

EXISTING BRIDGE #133
 2 SPAN BRIDGE OF TOTAL LENGTH = 61'-8"
 CLEAR ROADWAY = 30' WITH ASPHALT DECK
 ON STEEL PLANK FLOOR ON STEEL I BEAMS.
 RC ABUTMENTS AND TIMBER CAP & PILE
 BENT. EXISTING BRIDGE TO BE REMOVED.

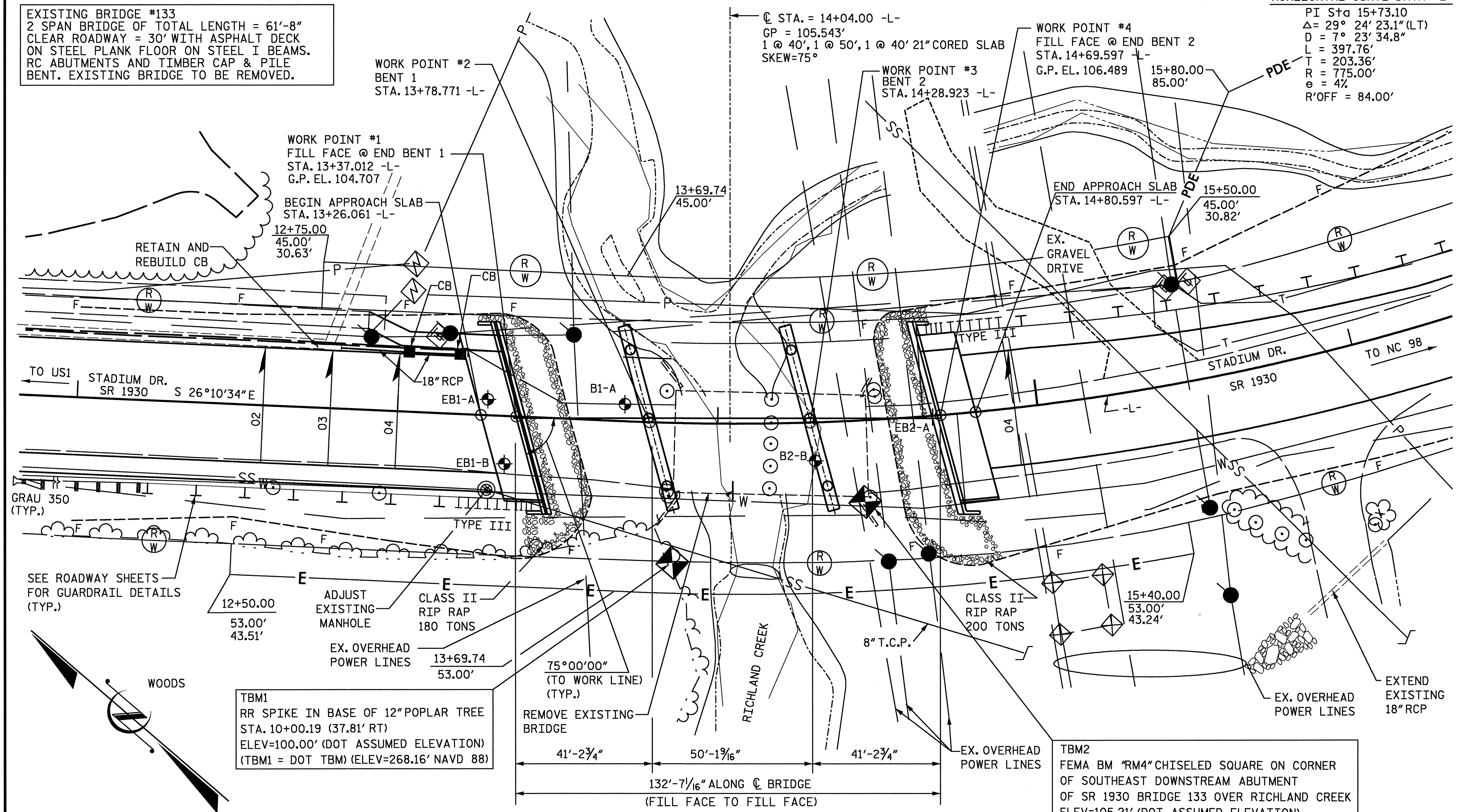
HORIZONTAL CURVE DATA -L-
 PI Sta 15+73.10
 Δ = 29° 24' 23.1" (LT)
 D = 7° 23' 34.8"
 L = 397.76'
 T = 203.36'
 R = 775.00'
 e = 4%
 R'OFF = 84.00'

NOTES:

- PILES AT END BENT 1 AND 2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 45 TONS EACH.
- WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.
- THE OPTIONAL HOLE INSTALLATION PROCEDURE AT END BENT 2 IS AS FOLLOWS: A 24 IN. DIA. HOLE SHALL BE DRILLED TO THE WEATHERED ROCK/ROCK ENCOUNTERED BETWEEN ELEVATION 80 AND 83 FT., AS DIRECTED BY THE ENGINEER. THE HP 12x53 PILE SHALL BE INSERTED INTO THE HOLE. THE HOLE SHALL THEN BE BACKFILLED WITH CLASS A CONCRETE. DUE TO THE LOOSE SANDY ALLUVIUM PRESENT, IT IS ANTICIPATED THAT A TEMPORARY CASING WILL BE REQUIRED TO MAINTAIN THE HOLE PRIOR TO BACKFILLING WITH CONCRETE.
- FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
- DRILLED PIERS HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 450 KIPS EACH AT THE TIP OF THE PIER.
- DRILLED PIERS HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 23 TSF. THE TIP BEARING CAPACITY SHALL BE VERIFIED.
- DRILLED PIERS AT BENT 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 64.0 FEET AND SATISFY THE REQUIRED TIP BEARING CAPACITY WITH A MINIMUM PENETRATION OF 5.5 FEET INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.
- DRILLED PIERS AT BENT 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 69.0 FEET AND SATISFY THE REQUIRED TIP BEARING CAPACITY WITH A MINIMUM PENETRATION OF 3 FEET INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.
- THE SCOUR CRITICAL ELEVATION (SCE) FOR BENT 1 IS 71 FEET. THE SCOUR CRITICAL ELEVATION (SCE) FOR BENT 2 IS 76 FEET. THE SCOUR CRITICAL ELEVATION IS FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS.
- CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. SEE SPECIAL PROVISIONS FOR CROSSHOLE SONIC LOGGING.
- SLURRY CONSTRUCTION SHALL NOT BE USED FOR THIS PROJECT.
- SID INSPECTIONS ARE NOT REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS.
- PERMANENT STEEL CASING IS NOT REQUIRED FOR DRILLED PIERS AT BENT 1 AND BENT 2.
- THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS OF RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS CERTIFIED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON.

PLAIN RIP RAP CLASS II (2'-0" THICK) FILTER FABRIC
 END BENT NO. 1 = 180 TONS 180 SQUARE YARDS
 END BENT NO. 2 = 200 TONS 195 SQUARE YARDS
 TOTAL = 380 TONS 375 SQUARE YARDS

♦ DENOTES GEO-TECH BORING HOLE LOCATIONS.



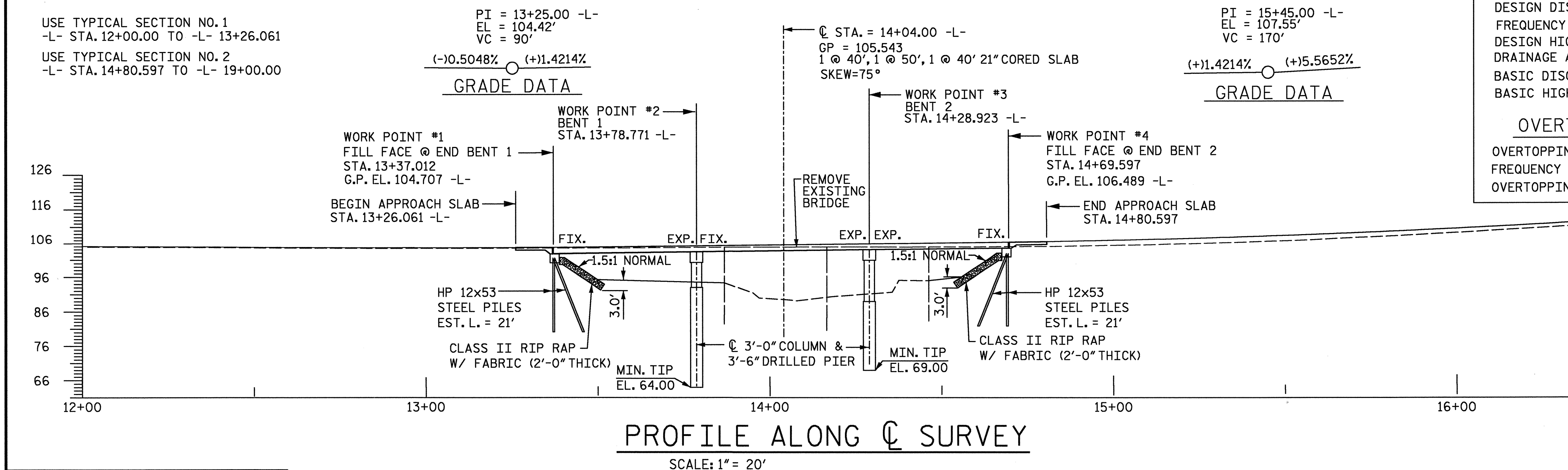
HYDRAULIC DATA

DESIGN DISCHARGE = 2450 CFS
 FREQUENCY OF DESIGN FLOOD = 50 YR.
 DESIGN HIGH WATER ELEVATION = 98.60
 DRAINAGE AREA = 7 SQ. MI.
 BASIC DISCHARGE (Q100) = 3100 CFS
 BASIC HIGH WATER ELEVATION = 99.72

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = +5400 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 500 YR. +
 OVERTOPPING FLOOD ELEVATION = 104.6

WBS. NO. 37017
 WAKE COUNTY
 STATION: 14+04.00 -L-
 REPLACES BRIDGE NO. 133



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE NO. 133 ON SR 1930
 OVER RICHLAND CREEK

1-12-06

ETHERILL ENGINEERING

REVISIONS						SHEET NO. S-1
NO.	BY	DATE	NO.	BY	DATE	
1			1			TOTAL SHEETS 23
2			2			

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DRAWN BY: J PENDERGRAFT DATE: 4-05
 CHECKED BY: J DILWORTH DATE: 4-05