

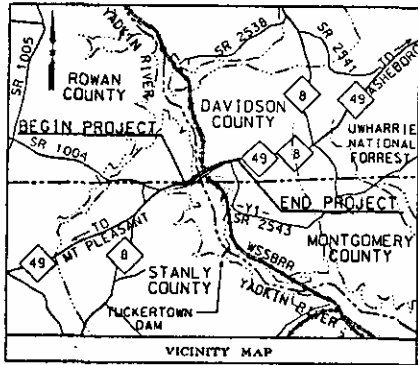
B-2612

PROJECT: 8.1631701

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

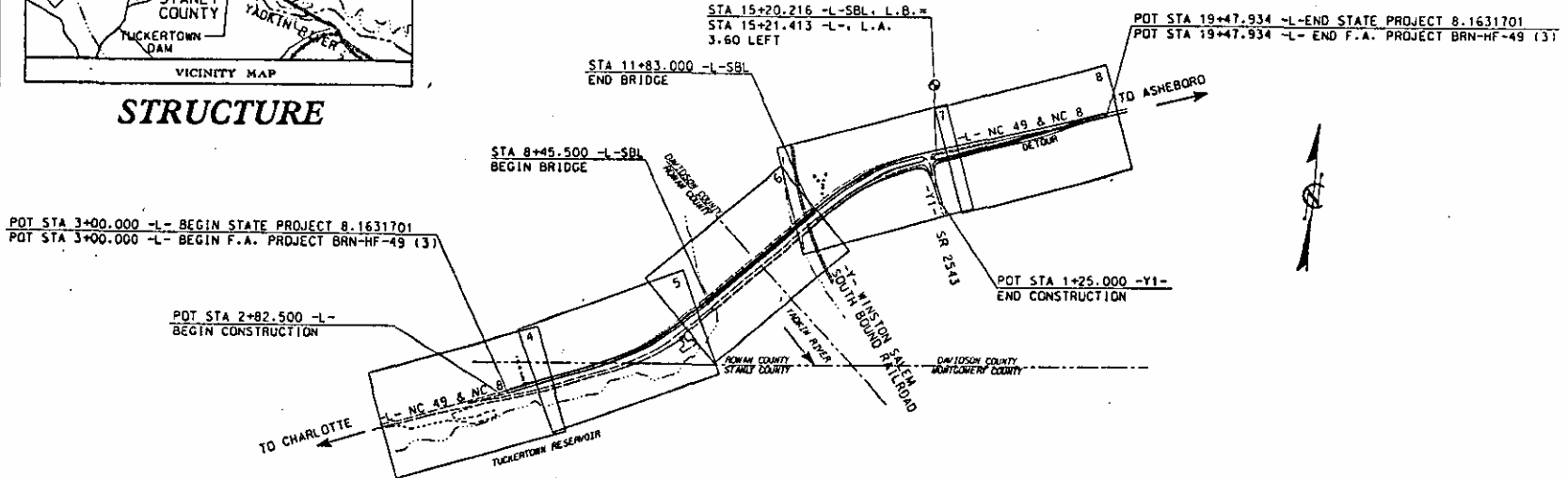
STANLY, ROWAN & DAVIDSON COUNTIES



STRUCTURE

LOCATION: REPLACEMENT OF BRIDGE NO. 8 AND APPROACHES ON N.C. 49
OVER YADKIN RIVER (TUCKERTOWN LAKE)

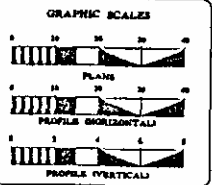
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,
LONG LIFE PAVEMENT MARKING AND PAVEMENT MARKERS



METRIC

NOTE:
ALL DIMENSIONS
IN THESE PLANS
ARE IN METERS
AND/OR MILLIMETERS
UNLESS OTHERWISE
INDICATED

| | | | |
|-------------------|----------------------------|-------------------|-------|
| STATE | STATE PROJECT APPROVED NO. | DATE | SCALE |
| N.C. | 8.1631701 | | 3/1 |
| STATE PROJECT NO. | F.A. PROJECT NO. | DESCRIPTION | |
| 8.1631701 | BRN HF-49 (3) | P.E., R.W., UTIL. | |
| 8.1631701 | | CONS. | |



DESIGN DATA

| | |
|-----|---------------|
| ADT | 1,300 (1994) |
| ADT | 17,400 (2018) |
| DHV | 12 % |
| D | 75 % |
| T | 21 % |
| V | 100 NMV |

PROJECT LENGTH

| | |
|---|------------|
| LENGTH ROADWAY F.A. PROJECT BRN HF-49(3) | = 1.309 km |
| LENGTH STRUCTURES F.A. PROJECT BRN HF-49(3) | = 0.338 km |
| TOTAL LENGTH STATE PROJECT 8.1631701 | = 1.647 km |

IPM STANDARD SPECIFICATIONS

LETTING DATE: DEC. 19, 19%.

Prepared in the Office of:

RUST
ENVIRONMENT & INFRASTRUCTURE

2500 21st Street
Suite 200
Raleigh, N.C. 27608
(919) 876-1000
FAX (919) 876-1000

Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19486 STATE OF NORTH CAROLINA

APPROVED: *J. M. [Signature]* 3/16

APPROVED: [Signature]

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

APPROVED: *Dr. [Signature]* P.E.

STATE HIGHWAY ENGINEER-DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: *[Signature]* 3/25/96

GENERAL NOTES

ASSUMED LIVE LOAD - MS 18 OR ALTERNATE LOADING.

HYDRAULIC DATA:

| | |
|----------------------------------|----------------|
| DESIGN DISCHARGE - | 3660 C.M.S. |
| FREQUENCY OF DESIGN FLOOD - | 50 YR. |
| DESIGN HIGH WATER ELEVATION - | 172.1 |
| BASIC DISCHARGE - | 4270 C.M.S. |
| BASIC FREQUENCY - | 100 YR. |
| BASIC HIGH WATER ELEVATION - | 172.1 |
| DRAINAGE AREA - | 10,670 SQ. KM. |
| FREQUENCY OF OVERTOPPING FLOOD - | > 500 YR. |
| OVERTOPPING FLOOD ELEV. - | 177.2 |

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES, FOR SEISMIC PERFORMANCE CATEGORY A.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET S-N.

FOR REINFORCED CONCRETE DECK SLAB, SEE SPECIAL PROVISIONS.

FOR CURING BRIDGE DECK SLABS, SEE SPECIAL PROVISION "REINFORCED CONCRETE DECK SLAB".

FOR PRESTRESSED CONCRETE PANELS, SEE SPECIAL PROVISIONS.

PILES FOR END BENT 1 SHALL BE DRIVEN TO MINIMUM BEARING CAPACITY OF 400 kN EACH.

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18 "EVALUATING SCOUR AT BRIDGES", APRIL 1993.

FOR EROSION CONTROL PLANS FOR THIS STRUCTURE, SEE ROADWAY PLANS.

THE APPROACH SLAB WAITING PERIOD IS WAIVED.

ALL REINFORCING STEEL SHALL BE ASTM A615M, GRADE 400.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FABRICATED METAL STAY-IN-PLACE FORMS MAY BE USED IN LIEU OF PRESTRESSED CONCRETE PANELS, SEE SPECIAL PROVISION "OPTIONAL FABRICATED METAL STAY-IN-PLACE FORMS".

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE IN METERS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 11m EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AS UNCLASSIFIED STRUCTURE EXCAVATION.

FOR STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.

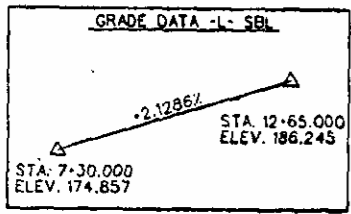
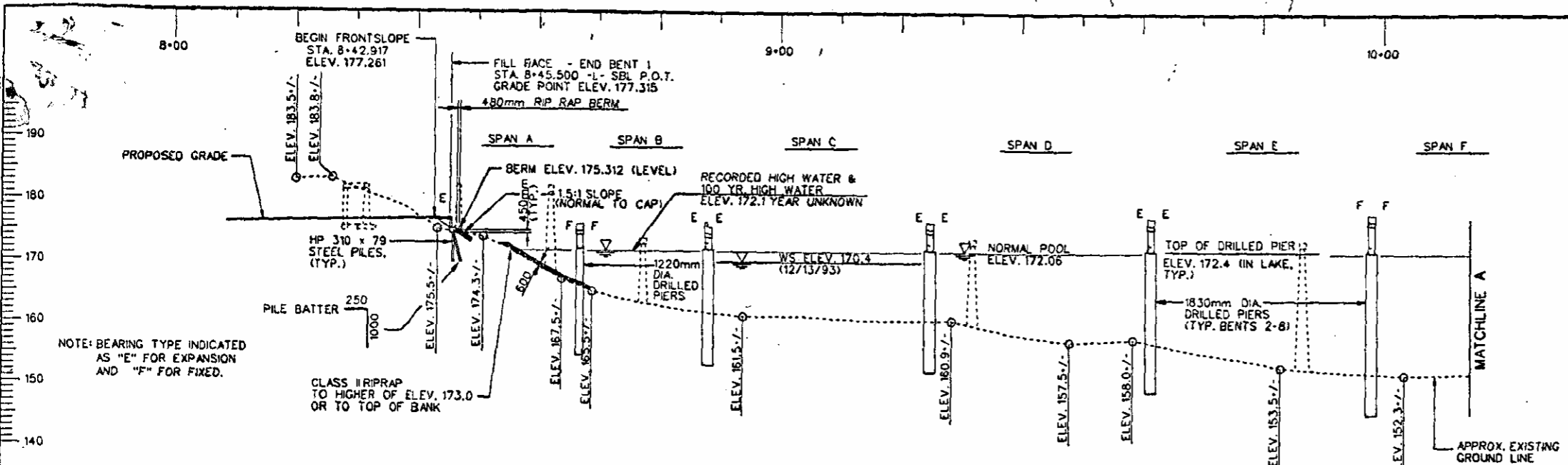
SEE GENERAL DRAWING SHEET 3 OF 5 (FOUNDATION LAYOUT) FOR LOCATION OF CENTERLINE BENT 2 AND BENT 8. BENTS NO. 2 & 8 ARE OFFSET FROM C JOINT.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 360,000 KILOGRAMS OF REINFORCING STEEL ONE 760mm SAMPLE OF EACH BAR USED, AND FOR PROJECTS REQUIRING OVER 360,000 KILOGRAMS OF REINFORCING STEEL TWO 760mm SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

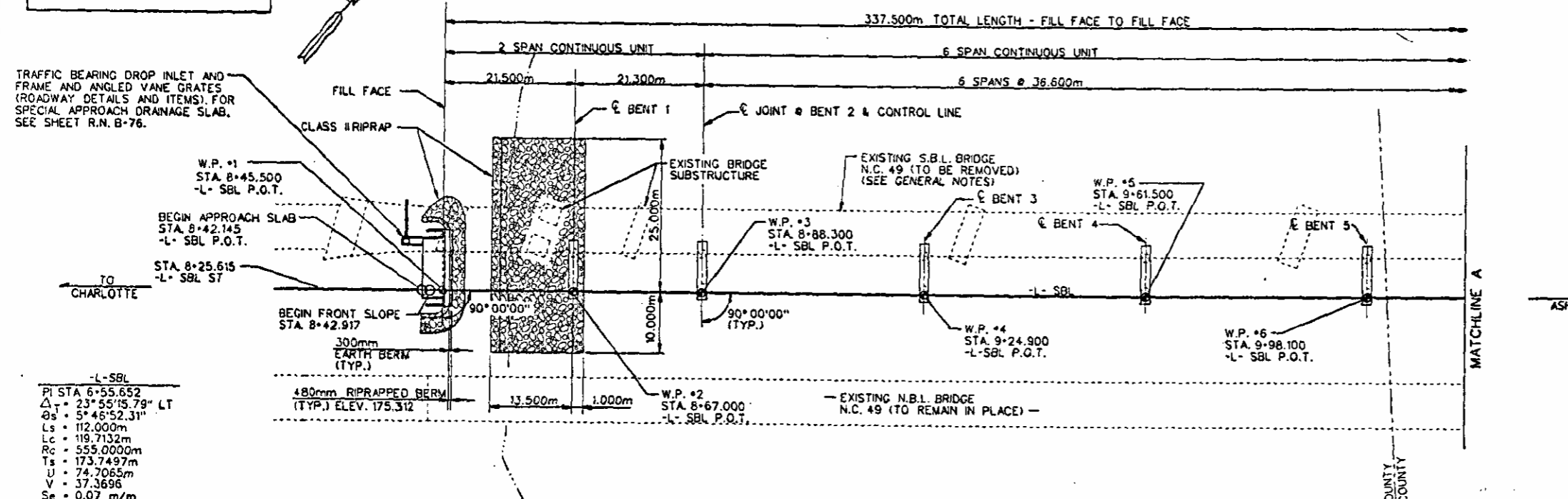
FOR CONTINUATION OF GENERAL NOTES, SEE GENERAL DRAWING SHEET 5 OF 5.

FOR METRIC REINFORCING STEEL FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.



SECTION ALONG -L- SBL
(BENTS ON SECTION AT RIGHT ANGLES TO C BENTS)



-L- SBL

| | |
|------------|-------------------|
| PI STA | 6+55.652 |
| Δ_T | 23° 55' 15.79" LT |
| Δ_s | 5° 46' 52.31" |
| Ls | 112.000m |
| Lc | 119.7132m |
| Rc | 555.0000m |
| Ts | 173.7497m |
| U | 74.7065m |
| V | 37.3696 |
| Se | 0.07 m/m |

PLANS PREPARED BY

RUST

ENVIRONMENT & INFRASTRUCTURE

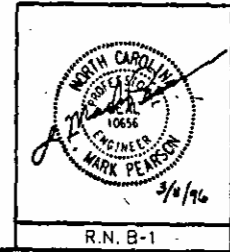
5510 SIX FORKS ROAD
RALEIGH, NORTH CAROLINA 27609

PROJECT NO. 8-2612

ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT
1+66.221 -Y- POC

SHEET 1 OF 5 REPLACES BRIDGE #8



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR
SOUTHBOUND LANE BRIDGE
ON NC 49 OVER YADKIN RIVER
(TUCKERTOWN RESERVOIR)
AND WINSTON-SALEM
SOUTHBOUND RAILROAD BETWEEN
CHARLOTTE AND ASHEBORO

| REVISIONS | | | | SHEET NO. |
|-----------|-----|-------|-----|-----------|
| NO. | BY: | DATE: | NO. | DATE: |
| 1 | | | 3 | |
| 2 | | | 4 | |

SHEET NO. S-1

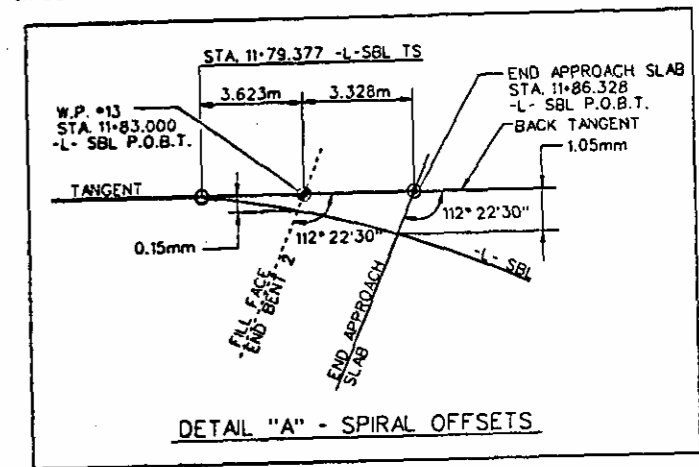
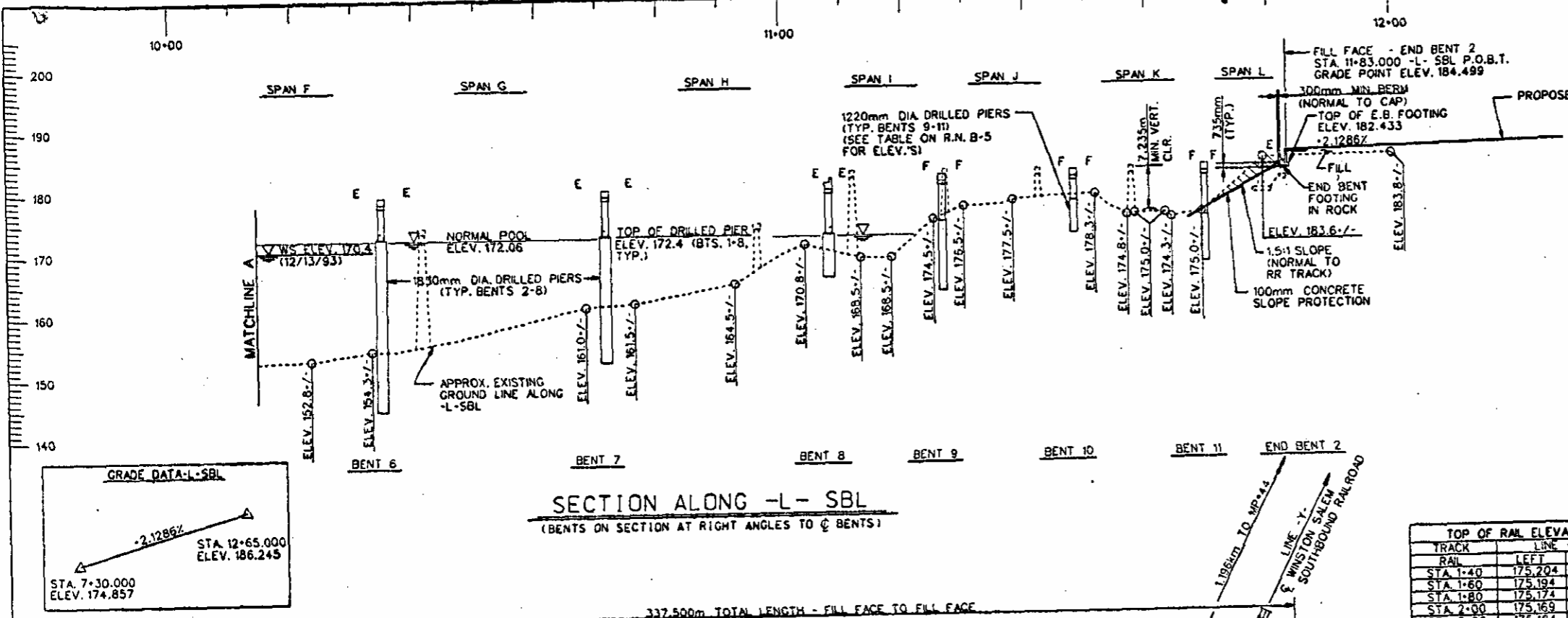
TOTAL SHEETS 79

DRAWN BY: GS/BKC DATE: 7/95

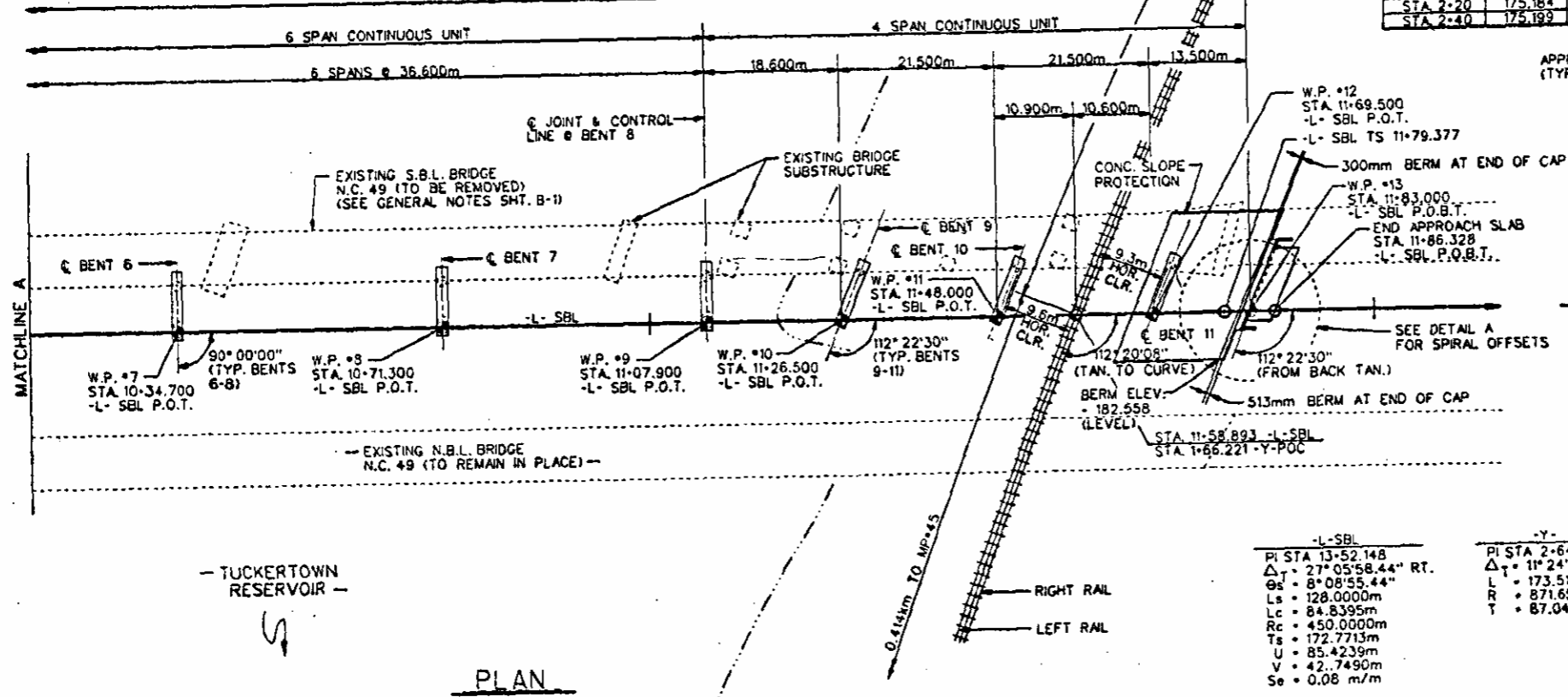
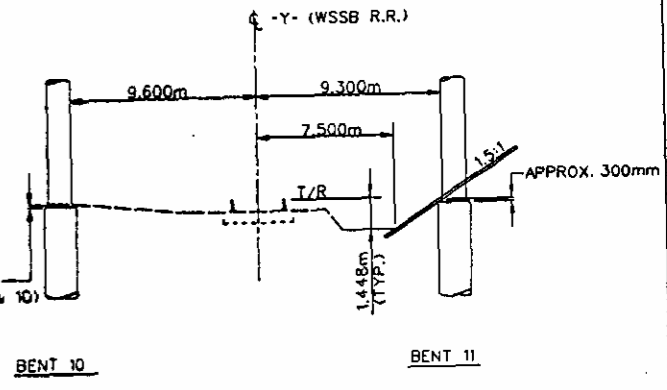
CHECKED BY: DAR DATE: 7/95

APPROVED BY: LMP DATE: 7/95

PLAN



| TOP OF RAIL ELEVATIONS | | |
|------------------------|---------|---------|
| TRACK | LEFT | RIGHT |
| STA 1+40 | 175.204 | 175.179 |
| STA 1+60 | 175.194 | 175.179 |
| STA 1+80 | 175.174 | 175.159 |
| STA 2+00 | 175.169 | 175.144 |
| STA 2+20 | 175.164 | 175.164 |
| STA 2+40 | 175.189 | 175.179 |

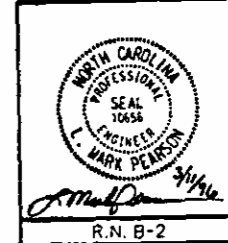


| -L- SBL | | -Y- | |
|------------|--------------------|------------|--------------------|
| PI STA | 13+52.148 | PI STA | 2+64.228 |
| Δ_T | 27° 05' 58.44" RT. | Δ_T | 11° 24' 20.84" RT. |
| Θ_s | 8° 08' 55.44" | L | 173.5194m |
| Ls | 128.0000m | R | 871.6566m |
| Lc | 84.8395m | T | 87.0474m |
| Rc | 450.0000m | | |
| Ts | 172.7713m | | |
| U | 85.4239m | | |
| V | 42.7490m | | |
| Se | 0.08 m/m | | |

PLANS PREPARED BY
RUST
 ENVIRONMENT & INFRASTRUCTURE
 5510 SIX FORKS ROAD
 RALEIGH, NORTH CAROLINA 27609

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT
 1+66.221 -Y- POC
 SHEET 2 OF 5 (MP=44.743)

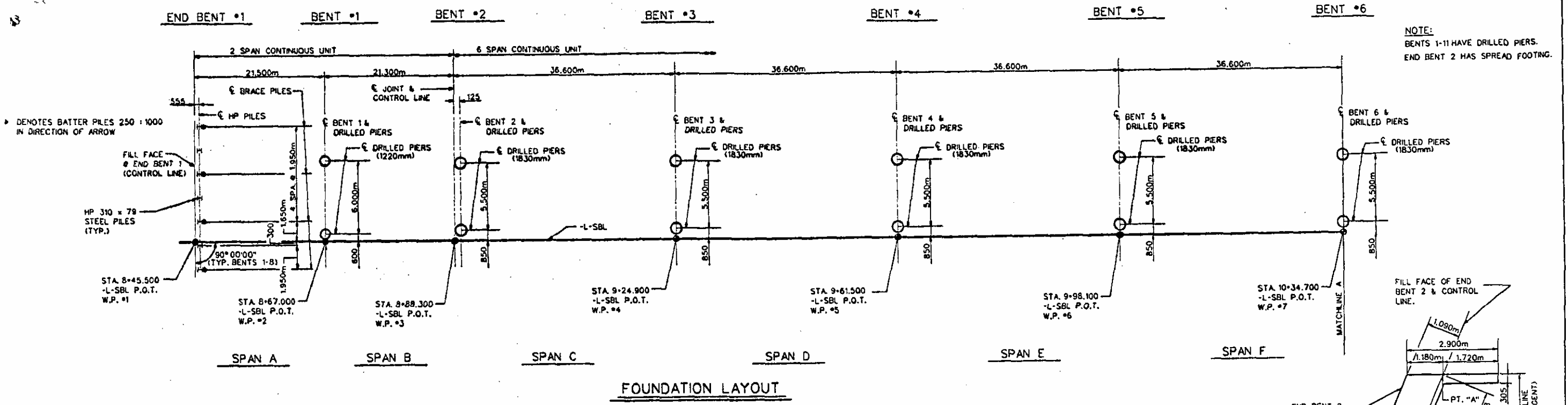
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING FOR
 SOUTHBOUND LANE BRIDGE
 ON NC 49 OVER YADKIN RIVER
 (TUCKERTOWN RESERVOIR)
 AND WINSTON-SALEM
 SOUTHBOUND RAILROAD BETWEEN
 CHARLOTTE AND ASHEBORO



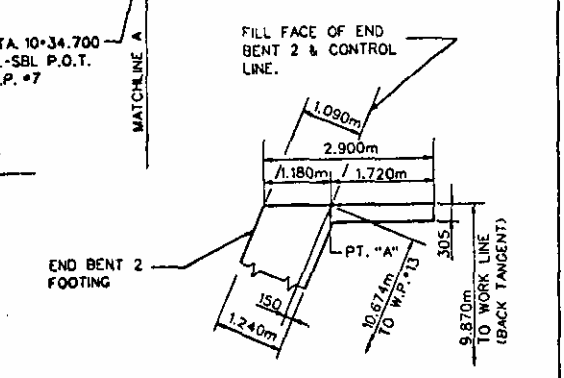
| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | 5-2 |
| 1 | | | 3 | | | 10/1/95 |
| 2 | | | 4 | | | 79 |

DRAWN BY: GS/BKC DATE: 7/95
 CHECKED BY: DAB DATE: 7/95
 APPROVED BY: LMP DATE: 2/96

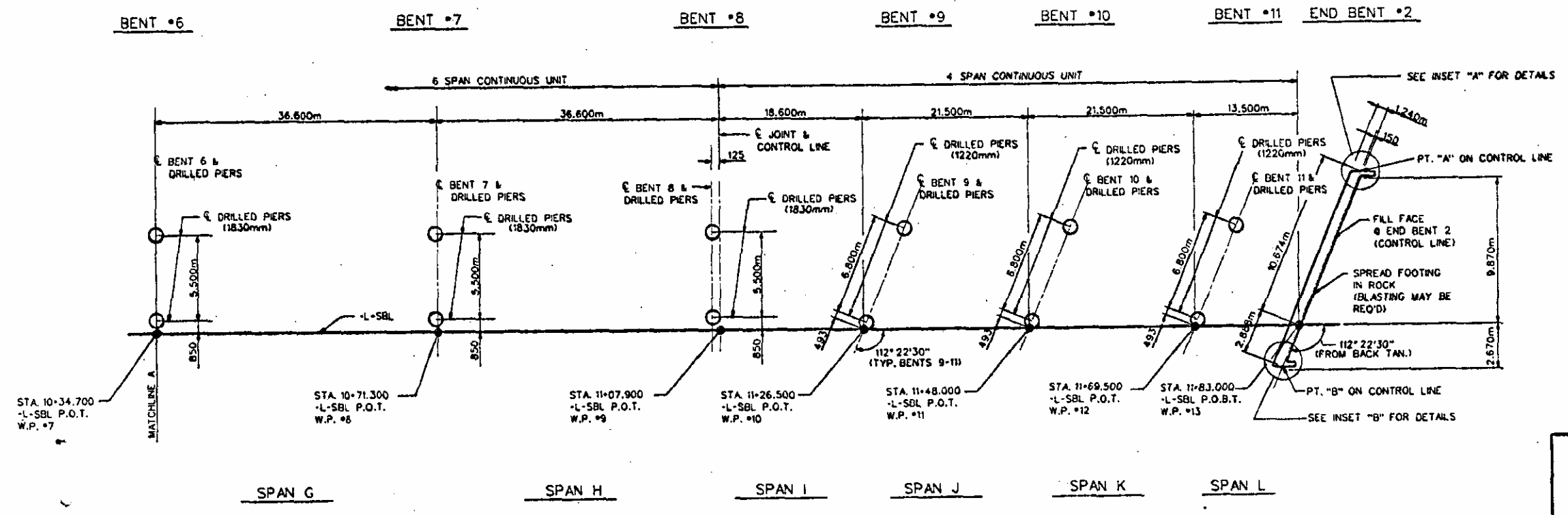
R.N. B-2



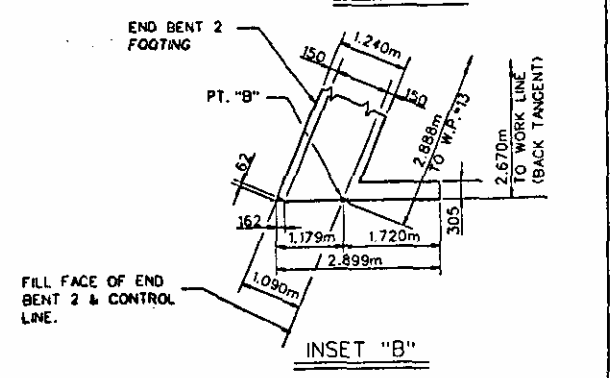
FOUNDATION LAYOUT



INSET "A"



FOUNDATION LAYOUT



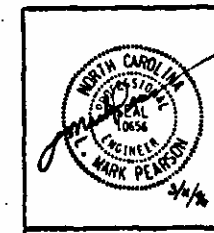
INSET "B"

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOUNDATION LAYOUT

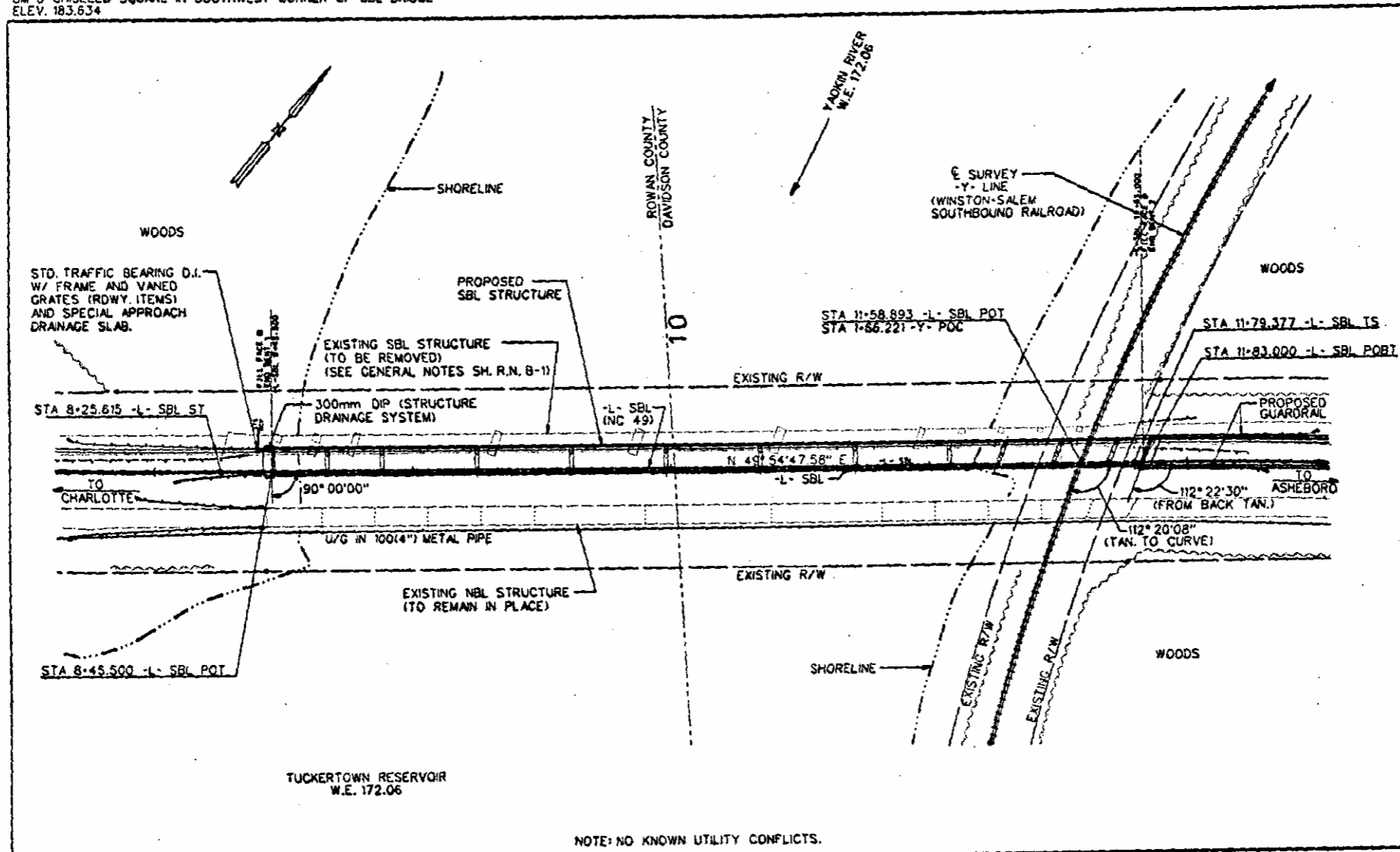


DRAWN BY: RKC/JRT DATE: 02/96
 CHECKED BY: DAR DATE: 02/96
 APPROVED BY: LMP DATE: 02/96

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTALS |
| 2 | | | 4 | | | 79 |

R.N. B-3

BENCH MARK:
 BM#3 CHISELED SQUARE IN SOUTHWEST CORNER OF SBL BRIDGE
 ELEV. 183.634



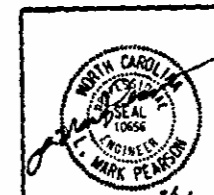
LOCATION SKETCH

NOTE: NO KNOWN UTILITY CONFLICTS.

PLANS PREPARED BY
RUST
 ENVIRONMENT & INFRASTRUCTURE
 3350 SIX FORKS ROAD
 RALEIGH, NORTH CAROLINA 27609

PROJECT NO. 8-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT
1-66.221 -Y- POC

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING FOR
 SOUTHBOUND LANE BRIDGE
 ON NC 49 OVER YADKIN RIVER
 (TUCKERTOWN RESERVOIR)
 AND WINSTON-SALEM
 SOUTHBOUND RAILROAD BETWEEN
 CHARLOTTE AND ASHEBORO



| REVISIONS | | | | SHEET NO. | |
|-----------|----|------|-----|-----------|------|
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. **5-4**
 TOTAL SHEETS **79**

DRAWN BY: GS4/BKC DATE: 6/24
 CHECKED BY: DAB DATE: 3/95
 APPROVED BY: LMP DATE: 2/96

R.N. B-4

TOTAL BILL OF MATERIAL

| | REMOVAL OF EXIST. STRUCTURE STATION 11+58.893 -L- SBL | FOUND. EXCAV. | 1220mm DIA. DRILLED PIERS NOT IN ROCK | 1220mm DIA. DRILLED PIERS IN ROCK | 1830mm DIA. DRILLED PIERS NOT IN ROCK | 1830mm DIA. DRILLED PIERS IN ROCK | UNCLASS. STRUCTURE EXCAV. | REINFORCED CONCRETE DECK SLAB | GROOVING BRIDGE FLOORS | CLASS "A" CONCRETE | BRIDGE APPROACH SLABS STATION 11+58.893 -L- SBL | REINFORCING STEEL | SPIRAL COLUMN REINFORCING STEEL | 1143mm PRESTR. CONCRETE GIRDERS | 1829mm PRESTR. CONCRETE GIRDERS | HP 310 x79 STEEL PILES | CONCRETE BARRIER RAIL | 100mm SLOPE PROTECTION | ELASTOMERIC BEARINGS | PLAIN RIP RAP CLASS 11 (600mm THICK) | EVAZOTE JOINT SEALS | MODULAR EXPANSION JOINT SEALS | STRUCTURE DRAINAGE SYSTEM | | | | | |
|----------------|---|---------------|---------------------------------------|-----------------------------------|---------------------------------------|-----------------------------------|---------------------------|-------------------------------|------------------------|--------------------|---|-------------------|---------------------------------|---------------------------------|---------------------------------|------------------------|-----------------------|------------------------|----------------------|--------------------------------------|---------------------|-------------------------------|---------------------------|----------|-----|----------|----------|----------|
| | LUMP SUM | CU. Meters | No. Meters | No. Meters | No. Meters | No. Meters | CU. Meters | SO. Meters | SO. Meters | CU. Meters | LUMP SUM | kg | kg | Meters | Meters | NO. Meters | Meters | SO. Meters | LUMP SUM | M-TONS | LUMP SUM | LUMP SUM | LUMP SUM | | | | | |
| SUPERSTRUCTURE | | | | | | | | 3565.9 | 3315.5 | | LUMP SUM | | | 586.91 | 1092.00 | | 676.64 | | | | | | | | | | | |
| END BENT 1 | | | | | | | | | | 19.4 | | 1722 | | | | 7 | 105 | | LUMP SUM | 95 | LUMP SUM | | | | | | | |
| BENT 1 | | | 2 | 24.0 | 2 | 7.8 | | | | 21.4 | | 7727 | 1379 | | | | | | LUMP SUM | 530 | | | LUMP SUM | | | | | |
| BENT 2 | | | | | 2 | 27.1 | 2 | 9.7 | | 28.2 | | 14,276 | 2354 | | | | | | LUMP SUM | | | | | | | | | |
| BENT 3 | | | | | 2 | 29.9 | 2 | 10.9 | | 26.5 | | 16,024 | 2649 | | | | | | LUMP SUM | | | | | | | | | |
| BENT 4 | | | | | 2 | 34.8 | 2 | 14.0 | | 27.9 | | 18,229 | 3192 | | | | | | LUMP SUM | | | | | | | | | |
| BENT 5 | | | | | 2 | 42.4 | 2 | 12.4 | | 29.3 | | 20,686 | 3612 | | | | | | LUMP SUM | | | | | | | | | |
| BENT 6 | | | | | 2 | 44.2 | 2 | 12.6 | | 30.7 | | 21,384 | 3784 | | | | | | LUMP SUM | | | | | | | | | |
| BENT 7 | | | | | 2 | 30.0 | 2 | 11.8 | | 32.1 | | 17,812 | 2907 | | | | | | LUMP SUM | | | | LUMP SUM | | | | | |
| BENT 8 | | | | | 2 | 5.9 | 2 | 8.9 | | 36.5 | | 10,035 | 1289 | | | | | | LUMP SUM | | | | LUMP SUM | | | | | |
| BENT 9 | | | 2 | 12.4 | 2 | 6.0 | | | | 27.8 | | 6326 | 1020 | | | | | | LUMP SUM | | | | | | | | | |
| BENT 10 | | | 2 | 5.2 | 2 | 7.8 | | | | 22.7 | | 4320 | 663 | | | | | | LUMP SUM | | | | | | | | | |
| BENT 11 | | | 2 | 7.1 | 2 | 7.3 | | | | 30.3 | | 5921 | 956 | | | | | 387 | LUMP SUM | | | LUMP SUM | | | | | | |
| END BENT 2 | | 59 | | | | | 576 | | | 24.8 | | 2298 | | | | | | | LUMP SUM | | | LUMP SUM | | | | | | |
| TOTAL | LUMP SUM | 59 | 8 | 48.7 | 8 | 28.9 | 14 | 214.3 | 14 | 80.3 | 576 | 3565.9 | 3315.5 | 357.6 | LUMP SUM | 146,760 | 23,805 | 586.91 | 1092.00 | 7 | 105 | 676.64 | 387 | LUMP SUM | 625 | LUMP SUM | LUMP SUM | LUMP SUM |

DRILLED PIER TABLE

| BENT NO. | COL NO. | PIER DIAM. (meters) | ALLOW. LOAD (kN) | PT. OF FIXITY ELEV. | CRIT. SCOUR ELEV. | TOP OF DR. PIER ELEV. | MIN. TIP ELEV. | LENGTH (meters) |
|----------|---------|---------------------|------------------|---------------------|-------------------|-----------------------|----------------|-----------------|
| 1 | 1 | 1.220 | 2500 | 160.0 | 161.0 | 172.4 | 154.0 | 18.4 |
| 1 | 2 | 1.220 | 2500 | 161.0 | 162.0 | 172.4 | 159.0 | 13.4 |
| 2 | 1 | 1.830 | 5600 | 158.9 | 159.9 | 172.4 | 155.0 | 17.4 |
| 2 | 2 | 1.830 | 5600 | 155.5 | 156.5 | 172.4 | 153.0 | 19.4 |
| 3 | 1 | 1.830 | 5600 | 154.4 | 155.4 | 172.4 | 152.0 | 20.4 |
| 3 | 2 | 1.830 | 5600 | 154.5 | 155.5 | 172.4 | 152.0 | 20.4 |
| 4 | 1 | 1.830 | 5600 | 151.3 | 152.3 | 172.4 | 148.0 | 24.4 |
| 4 | 2 | 1.830 | 5600 | 152.7 | 153.7 | 172.4 | 148.0 | 24.4 |
| 5 | 1 | 1.830 | 5600 | 148.1 | 149.1 | 172.4 | 145.0 | 27.4 |
| 5 | 2 | 1.830 | 5600 | 148.3 | 149.3 | 172.4 | 145.0 | 27.4 |
| 6 | 1 | 1.830 | 5600 | 146.3 | 147.3 | 172.4 | 143.0 | 29.4 |
| 6 | 2 | 1.830 | 5600 | 148.3 | 149.3 | 172.4 | 145.0 | 27.4 |
| 7 | 1 | 1.830 | 5600 | 154.8 | 155.8 | 172.4 | 152.0 | 20.4 |
| 7 | 2 | 1.830 | 5600 | 154.0 | 155.0 | 172.4 | 151.0 | 21.4 |
| 8 | 1 | 1.830 | 5600 | 167.7 | 168.7 | 172.4 | 165.0 | 7.4 |
| 8 | 2 | 1.830 | 5600 | 167.2 | 168.2 | 172.4 | 165.0 | 7.4 |
| 9 | 1 | 1.220 | 2500 | 172.0 | 173.0 | 175.2 | 170.0 | 5.2 |
| 9 | 2 | 1.220 | 2500 | 166.6 | 167.6 | 175.2 | 162.0 | 13.2 |
| 10 | 1 | 1.220 | 2500 | 175.6 | 176.6 | 178.7 | 172.0 | 6.7 |
| 10 | 2 | 1.220 | 2500 | 174.2 | 175.2 | 178.3 | 172.0 | 6.3 |
| 11 | 1 | 1.220 | 2500 | 172.0 | 173.0 | 174.5 | 170.0 | 4.5 |
| 11 | 2 | 1.220 | 2500 | 169.0 | 170.0 | 174.9 | 165.0 | 9.9 |

GENERAL NOTES (CONTINUED)

THE COMPUTED FOUNDATION LOAD FOR BENTS 2 - 8 IS 1922 kPa AND FOR BENTS 1,9,10,11 IS 1899 kPa.

PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS IN THE LAKE.

PERMANENT STEEL CASINGS ON DRILLED PIERS SHALL BE CUT OFF 0.3 m BELOW WATER SURFACE ELEVATION. ALL STEEL CASINGS SHALL BE CUT OFF TO THE SAME TOP ELEVATION. SEE SPECIAL PROVISION FOR DRILLED PIERS.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.

FOR PILE INTEGRITY TESTING, SEE SPECIAL PROVISIONS.

THE SCOUR CRITICAL ELEVATIONS FOR BENTS NO. 1-11 ARE SHOWN IN THE DRILLED PIER TABLE ON THIS SHEET.

THE SCOUR CRITICAL ELEVATIONS IN THE DRILLED PIER TABLE ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SPECIAL PROVISION "FALSEWORK AND FORMS OVER OR ADJACENT TO TRAFFIC" SHALL APPLY TO SPAN K ONLY, SEE SPECIAL PROVISIONS.

FOR 1829mm PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

WHILE TRAFFIC IS TEMPORARILY DETOURED ONTO THE NORTH BOUND LANES BRIDGE IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS, THE EXISTING SOUTH BOUND LANES BRIDGE CONSISTING OF REINFORCED CONCRETE DECK SUPPORTED ON EIGHT SPANS OF STEEL ROLLED BEAMS AND FOUR SPANS OF STEEL DECK TRUSSES TOTALING APPROXIMATELY 348.0 METERS IN LENGTH, HAVING A CLEAR ROADWAY OF 6.1 METERS IN WIDTH AND LOCATED 6.3 METERS NORTH OF LINE -L- REVISED SHALL BE REMOVED. THE APPROXIMATE SPAN LENGTHS IN METERS ARE AS FOLLOWS: 1 @ 15.6, 1 @ 15.2, 1 @ 15.6, 1 @ 54.5, 2 @ 54.8, 1 @ 54.5, 1 @ 15.8, 2 @ 15.2, 1 @ 15.3, AND 1 @ 21.7. THE EXISTING REINFORCED CONCRETE END BENTS SHALL ALSO BE TOTALLY REMOVED. THE EXISTING REINFORCED CONCRETE INTERIOR BENTS CONSISTING OF SIX POST-AND-BEAM BENTS AND FIVE POST-AND-WEB BENTS SHALL BE REMOVED TO AN ELEVATION BELOW THE EXISTING GROUND (STREAM BOTTOM) AT EACH BENT LOCATION. EXISTING BENT FOOTINGS THAT CONFLICT WITH NEW CONSTRUCTION SHALL BE TOTALLY REMOVED.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

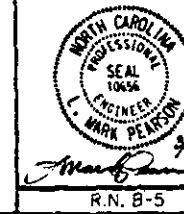
INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 11+58.893 -L- SBL".



PROJECT NO. 8-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POI
 SHEET 5 OF 5 1+66.221 -Y- POC

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 TOTAL BILL OF MATERIAL

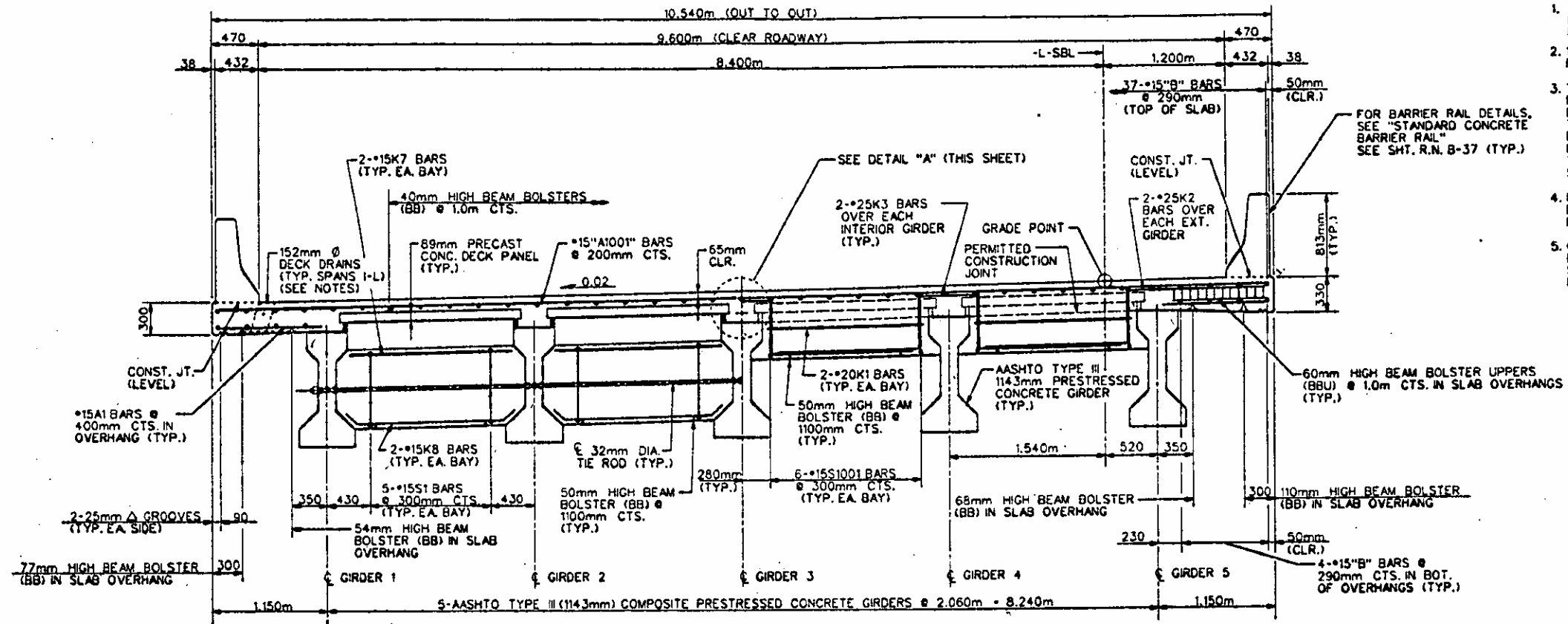


| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S-5 |
| 2 | | | 4 | | | TOTAL SHEETS 79 |

DRAWN BY: BKC DATE: 7/95
 CHECKED BY: DAP DATE: 7/95
 APPROVED BY: LMP DATE: 7/95

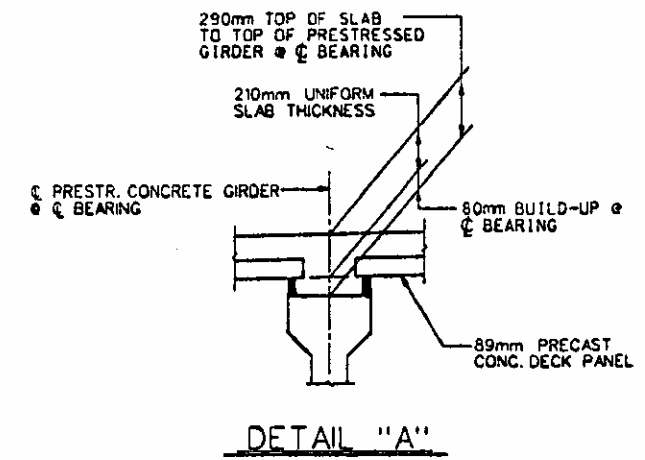
NOTES:

1. SPANS A AND B WILL HAVE THE SPECIAL DRAINAGE SYSTEM. SEE SHEETS B-70 & B-71 FOR DETAILS.
2. 152mm DIA. DECK DRAINS WILL NOT BE PLACED OVER WATER OR THE RAILROAD.
3. TEMPORARY STRUTS SHALL BE PLACED BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE DIAPHRAGMS AND THE NUTS ON THE 32mm DIA. TIE RODS SHALL BE FULL TIGHTENED BEFORE DIAPHRAGMS ARE CAST. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED. THE TIE RODS SHALL BE RETIGHTENED AFTER THE STRUTS HAVE BEEN REMOVED.
4. FOR REMOVAL OF FALSEWORK ON BENT DIAPHRAGMS, SEE SPECIAL PROVISIONS FOR PRESTRESSED CONCRETE PANELS.
5. CONCRETE IN INTERMEDIATE DIAPHRAGMS MAY BE CLASS A IN LIEU OF CLASS AA. PAYMENT SHALL BE MADE UNDER THE UNIT CONTRACT PRICE FOR REINFORCED CONCRETE DECK SLAB.



TYPICAL HALF CROSS-SECTION
(INTERMEDIATE DIAPHRAGMS FOR AASHTO TYPE III GIRDER SPANS A, B, I, J, K & L)

TYPICAL HALF CROSS-SECTION
(END BENT 1)

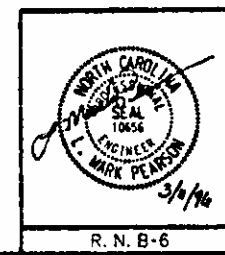


PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 1 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION
 AASHTO TYPE III GIRDERS
 SPANS A, B & I THRU L

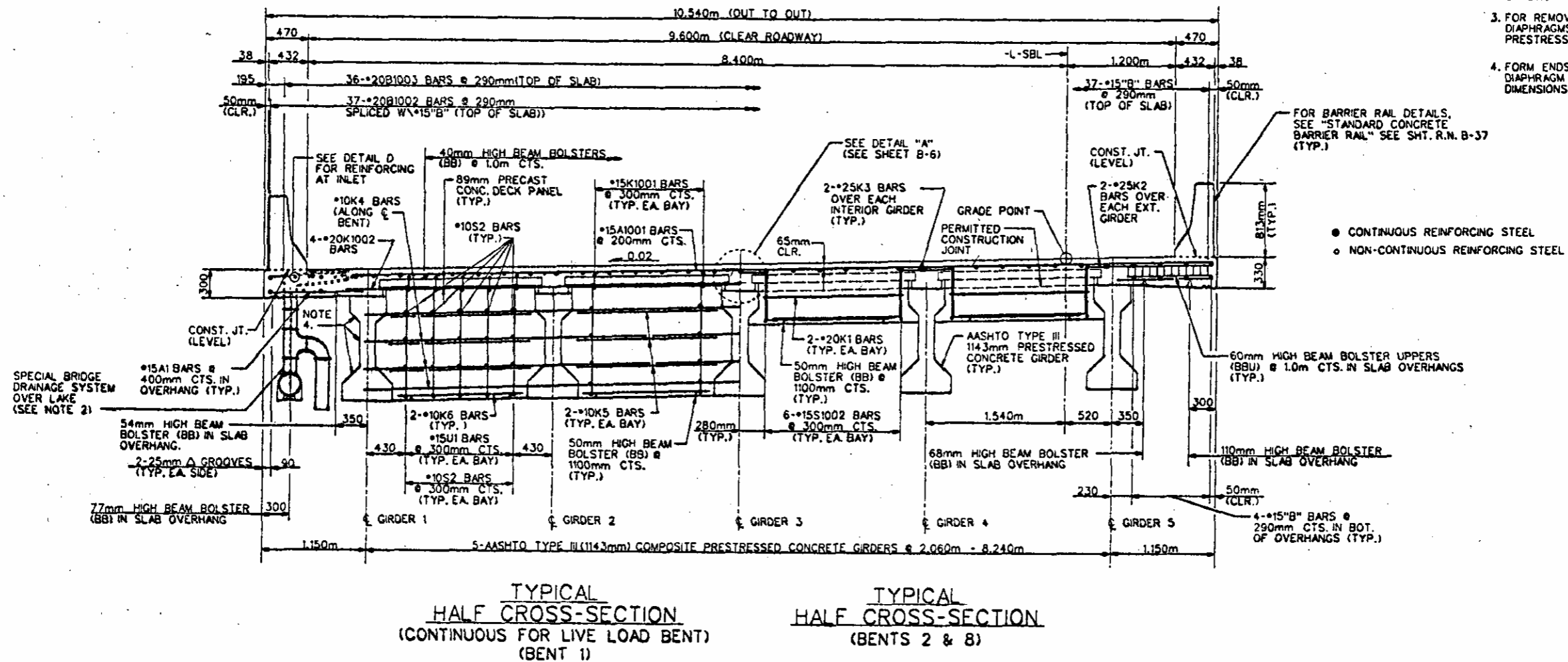


DRAWN BY: GS/WER/JRT DATE: 2/96
 CHECKED BY: DAR DATE: 2/96
 APPROVED BY: LMP DATE: 2/96

| REVISIONS | | | | | SHEET NO. S-6 |
|-----------|-----|-------|-----|-------|------------------|
| NO. | BY: | DATE: | NO. | DATE: | |
| 1 | | | 3 | | TOTALS 79 |
| 2 | | | 4 | | |

NOTES:

1. CONTINUOUS DIAPHRAGM POURED MONOLITHICALLY WITH DECK SLAB.
2. CONCRETE INSERTS IN THE DECK AND GIRDERS ARE REQUIRED FOR SUPPORT OF THE SPECIAL DRAINAGE SYSTEM. SEE SHEETS B-70 AND B-71 FOR DETAILS AND SPACING.
3. FOR REMOVAL OF FALSEWORK ON BENT DIAPHRAGMS, SEE SPECIAL PROVISIONS FOR PRESTRESSED CONCRETE PANELS.
4. FORM ENDS OF CAST-IN-PLACE CONTINUITY DIAPHRAGM TO MATCH EDGES AND DIMENSIONS OF GIRDER.



PROJECT NO. B-2612

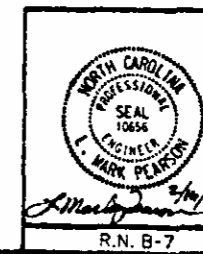
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L-SBL POT

SHEET 2 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION
AASHTO TYPE III GIRDERS
SPANS A, B & I



| REVISIONS | | | | | | SHEET NO. S-7 |
|-----------|----|------|-----|----|------|--------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

R.N. B-7

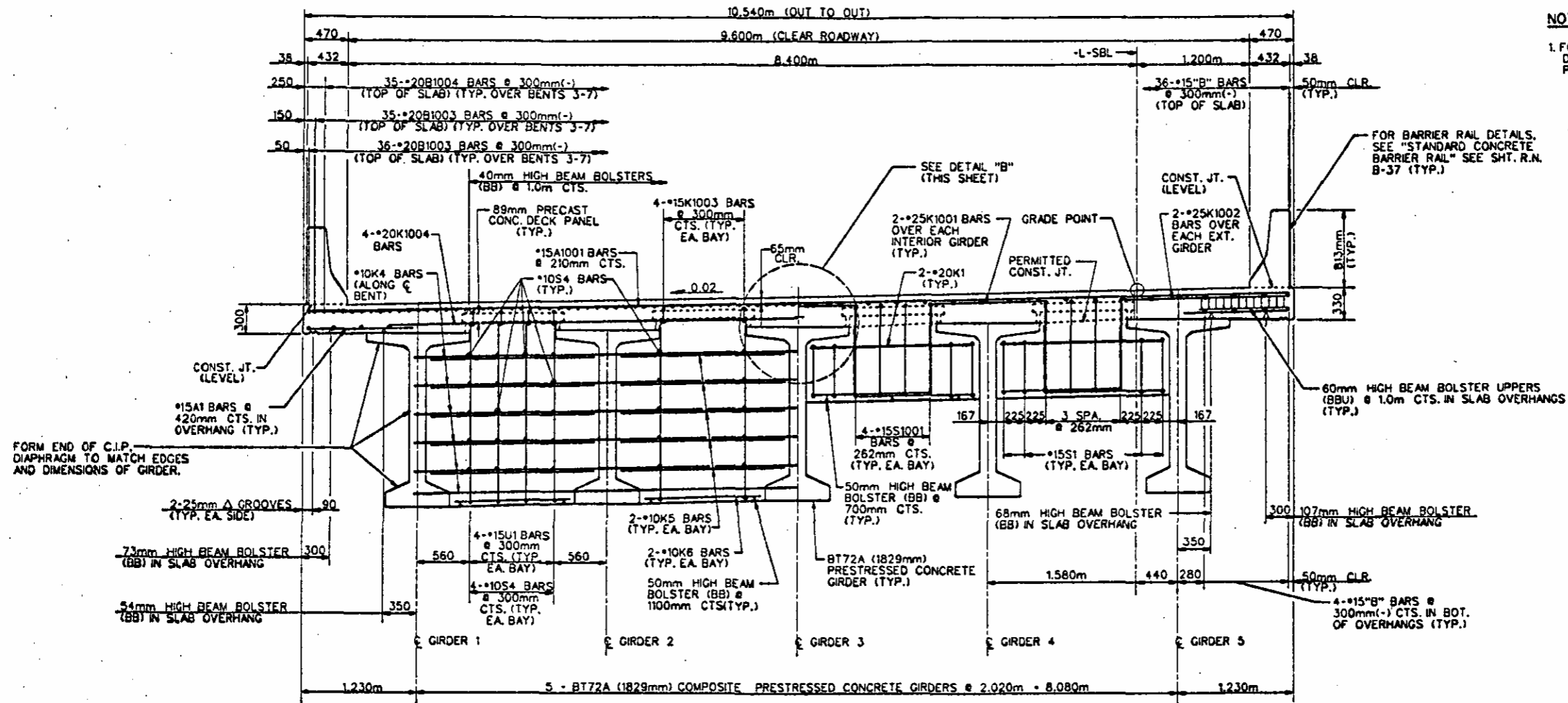
DRAWN BY: GS/WEB/JBT DATE: 6/94
 CHECKED BY: TMH/LKA/DAR DATE: 6/95
 APPROVED BY: LMP DATE: 2/96

NOTES:

1. FOR REMOVAL OF FALSEWORK ON BENT DIAPHRAGMS, SEE SPECIAL PROVISIONS FOR PRESTRESSED CONCRETE PANELS.

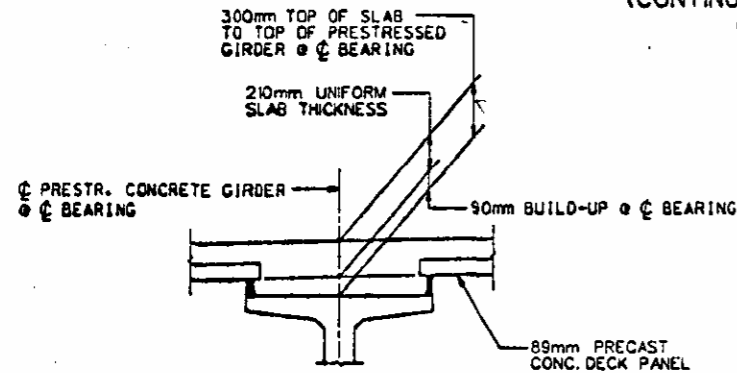
MAIN REINFORCING:

- CONTINUOUS REINFORCING STEEL
- NON-CONTINUOUS REINFORCING STEEL



TYPICAL HALF CROSS-SECTION
(CONTINUOUS FOR LIVE LOAD BENT)
(BENTS 3 THRU 7)

TYPICAL HALF CROSS-SECTION
(BENTS 2 & 8)



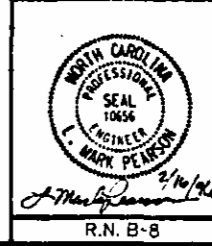
DETAIL "B"

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 3 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

TYPICAL SECTION
BT72A GIRDERS
SPANS C THRU H

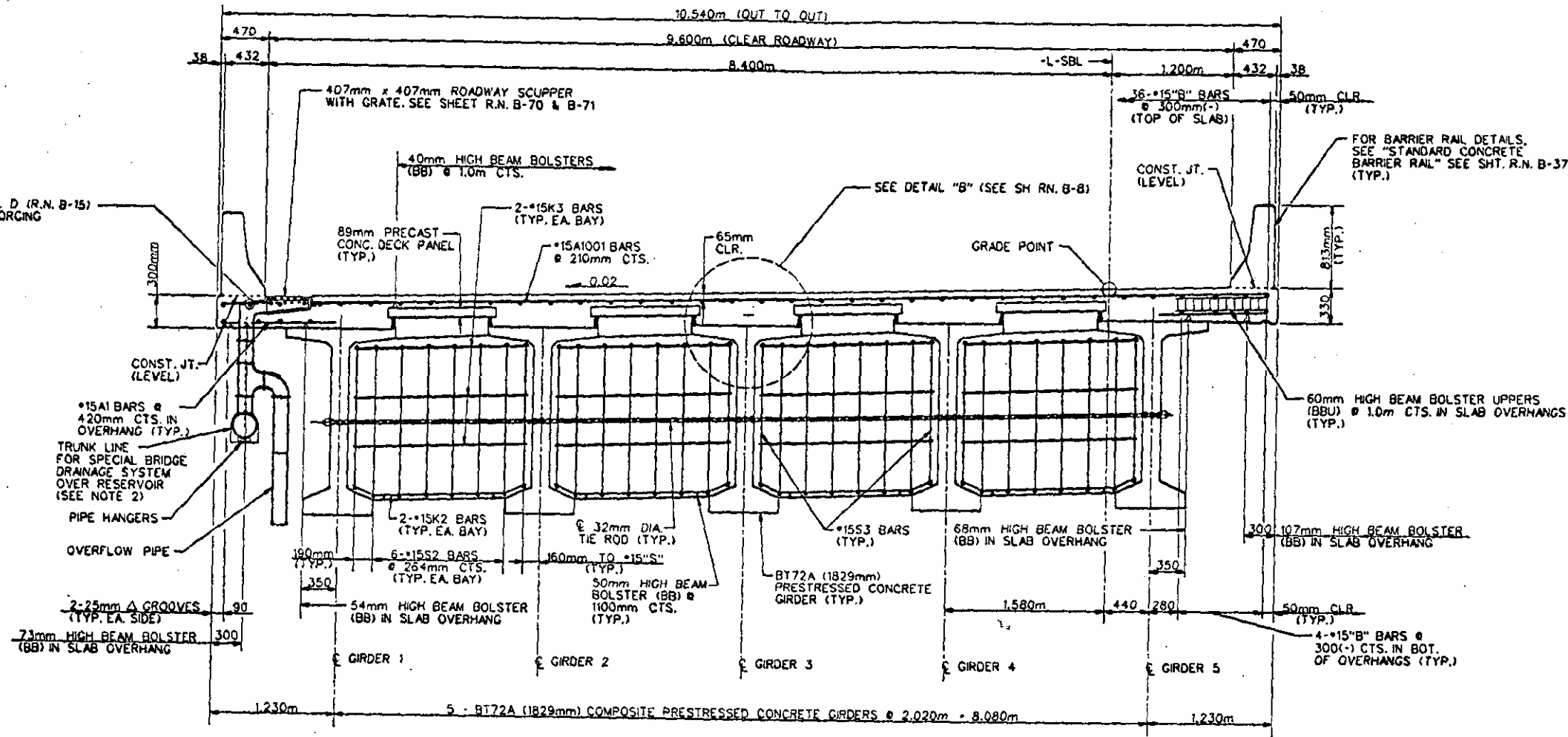


| REVISIONS | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----------|-------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. **5-8**
TOTAL SHEETS **79**

DRAWN BY: CS/DKC/WEB DATE: 5/95
 CHECKED BY: DAR DATE: 8/95
 APPROVED BY: LMP DATE: 2/96

R.N. B-8



TYPICAL CROSS-SECTION
 (INTERMEDIATE DIAPHRAGMS FOR
 BT72A SPANS C, D, E, F, G & H)

- NOTES:
1. SLAB REINFORCEMENT MAY BE SHIFTED SLIGHTLY AS NECESSARY TO AVOID INTERFERENCE WITH ROADWAY SCUPPERS.
 2. CONCRETE INSERTS IN THE DECK AND GIRDERS ARE REQUIRED FOR SUPPORT OF THE SPECIAL DRAINAGE SYSTEM, SEE SHEETS B-70 AND B-71 FOR DETAILS AND SPACING.
 3. TEMPORARY STRUTS SHALL BE PLACED BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE DIAPHRAGMS AND THE NUTS ON THE 32mm DIA. TIE RODS SHALL BE FULL TIGHTENED BEFORE DIAPHRAGMS ARE CAST. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED. THE TIE RODS SHALL BE RETIGHTENED AFTER THE STRUTS HAVE BEEN REMOVED.
 4. CONCRETE IN INTERMEDIATE DIAPHRAGMS MAY BE CLASS A IN LIEU OF CLASS AA. PAYMENT SHALL BE MADE UNDER THE UNIT CONTRACT PRICE FOR REINFORCED CONCRETE DECK SLAB.

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL PQT

SHEET 4 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

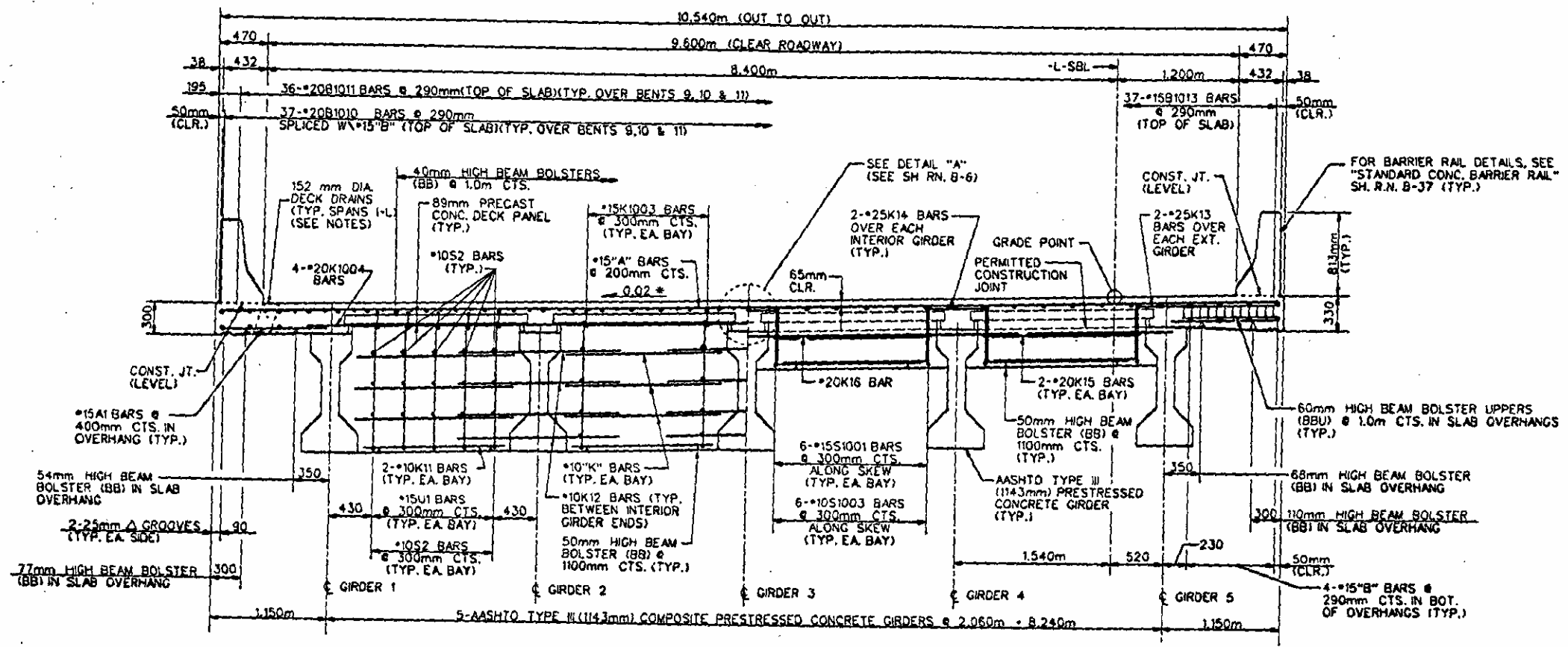
TYPICAL SECTION
 BT72A GIRDERS
 SPANS C THRU H



| REVISIONS | | | | | | SHEET NO. | |
|-----------|----|------|-----|----|------|-----------------|--|
| NO. | BY | DATE | NO. | BY | DATE | | |
| 1 | | | 3 | | | S-9 | |
| 2 | | | 4 | | | TOTAL SHEETS 79 | |

DRAWN BY: GS/BKC/WEB DATE: 5/95
 CHECKED BY: OAF DATE: 6/95
 APPROVED BY: LMP DATE: 7/96

R.N. B-9



TYPICAL
 HALF CROSS-SECTION
 (CONTINUOUS FOR LIVE LOAD)
 (BENTS 9, 10, & 11)

TYPICAL
 HALF CROSS-SECTION
 (END BENT 2)

NOTES:

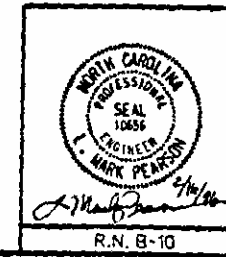
1. SPANS A AND B WILL HAVE THE SPECIAL DRAINAGE SYSTEM. SEE SHEETS B-70 & B-71 FOR DETAILS.
 2. 152mm DIA. DECK DRAINS WILL NOT BE PLACED OVER WATER OR THE RAILROAD. SEE SHEETS B-22 & B-23 FOR LOCATION.
 3. SEE SHEET B-11 FOR PIPE DRAIN DETAILS.
 4. FOR REMOVAL OF FALSEWORK ON BENT DIAPHRAGMS, SEE SPECIAL PROVISIONS FOR PRESTRESSED CONCRETE PANELS.
- * SUPERELEVATION RATE VARIES IN SPAN L. (FLATTENS AT THE RATE OF 0.01 m/m PER 12,800m FROM STA 11+79.377 TO STA 12+04.977 -L-SBL)
- CONTINUOUS REINFORCING STEEL
 - NON-CONTINUOUS REINFORCING STEEL

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 5 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

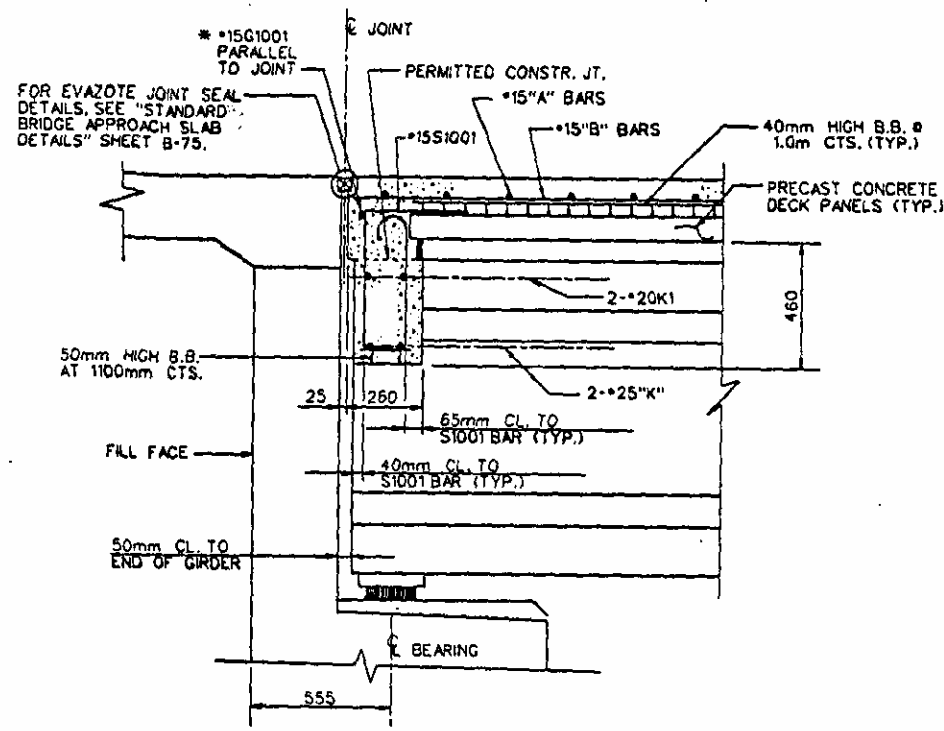
TYPICAL SECTION
 AASHTO TYPE III GIRDERS
 SPANS 1 THRU 4



| REVISIONS | | | | | | SHEET NO. 5-10 79 |
|-----------|----|------|-----|----|------|-------------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | 79 |
| 2 | | | 4 | | | |

DRAWN BY: GS/WER DATE: 6/95
 CHECKED BY: D&P DATE: 6/95
 APPROVED BY: LMP DATE: 7/96

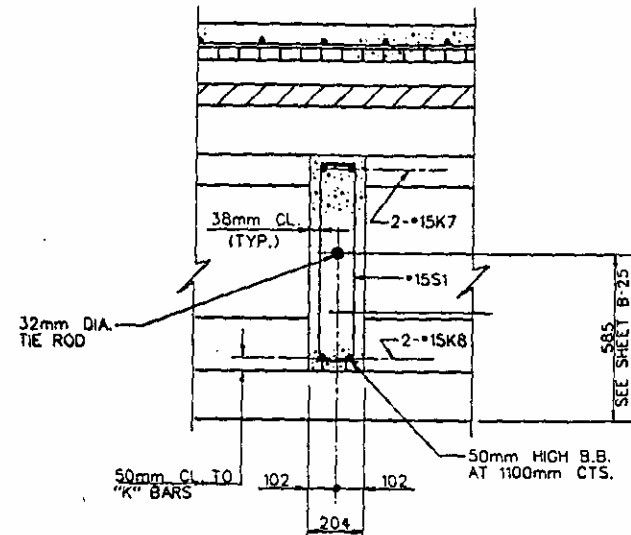
R.N. B-10



SECTION A-A

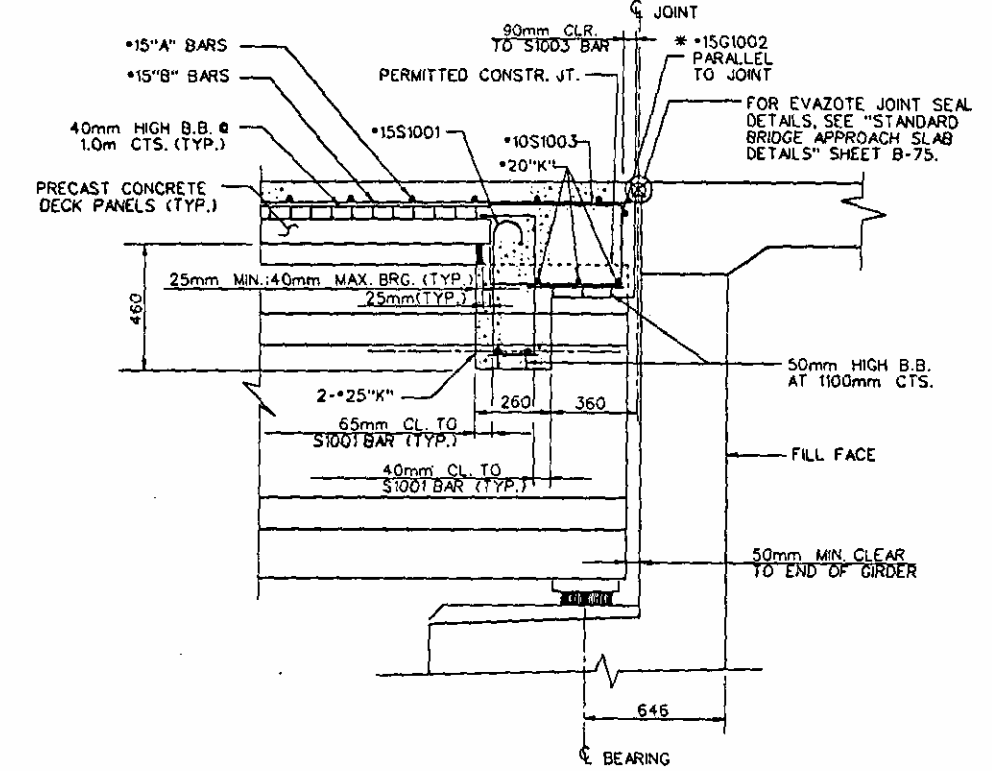
(DIAPHRAGM AT END BENT 1, D-1)

* #15 "C" BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



SECTION B-B

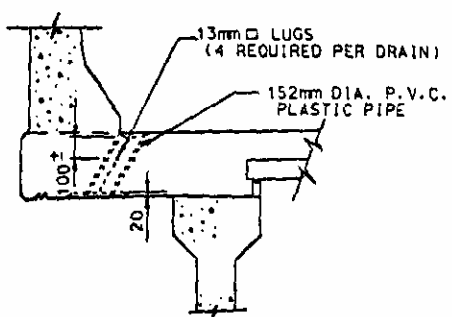
(INTERMEDIATE DIAPHRAGMS FOR AASHTO TYPE III SPANS, D-2)



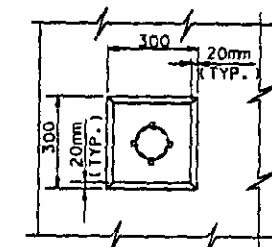
SECTION G-G

(DIAPHRAGM AT END BENT 2, D-9)

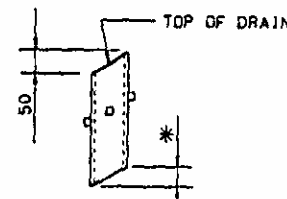
* #15 "G" BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



ELEVATION



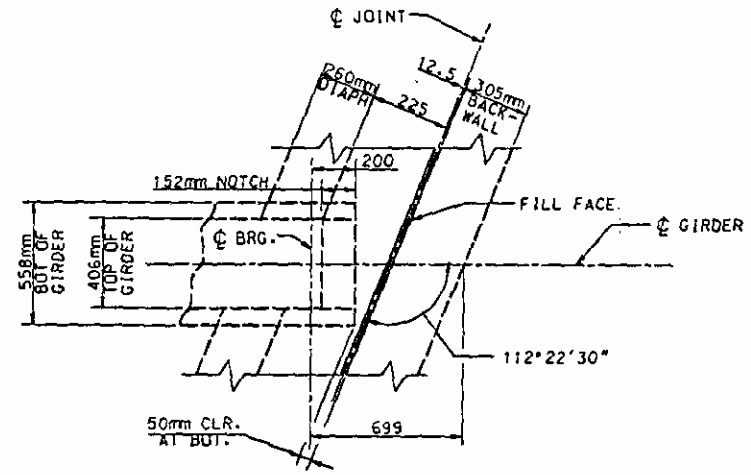
PLAN OF RECESS



(18 DRAINS REQUIRED) * TO BE SET TO MATCH SLOPE OF BOTTOM OF OVERHANG

PIPE DETAIL

PIPE DRAIN DETAILS



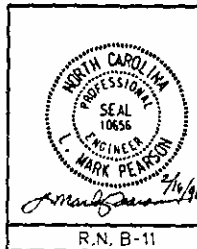
PLAN OF GIRDER END @ END BENT 2

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 6 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

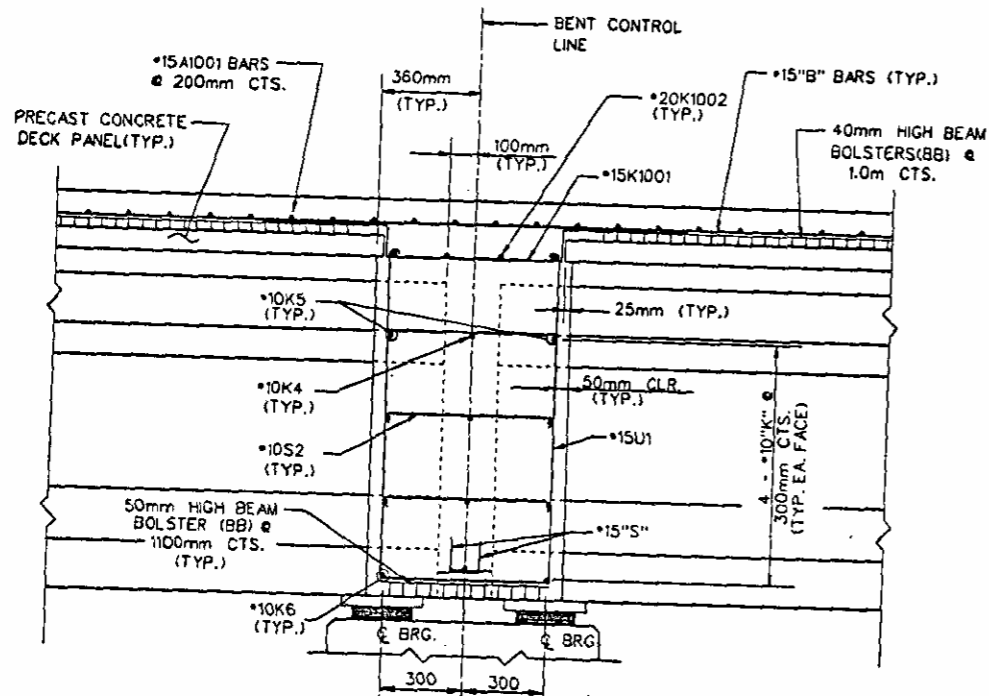
TYPICAL SECTION
 DETAILS



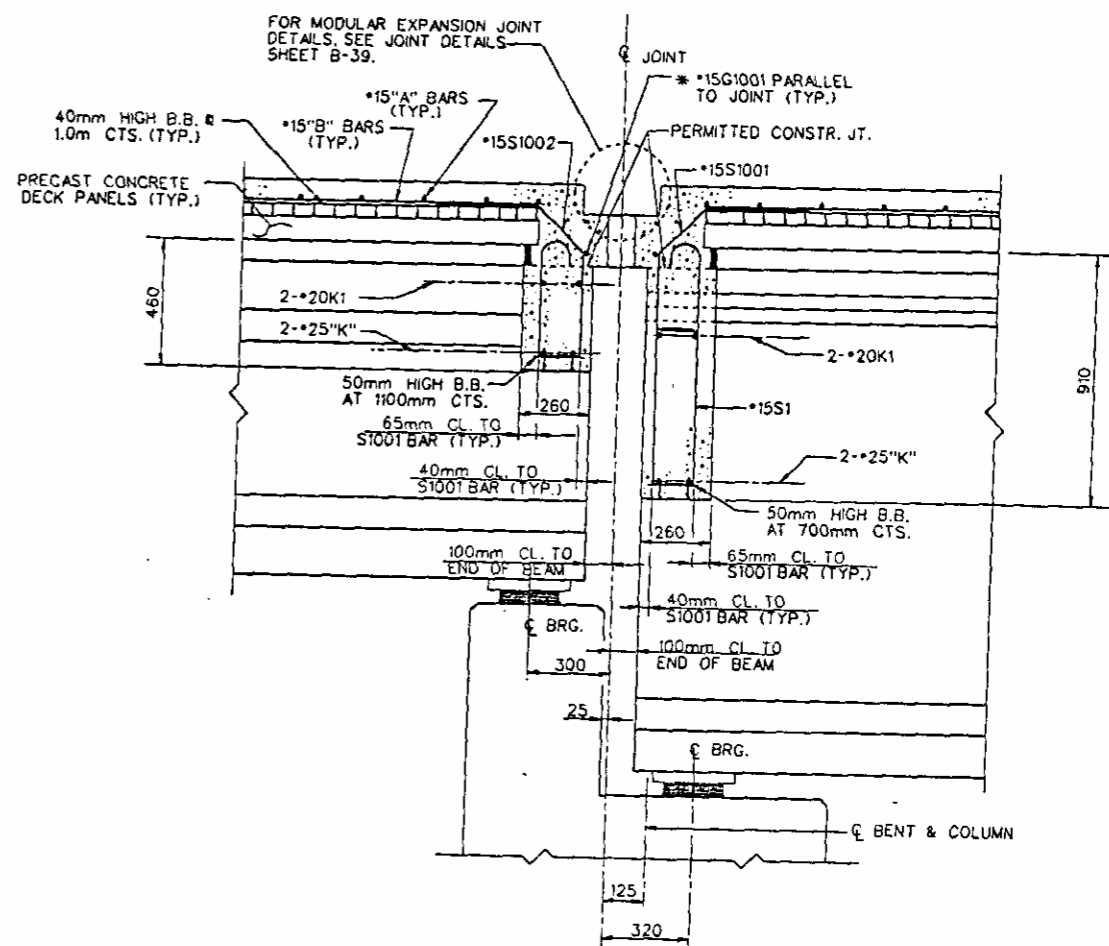
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|-----------|----|------|-----|----|------|-------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | S-11 101 79 |
| 2 | | | 4 | | | |

DRAWN BY: GS/WEB DATE: 6/95
 CHECKED BY: DAR DATE: 6/95
 APPROVED BY: LMP DATE: 7/96

R.N. B-11

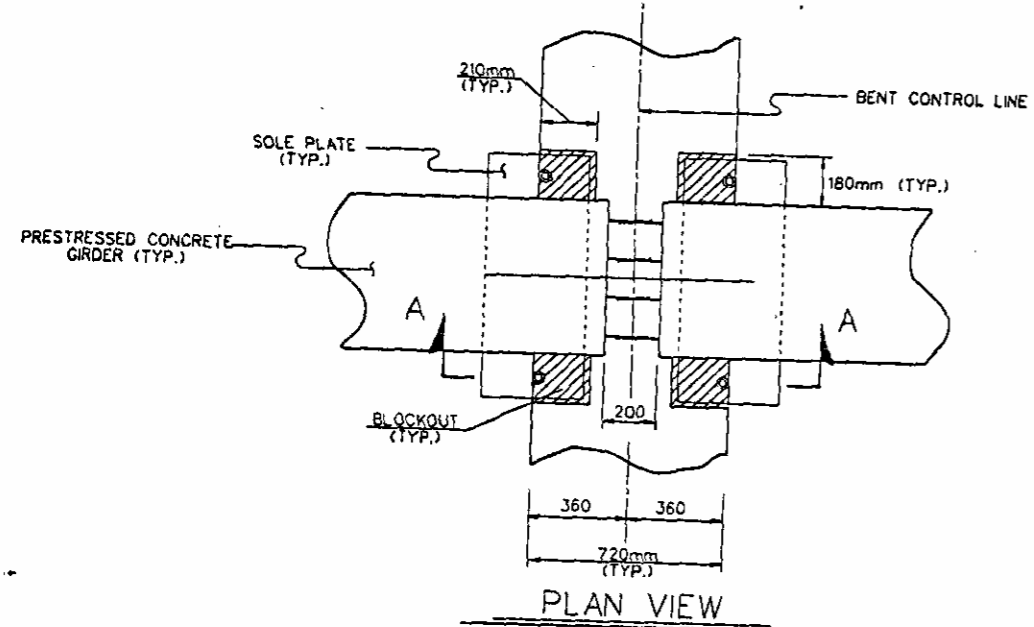


SECTION C-C (THRU BENT DIAPHRAGM)
 (DIAPHRAGM AT BENT 1 FOR CONTINUOUS DECK SLAB, D-3)

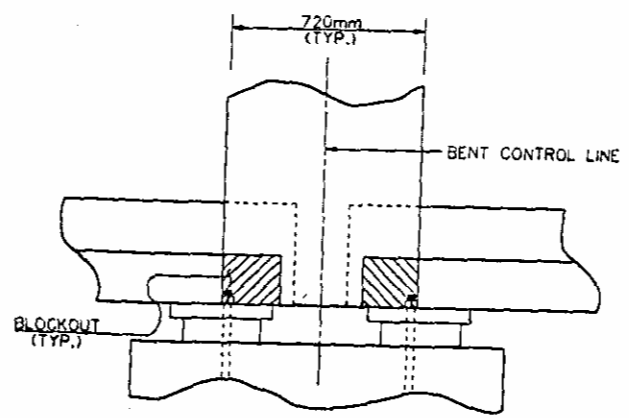


SECTION D-D
 (DIAPHRAGMS AT BENT 2, D-4 & D-7)

* 15 G BAR MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND STIRRUPS.



PLAN VIEW



SECTION A-A

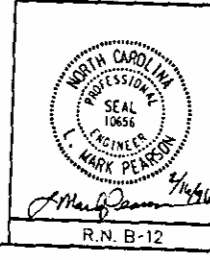
BENT DIAPHRAGM BLOCKOUT DETAIL
 (PRESTRESSED GIRDERS WITH CONTINUOUS DECK SLAB)

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 7 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

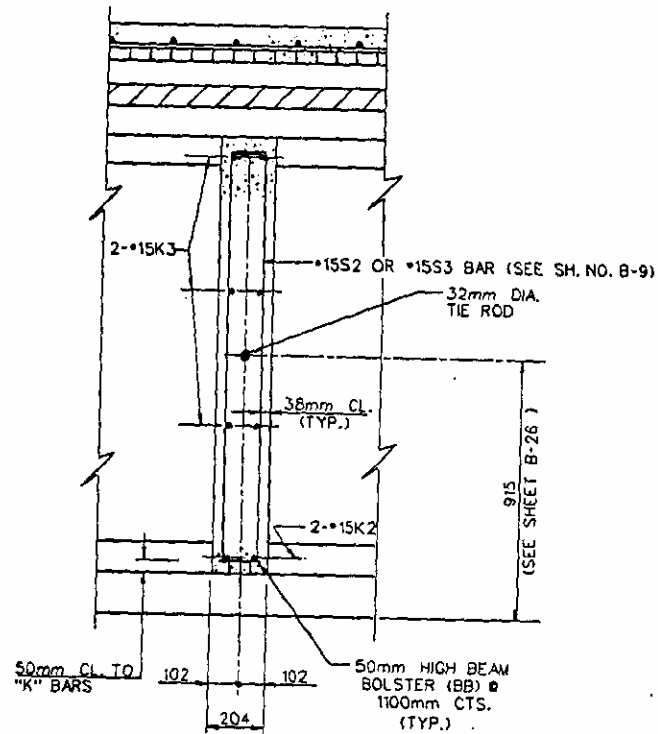
TYPICAL SECTION
 DETAILS



| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|-----------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | 5-12 |
| 2 | | | 4 | | | 79 |

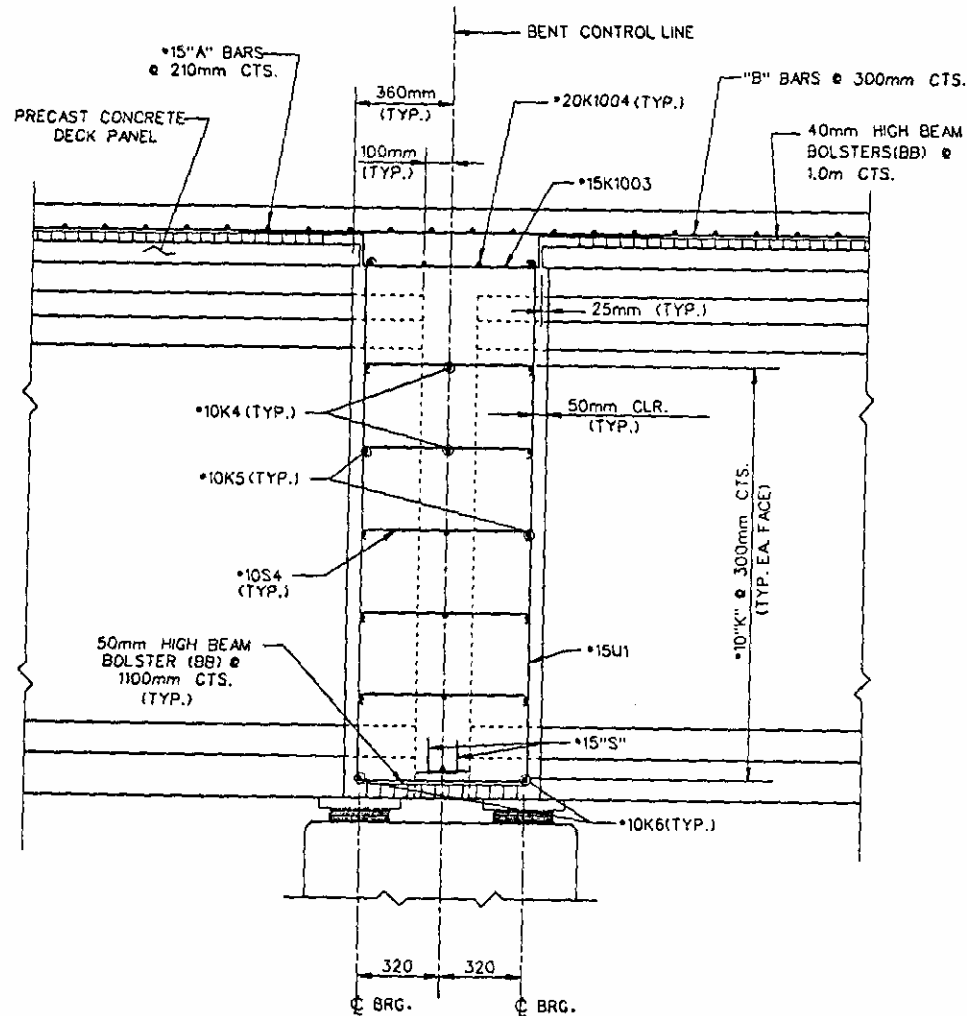
DRAWN BY: RNC/WER DATE: 5/95
 CHECKED BY: DAB DATE: 6/95
 APPROVED BY: LMP DATE: 7/95

R.N. B-12



SECTION E-E

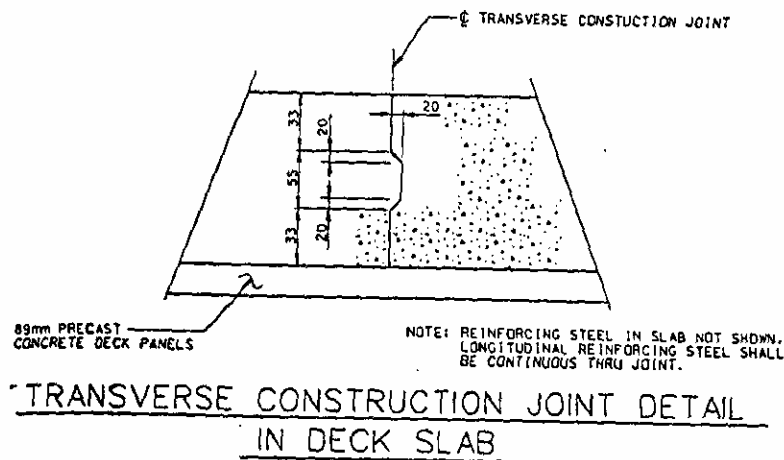
(INTERMEDIATE DIAPHRAGMS FOR BT72A SPANS, D-5)



SECTION F-F (THRU BENT DIAPHRAGM)

(FOR PRESTRESSED BT72A GIRDERS WITH CONTINUOUS DECK SLABS, D-6)

NOTE:
CONTINUOUS BENT DIAPHRAGM SHALL BE CAST MONOLITHIC WITH BRIDGE SLAB.



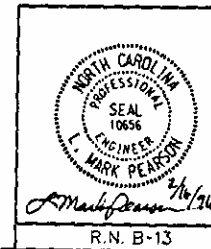
**TRANSVERSE CONSTRUCTION JOINT DETAIL
IN DECK SLAB**

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 8 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

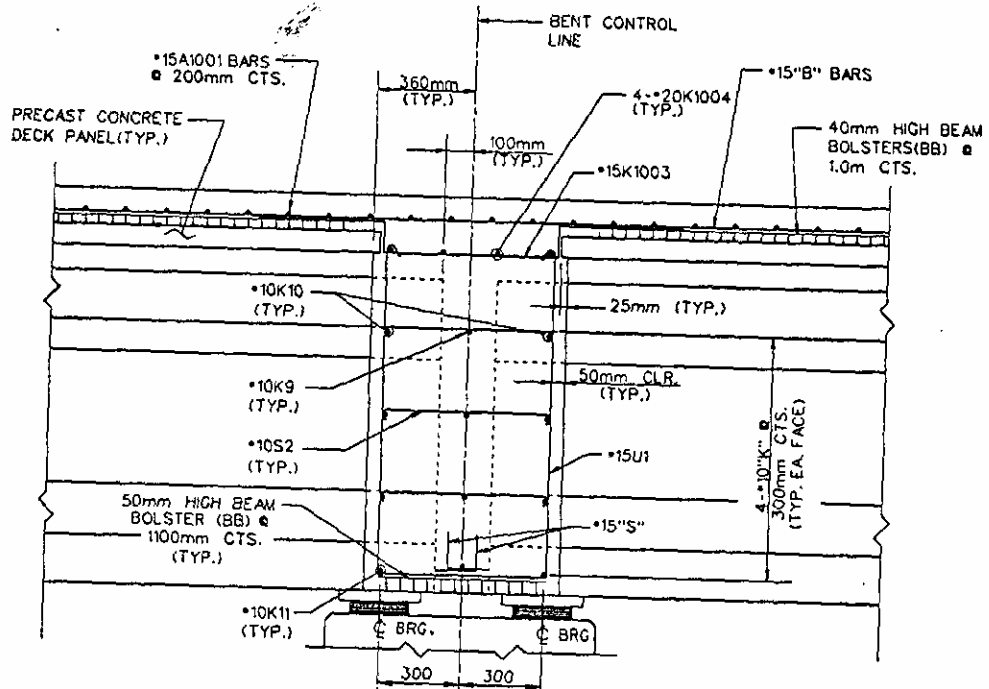
TYPICAL SECTION
 DETAILS



R.N. B-13

| REVISIONS | | | | | | SHEET NO. 5-13 TOTAL SHEETS 79 |
|-----------|----|------|-----|----|------|---|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

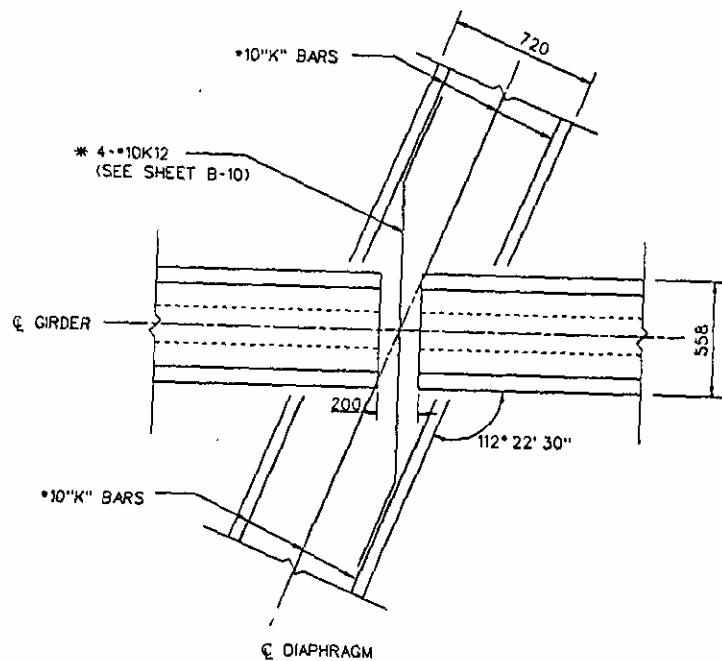
DRAWN BY: BKC/WFB DATE: 5/95
 CHECKED BY: DAR DATE: 6/95
 APPROVED BY: LMP DATE: 2/96



SECTION H-H (THRU BENT DIAPHRAGM)

(FOR TYPE III PRESTRESSED GIRDERS WITH CONTINUOUS DECK SLABS, D-8)
(BENTS 9, 10, & 11)

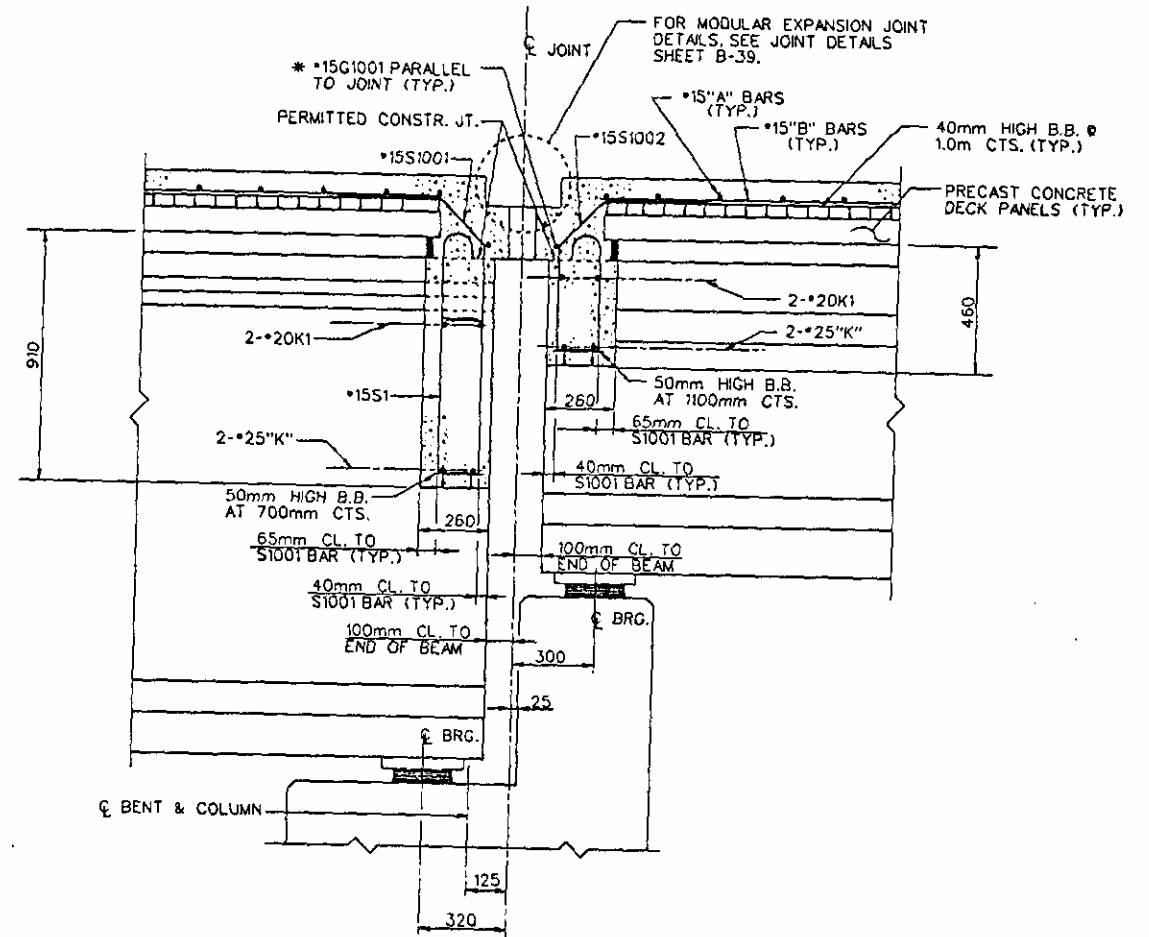
NOTE: *10K12 BARS NOT SHOWN IN SECTION
SEE DETAIL C (THIS SHEET)



DETAIL C

(PLAN OF SKEWED CONTINUOUS
BENT DIAPHRAGM AT INTERIOR GIRDERS)

*10K12 BARS SPACED VERTICALLY WITH
*10K10 AND *10K11 BARS @ 230mm CTS.



SECTION I-I

(DIAPHRAGMS AT BENT B, D-4 & D-7)

*15 G BAR MAY BE SHIFTED SLIGHTLY,
AS NECESSARY TO CLEAR REINFORCING
STEEL AND STIRRUPS.

PROJECT NO. B-2612

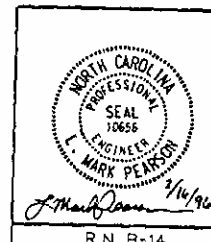
ROWAN-DAVIDSON COUNTY

STATION: 11-58.893 -L-SBL POT

SHEET 9 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

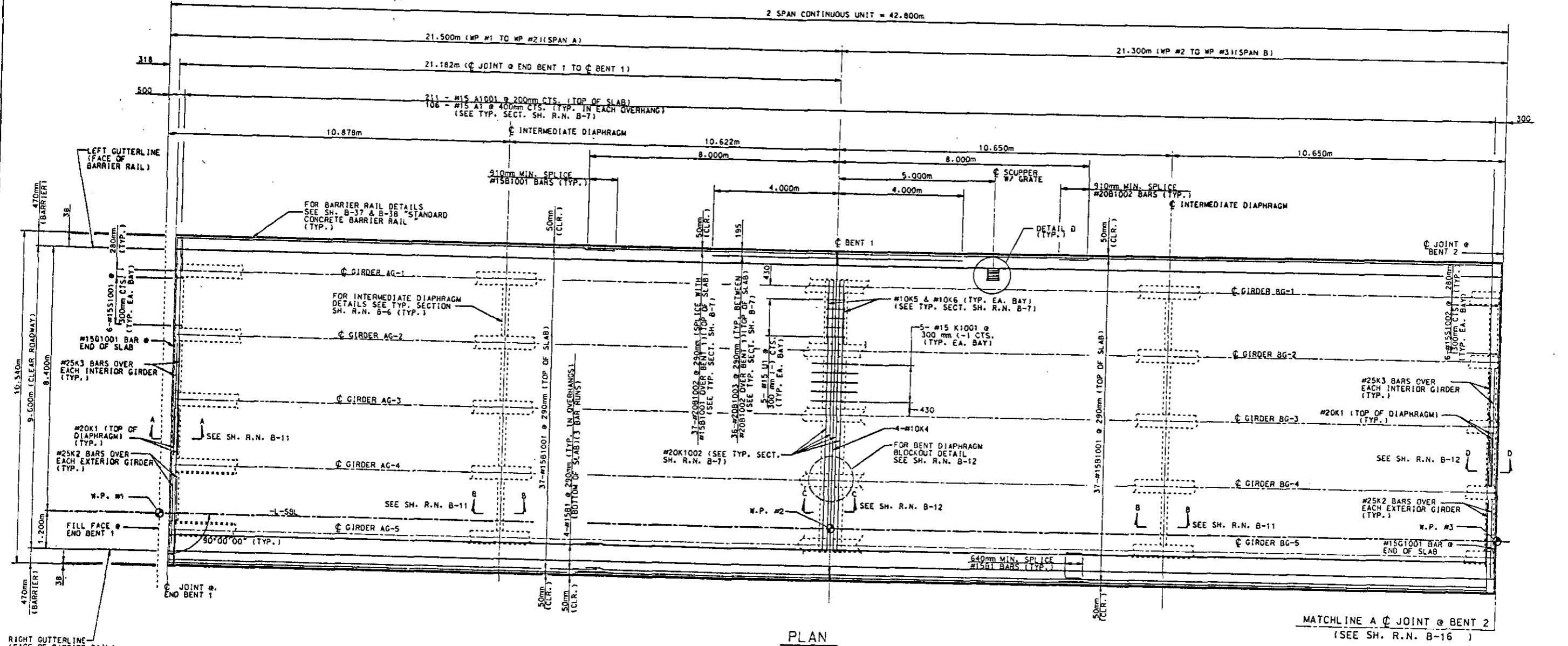
TYPICAL SECTION
DETAILS



| REVISIONS | | | | | | SHEET NO. S-14 |
|-----------|-----|-------|-----|-----|-------|--------------------|
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| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

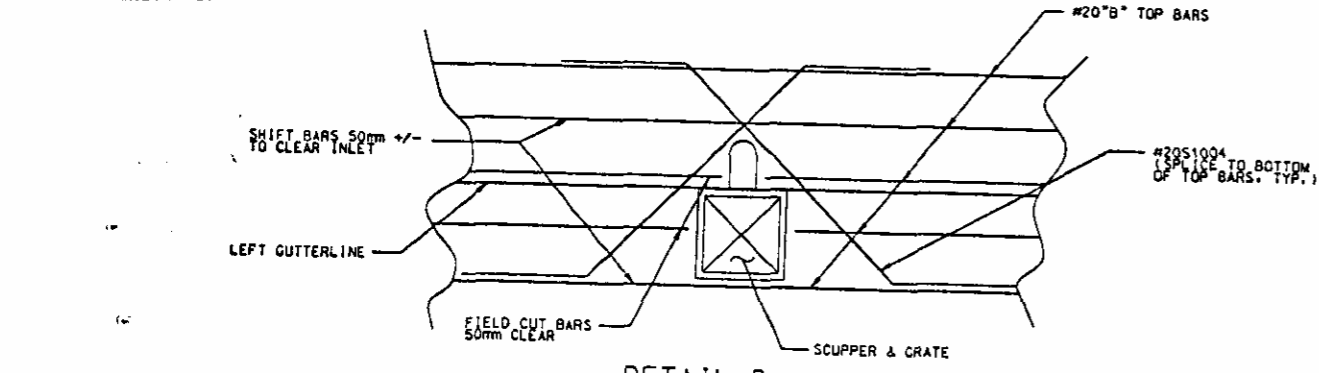
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| DRAWN BY: | BKC/WEB | DATE: | 6/95 |
| CHECKED BY: | DAR | DATE: | 6/95 |
| APPROVED BY: | LMP | DATE: | 7/96 |

R.N. B-14



PLAN

MATCHLINE A @ JOINT @ BENT 2
(SEE SH. R.N. B-16)



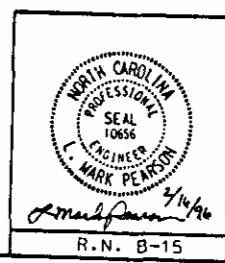
DETAIL D
FOR SCUPPER & GRATE DETAILS
SEE SHEETS B-70 & B-71

NOTES:
 LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.
 THE PLANS ARE DETAILED FOR A GROUT BED DECK PANEL SUPPORT SYSTEM. SEE PRECAST PRESTRESSED CONCRETE DECK PANELS SHEET FOR OTHER ALLOWABLE DECK SUPPORT SYSTEMS AND FOR DETAILS FOR THE GROUT BED SUPPORT.
 FOR INSERT LOCATION, SEE SPECIAL DRAINAGE SYSTEM SHEET R.N. B-70 TO B-71.
 PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 21 MPa BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF 2 SPAN CONTINUOUS
 UNIT - (SPANS A & B)



DRAWN BY: BKC/WER DATE: 5/95
 CHECKED BY: DAR DATE: 6/95
 APPROVED BY: LWP DATE: 2/96

| REVISIONS | | | | SHEET NO. |
|-----------|-----|-------|-------|------------|
| NO. | BY: | DATE: | DATE: | |
| 1 | | | | S-15 79 |
| 2 | | | | |

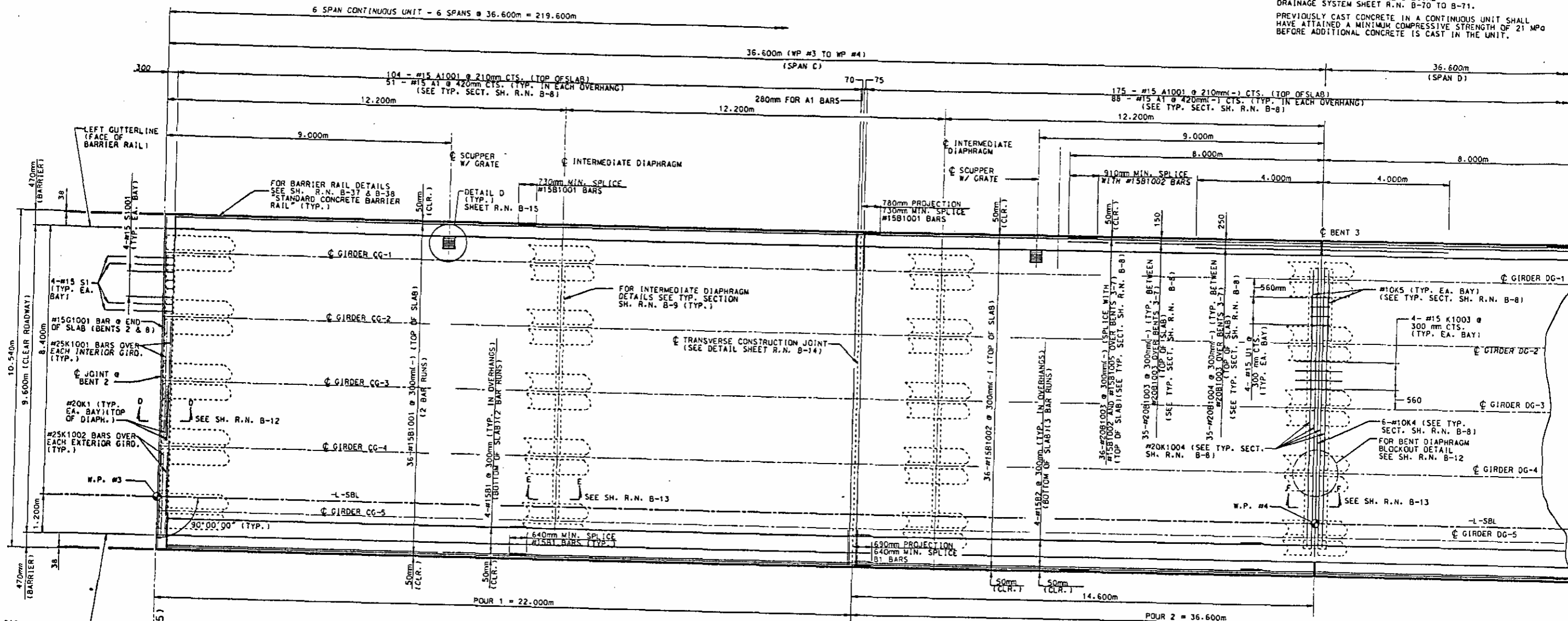
NOTES:

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

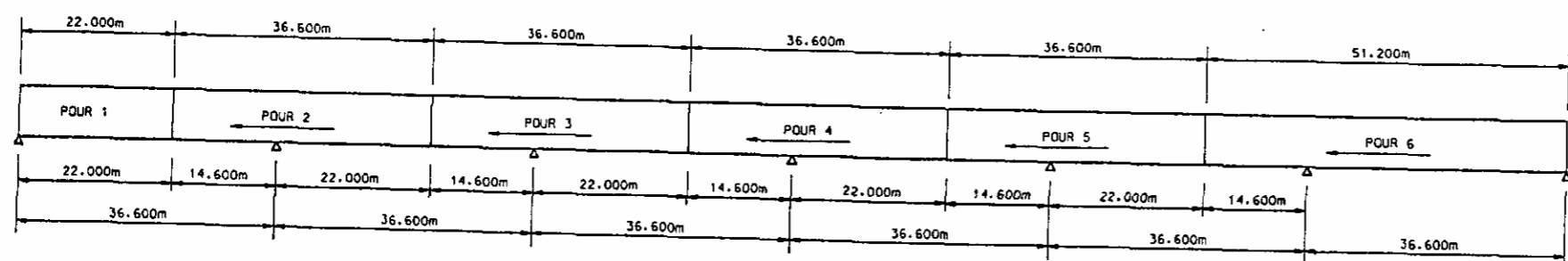
THE PLANS ARE DETAILED FOR A GROUT BED DECK PANEL SUPPORT SYSTEM. SEE PRECAST PRESTRESSED CONCRETE DECK PANELS SHEET FOR OTHER ALLOWABLE DECK SUPPORT SYSTEMS AND FOR DETAILS FOR THE GROUT BED SUPPORT.

FOR INSERT LOCATION, SEE SPECIAL DRAINAGE SYSTEM SHEET R.N. B-70 TO B-71.

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PLAN

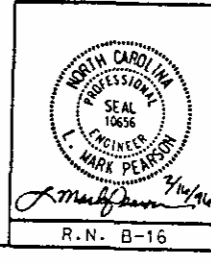


POUR SEQUENCE DETAIL

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 (SHEET 1 OF 6)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF 6 SPAN CONTINUOUS
 UNIT - (SPANS C-H)**



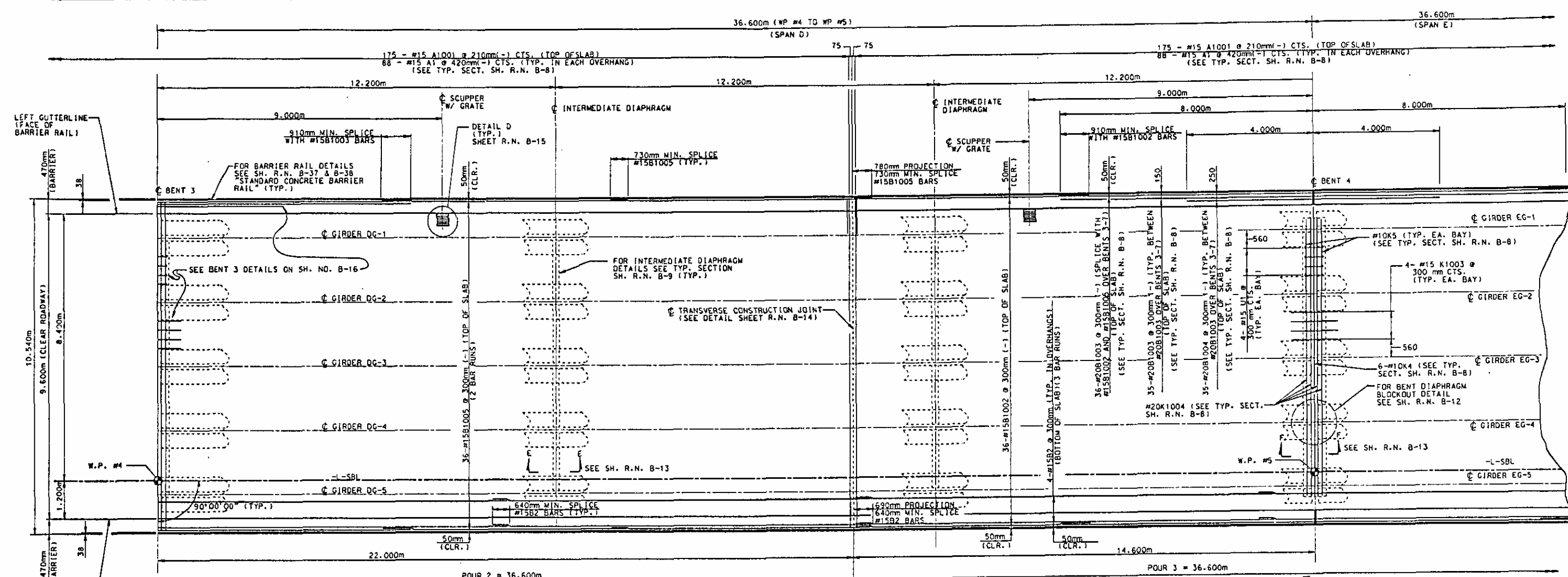
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|-----------|-----|-------|-----|-----|-------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

DRAWN BY: BKC/WEB DATE: 6/95
 CHECKED BY: DJB DATE: 6/95
 APPROVED BY: LMP DATE: 7/95

SHEET NO. S-10
 TOTAL SHEETS 79

NOTES:
 LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.
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6 SPAN CONTINUOUS UNIT - 6 SPANS @ 36.600m = 219.600m

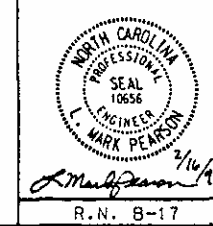


PLAN

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 (SHEET 2 OF 6)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 Raleigh

**SUPERSTRUCTURE
 PLAN OF 6 SPAN CONTINUOUS
 UNIT - (SPANS C-H)**



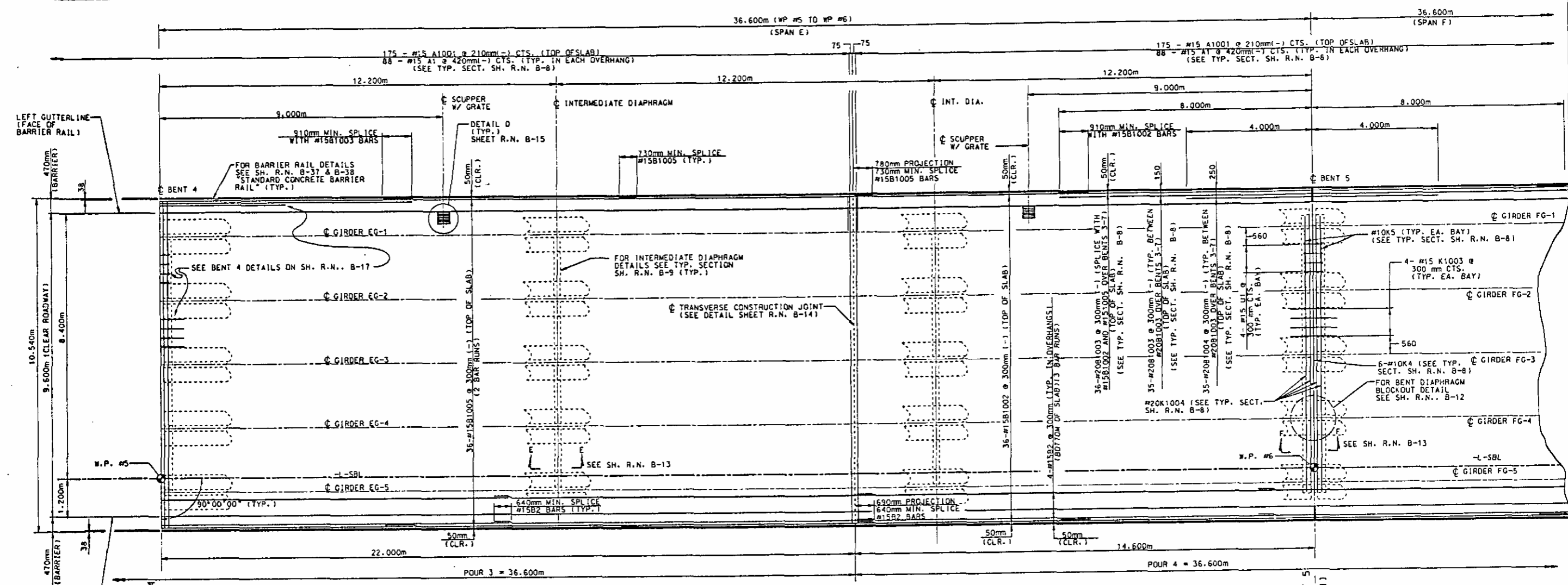
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|-----------|----|------|----|--------------------|
| NO | BY | DATE | NO | |
| 1 | | | 3 | TOTAL SHEETS 79 |
| 2 | | | 4 | |

DRAWN BY: BKC/WER DATE: 6/95
 CHECKED BY: DAR DATE: 6/95
 APPROVED BY: LMP DATE: 7/95

02/16/96
 Drawings: Robb 11.31.54
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NOTES:
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6 SPAN CONTINUOUS UNIT - 6 SPANS @ 36.600m = 219.600m

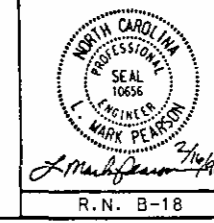


PLAN

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 (SHEET 3 OF 6)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF 6 SPAN CONTINUOUS
 UNIT - (SPANS C-H)



| REVISIONS | | | | | |
|-----------|----|------|-----|----|------|
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

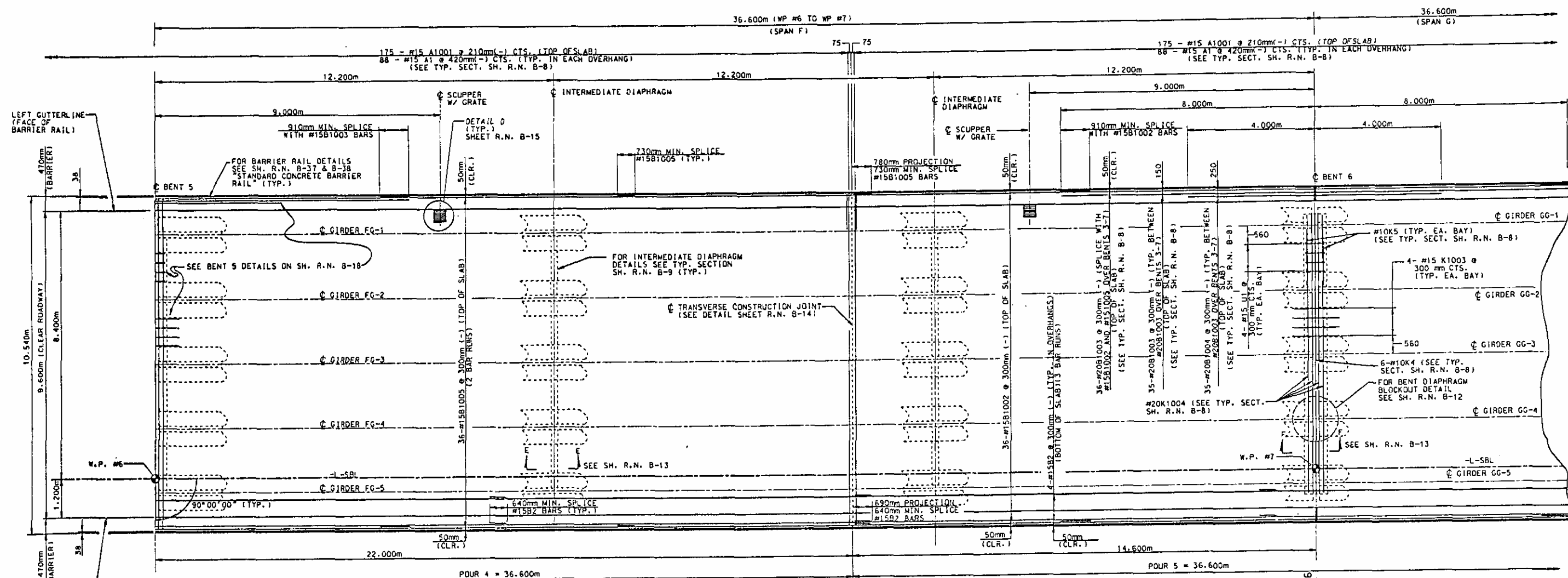
SHEET NO.
5-18
 TOTAL SHEETS
79

DRAWN BY: BKC/WEB DATE: 6/25
 CHECKED BY: DAR DATE: 6/25
 APPROVED BY: LMP DATE: 2/96

02/16/96
 Douglas Rabe 11:32:55
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NOTES:
 LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.
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6 SPAN CONTINUOUS UNIT - 6 SPANS @ 36.600m = 219.600m

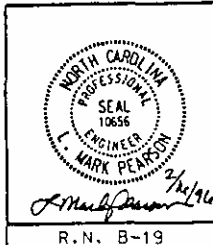


PLAN

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 (SHEET 4 OF 6)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF 6 SPAN CONTINUOUS
 UNIT - (SPANS C-H)**



| REVISIONS | | | | SHEET NO. | |
|-----------|----|------|-----|-----------|------|
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

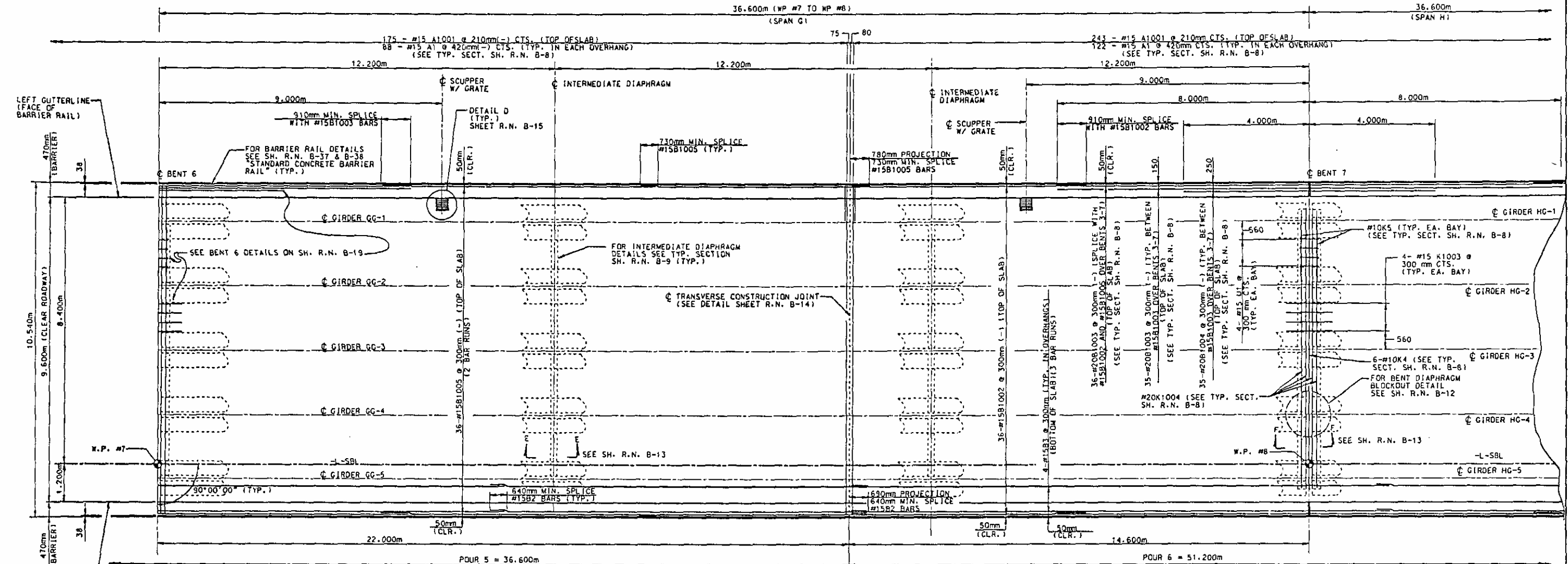
SHEET NO. **S-19**
 TOTAL SHEETS **79**

DRAWN BY: BKC/WFB DATE: 6/95
 CHECKED BY: DAR DATE: 6/95
 APPROVED BY: LMP DATE: 2/96

02/16/96
 Douglas Rabb 11:34:18
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6 SPAN CONTINUOUS UNIT - 6 SPANS @ 36.600m = 219.600m

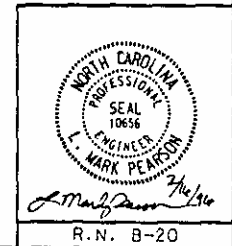
NOTES:
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PLAN

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 (SHEET 5 OF 6)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF 6 SPAN CONTINUOUS
 UNIT - (SPANS C-H)

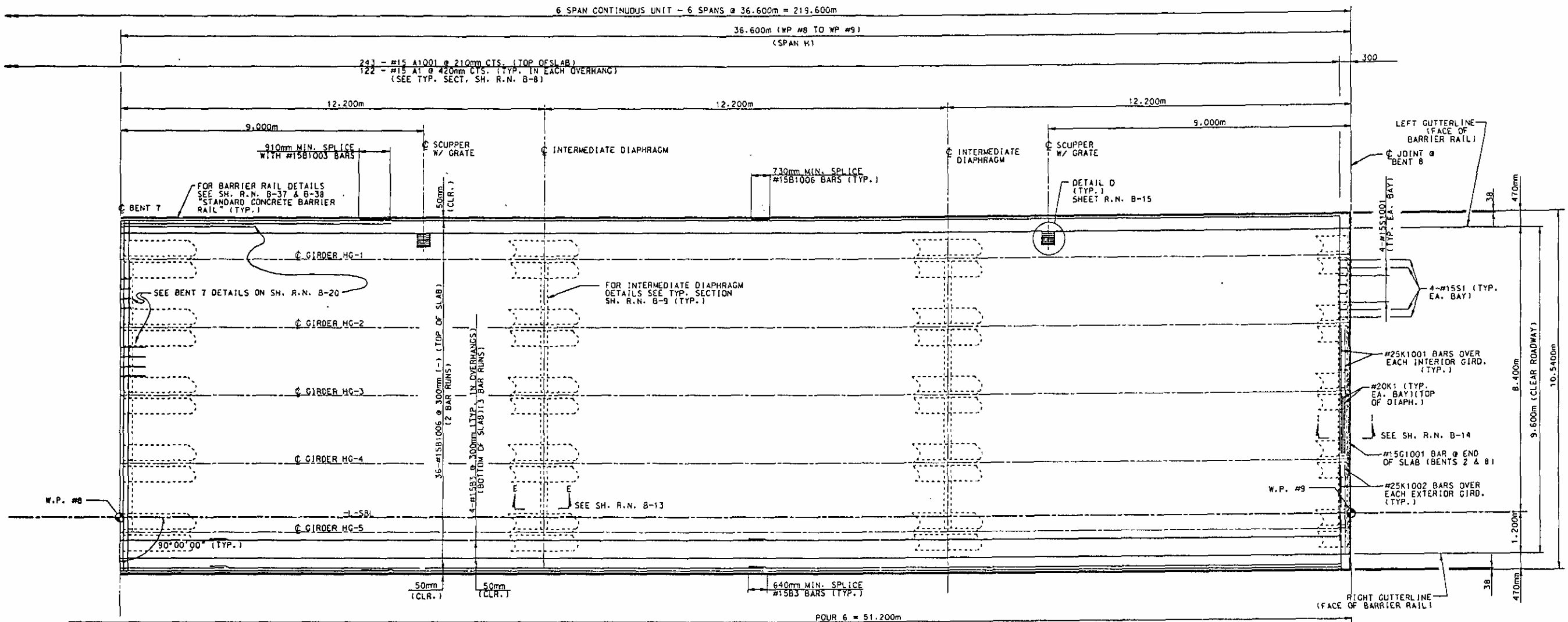


| REVISIONS | | | | | |
|-----------|-----|-------|-----|-----|-------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 2 | | |
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| | | | |
|--------------|---------|-------|------|
| DRAWN BY: | RKC/WEB | DATE: | 6/95 |
| CHECKED BY: | OAR | DATE: | 8/95 |
| APPROVED BY: | LMP | DATE: | 2/96 |

SHEET NO. S-20
 TOTAL SHEETS 79

NOTES:
 LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.
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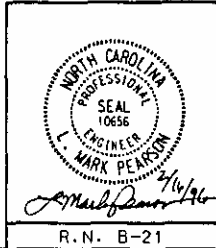


PLAN

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 (SHEET 6 OF 6)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF 6 SPAN CONTINUOUS
 UNIT - (SPANS C-H)



| REVISIONS | | | | | | SHEET NO. S-21 |
|-----------|----|------|-----|----|------|--------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

DRAWN BY: BKC/WEB DATE: 6/95
 CHECKED BY: DAR DATE: 5/95
 APPROVED BY: LMP DATE: 2/96

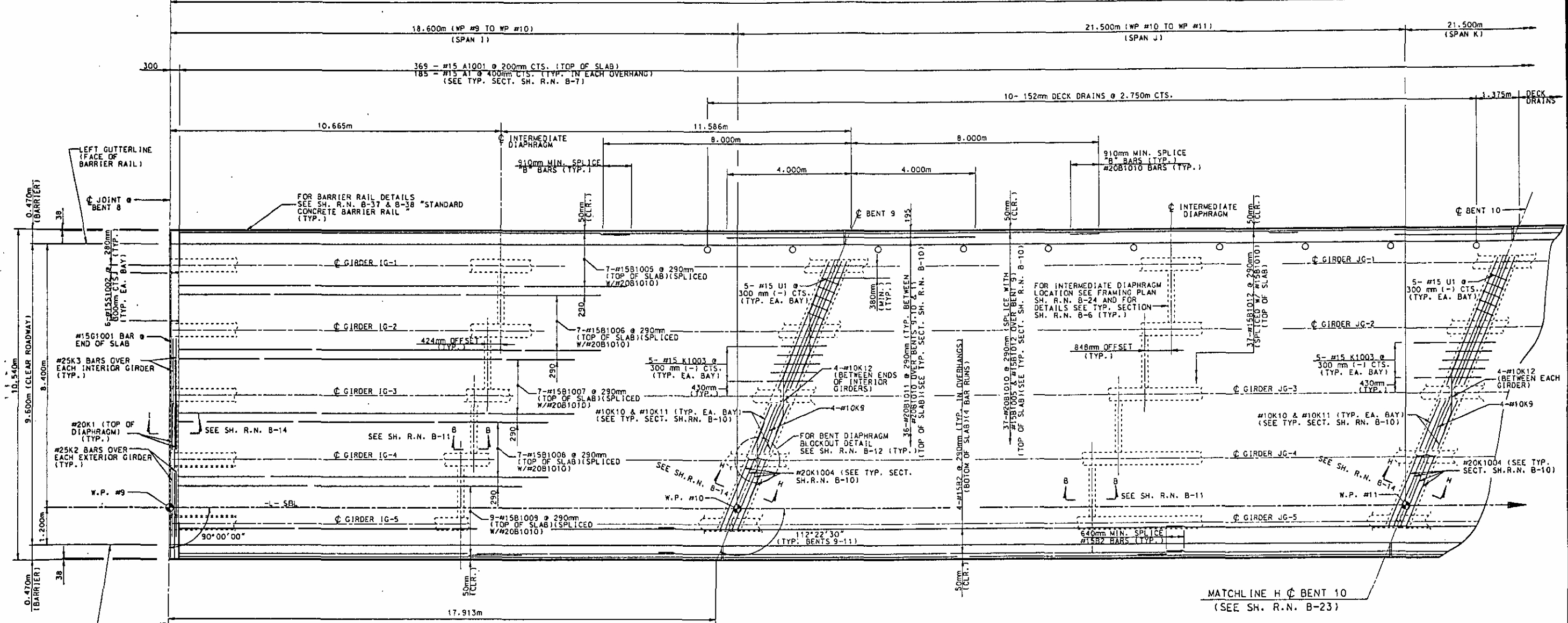
Drawings: Road 11/30/31
 Project: 11/30/31
 Date: 02/16/96

NOTES: LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

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4 SPAN CONTINUOUS UNIT = 75.100m



PLAN

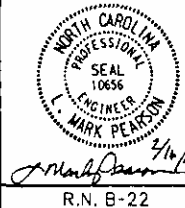
MATCHLINE H @ BENT 10
(SEE SH. R.N. B-23)

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF 4 SPAN CONTINUOUS
 UNIT - (SPANS I THRU L)

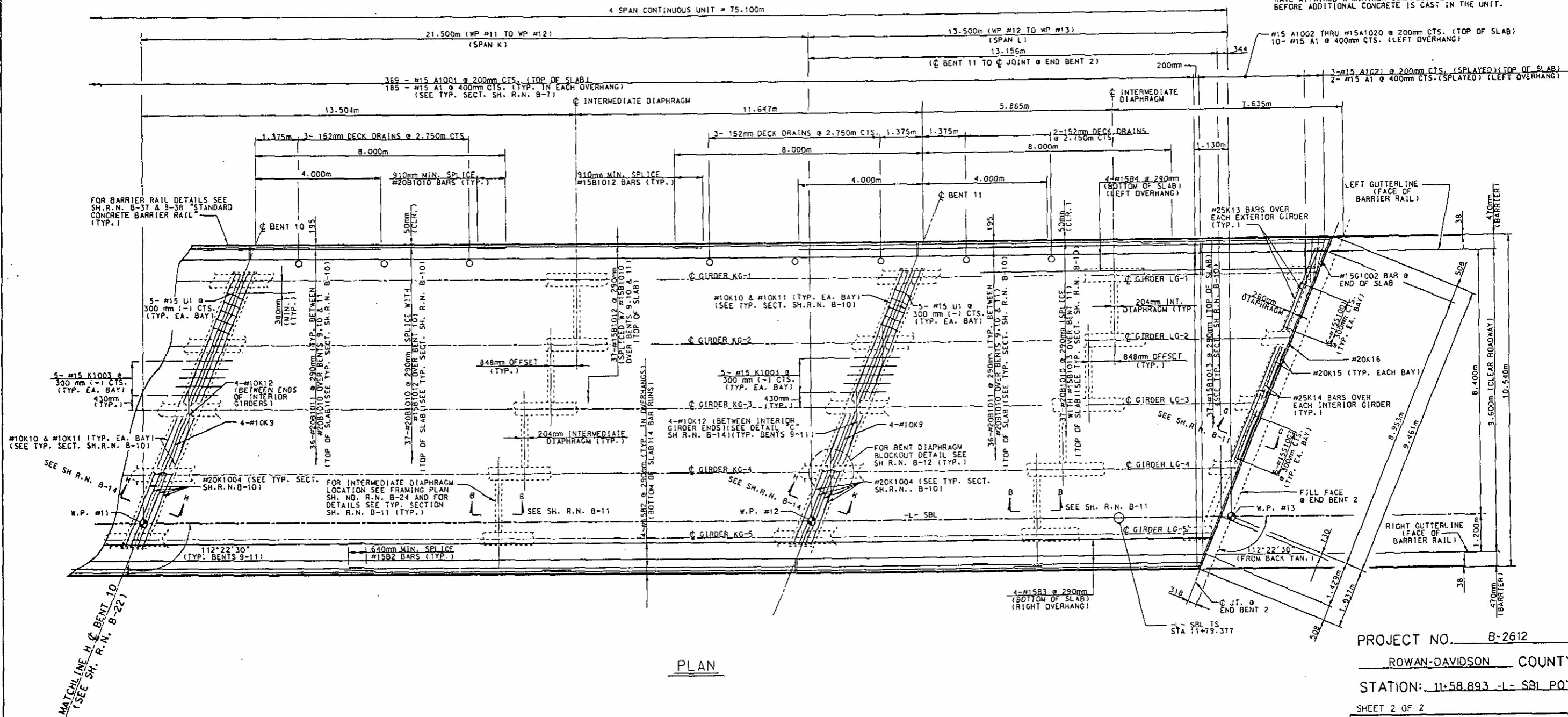


| REVISIONS | | | | | SHEET NO. 5-22 |
|-----------|----|------|-----|------|--------------------|
| NO. | BY | DATE | NO. | DATE | |
| 1 | | | 3 | | TOTAL SHEETS 79 |
| 2 | | | 4 | | |

| | | | |
|-------------|---------|------|------|
| DRAWN BY | BKC/SLK | DATE | 6/95 |
| CHECKED BY | DAR | DATE | 5/95 |
| APPROVED BY | LMP | DATE | 2/96 |

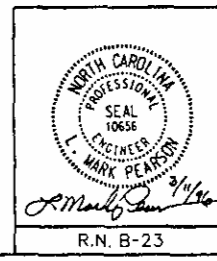
Douglas Bess 11/04/35
 02/16/96
 11/20/95
 11/20/95

NOTES:
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PLAN

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POI
 SHEET 2 OF 2



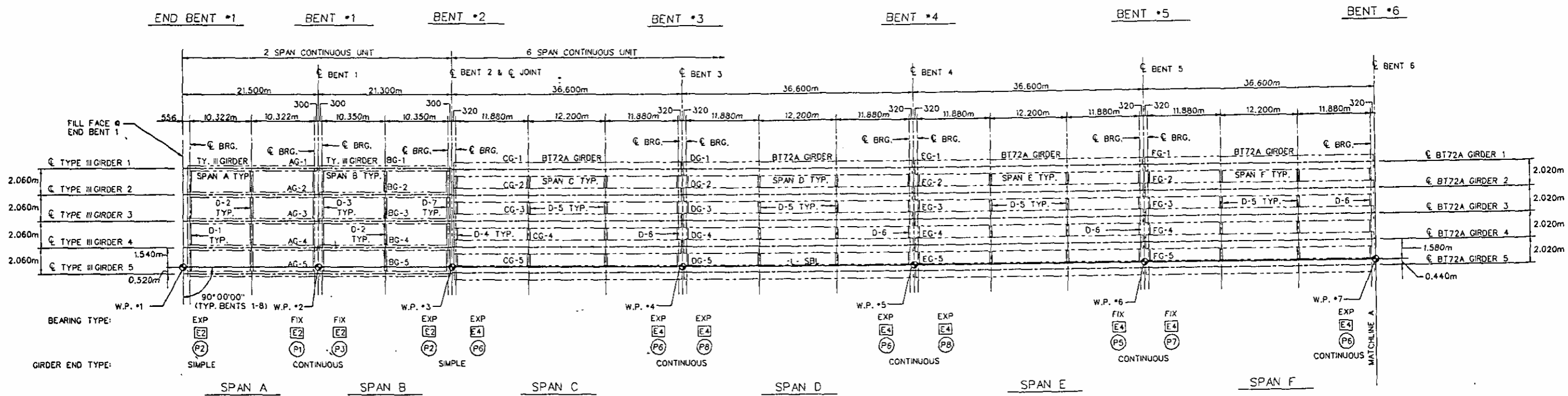
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF 4 SPAN CONTINUOUS
 UNIT - (SPANS I THRU L)

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-23 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 79 |

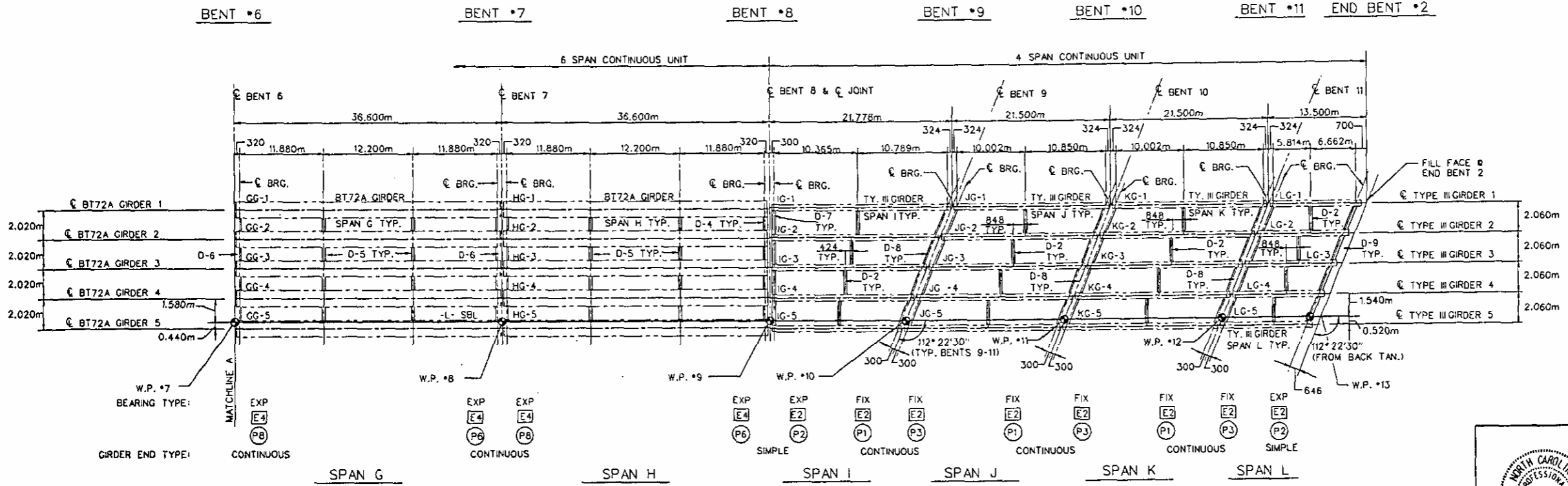
R.N. B-23

150923 03/10/98
 DRAWN BY: BKC/SLK DATE: 6/95
 CHECKED BY: DAR DATE: 6/95
 APPROVED BY: LMP DATE: 7/95



FRAMING PLAN

- NOTES :
- DIAPHRAGMS INDICATED THUS : D- (NO.) (SEE DIAPHRAGM DETAILS SH. RN. B-11 TO B-14)
 - ELASTOMERIC BEARINGS INDICATED THUS: (EN) (N-NUMBER)
 - SOLE PLATES INDICATED THUS: (PN) (N-NUMBER)
 - CONCRETE INSERTS ARE REQUIRED FOR SPECIAL DRAINAGE SYSTEM ATTACHMENTS TO GIRDERS ON LINE 1. SEE R.N. B-70 AND B-71 FOR DETAILS AND SPACING.



FRAMING PLAN

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -1-SBL POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 FRAMING PLAN**

REVISIONS

| NO. | BY | DATE | NO. | BY | DATE |
|-----|----|------|-----|----|------|
| 1 | | | 3 | | |
| 2 | | | 4 | | |

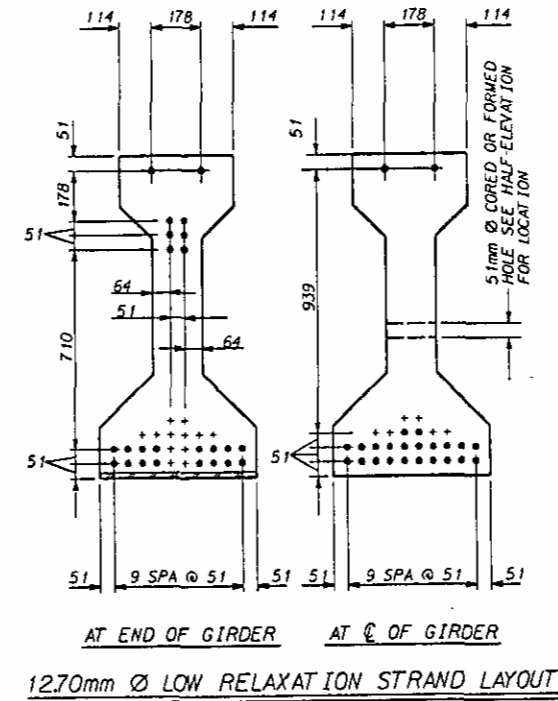
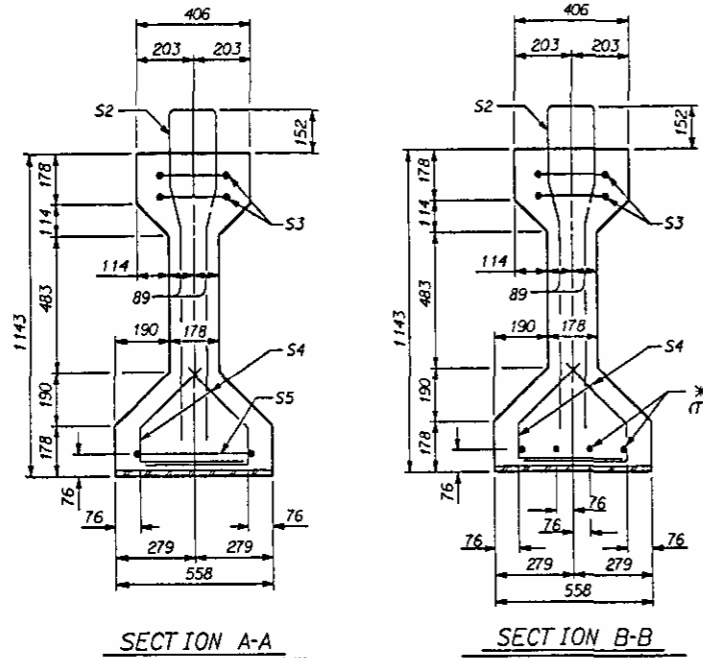
SHEET NO. S-24

DATE: 3/1/95

79

R.N. B-24

DRAWN BY: JRS DATE: 1/95
 CHECKED BY: DAR DATE: 3/95
 APPROVED BY: LMP DATE: 2/96



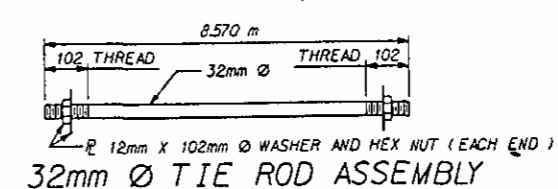
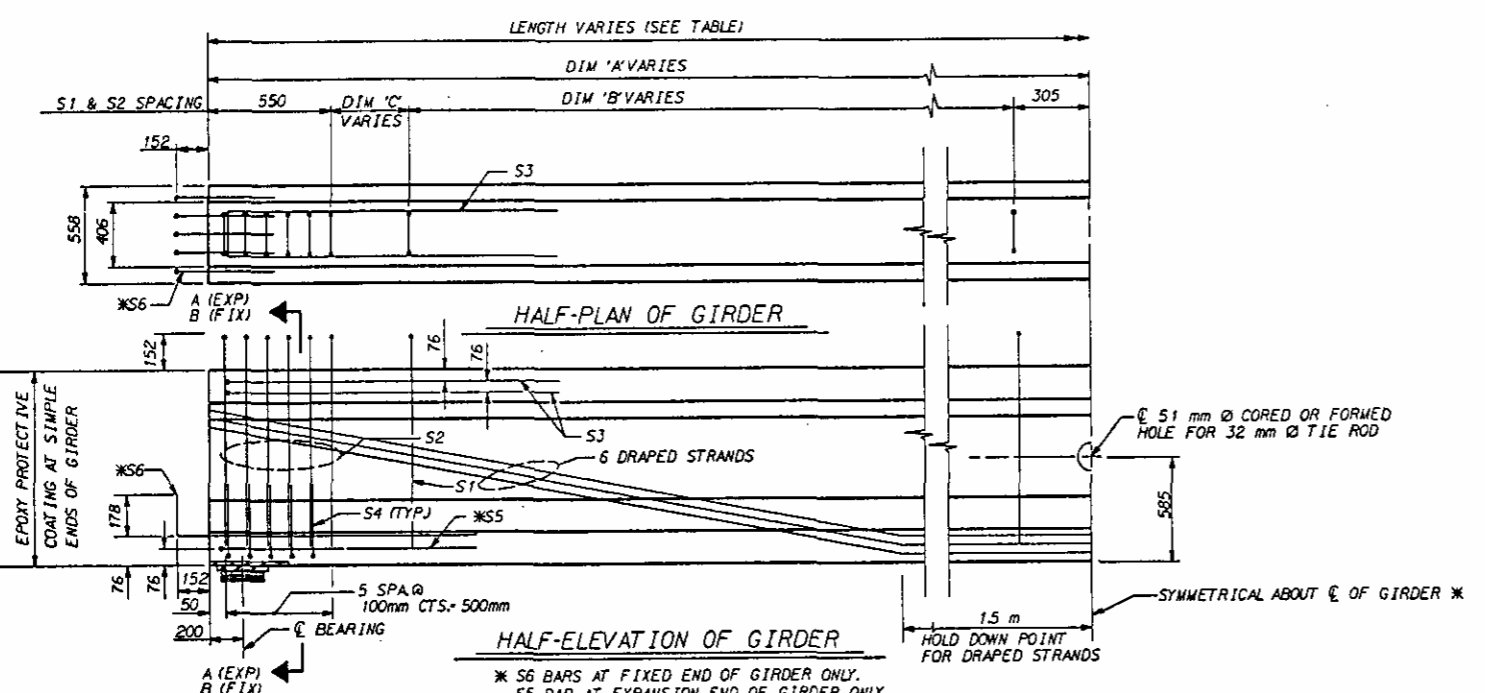
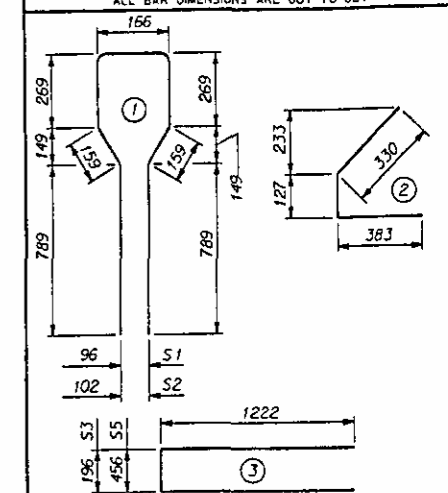
NOTE:
FOR PRESTRESSED CONCRETE GIRDER NOTES
SEE SHEET R.N.B-30A.

| 127.0mm • L. R. GRADE 1860 STRANDS | | |
|------------------------------------|-----------------------------------|-----------------------------------|
| AREA (mm ²) | ULTIMATE STRENGTH (kN PER STRAND) | APPLIED PRESTRESS (kN PER STRAND) |
| 98.71 | 183.7 | 137.8 |

| REINFORCING STEEL FOR ONE GIRDER | | | | | | |
|----------------------------------|--------|------|------|--------|--------|-----|
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT | |
| SPAN A GIRDER | S1 | 32 | #15 | 1 | 2600 | 131 |
| SPAN B GIRDER | S1 | 32 | #15 | 1 | 2600 | 131 |
| | S2 | 12 | #20 | 1 | 2600 | 73 |
| | S3 | 4 | #15 | 3 | 2640 | 17 |
| | S4 | 20 | #15 | 2 | 840 | 26 |
| | S5 | 1 | #15 | 3 | 2900 | 5 |
| | S6 | 4 | #15 | STR. | 1600 | 10 |

**NOTE: S6 BARS SHALL BE BENT AFTER GIRDER FABRICATION AND BEFORE SHIPMENT.

BAR TYPES
ALL BAR DIMENSIONS ARE OUT-TO-OUT



SPAN A: (1 COMPLETE ASSEMBLY REQUIRED)
SPAN B: (1 COMPLETE ASSEMBLY REQUIRED)

| QUANTITIES FOR ONE GIRDER | | | |
|---------------------------|-------------------|-----------------|-----------------------|
| | REINFORCING STEEL | 35 MPa CONCRETE | 1270mm Ø L.R. STRANDS |
| | Kg | m ³ | No. |
| SPAN A GIRDER | 262 | 7.60 | 24 |
| SPAN B GIRDER | 262 | 7.62 | 24 |

| GIRDERS REQUIRED | | |
|------------------|------------|------------------|
| NUMBER | LENGTH (m) | TOTAL LENGTH (m) |
| SPAN A | 5 | 21.044 |
| SPAN B | 5 | 21.100 |

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -1- SBL POT

| SPAN | GIRDER | LENGTH (m) | DIM 'A' (m) | DIM 'B' | DIM 'C' |
|------|--------|------------|-------------|-----------------|----------------|
| A | 1-5 | 21.044 | 10.522 | 15 SPA @ 610 mm | 1 SPA @ 517 mm |
| B | 1-5 | 21.100 | 10.550 | 15 SPA @ 610 mm | 1 SPA @ 545 mm |

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALPH

STANDARD
1143mm PRESTRESSED
CONCRETE GIRDER
SPANS A,B
CONTINUOUS FOR LIVE LOAD

REVISIONS

| NO. | BY | DATE | NO. | BY | DATE |
|-----|----|------|-----|----|------|
| 1 | | | 3 | | |
| 2 | | | 4 | | |

R.N. B-25

| SHEET NO. | | | | | |
|-----------|--|--|--|--|--------------|
| | | | | | 5-25 |
| | | | | | TOTAL SHEETS |
| | | | | | 79 |

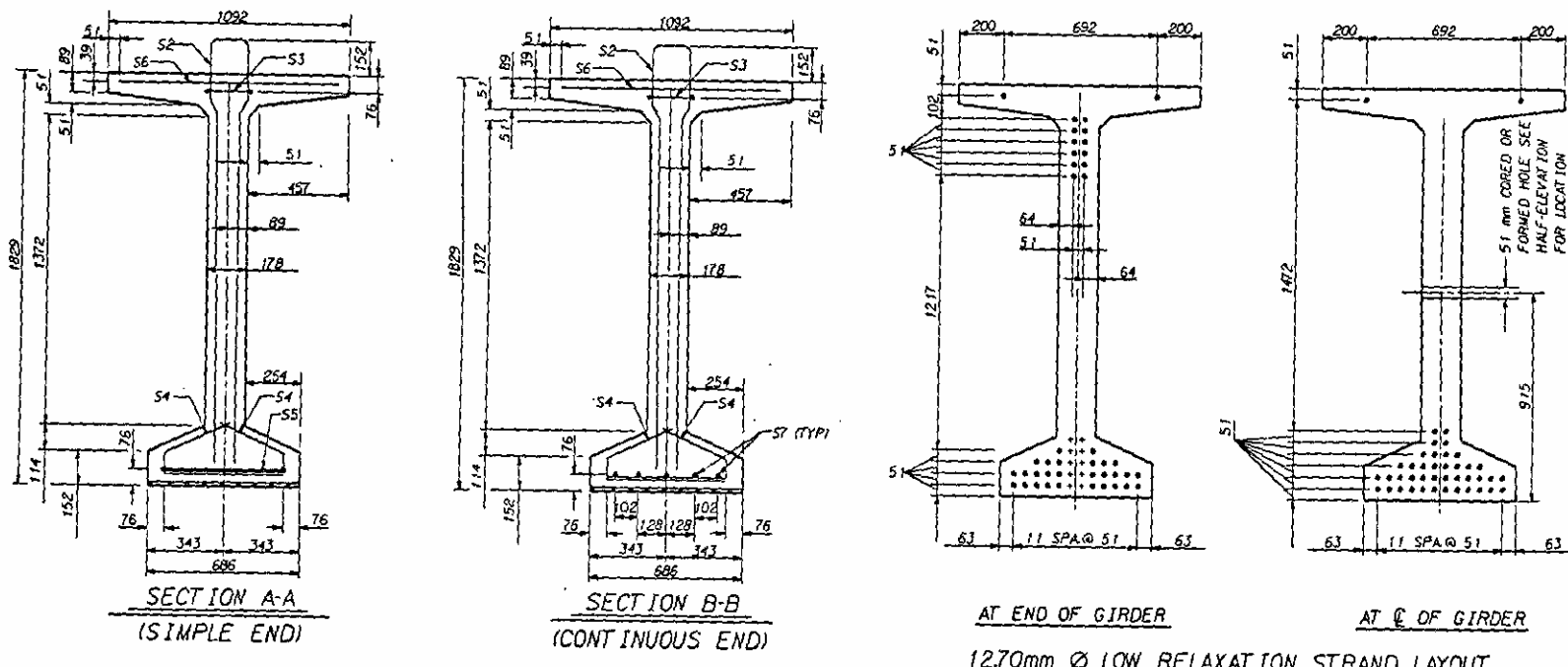
no prt user 13-32-31 03/11/96
K:\B7234\000\cadd\st\pcg2mab.dgn
K:\B7234\000\cadd\st\pcg2mab.prf

ASSEMBLED BY: JRS/WER DATE: 01/95
CHECKED BY: DAB DATE: 6/95
DRAWN BY: MIKE BRITT DATE: DEC. 1987
CHECKED BY: RANDY BISSETTE DATE: DEC. 1987

SPECIAL
STANDARD

REV. 10/1/93R ARB W GRP

STD.No.PCG2M



NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 1860 STRANDS AND SHALL CONFORM TO ASTM A-416 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TIE ROD ASSEMBLY SHALL BE ASTM A-36W GRADE STRUCTURAL STEEL. ALL REINFORCING STEEL SHALL BE GRADE 400.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

EPOXY PROTECTIVE COATING SHALL BE REQUIRED FOR SPANS C AND H GIRDERS AT SIMPLE ENDS ONLY.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

STEEL SOLE PLATES, BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

DEFORMED ANCHOR STUDS SHALL CONFORM TO ASTM A-96. WELDING PROCEDURE QUALIFICATION TEST FOR DEFORMED ANCHOR STUDS MAY BE REQUIRED.

ALL PRESTRESSED STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 34.5 MPa.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLABS FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER SHALL BE RAKED TO A DEPTH OF 6 mm, EXCEPT 75mm WIDTH ALONG EACH EDGE.

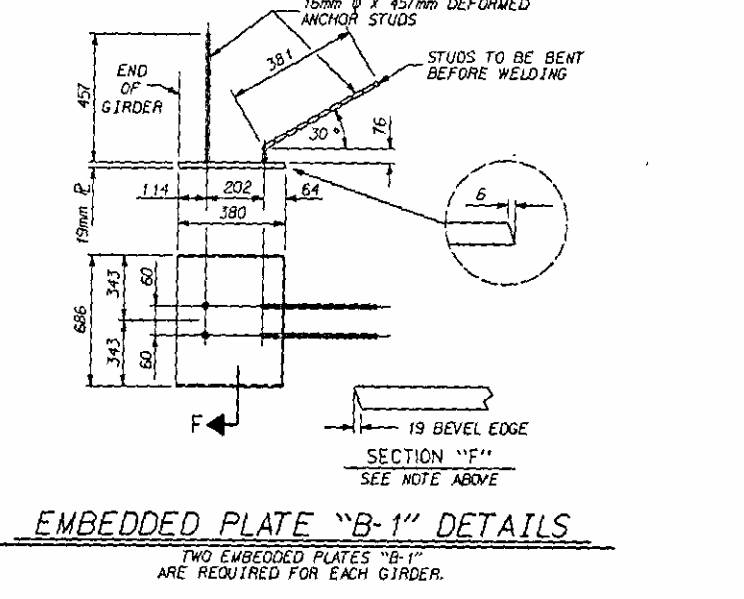
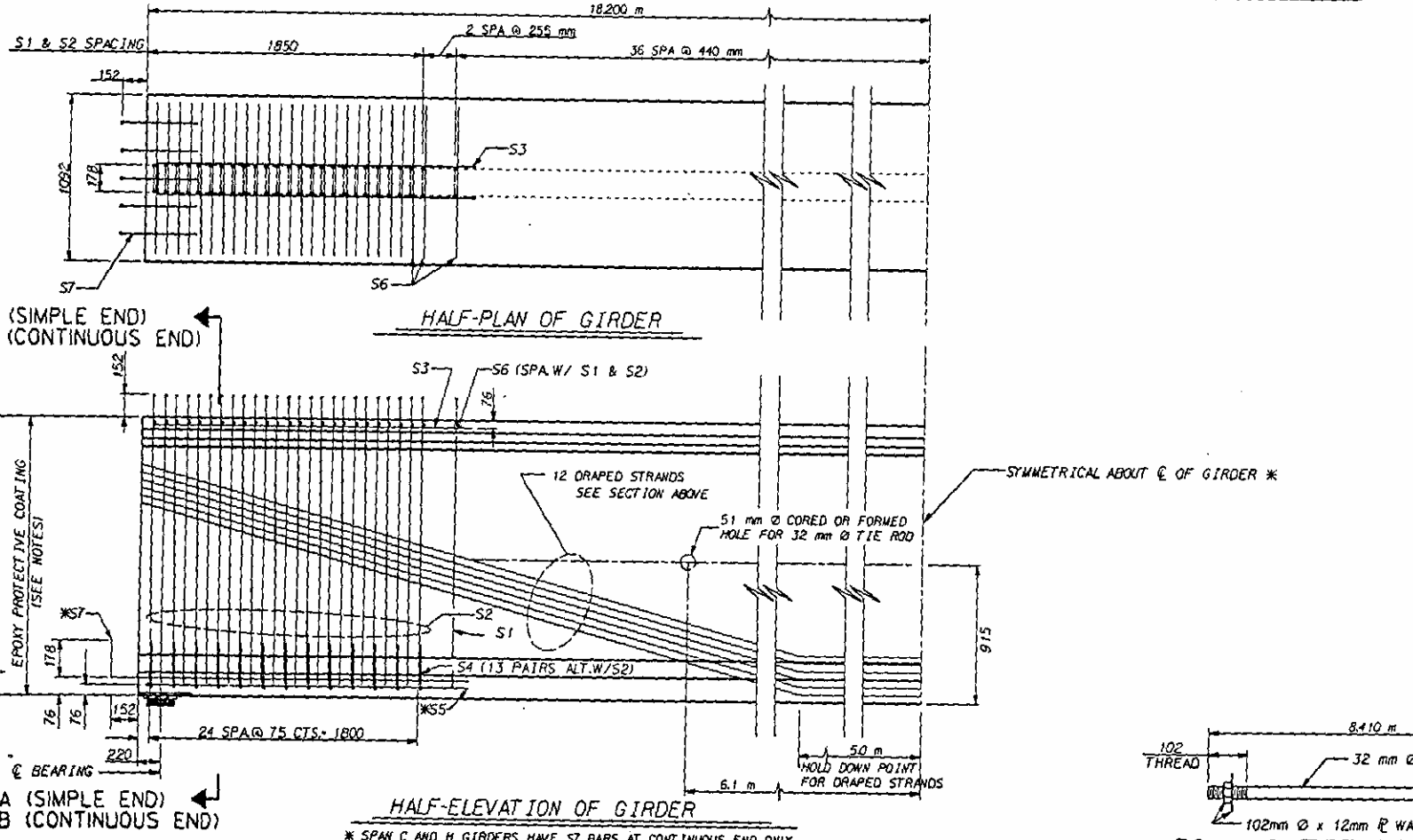
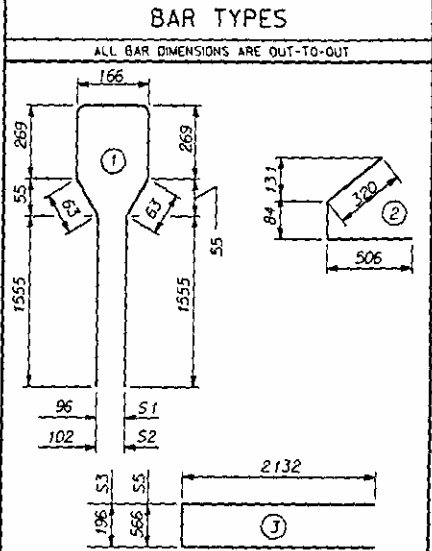
FOR CONCRETE INSERTS FOR BRIDGE DRAINAGE SYSTEM, SEE SHEETS R.N. B-70 AND B-71.

AT EXTERIOR GIRDER, FIELD BEND "ST" BARS TO FIT WITHIN DIAPHRAGM END FACE WITH 50mm CLEAR.

WHEN DRAPED STRANDS ARE DETAILED, THE LONGITUDINAL LOCATION OF THE HOLD DOWN DEVICES SHALL BE WITHIN 150mm OF THE LOCATION SHOWN AND THE CENTER OF GRAVITY OF THE GROUP OF STRANDS SHALL BE LOCATED WITHIN 13mm OF THE THEORETICAL LOCATION SHOWN.

| 12.70mm • L. R. GRADE 1860 STRANDS | | | | | | |
|------------------------------------|-----------------------------------|-----------------------------------|------|--------|--------|----|
| AREA (mm ²) | ULTIMATE STRENGTH (kN PER STRAND) | APPLIED PRESTRESS (kN PER STRAND) | | | | |
| 98.71 | 183.7 | 137.8 | | | | |
| REINFORCING STEEL FOR ONE GIRDER | | | | | | |
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT | |
| S1 | 75 | #15 | 1 | 3940 | 464 | |
| S2 | 50 | #20 | 1 | 3940 | 464 | |
| S3 | 2 | #15 | 3 | 4160 | 14 | |
| S4 | 52 | #15 | 2 | 910 | 74 | |
| S5 | 1 | #15 | 3 | 4830 | 8 | |
| S6 | 125 | #10 | STR. | 990 | 97 | |
| SPAN C,H GROR | *S7 | 5 | #15 | STR. | 1600 | 13 |
| SPAN D-G GROR | *S7 | 10 | #15 | STR. | 1600 | 25 |

* NOTE: S7 BARS SHALL BE BENT AFTER GIRDER FABRICATION AND BEFORE SHIPMENT



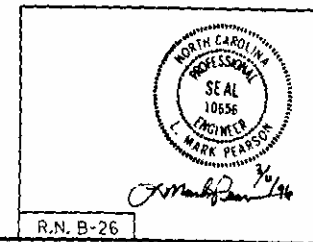
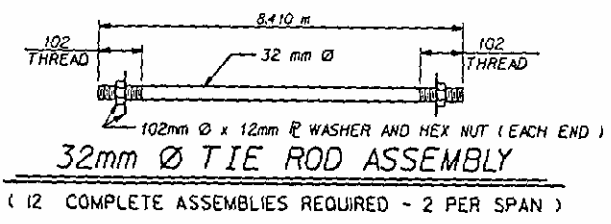
QUANTITIES FOR ONE GIRDER

| | REINFORCING STEEL | 41.4 MPa CONCRETE | 12.70mm Ø L.R. STRANDS |
|-------------|-------------------|-------------------|------------------------|
| | kg. | CUM. M | No. |
| SPANS C & H | 1134 | 197.1 | 42 |
| SPANS D - G | 1138 | 197.1 | 42 |

GIRDERS REQUIRED

| NUMBER | LENGTH (m) | TOTAL LENGTH (m) |
|--------|------------|------------------|
| 30 | 36.400 | 1092.000 |

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: J1+58.893 -L- SBL POT



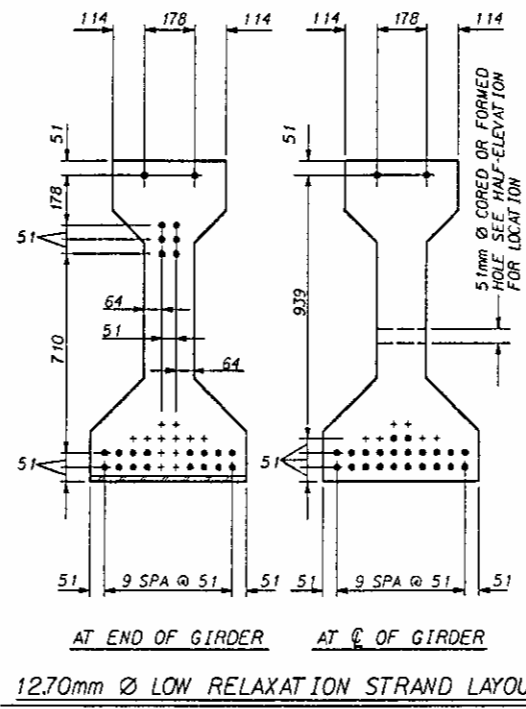
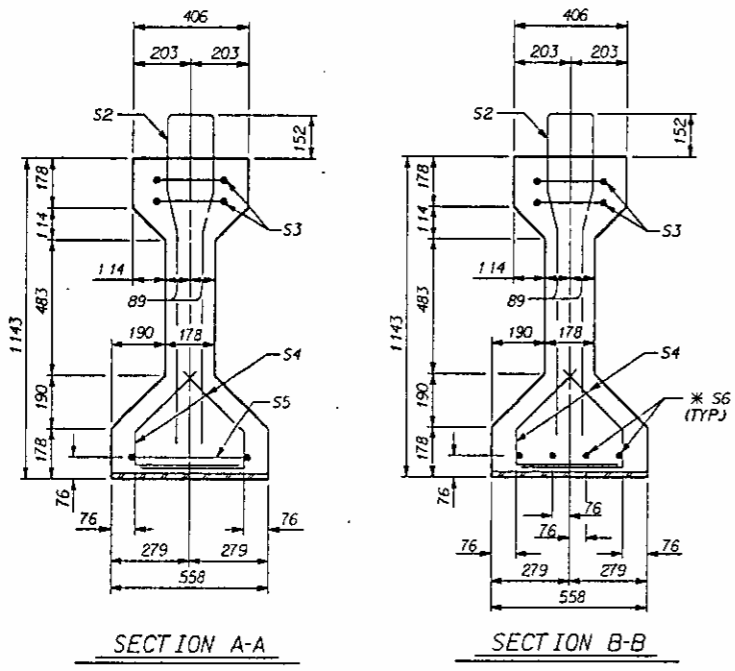
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BT2A (1829mm) PRESTRESSED BULB TEE GIRDER
 SPANS C,D,E,F,G,H
 CONTINUOUS FOR LIVE LOAD

| REVISIONS | | | | SHEET NO. |
|-----------|----|------|-----|-----------|
| NO. | BY | DATE | NO. | DATE |
| 1 | | | 3 | |
| 2 | | | 4 | |

TOTAL SHEETS: 79

| | | |
|-------------------|-------------|----------|
| ASSEMBLED BY: JRS | DATE: 01/95 | SPECIAL |
| CHECKED BY: DAR | DATE: 6/295 | |
| DRAWN BY: BXC | DATE: 10/94 | STANDARD |
| CHECKED BY: DJL | DATE: 10/94 | |

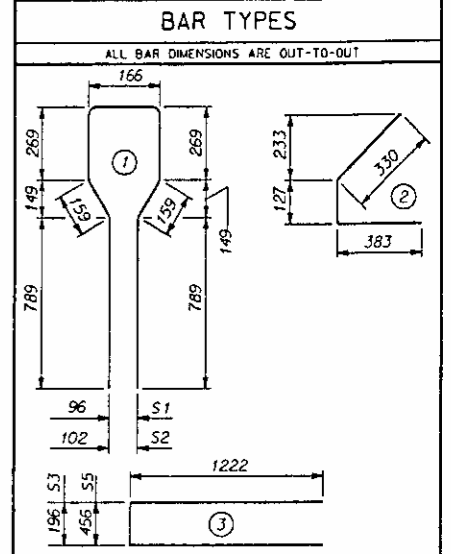


NOTE:
FOR PRESTRESSED CONCRETE GIRDER NOTES
SEE SHEET R.N. B-30A.

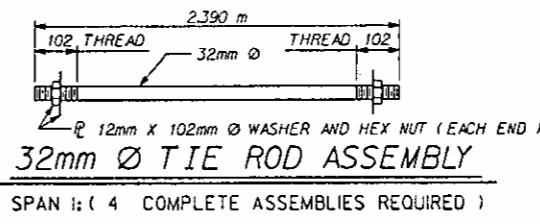
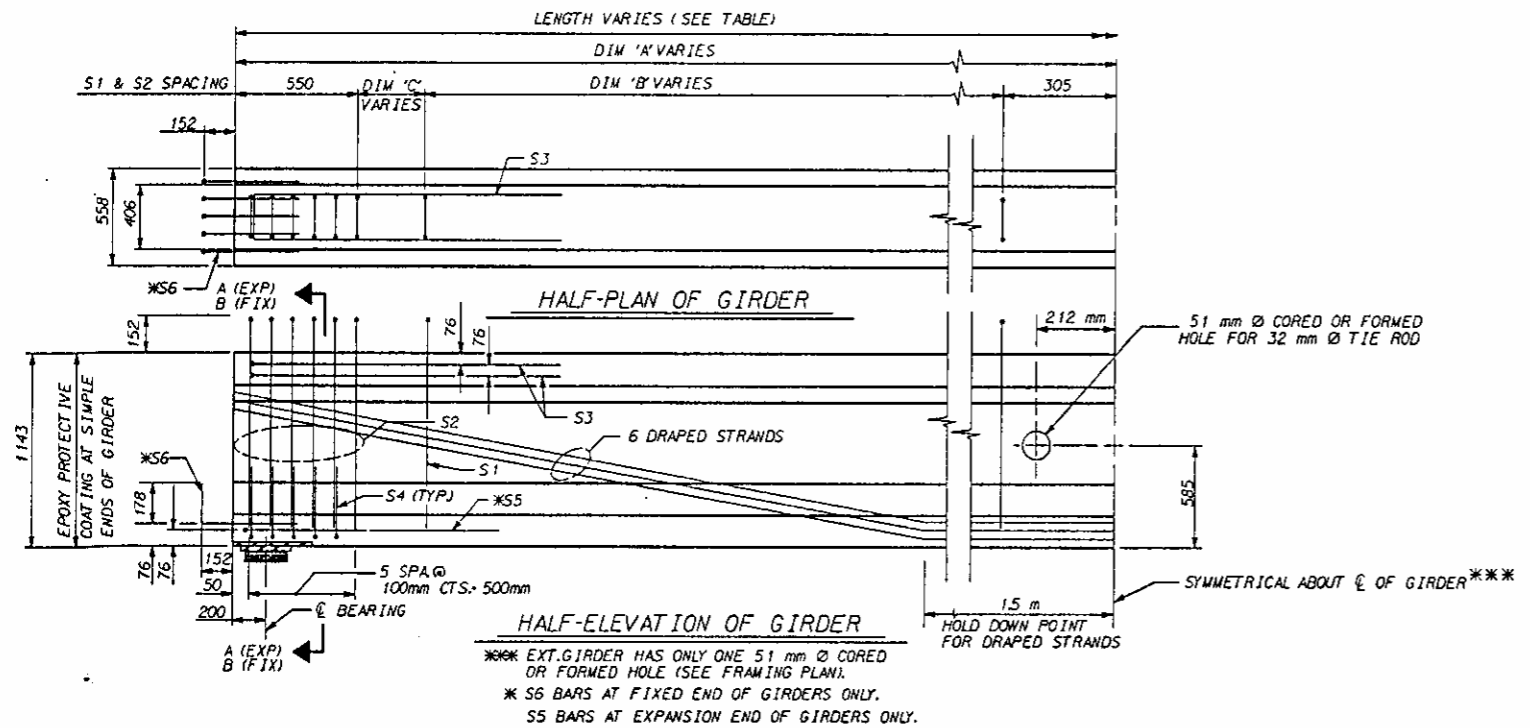
| 12.70mm • L. R. GRADE 1860 STRANDS | | |
|------------------------------------|-----------------------------------|-----------------------------------|
| AREA (mm ²) | ULTIMATE STRENGTH (kN PER STRAND) | APPLIED PRESTRESS (kN PER STRAND) |
| 98.71 | 183.7 | 137.8 |

| REINFORCING STEEL FOR ONE GIRDER | | | | | | |
|----------------------------------|-----|--------|------|------|--------|--------|
| GIRDER | BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
| GIRDER 1 | S1 | 34 | #15 | 1 | 2600 | 139 |
| | S2 | 32 | #15 | 1 | 2600 | 131 |
| GIRDER 2 | S1 | 30 | #15 | 1 | 2600 | 122 |
| | S2 | 12 | #20 | 1 | 2600 | 73 |
| GIRDER 3 | S3 | 4 | #15 | 3 | 2640 | 17 |
| | S4 | 20 | #15 | 2 | 840 | 26 |
| | S5 | 1 | #15 | 3 | 2900 | 5 |
| | *S6 | 4 | #15 | STR. | 1600 | 10 |

**NOTE: S6 BARS SHALL BE BENT AFTER GIRDER FABRICATION AND BEFORE SHIPMENT.



12.70mm Ø LOW RELAXATION STRAND LAYOUT



| QUANTITIES FOR ONE GIRDER | | | |
|---------------------------|-------------------|-----------------|------------------------|
| GIRDER | REINFORCING STEEL | 35 MPa CONCRETE | 12.70mm Ø L.R. STRANDS |
| | kg | m ³ | No. |
| GIRDER 1 | 270 | 7.78 | 24 |
| GIRDER 2 | 262 | 7.47 | 24 |
| GIRDER 3 | 253 | 7.17 | 24 |

| GIRDERS REQUIRED | | |
|------------------|------------|------------------|
| NUMBER | LENGTH (m) | TOTAL LENGTH (m) |
| GIRDER 1 | 1 | 21,554 |
| GIRDER 2 | 1 | 20,706 |
| GIRDER 3 | 1 | 19,858 |

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: II+58.893 -I- SBL POT

| SPAN | GIRDER | LENGTH (m) | DIM 'A' (m) | DIM 'B' | DIM 'C' |
|------|--------|------------|-------------|-----------------|----------------|
| 1 | 1 | 21,554 | 10,777 | 16 SPA @ 610 mm | 1 SPA @ 162 mm |
| 1 | 2 | 20,706 | 10,353 | 15 SPA @ 610 mm | 1 SPA @ 348 mm |
| 1 | 3 | 19,858 | 9,929 | 14 SPA @ 610 mm | 1 SPA @ 534 mm |

ASSEMBLED BY: JRS/WEB DATE: 01/95
CHECKED BY: DAR DATE: 6/95
DRAWN BY: MIKE BRITT DATE: DEC. 1987
CHECKED BY: RANDY BISSETTE DATE: DEC. 1987

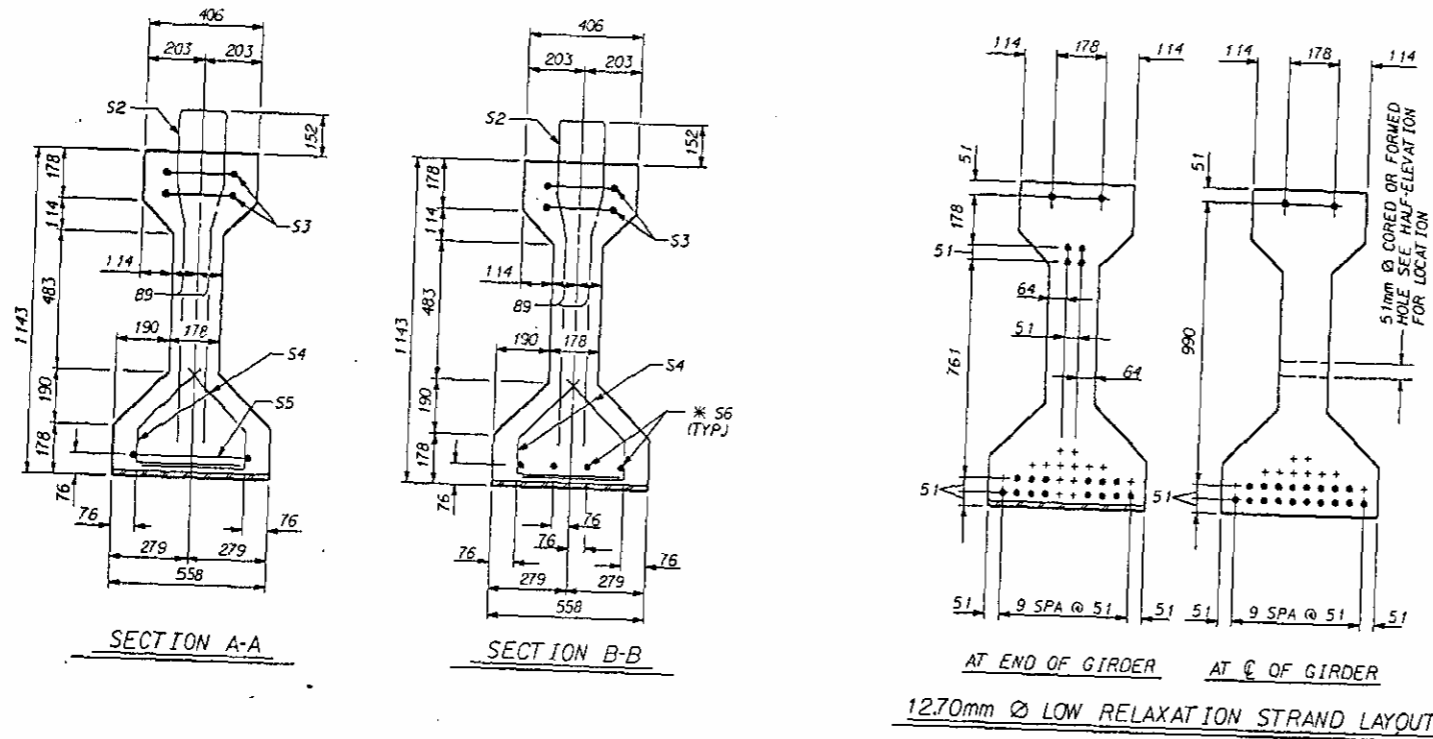
SPECIAL STANDARD
*****SYSTEM*****
*****IDGN*****
*****USER*****

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
1143mm PRESTRESSED
CONCRETE GIRDER
SPANS 1(GIRDERS 1-3)
CONTINUOUS FOR LIVE LOAD

| REVISIONS | | | | | |
|-----------|----|------|-----|----|------|
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. 5-27
TOTAL SHEETS 79



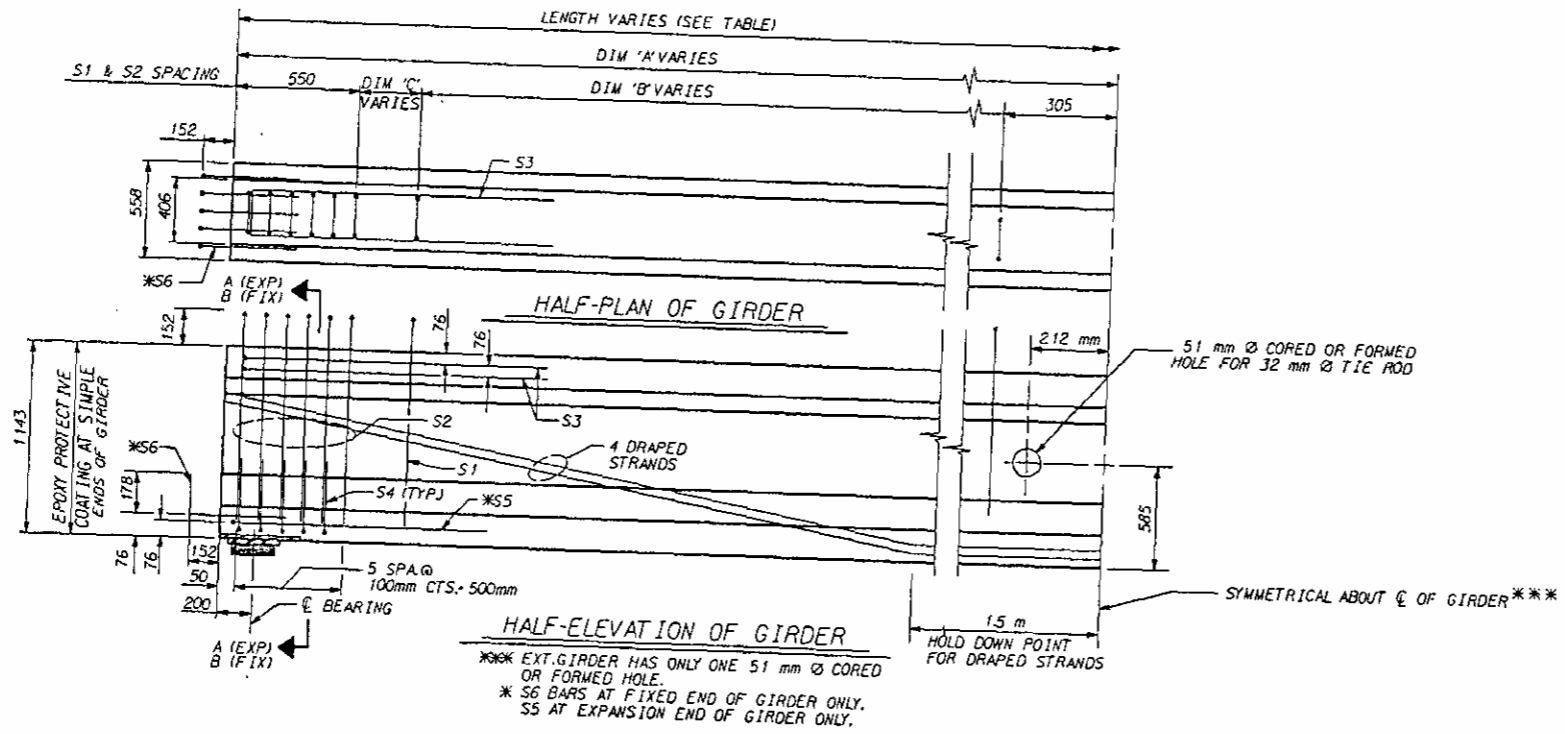
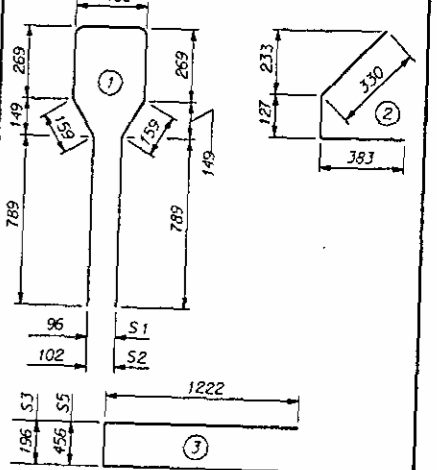
NOTE:
FOR PRESTRESSED CONCRETE GIRDER NOTES
SEE SHEET R.N.B-30A

| 12.70mm • L. R. GRADE 1860 STRANDS | | |
|------------------------------------|---|---|
| AREA (mm ²) | ULTIMATE STRENGTH (KN PER STRAND) | APPLIED PRESTRESS (KN PER STRAND) |
| 98.71 | 183.7 | 137.8 |

| REINFORCING STEEL FOR ONE GIRDER | | | | | | |
|----------------------------------|-----|--------|------|------|--------|--------|
| GIRDER | BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
| GIRDER 4 | S1 | 30 | #15 | 1 | 2600 | 122 |
| | S2 | 28 | #15 | 1 | 2600 | 114 |
| GIRDER 5 | S2 | 12 | #20 | 1 | 2600 | 73 |
| | S3 | 4 | #15 | 3 | 2640 | 17 |
| | S4 | 20 | #15 | 2 | 840 | 26 |
| | S5 | 1 | #15 | 3 | 2900 | 5 |
| | *S6 | 4 | #15 | STR. | 1600 | 10 |

**NOTES S6 BARS SHALL BE BENT AFTER GIRDER FABRICATION AND BEFORE SHIPMENT.

BAR TYPES
ALL BAR DIMENSIONS ARE OUT-TO-OUT



| SPAN | GIRDER | LENGTH (m) | DIM 'A' (m) | DIM 'B' | DIM 'C' |
|------|--------|------------|-------------|-----------------|----------------|
| I | 4 | 19.010 | 9.505 | 14 SPA @ 610 mm | 1 SPA @ 110 mm |
| I | 5 | 18.162 | 9.081 | 13 SPA @ 610 mm | 1 SPA @ 295 mm |

| QUANTITIES FOR ONE GIRDER | | | |
|---------------------------|-------------------|-----------------|------------------------|
| GIRDER | REINFORCING STEEL | 35 MPa CONCRETE | 12.70mm Ø L.R. STRANDS |
| | kg | m ³ | No. |
| GIRDER 4 | 251 | 6.86 | 20 |
| GIRDER 5 | 245 | 6.56 | 20 |

| GIRDERS REQUIRED | | | |
|------------------|------------|------------------|--------|
| NUMBER | LENGTH (m) | TOTAL LENGTH (m) | |
| GIRDER 4 | 1 | 19.010 | 19.010 |
| GIRDER 5 | 1 | 18.162 | 18.162 |

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -1- SBL POT

SHEET 2 OF 2
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
1143mm PRESTRESSED
CONCRETE GIRDER
SPANS 1 (GIRDERS 4 & 5)
CONTINUOUS FOR LIVE LOAD

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

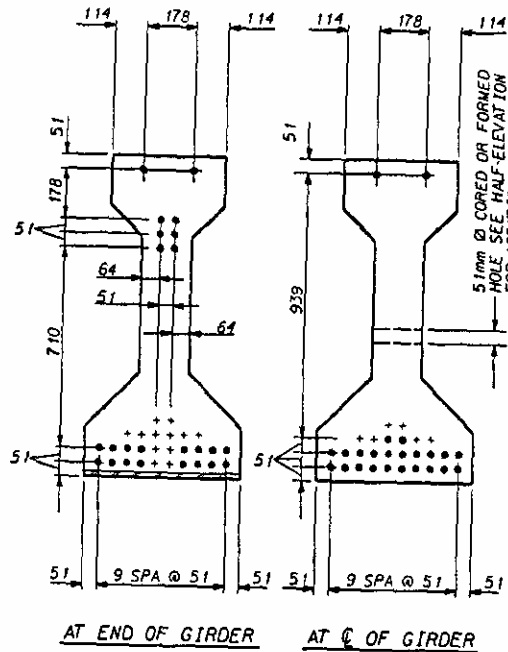
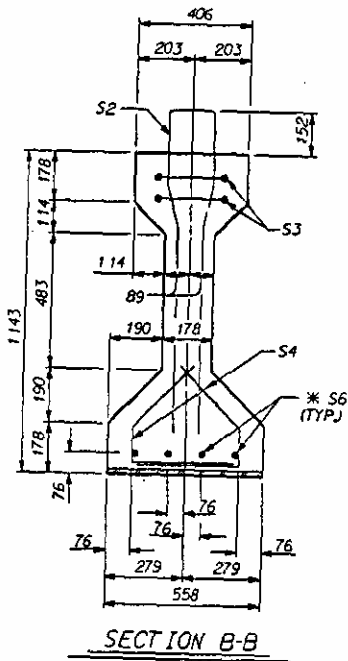
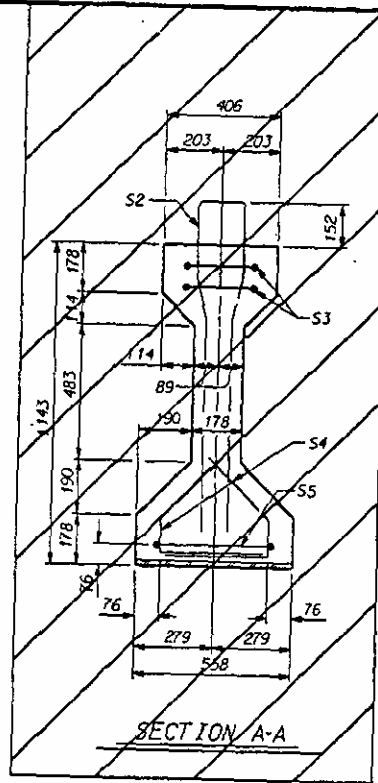


| | | |
|----------------------------|-----------------|----------|
| ASSEMBLED BY: JRS/WEB | DATE: 01/95 | SPECIAL |
| CHECKED BY: DAR | DATE: 6/95 | |
| DRAWN BY: MIKE BRITT | DATE: DEC. 1987 | STANDARD |
| CHECKED BY: RANDY BISSETTE | DATE: DEC. 1987 | |

REV. 10/1/93J ARB GRP

R.N. B-28

| NO. | BY | DATE | NO. | BY | DATE | SHEET NO. |
|-----|----|------|-----|----|------|-----------|
| 1 | | | 3 | | | 5-28 |



12.70mm Ø LOW RELAXATION STRAND LAYOUT

NOTE:
FOR PRESTRESSED CONCRETE GIRDER NOTES
SEE SHEET R.N.B-30A

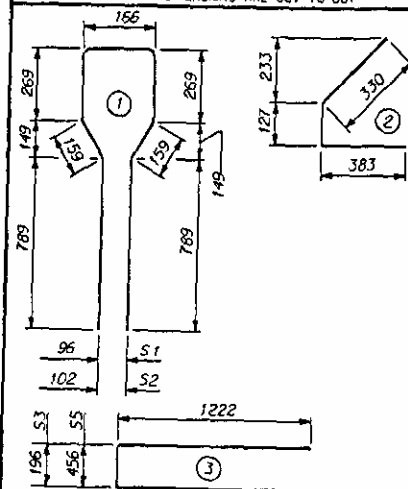
| 12.70mm • L. R. GRADE 1860 STRANDS | | |
|------------------------------------|---|---|
| AREA (mm ²) | ULTIMATE STRENGTH (KN PER STRAND) | APPLIED PRESTRESS (KN PER STRAND) |
| 98.71 | 183.7 | 137.8 |

| REINFORCING STEEL FOR ONE GIRDER | | | | | |
|----------------------------------|--------|------|------|--------|--------|
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
| S1 | 34 | #15 | 1 | 2600 | 139 |
| S2 | 12 | #20 | 1 | 2600 | 73 |
| S3 | 4 | #15 | 3 | 2640 | 17 |
| S4 | 20 | #15 | 2 | 840 | 26 |
| *S6 | 8 | #15 | STR. | 1600 | 20 |

**NOTE: S6 BARS SHALL BE BENT AFTER GIRDER FABRICATION AND BEFORE SHIPMENT.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT

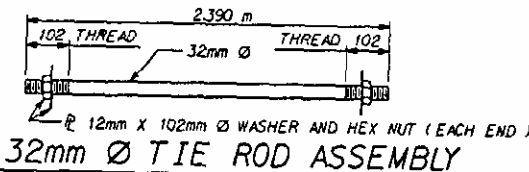
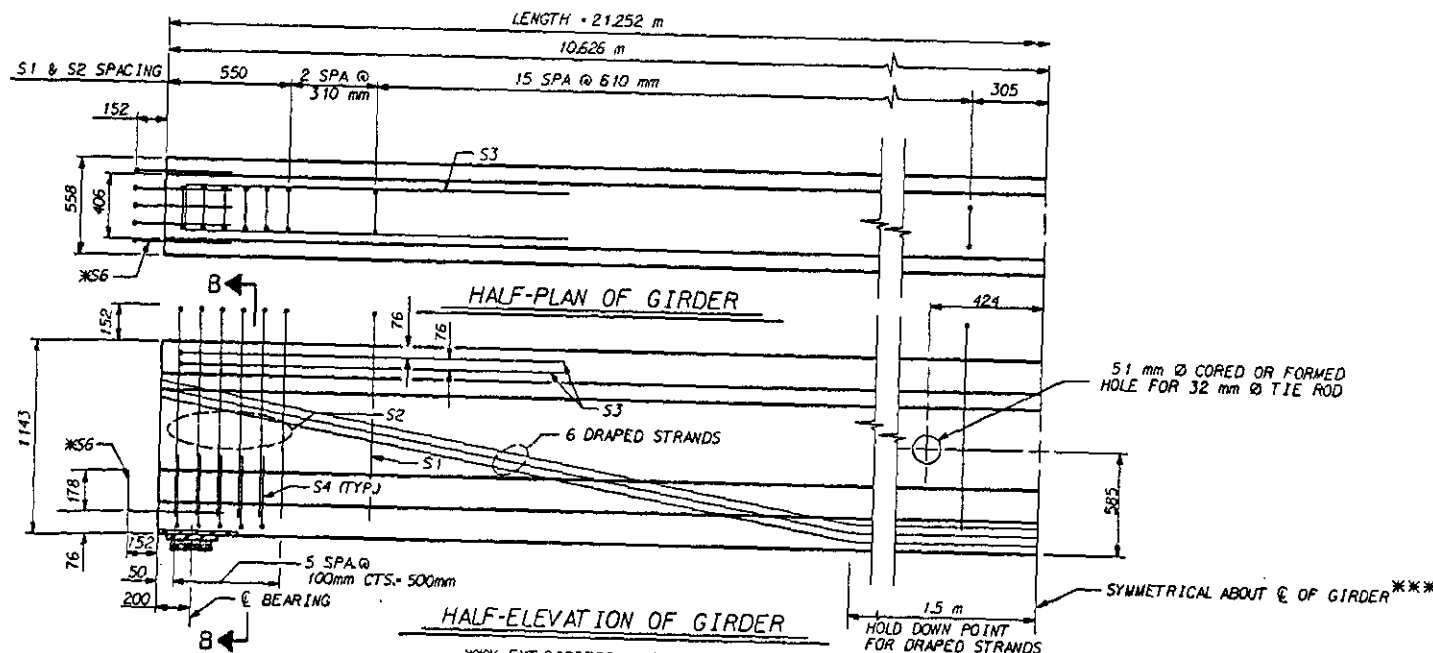


QUANTITIES FOR ONE GIRDER

| REINFORCING STEEL | 35 MPa CONCRETE | 12.70mm Ø L.R. STRANDS |
|-------------------|-----------------|------------------------|
| kg | m ³ | No. |
| 265 | 7.67 | 24 |

GIRDERS REQUIRED

| NUMBER | LENGTH (m) | TOTAL LENGTH (m) |
|--------|------------|------------------|
| 10 | 21,252 | 212,520 |



SPAN J: (4 COMPLETE ASSEMBLIES REQUIRED)
SPAN K: (4 COMPLETE ASSEMBLIES REQUIRED)

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: J1+58.893 -1- SBL POT

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
1143mm PRESTRESSED
CONCRETE GIRDER
SPANS J,K
CONTINUOUS FOR LIVE LOAD

REVISIONS

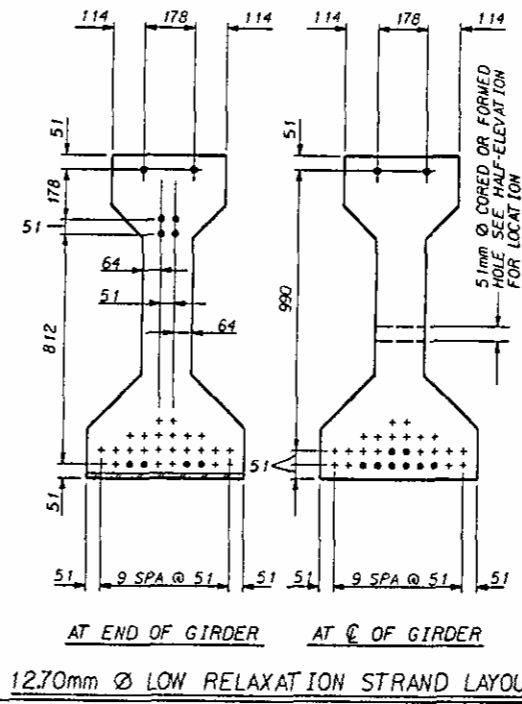
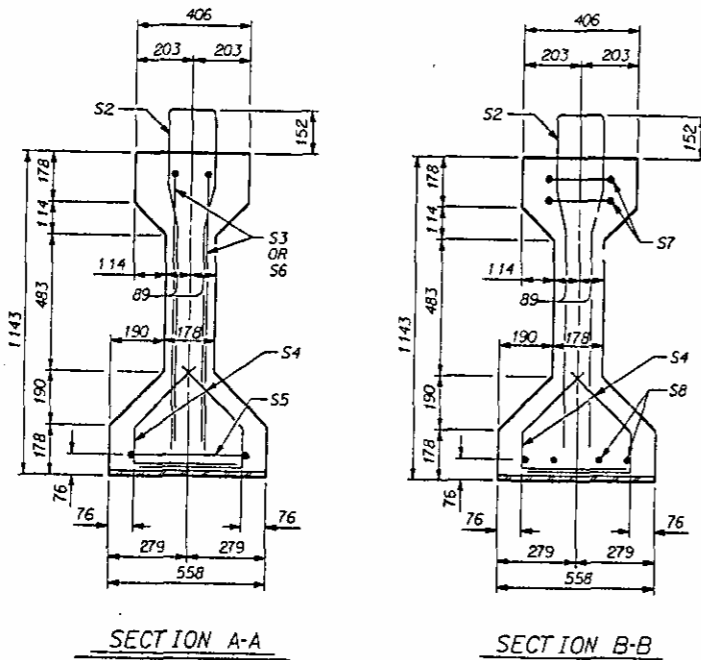
| NO. | BY | DATE | NO. | BY | DATE |
|-----|----|------|-----|----|------|
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. S-29
TOTAL SHEETS 79

| | | |
|----------------------------|-----------------|----------|
| ASSEMBLED BY: JRS/REB | DATE: 01/95 | SPECIAL |
| CHECKED BY: DAR | DATE: 6/95 | |
| DRAWN BY: MIKE BRITT | DATE: DEC. 1987 | STANDARD |
| CHECKED BY: RANDY BISSETTE | DATE: DEC. 1987 | |

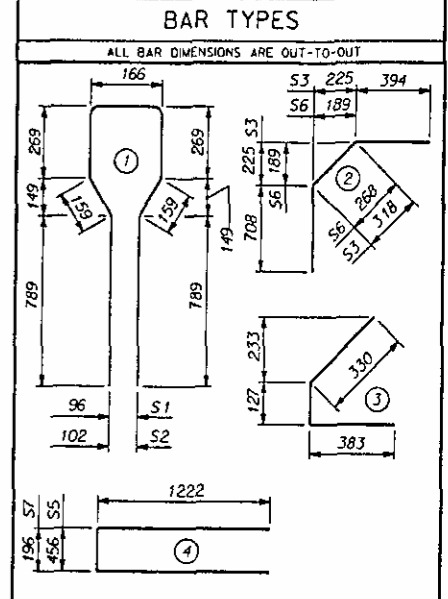
REV. 10/11/93R ARB M.GRP
*****SYSTEM*****
*****USER*****

03/11/96
 K:\87234\000\cadd\sr\pccg2.m\k.dgn
 K:\87234\000\cadd\sr\pccg2.m\k.dgn



NOTE:
FOR PRESTRESSED CONCRETE GIRDER NOTES
SEE SHEET R.N.B-30A

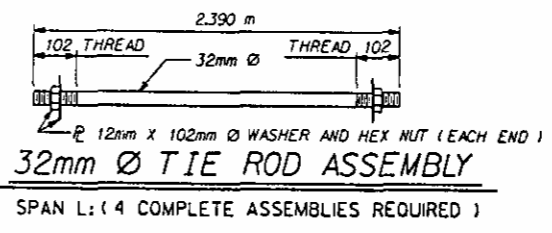
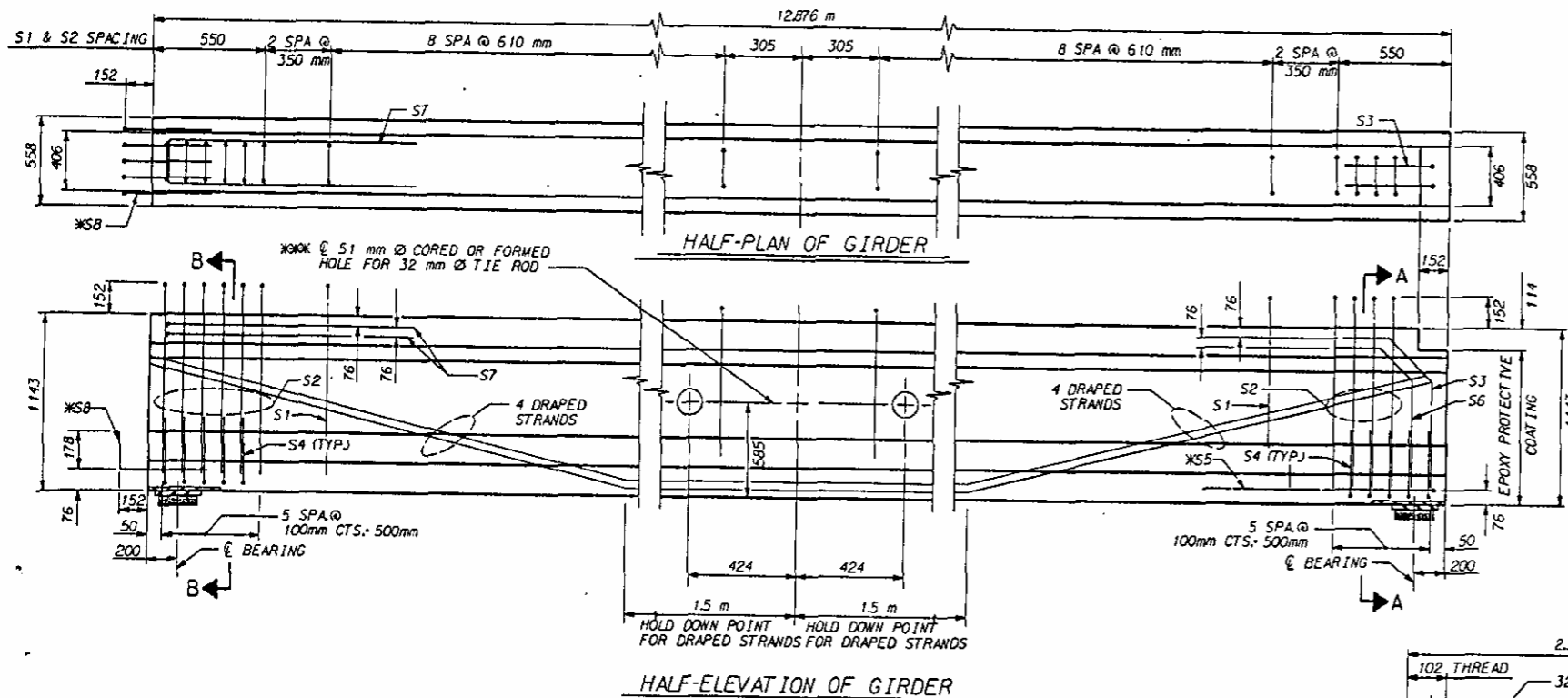
| 12.70mm • L. R. GRADE 1860 STRANDS | | | | | |
|------------------------------------|---|---|------|--------|--------|
| AREA (mm ²) | ULTIMATE STRENGTH (kN PER STRAND) | APPLIED PRESTRESS (kN PER STRAND) | | | |
| 98.71 | 183.7 | 137.8 | | | |
| REINFORCING STEEL FOR ONE GIRDER | | | | | |
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
| S1 | 20 | #15 | 1 | 2600 | 82 |
| S2 | 10 | #20 | 1 | 2600 | 61 |
| S3 | 2 | #20 | 2 | 1420 | 7 |
| S4 | 20 | #15 | 3 | 840 | 26 |
| S5 | 1 | #15 | 4 | 2900 | 5 |
| S6 | 2 | #20 | 2 | 1370 | 6 |
| S7 | 2 | #15 | 4 | 2640 | 8 |
| *JSB | 4 | #15 | STR. | 1600 | 10 |



| QUANTITIES FOR ONE GIRDER | | |
|---------------------------|-----------------|------------------------|
| REINFORCING STEEL | 35 MPa CONCRETE | 12.70mm Ø L.R. STRANDS |
| kg | m ³ | No. |
| 205 | 4.65 | 10 |

| GIRDERS REQUIRED | | |
|------------------|------------|------------------|
| NUMBER | LENGTH (m) | TOTAL LENGTH (m) |
| 5 | 12.876 | 64.380 |

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: II+58.893 -L- SBL POT



THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

NORTH CAROLINA PROFESSIONAL SEAL 10656 ENGINEER L. MARK PEARSON

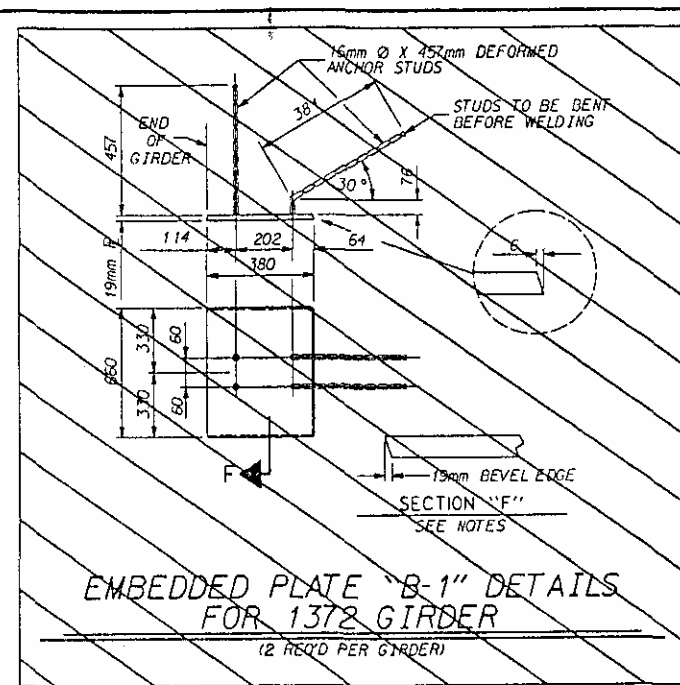
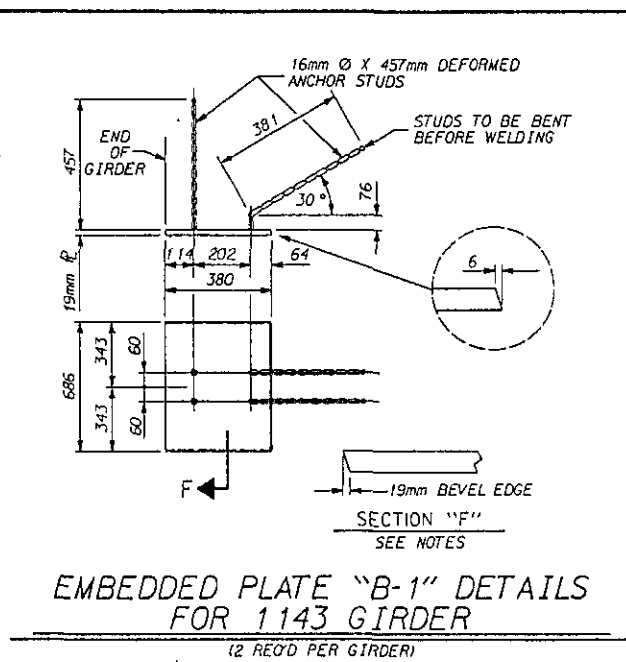
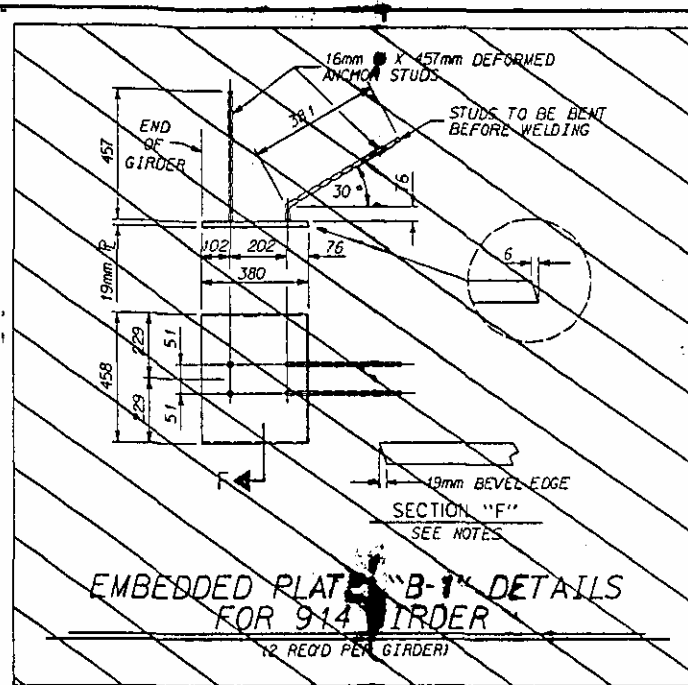
R.N. B-30

| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | |
|---|----|------|
| STANDARD 1143mm PRESTRESSED CONCRETE GIRDER SPAN L CONTINUOUS FOR LIVE LOAD | | |
| REVISIONS | | |
| NO. | BY | DATE |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |

| | |
|-------------------|--------------------|
| SHEET NO. S-30 | TOTAL SHEETS 79 |
|-------------------|--------------------|

| | | |
|----------------------------|-----------------|----------|
| ASSEMBLED BY: JRS | DATE: 01/95 | SPECIAL |
| CHECKED BY: DAR | DATE: 6/95 | |
| DRAWN BY: MIKE BRITT | DATE: DEC. 1987 | STANDARD |
| CHECKED BY: RANDY BISSETTE | DATE: DEC. 1987 | |

REV. 10/1/93R ARB W GRP



NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO ASTM A-416 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TIE ROD ASSEMBLY SHALL BE ASTM A-36M GRADE STRUCTURAL STEEL.

ALL REINFORCING STEEL SHALL BE GRADE 400.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

STEEL SOLE PLATES, BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

DEFORMED ANCHOR STUDS SHALL CONFORM TO ASTM A-496. WELDING PROCEDURE QUALIFICATION TEST FOR DEFORMED ANCHOR STUDS MAY BE REQUIRED.

ALL PRESTRESSED STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 28 MPa.

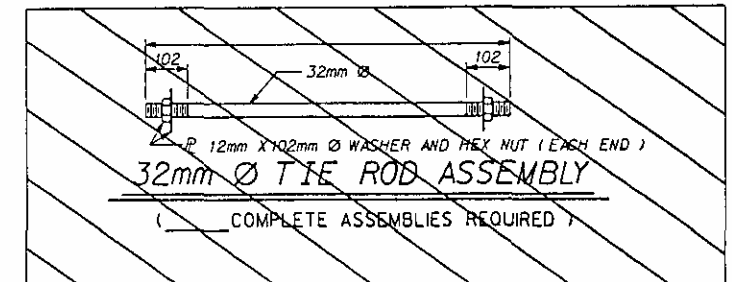
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER SHALL BE RAKED TO A DEPTH OF 6mm EXCEPT IN THE AREA BETWEEN THE STIRRUP AND THE EDGE OF THE GIRDER.

FOR CONCRETE INSERTS FOR BRIDGE DRAINAGE SYSTEM SEE SHEETS R.N. B-70 AND B-71.

AT EXTERIOR GIRDER, FIELD BEND 'S6' BARS TO FIT WITHIN DIAPHRAGM END FACE WITH 50mm CLEARANCE.

WHEN DRAPED STRANDS ARE DETAILED, THE LONGITUDINAL LOCATION OF THE HOLD DOWN DEVICES SHALL BE WITHIN 150mm OF THE LOCATION SHOWN AND THE CENTER OF GRAVITY OF THE GROUP OF STRANDS SHALL BE LOCATED WITHIN 13mm OF THE THEORETICAL LOCATION SHOWN.



PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -L- SBL POT

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.



R.N. B-30A

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**STANDARD
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS
SPANS A & B AND I THRU L**

| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|-----------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | 5-31 |
| 2 | | | 4 | | | 79 |

| | | |
|---------------------------------|------------------------|----------|
| ASSEMBLED BY: <u>RB</u> | DATE: <u>2/96</u> | SPECIAL |
| CHECKED BY: <u>LMP</u> | DATE: <u>2/96</u> | |
| DRAWN BY: <u>EO ROSE</u> | DATE: <u>NOV. 1991</u> | STANDARD |
| CHECKED BY: <u>GREG PERETTI</u> | DATE: <u>NOV. 1991</u> | |

NOTES

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO 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.

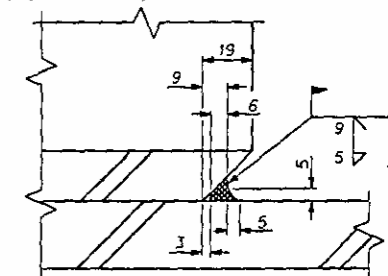
THE 51mm DIA. PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 P.V.C. PLASTIC PIPE. THE P.V.C. PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF A.S.T.M. D1785.

STEEL SOLE PLATES, BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

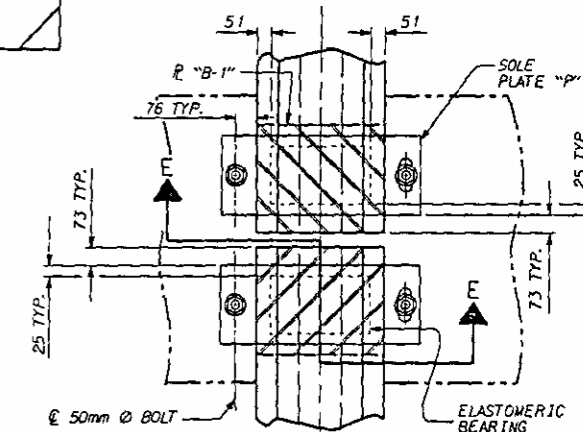
PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 149°C. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.



DETAIL "A"



TYPICAL HALF-PLAN (SHOWING FIX-FIX BENT)

TYPICAL HALF-PLAN (SHOWING EXP-EXP BENT)

PROJECT NO. B-2612

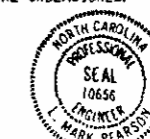
ROWAN-DAVIDSON COUNTY

STATION: U+58.893 -L-SBL POT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Raleigh
STANDARD ELASTOMERIC BEARING DETAILS
PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE

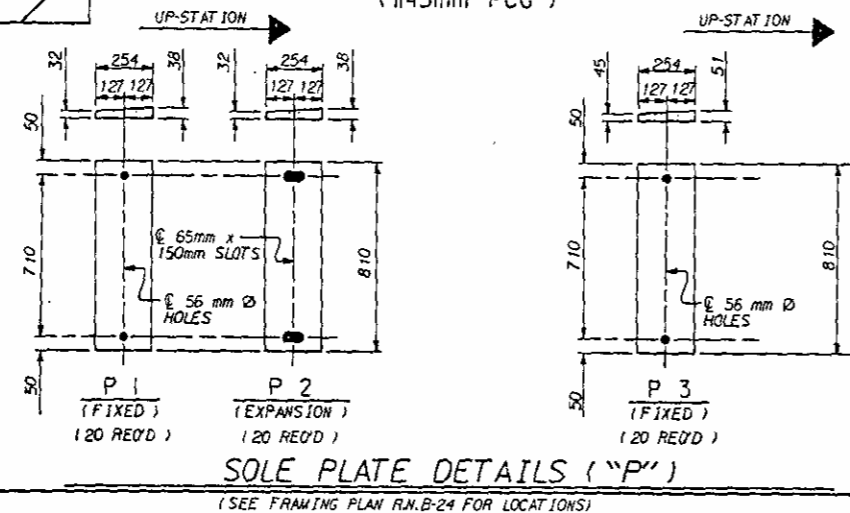
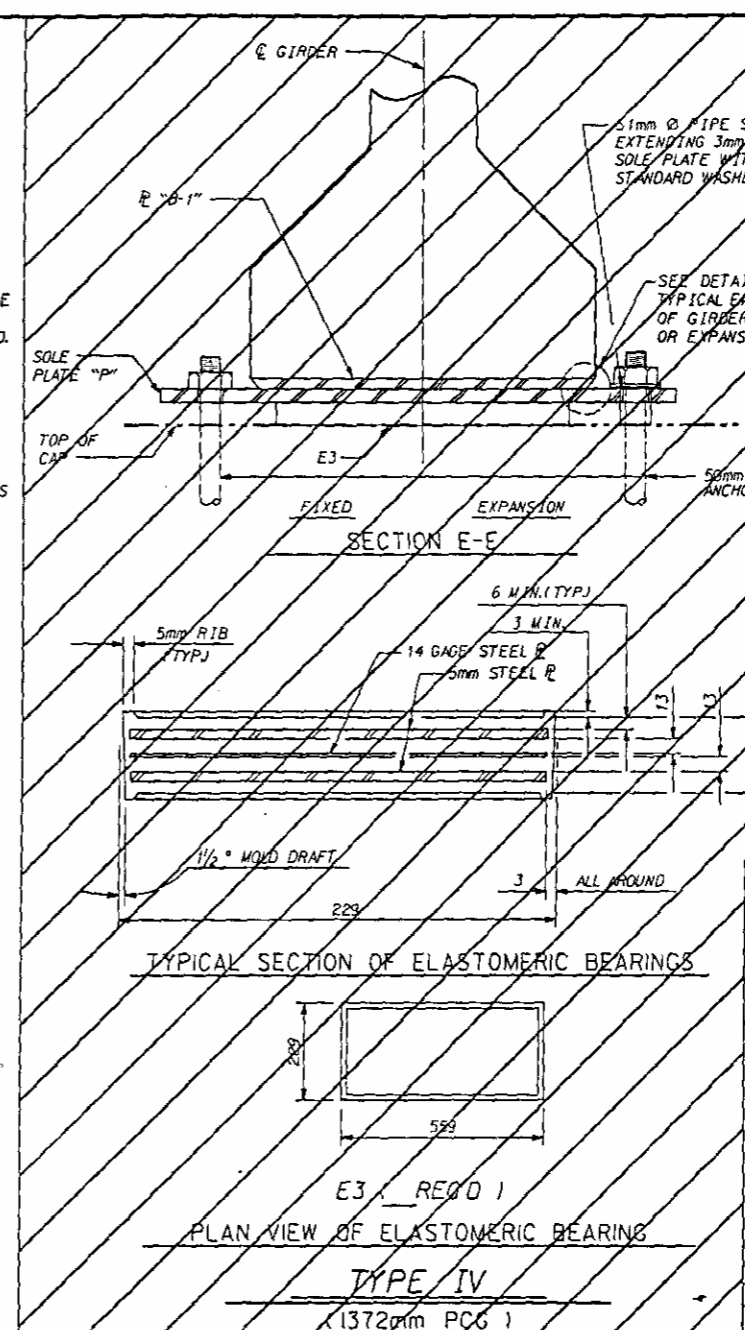
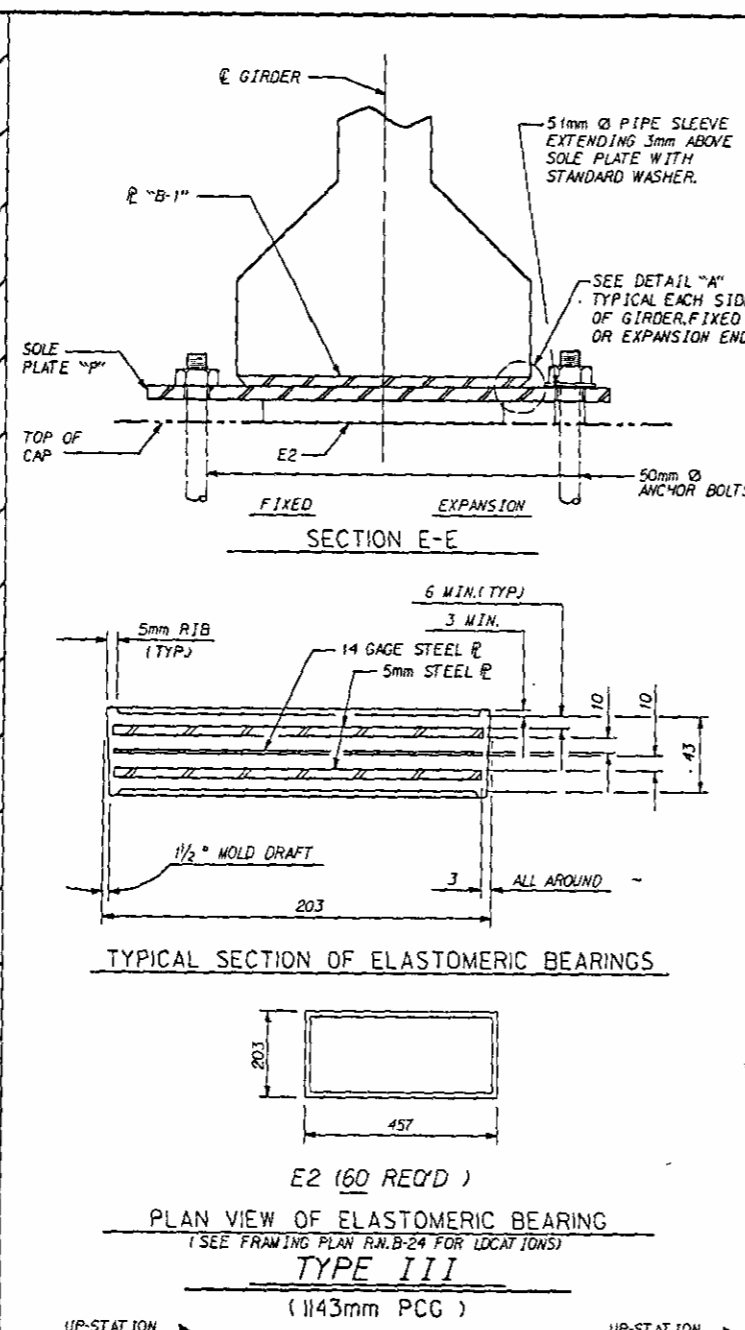
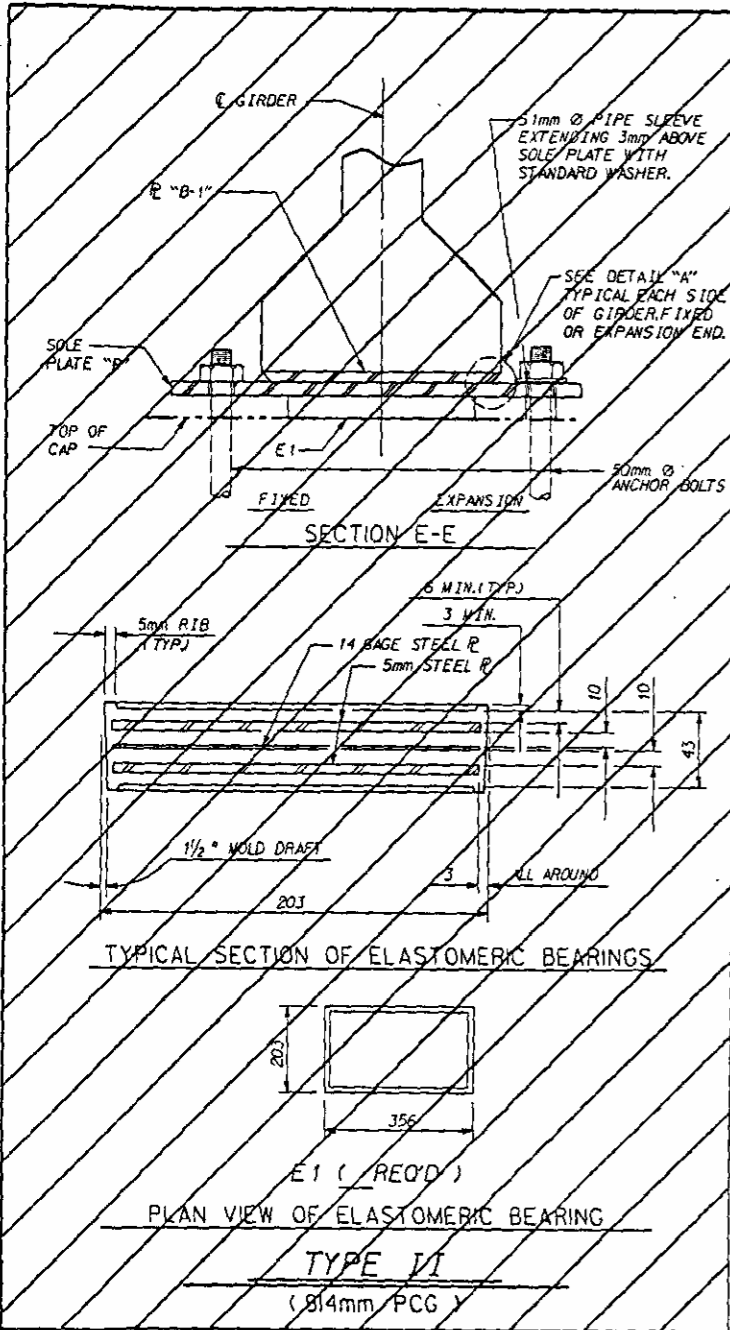
THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.



R.N. B-31

| - LOAD RATINGS - | |
|---------------------|--------------------|
| | MAX. D. L. + L. L. |
| 814mm PCG TYPE II | 366 kN |
| 1143mm PCG TYPE III | 512 kN |
| 1372mm PCG TYPE IV | 611 kN |

NOTE: ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.



| | | |
|-----------------------|---------------|----------|
| ASSEMBLED BY: JBS | DATE: 12/91 | SPECIAL |
| CHECKED BY: QAP | DATE: 2/96 | |
| DRAWN BY: W.J. HARRIS | DATE: 8-22-89 | STANDARD |
| CHECKED BY: C.R. KING | DATE: 8-22-89 | |

REV. 10/1/93 ELR M CRP

STD.No.EB2W

NOTES

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO 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.

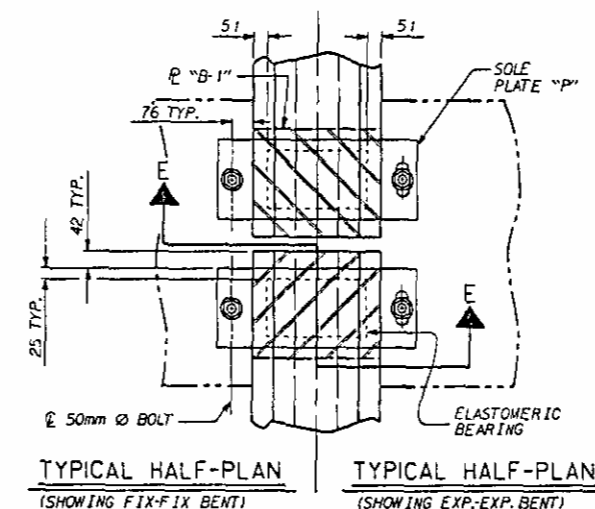
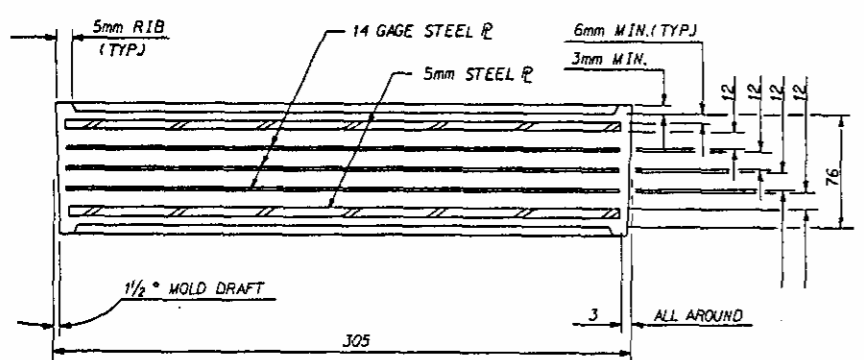
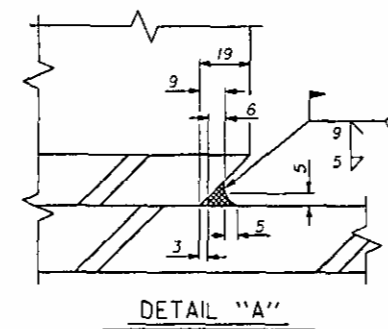
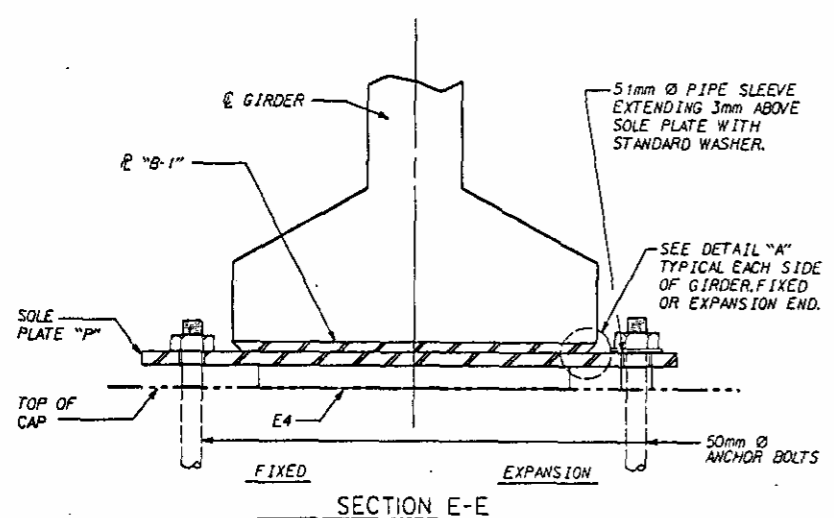
THE 51mm DIA. PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 P.V.C. PLASTIC PIPE. THE P.V.C. PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF A.S.T.M. D1785.

STEEL SOLE PLATES, BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.

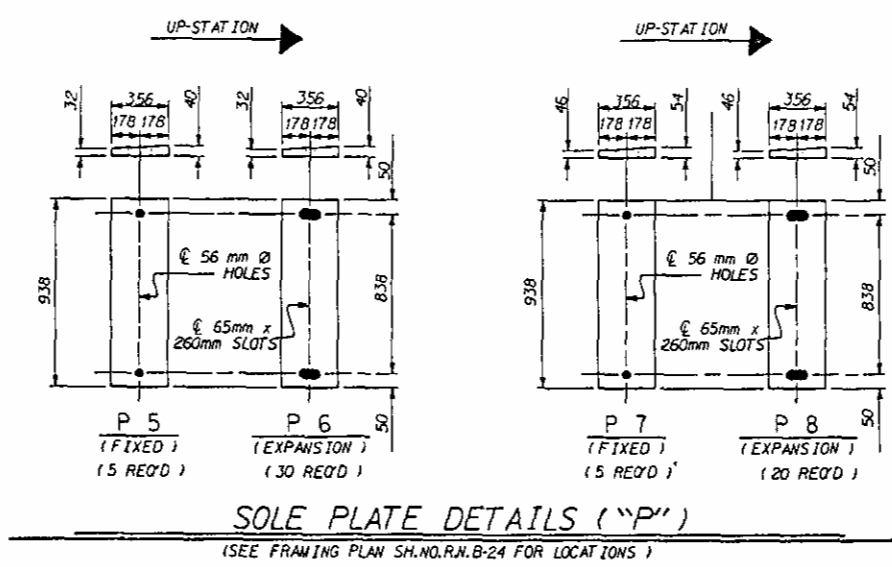
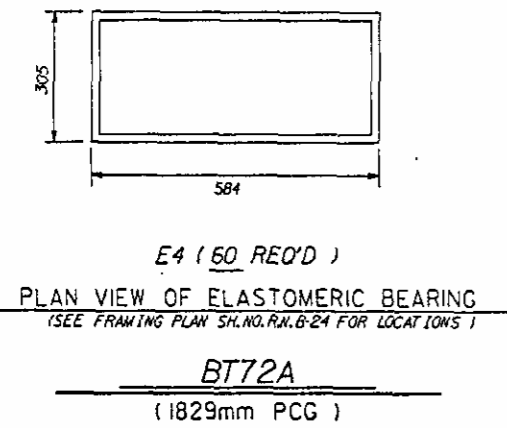
WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 149°C. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.



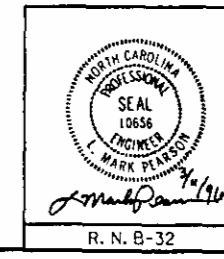
| - LOAD RATINGS - | |
|---------------------|--------------------|
| | MAX. D. L. + L. L. |
| 914mm PCG TYPE II | 366 kN |
| 1113mm PCG TYPE III | 512 kN |
| 1372mm PCG TYPE IV | 611 kN |
| 1829mm PCG -BT72A | 998 kN |

TYPICAL SECTION OF ELASTOMERIC BEARINGS



NOTE: ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: II+58.893 -L-SBL POT
 SHEET 2 OF 2



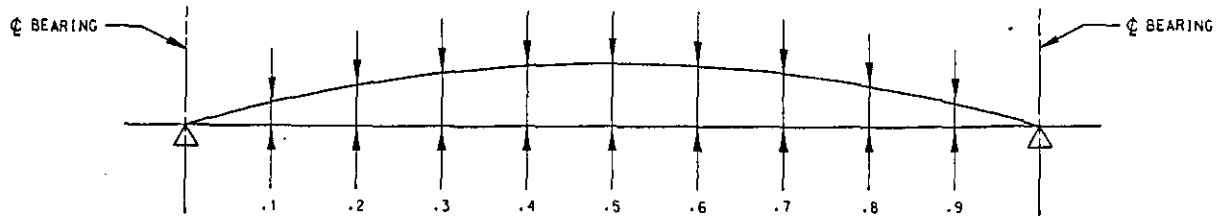
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

ELASTOMERIC BEARING DETAILS
 PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE

| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|-----------------|
| NO. | BY | DATE | NO. | BY | DATE | 5-33 |
| 1 | | | 2 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

R. N. B-32

DRAWN BY: IRS DATE: 1/95
 CHECKED BY: DAR DATE: 1/95
 APPROVED BY: LMP DATE: 2/96



| | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------------------------------|
| SPAN A GIRDERS 1 AND 5 | 17 | 30 | 39 | 45 | 47 | 45 | 39 | 30 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -7 | -13 | -18 | -21 | -22 | -21 | -18 | -13 | -7 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 10 | 17 | 21 | 24 | 25 | 24 | 21 | 17 | 10 | FINAL CAMBER |
| SPAN A GIRDERS 2,3 AND 4 | 17 | 30 | 39 | 45 | 47 | 45 | 39 | 30 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -7 | -13 | -18 | -21 | -22 | -21 | -18 | -13 | -7 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 10 | 17 | 21 | 24 | 25 | 24 | 21 | 17 | 10 | FINAL CAMBER |
| SPAN B GIRDERS 1 AND 5 | 17 | 30 | 39 | 45 | 47 | 45 | 39 | 30 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -7 | -13 | -18 | -21 | -22 | -21 | -18 | -13 | -7 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 10 | 17 | 21 | 24 | 25 | 24 | 21 | 17 | 10 | FINAL CAMBER |
| SPAN B GIRDERS 2,3 AND 4 | 17 | 30 | 39 | 45 | 47 | 45 | 39 | 30 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -7 | -13 | -18 | -21 | -22 | -21 | -18 | -13 | -7 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 10 | 17 | 21 | 24 | 25 | 24 | 21 | 17 | 10 | FINAL CAMBER |
| SPANS C THRU H GIRDERS 1 AND 5 | 27 | 48 | 63 | 72 | 75 | 72 | 63 | 48 | 27 | CAMBER (GIRDER ALONE IN PLACE) |
| | -14 | -27 | -37 | -43 | -45 | -43 | -37 | -27 | -14 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 13 | 21 | 26 | 29 | 30 | 29 | 26 | 21 | 13 | FINAL CAMBER |
| SPANS C THRU H GIRDERS 2,3 AND 4 | 28 | 48 | 62 | 72 | 75 | 72 | 62 | 48 | 28 | CAMBER (GIRDER ALONE IN PLACE) |
| | -14 | -26 | -35 | -41 | -43 | -41 | -35 | -26 | -14 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 14 | 22 | 27 | 31 | 32 | 31 | 27 | 22 | 14 | FINAL CAMBER |
| SPAN I GIRDER 1 | 20 | 32 | 40 | 46 | 48 | 46 | 40 | 32 | 20 | CAMBER (GIRDER ALONE IN PLACE) |
| | -6 | -12 | -16 | -19 | -20 | -19 | -16 | -12 | -6 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 14 | 20 | 24 | 27 | 28 | 27 | 24 | 20 | 14 | FINAL CAMBER |
| SPAN I GIRDER 2 | 17 | 29 | 39 | 45 | 47 | 45 | 39 | 29 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -6 | -12 | -17 | -20 | -21 | -20 | -17 | -12 | -6 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 11 | 17 | 22 | 25 | 26 | 25 | 22 | 17 | 11 | FINAL CAMBER |
| SPAN I GIRDER 3 | 17 | 29 | 38 | 44 | 45 | 44 | 38 | 29 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -6 | -10 | -14 | -17 | -17 | -17 | -14 | -10 | -6 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 11 | 19 | 24 | 27 | 28 | 27 | 24 | 19 | 11 | FINAL CAMBER |
| SPAN I GIRDER 4 | 13 | 22 | 28 | 32 | 33 | 32 | 28 | 22 | 13 | CAMBER (GIRDER ALONE IN PLACE) |
| | -5 | -9 | -12 | -14 | -14 | -14 | -12 | -9 | -5 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 8 | 13 | 16 | 18 | 19 | 18 | 16 | 13 | 8 | FINAL CAMBER |
| SPAN I GIRDER 5 | 12 | 21 | 27 | 31 | 32 | 31 | 27 | 21 | 12 | CAMBER (GIRDER ALONE IN PLACE) |
| | -4 | -7 | -10 | -11 | -12 | -11 | -10 | -7 | -4 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 8 | 14 | 17 | 20 | 20 | 20 | 17 | 14 | 8 | FINAL CAMBER |
| SPANS J AND K GIRDERS 1 AND 5 | 17 | 30 | 39 | 45 | 47 | 45 | 39 | 30 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -7 | -13 | -18 | -21 | -22 | -21 | -18 | -13 | -7 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 10 | 17 | 21 | 24 | 25 | 24 | 21 | 17 | 10 | FINAL CAMBER |
| SPANS J AND K GIRDERS 2,3 AND 4 | 17 | 30 | 39 | 45 | 47 | 45 | 39 | 30 | 17 | CAMBER (GIRDER ALONE IN PLACE) |
| | -7 | -14 | -18 | -22 | -23 | -22 | -18 | -14 | -7 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 10 | 16 | 21 | 23 | 24 | 23 | 21 | 16 | 10 | FINAL CAMBER |
| SPAN L GIRDERS 1 AND 5 | 1 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 1 | CAMBER (GIRDER ALONE IN PLACE) |
| | -1 | -2 | -2 | -3 | -3 | -3 | -2 | -2 | -1 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | FINAL CAMBER |
| SPAN L GIRDERS 2,3 AND 4 | 1 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 1 | CAMBER (GIRDER ALONE IN PLACE) |
| | -1 | -2 | -2 | -3 | -3 | -3 | -2 | -2 | -1 | DEFL. DUE TO SUPERIMPOSED DEAD LOAD * |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | FINAL CAMBER |

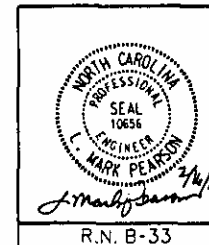
* FUTURE WEARING SURFACE INCLUDED

DEAD LOAD DEFLECTION AND GIRDER CAMBER
(FOR PRESTRESSED CONCRETE GIRDERS WITH LOW RELAXATION STRANDS)

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -L-SBL POT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
PRESTRESSED CONCRETE GIRDER
CAMBER AND
DEAD LOAD DEFLECTION**



| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|--------------|
| NO. | BY | DATE | NO. | BY | DATE | 5-34 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 79 |

DRAWN BY: DAR DATE: 1/95
CHECKED BY: JDJ DATE: 3/95
APPROVED BY: LMP DATE: 2/96

R.N. B-33

DECK PANEL SUPPORTS

PRESTRESSED CONCRETE DECK PANELS SHALL BE SUPPORTED ON THE END BENT DIAPHRAGM BY LAYERS OF 13mm THICK BITUMINOUS TYPE MATERIAL. THE BITUMINOUS TYPE MATERIAL SHALL HAVE A MINIMUM WIDTH OF 25mm AND A MAXIMUM WIDTH OF 38mm. THE DECK PANEL SHALL OVERHANG THE BITUMINOUS TYPE MATERIAL BY 25mm. FOR REMOVAL OF FALSEWORK ON BENT DIAPHRAGMS, SEE SPECIAL PROVISIONS FOR PRESTRESSED CONCRETE PANELS.

BITUMINOUS TYPE MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M213.

THE CONTRACTOR MAY SELECT ONE OF THE TWO DECK PANEL SUPPORT SYSTEMS SHOWN, UNLESS OTHERWISE INDICATED, OR HE MAY SUBMIT A DECK PANEL SUPPORT SYSTEM OF HIS OWN DESIGN TO THE ENGINEER FOR APPROVAL.

A. GROUT BED SUPPORT SYSTEM

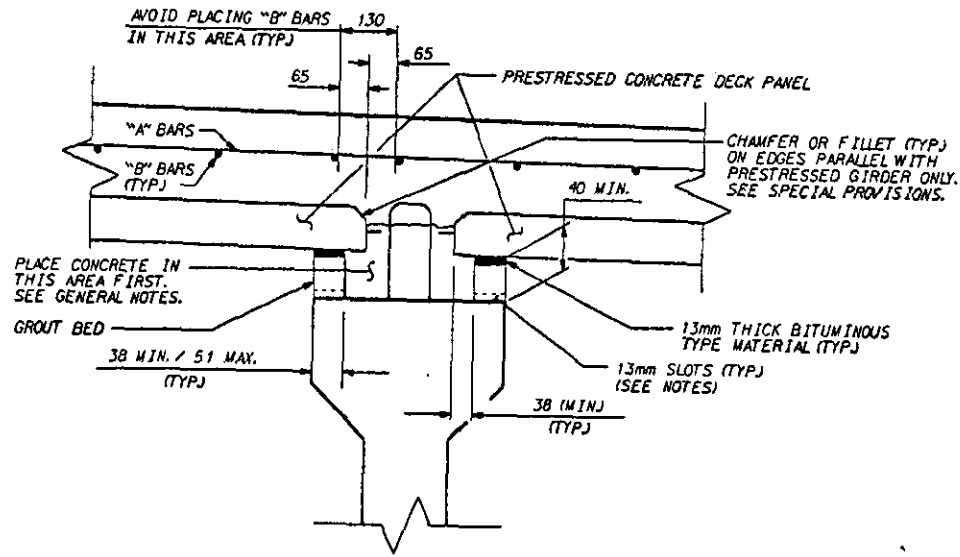
1. THE GROUT BED SHALL HAVE A MINIMUM WIDTH OF 38mm AND A MAXIMUM WIDTH OF 51mm. THE VERTICAL FACES OF THE GROUT BED SHALL BE FORMED. ONE LAYER OF 13mm THICK BITUMINOUS TYPE MATERIAL OF THE SAME WIDTH AS THE GROUT BED SHALL BE GLUED TO THE TOP OF THE GROUT BED; MORE THAN ONE LAYER IS NOT ALLOWED. THE ADHESIVE SHALL BE APPROVED BY THE ENGINEER. THE BITUMINOUS TYPE MATERIAL SHALL HAVE 13mm SLOTS LOCATED AT 1.2m CENTERS. THE GROUT BED SHALL HAVE 13mm X 13mm WIDE SLOTS OR OTHER EQUIVALENT SIZE OPENINGS AT 1.2m CENTERS ALONG THE BOTTOM STAGGERED WITH THE SLOTS IN THE TOP.
2. THE GROUT SHALL BE NON-SHRINK, NON-METALLIC GROUT HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 17 MPa. THE GROUT SHALL BE APPROVED BY THE ENGINEER.

B. POLYSTYRENE SUPPORT SYSTEM

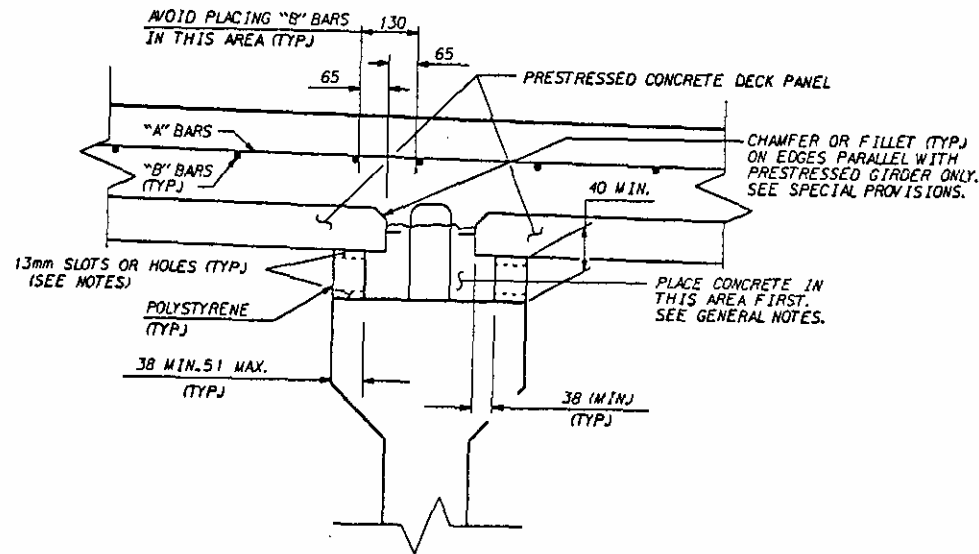
1. ALL POLYSTYRENE SHALL BE DOW STYROFOAM 60 HIGH-LOAD, UC INDUSTRIES FOAMULAR 600 OR APPROVED EQUAL.
2. THE POLYSTYRENE SUPPORT SYSTEM SHALL CONSIST OF ONE LAYER WITH A MINIMUM WIDTH OF 38mm AND A MAXIMUM WIDTH OF 51mm. THE POLYSTYRENE SHALL HAVE 13mm X 13mm WIDE SLOTS OR 13mm DIAMETER HOLES AT 1.2m CENTERS STAGGERED ALONG THE TOP AND BOTTOM.
3. THE POLYSTYRENE MAY BE CUT AND PLACED ON EDGE AS NECESSARY TO MATCH THE REQUIRED BUILDUP PROFILE ALONG THE GIRDER.
4. ADHESIVE, AS APPROVED BY THE ENGINEER, SHALL BE APPLIED TO THE TOP OF THE GIRDER IN A CONTINUOUS BEAD AND IN SUFFICIENT AMOUNT TO PREVENT THE POLYSTYRENE FROM BLOWING OUT AND TO PREVENT GAPS FROM FORMING BETWEEN THE POLYSTYRENE AND THE GIRDER. PRIOR TO PLACEMENT OF THE DECK PANELS, THE ADHESIVE SHALL ALSO BE APPLIED TO THE TOP OF THE POLYSTYRENE.
5. CONCRETE-FILLED BUCKETS, STACKS OF DECK PANELS, BUNDLED REINFORCING BARS OR OTHER HEAVY CONCENTRATED LOADS WILL NOT BE PERMITTED ON THE DECK PANEL ONCE THE PANEL HAS BEEN PLACED ON THE POLYSTYRENE SUPPORT SYSTEM.

GENERAL NOTES

1. FOR PRESTRESSED CONCRETE PANELS, SEE SPECIAL PROVISIONS.
2. SHIFT LONGITUDINAL "B" BARS AS NECESSARY TO OBTAIN A MINIMUM CLEAR DISTANCE OF 65mm TO THE RIGHT OR LEFT OF THE EDGE OF THE DECK PANEL. IF, IN SHIFTING TO OBTAIN THIS CLEARANCE, THE "B" BAR INTERFERES WITH THE STIRRUP IN THE TOP OF THE GIRDER THE "B" BAR MAY BE ELIMINATED.
3. WHEN CASTING THE DECK, PLACE CONCRETE FIRST OVER THE GIRDERS IN CONTINUOUS STRIPS A MINIMUM OF THREE PANEL LENGTHS AHEAD OF THE REST OF THE CONCRETE. CAREFULLY VIBRATE THE CONCRETE OVER THE GIRDERS SO THAT CONCRETE COMPLETELY FILLS THE AREA UNDER THE DECK PANEL OVERHANGS. THEN PLACE AND VIBRATE THE REMAINING DECK CONCRETE.



GROUT BED SUPPORT



POLYSTYRENE SUPPORT

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
 STATION: II+58.893 -L-SBL POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 PRECAST PRESTRESSED
 CONCRETE DECK PANELS

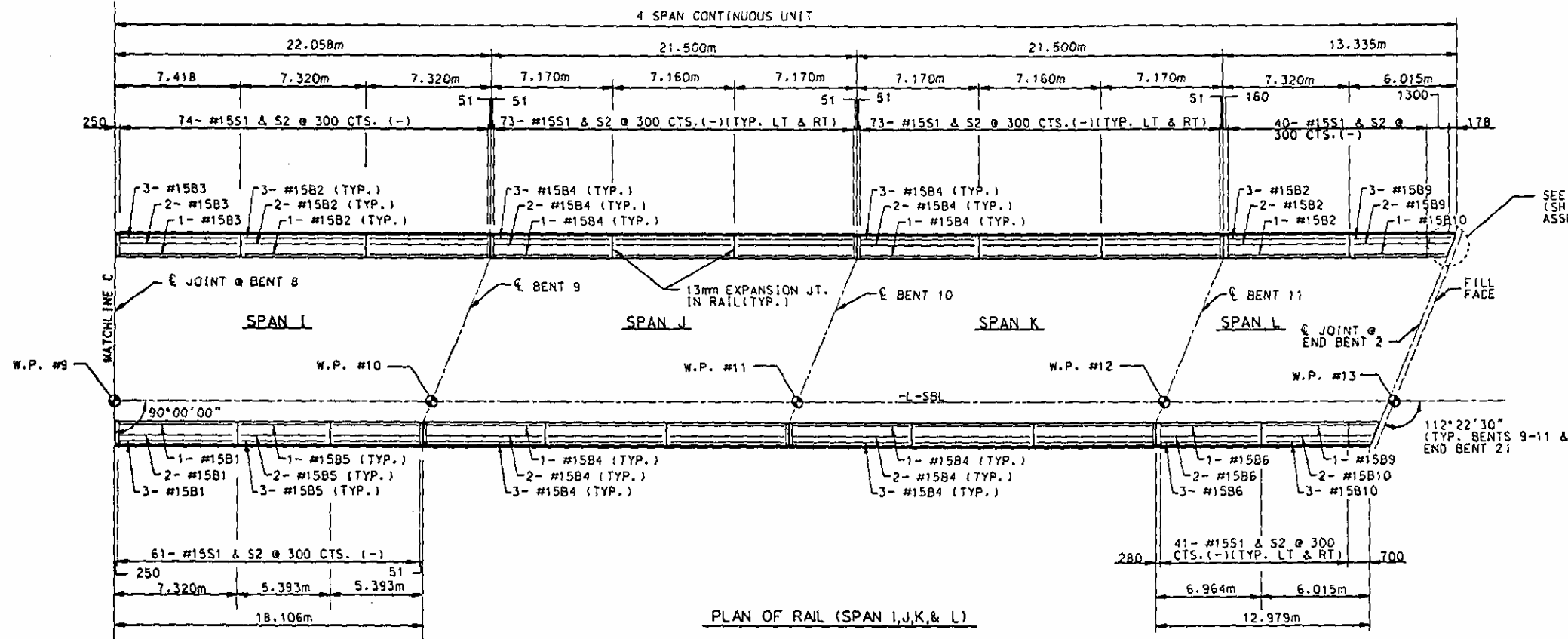
| REVISIONS | | | | | | SHEET NO. | |
|-----------|----|------|-----|----|------|--------------|--|
| NO. | BY | DATE | NO. | BY | DATE | TOTAL SHEETS | |
| 1 | | | 3 | | | S-35 | |
| 2 | | | 4 | | | 79 | |

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED

NORTH CAROLINA PROFESSIONAL SEAL
 10656
 ENGINEER
 L. MARK PEARSON
 2/14/92

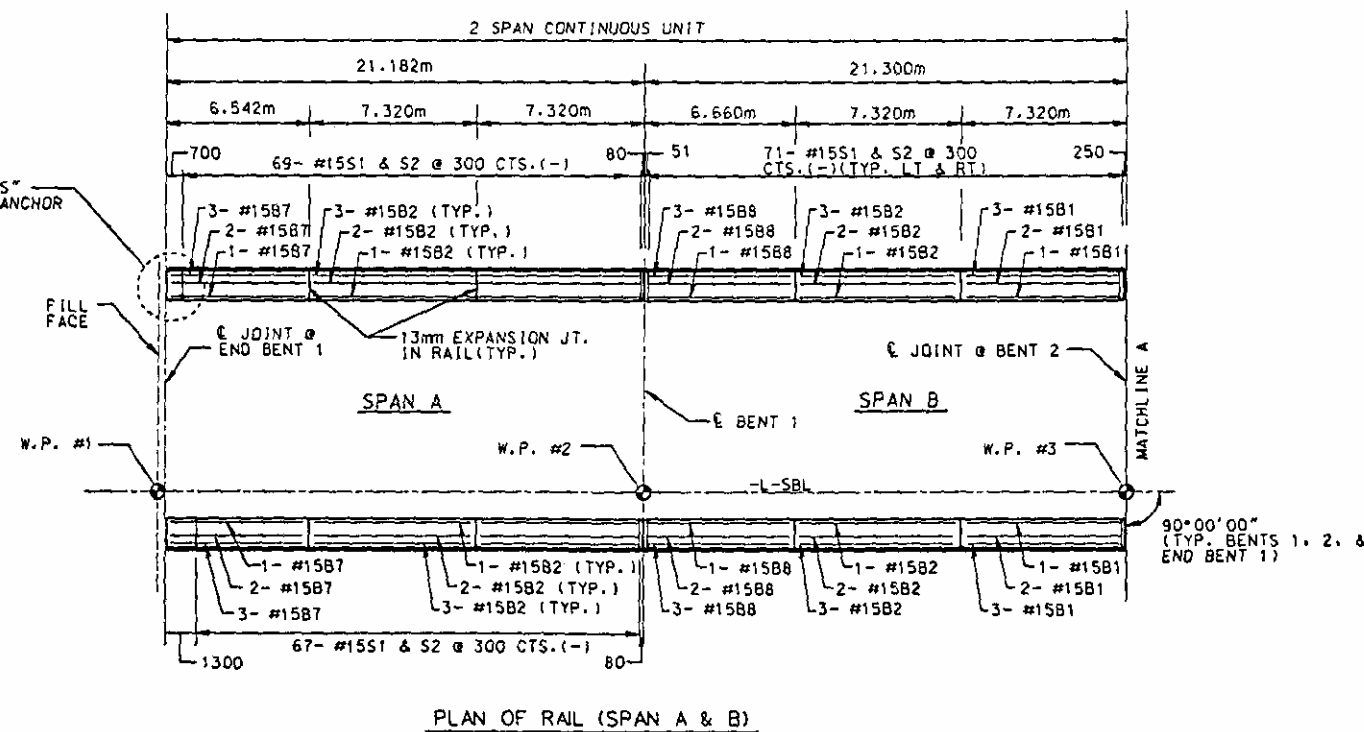
R.N. B-34

| | | |
|----------------------------------|----------------------|----------|
| ASSEMBLED BY: <u>JRS</u> | DATE: <u>01/95</u> | SPECIAL |
| CHECKED BY: <u>DAR</u> | DATE: <u>01/95</u> | |
| DRAWN BY: <u>E.L. ROSE</u> | DATE: <u>1-28-92</u> | STANDARD |
| CHECKED BY: <u>G.B. PERRETTI</u> | DATE: <u>4-16-92</u> | |



SEE "BARRIER RAIL-END OF RAIL DETAILS" (SH. R.N. B-37) FOR REINFORCING AND ANCHOR ASSEMBLIES AND END OF RAILS (TYP.)

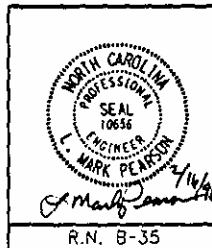
SEE "BARRIER RAIL-END OF RAIL DETAILS" (SH. R.N. B-37) FOR REINFORCING AND ANCHOR ASSEMBLIES AND END OF RAILS (TYP.)



PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11-58.893 -L-SBL POT
 SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEDH

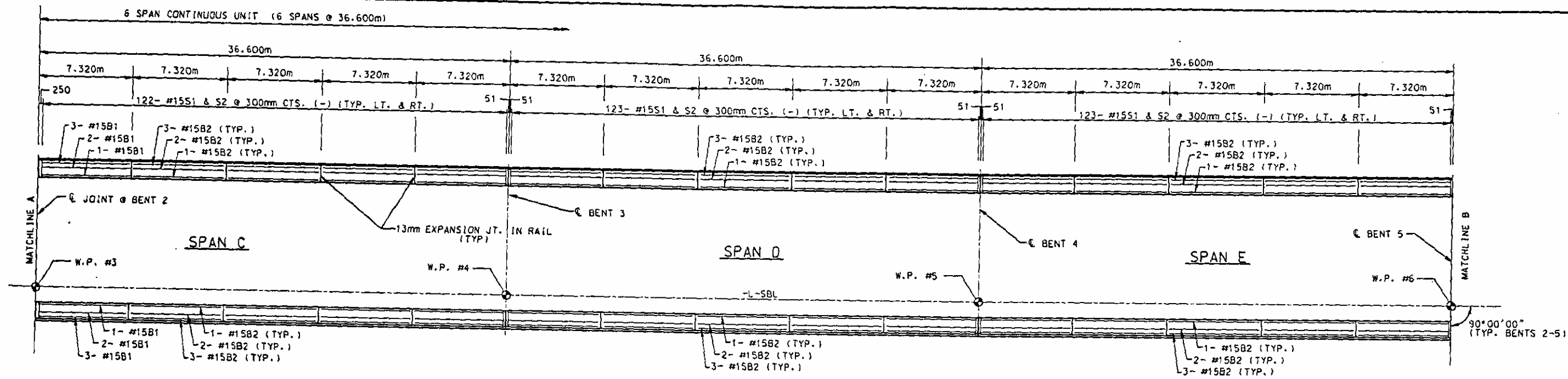
SUPERSTRUCTURE
 PLAN OF
 CONCRETE BARRIER RAIL



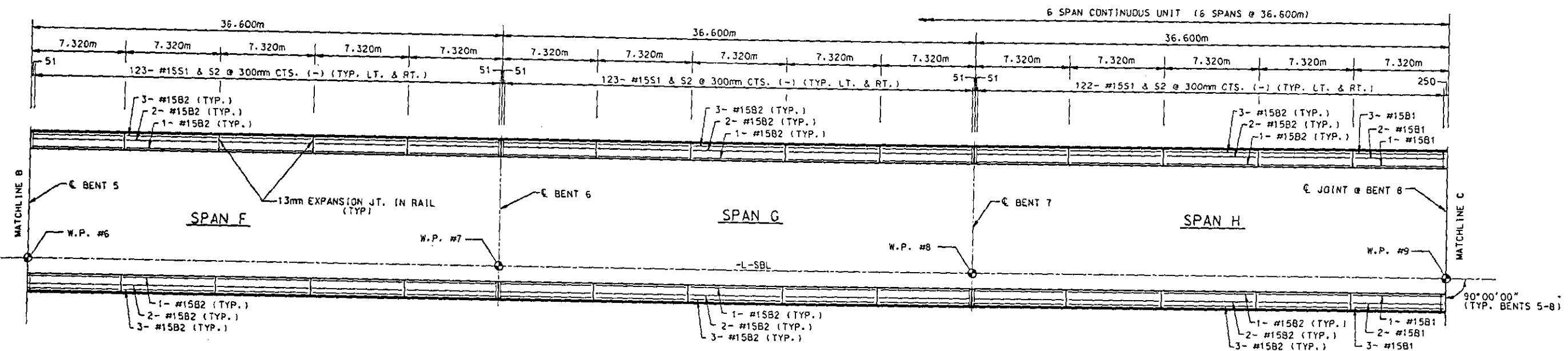
| REVISIONS | | | | | | SHEET NO. | |
|-----------|----|------|-----|----|------|-----------|--|
| NO. | BY | DATE | NO. | BY | DATE | 5-30 | |
| 1 | | | 3 | | | TOTAL | |
| 2 | | | 4 | | | 79 | |

DRAWN BY: JRS DATE: 11/94
 CHECKED BY: DAB DATE: 1/95
 APPROVED BY: LWP DATE: 7/96

R.N. B-35

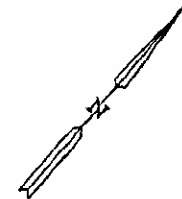


PLAN OF BARRIER RAIL
(SPANS C, D, & E)

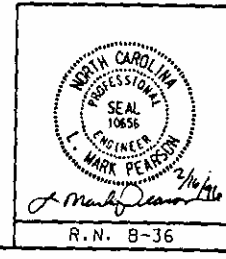


PLAN OF BARRIER RAIL
(SPANS F, G, & H)

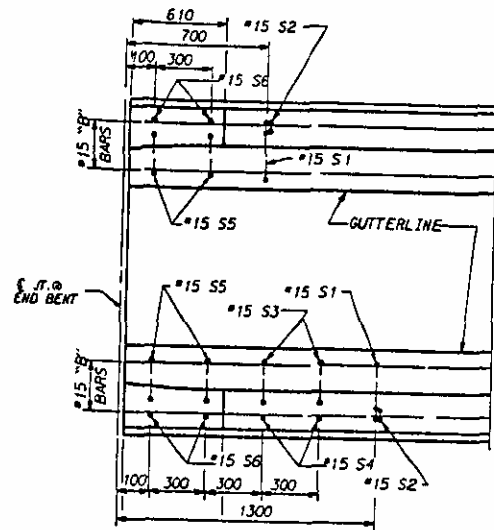
PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 SHEET 2 OF 2



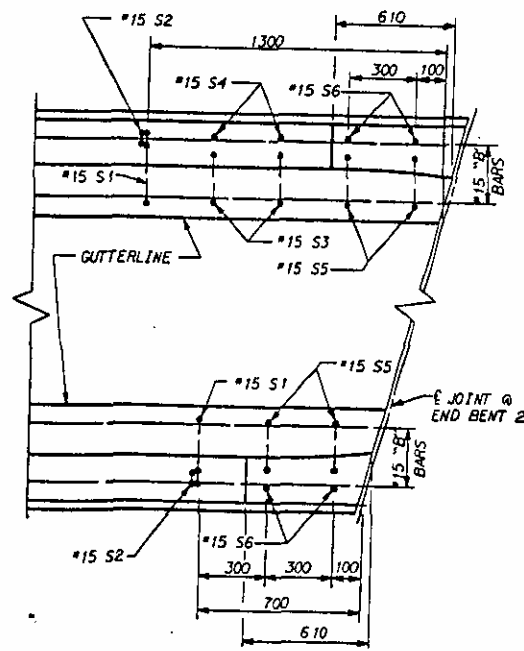
DRAWN BY: JRS DATE: 10/94
 CHECKED BY: D&R DATE: 6/95
 APPROVED BY: LMP DATE: 2/96



| | | | | | |
|--|----|------------------------------|-----|--------------------|------|
| STATE OF NORTH CAROLINA | | DEPARTMENT OF TRANSPORTATION | | RALEIGH | |
| SUPERSTRUCTURE PLAN OF CONCRETE BARRIER RAIL | | | | | |
| REVISIONS | | | | SHEET NO. | |
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |
| R.N. B-36 | | | | TOTAL SHEETS 79 | |

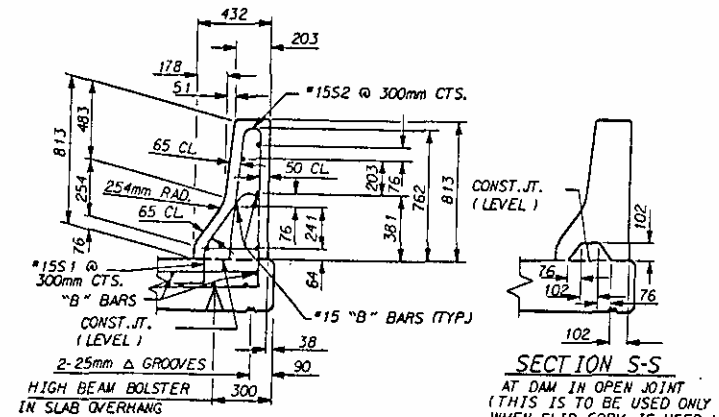


PLAN @ END BENT 1



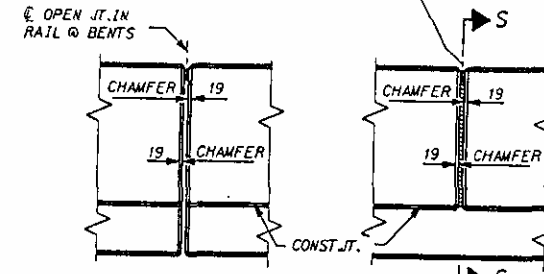
PLAN @ END BENT 2

NOTES
 THE BARRIER RAIL IN EACH CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 21MPa.
 WHEN EVAZOTE JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWS PRIOR TO THE CASTING OF BARRIER RAIL.
 ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.
 THE #15S3 THRU #15S6 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. FOR ADHESIVELY ANCHORED BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

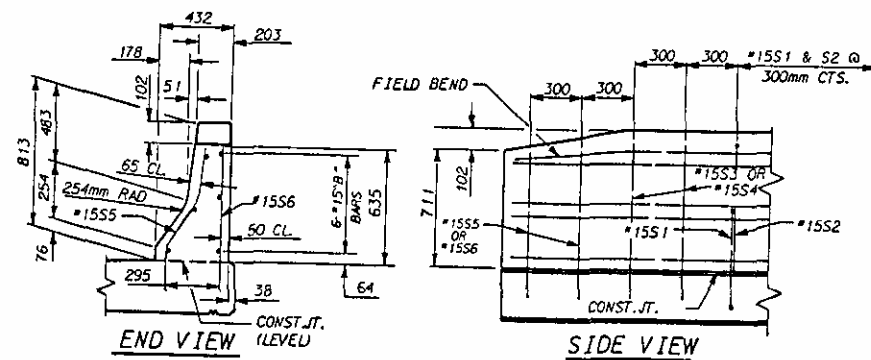


SECTION THRU RAIL

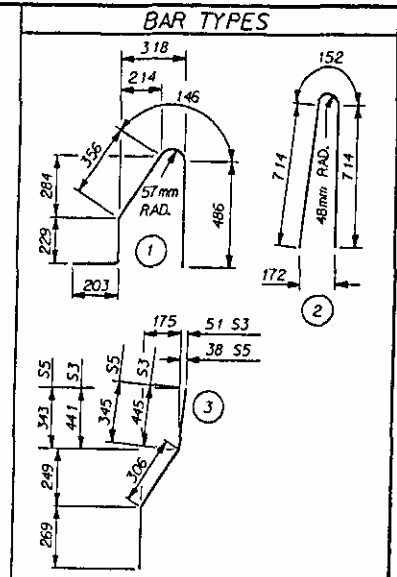
@ 13mm EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS. (NOTE: OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED.)



ELEVATION AT EXPANSION JOINTS BARRIER RAIL DETAILS



BARRIER RAIL-END OF RAIL DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL
 FOR CONCRETE BARRIER RAIL ONLY

| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
|-----|------|------|------|--------|--------|
| S1 | 2258 | #15 | 1 | 1420 | 5034 |
| S2 | 2258 | #15 | 2 | 1580 | 5601 |
| S3 | 4 | #15 | 3 | 1020 | 6 |
| S4 | 4 | #15 | STR | 960 | 6 |
| S5 | 8 | #15 | 3 | 920 | 12 |
| S6 | 8 | #15 | STR | 840 | 11 |
| B1 | 42 | #15 | STR | 7160 | 472 |
| B2 | 390 | #15 | STR | 7220 | 4421 |
| B3 | 6 | #15 | STR | 7260 | 68 |
| B4 | 72 | #15 | STR | 7060 | 798 |
| B5 | 12 | #15 | STR | 5280 | 99 |
| B6 | 6 | #15 | STR | 6860 | 65 |
| B7 | 12 | #15 | STR | 6440 | 121 |
| B8 | 12 | #15 | STR | 6560 | 124 |
| B9 | 6 | #15 | STR | 5840 | 55 |
| B10 | 6 | #15 | STR | 5760 | 54 |

EPOXY COATED REINFORCING STEEL 16,947 KG
 CLASS A-A CONCRETE 155.66 CU.METER
 CONCRETE BARRIER RAIL 67664 LIN.METER

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: ||+58.893 -L-SBL POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 CONCRETE
 BARRIER RAIL

REVISIONS

| NO. | BY | DATE | NO. | BY | DATE |
|-----|----|------|-----|----|------|
| 1 | | | 3 | | |
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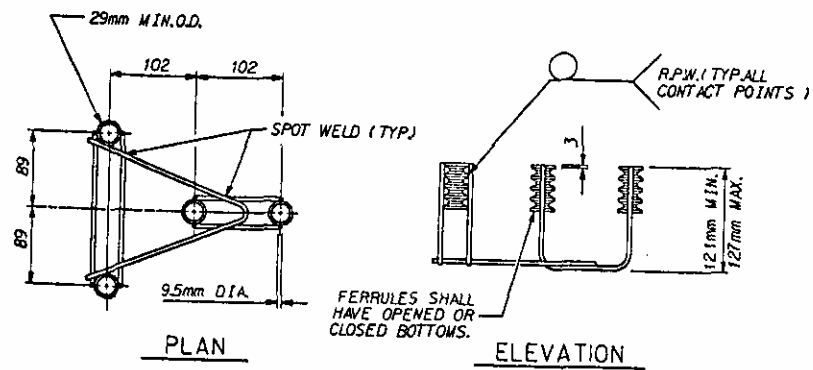
SHEET NO. S-38
 152 SHEETS
 79

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

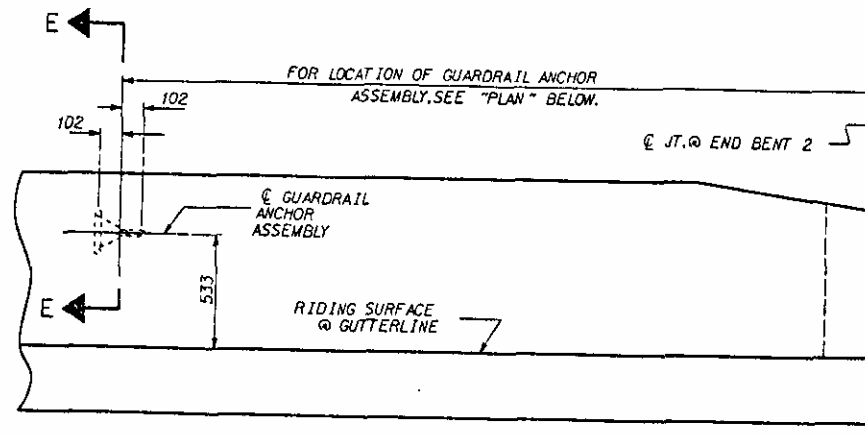


R.N. B-37

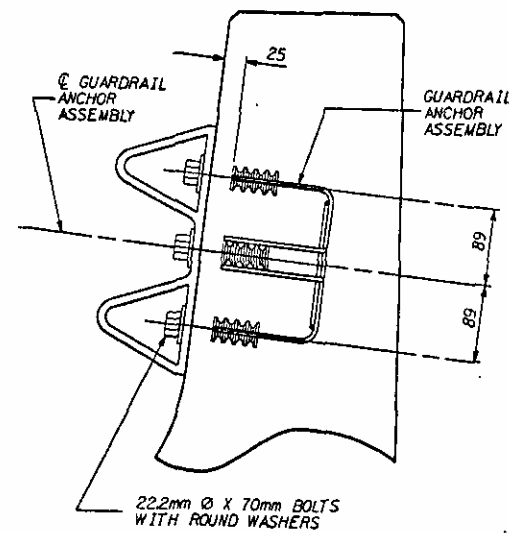
| | | |
|------------------------|---------------|----------|
| ASSEMBLED BY: JRS | DATE: 12/94 | SPECIAL |
| CHECKED BY: DAR | DATE: 02/96 | |
| DRAWN BY: R. BISSETTE | DATE: 5/28/87 | STANDARD |
| CHECKED BY: S.J. DAVIS | DATE: 3/3/87 | |



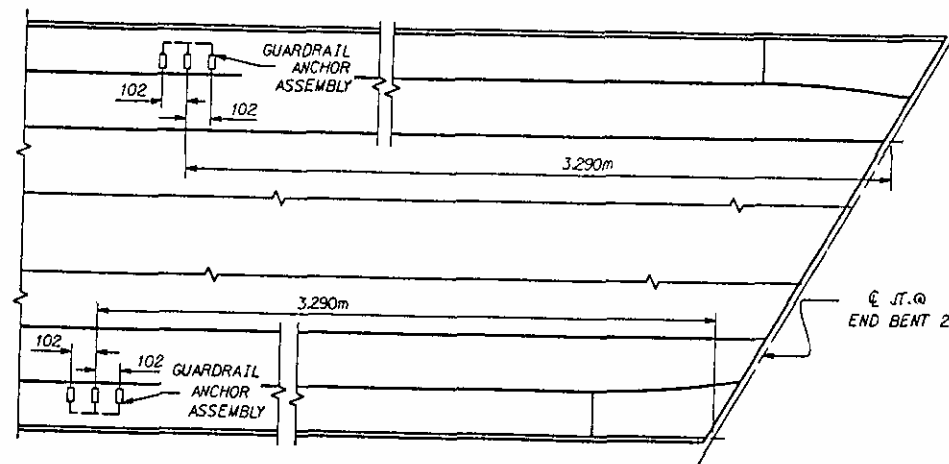
PLAN
ELEVATION
GUARDRAIL ANCHOR ASSEMBLY



ELEVATION @ ANCHOR ①



SECTION E-E



PLAN

NOTE: ATTACHMENT TYPE ① AT END BENT 2 SHOWN.
ATTACHMENT ② AT ENDBENT 1 SIMILAR.

LOCATION OF ANCHORS FOR GUARDRAIL

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS :

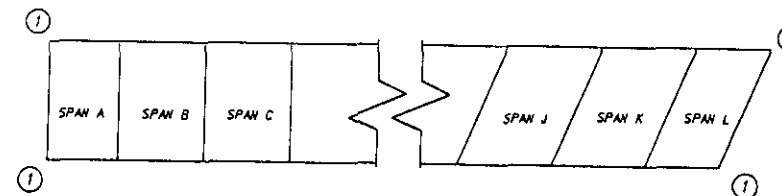
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM A108, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 38mm.
- B. 4 - 22.2mm DIA. X 70mm BOLTS WITH WASHERS FOR GUARDRAIL ANCHOR ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS WITH WASHERS MAY BE USED AS AN ALTERNATE FOR THE 22.2mm DIA. X 70mm GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
- C. WIRE STRUTS SHOWN IN THE ANCHOR ASSEMBLY ARE THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 689 MPa.

THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF GUARDRAIL ANCHOR ASSEMBLY. SEE SPECIAL PROVISIONS FOR "ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS". THE YIELD LOAD OF THE 22.2mm DIA. BOLT IS 73.8 kN. TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



SKETCH SHOWING POINTS OF ATTACHMENTS

NOTE: ① DENOTES POINT OF ATTACHMENT

PROJECT NO. B-2612

ROWAN-DAVIDSON COUNTY

STATION: II+58.893 -L-SBL POT

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.



R.N. B-38

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE
FOR BARRIER RAIL

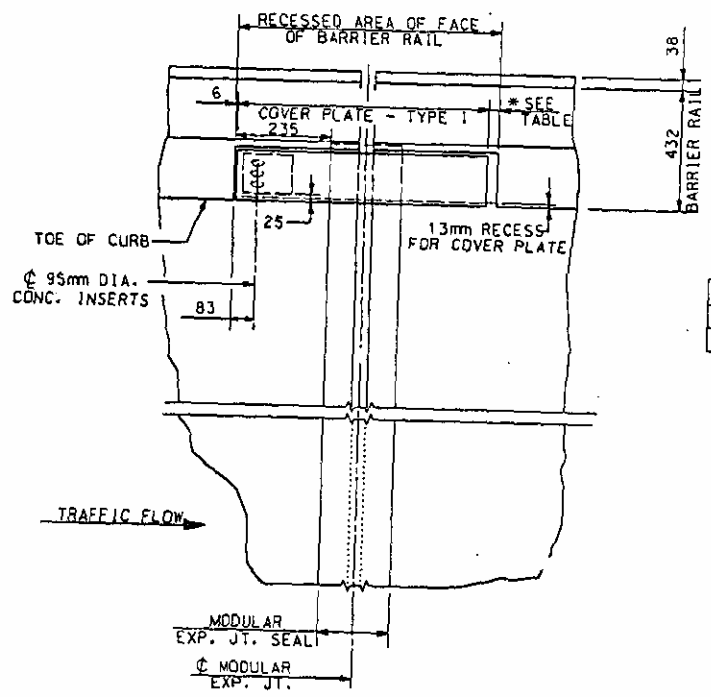
| REVISIONS | | | | | SHEET NO. |
|-----------|----|------|-----|------|--------------|
| NO. | BY | DATE | NO. | DATE | TOTAL SHEETS |
| 1 | | | 3 | | 5-39 |
| 2 | | | 4 | | 79 |

STD.No.GRA1M

| | | |
|-----------------------------|------------------|----------|
| ASSEMBLED BY : JRS | DATE : 01/95 | SPECIAL |
| CHECKED BY : LMP | DATE : 2/96 | |
| DRAWN BY : MIKE BRITT | DATE : DEC. 1987 | STANDARD |
| CHECKED BY : RANDY BISSETTE | DATE : DEC. 1987 | |

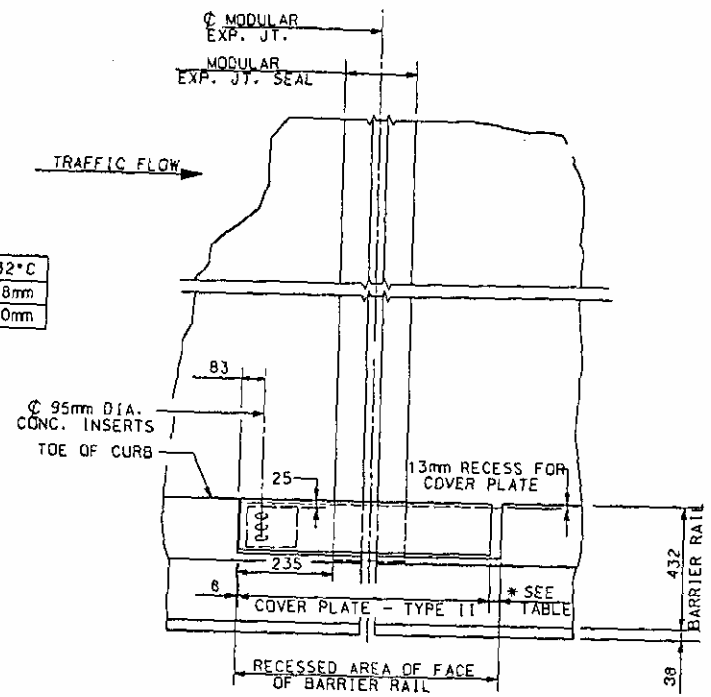
REV. 10/1/93 ELR LA CRP

*****SYSTEM*****
*****USER*****

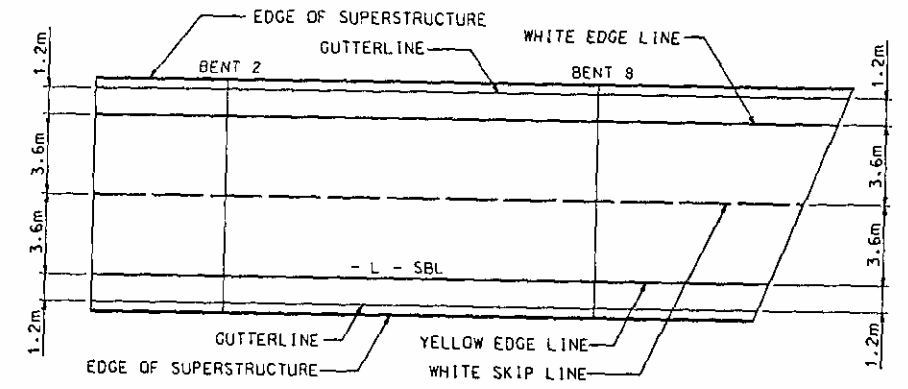


PLAN OF EXPANSION JOINT SEAL
(LEFT SIDE TRAFFIC FLOW)

| * | 0°C | 16°C | 32°C |
|--------|-------|------|------|
| BENT 2 | 106mm | 72mm | 38mm |
| BENT 8 | 118mm | 79mm | 40mm |



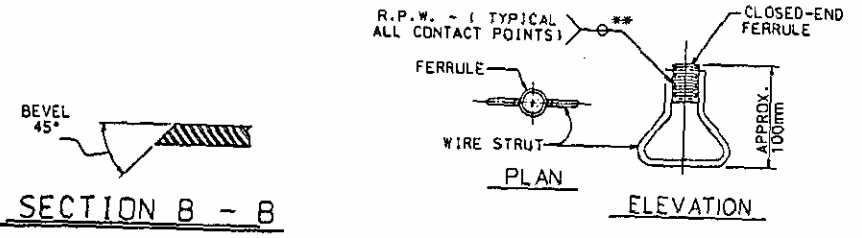
PLAN OF EXPANSION JOINT SEAL
(RIGHT SIDE TRAFFIC FLOW)



PAVEMENT MARKING ALIGNMENT

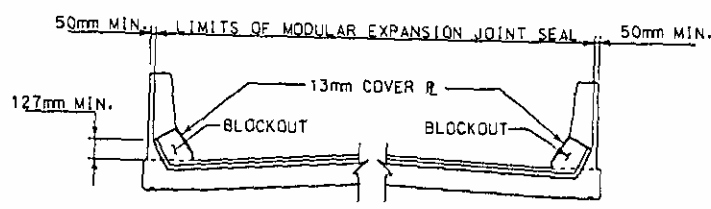
NOTES

SEE SPECIAL PROVISIONS FOR MODULAR EXPANSION JOINT SEALS.
 SET TOP OF MODULAR EXPANSION JOINT SEAL DEVICE A MINIMUM OF 3mm AND A MAXIMUM OF 6mm BELOW TOP OF SLAB.
 THE MODULAR EXPANSION JOINT SEAL AT BENT 2 SHALL BE CAPABLE OF HANDLING A TOTAL MOVEMENT, MEASURED PARALLEL TO THE CENTER LINE OF THE ROADWAY, OF 47mm (23.5mm EXPANSION AND 23.5mm CONTRACTION FROM A MIDPOINT TEMPERATURE OF 16° CELSIUS.)
 THE MODULAR EXPANSION JOINT SEAL AT BENT 8 SHALL BE CAPABLE OF HANDLING A TOTAL MOVEMENT, MEASURED PARALLEL TO THE CENTER LINE OF THE ROADWAY, OF 54mm (27mm EXPANSION AND 27mm CONTRACTION FROM A MIDPOINT TEMPERATURE OF 16° CELSIUS.)
 THE STEEL PLATES SHALL CONFORM TO ASTM A36 OR APPROVED EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIALY BLAST CLEANED AND COATED WITH A MINIMUM THICKNESS OF 100µm (DRY) OF ZINC-RICH PAINT IN ACCORDANCE WITH THE SPECIFICATIONS. AT THE CONTRACTOR'S OPTION, SURFACES MAY BE METALLIZED TO A MINIMUM THICKNESS OF 100µm. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).
 THE 19.05mm DIA. HEX HEAD BOLTS SHALL CONFORM TO ASTM A276 TYPE 304 STAINLESS STEEL.
 THE 19.05mm CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO ASTM A108, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 13.3kN.
 NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATE. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR "MODULAR EXPANSION JOINT SEALS".

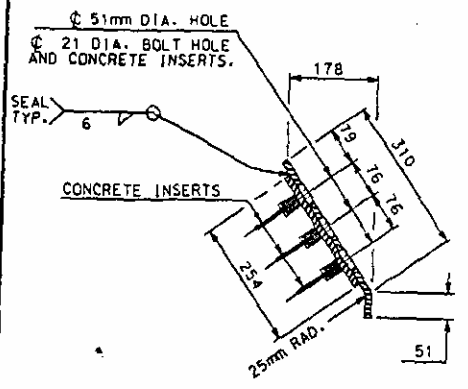


CONCRETE INSERT

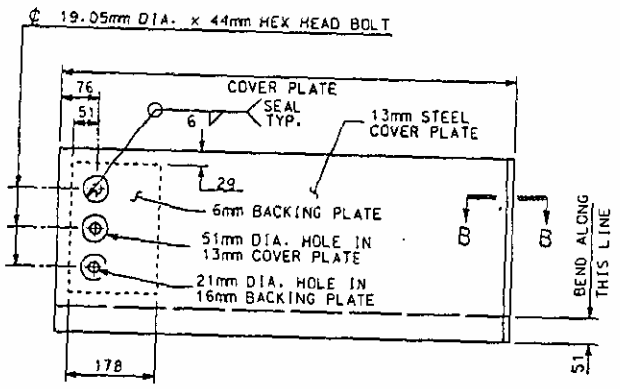
** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



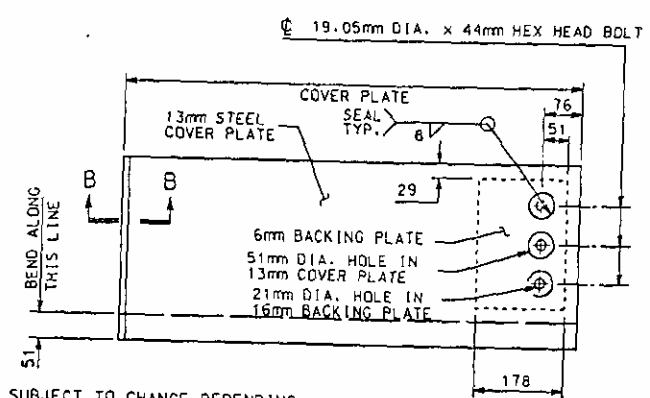
SKETCH SHOWING LIMIT OF MODULAR EXPANSION JOINT SEAL - BARRIER RAIL



END VIEW



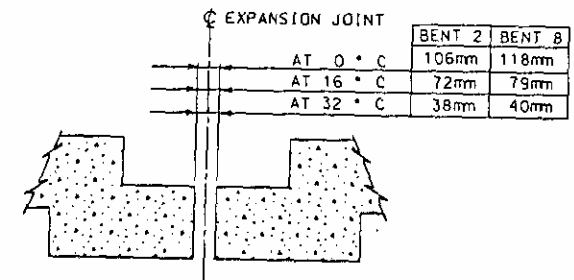
TYPE I - ELEVATION VIEW



TYPE II - ELEVATION VIEW

COVER PLATE DETAILS
TYPICAL MODULAR EXPANSION JOINT SEAL DETAILS

NOTE: DETAILS OF COVER PLATES ARE SUBJECT TO CHANGE DEPENDING ON THE DETAILS OF THE EXPANSION JOINT SEALS FURNISHED.



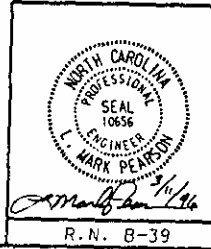
SECTION THRU SLAB
NORMAL TO JOINT

NOTE: MODULAR EXPANSION JOINT SEAL IS REQUIRED AT THIS JOINT, BUT NOT SHOWN. SEE SKETCH SHOWING LIMITS OF MODULAR EXPANSION JOINT SEAL.

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
 MODULAR EXPANSION
 JOINT SEAL DETAILS



| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | 5-40 |
| 1 | | | 3 | | | 101 SHEETS |
| 2 | | | 4 | | | 79 |

DRAWN BY: BKC DATE: 3/95
 CHECKED BY: DAB DATE: 6/95

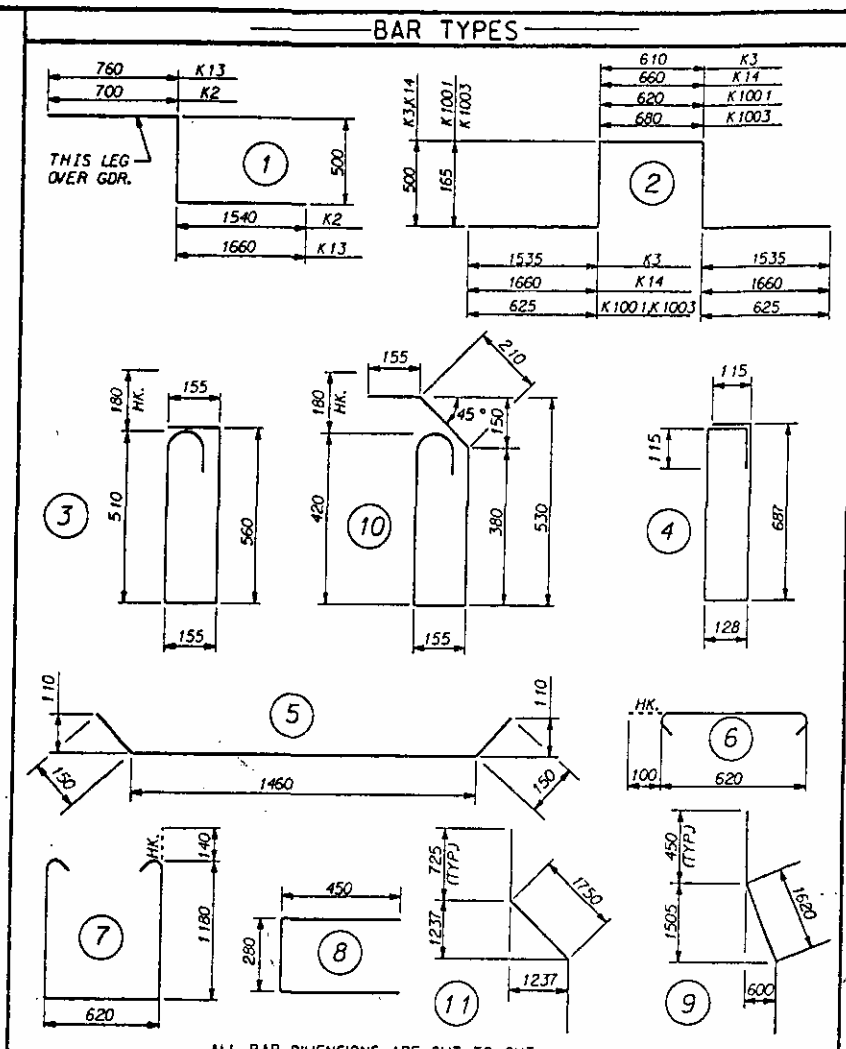
R.N. 8-39

REINFORCING BAR SCHEDULE

| TWO SPAN UNIT (SPANS A & B) | | | | | | FOUR SPAN UNIT (SPANS I THRU L) | | | | | | | | | | | | | | | | | | | |
|-----------------------------|------|------|--------------------------------|--------|---------|---------------------------------|------|--------|--------------------------------|---------|-------|------|--------|--------|--------|--------|-------|-------|------|--------|------|--------|------|--|--|
| REINFORCING STEEL | | | EPOXY COATED REINFORCING STEEL | | | REINFORCING STEEL | | | EPOXY COATED REINFORCING STEEL | | | | | | | | | | | | | | | | |
| BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | | | | | | | | | | | |
| A1 | 212 | 15 | STR. | 1120 | 373 | A1001 | 211 | 15 | STR. | 10,440 | 3458 | A1 | 382 | 15 | STR. | 1120 | 672 | A1001 | 369 | 15 | STR. | 10,440 | 6048 | | |
| B1 | 24 | 15 | STR. | 14,440 | 544 | B1001 | 74 | 15 | STR. | 13,920 | 1617 | B2 | 32 | 15 | STR. | 17,220 | 865 | B1002 | 1 | 15 | STR. | 10,320 | 16 | | |
| K4 | 4 | 10 | STR. | 8300 | 26 | B1002 | 37 | 20 | STR. | 16,000 | 1394 | B3 | 4 | 15 | STR. | 7780 | 49 | B1003 | 1 | 15 | STR. | 9840 | 15 | | |
| K5 | 24 | 10 | STR. | 1560 | 29 | B1003 | 36 | 20 | STR. | 8000 | 678 | B4 | 4 | 15 | STR. | 11,740 | 74 | B1004 | 1 | 15 | STR. | 9360 | 15 | | |
| K6 | 8 | 10 | STR. | 1400 | 9 | | | | | | B7 | 32 | 15 | STR. | 1600 | 80 | B1005 | 1 | 15 | STR. | 8860 | 14 | | | |
| K7 | 16 | 15 | STR. | 1600 | 40 | G1001 | 2 | 15 | STR. | 10,440 | 33 | K8 | 32 | 15 | 5 | 1760 | 88 | B1006 | 1 | 15 | STR. | 8380 | 13 | | |
| K8 | 16 | 15 | 5 | 1760 | 44 | | | | | | K9 | 48 | 10 | STR. | 1680 | 63 | B1007 | 1 | 15 | STR. | 7900 | 12 | | | |
| S1 | 40 | 15 | 4 | 1860 | 117 | K1 | 16 | 20 | STR. | 1540 | 58 | K10 | 72 | 10 | STR. | 1680 | 95 | B1008 | 1 | 15 | STR. | 7400 | 12 | | |
| S2 | 60 | 10 | 6 | 820 | 39 | K2 | 8 | 25 | 1 | 2740 | 86 | K11 | 24 | 10 | STR. | 1500 | 28 | B1009 | 1 | 15 | STR. | 6920 | 11 | | |
| U1 | 20 | 15 | 7 | 3260 | 102 | K3 | 12 | 25 | 2 | 4680 | 220 | K12 | 36 | 10 | 9 | 2520 | 71 | B1010 | 1 | 15 | STR. | 6440 | 10 | | |
| | | | | | | K1001 | 20 | 15 | 2 | 2200 | 69 | S1 | 80 | 15 | 4 | 1860 | 234 | B1011 | 1 | 15 | STR. | 5960 | 9 | | |
| | | | | | | K1002 | 4 | 20 | STR. | 8700 | 62 | S2 | 180 | 10 | 6 | 820 | 116 | B1012 | 1 | 15 | STR. | 5460 | 9 | | |
| | | | | | | | | | | | S1001 | 24 | 15 | 3 | 1560 | 59 | B1013 | 1 | 15 | STR. | 4980 | 8 | | | |
| | | | | | | | | | | | S1002 | 24 | 15 | 10 | 1500 | 57 | B1014 | 1 | 15 | STR. | 4500 | 7 | | | |
| | | | | | | | | | | | S1003 | 24 | 10 | 8 | 1180 | 22 | B1015 | 1 | 15 | STR. | 4000 | 6 | | | |
| | | | | | | | | | | | G1001 | 1 | 15 | STR. | 10,440 | 16 | B1016 | 1 | 15 | STR. | 3520 | 6 | | | |
| | | | | | | | | | | | G1002 | 1 | 15 | STR. | 11,280 | 18 | B1017 | 1 | 15 | STR. | 3040 | 5 | | | |
| | | | | | | | | | | | | | | | | B1018 | 1 | 15 | STR. | 2560 | 4 | | | | |
| | | | | | | | | | | | | | | | | B1019 | 1 | 15 | STR. | 2060 | 3 | | | | |
| | | | | | | | | | | | | | | | | B1020 | 1 | 15 | STR. | 1580 | 2 | | | | |
| | | | | | | | | | | | | | | | | B1021 | 3 | 15 | STR. | 1300 | 6 | | | | |
| | | | | | | | | | | | | | | | | B1005 | 7 | 15 | STR. | 14,840 | 163 | | | | |
| | | | | | | | | | | | | | | | | B1006 | 7 | 15 | STR. | 14,020 | 154 | | | | |
| | | | | | | | | | | | | | | | | B1007 | 7 | 15 | STR. | 13,180 | 145 | | | | |
| | | | | | | | | | | | | | | | | B1008 | 7 | 15 | STR. | 12,340 | 136 | | | | |
| | | | | | | | | | | | | | | | | B1009 | 9 | 15 | STR. | 11,500 | 163 | | | | |
| | | | | | | | | | | | | | | | | B1010 | 11 | 20 | STR. | 16,000 | 482 | | | | |
| | | | | | | | | | | | | | | | | B1011 | 108 | 20 | STR. | 8000 | 2035 | | | | |
| | | | | | | | | | | | | | | | | B1012 | 74 | 15 | STR. | 7320 | 850 | | | | |
| | | | | | | | | | | | | | | | | B1013 | 37 | 15 | STR. | 6000 | 349 | | | | |
| | | | | | | | | | | | | | | | | K1003 | 60 | 15 | 2 | 2260 | 213 | | | | |
| | | | | | | | | | | | | | | | | K1004 | 12 | 20 | STR. | 9400 | 266 | | | | |
| | | | | | | | | | | | | | | | | K1 | 8 | 20 | STR. | 1540 | 29 | | | | |
| | | | | | | | | | | | | | | | | K2 | 4 | 25 | 1 | 2740 | 43 | | | | |
| | | | | | | | | | | | | | | | | K3 | 6 | 25 | 2 | 4680 | 110 | | | | |
| | | | | | | | | | | | | | | | | K13 | 4 | 25 | 1 | 2920 | 46 | | | | |
| | | | | | | | | | | | | | | | | K14 | 6 | 25 | 2 | 4980 | 117 | | | | |
| | | | | | | | | | | | | | | | | K15 | 8 | 20 | STR. | 1680 | 32 | | | | |
| | | | | | | | | | | | | | | | | K16 | 1 | 20 | STR. | 8920 | 21 | | | | |
| | | | | | | | | | | | | | | | | S1001 | 24 | 15 | 3 | 1560 | 59 | | | | |
| | | | | | | | | | | | | | | | | S1002 | 24 | 15 | 10 | 1500 | 57 | | | | |
| | | | | | | | | | | | | | | | | S1003 | 24 | 10 | 8 | 1180 | 22 | | | | |
| | | | | | | | | | | | | | | | | G1001 | 1 | 15 | STR. | 10,440 | 16 | | | | |
| | | | | | | | | | | | | | | | | G1002 | 1 | 15 | STR. | 11,280 | 18 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | |
|-------------------------|----|------|--------------------------------------|----|------|-------------------------|----|------|--------------------------------------|----|--------|
| TOTAL REINFORCING STEEL | kg | 1323 | TOTAL EPOXY COATED REINFORCING STEEL | kg | 7826 | TOTAL REINFORCING STEEL | kg | 2742 | TOTAL EPOXY COATED REINFORCING STEEL | kg | 15,457 |
|-------------------------|----|------|--------------------------------------|----|------|-------------------------|----|------|--------------------------------------|----|--------|

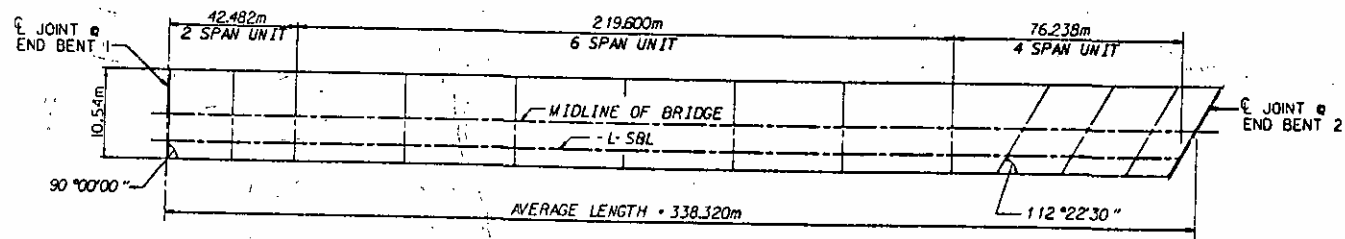
| GROOVING BRIDGE FLOORS | |
|-------------------------|-----------------|
| APPROACH SLABS | 67.4 SQ.METER |
| BRIDGE DECK-2 SPAN UNIT | 407.9 SQ.METER |
| BRIDGE DECK-6 SPAN UNIT | 2108.2 SQ.METER |
| BRIDGE DECK-4 SPAN UNIT | 732.0 SQ.METER |
| TOTAL | 3315.5 SQ.METER |



| SUPERSTRUCTURE BILL OF MATERIAL SPANS A,B,I,J,K,L | | | |
|---|--------------------------------|------------------------|-------------------------------------|
| | CLASS A-A CONCRETE (CU. METER) | REINFORCING STEEL (kg) | EPOXY COATED REINFORCING STEEL (kg) |
| SPANS A & B | 93.7 | 1323 | 7826 |
| SPANS I THRU L | 177.1 | 2742 | 15,457 |
| TOTALS ** | 270.8 | 4065 | 23,283 |

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

| SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS | | | | | |
|--|---|----------|----------------|----------|--------------------------|
| BAR SIZE | SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL | | APPROACH SLABS | | PARAPET AND BARRIER RAIL |
| | EPOXY COATED | UNCOATED | EPOXY COATED | UNCOATED | |
| #10 | 520 | 450 | 520 | 450 | 720 |
| #15 | 730 | 640 | 730 | 640 | 1020 |
| #20 | 910 | 790 | 910 | 790 | 1350 |
| #25 | 1980 | 1320 | 1980 | 1320 | 2240 |



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (TOTAL AREA - SQ.METERS = 3565.9)

ASSEMBLED BY: DAR DATE: 2/96
 CHECKED BY: LMP DATE: 2/96
 DRAWN BY: M. BRIT DATE: 5/28/87
 CHECKED BY: S.J. DAVIS DATE: 9/3/87

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

NORTH CAROLINA PROFESSIONAL SEAL 10656 ENGINEER L. MARK PEARSON

R.N. 8-40

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: JJ58.893 -I- SBL POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD SUPERSTRUCTURE BILL OF MATERIAL SPAN A & B AND SPANS I THRU L

| REVISIONS | | | | SHEET NO. |
|-----------|------|----|------|-----------|
| NO. | DATE | BY | DATE | 5-41 |
| 1 | | | | 79 |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

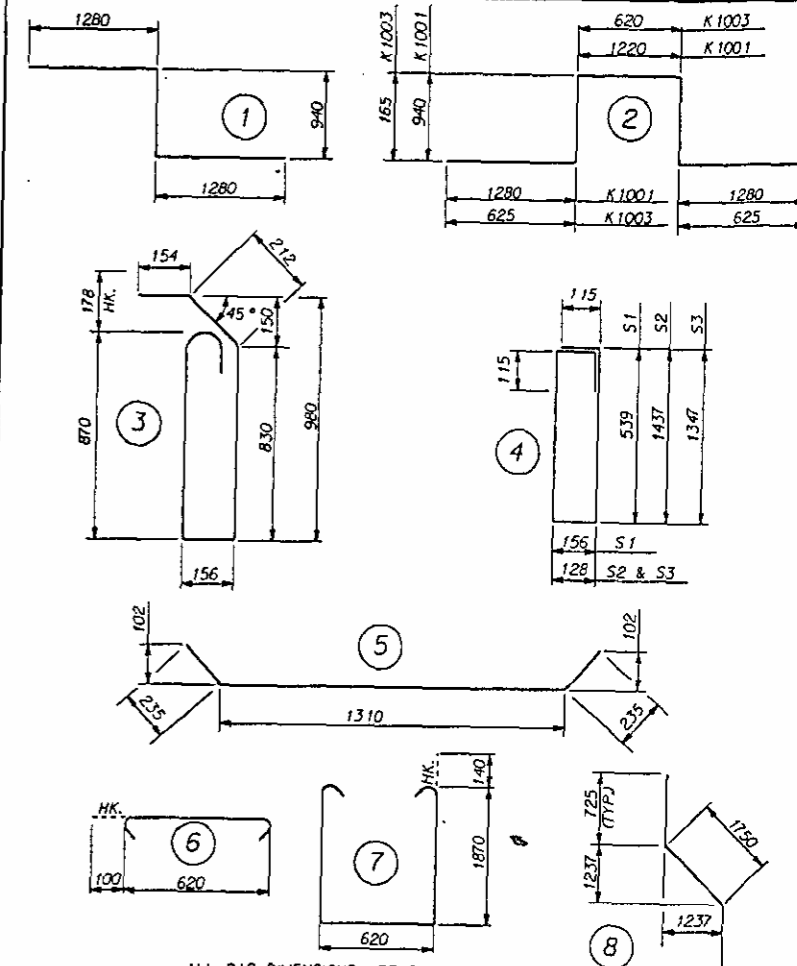
STD. NO. BOM2M

REINFORCING BAR SCHEDULE

SIX SPAN UNIT (SPANS C THRU H)

| REINFORCING STEEL | | | | | EPOXY COATED REINFORCING STEEL | | | | | | |
|----------------------------|------|------|--------|--------|--------------------------------|---|------|--------|--------|--------|--------|
| BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | | |
| A1 | 1052 | 15 | STR. | 1120 | 1850 | A1001 | 1047 | 15 | STR. | 10,440 | 17,161 |
| B1 | 16 | 15 | STR. | 11,520 | 289 | B1001 | 72 | 15 | STR. | 11,620 | 1314 |
| B2 | 96 | 15 | STR. | 12,840 | 1935 | B1002 | 180 | 15 | STR. | 7,460 | 2108 |
| B3 | 24 | 15 | STR. | 17,380 | 655 | B1003 | 355 | 20 | STR. | 16,000 | 13,376 |
| | | | | | | B1004 | 175 | 20 | STR. | 8,000 | 3297 |
| K2 | 96 | 15 | 5 | 1780 | 268 | B1005 | 288 | 15 | STR. | 9,420 | 4259 |
| K3 | 288 | 15 | STR. | 1740 | 787 | B1006 | 72 | 15 | STR. | 14,980 | 1693 |
| K4 | 30 | 10 | STR. | 840 | 192 | | | | | | |
| K5 | 200 | 10 | STR. | 1740 | 273 | K1 | 16 | 20 | STR. | 1740 | 86 |
| K6 | 40 | 10 | STR. | 1220 | 38 | K1001 | 12 | 25 | 2 | 5660 | 267 |
| | | | | | | K1002 | 8 | 25 | 1 | 3500 | 110 |
| S2 | 288 | 15 | 4 | 3360 | 1519 | K1003 | 80 | 15 | 2 | 2200 | 276 |
| S3 | 96 | 15 | 4 | 3180 | 479 | K1004 | 20 | 20 | STR. | 8660 | 408 |
| S4 | 400 | 10 | 6 | 820 | 257 | | | | | | |
| U1 | 80 | 15 | 7 | 4640 | 583 | S1 | 32 | 15 | 4 | 1620 | 81 |
| | | | | | | S1001 | 32 | 15 | 3 | 2400 | 121 |
| | | | | | | S1004 | 24 | 20 | 8 | 3200 | 181 |
| | | | | | | G1001 | 2 | 15 | STR. | 10,440 | 33 |
| TOTAL REINFORCING STEEL kg | | | | | 9125 | TOTAL EPOXY COATED REINFORCING STEEL kg | | | | | 44,751 |

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL - 6 SPAN UNIT

| | CLASS A-A CONCRETE (CU. METER) | REINFORCING STEEL (KG) | EPOXY COATED REINFORCING STEEL (KG) |
|----------|-----------------------------------|---------------------------|--|
| POUR 1 | 59.2 | - | - |
| POUR 2 | 106.8 | - | - |
| POUR 3 | 106.8 | - | - |
| POUR 4 | 106.8 | - | - |
| POUR 5 | 106.8 | - | - |
| POUR 6 | 147.5 | - | - |
| TOTALS** | 633.9 | 9125 | 44,751 |

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED
NOTE: FOR BRIDGE FLOOR GROOVING, SEE SHEET R.N. B-40.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

| BAR SIZE | SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL | | APPROACH SLABS | | PARAPET AND BARRIER RAIL |
|----------|---|----------|----------------|----------|--------------------------|
| | EPOXY COATED | UNCOATED | EPOXY COATED | UNCOATED | |
| #10 | 520 | 450 | 520 | 450 | 720 |
| #15 | 730 | 640 | 730 | 640 | 1020 |
| #20 | 910 | 790 | 910 | 790 | 1350 |
| #25 | 1980 | 1320 | 1980 | 1320 | 2240 |

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: II+58.893 -L- SBL POT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
SUPERSTRUCTURE
BILL OF MATERIAL
SPANS C THRU H

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

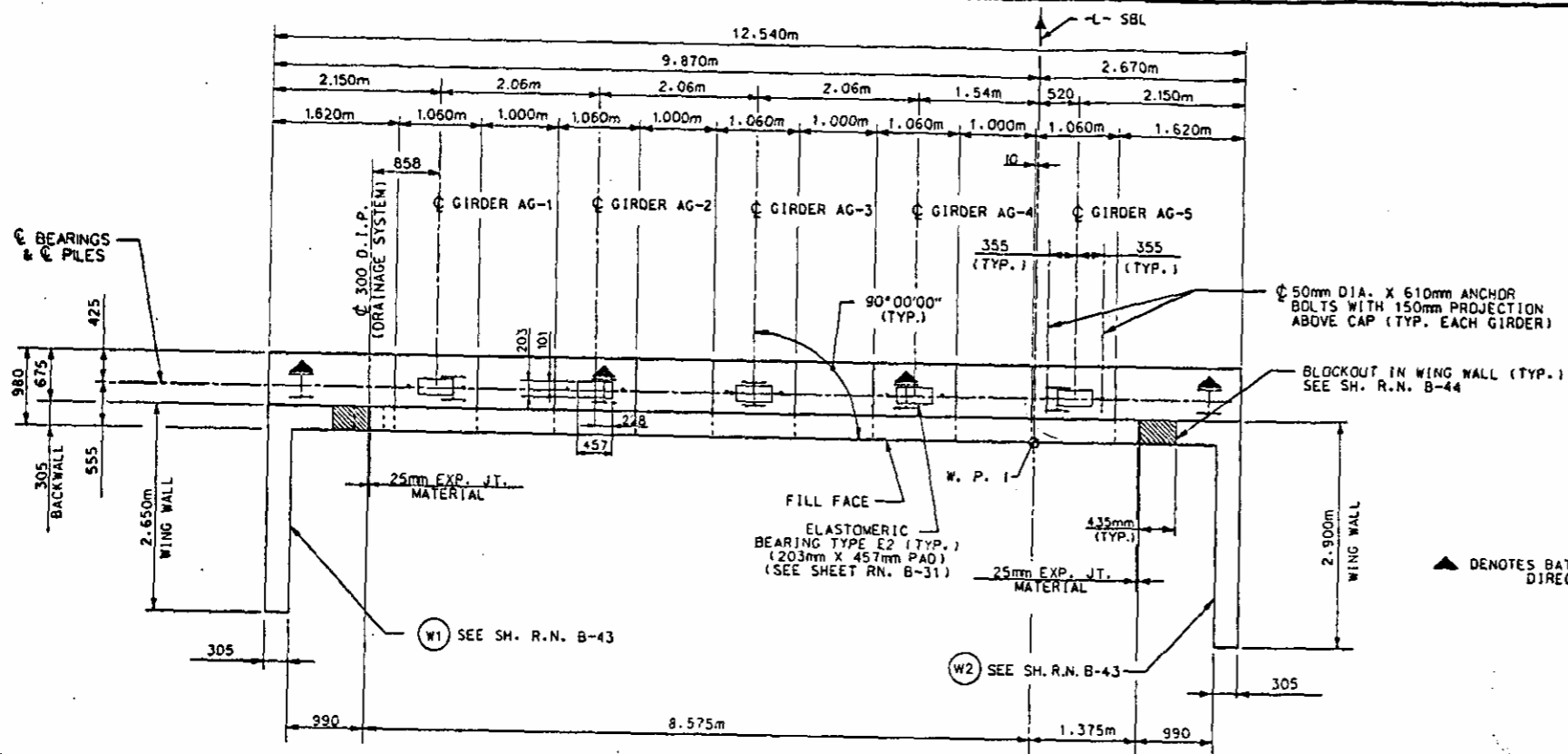


| REVISIONS | | | | | | SHEET NO. 5-42 |
|-----------|----|------|-----|----|------|--------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

ASSEMBLED BY: DAR DATE: 2/96
CHECKED BY: LMP DATE: 2/96
DRAWN BY: M. BRITT DATE: 5/28/87
CHECKED BY: S. J. DAVIS DATE: 9/3/87
REV. 10/1/93 ELR GA CRP

R.N. B-41

STD. NO. BOM2M



PLAN

NOTES:

PILES TO BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 400 KN EACH.

PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND ANCHOR BOLTS.

FOR EPOXY PROTECTIVE COATING SEE SPECIAL PROVISIONS. BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

FOR PILE SPLICE DETAILS, SEE SH. NO. B-44.

FOR PIPE DRAIN DETAILS, SEE SH. NO. B-44.

FOR BLOCKOUT IN WINGWALL, SEE SH. NO. B-44.

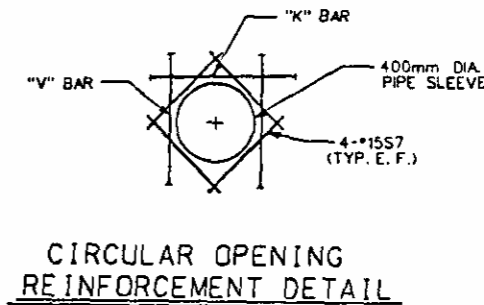
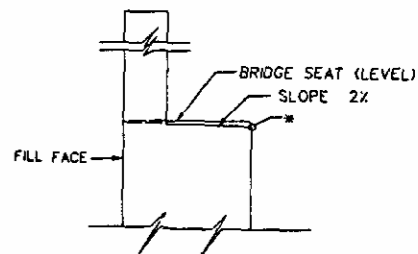
FOR TEMPORARY DRAINAGE AT END BENT, SEE SH. NO. B-69.

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

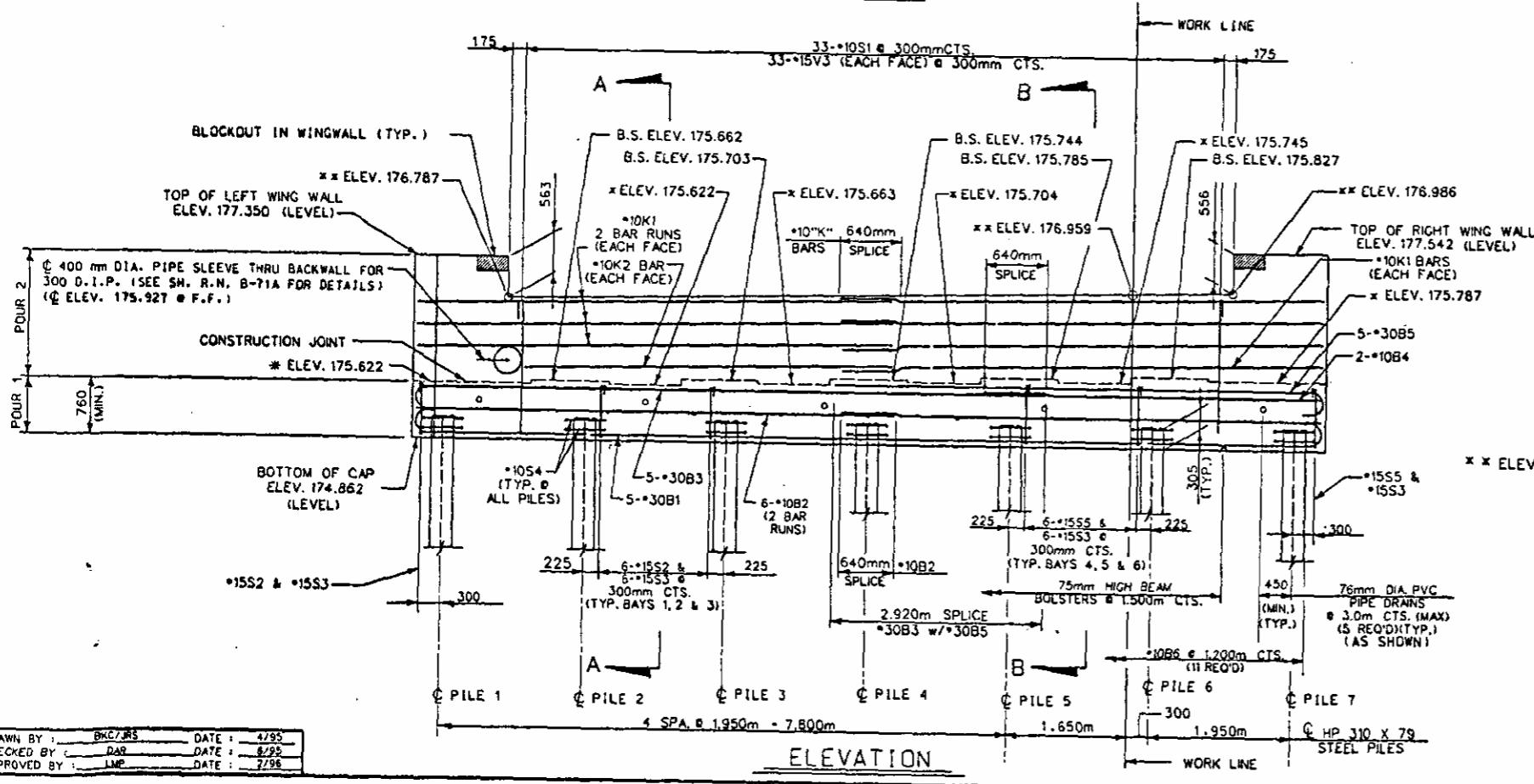
FOR STRUCTURE DRAINAGE SYSTEM NOTES, SEE SHEET R.N. B-70

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

ELEVATIONS BETWEEN AND OUTSIDE BRIDGE SEAT BUILDUPS ARE NOTED THUS * IN THE SKETCH BELOW:



CIRCULAR OPENING REINFORCEMENT DETAIL

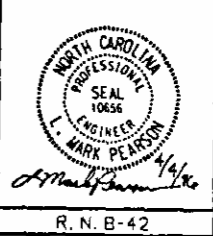


ELEVATION

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 1 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

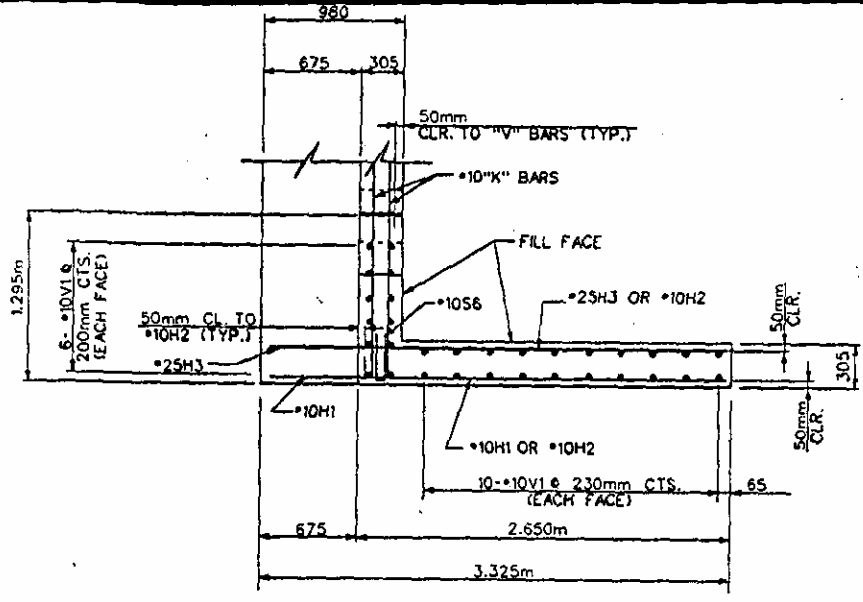
SUBSTRUCTURE
 END BENT 1



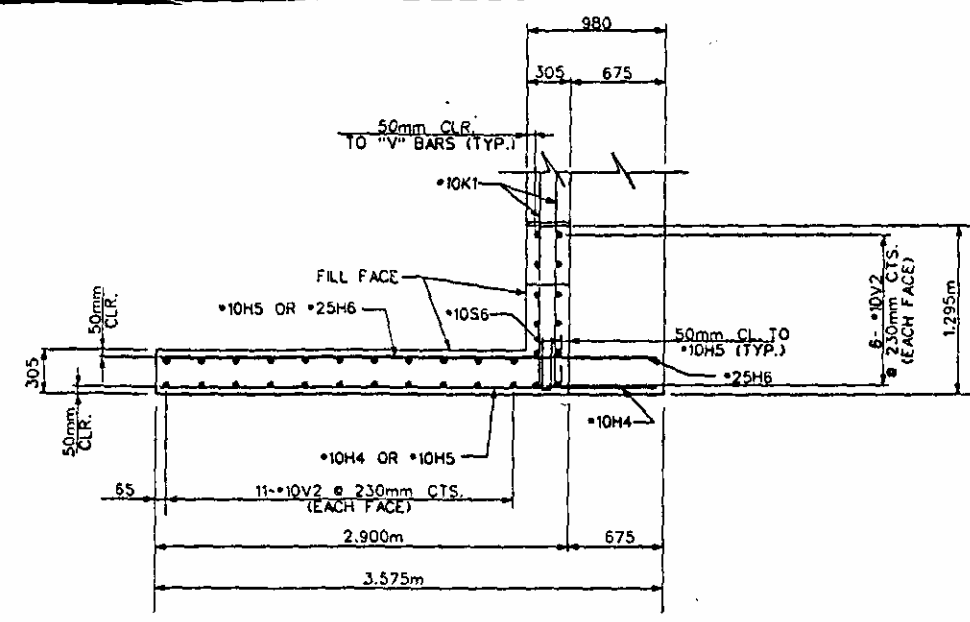
| REVISIONS | | | | | | SHEET NO. S-43 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

DRAWN BY: BKEZRS DATE: 4/95
 CHECKED BY: DAG DATE: 8/95
 APPROVED BY: LMP DATE: 7/98

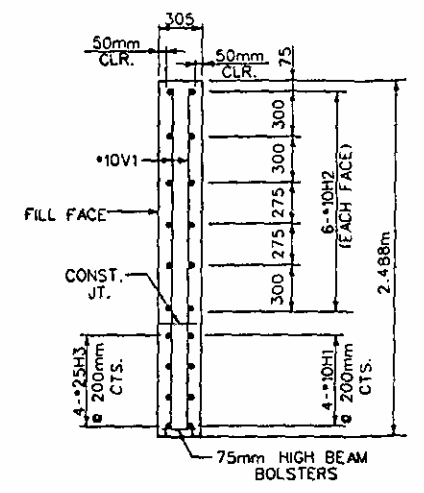
R. N. B-42



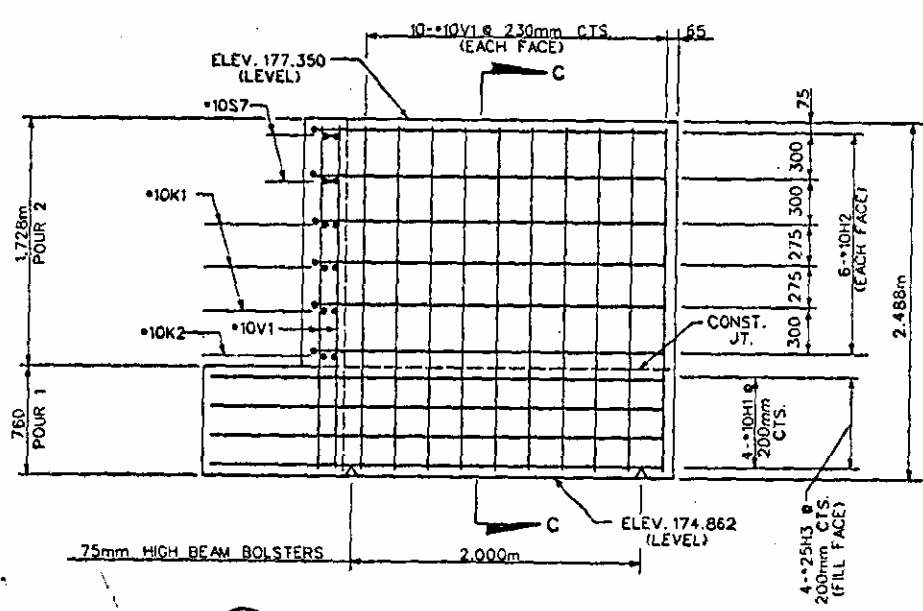
W1 PLAN OF LEFT WING



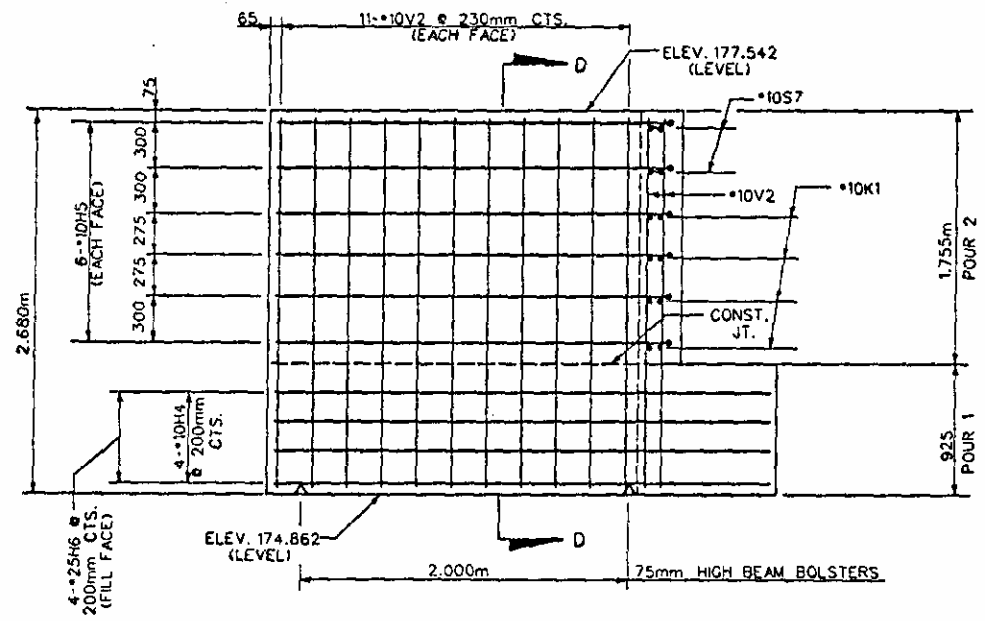
W2 PLAN OF RIGHT WING



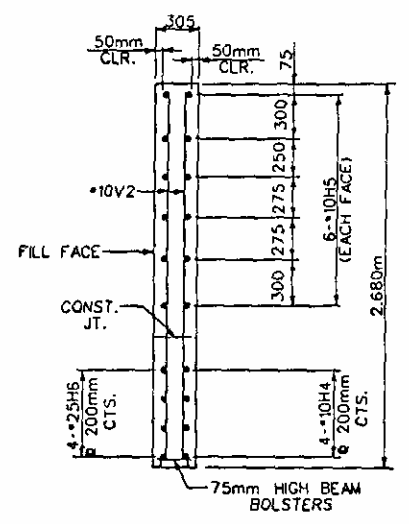
SECTION C-C



W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING

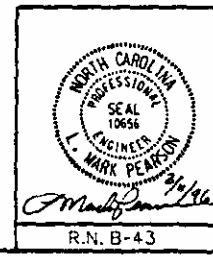


SECTION D-D

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 2 OF 3

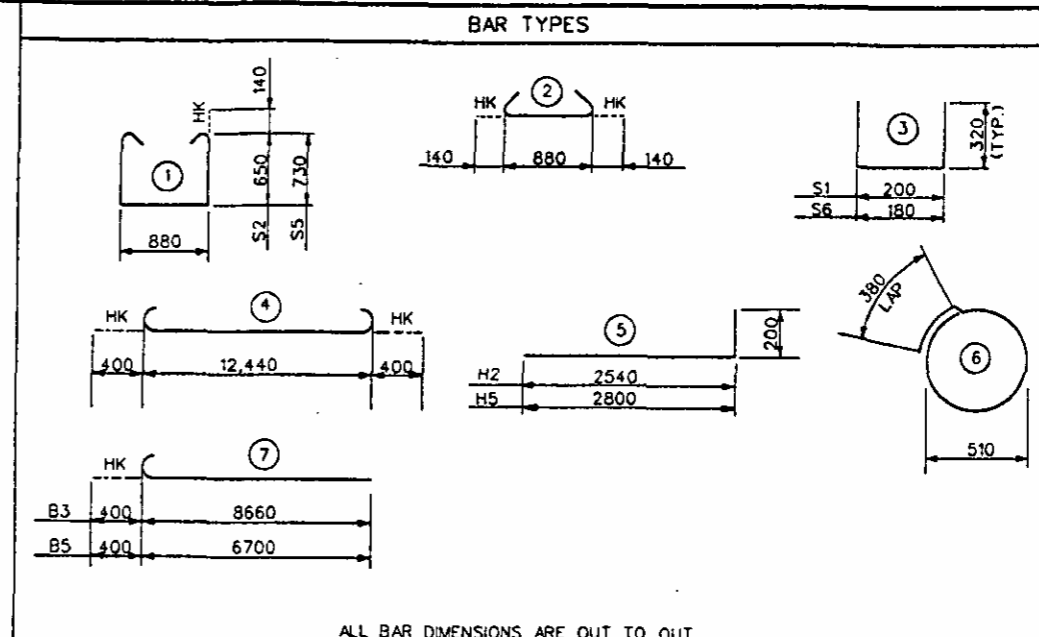
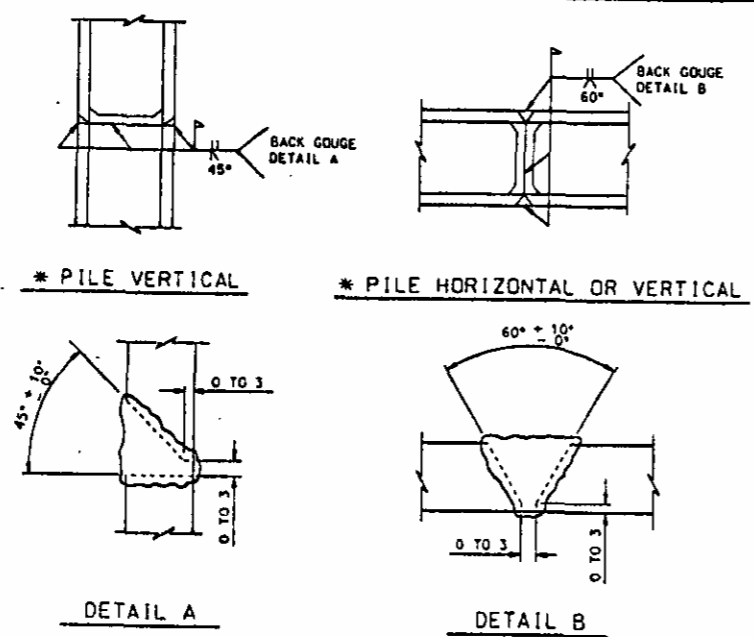
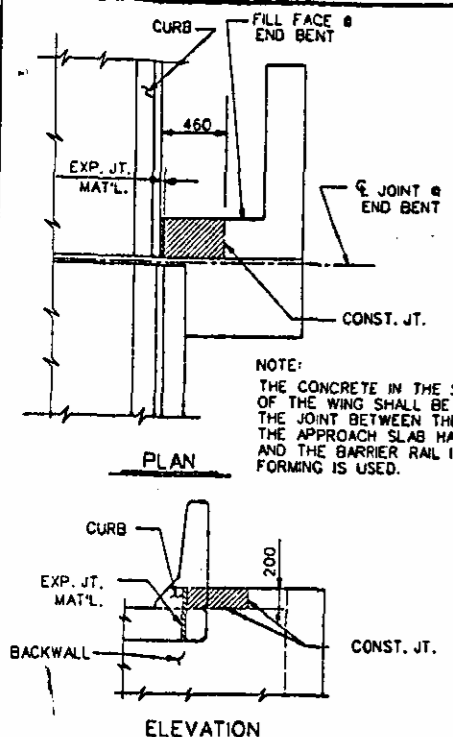
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1



| REVISIONS | | | | | | SHEET NO. 5-44 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

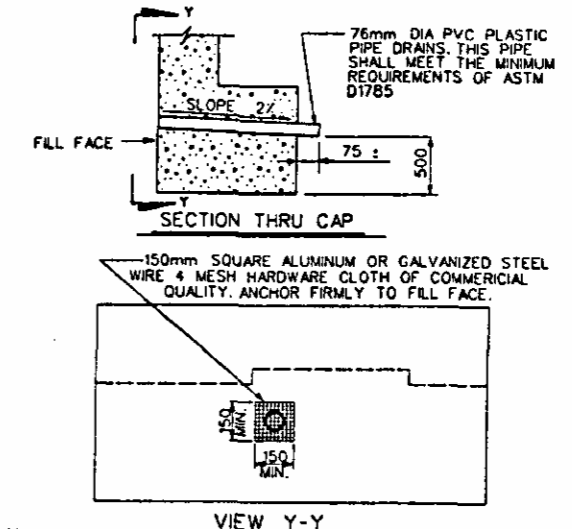
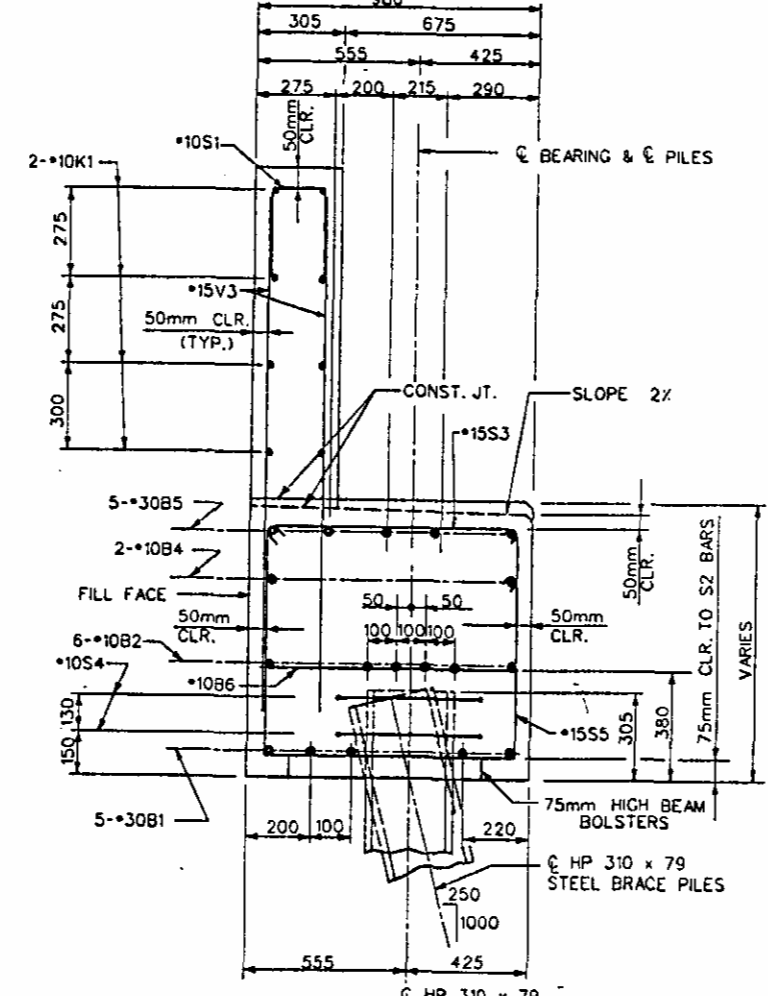
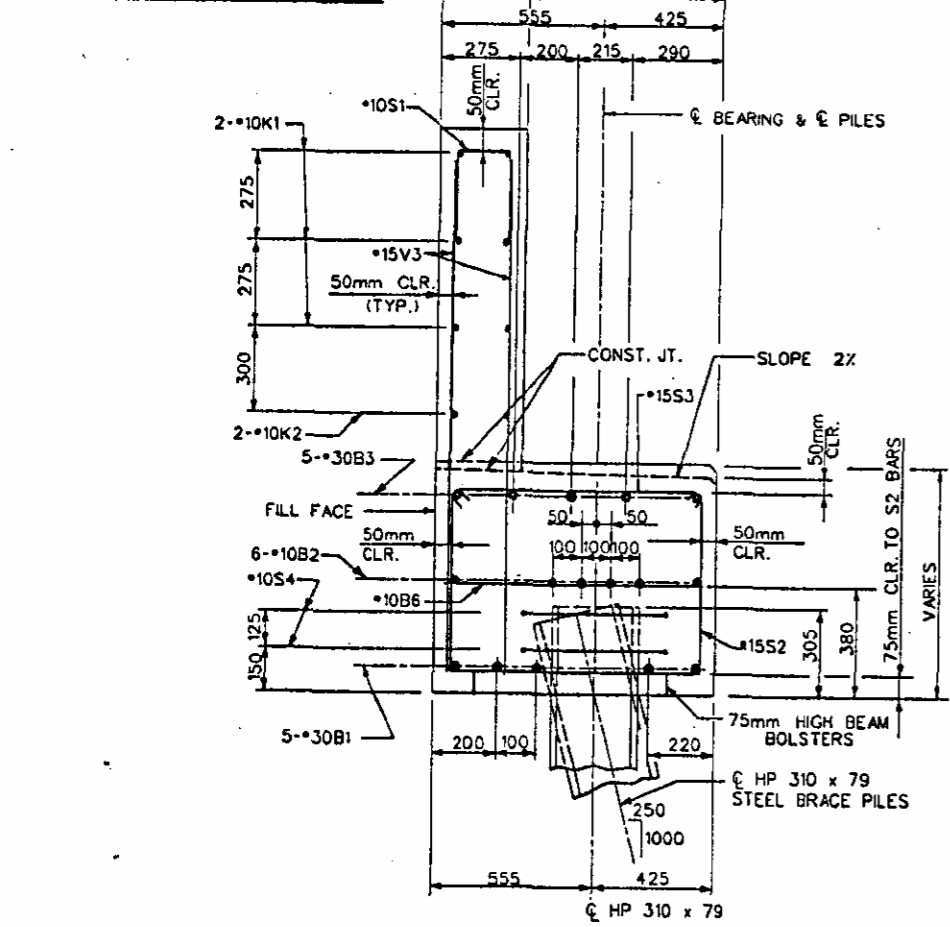
DRAWN BY: SKC DATE: 4/95
 CHECKED BY: DAR DATE: 7/95
 APPROVED BY: LMP DATE: 2/96

R.N. B-43



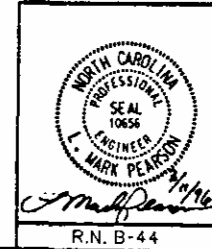
| BILL OF MATERIAL FOR END BENT 1 | | | | | |
|---------------------------------|-----|------|------|--------|--------|
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| B1 | 5 | 30 | 4 | 13,240 | 364 |
| B2 | 12 | 10 | STR. | 6540 | 62 |
| B3 | 5 | 30 | 7 | 9060 | 249 |
| B4 | 2 | 10 | STR. | 4420 | 7 |
| B5 | 5 | 30 | 7 | 7100 | 195 |
| B6 | 11 | 10 | STR. | 880 | 8 |
| | | | | | |
| H1 | 4 | 10 | STR. | 3220 | 10 |
| H2 | 12 | 10 | 5 | 2740 | 26 |
| H3 | 4 | 25 | STR. | 3220 | 51 |
| H4 | 4 | 10 | STR. | 3460 | 11 |
| H5 | 12 | 10 | 5 | 3000 | 28 |
| H6 | 4 | 25 | STR. | 3460 | 54 |
| | | | | | |
| K1 | 12 | 10 | STR. | 6540 | 62 |
| K2 | 2 | 10 | STR. | 5020 | 8 |
| S1 | 33 | 10 | 3 | 840 | 22 |
| S2 | 19 | 15 | 1 | 2460 | 73 |
| S3 | 38 | 15 | 2 | 1160 | 69 |
| S4 | 14 | 10 | 6 | 1980 | 22 |
| S5 | 19 | 15 | 1 | 2620 | 78 |
| S6 | 4 | 10 | 3 | 820 | 3 |
| S7 | 8 | 15 | STR. | 500 | 6 |
| | | | | | |
| V1 | 32 | 10 | STR. | 2360 | 59 |
| V2 | 34 | 10 | STR. | 2540 | 68 |
| V3 | 66 | 15 | STR. | 1800 | 187 |

BLOCKOUT IN WINGWALL FOR FITTING EVAZOTE JOINT SEAL



| | | |
|-------------------------|---------|----------------|
| TOTAL REINFORCING STEEL | - Kg | 1722 |
| CLASS "A" CONCRETE | | |
| POUR 1 | - CU. M | 11.8 |
| POUR 2 | - CU. M | 7.6 |
| | | TOTAL CU. M |
| | | 19.4 |
| HP 310x79 STEEL PILES | | |
| 7 PILES REQUIRED | | - TOTAL METERS |
| | | 105 |

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 SHEET 3 OF 3

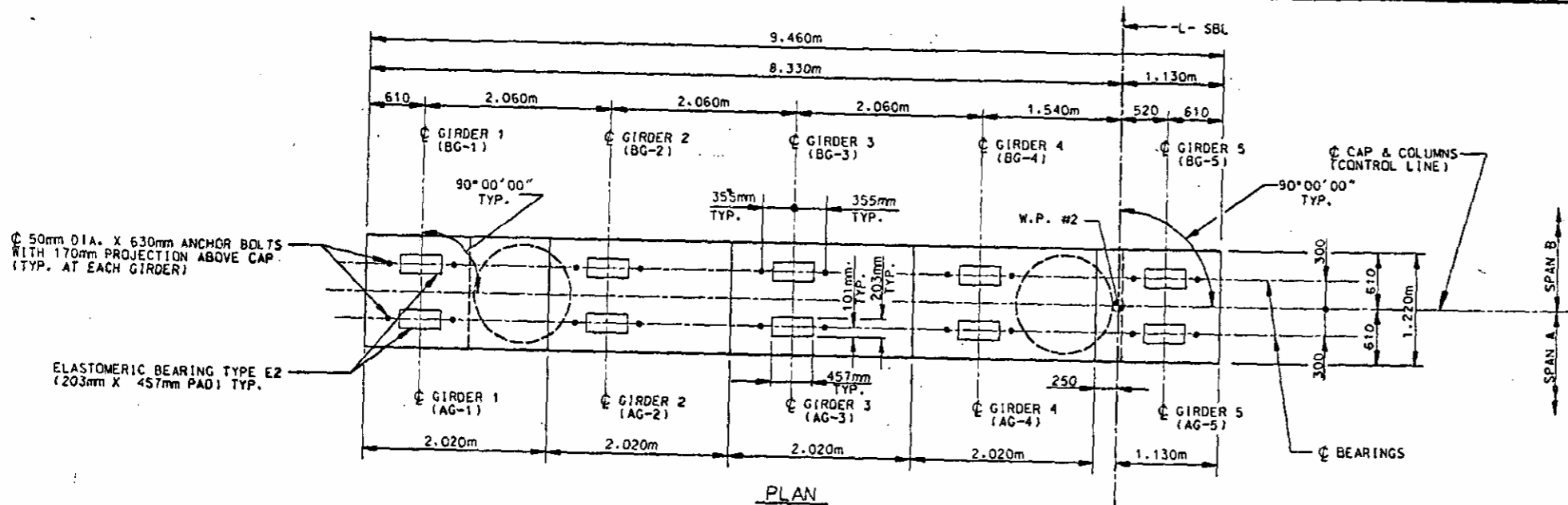


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1

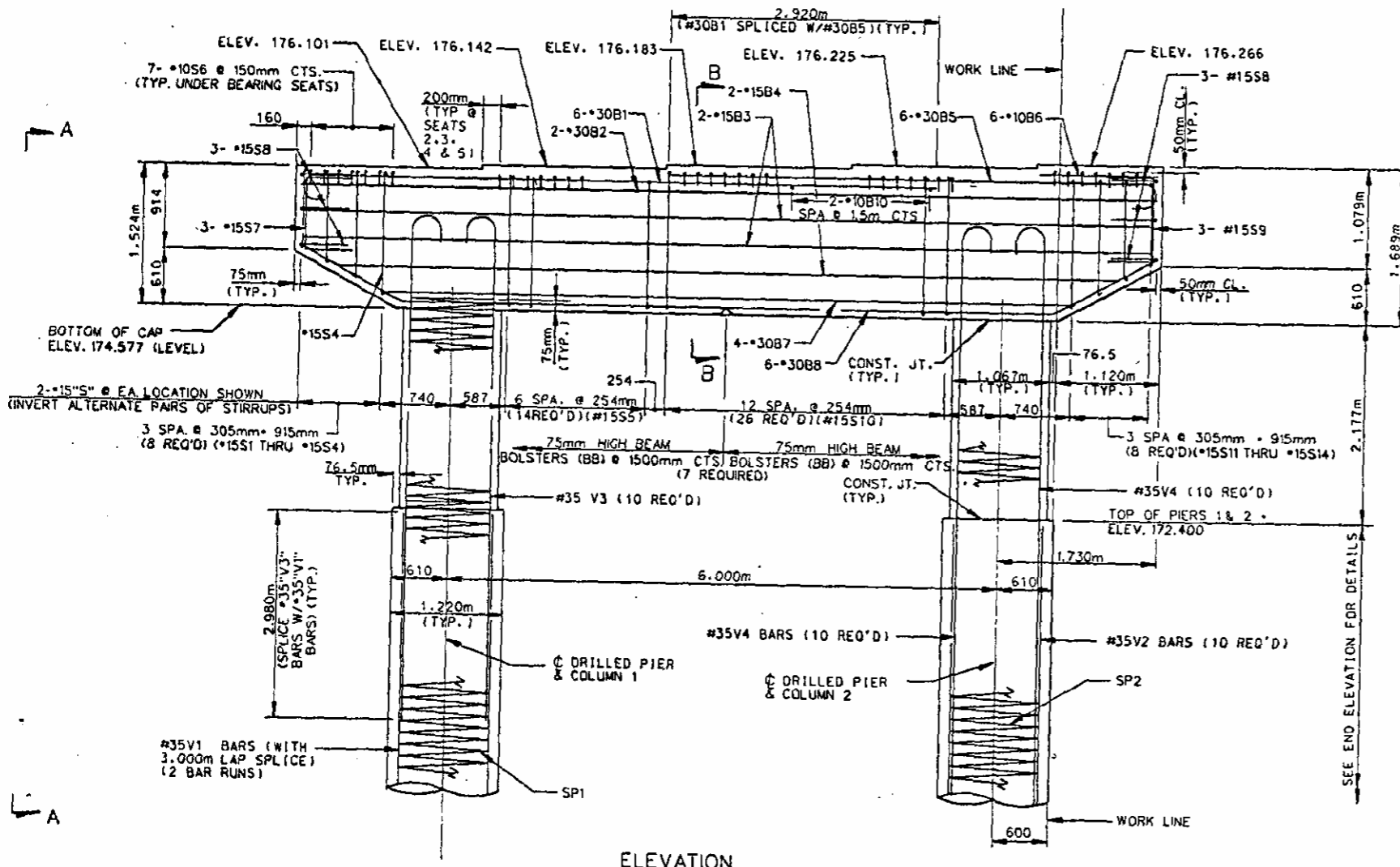
DRAWN BY: BKC/WCB DATE: 4/95
 CHECKED BY: DAB DATE: 7/95
 APPROVED BY: LMP DATE: 7/96

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | 5-45 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 79 |

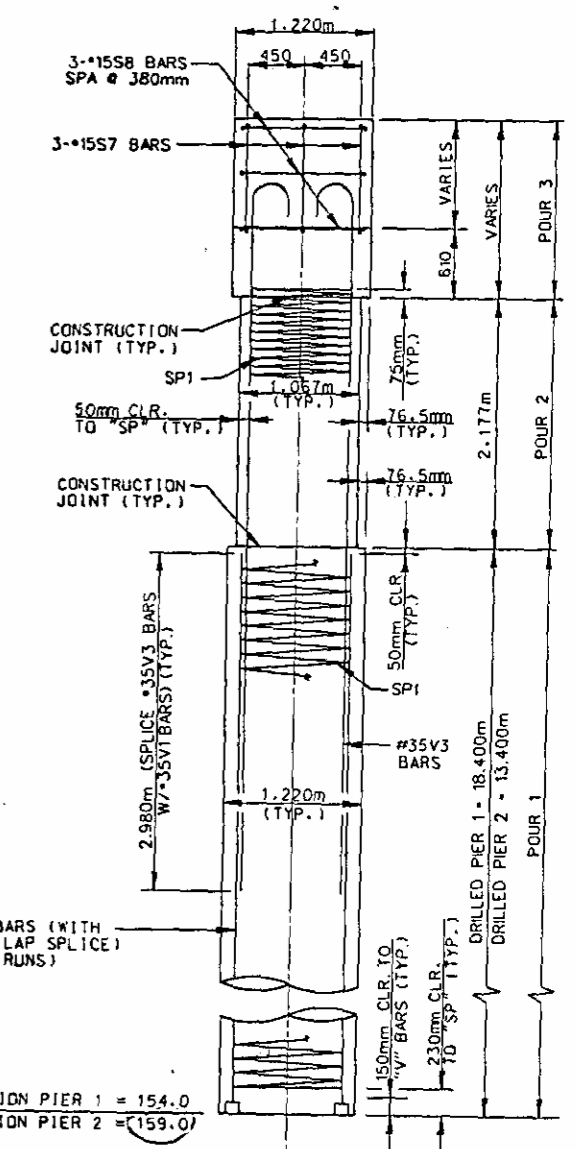
R.N. B-44



PLAN



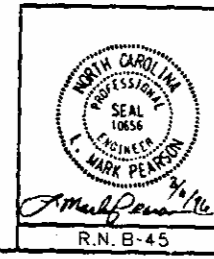
ELEVATION



END ELEVATION A-A

DRILLED PIER DETAILS FOR DRILLED PIER 1. DRILLED PIER 2 SIMILAR WITHOUT LONGITUDINAL REINFORCING SPLICE.

DRAWN BY: JBS/SLK/BJ DATE: 2/96
 CHECKED BY: DAR DATE: 2/96
 APPROVED BY: LMP DATE: 2/96

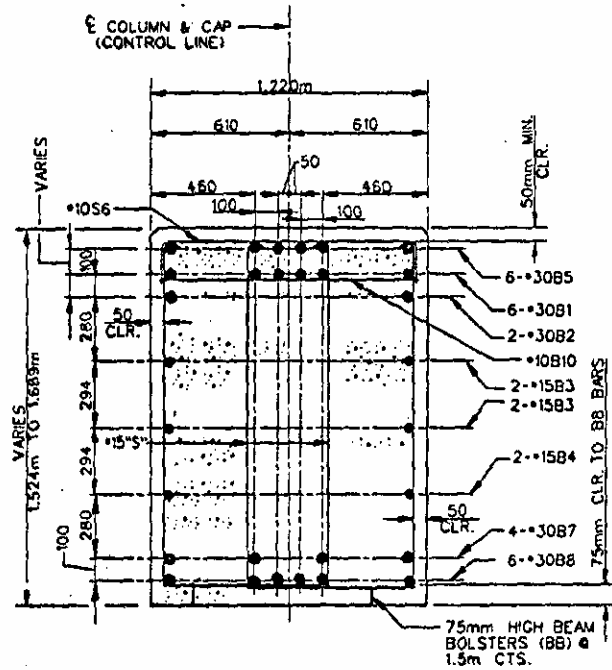


PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POI
 SHEET 1 OF 2

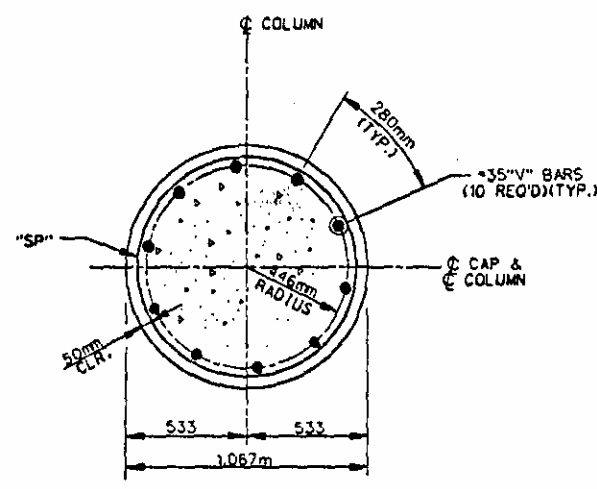
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

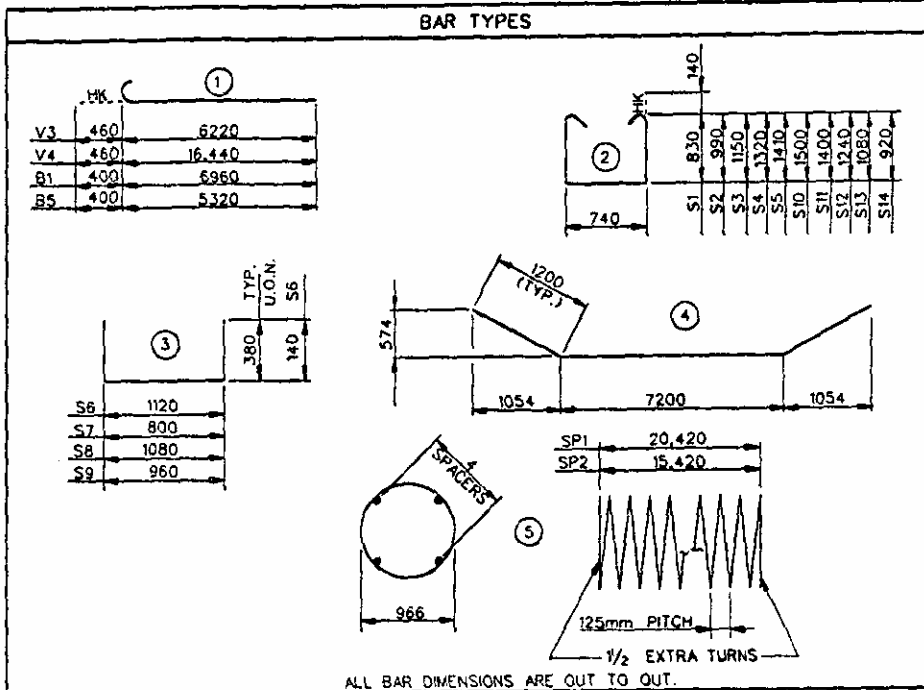
| REVISIONS | | | | | | SHEET NO. 5-40 79 |
|-----------|-----|-------|-----|-----|-------|-------------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |



SECTION B-B



COLUMN SECTION
(TYPICAL FOR COLUMNS)

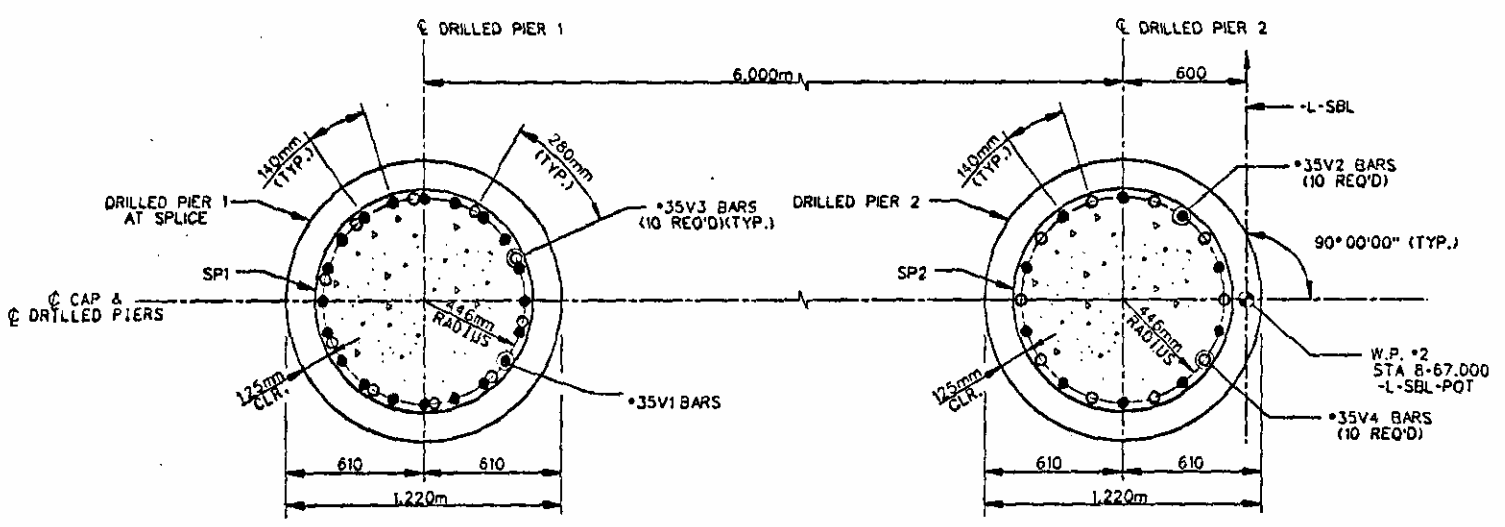


ALL BAR DIMENSIONS ARE OUT TO OUT.

| BILL OF MATERIAL | | | | | |
|---|-----|------|------|---------|--------|
| BENT 1 | | | | | |
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| B1 | 6 | 30 | | 7360 | 24.3 |
| B2 | 2 | 30 | STR. | 9360 | 10.3 |
| B3 | 4 | 15 | STR. | 9360 | 5.9 |
| B4 | 2 | 15 | STR. | 8600 | 2.7 |
| B5 | 6 | 30 | | 5720 | 18.9 |
| B6 | 6 | 10 | STR. | 1280 | 6 |
| B7 | 4 | 30 | STR. | 7580 | 16.7 |
| B8 | 6 | 30 | | 9600 | 31.7 |
| B10 | 2 | 10 | STR. | 1120 | 2 |
| | | | | | |
| S1 | 2 | 15 | 2 | 2680 | 8 |
| S2 | 2 | 15 | 2 | 3000 | 9 |
| S3 | 2 | 15 | 2 | 3320 | 10 |
| S4 | 2 | 15 | 2 | 3660 | 12 |
| S5 | 14 | 15 | 2 | 3840 | 64 |
| S6 | 35 | 10 | 3 | 1400 | 38 |
| S7 | 3 | 15 | 3 | 1560 | 7 |
| S8 | 6 | 15 | 3 | 1840 | 17 |
| S9 | 3 | 15 | 3 | 1720 | 8 |
| S10 | 26 | 15 | 2 | 4020 | 164 |
| | | | | | |
| S11 | 2 | 15 | 2 | 3620 | 12 |
| S12 | 2 | 15 | 2 | 3500 | 11 |
| S13 | 2 | 15 | 2 | 3180 | 10 |
| S14 | 2 | 15 | 2 | 2860 | 9 |
| | | | | | |
| V1 | 40 | 35 | STR | 10,600 | 3328 |
| V2 | 10 | 35 | STR | 13,200 | 1036 |
| V3 | 10 | 35 | | 6680 | 524 |
| V4 | 10 | 35 | | 16,900 | 1327 |
| | | | | | |
| TOTAL REINFORCING STEEL - kg | | | | | 7727 |
| | | | | | |
| SP1 | 1 | | 5 | 498,840 | 783 |
| SP2 | 1 | | 5 | 379,360 | 596 |
| SPIRAL COLUMN REINF. STEEL - kg | | | | | 1379 |
| | | | | | |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS | | | | | 3.9 |
| POUR 3 - CAP | | | | | 17.5 |
| TOTAL cu. m | | | | | 21.4 |
| | | | | | |
| 1220mm DIA. DRILLED PIERS (NO. 2) | | | | | |
| 1220mm DIA. PIERS NOT IN ROCK - m. 24.0 | | | | | |
| 1220mm DIA. PIERS IN ROCK - m. 7.8 | | | | | |
| CLASS "AA" CONCRETE (POUR 1) cu. m | | | | | 37.2 |

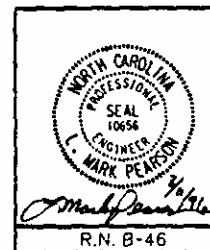
NOTES:

- FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.
- FOR DRILLED PIERS, SEE SPECIAL PROVISIONS
- THE CONTRACTOR MAY USE CLASS "AA" CONCRETE IN LIEU OF CLASS "A" CONCRETE IN COLUMN.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.
- THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.
- THE 1220mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1170mm IN THE HARD ROCK ZONE.
- PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:
 - 1220mm DIA. DRILLED PIERS IN ROCK
 - 1220mm DIA. DRILLED PIERS NOT IN ROCK
- PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL SHAFTS IN THE LAKE. TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.
- STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.
- FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.



PLAN OF DRILLED PIERS
(TYPICAL FOR DRILLED PIERS)

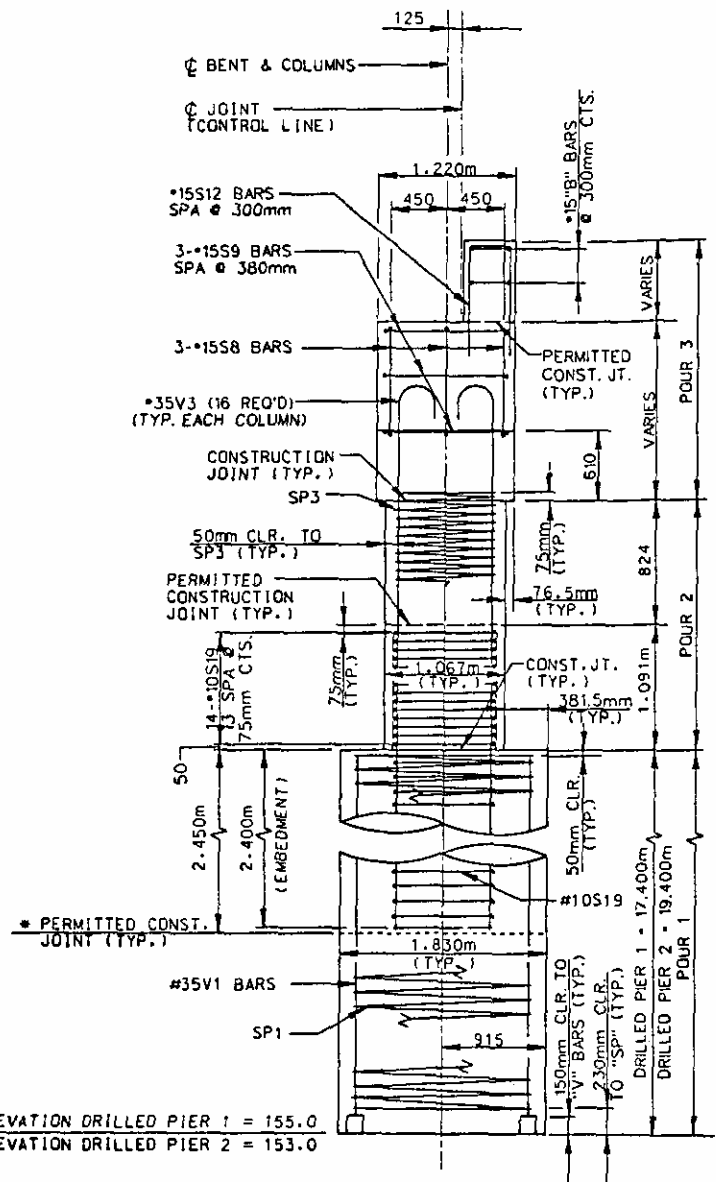
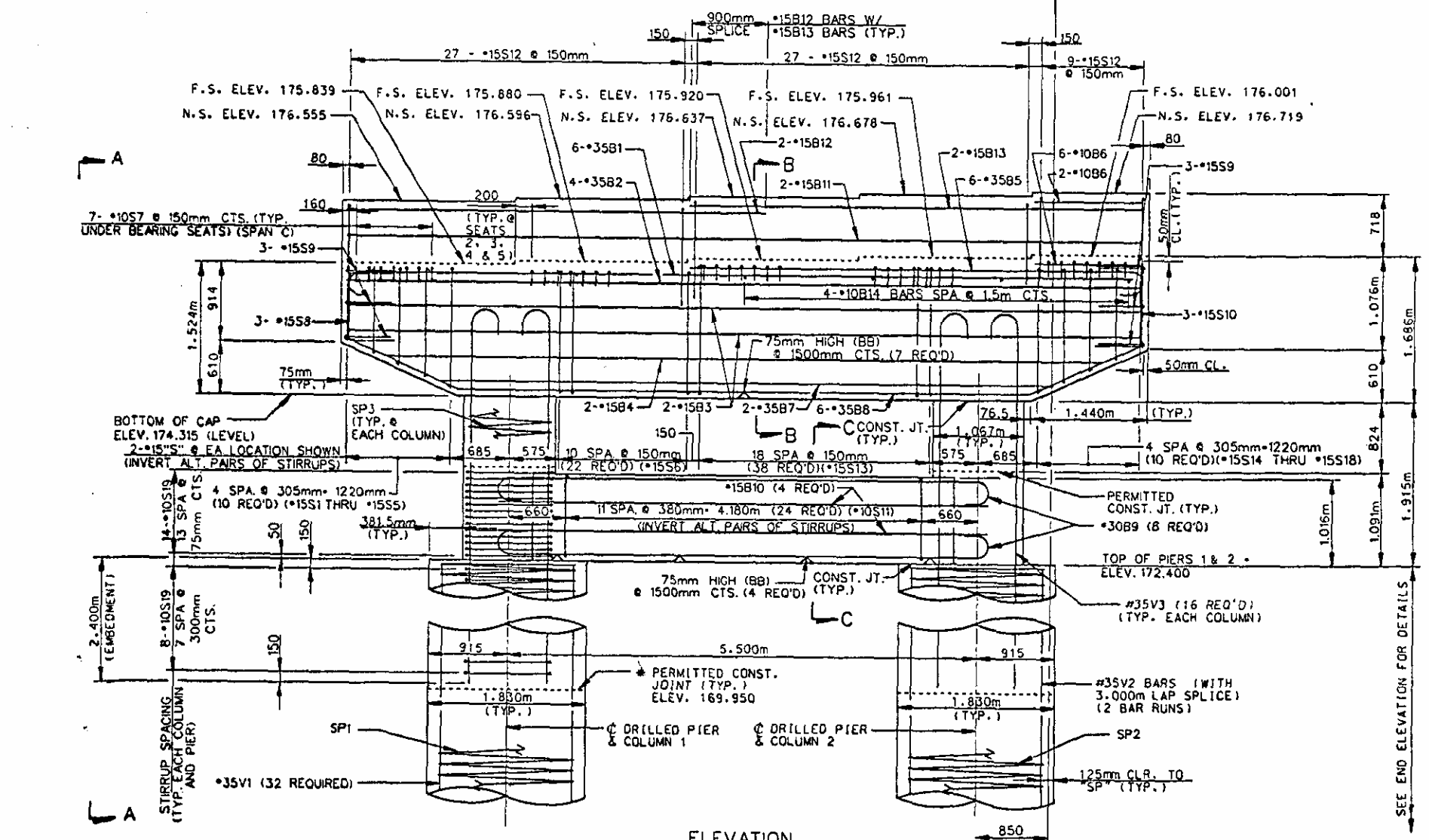
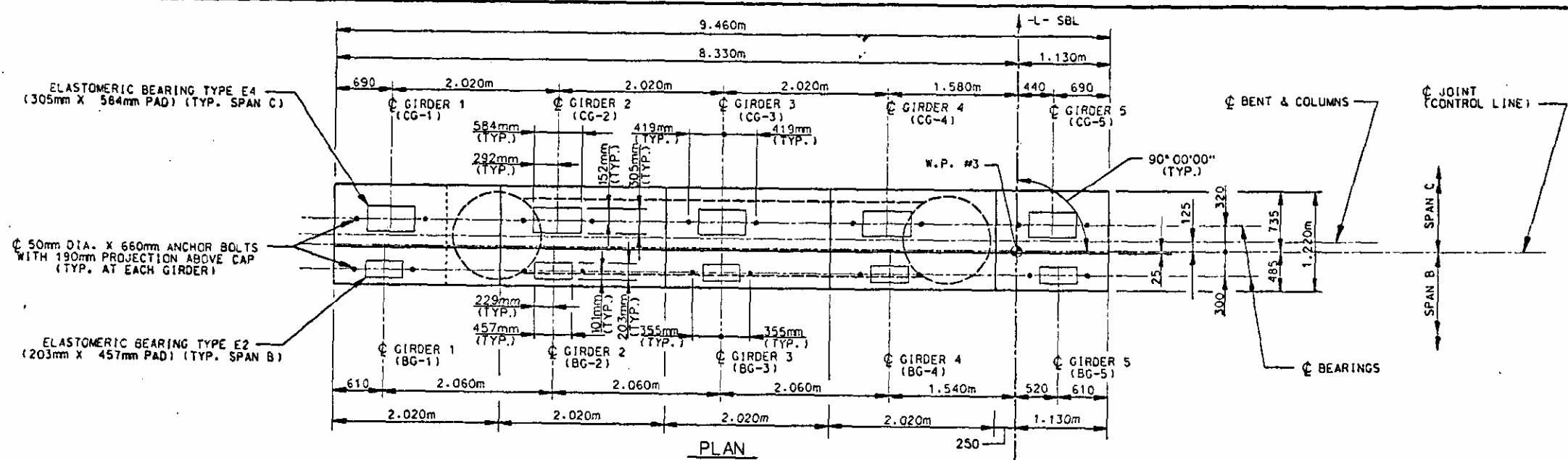
PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT
 SHEET 2 OF 2



| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
|--|-----|-------|-----|-----|-------|
| SUBSTRUCTURE BENT 1 | | | | | |
| REVISIONS | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. 5-47
TOTAL SHEETS 79

DRAWN BY: BRC/SLK/RCS DATE: 02/96
 CHECKED BY: DAR DATE: 02/96
 APPROVED BY: LMP DATE: 02/96



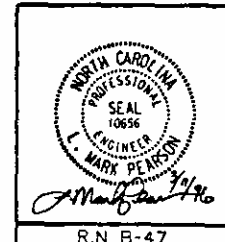
NOTE:
F.S. - FAR SEAT
N.S. - NEAR SEAT

TIP ELEVATION DRILLED PIER 1 = 155.0
TIP ELEVATION DRILLED PIER 2 = 153.0

END ELEVATION A-A
DETAILS FOR DRILLED PIER 1 SHOWN. DRILLED PIER 2 DETAILS SIMILAR.

* CONSTRUCTION JOINT PERMITTED TO ALLOW FOR ALIGNMENT OF COLUMN STEEL PRIOR TO COLUMN POUR (POUR 2).

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -L- SBL POT
SHEET 1 OF 2

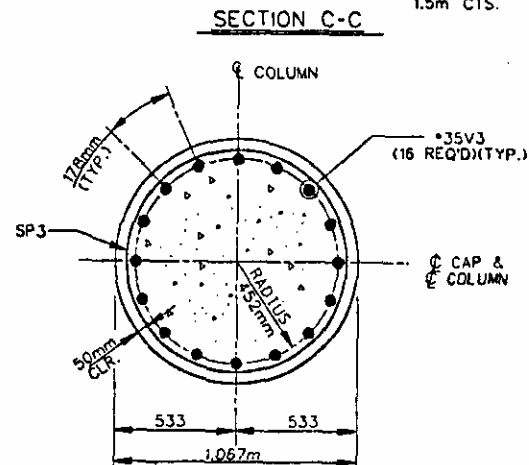
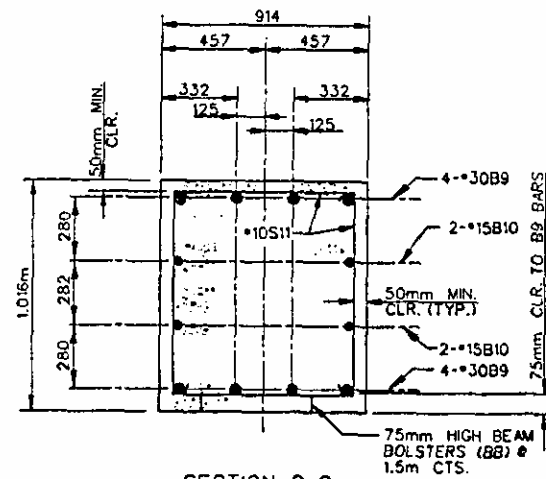
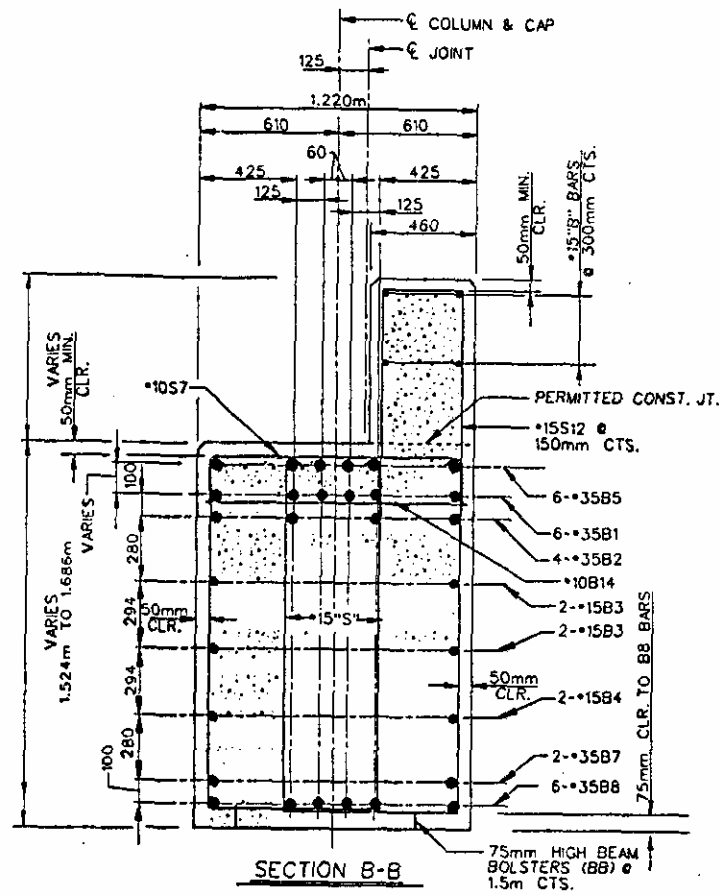


| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
|--|----|------|-----|----|------|
| SUBSTRUCTURE BENT 2 | | | | | |
| REVISIONS | | | | | |
| NO. | BY | DATE | NO. | BY | DATE |
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| 3 | | | 4 | | |

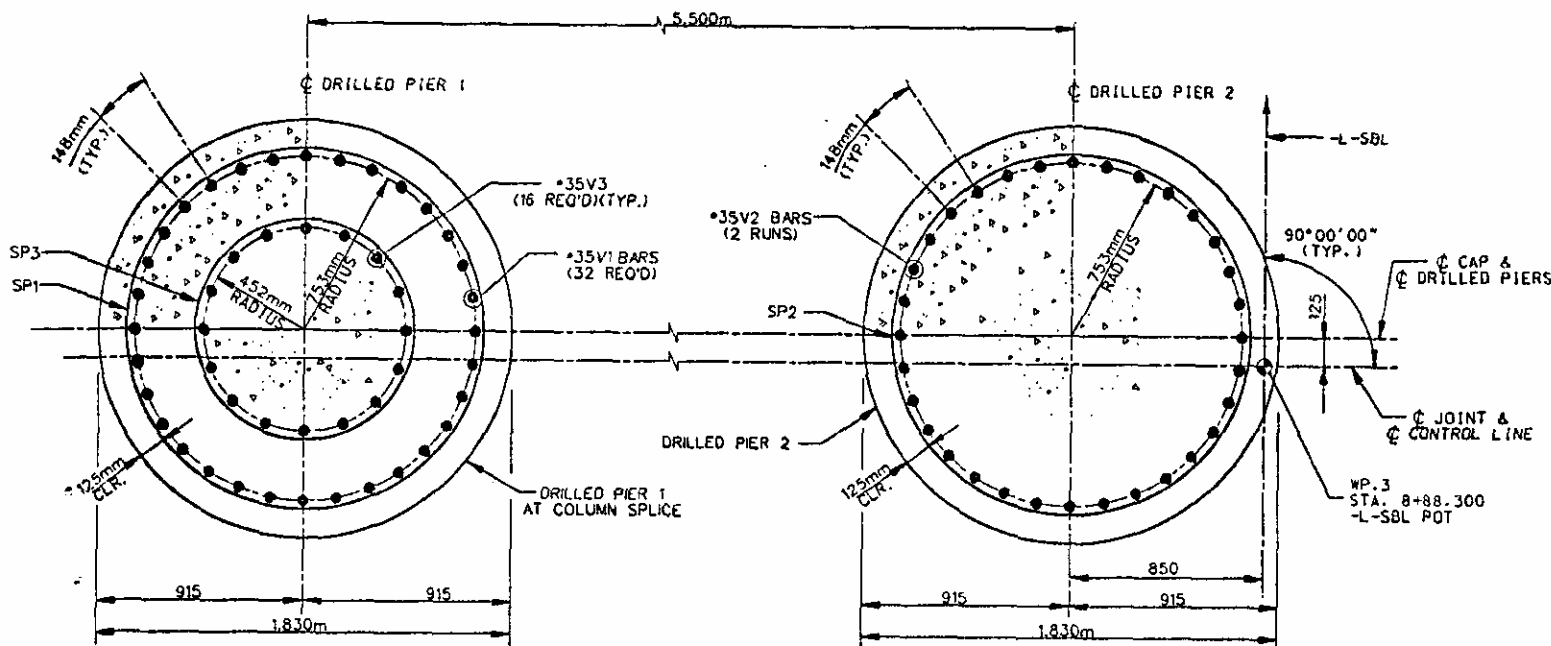
SHEET NO. S-48
TOTAL SHEETS 79

DRAWN BY: BKC/SLK/BKJ DATE: 2/96
CHECKED BY: DAR DATE: 2/96
APPROVED BY: LMP DATE: 2/96

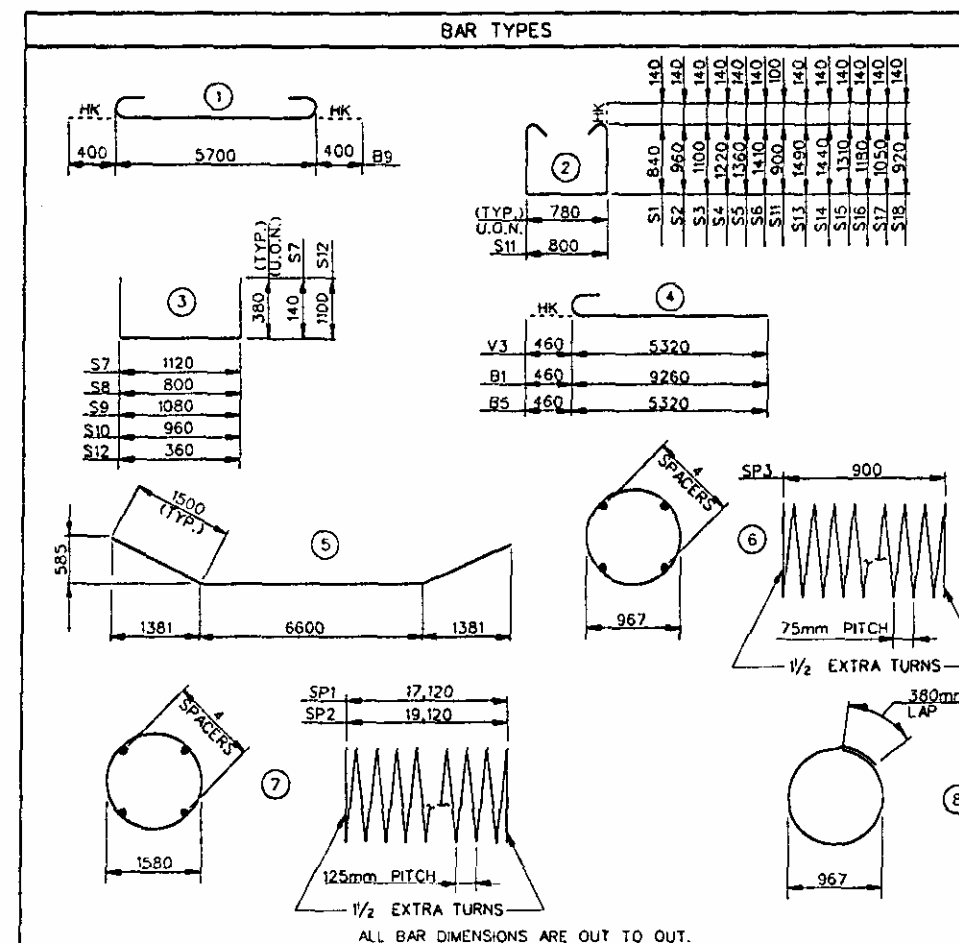
R.N. B-47



COLUMN SECTION
(TYPICAL FOR COLUMNS)



PLAN OF DRILLED PIERS
(TYPICAL FOR DRILLED PIERS)



NOTES:

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE CENTERLINE COLUMN AND CAP IS OFFSET FROM THE CENTERLINE JOINT.

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1830mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1780mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:

- 1830mm DIA. DRILLED PIERS IN ROCK
- 1830mm DIA. DRILLED PIERS NOT IN ROCK

PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS IN THE LAKE. TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE CONTRACTOR, AT HIS OPTION, MAY INCREASE THE STRUT WIDTH TO MATCH THE COLUMN DIAMETER PROVIDED THAT THE CLEAR COVER TO THE STIRRUPS DOES NOT EXCEED 120mm. ANY ADDITIONAL COST DUE TO THE USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.

BILL OF MATERIAL.

BENT 2

| BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | |
|---------|------|------|--------|--------|------|
| B1 | 6 | 35 | 4 | 9720 | 458 |
| B2 | 4 | 35 | STR. | 9360 | 294 |
| B3 | 4 | 15 | STR. | 9360 | 59 |
| B4 | 2 | 15 | STR. | 8380 | 26 |
| B5 | 6 | 35 | STR. | 5780 | 272 |
| B6 | 8 | 10 | STR. | 1280 | 8 |
| B7 | 2 | 35 | STR. | 7060 | 111 |
| B8 | 6 | 35 | 5 | 9600 | 452 |
| B9 | 8 | 30 | 1 | 6500 | 286 |
| B10 | 4 | 15 | STR. | 5700 | 36 |
| B11 | 2 | 15 | STR. | 9360 | 29 |
| B12 | 2 | 15 | STR. | 4940 | 16 |
| B13 | 2 | 15 | STR. | 5320 | 17 |
| B14 | 4 | 10 | STR. | 1120 | 4 |
| S1 | 2 | 15 | 2 | 2740 | 9 |
| S2 | 2 | 15 | 2 | 2980 | 9 |
| S3 | 2 | 15 | 2 | 3260 | 10 |
| S4 | 2 | 15 | 2 | 3500 | 11 |
| S5 | 2 | 15 | 2 | 3780 | 12 |
| S6 | 22 | 15 | 2 | 3880 | 134 |
| S7 | 35 | 10 | 3 | 1400 | 38 |
| S8 | 3 | 15 | 3 | 1560 | 7 |
| S9 | 6 | 15 | 3 | 1840 | 17 |
| S10 | 3 | 15 | 3 | 1720 | 8 |
| S11 | 24 | 10 | 2 | 2800 | 53 |
| S12 | 63 | 15 | 3 | 2560 | 253 |
| S13 | 38 | 15 | 2 | 4040 | 241 |
| S14 | 2 | 15 | 2 | 3940 | 12 |
| S15 | 2 | 15 | 2 | 3680 | 12 |
| S16 | 2 | 15 | 2 | 3420 | 11 |
| S17 | 2 | 15 | 2 | 3160 | 10 |
| S18 | 2 | 15 | 2 | 2900 | 9 |
| S19 | 44 | 10 | 8 | 3420 | 118 |
| V1 | 32 | 35 | STR. | 17,200 | 4321 |
| V2 | 64 | 35 | STR. | 11,100 | 5577 |
| V3 | 32 | 35 | 4 | 5320 | 1336 |

| | | | | |
|---------------------------------|---|---|---------|--------|
| TOTAL REINFORCING STEEL - kg | | | | 14,276 |
| SP1 | 1 | 7 | 687,900 | 1080 |
| SP2 | 1 | 7 | 766,540 | 1203 |
| SP3 | 2 | 6 | 45,060 | 71 |
| SPIRAL COLUMN REINF. STEEL - kg | | | | 2354 |

TOTAL REINFORCING STEEL - kg 14,276

| | | | | |
|-----|---|---|---------|------|
| SP1 | 1 | 7 | 687,900 | 1080 |
| SP2 | 1 | 7 | 766,540 | 1203 |
| SP3 | 2 | 6 | 45,060 | 71 |

SPIRAL COLUMN REINF. STEEL - kg 2354

| | | |
|----------------------------|------|------|
| CLASS "A" CONCRETE - cu. m | | |
| POUR 2 - COLUMNS & STRUT | 7.7 | |
| POUR 3 - CAP | 20.5 | |
| TOTAL cu. m. | | 28.2 |

| | | |
|---------------------------------------|------|------|
| 1830mm DIA. DRILLED PIERS (NO. 2) | | |
| 1830mm DIA. PIERS NOT IN ROCK - m. | 27.1 | |
| 1830mm DIA. PIERS IN ROCK - m. | 9.7 | |
| CLASS "AA" CONCRETE (POUR 1) - cu. m. | | 96.8 |

PROJECT NO. B-2612

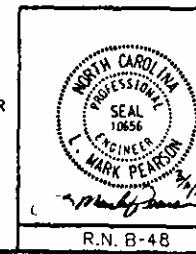
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2

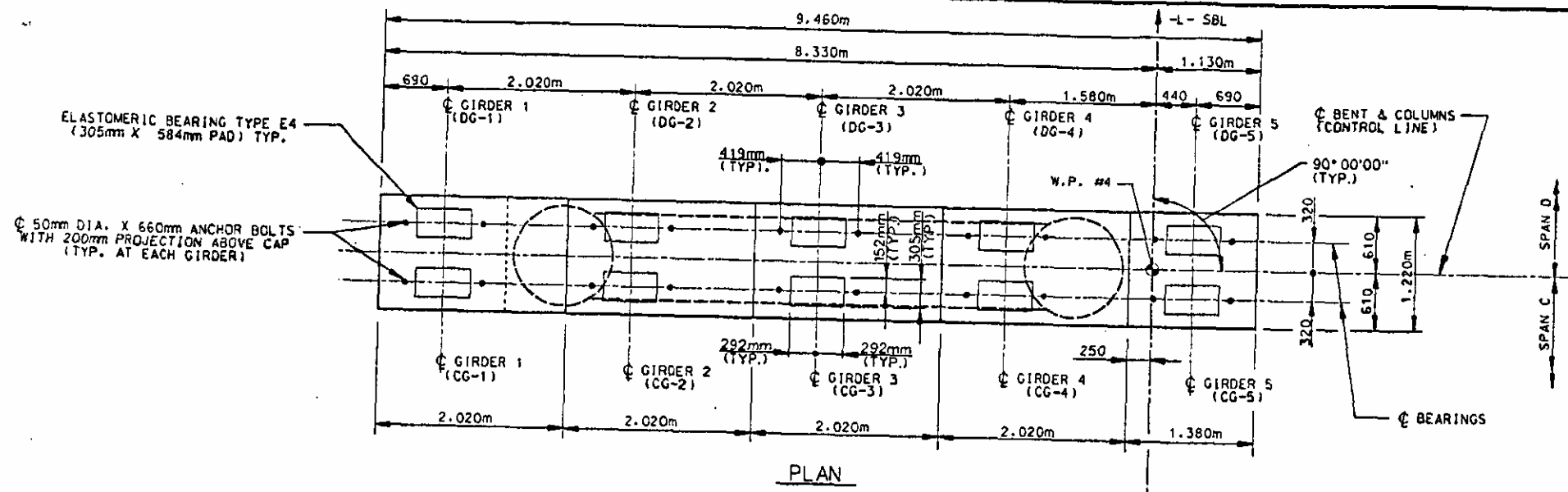


| REVISIONS | | | | SHEET NO. |
|-----------|----|------|-----|-----------|
| NO. | BY | DATE | NO. | DATE |
| 1 | | | 3 | |
| 2 | | | 4 | |

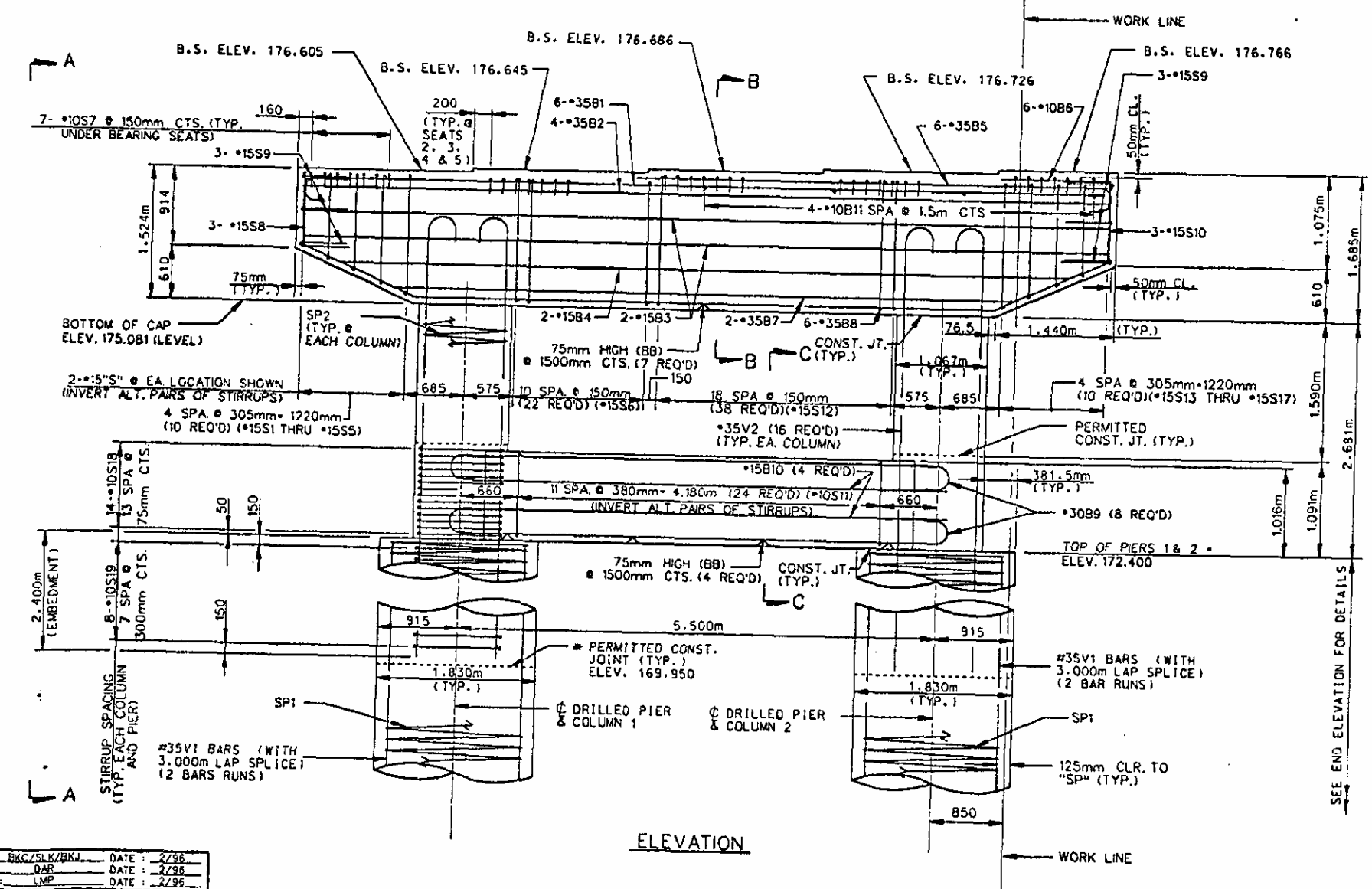
S-49
TOTAL SHEETS
79

R.N. B-48

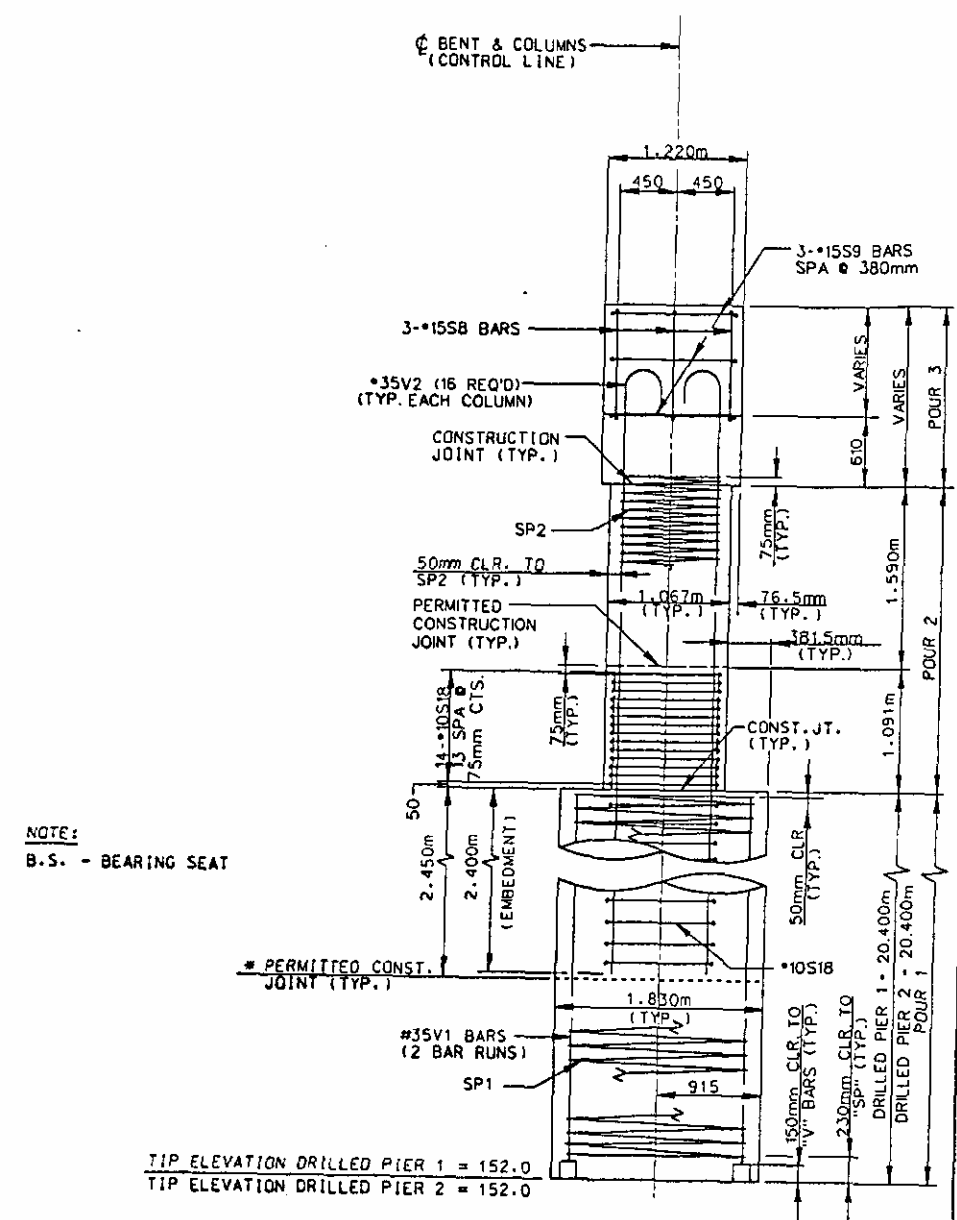
DRAWN BY: BKC/SLK/BJT DATE: 02/98
CHECKED BY: DAR DATE: 02/98
APPROVED BY: LMP DATE: 02/98



PLAN



ELEVATION



NOTE:
B.S. - BEARING SEAT

* CONSTRUCTION JOINT PERMITTED TO ALLOW FOR ALIGNMENT OF COLUMN STEEL PRIOR TO COLUMN POUR (POUR 2).

END ELEVATION A-A

DETAILS FOR DRILLED PIER 1 SHOWN. DRILLED PIER 2 DETAILS SIMILAR.

PROJECT NO. B-2612

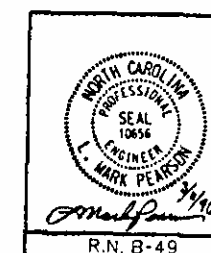
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL PQT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

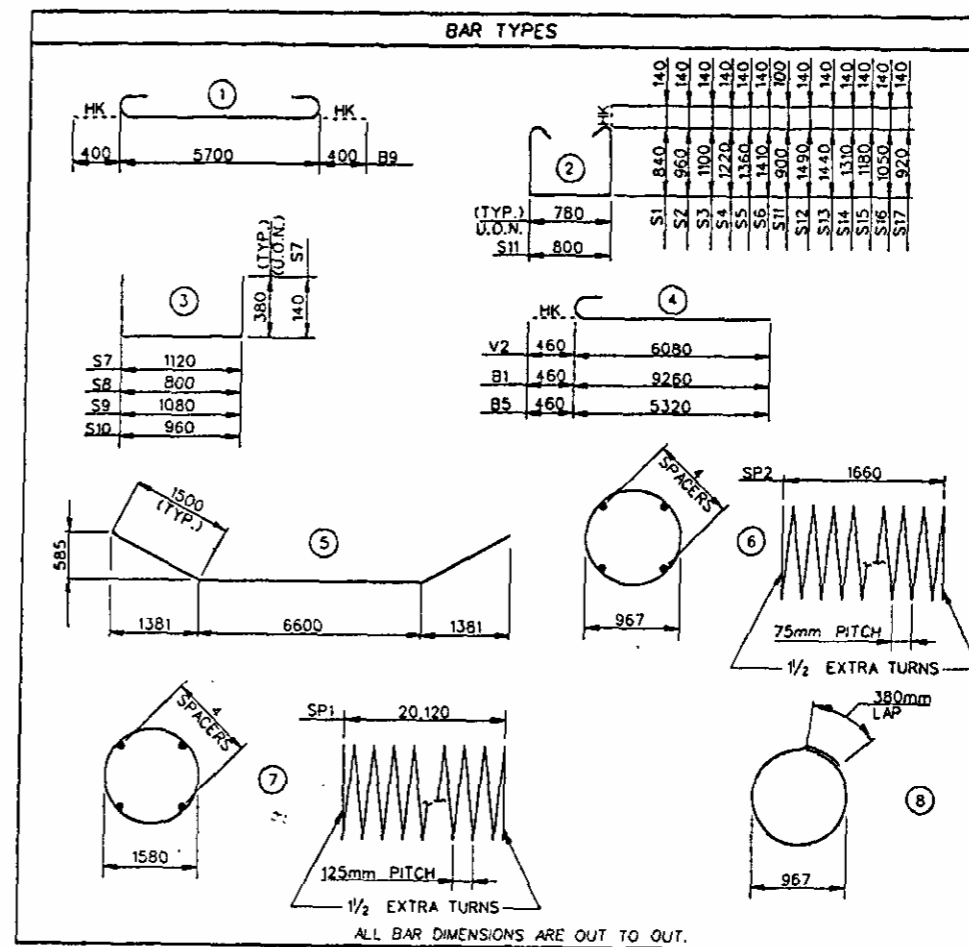
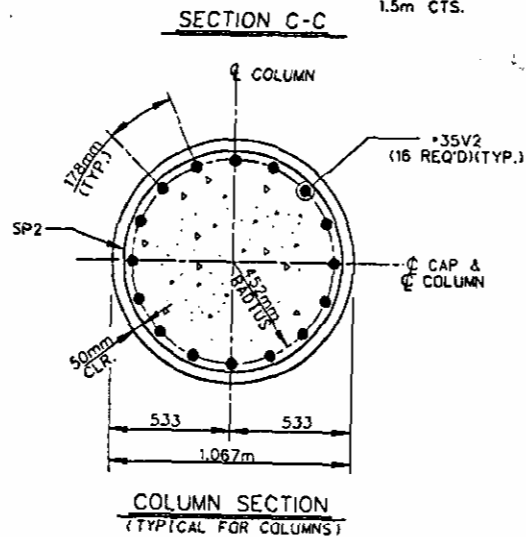
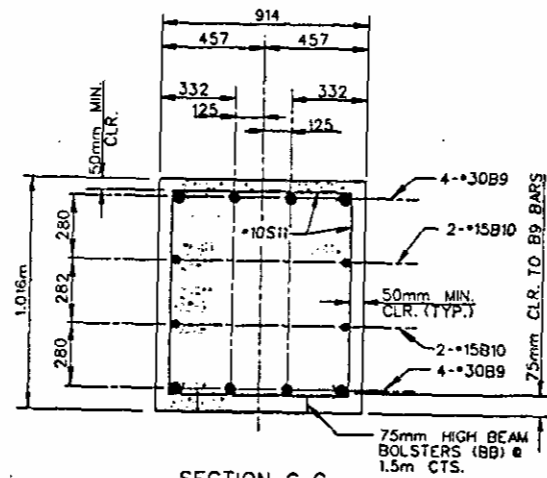
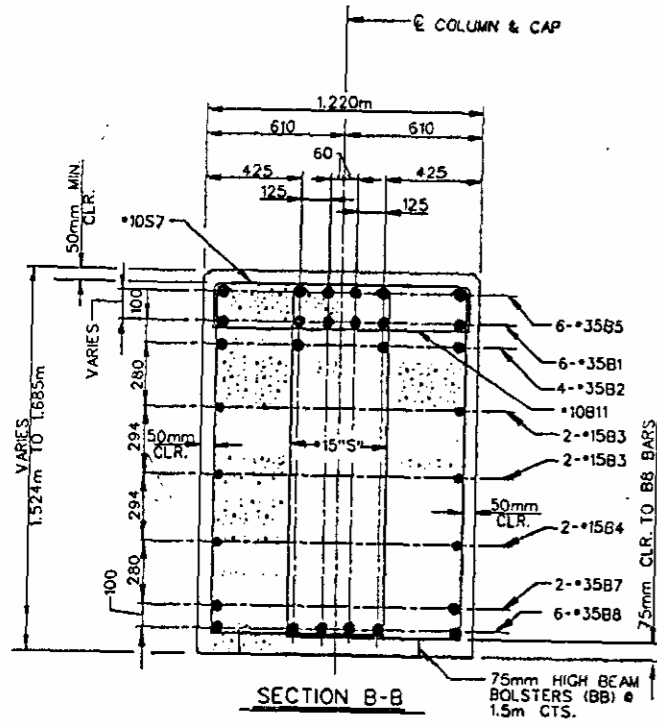
SUBSTRUCTURE
BENT 3



DRAWN BY: BKC/SLK/BKJ DATE: 2/96
CHECKED BY: DAR DATE: 2/96
APPROVED BY: LMP DATE: 2/96

| REVISIONS | | | | SHEET NO. 5-50 |
|-----------|-----|-------|-----|--------------------|
| NO. | BY: | DATE: | NO. | |
| 1 | | | 3 | TOTAL SHEETS 79 |
| 2 | | | 4 | |

R.N. B-49



| BILL OF MATERIAL | | | | | |
|---|-----|------|------|---------|--------|
| BENT 3 | | | | | |
| BAR NO. | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| B1 | 6 | 35 | 4 | 9720 | 458 |
| B2 | 4 | 35 | STR. | 9360 | 294 |
| B3 | 4 | 15 | STR. | 9360 | 59 |
| B4 | 2 | 15 | STR. | 8380 | 26 |
| B5 | 6 | 35 | STR. | 5780 | 272 |
| B6 | 6 | 10 | STR. | 1280 | 6 |
| B7 | 2 | 35 | STR. | 7060 | 111 |
| B8 | 6 | 35 | 5 | 9600 | 452 |
| B9 | 8 | 30 | 1 | 6500 | 286 |
| B10 | 4 | 15 | STR. | 5700 | 36 |
| B11 | 4 | 10 | STR. | 1120 | 4 |
| S1 | 2 | 15 | 2 | 2740 | 9 |
| S2 | 2 | 15 | 2 | 2980 | 9 |
| S3 | 2 | 15 | 2 | 3260 | 10 |
| S4 | 2 | 15 | 2 | 3500 | 11 |
| S5 | 2 | 15 | 2 | 3780 | 12 |
| S6 | 22 | 15 | 2 | 3880 | 134 |
| S7 | 35 | 10 | 3 | 1400 | 38 |
| S8 | 3 | 15 | 3 | 1560 | 7 |
| S9 | 6 | 15 | 3 | 1840 | 17 |
| S10 | 3 | 15 | 3 | 1720 | 8 |
| S11 | 24 | 10 | 2 | 2800 | 53 |
| S12 | 38 | 15 | 2 | 4040 | 241 |
| S13 | 2 | 15 | 2 | 3940 | 12 |
| S14 | 2 | 15 | 2 | 3680 | 12 |
| S15 | 2 | 15 | 2 | 3420 | 11 |
| S16 | 2 | 15 | 2 | 3160 | 10 |
| S17 | 2 | 15 | 2 | 2900 | 9 |
| S18 | 44 | 10 | 8 | 3420 | 118 |
| V1 | 128 | 35 | STR. | 11,600 | 11,656 |
| V2 | 32 | 35 | 4 | 6540 | 1643 |
| TOTAL REINFORCING STEEL - kg | | | | 16,024 | |
| SP1 | 2 | | 7 | 805,860 | 2530 |
| SP2 | 2 | | 6 | 75,700 | 119 |
| SPIRAL COLUMN REINF. STEEL - kg | | | | 2649 | |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS & STRUT | | | | 9.0 | |
| POUR 3 - CAP | | | | 17.5 | |
| TOTAL | | | | 26.5 | |
| 1830mm DIA. DRILLED PIERS (NO. 2) | | | | | |
| 1830mm DIA. PIERS NOT IN ROCK - m. 29.9 | | | | | |
| 1830mm DIA. PIERS IN ROCK - m. 10.9 | | | | | |
| CLASS "AA" CONCRETE (POUR 1) - cu. m. 107.3 | | | | | |

NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS "AA" CONCRETE IN LIEU OF CLASS "A" CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1830mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1780mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:

1830mm DIA. DRILLED PIERS IN ROCK

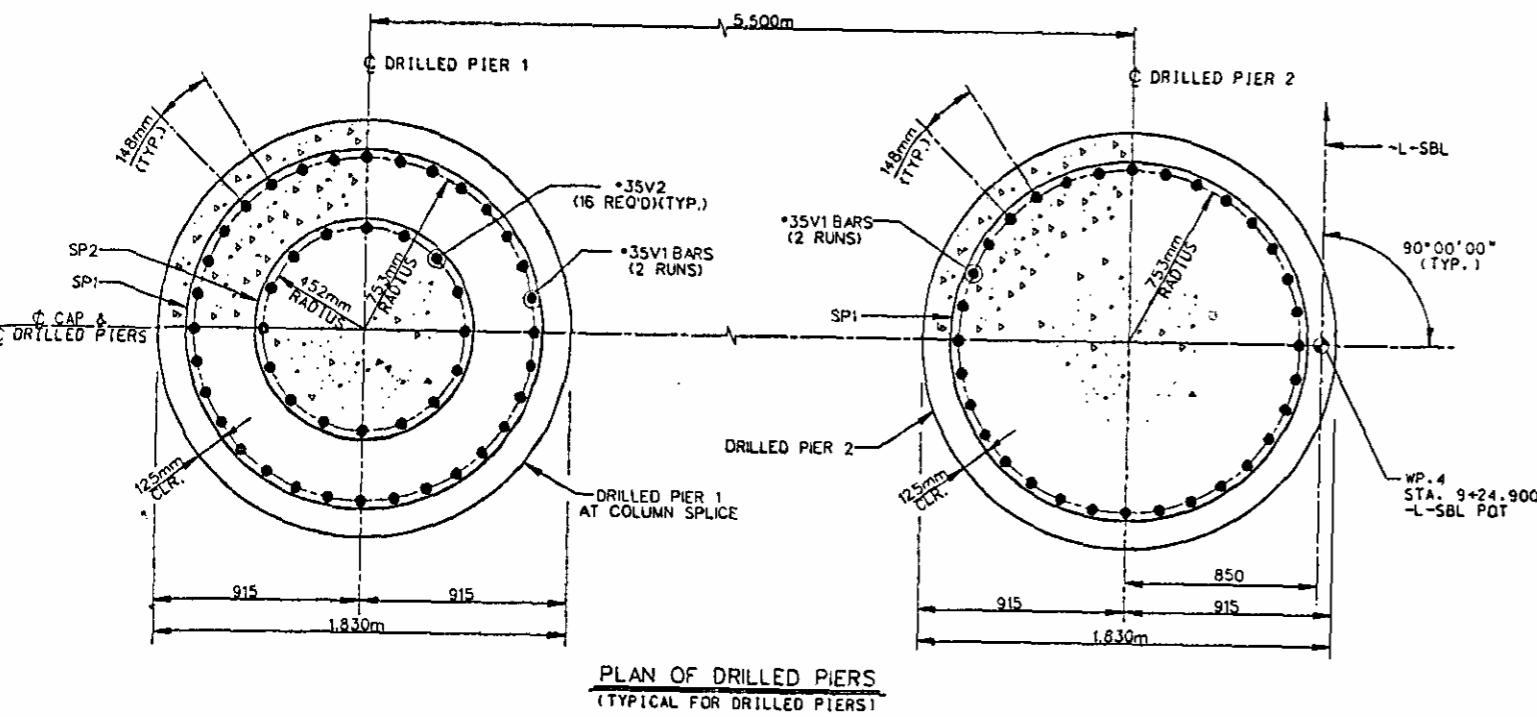
1830mm DIA. DRILLED PIERS NOT IN ROCK

PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS IN THE LAKE. TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

THE CONTRACTOR, AT HIS OPTION, MAY INCREASE THE STRUT WIDTH TO MATCH THE COLUMN DIAMETER PROVIDED THAT THE CLEAR COVER TO THE STIRRUPS DOES NOT EXCEED 120mm. ANY ADDITIONAL COST DUE TO THE USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.



PROJECT NO. B-2612

ROWAN-DAVIDSON COUNTY

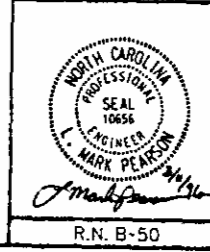
STATION: 11-58.893 -L- SBL POT

SHEET 2 OF 2

| STATE OF NORTH CAROLINA | | | | | |
|------------------------------|-----|-------|-----|-----|-------|
| DEPARTMENT OF TRANSPORTATION | | | | | |
| RALEIGH | | | | | |
| SUBSTRUCTURE | | | | | |
| BENT 3 | | | | | |
| REVISIONS | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. S-51

TOTAL SHEETS 79

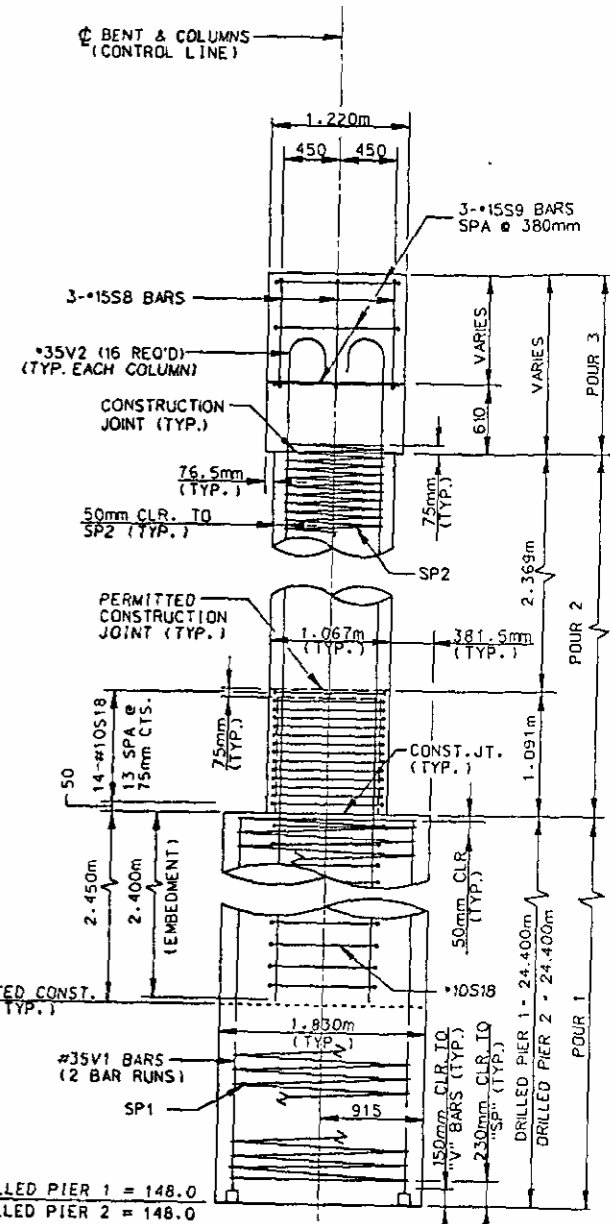
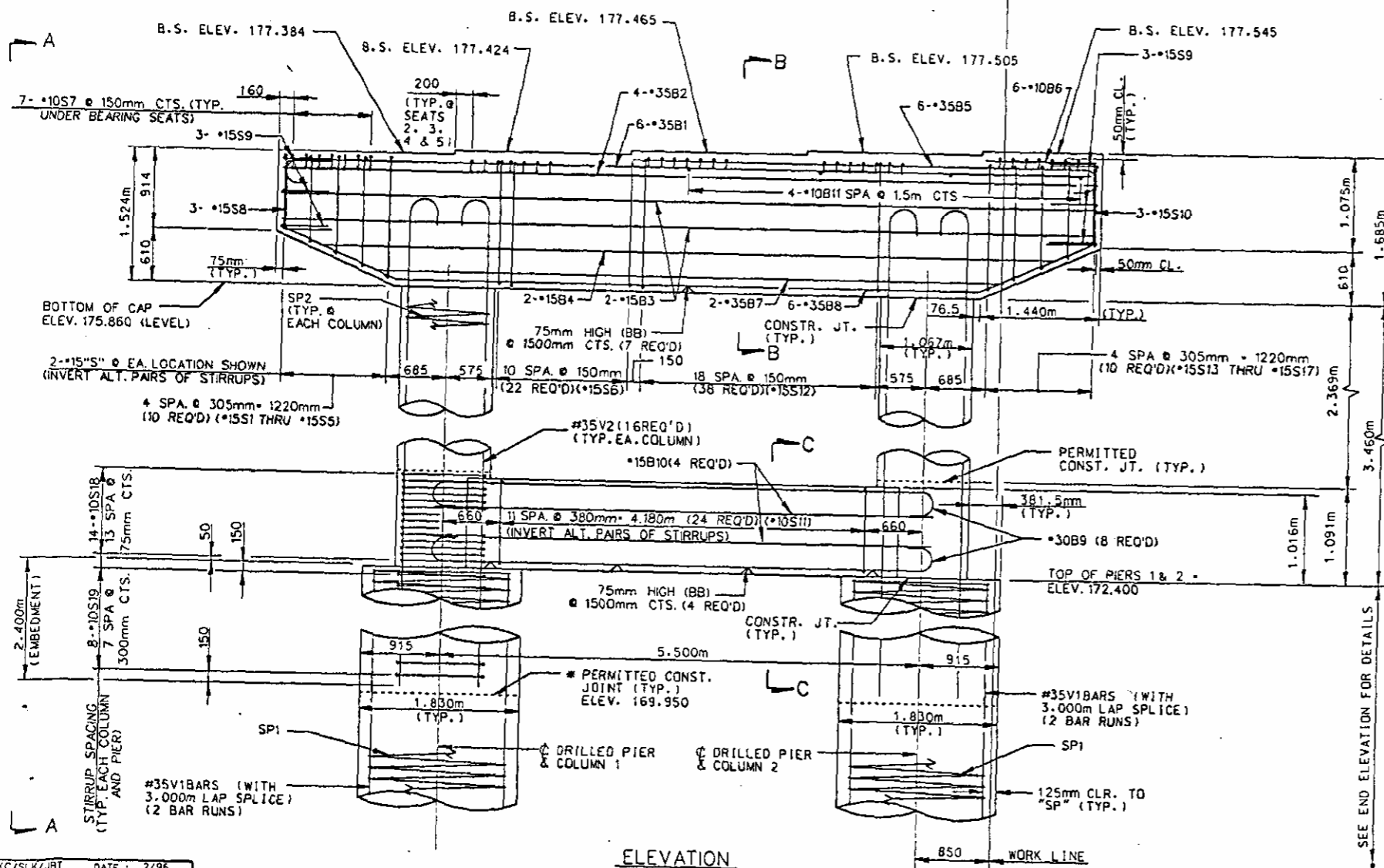
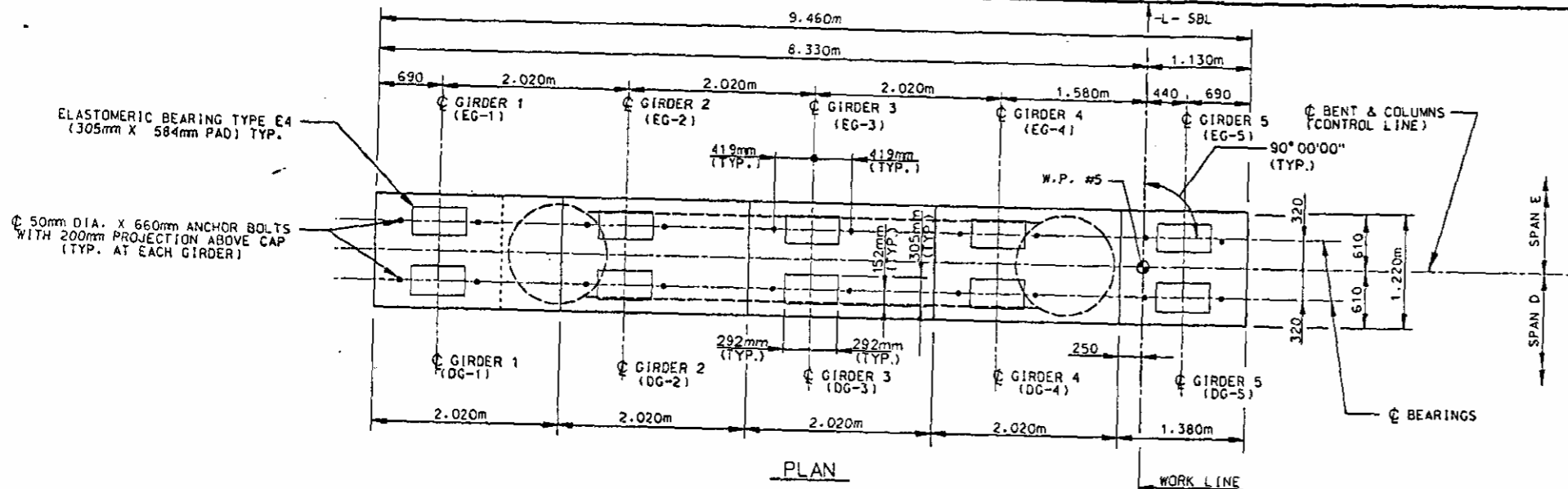


DRAWN BY: BKC/SLK/LBT DATE: 02/96

CHECKED BY: DAP DATE: 02/96

APPROVED BY: LWP DATE: 02/96

R.N. B-50



NOTE:
B.S. - BEARING SEAT

TIP ELEVATION DRILLED PIER 1 = 148.0
TIP ELEVATION DRILLED PIER 2 = 148.0

END ELEVATION A-A
DETAILS SHOWN FOR DRILLED PIER 1.
DRILLED PIER 2 DETAILS SIMILAR.

* CONSTRUCTION JOINT PERMITTED TO ALLOW
FOR ALIGNMENT OF COLUMN STEEL PRIOR
TO COLUMN POUR (POUR 2).

PROJECT NO. B-2612

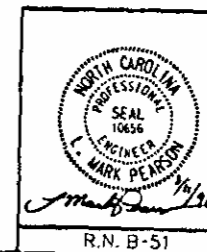
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POI

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

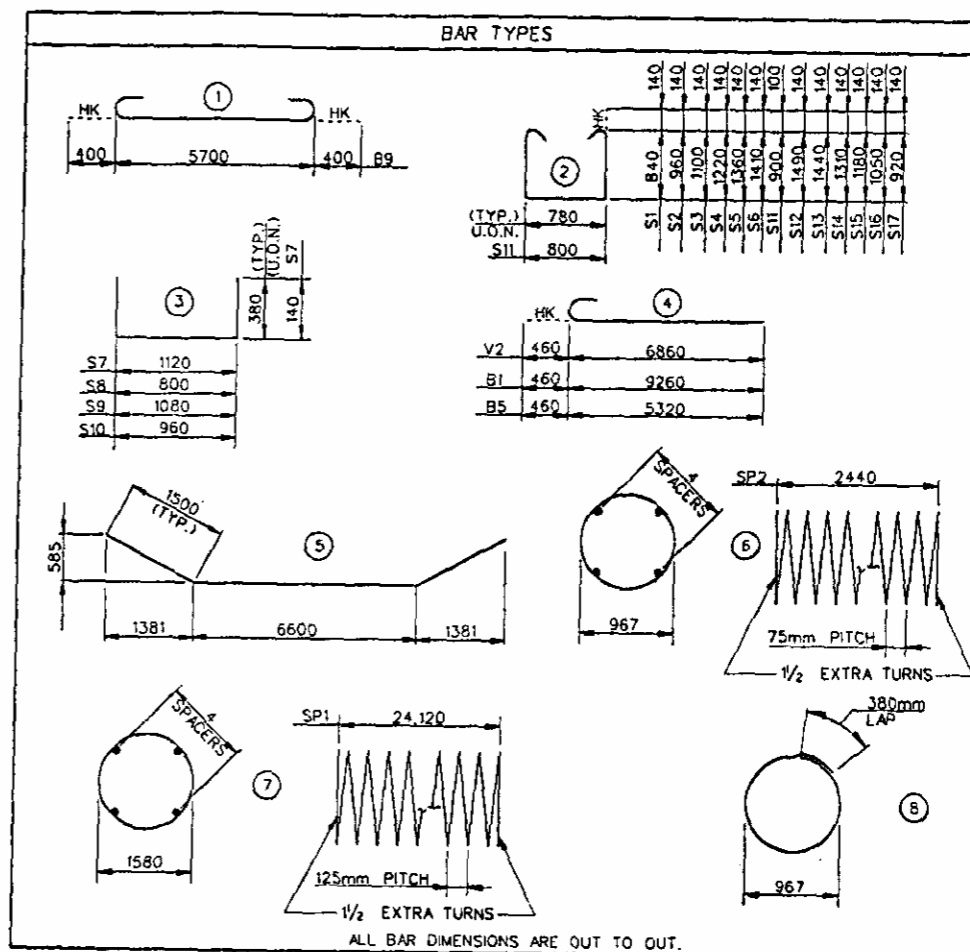
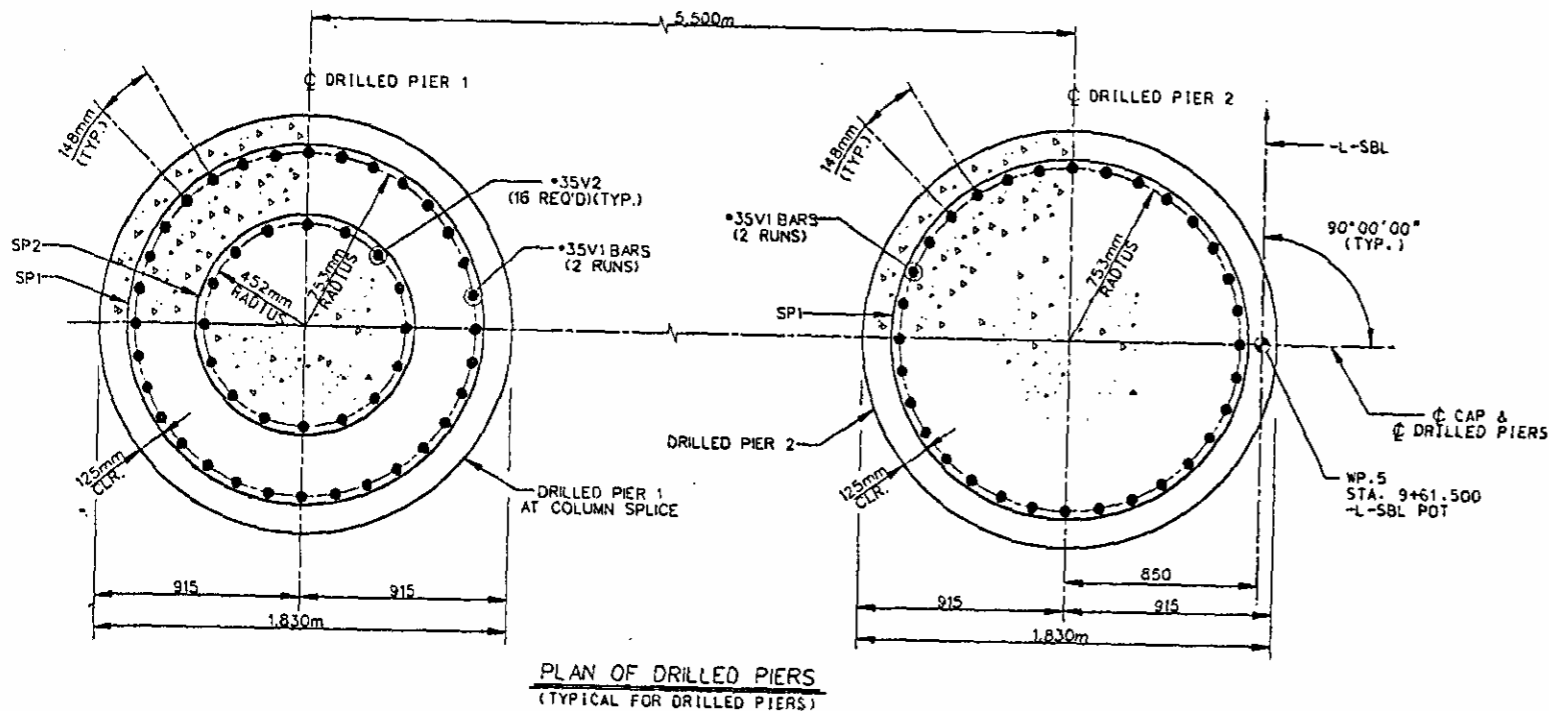
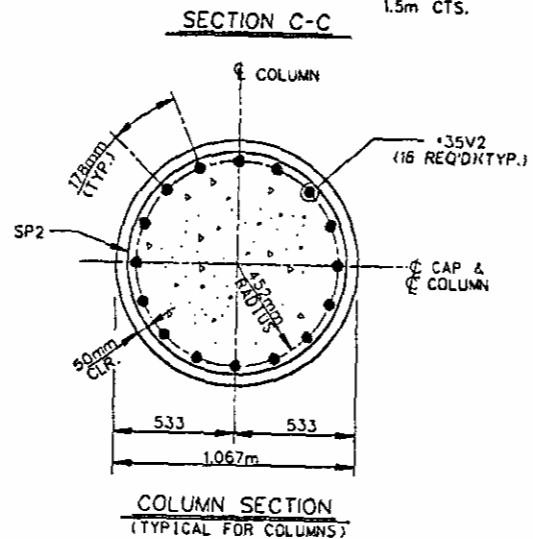
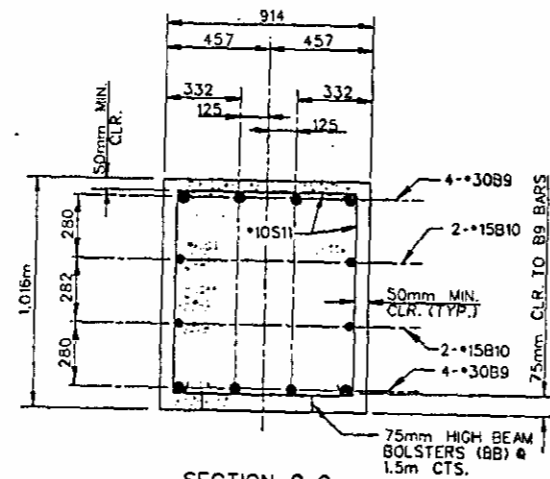
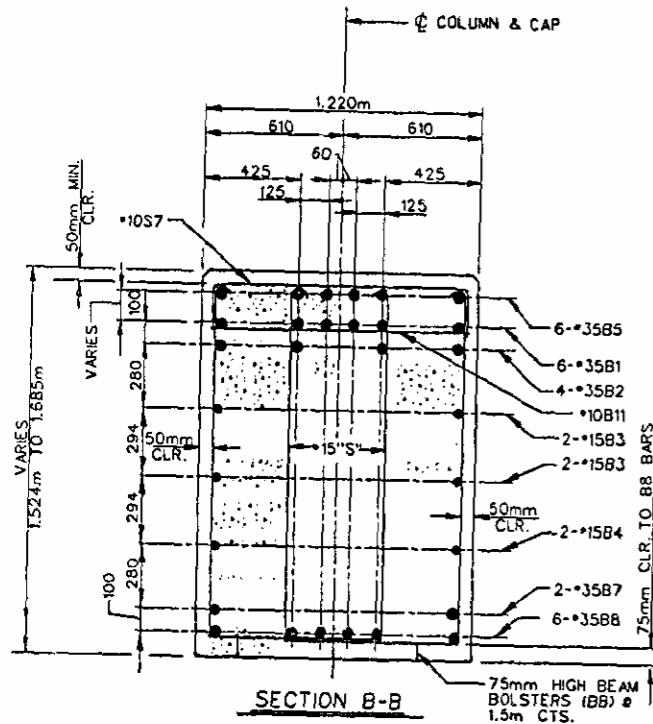
SUBSTRUCTURE
BENT 4



| REVISIONS | | | | SHEET NO. 5-52 |
|-----------|-----|-------|-------|-------------------|
| NO. | BY: | DATE: | DATE: | |
| 1 | | | | TOTALS 79 |
| 2 | | | | |

DRAWN BY: BKC/SLK/JBT DATE: 2/95
CHECKED BY: DAR DATE: 2/95
APPROVED BY: LMP DATE: 2/95

R.N. B-51



NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1830mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1780mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:

- 1830mm DIA. DRILLED PIERS IN ROCK
- 1830mm DIA. DRILLED PIERS NOT IN ROCK

PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS IN THE LAKE. TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

THE CONTRACTOR, AT HIS OPTION, MAY INCREASE THE STRUT WIDTH TO MATCH THE COLUMN DIAMETER PROVIDED THAT THE CLEAR COVER TO THE STIRRUPS DOES NOT EXCEED 120mm. ANY ADDITIONAL COST DUE TO THE USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.

PROJECT NO. B-2612

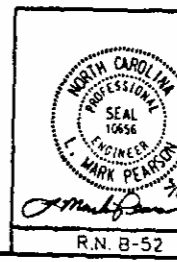
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 4

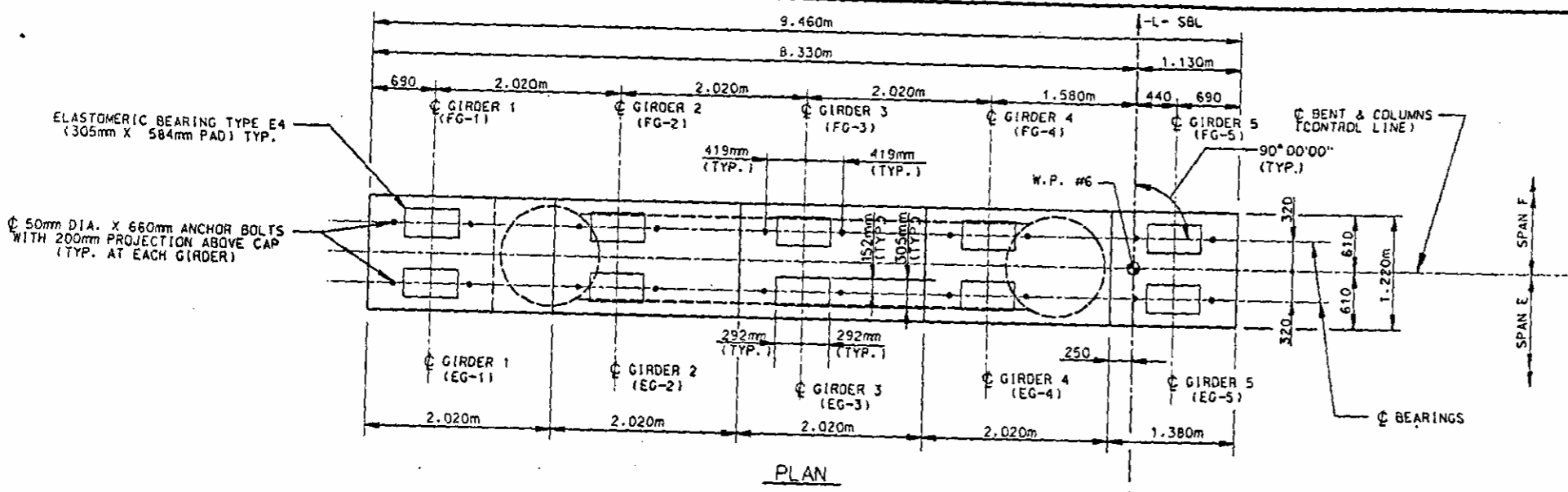


DRAWN BY: BKC/SLK/JBT DATE: 02/95
CHECKED BY: DAB DATE: 02/95
APPROVED BY: LWP DATE: 02/95

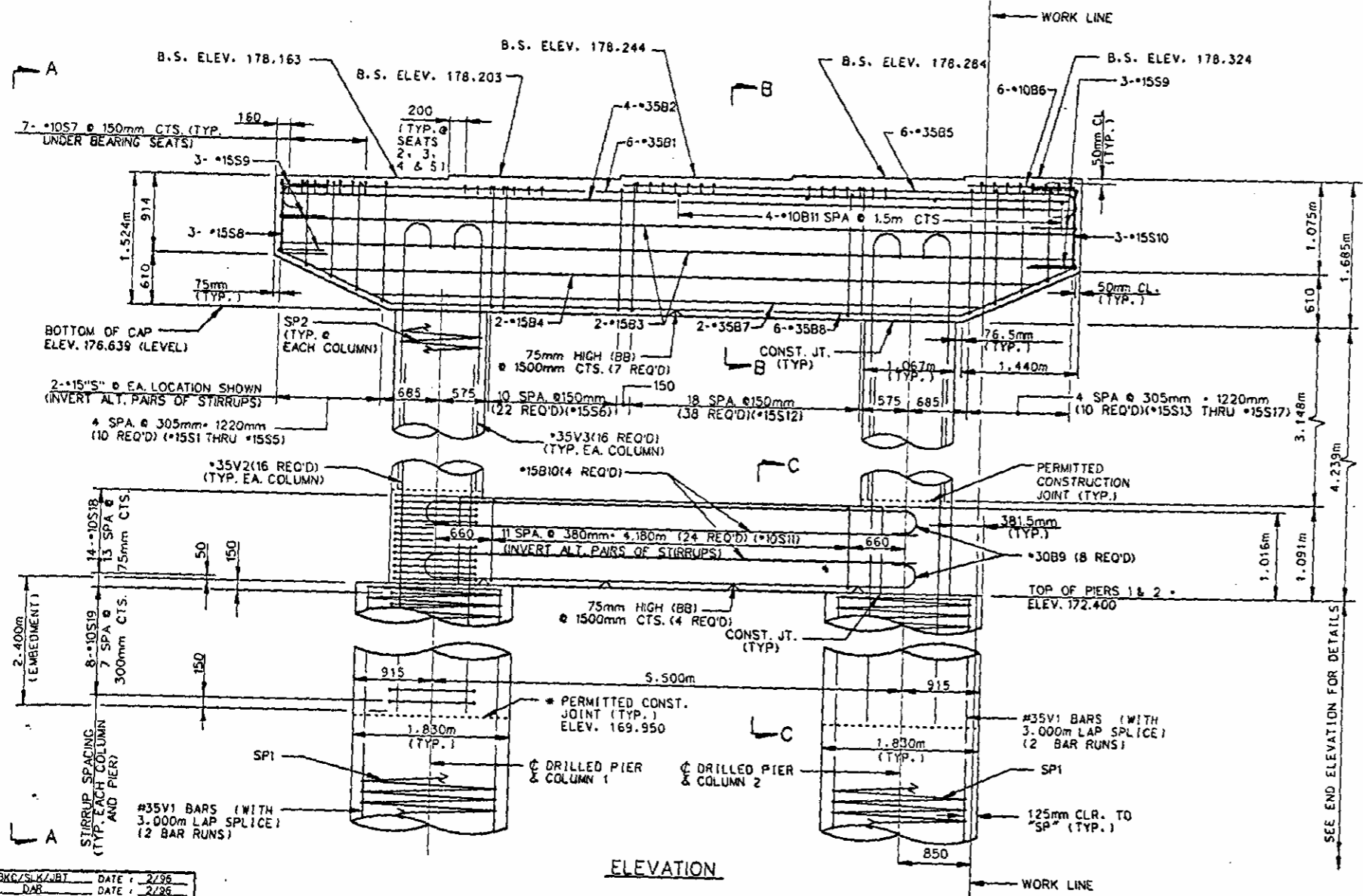
| REVISIONS | | | | | |
|-----------|-----|-------|-----|-----|-------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. S-53
TOTAL SHEETS 79

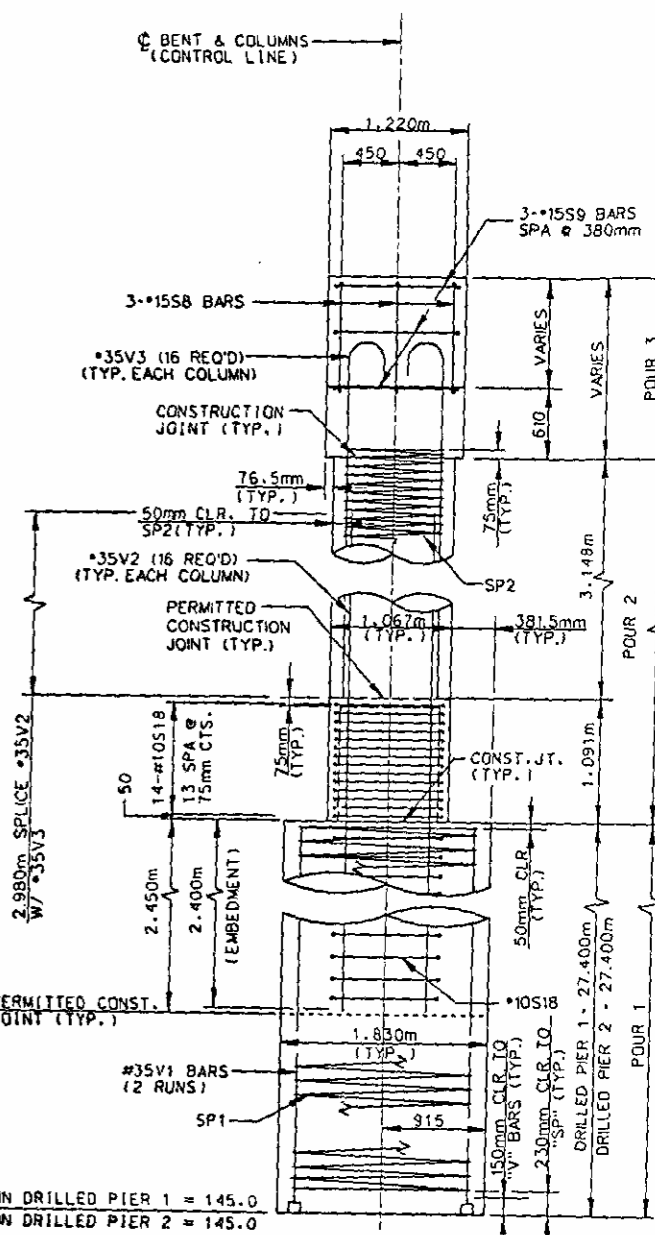
R.N. B-52



PLAN



ELEVATION



END ELEVATION A-A

NOTE:
B.S. - BEARING SEAT

* CONSTRUCTION JOINT PERMITTED TO ALLOW FOR ALIGNMENT OF COLUMN STEEL PRIOR TO COLUMN POUR (POUR 2).

DETAILS SHOWN FOR DRILLED PIER 1. DRILLED PIER 2 DETAILS SIMILAR.

PROJECT NO. B-2612

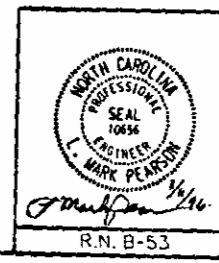
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 1 OF 2

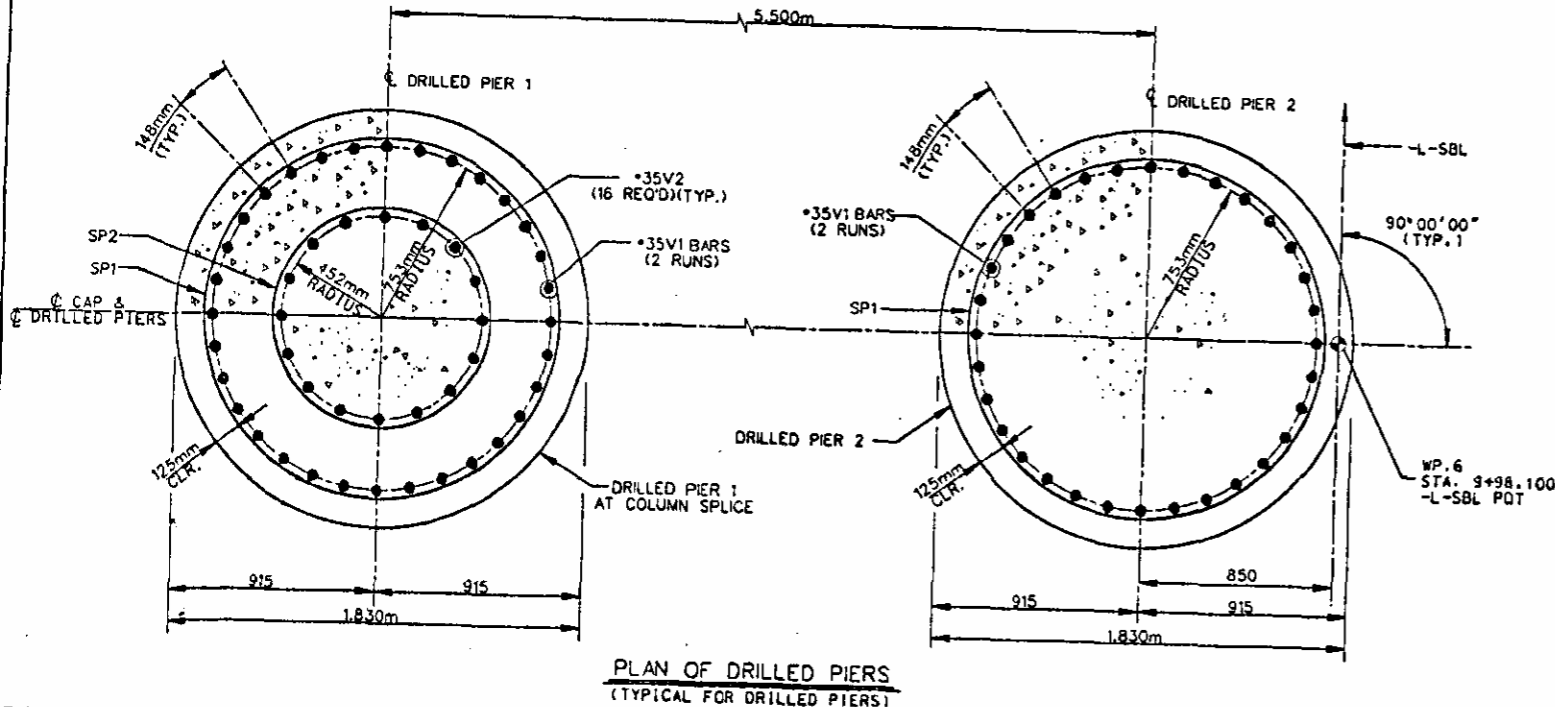
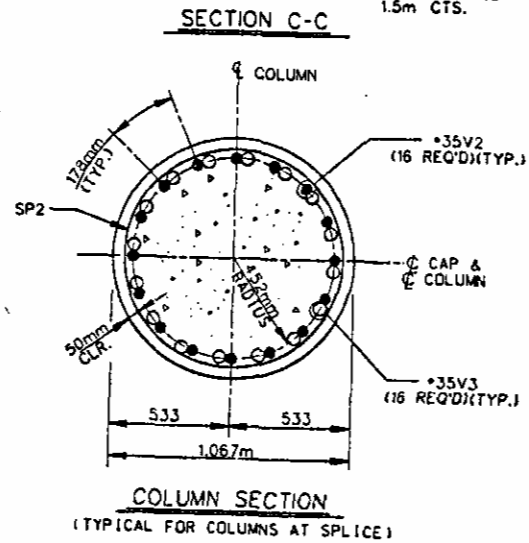
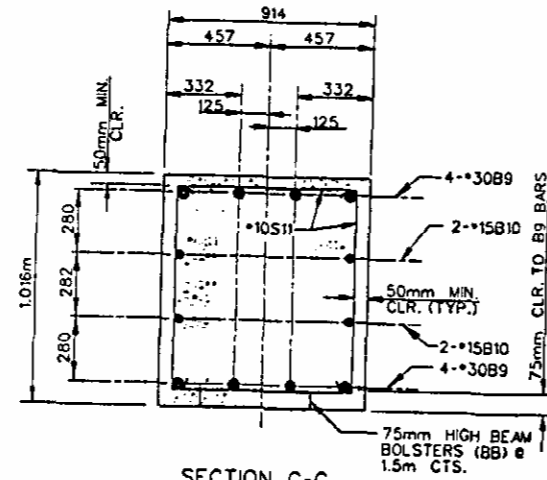
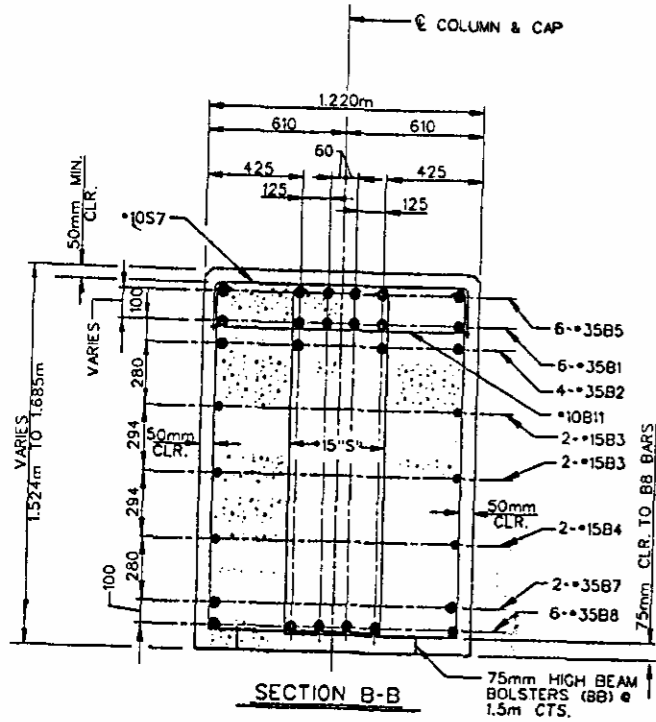
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 5

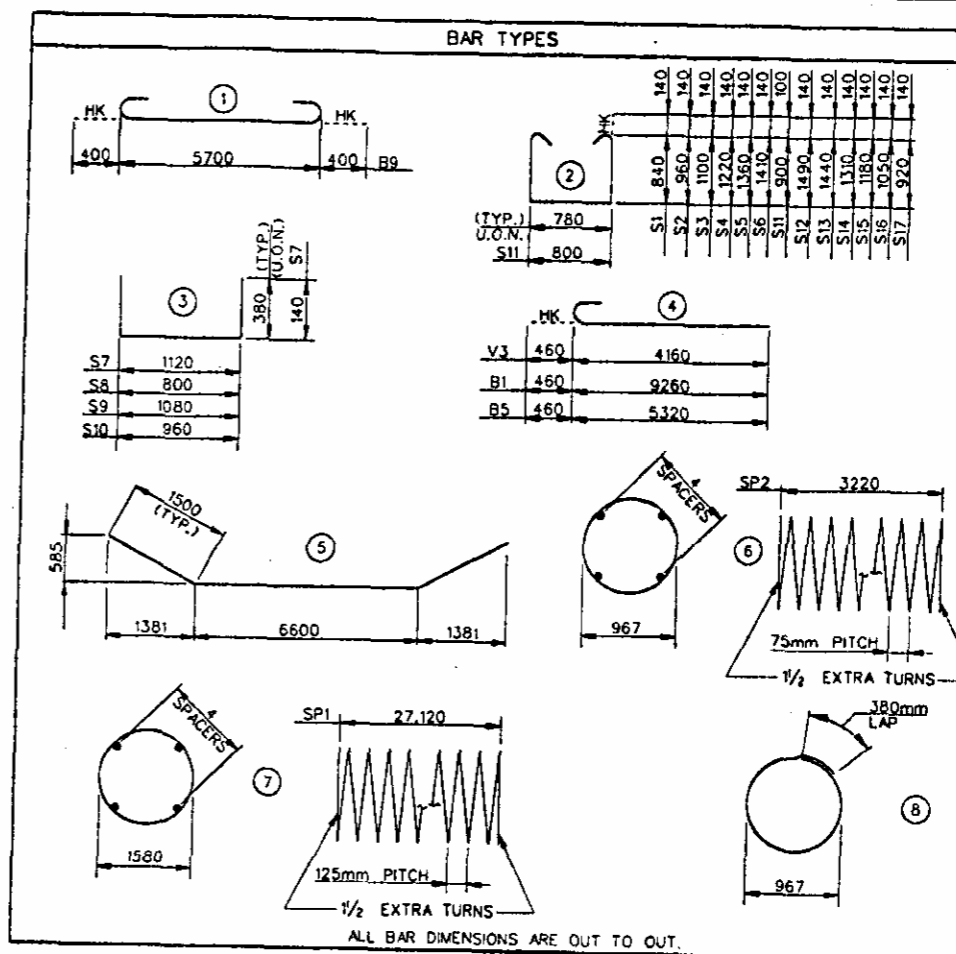


| REVISIONS | | | | | | SHEET NO. S-54 |
|-----------|----|------|-----|----|------|--------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

DRAWN BY: BKC/SJK/JBT DATE: 2/96
CHECKED BY: DAB DATE: 2/96
APPROVED BY: LMP DATE: 2/96



PLAN OF DRILLED PIERS
(TYPICAL FOR DRILLED PIERS)



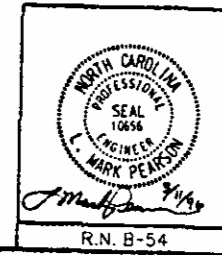
NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.
FOR DRILLED PIERS, SEE SPECIAL PROVISIONS
THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.
ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.
THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.
THE 1830mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1780mm IN THE HARD ROCK ZONE.
PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:
1830mm DIA. DRILLED PIERS IN ROCK
1830mm DIA. DRILLED PIERS NOT IN ROCK
PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS IN THE LAKE. TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.
STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.
FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.
THE CONTRACTOR, AT HIS OPTION, MAY INCREASE THE STRUT WIDTH TO MATCH THE COLUMN DIAMETER PROVIDED THAT THE CLEAR COVER TO THE STIRRUPS DOES NOT EXCEED 120mm. ANY ADDITIONAL COST DUE TO THE USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.

BILL OF MATERIAL

| BENT 5 | | | | | |
|---|-----|------|------|-----------|--------|
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| B1 | 6 | 35 | 4 | 9720 | 458 |
| B2 | 4 | 35 | STR. | 9360 | 294 |
| B3 | 4 | 15 | STR. | 9360 | 59 |
| B4 | 2 | 15 | STR. | 8380 | 26 |
| B5 | 6 | 35 | STR. | 5780 | 272 |
| B6 | 6 | 10 | STR. | 1280 | 6 |
| B7 | 2 | 35 | STR. | 7060 | 111 |
| B8 | 6 | 35 | 5 | 9600 | 452 |
| B9 | 8 | 30 | 1 | 6500 | 286 |
| B10 | 4 | 15 | STR. | 5700 | 36 |
| B11 | 4 | 10 | STR. | 1120 | 4 |
| S1 | 2 | 15 | 2 | 2740 | 9 |
| S2 | 2 | 15 | 2 | 2980 | 9 |
| S3 | 2 | 15 | 2 | 3260 | 10 |
| S4 | 2 | 15 | 2 | 3500 | 11 |
| S5 | 2 | 15 | 2 | 3780 | 12 |
| S6 | 22 | 15 | 2 | 3880 | 134 |
| S7 | 35 | 10 | 3 | 1400 | 38 |
| S8 | 3 | 15 | 3 | 1560 | 7 |
| S9 | 6 | 15 | 3 | 1840 | 17 |
| S10 | 3 | 15 | 3 | 1720 | 8 |
| S11 | 24 | 10 | 2 | 2800 | 53 |
| S12 | 38 | 15 | 2 | 4040 | 241 |
| S13 | 2 | 15 | 2 | 3940 | 12 |
| S14 | 2 | 15 | 2 | 3680 | 12 |
| S15 | 2 | 15 | 2 | 3420 | 11 |
| S16 | 2 | 15 | 2 | 3160 | 10 |
| S17 | 2 | 15 | 2 | 2900 | 9 |
| S18 | 44 | 10 | 8 | 3420 | 118 |
| V1 | 128 | 35 | STR. | 15,100 | 15,172 |
| V2 | 32 | 35 | STR. | 6,480 | 1628 |
| V3 | 32 | 35 | 4 | 4,620 | 1161 |
| TOTAL REINFORCING STEEL - kg | | | | | 20,686 |
| SP1 | 2 | | 7 | 1,081,100 | 3395 |
| SP2 | 2 | | 6 | 138,000 | 217 |
| SPIRAL COLUMN REINF. STEEL - kg | | | | | 3612 |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS & STRUT | | | | | 11.8 |
| POUR 3 - CAP | | | | | 17.5 |
| TOTAL cu. m | | | | | 29.3 |
| 1830mm DIA. DRILLED PIERS (NO. 2) | | | | | |
| 1830mm DIA. PIERS NOT IN ROCK - m. 42.4 | | | | | |
| 1830mm DIA. PIERS IN ROCK - m. 12.4 | | | | | |
| CLASS "AA" CONCRETE (POUR 1) - cu. m. 145.2 | | | | | |

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -L- SBL POT
SHEET 2 OF 2



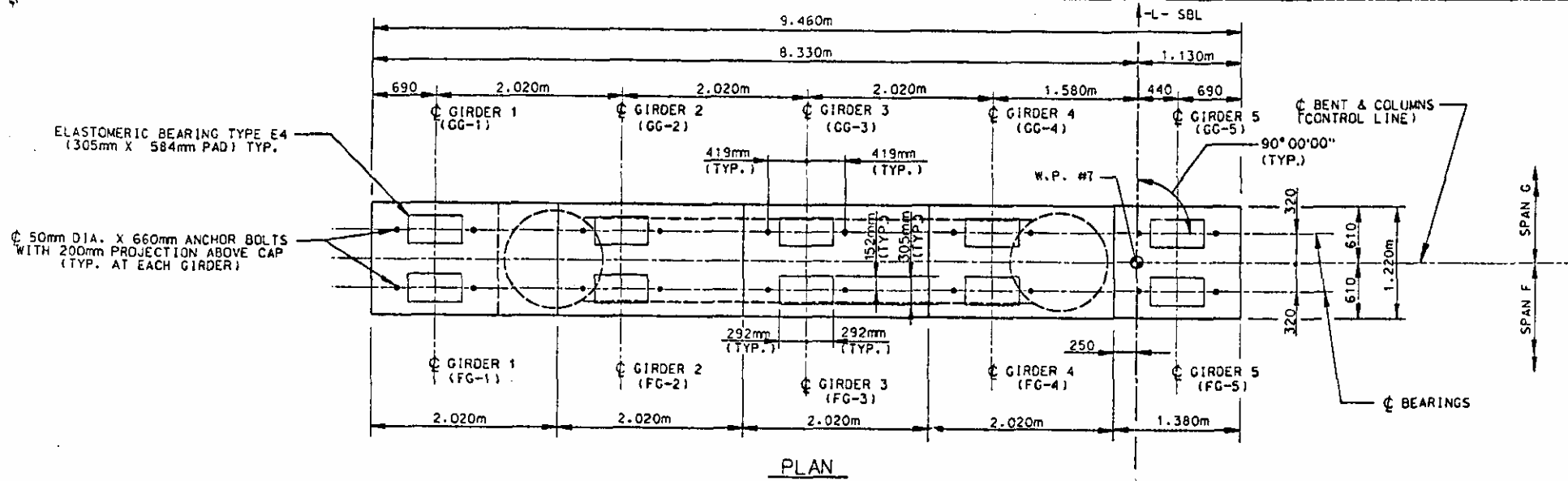
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Raleigh
SUBSTRUCTURE
BENT 5

| REVISIONS | | | | SHEET NO. |
|-----------|-----|-------|-----|-----------|
| NO. | BY: | DATE: | NO. | DATE: |
| 1 | | | 3 | |
| 2 | | | 4 | |

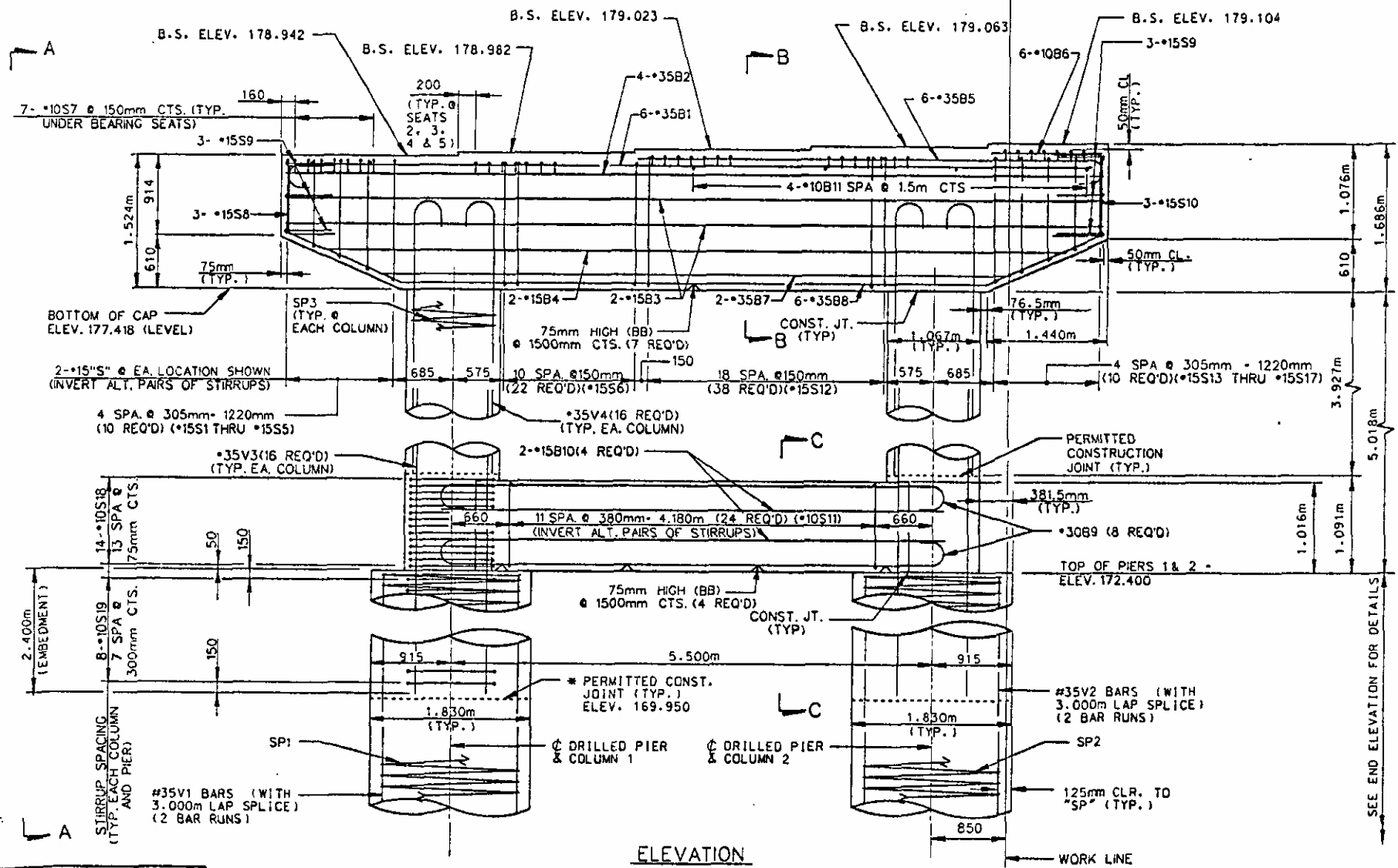
TOTAL SHEETS: 79

DRAWN BY: BKC/SLK/JBI DATE: 02/96
CHECKED BY: DAR DATE: 02/96
APPROVED BY: LMP DATE: 02/96

R.N. B-54

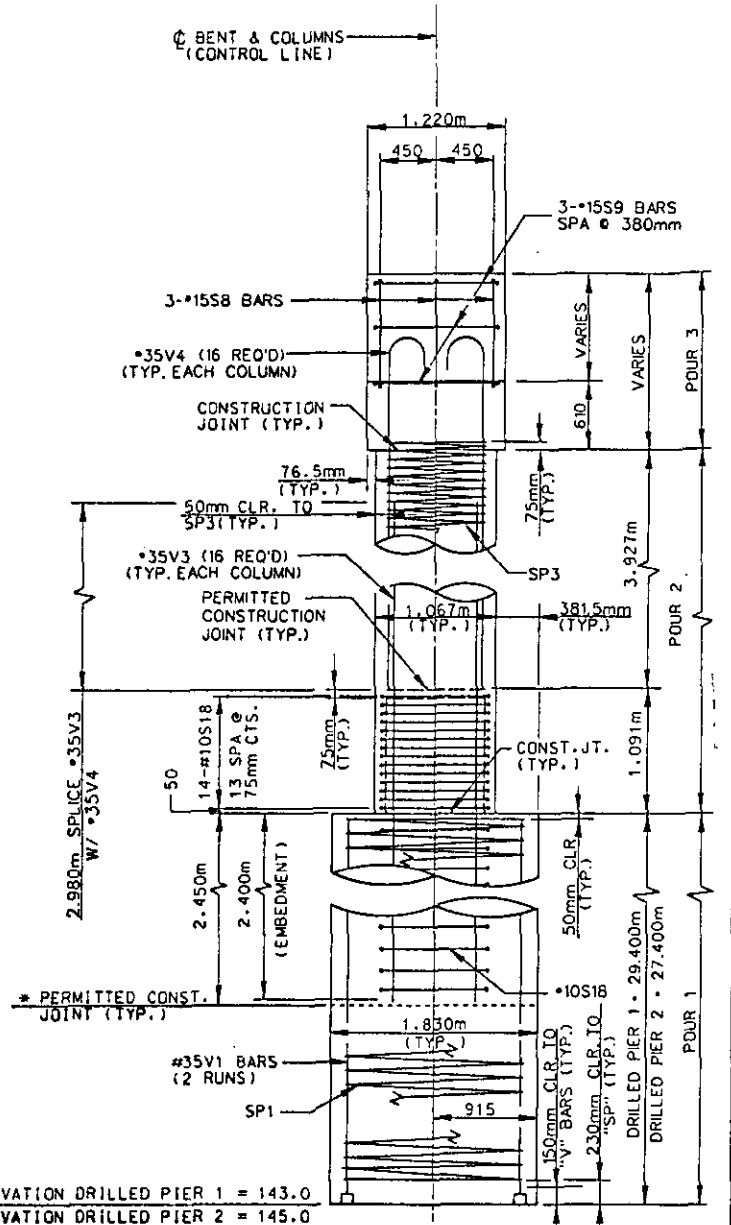


PLAN



ELEVATION

NOTE:
B.S. - BEARING SEAT



TIP ELEVATION DRILLED PIER 1 = 143.0
TIP ELEVATION DRILLED PIER 2 = 145.0

END ELEVATION A-A

DETAILS SHOWN FOR DRILLED PIER 1.
DRILLED PIER 2 DETAILS SIMILAR.

* CONSTRUCTION JOINT PERMITTED TO ALLOW FOR ALIGNMENT OF COLUMN STEEL PRIOR TO COLUMN POUR (POUR 2).

PROJECT NO. 8-2612

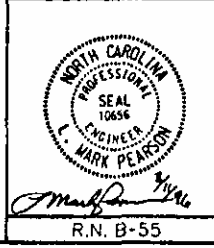
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 1 OF 2

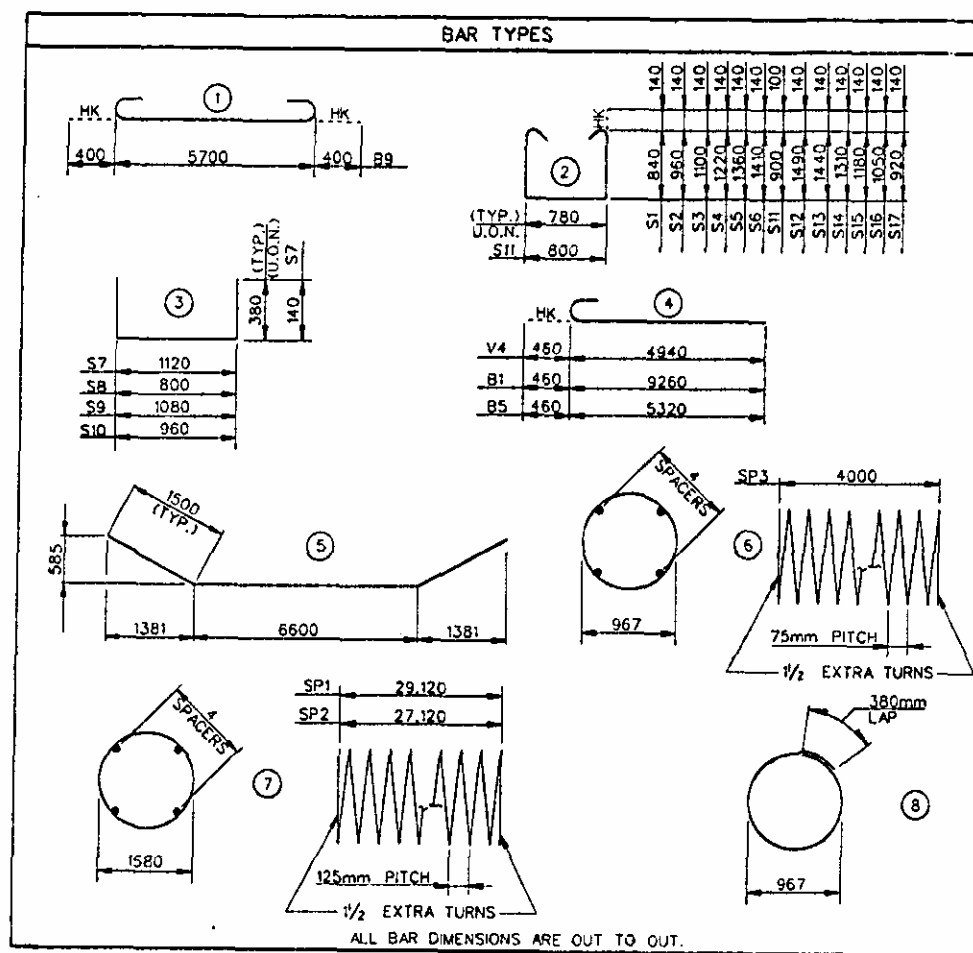
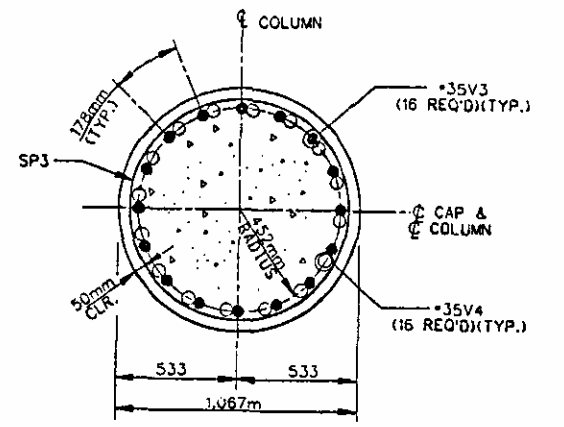
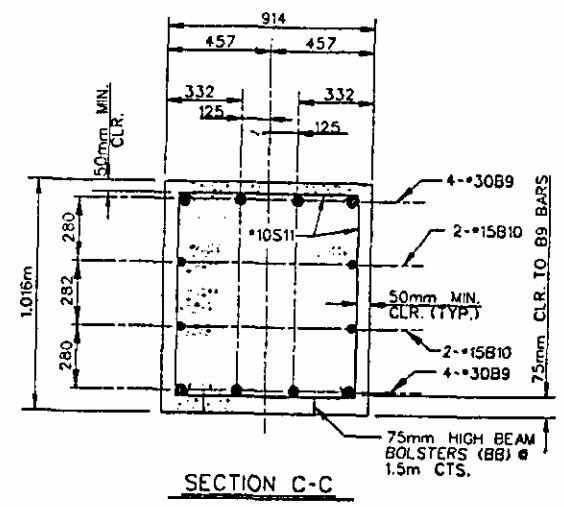
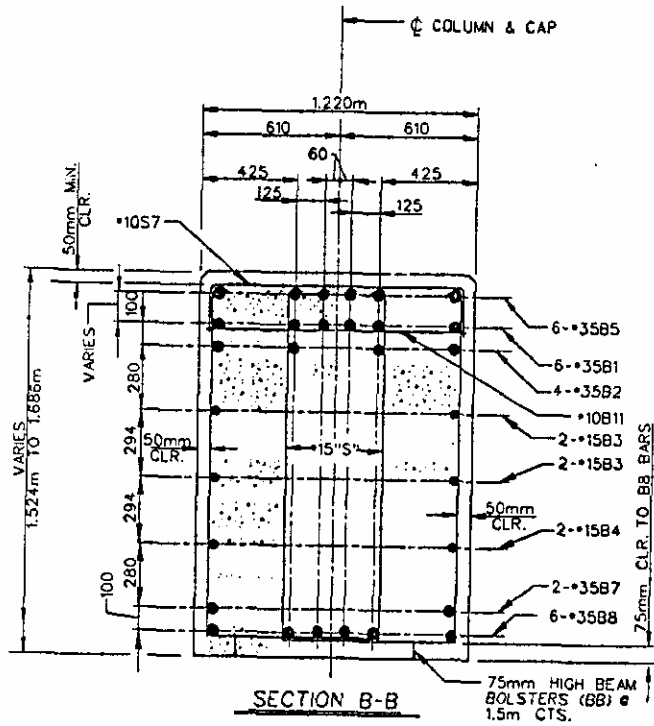
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 6



| REVISIONS | | | | | | SHEET NO. 5-50 |
|-----------|----|------|-----|----|------|--------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

DRAWN BY: BKC/SLK/JBT DATE: 2/96
CHECKED BY: DAP DATE: 2/96
APPROVED BY: LMP DATE: 2/96



| BILL OF MATERIAL | | | | | |
|---|-----|------|------|-----------|--------|
| BENT 6 | | | | | |
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| B1 | 6 | 35 | 4 | 9720 | 458 |
| B2 | 4 | 35 | STR. | 9360 | 294 |
| B3 | 4 | 15 | STR. | 9360 | 59 |
| B4 | 2 | 15 | STR. | 8380 | 26 |
| B5 | 6 | 35 | STR. | 5780 | 272 |
| B6 | 6 | 10 | STR. | 1280 | 6 |
| B7 | 2 | 35 | STR. | 7060 | 111 |
| B8 | 6 | 35 | 5 | 9600 | 452 |
| B9 | 8 | 30 | 1 | 6500 | 286 |
| B10 | 4 | 15 | STR. | 5700 | 36 |
| B11 | 4 | 10 | STR. | 1120 | 4 |
| S1 | 2 | 15 | 2 | 2740 | 9 |
| S2 | 2 | 15 | 2 | 2980 | 9 |
| S3 | 2 | 15 | 2 | 3260 | 10 |
| S4 | 2 | 15 | 2 | 3500 | 11 |
| S5 | 2 | 15 | 2 | 3780 | 12 |
| S6 | 22 | 15 | 2 | 3880 | 134 |
| S7 | 35 | 10 | 3 | 1400 | 38 |
| S8 | 3 | 15 | 3 | 1560 | 7 |
| S9 | 6 | 15 | 3 | 1840 | 17 |
| S10 | 3 | 15 | 3 | 1720 | 8 |
| S11 | 24 | 10 | 2 | 2800 | 53 |
| S12 | 38 | 15 | 2 | 4040 | 241 |
| S13 | 2 | 15 | 2 | 3940 | 12 |
| S14 | 2 | 15 | 2 | 3680 | 12 |
| S15 | 2 | 15 | 2 | 3420 | 11 |
| S16 | 2 | 15 | 2 | 3160 | 10 |
| S17 | 2 | 15 | 2 | 2900 | 9 |
| S18 | 44 | 10 | 8 | 3420 | 118 |
| V1 | 64 | 35 | STR. | 16,100 | 8089 |
| V2 | 64 | 35 | STR. | 15,100 | 7586 |
| V3 | 32 | 35 | STR. | 6,480 | 1628 |
| V4 | 32 | 35 | 4 | 5,400 | 1356 |
| TOTAL REINFORCING STEEL - kg | | | | | 21,384 |
| SP1 | 1 | | 7 | 1,159,740 | 1821 |
| SP2 | 1 | | 7 | 1,081,100 | 1697 |
| SP3 | 2 | | 6 | 169,240 | 256 |
| SPIRAL COLUMN REINF. STEEL - kg | | | | | 3784 |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS & STRUT | | | | | 13.2 |
| POUR 3 - CAP | | | | | 17.5 |
| TOTAL cu. m. | | | | | 30.7 |
| 1830mm DIA. DRILLED PIERS (NO. 2) | | | | | |
| 1830mm DIA. PIERS NOT IN ROCK - m. 44.2 | | | | | |
| 1830mm DIA. PIERS IN ROCK - m. 12.6 | | | | | |
| CLASS "AA" CONCRETE (POUR 1) - cu. m. 149.4 | | | | | |

NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS "AA" CONCRETE IN LIEU OF CLASS "A" CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1830mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1780mm IN THE HARD ROCK ZONE.

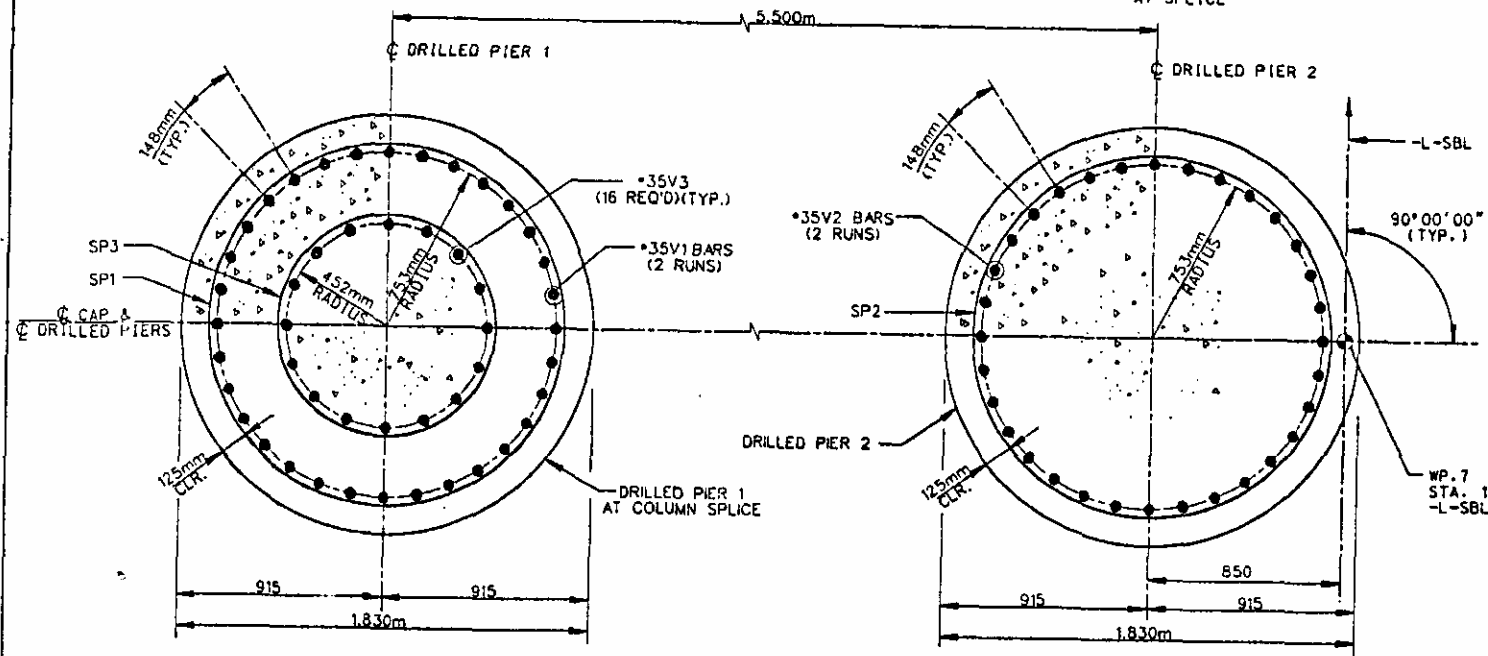
PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:
 1830mm DIA DRILLED PIERS IN ROCK
 1830mm DIA DRILLED PIERS NOT IN ROCK

PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS. IN THE LAKE, TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

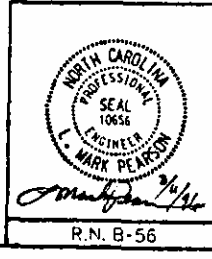
FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

THE CONTRACTOR AT HIS OPTION MAY INCREASE THE STRUT WIDTH TO MATCH THE COLUMN DIAMETER PROVIDED THAT THE CLEAR COVER TO THE STIRRUPS DOES NOT EXCEED 120mm. ANY ADDITIONAL COST DUE TO THE USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.



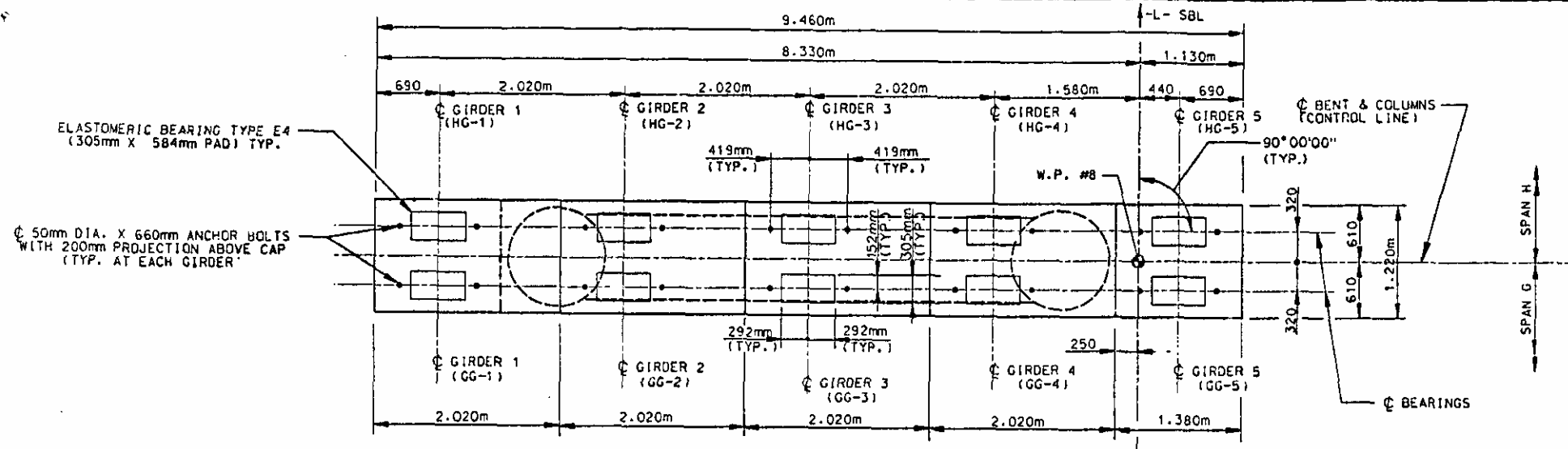
PLAN OF DRILLED PIERS
(TYPICAL FOR DRILLED PIERS)

DRAWN BY: BKG/SLK/JBT DATE: 02/96
 CHECKED BY: DAR DATE: 02/96
 APPROVED BY: LMP DATE: 02/96



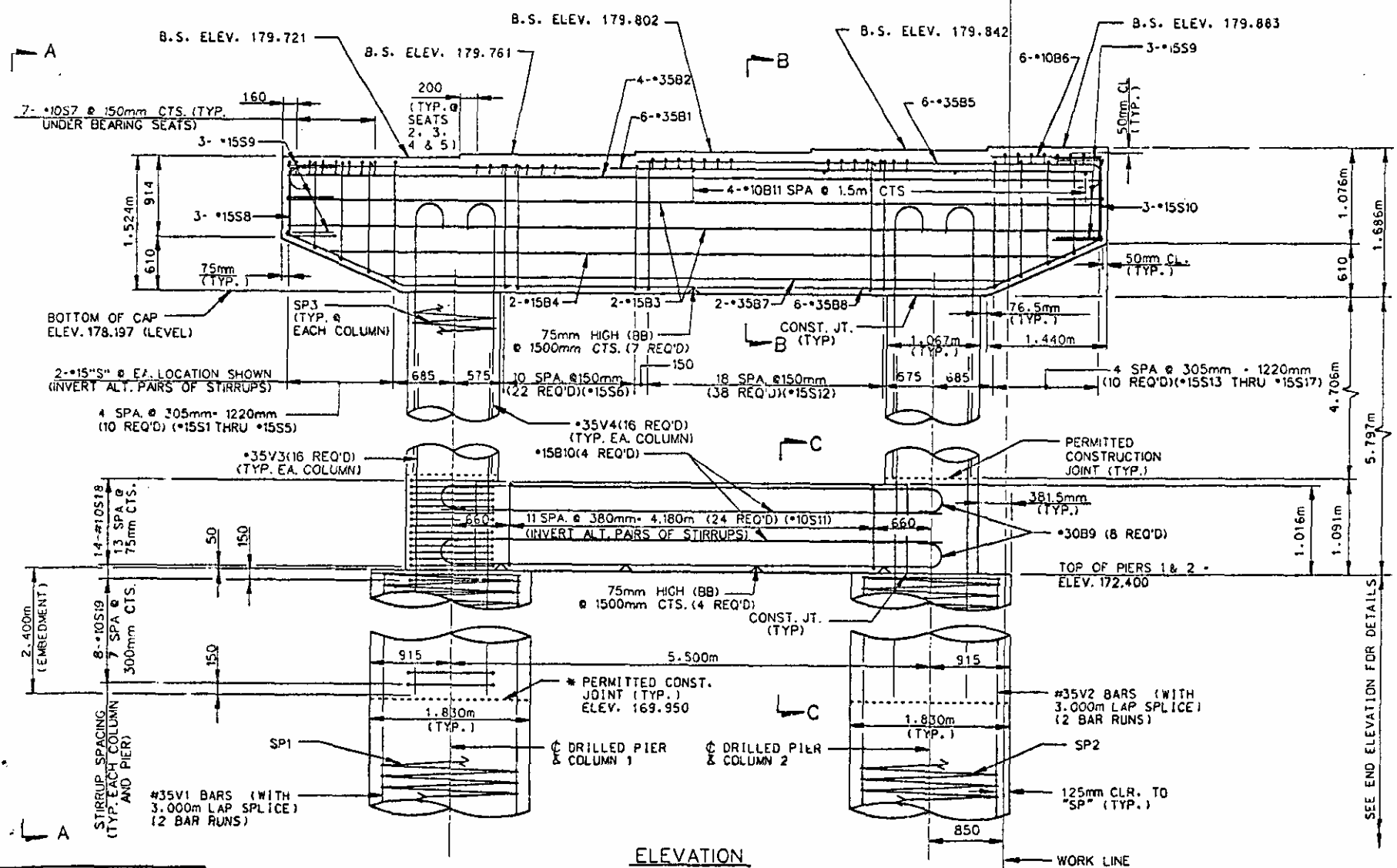
PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT
 SHEET 2 OF 2

| | | | |
|--|-----|-------|-----------------|
| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | |
| SUBSTRUCTURE BENT 6 | | | |
| REVISIONS | | | |
| NO. | BY: | DATE: | DATE: |
| 1 | | | |
| 2 | | | |
| SHEET NO. S-57 | | | TOTAL SHEETS 79 |

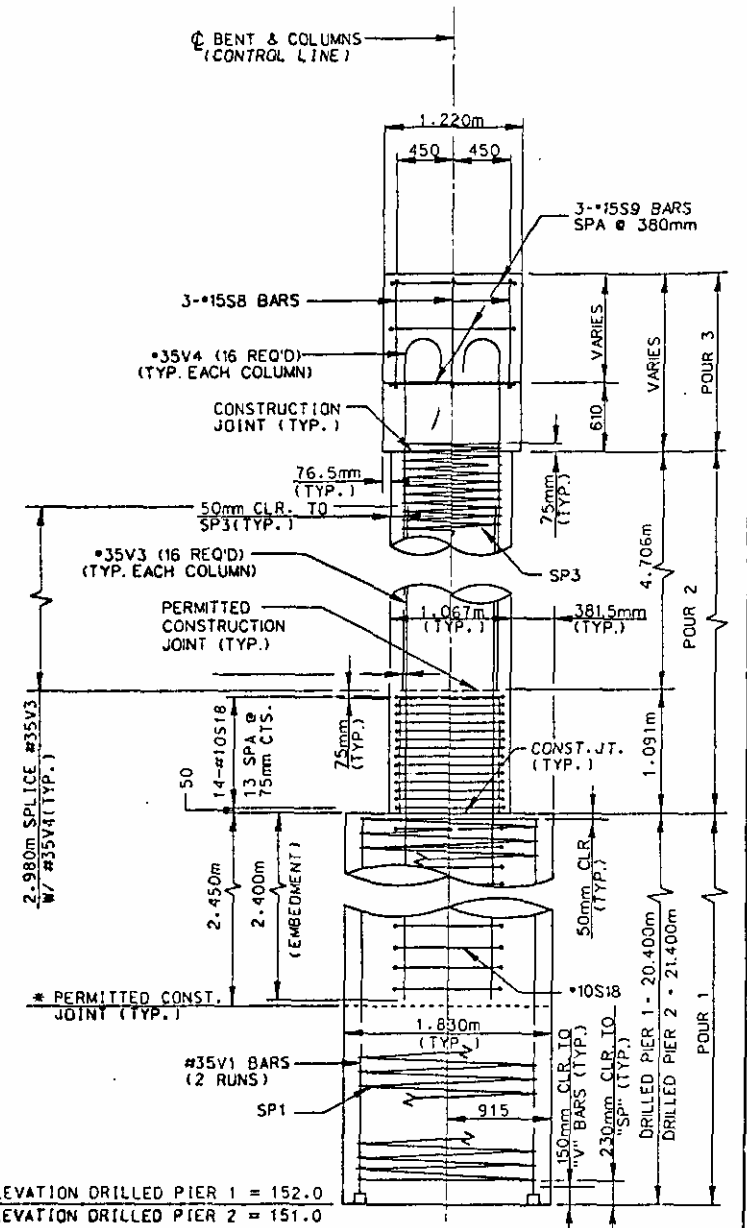


PLAN

NOTE:
B.S. - BEARING SEAT



ELEVATION



END ELEVATION A-A

DETAILS SHOWN FOR DRILLED PIER 1.
DRILLED PIER 2 DETAILS SIMILAR.

* CONSTRUCTION JOINT PERMITTED TO ALLOW FOR ALIGNMENT OF COLUMN STEEL PRIOR TO COLUMN POUR (POUR 2).

PROJECT NO. B-2612

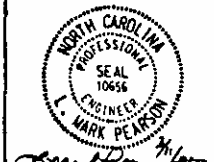
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -1- SBL PQT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

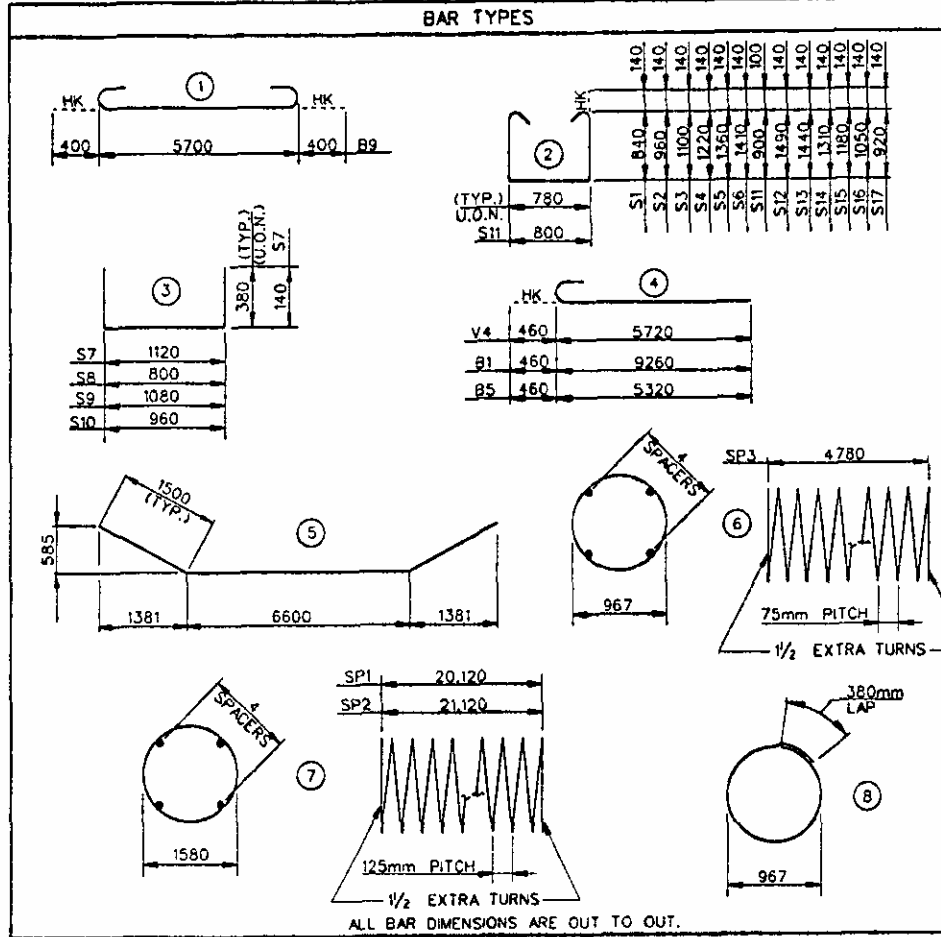
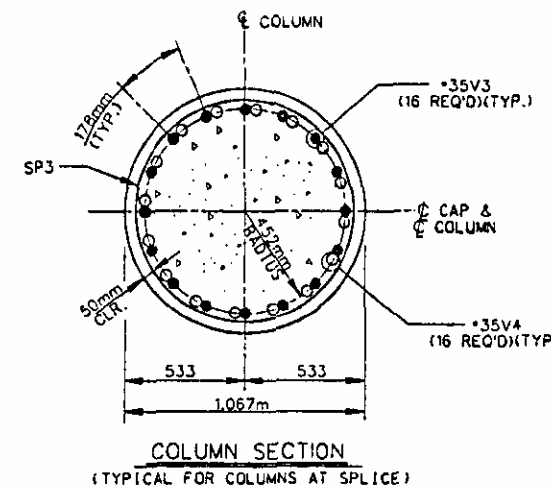
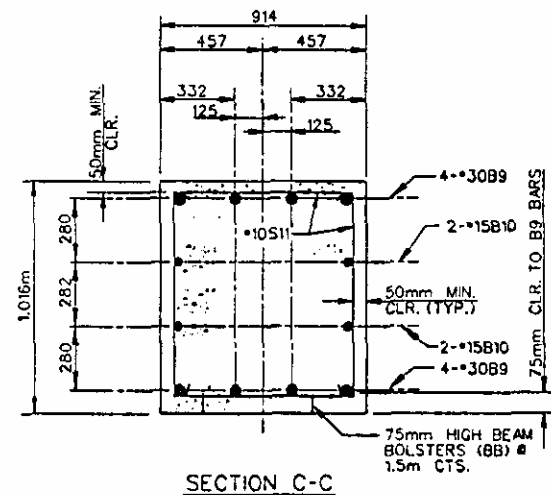
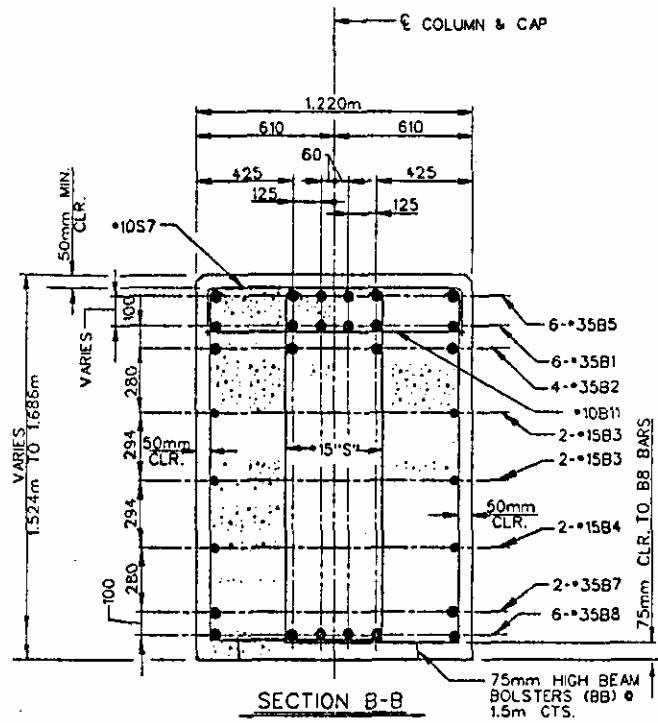
SUBSTRUCTURE
BENT 7



| REVISIONS | | | | | | SHEET NO. 5-58 |
|-----------|-----|-------|-----|-----|-------|-------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | 79 |
| 2 | | | 4 | | | |

DRAWN BY: BKG/SLK/JBT DATE: 2/96
CHECKED BY: DAB DATE: 2/96
APPROVED BY: LMP DATE: 2/96

R.N. B-57



| BILL OF MATERIAL | | | | | |
|---|------|------|--------|--------|--------|
| BENT 7 | | | | | |
| BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | |
| B1 | 6 | 35 | 4 | 9720 | 458 |
| B2 | 4 | 35 | STR. | 9360 | 294 |
| B3 | 4 | 15 | STR. | 9360 | 59 |
| B4 | 2 | 15 | STR. | 8380 | 26 |
| B5 | 6 | 35 | STR. | 5780 | 272 |
| B6 | 6 | 10 | STR. | 1280 | 6 |
| B7 | 2 | 35 | STR. | 7060 | 111 |
| B8 | 6 | 35 | 5 | 9600 | 452 |
| B9 | 8 | 30 | 1 | 6500 | 286 |
| B10 | 4 | 15 | STR. | 5700 | 36 |
| B11 | 4 | 10 | STR. | 1120 | 4 |
| | | | | | |
| S1 | 2 | 15 | 2 | 2740 | 9 |
| S2 | 2 | 15 | 2 | 2980 | 9 |
| S3 | 2 | 15 | 2 | 3260 | 10 |
| S4 | 2 | 15 | 2 | 3500 | 11 |
| S5 | 2 | 15 | 2 | 3780 | 12 |
| S6 | 22 | 15 | 2 | 3880 | 134 |
| S7 | 35 | 10 | 3 | 1400 | 38 |
| S8 | 3 | 15 | 3 | 1560 | 7 |
| S9 | 6 | 15 | 3 | 1840 | 17 |
| S10 | 3 | 15 | 3 | 1720 | 8 |
| S11 | 24 | 10 | 2 | 2800 | 53 |
| S12 | 38 | 15 | 2 | 4040 | 241 |
| S13 | 2 | 15 | 2 | 3940 | 12 |
| S14 | 2 | 15 | 2 | 3680 | 12 |
| S15 | 2 | 15 | 2 | 3420 | 11 |
| S16 | 2 | 15 | 2 | 3160 | 10 |
| S17 | 2 | 15 | 2 | 2900 | 9 |
| S18 | 44 | 10 | 8 | 3420 | 118 |
| | | | | | |
| V1 | 64 | 35 | STR | 11,600 | 5828 |
| V2 | 64 | 35 | STR | 12,100 | 6079 |
| V3 | 32 | 35 | STR | 6480 | 1628 |
| V4 | 32 | 35 | 4 | 6180 | 1552 |
| | | | | | |
| TOTAL REINFORCING STEEL - kg | | | | | 17,812 |
| | | | | | |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS & STRUT | | | | | 14.6 |
| POUR 3 - CAP | | | | | 17.5 |
| TOTAL cu. m. | | | | | 32.1 |
| | | | | | |
| 1830mm DIA. DRILLED PIERS (NO. 2) | | | | | |
| 1830mm DIA. PIERS NOT IN ROCK - m. 30.0 | | | | | |
| 1830mm DIA. PIERS IN ROCK - m. 11.8 | | | | | |
| CLASS "AA" CONCRETE (POUR 1) - cu. m. 109.9 | | | | | |

NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1830mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1780mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:

1830mm DIA. DRILLED PIERS IN ROCK

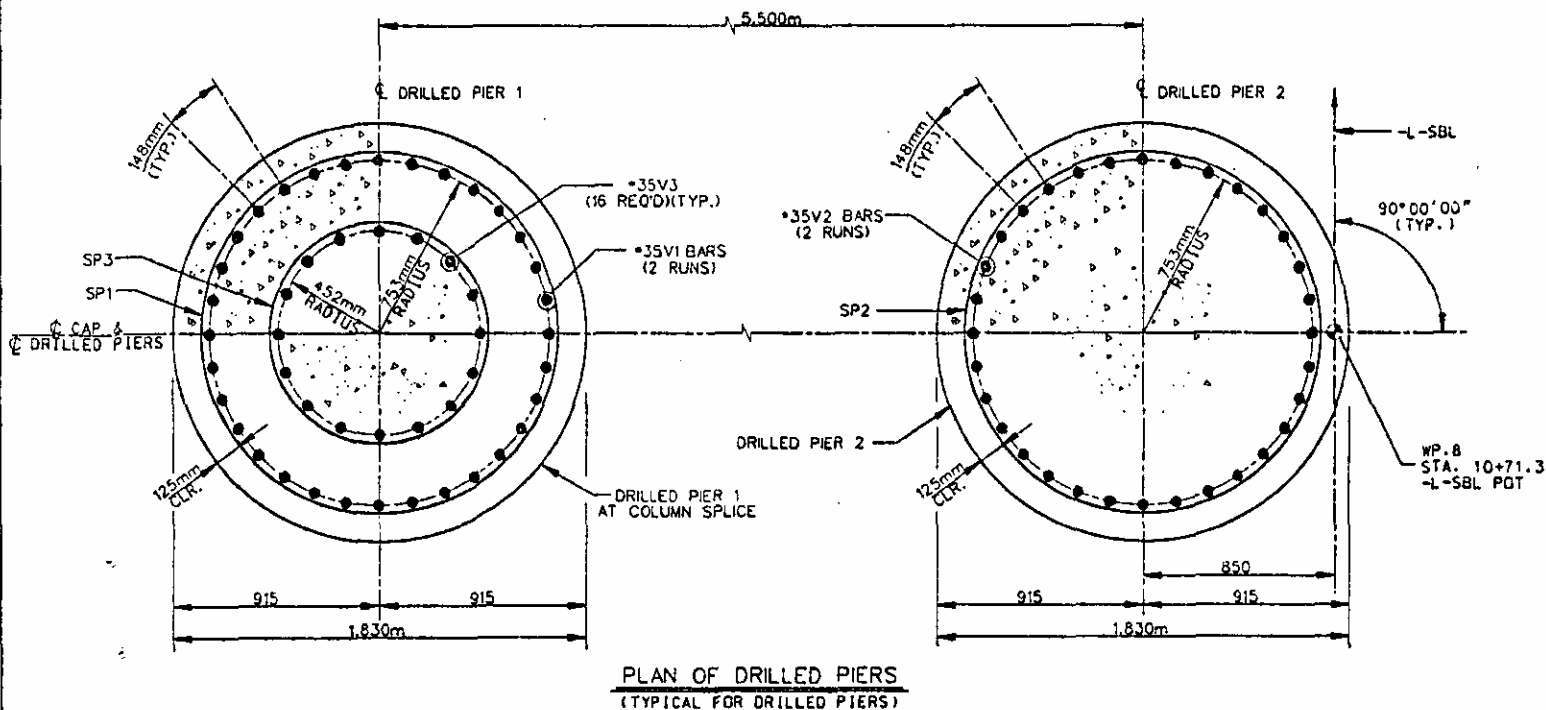
1830mm DIA. DRILLED PIERS NOT IN ROCK

PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS IN THE LAKE. TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

THE CONTRACTOR, AT HIS OPTION, MAY INCREASE THE STRUT WIDTH TO MATCH THE COLUMN DIAMETER PROVIDED THAT THE CLEAR COVER TO THE STIRRUPS DOES NOT EXCEED 120mm. ANY ADDITIONAL COST DUE TO THE USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.

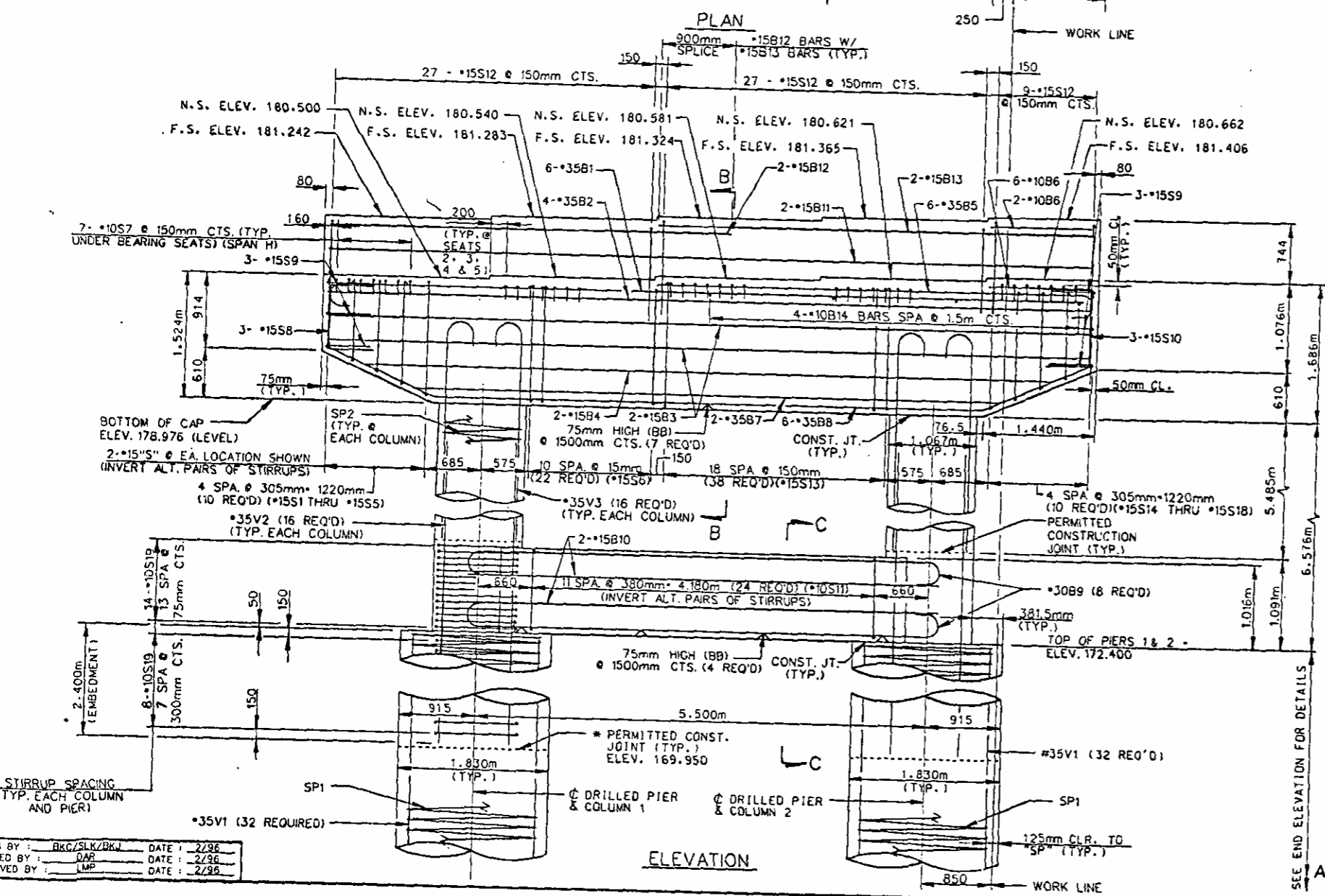
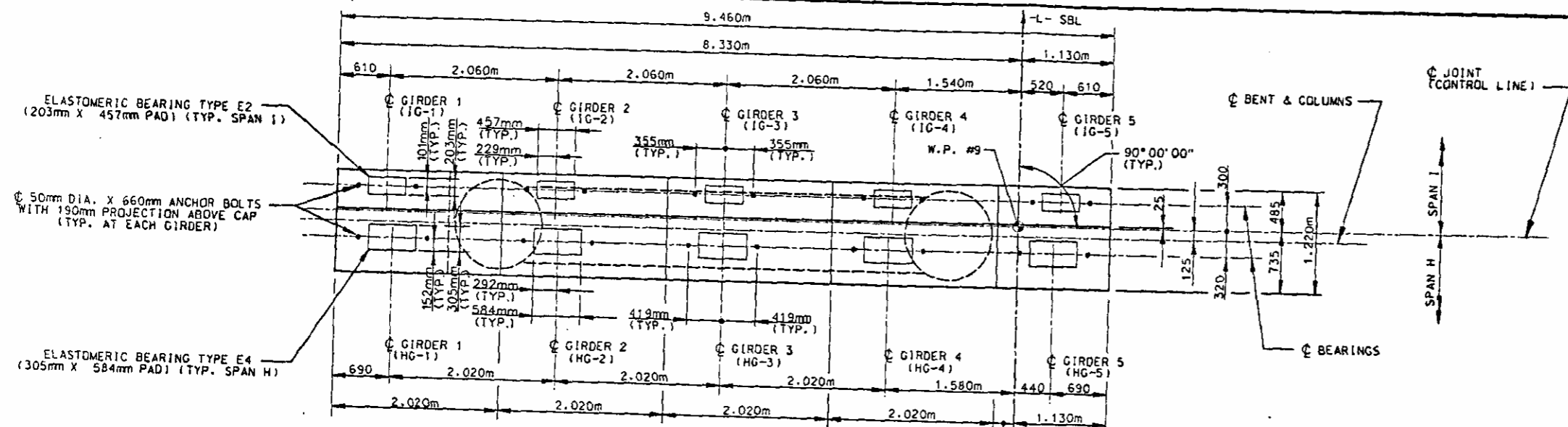


DRAWN BY: RKC/SLK/BJT DATE: 02/96
 CHECKED BY: DAR DATE: 02/96
 APPROVED BY: LMP DATE: 02/96

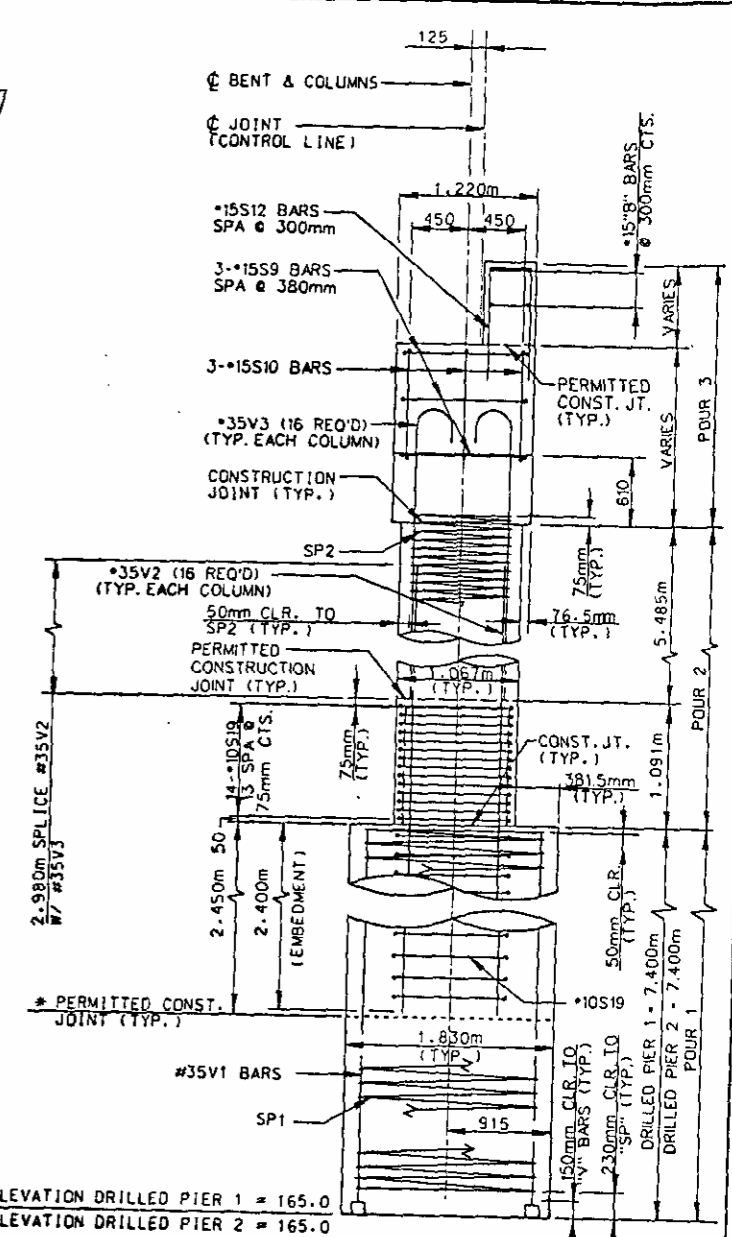
PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT
 SHEET 2 OF 2



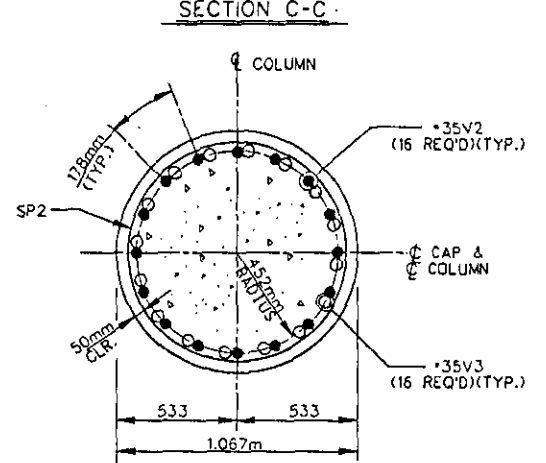
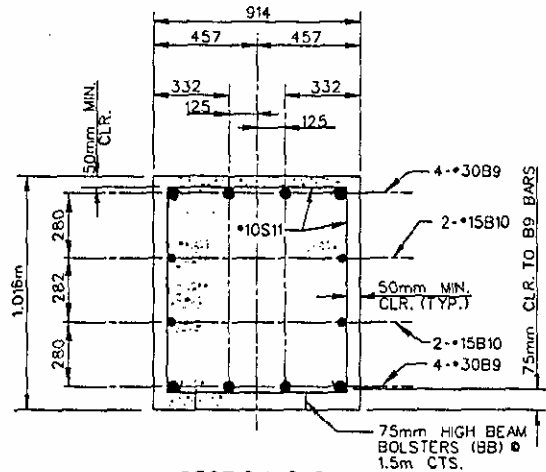
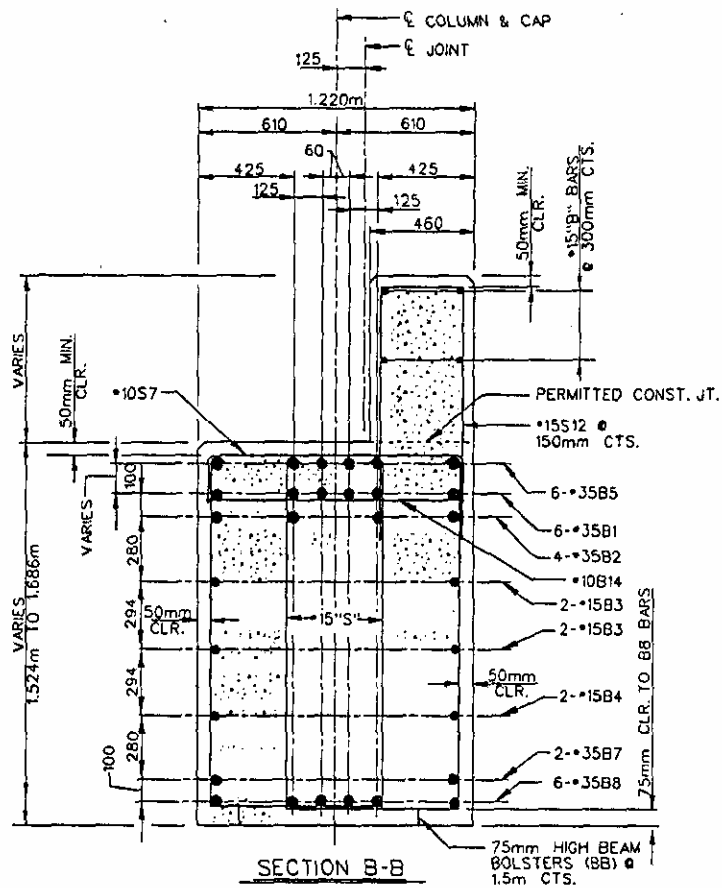
| REVISIONS | | | | | | SHEET NO. 5-59 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |



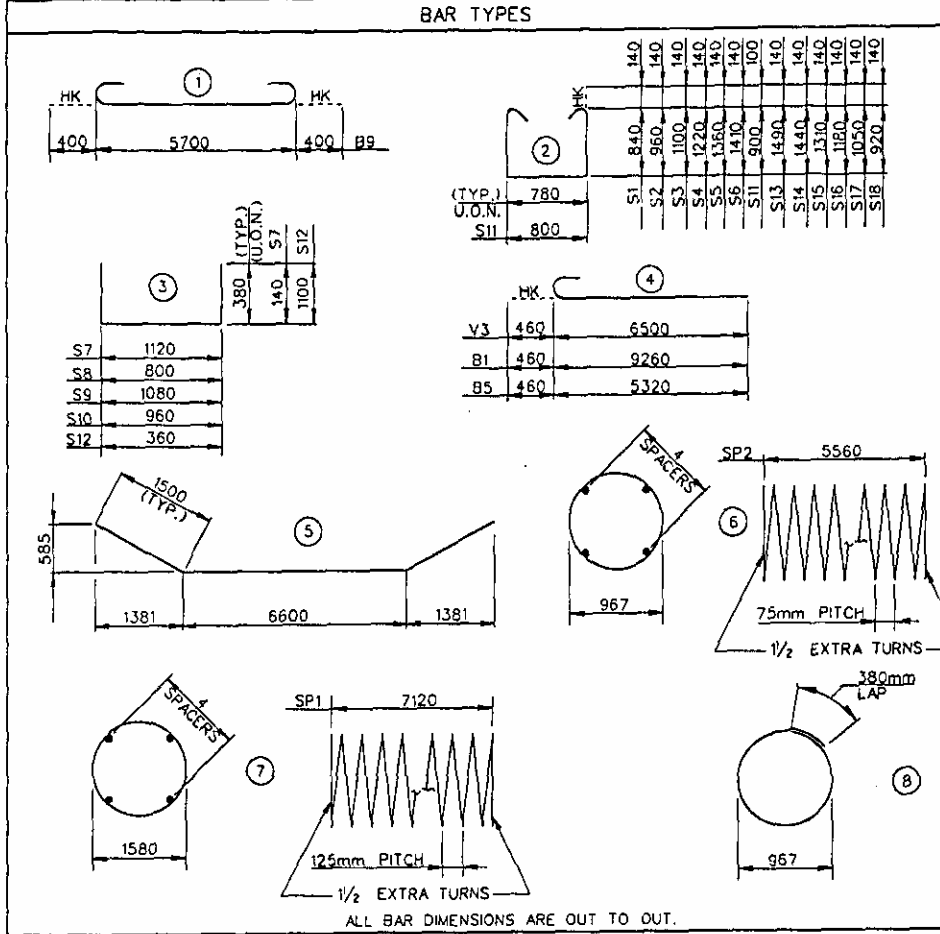
NOTE:
F.S. - FAR SEAT
N.S. - NEAR SEAT



DRAWN BY: BKC/SLK/BKJ DATE: 2/96
CHECKED BY: DAR DATE: 2/96
APPROVED BY: LMP DATE: 2/96



COLUMN SECTION
(TYPICAL FOR COLUMNS AT SPLICE)



ALL BAR DIMENSIONS ARE OUT TO OUT.

NOTES:

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE CENTERLINE COLUMN AND CAP IS OFFSET FROM THE CENTERLINE JOINT.

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1830mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1780mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:

- 1830mm DIA. DRILLED PIERS IN ROCK
- 1830mm DIA. DRILLED PIERS NOT IN ROCK

PERMANENT STEEL CASING SHALL BE REQUIRED FOR ALL DRILLED PIERS IN THE LAKE. TOP OF PERMANENT STEEL CASING SHALL BE 0.3m BELOW WATER SURFACE.

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

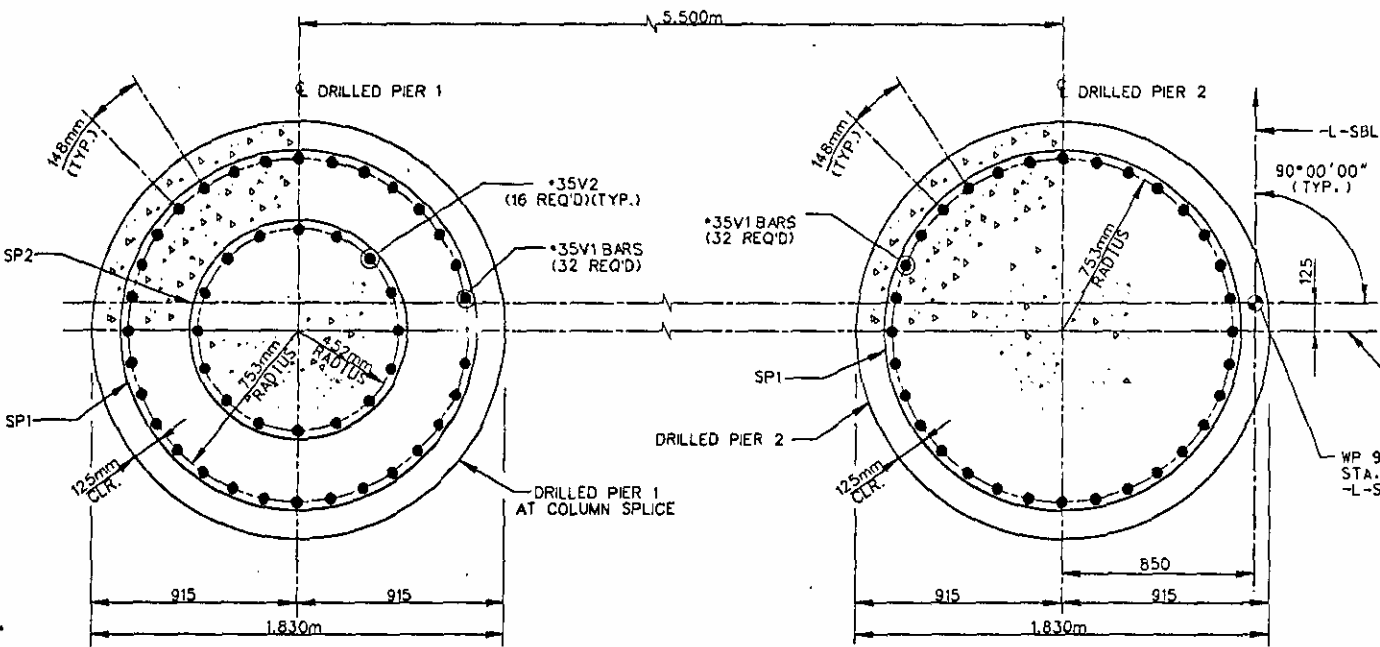
FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE CONTRACTOR, AT HIS OPTION, MAY INCREASE THE STRUT WIDTH TO MATCH THE COLUMN DIAMETER PROVIDED THAT THE CLEAR OVER TO THE STIRRUPS DOES NOT EXCEED 120mm. ANY ADDITIONAL COST DUE TO THE USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.

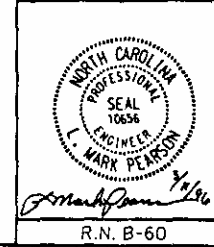
| BILL OF MATERIAL | | | | | |
|--|------|------|--------|---------|------|
| BENT 8 | | | | | |
| BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | |
| B1 | 6 | 35 | 4 | 9720 | 458 |
| B2 | 4 | 35 | STR. | 9360 | 294 |
| B3 | 4 | 15 | STR. | 9360 | 59 |
| B4 | 2 | 15 | STR. | 8380 | 26 |
| B5 | 6 | 35 | STR. | 5780 | 272 |
| B6 | 8 | 10 | STR. | 1280 | 6 |
| B7 | 2 | 35 | STR. | 7060 | 111 |
| B8 | 6 | 35 | 5 | 9600 | 452 |
| B9 | 8 | 30 | 1 | 6500 | 285 |
| B10 | 4 | 15 | STR. | 5700 | 36 |
| B11 | 2 | 15 | STR. | 9360 | 29 |
| B12 | 2 | 15 | STR. | 4940 | 16 |
| B13 | 2 | 15 | STR. | 5320 | 17 |
| B14 | 4 | 10 | STR. | 1120 | 4 |
| S1 | 2 | 15 | 2 | 2740 | 9 |
| S2 | 2 | 15 | 2 | 2980 | 9 |
| S3 | 2 | 15 | 2 | 3260 | 10 |
| S4 | 2 | 15 | 2 | 3500 | 11 |
| S5 | 2 | 15 | 2 | 3780 | 12 |
| S6 | 22 | 15 | 2 | 3880 | 134 |
| S7 | 35 | 10 | 3 | 1400 | 38 |
| S8 | 3 | 15 | 3 | 1560 | 7 |
| S9 | 6 | 15 | 3 | 1840 | 17 |
| S10 | 3 | 15 | 3 | 1720 | 8 |
| S11 | 24 | 10 | 2 | 2800 | 53 |
| S12 | 63 | 15 | 3 | 2560 | 253 |
| S13 | 38 | 15 | 2 | 4040 | 241 |
| S14 | 2 | 15 | 2 | 3940 | 12 |
| S15 | 2 | 15 | 2 | 3680 | 12 |
| S16 | 2 | 15 | 2 | 3420 | 11 |
| S17 | 2 | 15 | 2 | 3160 | 10 |
| S18 | 2 | 15 | 2 | 2900 | 9 |
| S19 | 44 | 10 | 8 | 3420 | 118 |
| V1 | 64 | 35 | STR. | 7200 | 3617 |
| V2 | 32 | 35 | STR. | 6480 | 1628 |
| V3 | 32 | 35 | 4 | 6960 | 1746 |
| TOTAL REINFORCING STEEL - kg | | | | 10,035 | |
| SP1 | 2 | | 7 | 294,700 | 925 |
| SP2 | 2 | | 6 | 231,720 | 364 |
| SPIRAL COLUMN REINF. STEEL - kg | | | | 1289 | |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS & STRUT | | | | 16.0 | |
| POUR 3 - CAP | | | | 20.5 | |
| TOTAL cu. m. | | | | 36.5 | |
| 1830mm DIA. DRILLED PIERS (NO. 2) | | | | | |
| 1830mm DIA. PIERS NOT IN ROCK - m. 5.9 | | | | | |
| 1830mm DIA. PIERS IN ROCK - m. 8.9 | | | | | |
| CLASS "AA" CONCRETE (POUR 1) - cu. m. 38.9 | | | | | |



PLAN OF DRILLED PIERS
(TYPICAL FOR DRILLED PIERS)

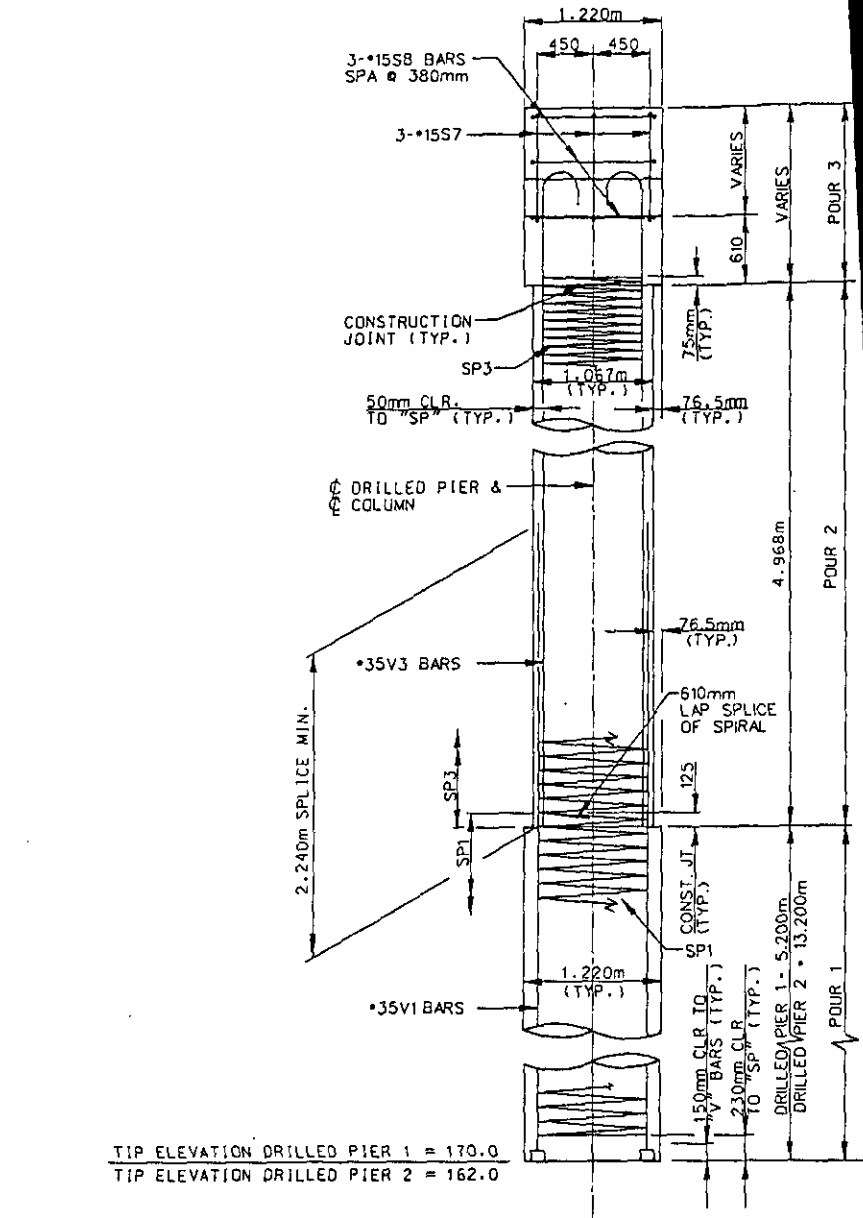
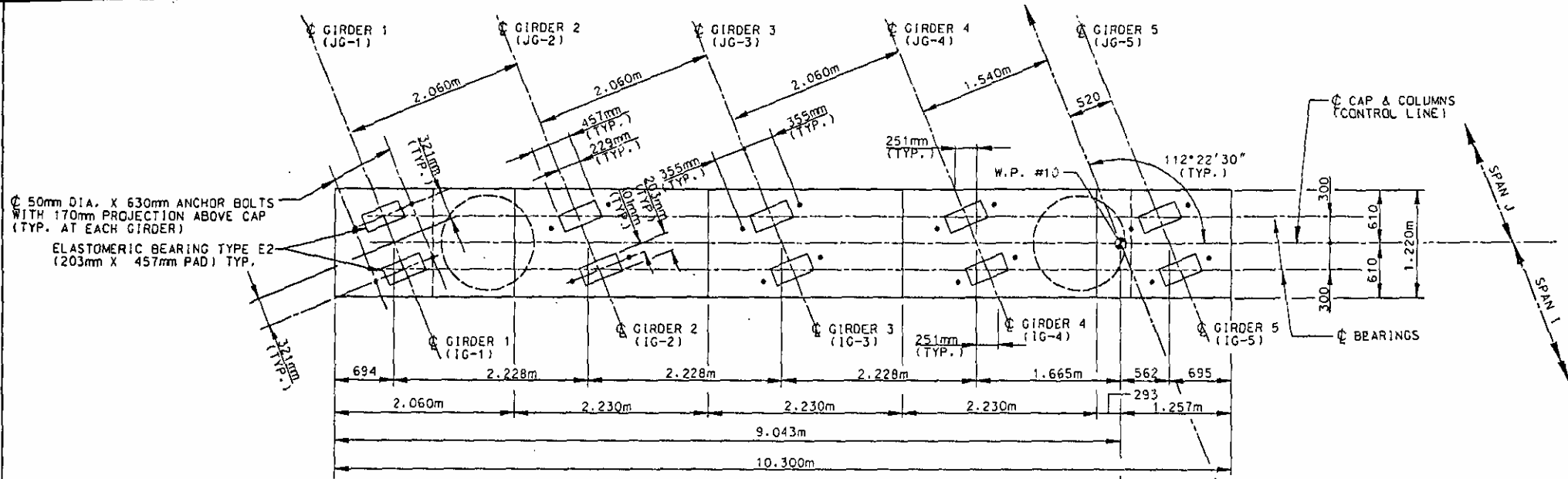
DRAWN BY: BKC/SLK/JBT DATE: 02/96
 CHECKED BY: DAR DATE: 02/96
 APPROVED BY: LMP DATE: 02/96

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT
 SHEET 2 OF 2

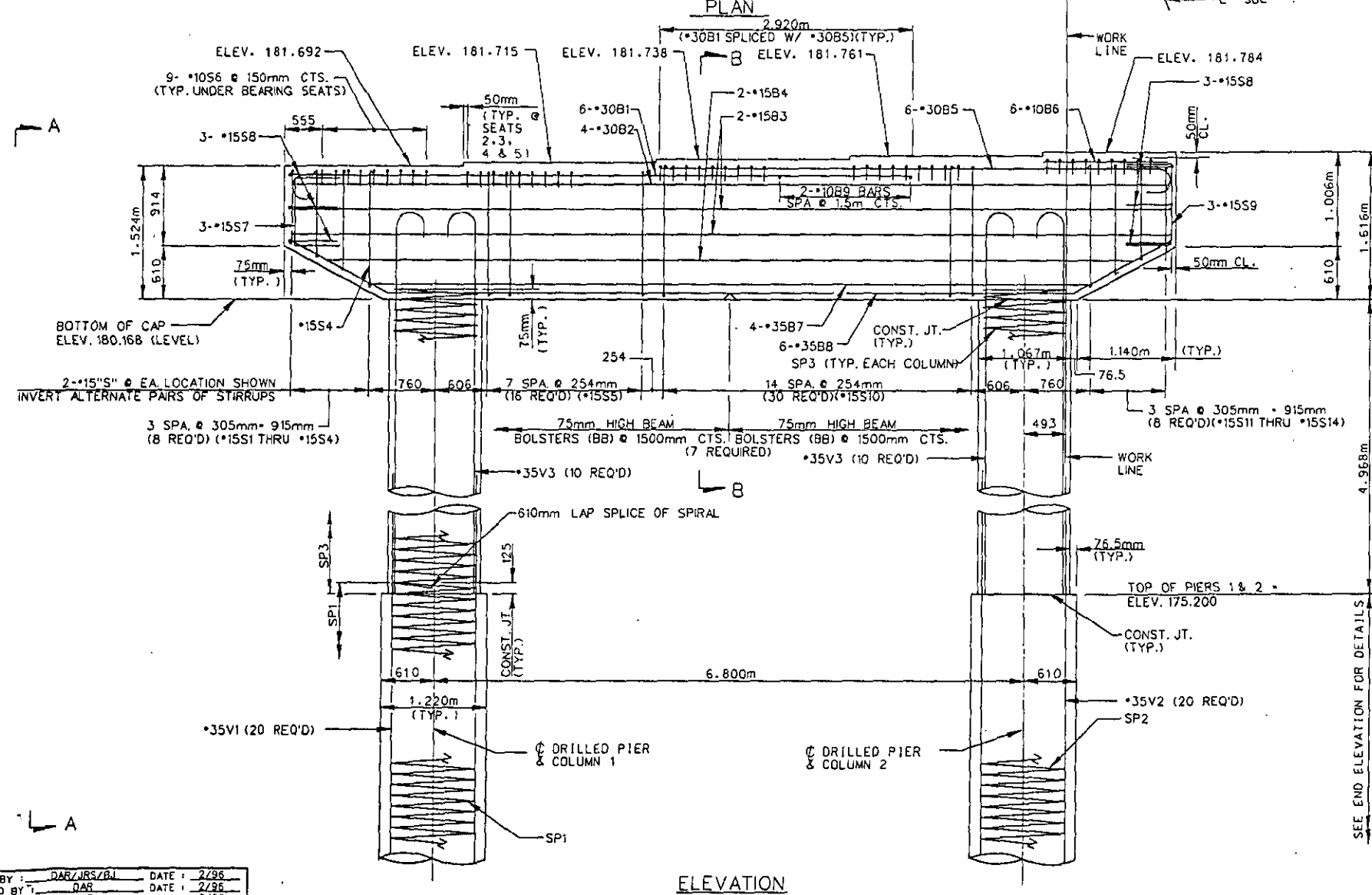


| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
|--|-----|-------|-----|-----|-------|
| SUBSTRUCTURE BENT 8 | | | | | |
| REVISIONS | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. S-61
 TOTAL SHEETS 79
 R.N. B-60

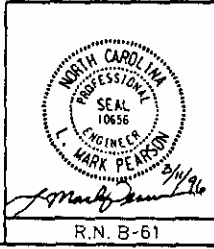


TIP ELEVATION DRILLED PIER 1 = 170.0
 TIP ELEVATION DRILLED PIER 2 = 162.0



END ELEVATION A-A
 DRILLED PIER DETAILS FOR DRILLED PIER 1, DRILLED PIER 2 SIMILAR.
 PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT
 SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 9

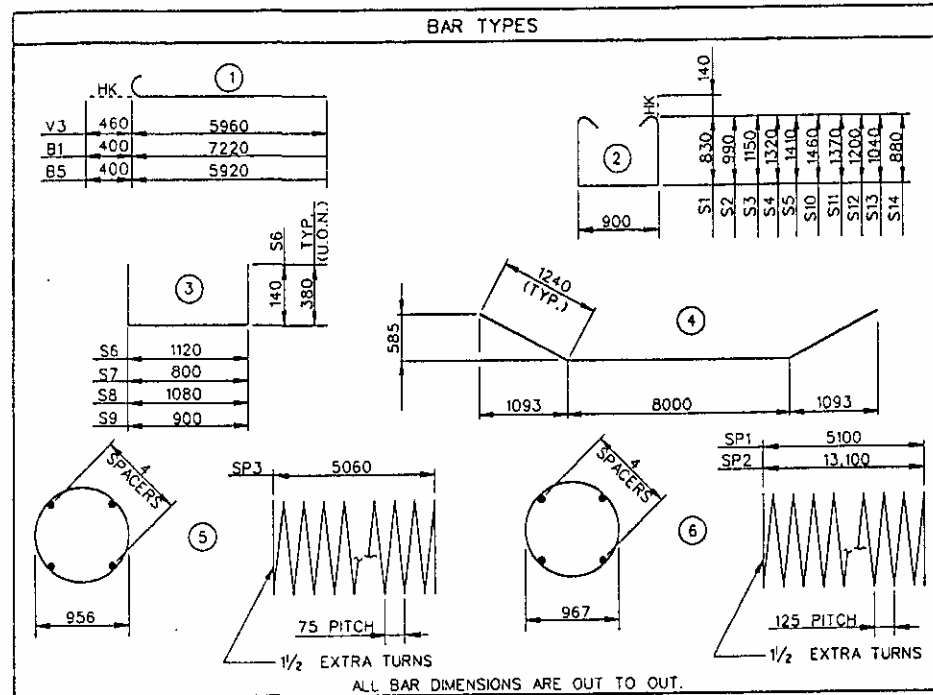
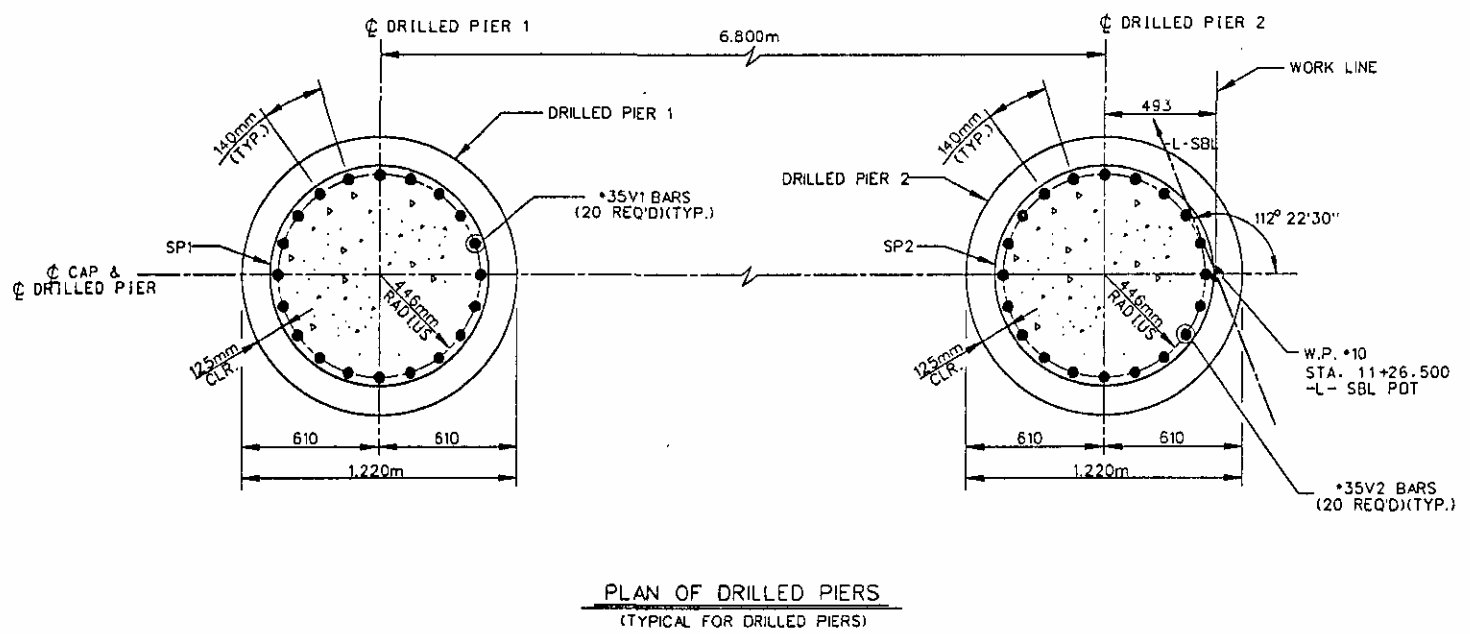
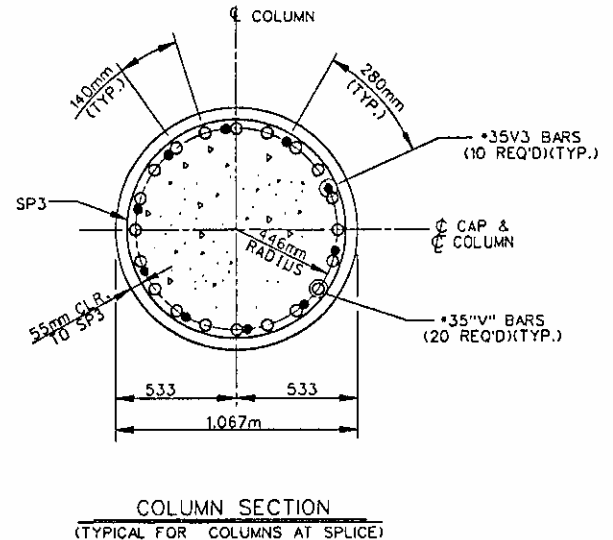
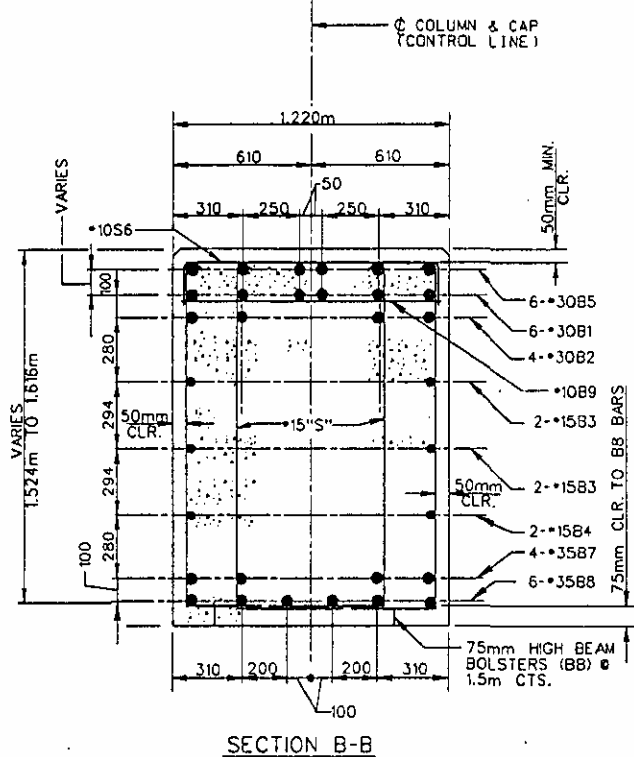


DRAWN BY: DAR/JRS/ZBJ DATE: 2/96
 CHECKED BY: DAR DATE: 2/96
 APPROVED BY: LMP DATE: 2/96

ELEVATION

| REVISIONS | | | | | | SHEET NO. | |
|-----------|----|------|-----|----|------|--------------|--|
| NO. | BY | DATE | NO. | BY | DATE | 5-62 | |
| 1 | | | 3 | | | TOTAL SHEETS | |
| 2 | | | 4 | | | 79 | |

DATE: 2/96
 DRAWN BY: DAR/JRS/ZBJ
 CHECKED BY: DAR
 APPROVED BY: LMP



| BILL OF MATERIAL | | | | | |
|--------------------------------------|-----|------|---------|--------|--------|
| BENT 9 | | | | | |
| BAR NO. | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| B1 | 6 | 30 | 1 | 7620 | 25 |
| B2 | 4 | 30 | STR. | 10,200 | 22 |
| B3 | 4 | 15 | STR. | 10,200 | 64 |
| B4 | 2 | 15 | STR. | 9420 | 30 |
| B5 | 6 | 30 | 1 | 6320 | 208 |
| B6 | 6 | 10 | STR. | 1440 | 7 |
| B7 | 4 | 30 | STR. | 8360 | 184 |
| B8 | 6 | 30 | 4 | 10,480 | 346 |
| B9 | 2 | 10 | STR. | 1120 | 2 |
| | | | | | |
| S1 | 2 | 15 | 2 | 2840 | 9 |
| S2 | 2 | 15 | 2 | 3160 | 10 |
| S3 | 2 | 15 | 2 | 3480 | 11 |
| S4 | 2 | 15 | 2 | 3820 | 12 |
| S5 | 16 | 15 | 2 | 4000 | 101 |
| S6 | 45 | 10 | 3 | 1400 | 50 |
| S7 | 3 | 15 | 3 | 1080 | 5 |
| S8 | 6 | 15 | 3 | 1360 | 13 |
| S9 | 3 | 15 | 3 | 1660 | 8 |
| S10 | 30 | 15 | 2 | 4100 | 193 |
| S11 | 2 | 15 | 2 | 3880 | 12 |
| S12 | 2 | 15 | 2 | 3580 | 11 |
| S13 | 2 | 15 | 2 | 3260 | 10 |
| S14 | 2 | 15 | 2 | 2940 | 9 |
| | | | | | |
| V1 | 20 | 35 | STR. | 7300 | 1146 |
| V2 | 20 | 35 | STR. | 15,300 | 2402 |
| V3 | 20 | 35 | 1 | 6420 | 1008 |
| | | | | | |
| TOTAL REINFORCING STEEL - kg | | | | | 6326 |
| | | | | | |
| SP1 | 1 | 6 | 126,480 | 199 | |
| SP2 | 1 | 6 | 317,860 | 499 | |
| SP3 | 2 | 5 | 204,900 | 322 | |
| | | | | | |
| SPIRAL COLUMN REINF. STEEL - kg | | | | | 1020 |
| | | | | | |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS | | | | | 8.9 |
| POUR 3 - CAP | | | | | 18.9 |
| TOTAL cu. m. | | | | | 27.8 |
| | | | | | |
| 1220mm DIA. DRILLED PIERS (NO.2) | | | | | |
| 1220mm DIA. PIER NOT IN ROCK - m. | | | | | 12.4 |
| 1220mm DIA. PIER IN ROCK - m. | | | | | 6.0 |
| CLASS "AA" CONCRETE (POUR 1) - Cu. m | | | | | 21.5 |

NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE LOCATION OF THE TOP OF DRILLED PIER IS BASED ON ASSUMED GROUND LINE ELEVATION. IF THE TOP OF DRILLED PIER AS DETAILED IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL FORM THE TOP OF DRILLED PIER 300mm BELOW THE ACTUAL GROUND ELEVATION.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1220mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1170mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:

1220mm DIA. DRILLED PIERS IN ROCK

1220mm DIA. DRILLED PIERS NOT IN ROCK

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

PROJECT NO. B-2612

ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 9

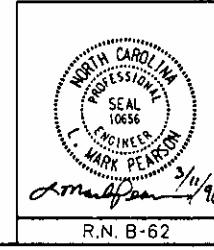
REVISIONS

| NO. | BY | DATE | NO. | BY | DATE |
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| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. S-63

TOTAL SHEETS 79

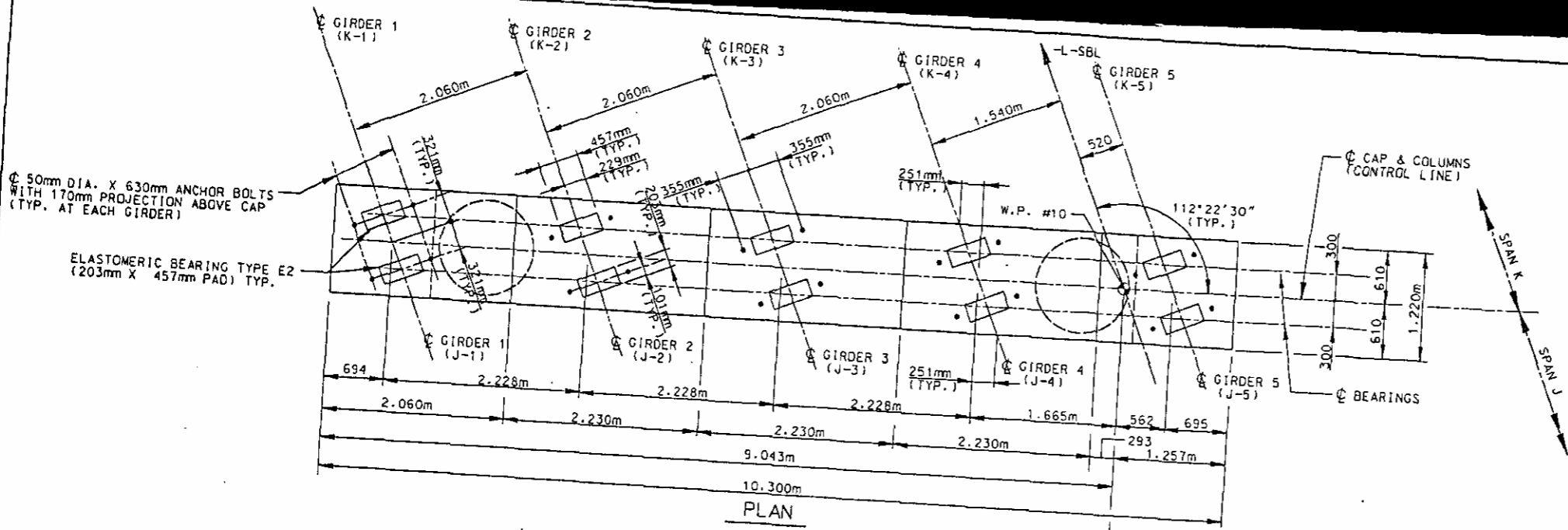
R.N. B-62



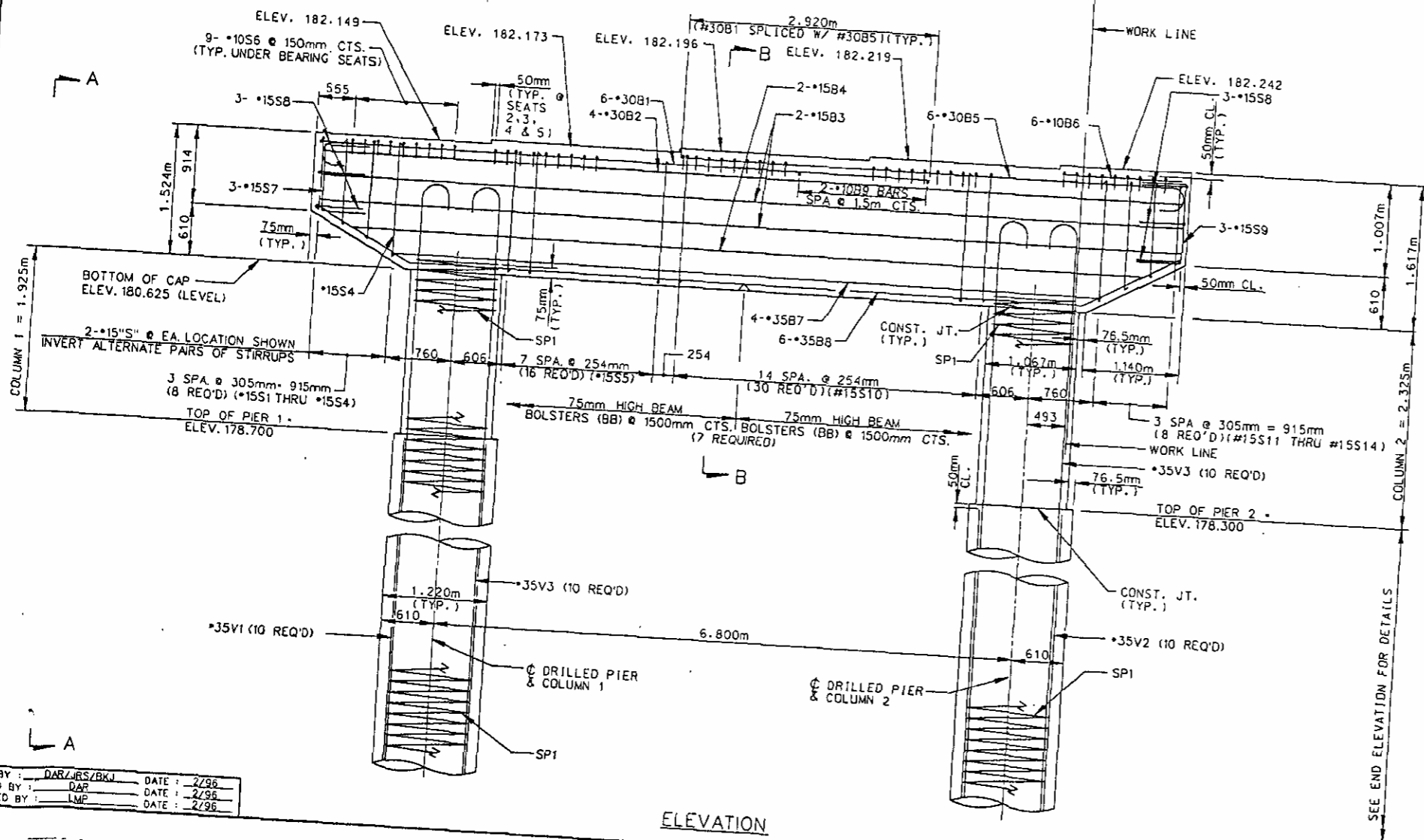
DRAWN BY: BKC/JRS/RCS DATE: 2/96

CHECKED BY: DAR DATE: 2/96

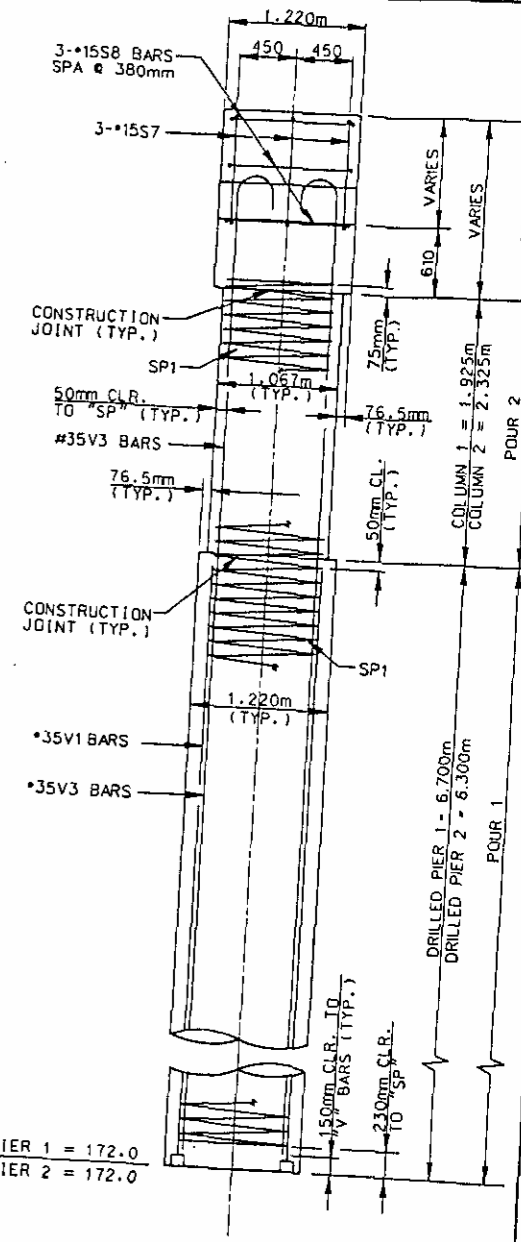
APPROVED BY: LMP DATE: 2/96



PLAN

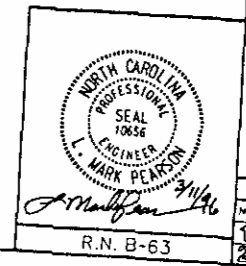


ELEVATION



TIP ELEVATION DRILLED PIER 1 = 172.0
TIP ELEVATION DRILLED PIER 2 = 172.0

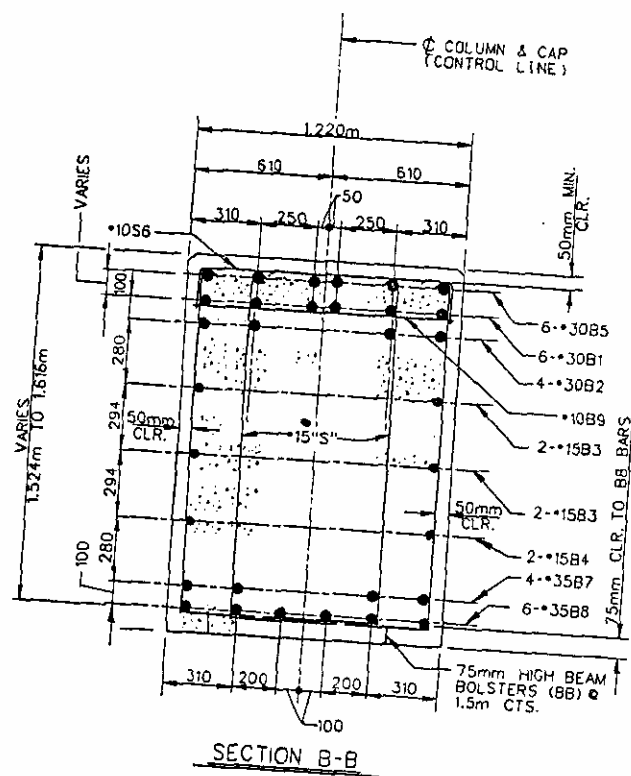
END ELEVATION A-A
DRILLED PIER DETAILS FOR DRILLED PIER 1. DRILLED PIER 2 SIMILAR.
PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -L- SBL PQT
SHEET 1 OF 2



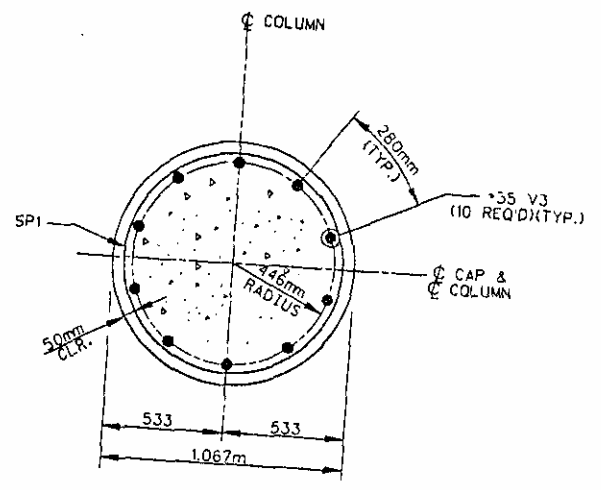
| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
|--|-----|-------|-----|-----|-------|
| SUBSTRUCTURE BENT 10 | | | | | |
| REVISIONS | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

DRAWN BY: DAR/JRS/BKJ DATE: 2/96
CHECKED BY: DAR DATE: 2/96
APPROVED BY: LMP DATE: 2/96

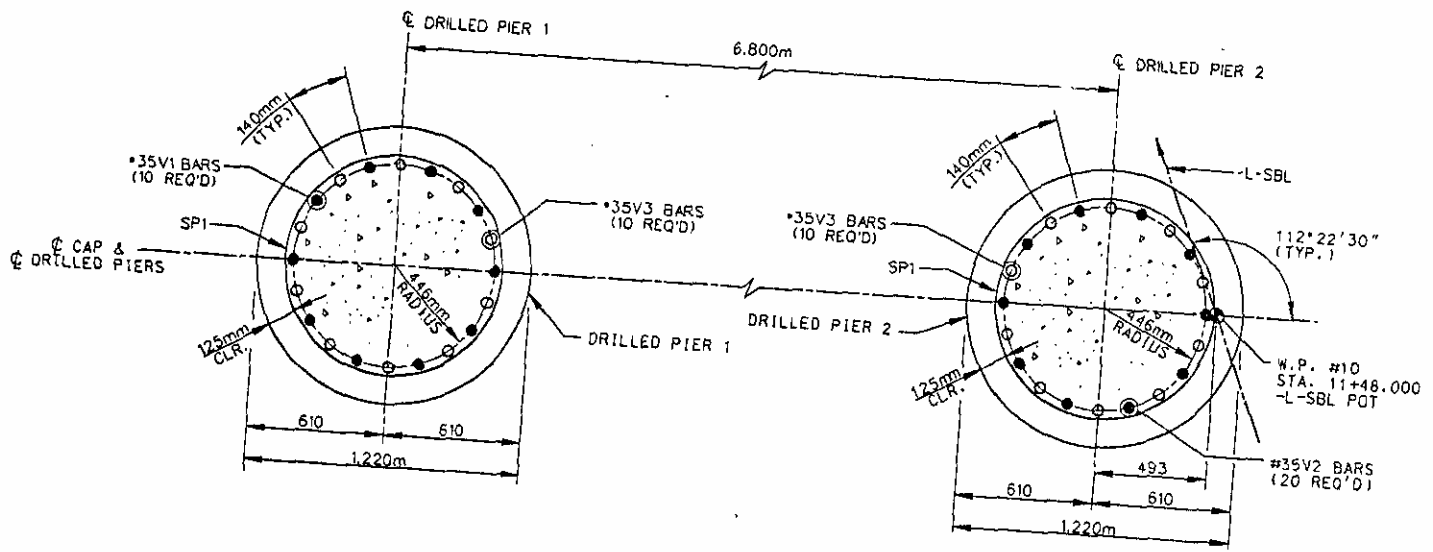
SHEET NO. S-64
TOTAL SHEETS 79



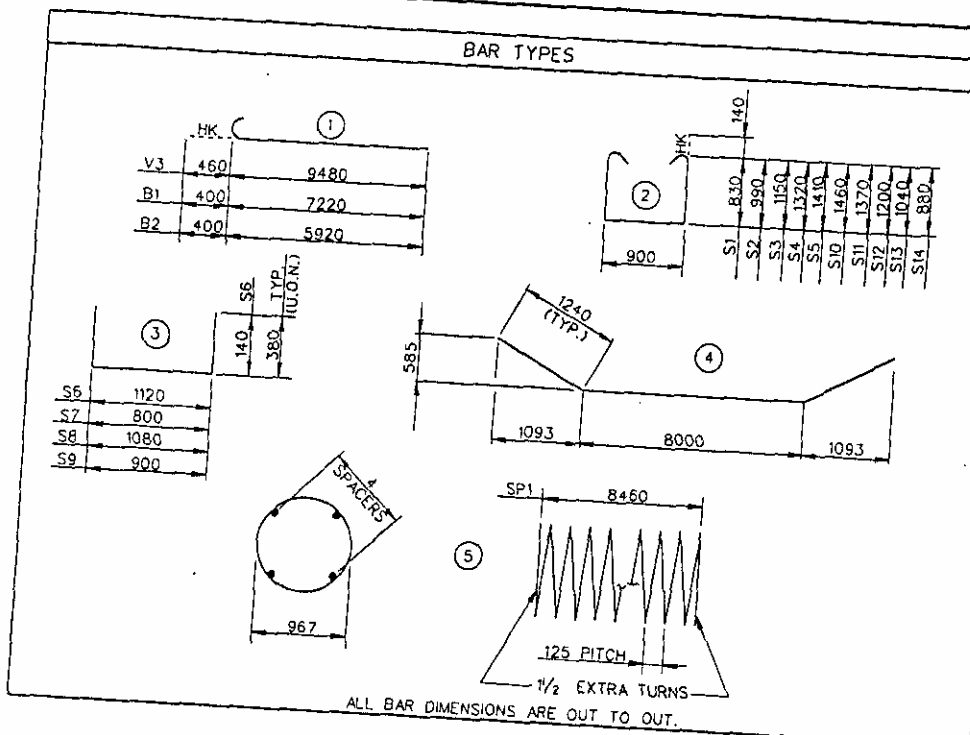
SECTION B-B



COLUMN SECTION
(TYPICAL FOR COLUMNS)



PLAN OF DRILLED PIERS
(TYPICAL FOR DRILLED PIERS)



| BILL OF MATERIAL | | | | | |
|-------------------------------------|------|------|---------|--------|------|
| BENT 10 | | | | | |
| BAR NO. | SIZE | TYPE | LENGTH | W | |
| B1 | 6 | 30 | 1 | 7820 | |
| B2 | 4 | 30 | STR. | 10,200 | |
| B3 | 4 | 15 | STR. | 10,200 | |
| B4 | 2 | 15 | STR. | 9420 | |
| B5 | 6 | 30 | 1 | 6320 | |
| B6 | 6 | 10 | STR. | 1440 | |
| B7 | 4 | 30 | STR. | 8360 | |
| B8 | 6 | 30 | 4 | 10,480 | |
| B9 | 2 | 10 | STR. | 1120 | |
| S1 | 2 | 15 | 2 | 2840 | |
| S2 | 2 | 15 | 2 | 3160 | |
| S3 | 2 | 15 | 2 | 3480 | |
| S4 | 2 | 15 | 2 | 3820 | |
| S5 | 16 | 15 | 2 | 4000 | 12 |
| S6 | 45 | 10 | 3 | 1400 | 50 |
| S7 | 3 | 15 | 3 | 1080 | 5 |
| S8 | 6 | 15 | 3 | 1360 | 13 |
| S9 | 3 | 15 | 3 | 1660 | 8 |
| S10 | 30 | 15 | 2 | 4100 | 193 |
| S11 | 2 | 15 | 2 | 3880 | 12 |
| S12 | 2 | 15 | 2 | 3580 | 11 |
| S13 | 2 | 15 | 2 | 3260 | 10 |
| S14 | 2 | 15 | 2 | 2940 | 9 |
| V1 | 10 | 35 | STR. | 6500 | 510 |
| V2 | 10 | 35 | STR. | 6100 | 479 |
| V3 | 20 | 35 | 1 | 9940 | 1561 |
| TOTAL REINFORCING STEEL - kg | | | | 4320 | |
| SPI | 2 | 5 | 211,120 | 663 | |
| SPIRAL COLUMN REINF. STEEL - kg | | | | 663 | |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS | | | | 3.8 | |
| POUR 3 - CAP | | | | 18.9 | |
| TOTAL cu. m | | | | 22.7 | |
| 1220mm DIA. DRILLED PIERS (NO.2) | | | | | |
| 1220mm DIA. PIER NOT IN ROCK - m | | | | 5.2 | |
| 1220mm DIA. PIER IN ROCK - m | | | | 7.8 | |
| CLASS "AA" CONCRETE (POUR1) - cu. m | | | | 15.2 | |

NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS
THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE LOCATION OF THE TOP OF DRILLED PIER IS BASED ON ASSUMED GROUND LINE ELEVATION. IF THE TOP OF DRILLED PIER AS DETAILED IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL FORM THE TOP OF DRILLED PIER 300mm BELOW THE ACTUAL GROUND ELEVATION.

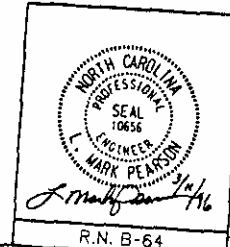
THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1220mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1170mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:
1220mm DIA. DRILLED PIERS IN ROCK
1220mm DIA. DRILLED PIERS NOT IN ROCK

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.
FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

PROJECT NO. B-2612
ROWAN-DAVIDSON COUNTY
STATION: 11+58.893 -L-SBL POT
SHEET 2 OF 2

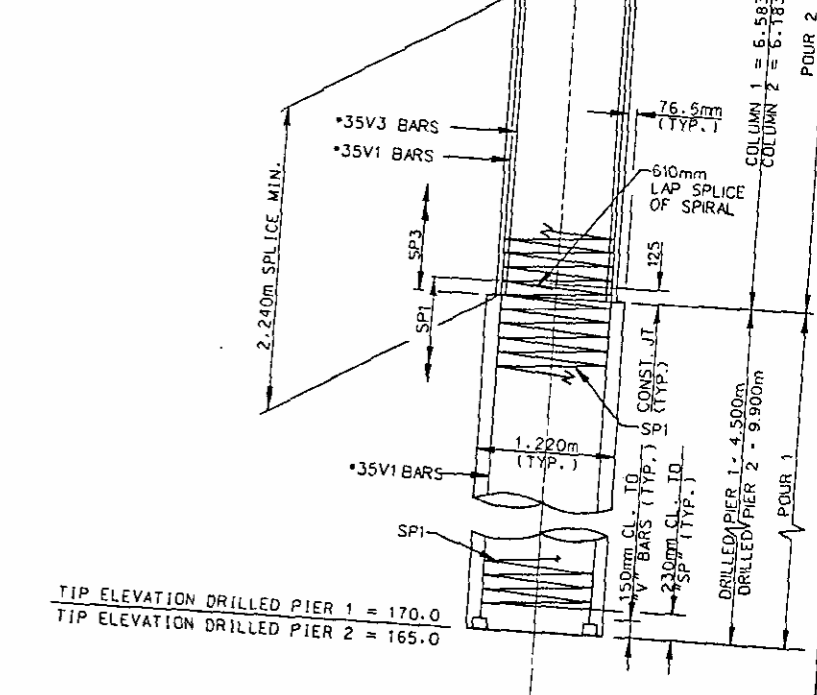
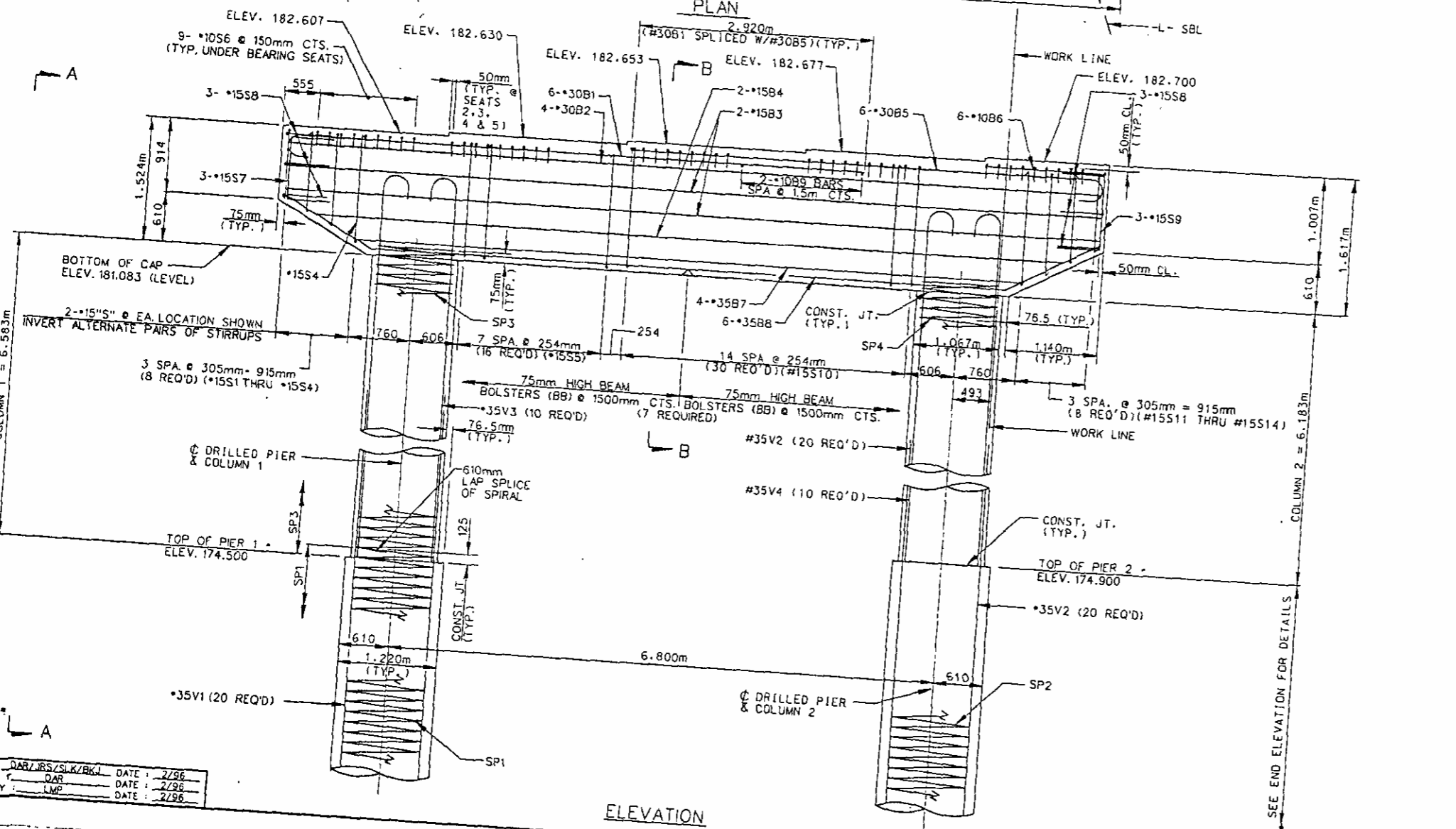
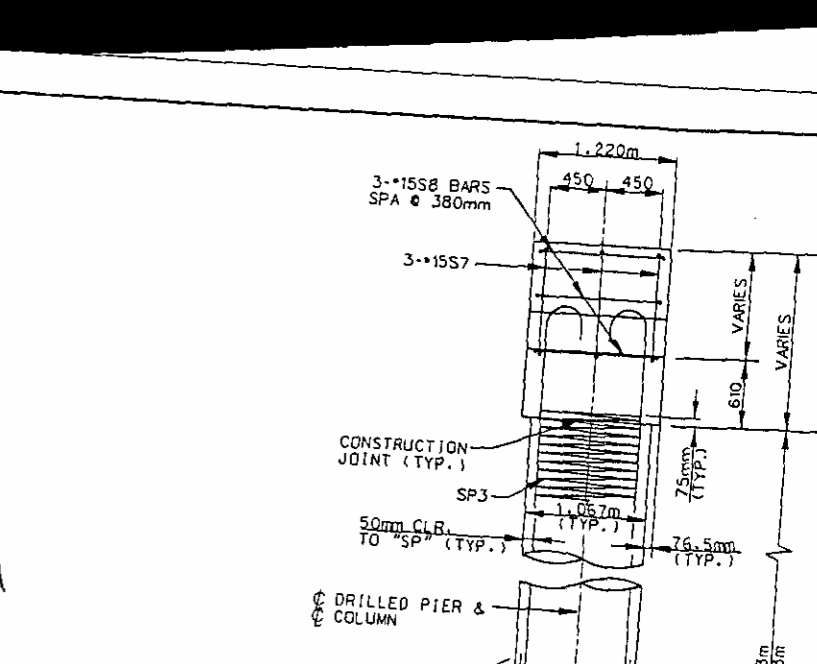
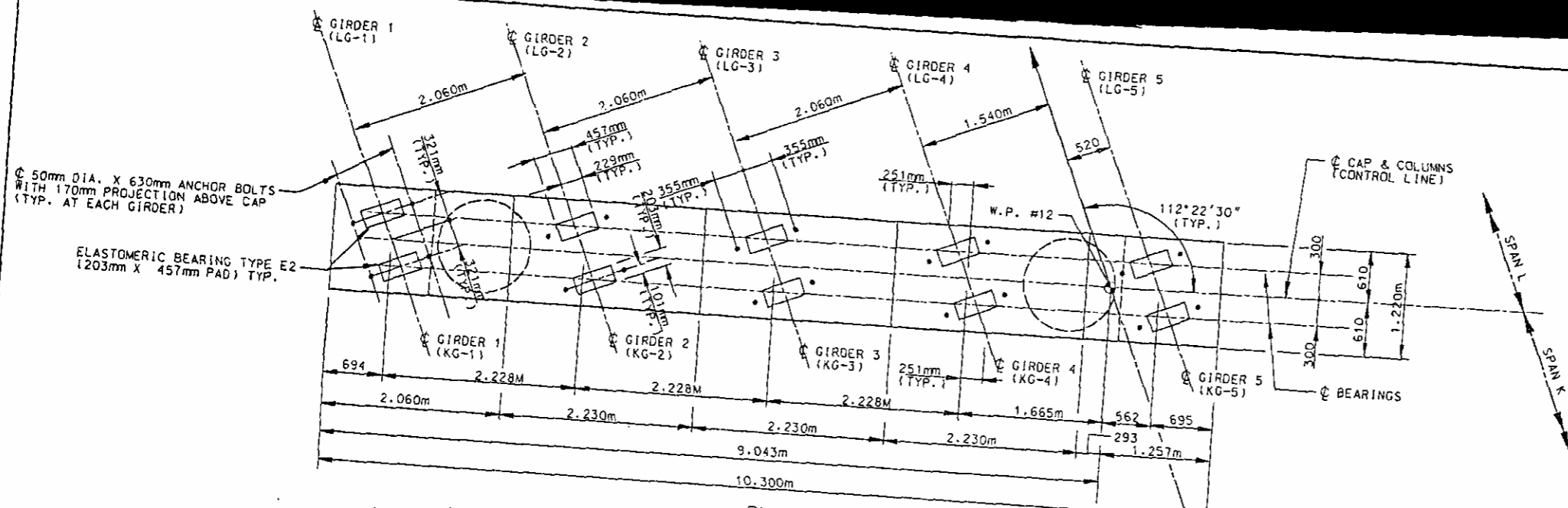


| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
|--|----|------|-----|----|------|
| SUBSTRUCTURE BENT 10 | | | | | |
| REVISIONS | | | | | |
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. 5-65
TOTAL SHEETS 79

DRAWN BY: BKC/SLK/RCS DATE: 2/96
CHECKED BY: DAR DATE: 2/96
APPROVED BY: LMP DATE: 2/96

THE PILE... 2013-09... 03/11/96...
 2012/24... 2012/24... 2012/24...



DRAWN BY: DAR/RS/SJK/BKJ DATE: 2/96
 CHECKED BY: DAR DATE: 2/96
 APPROVED BY: LMP DATE: 2/96

END ELEVATION A-A
 DRILLED PIER DETAILS SHOWN FOR DRILLED PIER 1.
 DRILLED PIER 2 SIMILAR.
 PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -1- SBL POT
 SHEET 1 OF 2

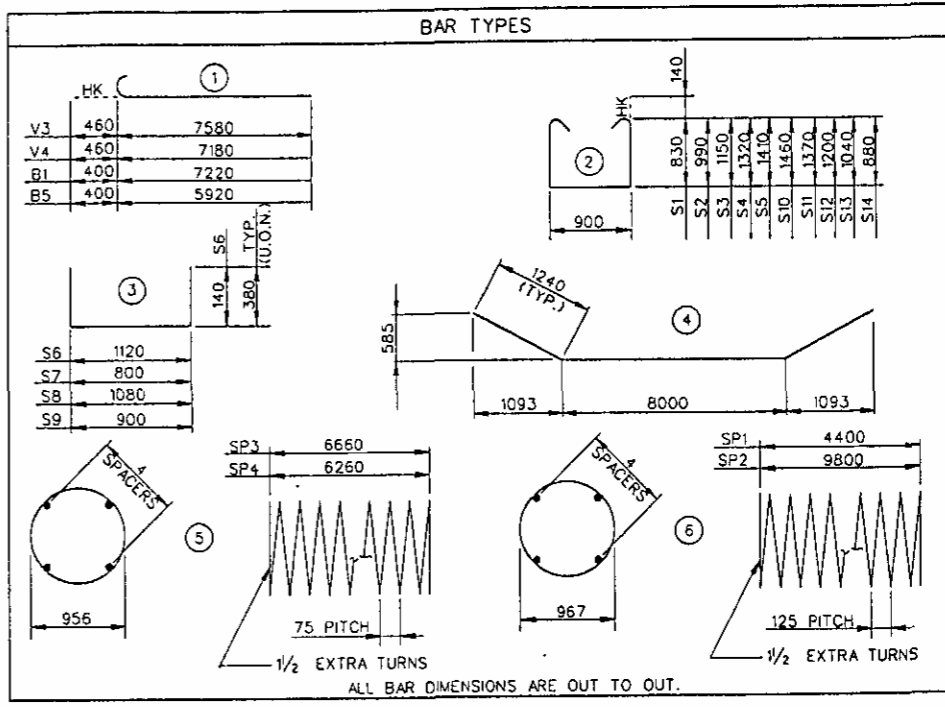
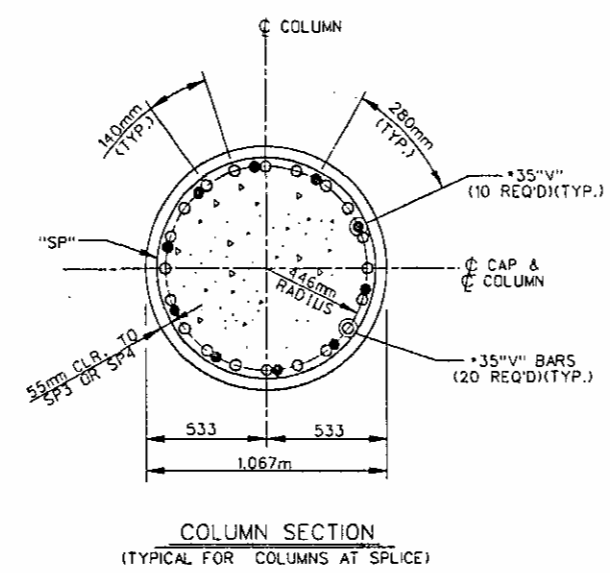
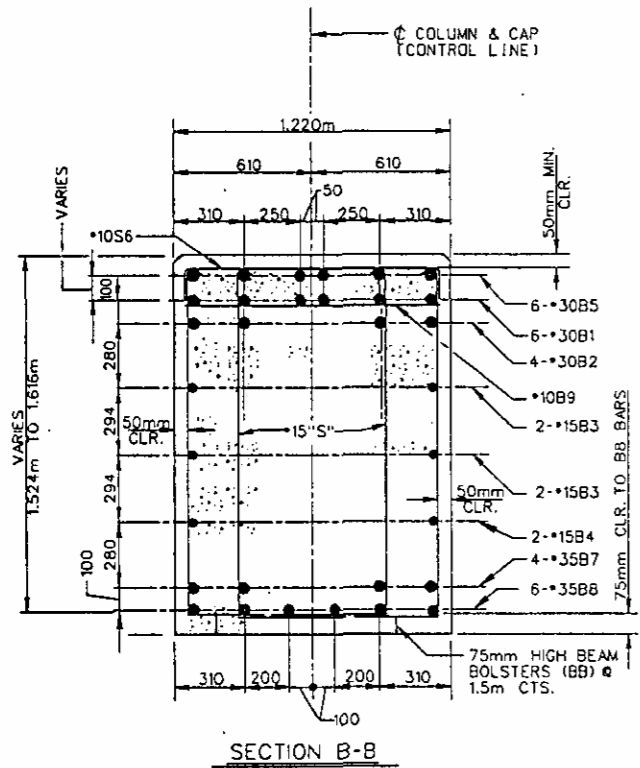
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 11

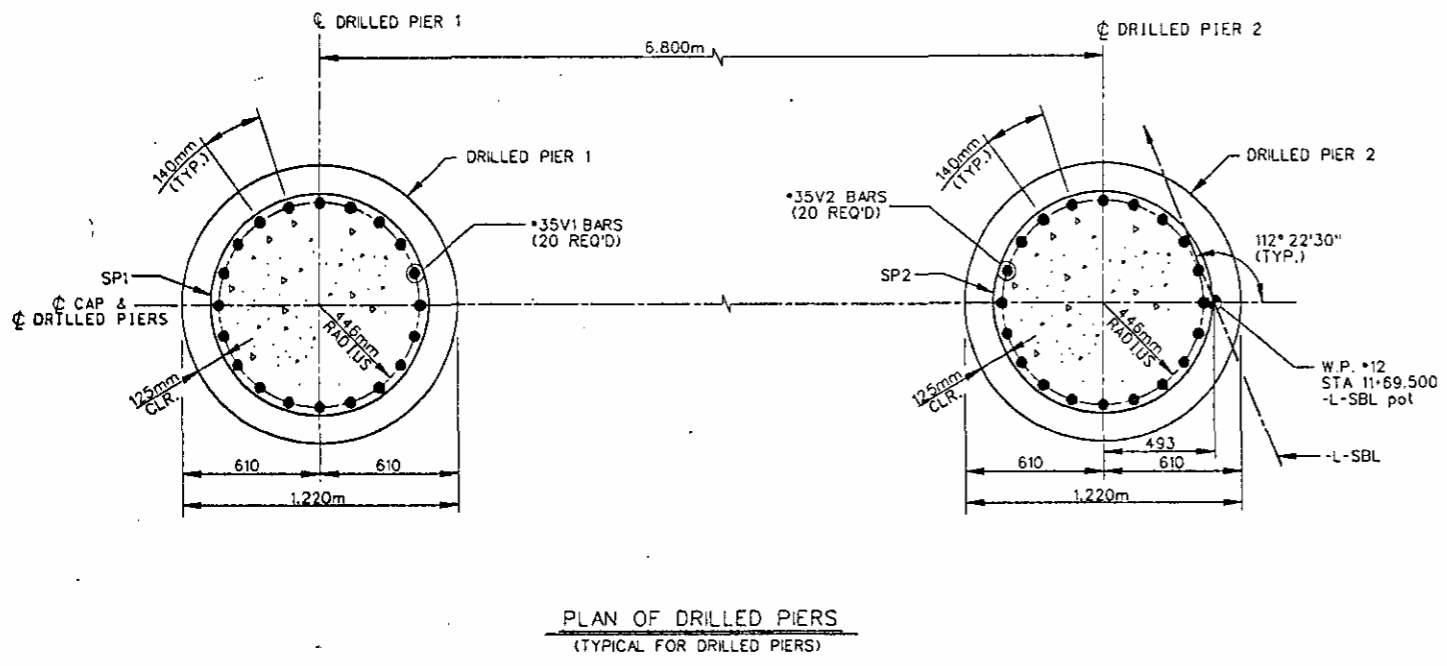
NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 10656
 L. MARK PEARSON
 3/11/96

| REVISIONS | | | | | |
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| NO. | BY | DATE | NO. | BY | DATE |
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SHEET NO. S-60
 TOTAL SHEETS 79
 R.N. B-65



| BILL OF MATERIAL | | | | | |
|------------------------------|-----|------|------|--------|------|
| BENT 11 | | | | | |
| BAR | NO. | SIZE | TYPE | LENGTH | WEIG |
| B1 | 6 | 30 | | 7620 | 253 |
| B2 | 4 | 30 | STR. | 10,200 | 224 |
| B3 | 4 | 15 | STR. | 10,200 | 64 |
| B4 | 2 | 15 | STR. | 9420 | 30 |
| B5 | 6 | 30 | | 6320 | 208 |
| B6 | 6 | 10 | STR. | 1440 | 7 |
| B7 | 4 | 30 | STR. | 8360 | 184 |
| B8 | 6 | 30 | | 10,480 | 346 |
| B9 | 2 | 10 | STR. | 1120 | 2 |
| S1 | 2 | 15 | 2 | 2840 | 9 |
| S2 | 2 | 15 | 2 | 3160 | 10 |
| S3 | 2 | 15 | 2 | 3480 | 11 |
| S4 | 2 | 15 | 2 | 3820 | 12 |
| S5 | 16 | 15 | 2 | 4000 | 101 |
| S6 | 45 | 10 | 3 | 1400 | 50 |
| S7 | 3 | 15 | 3 | 1080 | 5 |
| S8 | 3 | 15 | 3 | 1360 | 13 |
| S9 | 3 | 15 | 3 | 1660 | 8 |
| S10 | 30 | 15 | 2 | 4100 | 193 |
| S11 | 2 | 15 | 2 | 3880 | 12 |
| S12 | 2 | 15 | 3 | 3580 | 11 |
| S13 | 2 | 15 | 2 | 3260 | 10 |
| S14 | 2 | 15 | 2 | 2940 | 9 |
| V1 | 20 | 35 | STR. | 6600 | 1036 |
| V2 | 20 | 35 | STR. | 12,000 | 1884 |
| V3 | 10 | 35 | 1 | 8040 | 631 |
| V4 | 10 | 35 | 1 | 7640 | 600 |
| TOTAL REINFORCING STEEL - kg | | | | | 5921 |



NOTES:

FOR SPIRAL COLUMN REINFORCING STEEL, SEE SPECIAL PROVISIONS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY TO CLEAR REINFORCING STEEL IN CAP.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS

THE CONTRACTOR MAY USE CLASS 'AA' CONCRETE IN LIEU OF CLASS 'A' CONCRETE IN COLUMN.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

THE LOCATION OF THE TOP OF DRILLED PIER IS BASED ON ASSUMED GROUND LINE ELEVATION. IF THE TOP OF DRILLED PIER AS DETAILED IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL FORM THE TOP OF DRILLED PIER 300mm BELOW THE ACTUAL GROUND ELEVATION.

THE DRILLED PIERS SHALL BE INSTALLED TO THE MINIMUM TIP ELEVATION SHOWN ON THE PLANS.

THE 1220mm PIERS SHALL HAVE A MINIMUM DIAMETER OF 1170mm IN THE HARD ROCK ZONE.

PAYMENT FOR DRILLED PIERS WILL BE ON THE BASIS OF LINEAR METERS OF:

1220mm DIA. DRILLED PIERS IN ROCK

1220mm DIA. DRILLED PIERS NOT IN ROCK

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY TO AVOID ANCHOR BOLTS.

FOR PILE INTEGRITY TESTING, SEE DRILLED PIERS.

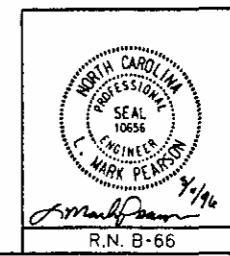
| | | | | | |
|---------------------------------------|---|---|---------|-----|------|
| TOTAL REINFORCING STEEL - kg | | | | | 5921 |
| SP1 | 1 | 6 | 109,740 | 172 | |
| SP2 | 1 | 6 | 238,920 | 375 | |
| SP3 | 1 | 5 | 268,160 | 211 | |
| SP4 | 1 | 5 | 252,420 | 198 | |
| SPIRAL COLUMN REINF. STEEL - kg | | | | | 956 |
| CLASS "A" CONCRETE - cu. m | | | | | |
| POUR 2 - COLUMNS | | | | | 11.4 |
| POUR 3 - CAP | | | | | 18.9 |
| TOTAL cu. m. | | | | | 30.3 |
| 1220mm DIA. DRILLED PIERS (NO. 2) | | | | | |
| 1220mm DIA. PIER NOT IN ROCK - m. | | | | | 7.1 |
| 1220mm DIA. PIER IN ROCK - m. | | | | | 7.3 |
| CLASS "AA" CONCRETE (POUR 1) - cu. m. | | | | | 16.8 |

PROJECT NO. B-2612

ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 2 OF 2



| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
|--|----|------|-----|----|------|
| SUBSTRUCTURE BENT 11 | | | | | |
| REVISIONS | | | | | |
| NO. | BY | DATE | NO. | BY | DATE |
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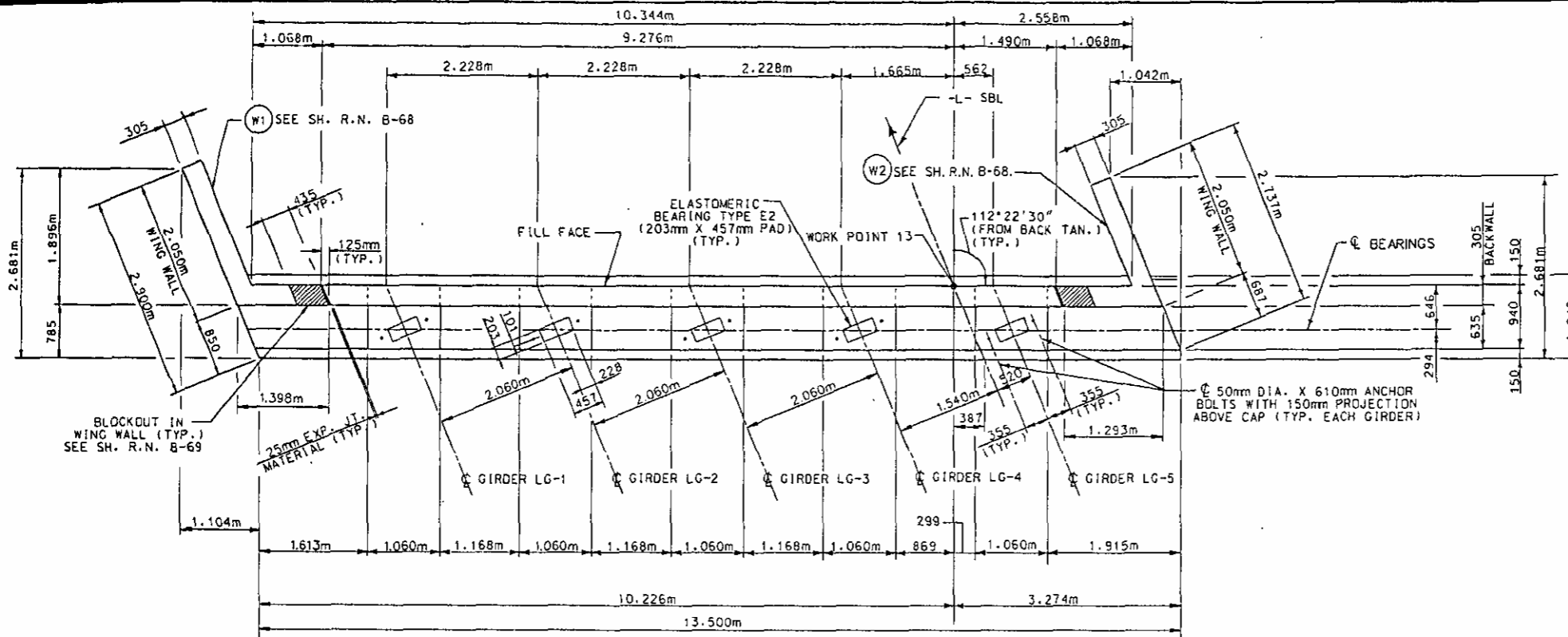
SHEET NO. 5-67

TOTAL SHEETS 79

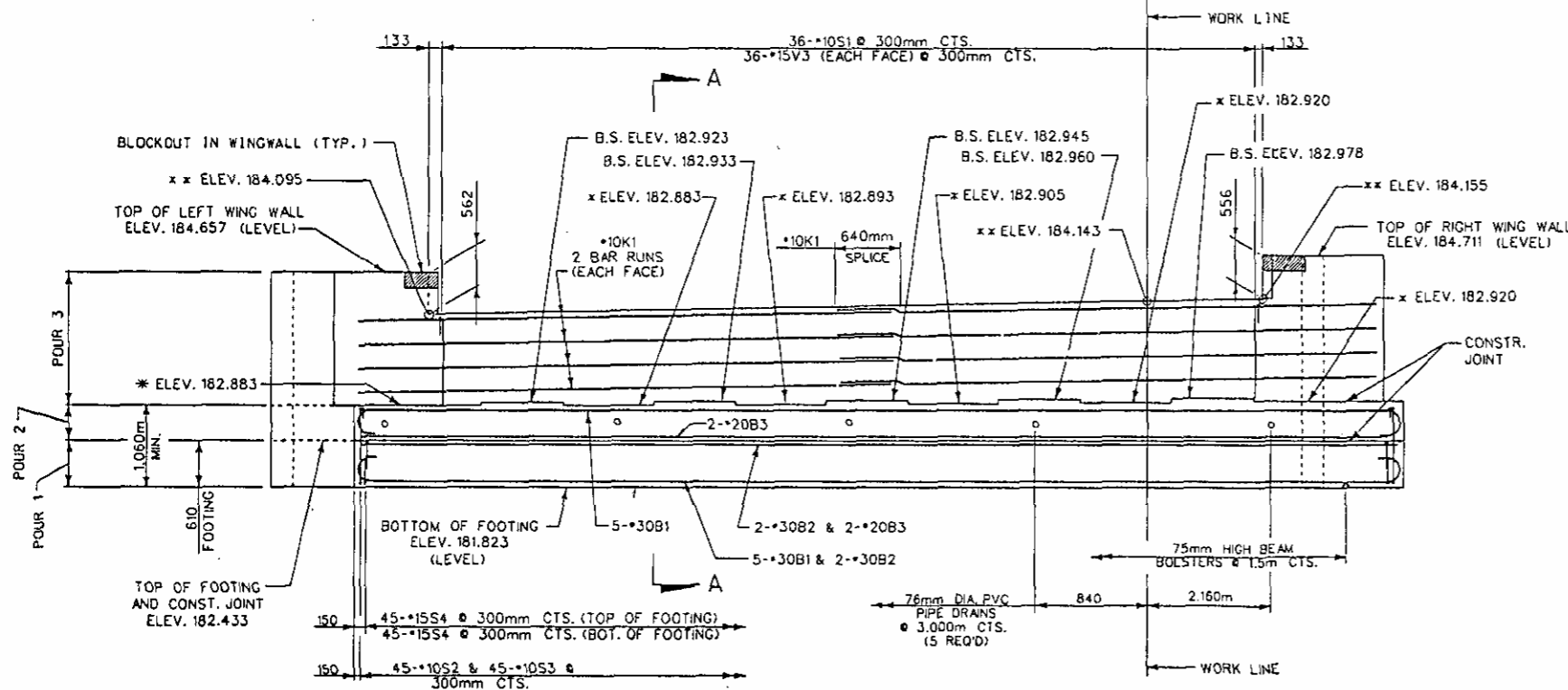
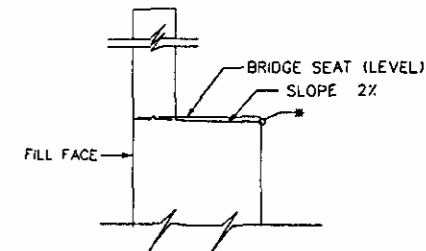
DRAWN BY: BKG/SLK/BKJ DATE: 2/96

CHECKED BY: DAR DATE: 2/96

APPROVED BY: LMF DATE: 2/96



NOTES:
 PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND ANCHOR BOLTS.
 FOR EPOXY PROTECTIVE COATING SEE SPECIAL PROVISIONS. BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
 THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
 FOR PIPE DRAIN DETAILS, SEE SH. NO. B-69.
 FOR BLOCKOUT IN WINGWALL, SEE SH. NO. B-69.
 FOR TEMPORARY DRAINAGE AT END BENT, SEE SH. NO. B-69.
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.
 ELEVATIONS BETWEEN AND OUTSIDE BRIDGE SEAT BUILDUPS ARE NOTED THUS * IN THE SKETCH BELOW:



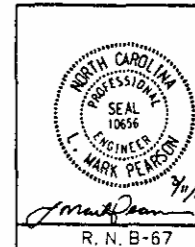
**ELEVATIONS ALONG FILL FACE

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

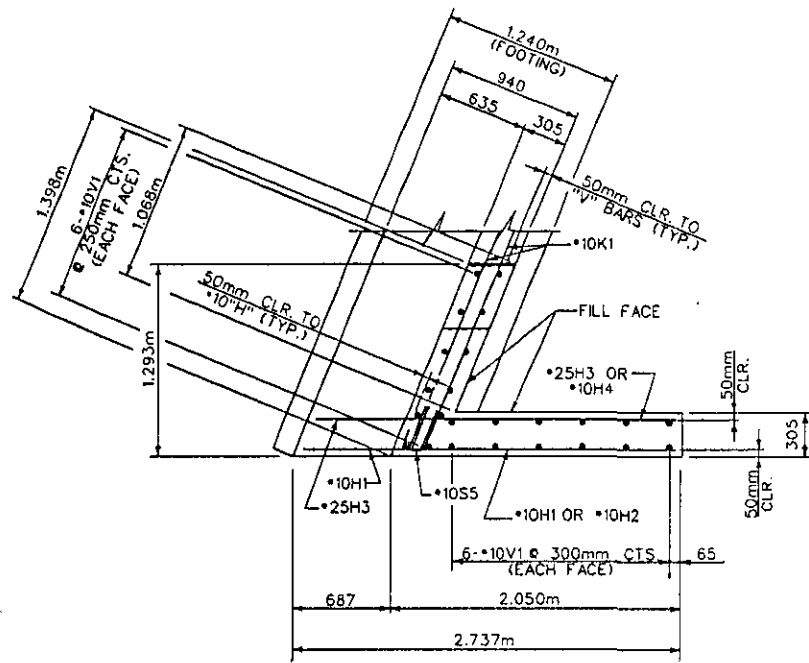
SUBSTRUCTURE
 END BENT 2



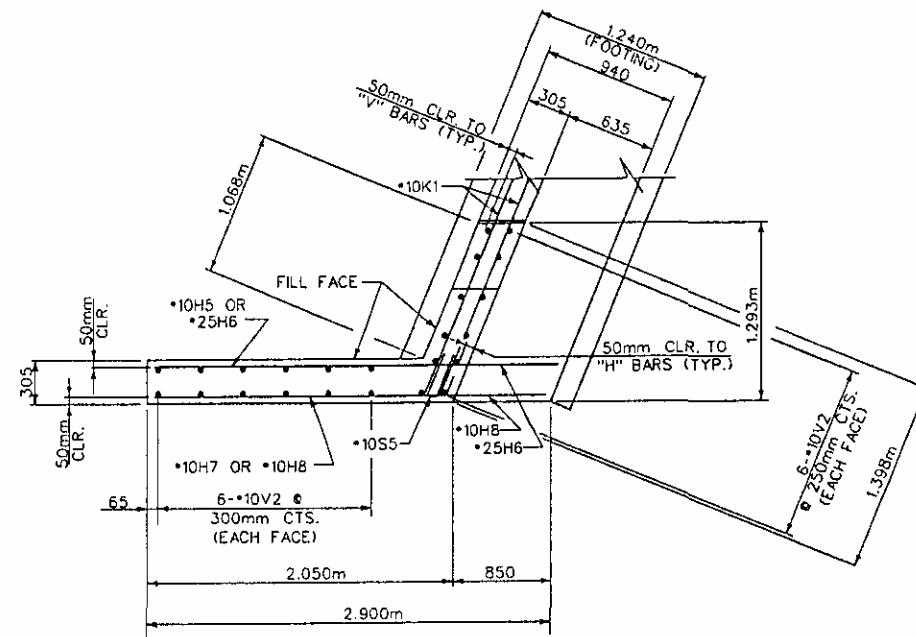
| REVISIONS | | | | | |
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DRAWN BY: BKC/JRS DATE: 6/95
 CHECKED BY: DAR DATE: 7/95
 APPROVED BY: LNP DATE: 2/96

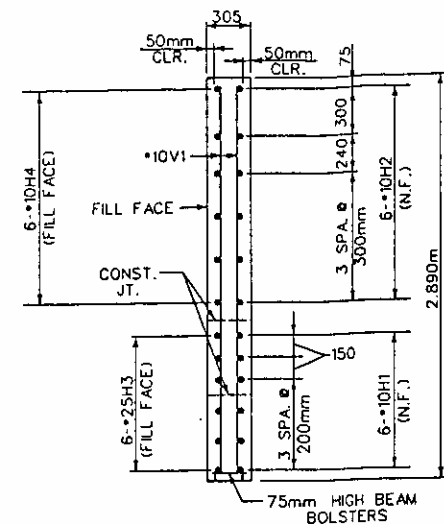
no. of user: 120926 01/11/96
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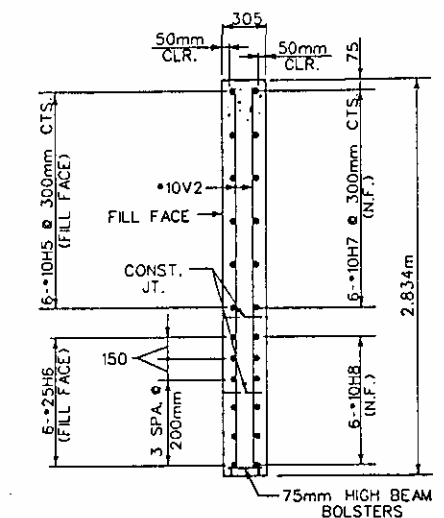
W2 PLAN OF RIGHT WING



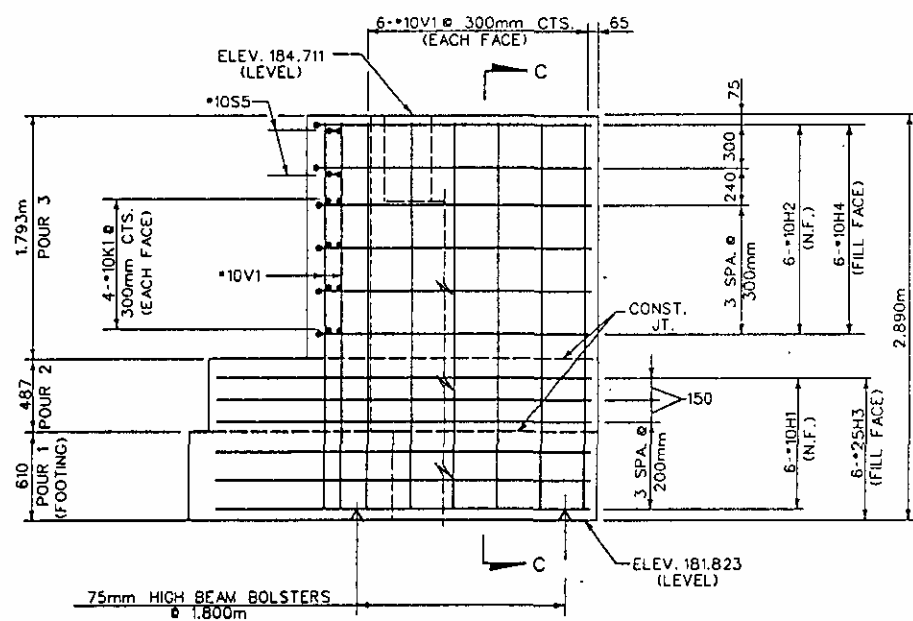
W1 PLAN OF LEFT WING



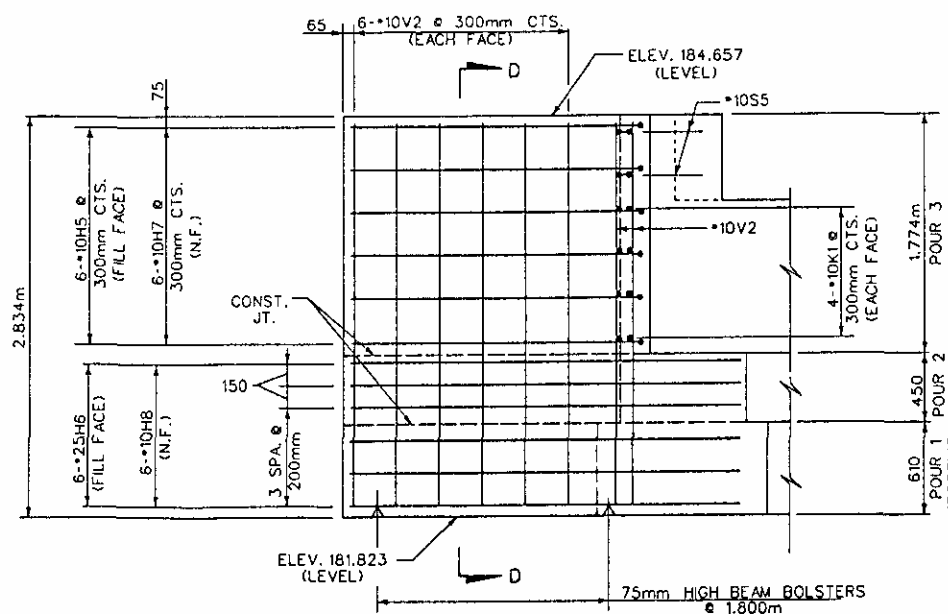
SECTION C-C



SECTION D-D



W2 ELEVATION OF RIGHT WING

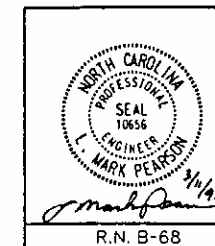


W1 ELEVATION OF LEFT WING

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

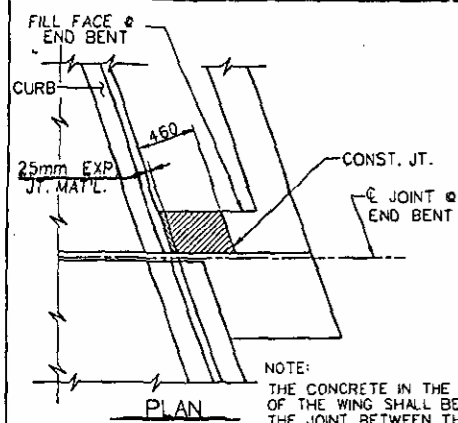
SUBSTRUCTURE
 END BENT 2



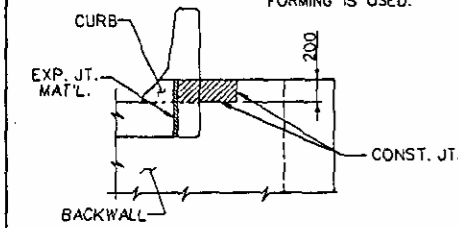
| REVISIONS | | | | | | SHEET NO. 5-69 |
|-----------|----|------|-----|----|------|--------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | TOTAL SHEETS 79 |
| 2 | | | 4 | | | |

DRAWN BY: BKC/JRS DATE: 6/95
 CHECKED BY: LSI DATE: 7/95
 APPROVED BY: LMP DATE: 2/96

R.N. B-68

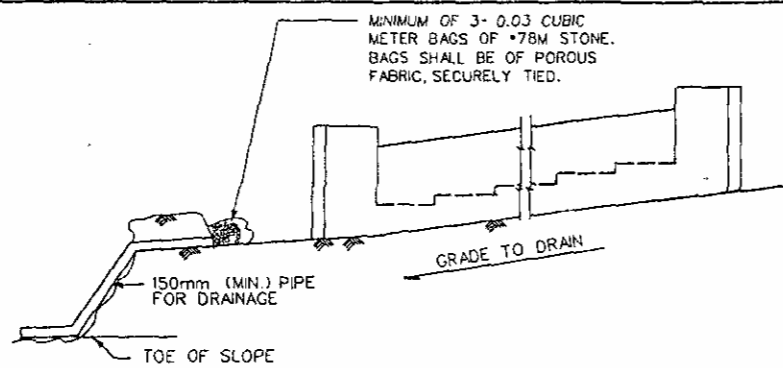


NOTE:
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



ELEVATION

BLOCKOUT IN WINGWALL FOR FITTING EVAZOTE JOINT SEAL

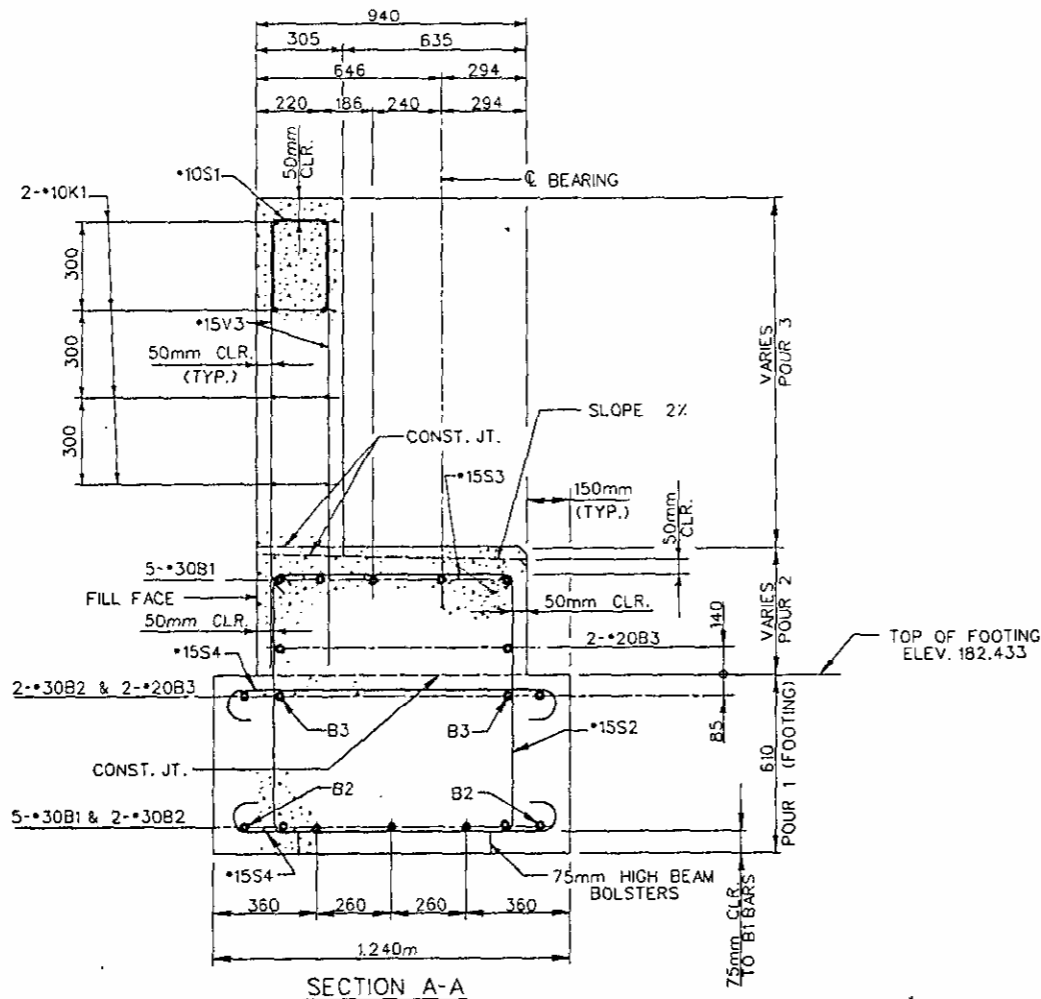


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

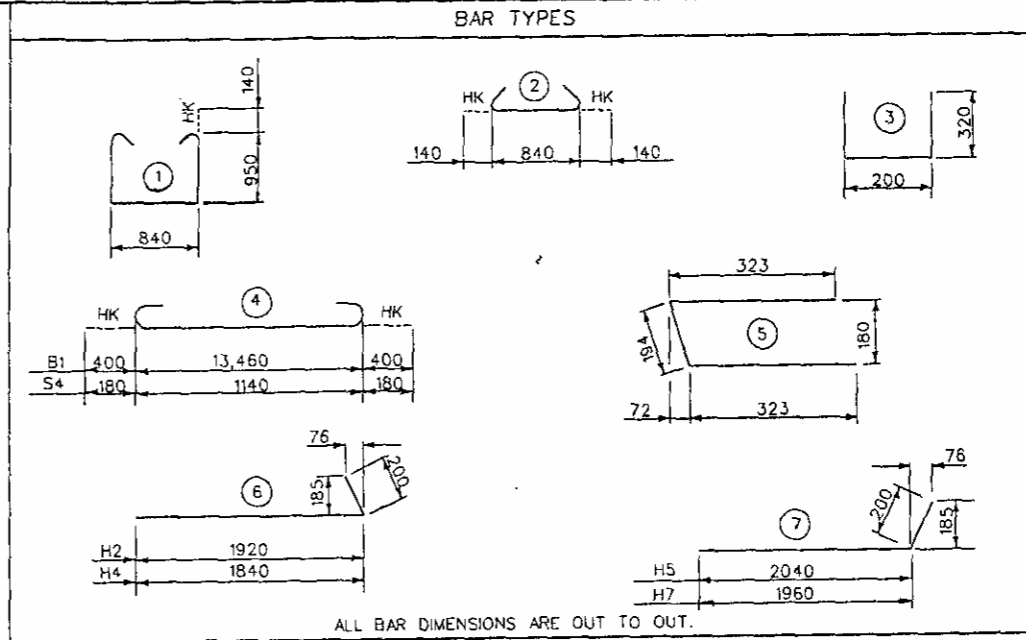
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THERE EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

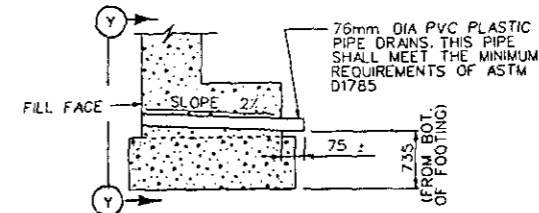
TEMPORARY DRAINAGE AT END BENT



SECTION A-A

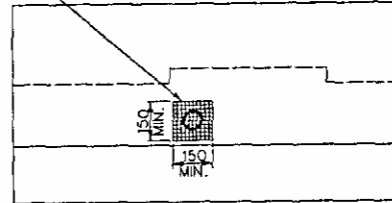


ALL BAR DIMENSIONS ARE OUT TO OUT.



SECTION THRU CAP AND FOOTING

150mm SQUARE ALUMINUM OR GALVANIZED STEEL WIRE 4 MESH HARDWARE CLOTH OF COMMERCIAL QUALITY. ANCHOR FIRMLY TO FILL FACE.



VIEW Y-Y

NOTE:

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTENERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

PIPE DRAIN DETAILS

BILL OF MATERIAL

FOR END BENT 2

| BAR NO. | NO. | SIZE | TYPE | LENGTH | WEIGHT |
|---------|-----|------|------|--------|--------|
| B1 | 10 | 30 | 4 | 14,260 | 784 |
| B2 | 4 | 30 | STR. | 13,400 | 295 |
| B3 | 4 | 20 | STR. | 13,460 | 127 |
| H1 | 6 | 10 | STR. | 2600 | 12 |
| H2 | 6 | 10 | 6 | 2120 | 10 |
| H3 | 6 | 25 | STR. | 2520 | 59 |
| H4 | 6 | 10 | 8 | 2040 | 10 |
| H5 | 6 | 10 | 7 | 2240 | 11 |
| H6 | 6 | 25 | STR. | 2720 | 64 |
| H7 | 6 | 10 | 7 | 2160 | 10 |
| H8 | 6 | 10 | STR. | 2620 | 12 |
| K1 | 16 | 10 | STR. | 7060 | 89 |
| S1 | 36 | 10 | 3 | 840 | 24 |
| S2 | 45 | 15 | 1 | 3020 | 213 |
| S3 | 45 | 15 | 2 | 1120 | 79 |
| S4 | 90 | 15 | 4 | 1500 | 212 |
| S5 | 4 | 10 | 5 | 840 | 3 |
| V1 | 12 | 15 | STR. | 2760 | 52 |
| V2 | 12 | 15 | STR. | 2700 | 51 |
| V3 | 72 | 15 | STR. | 1600 | 181 |

TOTAL REINFORCING STEEL - Kg 2298

| CLASS "A" CONCRETE | | |
|--------------------|---------|------|
| POUR 1 | - CU. M | 10.8 |
| POUR 2 | - CU. M | 6.6 |
| POUR 3 | - CU. M | 7.4 |
| - TOTAL CU. M | | 24.8 |

FOUNDATION EXCAVATION CU. M 59.0

PROJECT NO. B-2612

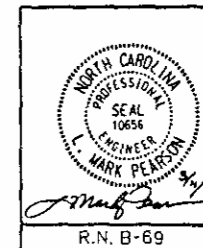
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

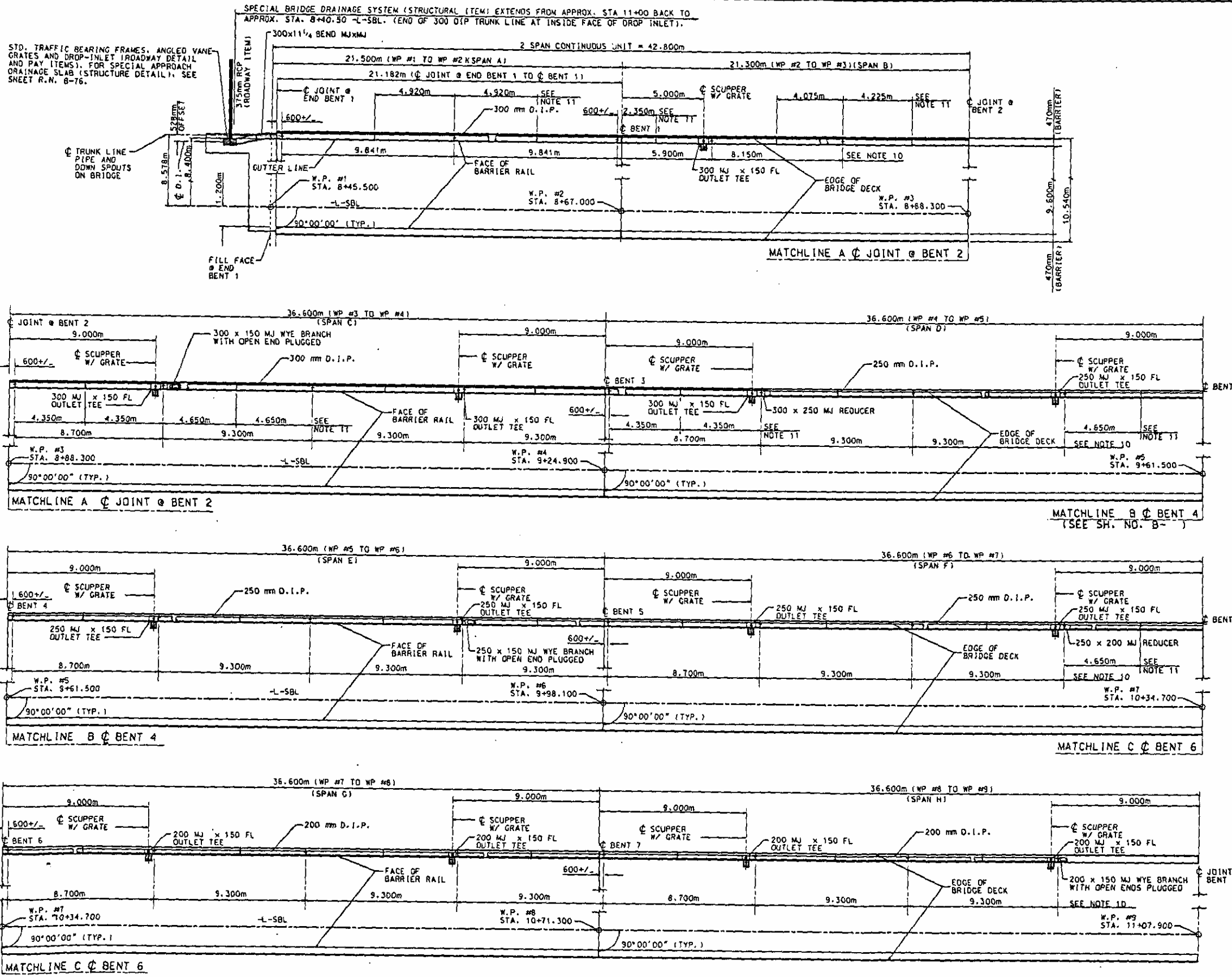


R.N. B-69

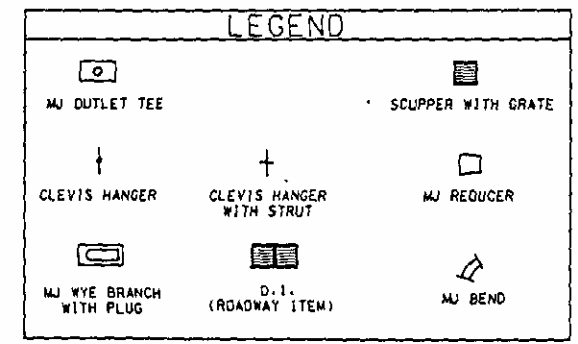
| REVISIONS | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | |
| 1 | | | 3 | 5-70 |
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|--------------|-----|-------|------|
| DRAWN BY: | BKC | DATE: | 4/95 |
| CHECKED BY: | JLV | DATE: | 2/96 |
| APPROVED BY: | LMP | DATE: | 2/96 |

no prt. use. 01/11/96
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R:\B7\214\000\asph\sr\endbent2.plt



- NOTES:**
1. TRUNK LINE PIPE SIZE VARIES. PIPE SIZE IS 300mm FROM STA. 8+45.5000 TO STA. 9+34 +/-, 250mm FROM STA. 9+34 +/- TO STA. 10+26 +/-, AND 200mm FROM STA. 10+26 +/- TO STA. 11+00 +/-.
 2. THE TRUNK LINE SHALL HAVE A MINIMUM SLOPE OF 2.1% AND CLEANOUTS SHALL BE PROVIDED AT 100m +/- INTERVALS.
 3. OFFSET ROADWAY SCUPPERS SHALL BE HEAVY DUTY GRAY IRON, RATED FOR HS-20 LOADING, WITH GRATE DIMENSIONS OF 407mm x 407mm, AND OUTLET PIPE INSIDE DIAMETER OF 127mm. OUTLET PIPE CENTERLINE SHALL BE OFFSET 178 mm FROM THE BACK EDGE OF THE FRAME. GRATE SHALL BE BOLTED TO FRAME.
 4. DRAINAGE PIPING SYSTEM SHALL BE MECHANICAL JOINT DUCTILE IRON PIPE, CLASS 350, NOMINAL 18 FT. LAYING LENGTH, MEETING THE APPLICABLE REQUIREMENTS OF ANSI/AWWA C151/A21-51. TRUNK LINE FITTINGS SHALL BE MECHANICAL JOINT, MEETING THE REQUIREMENTS OF ANSI/AWWA C110/A21-10 AND ANSI/AWWA C111/A21-11. DROP PIPE AND OVERFLOW PIPE FITTINGS SHALL BE FLANGED IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/AWWA C110/A21-10.
 5. ADJUSTABLE CLEVIS HANGER SHALL BE CARBON STEEL, BLACK FINISH, IN COMPLIANCE WITH FEDERAL SPECIFICATION WW-H-171E (TYPE 1) AND MANUFACTURER'S STANDARDIZATION SOCIETY SP-69 (TYPE 1). HANGER INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 6. PIPE JOINT SPACING SHALL BE ADJUSTED BY THE CONTRACTOR AS NECESSARY TO CLEAR HANGERS AND STRUTS.
 7. HANGER STRUTS SHALL BE PROVIDED AT LOCATIONS SHOWN TO PROVIDE LATERAL STABILITY. STRUTS SHALL BE AS SHOWN ON THE DRAINAGE SYSTEM DETAIL SHEET.
 8. TRUNK LINE PIPING SHALL BE LAID WITH BELL ENDS FACING IN THE UPSTREAM DIRECTION.
 9. SLAB REINFORCEMENT MAY BE SHIFTED SLIGHTLY AS NECESSARY TO AVOID INTERFERENCE WITH ROADWAY SCUPPERS.
 10. LOCATIONS OF HANGERS WITH STRUTS ARE SHOWN ON THE LAYOUT PLAN.
 11. THE INTERMEDIATE HANGERS BETWEEN THE HANGER STRUT LOCATIONS SHOWN SHALL BE PLACED AT THE MID POINT BETWEEN STRUTS AS INDICATED IN THE PLAN VIEW, TYPICAL.
 12. PROVIDE THREADED INSERT IN BOTTOM OF CONCRETE DECK OVERHANG AT ALL HANGER LOCATIONS. SEE SHEET R.N. B-71 FOR DETAILS.
 13. FOR STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.



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 ROWAN-DAVIDSON COUNTY
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 Raleigh

STRUCTURE DRAINAGE SYSTEM
 (SPANS A - H)
 LAYOUT

REVISIONS

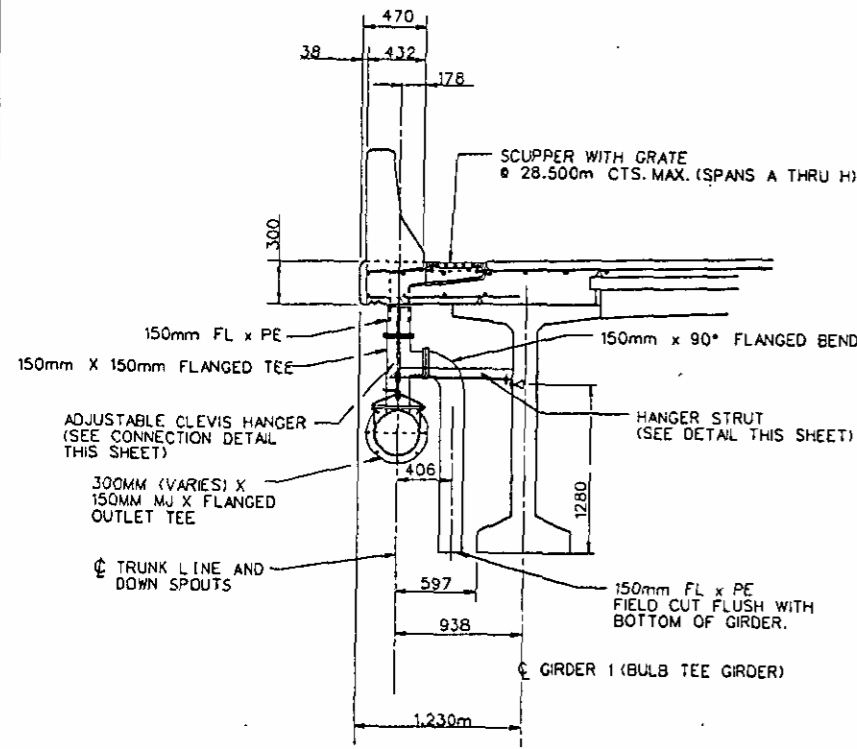
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| 2 | | | 4 | | |

SHEET NO. S-71
 10/2/85
 79

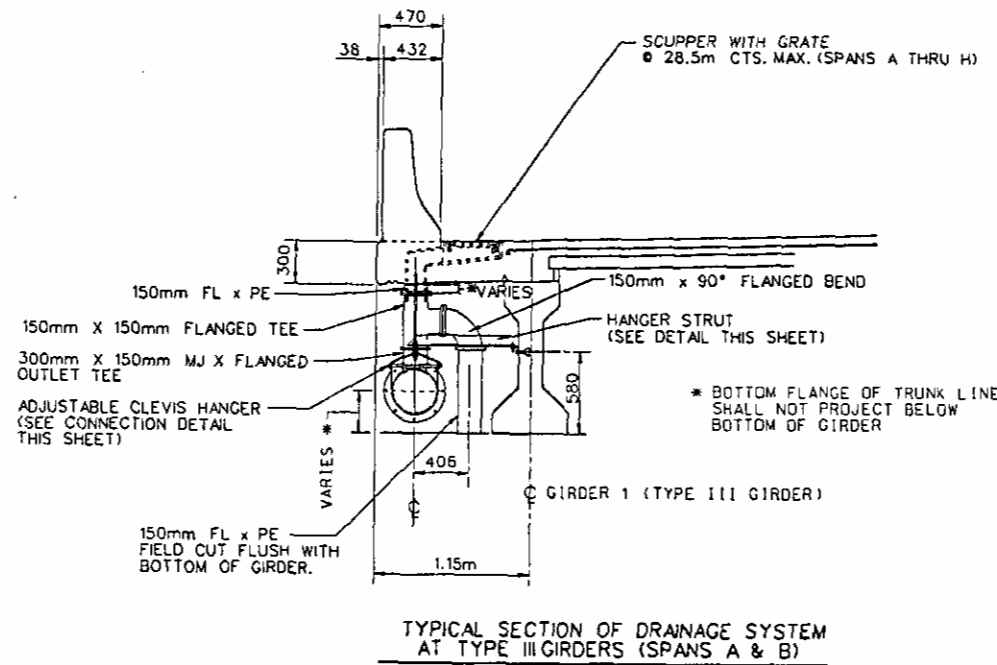
R.N. B-70

DRAWN BY: JBS DATE: 7/85
 CHECKED BY: JMG DATE: 7/85
 APPROVED BY: LMC DATE: 7/85

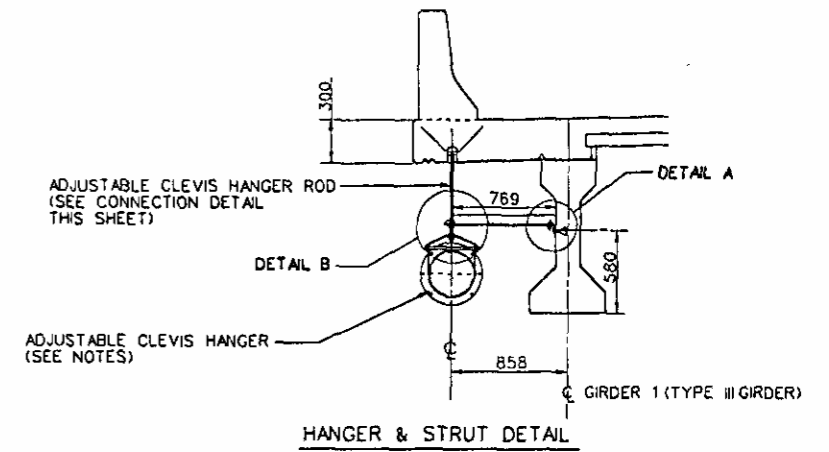
SCHEMATIC PLAN OF STRUCTURE DRAINAGE SYSTEM



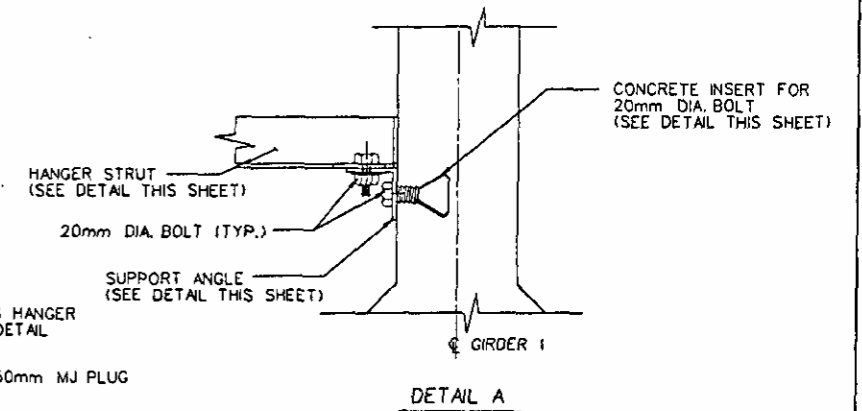
TYPICAL SECTION OF DRAINAGE SYSTEM AT BULB TEE GIRDERS (SPANS C THROUGH H)



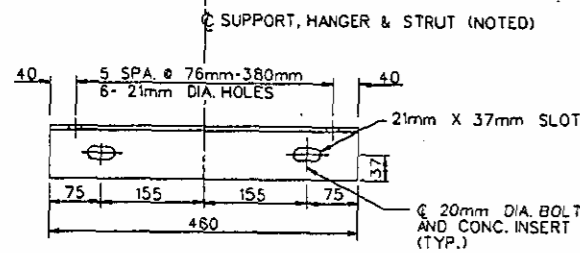
TYPICAL SECTION OF DRAINAGE SYSTEM AT TYPE III GIRDERS (SPANS A & B)



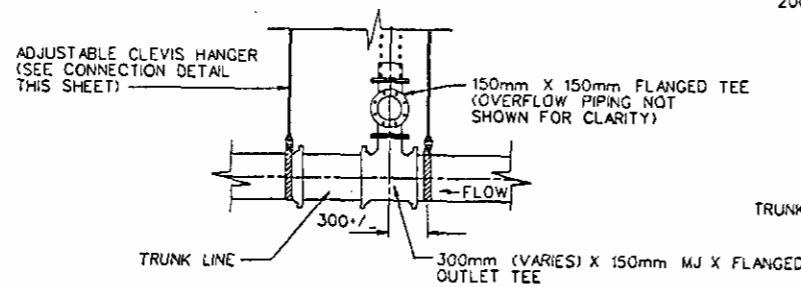
HANGER & STRUT DETAIL



DETAIL A

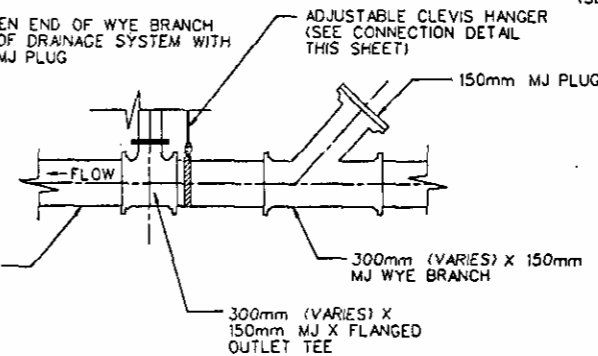


SUPPORT ANGLE FOR HANGER BRACE

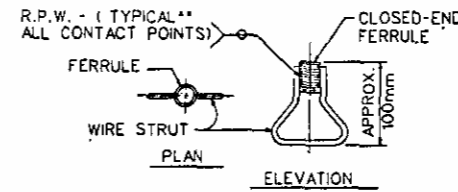


NOTE: LOCATE A HANGER AT EACH PIPE BELL AND ADJACENT TO EACH TRUNK LINE FITTING. MAXIMUM HANGER SPACING SHALL BE 5.500m

TYPICAL HANGER LOCATION



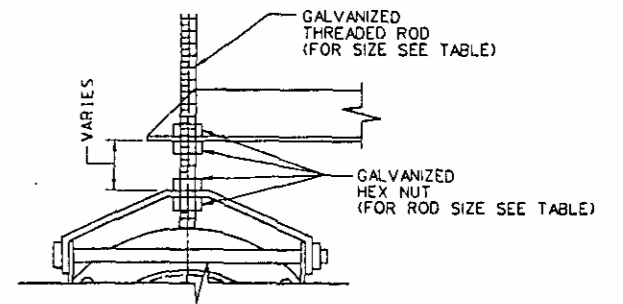
TYPICAL CLEANOUT DETAIL



** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

THE STRUCTURAL CONCRETE INSERT SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM A108, GRADE 12L14 AND SHALL HAVE A MIN. LENGTH OF THREADS OF 40mm.
- 1-20mm DIA. X 45mm BOLT W/WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307M. BOLT AND WASHER SHALL BE GALVANIZED.
- WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MIN. ALLOWABLE SIZE AND SHALL HAVE A MIN. TENSILE STRENGTH OF 689.5 MPa.
- FOR LOCATION OF HANGERS WITH STRUTS SEE SCHEMATIC PLAN OF STRUCTURE DRAINAGE SYSTEM. LOCATION OF INSERTS SHALL BE COORDINATED WITH GIRDER FABRICATION ALONG GIRDER LINE 1.



DETAIL B

PROJECT NO. B-2612

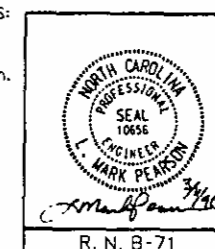
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

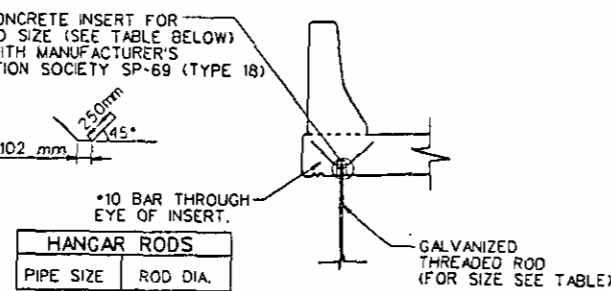
STRUCTURE DRAINAGE SYSTEM
 (SPANS A THROUGH H)
 TYPICAL SECTIONS AND DETAILS



| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | 572 |
| 2 | | | 4 | | | 79 |

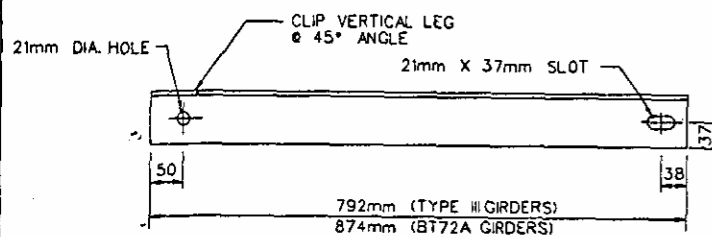
R. N. B-71

DRAWN BY: JRS DATE: 8/95
 CHECKED BY: JMK DATE: 7/95
 APPROVED BY: LMP DATE: 2/96

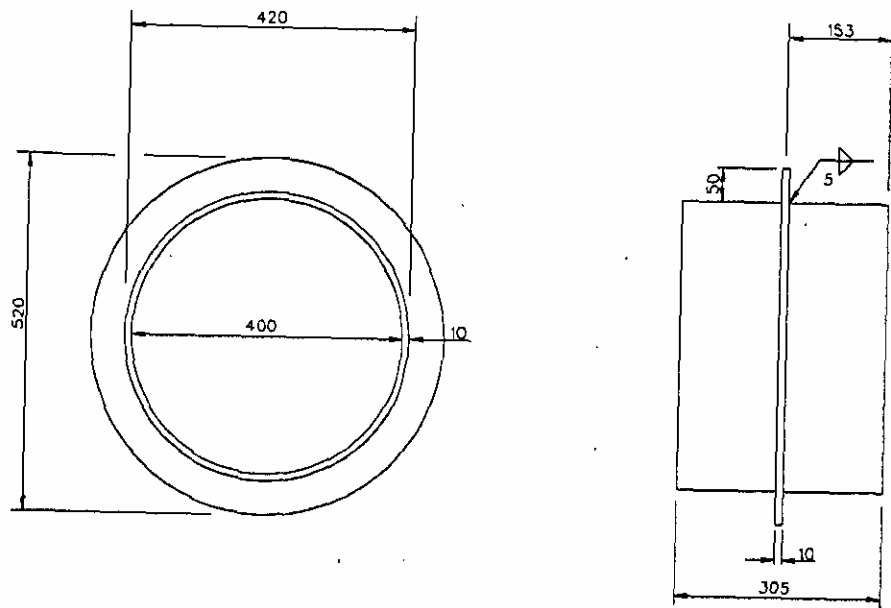


| HANGAR RODS | |
|-------------|----------|
| PIPE SIZE | ROD DIA. |
| 200mm | 20mm |
| 250mm | 25mm |
| 300mm | 25mm |

HANGER CONNECTION TO BRIDGE DECK

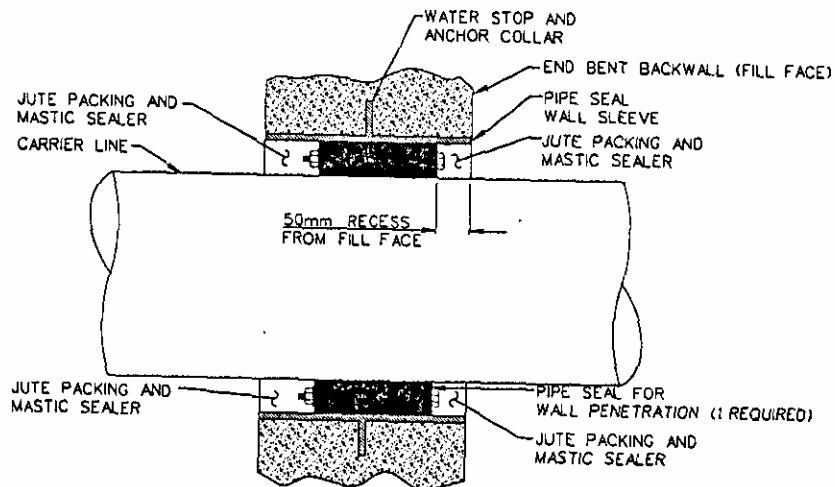


HANGER STRUT ANGLE



PIPE SEAL WALL SLEEVE DETAILS
(1 WALL SLEEVE REQUIRED)

NOTE: SLEEVE SHALL BE FABRICATED FROM ASTM A709M GRADE 250 AND GALVANIZED AFTER FABRICATION.



DETAIL OF PIPE SEAL FOR THRU WALL PENETRATION AT END BENT 1

| BILL OF PIPE MATERIALS | | |
|-----------------------------------|--------|--------|
| ITEM | LENGTH | WEIGHT |
| 300mm D.I.P.-MECHANICAL JOINT | 90.3 | METERS |
| 250mm D.I.P.-MECHANICAL JOINT | 91.8 | METERS |
| 200mm D.I.P.-MECHANICAL JOINT | 73.2 | METERS |
| 300mm MJ x 150mm FL OUTLET TEE | 4 | ea. |
| 300mm x 150mm MJ WYE BRANCH | 1 | ea. |
| 300mm x 250mm MJ REDUCER | 1 | ea. |
| 300mm x 1 1/4" MJ x MJ | 1 | ea. |
| 250mm MJ x 150mm FL OUTLET TEE | 5 | ea. |
| 250mm x 150mm MJ WYE BRANCH | 1 | ea. |
| 250mm x 200mm MJ REDUCER | 1 | ea. |
| 200mm MJ x 150mm FL OUTLET TEE | 4 | ea. |
| 200mm x 150mm MJ WYE BRANCH | 1 | ea. |
| 150mm x 150mm FL TEE | 13 | ea. |
| 150mm x 90° FL BEND | 13 | ea. |
| 150mm FL x PE D.I.P. 530mm LONG | 25 | ea. |
| 150mm FL x PE D.I.P. 1300mm LONG | 1 | ea. |
| 150mm MJ PLUG | 3 | ea. |
| 200mm MJ PLUG | 1 | ea. |
| 300mm CLEVIS HANGER | 21 | ea. |
| 250mm CLEVIS HANGER | 20 | ea. |
| 200mm CLEVIS HANGER | 16 | ea. |
| 22mm THREADED GALVANIZED ROD | 41 | ea. |
| 19mm THREADED GALVANIZED ROD | 16 | ea. |
| 874mm HANGER STRUT ANGLE | 24 | ea. |
| 792mm HANGER STRUT ANGLE | 5 | ea. |
| 460mm HANGER BRACE SUPPORT ANGLE | 24 | ea. |
| CONCRETE INSERT FOR 22mm ROD | 41 | ea. |
| CONCRETE INSERT FOR 19mm ROD | 16 | ea. |
| CONCRETE INSERT FOR SUPPORT ANGLE | 58 | ea. |

PROJECT NO. B-2612

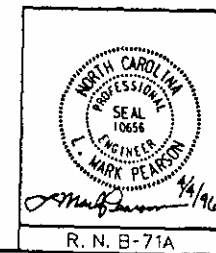
ROWAN-DAVIDSON COUNTY

STATION: 11+58.893 -L- SBL POT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

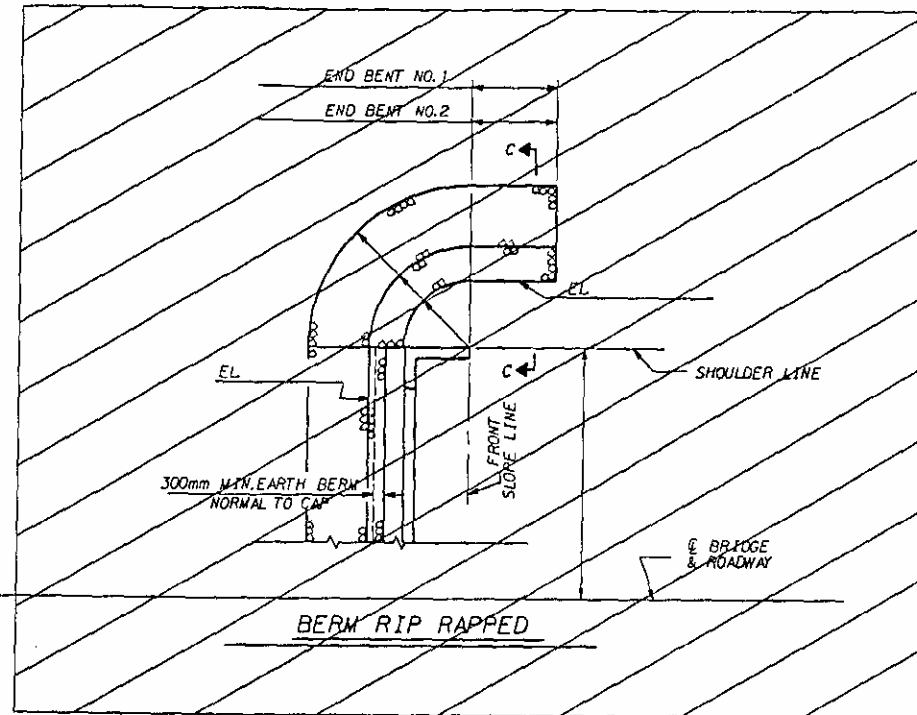
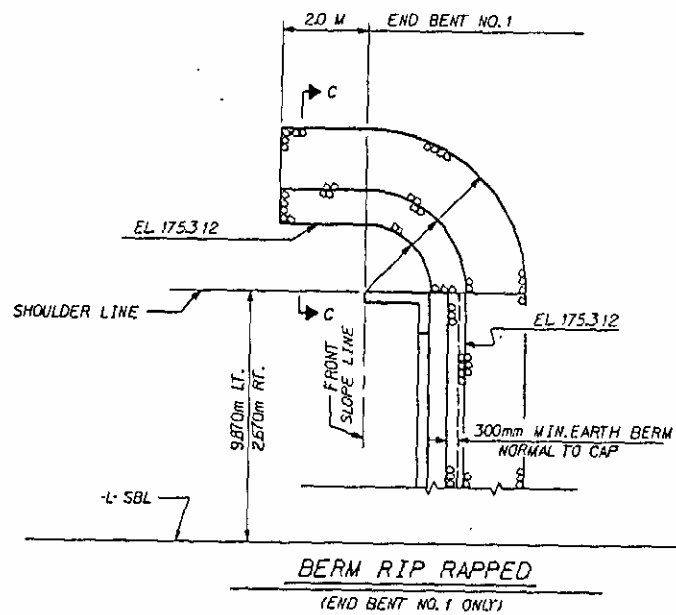
STRUCTURE DRAINAGE SYSTEM
(SPANS A THROUGH H)
TYPICAL SECTIONS AND DETAILS



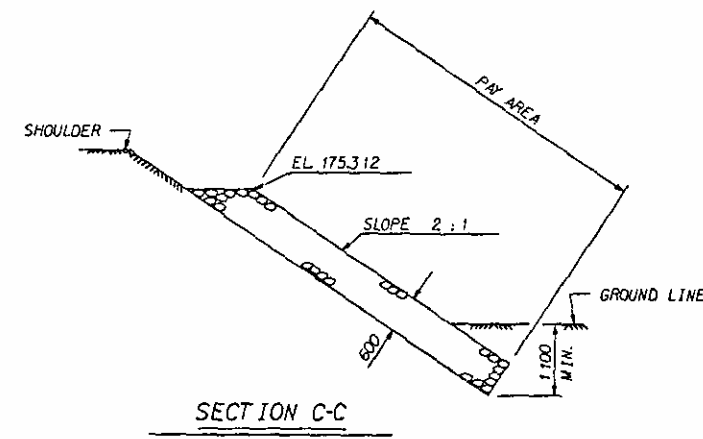
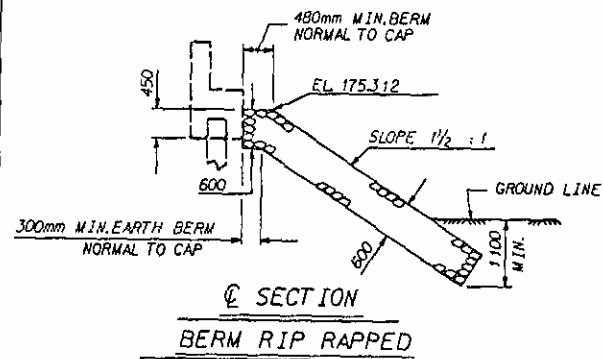
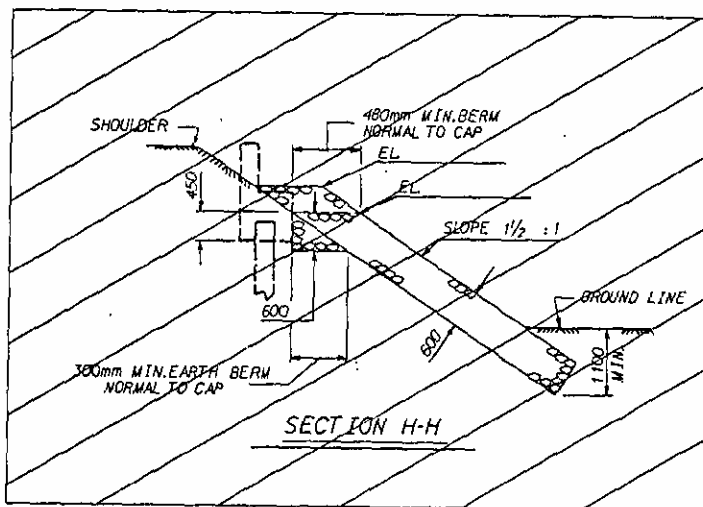
| REVISIONS | | | | | | SHEET NO. | |
|-----------|----|------|-----|----|------|------------|--|
| NO. | BY | DATE | NO. | BY | DATE | S-73 | |
| 1 | | | 3 | | | 104 SHEETS | |
| 2 | | | 4 | | | 79 | |

R. N. B-71A

DRAWN BY: BKJ DATE: 2/96
CHECKED BY: JMK DATE: 2/96
APPROVED BY: LMP DATE: 2/96



NOTES:
 FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.
 FOR RIP RAP LIMITS AT BENT 1, SEE GENERAL DRAWING.



| ESTIMATED QUANTITIES | | |
|----------------------------------|-------------|-----------|
| PLAIN RIP RAP CLASS 2 METRIC TON | | |
| BRIDGE AT | E.BT. NO. 1 | BT. NO. 1 |
| 11+58.893-L-REV. | 95 | 530* |

* RIP RAP AT BENT 1 WILL NOT BE INLAYED BUT DUMPED ALONG SHORE AS SHOWN ON SHEET B-1.

PROJECT NO. B-2612
 ROWAN - DAVIDSON COUNTY
 STATION: 11+58.893-L- SBL POT

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

NORTH CAROLINA PROFESSIONAL SEAL 10856 ENGINEER L. MARK PEARSON

R.N. B-72

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 RIP RAP DETAILS
 AT END BENT 1
 AND BENT 1

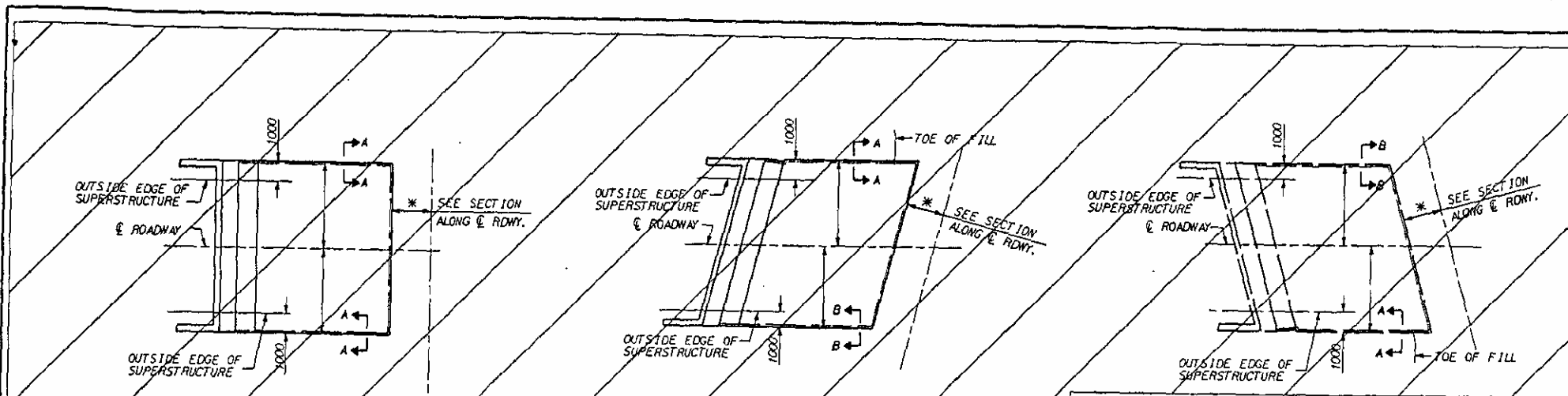
| REVISIONS | | | | | |
|-----------|----|------|-----|----|------|
| NO. | BY | DATE | NO. | BY | DATE |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. S-74
 TOTAL SHEETS 79

STD.No.RR2M SKEW 90°

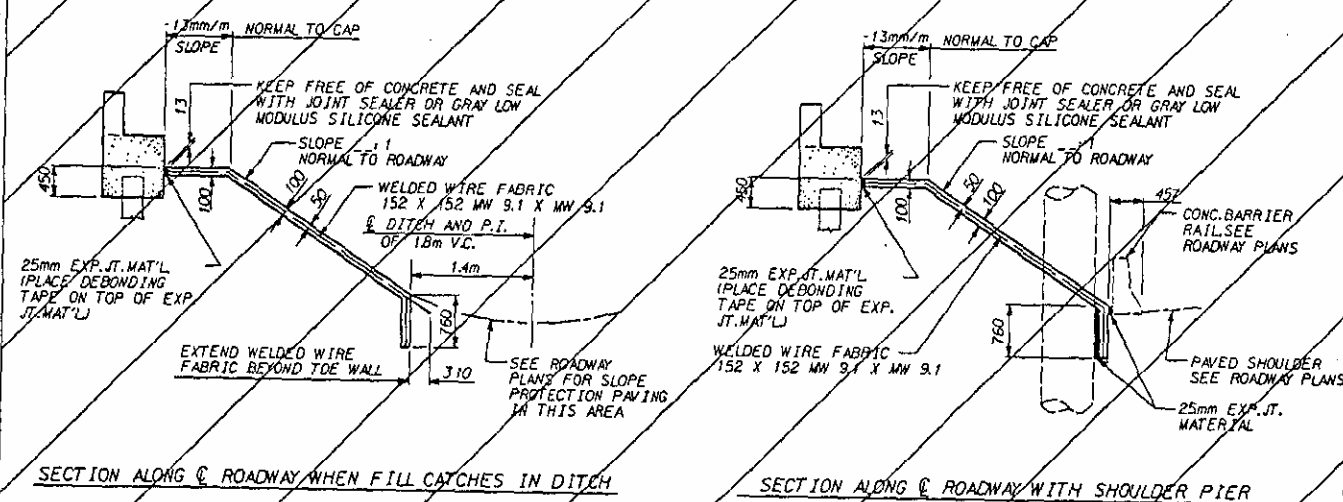
ASSEMBLED BY: JRS DATE: 2/96 SPECIAL
 CHECKED BY: LMP DATE: 2/96
 DRAWN BY: F.C. JONES DATE: 2/18/88 STANDARD
 CHECKED BY: A.R. BLISSETT DATE: 8/8/88

REV. 10/1/93 ARB (1) GRP

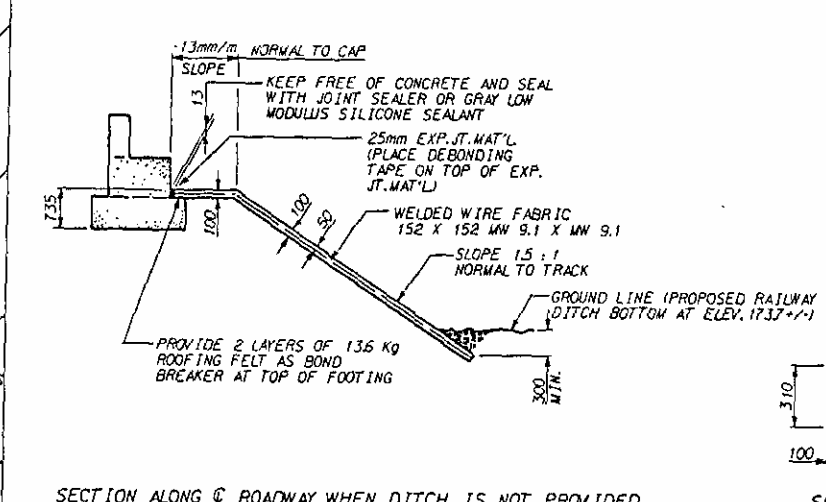


PLAN
END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION

NOTE: FOR PLAN VIEW, SEE SHEET 2 OF 2



DETAILS FOR ALTERNATE "A"



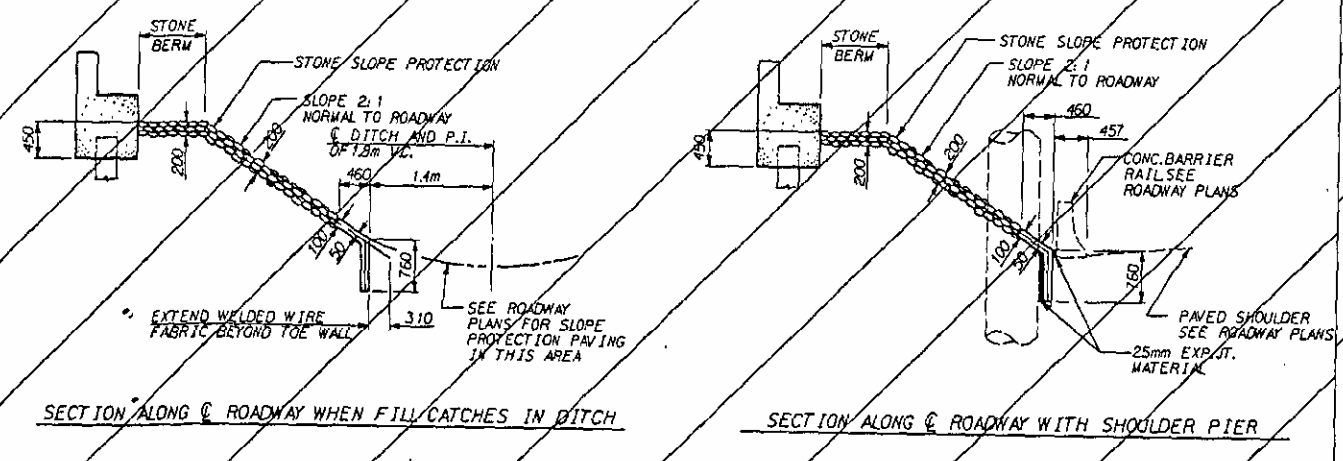
DETAILS FOR ALTERNATE "B"

GENERAL NOTES
SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. THE CONTRACTOR, AT HIS OPTION, MAY USE ALTERNATE "B" ONLY FOR HIGHWAY-OVER-HIGHWAY GRADE SEPARATIONS WITH AN END BENT SLOPE IN RURAL, UNPOPULATED AREAS. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS. FOR BERM WIDTH, SEE GENERAL DRAWING.

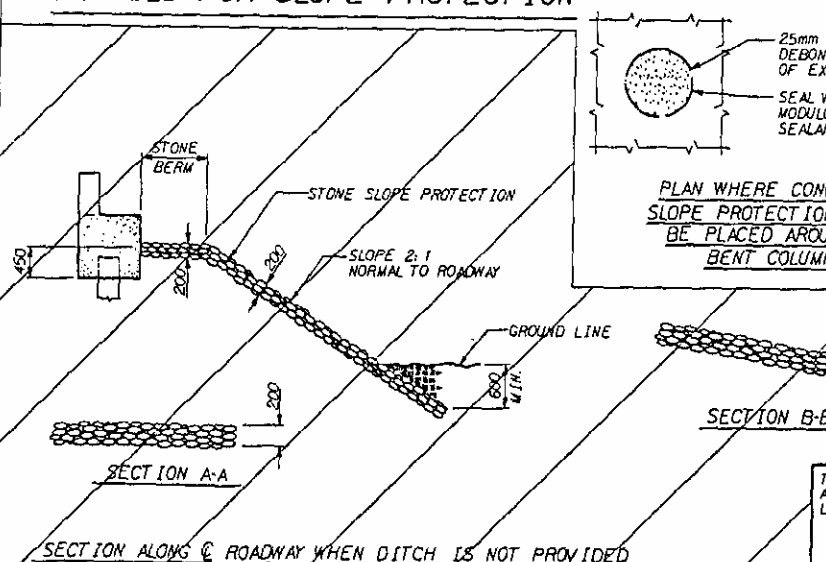
SLOPE PROTECTION
SLOPE PROTECTION SHALL CONSIST OF 100mm POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 152 X 152 MW 9.1 X MW 9.1 1524mm WIDE. ADJACENT RUNS OF WELDED WIRE FABRIC SHALL LAP AT LEAST 150mm. SLOPE PROTECTION SHALL BE POURED IN ALTERNATE 1220mm AND 1520mm STRIPS AS SHOWN IN THE POURING DETAIL. THE COST OF THE WELDED WIRE FABRIC SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE METER FOR SLOPE PROTECTION.

ALTERNATE "B"
ALTERNATE "B" SHALL CONSIST OF A COMBINATION CONCRETE SLAB AND STONE SLOPE PROTECTION. THE CONCRETE PORTIONS SHALL CONSIST OF PAVED STRIPS ALONG THE DITCH AS SHOWN IN THE DETAILS. 200mm OF STONE SHALL BE PLACED OVER THE REMAINING AREA SHOWN ON THE PLANS TO BE COVERED WITH SLOPE PROTECTION. CONCRETE SHALL BE CLASS "B". THE COST OF THE CONCRETE, STONE AND WELDED WIRE FABRIC 152 X 152 MW 9.1 X MW 9.1 SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE METER FOR SLOPE PROTECTION. SUBGRADING, STONE TYPE, STONE SIZE, AND HERBICIDE PROTECTION, SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE HERBICIDE TYPE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO APPLICATION.

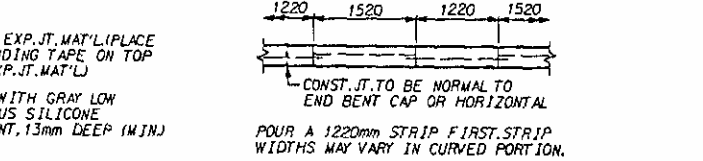
| BRIDGE @ STA 11+58.893 | 100 mm SLOPE PROTECTION SQUARE METERS | | WELDED WIRE FABRIC 152mm WIDE APPROX. L.M. |
|------------------------|---------------------------------------|------------|--|
| | END BENT 1 | END BENT 2 | |
| | | 387 | 282 |



DETAILS FOR ALTERNATE "A"



DETAILS FOR ALTERNATE "B"



POURING DETAIL
PROJECT NO. B-2612
ROWAN - DAVIDSON COUNTY
STATION: 11+58.893-L - SBL POT
SHEET 1 OF 2

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

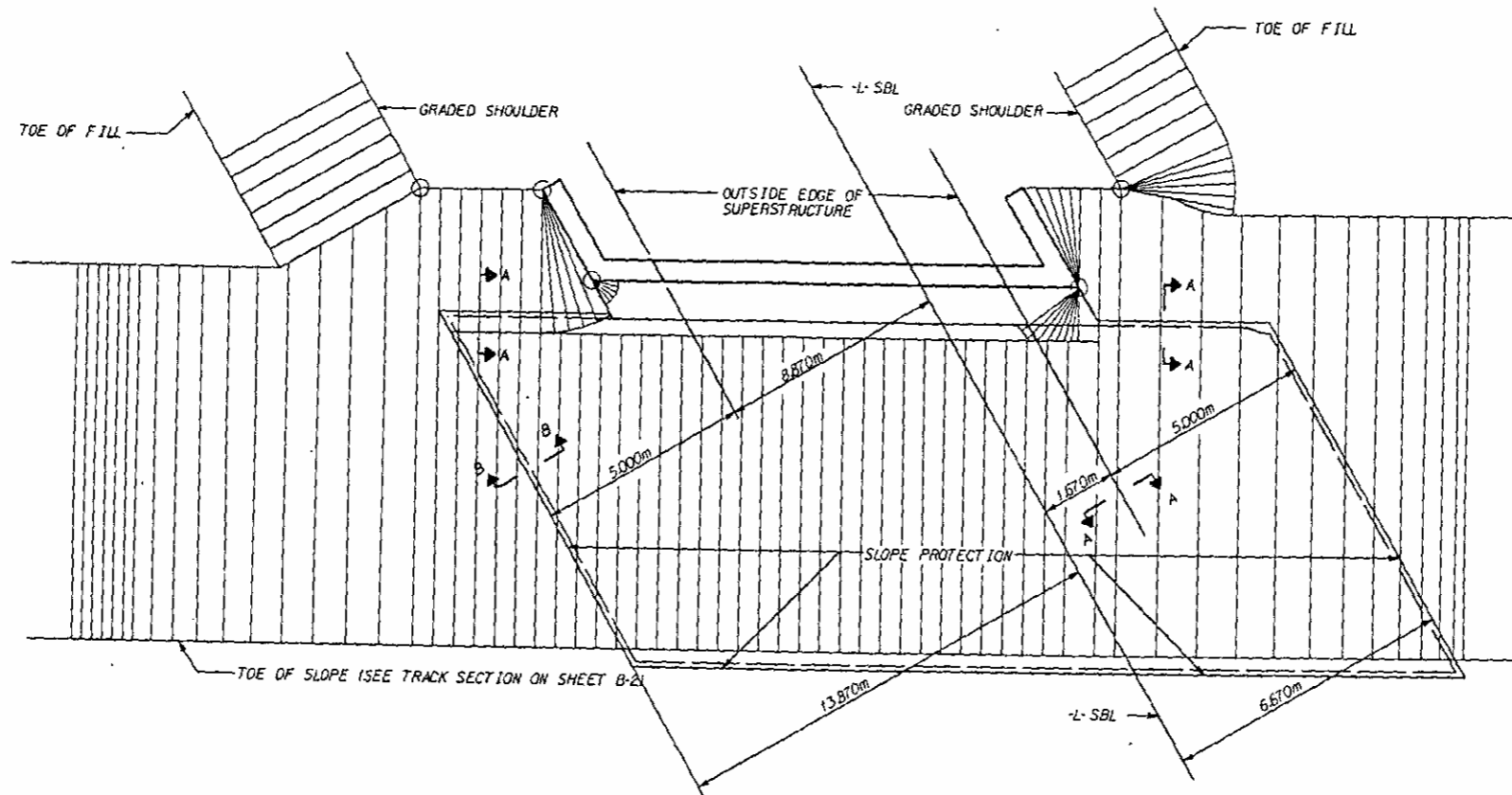


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

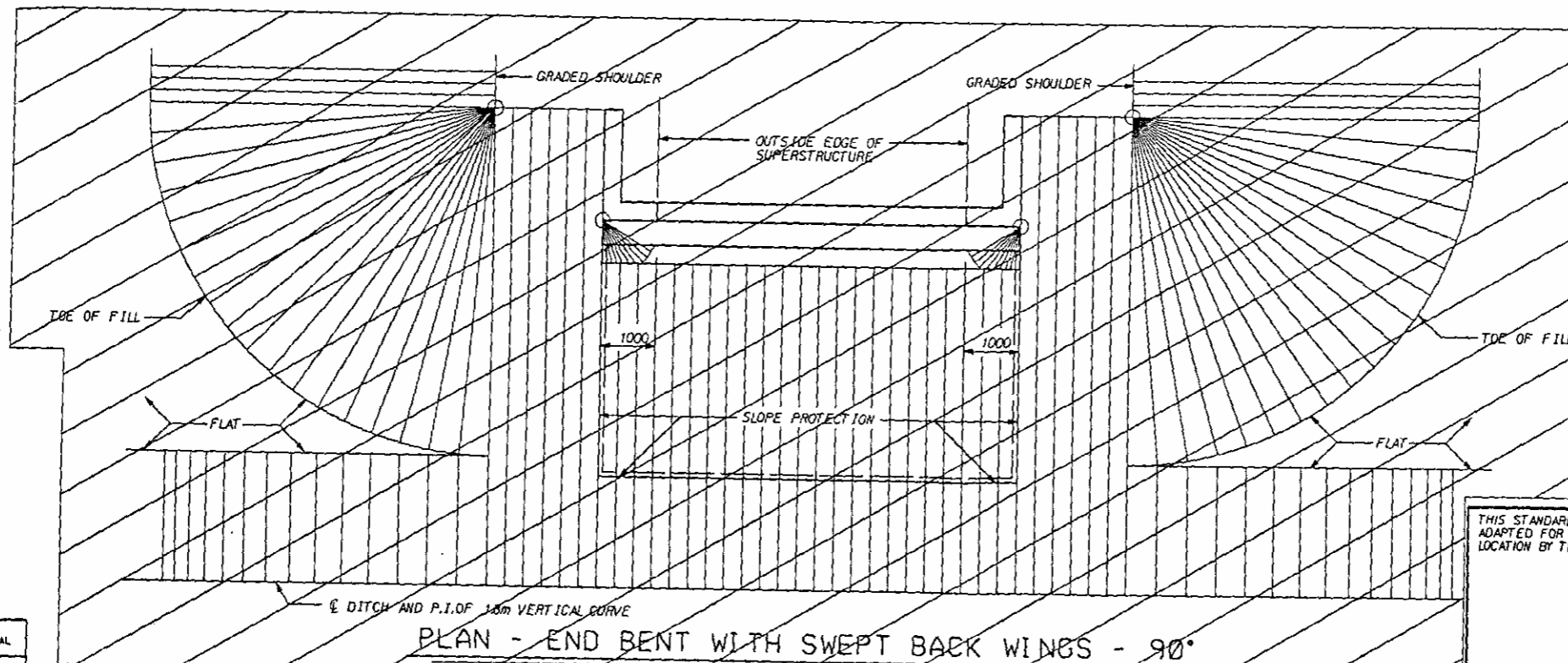
STANDARD SLOPE PROTECTION DETAILS END BENT 2

| REVISIONS | | SHEET NO. |
|-----------|------|-----------------|
| NO. | DATE | 5-75 |
| 1 | | TOTAL SHEETS 79 |
| 2 | | |

ASSEMBLED BY: _____ DATE: _____ SPECIAL
CHECKED BY: _____ DATE: _____ STANDARD
DRAWN BY: E.L. ROSE DATE: 5/12/92
CHECKED BY: G.B. PEREIRA DATE: 6/78/92
REV. 10-1-93 ELR LGP



PLAN - END BENT WITH SWEEP BACK WINGS - SKEWED
(END BENT 2 ONLY)



PLAN - END BENT WITH SWEEP BACK WINGS - 90°

PROJECT NO. B-2612
ROWAN - DAVIDSON COUNTY
STATION: 11+58.893 -L-SBL POT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
SLOPE PROTECTION
DETAILS

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

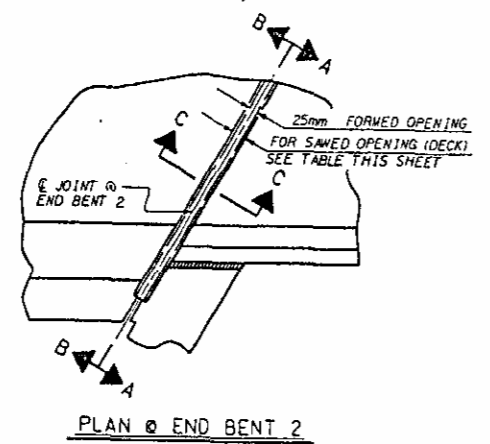
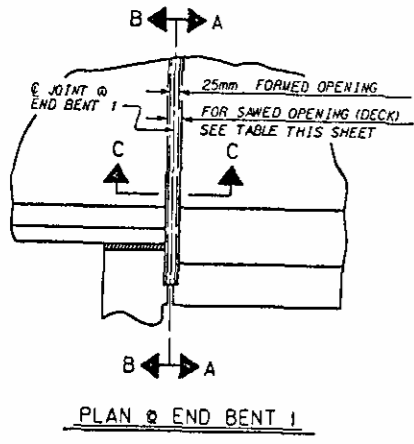


R.N. B-73A

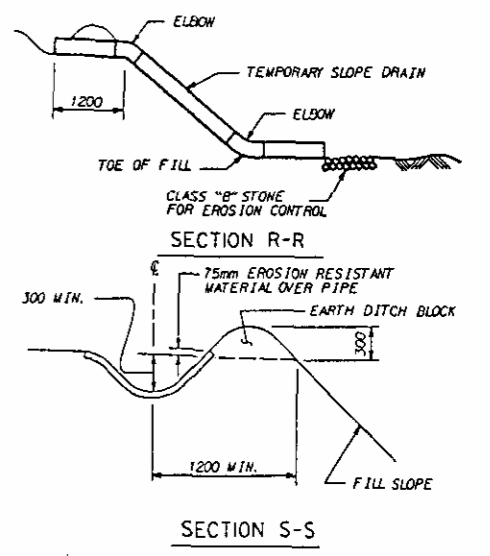
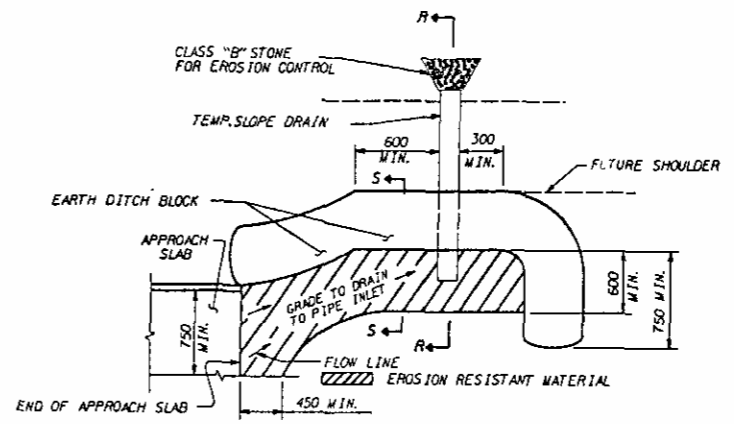
| REVISIONS | | | | | SHEET NO. |
|-----------|----|------|-----|------|--------------|
| NO. | BY | DATE | NO. | DATE | TOTAL SHEETS |
| 1 | | | 3 | | 79 |
| 2 | | | 4 | | |

| | | |
|------------------------|---------------|----------|
| ASSEMBLED BY: JRS | DATE: 2/96 | SPECIAL |
| CHECKED BY: LMP | DATE: 2/96 | |
| DRAWN BY: W.J. HARRIS | DATE: 10/4/88 | STANDARD |
| CHECKED BY: F.C. JONES | DATE: 10/5/88 | |

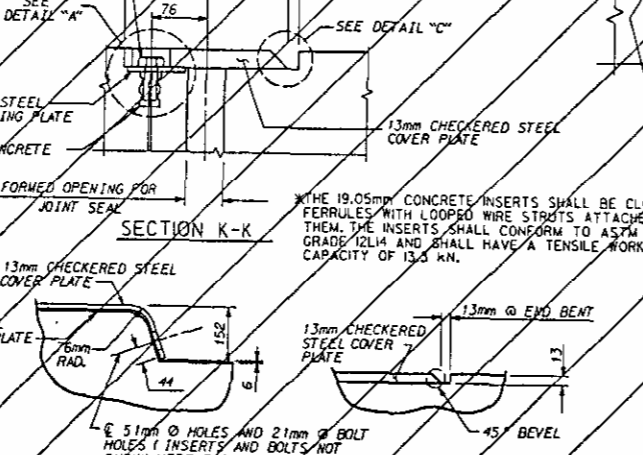
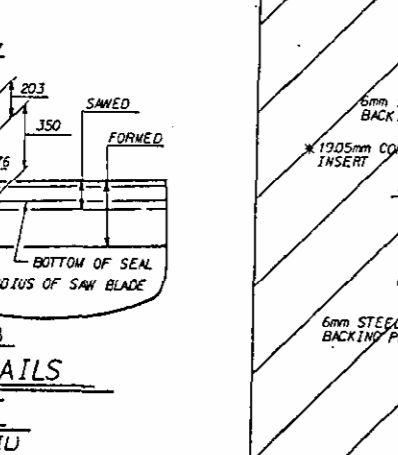
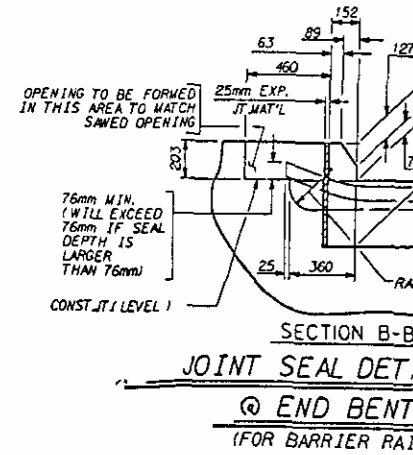
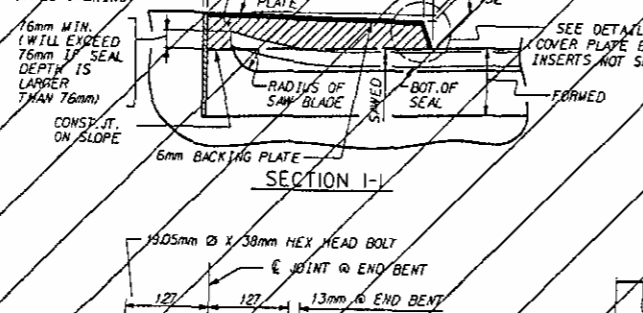
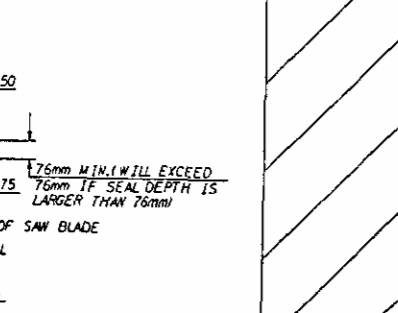
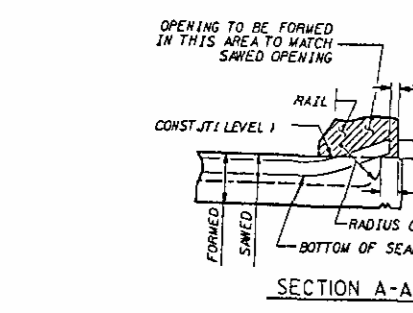
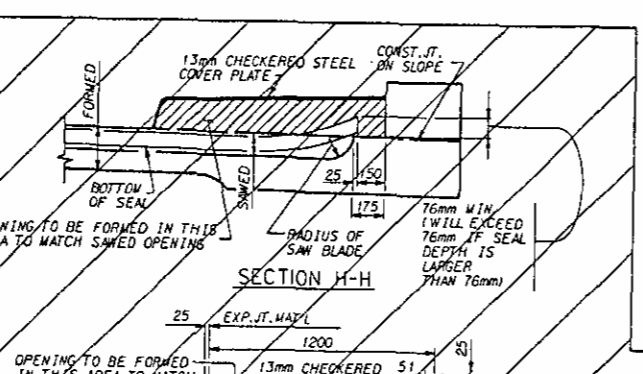
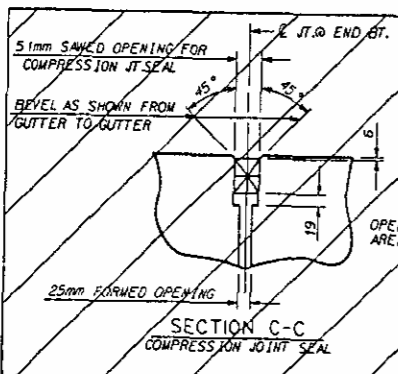
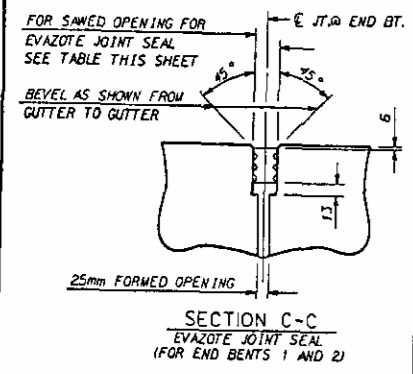
REV. 10-1-93 ELR 44 GRP *****SYSTEM*****
*****SERIAL***** *****SERIAL*****
*****SERIAL***** *****SERIAL*****



| SAWED OPENING FOR JOINT | |
|-------------------------|------------|
| TEMPERATURE (°C) | WIDTH (mm) |
| 38 | 38 |
| 16 | 54 |
| 0 | 65 |
| -6 | 70 |



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) BITUMINOUS PLANT MIX, TYPE 1 OR TYPE 2, MIN. 50mm DEPTH; 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 305mm IN DIAMETER.

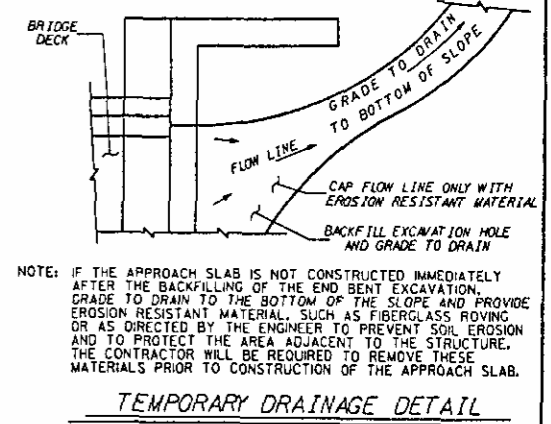
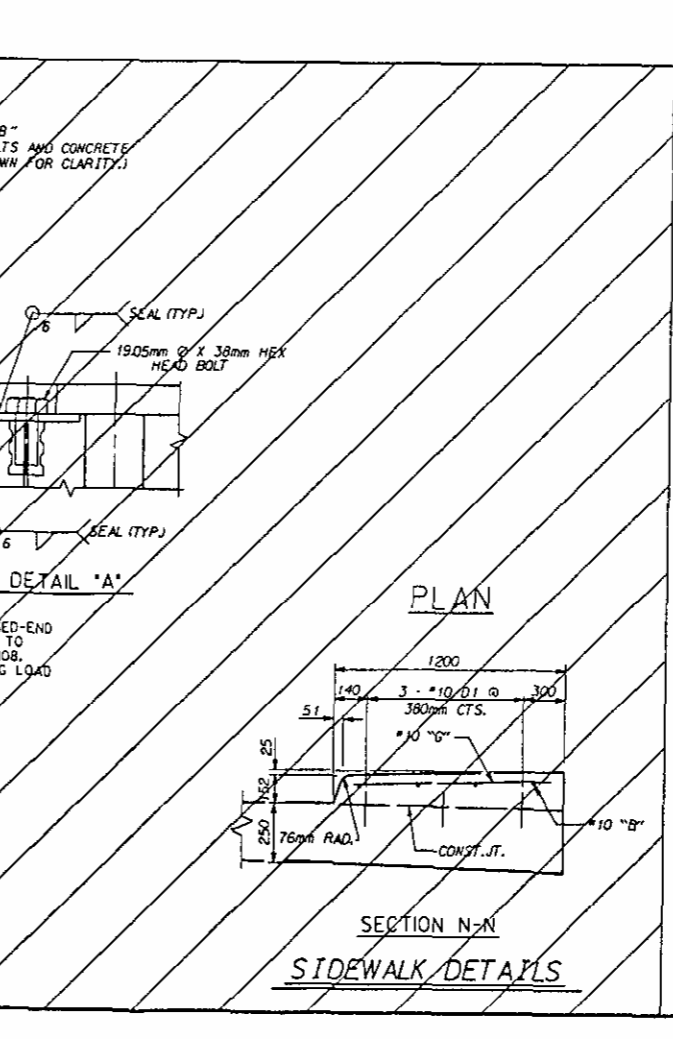


ASSEMBLED BY: JRS DATE: 2/95
 CHECKED BY: LMP DATE: 2/96
 SPECIAL

DRAWN BY: F. C. JONES DATE: 11/28/88
 CHECKED BY: A. R. BISSETTE DATE: 11/28/88
 STANDARD

DETAIL "A"
 DETAIL "B"
 DETAIL "C"

DETAIL "A"
 DETAIL "B"
 DETAIL "C"



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L-SBL POT
 SHEET 2 OF 2

THIS STANDARD DRAWING REVIEWED AND ADAPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED.

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

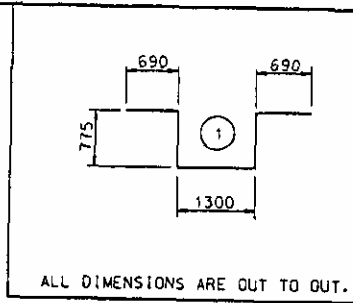
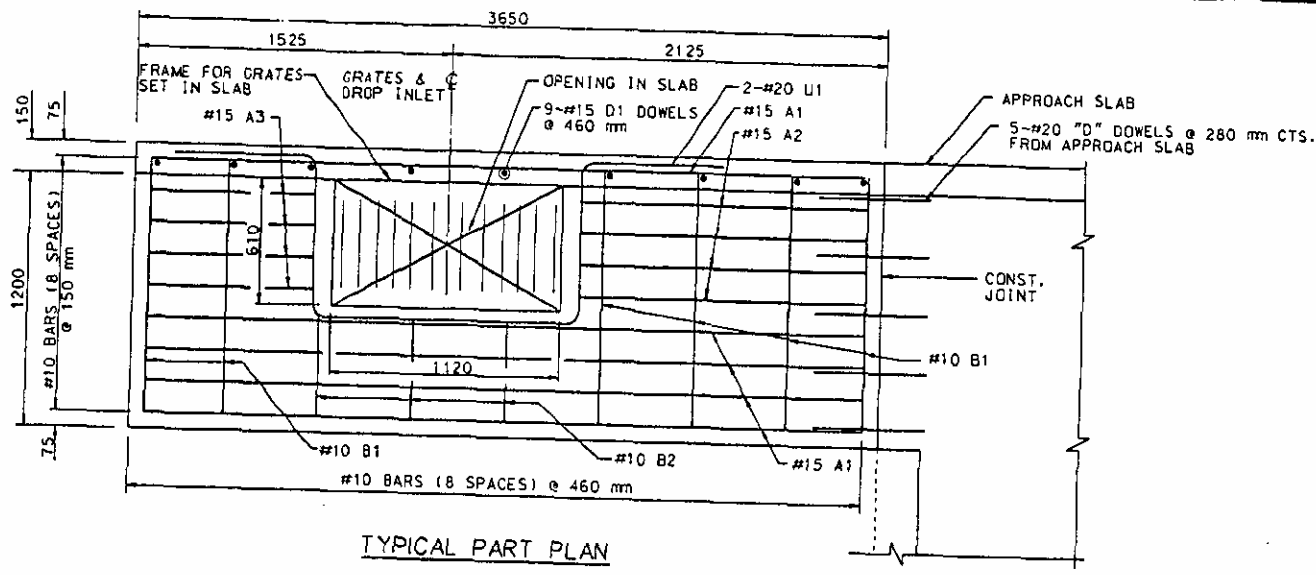
STANDARD
 BRIDGE APPROACH
 SLAB DETAILS

DECEMBER 1988

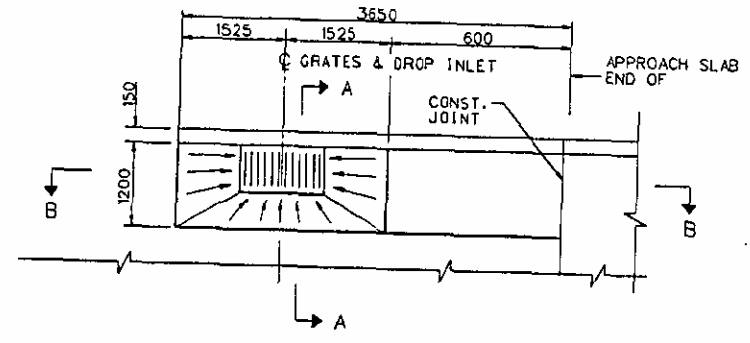
R.N. B-75

| REVISIONS | | SHEET NO. | |
|-----------|------|-----------|------|
| NO. | DATE | NO. | DATE |
| 1 | | 3 | |
| 2 | | 4 | |

SHEET NO. 5-78
 TOTAL SHEETS 79

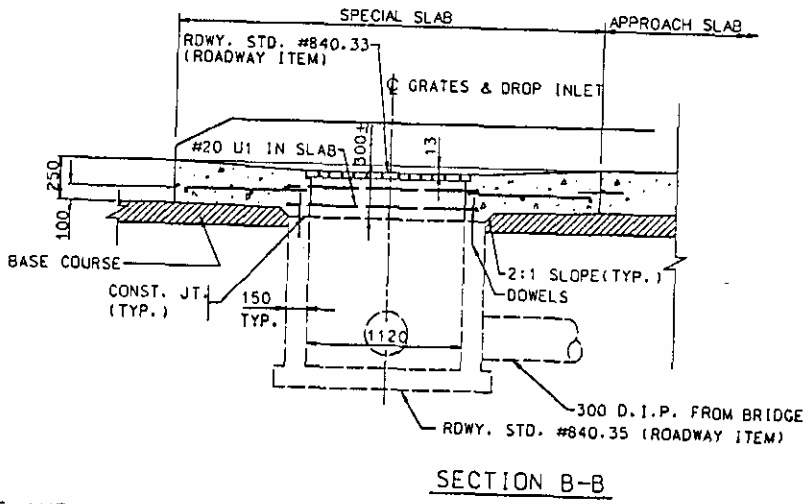
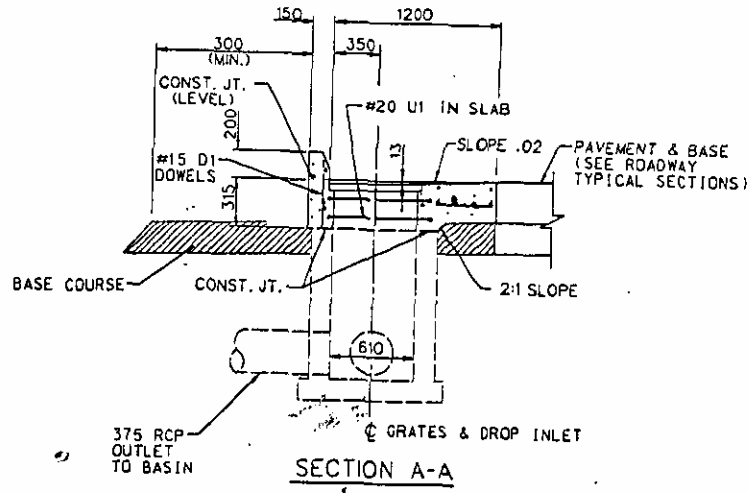


| BILL OF MATERIAL | | | | | |
|---------------------------|------|------|--------|--------|-------|
| SPECIAL SLAB | | | | | |
| BAR NO. | SIZE | TYPE | LENGTH | WEIGHT | |
| A1 | 5 | 15 | STR | 3.500 | 28 |
| A2 | 4 | 15 | STR | 1.400 | 9 |
| A3 | 4 | 15 | STR | 800 | 5 |
| B1 | 6 | 10 | STR | 1.200 | 6 |
| B2 | 3 | 10 | STR | 500 | 1 |
| D1 | 9 | 15 | STR | 330 | 5 |
| U1 | 1 | 20 | I | 4.200 | 10 |
| REINFORCING STEEL | | | | | 64 kg |
| CLASS AA CONCRETE - CU. m | | | | | 1.1 |



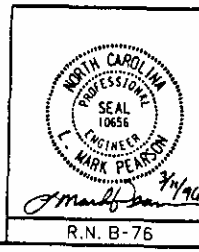
- NOTES:**
- SPECIAL DRAINAGE SLAB SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS FOR BRIDGE APPROACH SLABS IN THE STANDARD SPECIFICATIONS.
 - SPECIAL APPROACH DRAINAGE SLAB SHALL BE INCLUDED FOR PAYMENT IN BRIDGE APPROACH SLABS. STA. 11+58.893-L-SBL... LUMP SUM. SUCH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO CONSTRUCT THE SPECIAL APPROACH SLAB IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. NO SEPARATE PAYMENT WILL BE MADE FOR SPECIAL APPROACH DRAINAGE SLAB.
 - THE STANDARD TRAFFIC BEARING FRAMES AND ANGLED VANE GRATES (ROADWAY. STD DWG 840.33) AND THE STANDARD TRAFFIC BEARING DROP INLET (ROADWAY STD. DWG 840.35) ARE NOT INCLUDED FOR PAYMENT WITH THE SPECIAL APPROACH DRAINAGE SLAB BUT ARE INCLUDED IN THE ROADWAY ITEMS.

TYPICAL PART PLAN SHOWING SLOPE
SHOWING SLOPE @ 13 mm DEPRESSION



DETAIL OF GRATE, FRAME AND OPENING FOR DROP INLETS IN SPECIAL DRAINAGE SLAB

PROJECT NO. B-2612
 ROWAN-DAVIDSON COUNTY
 STATION: 11+58.893 -L- SBL POT



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SPECIAL
 APPROACH DRAINAGE SLAB
 TYPICAL SECTION
 AND DETAILS

| REVISIONS | | | | SHEET NO. |
|-----------|----|------|-----|-----------|
| NO. | BY | DATE | NO. | DATE |
| 1 | | | 3 | |
| 2 | | | 4 | |

SHEET NO. 5-79

12/20/94 03/11/96
 11/22/94 02/20/95
 11/22/94 02/20/95

DRAWN BY: B. JOHNSON DATE: 01-29-96
 CHECKED BY: M. PEARSON DATE: 01-29-96

R.N. B-76

STANDARD NOTES

DESIGN DATA:

| | | |
|--|-------|------------------------|
| SPECIFICATIONS | ----- | A.A.S.H.T.O. (CURRENT) |
| LIVE LOAD | ----- | SEE PLANS |
| IMPACT ALLOWANCE | ----- | SEE A.A.S.H.T.O. |
| STRESS IN EXTREME FIBER OF | | |
| STRUCTURAL STEEL - AASHTO M270 GRADE 250 | -- | 140 MPa |
| - AASHTO M270 GRADE 345W | -- | 190 MPa |
| - AASHTO M270 GRADE 345 | -- | 190 MPa |
| REINFORCING STEEL IN TENSION | | |
| GRADE 400 | -- | 165 MPa |
| CONCRETE IN COMPRESSION | ----- | 8 MPa |
| CONCRETE IN SHEAR | ----- | SEE A.A.S.H.T.O. |
| STRUCTURAL TIMBER - TREATED OR | | |
| UNTREATED - EXTREME FIBER STRESS | ----- | 12 MPa |
| COMPRESSION PERPENDICULAR TO GRAIN | ----- | 2.6 MPa |
| OF TIMBER | | |
| EQUIVALENT FLUID PRESSURE OF EARTH | ----- | 480 kg/m ² |
| | | (MINIMUM) |

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 1995 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 19mm WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 38mm RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 6mm FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 6mm RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 300mm INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER. FIVE SETS OF DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS. WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 22mm Ø SHEAR STUDS FOR THE 19mm Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 22mm Ø STUDS FOR 4 - 19mm Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 22mm Ø STUDS ALONG THE BEAM AS SHOWN FOR 19mm Ø STUDS BASED ON THE RATIO OF 3 - 22mm Ø STUDS FOR 4 - 19mm Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 610mm.

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 8mm IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 50mm OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 2mm OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.



JANUARY, 1990

STD. NO. SNM