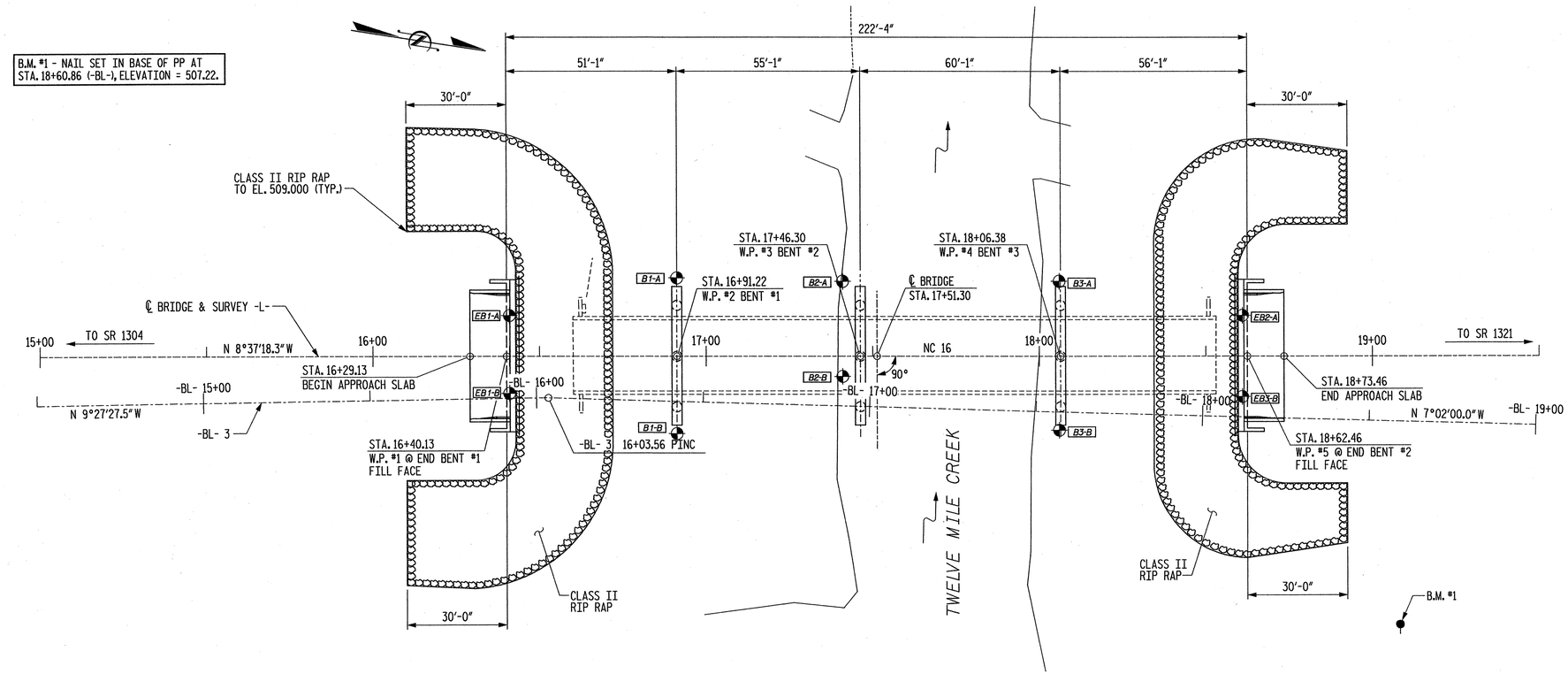
PROJ. NO. MA1000IB

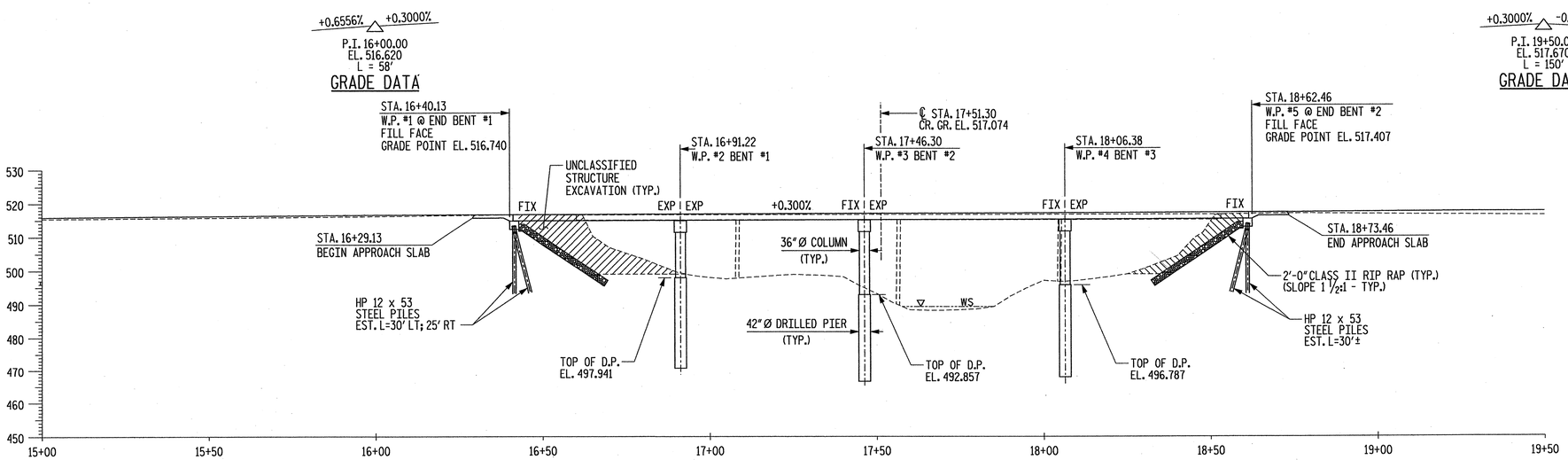
33 UNION COUNTY

B.M. #1 - NAIL SET IN BASE OF PP AT STA. 18+60.86 (-BL-), ELEVATION = 507.22.



PLAN

SCALE: 1" = 20'-0"



PROFILE ALONG ℄ SURVEY

SCALE: 1" = 20'

DESCRIPTION OF EXISTING BRIDGE

4 SPANS - 1 @ 47'-3⅜" 1 @ 47'-6⅜" 1 @ 47'-6⅜" 1 @ 47'-3⅜"; 9" REINFORCED CONCRETE / 4.25" ASPHALT WEARING SURFACE; REINFORCED CONCRETE DECK GIRDERS ON REINFORCED CONCRETE SPILL THROUGH ABUTMENTS AND REINFORCED CONCRETE ROUND NOSED POST AND WEB INTERIOR BENTS; 20'-0" CLEAR ROADWAY WIDTH SHALL BE REMOVED.

NOTES

1. PILES FOR END BENT NO. 1 AND NO. 2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 50 TONS EACH.
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 ON CERTIFIED PLATFORM SCALES OR OTHER 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	570 TONS	530 SQUARE YARDS
END BENT NO. 2	470 TONS	430 SQUARE YARDS
TOTAL	1040 TONS	960 SQUARE YARDS
PLAIN RIP RAP, CLASS B (1'-6" THICK)		
TOTAL	105 TONS	315 SQUARE YARDS
PLAIN RIP RAP, CLASS I (1'-6" THICK)		
TOTAL	155 TONS	290 SQUARE YARDS

3. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH FHWA'S TECHNICAL ADVISORY T5140.20 (SCOUR AT BRIDGES).
4. FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
5. THE DRILLED PIERS AT BENT NO. 1, NO. 2, AND NO. 3 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 30 TSF.
6. DRILLED PIERS FOR BENT NO. 1, NO. 2, NO. 3 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 146 TONS EACH AT THE TOP OF THE COLUMN.
7. DRILLED PIERS AT BENT NO. 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 474.0 FT AT COLUMN 1, COLUMN 2, AND COLUMN 3, SATISFY THE REQUIRED TIP BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 7.4 FT INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.
8. DRILLED PIERS AT BENT NO. 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 470.0 FT AT COLUMN 1, 470.5 FT AT COLUMN 2, AND 471.0 FT AT COLUMN 3, SATISFY THE REQUIRED TIP BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 12.6 FT INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.
9. DRILLED PIERS AT BENT NO. 3 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 473.5 FT AT COLUMN 1, COLUMN 2, AND COLUMN 3, SATISFY THE REQUIRED TIP BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 11.4 FT INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.
10. THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 IS 492.8 FT, NO. 2 IS 479.9 FT, AND NO. 3 IS 491.0 FT. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
11. PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 1. IF REQUIRED, THE CASING SHALL NOT EXTEND BELOW ELEVATION 485.0 FT WITHOUT THE ENGINEER'S PERMISSION.
12. PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 2. IF REQUIRED, THE CASING SHALL NOT EXTEND BELOW ELEVATION 483.0 FT WITHOUT THE ENGINEER'S PERMISSION.
13. PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 3. IF REQUIRED, THE CASING SHALL NOT EXTEND BELOW ELEVATION 488.0 FT WITHOUT THE ENGINEER'S PERMISSION.
14. FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISIONS FOR DRILLED PIERS.
15. CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NO. 1, NO. 2 AND NO. 3. SEE SPECIAL PROVISION FOR CROSSHOLE SONIC LOGGING.
16. THE CONTRACTOR MAY BEGIN THE REINFORCEMENT BRIDGE APPROACH FILL CONSTRUCTION AFTER COMPLETION OF END BENTS NO. 1 AND NO. 2. NO OTHER WATING PERIOD WILL BE REQUIRED FOR THE APPROACH SLAB CONSTRUCTION AT END BENTS NO. 1 AND NO. 2.
17. PILES AT END BENT NO. 1 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN EL. 488.00 FT. AND SATISFY THE BEARING CAPACITY OF 50 TONS.
18. PILES AT END BENT NO. 2 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN EL. 487.00 FT. AND SATISFY THE BEARING CAPACITY OF 50 TONS.
19. THE STEEL PILES SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. FOR GALVANIZING STEEL PILES, SEE SPECIAL PROVISIONS.
20. WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.
21. ADT 17,600 FOR YEAR 2023.
22. DELINEATORS ON BARRIER RAIL AND ON STEEL BEAM GUARDRAIL SHALL BE INCLUDED IN THE PRICE BID FOR STEEL BEAM GUARDRAIL.

◈ GEO TECH BORE HOLES LOCATION

PROJECT NO. 36971
COUNTY: UNION
STATION: 17+51.30
REPLACES BRIDGE NO. 33

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 33 ON NC 16 OVER TWELVE MILE CREEK

Plans prepared by:
KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR. SUITE #202
RALEIGH, N.C. 27606
For Division of Highways

NORTH CAROLINA PROFESSIONAL SEAL 20532 ENGINEER JAMES E. MONDOLFI 10/20/04

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	1
1			3			TOTAL SHEETS
2			4			24

DRAWN BY: B.E. LANNING DATE: JULY 2004
CHECKED BY: J.E. MONDOLFI DATE: JULY 2004

PLOT: 10/19/2004 05:36:36 PM Ko & Associates, P.C. FILE NAME: r:\Structures\33_sht1.dgn