

|        |           |        |         | EXTERI  | OR UNIT  | INTERI  | OR UNIT |
|--------|-----------|--------|---------|---------|----------|---------|---------|
| BAR    | NUMBER    | SIZE   | TYPE    | LENGTH  | WEIGHT   | LENGTH  | WEIGHT  |
| B1     | 4         | • 4    | STR     | 23'- 4" | 62       | 23'- 7" | 62      |
|        |           |        |         |         |          |         |         |
| SI     | 8         | * 4    | 3       | 4'- 3"  | 23       | 4'- 3"  | 23      |
| S2     | 88        | * 4    | 3       | 5'- 4"  | 314      | 5'- 4"  | 314     |
| * S3   | 46        | * 5    | 1       | 5'- 3"  | 252      |         |         |
|        |           |        |         |         |          |         |         |
|        |           |        |         |         |          |         |         |
| REINFO | ORCING    | STEEL  |         |         | BS. 400  |         | 400     |
| * EP0> | Y COATI   | D REIN | FORCING | STEEL   | LBS. 252 |         |         |
| 5,000  | P.S.I. CO | NCRETE |         | CU. Y   | DS. 6.3  | 6.3     |         |
|        |           |        |         |         |          |         |         |
| 0.6"Ø  | L.R. STR  | ANDS   | No.     |         | 16       |         | 16      |
|        |           |        |         |         |          |         |         |
|        |           |        |         |         |          |         |         |

| DEAD LOAD DEFLECTIO                            | N AND CAMBER         |
|--|----------------------|
|  | 3'-0"× 1'-9"         |
|  | 0.6"Ø L.R.<br>STRAND |
| CAMBER (SLAB ALONE IN PLACE)                   | 1" 1                 |
| DEFLECTION DUE TO<br>SUPERIMPOSED DEAD LOAD*** | 3/16″ ∤              |
|  |                      |
| FINAL CAMBER                                   | 13/16" 1             |

| . THAT CAMPEN |          |        |         |         |  |  |
|---------------|----------|--------|---------|---------|--|--|
| **            | INCLUDES | FUTURE | WEARING | SURFACE |  |  |

|   | BIL           | OF     | MATE   | RIAL   | FOR | CONCRE    | ETE E      | BARRI | ER RA  | IL     |
|---|---------------|--------|--------|--------|-----|-----------|------------|-------|--------|--------|
| BAR   | BARS PER SPAN |        |        |        |     | TOTAL NO. | SIZE       | TYPE  | LENGTH | WEIGHT |
|   |               | SPAN A | SPAN B | SPAN C |     |           |            |       |        |        |
| * B2  |               | 28     | 28     |        |     | 56        | * 5        | STR   | 22'-2" | 1295   |
| A D2  |               | 20     | -20    |        |     | 30        |            | 3111  | ~~ ~   | 1233   |
| * S4  |               | 92     | 92     |        |     | 184       | <b>•</b> 5 | 2     | 5'- 6" | 1056   |
| *EPOXY COATED REINFORCING STEEL = 2351 LBS.  CLASS AA CONCRETE = 18.3 CUVYS.  TOTAL LIN. FT. OF CONCRETE BARRIER RAIL = 181.8 |               |        |        |        |     |           |            |       |        |        |

| CORED SLABS REQUIRED |        |        |              |  |  |  |  |
|----------------------|--------|--------|--------------|--|--|--|--|
|                      | NUMBER | LENGTH | TOTAL LENGTH |  |  |  |  |
| EXTERIOR C.S.        | 4      | 45'-0" | 180'-0"      |  |  |  |  |
| INTERIOR C.S.        | 18     | 45'-0" | 810'-0"      |  |  |  |  |
| TOTAL                | 22     |        | 990'-0"      |  |  |  |  |

## NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT. THE 2½" Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1½" ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SMALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT. THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNITL THE CONCRETE HAS REACHED RELEASE STRENGTH, AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS. THE CONTRACTOR SHALL SUBMIT TO THE ENINEER FOR REVIEW AND COMMENT, DETAILED DRAWTINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWN SHALL BE INDICATED.

WHEN A CONCRETE WEARING SURFACE IS DETAILED ON THE CORED SLAB BRIDGE TYPICAL SECTION, THE TOP SURFACE OF THE CORED SLAB UNITS SHALL HAVE A % TAKED FINISH.

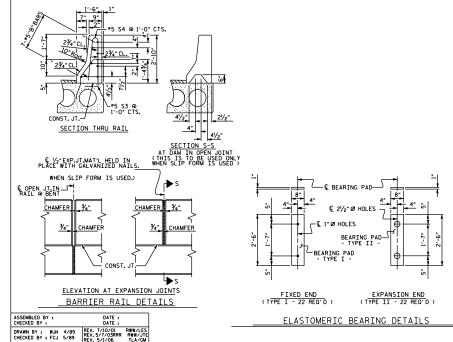
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED. PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2 TAN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-1080 OF THE STANDARD SPECIFICATIONS, A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS, ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SECMENTS LESS THAN 20 FEET IN LENGTH, AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

EXAMPLE PROJECT NO. COUNTY STATION: \_ SHEET 3 OF 3 STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD 3'-0"X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT SHEET NO. REVISIONS BY: DATE: NO. BY: DATE: TOTAL STD. NO. PCS3

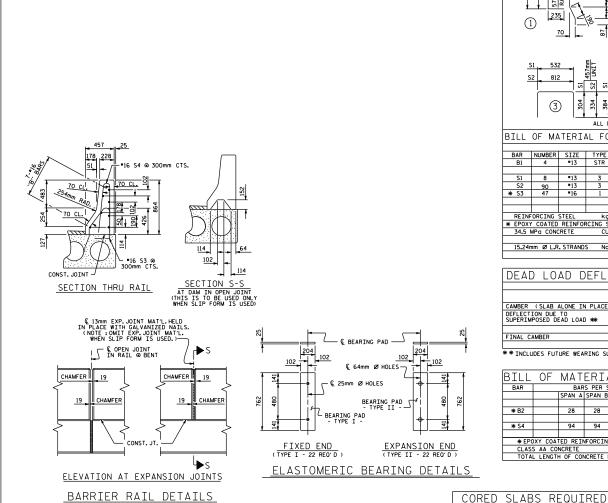


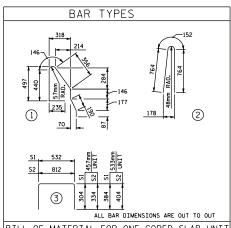
ASSEMBLED BY :

DRAWN BY: WJH 4/89 CHECKED BY: FCJ 5/89

DATE

REV. 7/10/01 RWW/LES REV. 5/7/03RR RWW/JTE REV. 5/1/06





| RILL                    | OF MA    | TIEKT       | AL FU    | Y UNE   | CORED  | SLAB          | UNTI   |  |
|-------------------------|----------|-------------|----------|---------|--------|---------------|--------|--|
|                         |          |             |          | EXTERIO | R UNIT | INTERIOR UNIT |        |  |
| BAR                     | NUMBER   | SIZE        | TYPE     | LENGTH  | WEIGHT | LENGTH        | WEIGHT |  |
| B1                      | 4        | *13         | STR      | 7160    | 28     | 7160          | 28     |  |
|                         |          |             |          |         |        |               |        |  |
| S1                      | 8        | *13         | 3        | 1300    | 10     | 1300          | 10     |  |
| S2                      | 90       | *13         | 3        | 1620    | 145    | 1620          | 145    |  |
| * S3                    | 47       | <b>=</b> 16 | 1        | 1600    | 117    |               |        |  |
|                         |          |             |          |         |        |               |        |  |
|                         |          |             |          |         |        |               |        |  |
| REINF                   | ORCING   | STEEL       | kg       |         | 183    |               | 183    |  |
| * EPOXY                 | COATED   | REINFOR     | RCING ST | EEL k   | g 117  |               |        |  |
| 34.5 MPa CONCRETE CU. N |          |             |          | METERS  | 4.7    |               | 4.7    |  |
|                         |          |             |          |         |        |               |        |  |
| 15.24n                  | nm Ø L.R | . STRAND    | S No.    |         | 16     |               | 16     |  |
|                         |          |             |          |         |        |               |        |  |

| DEAD LOAD DEFLECT                              | ION AND CAMBER           |
|--|--------------------------|
|  | 914mm × 533mm            |
|  | 15.24mm Ø<br>L.R. STRAND |
| CAMBER (SLAB ALONE IN PLACE)                   | 28 🛊                     |
| DEFLECTION DUE TO<br>SUPERIMPOSED DEAD LOAD ** | 5 <b>†</b>               |
| FINAL CAMBER                                   | 23 1                     |

\*\* INCLUDES FUTURE WEARING SURFACE

| NUMBER | LENGTH | TOTAL LENGTH | 4 | 13.800 | 55.200 |

248.400

18 13.800

22

INTERIOR C.S.

TOTAL

## NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO ASSHTO M203M EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 420 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 64mm Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE 64mm Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 38mm ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT. THE SIMM & BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE WENCYED JOP PREBUT DIDGS FROM RISING ON MOVING STEWAYS. CONCRETE HAS PRACED DESCRIBED FOR THE FORM OF THE WEEK PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWTINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS. LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

WHEN A CONCRETE WEARING SURFACE IS DETAILED ON THE CORED SLAB BRIDGE TYPICAL SECTION, THE TOP SURFACE OF THE CORED SLAB UNITS SHALL HAVE A 10mm RAKED FINISH.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCETTE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 27.6 MPG.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED. PRESTRESSED STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, 12mm IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ABTICLE 825-1080 OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS, ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEAMENTS, LESS THAN 61. THE NEW THIRD POINT BETWEEN THE NEW THIRD SEGMENTS LESS THAN 3.5m IN LENGTH AND NO CONTRACTION JOINT ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 3.5m IN LENGTH.

| BILL         | OF                                      | MAT     | ERIA     | AL F    | OR C | CONCR     | ETE  | BAR  | RIER F | RAIL   |
|--------------|---|---------|----------|---------|------|-----------|------|------|--------|--------|
| BAR          |   | BAR     | S PER S  | PAN     |      | TOTAL NO. | SIZE | TYPE | LENGTH | WEIGHT |
|              | SPAN A SPAN B SPAN C                    |         |          |         |      |           |      |      |        |        |
|              |   |         |          |         |      |           |      |      |        |        |
| * B2         |   | 28      | 28       |         |      | 56        | *16  | STR  | 6800   | 591    |
|              |   |         |          |         |      |           |      |      |        |        |
| <b>*</b> \$4 |   | 94      | 94       |         |      | 188       | *16  | 2    | 1680   | 490    |
|              |   |         |          |         |      |           |      |      |        |        |
| * EPC        | *EPOXY COATED REINFORCING STEEL kg 1081 |         |          |         |      |           |      |      | 1081   |        |
|              | CLASS AA CONCRETE CU. METERS 13.9       |         |          |         |      |           |      | 13.9 |        |        |
| TOTAL        | L LENGT                                 | H OF CO | VCRETE E | BARRIER | RAIL | ME        | TERS |      |        | 55.200 |

| GRADE 270 S                          | TRANDS            |
|--------------------------------------|-------------------|
|                                      | 15.24mm Ø<br>L.R. |
| AREA<br>(mm²)                        | 140.00            |
| ULTIMATE STRENGTH<br>(KN PER STRAND) | 260.7             |
| APPLIED PRESTRESS<br>(KN PER STRAND) | 195.5             |

| PROJE   | ECT N          | 0.        | Ε   | XAMPL | E      |  |
|---|----------------|-----------|-----|-------|--------|--|
|   |                |           |     | co    | UNTY   |  |
| STAT  | ION <b>:</b> _ |           |     |       |        |  |
| HEET (  | OF             |           |     |       |        |  |
| DEPARTMENT OF TRANSPORTATION  MALEON  914mm X 533mm  PRESTRESSED  CONCRETE CORED  SLAB UNIT |                |           |     |       |        |  |
| _   |                | SHEET NO. |     |       |        |  |
| (0. BY:   | DATEs          | NO.       | BYs | DATE: | ****   |  |
| <u>ข</u>  |                | 3         |     |       | SHEETS |  |

STD. NO. PCS3SM