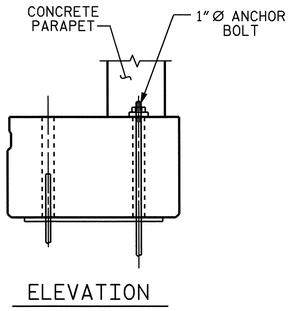
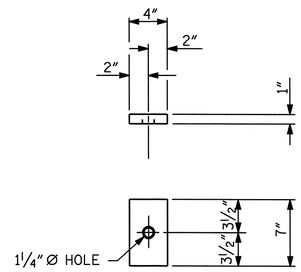
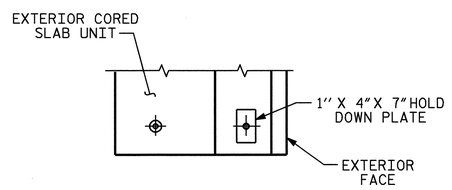
| GRADE 270 STRANDS | |
|---|---|
| | 1/2" Ø L.R. |
| AREA ( SQUARE INCHES ) | 0.153 |
| ULTIMATE STRENGTH ( LBS. PER STRAND ) | 41,300 |
| APPLIED PRESTRESS ( LBS. PER STRAND ) | 30,980 |




ELEVATION

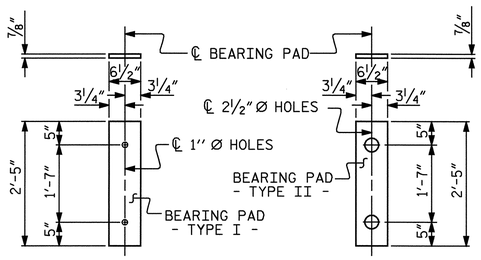



PLAN

HOLD DOWN PLATE

## CORED SLAB ANCHOR DETAILS

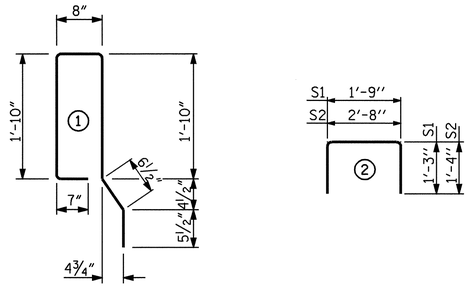



FIXED END
( TYPE I - 39 REQ'D )

EXPANSION END
( TYPE II - 39 REQ'D )

## ELASTOMERIC BEARING DETAILS

## BAR TYPES




ALL BAR DIMENSIONS ARE OUT TO OUT

## BILL OF MATERIAL FOR ONE CORED SLAB SECTION

| | | | | EXTERIOR UNIT | | INTERIOR UNIT | |
|---|---|---|---|---|---|---|---|
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT | LENGTH | WEIGHT |
| B1 | 4 | # 4 | STR | 25'-3" | 67 | 25'-3" | 67 |
| | | | | | | | |
| S1 | 8 | # 4 | 2 | 4'-3" | 23 | 4'-3" | 23 |
| S2 | 96 | # 4 | 2 | 5'-4" | 342 | 5'-4" | 342 |
| ✳ S3 | 50 | # 5 | 1 | 5'-11" | 309 | | |
| | | | | | | | |
| | | | | | | | |
| REINFORCING STEEL (LBS.) | | | | | 432 | | 432 |
| ✳ EPOXY COATED REINFORCING STEEL (LBS.) | | | | | 309 | | |
| 5,000 P.S.I. CONCRETE (CU. YDS.) | | | | | 6.6 | | 6.6 |
| | | | | | | | |
| 1/2" Ø L.R. STRANDS No. | | | | | 21 | | 21 |

## DEAD LOAD DEFLECTION AND CAMBER

| | 3'-0" x 1'-9" |
|---|---|
| | 1/2" Ø L.R. STRAND |
| CAMBER (SLAB ALONE IN PLACE) | 1 3/4" ↑ |
| DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ✳✳ | 3/16" ↓ |
| FINAL CAMBER | 1 3/16" ↑ |

✳✳ INCLUDES FUTURE WEARING SURFACE

## BILL OF MATERIAL FOR CONCRETE PARAPET AND END POST

| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
|---|---|---|---|---|---|
| ✳ B2 | 36 | #5 | STR | 48'-6" | 1821 |
| | | | | | |
| ✳ E1 | 8 | #7 | STR | 2'-4" | 38 |
| ✳ E2 | 8 | #7 | STR | 2'-7" | 42 |
| ✳ E3 | 8 | #7 | STR | 2'-9" | 45 |
| ✳ E4 | 8 | #7 | STR | 2'-11" | 47 |
| | | | | | |
| ✳ F1 | 16 | #6 | STR | 3'-6" | 84 |
| ✳ EPOXY COATED REINFORCING STEEL LBS. = 2077 | | | | | |
| CLASS AA CONCRETE = 20.3 CU.YDS. | | | | | |
| 1'-0" X 1'-9 3/4" CONCRETE PARAPET LIN. FT. = 293.75 | | | | | |

## CORED SLABS REQUIRED

| | SPAN 'A' | | SPAN 'B' | | SPAN 'C' | | |
|---|---|---|---|---|---|---|---|
| | NUMBER | LENGTH | NUMBER | LENGTH | NUMBER | LENGTH | TOTAL LENGTH |
| EXTERIOR C.S. | 2 | 48'-10 1/2" | 2 | 48'-10 1/2" | 2 | 48'-10 1/2" | 293'-3" |
| INTERIOR C.S. | 11 | 48'-10 1/2" | 11 | 48'-10 1/2" | 11 | 48'-10 1/2" | 1612'-10 1/2" |
| TOTAL | 13 | 635'-4 1/2" | 13 | 635'-4 1/2" | 13 | 635'-4 1/2" | 1906'-1 1/2" |

## 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 CONSTRUCTION OF SUPERSTRUCTURE.

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE 2 1/2" Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1 1/2" ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE B 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 UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

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 4000 PSI.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) 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 SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

## CORED SLAB ANCHOR DETAIL NOTES

CORED SLAB UNITS SHALL BE ANCHORED AT THE CORNERS OF EACH SPAN WITH 1" Ø HIGH STRENGTH ANCHOR BOLTS.

HIGH STRENGTH ANCHOR BOLTS, HOLD DOWN PLATES, NUTS, AND WASHERS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

HIGH STRENGTH ANCHOR BOLTS SHALL BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

HOLD DOWN PLATES, HIGH STRENGTH ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

HOLD DOWN PLATES, HIGH STRENGTH ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE PAY ITEM FOR CONSTRUCTION OF SUBSTRUCTURE.

THE HIGH STRENGTH ANCHOR BOLTS SHALL CONFORM TO ASTM F-1554-99 GRADE 105 AND BE INSTALLED ACCORDING TO THE PLANS.

PROJECT NO. B-3703

WAKE COUNTY

STATION: 18+17.85 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT

NORTH CAROLINA PROFESSIONAL SEAL 15825 ENGINEER BRUCE D. KLAPPENBACH
12-21-04

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 27 |

ASSEMBLED BY : G.M.Patterson DATE : 10/04/04
CHECKED BY : D.A.GLADDEN DATE : 10/12/04

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

REV. 10/17/00 RWW/LES
REV. 7/10/01 RWW/LES
REV. 5/7/03 RWW/JTE

17-DEC-2004 09:31
W:\squad1\B3703\MPATTE01\MICROS01\B-370301.DGN
bklappenbach