ID: R-2518B

PROJECT: C202007

CONTENTS:

INVESTIGATION ALONG -L-

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

STATE PROJECT 34445.1.1 I.D. NO. R-2518B

F.A. PROJECT

COUNTY YANCEY

DESCRIPTION US 19E FROM EAST OF THE YANCEY CO. LINE TO SR 1336

METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2518B	1	187

STATE W.B.S. ELEMENT	F.A. PROJ. NO.	DESCRIPTION
34445.1.1	---	PE
34445.2.3	---	R/W & UTIL.
34445.4.2	---	CONST.

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

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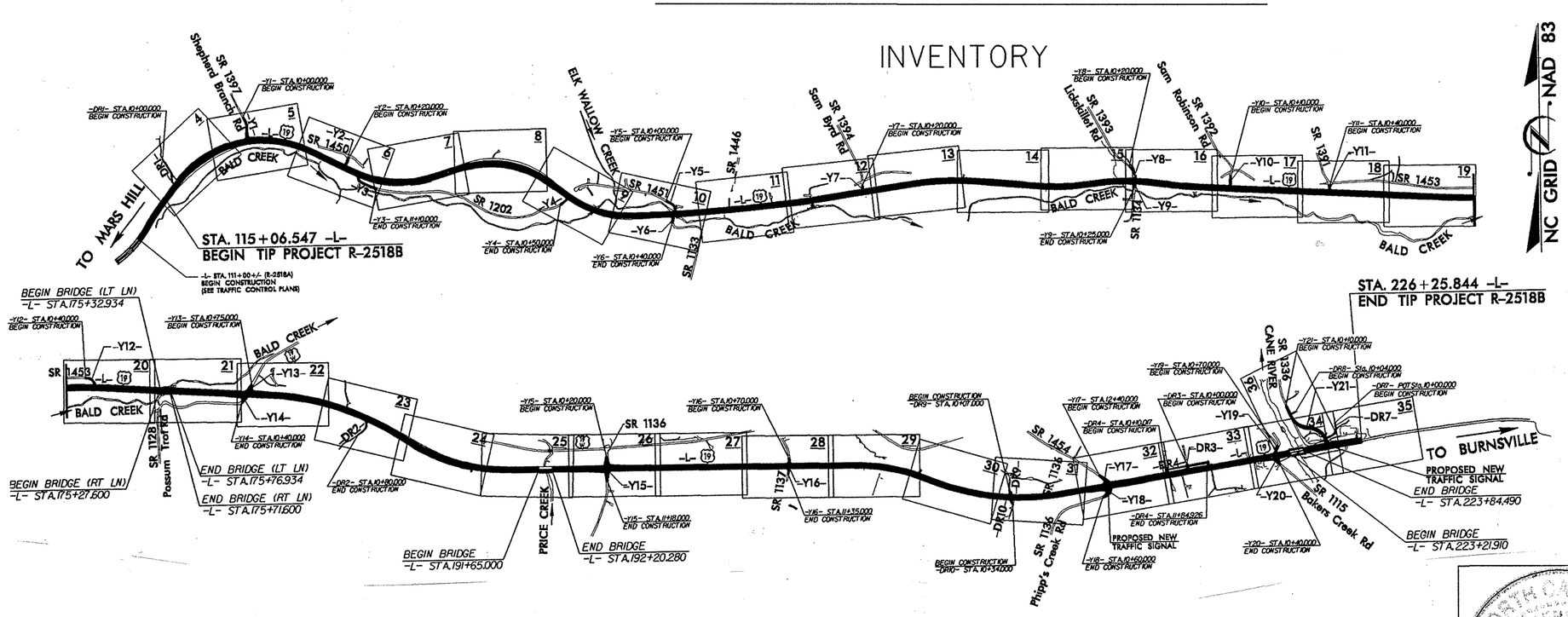
INVENTORY



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INVESTIGATED BY J C KUHNE PERSONNEL D O CHEEK

CHECKED BY C COFFEY

SUBMITTED BY J C KUHNE GK ROSE

DATE

DRAWN BY: J C KUHNE

NORTH CAROLINA REGISTERED SEAL 1978 ENGINEER

SEAL

SIGNATURE 7/15/05

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
R-2518B	34445.1.1	2	187

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL COMPOSITION, ANGULARITY STRUCTURE, PLASTICITY, ETC. EXAMPLE: *VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6.*

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-A	A-1-B		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
LIQUID LIMIT	6 MX		N.P.	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PLASTIC INDEX				10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN			
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

P.I. OF A-7-5 ≤ L.L. - 30 ; P.I. OF A-7-6 > L.L. - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (BLOWS)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (kN/m^2)
GENERALLY GRANULAR MATERIAL	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	<4 4 TO 10 10 TO 30 30 TO 50 >50	N/A
GENERALLY SILT-CLAY MATERIAL	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	<2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 >30	<25 25 TO 50 50 TO 100 100 TO 200 200 TO 400 >400

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.0	0.42	0.25	0.075	0.053

BOULDER	COBBLE	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12"	3"				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL — SHRINKAGE LIMIT		
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX	DRY STRENGTH
NONPLASTIC	0-5	VERY LOW
LOW PLASTICITY	6-15	SLIGHT
MED. PLASTICITY	16-25	MEDIUM
HIGH PLASTICITY	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

WELL GRADED- INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.
UNIFORM- INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)
GAP-GRADED- INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 30
MODERATELY COMPRESSIBLE	LIQUID LIMIT 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

ROCK DESCRIPTION

IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED THAT MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:

WEATHERED ROCK (SWR) (HWR)		SOFT WEATHERED ROCK	MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGERS AND YIELDS SPT VALUES > 100 BLOWS BUT < SPT REFUSAL
		HARD WEATHERED ROCK	MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGERS AND YIELDS SPT REFUSAL.*
HARD ROCK (HR)	CORED ROCK	INFERRED ROCK LINE**	MATERIAL THAT CANNOT BE PENETRATED BY POWER AUGERS, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING A SAMPLE.

*SPT REFUSAL ≤2.5cm OF PENETRATION PER 50 BLOWS.

**AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. THE HARD ROCK SYMBOL IS SHOWN WHEN ROCK IS CORED AND ONLY TO THAT DEPTH CORED. A DESCRIPTION OF ROCK IS GIVEN INCLUDING:

CORE RECOVERY (REC.)- TOTAL LENGTH OF ROCK RECOVERED IN THE CORE BARREL DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.

ROCK QUALITY DESIGNATION (ROD)- TOTAL LENGTH OF SOUND ROCK SEGMENTS RECOVERED THAT ARE LONGER THAN OR EQUAL TO 0.1m DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING.
- STATIC WATER LEVEL AFTER_____HOURS.
- PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA
- SPRING OR SEEPAGE

MISCELLANEOUS SYMBOLS AND ABBREVIATIONS

- ROADWAY EMBANKMENT WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS
- INFERRED SOIL BOUNDARIES
- ALLUVIAL/RESIDUAL BOUNDARIES
- 25° DIP DIRECTION AND DIP OF STRUCTURES
- APPARENT DIP (NORMAL TO_____)
- SPT / DPT / VST TEST BORING
- AUGER BORING
- CORE BORING
- MW MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- SPT N-COUNT

SAMPLE DESIGNATIONS
S- BULK SAMPLE
SS- SPLIT SPOON SAMPLE
ST- SHELBY TUBE SAMPLE
RS- ROCK SAMPLE
●- SOUNDING ROD

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] MOBILE B
- [ ] BK-51
- [X] CME-45
- [X] CME-550
- [ ] PORTABLE HOIST
- [ ] OTHER _____
- [ ] OTHER _____

AUGER TOOLS:
- [ ] 6" (152 mm) CONTINUOUS FLIGHT
- [X] 8" (203 mm) HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG. - CARBIDE INSERTS
- [ ] CLAY BITS

OTHER:

HAMMER TYPE:
- [X] AUTOMATIC
- [ ] MANUAL

CORE BORING TOOLS:
- [ ] -AX
- [ ] -BX
- [ ] -NX

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [ ] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER.
APPARENT DIP - THE DIP OF ROCK STRATA NOT PERPENDICULAR TO STRIKE.
AQUIFER - A WATER BEARING FORMATION OR STRATA.
AUGER REFUSAL (A.R.)- POINT AT WHICH POWER AUGERS WILL NOT PENETRATE.
BEDDED - SOIL OR ROCK LYING IN A POSITION ESSENTIALLY PARALLEL.
BEDROCK - ROCK OF RELATIVELY GREAT THICKNESS AND EXTENT IN ITS ORIGINAL LOCATION.
CALCAREOUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
COHESIVE SOIL - A SOIL THAT WHEN UNCONFINED HAS CONSIDERABLE DRY STRENGTH AND SIGNIFICANT COHESION WHEN SUBMERGED.
COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
CORE RECOVERY (% REC.) - TOTAL LENGTH OF ALL ROCK DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
COQUINA - A ROCK TYPE COMPOSED ESSENTIALLY OF MARINE SHELLS CEMENTED BY CALCIUM CARBONATE.
DIKE - IGNEOUS ROCK INTRUSION WHICH IS NARROW COMPARED WITH ITS OTHER DIMENSIONS.
DIP - THE ANGLE BETWEEN A BEDDING PLANE, JOINT PLANE OR FAULT PLANE AND THE HORIZONTAL, MEASURED PERPENDICULAR TO THE STRIKE.
DUMPS - UNCOVERED DEPOSITS OF WASTE MATERIAL SUCH AS WOOD, MASONRY DEBRIS OR GARBAGE.
FAULT - A BREAK IN THE CONTINUITY OF A BODY OF ROCK, ATTENDED BY A MOVEMENT ON EITHER OR BOTH SIDES OF THE BREAK.
FINES - PORTIONS OF A SOIL FINER THAN NO. 200 U.S. STANDARD SIEVE.
FISSILITY OR FISSILE - A PROPERTY OF SPLITTING EASILY ALONG CLOSELY SPACED PARALLEL PLANES.
FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
FLOODPLAIN - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
FORMATION - A MAPPABLE UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
FRACTURE - A CRACK LARGE ENOUGH TO BE VISIBLE TO THE UNAIDED EYE.
FRIABLE - EASY TO BREAK OR CRUMBLE.
GRANULAR MATERIAL - SOIL THAT WHEN UNCONFINED HAS LITTLE OR NO DRY STRENGTH AND HAS LITTLE OR NO COHESION WHEN SUBMERGED.
GROUNDWATER (G.W.) - WATER THAT IS FREE TO MOVE THROUGH SOIL MASS UNDER THE INFLUENCE OF GRAVITY.
GROUNDWATER LEVEL - LEVEL OF WATER WITH RESPECT TO EXISTING GROUND SURFACE.
HARDPAN - A GENERAL TERM USED TO DESCRIBE A HARD CEMENTED SOIL LAYER WHICH DOES NOT SOFTEN WHEN WET.
INDURATED - EARTH MATERIAL HARDENED BY HEAT, PRESSURE OR CEMENTATION.
INTERBEDDED - ALTERNATING LENSES OR LAYERS OF SOIL AND/OR ROCK MATERIALS.
JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
LAMINATED - VERY THIN ALTERNATING LAYERS LESS THAN 1cm.
LAYER - SUBJECT MATERIAL GREATER THAN 1cm IN THICKNESS.
LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.
LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
MARL - A NON-INDURATED, CALCAREOUS DEPOSIT OF CLAYS, SILTS AND SANDS, OFTEN CONTAINING SHELLS.
MICACEOUS SOIL (MIC.) - A SOIL OR ROCK TYPE CONTAINING AN APPRECIABLE AMOUNT OF MICA.
MUCK (MK.) - A HIGHLY ORGANIC SOIL OF VERY SOFT CONSISTENCY, GENERALLY FOUND ON TIDAL FLATS, LAKE OR STREAM FLOODPLAINS.
PEAT (PT) - A FIBROUS MASS OF ORGANIC MATTER IN VARIOUS STAGES OF DECOMPOSITION.
PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.
RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
ROCK - SEE LEGEND
ROCK QUALITY DESIGNATION (R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 0.1 METER DIVIDED BY THE TOTAL LENGTH OF CORE RUN EXPRESSED AS A PERCENTAGE.
SANITARY LANDFILLS - COMPACTED AND/OR COVERED LAYERS OF SOIL AND WASTE PRODUCTS.
SAPROLITE (SAP.) - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLAIN.
SILL - AN IGNEOUS SHEET OF INTRUSIVE ROCK WHOSE THICKNESS IS SLIGHT COMPARED TO ITS LATERAL EXTENT.
SOME - PRESENCE OF 5% TO 30% OF SUBJECT MATERIAL.
STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N) OF A 63.5 kg HAMMER FALLING 0.76 METERS REQUIRED TO PRODUCE A PENETRATION OF 30 cm INTO SOIL WITH A 5 cm OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION RESISTANCE OF LESS THAN 2.5 cm WITH 50 BLOWS.
STRIKE - THE DIRECTION OR BEARING OF A HORIZONTAL LINE IN THE PLANE OF AN INCLINED STRATUM, JOINT, FAULT OR OTHER STRUCTURAL PLANE.
SUBGRADE - THE SOIL PREPARED TO SUPPORT A STRUCTURE OR A PAVEMENT SYSTEM.
TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
TRACE - PRESENCE OF LESS THAN 5% OF SUBJECT MATERIAL.

ABBREVIATIONS

BLDR. - BOULDER	PL - PLASTIC LIMIT
CL. - CLAY	PI - PLASTICITY INDEX
COB. - COBBLE	n - POROSITY
CSE. - COARSE	SD. - SAND
EST. - ESTIMATED	SAT. - SATURATED
F. - FINE	SL. - SILT, SILTY
FOSS. - FOSSILIFEROUS	SLI. - SLIGHTLY
FRAC. - FRACTURED	G_s - SPECIFIC GRAVITY
GR. - GRAVEL	qu - UNCONFINED COMPRESSIVE STRENGTH
LL - LIQUID LIMIT	γ - UNIT WEIGHT (WET UNIT WEIGHT)
MED. - MEDIUM	γ_d - DRY UNIT WEIGHT
W - MOISTURE CONTENT	γ_{SAT} - SATURATED UNIT WEIGHT
MOT. - MOTTLED	e - VOID RATIO
OM - OPTIMUM MOISTURE	V. - VERY
ORG. - ORGANIC	

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ADDITIONAL INFORMATION MAY BE AVAILABLE, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

FIELD BORING LOGS
ROCK CORES
SOIL & ROCK TEST DATA
SUBSURFACE REPORT

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NOTES:

REVISED NOVEMBER 11, 1998

9/09/99

TIP PROJECT: R-2518B

PROJECT: 34445.1.1

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

YANCEY COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2518B	2A	187

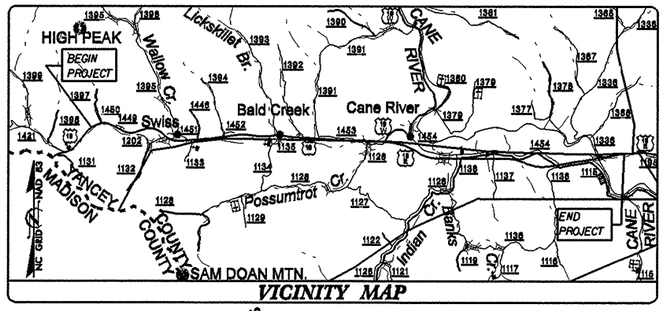
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34445.1.1		PE

METRIC

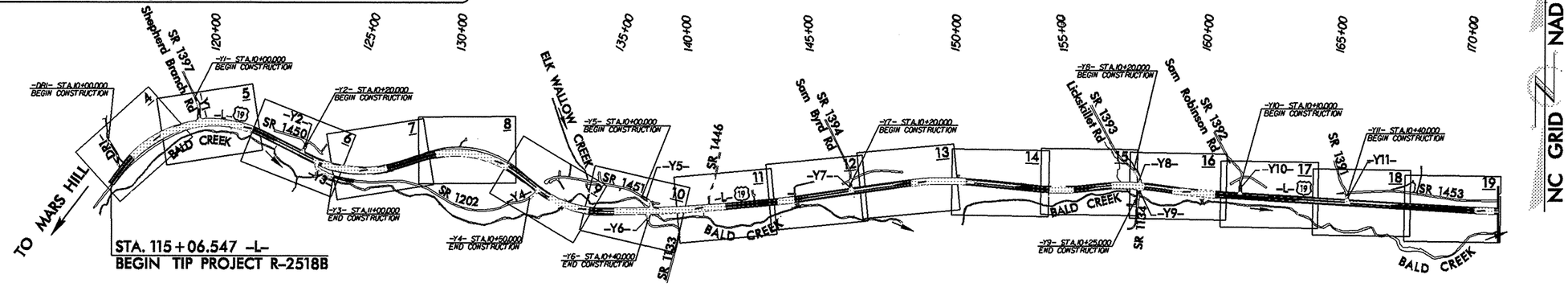
ALL DIMENSIONS IN THESE PLANS ARE IN METERS

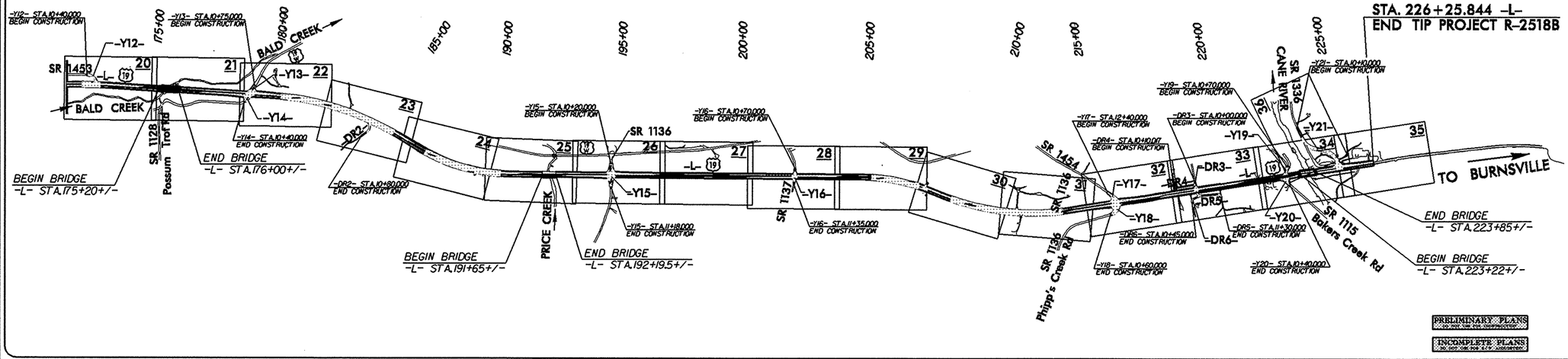
LOCATION: *US 19 FROM EAST OF THE YANCEY COUNTY LINE TO SR 1336*

TYPE OF WORK: *GRADING, DRAINAGE, WIDENING, PAVING, & STRUCTURES*



VICINITY MAP





PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

GRAPHIC SCALES

PLANS 5 0 10

PROFILE (HORIZONTAL) 5 0 10

PROFILE (VERTICAL) 1 0 2

DESIGN DATA

ADT 2005 = 17,200
ADT 2025 = 26,800
DHV = 10%
D = 60%
T = 10% *
V = 100 Km/h

* TTST= 6% DUALS= 4 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2518B	=	10.921 km
LENGTH STRUCTURES TIP PROJECT R-2518B	=	0.198 km
TOTAL LENGTH OF TIP PROJECT R-2518B	=	11.119 km

PLANS PREPARED BY:	***PLANS PREPARED FOR:***
TGS ENGINEERS SUITE 141 975 WALNUT STREET CARY, NC 27511 PH (919) 319-8850	*DIVISION OF HIGHWAYS 1000 Birch Ridge Dr. Raleigh, NC 27610*
2002 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: MARCH 19, 2004	CHARLES L. FLOWE, PE *PROJECT ENGINEER*
LETTING DATE: MARCH 21, 2006	W. CRAIG PARKER, PE *PROJECT DESIGN ENGINEER*
NCDOT CONTACT:	TERESA BRUTON, PE *PROJECT ENGINEER - DESIGN SERVICES*

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Michael F. Easley, GOVERNOR
P.O. BOX 25201, RALEIGH, N.C. 27611-5201
Lyndo Tippett, SECRETARY

24 June, 2005

STATE PROJECT: 34445.1.1, R-2518B

COUNTY: Yancey

DESCRIPTION: US 19 E from East of the Yancey Co. line to SR 1336

SUBJECT: Geotechnical Report – Inventory

PROJECT DESCRIPTION

The project consists of 11.12 km of roadway widening from 2 lane existing to 4 and 5 lanes. Widening is exclusively along existing with no realignment. Structures to be added or lengthened are seven 1-barrel culverts, four 3-barrel culverts, one 4-barrel culverts, one retaining wall and three bridge locations.

A geotechnical investigation was performed from May through August of 2004 utilizing a CME 550 ATV mounted drill and CME 45C Track mounted drill. Standard Penetration Tests were performed at selected locations along the alignment for embankments, cut slopes and retaining walls. Representative soil samples were obtained for visual classification in the field and for laboratory analysis by the Material and Tests Unit.

The following survey line was investigated:

Line	Stations
- L -	115+00 – 226+20

AREAS OF SPECIAL GEOTECHNICAL INTEREST

STRUCTURES

There is one retaining wall on the project. This is covered in a separate Structure report included in this document. Bridge structures are proposed at the time of this Inventory and exploratory borings only were conducted pending final plans. It is assumed that existing culverts will be lengthened. Borings and Standard Penetration Tests were done at these existing culvert locations:

Sta. 119+75	Sta. 124+40
Sta. 134+80	Sta. 138+20
Sta. 146+10	Sta. 150+60
Sta. 156+60	Sta. 162+50
Sta. 164+90	Sta. 185+00
Sta. 200+70	Sta. 205+80

Proposed new and additional bridge locations are located at the following Stations:

Sta. 175+20 – 176+00
Sta. 191+65 – 192+20
Sta. 223+20 – 223+85

POTENTIALLY UNSUITABLE SUBSURFACE CONDITIONS

The project traverses many large flood plains with conditions described under Soil Properties. These may contain local lenses of non-plastic or saturated clays but not on a scale suitable for concern to the construction process in general or specific stability problems. Localized areas may exist that require shallow undercut, select backfill and/or fabric stabilization. These are not extensive areas of concern.

GROUNDWATER

Groundwater exists at the base flow level in alluviual areas. The majority of the fills will be constructed on this material which consists primarily of moderate strength sands and gravels. No plastic clays were discovered and groundwater should not contribute to fill instability. Groundwater was not encountered in the cut areas.

PHYSIOGRAPHY AND GEOLOGY

The project lies in moderately rolling terrain. It then enters a relatively broad valley from Stations 135+00 – 190+00 and reaches a maximum elevation of 800m at Sta. 213+00. From the start of the project to Station 180+00 it runs parallel to Bald Creek and is intersected by Price's Creek at Station 192+00 and the Cane River at Station 223+00.

The corridor has several businesses and residences but affects few properties since the Right-of-Way for widening was mostly purchased during the original improvement project in the late 1980's.

The project lies within gneissic and Ashe Formation rocks. These are categorized as muscovite-biotite geisses and biotite-hornblende poorly to moderately foliated. Rock structure is competent and it is important to note that all cut areas are widenings of

existing cuts which have proven stable over the past 20 years.

SOIL PROPERTIES

High mica content in the parent gneisses generates mostly silty material in all residual and saprolite soils in the project corridor.

Residual soils in cut areas tend to be silts, silty sands and clayey sands of moderate to high strength. Alluvial deposits are predominately non-plastic clays, silts and lenses of gravel and sandy gravel.

Cut areas consist of mostly silts, silty sands and clayey sands. Weathered rock horizons generally range from 1-3m. **Manganese oxide, MnO, filled joints are were encountered in soils throughout the project.**

All areas denoted on cross sections as "saprolite and weathered rock", or "weathered rock" may contain very weathered to slightly weathered rock that requires select ripping or blasting to excavate.

ROCK PROPERTIES

Rock exposed in cuts shows moderate foliation, weathering to some degree and is moderately jointed. The rock is generally severe to slightly weathered and not found in appreciable amounts except for the following stations:

127+00 – 128+00
135+40 – 136+40
157+60 – 159+80
162+60 – 164+00
187+00 – 188+40
195+40 – 196+40

Foliations generally dip 35-90^0 ESE with some dipslope for the left hand cuts on the project.

The volume of rock, the orientation of foliation, weathering and the degree of jointing as mapped in outcrop do not lend to efficient rock slope design so no coring was done, nor are rock slopes steeper than 1 ½:1 recommended for any cut area.

GROUNDWATER

Rainfall amounts were higher than average during the investigation of this project. Due to the highly jointed nature of the rock and the free draining soils in cut areas, groundwater was rarely encountered. The stream valleys and alluvial floodplains invariably have groundwater levels between 1 and 3m. No springs or known private wells were encountered. The areas where groundwater can uniformly be expected between 1 and 3m are:

Sta. 119+00 – 123+00 rt
Sta. 134+60 – 140+60 rt
Sta. 142+80 – 146+20 lt and rt
Sta. 150+00 – 163+00 lt and rt
Sta. 164+80 – 176+00 rt
Sta. 191+00 – 193+00 lt and rt
Sta. 204+80 – 208+00 lt and rt
Sta. 223+00 – 224+00 lt and rt

GEOTECHNICAL DESCRIPTIVE ANALYSIS

Stations 115+40 – 118+40

This section involves widening existing with small to moderate left hand cuts. Primary subsurface consists of A-4 sandy silts, loose to med. dense. Rock exists from 116+50 to 118+00 with overburden of med. dense saprolite to weathered rock.

Stations 118+40 – 125+00

This section involves mostly adding 1-5m of fill to widen over loose alluvial sands and gravels. The culvert at 119+70 lies on 4 – 5 m of alluvial material as does the culvert at 124+20.

Stations 125+00 – 136+80

Moderate to large sized cuts on left and right in med. dense to dense saprolite (A-4, A-2-4) grading into rock. Existing 1.5:1 cuts are dry and stable. Culvert extension at 135+00 to be founded on 3 – 4 m of loose to med. dense alluvium. The retaining wall from 126+50 – 127+30 will be founded on shot rock fill at a depth of 2 m.

Stations 136+80 – 151+40

This section is categorized by shallow fill over floodplain with a small left cut in saprolite, weathered rock and rock from 139+60 – 140+80. Culvert extensions at 138+00 and 146+00 will be founded in 2 – 4 m of loose sandy clay and sandy gravel alluvium. Fills will lie over loose to med. dense alluvium.

Stations 151+40 – 165+00

Section typified by widening with cuts on the left. Cuts range from sliver to large with most of the material ranging from dense saprolite to weathered rock and fresh rock. The culvert at 156+60 rests on 1m of loose alluvium on the left and 2.5 m on the right. The culvert extension at 162+80 is in 2.0 m of med. dense alluvium and the culvert at 164+90 rests on 2.0 m med. dense alluvium on the left and 1.0 m on the right.

Stations 165+00 – 180+00

Section characterized by minor fills over alluvial materials with a low cut in med. dense saprolite from 179+20 – 180+00. Preliminary borings were taken for two proposed bridges to replace the culvert at 175+00 – 176+00.

Stations 180+00 – 215+00

Long section of cut and fill delineated in this report because the project crosses into Ashe formation rocks. This more deeply weathered material provides moderate to large cuts in loose to dense saprolite. The only rock in this section occurs from 195+40 – 196+60 with rest in saprolite. Cuts will widen existing and typically range from 10 – 15 m high. Preliminary borings were advanced for a proposed second bridge deck at 192+00 with typical depths to rock on the order of 15 m. A culvert extension at 205+87 lt. Shows depth to saprolite at 2.5 m and the culvert extension at 207+40 shows 4.0 m of alluvim on rock.

Stations 215+00 – 226+00

No areas of Geotechnical concern through this section. The project enters more commercial and residential property with many intersections and driveways but little grading. Borings were taken for an additional two lane bridge section proposed at 223+22 – 223+85. These showed depths to weathered rock at 9.0 m.

Respectfully submitted,

Jody C. Kuhne

EARTHWORK BALANCE SHEET (FOR BASE PAVEMENT ALT.)

(CUBIC METERS)

PROJECT R-2518B **COUNTY** YANCEY **DATE** February 19, 2007 **COMP. BY:** SGM **SHEET** 3c **OF** 137 **SHEETS**

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + %	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-L- Left	115+06.547	125+00	173,950	17,568			156,382	15,373	12,811	0	12,811	0	4,757	156,382		161,139
-L- Right	115+06.547	125+00	11,105	1,215			9,890	2,956	1,215	1,498	2,938	0		8,167		8,167
-DR1-	10+50	11+19.427	1,453				1,453	13		13	15	0		1,438		1,438
-Y1-	10+30	10+93.222	226				226	961		961	1,105	879		0		0
-Y2-	10+20	10+43.454	42				42	3		3	3	0		39		39
-Y3-	10+10.541	11+10	109				109	264		264	304	195		0		0
SUBTOTALS:			186,885	18,783			168,102	19,570	14,026	2,739	17,176	1,074	4,757	166,026		170,783
-L- Left	125+00	135+00	46,741	1,991			44,750	7,442	1,991	5,053	7,802	0		38,939		38,939
-L- Right	125+00	135+00	134,428	59,137			75,291	2,240	1,867	0	1,867	0	57,270	75,291		132,561
-Y4-	10+09.950	10+50	11				11	85		85	98	87		0		0
SUBTOTALS:			181,180	61,128			120,052	9,767	3,858	5,138	9,767	87	57,270	114,230		171,500
-L- Left	135+00	145+00	11,010	168			10,842	11,208	168	11,006	12,825	1,815	0			
-L- Right	135+00	145+00	4,916	103			4,813	2,986	103	2,862	3,395	0	0	1,521		1,521
-Y5-	10+00	10+65.548	15				15	342		342	393	378				
-Y6-	10+10.294	10+50	65				65	9		9	10	0		55		55
SUBTOTALS:			16,006	271			15,735	14,545	271	14,219	16,623	2,193	0	1,576		1,576
-L- Left	145+00	155+00	8,165	1,127			7,038	14,613	1,127	13,261	16,377	8,212	0			
-L- Right	145+00	155+00	1,764				1,764	2,021		2,021	2,324	560		0		0
-Y7-	10+20	10+38.058	24				24	71		71	82	58		0		0
SUBTOTALS:			9,953	1,127			8,826	16,705	1,127	15,353	18,783	8,830	0	0		0
-L- Left	155+00	165+00	55,066	26,819			28,247	10,197	8,498	0	8,498	0	18,321	28,247		46,568
-L- Right	155+00	165+00	1,329				1,329	1,594		1,594	1,833	504		0		0
-Y8-	10+20	10+80.081	9				9	339		339	390	381		0		0
-Y9-	10+09.883	10+25	41				41	0		0	0	0		41		41
-Y10-	10+10	10+43.966	44				44	62		62	71	27		0		0
SUBTOTALS:			56,489	26,819			29,670	12,192	8,498	1,995	10,792	912	18,321	28,288		46,609
SHEET TOTALS:			450,513	108,128			342,385	72,779	27,780	39,444	73,141	13,096	80,348	310,120		390,468

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

EARTHWORK BALANCE SHEET (FOR BASE PAVEMENT ALT.)

(CUBIC METERS)

PROJECT R-2518B **COUNTY** YANCEY **DATE** February 19, 2007 **COMP. BY:** SGM

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + %	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-L- Left	165+00	175+30	698				698	16,453		16,453	18,921	18,223		0		0
-L- Right	165+00	175+30	1,213				1,213	2,757		2,757	3,171	1,958		0		0
BRIDGE OVER BALD CREEK																
-Y11-	10+40	10+61.851	34				34	30		30	35	1		0		0
-Y12-	10+40	10+94.826	8				8	400		400	460	452		0		0
SUBTOTALS:			1,953				1,953	19,640		19,640	22,587	20,634		0		0
-L- Left	175+74	186+00	9,990				9,990	2,141		2,141	2,462	0		7,528		7,528
-L- Right	175+74	186+00	60,924				60,924	34,542		34,542	39,723	0		21,201		21,201
-Y13-	10+75	11+06.723	142				142	66		66	76	0		66		66
-Y14-	10+09.867	10+90	2,193				2,193	64		64	74	0		2,119		2,119
-DR2-	10+09.879	10+80	12				12	635		635	730	718		0		0
SUBTOTALS:			73,261				73,261	37,448		37,448	43,065	718		30,914		30,914
-L- Left	186+00	191+65	995				995	639		639	735	0		260		260
-L- Right	186+00	191+65	64,339	7,611			56,728	23,097	7,611	13,964	23,670	0		40,669		40,669
BRIDGE OVER PRICE CREEK																
SUBTOTALS:			65,334	7,611			57,723	23,736	7,611	14,603	24,405	0		40,929		40,929
-L- Left	192+20	202+20	4,081				4,081	6,116		6,116	7,033	2,952		0		0
-L- Right	192+20	202+20	118,890	8,256			110,634	34,506	8,256	24,599	36,545	0		82,345		82,345
-Y15-	10+20	10+57.450	32				32	44		44	51	19		0		0
-Y15-	10+77.184	11+18	14				14	317		317	365	351		0		0
-Y16-	10+70	10+93.015	57				57	0		0	0	0		57		57
-Y16-	11+12.797	11+35	22				22	96		96	110	88		0		0
SUBTOTALS:			123,096	8,256			114,840	41,079	8,256	31,172	44,104	3,410		82,402		82,402
-L- Left	202+20	212+20	30,142				30,142	2,912		2,912	3,349	0		26,793		26,793
-L- Right	202+20	212+20	67,773				67,773	14,691		14,691	16,895	0		50,878		50,878
-DR9-	10+07	10+34.478	102				102	24		24	28	0		74		74
-DR10-	10+09.867	10+34	39				39	56		56	64	25		0		0
SUBTOTALS:			98,056				98,056	17,683	0	17,683	20,336	25		77,745		77,745
SHEET TOTALS:			361,700	15,867			345,833	139,586	15,867	120,546	154,497	24,787	0	231,990		231,990

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

EARTHWORK BALANCE SHEET (FOR ABC PAVEMENT ALT.)

(CUBIC METERS)

PROJECT R-2518B **COUNTY** YANCEY **DATE** February 19, 2007 **COMP. BY:** SGM **SHEET** 36 **OF** 187 **SHEETS**

3 OF 3

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + %	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-L- Left	212+20	223+22	52,644				52,644	7,029		7,029	8,083	0		44,561		44,561
-L- Right	212+20	223+22	19,100				19,100	1,816		1,816	2,088	0		17,012		17,012
BRIDGE OVER CANE RIVER																
-Y17-	12+40	12+91.900	1,470				1,470	179		179	206	0		1,264		1,264
-Y18-	10+09.867	10+60	96				96	73		73	84	0		12		12
-DR3-	10+00	10+24.573	21				21	4		4	5	0		16		16
-DR4-	10+10.017	10+96.732	225				225	104		104	120	0		105		105
-DR4-	11+02.131	11+84.926	110				110	143		143	164	54		0		0
-DR7-	10+00	10+83.899	53				53	0		0	0	0		53		53
-DR8-	10+04	10+25.400	133				133	8		8	9	0		124		124
-Y19-	10+70	11+00.481	23				23	17		17	20	0		3		3
-Y20-	10+09.867	10+40	119				119	0		0	0	0		119		119
SUBTOTALS:			73,994				73,994	9,373		9,373	10,779	54		63,269		63,269
-L- Left	223+85	226+25.844	301				301	1,530		1,530	1,760	1,459		0		0
-L- Right	223+85	226+25.844	60				60	360		360	414	354		0		0
-Y21-	10+10	12+62.807	20,535				20,535	600		600	690	0		19,845		19,845
SUBTOTALS:			20,896				20,896	2,490		2,490	2,864	1,813		19,845		19,845
SUMMARY TOTALS:			907,103	123,995			783,108	224,228	43,647	171,853	241,281	39,750	80,348	625,224		705,572
Est. Loss due to Clearing & Grubbing			-500				-500							-500		-500
Adjustment for Rock Waste Swell													16,070			16,070
Uncompacted Rock Waste													14,463			14,463
Waste In Lieu of Borrow												-39,750		-39,750		-39,750
GRAND TOTALS:			906,603	123,995			782,608	224,228	43,647	171,853	241,281	0	110,881	584,974		695,855
SAY:			**910,000**													**700,000**

Pavement Structure Volume = 26,237

Shoulder Borrow = 14,800

Contingency Undercut = 1,000

R-2518B Earthwork Computations.xls : Balance Card 3 (ABC)

3/26/2008 9:44 AM

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

EARTHWORK BALANCE SHEET (FOR ABC PAVEMENT ALT.)

(CUBIC METERS)

PROJECT R-2518B **COUNTY** YANCEY **DATE** February 19, 2007 **COMP. BY:** SGM

SHEET 3F **OF** 187 **SHEETS**

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + %	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-L- Left	115+06.547	125+00	173,429	17,353			156,076	16,306	13,588	0	13,588	0	3,765	156,076		159,841
-L- Right	115+06.547	125+00	10,626	1,144			9,482	3,116	1,144	1,743	3,148	0		7,478		7,478
-DR1-	10+50	11+19.427	1,453				1,453	13		13	15	0		1,438		1,438
-Y1-	10+30	10+93.222	226				226	961		961	1,105	879		0		0
-Y2-	10+20	10+43.454	42				42	3		3	3	0		39		39
-Y3-	10+10.541	11+10	109				109	264		264	304	195		0		0
SUBTOTALS:			185,885	18,497			167,388	20,663	14,732	2,984	18,163	1,074	3,765	165,031		168,796
-L- Left	125+00	135+00	46,091	1,914			44,177	7,921	1,914	5,624	8,382	0		37,709		37,709
-L- Right	125+00	135+00	133,556	58,792			74,764	2,535	2,113	0	2,113	0	56,679	74,764		131,443
-Y4-	10+09.950	10+50	11				11	85		85	98	87		0		0
SUBTOTALS:			179,658	60,706			118,952	10,541	4,027	5,709	10,593	87	56,679	112,473		169,152
-L- Left	135+00	145+00	10,591	168			10,423	12,298	168	12,096	14,078	3,487	0			
-L- Right	135+00	145+00	4,861	103			4,758	3,180	103	3,056	3,618	0	0	1,243		1,243
-Y5-	10+00	10+65.548	15				15	342		342	393	378		0		0
-Y6-	10+10.294	10+50	65				65	9		9	10	0		55		55
SUBTOTALS:			15,532	271			15,261	15,829	271	15,503	18,099	3,865	0	1,298		1,298
-L- Left	145+00	155+00	7,785	1,111			6,674	15,853	1,111	14,520	17,809	10,024	0			
-L- Right	145+00	155+00	1,758				1,758	2,042		2,042	2,348	590		0		0
-Y7-	10+20	10+38.058	24				24	71		71	82	58		0		0
SUBTOTALS:			9,567	1,111			8,456	17,966	1,111	16,633	20,239	10,672	0	0		0
-L- Left	155+00	165+00	54,646	26,646			28,000	11,392	9,493	0	9,493	0	17,153	28,000		45,153
-L- Right	155+00	165+00	1,322				1,322	1,622		1,622	1,865	543		0		0
-Y8-	10+20	10+80.081	9				9	339		339	390	381		0		0
-Y9-	10+09.883	10+25	41				41	0		0	0	0		41		41
-Y10-	10+10	10+43.966	44				44	62		62	71	27		0		0
SUBTOTALS:			56,062	26,646			29,416	13,415	9,493	2,023	11,819	951	17,153	28,041		45,194
SHEET TOTALS:			446,704	107,231			339,473	78,414	29,634	42,852	78,913	16,649	77,597	306,843		384,440

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

EARTHWORK BALANCE SHEET (FOR ABC PAVEMENT ALT.)

(CUBIC METERS)

PROJECT R-2518B **COUNTY** YANCEY **DATE** February 19, 2007 **COMP. BY:** SGM

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + %	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-L- Left	165+00	175+30	589				589	17,619		17,619	20,262	19,673		0		0
-L- Right	165+00	175+30	1,141				1,141	2,978		2,978	3,425	2,284		0		0
BRIDGE OVER BALD CREEK																
-Y11-	10+40	10+61.851	34				34	30		30	35	1		0		0
-Y12-	10+40	10+94.826	8				8	400		400	460	452		0		0
SUBTOTALS:			1,772				1,772	21,027		21,027	24,182	22,410		0		0
-L- Left	175+74	186+00	9,950				9,950	2,537		2,537	2,918	0		7,032		7,032
-L- Right	175+74	186+00	60,262				60,262	35,518		35,518	40,846	0		19,416		19,416
-Y13-	10+75	11+06.723	142				142	66		66	76	0		66		66
-Y14-	10+09.867	10+90	2,193				2,193	64		64	74	0		2,119		2,119
-DR2-	10+09.879	10+80	12				12	635		635	730	718		0		0
SUBTOTALS:			72,559				72,559	38,820		38,820	44,644	718		28,633		28,633
-L- Left	186+00	191+65	869				869	879		879	1,011	142		0		0
-L- Right	186+00	191+65	63,959	7,462			56,497	23,600	7,462	14,646	24,305	0		39,654		39,654
BRIDGE OVER PRICE CREEK																
SUBTOTALS:			64,828	7,462			57,366	24,479	7,462	15,525	25,316	142		39,654		39,654
-L- Left	192+20	202+20	4,023				4,023	6,149		6,149	7,071	3,048		0		0
-L- Right	192+20	202+20	118,375	8,154			110,221	35,558	8,154	25,773	37,793	0		80,582		80,582
-Y15-	10+20	10+57.450	32				32	44		44	51	19		0		0
-Y15-	10+77.184	11+18	14				14	317		317	365	351		0		0
-Y16-	10+70	10+93.015	57				57	0		0	0	0		57		57
-Y16-	11+12.797	11+35	22				22	96		96	110	88		0		0
SUBTOTALS:			122,523	8,154			114,369	42,164	8,154	32,379	45,390	3,506		80,639		80,639
-L- Left	202+20	212+20	29,991				29,991	3,597		3,597	4,137	0		25,854		25,854
-L- Right	202+20	212+20	67,290				67,290	15,730		15,730	18,090	0		49,200		49,200
-DR9-	10+07	10+34.478	102				102	24		24	28	0		74		74
-DR10-	10+09.867	10+34	39				39	56		56	64	25		0		0
SUBTOTALS:			97,422				97,422	19,407		19,407	22,319	25		75,128		75,128
SHEET TOTALS:			359,104	15,616			343,488	145,897	15,616	127,158	161,851	26,801		224,054		224,054

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

EARTHWORK BALANCE SHEET (FOR BASE PAVEMENT ALT.)

(CUBIC METERS)

PROJECT R-2518B **COUNTY** YANCEY **DATE** February 19, 2007 **COMP. BY:** SGM **SHEET** 31A **OF** 187 **SHEETS**

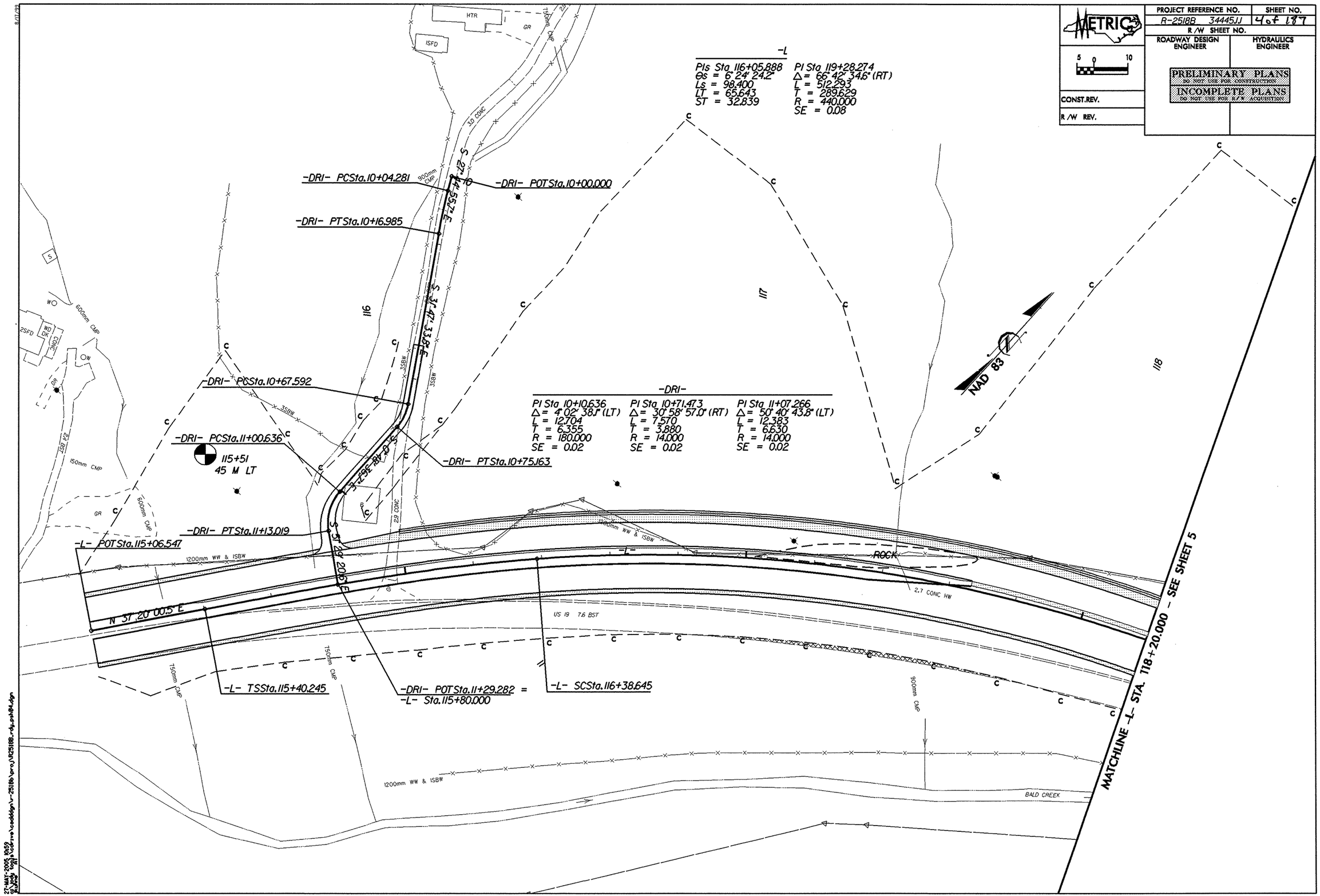
LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + %	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-L- Left	212+20	223+22	52,391				52,391	8,085		8,085	9,298	0		43,093		43,093
-L- Right	212+20	223+22	18,470				18,470	2,202		2,202	2,532	0		15,938		15,938
BRIDGE OVER CANE RIVER																
-Y17-	12+40	12+91.900	1,470				1,470	179		179	206	0		1,264		1,264
-Y18-	10+09.867	10+60	96				96	73		73	84	0		12		12
-DR3-	10+00	10+24.573	21				21	4		4	5	0		16		16
-DR4-	10+10.017	10+96.732	225				225	104		104	120	0		105		105
-DR4-	11+02.131	11+84.926	110				110	143		143	164	54		0		0
-DR7-	10+00	10+83.899	53				53	0		0	0	0		53		53
-DR8-	10+04	10+25.400	133				133	8		8	9	0		124		124
-Y19-	10+70	11+00.481	23				23	17		17	20	0		3		3
-Y20-	10+09.867	10+40	119				119	0		0	0	0		119		119
SUBTOTALS:			73,111				73,111	10,815		10,815	12,438	54		60,727		60,727
-L- Left	223+85	226+25.844	212				212	1,486		1,486	1,709	1,497		0		0
-L- Right	223+85	226+25.844	112				112	314		314	361	249		0		0
-Y21-	10+10	12+62.807	20,535				20,535	600		600	690	0		19,845		19,845
SUBTOTALS:			20,859				20,859	2,400		2,400	2,760	1,746		19,845		19,845
SUMMARY TOTALS:			899,778	122,847			776,931	237,526	45,250	183,225	255,962	45,250	77,597	611,469	0	689,066
Est. Loss due to Clearing & Grubbing			-500				-500							-500		-500
Adjustment for Rock Waste Swell													15,519			15,519
Uncompacted Rock Waste													13,967			13,967
Waste In Lieu of Borrow												-45,250		-45,250		-45,250
GRAND TOTALS:			899,278	122,847			776,431	237,526	45,250	183,225	255,962	0	107,083	565,719		672,802
SAY:			**903,000**													**676,000**

Pavement Structure Volume = 18,911

Shoulder Borrow = 11,700

Contingency Undercut = 1,000

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.


METRIC
PROJECT REFERENCE NO.
R-2518B 34445JJ
SHEET NO.
4 of 187
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
CONST.REV.
R/W REV.
-L
PIs Sta 116+05.888
Θs = 6° 24' 24.2"
Ls = 98.400
LT = 65.643
ST = 32.839
PI Sta 119+28.274
Δ = 66° 42' 34.6" (RT)
L = 512.293
T = 289.629
R = 440.000
SE = 0.08
-DRI- PCSta.10+04.281
-DRI- POTSta.10+00.000
-DRI- PTSta.10+16.985
-DRI- PCSta.10+67.592
-DRI- PCSta.11+00.636
115+51
45 M LT
-DRI- PTSta.10+75.163
-DRI- PTSta.11+13.019
-L- POTSta.115+06.547
-L- TSSta.115+40.245
-DRI- POTSta.11+29.282 =
-L- Sta.115+80.000
-L- SCSta.116+38.645
-DRI-
PI Sta 10+10.636
Δ = 4° 02' 38.1" (LT)
L = 12.704
T = 6.355
R = 180.000
SE = 0.02
PI Sta 10+71.473
Δ = 30° 58' 57.0" (RT)
L = 7.570
T = 3.880
R = 14.000
SE = 0.02
PI Sta 11+07.266
Δ = 50° 40' 43.8" (LT)
L = 12.383
T = 6.630
R = 14.000
SE = 0.02
S 27° 44' 55.7" E
S 31° 47' 33.8" E
S 0° 48' 35.7" E
S 37° 29' 20.6" E
N 37° 20' 00.5" E
116
117
118
NAD 83
ROCK
US 19 7.6 BST
2.7 CONC HW
1200mm WW & ISBW
750mm CMP
900mm CMP
600mm CMP
150mm CMP
BALD CREEK
MATCHLINE -L- STA. 118+20.000 - SEE SHEET 5
REVISIONS
8/17/99
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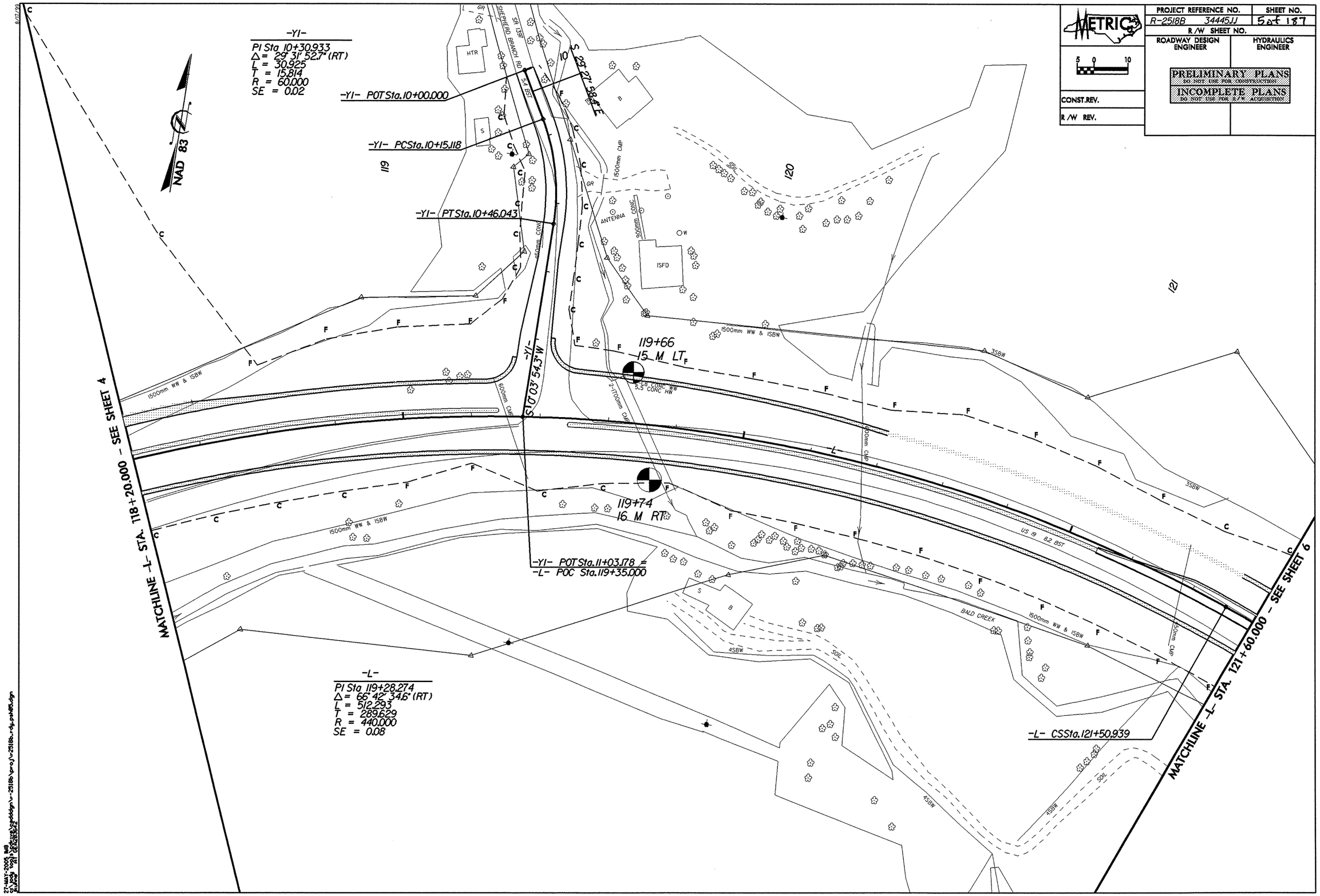
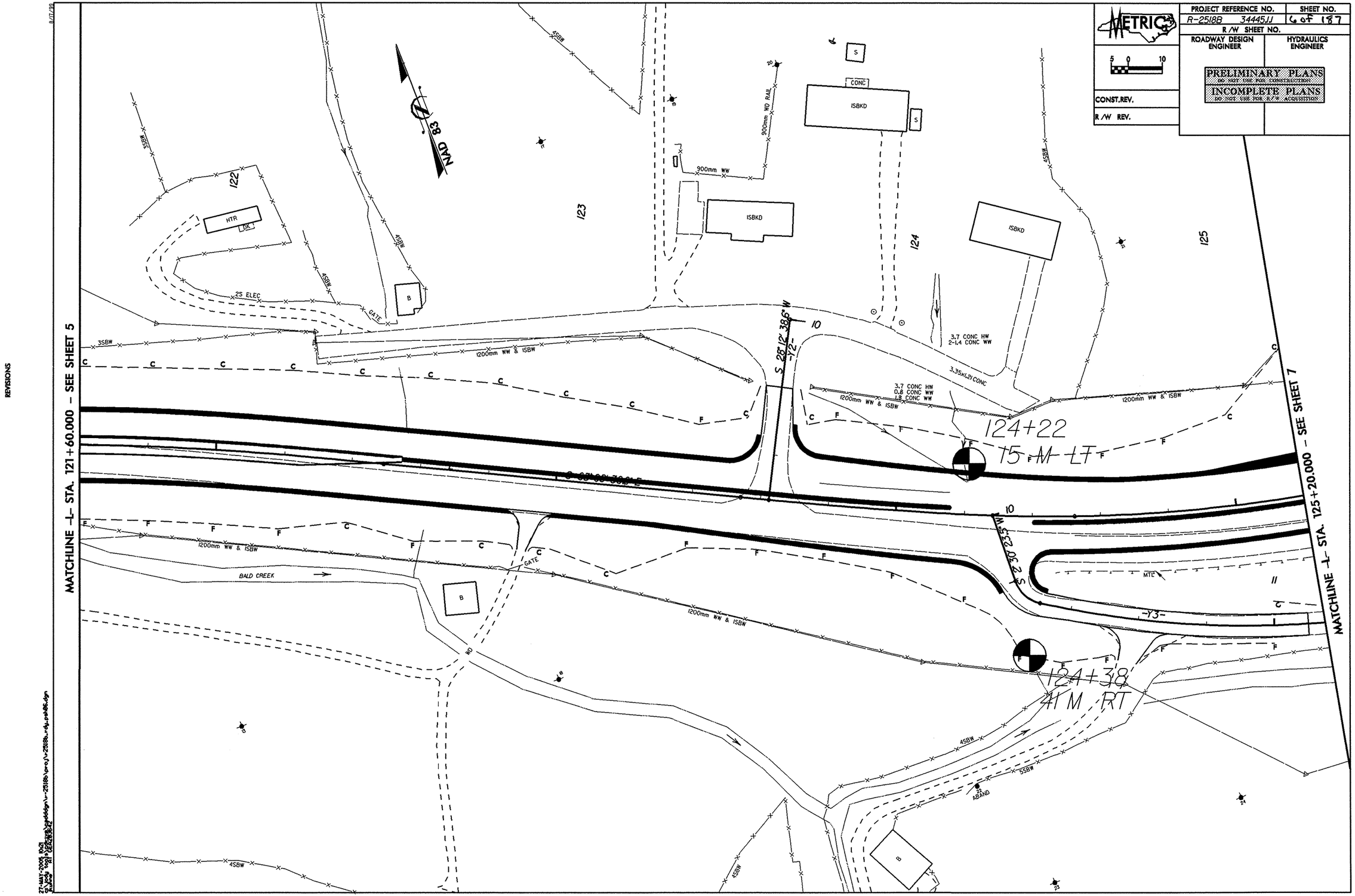


METRIC
PROJECT REFERENCE NO.
R-2518B 34445JJ
SHEET NO.
5 of 187
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
CONST.REV.
R/W REV.
-Y1-
PI Sta 10+30.933
Δ = 29° 31' 52.7" (RT)
L = 30.925
T = 15.814
R = 60.000
SE = 0.02
-Y1- POT Sta.10+00.000
-Y1- PC Sta.10+15.118
-Y1- PT Sta.10+46.043
NAD 83
119
120
121
S 29° 27' 58.4" E
S 10° 03' 54.3" W
119+66
15 M LT
119+74
16 M RT
-Y1- POT Sta.11+03.178 =
-L- POC Sta.119+35.000
-L-
PI Sta 119+28.274
Δ = 66° 42' 34.6" (RT)
L = 512.293
T = 289.629
R = 440.000
SE = 0.08
-L- CS Sta.121+50.939
MATCHLINE -L- STA. 118+20.000 - SEE SHEET 4
MATCHLINE -L- STA. 121+60.000 - SEE SHEET 6
SHEPHERD BRANCH RD
SR 1397
5.4 BST
HTR
ANTENNA
ISFD
1500mm CMP
900mm CONC
450mm CONC
600mm CMP
2-1700mm CMP
1500mm WW & ISBW
3SBW
4SBW
US 19 82 BST
BALD CREEK
SOIL



METRIC
PROJECT REFERENCE NO.
R-2518B 34445JJ
SHEET NO.
6 of 187
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
CONST.REV.
R/W REV.
NAD 83
MATCHLINE -L- STA. 121+60.000 - SEE SHEET 5
MATCHLINE -L- STA. 125+20.000 - SEE SHEET 7
122
123
124
125
HTR
DK
B
ISBKD
CONC
S
900mm WD RAIL
900mm WW
3SBW
4SBW
5SBW
2S ELEC
GATE
1200mm WW & ISBW
3.7 CONC HW
2-1.4 CONC WW
3.35x1.21 CONC
3.7 CONC HW
0.8 CONC WW
1.8 CONC WW
S 28°12' 38.6" W
-Y2-
S 2°30' 23.5" W
-Y3-
124+22
15 M LT
124+38
41 M RT
BALD CREEK
MTE
ABAND

REVISIONS

8/17/23

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
34445.11 R-2518B	7 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

NAD 83

-L-

PI Sta 125+84.331
Δ = 32° 39' 17.3" (LT)
L = 256.470
T = 131.823
R = 450.000
SE = 0.08

PIs Sta 127+41.816
θs = 6° 15' 51.6"
Ls = 98.400
LT = 65.641
ST = 32.837

PIs Sta 128+73.031
θs = 7° 02' 50.6"
Ls = 98.400
LT = 65.652
ST = 32.847

-Y3-

PI Sta 10+95.168
Δ = 26° 05' 44.3" (LT)
L = 126.650
T = 64.443
R = 278.074
SE = 0.07

126

127

128

MATCHLINE -L- STA. 125+20.000 - SEE SHEET 6

MATCHLINE -L- STA. 128+60.000 - SEE SHEET 8

ROCK

-L- CSSta. 127+08.979

-L- SRSSta. 128+07.379

1200mm WW & ISBW

PROPOSED EXPRESSWAY GUTTER

16.5m FULL LANE

PROP. MONO. CONC. ISLAND

15:1 TAPER

30m TAPER

REMOVE EXISTING GUARDRAIL

+01.400
BEG. CURB TRANSITION
SEE SHEET 2-D

+04.379
BEG. CURB TRANSITION
SEE SHEET 2-D

PROP. 450mm C&G

PROP. RAISED GRASS MEDIAN

PROP. 825mm C&G

127+30
7.5 M RT

+10.379
END CURB TRANSITION

CAT-1

BEGIN WALL
-L- STA. 126+50+/-

126+50
6.5 M RT

126+70
6.5 M RT

126+90
7 M RT

PROPOSED CONC. RET. WALL

END WALL
-L- STA. 127+30+/-

-Y3-

S 81° 58' 14.5" E

BALD CREEK

-Y3- PTSta. 11+57.376

-Y3- POTSta. 11+92.773

ISFD

APT

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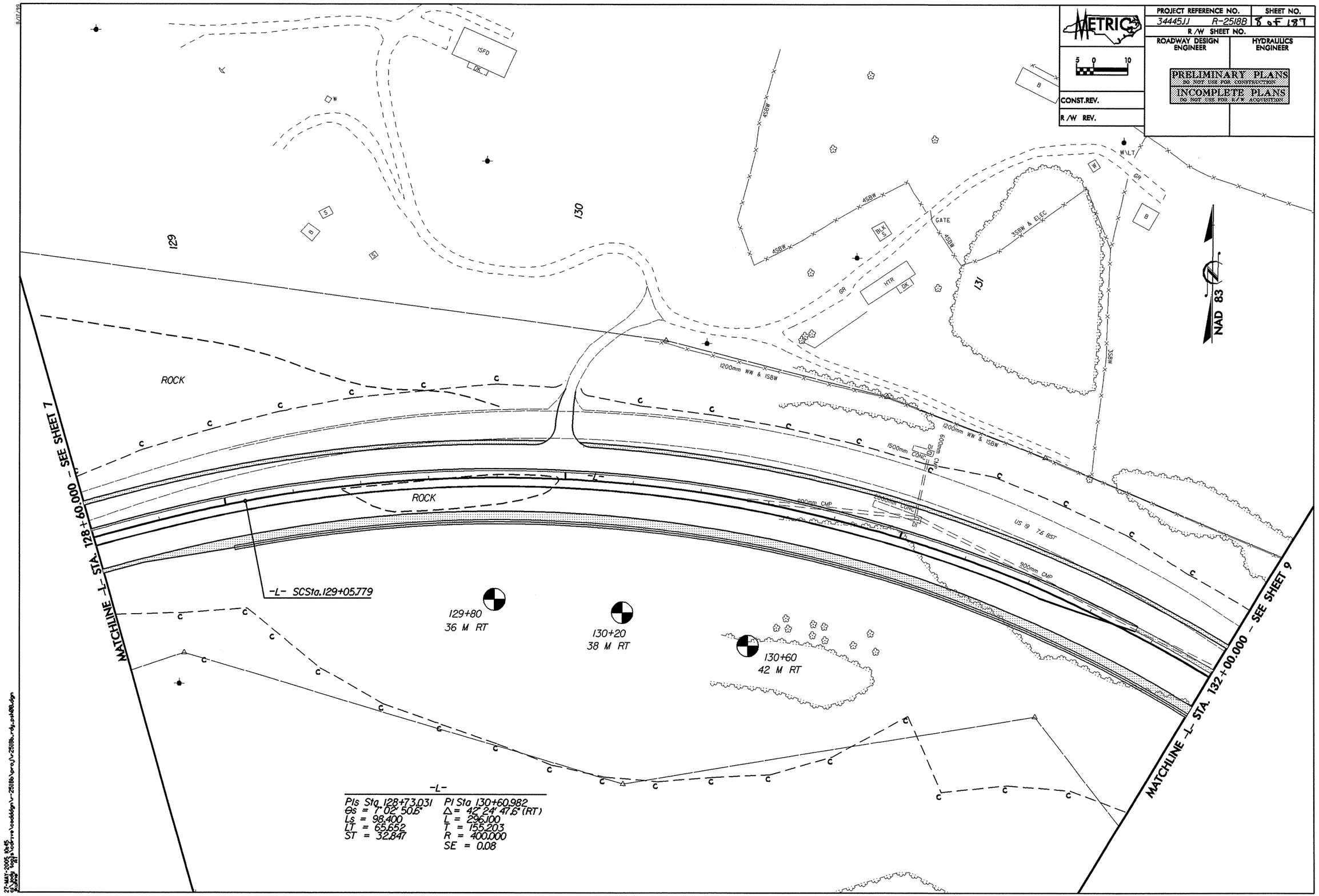

REVISIONS

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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
34445.1.1 R-2518B	9 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

NAD 83

MATCHLINE -L- STA. 132+00.000 - SEE SHEET 8

MATCHLINE -L- STA. 135+40.000 - SEE SHEET 10

-L-
PI Sta 130+60.982
Δ = 42° 24' 47.6" (RT)
L = 296.100
T = 155.203
R = 400.000
SE = 0.08

PIs Sta 132+34.726
θs = 7° 02' 50.6"
Ls = 98.400
LT = 65.652
ST = 32.847

PIs Sta 133+65.931
θs = 7° 02' 50.6"
Ls = 98.400
LT = 65.652
ST = 32.847

PI Sta 134+83.280
Δ = 23° 53' 03.6" (LT)
L = 166.744
T = 84.601
R = 400.000
SE = 0.08

-Y4-
PI Sta 10+20.549
Δ = 10° 21' 58.7" (RT)
L = 40.985
T = 20.549
R = 226.531
SE = EXISTING

PI Sta 10+60.557
Δ = 22° 15' 25.8" (RT)
L = 38.650
T = 19.572
R = 99.494
SE = 0.02

-L- CSSta.132+01.879
-L- SRSSta.133+00.279
-Y4- PCCSta.10+40.985
-Y4- PTSta.10+79.635
-L- SCSta.133+98.679
-Y4- PCSta.10+00.000 = -L- POS Sta. 133+51.473
133+80 32 M LT
134+88 14 M LT

CEMETERY
W/LT
ISBKD
WO
2.5 BST
250mm CMP
64 BST
200mm CONC
SR 1451 64 BST
ELK WALLOW CREEK
133
134
135
W/LT
WO
3.5 BST
WD STEPS
2S HTR
WD DK
CONC
ISFD
S
G
2100mm WD
900mm CONC
1200mm WW & ISBW
1050mm CMP
1500mm CONC
MTL
3.0 BST
FUNNEL
10
US 19 7.9 BST
ROCK
450mm CMP
1800mm CONC
SR 1202 6.3 BST
359W
BALD CREEK
100mm WD WALL
HTR
S

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PROJECT REFERENCE NO.	SHEET NO.
34445.11 R-2518B	10 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

5 0 10

REVISIONS

8/17/99

-L-

PI Sta 134+83.280
Δ = 23° 53' 03.6" (LT)
L = 166.744
T = 84.601
R = 400.000
SE = 0.08

PIs Sta 136+00.712
θs = 0° 33' 47.5"
θs = 7° 02' 52.5"
Ls = 98.400
LT = 63.235
ST = 35.289

PI Sta 138+81.737
Δ = 4° 59' 27.8" (LT)
L = 435.552
T = 217.914
R = 5,000.000
SE = 0.08

-Y5-

PI Sta 10+49.012
Δ = 7° 45' 23.6" (RT)
L = 34.757
T = 20.256
R = 27.000
SE = 0.02

-Y5- POT Sta. 10+00.000

-Y5- PCSta. 10+28.756

-Y5- PTSta. 10+63.512

-L- POC Sta. 138+05.064 =
-Y5- POT Sta. 10+75.844 =
-Y6- POT Sta. 10+00.000

-L- SCSta. 136+63.823

-L- CSSta. 135+65.423

-Y6- PCSta. 10+32.762

-Y6- PCCSta. 10+71.021

-Y6- POT Sta. 11+22.664

-Y6- PTSta. 10+92.935

-Y6-

PI Sta 10+58.262
Δ = 96° 46' 05.2" (LT)
L = 38.259
T = 25.500
R = 22.653
SE = 0.05

PI Sta 10+82.036
Δ = 14° 23' 51.6" (LT)
L = 21.913
T = 11.015
R = 87.205
SE = EXISTING

MATCHLINE -L- STA. 135+60.000 – SEE SHEET 9

MATCHLINE -L- STA. 139+20.000 – SEE SHEET 11

SR 1395 SCRONCH CREEK RD

SR 1451 66 BST

SR 1133 6.0 BST

US 19 7.9 BST

150mm CURB

BST

GR

W/LT

300mm CMP

1200mm CMP

SOIL

CONC

2SAPT

ISBKD

COVERED DK

2SBK
MT. PLEASANT BAPTIST CHURCH

WD DK

1200mm CHL

1500mm

BALD CREEK

1200mm WW & ISBW

REMOVE EXISTING GUARDRAIL

4-3.4x2.7 CONC MTL

7.3 CONC HW
4.9 CONC WW
4.9 CONC WW

20.1 CONC HW
7.5 CONC WW
5.9 CONC WW

450mm CMP

ROCK

1750mm CONC

1850mm CONC

SPRING BOX

ISFD

ANTENNA

BLK STEPS

NAD 83

138+02
20 M LT

138+11
23 M RT

S 55° 09' 04.9" E

S 14° 36' 18.7" W

N 183° 26' 21.9" E

PROJECT REFERENCE NO.	SHEET NO.
34445JJ R-2518B	11 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

REVISIONS

MATCHLINE -L- STA. 139+20.000 - SEE SHEET 10

MATCHLINE -L- STA. 142+80.000 - SEE SHEET 12

NAD 83

-L- PTSta.140+99.375

-L- TSSta.142+65.525

140+60
40 M LT

-L-
PI Sta 138+81.737
Δ = 4° 59' 27.8" (LT)
L = 435.552
T = 217.914
R = 5,000.000
SE = 0.02

-L- N 84° 38' 49.4" E

US 19 7.9 BST

SR 1446 GR

BALD CREEK

ABAND

MTL CANOPY

ISBKD

MTL CANOPY KENNEL

BLK BLOG

CONC

400mm ROCK WALL

WD DK

ISFD

G

S

W/LT

1200mm WW & ISBW

600mm CONC

450mm CONC

400mm CMP

3.7 CONC HW

600mm CMP

2100mm CHL

SOIL

BST

GR

F

C

27-MAY-2008 BSG
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8/17/99

REVISIONS

27-MAY-2005 16:55
User: Wang, Kevin
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-L-

PIs Sta 142+90.125
Θs = 0° 31' 42.8"
Ls = 36.900
LT = 24.600
ST = 12.300

PI Sta 143+36.625
Δ = 1° 57' 33.4" (LT)
L = 68.392
T = 34.199
R = 2,000.000
SE = 0.03

PIs Sta 143+83.117
Θs = 0° 31' 42.8"
Ls = 36.900
LT = 24.600
ST = 12.300

PROJECT REFERENCE NO.	SHEET NO.
R-2518B	12 of 197
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

MATCHLINE -L- STA. 142+80.000 – SEE SHEET 11

MATCHLINE -L- STA. 146+40.000 – SEE SHEET 13

NAD 83

143 144 145 146

POND

SOIL

300mm CMP

-L- CS Sta.143+70.817

-L- SC Sta.143+02.425

-L- ST Sta.144+07.717

-Y7- POT Sta.10+00.000

-Y7- POT Sta.10+48.007
-L- POT Sta.145+93.603

N. 81° 37' 50.3" E.

S 1° 00' 15.8" E

30 BST

1200mm WW & ISBW

CEMETERY

GATE

BST

1200mm RCP

375mm CMP

450mm CMP

1350mm CMP

2SFD

5.4 BST

SR 1394

BIRD RD

10

L4 CONC WW
1.7 CONC WW
3.2 CONC HW

L5 CONC WW
1.9 CONC WW
3.2 CONC HW

8 CONC HW
146+10
11 M LT

5.6 BST

3.3 BST

1500mm CMP

2-4.2 CONC WW
1-4.1 CONC HW

4-3.4x2.7 CONC

BALD CREEK

2175mm x 1675mm CMP

GR

W/LT

800mm WD RAIL

600mm CMP

WD DK

½SFD

CONC

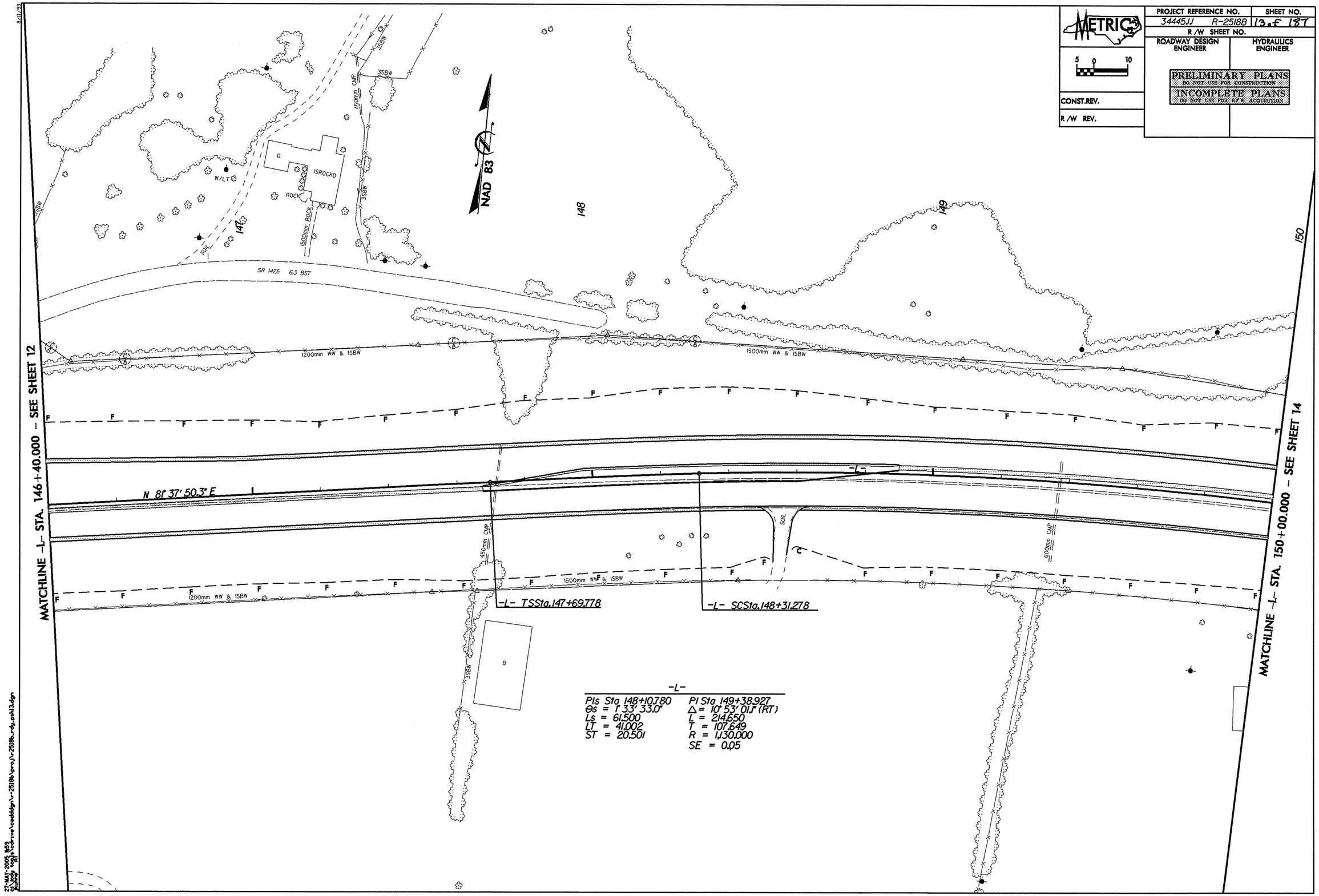
1200mm CONC

ISFD

2SFD

200mm BK WALL

W



REVISIONS

8/17/99

27-MAY-2005 #59
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REVISIONS

27-MAY-2005 12:04
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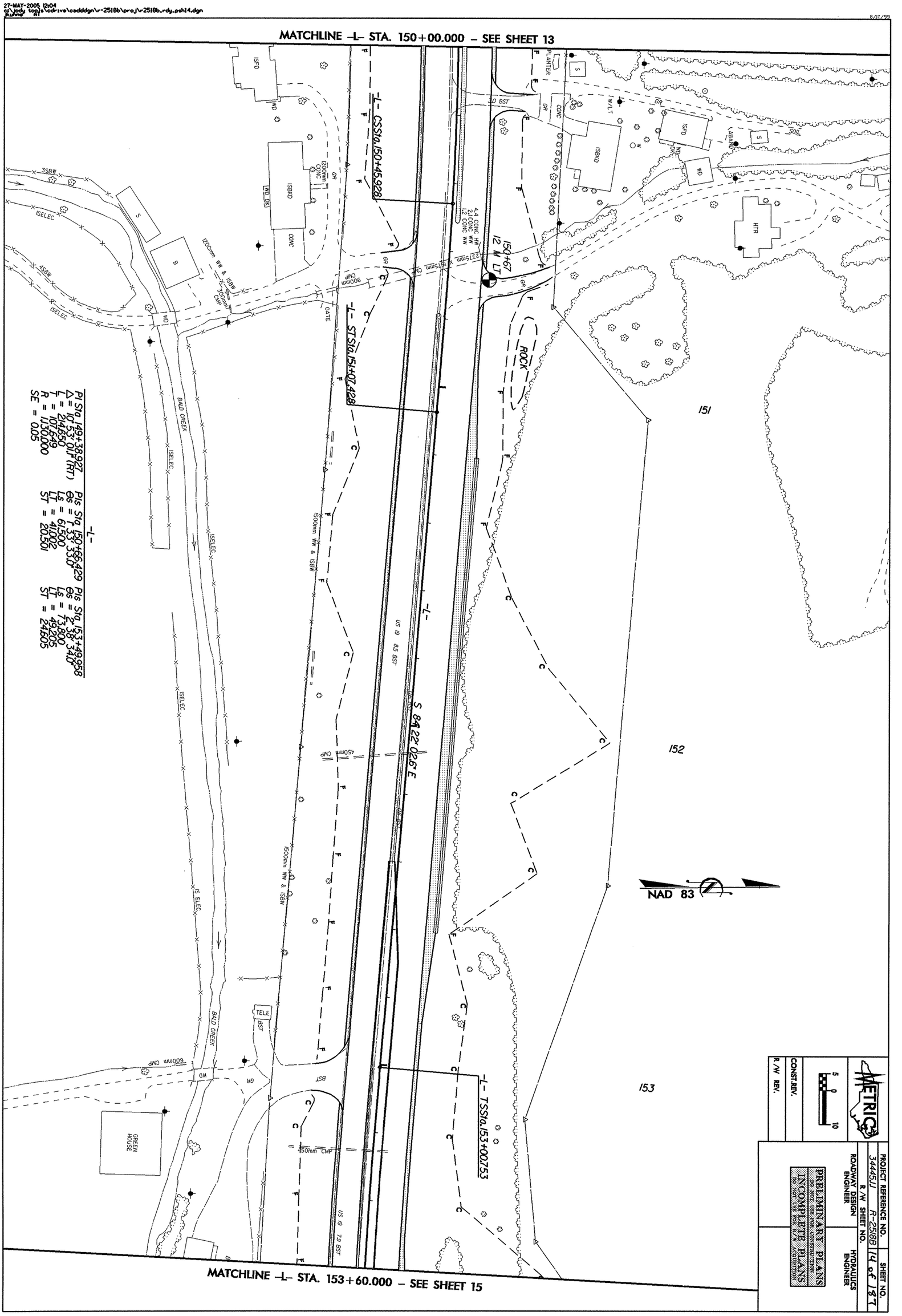
8/17/99



-L-

PIs Sta 153+49.958
Θs = 2° 38' 34.0"
Ls = 73.800
LT = 49.205
ST = 24.605

PI Sta 154+23.212
Δ = 6° 57' 40.6" (LT)
L = 97.198
T = 48.659
R = 800.000
SE = 0.06

PIs Sta 154+96.356
Θs = 2° 38' 34.0"
Ls = 73.800
LT = 49.205
ST = 24.605

PIs Sta 155+94.756
Θs = 2° 38' 34.0"
Ls = 73.800
LT = 49.205
ST = 24.605

PI Sta 156+84.725
Δ = 9° 20' 36.5" (RT)
L = 130.459
T = 65.375
R = 800.000
SE = 0.06

NAD 83

-Y8- POT Sta. 10+00.000

-L- SCSta. 153+74.553

-L- CSSta. 154+71.751

-L- SRSSta. 155+45.551

-L- SCSta. 156+19.351

153+80
30 M LT

156+64
14 M LT

156+65
15 M RT

ROCK

REMOVE EXISTING GUARDRAIL

US 19 7.9 BST

SR 1393 LOCKHART RD 1.1 BST

SR 1135 4.7 BST

ISBKD

MTL CANOPY

2SFD

ISBUS (CLOSED)

1-ISL 4 GASPUMPS U/MTL CANOPY

PLAYGROUND

BALLFIELD

2SROCK BALD CREEK SCHOOL

ISROCK GYM

2SM BALD CREEK METHODIST CHURCH

ISFD

APT

1500mm WW & ISBW

1200mm CHL

600mm CMP

600mm CURB

1800mm CONC

450mm CMP

200mm CMP

1200mm CONC

900mm CONC

CROSSTIES

PLANTER

FLAGPOLE

BALD CREEK

(ABANDONED)

MATCHLINE -L- STA. 153+60.000 - SEE SHEET 14

MATCHLINE -L- STA. 157+00.000 - SEE SHEET 16

REVISIONS

27-MAY-2005 [214]
jjones
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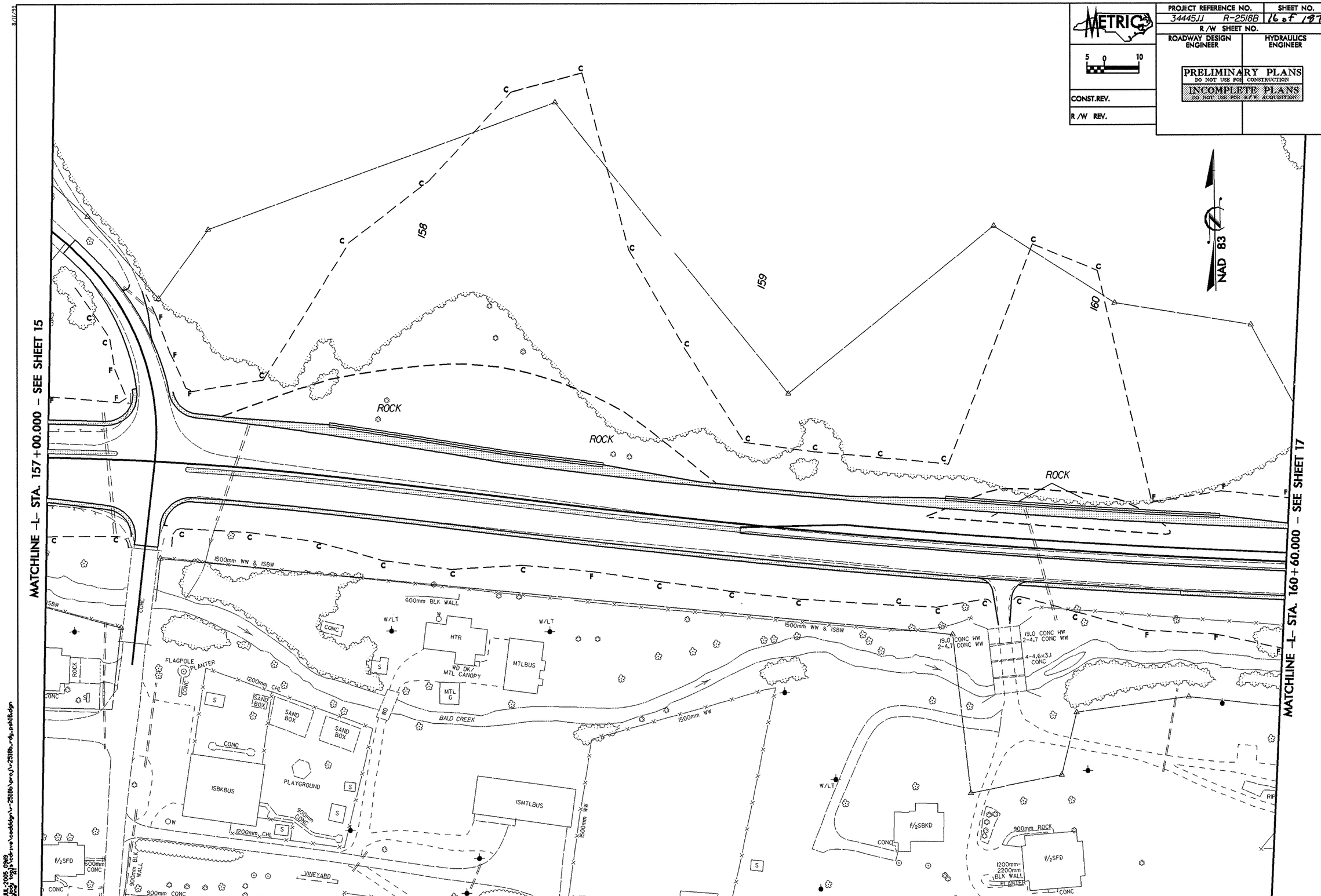
METRIC
PROJECT REFERENCE NO.
34445JJ R-2518B
SHEET NO.
16 of 187
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
CONST.REV.
R/W REV.
NAD 83
MATCHLINE -L- STA. 157+00.000 - SEE SHEET 15
MATCHLINE -L- STA. 160+60.000 - SEE SHEET 17
158
159
160
ROCK
1500mm WW & ISBW
600mm BLK WALL
HTR
MTLBUS
WD DK/ MTL CANOPY
MTL G
BALD CREEK
1500mm WW
19.0 CONC HW
2-4.7 CONC WW
4-4.6x3.1 CONC
FLAGPOLE
PLANTER
1200mm CHL
SAND BOX
PLAYGROUND
ISBKBUS
ISMTLBUS
900mm CONC
1½SFD
1½SBKD
900mm ROCK
1200mm-2200mm BLK WALL
VINEYARD
GATE
CONC
W/LT
REVISIONS

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
34445JJ R-2518B	17 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

REVISIONS

-L-
PIs Sta. 160+41.988
Os = 0°24'23.7"
Ls = 36.900
LT = 24.600
ST = 12.300

NAD 83

MATCHLINE -L- STA. 160+60.000 – SEE SHEET 16

MATCHLINE -L- STA. 164+20.000 – SEE SHEET 18

-L- ST Sta. 160+66.588

S 1°41'01" W

-Y10- POT Sta. 10+00.000

-Y10- POT Sta. 10+53.838 =
-L- POT Sta. 161+26.226

S 86°31'35.5" E

163+60
55 M LT

163+00
35 M LT

162+30
12 M LT

162+78
21 M RT

ROCK

ROCK

ROCK

BALD CREEK

BALD CREEK

US 19 87 BST

SR 1203 BST

SR 1392 SAM ROBINSON RD

ISBKD

ISFD

ISMTL

2SFD

B

ANTENNA

1500mm WW & ISBW

1500mm WW & ISBW

1500mm WW & ISBW

1500mm WW & ISBW

ISELEC & ISBW

ISELEC & ISBW

1500mm WD RAIL

1500mm WD RAIL

1500mm WD RAIL

900mm CONC

900mm CONC

3.4 CONC

2.4x4.3 CONC

3.0 CONC HW
1.6 CONC WW
1.2 CONC WW

3.0 CONC HW
2.3 CONC WW
1.8 CONC WW

4SBW

2SBW

3SBW

RAP

GATE

SOIL

WO

GR

27-MAY-2005 14:02
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PROJECT REFERENCE NO.	SHEET NO.
34445.11 R-2518B	18 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

REVISIONS

8/17/33

-Y11-
PI Sta 10+32.008
Δ = 30° 57' 48.7" (RT)
L = 42.693
T = 21.882
R = 79.000
SE = 0.01

-Y11- POT Sta. 10+00.000

-Y11- PCSta. 10+10.127

S 56° 15' 30.1" E

-Y11-

S 2° 17' 42.5" E

-Y11- PT Sta. 10+52.819

S 86° 31' 35.5" E

-L-

-Y11- POT Sta. 10+71.768 =
-L- POT Sta. 165+44.349

NAD 83

10

165

166

167

ABAND

2SFD

B

3SBW

1500mm WW & ISBW

900mm WW

164+90
22 M LT

164+90
23 M RT

ANTENNA

ABAND

ABAND

ABAND

BALD CREEK

GATE

MATCHLINE -L- STA. 164+20.000 – SEE SHEET 17

MATCHLINE -L- STA. 167+80.000 – SEE SHEET 19

04-JUN-2005 10:55
$(Login) log:\c:\drive\ceddgn\r-2518b\proj\r-2518b_rdy_pshtb.dgn

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
34445JJ R-2518B	19 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

MATCHLINE -L- STA. 167+80.000 – SEE SHEET 18

MATCHLINE -L- STA. 171+40.000 – SEE SHEET 20

NAD 83

168 169 170 171

-L- TSSta.170+08.982

-L- SCSta.170+45.882

-L- CSSta.171+25.234

S 86° 31' 35.5" E

US 19 8.5 BST

-L-

PIs Sta. 170+33.582
Θs = 0° 36' 14.6"
Ls = 36.900
LT = 24.600
ST = 12.300

PI Sta. 170+85.565
Δ = 2° 35' 52.9" (LT)
L = 79.352
T = 39.683
R = 1,750.000
SE = 0.03

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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
34445JJ R-2518B	20 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L-
PIs Sta. 171+37.534 Es = 0' 36' 14.6" Ls = 36.900 LT = 24.600 ST = 12.300
PIs Sta. 171+86.734 Es = 0' 36' 14.6" Ls = 36.900 LT = 24.600 ST = 12.300
PI Sta. 172+38.857 Δ = 2° 36' 25.9" (RT) L = 79.632 T = 39.823 R = 1750.000 SE = 0.03
PIs Sta. 172+90.967 Es = 0' 36' 14.6" Ls = 36.900 LT = 24.600 ST = 12.300

-Y12-
PI Sta. 10+38.587 Δ = 7° 08' 47.9" (RT) L = 21.953 T = 10.991 R = 176.000 SE = 0.07
PI Sta. 10+67.439 Δ = 55° 30' 11.5" (RT) L = 32.936 T = 17.889 R = 34.000 SE = 0.09

MATCHLINE -L- STA. 171+40.000 – SEE SHEET 19

MATCHLINE -L- STA. 175+00.000 – SEE SHEET 21

I72

I73

I74

MBSW

NAD 83

-Y12- POT Sta. 10+00.000

-Y12- PC Sta. 10+27.597

-Y12- PCC Sta. 10+49.550

-Y12- PT Sta. 10+82.486

S 88° 56' 33.2" E

-Y12-

-L- SRS Sta. 171+62.134

S 26° 17' 33.8" E

-L- S 86° 31' 02.5" E

-L- SC Sta. 171+99.034

175+20
25 M RT

-L- ST Sta. 173+15.566

-L- CS Sta. 172+78.666

-Y12- POT Sta. 11+06.075 =
-L- POC Sta. 172+68.943

SR 1453 6J BST

US 19 8.5 BST

7.2 BST

BST

APPROX. LOCATION OF JUNCTION BOX

5SBW

WD RAIL & 3SBW

1500mm WW & ISBW

1200mm WW

450mm CMP

600mm CMP

375mm CMP

4.0 CONC HW

2SFD

2100mm CONC

CONC

W/LT

BALD CREEK

LUMBER SHED

LUMBER SHED

GR

MTL

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jjones
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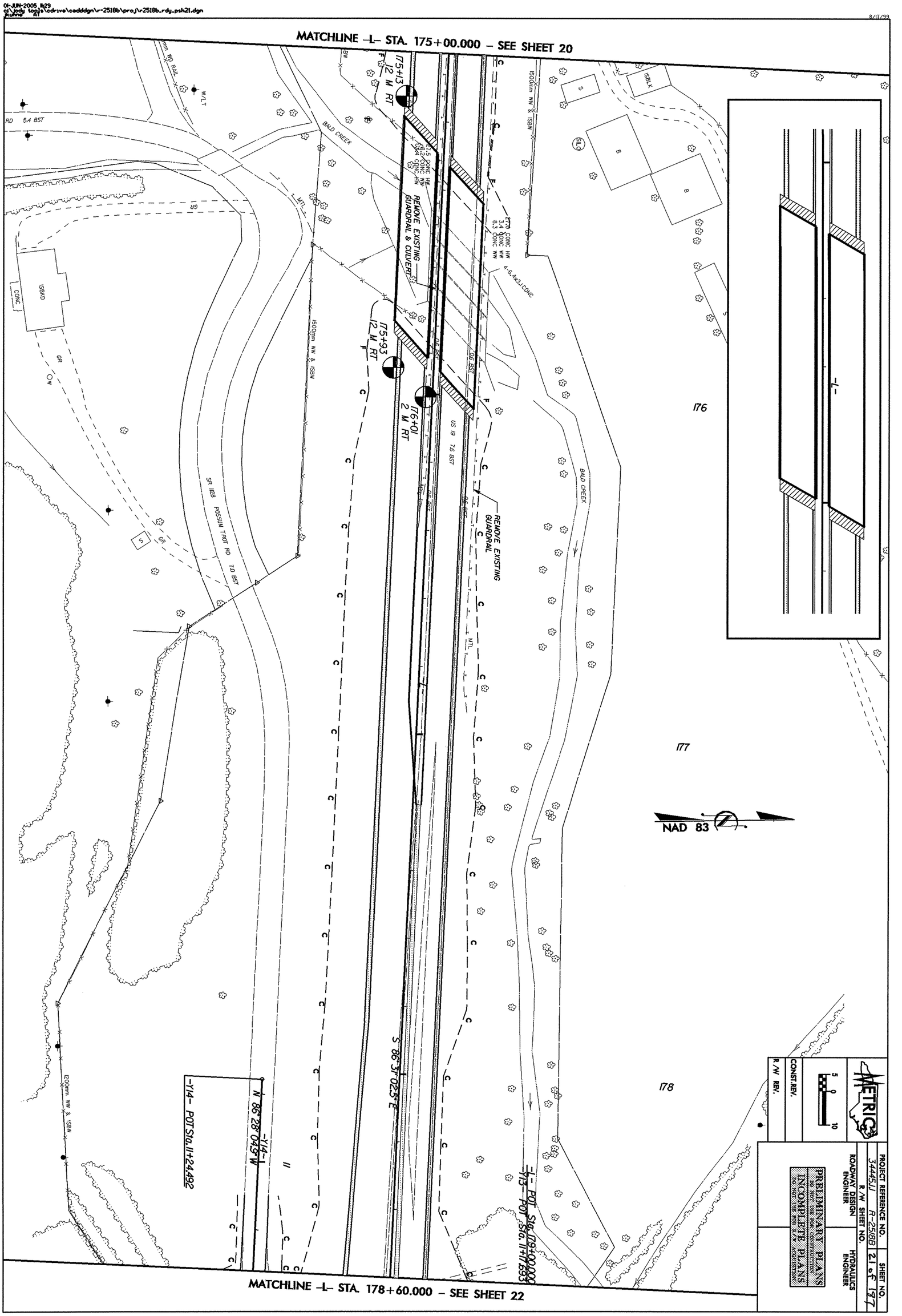
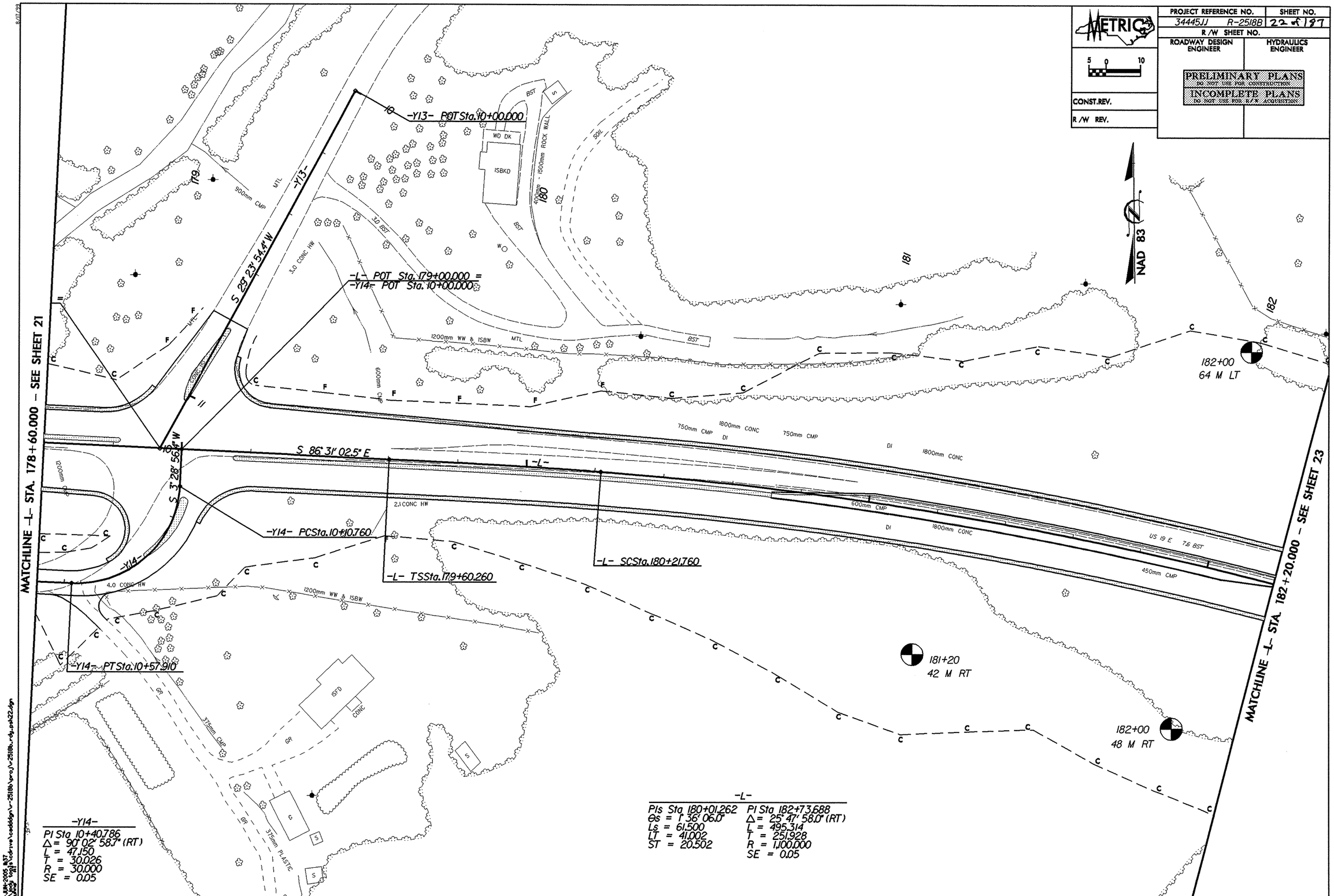
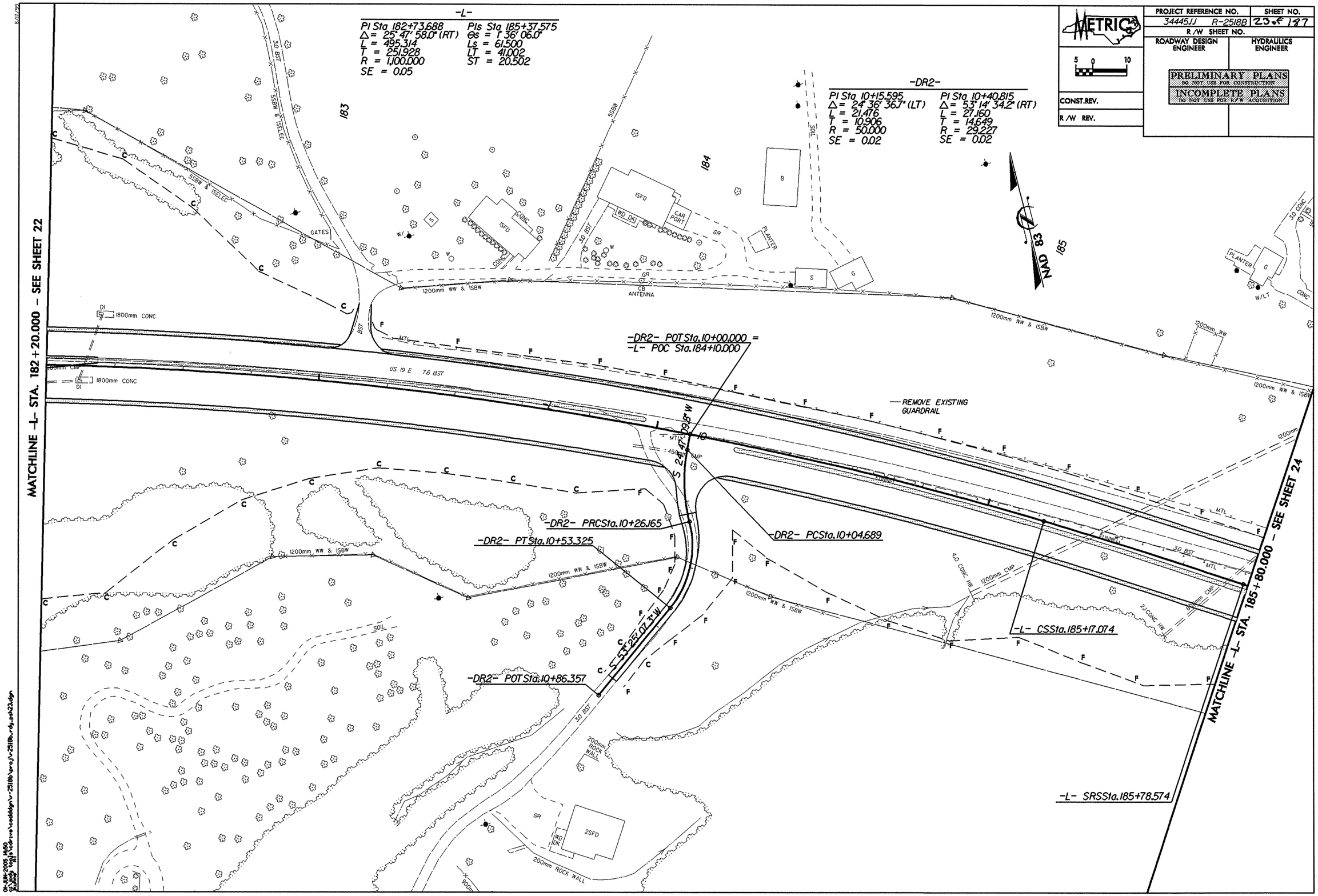


MATCHLINE -L- STA. 175+00.000 - SEE SHEET 20
MATCHLINE -L- STA. 178+60.000 - SEE SHEET 22
175+13
12 M RT
175+93
12 M RT
176+01
2 M RT
REMOVE EXISTING GUARDRAIL & CULVERT
REMOVE EXISTING GUARDRAIL
BALD CREEK
US 19 7.6 BST
SR 1128 POSSUM TROT RD 7.0 BST
1500mm WW & ISBW
1200mm WW & ISBW
S 86° 37' 02.5" E
-Y14- POT Sta. 11+24.492
N 86° 28' 04.9" W
-L- POT Sta. 179+00.000
-Y13- POT Sta. 11+17.693
176
177
178
NAD 83
METRIC
PROJECT REFERENCE NO.
34445.1.1
R-2518B
SHEET NO.
21 of 197
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
INCOMPLETE PLANS
CONST. REV.
R/W REV.



METRIC
PROJECT REFERENCE NO.
34445JJ R-2518B
SHEET NO.
22 of 187
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
CONST.REV.
R/W REV.
NAD 83
MATCHLINE -L- STA. 178+60.000 - SEE SHEET 21
MATCHLINE -L- STA. 182+20.000 - SEE SHEET 23
-Y13- POT Sta.10+00.000
-L- POT Sta.179+00.000 =
-Y14- POT Sta.10+00.000
S 29° 23' 54.4" W
S 86° 31' 02.5" E
S 3° 28' 56.4" W
-Y14- PCSta.10+10.760
-L- TSSta.179+60.260
-L- SCSta.180+21.760
-Y14- PTSta.10+57.910
182+00
64 M LT
181+20
42 M RT
182+00
48 M RT
-Y14-
PI Sta 10+40.786
Δ = 90° 02' 58.7" (RT)
L = 47.150
T = 30.026
R = 30.000
SE = 0.05
-L-
PIs Sta 180+01.262
Θs = 1° 36' 06.0"
Ls = 61.500
LT = 41.002
ST = 20.502
PI Sta 182+73.688
Δ = 25° 47' 58.0" (RT)
L = 495.314
T = 251.928
R = 1,100.000
SE = 0.05

REVISIONS



METRIC

PROJECT REFERENCE NO.	SHEET NO.
34445JJ R-2518B	23 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
34445.11 R-2518B	24 of 187
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

-L-
Pls Sta 185+37.575
Es = 1°36'06.0"
Ls = 61.500
LT = 41.002
ST = 20.502

Pls Sta 186+35.984
Es = 3°19'59.6"
Ls = 86.100
LT = 57.410
ST = 28.709

Pl Sta 188+31.784
Δ = 25°27'02.3" (LT)
L = 328.706
T = 167.110
R = 740.000
SE = 0.07

NAD 83

MATCHLINE -L- STA. 185+80.000 – SEE SHEET 23

MATCHLINE -L- STA. 189+40.000 – SEE SHEET 25

-L- SCSta.186+64.674

REMOVE EXISTING GUARDRAIL

REMOVE EXISTING GUARDRAIL

ROCK

186+80
22 M RT

187+60
48 M RT

186

187

188

189

200mm WD WALL

200mm BLK WALL

ISBKD

CONC

900mm CONC

900mm WD RAIL

3.2 BST

3.0 BST

3.0 CONC

600mm CMP

MTL

3.0 BST FUNNEL

0.6 BST

US 19 E 7.2 BST

1800mm CONC

450mm CMP

1200mm WW & ISBW

MTL CANOPY

MTL CAR PORT

VINEYARD

2SFD

MD. DK

HTR

450mm BK WALL

PDOL

SOIL

GR

GUY

375mm CMP

IGATE

1200mm WW & 1SBW

08-JAN-2005 jeff
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REVISIONS

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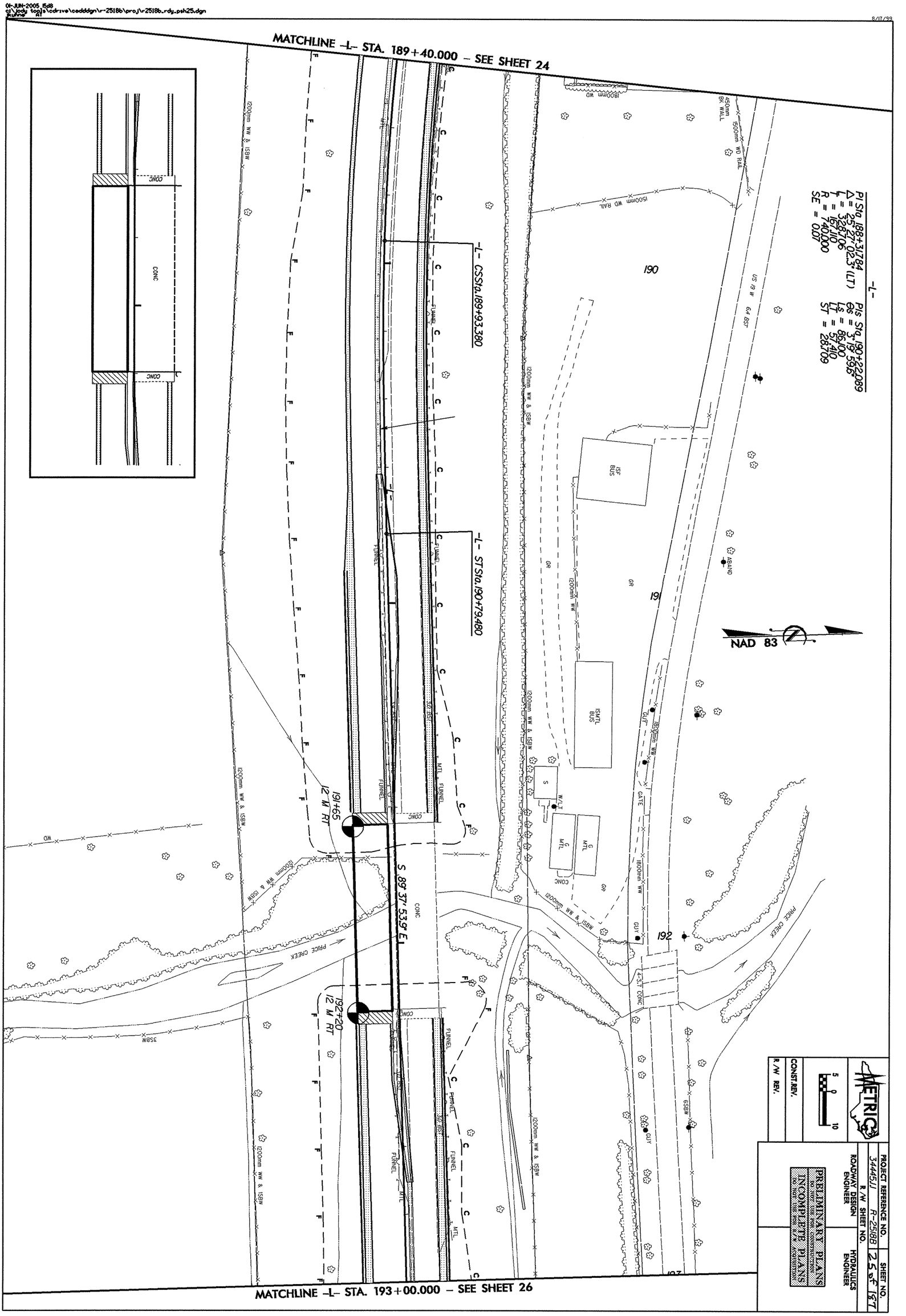

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METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
34445.11 R-2518B	26 of 187
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

REVISIONS

NAD 83

MATCHLINE -L- STA. 193+00.000 – SEE SHEET 25

MATCHLINE -L- STA. 196+60.000 – SEE SHEET 27

POND

CAR WASH U/MTL CANOPY

BST

GR

VACCUMS

W/LT

1800mm CMP

BK COLUMNS

6SBW

US 19 W 6.4 BST

SR 1454 6.4 BST

194

1050mm CMP

-Y15- POT Sta. 10+00.000

10

S 0°06'29.9" W

SR 1136

195

DI

CONC

750mm CMP

5 GAS PUMPS U/MTL CANOPY

2SBLK BUS

1SBLK BUS

2SBLKAPT

196

ISFD

ANTENNA'S

600mm CMP

1200mm WW & ISBW

1800mm CONC

REMOVE EXISTING GUARDRAIL

US 19 E BST

US 19 E T.9 BST

S 89°37'53.9" E

450mm CMP

ROCK

-L- POT Sta. 194+47.800 =
-Y15- POT Sta. 10+67.317

-Y15- POT Sta. 11+27.015

375mm CMP

MTL CAR PORT

ABAND

SSBW

WD RAIL

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REVISIONS

02-JUN-2005 10:32
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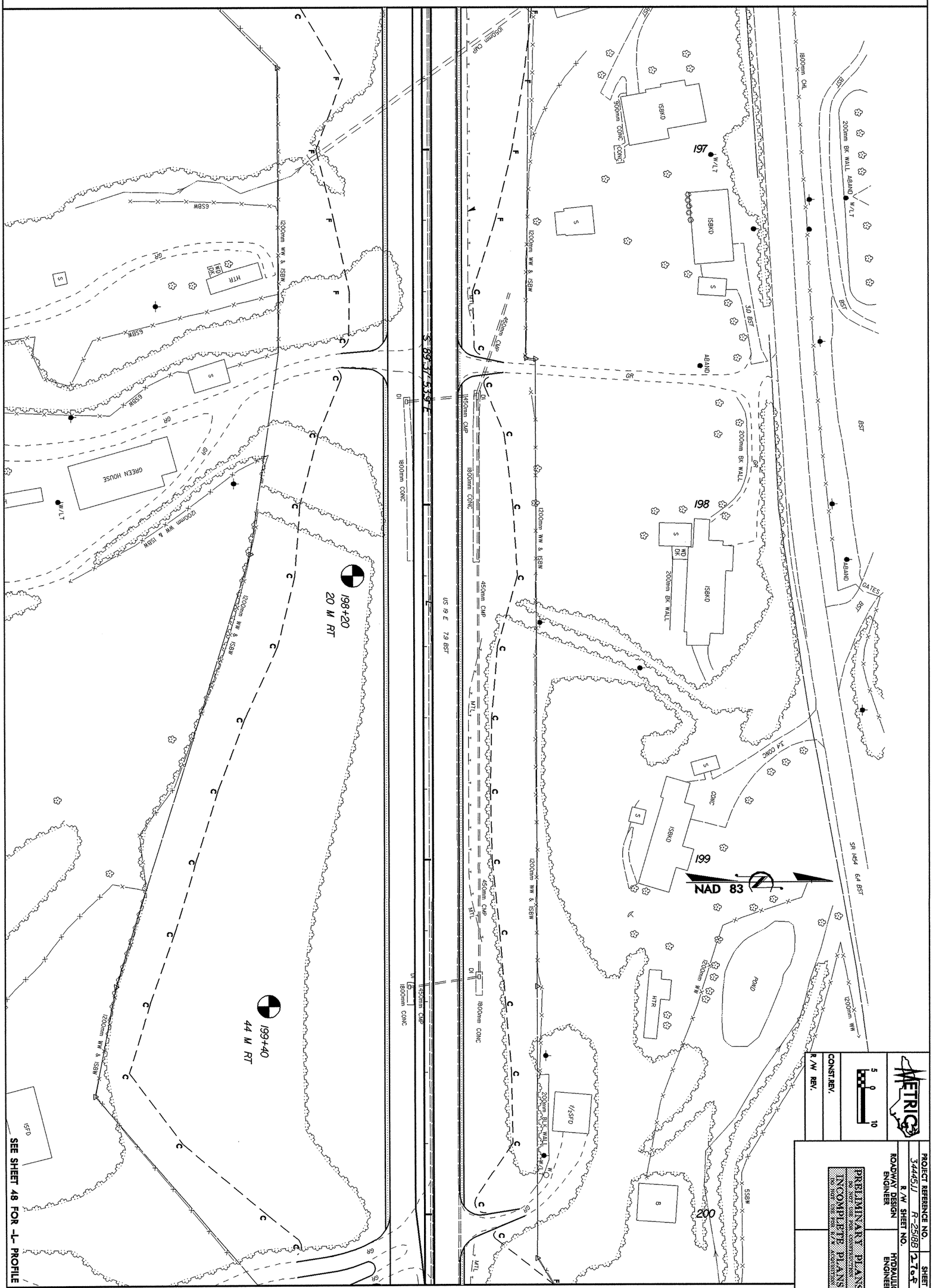
8/17/99

MATCHLINE -L- STA. 196+60.000 - SEE SHEET 26



SEE SHEET 48 FOR -L- PROFILE

MATCHLINE -L- STA. 200+20.000 - SEE SHEET 28

METRIC

CONST.REV.

R/W REV.

PROJECT REFERENCE NO. 34445J1 R-2518B

SHEET NO. 27 of 187

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

REVISIONS

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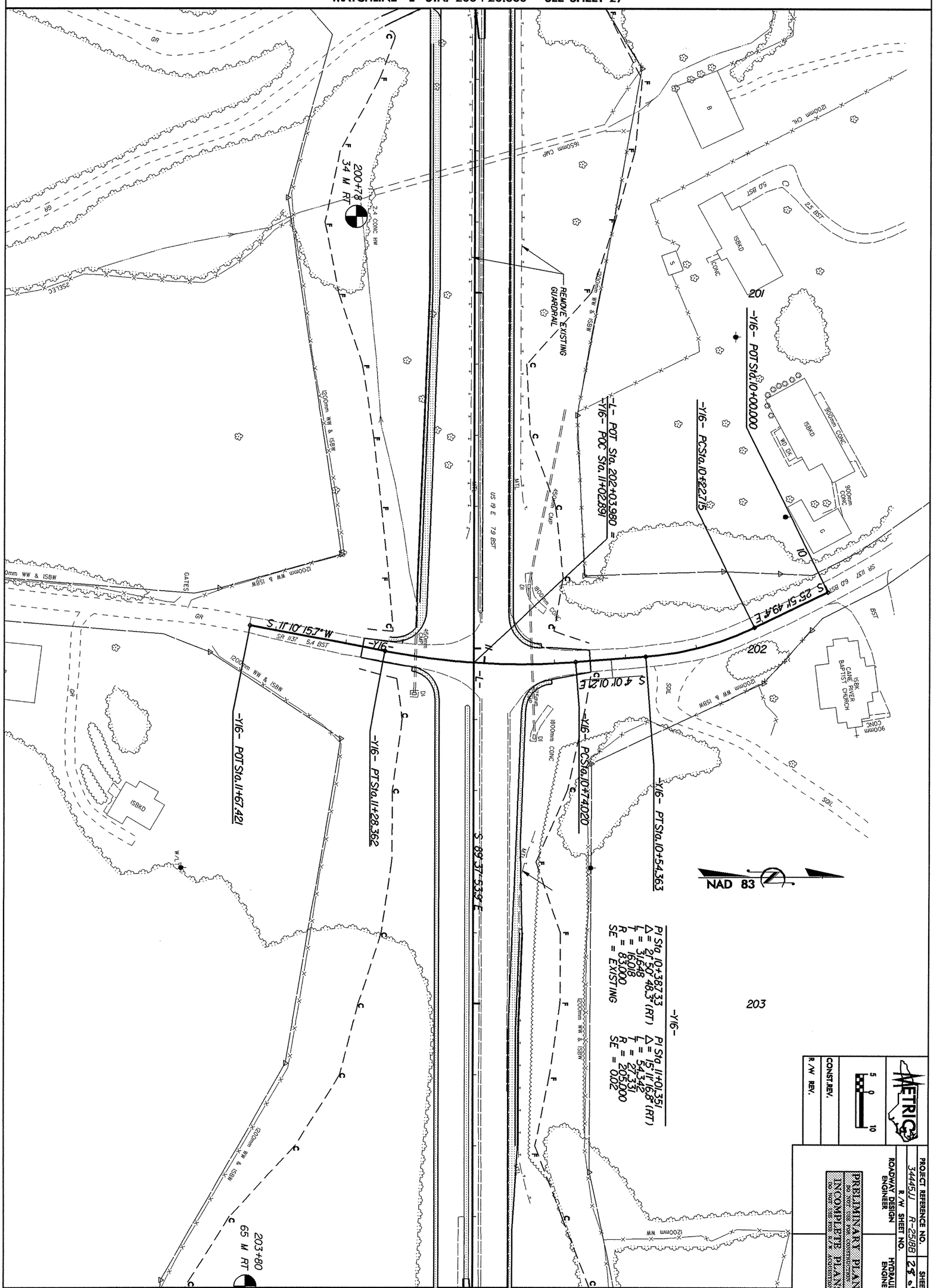
MATCHLINE -L- STA. 200+20.000 - SEE SHEET 27



MATCHLINE -L- STA. 203+80.000 - SEE SHEET 29

METRIC

5 0 10

CONST.REV.

R/W REV.

PROJECT REFERENCE NO. 34445.1.1 R-2518B

SHEET NO. 28 of 187

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

8/17/99

REVISIONS

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	34445JJ R-2518B	29 of 187
	R/W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

MATCHLINE -L- STA. 203+80.000 – SEE SHEET 28

MATCHLINE -L- STA. 207+20.000 – SEE SHEET 30

NAD 83

GATE
W/LT
CONC STONES
ISFD
S
1200mm RD RAIL
GATE
1200mm WW
GATE
1200mm WW
1200mm WW
204
205
206
207
55BW
55BW
55BW
55BW
HTR
WO
WD DK
SR 1454 6.4 BST
SR 1454 7.3 BST
GR
CONC PATIO
ISFD
ISL BLG
C
1200mm WW & ISBW
1200mm WW & ISBW
1200mm WW & ISBW
C
F
REMOVE EXISTING GUARDRAIL
1500mm CMP
2-2250mm CMP
MTL
US 19 E 7.9 BST
S 89°37'53.9" E
1800mm CONC
DI
1800mm CMP
DI
450mm CMP
450mm CMP
204+95
25 M RT
-L- TSSta. 204+46.518
2.5 CONC FW
205+87
30 M RT
-L- SCSta. 205+20.318
203+80
65 M RT
CONC PATIO
ISFD
900mm CONC
ISFD
S

-L-

PIs Sta. 204+95.724	PI Sta. 206+22.758
θs = 2°49'08.2"	Δ = 15°33'19.4" (RT)
Ls = 73.800	L = 203.620
LT = 49.206	T = 102.440
ST = 24.606	R = 750.000
	SE = 0.06

03-JUN-2005 KMS
D:\proj\roadway\r-2518b\proj\r-2518b_rdy_sht29.dgn

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
34445JJ R-2518B	30 of 187
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

-L-

Pls Sta. 207+48.543
Θs = 2° 49' 08.2"
Ls = 73.800
LT = 49.206
ST = 24.606

Pls Sta. 208+38.740
Θs = 1° 45' 42.6"
Ls = 61.500
LT = 41.002
ST = 20.502

PI Sta. 210+99.626
Δ = 27° 02' 00.7" (LT)
L = 471.824
T = 240.388
R = 1,000.000
SE = 0.05

NAD 83

MATCHLINE -L- STA. 207+20.000 – SEE SHEET 29

MATCHLINE -L- STA. 210+80.000 – SEE SHEET 31

208

209

210

200mm BK WALL

1½SFD

ISFD

WD DK

[CONC] 300mm BLK WALL

GR

27 BST

S

G

2SFD

900mm ROCK

900mm CONC

30 BST

BST

208+40
45 M LT

210+00
35 M LT

1200mm WW & ISBW

2.2 CONC HW

REMOVE EXISTING GUARDRAIL

-L- SCSta. 208+59.238

US 19 E 7.9 BST

3.0 BST

MTL

TL

600mm CMP

1800mm CONC

450mm CMP

0.6 BST

375mm CMP

2-1250mm CMP

6.9 CONC HW

207+40
28 M RT

-L- CSSta. 207+23.938

-L- SRSSta. 207+97.738

SOIL

GATE

55BW

1200mm WD RAIL

ST

1200mm WW

3.0 BST

450mm CMP

WD DK

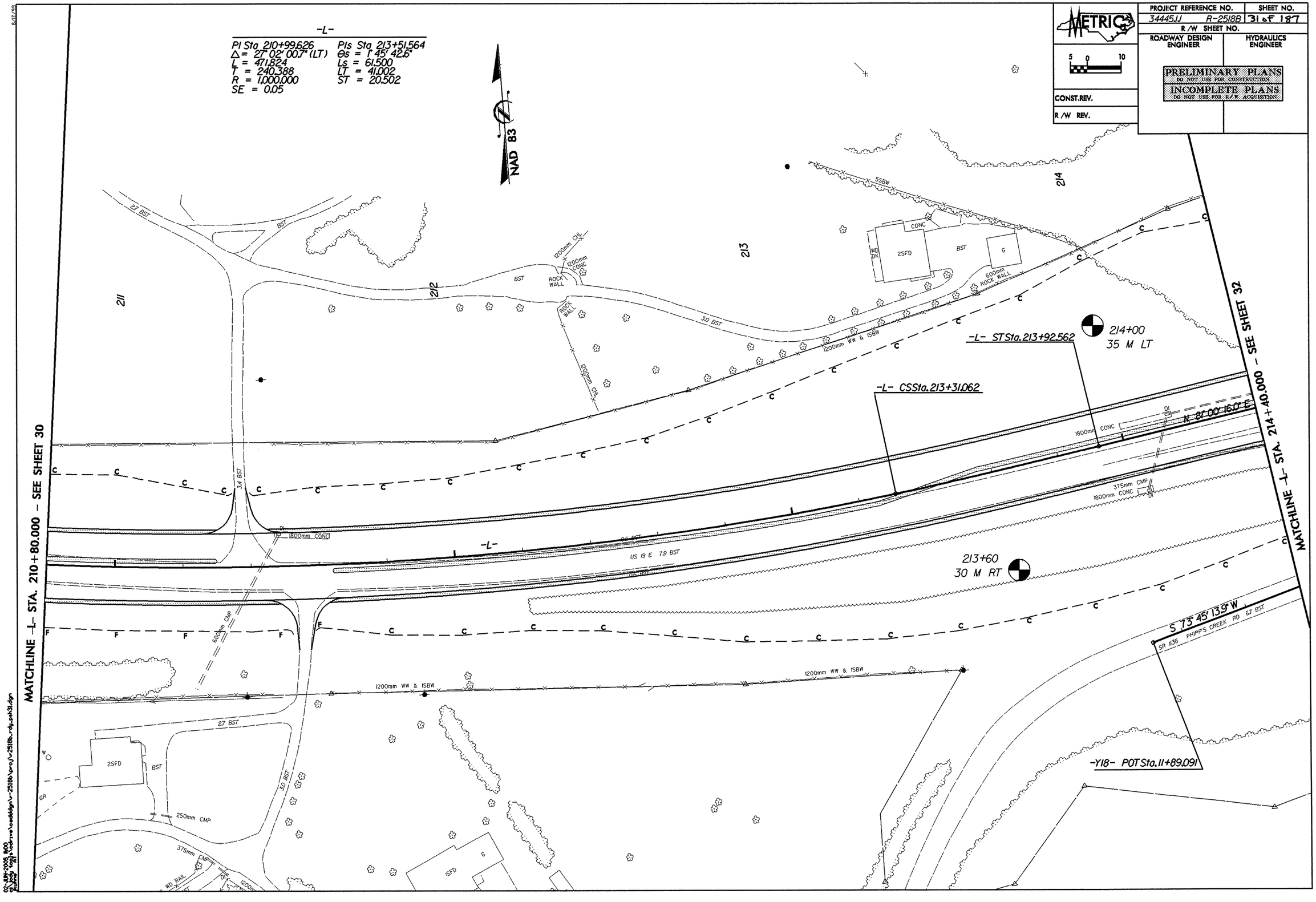
ISFD

G

BST

GR

DI



-L-
PI Sta 210+99.626
Δ = 27° 02' 00.7" (LT)
L = 471.824
T = 240.388
R = 1,000.000
SE = 0.05
PIs Sta 213+51.564
θs = 1° 45' 42.6"
Ls = 61.500
LT = 41.002
ST = 20.502
NAD 83
METRIC
5 0 10
CONST.REV.
R/W REV.
PROJECT REFERENCE NO.
34445JJ R-2518B
SHEET NO.
31 of 187
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
MATCHLINE -L- STA. 210+80.000 - SEE SHEET 30
MATCHLINE -L- STA. 214+40.000 - SEE SHEET 32
211
212
213
214
-L- ST Sta. 213+92.562
214+00
35 M LT
-L- CS Sta. 213+31.062
N 81° 00' 16.0" E
213+60
30 M RT
S 73° 45' 13.9" W
SR 1136 PHIPP'S CREEK RD 67 BST
-Y18- POT Sta. 11+89.091
1200mm WW & ISBW
1800mm CONC
375mm CMP
600mm CMP
250mm CMP
2SFD
1SFD
BST
ROCK WALL

REVISIONS

REVISIONS

02-JUN-2005 8:04
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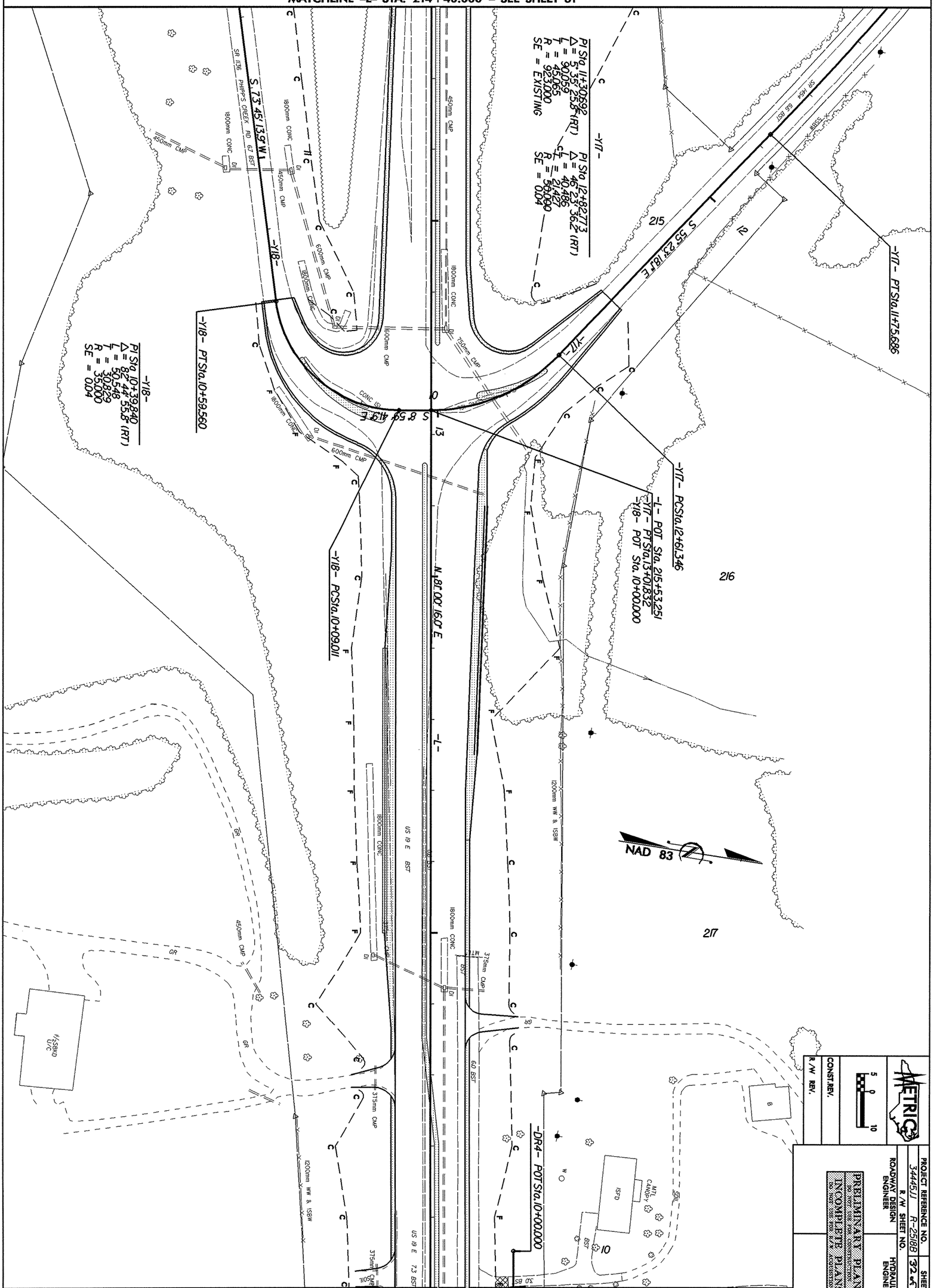
MATCHLINE -L- STA. 214+40.000 - SEE SHEET 31



MATCHLINE -L- STA. 218+00.000 - SEE SHEET 33

METRIC

CONST.REV.

R/W REV.

PROJECT REFERENCE NO. 34445J1 R-2518B

SHEET NO. 32 of 187

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
34445JJ R-2518B	33 of 137
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

REVISIONS

9.17.09

-DR5-

PI Sta 10+23.843
Δ = 86° 11' 44.2" (LT)
L = 30.088
T = 18.714
R = 20.000
SE = 0.02

PI Sta 11+13.375
Δ = 85° 45' 59.0" (RT)
L = 17.963
T = 11.145
R = 12.000
SE = 0.02

-DR6-

PI Sta 10+05.928
Δ = 40° 30' 31.6" (RT)
L = 8.484
T = 4.428
R = 12.000
SE = 0.02

PI Sta 10+37.701
Δ = 78° 24' 54.9" (LT)
L = 16.423
T = 9.790
R = 12.000
SE = 0.02

MATCHLINE -L- STA. 218+00.000 – SEE SHEET 32

MATCHLINE -L- STA. 221+60.000 – SEE SHEET 34

NAD 83

219 220 221

HTR WD DK S ISMTL BUS

1200mm CONC BST 54" BST 48" BST 42" BST 30" BST 27" BST

-DR3- POT Sta. 10+00.000

-DR3- POT Sta. 10+11.000 = -DR4- POT Sta. 10+99.431

-DR5- PC Sta. 10+05.128

-DR5- POC Sta. 10+24.606 = -DR6- POT Sta. 10+00.000

-DR5- PC Sta. 11+02.230

-DR5- PT Sta. 10+35.216

-DR5- PT Sta. 11+20.193

-DR5- POT Sta. 11+30.435

-DR3- POT Sta. 10+34.440 = -DR5- POT Sta. 10+00.000 = -L- POT Sta. 218+89.143 -DR6- PC Sta. 10+01.500

-DR6- PT Sta. 10+44.334

-DR6- POT Sta. 10+49.491

-DR6- PT Sta. 10+09.984

-DR6- PC Sta. 10+27.911

N 81° 00' 14.3" E

-L- N 81° 00' 16.0" E

S 9° 00' 57.0" E

S 65° 41' 36.4" W

S 25° 04.8' W

S 12° 43' 16.5" E

N 84° 47' 18.8" E

REMOVE EXISTING GUARDRAIL

GATE 1800mm CHL

1200mm WW & ISBW

600mm CMP 750mm CMP 450mm CMP 1800mm CONC 375mm CMP 300mm PLASTIC 300mm PVC 200mm CMP 1500mm CONC

ISBKD 300mm BLK WALL ISFD 2SFD

200mm CONC CURB W/LT GR SOIL

DI G W/LT

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Last Saved By: tcarlson
Full Path: C:\Projects\roadsdgn\r-2518b\proj\r-2518b_rdy_pshts33.dgn

REVISIONS

8/17/99

02-JAN-2005 843
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MATCHLINE -L- STA. 221+60.000 – SEE SHEET 33

MATCHLINE -L- STA. 225+20.000 – SEE SHEET 35

-Y19-
PI Sta 10+62.629
Δ = 53° 57' 49.9" (RT)
L = 32.965
T = 17.819
R = 35.000
SE = 0.04

PI Sta 11+02.113
Δ = 19° 12' 15.2" (LT)
L = 16.759
T = 8.459
R = 50.000
SE = 0.02

-Y19- POT Sta.10+00.000

-Y19- PCSta.10+44.809

-Y19- PTSta.10+77.774

-Y19- PCSta.10+93.654

-L- POT Sta. 222+61.890 =
-Y19- PTSta.11+10.413 =
-Y20- POT Sta.10+00.000

-Y20- PCSta.10+14.195

-Y20- PTSta.10+31.681

-Y20-
PI Sta 10+23.313
Δ = 40° 04' 28.6" (LT)
L = 17.486
T = 9.118
R = 25.000
SE = 0.02

-Y20- POTSta.11+38.714

-L- POT Sta. 224+82.890 =
-Y21- POTSta.12+72.674

-Y21-
PI Sta 11+00.210
Δ = 57° 03' 02.2" (LT)
L = 79.658
T = 43.482
R = 80.000
SE = 0.08

PI Sta 12+18.161
Δ = 72° 19' 20.0" (RT)
L = 100.981
T = 58.468
R = 80.000
SE = 0.08

-Y21- PCSta.11+59.693

-Y21- PTSta.11+36.385

-Y21- PTSta.12+60.674

MATCHLINE -Y21- STA. 11+20.000 SEE SHEET 36

NAD 83

S 43° 45' 18.6" E

S 10° 12' 31.3" W

S 45° 04' 12.6" E

S 8° 59' 44.0" E

N 81° 00' 16.0" E

S 81° 19' 04.4" E

S 8° 59' 44.4" E

223+18
12 M LT

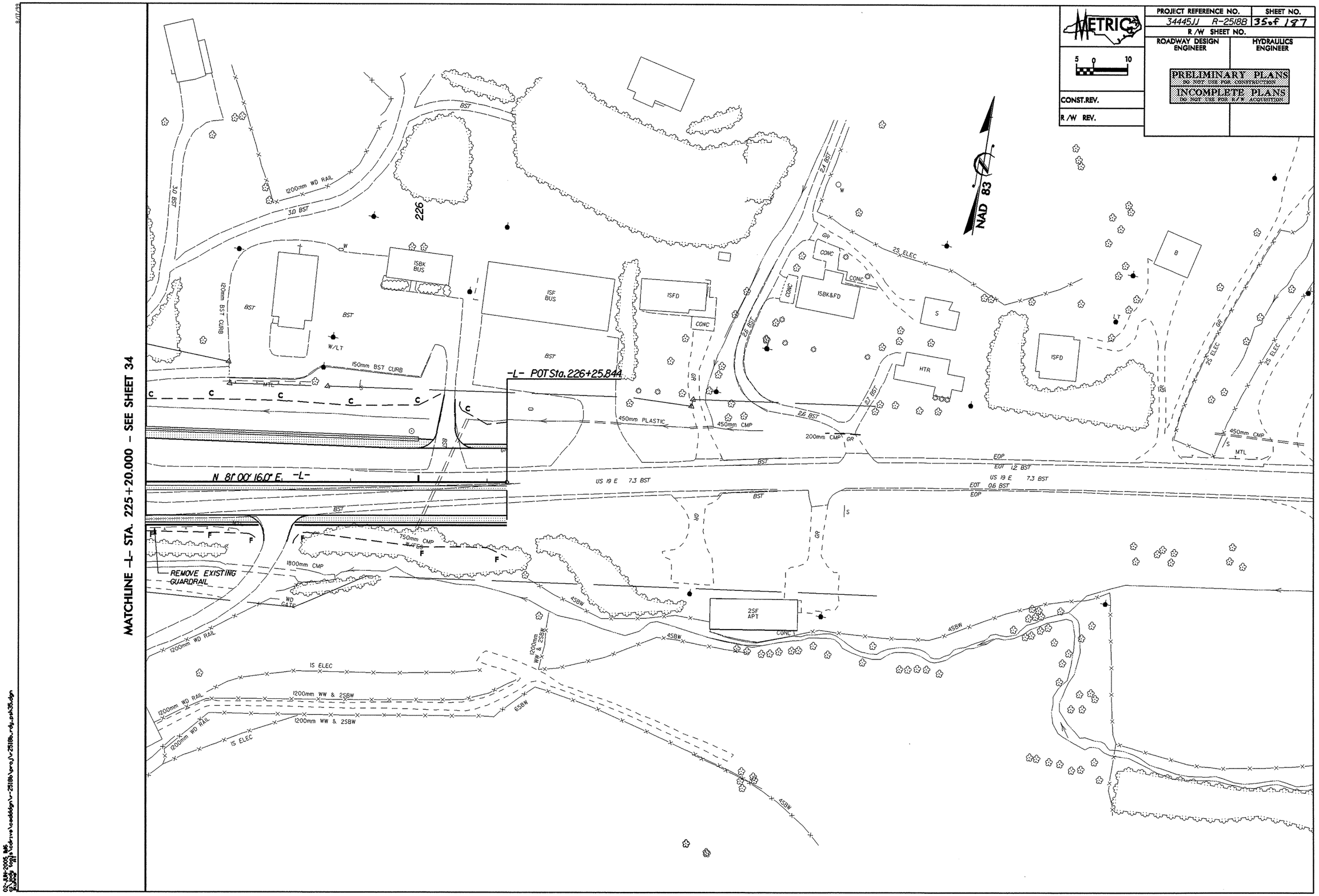
223+82
12 M LT

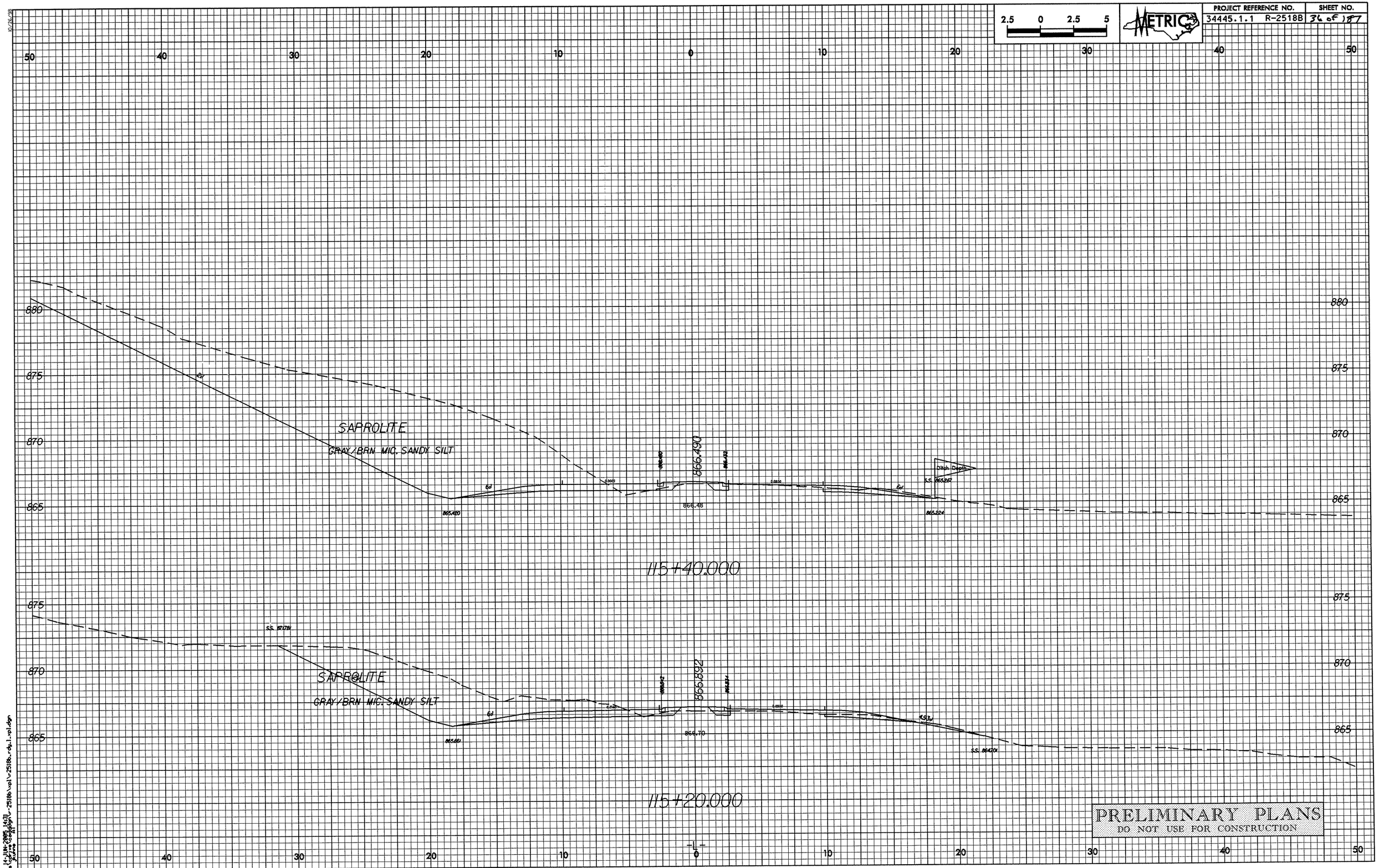
REMOVE EXISTING GUARDRAIL

SR 1115 BAKERS CREEK RD

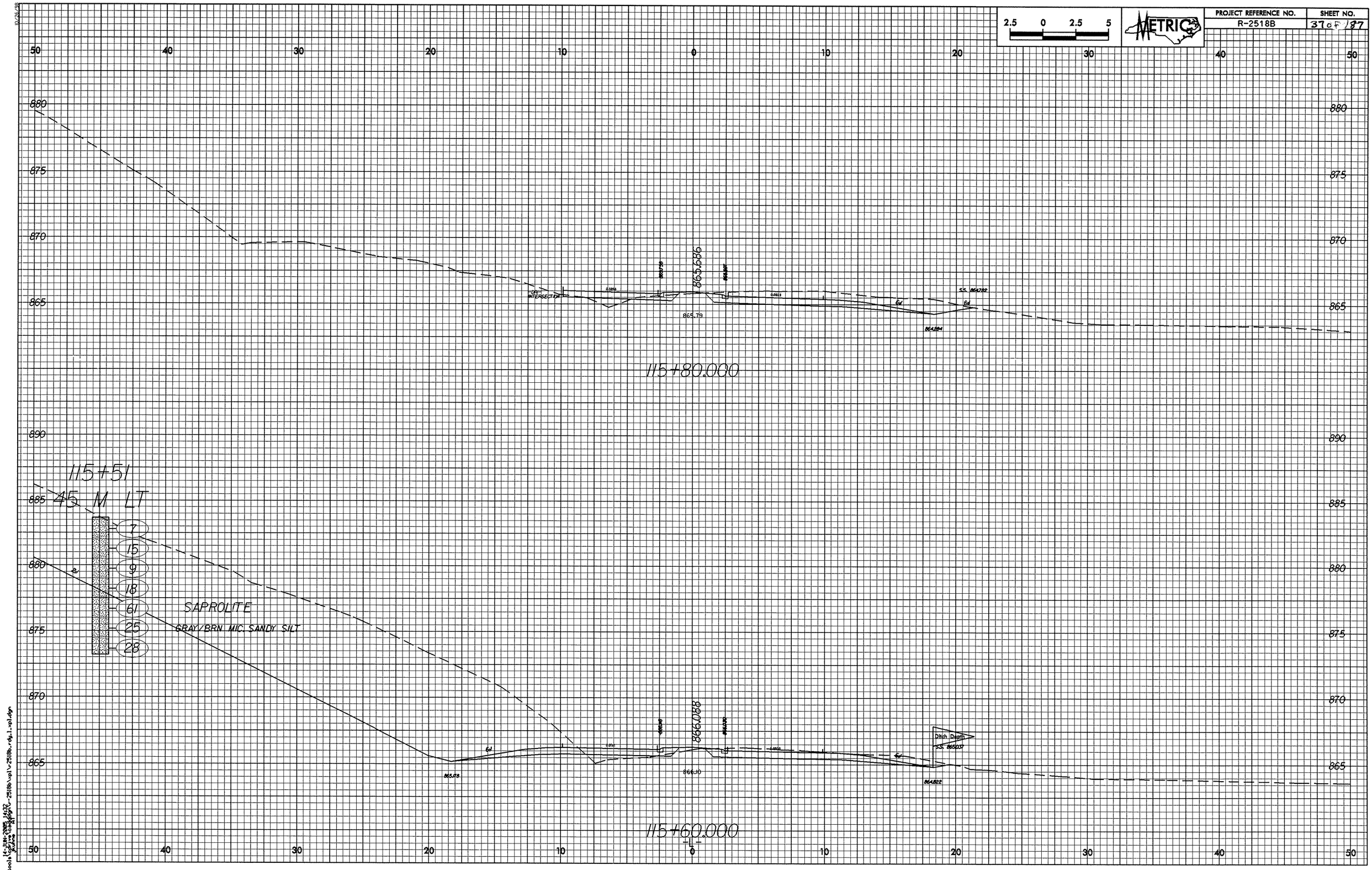
CANE RIVER

-L-

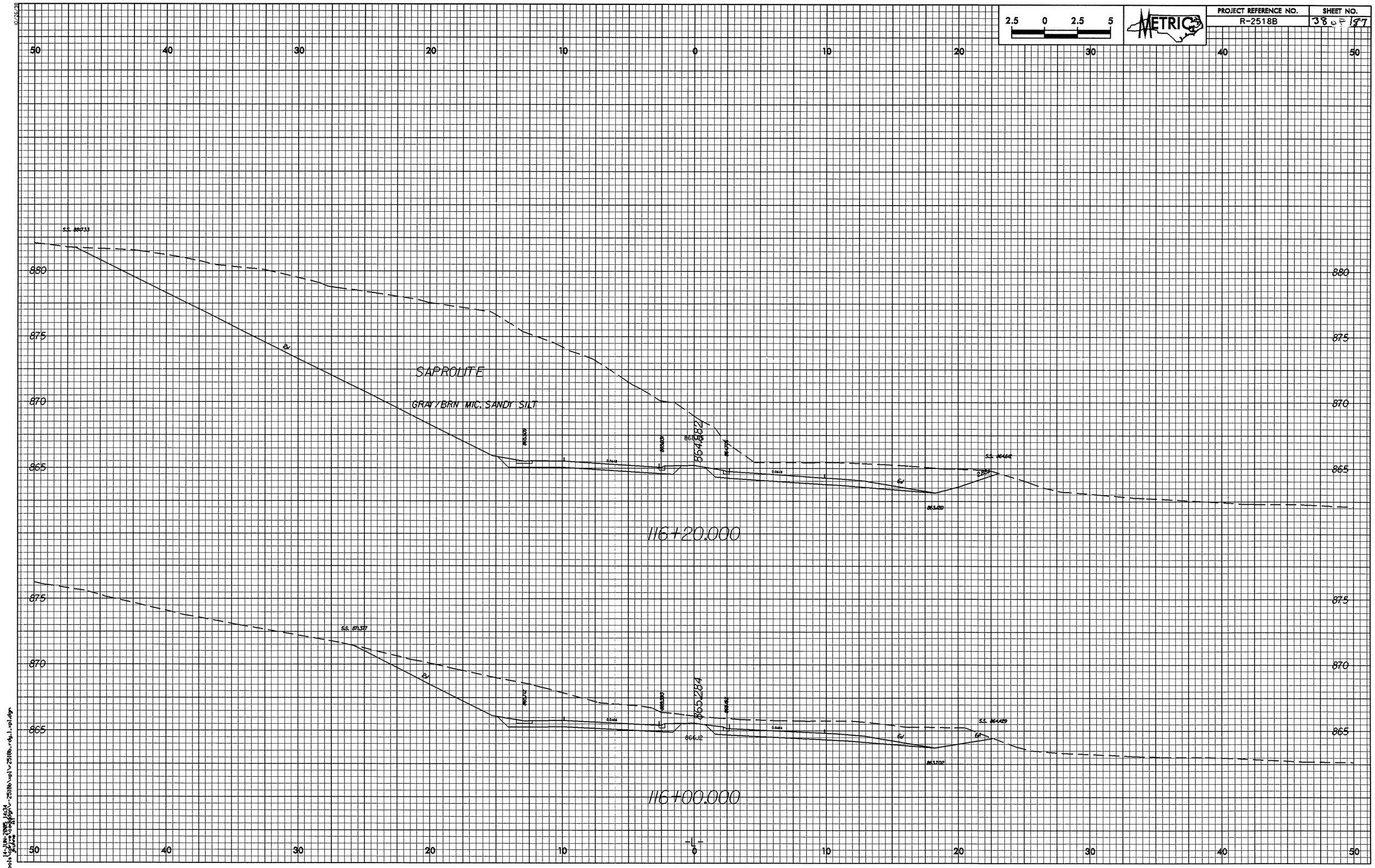

METRIC
5 0 10
PROJECT REFERENCE NO.
34445JJ R-2518B
SHEET NO.
35 of 187
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
CONST.REV.
R/W REV.
NAD 83
MATCHLINE -L- STA. 225+20.000 - SEE SHEET 34
-L- POT Sta. 226+25.844
N 81° 00' 16.0" E. -L-
226
1200mm WD RAIL
3.0 BST
120mm BST CURB
150mm BST CURB
ISBK BUS
ISF BUS
ISFD
ISBK&FD
HTR
CONC
2S ELEC
450mm PLASTIC
450mm CMP
200mm CMP
US 19 E 7.3 BST
EOP
EOT 1.2 BST
EOT 0.6 BST
750mm CMP
1800mm CMP
REMOVE EXISTING GUARDRAIL
WD GATE
2SF APT
1200mm WW & 2SBW
1S ELEC
4SBW
6SBW
MTL
W/LT
BST
GR
LT
S
B



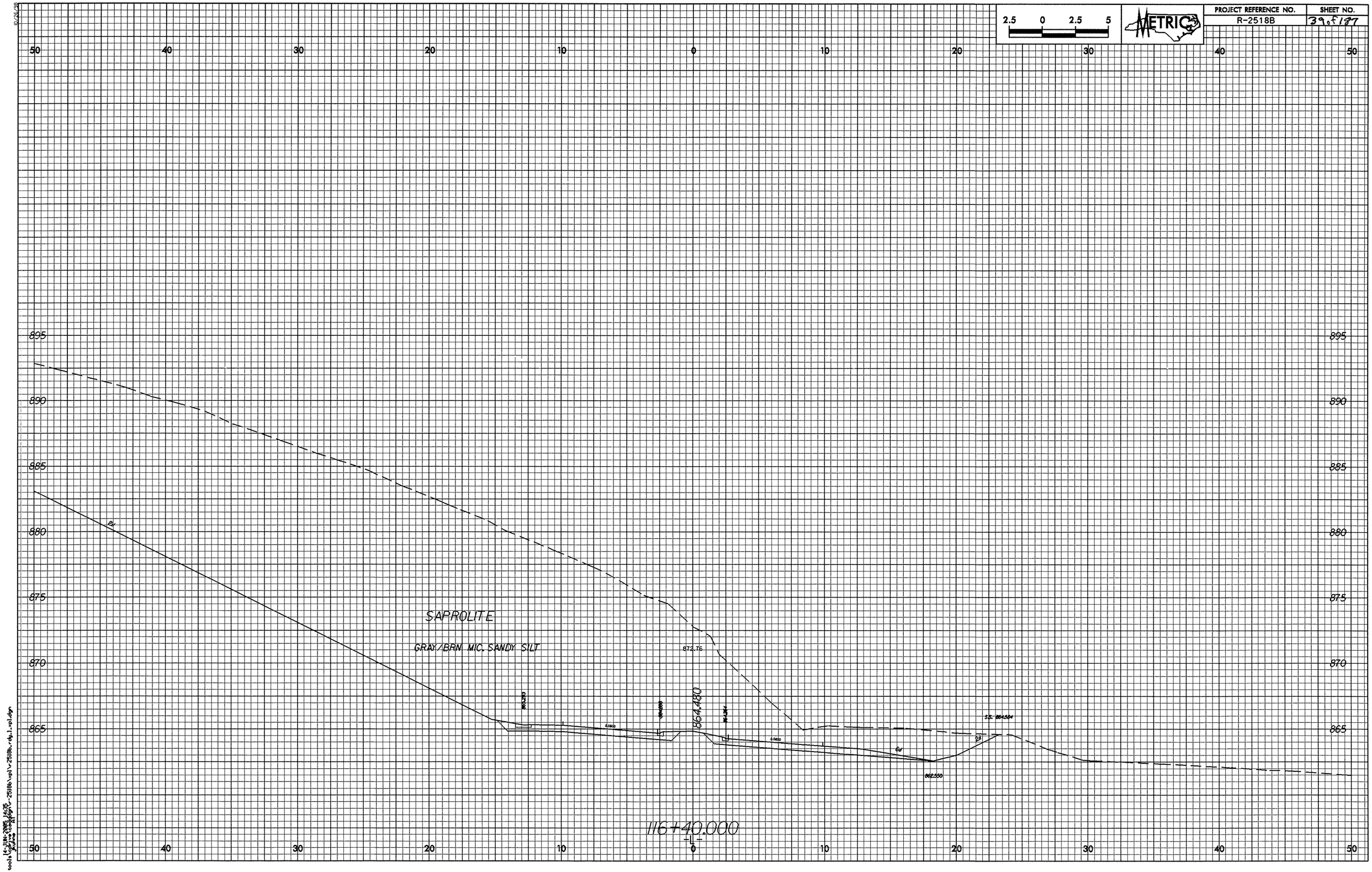
PROJECT REFERENCE NO.
34445.1.1 R-2518B
SHEET NO.
36 of 187
METRIC
2.5 0 2.5 5
SAPROLITE
GRAY/BRN MIC. SANDY SILT
866.490
866.48
865.420
865.224
Ditch Depth
115+40.000
SAPROLITE
GRAY/BRN MIC. SANDY SILT
866.892
866.70
865.661
115+20.000
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



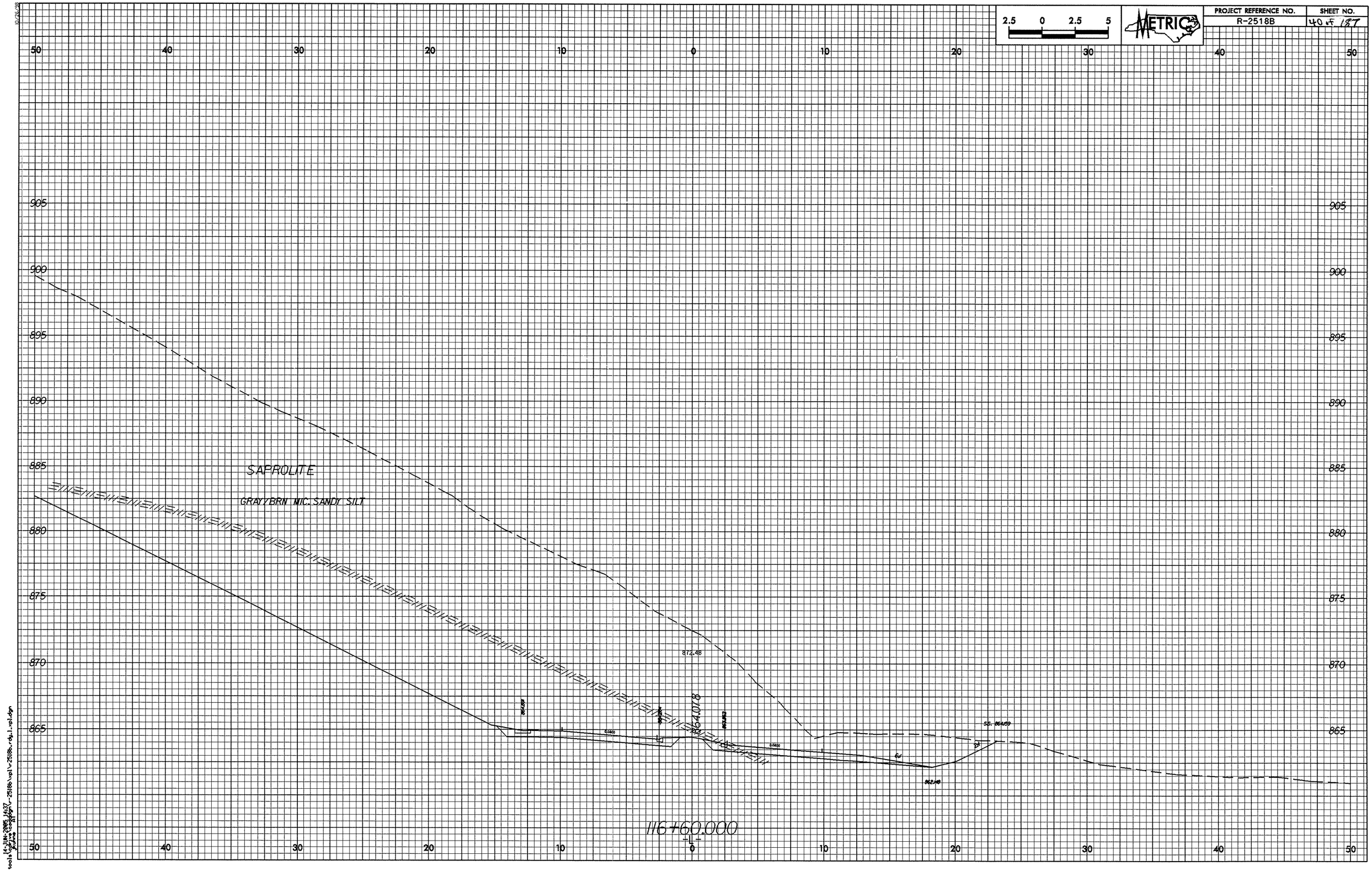
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
37 OF 187
115+80.000
865.686
865.79
115+51
45 M LT
7
15
9
18
61
25
28
SAPROLITE
GRAY/BRN MIC. SANDY SILT
866.088
866.10
Ditch Depth
115+60.000
-L-



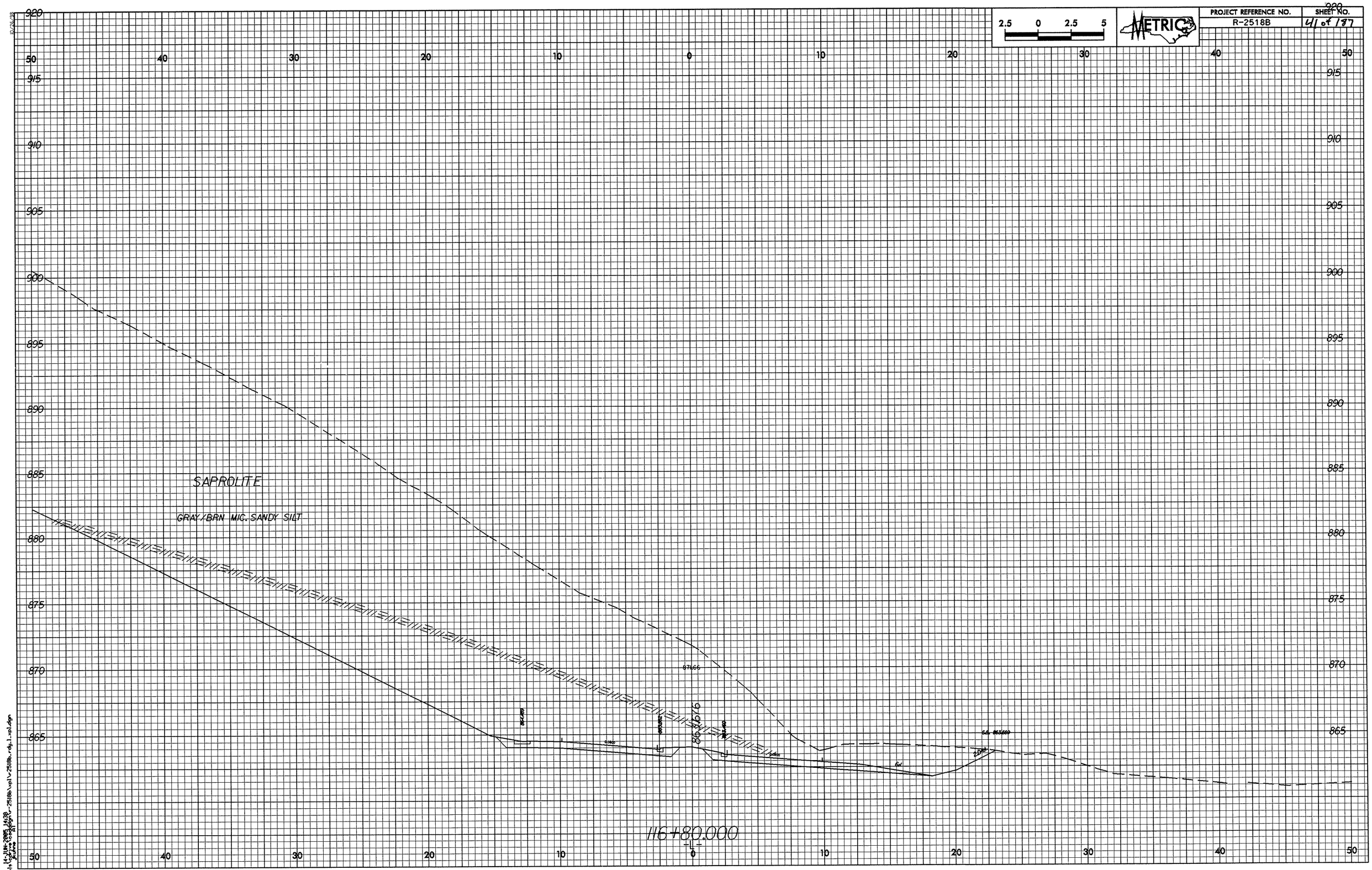
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
38 OF 187
50 40 30 20 10 0 10 20 30 40 50
880
875
870
865
SAPROLITE
GRAY/BRN MIC. SANDY SILT
864.882
116+20.000
865.284
866.12
116+00.000
-L-



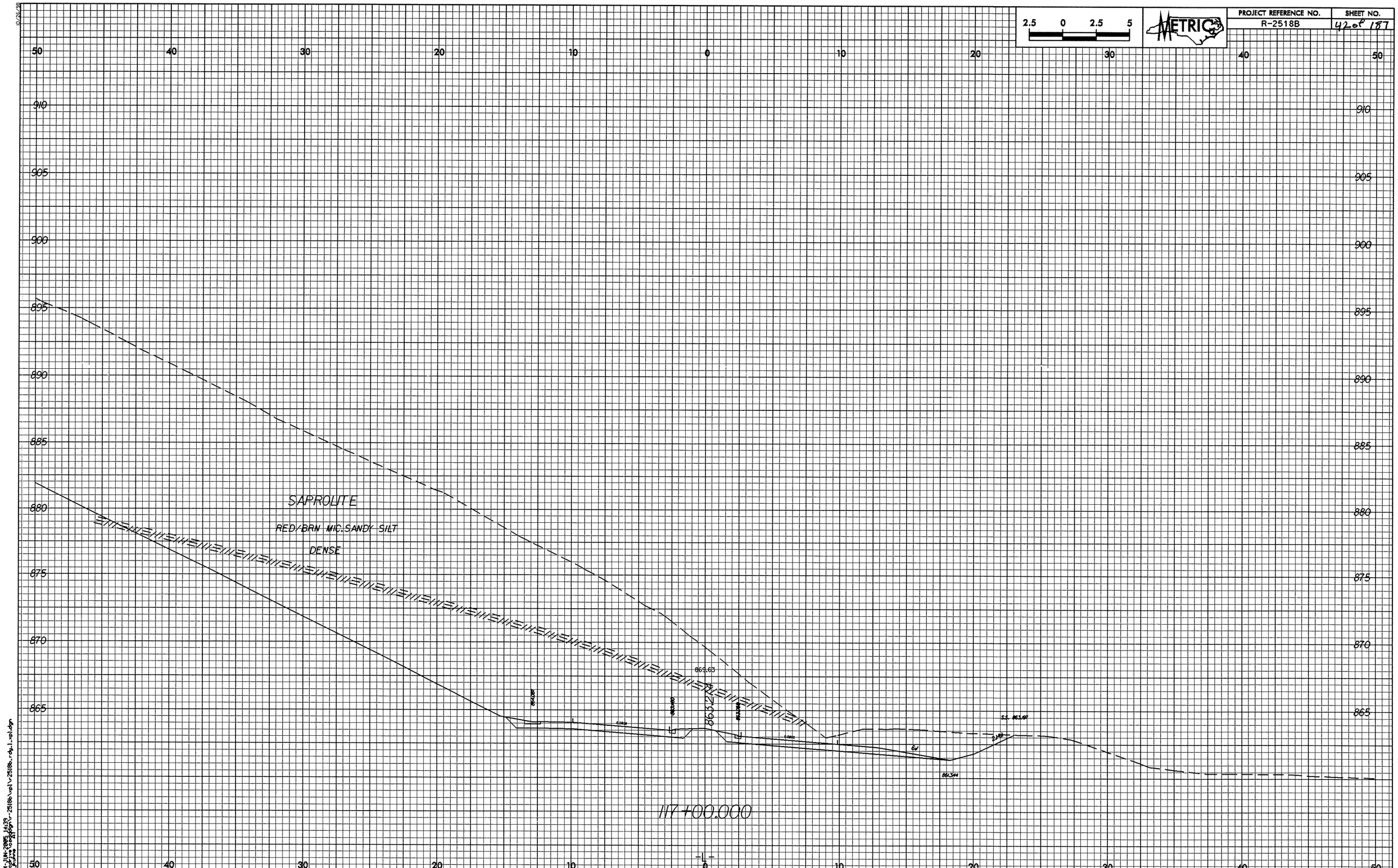
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
39 of 187
50 40 30 20 10 0 10 20 30 40 50
895
890
885
880
875
870
865
SAPROLITE
GRAY/BRN MIC. SANDY SILT
872.76
864.480
862.550
116+40.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
40 of 187
50 40 30 20 10 0 10 20 30 40 50
905
900
895
890
885
880
875
870
865
SAPROLITE
GRAY/BRN MIC. SANDY SILT
872.48
864.078
116+60.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
41 of 187
SAPROLITE
GRAY/BRN MIC. SANDY SILT
116+80.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
42 of 187
50 40 30 20 10 0 10 20 30 40 50
910
905
900
895
890
885
880
875
870
865
SAPROLITE
RED/BRN MIC.SANDY SILT
DENSE
869.63
863.274
S.S. 863.197
861.344
117+00.000
-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2518B	43 of 187

METRIC

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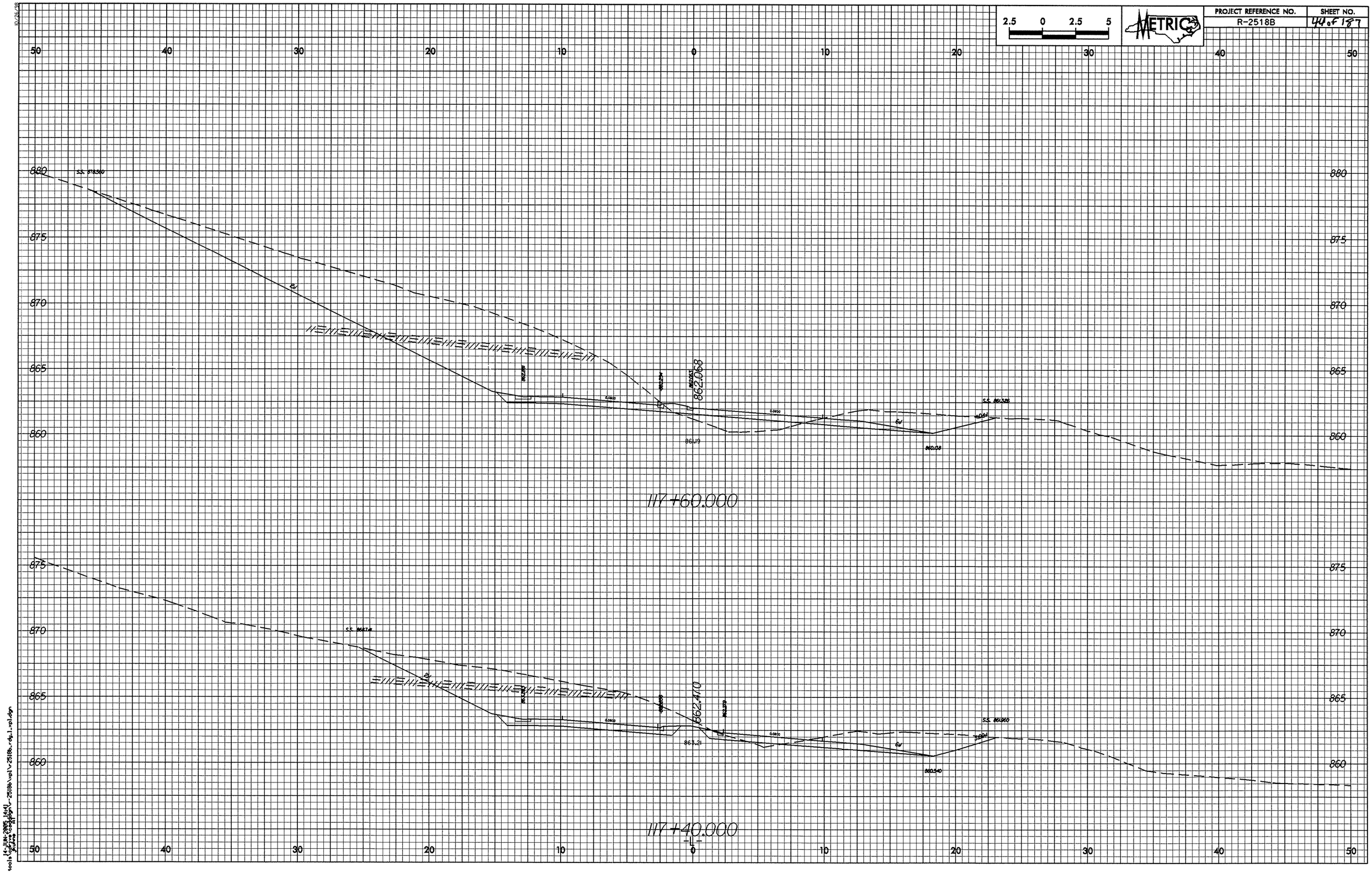
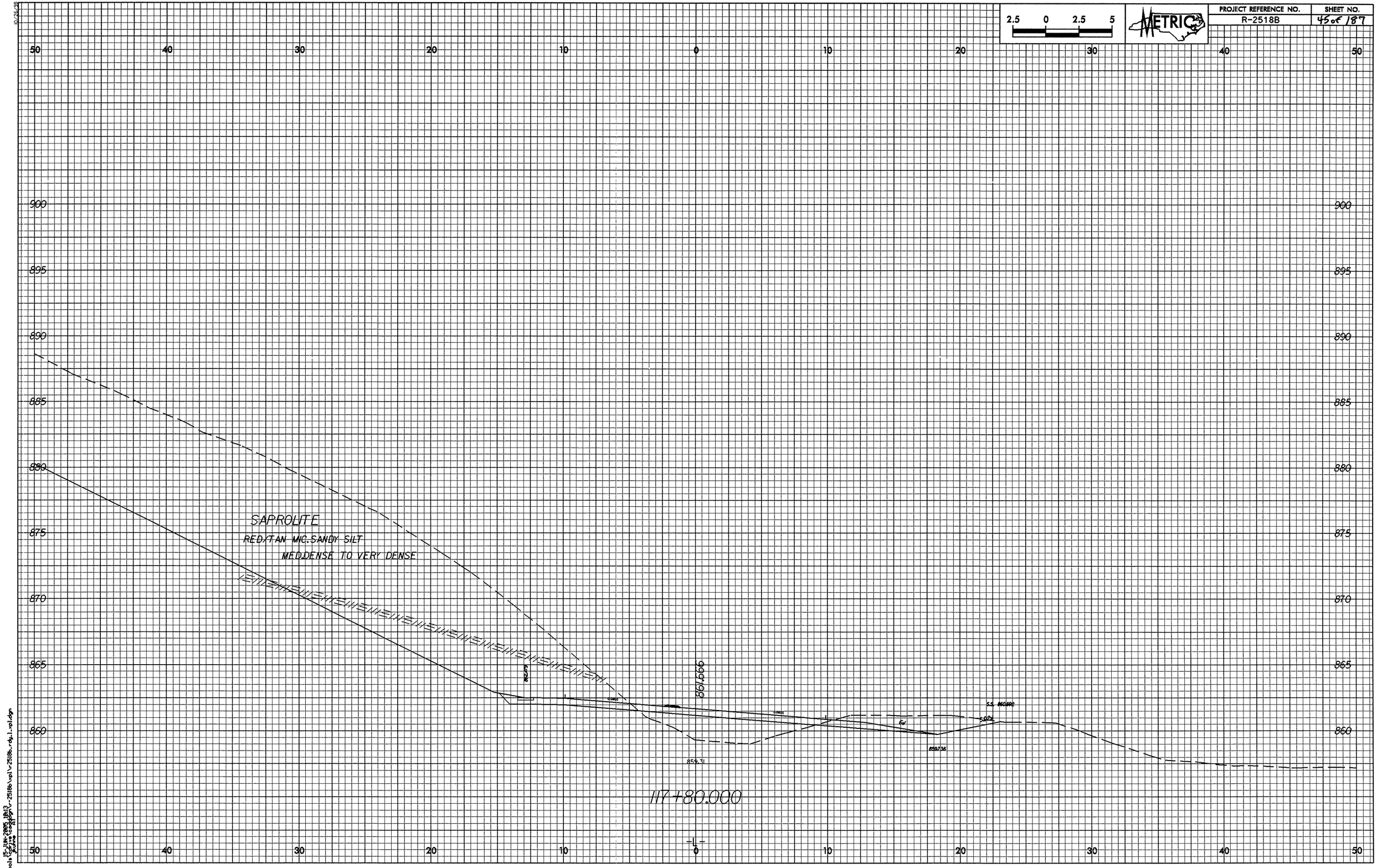
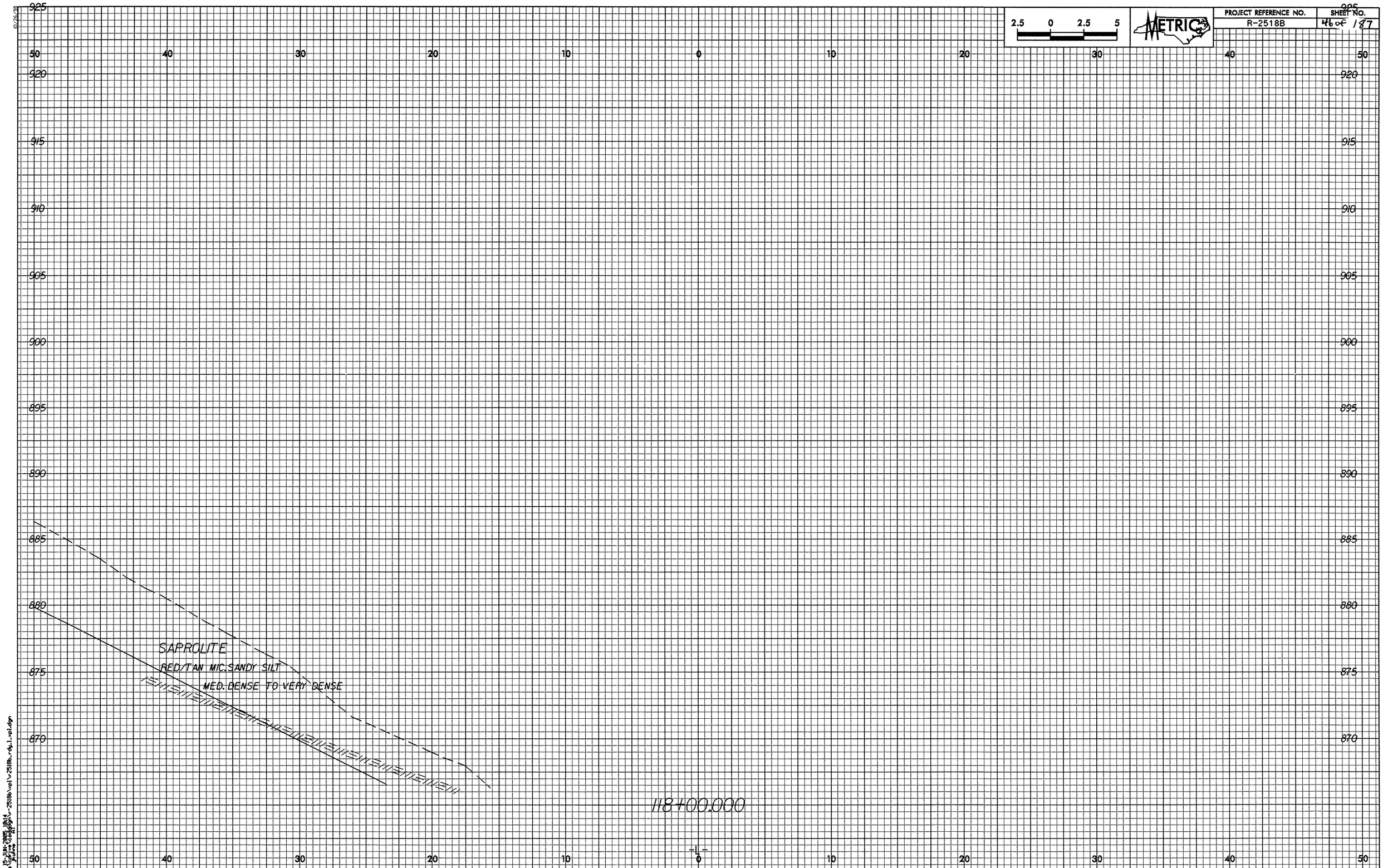


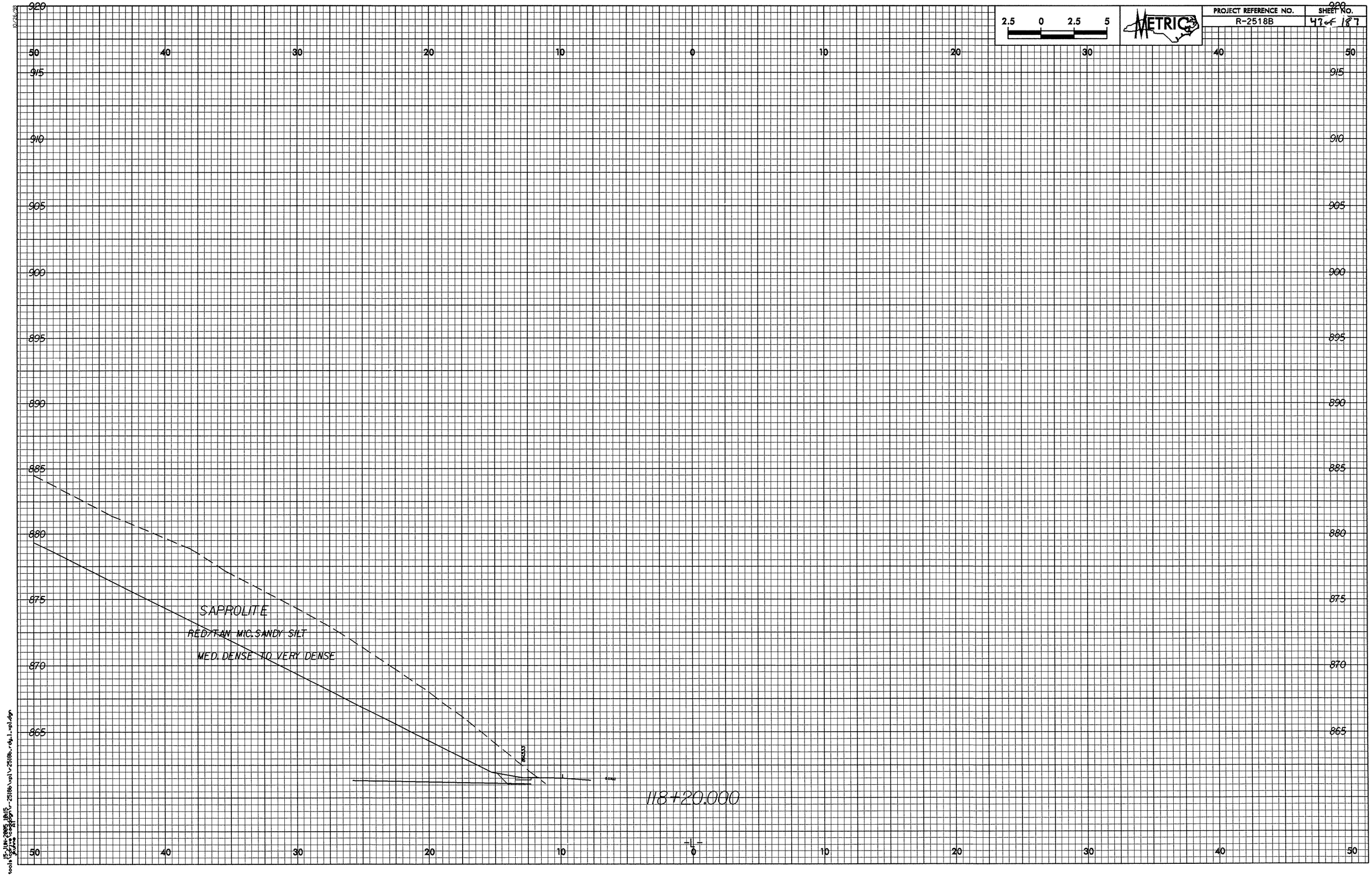
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
44 of 187
50 40 30 20 10 0 10 20 30 40 50
880
875
870
865
860
862.068
861.19
860.138
117+60.000
862.410
863.21
860.540
117+40.000
-L-



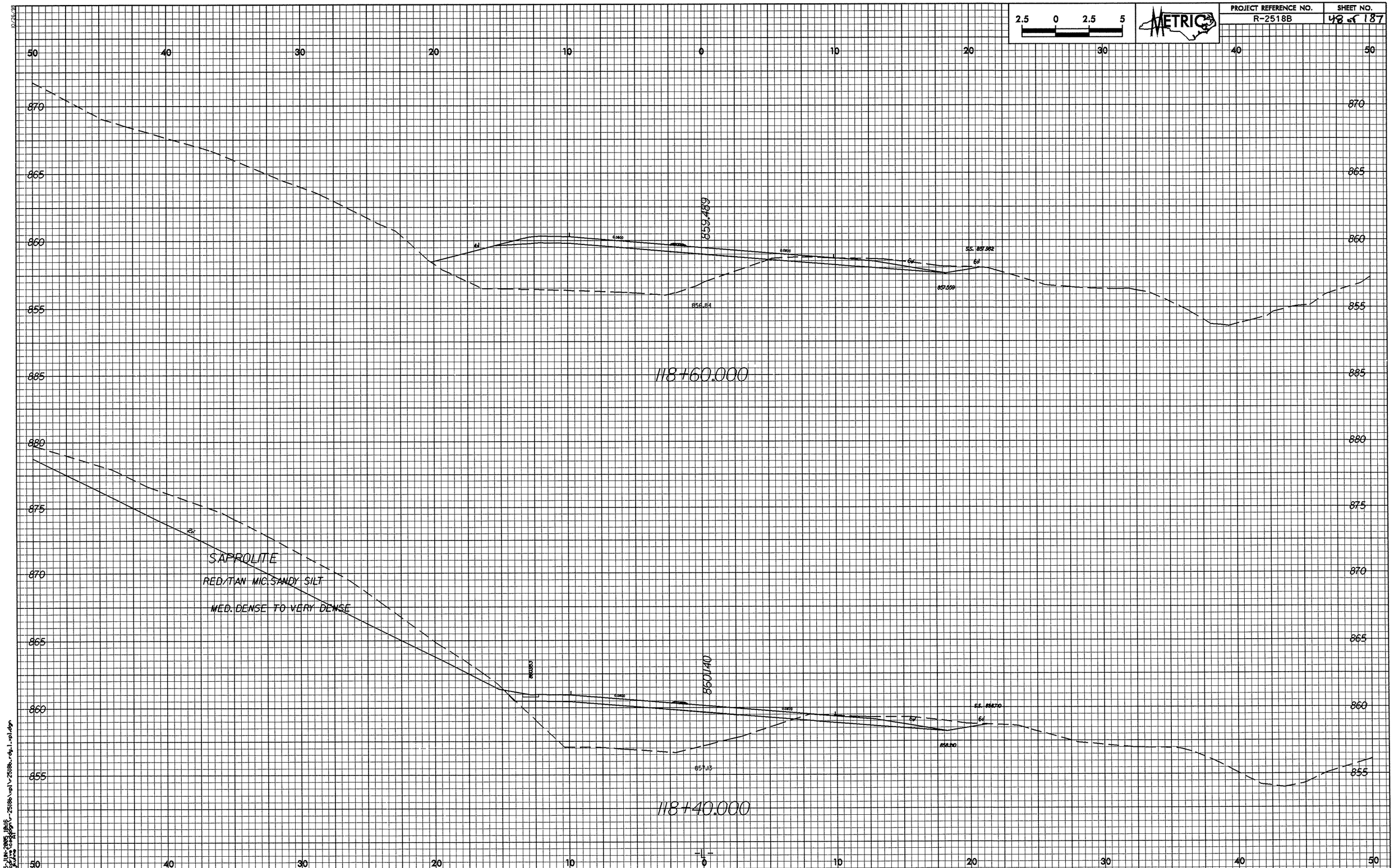
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
45 of 187
50 40 30 20 10 0 10 20 30 40 50
900
895
890
885
880
875
870
865
860
SAPROLITE
RED/TAN MIC. SANDY SILT
MED.DENSE TO VERY DENSE
861.666
S.S. 860.692
859.31
859.736
117+80.000
-L-



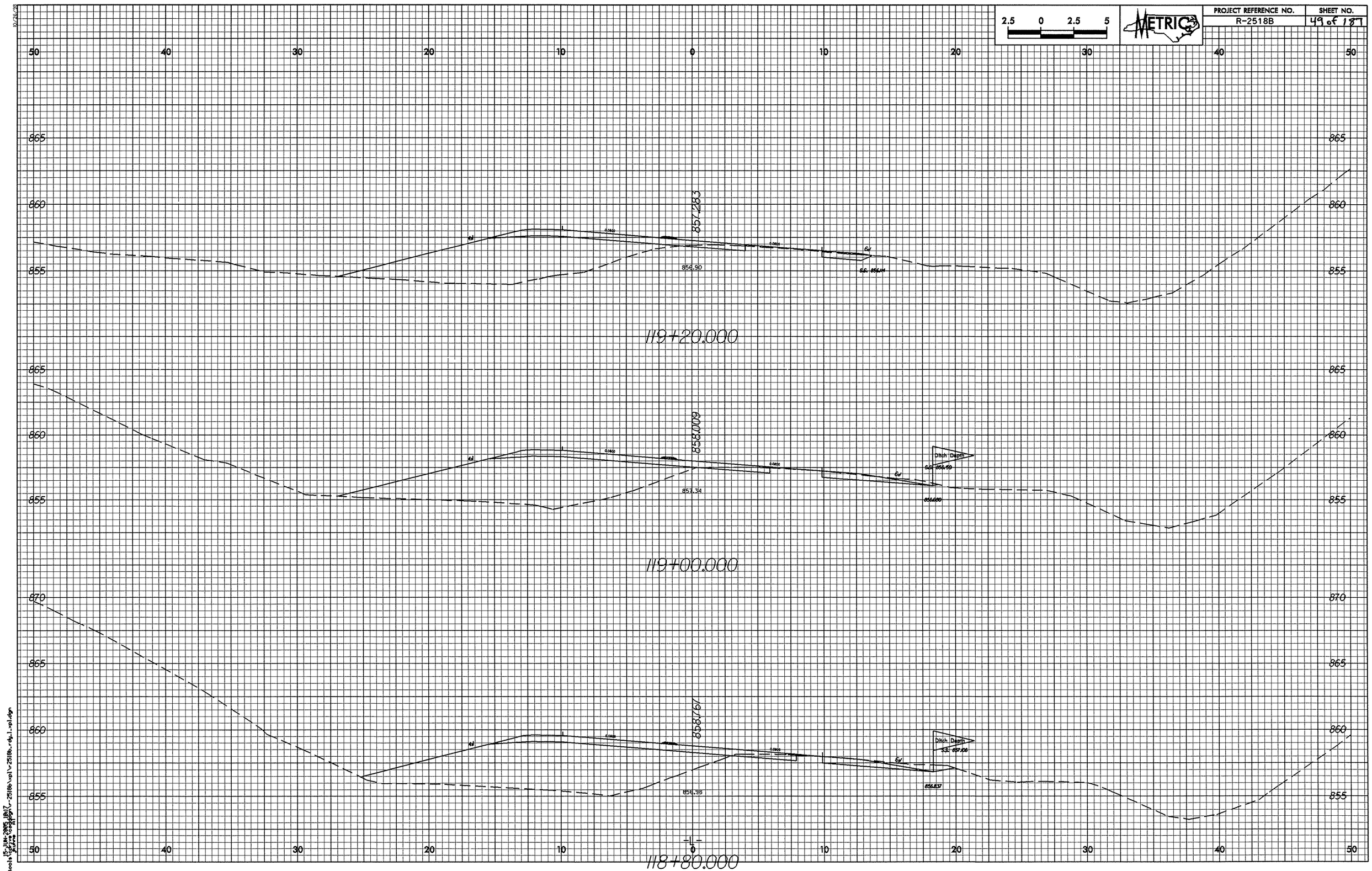
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
46 of 187
925
920
915
910
905
900
895
890
885
880
875
870
50 40 30 20 10 0 10 20 30 40 50
SAPROLITE
RED/TAN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
118+00.000
-L-



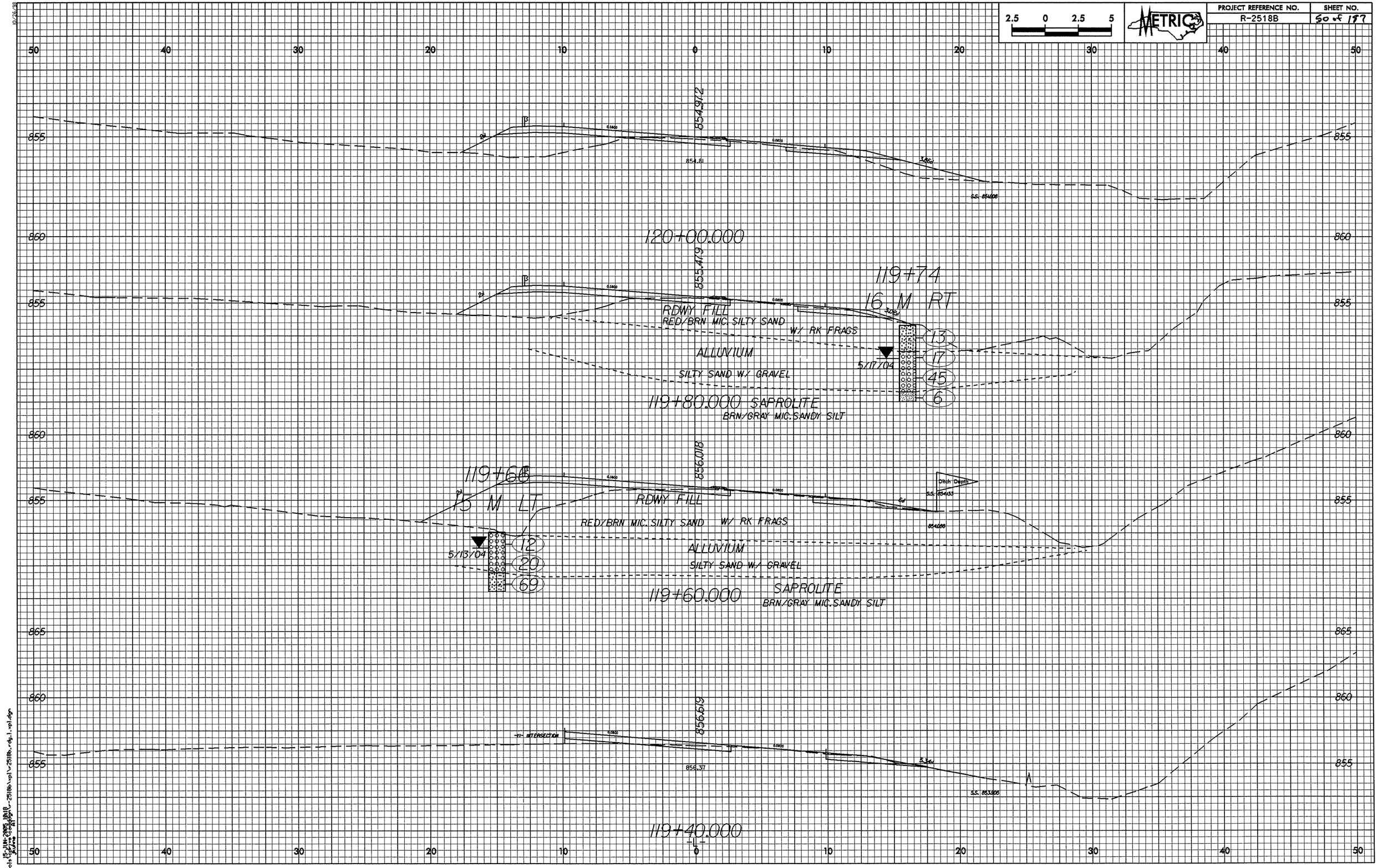
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
47 of 187
920
915
910
905
900
895
890
885
880
875
870
865
50 40 30 20 10 0 10 20 30 40 50
SAPROLITE
RED/TAN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
118+20.000
-L-



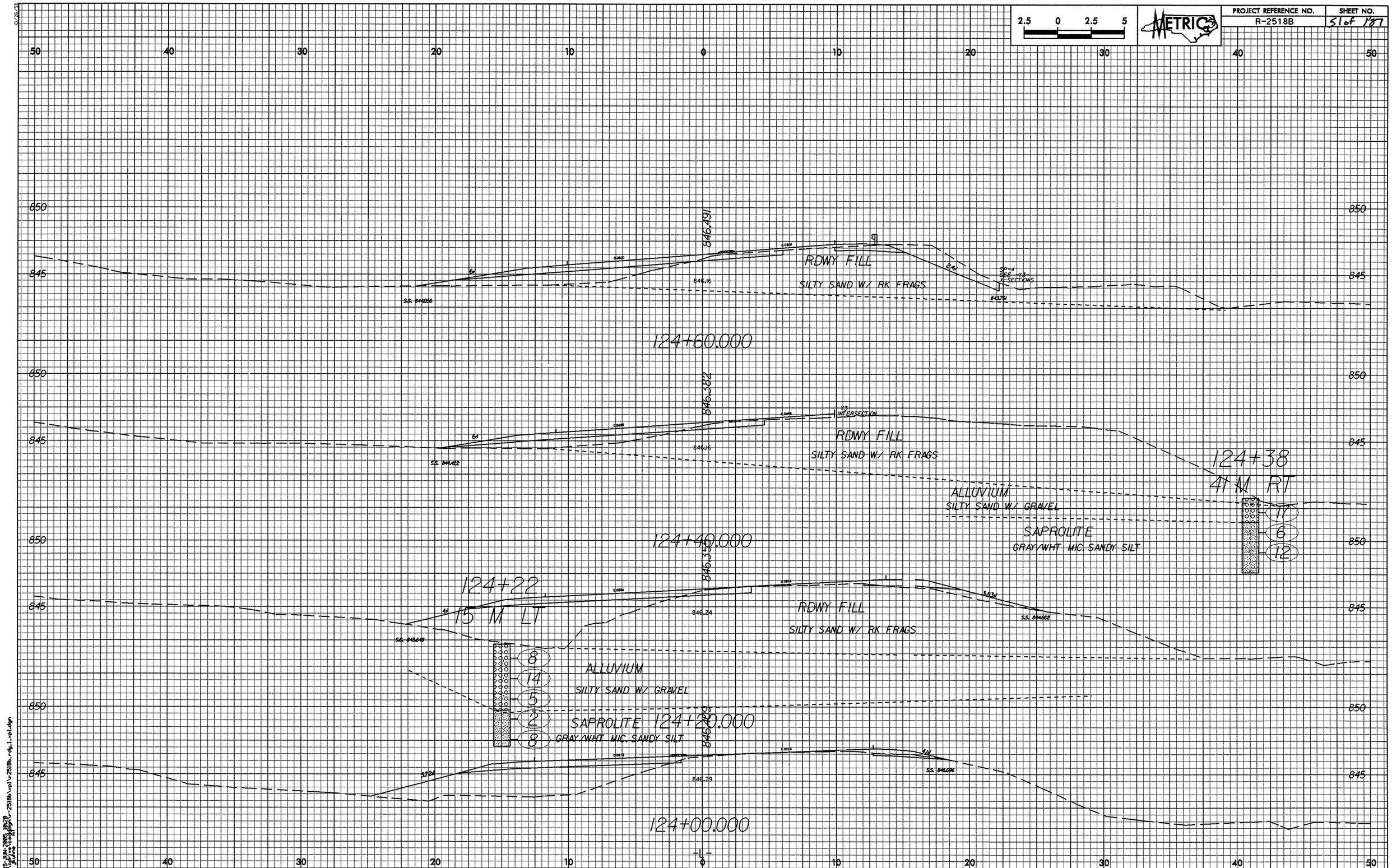
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
48 of 187
50 40 30 20 10 0 10 20 30 40 50
870 865 860 855 885 880 875 870 865 860 855
859.489
856.84
857.559
118+60.000
SAPROLITE
RED/TAN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
860.140
857.13
858.210
118+40.000
-L-



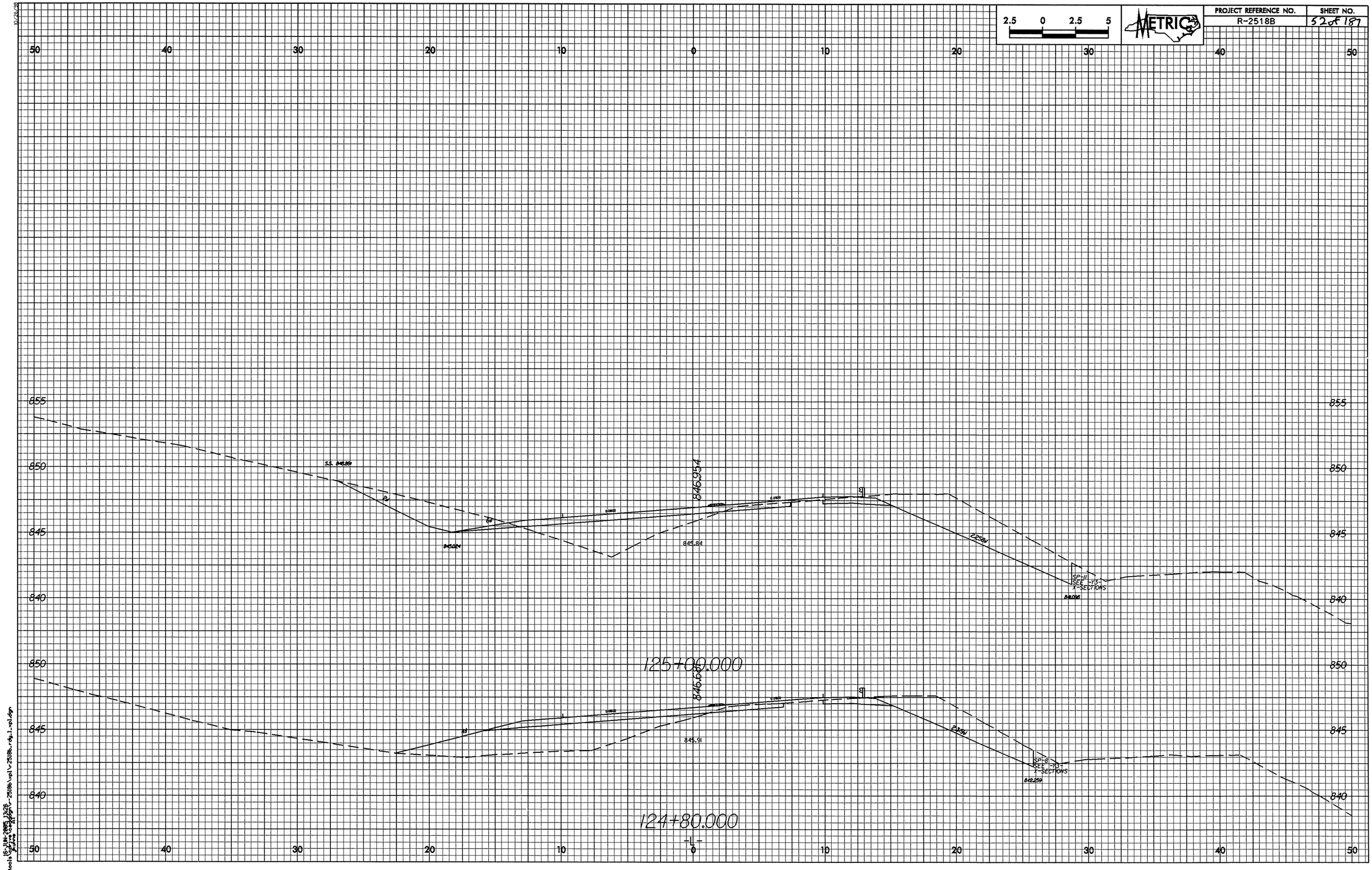
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
49 of 187
50 40 30 20 10 0 10 20 30 40 50
865
860
855
857.283
856.90
119+20.000
858.009
857.34
Ditch Depth
119+00.000
870
858.767
856.98
Ditch Depth
-L-
118+80.000



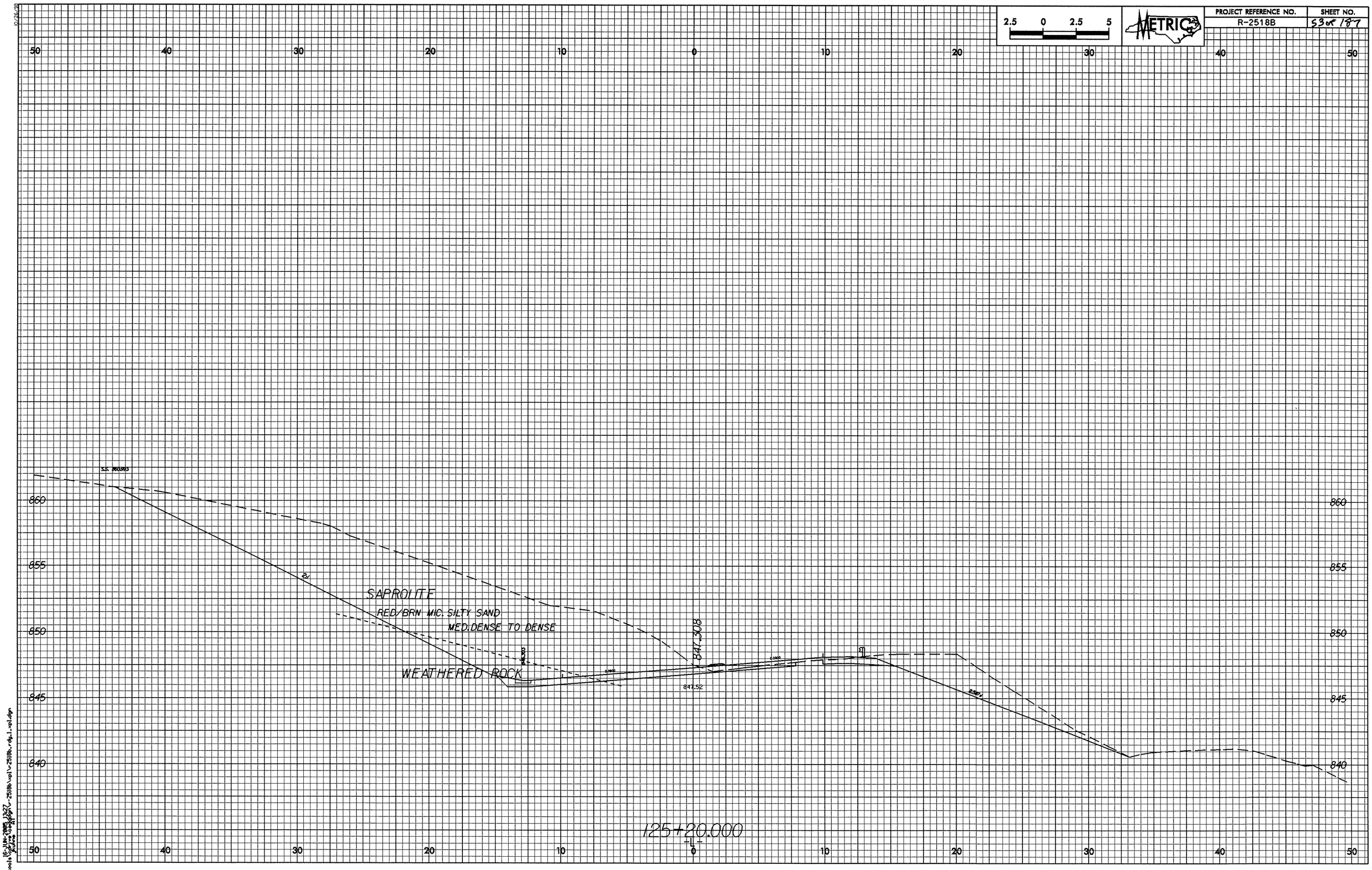
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
50 of 187
854.972
854.81
120+00.000
855.479
119+74
16 M RT
RDWY FILL
RED/BRN MIC. SILTY SAND
W/ RK FRAGS
ALLUVIUM
SILTY SAND W/ GRAVEL
5/17/04
13
17
45
6
119+80.000 SAPROLITE
BRN/GRAY MIC. SANDY SILT
856.018
119+66
15 M LT
RDWY FILL
RED/BRN MIC. SILTY SAND W/ RK FRAGS
Ditch Depth
5/13/04
12
20
69
ALLUVIUM
SILTY SAND W/ GRAVEL
119+60.000
SAPROLITE
BRN/GRAY MIC. SANDY SILT
856.619
-Y1- INTERSECTION
856.37
119+40.000
-L-



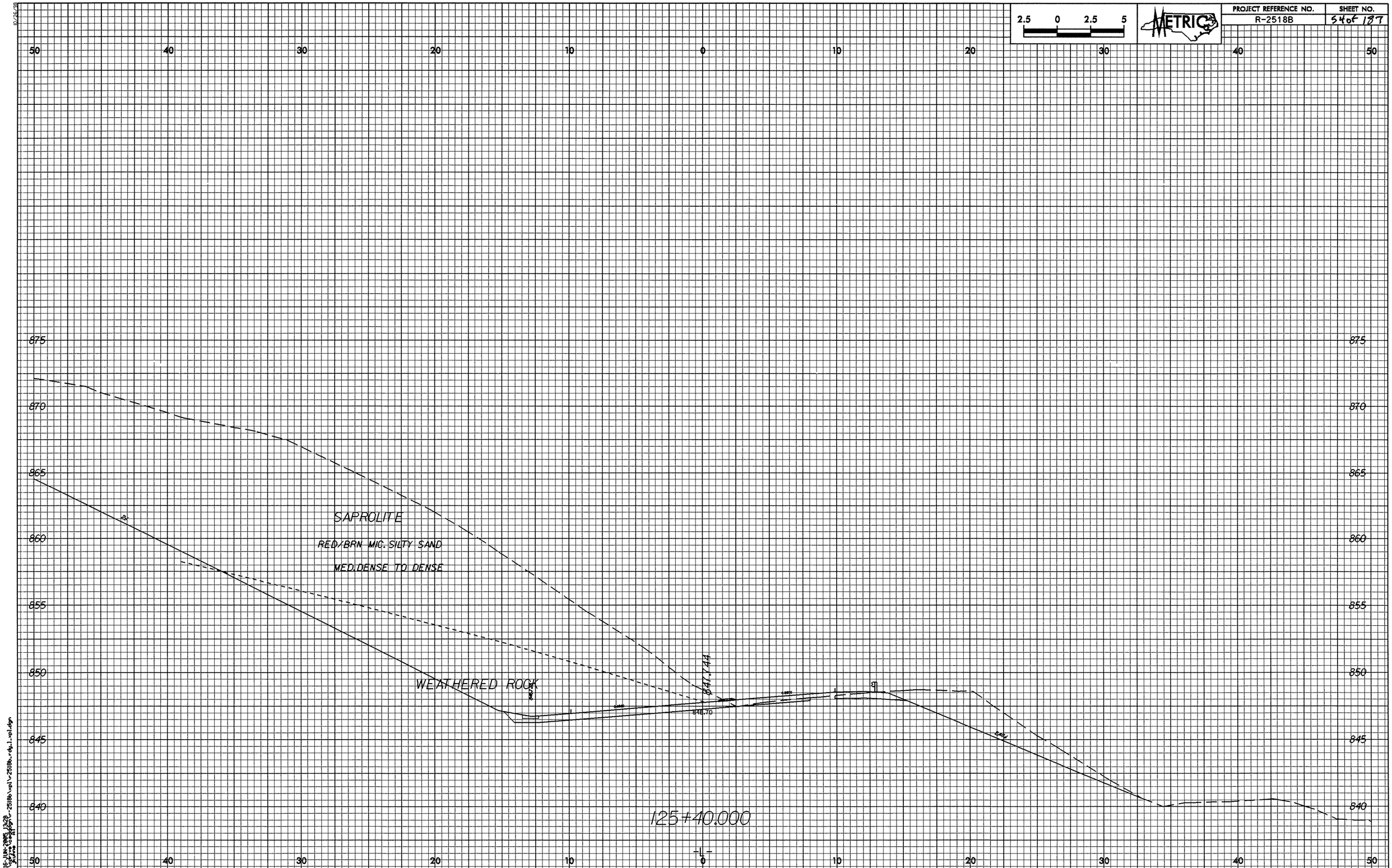
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
51 of 187
50 40 30 20 10 0 10 20 30 40 50
850
845
846.491
RDWY FILL
SILTY SAND W/ RK FRAGS
846.16
SP-4
SEE Y3
X-SECTIONS
S.S. 844.056
843.761
124+60.000
846.382
Y3
INTERSECTION
RDWY FILL
SILTY SAND W/ RK FRAGS
846.16
S.S. 844.422
124+38
41 M RT
ALLUVIUM
SILTY SAND W/ GRAVEL
SAPROLITE
GRAY/WHT MIC. SANDY SILT
17
6
12
124+40.000
846.350
124+22
15 M LT
846.24
RDWY FILL
SILTY SAND W/ RK FRAGS
S.S. 844.662
S.S. 843.648
8
14
5
2
8
ALLUVIUM
SILTY SAND W/ GRAVEL
SAPROLITE
GRAY/WHT MIC. SANDY SILT
124+20.000
846.29
S.S. 846.096
124+00.000
-L-



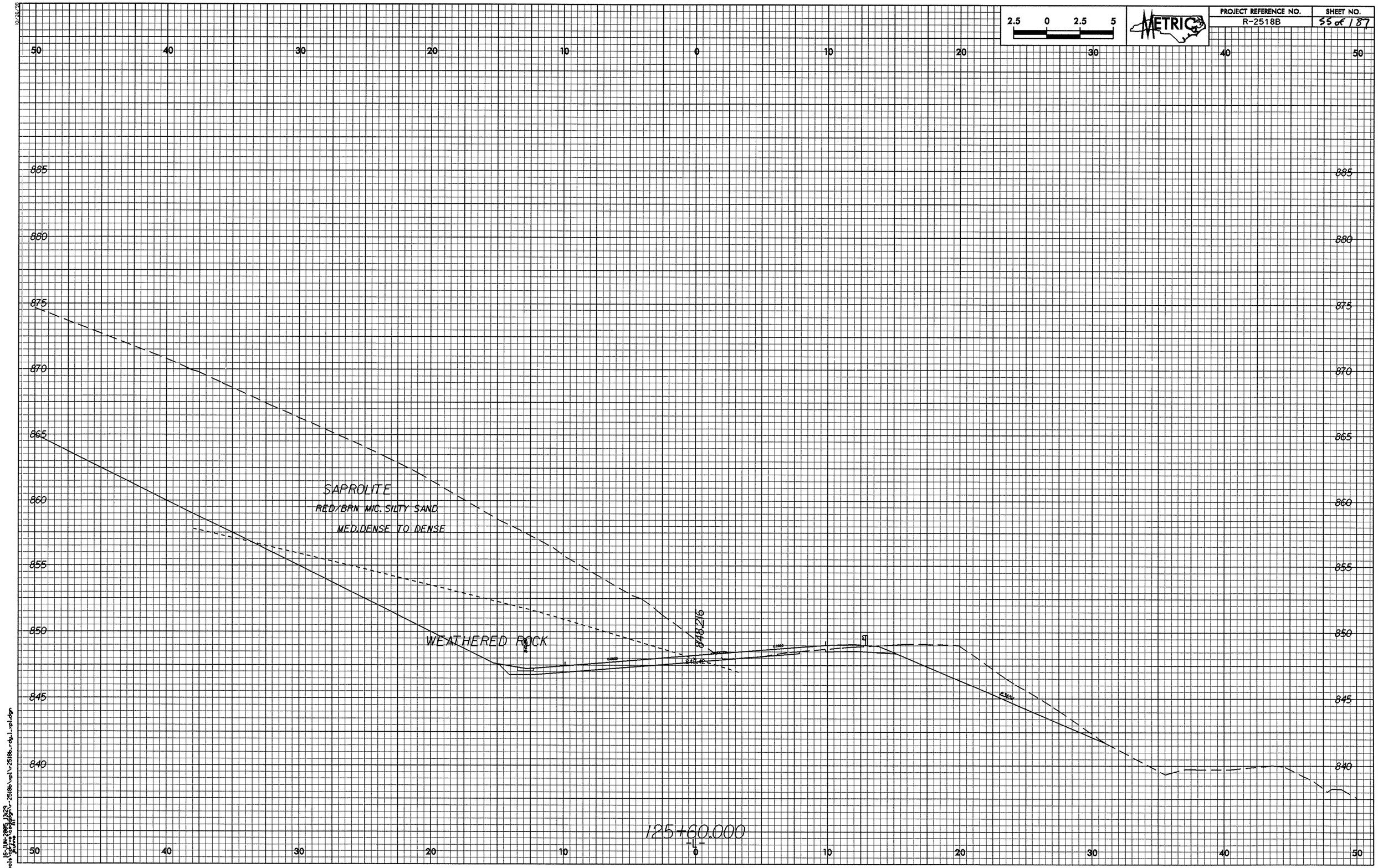
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
52 of 187
50 40 30 20 10 0 10 20 30 40 50
855
850
845
840
S.S. 845.851
846.954
845.024
845.84
2.2591
SP-11
SEE -Y3-
X-SECTIONS
125+00.000
846.68
845.91
2.3191
SP-8
SEE -Y3-
X-SECTIONS
842.259
124+80.000
-L-



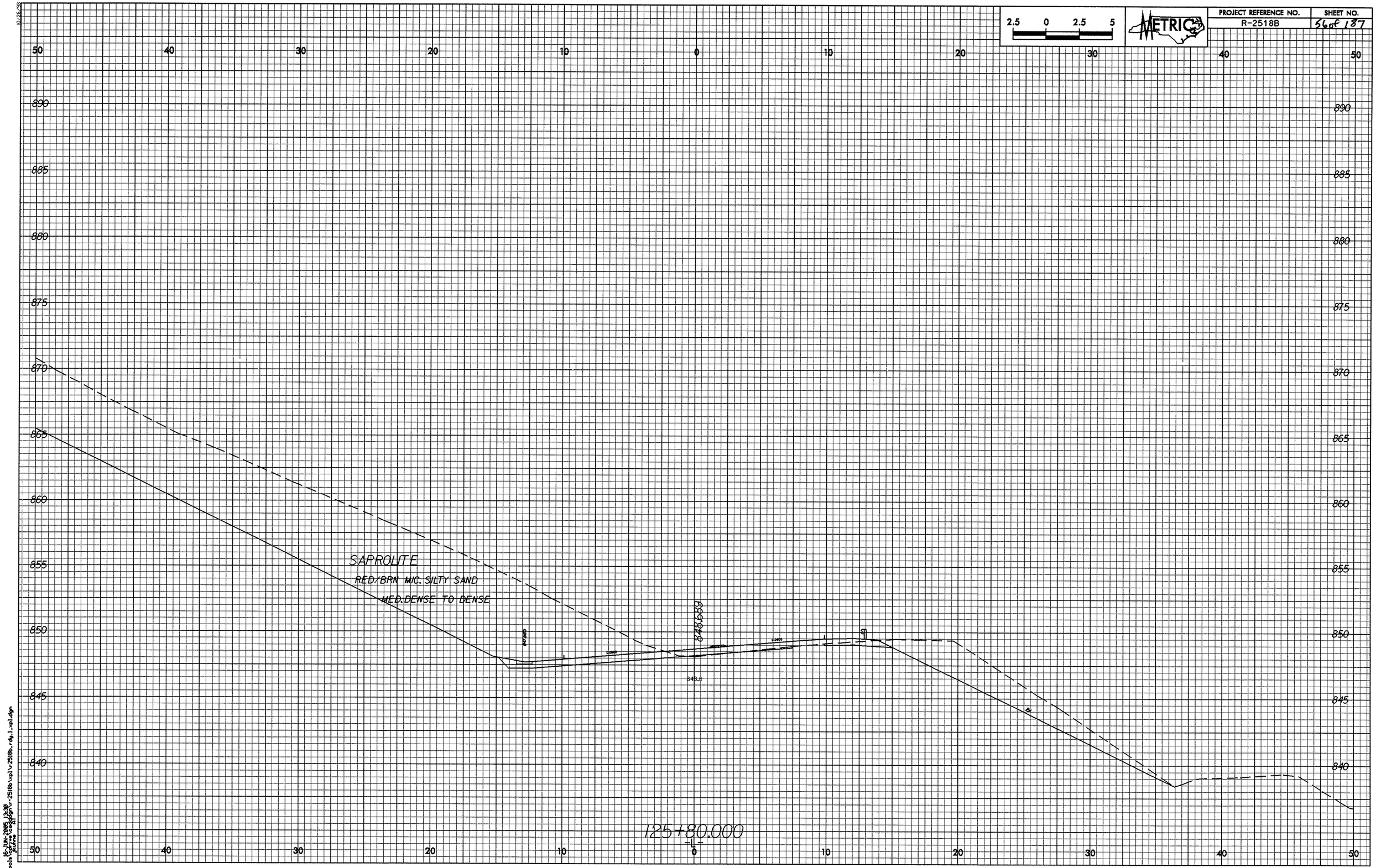
16-JUN-2005 13:27



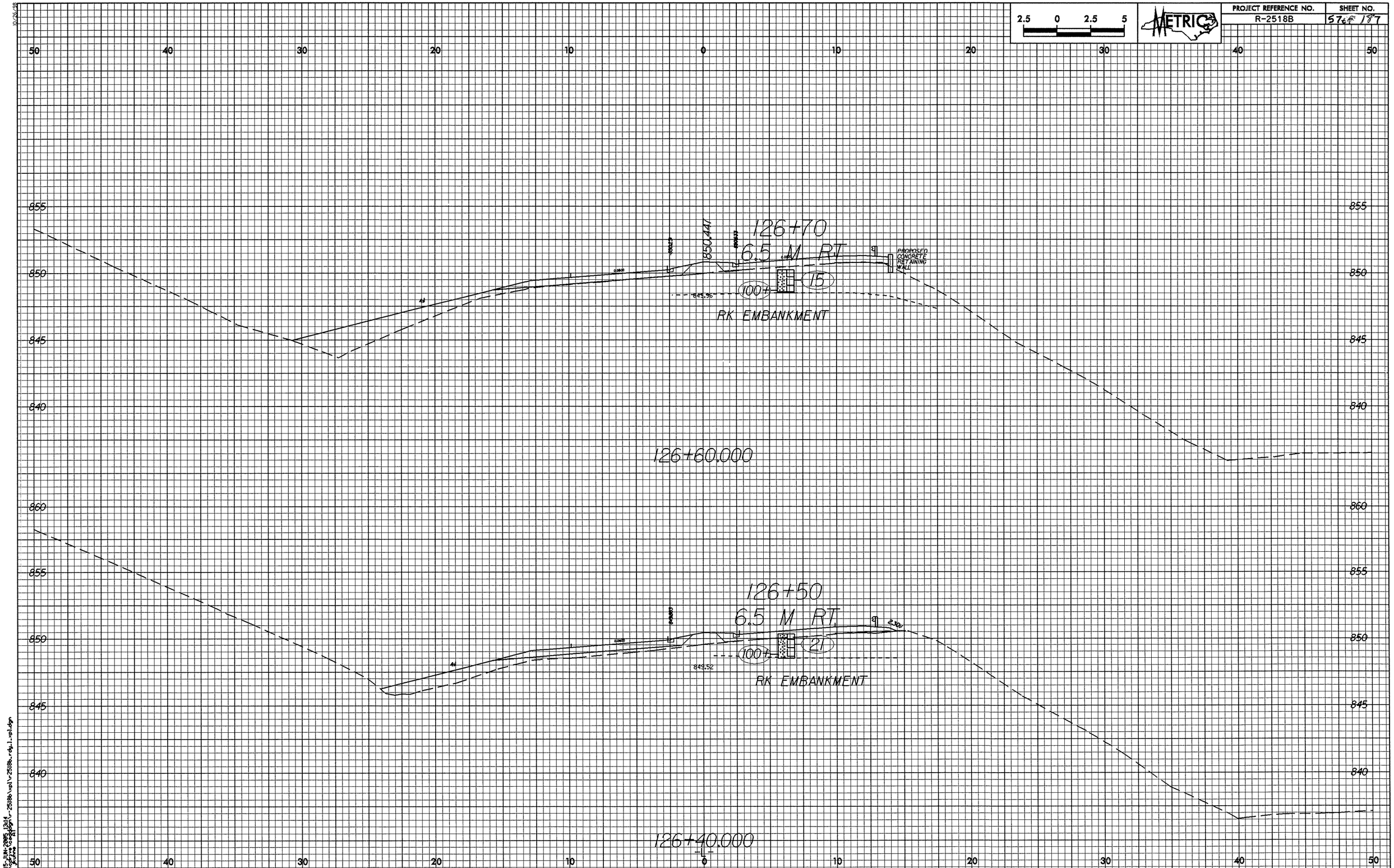
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
54 of 187
50 40 30 20 10 0 10 20 30 40 50
875
870
865
860
855
850
845
840
SAPROLITE
RED/BRN MIC. SILTY SAND
MED.DENSE TO DENSE
WEATHERED ROCK
847.744
848.70
125+40.000
-L-



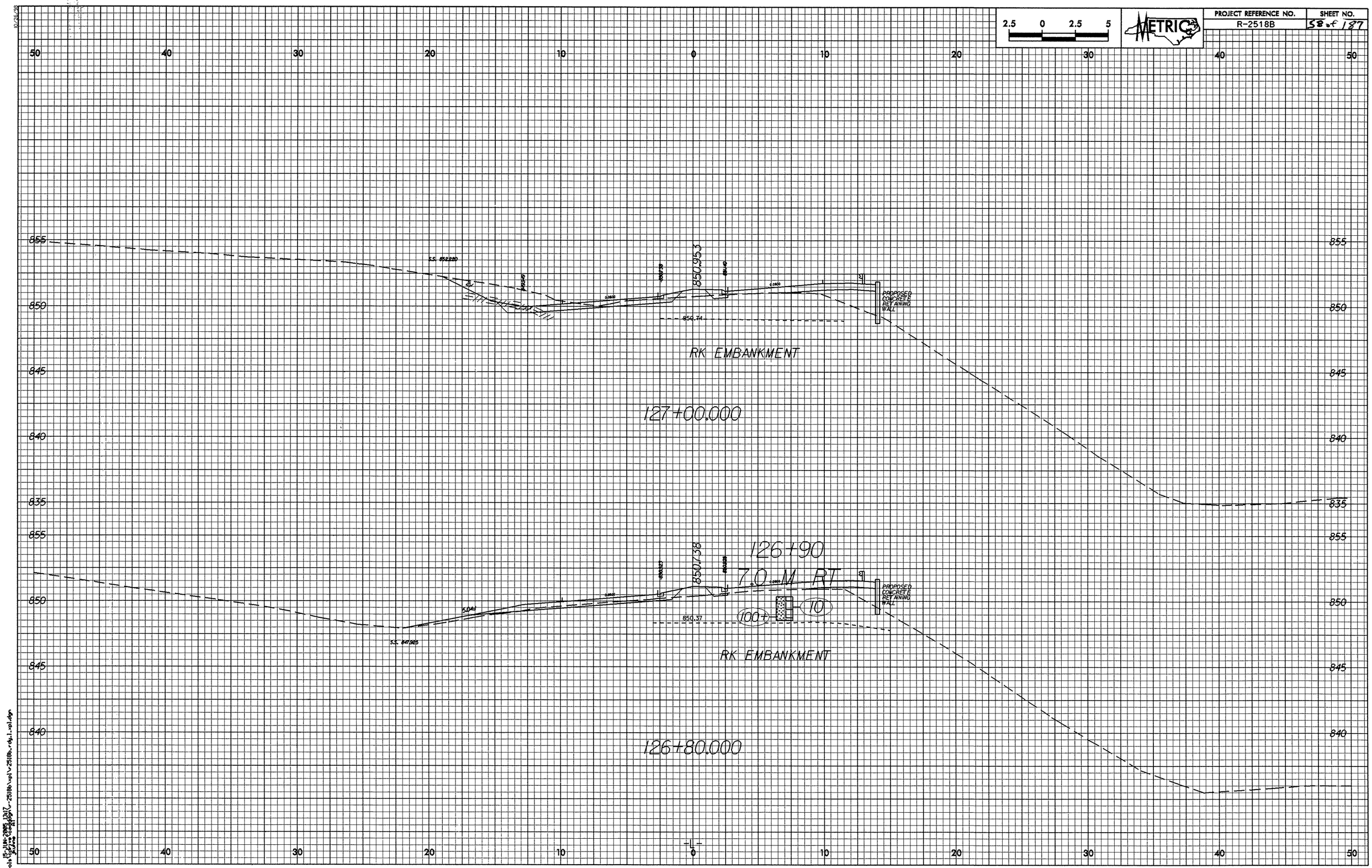
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
55 of 187
50 40 30 20 10 0 10 20 30 40 50
885
880
875
870
865
860
855
850
845
840
SAPROLITE
RED/BRN MIC. SILTY SAND
MED.DENSE TO DENSE
WEATHERED ROCK
848.216
125+60.000
-L-



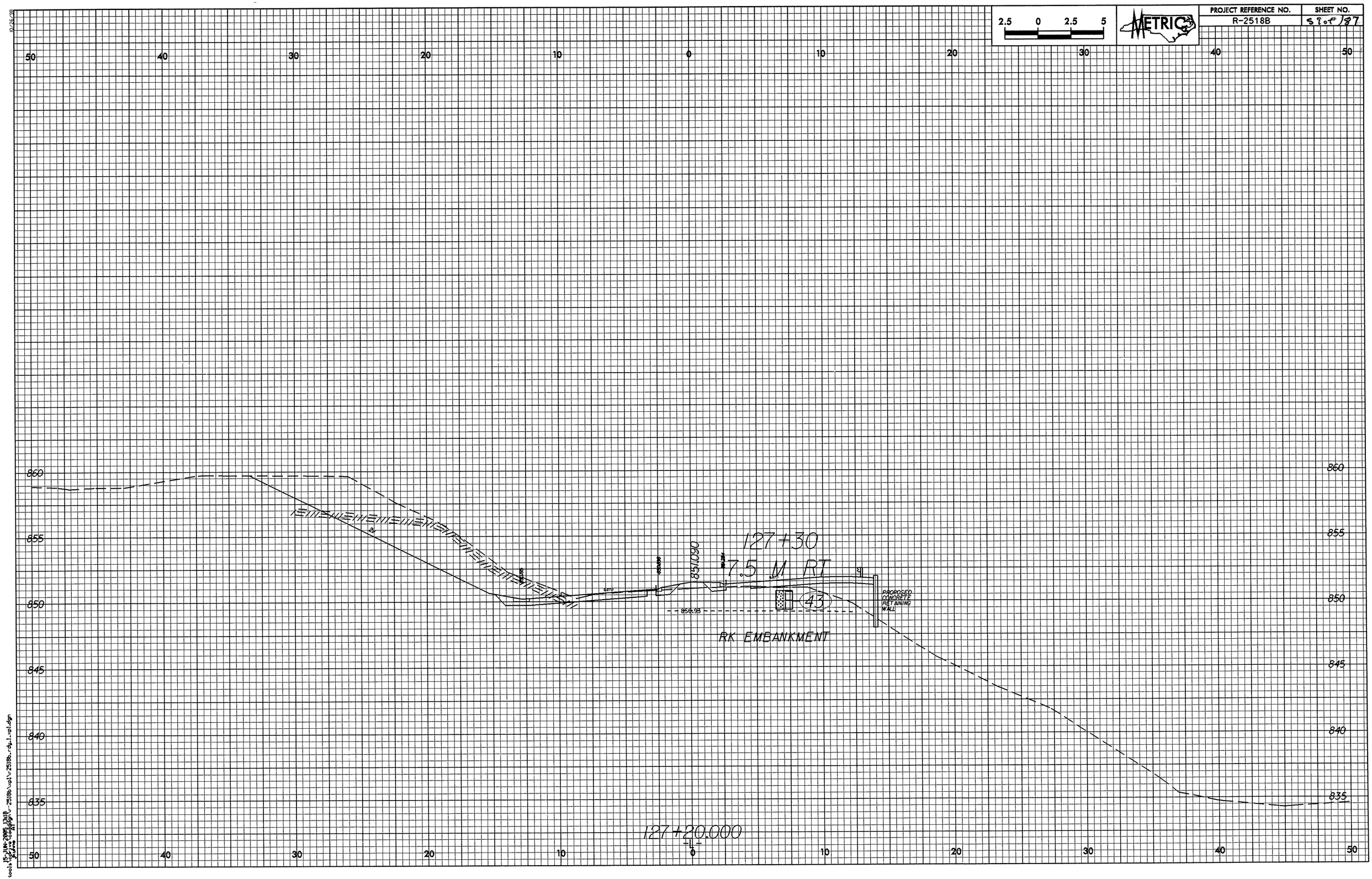
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
56 of 187
50 40 30 20 10 0 10 20 30 40 50
890 885 880 875 870 865 860 855 850 845 840
SAPROLITE
RED/BRN MIC. SILTY SAND
MED. DENSE TO DENSE
848.689
848.11
125+80.000
-L-



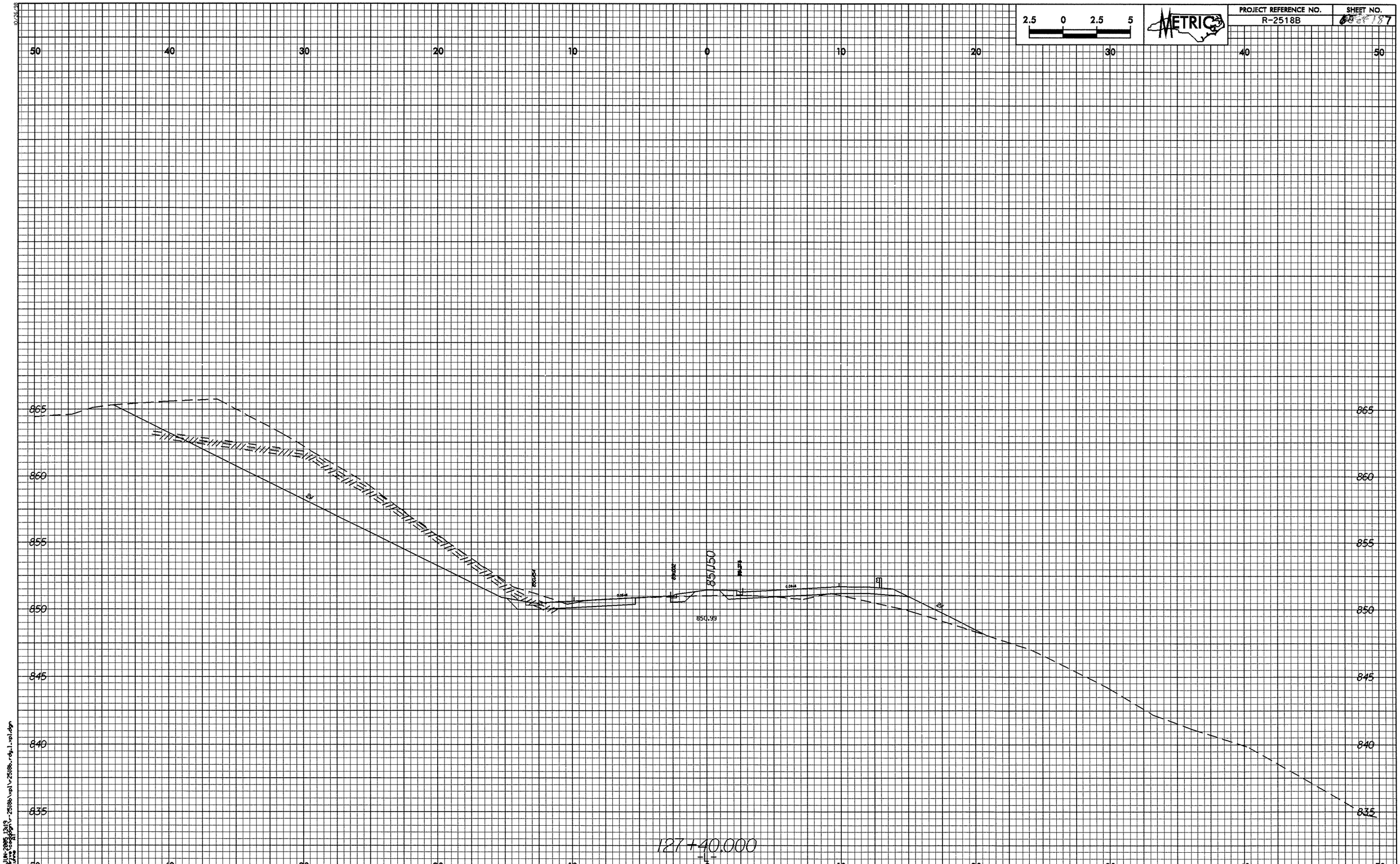
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
57 of 187
126+70
6.5 M RT
850.441
PROPOSED CONCRETE RETAINING WALL
15
100+
849.96
RK EMBANKMENT
126+60.000
126+50
6.5 M RT
21
100+
849.52
RK EMBANKMENT
126+40.000



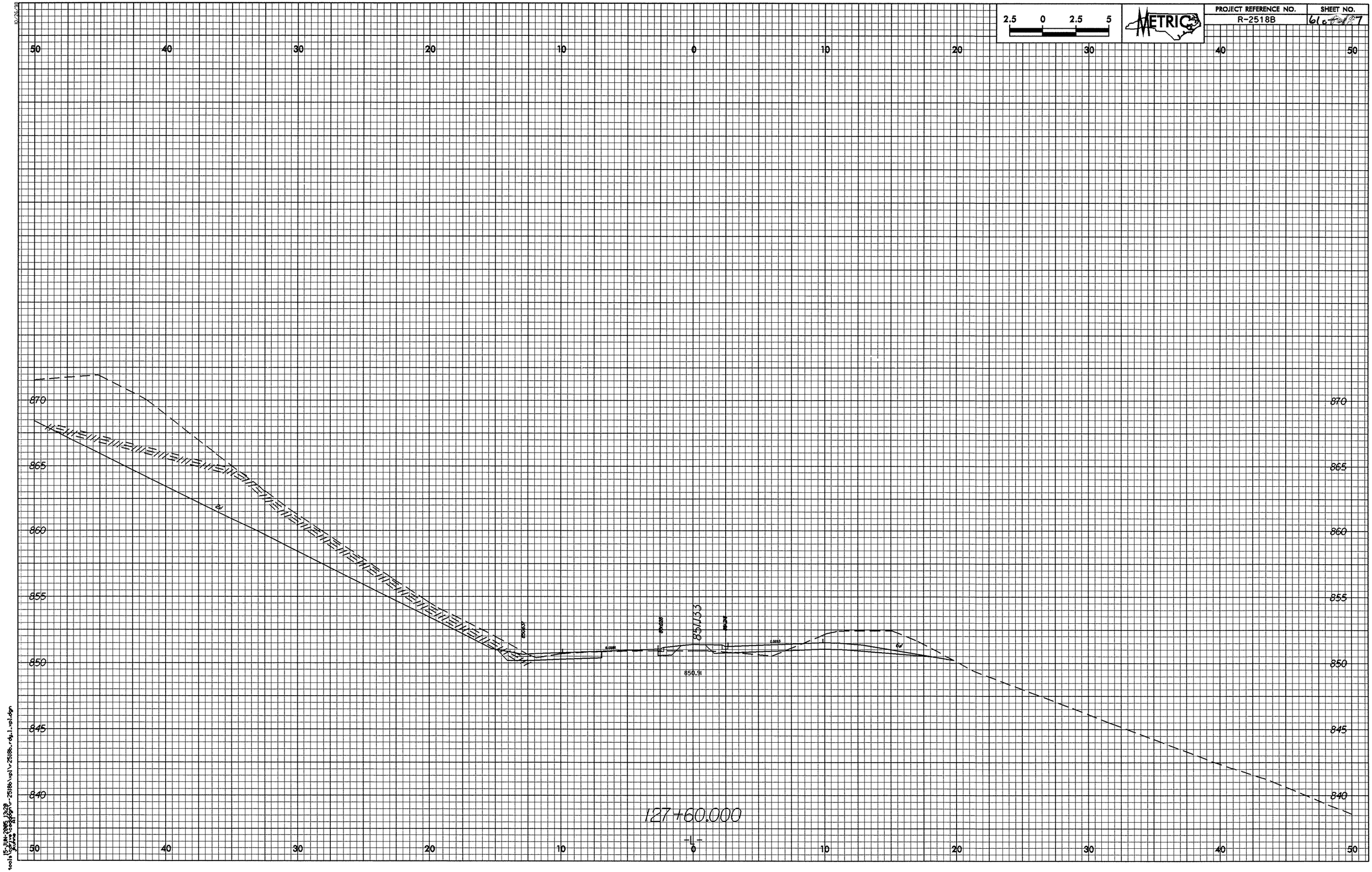
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
58 of 187
50 40 30 20 10 0 10 20 30 40 50
855
850
845
840
835
S.S. 852.220
850.953
850.74
PROPOSED CONCRETE RETAINING WALL
RK EMBANKMENT
127+00.000
126+90
7.0 M RT
850.738
5.041
850.37
100+
10
S.S. 847.925
RK EMBANKMENT
126+80.000
-L-



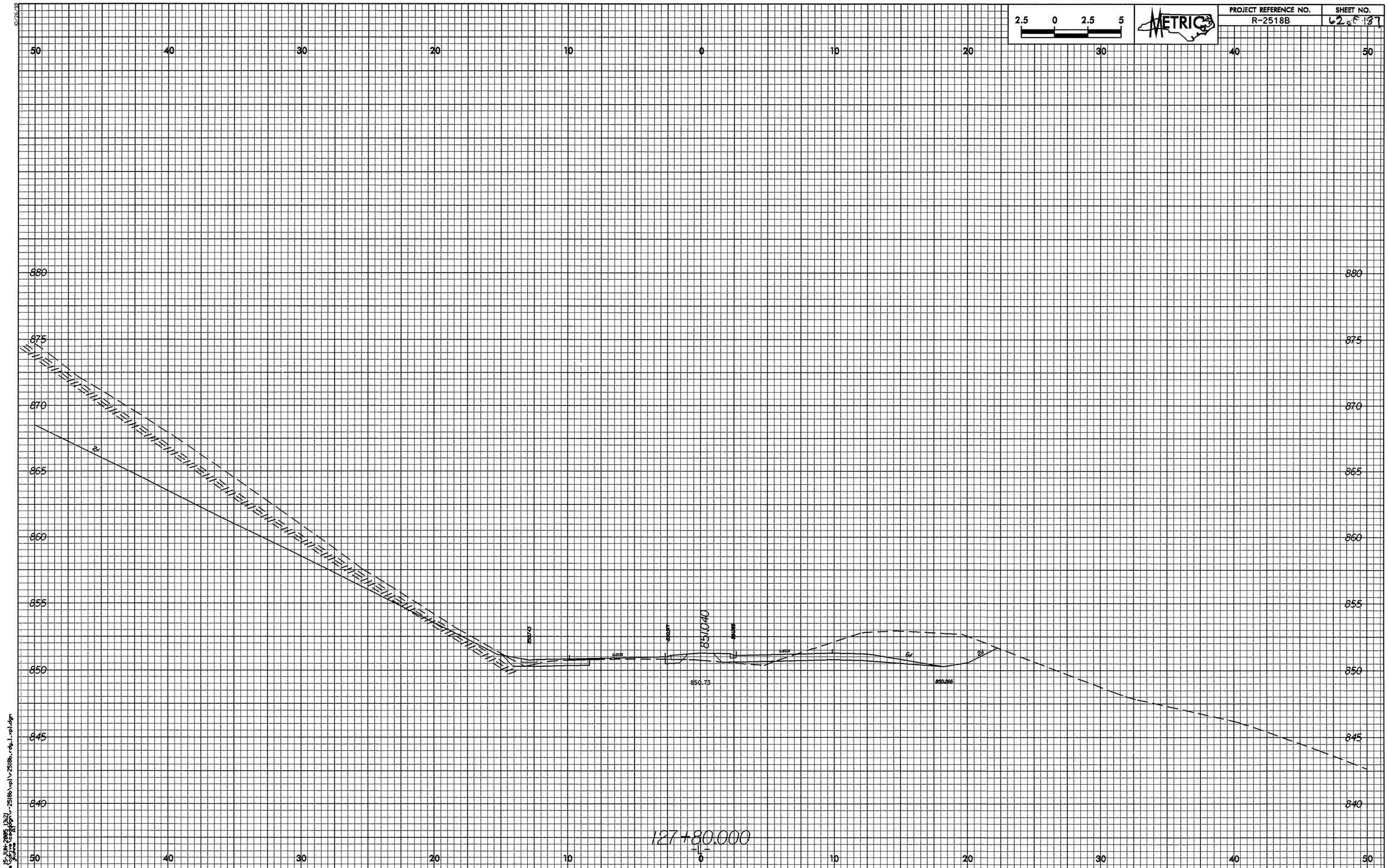
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
S 9 of 187
50 40 30 20 10 0 10 20 30 40 50
860
855
850
845
840
835
127+30
7.5 M RT
851.090
43
PROPOSED CONCRETE RETAINING WALL
RK EMBANKMENT
127+20.000



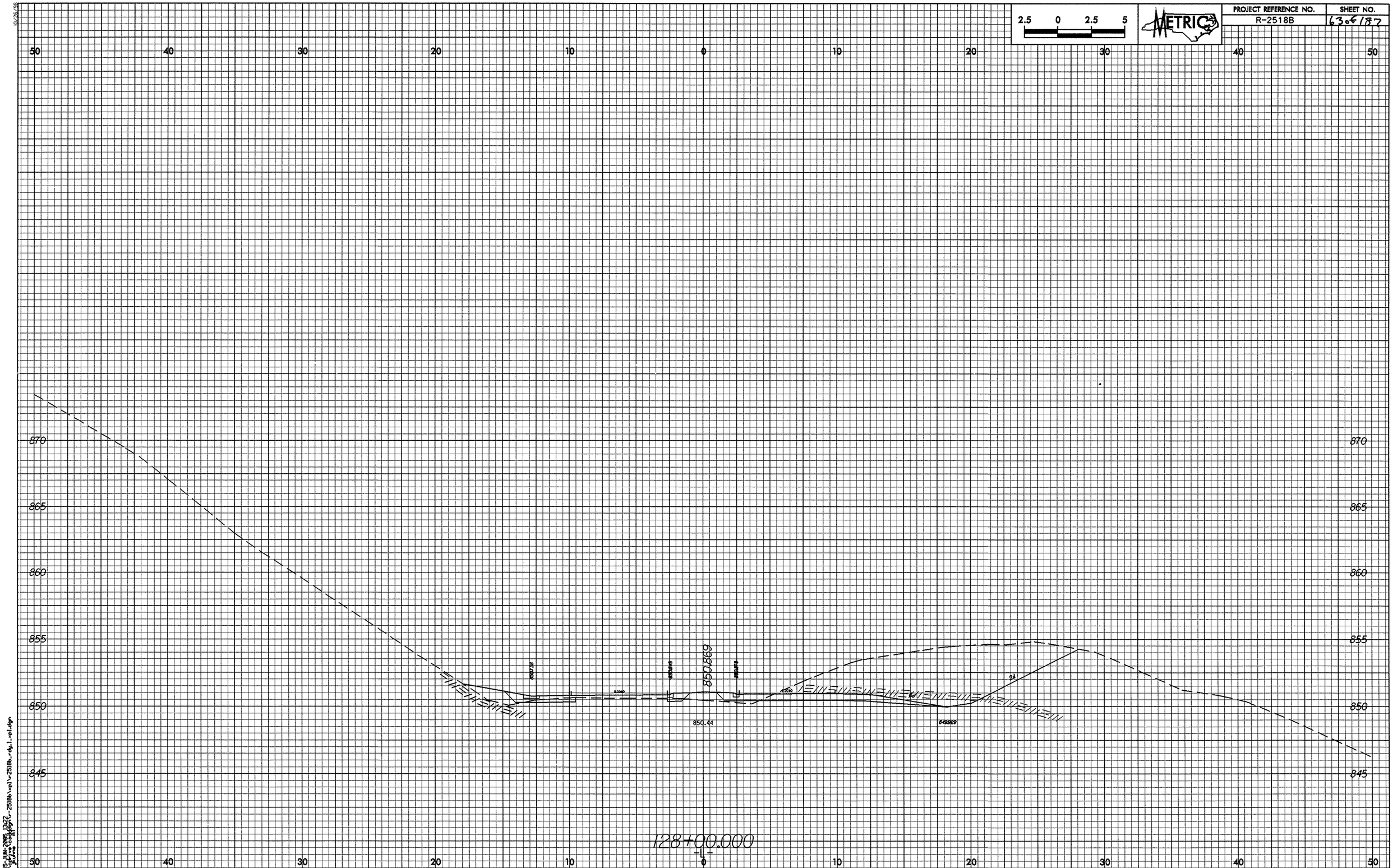
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
50 40 30 20 10 0 10 20 30 40 50
865
860
855
850
845
840
835
851.50
850.99
127+40.000
-L-



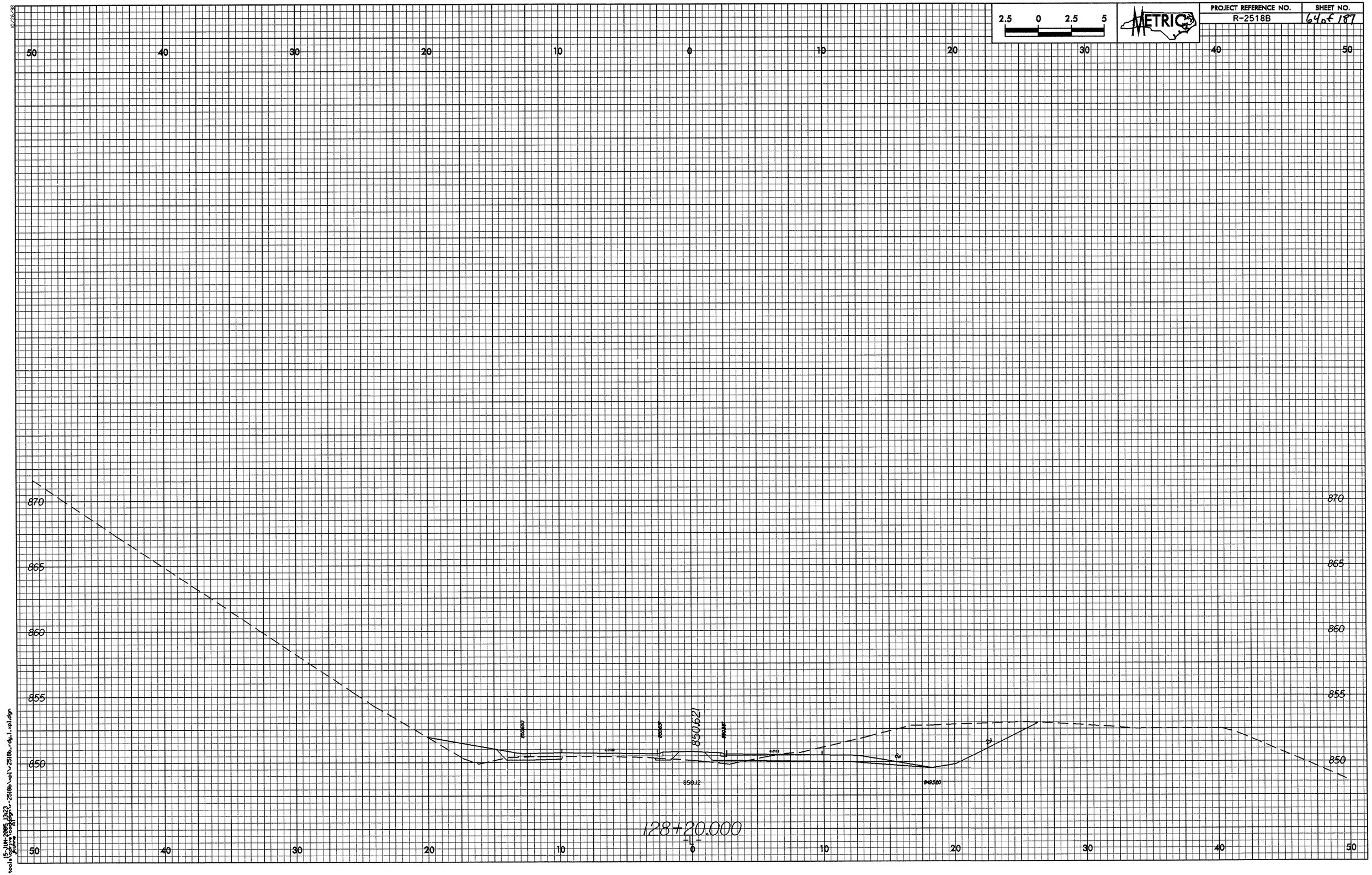
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
61 of 127
50 40 30 20 10 0 10 20 30 40 50
870
865
860
855
850
845
840
851.133
850.91
127+60.000
-L-



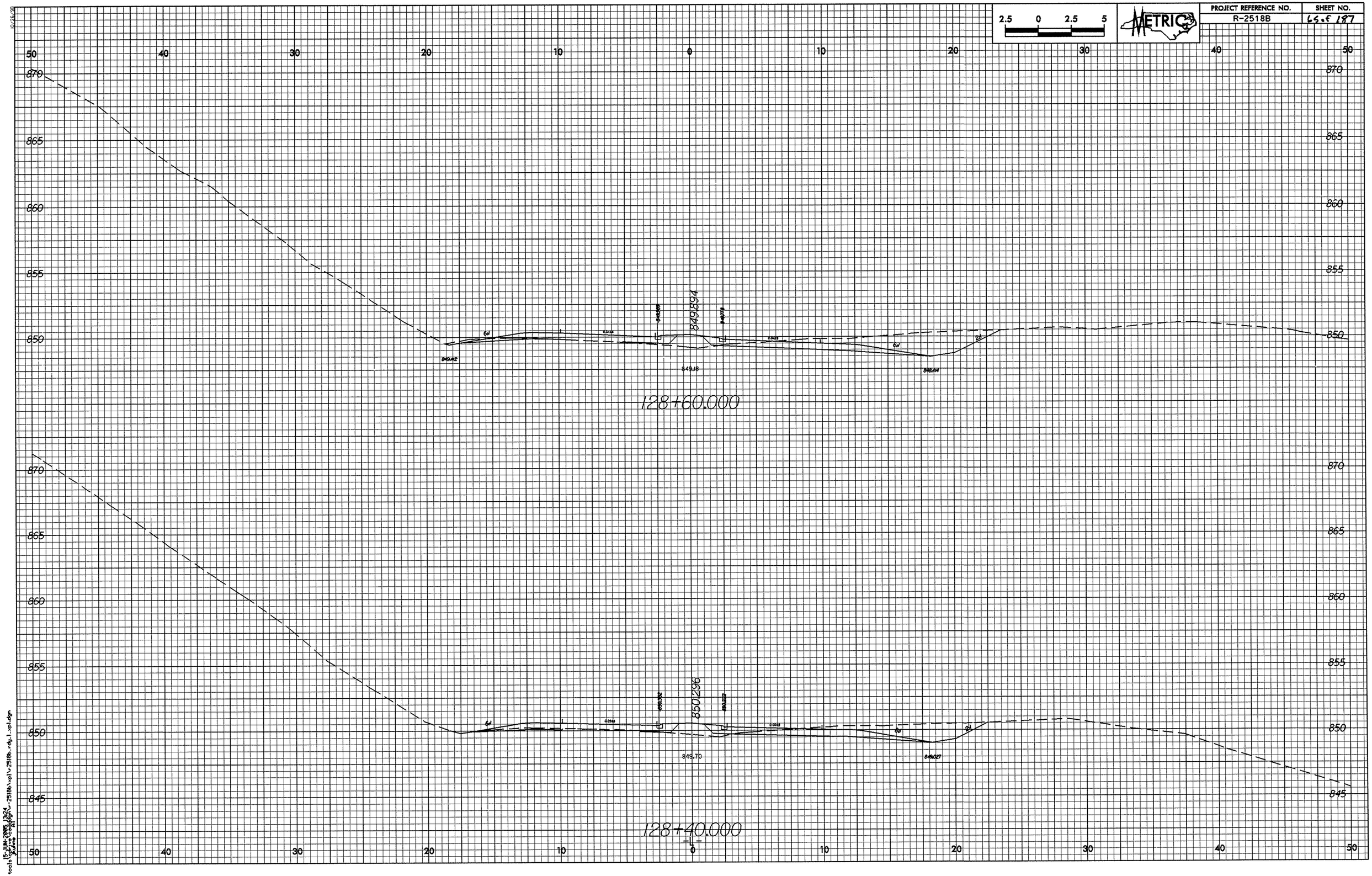
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
62 of 187
50 40 30 20 10 0 10 20 30 40 50
880 875 870 865 860 855 850 845 840
851.040
850.73
850.266
127+80.000
-L-



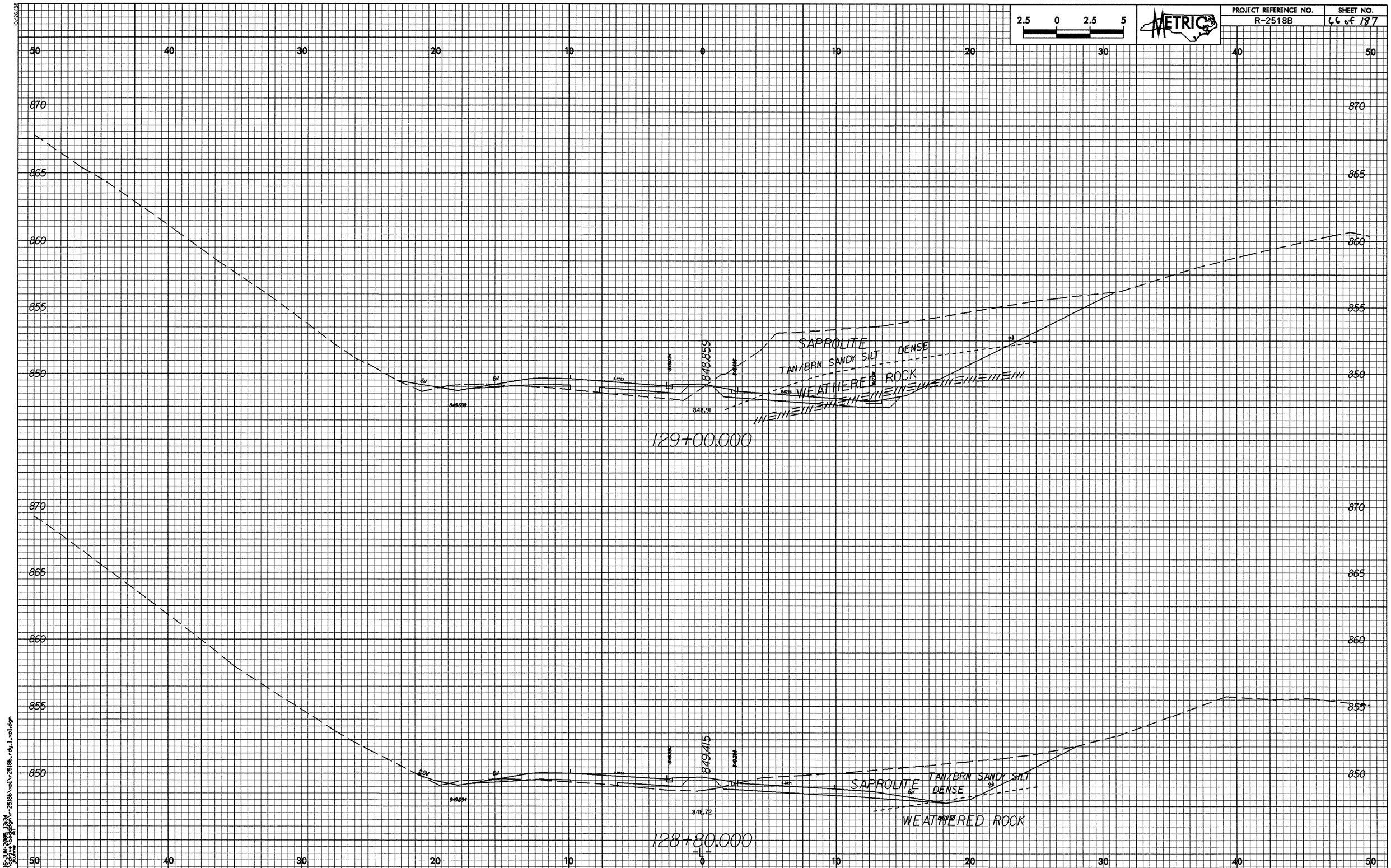
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
63 of 187
50 40 30 20 10 0 10 20 30 40 50
870
865
860
855
850
845
850.869
850.44
128+00.000
-L-



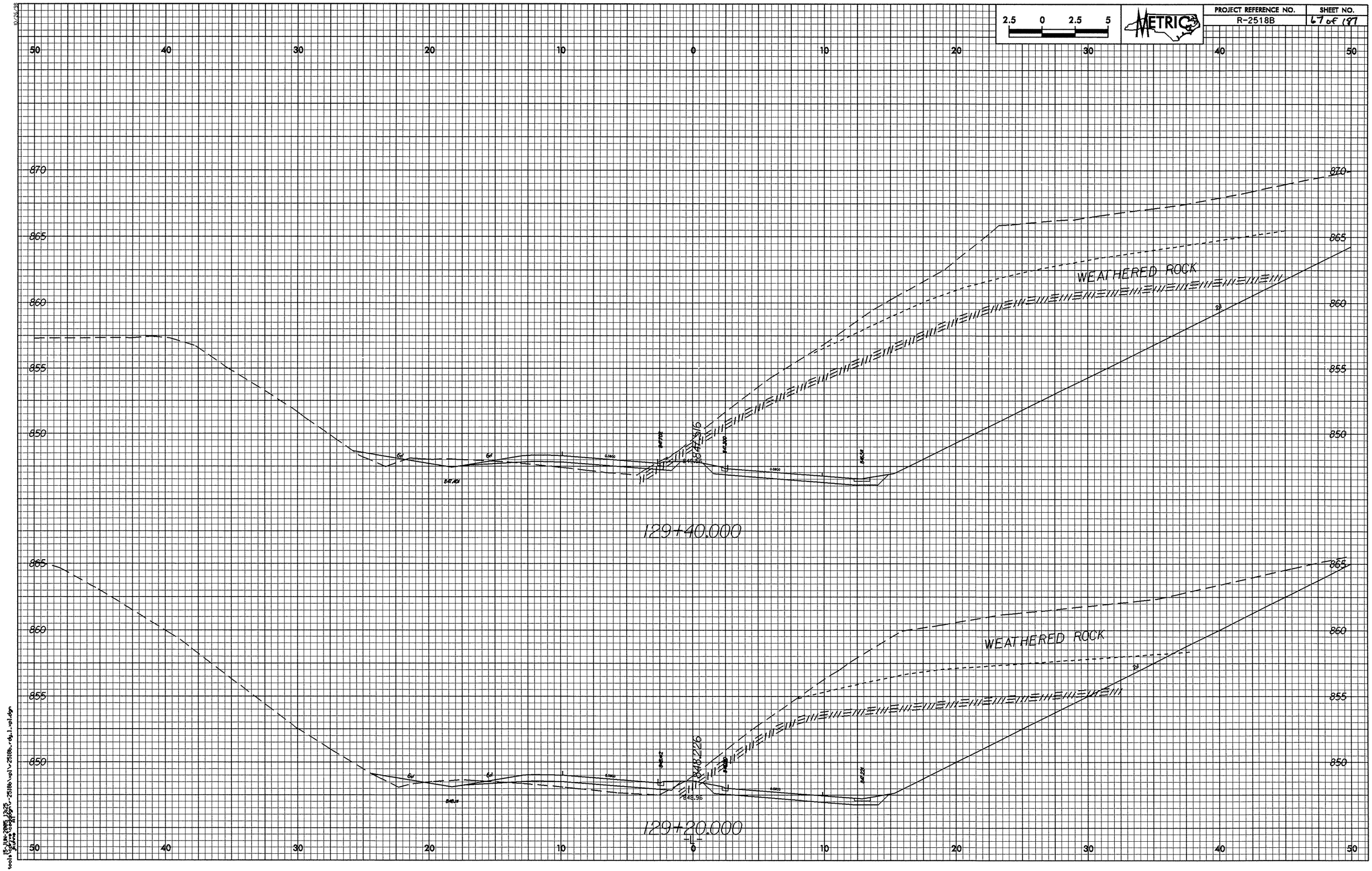
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
64 of 187
50 40 30 20 10 0 10 20 30 40 50
870
865
860
855
850
850.621
850.12
128+20.000
-L-



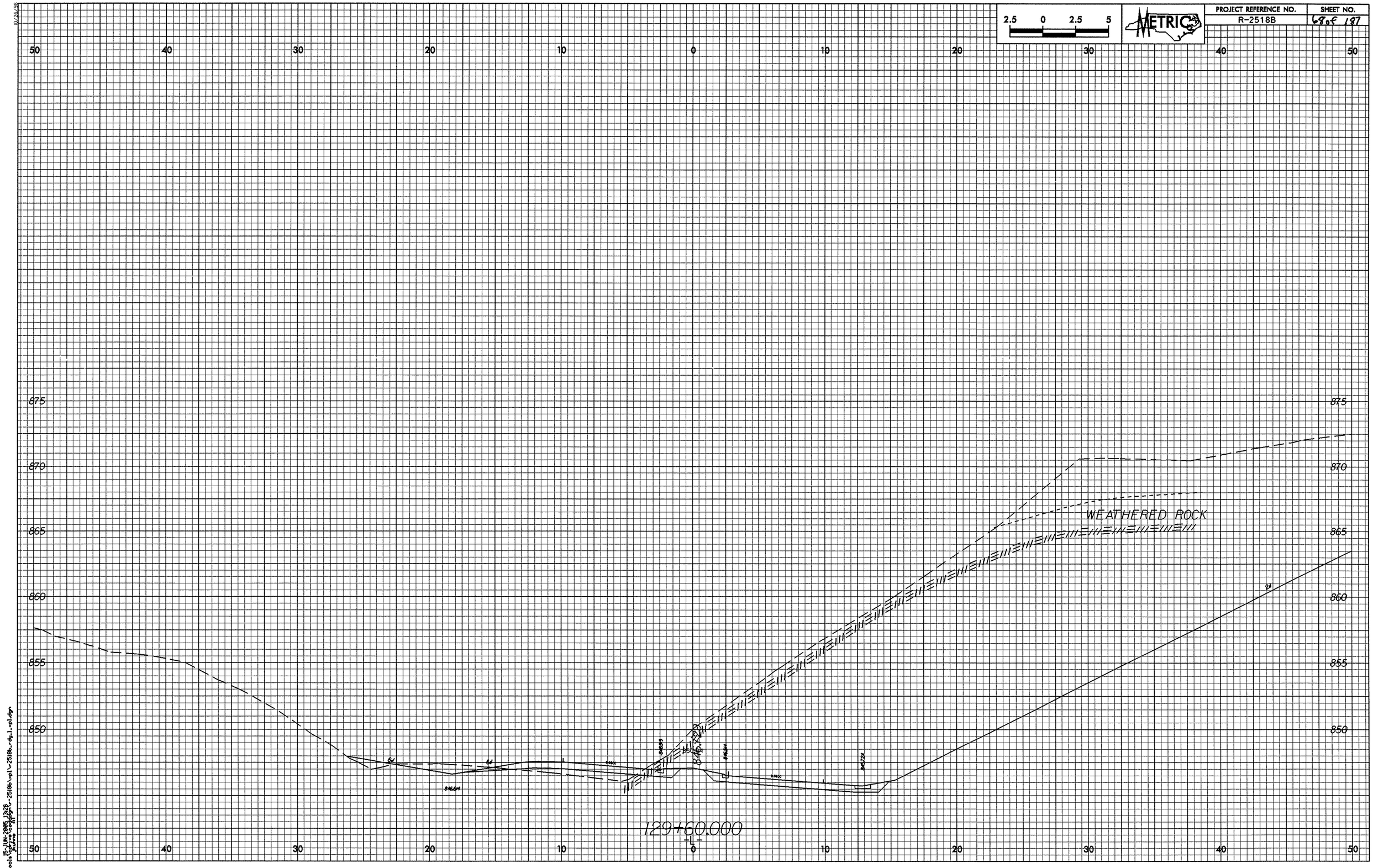
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
65 of 187
50 40 30 20 10 0 10 20 30 40 50
870 865 860 855 850 845
849.894
849.18
128+60.000
850.296
849.70
128+40.000



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
66 of 187
50 40 30 20 10 0 10 20 30 40 50
870
865
860
855
850
SAPROLITE
TAN/BRN SANDY SILT DENSE
WEATHERED ROCK
848.859
848.91
129+00.000
849.415
848.72
128+80.000



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
67 of 187
50 40 30 20 10 0 10 20 30 40 50
870
865
860
855
850
WEATHERED ROCK
129+40.000
WEATHERED ROCK
848.226
848.96
129+20.000
-L-



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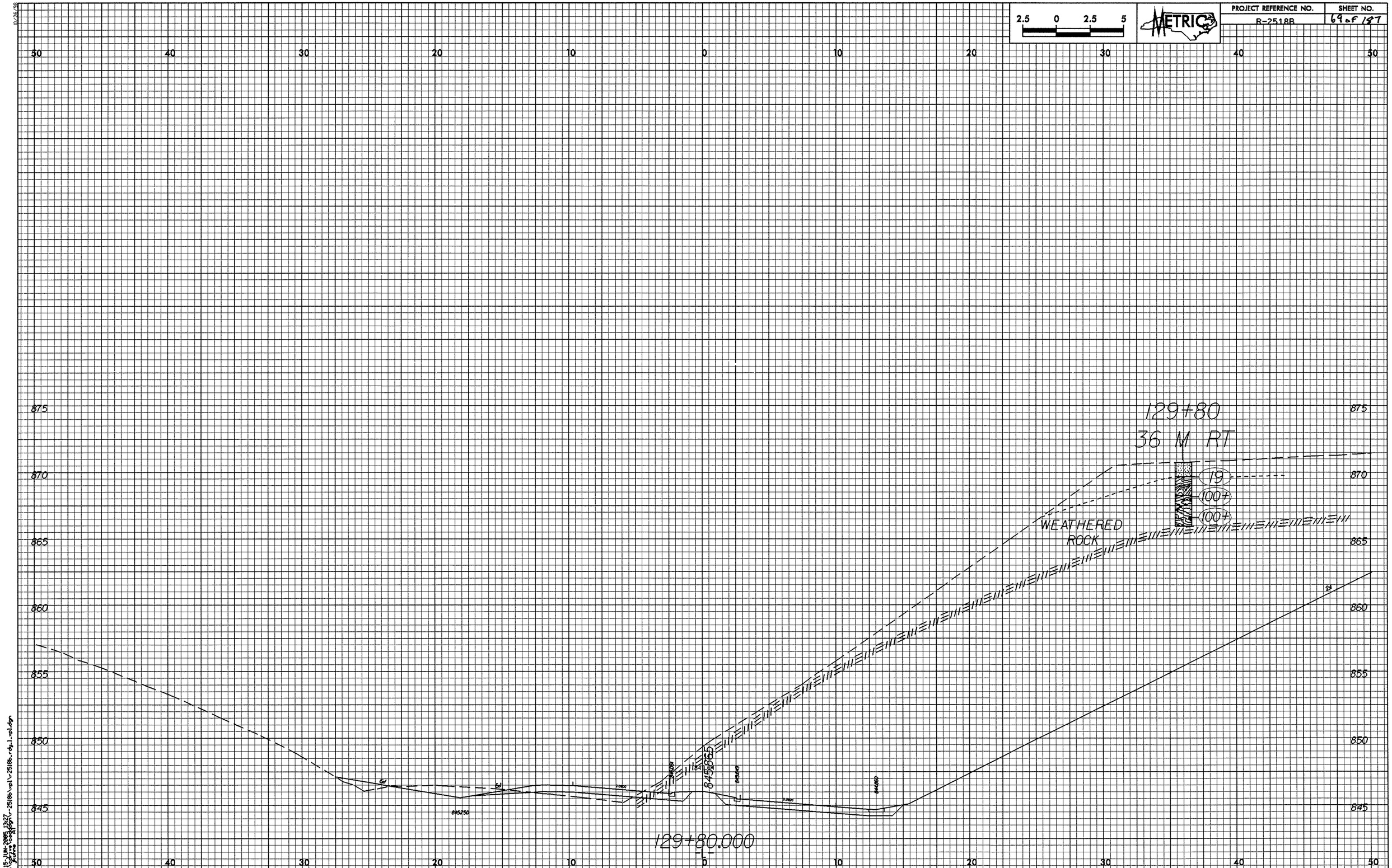
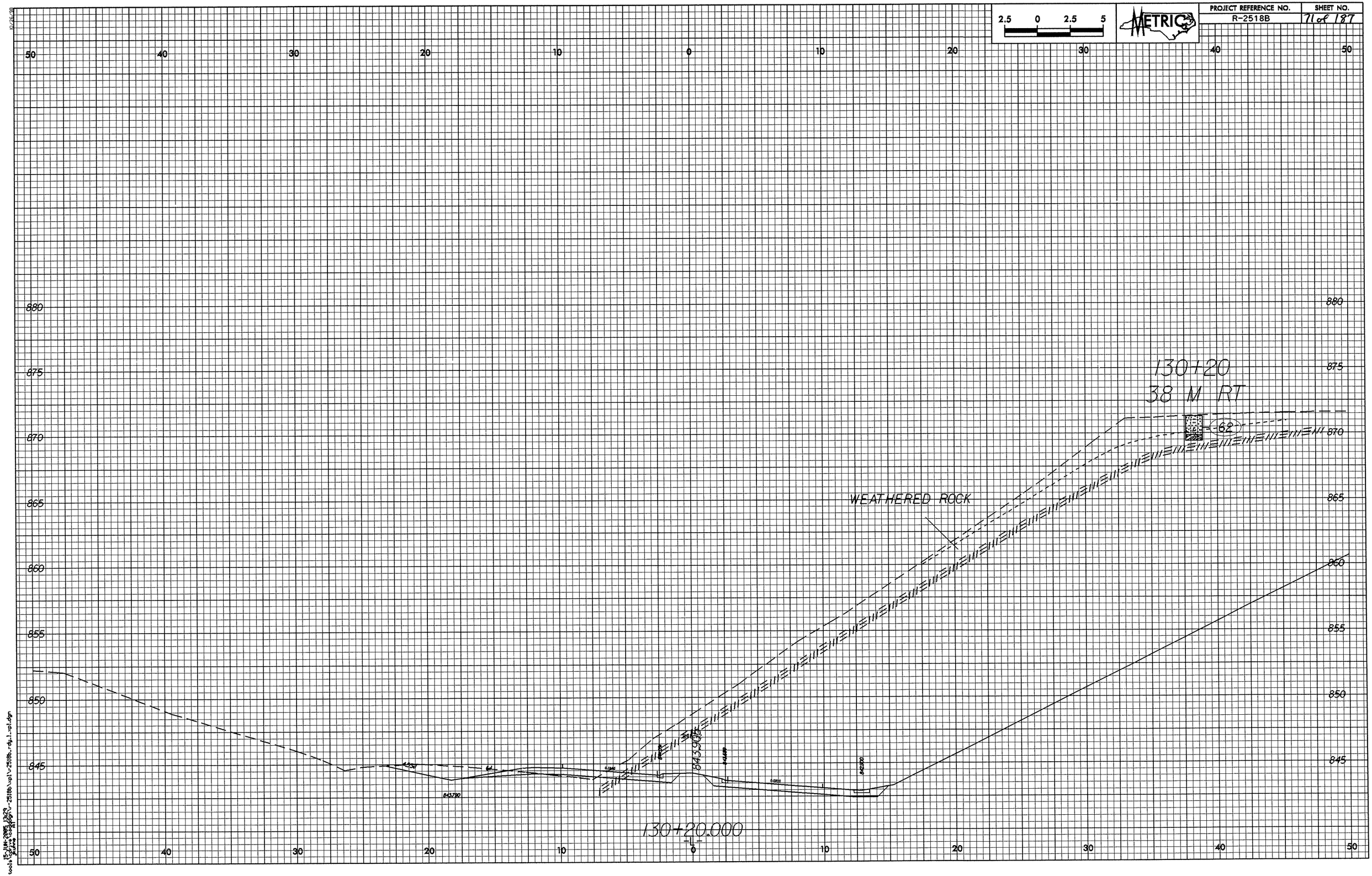
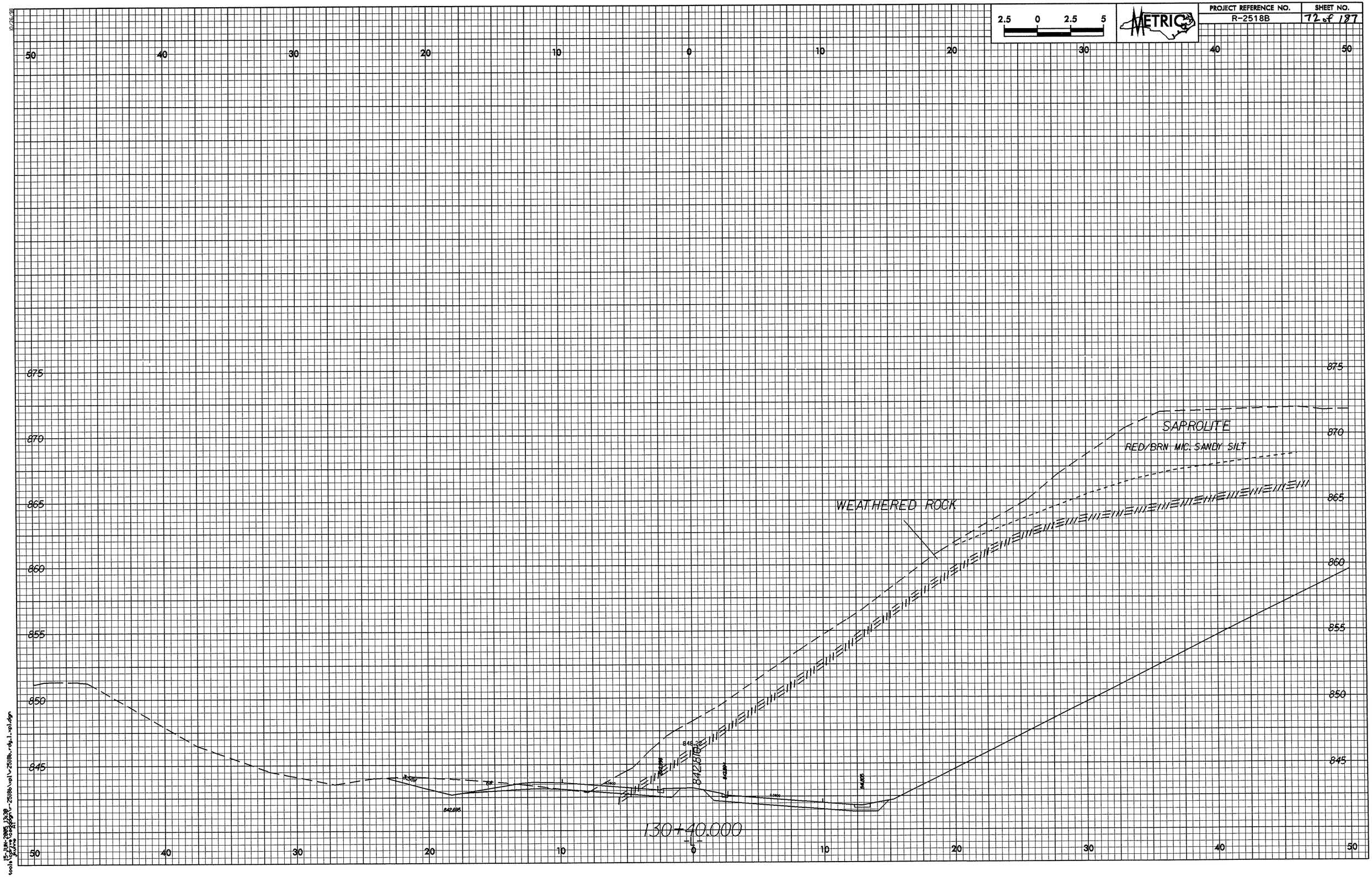


2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
69 of 187
50 40 30 20 10 0 10 20 30 40 50
875
870
865
860
855
850
845
129+80
36 M RT
19
100+
100+
WEATHERED
ROCK
129+80.000
-L-

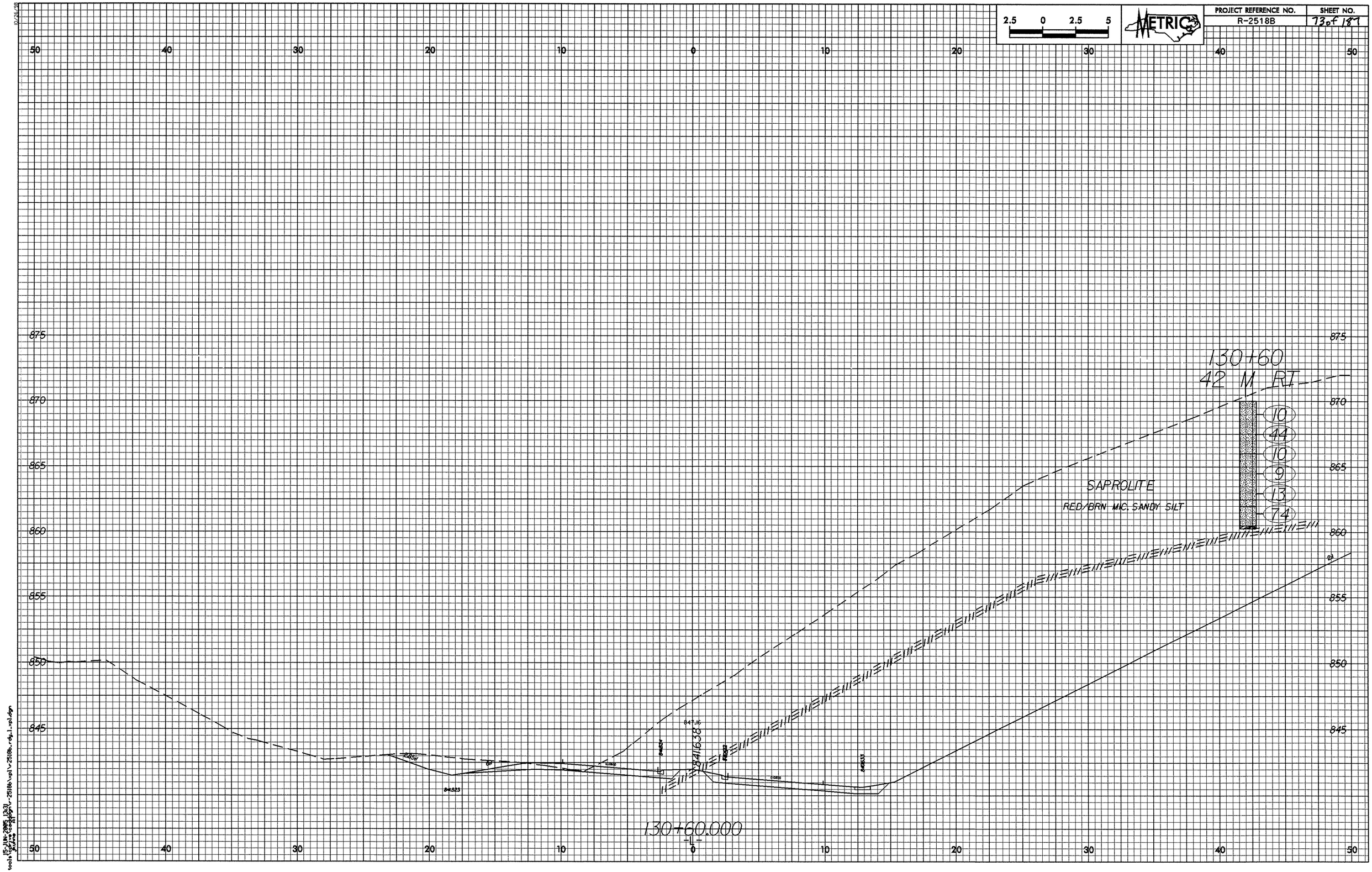
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
70 of 187
50 40 30 20 10 0 10 20 30 40 50
880
875
870
865
860
855
850
845
WEATHERED ROCK
844.806
0.0800
844.707
843.598
-L-
130+00.000
10/26/98
15-JUN-2005 13:28



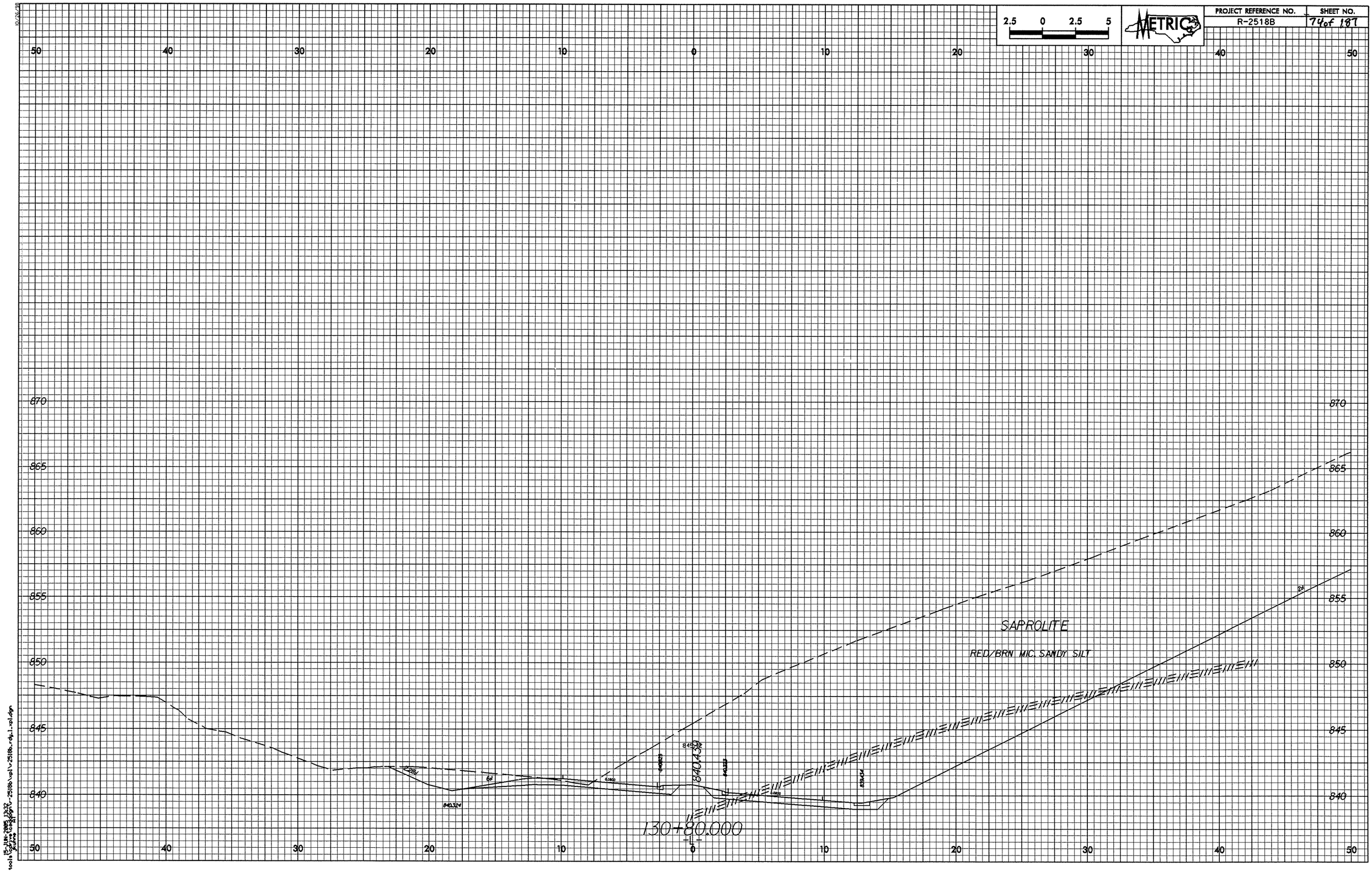
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
71 of 187
50 40 30 20 10 0 10 20 30 40 50
880
875
870
865
860
855
850
845
130+20
38 M RT
62
WEATHERED ROCK
843790
843900
130+20.000



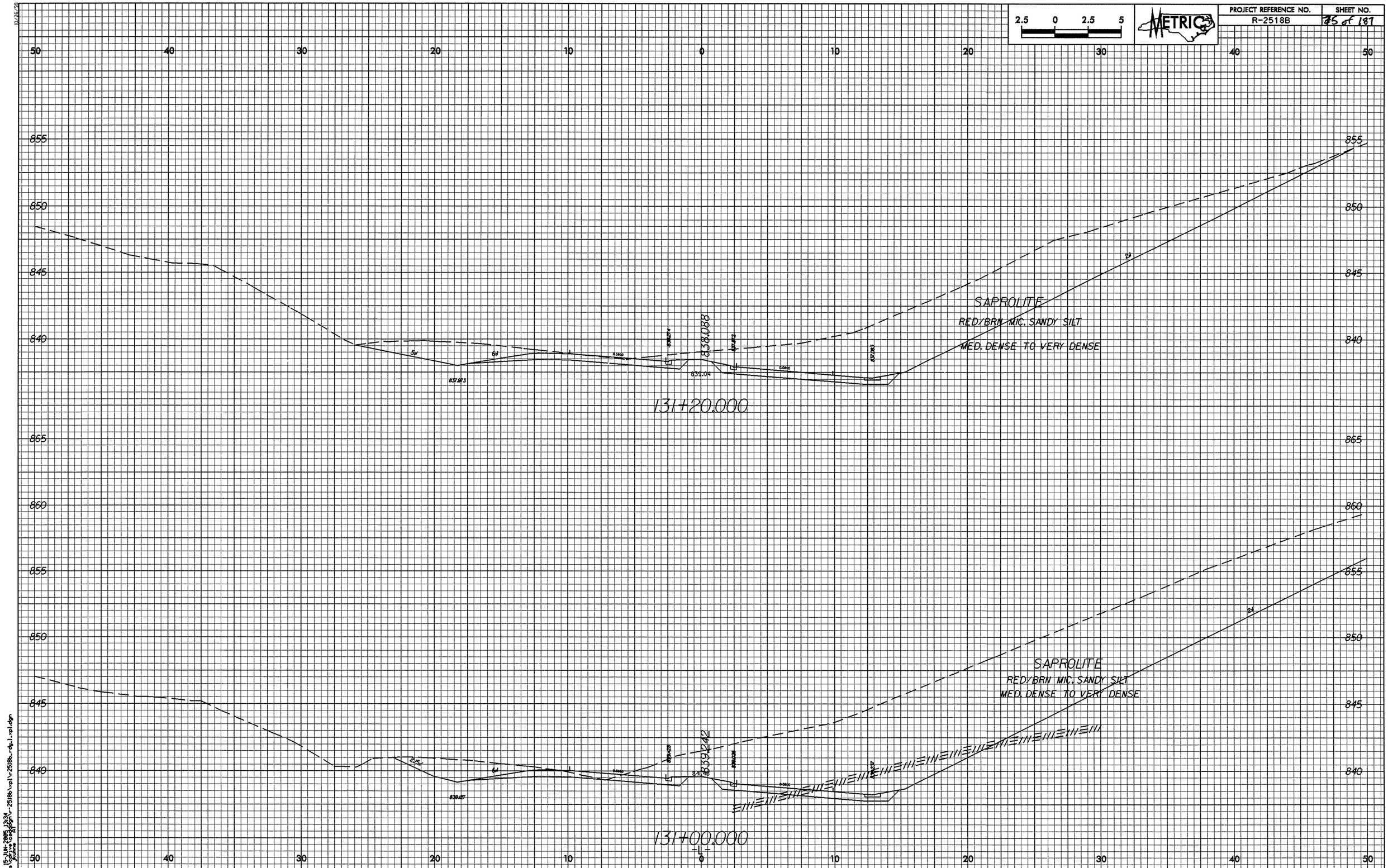
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
72 of 187
50 40 30 20 10 0 10 20 30 40 50
875
870
865
860
855
850
845
SAPROLITE
RED/BRN MIC. SANDY SILT
WEATHERED ROCK
130+40.000
-L-



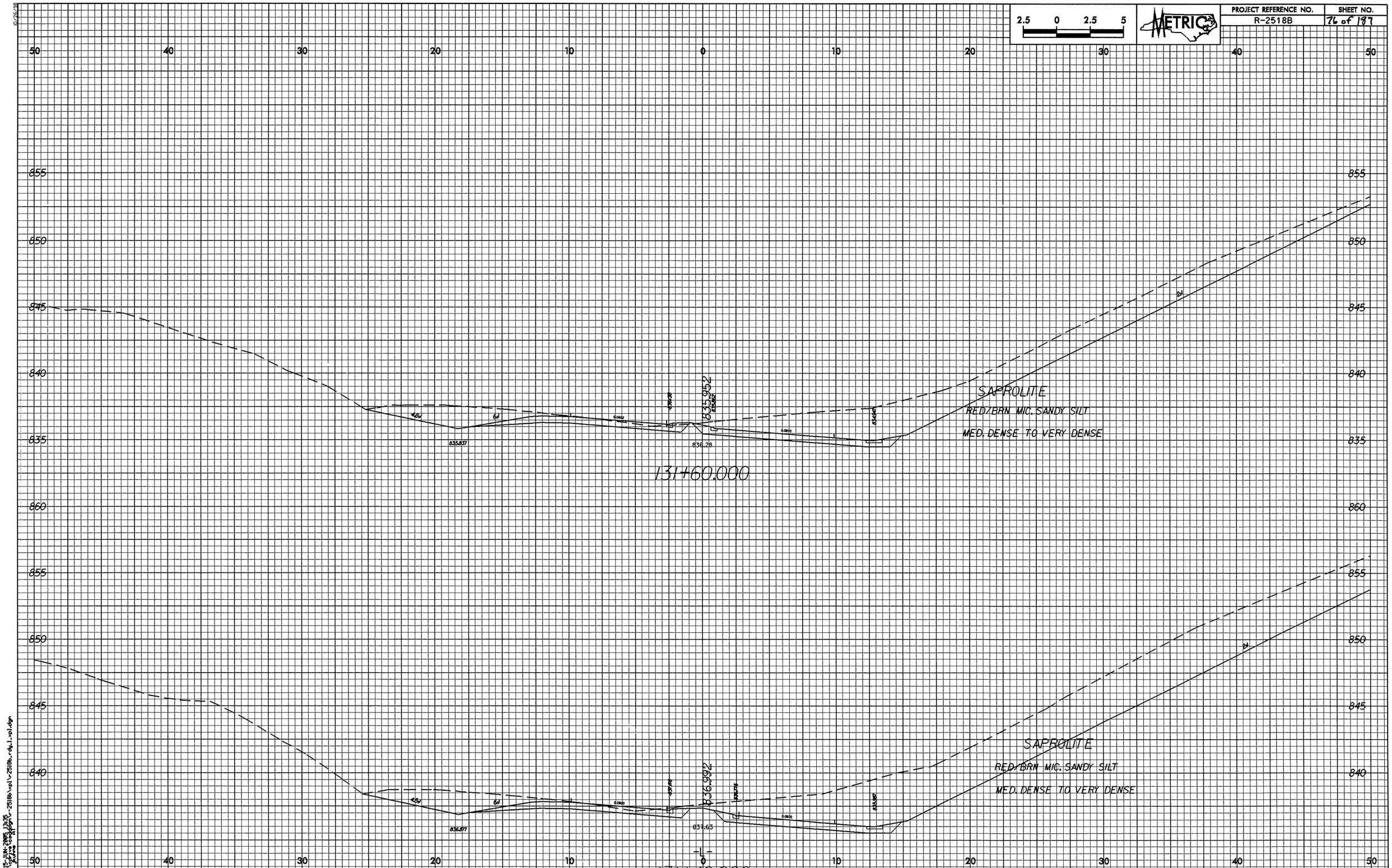
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
73 of 187
50 40 30 20 10 0 10 20 30 40 50
875
870
865
860
855
850
845
130+60
42 M RT
10
44
10
9
13
74
SAPROLITE
RED/BRN MIC. SANDY SILT
847.16
841.638
130+60.000
-L-



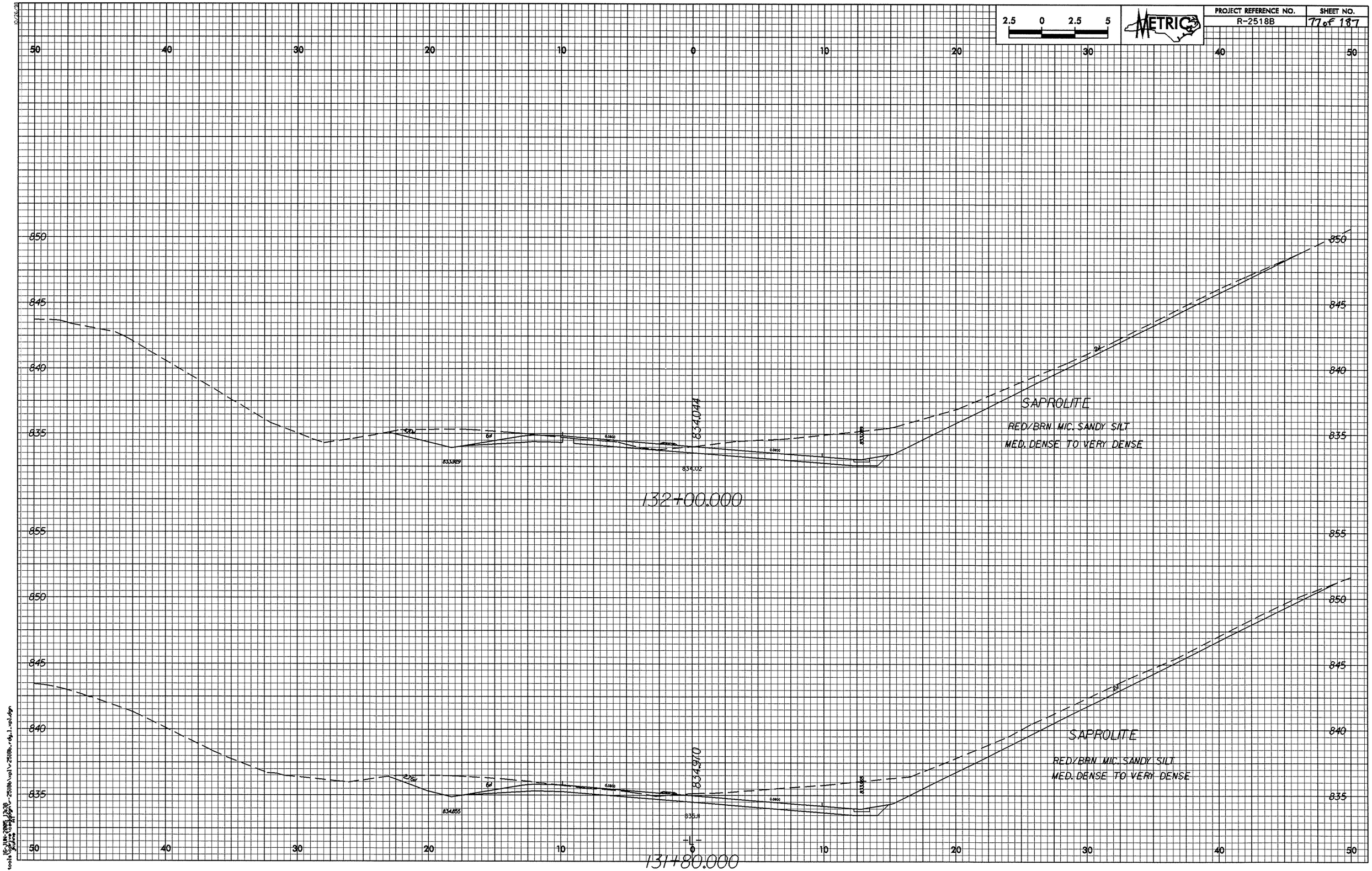
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
74 of 187
50 40 30 20 10 0 10 20 30 40 50
870
865
860
855
850
845
840
SAPROLITE
RED/BRN MIC. SANDY SILT
840.324
840.439
130+80.000



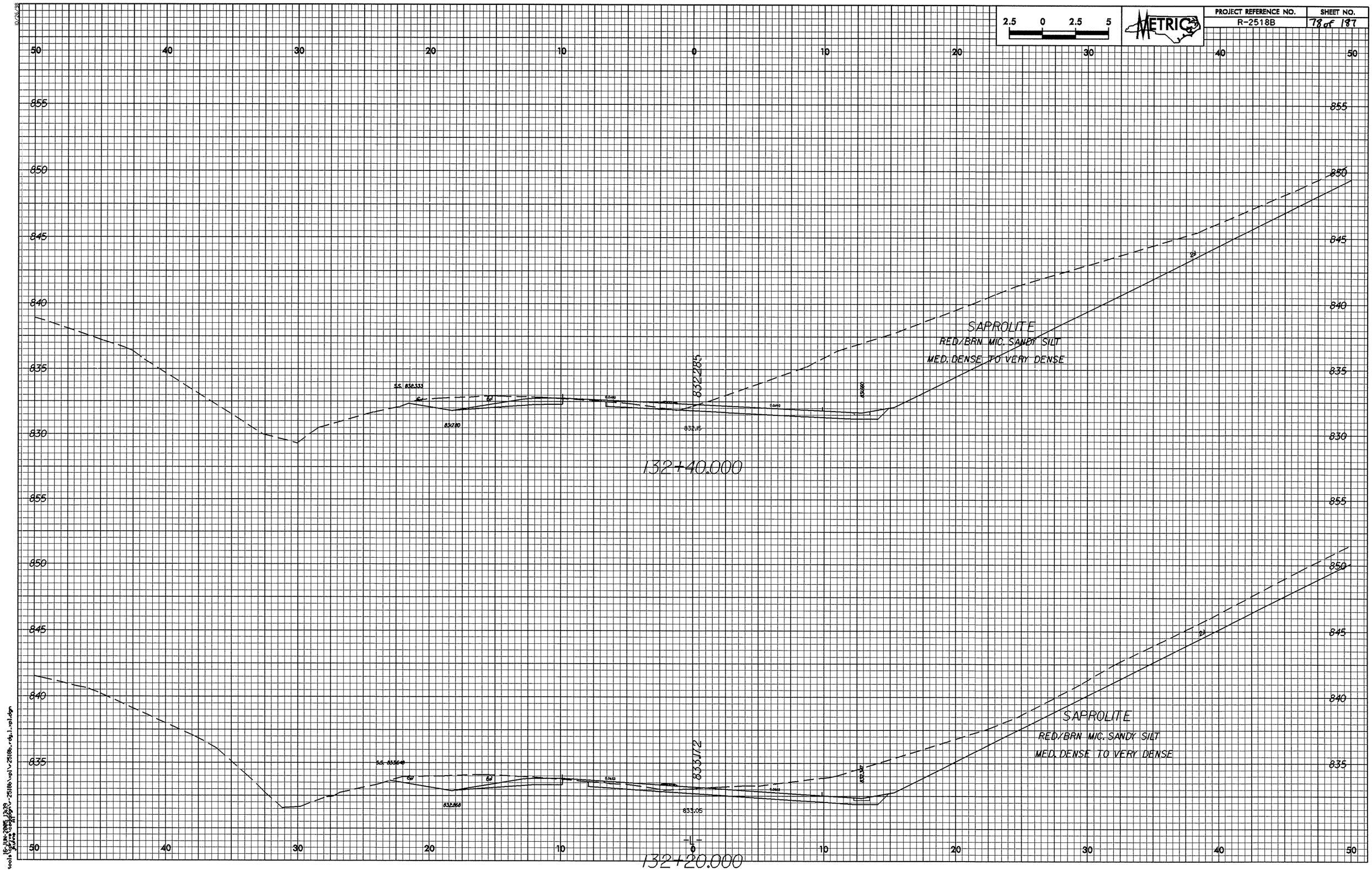
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
75 of 187
50 40 30 20 10 0 10 20 30 40 50
855
850
845
840
865
860
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
838.088
839.04
131+20.000
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
839.242
131+00.000
-L-



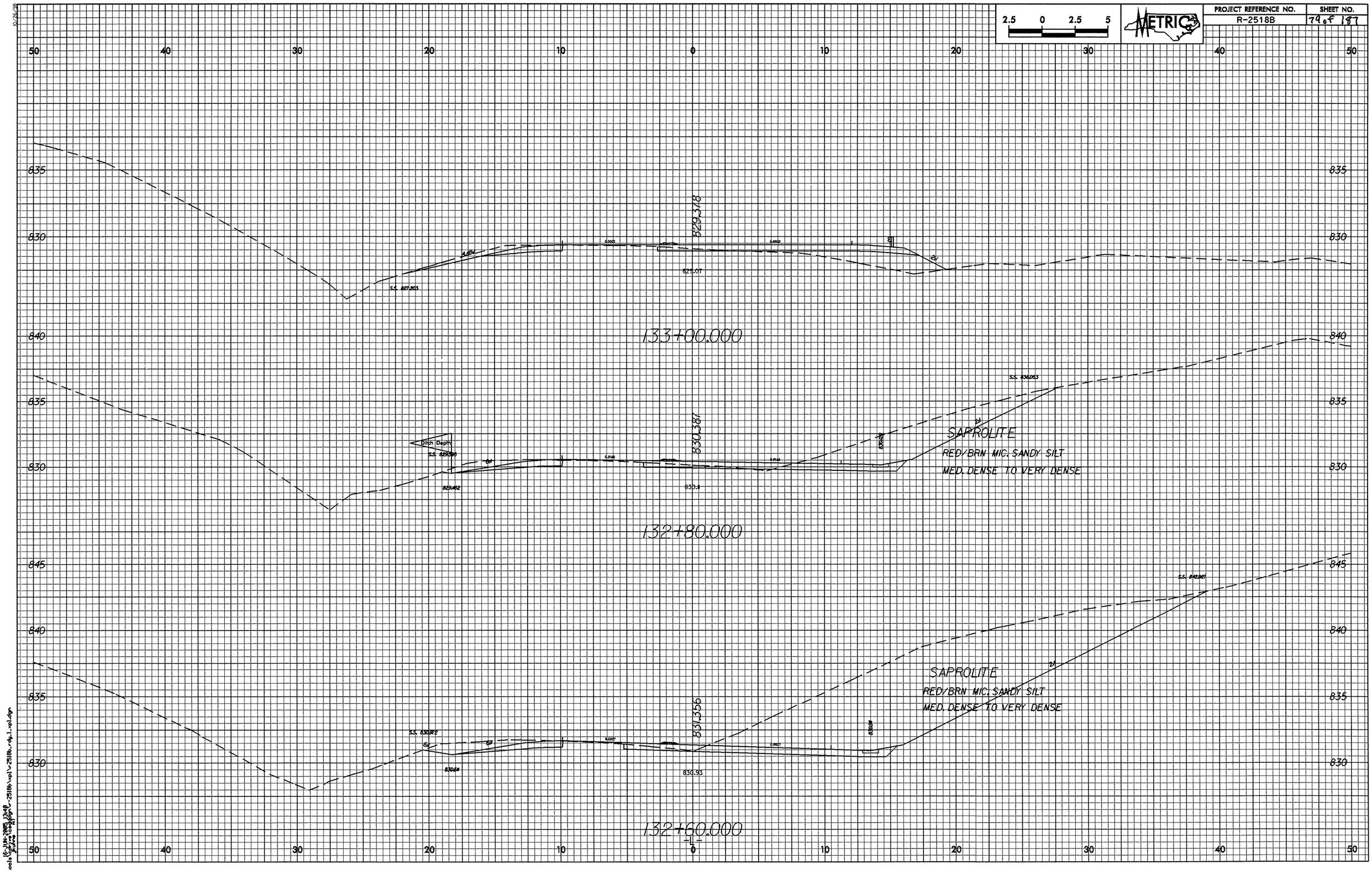
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
76 of 187
50 40 30 20 10 0 10 20 30 40 50
855
850
845
840
835
860
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
835.952
835.837
836.28
131+60.000
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
836.992
836.877
837.63
131+40.000



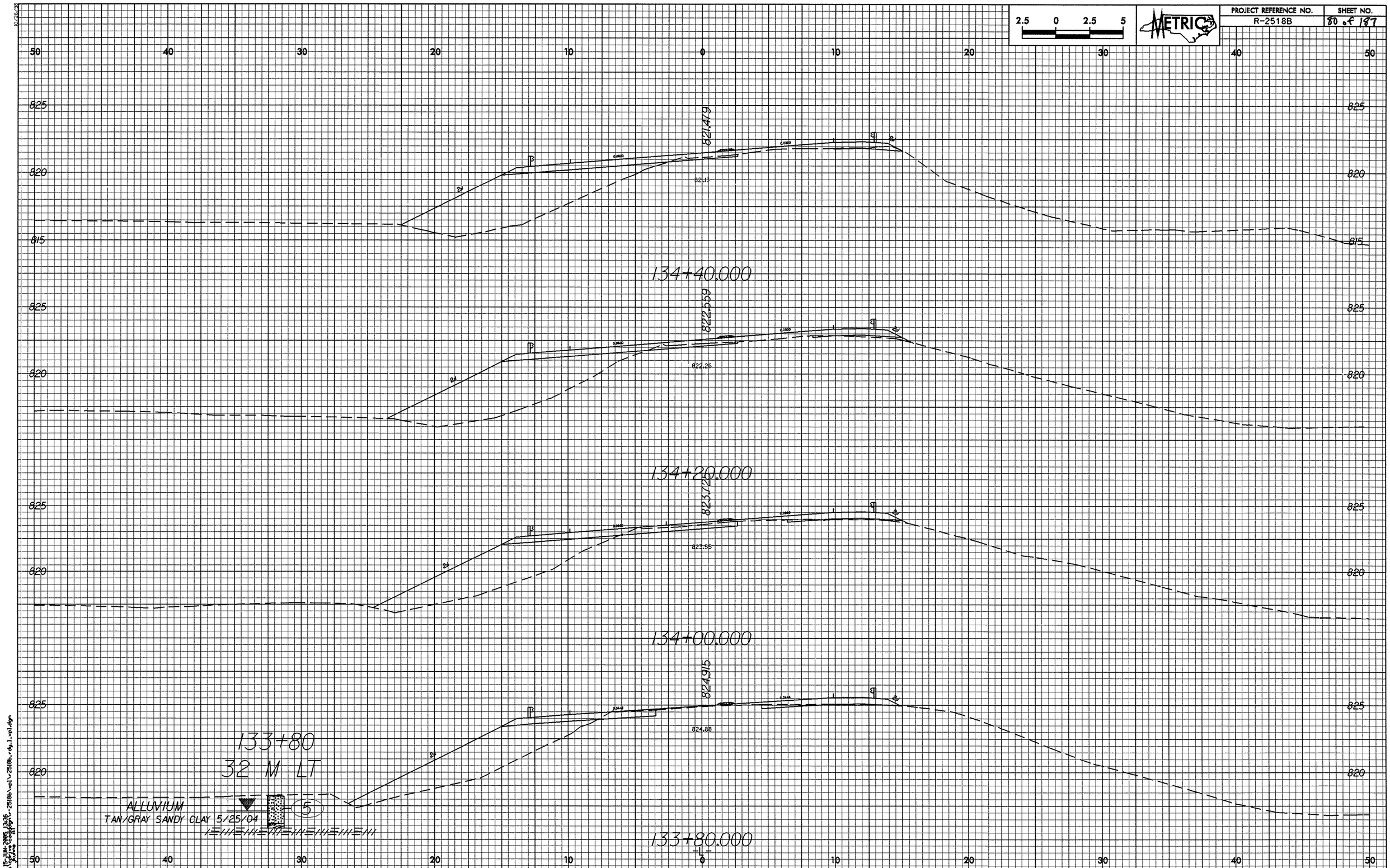
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
77 of 187
50 40 30 20 10 0 10 20 30 40 50
850
845
840
835
834.044
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
834.02
132+00.000
855
850
845
840
835
834.970
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
835.11
-L-
131+80.000



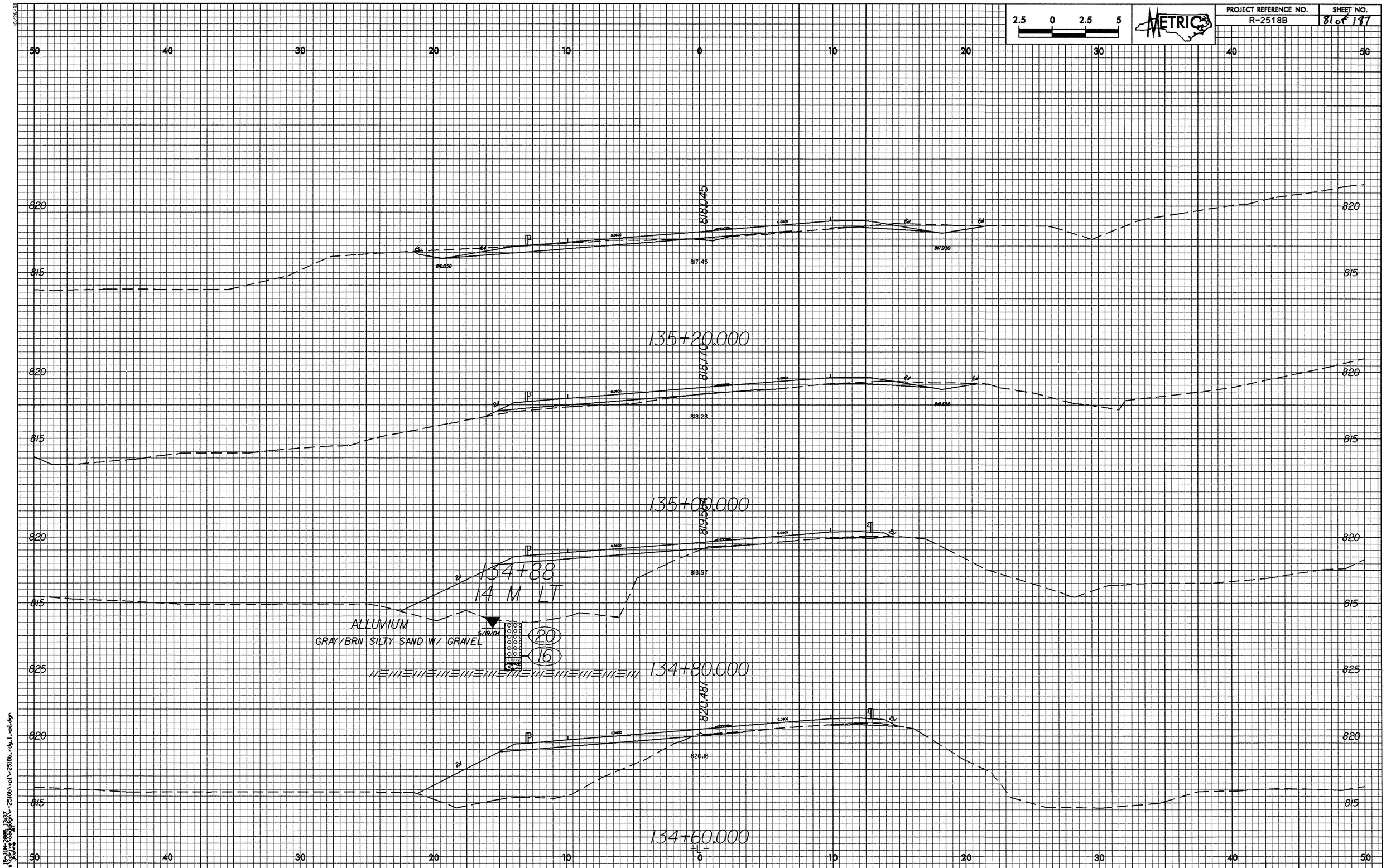
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
78 of 187
50 40 30 20 10 0 10 20 30 40 50
855
850
845
840
835
830
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
832.285
832.15
132+40.000
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
833.172
833.05
132+20.000



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
79 of 187
50 40 30 20 10 0 10 20 30 40 50
835
830
840
845
829.318
825.07
133+00.000
830.387
Ditch Depth
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
132+80.000
831.356
830.93
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
132+60.000
-L-



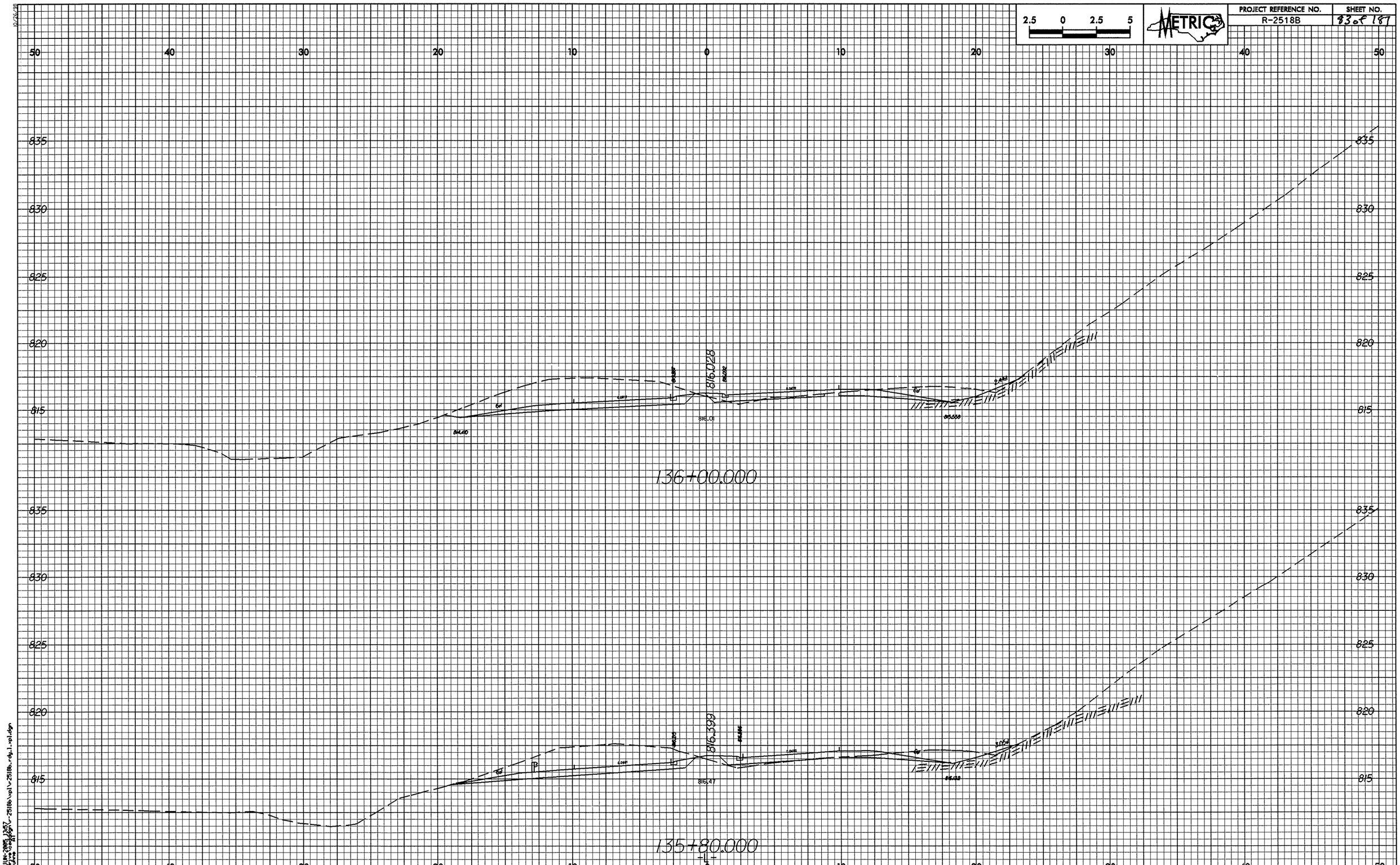
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
80 of 187
50 40 30 20 10 0 10 20 30 40 50
825
820
815
821.479
821.13
134+40.000
822.559
822.26
134+20.000
823.725
823.55
134+00.000
824.915
824.88
133+80
32 M LT
ALLUVIUM
TAN/GRAY SANDY CLAY 5/25/04
5
133+80.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
81 of 187
50 40 30 20 10 0 10 20 30 40 50
820
815
818.045
817.45
135+20.000
818.28
135+00.000
819.58
818.97
134+88
14 M LT
ALLUVIUM
GRAY/BRN SILTY SAND W/ GRAVEL
5/19/04
20
16
825
134+80.000
820.481
820.18
134+60.000
-L-

PROJECT REFERENCE NO. R-2518B

SHEET NO. 82 of 187



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
83 of 187
50 40 30 20 10 0 10 20 30 40 50
835 830 825 820 815
816.028
816.01
136+00.000
816.399
816.47
135+80.000
-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2518B	84 of 187

2.5 0 2.5 5

METRIC

50 40 30 20 10 0 10 20 30 40 50

835 830 825 820 815

815.745

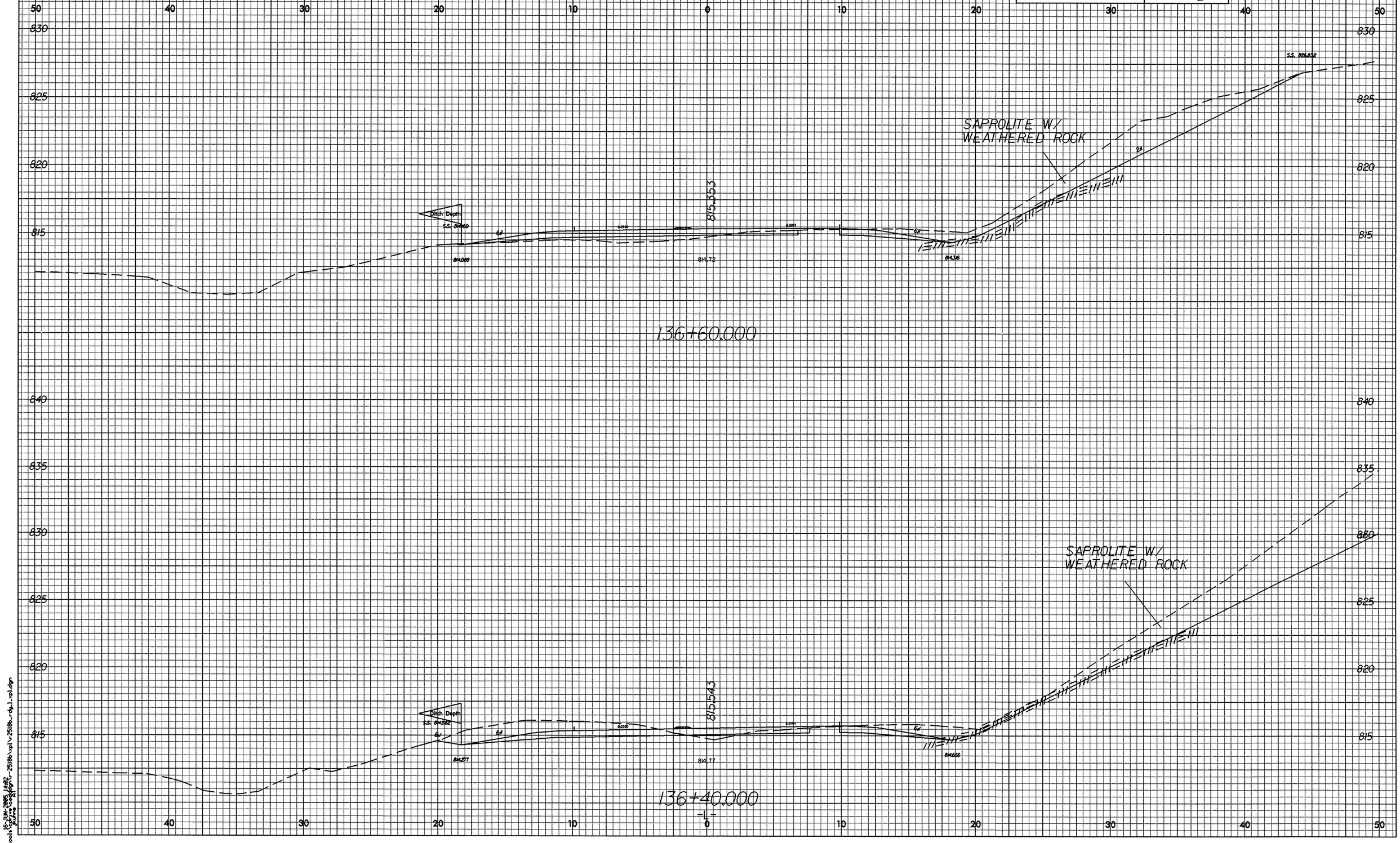
815.40

814.308

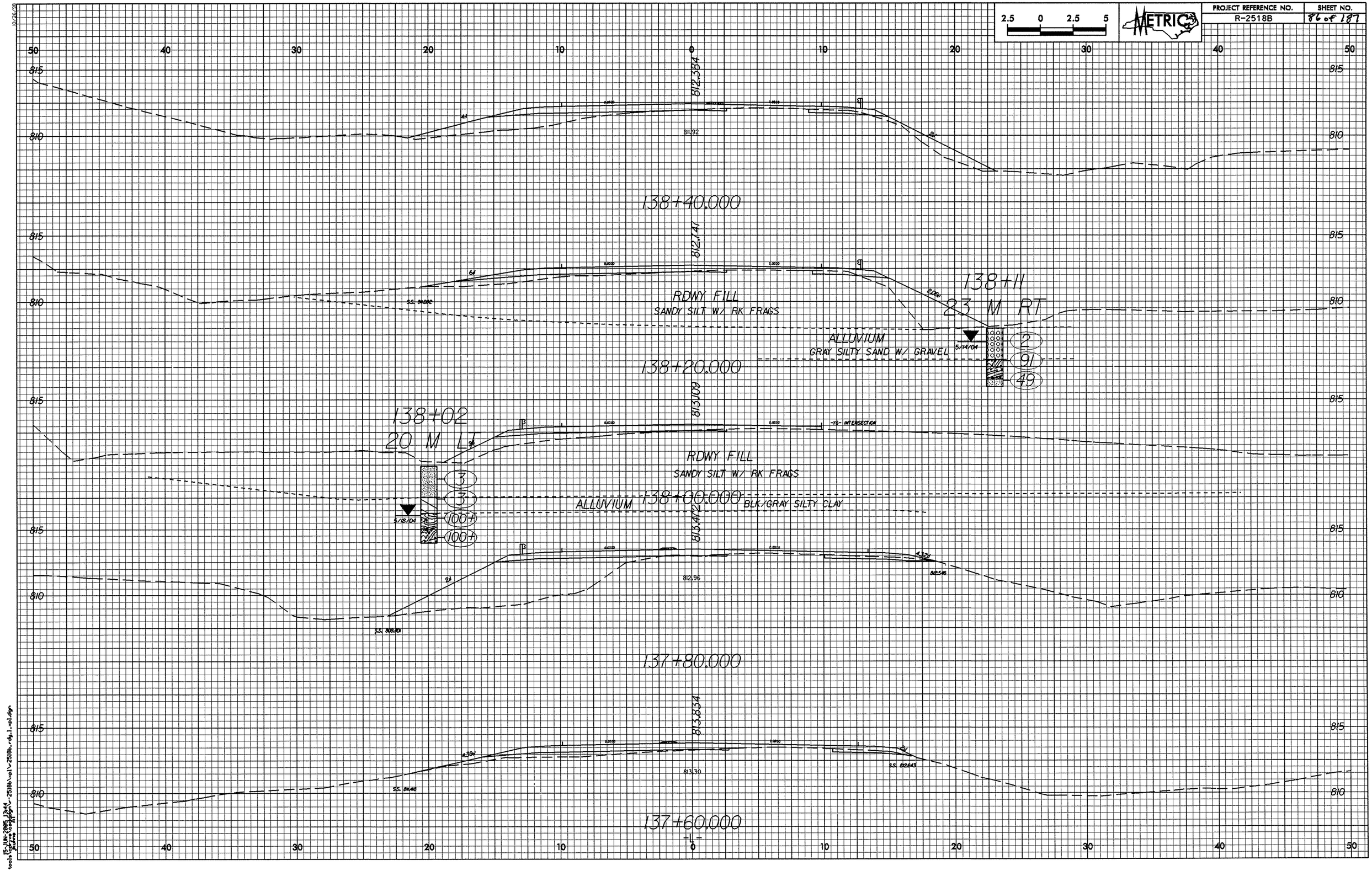
136+20.000

50 40 30 20 10 0 10 20 30 40 50

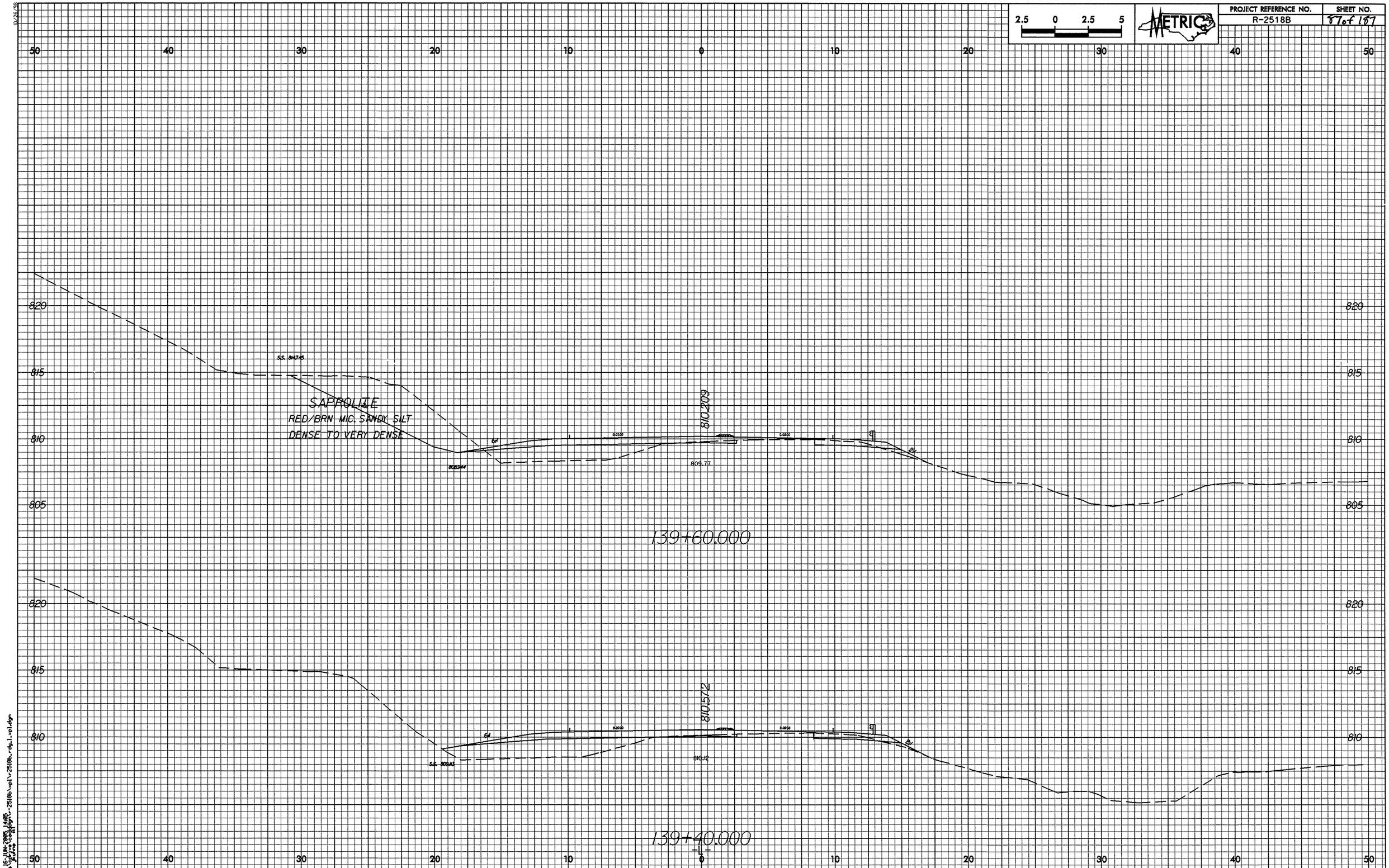
835 830 825 820 815



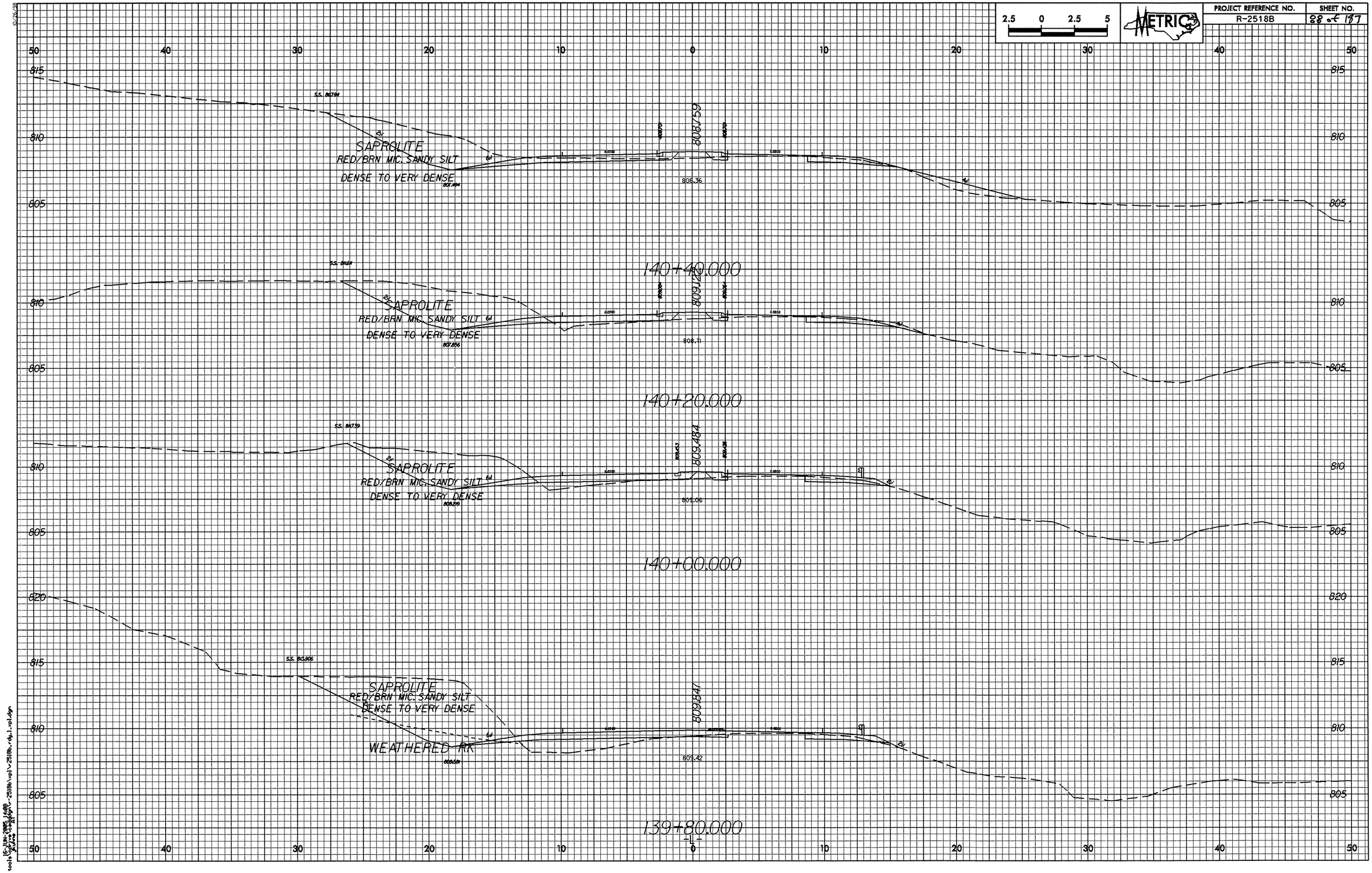
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
85 of 187
SAPROLITE W/
WEATHERED ROCK
Ditch Depth
815.353
814.72
136+60.000
SAPROLITE W/
WEATHERED ROCK
Ditch Depth
815.543
814.77
136+40.000
-L-



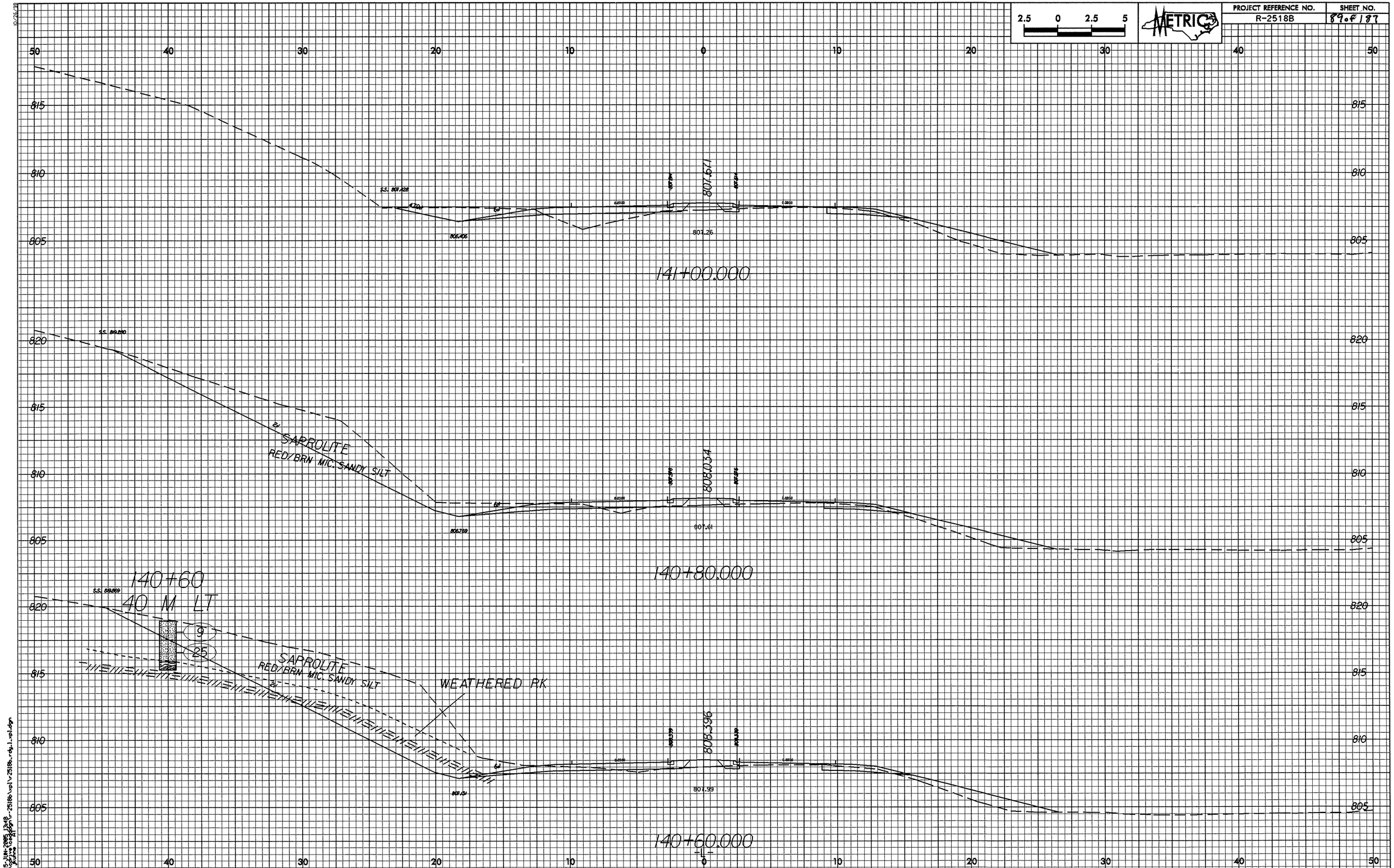
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
86 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
812.384
811.92
138+40.000
812.141
138+11
23 M RT
RDWY FILL
SANDY SILT W/ RK FRAGS
ALLUVIUM
GRAY SILTY SAND W/ GRAVEL
5/14/04
2
91
49
138+20.000
813.109
138+02
20 M LT
-Y6- INTERSECTION
RDWY FILL
SANDY SILT W/ RK FRAGS
3
3
100+
100+
ALLUVIUM
138+00.000
BLK/GRAY SILTY CLAY
5/18/04
813.472
812.96
S.S. 808.101
137+80.000
813.834
813.30
S.S. 812.643
137+60.000
-L-



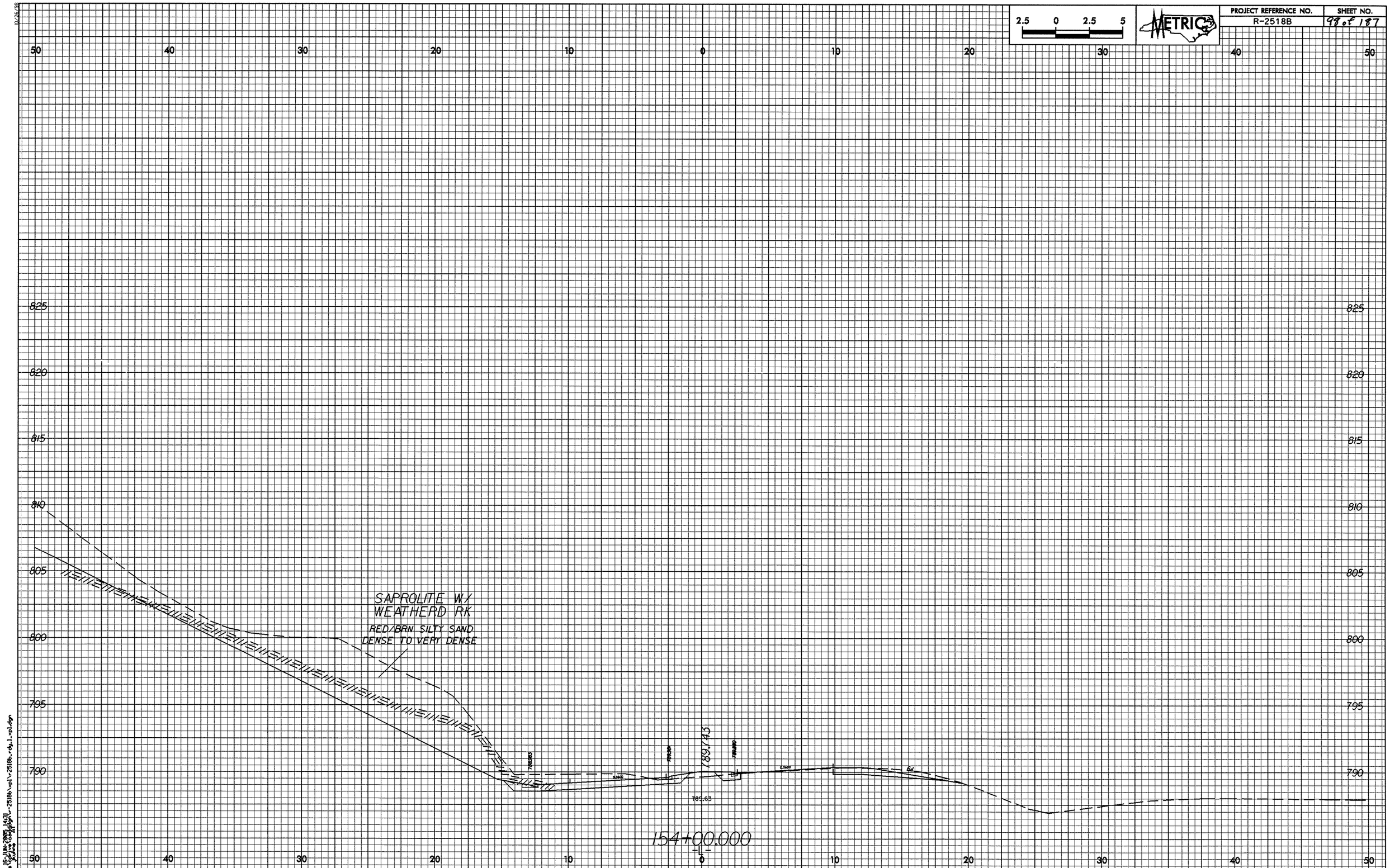
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
87 of 187
50 40 30 20 10 0 10 20 30 40 50
820
815
810
805
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
810.209
809.77
139+60.000
810.572
810.12
139+40.000
-L-



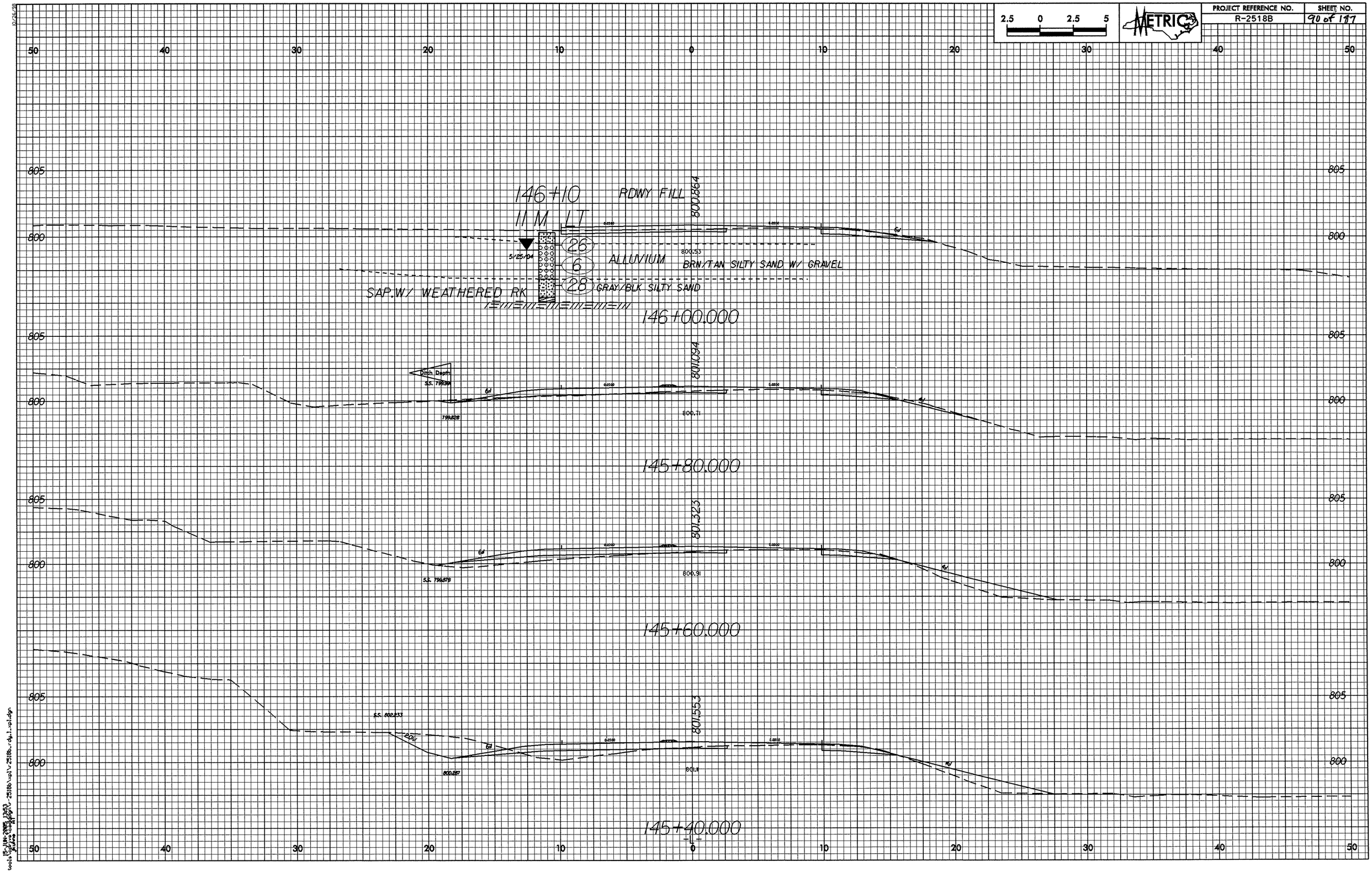
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
88 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
820
S.S. 811.794
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
808.759
808.36
140+40.000
S.S. 811.611
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
809.122
808.71
140+20.000
S.S. 811.739
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
809.484
809.06
140+00.000
S.S. 813.906
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
WEATHERED RK
809.847
809.42
139+80.000
-L-



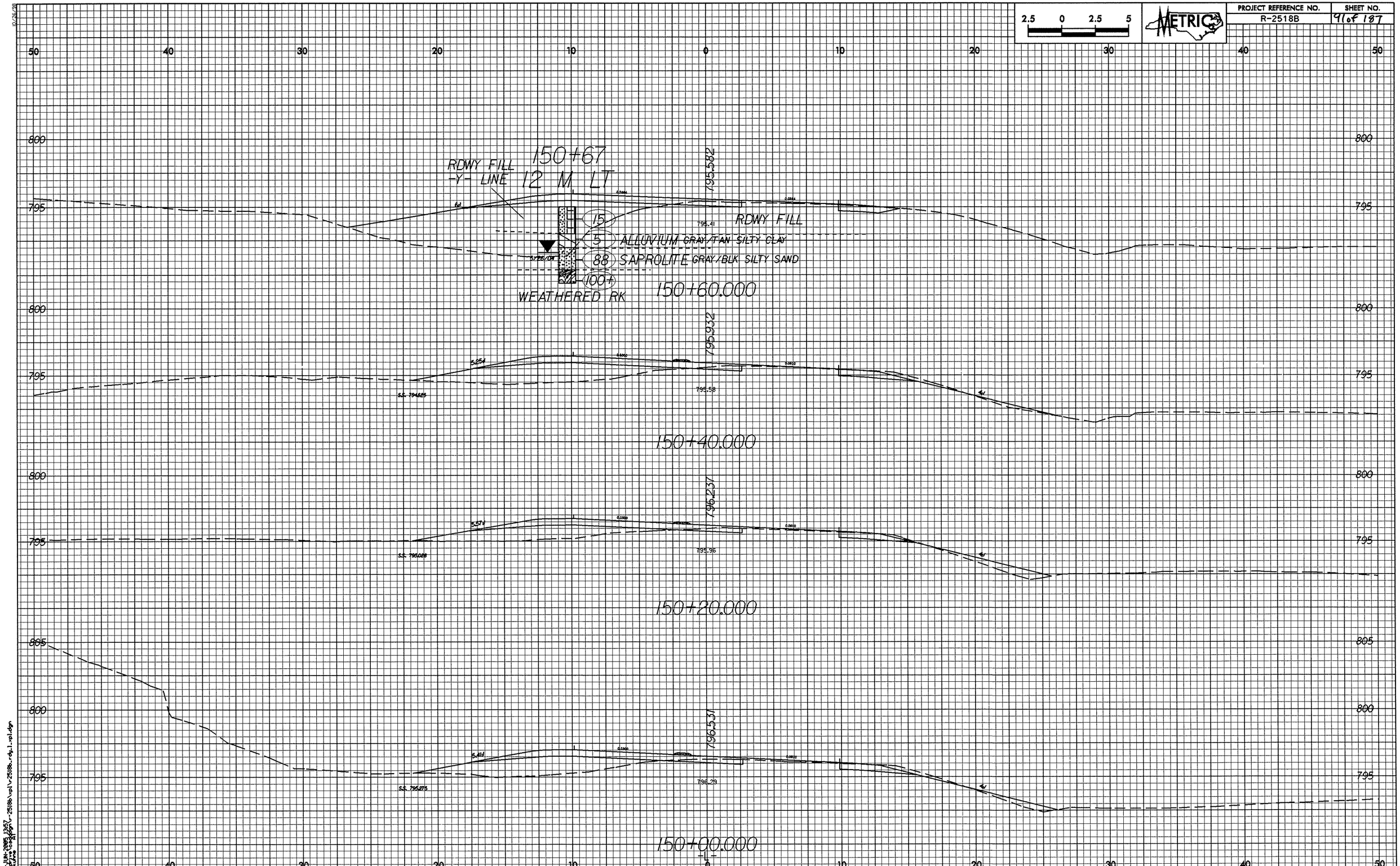
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
89 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
820
S.S. 807.428
806.406
807.671
807.26
141+00.000
S.S. 819.280
SAPROLITE
RED/BRN MIC. SANDY SILT
808.034
806.769
807.61
140+80.000
140+60
40 M LT
S.S. 819.869
9
25
SAPROLITE
RED/BRN MIC. SANDY SILT
WEATHERED PK
808.396
807.99
140+60.000



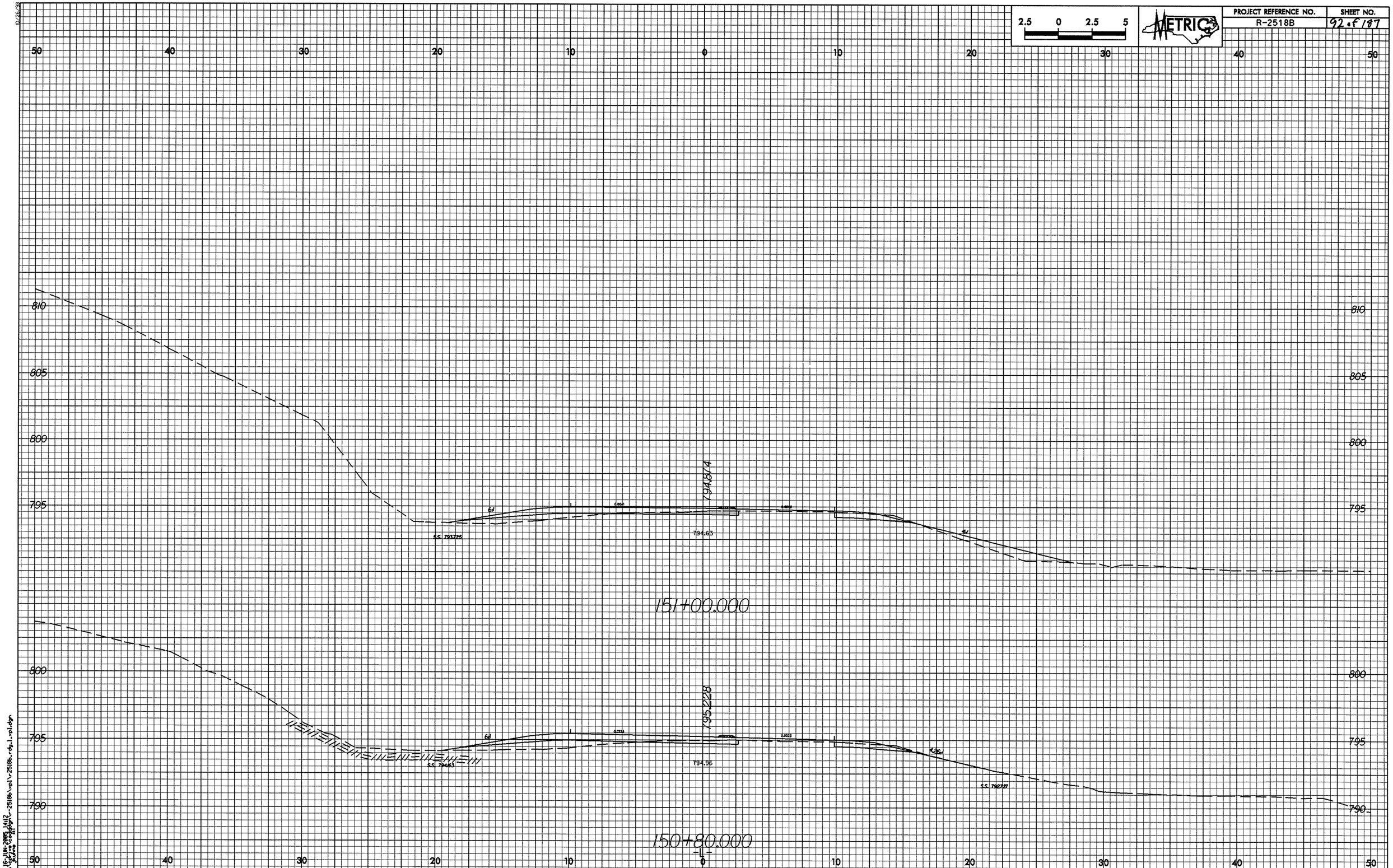
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
98 of 187
50 40 30 20 10 0 10 20 30 40 50
825
820
815
810
805
800
795
790
SAPROLITE W/
WEATHERD RK
RED/BRN SILTY SAND
DENSE TO VERY DENSE
789.743
789.63
154+00.000
-L-



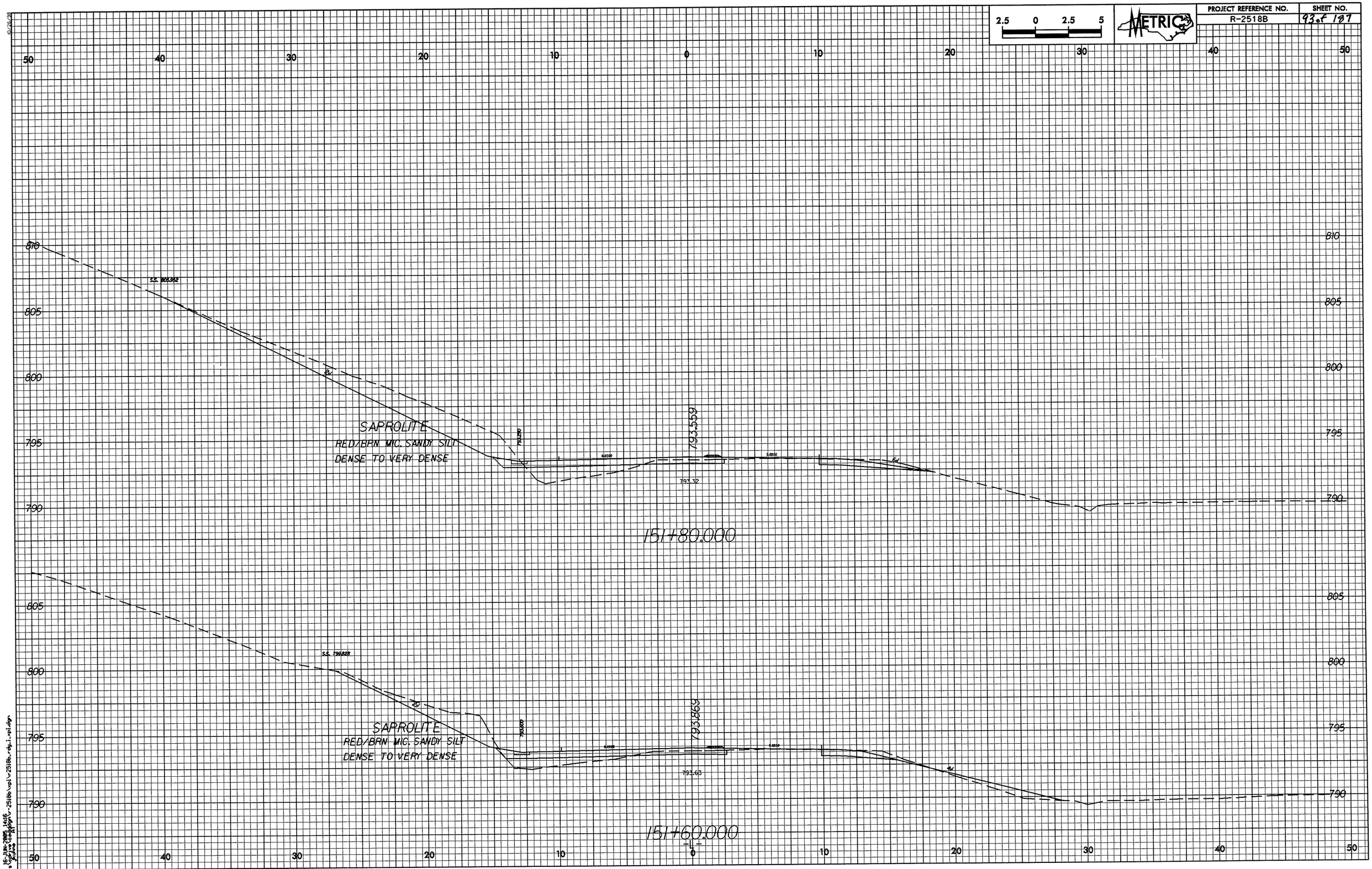
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
90 of 147
146+10
11 M LT
RDWY FILL
800.864
26
6
28
5/25/04
ALLUVIUM
BRN/TAN SILTY SAND W/ GRAVEL
GRAY/BLK SILTY SAND
SAP.W/ WEATHERED RK
800.53
146+00.000
801.094
Ditch Depth
S.S. 799.391
799.828
800.71
145+80.000
801.323
S.S. 799.878
800.91
145+60.000
801.553
S.S. 802.233
800.287
801.11
145+40.000
-L-



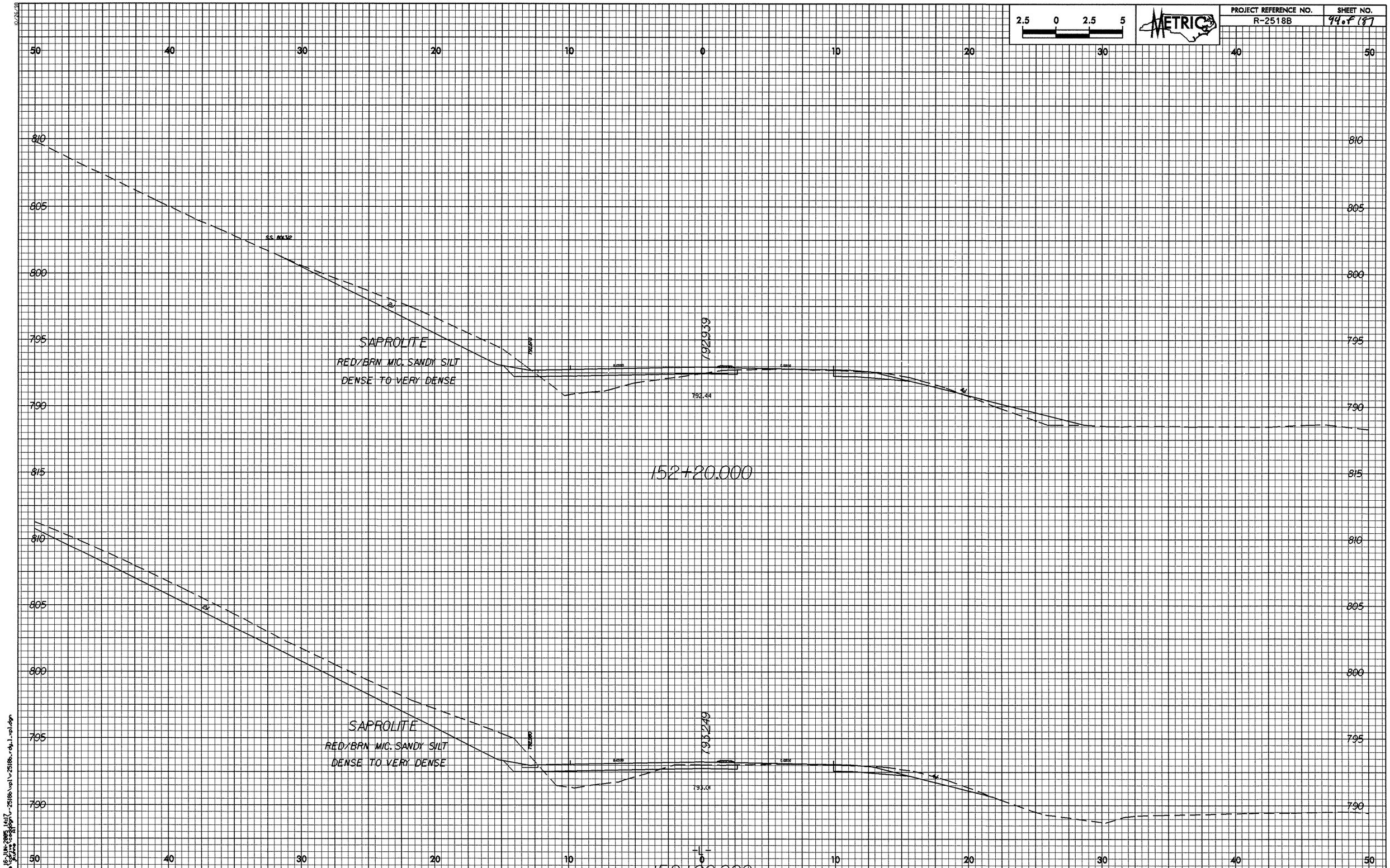
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
91 of 187
150+67
12 M LT
RDWY FILL
-Y- LINE
795.582
795.41
RDWY FILL
15
5
ALLUVIUM GRAY/TAN SILTY CLAY
88
SAPROLITE GRAY/BLK SILTY SAND
100+
WEATHERED RK
150+60.000
795.932
795.58
150+40.000
796.237
795.96
150+20.000
796.531
796.29
150+00.000
-L-



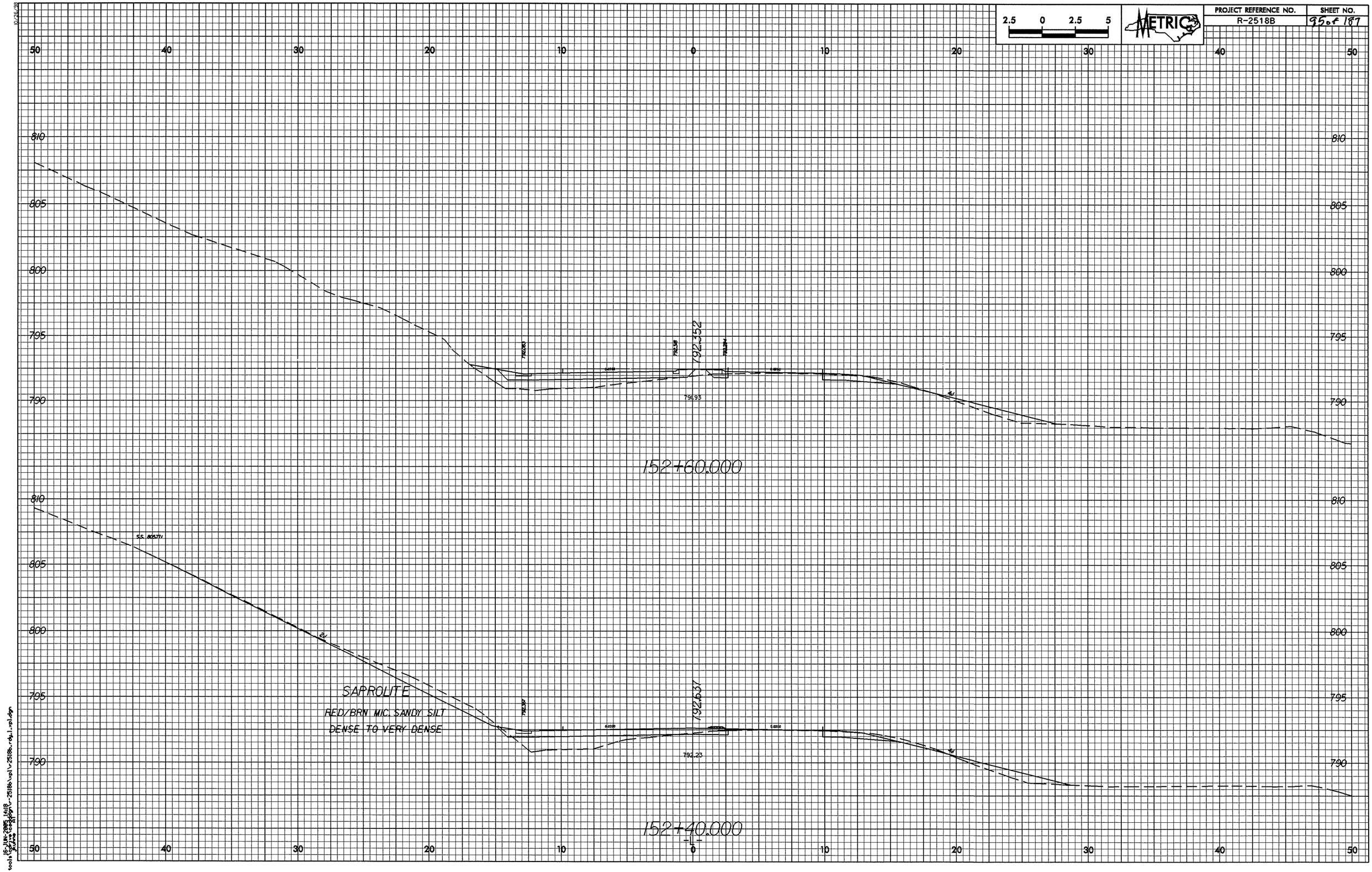
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
92 of 187
50 40 30 20 10 0 10 20 30 40 50
810
805
800
795
794.874
794.63
151+00.000
800
795
790
795.228
794.96
150+80.000
-L-



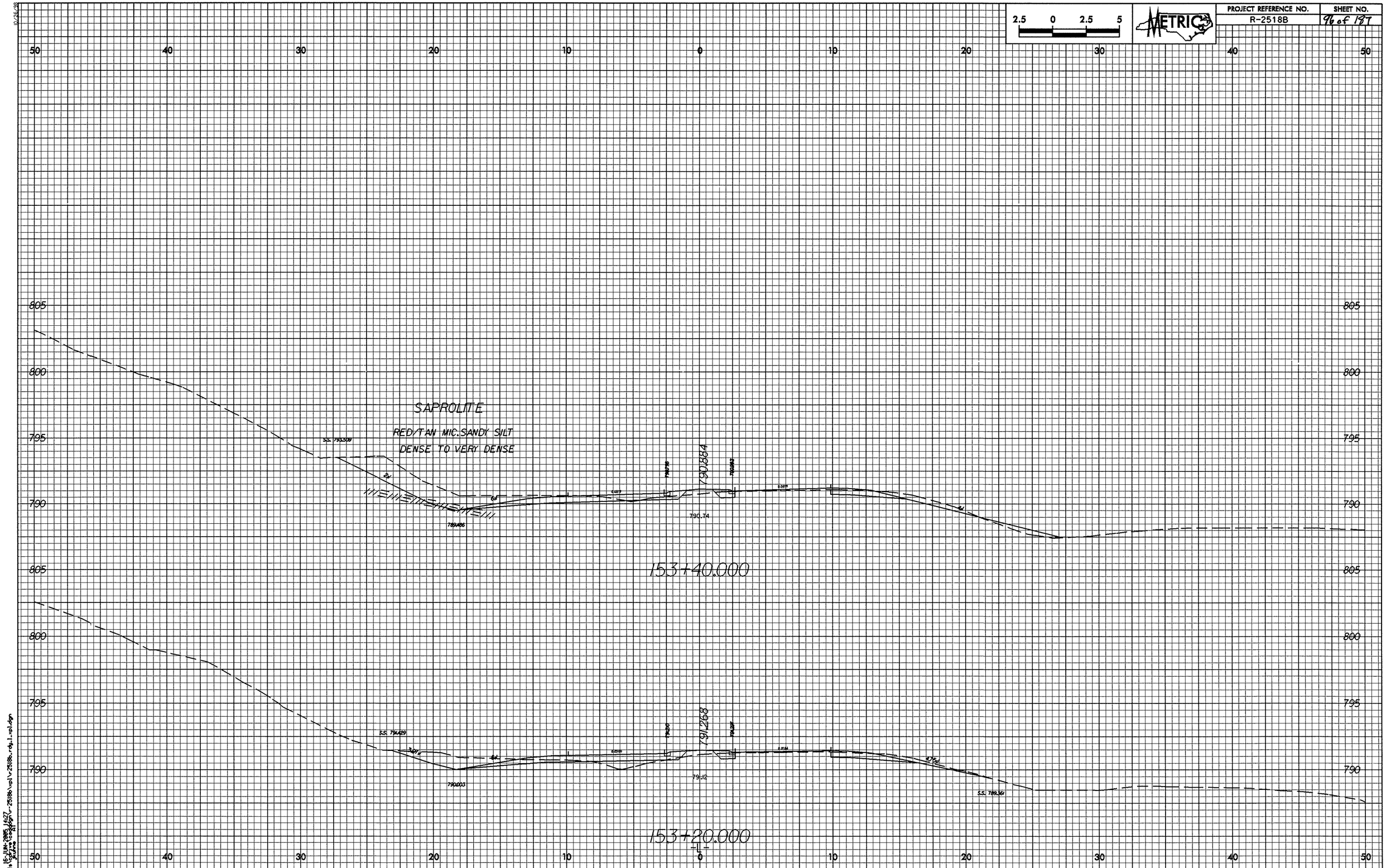
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
93 of 187
50 40 30 20 10 0 10 20 30 40 50
810
805
800
795
790
S.S. 805.962
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
793.559
793.32
151+80.000
S.S. 799.828
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
793.869
793.63
151+60.000



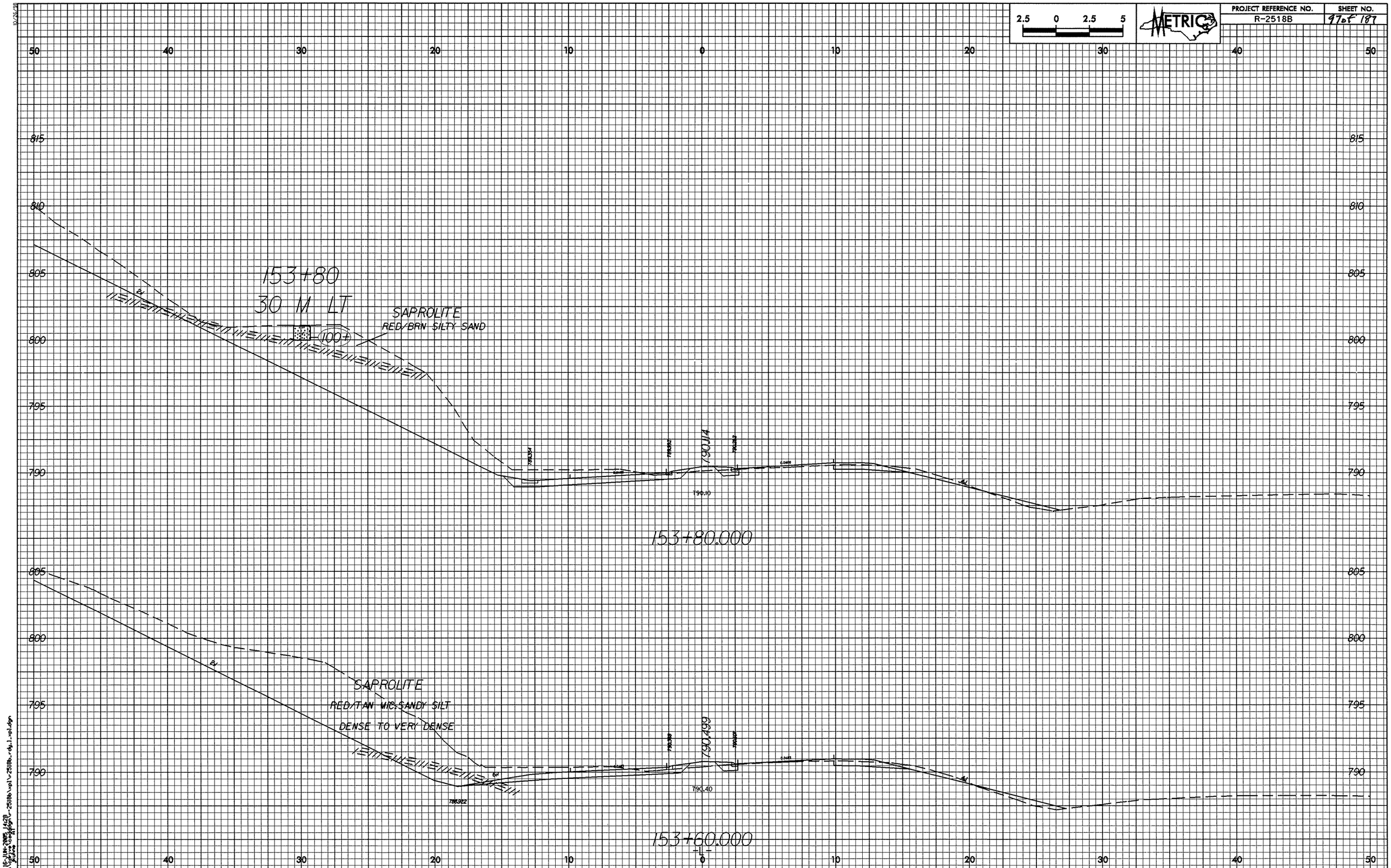
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
94 of 187
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
792.939
792.44
152+20.000
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
793.249
793.01
152+00.000



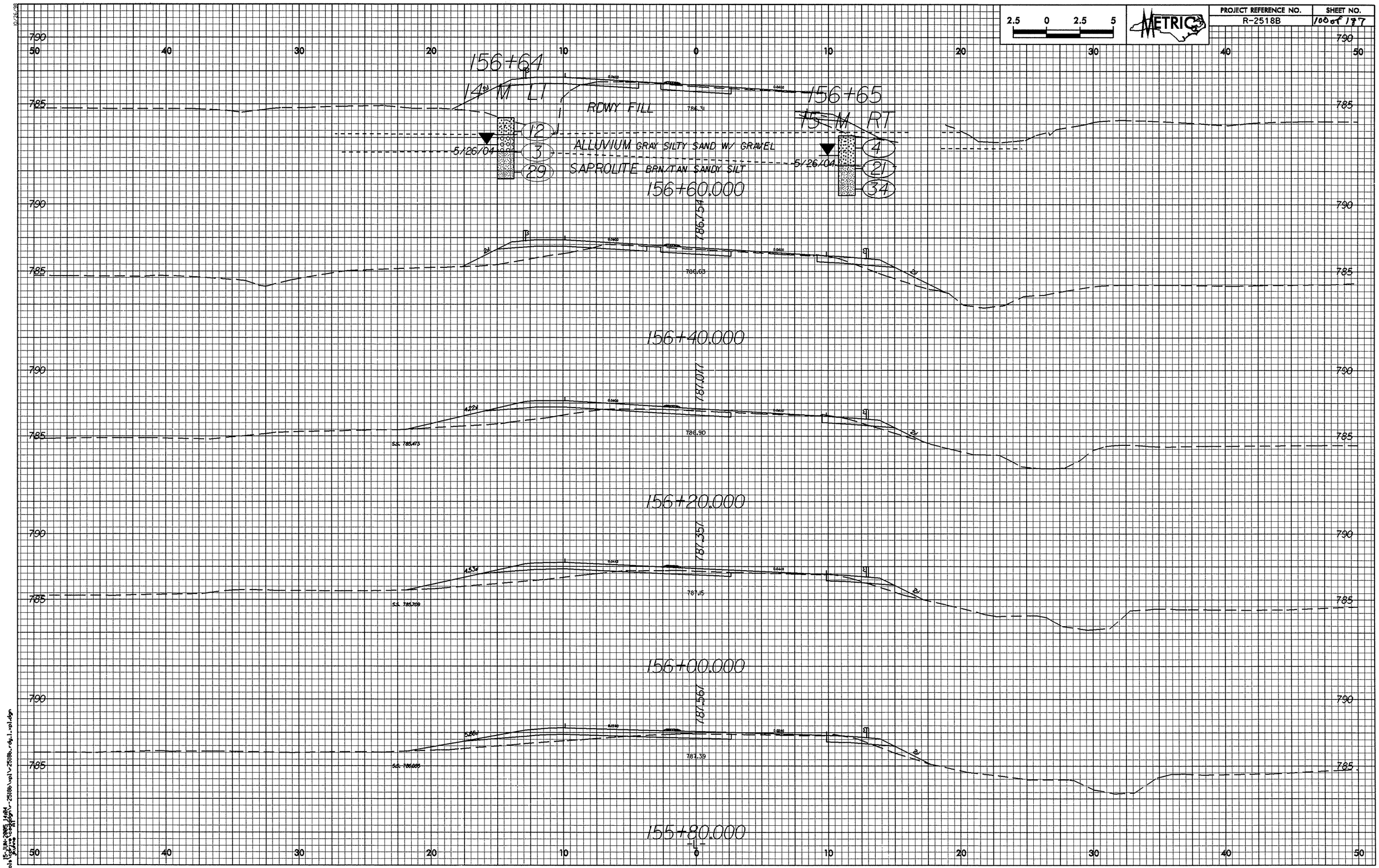
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
95 of 187
50 40 30 20 10 0 10 20 30 40 50
810
805
800
795
790
792.352
791.93
152+60.000
S.S. 805771
SAPROLITE
RED/BRN MIC. SANDY SILT
DENSE TO VERY DENSE
792.637
792.23
152+40.000
-L-



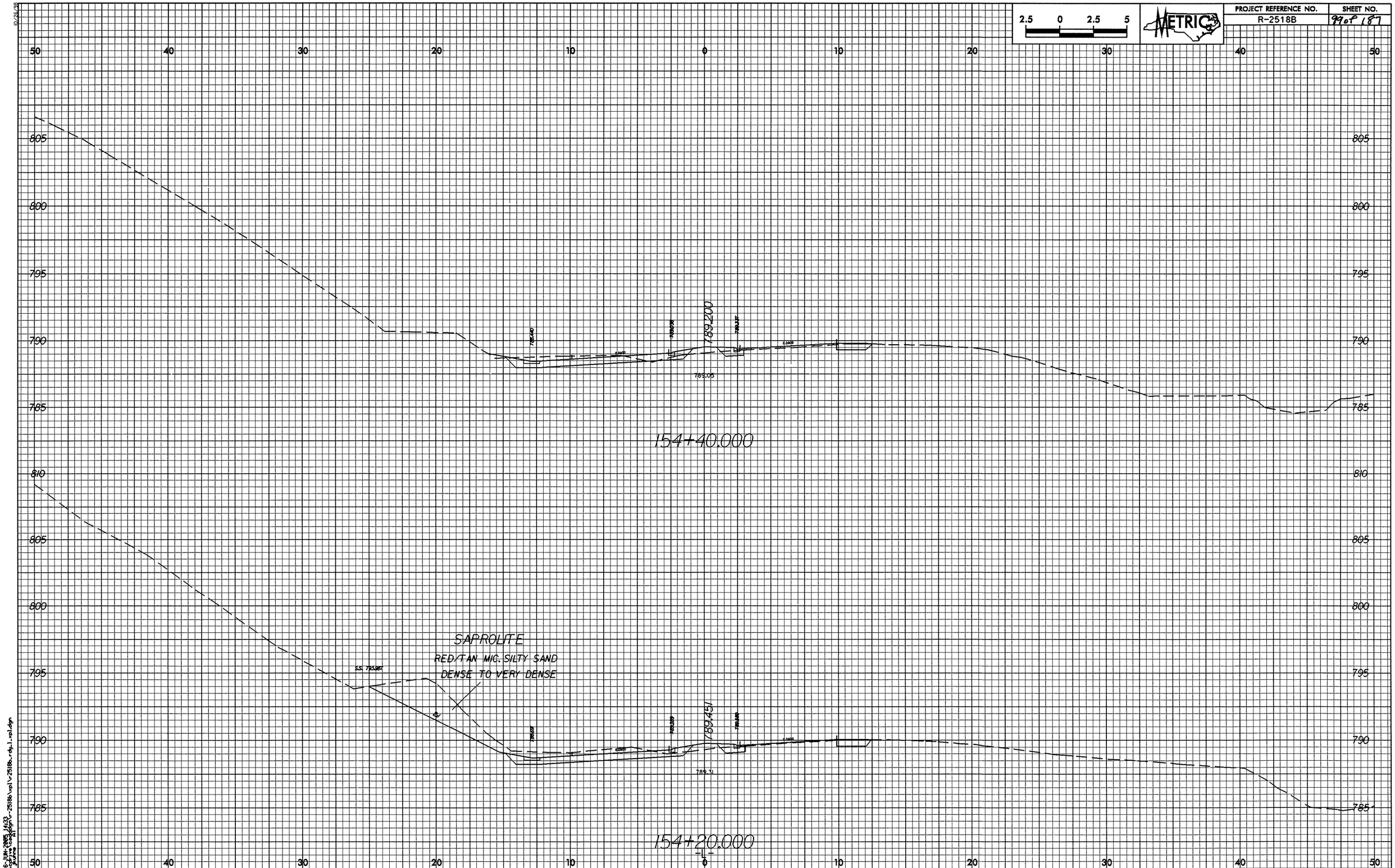
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
96 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
SAPROLITE
RED/TAN MIC.SANDY SILT
DENSE TO VERY DENSE
S.S. 793.509
790.884
790.74
789.486
153+40.000
S.S. 791.429
791.268
790.003
791.12
S.S. 789.361
153+20.000



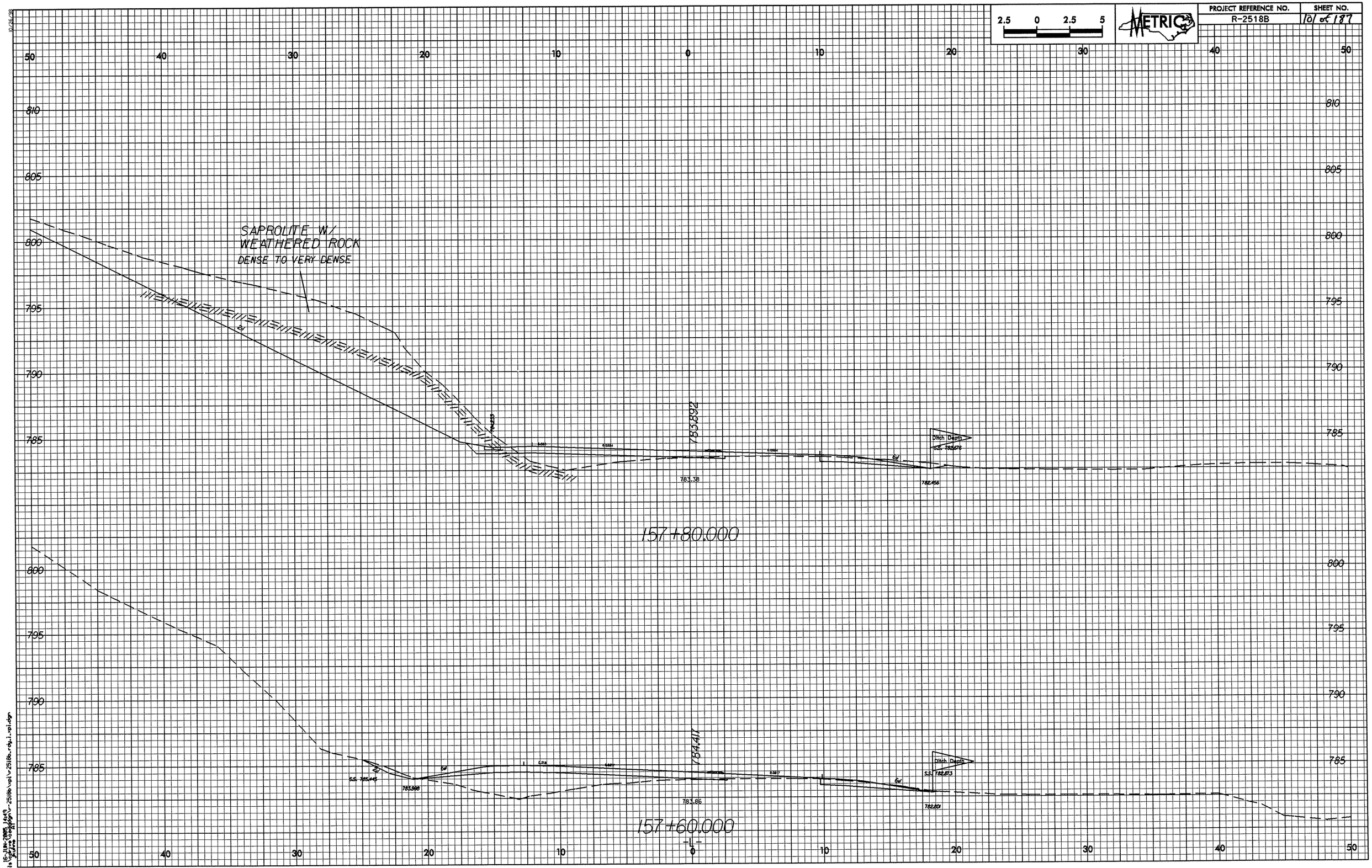
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
97 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
795
790
153+80
30 M LT
100+
SAPROLITE
RED/BRN SILTY SAND
790.114
790.10
153+80.000
SAPROLITE
RED/TAN MIC. SANDY SILT
DENSE TO VERY DENSE
790.499
790.40
153+60.000



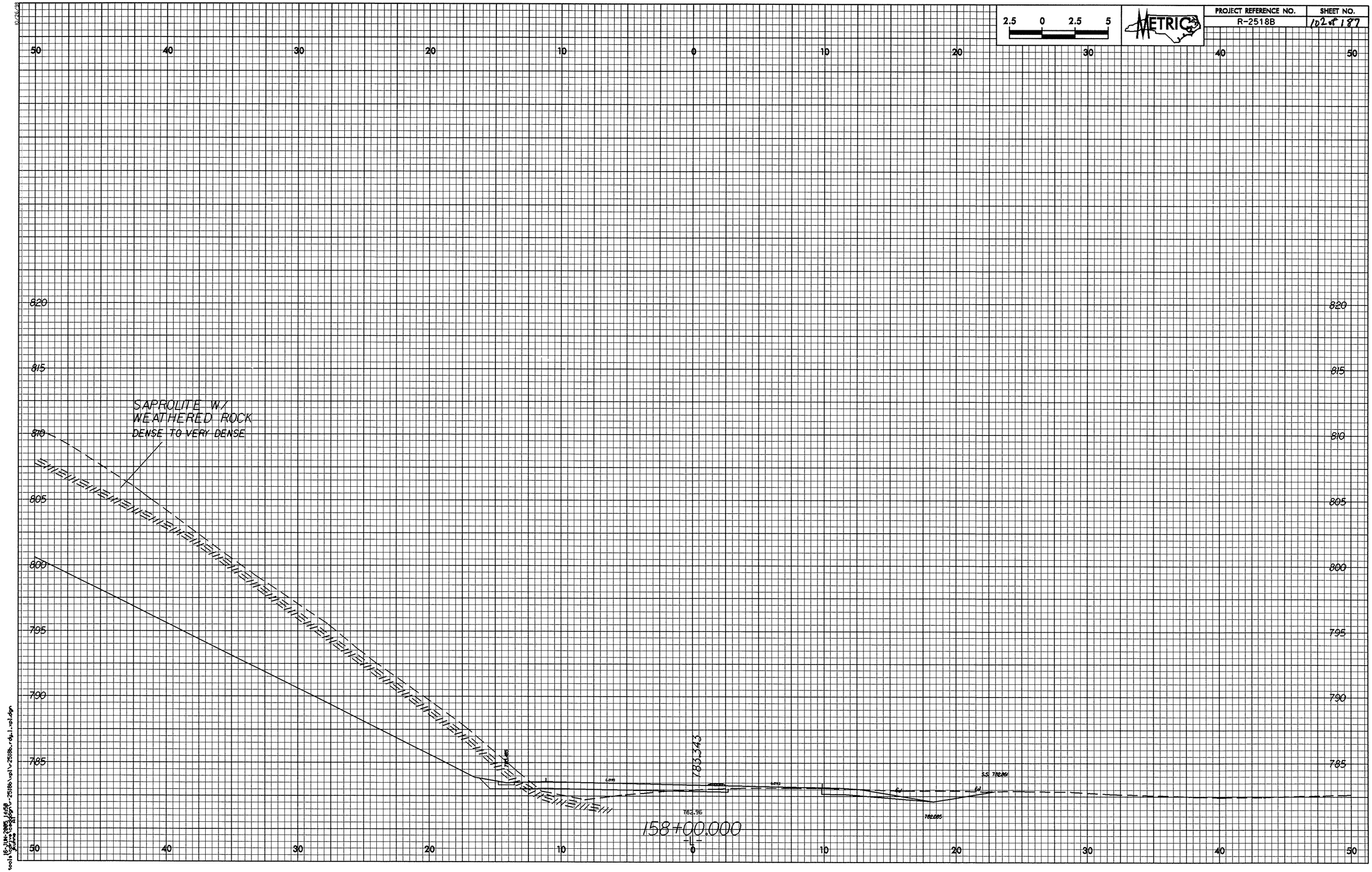
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
100 of 187
156+64
14 M LT
156+65
15 M RT
RDWY FILL
786.31
ALLUVIUM GRAY SILTY SAND W/ GRAVEL
SAPROLITE BRN/TAN SANDY SILT
5/26/04
12
3
29
4
21
34
156+60.000
786.754
786.63
156+40.000
787.017
786.90
S.S. 785.473
156+20.000
787.357
787.15
S.S. 785.709
156+00.000
787.567
787.39
S.S. 786.085
155+80.000
790
785
50
40
30
20
10
0



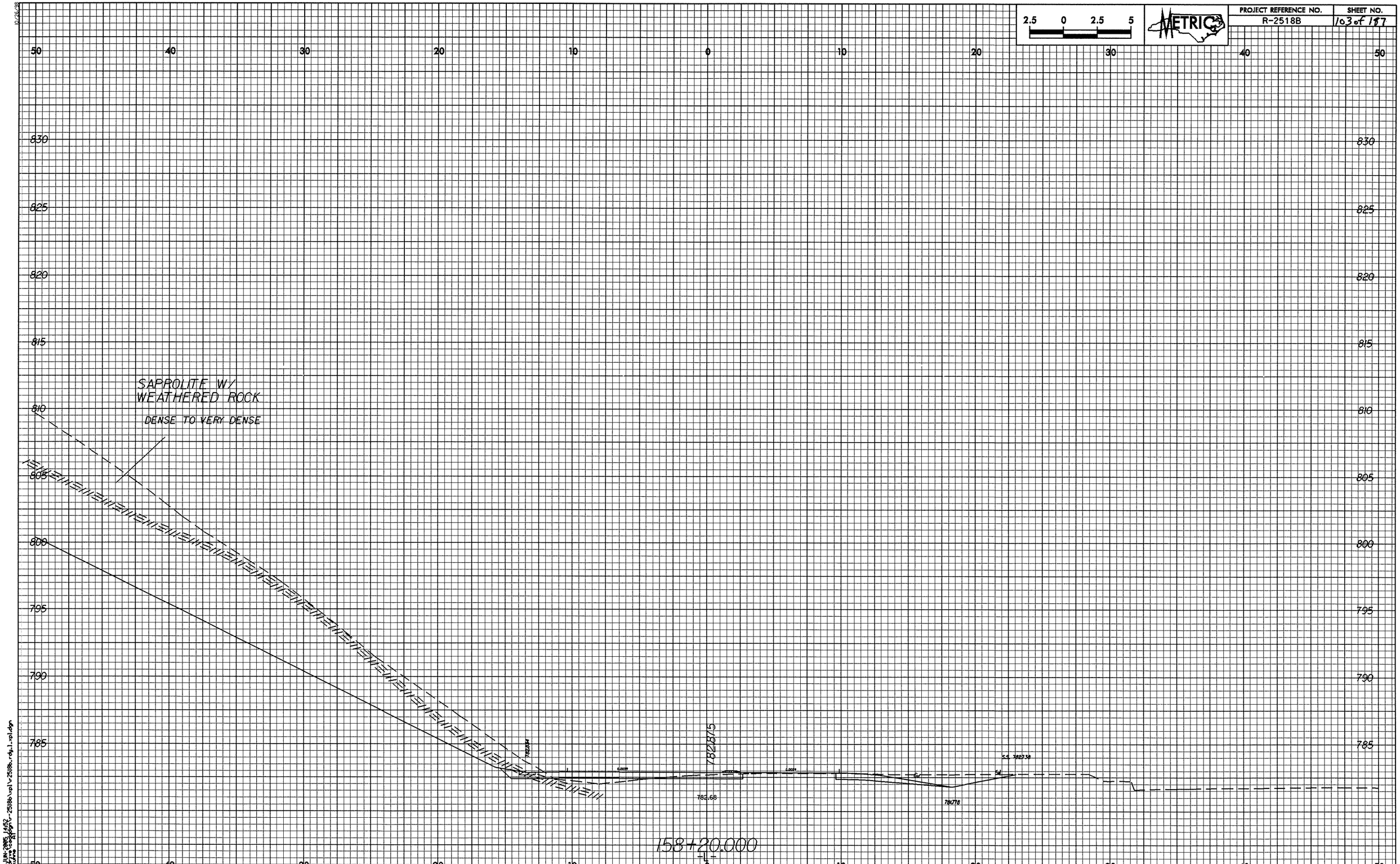
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
99 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
785
810
789.200
789.05
154+40.000
SAPROLITE
RED/TAN MIC. SILTY SAND
DENSE TO VERY DENSE
789.451
789.31
154+20.000



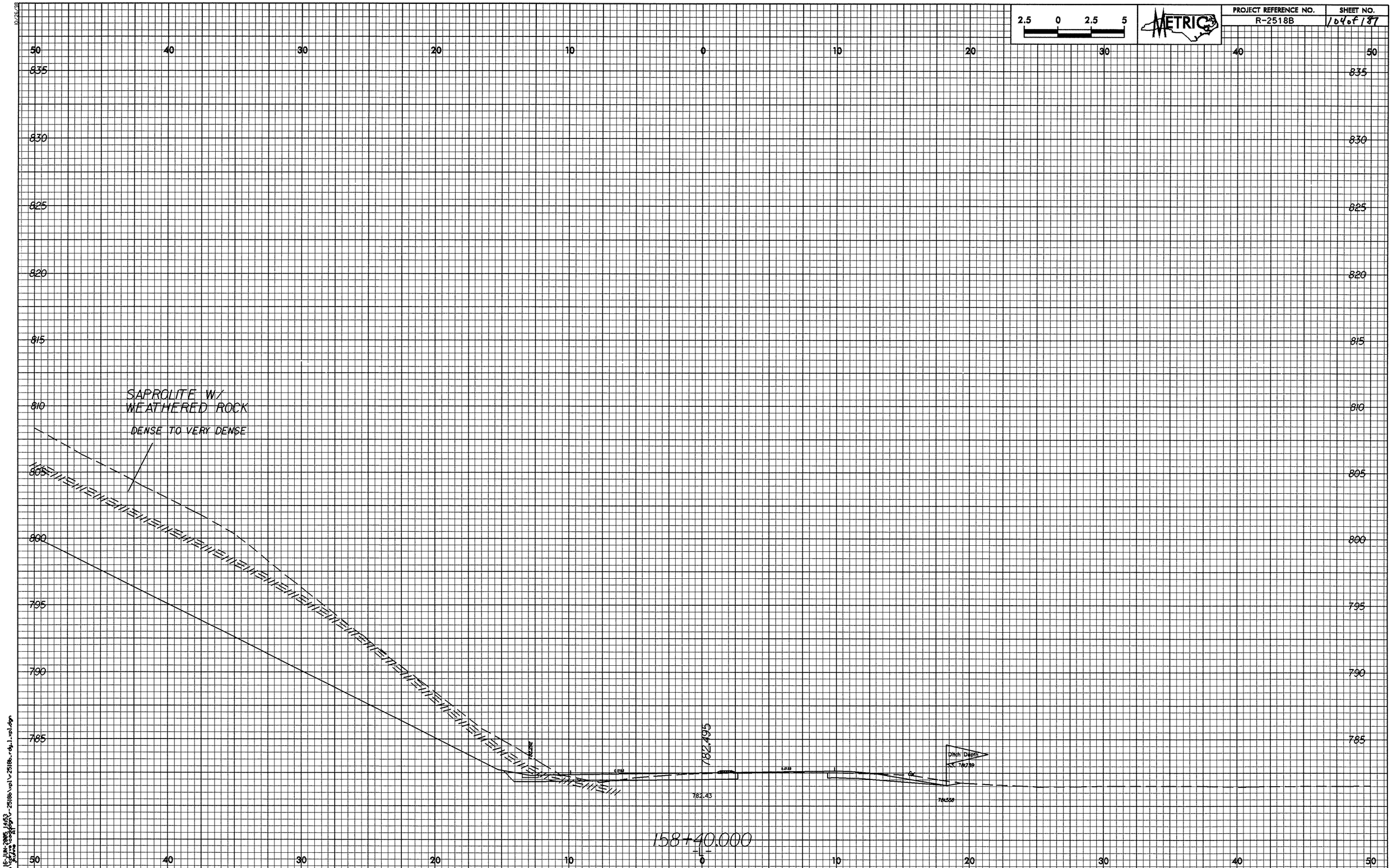
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
101 of 187
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
783.892
783.38
Ditch Depth
S.S. 782.676
782.456
157+80.000
784.417
783.86
S.S. 785.445
783.998
S.S. 782.873
782.801
157+60.000
-L-



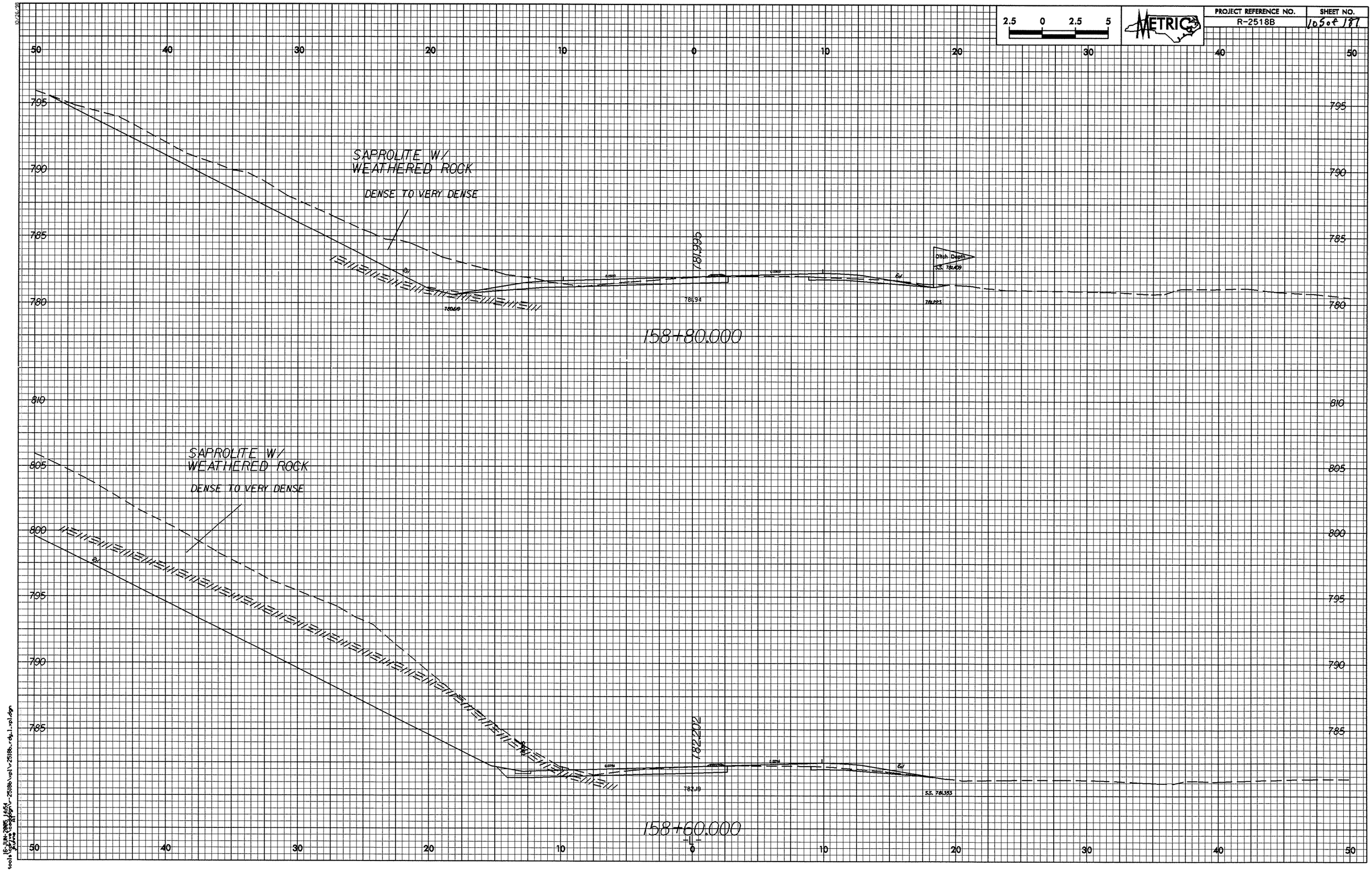
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
102 of 187
50 40 30 20 10 0 10 20 30 40 50
820
815
810
805
800
795
790
785
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
783.343
782.96
158+00.000
-L-



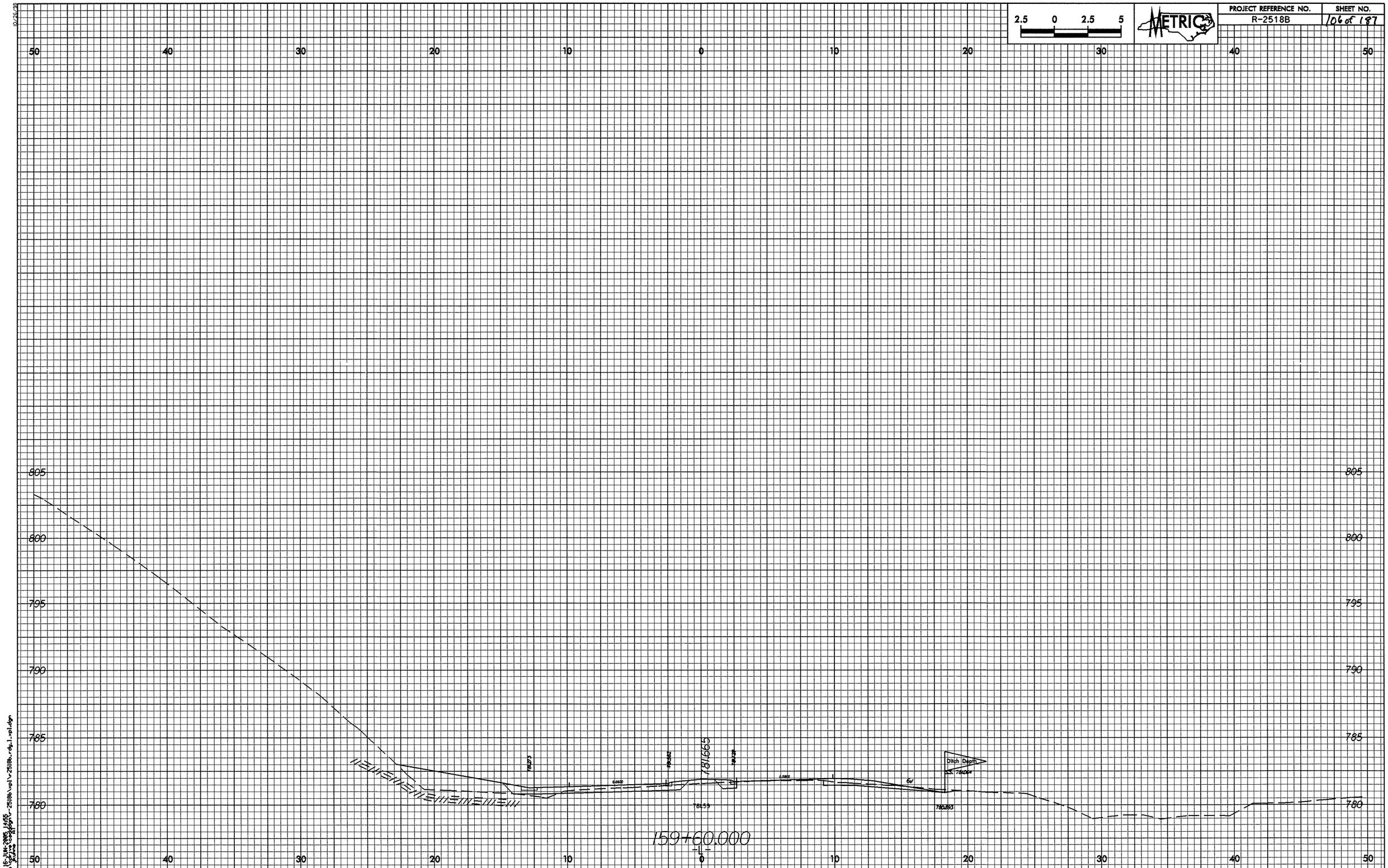
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
103 of 187
50 40 30 20 10 0 10 20 30 40 50
830 825 820 815 810 805 800 795 790 785
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
782.875
782.68
S.S. 782.738
158+20.000
-L-



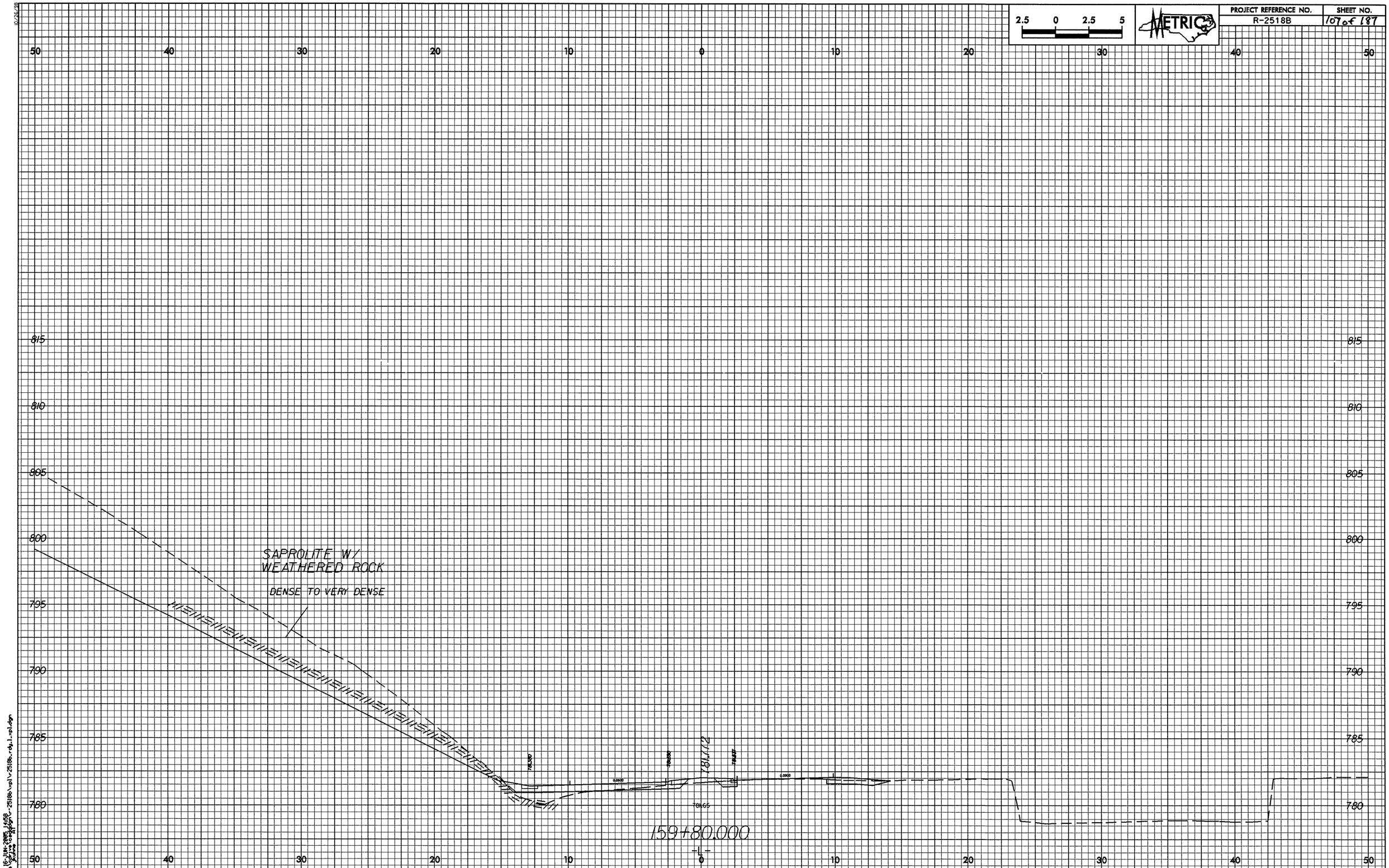
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
104 of 187
50 40 30 20 10 0 10 20 30 40 50
835
830
825
820
815
810
805
800
795
790
785
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
782.495
782.43
Ditch Depth
158+40.000
-L-



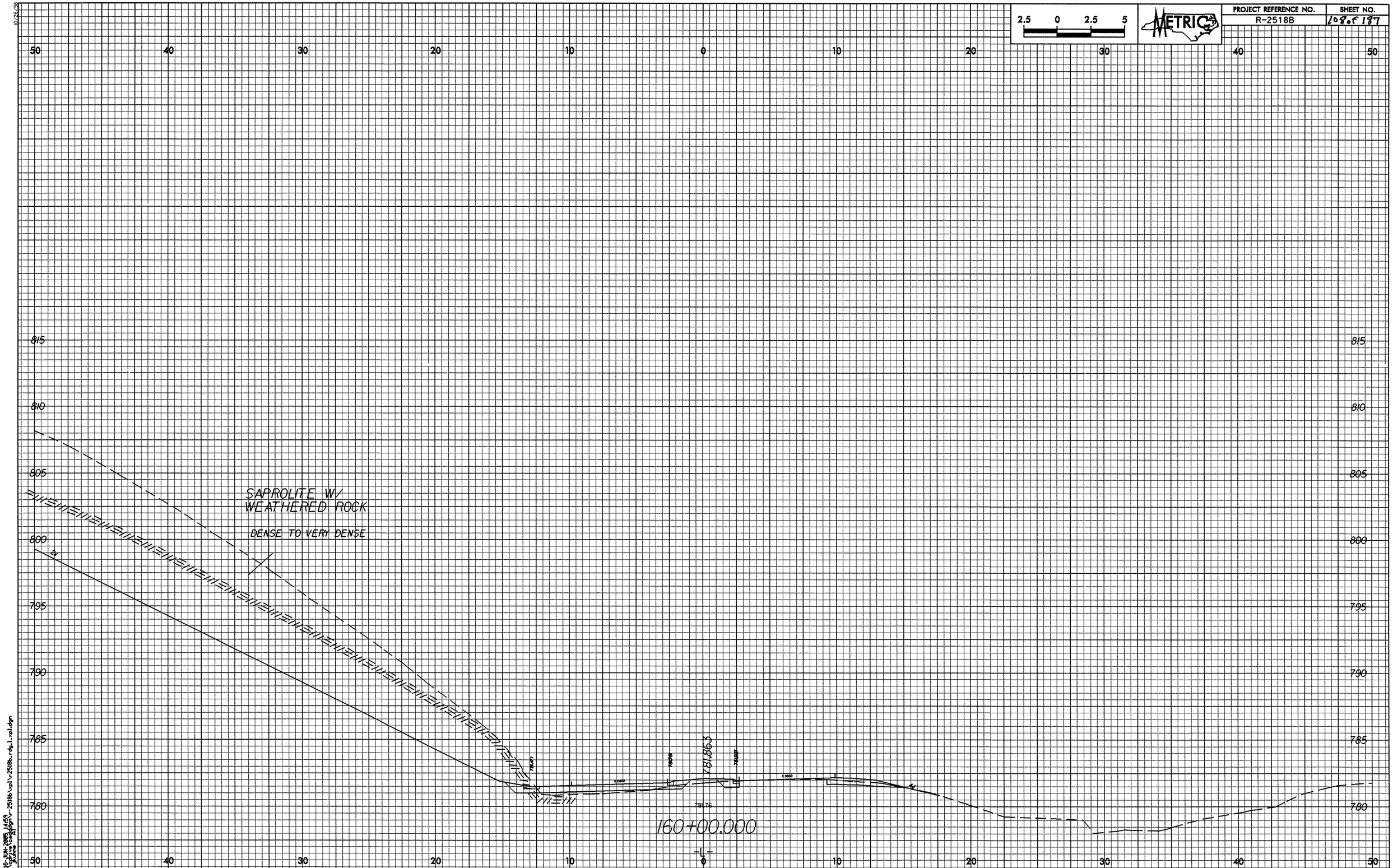
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
105 of 187
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
781.995
Ditch Depth
S.S. 781.409
781.94
781.223
780.619
158+80.000
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
782.202
782.19
S.S. 781.353
158+60.000
-L-



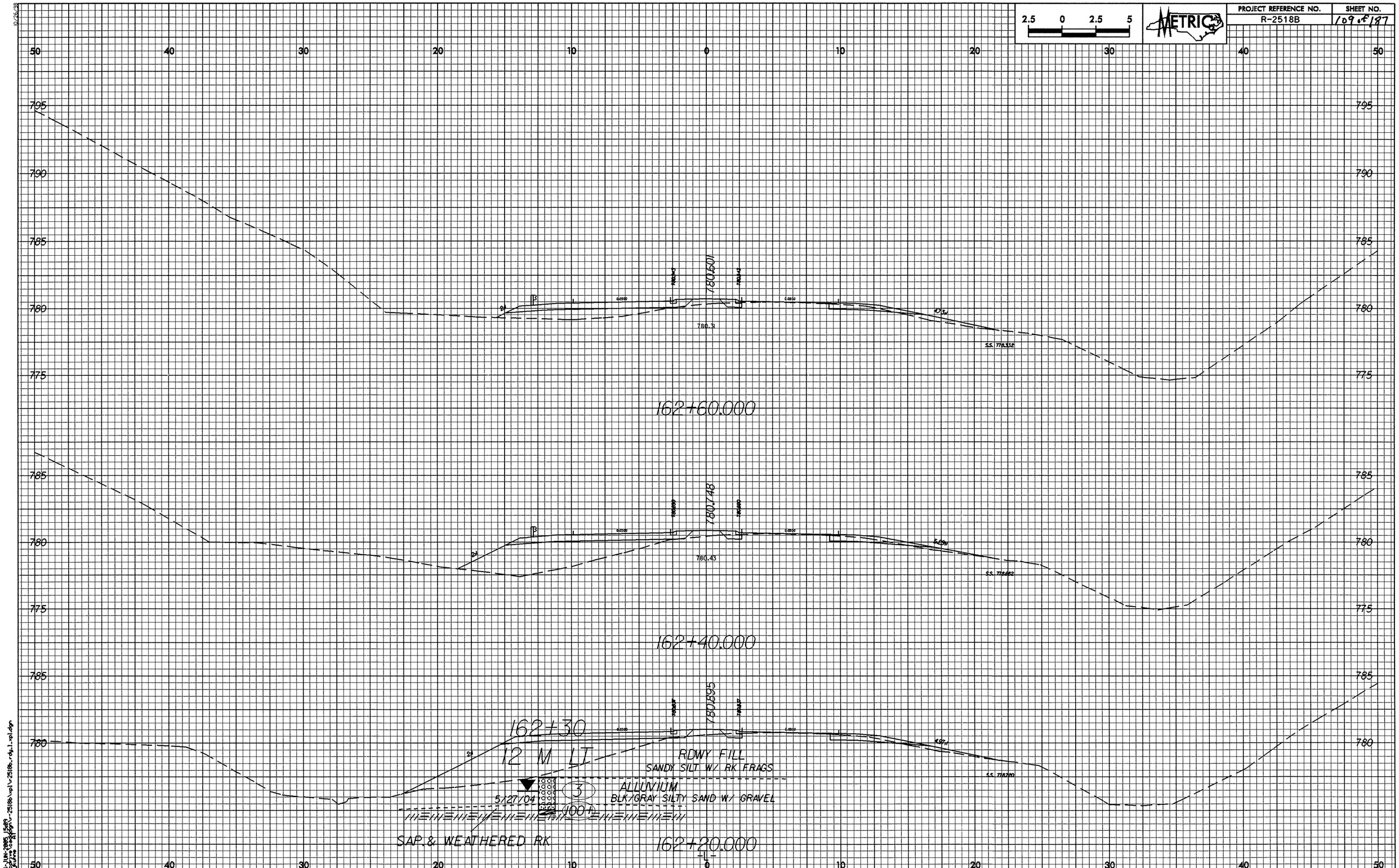
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
106 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
785
780
Ditch Depth
781.665
781.59
780.893
159+60.000
-L-



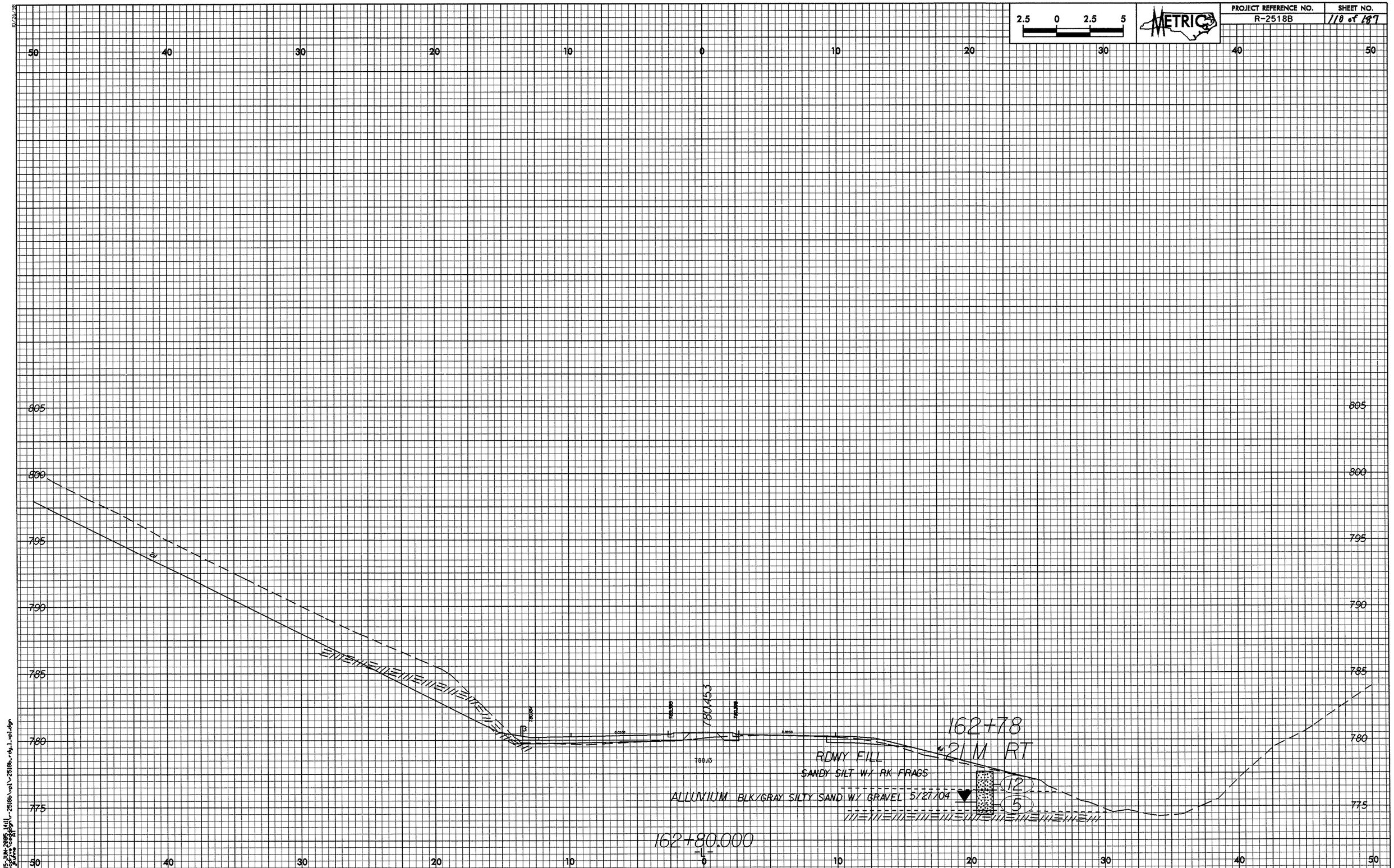
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
107 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
795
790
785
780
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
781.772
781.65
159+80.000
-L-



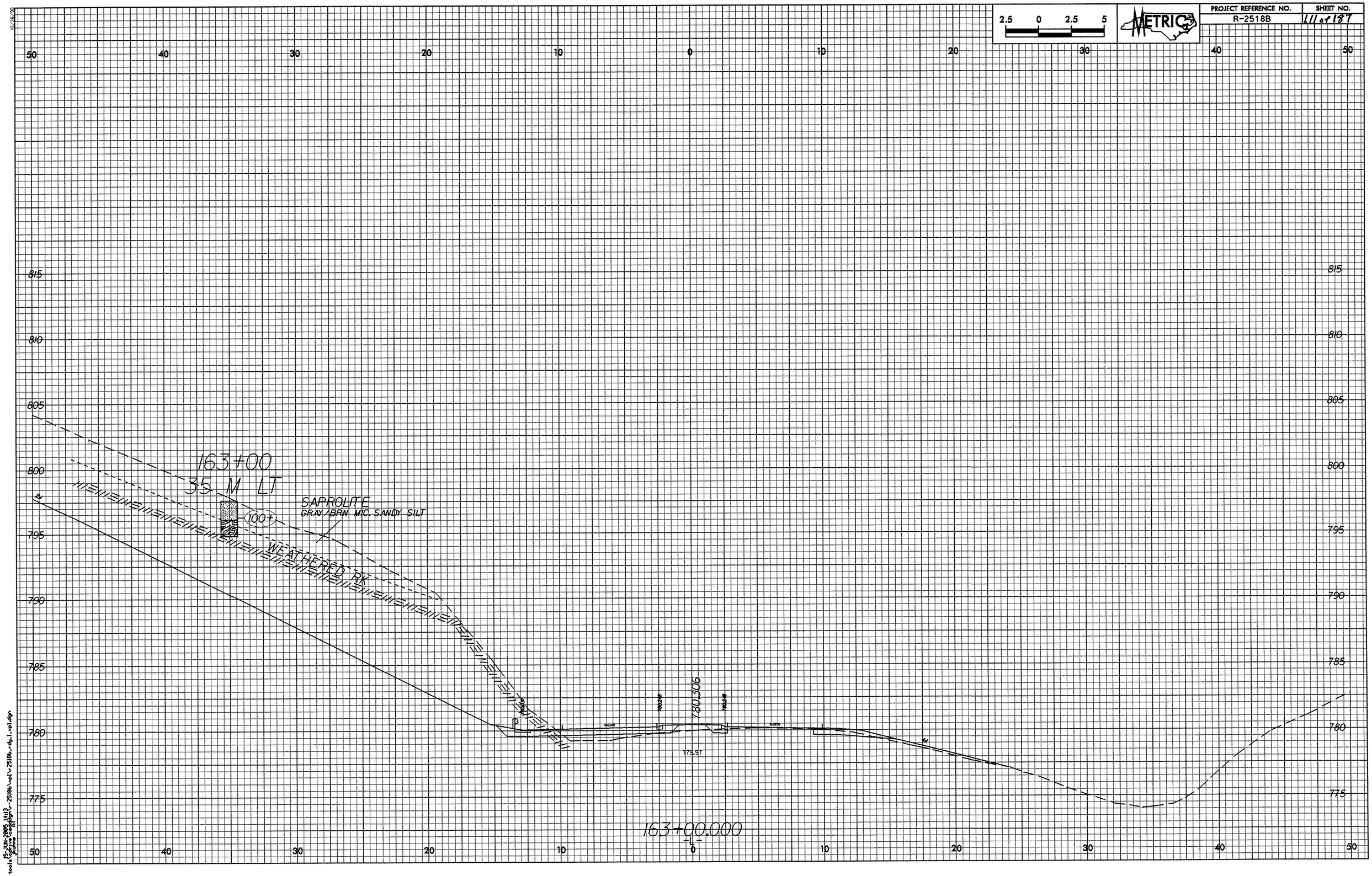
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
108 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
795
790
785
780
SAPROLITE W/
WEATHERED ROCK
DENSE TO VERY DENSE
781.863
781.76
160+00.000
-L-



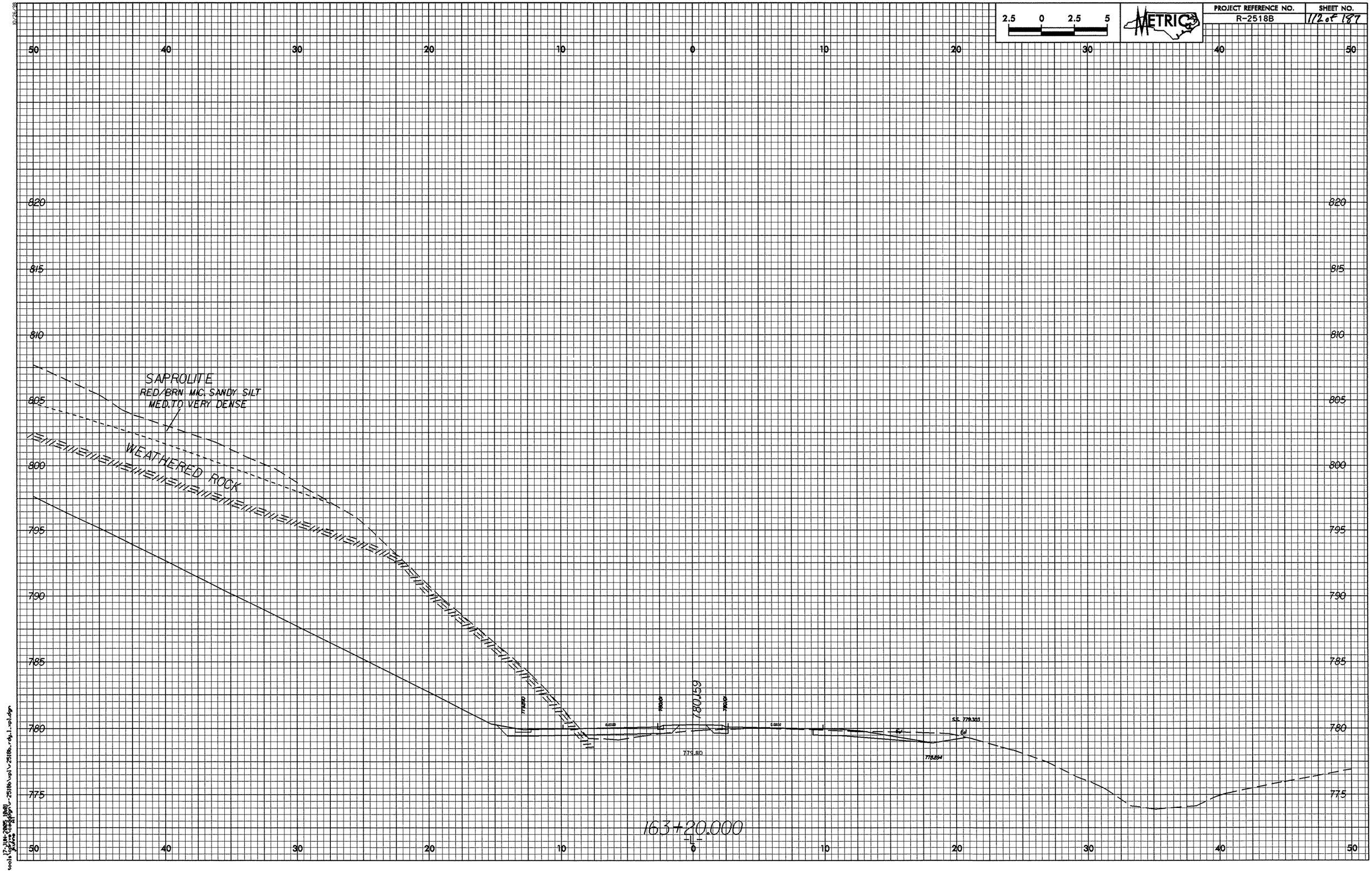
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
109 of 187
50 40 30 20 10 0 10 20 30 40 50
795
790
785
780
775
780.601
780.31
S.S. 778.332
162+60.000
780.748
780.43
S.S. 778.662
162+40.000
780.895
162+30
12 M LT
RDWY FILL
SANDY SILT W/ RK FRAGS
ALLUVIUM
BLK/GRAY SILTY SAND W/ GRAVEL
5/27/04
3
100+
SAP. & WEATHERED RK
162+20.000



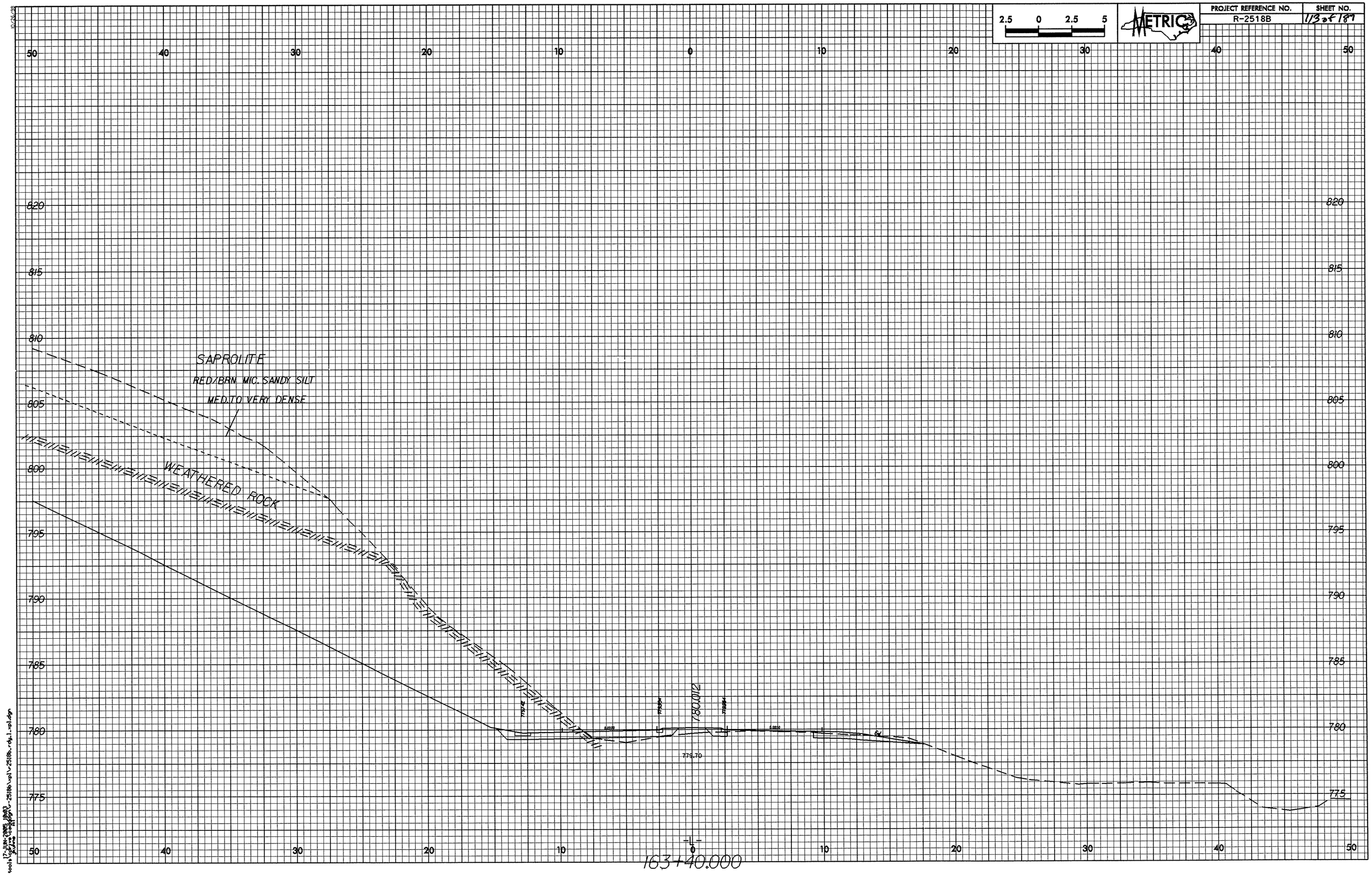
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
110 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
785
780
775
780.453
780.13
162+78
21 M RT
RDWY FILL
SANDY SILT W/ RK FRAGS
ALLUVIUM BLK/GRAY SILTY SAND W/ GRAVEL 5/27/04
12
5
162+80.000
-L-



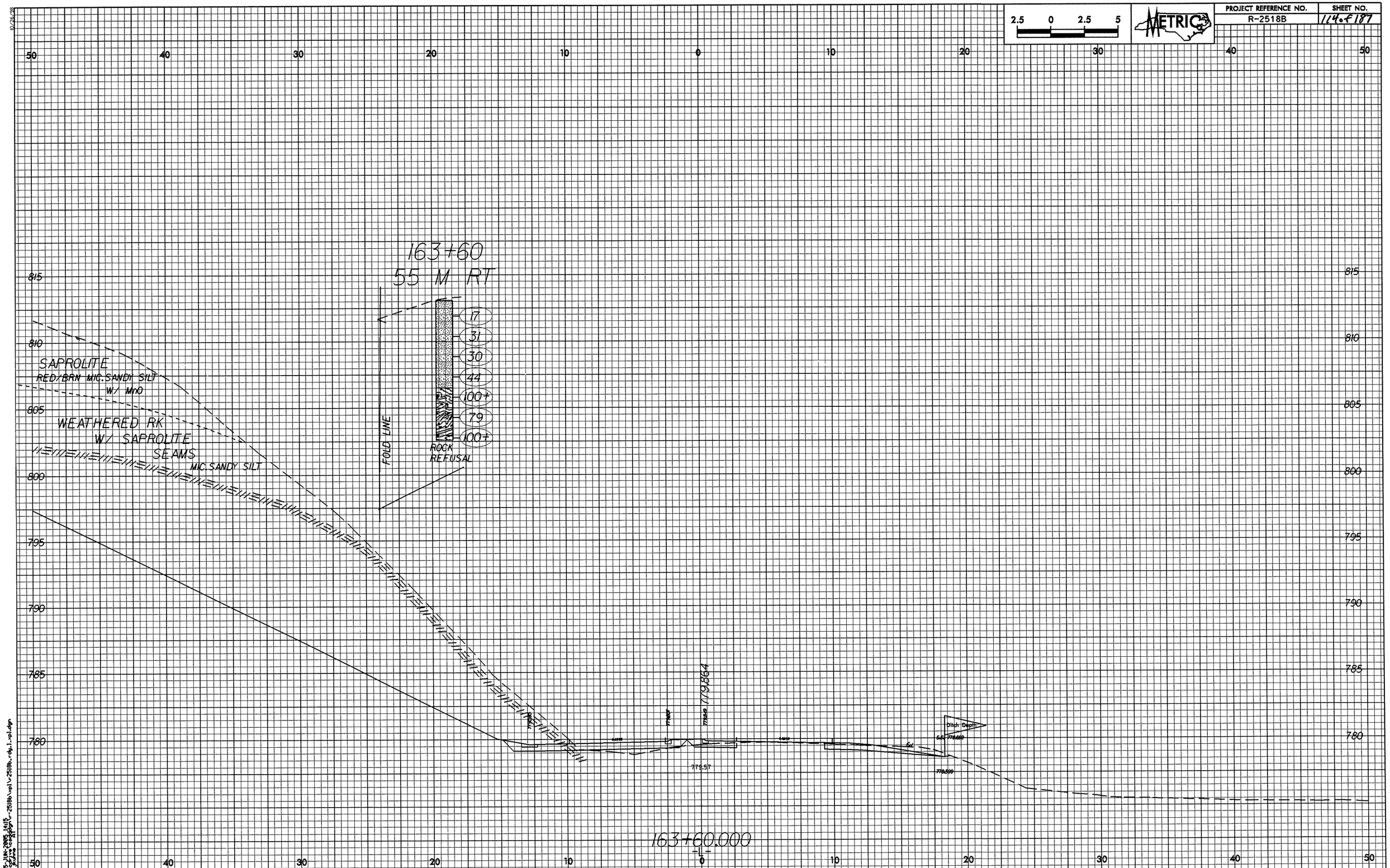
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
111 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
795
790
785
780
775
163+00
35 M LT
SAPROLITE
GRAY/BRN MIC. SANDY SILT
100+
WEATHERED RK
780.306
779.97
163+00.000
-L-



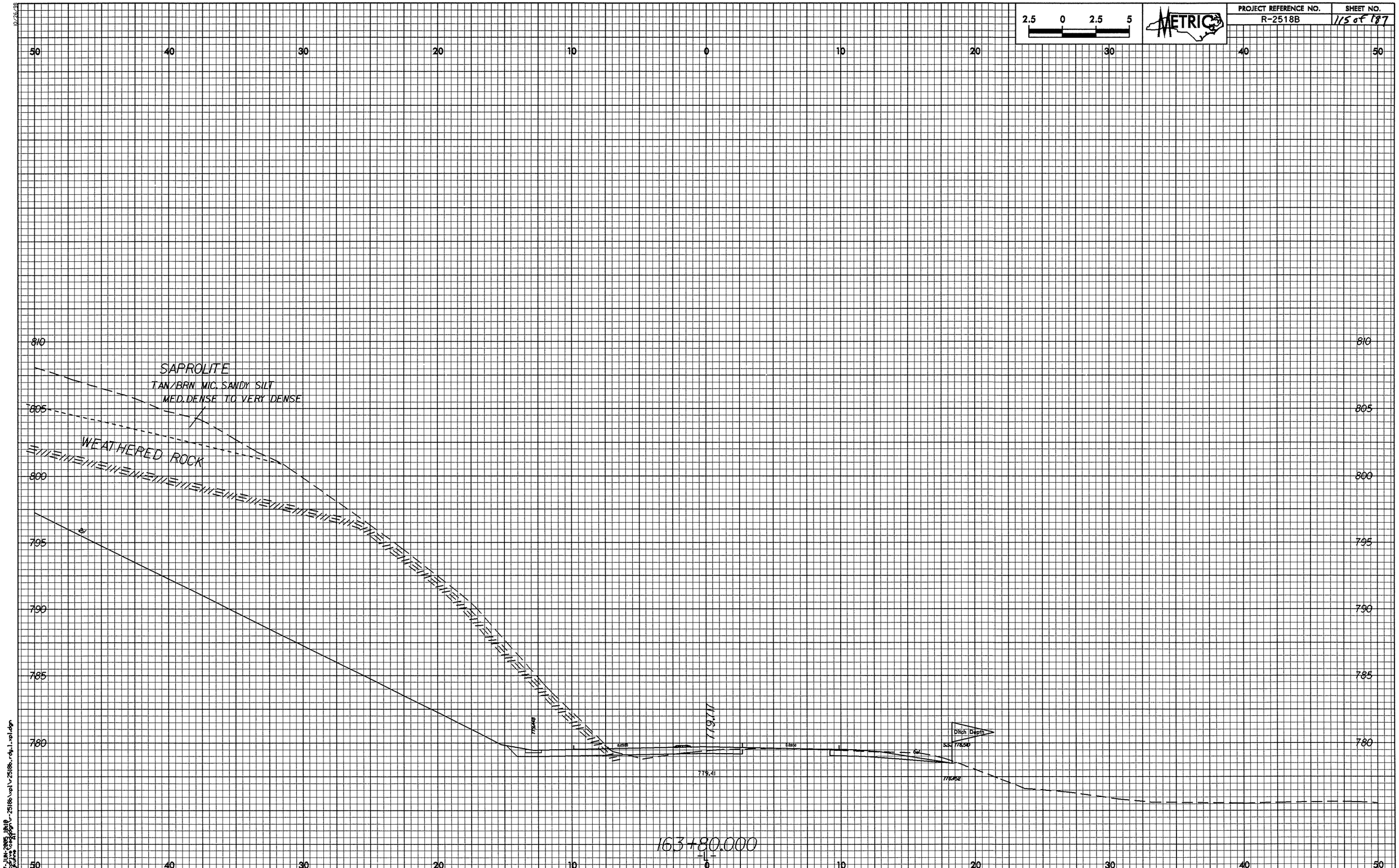
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
112 of 187
50 40 30 20 10 0 10 20 30 40 50
820
815
810
805
800
795
790
785
780
775
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. TO VERY DENSE
WEATHERED ROCK
780.59
779.80
S.S. 779.303
778.894
163+20.000
-L-



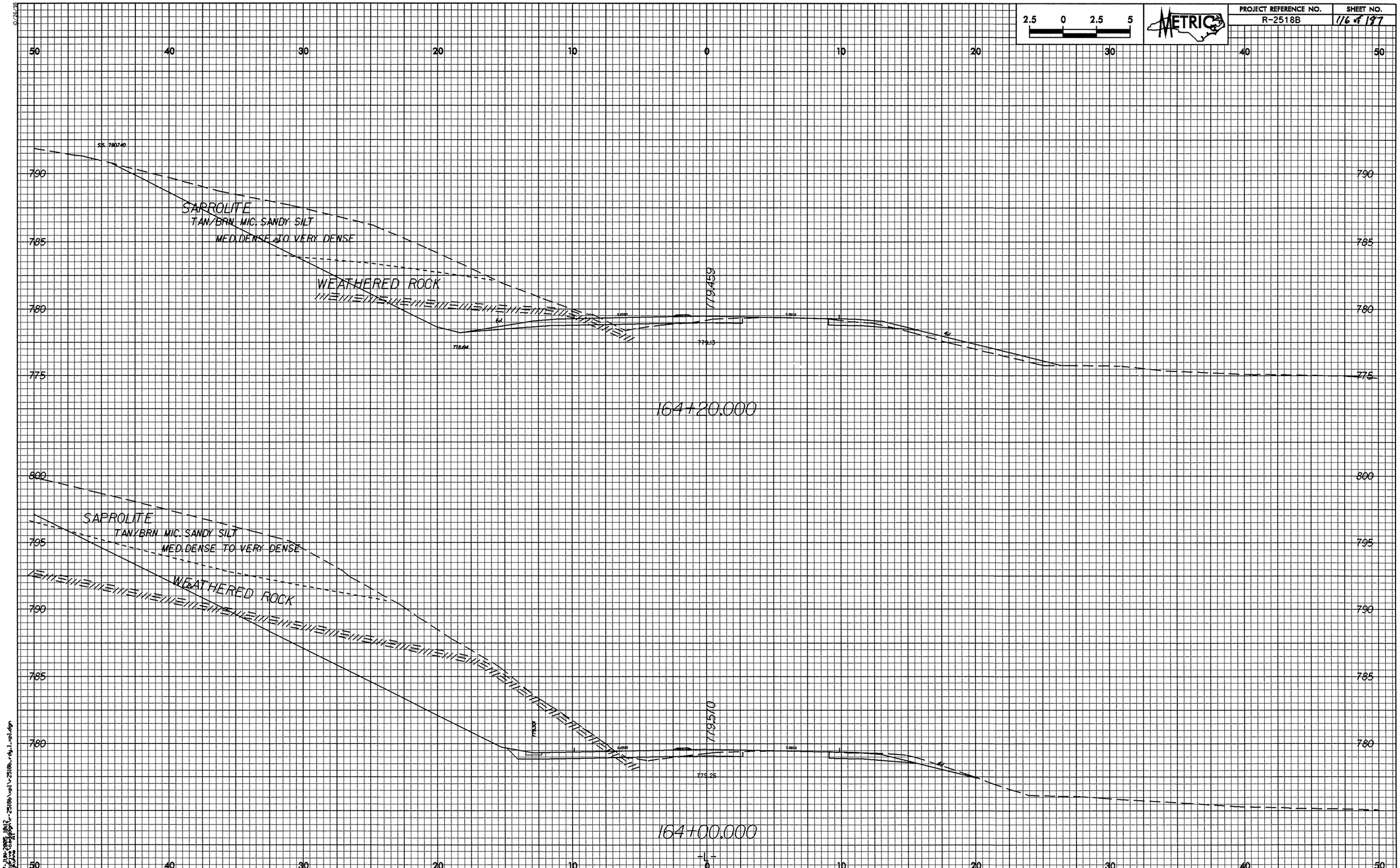
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
113 of 187
SAPROLITE
RED/BRN. MIC. SANDY SILT
MED. TO VERY DENSE
WEATHERED ROCK
780.012
779.70
-L-
163+40.000



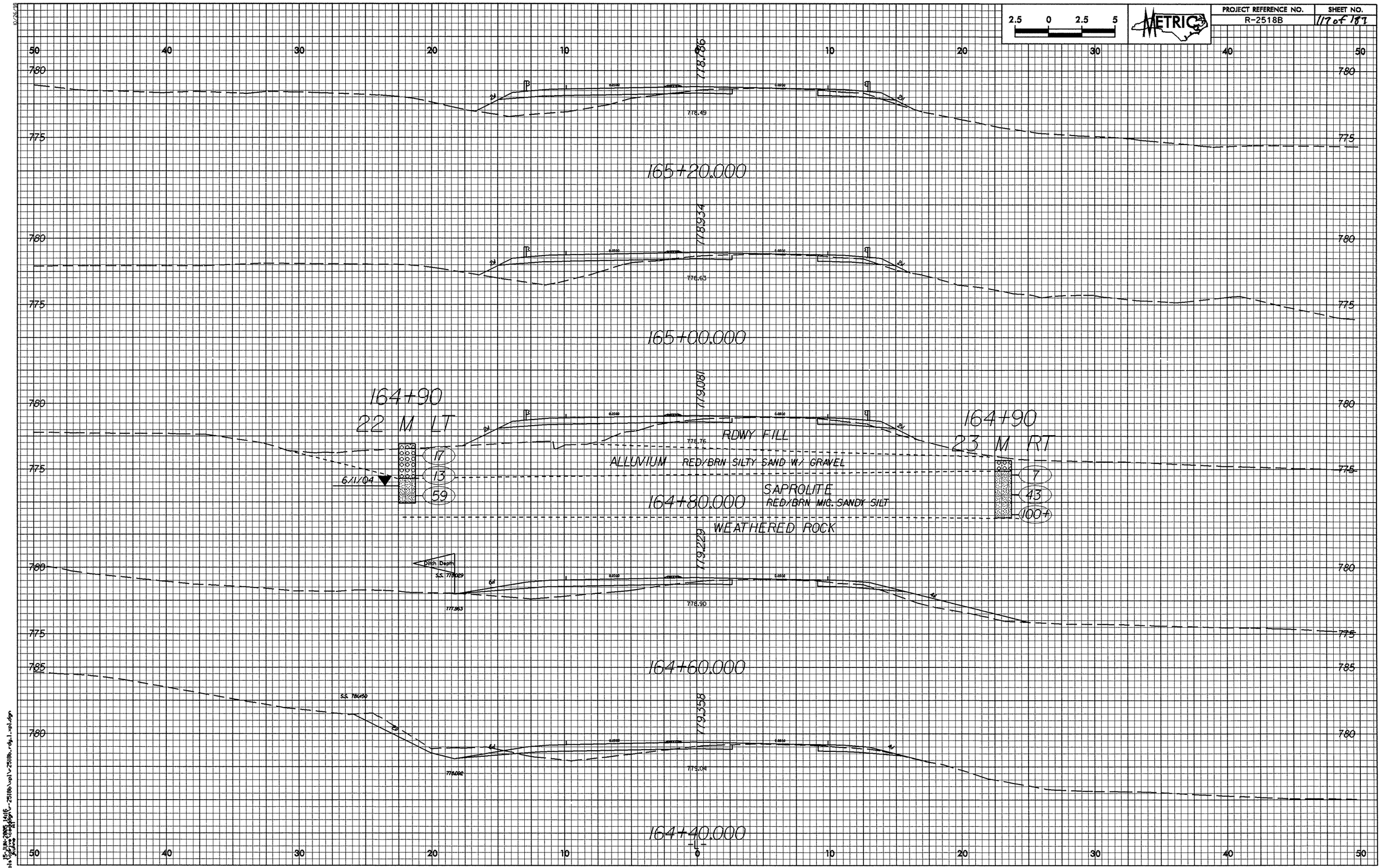
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
114 of 187
163+60
55 M RT
17
31
30
44
100+
79
100+
ROCK
REFUSAL
FOLD LINE
SAPROLITE
RED/BRN MIC.SANDY SILT
W/ MnO
WEATHERED RK
W/ SAPROLITE
SEAMS
MIC.SANDY SILT
779.864
779.57
Ditch Depth
163+60.000
-L-



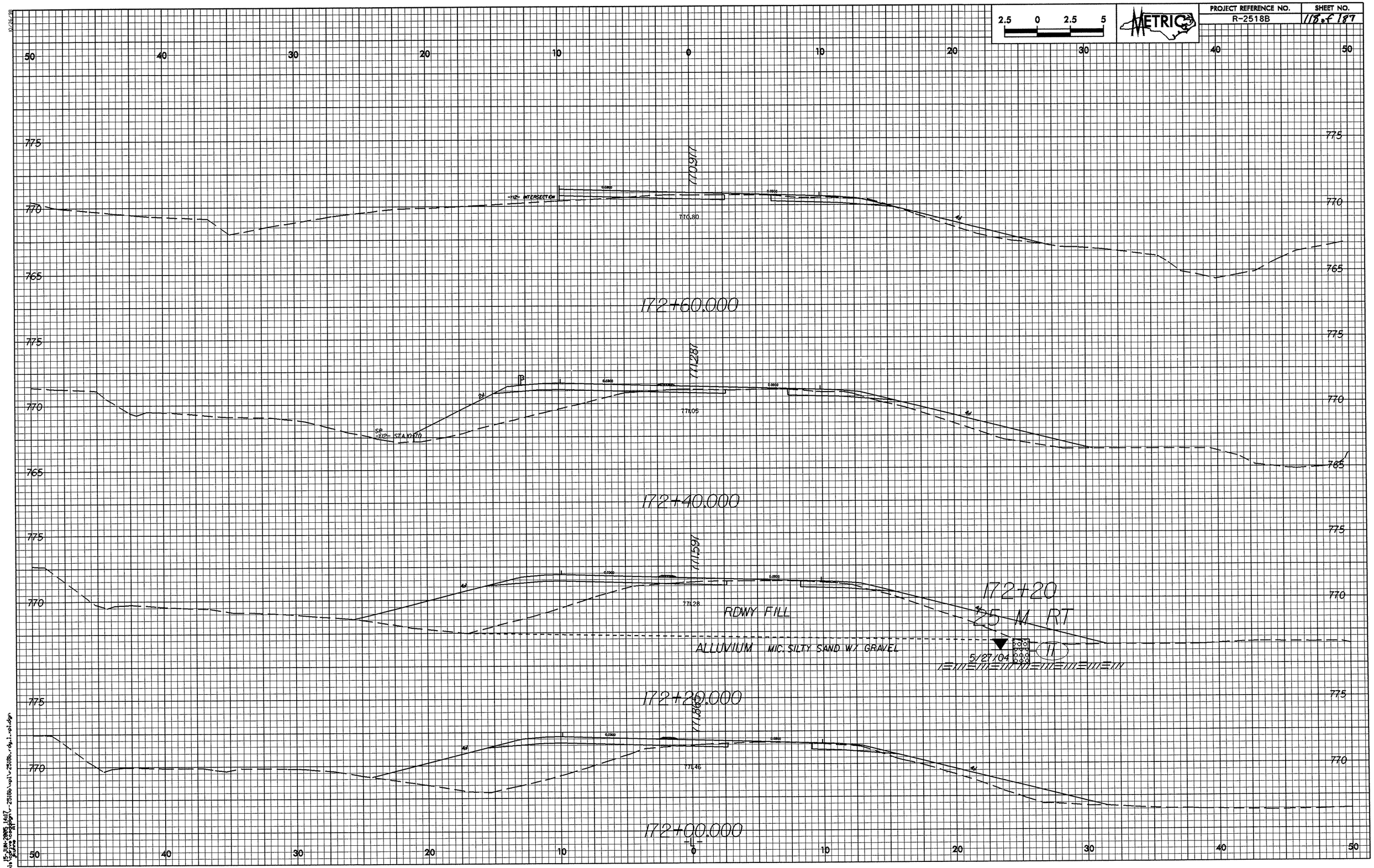
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
115 of 187
50 40 30 20 10 0 10 20 30 40 50
810
805
800
795
790
785
780
SAPROLITE
TAN/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
WEATHERED ROCK
779.41
Ditch Depth
163+80.000



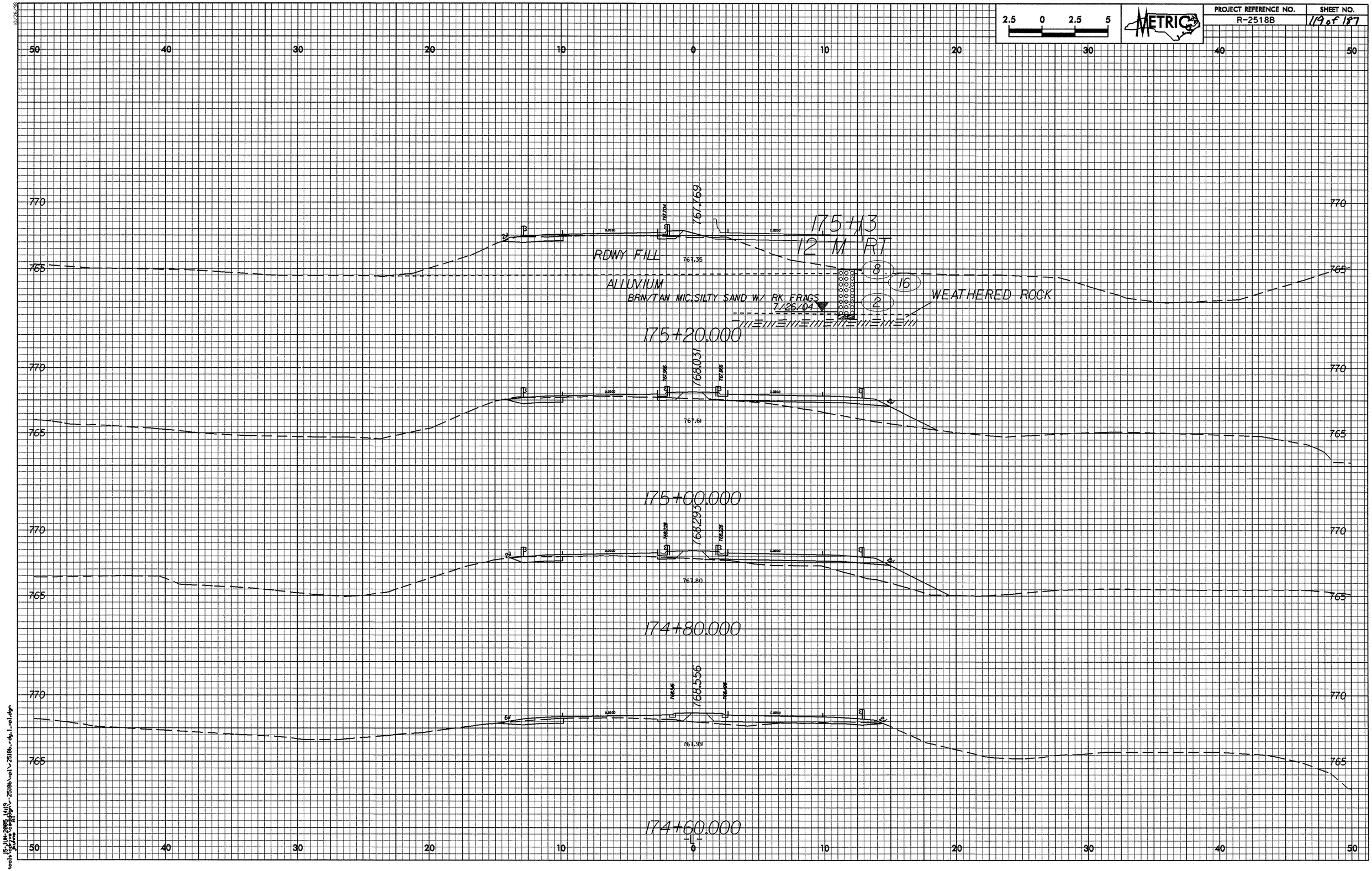
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
116 of 197
SAPROLITE
TAN/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
WEATHERED ROCK
779.459
164+20.000
SAPROLITE
TAN/BRN MIC. SANDY SILT
MED. DENSE TO VERY DENSE
WEATHERED ROCK
779.510
164+00.000
-L-



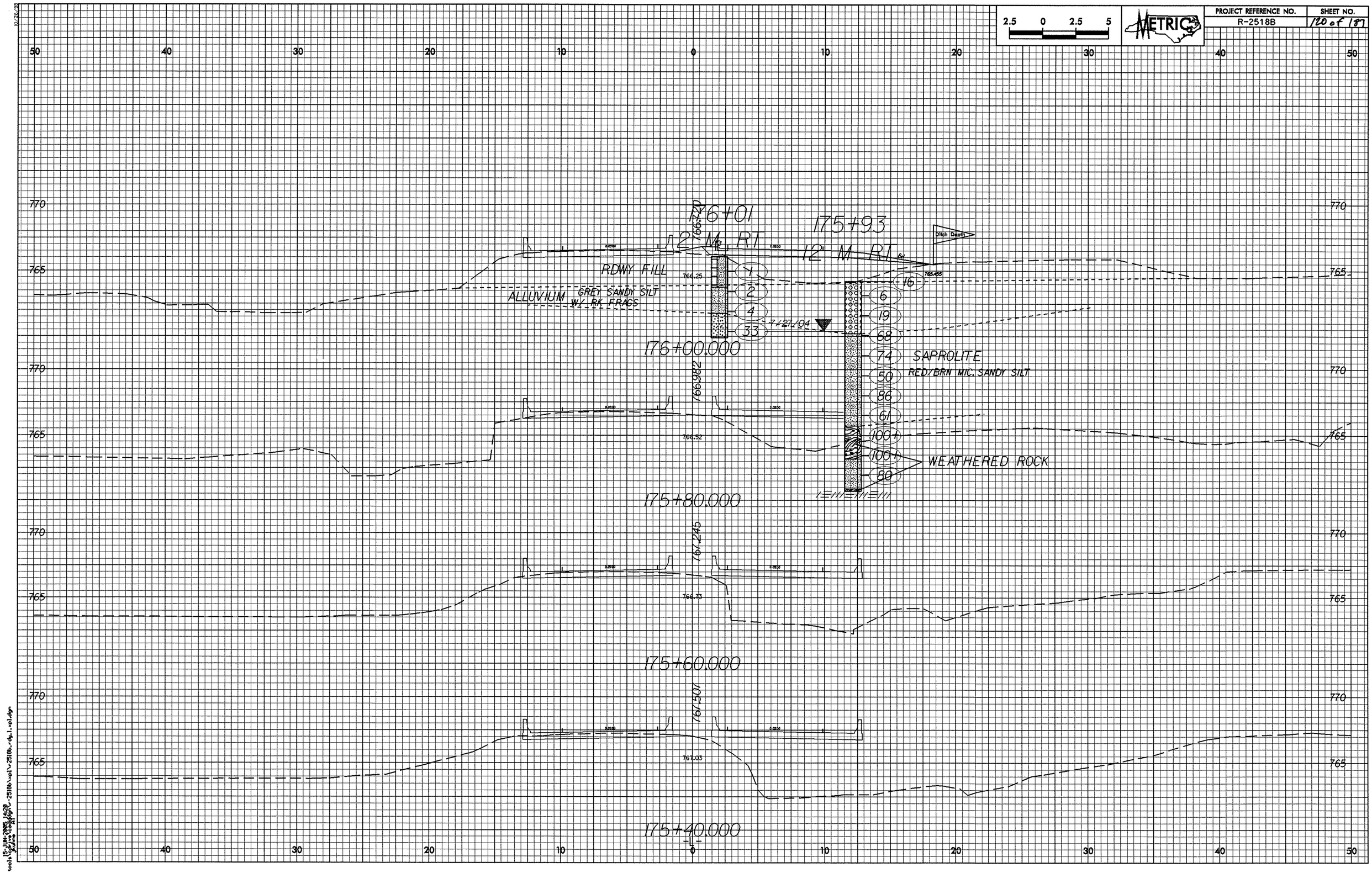
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
117 of 187
165+20.000
778.786
778.49
165+00.000
778.934
778.63
164+90
22 M LT
164+90
23 M RT
179.081
778.76
RDWY FILL
ALLUVIUM RED/BRN SILTY SAND W/ GRAVEL
SAPROLITE
RED/BRN MIC. SANDY SILT
WEATHERED ROCK
164+80.000
17
13
59
7
43
100+
6/1/04
Ditch Depth
S.S. 778.029
777.963
779.229
778.90
164+60.000
S.S. 781.450
779.358
778.092
779.04
164+40.000



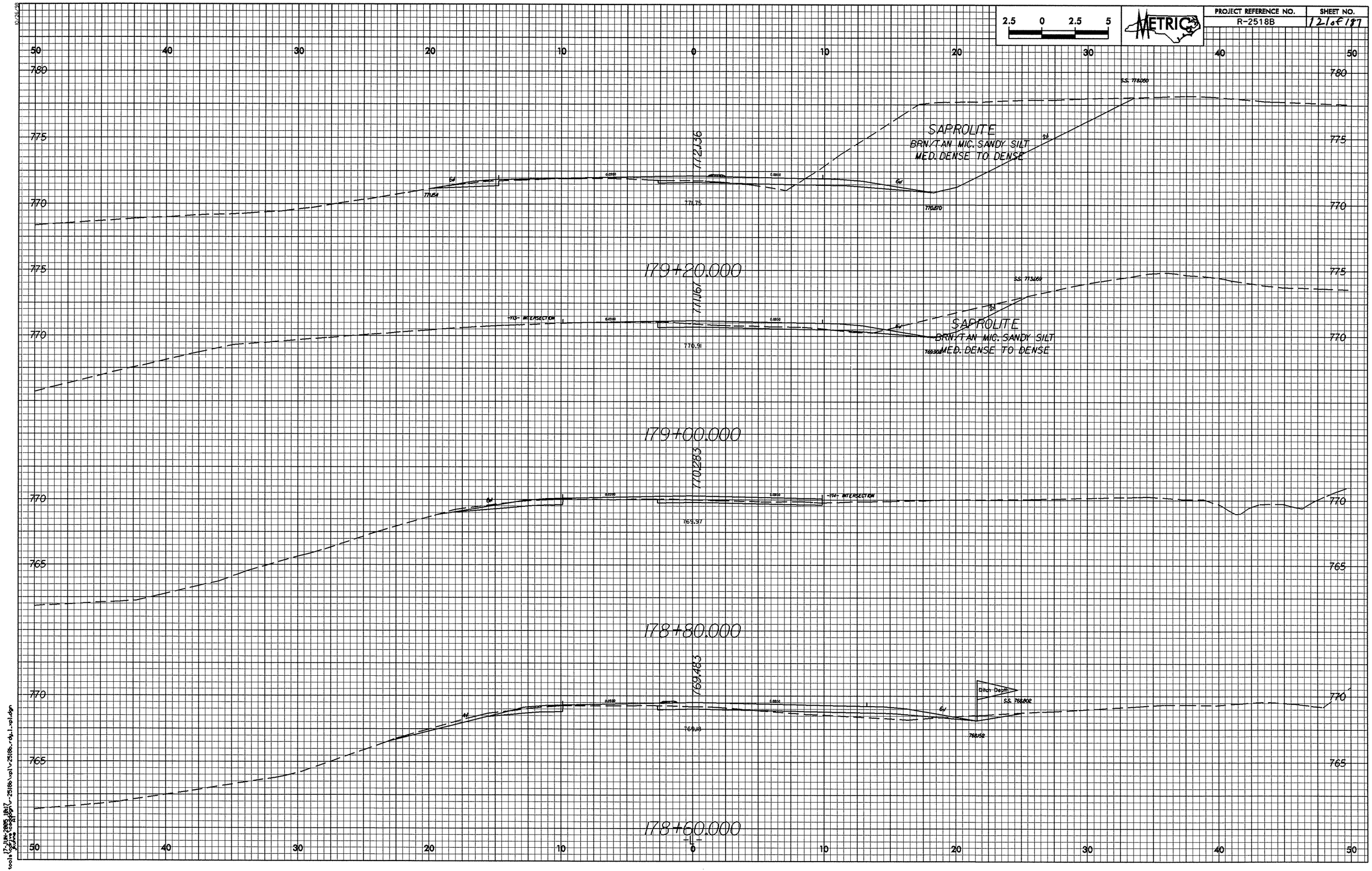
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
118 of 187
50 40 30 20 10 0 10 20 30 40 50
775
770
765
770.97
-Y12- INTERSECTION
770.80
172+60.000
771.28
771.05
SR -Y12- STA 10+70
172+40.000
771.59
771.28
RDWY FILL
172+20
25 M RT
ALLUVIUM MIC. SILTY SAND W/ GRAVEL
5/27/04
11
172+20.000
771.86
771.46
172+00.000



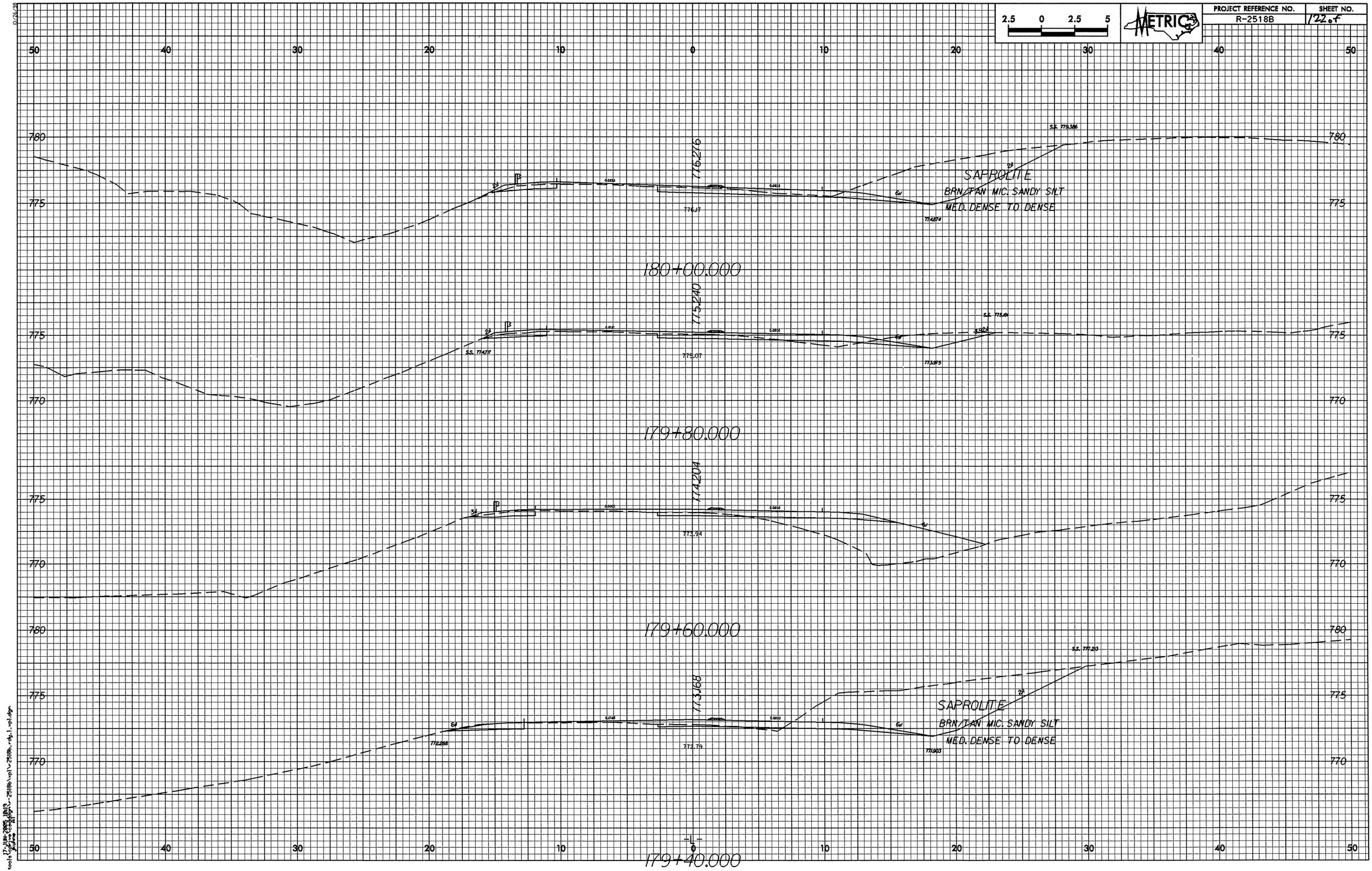
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
119 of 187
175+13
12 M RT
RDWY FILL
767.35
ALLUVIUM
BRN/TAN MIC.SILTY SAND W/ RK FRAGS
7/26/04
WEATHERED ROCK
8
16
2
175+20.000
768.031
767.61
175+00.000
768.293
767.80
174+80.000
768.556
767.99
174+60.000
-L-



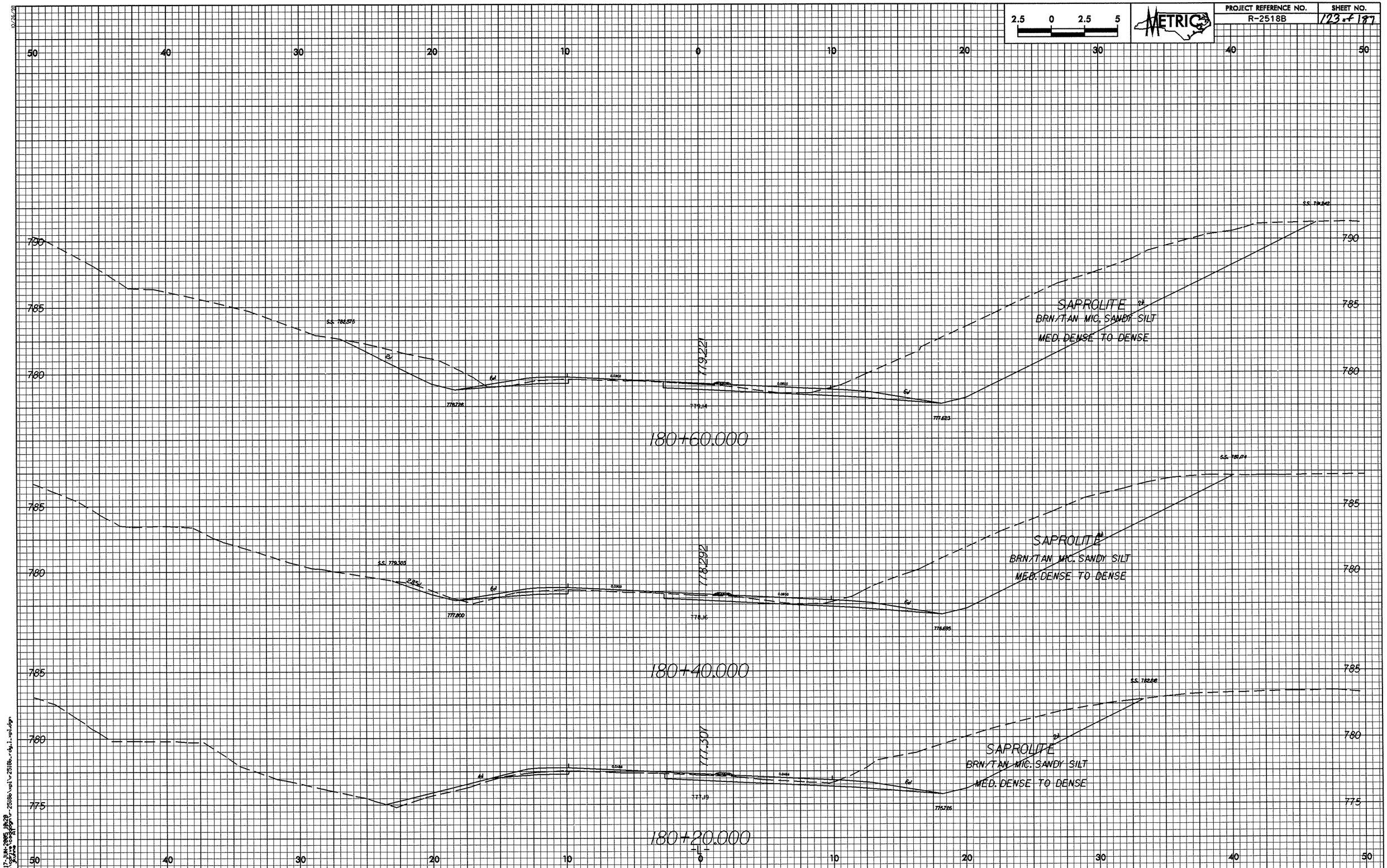
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
120 of 187
176+01
2 M RT
175+93
12 M RT
Ditch Depth
RDWY FILL
ALLUVIUM
GREY SANDY SILT W/ RK FRAGS
7/27/04
176+00.000
SAPROLITE
RED/BRN MIC. SANDY SILT
WEATHERED ROCK
175+80.000
175+60.000
175+40.000



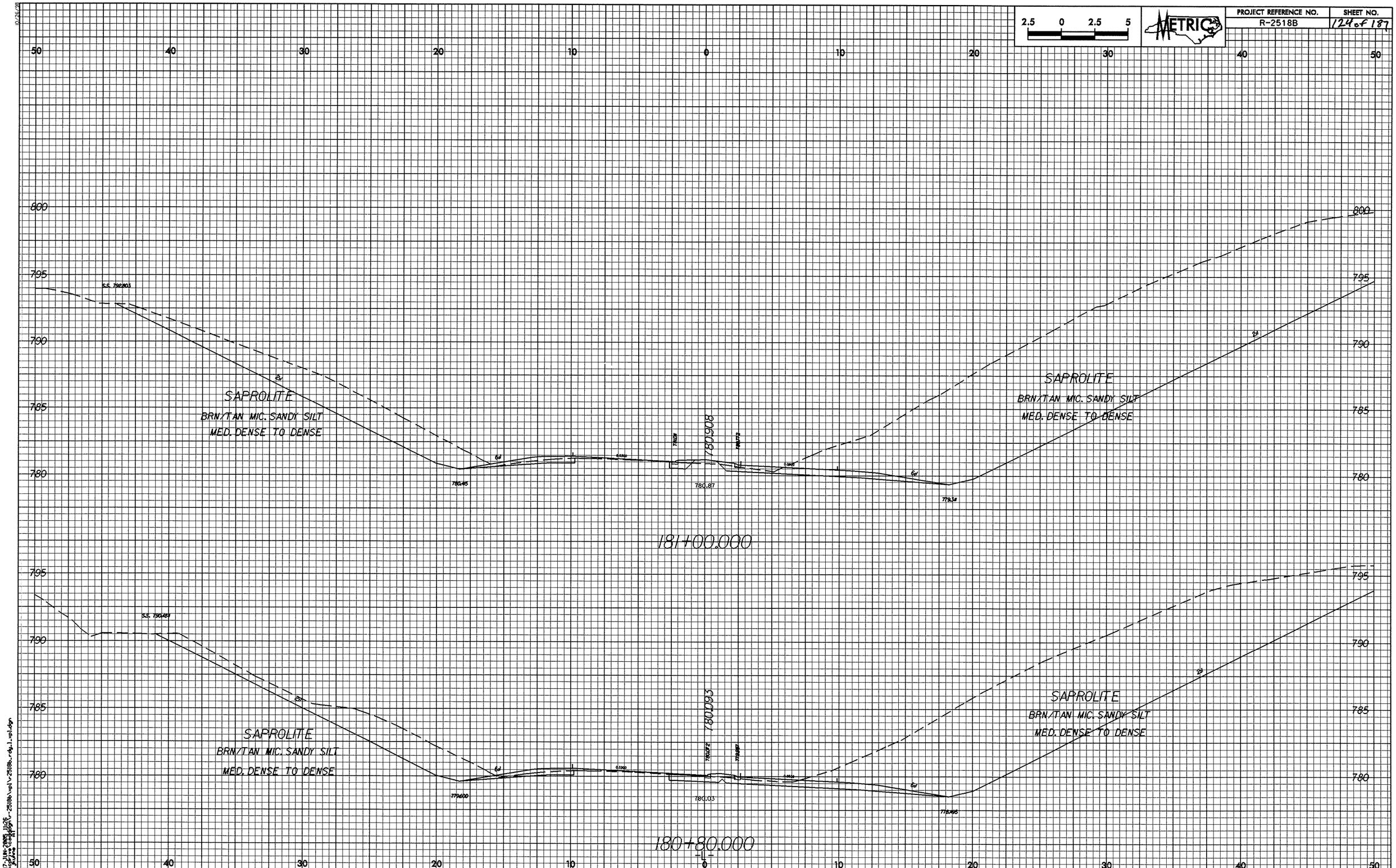
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
121 of 187
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
S.S. 778.050
772.136
771.75
770.870
179+20.000
S.S. 773.059
771.161
-Y13- INTERSECTION
770.91
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
179+00.000
770.283
-Y14- INTERSECTION
769.97
178+80.000
769.483
Ditch Depth
S.S. 768.802
769.18
768.152
178+60.000
-L-



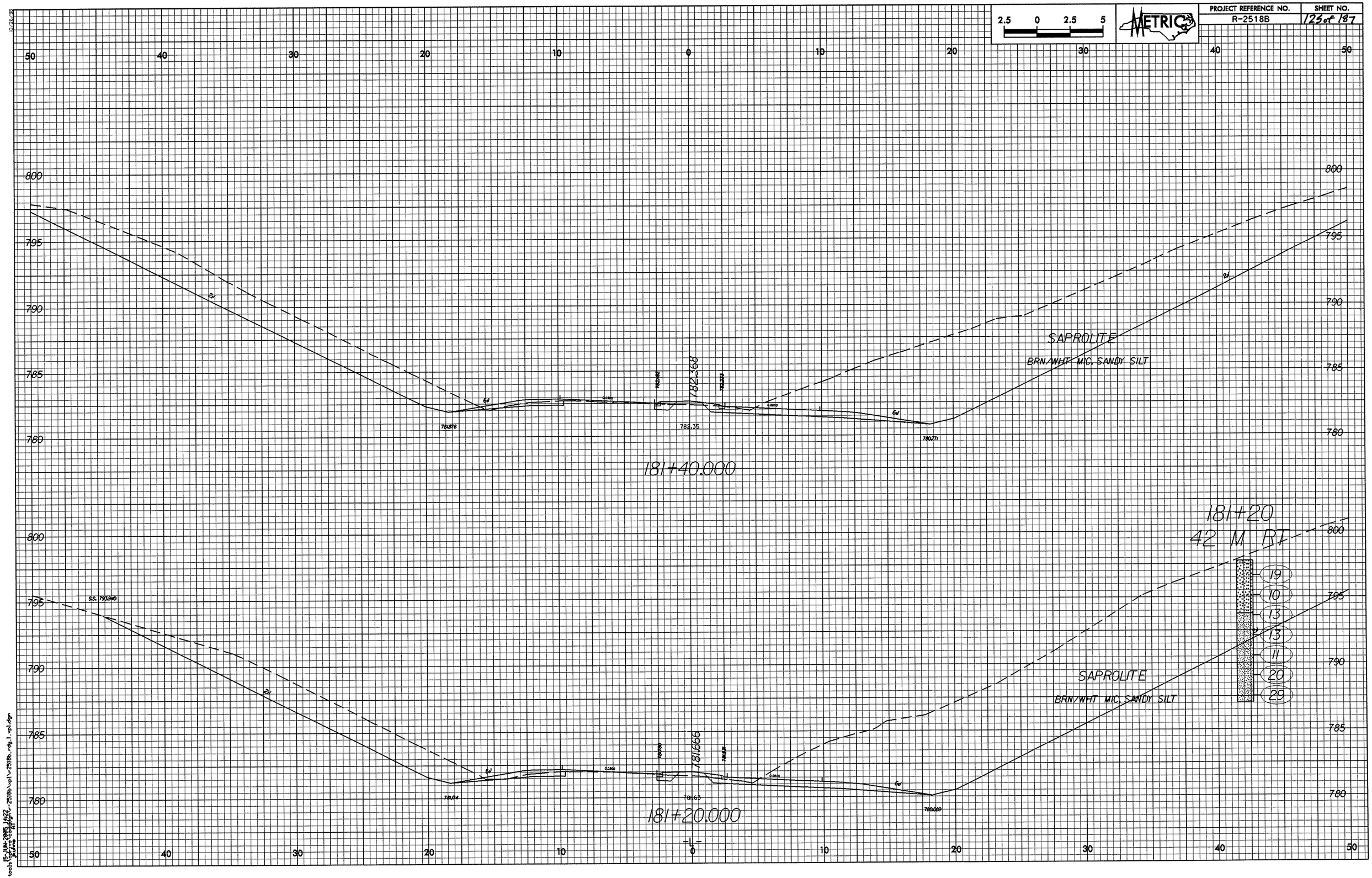
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
122 of
50 40 30 20 10 0 10 20 30 40 50
780
775
770
776.276
776.17
774.874
S.S. 779.386
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
180+00.000
775.240
775.07
773.975
S.S. 774.717
S.S. 775.191
179+80.000
774.204
773.94
179+60.000
773.168
772.79
772.268
771.903
S.S. 777.213
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
-L-
179+40.000



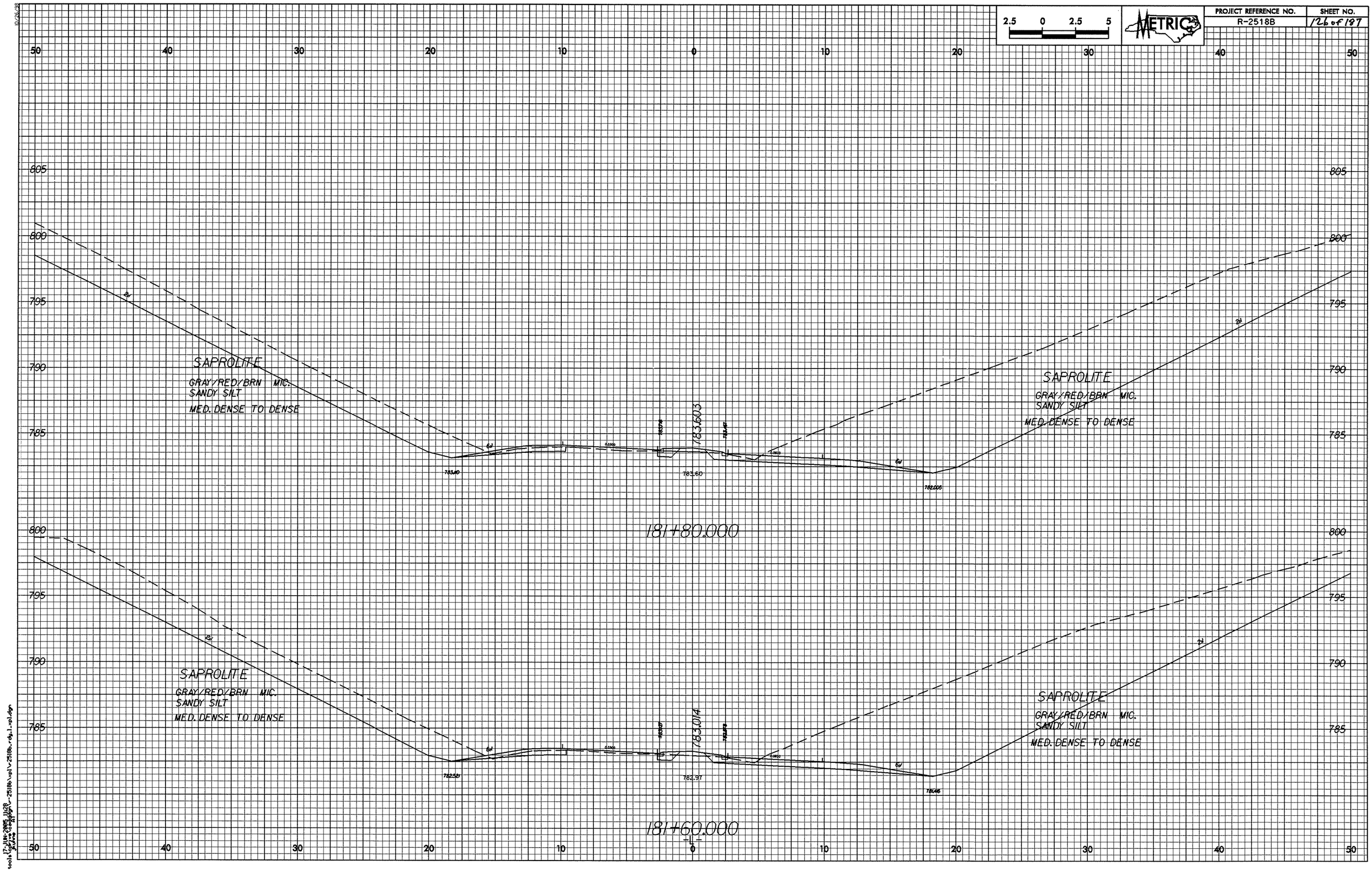
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
123 of 187
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
779.221
180+60.000
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
778.292
180+40.000
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
777.301
180+20.000
-L-



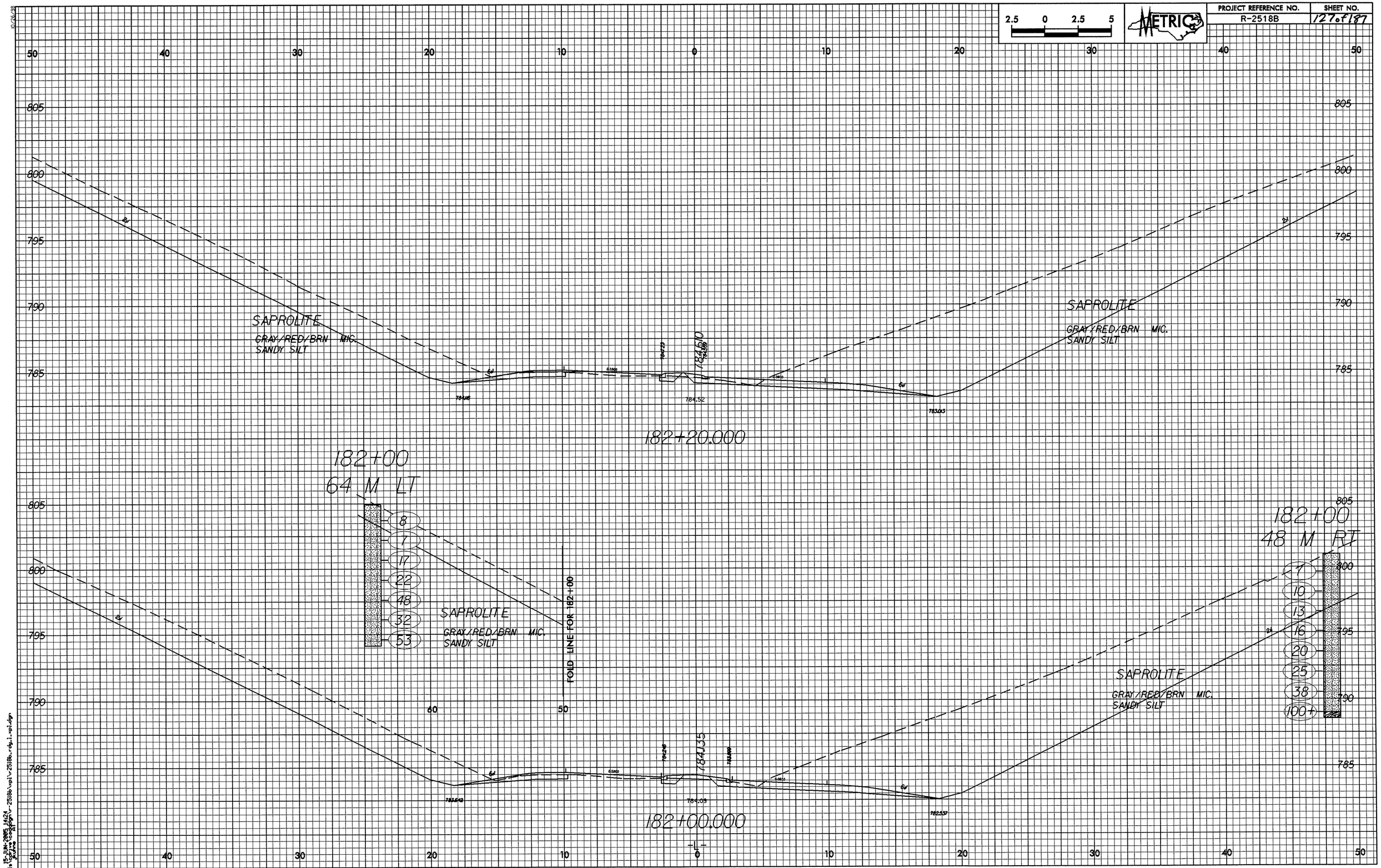
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
124 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
S.S. 792.803
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
780.908
780.45
780.87
779.34
181+00.000
S.S. 790.484
780.093
779.600
780.03
778.495
180+80.000



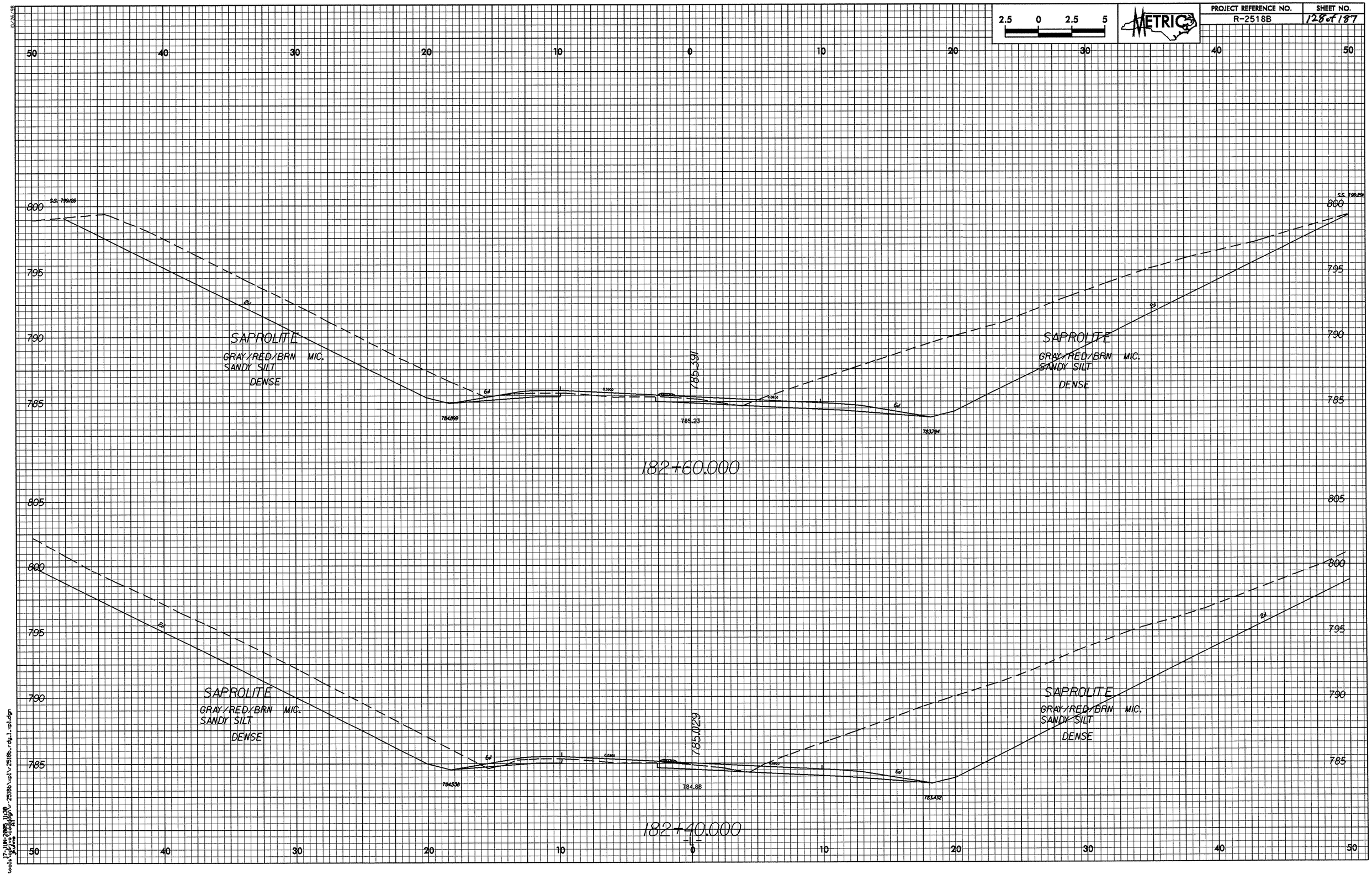
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
125 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
SAPROLITE
BRN/WHT MIC. SANDY SILT
782.368
782.35
781.876
780.771
181+40.000
181+20
42 M RT
19
10
13
13
11
20
29
SAPROLITE
BRN/WHT MIC. SANDY SILT
781.666
781.63
781.74
780.069
181+20.000
-L-



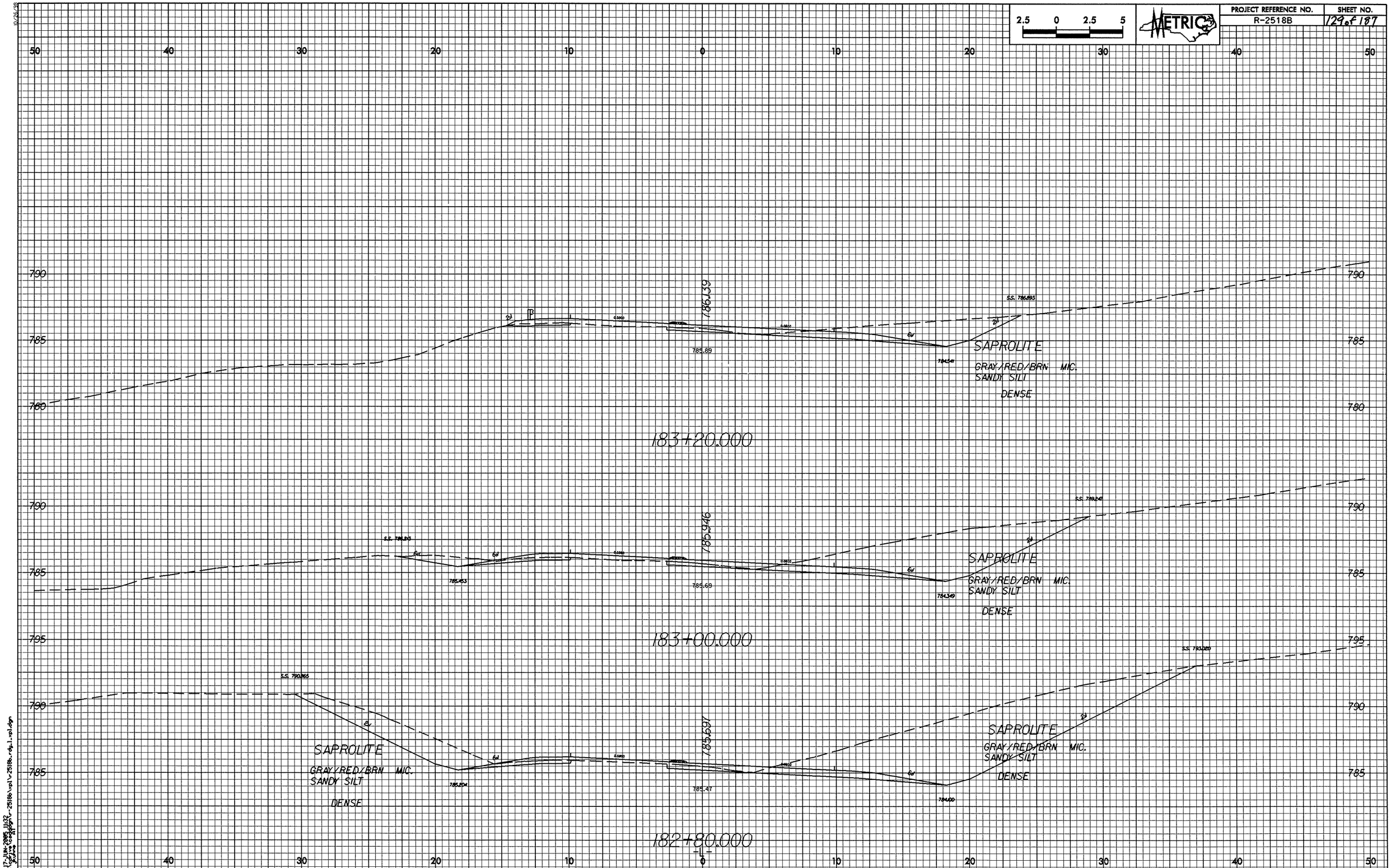
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
126 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
785
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
MED. DENSE TO DENSE
783.603
783.60
181+80.000
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
MED. DENSE TO DENSE
783.014
782.97
181+60.000
-L-



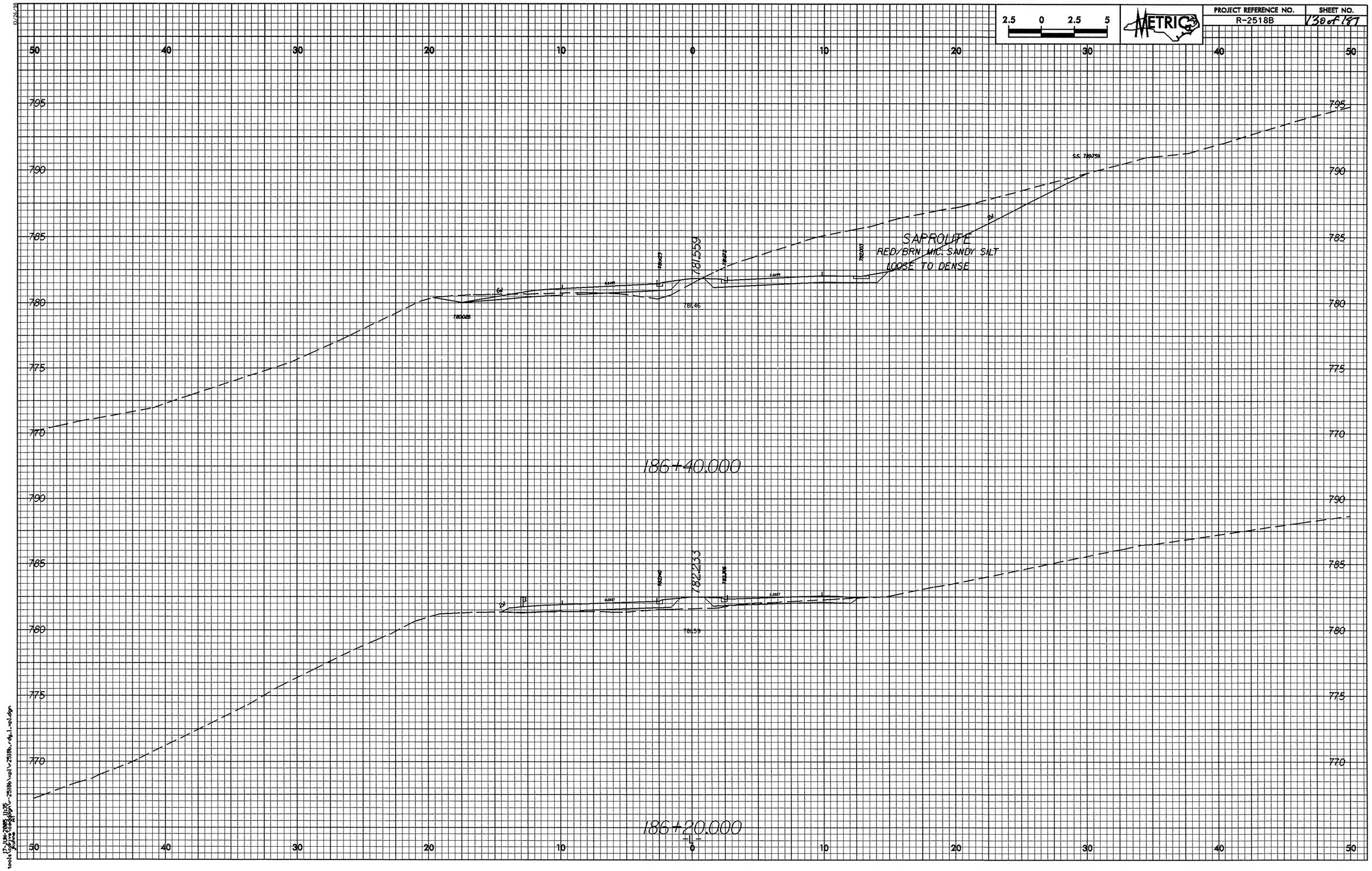
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
127 of 187
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
784.52
182+20.000
182+00
64 M LT
8
7
17
22
48
32
53
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
FOLD LINE FOR 182+00
182+00
48 M RT
7
10
13
16
20
25
38
100+
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
784.03
182+00.000
-L-



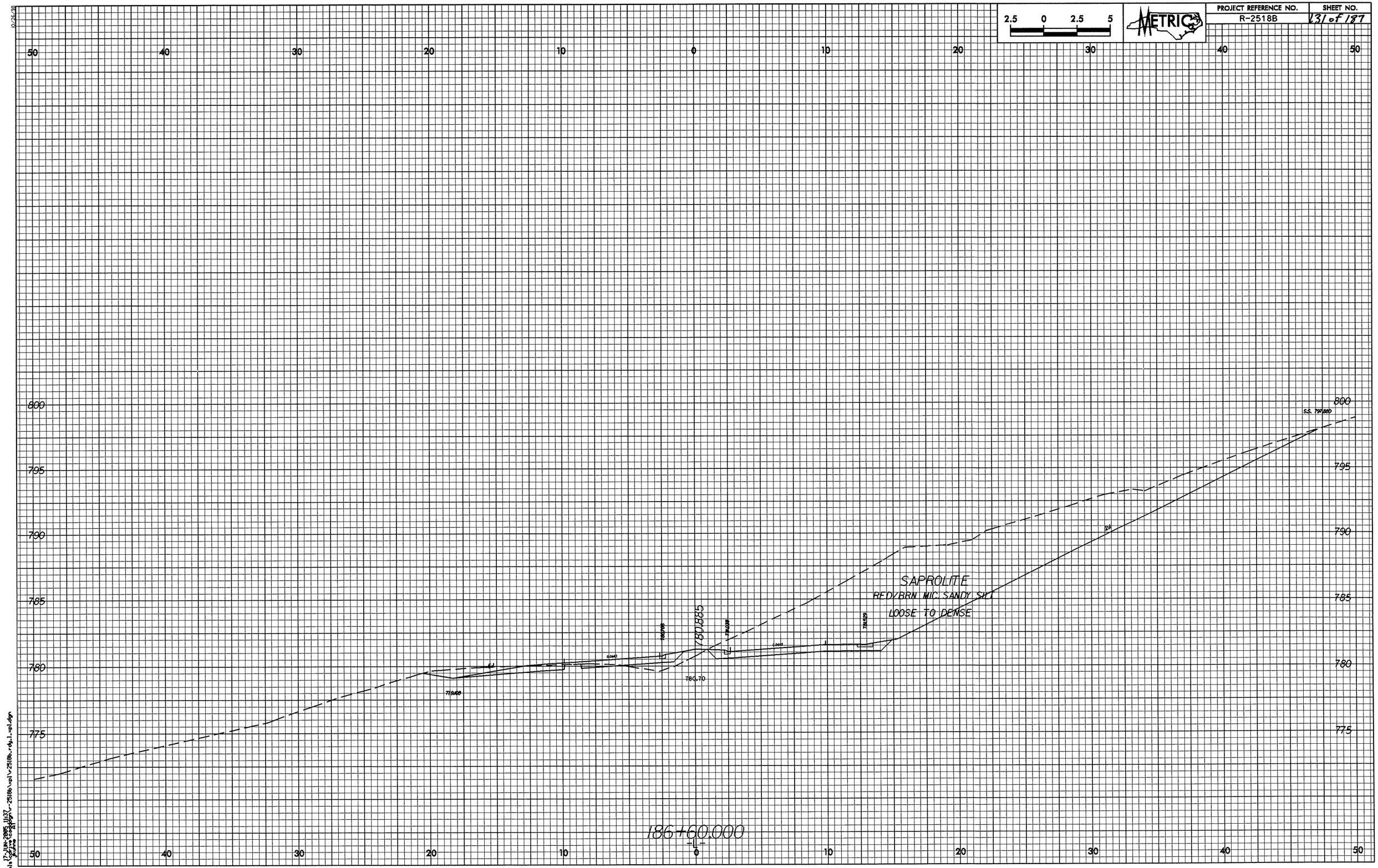
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
128 of 187
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
DENSE
785.391
784.899
785.23
783.794
182+60.000
785.029
784.536
784.88
783.432
182+40.000



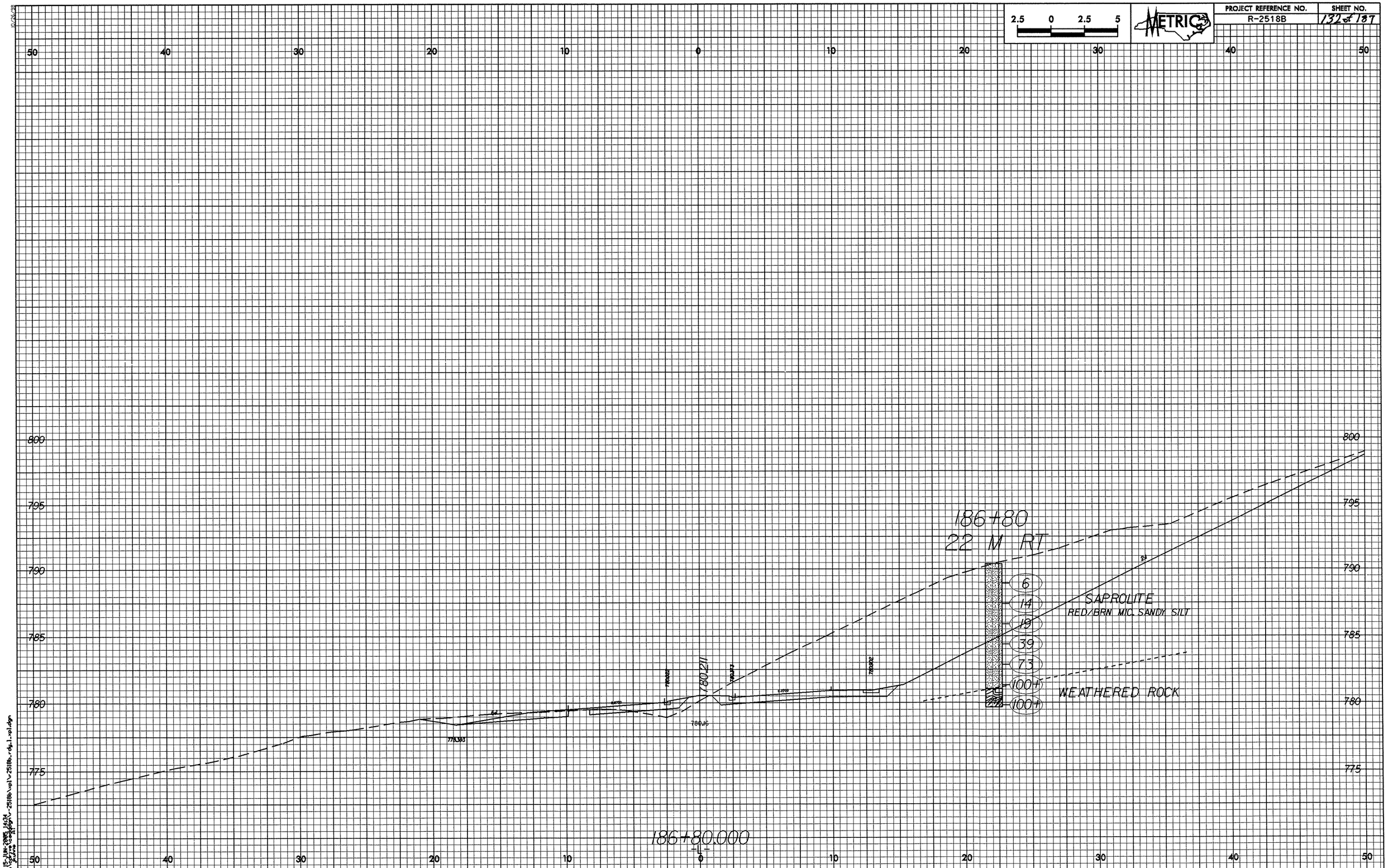
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
129 of 187
50 40 30 20 10 0 10 20 30 40 50
790
785
780
786.139
785.89
784.541
S.S. 786.893
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
DENSE
183+20.000
790
785
795
785.946
785.69
784.349
S.S. 789.247
S.S. 786.213
785.453
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
DENSE
183+00.000
790
785
785.691
785.47
784.100
S.S. 790.865
S.S. 793.020
785.204
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
DENSE
SAPROLITE
GRAY/RED/BRN MIC.
SANDY SILT
DENSE
182+80.000
-L-



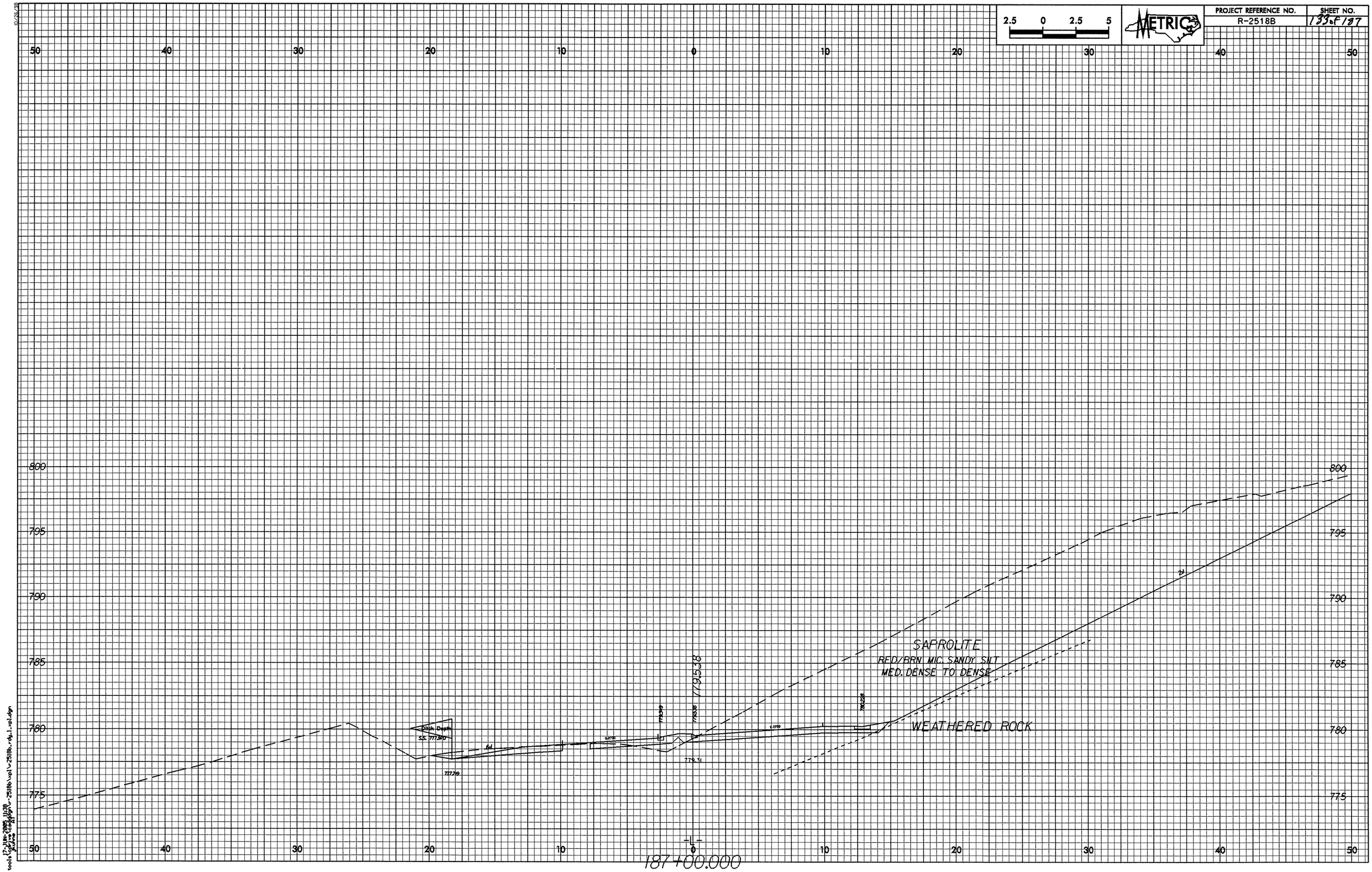
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
130 of 187
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
S.S. 789.759
781.559
781.46
780.026
186+40.000
782.233
781.59
186+20.000



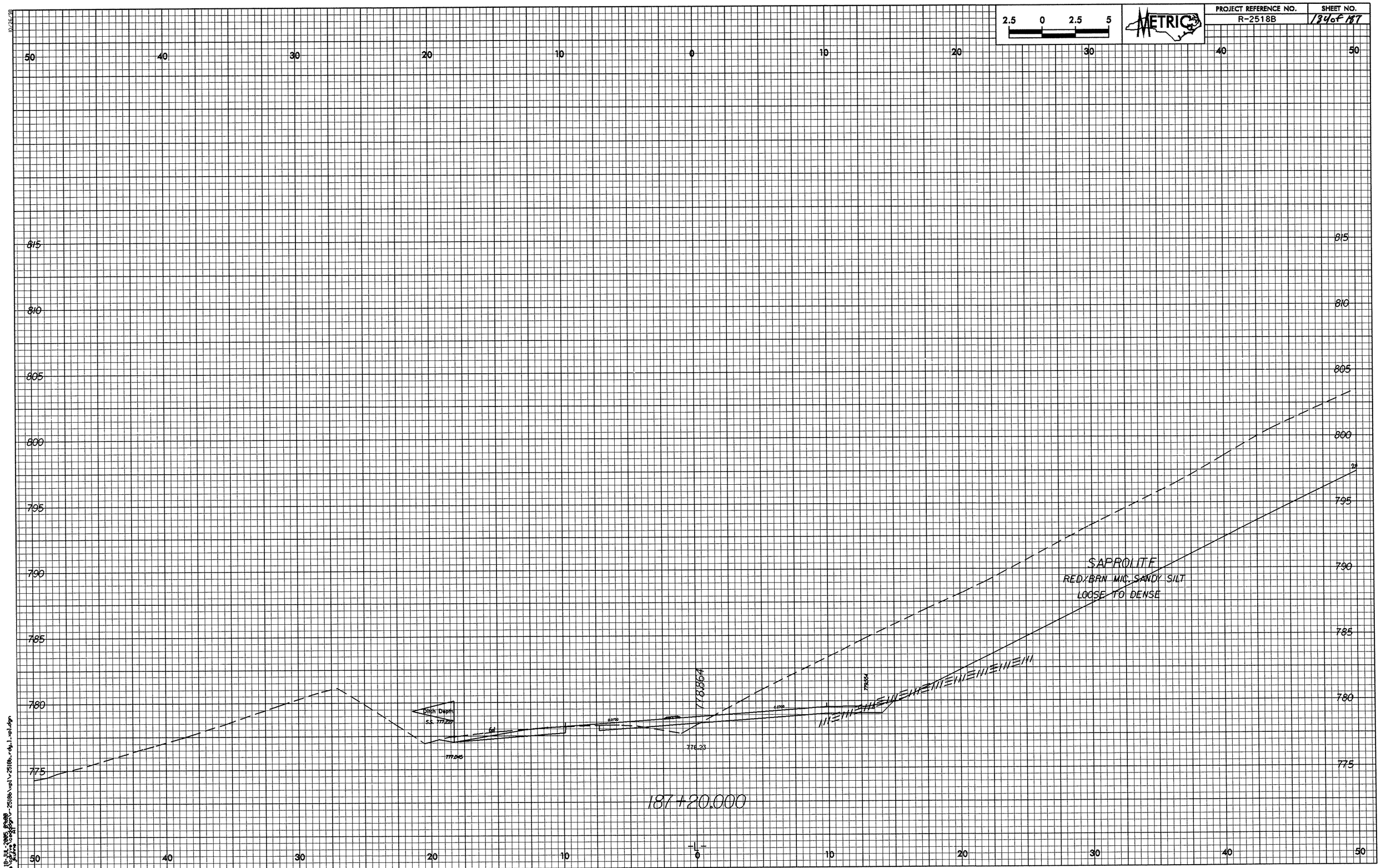
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
131 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
775
S.S. 797.880
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
780.885
780.70
779.108
186+60.000



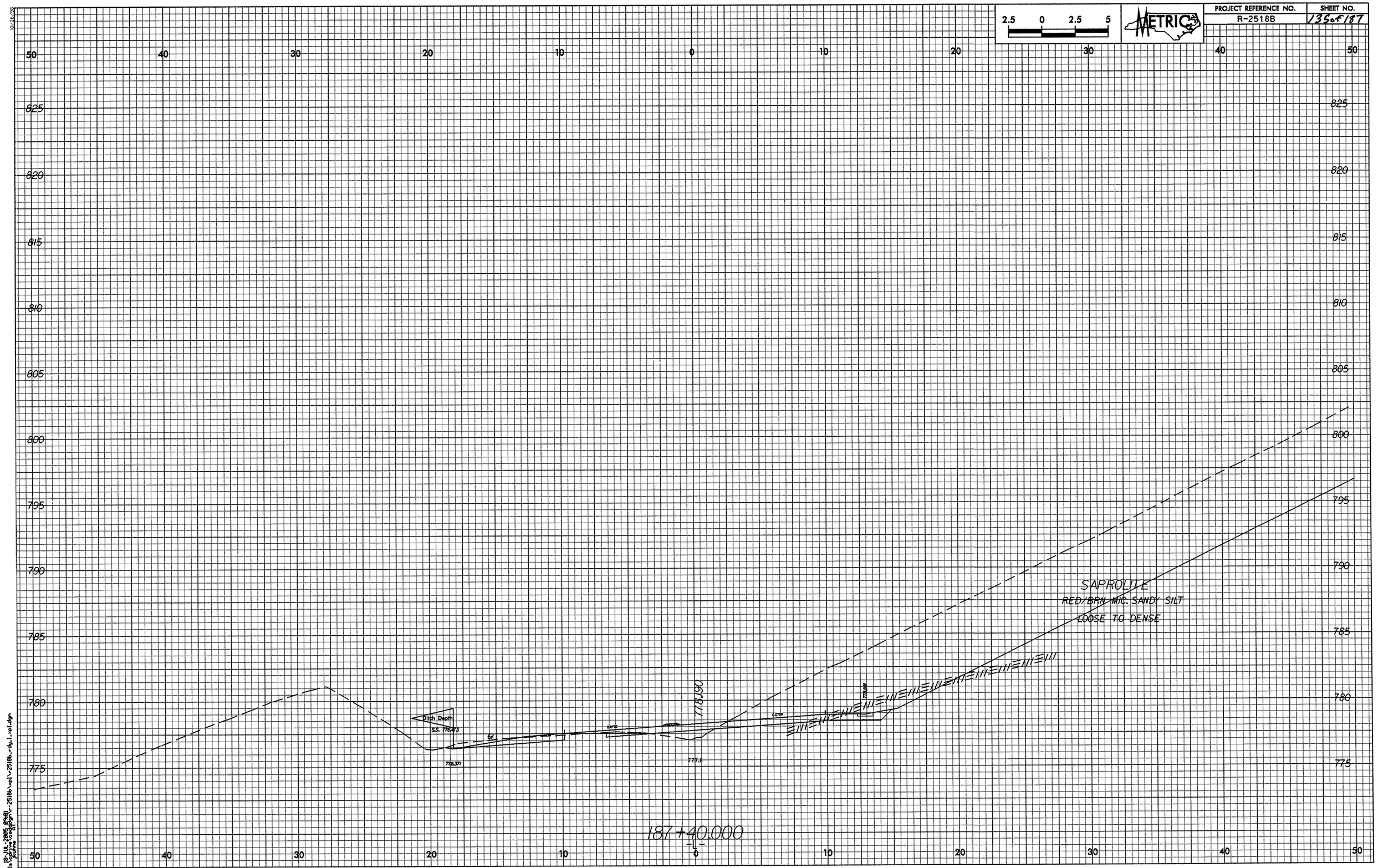
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
132 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
775
186+80
22 M RT
6
14
19
39
73
100+
100+
SAPROLITE
RED/BRN MIC. SANDY SILT
WEATHERED ROCK
780.211
780.16
186+80.000
-L-



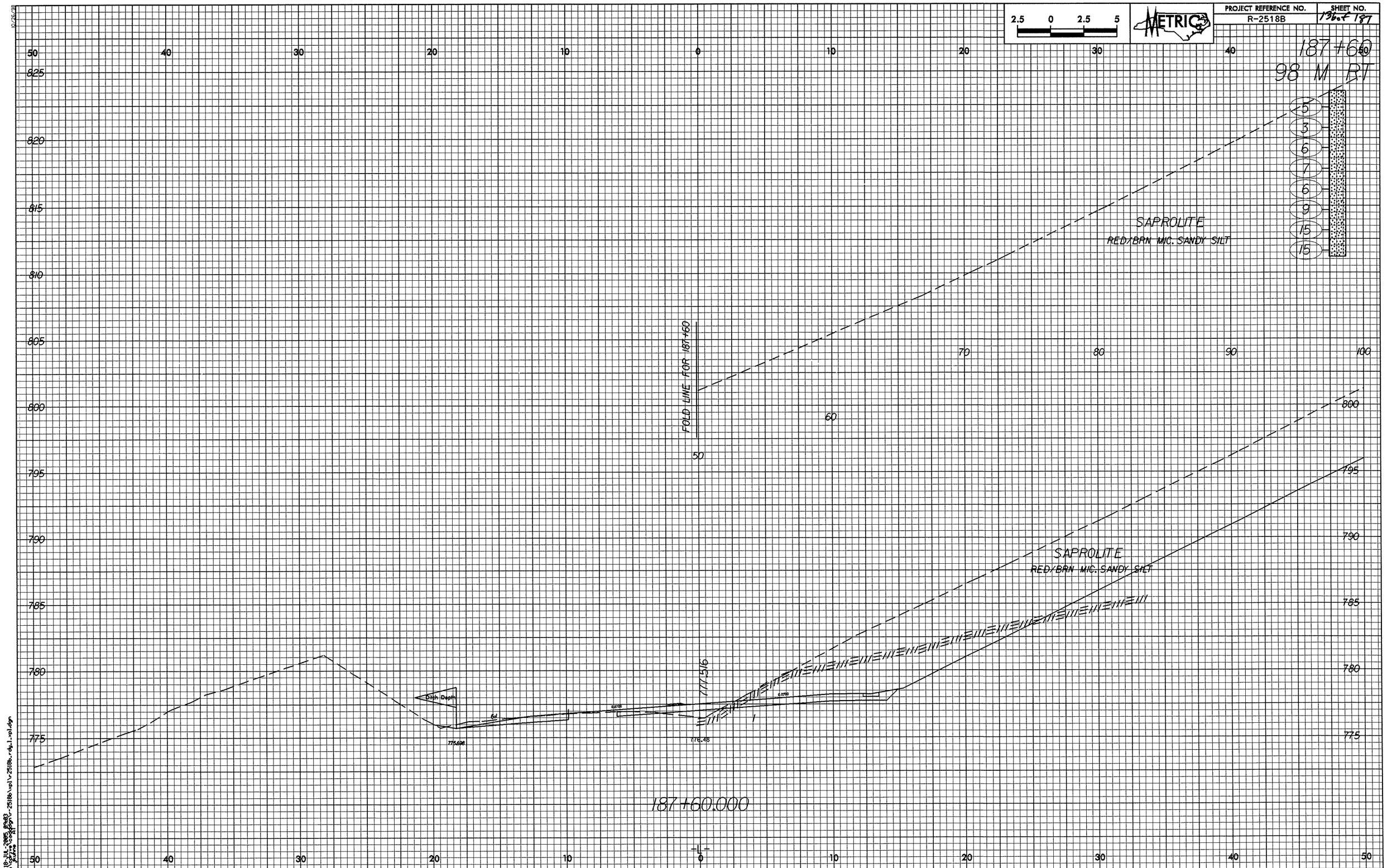
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
133 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
775
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. DENSE TO DENSE
WEATHERED ROCK
779.538
779.31
Ditch Depth
-L-
187+00.000



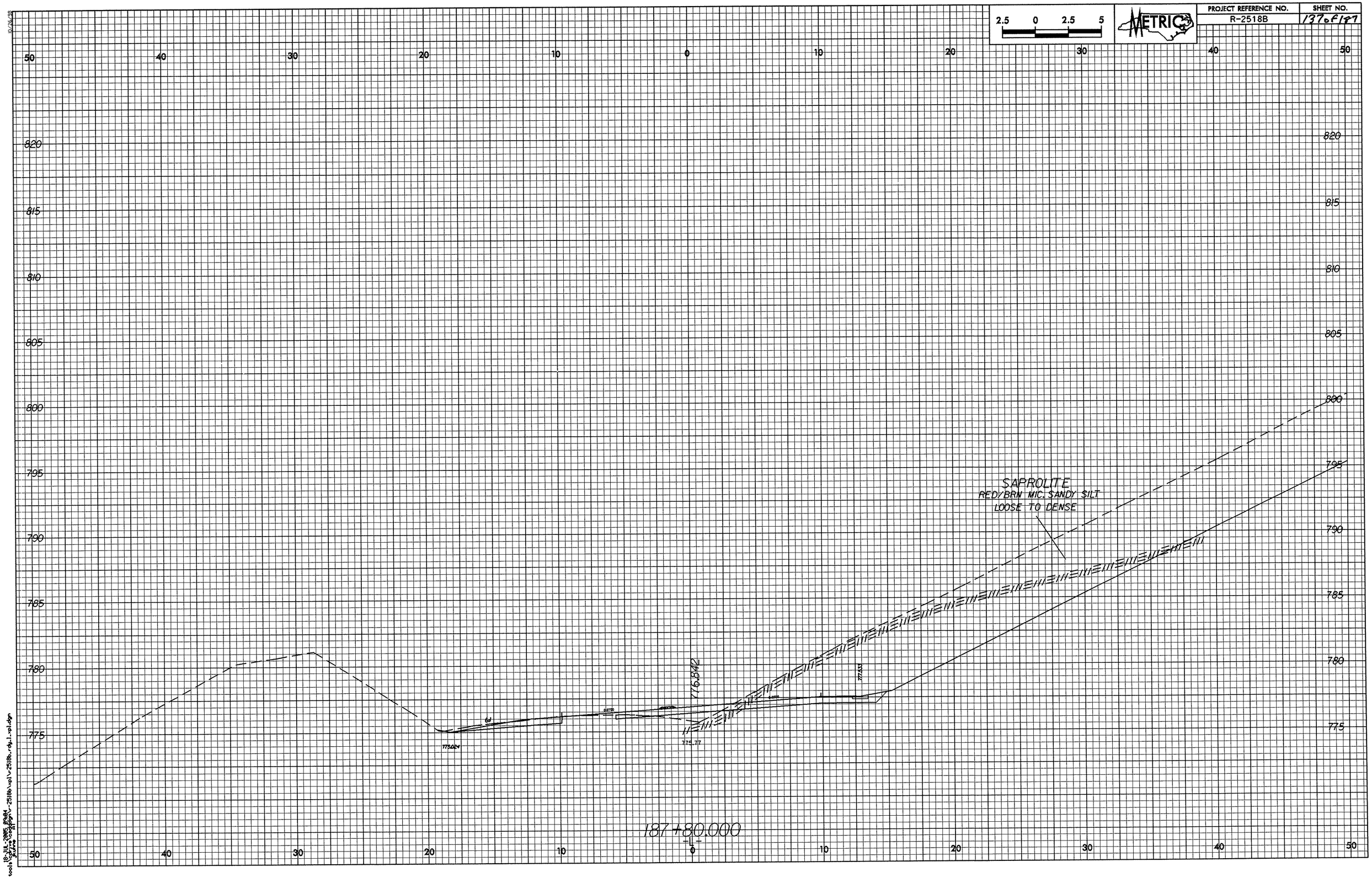
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
134 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
795
790
785
780
775
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
Ditch Depth
S.S. 777.227
777.045
778.864
778.23
779.554
187+20.000
-L-



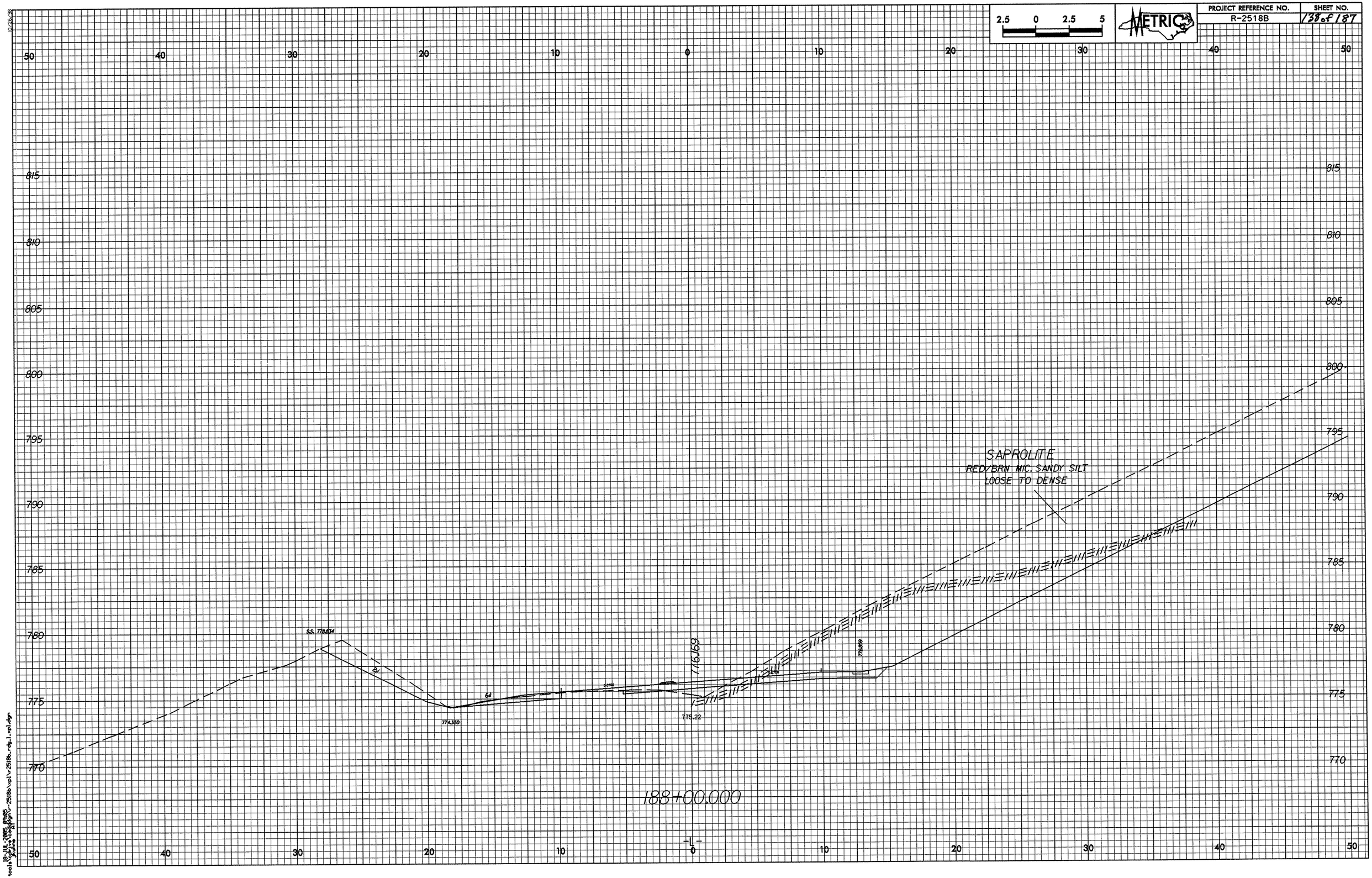
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
135 of 187
50 40 30 20 10 0 10 20 30 40 50
825 820 815 810 805 800 795 790 785 780 775
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
Ditch Depth
S.S. 776.475
776.371
777.11
778.190
778.698
187+40.000
-L-



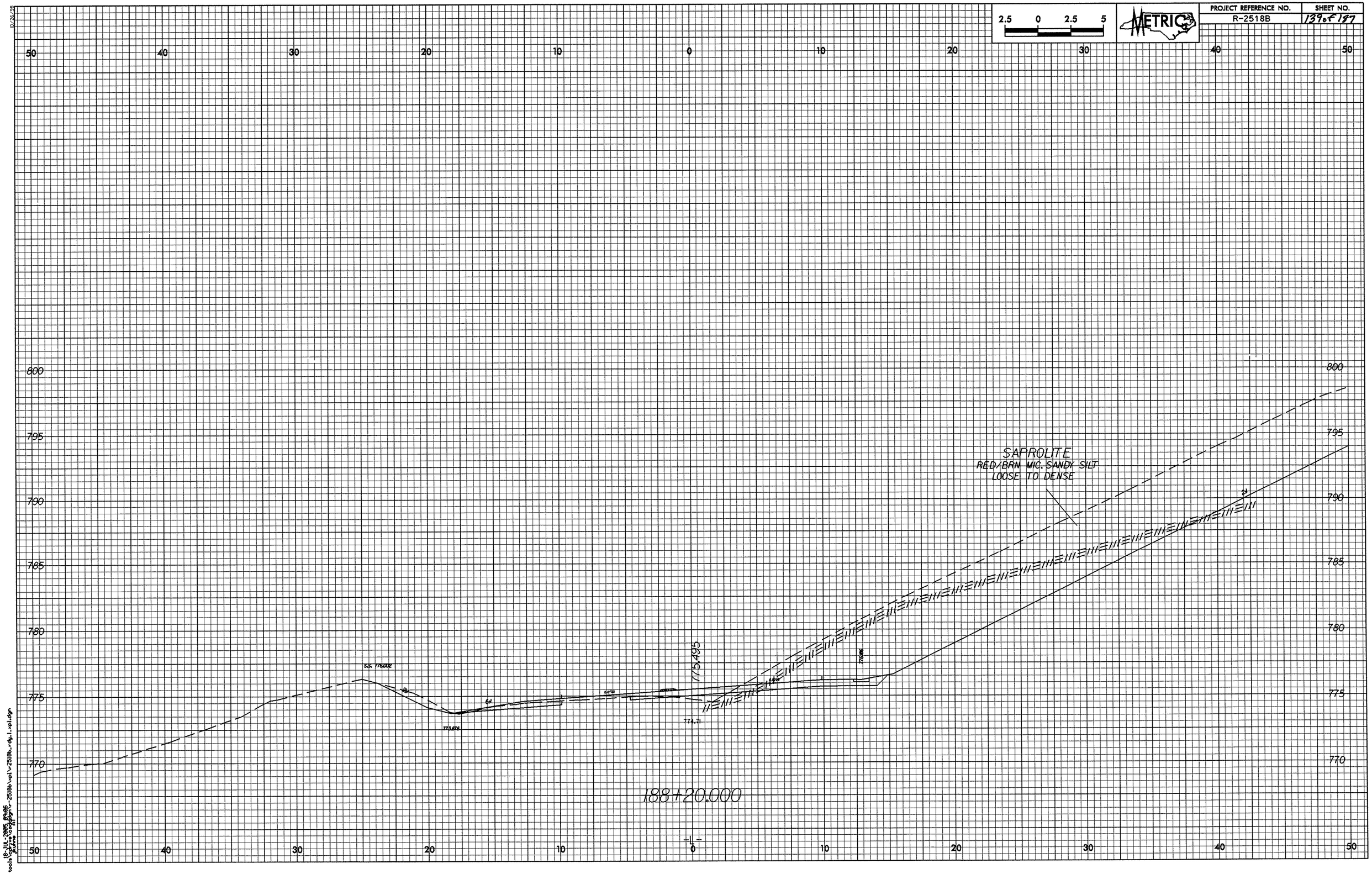
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
136 of 187
187+60
98 M RT
5
3
6
7
6
9
15
15
SAPROLITE
RED/BRN MIC. SANDY SILT
FOLD LINE FOR 187+60
SAPROLITE
RED/BRN MIC. SANDY SILT
Ditch Depth
777.516
776.48
187+60.000
-L-



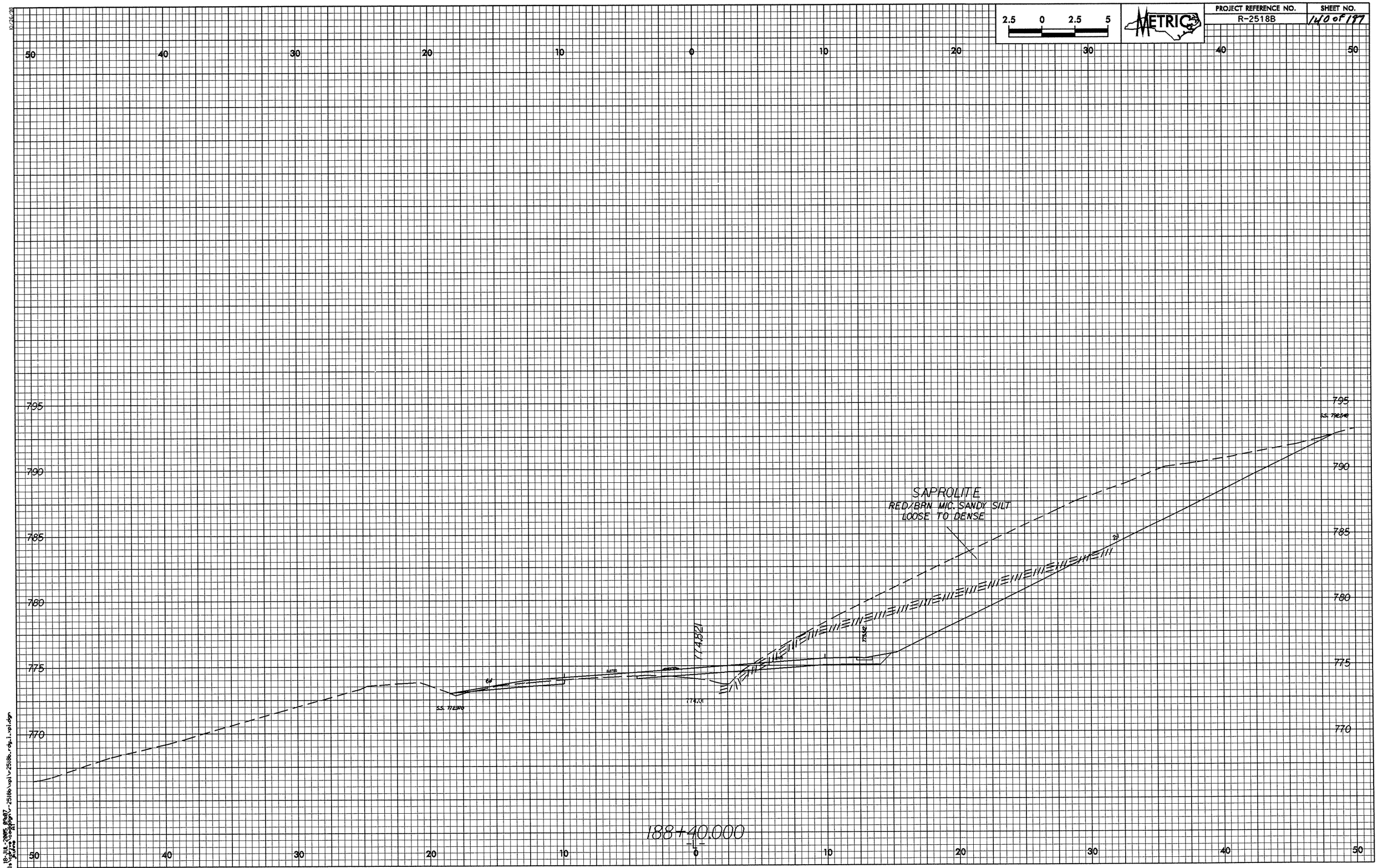
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
137 of 187
50 40 30 20 10 0 10 20 30 40 50
820 815 810 805 800 795 790 785 780 775
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
776.842
775.024
775.77
777.533
187+80.000
-L-



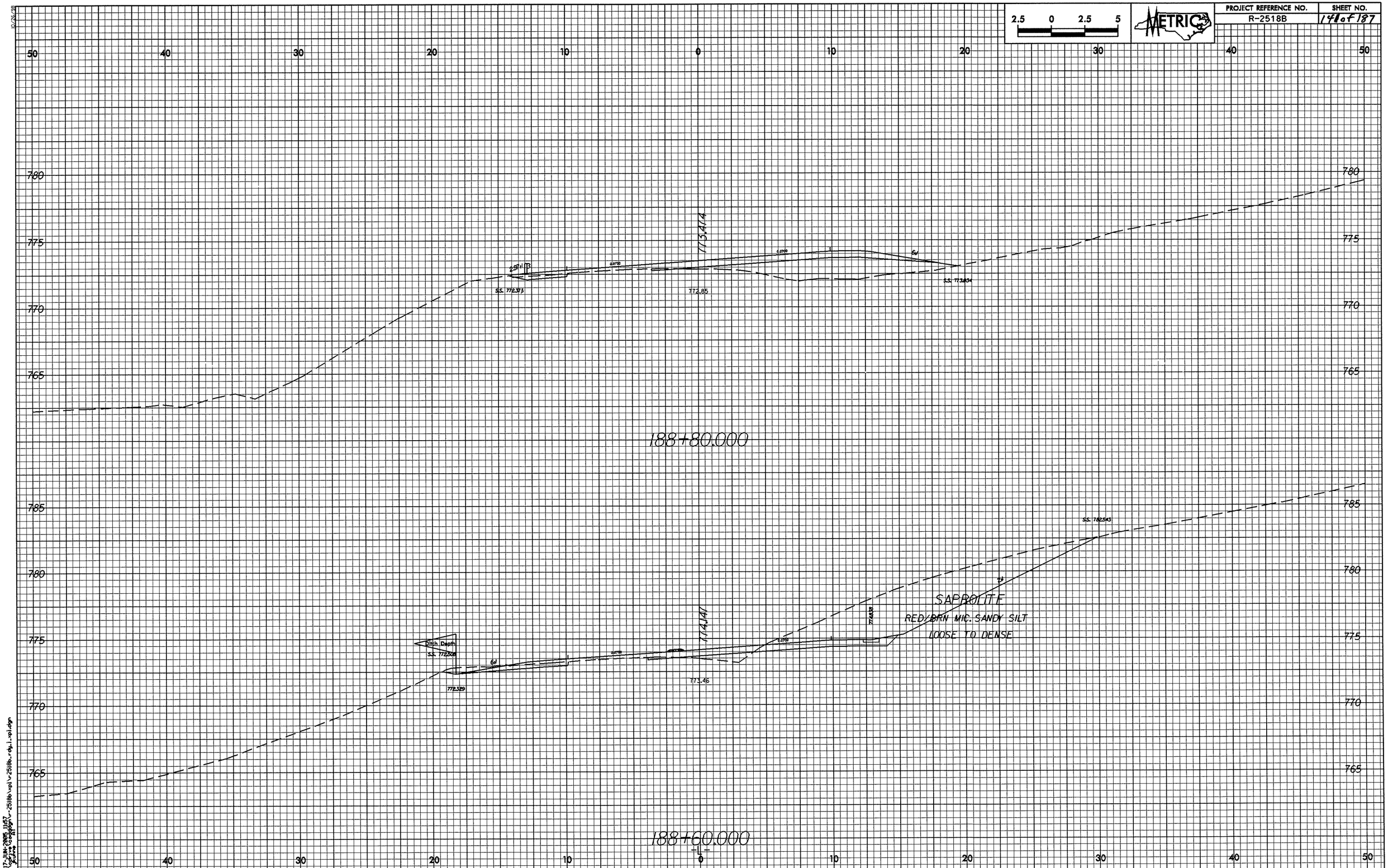
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
138 of 187
50 40 30 20 10 0 10 20 30 40 50
815 810 805 800 795 790 785 780 775 770
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
S.S. 778.834
774.350
775.22
776.169
776.859
188+00.000
-L-



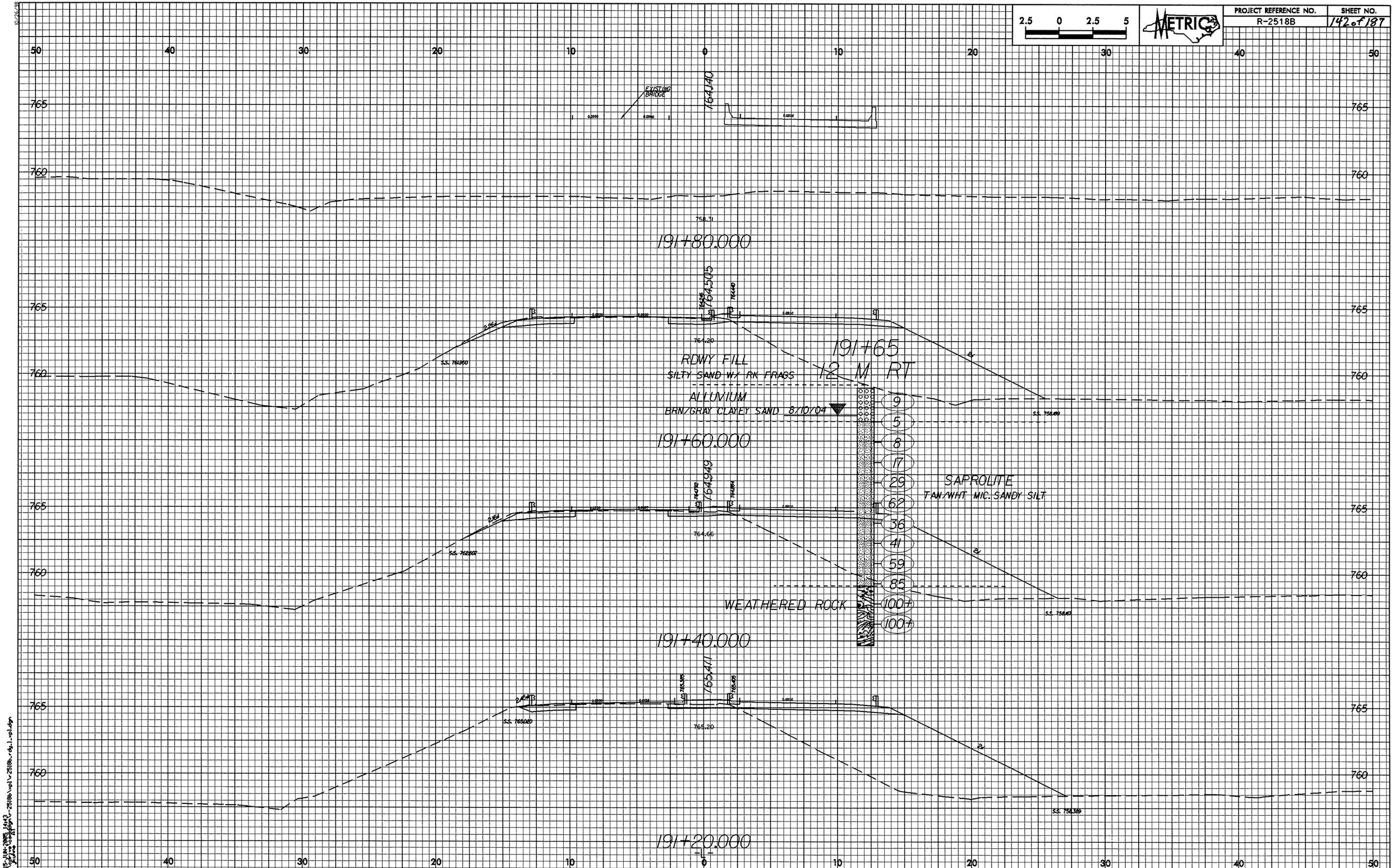
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
139 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
775
770
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
775.495
188+20.000
-L-



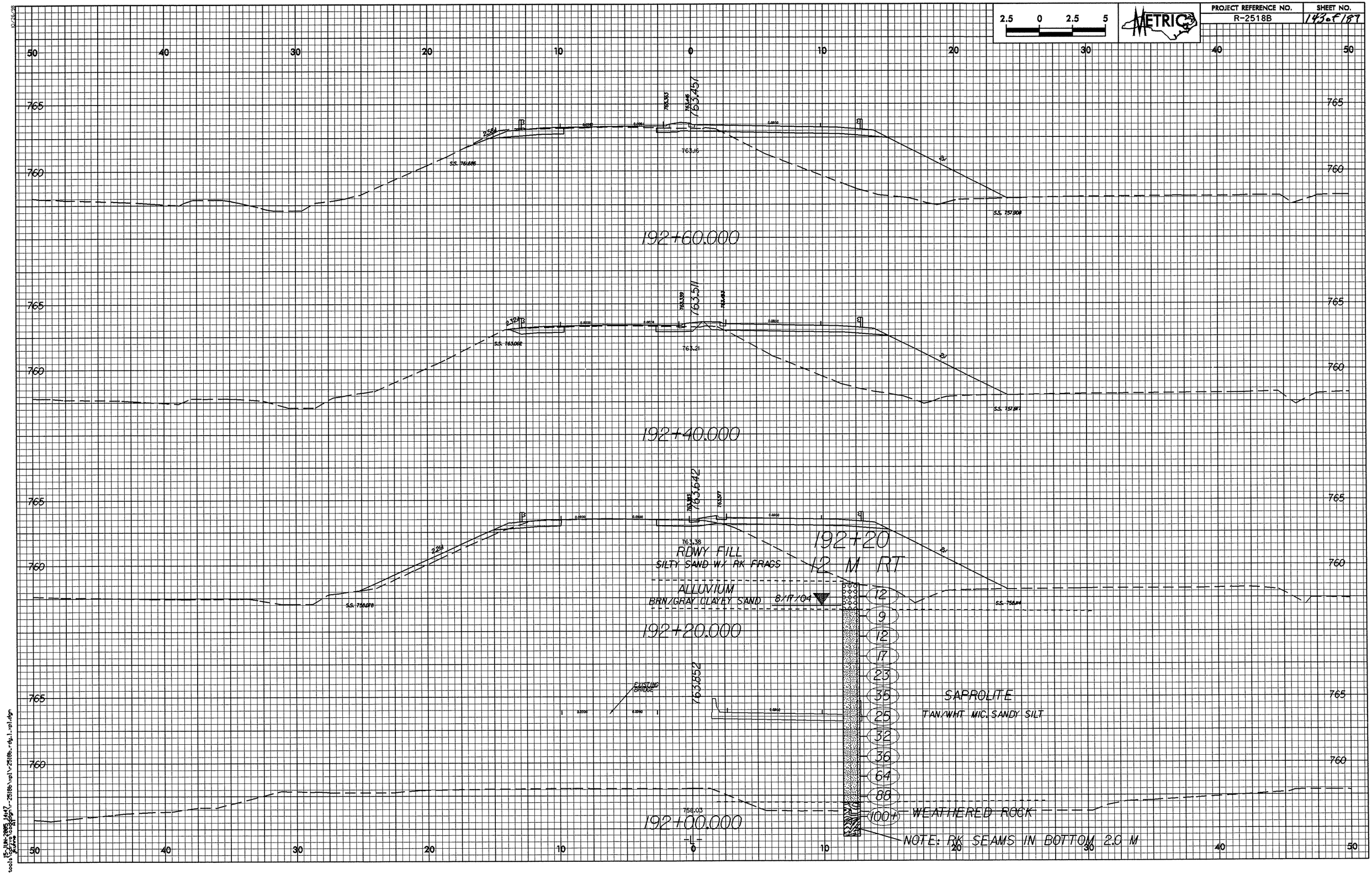
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
140 of 197
50 40 30 20 10 0 10 20 30 40 50
795
790
785
780
775
770
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
S.S. 772.970
774.821
774.01
188+40.000



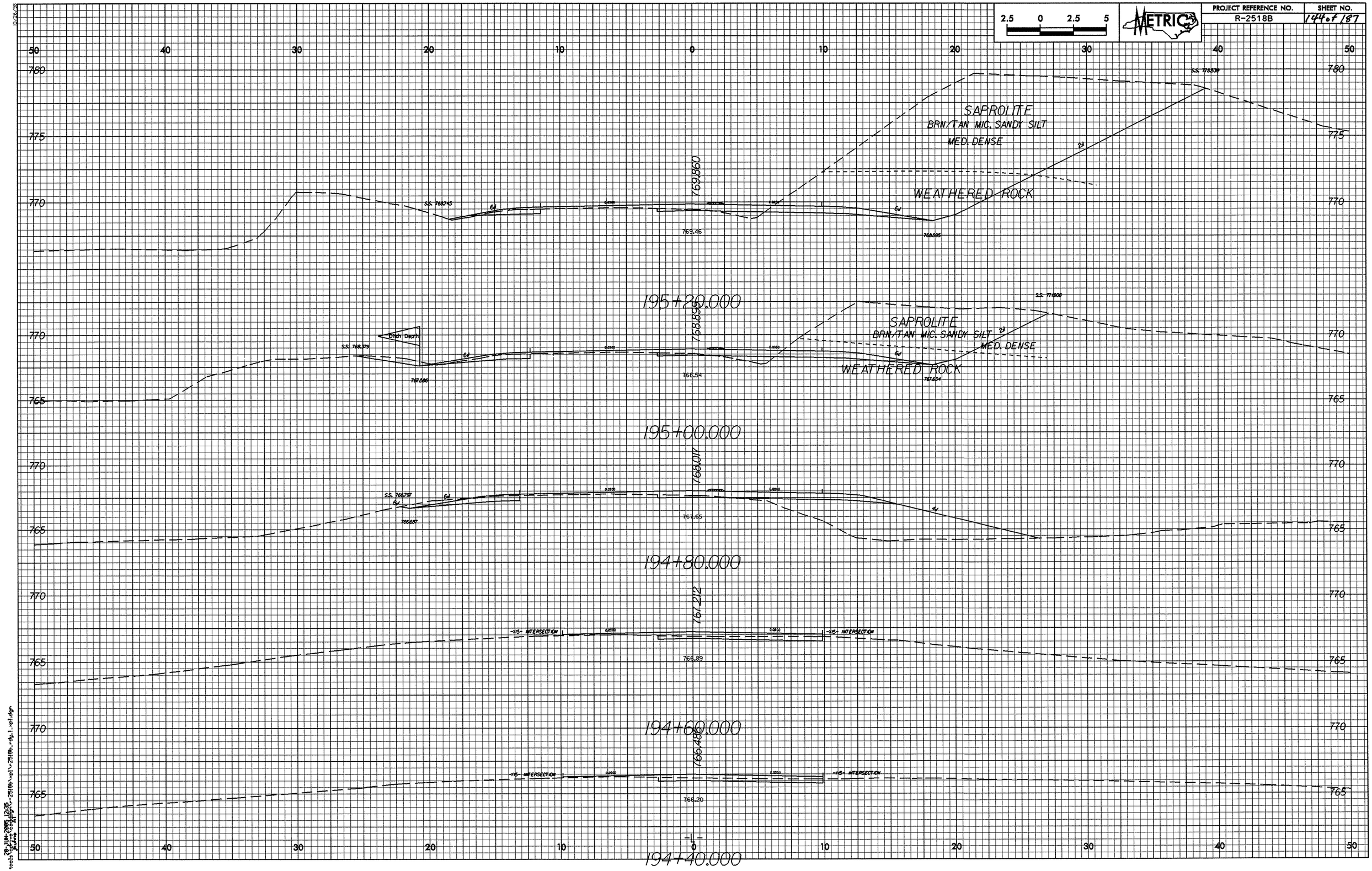
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
141 of 187
50 40 30 20 10 0 10 20 30 40 50
780
775
770
765
773.414
772.85
S.S. 772.373
S.S. 773.834
188+80.000
785
780
775
770
765
S.S. 782.543
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
774.141
773.46
772.329
Ditch Depth
S.S. 772.308
188+60.000



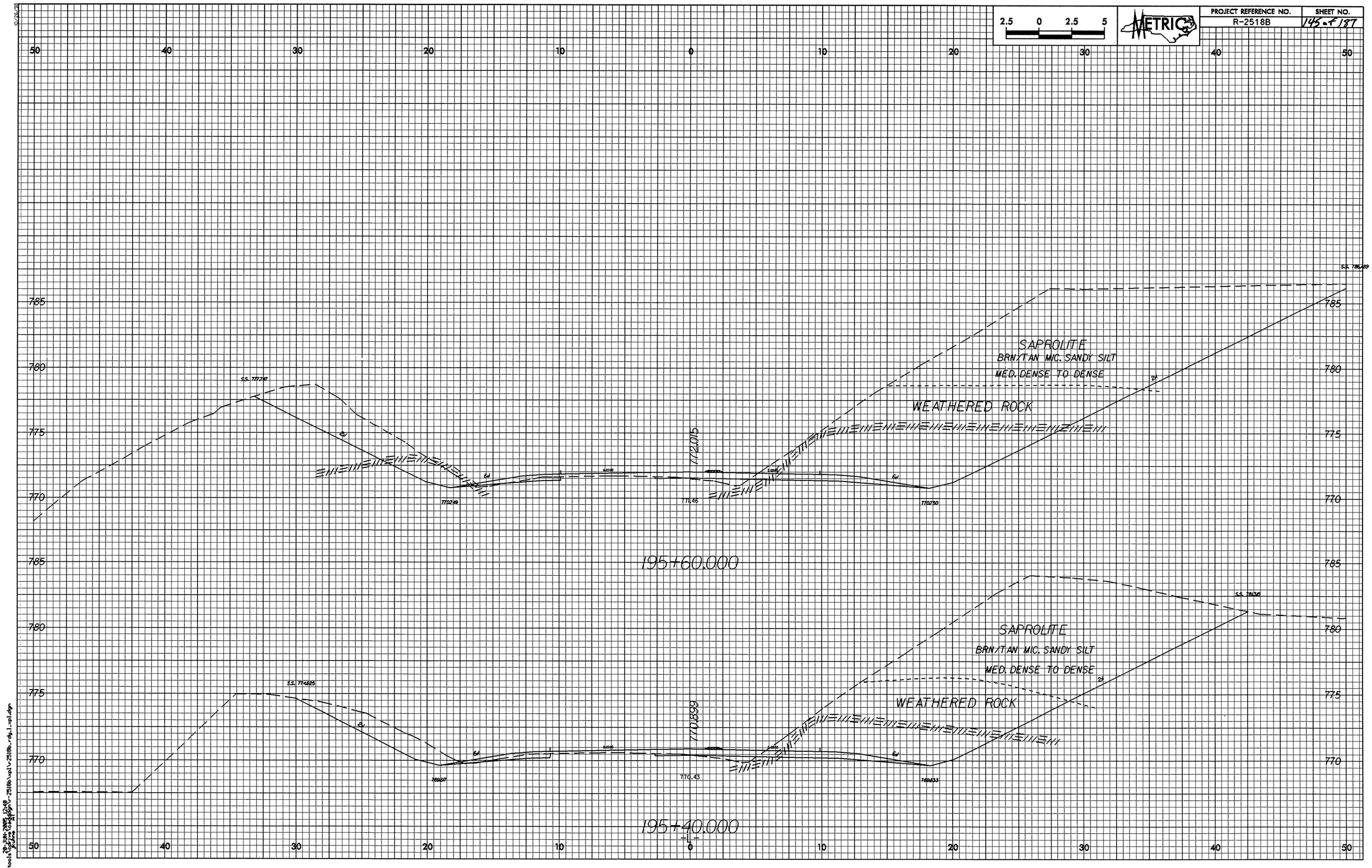
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
142 of 187
EXISTING BRIDGE
764.140
758.31
191+80.000
764.505
764.20
191+65
12 M RT
RDWY FILL
SILTY SAND W/ RK FRAGS
ALLUVIUM
BRN/GRAY CLAYEY SAND 8/10/04
9
5
8
17
29
62
36
41
59
85
100+
100+
SAPROLITE
TAN/WHT MIC. SANDY SILT
WEATHERED ROCK
191+60.000
764.949
764.66
191+40.000
765.411
765.20
191+20.000



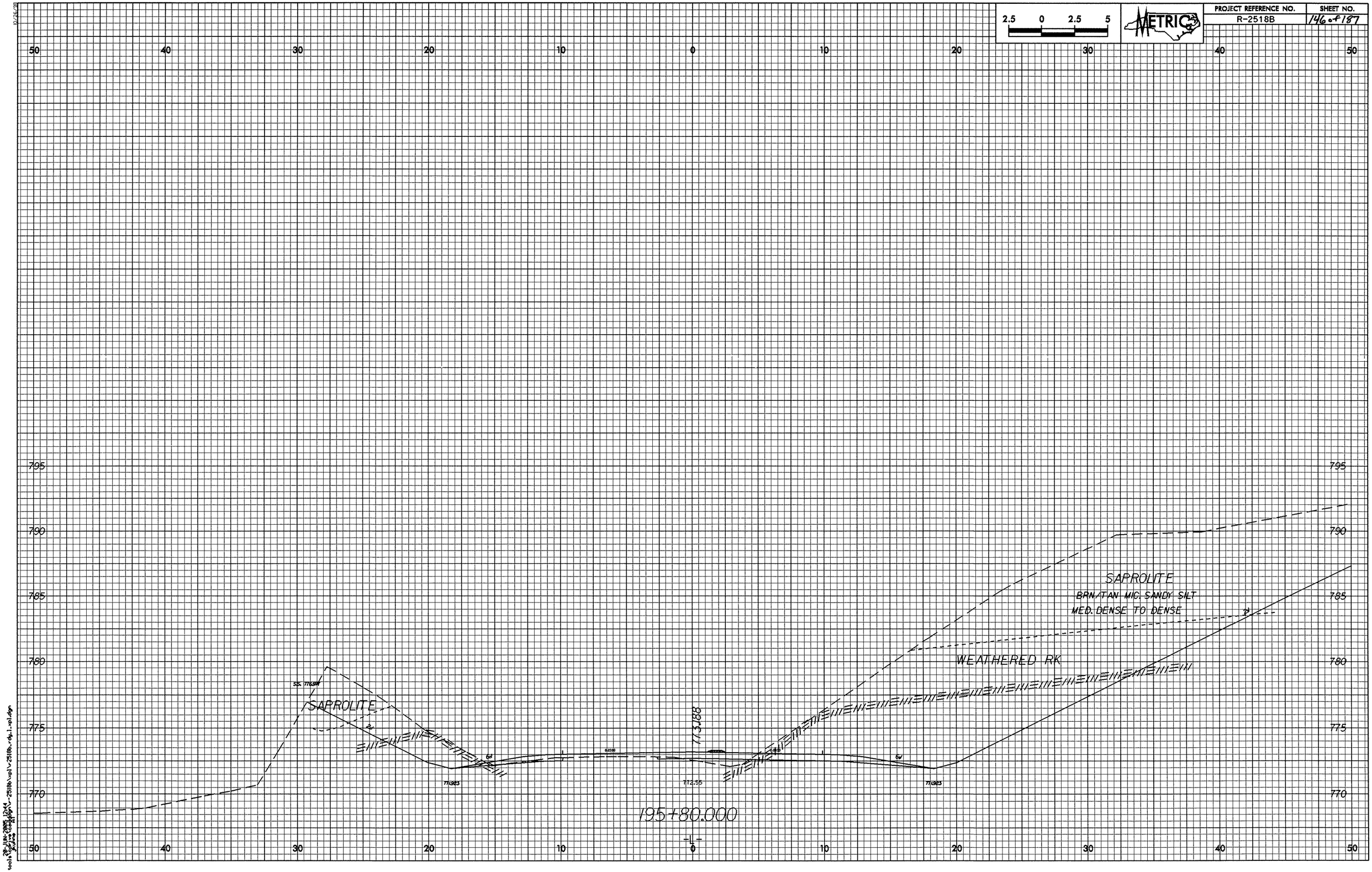
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
143 of 187
50 40 30 20 10 0 10 20 30 40 50
765
760
763.457
763.16
S.S. 761.686
S.S. 757.904
192+60.000
763.511
763.21
S.S. 763.062
S.S. 757.817
192+40.000
763.642
763.38
RDWY FILL
SILTY SAND W/ RK FRAGS
192+20
12 M RT
ALLUVIUM
BRN/GRAY CLAYEY SAND
8/17/04
S.S. 758.078
S.S. 758.114
192+20.000
763.852
EXISTING BRIDGE
12
9
12
17
23
35
25
32
36
64
88
100+
SAPROLITE
TAN/WHT MIC. SANDY SILT
WEATHERED ROCK
758.03
192+00.000
NOTE: RK SEAMS IN BOTTOM 2.0 M
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
144 of 187
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE
WEATHERED ROCK
769.860
769.46
768.595
195+20.000
768.899
768.54
767.586
767.634
Ditch Depth
195+00.000
768.017
767.65
766.687
194+80.000
767.212
766.89
-X15- INTERSECTION
194+60.000
766.486
766.20
194+40.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
145 of 187
50 40 30 20 10 0 10 20 30 40 50
785
780
775
770
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
WEATHERED ROCK
772.015
771.46
770.749
770.750
195+60.000
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
WEATHERED ROCK
770.899
770.43
769.617
769.633
195+40.000
-L-



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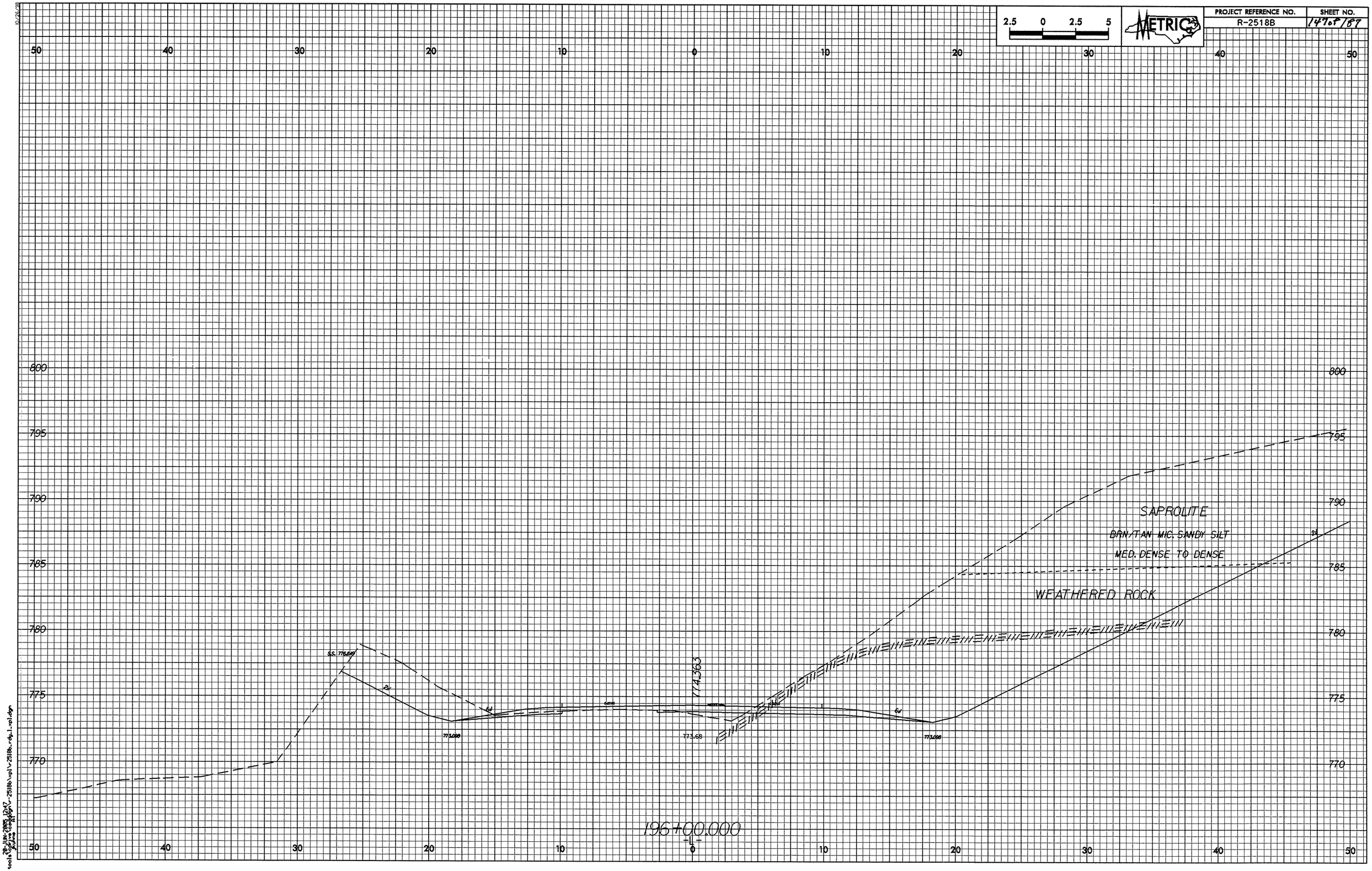
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
146 of 187
50 40 30 20 10 0 10 20 30 40 50
795
790
785
780
775
770
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
WEATHERED RK
SAPROLITE
773.188
772.55
195+80.000
-L-



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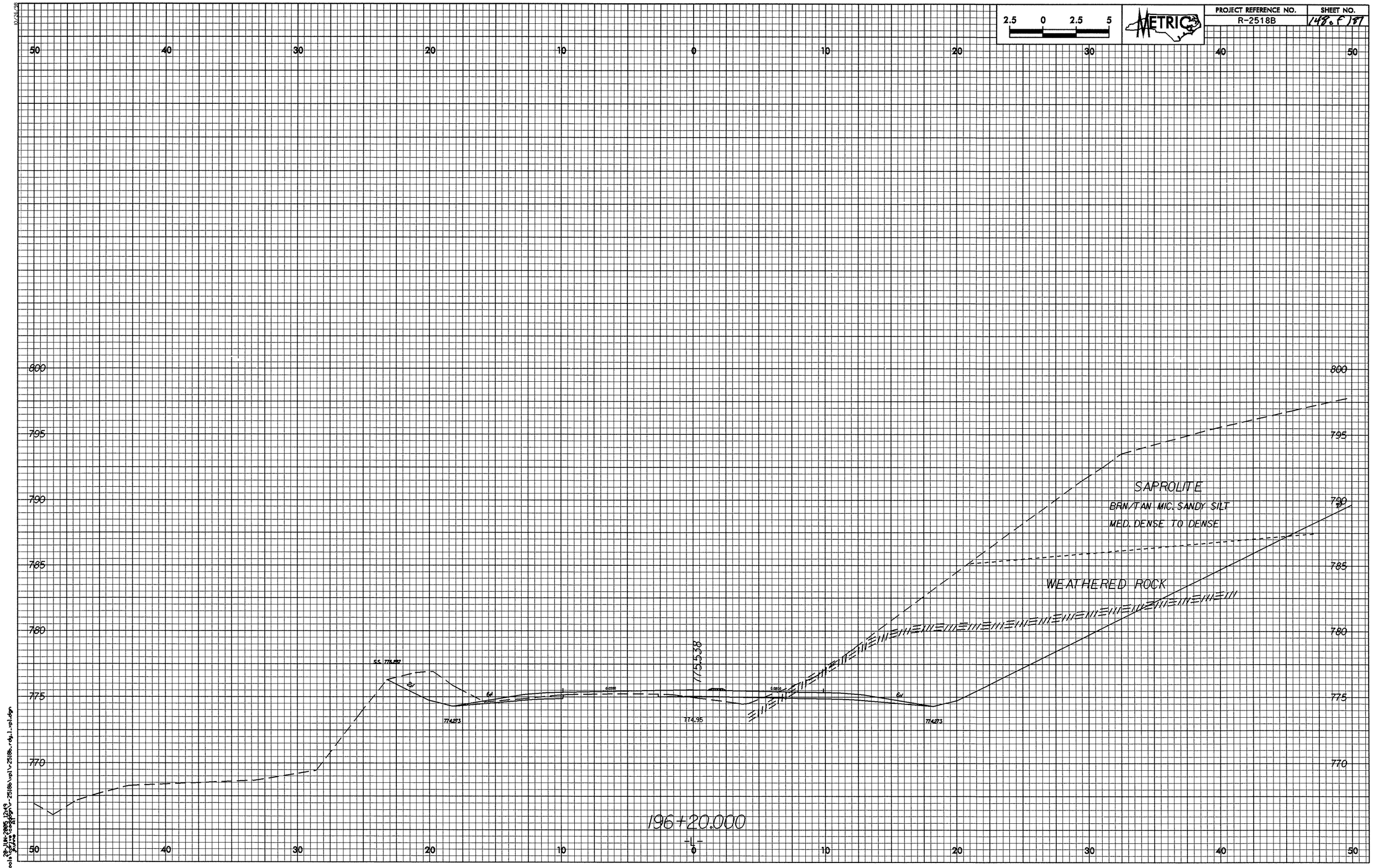
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
147 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
775
770
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
WEATHERED ROCK
774.363
773.68
773.098
196+00.000
-L-



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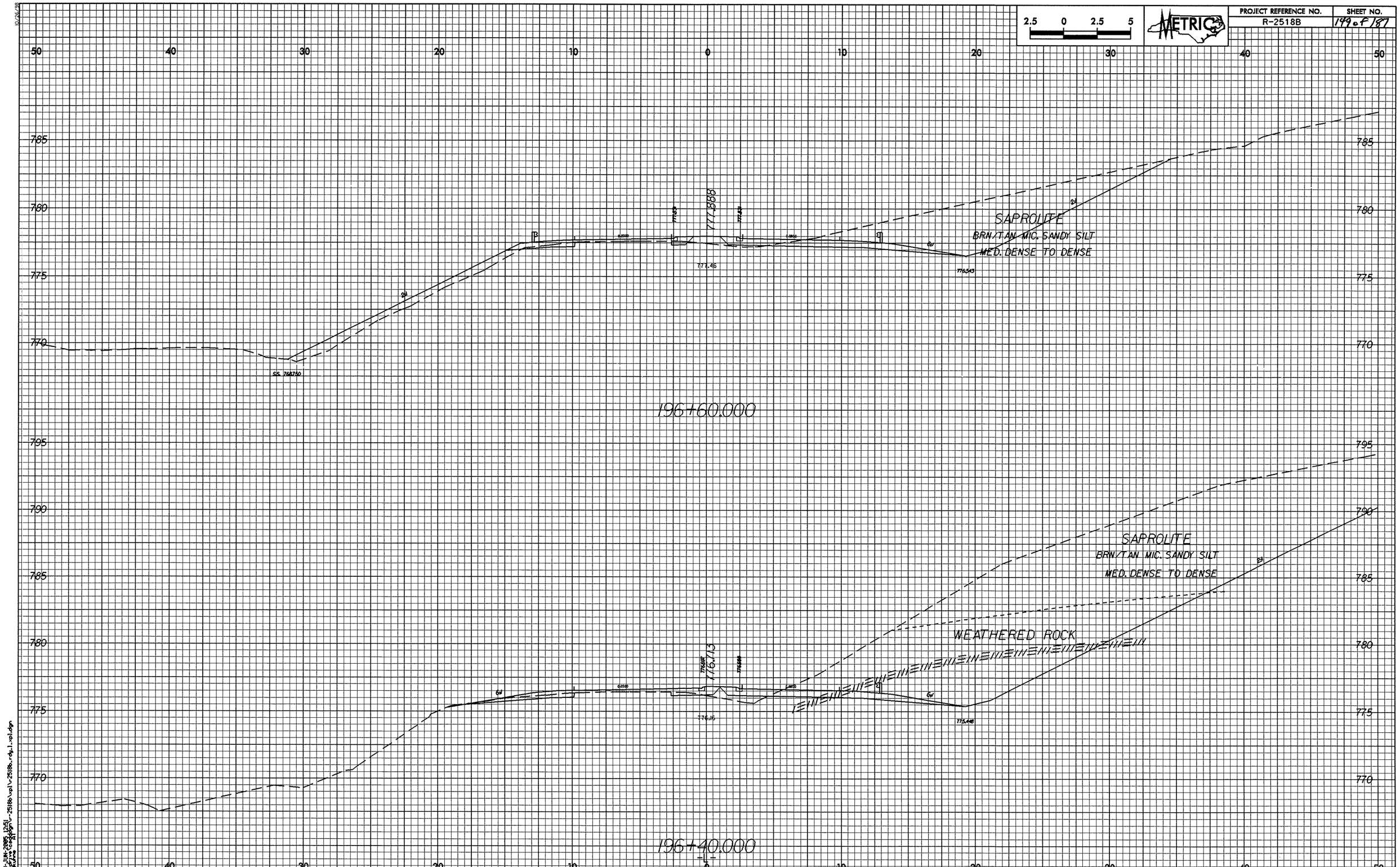
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
148 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
775
770
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
WEATHERED ROCK
775.538
774.95
774.273
196+20.000
-L-



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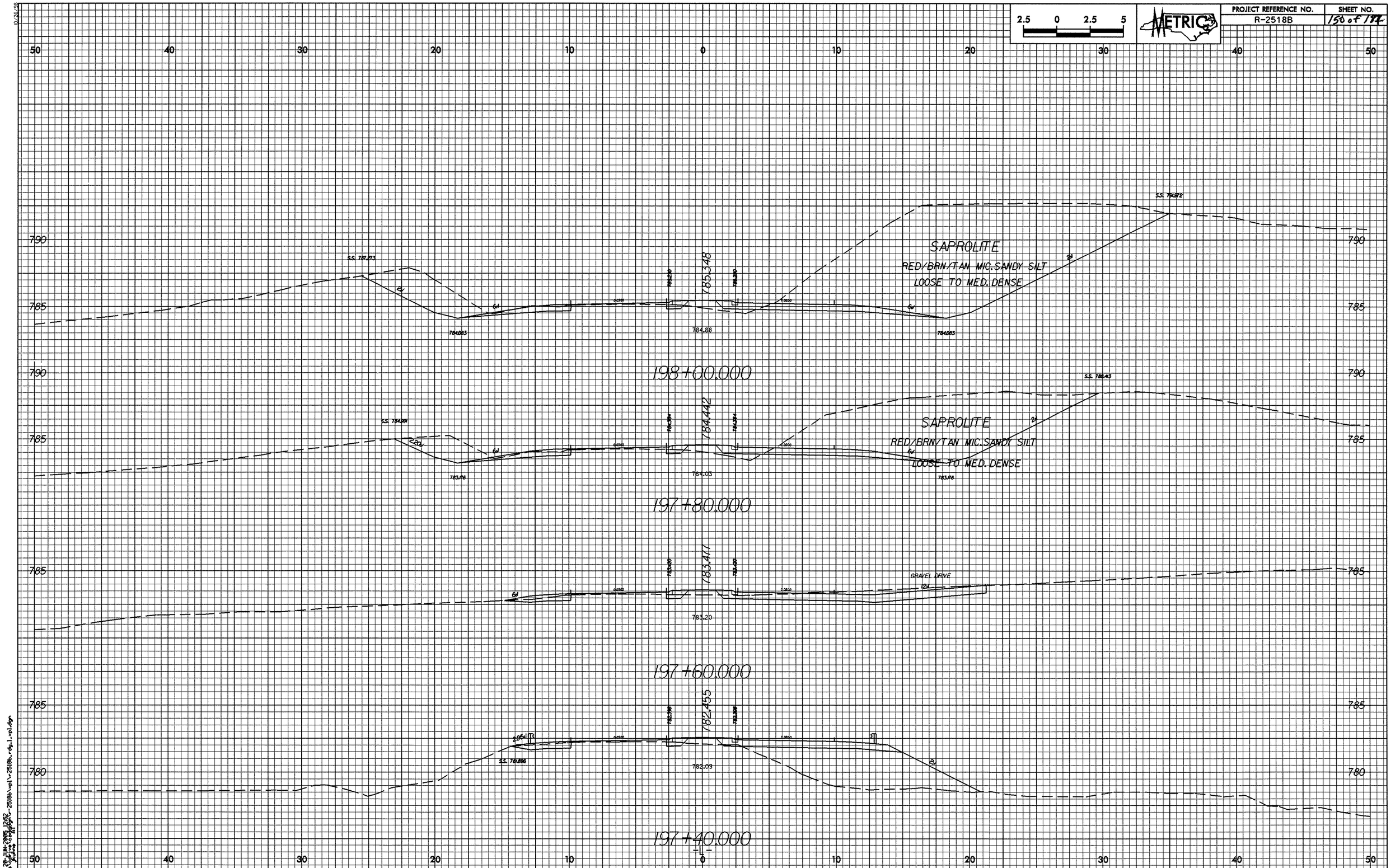
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
149 of 187
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
777.888
777.46
776.543
196+60.000
SAPROLITE
BRN/TAN MIC. SANDY SILT
MED. DENSE TO DENSE
WEATHERED ROCK
776.713
776.16
775.448
196+40.000



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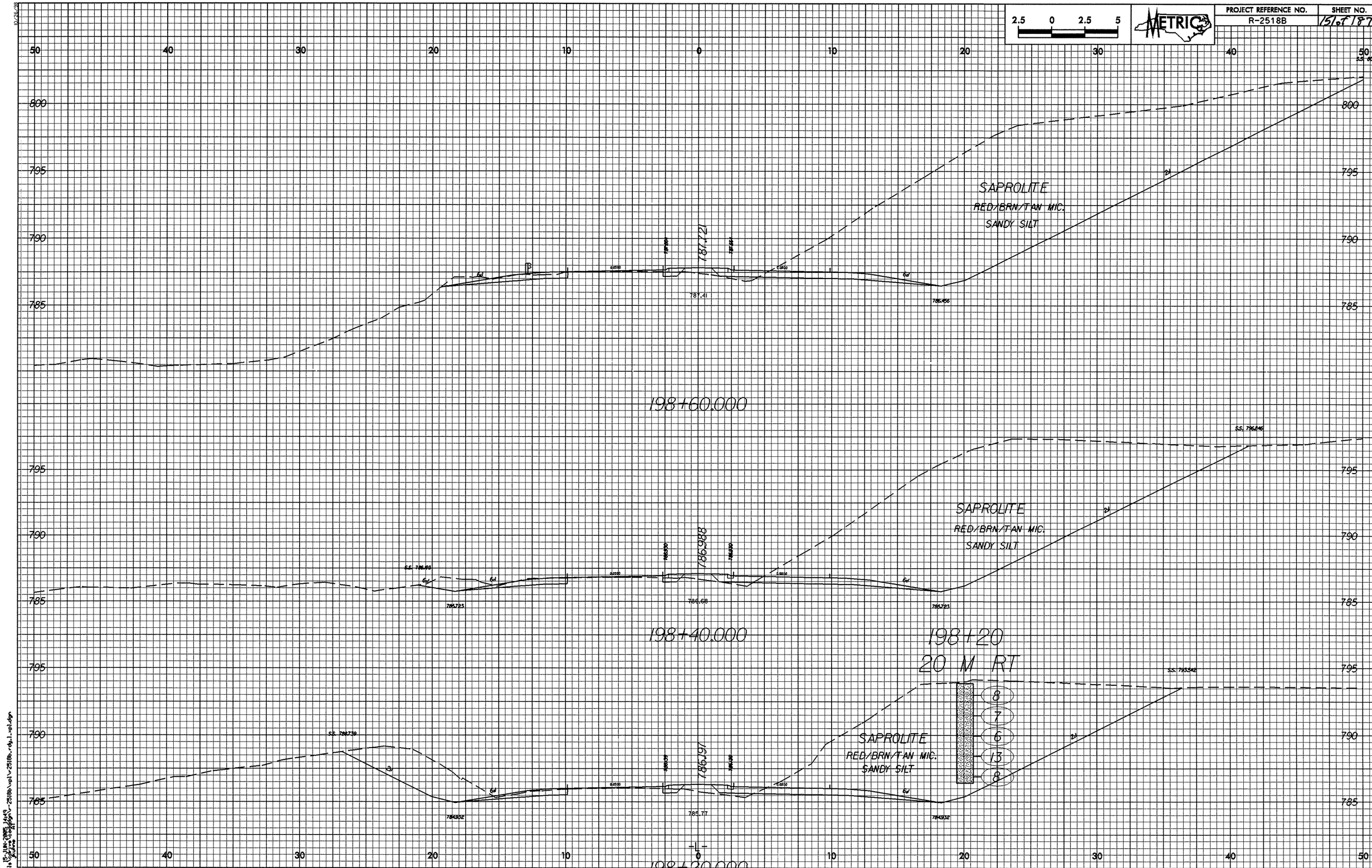
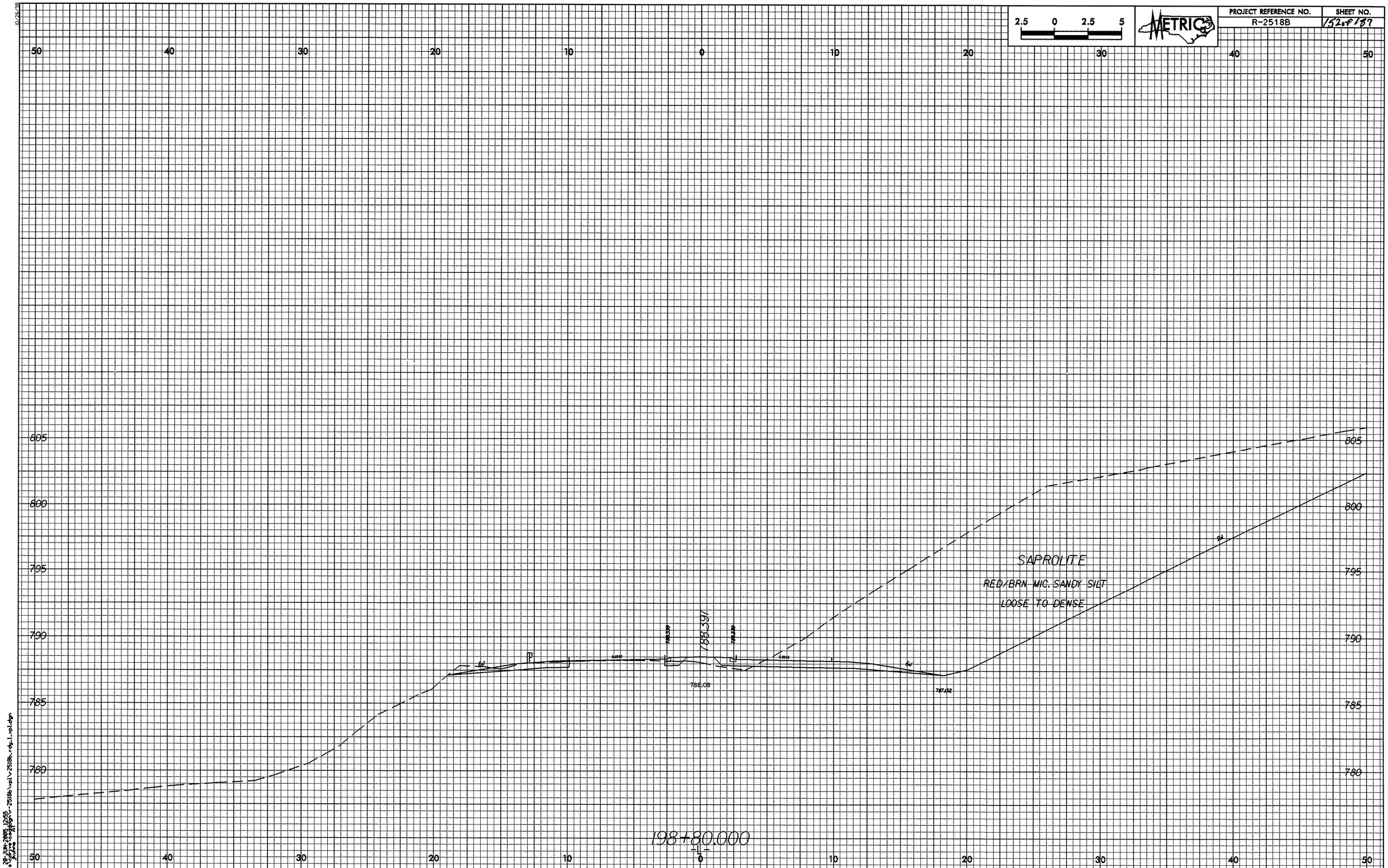
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
150 of 192
SAPROLITE
RED/BRN/TAN MIC. SANDY SILT
LOOSE TO MED. DENSE
785.348
784.88
198+00.000
SAPROLITE
RED/BRN/TAN MIC. SANDY SILT
LOOSE TO MED. DENSE
784.442
784.03
197+80.000
GRAVEL DRIVE
783.411
783.20
197+60.000
782.455
782.09
197+40.000



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
151 of 187
SAPROLITE
RED/BRN/TAN MIC.
SANDY SILT
787.721
787.41
786.456
198+60.000
SAPROLITE
RED/BRN/TAN MIC.
SANDY SILT
786.988
786.68
786.723
786.723
198+40.000
198+20
20 M RT
SAPROLITE
RED/BRN/TAN MIC.
SANDY SILT
786.191
785.77
784.932
784.932
8
7
6
13
8
-L-
198+20.000



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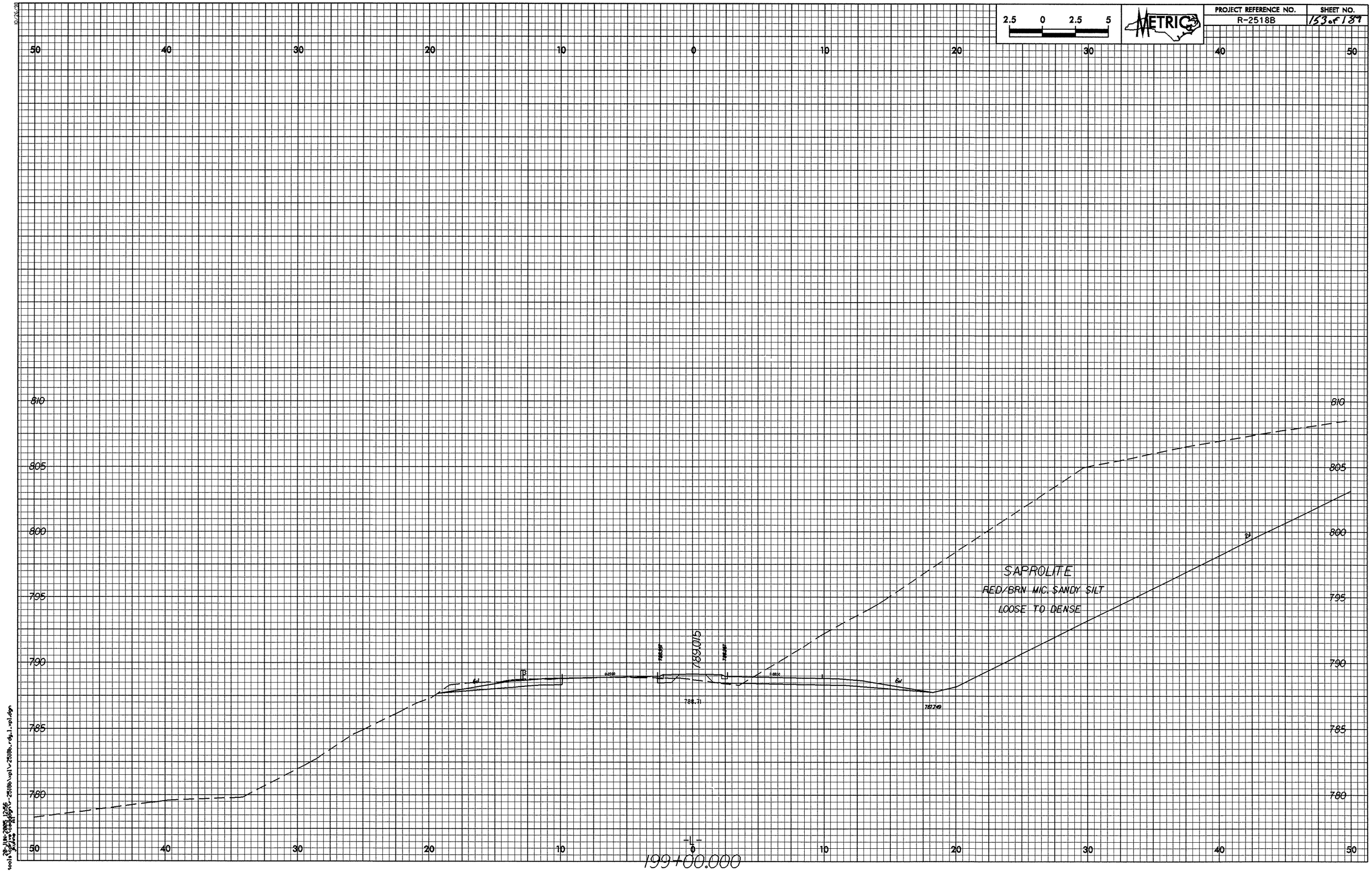
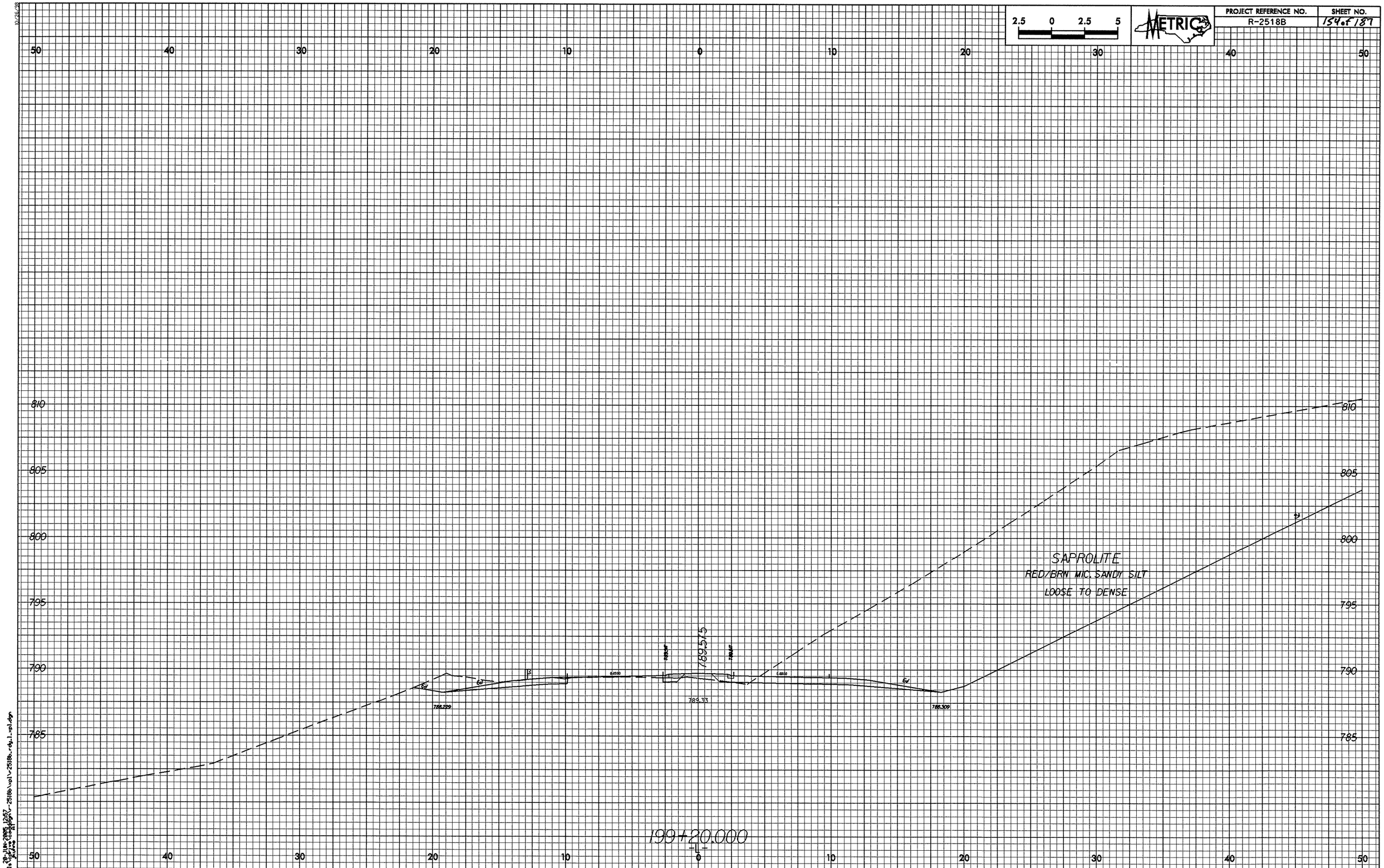
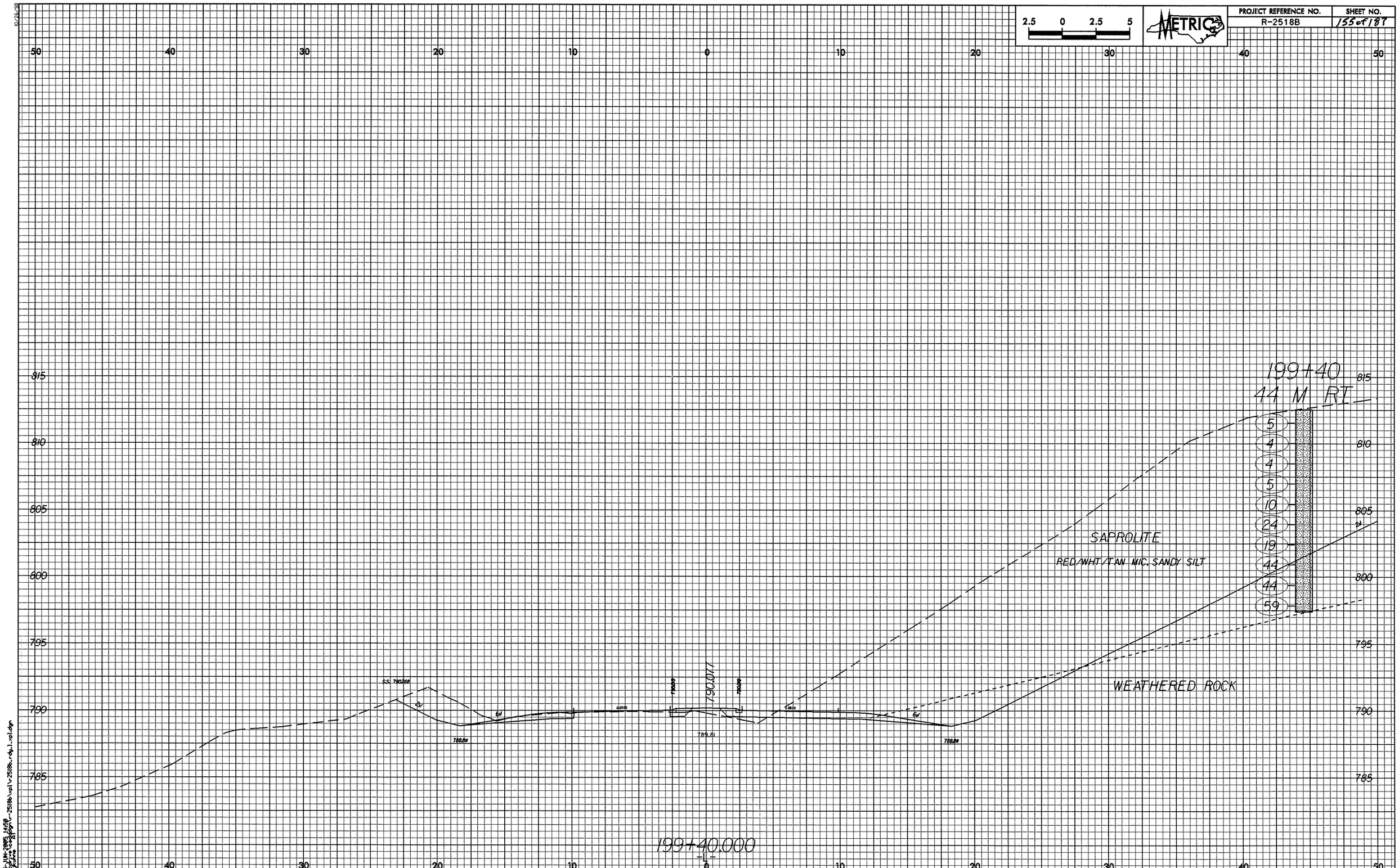
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
152 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
785
780
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
788.391
788.08
787.132
198+80.000
-L-



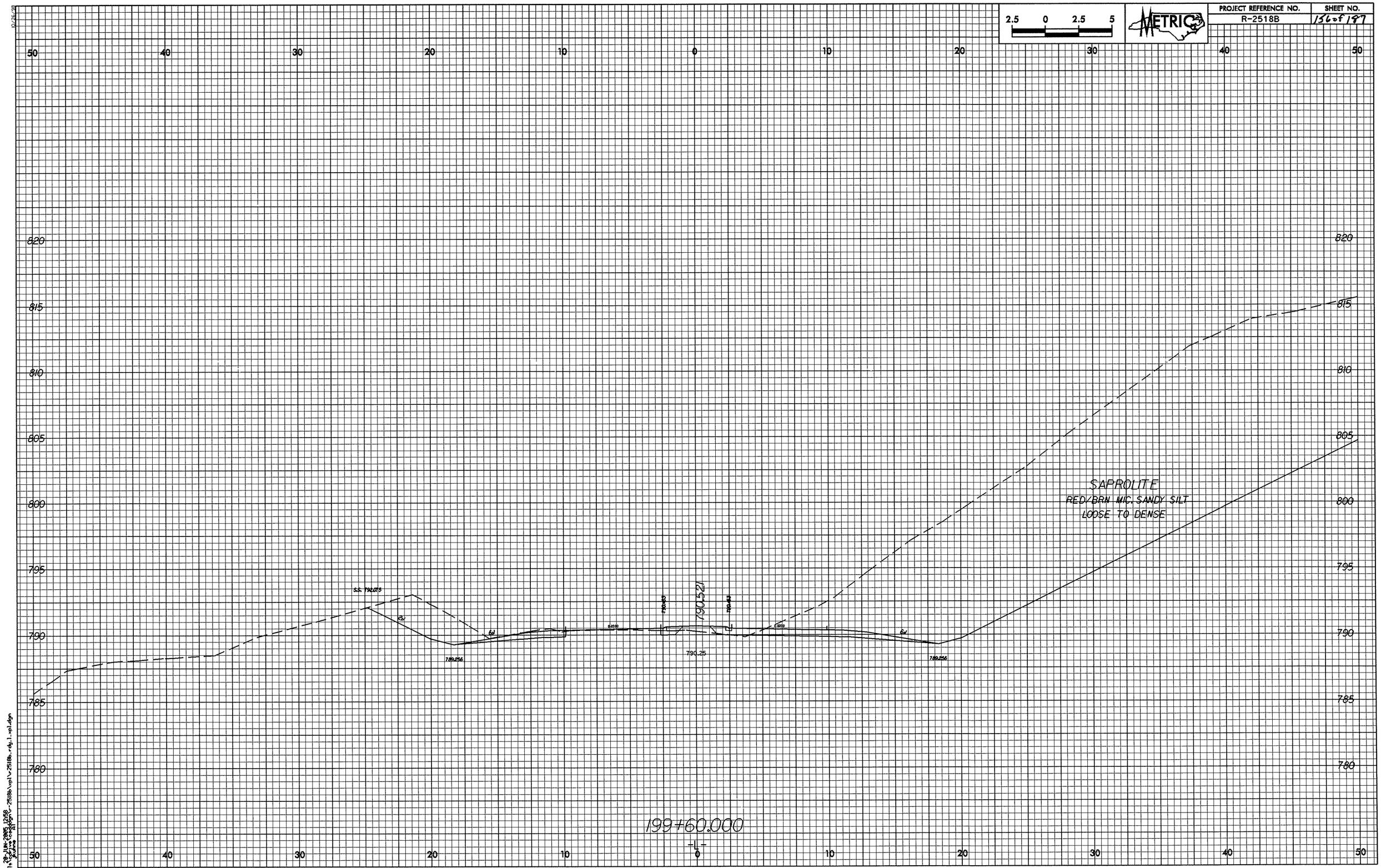
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
153 of 187
50 40 30 20 10 0 10 20 30 40 50
810
805
800
795
790
785
780
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
789.015
788.71
787.749
-L-
199+00.000



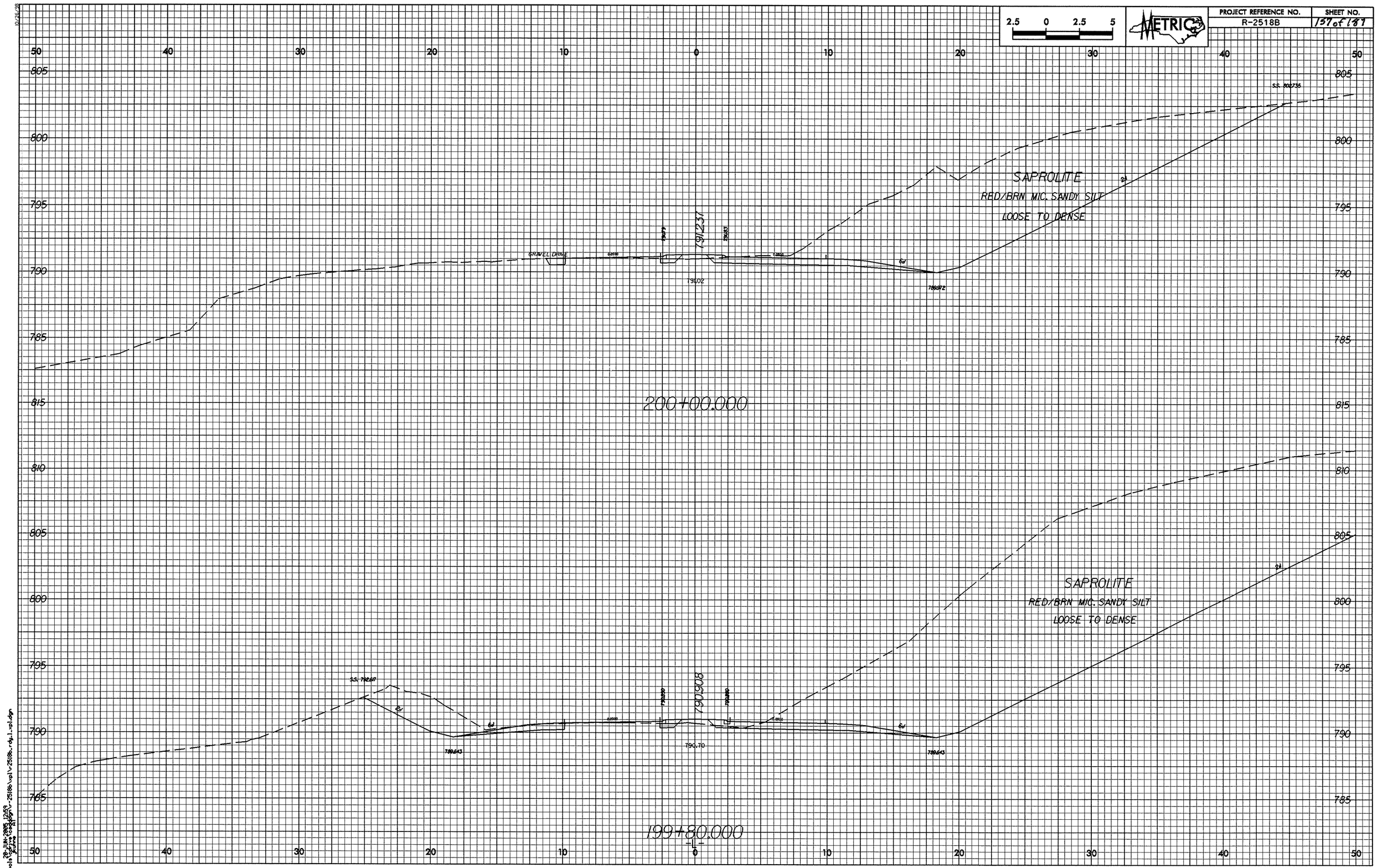
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
154 of 187
50 40 30 20 10 0 10 20 30 40 50
810
805
800
795
790
785
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
789.575
788.229
789.33
788.309
199+20.000
-L-



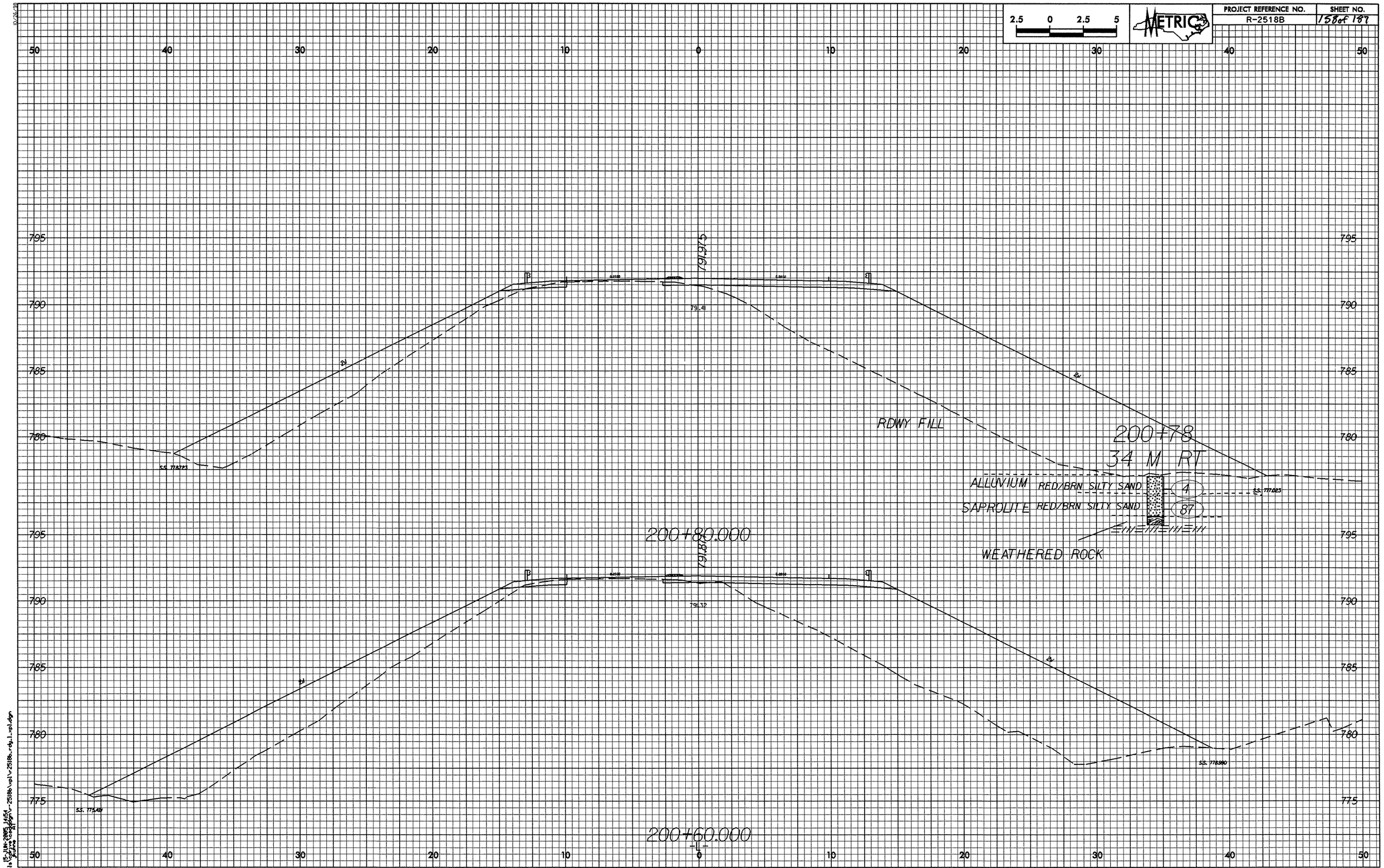
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
155 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
795
790
785
199+40
44 M RT
5
4
4
5
10
24
19
44
44
59
SAPROLITE
RED/WHT/TAN MIC. SANDY SILT
WEATHERED ROCK
S.S. 790.268
790.077
789.81
199+40.000
-L-



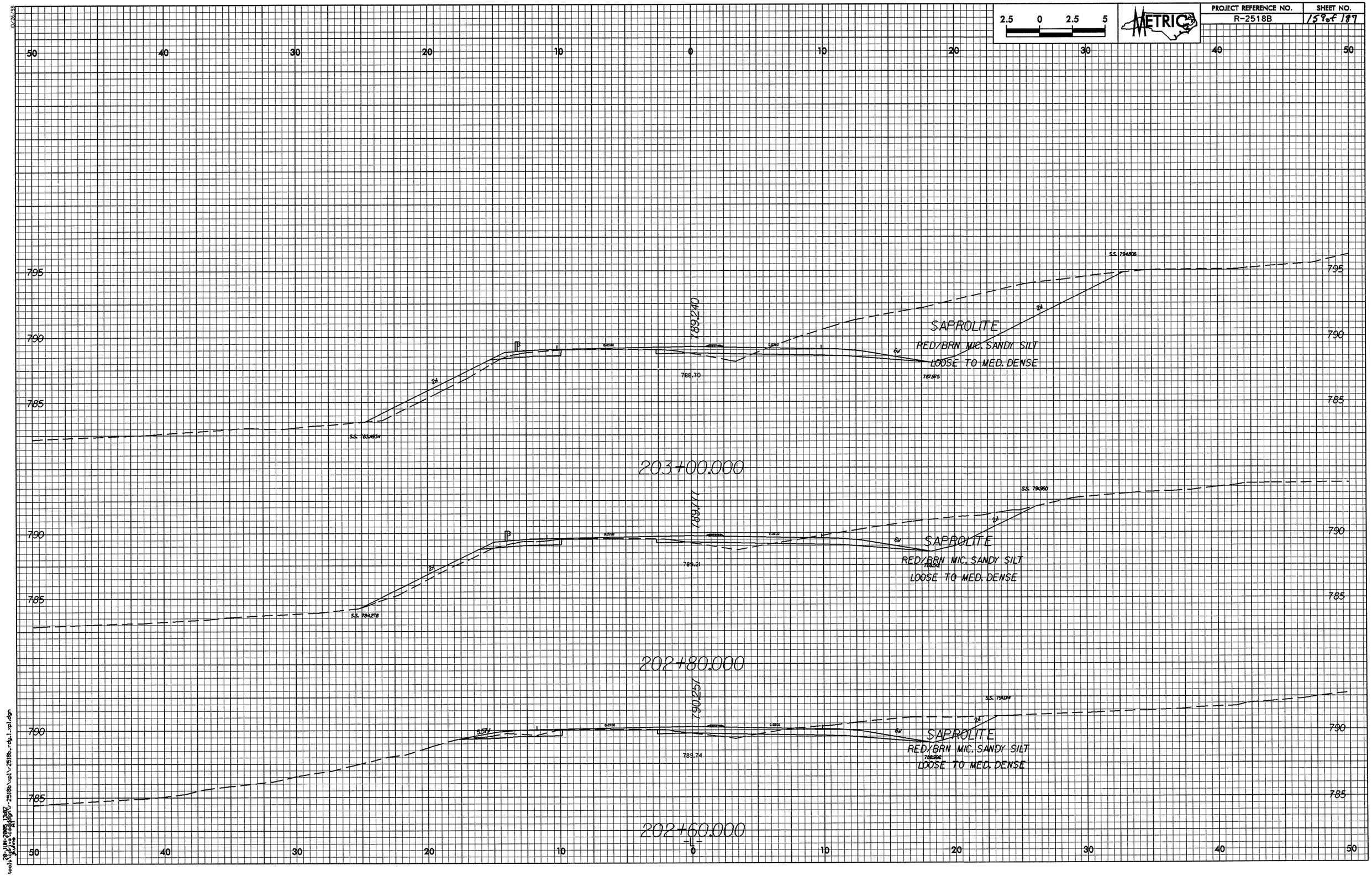
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
156 of 187
50 40 30 20 10 0 10 20 30 40 50
820
815
810
805
800
795
790
785
780
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
S.S. 792.075
790.521
789.256
790.25
789.256
199+60.000
-L-



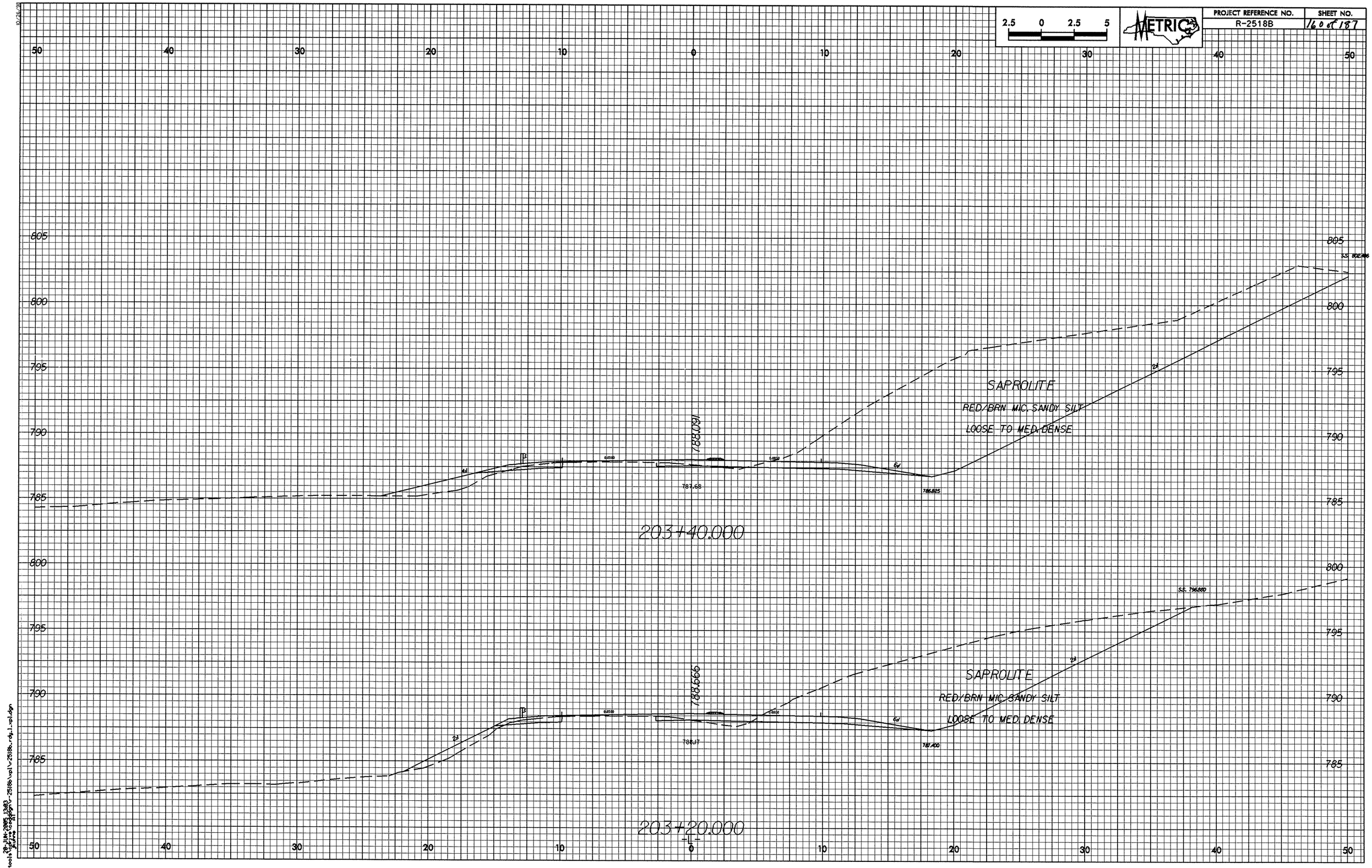
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
157 of 187
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
GRAVEL DRIVE
791.237
791.02
789.972
200+00.000
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO DENSE
790.908
790.70
789.643
789.643
199+80.000
-L-



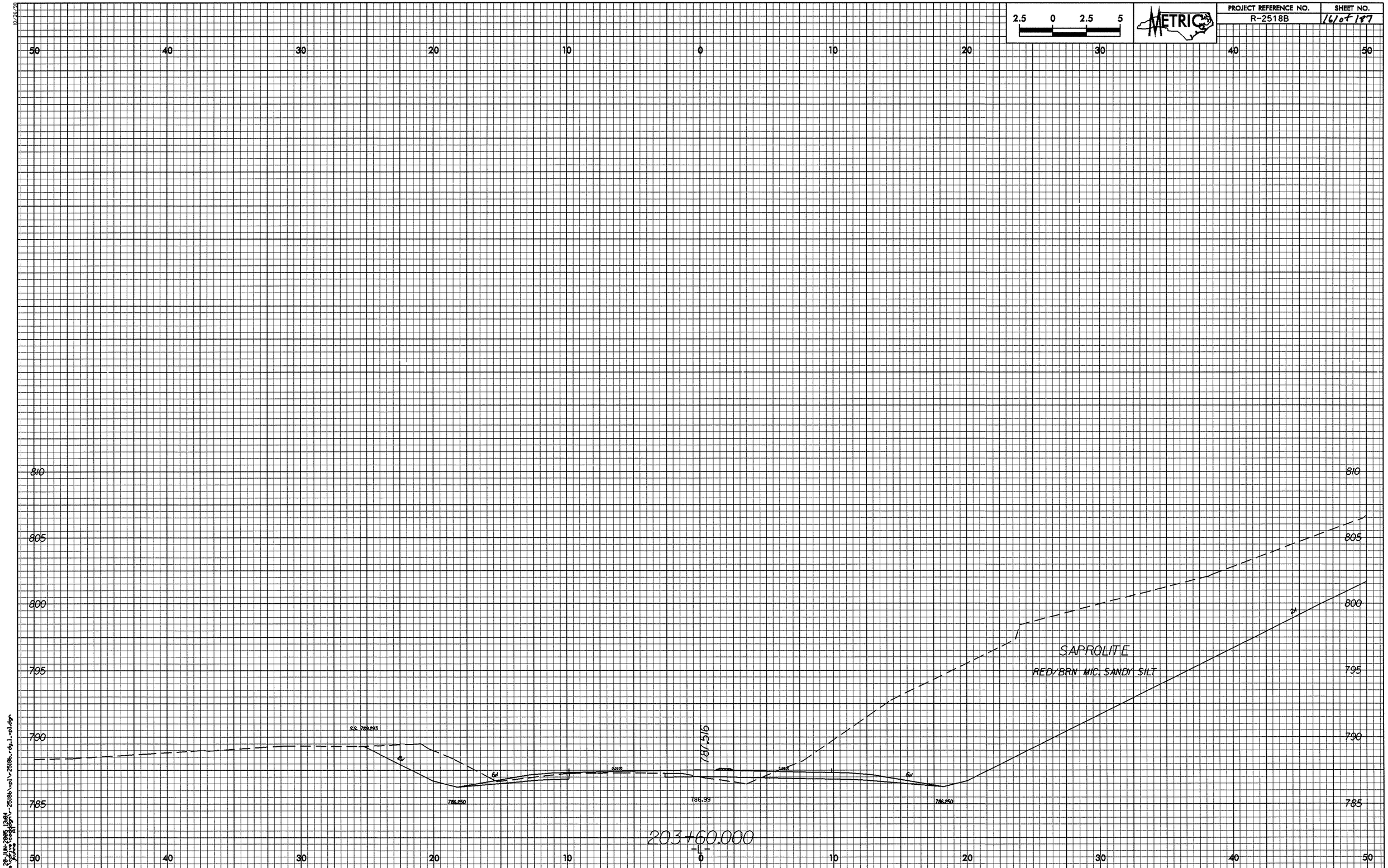
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
158 of 187
50 40 30 20 10 0 10 20 30 40 50
795
790
785
780
775
791.975
791.41
RDWY FILL
200+78
34 M RT
ALLUVIUM RED/BRN SILTY SAND
SAPROLITE RED/BRN SILTY SAND
4
87
WEATHERED ROCK
200+80.000
791.87
791.32
200+60.000
-L-



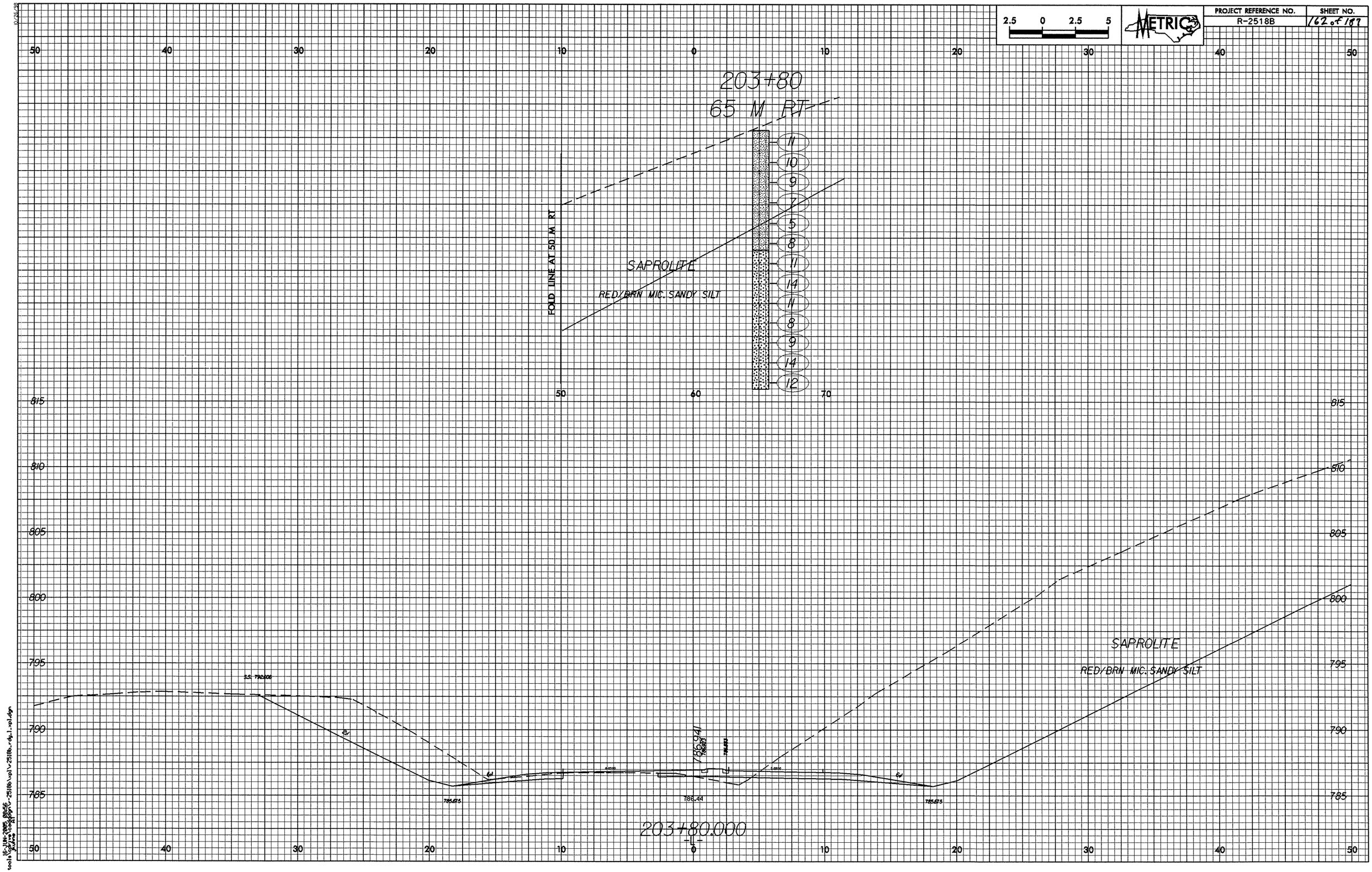
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
159 of 187
50 40 30 20 10 0 10 20 30 40 50
795
790
785
789.240
788.70
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
203+00.000
789.777
789.21
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
202+80.000
790.257
789.74
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
202+60.000



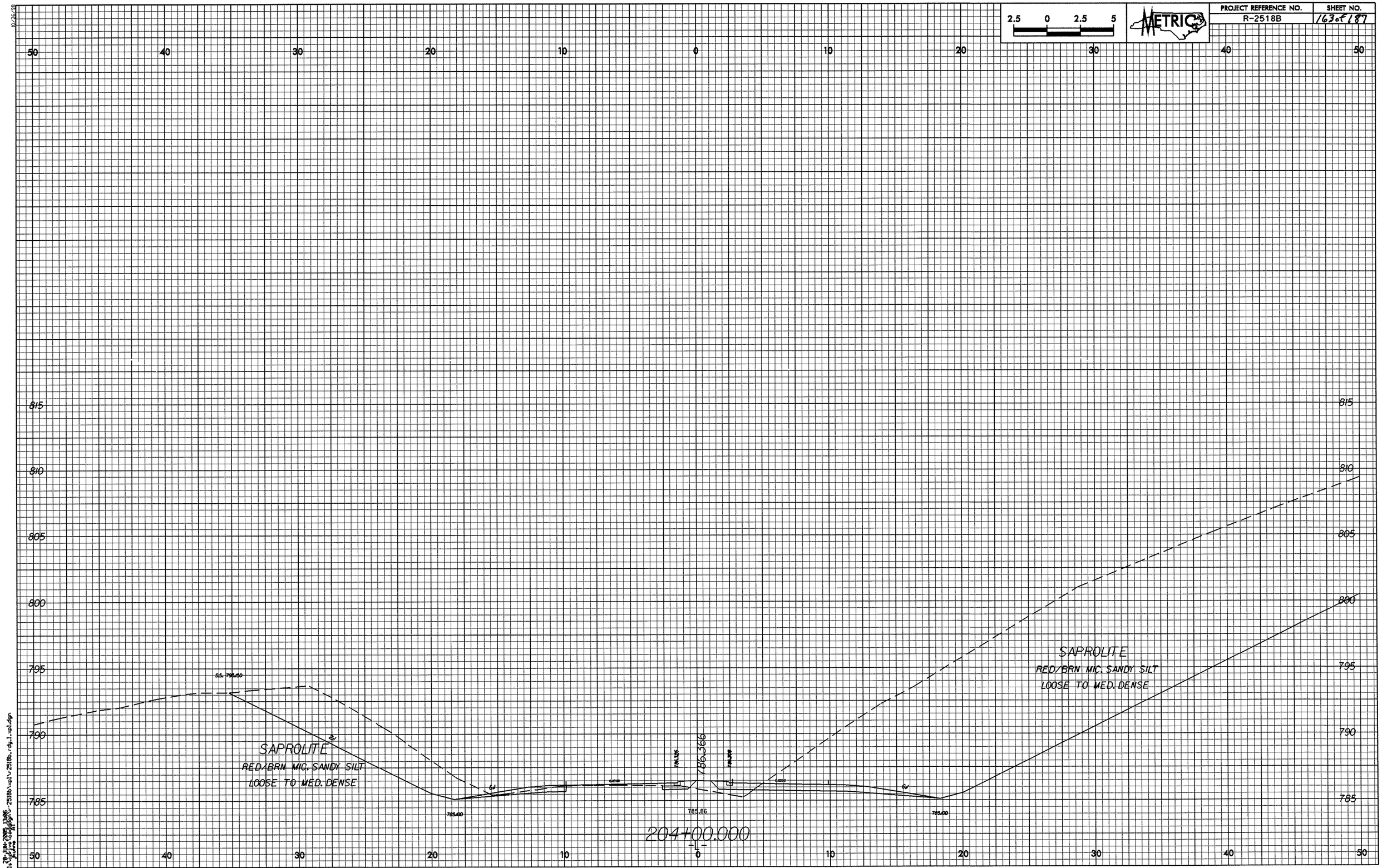
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
160 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
785
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
788.091
787.68
786.825
203+40.000
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
788.666
788.17
787.400
203+20.000
-L-



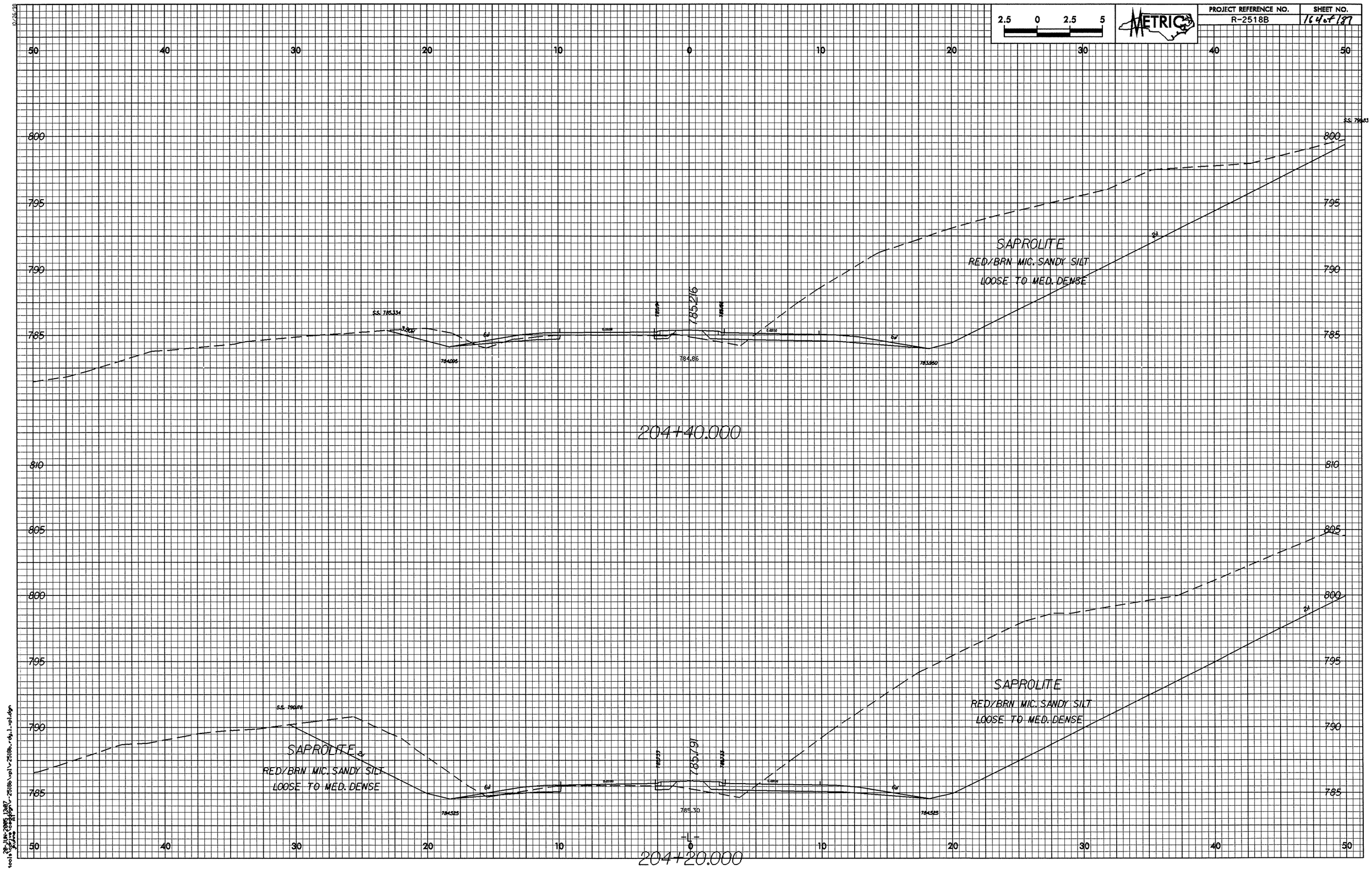
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
161 of 187
50 40 30 20 10 0 10 20 30 40 50
810
805
800
795
790
785
SAPROLITE
RED/BRN MIC. SANDY SILT
787.516
786.250
786.99
786.250
203+60.000
-L-



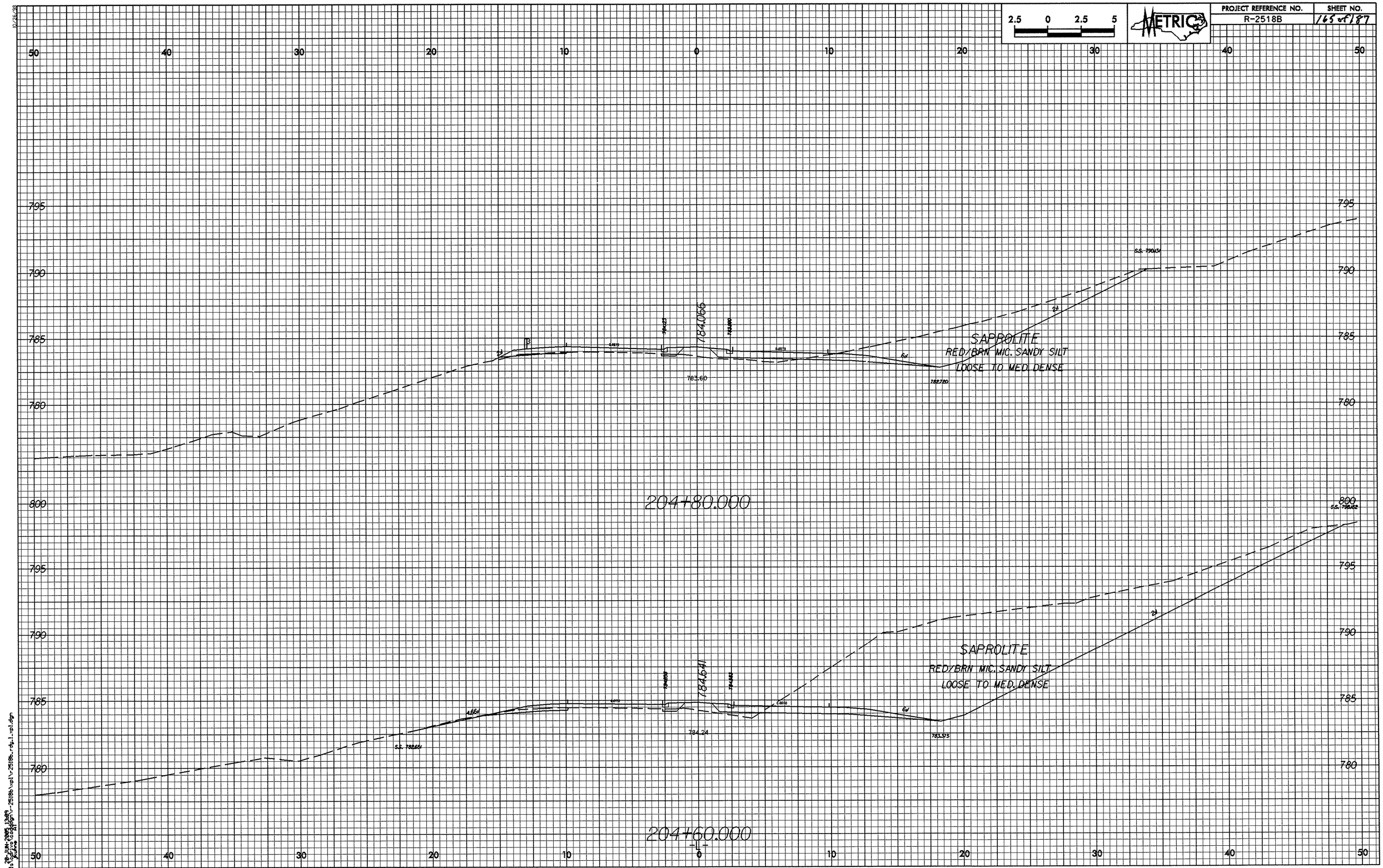
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
162 of 187
203+80
65 M RT
FOLD LINE AT 50 M RT
SAPROLITE
RED/BRN MIC. SANDY SILT
11
10
9
7
5
8
11
14
11
8
9
14
12
50
60
70
815
810
805
800
795
790
785
SAPROLITE
RED/BRN MIC. SANDY SILT
786.941
786.44
785.675
203+80.000
-L-



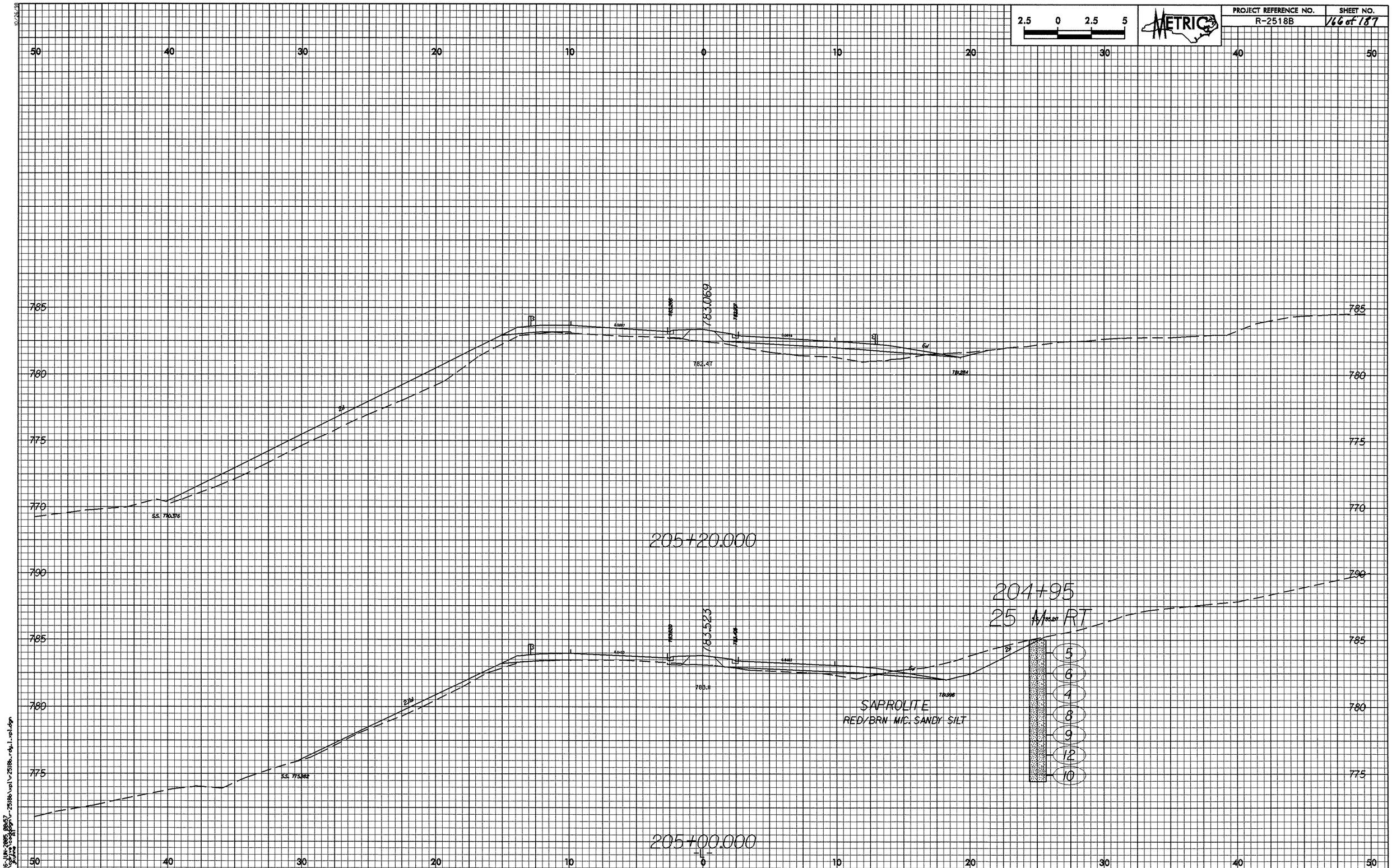
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
163 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
795
790
785
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
786.366
785.86
204+00.000
-L-



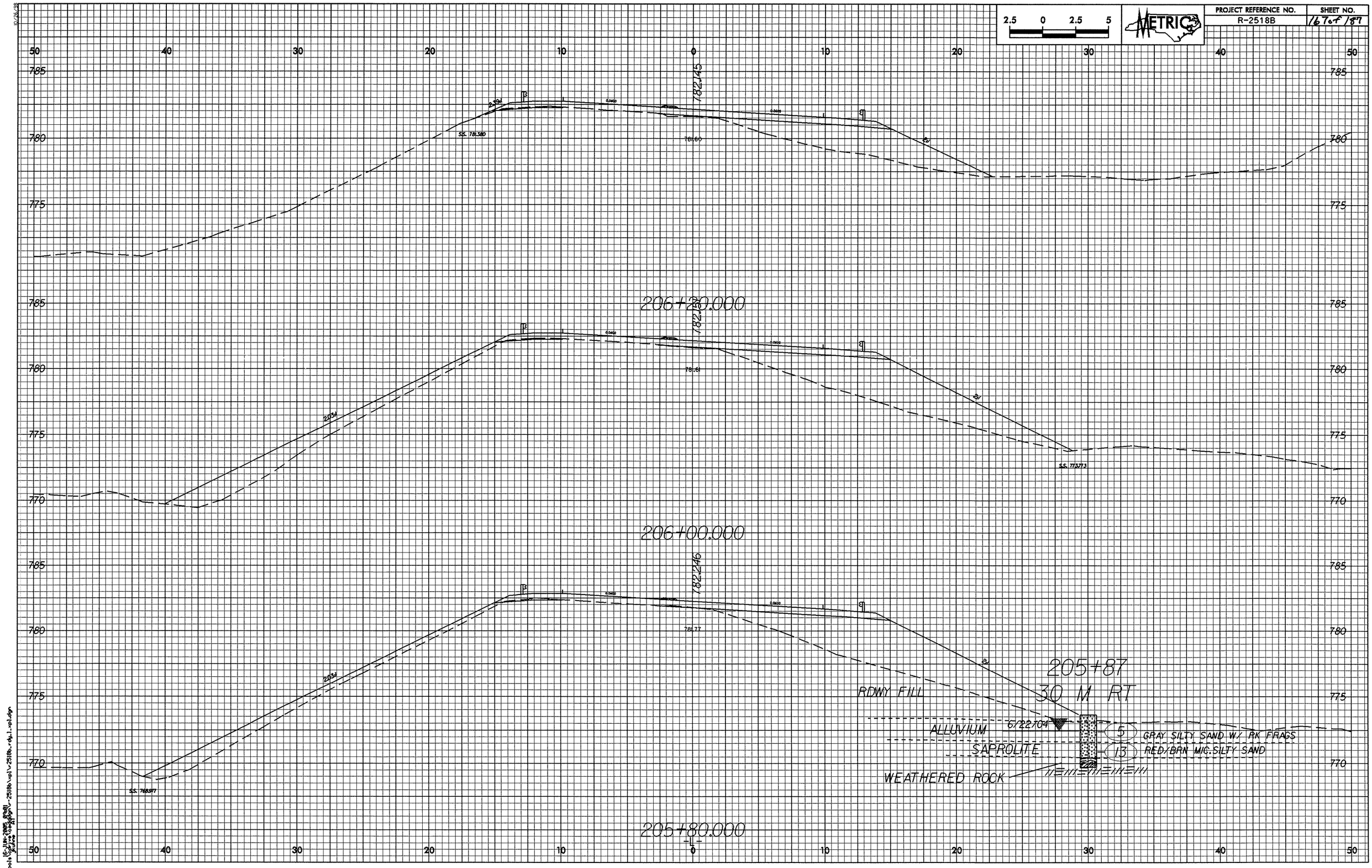
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
164 of 187
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
785.216
784.86
204+40.000
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
785.791
785.30
204+20.000



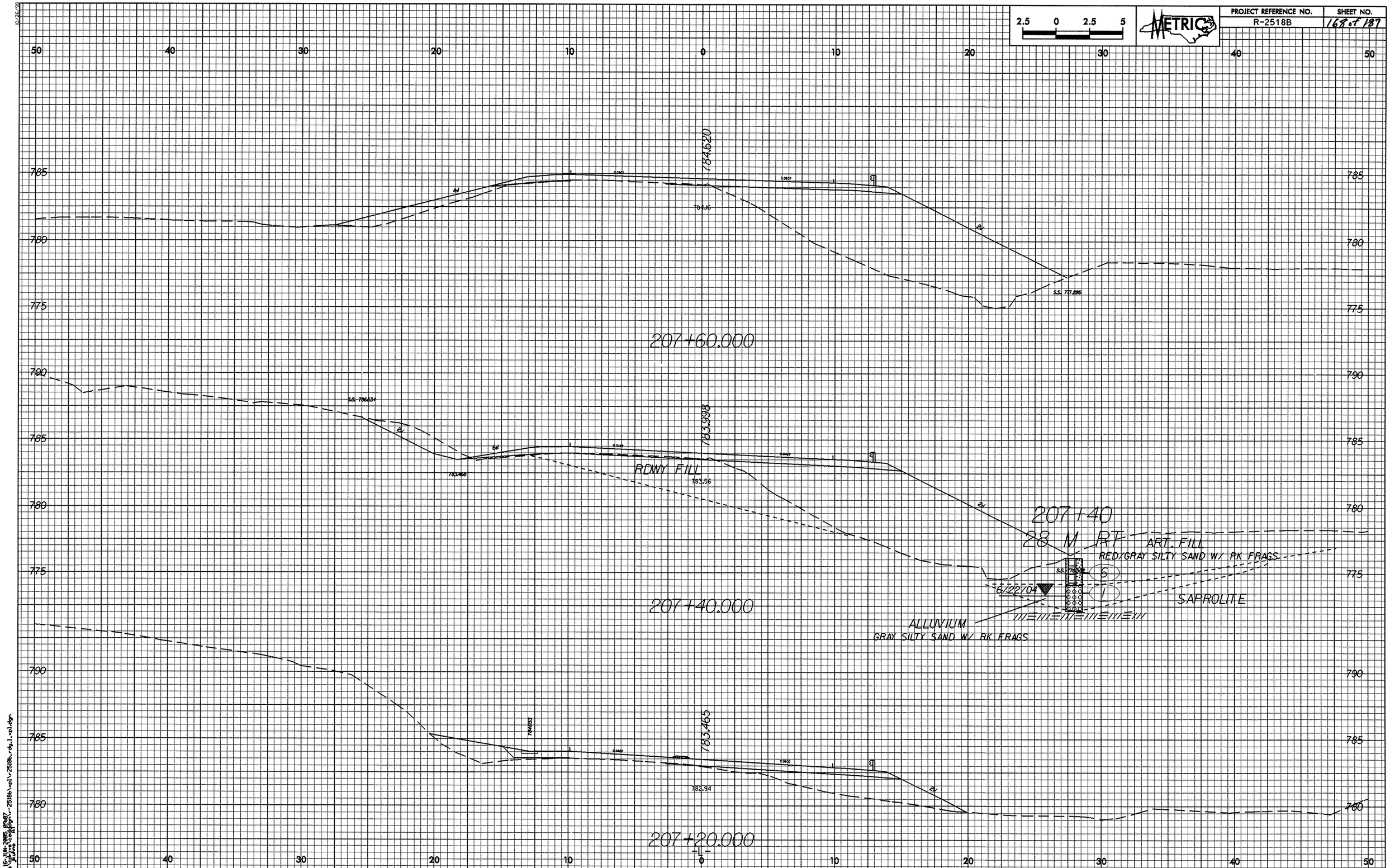
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
165 of 187
50 40 30 20 10 0 10 20 30 40 50
795
790
785
780
800
784.066
783.60
782.720
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
204+80.000
784.641
784.24
783.375
SAPROLITE
RED/BRN MIC. SANDY SILT
LOOSE TO MED. DENSE
204+60.000



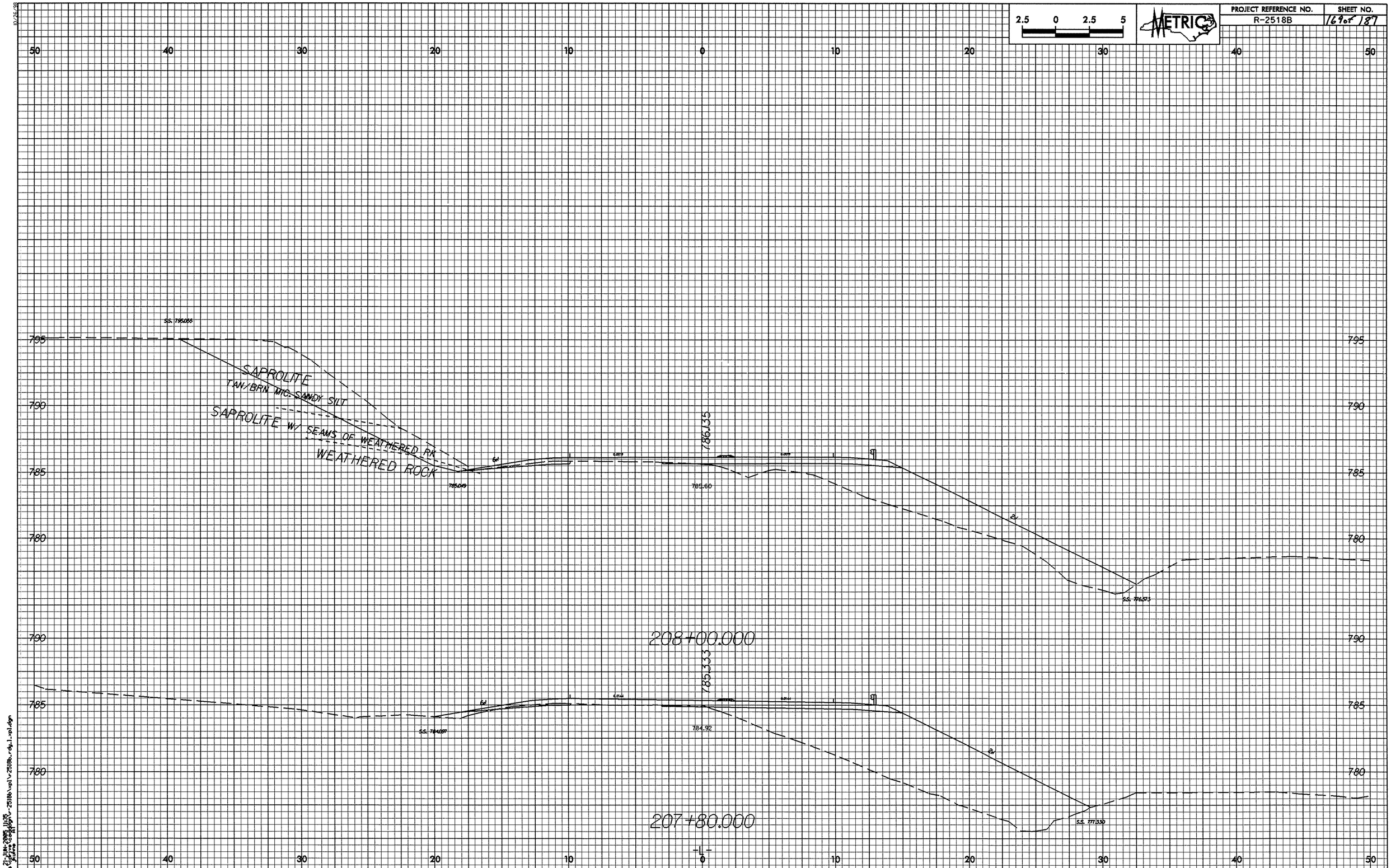
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
166 of 187
50 40 30 20 10 0 10 20 30 40 50
785
780
775
770
790
783.069
782.47
S.S. 770.376
205+20.000
204+95
25 M RT
783.523
783.11
SAPROLITE
RED/BRN MIC. SANDY SILT
5
6
4
8
9
12
10
S.S. 775.882
205+00.000



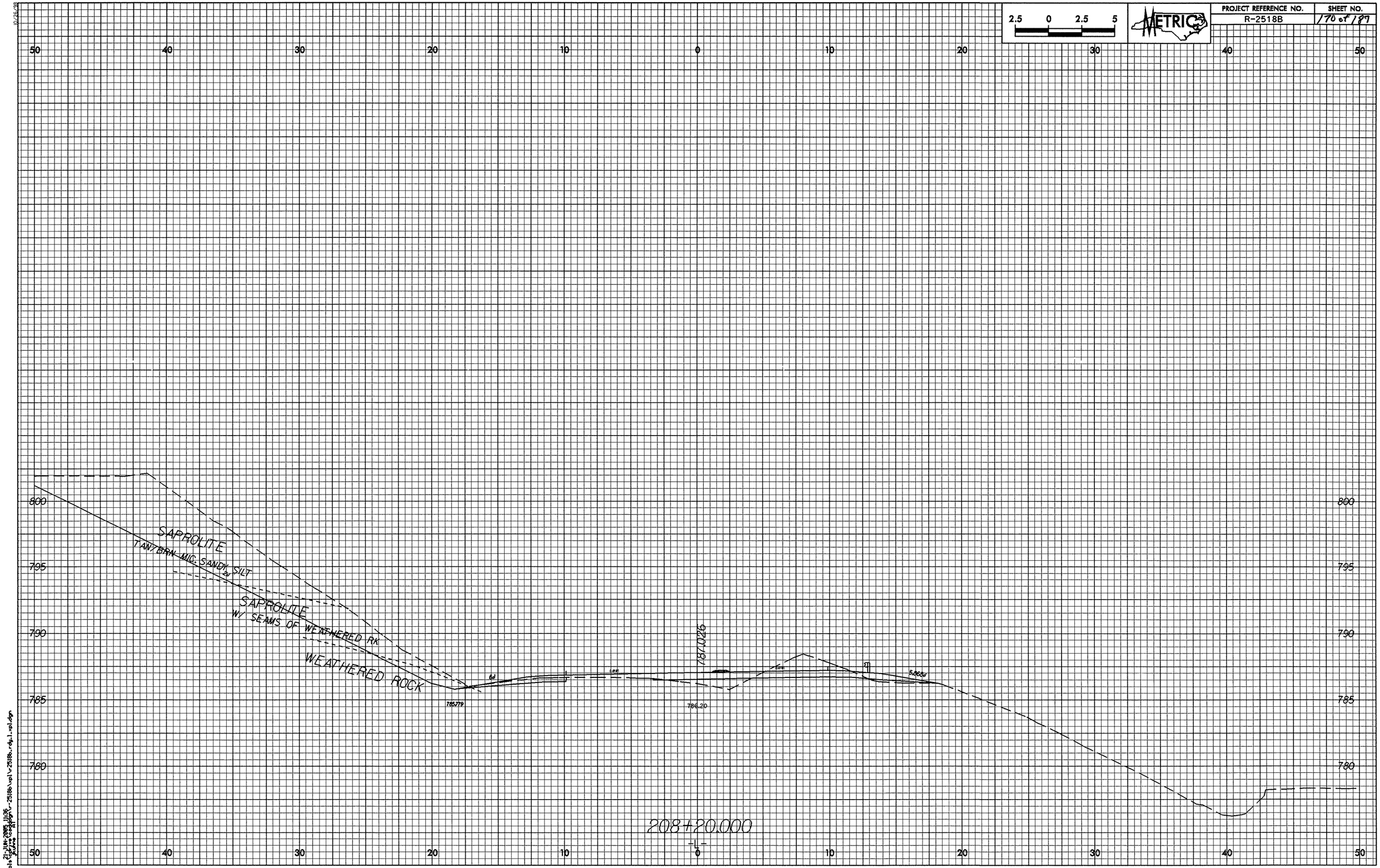
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
167 of 187
50 40 30 20 10 0 10 20 30 40 50
785
780
775
770
182.145
S.S. 781.380
781.60
206+20.000
182.150
781.61
S.S. 773.773
206+00.000
182.246
781.77
S.S. 768.977
205+87
30 M RT
RDWY FILL
ALLUVIUM
6/22/04
SAPROLITE
WEATHERED ROCK
5
GRAY SILTY SAND W/ RK FRAGS
13
RED/BRN MIC. SILTY SAND
205+80.000
-L-



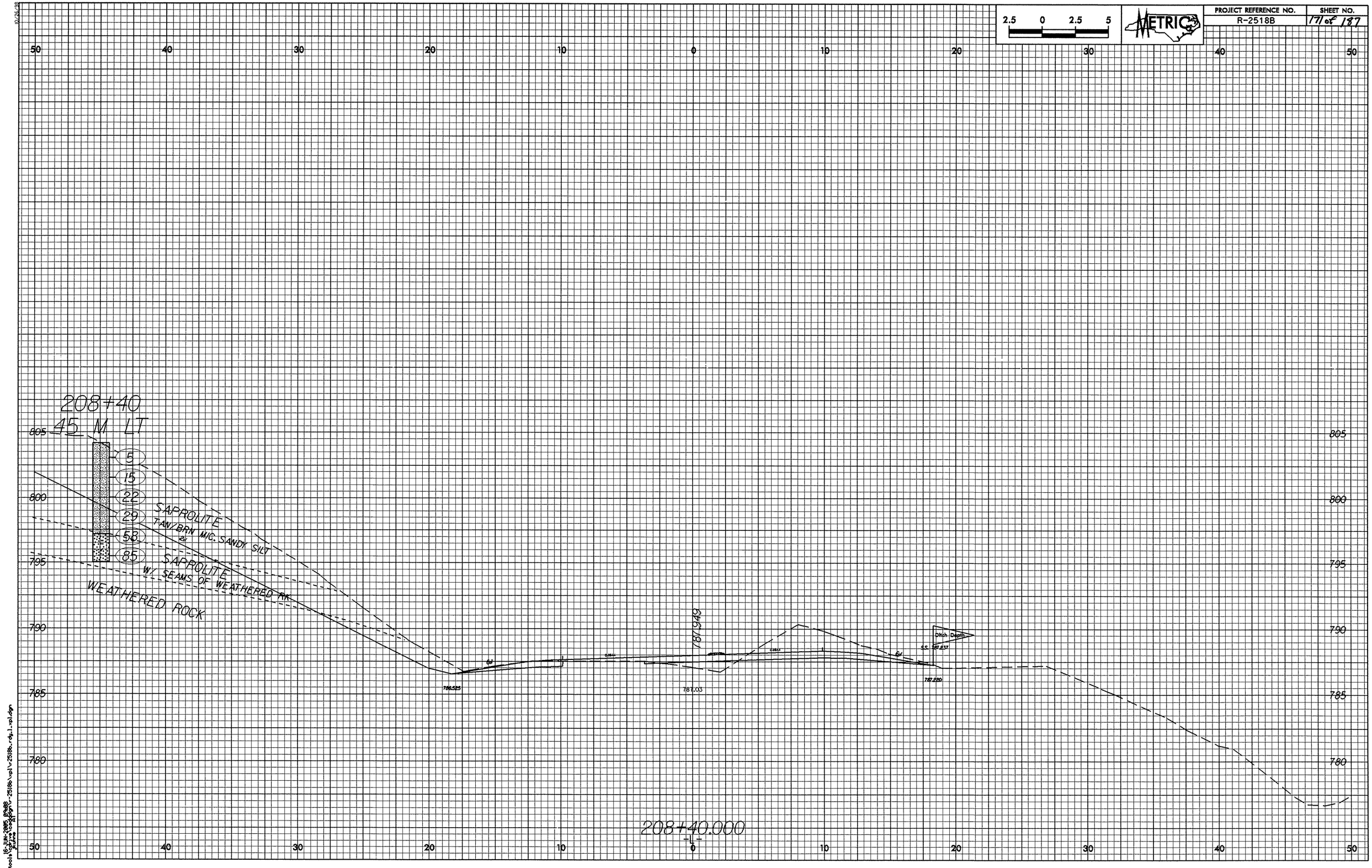
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
168 of 187
50 40 30 20 10 0 10 20 30 40 50
785
780
775
790
784.620
764.16
S.S. 777.286
207+60.000
S.S. 786.634
783.998
RDWY FILL
783.56
207+40
28 M RT
ART. FILL
RED/GRAY SILTY SAND W/ RK FRAGS
6/22/04
SAPROLITE
ALLUVIUM
GRAY SILTY SAND W/ RK FRAGS
207+40.000
783.465
782.94
207+20.000



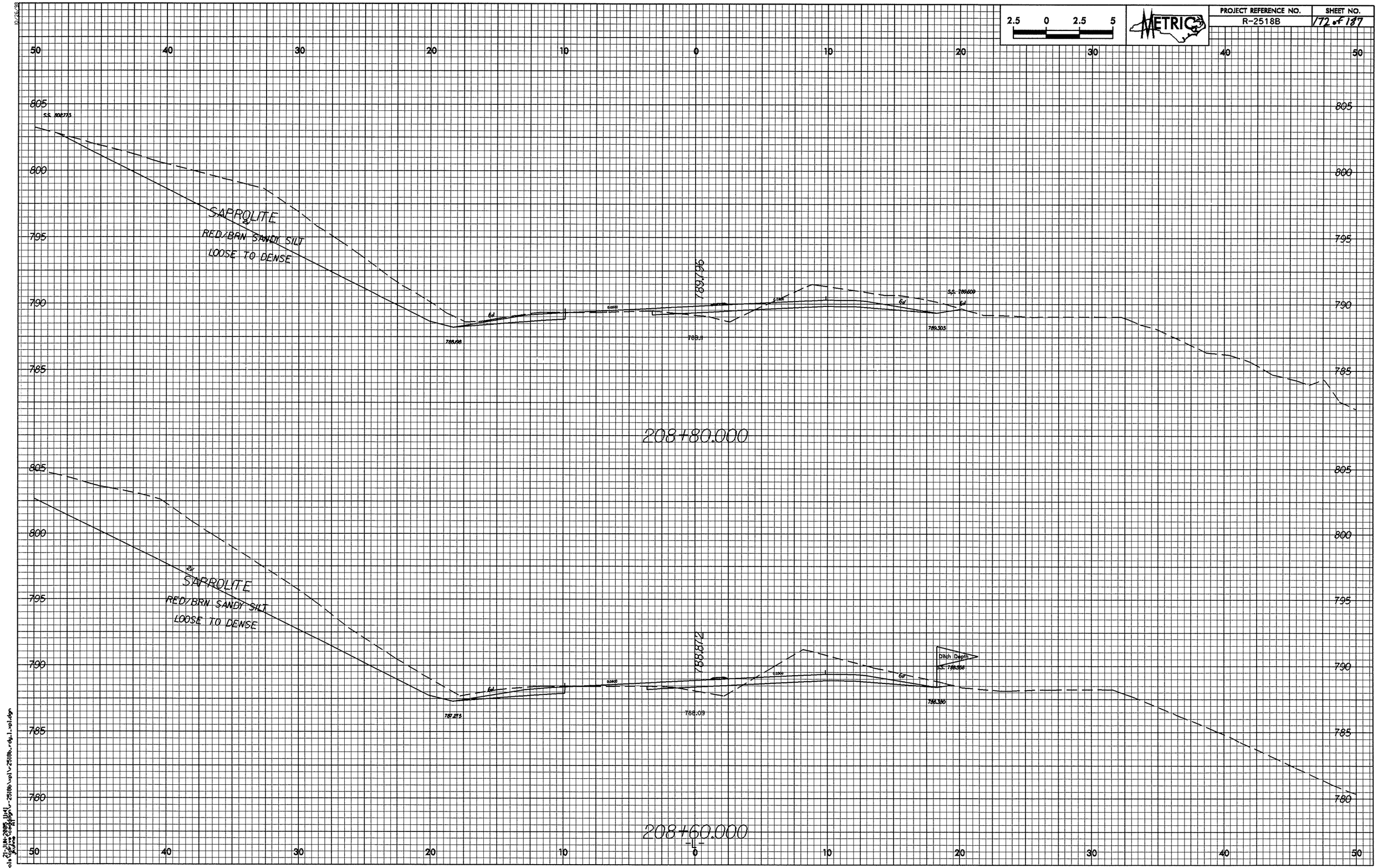
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
169 of 187
50 40 30 20 10 0 10 20 30 40 50
795
790
785
780
SAPROLITE
TAN/BRN MIC. SANDY SILT
SAPROLITE W/ SEAMS OF WEATHERED RK
WEATHERED ROCK
786.135
785.60
208+00.000
785.333
784.92
207+80.000
-L-



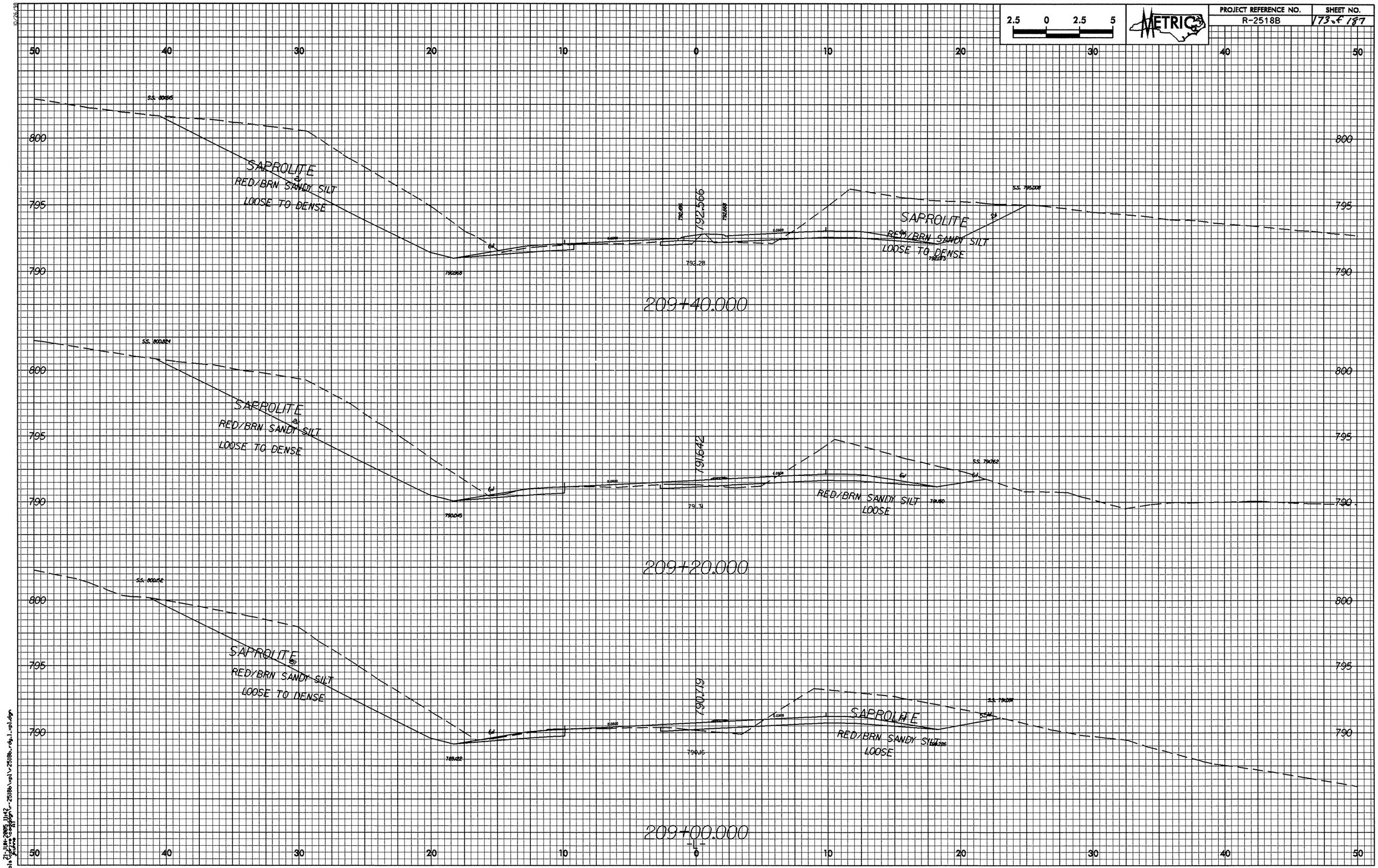
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
170 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
790
785
780
SAPROLITE
TAN/BRN MIC. SANDY SILT
SAPROLITE
W/ SEAMS OF WEATHERED RK
WEATHERED ROCK
787.026
785.779
786.20
208+20.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
171 of 187
208+40
45 M LT
5
15
22
29
58
85
SAPROLITE
TAN/BRN MIC. SANDY SILT
SAPROLITE
W/ SEAMS OF WEATHERED RK
WEATHERED ROCK
787.949
Ditch Depth
786.525
787.03
787.220
208+40.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
172 of 187
50 40 30 20 10 0 10 20 30 40 50
805
800
795
790
785
780
SAPROLITE
RED/BRN SANDY SILT
LOOSE TO DENSE
789.196
788.196
789.11
789.303
S.S. 789.609
208+80.000
788.872
787.275
788.09
788.380
Ditch Depth
S.S. 788.568
208+60.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
173 of 187
SAPROLITE
RED/BRN SANDY SILT
LOOSE TO DENSE
792.566
792.28
SAPROLITE
RED/BRN SANDY SILT
LOOSE TO DENSE
209+40.000
SAPROLITE
RED/BRN SANDY SILT
LOOSE TO DENSE
791.642
RED/BRN SANDY SILT
LOOSE
209+20.000
SAPROLITE
RED/BRN SANDY SILT
LOOSE TO DENSE
790.719
SAPROLITE
RED/BRN SANDY SILT
LOOSE
209+00.000

2.5 0 2.5 5

METRIC

10/26/38

50 40 30 20 10 0 10 20 30 40 50

210+00
35 M RT

SS. 805.82

805
800
795

6
8
13
6
6
16

SAPROLITE
RED/TAN/BRN MIC.
SANDY SILT

6d

0.050

795.75

794.83

795.570

SS. 802.580

SAPROLITE
RED/TAN/BRN MIC.
SANDY SILT

6d

794.683

210+00.000

SS. 803.809

805
800
795

6d

SAPROLITE
RED/TAN/BRN MIC.
SANDY SILT

0.050

794.359

794.08

792.762

SS. 800.470

SAPROLITE
RED/TAN/BRN MIC.
SANDY SILT

6d

793.867

209+80.000

SS. 802.280

805
800
795

6d

SAPROLITE
RED/TAN/BRN MIC.
SANDY SILT

0.050

793.485

793.26

794.888

SS. 798.800

SAPROLITE
RED/TAN/BRN MIC.
SANDY SILT

6d

792.993

209+60.000

50 40 30 20 10 0 10 20 30 40 50

16-JAN-2005 8:41
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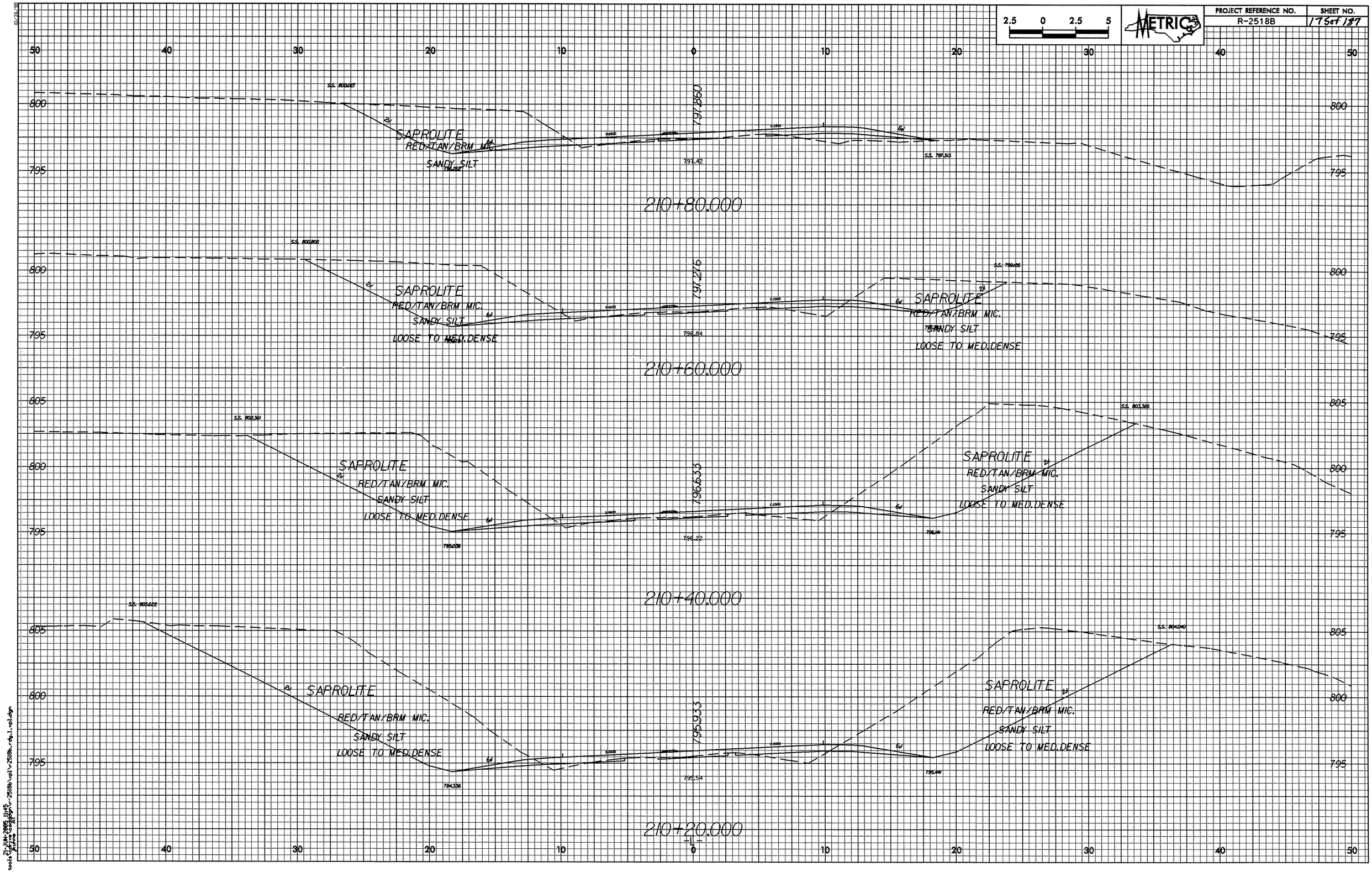
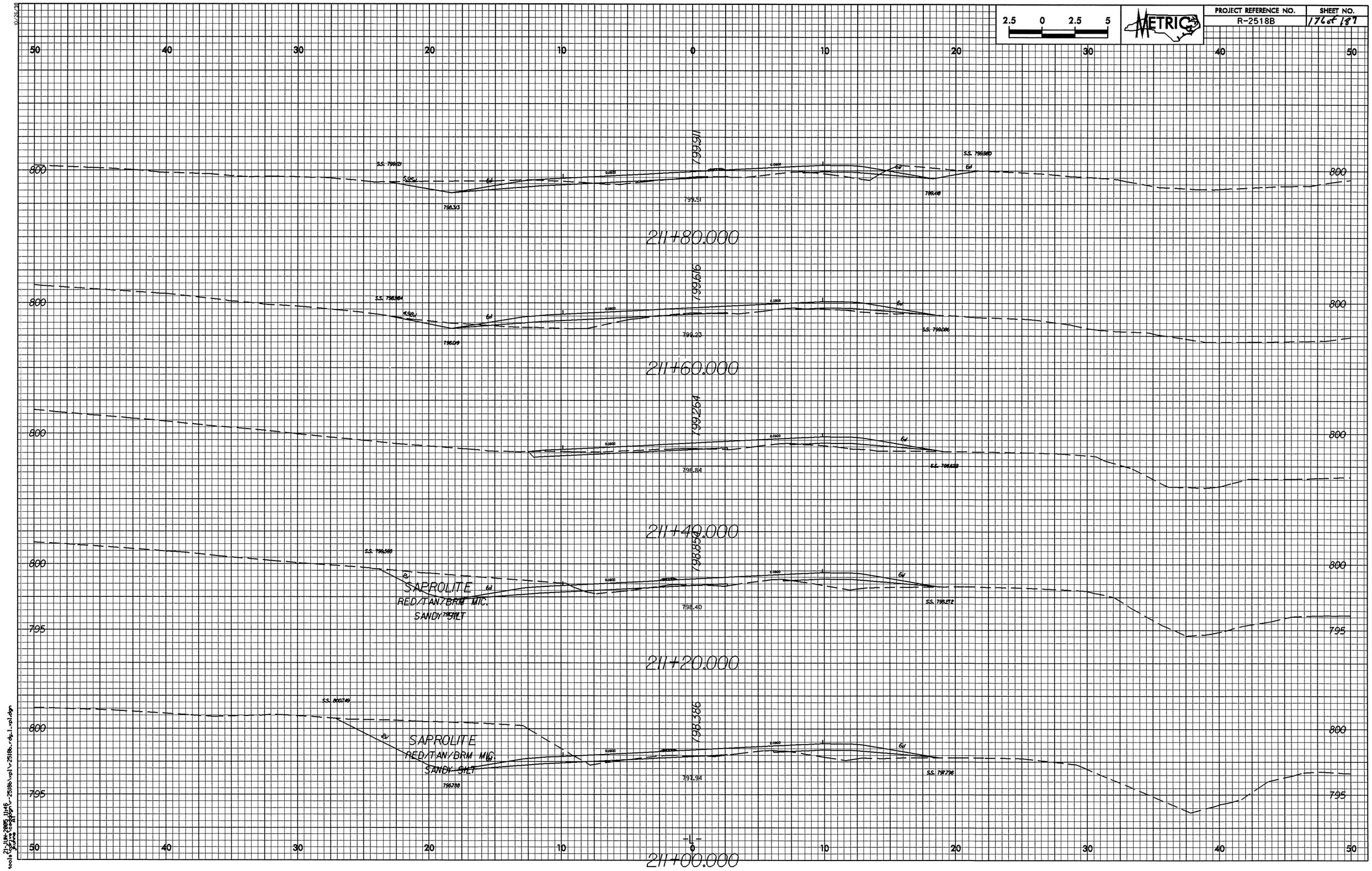
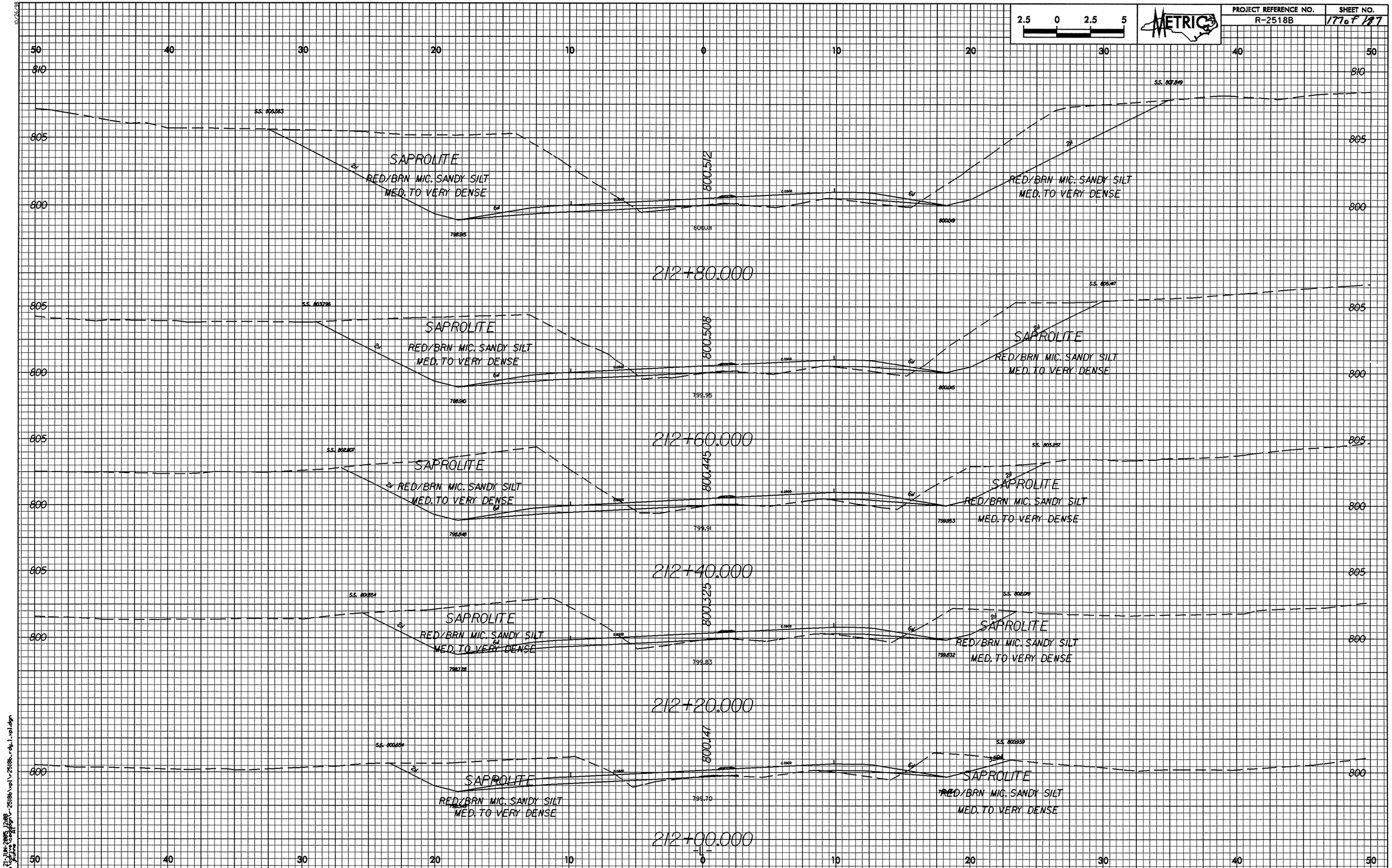


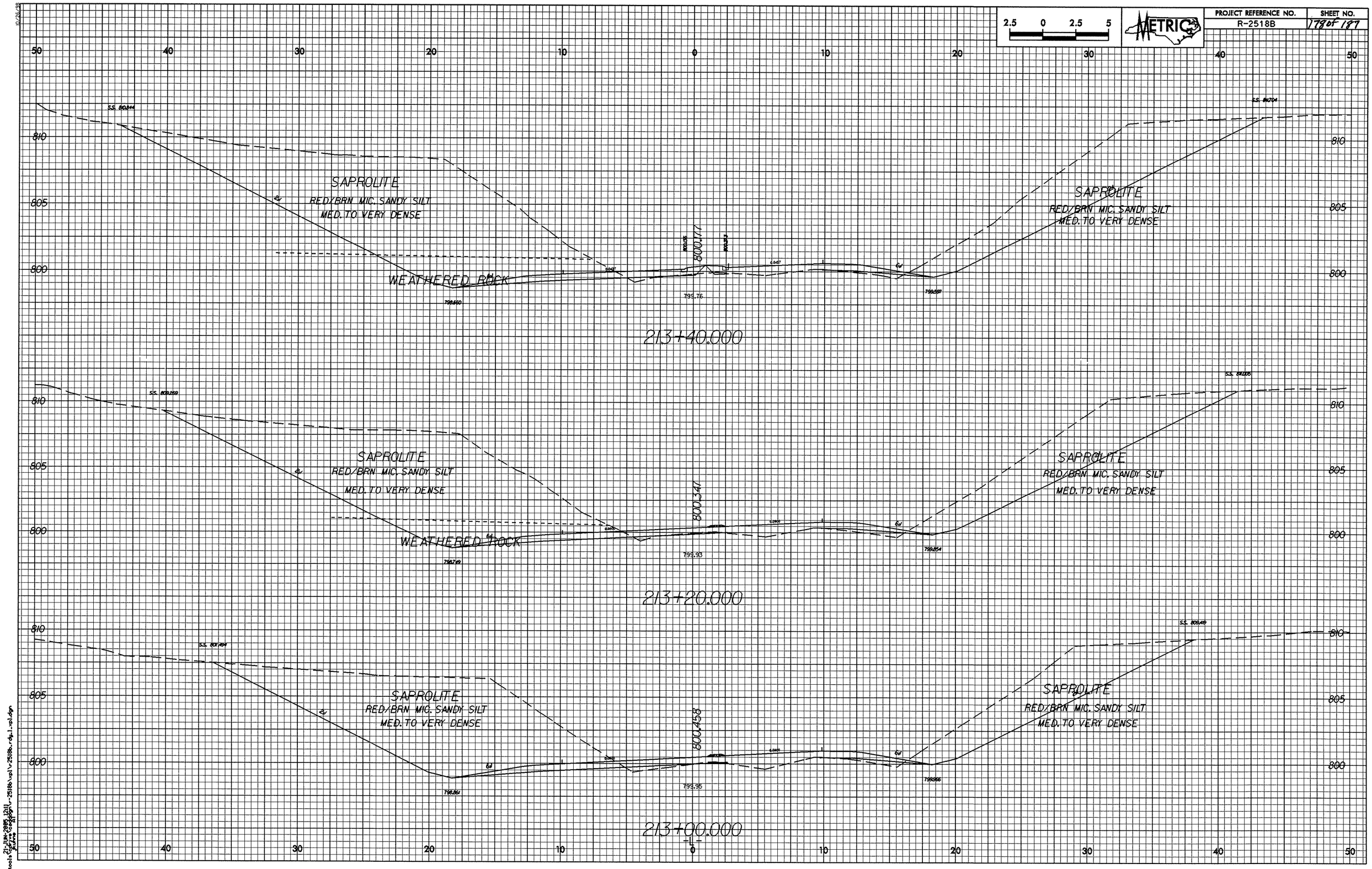
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
17 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
S.S. 800.027
797.860
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
797.42
S.S. 797.343
210+80.000
S.S. 800.806
797.276
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
LOOSE TO MED.DENSE
796.84
S.S. 799.126
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
LOOSE TO MED.DENSE
210+60.000
805
S.S. 802.361
S.S. 803.366
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
LOOSE TO MED.DENSE
796.633
795.038
796.22
796.141
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
LOOSE TO MED.DENSE
210+40.000
S.S. 805.622
S.S. 804.040
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
LOOSE TO MED.DENSE
795.933
794.336
795.54
795.441
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
LOOSE TO MED.DENSE
210+20.000
-L-



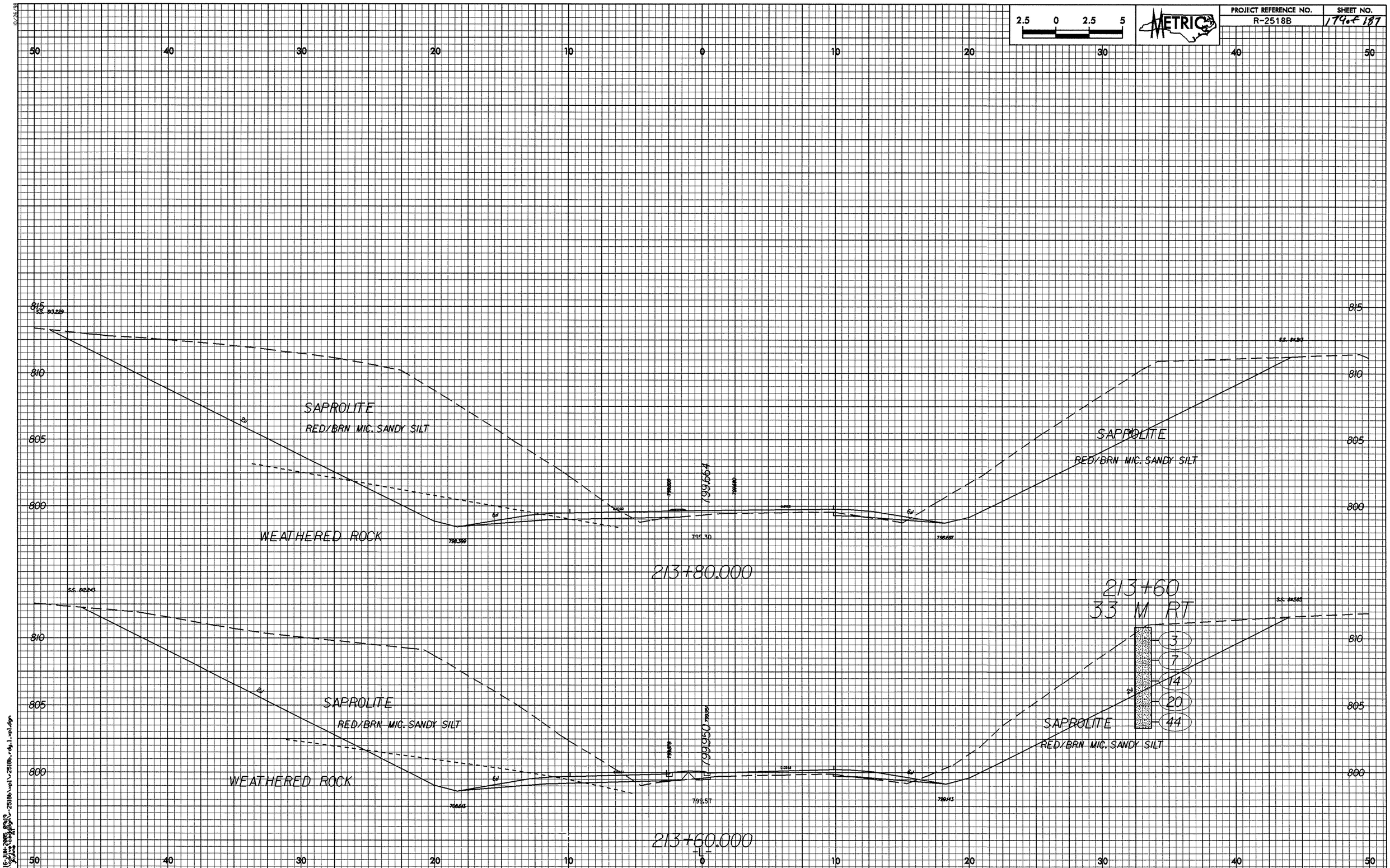
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
176 of 187
50 40 30 20 10 0 10 20 30 40 50
800
799.911
799.51
798.313
799.48
211+80.000
799.616
799.23
798.019
S.S. 799.086
211+60.000
799.264
798.84
S.S. 798.632
211+40.000
798.854
798.40
S.S. 798.272
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
795
211+20.000
798.386
797.94
S.S. 797.796
SAPROLITE
RED/TAN/BRM MIC.
SANDY SILT
-L-
211+00.000



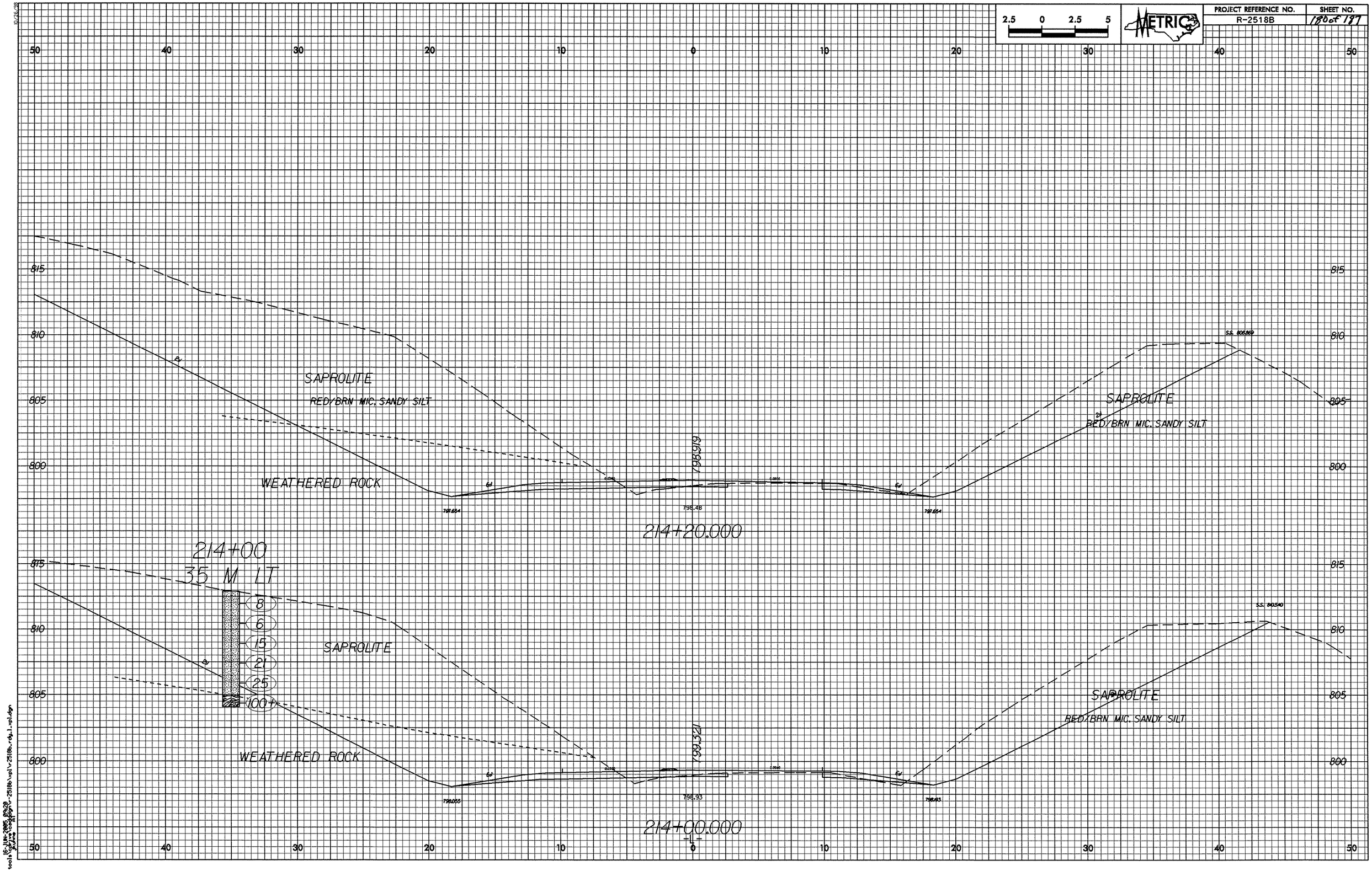
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
177 of 187
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. TO VERY DENSE
800.512
800.01
212+80.000
800.508
799.95
212+60.000
800.445
799.91
212+40.000
800.325
799.83
212+20.000
800.147
799.70
212+00.000



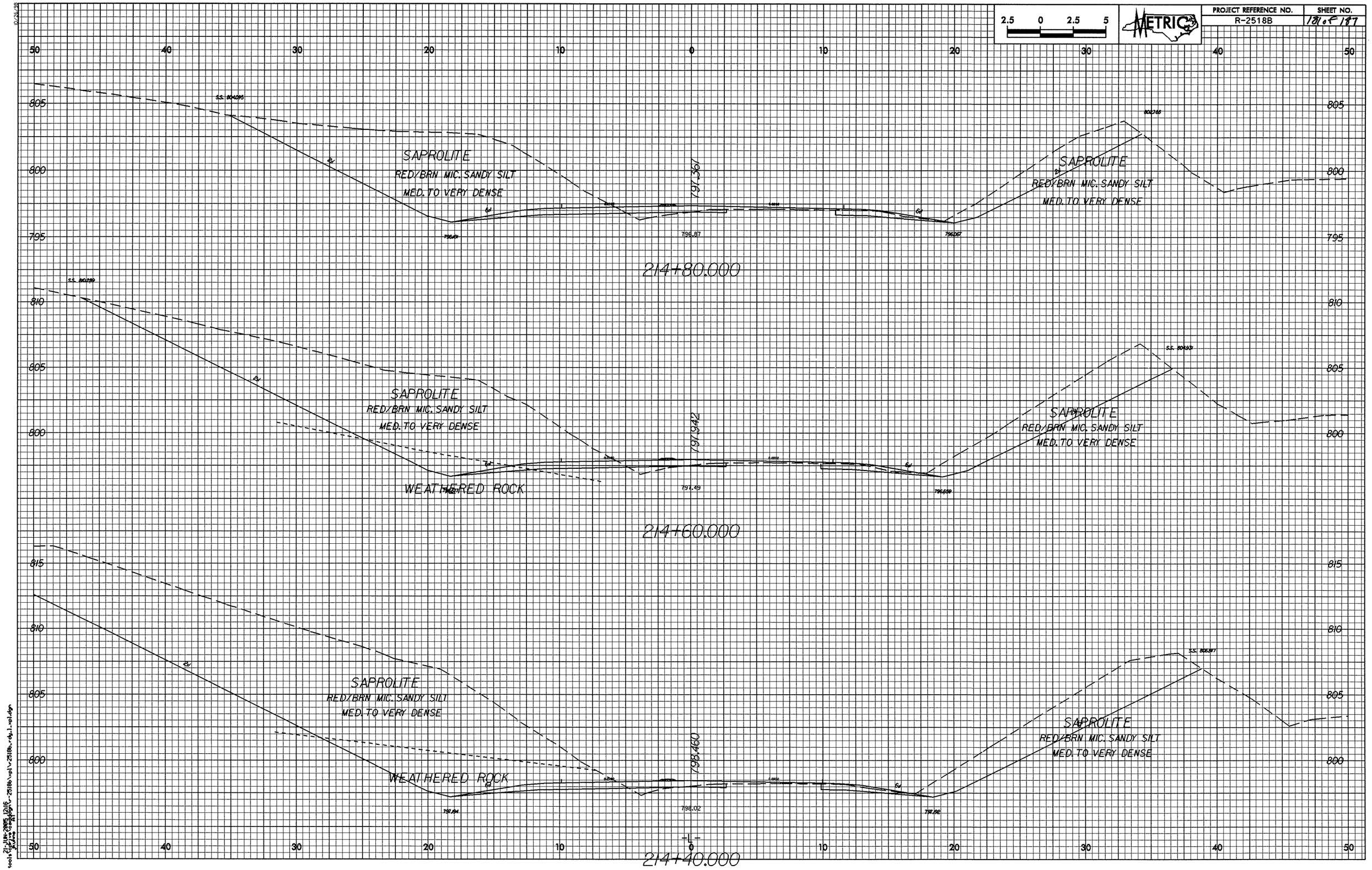
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
178 of 187
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. TO VERY DENSE
WEATHERED ROCK
800.177
799.76
213+40.000
800.347
799.93
213+20.000
800.458
799.95
213+00.000



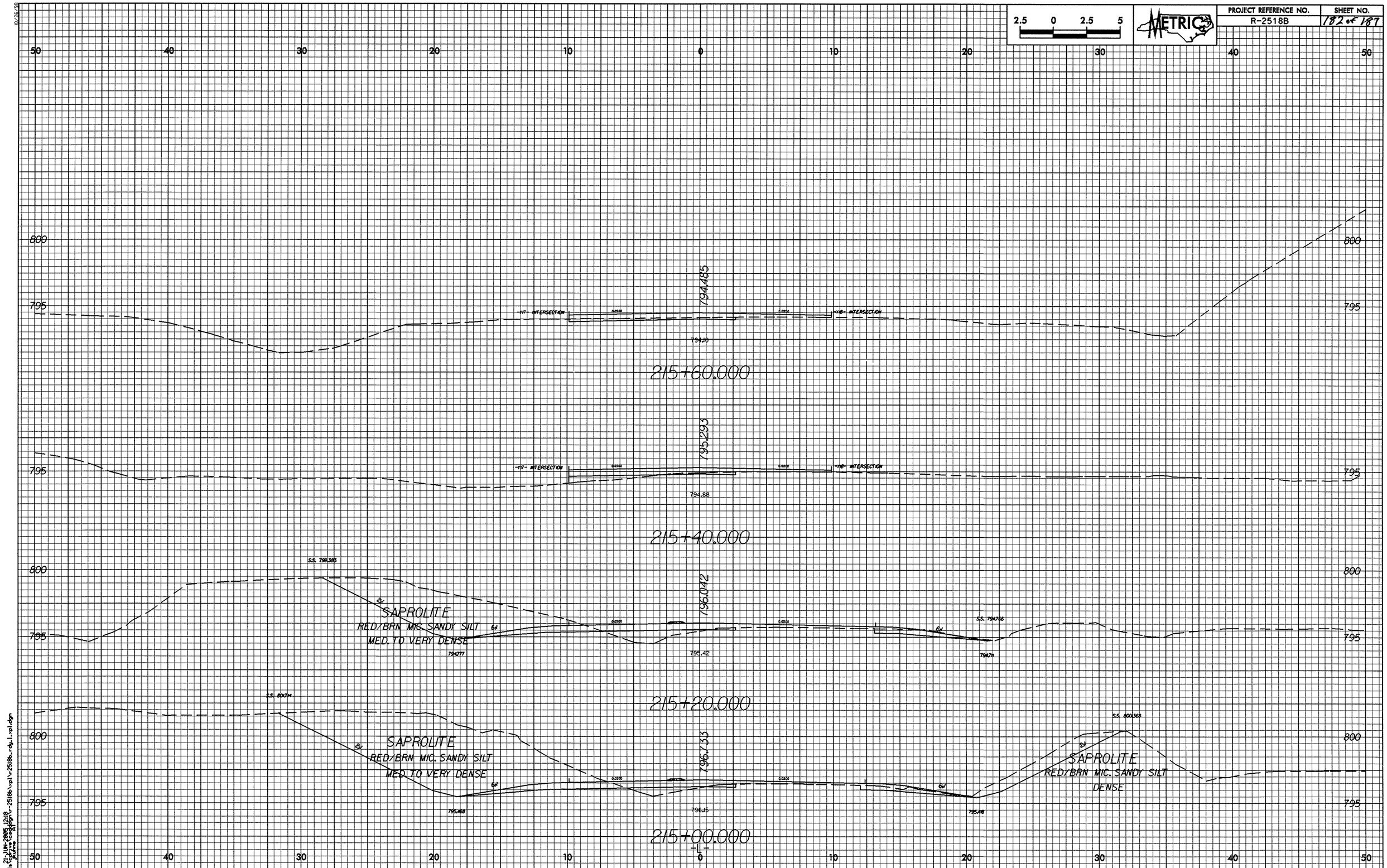
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
179 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
SAPROLITE
RED/BRN MIC. SANDY SILT
WEATHERED ROCK
799.664
799.30
213+80.000
213+60
33 M RT
3
7
14
20
44
799.950
799.57
213+60.000



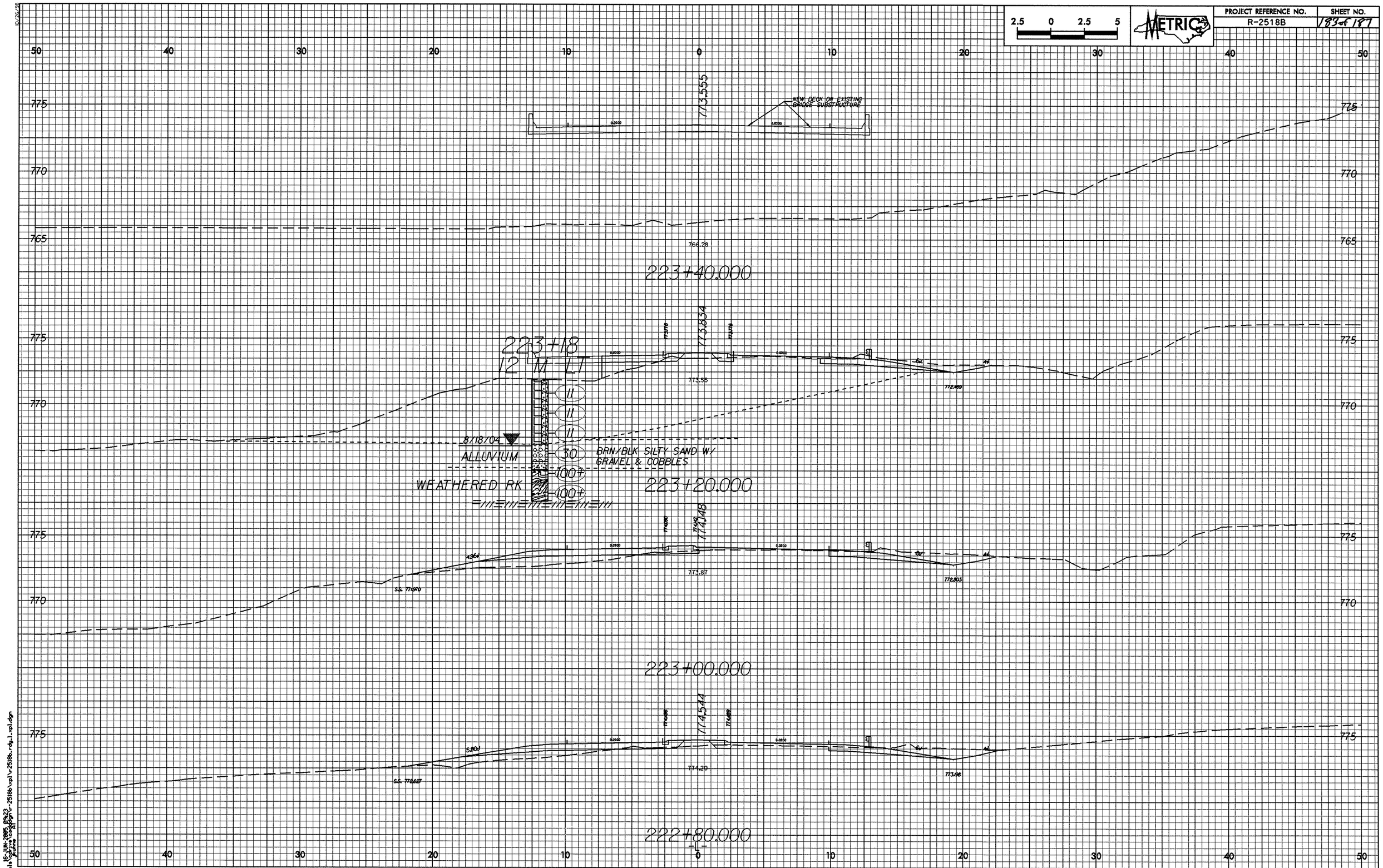
2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
180 of 187
50 40 30 20 10 0 10 20 30 40 50
815
810
805
800
SAPROLITE
RED/BRN MIC. SANDY SILT
WEATHERED ROCK
798.919
798.48
797.654
S.S. 806.869
214+20.000
214+00
35 M LT
8
6
15
21
25
100+
799.321
798.93
798.055
798.193
S.S. 810.540
214+00.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
181 of 187
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. TO VERY DENSE
797.367
796.87
214+80.000
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. TO VERY DENSE
797.942
WEATHERED ROCK
797.49
214+60.000
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. TO VERY DENSE
798.460
WEATHERED ROCK
798.02
214+40.000



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
182 of 187
50 40 30 20 10 0 10 20 30 40 50
800
795
794.485
-Y17- INTERSECTION
-Y18- INTERSECTION
794.10
215+60.000
795.293
794.88
215+40.000
S.S. 799.383
796.042
SAPROLITE
RED/BRN MIC. SANDY SILT
MED. TO VERY DENSE
S.S. 794.766
794.777
795.42
794.711
215+20.000
S.S. 800.714
796.733
S.S. 800.368
795.468
796.15
795.418
215+00.000
-L-



2.5 0 2.5 5
METRIC
PROJECT REFERENCE NO.
R-2518B
SHEET NO.
183 of 187
NEW DECK ON EXISTING BRIDGE SUBSTRUCTURE
773.555
766.28
223+40.000
773.834
773.55
223+18
12 M LT
8/18/04
ALLUVIUM
WEATHERED RK
BRN/BLK SILTY SAND W/ GRAVEL & COBBLES
11
11
11
30
100+
100+
223+20.000
774.148
773.87
S.S. 771970
772.803
223+00.000
774.544
774.20
S.S. 772627
773.196
222+80.000

PROJECT REFERENCE NO.
R-2518B
SHEET NO.
184.F 187
METRIC
2.5 0 2.5 5
224+20.000
773.292
Ditch Depth
S.S. 772.017
772.027
6:1
773.04
2:1
224+00.000
773.230
Ditch Depth
S.S. 772.064
771.965
6:1
773.05
2.55:1
S.S. 772.289
223+80.000
223+82
12 M LT
773.251
NEW DECK ON EXISTING
BRIDGE SUBSTRUCTURE
RDWY FILL
6
5
RED/BRN SANDY CLAY W/ RK FRAGS
771.22
8/18/04
14
ALLUVIUM
SAND,GRAVEL,COBBLES
12
SAPROLITE
20
RED/BRN SANDY SILT
100+
WEATHERED RK
W/ SAPROLITE
49
100+
NEW DECK ON EXISTING
BRIDGE SUBSTRUCTURE
223+60.000
765.78
-L-
50 40 30 20 10 0 10 20 30 40 50
775 770 765
10/26/98
16-JUN-2005 09:28
kuhne

M&T 503E

JJL

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-MATERIALS AND TESTS UNIT
SOILS TEST REPORT-SOILS LABORATORY

T.I.P. ID #:	R-2518B

REPORT ON SAMPLES OF:	Soil for Classification

PROJECT:	34445.1.1	COUNTY:	Yancey	Owner:	--
DATE SAMPLED:	5/13-6/2/04	DATE RECEIVED:	5/25 – 6/21/04	DATE REPORTED:	6-23-04
SAMPLED FROM:	Rdwy	SAMPLED BY:	J Kuhne		
SUBMITTED BY:	W D Frye		2002	STANDARD SPECIFICATION	
LABORATORY:	Asheville				

TEST RESULTS

Project Sample No.	SS-1	MS-1	SS-2	MS-2	SS-3	MS-3	SS-4	MS-4
Lab Sample No. A-	145595	145686	145596	145852	145597	145853	145598	146026
HiCAMS Sample #	--	--	--	--	--	--	--	--
Retained #4 Sieve %	--	--	--	--	--	--	--	--
Passing #10 Sieve %	93		100		86		83	
Passing #40 Sieve %	80		99		75		71	
Passing #200 Sieve %	31		59		40		37	

MINUS #10 FRACTION

Soil Mortar - 100%								
Coarse Sand -Ret. #60	28		6		22		23	
Fine Sand - Ret. #270	50		55		45		46	
Silt 0.05-0.005 mm %	18		31		25		23	
Clay < 0.005 mm %	4		8		8		8	
Passing # 40 Sieve %	--		--		--		--	
Passing # 200 Sieve %	--		--		--		--	

Liquid Limit	24		51		28		29	
Plastic Index	NP		NP		NP		NP	
AASHTO Classification	A-2-4 (0)		A-5 (6)		A-4 (1)		A-4 (0)	
Quantity								
Texture								
Station	119+66 Lt	130+60 Rt	119+74 Rt	181+20 Rt	126+90 Rt	181+20 Rt	126+70 Rt	Rt
Hole No.	-L-	-L-	-L-	-L-	-L-	-L-	-L-	-L-
Depth (ft) From:	4.21	8.75	5.48	2.77	0.92	7.33	0.93	6.16
To:	4.51	9.05	5.78	3.07	1.37	7.63	1.23	6.46
Moisture %		7.3		13.1		15.1		11.7

Remarks:

Soil & moisture samples came in at different times

CC:

W D Frye	
J J Lail	
File	

SOILS ENGINEER:	

M&T 503E

JJL

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-MATERIALS AND TESTS UNIT
SOILS TEST REPORT-SOILS LABORATORY

T.I.P. ID #:	R-2518B

REPORT ON SAMPLES OF:	Soil for Classification

PROJECT:	34445.1.1	COUNTY:	Yancey	Owner:	--
DATE SAMPLED:	5/13-6/2/04	DATE RECEIVED:	5/25 – 6/21/04	DATE REPORTED:	6-23-04
SAMPLED FROM:	Rdwy	SAMPLED BY:	J Kuhne		
SUBMITTED BY:	W D Frye		2002	STANDARD SPECIFICATION	
LABORATORY:	Asheville				

TEST RESULTS

Project Sample No.	SS-5	MS-5	SS-6	MS-6	SS-7	SS-8	SS-9	SS-10
Lab Sample No. A-	145599	146027	145687	146028	145688	145689	145690	145691
HiCAMS Sample #	--	--	--	--	--	--	--	--
Retained #4 Sieve %	--	--	--	--	--	--	--	--
Passing #10 Sieve %	80		68		71	94	93	96
Passing #40 Sieve %	71		65		56	81	81	79
Passing #200 Sieve %	40		50		28	52	45	51

MINUS #10 FRACTION

Soil Mortar - 100%								
Coarse Sand -Ret. #60	21		11		33	23	22	29
Fine Sand - Ret. #270	42		24		36	31	42	27
Silt 0.05-0.005 mm %	31		31		23	36	30	28
Clay < 0.005 mm %	6		34		8	10	6	16
Passing # 40 Sieve %	--		--		--	--	--	--
Passing # 200 Sieve %	--		--		--	--	--	--

Liquid Limit	28		45		28	36	41	38
Plastic Index	NP		13		NP	NP	NP	12
AASHTO Classification	A-4 (1)		A-7-5 (5)		A-2-4 (0)	A-4 (3)	A-5 (2)	A-6 (4)
Quantity								
Texture								
Station	138+11 Rt	199+40 Rt	133+80 Lt	203+80 Rt	130+20 Rt	130+60 Rt	130+60 Rt	140+60 Lt
Hole No.	-L-	-L-	-L-	-L-	-L-	-L-	-L-	-L-
Depth (ft) From:	2.67	8.75	0.15	5.64	1.05	1.15	4.19	1.0
To:	2.97	9.05	0.45	5.94	1.35	1.45	4.49	1.30
Moisture %		10.4		15.8				

Remarks:

Soil & moisture samples came in at different times

CC:

W D Frye
J J Lail
File

SOILS ENGINEER:

M&T 503E

JJL

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-MATERIALS AND TESTS UNIT
SOILS TEST REPORT-SOILS LABORATORY

T.I.P. ID #:	R-2518B

REPORT ON SAMPLES OF:	Soil for Classification

PROJECT:	34445.1.1	COUNTY:	Yancey	Owner:	--
DATE SAMPLED:	5/13-6/2/04	DATE RECEIVED:	5/25 – 6/21/04	DATE REPORTED:	6-23-04
SAMPLED FROM:	Rdwy	SAMPLED BY:	J Kuhne		
SUBMITTED BY:	W D Frye		2002	STANDARD SPECIFICATION	
LABORATORY:	Asheville				

TEST RESULTS

Project Sample No.	SS-11	SS-12	SS-13	SS-14	SS-15	SS-16	SS-17	
Lab Sample No. A-	145692	145693	145694	145854	145855	145856	145857	
HiCAMS Sample #	--	--	--	--	--	--	--	
Retained #4 Sieve %	--	--	--	--	--	--	--	
Passing #10 Sieve %	91	86	91	91	100	99	97	
Passing #40 Sieve %	65	84	88	89	97	94	88	
Passing #200 Sieve %	26	63	51	46	47	38	35	

MINUS #10 FRACTION

Soil Mortar - 100%								
Coarse Sand -Ret. #60	43	6	16	9	10	15	26	
Fine Sand - Ret. #270	35	28	44	52	59	63	47	
Silt 0.05-0.005 mm %	18	32	34	31	27	20	19	
Clay < 0.005 mm %	4	34	6	8	4	2	8	
Passing # 40 Sieve %	--	--	--	--	--	--	--	
Passing # 200 Sieve %	--	--	--	--	--	--	--	

Liquid Limit	26	50	39	49	36	34	32	
Plastic Index	NP	21	NP	NP	NP	NP	NP	
AASHTO Classification	A-2-4 (0)	A-7-6 (11)	A-4 (3)	A-5 (3)	A-4 (2)	A-4 (1)	A-2 –4 (0)	
Quantity								
Texture								
Station	140+60 Lt	150+67 Lt	156+64 Lt	162+30 Lt	164+90 Lt	164+90 Rt	181+20 Rt	
Hole No.	-L-	-L-	-L-	-L	-L-	-L-	-L-	
Depth (ft) From:	2.52	2.58	2.72	1.10	1.07	1.22	4.29	
To:	2.82	2.88	3.02	1.40	1.37	1.52	4.59	

Remarks:

Soil & moisture samples came in at different times

CC:

W D Frye	
J J Lail	
File	

SOILS ENGINEER:	

M&T 503E

JJL

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-MATERIALS AND TESTS UNIT
SOILS TEST REPORT-SOILS LABORATORY

T.I.P. ID #:	R-2518B

REPORT ON SAMPLES OF:	Soil for Classification

PROJECT:	34445.1.1	COUNTY:	Yancey	Owner:	--
DATE SAMPLED:	6-3-04	DATE RECEIVED:	6-21-04	DATE REPORTED:	7-1-04
SAMPLED FROM:	Rdw –L-	SAMPLED BY:	J Kuhne		
SUBMITTED BY:	W D Frye		2002	STANDARD SPECIFICATION	
LABORATORY:	Asheville				

TEST RESULTS

Project Sample No.	SS-18	SS-19	SS-20	SS-21	SS-22	SS-23	SS-24	SS-25
Lab Sample No. A-	146029	146030	146031	146032	146033	146034	146035	146036
HiCAMS Sample #	--	--	--	--	--	--	--	--
Retained #4 Sieve %	--	--	--	--	--	--	--	--
Passing #10 Sieve %	86	89	89	76	91	95	100	100
Passing #40 Sieve %	76	76	82	70	78	92	92	92
Passing #200 Sieve %	46	26	46	36	55	38	44	56

MINUS #10 FRACTION

Soil Mortar - 100%								
Coarse Sand -Ret. #60	21	30	15	18	24	11	20	16
Fine Sand - Ret. #270	35	55	37	47	21	65	49	39
Silt 0.05-0.005 mm %	16	7	15	19	18	14	21	19
Clay < 0.005 mm %	28	8	33	16	37	10	10	26
Passing # 40 Sieve %	--	--	--	--	--	--	--	--
Passing # 200 Sieve %	--	--	--	--	--	--	--	--

Liquid Limit	36	29	40	33	45	28	31	42
Plastic Index	8	NP	8	NP	13	NP	NP	NP
AASHTO Classification	A-4 (2)	A-2-4 (0)	A-4 (2)	A-4 (0)	A-7-5 (6)	A-4 (1)	A-4 (2)	A-5 (4)
Quantity								
Texture								
Station	184+87 Rt	184+87 Rt	186+80 Rt	186+80 Rt	198+20 Rt	199+40 Rt	199+40 Rt	199+40 Rt
Hole No.								
Depth (ft) From:	1.31	5.87	1.60	3.12	1.06	1.15	8.75	11.79
	1.61	6.17	1.90	3.42	1.36	1.45	9.05	12.09

Remarks:

A-146029 thru A-146038

CC:

W D Frye	
J J Lail	
File	

SOILS ENGINEER:	

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JJL

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-MATERIALS AND TESTS UNIT
SOILS TEST REPORT-SOILS LABORATORY

T.I.P. ID #:	**R-2518B**

REPORT ON SAMPLES OF:	**Soil for Classification**

PROJECT:	**34445.1.1**	**COUNTY:**	**Yancey**	**Owner:**	**--**		
DATE SAMPLED:	**6-3-04**	**DATE RECEIVED:**	**6-21-04**	**DATE REPORTED:**	**7-1-04**		
SAMPLED FROM:	**Rdw –L-**	**SAMPLED BY:**	**J Kuhne**				
SUBMITTED BY:	**W D Frye**			**2002**	**STANDARD SPECIFICATION**		
LABORATORY:	**Asheville**						

TEST RESULTS

Project Sample No.	SS-27	SS-28						
Lab Sample No. A-	146037	146038						
HiCAMS Sample #	--	--						
Retained #4 Sieve %	--	--						
Passing #10 Sieve %	88	85						
Passing #40 Sieve %	86	68						
Passing #200 Sieve %	76	26						

MINUS #10 FRACTION

Soil Mortar - 100%								
Coarse Sand -Ret. #60	5	36						
Fine Sand - Ret. #270	10	41						
Silt 0.05-0.005 mm %	10	15						
Clay < 0.005 mm %	75	8						
Passing # 40 Sieve %	--	--						
Passing # 200 Sieve %	--	--						

Liquid Limit	54	35						
Plastic Index	10	NP						
AASHTO Classification	A-5 (11)	A-2-4 (0)						
Quantity								
Texture								
Station	203+80 Rt	203+80 Rt						
Hole No.								
Depth (ft) From:	1.08	10.20						
	1.38	10.52						

Remarks:

A-146029 thru A-146038

CC:

W D Frye	
J J Lail	
File	

SOILS ENGINEER:	