

PROJECT: 6.678019T R-2248C

CONTENTS: AS SHOW ON PAGE 3

LINE	STATION	SHEET NUMBERS	
		PLAN	PROFILE & SECTS.
-L-	221+00 - 295+37.33	4-24	30-42
-YREV-	10+00 - 16+42.98	6,7,25	43
-YREVB-	10+00 - 14+30.26	6,7	44
-YREVA-	10+03 - 11+26.84	6,7	45
-YI-	10+00 - 11+60	14	45
-Y2-	12+60 - 18+00	15	45-46
-Y3REV-	10+00 - 17+17.99	23	47-48
RAMP E	0+00 - 4+60	4-5	49
RAMP F	0+00 - 4+57	4-5	50-51
LOOP A	0+00 - 4+50.62	15	52
LOOP C	0+00 - 4+45.88	15	53
Y2 RPA	0+00 - 6+81.751	15-16	54
Y2 RPB	0+00 - 5+42.361	14-15	55
Y2 RPC	0+00 - 6+92.65	14-15	56-57
Y2 RPD	0+00 - 5+24.067	15-16	58-59
Y3 RPA	0+00 - 4+49.62	23	60
Y3 RPB	0+00 - 5+66.432	23	61
Y3 RPC	0+00 - 5+60	23	62
Y3 RPD	0+00 - 4+69.92	23	63

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

# SUBSURFACE INVESTIGATION

LOCATION: NORTH CHARLOTTE OUTER LOOP  
FROM NORTH OF NC 27  
TO NORTHEAST OF SR 2042 (OAKDALE RD.)  
COUNTY: MECKLENBURG

## INVENTORY \*\*\*

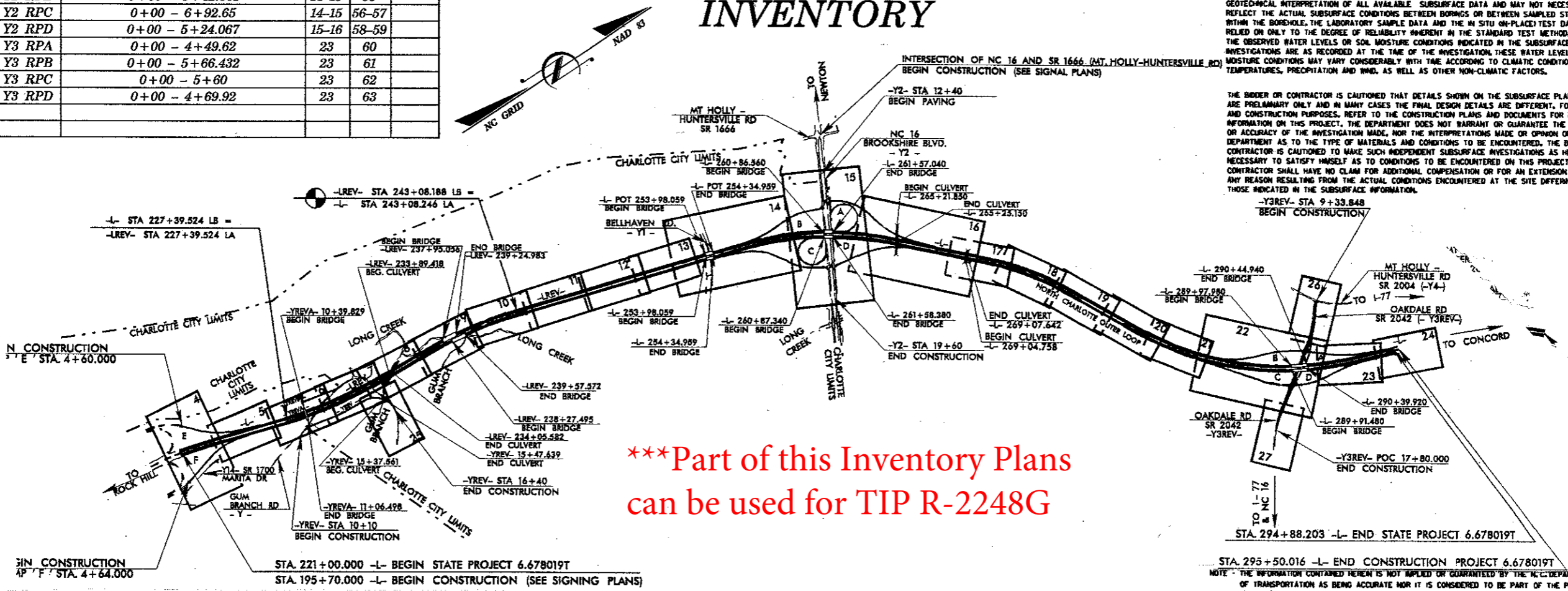
<p>ALL DIMENSIONS IN THESE PLANS ARE IN METERS</p>	STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	N.C.	R-2248C	1	63
	STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
	8.U672212	NHF-117-1(45)	PE, RW- SPECIAL PARCELS	
6.678010T		RW-SPEC. PARCELS		
6.678006B		RW, UTIL.		
6.678019T		CONSTRUCTION		

### 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) 250-4086. 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 BORINGHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU ON-PLACED 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.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

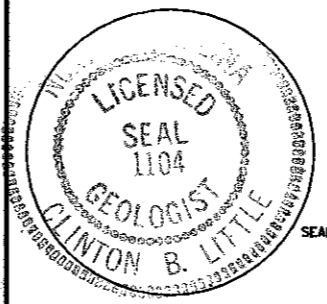


\*\*\*Part of this Inventory Plans can be used for TIP R-2248G

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

DRAWN BY: J.E. BEVERLY



*[Signature]*  
SIGNATURE

INVESTIGATED BY J.E. BEVERLY PERSONNEL J.K. STICKNEY  
 CHECKED BY C.B. LITTLE C.L. SMITH  
 SUBMITTED BY C.B. LITTLE C.E. BURRIS  
 DATE JANUARY 2001

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		GRADATION		TERMS AND DEFINITIONS		ABBREVIATIONS																																																																																																																																																																																																																																																					
<p>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, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH PLASTIC, A7-6.</p>		<p>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.</p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>		<p>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 DISLOGGED 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 INCH. LAYER - SUBJECT MATERIAL GREATER THAN INCH 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 4 INCHES 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 IN OR B.P.F.) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL PENETRATION RESISTANCE OF LESS THAN 1 INCH 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.</p>		<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p>SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE</p> <p>LIQUID LIMIT LESS THAN 30 LIQUID LIMIT 31-50 LIQUID LIMIT GREATER THAN 50</p>		<p>BLDR. - BOULDER CL. - CLAY COB. - COBBLE CSE. - COARSE EST. - ESTIMATED F. - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED GR. - GRAVEL LL - LIQUID LIMIT MED. - MEDIUM MOT. - MOTTLED OM - OPTIMUM MOISTURE ORG. - ORGANIC</p> <p>PL - PLASTIC LIMIT PI - PLASTICITY INDEX n - POROSITY SD. - SAND SAT. - SATURATED SL. - SILT, SILTY SLI. - SLIGHTLY G<sub>s</sub> - SPECIFIC GRAVITY q<sub>u</sub> - UNCONFINED COMPRESSIVE STRENGTH γ - UNIT WEIGHT (WET UNIT WEIGHT) γ<sub>d</sub> - DRY UNIT WEIGHT γ<sub>SAT</sub> - SATURATED UNIT WEIGHT e - VOID RATIO V. - VERY</p>																																																																																																																																																																																																																																																			
<p>SOIL LEGEND AND AASHTO CLASSIFICATION</p> <table border="1"> <tr> <th>GENERAL CLASS.</th> <th colspan="7">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="7">SILT-CLAY MATERIALS (&gt; 35% PASSING #200)</th> <th colspan="3">ORGANIC MATERIALS</th> </tr> <tr> <td>GROUP CLASS.</td> <td>A-1</td><td>A-3</td><td colspan="2">A-2</td><td>A-4</td><td>A-5</td><td>A-6</td><td>A-7</td> <td>A-1, A-2</td><td>A-4, A-5</td><td colspan="2"></td><td colspan="3"></td> <td>A-1, A-2</td><td>A-3</td><td>A-4, A-5</td><td>A-6, A-7</td> </tr> <tr> <td>SYMBOL</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>% PASSING</td> <td>100</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td> <td>100</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td> <td>100</td><td>100</td><td>100</td><td>100</td> </tr> <tr> <td>LIQUID LIMIT</td> <td>≤ 5</td><td>≤ 10</td><td>10-15</td><td>15-20</td><td>20-25</td><td>25-30</td><td>30-40</td><td>40-50</td> <td>≤ 5</td><td>≤ 10</td><td>10-15</td><td>15-20</td><td>20-25</td><td>25-30</td> <td>≤ 5</td><td>≤ 10</td><td>10-15</td><td>15-20</td> </tr> <tr> <td>PLASTIC INDEX</td> <td>≤ 4</td><td>≤ 7</td><td>7-10</td><td>10-12</td><td>12-15</td><td>15-20</td><td>20-25</td><td>25-30</td> <td>≤ 4</td><td>≤ 7</td><td>7-10</td><td>10-12</td><td>12-15</td><td>15-20</td> <td>≤ 4</td><td>≤ 7</td><td>7-10</td><td>10-12</td> </tr> <tr> <td>GROUP INDEX</td> <td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td> <td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td> <td>0</td><td>0</td><td>0</td><td>0</td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td>STONE FRAGS, GRAVEL AND SAND</td><td>FINE SAND</td><td colspan="2">SILTY OR CLAYEY GRAVEL AND SAND</td><td>CLAY</td><td>SILTY SOILS</td><td>CLAYEY SOILS</td><td></td> <td>GRANULAR SOILS</td><td>SILT-CLAY SOILS</td><td colspan="2">MUCK, PEAT</td><td colspan="3">HIGHLY ORGANIC SOILS</td> </tr> <tr> <td>GEN. RATING AS A SUBGRADE</td> <td colspan="3">EXCELLENT TO GOOD</td><td colspan="4">FAIR TO POOR</td><td>FAIR TO POOR</td><td>POOR</td><td colspan="3">UNSATURABLE</td><td colspan="3"></td> </tr> </table> <p>P.I. OF A-7-5 ≤ L.L. - 30 + P.I. OF A-7-5 &gt; L.L. - 30</p>		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-4, A-5						A-1, A-2	A-3	A-4, A-5	A-6, A-7	SYMBOL																			% PASSING	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	LIQUID LIMIT	≤ 5	≤ 10	10-15	15-20	20-25	25-30	30-40	40-50	≤ 5	≤ 10	10-15	15-20	20-25	25-30	≤ 5	≤ 10	10-15	15-20	PLASTIC INDEX	≤ 4	≤ 7	7-10	10-12	12-15	15-20	20-25	25-30	≤ 4	≤ 7	7-10	10-12	12-15	15-20	≤ 4	≤ 7	7-10	10-12	GROUP INDEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS, GRAVEL AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND		CLAY	SILTY SOILS	CLAYEY SOILS		GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT		HIGHLY ORGANIC SOILS			GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD			FAIR TO POOR				FAIR TO POOR	POOR	UNSATURABLE						<p>CONSISTENCY OR DENSENESS</p> <table border="1"> <tr> <th>PRIMARY SOIL TYPE</th> <th>COMPACTNESS OR CONSISTENCY</th> <th>RANGE OF STANDARD PENETRATION RESISTANCE (BLOWS)</th> <th>RANGE OF UNCONFINED COMPRESSIVE STRENGTH (kN/m<sup>2</sup>)</th> </tr> <tr> <td rowspan="4">GENERALLY GRANULAR MATERIAL</td> <td>VERY LOOSE</td> <td>&lt; 4</td> <td>N/A</td> </tr> <tr> <td>LOOSE</td> <td>4 TO 10</td> <td></td> </tr> <tr> <td>MEDIUM DENSE</td> <td>10 TO 30</td> <td></td> </tr> <tr> <td>DENSE</td> <td>30 TO 50</td> <td></td> </tr> <tr> <td rowspan="4">GENERALLY SILT-CLAY MATERIAL</td> <td>VERY SOFT</td> <td>&lt; 2</td> <td>&lt; 25</td> </tr> <tr> <td>SOFT</td> <td>2 TO 4</td> <td>25 TO 50</td> </tr> <tr> <td>MEDIUM STIFF</td> <td>4 TO 8</td> <td>50 TO 100</td> </tr> <tr> <td>STIFF</td> <td>8 TO 15</td> <td>100 TO 200</td> </tr> <tr> <td rowspan="2"></td> <td>VERY STIFF</td> <td>15 TO 30</td> <td>200 TO 400</td> </tr> <tr> <td>HARD</td> <td>&gt; 30</td> <td>&gt; 400</td> </tr> </table>		PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (BLOWS)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (kN/m <sup>2</sup> )	GENERALLY GRANULAR MATERIAL	VERY LOOSE	< 4	N/A	LOOSE	4 TO 10		MEDIUM DENSE	10 TO 30		DENSE	30 TO 50		GENERALLY SILT-CLAY MATERIAL	VERY SOFT	< 2	< 25	SOFT	2 TO 4	25 TO 50	MEDIUM STIFF	4 TO 8	50 TO 100	STIFF	8 TO 15	100 TO 200		VERY STIFF	15 TO 30	200 TO 400	HARD	> 30	> 400	<p>GROUND WATER</p> <p>▽ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING. ▽ STATIC WATER LEVEL AFTER 24 HOURS. ▽ PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA ○ SPRING OR SEEPAGE</p>		<p>MISCELLANEOUS SYMBOLS AND ABBREVIATIONS</p> <table border="1"> <tr> <td></td> <td>ROADWAY EMBANKMENT WITH SOIL DESCRIPTION</td> <td></td> <td>SPT TEST BORING</td> <td></td> <td>SAMPLE DESIGNATIONS</td> </tr> <tr> <td></td> <td>SOIL SYMBOL</td> <td></td> <td>AUGER BORING</td> <td></td> <td>S - BULK SAMPLE</td> </tr> <tr> <td></td> <td>ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS</td> <td></td> <td>CORE BORING</td> <td></td> <td>SS - SPLIT SPOON SAMPLE</td> </tr> <tr> <td></td> <td>INFERRED SOIL BOUNDARIES</td> <td></td> <td>ST - SHELBY TUBE SAMPLE</td> <td></td> <td>RS - ROCK SAMPLE</td> </tr> <tr> <td></td> <td>ALLUVIAL/RESIDUAL BOUNDARIES</td> <td></td> <td>MONITORING WELL</td> <td></td> <td>PIEZOMETER INSTALLATION</td> </tr> <tr> <td></td> <td>DIP DIRECTION AND DIP OF STRUCTURES</td> <td></td> <td>SLOPE INDICATOR INSTALLATION</td> <td></td> <td>SOUNDING ROD</td> </tr> <tr> <td></td> <td>APPARENT DIP (NORMAL TO)</td> <td></td> <td>SPT N-COUNT</td> <td></td> <td></td> </tr> </table>			ROADWAY EMBANKMENT WITH SOIL DESCRIPTION		SPT TEST BORING		SAMPLE DESIGNATIONS		SOIL SYMBOL		AUGER BORING		S - BULK SAMPLE		ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS		CORE BORING		SS - SPLIT SPOON SAMPLE		INFERRED SOIL BOUNDARIES		ST - SHELBY TUBE SAMPLE		RS - ROCK SAMPLE		ALLUVIAL/RESIDUAL BOUNDARIES		MONITORING WELL		PIEZOMETER INSTALLATION		DIP DIRECTION AND DIP OF STRUCTURES		SLOPE INDICATOR INSTALLATION		SOUNDING ROD		APPARENT DIP (NORMAL TO)		SPT N-COUNT		
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6/24/99

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS



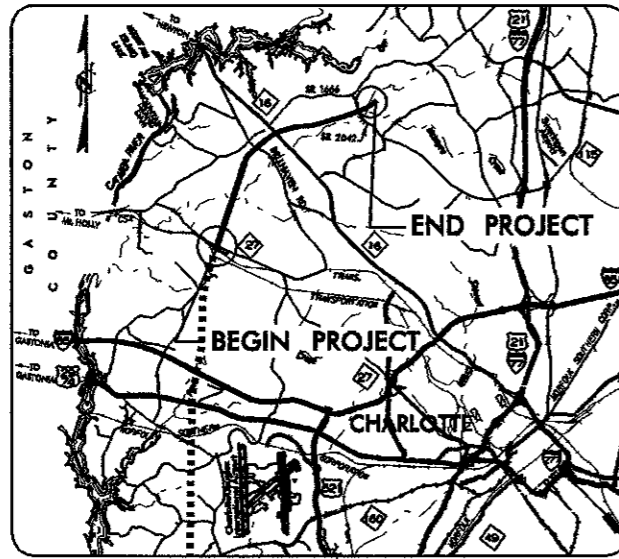
STATE	STATE PROJECT SURVEY NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2248C	3	63
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.U672212	NHF-117-1(45)	PE, RW- SPECIAL PARCELS	
6.678010T		RW-SPEC. PARCELS	
6.678006B		RAW, UTIL.	
6.678019T		CONSTRUCTION	

ALL DIMENSIONS IN THESE PLANS ARE IN METERS

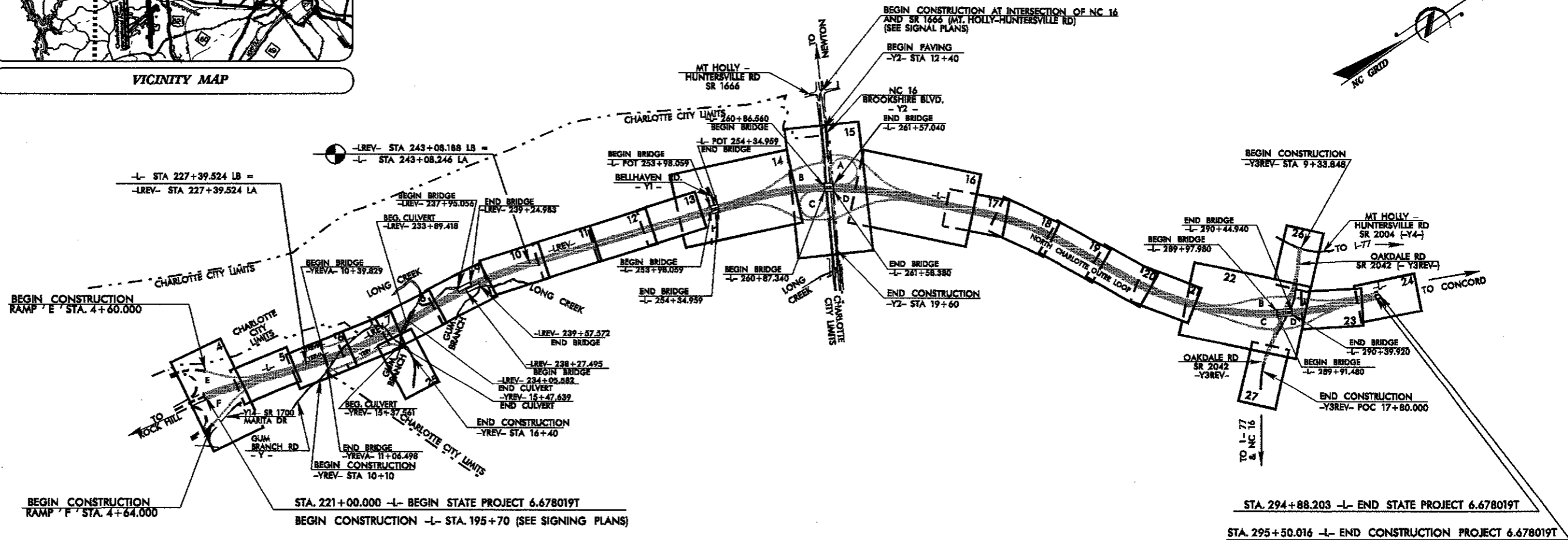
# MECKLENBURG COUNTY

**LOCATION:** NORTH CHARLOTTE OUTER LOOP  
FROM NORTH OF NC 27 (MOUNT HOLLY RD.)  
TO NORTHEAST OF SR 2042 (OAKDALE ROAD)

**TYPE OF WORK:** GRADING, DRAINAGE, PAVING, STRUCTURES, CULVERTS,  
GUARDRAIL, CABLE GUIDERAIL, SIGNING AND SIGNALS

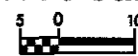


VICINITY MAP

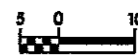


THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

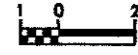
**GRAPHIC SCALES**



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

**DESIGN DATA**

ADT 2002 = 43,100  
ADT 2020 = 71,100

DHV = 10%  
D = 60%  
T = 15% \*  
V = 110 km/h

\* TTST % = 10 DUAL % = 5

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT 6.678019T = 7.088 Km  
LENGTH STRUCTURE PROJECT 6.678019T = 0.300 Km  
TOTAL LENGTH STATE PROJECT 6.678019T = 7.388 Km

Prepared in the Office of:

**DIVISION OF HIGHWAYS**

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JUNE 30, 2000

LETTING DATE:  
JULY 16, 2002

G. E. BREW, P.E.  
PROJECT ENGINEER

IMAD ABOUYOUNIS  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

ROADWAY DESIGN ENGINEER

APPROVED DIVISION ADMINISTRATOR

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR

PROJECT: 6.678019T R-2248C

03-APR-2002 09:27  
R:\PROJECTS\2248C\6.678019T\6.678019T.dwg



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

LYNDO TIPPETT  
SECRETARY

January 30, 2001

STATE PROJECT: 8.U672212 (R-2248C)  
F.A. PROJECT: NHF-117-1(45)  
COUNTY: Mecklenburg  
DESCRIPTION: North Charlotte Outer Loop from North of NC 27 to Northeast of SR 2042 (Oakdale Rd.)

SUBJECT: Geotechnical Report - Inventory

This report presents the findings of the Geotechnical Investigation for section C of the North Charlotte Outer Loop. Stations encompassed on this project are from -L- 221+00 to 295+37.33. The project generally proceeds in a northern direction from beginning to end.

The initial geotechnical field investigation for this project was conducted between January and February of 2000. An alignment revision was re-drilled in November of 2000 and additional vane shear data collected in December 2000. An ATV mounted drill machine was utilized for this investigation.

The following survey lines were investigated:

Line	Station
-L-	221+00 – 295+37.33
-YREV-	10+00 – 16+42.98
-YREVB-	10+00 – 14+30.26
-YREVA-	10+03 – 11+26.84
-Y1-	10+00 – 11+60
-Y2	12+60 – 18+00
-Y3REV-	10+00 – 17+17.99
RAMP E	0+00 – 4+60
RAMP F	0+00 – 4+57
LOOP A	0+00 – 4+50.62
LOOP C	0+00 – 4+45.88
Y2 RAMP A	0+00 – 6+81.751
Y2 RAMP B	0+00 – 5+42.361
Y2 RAMP C	0+00 – 6+92.65

Line	Station
Y2 RAMP D	0+00 – 5+24.067
Y3 RAMP A	0+00 – 4+49.62
Y3 RAMP B	0+00 – 5+66.432
Y3 RAMP C	0+00 – 5+60.00
Y3 RAMP D	0+00 – 4+69.92

Areas of Special Geotechnical Interest:

1. Alluvial Soils / Wet Areas:

There are many areas containing alluvial soils throughout the project corridor as well as known wet land areas. Most of these areas are the result of adjacent streams and tributaries which contain soft to medium stiff silt and clay soils and should be of no special interest. The following is a list of areas which do contain very soft to soft alluvial soils which may be of concern:

Line	Station Range
-L-	240+40 – 242+40 (RT of -L- to LT of -L-)
-L-	245+00 – 247+50
-L-	252+75 – 253+05
-L-	265+15 – 265+50
-L-	281+00 – 281+50 (pond sediments)
Y2 Ramp A	2+00 – 2+30
Y2 Ramp A	4+10 – 4+45
Y2 Ramp C	3+60 Right of -CL- (pond)
Y2 Ramp D	0+65 – 1+55
Y3 Ramp B	2+90 – 1+55 (dried up pond sediments)

2. High PI Soils: (PI's Greater than 30)

- A. The area between -L- stations 238+20 to 238+55 contains a soft fine sandy silty clay (A-7-5) with a Plasticity Index of 31. The clay layer is alluvial in origin and extends from the ground surface to approximately 1.0 meter in depth.
- B. The area between -L- stations 259+80 to 260+60 contains a stiff sandy silty clay (A-7-6) with a Plasticity Index of 31. The clay layer extends from the ground surface to 2.0 meters in depth.
- C. The area between -L- stations 262+20 to 263+00 contains a very stiff sandy silty clay with a Plasticity Index of 35. The clay layer extends from the ground surface to approximately 2.0 meters in depth.
- D. The area between -L- stations 265+60 to 268+20 contains a medium stiff to stiff silty sandy clay (A-7-5) with a Plasticity Index of 32 to 37. The clay layer extends from the surface to as deep as 3 meters.



- E. The area between -L- stations 285+60 to 287+40 contains a medium stiff to very stiff sandy clay (A-7-6) with a Plasticity Index of 30 to 34. The clay layer extends from the ground surface to as much as 4 meters in depth.
- F. The area between Ramp E stations 0+00 to 1+70 contains a medium stiff to stiff sandy silty clay (A-7-5) with a Plasticity Index of 33. The clay layer extends from the ground surface to as much as 2 meters in depth.
- G. The area between Ramp F stations 3+40 to 4+55 contains a stiff sandy silty clay (A-7-5) with a Plasticity Index of 33. The clay layer extends from the ground surface to a depth of up to 3 meters.
- H. The area between Loop A at -Y2- stations 0+10 to 1+40 contains a stiff to very stiff sandy silty clay (A-7-5) with a Plasticity Index of 35. The clay layer extends from the ground surface to a depth of up to 2 meters.
- I. The area between Ramp A at -Y2- stations 0+00 to 1+10 contains a medium stiff silty sandy clay (A-7-5) with a Plasticity Index of 33. The clay layer extends from the ground surface to a depth of up to 2 meters.
- J. The area between Ramp A at -Y2- stations 4+10 to 4+45 contains an alluvial soft to medium stiff sandy clay (A-7-5) with a Plasticity Index of 37. The clay layer extends from the ground surface to a depth of 0.4 meters.
- K. The area between Ramp D at -Y2- stations 0+00 to 0+70 contains a stiff silty sandy clay (A-7-5) with a Plasticity Index of 35. The clay layer extends from the ground surface to a depth of 2 meters.
- L. The area between Ramp D at -Y2- stations 2+70 to 3+40 contains a medium stiff silty clay (A-7-5) with a Plasticity Index of 30. The clay layer extends from the ground surface to a depth of 2 meters.
- M. The area between Ramp C at -Y3REV stations 0+50 to 2+30 contains medium stiff to very stiff sandy clay (A-7-6) with a Plasticity Index of 30-34. The clay layer extends from the ground surface to a depth of up to 4 meters.
- N. The area between Ramp C at -Y3REV- stas. 3+00 to 4+57 contains a medium stiff to very stiff sandy silty clay (A-7-6) with a Plasticity Index of 31. The clay layer extends from the ground surface to a maximum depth of approximately 3 meters.
- O. The area between Ramp D at -Y3REV- stas. 1+90 to 3+00 contains a stiff silty clay (A-7-5) with a Plasticity Index of 30. The clay layer extends from the ground surface to a depth of 3 meters.

### 3. Rock:

Hard rock was encountered at locations throughout the proposed project corridor. The only instance of rock discovered at or above grade was between -L- stations 226+70 to 227+60.

### 4. Dumpsites:

- A. The area between -L- stations 268+65 to 268+80 contains various amounts of discarded waste on the ground surface. Some of the larger trash items noted were old junk cars and gas pumps. The area extends both left and right of the centerline.
- B. The area between -L- stations 271+70 to 272+80 contains trash scattered about the ground surface from the centerline to left of -L-. Items include junk cars, tires, trash, and used oil filters.

### Physiography/Geology:

The project area is located in Mecklenburg County in the southern piedmont region of North Carolina. The topography ranges from flat to gently rolling with gently sloping interstream areas. The proposed project corridor is generally well drained and is bisected by several stream and wet weather drainage features. The project is surrounded by a combination of densely wooded areas, urban areas and open fields. Elevations within the project area range from approximately 180 to 230 meters.

Geologically this site is part of the Charlotte Belt and is underlain by granitic rock.

### Soil Properties:

#### 1. Residual Soils:

These soils are derived from in place weathering of parent materials. They occur in a variety of consistencies, classifications, and stratigraphic sequences. Residual soils are further subdivided into clays, silts, and sands.

Clays are found consistently throughout the project corridor as both near surface soils and subsoils. They consist primarily of medium stiff to very stiff red-brown and tan sandy silty clay (A-6, A-7-5, A-7-6) 0.5 to 14 meters thick. These soils are typically well drained and possess Atterburg Limits in the intermediate range. Soil test results for these soils indicate a plasticity index range of 11 to 37 and a liquid limit range of 42 to 72.

Silts encountered on the project were of both the A-4 and A-5 AASHTO Classifications and occur as both near surface soils and subsoils. They generally consist of medium stiff to hard gray-white and brown sandy silt with depths ranging from 0.5 to 9 meters thick.

Sands encountered on the project were of the A-1-b, A-2-4, A-2-6 and A-2-7 AASHTO Classification and occur as both near surface soils and subsoils. The sandy soils generally consists of a loose to dense silty sand with depths ranging from 0.5 to 8 meters thick.

2. Alluvial Soils:

Alluvial soils originate from water transportation and deposition in a floodplain environment. These deposits are usually shallow, but range up to 4 meters in thickness. Alluvial soils consist of very soft to medium stiff clayey sandy silt (A-4), soft to stiff sandy silty clay (A-6, A-7-5, A-7-6) and very loose to loose clayey silty sand (A-2-4).

3. Fill Soils:

The following three areas were encountered which contained uncompacted fill material:

- A. An area left of -L- stations 239+00 to 239+80 contains as much as 5 meters of medium stiff to hard sandy silty clay (A-7-5) with wood debris, plastic, stumps and rocks.
- B. Another area between -L- stations 272+80 to 273+40 contains up to 9 meters of medium stiff to stiff micaceous sandy silty clay (A-7-5) with wood debris.
- C. The third area is a debris fill used in the construction of an earthen dam right of -L- station 281+00. The fill material extends along the length of the dam and also has a gravel road constructed along top. Material in the fill appears to be a mixture of clay, silt, asphalt, and concrete slabs. Height of the fill (dam) is 3 to 3.5 meters.
- D. The fill area between Ramp B at -Y2- stations 4+20 to 4+85 contains medium stiff to stiff sandy clay (A-6). Maximum thickness of this material is approximately 6 meters.

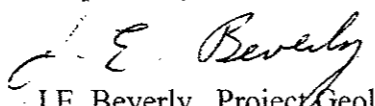
Rock Properties:

Rock is defined as that material which refuses penetration of power augers. Hard rock was encountered along various segments of the project corridor.

Groundwater:

Groundwater was encountered sporadically throughout the project corridor. The following is a list of areas where groundwater was encountered at or above proposed grade.

Line	Station Range
-L-	223+00 – 232+00
Ramp E	0+00 – 4+60 (All of Ramp E)
Ramp F	0+00 – 4+57 (All of Ramp F)

Respectfully Submitted,  
  
 J.E. Beverly, Project Geologist

5/27/02

PROJECT NO. :

R-2248C

COUNTY:

MECKLENBURG

PREPARED:

ITA

\*Use "L SBL" Stations

CHECKED:

TEF

LOCATION	EXCAVATION CU. METER					EMBANKMENT CU. METER					WASTE CU. METER		
	TOTAL UNCL EXCA	EARTH SUITABLE	EARTH UNSUITABLE	UNDERCUT	ROCK	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 20%	BORROW (CM)	SUITABLE	UNSUITABLE	ROCK
Summary No. 1													
L 221+00 to 227+39.524	404462	391940			12522	1082	1082		1082		391940		11440
Rp-E 2+79.14 to 4+60.00	32297	32297				152		152	182		32115		
Rp-F 2+15.07 to 4+60.00	45447	45447									45447		
Y14 13+60 to 14+20	265	265									265		
<b>SUMMARY NO. 1 TOTAL</b>	<b>482471</b>	<b>469949</b>			<b>12522</b>	<b>1234</b>	<b>1082</b>	<b>152</b>	<b>1264</b>		<b>469767</b>		<b>11440</b>
SUMMARY No. 2													
Lrev 227+39.524 to 233+60.00	214737	213991			746	41188	746	40442	49276		165461		
Yrev 10+10.00 to 16+42.98	12967	12967				3764		3764	4517		8450		
Yreva 10+03.60 to 11+43.828						489		489	587	587			
Yrevb 11+50.00 to 14+30.00	3872	3872				1914		1914	2297		1575		
<b>SUMMARY NO. 2 TOTAL</b>	<b>231576</b>	<b>230830</b>			<b>746</b>	<b>47355</b>	<b>746</b>	<b>46609</b>	<b>56677</b>	<b>587</b>	<b>175486</b>		
SUMMARY No. 3													
Lrev 233+60 to 237+95.056	19898	19898				59558		59558	71470	51572			
<b>SUMMARY NO. 3 TOTAL</b>	<b>19898</b>	<b>19898</b>				<b>59558</b>		<b>59558</b>	<b>71470</b>	<b>51572</b>			
SUMMARY NO. 4													
Lrev 239+24.983 to 243+08.188 L.B	25107	25107		6348		43276		43276	51931	26824		6348	
L 243+08.246 L.A.to 246+60	21162	20893	269	9915		36922		36922	44306	23413		10184	
<b>SUMMARY NO. 4 TOTAL</b>	<b>46269</b>	<b>46000</b>	<b>269</b>	<b>16263</b>		<b>80198</b>		<b>80198</b>	<b>96238</b>	<b>50238</b>		<b>16532</b>	
SUMMARY NO. 5													
L 246+60 to 253+98.059				5475		323857		323857	388628	388628		5475	
Y1 10+00.00 to 11+67.391	249	249				439		439	527	278			
<b>SUMMARY NO. 5 TOTAL</b>	<b>249</b>	<b>249</b>		<b>5475</b>		<b>324296</b>		<b>324296</b>	<b>389155</b>	<b>388906</b>		<b>5475</b>	
SUMMARY NO. 6													
L 254+34.959 to 260+86.560	2294	2294				463634		463634	556361	554067			
Y2 12+40 to 18+20 (RT)	10569	10569				397		397	476		10093		
rpy2 1+42.223 to 6+00.00	1601	1601				76766		76766	92119	90518			
lpy2 1+02.648 to 3+56.05	6744	6744				1068		1068	1282		5462		
rpy2 2+35.544 to 5+20.00	44634	44634				3514		3514	4217		40417		
<b>SUMMARY NO. 6 TOTAL</b>	<b>65842</b>	<b>65842</b>				<b>545379</b>		<b>545379</b>	<b>654455</b>	<b>644585</b>	<b>55972</b>		

S/27102

PROJECT NO. : R-2248C

COUNTY: MECKLENBURG

PREPARED: ITA

CHECKED: TEF

LOCATION	EXCAVATION CU. METER					EMBANKMENT CU. METER					WASTE CU. METER		
	TOTAL UNCL EXCA	EARTH SUITABLE	EARTH UNSUITABLE	UNDERCUT	ROCK	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 20%	BORROW	SUITABLE	UNSUITABLE	ROCK
<b>SUMMARY NO. 7</b>													
L 261+57.040 to 271+20	4713	4713				299696		299696	359635	354922			
Y2 13+60 to 19+60 (LT)	8291	8291				390		390	468		7823		
Rpay2 1+37.719 to 6+60.00	6130	6130				104146		104146	124975	118845			
Lpay2 0+80.888 to 3+55.840	6507	6507				4493		4493	5392		1115		
Rpd2 1+08.364 to 5+00.00	13665	13665				13095		13095	15714	2049			
<b>SUMMARY NO. 7 TOTAL</b>	<b>39306</b>	<b>39306</b>				<b>421820</b>		<b>421820</b>	<b>506184</b>	<b>475816</b>	<b>8938</b>		
<b>SUMMARY NO. 8 TOTAL</b>													
L 271+20.00 to 280+40	24171	24171				273164		273164	327797	303626			
<b>SUMMARY NO. 8 TOTAL</b>	<b>24171</b>	<b>24171</b>				<b>273164</b>		<b>273164</b>	<b>327797</b>	<b>303626</b>			
<b>SUMMARY NO. 9</b>													
L 280+40.00 to 289+97.780	66278	66264	14	3895		211892		211892	254270	188006		3909	
Rpby3 1+45.031 to 4+80.00	9689	9689				11395		11395	13674	3985			
Rpcy3 1+21.935 to 4+40.00	2893	2893				20566		20566	24679	21786			
Y3rev 9+80.00 to 17+70	10829	10829				1206		1206	1447		9382		
<b>SUMMARY NO. 9 TOTAL</b>	<b>89689</b>	<b>89675</b>	<b>14</b>	<b>3895</b>		<b>245059</b>		<b>245059</b>	<b>294071</b>	<b>213778</b>	<b>9382</b>	<b>3909</b>	
<b>SUMMARY NO. 10</b>													
L 290+44.940 to 294+88.203	6328	6328				114043		114043	136852	130524			
Rpay3 1+35.930 to 4+20.00	8470	8470				1789		1789	2147		6323		
Rpd3 1+28.842 to 5+00.00	4936	4936				18443		18443	22132	17196			
<b>SUMMARY NO. 10 TOTAL</b>	<b>19734</b>	<b>19734</b>				<b>134275</b>		<b>134275</b>	<b>161130</b>	<b>147719</b>	<b>6323</b>		





PROJECT NUMBER: DO-5400	SHEET NO. 27
DATE: 11/11/03	SCALE: AS SHOWN
DESIGNED BY: J. LEE	CHECKED BY: J. LEE
DRAWN BY: J. LEE	IN CHARGE: J. LEE
PRELIMINARY PLANS DO NOT BE CONSIDERED FOR BIDDING OR CONSTRUCTION	

**Table 1: Stationing Data**

No. 6		No. 7	
PI STA 2+000	PI STA 3+000	PI STA 0+000	PI STA 1+000
Δ = 19°59'01" (RT)	Δ = 3°52'23"	Δ = 0°00'00"	Δ = 24°00'25" (LT)
L = 15.463	L = 60.000	L = 0.000	L = 84.369
T = 17.529	T = 40.000	T = 0.000	T = 53.250
R = 440.000	R = 200.000	R = 240.000	R = 200.000
sup = 0.00	sup = 0.00	sup = 0.00	sup = 0.00

**DATUM DESCRIPTION**  
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCOS FOR MONUMENT "MOTT" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 153988.713m EASTING: 423483.648m. THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS 0.999844. THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MOTT" TO -BL- STATION 2+51854 IS N 6° 52' 41.3" W 17391.639. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES. VERTICAL DATUM USED IS NGVD 29.

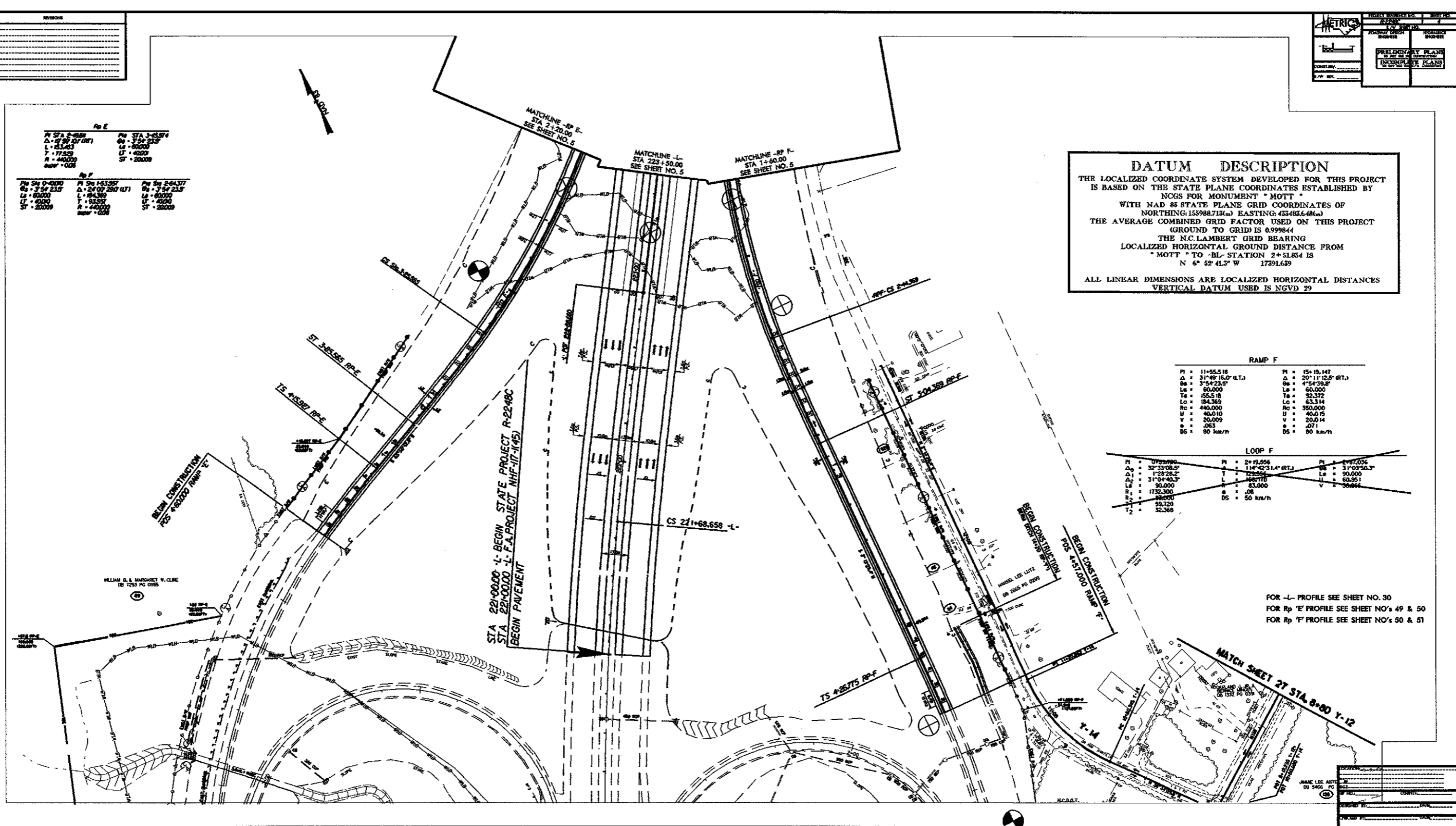
**Table 2: RAMP F Data**

RAMP F	
PI = 11+55.518	PI = 15+19.147
Δ = 31°49'16.0" (LT)	Δ = 20°11'12.5" (RT)
Δθ = 3°54'23.0"	Δθ = 4°54'39.8"
L = 60.000	L = 60.000
T = 35.518	T = 32.372
Lo = 184.369	Lo = 63.314
Rc = 440.000	Rc = 350.000
U = 40.010	U = 40.075
V = 20.009	V = 20.014
e = .063	e = .071
DS = 90 km/h	DS = 90 km/h

**Table 3: LOOP F Data**

LOOP F		
PI = 0729980	PI = 2+19.556	PI = 4+97.036
Δ <sub>1</sub> = 32°33'08.5"	Δ <sub>2</sub> = 114°42'31.4" (RT)	Δ <sub>3</sub> = 31°03'50.3"
Δ <sub>1</sub> = 1°29'28.2"	Δ <sub>2</sub> = 128°27'10"	Δ <sub>3</sub> = 1°03'50.3"
Δ <sub>2</sub> = 31°04'40.3"	Δ <sub>3</sub> = 114°42'31.4" (RT)	Δ <sub>4</sub> = 31°03'50.3"
L <sub>1</sub> = 90.000	L <sub>2</sub> = 83.000	L <sub>3</sub> = 90.000
L <sub>4</sub> = 1732.300	L <sub>5</sub> = 84.000	L <sub>6</sub> = 90.000
R <sub>1</sub> = 380.000	R <sub>2</sub> = 59.720	R <sub>3</sub> = 380.000
R <sub>4</sub> = 59.720	R <sub>5</sub> = 32.368	R <sub>6</sub> = 380.000
T <sub>1</sub> = 32.368	T <sub>2</sub> = 32.368	T <sub>3</sub> = 32.368
DS = 50 km/h	DS = 50 km/h	DS = 50 km/h

FOR -L- PROFILE SEE SHEET NO. 30  
 FOR Rp 'E' PROFILE SEE SHEET NO'S 49 & 50  
 FOR Rp 'F' PROFILE SEE SHEET NO'S 50 & 51



NAME: J. LEE	AUTH: J. LEE
DO: 5400	PG: 27
DATE: 11/11/03	COUNT: 1


REVISIONS

-RPE-

PI STA 1-52.092 θs = 3° 54' 23.5" Ls = 60.000 LT = 40.001 ST = 20.009	PI STA 2-49.611 Δ = 19° 59' 10.1" (RT) L = 153.483 T = 77.529 R = 440.000 e = 0.06	PI STA 3-45.574 θs = 3° 54' 23.5" Ls = 60.000 LT = 40.001 ST = 20.009
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FOR -L- LINE PROFILE SEE SHEET NO. 30 & 31  
FOR Rp 'E' PROFILE SEE SHEET NO. 49 & 50  
FOR Rp 'F' PROFILE SEE SHEET NO. 50 & 51

METRIC



CONST. REV.  
R/W REV.

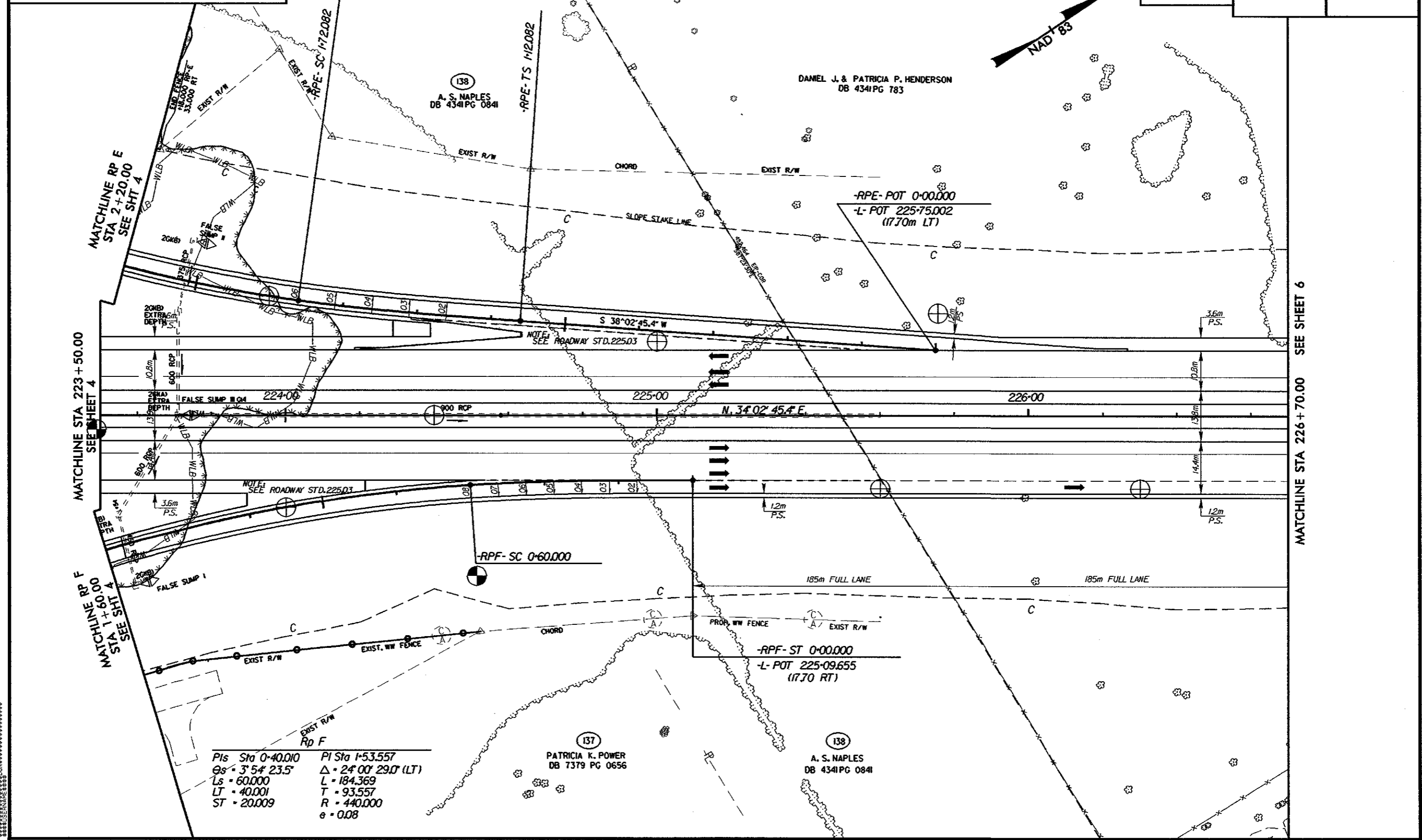
PROJECT REFERENCE NO. R-2248C SHEET NO. 5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION



MATCHLINE STA 223+50.00  
SEE SHEET 4

MATCHLINE RP F  
STA 1+60.00  
SEE SHEET 4

MATCHLINE STA 226+70.00  
SEE SHEET 6

-RPF-

PI Sta 0-40.010 θs = 3° 54' 23.5" Ls = 60.000 LT = 40.001 ST = 20.009	PI Sta 1-53.557 Δ = 24° 00' 29.0" (LT) L = 184.369 T = 93.557 R = 440.000 e = 0.08
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137 PATRICIA K. POWER  
DB 7379 PG 0656


138 A. S. NAPLES  
DB 4341 PG 0841

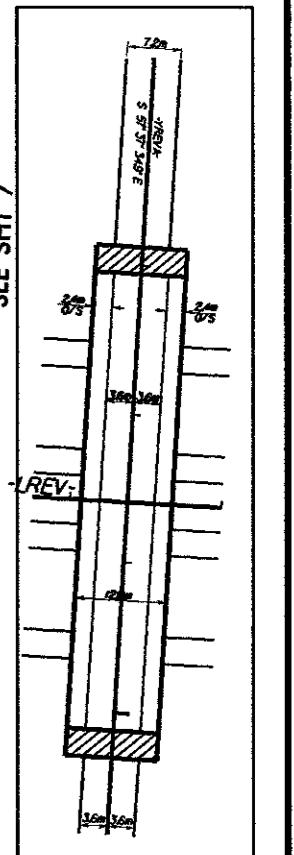
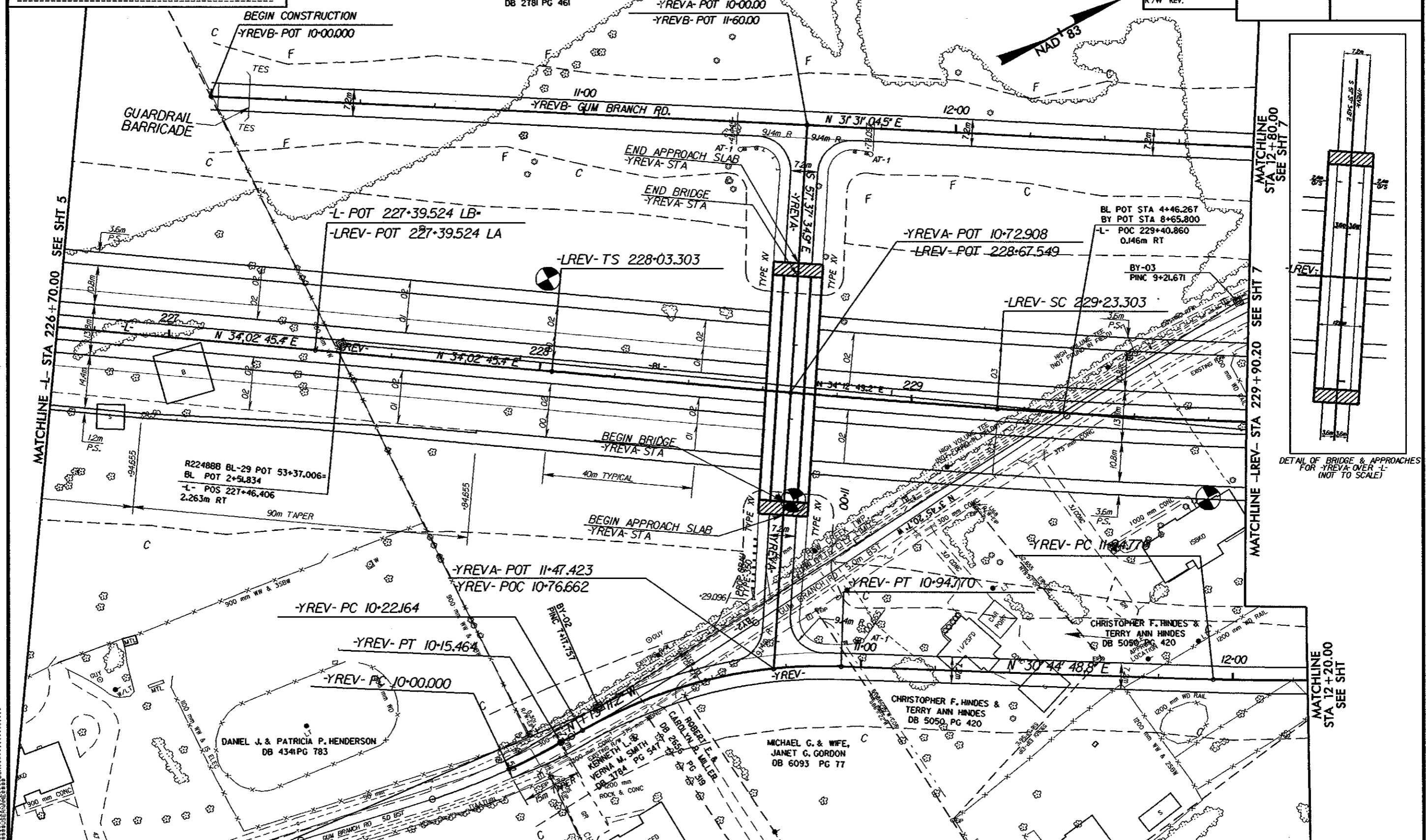


REVISIONS	

-YREV-		-LREV-	
PI Sta 10-07.737	PI Sta 10-59.441	PIs Sta 228-83.306	PI Sta 231-40.671
$\Delta = 5' 12" 43.2" (LT)$	$\Delta = 32' 00" 00.0" (RT)$	$\theta = 1' 28' 31.5"$	$\Delta = 10' 39' 34.2" (LT)$
L = 15.464	L = 72.606	Ls = 120.000	L = 433.4813
T = 77.37	T = 37.277	LT = 80.003	T = 217.3680
R = 170.000	R = 130.000	ST = 40.003	R = 2,330.000
	e = 0.08		e = 0.03

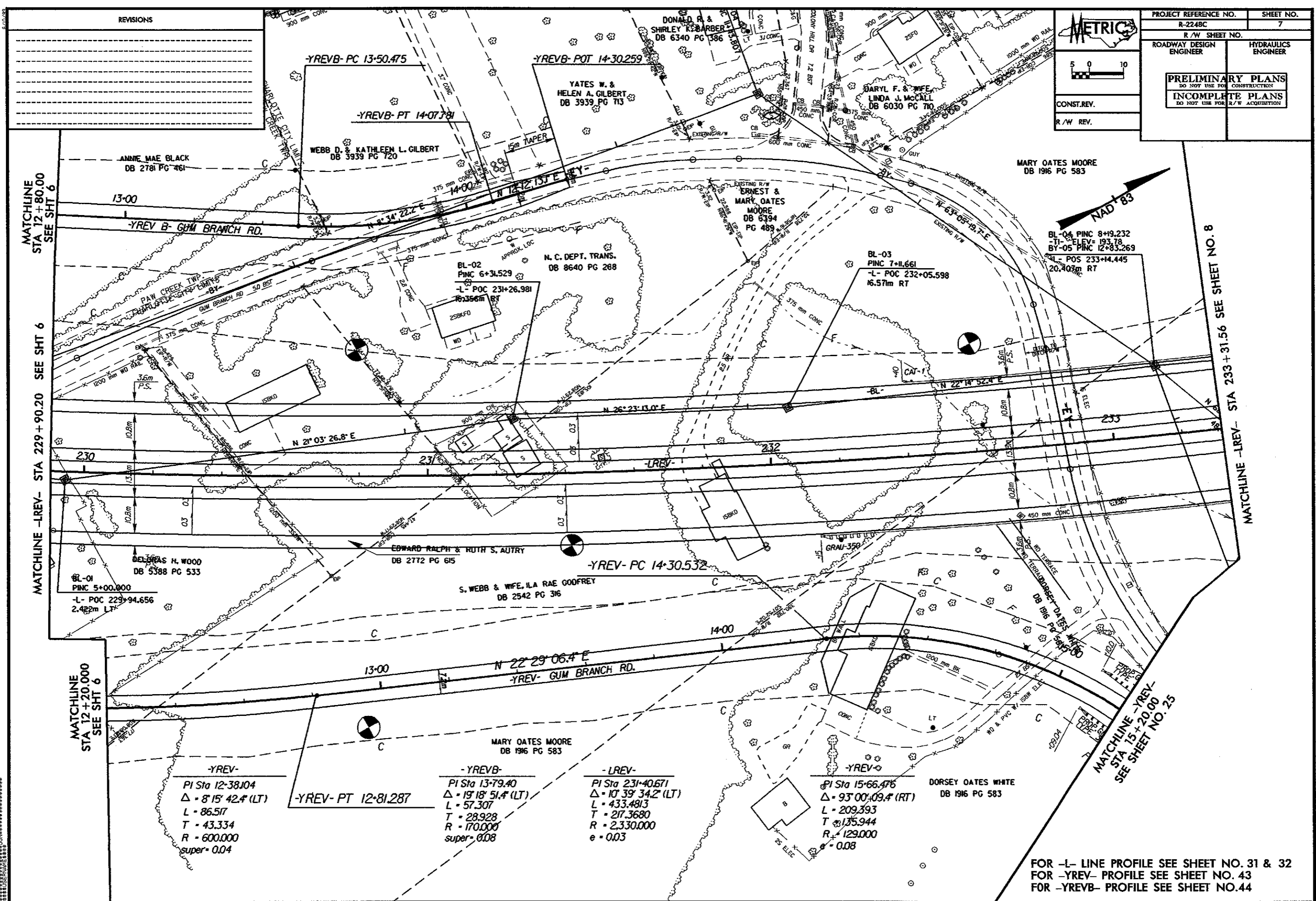
FOR -L- LINE PROFILE SEE SHEET NO. 31  
 FOR -YREV- PROFILE SEE SHEET NO. 43  
 FOR -YREVA- PROFILE SEE SHEET NO. 45  
 FOR -YREVB- PROFILE SEE SHEET NO. 44

	
PROJECT REFERENCE NO. R-2248C	SHEET NO. 6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
INCOMPLETE PLANS <small>DO NOT USE FOR R/W ACQUISITION</small>	
CONST. REV.	
R/W REV.	



REVISIONS	

PROJECT REFERENCE NO. R-224BC	SHEET NO. 7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION <b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
CONST. REV.	
R/W REV.	



MATCHLINE - STA 12+80.00  
SEE SHT 6

MATCHLINE -LREV- STA 229+90.20  
SEE SHT 6

MATCHLINE - STA 12+20.00  
SEE SHT 6

MATCHLINE -LREV- STA 233+31.56  
SEE SHEET NO. 8

**-YREV-**  
 PI Sta 12+38.04  
 $\Delta = 8' 15'' 42.4''$  (LT)  
 L = 86.517  
 T = 43.334  
 R = 600.000  
 super = 0.04

**-YREV- PT 12+81.287**

**-YREVB-**  
 PI Sta 13+79.40  
 $\Delta = 19' 18'' 51.4''$  (LT)  
 L = 57.307  
 T = 28.928  
 R = 170.000  
 super = 0.08

**-LREV-**  
 PI Sta 231+40.671  
 $\Delta = 10' 39'' 34.2''$  (LT)  
 L = 433.4813  
 T = 217.3680  
 R = 2,330.000  
 e = 0.03

**-YREV-**  
 PI Sta 15+66.476  
 $\Delta = 93' 00'' 09.4''$  (RT)  
 L = 209.393  
 T = 135.944  
 R = 129.000  
 e = 0.08

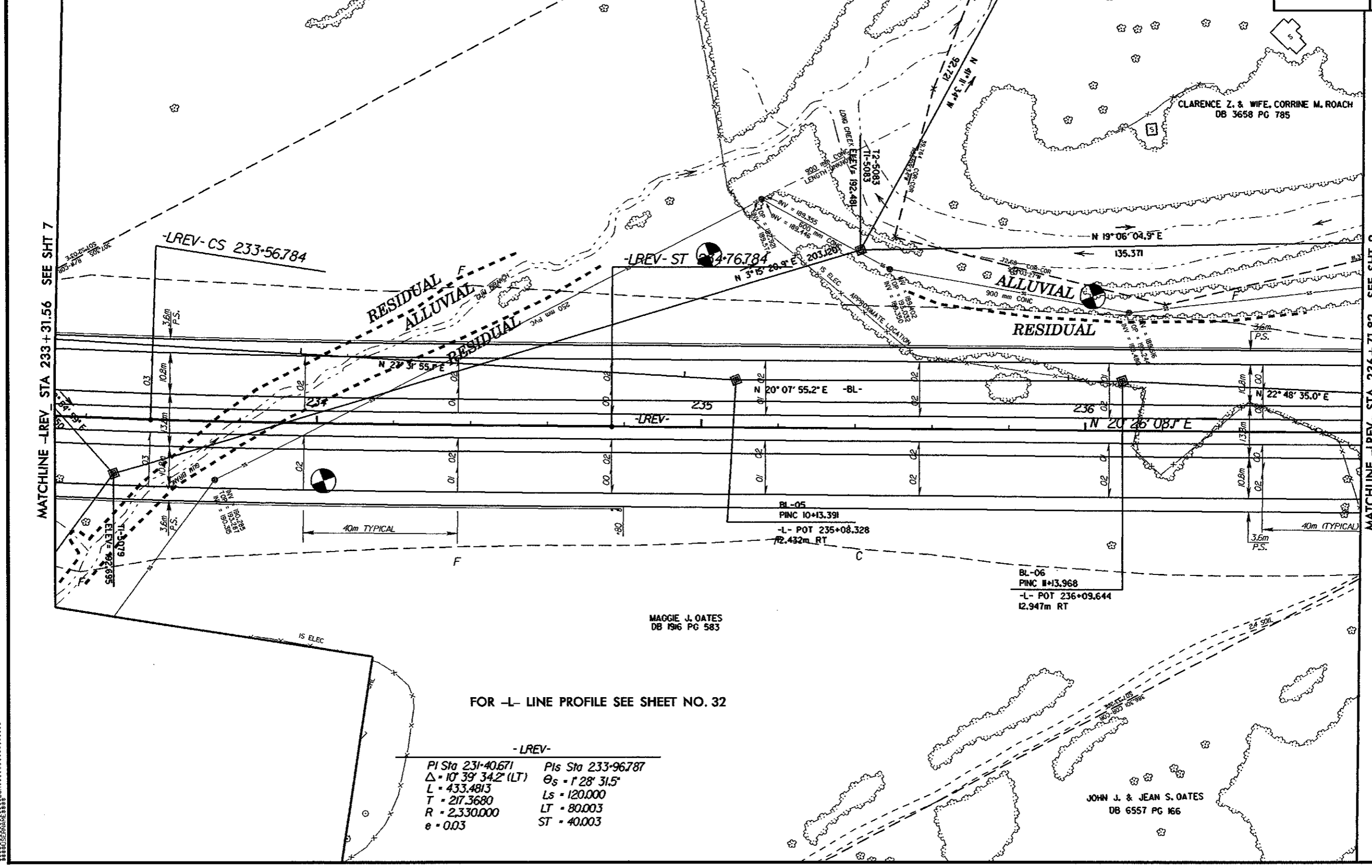
FOR -L- LINE PROFILE SEE SHEET NO. 31 & 32  
 FOR -YREV- PROFILE SEE SHEET NO. 43  
 FOR -YREVB- PROFILE SEE SHEET NO. 44

REVISIONS

**METRIC**

CONST. REV.  
R/W REV.

PROJECT REFERENCE NO. R-2248C	SHEET NO. 8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION <b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	



MATCHLINE -LREV- STA 233+31.56 SEE SHT 7

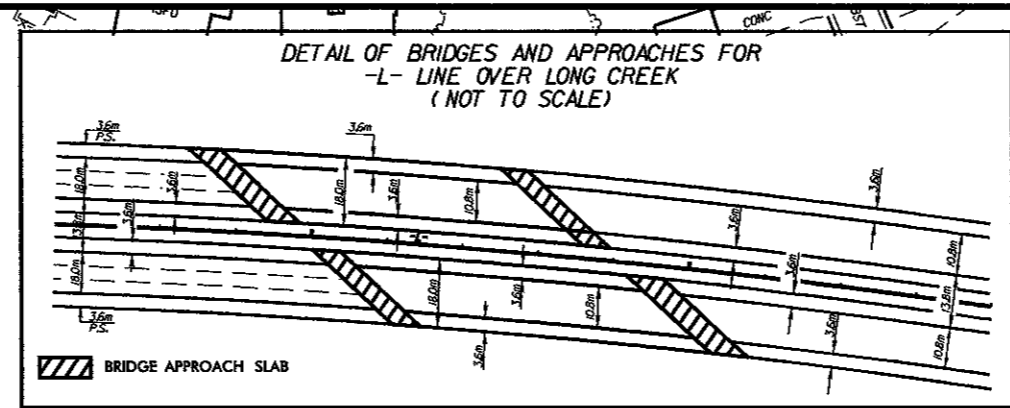
MATCHLINE -LREV- STA 236+71.82 SEE SHT 9

FOR -L- LINE PROFILE SEE SHEET NO. 32

-LREV-	
PI Sta 231+40.671	PIs Sta 233+96.787
$\Delta = 10^{\circ} 39' 34.2''$ (LT)	$\theta_s = 1^{\circ} 28' 31.5''$
L = 433.4813	Ls = 120.000
T = 217.3680	LT = 80.003
R = 2,330.000	ST = 40.003
e = 0.03	



REVISIONS



PROJECT REFERENCE NO. R-2248C SHEET NO. 9

R/W SHEET NO.

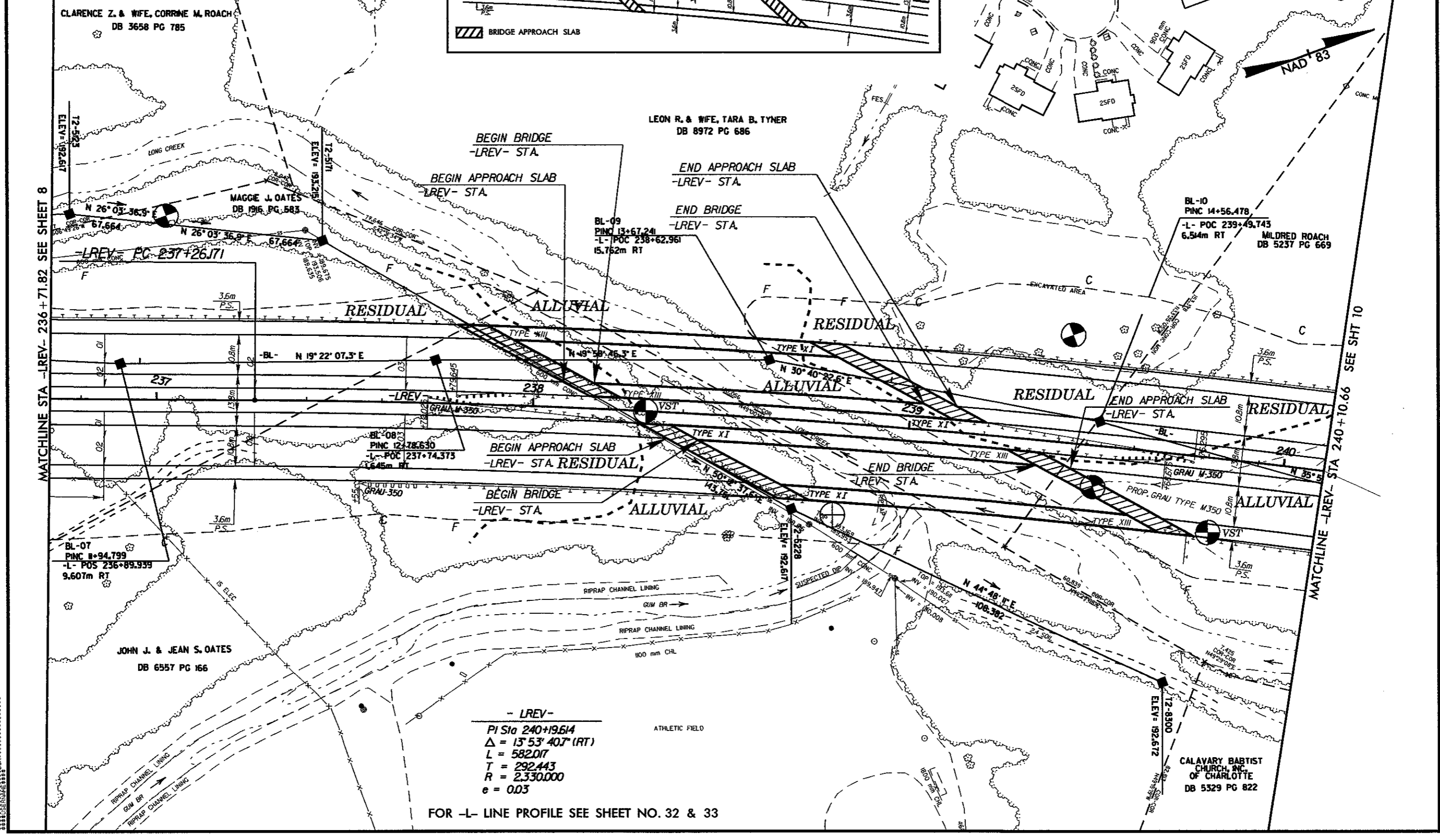
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

CONST. REV.

R/W REV.



- LREV -

PI Sta 240+19.614  
 $\Delta = 15^\circ 53' 40.7" (RT)$   
 $L = 582.017$   
 $T = 292.443$   
 $R = 2,330.000$   
 $e = 0.03$

FOR -L- LINE PROFILE SEE SHEET NO. 32 & 33

MATCHLINE STA -LREV- 236+71.82 SEE SHEET 8

MATCHLINE -LREV- STA 240+10.66 SEE SHT 10

REVISIONS

FOR -L- LINE PROFILE SEE SHEET NO. 33

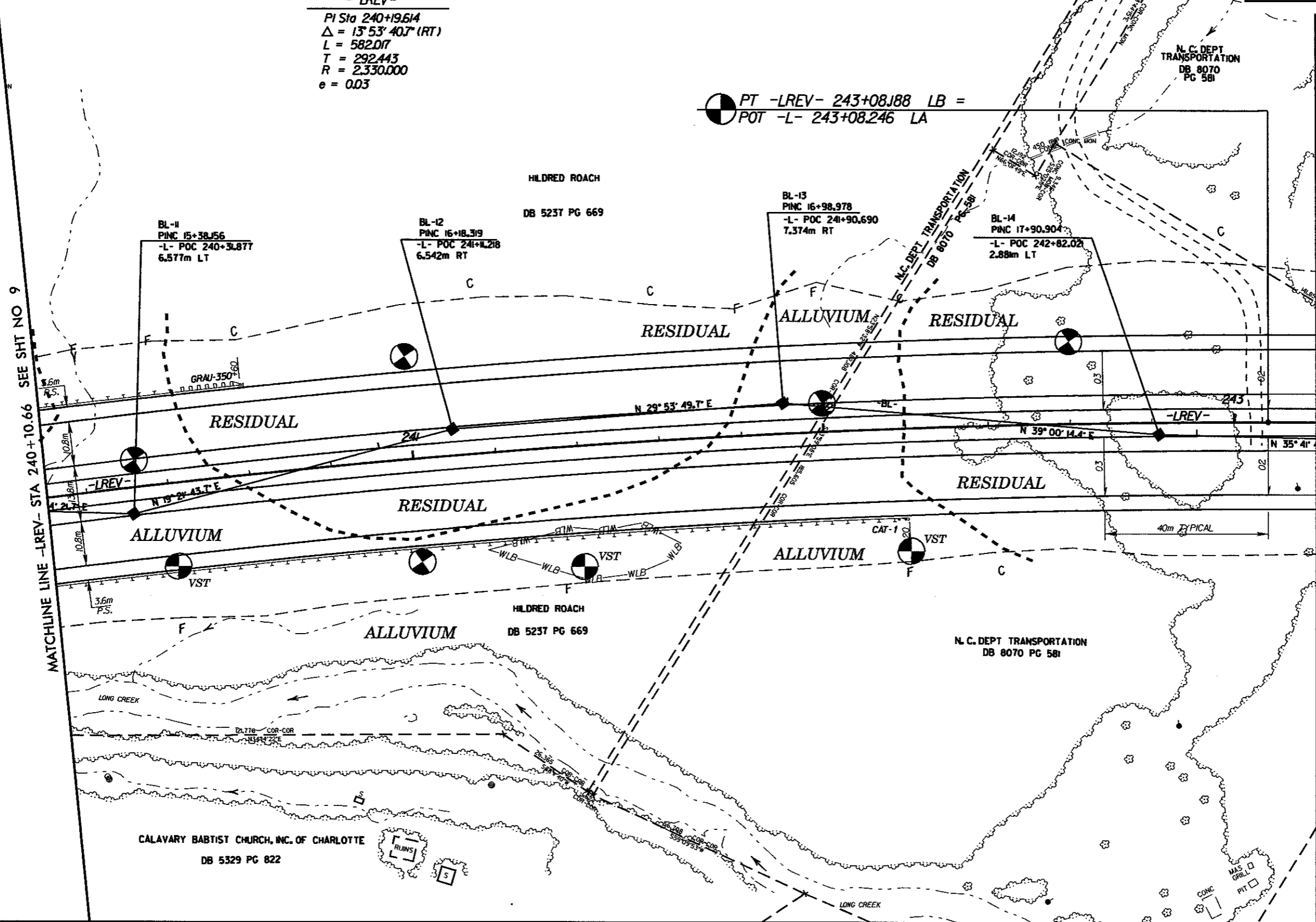
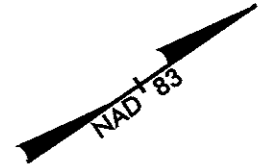
**METRIC**

CONST. REV.  
R/W REV.

PROJECT REFERENCE NO. R-2248C	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION <b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	

- LREV -  
 PI Sta 240+19.614  
 $\Delta = 13^{\circ} 53' 40.7''$  (RT)  
 L = 582.017  
 T = 292.443  
 R = 2,330.000  
 e = 0.03

PT -LREV- 243+08J88 LB =  
 POT -L- 243+08.246 LA



MATCHLINE -LREV- STA 240+10.66 SEE SHT NO 9

MATCHLINE -L- STA 243+20.00 SEE SHEET NO. 11

CALAVARY BAPTIST CHURCH, INC. OF CHARLOTTE  
 DB 5329 PG 822

HILDRED ROACH  
 DB 5237 PG 669

N. C. DEPT TRANSPORTATION  
 DB 8070 PG 581

BL-11  
 PINC 15+38J56  
 -L- POC 240+3L877  
 6.577m LT

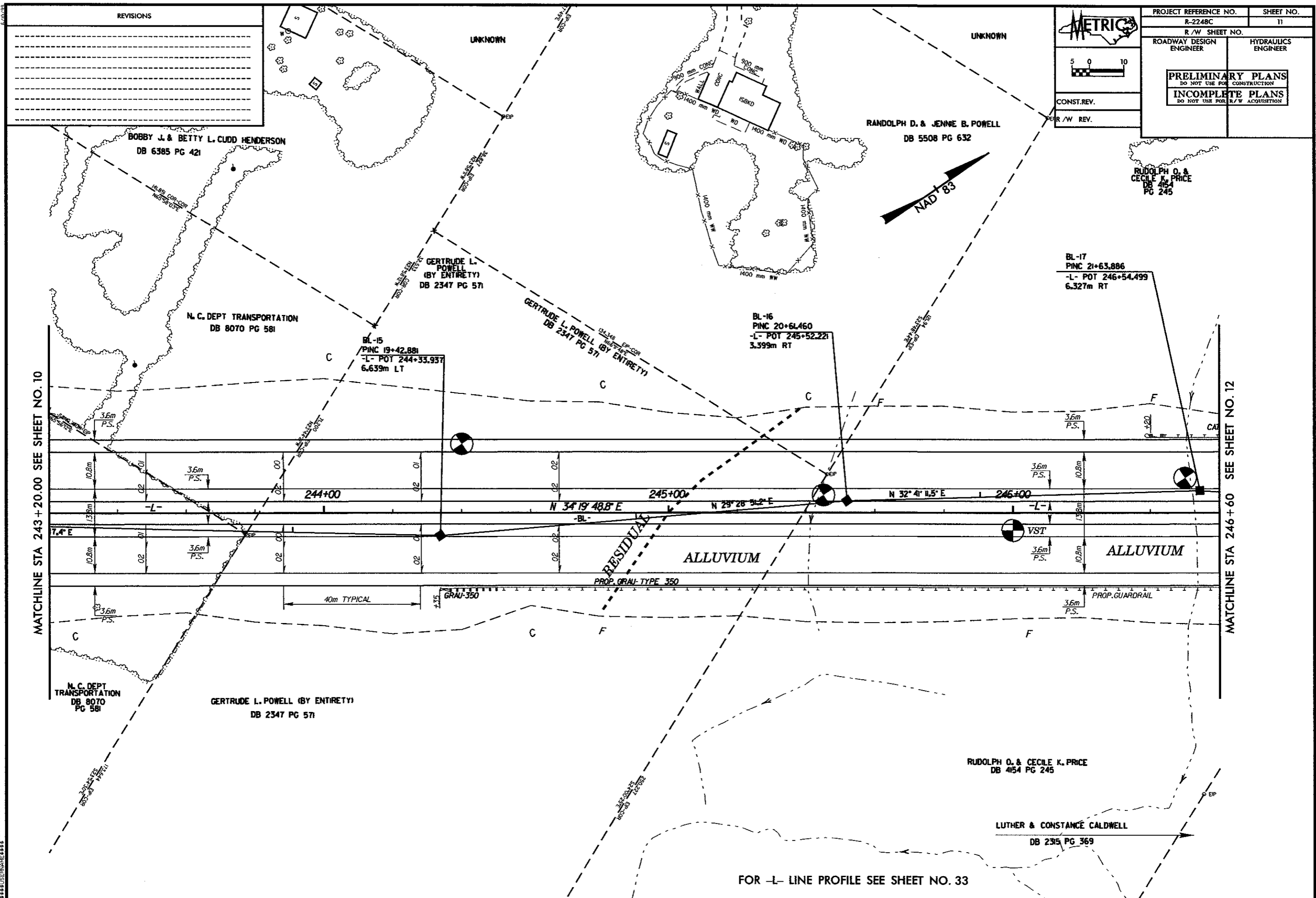
BL-12  
 PINC 16+18J19  
 -L- POC 241+L218  
 6.542m RT

BL-13  
 PINC 16+98J78  
 -L- POC 241+90.690  
 7.374m RT

BL-14  
 PINC 17+90J04  
 -L- POC 242+82.02  
 2.88m LT

REVISIONS

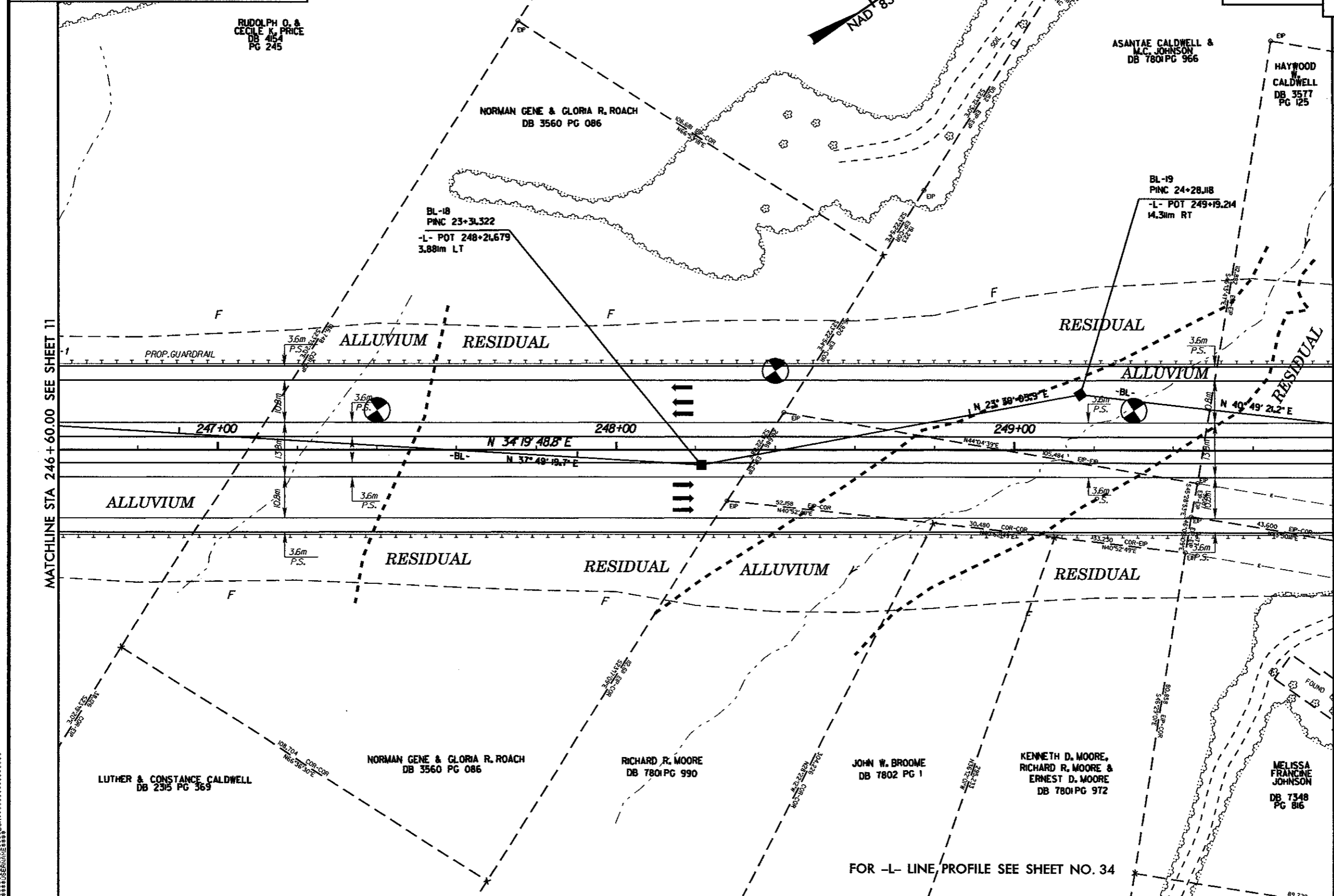
PROJECT REFERENCE NO. R-2248C		SHEET NO. 11
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION <b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION		
CONST. REV.		R/W REV.



\*\*\*\*\*  
 SYSTEMS  
 \*\*\*\*\*

REVISIONS

PROJECT REFERENCE NO. R-2248C	SHEET NO. 12
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small> <b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR R/W ACQUISITION</small>	
CONST. REV.	
R / W REV.	



MATCHLINE STA 246 + 60.00 SEE SHEET 11

MATCHLINE STA 249 + 80.00 SEE SHEET 13

HOLLAND & FROMA ROACH  
DB 2315 PG 368

ASANTAE CALDWELL &  
M.C. JOHNSON  
DB 780 PG 966

HAYWOOD  
CALDWELL  
DB 3577  
PG 125

NORMAN GENE & GLORIA R. ROACH  
DB 3560 PG 086

RUDOLPH O. &  
CECILE K. PRICE  
DB 4154  
PG 245

BL-18  
PINC 23+31.322  
-L- POT 248+21.679  
3.88m LT

BL-19  
PINC 24+28.118  
-L- POT 249+19.214  
14.31m RT

LUTHER & CONSTANCE CALDWELL  
DB 2315 PG 369

NORMAN GENE & GLORIA R. ROACH  
DB 3560 PG 086

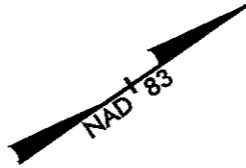
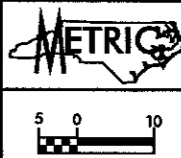
RICHARD R. MOORE  
DB 780 PG 990

JOHN W. BROOME  
DB 7802 PG 1

KENNETH D. MOORE,  
RICHARD R. MOORE &  
ERNEST D. MOORE  
DB 780 PG 972

MELISSA FRANCINE  
JOHNSON  
DB 7348  
PG 816

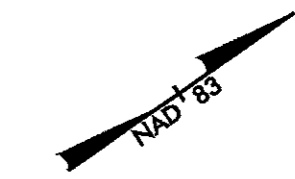
FOR -L- LINE, PROFILE SEE SHEET NO. 34



\*\*\*\*\*  
SYSTEMS  
\*\*\*\*\*

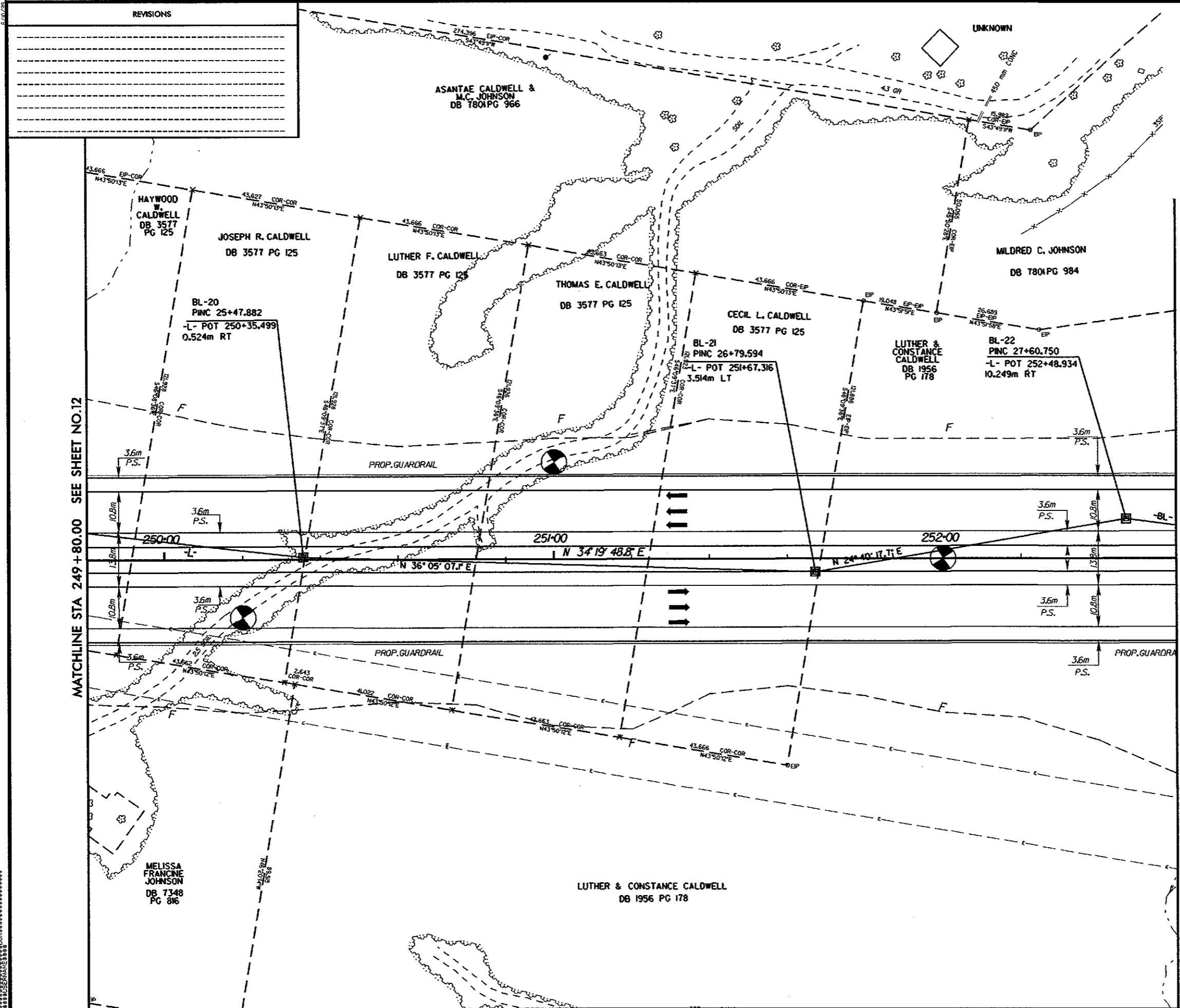
REVISIONS

PROJECT REFERENCE NO. R-2248C		SHEET NO. 13	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
<p align="center"><b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION</p> <p align="center"><b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION</p>			
CONST.REV.			
R/W REV.			

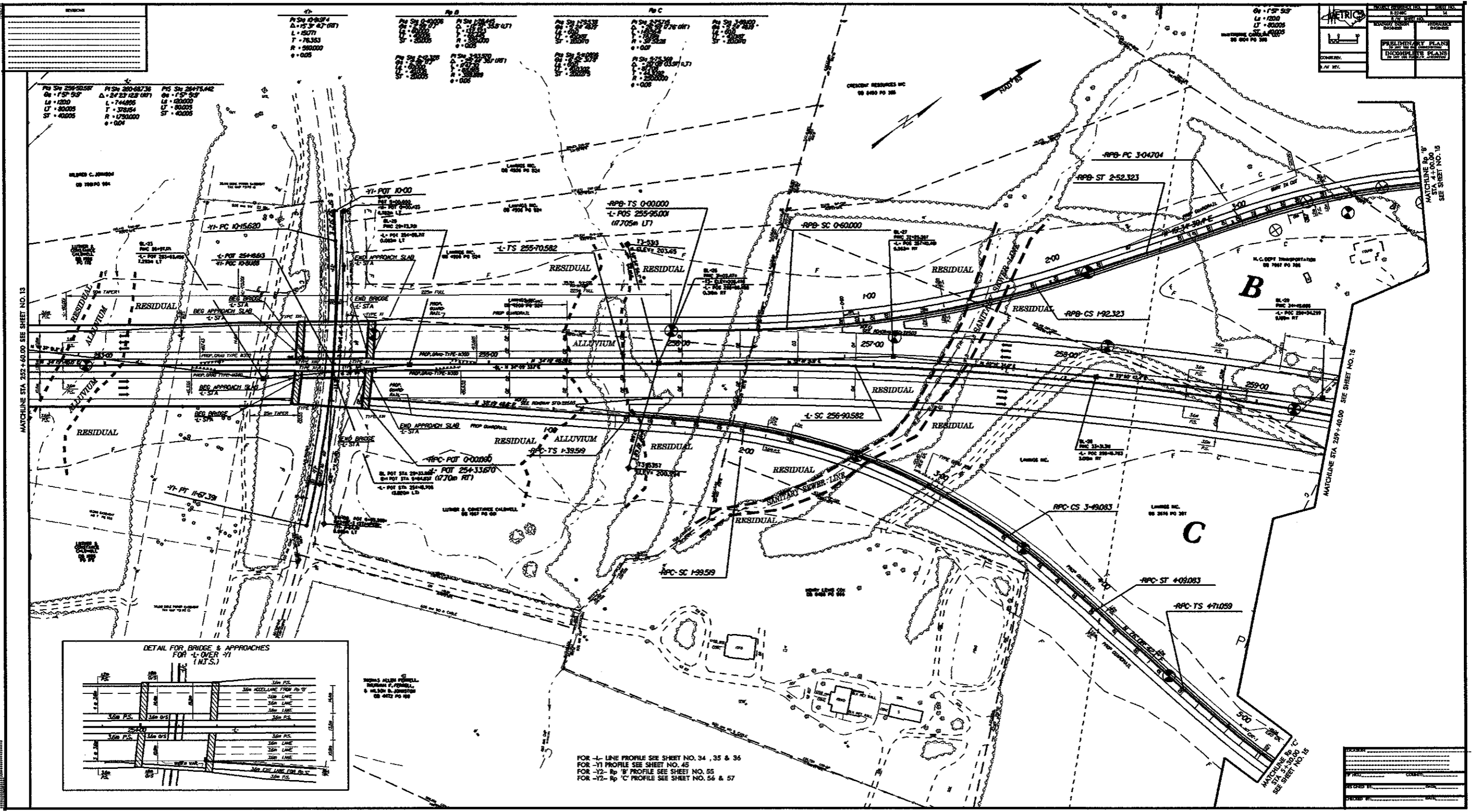


MATCHLINE STA 249 + 80.00 SEE SHEET NO.12

MATCHLINE STA 252 + 60.00 SEE SHEET NO.14



FOR -L- LINE PROFILE SEE SHEET NO. 34

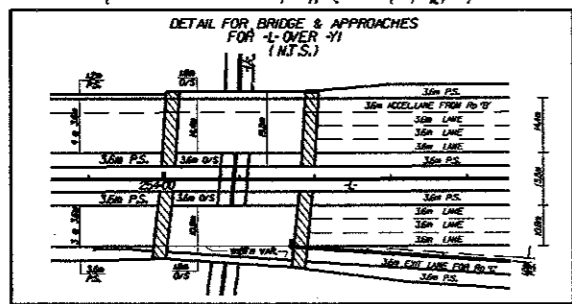


PC	PVI	PT
256-50.58	260-87.36	254-75.42
0+1200	0+1200	0+1200
0+1200	0+1200	0+1200
0+1200	0+1200	0+1200

PC	PVI	PT
0-0000	178.47	178.47
0+2000	0+2000	0+2000
0+2000	0+2000	0+2000
0+2000	0+2000	0+2000

MATCHLINE STA 222+00.00 SEE SHEET NO. 13

MATCHLINE STA 229+40.00 SEE SHEET NO. 15



FOR L- LINE PROFILE SEE SHEET NO. 34, 35 & 36  
 FOR -Y1 PROFILE SEE SHEET NO. 45  
 FOR -Y2- R/B PROFILE SEE SHEET NO. 55  
 FOR -Y2- R/C PROFILE SEE SHEET NO. 54 & 57

**METRICS**

SCALE: 1" = 40' (HORIZONTAL)  
 1" = 20' (VERTICAL)

DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 PROJECT NO. \_\_\_\_\_

DATE	_____
DRAWN BY	_____
CHECKED BY	_____
PROJECT NO.	_____



**METRICS**

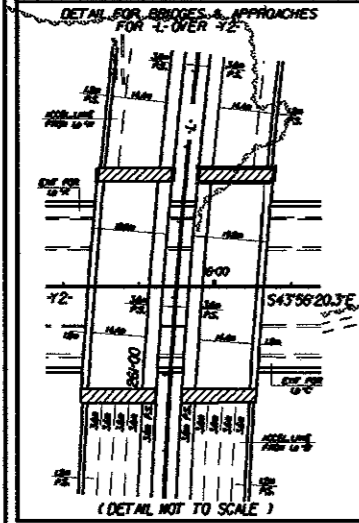
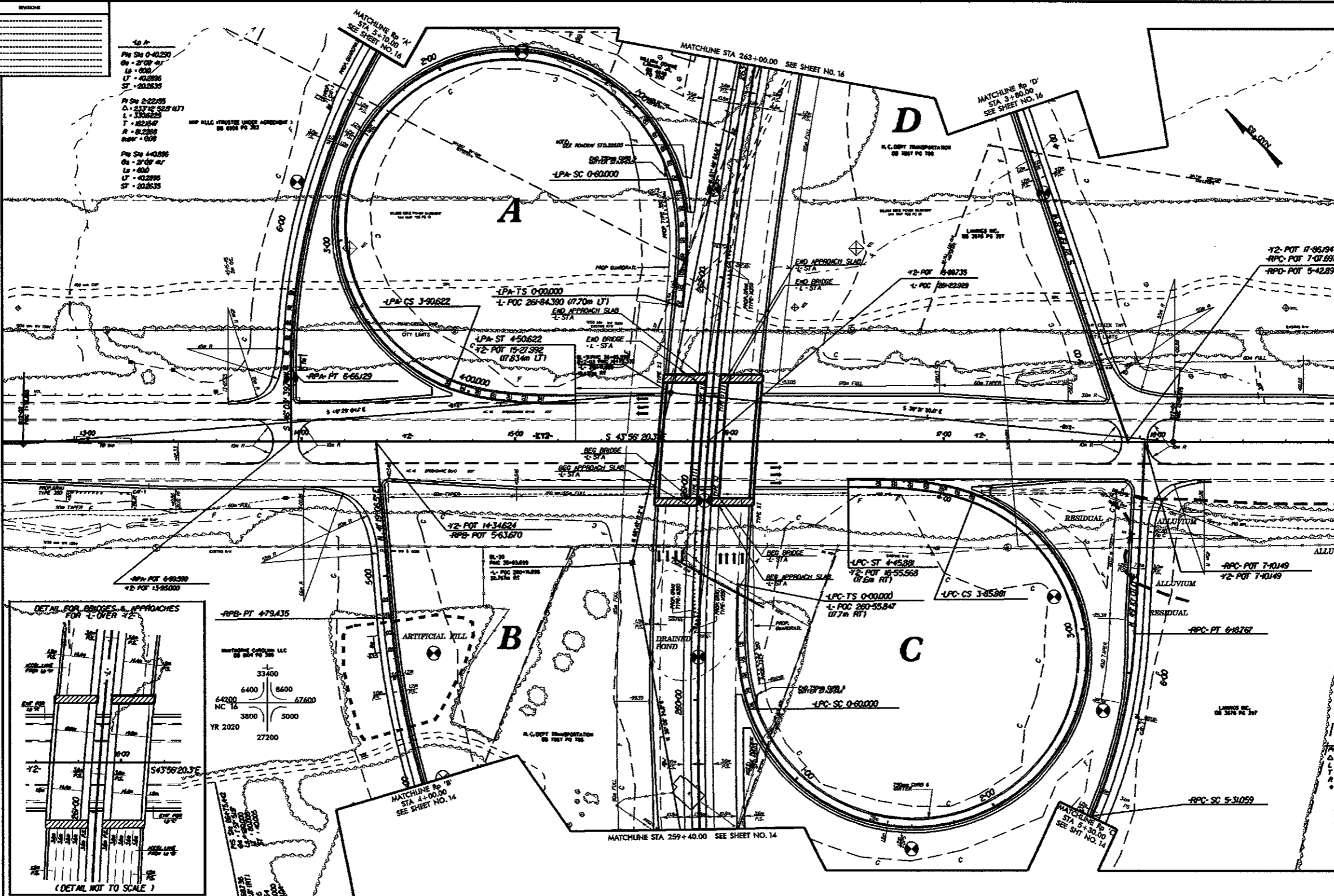
PROJECT NO. 17-0000  
SHEET NO. 11

DATE: 11/15/17  
SCALE: AS SHOWN

PRELIMINARY PLANS  
INCOMPLETE PLANS

CONTR. NO. 17-0000  
1/11 REV.

FOR -L- LINE PROFILE SEE SHEET NO. 36 & 37  
 FOR R/A PROFILE SEE SHEET NO. 54  
 FOR R/B PROFILE SEE SHEET NO. 55  
 FOR R/C PROFILE SEE SHEET NO. 56 & 57  
 FOR R/D PROFILE SEE SHEET NO. 58 & 59  
 FOR L/A PROFILE SEE SHEET NO. 52  
 FOR L/B PROFILE SEE SHEET NO. 53  
 FOR -Y2- PROFILE SEE SHEET NO. 45, 46, & 47



PC	PT	ST	PC	PT	ST	PC	PT	ST
0+00.00	0+00.00	0+00.00	2+00.00	2+00.00	2+00.00	4+00.00	4+00.00	4+00.00
0+00.00	0+00.00	0+00.00	2+00.00	2+00.00	2+00.00	4+00.00	4+00.00	4+00.00
0+00.00	0+00.00	0+00.00	2+00.00	2+00.00	2+00.00	4+00.00	4+00.00	4+00.00
0+00.00	0+00.00	0+00.00	2+00.00	2+00.00	2+00.00	4+00.00	4+00.00	4+00.00

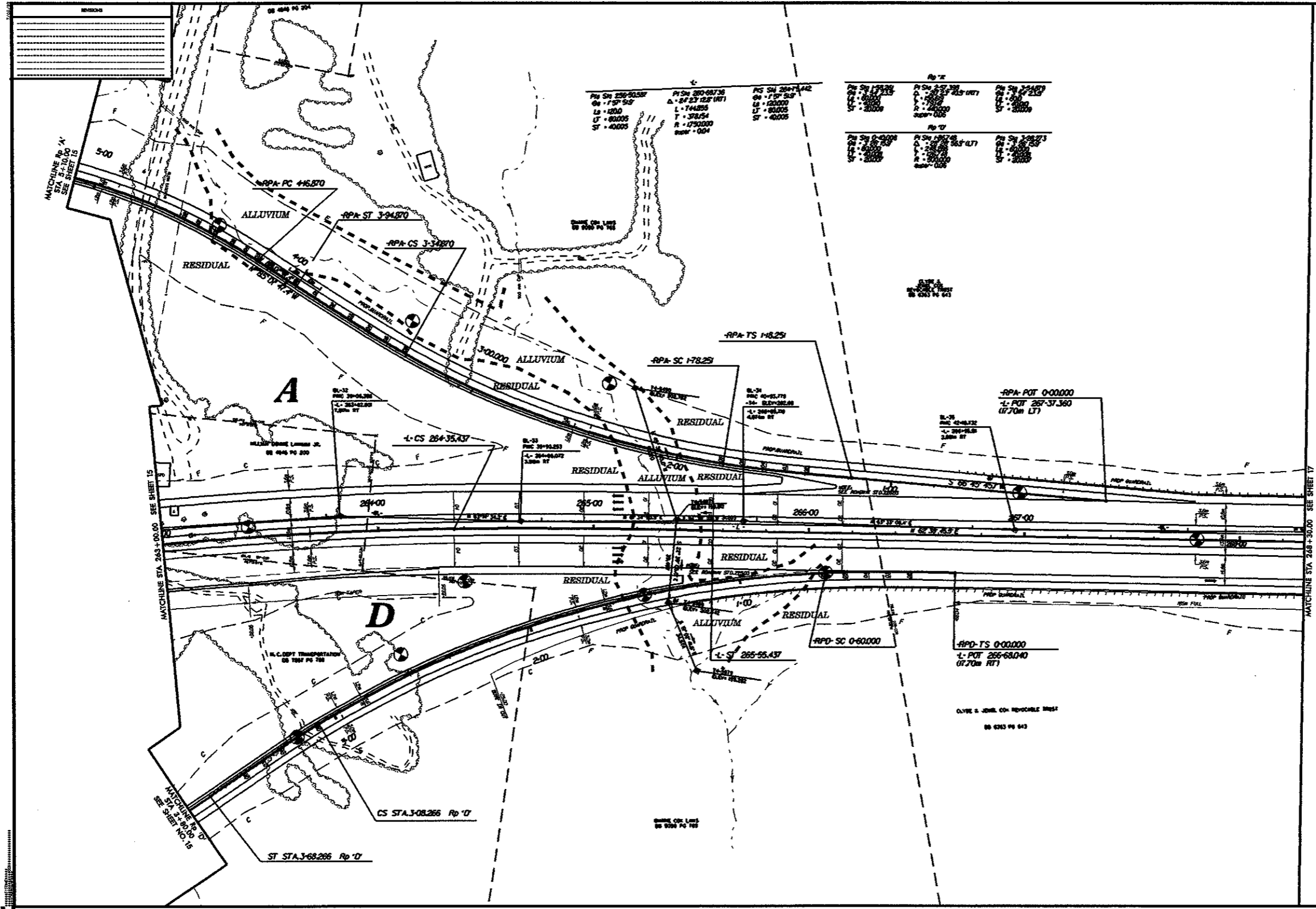
MISSIONS

10 A	PC Sta 0+00.00	PT Sta 0+00.00	ST Sta 0+00.00
10 B	PC Sta 0+00.00	PT Sta 0+00.00	ST Sta 0+00.00
10 C	PC Sta 0+00.00	PT Sta 0+00.00	ST Sta 0+00.00
10 D	PC Sta 0+00.00	PT Sta 0+00.00	ST Sta 0+00.00

-Y2- MATCHLINE STA 12+40.00 SEE SHEET NO. 10

-Y2- MATCHLINE STA 19+40.00 SEE SHEET NO. 17

	<table border="1"> <tr> <td>PROJECT NO.</td> <td>11</td> </tr> <tr> <td>DATE</td> <td>11/11/11</td> </tr> <tr> <td>DESIGNED BY</td> <td>...</td> </tr> <tr> <td>CHECKED BY</td> <td>...</td> </tr> <tr> <td>DATE</td> <td>...</td> </tr> </table>	PROJECT NO.	11	DATE	11/11/11	DESIGNED BY	...	CHECKED BY	...	DATE	...
PROJECT NO.	11										
DATE	11/11/11										
DESIGNED BY	...										
CHECKED BY	...										
DATE	...										
<table border="1"> <tr> <td>SCALE</td> <td>1" = 40'</td> </tr> </table>	SCALE	1" = 40'	<table border="1"> <tr> <td>PRELIMINARY PLANS</td> <td>INCOMPLETE PLANS</td> </tr> </table>	PRELIMINARY PLANS	INCOMPLETE PLANS						
SCALE	1" = 40'										
PRELIMINARY PLANS	INCOMPLETE PLANS										



Rd 12		
PC STA 204+75.442	PI STA 204+87.38	PT STA 204+99.32
Δ = 17° 54'	Δ = 84° 23' 12" (RT)	Δ = 7° 07' 54"
L = 120.0	L = 744.855	L = 220.0
T = 80.005	T = 378.54	T = 80.005
S = 40.005	S = 1750.000	S = 40.005
ELEV = 0.04		

Rd 17		
PC STA 17+00.0	PI STA 17+00.0	PT STA 17+00.0
Δ = 0° 00'	Δ = 0° 00'	Δ = 0° 00'
L = 0.0	L = 0.0	L = 0.0
T = 0.0	T = 0.0	T = 0.0
S = 0.0	S = 0.0	S = 0.0
ELEV = 0.00		

REVISIONS

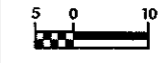
FOR L- LINE PROFILE SEE SHEET NO. 37 & 38  
 FOR RD A PROFILE SEE SHEET 54  
 FOR RD D PROFILE SEE SHEET 58 & 59

DESIGNED BY	
CHECKED BY	
DATE	

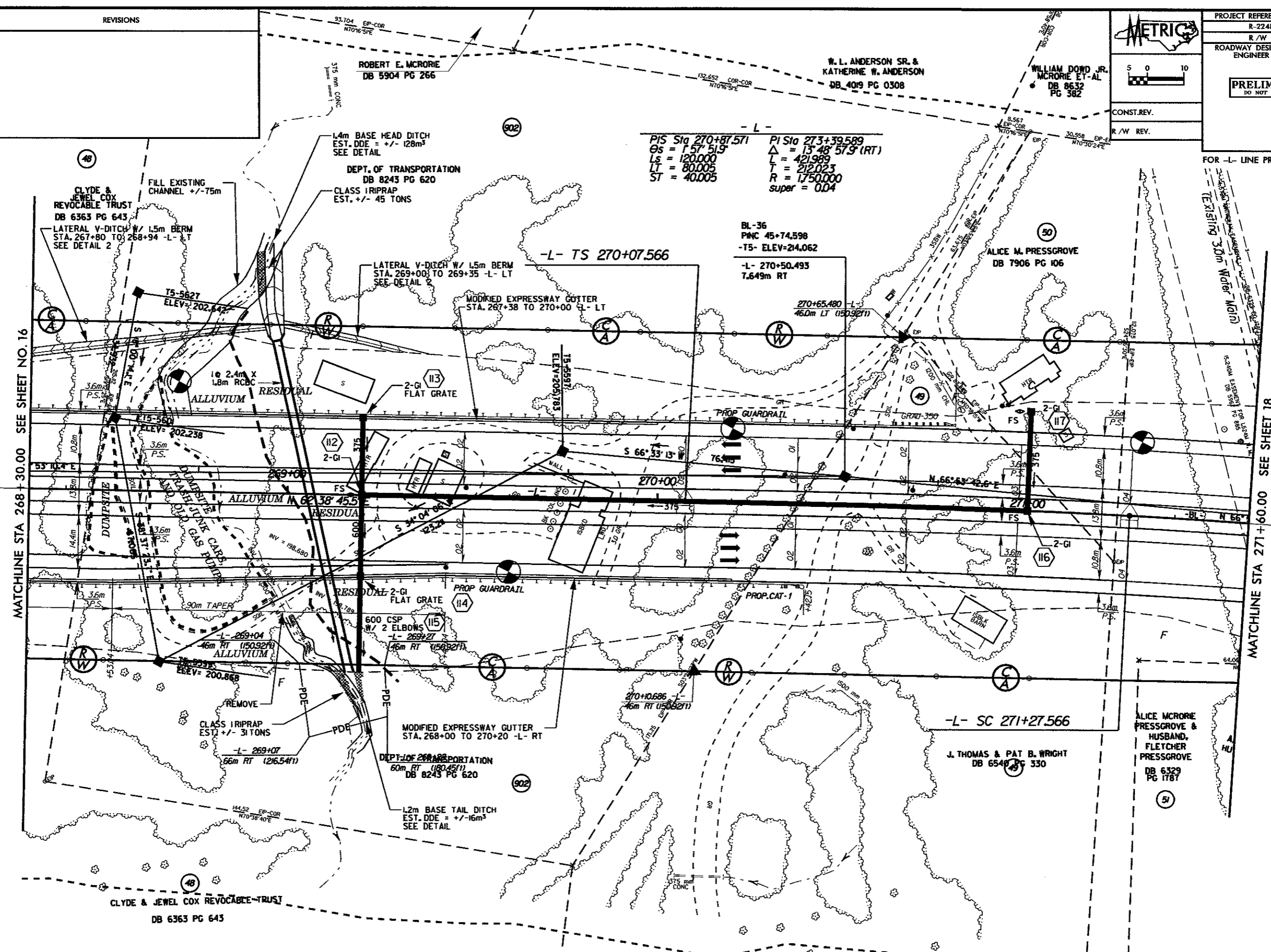
REVISIONS



PROJECT REFERENCE NO. R-2248C	SHEET NO. -17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
CONST.REV.	
R/W REV.	



FOR -L- LINE PROFILE SEE SHEET NO. 36



MATCHLINE STA 268 + 30.00 SEE SHEET NO. 16

MATCHLINE STA 271 + 60.00 SEE SHEET 18



- L -  
 PIS Sta 270+87.571    PI Sta 273+39.589  
 Gs = 1.57 519'    Δ = 13 48' 57.9" (RT)  
 Ls = 120.000    L = 421.989  
 LT = 80.005    T = 212.023  
 ST = 40.005    R = 1750.000  
 super = 0.04

BL-36  
 PNC 45+74.598  
 -T5- ELEV=214.062  
 -L- 270+50.493  
 7.649m RT

Alice McRorie  
 Pressgrove &  
 Husband &  
 Fletcher  
 Pressgrove  
 DB 6329  
 PG 1787

J. THOMAS & PAT B. WRIGHT  
 DB 6548 PG 330

Clyde & Jewel Cox  
 Revocable Trust  
 DB 6363 PG 643

ROBERT E. MCRORIE  
 DB 5904 PG 266

W. L. ANDERSON SR. &  
 KATHERINE W. ANDERSON  
 DB 4019 PG 0308

WILLIAM DOWD JR.  
 MCRORIE ET-AL  
 DB 8632  
 PG 382

Alice M. Pressgrove  
 DB 7906 PG 106

Clyde & Jewel Cox Revocable Trust  
 DB 6363 PG 643

DEPT. OF TRANSPORTATION  
 DB 8243 PG 620

CLASS IRIPRAP  
 EST. +/- 31 TONS

MODIFIED EXPRESSWAY GUTTER  
 STA. 268+00 TO 270+20 -L- RT

600 CSP  
 W/ 2 ELBOWS  
 -L- 269+27  
 46m RT (150.92ft)

CLASS IRIPRAP  
 EST. +/- 31 TONS

ALLUVIUM  
 ELEV= 200.868

ALLUVIUM M 6' 38' 45.5"

2-GI  
 FLAT GRATE

LATERAL V-DITCH W/ 1.5m BERM  
 STA. 269+00 TO 269+35 -L- LT  
 SEE DETAIL 2

CLASS IRIPRAP  
 EST. +/- 45 TONS

1.4m BASE HEAD DITCH  
 EST. DDE = +/- 128m³  
 SEE DETAIL

FILL EXISTING  
 CHANNEL +/- 75m

LATERAL V-DITCH W/ 1.5m BERM  
 STA. 267+80 TO 268+94 -L- LT  
 SEE DETAIL 2

MODIFIED EXPRESSWAY GUTTER  
 STA. 267+38 TO 270+00 -L- LT

270+65.480 -L-  
 46.0m LT (150.92ft)

-L- TS 270+07.566

N 66° 43' 12.6" E

270+00

270+10.686 -L-  
 46m RT (150.92ft)

15-560  
 ELEV= 202.238

15-5591  
 ELEV= 205.783

15-5627  
 ELEV= 202.442

15-5601  
 ELEV= 202.238

15-5602  
 ELEV= 202.238

15-5603  
 ELEV= 202.238

15-5604  
 ELEV= 202.238

15-5605  
 ELEV= 202.238

15-5606  
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15-5607  
 ELEV= 202.238

15-5608  
 ELEV= 202.238

15-5609  
 ELEV= 202.238

15-5610  
 ELEV= 202.238

15-5611  
 ELEV= 202.238

15-5612  
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15-5613  
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15-5630  
 ELEV= 202.238

15-5631  
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15-5632  
 ELEV= 202.238

15-5633  
 ELEV= 202.238

15-5634  
 ELEV= 202.238



REVISIONS

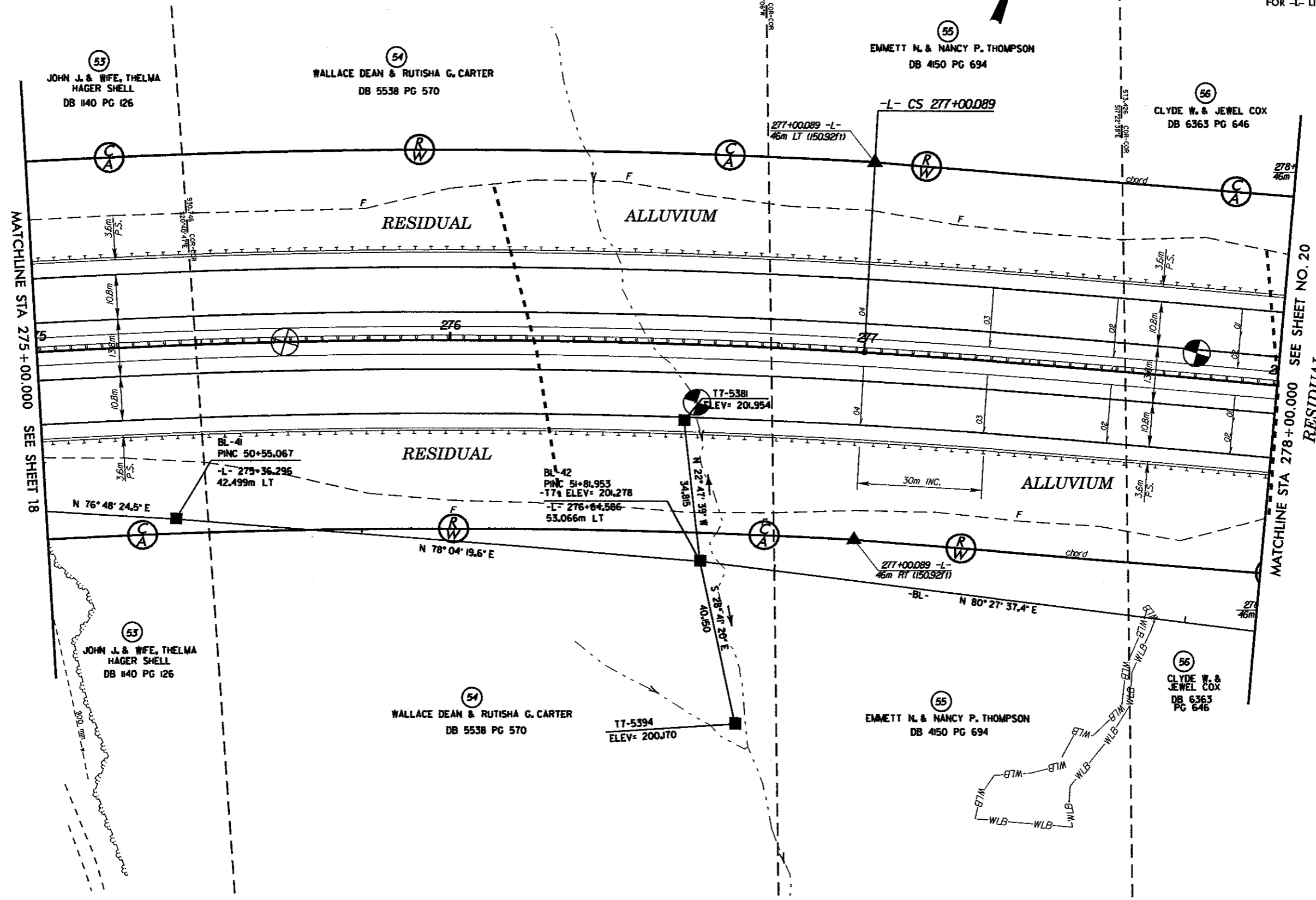


PROJECT REFERENCE NO. R-2248C	SHEET NO. 19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
CONST. REV.	
R/W REV.	

FOR -L- LINE PROFILE SEE SHEET NO. 37

- L -

PI Sta 275+17.598	PIs Sta 277+40.094
$\Delta = 17^{\circ} 59' 37.1''$ (RT)	$\Theta_s = 1^{\circ} 51' 51.9''$
L = 366.325	Ls = 120.000
T = 183.834	LT = 80.005
R = 1,750.000	ST = 40.004
super = 0.04	



MATCHLINE STA 275+00.000 SEE SHEET 18

MATCHLINE STA 278+00.000 SEE SHEET NO. 20

53  
JOHN J. & WIFE, THELMA  
HAGER SHELL  
DB 140 PG 126

54  
WALLACE DEAN & RUTISHA G. CARTER  
DB 5538 PG 570

55  
EMMETT N. & NANCY P. THOMPSON  
DB 4150 PG 694

56  
CLYDE W. & JEWEL COX  
DB 6363 PG 646

BL-41  
PINC 50+55.067  
-L- 275+36.296  
42.499m LT

BL-42  
PINC 51+81.953  
-T71 ELEV= 201.278  
-L- 276+84.586  
53.066m LT

T7-5381  
ELEV= 201.954

T7-5394  
ELEV= 200.770

53  
JOHN J. & WIFE, THELMA  
HAGER SHELL  
DB 140 PG 126

54  
WALLACE DEAN & RUTISHA G. CARTER  
DB 5538 PG 570

55  
EMMETT N. & NANCY P. THOMPSON  
DB 4150 PG 694

56  
CLYDE W. & JEWEL COX  
DB 6363  
PG 646

11/15/2011 10:00 AM

REVISIONS



PROJECT REFERENCE NO. R-2248C SHEET NO. 20

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.

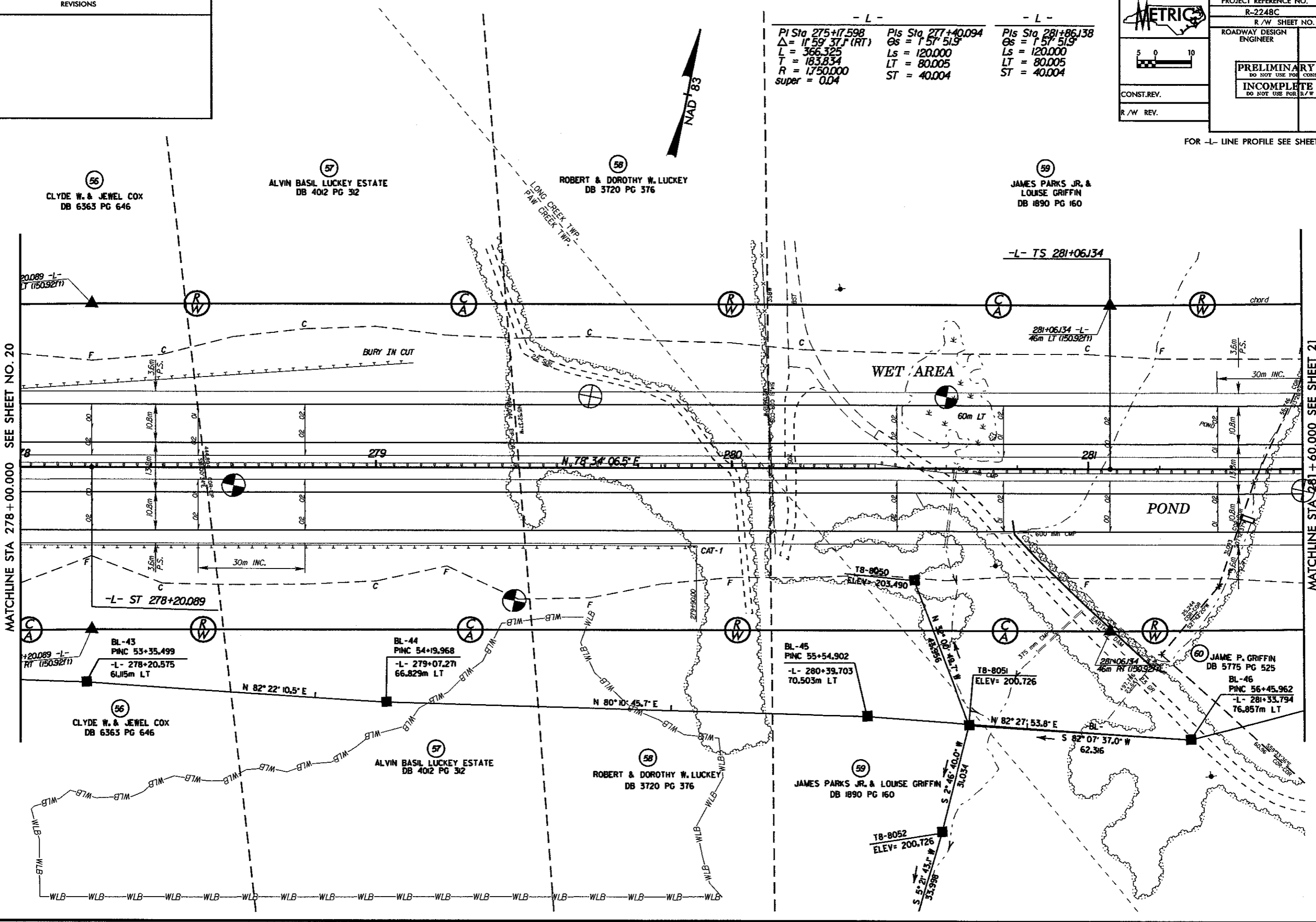
FOR -L- LINE PROFILE SEE SHEET NO. 37 & 38

- L -

PI Sta 275+17.598	PIs Sta 277+40.094	PIs Sta 281+86.138
$\Delta = 11^{\circ} 59' 37.1$ (RT)	$\Theta_s = 1^{\circ} 57' 51.9$	$\Theta_s = 1^{\circ} 57' 51.9$
L = 366.325	Ls = 120.000	Ls = 120.000
T = 183.834	LT = 80.005	LT = 80.005
R = 1750.000	ST = 40.004	ST = 40.004
super = 0.04		

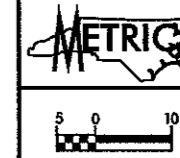
MATCHLINE STA 278+00.000 SEE SHEET NO. 20

MATCHLINE STA 281+60.000 SEE SHEET 21





REVISIONS



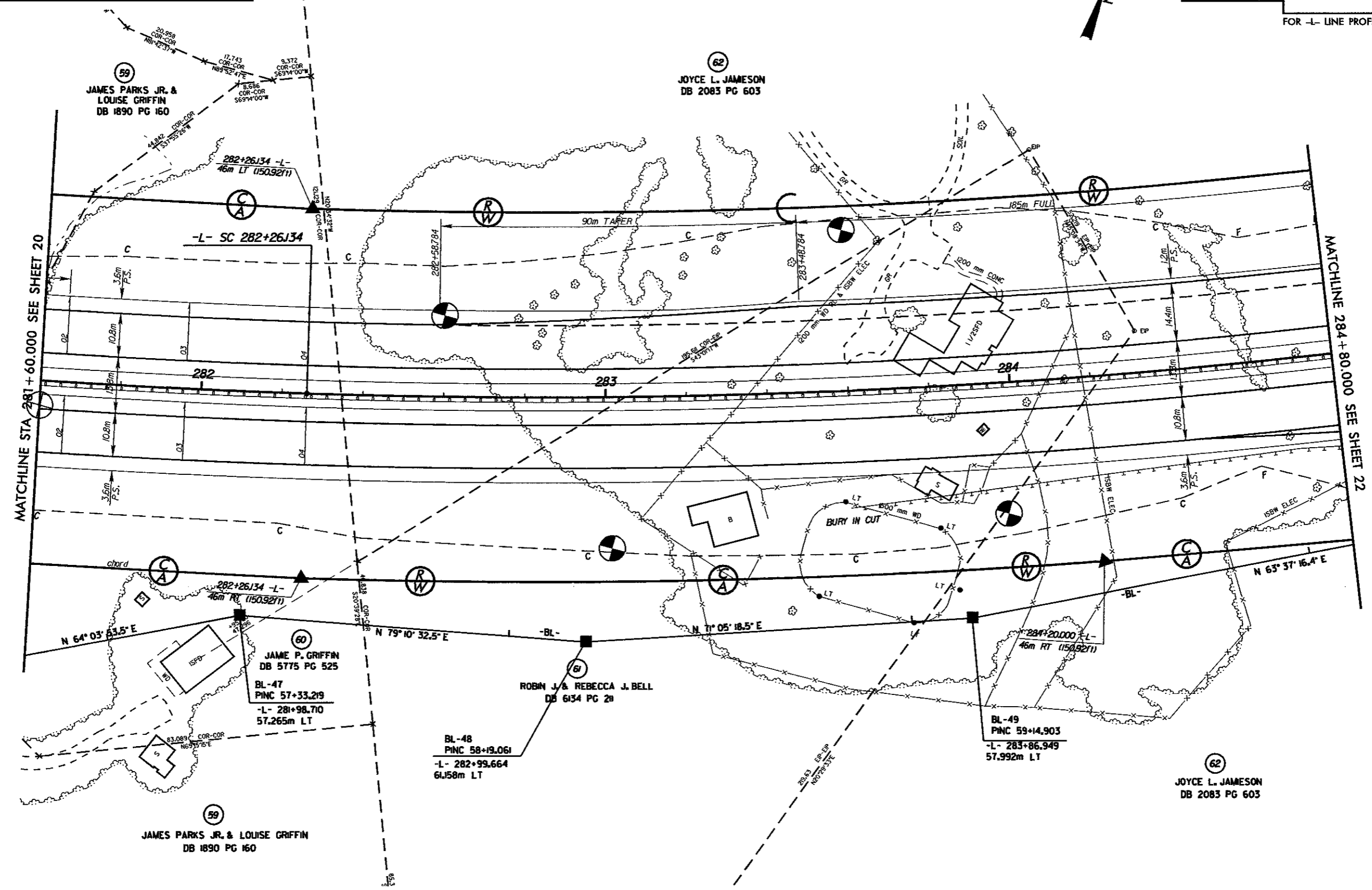
PROJECT REFERENCE NO.	SHEET NO.
R-2248C	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION <b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
CONST. REV.	
R/W REV.	

- L -

Pls Sta 281+86.138	Pl Sta 288+11.919
Gs = 1.57 51.9	Δ = 37° 00' 51.6" (LT)
Ls = 120.000	L = 1,130.538
LT = 80.005	T = 585.785
ST = 40.004	R = 1,750.000
	super = 0.04



FOR -L- LINE PROFILE SEE SHEET NO. 38



59  
 JAMES PARKS JR. &  
 LOUISE GRIFFIN  
 DB 1890 PG 160

62  
 JOYCE L. JAMESON  
 DB 2083 PG 603

60  
 JAME P. GRIFFIN  
 DB 5775 PG 525

61  
 ROBIN J. & REBECCA J. BELL  
 DB 6134 PG 20

BL-49  
 PINC 59+14.903  
 -L- 283+86.949  
 57.992m LT

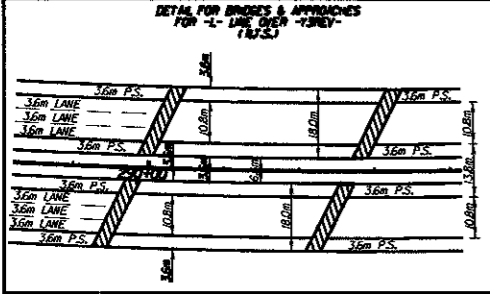
59  
 JAMES PARKS JR. & LOUISE GRIFFIN  
 DB 1890 PG 160

62  
 JOYCE L. JAMESON  
 DB 2083 PG 603

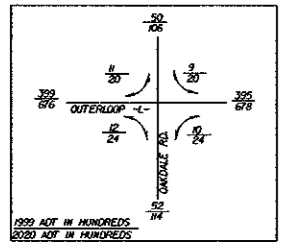
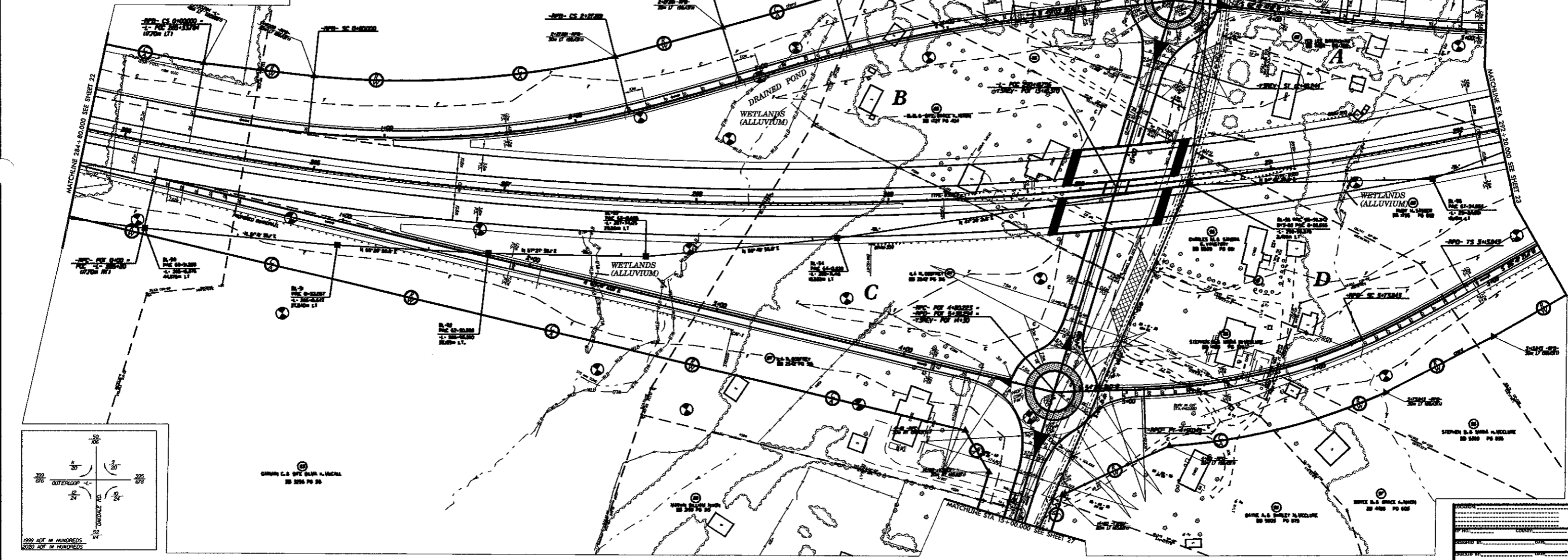
MATCHLINE STA 281 + 60.000 SEE SHEET 20

MATCHLINE 284 + 80.000 SEE SHEET 22

NO.	DATE	DESCRIPTION



No A		No B	
PC Sta 0+000.00	PT Sta 0+300.00	PC Sta 0+300.00	PT Sta 0+600.00
Δ = 90° 00' 00"	Δ = 90° 00' 00"	Δ = 90° 00' 00"	Δ = 90° 00' 00"
L = 300.00	L = 300.00	L = 300.00	L = 300.00
LT = 0.000	LT = 0.000	LT = 0.000	LT = 0.000
ST = 200.00	ST = 200.00	ST = 200.00	ST = 200.00
Sup = 0.00	Sup = 0.00	Sup = 0.00	Sup = 0.00



**METRIC**

PROJECT APPROVED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

SCALE: \_\_\_\_\_

CONTRACT: \_\_\_\_\_

FOR 'L' LINE PROFILE SEE SHEET NO. 26 & 27  
 FOR 'M' PROFILE SEE SHEET NO. 28  
 FOR 'N' PROFILE SEE SHEET NO. 29  
 FOR 'O' PROFILE SEE SHEET NO. 30  
 FOR 'P' PROFILE SEE SHEET NO. 31

DESIGNED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
APPROVED BY: _____	DATE: _____

REVISIONS

**METRIC**

CONST. REV.  
R/W REV.

PROJECT REFERENCE NO. R-2248C	SHEET NO. 23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	

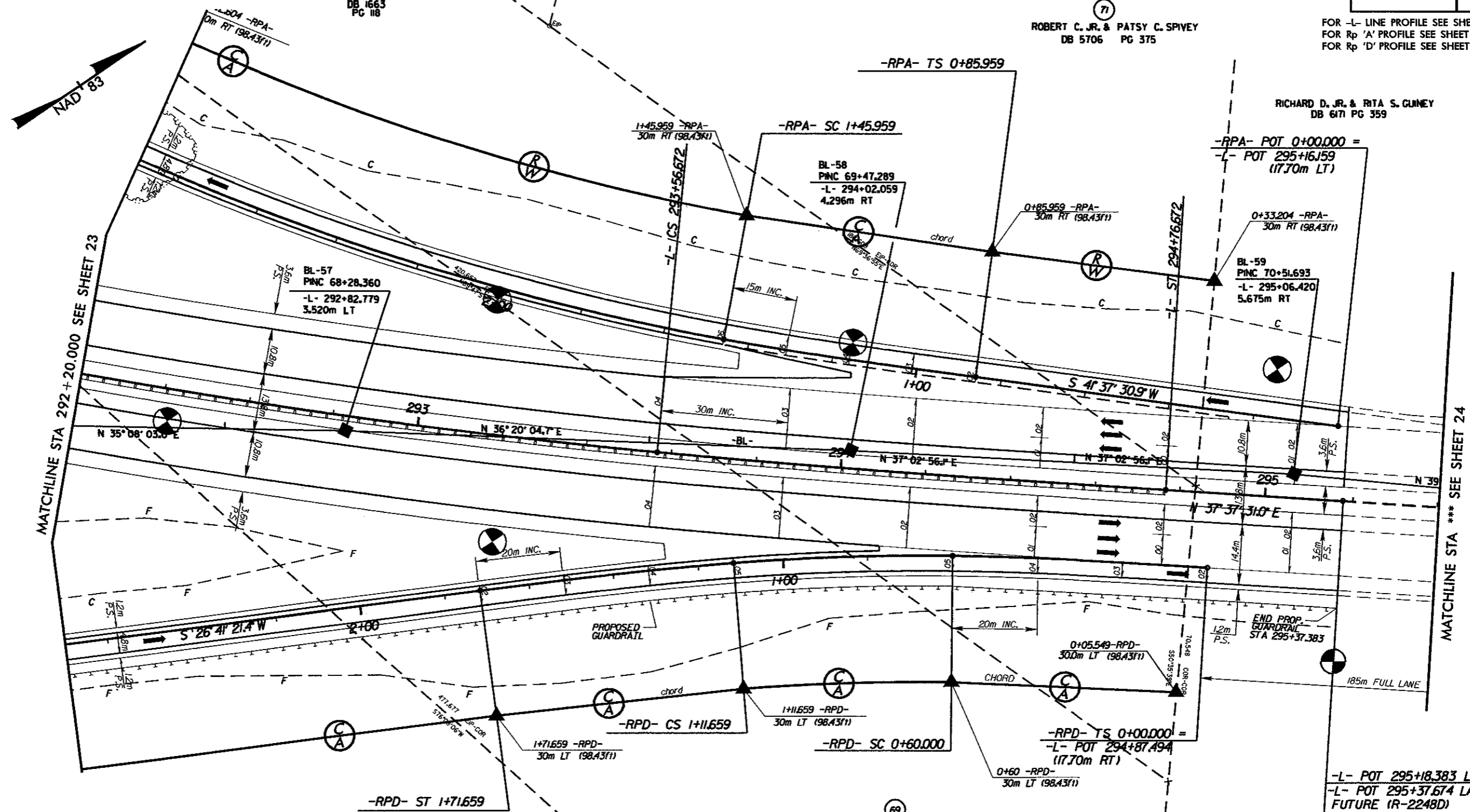
- L -		
PI Sta 288+11.919 $\Delta = 37^{\circ} 00' 51.6" (LT)$ L = 1130.538 T = 585.785 R = 1750.000	PIs Sta 293+96.676 $\Theta s = 1^{\circ} 57' 51.9"$ Ls = 120.000 LT = 80.005 ST = 40.004	PI Sta 3+22.609 $\Theta s = 2^{\circ} 51' 53.2"$ Ls = 60.000 LT = 40.005 ST = 20.005
Rp A		
PI Sta 2+24.729 $\Delta = 14^{\circ} 57' 30.5" (RT)$ L = 156.645 T = 78.770 R = 600.000 super = 0.06	PIs Sta 1+25.964 $\Theta s = 2^{\circ} 51' 53.2"$ Ls = 60.000 LT = 40.005 ST = 20.005	

(71)  
ROBERT C. JR. & PATSY C. SPIVEY  
DB 5706 PG 375

FOR -L- LINE PROFILE SEE SHEET NO. 39 & 40  
FOR Rp 'A' PROFILE SEE SHEET NO. 58  
FOR Rp 'D' PROFILE SEE SHEET NO. 61

(70)  
EUGENE D. & GERALDINE BIRMINGHAM  
DB 1663 PG 118

RICHARD D. JR. & RITA S. GUINEY  
DB 6171 PG 359



Rp D		
PIs Sta 0+40.006 $\Theta s = 2^{\circ} 56' 17.68"$ Ls = 60.000 LT = 40.006 ST = 20.005	PI Sta 0+85.846 $\Delta = 5^{\circ} 03' 34.28" (LT)$ L = 51.659 T = 25.846 R = 585.000 super = 0.05	PIs Sta 1+31.664 $\Theta s = 2^{\circ} 56' 17.68"$ Ls = 60.000 LT = 40.006 ST = 20.005

(69)  
TED LEE BIRMINGHAM  
DB 7494 PG T22

(68)  
RUBY H. SASSER  
DB 1796 PG 582

POT STA 295+18.383 -L- END STATE PROJECT R-2248C  
POT STA 295+18.383 -L- END F.A. PROJECT NHF-117-1145)  
END CONSTRUCTION

-L- POT 295+18.383 LB =  
-L- POT 295+37.674 LA  
FUTURE (R-2248D)

RICHARD D. JR. & RITA S. GUINEY  
DB 6171 PG 359

REVISIONS



PROJECT REFERENCE NO. R-2248C SHEET NO. 24

R/W SHEET NO.  
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

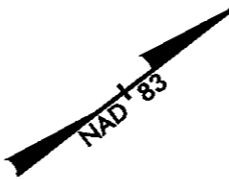


**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

CONST.REV.

R/W REV.

FOR -L- LINE PROFILE SEE SHEET NO. 40



MATCHLINE STA \*\*\* SEE SHEET 23

OAK HILLS, INC.  
DB 4092 PG 428

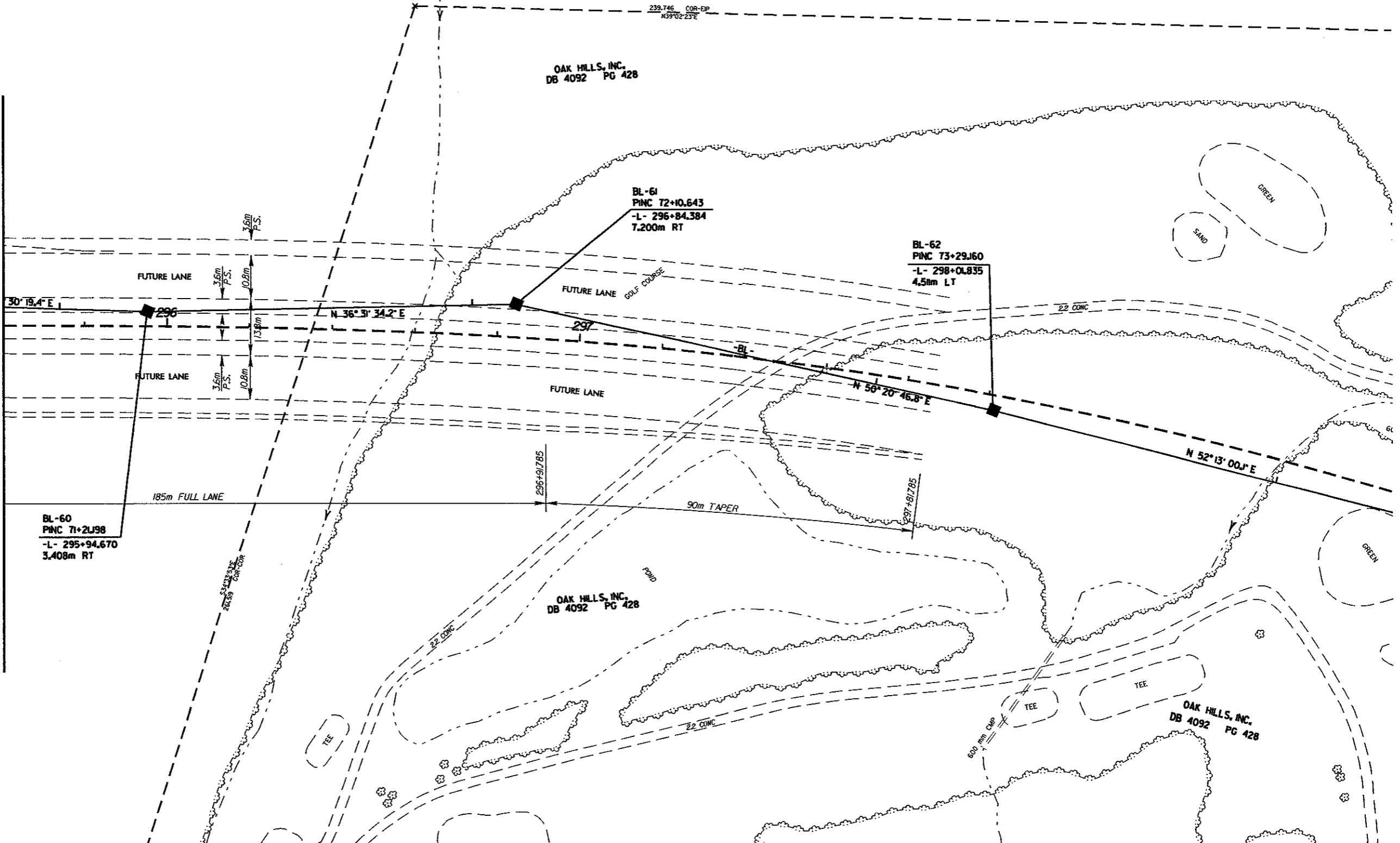
BL-61  
PINC 72+10.643  
-L- 296+84.384  
7.200m RT

BL-62  
PINC 73+29.160  
-L- 298+04.835  
4.51m LT

BL-60  
PINC 71+21.998  
-L- 295+94.670  
3.408m RT

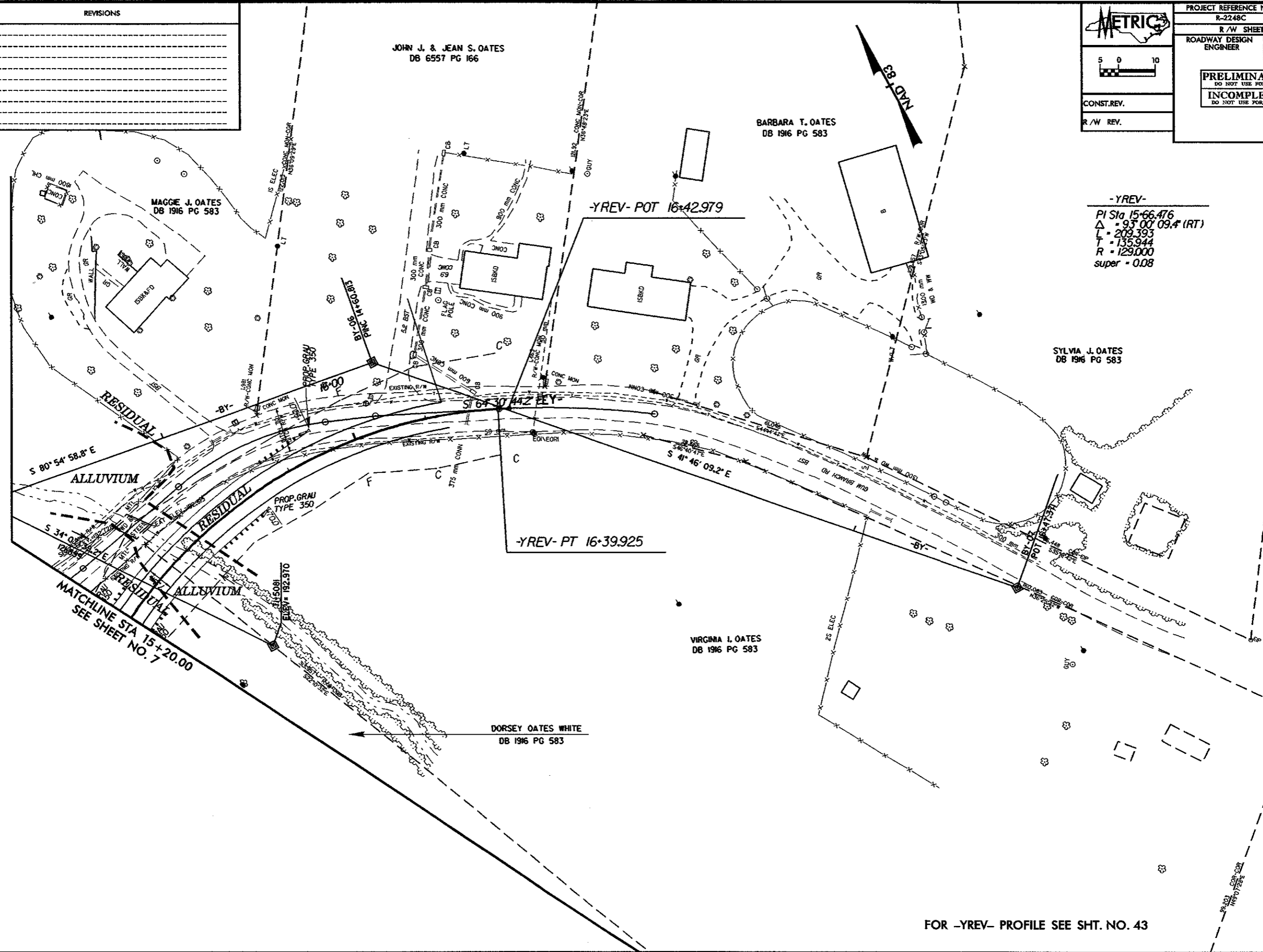
OAK HILLS, INC.  
DB 4092 PG 428

OAK HILLS, INC.  
DB 4092 PG 428



REVISIONS

		PROJECT REFERENCE NO. R-2248C	SHEET NO. 25
		R / W SHEET NO.	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>			
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR R/W ACQUISITION</small>			
CONST. REV.		R / W REV.	



-YREV-  
 PI Sta 15+66.476  
 Δ = 95° 00' 09.4" (RT)  
 L = 209.393  
 T = 135.944  
 R = 129.000  
 super = 0.08

S 90° 54' 58.8" E

ALLUVIUM

RESIDUAL

-YREV- PT 16+39.925

VIRGINIA I. OATES  
 DB 1916 PG 583

DORSEY OATES WHITE  
 DB 1916 PG 583

MATCHLINE STA 15+20.00  
 SEE SHEET NO. 7

FOR -YREV- PROFILE SEE SHT. NO. 43

REVISIONS




CONST. REV.

R/W REV.

PROJECT REFERENCE NO. R-2248C SHEET NO. 26

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

HNP ILLC (TRUSTEE UNDER AGREEMENT)  
DB 8806 PG 383



60.695 DUKE POWER EASEMENT  
TAX MAP #33 PG 01

PAW CREEK TWP.  
CITY LIMITS

POT Sta. 10+00.000

1200 mm WW ISBW

MT HOLY HUNTERSVILLE RD 7.5 BST  
POT 5+00.000

NC 16 BROOKSHIRE BLVD 7.4 BST

NC 16 BROOKSHIRE BLVD 7.4 BST

MT HOLY HUNTERSVILLE RD 125 BST

HAWTHORNE CAROLINA LLC  
DB 8104 PG 368

1200 mm WW ISBW

CONC. INV. = 221.329  
TOP = 224.545 EXISTING R/W  
CONC. INV. = 221.293  
CONC. INV. = 220.822  
TOP = 224.002  
INV. = 220.786

MATCHLINE STA 12 + 60.00 SEE SHEET NO. 15

FOR -Y2- PROFILE SEE SHT. NO. 45





REVISIONS

PROJECT REFERENCE NO. R-2248C		SHEET NO. 28
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION		
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION		
CONST. REV.		
R/W REV.		

~~-Y4-~~  
PI Sta 12-39150  
 $\Delta = 39^{\circ} 59' 37.0''$  (LT)  
L = 264.451  
T = 137.861  
R = 378.859  
e = 0.08

END CONSTRUCTION  
POT Sta. 13-05.457 -Y4REV- LB  
POC 13-00.00 -Y4- LA

-Y4REV-  
PI Sta 11-73.625  
 $\Delta = 41^{\circ} 04' 44.4''$  (LT)  
L = 125.469  
T = 65.567  
R = 175.000  
e = 0.06

~~-Y3-~~  
PI Sta 10-10.928  
 $\Delta = 01^{\circ} 37' 51.89''$  (LT)  
L = 20.0545  
T = 10.0279  
R = 704.4629  
e = NC

~~PI Sta 10-46.002  
 $\Delta = 01^{\circ} 37' 18.93''$  (RT)  
L = 51.8941  
T = 25.9473  
R = 4780.8189  
e = NC~~

-Y4REV-  
PI Sta 10-80.001  
 $\Delta = 11^{\circ} 01' 34.0''$  (RT)  
L = 33.677  
T = 16.891  
R = 175.000  
e = NC

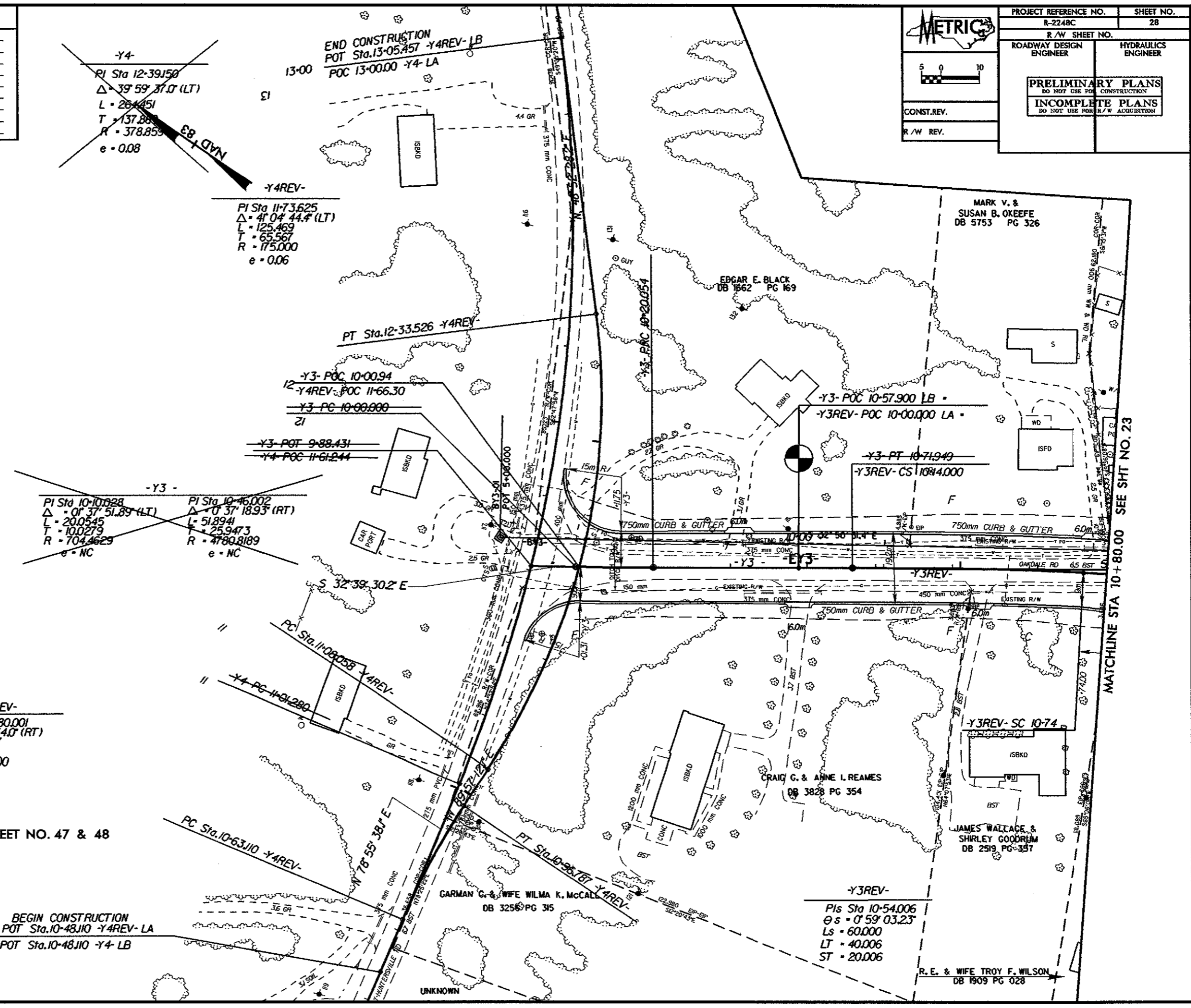
-Y3REV-  
PIs Sta 10-54.006  
 $\theta s = 0^{\circ} 59' 03.23''$   
Ls = 60.000  
LT = 40.006  
ST = 20.006

FOR -Y3REV- PROFILE SEE SHEET NO. 47 & 48

BEGIN CONSTRUCTION  
POT Sta. 10-48.110 -Y4REV- LA  
POT Sta. 10-48.110 -Y4- LB

MATCHLINE STA 10+80.00 SEE SHT NO. 23

DO NOT USE FOR CONSTRUCTION



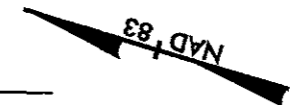
REVISIONS

5 0 10

CONST. REV.

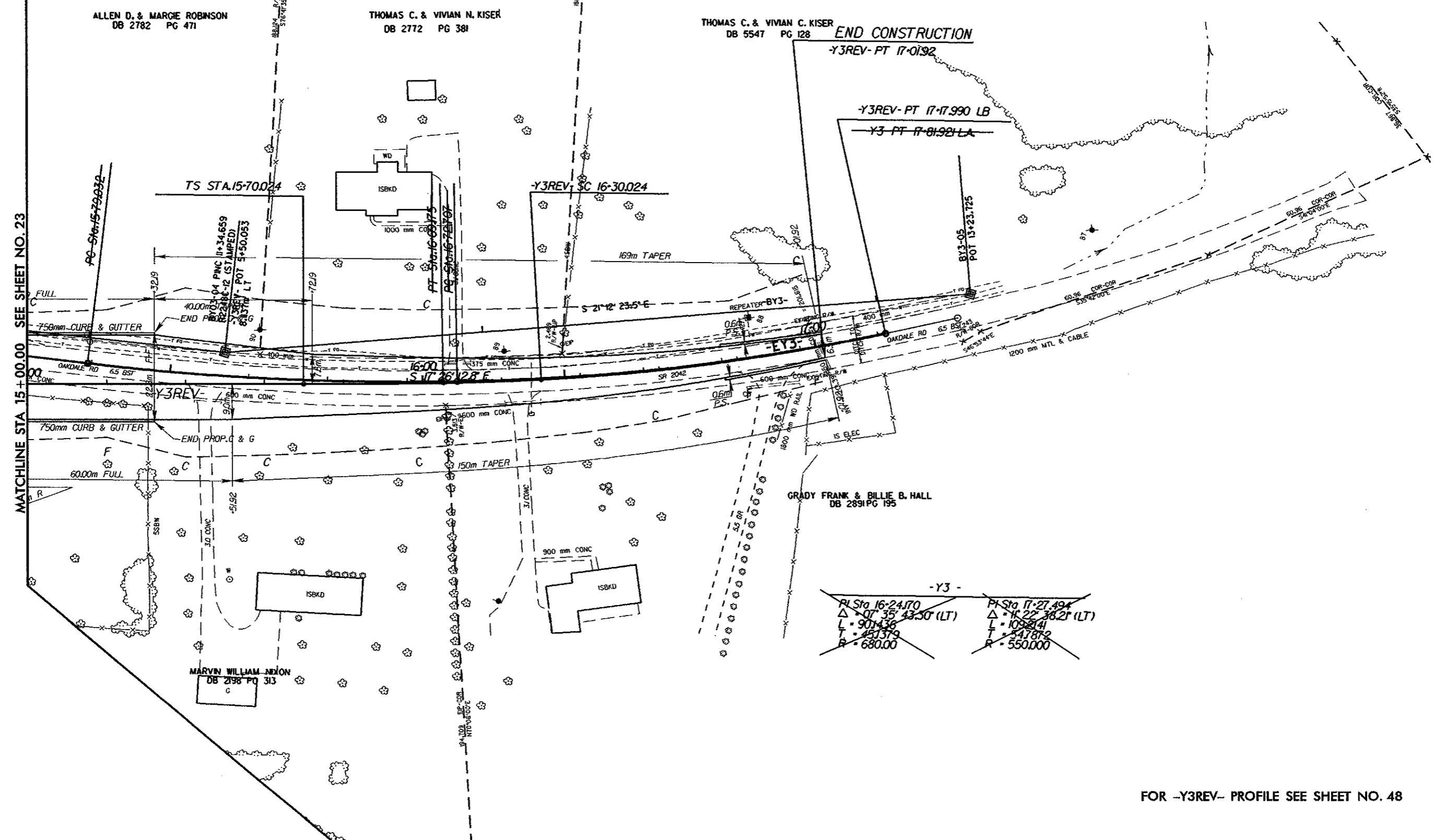
R/W REV.

PROJECT REFERENCE NO. R-2248C	SHEET NO. 29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR R/W ACQUISITION</small>	



-Y3REV-

PI Sta 16+10.030	PI Sta 16+74.101
Δs = 3° 07' 30.8"	Δ = 9° 09' 49.6" (LT)
Ls = 60.000	L = 87.966
LT = 40.006	T = 44.077
ST = 20.006	R = 550.000
	e = 0.06



MATCHLINE STA 15+00.00 SEE SHEET NO. 23

ALLEN D. & MARGIE ROBINSON  
DB 2782 PG 471

THOMAS C. & VIVIAN N. KISER  
DB 2772 PG 381

THOMAS C. & VIVIAN C. KISER  
DB 5547 PG 128

**END CONSTRUCTION**

-Y3REV- PT 17+01.92

-Y3REV- PT 17+17.990 LB

-Y3- PT 17+81.921 LA

-Y3REV- SC 16+30.024

TS STA 15+70.024

04 PINC II+34.659  
R-2248C-12 (STAMPED)  
7.88% POT 5+50.053  
8.13% LT

S 17° 26' 12.8\"/>

~~-Y3-~~

PI Sta 16+24.170	PI Sta 17+27.494
Δ = 07° 35' 43.50" (LT)	Δ = 14° 22' 36.21" (LT)
L = 90.436	L = 109.241
T = 45.179	T = 24.782
R = 680.00	R = 550.000

MARVIN WILLIAM NIXON  
DB 2196 PG 313

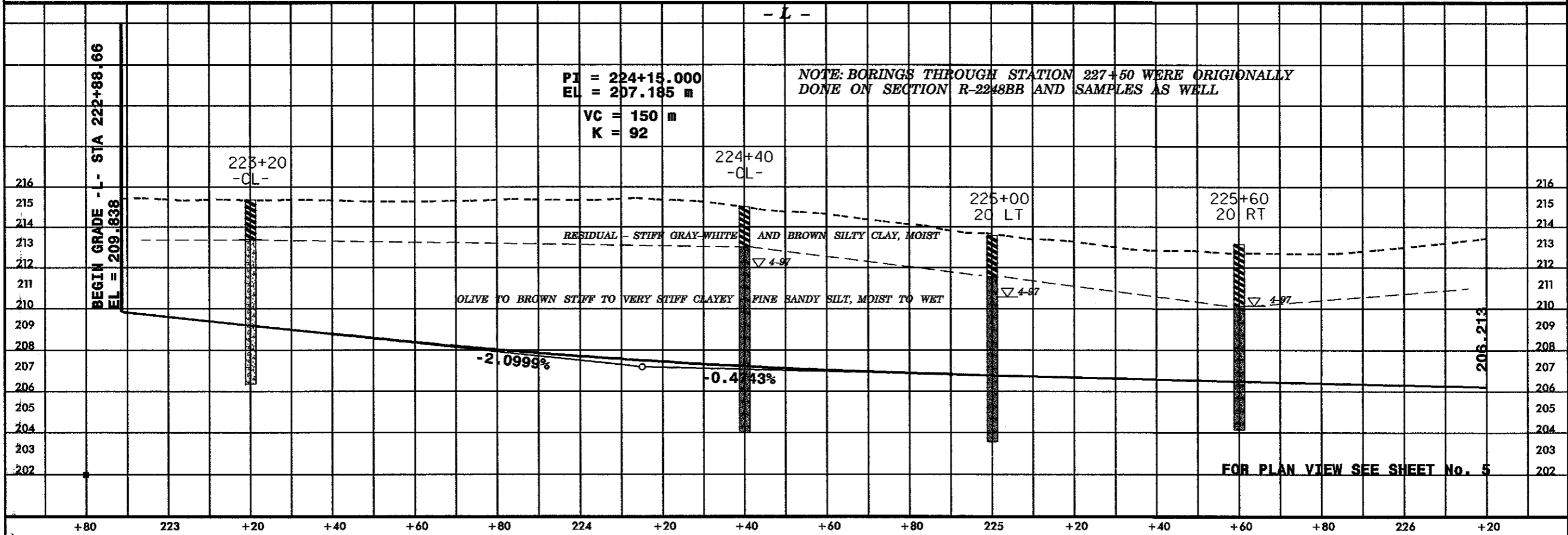
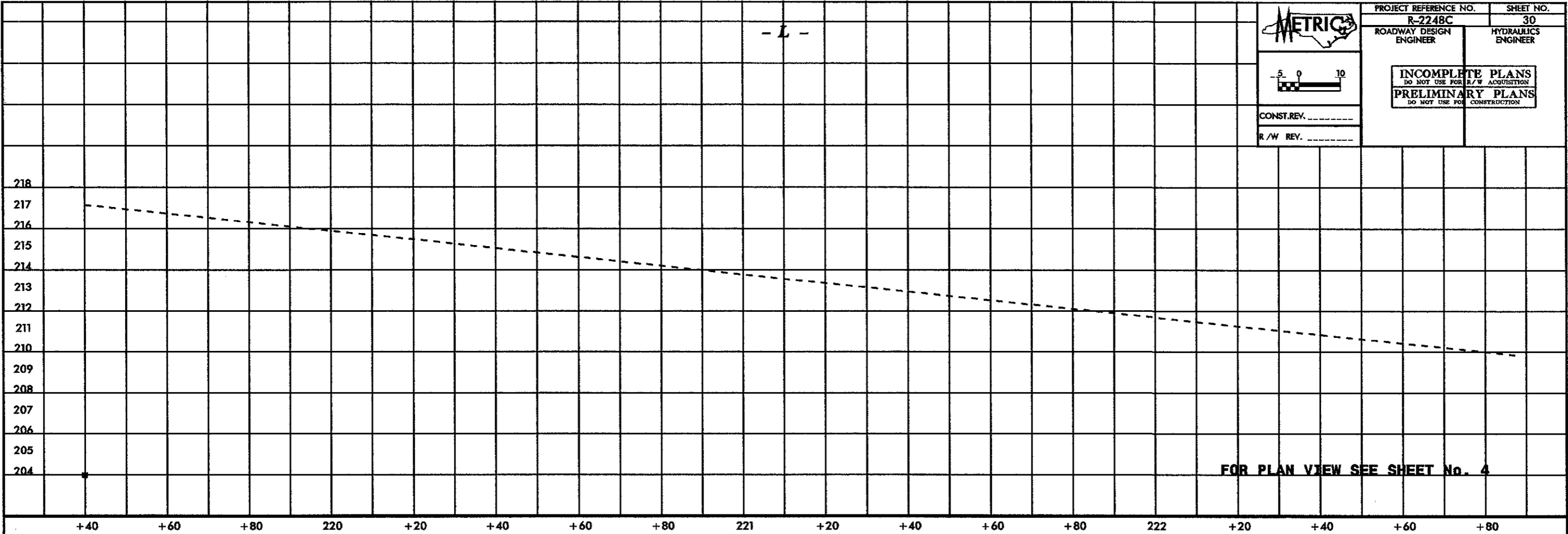
GRADY FRANK & BILLIE B. HALL  
DB 2891 PG 195

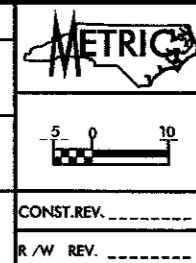
FOR -Y3REV- PROFILE SEE SHEET NO. 48

**METRIC**

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

PROJECT REFERENCE NO. <b>R-2248C</b>	SHEET NO. <b>30</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR R/W ACQUISITION</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	



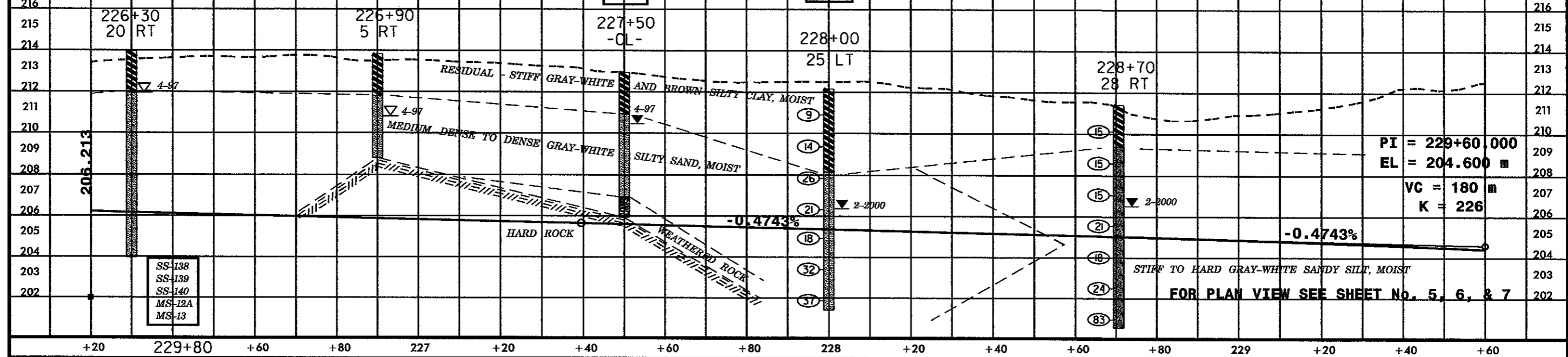


PROJECT REFERENCE NO. R-2248C SHEET NO. 31  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
**INCOMPLETE PLANS**  
 DO NOT USE FOR ACQUISITION  
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 CONST. REV. \_\_\_\_\_  
 R/W REV. \_\_\_\_\_

### SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-26	CL	227+60	0.00-2.00	A-7-5(32)	65	33	8.2	9.8	20.9	61.2	100	95	84		
S-26A	CL	227+60	2.00-6.00	A-2-4(0)	22	2	30.6	38.7	18.5	12.2	94	75	34		
SS-141	3ORT	228+70	2.97-3.27	A-4(1)	28	5	15.4	42	28.5	14.1	100	95	53		
SS-142	3ORT	228+00	1.42-1.72	A-7-5(12)	44	11	2.8	16.6	56.4	24.2	100	98	87		
SS-143	3ORT	228+00	4.46-4.76	A-2-4(0)	21	NP	35.4	39.2	15.4	10.1	100	79	35		

NOTE: BORINGS THROUGH STATION 227+50 WERE ORIGINALLY DONE ON SECTION R-2248BB AND SAMPLES AS WELL

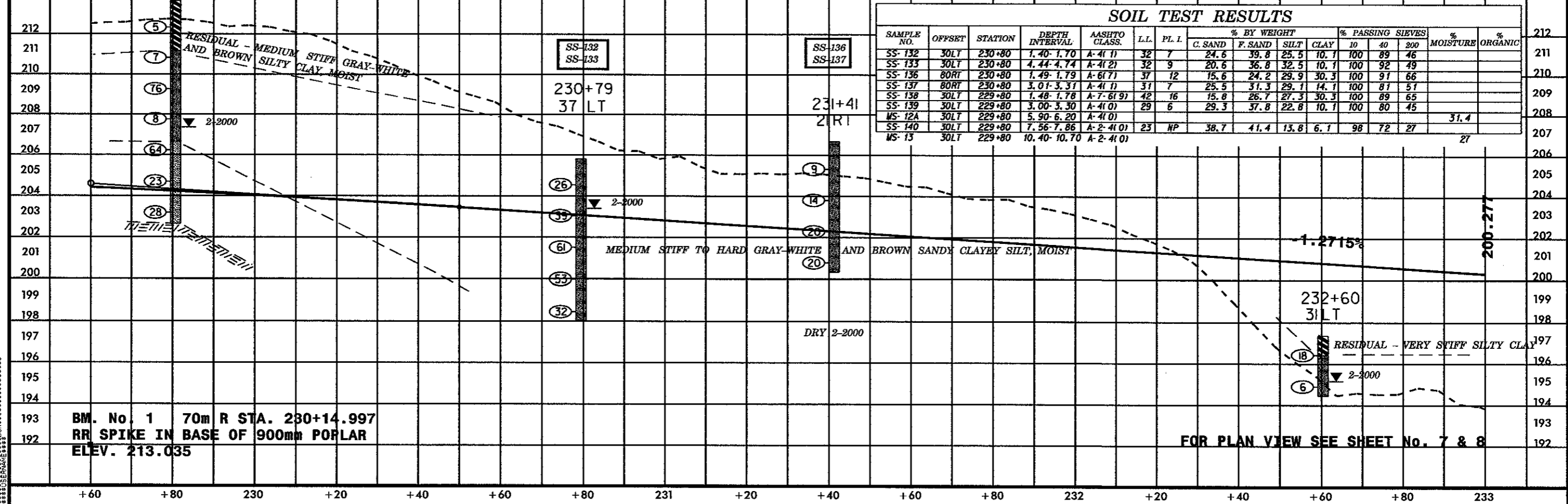


PI = 229+60.000  
 EL = 204.600 m  
 VC = 180 m  
 K = 226

FOR PLAN VIEW SEE SHEET No. 5, 6, & 7

### SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-132	3OLT	230+80	1.40-1.70	A-4(1)	32	7	24.6	39.8	25.5	10.1	100	89	46		
SS-133	3OLT	230+80	4.44-4.74	A-4(2)	32	9	20.6	36.8	32.5	10.1	100	92	49		
SS-136	8ORT	230+80	1.49-1.79	A-6(7)	37	12	15.6	24.2	29.9	30.3	100	91	66		
SS-137	8ORT	230+80	3.01-3.31	A-4(1)	31	7	25.5	31.3	29.1	14.1	100	81	51		
SS-138	3OLT	229+80	1.48-1.78	A-7-6(9)	42	16	15.8	26.7	27.3	30.3	100	89	65		
SS-139	3OLT	229+80	3.00-3.30	A-4(0)	29	6	29.3	37.8	22.8	10.1	100	80	45		
MS-12A	3OLT	229+80	5.90-6.20	A-4(0)										31.4	
SS-140	3OLT	229+80	7.56-7.86	A-2-4(0)	23	NP	38.7	41.4	13.8	6.1	98	72	27		
MS-13	3OLT	229+80	10.40-10.70	A-2-4(0)											27



BM. No. 1 70m R STA. 230+14.997  
 RR SPIKE IN BASE OF 900mm POPLAR  
 ELEV. 213.035

FOR PLAN VIEW SEE SHEET No. 7 & 8



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

CONST. REV. \_\_\_\_\_ R/W REV. \_\_\_\_\_

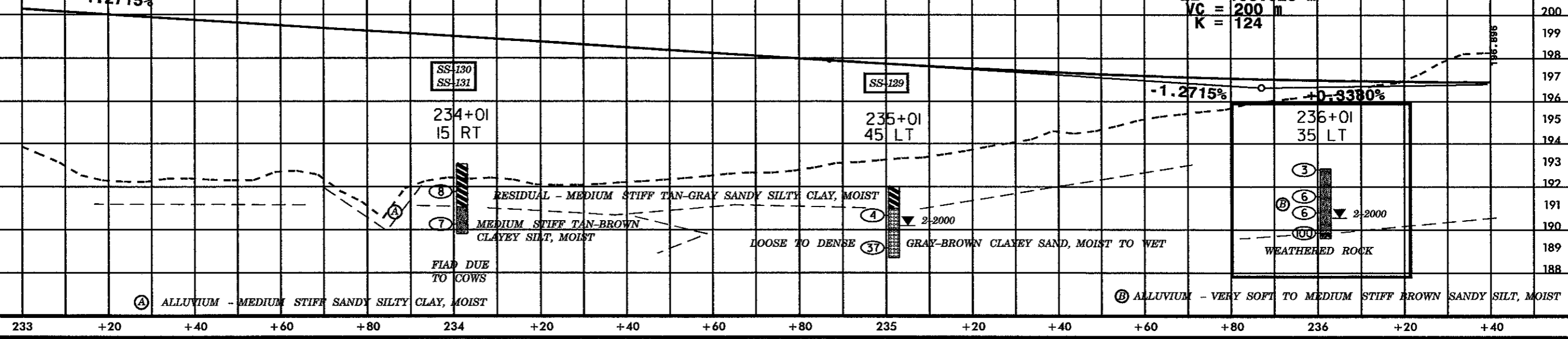
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-123	20RT	239+50	0.00-0.45	A-6(7)	13	13	5.5	32.5	21.6	40.4	100	99	68		
SS-124	20LT	239+40	1.50-1.80	A-7-6(10)	41	18	17.2	21.5	20.7	40.6	95	85	63		
SS-125	20LT	239+40	6.06-6.36	A-4(0)	32	5	30.4	25.8	25.6	18.3	82	63	41		
SS-126	20LT	239+40	9.10-9.40	A-4(5)	37	7	5.5	31.2	58.9	24.3	100	98	73		
SS-127	35LT	237+00	1.18-1.48	A-4(0)	24	4	25.6	42.4	9.7	22.3	99	93	41		
SS-128	35LT	237+00	2.60-2.90	A-4(3)	37	9	17.6	38.3	23.7	20.3	100	91	54		
SS-129	30LT	235+00	1.48-1.78	A-1-6(0)	22	5	36.5	26.2	13	24.3	52	40	22		
SS-130	30RT	234+00	1.44-1.74	A-7-6(7)	47	22	32.5	20	1.1	40.4	97	76	49		
SS-131	30RT	234+00	2.96-3.26	A-4(3)	36	5	17.8	33.5	34.5	14.1	98	88	64		

260-277

-1.2715%

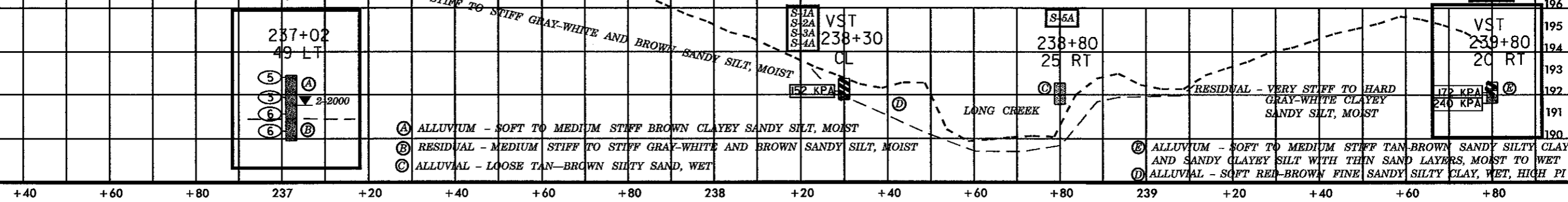
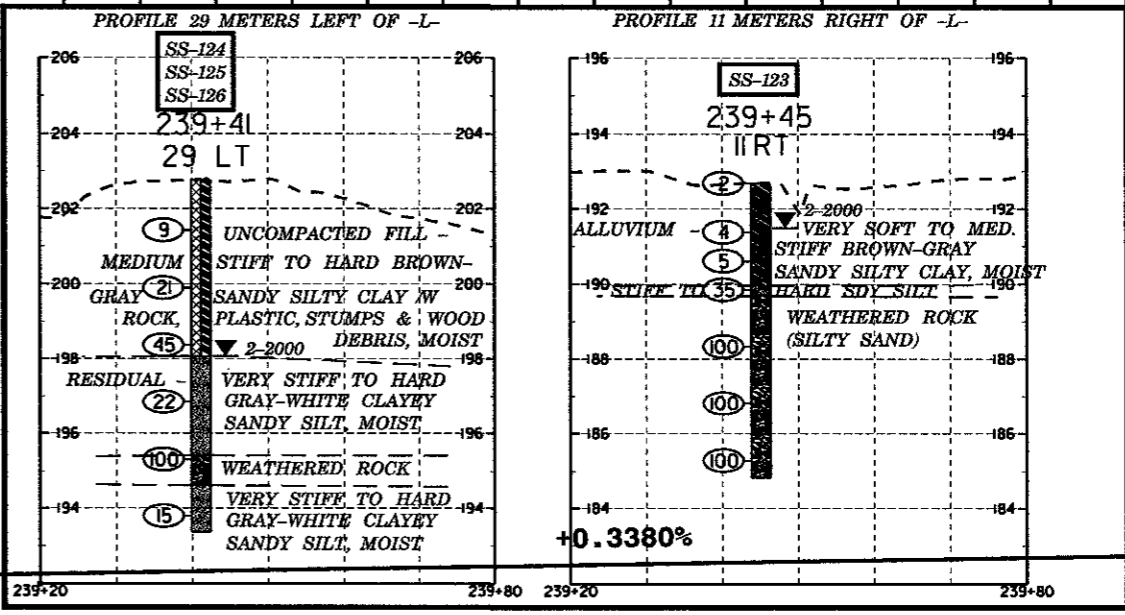
PI = 235+87.000  
EL = 196.628 m  
VC = 200 m  
K = 124



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-1A	CL	238+30	0.00 - 0.10	A-7-5(25)	61	27	7.5	16	42	34.5	100	96	81		
S-2A	CL	238+30	0.10 - 0.27	A-7-5(31)	67	31	4.7	15.8	30.8	48.7	100	98	84		
S-3A	CL	238+30	0.40 - 0.60	A-7-5(24)	51	21	1.4	5.9	50.1	42.6	100	99	95		
S-4A	CL	238+30	0.75 - 1.00	A-6(12)	39	17	7.3	15.8	34.3	42.6	96	94	76		
S-5A	25 RT	238+80	0.00 - 0.20	A-2-4(0)	26	NP	16.2	56.4	21.3	6.1	100	98	33		
S-6A	20 RT	239+80	0.00 - 0.20	A-7-6(14)	48	20	16.8	15.2	39.6	28.4	96	84	70		
S-7A	20 RT	239+80	0.30 - 0.40	A-2-4(0)	28	10	45.8	20.9	17	16.2	96	66	34		
S-8A	20 RT	239+80	0.40 - 0.60	A-7-6(19)	47	18	6.7	6.5	42.2	44.6	100	96	89		
S-9A	20 RT	239+80	0.60 - 0.70	A-2-4(0)	23	5	50.9	16	16.8	16.2	95	60	34		
S-10A	20 RT	239+80	0.70 - 0.90	A-4(3)	28	9	22.7	22.1	30.8	24.3	97	83	58		

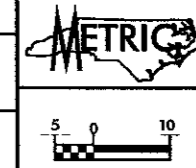
-L REV-



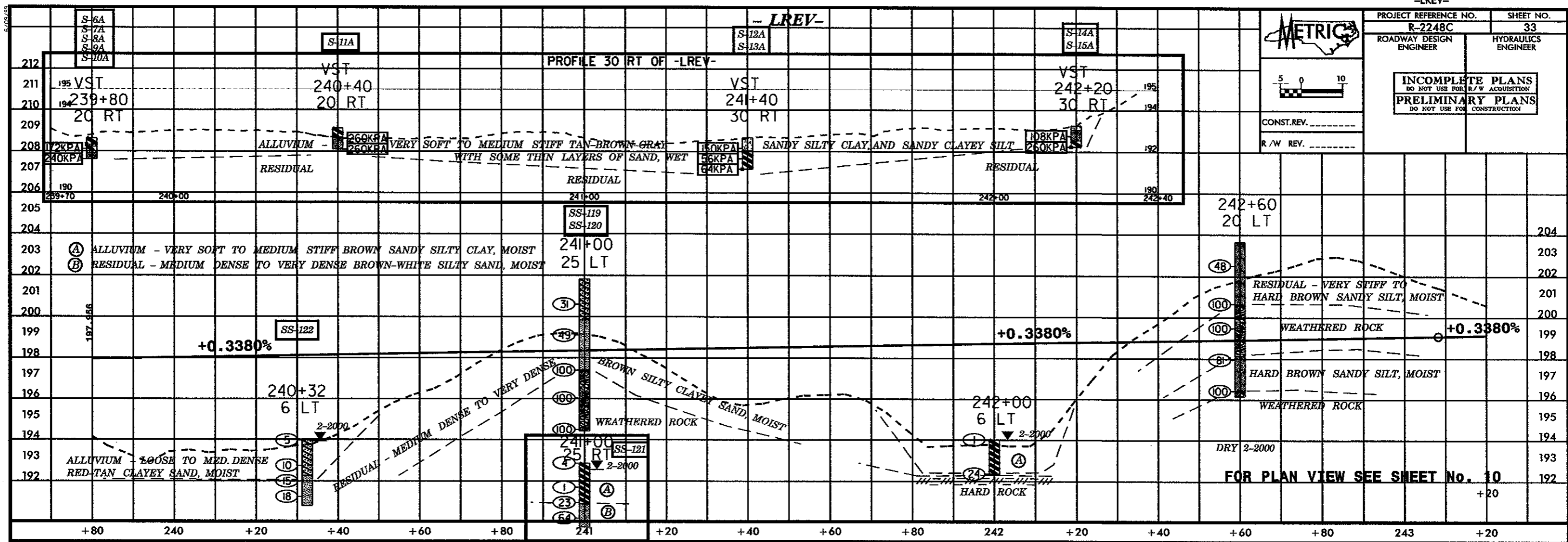
- (A) ALLUVIUM - SOFT TO MEDIUM STIFF BROWN CLAYEY SANDY SILT, MOIST
- (B) RESIDUAL - MEDIUM STIFF TO STIFF GRAY-WHITE AND BROWN SANDY SILT, MOIST
- (C) ALLUVIAL - LOOSE TAN-BROWN SILTY SAND, WET
- (D) ALLUVIUM - SOFT TO MEDIUM STIFF TAN-BROWN SANDY SILTY CLAY AND SANDY CLAYEY SILT WITH THIN SAND LAYERS, MOIST TO WET
- (E) ALLUVIAL - SOFT RED-BROWN FINE SANDY SILTY CLAY, WET, HIGH PI



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



CONST. REV. R/W REV.

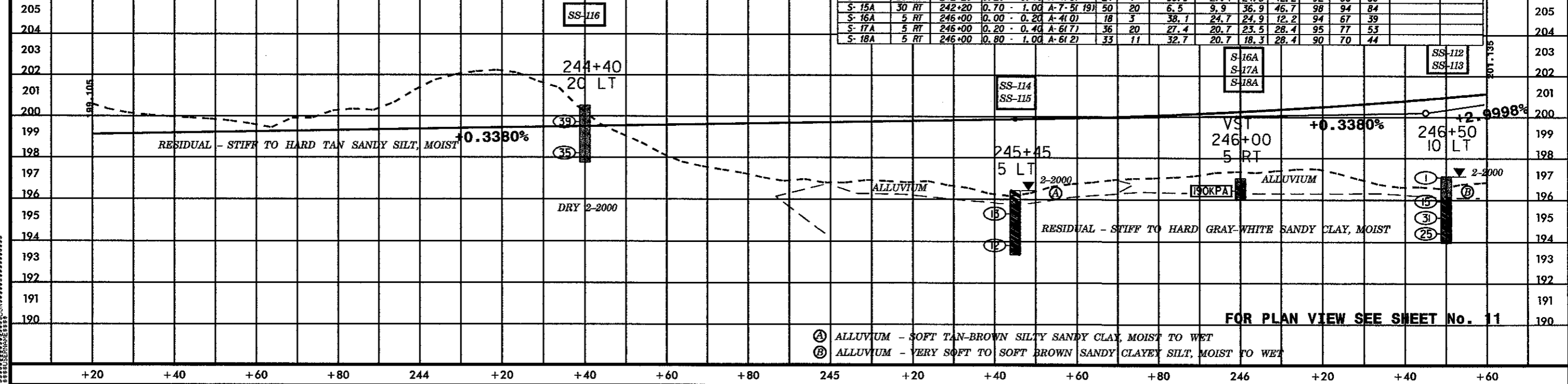


**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES		% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40		
SS-112	10LT	247+40	0.20-0.50	A-4(0)	30	7	32.5	27.7	21.6	18.2	94	73	42	
SS-113	10LT	247+40	1.34-1.64	A-6(5)	33	17	26.3	28.1	13.3	32.3	99	83	50	
SS-114	5LT	245+50	1.23-1.53	A-6(6)	36	16	25.7	20.2	19.8	34.3	97	80	57	
SS-115	5LT	245+45	2.75-3.05	A-6(3)	30	14	28.1	26.9	12.7	32.3	99	82	49	
SS-116	10RT	244+40	0.96-1.26	A-4(1)	27	7	25.1	24.2	18.4	32.3	97	81	54	
SS-119	20LT	241+00	1.38-1.68	A-2-6(0)	33	12	38.4	30.3	9.1	22.2	99	74	35	
SS-120	20LT	241+00	2.90-3.20	A-2-4(0)	27	HP	48.8	30.2	9.9	11.1	89	59	23	
SS-122	16RT	240+32	0.00-0.45	A-7-6(12)	21	21	12.5	26.9	16.2	44.4	100	93	66	
SS-121	30RT	241+00	0.00-0.45	A-7-6(19)	18	18	3.8	9.3	28.3	58.6	100	98	89	

**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES		% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40		
S-6A	20 RT	239+80	0.00 - 0.20	A-7-6(14)	48	20	16.8	15.2	39.6	28.4	96	84	70	
S-7A	20 RT	239+80	0.30 - 0.40	A-2-4(0)	28	10	45.8	20.9	17	16.2	96	66	34	
S-8A	20 RT	239+80	0.40 - 0.60	A-7-6(19)	47	18	6.7	6.5	42.2	44.6	100	96	89	
S-9A	20 RT	239+80	0.60 - 0.70	A-2-4(0)	23	5	50.9	16	16.8	16.2	95	60	34	
S-10A	20 RT	239+80	0.70 - 0.90	A-4(3)	28	9	22.7	22.1	30.8	24.3	97	83	58	
S-11A	20 RT	240+40	0.45 - 0.65	A-4(2)	26	7	7.9	38.7	29	24.3	100	97	60	
S-12A	30 RT	241+40	0.10 - 0.30	A-5(6)	44	9	18.7	15.6	41.4	24.3	95	82	66	
S-13A	30 RT	241+40	0.70 - 0.90	A-7-6(27)	54	25	3.2	5.7	32.3	58.8	100	98	92	
S-14A	30 RT	242+20	0.20 - 0.40	A-4(0)	24	4	38.9	27.4	21.5	12.2	92	66	36	
S-15A	30 RT	242+20	0.70 - 1.00	A-7-5(19)	50	20	6.5	9.9	36.9	46.7	98	94	84	
S-16A	5 RT	246+00	0.00 - 0.20	A-4(0)	18	3	38.1	24.7	24.9	12.2	94	67	39	
S-17A	5 RT	246+00	0.20 - 0.40	A-6(7)	36	20	27.4	20.7	23.5	28.4	95	77	53	
S-18A	5 RT	246+00	0.80 - 1.00	A-6(2)	33	11	32.7	20.7	18.3	28.4	90	70	44	

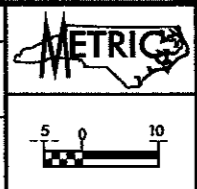


- (A) ALLUVIUM - SOFT TAN-BROWN SILTY SANDY CLAY, MOIST TO WET
- (B) ALLUVIUM - VERY SOFT TO SOFT BROWN SANDY CLAYEY SILT, MOIST TO WET

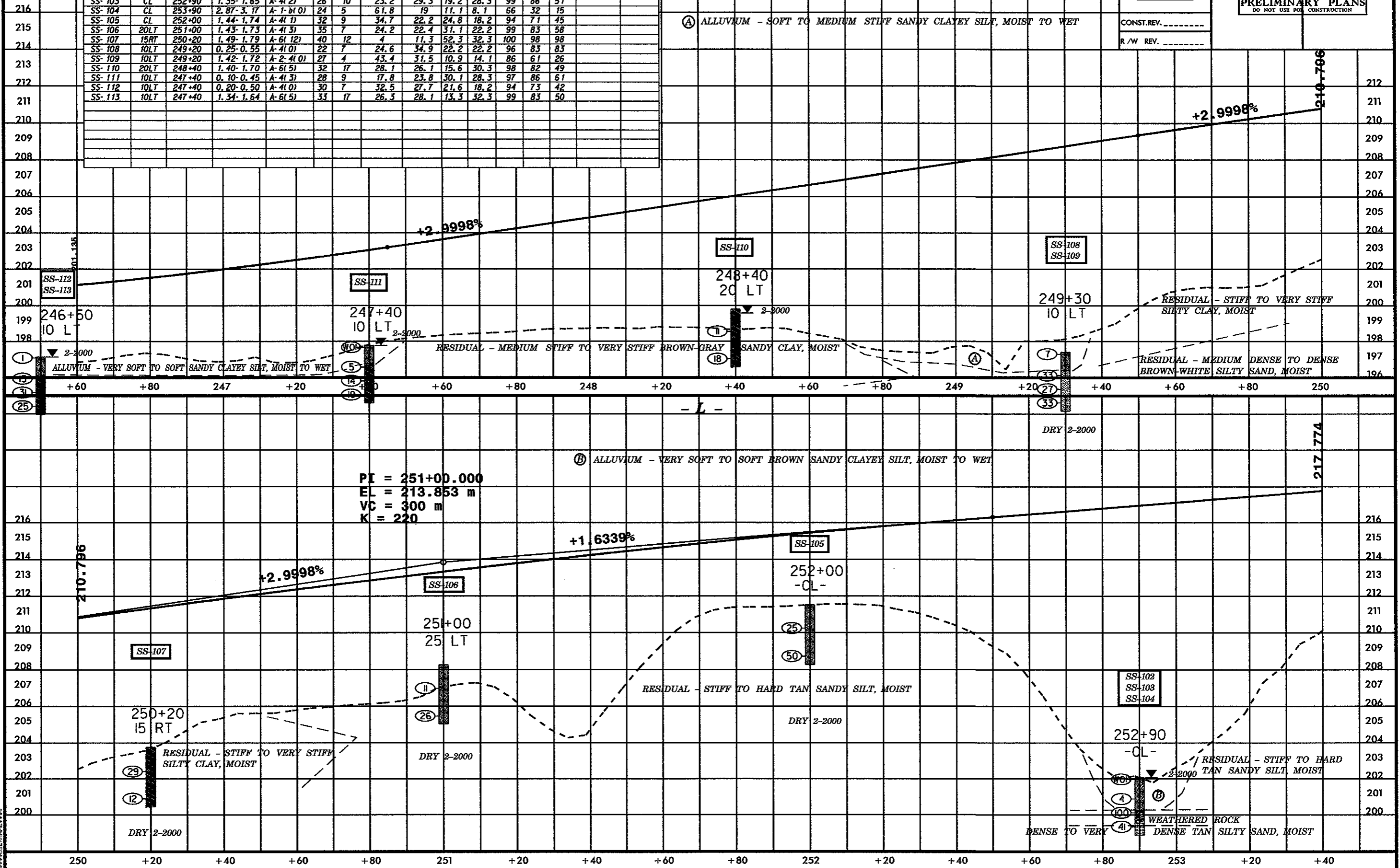
FOR PLAN VIEW SEE SHEET No. 11

### SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-102	CL	252+90	0.25-0.55	A-4(0)	26	6	30.3	27.7	23.8	18.2	97	79	46		
SS-103	CL	252+90	1.35-1.65	A-4(2)	26	10	23.2	29.3	19.2	28.3	99	86	51		
SS-104	CL	253+90	2.87-3.17	A-1-b(0)	24	5	61.8	19	11.1	8.1	66	32	15		
SS-105	CL	252+00	1.44-1.74	A-4(1)	32	9	34.7	22.2	24.8	18.2	94	71	45		
SS-106	20LT	251+00	1.43-1.73	A-4(3)	35	7	24.2	22.4	31.1	22.2	99	83	58		
SS-107	15RT	250+20	1.49-1.79	A-6(12)	40	12	4	11.3	52.3	32.3	100	98	98		
SS-108	10LT	249+20	0.25-0.55	A-4(0)	22	7	24.6	34.9	22.2	22.2	96	83	83		
SS-109	10LT	249+20	1.42-1.72	A-2-4(0)	27	4	43.4	31.5	10.9	14.1	86	61	26		
SS-110	20LT	248+40	1.40-1.70	A-6(5)	32	17	28.1	26.1	15.6	30.3	98	82	49		
SS-111	10LT	247+40	0.10-0.45	A-4(3)	28	9	17.8	23.8	30.1	28.3	97	86	61		
SS-112	10LT	247+40	0.20-0.50	A-4(0)	30	7	32.5	27.7	21.6	18.2	94	73	42		
SS-113	10LT	247+40	1.34-1.64	A-6(5)	33	17	26.3	28.1	13.3	32.3	99	83	50		



PROJECT REFERENCE NO. R-2248C SHEET NO. 34  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
**INCOMPLETE PLANS**  
 DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

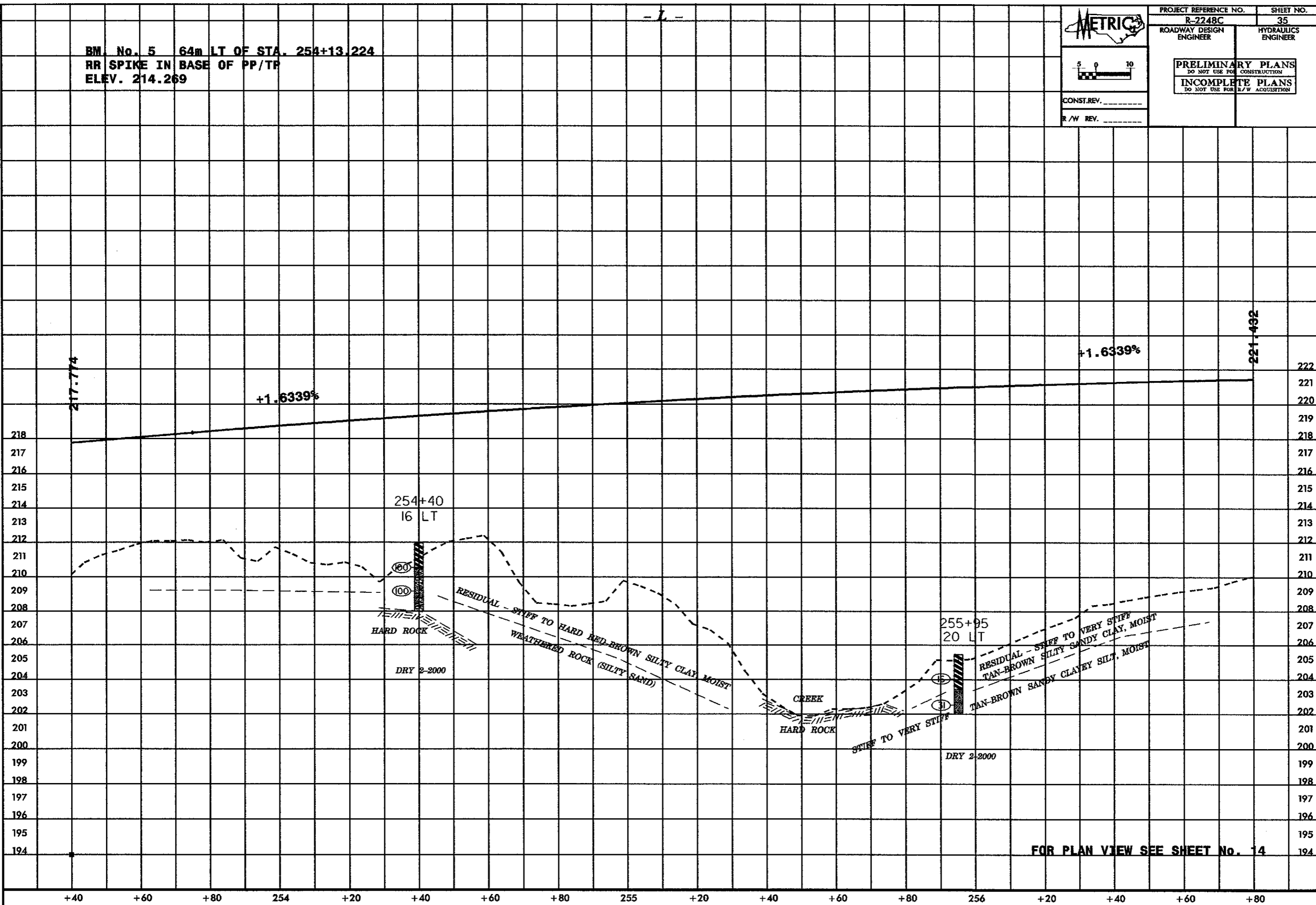


BM No. 5 64m LT OF STA. 254+13.224  
 RR SPIKE IN BASE OF PP/TP  
 ELEV. 214.269

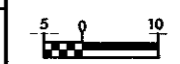
**METRIC**

CONST. REV. \_\_\_\_\_  
 R/W REV. \_\_\_\_\_

PROJECT REFERENCE NO. R-2248C	SHEET NO. 35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION <b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	

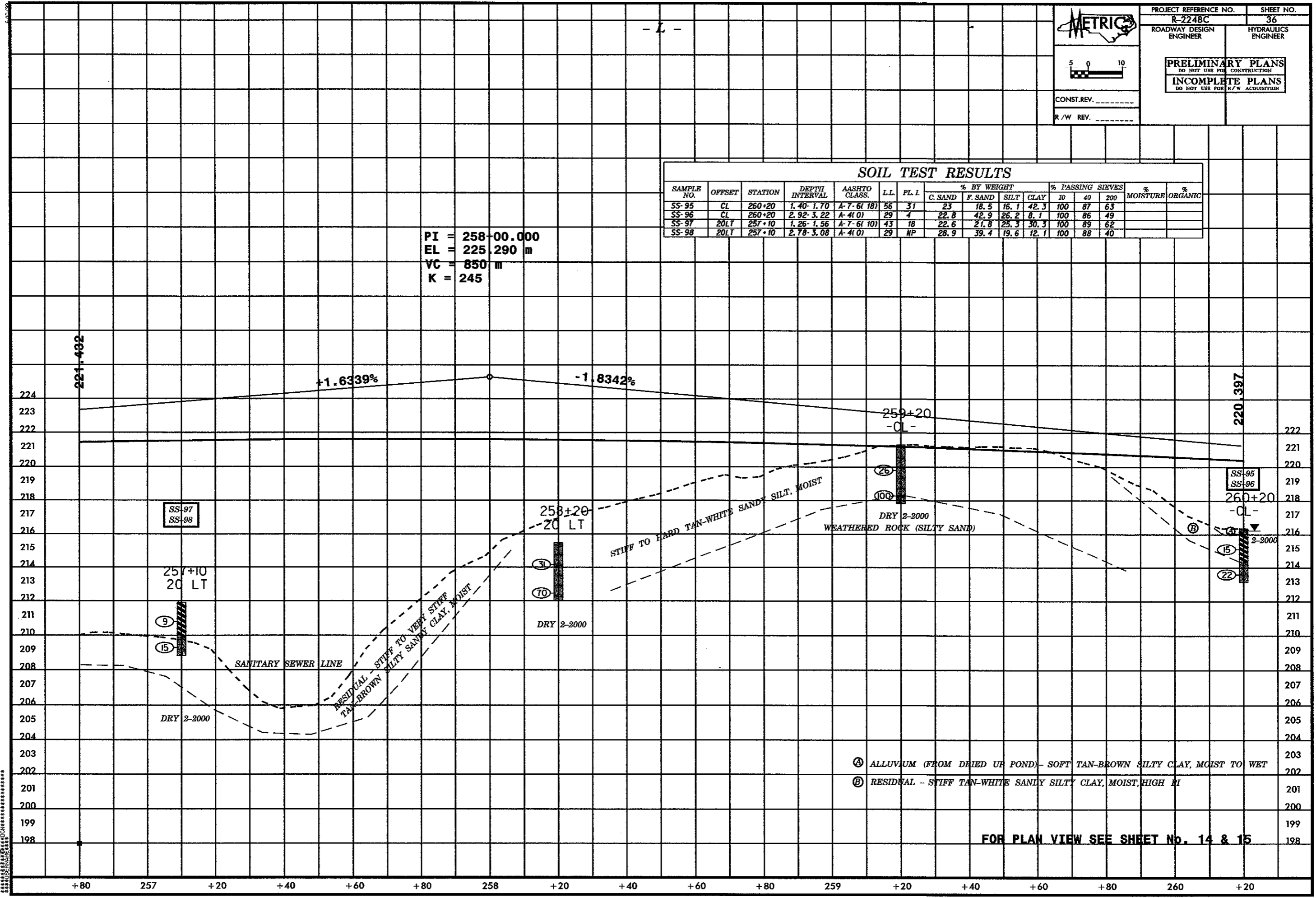


FOR PLAN VIEW SEE SHEET No. 14



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-95	CL	260+20	1.40-1.70	A-7-6(18)	56	31	23	18.5	16.1	42.3	100	87	63		
SS-96	CL	260+20	2.92-3.22	A-4(0)	29	4	22.8	42.9	26.2	8.1	100	86	49		
SS-97	20LT	257+10	1.26-1.56	A-7-6(10)	43	18	22.6	21.8	25.3	30.3	100	89	62		
SS-98	20LT	257+10	2.78-3.08	A-4(0)	29	NP	28.9	39.4	19.6	12.1	100	88	40		

PI = 258+00.000  
 EL = 225.290 m  
 VC = 850 m  
 K = 245



- Ⓐ ALLUVIUM (FROM DRIED UP POND) - SOFT TAN-BROWN SILTY CLAY, MOIST TO WET
- Ⓑ RESIDUAL - STIFF TAN-WHITE SANDY SILTY CLAY, MOIST, HIGH PI

FOR PLAN VIEW SEE SHEET No. 14 & 15

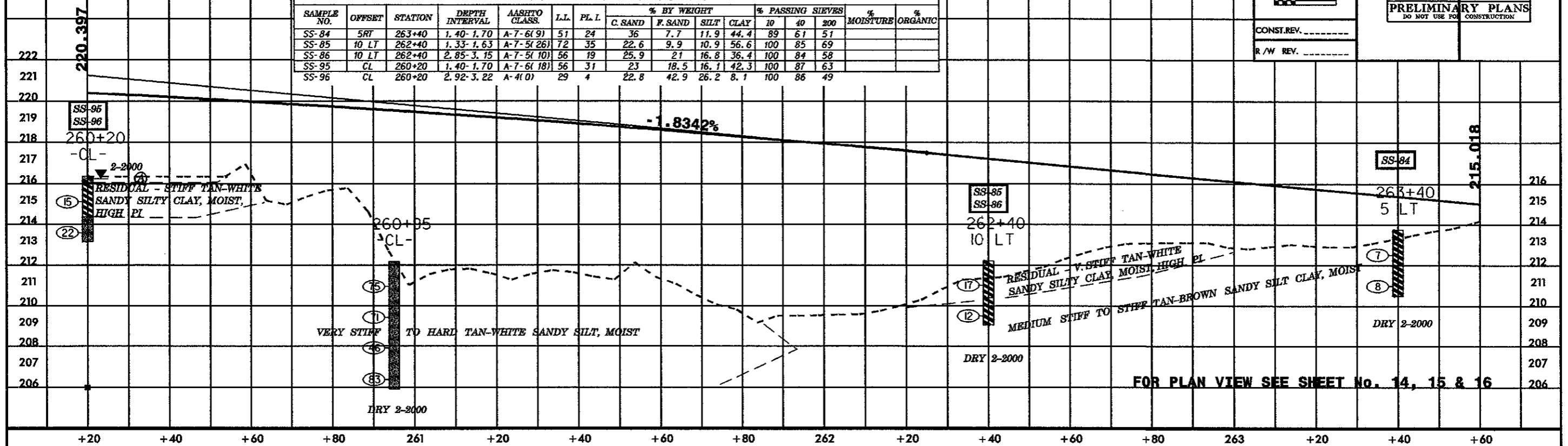
Ⓐ ALLUVIUM (FROM DRIED UP POND) - SOFT TAN-BROWN SILTY CLAY, MOIST TO WET

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

PROJECT REFERENCE NO. R-2248C SHEET NO. 37  
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

SOIL TEST RESULTS

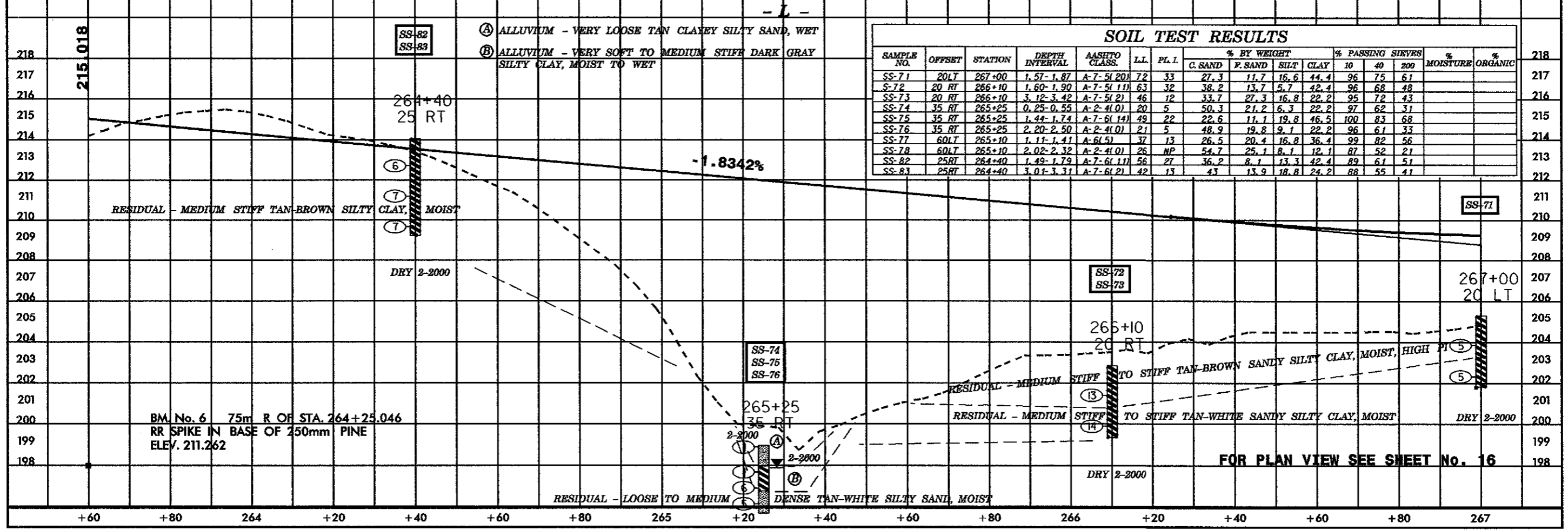
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-84	5RT	263+40	1.40-1.70	A-7-6(9)	51	24	36	7.7	11.9	44.4	89	61	51		
SS-85	10 LT	262+40	1.33-1.63	A-7-5(26)	72	35	22.6	9.9	10.9	56.6	100	85	69		
SS-86	10 LT	262+40	2.85-3.15	A-7-5(10)	56	19	25.9	2.1	16.8	36.4	100	84	58		
SS-95	CL	260+20	1.40-1.70	A-7-6(18)	56	31	23	18.5	16.1	42.3	100	87	63		
SS-96	CL	260+20	2.92-3.22	A-4(0)	29	4	22.8	42.9	26.2	8.1	100	86	49		



Ⓐ ALLUVIUM - VERY LOOSE TAN CLAYEY SILTY SAND, WET  
Ⓑ ALLUVIUM - VERY SOFT TO MEDIUM STIFF DARK GRAY SILTY CLAY, MOIST TO WET

SOIL TEST RESULTS

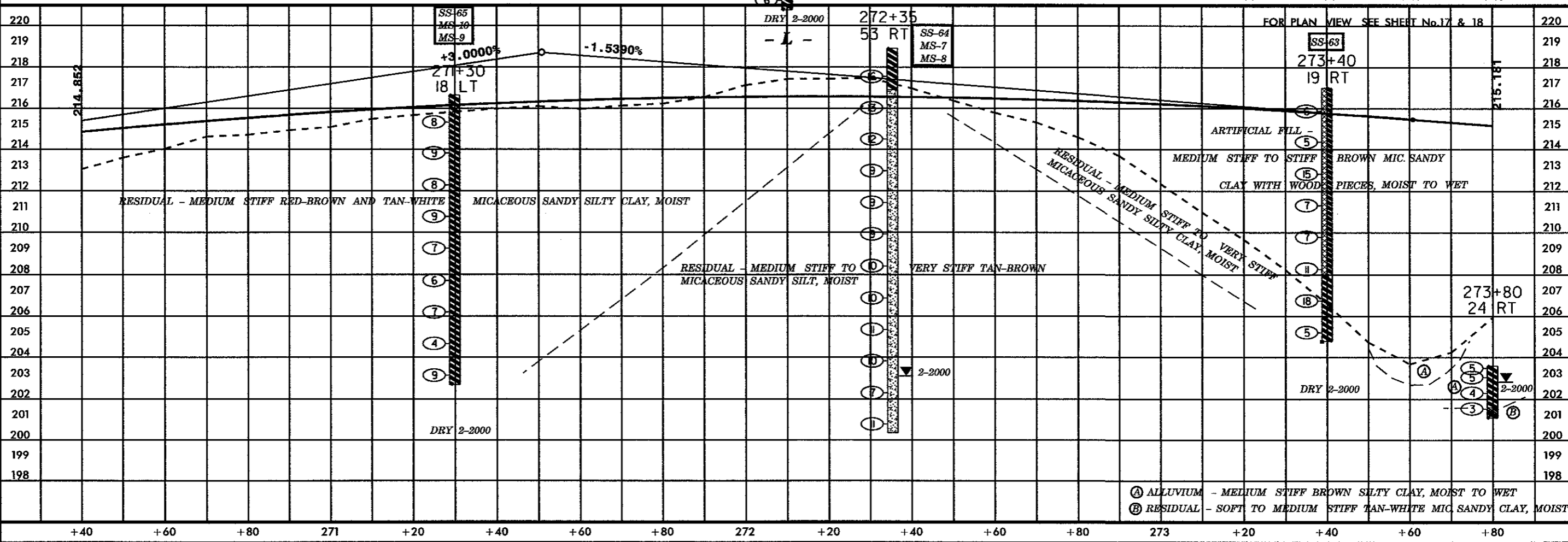
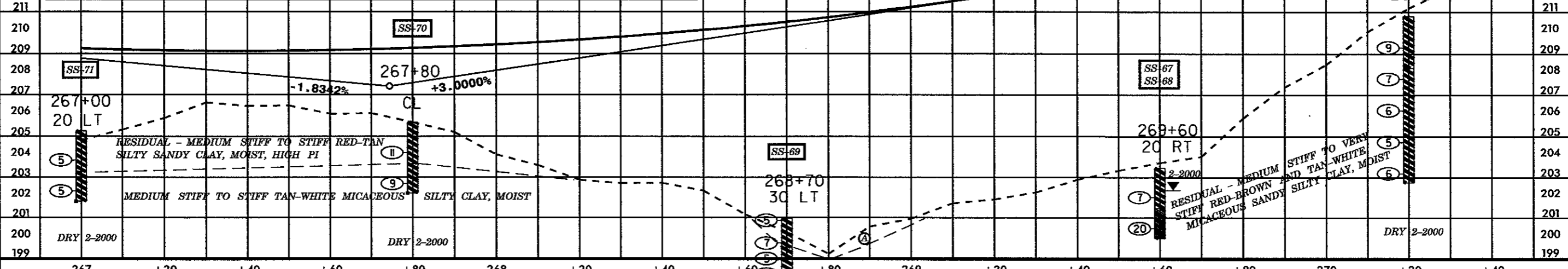
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-71	20LT	267+00	1.51-1.87	A-7-5(20)	72	33	27.3	11.7	16.6	44.4	96	75	61		
S-72	20 RT	266+10	1.60-1.90	A-7-5(11)	63	32	38.2	13.7	5.7	42.4	96	68	48		
SS-73	20 RT	266+10	3.12-3.42	A-7-5(2)	46	12	33.7	27.3	16.8	22.2	95	72	43		
SS-74	35 RT	265+25	0.25-0.55	A-2-4(0)	20	5	50.3	21.2	6.3	22.2	97	62	31		
SS-75	35 RT	265+25	1.44-1.74	A-7-6(14)	49	22	22.6	11.1	19.8	46.5	100	83	68		
SS-76	35 RT	265+25	2.20-2.50	A-2-4(0)	21	5	48.9	19.8	9.1	22.2	96	61	33		
SS-77	60LT	265+10	1.11-1.41	A-6(5)	37	13	26.5	20.4	16.8	36.4	99	82	56		
SS-78	60LT	265+10	2.02-2.32	A-2-4(0)	26	NP	54.7	25.1	8.1	12.1	87	52	21		
SS-82	25RT	264+40	1.49-1.79	A-7-6(11)	56	27	36.2	8.1	13.3	42.4	89	61	51		
SS-83	25RT	264+40	3.01-3.31	A-7-6(2)	42	13	43	13.9	18.8	24.2	88	55	41		



**SOIL TEST RESULTS**

STATION	SAMPLE NO.	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
222	MS-8	53RT	15.20-15.50	A-5(4)											
221	SS-63	19RT	8.87-9.17	A-7-5(10)	56	21	26.7	20.8	22.2	30.3	94	78	54		
220	SS-64	53RT	1.62-1.92	A-7-5(3)	66	29	4.6	4.4	28.3	62.6	100	97	92		
219	SS-65	18LT	3.04-3.34	A-7-5(9)	51	18	26.1	17.2	28.5	28.3	92	74	56		
218	MS-7	53RT	7.60-7.90	A-5(4)										23.5	
218	MS-9	18LT	5.92-6.22	A-7-5(9)										23.3	
218	MS-10	18LT	10.55-10.85	A-7-5(9)										26.5	
217	SS-66	20LT	1.66-1.96	A-7-5(13)	57	23	25.1	11.9	24.6	38.4	92	74	61		
217	MS-11	20LT	4.57-4.87	A-7-5(9)										33.5	
216	SS-67	20RT	1.60-1.90	A-7-6(7)	54	27	40	17	18.8	24.2	92	64	43		
216	SS-68	20RT	3.12-3.42	A-6(1)	32	11	45.7	12.9	7.1	34.3	95	61	41		
215	SS-69	30RT	0.25-0.55	A-7-6(11)	48	20	27.1	10.9	25.7	36.4	96	75	62		
215	SS-70	CL	1.62-1.92	A-7-5(27)	71	37	21.6	9.1	37	32.3	97	81	69		
214	SS-71	20LT	1.57-1.87	A-7-5(20)	72	33	27.3	11.7	16.6	44.4	96	75	61		

PROJECT REFERENCE NO. R-2248C SHEET NO. 38  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
 METRIC  
 5 0 10  
 INCOMPLETE PLANS  
 DO NOT USE FOR R/W ACQUISITION  
 PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 CONST. REV. \_\_\_\_\_  
 R/W REV. \_\_\_\_\_



- (A) ALLUVIUM - MEDIUM STIFF BROWN SILTY CLAY, MOIST TO WET
- (B) RESIDUAL - SOFT TO MEDIUM STIFF TAN-WHITE MIC. SANDY CLAY, MOIST



LEFT DITCH

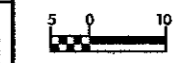
- L -



PROJECT REFERENCE NO. R-2248C SHEET NO. 39

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

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



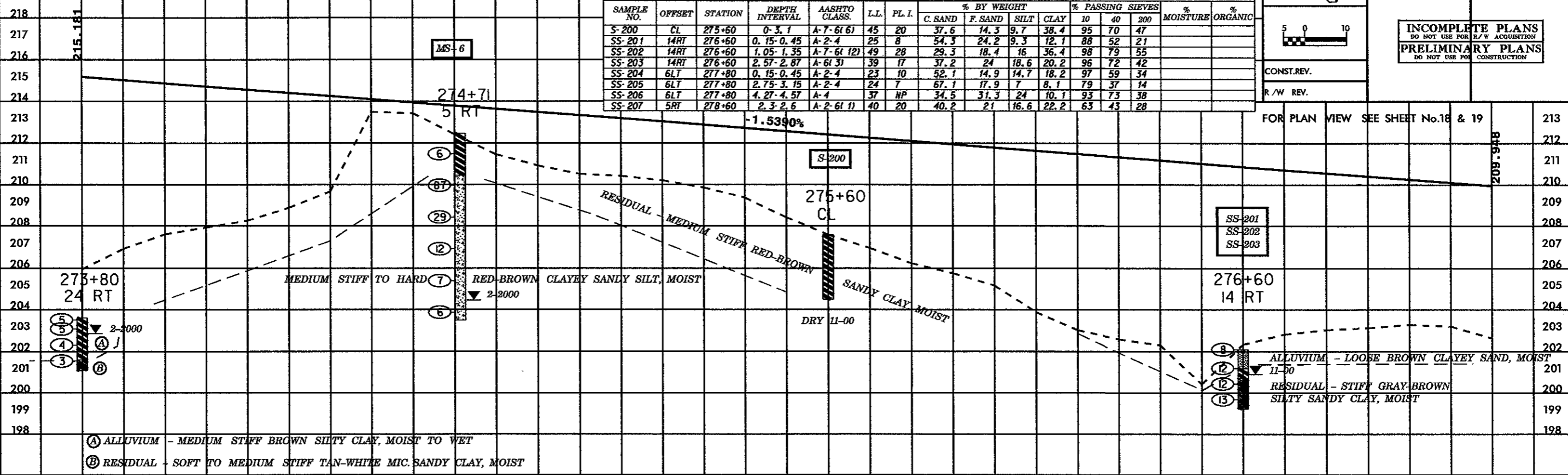
CONST. REV.

R/W REV.

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-200	CL	275+60	0-3.1	A-7-6(6)	45	20	37.6	14.3	9.7	38.4	95	70	47		
SS-201	14RT	276+60	0.15-0.45	A-2-4	25	8	54.3	24.2	9.3	12.1	88	52	21		
SS-202	14RT	276+60	1.05-1.35	A-7-6(12)	49	28	29.3	18.4	16	36.4	98	79	55		
SS-203	14RT	276+60	2.57-2.87	A-6(3)	39	17	37.2	24	18.6	20.2	96	72	42		
SS-204	6LT	277+80	0.15-0.45	A-2-4	23	10	52.1	14.9	14.7	18.2	97	59	34		
SS-205	6LT	277+80	2.75-3.15	A-2-4	24	7	67.1	17.9	7	8.1	79	37	14		
SS-206	6LT	277+80	4.27-4.57	A-1	37	NP	34.5	31.3	24	10.1	93	73	38		
SS-207	5RT	278+60	2.3-2.6	A-2-6(1)	40	20	40.2	21	16.6	22.2	63	43	28		

FOR PLAN VIEW SEE SHEET No. 18 & 19



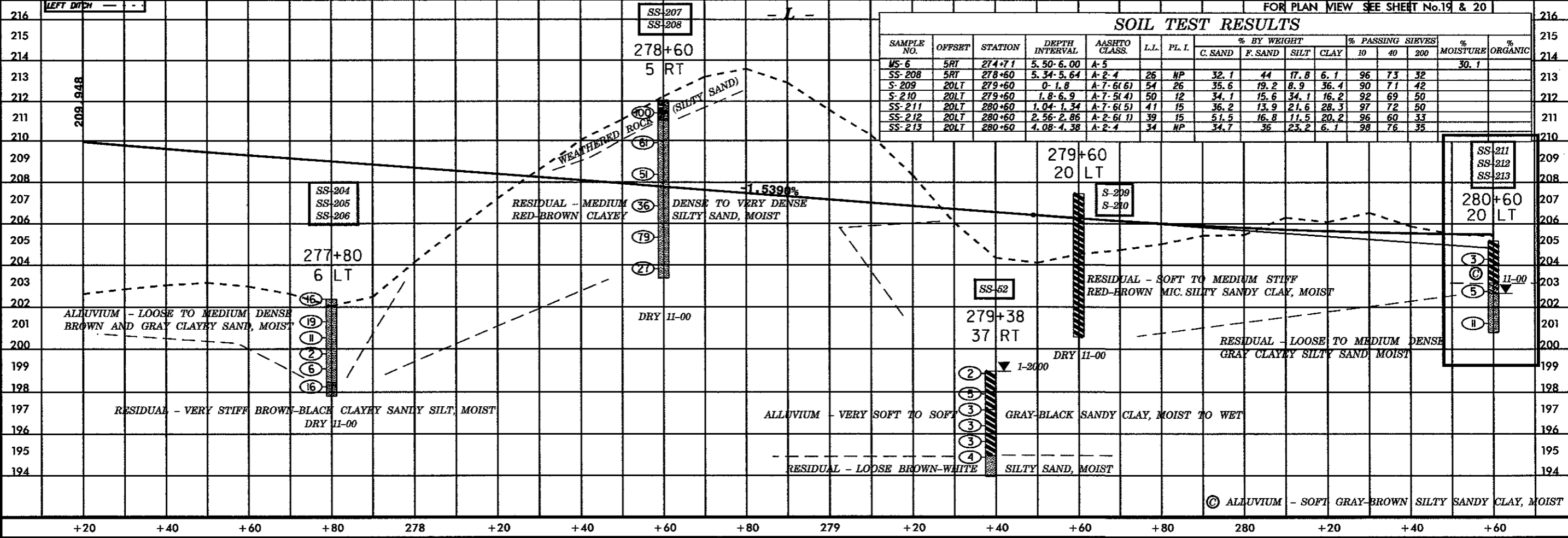
(A) ALLUVIUM - MEDIUM STIFF BROWN SILTY CLAY, MOIST TO WET  
 (B) RESIDUAL - SOFT TO MEDIUM STIFF TAN-WHITE MIC. SANDY CLAY, MOIST

+80 274 +20 +40 +60 +80 275 +20 +40 +60 +80 276 +20 +40 +60 +80 277 +20

FOR PLAN VIEW SEE SHEET No. 19 & 20

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
MS-6	5RT	274+71	5.50-6.00	A-5										30.1	
SS-208	5RT	278+60	5.34-5.64	A-2-4	26	NP	32.1	44	17.8	6.1	96	73	32		
S-209	20LT	279+60	0-1.8	A-7-6(6)	54	26	35.6	19.2	8.9	36.4	90	71	42		
S-210	20LT	279+60	1.8-6.9	A-7-6(4)	50	12	34.1	15.6	34.1	16.2	92	69	50		
SS-211	20LT	280+60	1.04-1.34	A-7-6(5)	41	15	36.2	13.9	21.6	28.3	97	72	50		
SS-212	20LT	280+60	2.56-2.86	A-2-6(1)	39	15	51.5	16.8	11.5	20.2	96	60	33		
SS-213	20LT	280+60	4.08-4.38	A-2-4	34	NP	34.7	36	23.2	6.1	98	76	35		



RESIDUAL - VERY STIFF BROWN-BLACK CLAYEY SILTY SAND, MOIST DRY II-00  
 ALLUVIUM - VERY SOFT TO SOFT GRAY-BLACK SANDY CLAY, MOIST TO WET

(C) ALLUVIUM - SOFT GRAY-BROWN SILTY SANDY CLAY, MOIST

+20 +40 +60 +80 278 +20 +40 +60 +80 279 +20 +40 +60 +80 280 +20 +40 +60

LEFT DITCH ---  
RIGHT DITCH ---

### SOIL TEST RESULTS

FOR PLAN VIEW SEE SHEET No. 20, 21, & 22

PROJECT REFERENCE NO. R-2248C SHEET NO. 40

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER



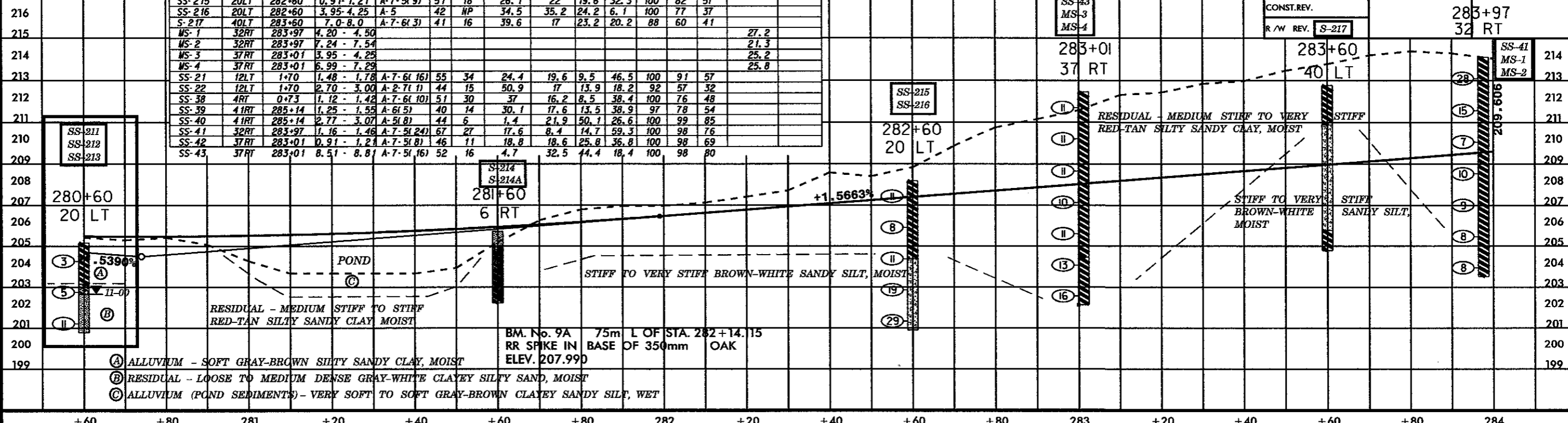
**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

CONST. REV. R/W REV. S-217

283+97  
32 RT

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-211	20LT	280+60	1.04-1.34	A-7-6(1)	41	15	36.2	13.9	21.6	28.3	97	72	50		
SS-212	20LT	280+60	2.56-2.86	A-2-6(1)	39	15	51.5	16.8	11.5	20.2	96	60	33		
SS-213	20LT	280+60	4.08-4.38	A-2-4	34	NP	34.7	36	23.2	6.1	98	76	35		
S-214A	6RT	281+60	0-0.8	A-7-6(1)	49	27	36.4	18.2	9.1	36.4	96	75	45		
S-214	6RT	281+60	.8-2.5	A-6(1)	32	13	37.8	21.6	16.4	24.2	85	63	38		
SS-215	20LT	282+60	0.91-1.21	A-7-5(1)	51	18	26.1	22	19.6	32.3	100	82	57		
SS-216	20LT	282+60	3.95-4.25	A-5	42	NP	34.5	35.2	24.2	6.1	100	77	37		
S-217	40LT	283+60	7.0-8.0	A-7-6(3)	41	16	39.6	17	23.2	20.2	88	60	41		
MS-1	32RT	283+97	4.20-4.50											27.2	
MS-2	32RT	283+97	7.24-7.54											21.3	
MS-3	37RT	283+01	5.95-4.25											25.2	
MS-4	37RT	283+01	6.99-7.29											25.8	
SS-21	12LT	1+70	1.48-1.78	A-7-6(16)	55	34	24.4	19.6	9.5	46.5	100	91	57		
SS-22	12LT	1+70	2.70-3.00	A-2-7(1)	44	15	50.9	17	13.9	18.2	92	57	32		
SS-38	4RT	0+73	1.12-1.42	A-7-6(10)	51	30	37	16.2	8.5	38.4	100	76	48		
SS-39	41RT	285+14	1.25-1.55	A-6(5)	40	14	30.1	17.6	13.5	38.9	97	78	54		
SS-40	41RT	285+14	2.77-3.07	A-5(8)	44	6	1.4	21.9	50.1	26.6	100	99	85		
SS-41	32RT	283+97	1.16-1.46	A-7-5(24)	67	27	17.6	8.4	14.7	59.3	100	98	76		
SS-42	37RT	283+01	0.91-1.21	A-7-5(8)	46	11	18.8	18.6	25.8	36.8	100	98	69		
SS-43	37RT	283+01	8.51-8.81	A-7-5(16)	52	16	4.7	32.5	44.4	18.4	100	98	80		

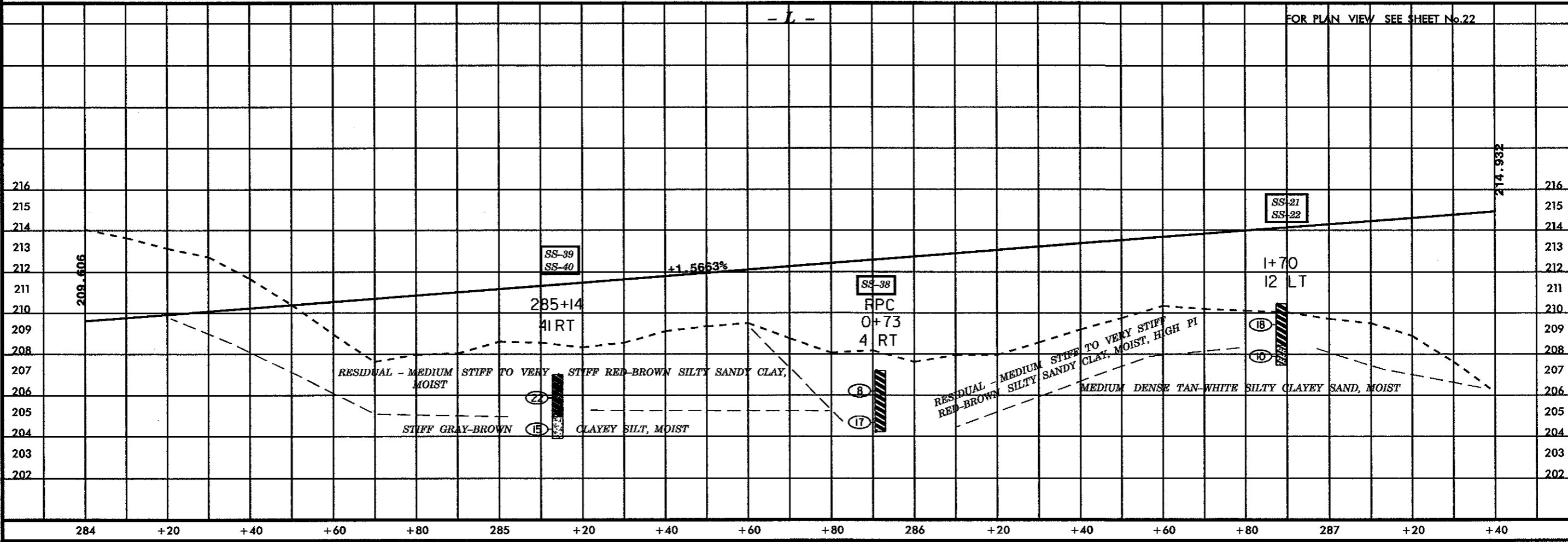
- L -



- (A) ALLUVIUM - SOFT GRAY-BROWN SILTY SANDY CLAY, MOIST
- (B) RESIDUAL - LOOSE TO MEDIUM DENSE GRAY-WHITE CLAYEY SILTY SAND, MOIST
- (C) ALLUVIUM (POND SEDIMENTS) - VERY SOFT TO SOFT GRAY-BROWN CLAYEY SANDY SILT, WET

BM. No. 9A 75m L OF STA. 282+14.15  
RR SPIKE IN BASE OF 350mm OAK  
ELEV. 207.990

FOR PLAN VIEW SEE SHEET No. 22



LEFT DITCH  
RIGHT DITCH

### SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-3	4RT	1+15	1.11 - 1.41	A-7-5(22)	54	17	0.8	9.3	53.5	36.4	100	99	96		
SS-4	4RT	1+15	5.67 - 5.97	A-7-5(17)	56	12	1.6	16	56.2	26.3	100	99	91		
SS-5	2LT	1+99	2.71 - 3.01	A-5(5)	46	8	22.6	22.8	34.3	20.2	100	86	61		
SS-6	13RT	292+42	1.21 - 1.51	A-7-5(7)	52	12	27.7	20.6	23.4	28.3	100	83	57		
SS-10	13RT	291+42	0.80 - 1.10	A-6(2)	38	11	34.7	24.2	20.8	20.2	100	85	44		
SS-11	13RT	291+42	1.29 - 1.59	A-7-6(23)	50	26	12.1	6.3	27.1	54.5	100	93	83		
SS-17	44RT	289+75	1.03 - 1.33	A-7-6(11)	51	22	29.7	16.4	25.7	28.3	100	80	57		
SS-18	44RT	289+75	2.55 - 2.85	A-7-5(3)	44	11	30.5	28.5	28.9	12.1	100	80	48		
SS-19	24RT	287+97	0.15 - 0.45	A-4(0)	24	6	38.4	21	20.4	20.2	100	77	44		
SS-20	24RT	287+97	1.73 - 2.03	A-2-4(0)	29	6	49.7	23.8	16.4	10.1	89	56	28		

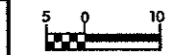
FOR PLAN VIEW SEE SHEET No. 22 & 23



PROJECT REFERENCE NO. R-2248C SHEET NO. 41

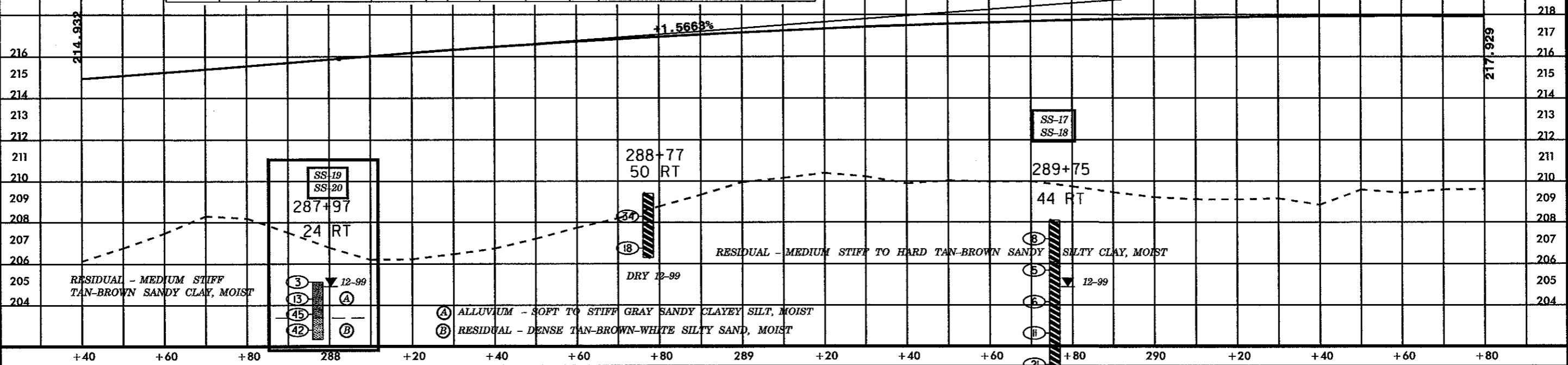
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS  
DO NOT USE FOR B/L/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



CONST.REV.

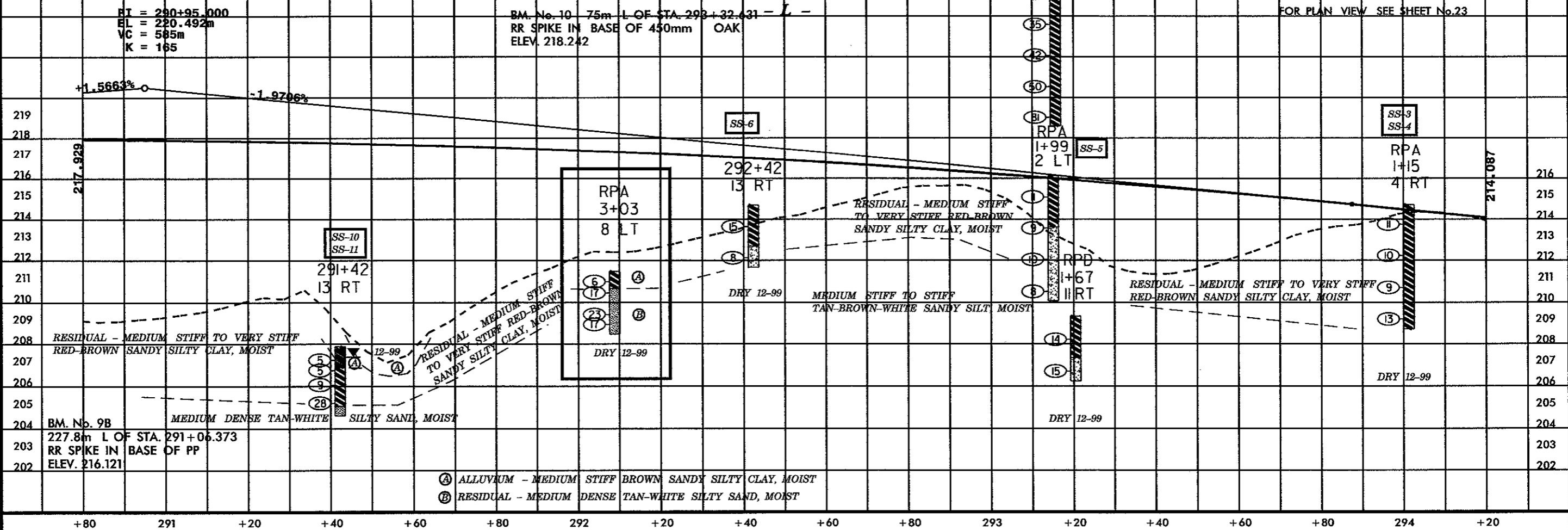
R/W REV.



RT = 290+95.000  
EL = 220.492m  
VC = 585m  
K = 165

BM No. 10 75m L OF STA. 293+32.431 - L -  
RR SPIKE IN BASE OF 450mm OAK  
ELEV. 218.242

FOR PLAN VIEW SEE SHEET No. 23



BM No. 9B  
227.8m L OF STA. 291+06.373  
RR SPIKE IN BASE OF PP  
ELEV. 216.121

A ALLUVIUM - MEDIUM STIFF BROWN SANDY SILTY CLAY, MOIST  
B RESIDUAL - MEDIUM DENSE TAN-WHITE SILTY SAND, MOIST

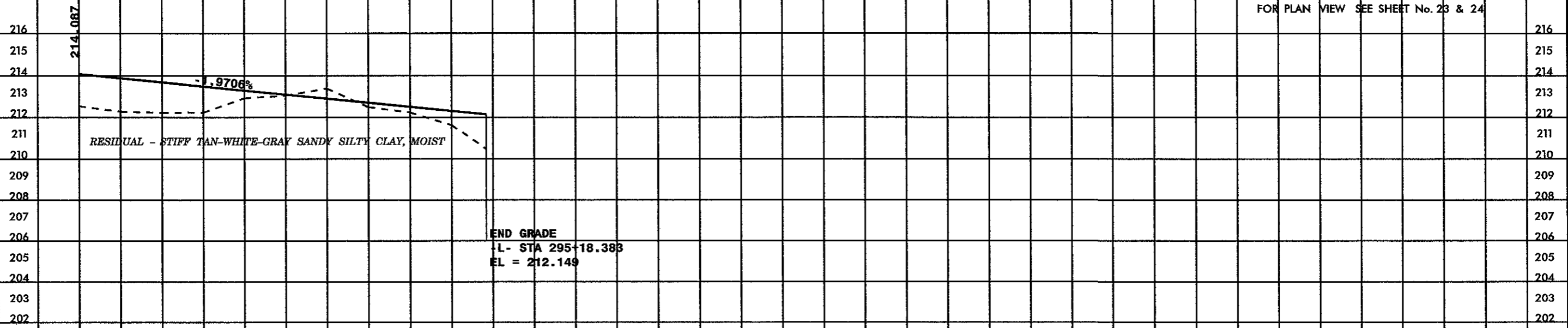


PROJECT REFERENCE NO. R-2248C	SHEET NO. 42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR R/W ACQUISITION</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	



CONST. REV.  
R/W REV.

FOR PLAN VIEW SEE SHEET No. 23 & 24

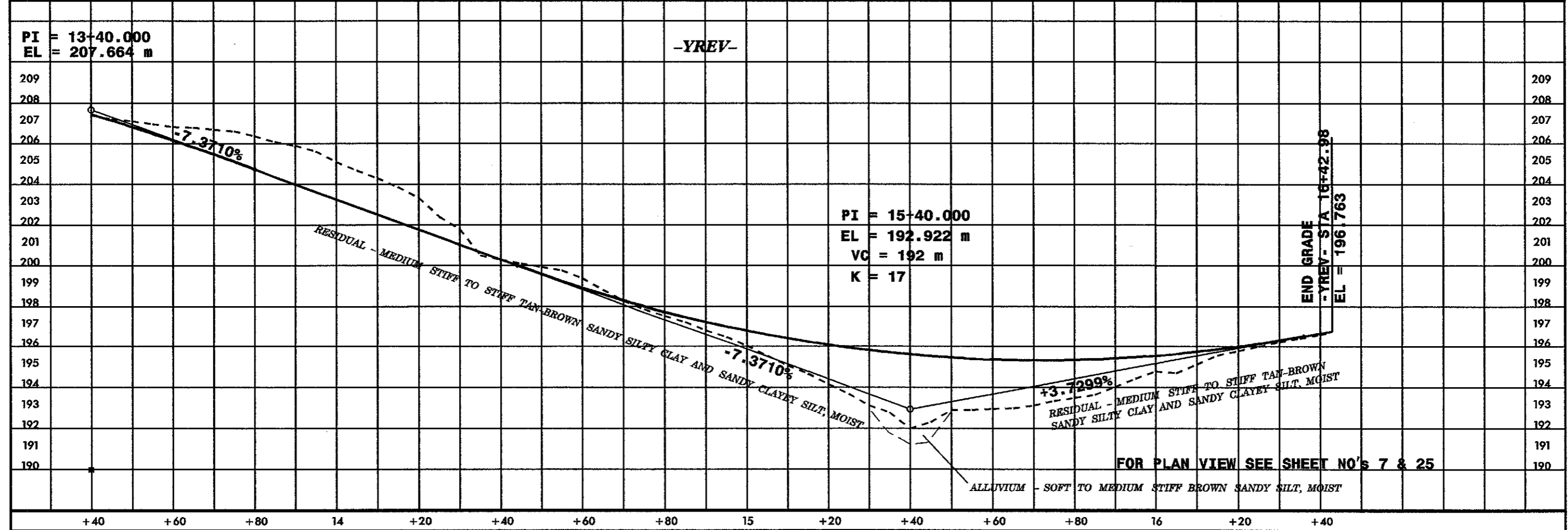
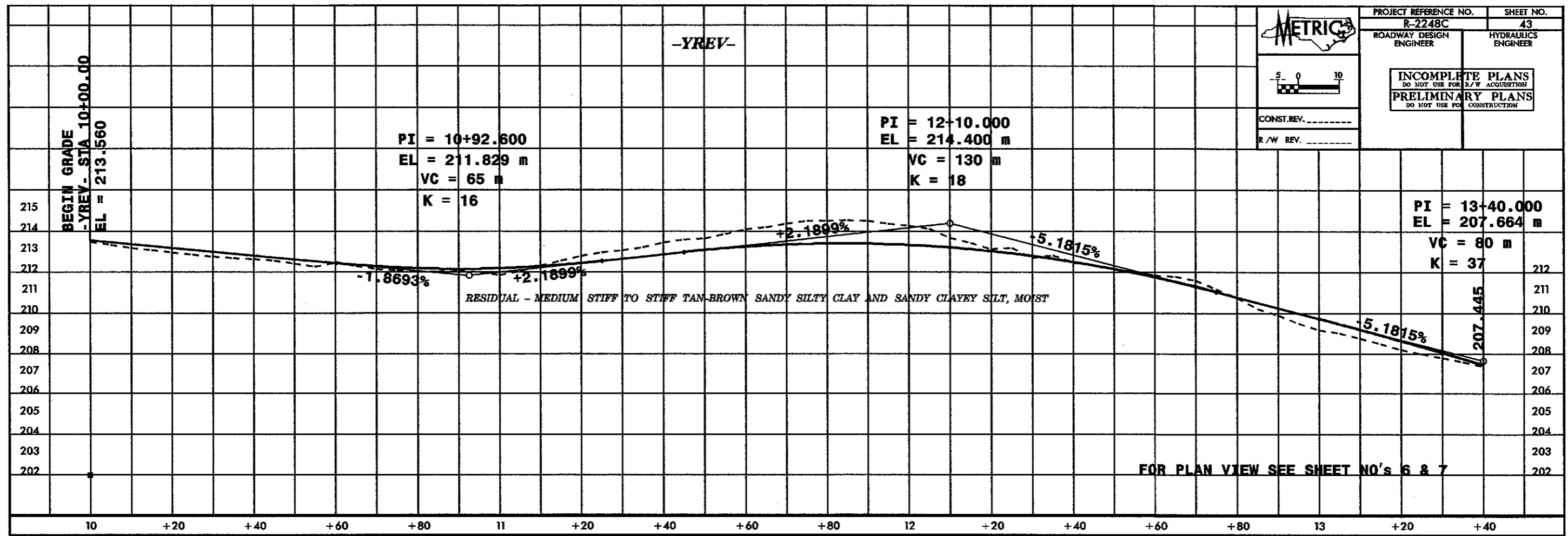


+20 +40 +60 +80 295

\*\*\*\*\*

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

PROJECT REFERENCE NO. R-2248C	SHEET NO. 43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



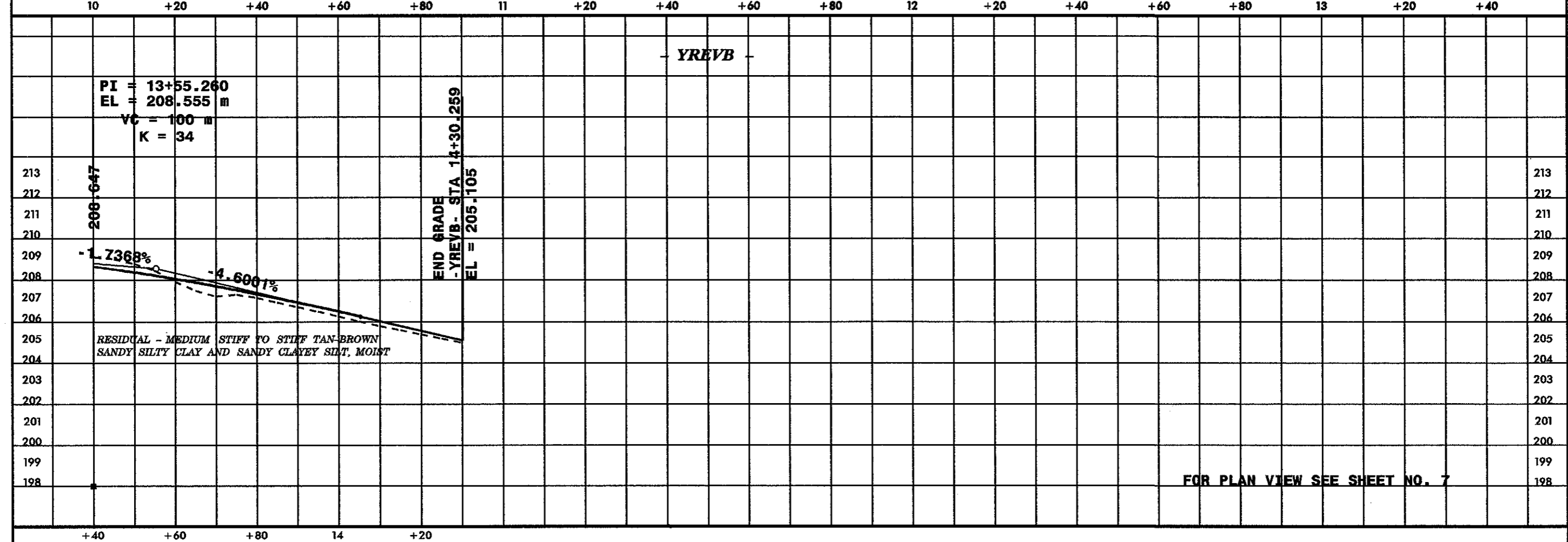
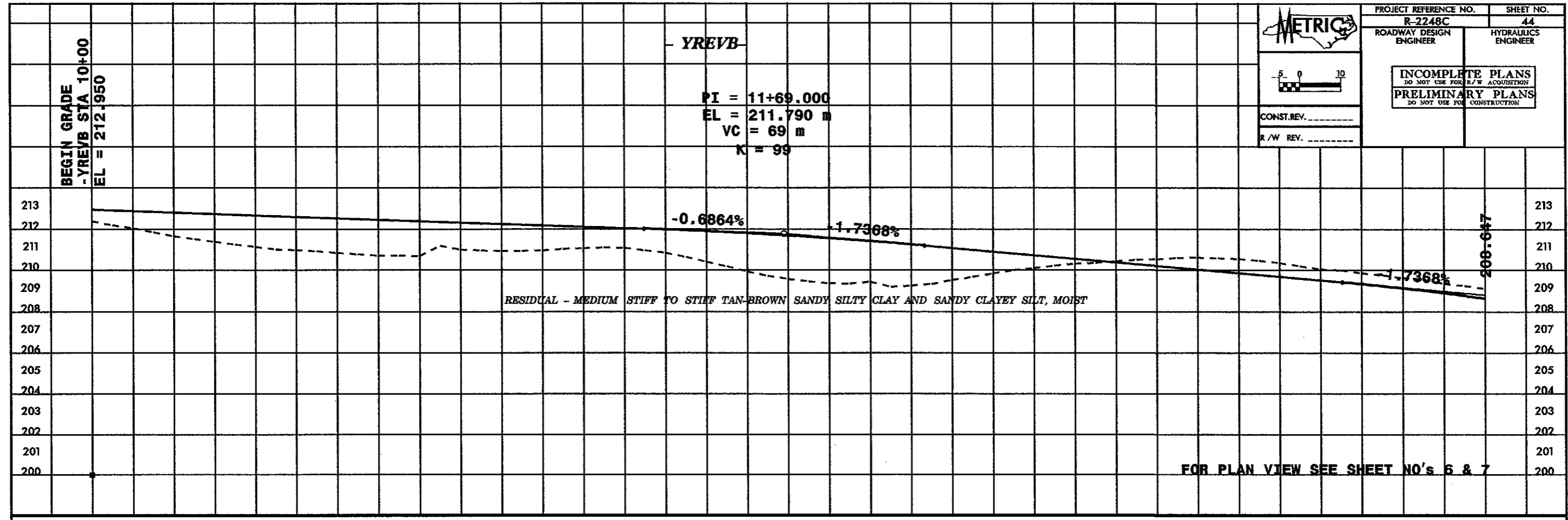
**METRIC**

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

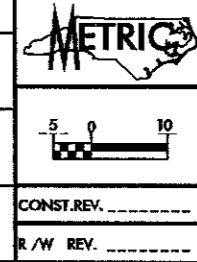
PROJECT REFERENCE NO. R-2248C	SHEET NO. 44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION







ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

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

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

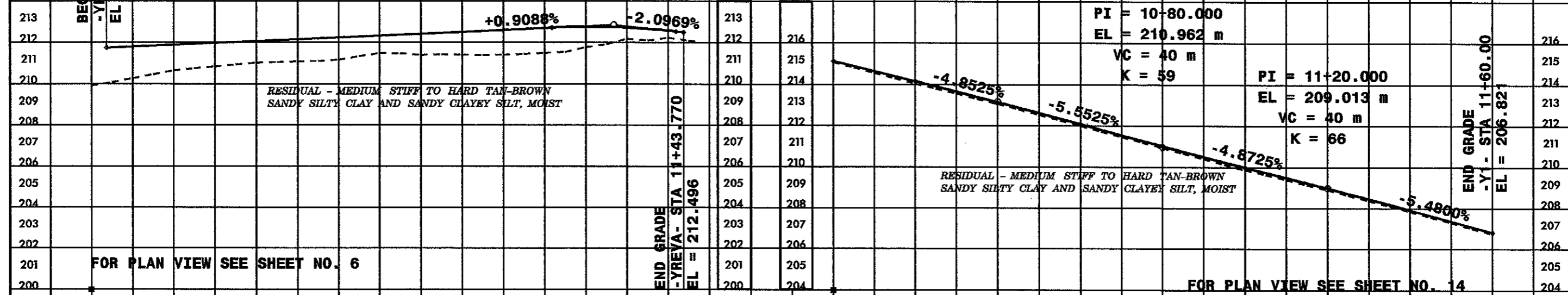
**- Y1 -**  
**BELHAVEN RD**

PI = 10+40.000  
EL = 213.183 m  
VC = 40 m  
K = 57

PI = 11+26.840  
EL = 212.851 m  
VC = 30 m  
K = 10

PI = 10+80.000  
EL = 210.962 m  
VC = 40 m  
K = 59

PI = 11+20.000  
EL = 209.013 m  
VC = 40 m  
K = 66

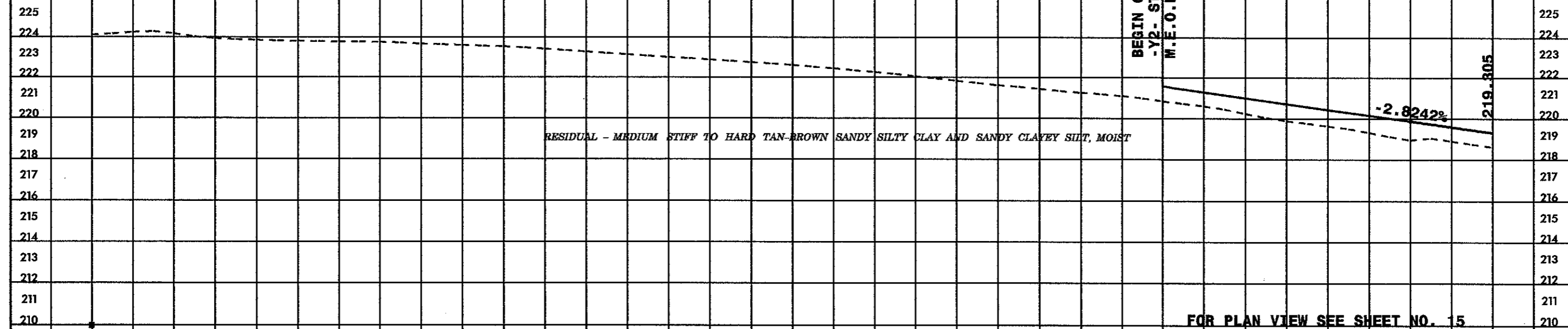


FOR PLAN VIEW SEE SHEET NO. 6

FOR PLAN VIEW SEE SHEET NO. 14

**- Y2 -**  
**BROOKSHIRE BLVD.**  
NC16

BEGIN GRADE  
-Y2- STA 12+60.000  
M.E.O.P. EL = 221.568



FOR PLAN VIEW SEE SHEET NO. 15

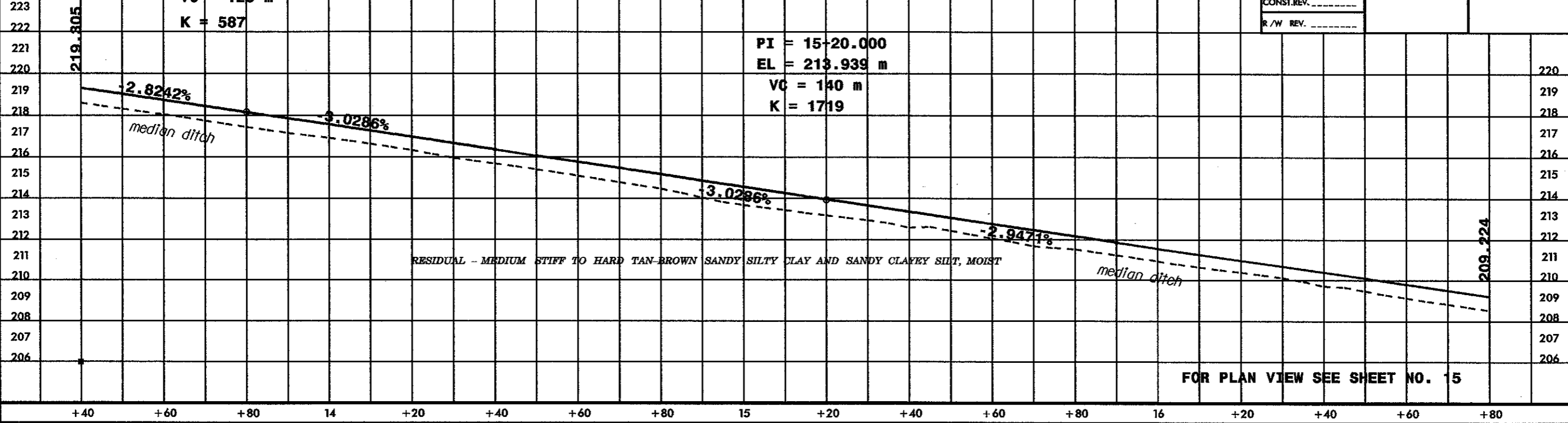
**- Y2 -  
BROOKSHIRE BLVD.  
NC16**

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

PROJECT REFERENCE NO. R-2248C	SHEET NO. 46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR ACQUISITION</small>	
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

PI = 13+80.000  
EL = 218.179 m  
VC = 120 m  
K = 587

PI = 15+20.000  
EL = 213.939 m  
VC = 140 m  
K = 1719

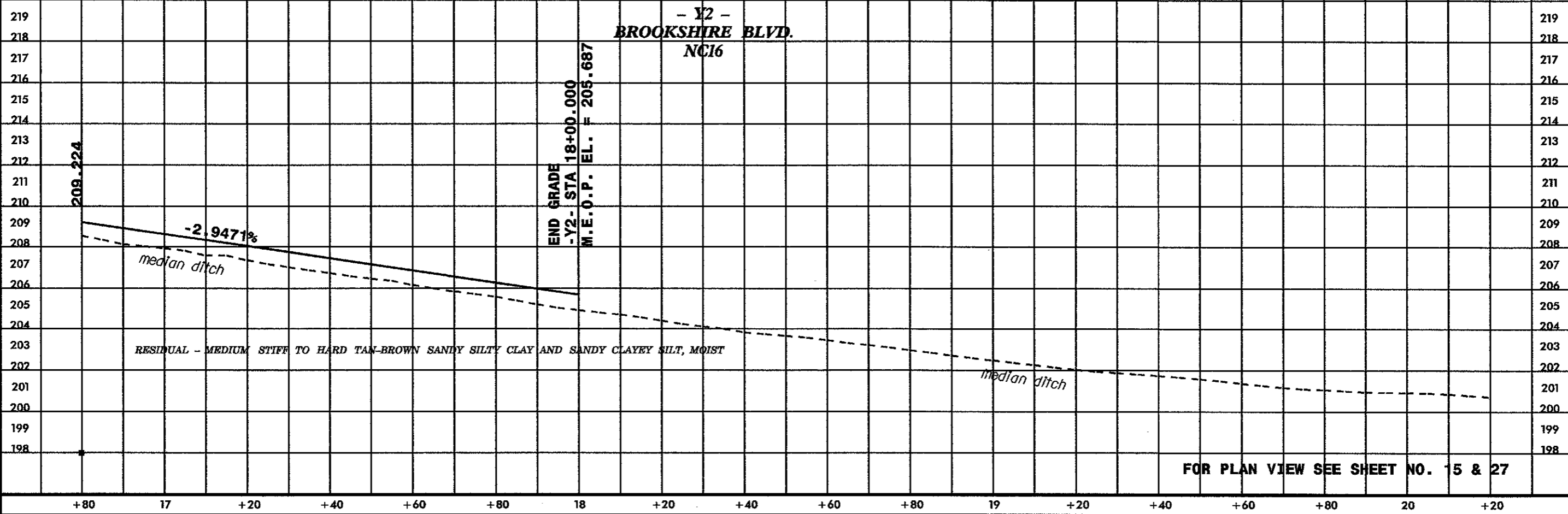


**- Y2 -  
BROOKSHIRE BLVD.  
NC16**


END GRADE  
-Y2- STA. 18+00.000  
M.E.O.P. EL. = 205.687

-2.9471%  
median ditch

RESIDUAL - MEDIUM STIFF TO HARD TAN-BROWN SANDY SILTY CLAY AND SANDY CLAYEY SILT, MOIST



**- Y2 -  
BROOKSHIRE BLVD.  
NC16**

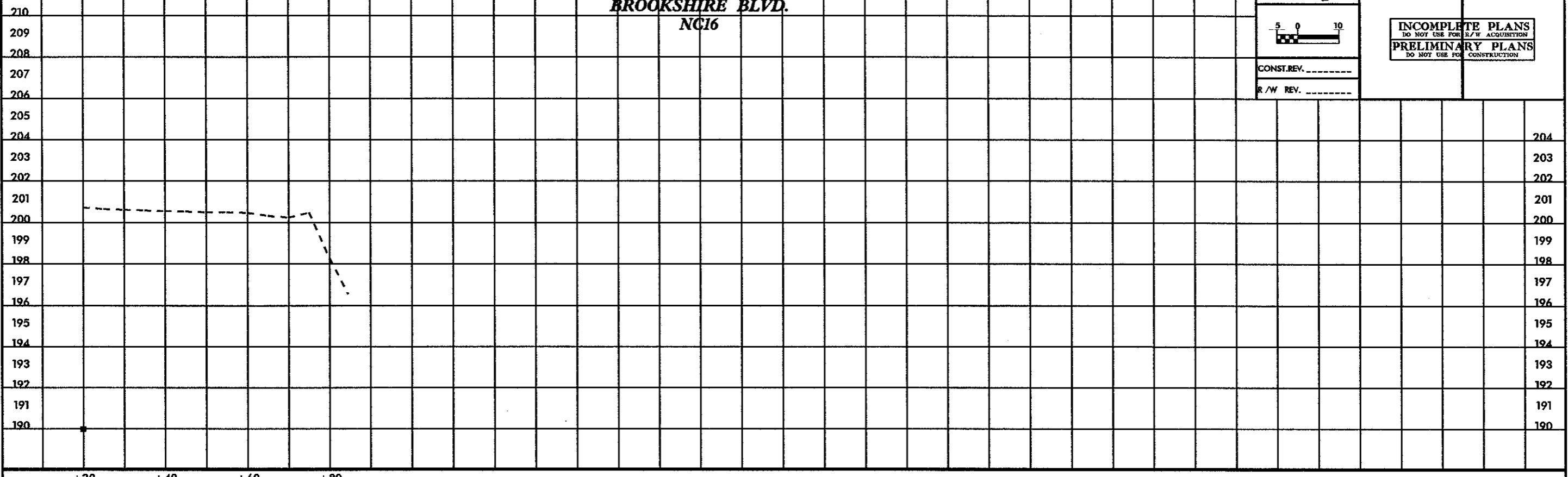


5 0 10

CONST. REV. \_\_\_\_\_

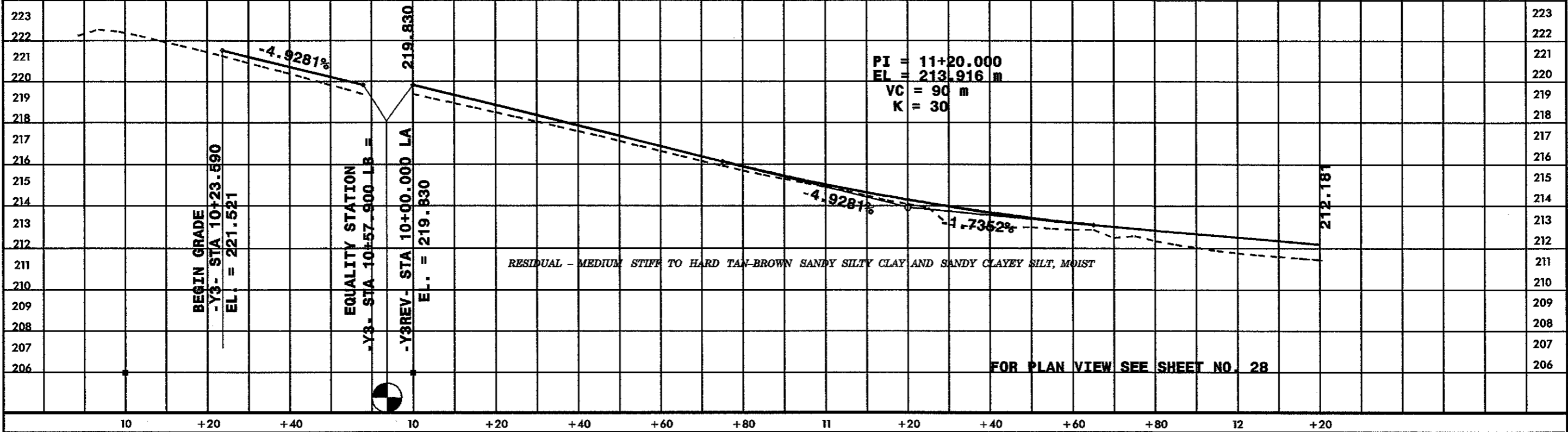
R/W REV. \_\_\_\_\_

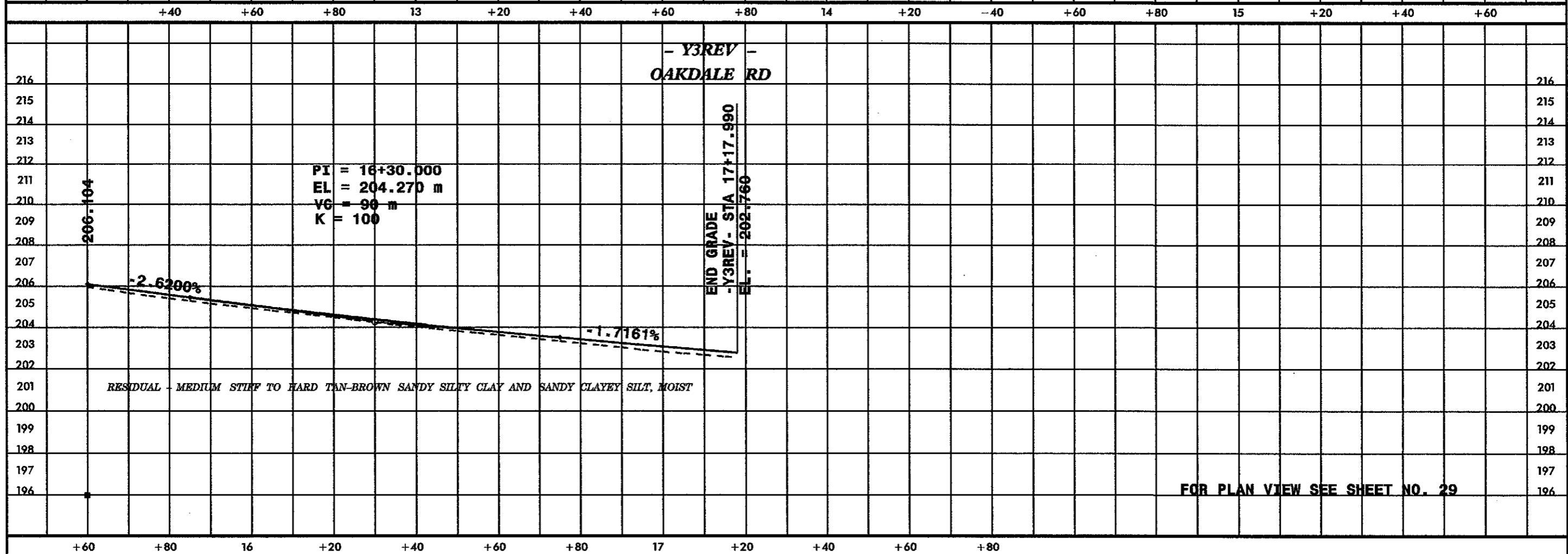
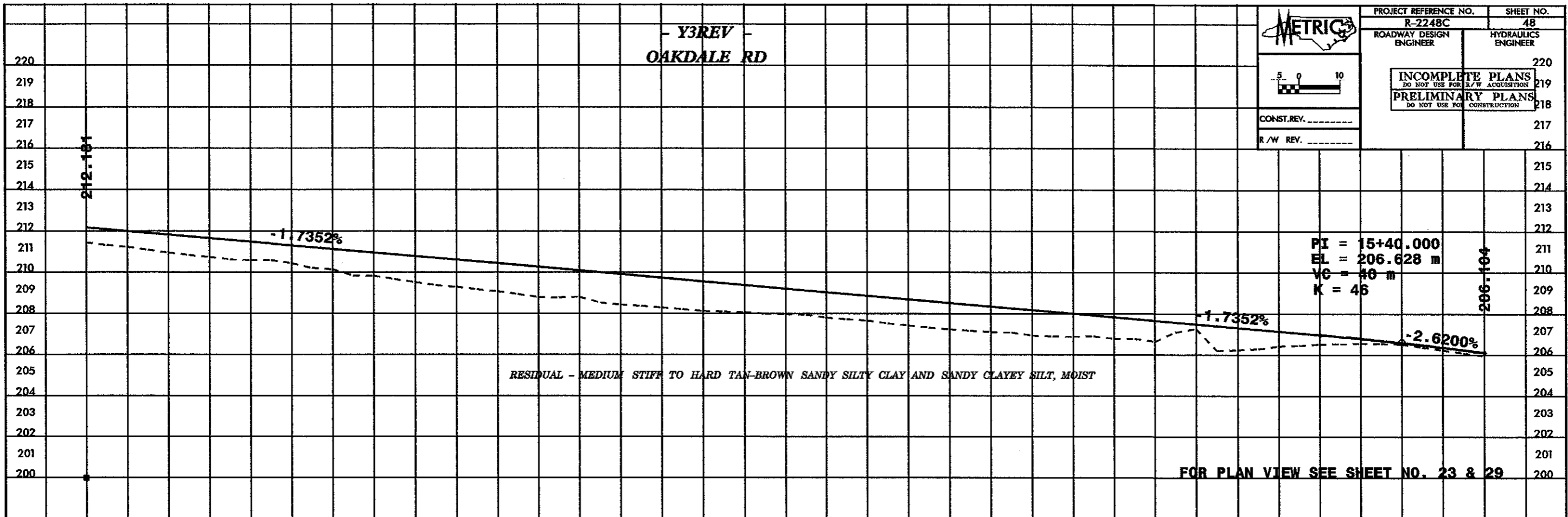
PROJECT REFERENCE NO. <b>R-2248C</b>	SHEET NO. <b>47</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR B/W ACQUISITION</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

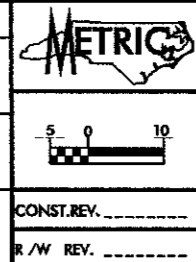


**- Y3 -  
OAKDALE RD**

**- Y3REV -  
OAKDALE RD**







NOTE: DUE TO PROJECT OVERLAP BORINGS AND SAMPLES WERE ORIGINALLY TAKEN ON SECTION R-2248BB

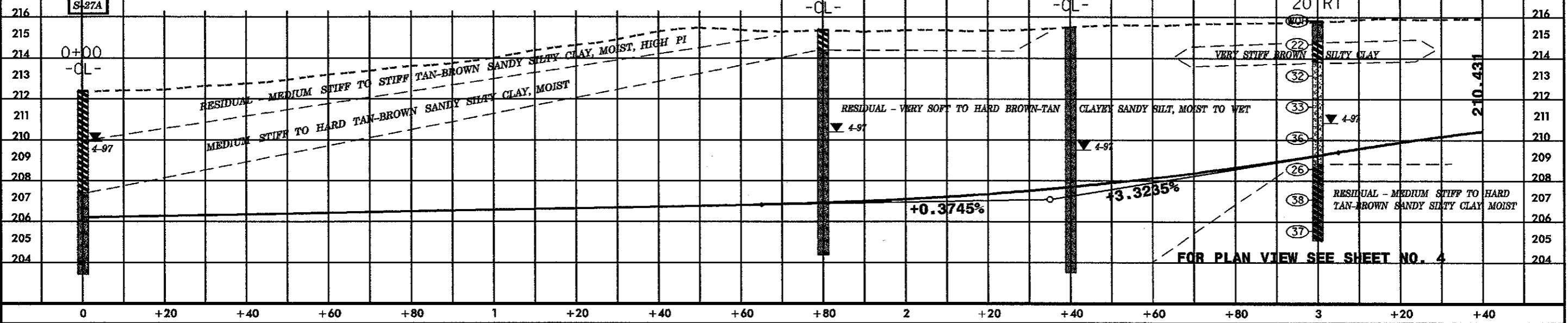
RAMP E

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
							S-27	10	0+00	0.00-5.00	A-7-5(32)	65	33		
S-27A	10	0+00	5.00-9.00	A-4(0)	31	6	27.7	34.9	21.1	16.3	98	82	43		
S-30	0	1+80	0.00-1.00	A-7-6(25)	54	26	4.7	14.5	40.1	40.8	100	97	85		
S-30A	0	1+80	1.00-6.00	A-4(0)	25	2	26.3	38.9	20.5	14.3	100	83	41		
S-30B	0	1+80	6.00-11.00	A-4(4)	35	8	13.9	24.1	39.7	22.4	92	84	63		
SS-31	20	3+00	0.00-0.45	A-4(0)	35	2	21.2	29.0	33.5	16.3	95	84	53		
SS-31A	20	3+00	1.15-1.50	A-7-5(50)	87	51	3.3	6.5	18.9	71.4	100	98	92	40.7	
SS-31B	20	3+00	2.67-3.12	A-5(6)	44	7	8.8	28.3	40.5	22.4	100	96	72	27.8	
SS-31C	20	3+00	7.23-7.68	A-6(6)	89	13	15.9	29.8	29.9	24.5	97	88	59	26.1	

S-30  
S-30A  
S-30B

SS-31  
SS-31A  
SS-31B  
SS-31C

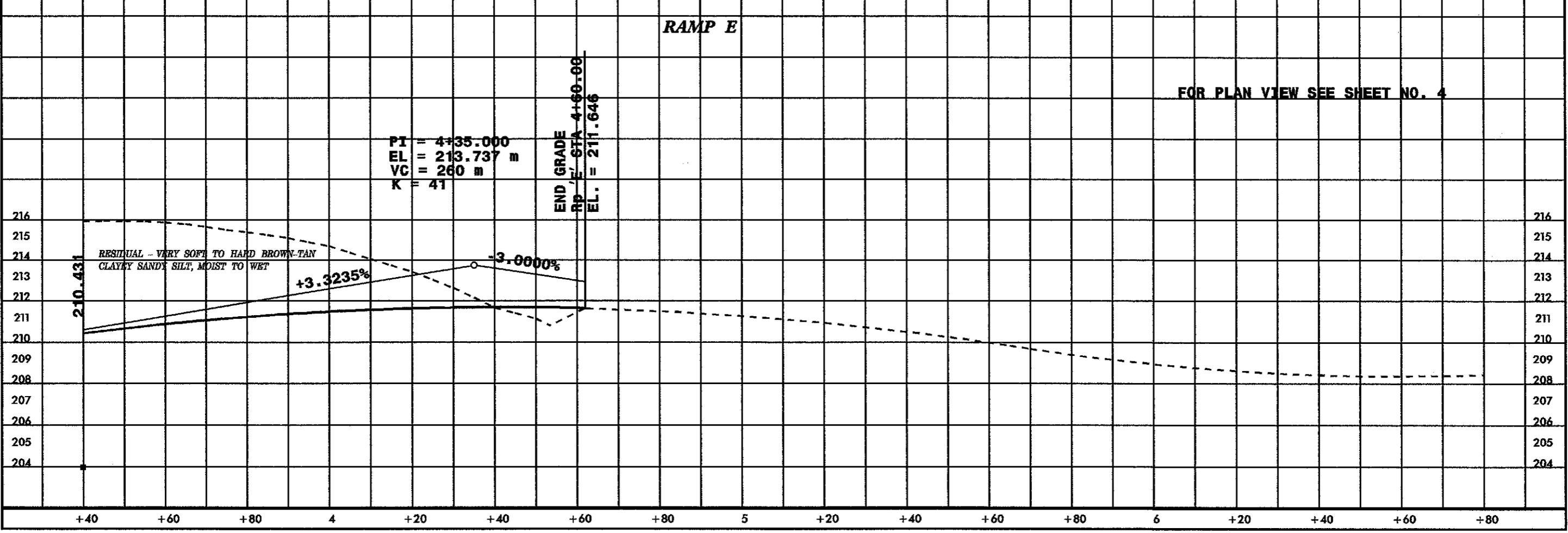
BEGIN GRADE  
 RP 'E' STA 0+00.000  
 EL. = 206.210



RAMP E

PI = 4+35.000  
 EL = 213.737 m  
 VC = 260 m  
 K = 41

END GRADE  
 RP 'E' STA 4+60.00  
 EL. = 211.646



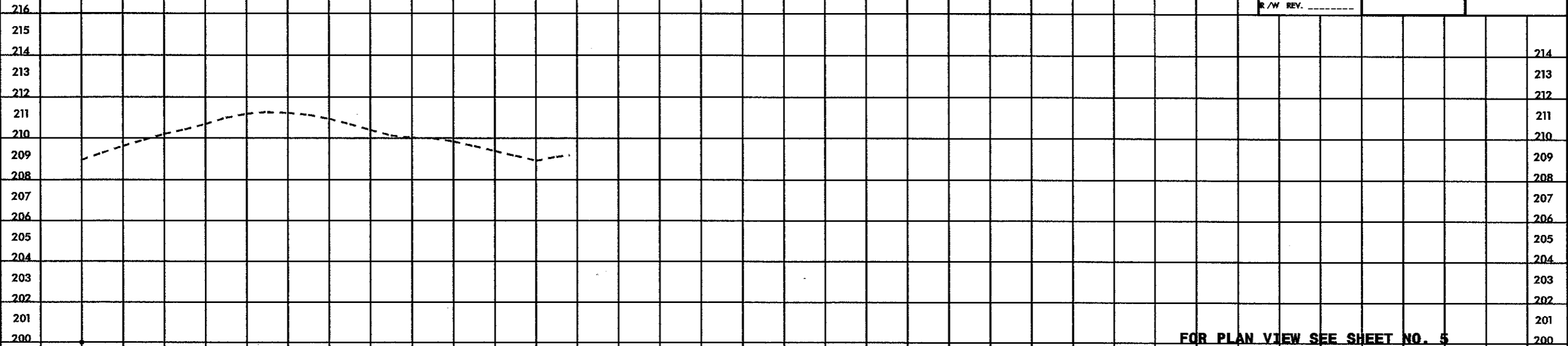
RAMP E

5 0 10

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

PROJECT REFERENCE NO. R-2248C SHEET NO. 50  
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

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



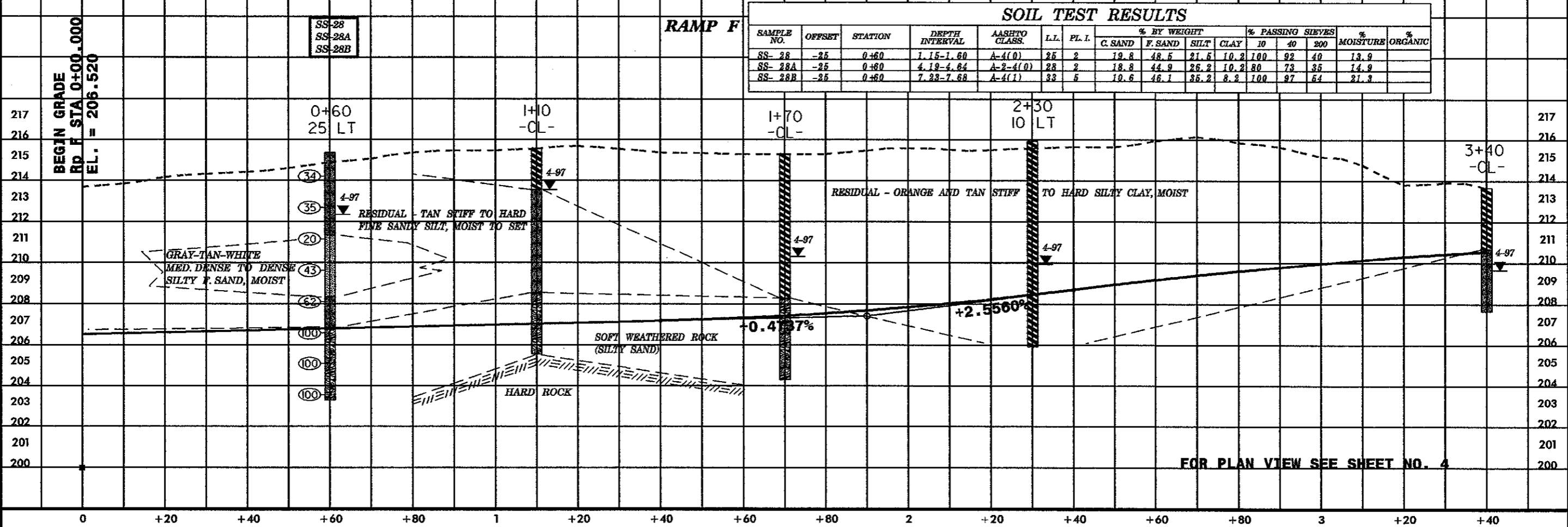
NOTE: DUE TO PROJECT OVERLAP BORINGS AND SAMPLES WERE ORIGINALLY TAKEN ON SECTION R-2248BB

FOR PLAN VIEW SEE SHEET NO. 5

+80 7 +20 +40 +60 +80

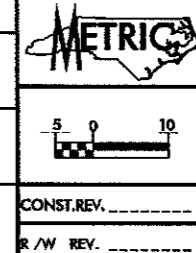
RAMP F

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-28	-25	0+60	1.15-1.60	A-4(0)	25	2	19.8	48.5	21.5	10.2	100	92	40	13.9	
SS-28A	-25	0+60	4.19-4.64	A-2-4(0)	28	2	18.8	44.9	26.2	10.2	80	73	35	14.9	
SS-28B	-25	0+60	7.22-7.68	A-4(1)	32	5	10.6	46.1	35.2	8.2	100	97	64	21.3	



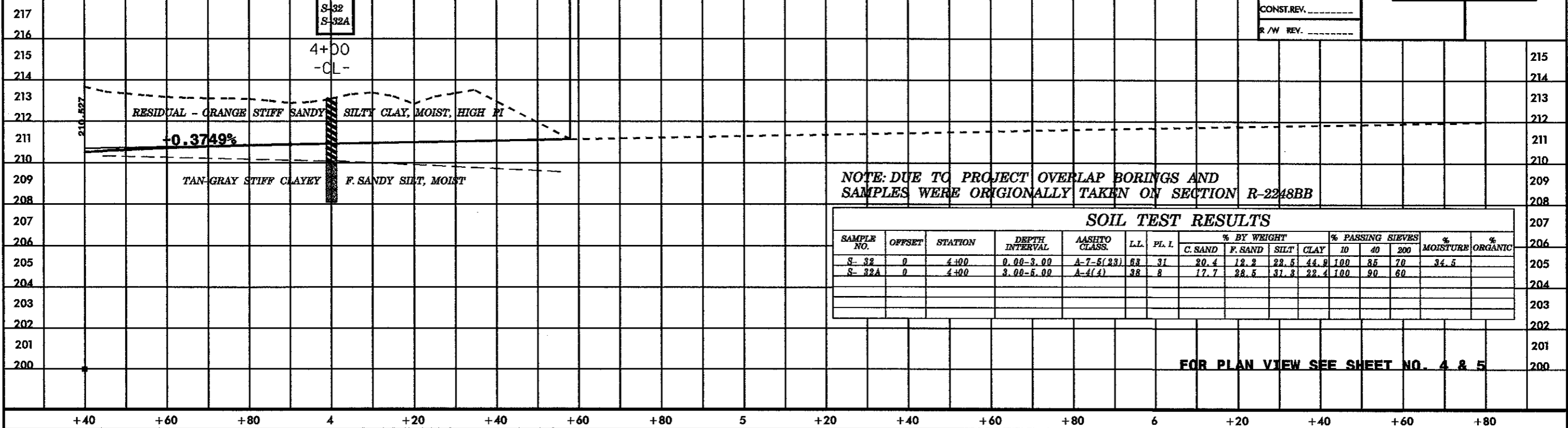
FOR PLAN VIEW SEE SHEET NO. 4

0 +20 +40 +60 +80 1 +20 +40 +60 +80 2 +20 +40 +60 +80 3 +20 +40



PROJECT REFERENCE NO. R-2248C SHEET NO. 51  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
 INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION  
 PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

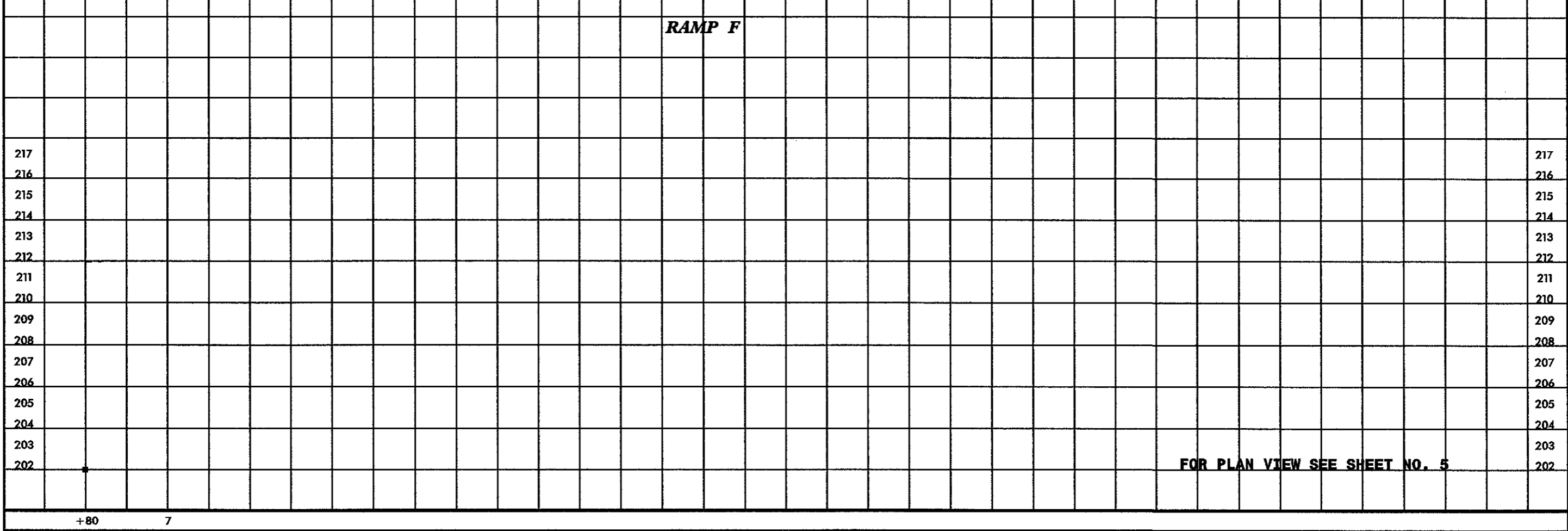
**RAMP F**  
 END GRADE  
 Rp 'F' STA 4+57.00  
 EL. = 211.147



NOTE: DUE TO PROJECT OVERLAP BORINGS AND SAMPLES WERE ORIGINALLY TAKEN ON SECTION R-2248BB

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL I	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-32	0	4+00	0.00-3.00	A-7-5(23)	68	31	20.4	12.2	22.5	44.9	100	85	70	34.5	
S-32A	0	4+00	3.00-5.00	A-4(4)	38	8	17.7	28.5	31.3	22.4	100	90	60		

FOR PLAN VIEW SEE SHEET NO. 4 & 5



FOR PLAN VIEW SEE SHEET NO. 5



SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-85	15RT	0+60	1.33-1.63	A-7-5(26)	72	35	22.6	9.9	10.9	56.6	100	85	69		
SS-86	15RT	0+60	2.85-3.15	A-7-5(10)	56	19	25.9	21	16.8	36.4	100	84	58		

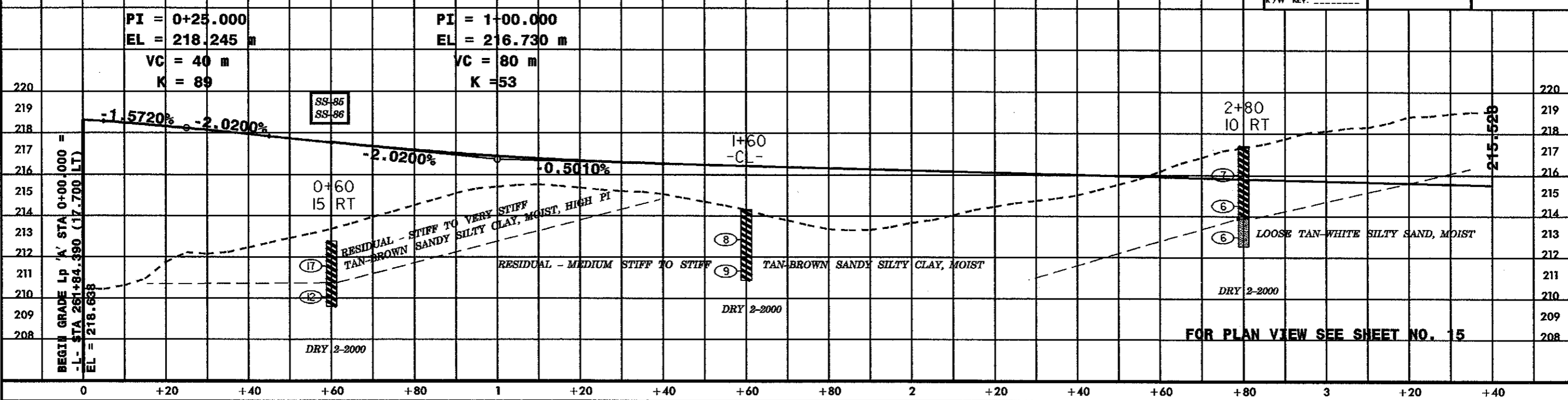
**- Y2 -  
LOOP A  
BROOKSHIRE BLVD.**

PROJECT REFERENCE NO. R-2248C  
SHEET NO. 52

ROADWAY DESIGN ENGINEER  
HYDRAULICS ENGINEER

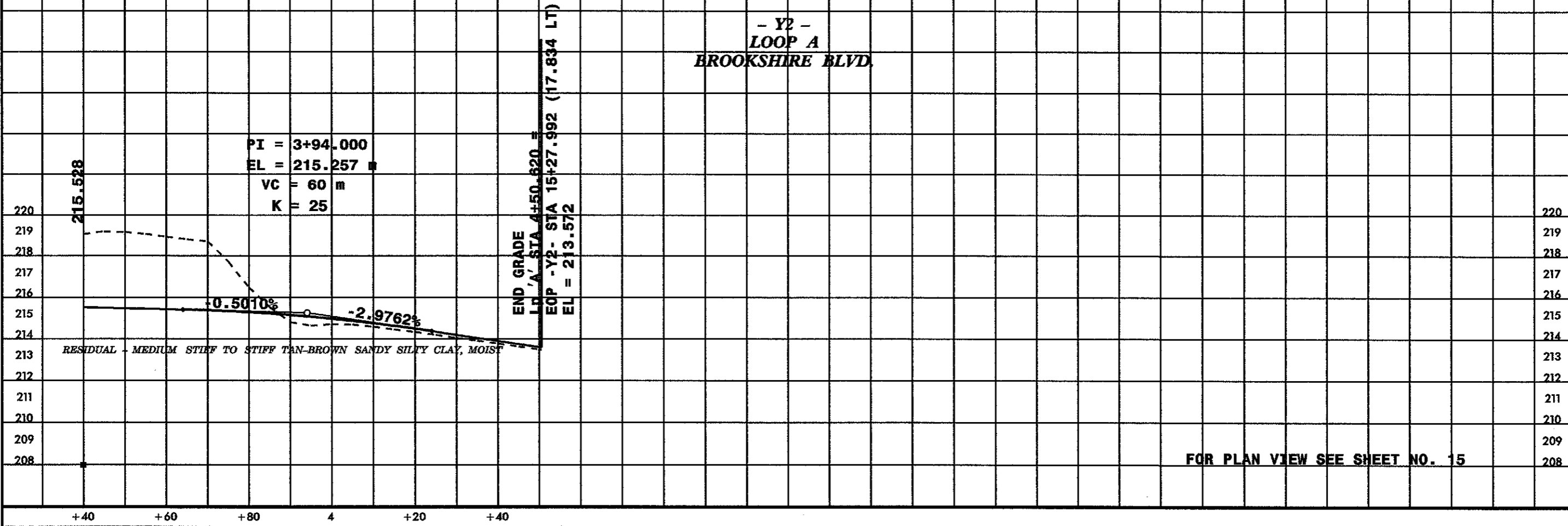
**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

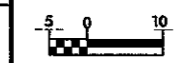


FOR PLAN VIEW SEE SHEET NO. 15

**- Y2 -  
LOOP A  
BROOKSHIRE BLVD.**



FOR PLAN VIEW SEE SHEET NO. 15

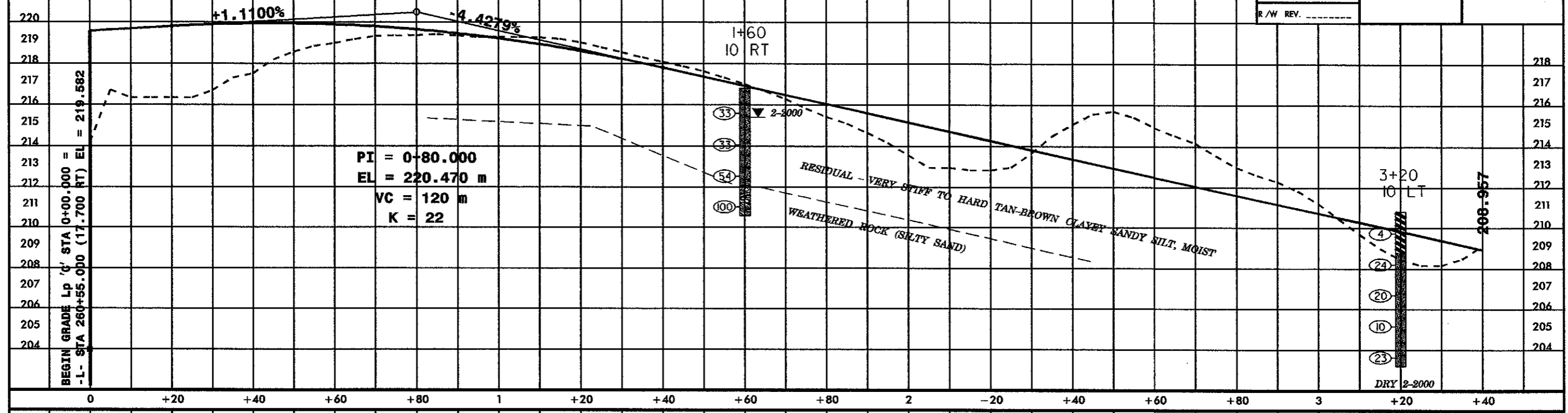


**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

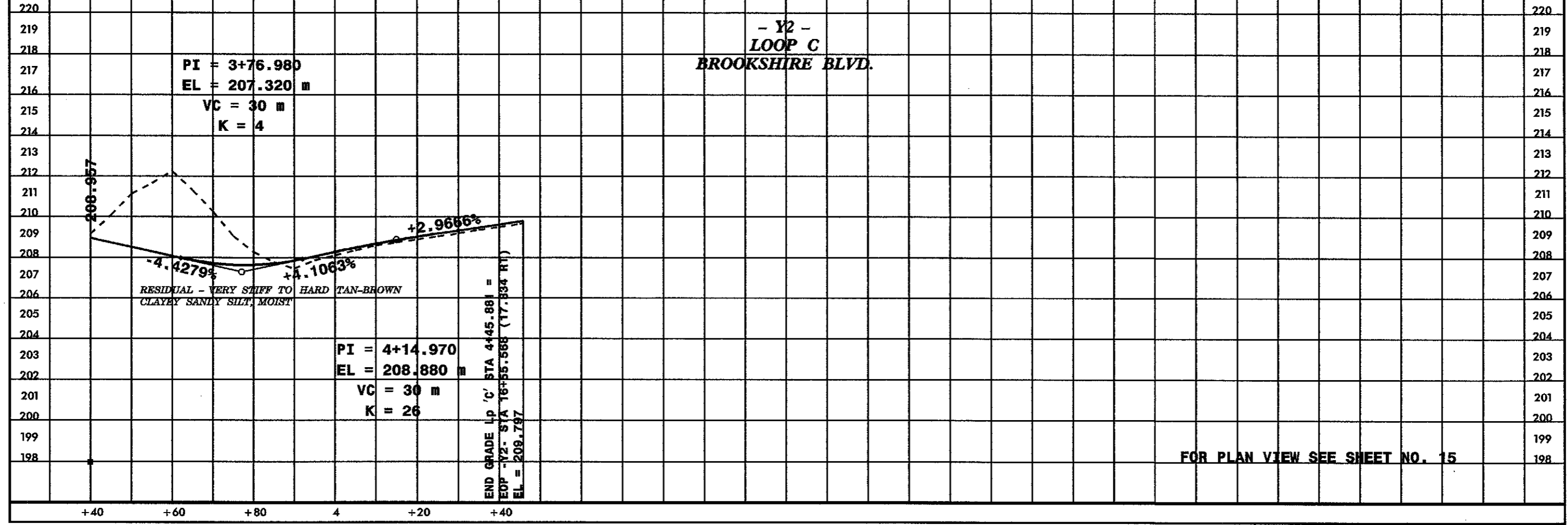
CONST. REV. \_\_\_\_\_

R/W REV. \_\_\_\_\_

**- Y2 -  
LOOP C  
BROOKSHIRE BLVD.**



**- Y2 -  
LOOP C  
BROOKSHIRE BLVD.**



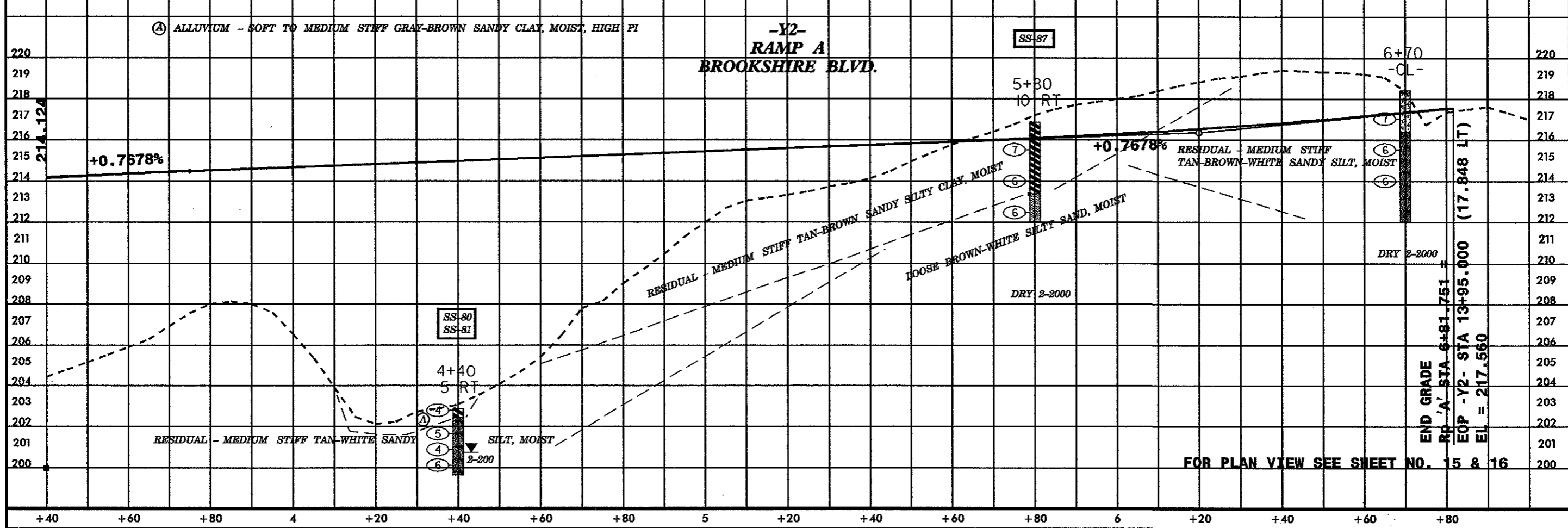
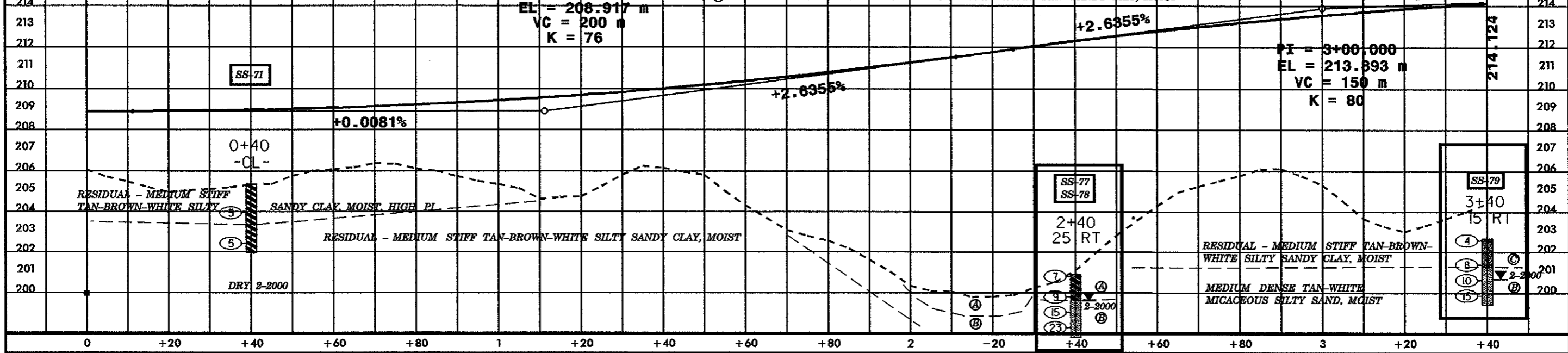
FOR PLAN VIEW SEE SHEET NO. 15

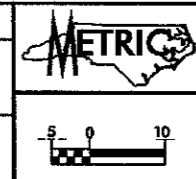
**-Y2-  
RAMP A  
BROOKSHIRE BLVD.**

**SOIL TEST RESULTS**

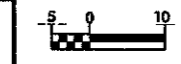
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-71	-CL-	0+40	1.57-1.87	A-7-5(20)	72	33	27.3	11.7	16.6	44.4	96	75	61		
SS-77	25RT	2+40	1.11-1.41	A-6(5)	37	13	26.5	20.4	16.8	36.4	99	82	56		
SS-78	25RT	2+40	2.02-2.32	A-2-4(0)	26	NP	54.7	25.1	8.1	12.1	87	52	21		
SS-79	15RT	3+40	0.25-0.55	A-4(0)	20	6	38.6	26.5	10.7	24.2	97	73	37		
SS-80	5RT	4+40	1.36-1.66	A-4(0)	37	2	36	31.3	14.5	18.2	96	72	37		
SS-81	5RT	4+40	0.25-0.55	A-7-5(12)	71	37	33.5	22.6	11.5	32.3	98	77	46		
SS-87	10LT	5+80	4.65-4.95	A-2-4(0)	34	NP	47.7	22.6	15.6	14.1	87	54	30		

- (A) ALLUVIUM - SOFT TO MEDIUM STIFF TO STIFF DARK GRAY SILTY CLAY WITH ROOT MATTER, MOIST
- (B) RESIDUAL - MEDIUM DENSE TAN-WHITE MICACEOUS SILTY SAND, MOIST
- (C) RESIDUAL - LOOSE TO MEDIUM DENSE BROWN-WHITE-TAN SANDY SILT, MOIST





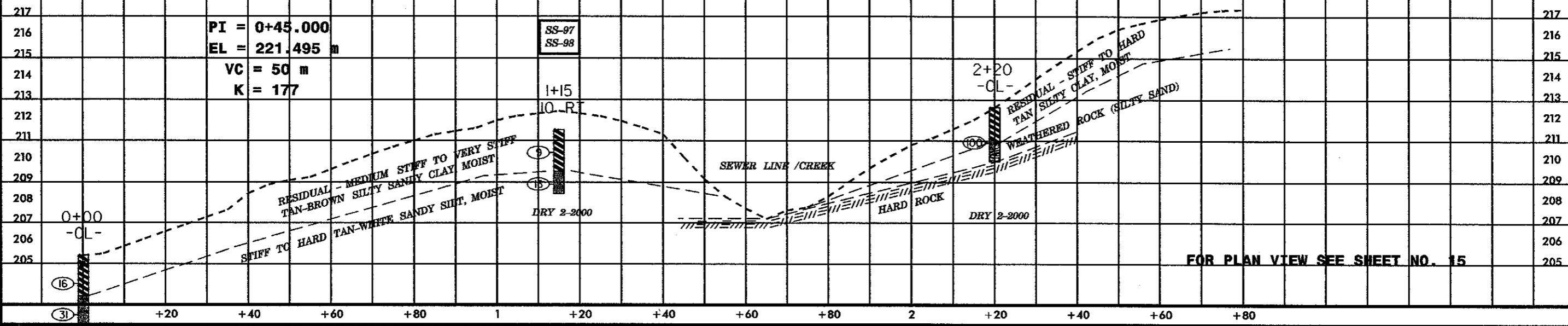
**-Y2- RAMP B BROOKSHIRE BLVD.**



**TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-93	15RT	4+60	1.50-1.80	A-6(3)	31	13	36.1	19.4	14.3	30.2	98	77	47		
SS-94	15RT	4+60	6.06-6.36	A-7-6(11)	49	20	23.2	22	20.6	34.3	100	84	62		
SS-97	10RT	1+15	1.26-1.56	A-7-6(10)	43	18	22.6	21.8	25.3	30.3	100	89	62		
SS-98	10RT	1+15	2.78-3.08	A-4(0)	29	NP	28.9	39.4	19.6	12.1	100	88	40		

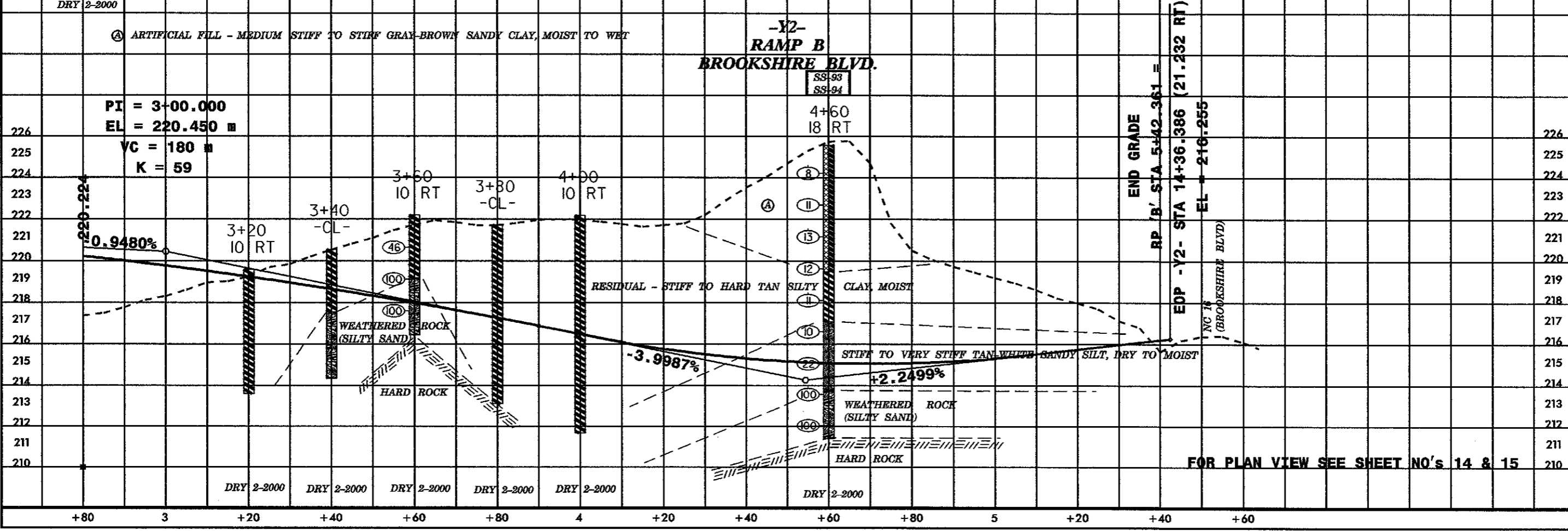
PI = 0+45.000  
 EL = 221.495 m  
 VC = 50 m  
 K = 177



FOR PLAN VIEW SEE SHEET NO. 15

**-Y2- RAMP B BROOKSHIRE BLVD.**

PI = 3+00.000  
 EL = 220.450 m  
 VC = 180 m  
 K = 59



FOR PLAN VIEW SEE SHEET NO'S 14 & 15



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

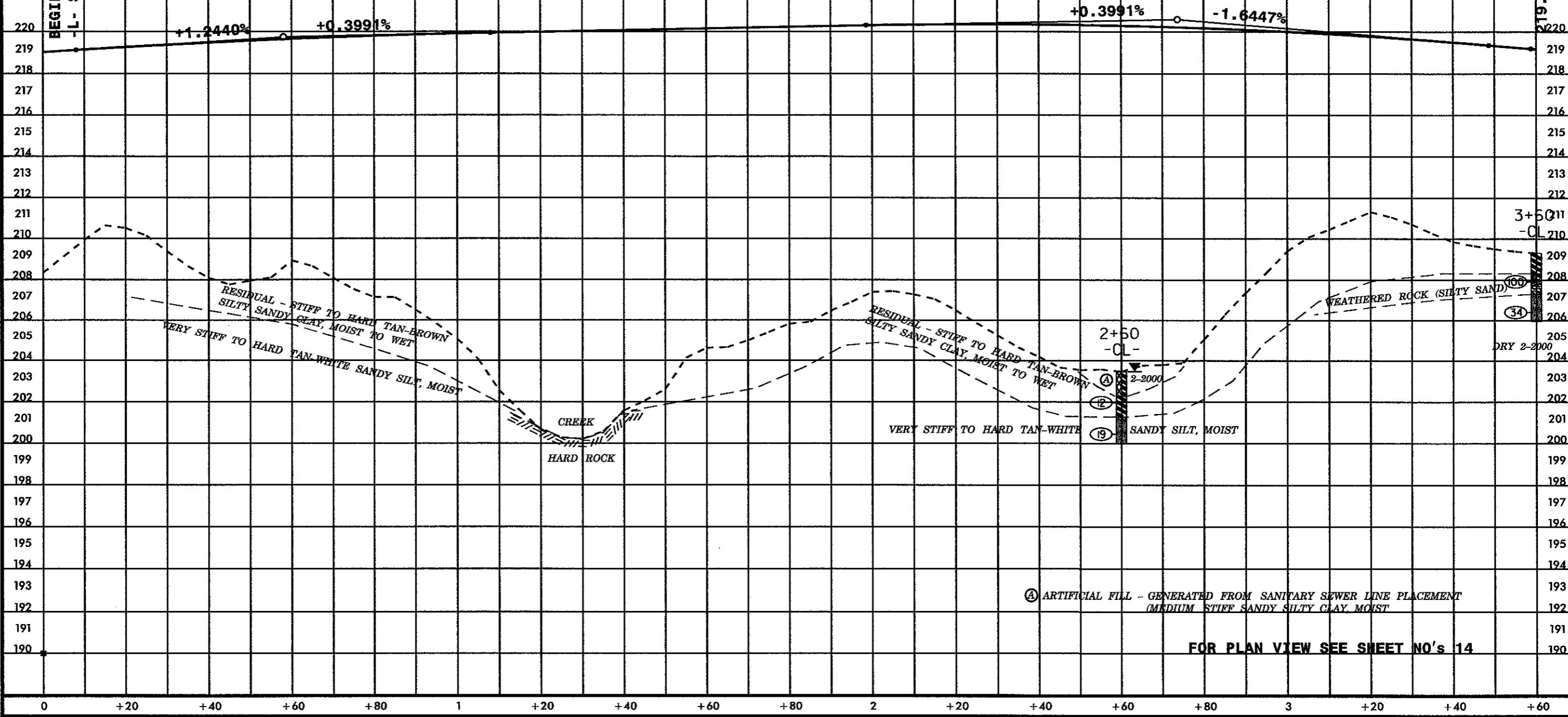
CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

- Y2 -  
RAMP C  
BROOKSHIRE BLVD.

BEGIN GRADE Rp 'C' STA 0+00.000 =  
-L- STA 254+33.670 (17.7m RT) EL = 219.018

PI = 0+58.000  
EL = 219.740 m  
VC = 100 m  
K = 118 m

PI = 2+73.630  
EL = 220.600 m  
VC = 150 m  
K = 73



FOR PLAN VIEW SEE SHEET NO's 14

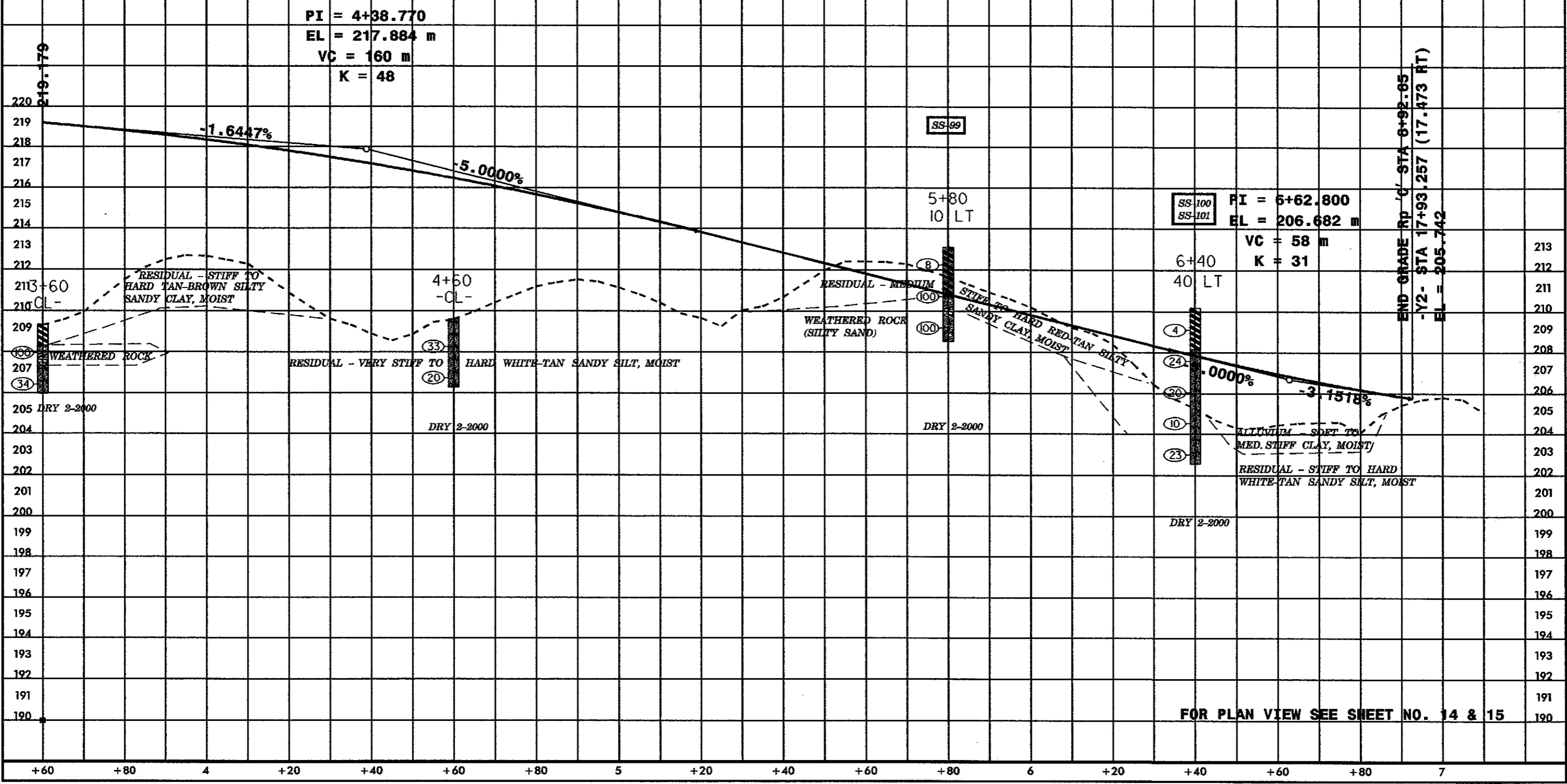
**- Y2 -  
RAMP C  
BROOKSHIRE BLVD.**

**METRIC**

CONSTR. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

PROJECT REFERENCE NO. <b>R-2248C</b>	SHEET NO. <b>57</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-99	10LT	5+80	1.02-1.32	A-6(4)	36	12	23.2	33.1	17.4	26.3	100	90	51		
SS-100	40LT	6+40	1.22-1.52	A-7-6(9)	44	16	22.4	19.8	15.4	42.4	100	89	62		
SS-101	40LT	6+40	2.74-3.04	A-4(2)	29	10	28.3	32.7	14.7	24.2	100	86	46		



FOR PLAN VIEW SEE SHEET NO. 14 & 15







**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

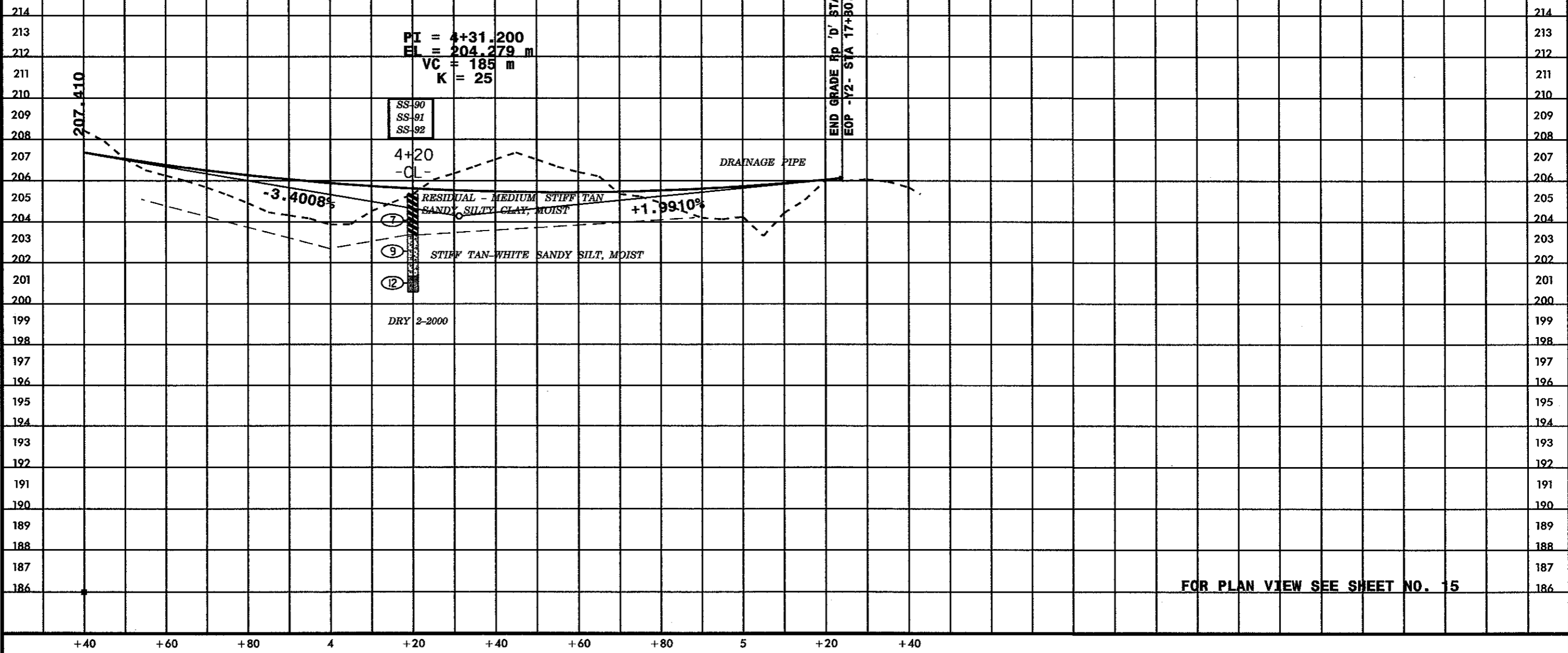
**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

CONST. REV. \_\_\_\_\_

R/W REV. \_\_\_\_\_

**- Y2 -  
RAMP D  
BROOKSHIRE BLVD.**

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-90	CL	4+20	1.43-1.73	A-7-5(16)	60	20	20	16.5	17.1	46.4	100	88	69		
SS-91	CL	4+20	2.95-3.25	A-5(3)	45	9	20.6	38.9	14.3	26.2	100	89	50		
SS-92	CL	4+20	4.47-4.77	A-4(0)	36	NP	28.4	45	14.5	12.1	100	84	37		



FOR PLAN VIEW SEE SHEET NO. 15



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

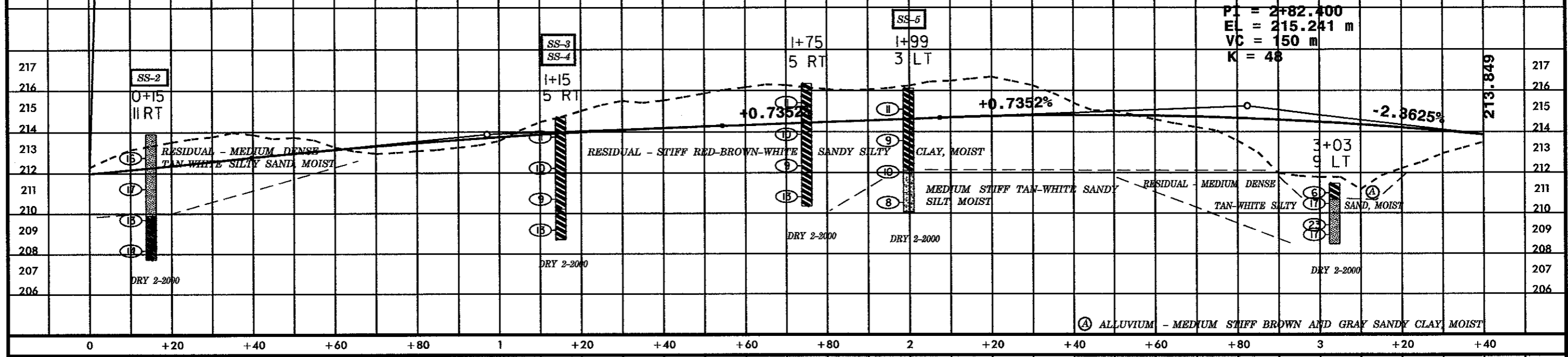
CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

**RAMP 'A' AT -Y3REV- (OAKDALE RD)**

**BEGIN GRADE**  
Rp A STA 0+00.000  
-L+ STA 295+16.159 (17.70 LT)  
EL = 211.977

PI = 2+82.400  
EL = 215.241 m  
VC = 150 m  
K = 48

FOR PLAN VIEW SEE SHEET NO. 23 & 24

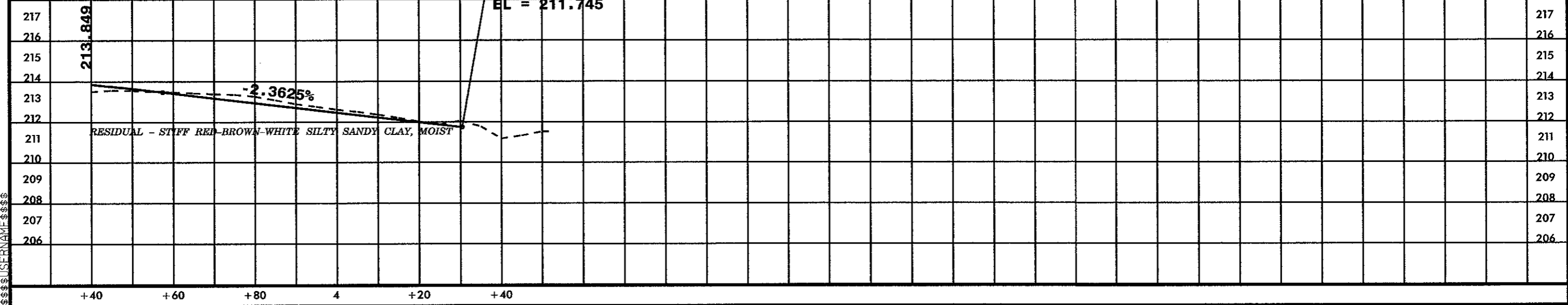


0    +20    +40    +60    +80    1    +20    +40    +60    +80    2    +20    +40    +60    +80    3    +20    +40

FOR PLAN VIEW SEE SHEET NO. 23 & 24

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-2	11RT	0+15	4.34 - 4.74	A-6(8)	39	11	7.7	31.7	42.4	18.2	100	96	71		
SS-3	5RT	1+15	1.11 - 1.41	A-7-5(22)	54	17	0.8	9.3	53.5	36.4	100	99	96		
SS-4	5RT	1+15	5.67 - 5.97	A-7-5(17)	56	12	1.6	16	56.2	26.3	100	99	91		
SS-5	3LT	1+99	2.71 - 3.01	A-5(5)	46	8	22.6	22.8	34.3	20.2	100	86	61		

**END GRADE**  
Rp A STA 4+30.381 =  
EL = 211.745



+40    +60    +80    4    +20    +40

SYSTEMS DOWN

**METRIC**

PROJECT REFERENCE NO. R-2248C SHEET NO. 61

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

CONST. REV. \_\_\_\_\_

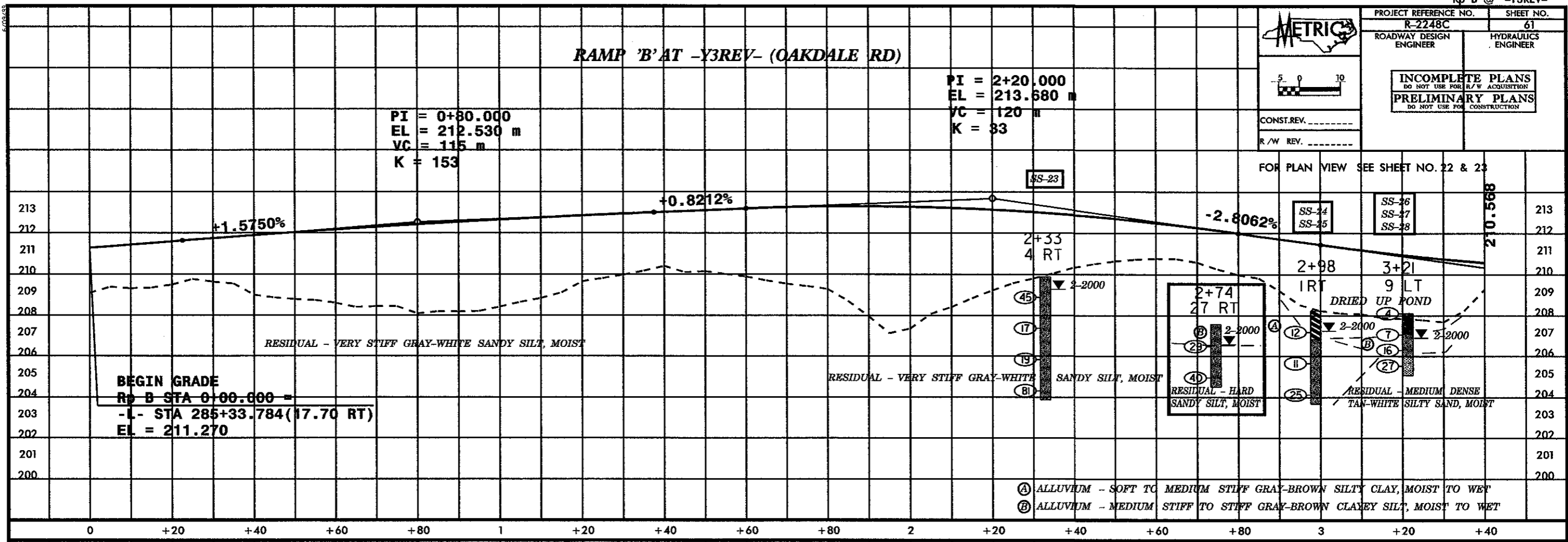
R/W REV. \_\_\_\_\_

**RAMP 'B' AT -Y3REV- (OAKDALE RD)**

PI = 0+80.000  
EL = 212.530 m  
VC = 115 m  
K = 153

PI = 2+20.000  
EL = 213.680 m  
VC = 120 m  
K = 33

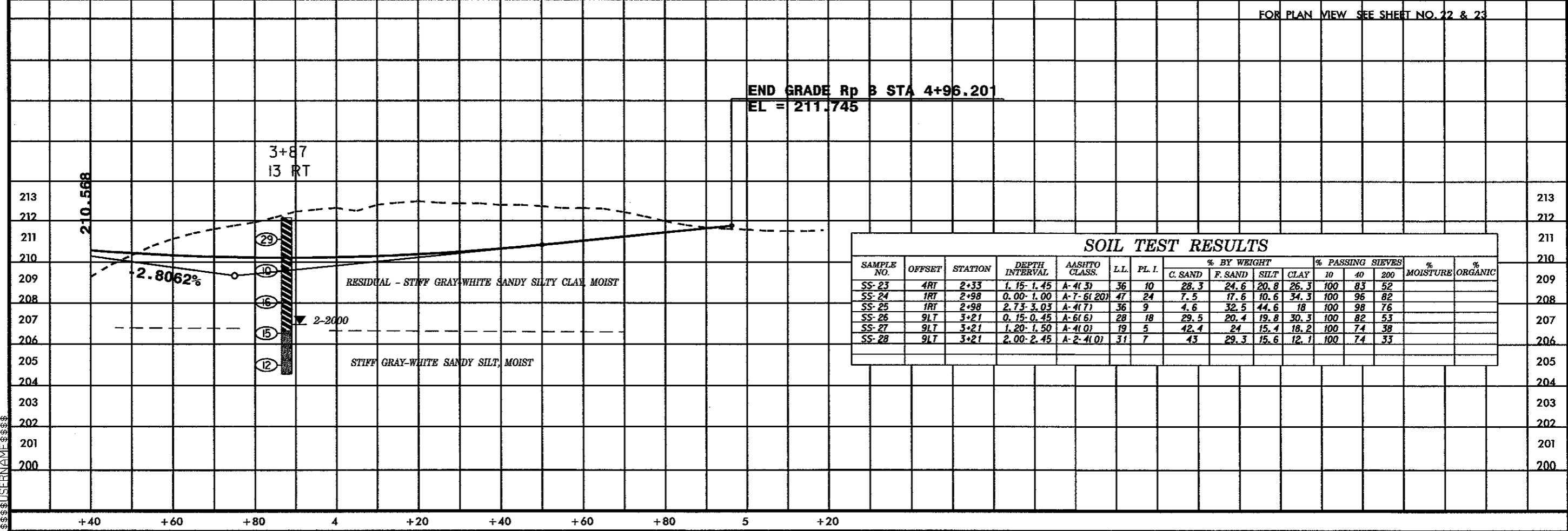
FOR PLAN VIEW SEE SHEET NO. 22 & 23



- Ⓐ ALLUVIUM - SOFT TO MEDIUM STIFF GRAY-BROWN SILTY CLAY, MOIST TO WET
- Ⓑ ALLUVIUM - MEDIUM STIFF TO STIFF GRAY-BROWN CLAYEY SILT, MOIST TO WET

FOR PLAN VIEW SEE SHEET NO. 22 & 23

**END GRADE Rp B STA 4+96.201**  
EL = 211.745



**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-23	4RT	2+33	1.15-1.45	A-4(3)	36	10	28.3	24.6	20.8	26.3	100	83	52		
SS-24	1RT	2+98	0.00-1.00	A-7-6(20)	47	24	7.5	17.6	10.6	34.3	100	96	82		
SS-25	1RT	2+98	2.73-3.03	A-4(7)	36	9	4.6	32.5	44.6	18	100	98	76		
SS-26	9LT	3+21	0.15-0.45	A-6(6)	28	18	29.5	20.4	19.8	30.3	100	82	53		
SS-27	9LT	3+21	1.20-1.50	A-4(0)	19	5	42.4	24	15.4	18.2	100	74	38		
SS-28	9LT	3+21	2.00-2.45	A-2-4(0)	31	7	43	29.3	15.6	12.1	100	74	33		

SYSTEMS ENGINEERING  
 CONSULTANTS  
 INCORPORATED  
 15000 WILSON BLVD  
 SUITE 100  
 BELLFLOWER, CA 91706  
 (714) 861-1000  
 FAX (714) 861-1001  
 WWW.SYS-ENR.COM



ROADWAY DESIGN ENGINEER  
HYDRAULICS ENGINEER

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

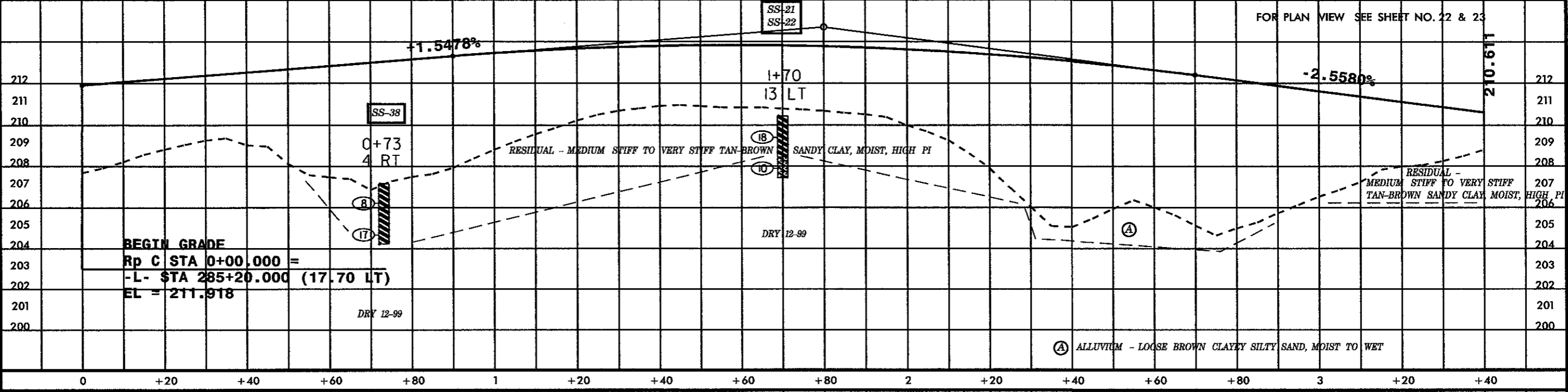


CONST. REV. \_\_\_\_\_  
R/W REV. \_\_\_\_\_

**RAMP 'C' AT -Y3REV- (OAKDALE RD)**

PI = 1+80.000  
EL = 214.704 m  
VC = 180 m  
K = 44

FOR PLAN VIEW SEE SHEET NO. 22 & 23



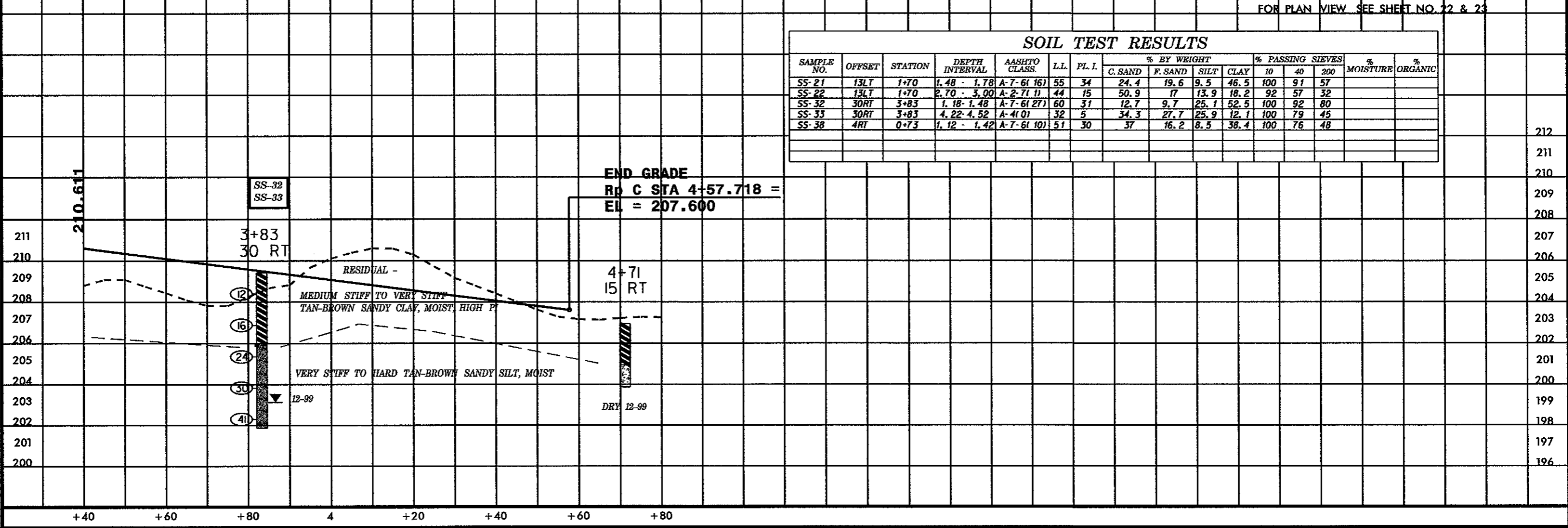
**BEGIN GRADE**  
Rp C STA 0+00.000 =  
-L- STA 285+20.000 (17.70 LT)  
EL = 211.918

**END GRADE**  
Rp C STA 4+57.718 =  
EL = 207.600

**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-21	13LT	1+70	1.48 - 1.78	A-7-6(16)	55	34	24.4	19.6	9.5	46.5	100	91	57		
SS-22	15LT	1+70	2.70 - 3.00	A-2-7(1)	44	15	50.9	17	13.9	18.2	92	57	32		
SS-32	30RT	3+83	1.18 - 1.48	A-7-6(27)	60	31	12.7	9.7	25.1	52.5	100	92	80		
SS-33	30RT	3+83	4.22 - 4.52	A-4(0)	32	5	34.3	27.7	25.9	12.1	100	79	45		
SS-38	4RT	0+73	1.12 - 1.42	A-7-6(10)	51	30	37	16.2	8.5	38.4	100	76	48		

FOR PLAN VIEW SEE SHEET NO. 22 & 23



\$\$\$SYTIME\$\$\$\$\$  
\$\$\$DGN\$\$\$\$\$  
\$\$\$NAME\$\$\$\$\$  
\$\$\$NO\$\$\$\$\$  
\$\$\$DATE\$\$\$\$\$



PROJECT REFERENCE NO. R-2248C SHEET NO. 63  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
**INCOMPLETE PLANS**  
 DO NOT USE FOR ACQUISITION  
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

**RAMP 'D' AT -Y3REV- (OAKDALE RD)**

PI = 0+62.600  
 EL = 214.190 m  
 VC = 125 m  
 K = 288

PI = 2+05.000  
 EL = 216.921 m  
 VC = 155 m  
 K = 32

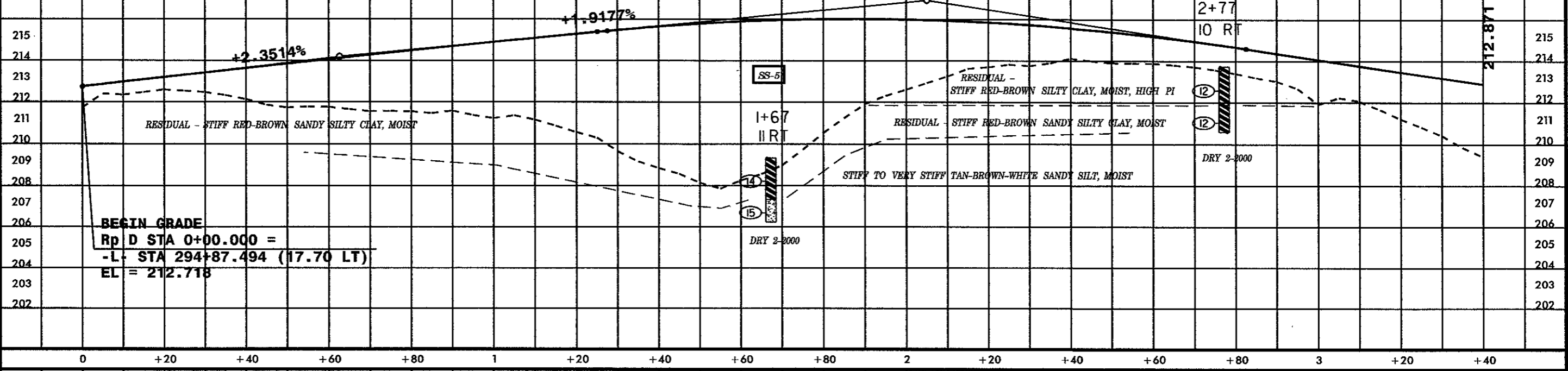


CONST. REV. \_\_\_\_\_  
 R/W REV. \_\_\_\_\_

SS-12

FOR PLAN VIEW SEE SHEET NO. 13

212.871



**BEGIN GRADE**  
 Rp D STA 0+00.000 =  
 -L- STA 294+87.494 (17.70 LT)  
 EL = 212.718

DRY 2-2000

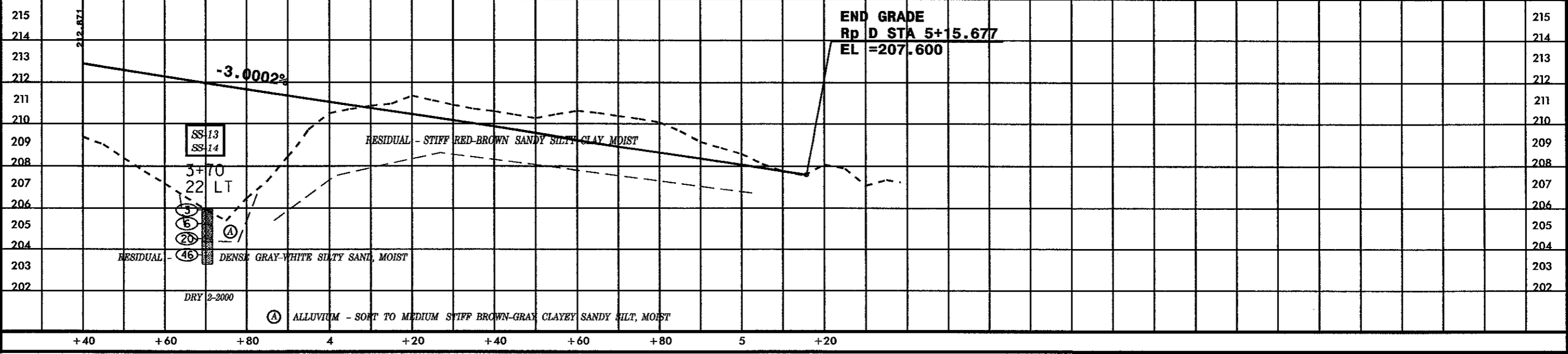
DRY 2-2000

0 +20 +40 +60 +80 1 +20 +40 +60 +80 2 +20 +40 +60 +80 3 +20 +40

FOR PLAN VIEW SEE SHEET NO. 13

**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-5	11RT	1+67	2.71-3.01	A-5(5)	46	8	22.6	22.8	34.3	20.2	100	86	61		
SS-12	10RT	2+77	1.33-1.63	A-7.5(34)	66	30	4.6	7.7	35.2	52	100	97	91		
SS-13	22LT	3+70	0.86-1.16	A-4(0)	26	9	44.4	19.8	11.5	24.2	100	74	38		
SS-14	22LT	3+70	2.38-2.68	A-2-4(0)	25	NP	60.2	24.2	7.5	8.1	93	52	18		



**END GRADE**  
 Rp D STA 5+15.677  
 EL = 207.600

SS-13  
 SS-14

3+70  
 22 LT

RESIDUAL - (46) DENSE GRAY-WHITE SILTY SAND, MOIST

DRY 2-2000

(A) ALLUVIUM - SORT TO MEDIUM STIFF BROWN-GRAY CLAYEY SANDY SILT, MOIST

+40 +60 +80 4 +20 +40 +60 +80 5 +20

\$\$\$ SYSTEM TIME \$\$\$  
 \$\$\$ DGN \$\$\$  
 \$\$\$ PLOT \$\$\$  
 \$\$\$ PRINT \$\$\$