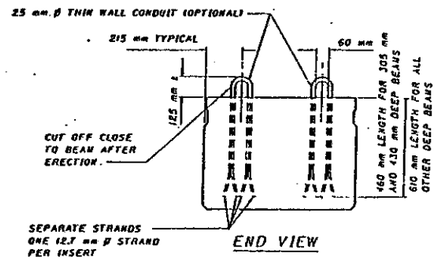
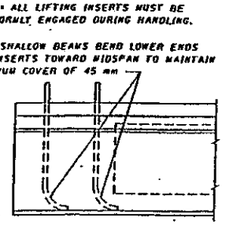
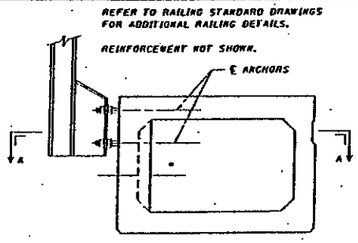


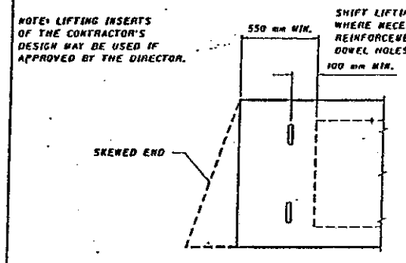
END VIEW



ELEVATION

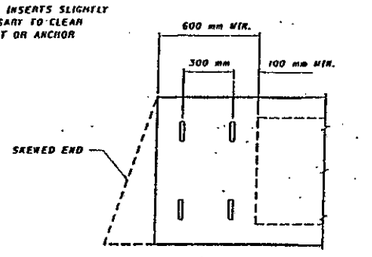


SECTION SHOWING WALL THICKENING AT GUARDRAIL ANCHORS



FOR 305 mm, 430 mm AND 535 mm DEEP BEAMS

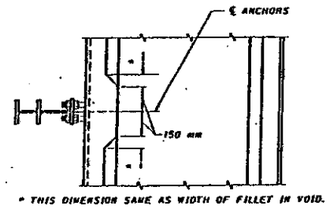
PLAN



FOR 685 mm, 840 mm AND 1070 mm DEEP BEAMS

PLAN

BEAM LIFTING INSERTS AT PIER



* THIS DIMENSION SAME AS WIDTH OF FILLET IN VOID.

SECTION A-A

NOTES:

TRANSVERSE TIE RODS SHALL BE 25 mm DIAMETER STEEL RODS OF GRADE A3H (1018 STEEL, THREADED BOTH ENDS, AND WITH NUT AND WASHER AT EACH END. THREADS MAY BE CUT OR ROLLED. IF ROLLED THREADS ARE USED, MINIMUM DIAMETER OF ROD AT ROOT OF THREADS SHALL BE 21 mm. TENSION SHALL BE APPLIED BY A TORQUE OF APPROXIMATELY 340 N·M AFTER THE TIE RODS ARE TIGHTENED THE RECESSES IN THE FASCIA BEAMS SHALL BE FILLED WITH NON-SHRINKING MORTAR OF THE SAME COLOR AS THE BEAM. ONE TRANSVERSE TIE ROD WILL BE PERMITTED TO TIE A MAXIMUM OF THREE BEAMS TOGETHER.

PRESTRESSING STRANDS: SHALL BE ASTM 416 GRADE 270, 12.7 mm DIAMETER SEVEN-WIRE, UNCOATED, LOW-RELAXATION STRANDS

GALVANIZING: ALL ANCHOR BOLTS, STUDS, INSERTS, TIE RODS, NUTS AND WASHERS SHALL BE GALVANIZED PER 711.02.

ANCHOR DOWELS: THE BEAM ENDS TO BE ANCHORED SHALL BE INDICATED ON THE PROJECT PLANS. ANCHOR DOWEL HOLES AND PRESTRESSING STRANDS SHALL BE LOCATED TO AVOID MUTUAL INTERFERENCE. THE LATERAL SPACING OF THE HOLES IN THE BEAM SHALL BE SUCH THAT THE ANCHOR DOWELS CLEAR THE ELASTOMERIC BEARING, AND ARE AS CLOSE TO THE ℄ OF BEAM AS POSSIBLE.

AFTER TENSIONING OF THE TRANSVERSE TIE RODS THE DOWEL HOLES SHALL BE DRILLED INTO THE ABUTMENT OR PIER SEAT AND DOWELS INSTALLED.

ELASTOMERIC BEARINGS: FOUR ELASTOMERIC BEARINGS ARE REQUIRED PER BEAM. POSITIONED AS SHOWN ON SHEET 4 OF 4.

PREFORMED BEARING PADS ON SKEWED BRIDGES, PREFORMED BEARING PADS PER 711.21, 3 mm THICK AND OF THE SAME PLAN DIMENSIONS AS THE ELASTOMERIC BEARING PADS SHOULD BE PROVIDED AS SHIMS.

NOTCHES SHALL BE PROVIDED IN BEAM ENDS WHERE SHOWN ON THE PROJECT PLANS TO ELIMINATE AN OPEN JOINT OVER PIERS (SEE SHEET 4 OF 4) OR TO ACCOMMODATE ANCHORAGE FOR END DAMS OR EXPANSION JOINTS.

ENDS OF BEAMS, AGAINST WHICH CONCRETE IS NOT TO BE PLACED, SHALL BE PROTECTED BY TYPE B WATER PROOFING AS PER 512.06 AND APPLIED IN THE FIELD.

SEALING OF CONCRETE SURFACES (NON-EPOXY): SHALL BE PROVIDED FOR THE FASCIA AND THE BOTTOM OF THE EXTERIOR BEAMS.

DRIP GROOVES: ON THE UNDERSIDE OF THE FASCIA BEAM SHALL NOT BE PERMITTED.

PREPARATION OF CONCRETE SURFACES IN CONTACT WITH MORTAR: THE KEYWAY SURFACES SHALL BE GIVEN A MEDIUM SANDBLAST AT THE PLANT WITHIN FOUR DAYS BEFORE THE BEAMS LEAVE THE PLANT. BEFORE MORTARING, THE KEYWAYS SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST AND OTHER FOREIGN MATTER BY MEANS OF HIGH PRESSURE WASHING OF AT LEAST 7 MPa AND A DELIVERY RATE OF NOT LESS THAN 16 L/MIN.

MORTAR:
MORTAR OR GROUT FOR KEYWAYS BETWEEN PRESTRESSED CONCRETE BOX BEAMS, FOR TIE ROD RECESSES AND FOR ANCHOR DOWEL HOLES SHALL BE A NON-SHRINKING MORTAR. THE MORTAR SELECTED AS DEFINED IN THE BELOW ALTERNATIVES SHALL BE PREPARED, PLACED AND CURED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. AT LEAST THREE (3) 75 mm DIAMETER BY 150 mm LONG MORTAR TEST CYLINDERS OF THE GROUTING MATERIAL SHALL BE TAKEN DURING THE ACTUAL GROUTING OPERATION AND SUBMITTED TO THE TESTING LABORATORY FOR COMPRESSION TESTING OF MINIMUM STRENGTH OF GROUT.

ALTERNATE 1
IF EITHER CONSTRUCTION OR NORMAL VEHICLE TRAFFIC WILL NOT BE ON THE BOX BEAMS WITHIN 7 DAYS OF PLACEMENT OF THE MORTAR OR GROUT, THE MORTAR MATERIAL SHALL CONFORM WITH CORPS OF ENGINEER'S SPECIFICATION CRD-C621-89A OR SHEAR KEY MORTAR AS PER PROPOSAL NOTE. MINIMUM STRENGTH OF THE MORTAR SHALL BE 35 MPa BEFORE ANY TRAFFIC IS ALLOWED ON THE STRUCTURE.

ALTERNATE 2
IF PART-WIDTH CONSTRUCTION IS BEING USED, OR ANY CONSTRUCTION OR NORMAL VEHICLE TRAFFIC WILL BE ON THE BOX BEAMS WITHIN 7 DAYS OF PLACEMENT OF THE MORTAR OR GROUT, THE MORTAR MATERIAL SHALL BE SHEAR KEY MORTAR AS PER PROPOSAL NOTE. MINIMUM STRENGTH OF THE MORTAR SHALL BE 35 MPa BEFORE ANY TRAFFIC IS ALLOWED ON THE STRUCTURE.

MORTARING OF SHEAR KEYS: AFTER THE TRANSVERSE TIE RODS HAVE BEEN TIGHTENED, SHEAR KEYS SHALL BE FILLED WITH NON-SHRINKING MORTAR. BEFORE MORTARING WITH CRD-C621-89A, THE KEYWAY SURFACES SHALL BE WETTED, BUT NO FREE WATER SHALL BE ALLOWED TO REMAIN IN THE KEYWAYS. SURFACES WHEN OTHER MORTAR IS USED SHALL BE AS PER MANUFACTURES RECOMMENDATION. MORTAR SHALL BE PLACED INTO THE KEYWAYS IN A MANNER THAT INSURES COMPLETE AND SOLID FILLING

COMPOSITE BRIDGES: THE FOLLOWING NOTES APPLY TO COMPOSITE BRIDGES ONLY:

1.) CLEANING PRIOR TO PLACEMENT OF COMPOSITE SLAB: BEFORE PLACEMENT OF THE SLAB CONCRETE, THE TOPS OF ALL BEAMS SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST AND OTHER FOREIGN MATTER. THE SURFACE SHALL BE FLUSHED WITH CLEAR WATER AND SHALL BE WET, WITHOUT FREE WATER, WHEN THE CONCRETE IS PLACED.

2.) SLAB PLACEMENT: ON MULTI-SPAN BRIDGES WITH SLAB CONTINUOUS OVER PIERS, CONSTRUCTION JOINTS PERPENDICULAR TO THE CENTERLINE OF ROADWAY MAY BE PLACED NEAR THE CENTER OF A SPAN. HOWEVER, COMPOSITE SLAB POURS SHALL BE AS LONG AS PRACTICABLE. ON MULTI-SPAN BRIDGES WITH JOINTS AT PIERS, COMPOSITE SLABS SHALL BE PLACED BETWEEN JOINTS WITHOUT ADDITIONAL CONSTRUCTION JOINTS, BUT SHALL COMPLY WITH THE REQUIREMENTS OF ITEM 511.

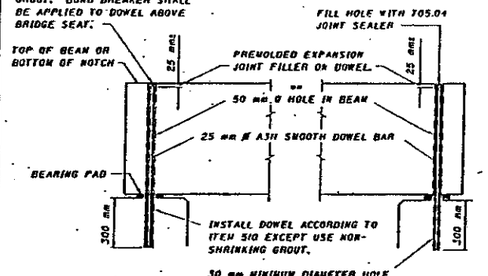
PROJECT PLANS: SHALL SPECIFY THE DETAILS OF THE STANDARD DRAWING WHICH ARE TO APPLY AND WILL INCLUDE THE FOLLOWING:
A BEAM LAYOUT PLAN SHOWING SPAN LENGTH, BEAM LENGTH, SKEW ANGLE, FIXED AND EXPANSION ENDS OF BEAMS, LOCATION OF ANCHOR DOWELS, SIZE, LOCATION AND HARDNESS OF ELASTOMERIC BEARING PADS, LOCATION OF DIAPHRAM CENTERLINES AND LOCATIONS OF RAILING POSTS.
A TRANSVERSE CROSS-SECTION THRU THE DECK.
A CROSS-SECTION OF THE BEAM SHOWING BEAM TYPE, SIZE, NUMBER, STRENGTH AND LOCATION OF STRANDS. DEBONDED STRANDS, ALL REINFORCING STEEL DETAILS AND THE DESIGN DATA.

DETAILS AT ABUTMENTS AND PIERS.
ALL OTHER NECESSARY DETAILS AND INFORMATION.
IT IS NOT INTENDED THAT DETAILS SHOWN ON THIS STANDARD DRAWING BE REPEATED ON THE PROJECT PLANS EXCEPT AS MAY BE REQUIRED FOR CLARITY.

ITEMS INCLUDED WITH ITEM 515 FOR PAYMENT:

1. ANCHOR DOWELS AND INSTALLATION
2. ALL PREFORMED EXPANSION JOINT FILLER REQUIRED.
3. TYPE B WATER PROOFING AT ENDS OF BEAMS
4. MORTAR AND LABOR REQUIRED.
5. ALL OTHER MATERIAL & LABOR REQUIRED FOR FABRICATION AND ERECTION.

ALL DIMENSIONS ARE IN mm

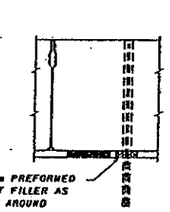


FIXED

EXPANSION

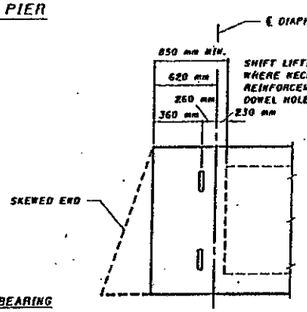
** PROVIDE 65 mm ϕ HOLE IN BEAM WHEN USING COMPRESSION SEAL EXPANSION JOINT AS PER STD. DRWG. EXJ-3-82

ANCHOR DOWELS



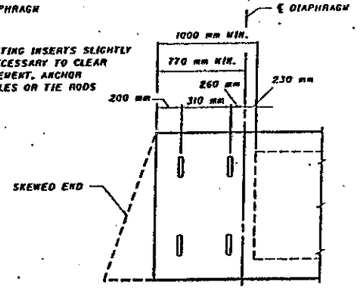
DOWEL CLEARS ELASTOMERIC BEARING

END VIEW



FOR 305 mm, 430 mm AND 535 mm DEEP BEAMS

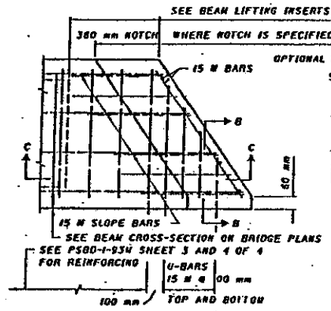
PLAN



FOR 685 mm, 840 mm AND 1070 mm DEEP BEAMS

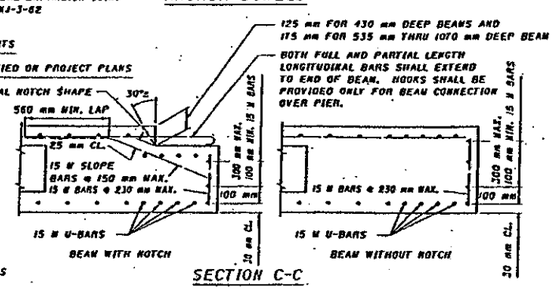
PLAN

BEAM LIFTING INSERTS AT ABUTMENT

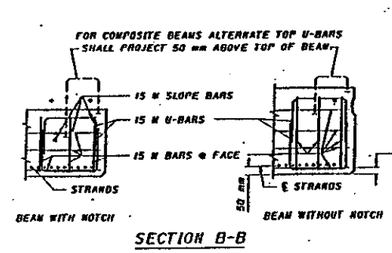


PLAN

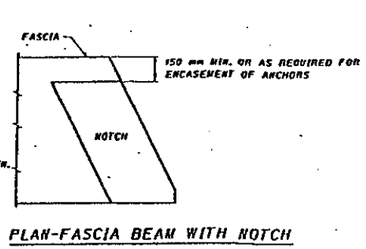
SEE ALTERNATE PLAN FOR FASCIA BEAM.



SECTION C-C



SECTION B-B



PLAN-FASCIA BEAM WITH NOTCH

DETAILS AND REINFORCEMENT OF BEAM ENDS

NOTE: THE FABRICATOR'S SHOP DRAWINGS SHALL SHOW COMPLETE DETAILS OF THE BEAM REINFORCING.

REVISIONS	STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN				
	STANDARD: PRESTRESSED CONCRETE BOX BEAM BRIDGE DETAILS				
	APPROVED: Richard E Engel ENGINEER OF BRIDGES — DATE: 12-19-99				DRAWING NO. PSBD-1-93M
	PREPARED: MRG	DRWN: REF	CHECKED: SEM	REVIEWED: LMW	SHEET NO. 1 OF 4 SHEETS