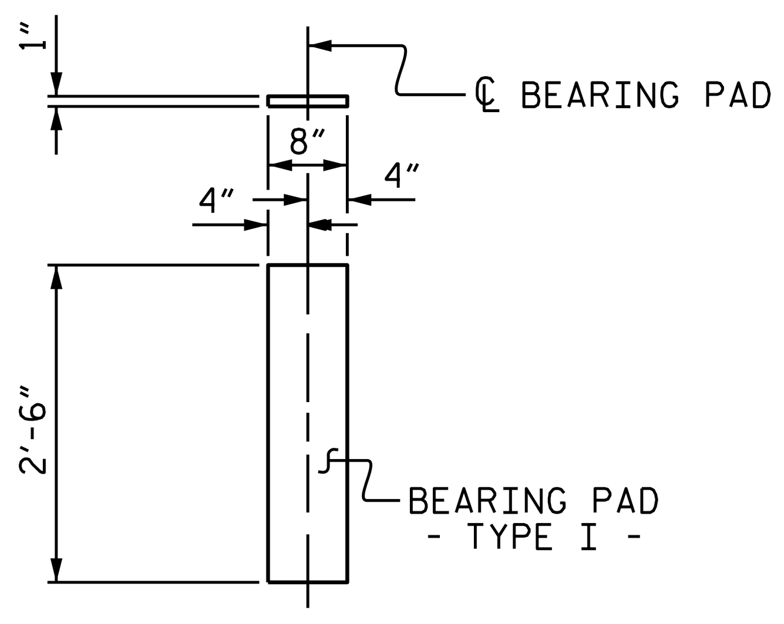


FIXED & EXPANSION END

(TYPE I - 784 REQUIRED)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS

(BEARING PAD TYPE I AT THE CONTRACTORS OPTION)
(SEE BEARING PLACEMENT DETAILS FOR CONTINUOUS PAD OPTION)

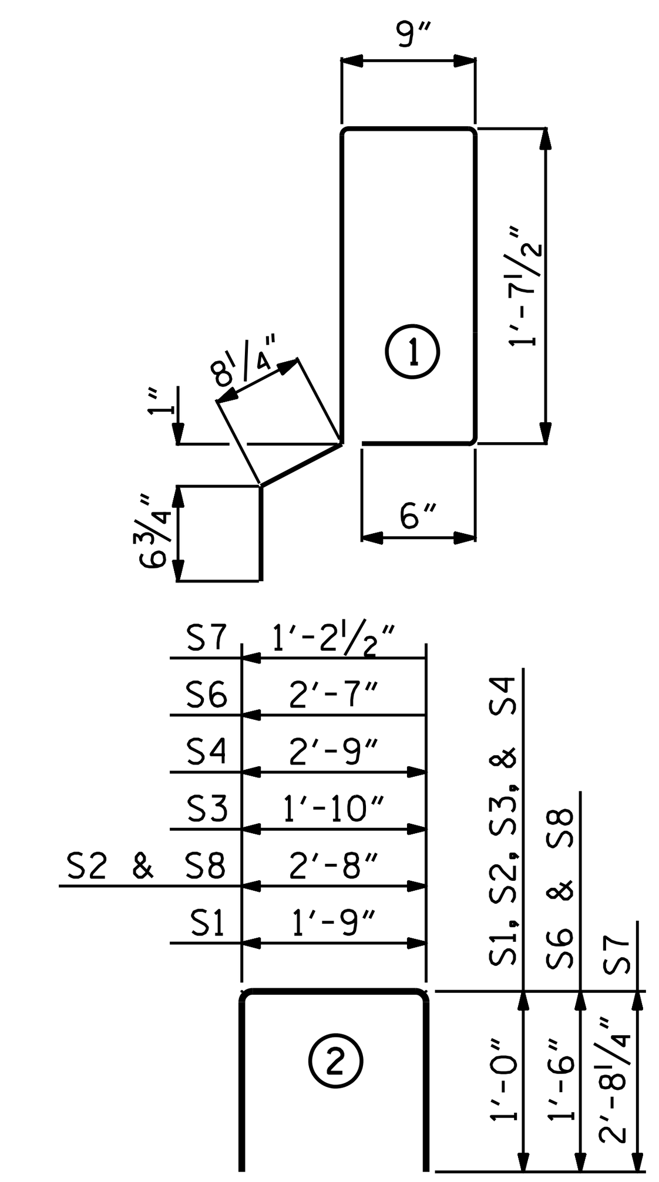
BILL OF MATERIAL FOR ONE 39'-10½" CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR.	41'-2½"	55	41'-2½"	55
S1	8	#5	2	-	-	3'-9"	31
S2	84	#5	2	-	-	4'-8"	409
S3	8	#5	2	3'-10"	32	-	-
S4	84	#5	2	4'-9"	416	-	-
* S5	40	#5	1	5'-9"	240	-	-
S6	4	#5	2	5'-7"	23	-	-
S7	4	#5	2	6'-7"	27	6'-7"	27
S8	4	#5	2	-	-	5'-8"	24
REINFORCING STEEL			LBS.		553		546
* EPOXY COATED REINFORCING STEEL			LBS.		240		
6500 P.S.I. CONCRETE			CU. YDS.		5.7		6.0
0.6" Ø L.R. STRANDS			No.		20		20

GUTTERLINE PPC THICKNESS & RAIL HEIGHT

	PPC OVERLAY THICKNESS @ MID-SPAN	PARAPET HEIGHT @ MID-SPAN
39'-10½" UNITS	1"	2'-7" (MIN.)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

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

CORED SLABS REQ'D PER SPAN

39'-10½" UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	39'-10½"	79'-9"
INTERIOR C.S.	12	39'-10½"	478'-6"
TOTAL	14		558'-3"

(28 SPANS REQUIRED)

CONCRETE RELEASE STRENGTH

UNIT	PSI
39'-10½" UNITS	5000

DEAD LOAD DEFLECTION AND CAMBER

	00I-CAD
39-10½"' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1⅛" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	¼" ↓
FINAL CAMBER	⅞" ↑

** INCLUDES PPC OVERLAY

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 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.

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.

ALL REINFORCING STEEL IN 2-BAR METAL RAIL CONCRETE PARAPETS 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 & BOTTOMS.

GROOVED CONTRACTION JOINTS, ½" 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 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.

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

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #5 S4 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

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.

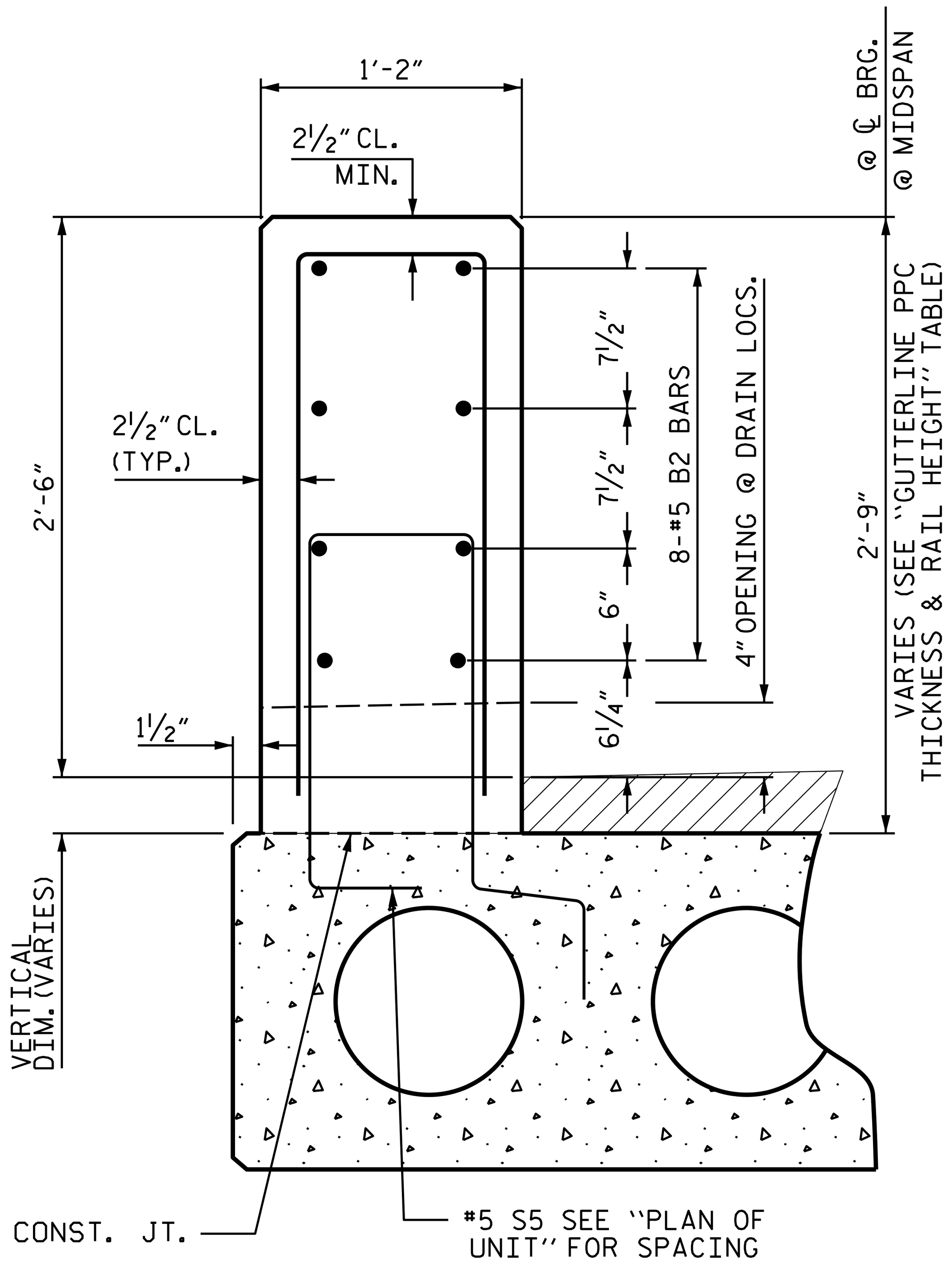
THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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

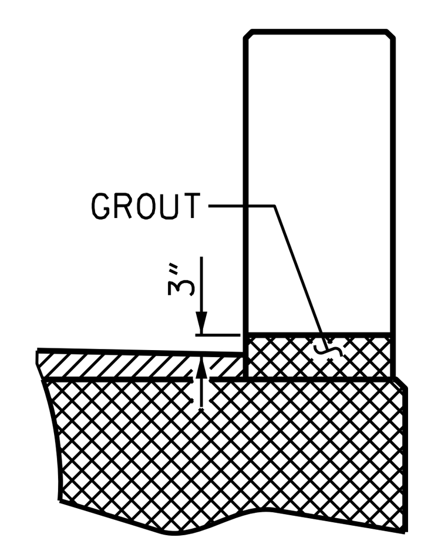
THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

PRESTRESSED CONCRETE CORED SLAB UNITS SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR. SEE SPECIAL PROVISIONS FOR CALCIUM NITRITE CORROSION INHIBITOR.

PRESTRESSED CONCRETE CORED SLABS ARE DESIGNED FOR 0 PSI TENSION IN THE PRECOMPRESSED TENSILE ZONE UNDER ALL LOADING CONDITIONS.

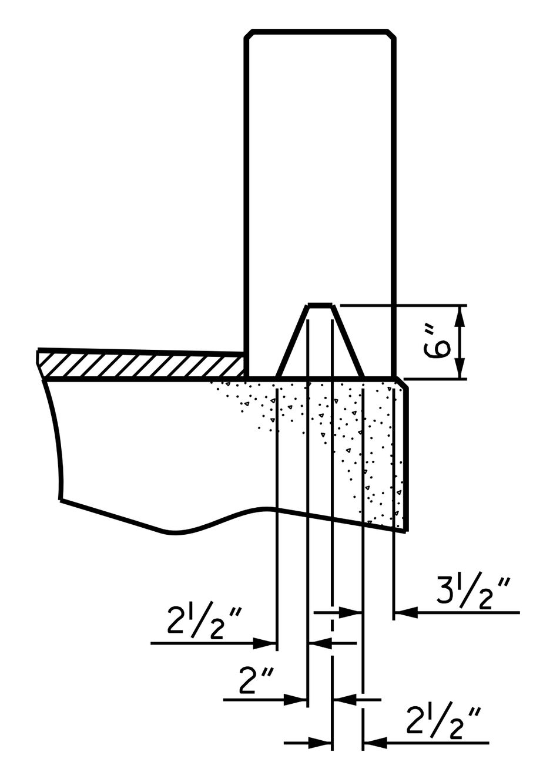


SECTION THRU RAIL



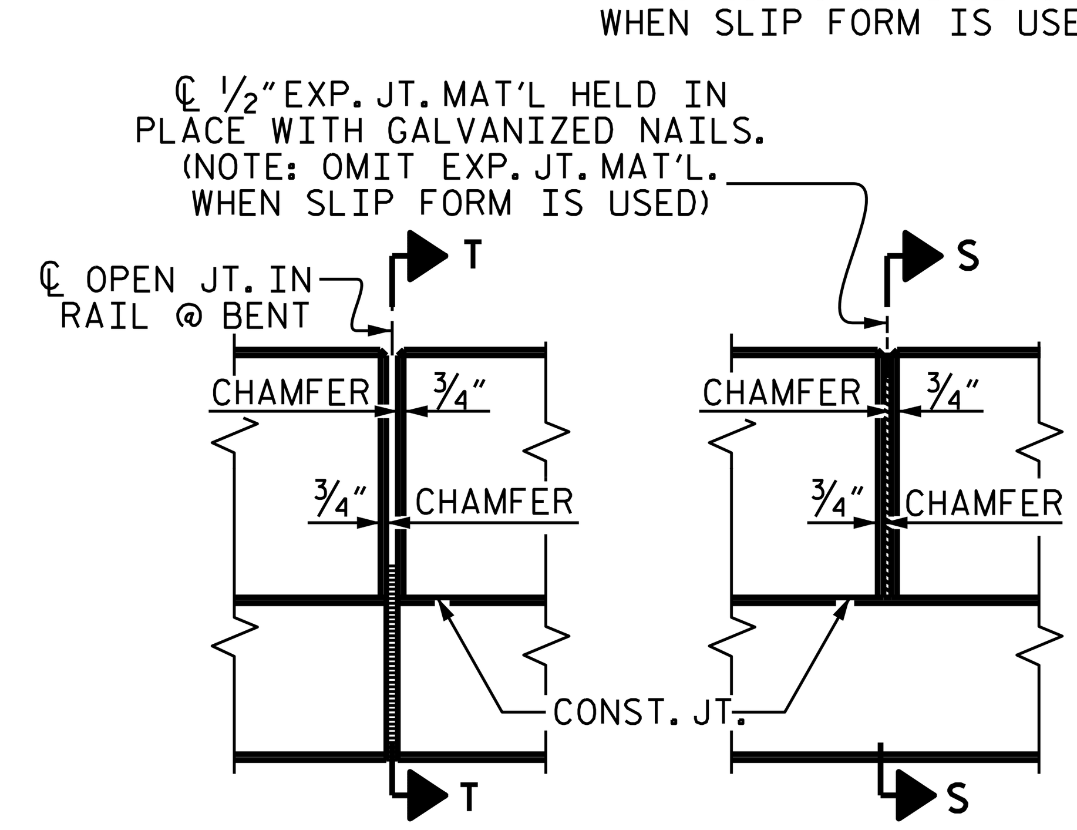
SECTION T-T

AT OPEN JOINT AT BENT
(THIS IS TO BE USED WHERE FOAM JOINT IS NOT USED)



SECTION S-S

AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

2-BAR METAL RAIL PARAPET DETAILS

(FOR ADDITIONAL DETAILS AND BILL OF MATERIALS SEE "CONCRETE PARAPET AND END POST DETAILS")

DECK DRAIN NOTES

THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 4" X 8". THE HEIGHT OF THE BLOCKOUT IN THE CONCRETE PARAPET (2 BAR-METAL RAIL) SHALL EXTEND FROM THE TOP OF THE CORED SLAB UNIT TO THE TOP OF THE DRAIN OPENING.

APPLY EPOXY PROTECTIVE COATING TO EXTERIOR FACE OF THE EXTERIOR CORED SLAB UNITS THAT REQUIRE DRAINS IN THE BARRIER RAIL.

PROJECT NO. 15BPR.25
BRUNSWICK COUNTY
BRIDGE NO. 14

SHEET 4 OF 4

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043571 SAMUEL L. CULLUM
DocuSigned by: 19C97095C75A467... 4/12/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

00I-CAD

PRESTRESSED CONCRETE CORED SLAB UNIT DETAILS

KCA KISINGER CAMPO & ASSOCIATES
4800 SIX FORKS ROAD SUITE 120
RALEIGH, NC 27609
(919) 882-7839

DRAWN BY :	DIEGO A. AGUIRRE	DATE :	03-2018
CHECKED BY :	JACOB. H. DUKE	DATE :	03-2018
DESIGN ENGINEER OF RECORD :	SAMUEL L. CULLUM	DATE :	03-2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-9
TOTAL SHEETS 111