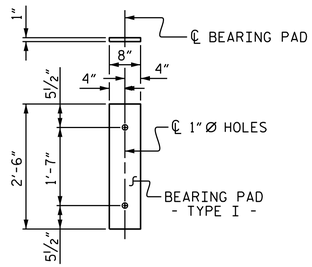



FIXED END
( TYPE I - 44 REQ'D )

# ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

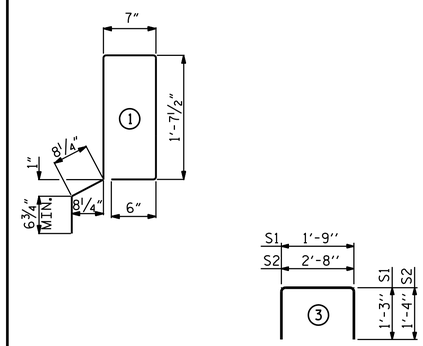
## CORED SLABS REQUIRED

| | NUMBER | LENGTH | TOTAL LENGTH |
|---|---|---|---|
| 50' UNIT | | | |
| EXTERIOR C.S. | 2 | 50'-0" | 100'-0" |
| INTERIOR C.S. | 9 | 50'-0" | 450'-0" |
| TOTAL | 11 | - | 550'-0" |

## CORED SLABS REQUIRED

| | NUMBER | LENGTH | TOTAL LENGTH |
|---|---|---|---|
| 55' UNIT | | | |
| EXTERIOR C.S. | 2 | 55'-0" | 110'-0" |
| INTERIOR C.S. | 9 | 55'-0" | 495'-0" |
| TOTAL | 11 | - | 605'-0" |

## BAR TYPES




ALL BAR DIMENSIONS ARE OUT TO OUT

## 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 BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX 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.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

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 THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

## BILL OF MATERIAL FOR ONE 50' CORED SLAB UNIT

| | | | | EXTERIOR UNIT | | INTERIOR UNIT | |
|---|---|---|---|---|---|---|---|
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT | LENGTH | WEIGHT |
| B6 | 4 | #4 | STR | 25'-9" | 69 | 25'-9" | 69 |
| | | | | | | | |
| S1 | 8 | #5 | 3 | 4'-3" | 35 | 4'-3" | 35 |
| S2 | 104 | #4 | 3 | 5'-4" | 371 | 5'-4" | 371 |
| ✱ S3 | 58 | #5 | 1 | 5'-7" | 338 | | |
| | | | | | | | |
| | | | | | | | |
| REINFORCING STEEL | | | LBS. | | 475 | | 475 |
| ✱ EPOXY COATED REINFORCING STEEL | | | LBS. | | 338 | | |
| 6500 P.S.I. CONCRETE | | | CU. YDS. | | 7.1 | | 7.1 |
| | | | | | | | |
| 0.6"Ø L.R. STRANDS | | | No. | | 19 | | 19 |
| | | | | | | | |

## DEAD LOAD DEFLECTION AND CAMBER

| | 3'-0" x 1'-9" |
|---|---|
| 50' & 55' CORED SLAB UNIT | 0.6"Ø L.R. STRAND |
| CAMBER ( SLAB ALONE IN PLACE ) | 1½" ↑ |
| DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✱✱ | ⅜" ↓ |
| FINAL CAMBER | 1⅛" ↑ |

✱✱ INCLUDES FUTURE WEARING SURFACE

## CONCRETE RELEASE STRENGTH

| | |
|---|---|
| UNIT | PSI |
| 50' & 55' UNITS | 4900 |

## BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT

| | | | | EXTERIOR UNIT | | INTERIOR UNIT | |
|---|---|---|---|---|---|---|---|
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT | LENGTH | WEIGHT |
| B7 | 4 | #4 | STR | 28'-3" | 75 | 28'-3" | 75 |
| | | | | | | | |
| S1 | 8 | #5 | 3 | 4'-3" | 35 | 4'-3" | 35 |
| S2 | 114 | #4 | 3 | 5'-4" | 406 | 5'-4" | 406 |
| ✱ S3 | 64 | #5 | 1 | 5'-7" | 373 | | |
| | | | | | | | |
| | | | | | | | |
| REINFORCING STEEL | | | LBS. | | 516 | | 516 |
| ✱ EPOXY COATED REINFORCING STEEL | | | LBS. | | 373 | | |
| 6500 P.S.I. CONCRETE | | | CU. YDS. | | 7.8 | | 7.8 |
| | | | | | | | |
| 0.6"Ø L.R. STRANDS | | | No. | | 19 | | 19 |
| | | | | | | | |

## GRADE 270 STRANDS

| | 0.6"Ø L.R. |
|---|---|
| AREA ( SQUARE INCHES ) | 0.217 |
| ULTIMATE STRENGTH ( LBS. PER STRAND ) | 58,600 |
| APPLIED PRESTRESS ( LBS. PER STRAND ) | 43,950 |

PROJECT NO. BP1-R002
NORTHAMPTON COUNTY
STATION: 13+68.00 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

# 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 048992 ENGINEER ELIZABETH C. PHELPS

DocuSigned by: Elizabeth Phelps 8/10/2023
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-9 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |

STD.NO.21"PCS3_33_90S


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Raleigh, NC 27606


DRAWN BY : E.C. PHELPS DATE : 08/2023
CHECKED BY : K.F. SMIACH DATE : 08/2023
DESIGN ENGINEER OF RECORD: E.C. PHELPS DATE : 08/2023

8/3/2023
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8/26/21