7-6)										VISUAL		R-348	411+16.9 167.4 ft. RT	0.0 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
		16.0 - 17.5	0	1	2	20	77	47	25	31	A-7-6		8.0 - 16.0				BROWN AND GRAY CLAY (A-7-6)									VISUAL	
		17.5 - 23.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL				16.0 - 18.5	GRAY CLAY (A-7-6)									VISUAL
23.5 - 25.5	BROWN AND BLACK CLAY (A-7-6)									VISUAL	18.5 - 20.0		0				0	1	10	89	53	31	36	A-7-6			
25.5 - 28.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	20.0 - 23.0		GRAY CLAY (A-7-6)									VISUAL					
28.5 - 30.0	0	2	85	13	NP	NP	12	A-3a	23.0 - 26.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL								
30.0 - 37.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	26.0 - 27.5		0		1	76	23	NP	NP	18	A-3a						
37.0 - 43.5	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL	27.5 - 28.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL						
43.5 - 53.5	GRAY SANDSTONE									VISUAL	28.5 - 38.7	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									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		
SR-823												SR-823													
R-346	411+19.2 3.7 ft. RT	0.0 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL	R-351	414+18.4 91.4 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		8.5 - 10.0	20	14	16	28	22	27	9	14	A-4a			0.3 - 10.5	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL	
		10.0 - 10.5	BROWN SANDY SILT (A-4a)									VISUAL			10.5 - 13.0	GRAYISH BROWN SILT AND CLAY (A-6a)									VISUAL
		10.5 - 20.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL			13.0 - 18.0	GRAY CLAY (A-7-6)									VISUAL
		20.5 - 21.0	LIGHT GRAY AND BROWN SILT AND CLAY (A-6a)									VISUAL			18.0 - 20.0	0	1	1	14	84	60	36	36	A-7-6	
		21.0 - 22.5	10	1	23	29	37	28	13	25	A-6a			20.0 - 22.0	GRAY CLAY (A-7-6)									VISUAL	
		22.5 - 23.0	LIGHT GRAY AND BROWN SILT AND CLAY (A-6a)									VISUAL			22.0 - 24.0	0	0	0	50	50	61	36	38	A-7-6	
		23.0 - 25.0	0	0	11	49	40	45	26	33	A-7-6			24.0 - 30.0	GRAY CLAY (A-7-6)									VISUAL	
		25.0 - 26.0	LIGHT BROWN CLAY (A-7-6)									VISUAL			30.0 - 45.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL
		26.0 - 27.0	0	1	9	58	32	33	16	24	A-6b			45.0 - 46.8	BROWN SANDSTONE									VISUAL	
		27.0 - 32.0	BROWN SILTY CLAY (A-6b)									VISUAL			46.8 - 55.0	GRAY AND BROWN SANDSTONE									VISUAL
		32.0 - 42.0	LIGHT BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL													
		42.0 - 45.0	GRAY SANDY SILT (A-4a)									VISUAL	R-349	414+18.9 122.6 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL
		45.0 - 55.0	GRAY SANDSTONE									VISUAL			0.2 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
R-345	411+24.0 115.7 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL			8.0 - 15.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		0.3 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL			15.5 - 17.0	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL
		8.0 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL			17.0 - 21.0	BROWN SANDSTONE									VISUAL
		8.5 - 10.0	0	0	8	57	35	29	11	22	A-6a	R-353	416+22.8 102.8 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL	
		10.0 - 10.5	BROWN SILT AND CLAY (A-6a)									VISUAL			0.2 - 5.5	SEVERELY WEATHERED LIGHT BROWN SANDSTONE									VISUAL
		10.5 - 18.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL			5.5 - 16.3	LIGHT BROWN, REDDISH BROWN, AND GRAY SANDSTONE									VISUAL
		18.0 - 18.5	BROWN SANDY SILT (A-4a)									VISUAL			16.3 - 80.0	LIGHT GRAY AND DARK GRAY SANDSTONE									VISUAL
		18.5 - 20.0	12	17	24	25	22	22	5	15	A-4a	R-354	416+57.7 23.1 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	
		20.0 - 20.5	BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 5.5	SEVERELY WEATHERED LIGHT BROWN SANDSTONE									VISUAL
		20.5 - 23.5	LIGHT BROWN CLAY (A-7-6)									VISUAL			5.5 - 13.4	BROWN AND LIGHT GRAY SANDSTONE									VISUAL
		23.5 - 25.0	0	0	2	27	71	44	20	33	A-7-6			13.4 - 55.0	GRAY SANDSTONE									VISUAL *	
		25.0 - 25.5	LIGHT BROWN CLAY (A-7-6)									VISUAL	R-356	420+12.6 210.3 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		25.5 - 30.0	BROWN SANDY SILT (A-4a)									VISUAL			0.3 - 8.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		30.0 - 43.0	BROWN CLAY (A-7-6)									VISUAL			8.0 - 15.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
		43.0 - 53.0	GRAY SANDSTONE									VISUAL			15.5 - 24.0	BROWN AND GRAY SHALE									VISUAL
C-52	411+81.1 40.7 ft. RT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL			24.0 - 29.0	GRAY SHALE									VISUAL
		0.8 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL			29.0 - 43.2	GRAY SANDSTONE									VISUAL
		8.0 - 13.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			43.2 - 44.5	BROWN SANDSTONE									VISUAL
		13.5 - 15.0	3	0	0	22	75	60	32	32	A-7-6			44.5 - 54.0	SHALE									VISUAL	
		15.0 - 25.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			54.0 - 59.5	DARK GRAY SHALE									VISUAL
		25.5 - 28.5	REDDISH BROWN CLAY (A-7-6)									VISUAL			59.5 - 131.4	GRAY SANDSTONE									VISUAL *
		28.5 - 30.0	0	0	1	21	78	54	30	33	A-7-6			131.4 - 139.5	GRAY AND DARK GRAY SANDSTONE									VISUAL	
		30.0 - 32.0	REDDISH BROWN CLAY (A-7-6)									VISUAL			139.5 - 144.5	GRAY SANDSTONE									VISUAL
		32.0 - 42.0	LIGHT BROWN SILT (A-4b)									VISUAL	R-359	420+27.7 176.5 ft. RT	0.0 - 5.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		42.0 - 48.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			5.5 - 7.0	SEVERELY WEATHERED GRAY SILTSTONE.									VISUAL
		48.5 - 53.5	GRAY SANDSTONE									VISUAL			7.0 - 14.8	GRAYISH BROWN SILTSTONE									VISUAL
C-51	412+76.1 136.1 ft. LT	0.0 - 0.9	TOPSOIL (VISUAL)									VISUAL			14.8 - 90.0	BROWN AND GRAY SANDSTONE									VISUAL
		0.9 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL			90.0 - 90.7	GRAY SANDSTONE									VISUAL
		5.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			90.7 - 94.3	GRAY SHALE									VISUAL
		10.0 - 15.0	BROWN SANDSTONE									VISUAL			94.3 - 95.0	GRAY SANDSTONE									VISUAL
R-350	414+13.8 10.8 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL	R-362	423+86.0 12.1 ft. RT	0.0 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
		0.2 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL			8.0 - 20.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.5 - 12.0	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL			20.0 - 45.0	LIGHT GRAY SANDSTONE									VISUAL *
		12.0 - 20.0	GRAY AND BROWN 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			
			SR-823													SR-823										
R-360	424+20.5 196.2 ft. LT	0.0 - 3.5	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL	R-373	434+08.2 141.1 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)										VISUAL
		3.5 - 5.0	27	13	16	26	18	23	8	11	A-4a			0.3 - 3.5	BROWN SANDY SILT (A-4a)										VISUAL	
		5.0 - 5.5	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			3.5 - 5.0	7	10	20	45	18	23	6	11	A-4a		
		5.5 - 6.0	BROWN AND GRAY SILT (A-4b)									VISUAL			5.0 - 8.5	BROWN SANDY SILT (A-4a)										VISUAL
		6.0 - 7.5	2	3	15	58	22	21	5	10	A-4b			8.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE.										VISUAL	
		7.5 - 8.0	BROWN AND GRAY SILT (A-4b)									VISUAL			10.0 - 17.0	BROWN AND GRAY SANDSTONE										VISUAL
		8.0 - 10.5	BROWN CLAY (A-7-6)									VISUAL			17.0 - 35.3	GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL
		10.5 - 15.5	SEVERELY WEATHERED DARK BROWN CLAYSHALE.									VISUAL			35.3 - 38.3	BROWN AND GRAY SHALE										VISUAL
		15.5 - 22.4	BROWN AND GRAY CLAYSHALE									VISUAL			38.3 - 75.0	GRAY SANDSTONE										VISUAL
		22.4 - 29.0	BLACK SHALE									VISUAL														
		29.0 - 32.8	GRAY SHALE									VISUAL	R-371	434+11.0 82.9 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)										VISUAL
		32.8 - 113.8	GRAY SANDSTONE									VISUAL			0.4 - 5.5	BROWN SANDY SILT (A-4a)										VISUAL
		113.8 - 130.0	GRAY AND LIGHT GRAY SANDSTONE									VISUAL			5.5 - 14.6	BROWN SANDSTONE										VISUAL
														14.6 - 90.0	GRAY SANDSTONE										VISUAL	
R-363	428+11.8 258.2 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL	R-370	434+14.1 171.9 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)										VISUAL
		0.2 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL			0.3 - 4.0	BROWN GRAVEL WITH SAND (A-1-b)										VISUAL
		3.0 - 13.0	BROWN AND GRAY SANDSTONE									VISUAL			4.0 - 19.5	BROWN SANDSTONE										VISUAL
		13.0 - 14.5	BLACK SHALE									VISUAL			19.5 - 90.0	GRAY SANDSTONE										VISUAL
		14.5 - 18.0	GRAY CLAYSHALE									VISUAL														
		18.0 - 25.0	GRAY SHALE									VISUAL														
		25.0 - 47.2	DARK GRAY SHALE									VISUAL														
		47.2 - 63.3	GRAY AND DARK GRAY SANDSTONE									VISUAL	R-374	438+05.1 1.5 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)										VISUAL
		63.3 - 76.9	DARK GRAY SILTSHALE									VISUAL			0.4 - 3.0	LIGHT BROWN SANDY SILT (A-4a)										VISUAL
		76.9 - 173.5	LIGHT GRAY SANDSTONE									VISUAL			3.0 - 8.5	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL *
		173.5 - 200.0	GRAY AND DARK GRAY SANDSTONE									VISUAL			8.5 - 17.6	BROWN SANDSTONE										VISUAL
														17.6 - 27.4	GRAY SANDSTONE										VISUAL	
														27.4 - 45.0	GRAY SANDSTONE										VISUAL	
R-365	428+30.5 57.7 ft. RT	0.0 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL	R-376	438+19.8 139.9 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)										VISUAL
		3.5 - 5.0	34	7	6	17	36	40	17	12	A-6b			0.3 - 3.0	BROWN SANDY SILT (A-4a)										VISUAL	
		5.0 - 8.0	BROWN SILTY CLAY (A-6b)									VISUAL			3.0 - 8.0	SEVERELY WEATHERED BROWN SANDSTONE										VISUAL
		8.0 - 17.5	BROWN AND GRAY SHALE, INTERBEDDED WITH SANDSTONE									VISUAL			8.0 - 60.5	BROWN AND GRAY SANDSTONE INTERBEDDED WITH SHALE										VISUAL
		17.5 - 27.7	BLACK SHALE									VISUAL			60.5 - 71.0	BROWN SANDSTONE										VISUAL
		27.7 - 42.8	LIGHT GRAY SANDSTONE									VISUAL														
		42.8 - 56.2	BLACK SHALE									VISUAL														
		56.2 - 160.0	LIGHT GRAY SANDSTONE									VISUAL	R-379	440+12.8 0.6 ft. RT	0.0 - 0.1	TOPSOIL (VISUAL)										VISUAL
														0.1 - 1.0	BROWN SANDY SILT (A-4a)										VISUAL	
R-367	432+20.4 217.6 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL			1.0 - 2.0	14	6	12	44	24	30	8	20	A-4a		
		0.2 - 6.0	BROWN AND GRAY SILT (A-4b)									VISUAL			2.0 - 2.5	7	6	15	58	14	27	5	14	A-4b		
		6.0 - 7.5	5	4	11	61	20	25	8	10	A-4b			2.5 - 11.0	BROWN SILT (A-4b)									VISUAL		
		7.5 - 10.5	BROWN AND GRAY SILT (A-4b)									VISUAL			11.0 - 11.8	0	1	3	23	73	50	28	26	A-7-6		
		10.5 - 15.0	SEVERELY WEATHERED GRAY AND BROWN CLAYSHALE.									VISUAL			11.8 - 18.0	BROWN SANDY SILT (A-4a)									VISUAL	
		15.0 - 30.5	BROWN CLAYSHALE									VISUAL			18.0 - 19.5	SEVERELY WEATHERED GRAY SANDSTONE.									VISUAL	
		30.5 - 37.5	GRAY SHALE									VISUAL			19.5 - 24.5	BROWN SANDSTONE									VISUAL	
		37.5 - 114.0	GRAY SANDSTONE									VISUAL														
		114.0 - 145.0	DARK GRAY AND GRAY SANDSTONE									VISUAL	R-378	440+15.6 86.3 ft. LT	0.0 - 0.1	TOPSOIL (VISUAL)										VISUAL
														0.1 - 1.0	BROWN SILT (A-4b)										VISUAL	
														1.0 - 2.5	5	5	16	55	19	26	6	8	A-4b			
R-369	432+21.3 80.1 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL			2.5 - 3.5	BROWN SILT (A-4b)									VISUAL	
		0.2 - 4.5	GRAY SILT (A-4b)									VISUAL			3.5 - 5.0	3	8	21	50	18	25	5	9	A-4b		
		4.5 - 15.3	BROWN AND GRAY SANDSTONE									VISUAL			5.0 - 8.5	BROWN SILT (A-4b)									VISUAL	
		15.3 - 95.0	GRAY SANDSTONE									VISUAL			8.5 - 10.0	SEVERELY WEATHERED GRAY SANDSTONE.									VISUAL	
														10.0 - 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	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class				
			SR-823													SR-823											
TR-23	441+30.3 48.1 ft. LT	0.0 - 0.3 0.3 - 7.5 7.5 - 10.0 10.0 - 20.0	TOPSOIL (VISUAL) BROWN SILT AND CLAY (A-6a) BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL VISUAL	R-381	447+17.3 17.8 ft. RT	0.0 - 0.2 0.2 - 7.0 7.0 - 12.7 12.7 - 20.0	TOPSOIL (VISUAL) BROWN SILT AND CLAY (A-6a) BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL VISUAL		
B-9	441+95.7 57.2 ft. LT	0.0 - 0.1 0.1 - 4.0 4.0 - 14.0	TOPSOIL (VISUAL) GRAY SANDY SILT (A-4a) GRAY SANDSTONE									VISUAL VISUAL VISUAL	R-383	447+85.1 117.0 ft. RT	0.0 - 0.3 0.3 - 3.0 3.0 - 5.0 5.0 - 25.0	TOPSOIL (VISUAL) BROWN SANDY SILT (A-4a) SEVERELY WEATHERED GRAYISH BROWN SANDSTONE BROWN SANDSTONE									VISUAL VISUAL VISUAL VISUAL		
TR-22	442+46.9 51.5 ft. RT	0.0 - 0.7 0.7 - 2.8 2.8 - 3.5 3.5 - 4.0 4.0 - 6.1 6.1 - 24.0	TOPSOIL (VISUAL) BROWN SANDY SILT (A-4a) BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL VISUAL VISUAL VISUAL	R-382	448+15.2 126.4 ft. LT	0.0 - 5.5 5.5 - 17.6 17.6 - 55.0	SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL		
B-8	443+05.8 34.6 ft. LT	0.0 - 1.0 1.0 - 2.5 2.5 - 3.0 3.0 - 3.5 3.5 - 5.0 5.0 - 7.5 7.5 - 27.5	BROWN SILT (A-4b) 4 12 15 52 17 22 4 13 BROWN SILT (A-4b) BROWN SANDY SILT (A-4a) 12 23 17 35 13 22 3 12 BROWN SANDY SILT (A-4a) GRAY SANDSTONE									VISUAL A-4b VISUAL A-4a VISUAL VISUAL	R-384	452+33.5 74.6 ft. LT	0.0 - 0.4 0.4 - 7.0 7.0 - 22.7 22.7 - 75.0	TOPSOIL (VISUAL) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL VISUAL		
B-6	443+23.0 34.6 ft. RT	0.0 - 0.5 0.5 - 2.0 2.0 - 3.5 3.5 - 5.0 5.0 - 6.0 6.0 - 26.5	BROWN SANDY SILT (A-4a) 16 23 15 28 18 26 8 13 BROWN SANDY SILT (A-4a) 10 25 14 40 11 NP NP 12 BROWN SANDY SILT (A-4a) GRAY SANDSTONE									VISUAL A-4a VISUAL A-4a VISUAL VISUAL	R-389	455+17.0 83.3 ft. RT	0.0 - 0.3 0.3 - 7.0 7.0 - 18.3 18.3 - 50.0	TOPSOIL (VISUAL) SEVERELY WEATHERED BROWN SANDSTONE GRAY AND BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL VISUAL		
TR-21	443+67.0 46.4 ft. LT	0.0 - 1.5 1.5 - 20.0	GRAVEL (A-1-a) GRAY SANDSTONE									VISUAL VISUAL	R-387	455+35.9 182.3 ft. LT	0.0 - 0.3 0.3 - 6.0 6.0 - 30.0 30.0 - 131.0	TOPSOIL (VISUAL) SEVERELY WEATHERED LIGHT BROWN SANDSTONE. BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL VISUAL		
B-7	444+07.0 71.7 ft. LT	0.0 - 0.2 0.2 - 2.5 2.5 - 12.5	TOPSOIL (VISUAL) GRAY SANDY SILT (A-4a) GRAY SANDSTONE									VISUAL VISUAL VISUAL	R-390	459+06.6 153.1 ft. LT	0.0 - 1.0 1.0 - 8.0 8.0 - 13.0 13.0 - 16.3 16.3 - 85.5	TOPSOIL (VISUAL) BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL VISUAL VISUAL VISUAL		
B-5	444+33.3 52.6 ft. RT	0.0 - 0.1 0.1 - 1.5 1.5 - 11.5	TOPSOIL (VISUAL) GRAY SANDY SILT (A-4a) GRAY SANDSTONE									VISUAL VISUAL VISUAL	R-392	459+19.3 6.3 ft. RT	0.0 - 0.5 0.5 - 6.0 6.0 - 7.5 7.5 - 8.0 8.0 - 11.5 11.5 - 12.5 12.5 - 30.0	TOPSOIL (VISUAL) BROWN SANDY SILT (A-4a) 2 14 26 43 15 21 2 12 BROWN SANDY SILT (A-4a) SEVERELY WEATHERED BROWN SANDSTONE BROWN SANDSTONE GRAY SANDSTONE									VISUAL VISUAL A-4a VISUAL VISUAL VISUAL VISUAL		
TR-20	444+69.7 42.1 ft. RT	0.0 - 0.2 0.2 - 5.0 5.0 - 20.0	TOPSOIL (VISUAL) BROWN SILT AND CLAY (A-6a) GRAY SANDSTONE									VISUAL VISUAL VISUAL															
R-380	446+99.5 130.0 ft. LT	0.0 - 8.5 8.5 - 10.0 10.0 - 11.0 11.0 - 12.5 12.5 - 16.0 16.0 - 35.0	REDDISH BROWN SANDY SILT (A-4a) 18 4 11 46 21 25 6 14 REDDISH BROWN SANDY SILT (A-4a) 19 4 13 45 19 29 8 15 REDDISH BROWN SANDY SILT (A-4a) BROWN SANDSTONE									VISUAL A-4a VISUAL A-4a VISUAL 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		
SR-823												SR-823													
R-393	460+18.5 78.2 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	C-12	466+17.4 247.6 ft. RT	0.0 - 4.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 8.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			4.0 - 5.0	0	0	2	54	44	41	22	23	A-7-6	
		8.0 - 13.5	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			5.0 - 9.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL
		13.5 - 15.0	14	8	19	44	15	24	5	14	A-4a			9.0 - 10.0	1	3	8	71	17	21	4	17	A-4b		
		15.0 - 18.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			10.0 - 14.0	LIGHT BROWN SILT (A-4b)									VISUAL
		18.0 - 21.0	BROWN SANDY SILT (A-4a)									VISUAL			14.0 - 18.5	GRAY SANDSTONE									VISUAL
		21.0 - 22.5	15	8	14	42	21	27	9	15	A-4a			18.5 - 19.0	GRAY CLAYSTONE									VISUAL	
		22.5 - 30.0	BROWN SANDY SILT (A-4a)									VISUAL													
		30.0 - 33.5	GRAY SILT (A-4b)									VISUAL	C-11	466+89.0 5.0 ft. RT	0.0 - 0.1	TOPSOIL (VISUAL)									VISUAL
		33.5 - 35.0	1	1	8	60	30	27	9	20	A-4b			0.1 - 1.0	BROWN SILT (A-4b)									VISUAL	
		35.0 - 38.5	GRAY SILT (A-4b)									VISUAL			1.0 - 2.5	0	2	4	68	26	25	7	19	A-4b	
		38.5 - 40.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			2.5 - 5.0	BROWN SILT (A-4b)									VISUAL
														5.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL	
R-394	463+14.3 111.8 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL			6.0 - 7.5	16	14	15	42	13	27	6	14	A-4a	
		1.0 - 11.0	BROWN SILT (A-4b)									VISUAL			7.5 - 10.5	BROWN SANDY SILT (A-4a)									VISUAL
		11.0 - 12.5	9	5	17	53	16	22	3	13	A-4b			10.5 - 11.0	GRAY SILT (A-4b)									VISUAL	
		12.5 - 15.5	BROWN SILT (A-4b)									VISUAL			11.0 - 12.5	0	0	7	77	16	30	6	15	A-4b	
		15.5 - 19.5	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL			12.5 - 13.0	GRAY SILT (A-4b)									VISUAL
		19.5 - 30.0	BROWN AND GRAY SANDSTONE									VISUAL			13.0 - 18.0	GRAY SANDSTONE									VISUAL
		30.0 - 49.7	GRAY SANDSTONE (VISUAL)									VISUAL													
R-396	463+18.6 92.1 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	C-10	467+32.2 239.2 ft. LT	0.0 - 1.0	BROWN AND GRAY SILT (A-4b)									VISUAL
		1.0 - 3.5	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			1.0 - 2.5	2	6	6	60	26	26	9	17	A-4b	
		3.5 - 5.0	47	7	7	32	7	23	3	12	A-4a			2.5 - 3.5	BROWN AND GRAY SILT (A-4b)									VISUAL	
		5.0 - 13.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			3.5 - 5.0	2	9	9	62	18	29	10	15	A-4b	
		13.0 - 13.5	BROWN SILTY CLAY (A-6b)									VISUAL			5.0 - 7.0	BROWN AND GRAY SILT (A-4b)									VISUAL
		13.5 - 15.0	4	3	5	59	29	37	16	22	A-6b			7.0 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL	
		15.0 - 18.0	BROWN SILTY CLAY (A-6b)									VISUAL			8.5 - 9.1	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL
		18.0 - 20.5	BROWN SANDY SILT (A-4a)									VISUAL			9.1 - 14.1	GRAY SANDSTONE									VISUAL
		20.5 - 21.0	BROWN SILT (A-4b)									VISUAL													
		21.0 - 22.5	0	0	20	68	12	NP	NP	22	A-4b	R-402	468+18.5 1.4 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	
		22.5 - 25.0	BROWN SILT (A-4b)									VISUAL			1.0 - 2.5	0	3	3	63	31	30	9	19	A-4b	
														2.5 - 3.5	BROWN AND GRAY SILT (A-4b)									VISUAL	
														3.5 - 5.0	0	2	5	69	24	30	8	20	A-4b		
R-395	463+19.1 1.1 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL			5.0 - 11.0	BROWN AND GRAY SILT (A-4b)									VISUAL
		1.0 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL			11.0 - 12.5	3	5	19	57	16	25	3	18	A-4b	
		5.5 - 8.5	BROWN SILT (A-4b)									VISUAL			12.5 - 13.0	BROWN AND GRAY SILT (A-4b)									VISUAL
		8.5 - 10.0	0	8	24	51	17	24	2	16	A-4b			13.0 - 14.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL	
		10.0 - 20.0	BROWN SILT (A-4b)									VISUAL			14.5 - 20.0	GRAY SANDSTONE									VISUAL
R-399	464+20.0 102.8 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL	R-405	472+18.3 68.0 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		0.2 - 3.5	BROWN SILT (A-4b)									VISUAL			1.0 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.5 - 5.0	0	0	13	65	22	NP	NP	23	A-4b			8.0 - 8.5	BROWNISH GRAY SILT AND CLAY (A-6a)									VISUAL	
		5.0 - 5.5	BROWN SILT (A-4b)									VISUAL			8.5 - 10.0	2	4	3	67	24	32	11	21	A-6a	
		5.5 - 8.5	BROWN SILTY CLAY (A-6b)									VISUAL			10.0 - 11.0	BROWNISH GRAY SILT AND CLAY (A-6a)									VISUAL
		8.5 - 10.0	0	0	1	59	40	40	20	17	A-6b			11.0 - 12.5	0	0	1	70	29	33	13	24	A-6a		
		10.0 - 10.5	BROWN SILTY CLAY (A-6b)									VISUAL			12.5 - 20.0	BROWNISH GRAY SILT AND CLAY (A-6a)									VISUAL
		10.5 - 17.5	BROWN SANDY SILT (A-4a)									VISUAL													
		17.5 - 20.0	GRAY SANDSTONE									VISUAL	R-408	472+24.1 128.2 ft. RT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL
														0.6 - 1.0	BROWN SILT (A-4b)									VISUAL	
														1.0 - 2.5	10	3	6	63	18	25	6	16	A-4b		
														2.5 - 5.0	BROWN SILT (A-4b)									VISUAL	
														5.0 - 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

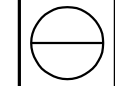
Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
SR-823												SR-823													
C-15	472+64.1 223.9 ft. RT	0.0 - 1.0	BROWN SILT (A-4b)									VISUAL	R-410	477+48.7 83.4 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		1.0 - 2.5	1	12	13	59	15	30	10	18	A-4b			1.0 - 3.5	BROWN SILT (A-4b)									VISUAL	
		2.5 - 3.5	BROWN SILT (A-4b)									VISUAL			3.5 - 5.0	18	10	9	50	13	26	4	13	A-4b	
		3.5 - 5.0	1	1	12	68	18	30	9	14	A-4b			5.0 - 10.5	BROWN SILT (A-4b)									VISUAL	
		5.0 - 7.5	BROWN SILT (A-4b)									VISUAL			10.5 - 11.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		7.5 - 12.5	GRAY SANDSTONE									VISUAL			11.0 - 12.5	1	9	5	61	24	32	12	20	A-6a	
C-14	473+69.0 59.7 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL			12.5 - 23.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		0.2 - 1.0	BROWN SILT (A-4b)									VISUAL			23.0 - 23.5	BROWN SILT (A-4b)									VISUAL
		1.0 - 2.5	3	2	5	69	21	27	7	16	A-4b			23.5 - 25.0	3	13	11	57	16	26	5	13	A-4b		
		2.5 - 4.0	BROWN SILT (A-4b)									VISUAL			25.0 - 31.0	BROWN SILT (A-4b)									VISUAL
		4.0 - 5.0	27	21	11	29	12	27	6	12	A-4a			31.0 - 32.5	1	14	10	57	18	29	8	15	A-4b		
		5.0 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL			32.5 - 35.0	BROWN SILT (A-4b)									VISUAL
		5.5 - 6.0	MOTTLED BROWN AND GRAY SILT (A-4b)									VISUAL	R-414	480+84.1 267.1 ft. LT	0.0 - 3.0	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL
		6.0 - 7.5	0	0	4	77	19	24	6	18	A-4b			3.0 - 15.0	BROWN SANDSTONE									VISUAL	
		7.5 - 8.5	MOTTLED BROWN AND GRAY SILT (A-4b)									VISUAL			15.0 - 30.0	BROWN AND GRAY SANDSTONE									VISUAL
		8.5 - 10.0	0	0	6	65	29	27	9	19	A-4b			30.0 - 75.5	GRAY SANDSTONE									VISUAL	
		10.5 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL			75.5 - 82.8	BROWN SANDSTONE									VISUAL
		13.5 - 15.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			82.8 - 173.0	GRAY SANDSTONE									VISUAL
		15.0 - 20.0	GRAY SANDSTONE									VISUAL	R-416	480+94.2 75.9 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
C-13	475+01.2 176.4 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL			1.0 - 15.0	BROWN SANDY SILT (A-4a)									VISUAL
		0.3 - 1.0	GRAYISH BROWN SILT (A-4b)									VISUAL			15.0 - 17.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		1.0 - 2.5	3	6	7	72	12	30	4	20	A-4b			17.0 - 50.5	BROWN SANDSTONE									VISUAL	
		2.5 - 4.0	GRAYISH BROWN SILT (A-4b)									VISUAL													
		4.0 - 5.0	14	20	13	42	11	NP	NP	13	A-4a	R-419	483+57.7 141.2 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	
		4.0 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL			1.0 - 5.0	BROWN SANDY SILT (A-4a)									VISUAL
		8.0 - 11.0	BROWN AND GRAY SILT (A-4b)									VISUAL			5.0 - 20.0	GRAY SANDSTONE									VISUAL
		11.0 - 12.5	2	10	15	61	12	NP	NP	15	A-4b														
		12.5 - 13.5	BROWN AND GRAY SILT (A-4b)									VISUAL	TR-19	483+69.8 46.5 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		13.5 - 15.0	1	7	11	69	12	NP	NP	17	A-4b			1.0 - 8.7	BROWN SANDY SILT (A-4a)									VISUAL	
		15.0 - 19.0	BROWN AND GRAY SILT (A-4b)									VISUAL			8.7 - 20.2	GRAY SANDSTONE									VISUAL
		19.0 - 21.5	GRAY SANDY SILT (A-4a)									VISUAL													
		21.5 - 23.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL	TR-18	484+38.6 39.0 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		23.0 - 28.0	GRAY SANDSTONE									VISUAL			1.0 - 2.5	13	7	9	58	13	25	3	9	A-4b	
R-409	475+18.9 1.2 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL			2.5 - 3.0	BROWN SILT (A-4b)									VISUAL
		1.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			3.0 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 7.5	13	16	13	43	15	28	6	14	A-4a			3.5 - 5.0	0	3	40	45	12	NP	NP	12	A-4a		
		7.5 - 13.0	BROWN SANDY SILT (A-4a)									VISUAL			5.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
		13.0 - 13.5	BROWN AND GRAY SILT (A-4b)									VISUAL			6.0 - 7.5	11	20	28	31	10	NP	NP	11	A-4a	
		13.5 - 15.0	0	0	2	73	25	27	9	18	A-4b			7.5 - 20.3	GRAY SANDSTONE									VISUAL	
		15.0 - 18.0	BROWN AND GRAY SILT (A-4b)									VISUAL	C-54	484+80.3 161.7 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
		18.0 - 20.0	BROWN SANDY SILT (A-4a)									VISUAL			0.4 - 11.0	BROWN SANDY SILT (A-4a)									VISUAL
														11.0 - 16.0	GRAY SANDSTONE									VISUAL	
												B-12	485+04.7 9.0 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	
														0.3 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL	
														1.0 - 2.5	0	0	8	92	NP	NP	17	A-4b			
														2.5 - 4.0	BROWN SANDY SILT (A-4a)									VISUAL	
														4.0 - 8.5	REDDISH BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	
														8.5 - 28.5	GRAY SANDSTONE									VISUAL	

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SOIL PROFILE

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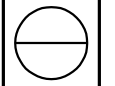
SUMMARY OF SOIL TEST DATA

**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				
			SR-823													SR-823											
B-11	485+19.1 48.6 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)										R-427	495+16.9 1.1 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)											
		0.2 - 1.0	BROWN SANDY SILT (A-4a)												0.3 - 13.0	BROWN SANDY SILT (A-4a)											
		1.0 - 2.5	0	1	17	82		NP	NP	14	A-4b			13.0 - 15.5	SEVERELY WEATHERED BROWN SANDSTONE.												
		2.5 - 4.0	BROWN SANDY SILT (A-4a)												15.5 - 20.0	BROWN AND GRAY SANDSTONE											
		4.0 - 8.5	GRAY SANDY SILT (A-4a)																								
		8.5 - 28.5	GRAY SANDSTONE										R-430	497+01.4 86.8 ft. RT	0.0 - 5.5	BROWN AND RED SANDY SILT (A-4a)											
														5.5 - 15.5	BROWN AND RED SILT AND CLAY (A-6a)												
														15.5 - 20.0	BROWN AND GRAY SANDY SILT (A-4a)												
C-53	485+39.4 182.8 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)																								
		0.3 - 3.0	BROWN SILT (A-4b)																								
		3.0 - 6.5	BROWNISH GRAY SANDY SILT (A-4a)										R-429	497+10.8 5.6 ft. RT	0.0 - 0.5	TOPSOIL (VISUAL)											
		6.5 - 7.0	BROWN SANDSTONE												0.5 - 6.0	BROWN SANDY SILT (A-4a)											
		7.0 - 12.0	GRAY SANDSTONE												6.0 - 20.0	BROWN INTERBEDDED SHALE, BRECCIA, SANDSTONE											
TR-17	485+26.9 24.3 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)										R-432	498+11.4 111.1 ft. LT	0.0 - 0.6	TOPSOIL (VISUAL)											
		0.4 - 3.0	BROWN SILT (A-4b)												0.6 - 4.5	BROWN SANDY SILT (A-4a)											
		3.0 - 5.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												4.5 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE.											
		5.5 - 6.3	BROWN SANDY SILT (A-4a)												6.0 - 18.0	LIGHT BROWN SANDSTONE											
		6.3 - 7.0	SEVERELY WEATHERED GRAY SANDSTONE												18.0 - 40.0	GRAY SANDSTONE											*
		7.0 - 27.0	BROWN AND GRAY SANDSTONE																								
B-10	486+01.5 43.8' RT	0.0 - 0.3	TOPSOIL (VISUAL)										R-433	498+14.4 21.4 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)											
		0.3 - 1.0	BROWN SILT (A-4b)												0.5 - 4.0	BROWN AND GRAY SANDY SILT (A-4a)											
		1.0 - 2.5	0	0	10	74	16	24	5	15	A-4b			4.0 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE												
		2.5 - 6.0	BROWN SILT (A-4b)												6.0 - 12.4	LIGHT BROWN SANDSTONE											
		6.0 - 7.5	0	0	11	74	15	26	8	38	A-4b			12.4 - 25.0	GRAY SANDSTONE												
		7.5 - 8.5	BROWN SILT (A-4b)																								
		8.5 - 9.5	SEVERELY WEATHERED GRAY SANDSTONE										R-434	498+47.1 133.5 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)											
		9.5 - 19.5	GRAY SANDSTONE												0.4 - 3.0	REDDISH BROWN SANDY SILT (A-4a)											
														3.0 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE.												
														6.0 - 15.9	LIGHT BROWN AND BROWN SANDSTONE												
TR-16	486+12.4 32.3 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)												15.9 - 20.0	GRAY SANDSTONE											
		0.2 - 8.5	BROWN SANDY SILT (A-4a)																								
		8.5 - 18.5	GRAY SANDSTONE										R-435	501+08.3 201.1 ft. LT	0.0 - 0.1	TOPSOIL (VISUAL)											
TR-15	486+83.3 32.9 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)												0.1 - 13.0	SEVERELY WEATHERED BROWN SANDSTONE											
		0.2 - 7.0	BROWN SANDY SILT (A-4a)												13.0 - 130.0	GRAY SANDSTONE											
		7.0 - 8.0	SEVERELY WEATHERED SILTSTONE																								
		8.0 - 18.0	GRAY SANDSTONE										R-2437	501+22.1 86.1 ft. RT	0.0 - 8.0	REDDISH BROWN SILT AND CLAY (A-6a)											
R-421	488+19.3 4.0 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)												8.0 - 15.0	SEVERELY WEATHERED BROWN SANDSTONE											
		0.2 - 3.0	BROWN COARSE AND FINE SAND (A-3a)												15.0 - 25.5	BROWN SANDSTONE											
		3.0 - 8.0	BROWN SANDY SILT (A-4a)												25.5 - 80.0	GRAY SANDSTONE											
		8.0 - 9.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE										R-437	501+22.1 86.1 ft. RT	0.0 - 8.0	BROWN SILT AND CLAY (A-6a)											
		9.0 - 14.0	GRAY SANDSTONE												8.0 - 17.4	SEVERELY WEATHERED BROWN SANDSTONE											
														17.4 - 60.0	GRAY SANDSTONE												
R-424	491+05.2 CL	0.0 - 3.5	BROWN SILT (A-4b)										R-2436	501+35.7 85.8 ft. LT	0.0 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE											
		3.5 - 5.0	0	0	7	73	20	32	8	21	A-4b			5.0 - 11.0	LIGHT BROWN SANDSTONE												
		5.0 - 5.5	BROWN SILT (A-4b)												11.0 - 60.7	BROWN AND GRAY SANDSTONE											
		5.5 - 6.0	BROWN SANDY SILT (A-4a)												60.7 - 145.0	GRAY SANDSTONE											
		6.0 - 7.5	5	26	14	40	15	29	7	8	A-4a																
		7.5 - 8.0	BROWN SANDY SILT (A-4a)																								
		8.0 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE																								
		10.0 - 20.0	GRAY SANDSTONE																								

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

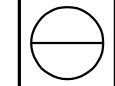
Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class		
SR-823												SR-823													
R-436	501+35.7 85.8 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	R-447	512+15.8 8.5 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
		0.3 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			0.4 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 30.0	BROWN SANDSTONE									VISUAL			3.0 - 5.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		30.0 - 60.0	BROWN AND GRAY SANDSTONE									VISUAL			5.0 - 16.0	BROWN AND REDDISH BROWN SANDSTONE									VISUAL
REPLACED BY R-2436		60.0 - 110.0	GRAY SANDSTONE									VISUAL			16.0 - 25.5	DARK GRAY CLAYSHALE									VISUAL
														25.5 - 125.0	GRAY SANDSTONE									VISUAL *	
R-440	504+45.8 141.8 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL	R-446	512+17.7 189.3 ft. LT	0.0 - 1.5	BROWN SANDY SILT (A-4a)									VISUAL
		0.2 - 3.0	DARK BROWN SILT (A-4b)									VISUAL			1.5 - 5.0	SEVERELY WEATHERED GRAY AND BROWN SANDSTONE									VISUAL
		3.0 - 6.0	SEVERELY WEATHERED GRAYISH BROWN SANDSTONE									VISUAL			5.0 - 16.6	LIGHT GRAY AND BROWN SANDSTONE									VISUAL
		6.0 - 13.5	GRAY SANDSTONE									VISUAL			16.6 - 19.2	BLACK SHALE									VISUAL
C-17	504+83.7 122.5 ft. LT	0.0 - 0.1	TOPSOIL (VISUAL)									VISUAL			19.2 - 125.0	GRAY SANDSTONE									VISUAL
		0.1 - 4.5	BROWN SANDY SILT (A-4a)									VISUAL	R-448	512+19.5 175.0 ft. RT	0.0 - 3.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL
		4.5 - 9.5	GRAY SANDSTONE									VISUAL			3.0 - 5.0	SEVERELY WEATHERED LIGHT GRAY SANDSTONE									VISUAL
R-439	504+61.7 91.4 ft. RT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL			5.0 - 14.2	BROWN AND GRAY SANDSTONE									VISUAL
		0.5 - 4.5	BROWN SANDY SILT (A-4a)									VISUAL			14.2 - 125.0	GRAY SANDSTONE									VISUAL
		4.5 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL	R-2451	516+08.6 160.8 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		6.0 - 20.0	BROWN SANDSTONE									VISUAL			0.3 - 2.5	BROWN SANDY SILT (A-4a)									VISUAL
C-16	504+63.7 17.3 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL			2.5 - 10.5	REDDISH BROWN SILTY CLAY (A-6b)									VISUAL
		0.2 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			10.5 - 25.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL
		3.5 - 8.5	GRAY SANDSTONE									VISUAL			25.0 - 126.5	GRAY SANDSTONE									VISUAL
R-442	505+27.7 9.2 ft. LT	0.0 - 4.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	R-451	516+08.6 160.8 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		4.0 - 7.5	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL			0.3 - 3.0	REDDISH BROWN SANDY SILT (A-4a)									VISUAL
		7.5 - 10.2	BROWN SANDSTONE									VISUAL			3.0 - 10.5	REDDISH BROWN SILT AND CLAY (A-6a)									VISUAL
		10.2 - 20.0	GRAY SANDSTONE									VISUAL	REPLACED BY R-2451		10.5 - 11.7	SEVERELY WEATHERED BROWN SHALE									VISUAL
R-2444	508+34.4 121.0 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL			11.7 - 22.5	LIGHT BROWN SANDSTONE									VISUAL
		0.3 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL			22.5 - 33.5	GRAY SANDSTONE									VISUAL
		8.0 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL			33.5 - 39.1	LIGHT GRAY AND GRAY SANDSTONE									VISUAL
		10.0 - 30.0	BROWN SANDSTONE									VISUAL			39.1 - 40.8	LIGHT GRAY AND GRAY BRECCIA									VISUAL
		30.0 - 70.0	GRAY SANDSTONE									VISUAL			40.8 - 90.0	GRAY SANDSTONE									VISUAL
R-444	508+34.4 121.0 ft. LT	0.0 - 0.7	TOPSOIL (VISUAL)									VISUAL	R-450	516+18.1 3.7 ft. LT	0.0 - 3.4	LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL
		0.7 - 3.0	REDDISH BROWN SANDY SILT (A-4a)									VISUAL			3.4 - 17.0	BROWN AND LIGHT GRAY SANDSTONE									VISUAL
		3.0 - 7.0	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL			17.0 - 20.5	DARK GRAY AND BLACK SHALE									VISUAL
REPLACED BY R-2444		7.0 - 14.2	BROWN AND GRAY SANDSTONE									VISUAL			20.5 - 23.6	GRAY SHALE									VISUAL
		14.2 - 20.3	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL			23.6 - 47.8	GRAY SANDSTONE									VISUAL
		20.3 - 40.0	GRAY SANDSTONE									VISUAL			47.8 - 120.0	LIGHT GRAY SANDSTONE									VISUAL *
R-445	508+42.3 128.2 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	R-2449	516+22.4 193.4 ft. LT	0.0 - 0.7	TOPSOIL (VISUAL)									VISUAL
		0.3 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL			0.7 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.0 - 6.0	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL			5.5 - 10.0	SEVERELY WEATHERED GRAY AND BROWN SANDSTONE									VISUAL
		6.0 - 12.0	BROWN AND GRAY SANDSTONE									VISUAL			10.0 - 17.9	LIGHT BROWN SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		12.0 - 19.2	GRAY AND BROWN CLAYSHALE									VISUAL			17.9 - 21.0	BLACK SHALE									VISUAL
		19.2 - 35.0	BROWN AND GRAY SANDSTONE									VISUAL			21.0 - 26.3	DARK GRAY CLAYSHALE									VISUAL
														26.3 - 30.7	GRAY SHALE									VISUAL	
														30.7 - 155.0	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	
SR-823												
R-449	516+22.4	0.0 - 6.8	LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL
	193.4 ft. LT	6.8 - 8.6	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL
		8.6 - 18.0	LIGHT GRAY SANDSTONE									VISUAL
REPLACED BY R-2449		18.0 - 23.1	BLACK SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		23.1 - 24.7	DARK GRAY CLAYSHALE									VISUAL
		24.7 - 26.0	LIGHT GRAY SANDSTONE									VISUAL
		26.0 - 30.0	GRAY SHALE									VISUAL
		30.0 - 31.8	GRAY CLAYSTONE									VISUAL
		31.8 - 47.3	GRAY SANDSTONE									VISUAL
		47.3 - 120.0	LIGHT GRAY SANDSTONE									VISUAL
R-2452	520+21.3	0.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
	169.5 ft. LT	6.0 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		10.0 - 20.5	BROWNISH GRAY SANDSTONE									VISUAL
		20.5 - 28.5	GRAY SANDSTONE									VISUAL
		28.5 - 35.2	GRAY SANDSTONE INTERBEDDED WITH CONGLOM./BRECCIA									VISUAL
		35.2 - 120.0	GRAY SANDSTONE									VISUAL
R-452	520+21.3	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
	169.5 ft. LT	0.3 - 5.5	BROWN SANDY SILT (A-4a)									VISUAL
		5.5 - 6.0	LIGHT BROWN CLAY (A-7-6)									VISUAL
REPLACED BY R-2452		6.0 - 7.5	0	1	7	47	45	44	35	18	A-7-6	
		7.5 - 8.0	LIGHT BROWN CLAY (A-7-6)									VISUAL
		8.0 - 8.5	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE.									VISUAL
		8.5 - 10.0	0	0	9	65	26	26	10	9	A-4b	
		10.0 - 13.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE.									VISUAL
		13.0 - 15.0	BROWN AND GRAY SANDSTONE									VISUAL
		15.0 - 17.0	BROWN AND GRAY BRECCIA									VISUAL
		17.0 - 22.5	BROWN AND GRAY SANDSTONE									VISUAL
		22.5 - 28.5	GRAY SANDSTONE INTERBEDDED WITH SILTSHALE AND CLAY									VISUAL
		28.5 - 31.3	GRAY BRECCIA									VISUAL
		31.3 - 95.0	GRAY SANDSTONE									VISUAL
R-454	520+24.4	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
	88.4 ft. RT	0.4 - 3.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		3.0 - 5.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		5.5 - 8.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE.									VISUAL
		8.0 - 21.1	BROWN SANDSTONE									VISUAL
		21.1 - 45.7	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		45.7 - 60.0	GRAY SANDSTONE									VISUAL
		60.0 - 70.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
R-453	520+24.6	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
	82.1 ft. LT	0.3 - 3.0	BROWN GRAVEL WITH SAND, SILT, AND CLAY (A-2-6)									VISUAL
		3.0 - 5.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		5.5 - 9.0	SEVERELY WEATHERED BROWN AND GRAY CLAYSHALE.									VISUAL
		9.0 - 13.0	SEVERELY WEATHERED BROWN SANDSTONE.									VISUAL
		13.0 - 19.2	BROWN SANDSTONE									VISUAL
		19.2 - 20.2	BROWN AND GRAY BRECCIA									VISUAL
		20.2 - 23.7	GRAY SILTSTONE									VISUAL
		23.7 - 105.0	GRAY SANDSTONE									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
SR-823												
R-2455	524+19.6	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL
	174.3 ft. LT	0.2 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 5.5	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		5.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		10.0 - 23.8	BROWN SANDSTONE									VISUAL
		23.8 - 130.0	GRAY SANDSTONE									VISUAL
R-455	524+19.6	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
	174.3 ft. LT	0.3 - 15.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		15.0 - 15.5	BROWN AND GRAY BRECCIA									VISUAL
REPLACED BY R-2455		15.5 - 105.0	GRAY SANDSTONE									VISUAL
R-456	524+22.5	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
	1.9 ft. RT	0.3 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL
		3.0 - 8.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		8.0 - 10.5	BLACK CLAY (A-7-6)									VISUAL
		10.5 - 15.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		15.0 - 21.1	GRAY SANDSTONE									VISUAL
		21.1 - 25.0	BROWN AND GRAY SANDSTONE									VISUAL
		25.0 - 115.0	GRAY SANDSTONE									VISUAL *
R-2457	524+32.7	0.0 - 0.1	TOPSOIL (VISUAL)									VISUAL
	189.2 ft. RT	0.1 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 11.5	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL
		11.5 - 22.5	BROWNISH GRAY SANDSTONE									VISUAL
		22.5 - 81.0	GRAY SANDSTONE									VISUAL
R-457	524+32.7	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
	189.2 ft. RT	0.4 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
		8.0 - 19.5	LIGHT BROWN AND BROWN SANDSTONE									VISUAL
REPLACED BY R-2457		19.5 - 106.0	GRAY SANDSTONE									VISUAL
R-459	528+20.4	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
	1.4 ft. RT	0.3 - 1.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		1.0 - 2.5	0	1	6	50	43	53	32	27	A-7-6	
		2.5 - 3.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		3.5 - 5.0	0	0	1	51	48	58	37	26	A-7-6	
		5.0 - 8.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		8.5 - 10.0	0	0	0	47	53	57	35	27	A-7-6	
		10.0 - 13.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		13.5 - 20.0	GRAY CLAY (A-7-6)									VISUAL
R-461	529+17.9	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
	97.4 ft. LT	0.4 - 1.0	BROWN CLAY (A-7-6)									VISUAL
		1.0 - 2.5	0	0	1	52	47	54	32	25	A-7-6	
		2.5 - 3.5	BROWN CLAY (A-7-6)									VISUAL
		3.5 - 5.0	0	0	0	51	49	56	35	27	A-7-6	
		5.0 - 11.0	BROWN CLAY (A-7-6)									VISUAL
		11.0 - 12.5	0	0	0	48	52	59	36	28	A-7-6	
		12.5 - 16.0	BROWN CLAY (A-7-6)									VISUAL
		16.0 - 30.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL

DRAWN RLS
CHECKED AEN

SOIL PROFILE

SCI-823-6.81

18/135



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	
			SR-823									
R-462	529+19.5 2.0 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 3.5	BROWN CLAY (A-7-6)									VISUAL
		3.5 - 5.0	0	0	0	69	31	54	27	24	A-7-6	
		5.0 - 11.0	BROWN CLAY (A-7-6)									VISUAL
		11.0 - 12.5	0	0	0	48	52	59	34	27	A-7-6	
		12.5 - 21.0	BROWN CLAY (A-7-6)									VISUAL
		21.0 - 30.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
R-463	529+20.1 93.2 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 3.5	BROWN AND LIGHT GRAY CLAY (A-7-6)									VISUAL
		3.5 - 5.0	8	4	12	48	28	46	25	18	A-7-6	
		5.0 - 8.5	BROWN AND LIGHT GRAY CLAY (A-7-6)									VISUAL
		8.5 - 10.0	0	0	0	48	52	62	38	30	A-7-6	
		10.0 - 30.0	BROWN AND LIGHT GRAY CLAY (A-7-6)									VISUAL
R-466	533+18.7 138.2 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL
		0.2 - 4.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		4.0 - 8.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		8.0 - 8.5	BROWN CLAY (A-7-6)									VISUAL
		8.5 - 10.0	0	0	2	16	82	55	32	28	A-7-6	
		10.0 - 18.5	BROWN CLAY (A-7-6)									VISUAL
		18.5 - 20.0	0	0	1	9	90	59	32	34	A-7-6	
		20.0 - 23.5	BROWN CLAY (A-7-6)									VISUAL
		23.5 - 25.0	0	0	0	3	97	62	37	37	A-7-6	
		25.0 - 30.0	BROWN CLAY (A-7-6)									VISUAL
		30.0 - 38.5	GRAY CLAY (A-7-6)									VISUAL
		38.5 - 40.0	0	0	0	9	91	60	34	36	A-7-6	
		40.0 - 52.0	GRAY CLAY (A-7-6)									VISUAL
		52.0 - 57.0	GRAY SILT AND CLAY (A-6a)									VISUAL
		57.0 - 59.8	GRAYISH BROWN GRAVEL (A-1-a)									VISUAL
R-464	533+20.3 143.7 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 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	1	45	54	55	33	22	A-7-6	
		7.5 - 13.5	BROWN CLAY (A-7-6)									VISUAL
		13.5 - 15.0	0	0	0	45	55	63	39	21	A-7-6	
		15.0 - 18.5	BROWN CLAY (A-7-6)									VISUAL
		18.5 - 21.0	GRAY CLAY (A-7-6)									VISUAL
		21.0 - 23.0	0	1	1	11	87	59	33	35	A-7-6	
		23.0 - 46.5	GRAY CLAY (A-7-6)									VISUAL
		46.5 - 48.5	GRAY SILT (A-4b)									VISUAL
		48.5 - 50.0	0	0	1	82	17	23	2	27	A-4b	
		50.0 - 52.0	GRAY SILT (A-4b)									VISUAL
		52.0 - 57.0	GRAY GRAVEL WITH SAND (A-1-b)									VISUAL
		57.0 - 58.8	SEVERELY WEATHERED GRAY SHALE.									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
			SR-823									
R-465	533+20.9 2.3 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		6.0 - 13.5	BROWN CLAY (A-7-6)									VISUAL
		13.5 - 18.0	GRAY CLAY (A-7-6)									VISUAL
		18.0 - 20.0	0	0	0	18	82	52	29	26	A-7-6	
		20.0 - 53.5	GRAY CLAY (A-7-6)									VISUAL
		53.5 - 57.0	GRAY GRAVEL WITH SAND (A-1-b)									VISUAL
		57.0 - 58.6	BROWN SANDSTONE FRAGMENTS.									VISUAL
B-1223	535+28.2 7.1 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL
		0.5 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL
		1.0 - 2.5	0	1	10	46	43	34	18	20	A-6b	
		2.5 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL
		3.5 - 5.0	0	3	4	93	58	33	21		A-7-6	
		5.0 - 6.0	BROWN CLAY (A-7-6)									VISUAL
		6.0 - 7.5	0	0	0	7	93	60	34	30	A-7-6	
		7.5 - 8.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		8.0 - 10.0	0	0	0	17	83	57	31	31	A-7-6	
		10.0 - 13.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		13.5 - 18.0	GRAY CLAY (A-7-6)									VISUAL
		18.0 - 20.0	0	0	0	5	95	67	41	40	A-7-6	
		20.0 - 28.0	GRAY CLAY (A-7-6)									VISUAL
		28.0 - 30.0	0	0	0	21	79	58	34	36	A-7-6	
		30.0 - 38.5	GRAY CLAY (A-7-6)									VISUAL
		38.5 - 43.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		43.5 - 48.8	DECOMPOSED GRAY SILTSTONE									VISUAL
C-22	535+49.4 165.7 ft. RT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL
		0.6 - 6.0	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		6.0 - 7.5	0	0	8	48	44	39	24	25	A-6b	
		7.5 - 11.0	BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL
		11.0 - 13.0	BROWN SANDY SILT (A-4a)									VISUAL
		13.0 - 13.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		13.5 - 15.0	0	0	0	20	80	52	29	25	A-7-6	
		15.0 - 22.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		22.0 - 24.0	0	0	0	10	90	59	34	34	A-7-6	
		24.0 - 27.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		27.0 - 29.0	0	0	0	31	69	48	27	31	A-7-6	
		29.0 - 32.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		32.0 - 34.0	0	0	1	9	90	47	25	35	A-7-6	
		34.0 - 43.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		43.5 - 48.5	GRAY SANDY SILT (A-4a)									VISUAL
		48.5 - 53.5	GRAY GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		53.5 - 54.0	GRAY SILT AND CLAY (A-6a)									VISUAL

SOIL PROFILE

SCI-823-6.81



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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.

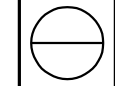
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

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				
			SR-823													RELOCATED SHUMWAY HOLLOW ROAD (TR 234)											
C-23	535+51.6 173.0 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)										B-1303	15+22.1	0.0 - 0.2	TOPSOIL (VISUAL)											
		0.4 - 3.5	BROWN AND GRAY SILT AND CLAY (A-6a)											25.7 ft. RT	0.2 - 2.0	18	17	19	35	11	21	3	4		A-4a	*	
		3.5 - 5.0	0	2	7	55	36	32	14	25				2.0 - 4.0	20	18	14	35	13	23	4	6		A-4a			
		5.0 - 10.0	BROWN AND GRAY SILT AND CLAY (A-6a)												4.0 - 6.0	BROWN SANDY SILT (A-4a)											
		10.0 - 11.0	BROWN AND GRAY CLAY (A-7-6)												6.0 - 7.0	SEVERELY WEATHERED GRAY SANDSTONE											
		11.0 - 12.5	1	0	1	22	76	52	29	30				7.0 - 15.0	BROWN AND GRAY SANDSTONE												
		12.5 - 18.0	BROWN AND GRAY CLAY (A-7-6)																								
		18.0 - 20.0	0	0	0	4	96	77	50	39			B-1304	16+58.1	0.0 - 0.3	TOPSOIL (VISUAL)											
		20.0 - 23.0	BROWN AND GRAY CLAY (A-7-6)											46.1 ft. LT	0.3 - 18.5	BROWN SILT AND CLAY (A-6a)											
		23.0 - 25.0	0	0	0	40	60	43	23	29				18.5 - 22.0	SANDSTONE FRAGMENTS												
		25.0 - 28.0	BROWN AND GRAY CLAY (A-7-6)												22.0 - 45.0	GRAY SANDSTONE											
		28.0 - 30.0	0	0	0	25	75	50	27	34																	
		30.0 - 38.5	BROWN AND GRAY CLAY (A-7-6)																								
		38.5 - 43.5	GRAY GRAVEL WITH SAND AND SILT (A-2-4)											B-1311A	18+72.5	0.0 - 0.3	TOPSOIL (VISUAL)										
		43.5 - 44.0	GRAY SILT AND CLAY (A-6a)											54.3 ft. RT	0.3 - 2.0	BROWN SILT AND CLAY (A-6a)											
														2.0 - 4.0	BROWN SANDY SILT (A-4a)												
														4.0 - 6.0	0	0	17	52	31	25	11	16		A-6a			
TR-14	537+32.3 46.2 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)												6.0 - 11.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)											
		0.3 - 8.5	BROWN AND GRAY SILTY CLAY (A-6b)												11.0 - 13.5	BROWN SILT AND CLAY (A-6a)											
		8.5 - 13.0	BROWN CLAY (A-7-6)												13.5 - 15.0	0	1	9	59	31	25	9	17		A-4b		
		13.0 - 15.0	0	0	0	7	93	65	37	28				15.0 - 21.0	BROWN SILT (A-4b)												
		15.0 - 33.5	BROWN CLAY (A-7-6)												21.0 - 24.0	BROWN GRAVEL WITH SAND (A-1-b)											
		33.5 - 44.0	SEVERELY WEATHERED GRAY SILTSTONE												24.0 - 28.0	YELLOWISH BROWN SANDSTONE											
		44.0 - 54.0	GRAY SILTSTONE												28.0 - 34.0	GRAY SANDSTONE											
			RELOCATED SHUMWAY HOLLOW ROAD (TR 234)																								
B-1343	11+27.5 98.8 ft. RT	0.0 - 0.7	TOPSOIL (VISUAL)												0.0 - 0.3	TOPSOIL (VISUAL)											
		0.7 - 6.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												0.3 - 6.0	BROWN SILTY CLAY (A-6b)											
		6.0 - 11.5	BROWN SANDSTONE												6.0 - 7.5	2	13	22	26	37	41	21	15		A-7-6		
		11.5 - 68.7	GRAY AND BROWN SANDSTONE INTERBEDDED WITH SILTSTONE												7.5 - 11.0	BROWN CLAY (A-7-6)											
		68.7 - 85.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE												11.0 - 13.5	BROWN SANDY SILT (A-4a)											
														13.5 - 16.0	BROWN CLAY (A-7-6)												
B-1301	12+25.7 4.4 ft. RT	0.0 - 0.3	ASPHALT CONCRETE (VISUAL)												16.0 - 18.5	BROWN SANDY SILT (A-4a)											
		0.3 - 0.5	BROWN SILT (A-4b)												18.5 - 20.0	2	13	46	21	18	23	5	12		A-4a		
		0.5 - 2.5	2	14	14	51	19	22	3	14		*		20.0 - 30.0	BROWN SANDY SILT (A-4a)												
		2.5 - 4.5	9	28	13	31	19	25	7	12				30.0 - 37.5	BROWN SILT AND CLAY (A-6a)												
		4.5 - 5.5	SEVERELY WEATHERED BROWN SANDSTONE												37.5 - 55.0	GRAY SANDSTONE											
		5.5 - 10.5	BROWN SANDSTONE																								
B-1302	12+65.4 68.7 ft. LT	0.0 - 0.1	TOPSOIL (VISUAL)												0.0 - 0.3	TOPSOIL (VISUAL)											
		0.1 - 6.0	BROWN SANDY SILT (A-4a)												0.3 - 3.5	BROWN SILT (A-4b)											
		6.0 - 7.0	BROWN SILT AND CLAY (A-6a)												3.5 - 5.0	5	13	15	52	15	20	3	11		A-4b		
		7.0 - 10.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE												5.0 - 13.0	BROWN SILT (A-4b)											
		10.0 - 60.0	GRAY SANDSTONE												13.0 - 13.5	MOTTLED LIGHT BROWN AND GRAY CLAY (A-7-6)											
														13.5 - 15.0	0	0	1	37	62	42	21	22		A-7-6			
														15.0 - 18.0	MOTTLED LIGHT BROWN AND GRAY CLAY (A-7-6)												
														18.0 - 18.5	MOTTLED LIGHT BROWN AND GRAY SILT (A-4b)												
B-1344	14+77.6 128.1 ft. RT	0.0 - 8.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)												18.5 - 20.0	2	6	9	65	19	26	7	15		A-4b		
		8.5 - 10.7	SEVERELY WEATHERED GRAY SANDSTONE												20.0 - 21.5	MOTTLED LIGHT BROWN AND GRAY SILT (A-4b)											
		10.7 - 25.0	BROWN AND GRAY SANDSTONE												21.5 - 23.5	DECOMPOSED SANDSTONE											
		25.0 - 40.8	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE												23.5 - 33.7	BROWN SANDSTONE											
		40.8 - 42.9	GRAY SILTSTONE																								
		42.9 - 46.8	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE																								
		46.8 - 55.0	GRAY SANDSTONE																								

DRAWN RLS
CHECKED AEN

SOIL PROFILE

SCI-823-6.81



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SUMMARY OF SOIL TEST DATA

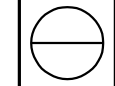
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* 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				
RELOCATED SHUMWAY HOLLOW ROAD (TR 234)												RELOCATED SHUMWAY HOLLOW ROAD (TR 234)															
B-1306	24+39.4 6.2 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	C-49	27+12.8	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL		
		0.3 - 2.0	BROWN SANDY SILT (A-4a)									VISUAL		55.7 ft. RT	0.6 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
		2.0 - 9.0	BROWN SANDSTONE FRAGMENTS (VISUAL)									VISUAL			3.0 - 6.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		9.0 - 16.1	GRAY AND BROWN SANDSTONE									VISUAL			6.0 - 7.5	0	0	0	4	96	66	41	34		A-7-6		
		16.1 - 55.0	GRAY SANDSTONE									VISUAL			7.5 - 13.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL		
C-47	26+04.1 31.6 ft. LT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL			13.5 - 15.0	0	0	1	9	90	75	47	39		A-7-6		
		0.8 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL			15.0 - 26.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		1.0 - 2.5	24	14	10	39	13	24	2	8		A-4a		26.0 - 27.5	0	0	2	30	68	47	25	31		A-7-6			
		3.0 - 10.1	SEVERELY WEATHERED BROWN SILTSTONE									VISUAL			27.5 - 30.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		10.1 - 15.0	BROWN SANDSTONE									VISUAL			30.0 - 39.0	GRAYISH BROWN SILTY CLAY (A-6b)									VISUAL		
C-48	26+06.3 84.8 ft. RT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL			39.0 - 40.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL		
		0.8 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL			40.0 - 41.8	GRAY SILTSTONE									VISUAL		
		1.0 - 2.5	9	7	6	48	30	33	13	12		A-6a	B-1307	27+52.4	0.0 - 0.7	TOPSOIL (VISUAL)									VISUAL		
		2.5 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL		7.1 ft. LT	0.7 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL		
		3.0 - 6.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			6.0 - 21.0	BROWN CLAY (A-7-6)									VISUAL		
		6.0 - 7.5	2	0	1	22	75	56	33	11		A-7-6		21.0 - 22.5	0	0	0	13	87	60	38	34		A-7-6 *			
		7.5 - 10.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			22.5 - 23.5	BROWN CLAY (A-7-6)									VISUAL		
		10.5 - 11.0	BROWN CLAY (A-7-6)									VISUAL			23.5 - 25.0	0	0	0	12	88	57	28	33		A-7-6		
		11.0 - 12.5	1	4	5	33	57	43	23	20		A-7-6		25.0 - 26.0	BROWN CLAY (A-7-6)									VISUAL			
		12.5 - 14.5	BROWN CLAY (A-7-6)									VISUAL			26.0 - 27.5	0	0	1	21	78	54	30	32		A-7-6		
		14.5 - 15.0	SEVERELY WEATHERED BROWN SILTSTONE									VISUAL			27.5 - 42.0	BROWN SILT AND CLAY (A-7-6)									VISUAL		
		15.0 - 20.0	BROWN SANDSTONE									VISUAL			42.0 - 47.0	GRAY SILT AND CLAY (A-6a)									VISUAL		
B-1307A	27+08.6 11.6 ft. RT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL			47.0 - 49.5	GRAY SILTY CLAY (A-6b)									VISUAL		
		0.5 - 3.5	REDDISH BROWN SILT AND CLAY (A-6a)									VISUAL			49.5 - 51.0	BROWN SANDY SILT (A-4a)									VISUAL		
		3.5 - 5.0	5	11	7	47	30	34	15	16		A-6a		51.0 - 52.0	GRAY SILTY CLAY (A-6b)									VISUAL			
		5.0 - 6.0	REDDISH BROWN SILT AND CLAY (A-6a)									VISUAL			52.0 - 58.8	GRAY SANDSTONE									VISUAL		
		6.0 - 8.5	MOTTLED RED AND BROWN SILTY CLAY (A-6b)									VISUAL			B-1313A	31+03.5	0.0 - 2.0	TOPSOIL (VISUAL)									VISUAL
		8.5 - 17.0	BROWN CLAY (A-7-6)									VISUAL		6.1 ft. RT	0.7 - 2.0	0	2	5	73	20	26	7	13		A-4b		
		17.0 - 20.0	GRAY CLAY (A-7-6)									VISUAL			2.0 - 4.7	BROWN SILT (A-4b)									VISUAL		
		20.0 - 22.0	0	0	0	8	92	57	34	36		A-7-6		4.0 - 6.0	3	6	8	59	24	25	7	18		A-4b			
		22.0 - 24.0	0	0	0	12	88	60	35	40		A-7-6		6.0 - 8.0	BROWN SILT (A-4b)									VISUAL			
		24.0 - 26.0	0	0	1	12	87	48	25	34		A-7-6															
		26.0 - 28.0	0	0	0	20	80	53	29	36		A-7-6	C-46	32+44.6	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL		
		28.0 - 30.0	GRAY CLAY (A-7-6)									VISUAL		52.1 ft. LT	1.0 - 2.5	0	2	24	31	43	34	17	18		A-6b *		
C-50	27+12.8 33.5 ft. LT	0.0 - 0.7	TOPSOIL (VISUAL)									VISUAL			2.5 - 6.0	LIGHT BROWN SILTY CLAY (A-6b)									VISUAL		
		0.7 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL			6.0 - 7.5	0	6	70	6	18	28	10	16		A-2-4		
		3.0 - 6.0	GRAYISH BROWN CLAY (A-7-6)									VISUAL			7.5 - 13.5	LIGHT BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL		
		6.0 - 7.5	2	0	0	3	95	63	36	34		A-7-6		13.5 - 15.0	0	0	1	60	39	36	18	34		A-6b			
		7.5 - 23.5	GRAYISH BROWN CLAY (A-7-6)									VISUAL			15.0 - 16.4	GRAY SILTY CLAY (A-6b)									VISUAL		
		23.5 - 25.0	2	0	0	7	91	64	41	36		A-7-6		16.4 - 18.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			
		25.0 - 38.5	GRAYISH BROWN CLAY (A-7-6)									VISUAL			18.0 - 23.0	GRAY SANDSTONE									VISUAL		
		38.5 - 40.0	1	0	1	61	37	35	13	27		A-6a															
		40.0 - 48.5	GRAYISH BROWN SILT AND CLAY (A-6a)									VISUAL															
		48.5 - 50.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL															
		50.0 - 55.0	GRAY SILTSTONE									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			
RELOCATED SHUMWAY HOLLOW ROAD (TR 234)												RELOCATED SHUMWAY HOLLOW ROAD (TR 234)														
C-45	32+40.8 72.7 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL	B-27	38+04.1 39.7 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL	
		0.4 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL			0.4 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL	
		3.0 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL			1.0 - 2.5	1	4	33	36	26	21	9	17	A-4a		
		3.5 - 5.0	0	0	56	18	26	35	19	21	A-6b			2.5 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL		
		5.0 - 5.5	BROWN SILTY CLAY (A-6b)									VISUAL			3.0 - 6.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
		5.5 - 8.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			6.0 - 7.5	0	7	80	13	NP	NP	14	A-3a			
		8.5 - 10.0	0	19	70	11	NP	NP	17	A-3a				7.5 - 11.6	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
		10.0 - 15.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			11.6 - 12.5	0	1	1	52	46	39	16	33	A-6b		
		15.0 - 16.0	BROWN SILTY CLAY (A-6b)									VISUAL			12.5 - 13.0	BROWN SILTY CLAY (A-6b)									VISUAL	
		16.0 - 17.5	0	7	8	45	40	37	16	35	A-6b			13.0 - 16.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
		17.5 - 18.5	BROWN SILTY CLAY (A-6b)									VISUAL			16.5 - 36.5	GRAY SANDSTONE									VISUAL	
		18.5 - 20.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL														
		20.0 - 25.0	GRAY SANDSTONE									VISUAL	B-28	38+06.7 35.3 ft. LT	0.0 - 0.7	TOPSOIL (VISUAL)									VISUAL	
B-1308	33+72.3 1.1 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL			0.7 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		0.2 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			3.5 - 5.0	3	3	32	30	32	26	11	20	VISUAL		
		3.5 - 8.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			5.0 - 5.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		8.5 - 11.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			5.5 - 11.0	BROWN FINE SAND (A-3)									VISUAL	
		11.0 - 12.5	0	1	3	51	45	34	13	28	A-6a			11.0 - 12.5	0	7	87	6	NP	NP	9	VISUAL				
		12.5 - 14.5	GRAY COARSE AND FINE SAND (A-3a)									VISUAL			12.5 - 15.5	BROWN FINE SAND (A-3)									VISUAL	
		14.5 - 20.0	GRAY SANDSTONE									VISUAL			15.5 - 16.0	BROWN SILT AND CLAY (A-6a)									VISUAL	
B-1314A	34+98.1 11.4 ft. RT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL	TR-28	38+20.7 17.8 ft. RT	0.0 - 0.7	ASPHALT CONCRETE (VISUAL)									VISUAL	
		0.8 - 2.0	0	2	14	53	31	29	12	17	A-6a			0.7 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL *		
		2.0 - 4.0	1	1	29	42	27	23	10	20	A-4a			3.0 - 15.5	REDDISH BROWN COARSE AND FINE SAND (A-3a)									VISUAL		
		4.0 - 6.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			15.5 - 18.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL	
TR-27	35+91.3 5.9 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL			18.5 - 30.5	GRAY SANDSTONE									VISUAL	
		0.4 - 7.5	BROWN SANDY SILT (A-4a)									VISUAL			RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP A											
		7.5 - 17.5	BROWN AND GRAY SANDSTONE									VISUAL	B-1313	386+92.6 5.0 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	
B-25	36+59.3 49.2 ft. RT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL			0.3 - 2.0	1	4	14	52	29	27	9	14	A-4b *		
		0.5 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL			2.0 - 4.0	1	4	29	26	40	NP	NP	13	A-4a		
		1.0 - 2.5	2	0	2	53	43	35	13	31	A-6a			4.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL		
		2.5 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL			6.0 - 15.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
		3.0 - 4.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL														
		4.5 - 14.5	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL	B-1314	390+91.6 35.9 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	
B-24	36+59.8 43.4 ft. LT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL			1.0 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL	
		0.6 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL			6.0 - 13.5	BROWN CLAY (A-7-6)									VISUAL	
		1.0 - 2.5	0	1	1	65	33	32	11	31	A-6a			13.5 - 15.5	1	2	4	21	72	51	26	29	A-7-6			
		2.5 - 3.0	BROWN SILT AND CLAY (A-6a)									VISUAL			15.5 - 16.0	BROWN CLAY (A-7-6)									VISUAL	
		3.0 - 5.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			16.0 - 21.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
		5.0 - 15.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL			21.0 - 22.5	0	0	88	12	NP	NP	5	A-3a			
													22.5 - 30.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			
													30.0 - 35.0	GRAY SILT AND CLAY (A-6a)									VISUAL			
													35.0 - 41.3	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		
RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP A												RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP B													
B-1315	390+91.9 81.3 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	C-44	383+43.2 63.4 ft. LT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL
		1.0 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			0.6 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		3.5 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL			3.5 - 5.0	0	5	57	5	33	29	13	16	A-6a	
		6.0 - 11.0	BROWN CLAY (A-7-6)									VISUAL			5.0 - 8.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		11.0 - 28.5	BROWN FINE SAND (A-3)									VISUAL			8.0 - 11.0	BROWN FINE SAND (A-3)									VISUAL
		28.5 - 33.0	GRAY SILT AND CLAY (A-6a)									VISUAL			11.0 - 12.5	1	9	82	8		NP	NP	34	A-3	
		33.0 - 38.1	GRAY SANDSTONE									VISUAL			12.5 - 13.6	BROWN FINE SAND (A-3)									VISUAL
B-1316	394+92.4 88.2 ft. RT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL			13.6 - 15.5	GRAY CLAY (A-7-6)									VISUAL
		0.8 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL			15.5 - 17.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		6.0 - 16.0	BROWN CLAY (A-7-6)									VISUAL			17.0 - 22.0	GRAY SANDSTONE									VISUAL
		16.0 - 18.5	BROWN FINE SAND (A-3)									VISUAL	RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP C												
		18.5 - 26.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	B-1330	377+97.4 0.3 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		26.0 - 30.0	BROWN FINE SAND (A-3)									VISUAL			1.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
		30.0 - 38.5	GRAY SILT AND CLAY (A-6a)									VISUAL			6.0 - 9.5	SANDSTONE FRAGMENTS									VISUAL
		38.5 - 41.0	GRAY SANDY SILT (A-4a)									VISUAL			9.5 - 15.0	GRAY SANDSTONE									VISUAL
		41.0 - 50.0	GRAY SANDSTONE									VISUAL													
B-1317	399+02.0 54.0 ft. RT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL			0.0 - 0.9	TOPSOIL (VISUAL)									VISUAL
		0.8 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL			0.9 - 8.0	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 11.0	BROWN CLAY (A-7-6)									VISUAL			8.0 - 10.5	BROWN CLAY (A-7-6)									VISUAL
		11.0 - 12.5	1	0	1	23	75	60	35	33	A-7-6			10.5 - 13.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
		12.5 - 18.5	BROWN CLAY (A-7-6)									VISUAL			13.0 - 16.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		18.5 - 20.0	0	1	1	17	81	57	33	31	A-7-6			16.5 - 21.5	GRAY SANDSTONE									VISUAL	
		20.0 - 22.5	BROWN CLAY (A-7-6)									VISUAL													
		22.5 - 26.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL	C-41	378+99.8 57.4 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		26.0 - 27.5	0	2	79	19		NP	NP	8	A-3a			0.3 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL	
		27.5 - 37.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			3.0 - 8.5	BROWN SILTSTONE									VISUAL
		37.0 - 40.0	GRAY GRAVEL WITH SAND (A-1-b)									VISUAL			8.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		40.0 - 50.0	GRAY SANDSTONE									VISUAL			10.0 - 12.3	BROWN SANDSTONE									VISUAL
RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP B														12.3 - 15.0	GRAY SANDSTONE									VISUAL	
B-1311	376+49.6 7.8 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	B-1329	382+01.8 0.8 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		0.3 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			1.0 - 2.5	8	10	9	48	25	27	8	10	A-4a	*
		6.0 - 8.7	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			2.5 - 11.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL
		8.7 - 14.0	GRAY SANDSTONE									VISUAL			11.0 - 18.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
B-1312	380+53.0 10.8 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL			18.5 - 20.5	SEVERELY WEATHERED GRAY SHALE									VISUAL
		0.5 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL			20.5 - 26.0	GRAY SANDSTONE									VISUAL
		1.0 - 2.5	0	3	27	42	28	21	7	20	A-4a			RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP D											
		2.5 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL	B-1327	385+91.6 81.5 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		6.0 - 8.5	GRAY SILTY CLAY (A-6b)									VISUAL			0.3 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 10.0	SANDSTONE FRAGMENTS									VISUAL			6.0 - 16.7	BROWN AND GRAY SANDSTONE									VISUAL
		10.0 - 15.5	GRAY SANDSTONE									VISUAL			16.7 - 60.0	GRAY SANDSTONE									VISUAL
C-43	383+41.7 80.4 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL													
		1.0 - 2.5	0	2	46	25	27	24	12	13	A-6a														
		2.5 - 3.5	LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL													
		3.5 - 6.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL													
		6.0 - 7.5	0	5	32	28	35	25	12	17	A-6a														
		7.5 - 8.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL													
		8.5 - 10.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL													
		10.0 - 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		
RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP D												RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP D													
B-1328	385+92.3 13.3 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL	B-1323	391+91.7 74.0 ft. RT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL
		0.5 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL			0.6 - 8.5	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL
		8.5 - 11.0	BROWN CLAY (A-7-6)									VISUAL			8.5 - 13.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		11.0 - 13.0	0	0	1	3	96	66	37	33	A-7-6			13.0 - 15.0	0	0	0	15	85	55	28	39	A-7-6		
		13.0 - 16.0	BROWN CLAY (A-7-6)									VISUAL			15.0 - 18.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		16.0 - 18.0	0	0	1	12	87	69	39	36	A-7-5			18.5 - 20.0	0	0	1	7	92	57	31	32	A-7-6		
		18.0 - 18.5	BROWN ELASTIC CLAY (A-7-5)									VISUAL			20.0 - 21.0	GRAY ELASTIC CLAY (A-7-5)									VISUAL
		18.5 - 23.5	BROWN CLAY (A-7-6)									VISUAL			21.0 - 23.0	0	0	0	6	94	61	30	37	A-7-5	
		23.5 - 30.0	BROWN SANDY SILT (A-4a)									VISUAL			23.0 - 25.0	GRAY ELASTIC CLAY (A-7-5)									VISUAL
		30.0 - 34.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL *			23.5 - 25.0	0	0	1	16	83	55	30	34	A-7-5	
		34.5 - 40.0	BROWN SANDSTONE									VISUAL			25.0 - 26.0	GRAY ELASTIC CLAY (A-7-5)									VISUAL
B-1345	385+95.4 48.8 ft. LT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL			26.0 - 27.5	0	0	0	4	96	60	33	36	A-7-6	
		0.8 - 3.5	REDDISH BROWN SANDY SILT (A-4a)									VISUAL			27.5 - 44.0	GRAY CLAY (A-7-6)									VISUAL
		3.5 - 7.0	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL			44.0 - 47.0	GRAY SILT AND CLAY (A-6a)									VISUAL
		7.0 - 13.8	BROWN SANDSTONE									VISUAL			47.0 - 57.0	GRAY CLAY (A-7-6)									VISUAL
		13.8 - 25.8	GRAY AND BROWN SILTSTONE INTERBEDDED W/ SANDSTONE									VISUAL			57.0 - 60.0	BROWN FINE SAND (A-3)									VISUAL
		25.8 - 65.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE									VISUAL			60.0 - 68.5	BROWN SANDY SILT (A-4a)									VISUAL
B-1326	387+86.2 110.0 ft. RT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	B-1321	393+97.0 100.8 ft. LT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL
		1.0 - 6.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL			0.6 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 18.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			13.5 - 16.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		18.5 - 26.0	GRAY CLAY (A-7-6)									VISUAL			16.0 - 26.0	GRAY CLAY (A-7-6)									VISUAL
		26.0 - 28.0	0	0	0	5	95	63	36	37	A-7-6			26.0 - 27.5	0	0	0	23	77	54	30	34	A-7-6		
		28.0 - 52.0	GRAY CLAY (A-7-6)									VISUAL			27.5 - 30.0	GRAY CLAY (A-7-6)									VISUAL
		52.0 - 63.5	BROWN FINE SAND (A-3)									VISUAL			30.0 - 33.5	GRAY SILTY CLAY (A-6b)									VISUAL
		63.5 - 69.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			33.5 - 35.0	0	0	3	43	54	40	21	27	A-6b	
		69.0 - 74.0	GRAY SANDSTONE									VISUAL			35.0 - 42.0	GRAY SILTY CLAY (A-6b)									VISUAL
B-1325	389+95.6 10.9 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	B-1322	393+99.8 9.4 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		1.0 - 11.0	BROWN SILTY CLAY (A-6b)									VISUAL			1.0 - 3.0	BROWN SANDY SILT (A-4a)									VISUAL
		11.0 - 12.5	6	7	8	44	35	32	16	14	A-6b			3.0 - 8.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL	
		12.5 - 21.0	BROWN SILTY CLAY (A-6b)									VISUAL			8.5 - 10.5	0	0	1	17	82	54	30	30	A-7-6	
		21.0 - 28.5	BROWN CLAY (A-7-6)									VISUAL			10.5 - 16.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
		28.5 - 33.5	GRAY CLAY (A-7-6)									VISUAL			16.0 - 17.5	0	0	0	11	89	61	37	33	A-7-6 *	
		33.5 - 35.0	0	0	1	26	73	50	29	33	A-7-6 *			17.5 - 18.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL	
		35.0 - 52.0	BROWN CLAY (A-7-6)									VISUAL			18.5 - 20.5	0	0	0	10	90	56	23	33	A-7-5	
		52.0 - 58.5	BROWN SANDY SILT (A-4a)									VISUAL			20.5 - 21.0	BROWN ELASTIC CLAY (A-7-5)									VISUAL
		58.5 - 64.5	SEVERELY WEATHERED SANDSTONE									VISUAL			21.0 - 22.5	0	0	0	8	92	52	28	34	A-7-6	
		64.5 - 69.5	GRAY SANDSTONE									VISUAL			22.5 - 28.5	GRAY CLAY (A-7-6)									VISUAL
B-1324	390+07.1 74.5 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL			28.5 - 30.5	0	0	0	6	94	63	37	37	A-7-6	
		0.3 - 6.0	BROWN SILTY CLAY (A-6b)									VISUAL			30.5 - 57.0	GRAY CLAY (A-7-6)									VISUAL
		6.0 - 26.0	BROWN SANDY SILT (A-4a)									VISUAL			57.0 - 60.0	BROWN SILTY CLAY (A-6b)									VISUAL
		26.0 - 30.0	SEVERELY WEATHERED GRAY SHALE									VISUAL			60.0 - 67.0	BROWN SANDY SILT (A-4a)									VISUAL
		30.0 - 35.0	SANDSTONE FRAGMENTS									VISUAL			67.0 - 70.0	SEVERELY WEATHERED SHALE									VISUAL
		35.0 - 65.0	GRAY SANDSTONE									VISUAL			70.0 - 72.0	GRAY SANDSTONE									VISUAL

SOIL PROFILE

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SUMMARY OF SOIL TEST DATA

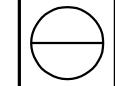
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

* 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		
RELOCATED SHUMWAY HOLLOW ROAD (TR 234) - RAMP D												SR-335													
B-1320	397+98.2 5.3 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	B-1342	10+59.4 11.7 ft. LT	0.0 - 1.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.0 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL			1.0 - 2.5	1	2	26	30	42	28	14	19	A-6a	
		3.5 - 18.5	BROWN CLAY (A-7-6)									VISUAL			2.5 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		18.5 - 20.5	0	1	1	3	95	63	34	35	A-7-6			3.5 - 5.0	0	4	56	14	26	26	13	17	A-6a		
		20.5 - 33.0	BROWN CLAY (A-7-6)									VISUAL			5.0 - 6.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		33.0 - 35.0	0	0	0	5	95	54	26	37	A-7-6			6.5 - 7.5	0	8	79	13	NP	NP	13		A-3a		
		35.0 - 42.0	BROWN CLAY (A-7-6)									VISUAL			7.5 - 14.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		42.0 - 47.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			14.0 - 15.0	1	1	2	63	34	38	16	30	A-6b	
		47.0 - 53.5	GRAY SILT AND CLAY (A-6a)									VISUAL			15.0 - 15.5	BROWN SILTY CLAY (A-6b)									VISUAL
		53.5 - 55.0	SEVERELY WEATHERED LIGHT GRAY SANDSTONE									VISUAL			15.5 - 19.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		55.0 - 60.0	GRAY SANDSTONE									VISUAL			19.5 - 30.9	LIGHT GRAY SANDSTONE									VISUAL
B-1319	397+99.0 124.9 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL	B-1333	11+30.6 6.3 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.5 - 1.0	BROWN SILTY CLAY (A-6b)									VISUAL			0.3 - 2.0	32	18	21	22	7	NP	NP	6		A-2-4 *
		1.0 - 2.5	1	1	2	54	42	35	17	21	A-6b			2.0 - 4.0	0	7	61	10	22	24	8	14	A-2-4		
		2.5 - 3.5	BROWN SILTY CLAY (A-6b)									VISUAL			4.0 - 6.0	0	2	69	9	20	NP	NP	12	A-3a	
		3.5 - 5.0	0	0	1	15	84	46	22	16	A-7-6			6.0 - 7.5	0	15	68	17	NP	NP	12		A-3a		
		5.0 - 30.0	BROWN CLAY (A-7-6)									VISUAL			7.5 - 8.0	BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		30.0 - 47.0	GRAY CLAY (A-7-6)									VISUAL			8.0 - 11.0	BROWN FINE SAND (A-3)									VISUAL
		47.0 - 55.0	BROWN SANDY SILT (A-4a)									VISUAL			11.0 - 12.5	0	24	72	4	NP	NP	29		A-3	
		55.0 - 60.0	GRAY SANDSTONE									VISUAL			12.5 - 13.0	BROWN FINE SAND (A-3)									VISUAL
B-1318	402+06.6 111.0 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL	B-1341	12+08.0 11.6 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		1.0 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL			0.3 - 3.0	DARK BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL
		6.0 - 8.5	BROWN CLAY (A-7-6)									VISUAL			3.0 - 3.5	REDDISH BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 10.5	7	0	1	7	85	66	37	28	A-7-6			3.5 - 5.0	0	7	48	15	30	23	10	15	A-4a		
		10.5 - 18.5	BROWN CLAY (A-7-6)									VISUAL			5.0 - 5.5	REDDISH BROWN SANDY SILT (A-4a)									VISUAL
		18.5 - 20.5	0	0	0	12	88	58	30	37	A-7-6			5.5 - 6.0	REDDISH BROWN COARSE AND FINE SAND (A-3a)									VISUAL	
		20.5 - 28.5	BROWN CLAY (A-7-6)									VISUAL			6.0 - 7.5	0	8	78	14	NP	NP	15		A-3a	
		28.5 - 30.0	BROWN FINE SAND (A-3)									VISUAL			7.5 - 11.0	REDDISH BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		30.0 - 38.5	BROWN SILT AND CLAY (A-6a)									VISUAL			11.0 - 12.5	0	1	1	62	36	35	15	31		A-6a
		38.5 - 42.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL			12.5 - 14.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		42.0 - 47.0	GRAY SANDSTONE									VISUAL			14.0 - 16.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
B-1334	8+81.4 6.3 ft. LT	0.0 - 0.8	ASPHALT CONCRETE (VISUAL)									VISUAL			16.0 - 24.1	LIGHT GRAY SANDSTONE									VISUAL
		0.8 - 1.1	AGGREGATE BASE (VISUAL)									VISUAL			24.1 - 46.0	GRAY SANDSTONE									VISUAL
		1.1 - 2.0	13	10	23	41	13	21	7	9	A-4a														
		2.0 - 4.0	0	14	70		16	NP	NP	7	A-3a														
		4.0 - 6.0	0	13	76		11	NP	NP	9	A-3a														
		6.0 - 7.5	0	20	74		6	NP	NP	17	A-3														
		7.5 - 8.0	BROWN FINE SAND (A-3)									VISUAL													
		8.0 - 8.5	BROWN ELASTIC CLAY (A-7-5)									VISUAL													
		8.5 - 10.0	2	3	4	56	35	44	14	29	A-7-5														
		10.0 - 10.5	BROWN ELASTIC CLAY (A-7-5)									VISUAL													
		10.5 - 14.0	GRAYISH BROWN COARSE AND FINE SAND (A-3a)									VISUAL													
		14.0 - 19.0	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					
																									SR-335				
B-1332	12+80.2 5.5 ft. LT	0.0 - 0.7	ASPHALT CONCRETE (VISUAL)										VISUAL	B-1201	10+90.4 6.9 ft. RT	0.0 - 0.8	ASPHALT, AGGREGATE BASE (VISUAL)										VISUAL		
		0.7 - 1.0	AGGREGATE BASE (VISUAL)										VISUAL			0.8 - 1.0	FILL: BROWN SILT AND CLAY (A-6a)										VISUAL		
		1.0 - 2.0	22	14	17	40	7	NP	NP	11			A-4a *			1.0 - 3.0	25	9	12	36	18	31	13	27			A-6a *		
		2.0 - 2.5	BROWN SANDY SILT (A-4a)										VISUAL			3.0 - 3.5	FILL: BROWN SILT AND CLAY (A-6a)										VISUAL		
		2.5 - 4.0	49	19	13		19	NP	NP	7			A-1-b			3.5 - 5.0	24	4	11	41	20	30	9	12			A-4a		
		4.0 - 4.5	BROWN GRAVEL WITH SAND (A-1-b)										VISUAL			5.0 - 7.0	24	4	11	42	19	30	12	13			A-6a		
		4.5 - 6.0	0	6	42	36	16	NP	NP	17			A-4a			7.0 - 10.0	BROWN SILT AND CLAY (A-6a)										VISUAL		
		6.0 - 7.5	0	25	59		16	NP	NP	18			A-3a			C-60	11+08.5 50.0 ft. LT	0.0 - 0.7	TOPSOIL (VISUAL)										VISUAL
		7.5 - 10.5	BROWN COARSE AND FINE SAND (A-3a)										VISUAL					0.7 - 3.0	BROWN SILT (A-4b)										VISUAL
		10.5 - 11.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL					3.0 - 5.5	SILT AND CLAY (A-6a)										VISUAL
11.0 - 12.5	0	1	3	48	48	38	14	34			A-6a	5.5 - 8.5	BROWN CLAY (A-7-6)										VISUAL						
12.5 - 14.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL	8.5 - 10.0	0	0	1			27	72	47	24	30			A-7-6				
14.0 - 18.0	BROWN FINE SAND (A-3)										VISUAL	10.0 - 13.0	BROWN CLAY (A-7-6)										VISUAL						
18.0 - 23.0	SANDSTONE										VISUAL	13.0 - 16.0	GRAY SILT (A-4b)										VISUAL						
B-1340	13+51.5 11.6 ft. LT	0.0 - 0.3	ASPHALT CONCRETE (VISUAL)										VISUAL	B-1202	13+24.7 7.6 ft. LT			0.0 - 0.8	ASPHALT, AGGREGATE BASE (VISUAL)										VISUAL
		0.3 - 4.0	POSSIBLE FILL: BROWN SILT AND CLAY (A-6a)										VISUAL					0.8 - 1.0	FILL: BROWN SILTY CLAY (A-6b)										VISUAL
		4.0 - 5.0	10	7	29	37	17	21	5	16			A-4a					1.0 - 3.0	11	3	5	46	35	33	16	18			A-6b *
		5.0 - 9.0	BROWN SANDY SILT (A-4a)										VISUAL			3.0 - 5.0	5	4	4	38	49	39	21	22			A-6b		
		9.0 - 10.0	0	3	35	27	35	26	13	22			A-6a			5.0 - 5.5	FILL: BROWN SILTY CLAY (A-6b)										VISUAL		
		10.0 - 11.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)										VISUAL			5.5 - 7.0	0	1	1	33	65	50	29	23			A-7-6		
		11.0 - 12.5	0	8	68		24	NP	NP	16			A-3a			7.0 - 10.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)										VISUAL		
		12.5 - 15.0	GRAY COARSE AND FINE SAND (A-3a)										VISUAL			B-1203	15+63.3 6.2 ft. RT	0.0 - 0.8	ASPHALT, AGGREGATE BASE (VISUAL)										VISUAL
		15.0 - 16.0	GRAY SANDSTONE										VISUAL					0.8 - 1.0	FILL: GRAY SILT (A-4b)										VISUAL
		16.0 - 21.7	LIGHT GRAY SANDSTONE										VISUAL					1.0 - 3.0	2	3	3	58	34	26	9	18			A-4b *
21.7 - 45.0	GRAY SANDSTONE										VISUAL	3.0 - 5.0	3	2	2			22	71	52	28	25			A-7-6				
B-1331	14+29.4 5.6 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)										VISUAL	B-1204	19+24.7 6.1 ft. LT			0.0 - 0.8	ASPHALT, AGGREGATE BASE (VISUAL)										VISUAL
		0.4 - 2.0	7	15	26		52	NP	NP	14			A-4a *					0.8 - 1.0	FILL: GRAY SANDY SILT (A-4a)										VISUAL
		2.0 - 4.0	0	3	36	34	27	21	8	19			A-4a					1.0 - 3.0	14	9	10	48	19	22	6	12			A-4a *
		4.0 - 5.0	BROWN SANDY SILT (A-4a)										VISUAL					3.0 - 5.0	0	1	13	68	18	23	5	21			A-4b
		5.0 - 6.0	0	3	43	25	29	24	11	18			A-6a					5.0 - 5.5	BROWN SILT (A-4b)										VISUAL
		6.0 - 6.5	BROWN SILT AND CLAY (A-6a)										VISUAL					5.5 - 7.0	18	11	18	38	15	23	5	16			A-4a
		6.5 - 7.5	0	20	69		11	NP	NP	24			A-3a			7.0 - 8.0	REDDISH BROWN SANDY SILT (A-4a)										VISUAL		
		7.5 - 18.0	BROWN COARSE AND FINE SAND (A-3a)										VISUAL			8.0 - 10.0	GRAY CLAY (A-7-6)										VISUAL		
		18.0 - 30.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE										VISUAL			C-61	10+81.9 85.7 ft. RT	0.0 - 0.9	TOPSOIL (VISUAL)										VISUAL
		LUCASVILLE MINFORD ROAD (CR 28)																0.9 - 3.5	SANDSTONE FRAGMENTS										VISUAL
3.5 - 5.0	4	1	1	20	74	52	28	21			A-7-6	5.0 - 5.5	BROWN SILT (A-4b)										VISUAL						
5.0 - 8.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL	5.5 - 7.0	18	11	18			38	15	23	5	16			A-4a				
8.5 - 10.0	0	1	1	16	82	58	42	30			A-7-6	7.0 - 8.0	REDDISH BROWN SANDY SILT (A-4a)										VISUAL						
10.0 - 11.0	BROWN AND GRAY CLAY (A-7-6)										VISUAL	8.0 - 10.0	GRAY CLAY (A-7-6)										VISUAL						
11.0 - 12.5	1	0	1	28	70	46	25	27			A-7-6	C-61	10+81.9 85.7 ft. RT	0.0 - 0.9	TOPSOIL (VISUAL)										VISUAL				
12.5 - 13.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL			0.9 - 3.5	SANDSTONE FRAGMENTS										VISUAL				
13.5 - 16.0	BROWN SANDY SILT (A-4a)										VISUAL			3.5 - 5.0	4			1	1	20	74	52	28	21			A-7-6		
16.0 - 18.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)										VISUAL			5.0 - 8.5	BROWN AND GRAY CLAY (A-7-6)										VISUAL				
18.5 - 21.0	BROWN AND GRAY COARSE AND FINE SAND (A-3a)										VISUAL			8.5 - 10.0	0	1	1	16	82	58	42	30			A-7-6				
21.0 - 23.5	BROWN GRAVEL WITH SAND AND SILT (A-2-4)										VISUAL			10.0 - 11.0	BROWN AND GRAY CLAY (A-7-6)										VISUAL				
23.5 - 25.0	SEVERELY WEATHERED GRAY SANDSTONE										VISUAL			11.0 - 12.5	1	0	1	28	70	46	25	27			A-7-6				
25.0 - 30.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE										VISUAL			12.5 - 13.5	BROWN AND GRAY CLAY (A-7-6)										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.

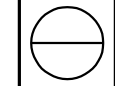
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

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			
LUCASVILLE MINFORD ROAD (CR 28)												LUCASVILLE MINFORD ROAD (CR 28)														
C-62	21+97.0 44.0 ft LT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL	B-1208	34+35.0 6.8 ft. LT	0.0 - 0.8	ASPHALT, AGGREGATE BASE (VISUAL)									VISUAL	
		0.6 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL			0.8 - 1.0	MOTTLED BROWN AND GRAY SILT (A-4b)									VISUAL	
		1.0 - 2.5	19	12	13	40	16	23	5	18	A-4a			1.0 - 3.0	4	3	4	63	26	28	10	18	A-4b *			
		2.5 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			3.0 - 5.0	16	5	5	46	28	30	12	17	A-6a		
		3.5 - 5.0	28	12	13	32	15	24	6	14	A-4a			5.0 - 7.0	12	9	11	47	21	31	11	17	A-6a			
		5.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			7.0 - 7.5	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL	
		6.0 - 8.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL			7.5 - 10.0	GRAY CLAY (A-7-6)									VISUAL	
		8.5 - 10.0	0	0	1	3	96	66	39	37	A-7-6	LUCASVILLE MINFORD ROAD (CR 28) - RAMP A														
		10.0 - 29.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL	B-1231	521+20.1 168.8 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	
		29.0 - 43.5	GRAY COARSE AND FINE SAND (A-3a)									VISUAL			0.3 - 6.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL	
		43.5 - 45.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL			6.0 - 10.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL	
		45.0 - 47.3	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL			10.0 - 85.0	GRAY SANDSTONE									VISUAL	
		47.3 - 50.0	GRAY SILTSTONE									VISUAL														
B-1205	22+17.7 7.9 ft. RT	0.0 - 0.0	ASPHALT, AGGREGATE BASE (VISUAL)									VISUAL	B-1228	525+05.5 111.7 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL	
		1.0 - 3.0	5	7	8	48	32	29	11	16	A-6a *			0.5 - 1.0	BROWN SILT (A-4b)									VISUAL		
		3.0 - 5.0	14	12	11	39	24	26	9	13	A-4a			1.0 - 2.5	1	1	9	69	20	28	8	10	A-4b			
		5.0 - 7.0	0	0	1	15	84	58	32	32	A-7-6			2.5 - 3.5	BROWN SILT (A-4b)									VISUAL		
		7.0 - 10.0	BROWN CLAY (A-7-6)									VISUAL			3.5 - 10.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL	
C-63	22+48.1 45.6 ft. RT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL			10.0 - 72.6	GRAY SANDSTONE									VISUAL	
		0.8 - 1.0	LIGHT BROWN SILTY CLAY (A-6b)									VISUAL			72.6 - 82.3	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL	
		1.0 - 2.5	0	1	2	47	50	38	19	18	A-6b			82.3 - 90.0	GRAY SANDSTONE									VISUAL		
		2.5 - 6.0	LIGHT BROWN SILTY CLAY (A-6b)									VISUAL			90.0 - 100.0	GRAY SANDSTONE INTERBEDDED WITH SILTSTONE (VISUAL)									VISUAL	
		6.0 - 7.5	0	0	0	9	91	58	35	26	A-7-6	B-1227	525+08.2 98.1 ft. RT	0.0 - 0.7	TOPSOIL (VISUAL)									VISUAL		
		7.5 - 18.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL			0.7 - 3.5	BROWN SILT AND CLAY (A-6a)									VISUAL	
		18.5 - 20.0	0	0	0	3	97	70	42	39	A-7-6			3.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL		
		20.0 - 21.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL			10.0 - 25.0	BROWN SANDSTONE									VISUAL	
		21.0 - 38.5	GRAY CLAY (A-7-6)									VISUAL			30.0 - 110.0	GRAY SANDSTONE									VISUAL	
		38.5 - 39.5	GRAY COARSE AND FINE SAND (A-3a)									VISUAL	B-1229	527+81.9 70.1 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	
		39.5 - 43.5	GRAY CLAY (A-7-6)									VISUAL			0.3 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL	
		43.5 - 44.5	GRAY COARSE AND FINE SAND (A-3a)									VISUAL			6.0 - 16.5	WEATHERED BROWN AND GRAY SILTSTONE									VISUAL	
		44.5 - 54.0	REDDISH BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL			16.5 - 31.5	GRAY SANDSTONE									VISUAL	
		54.0 - 56.8	GRAY SANDSTONE									VISUAL														
		56.8 - 59.0	GRAY SILTSTONE									VISUAL	B-1222	529+62.8 4.1 ft. RT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL	
B-1206	26+54.5 7.1 ft. LT	0.0 - 1.0	ASPHALT, AGGREGATE BASE (VISUAL)									VISUAL			0.5 - 2.0	16	11	12	41	20	24	9	14	A-4a *		
		1.0 - 3.0	4	6	8	58	24	27	11	16	A-6a *			2.0 - 4.0	2	9	16	52	21	28	9	13	A-4b			
		3.0 - 5.0	0	1	7	60	32	34	16	22	A-6b			4.0 - 6.0	7	8	13	44	28	33	17	15	A-6b			
		5.0 - 7.0	5	13	19	39	24	31	9	23	A-4a			6.0 - 7.4	BROWN SILT AND CLAY (A-6a)									VISUAL		
		7.0 - 10.0	BROWN SANDY SILT (A-4a)									VISUAL			7.4 - 8.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL	
B-1207	29+94.9 7.1 ft. RT	0.0 - 0.8	ASPHALT, AGGREGATE BASE (VISUAL)									VISUAL			8.5 - 10.0	0	0	0	12	88	59	36	30	A-7-6		
		0.8 - 1.0	GRAY SILT (A-4b)									VISUAL			10.0 - 18.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL	
		1.0 - 3.0	2	6	6	70	16	21	2	19	A-4b *			18.5 - 26.0	GRAY CLAY (A-7-6)									VISUAL		
		3.0 - 5.0	3	3	4	58	32	35	15	22	A-6a			26.0 - 27.5	0	0	0	11	89	50	26	33	A-7-6			
		5.0 - 7.0	11	5	5	54	25	32	13	19	A-6a			27.5 - 58.5	GRAY CLAY (A-7-6)									VISUAL		
		7.0 - 10.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			58.5 - 60.0	GRAY SILT AND CLAY (A-6a)									VISUAL	
														60.0 - 78.9	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL		

DRAWN RLS
CHECKED AEN

SOIL PROFILE

SCI-823-6.81



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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				
LUCASVILLE MINFORD ROAD (CR 28) - RAMP A												LUCASVILLE MINFORD ROAD (CR 28) - RAMP A															
B-1220	533+40.2 13.9 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	C-55	535+10.9 95.8 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL		
		0.3 - 2.0	0	0	8	56	36	30	13	15	A-6a			0.3 - 5.5	LIGHT BROWN SILT (A-4b)									VISUAL			
		2.0 - 4.0	LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL			5.5 - 8.5	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL		
		4.0 - 6.0	0	3	10	50	37	30	14	20	A-6a			8.5 - 10.0	0	0	6	46	48	36	20	21	A-6b				
		6.0 - 8.5	LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL			10.0 - 13.0	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL		
		8.5 - 10.0	7	5	11	40	37	39	19	21	A-6b			13.0 - 16.0	BROWN CLAY (A-7-6)									VISUAL			
		10.0 - 11.0	LIGHT BROWN SILTY CLAY (A-6b)									VISUAL			16.0 - 17.5	4	2	6	25	63	42	21	26	A-7-6			
		11.0 - 12.5	0	0	5	33	62	46	28	22	A-7-6			17.5 - 20.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			
		12.5 - 18.5	LIGHT BROWN CLAY (A-7-6)									VISUAL			20.5 - 23.5	BROWNISH GRAY CLAY (A-7-6)									VISUAL		
		18.5 - 20.0	1	3	20	29	47	35	17	20	A-6b			23.5 - 25.0	0	0	0	1	99	83	54	42	A-7-6				
		20.0 - 21.0	LIGHT BROWN SILTY CLAY (A-6b)									VISUAL			25.0 - 49.0	BROWNISH GRAY CLAY (A-7-6)									VISUAL		
		21.0 - 22.5	7	8	22	63	35	16	18	A-6b				49.0 - 51.5	GRAY SILT (A-4b)									VISUAL			
		22.5 - 23.5	LIGHT BROWN SILTY CLAY (A-6b)									VISUAL			51.5 - 56.5	GRAY SILTSTONE									VISUAL		
		23.5 - 25.0	0	0	0	11	89	64	40	38	A-7-6			LUCASVILLE MINFORD ROAD (CR 28) - RAMP B													
		25.0 - 48.5	GRAY CLAY (A-7-6)									VISUAL			B-1219	516+57.6 28.5 ft. LT	0.0 - 2.0	TOPSOIL (VISUAL)									VISUAL
		48.5 - 49.0	10	13	20	40	17	NP	NP	14	A-4a			0.3 - 2.0	0	3	5	65	27	29	12	22	A-6a				
		49.0 - 53.8	BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL			2.0 - 4.0	0	3	4	66	27	28	12	22	A-6a			
C-57	533+64.6 74.2 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL			4.0 - 6.0	BROWN TO LIGHT BROWN SILT AND CLAY (A-6a)									VISUAL		
		0.4 - 5.5	BROWN SILT (A-4b)									VISUAL			6.0 - 7.5	3	1	5	56	35	33	17	23	A-6b			
		5.5 - 6.0	MOTTLED REDDISH BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			7.5 - 8.5	LIGHT GRAY SILTY CLAY (A-6b)									VISUAL		
		6.0 - 7.5	0	1	9	65	25	34	12	21	A-6a			8.5 - 10.0	0	1	7	64	28	28	14	18	A-6a				
		7.5 - 10.5	MOTTLED REDDISH BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL			10.0 - 11.0	MOTTLED BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL		
		10.5 - 13.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			11.0 - 12.5	0	0	0	10	90	59	35	28	A-7-6			
		13.5 - 15.0	0	0	4	17	79	50	27	26	A-7-6			12.5 - 18.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL			
		15.0 - 18.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			18.5 - 41.0	GRAY CLAY (A-7-6)									VISUAL		
		18.0 - 21.0	BROWNISH GRAY ELASTIC CLAY (A-7-5)									VISUAL			41.0 - 42.5	0	0	0	86	14	22	6	27	A-4b			
		21.0 - 22.5	0	0	0	1	99	73	43	41	A-7-5			42.5 - 43.5	GRAY SILT (A-4b)									VISUAL			
		22.5 - 23.0	BROWNISH GRAY ELASTIC CLAY (A-7-5)									VISUAL			43.5 - 45.0	0	0	2	31	67	43	24	30	A-7-6			
		23.0 - 42.0	BROWNISH GRAY CLAY (A-7-6)									VISUAL			45.0 - 46.0	GRAY CLAY (A-7-6)									VISUAL		
		42.0 - 47.5	BROWN COARSE AND FINE SAND (A-3a)									VISUAL			46.0 - 47.5	34	10	18	38	NP	NP	17	A-4a				
		47.5 - 49.5	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL			47.5 - 51.0	BROWN AND GRAY SANDY SILT (A-4a)									VISUAL		
		49.5 - 54.5	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL			51.0 - 53.5	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL		
														53.5 - 58.5	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL			
C-56	534+40.7 13.9 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL			B-1221	520+43.5 35.1 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 5.5	BROWN SILT (A-4b)									VISUAL					0.3 - 8.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		5.5 - 8.0	REDDISH BROWN SILT AND CLAY (A-6a)									VISUAL					8.5 - 10.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL
		8.0 - 11.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL					10.0 - 12.0	0	0	1	13	86	58	34	25	A-7-6	
		11.0 - 12.5	0	0	2	52	46	48	30	21	A-7-6			12.0 - 15.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			
		12.5 - 20.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL			15.0 - 17.0	0	0	0	8	92	67	41	33	A-7-6			
		20.5 - 21.0	GRAY CLAY (A-7-6)									VISUAL			17.0 - 23.5	BROWN CLAY (A-7-6)									VISUAL		
		21.0 - 22.5	4	0	0	4	92	63	34	28	A-7-6			23.5 - 53.5	GRAY CLAY (A-7-6)									VISUAL			
		22.5 - 42.0	GRAY CLAY (A-7-6)									VISUAL			53.5 - 59.0	GRAY SANDY SILT (A-4a)									VISUAL		
		42.0 - 47.0	LIGHT GRAY SILT (A-4b)									VISUAL			59.0 - 60.0	GRAY SILT (A-4b)									VISUAL		
		47.0 - 50.0	GRAY SILT (A-4b)									VISUAL			60.0 - 65.0	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL		
		50.0 - 55.0	GRAY SILTSTONE									VISUAL															

SOIL PROFILE

SCI-823-6.81



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			
LUCASVILLE MINFORD ROAD (CR 28) - RAMP B												LUCASVILLE MINFORD ROAD (CR 28) - RAMP C														
B-1230	525+09.2 24.2 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	C-59	508+11.2 46.8 ft. LT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL	
		0.3 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			0.8 - 3.5	LIGHT BROWN SILT (A-4b)									VISUAL	
		3.5 - 5.0	25	11	23	41		NP	NP	9	A-4b			3.5 - 5.0	8	4	10	63	15	24	7	19	A-4b			
		5.0 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL			5.0 - 6.0	LIGHT BROWN SILT (A-4b)									VISUAL	
		6.0 - 7.5	1	2	11	62	24	31	12	13	A-6a			6.0 - 8.5	MOTTLED BROWN AND RED SANDY SILT (A-4a)									VISUAL		
		7.5 - 16.0	BROWN SILT AND CLAY (A-6a)									VISUAL			8.5 - 13.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL	
		16.0 - 17.5	2	5	13	47	33	31	13	16	A-6a *			13.5 - 15.0	0	0	1	27	72	52	29	34	A-7-6			
		17.5 - 18.5	BROWN SILT AND CLAY (A-6a)									VISUAL			15.0 - 23.5	BROWN AND GRAY CLAY (A-7-6)									VISUAL	
		18.5 - 20.0	35	7	16	42		NP	NP	12	A-4a			23.5 - 26.0	GRAY GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL		
		20.0 - 26.0	BROWN SANDY SILT (A-4a)									VISUAL			26.0 - 28.5	GRAY SANDY SILT (A-4a)									VISUAL	
		26.0 - 27.0	45	11	9	35		NP	NP	17	A-2-4			28.5 - 33.5	BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL		
		27.0 - 28.5	LIGHT BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL			33.5 - 36.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL	
		28.5 - 30.0	BROWN SILT AND CLAY (A-6a)									VISUAL			35.0 - 40.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL	
		30.0 - 40.0	GRAY TO BROWN SANDSTONE									VISUAL														
B-1226	528+21.7 15.1 ft. LT	0.0 - 0.6	TOPSOIL (VISUAL)									VISUAL	C-58	508+12.1 74.4 ft. RT	0.0 - 0.8	TOPSOIL (VISUAL)									VISUAL	
		0.6 - 1.0	BROWN SANDY SILT (A-4a)									VISUAL			0.8 - 3.5	LIGHT BROWN SANDY SILT (A-4a)									VISUAL	
		1.0 - 2.5	1	3	20	49	27	26	10	11	A-4a			3.5 - 5.0	5	3	13	56	23	26	7	15	A-4b			
		2.5 - 3.5	BROWN SANDY SILT (A-4a)									VISUAL			5.0 - 8.5	LIGHT BROWN SILT (A-4b)									VISUAL	
		3.5 - 5.0	2	7	23	47	21	25	8	13	A-4a			8.5 - 10.0	3	5	17	42	33	32	16	21	A-6b			
		5.0 - 10.0	BROWN SANDY SILT (A-4a)									VISUAL			10.0 - 11.0	MOTTLED BROWN AND GRAY SILTY CLAY (A-6b)									VISUAL	
		10.0 - 12.0	0	0	0	10	90	63	39	31	A-7-6			11.0 - 12.5	1	0	1	27	71	59	35	31	A-7-6			
		12.0 - 12.5	2	7	22	45	24	28	3	17	A-4a			12.5 - 13.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		12.5 - 13.5	MOTTLED LIGHT BROWN AND GRAY CLAY (A-7-6)									VISUAL			13.5 - 15.0	0	0	1	15	84	64	39	41	A-7-6		
		13.5 - 15.0	0	0	0	10	90	70	47	34	A-7-6			15.0 - 19.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL		
		15.0 - 16.0	MOTTLED LIGHT BROWN AND GRAY CLAY (A-7-6)									VISUAL			19.5 - 23.5	REDDISH BROWN GRAVEL WITH SAND AND SILT (A-2-4)									VISUAL	
		16.0 - 17.5	0	0	0	14	86	58	35	34	A-7-6			23.5 - 26.0	GRAY COARSE AND FINE SAND (A-3a)									VISUAL		
		17.5 - 22.0	GRAY CLAY (A-7-6)									VISUAL			26.0 - 28.5	MOTTLED BROWN AND GRAY GRAVEL WITH SAND (A-1-b)									VISUAL	
		22.0 - 24.0	9	4	21	44	22	26	9	18	A-4a *			28.5 - 30.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL		
		24.0 - 50.0	GRAY CLAY (A-7-6)									VISUAL			30.0 - 35.0	GRAY SILTSTONE INTERBEDDED WITH SANDSTONE									VISUAL	
B-1224	531+05.1 20.9 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	B-1209	508+24.4 19.7 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL	
		0.3 - 2.0	28	4	21	47	25	10	15		A-4b *			0.3 - 1.5	0	3	7	68	22	24	6	18	A-4b			
		2.0 - 4.0	1	2	7	27	63	49	27	22	A-7-6			1.5 - 3.0	3	2	6	67	22	25	4	17	A-4b			
		4.0 - 6.0	1	0	0	10	89	58	34	23	A-7-6			3.0 - 4.5	26	18	16	29	11	25	4	12	A-4a			
		6.0 - 18.5	BROWN CLAY (A-7-6)									VISUAL			4.5 - 6.0	34	12	12	30	12	25	4	13	A-4a		
		18.5 - 20.0	0	0	1	11	88	30	14	31	A-6a			6.0 - 8.5	GRAY SILTY CLAY (A-6b)									VISUAL		
		20.0 - 23.5	BROWN SILT AND CLAY (A-6a)									VISUAL			8.5 - 11.0	BROWN AND GRAY SILT AND CLAY (A-6a)									VISUAL	
		23.5 - 73.5	GRAY CLAY (A-7-6)									VISUAL			11.0 - 13.5	GRAY CLAY (A-7-6)									VISUAL	
		73.5 - 74.5	26	14	14	46		NP	NP	15	A-4a			13.5 - 15.0	0	0	0	10	90	55	29	39	A-7-6			
		74.5 - 79.5	GRAY SANDY SILT (A-4a)									VISUAL			15.0 - 16.0	GRAY CLAY (A-7-6)									VISUAL	
		79.5 - 84.5	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL			16.0 - 17.5	0	0	0	18	82	54	30	38	A-7-6		
														17.5 - 21.0	GRAY CLAY (A-7-6)									VISUAL		
														21.0 - 23.5	BROWN SILT (A-4b)									VISUAL		
														23.5 - 28.5	GRAY SILT AND CLAY (A-6a)									VISUAL		
														28.5 - 29.4	SEVERELY WEATHERED GRAY SILTSTONE									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.

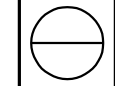
* DENOTES SAMPLE TAKEN AT OR NEAR GRADE

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
LUCASVILLE MINFORD ROAD (CR 28) - RAMP C												
B-1211	512+06.9 0.5 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL
		0.2 - 1.5	4	4	19	52	21	23	7	15	A-4b *	
		1.5 - 3.0	0	1	5	21	73	52	33	22	A-7-6	
		3.0 - 4.5	0	0	0	7	93	50	23	29	A-7-6	
		4.5 - 6.0	0	0	0	8	92	60	36	15	A-7-6	
		6.0 - 11.0	BROWN CLAY (A-7-6)									VISUAL
		11.0 - 12.5	0	0	0	16	84	55	33	33	A-7-6	
		12.5 - 38.5	BROWN CLAY (A-7-6)									VISUAL
		38.5 - 43.5	GRAY SANDY SILT (A-4a)									VISUAL
		43.5 - 43.8	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL
B-1213	516+09.5 14.6 ft. RT	0.0 - 1.5	6	2	7	57	28	25	13	17	A-6a	
		1.5 - 3.0	7	4	6	51	32	30	13	16	A-6a	
		3.0 - 4.5	0	0	0	13	87	62	28	26	A-7-6	
		4.5 - 21.0	LIGHT BROWN CLAY (A-7-6)									VISUAL
		21.0 - 23.0	0	0	0	13	87	57	32	36	A-7-6	
		26.0 - 50.0	BROWN AND GRAY CLAY (A-7-6)									VISUAL
B-1215	520+18.8 7.9 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
		0.4 - 4.0	BROWN SILT AND CLAY (A-6a)									VISUAL *
		4.0 - 33.9	BROWN CLAY (A-7-6)									VISUAL
		33.9 - 38.5	BROWN FINE SAND (A-3)									VISUAL
		38.5 - 43.5	GRAY SANDY SILT (A-4a)									VISUAL
		43.5 - 44.2	SANDSTONE FRAGMENTS									VISUAL
		44.2 - 49.2	GRAY SANDSTONE									VISUAL
B-1216	522+07.5 16.1 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 6.6	BROWN SILT AND CLAY (A-6a)									VISUAL
		6.6 - 11.0	GRAY SILTY CLAY (A-6b)									VISUAL
		11.0 - 16.0	BROWN AND GRAY SILT (A-4b)									VISUAL
		16.0 - 19.0	SEVERELY WEATHERED BROWN AND GRAY SILTSTONE									VISUAL
		19.0 - 24.0	GRAY SANDSTONE									VISUAL
B-1233	524+77.0 76.8 ft. LT	0.0 - 1.0	TOPSOIL (VISUAL)									VISUAL
		1.0 - 2.5	3	3	12	61	21	29	9	15	A-4b	
		2.5 - 3.5	LIGHT BROWN SILT (A-4b)									VISUAL
		3.5 - 5.0	2	19	13	66	27	8	11		A-4b	
		5.0 - 6.0	LIGHT BROWN SILT (A-4b)									VISUAL
		6.0 - 13.5	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		13.5 - 14.0	4	8	15	73	23	5	26		A-4b	
		14.0 - 15.0	LIGHT BROWN SILT (A-4b)									VISUAL
		15.0 - 23.0	BROWNISH GRAY SANDSTONE									VISUAL
		23.0 - 33.4	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		33.4 - 36.5	GRAY SANDSTONE									VISUAL
		36.5 - 60.0	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL
		60.0 - 91.5	GRAY SANDSTONE									VISUAL
B-1225	528+38.8 1.3 ft. RT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
		0.4 - 1.5	BROWN SILT AND CLAY (A-6a)									VISUAL
		1.5 - 11.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL
		11.0 - 38.5	GRAY CLAY (A-7-6)									VISUAL *
		38.5 - 44.0	SEVERELY WEATHERED GRAY SANDSTONE (VISUAL)									VISUAL

Boring	Station & Offset	Depth From To	% Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	ODOT Class	
LUCASVILLE MINFORD ROAD (CR 28) - RAMP D												
B-1232	522+25.6 100.6 ft. LT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 4.0	BROWN SILTY CLAY (A-6b)									VISUAL
		4.0 - 6.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		6.0 - 11.0	SEVERELY WEATHERED BROWN SILTSTONE									VISUAL
		11.0 - 15.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		15.0 - 51.9	GRAY SANDSTONE									VISUAL
		51.9 - 61.8	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL *
		61.8 - 85.0	GRAY SANDSTONE									VISUAL
B-1234	525+21.2 85.2 ft. RT	0.0 - 1.0	LIGHT BROWN SILT (A-4b)									VISUAL
		1.0 - 2.5	0	2	4	68	26	30	10	13	A-4b	
		2.5 - 3.5	LIGHT BROWN SILT (A-4b)									VISUAL
		3.5 - 10.0	SEVERELY WEATHERED BROWN SANDSTONE									VISUAL
		10.0 - 47.5	BROWN SANDSTONE									VISUAL
		47.5 - 58.5	GRAY SHALE INTERBEDDED WITH SANDSTONE									VISUAL
		58.5 - 100.0	GRAY SANDSTONE									VISUAL
B-1235	525+94.3 58.9 ft. LT	0.0 - 0.4	TOPSOIL (VISUAL)									VISUAL
		0.4 - 6.0	BROWN SANDY SILT (A-4a)									VISUAL
		6.0 - 15.0	SEVERELY WEATHERED BROWN AND GRAY SANDSTONE									VISUAL
		15.0 - 17.7	REDDISH BROWN SANDSTONE									VISUAL
		17.7 - 70.0	GRAY SANDSTONE									VISUAL
B-1218	527+80.1 13.7 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL
		0.2 - 5.0	BROWN SANDY SILT (A-4a)									VISUAL
		5.0 - 6.5	0	2	14	26	58	47	27	19	A-7-6 *	
		6.5 - 21.0	BROWN CLAY (A-7-6)									VISUAL
		21.0 - 22.5	0	1	4	41	54	39	21	30	A-6b	
		22.5 - 23.5	GRAYISH BROWN SILTY CLAY (A-6b)									VISUAL
		23.5 - 25.0	19	3	23	55	NP	NP	21		A-4b	
		25.0 - 26.0	LIGHT BROWN AND RED SILT (A-4b)									VISUAL
		26.0 - 28.5	BROWN SANDY SILT (A-4a)									VISUAL
		28.5 - 30.0	BROWN SILT (A-4b)									VISUAL
		30.0 - 38.5	BROWN SANDY SILT (A-4a)									VISUAL
		38.5 - 43.5	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL
		43.5 - 51.5	GRAY SANDSTONE									VISUAL
B-1217	530+13.7 4.8 ft. LT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL
		0.2 - 4.5	BROWN SILT (A-4b)									VISUAL *
		4.5 - 7.0	BROWN SANDY SILT (A-4a)									VISUAL
		7.0 - 8.5	GRAY SILTY CLAY (A-6b)									VISUAL
		8.5 - 13.5	BROWN SANDY SILT (A-4a)									VISUAL
		13.5 - 30.0	GRAY SILT AND CLAY (A-6a)									VISUAL
		30.0 - 35.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL
		35.0 - 51.0	GRAY SANDSTONE INTERBEDDED WITH MUDSTONE LAYERS									VISUAL

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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	
LUCASVILLE MINFORD ROAD (CR 28) - RAMP D												
B-1214	532+88.8 30.5 ft. RT	0.0 - 0.2	TOPSOIL (VISUAL)									VISUAL
		0.2 - 3.0	BROWN SILT (A-4b)									VISUAL *
		3.0 - 8.5	BROWN SANDY SILT (A-4a)									VISUAL
		8.5 - 23.0	BROWN CLAY (A-7-6)									VISUAL
		23.0 - 25.0	0	0	0	30	70	49	27	30	A-7-6	
		25.0 - 30.0	BROWN CLAY (A-7-6)									VISUAL
		30.0 - 38.5	BROWN SANDY SILT (A-4a)									VISUAL
		38.5 - 45.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL
		45.0 - 52.0	GRAY SANDSTONE									VISUAL
		B-1212	536+98.4 23.5 ft. RT	0.0 - 0.1	TOPSOIL (VISUAL)							
0.1 - 1.5	0			1	10	57	32	27	10	11	A-4b	
1.5 - 3.0	0			1	13	60	26	23	6	9	A-4b	
3.0 - 4.5	14			6	17	43	20	25	7	9	A-4a	
4.5 - 4.7	BROWN SILT (A-4b)									VISUAL		
4.7 - 6.0	0			0	0	8	92	64	43	22	A-7-6	
6.0 - 11.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL		
11.0 - 12.5	0			0	0	10	90	55	31	30	A-7-6	
12.5 - 21.0	GRAY CLAY (A-7-6)									VISUAL		
21.0 - 22.5	0			0	0	13	87	61	35	36	A-7-6	
22.5 - 43.5	GRAY CLAY (A-7-6)									VISUAL		
43.5 - 48.5	GRAY SANDY SILT (A-4a)									VISUAL		
48.5 - 50.0	SEVERELY WEATHERED SILTSTONE									VISUAL		
50.0 - 56.5	GRAY SANDSTONE INTERBEDDED WITH SHALE									VISUAL		
B-1210	540+98.2 22.7 ft. RT	0.0 - 0.3	TOPSOIL (VISUAL)									VISUAL
		0.3 - 1.5	6	7	22	42	23	24	10	14	A-4a	
		1.5 - 3.0	12	3	19	39	27	32	15	13	A-6a	
		3.0 - 4.5	0	1	12	46	41	38	22	21	A-6b	
		4.5 - 6.0	1	0	2	38	59	46	27	23	A-7-6	
		6.0 - 11.0	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL *
		11.0 - 12.5	0	0	1	5	94	65	42	37	A-7-6	
		12.5 - 33.5	MOTTLED BROWN AND GRAY CLAY (A-7-6)									VISUAL
		33.5 - 43.5	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		43.5 - 45.0	SEVERELY WEATHERED GRAY SILTSTONE									VISUAL
45.0 - 51.5	GRAY SANDSTONE									VISUAL		
PRELIMINARY EXPLORATION - SR 823												
PB-33	394+04.5 78.0 ft. LT	0.0 - 0.5	TOPSOIL (VISUAL)									VISUAL
		0.5 - 10.0	BROWN SILT AND CLAY (A-6a)									VISUAL
		10.0 - 18.0	BROWNISH GRAY CLAY (A-7-6)									VISUAL
		18.0 - 20.0	0	0	0	5	95	35	15	25	VISUAL	
		20.0 - 35.5	BROWNISH GRAY CLAY (A-7-6)									VISUAL
		35.5 - 53.5	REDDISH BROWN COARSE AND FINE SAND (A-3a)									VISUAL
		53.5 - 54.0	SEVERELY WEATHERED GRAY SANDSTONE									VISUAL
		54.0 - 64.0	LIGHT GRAY AND DARK GRAY SANDSTONE									VISUAL

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DRAWN RLS
CHECKED AEN

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	Unconfined Compression				
				% AGG	% Sand		% Fines		LL	PI		Cohesion, (psf)		Friction Angle, (degrees)		Cohesion (psf)	Friction Angle (degrees)	Cc	Cr	Pc	E ₀	pcf	Cohesion (psf)				
					Coarse	Fine	Silt	Clay				Total	Effective	Total	Effective												
B-1	P-1	8.0 - 10.0	A-7-6	0	0	1	13	86	52	26	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122.2	2051
B-1	P-2	12.5 - 14.5	A-7-6	0	0	2	19	79	52	28	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121.2	2365
B-1	P-3	18.0 - 19.1	A-7-6	0	0	1	24	75	49	23	28	-	-	-	-	-	-	-	-	-	-	0.21	0.1	0	0.955	-	-
B-1	P-3c	19.5 - 20.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120.6	1348
B-1	P-3C	19.5 - 20.0	A-7-6	0	0	1	21	78	59	36	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120.6	1349
B-2	P-1	6.0 - 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16	0.09	0.7	0.709	125.6	2005
B-2	P-1	6.0 - 8.0	A-7-6	1	0	0	14	85	67	40	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125.6	2031
B-2	P-2A	11.0 - 12.0	A-7-6	0	2	4	24	70	52	30	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120.2	2572
B-2	P-2B	12.0 - 13.0	A-7-6	5	1	2	12	80	78	54	31	-	-	-	-	-	-	-	-	-	-	0.18	0.08	3.18	0.833	121.4	2198
B-3	P-1	8.0 - 10.0	A-7-6	0	0	1	9	90	60	34	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122.6	1658
B-3	P-2	10.0 - 12.0	A-7-6	0	0	3	26	71	44	25	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119.9	2204
B-4	P-1A	8.0 - 8.2	A-6a	2	5	8	43	42	31	14	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-4	P-1B	8.2 - 10.0	A-3	0	8	89	0	0	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-1213	P-1	21.0 - 23.0	A-7-6	0	0	0	13	87	57	32	36	556	678	12.6	17.5	-	-	-	-	-	-	-	-	-	-	117.4	-
B-1220	P-2	18.0 - 20.0	A-6b	1	4	15	30	50	36	17	21	-	-	-	-	-	2478	6.3	0.26	0.09	1.66	0.687	-	-	127.9	-	
B-1221	P-1	10.0 - 12.0	A-7-6	0	0	1	13	86	58	34	25	-	-	-	-	-	-	-	-	-	-	0.19	0.07	1.15	0.675	125.5	1672
B-1221	P-2	15.0 - 17.0	A-7-6	0	0	0	8	92	67	41	33	426	578	9.1	11.7	-	-	-	-	-	-	-	-	-	-	120.8	-
B-1223	P-1	8.0 - 10.0	A-7-6	0	0	0	17	83	57	31	31	-	-	-	-	-	-	-	-	-	-	0.27	0.1	0.89	0.79	122.2	1206
B-1223	P-2	18.0 - 20.0	A-7-6	0	0	0	5	95	67	41	40	546	634	11.0	17.8	-	-	-	-	-	-	0.37	0.16	5.4	1.124	140.7	-
B-1223	P-3	28.0 - 30.0	A-7-6	0	0	0	21	79	58	34	36	-	-	-	-	-	1772	3.5	-	-	-	-	-	-	-	116.6	-
B-1224	P-1	23.0 - 25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123.8	2663
B-1226	P-1	10.0 - 12.0	A-7-6	0	0	0	10	90	63	39	31	722	764	10.0	15.8	-	-	-	-	-	-	-	-	-	-	121.0	3028
B-1226	P-2	22.0 - 24.0	A-4a	9	4	21	44	22	26	9	18	1820	138	0.0	47.0	-	-	-	-	-	-	-	-	-	-	128.5	-
B-1314	P-1	13.5 - 15.5	A-7-6	1	2	4	21	72	51	26	29	646	19.9	0.0	32.3	-	-	-	-	-	-	-	-	-	-	121.6	-
B-1318	P-1	8.5 - 10.5	A-7-6	7	0	1	7	85	66	37	28	482	12.8	0.0	24.0	-	-	-	-	-	-	-	-	-	-	116.0	-
B-1318	P-2	18.5 - 20.5	A-7-6	0	0	0	12	88	58	30	37	-	-	-	-	-	-	-	-	-	-	0.35	0.12	5.46	1.06	-	-
B-1320	P-1	18.5 - 20.5	A-7-6	0	1	1	3	95	63	34	35	-	-	-	-	-	1438	0	-	-	-	-	-	-	-	118.0	-
B-1320	P-2	33.0 - 35.0	A-7-6	0	0	0	5	95	54	26	37	860	11.2	0.0	26.9	-	-	-	-	-	-	-	-	-	-	118.0	-
B-1322	P-1	8.5 - 10.5	A-7-6	0	0	1	17	82	54	30	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	124.0	969
B-1322	P-2	18.5 - 20.5	A-7-6	0	0	0	10	90	56	23	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-1322	P-3	28.5 - 30.5	A-7-6	0	0	0	6	94	63	37	37	-	-	-	-	-	-	-	-	-	-	0.27	0.13	1.79	1.026	-	-

SOIL PROFILE

SCI-823-6.81



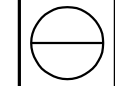
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SUMMARY OF SOIL TEST DATA - SHELBY TUBES

Boring Number	Sample Number	Sample Depth (feet)	ODOT Designation	Type of Test																			
				Gradation					Atterberg Limits		Moisture Content %	Consolidated-undrained				Unconsolidated-undrained		Consolidation				Unit Weights	Unconfined Compression
				% AGG	% Sand		% Fines		LL	PI		Cohesion, (psf)		Friction Angle, (degrees)		Cohesion (psf)	Friction Angle (degrees)	Cc	Cr	Pc	E ₀	pcf	Cohesion (psf)
					Coarse	Fine	Silt	Clay				Total	Effective	Total	Effective								
B-1323	P-1	13.0 - 15.0	A-7-6	0	0	0	15	85	55	29	39	-	-	-	-	1578	0	-	-	-	-	122.9	-
B-1323	P-2	21.0 - 23.0	A-7-6	0	0	0	6	94	61	34	37	-	-	-	-	-	-	-	-	-	-	116.6	2509
B-1326	P-2	26.0 - 28.0	A-7-6	0	0	0	5	95	63	36	37	592	15.2	0	26.8	-	-	-	-	-	-	118.6	-
B-1328	P-1	11.0 - 13.0	A-7-6	0	0	1	3	96	66	37	33	-	-	-	-	-	-	-	-	-	-	-	-
B-1328	P-2	16.0 - 18.0	A-7-6	0	0	1	12	87	69	39	36	282	10.8	0	20.6	-	-	-	-	-	-	120.9	-
C-19	P-1	16.5 - 18.5	A-7-6	1	4	4	20	72	66	40	33	-	-	-	-	-	-	0.23	0.06	8301	0.901	147.0	1143
C-19	P-2	21.0 - 23.0	A-4b	0	0	1	71	28	28	7	34	-	-	-	-	-	-	-	-	-	-	-	215
C-21	P-2	22.7 - 24.0	A-4b	0	0	1	71	28	28	7	34	-	-	-	-	216	0	-	-	-	-	121.3	-
C-21	P-2	22.0 - 22.7	A-6a	0	0	1	62	37	34	12	35	-	-	-	-	-	-	0.4	0.07	8289	1.111	-	-
C-22	P-1	22.0 - 24.0	A-7-6	0	0	0	10	90	59	34	34	-	-	-	-	-	-	0.23	0.09	0.84	-	118.9	3081
C-22	P-2	27.0 - 29.0	A-7-6	0	0	0	31	69	48	27	31	-	-	-	-	-	-	-	-	-	-	117.3	1906
C-22	P-3	32.0 - 34.0	A-7-6	0	0	1	9	90	47	25	35	-	-	-	-	-	-	0.24	0.12	0.86	0.81	119.2	1848
C-23	P-1	18.0 - 20.0	A-7-6	0	0	0	4	96	77	50	39	-	-	-	-	-	-	-	-	-	-	116.2	1732
C-23	P-2	23.0 - 25.0	A-7-6	0	0	0	40	60	43	23	29	-	-	-	-	-	-	-	-	-	-	115.3	1722
C-23	P-3	28.0 - 30.0	A-7-6	0	0	0	25	75	50	27	34	-	-	-	-	-	-	0.24	0.13	1.39	0.935	114.9	2201
R-329	P-1	11.0 - 13.0	A-7-6	0	0	0	40	60	72	44	40	-	-	-	-	-	-	0.33	0.15	0.8	1.037	115.4	1999
R-331	P-1	8.0 - 10.0	A-7-6	0	0	0	50	50	63	39	39	-	-	-	-	-	-	-	-	-	-	-	-
R-335	P-1	13.0 - 15.0	A-6a	1	6	2	38	53	27	12	32	-	-	-	-	1446	1.1	0.47	0.17	3068	1.157	119.6	-
R-343	P-1	13.0 - 15.0	A-7-6	0	0	5	53	42	58	38	28	-	-	-	-	0	9.5	0.24	0.11	2591	0.963	117.2	-
R-346	P-1	23.0 - 25.0	A-7-6	0	0	11	49	40	45	26	33	-	-	-	-	-	-	-	-	-	-	-	-
R-346	P-2	25.0 - 27.0	A-6b	0	1	9	58	32	33	16	24	-	-	-	-	486	7.3	-	-	-	-	124.7	-
R-351	P-1	18.0 - 20.0	A-7-6	0	1	1	14	84	60	36	36	-	-	-	-	908	7.3	-	-	-	-	117.4	-
R-351	P-2	22.0 - 24.0	A-7-6	0	0	0	50	50	61	36	38	-	-	-	-	-	-	0.41	0.18	5.41	1.101	115.9	1668
R-464	P-1	21.0 - 23.0	A-7-6	0	1	1	11	87	59	33	35	-	-	-	-	-	-	0.47	0.15	20.22	1.074	118.7	1354
R-465	P-1	18.0 - 20.0	A-7-6	0	0	0	18	82	52	29	26	-	-	-	-	-	-	0.41	0.14	6.81	0.964	118.0	2147
R-466	P-1	23.0 - 25.0	A-7-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	0.05	7.95	0.904	124.0	744
TR-14	ST-1	13.0 - 15.0	A-7-6	0	0	0	7	93	65	37	28	-	-	-	-	-	-	0.26	0.08	1418	1.061	116.9	1911

SOIL PROFILE

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BEGIN PROJECT
PHASE I
STA. 352+00

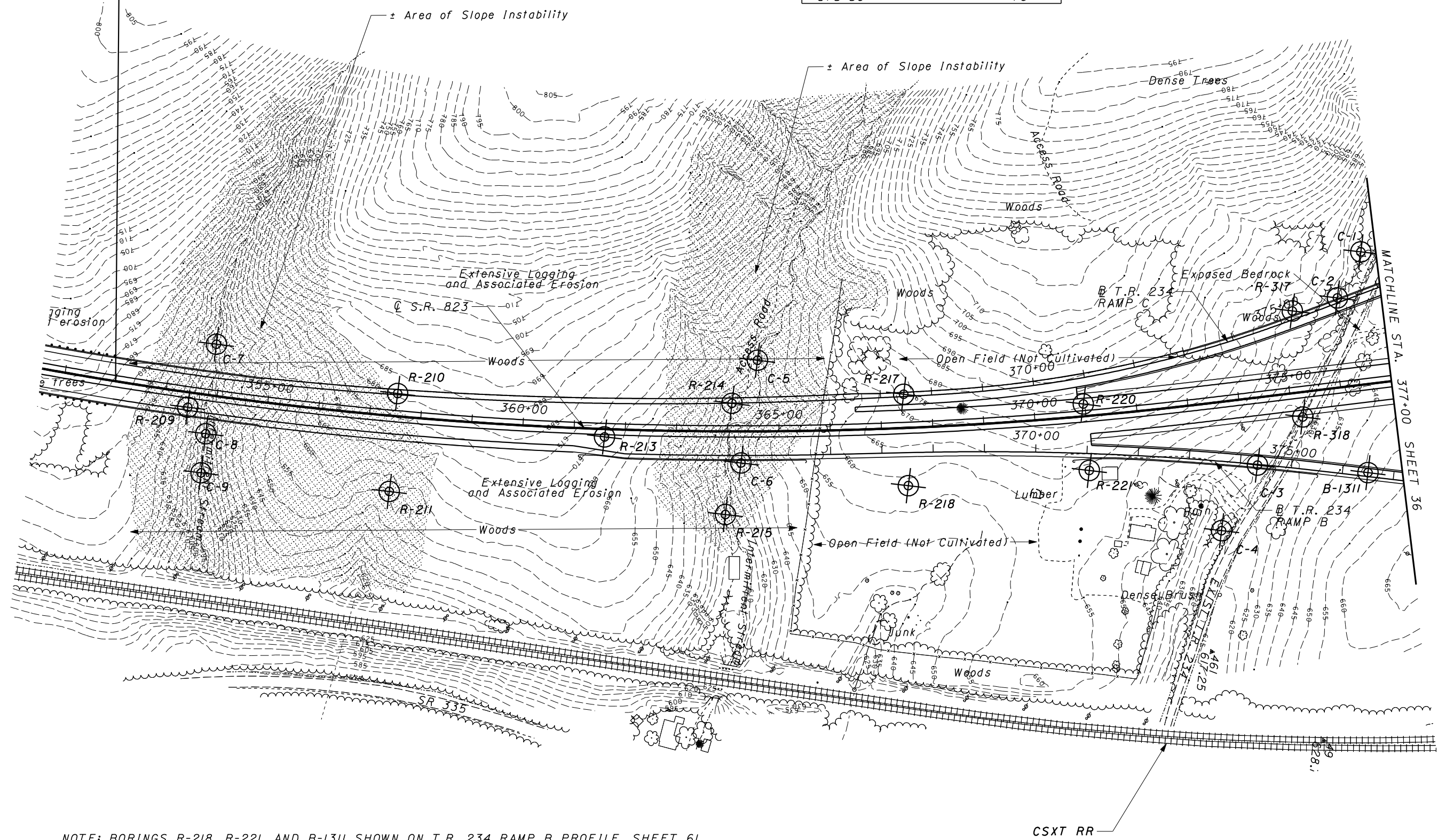
CROSS SECTION INDEX	
STATION	SHEET
354+00	75
357+50	76
364+00	77
375+50	78



DRAWN
RLS
CHECKED
AEN

SOIL PROFILE
SR 823 STA. 352+00 TO STA. 377+00

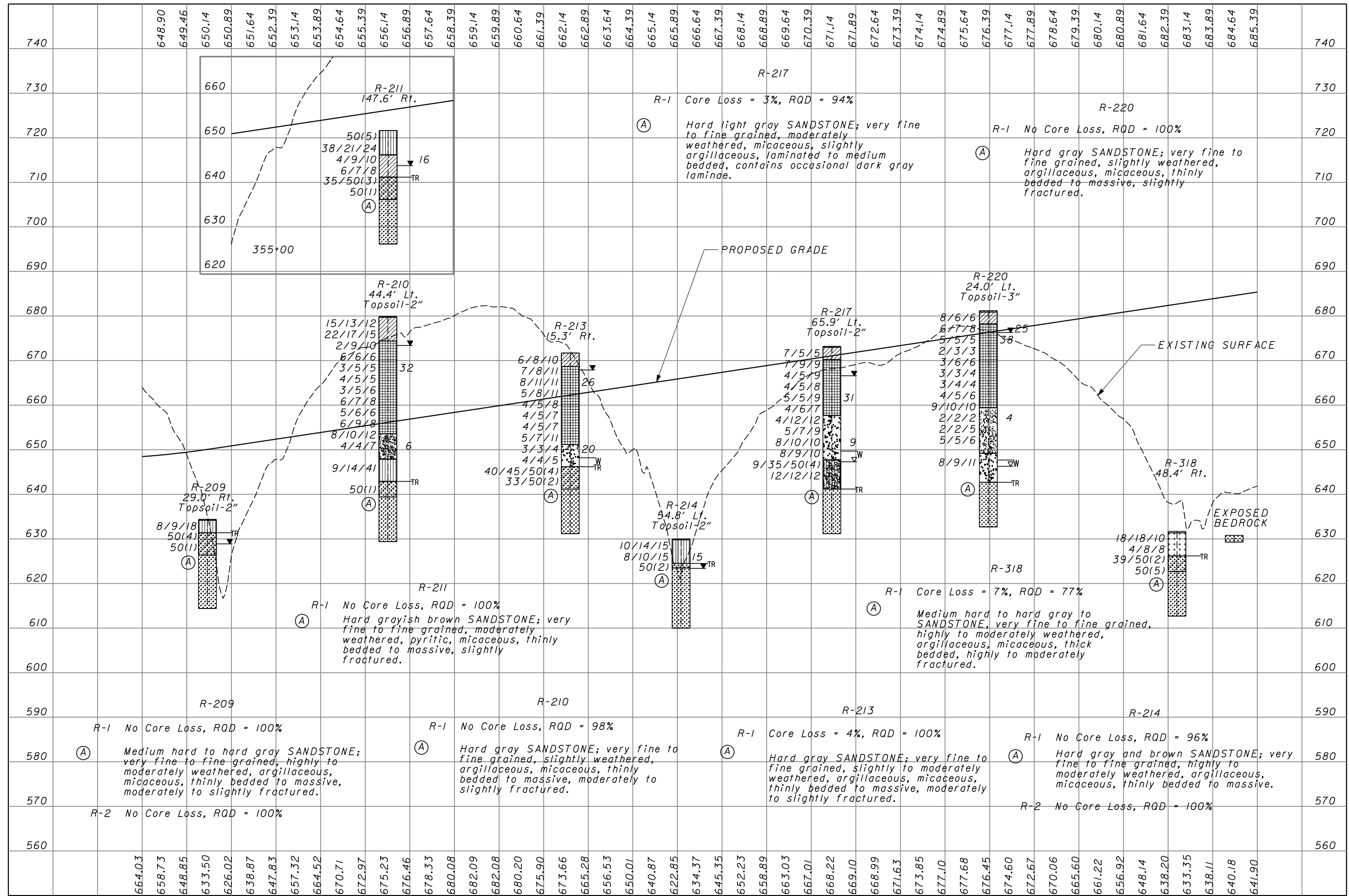
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NOTE: BORINGS R-218, R-221, AND B-1311 SHOWN ON T.R. 234 RAMP B PROFILE, SHEET 61.
BORING R-317 SHOWN ON T.R. 234 RAMP C PROFILE, SHEET 62.

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CHECKED
 RLS
 AEN

SOIL PROFILE
SR 823 STA. 352+00 TO STA 377+00

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NOTE: BORINGS B-1305 TO B-1314A, SHOWN ON T.R. 234 PROFILE, SHEETS 55 AND 57.
 BORINGS B-1314 AND B-1317 SHOWN ON T.R. 234 RAMP A PROFILE, SHEET 60.
 BORING B-1312 SHOWN ON T.R. 234 RAMP B PROFILE, SHEET 61.
 BORINGS B-1329 AND B-1330 SHOWN ON T.R. 234 RAMP C PROFILE, SHEET 62.
 BORINGS B-1320, B-1322, B-1325, AND B-1328 SHOWN ON T.R. 234 RAMP D PROFILE, SHEET 63.
 BORINGS B-1331 TO B-1334 SHOWN ON S.R. 335 PROFILE, SHEET 64.
 BORINGS B-1 TO B-4, TR-24 TO TR-28, AND B-1340 TO B-1342 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

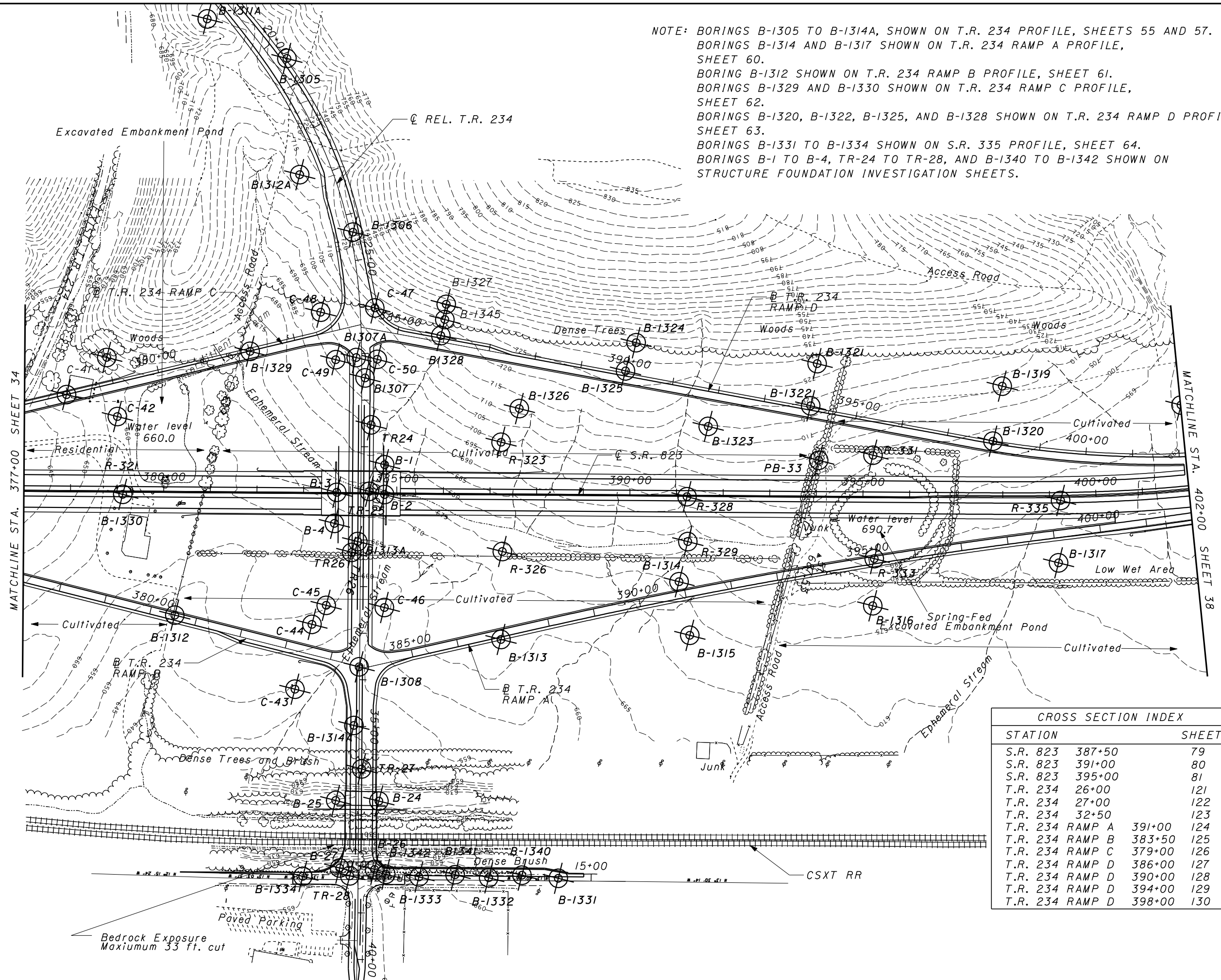




 HORIZONTAL SCALE IN FEET

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 CHECKED: AEN

SOIL PROFILE
SR 823 STA. 377+00 TO STA. 402+00

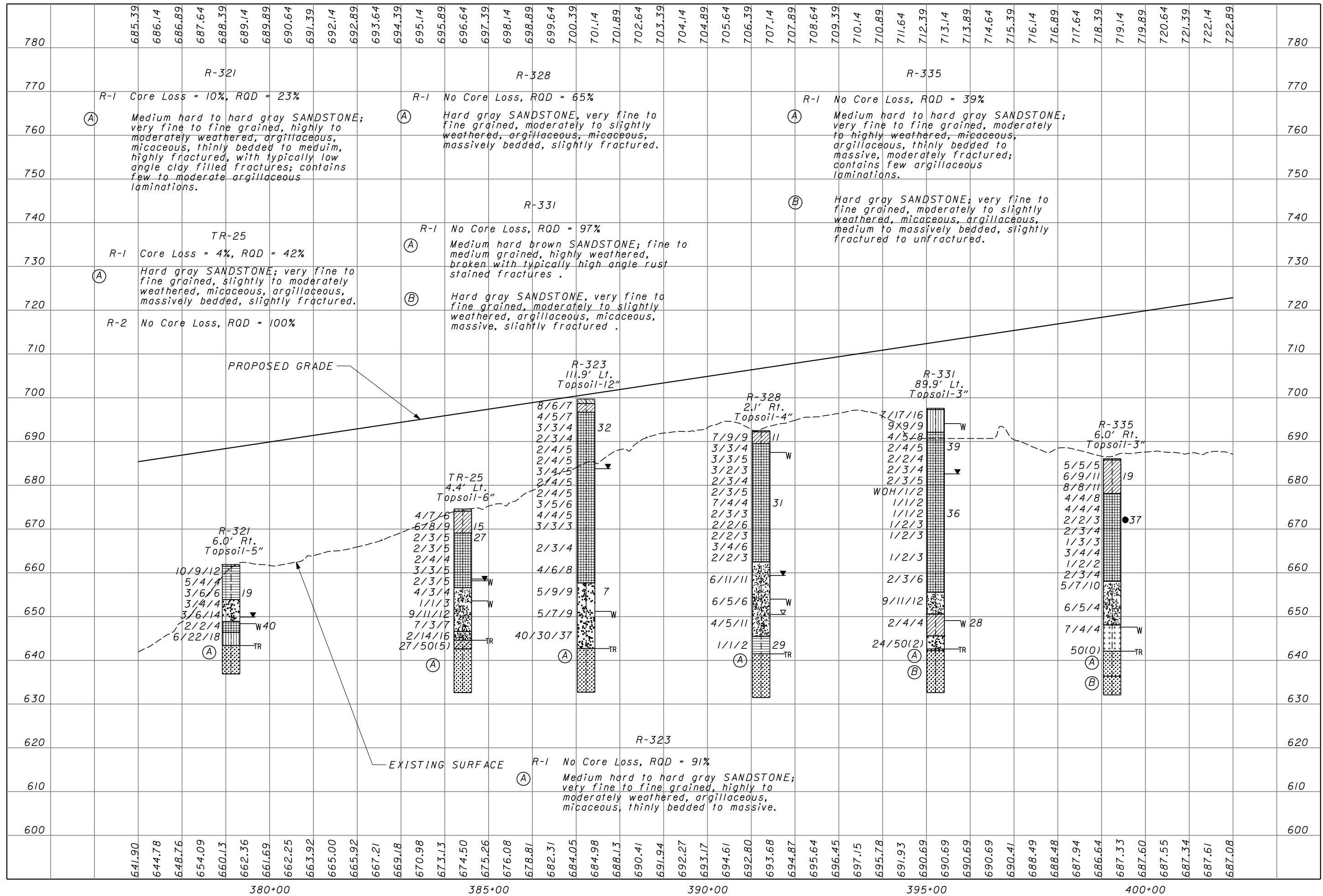


CROSS SECTION INDEX		
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S.R. 823	391+00	80
S.R. 823	395+00	81
T.R. 234	26+00	121
T.R. 234	27+00	122
T.R. 234	32+50	123
T.R. 234 RAMP A	391+00	124
T.R. 234 RAMP B	383+50	125
T.R. 234 RAMP C	379+00	126
T.R. 234 RAMP D	386+00	127
T.R. 234 RAMP D	390+00	128
T.R. 234 RAMP D	394+00	129
T.R. 234 RAMP D	398+00	130

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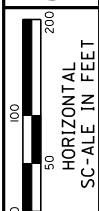
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SOIL PROFILE
SR 823 STA. 377+00 TO STA. 402+00

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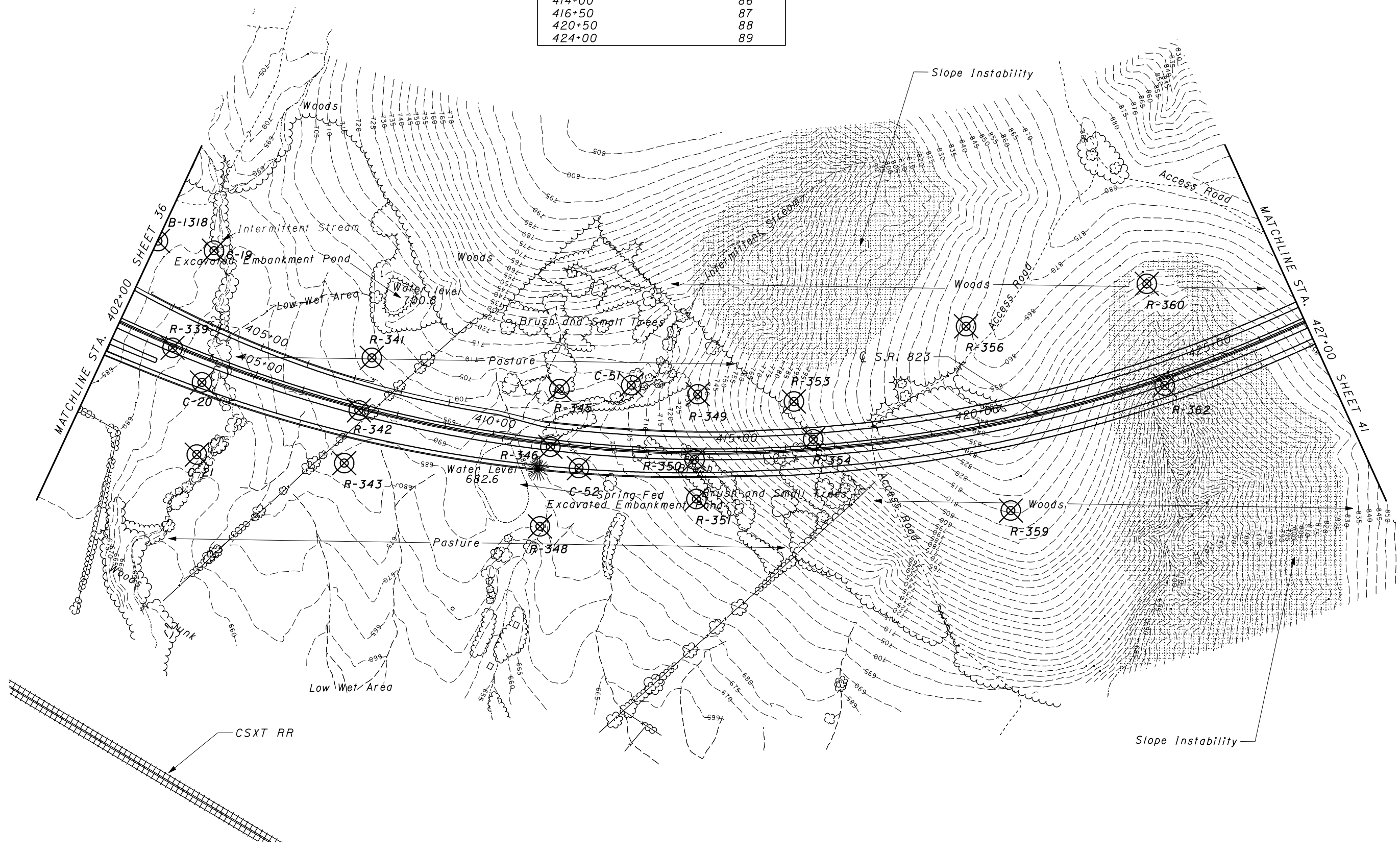
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SOIL PROFILE
SR 823 STA. 402+00 TO STA. 427+00

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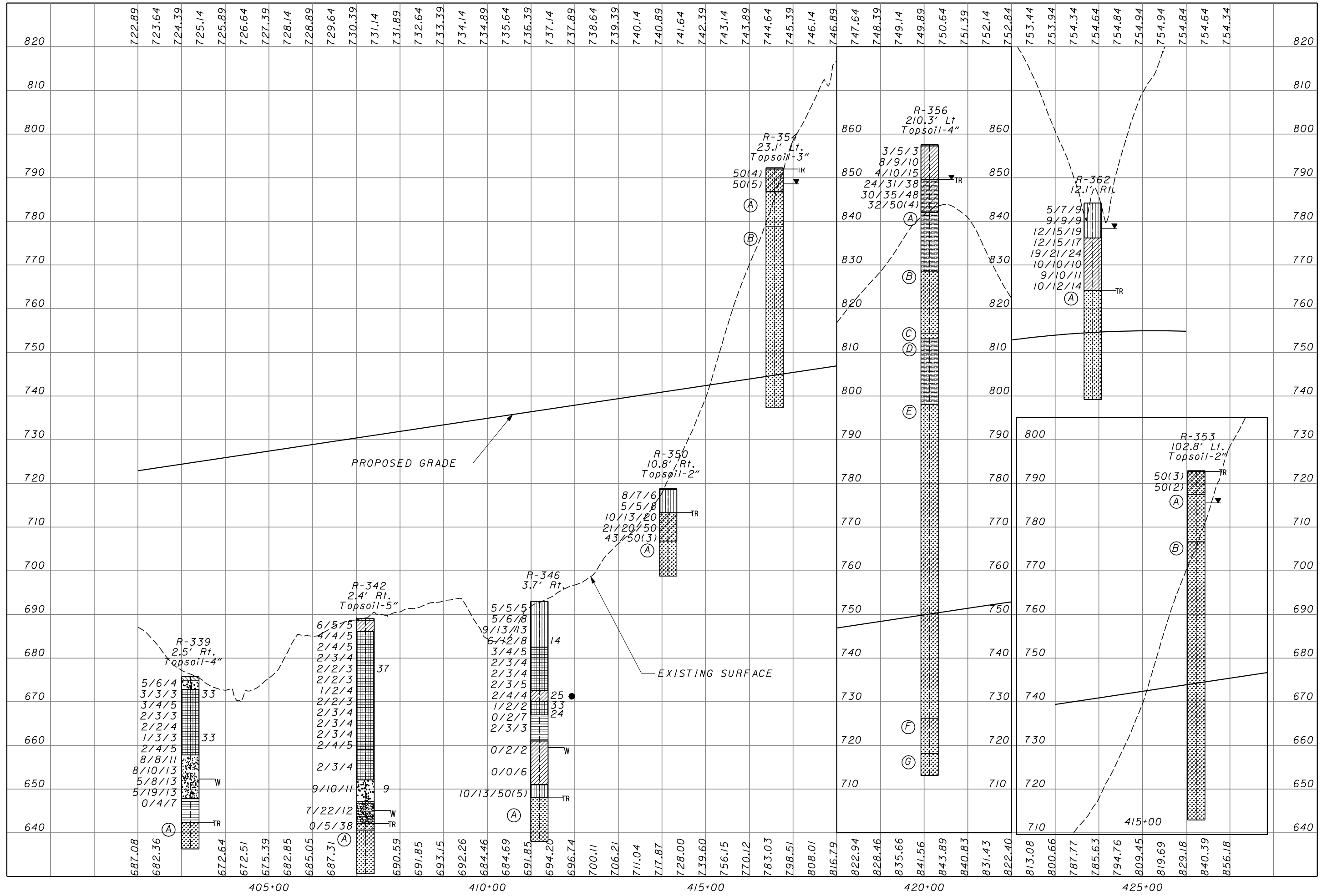


CROSS SECTION INDEX	
STATION	SHEET
404+00	82
407+00	83
411+00	84
412+00	85
414+00	86
416+50	87
420+50	88
424+00	89



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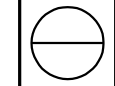
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 RLS
 AEN

SOIL PROFILE
SR 823 STA. 402+00 TO STA. 427+00

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R-339

R-1 Core Loss = 3%, RQD = 65%

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

R-342

R-1 No Core Loss, RQD = 83%

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

R-346

R-1 Core Loss = 4%, RQD = 72%

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

R-350

R-1 Core Loss = 5%, RQD = 34%

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

R-354

R-1 Core Loss = 15%, RQD = 52%

- (A) Medium hard brown and light gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, highly fractured with typically low angle rust stained to clean fractures.

R-2 No Core Loss, RQD = 96%

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

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 98%

R-5 No Core Loss, RQD = 100%

R-6 Core Loss = 33%, RQD = 67%

R-362

R-1 Core Loss = , RQD = 89%

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

R-2 No Core Loss, RQD = 92%

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

R-353

R-1 No Core Loss, RQD = 51%

- (A) Medium hard light brown, reddish brown, and gray SANDSTONE; very fine to fine grained, highly weathered, thinly bedded to thickly bedded, broken with rust stained and clay filled fractures, contains occasional argillaceous beds.

R-2 No Core Loss, RQD = 99%

- (B) Medium hard light gray and dark gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, massively bedded, slightly fractured to unfractured.

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 99%

R-5 No Core Loss, RQD = 98%

R-6 No Core Loss, RQD = 100%

R-7 No Core Loss, RQD = 94%

R-8 No Core Loss, RQD = 100%

R-356

R-1 Core Loss = 3%, RQD = 60%

- (A) Soft brown and gray SHALE; highly weathered, arenaceous, micaceous, thinly laminated to thinly bedded, broken (contains numerous healed fractures); contains few arenaceous laminations.

R-2 Core Loss = 15%, RQD = 48%

- (B) Medium hard gray SANDSTONE; highly weathered.

R-3 Core Loss = 25%, RQD = 55%

R-4 No Core Loss, RQD = 42%

- (C) Medium hard brown SANDSTONE; fine to medium grained, moderately weathered, micaceous, argillaceous, carbonaceous, broken; contains moderate argillaceous laminations.

- (D) Soft to medium hard SHALE, decomposed to highly weathered, carbonaceous, arenaceous, highly fractured.

R-5 Core Loss = 9%, RQD = 46%

R-6 No Core Loss, RQD = 95%

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

R-7 No Core Loss, RQD = 90%

R-8 No Core Loss, RQD = 99%

R-9 No Core Loss, RQD = 100%

R-10 No Core Loss, RQD = 95%

R-11 No Core Loss, RQD = 97%

R-12 No Core Loss, RQD = 100%

R-13 No Core Loss, RQD = 72%

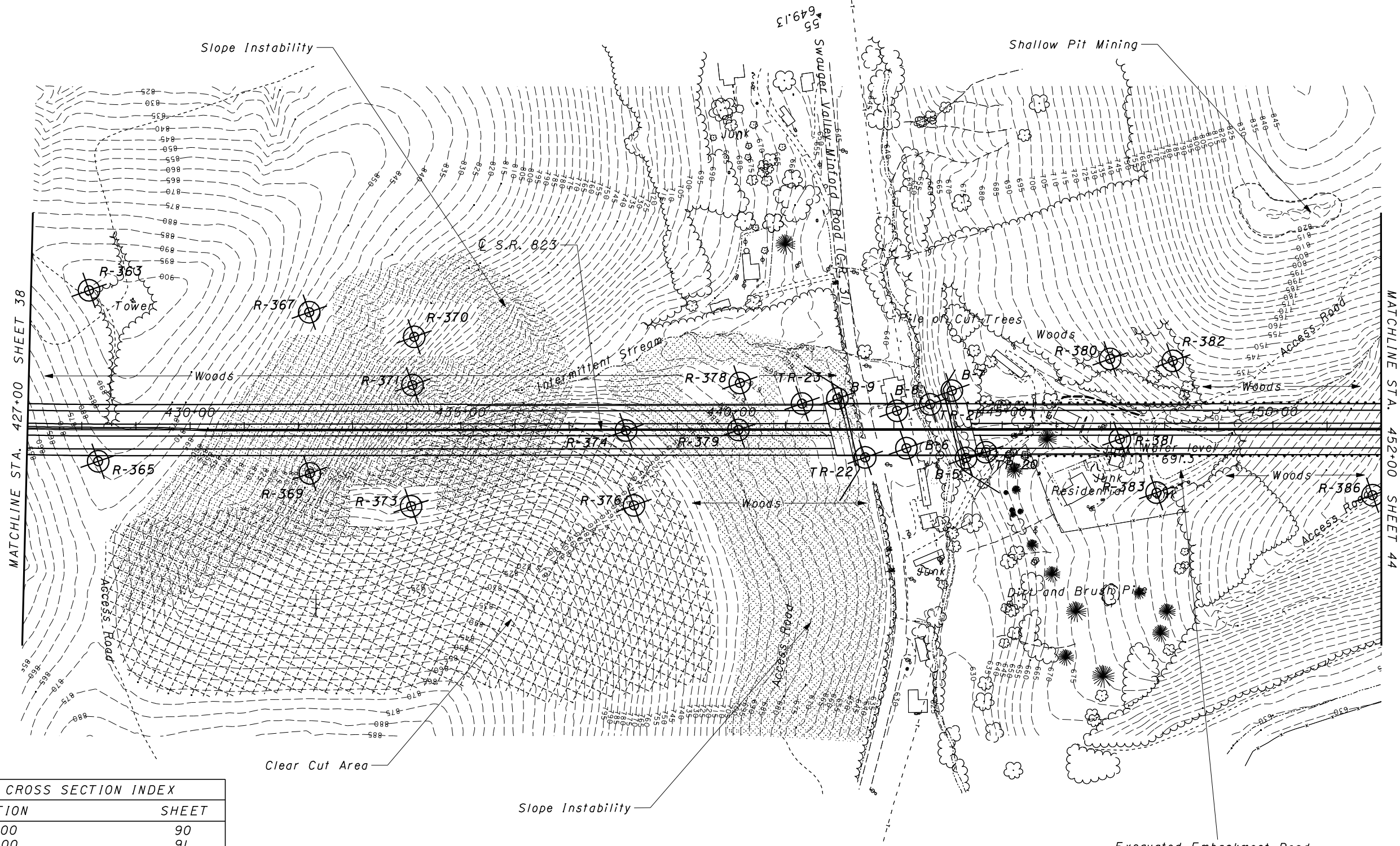
- (F) Medium hard to hard gray and dark gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, laminated to medium bedded, moderately fractured; contains moderate to abundant argillaceous laminations, friable.

R-14 No Core Loss, RQD = 92%

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

NOTE: BORINGS B-5 TO B-9 AND TR-20 TO TR-23 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

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 CHECKED: AEN
 HORIZONTAL SCALE IN FEET
 0 50 100 200



MATCHLINE STA. 427+00 SHEET 38

MATCHLINE STA. 452+00 SHEET 44

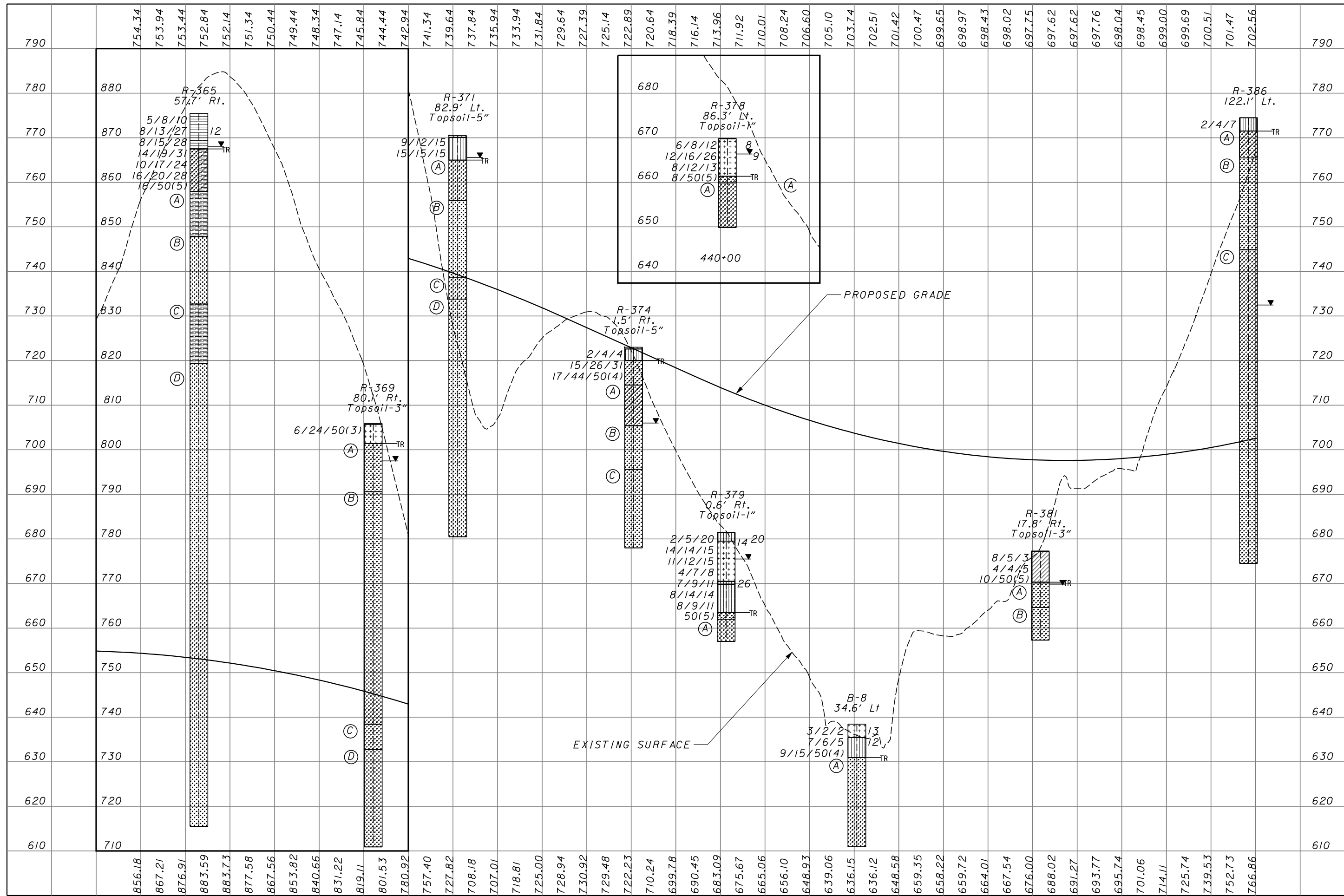
CROSS SECTION INDEX	
STATION	SHEET
428+00	90
432+00	91
434+00	92
438+00	93
440+00	94
447+00	95
448+00	96
452+00	97

SOIL PROFILE
SR 823 STA. 427+00 TO STA. 452+00

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AEN

SOIL PROFILE
SR 823 STA 427+00 TO STA. 452+00

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R-365

- R-1 No Core Loss, RQD = 89%
- (A) Soft black SHALE; moderately to highly weathered, arenaceous, carbonaceous, thinly laminated to thinly bedded, slightly fractured; contains few arenaceous laminations.
- R-2 No Core Loss, RQD = 98%
- (B) Medium hard light gray SANDSTONE; very fine to fine grained, highly to moderately weathered, contains moderate argillaceous laminations.
- R-3 Core Loss = 5%, RQD = 88%
- R-4 No Core Loss, RQD = 98%
- (C) Soft to medium hard black SHALE; highly to moderately weathered, arenaceous, micaceous, carbonaceous, laminated to thinly bedded, contains thin arenaceous laminations.
- R-5 No Core Loss, RQD = 53%
- (D) Hard light gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, slightly argillaceous, massively bedded, slightly fractured to unfractured.
- R-6 No Core Loss, RQD = 98%
- 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 = 99%
- R-13 No Core Loss, RQD = 100%
- R-14 No Core Loss, RQD = 100%
- R-15 No Core Loss, RQD = 100%

B-8

- R-1 Core Loss = 19%, RQD = 68%
- (A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, massive bedding, highly fractured, contains few laminations.
- R-2 No Core Loss, RQD = 90%
- R-3 No Core Loss, RQD = 100%

R-378

- R-1 Core Loss = 9%, RQD = 75%
- (A) Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, thinly to medium bedded, moderately fractured.

R-379

- R-1 Core Loss = 15%, RQD = 38%
- (A) Medium hard brown SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, massively bedded, moderately fractured.

R-369

- R-1 No Core Loss, RQD = 52%
- (A) Medium hard brown and gray SANDSTONE; moderately to highly weathered, slightly argillaceous, micaceous, highly fractured.
- R-2 No Core Loss, RQD = 90%
- (B) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, micaceous, laminated to thinly bedded, moderately to slightly fractured.
- 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 = 96%
- (C) Medium hard gray SANDSTONE; highly to moderately weathered, micaceous, laminated to thinly bedded; contains few argillaceous laminations, friable.
- R-8 No Core Loss, RQD = 100%
- (D) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, argillaceous, massive.
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 100%

R-371

- R-1 No Core Loss, RQD = 59%
- (A) Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, broken to highly fractured; contains clay filled fractures.
- R-2 No Core Loss, RQD = 94%
- (B) Medium hard to hard gray SANDSTONE, very fine to fine grained, moderately weathered, argillaceous, micaceous, massive, slightly fractured to unfractured.
- R-3 No Core Loss, RQD = 93%
- (C) Medium hard gray SANDSTONE; very fine grained, moderately weathered, thinly laminated to massively bedded, turbidity bedded, slightly fractured; contains few to moderate argillaceous laminations.
- R-4 No Core Loss, RQD = 96%
- (D) Hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, argillaceous, pyritic, laminated to medium bedded, slightly fractured to unfractured.
- 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 = 7%, RQD = 93%

R-374

- R-1 Core Loss = 28%, RQD = 22%
- (A) Soft to medium hard brown SANDSTONE very fine to fine grained, highly weathered to decomposed, thinly bedded, micaceous, argillaceous, broken.
- R-2 Core Loss = 3%, RQD = 41%
- (B) Medium hard to hard gray SANDSTONE; moderately to highly weathered, laminated to medium bedded, contains few to moderate argillaceous laminations.
- R-3 Core Loss = 1%, RQD = 41%
- (C) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, thinly bedded to medium bedded, argillaceous, micaceous.
- R-4 Core Loss = 1%, RQD = 78%

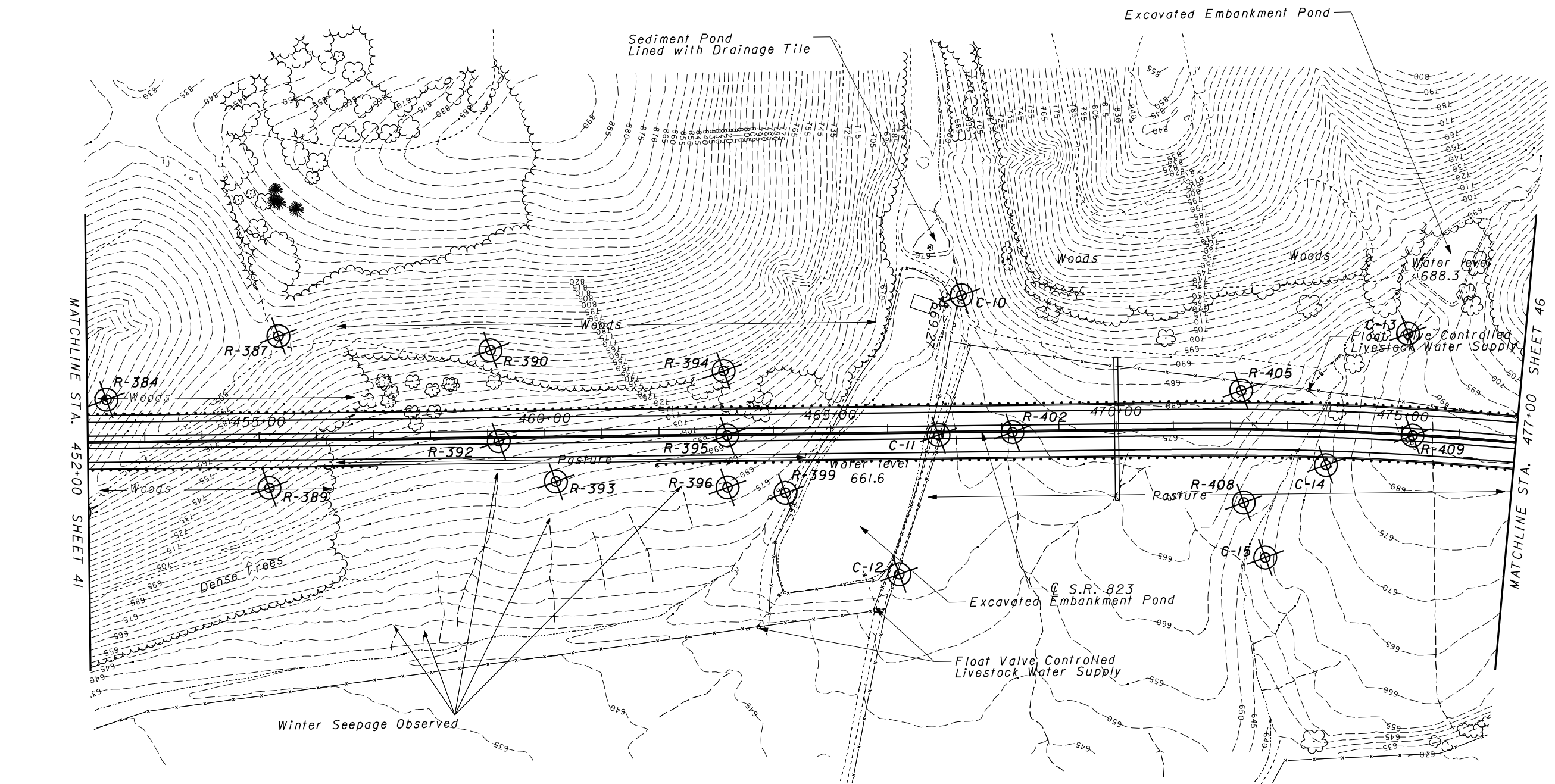
R-386

- R-1 Core Loss = 56%, RQD = 0%
- (A) Soft brown SANDSTONE; very fine to fine grained, decomposed, argillaceous, micaceous, (has soil like appearance), contains moderate to abundant argillaceous laminations.
- R-2 Core Loss = 8%, RQD = 0%
- (B) Soft to medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, contains moderate to abundant argillaceous laminations.
- R-3 Core Loss = 25%, RQD = 14%
- R-4 Core Loss = 3%, RQD = 47%
- R-5 No Core Loss, RQD = 58%
- (C) Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, broken to highly fractured, contains abundant to moderate argillaceous laminations.
- R-6 Core Loss = 1%, RQD = 63%
- R-7 No Core Loss, RQD = 60%
- R-8 No Core Loss, RQD = 54%
- R-9 Core Loss = 1%, RQD = 59%
- R-10 Core Loss = 3%, RQD = 55%
- R-11 Core Loss = 2%, RQD = 80%
- R-12 No Core Loss, RQD = 75%

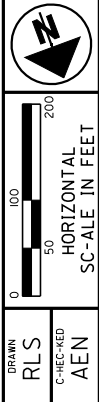
R-381

- R-1 No Core Loss, RQD = 71%
- (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, highly fractured to moderately weathered, micaceous, argillaceous, laminated to medium bedded, contains several clay filled fractures.
- (B) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, micaceous, argillaceous, laminated to medium bedded, contains few argillaceous laminations.
- R-2 No Core Loss, RQD = 94%

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CROSS SECTION INDEX	
STATION	SHEET
452+00	97
455+50	98
459+00	99
463+00	100
467+00	101
472+00	102
474+00	103



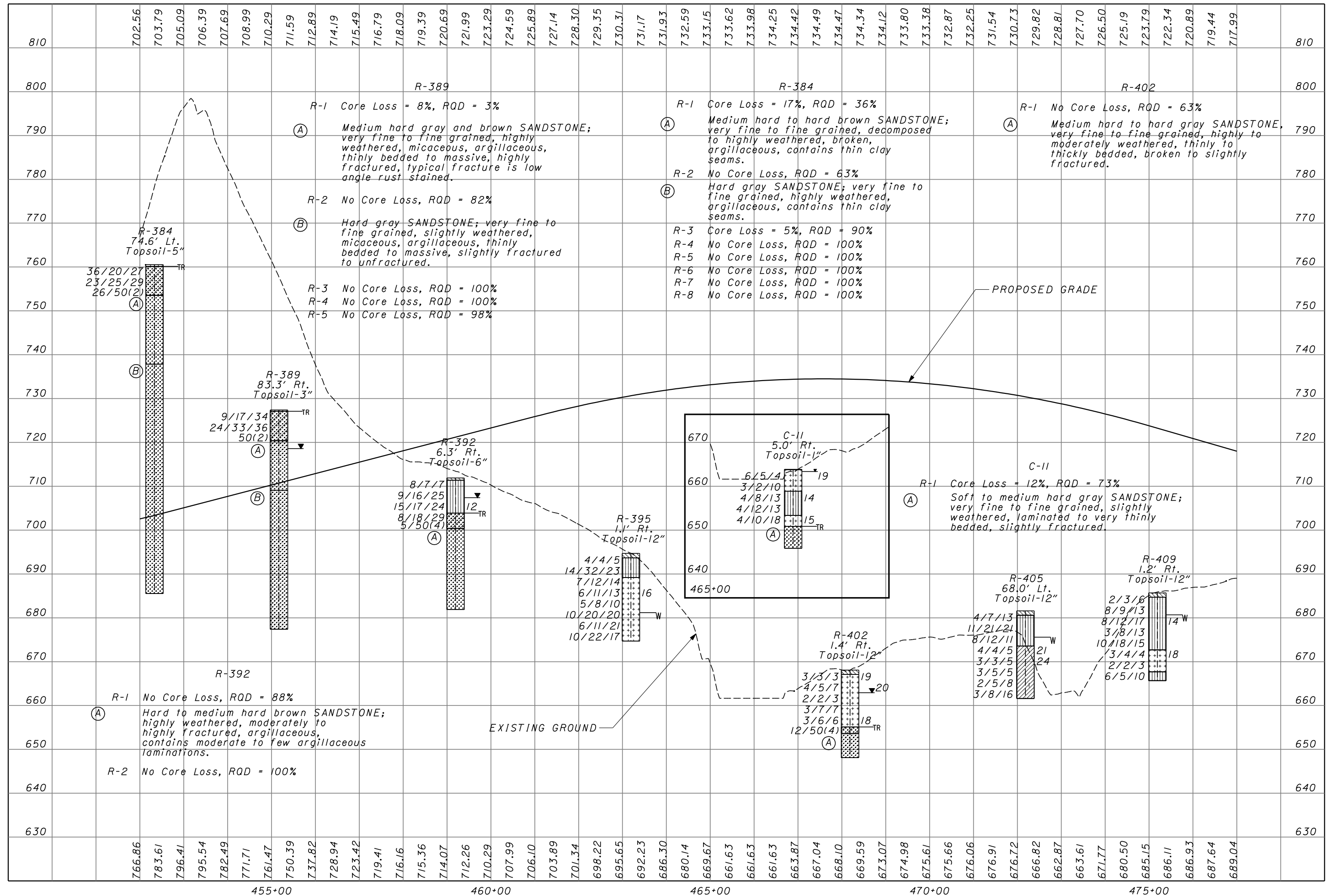
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SOIL PROFILE
SR 823 STA. 452+00 TO STA. 477+00

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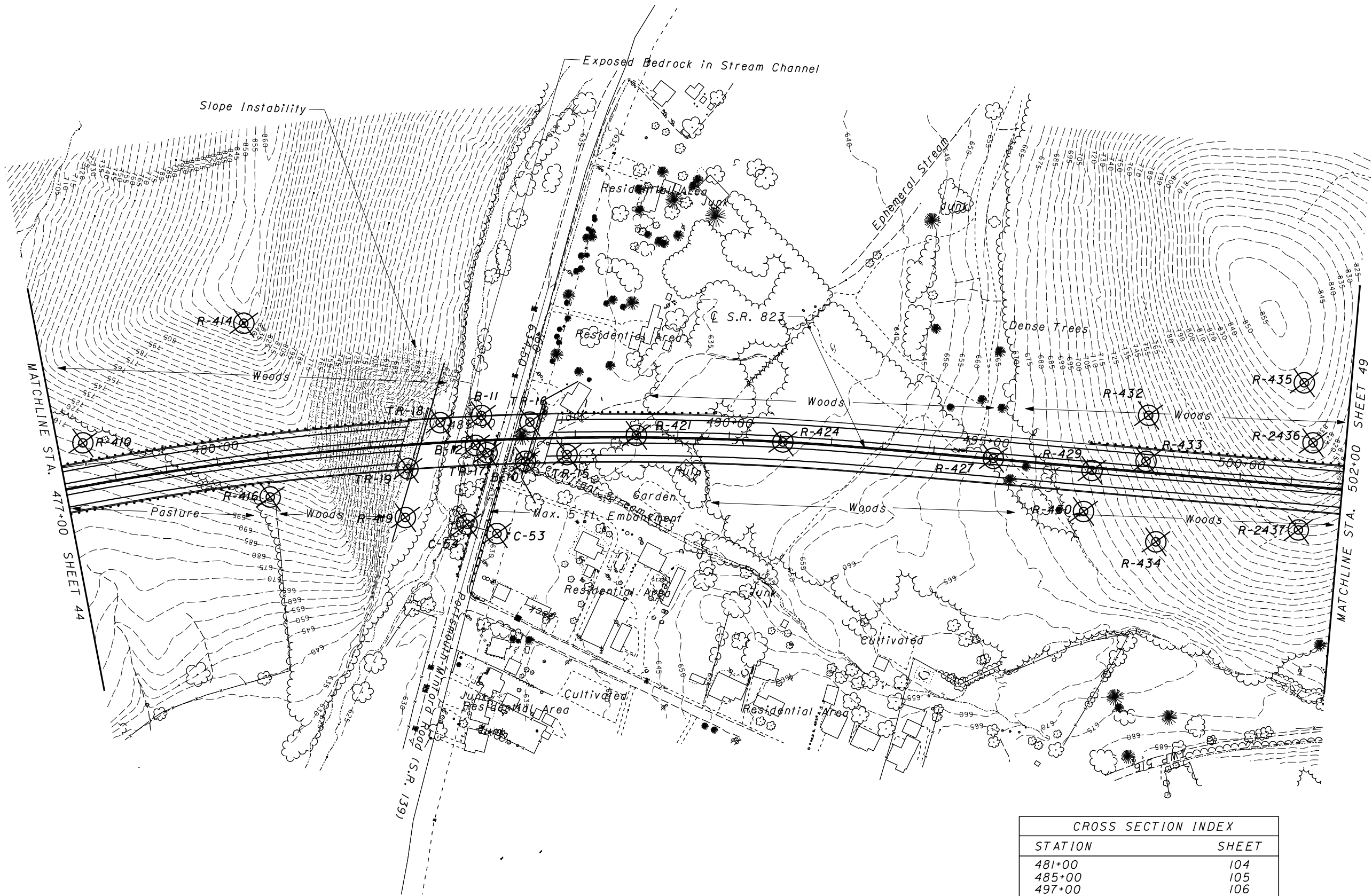


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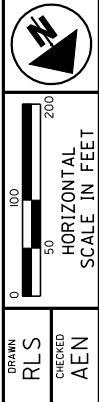
SOIL PROFILE
SR 823 STA. 452+00 TO STA. 477+00

SCI-823-6.81

NOTE: BORINGS B-10 TO B-12 AND TR-15 TO TR-19 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.



CROSS SECTION INDEX	
STATION	SHEET
481+00	104
485+00	105
497+00	106
498+00	107
501+50	108

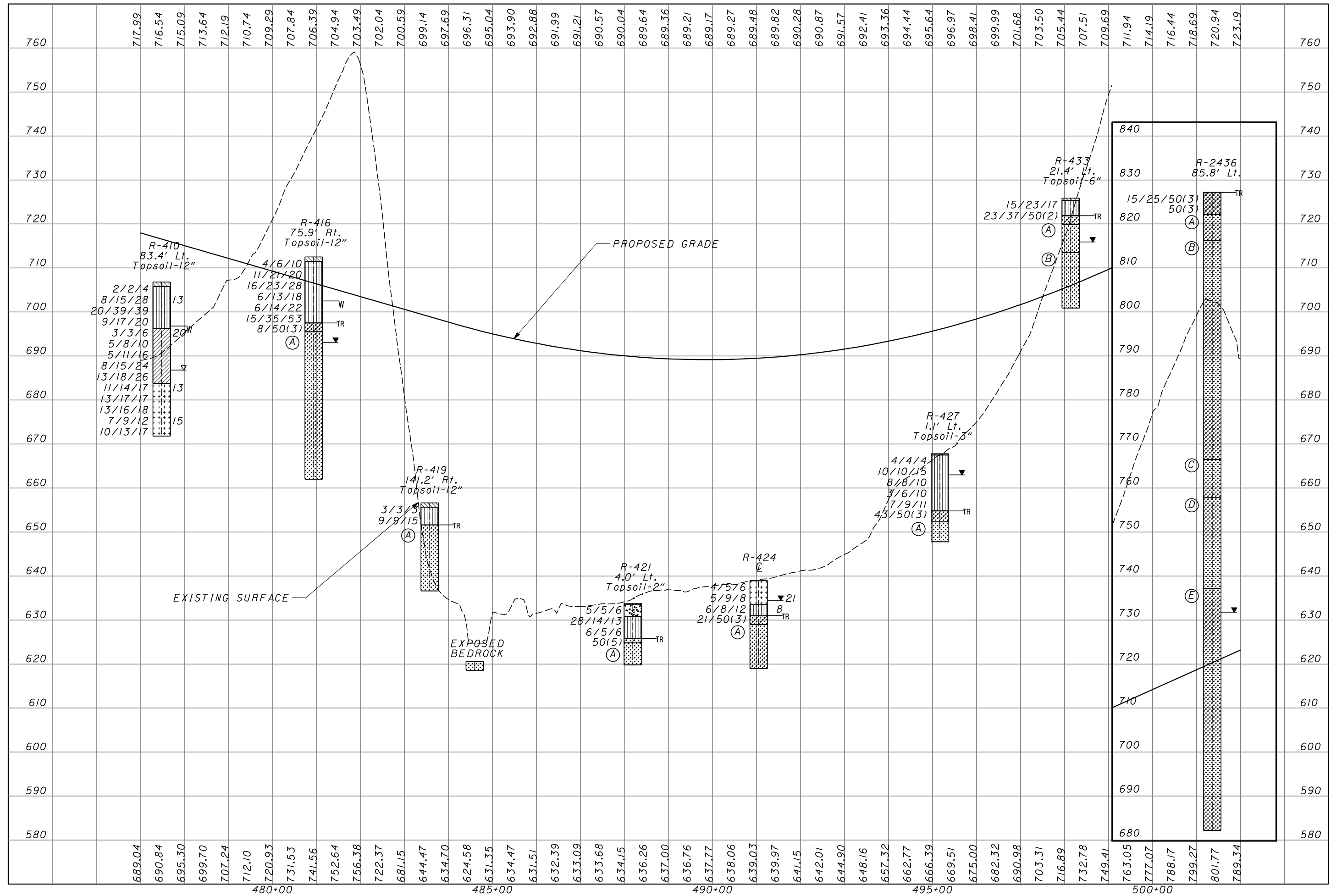


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SOIL PROFILE
SR 823 STA. 477+00 TO STA. 502+00

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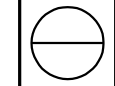
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SOIL PROFILE
SR 823 STA. 477+00 TO STA. 502+00

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R-416

- R-1 No Core Loss, RQD = 83%
- (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, broken to moderately fractured, moderately weathered, micaceous, argillaceous.
- R-2 No Core Loss, RQD = 100%
- R-3 Core Loss = 3%, RQD = 98%
- R-4 No Core Loss, RQD = 100%

R-419

- R-1 No Core Loss, RQD = 78%
- (A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, massively bedded.
- R-2 No Core Loss, RQD = 81%

R-421

- R-1 No Core Loss, RQD = 90%
- (A) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded.

R-424

- R-1 No Core Loss, RQD = 92%
- (A) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, medium bedded to massive, slightly fractured.
- R-2 No Core Loss, RQD = 99%

R-427

- R-1 No Core Loss, RQD = 100%
- (A) Soft to medium hard brown and gray SANDSTONE, argillaceous, highly weathered, moderately fractured.

R-433

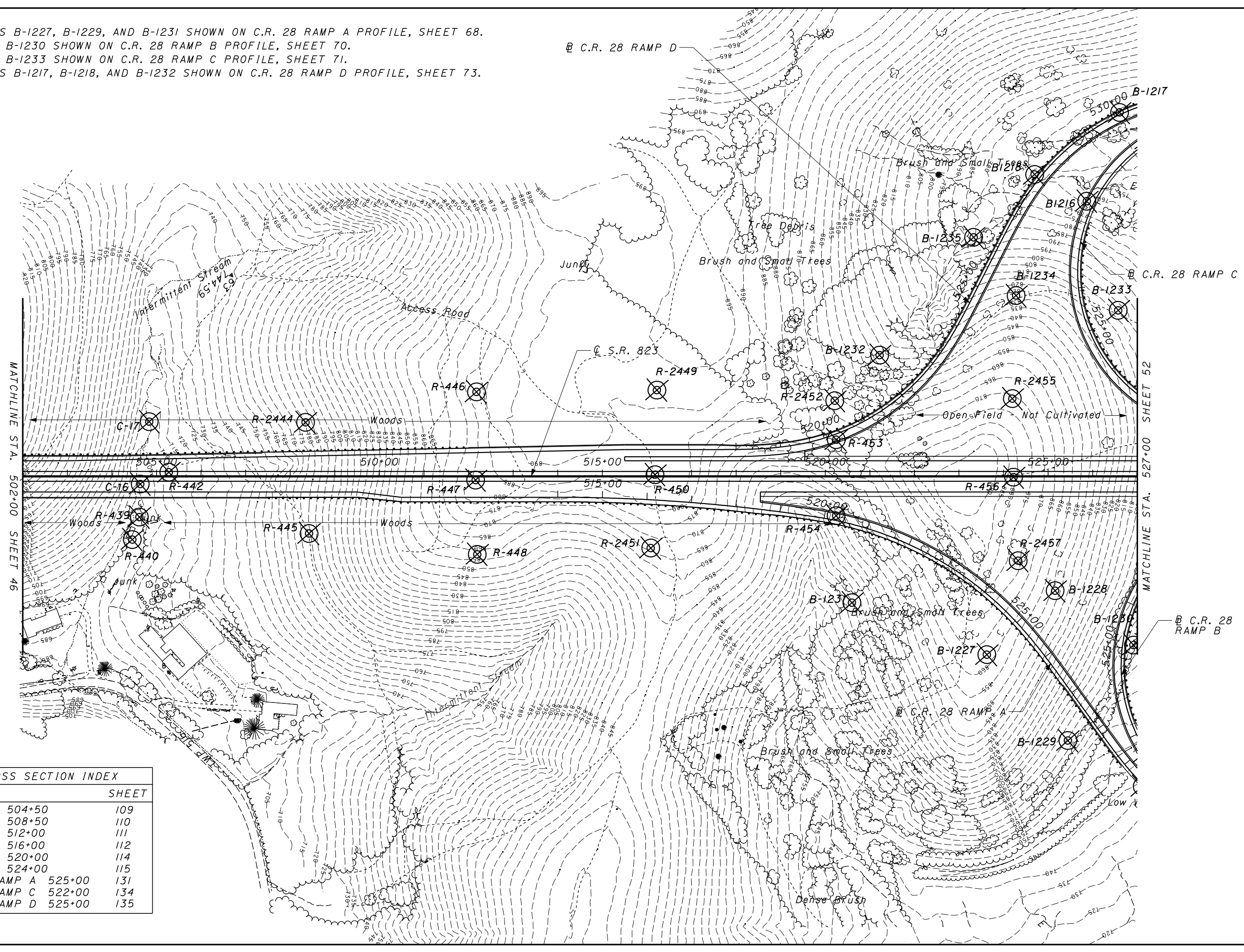
- R-1 No Core Loss, RQD = 75%
- (A) Medium hard light brown SANDSTONE, fine to medium grained, argillaceous, highly weathered to decomposed, broken; contains numerous silty clay filled, rust stained, low angled fractures.
- (B) Medium hard to hard gray SANDSTONE, very fine to fine grained, laminated to thin bedded, moderately weathered, contains very small argillaceous clasts, highly fractured.
- R-2 No Core Loss, RQD = 73%
- R-3 No Core Loss, RQD = 92%

R-2436

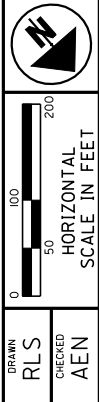
- R-1 No Core Loss, RQD = 69%
- (A) Hard light brown SANDSTONE; very fine to fine grained, highly weathered, thickly to massively bedded, moderately to highly fractured.
- (B) Hard brown and gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thickly bedded to massive, moderately fractured.
- R-2 Core Loss = 2%, RQD = 86%
- R-3 Core Loss = 3%, RQD = 94%
- R-4 No Core Loss, RQD = 95%
- R-5 No Core Loss, RQD = 98%
- R-6 No Core Loss, RQD = 92%
- (C) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, laminated to medium bedded, slightly to moderately fractured, contains moderate to abundant argillaceous laminations.
- R-7 No Core Loss, RQD = 97%
- (D) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, pyritic, massive, slightly fractured, contains few argillaceous laminations.
- R-8 No Core Loss, RQD = 83%
- R-9 No Core Loss, RQD = 100%
- (E) Very hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, massive, unfractured to slightly fractured.
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 99%
- 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%

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NOTE: BORINGS B-1227, B-1229, AND B-1231 SHOWN ON C.R. 28 RAMP A PROFILE, SHEET 68.
 BORING B-1230 SHOWN ON C.R. 28 RAMP B PROFILE, SHEET 70.
 BORING B-1233 SHOWN ON C.R. 28 RAMP C PROFILE, SHEET 71.
 BORINGS B-1217, B-1218, AND B-1232 SHOWN ON C.R. 28 RAMP D PROFILE, SHEET 73.



CROSS SECTION INDEX		
STATION		SHEET
S.R. 823	504+50	109
S.R. 823	508+50	110
S.R. 823	512+00	111
S.R. 823	516+00	112
S.R. 823	520+00	114
S.R. 823	524+00	115
C.R. 28 RAMP A	525+00	131
C.R. 28 RAMP C	522+00	134
C.R. 28 RAMP D	525+00	135

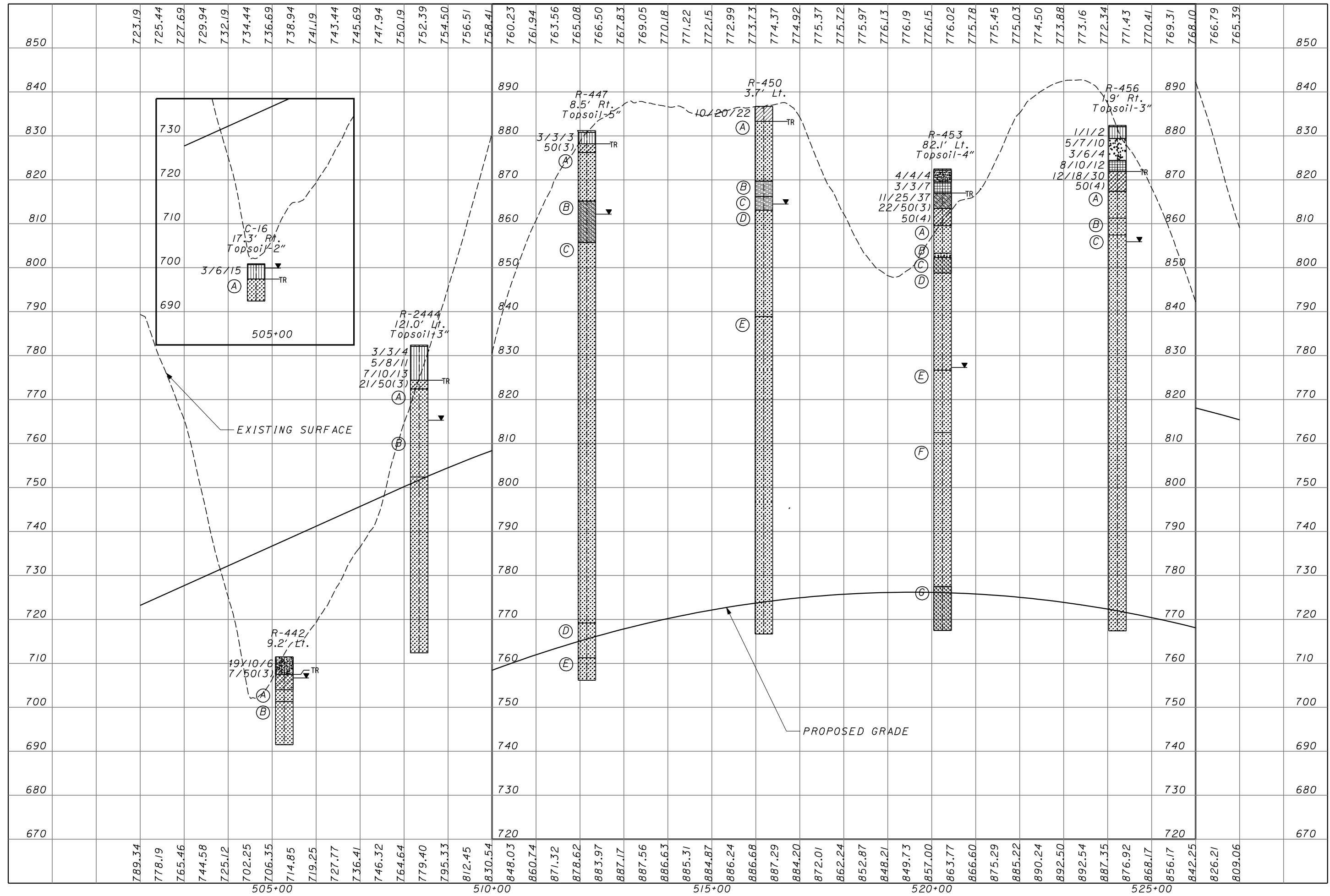


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SOIL PROFILE
SR 823 STA. 502+00 TO STA. 527+00

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SOIL PROFILE
SR 823 STA. 502+00 TO STA 527+00

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R-447

- R-1 Core Loss = 6%, RQD = 78%
- (A) Medium hard brown and reddish brown SANDSTONE; fine to medium grained, highly weathered, micaceous, massive, broken.
- R-2 No Core Loss, RQD = 73%
- (B) Soft to medium hard dark gray CLAY SHALE; highly weathered, arenaceous, laminated to very thinly bedded, broken to moderately fractured.
- R-3 No Core Loss, RQD = 87%
- (C) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, argillaceous, thinly bedded to medium bedded, slightly fractured.
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 48%
- R-6 No Core Loss, RQD = 48%
- R-7 No Core Loss, RQD = 66%
- R-8 No Core Loss, RQD = 100%
- R-9 No Core Loss, RQD = 100%
- R-10 No Core Loss, RQD = 97%
- R-11 No Core Loss, RQD = 100%
- (D) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, laminated to medium bedded, slightly fractured, contains few to moderate argillaceous laminations..
- R-12 No Core Loss, RQD = 100%
- (E) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, micaceous, pyritic, argillaceous, medium bedded to massive, unfractured to slightly fractured.
- R-13 No Core Loss, RQD = 100%

R-442

- R-1 No Core Loss, RQD = 76%
- (A) Soft to medium hard brown SANDSTONE; fine to medium grained, highly weathered, argillaceous, broken.
- (B) Medium hard to hard gray SANDSTONE, moderately to slightly fractured, very fine to fine grained, moderately weathered, moderately to slightly fractured, contains medium to massive turbidite beds.
- R-2 No Core Loss, RQD = 100%

C-16

- R-1 Core Loss = 8%, RQD = 83%
- (A) Soft to medium hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, laminated to very thinly bedded, slightly fractured, contains rust stains.

R-450

- R-1 No Core Loss, RQD = 63%
- (A) Medium hard brown and light gray SANDSTONE; fine to medium grained, highly weathered, broken, contains numerous low angle rust stained and clay filled fractures.
- R-2 No Core Loss, RQD = 90%
- (B) Soft to medium hard dark gray and black SHALE; moderately to highly weathered, carbonaceous, moderately to highly fractured.
- (C) Soft gray SHALE; highly weathered to decomposed, thinly laminated, arenaceous, moderately to highly fractured.
- R-3 No Core Loss, RQD = 91%
- (D) Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, broken to moderately fractured, argillaceous, contains moderate argillaceous laminations.
- R-4 Core Loss = 4%, RQD = 86%
- R-5 No Core Loss, RQD = 98%
- (E) Medium hard to hard light gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, thickly bedded to massive, unfractured to slightly fractured.
- R-6 No Core Loss, RQD = 95%
- R-7 Core Loss = 9%, RQD = 82%
- R-8 No Core Loss, RQD = 68%
- 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-2444

- R-1 Core Loss = 57%, RQD = 4%
- (A) Soft to medium hard brown SANDSTONE; very fine to fine grained, highly weathered to decomposed, argillaceous, micaceous, medium bedded to thickly bedded, broken, with few shale laminae.
- R-2 No Core Loss, RQD = 94%
- R-3 No Core Loss, RQD = 100%
- (B) Medium hard to hard gray SANDSTONE; to moderately weathered, bedded to thickly bedded, slightly very fine to fine grained, slightly argillaceous, micaceous, pyritic, thinly 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-453

- R-1 No Core Loss, RQD = 100%
- (A) Medium hard brown SANDSTONE; fine to coarse grained, moderately weathered, argillaceous, thinly bedded to medium bedded, highly fractured.
- R-2 Core Loss = 8%, RQD = 77%
- (B) Medium hard brown and gray BRECCIA; highly weathered, broken.
- (C) Soft to medium hard gray SILTSTONE; highly weathered, broken to highly fractured, argillaceous.
- (D) Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, micaceous, argillaceous, laminated to moderately bedded, highly fractured.
- R-3 No Core Loss, RQD = 83%
- R-4 No Core Loss, RQD = 91%
- R-5 Core Loss = 1%, RQD = 91%
- (E) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, medium bedded to massively bedded.
- (F) Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, argillaceous, laminated to thinly bedded.
- R-7 No Core Loss, RQD = 100%
- R-8 Core Loss = 3%, RQD = 97%
- R-9 Core Loss = 1%, RQD = 84%
- R-10 Core Loss = 2%, RQD = 60%
- (G) Medium hard gray SILTSTONE; moderately weathered, micaceous, laminated to thinly bedded.
- R-12 No Core Loss, RQD = 93%

R-456

- R-1 No Core Loss, RQD = 97%
- (A) Medium hard to hard gray SANDSTONE, fine to coarse grained, micaceous, moderately weathered, medium to massive beds, slightly fractured .
- R-2 Core Loss = 2%, RQD = 72%
- (B) Medium hard to hard brown and gray SANDSTONE, fine to coarse grained, highly weathered, broken to highly fractured, poorly cemented.
- R-3 No Core Loss, RQD = 100%
- (C) Hard gray SANDSTONE, very fine to medium grained, argillaceous, thin to thick bedded, moderately weathered, highly fractured.
- R-4 Core Loss = 1%, RQD = 99%
- R-5 No Core Loss, RQD = 100%
- R-6 Core Loss = 1%, RQD = 98%
- R-7 Core Loss = 3%, RQD = 95%
- R-8 No Core Loss, RQD = 100%

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SOIL PROFILE SR 823 STA. 502+00 TO STA 527+00

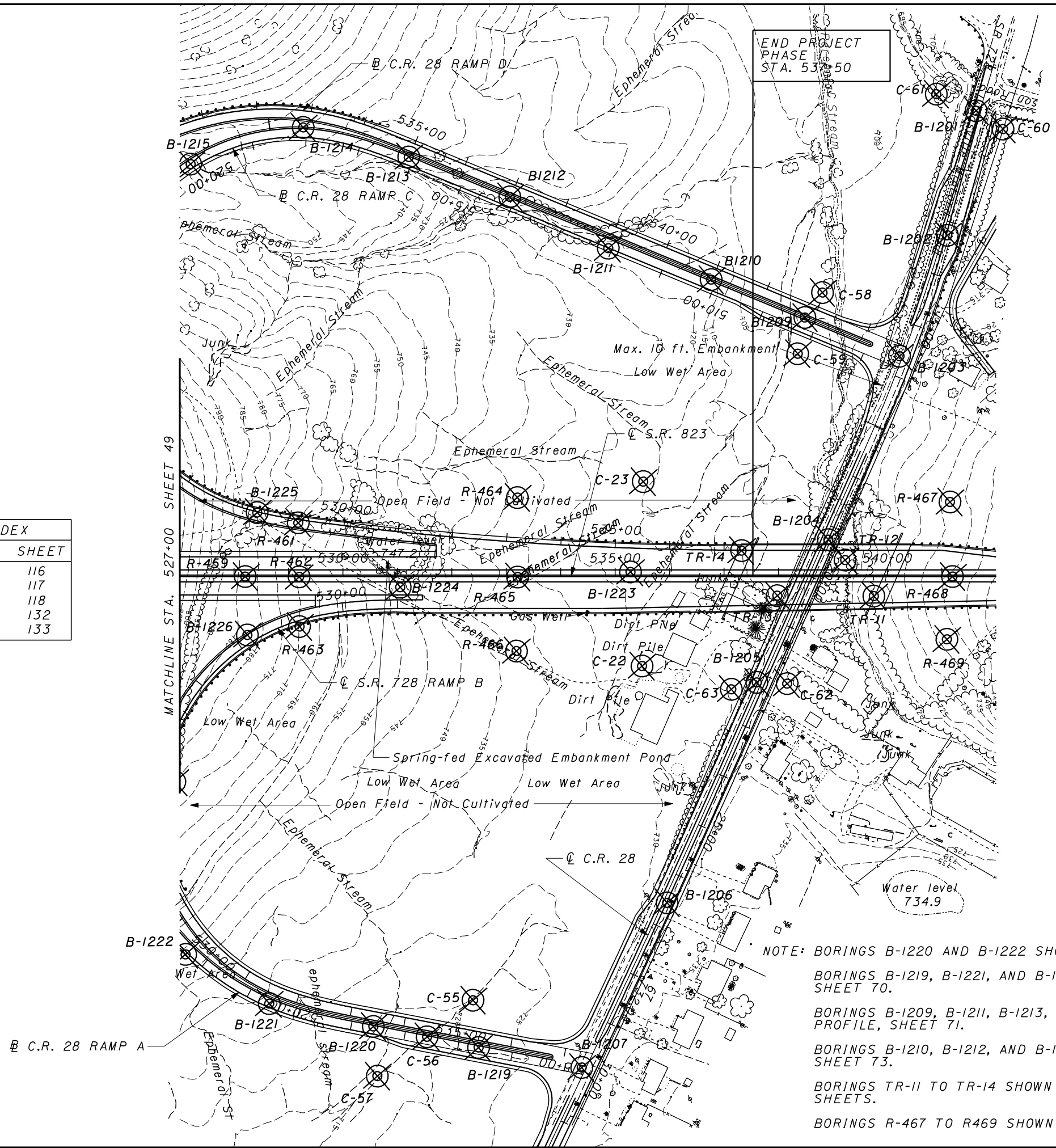
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CROSS SECTION INDEX		
STATION		SHEET
S.R. 823	529+00	116
S.R. 823	533+00	117
S.R. 823	535+50	118
C.R. 28 RAMP A	534+50	132
C.R. 28 RAMP C	508+00	133



END PROJECT
 PHASE
 STA. 537+50

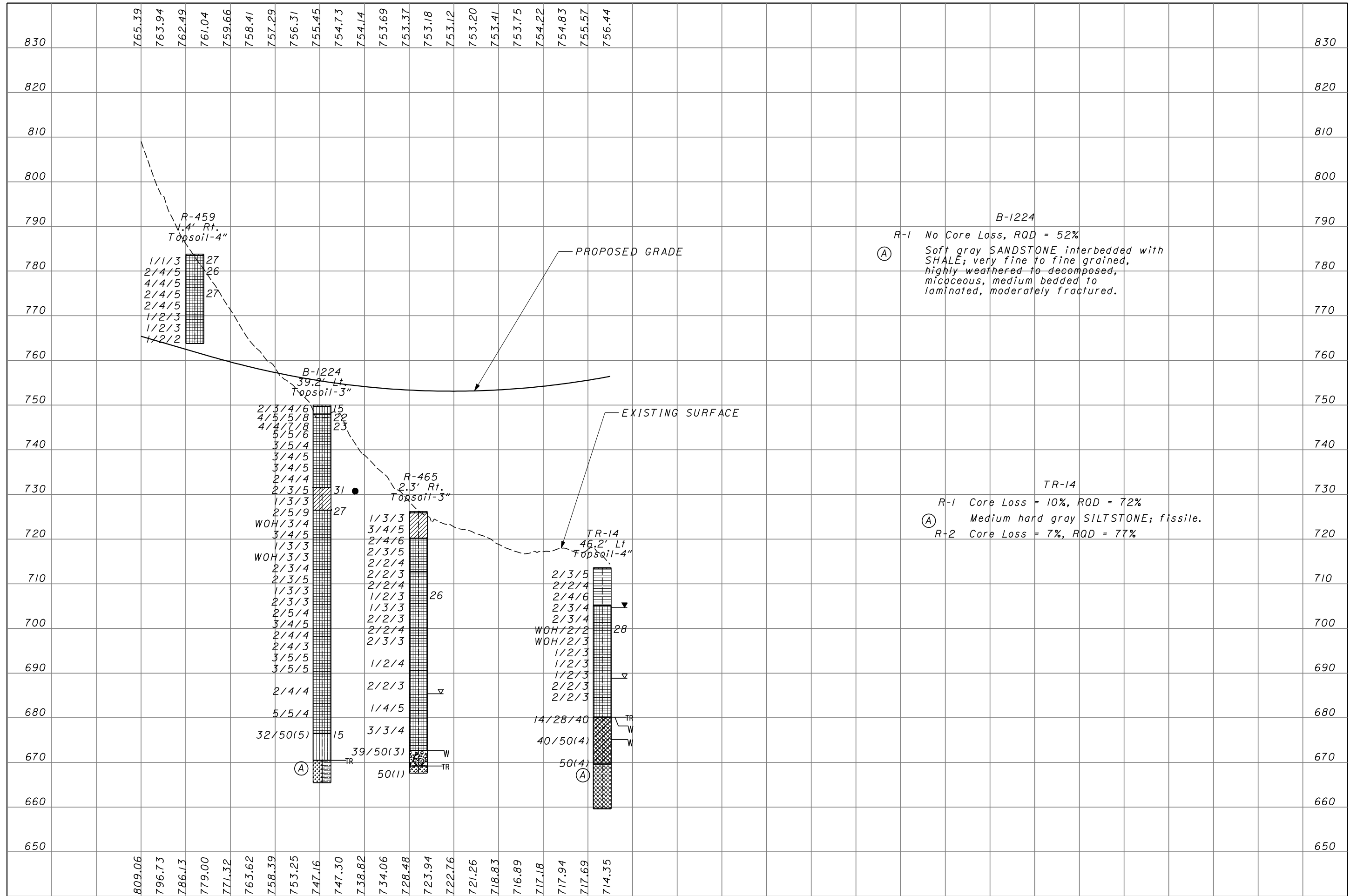


SOIL PROFILE
 SR 823 STA. 527+00 TO STA. 537+50

SCI-823-6.81

NOTE: BORINGS B-1220 AND B-1222 SHOWN ON C.R. 28 RAMP A PROFILE, SHEET 68.
 BORINGS B-1219, B-1221, AND B-1226 SHOWN ON C.R. 28 RAMP B PROFILE, SHEET 70.
 BORINGS B-1209, B-1211, B-1213, B-1215, AND B-1225 SHOWN ON C.R. 28 RAMP C PROFILE, SHEET 71.
 BORINGS B-1210, B-1212, AND B-1214 SHOWN ON C.R. 28 RAMP D PROFILE, SHEET 73.
 BORINGS TR-II TO TR-14 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.
 BORINGS R-467 TO R469 SHOWN ON PHASE 2 SOIL PROFILE.

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SOIL PROFILE
SR 823 STA. 527+00 TO STA. 537+50

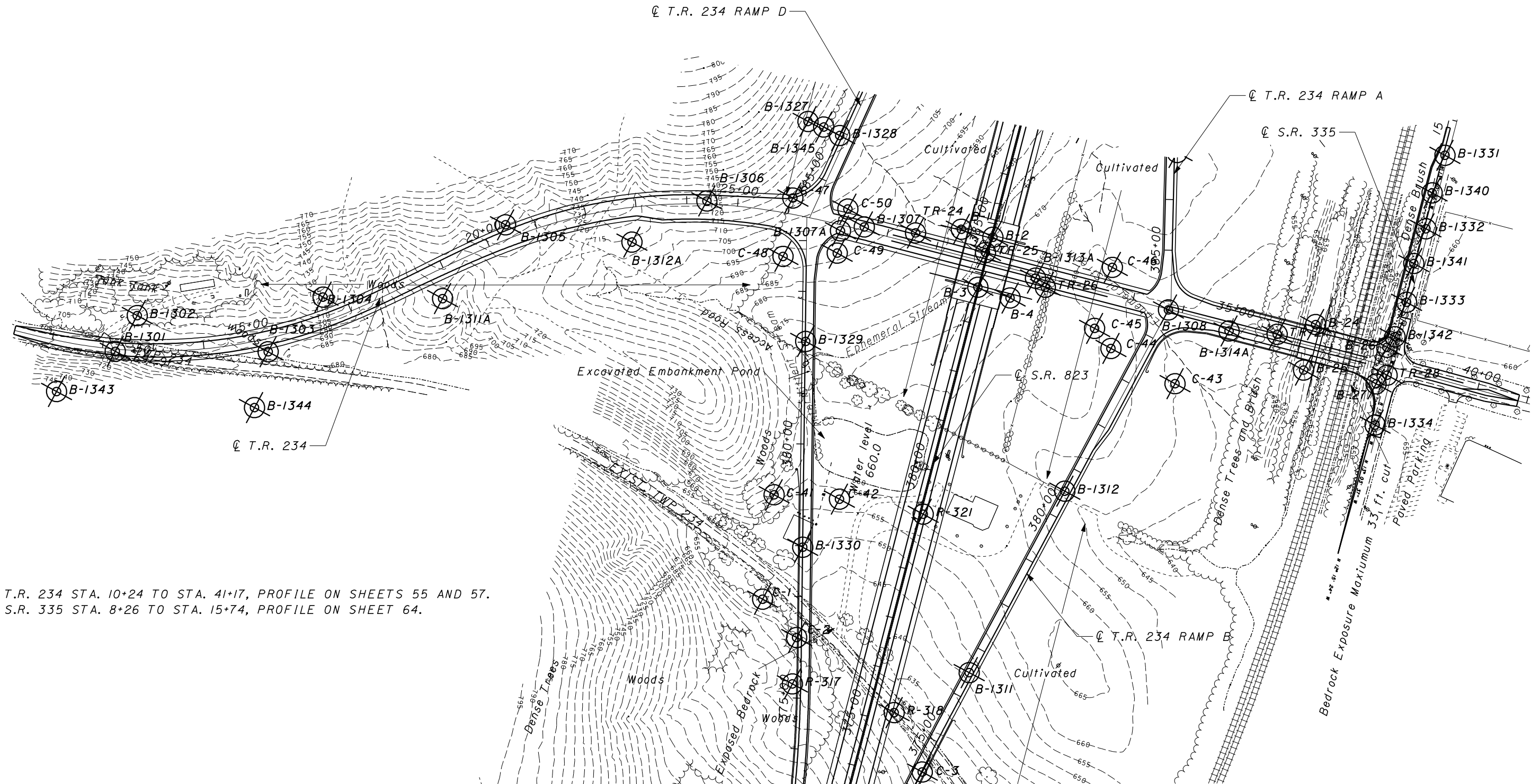
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NOTE: BORINGS R-318 AND R-321 SHOWN ON S.R. 823 PROFILE, SHEETS 35 AND 37.
 BORINGS B-1311 AND B-1312 SHOWN T.R. 234 RAMP B PROFILE, SHEET 61.
 BORINGS B-1329, B-1330, AND R-317 SHOWN ON T.R. 234 RAMP C PROFILE, SHEET 62.
 BORINGS B-1331 TO B-1334 SHOWN ON S.R. 335 PROFILE, SHEET 64.
 BORINGS B-1 TO B-4, B-24 TO B-27, TR-24 TO TR-28, AND B-1340 TO B-1342 SHOWN ON
 STRUCTURE FOUNDATION INVESTIGATION SHEETS.

CROSS SECTION INDEX		
STATION		SHEET
S.R. 823	375+50	78
T.R. 234	12+00	119
T.R. 234	15+00	120
T.R. 234	26+00	121
T.R. 234	27+00	122
T.R. 234	32+50	123
T.R. 234 RAMP B	383+50	125
T.R. 234 RAMP C	379+00	126
T.R. 234 RAMP D	386+00	127



 HORIZONTAL SCALE IN FEET
 DRAWN: RLS
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T.R. 234 STA. 10+24 TO STA. 41+17, PROFILE ON SHEETS 55 AND 57.
 S.R. 335 STA. 8+26 TO STA. 15+74, PROFILE ON SHEET 64.

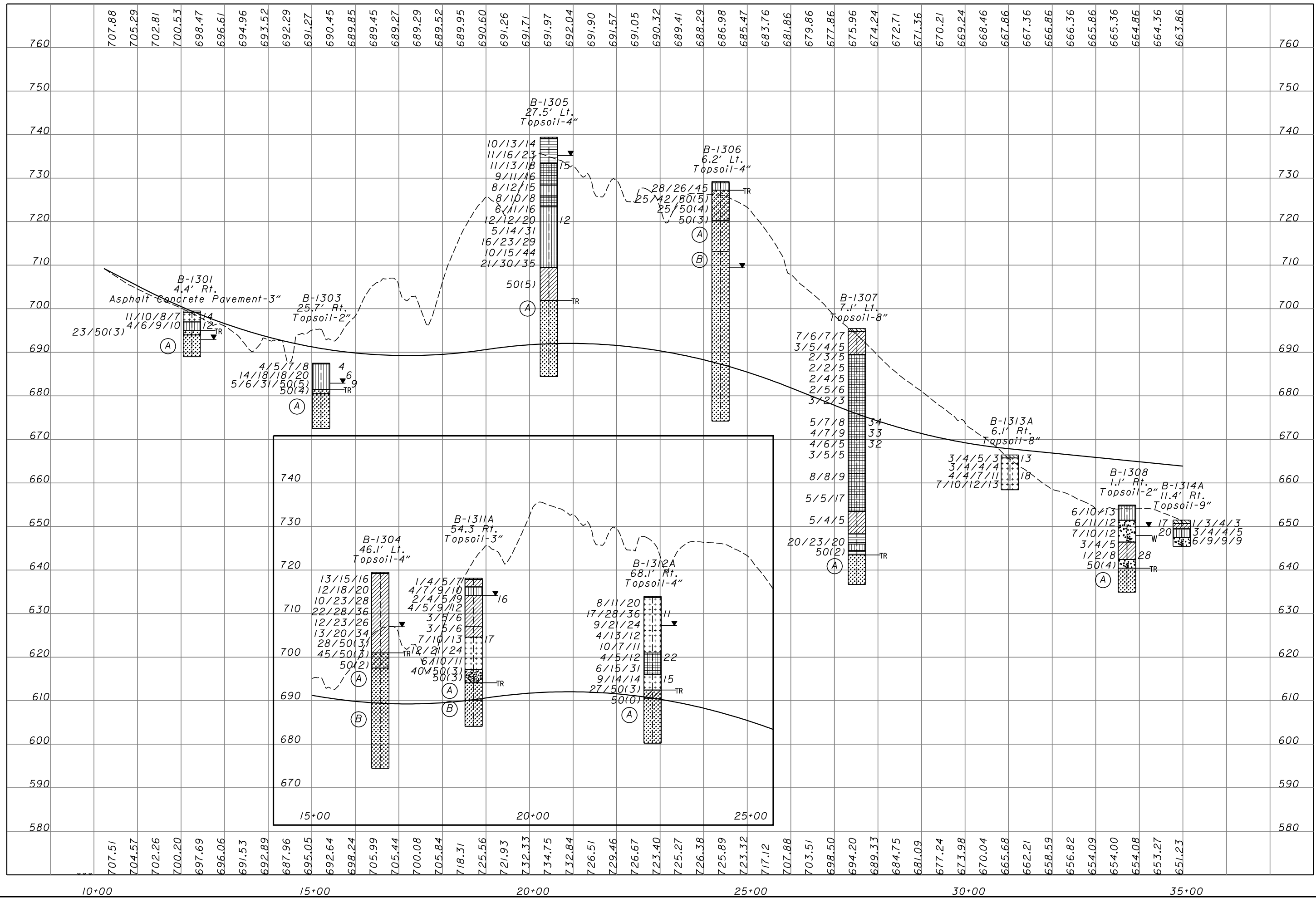
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SOIL PROFILE
T.R. 234 AND S.R. 335

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SOIL PROFILE
T.R. 234 STA.10+24 TO STA. 35+00

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B-1301

R-1 Core Loss = 22, RQD = 12%

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

B-1304

R-1 No Core Loss, RQD = 66%

- (A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, medium bedded to thickly bedded, highly fractured, fractures along bedding planes with infilling of clayey silt.
- (B) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded, slightly to moderately fractured.

R-2 No Core Loss, RQD = 96%

R-3 No Core Loss, RQD = 100%

B-1312A

R-1 Core Loss = 13%, RQD = 47%

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

B-1303

R-1 No Core Loss, RQD = 66%

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

B-1305

R-1 No Core Loss, RQD = 84%

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

R-2 No Core Loss, RQD = 96%

B-1307

R-1 Core Loss = 15%, RQD = 82%

- (A) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, massively bedded, unfractured.

B-1311A

R-1 Core Loss = 3%, RQD = 64%

- (A) Hard yellowish brown SANDSTONE; fine grained, highly weathered, argillaceous, micaceous, highly fractured to moderately fractured, exhibits cross bedding.

- (B) Medium hard to hard gray SANDSTONE; fine to very fine grained, argillaceous, micaceous, massive, moderately fractured, contains clay filled fractures.

B-1306

R-1 No Core Loss, RQD = 67%

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

R-2 No Core Loss, RQD = 67%

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

R-3 No Core Loss, RQD = 88%

R-4 No Core Loss, RQD = 92%

R-5 No Core Loss, RQD = 100%

B-1308

R-1 No Core Loss, RQD = 86%

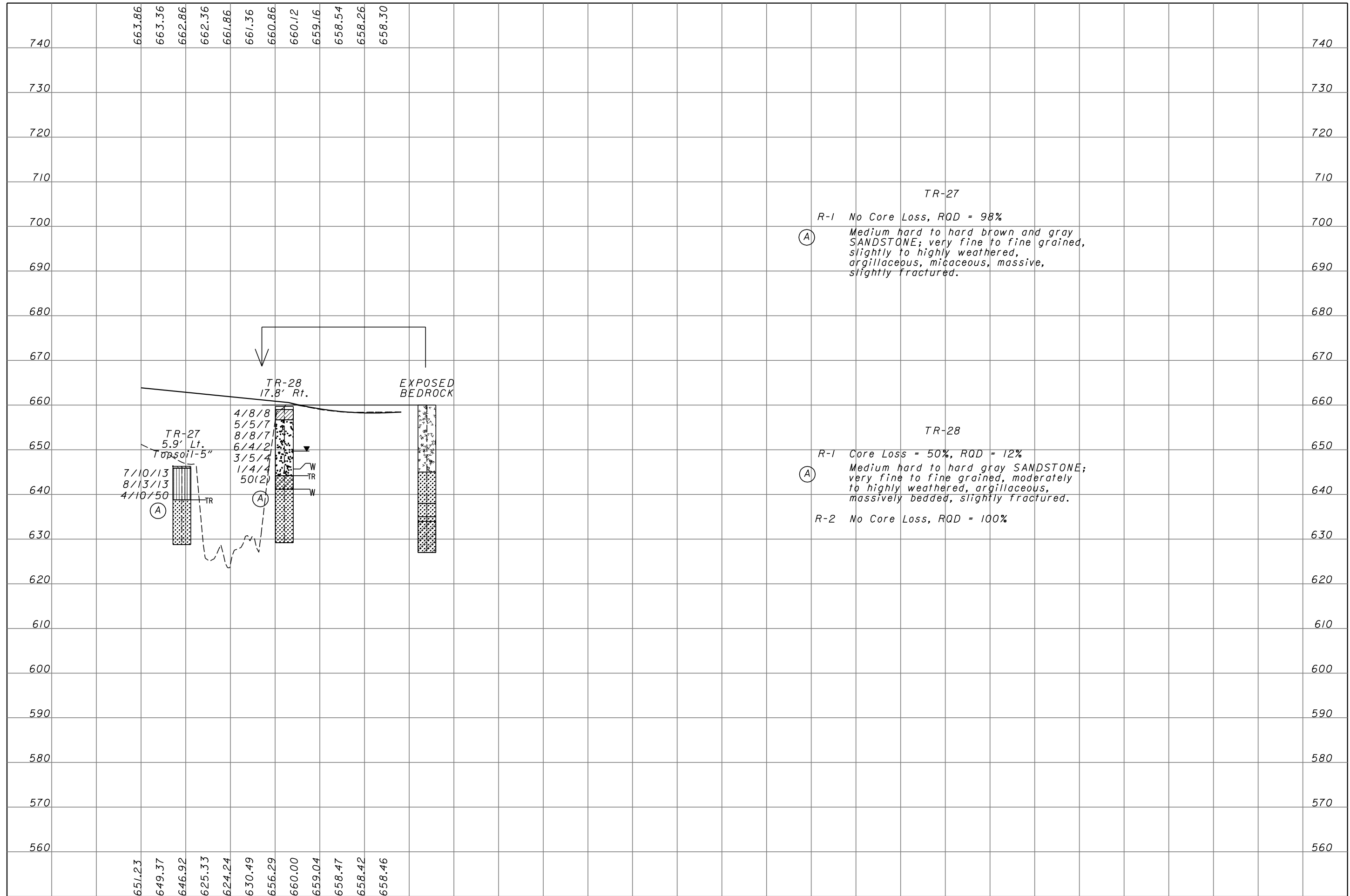
- (A) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massively bedded, unfractured.

SOIL PROFILE
 T.R. 234 STA.10+24 TO STA. 35+00

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35+00

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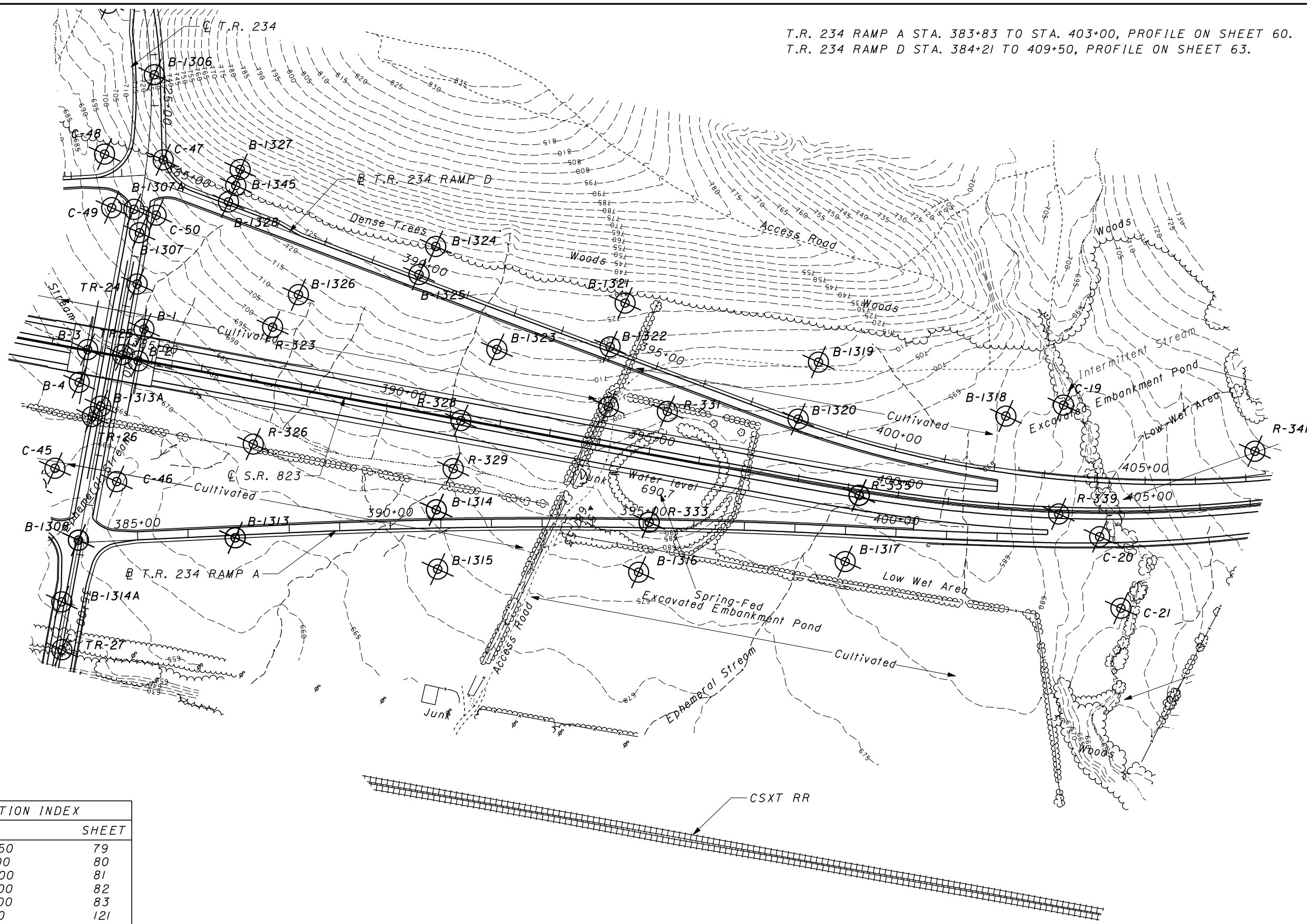
SOIL PROFILE
T.R. 234 STA. 35+00 TO STA. 41+17

SCI-823-6.81

57/135



T.R. 234 RAMP A STA. 383+83 TO STA. 403+00, PROFILE ON SHEET 60.
 T.R. 234 RAMP D STA. 384+21 TO 409+50, PROFILE ON SHEET 63.



CROSS SECTION INDEX		
STATION		SHEET
S.R. 823	387+50	79
S.R. 823	391+00	80
S.R. 823	395+00	81
S.R. 823	404+00	82
S.R. 823	407+00	83
T.R. 234	26+00	121
T.R. 234	27+00	122
T.R. 234	32+50	123
T.R. 234 RAMP A	391+00	124
T.R. 234 RAMP D	386+00	127
T.R. 234 RAMP D	390+00	128
T.R. 234 RAMP D	394+00	129
T.R. 234 RAMP D	398+00	130

NOTE: BORINGS R-323, R-328, R-331, AND R-335 SHOWN ON S.R. 823 PROFILE, SHEET 37.
 BORINGS B-1306 TO B-1308 AND B-1312A TO B-1314A SHOWN ON T.R. 234 PROFILE, SHEET 55.
 BORINGS B-1 TO B-4 AND TR-24 TO TR-27 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.



SCALE IN FEET

HORIZONTAL

CHECKED AEN

RLS

DRAWN

SOIL PROFILE
T.R. 234 RAMP A AND RAMP D

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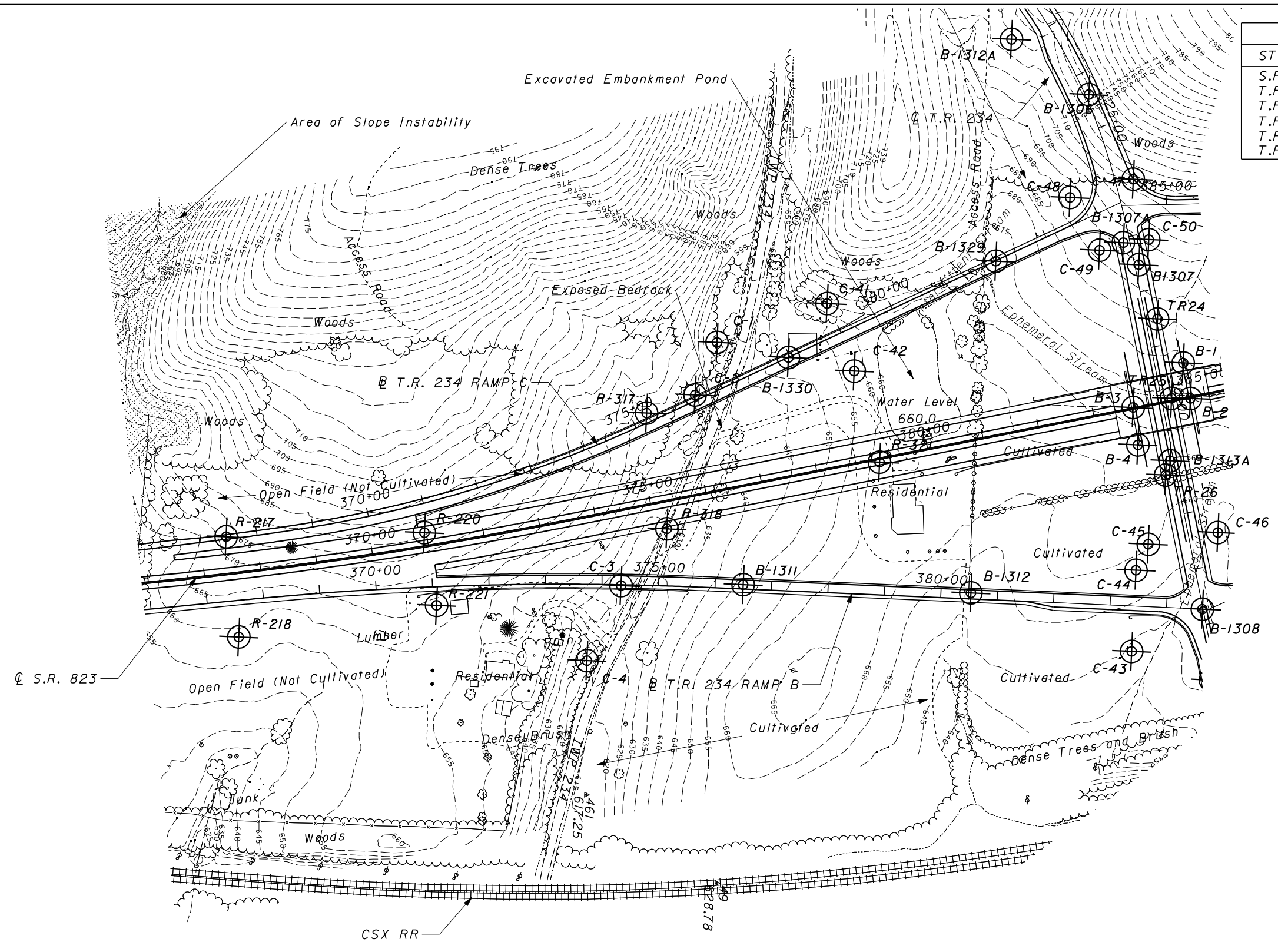
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 HORIZONTAL SCALE IN FEET

CROSS SECTION INDEX		
STATION		SHEET
S.R. 823	375+50	78
T.R. 234	26+00	121
T.R. 234	27+00	122
T.R. 234	32+50	123
T.R. 234 RAMP B	383+50	125
T.R. 234 RAMP C	379+00	126



SOIL PROFILE
T.R. 234 RAMP B AND RAMP C

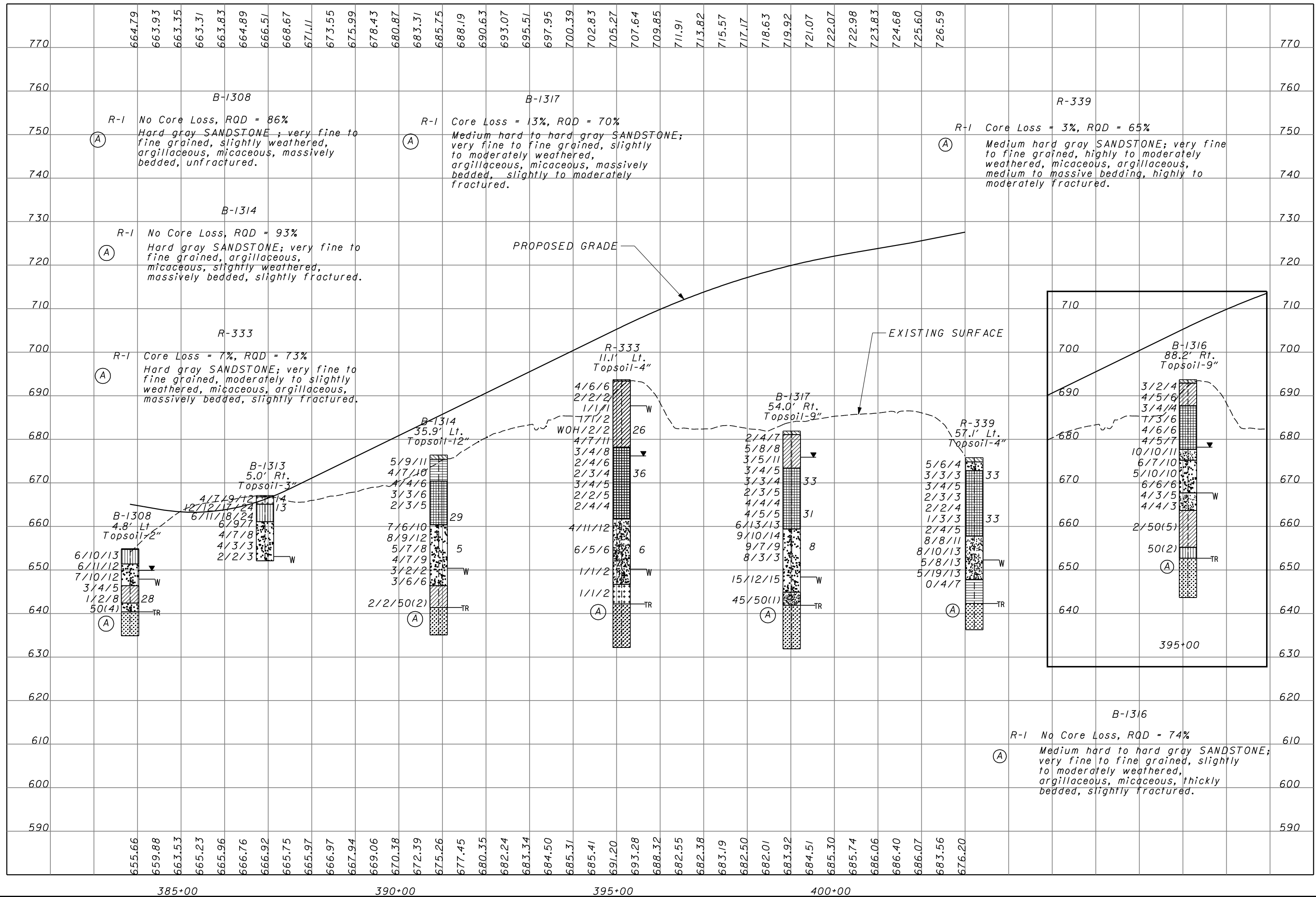
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NOTE: BORINGS R-217, R-220, R-318, AND R-321 SHOWN ON S.R. 823 PROFILE, SHEETS 35 AND 37.
 BORINGS B-1306 TO B-1308, B-1312A, AND B-1313A SHOWN ON T.R. 234 PROFILE, SHEET 55.
 BORINGS B-1 TO B-4 AND TR-24 TO TR-26 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

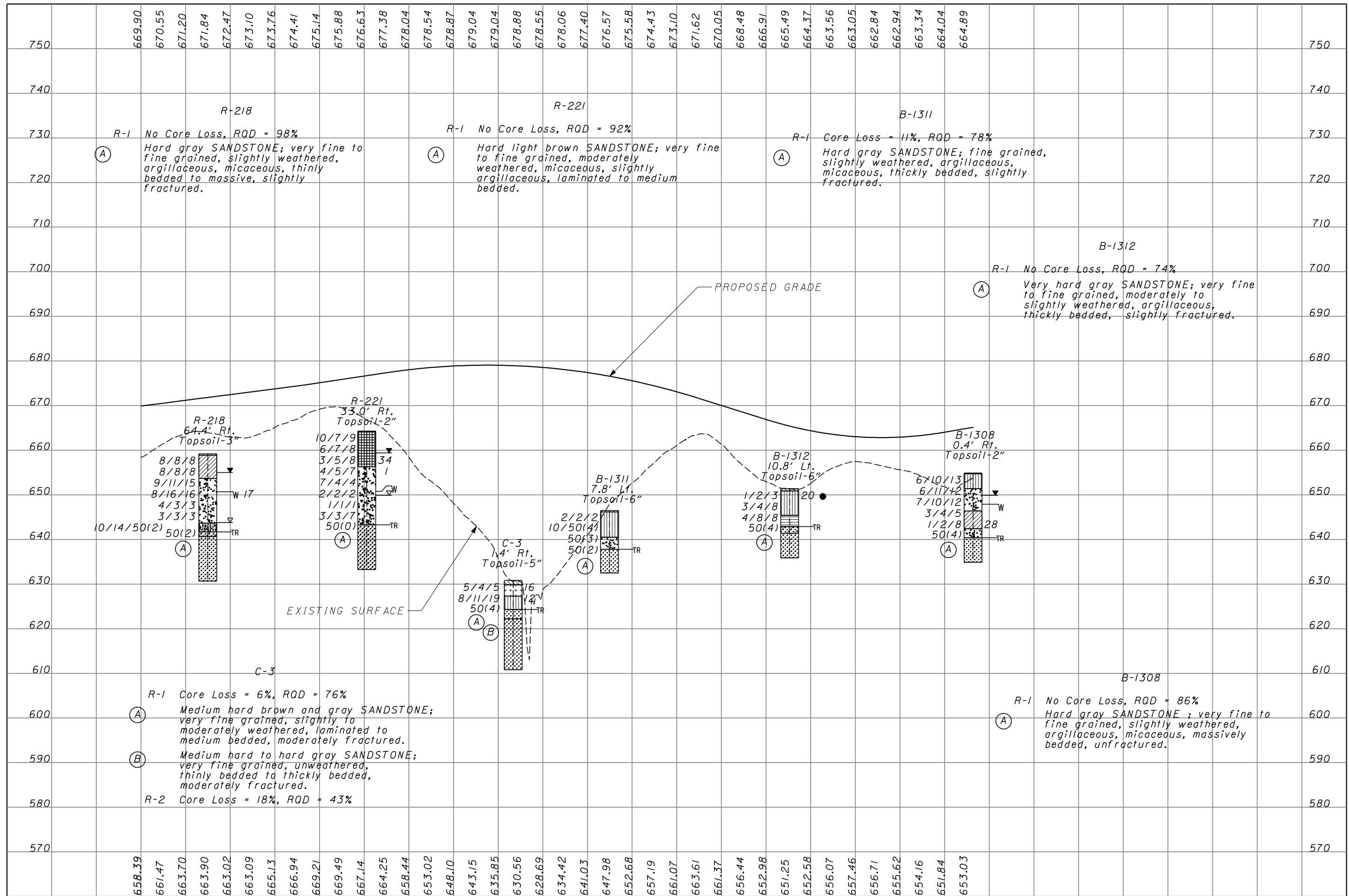
T.R. 234 RAMP B STA. 366+00 TO STA. 384+65, PROFILE ON SHEET 61.
 T.R. 234 RAMP C STA. 366+50 TO STA. 384+46, PROFILE ON SHEET 62.

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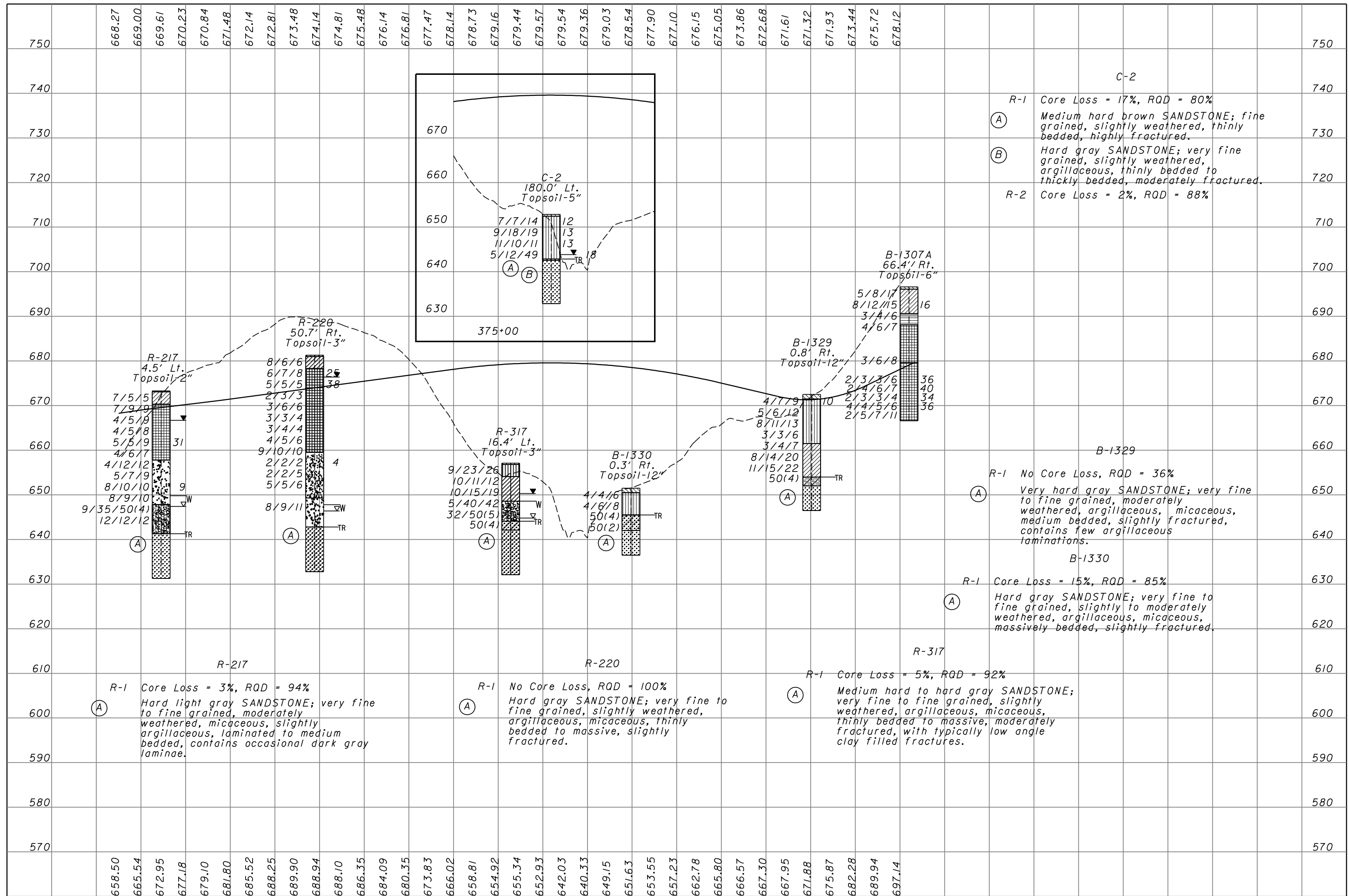
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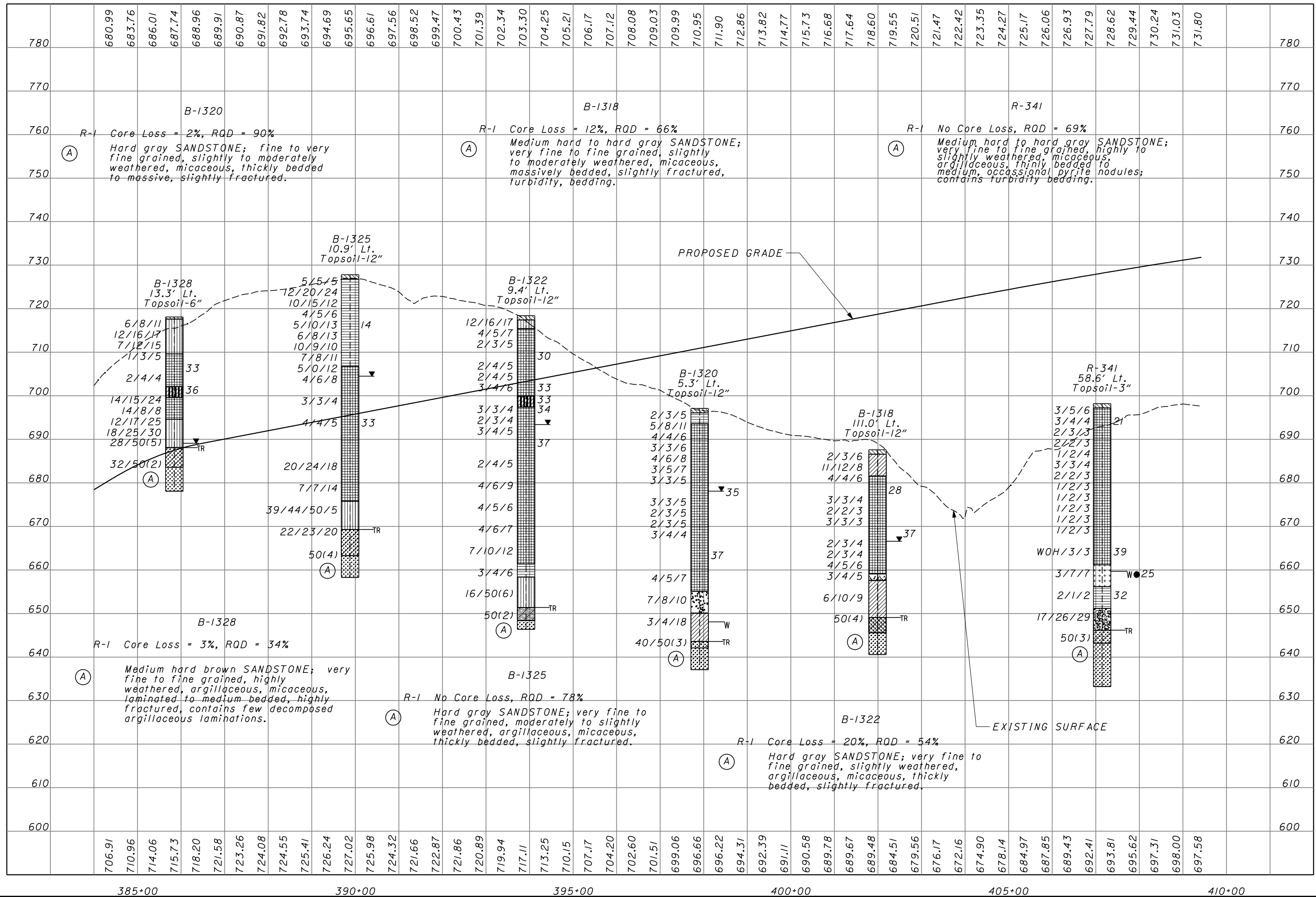
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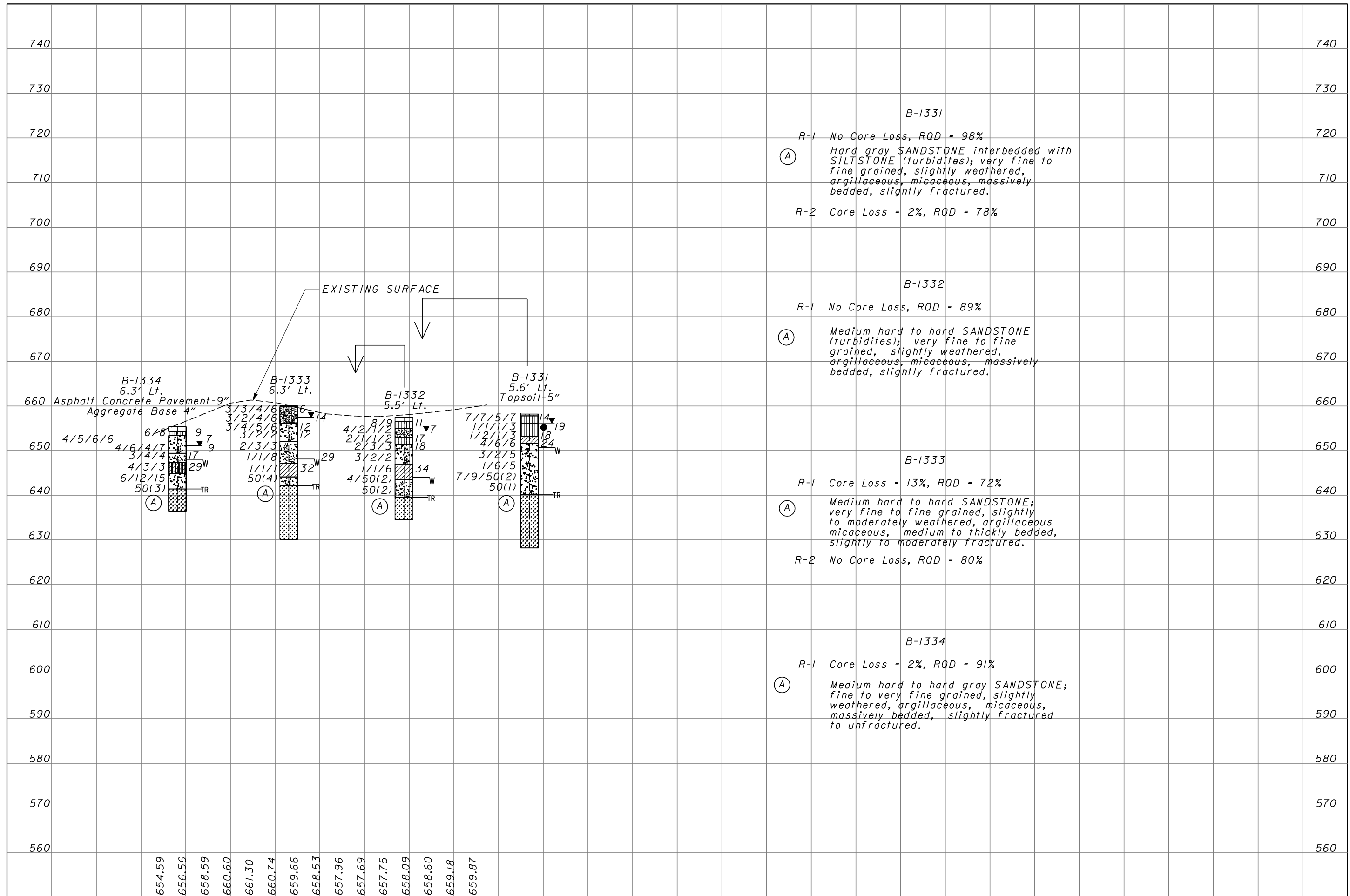
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10+00

15+00

DESIGN
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 CHECKED
 AEN

SOIL PROFILE
S.R. 335 STA. 8+26 TO STA. 15+74

SCI-823-6.81

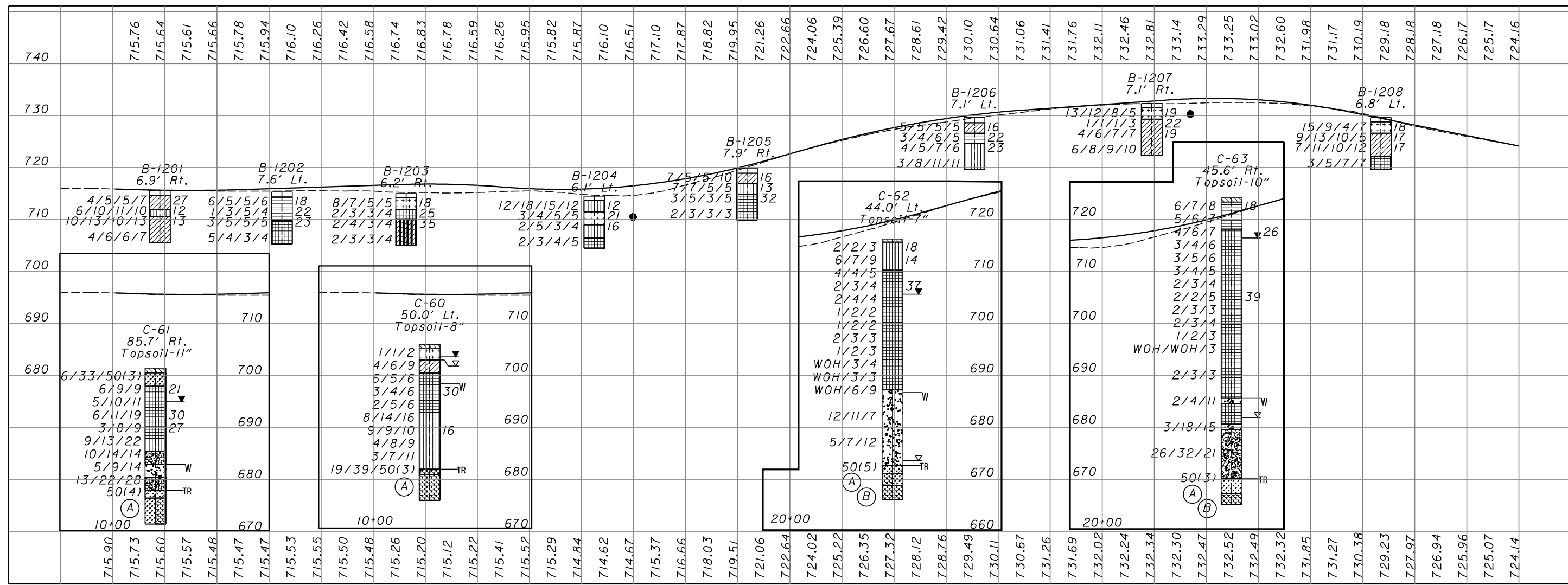
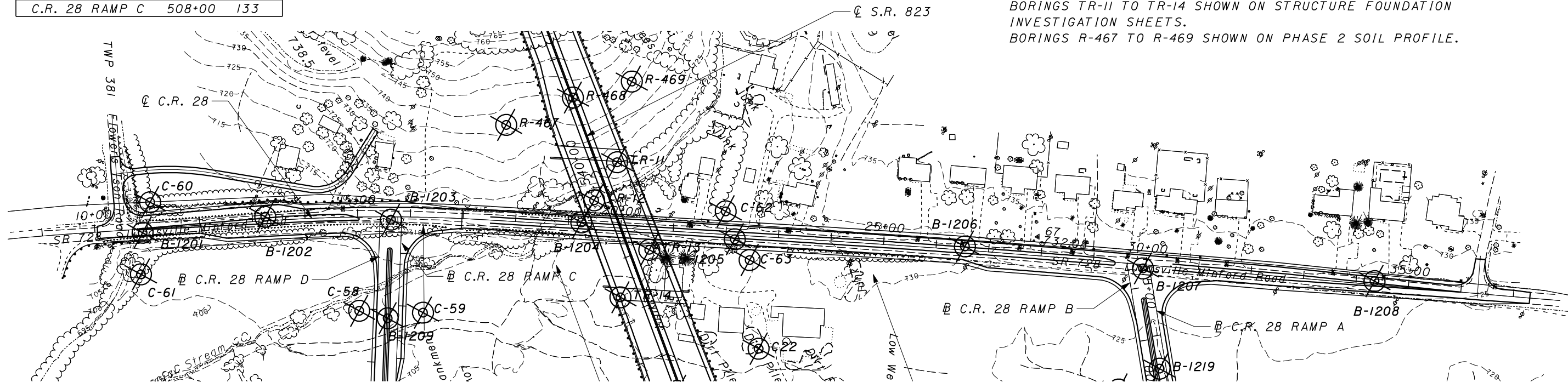
64/135



CROSS SECTION INDEX		
STATION	SHEET	
C.R. 28 RAMP C	508+00	133

NOTE BORING B-1219 SHOWN ON C.R. 28 RAMP B PROFILE, SHEET 70.
BORINGS TR-II TO TR-14 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.
BORINGS R-467 TO R-469 SHOWN ON PHASE 2 SOIL PROFILE.

HORIZONTAL SCALE IN FEET



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SCI-823-6.81 SOIL PROFILE C.R. 28 STA. 10+00 TO STA. 37+89

C-60

R-1 Core Loss = 18%, RQD = 65%

- (A) Soft to medium hard gray SILTSTONE; moderately weathered, argillaceous, thinly bedded, broken.

C-61

R-1 No Core Loss, RQD = 73%

- (A) Soft to medium hard gray SILTSTONE interbedded with SANDSTONE; highly weathered to decomposed, argillaceous, thinly bedded, highly fractured.

C-62

R-1 Core Loss = 23%, RQD = 58%

- (A) Soft to medium hard gray SILTSTONE interbedded with SANDSTONE; highly weathered to decomposed.
- (B) Soft to medium hard gray SILTSTONE; highly weathered to decomposed, argillaceous, thinly bedded, highly fractured.

C-63

R-1 Core Loss = 7%, RQD = 83%

- (A) Soft to medium hard gray SANDSTONE; very fine grained, highly weathered to decomposed, thin bedded, broken.
- (B) Soft to medium hard gray SILTSTONE; fine grained, highly weathered to decomposed, argillaceous, thinly bedded, highly fractured.

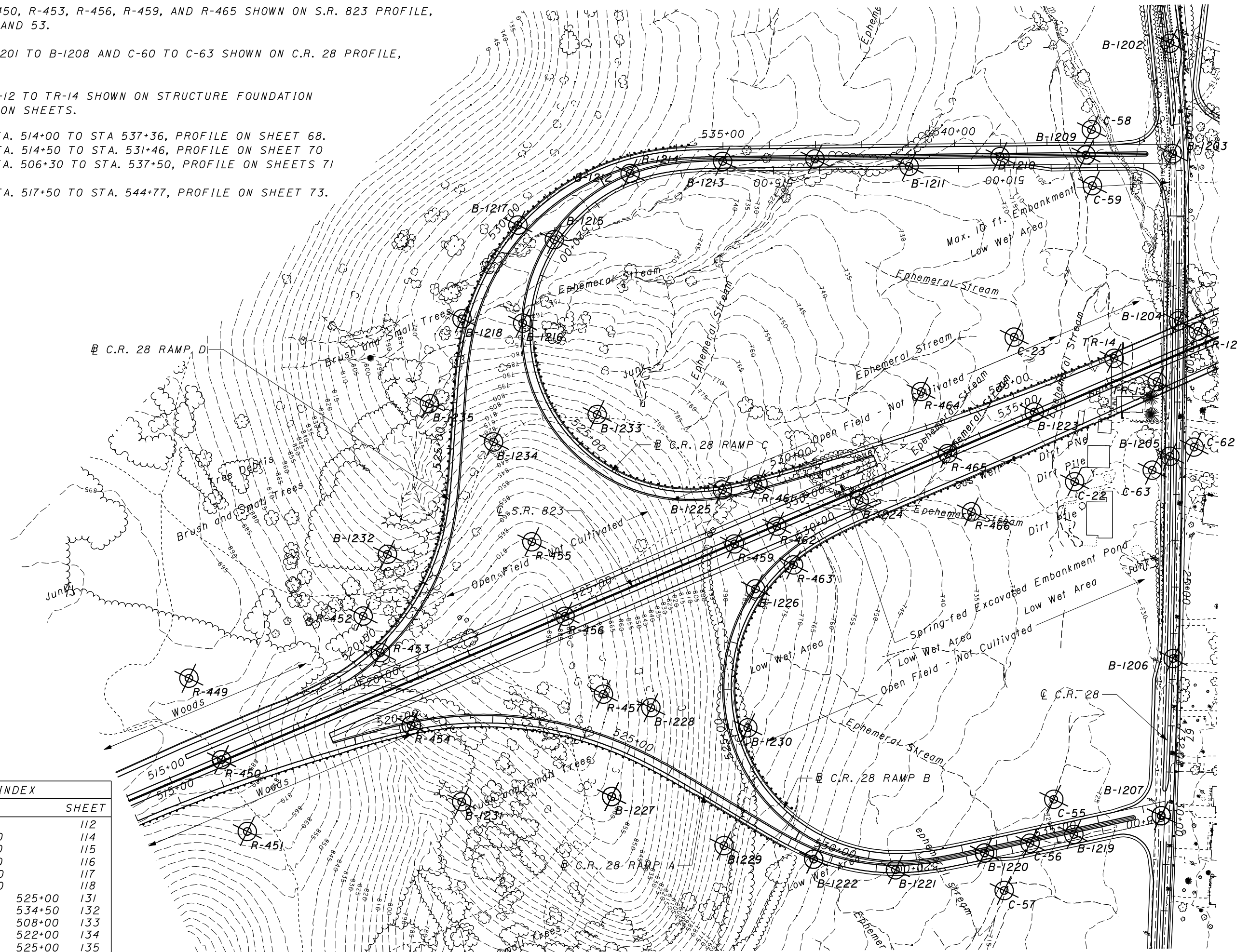


NOTE: BORINGS R-450, R-453, R-456, R-459, AND R-465 SHOWN ON S.R. 823 PROFILE, SHEETS 50 AND 53.

BORINGS B-1201 TO B-1208 AND C-60 TO C-63 SHOWN ON C.R. 28 PROFILE, SHEET 65.

BORINGS TR-12 TO TR-14 SHOWN ON STRUCTURE FOUNDATION INVESTIGATION SHEETS.

- C.R. 28 RAMP A STA. 514+00 TO STA 537+36, PROFILE ON SHEET 68.
- C.R. 28 RAMP B STA. 514+50 TO STA. 531+46, PROFILE ON SHEET 70
- C.R. 28 RAMP C STA. 506+30 TO STA. 537+50, PROFILE ON SHEETS 71 AND 72.
- C.R. 28 RAMP D STA. 517+50 TO STA. 544+77, PROFILE ON SHEET 73.



CROSS SECTION INDEX		
STATION		SHEET
S.R. 823	516+00	112
S.R. 823	520+00	114
S.R. 823	524+00	115
S.R. 823	529+00	116
S.R. 823	533+00	117
S.R. 823	535+50	118
C.R. 28 RAMP A	525+00	131
C.R. 28 RAMP A	534+50	132
C.R. 28 RAMP C	508+00	133
C.R. 28 RAMP C	522+00	134
C.R. 28 RAMP D	525+00	135

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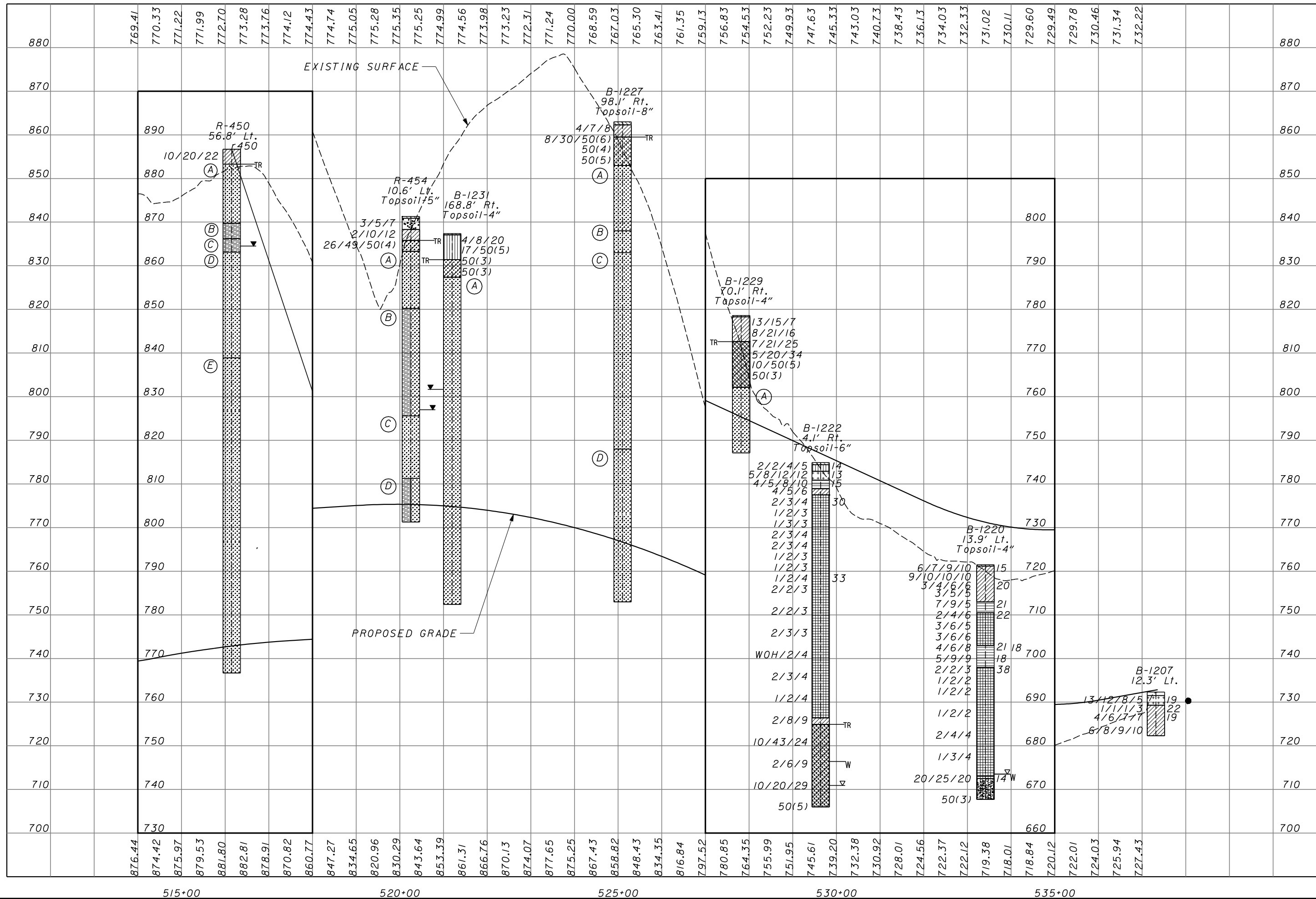
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SOIL PROFILE
C.R. 28 RAMP A, RAMP B, RAMP C, AND RAMP D

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SOIL PROFILE
C.R. 28 RAMP A STA. 514+00 TO STA 537+36

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R-450

- R-1 No Core Loss, RQD = 63%
Ⓐ Medium hard brown and light gray SANDSTONE; fine to medium grained, highly weathered, broken, contains numerous low angle rust stained and clay filled fractures.
- R-2 No Core Loss, RQD = 90%
Ⓑ Soft to medium hard dark gray and black SHALE; moderately to highly weathered, carbonaceous, moderately to highly fractured.
- Ⓒ Soft gray SHALE; highly weathered to decomposed, thinly laminated, arenaceous, moderately to highly fractured.
- R-3 No Core Loss, RQD = 91%
- Ⓓ Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, broken to moderately fractured, argillaceous, contains moderate argillaceous laminations.
- R-4 Core Loss = 4%, RQD = 86%
- R-5 No Core Loss, RQD = 98%
- Ⓔ Medium hard to hard light gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, thickly bedded to massive, unfractured to slightly fractured.
- R-6 No Core Loss, RQD = 95%
- R-7 Core Loss = 9%, RQD = 82%
- R-8 No Core Loss, RQD = 68%
- R-9 No Core Loss, RQD = 100%

B-1229

- R-1 No Core Loss, RQD = 70%
Ⓐ Medium hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, pyritic, moderately fractured, few to moderate argillaceous laminae.
- R-2 No Core Loss, RQD = 37%

R-454

- R-1 No Core Loss, RQD = 86%
Ⓐ Medium hard brown SANDSTONE; fine to medium grained, highly weathered, argillaceous, thinly bedded to medium bedded, broken.
- R-2 No Core Loss, RQD = 50%
- R-3 No Core Loss, RQD = 95%
- R-4 No Core Loss, RQD = 33%
Ⓑ Soft to medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, moderately to highly weathered, thinly bedded to medium bedded, broken, contains clay seams.
- R-5 No Core Loss, RQD = 18%
- R-6 No Core Loss, RQD = 37%
- R-7 No Core Loss, RQD = 0%
- R-8 No Core Loss, RQD = 0%
- Ⓒ Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, thinly bedded to medium bedded, broken, contains clay seams.
- R-9 No Core Loss, RQD = 0%
- R-10 No Core Loss, RQD = 38%
- R-11 Core Loss = 10%, RQD = 0%
- Ⓓ Medium hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered, thinly bedded to medium bedded, broken, contains clay seams.
- R-12 Core Loss = 2%, RQD = 32%
- R-13 No Core Loss, RQD = 0%

B-1231

- R-1 No Core Loss, RQD = 87%
Ⓐ Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, massively bedded, slightly fractured.
- R-2 No Core Loss, RQD = 100%
- R-3 No Core Loss, RQD = 100%
- R-4 Core Loss = 2%, RQD = 98%
- 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%

B-1227

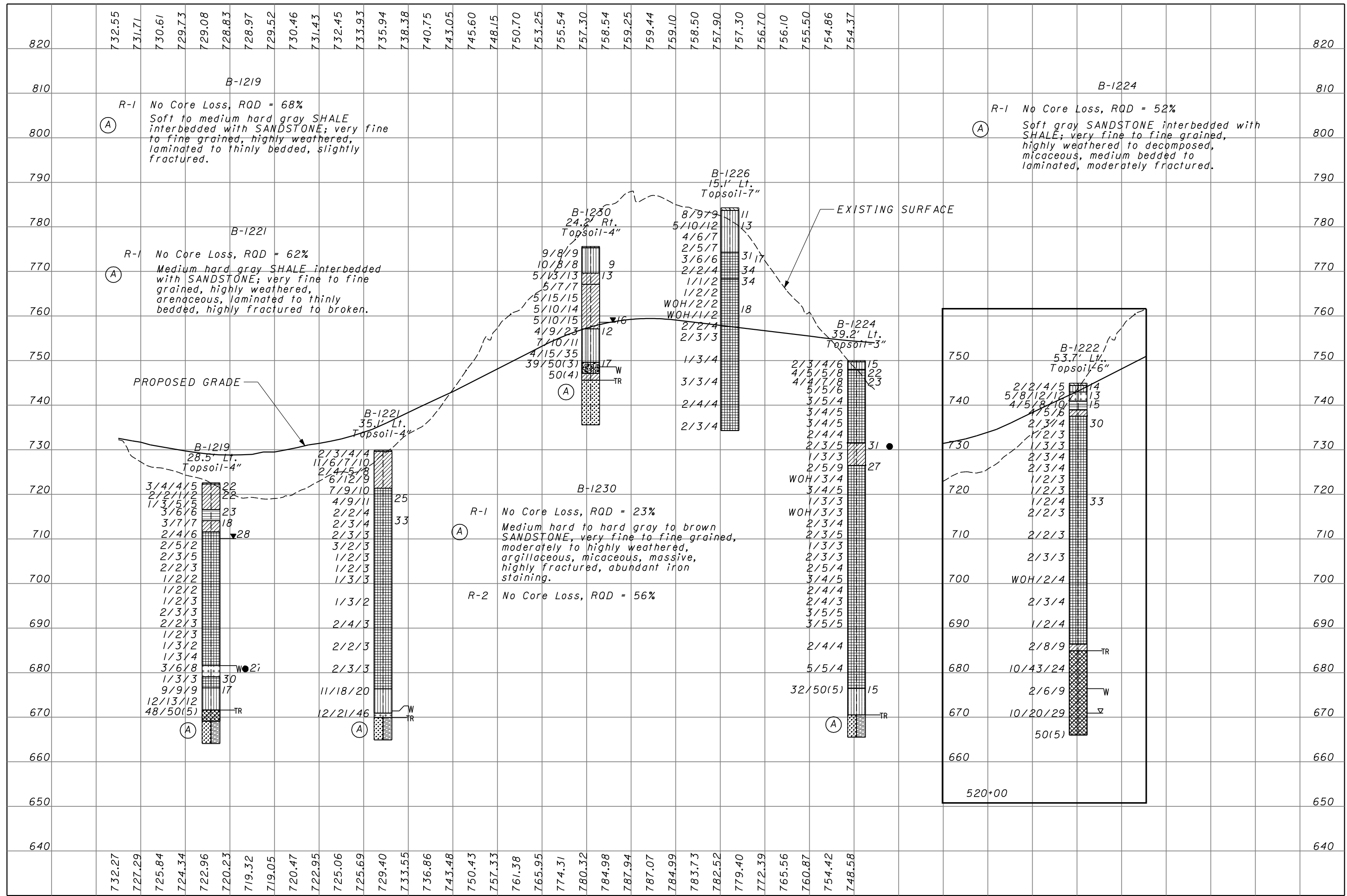
- R-1 Core Loss = 7%, RQD = 78%
Ⓐ Medium hard brown SANDSTONE; very fine to fine grained, highly weathered, micaceous, massively bedded, moderately fractured.
- R-2 Core Loss = 2%, RQD = 99%
- R-3 No Core Loss, RQD = 100%
- R-4 No Core Loss, RQD = 100%
Ⓑ Medium hard to hard brown SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, massively bedded, slightly fractured.
- R-5 No Core Loss, RQD = 88%
Ⓒ Hard gray SANDSTONE, very fine to fine grained, slightly weathered, argillaceous, micaceous, thickly bedded, slightly fractured to unfractured.
- R-6 No Core Loss, RQD = 100%
- R-7 No Core Loss, RQD = 83%
- R-8 No Core Loss, RQD = 90%
- R-9 No Core Loss, RQD = 84%
- R-10 No Core Loss, RQD = 83%
- R-11 No Core Loss, RQD = 78%
- R-12 No Core Loss, RQD = 100%
- R-13 No Core Loss, RQD = 77%
- R-14 No Core Loss, RQD = 30%
Ⓓ Medium hard to hard gray SANDSTONE; micaceous, laminated to thickly bedded, slightly fractured, contains few argillaceous laminations, to slightly weathered, argillaceous, fine to very fine grained, moderately
- R-15 No Core Loss, RQD = 42%
- R-16 No Core Loss, RQD = 41%
- R-17 No Core Loss, RQD = 32%

SOIL PROFILE
C.R. 28 RAMP A STA. 514+00 TO STA 537+36

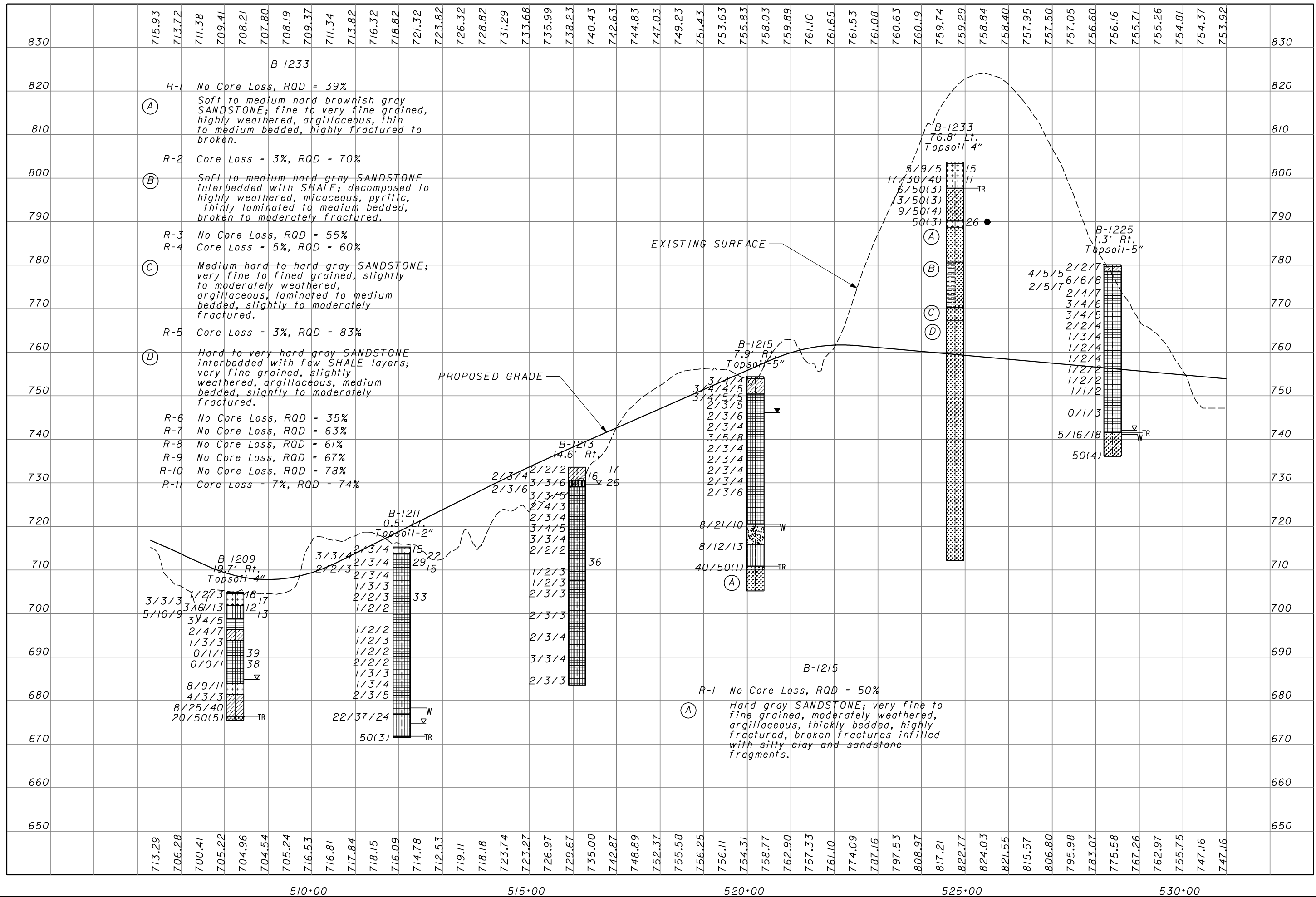
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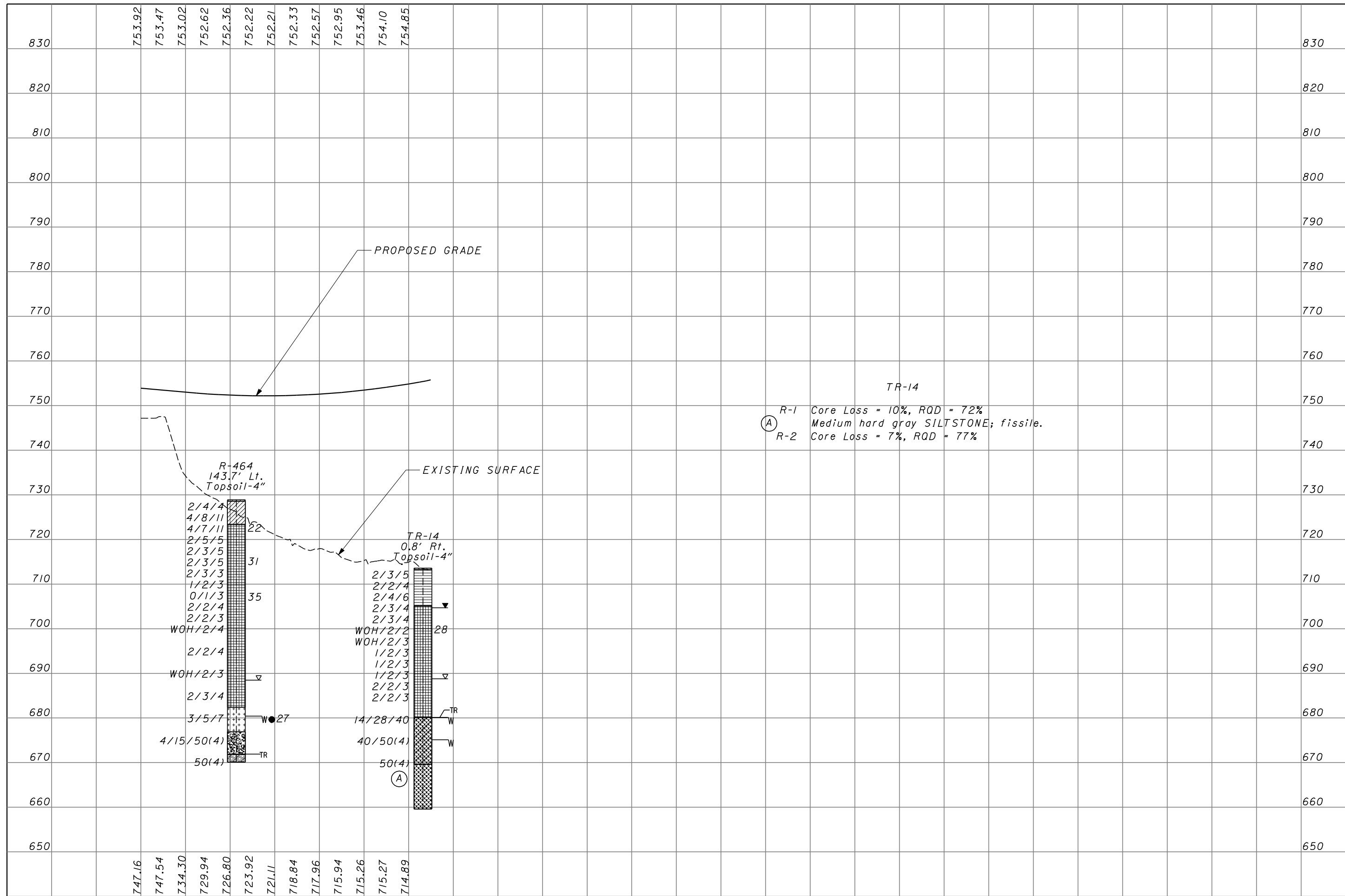
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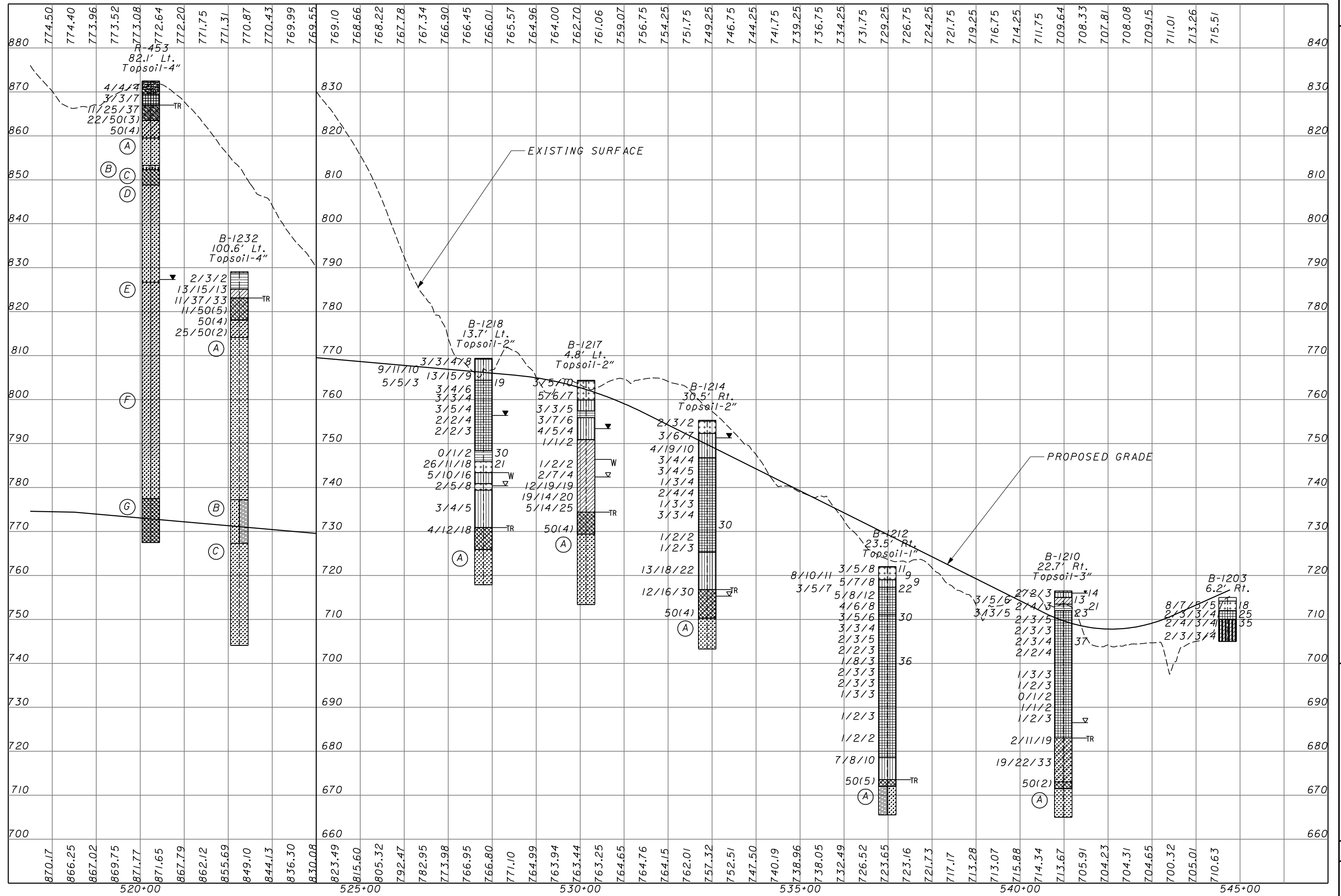
SOIL PROFILE
C.R. 28 RAMP C STA. 531+00 TO STA. 537+50

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RLS
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SOIL PROFILE
C.R. 28 RAMP D STA. 517+50 TO STA. 544+77

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R-453

R-1 No Core Loss, RQD = 100%

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

R-2 Core Loss = 8%, RQD = 77%

(B) Medium hard brown and gray BRECCIA; highly weathered, broken.

(C) Soft to medium hard gray SILTSTONE; highly weathered, broken to highly fractured, argillaceous.

(D) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, micaceous, argillaceous, laminated to thick bedded.

R-3 No Core Loss, RQD = 83%

R-4 No Core Loss, RQD = 91%

R-5 Core Loss = 1%, RQD = 91%

(E) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, medium bedded to massively bedded.

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

(F) Medium hard gray SANDSTONE; very fine micaceous, argillaceous, laminated to to fine grained, moderately weathered, thinly bedded.

R-7 No Core Loss, RQD = 100%

R-8 Core Loss = 3%, RQD = 97%

R-9 Core Loss = 1%, RQD = 84%

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

R-10 Core Loss = 2%, RQD = 60%

R-11 No Core Loss, RQD = 93%

B-1232

R-1 No Core Loss, RQD = 83%

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

R-2 No Core Loss, RQD = 65%

R-3 No Core Loss, RQD = 83%

R-4 No Core Loss, RQD = 84%

R-5 No Core Loss, RQD = 73%

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

R-6 No Core Loss, RQD = 76%

(C) Soft to medium hard gray SANDSTONE; fine to very fine grained, moderately to slightly weathered, argillaceous, micaceous, pyritic, massively bedded, moderately to highly fractured.

R-7 No Core Loss, RQD = 83%

R-8 No Core Loss, RQD = 83%

B-1217

R-1 No Core Loss, RQD = 86%

(A) Hard gray SANDSTONE interbedded with few MUDSTONE layers; very fine grained, argillaceous, thickly bedded, slightly fractured.

R-2 No Core Loss, RQD = 99%

B-1214

R-1 Core Loss = 1%, RQD = 64%

(A) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, micaceous, massively bedded, moderately fractured to broken, iron staining throughout.

B-1212

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

(A) Medium hard to hard gray SANDSTONE interbedded with SHALE; very fine to fine grained, highly weathered, micaceous, laminated, slightly fractured.

B-1210

R-1 No Core Loss, RQD = 76%

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

B-1218

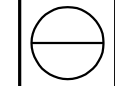
R-1 Core Loss = 2%, RQD = 64%

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

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RLS
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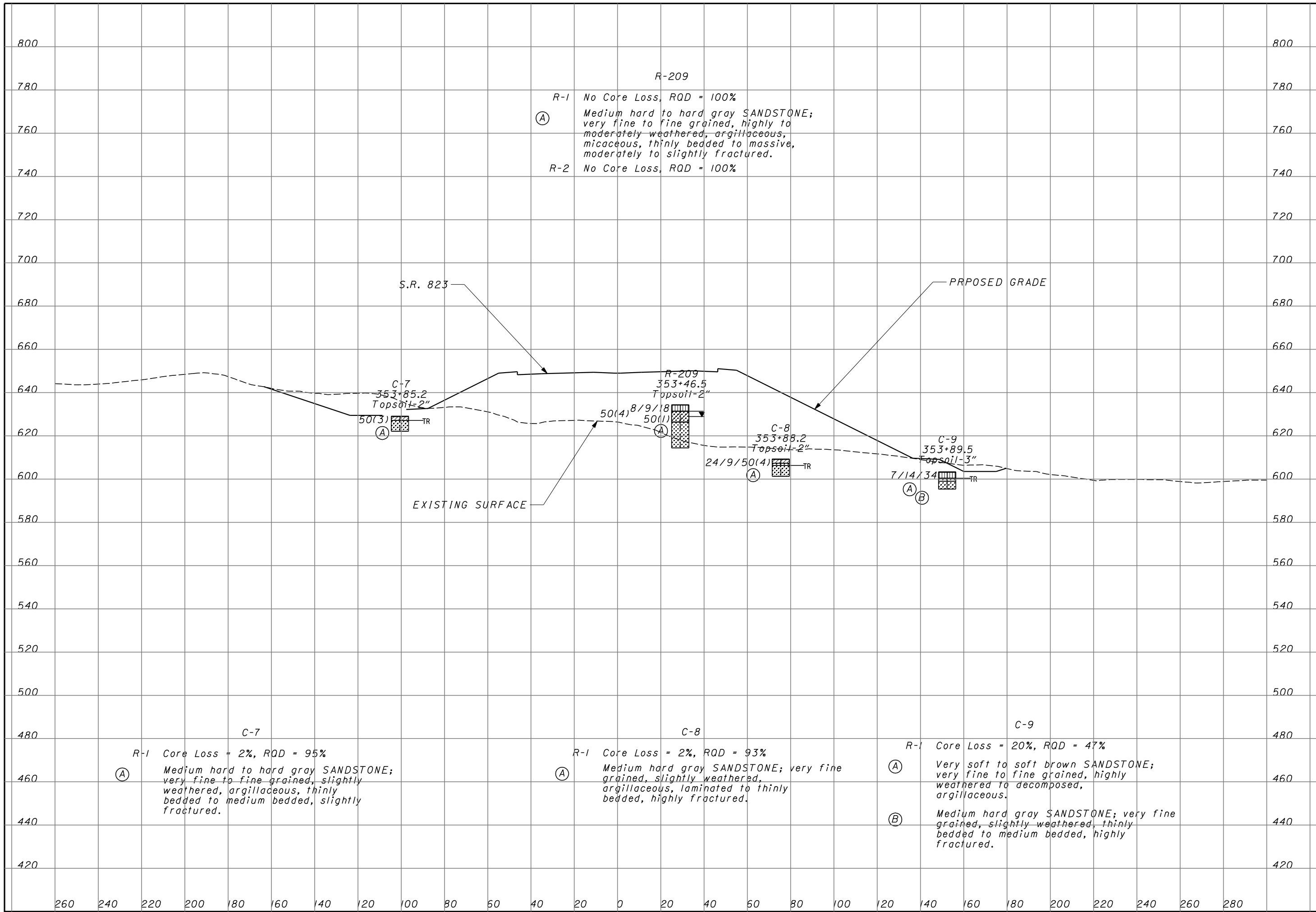
SOIL PROFILE
C.R. 28 RAMP D STA. 517+50 TO STA. 544+77

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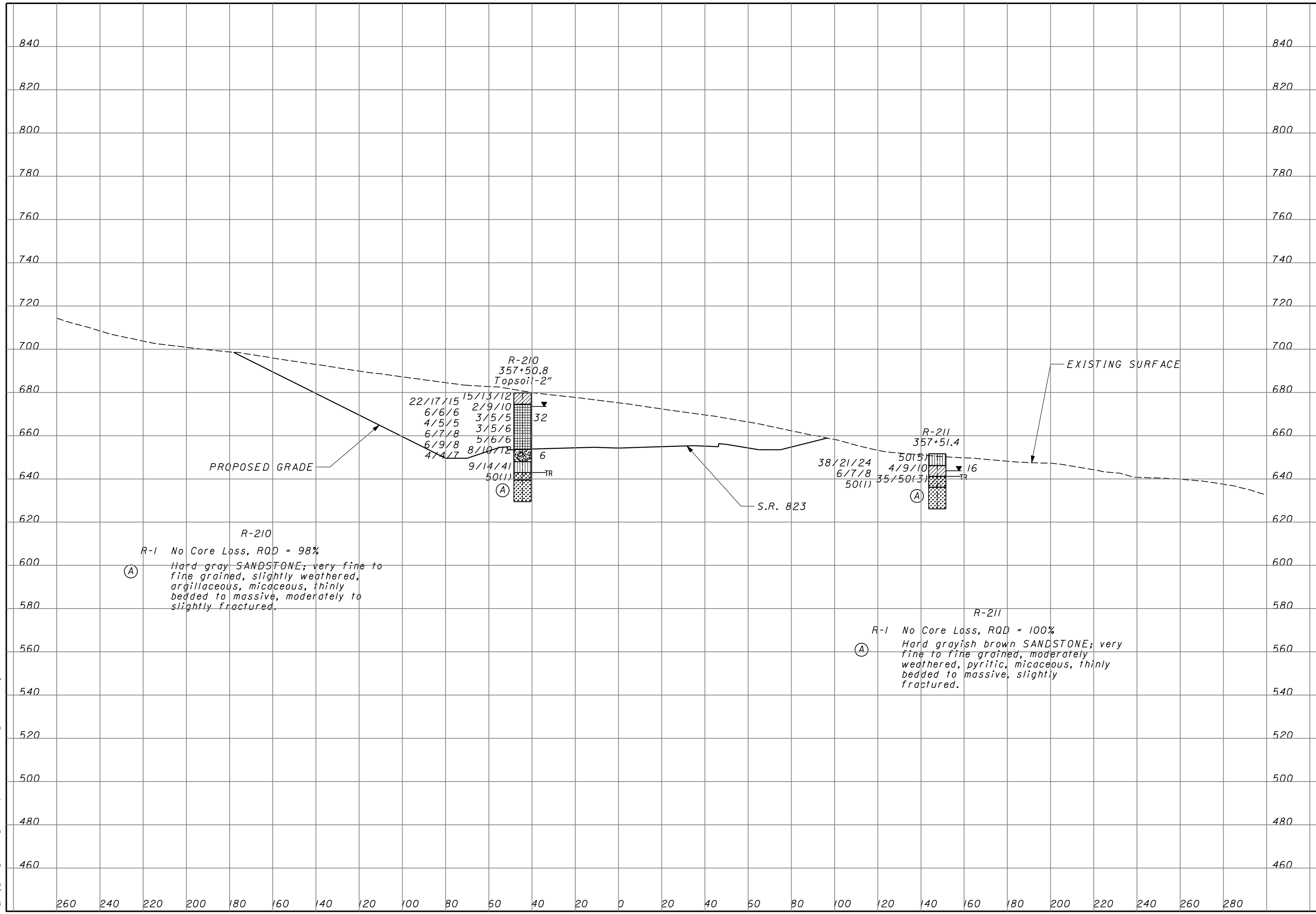
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 354+00
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 75/135

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SOIL PROFILE
CROSS SECTION - SR 83 STA. 357+50

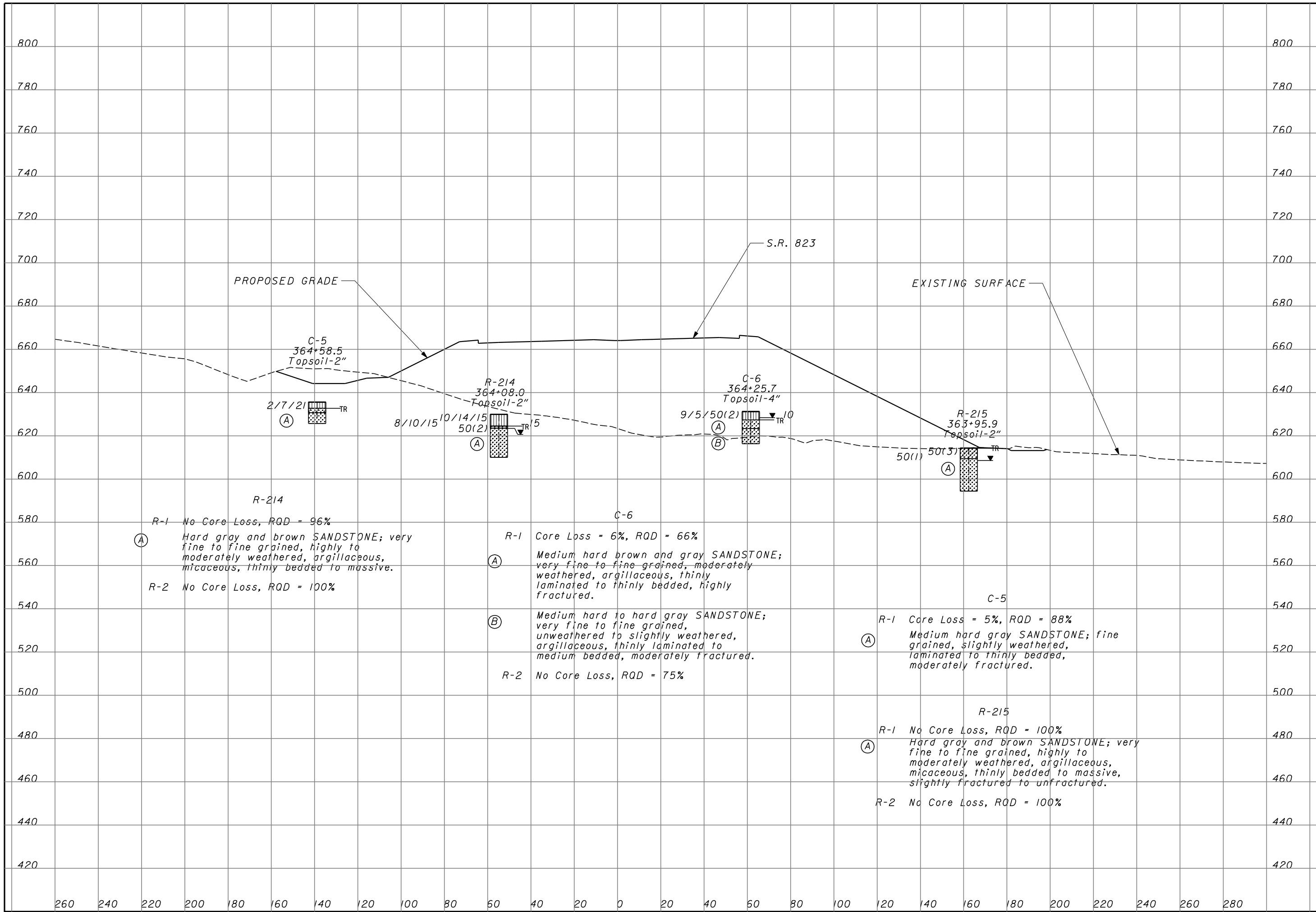
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76/135

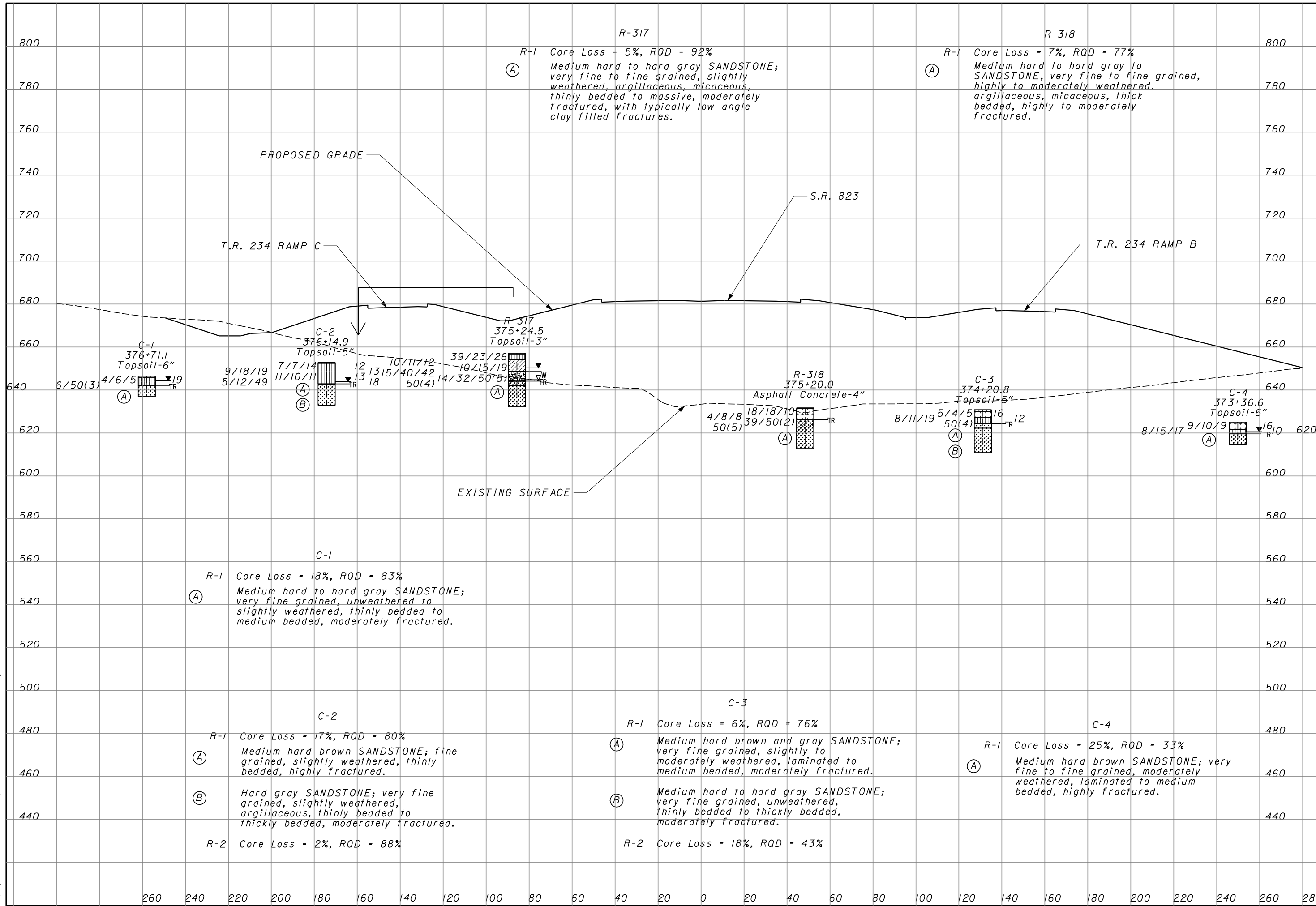


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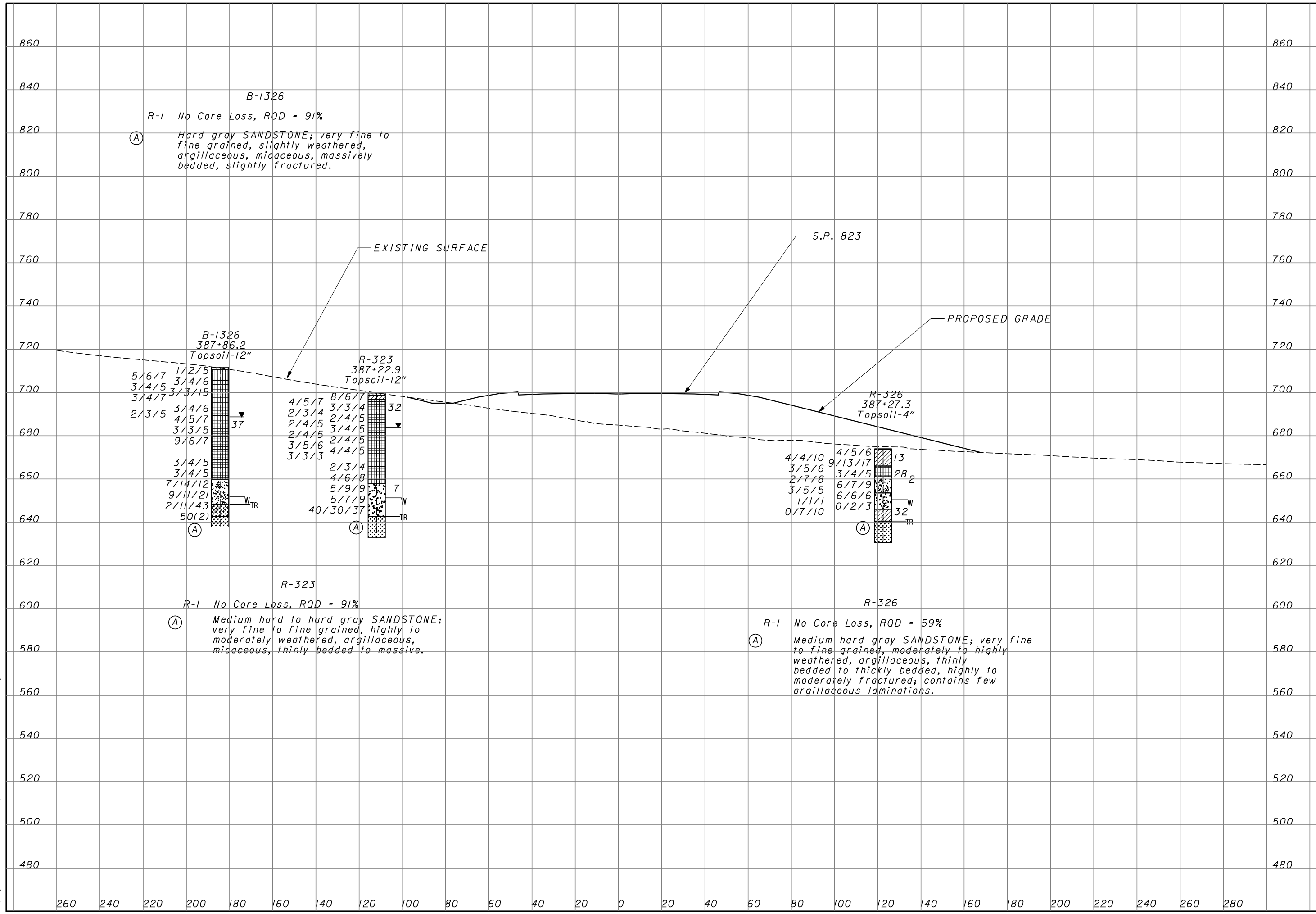
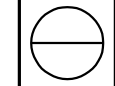
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 375+50
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 78/135

**SOIL PROFILE
CROSS SECTION - SR 823 STA. 387+50**

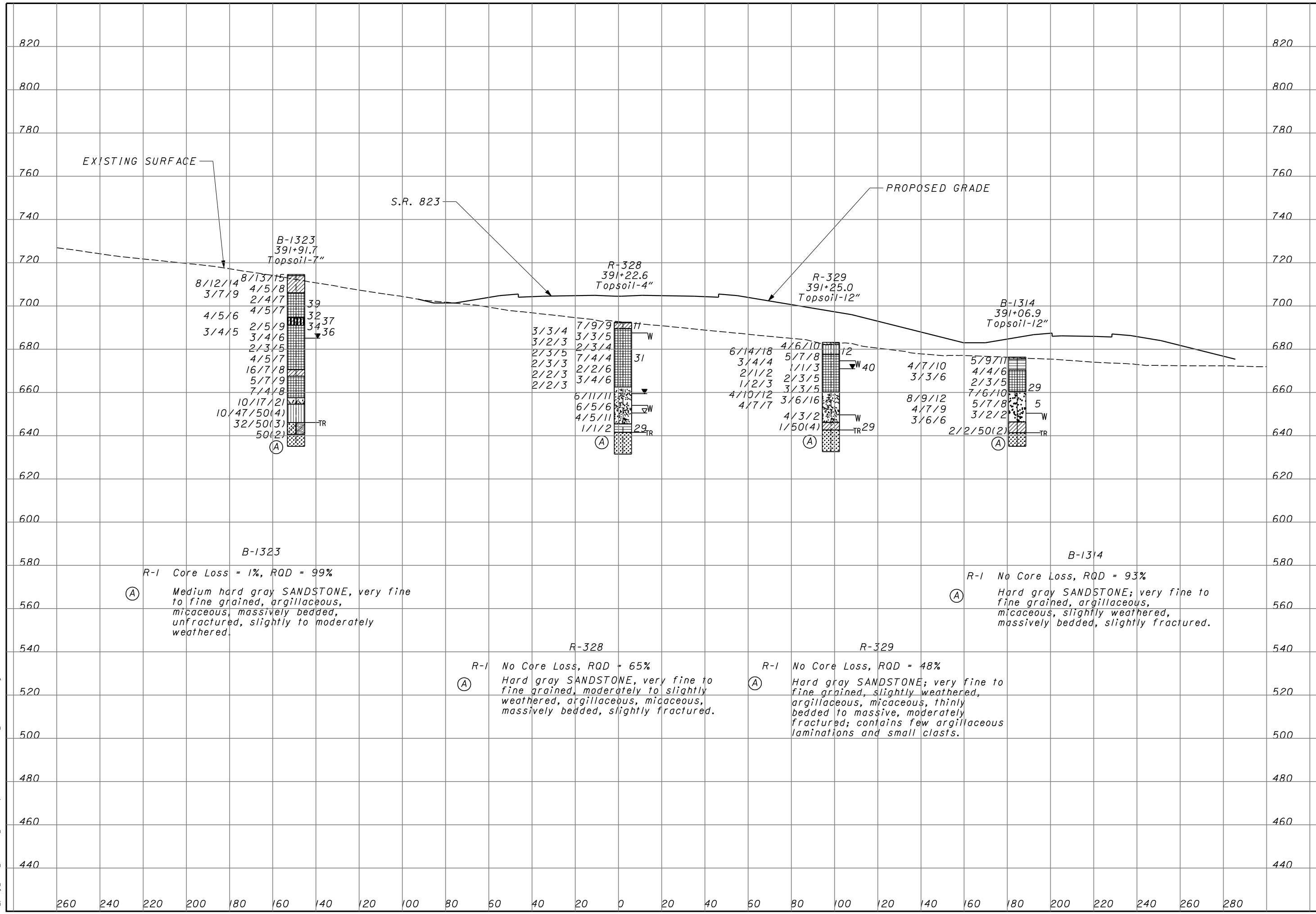
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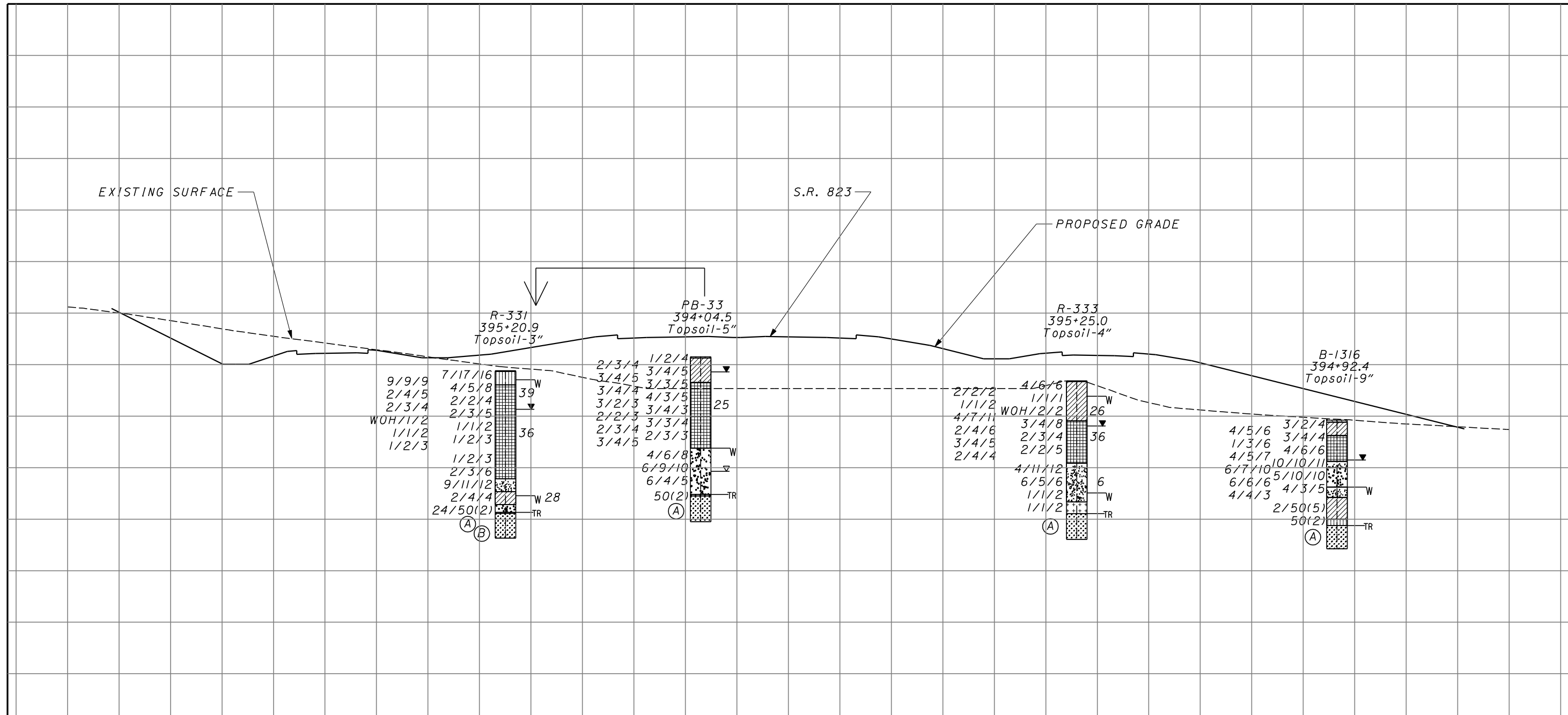
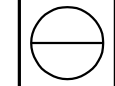
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 391+00

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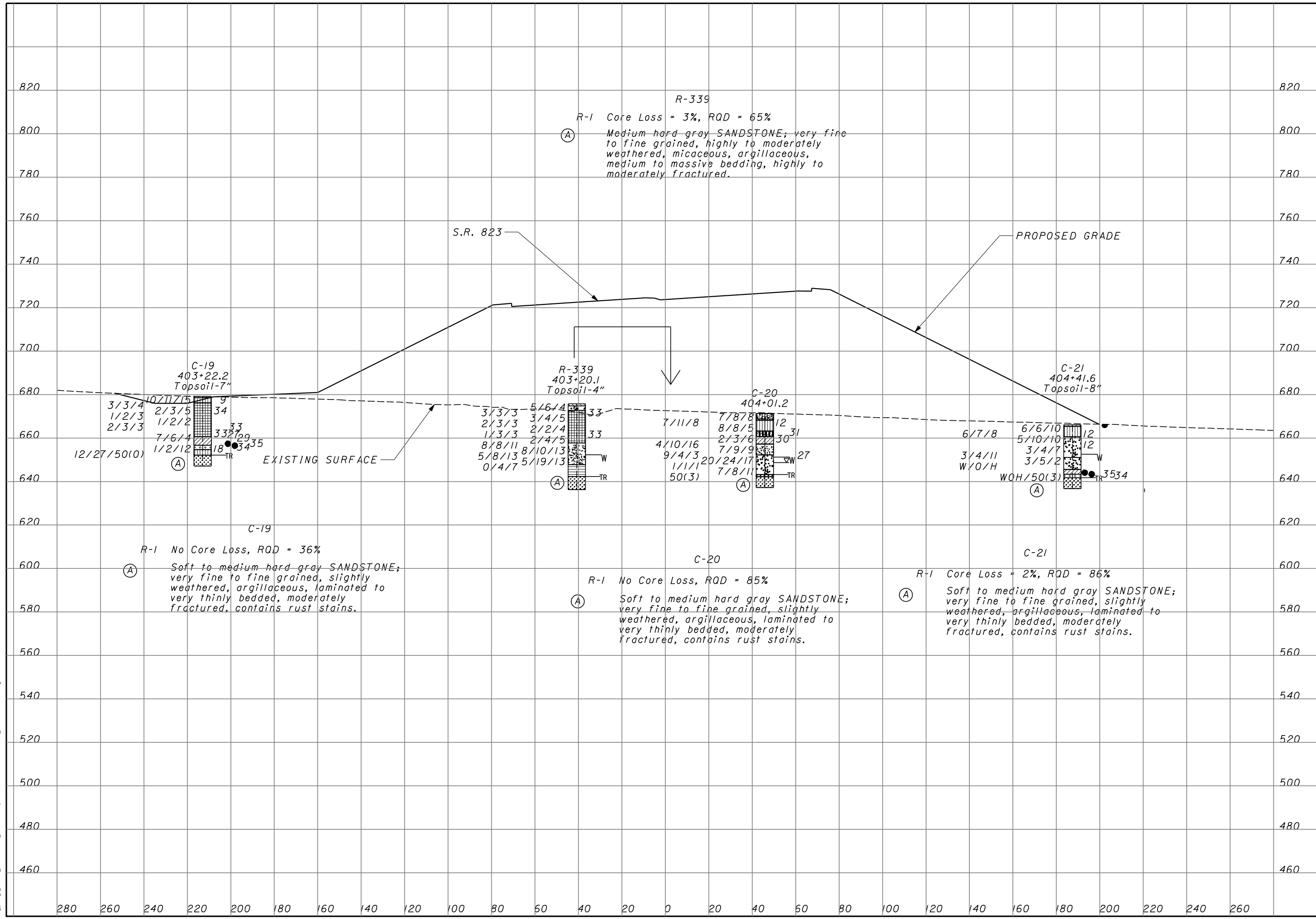
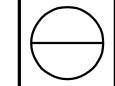


Boring ID	Core Loss	RQD	Description
R-331	No Core Loss	97%	Medium hard brown SANDSTONE; fine to medium grained, highly weathered, broken with typically high angle rust stained fractures.
			Hard gray SANDSTONE, very fine to fine grained, moderately to slightly weathered, argillaceous, micaceous, massive, slightly fractured.
PB-33	Core Loss = 3%	97%	Medium hard to hard light gray and dark gray SANDSTONE, very fine to fine grained, slightly weathered; contains occasional siltstone laminae.
R-333	Core Loss = 7%	73%	Hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, micaceous, argillaceous, massively bedded, slightly fractured.
B-1316	No Core Loss	74%	Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, thickly bedded, slightly fractured.

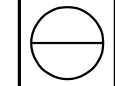
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 404+00**

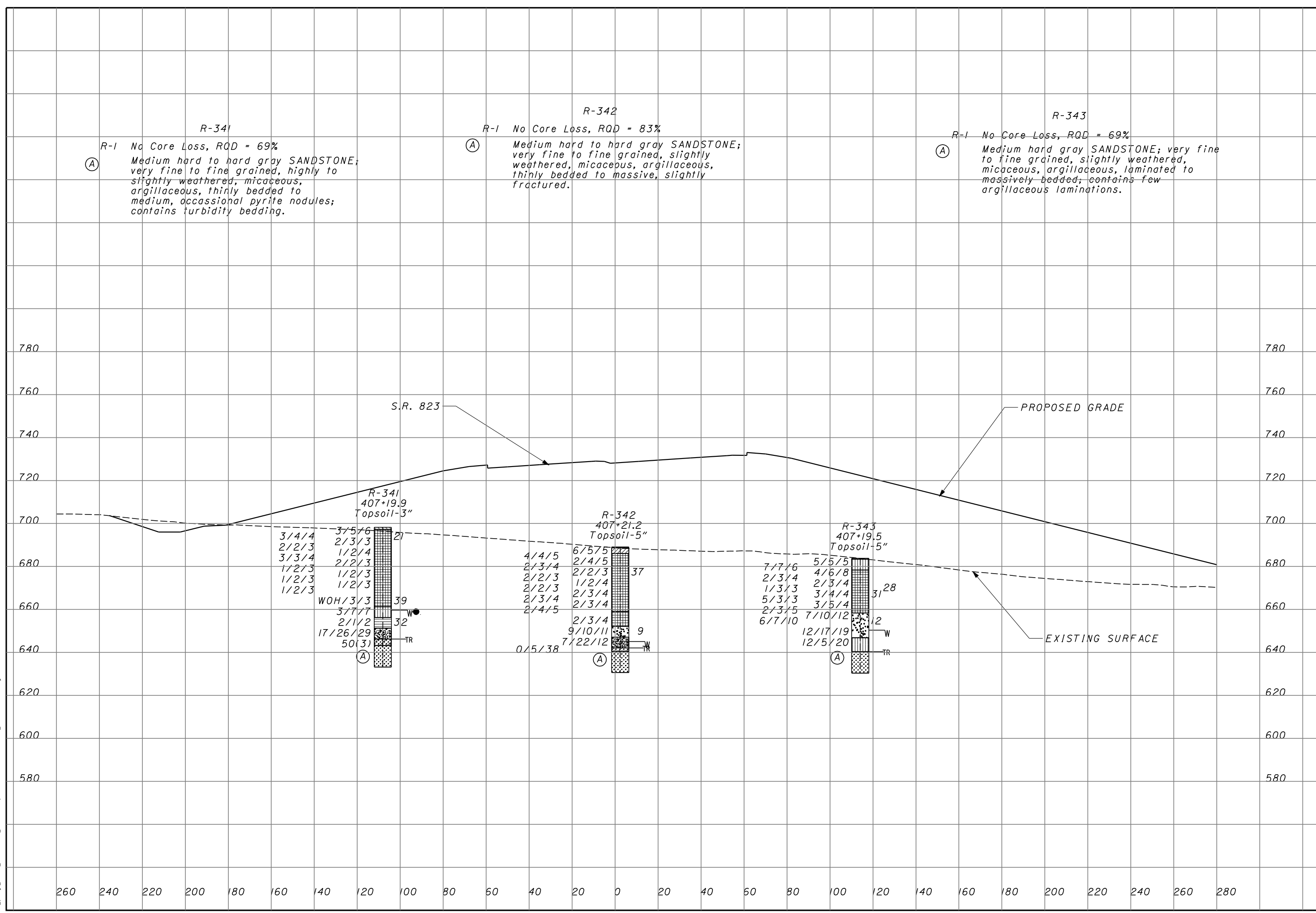
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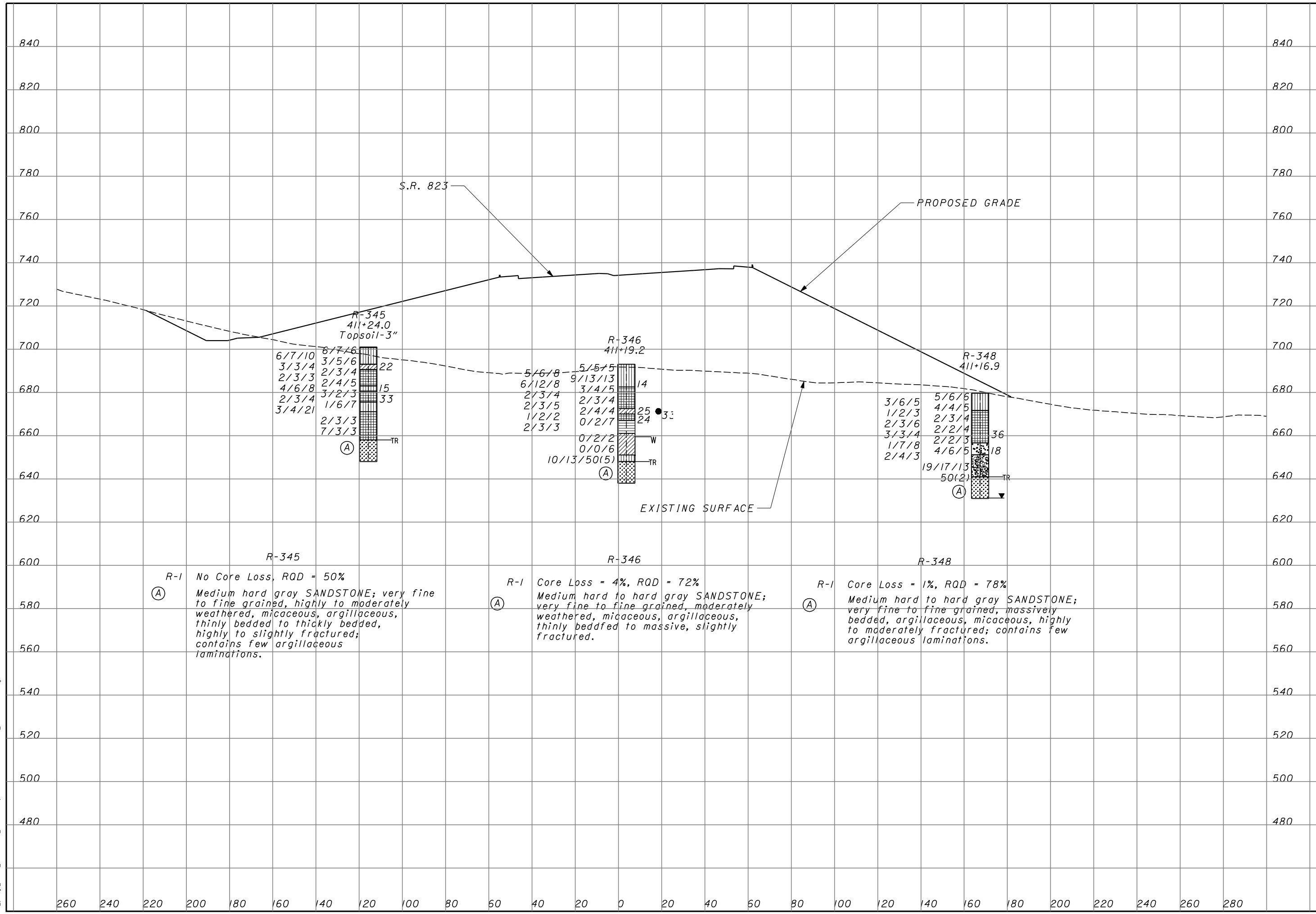


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SOIL PROFILE
CROSS SECTION - SR 823 STA. 411+00

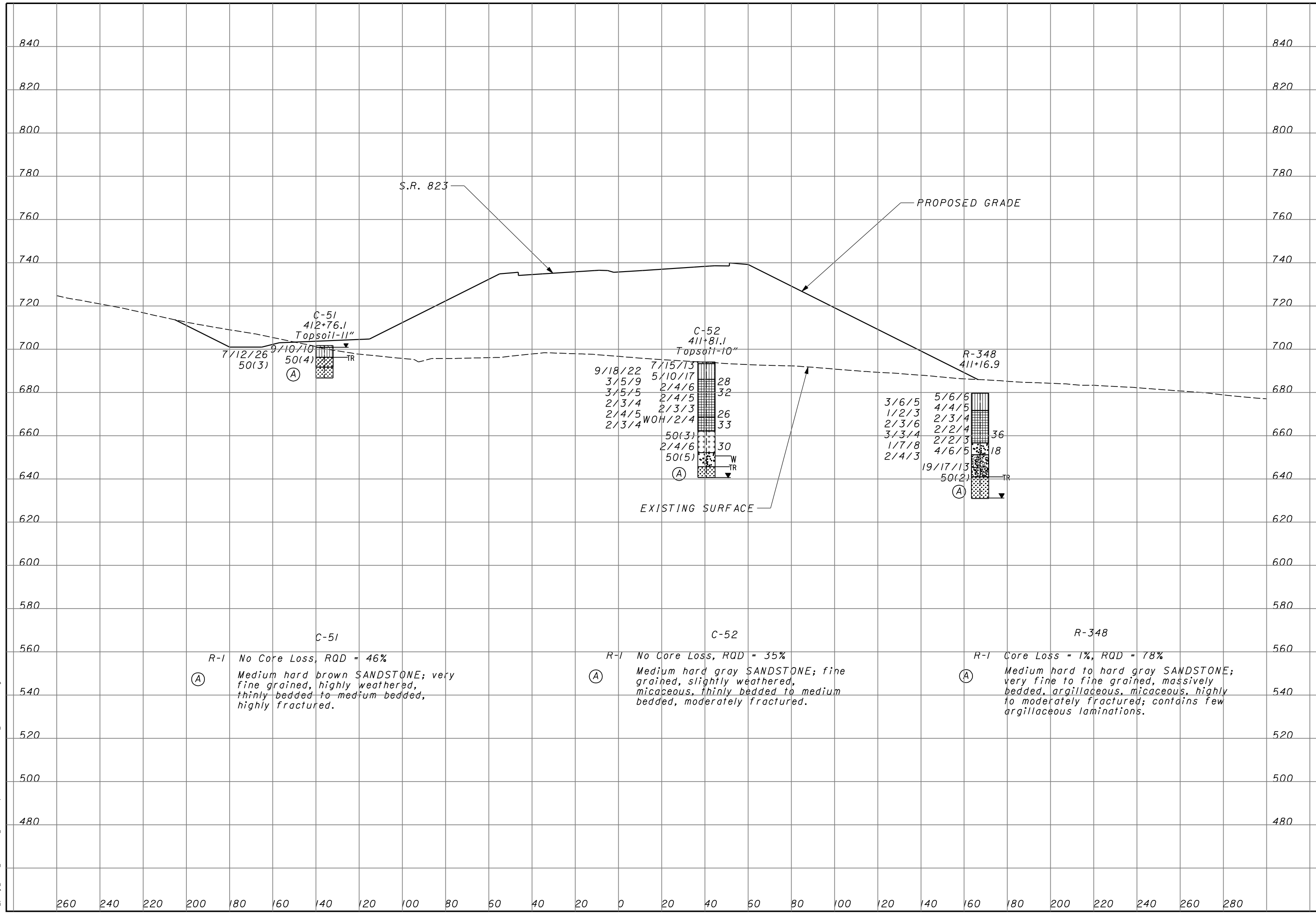
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SOIL PROFILE
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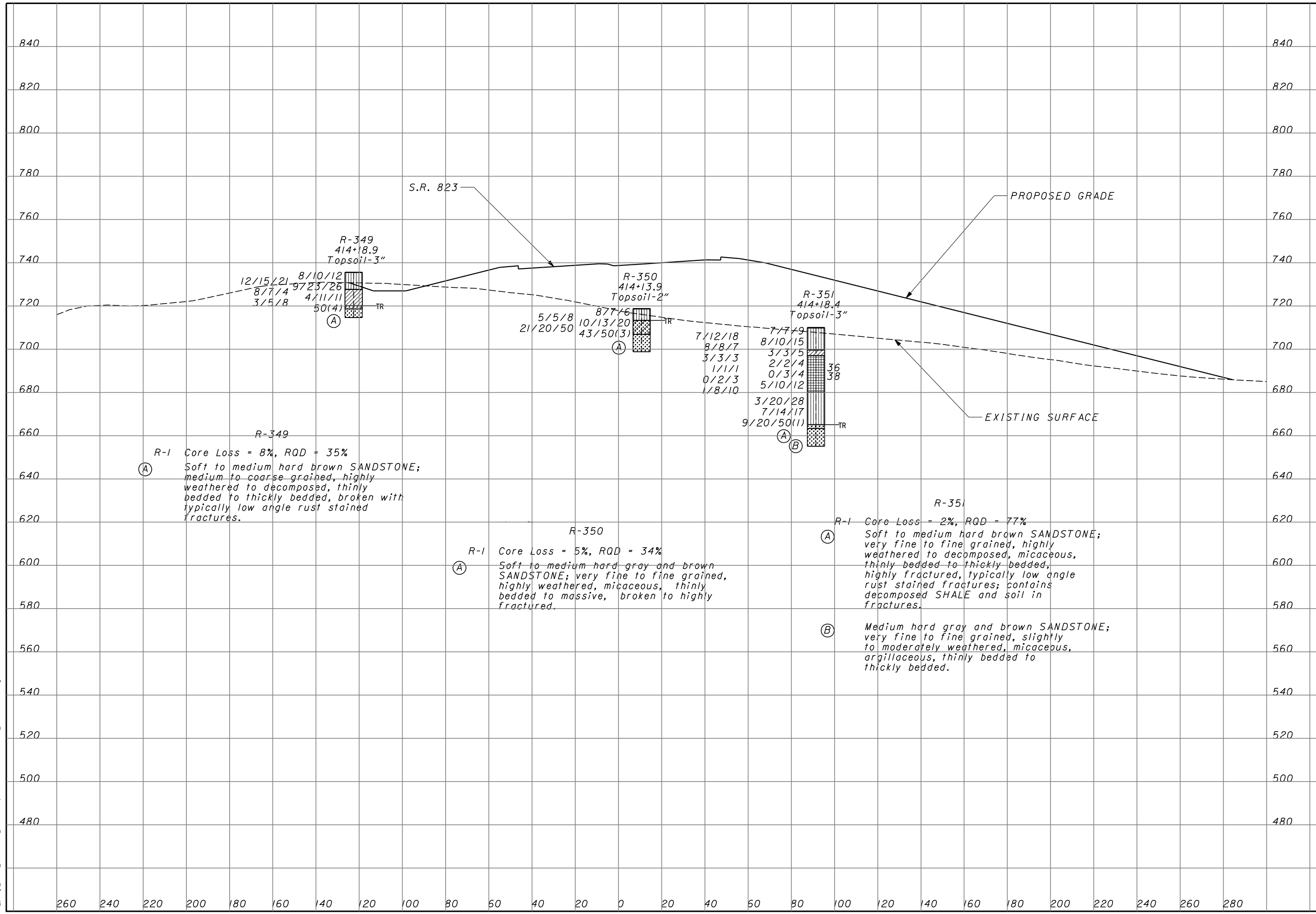
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 414+00**

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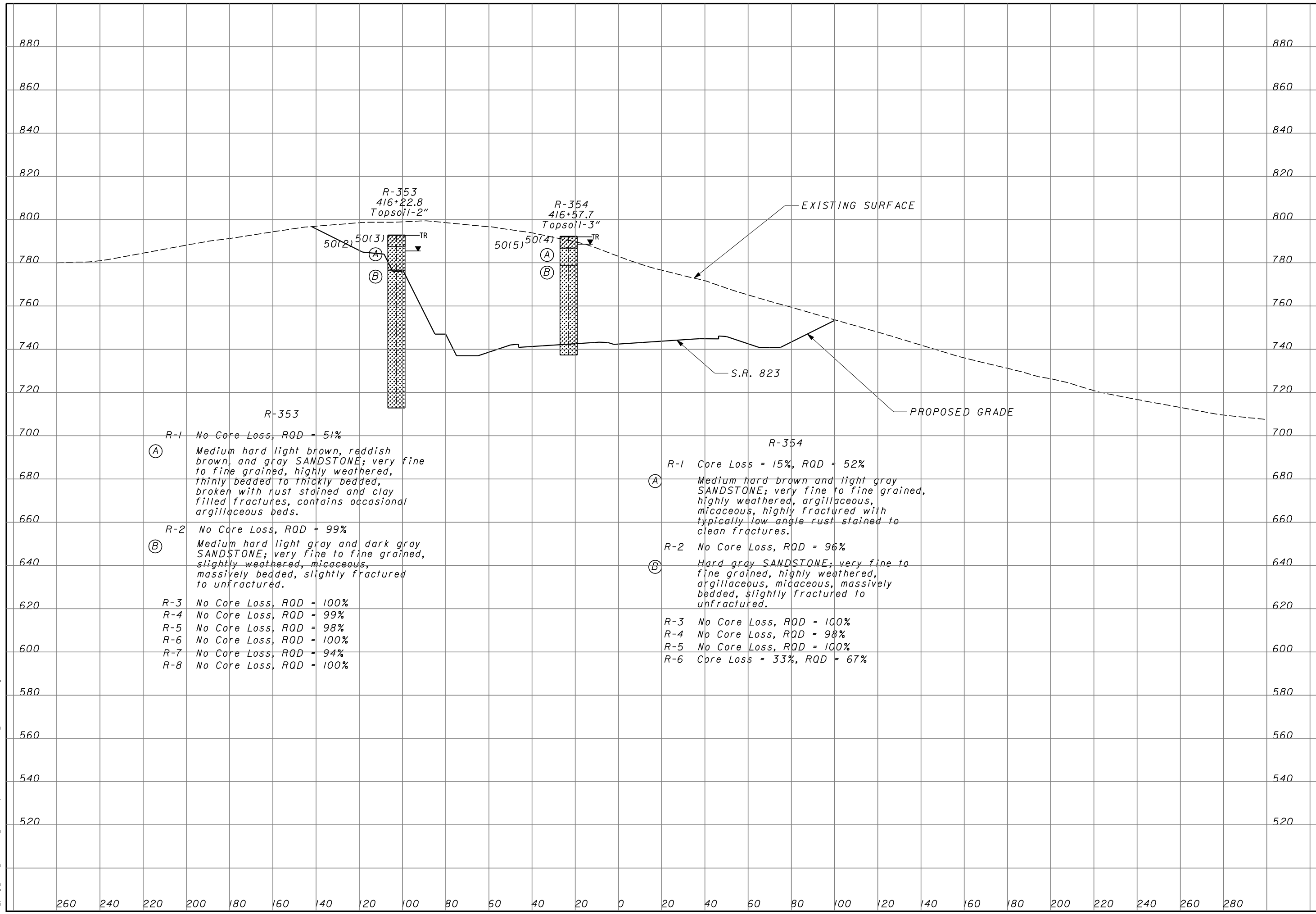


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**SOIL PROFILE
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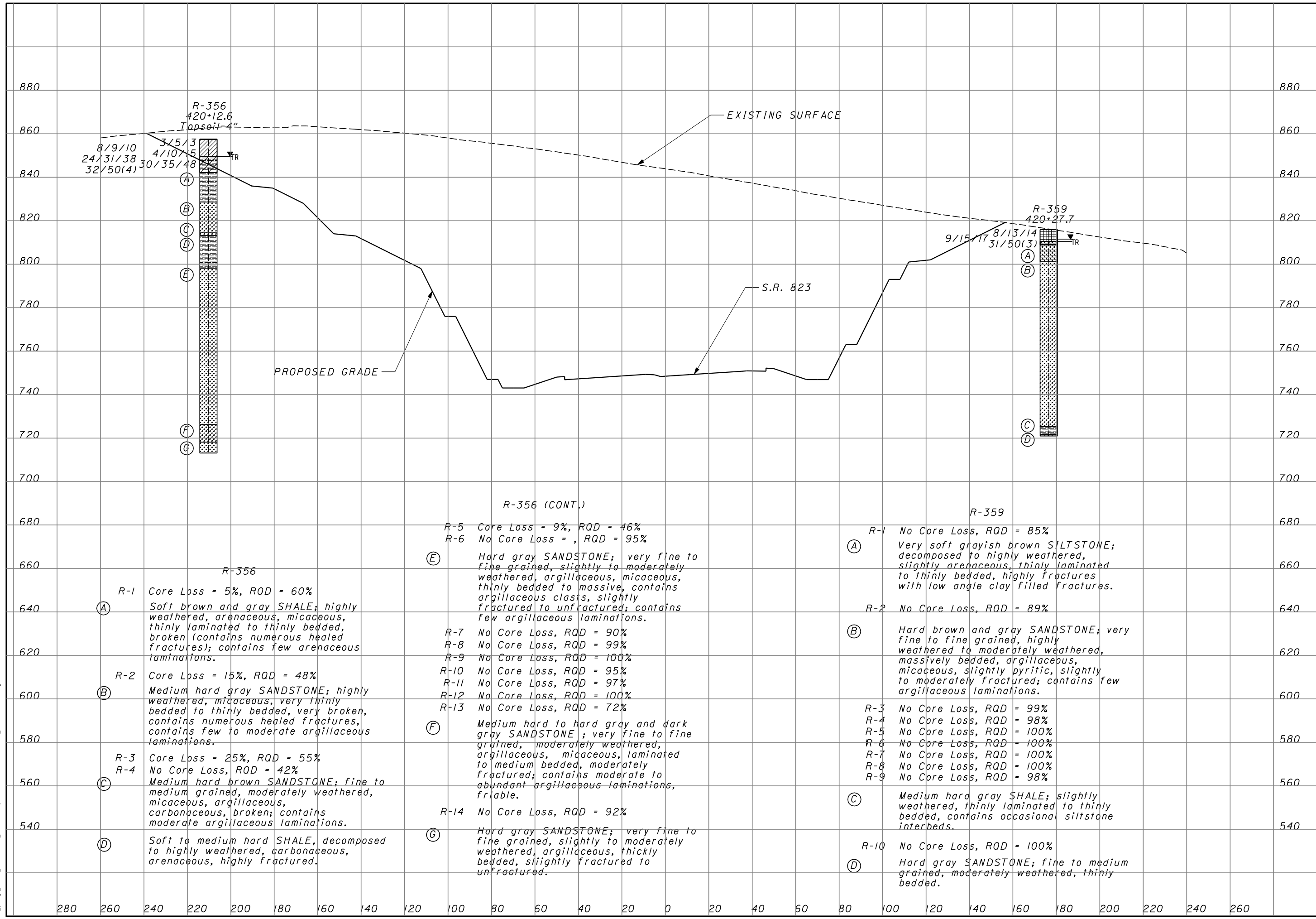
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 420+50

SCI-823-6.81



R-356
420+12.6
Topsoil-4"
8/9/10
24/31/38
32/50(4)
3/5/3
4/10/15
30/35/48

R-359
420+27.7
9/15/17
8/13/14
31/50(3)

R-356

R-1 Core Loss = 5%, RQD = 60%
Soft brown and gray SHALE; highly weathered, arenaceous, micaceous, thinly laminated to thinly bedded, broken (contains numerous healed fractures); contains few arenaceous laminations.

R-2 Core Loss = 15%, RQD = 48%
Medium hard gray SANDSTONE; highly weathered, micaceous, very thinly bedded to thinly bedded, very broken, contains numerous healed fractures, contains few to moderate argillaceous laminations.

R-3 Core Loss = 25%, RQD = 55%
R-4 No Core Loss, RQD = 42%
Medium hard brown SANDSTONE; fine to medium grained, moderately weathered, micaceous, argillaceous, carbonaceous, broken; contains moderate argillaceous laminations.

R-5 No Core Loss, RQD = 46%
R-6 No Core Loss, RQD = 95%

R-356 (CONT.)

(E) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, thinly bedded to massive, contains argillaceous clasts, slightly fractured to unfractured; contains few argillaceous laminations.

R-7 No Core Loss, RQD = 90%
R-8 No Core Loss, RQD = 99%
R-9 No Core Loss, RQD = 100%
R-10 No Core Loss, RQD = 95%
R-11 No Core Loss, RQD = 97%
R-12 No Core Loss, RQD = 100%
R-13 No Core Loss, RQD = 72%

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

R-14 No Core Loss, RQD = 92%

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

R-359

(A) No Core Loss, RQD = 85%
Very soft grayish brown SILTSTONE; decomposed to highly weathered, slightly arenaceous, thinly laminated to thinly bedded, highly fractures with low angle clay filled fractures.

R-2 No Core Loss, RQD = 89%

(B) Hard brown and gray SANDSTONE; very fine to fine grained, highly weathered to moderately weathered, massively bedded, argillaceous, micaceous, slightly pyritic, slightly to moderately fractured; contains few argillaceous laminations.

R-3 No Core Loss, RQD = 99%
R-4 No Core Loss, RQD = 98%
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 = 98%

(C) Medium hard gray SHALE; slightly weathered, thinly laminated to thinly bedded, contains occasional siltstone interbeds.

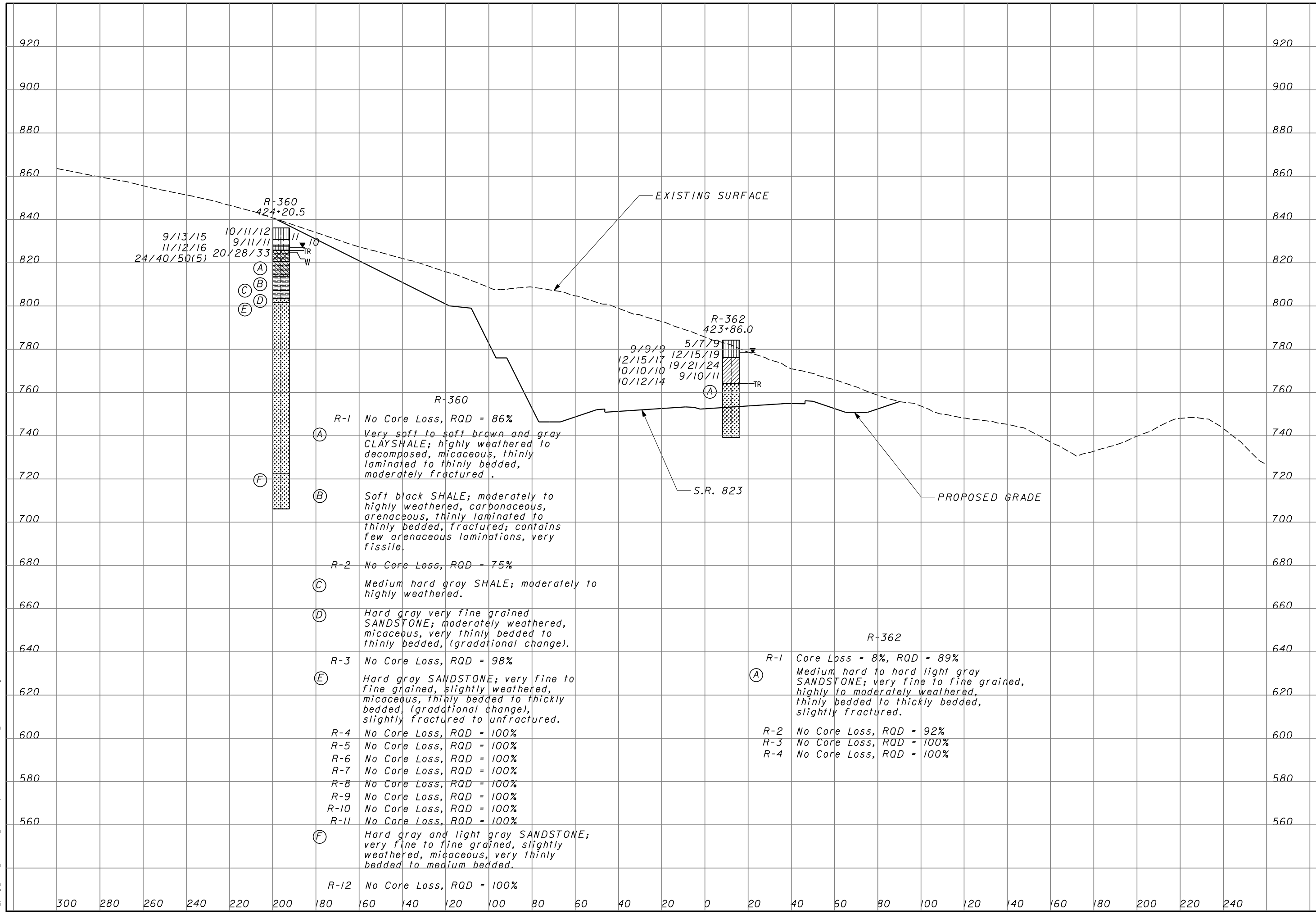
R-10 No Core Loss, RQD = 100%

(D) Hard gray SANDSTONE; fine to medium grained, moderately weathered, thinly bedded.

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 424+00

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9/13/15
11/12/16
24/40/50(5)

10/11/12
9/11/11
20/28/33

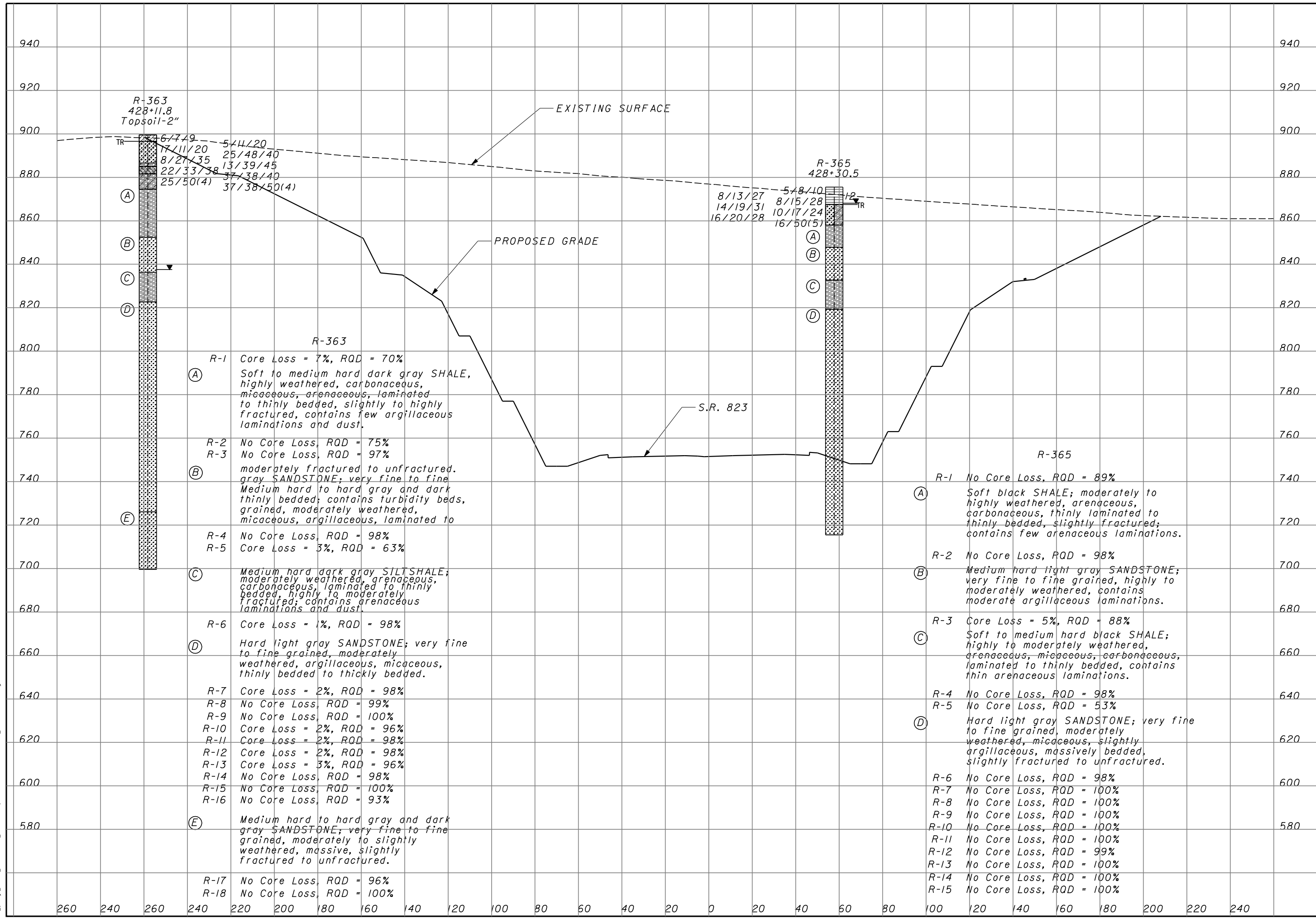
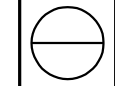
9/9/9
12/15/17
10/10/10
10/12/14

5/7/79
12/15/19
19/21/24
9/10/11

- R-360
- (A) R-1 No Core Loss, RQD = 86%
Very soft to soft brown and gray CLAYSHALE; highly weathered to decomposed, micaceous, thinly laminated to thinly bedded, moderately fractured.
 - (B) Soft black SHALE; moderately to highly weathered, carbonaceous, arenaceous, thinly laminated to thinly bedded, fractured; contains few arenaceous laminations, very fissile.
 - (C) R-2 No Core Loss, RQD = 75%
Medium hard gray SHALE; moderately to highly weathered.
 - (D) Hard gray very fine grained SANDSTONE; moderately weathered, micaceous, very thinly bedded to thinly bedded, (gradational change).
 - (E) R-3 No Core Loss, RQD = 98%
Hard gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, thinly bedded to thickly bedded, (gradational change), slightly fractured to unfractured.
 - 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%
 - (F) Hard gray and light gray SANDSTONE; very fine to fine grained, slightly weathered, micaceous, very thinly bedded to medium bedded.
 - R-12 No Core Loss, RQD = 100%

- R-362
- (A) R-1 Core Loss = 8%, RQD = 89%
Medium hard to hard light gray SANDSTONE; very fine to fine grained, highly to moderately weathered, thinly bedded to thickly bedded, slightly fractured.
 - R-2 No Core Loss, RQD = 92%
 - R-3 No Core Loss, RQD = 100%
 - R-4 No Core Loss, RQD = 100%

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R-363
428+11.8
Topsoil-2"
6/7/49
17/11/20
8/21/35
22/33/38
25/50(4)
5/4/20
25/48/40
13/39/45
37/38/40
37/38/50(4)

R-365
428+30.5
8/13/27
14/19/31
16/20/28
5/8/10
8/15/28
10/17/24
16/50(5)

R-363

(A) R-1 Core Loss = 7%, RQD = 70%
Soft to medium hard dark gray SHALE, highly weathered, carbonaceous, micaceous, arenaceous, laminated to thinly bedded, slightly to highly fractured, contains few argillaceous laminations and dust.

R-2 No Core Loss, RQD = 75%
R-3 No Core Loss, RQD = 97%

(B) moderately fractured to unfractured, gray SANDSTONE; very fine to fine. Medium hard to hard gray and dark thinly bedded; contains turbidity beds, grained, moderately weathered, micaceous, argillaceous, laminated to

R-4 No Core Loss, RQD = 98%
R-5 Core Loss = 3%, RQD = 63%

(C) Medium hard dark gray SILT SHALE; moderately weathered, arenaceous, carbonaceous, laminated to thinly bedded, highly to moderately fractured; contains arenaceous laminations and dust.

R-6 Core Loss = 1%, RQD = 98%

(D) Hard light gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, micaceous, thinly bedded to thickly bedded.

R-7 Core Loss = 2%, RQD = 98%
R-8 No Core Loss, RQD = 99%
R-9 No Core Loss, RQD = 100%
R-10 Core Loss = 2%, RQD = 96%
R-11 Core Loss = 2%, RQD = 98%
R-12 Core Loss = 2%, RQD = 98%
R-13 Core Loss = 3%, RQD = 96%
R-14 No Core Loss, RQD = 98%
R-15 No Core Loss, RQD = 100%
R-16 No Core Loss, RQD = 93%

(E) Medium hard to hard gray and dark gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, massive, slightly fractured to unfractured.

R-17 No Core Loss, RQD = 96%
R-18 No Core Loss, RQD = 100%

R-365

(A) R-1 No Core Loss, RQD = 89%
Soft black SHALE; moderately to highly weathered, arenaceous, carbonaceous, thinly laminated to thinly bedded, slightly fractured; contains few arenaceous laminations.

R-2 No Core Loss, RQD = 98%

(B) Medium hard light gray SANDSTONE; very fine to fine grained, highly to moderately weathered, contains moderate argillaceous laminations.

R-3 Core Loss = 5%, RQD = 88%

(C) Soft to medium hard black SHALE; highly to moderately weathered, arenaceous, micaceous, carbonaceous, laminated to thinly bedded, contains thin arenaceous laminations.

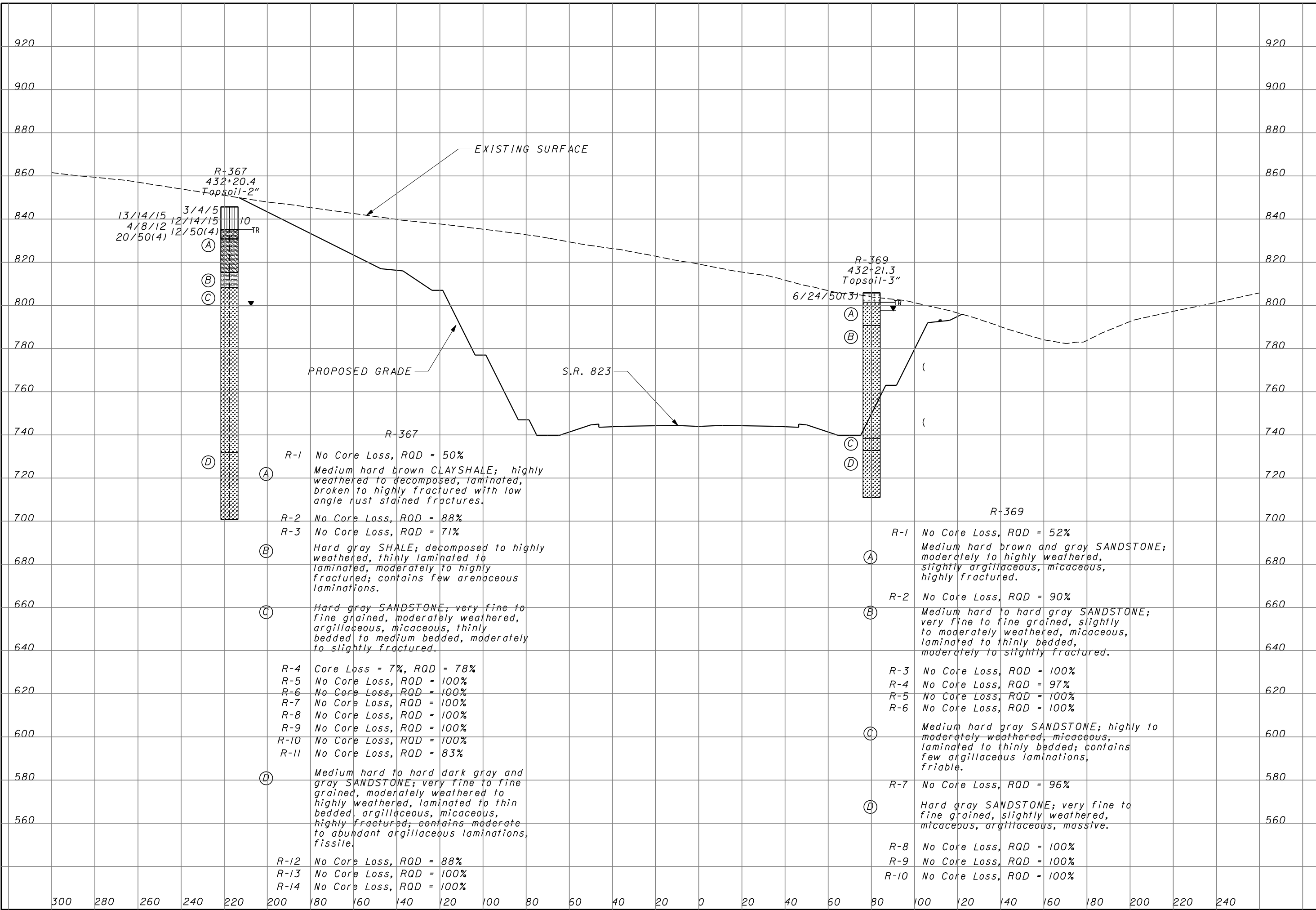
R-4 No Core Loss, RQD = 98%
R-5 No Core Loss, RQD = 53%

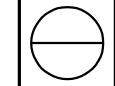
(D) Hard light gray SANDSTONE; very fine to fine grained, moderately weathered, micaceous, slightly argillaceous, massively bedded, slightly fractured to unfractured.

R-6 No Core Loss, RQD = 98%
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 = 99%
R-13 No Core Loss, RQD = 100%
R-14 No Core Loss, RQD = 100%
R-15 No Core Loss, RQD = 100%

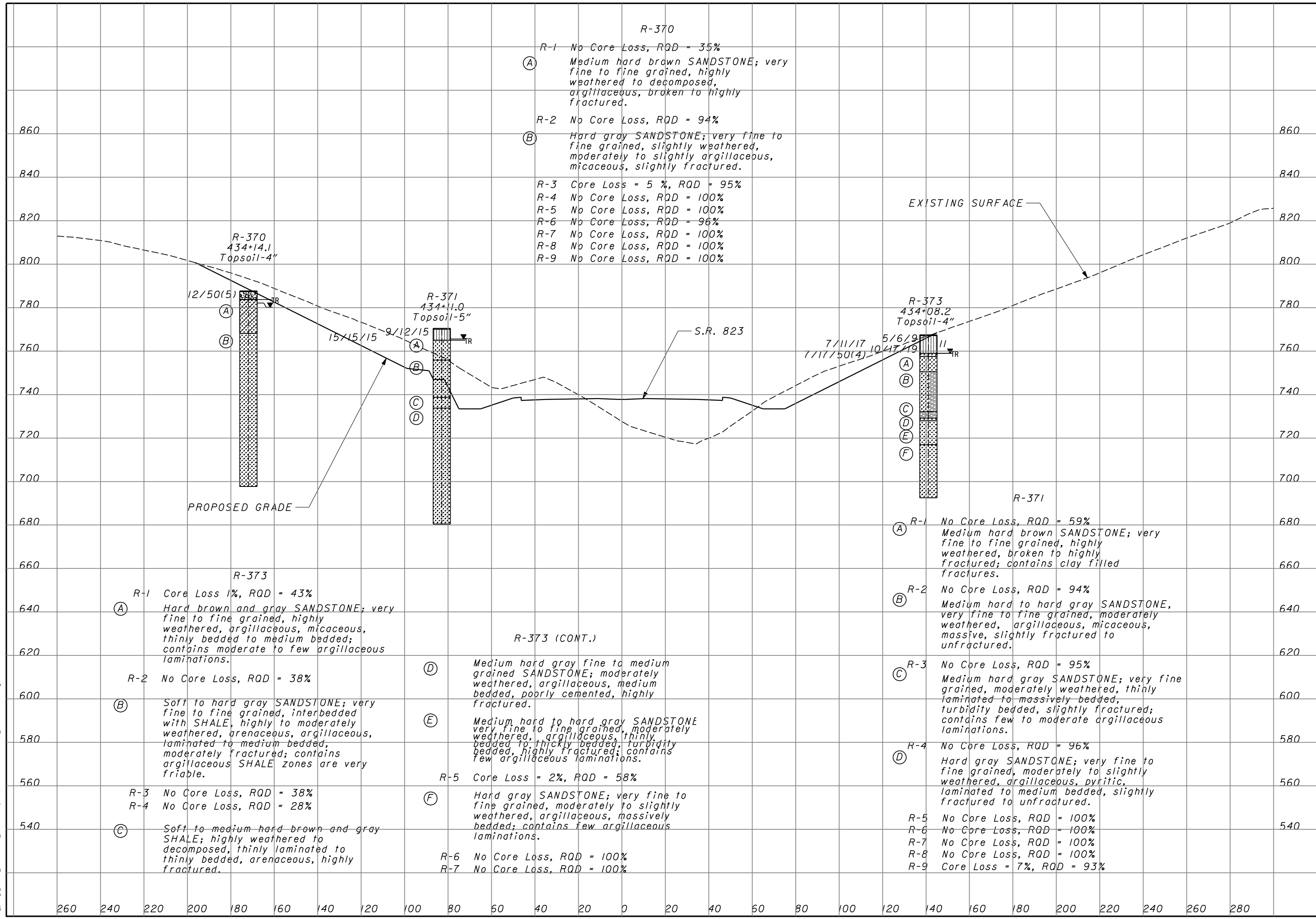
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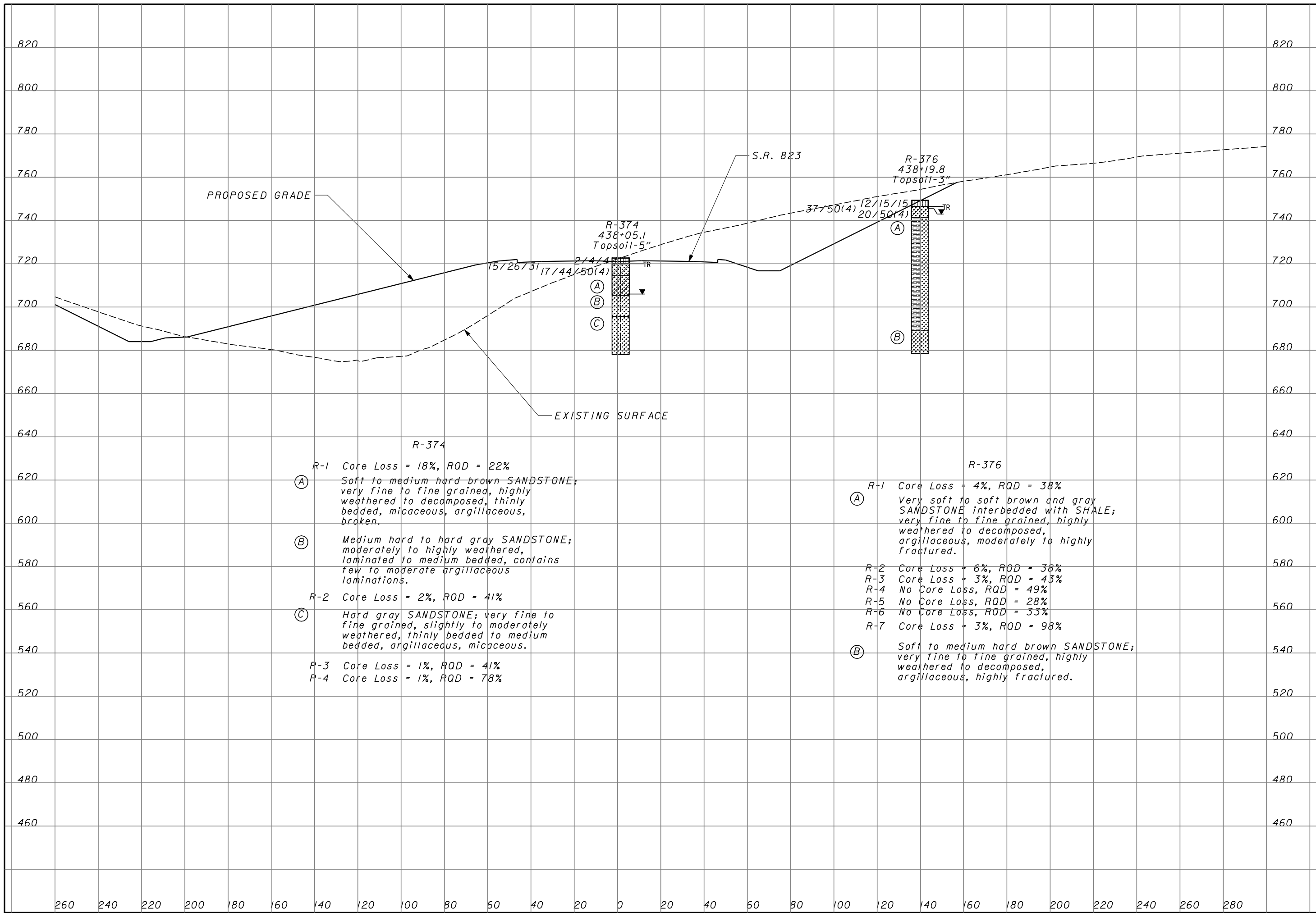


R-373 (CONT.)

R-373

- R-1:** No Core Loss, RQD = 43%. Hard brown and gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to medium bedded; contains moderate to few argillaceous laminations.
- R-2:** No Core Loss, RQD = 38%. Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, broken to highly fractured; contains clay filled fractures.
- R-3:** No Core Loss, RQD = 95%. Medium hard gray SANDSTONE; very fine grained, moderately weathered, thinly laminated to massively bedded, turbidity bedded, slightly fractured; contains few to moderate argillaceous laminations.
- R-4:** No Core Loss, RQD = 96%. Hard gray SANDSTONE; very fine to fine grained, moderately to slightly weathered, argillaceous, pyritic, laminated to medium bedded, slightly fractured to unfractured.
- 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 = 7%, RQD = 93%

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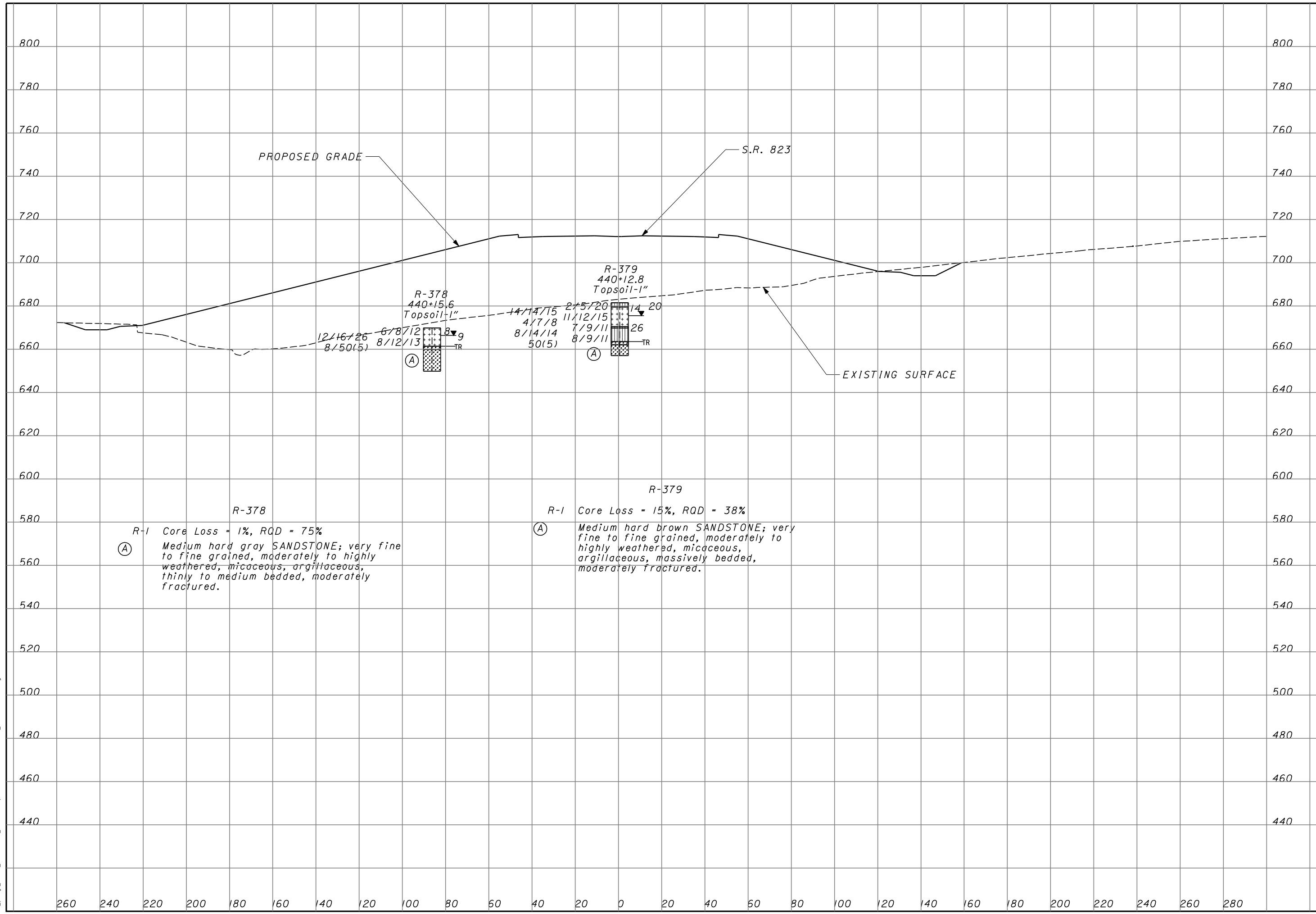
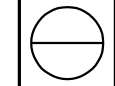


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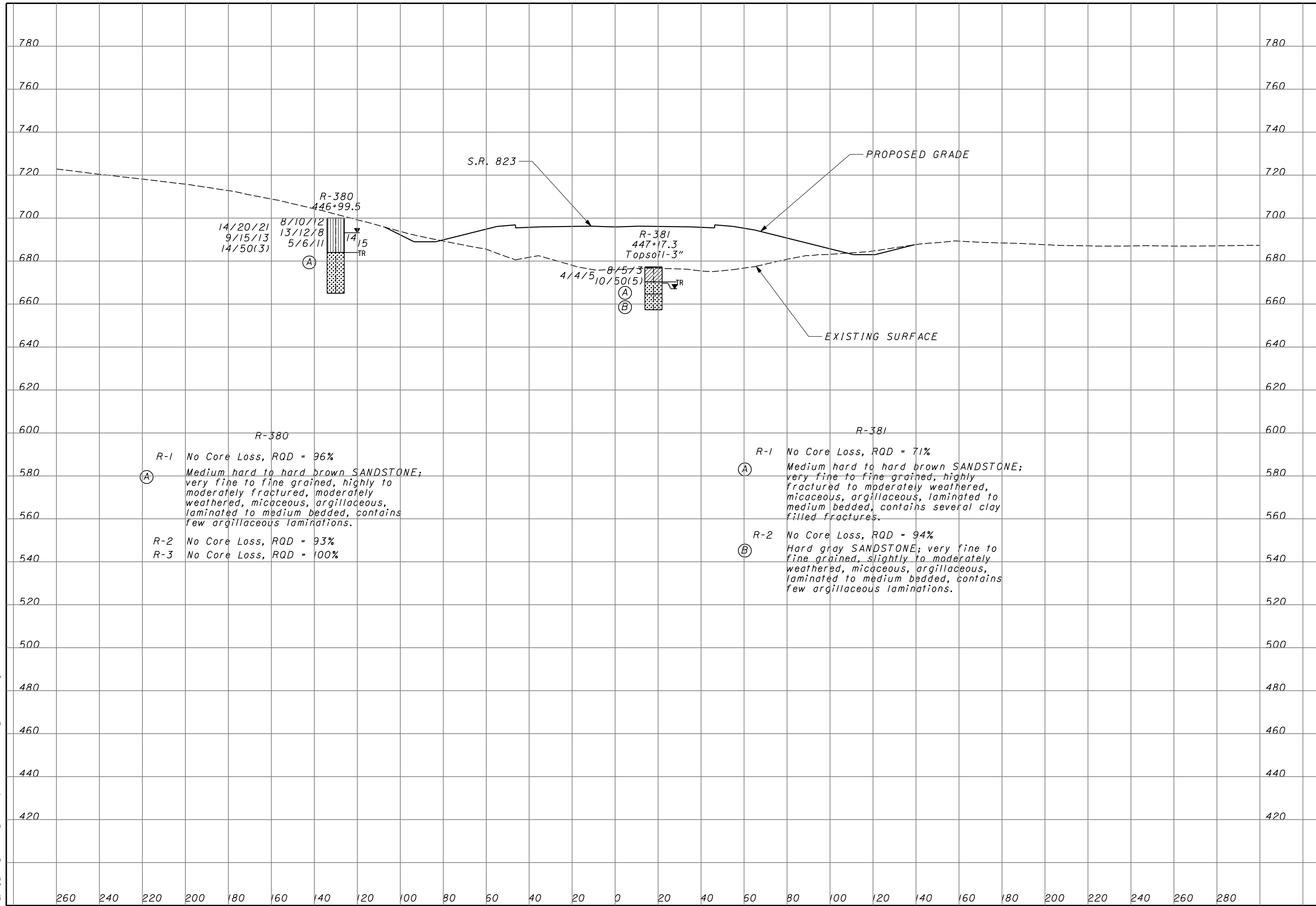
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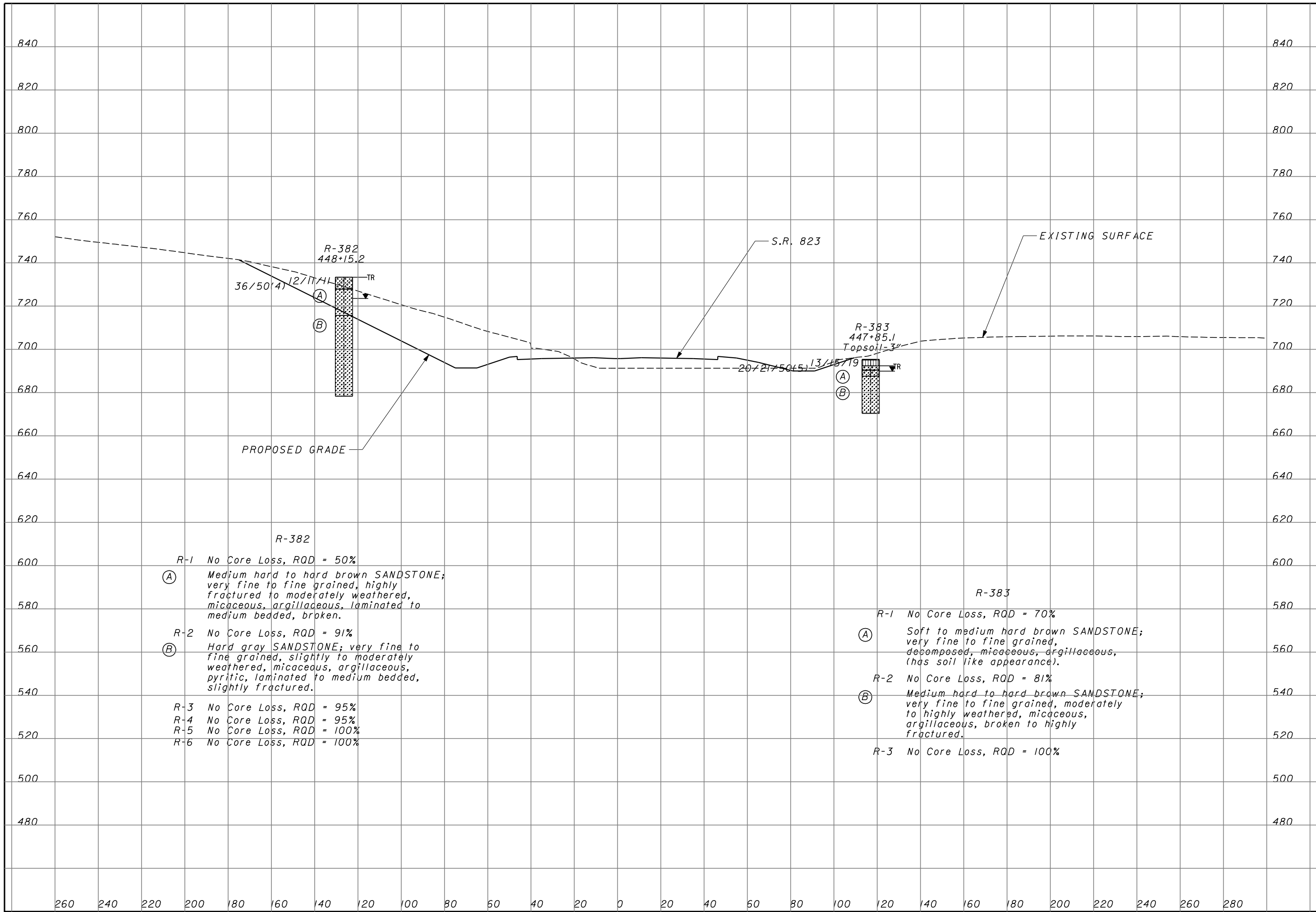
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 447+00

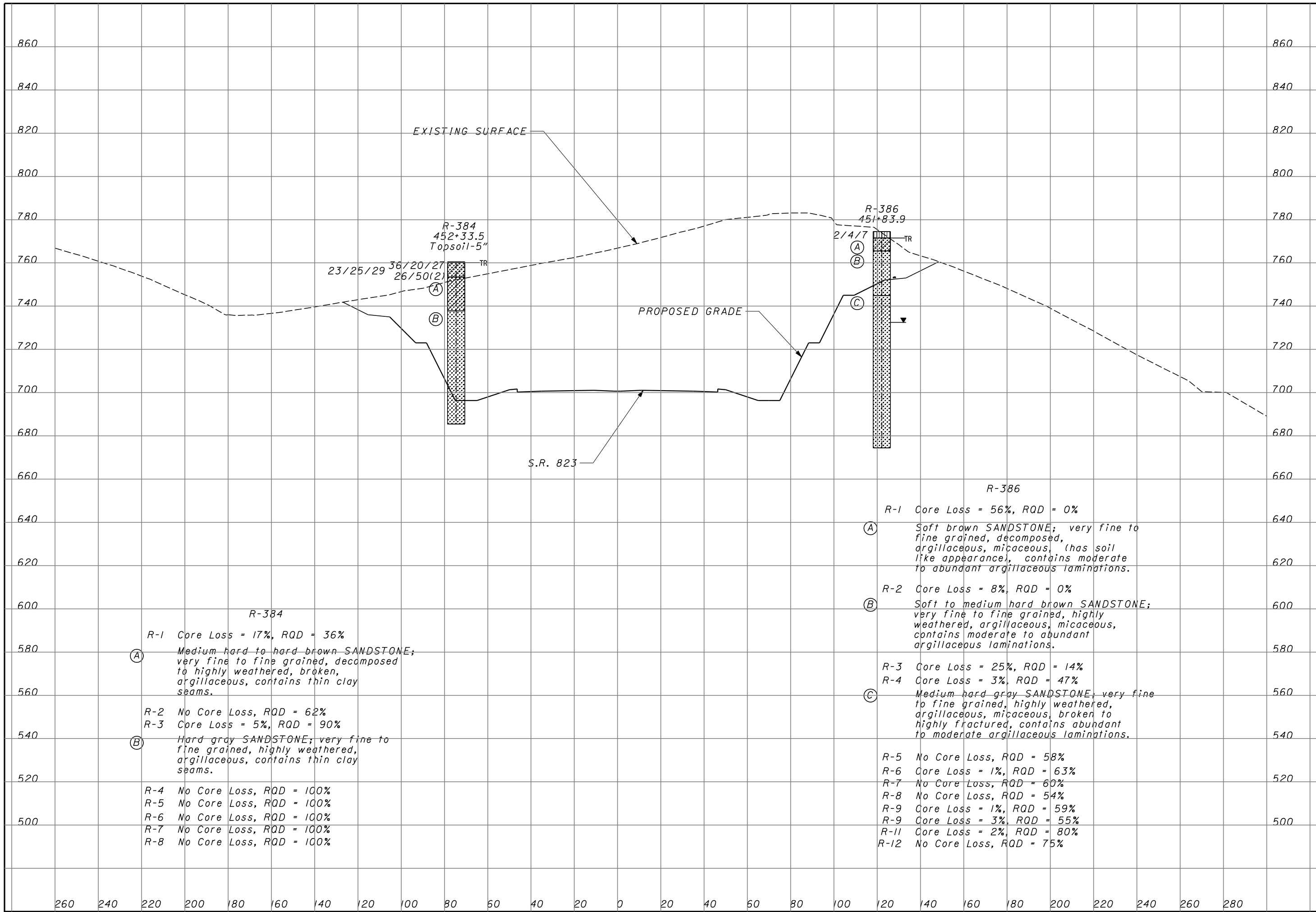
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R-384

R-1 Core Loss = 17%, RQD = 36%
 (A) Medium hard to hard brown SANDSTONE; very fine to fine grained, decomposed to highly weathered, broken, argillaceous, contains thin clay seams.

R-2 No Core Loss, RQD = 62%
 R-3 Core Loss = 5%, RQD = 90%
 (B) Hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, contains thin clay seams.

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-386

R-1 Core Loss = 56%, RQD = 0%
 (A) Soft brown SANDSTONE; very fine to fine grained, decomposed, argillaceous, micaceous, (has soil like appearance), contains moderate to abundant argillaceous laminations.

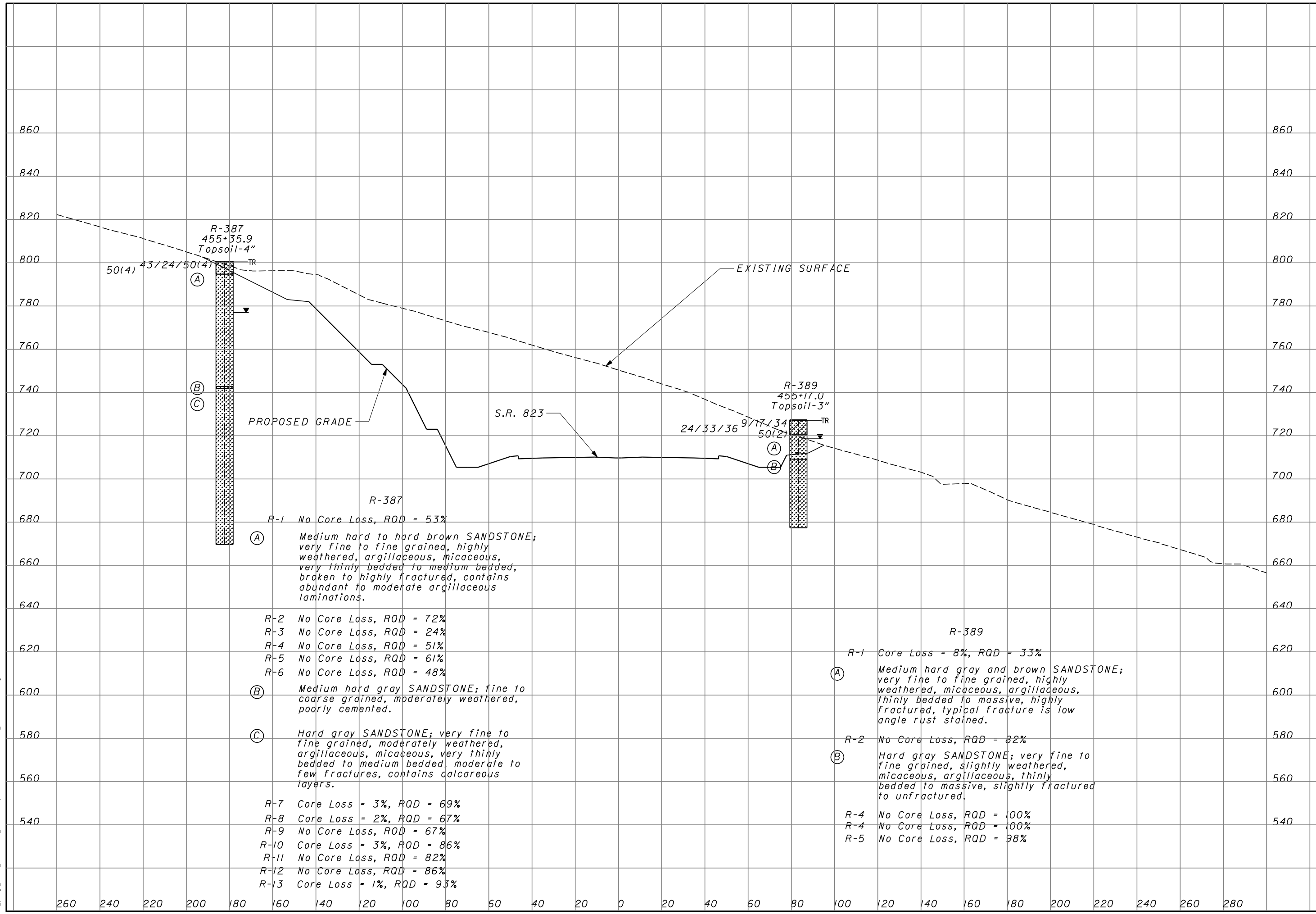
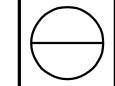
R-2 Core Loss = 8%, RQD = 0%
 (B) Soft to medium hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, contains moderate to abundant argillaceous laminations.

R-3 Core Loss = 25%, RQD = 14%
 R-4 Core Loss = 3%, RQD = 47%
 (C) Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, broken to highly fractured, contains abundant to moderate argillaceous laminations.

R-5 No Core Loss, RQD = 58%
 R-6 Core Loss = 1%, RQD = 63%
 R-7 No Core Loss, RQD = 60%
 R-8 No Core Loss, RQD = 54%
 R-9 Core Loss = 1%, RQD = 59%
 R-9 Core Loss = 3%, RQD = 55%
 R-11 Core Loss = 2%, RQD = 80%
 R-12 No Core Loss, RQD = 75%

SOIL PROFILE
CROSS SECTION - SR 823 STA. 455+50

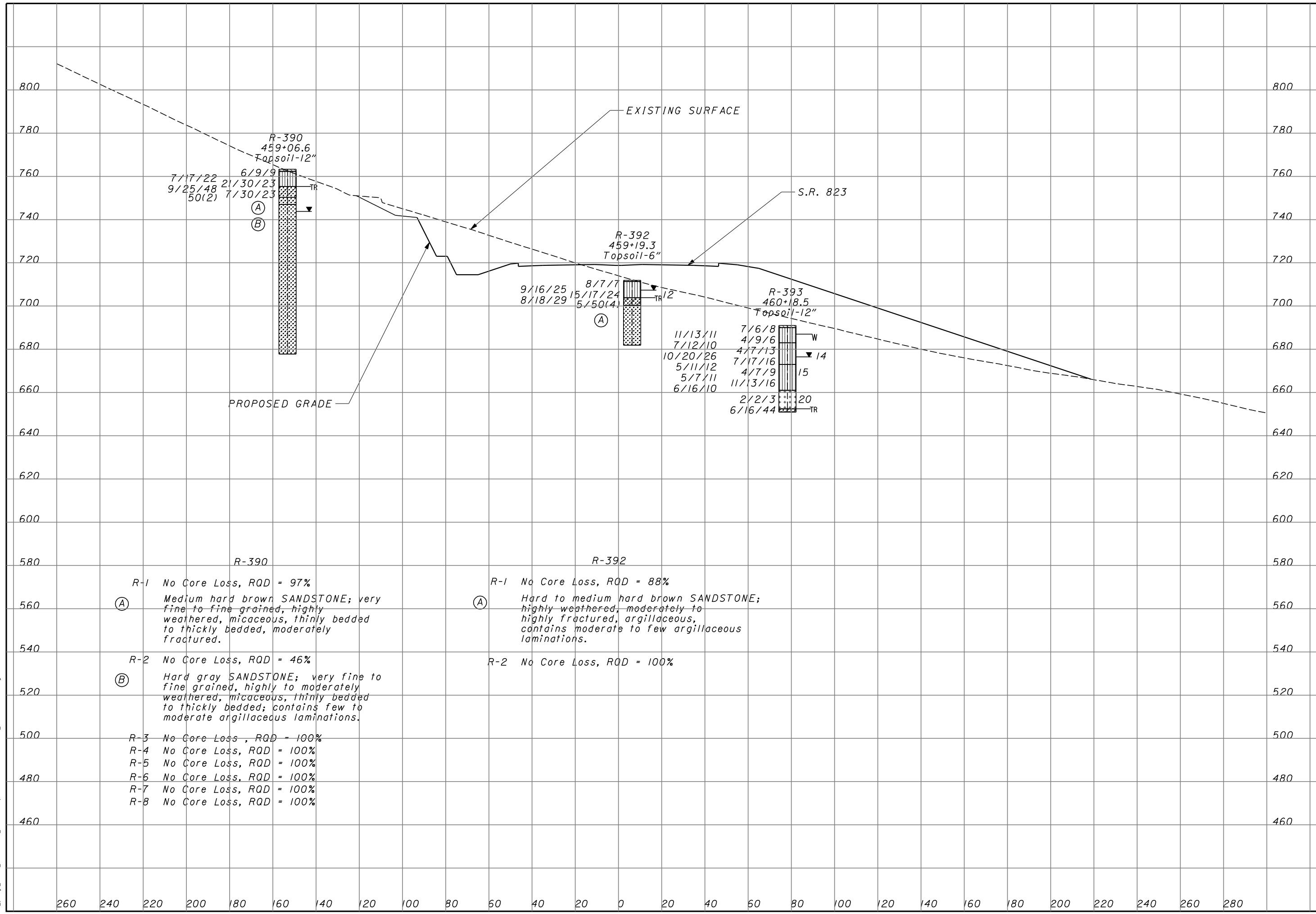
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 459+00**

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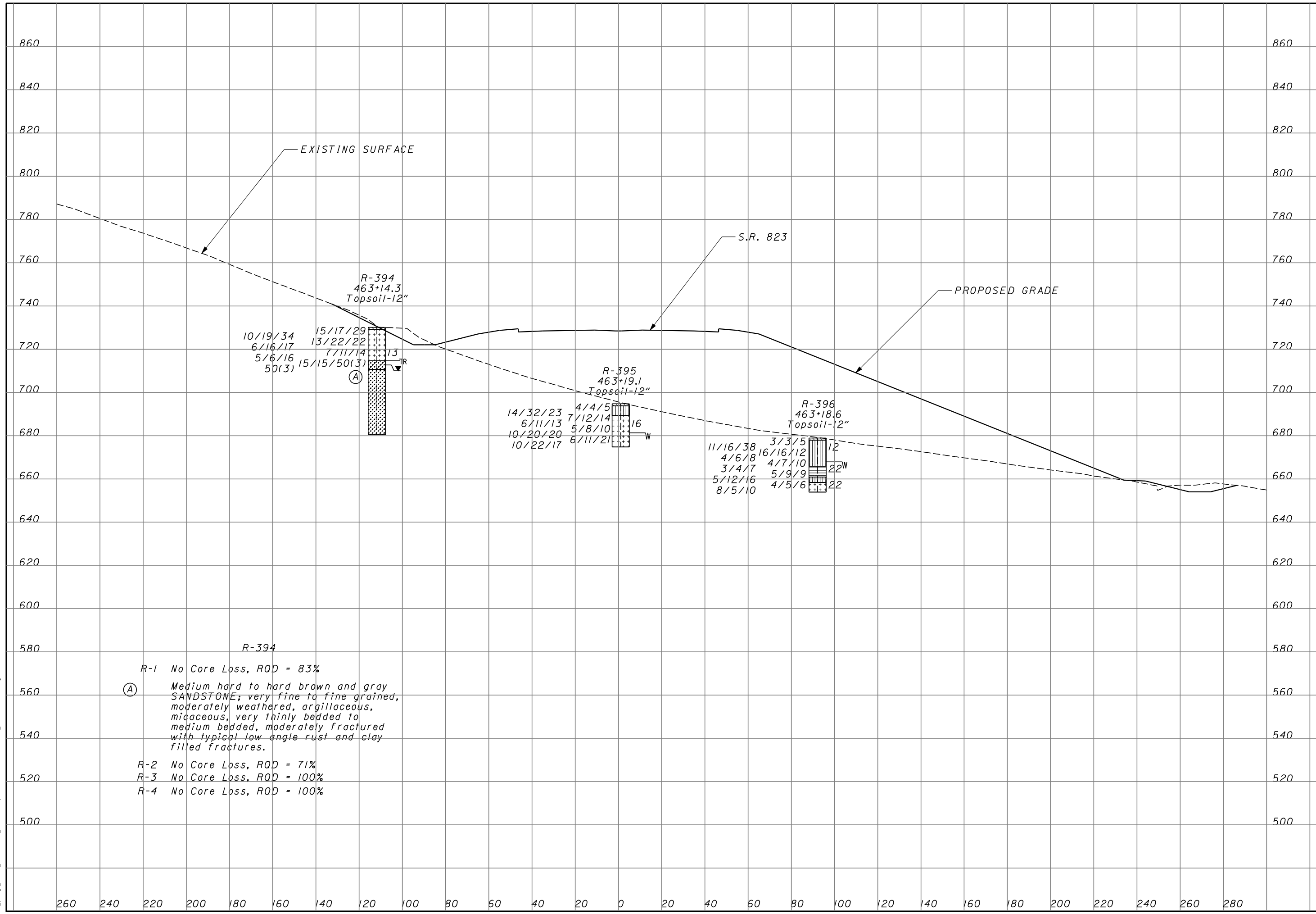
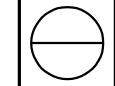
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 463+00

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100/35



R-394

R-1 No Core Loss, RQD = 83%

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

R-2 No Core Loss, RQD = 71%

R-3 No Core Loss, RQD = 100%

R-4 No Core Loss, RQD = 100%

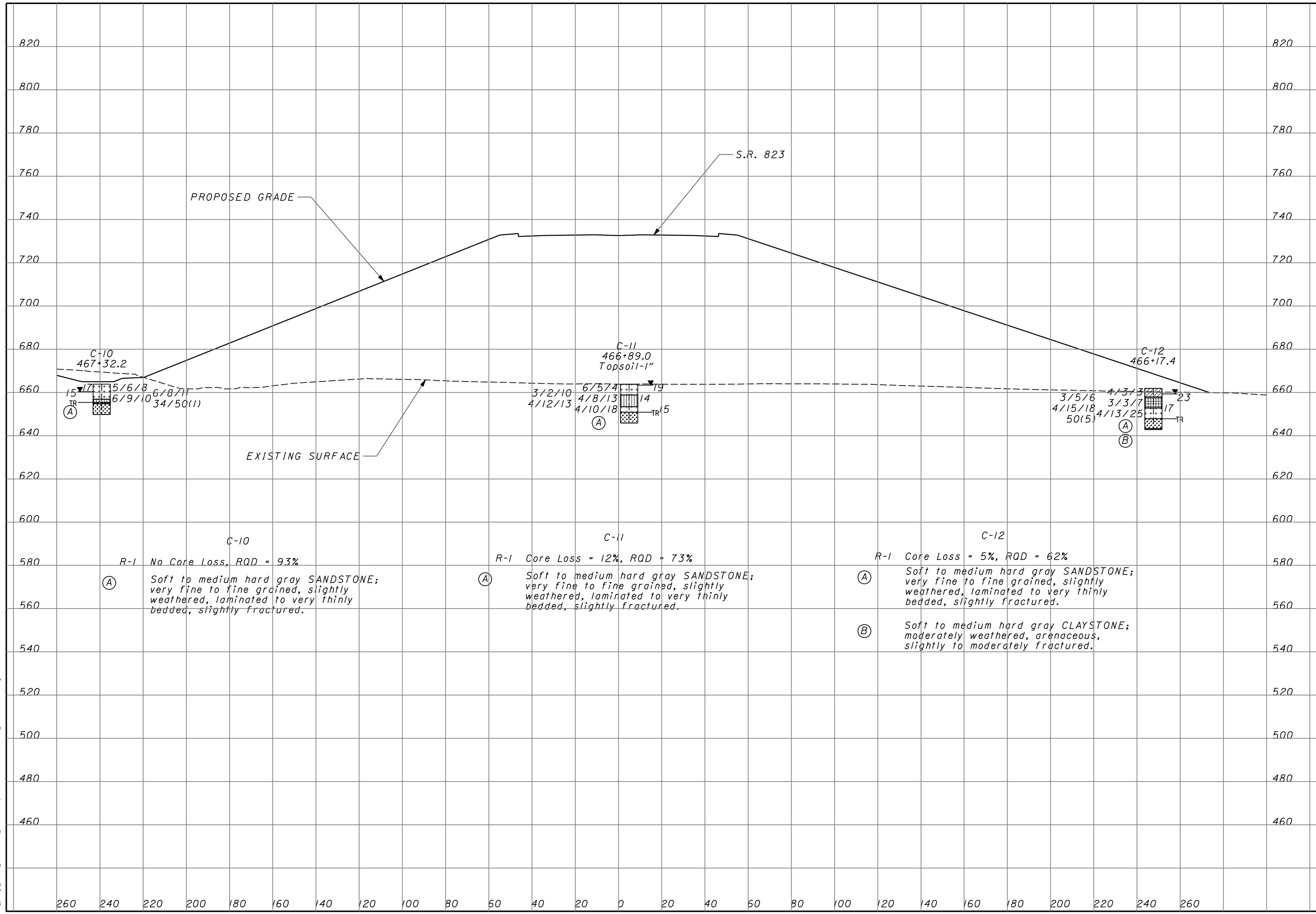
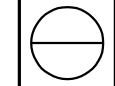
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 467+00**

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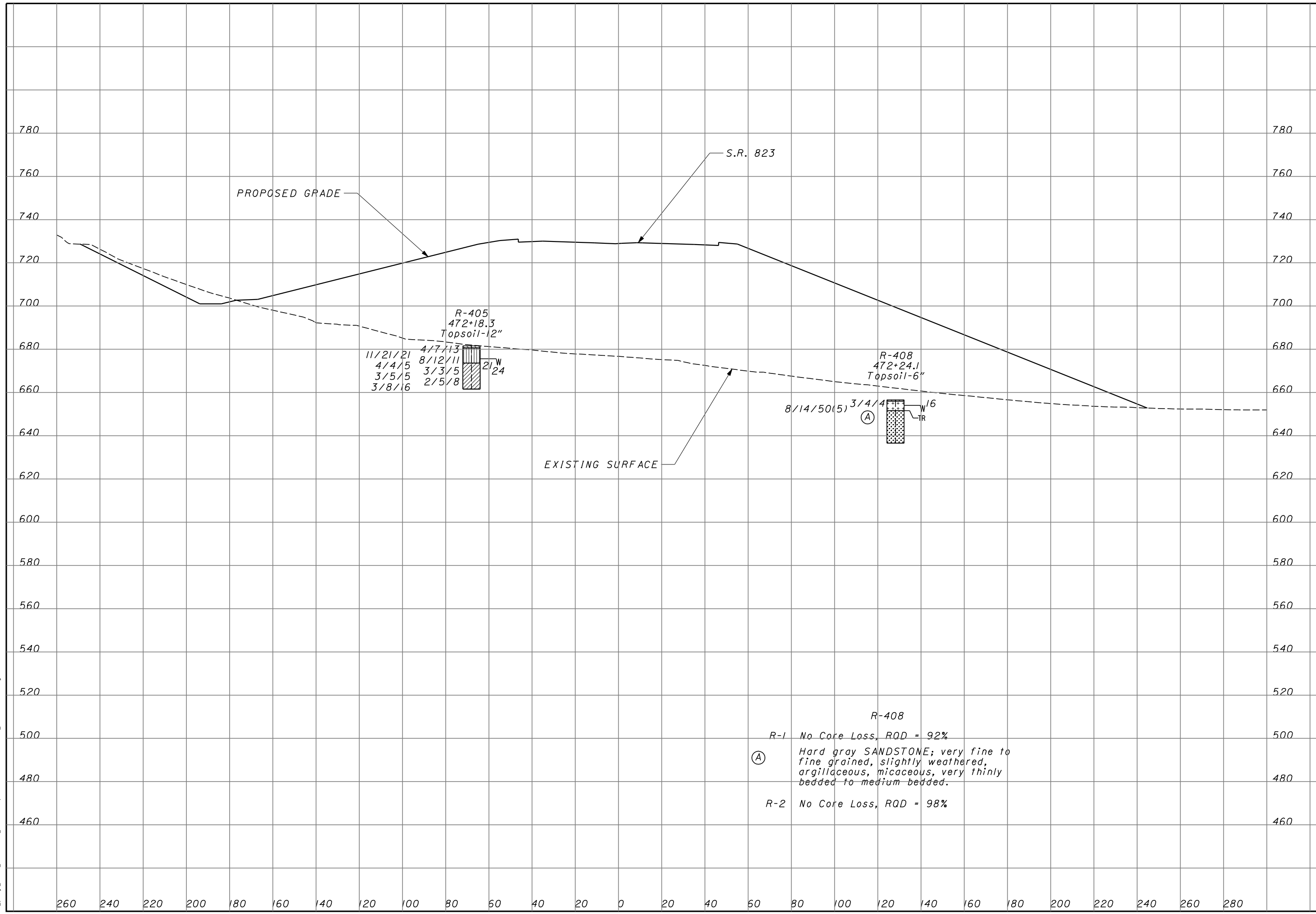
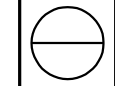
101/135



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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 472+00**

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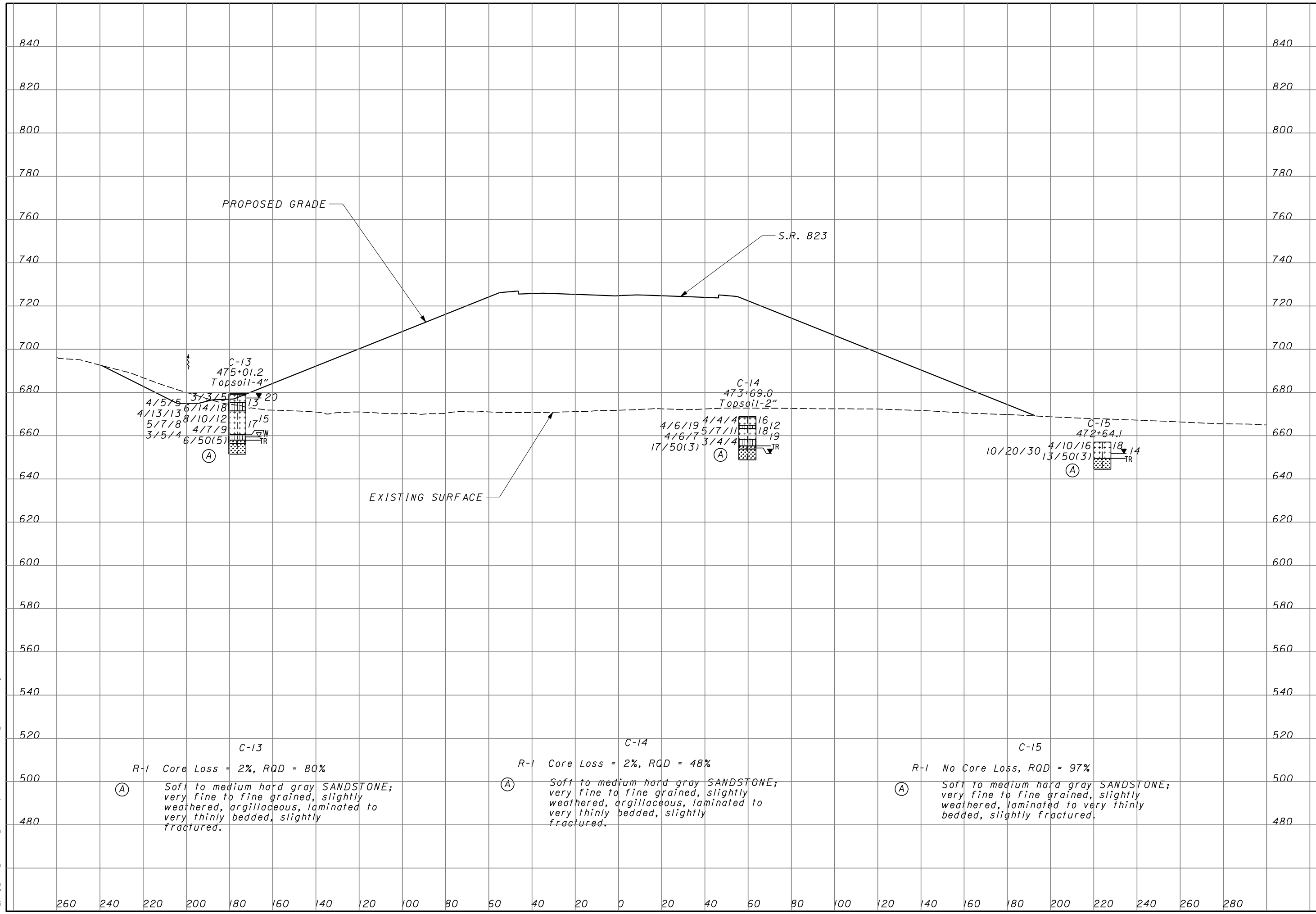
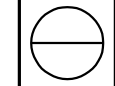
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 474+00

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103/135

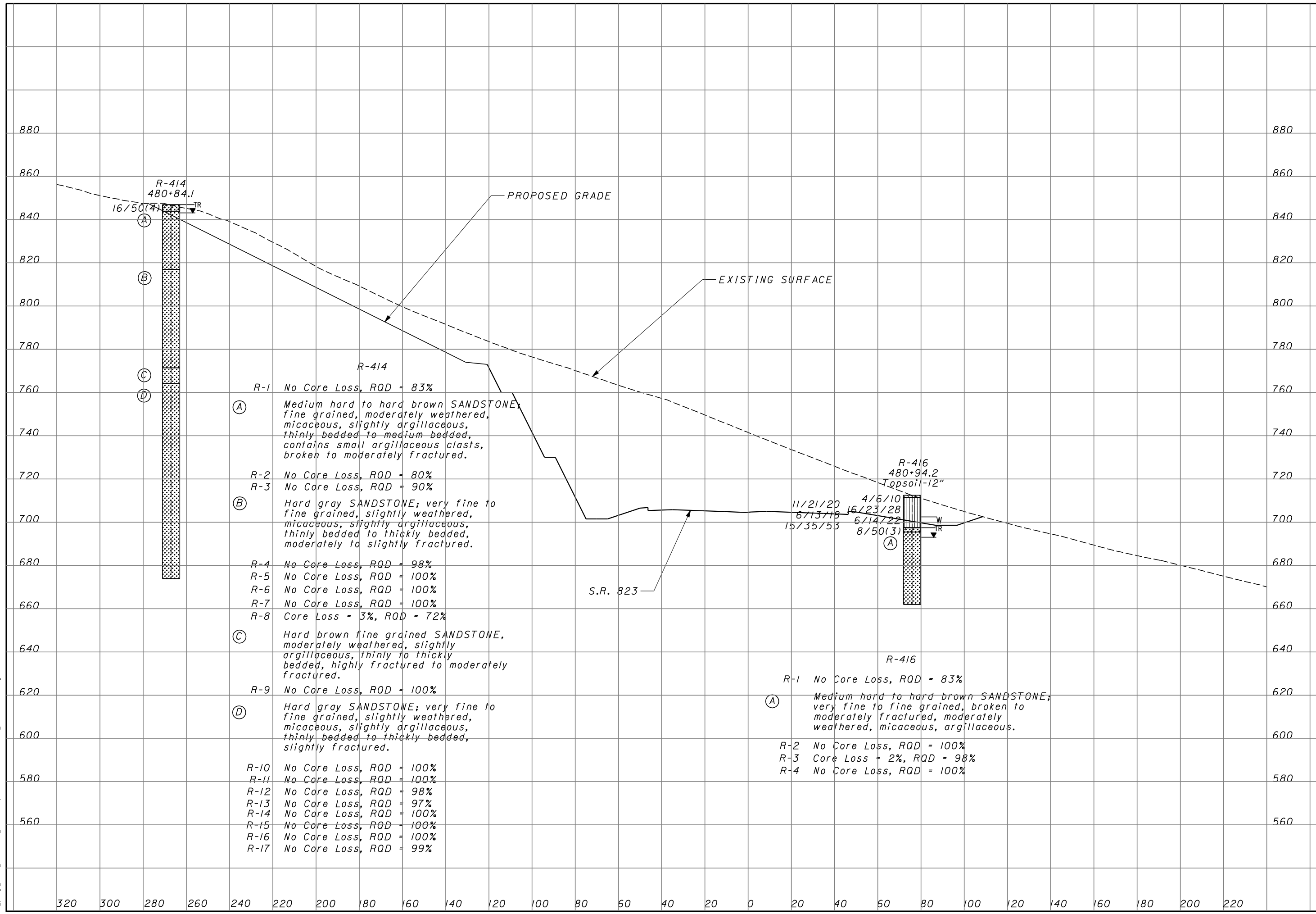


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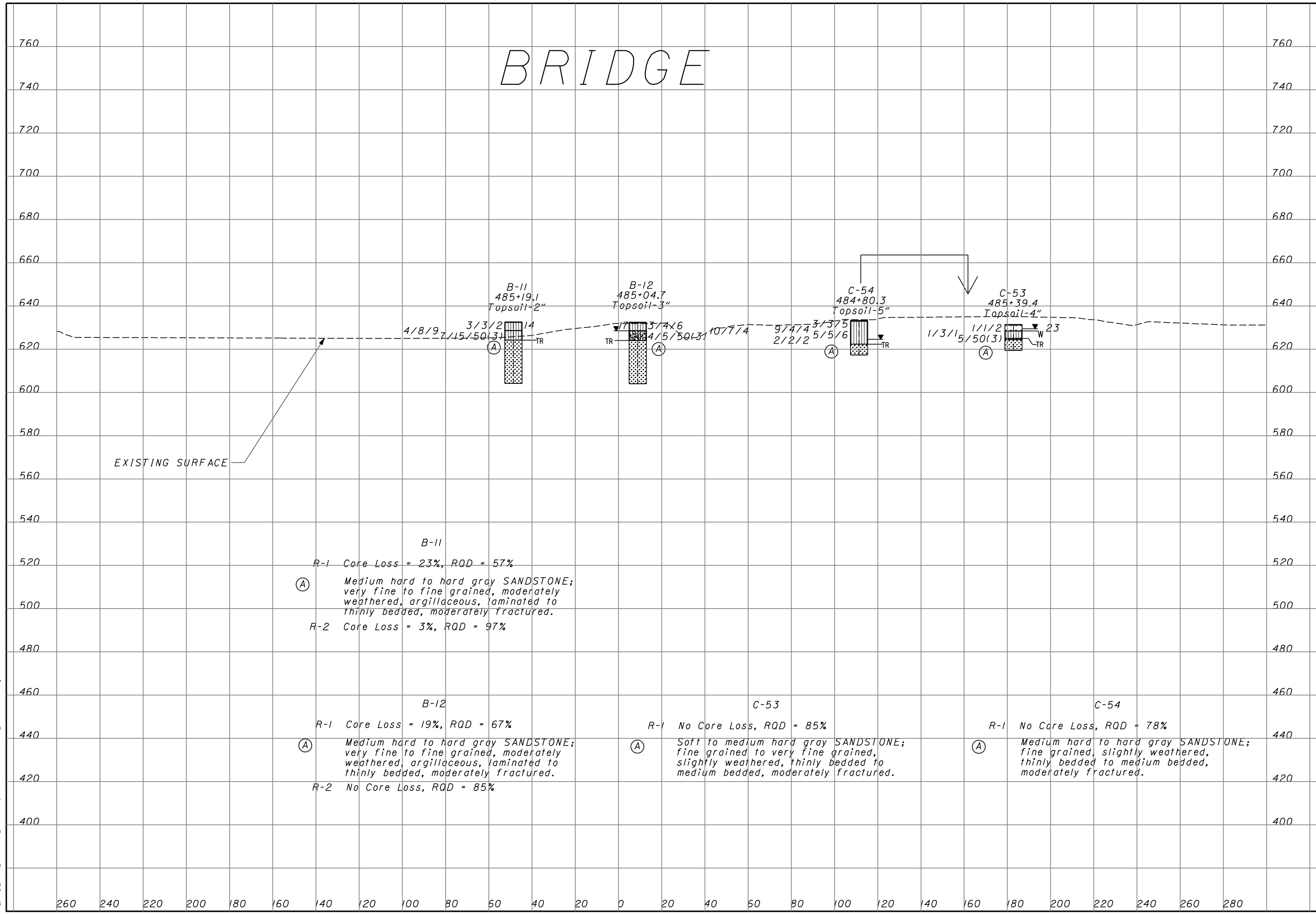
SOIL PROFILE
CROSS SECTION - SR 823 STA. 481+00

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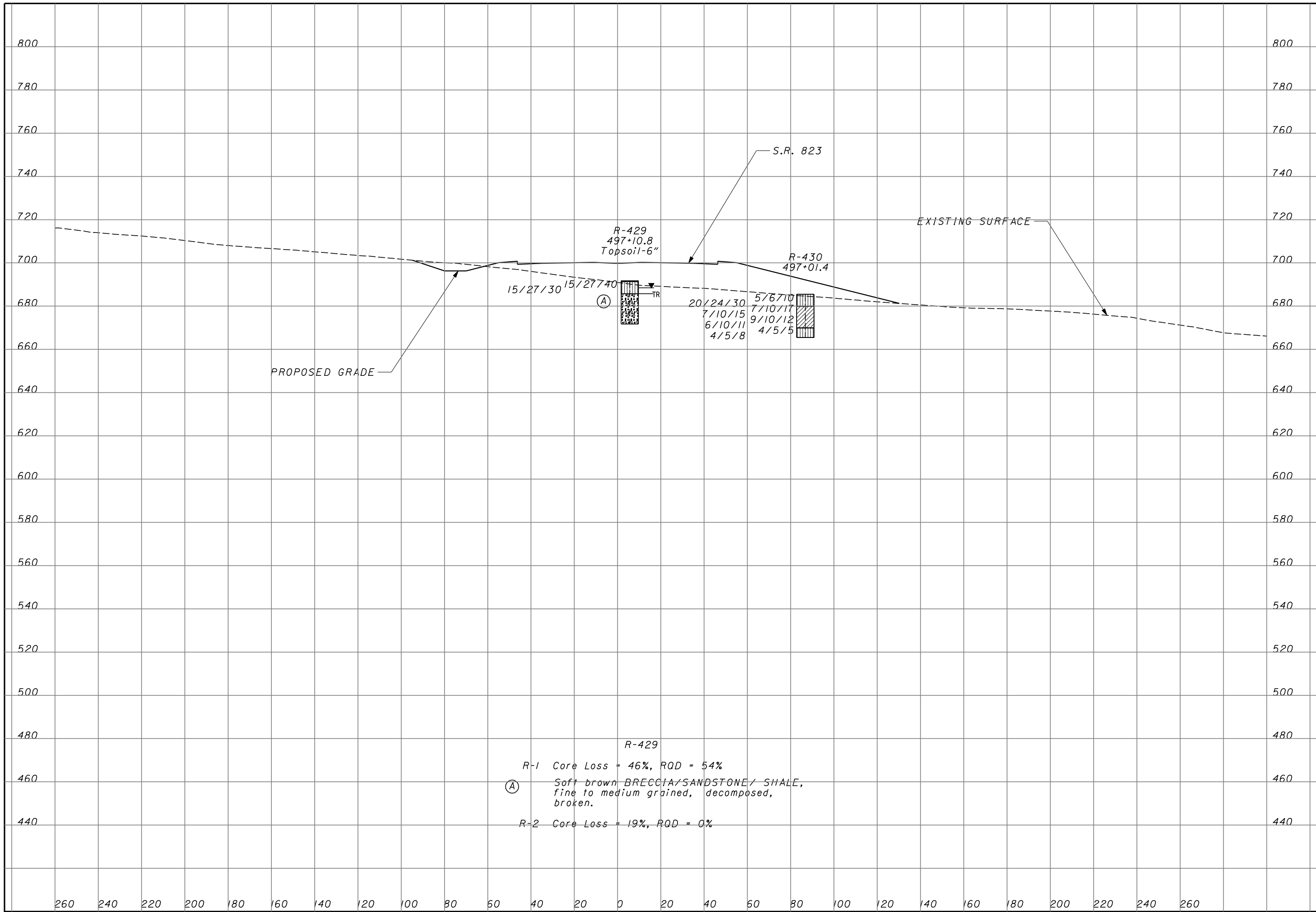


SOIL PROFILE
CROSS SECTION - SR 823 STA. 485+00

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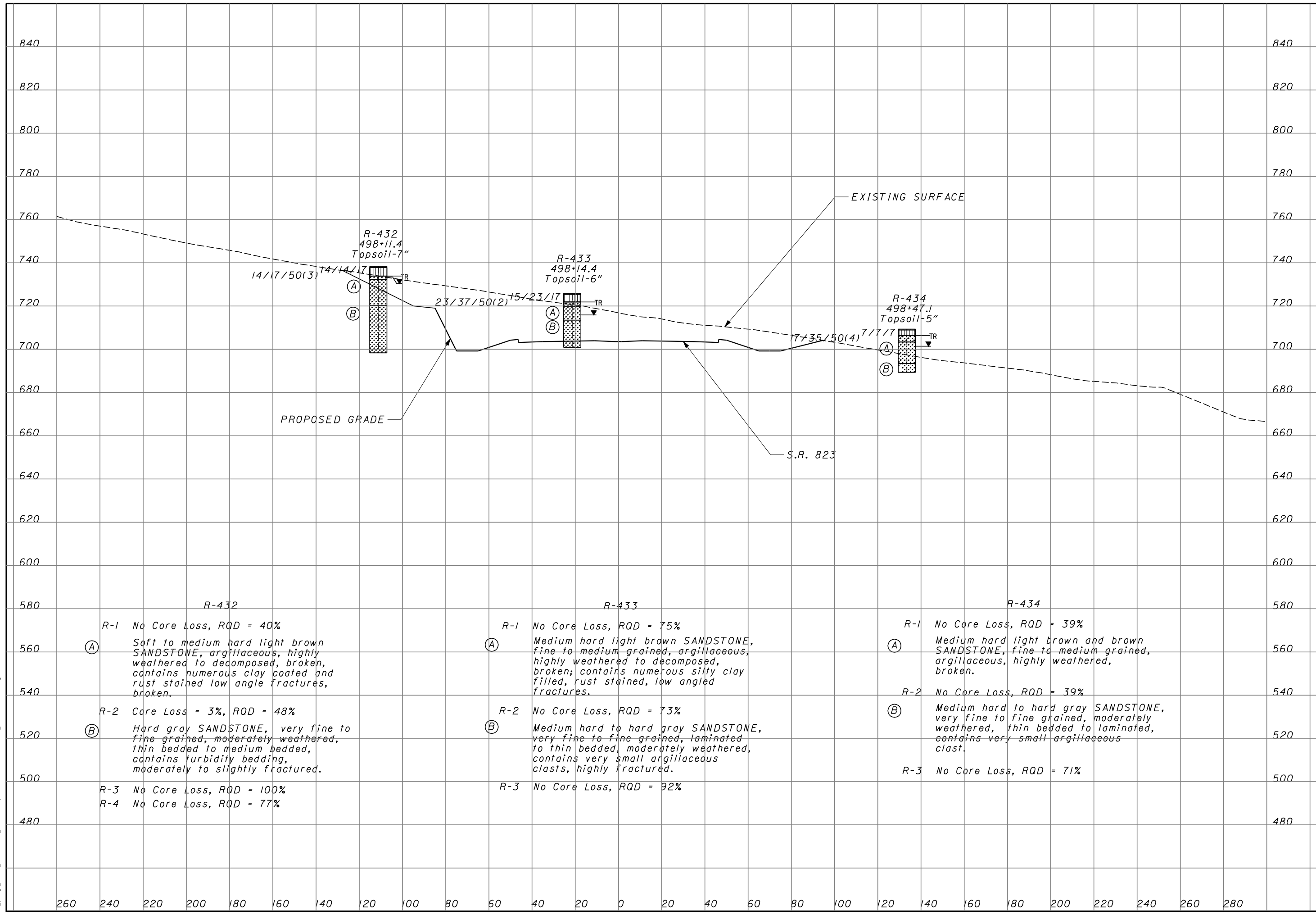
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 497+00
SCI-823-6.81
 106/135

SOIL PROFILE
CROSS SECTION - SR 823 STA. 498+00

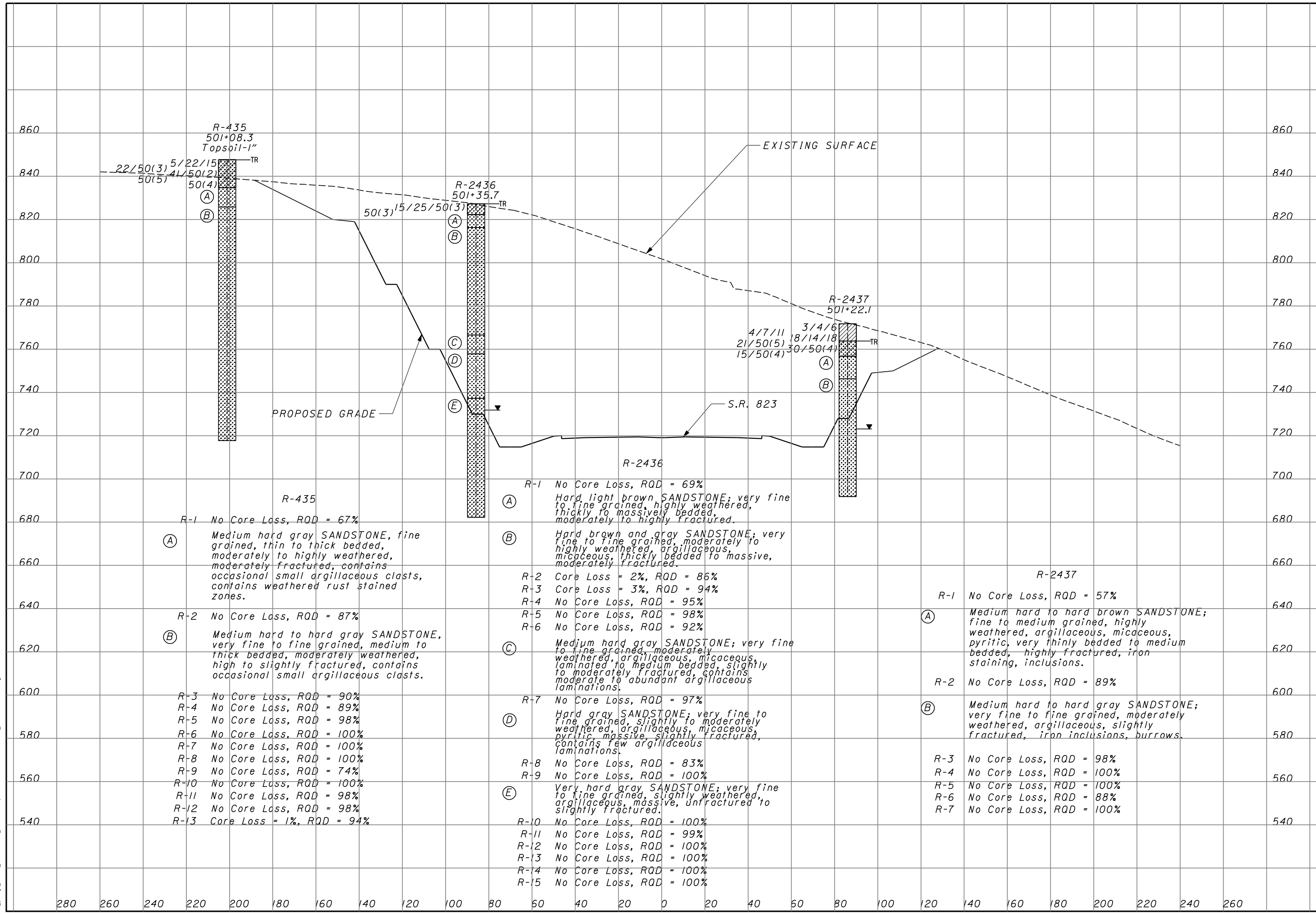
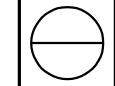


SCI-823-6.81

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SOIL PROFILE
CROSS SECTION - SR 823 STA. 501+50

SCI-823-6.81



R-435
501+08.3
Topsoil-1\"

22/50(3) 5/22/15
41/50(2) 50(4)
50(5)

(A)
(B)

R-435
R-1 No Core Loss, RQD = 67%

(A) Medium hard gray SANDSTONE, fine grained, thin to thick bedded, moderately to highly weathered, moderately fractured, contains occasional small argillaceous clasts, contains weathered rust stained zones.

R-2 No Core Loss, RQD = 87%

(B) Medium hard to hard gray SANDSTONE, very fine to fine grained, medium to thick bedded, moderately weathered, high to slightly fractured, contains occasional small argillaceous clasts.

- R-3 No Core Loss, RQD = 90%
- R-4 No Core Loss, RQD = 89%
- R-5 No Core Loss, RQD = 98%
- 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 = 74%
- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 98%
- R-12 No Core Loss, RQD = 98%
- R-13 Core Loss = 1%, RQD = 94%

R-2436
501+35.7

50(3) 15/25/50(3)

(A)
(B)

(C)
(D)

(E)

R-1 No Core Loss, RQD = 69%
(A) Hard light brown SANDSTONE; very fine to fine grained, highly weathered, thickly to massively bedded, moderately to highly fractured.

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

- R-2 Core Loss = 2%, RQD = 86%
- R-3 Core Loss = 3%, RQD = 94%
- R-4 No Core Loss, RQD = 95%
- R-5 No Core Loss, RQD = 98%
- R-6 No Core Loss, RQD = 92%

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

(D) Hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, pyritic, massive, slightly fractured, contains few argillaceous laminations.

- R-7 No Core Loss, RQD = 97%
- R-8 No Core Loss, RQD = 83%
- R-9 No Core Loss, RQD = 100%

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

- R-10 No Core Loss, RQD = 100%
- R-11 No Core Loss, RQD = 99%
- 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%

EXISTING SURFACE

PROPOSED GRADE

S.R. 823

R-2436

R-2437
501+22.1

4/7/11 3/4/6
21/50(5) 18/14/18
15/50(4) 30/50(4)

(A)
(B)

R-2437
R-1 No Core Loss, RQD = 57%

(A) Medium hard to hard brown SANDSTONE; fine to medium grained, highly weathered, argillaceous, micaceous, pyritic, very thinly bedded to medium bedded, highly fractured, iron staining, inclusions.

R-2 No Core Loss, RQD = 89%

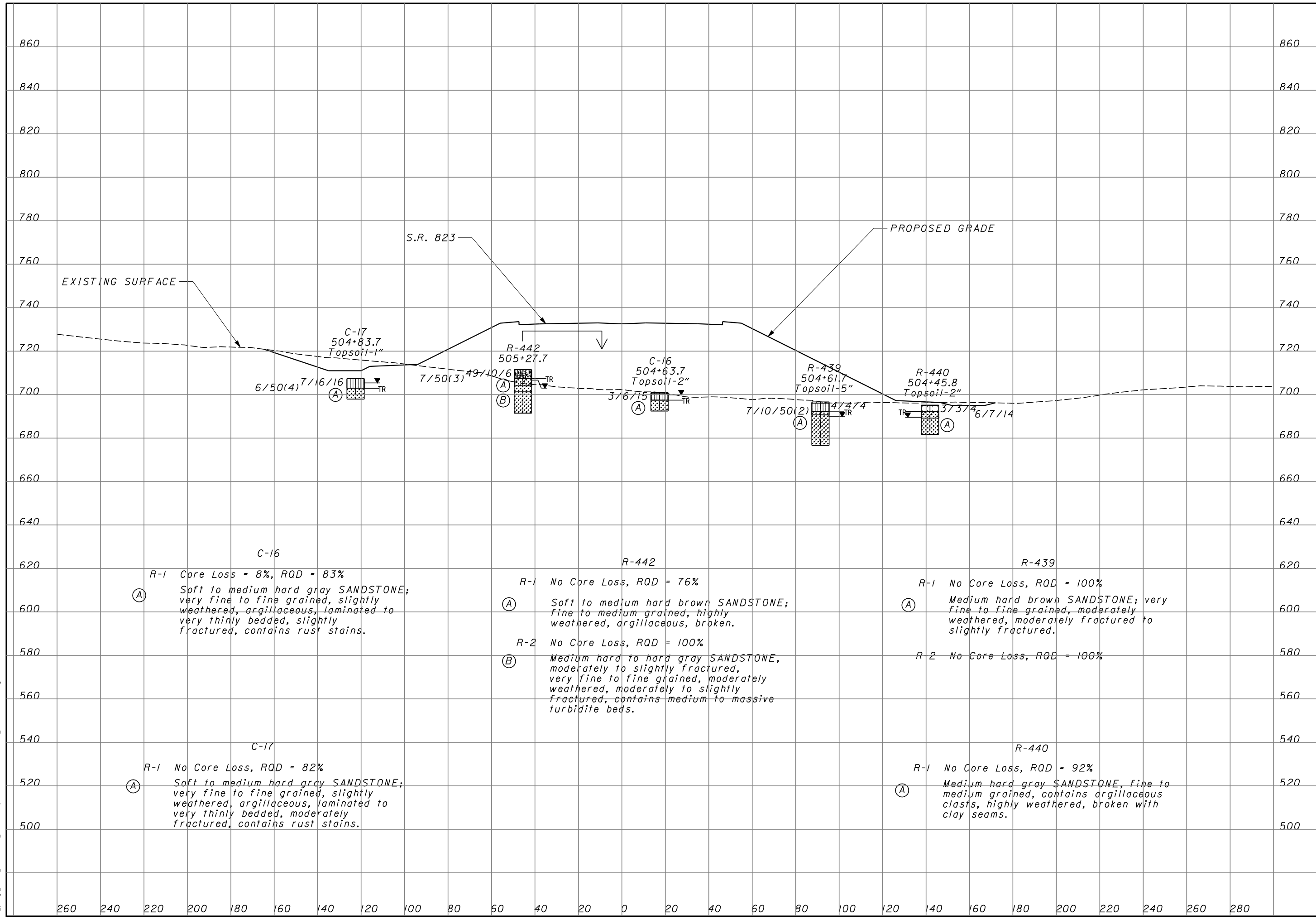
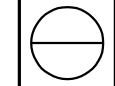
(B) Medium hard to hard gray SANDSTONE; very fine to fine grained, moderately weathered, argillaceous, slightly fractured, iron inclusions, burrows.

- R-3 No Core Loss, RQD = 98%
- R-4 No Core Loss, RQD = 100%
- R-5 No Core Loss, RQD = 100%
- R-6 No Core Loss, RQD = 88%
- R-7 No Core Loss, RQD = 100%

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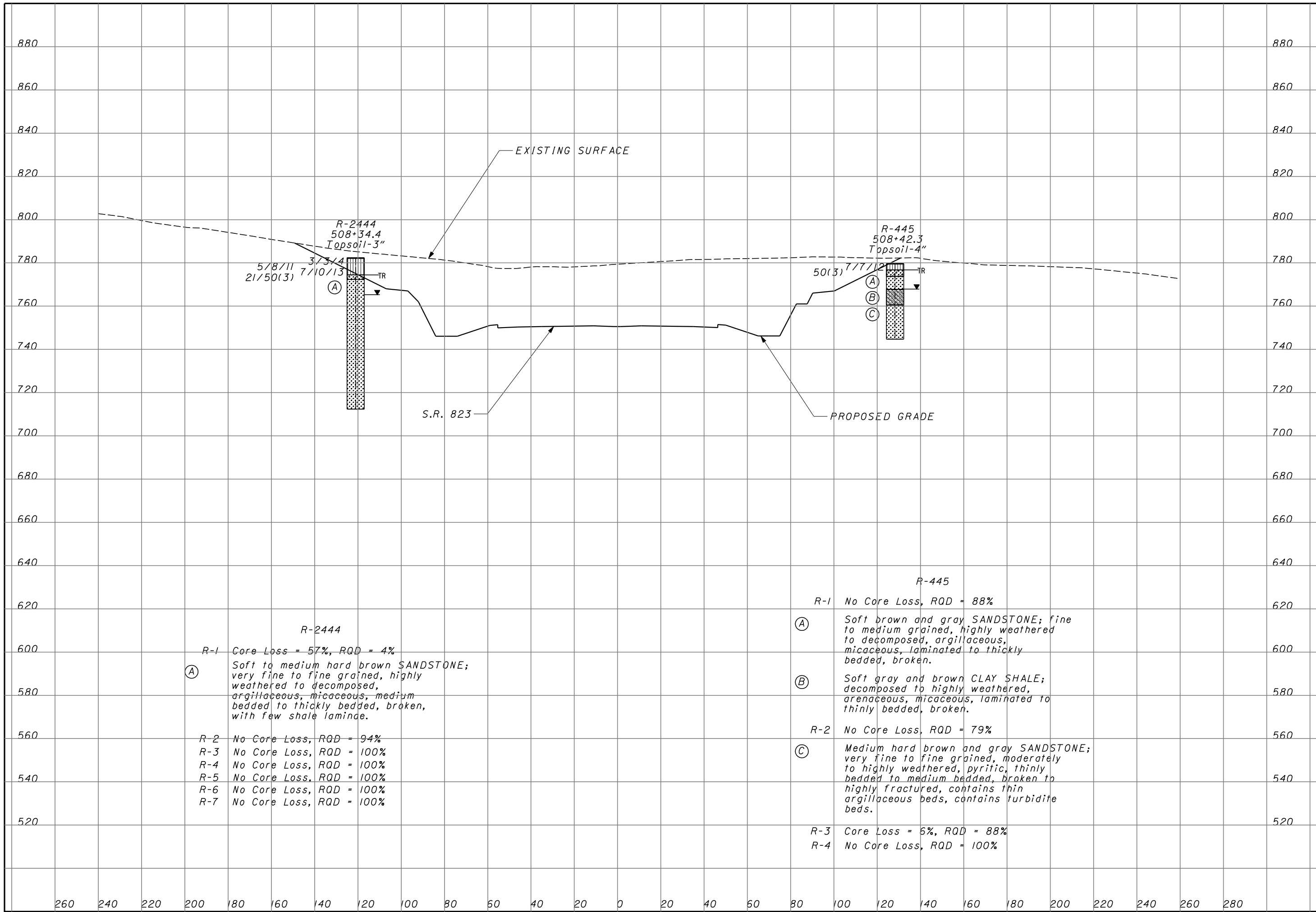
SOIL PROFILE
CROSS SECTION - SR 823 STA. 504+50

SCI-823-6.81



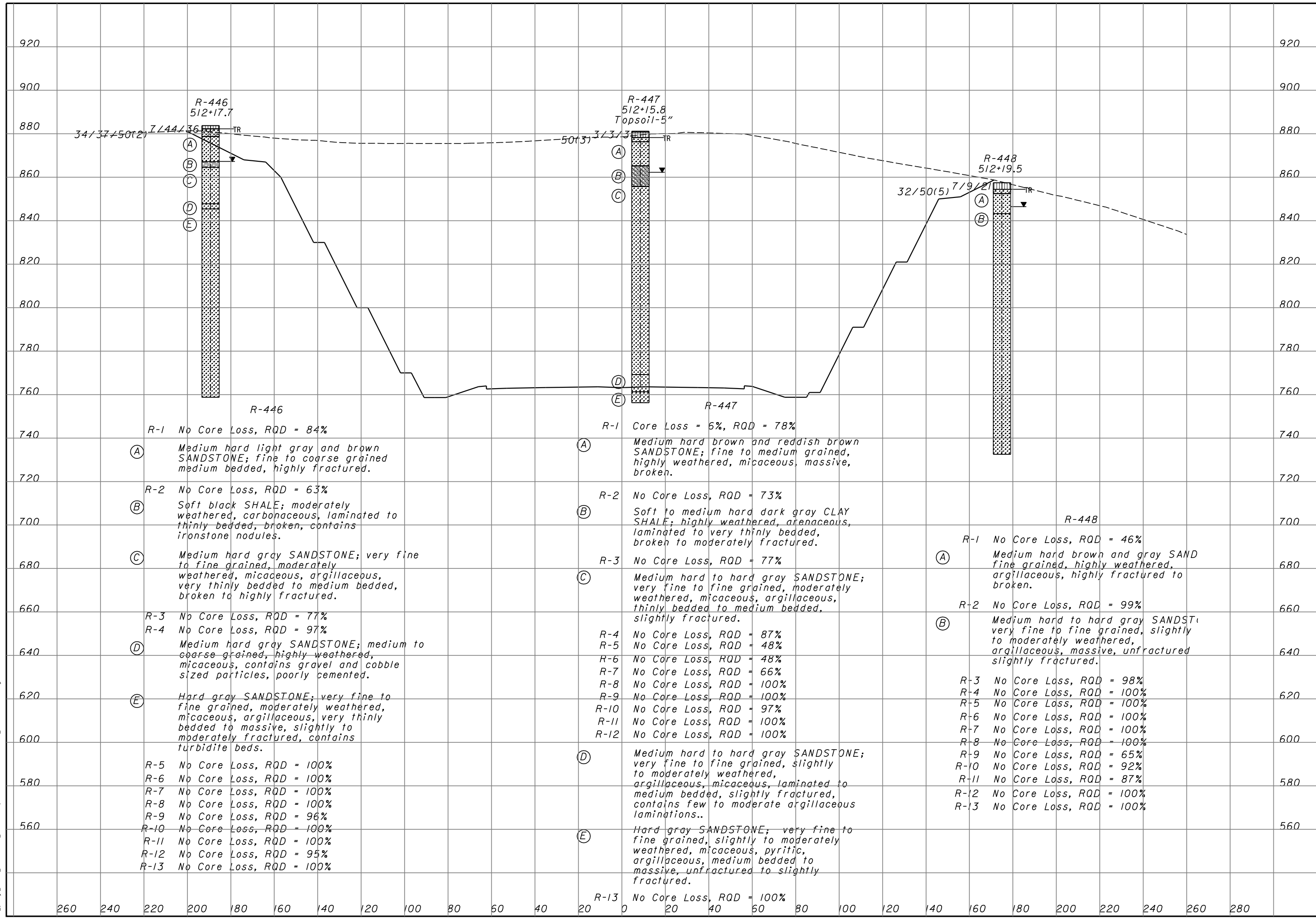
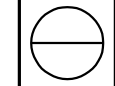
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SOIL PROFILE
CROSS SECTION - SR 823 STA. 512+00

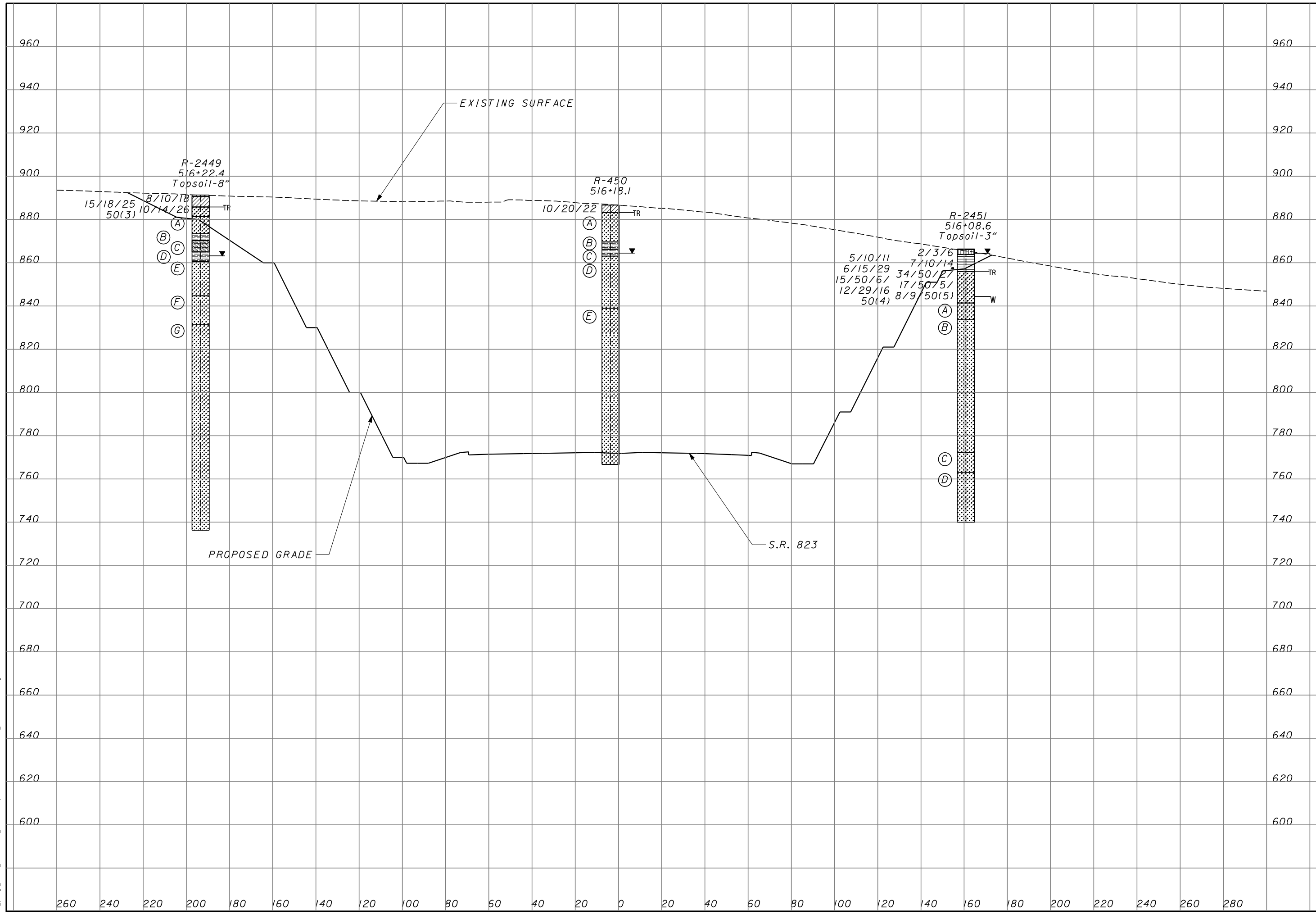
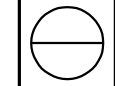
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**SOIL PROFILE
CROSS SECTION - SR 823 STA. 516+00**

SCI-823-6.81



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R-2449

- R-1 No Core Loss, RQD = 61%
 (A) Medium hard light brown SANDSTONE interbedded with SHALE; fine grained, highly weathered, micaceous, thickly bedded, moderately fractured.
- R-2 Core Loss = 6%, RQD = 55%
 (B) Soft to medium hard black SHALE; moderately to highly weathered, arenaceous, carbonaceous, micaceous, thinly laminated to laminated.
- (C) Very soft dark gray CLAYSHALE; highly weathered to decomposed, carbonaceous, laminated to thinly bedded.
- R-3 No Core Loss, RQD = 80%
 (D) Soft to medium hard gray SHALE; highly weathered to decomposed, arenaceous, thinly bedded.
- (E) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, laminated to medium bedded, unfractured to slightly fractured, contains coal stringers.
- R-4 No Core Loss, RQD = 98%
 R-5 No Core Loss, RQD = 98%
- (F) Very hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, massively bedded, unfractured.
- R-6 No Core Loss, RQD = 100%
 (G) Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, 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 = 27%
 R-13 No Core Loss, RQD = 100%
 R-14 No Core Loss, RQD = 100%
 R-15 No Core Loss, RQD = 100%

R-450

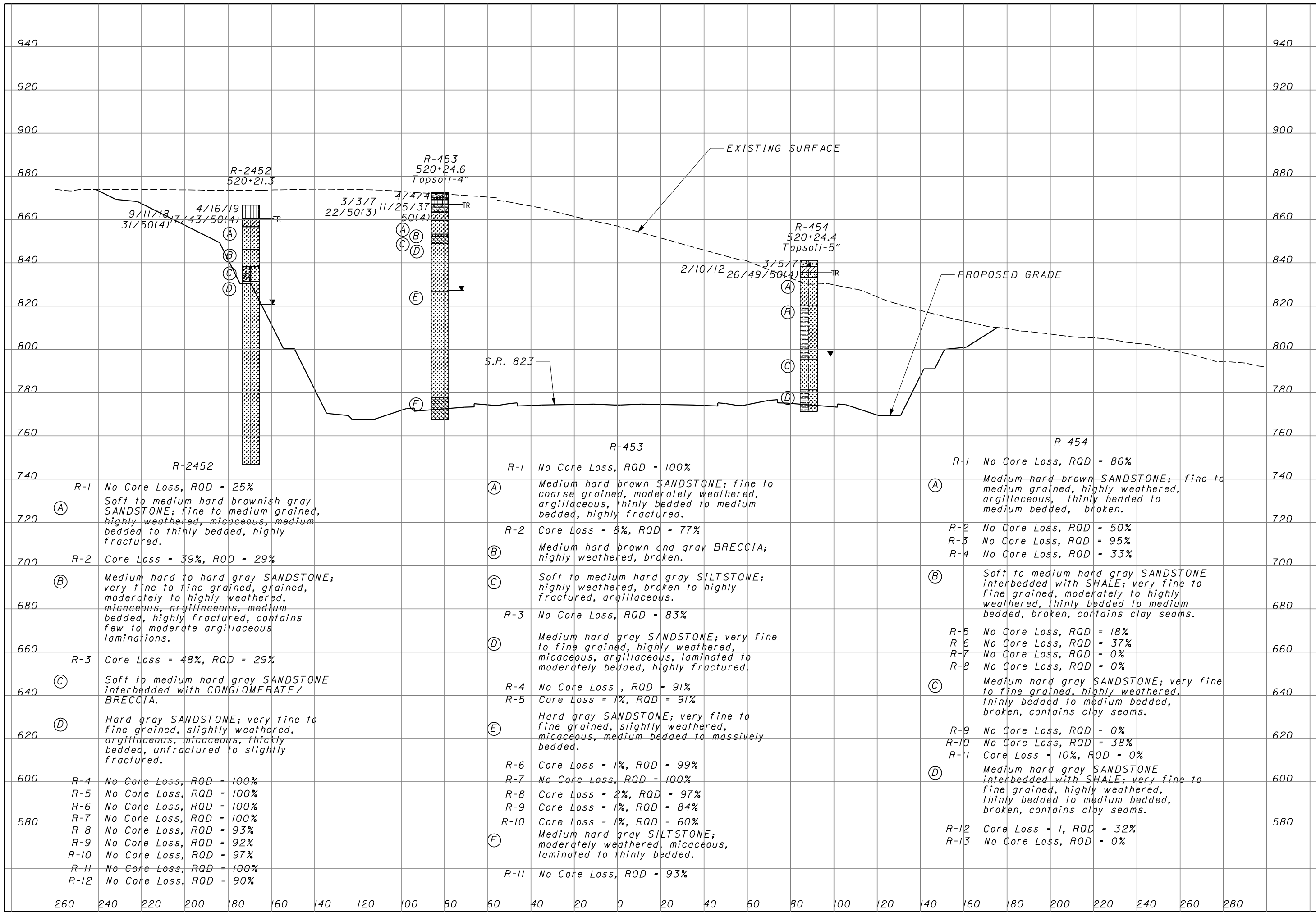
- R-1 No Core Loss, RQD = 63%
 (A) Medium hard brown and light gray SANDSTONE; fine to medium grained, highly weathered, broken, contains numerous low angle rust stained and clay filled fractures.
- R-2 No Core Loss, RQD = 90%
 (B) Soft to medium hard dark gray and black SHALE; moderately to highly weathered, carbonaceous, moderately to highly fractured.
- (C) Soft gray SHALE; highly weathered to decomposed, thinly laminated, arenaceous, moderately to highly fractured.
- R-3 No Core Loss, RQD = 91%
 (D) Medium hard gray SANDSTONE; very fine to fine grained, highly weathered, broken to moderately fractured, argillaceous, contains moderate argillaceous laminations.
- R-4 Core Loss = 4%, RQD = 86%
 R-5 No Core Loss, RQD = 98%
- (E) Medium hard to hard light gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, thickly bedded to massive, unfractured to slightly fractured.
- R-6 No Core Loss, RQD = 95%
 R-7 Core Loss = 9%, RQD = 82%
 R-8 No Core Loss, RQD = 68%
 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 = 93%

R-2451

- R-1 No Core Loss, RQD = 78%
 (A) Medium hard gray SANDSTONE; very fine to medium grained, moderately weathered, argillaceous, micaceous, slightly carbonaceous, laminated to medium bedded, slightly fractured.
- R-2 No Core Loss, RQD = 83%
 (B) 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 = 92%
 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, slightly weathered, argillaceous, micaceous, medium bedded to laminated, moderately fractured, contains few to moderate argillaceous laminations.
- R-9 No Core Loss, RQD = 100%
- (D) Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, micaceous, pyritic, laminated to thickly bedded, contains few argillaceous laminations.
- R-10 No Core Loss, RQD = 100%
 R-11 No Core Loss, RQD = 100%



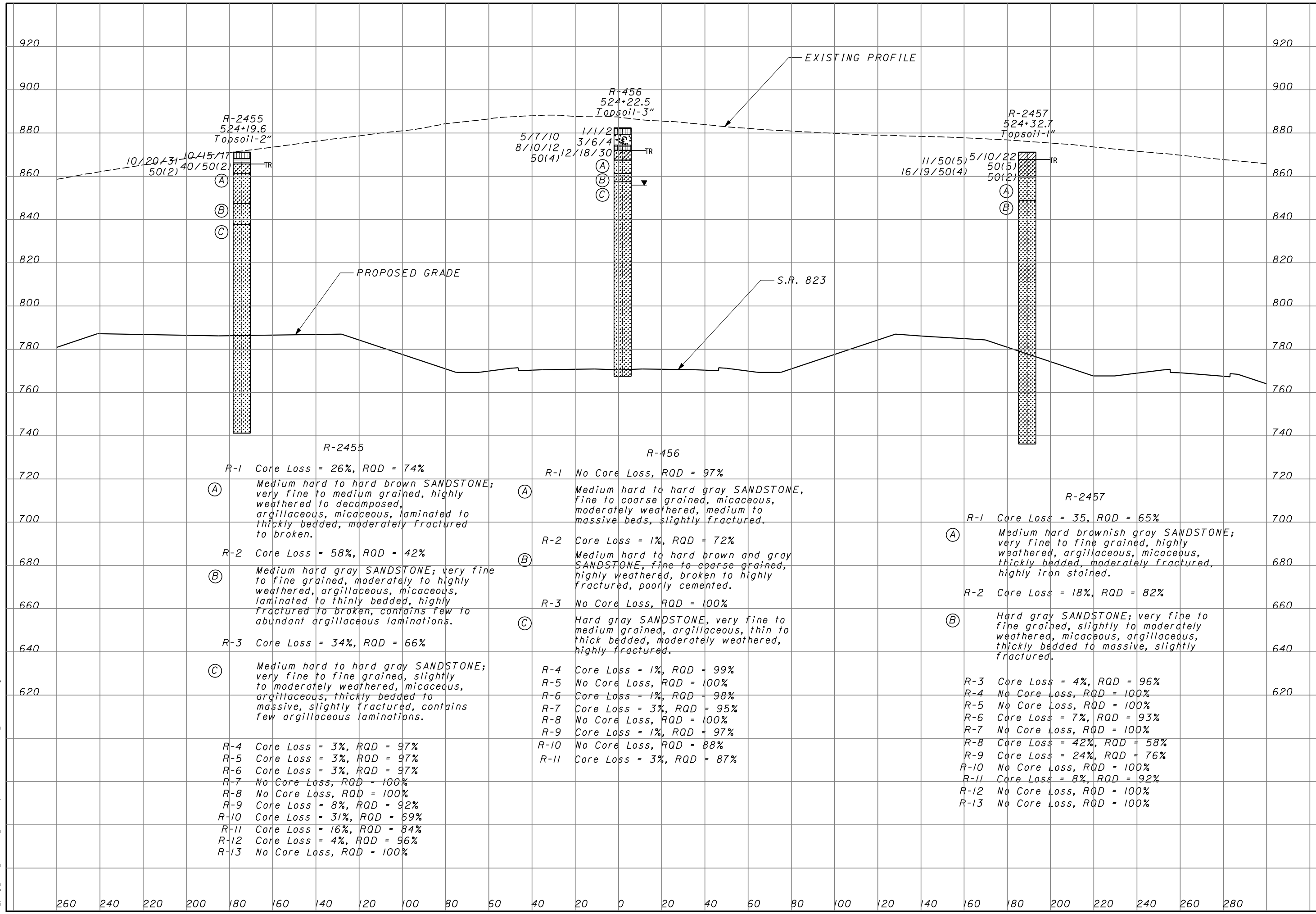
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 CHECKED: AEN
SOIL PROFILE
CROSS SECTION - SR 823 STA. 520+00
SCI-823-6.81
 114/135

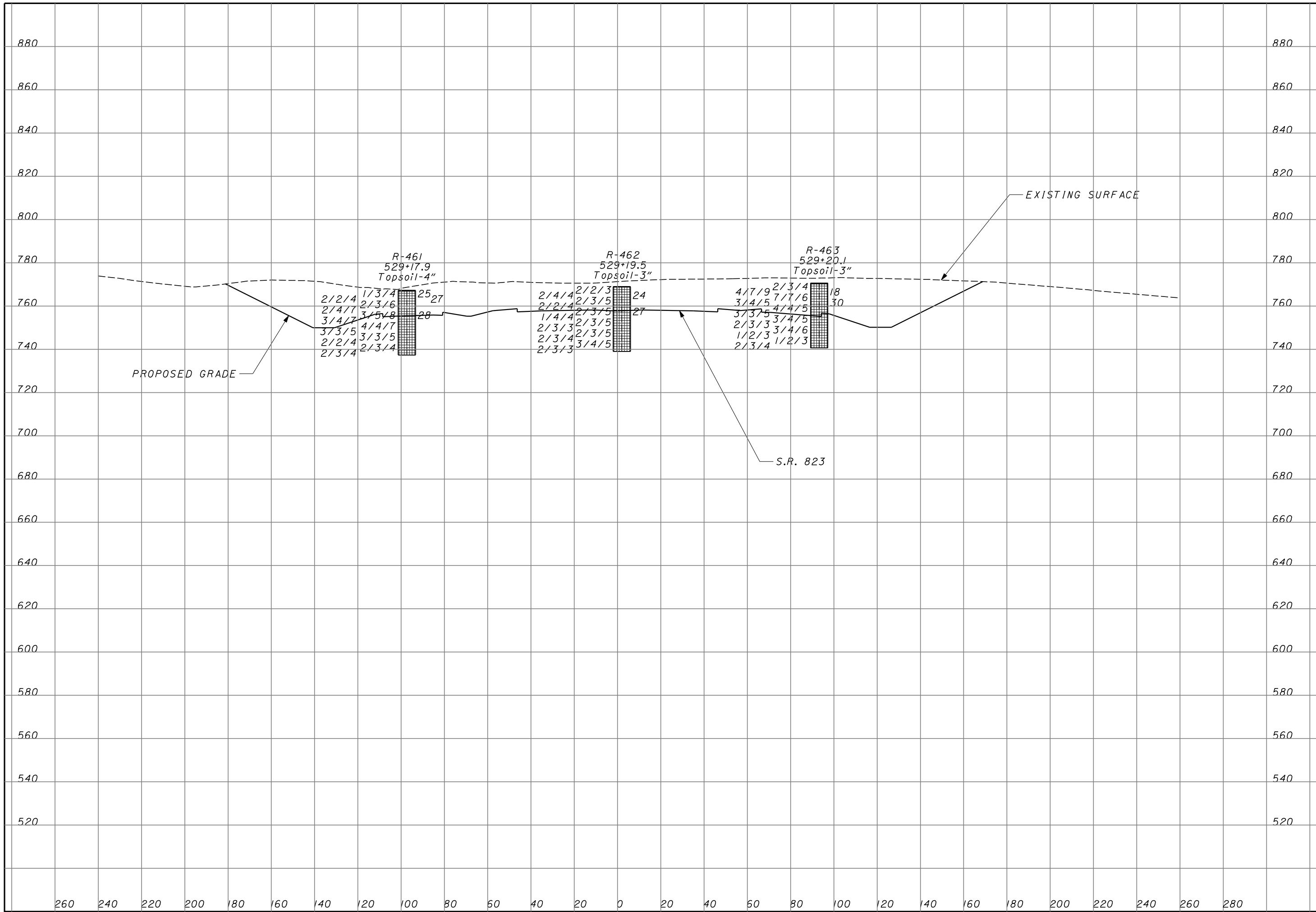
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CROSS SECTION - SR 823 STA. 524+00

SCI-823-6.81

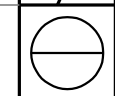


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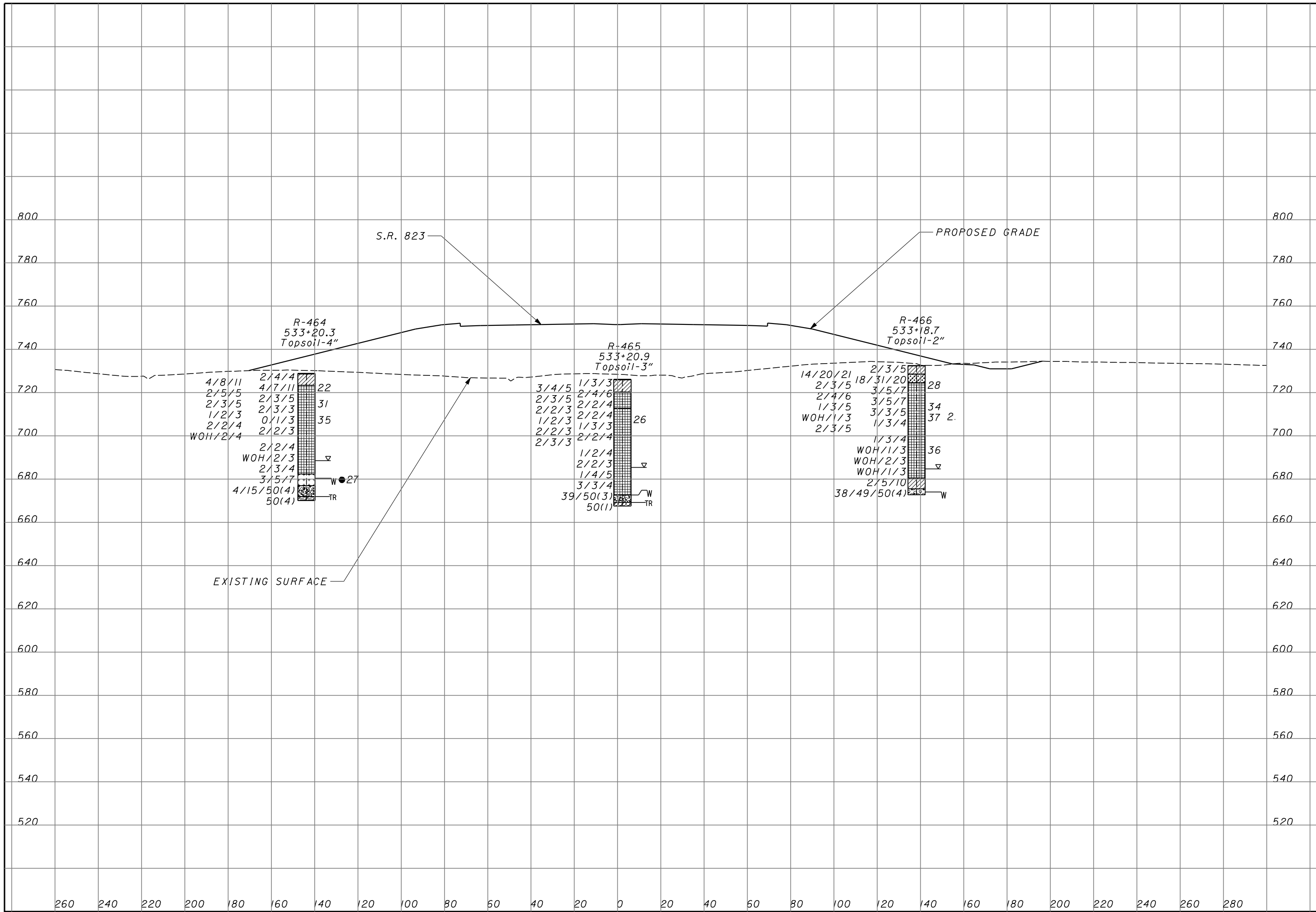
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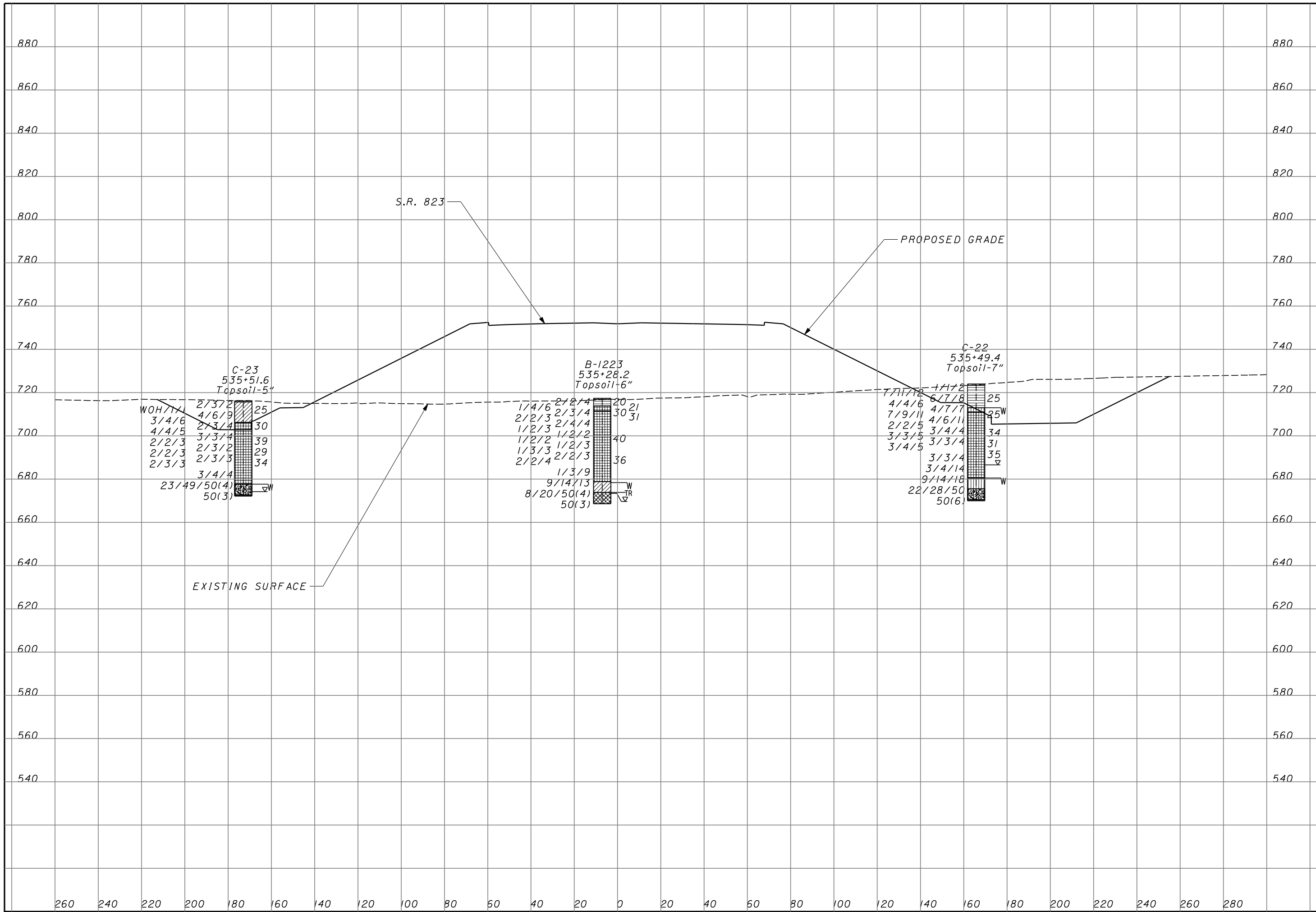
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CHECKED AEN	
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116/135	

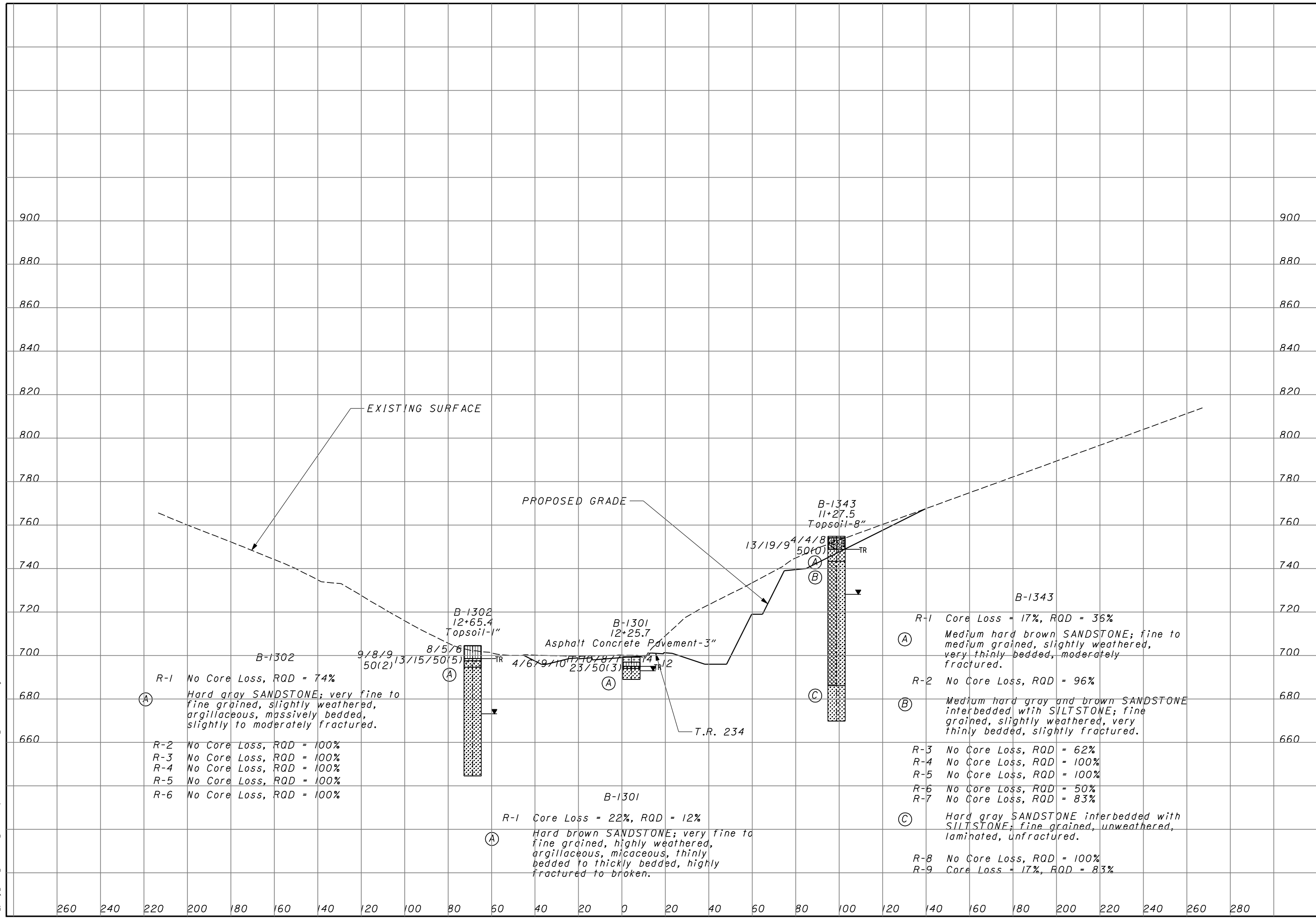
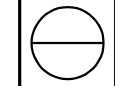


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R-1 No Core Loss, RQD = 74%
Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, massively bedded, slightly to moderately fractured.

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-1 Core Loss = 22%, RQD = 12%
Hard brown SANDSTONE; very fine to fine grained, highly weathered, argillaceous, micaceous, thinly bedded to thickly bedded, highly fractured to broken.

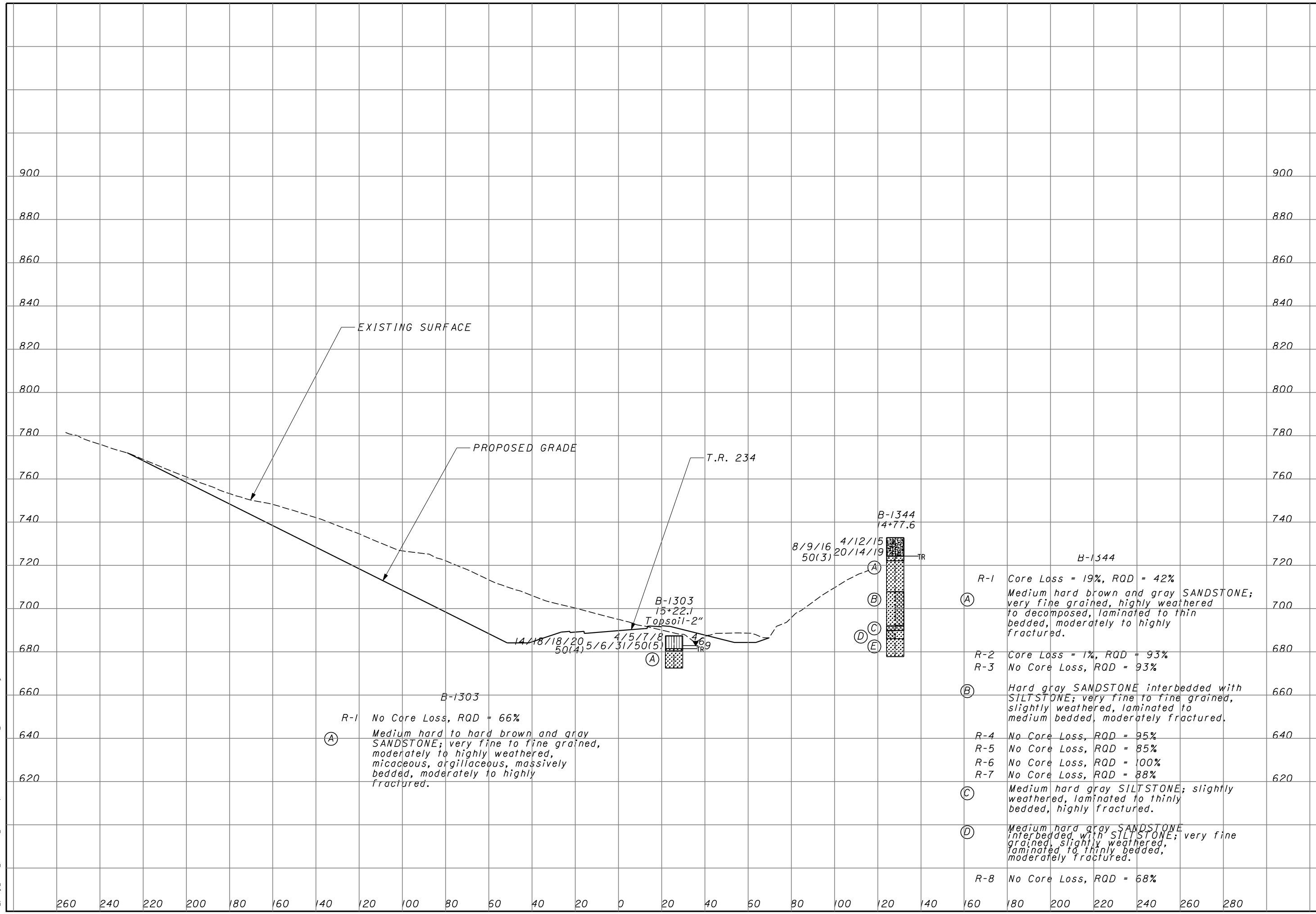
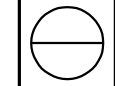
R-1 Core Loss = 17%, RQD = 36%
Medium hard brown SANDSTONE; fine to medium grained, slightly weathered, very thinly bedded, moderately fractured.

R-2 No Core Loss, RQD = 96%
Medium hard gray and brown SANDSTONE interbedded with SILTSTONE; fine grained, slightly weathered, very thinly bedded, slightly fractured.

R-3 No Core Loss, RQD = 62%
R-4 No Core Loss, RQD = 100%
R-5 No Core Loss, RQD = 100%
R-6 No Core Loss, RQD = 50%
R-7 No Core Loss, RQD = 83%

R-8 No Core Loss, RQD = 100%
R-9 Core Loss = 17%, RQD = 83%

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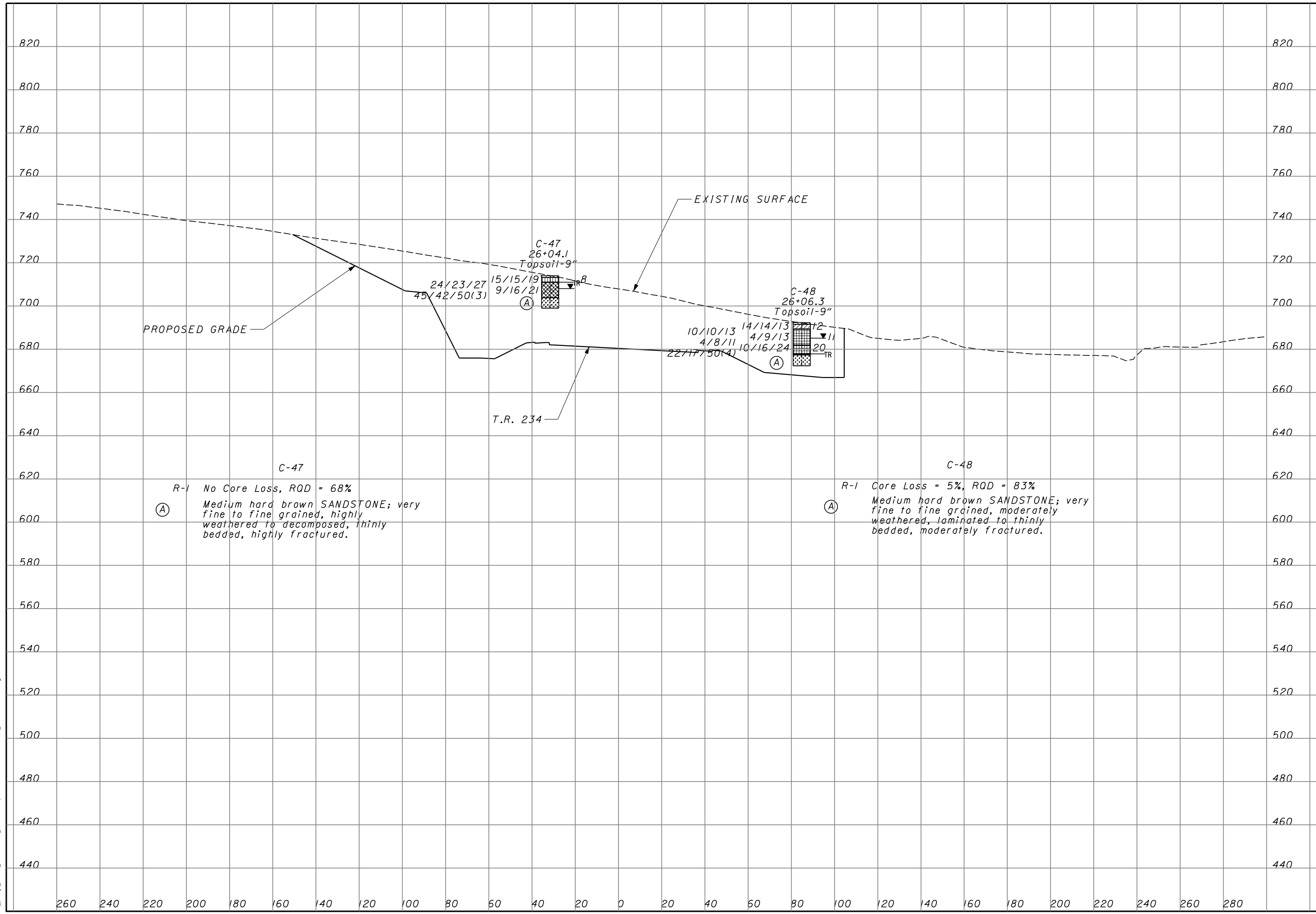
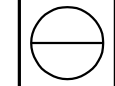
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DRAWN
RLS
CHECKED
AEN

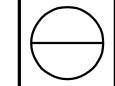
SOIL PROFILE
CROSS SECTION - TR 234 STA. 26+00

SCI-823-6.81

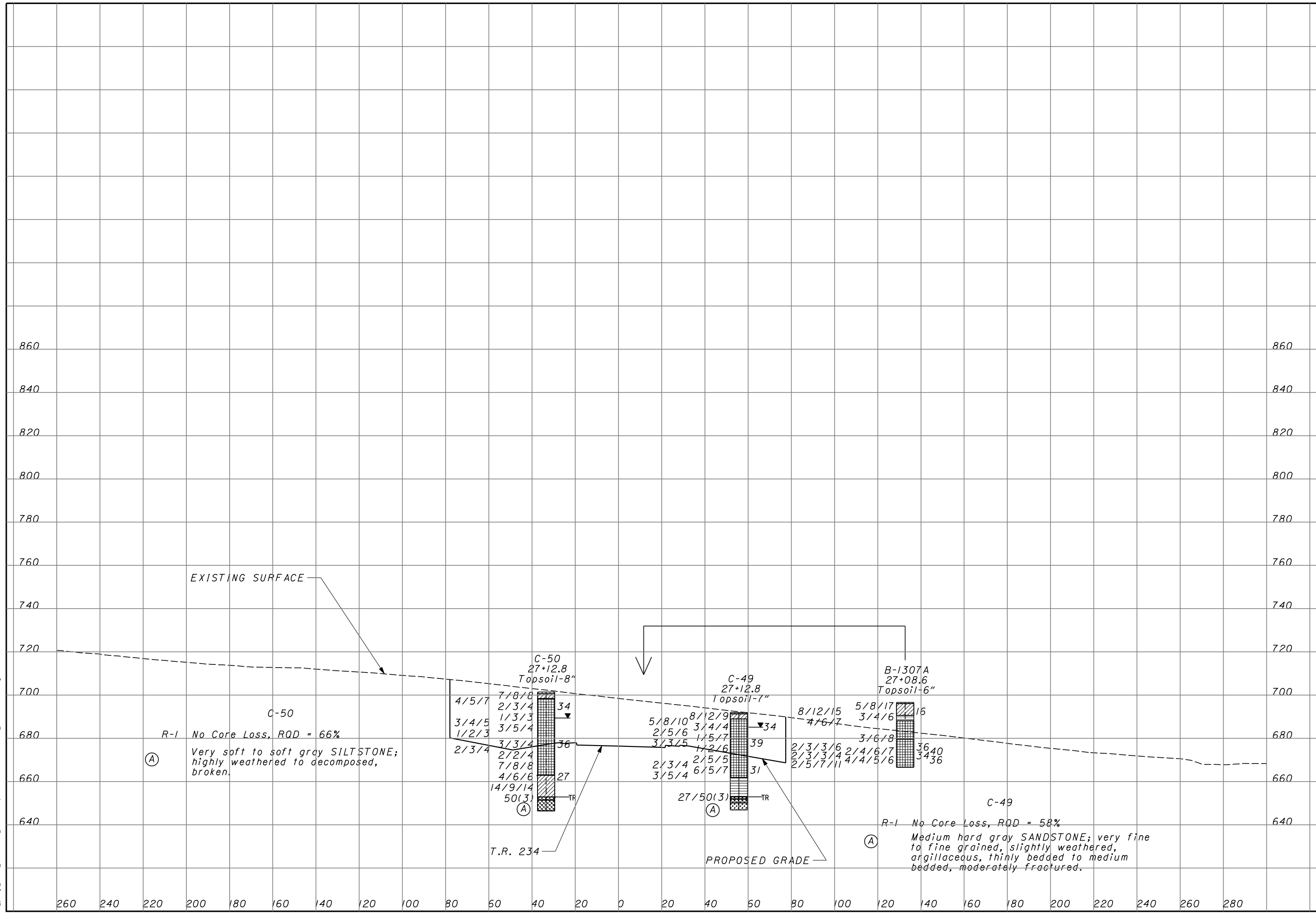
121/135



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EXISTING SURFACE

C-50
27+12.8
Topsoil-8"

4/5/7 7/8/8
2/3/4 1/3/3
3/4/5 3/5/4
1/2/3 3/3/4
2/3/4 2/2/4
7/8/8 4/6/6
14/9/14 50(3)

34
36
27

TR

T.R. 234

(A) R-1 No Core Loss, RQD = 66%
Very soft to soft gray SILTSTONE;
highly weathered to decomposed,
broken.

PROPOSED GRADE

C-49
27+12.8
Topsoil-7"

5/8/10 8/12/9
2/5/6 3/4/4
3/3/5 1/5/7
2/3/4 2/5/5
3/5/4 6/5/7

34
39
31

TR

27/50(3)

(A) R-1 No Core Loss, RQD = 58%
Medium hard gray SANDSTONE; very fine
to fine grained, slightly weathered,
argillaceous, thinly bedded to medium
bedded, moderately fractured.

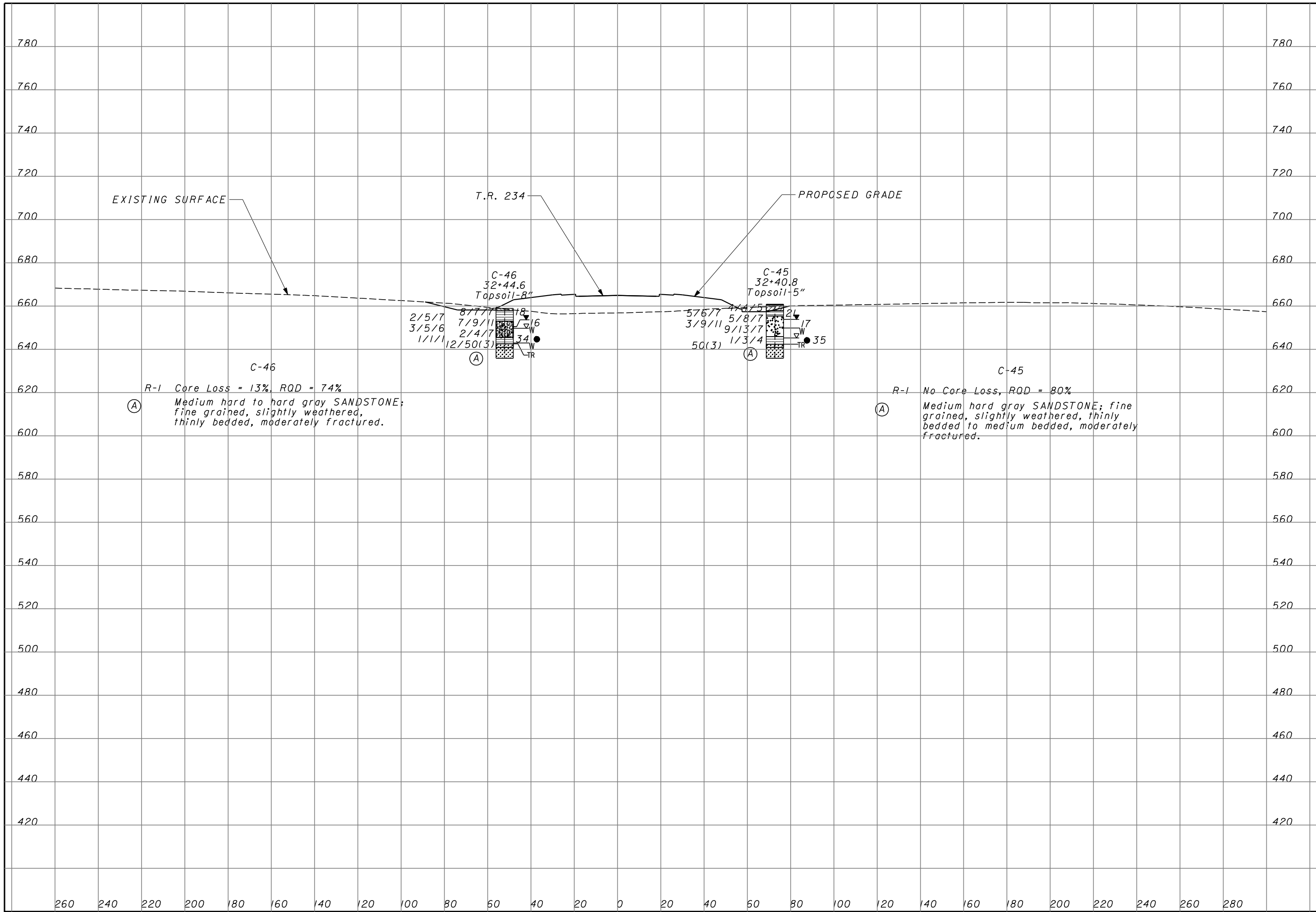
B-1307A
27+08.6
Topsoil-6"

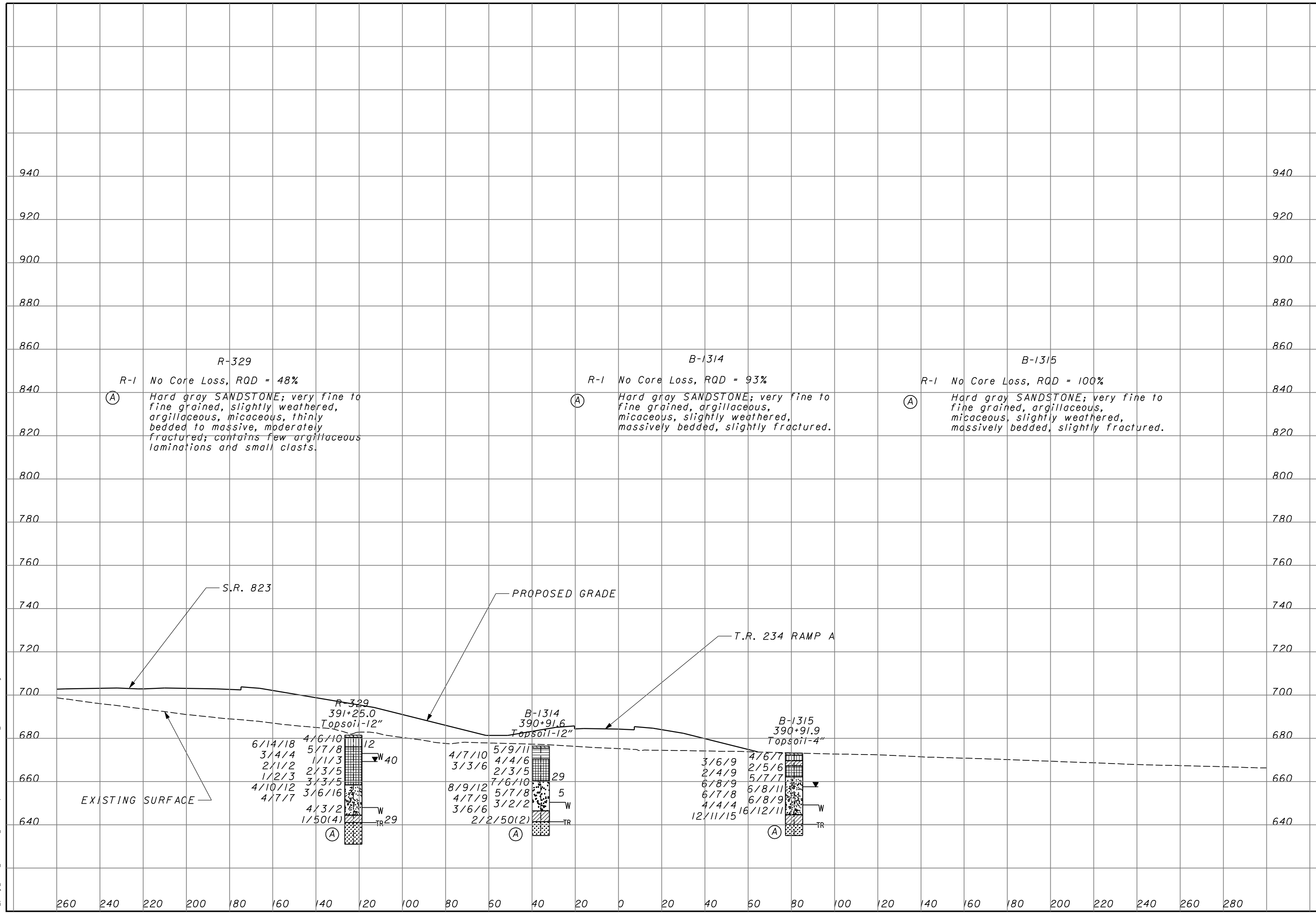
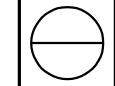
8/12/15 5/8/17
4/6/7 3/4/6
3/6/8

16
36
40
34
36

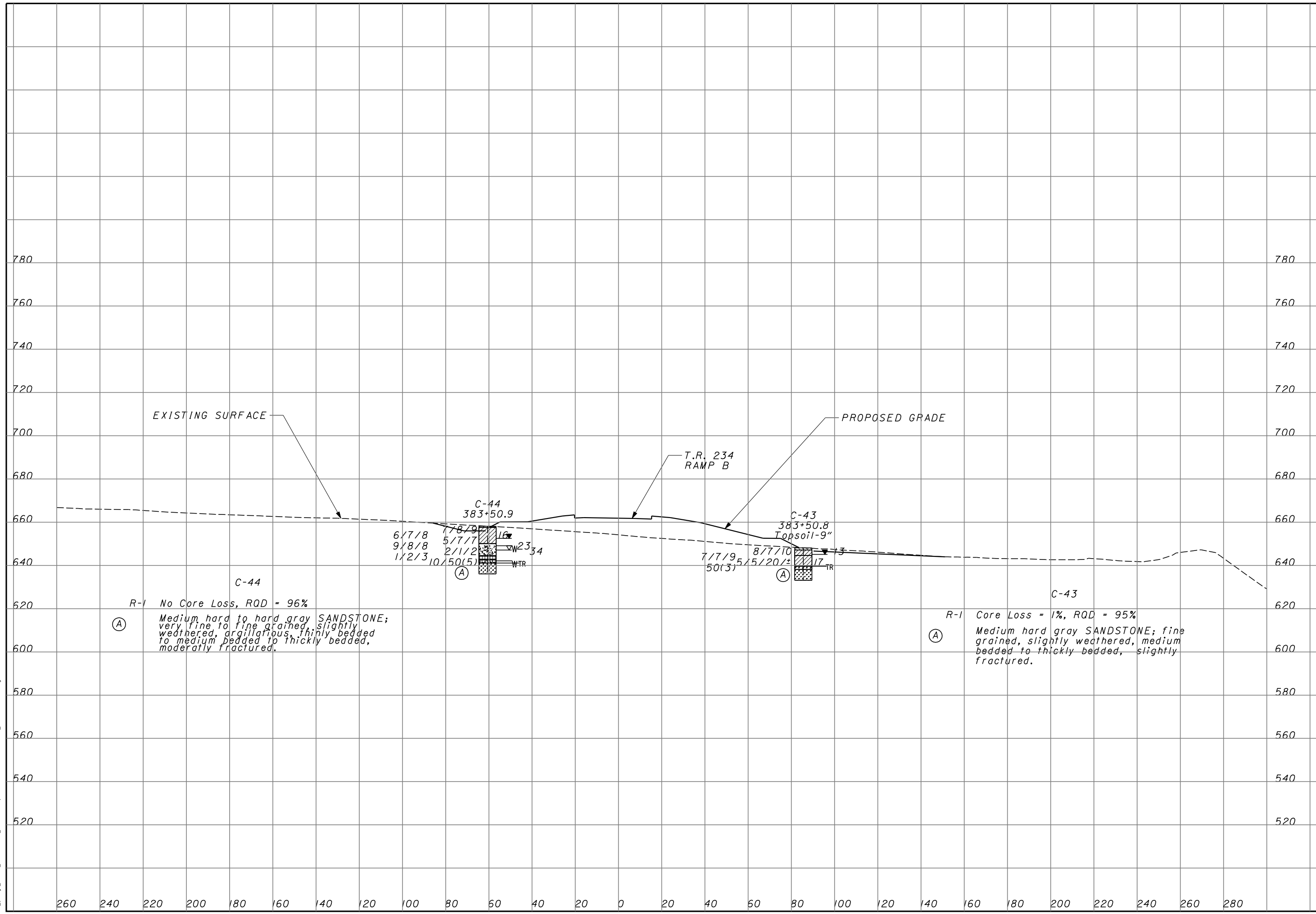
C-49

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EXISTING SURFACE

PROPOSED GRADE

T.R. 234
RAMP B

C-44
383+50.9

C-43
383+50.8
Topsoil-9"

6/7/8
9/8/8
1/2/3
7/8/9
5/7/7
2/1/2
10/50(5)

7/7/9
5/5/20/±
8/7/10
17 TR

C-44

C-43

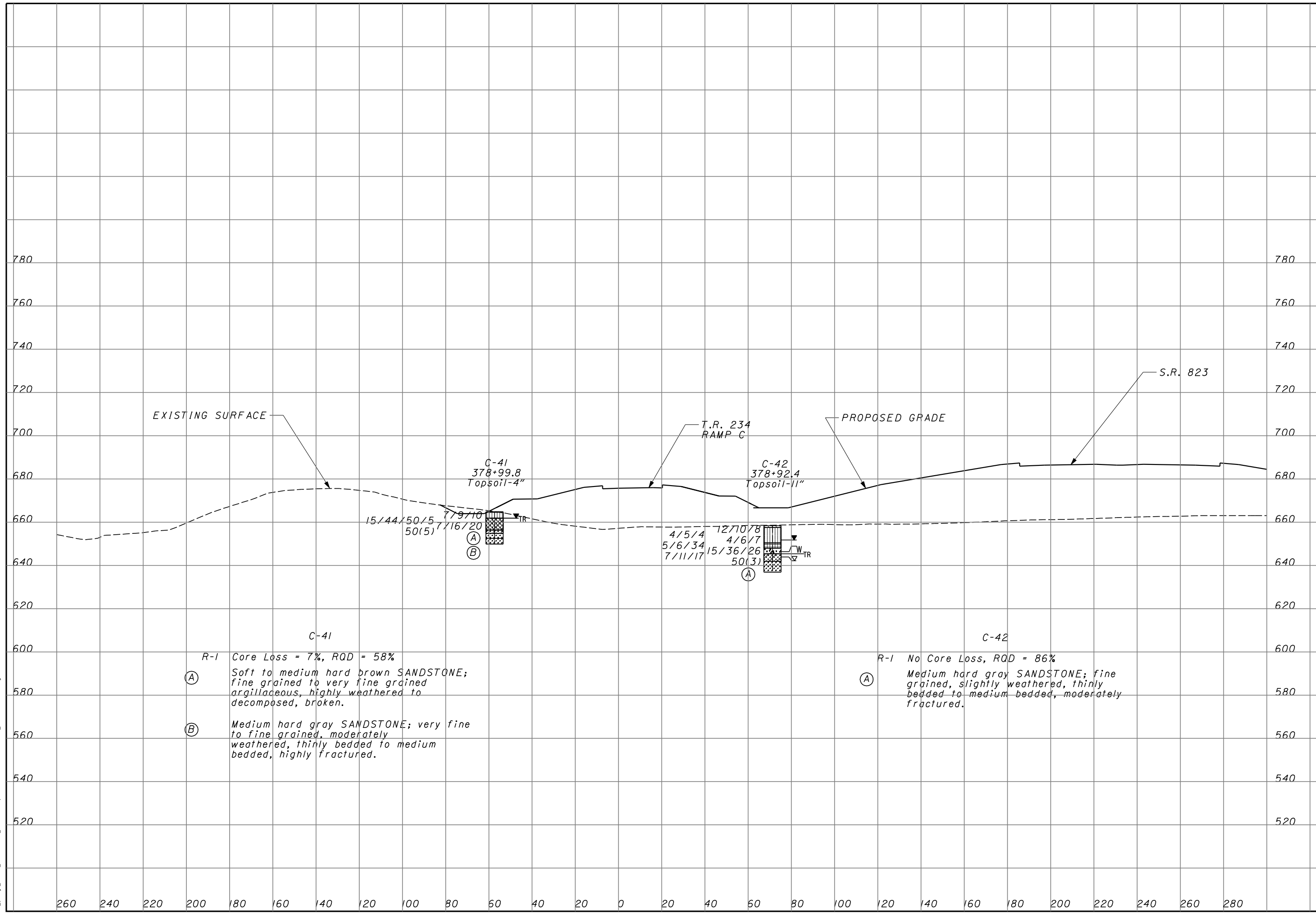
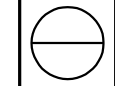
R-1 No Core Loss, RQD = 96%

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

Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, thinly bedded to medium bedded to thickly bedded, moderately fractured.

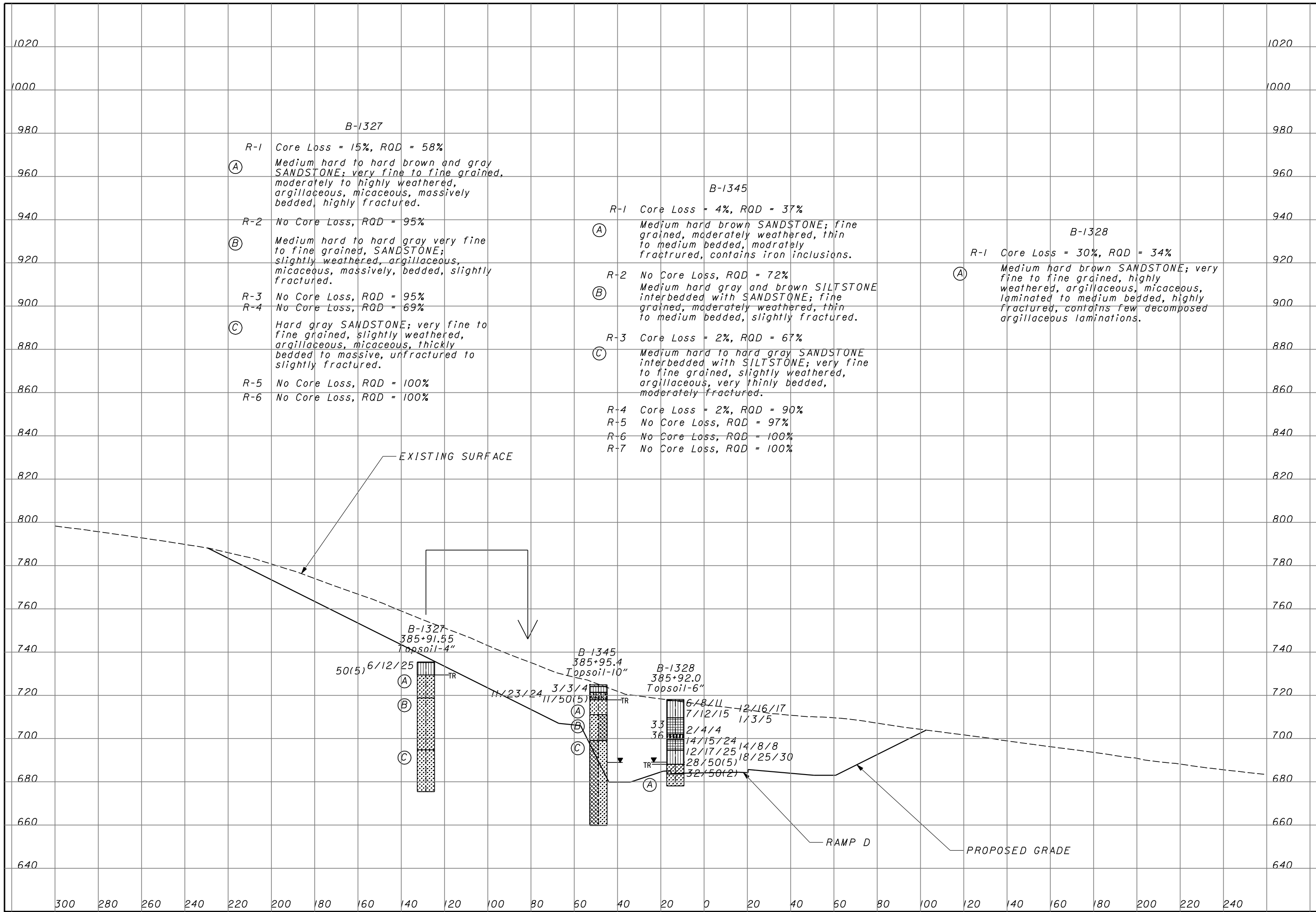
Medium hard gray SANDSTONE; fine grained, slightly weathered, medium bedded to thickly bedded, slightly fractured.

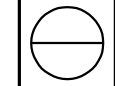
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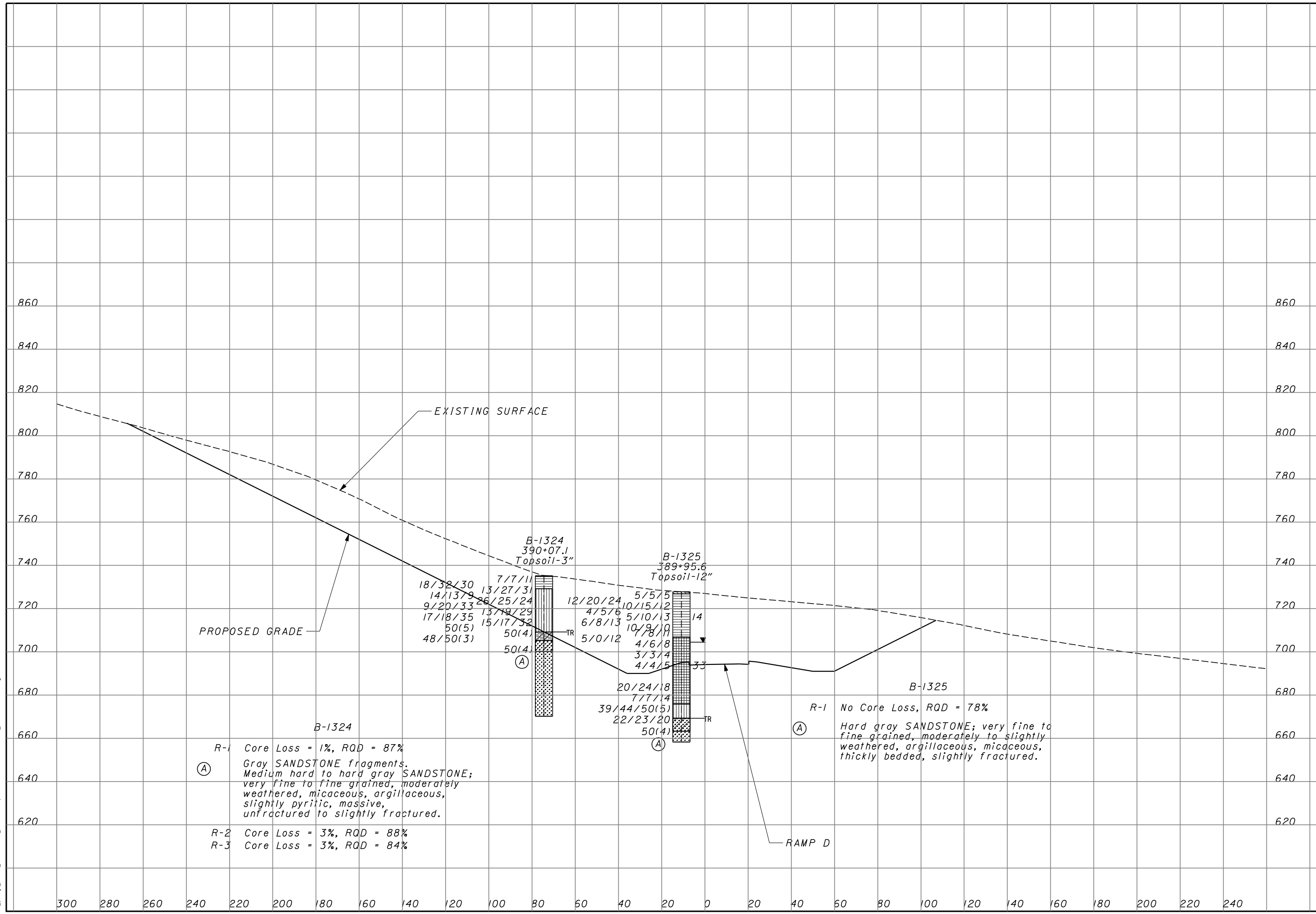
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(A) R-1 Core Loss = 1%, RQD = 87%
Gray SANDSTONE fragments.
Medium hard to hard gray SANDSTONE;
very fine to fine grained, moderately
weathered, micaceous, argillaceous,
slightly pyritic, massive,
unfractured to slightly fractured.

R-2 Core Loss = 3%, RQD = 88%
R-3 Core Loss = 3%, RQD = 84%

(A) R-1 No Core Loss, RQD = 78%
Hard gray SANDSTONE; very fine to
fine grained, moderately to slightly
weathered, argillaceous, micaceous,
thickly bedded, slightly fractured.

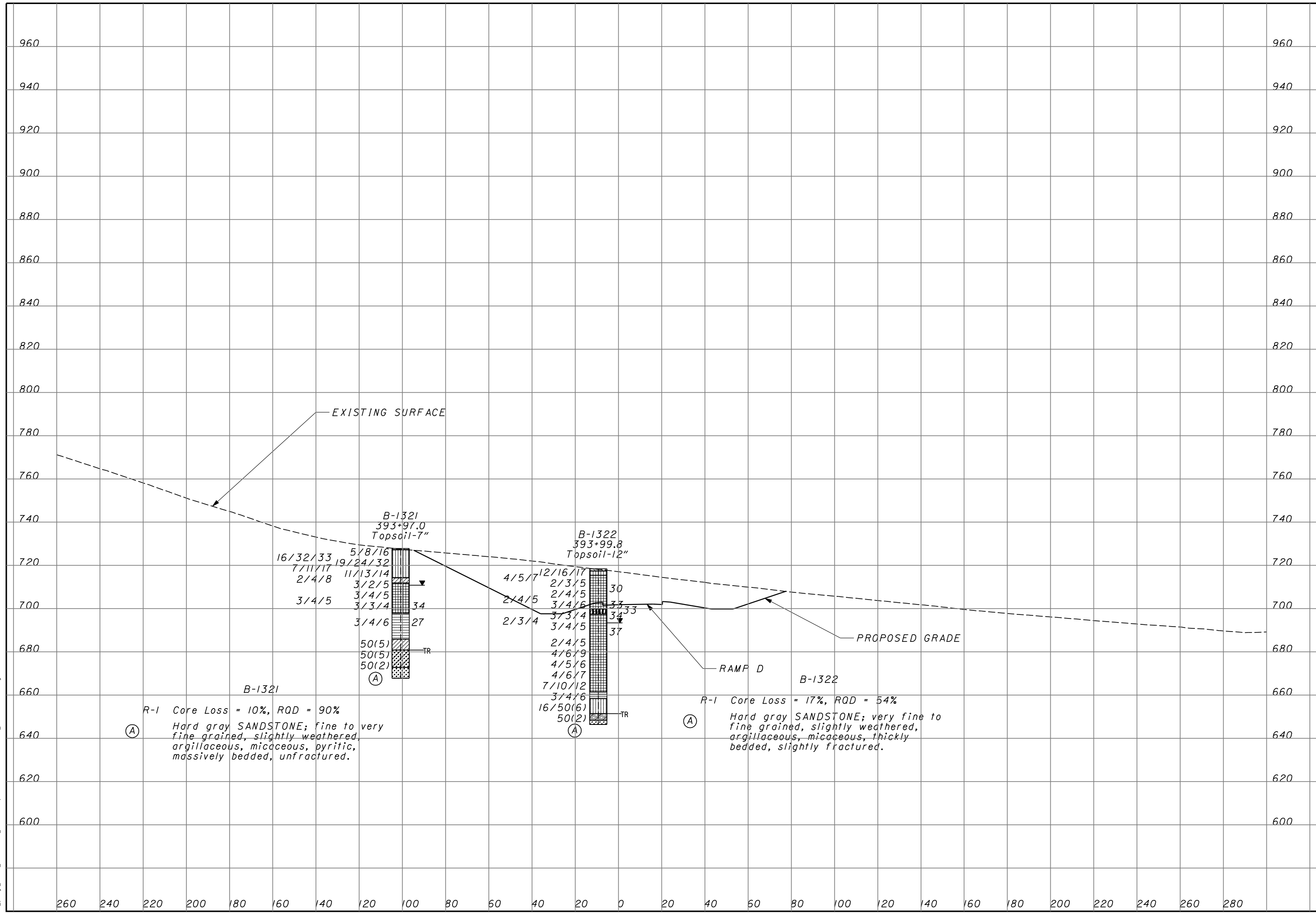
B-1324
390+07.1
Topsoil-3"

18/32/30 7/7/11
14/13/9 13/27/31
9/20/33 26/25/24
17/18/35 13/19/29
50(5) 15/17/32
48/50(3) 50(4)
50(4)
TR

B-1325
389+95.6
Topsoil-12"

12/20/24 5/5/5
4/5/6 10/15/12
6/8/13 5/10/13
10/9/10
5/0/12 4/6/8
4/4/5 3/3/4
4/4/5 33
20/24/18
7/7/14
39/44/50(5)
22/23/20
50(4)
TR

RAMP D



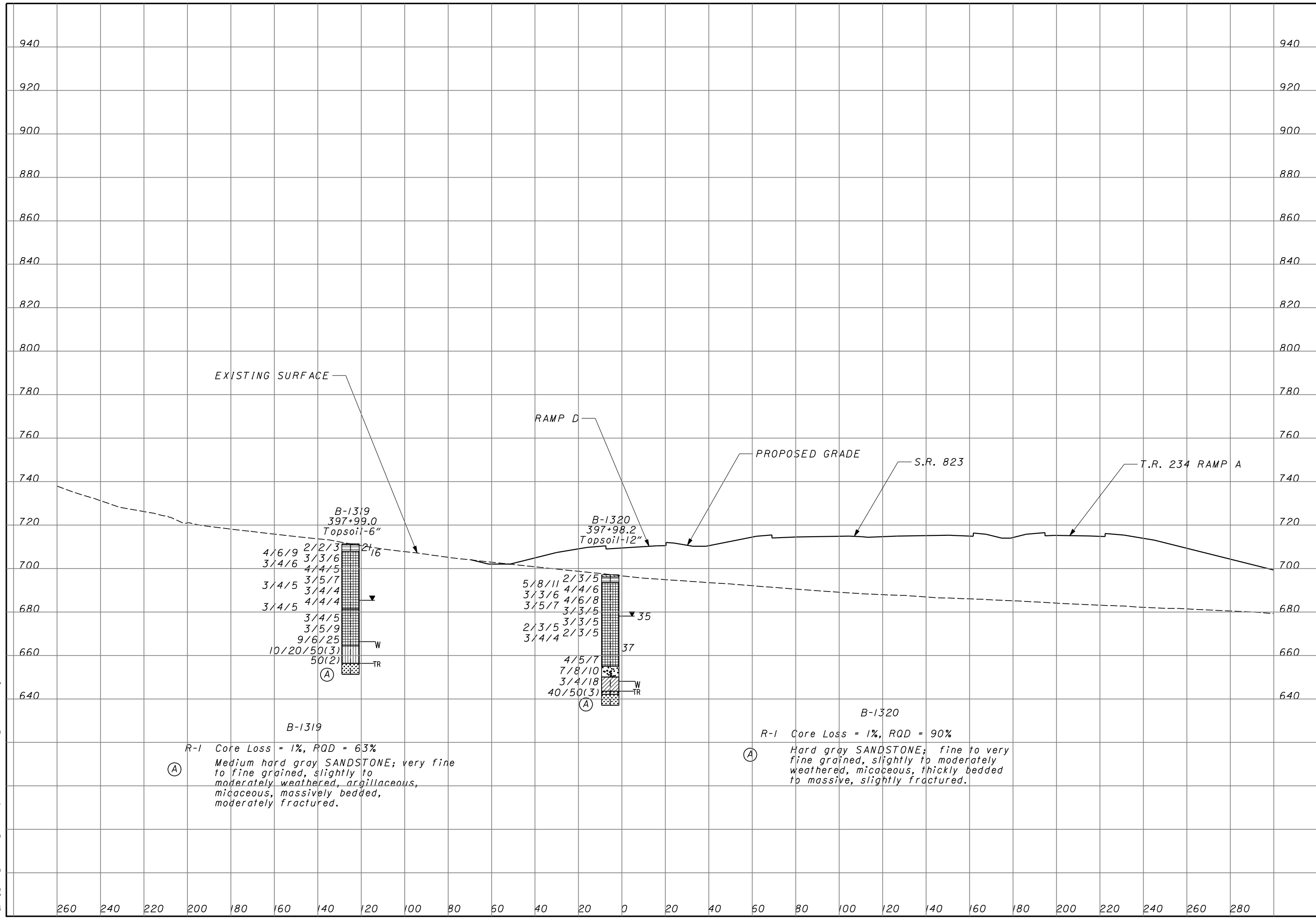
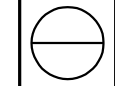
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DRAWN
RLS
CHECKED
AEN

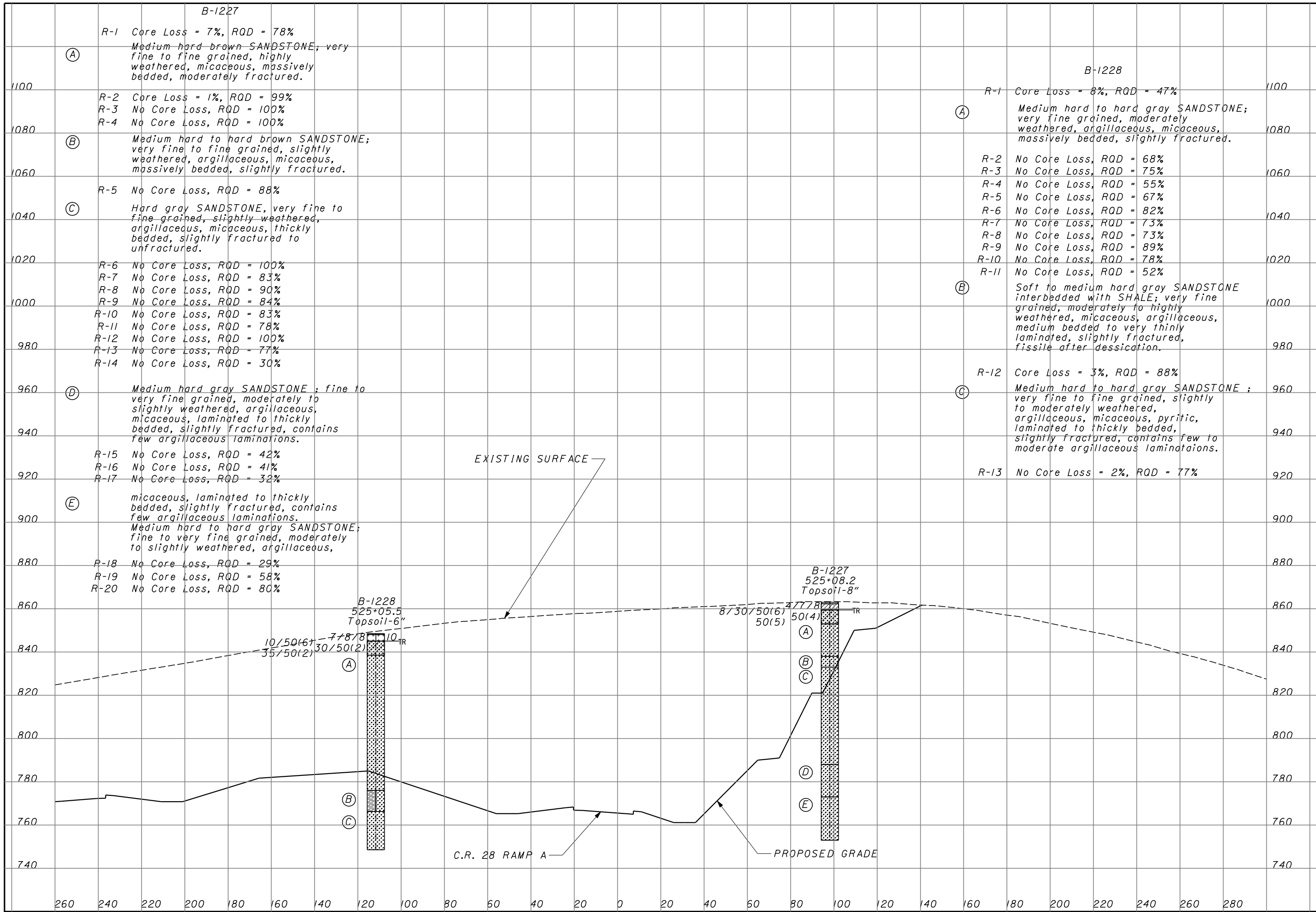
SOIL PROFILE
CROSS SECTION - TR 234 RAMP D STA. 398+00

SCI-823-6.81

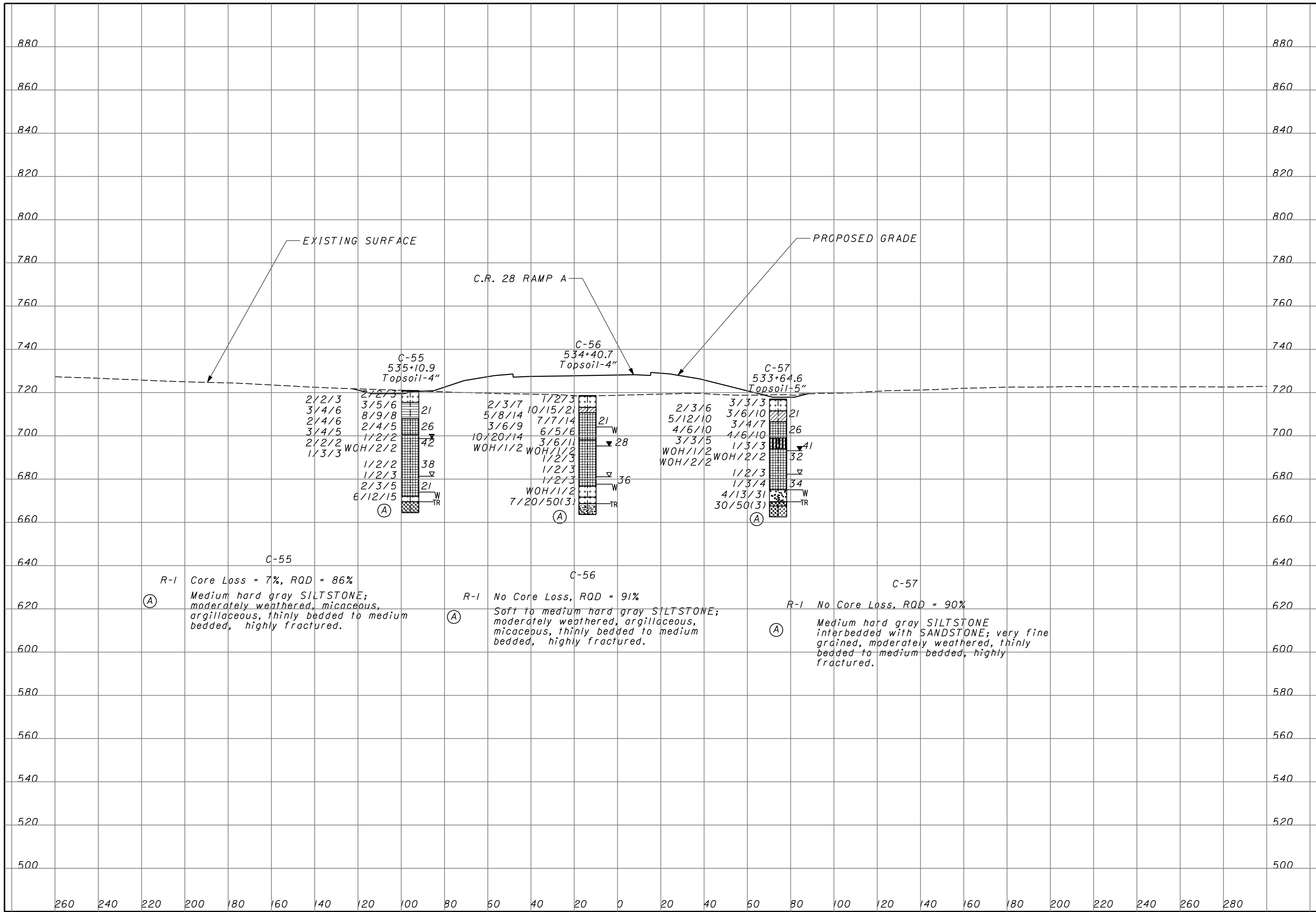


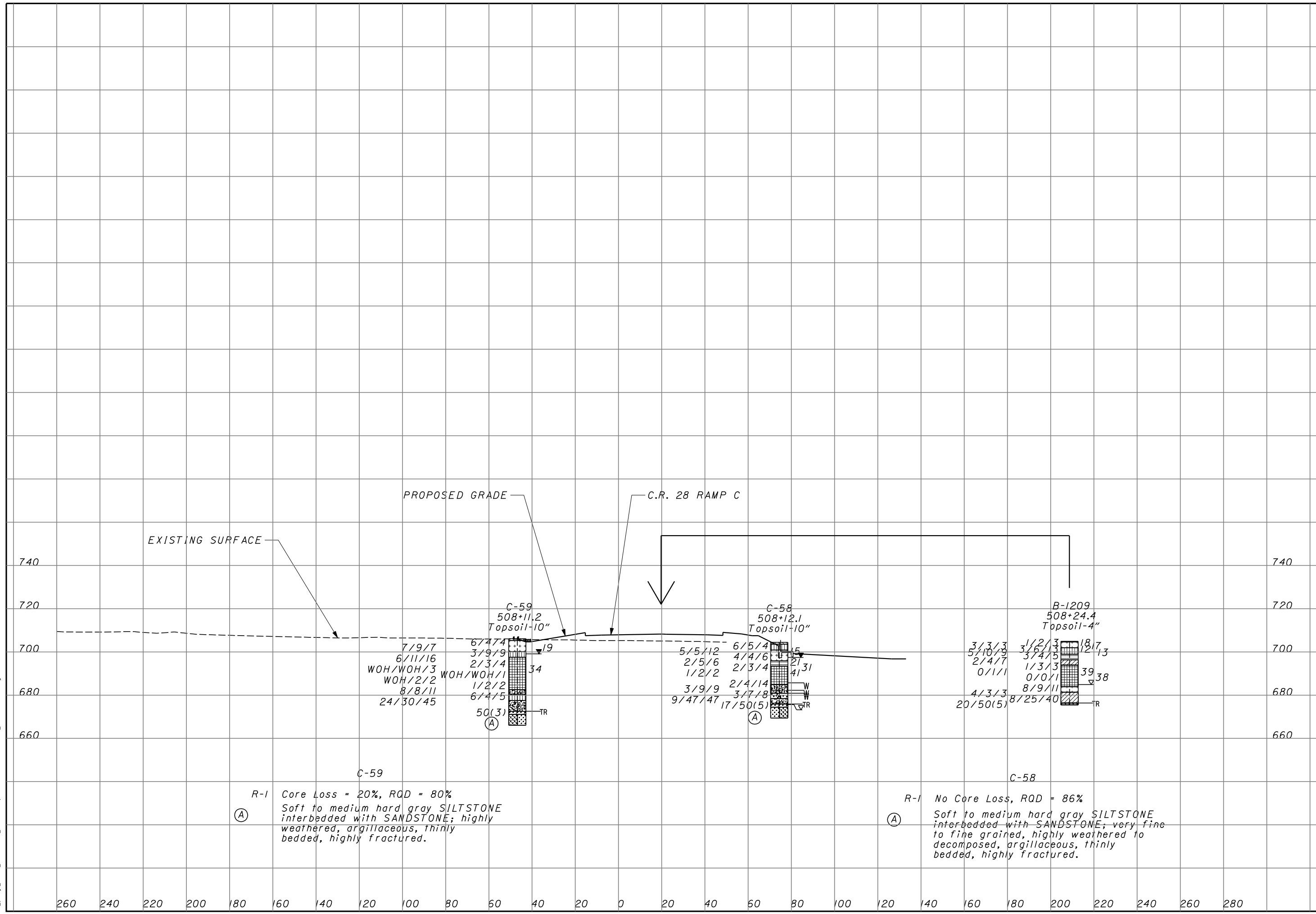
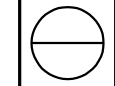
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3/6/2008
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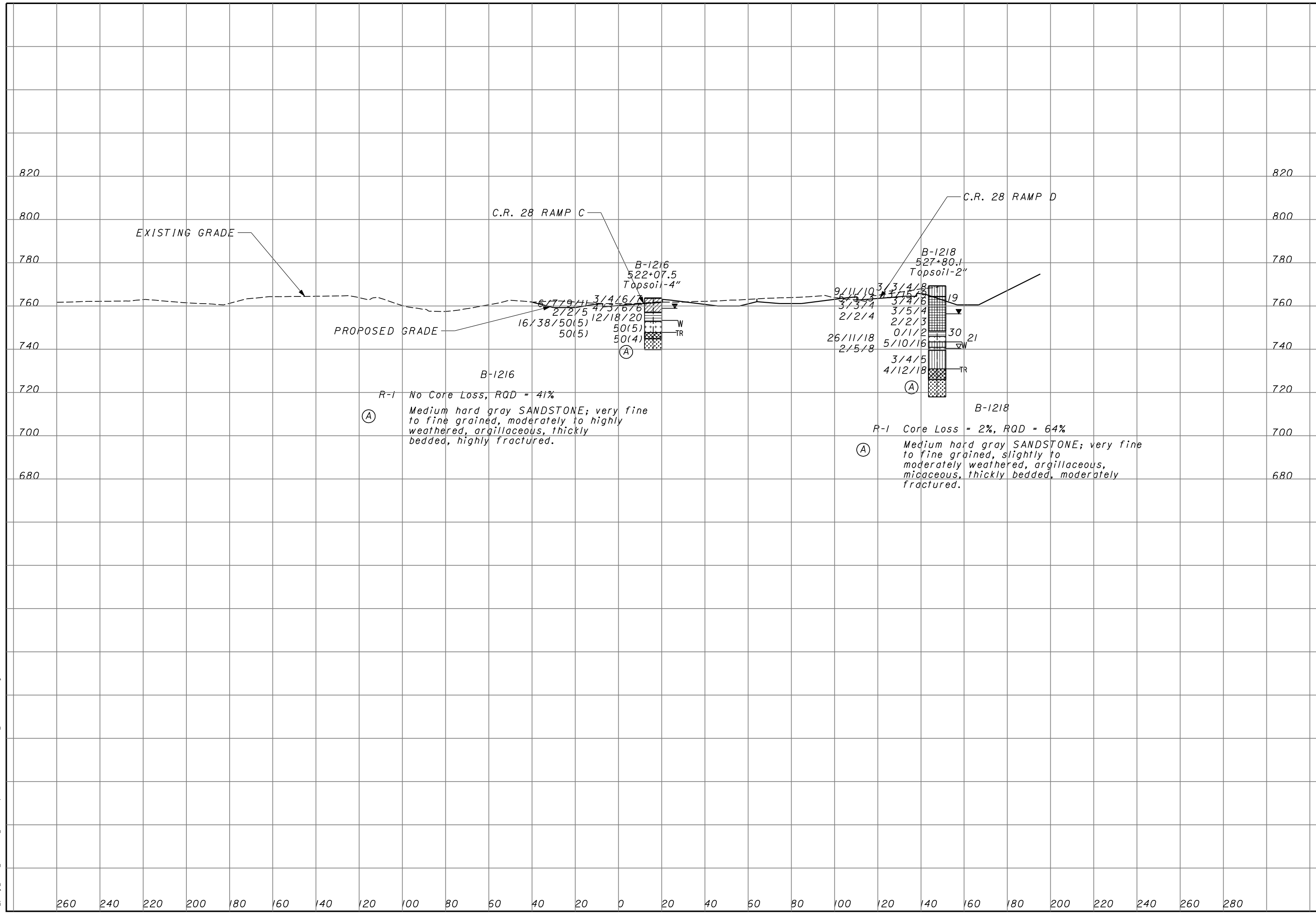
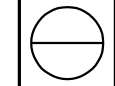




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SOIL PROFILE
CROSS SECTION - SR 728 RAMP C STA. 522+00

SCI-823-6.81



B-1216
R-1 No Core Loss, RQD = 41%
Medium hard gray SANDSTONE; very fine to fine grained, moderately to highly weathered, argillaceous, thickly bedded, highly fractured.

B-1218
R-1 Core Loss = 2%, RQD = 64%
Medium hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered, argillaceous, micaceous, thickly bedded, moderately fractured.

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