| | STATE | PROJECT NO. | PCN | SECTION NO. | SHEET NO. |
|---|---|---|---|---|---|
| | ND | SS-8-018(088)064 | 21746 | 1 | 1 |

# JOB # 7
# NORTH DAKOTA
# DEPARTMENT OF TRANSPORTATION

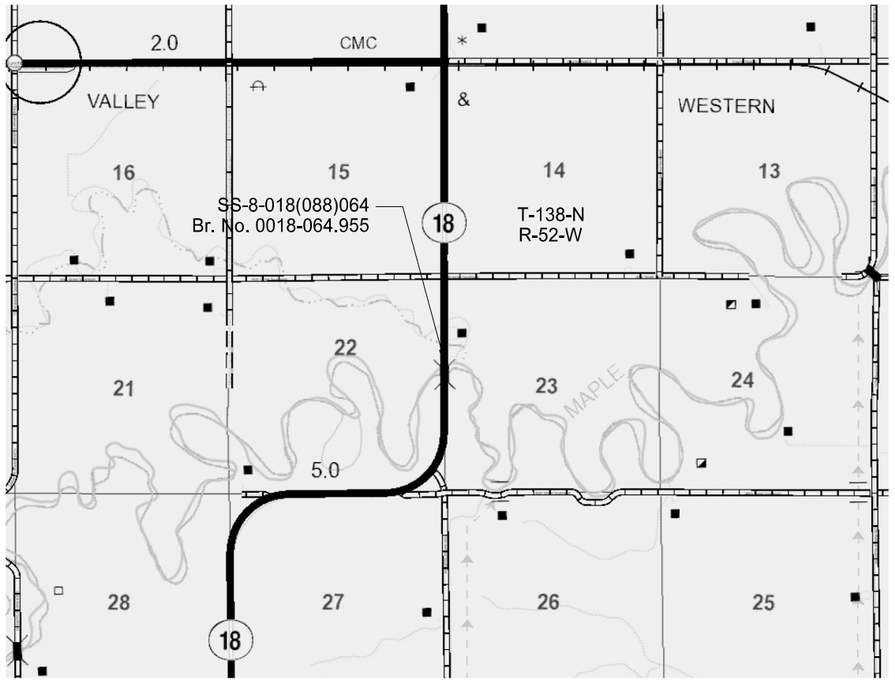
SS-8-018(088)064

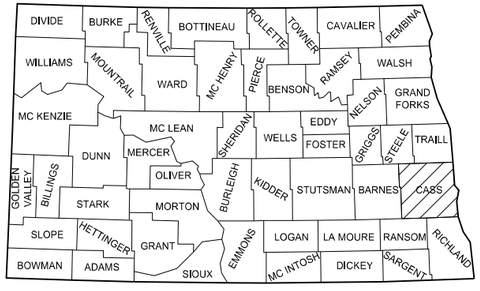
GOVERNING SPECIFICATIONS:
2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

| PROJECT NUMBER \ DESCRIPTION | NET MILES | GROSS MILES |
|---|---|---|
| SS-8-018(088)064 | N/A | N/A |

Cass County
9 Miles North of Jct ND 46

Slide Repair




STATE COUNTY MAP

DESIGNER

DESIGNER

DESIGNER

DESIGNER

ND DEPARTMENT OF TRANSPORTATION
for OFFICE OF PROJECT DEVELOPMENT

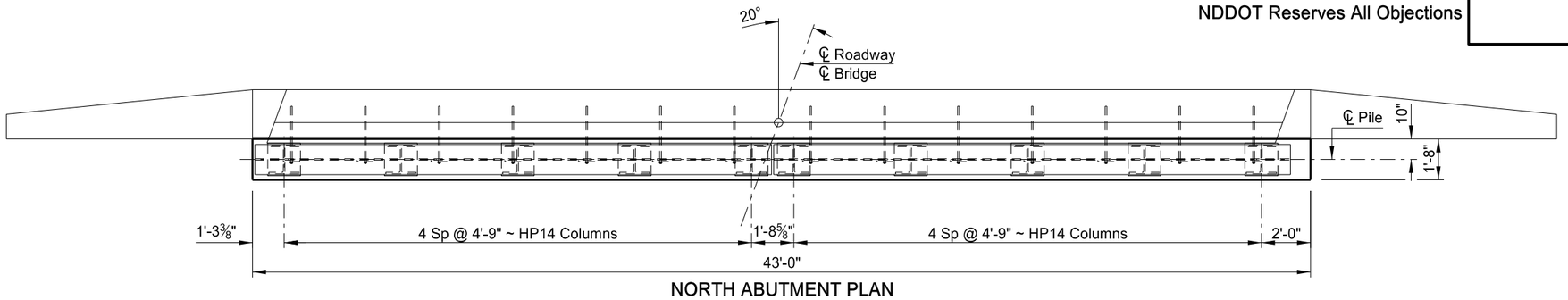
NDDOT DIV-DIST OR CONSULTANT FIRM

REGISTERED PROFESSIONAL ENGINEER
NORTH DAKOTA

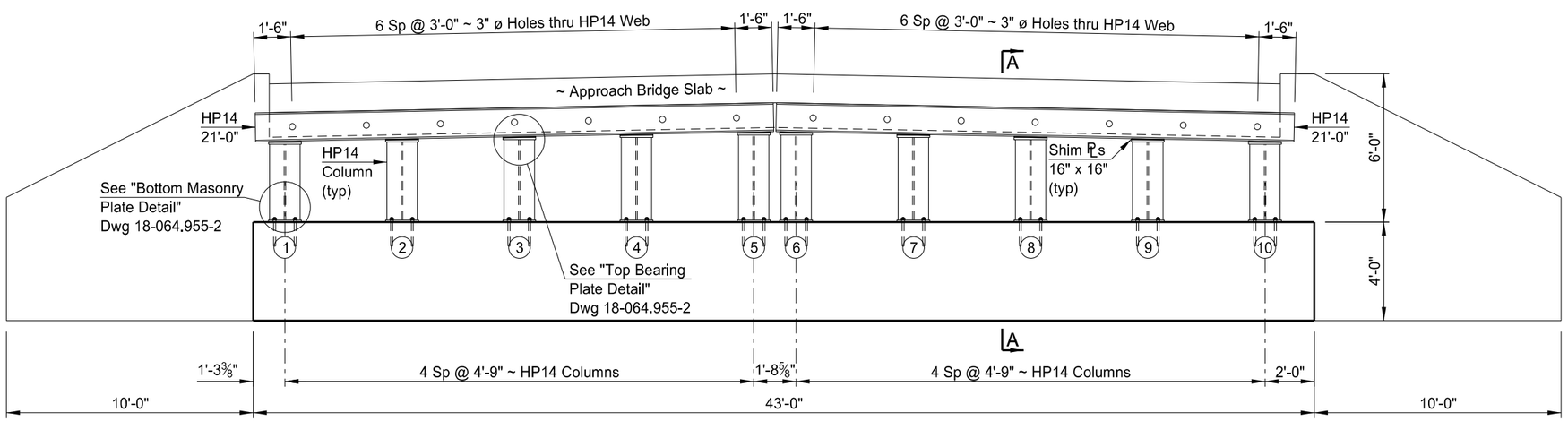
5/30/2018 10:02:25 AM ajderman R:\project\80018064.088\design\Sheets\001TS_Title_Sheet.dgn

23 U.S.C. 409
NDDOT Reserves All Objections

| STATE | PROJECT NUMBER | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | SS-8-018(088)064 | 170 | 1 |

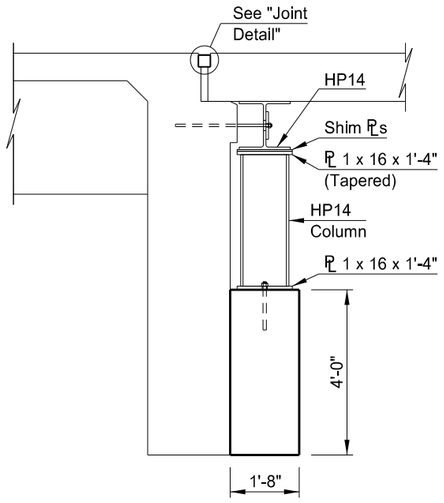



NORTH ABUTMENT PLAN




(FACING SOUTH)

NORTH ABUTMENT ELEVATION




A-A

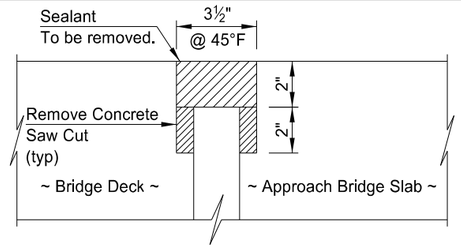
| H-PILE | * LENGTH |
|---|---|
| 1, 10 | 3'-0⅞" |
| 2, 9 | 3'-2" |
| 3, 8 | 3'-3" |
| 4, 7 | 3'-4⅛" |
| 5, 6 | 3'-5¼" |

* Field verify H-Pile lengths after lifting approach bridge slab.

## NOTES:

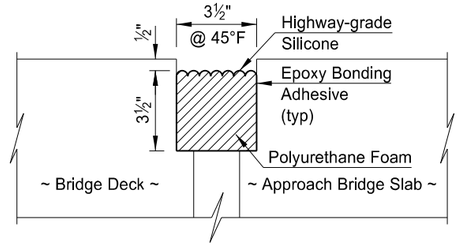
ORDER OF WORK:
1. Drill and epoxy 5B100 and 5A101 bars and install 6A100 bars.
2. Cast concrete bearing wall with 1" ø swedged anchor bolts.
3. Jack the HP14 underneath the approach slab and lift slab so that it is higher than the bridge deck at the joint.
4. Set HP14 columns with bottom masonry plate and top bearing plate.
5. Install shim plates and tack weld to top bearing plate.
6. Drill and epoxy ¾" ø anchor bolts.
7. Install ¾" plate washers and nuts.
8. Install polyurethane foam joint seal.

JOINT MODIFICATION: Remove all existing sealant, joint filler and foreign material from the joint and sandblast clean. Use a pre-compressed polymer impregnated polyurethane foam joint seal coated with a highway-grade silicone surface providing a permanent weather tight seal. Use a compatible two-component epoxy adhesive on the joint seal for bonding. The joint seal may be Wabo FS Bridge Seal (Watson Bowman Acme); BEJS Bridge Expansion Joint System (Emseal); Sealtite 50N (Schul International); Iso-Flex Silfast XL (LymTal International), or an approved equal. Prepare existing joint opening and install the joint seal according to the manufacturer's recommendations. The estimated quantity of joint seal modification includes an additional 6 inches of joint seal at each end to be turned up vertically matching the inside face of the barrier.



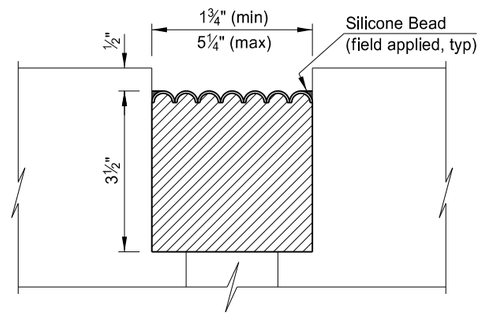

(SHOWING EXISTING)

JOINT DETAIL




(SHOWING NEW)

JOINT DETAIL




POLYURETHANE FOAM JOINT SEAL

This document was originally issued and sealed by Brian W. Raschke, Registration Number PE 4361, on 10/23/18 and the original document is stored at the North Dakota Department of Transportation

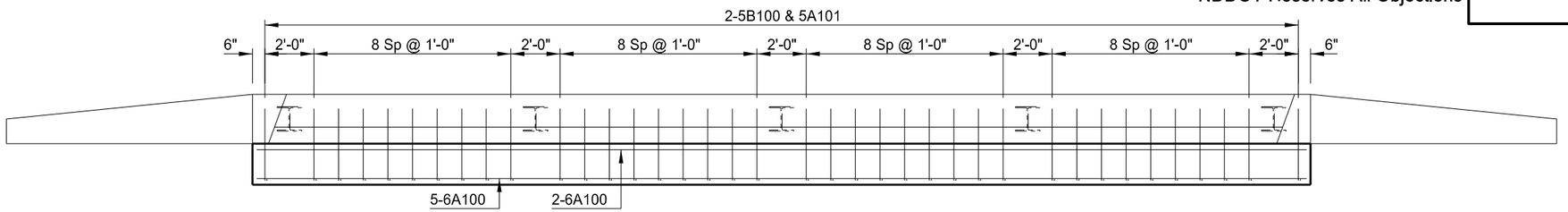
MAPLE RIVER

(SHOWING DIMENSIONS)

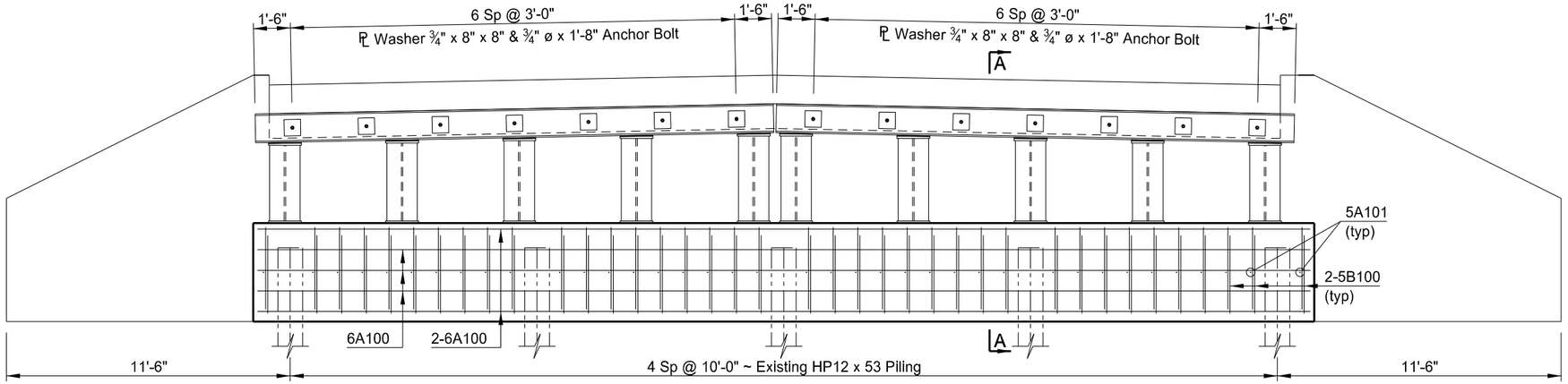
APPROACH BRIDGE SLAB SHORING & JOINT MODIFICATION

23 U.S.C. 409
NDDOT Reserves All Objections

| STATE | PROJECT NUMBER | SECTION NO. | SHEET NO. |
|---|---|---|---|
| ND | SS-8-018(088)064 | 170 | 2 |

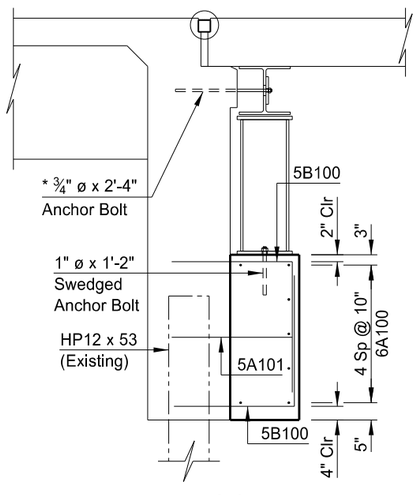



NORTH ABUTMENT PLAN

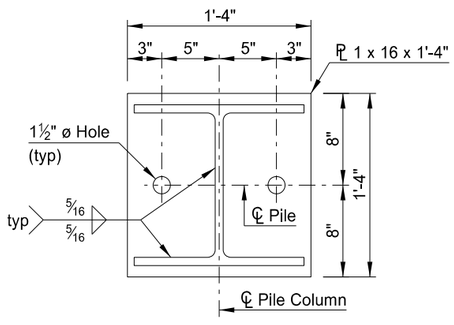



(FACING SOUTH)

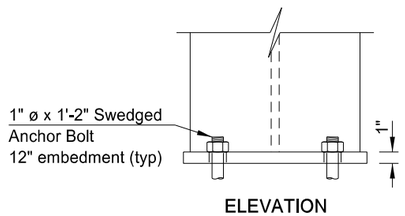
NORTH ABUTMENT ELEVATION




A-A

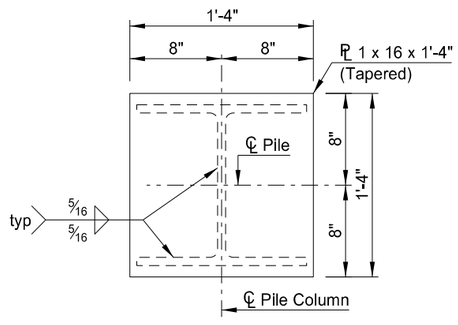



PLAN

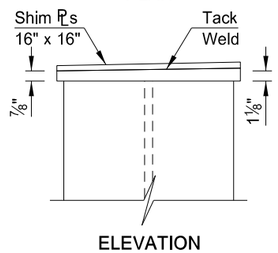



ELEVATION

BOTTOM MASONRY PLATE DETAIL




PLAN




ELEVATION

TOP BEARING PLATE DETAIL

| BAR LIST | | | |
|---|---|---|---|
| SIZE | MARK | NO. | LENGTH |
| 6 | A100 | 7 | 42'-8" |
| 5 | A101 | 38 | * 2'-11" |
| | | | |
| 5 | B100 | 76 | 6'-2" |

| ESTIMATED MATERIAL QUANTITIES | |
|---|---|
| REINFORCING STEEL (LBS) | CONCRETE (CY) |
| 1,053 | 10.6 |
| STRUCTURAL STEEL (LBS) | JOINT SEAL (LF) |
| 9,800 | 39 |

## NOTES:

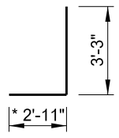
Provide Class AE-3 concrete that meets the requirements of Section 802 and Grade 60 reinforcing steel that meets the requirements of Section 612.

Prepare existing concrete surface that will have concrete placed against it with a bush hammer to produce a clean, rough surface with a minimum amplitude of ¼".

Install the 5B100 and 5A101 bars and ¾" ø anchor bolts according to the manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage and that meets the requirements of Section 806.02.

The dimensions shown in the "Bent Bar Detail" are out to out.

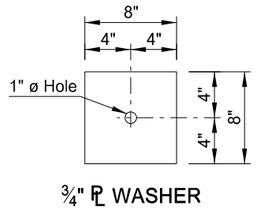
The estimated structural steel quantity is assuming HP14 x 102 is being used. Any size of HP14 may be used.




B100

BENT BAR DETAIL

* Length may vary depending on manufacturer's recommendations for anchorage. Provide a minimum anchorage length of 15 inches.




¾" ℄ WASHER

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MAPLE RIVER

(SHOWING REINFORCING)

APPROACH BRIDGE SLAB SHORING

# ND DEPARTMENT OF TRANSPORTATION

## ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 10 BIDDER ENGINEERS ESTIMATE c.c. CHECK RANK 00 BID PRICE | AMOUNT | BIDDER MAYO CONSTRUCTION CO INC CAVALIER, ND c.c. BOND RANK 01 BID PRICE | AMOUNT | BIDDER MARK SAND & GRAVEL COMPANY FERGUS FALLS, MN c.c. BOND RANK 02 BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 103 | CONTRACT BOND | L SUM | 1.000 | 25200.000 | 25200.00 | 17700.000 | 17700.00 | 100.000 | 100.00 |
| 107 | RAILWAY PROTECTION INSURANCE-3 LOCATIONS | L SUM | 1.000 | 2000.000 | 2000.00 | 3200.000 | 3200.00 | 1000.000 | 1000.00 |
| 202 | REMOVAL OF CONCRETE | L SUM | 1.000 | 5000.000 | 5000.00 | 5000.000 | 5000.00 | 3000.000 | 3000.00 |
| 202 | REMOVAL OF CONCRETE PAVEMENT | SY | 1250.000 | 5.000 | 6250.00 | 6.000 | 7500.00 | 6.000 | 7500.00 |
| 203 | COMMON EXCAVATION-TYPE A | CY | 6286.000 | 2.500 | 15715.00 | 1.750 | 11005.00 | 1.750 | 11005.00 |
| 203 | TOPSOIL | CY | 7000.000 | 3.000 | 21000.00 | 1.000 | 7000.00 | 1.000 | 7000.00 |
| 203 | ROADWAY OBLITERATION | LF | 360.000 | 1500.000 | 5400.000.00 | 3.000 | 1080.00 | 3.000 | 1080.00 |
| 203 | GUARDRAIL EMBANKMENT-TYPE C | EA | 7.000 | 1300.000 | 9100.00 | 2000.000 | 14000.00 | 2000.000 | 14000.00 |
| 210 | CLASS 2 EXCAVATION | L SUM | 1.000 | 2000.000 | 2000.00 | 500.000 | 500.00 | 500.000 | 500.00 |
| 210 | SELECT BACKFILL | TON | 40.000 | 12.000 | 480.00 | 19.000 | 760.00 | 19.000 | 760.00 |
| 210 | FOUNDATION PREPARATION | EA | 1.000 | 3500.000 | 3500.00 | 5000.000 | 5000.00 | 5000.000 | 5000.00 |
| 210 | FOUNDATION FILL | CY | 110.000 | 20.000 | 2200.00 | 28.000 | 3080.00 | 28.000 | 3080.00 |
| 216 | WATER | M GAL | 334.000 | 8.000 | 2672.00 | 15.000 | 5010.00 | 10.000 | 3340.00 |
| 306 | AGGREGATE CL 3M | TON | 75903.000 | 5.500 | 417466.50 | 6.270 | 475911.81 | 9.000 | 683127.00 |
| 306 | BLENDED BASE COURSE | SY | 400163.000 | 1.000 | 400163.00 | .734 | 293719.64 | .900 | 360146.70 |
| 306 | REMOVE AND RELAY BLENDED BASE COURSE | SY | 2337.800 | 3.000 | 7013.40 | 1.264 | 2954.979 | 1.000 | 2337.80 |
| 401 | MC70 OR 250 LIQUID ASPHALT | GAL | 105669.000 | 1.050 | 110952.45 | 1.300 | 137369.70 | 1.400 | 147936.60 |
| 401 | SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT | GAL | 5969.000 | .950 | 5671.40 | .950 | 5671.40 | .800 | 4775.20 |
| 401 | BLOTTER MATERIAL CL 44 | TON | 332.000 | 18.010 | 5979.32 | 15.420 | 5119.44 | 10.000 | 3320.00 |
| 410 | HOT BITUMINOUS PAVEMENT SUPERPAVE | TON | 10351.700 | 14.000 | 144923.80 | 15.630 | 161797.07 | 16.000 | 165627.20 |
| 410 | PG 58-28 ASPHALT CEMENT | TON | 373.600 | 150.000 | 56040.00 | 197.860 | 73920.496 | 140.000 | 52304.00 |
| 410 | PG 58-34 ASPHALT CEMENT | TON | 267.500 | 225.000 | 60187.50 | 221.020 | 59122.85 | 190.000 | 50825.00 |
| 410 | TESTING | TON | 10351.700 | .250 | 2587.925 | .190 | 1966.823 | 1.400 | 1449.380 |
| 410 | CORED SAMPLE | EA | 60.000 | 12.000 | 720.00 | 12.350 | 741.00 | 15.000 | 900.00 |
| 411 | MILLING PAVEMENT SURFACE | SY | 8445.000 | 1.000 | 8445.00 | 1.150 | 9711.75 | 1.000 | 8445.00 |
| 550 | BRIDGE APPROACH SLAB-REMOVE & REPLACE | SY | 197.700 | 175.000 | 34597.50 | 150.000 | 29655.00 | 150.000 | 29655.00 |
| 602 | CLASS AE-3 CONCRETE | CY | 146.700 | 300.000 | 44010.00 | 241.000 | 35354.70 | 241.000 | 35354.70 |
| 602 | CLASS AE-3 CONCRETE-BOX CULVERT | CY | 60.800 | 320.000 | 19456.00 | 400.000 | 24320.00 | 400.000 | 24320.00 |
| 612 | REINFORCING STEEL-GRADE 60-BOX CULVERT | LBS | 7604.000 | .600 | 4562.40 | .700 | 5322.80 | .700 | 5322.80 |
| 612 | REINFORCING STEEL-GRADE 60 | LBS | 3009.400 | .550 | 1655.170 | .670 | 2016.298 | .670 | 2016.298 |
| 612 | REINFORCING STEEL-GRADE 60-EPOXY COATED | LBS | 284.600 | .700 | 199.220 | 1.000 | 284.600 | 1.000 | 284.600 |
| 622 | STEEL PILING HP 12 X 53 | LF | 840.000 | 28.000 | 23520.00 | 15.000 | 12600.00 | 15.000 | 12600.00 |
| 6387 | FT 11IN X5FT 71N STR PLATE PIPE ARCH .138IN | LF | 32.000 | 350.000 | 11200.00 | 527.630 | 16884.16 | 528.000 | 16896.00 |
| 702 | MOBILIZATION | L SUM | 1.000 | 257169.150 | 257169.15 | 93100.000 | 93100.00 | 160000.000 | 160000.00 |
| 704 | FLAGGING | MHR | 4000.000 | 18.000 | 72000.00 | 18.500 | 74000.00 | 1.000 | 4000.00 |
| 704 | TRAFFIC CONTROL SIGNS | UNIT | 4639.000 | 2.880 | 13360.32 | 1.850 | 8582.15 | 1.850 | 8582.15 |
| 704 | LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL | EA | 1.000 | 10000.000 | 10000.00 | 6199.050 | 6199.05 | 6200.000 | 6200.00 |
| 704 | TYPE III BARRICADE | EA | 25.000 | 108.200 | 2705.00 | 95.000 | 2375.00 | 95.000 | 2375.00 |
| 704 | DELINEATOR DRUMS | EA | 100.000 | 33.270 | 3327.00 | 24.050 | 2405.00 | 24.050 | 2405.00 |
| 704 | TRAFFIC CONES | EA | 30.000 | 7.740 | 232.20 | 9.540 | 286.20 | 9.540 | 286.20 |
| 704 | TUBULAR MARKERS | EA | 30.000 | 12.040 | 361.20 | 9.400 | 282.00 | 9.400 | 282.00 |
| 704 | VERTICAL PANELS-BACK TO BACK | EA | 100.000 | 10.610 | 1061.00 | 12.200 | 1220.00 | 12.200 | 1220.00 |
| 704 | PILOT CAR | HR | 2000.000 | 20.900 | 41800.00 | 28.500 | 57000.00 | 1.000 | 200.00 |
| 706 | FIELD LABORATORY-TYPE C | EA | 2.000 | 3000.000 | 6000.00 | 3000.000 | 6000.00 | 4000.000 | 8000.00 |
| 708 | RIPRAP-LOOSE ROCK | CY | 125.000 | 30.000 | 3750.00 | 40.000 | 5000.00 | 40.000 | 5000.00 |
| 708 | DITCH CHECKS | LF | 500.000 | 3.500 | 1750.00 | 1.670 | 835.00 | 1.670 | 835.00 |
| 708 | SEEDING-TYPE B-CL II | ACRE | 35.000 | 250.000 | 8750.00 | 200.000 | 7000.00 | 200.000 | 7000.00 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO:

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

SHEET NO 2 OF 12

# ABSTRACT OF BIDS RECEIVED

PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

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|---|---|---|---|---|---|---|---|---|---|
| 708 | SEEDING-TYPE B-CL IV | ACRE | 17000 | 60000 | 102000 | 59000 | 100300 | 59000 | 100300 |
| 708 | TURF REINFORCEMENT COCONUT MAT | SY | 106700 | 4750 | 506825 | 4250 | 453475 | 4250 | 453475 |
| 709 | GEOTEXTILE FABRIC-TYPE RR | SY | 19000 | 2000 | 38000 | 2300 | 43700 | 2300 | 43700 |
| 709 | GEOTEXTILE FABRIC-TYPE R1 | SY | 9500 | 3000 | 28500 | 3500 | 33250 | 3500 | 33250 |
| 710 | TEMPORARY BYPASS | EA | 2 | 750000 | 1500000 | 8900000 | 17800000 | 7000000 | 14000000 |
| 714 | PIPE CONC REINF 24IN CL III | LF | 1800 | 45000 | 81000 | 43310 | 77958 | 43300 | 77940 |
| 714 | PIPE CONC REINF 30IN CL III | LF | 40600 | 60000 | 2436000 | 59900 | 2431940 | 59900 | 2431940 |
| 714 | PIPE CONC REINF 36IN CL III | LF | 16800 | 85000 | 1428000 | 89020 | 1495536 | 89000 | 1495200 |
| 714 | PIPE CONC REINF ARCH 73IN X 45IN CL III | LF | 8200 | 300000 | 2460000 | 341430 | 2799726 | 341450 | 2799890 |
| 714 | END SECT-CONC REINF 24IN | EA | 1000 | 400000 | 400000 | 563750 | 563750 | 564000 | 564000 |
| 714 | END SECT-CONC REINF 30IN | EA | 800 | 620000 | 496000 | 839370 | 671496 | 839500 | 671600 |
| 714 | END SECT-CONC REINF 36IN | EA | 400 | 750000 | 300000 | 1113160 | 445264 | 1113200 | 445280 |
| 714 | END SECT-CONC REINF ARCH 73IN X 45IN | EA | 200 | 1500000 | 300000 | 2442410 | 488482 | 2442500 | 488500 |
| 714 | PIPE CORR STEEL .064IN 18IN | LF | 4000 | 15000 | 60000 | 11300 | 45200 | 11300 | 45200 |
| 714 | PIPE CORR STEEL .064IN 24IN | LF | 45800 | 18000 | 824400 | 15350 | 703030 | 15350 | 703030 |
| 714 | PIPE CORR STEEL .064IN 30IN | LF | 30400 | 30000 | 912000 | 19110 | 580944 | 19100 | 580040 |
| 714 | PIPE CORR STEEL .064IN 36IN | LF | 28400 | 25000 | 710000 | 23600 | 670240 | 23600 | 670240 |
| 714 | PIPE CORR STEEL .079IN 48IN | LF | 17200 | 45000 | 774000 | 37570 | 646204 | 37600 | 646720 |
| 714 | END SECT CORR STEEL .064IN 18IN | EA | 100 | 90000 | 9000 | 73500 | 7350 | 73500 | 7350 |
| 714 | END SECT CORR STEEL .064IN 24IN | EA | 1200 | 115000 | 1380000 | 101060 | 121272 | 101000 | 121200 |
| 714 | END SECT CORR STEEL .079IN 30IN | EA | 1000 | 200000 | 200000 | 211310 | 211310 | 211300 | 211300 |
| 714 | END SECT CORR STEEL .109IN 48IN | EA | 400 | 525000 | 210000 | 762560 | 305024 | 763000 | 305200 |
| 714 | PIPE PVC 10IN | LF | 22500 | 8000 | 180000 | 10000 | 225000 | 10000 | 225000 |
| 714 | PIPE STEEL SMOOTH WALL .469IN 30IN BORED | LF | 6000 | 300000 | 1800000 | 176000 | 1056000 | 190000 | 1140000 |
| 714 | FLAP GATE 18IN | EA | 100 | 750000 | 750000 | 1000000 | 1000000 | 1000000 | 1000000 |
| 720 | MONUMENTS | EA | 31 | 250000 | 775000 | 313000 | 970300 | 350000 | 1085000 |
| 754 | FLAT SHEET FOR SIGNS-TYPE 2 REFL SHEETING | SF | 37600 | 18000 | 676800 | 10000 | 376000 | 10000 | 376000 |
| 754 | FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING | SF | 33900 | 20000 | 678000 | 14500 | 491550 | 14500 | 491550 |
| 754 | STATE FURNISHED FLAT SHEET FOR SIGNS-TYPE 2 | SF | 6250 | 12000 | 75000 | 4000 | 25000 | 4000 | 25000 |
| 754 | STEEL GALV POSTS-TELESCOPING PERFORATED TUBE | LF | 172500 | 8500 | 1466250 | 6000 | 1035000 | 8000 | 1035000 |
| 754 | MILE POST-TYPE B | EA | 18 | 105000 | 189000 | 50000 | 900000 | 50000 | 900000 |
| 754 | RESET SIGN PANEL | EA | 13 | 75000 | 975000 | 35000 | 455000 | 35000 | 455000 |
| 754 | RESET SIGN SUPPORT | EA | 1 | 75000 | 75000 | 60000 | 60000 | 60000 | 60000 |
| 762 | PVMT MK PAINTED-MESSAGE | SF | 8220 | 2200 | 18084 | 750 | 6165 | 750 | 6165 |
| 762 | SHORT TERM 4IN LINE-TYPE NR | LF | 1314210 | 100 | 1314210 | 092 | 120973 | 092 | 120973 |
| 762 | PVMT MK PAINTED 4IN LINE | LF | 2301810 | 030 | 690543 | 027 | 62148 | 027 | 62148 |
| 762 | PVMT MK PAINTED 8IN LINE | LF | 5100 | 200 | 10200 | 200 | 10200 | 200 | 10200 |
| 762 | PVMT MK PAINTED 24IN LINE | LF | 900 | 1800 | 16200 | 2420 | 21780 | 2420 | 21780 |
| 764 | W-BEAM GUARDRAIL | LF | 7900 | 22000 | 173800 | 20480 | 161792 | 20500 | 161950 |
| 764 | W-BEAM GUARDRAIL END TERMINAL | EA | 8 | 1700000 | 1360000 | 1583630 | 12669 | 1584000 | 12672 |
| 764 | REMOVE BOX BEAM GUARDRAIL | LF | 6310 | 1800 | 11358 | 2040 | 12872 | 2050 | 12935 |
| 764 | REMOVE END TREATMENT & TRANSITION | EA | 8 | 150000 | 120000 | 95900 | 7672 | 96000 | 7680 |
| 772 | FLASHING BEACON-POST MOUNTED | EA | 1 | 1500000 | 1500000 | 1800000 | 1800000 | 1800000 | 1800000 |
| 930 | APPROACH SLAB LIP REPAIR | LF | 410 | 100000 | 410000 | 50000 | 20500 | 50000 | 20500 |
| 930 | BARRIER END MODIFICATION | EA | 8 | 500000 | 4000000 | 500000 | 4000000 | 500000 | 4000000 |
| 960 | RUMBLE STRIPS - ASPHALT SHOULDER | MILE | 35.500 | 525000 | 1863750 | 446200 | 15840.10 | 325000 | 11537.50 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: _____ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD _____ DEPARTMENT OF TRANSPORTATION DIRECTOR

# ABSTRACT OF BIDS RECEIVED

## ND DEPARTMENT OF TRANSPORTATION



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930 ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| NO. | BIDDER | BIDDER | BIDDER |
|---|---|---|---|
| 10 | ENGINEERS ESTIMATE | MAYO CONSTRUCTION CO INC | MARK SAND & GRAVEL COMPANY |
| | | CAVALIER, ND | FERGUS FALLS, MN |
| | c.c. CHECK RANK 00 | c.c. BOND RANK 01 | c.c. BOND RANK 02 |

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | BID PRICE | AMOUNT | BID PRICE | AMOUNT | BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| | TOTAL | | | | 542575210 | NO LIMIT | 492550254 | NO LIMIT | 494155315 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: MAYO CONSTRUCTION CO., INC.

57

DATE OF AWARD 3-6-2003

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION



## ABSTRACT OF BIDS RECEIVED

PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 10 BIDDER BORDER STATES PAVING INC FARGO, ND c.c. BOND RANK 03 BID PRICE | AMOUNT | BIDDER SHERBROOKE ASPHALT INC DETROIT LAKES, MN c.c. BOND RANK 04 BID PRICE | AMOUNT | BIDDER ANDERSON WESTERN INC BISMARCK, ND c.c. BOND RANK 05 BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 103 | CONTRACT BOND | L SUM | 1.000 | 16125.000 | 16125.00 | 22718.250 | 22718.25 | 22725.000 | 22725.00 |
| 107 | RAILWAY PROTECTION INSURANCE-3 LOCATIONS | L SUM | 1.000 | 2200.000 | 2200.00 | 1000.000 | 1000.00 | 7500.000 | 7500.00 |
| 202 | REMOVAL OF CONCRETE | L SUM | 1.000 | 3060.000 | 3060.00 | 3000.000 | 3000.00 | 3000.000 | 3000.00 |
| 202 | REMOVAL OF CONCRETE PAVEMENT | SY | 1250.000 | 6.100 | 7625.00 | 6.000 | 7500.00 | 6.000 | 7500.00 |
| 203 | COMMON EXCAVATION-TYPE A | CY | 6286.000 | 18.800 | 113148.00 | 17.750 | 110005.00 | 17.750 | 110005.00 |
| 203 | TOPSOIL | CY | 700.000 | 10.200 | 7140.00 | 10.000 | 7000.00 | 10.000 | 7000.00 |
| 203 | ROADWAY OBLITERATION | LF | 360.000 | 3.050 | 1098.00 | 3.000 | 1080.00 | 3.000 | 1080.00 |
| 205 | GUARDRAIL EMBANKMENT-TYPE C | EA | 7.000 | 2040.000 | 14280.00 | 2000.000 | 14000.00 | 2000.000 | 14000.00 |
| 210 | CLASS 2 EXCAVATION | L SUM | 1.000 | 510.000 | 510.00 | 500.000 | 500.00 | 500.000 | 500.00 |
| 210 | SELECT BACKFILL | TON | 40.000 | 19.400 | 776.00 | 19.000 | 760.00 | 19.000 | 760.00 |
| 210 | FOUNDATION PREPARATION | EA | 1.000 | 5100.000 | 5100.00 | 5000.000 | 5000.00 | 5000.000 | 5000.00 |
| 210 | FOUNDATION FILL | CY | 110.000 | 28.550 | 3140.50 | 28.000 | 3080.00 | 28.000 | 3080.00 |
| 216 | WATER | M GAL | 334.000 | 11.380 | 3800.92 | 8.000 | 2672.00 | 15.000 | 5010.00 |
| 304 | AGGREGATE CL 3M | TON | 7590.300 | 7.630 | 57913.89 | 7.280 | 55257.38 | 10.000 | 75903.00 |
| 306 | BLENDED BASE COURSE | SY | 400163.000 | .680 | 27211.08 | .800 | 320130.40 | .320 | 128052.16 |
| 306 | REMOVE AND RELAY BLENDED BASE COURSE | SY | 2337.800 | 1.450 | 3389.81 | 1.000 | 2337.80 | 1.270 | 2969.06 |
| 401 | MC70 OR 250 LIQUID ASPHALT | GAL | 105669.000 | 1.300 | 137369.70 | 1.100 | 116235.90 | 1.320 | 139483.08 |
| 401 | SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT | GAL | 5969.900 | 1.110 | 6626.89 | .900 | 5372.91 | 1.090 | 6507.91 |
| 401 | BLOTTER MATERIAL CL 44 | TON | 332.000 | 17.700 | 5876.40 | 7.800 | 2589.60 | 17.310 | 5746.92 |
| 410 | HOT BITUMINOUS PAVEMENT SUPERPAVE | TON | 10351.700 | 14.420 | 149271.14 | 14.490 | 149996.13 | 15.700 | 162521.69 |
| 410 | PG 58-28 ASPHALT CEMENT | TON | 373.600 | 202.000 | 75467.20 | 250.000 | 93400.00 | 198.020 | 73983.72 |
| 410 | PG 58-34 ASPHALT CEMENT | TON | 267.500 | 260.000 | 69550.00 | 250.000 | 66875.00 | 250.240 | 66939.20 |
| 410 | TESTING | TON | 1035.700 | .210 | 217.38 | .250 | 258.92 | .240 | 248.44 |
| 410 | CORED SAMPLE | EA | 60.000 | 10.500 | 630.00 | 5.000 | 300.00 | 6.000 | 360.00 |
| 411 | MILLING PAVEMENT SURFACE | SY | 844.500 | .700 | 591.15 | 1.100 | 928.95 | .720 | 608.40 |
| 550 | BRIDGE APPROACH SLAB-REMOVE & REPLACE | SY | 197.700 | 153.000 | 30248.10 | 150.000 | 29655.00 | 150.000 | 29655.00 |
| 602 | CLASS AE-3 CONCRETE | CY | 146.700 | 245.800 | 36058.86 | 241.000 | 35354.70 | 241.000 | 35354.70 |
| 602 | CLASS AE-3 CONCRETE-BOX CULVERT | CY | 6.080 | 408.000 | 2480.64 | 400.000 | 2432.00 | 400.000 | 2432.00 |
| 612 | REINFORCING STEEL-GRADE 60-BOX CULVERT | LBS | 760.400 | .710 | 539.88 | .700 | 532.28 | .700 | 532.28 |
| 612 | REINFORCING STEEL-GRADE 60 | LBS | 3009.400 | .680 | 2046.39 | .670 | 2016.298 | .670 | 2016.298 |
| 612 | REINFORCING STEEL-GRADE 60-EPOXY COATED | LBS | 284.600 | 1.020 | 290.29 | 1.000 | 284.60 | 1.000 | 284.60 |
| 622 | STEEL PILING HP 12 X 53 | LF | 84.000 | 15.300 | 1285.20 | 15.000 | 1260.00 | 15.000 | 1260.00 |
| 6387 | 7FT 11IN X5FT 71N STR PLATE PIPE ARCH .138IN | LF | 32.000 | 53.820 | 1722.24 | 52.500 | 1680.00 | 52.500 | 1680.00 |
| 702 | MOBILIZATION | L SUM | 1.000 | 75000.000 | 75000.00 | 132000.000 | 132000.00 | 139350.000 | 139350.00 |
| 704 | FLAGGING | MHR | 400.000 | 18.500 | 7400.00 | 9.000 | 3600.00 | 20.000 | 8000.00 |
| 704 | TRAFFIC CONTROL SIGNS | UNIT | 463.900 | 1.890 | 876.77 | 1.850 | 858.215 | 1.850 | 858.215 |
| 704 | LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL | EA | 1.000 | 6323.000 | 6323.00 | 6199.050 | 6199.05 | 6199.050 | 6199.05 |
| 704 | TYPE III BARRICADE | EA | 25.000 | 97.000 | 2425.00 | 95.000 | 2375.00 | 95.000 | 2375.00 |
| 704 | DELINEATOR DRUMS | EA | 100.000 | 24.500 | 2450.00 | 24.050 | 2405.00 | 24.050 | 2405.00 |
| 704 | TRAFFIC CONES | EA | 30.000 | 9.750 | 292.50 | 9.540 | 286.20 | 9.540 | 286.20 |
| 704 | TUBULAR MARKERS | EA | 30.000 | 9.600 | 288.00 | 9.400 | 282.00 | 9.400 | 282.00 |
| 704 | VERTICAL PANELS-BACK TO BACK | EA | 100.000 | 12.450 | 1245.00 | 12.200 | 1220.00 | 12.200 | 1220.00 |
| 704 | PILOT CAR | HR | 200.000 | 25.000 | 5000.00 | 11.000 | 2200.00 | 25.000 | 5000.00 |
| 706 | FIELD LABORATORY-TYPE C | EA | 2.000 | 2500.000 | 5000.00 | 3600.000 | 7200.00 | 2000.000 | 4000.00 |
| 708 | RIPRAP-LOOSE ROCK | CY | 125.000 | 35.700 | 4462.50 | 40.000 | 5000.00 | 40.000 | 5000.00 |
| 708 | DITCH CHECKS | LF | 500.000 | 1.700 | 850.00 | 1.670 | 835.00 | 1.670 | 835.00 |
| 708 | SEEDING-TYPE B-CL II | ACRE | 35.000 | 204.000 | 7140.00 | 200.000 | 7000.00 | 200.000 | 7000.00 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO:

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

# ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 10 BIDDER BORDER STATES PAVING INC FARGO, ND c.c. BOND RANK 03 BID PRICE | AMOUNT | BIDDER SHERBROOKE ASPHALT INC DETROIT LAKES, MN c.c. BOND RANK 04 BID PRICE | AMOUNT | BIDDER ANDERSON WESTERN INC BISMARCK, ND c.c. BOND RANK 05 BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 708 | SEEDING-TYPE B-CL IV | ACRE | 17.000 | 60.0000 | 1020.00 | 59.000 | 1003.00 | 59.000 | 1003.00 |
| 708 | TURF REINFORCEMENT COCONUT MAT | SY | 1067.000 | 4.350 | 4641.45 | 4.250 | 4534.75 | 4.750 | 5068.25 |
| 709 | GEOTEXTILE FABRIC-TYPE RR | SY | 190.000 | 2.350 | 446.50 | 2.300 | 437.00 | 2.300 | 437.00 |
| 709 | GEOTEXTILE FABRIC-TYPE RI | SY | 95.000 | 3.570 | 339.15 | 3.500 | 332.50 | 3.500 | 332.50 |
| 710 | TEMPORARY BYPASS | EA | 2.000 | 715.0000 | 1430.00 | 7000.000 | 14000.00 | 7000.000 | 14000.00 |
| 714 | PIPE CONC REINF 24IN CL III | LF | 180.00 | 44.150 | 7947.0 | 43.310 | 7795.8 | 43.310 | 7795.8 |
| 714 | PIPE CONC REINF 30IN CL III | LF | 406.000 | 61.100 | 24806.6 | 59.900 | 24319.4 | 59.900 | 24319.4 |
| 714 | PIPE CONC REINF 36IN CL III | LF | 168.000 | 90.800 | 15254.4 | 89.020 | 14955.3 | 89.020 | 14955.36 |
| 714 | PIPE CONC REINF ARCH 73IN X 45IN CL III | LF | 82.000 | 348.250 | 28556.5 | 341.430 | 27997.2 | 341.430 | 27997.26 |
| 714 | END SECT-CONC REINF 24IN | EA | 1.000 | 575.000 | 575.00 | 563.750 | 563.75 | 563.750 | 563.75 |
| 714 | END SECT-CONC REINF 30IN | EA | 8.000 | 856.150 | 6849.2 | 839.370 | 6714.9 | 839.370 | 6714.96 |
| 714 | END SECT-CONC REINF 36IN | EA | 4.000 | 1135.000 | 4540.0 | 1113.160 | 4452.6 | 1113.160 | 4452.64 |
| 714 | END SECT-CONC REINF ARCH 73IN X 45IN | EA | 2.000 | 2491.250 | 4982.5 | 2442.410 | 4884.8 | 2442.410 | 4884.82 |
| 714 | PIPE CORR STEEL .064IN 18IN | LF | 40.000 | 11.500 | 460.0 | 11.300 | 452.0 | 11.300 | 452.00 |
| 714 | PIPE CORR STEEL .064IN 24IN | LF | 458.000 | 15.650 | 7167.7 | 15.350 | 7030.3 | 15.350 | 7030.30 |
| 714 | PIPE CORR STEEL .064IN 30IN | LF | 304.000 | 19.500 | 5928.0 | 19.110 | 5809.4 | 19.110 | 5809.44 |
| 714 | PIPE CORR STEEL .064IN 36IN | LF | 284.000 | 24.050 | 6830.2 | 23.600 | 6702.4 | 23.600 | 6702.40 |
| 714 | PIPE CORR STEEL .079IN 48IN | LF | 172.000 | 38.300 | 6587.6 | 37.570 | 6462.0 | 37.570 | 6462.04 |
| 714 | END SECT CORR STEEL .064IN 18IN | EA | 1.000 | 75.000 | 75.00 | 73.500 | 73.5 | 73.500 | 73.50 |
| 714 | END SECT CORR STEEL .064IN 24IN | EA | 12.000 | 103.000 | 1236.0 | 101.060 | 1212.7 | 101.060 | 1212.72 |
| 714 | END SECT CORR STEEL .079IN 30IN | EA | 10.000 | 215.500 | 2155.0 | 211.310 | 2113.1 | 211.310 | 2113.10 |
| 714 | END SECT CORR STEEL .109IN 48IN | EA | 4.000 | 778.000 | 3112.0 | 762.560 | 3050.2 | 762.560 | 3050.24 |
| 714 | PIPE PVC 10IN | LF | 225.000 | 10.200 | 2295.0 | 10.000 | 2250.0 | 10.000 | 2250.00 |
| 714 | PIPE STEEL SMOOTH WALL .469IN 30IN BORED | LF | 60.000 | 345.750 | 20745.0 | 215.000 | 12900.0 | 360.670 | 21640.20 |
| 714 | FLAP GATE 18IN | EA | 1.000 | 1020.000 | 1020.0 | 1000.000 | 1000.0 | 1000.000 | 1000.00 |
| 720 | MONUMENTS | EA | 31.000 | 387.600 | 12015.6 | 320.000 | 9920.0 | 390.000 | 12090.00 |
| 754 | FLAT SHEET FOR SIGNS-TYPE 2 REFL SHEETING | SF | 376.000 | 10.200 | 3835.2 | 16.250 | 6110.0 | 10.000 | 3760.00 |
| 754 | FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING | SF | 339.000 | 14.800 | 5017.2 | 16.000 | 5424.0 | 14.500 | 4915.50 |
| 754 | STATE FURNISHED FLAT SHEET FOR SIGNS-TYPE 2 | SF | 6.250 | 4.100 | 25.63 | 7.300 | 45.63 | 4.000 | 25.00 |
| 754 | STEEL GALV POSTS-TELESCOPING PERFORATED TUBE | LF | 172.500 | 6.120 | 1055.7 | 8.230 | 1419.6 | 6.000 | 1035.00 |
| 754 | MILE POST-TYPE B | EA | 18.000 | 51.000 | 918.0 | 111.650 | 2009.7 | 50.000 | 900.00 |
| 754 | RESET SIGN PANEL | EA | 13.000 | 35.700 | 464.1 | 35.600 | 462.8 | 35.000 | 455.00 |
| 754 | RESET SIGN SUPPORT | EA | 1.000 | 61.200 | 61.2 | 59.000 | 59.0 | 60.000 | 60.00 |
| 762 | PVMT MK PAINTED-MESSAGE | SF | 822.000 | .760 | 624.72 | .750 | 616.5 | .750 | 616.50 |
| 762 | SHORT TERM 4IN LINE-TYPE NR | LF | 13142.000 | .094 | 1235.3 | .060 | 788.5 | .092 | 1209.03 |
| 762 | PVMT MK PAINTED 4IN LINE | LF | 23018.000 | .028 | 644.5 | .027 | 621.4 | .027 | 621.49 |
| 762 | PVMT MK PAINTED 8IN LINE | LF | 51.000 | .210 | 10.71 | .200 | 10.2 | .200 | 10.20 |
| 762 | PVMT MK PAINTED 24IN LINE | LF | 90.000 | 2.470 | 222.3 | 2.420 | 217.8 | 2.420 | 217.80 |
| 764 | W-BEAM GUARDRAIL | LF | 790.000 | 20.900 | 16511.0 | 20.480 | 16179.2 | 20.480 | 16179.20 |
| 764 | W-BEAM GUARDRAIL END TERMINAL | EA | 8.000 | 1615.000 | 12920.0 | 1583.630 | 12669.0 | 1583.630 | 12669.04 |
| 764 | REMOVE BOX BEAM GUARDRAIL | LF | 631.000 | 2.080 | 1312.4 | 2.040 | 1287.2 | 2.040 | 1287.24 |
| 764 | REMOVE END TREATMENT & TRANSITION | EA | 8.000 | 98.000 | 784.0 | 95.900 | 767.2 | 95.900 | 767.20 |
| 772 | FLASHING BEACON-POST MOUNTED | EA | 1.000 | 185.000 | 185.0 | 180.000 | 180.0 | 180.000 | 180.00 |
| 930 | APPROACH SLAB LIP REPAIR | LF | 41.000 | 51.000 | 2091.0 | 50.000 | 2050.0 | 50.000 | 2050.00 |
| 930 | BARRIER END MODIFICATION | EA | 8.000 | 510.000 | 4080.0 | 500.000 | 4000.0 | 500.000 | 4000.00 |
| 960 | RUMBLE STRIPS - ASPHALT SHOULDER | MILE | 3.500 | 331.500 | 1160.2 | 325.000 | 1137.5 | 470.000 | 1645.00 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: _____ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD _____ DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

# ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

COMPLETION TIME ND 18, LEONARD TO CASSELTON 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

NO. 10

| | BIDDER | BIDDER | BIDDER |
|---|---|---|---|
| | BORDER STATES PAVING INC | SHERBROOKE ASPHALT INC | ANDERSON WESTERN INC |
| | FARGO, ND | DETROIT LAKES, MN | BISMARCK, ND |
| | c.c. BOND RANK 03 | c.c. BOND RANK 04 | c.c. BOND RANK 05 |

| SPEC NO. | ITEM DESCRIPTION | UNIT | QUANTITY | BID PRICE | AMOUNT | BID PRICE | AMOUNT | BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| | TOTAL | | | NO LIMIT | 4993475.40 | NO LIMIT | 5071217.72 | NO LIMIT | 5072230.95 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO:

60 DATE OF AWARD

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

# ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 10 BIDDER THORSON A DIV. OF NO RTHSTAR MATERIAL INC BEMIDJI, MN c.c. BOND RANK 06 BID PRICE | AMOUNT | BIDDER CENTRAL SPECIALTIES INC ALEXANDRIA, MN c.c. BOND RANK 07 BID PRICE | AMOUNT | BIDDER NORTHERN IMPROVEMENT CO FAR FARGO, ND c.c. BOND RANK 08 BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 103 | CONTRACT BOND | L SUM | 1.000 | 19500.000 | 19500.00 | 16000.000 | 16000.00 | 16500.000 | 16500.00 |
| 107 | RAILWAY PROTECTION INSURANCE-3 LOCATIONS | L SUM | 1.000 | 2500.000 | 2500.00 | 2500.000 | 2500.00 | 5000.000 | 5000.00 |
| 202 | REMOVAL OF CONCRETE | L SUM | 1.000 | 3000.000 | 3000.00 | 3000.000 | 3000.00 | 3150.000 | 3150.00 |
| 202 | REMOVAL OF CONCRETE PAVEMENT | SY | 1250.000 | 6.000 | 7500.00 | 6.000 | 7500.00 | 6.300 | 7875.00 |
| 203 | COMMON EXCAVATION-TYPE A | CY | 62860.000 | 2.300 | 144578.00 | 1.750 | 110005.00 | 2.100 | 132006.00 |
| 203 | TOPSOIL | CY | 7000.000 | 3.000 | 21000.00 | 1.000 | 7000.00 | 1.900 | 13300.00 |
| 203 | ROADWAY OBLITERATION | LF | 360.000 | 10.300 | 3708.00 | 3.000 | 1080.00 | 8.500 | 3060.00 |
| 203 | GUARDRAIL EMBANKMENT-TYPE C | EA | 7.000 | 546.000 | 3822.00 | 2000.000 | 14000.00 | 1575.000 | 11025.00 |
| 210 | CLASS 2 EXCAVATION | L SUM | 1.000 | 500.000 | 500.00 | 500.000 | 500.00 | 525.000 | 525.00 |
| 210 | SELECT BACKFILL | TON | 40.000 | 19.000 | 760.00 | 19.000 | 760.00 | 20.000 | 800.00 |
| 210 | FOUNDATION PREPARATION | EA | 1.000 | 5000.000 | 5000.00 | 5000.000 | 5000.00 | 5250.000 | 5250.00 |
| 210 | FOUNDATION FILL | CY | 110.000 | 28.000 | 3080.00 | 28.000 | 3080.00 | 29.500 | 3245.00 |
| 216 | WATER | M GAL | 3340.000 | 13.000 | 43420.00 | 8.000 | 26720.00 | 15.000 | 50100.00 |
| 306 | AGGREGATE CL 3M | TON | 75903.000 | 10.000 | 759030.00 | 8.000 | 607224.00 | 9.000 | 683127.00 |
| 306 | BLENDED BASE COURSE | SY | 400163.000 | .750 | 300122.25 | .900 | 360146.70 | 1.000 | 400163.00 |
| 306 | REMOVE AND RELAY BLENDED BASE COURSE | SY | 23378.000 | 2.000 | 46756.00 | 1.000 | 23378.00 | 2.000 | 46756.00 |
| 401 | MC70 OR 250 LIQUID ASPHALT | GAL | 105669.000 | 1.200 | 126802.80 | 1.150 | 121519.35 | 1.250 | 132086.25 |
| 401 | SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT | GAL | 59699.000 | .010 | 596.99 | .700 | 41789.30 | .900 | 53729.10 |
| 401 | BLOTTER MATERIAL CL 44 | TON | 3320.000 | 8.000 | 26560.00 | 15.000 | 49800.00 | 26.500 | 87980.00 |
| 410 | HOT BITUMINOUS PAVEMENT SUPERPAVE | TON | 103517.000 | 15.600 | 1614865.20 | 16.970 | 175668.349 | 15.550 | 1609689.35 |
| 410 | PG 58-28 ASPHALT CEMENT | TON | 3736.000 | 215.000 | 803240.00 | 190.000 | 709840.00 | 210.000 | 784560.00 |
| 410 | PG 58-34 ASPHALT CEMENT | TON | 2675.000 | 265.000 | 708875.00 | 240.000 | 642000.00 | 270.000 | 722250.00 |
| 410 | TESTING | TON | 103517.000 | .500 | 51758.50 | .400 | 41406.80 | .250 | 25879.25 |
| 410 | CORED SAMPLE | EA | 600.000 | 10.000 | 6000.00 | 15.000 | 9000.00 | 16.000 | 9600.00 |
| 411 | MILLING PAVEMENT SURFACE | SY | 8445.000 | 1.750 | 14778.75 | 1.000 | 8445.00 | 1.300 | 10978.50 |
| 550 | BRIDGE APPROACH SLAB-REMOVE & REPLACE | SY | 197.700 | 150.000 | 29655.00 | 150.000 | 29655.00 | 160.000 | 31632.00 |
| 602 | CLASS AE-3 CONCRETE | CY | 146.700 | 241.000 | 35354.70 | 241.000 | 35354.70 | 250.000 | 36675.00 |
| 602 | CLASS AE-3 CONCRETE-BOX CULVERT | CY | 60.800 | 400.000 | 24320.00 | 400.000 | 24320.00 | 420.000 | 25536.00 |
| 612 | REINFORCING STEEL-GRADE 60-BOX CULVERT | LBS | 7604.000 | .700 | 5322.80 | .700 | 5322.80 | .750 | 5703.00 |
| 612 | REINFORCING STEEL-GRADE 60 | LBS | 3009.000 | .670 | 2016.30 | .670 | 2016.30 | .700 | 2106.30 |
| 612 | REINFORCING STEEL-GRADE 60-EPOXY COATED | LBS | 2846.000 | 1.000 | 2846.00 | 1.000 | 2846.00 | 1.050 | 2988.30 |
| 622 | STEEL PILING HP 12 X 55 | LF | 840.000 | 15.000 | 12600.00 | 15.000 | 12600.00 | 15.750 | 13230.00 |
| 638 | 7FT 11IN X5FT 71N STR PLATE PIPE ARCH .138IN | LF | 32.000 | 254.000 | 8128.00 | 527.630 | 16884.16 | 460.000 | 14720.00 |
| 702 | MOBILIZATION | L SUM | 1.000 | 93000.000 | 93000.00 | 350000.000 | 350000.00 | 128000.000 | 128000.00 |
| 704 | FLAGGING | MHR | 4000.000 | 18.250 | 73000.00 | 9.000 | 36000.00 | 17.500 | 70000.00 |
| 704 | TRAFFIC CONTROL SIGNS | UNIT | 4639.000 | 1.850 | 8582.15 | 1.850 | 8582.15 | 1.960 | 9092.44 |
| 704 | LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL | EA | 1.000 | 6199.050 | 6199.05 | 6199.050 | 6199.05 | 650.000 | 650.00 |
| 704 | TYPE III BARRICADE | EA | 25.000 | 95.000 | 2375.00 | 95.000 | 2375.00 | 100.000 | 2500.00 |
| 704 | DELINEATOR DRUMS | EA | 100.000 | 24.050 | 2405.00 | 24.050 | 2405.00 | 25.000 | 2500.00 |
| 704 | TRAFFIC CONES | EA | 30.000 | 9.540 | 286.20 | 9.540 | 286.20 | 10.000 | 300.00 |
| 704 | TUBULAR MARKERS | EA | 30.000 | 9.400 | 282.00 | 9.400 | 282.00 | 10.000 | 300.00 |
| 704 | VERTICAL PANELS-BACK TO BACK | EA | 100.000 | 12.200 | 1220.00 | 12.200 | 1220.00 | 12.750 | 1275.00 |
| 704 | PILOT CAR | HR | 2000.000 | 32.000 | 64000.00 | 15.000 | 30000.00 | 27.500 | 55000.00 |
| 706 | FIELD LABORATORY-TYPE C | EA | 2.000 | 272.000 | 544.00 | 5000.000 | 10000.00 | 6000.000 | 12000.00 |
| 708 | RIPRAP-LOOSE ROCK | CY | 125.000 | 26.000 | 3250.00 | 40.000 | 5000.00 | 35.000 | 4375.00 |
| 708 | DITCH CHECKS | LF | 500.000 | 1.670 | 835.00 | 1.670 | 835.00 | 1.750 | 875.00 |
| 708 | SEEDING-TYPE B-CL II | ACRE | 35.000 | 200.000 | 7000.00 | 200.000 | 7000.00 | 210.000 | 7350.00 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: _____ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD _____ DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

# ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

COMPLETION TIME ND 18, LEONARD TO CASSELTON 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 10 BIDDER THORSON A DIV. OF NO RTHSTAR MATERIAL INC BEMIDJI, MN c.c. BOND RANK 06 BID PRICE | AMOUNT | BIDDER CENTRAL SPECIALTIES INC ALEXANDRIA, MN c.c. BOND RANK 07 BID PRICE | AMOUNT | BIDDER NORTHERN IMPROVEMENT CO FAR FARGO, ND c.c. BOND RANK 08 BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 708 | SEEDING-TYPE B-CL IV | ACRE | 17000 | 59000 | 100300 | 59000 | 100300 | 62000 | 105400 |
| 708 | TURF REINFORCEMENT COCONUT MAT | SY | 1067000 | 4250 | 453475 | 4250 | 453475 | 4500 | 480150 |
| 709 | GEOTEXTILE FABRIC-TYPE RR | SY | 19000 | 2300 | 43700 | 2300 | 43700 | 2400 | 45600 |
| 709 | GEOTEXTILE FABRIC-TYPE R1 | SY | 9500 | 3500 | 33250 | 3500 | 33250 | 3700 | 35150 |
| 710 | TEMPORARY BYPASS | EA | 2000 | 1458000 | 2916000 | 7000000 | 14000000 | 1575000 | 3150000 |
| 714 | PIPE CONC REINF 24IN CL III | LF | 18000 | 3680 | 66240 | 4331 | 77958 | 8300 | 149400 |
| 714 | PIPE CONC REINF 30IN CL III | LF | 40600 | 4600 | 186760 | 5990 | 243194 | 7350 | 298410 |
| 714 | PIPE CONC REINF 36IN CL III | LF | 16800 | 6480 | 108864 | 8902 | 149536 | 8350 | 140280 |
| 714 | PIPE CONC REINF ARCH 73IN X 45IN CL III | LF | 8200 | 23500 | 192700 | 34143 | 279972 | 27500 | 225500 |
| 714 | END SECT-CONC REINF 24IN | EA | 100 | 4750 | 4750 | 5637 | 5637 | 7500 | 7500 |
| 714 | END SECT-CONC REINF 30IN | EA | 800 | 6520 | 52160 | 8397 | 67196 | 7600 | 60800 |
| 714 | END SECT-CONC REINF 36IN | EA | 400 | 8290 | 33160 | 11131 | 44526 | 9500 | 38000 |
| 714 | END SECT-CONC REINF ARCH 73IN X 45IN | EA | 200 | 17500 | 35000 | 24424 | 48848 | 18000 | 36000 |
| 714 | PIPE CORR STEEL .064IN 18IN | LF | 4000 | 147 | 5880 | 113 | 4520 | 150 | 6000 |
| 714 | PIPE CORR STEEL .064IN 24IN | LF | 45800 | 173 | 79234 | 153 | 70308 | 180 | 82440 |
| 714 | PIPE CORR STEEL .064IN 30IN | LF | 30400 | 197 | 59888 | 191 | 58094 | 170 | 51680 |
| 714 | PIPE CORR STEEL .064IN 36IN | LF | 28400 | 226 | 64184 | 236 | 67024 | 240 | 68160 |
| 714 | PIPE CORR STEEL .079IN 48IN | LF | 17200 | 316 | 54352 | 375 | 64624 | 472 | 81270 |
| 714 | END SECT CORR STEEL .064IN 18IN | EA | 100 | 1580 | 1580 | 735 | 735 | 1680 | 1680 |
| 714 | END SECT CORR STEEL .064IN 24IN | EA | 1200 | 1760 | 21120 | 1010 | 12120 | 1500 | 18000 |
| 714 | END SECT CORR STEEL .079IN 30IN | EA | 1000 | 2470 | 2470 | 2113 | 2113 | 2100 | 2100 |
| 714 | END SECT CORR STEEL .109IN 48IN | EA | 400 | 6030 | 24120 | 7625 | 30502 | 5750 | 23000 |
| 714 | PIPE PVC 10IN | LF | 22500 | 162 | 36450 | 100 | 22500 | 105 | 23625 |
| 714 | PIPE STEEL SMOOTH WALL .469IN 30IN BORED | LF | 6000 | 159 | 95400 | 160 | 96000 | 168 | 100800 |
| 714 | FLAP GATE 18IN | EA | 100 | 8220 | 82200 | 10000 | 100000 | 805 | 80500 |
| 720 | MONUMENTS | EA | 3100 | 4500 | 139500 | 3250 | 100750 | 1350 | 418500 |
| 754 | FLAT SHEET FOR SIGNS-TYPE 2 REFL SHEETING | SF | 37600 | 100 | 37600 | 100 | 37600 | 105 | 39480 |
| 754 | FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING | SF | 33900 | 145 | 49155 | 145 | 49155 | 152 | 51597 |
| 754 | STATE FURNISHED FLAT SHEET FOR SIGNS-TYPE 2 | SF | 625 | 40 | 250 | 40 | 250 | 42 | 262 |
| 754 | STEEL GALV POSTS-TELESCOPING PERFORATED TUBE | LF | 172500 | 60 | 103500 | 60 | 103500 | 63 | 108675 |
| 754 | MILE POST-TYPE B | EA | 1800 | 500 | 9000 | 500 | 90000 | 525 | 94500 |
| 754 | RESET SIGN PANEL | EA | 1300 | 350 | 45500 | 350 | 45500 | 367 | 47775 |
| 754 | RESET SIGN SUPPORT | EA | 100 | 600 | 6000 | 600 | 6000 | 630 | 6300 |
| 762 | PVMT MK PAINTED-MESSAGE | SF | 8220 | 7 | 6165 | 7 | 6165 | 8 | 6576 |
| 762 | SHORT TERM 4IN LINE-TYPE NR | LF | 1314210 | 0 | 12090 | 0 | 12090 | 1 | 13142 |
| 762 | PVMT MK PAINTED 4IN LINE | LF | 2301810 | 0 | 62148 | 0 | 62148 | 0 | 69054 |
| 762 | PVMT MK PAINTED 8IN LINE | LF | 5100 | 2 | 102 | 2 | 102 | 2 | 107 |
| 762 | PVMT MK PAINTED 24IN LINE | LF | 9000 | 24 | 2178 | 24 | 2178 | 25 | 2295 |
| 764 | W-BEAM GUARDRAIL | LF | 7900 | 204 | 161792 | 204 | 161792 | 216 | 171072 |
| 764 | W-BEAM GUARDRAIL END TERMINAL | EA | 800 | 1583 | 126664 | 1583 | 126664 | 1680 | 134400 |
| 764 | REMOVE BOX BEAM GUARDRAIL | LF | 6310 | 20 | 12624 | 20 | 12624 | 26 | 16715 |
| 764 | REMOVE END TREATMENT & TRANSITION | EA | 800 | 959 | 76720 | 959 | 76720 | 1575 | 126000 |
| 772 | FLASHING BEACON-POST MOUNTED | EA | 100 | 1800 | 18000 | 1800 | 18000 | 1890 | 18900 |
| 930 | APPROACH SLAB LIP REPAIR | LF | 4100 | 50 | 205000 | 50 | 205000 | 525 | 215250 |
| 930 | BARRIER END MODIFICATION | EA | 800 | 500 | 400000 | 500 | 400000 | 525 | 420000 |
| 960 | RUMBLE STRIPS - ASPHALT SHOULDER | MILE | 35500 | 8250 | 292875 | 3250 | 115375 | 5500 | 195250 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: _____ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD _____ DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

# ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 10 BIDDER THORSON A DIV. OF NORTHSTAR MATERIAL INC BEMIDJI, MN c.c. BOND RANK 06 BID PRICE | AMOUNT | BIDDER CENTRAL SPECIALTIES INC ALEXANDRIA, MN c.c. BOND RANK 07 BID PRICE | AMOUNT | BIDDER NORTHERN IMPROVEMENT CO FAR FARGO, ND c.c. BOND RANK 08 BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| | TOTAL | | | NO LIMIT | 539069682 | NO LIMIT | 542651104 | NO LIMIT | 554709562 |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO:

63

DATE OF AWARD

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION



## ABSTRACT OF BIDS RECEIVED

PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 1 BIDDER DUININCK BROTHERS IN C PRINSBURG, MN c.c. BOND RANK 09 BID PRICE | AMOUNT | BIDDER c.c. BID PRICE | AMOUNT | BIDDER c c. BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 103 | CONTRACT BOND | L SUM | 1.000 | 24000.000 | 24000.00 | | | | |
| 107 | RAILWAY PROTECTION INSURANCE-3 LOCATIONS | L SUM | 1.000 | 2500.000 | 2500.00 | | | | |
| 202 | REMOVAL OF CONCRETE | L SUM | 1.000 | 3000.000 | 3000.00 | | | | |
| 202 | REMOVAL OF CONCRETE PAVEMENT | SY | 1250.000 | 6.000 | 7500.00 | | | | |
| 203 | COMMON EXCAVATION-TYPE A | CY | 6286.000 | 2.300 | 14457.80 | | | | |
| 203 | TOPSOIL | CY | 7000.000 | 3.000 | 21000.00 | | | | |
| 203 | ROADWAY OBLITERATION | LF | 360.000 | 10.300 | 3708.00 | | | | |
| 203 | GUARDRAIL EMBANKMENT-TYPE C | EA | 7.000 | 546.000 | 3822.00 | | | | |
| 210 | CLASS 2 EXCAVATION | L SUM | 1.000 | 500.000 | 500.00 | | | | |
| 210 | SELECT BACKFILL | TON | 40.000 | 19.000 | 760.00 | | | | |
| 210 | FOUNDATION PREPARATION | EA | 1.000 | 5000.000 | 5000.00 | | | | |
| 210 | FOUNDATION FILL | CY | 110.000 | 28.000 | 3080.00 | | | | |
| 216 | WATER | M GAL | 3340.000 | 12.500 | 41750.00 | | | | |
| 306 | AGGREGATE CL 3M | TON | 75903.000 | 7.470 | 566995.41 | | | | |
| 306 | BLENDED BASE COURSE | SY | 400163.000 | 7.720 | 2881173.36 | | | | |
| 306 | REMOVE AND RELAY BLENDED BASE COURSE | SY | 23378.000 | 1.000 | 23378.00 | | | | |
| 401 | MC70 OR 250 LIQUID ASPHALT | GAL | 105669.000 | 1.280 | 135256.32 | | | | |
| 401 | SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT | GAL | 59699.000 | 1.000 | 59699.00 | | | | |
| 401 | BLOTTER MATERIAL CL 44 | TON | 3320.000 | 15.000 | 49800.00 | | | | |
| 410 | HOT BITUMINOUS PAVEMENT SUPERPAVE | TON | 103517.000 | 19.750 | 2044460.75 | | | | |
| 410 | PG 58-28 ASPHALT CEMENT | TON | 3736.000 | 202.000 | 754672.00 | | | | |
| 410 | PG 58-34 ASPHALT CEMENT | TON | 2675.000 | 260.000 | 695500.00 | | | | |
| 410 | TESTING | TON | 103517.000 | .320 | 33125.44 | | | | |
| 410 | CORED SAMPLE | EA | 600.000 | 10.500 | 6300.00 | | | | |
| 411 | MILLING PAVEMENT SURFACE | SY | 8445.000 | 1.930 | 16298.85 | | | | |
| 550 | BRIDGE APPROACH SLAB-REMOVE & REPLACE | SY | 1977.00 | 150.000 | 29655.00 | | | | |
| 602 | CLASS AE-3 CONCRETE | CY | 146.700 | 241.000 | 35354.70 | | | | |
| 602 | CLASS AE-3 CONCRETE-BOX CULVERT | CY | 60.800 | 400.000 | 24320.00 | | | | |
| 612 | REINFORCING STEEL-GRADE 60-BOX CULVERT | LBS | 7604.000 | .700 | 5322.80 | | | | |
| 612 | REINFORCING STEEL-GRADE 60 | LBS | 300940.000 | .670 | 201629.80 | | | | |
| 612 | REINFORCING STEEL-GRADE 60-EPOXY COATED | LBS | 2846.000 | 1.000 | 2846.00 | | | | |
| 622 | STEEL PILING HP 12 X 53 | LF | 840.000 | 15.000 | 12600.00 | | | | |
| 6387 | 7FT 11IN X5FT 71N STR PLATE PIPE ARCH .138IN | LF | 32.000 | 254.000 | 8128.00 | | | | |
| 702 | MOBILIZATION | L SUM | 1.000 | 172000.000 | 172000.00 | | | | |
| 704 | FLAGGING | MHR | 4000.000 | 15.000 | 60000.00 | | | | |
| 704 | TRAFFIC CONTROL SIGNS | UNIT | 4639.000 | 1.850 | 8582.15 | | | | |
| 704 | LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL | EA | 1.000 | 6199.050 | 6199.05 | | | | |
| 704 | TYPE III BARRICADE | EA | 25.000 | 95.000 | 2375.00 | | | | |
| 704 | DELINEATOR DRUMS | EA | 100.000 | 24.050 | 2405.00 | | | | |
| 704 | TRAFFIC CONES | EA | 30.000 | 9.540 | 286.20 | | | | |
| 704 | TUBULAR MARKERS | EA | 30.000 | 9.400 | 282.00 | | | | |
| 704 | VERTICAL PANELS-BACK TO BACK | EA | 100.000 | 12.200 | 1220.00 | | | | |
| 704 | PILOT CAR | HR | 2000.000 | 20.000 | 40000.00 | | | | |
| 706 | FIELD LABORATORY-TYPE C | EA | 2.000 | 5000.000 | 10000.00 | | | | |
| 708 | RIPRAP-LOOSE ROCK | CY | 125.000 | 40.000 | 5000.00 | | | | |
| 708 | DITCH CHECKS | LF | 500.000 | 1.670 | 835.00 | | | | |
| 708 | SEEDING-TYPE B-CL II | ACRE | 35.000 | 200.000 | 7000.00 | | | | |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO:

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

# ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

ND 18, LEONARD TO CASSELTON

COMPLETION TIME 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| SPEC. NO. | ITEM DESCRIPTION | UNIT | QUANTITY | NO. 10 BIDDER DUININCK BROTHERS IN C PRINSBURG, MN c.c. BOND RANK 09 BID PRICE | AMOUNT | BIDDER c.c. BID PRICE | AMOUNT | BIDDER c.c. BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 708 | SEEDING-TYPE B-CL IV | ACRE | 17.000 | 5.9000 | 100.30 | | | | |
| 708 | TURF REINFORCEMENT COCONUT MAT | SY | 1067.000 | 4.250 | 4534.75 | | | | |
| 709 | GEOTEXTILE FABRIC-TYPE RR | SY | 190.000 | 2.300 | 437.00 | | | | |
| 709 | GEOTEXTILE FABRIC-TYPE R1 | SY | 95.000 | 3.500 | 332.50 | | | | |
| 710 | TEMPORARY BYPASS | EA | 2.000 | 14580.000 | 29160.00 | | | | |
| 714 | PIPE CONC REINF 24IN CL III | LF | 18.000 | 36.800 | 662.40 | | | | |
| 714 | PIPE CONC REINF 30IN CL III | LF | 404.000 | 46.000 | 18676.00 | | | | |
| 714 | PIPE CONC REINF 36IN CL III | LF | 168.000 | 64.800 | 10886.40 | | | | |
| 714 | PIPE CONC REINF ARCH 73IN X 45IN CL III | LF | 82.000 | 235.000 | 19270.00 | | | | |
| 714 | END SECT-CONC REINF 24IN | EA | 1.000 | 475.000 | 475.00 | | | | |
| 714 | END SECT-CONC REINF 30IN | EA | 8.000 | 652.000 | 5216.00 | | | | |
| 714 | END SECT-CONC REINF 36IN | EA | 4.000 | 829.000 | 3316.00 | | | | |
| 714 | END SECT-CONC REINF ARCH 73IN X 45IN | EA | 2.000 | 1750.000 | 3500.00 | | | | |
| 714 | PIPE CORR STEEL .064IN 18IN | LF | 40.000 | 14.700 | 588.00 | | | | |
| 714 | PIPE CORR STEEL .064IN 24IN | LF | 458.000 | 17.300 | 7923.40 | | | | |
| 714 | PIPE CORR STEEL .064IN 30IN | LF | 304.000 | 19.700 | 5988.80 | | | | |
| 714 | PIPE CORR STEEL .064IN 36IN | LF | 284.000 | 22.600 | 6418.40 | | | | |
| 714 | PIPE CORR STEEL .079IN 48IN | LF | 172.000 | 31.600 | 5435.20 | | | | |
| 714 | END SECT CORR STEEL .064IN 18IN | EA | 1.000 | 158.000 | 158.00 | | | | |
| 714 | END SECT CORR STEEL .064IN 24IN | EA | 12.000 | 176.000 | 2112.00 | | | | |
| 714 | END SECT CORR STEEL .079IN 30IN | EA | 1.000 | 247.000 | 247.00 | | | | |
| 714 | END SECT CORR STEEL .109IN 48IN | EA | 4.000 | 603.000 | 2412.00 | | | | |
| 714 | PIPE PVC 10IN | LF | 225.000 | 16.200 | 3645.00 | | | | |
| 714 | PIPE STEEL SMOOTH WALL .469IN 30IN BORED | LF | 60.000 | 159.000 | 9540.00 | | | | |
| 714 | FLAP GATE 18IN | EA | 1.000 | 822.000 | 822.00 | | | | |
| 720 | MONUMENTS | EA | 31.000 | 200.000 | 6200.00 | | | | |
| 754 | FLAT SHEET FOR SIGNS-TYPE 2 REFL SHEETING | SF | 376.000 | 14.000 | 5264.00 | | | | |
| 754 | FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING | SF | 339.000 | 17.000 | 5763.00 | | | | |
| 754 | STATE FURNISHED FLAT SHEET FOR SIGNS-TYPE 2 | SF | 6.250 | 15.000 | 93.75 | | | | |
| 754 | STEEL GALV POSTS-TELESCOPING PERFORATED TUBE | LF | 1725.000 | 7.000 | 12075.00 | | | | |
| 754 | MILE POST-TYPE B | EA | 18.000 | 125.000 | 2250.00 | | | | |
| 754 | RESET SIGN PANEL | EA | 13.000 | 125.000 | 1625.00 | | | | |
| 754 | RESET SIGN SUPPORT | EA | 1.000 | 150.000 | 150.00 | | | | |
| 762 | PVMT MK PAINTED-MESSAGE | SF | 82.000 | .750 | 61.50 | | | | |
| 762 | SHORT TERM 4IN LINE-TYPE NR | LF | 13142.000 | .090 | 1182.78 | | | | |
| 762 | PVMT MK PAINTED 4IN LINE | LF | 23018.000 | .030 | 690.54 | | | | |
| 762 | PVMT MK PAINTED 8IN LINE | LF | 51.000 | .200 | 10.20 | | | | |
| 762 | PVMT MK PAINTED 24IN LINE | LF | 9.000 | 2.420 | 21.78 | | | | |
| 764 | W-BEAM GUARDRAIL | LF | 79.000 | 20.480 | 1617.92 | | | | |
| 764 | W-BEAM GUARDRAIL END TERMINAL | EA | 8.000 | 1583.630 | 12669.04 | | | | |
| 764 | REMOVE BOX BEAM GUARDRAIL | LF | 63.000 | 2.040 | 128.52 | | | | |
| 764 | REMOVE END TREATMENT & TRANSITION | EA | 8.000 | 9.590 | 76.72 | | | | |
| 772 | FLASHING BEACON-POST MOUNTED | EA | 1.000 | 1800.000 | 1800.00 | | | | |
| 930 | APPROACH SLAB LIP REPAIR | LF | 41.000 | 50.000 | 2050.00 | | | | |
| 930 | BARRIER END MODIFICATION | EA | 8.000 | 500.000 | 4000.00 | | | | |
| 960 | RUMBLE STRIPS - ASPHALT SHOULDER | MILE | 3.500 | 547.000 | 1941.50 | | | | |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: _____ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD _____ DEPARTMENT OF TRANSPORTATION DIRECTOR

# ND DEPARTMENT OF TRANSPORTATION

# ABSTRACT OF BIDS RECEIVED



PROJECT NO. SS-RSS-8-018(036)055

COUNTY & DATE CASS (017) FEB 14, 2003 09:30AM

LENGTH & TYPE 17.930

COMPLETION TIME ND 18, LEONARD TO CASSELTON 10/17/03 BLENDED BITUMINOUS BASE & HOT BITUMINO

| NO. | BIDDER | BIDDER | BIDDER |
|---|---|---|---|
| 10 | DUININCK BROTHERS IN C<br>PRINSBURG, MN<br>c.c. BOND RANK 09 | c.c. | c c. |

| SPEC NO. | ITEM DESCRIPTION | UNIT | QUANTITY | BID PRICE | AMOUNT | BID PRICE | AMOUNT | BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| | TOTAL | | | NO LIMIT | 5645618.41 | | | | |

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: _____

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD _____ DEPARTMENT OF TRANSPORTATION DIRECTOR

| DESIGN DATA | | | | |
|---|---|---|---|---|
| Traffic | Average Daily | | | Max.Hr. |
| Current 2001 | Pass: 1180 | Trucks 120 | Total 1300 | 130 |
| Forecast 2021 | Pass: 1420 | Trucks 145 | Total 1565 | 160 |
| Minimum Sight Dist. for: | | Design Speed 65 | | |
| Stopping 645' | | Bridges | | |
| Safe Passing | | | | |
| Passing for Marking 1200' | | | | |
| Pavement Design Life (years) N/A | | | | |

JOB# 10

| STATE | PROJECT NO. | PCN | SHEET NO. |
|---|---|---|---|
| ND | SS-8-018(036)055 | 12205 | 1 |

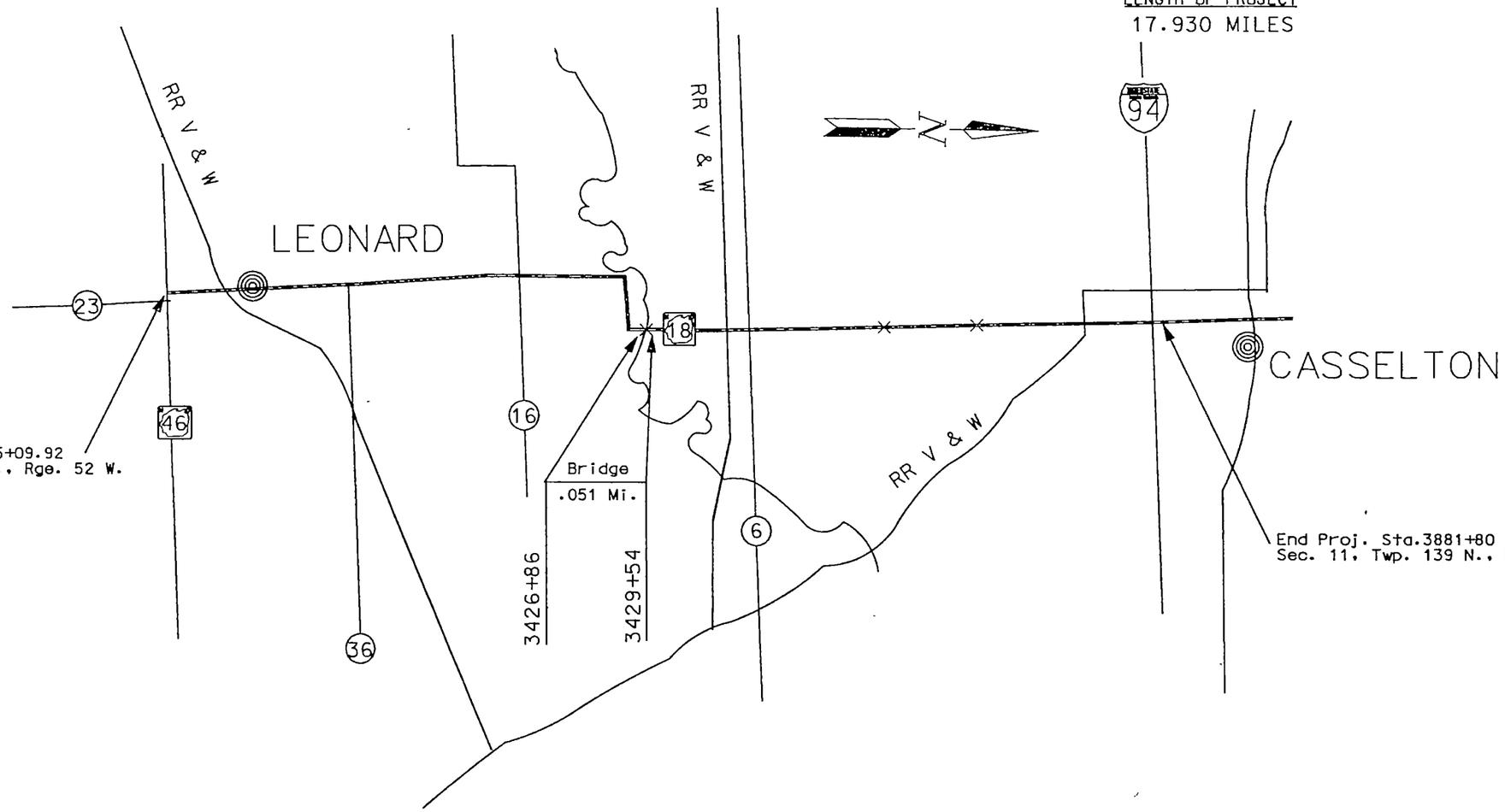
# NORTH DAKOTA
# DEPARTMENT OF TRANSPORTATION

STATE RURAL PROJECT NO. SS-8-018(036)055
IN CASS COUNTY
BLENDED BASE COURSE, HOT BITUMINOUS PAVEMENT & INCIDENTALS

GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota Department of Transportation October 2002; Standard Drawings currently in effect; and other Contract Provisions submitted herein.

LENGTH OF PROJECT
17.930 MILES




DESIGNER Blaine Erikson
DESIGNER
DESIGNER
DESIGNER
DESIGNER

APPROVED DATE _____

DIVISION ADMINISTRATOR
FEDERAL HIGHWAY ADMINISTRATION
U.S. DEPARTMENT OF TRANSPORTATION

APPROVED DATE 10/2/02

DIRECTOR,
OFFICE OF PROJECT DEVELOPMENT
ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.

APPROVED DATE 9/26/02

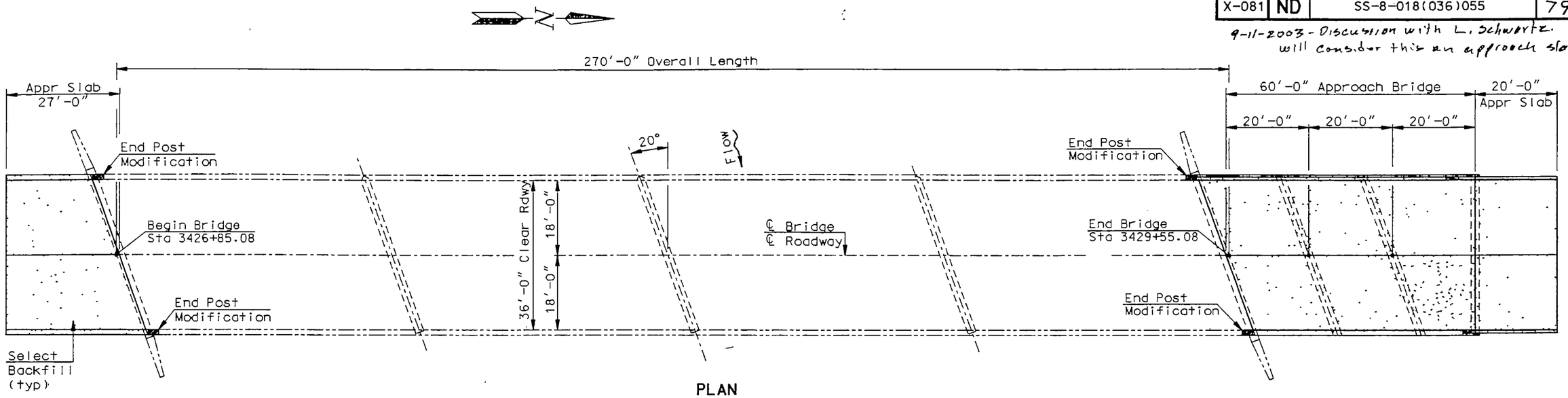
Roger Weigel
DESIGN DIVISION
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

ROGER WEIGEL
REGISTERED
PROFESSIONAL
P.E. 2930
ENGINEER
NORTH DAKOTA

.../80018055.036/DESIGN/TITLE1.dgn 09/25/2002 03:52:05 PM

| BRIDGE CODE | STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|---|
| X-081 | ND | SS-8-018(036)055 | 79 |

9-11-2003 - Discussion with L. Schwartz. will consider this an approach slab.




PLAN

## NOTES:

100 SCOPE OF WORK: The work at this site consists of installing an approach bridge and removing and replacing the approach slabs. Barriers or curbs shall be placed as shown on the plan sheets.

100 GENERAL: The cost of furnishing and placing preformed expansion joint filler, concrete inserts, rebar couplers, and other miscellaneous items shall be included in the price bid for Class AE-3 concrete.

602 SURFACE FINISH "D": Surface Finish "D" shall be required for the inside and top surfaces of the barrier.

602 CONCRETE CURE: If fly ash in excess of 10% by weight is used in the mix, the wet cure time shall be increased from 7 to 10 days.

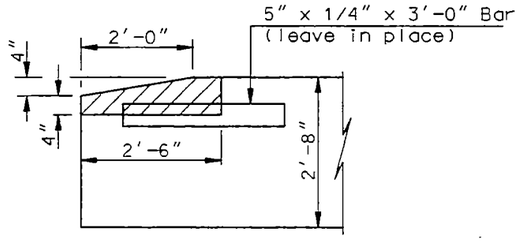
622 PILING: Piling shall be driven with a steam, air, or diesel hammer with a rated energy and ram weight not less than 26,980 foot-pound-tons, as computed by the formula W(E-9,702)+.571E where W is the weight of the ram in tons and E is the rated hammer energy. In no case shall the ram weight be less than 2,700 pounds.

704 TRAFFIC CONTROL: One lane of traffic shall be maintained on the bridge at all times during the project.

DESIGN STRENGTHS:

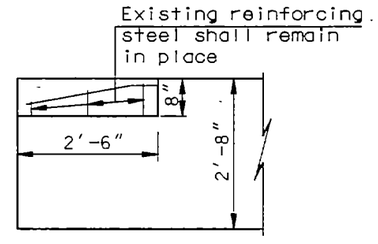
f'c = 3,000 psi ~ Class AE-3 Concrete
fy = 60,000 psi ~ Reinforcing Steel

| SPEC | CODE | ITEM DESCRIPTION | UNIT | QUANTITY |
|---|---|---|---|---|
| 210 | 0198 | SELECT BACKFILL | TON | 40 |
| 550 | 0217 | BRIDGE APPROACH SLAB-REMOVE & REPLACE | SY | 197.7 |
| 602 | 1130 | CLASS AE-3 CONCRETE | CY | 146.7 |
| 612 | 0115 | REINFORCING STEEL-GRADE 60 | LBS | 30,094 |
| 612 | 0116 | REINFORCING STEEL-GRADE 60-EPOXY COATED | LBS | 2,846 |
| 622 | 0040 | STEEL PILING HP 12 X 53 | LF | 840 |
| 930 | 9639 | APPROACH SLAB LIP REPAIR | LF | 41 |
| 930 | 9647 | BARRIER END MODIFICATION | EA | 4 |




SHOWING REMOVAL LIMITS

Hatched area designates concrete to be removed. Concrete shall be saw cut to provide for a neat line prior to being removed. Care shall be taken not to damage existing reinforcing bars. The entire repaired area shall receive special surface treatment. The color and texture shall match the existing barrier.




SHOWING MODIFIED BARRIER END

All labor, equipment and materials required to build the barrier end modifications shall be included in the bid item "Barrier End Modification."

BARRIER END MODIFICATION DETAILS
(Typical at all 4 corners of the bridge)

F.W.S. 15 PSF

HS 25 DESIGN LOADING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

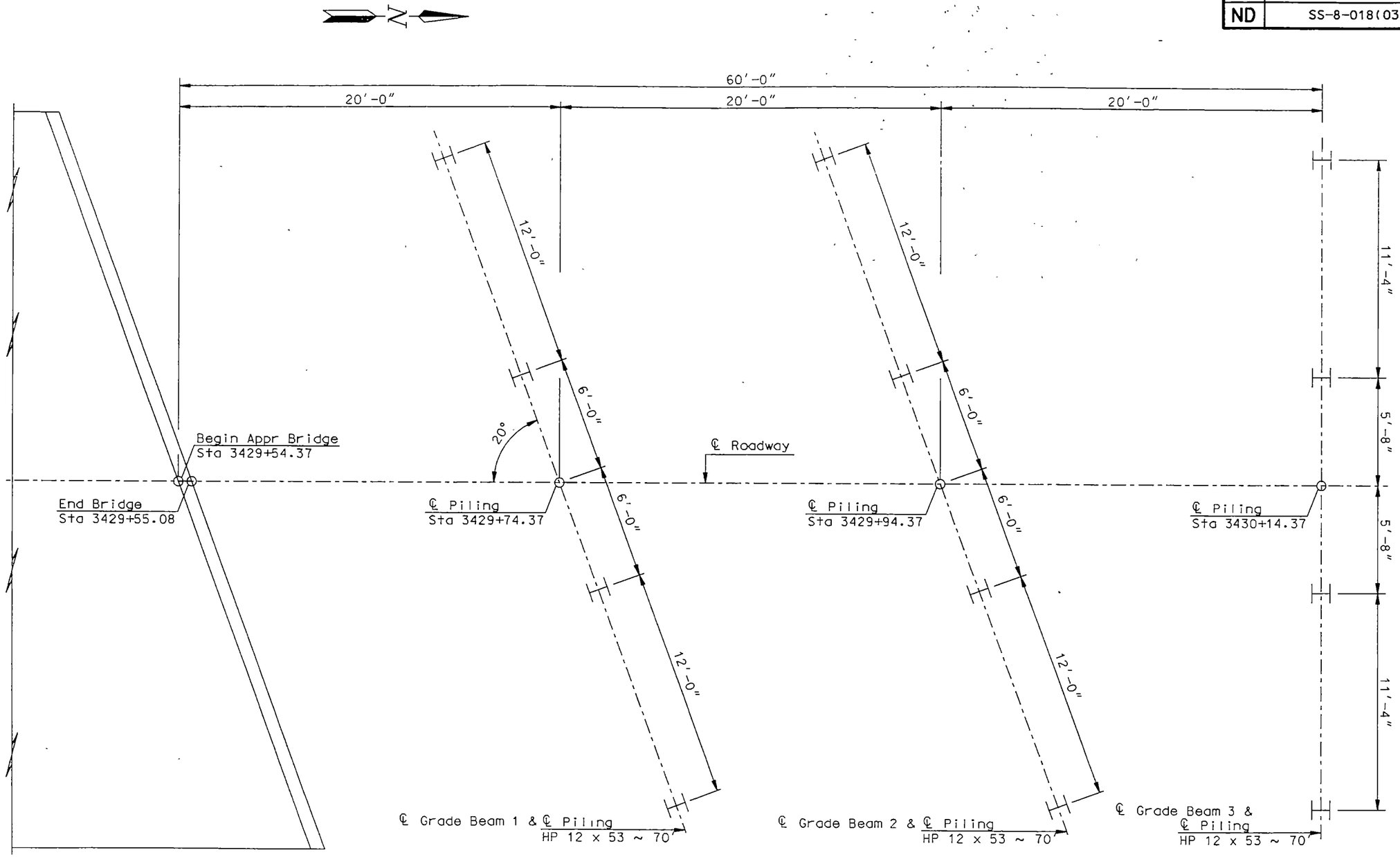
MAPLE RIVER

BRIDGE LAYOUT

PROJECT: SS-8-018(036)055
STATION 3428 + 20.08

CASS COUNTY

| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 80 |




MAPLE RIVER

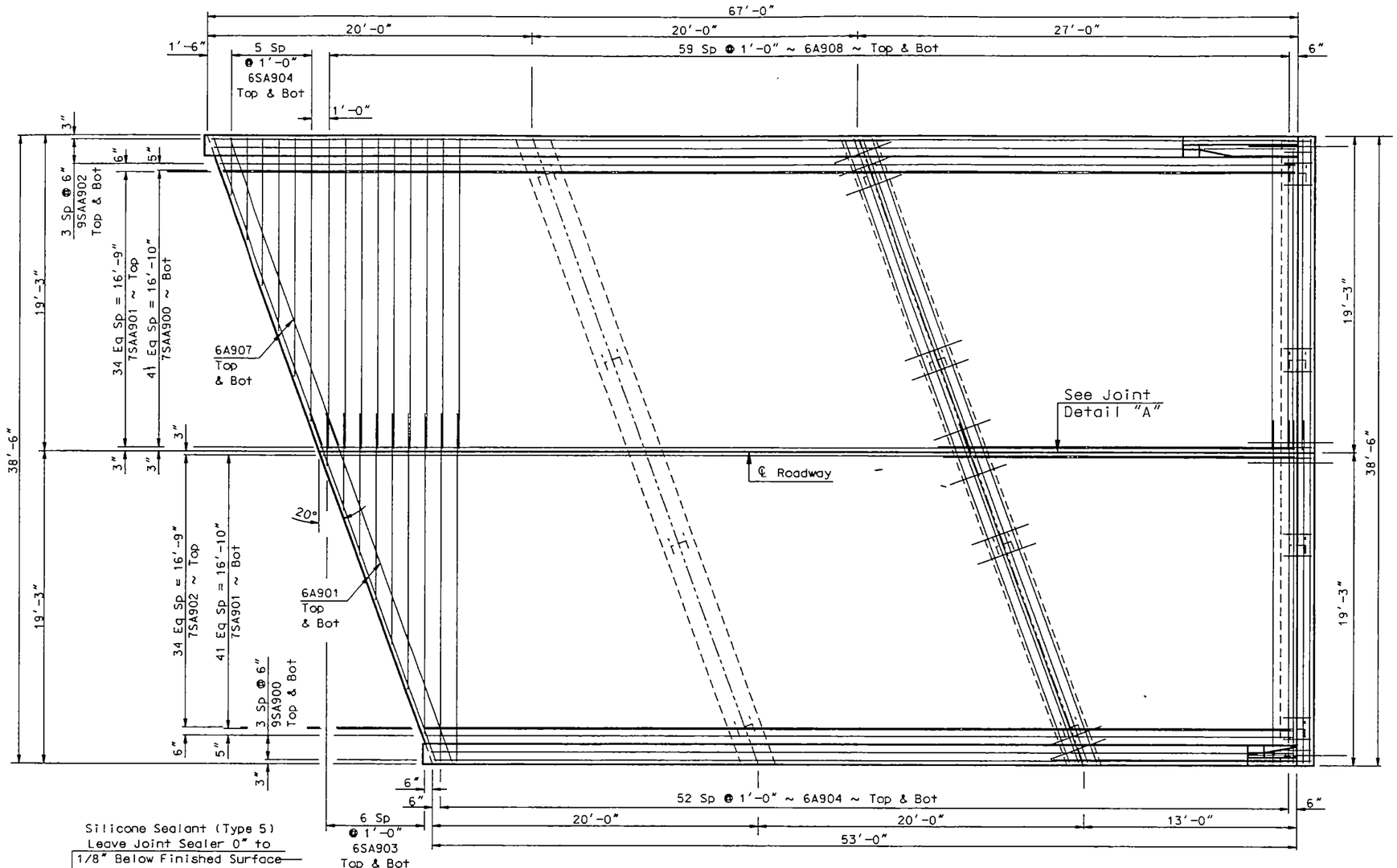
APPROACH BRIDGE
PILING LAYOUT

pilinglayout 02LCS164 JDS

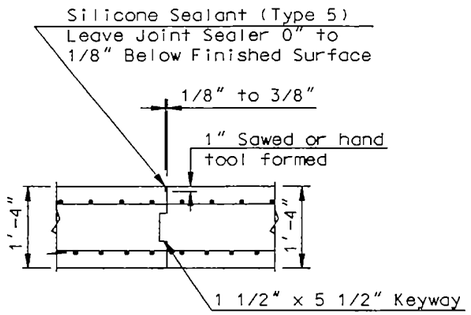
18-064.955-1

./18-064.955/pile layout.dgn 12/19/2002 04:56:48 PM

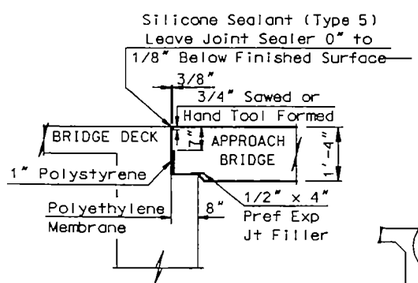
| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 81 |



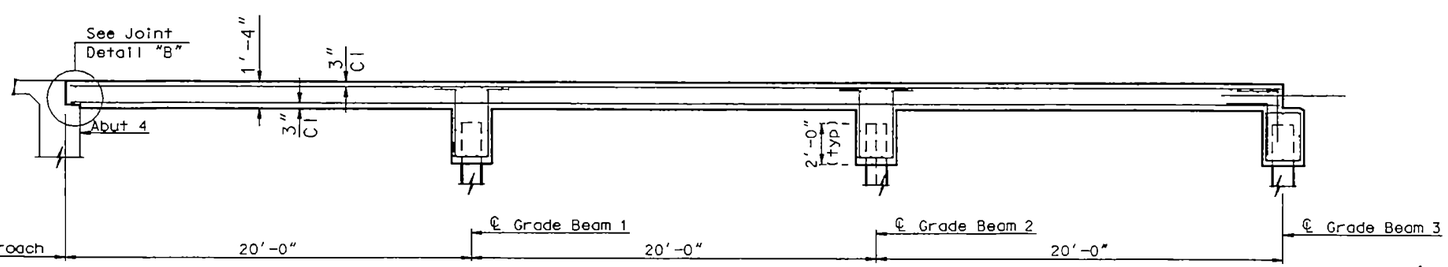

PLAN




JOINT DETAIL "A"




JOINT DETAIL "B"



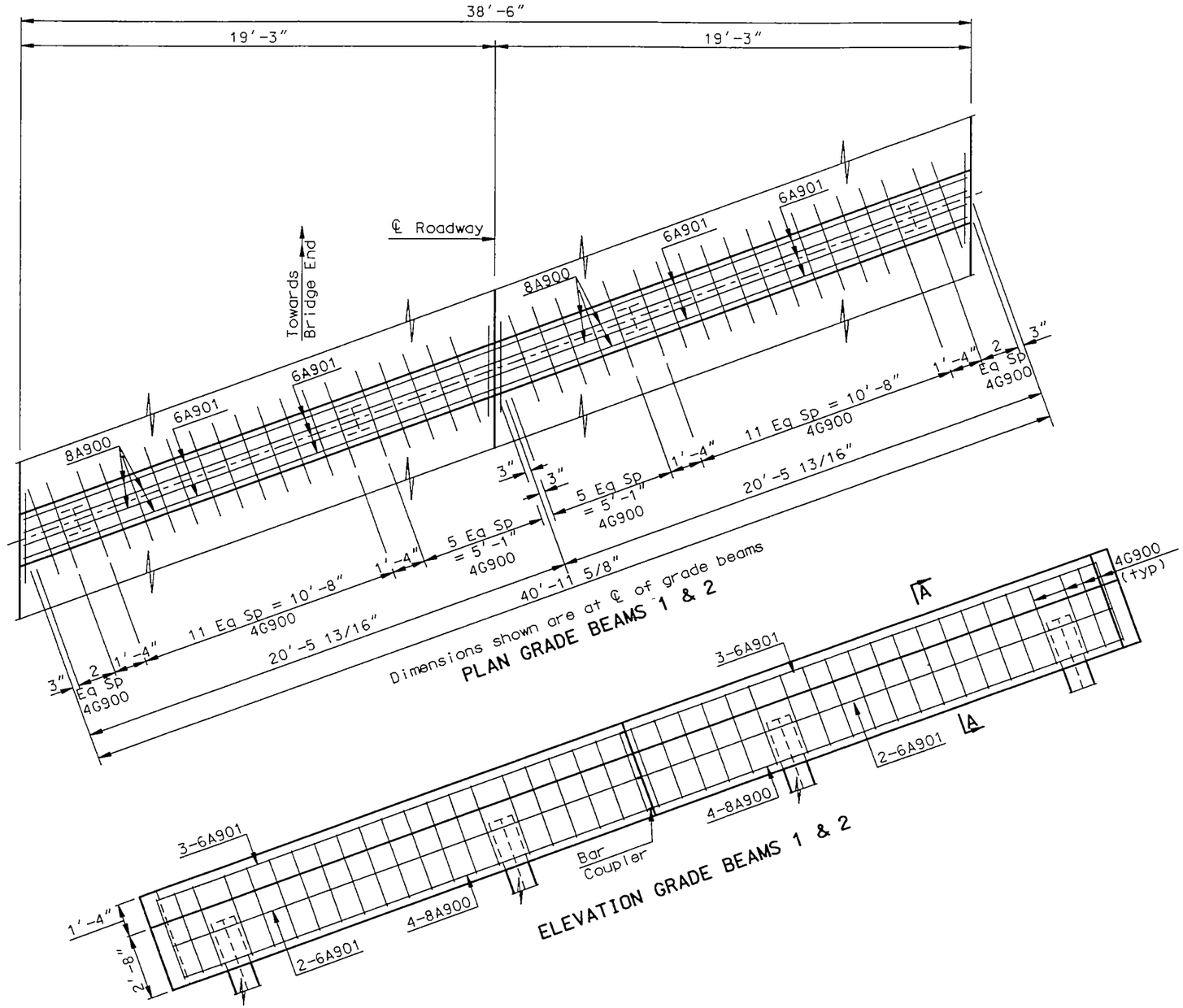

ELEVATION @ ℄ ROADWAY

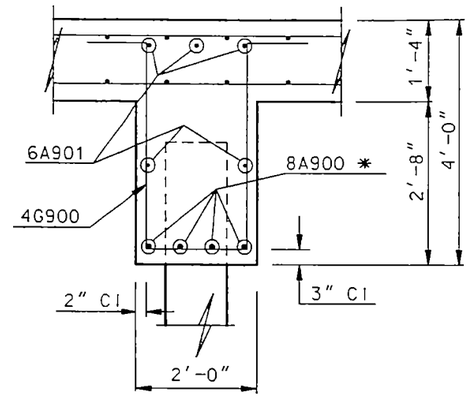
| QUANTITIES |
|---|
| See Dwg 18-064.955-5 |
| |
| |
| |

MAPLE RIVER

APPROACH BRIDGE SLAB DETAILS

| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 82 |




A-A

* Rebar couplers shall be used to connect 8A900 & 6A901 bars. The couplers shall be an approved mechanical connector capable of developing 125% of the specified yield strength of the reinforcing steel.

**NOTE:**

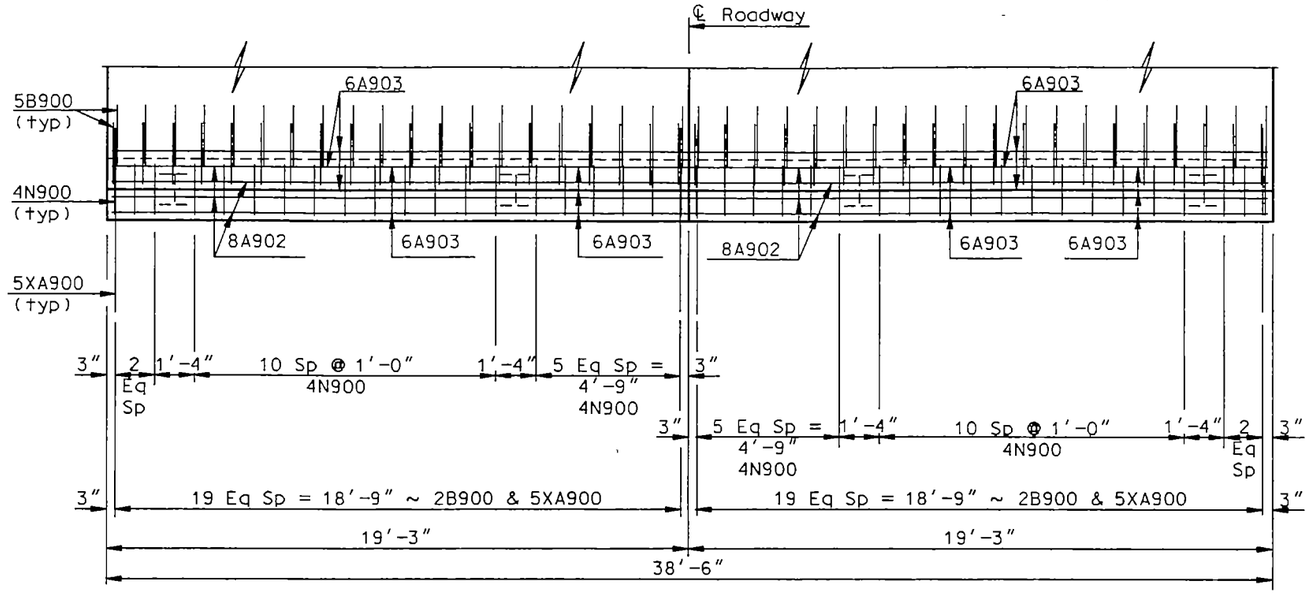
1 1/2" ø holes through piling for 8A900 rebar may be drilled or flame cut.

| QUANTITIES |
|---|
| See Dwg 18-064.955-5 |
| |

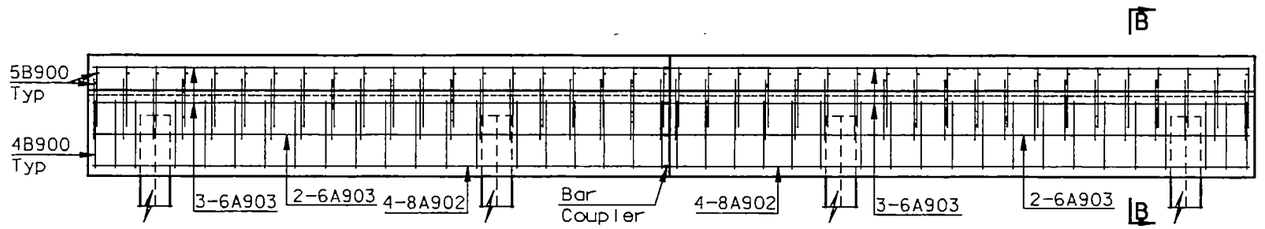
MAPLE RIVER

APPROACH BRIDGE
GRADE BEAM DETAILS

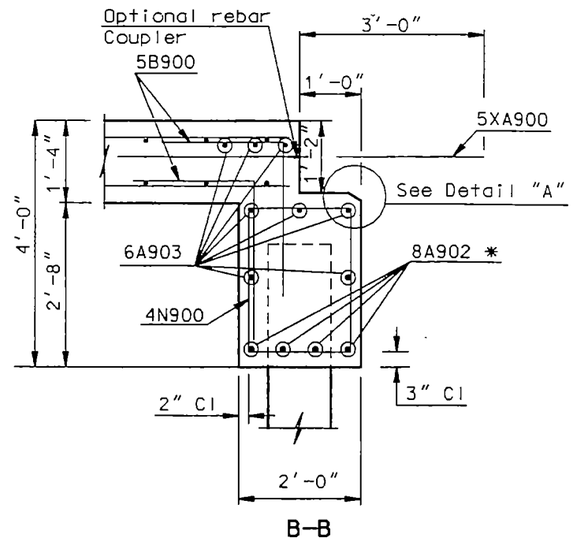
| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 83 |



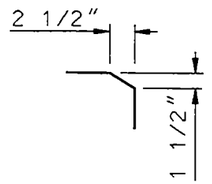

PLAN GRADE BEAM 3




ELEVATION GRADE BEAM 3




B-B




DETAIL "A"

* Rebar couplers shall be used to connect 8A902 & 6A903 bars. The couplers shall be an approved mechanical connector capable of developing 125% of the specified yield strength of the reinforcing steel. The couplers, if used, on the 5XA900 bar shall be epoxy coated and the 5XA900 bar shall be replaced with two 3'-0" rebars.

**NOTE:**

1 1/2" ø holes through piling for 8A902 rebar may be drilled or flame cut.

| QUANTITIES |
|---|
| See Dwg 18-064.955-5 |
| |

MAPLE RIVER

APPROACH BRIDGE
GRADE BEAM DETAILS

| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 83A |

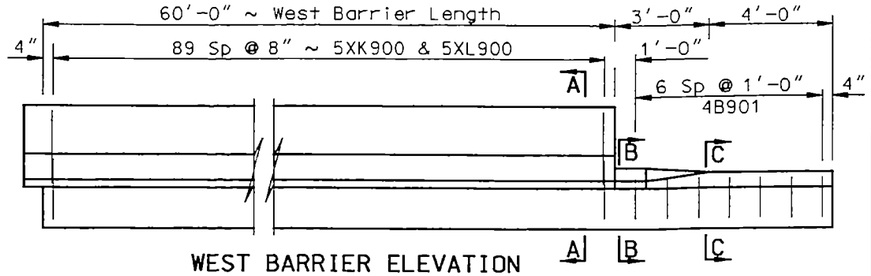
# BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

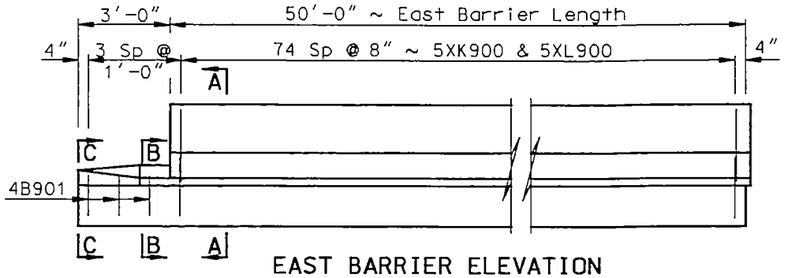
| LOCATION | | SIZE | MARK | NO. EACH /SET | NOMINAL LENGTH | DETAILING DIMENSIONS a | b | c | d | e | f | g | h | k |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROACH BRIDGE | REGULAR | 8 | A900 | 16 | 20'-3" | | 20'-3" | | | | | | | |
| | | 6 | A901 | 20 | 20'-3" | | 20'-3" | | | | | | | |
| | | 8 | A902 | 8 | 19'-1" | | 19'-1" | | | | | | | |
| | | 6 | A903 | 16 | 20'-3" | | 20'-3" | | | | | | | |
| | | 6 | A904 | 53 | 21'-5" | | 21'-5" | | | | | | | |
| | | 6 | A907 | 4 | 20'-2" | | 20'-2" | | | | | | | |
| | | 6 | A908 | 60 | 18'-11" | | 18'-11" | | | | | | | |
| | | 4 | A909 | 1 | 4'-1" | | 4'-1" | | | | | | | |
| | | 4 | A910 | 1 | 8'-1" | | 8'-1" | | | | | | | |
| | | 5 | B900 | 80 | 4'-0" | | 2'-0" | 2'-0" | | | | | | |
| | | 4 | B901 | 10 | 2'-4" | | 1'-0" | 1'-4" | | | | | | |
| | | 4 | G900 | 84 | 10'-6" | 3'-5" | 1'-8" | 3'-5" | 1'-0" | | | | 12 | 0 |
| | | 4 | N900 | 40 | 8'-6" | 1'-6" | 2'-3" | 6" | | | | | 0 | 12 |
| | | 9 | SA900 | 2 | 212'-0" | 52'-9" | 53'-3" | | | 3 | | | | |
| | | 7 | SA901 | 1 | 2373'-0" | 53'-5" | 59'-7" | | | 41 | | | | |
| | | 7 | SA902 | 1 | 1977'-6" | 53'-5" | 59'-7" | | | 34 | | | | |
| | | 6 | SA903 | 2 | 79'-11" | 3'-2" | 19'-8" | | | 6 | | | | |
| | | 6 | SA904 | 2 | 62'-3" | 3'-6" | 17'-3" | | | 5 | | | | |
| | | 7 | SAA900 | 1 | 2756'-3" | 40'-0" | 22'-7" | 2'-10" | 40'-0" | 41 | 28'-8" | | | |
| | | 7 | SAA901 | 1 | 2296'-10" | 40'-0" | 22'-7" | 2'-10" | 40'-0" | 34 | 28'-8" | | | |
| | | 9 | SAA902 | 2 | 284'-2" | 40'-0" | 30'-9" | 4'-9" | 40'-0" | 3 | 31'-4" | | | |
| | EPOXY | 5 | XA900 | 40 | 6'-0" | | 6'-0" | | | | | | | |
| | | 4 | XA901 | 9 | 49'-10" | | 49'-10" | | | | | | | |
| | | 4 | XA902 | 9 | 59'-10" | | 59'-10" | | | | | | | |
| | | 5 | XK900 | 165 | 6'-3" | 2'-0" | 8" | 11" | 1'-4" | 1'-0" | 2.5 | 8" | 8 5 | 12 |
| | | 5 | XL900 | 165 | 5'-0" | 3" | 2'-2" | 8" | 2'-2" | | 2.5 | | 1.25 | 12 |

## NOTES:

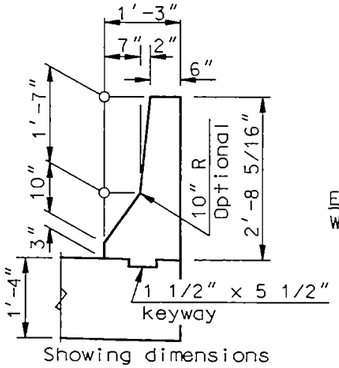
1. Fabrication and tolerances shall be in accordance with the CRSI Manual of Standard Practice.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. Adjacent "AA" bars shall be turned end for end so that the splice locations are staggered.
5. The "f" dimension indicates the radius.
6. An "X" preceding a bar designation indicates an epoxy coated bar.



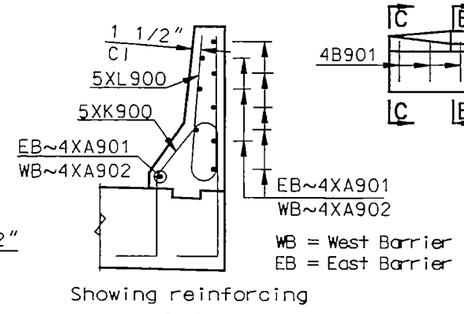

WEST BARRIER ELEVATION




EAST BARRIER ELEVATION

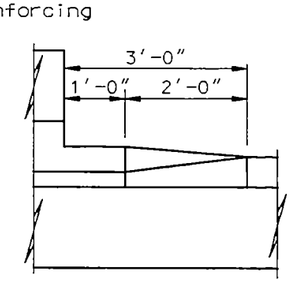



Showing dimensions
A–A

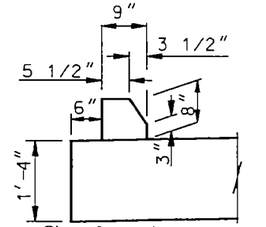



WB = West Barrier
EB = East Barrier

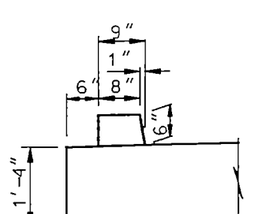
Showing reinforcing
A–A



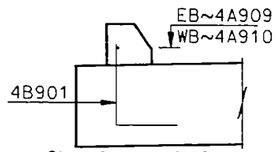

CURB TRANSITION



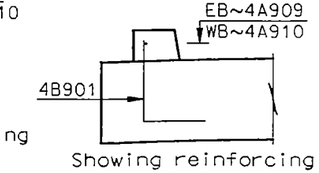

Showing dimensions
B–B



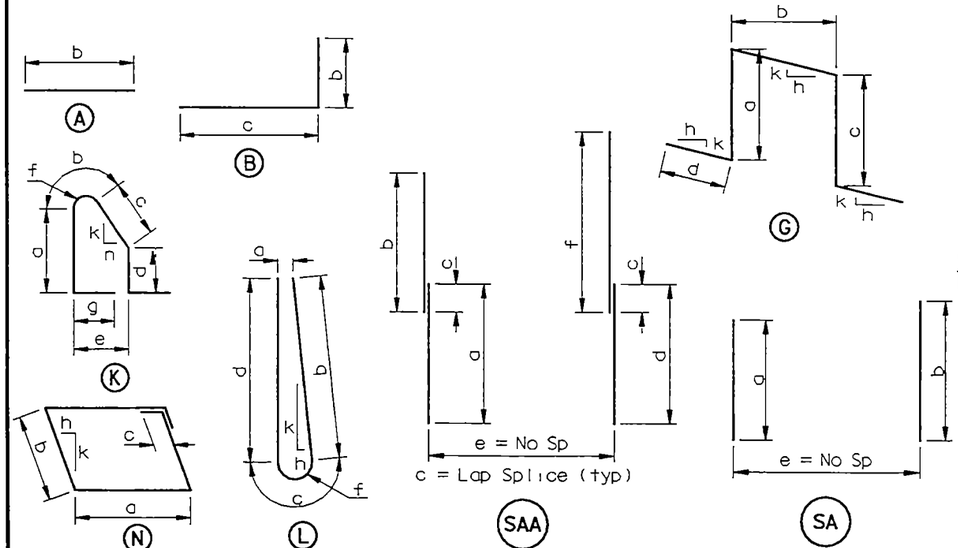

Showing dimensions
C–C

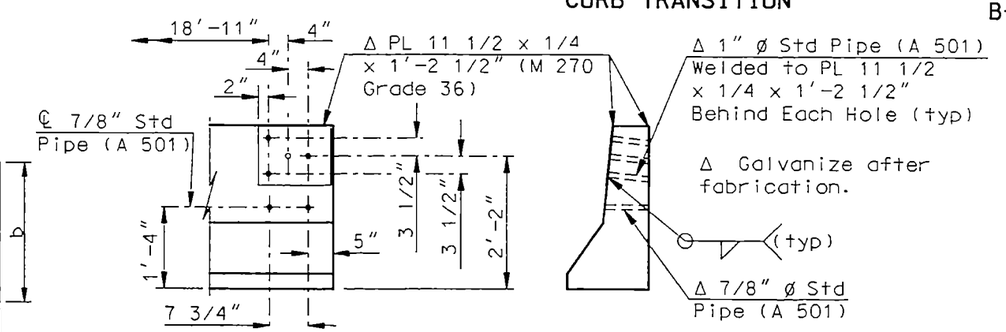



Showing reinforcing
B–B




Showing reinforcing
C–C




(SHOWING FRONT FACE)

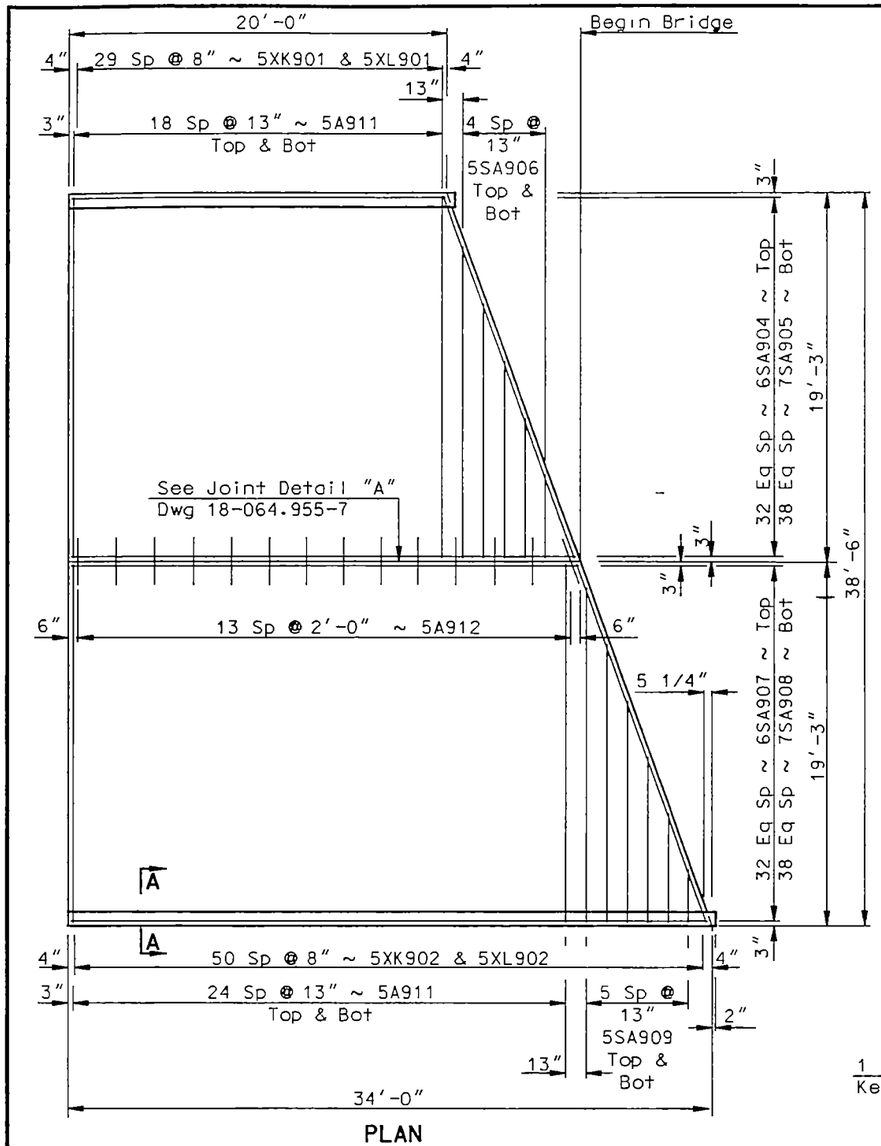
CONNECTION PLATE DETAILS

| QUANTITIES | | |
|---|---|---|
| CLASS AE-3 CONCRETE | 146.7 | CY |
| REINF STEEL | 34,094 | LBS |
| REINF STEEL (EPOXY) | 2,846 | LBS |
| STEEL PILING HP12 X 53 | 840 | LF |

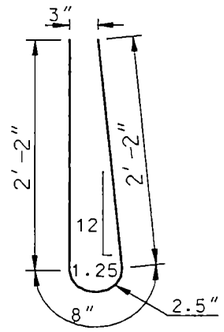
MAPLE RIVER

APPROACH BRIDGE DETAILS

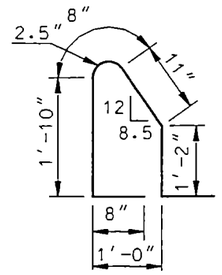
| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 83 |



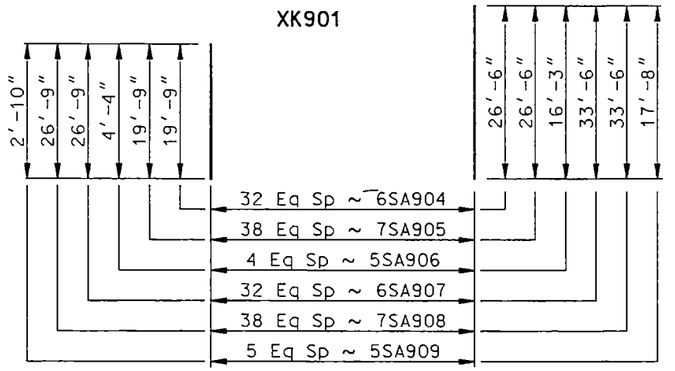

PLAN




XL901



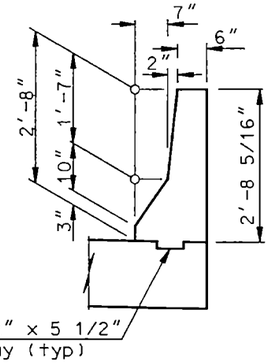

XK901



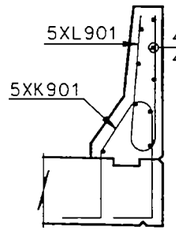

**SA904, SA905, SA906, SA907, SA908 & SA909**

Dimensions shown are out to out

BENT BAR DETAILS



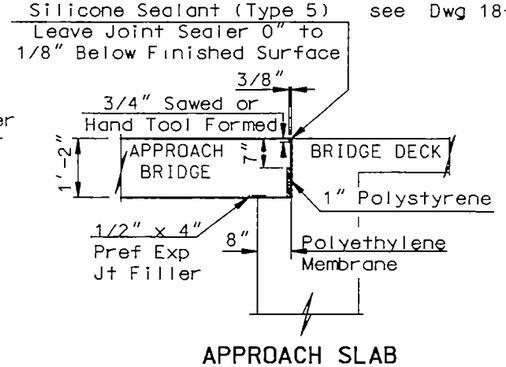

(SHOWING DIMENSIONS)




WB = West Barrier
EB = East Barrier

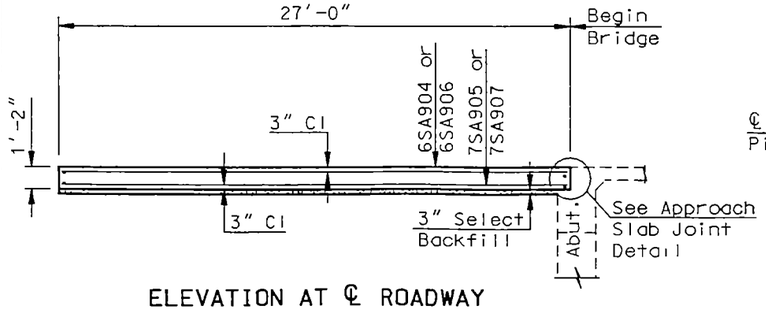
(SHOWING REINFORCING)

A-A

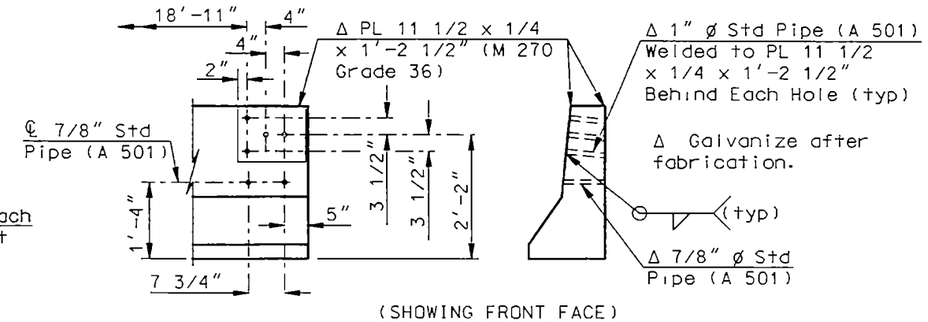



APPROACH SLAB JOINT DETAIL

For notes and additional details see Dwg 18-064.955-5.




ELEVATION AT ℄ ROADWAY




(SHOWING FRONT FACE)

CONNECTION PLATE DETAILS

SKEW ANGLE = 20°

BAR LIST - ONE SLAB

| SIZE | MARK | NO. | LENGTH |
|---|---|---|---|
| 5 | A911 | 88 | 18'-11" |
| 5 | A912 | 14 | 2'-6" |
| 4 | XA913 | 9 | 20'-3" |
| 4 | XA914 | 9 | 33'-10" |
| | | | |
| | | | |
| 6 | SA904 | 1 | 763'-2" |
| 7 | SA905 | 1 | 901'-10" |
| 5 | SA906 | 2 | 51'-9" |
| 6 | SA907 | 1 | 1174'-10" |
| 7 | SA908 | 1 | 1144'-9" |
| 5 | SA909 | 2 | 64'-9" |
| | | | |
| 5 | XK901 | 81 | 5'-11" |
| 5 | XL901 | 81 | 5'-0" |

ESTIMATED MATERIAL QUANTITIES

| REINFORCING STEEL (LBS) | CONCRETE (CY) |
|---|---|
| 10,357 | 49.1 |

QUANTITIES

| | |
|---|---|
| Bridge Approach Slab | 115.5 SY |

MAPLE RIVER

SOUTH APPROACH SLAB DETAILS

APPSLAB1 02LCS165 JDS

18-064.955-6

.../BRIDGE/18-064.955/appslab1.dgn 12/23/2002 08:55:23 AM

| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 83C |

## NOTE:

All estimated material quantities shown are for information purposes only. All equipment, labor and materials including select backfill, concrete, reinforcing bars, polyethylene membrane, preformed joint filler, polystyrene and silicone sealant required to remove existing approach slabs and build new approach slabs and barriers shall be included in the price bid "Bridge Approach Slab-Remove & Replace."

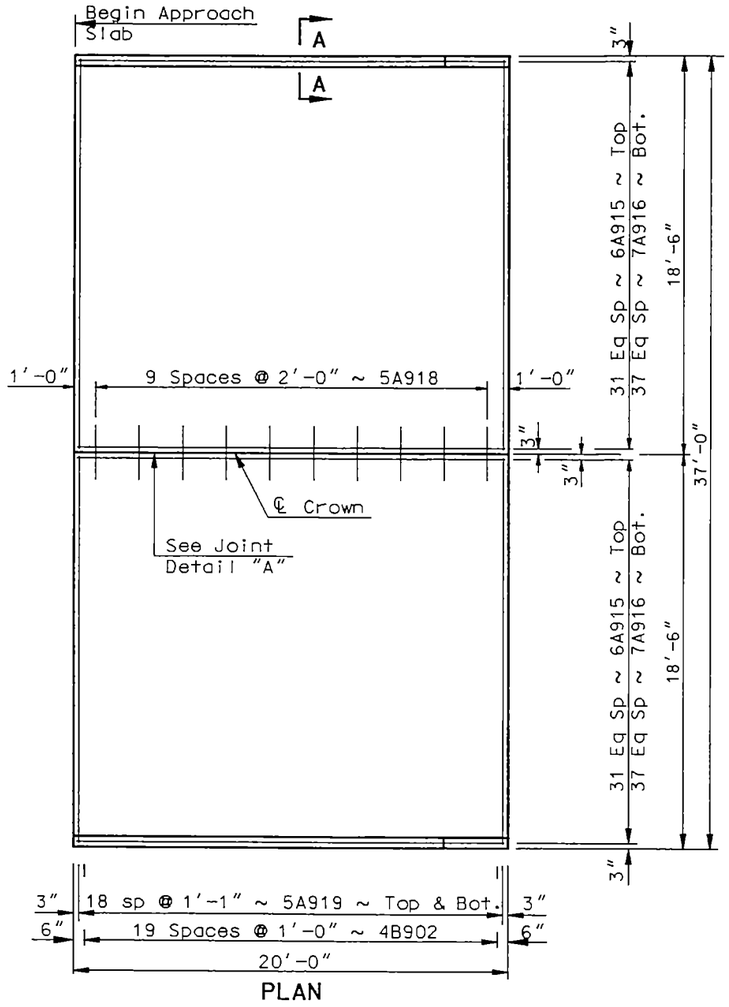
The existing approach slabs at both ends of the bridge are 40 foot in length. These approach slabs shall be removed, become the property of the contractor and be disposed of off the right of way. The cost to remove and dispose of the approach slabs shall be included in the price bid for "Bridge Approach Slab-Remove & Replace."

The concrete shall be Class AE-3 and the reinforcing steel shall be Grade 60. The polyethylene membrane shall meet the requirements of AASHTO M 171.

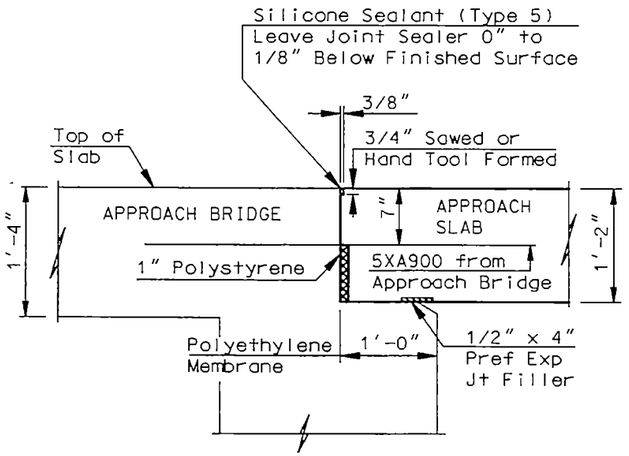
Surface Finish "D" shall be required for the inside and top surface of the approach slab barriers.

| Width = 36'-0" Cl. Rdwy. | | | |
|---|---|---|---|
| Skew Angle = 0° | | | |
| BAR LIST – ONE SLAB | | | |
| SIZE | MARK | NO. | LENGTH |
| 6 | A915 | 64 | 19'-8" |
| 7 | A916 | 76 | 19'-8" |
| 4 | A917 | 2 | 19'-0" |
| 5 | A918 | 10 | 2'-6" |
| 5 | A919 | 76 | 18'-2" |
| | | | |
| 4 | B902 | 40 | 2'-2" |
| | | | |
| | | | |
| | | | |

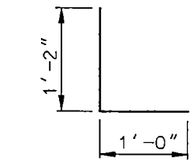
| ESTIMATED MATERIAL QUANTITIES | |
|---|---|
| REINFORCING STEEL GRADE 60 (LBS) | AE-3 CONCRETE (CY) |
| 6,495 | 32.3 |




PLAN



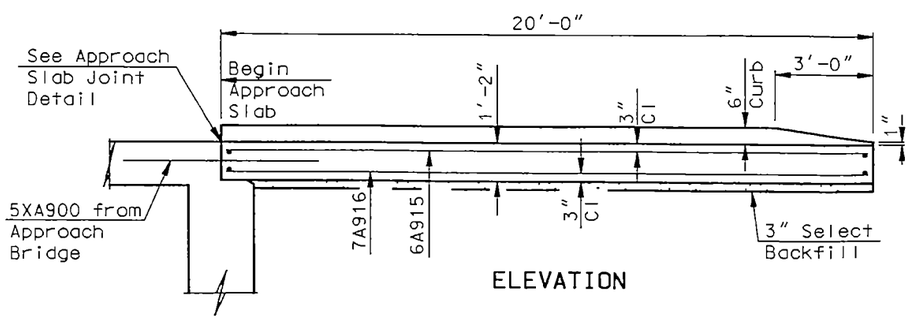

APPROACH SLAB JOINT DETAIL



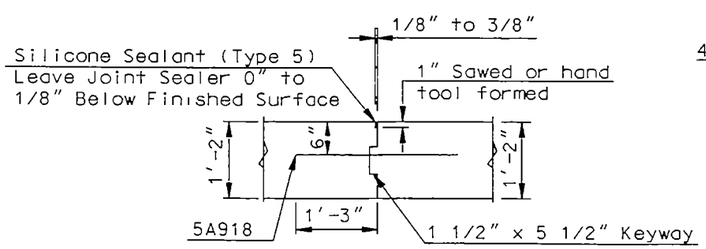

B902

Dimensions shown are out to out

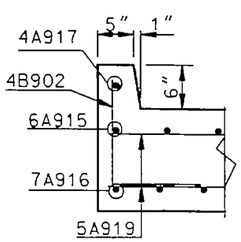
BENT BAR DETAIL




ELEVATION




JOINT DETAIL "A"




A–A

| QUANTITIES | | |
|---|---|---|
| BRIDGE APPROACH SLAB | 82.2 | SY |

MAPLE RIVER

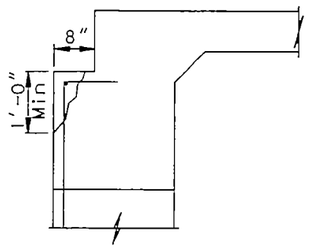
NORTH APPROACH SLAB DETAILS

appslab2 02LCS166 JDS

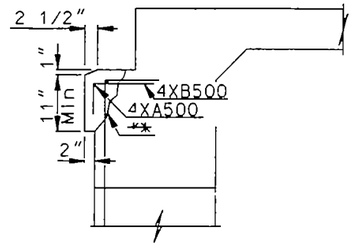
./BRIDGE/18-064.955/appslab2.dgn 12/20/2002 03:47:02 PM

18-064.955-7

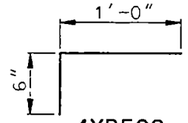
| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 830 |




EXISTING APPROACH SLAB LIP




NEW APPROACH SLAB LIP




4XB500

BENT BAR DETAILS

Dimensions shown are out to out

** Bush Hammer Finish: Before any concrete is placed against the existing concrete the surface shall be prepared with a bush hammer to produce a clean rough finish.

| BAR LIST (1 APPR. LIP) | | | |
|---|---|---|---|
| SIZE | MARK | NO. | LENGTH |
| 4 | XA500 | 2 | 19'-6" |
| | | | |
| | | | |
| | | | |
| 4 | XB500 | 42 | *1'-6" |
| | | | |

| ESTIMATED MATERIAL QUANTITIES | |
|---|---|
| REINFORCING STEEL LBS (EPOXY) | CONCRETE CY (CL AE-3) |
| 68 | 0.7 |

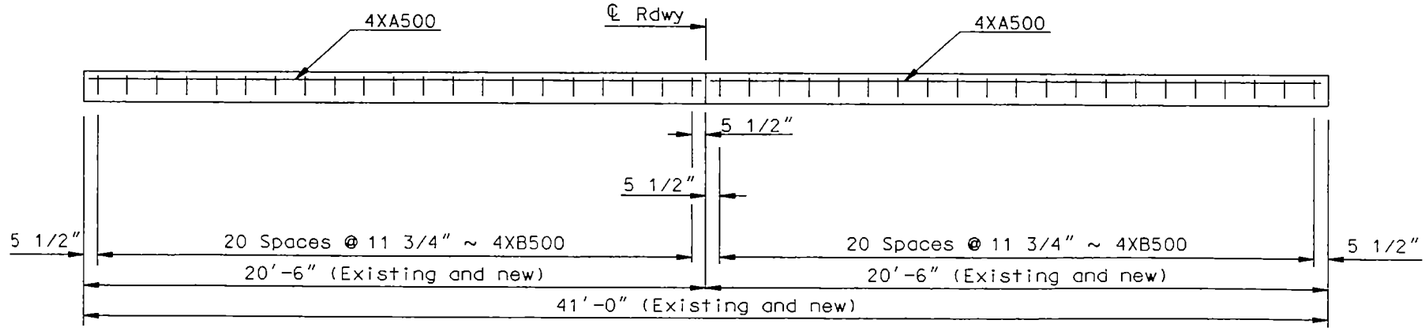
* Length may vary depending on manufacturer's recommendations for anchorage.

4XB500 bars shall be installed according to the manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Sec. 806.02 of the NDDOT Standard Specifications.

Quantities shown are for informational purposes only.

Class AAE-3 Concrete, reinforcing steel, labor and equipment required to build the approach slab lip shall be included in the bid item "Approach Slab Lip Repair".

The quantity shown is for bidding purposes only. The actural quantity will be determined in the field by the Engineer.




ELEVATION

(Showing only new reinforcing)

| QUANTITIES | |
|---|---|
| APPROACH SLAB LIP REPAIR | 41.0 LF |

MAPLE RIVER

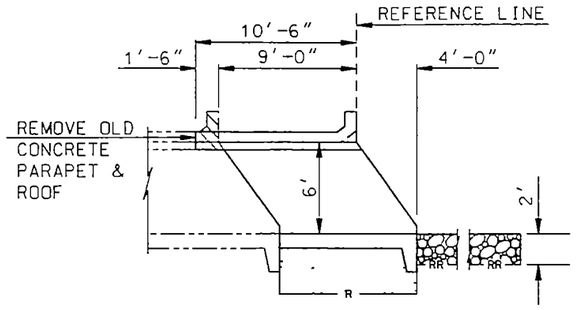
APPROACH SLAB LIP REPAIR

APLIPRP 02LCS167 JDS

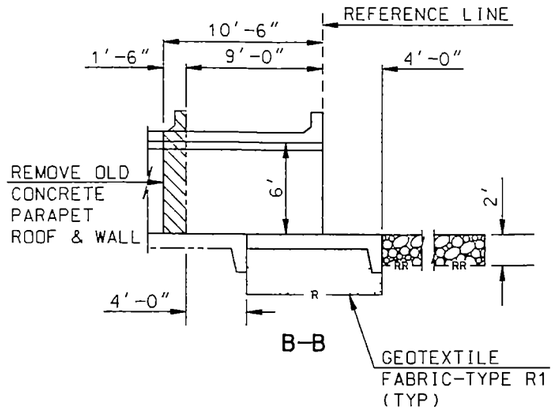
18-064.955-8

.../BRIDGE/18-064.955/aplirp.dgn 12/19/2002 04:56:41 PM

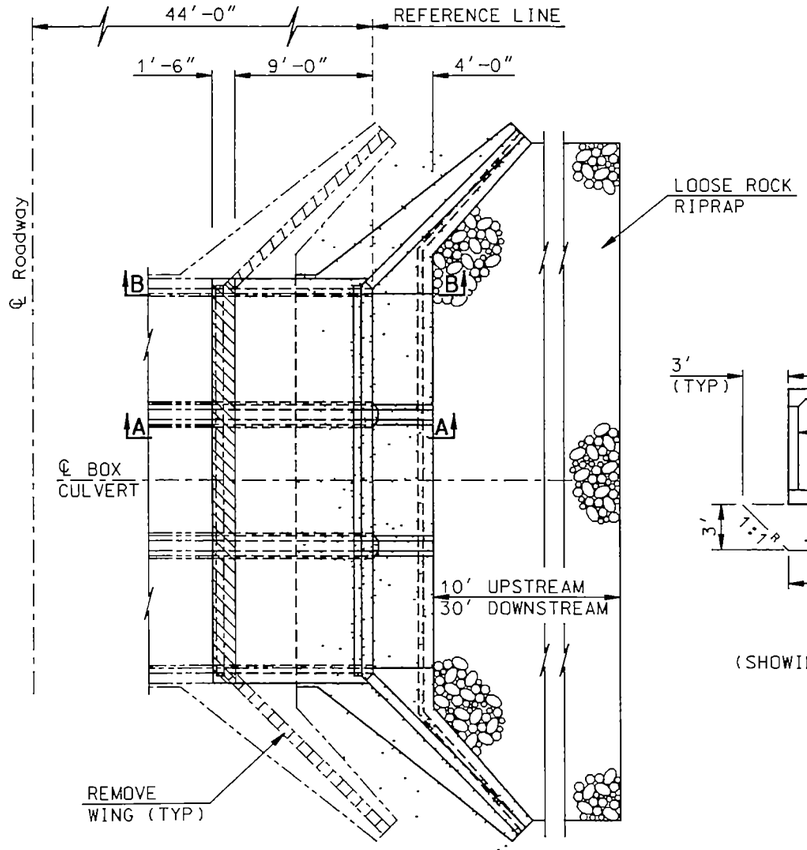
| STATE | PROJECT NUMBER | SHEET NO. |
|---|---|---|
| ND | SS-8-018(036)055 | 84 |



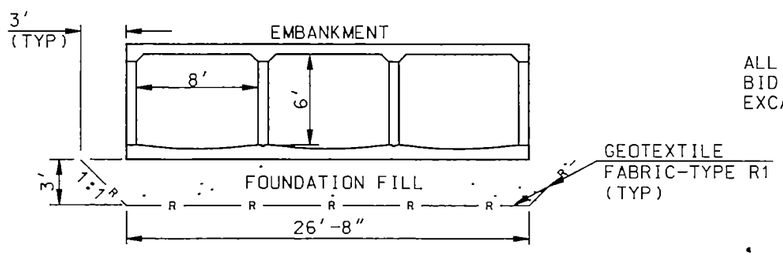

A–A




B–B




PLAN VIEW




SECTION

(SHOWING THE FILL AND FABRIC UNDER THE BOX)

## SCOPE OF WORK

WORK CONSISTS OF EXTENDING A TRIPLE BARREL 8' X 6' RCB 9'-0" ALONG ℄ BOX CULVERT ON BOTH ENDS.

## REMOVAL OF CONCRETE

REMOVE PORTIONS OF EXISTING CULVERT ENDS WHERE EXTENSION IS TO BE ATTACHED. REMOVE EXISTING CONCRETE TO EXPOSE AT LEAST 1'-6" PROJECTION OF EXISITNG REINFORCING STEEL AT THE PARAPET AND THE OUTSIDE WALLS AT THE VERTICAL JUNCTION WITH THE WING. REMOVE EXISTING WING WALLS IN ENTIRETY. REBAR PROTUDING FROM THE FLOOR UNDER THE WING WALLS SHALL BE CUT FLUSH WITH THE TOP SURFACE OF THE FLOOR. FLAME CUTTING OF REINFORCING STEEL IS PERMITTED.

LEAVE EXISTING INNER WALL, FLOOR AND CUTOFF WALLS IN PLACE. IF THE EXTENSION IS SHORT SOME INTERFERENCE MAY ARISE BETWEEN THE OLD AND NEW FOOTINGS. THEREFORE, SOME BENDING AND CUTTING OF THE NEW REINFORCING STEEL WILL BE REQUIRED AND THE CONCRETE QUANTITY MAY BE REDUCED SLIGHTLY.

IF THE EXISTING WALL AND ROOF THICKNESSES ARE DIFFERENT THAN THE NEW THICKNESSES, THE INNER SURFACES SHALL BE FLUSH AND THE EXTERIOR SURFACES TAPERED IN THE FIRST 1'-6" OF THE BARREL.

ALL CONCRETE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY.

## FOUNDATION PREPARATION

THE BIDDERS SHALL BE AWARE OF THE POSSIBLE INUNDATED CONDITIONS AT THIS SITE BEFORE THE BID LETTING. THE COST OF ANY COFFERDAMS AND DEWATERING THE EXCAVATION SHALL BE INCLUDED IN THE BID FOR "FOUNDATION PREPARATION".

## CLASS 2 EXCAVATION

ALL EXCAVATION REQUIRED TO BUILD THE BOX CULVERT SHALL BE INCLUDED IN THE BID FOR "CLASS 2 EXCAVATION". THE APPROXIMATE QUANTITY OF CLASS 2 EXCAVATION IS 50 CY.

**QUANTITIES**

| SPEC NO. | CODE NO. | BID ITEM | |
|---|---|---|---|
| 202 | 0111 | REMOVAL OF CONCRETE | 1 L.S. |
| 210 | 0111 | CLASS 2 EXCAVATION | 1 L.S. |
| 210 | 0201 | FOUNDATION PREPARATION | 1 EA. |
| 210 | 0210 | FOUNDATION FILL | 110 C.Y. |
| 602 | 1131 | CLASS AE-3 CONCRETE-BOX CULVERT | 60.8 C.Y. |
| 612 | 0114 | REINFORCING STEEL-GRADE 60-BOX CULVERT | 7604 LBS. |
| 708 | 1020 | RIPRAP - LOOSE ROCK | 125 C.Y. |
| 709 | 0600 | GEOTEXTILE FABRIC - TYPE RR | 190 S.Y. |
| 709 | 0701 | GEOTEXTILE FABRIC - TYPE R1 | 95 S.Y. |

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

**REINFORCED CONCRETE TRIPLE BOX CULVERT EXTENSION LAYOUT**

STA 3850 + 48
CLEAR SPAN 3 x 8 CLEAR HEIGHT 6
MAXIMUM FILL 7
LIVE LOAD HS 25

PROJECT: SS-8-018(036)055
CASS COUNTY

DATE _____ BRIDGE ENGINEER _____

18072952LO

18-072.952

./18-072.952/18072952LO.dgn 09/26/2002 12:44:15 PM

# NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO 1 OF 6

# ABSTRACT OF BIDS RECEI...

PROJECT NO BRF-8-018(09)064. TYPE IMP

017

COUNTY & DATE CASS COUNTY APR 19, 1985

LENGTH & TYPE .132

ND18 AT MAPLE R N LEONARD

COMPLETION TIME 11 01 85 GRADE. STRUCTURE & CONCRETE PA

| SPEC NO | ITEM DESCRIPTION | | UNIT | QUANTITY | NO S BIDDER ENGINEERS ESTIMATE CC CHECK BID PRICE | ENGINEERS ESTIMATE RANK 00 AMOUNT | BIDDER INDUSTRIAL BUILDERS I FARGO, ND CCBOND BID PRICE | RANK 01 AMOUNT | BIDDER WANZEK CONSTRUCTION I FARGO, ND CCBOND BID PRICE | RANK 02 AMOUNT |
|---|---|---|---|---|---|---|---|---|---|---|
| 103 | CONTRACT BOND | | L SUM | 1000 | 5000000 | 500000 | 3500000 | 350000 | 3000000 | 300000 |
| 203 | EMBANKMENT-TYPE C | | CU.YD | 1325000 | 3500 | 463750 | 1100 | 145750 | 2750 | 364375 |
| 216 | WATER | | M GAL | 38000 | 5500 | 20900 | 10000 | 38000 | 10000 | 38000 |
| 302 | AGGREGATE BASE COURSE | CL.5 | TON | 1635000 | 5500 | 899250 | 12500 | 20437500 | 11000 | 1798500 |
| 63018 | 18 IN.COPR.STEEL PIPE | .064 IN. | L FT | 72000 | 13000 | 93600 | 15000 | 108000 | 15000 | 108000 |
| 63018 | 18 IN. CORR. STEEL | END SECTION .064 INCHES | EA | 2000 | 70000 | 14000 | 80000 | 16000 | 100000 | 20000 |
| 705 | MOBILIZATION | | L SUM | 1000 | 12500000 | 1250000 | 5500000 | 5500000 | 4000000 | 4000000 |
| 722 | BOX BEAM GUARD RAIL | | L FT | 278000 | 25000 | 695000 | 24000 | 667200 | 23000 | 639400 |
| 722 | BOX BEAM GUARDRAIL- | FLARED END TREAT & TRAN. | EA | 4000 | 600000 | 240000 | 600000 | 2400000 | 580000 | 2320000 |
| 724 | TEMPORARY BYPASS | | L SUM | 1000 | 10000000 | 1000000 | 20000000 | 20000000 | 20000000 | 20000000 |
| 726 | SEEDING TYPE B CL.V | | ACRE | 3000 | 200000 | 60000 | 250000 | 750000 | 400000 | 1200000 |
| 746 | FLAGGING | | M HR | 500000 | 5500 | 275000 | 7000 | 3500000 | 8500 | 4250000 |
| 750 | FIELD LABORATORY-TYPE | A | EA | 1000 | 2500000 | 250000 | 1500000 | 1500000 | 2000000 | 2000000 |
| 762 | TRAFFIC CONTROL | | L SUM | 1000 | 5000000 | 500000 | 4500000 | 4500000 | 4000000 | 4000000 |
| 776 | TEMPORARY STRIPING | | MILE | 1000 | 200000 | 20000 | 200000 | 20000 | 100000 | 10000 |
| | SUBTOTAL | | | | | 6281500 | | 7203700 | | 7055275 |
| | ALTERNATE 01 | | | | | | | | | |
| 202 | REMOVAL OF STRUCTURE | | L SUM | 1000 | 6000000 | 600000 | 8000000 | 800000 | 15000000 | 1500000 |
| 208 | CLASS 1 EXCAVATION | | CU YD | 113000 | 4000 | 45200 | 6000 | 67800 | 11000 | 124300 |
| 208 | CLASS 2 EXCAVATION | | CU YD | 116000 | 10000 | 116000 | 6000 | 69600 | 22000 | 255200 |
| 208 | CLASS 3 EXCAVATION | | CU YD | 3000000 | 3000 | 900000 | 2500 | 750000 | 2500 | 750000 |
| 208 | FOUNDATION PREP. | | L SUM | 1000 | 5000000 | 500000 | 3000000 | 3000000 | 10000000 | 10000000 |
| 228 | SELECT BACKFILL | | CU YD | 221000 | 10000 | 221000 | 10000 | 2210000 | 10000 | 2210000 |
| 5508 | 8 IN.NON-REINF.CONC. | PVMT.-CL.AE | SQ.YD | 1092000 | 22000 | 2402400 | 28000 | 3057600 | 28000 | 3057600 |
| 550 | CONCRETE BRIDGE | APPROACH SLAB | SQ YD | 320000 | 100000 | 3200000 | 65000 | 20800000 | 70000 | 22400000 |
| 550 | DOWELED EXPANSION | JOINT ASSEMBLY | L FT | 131000 | 10000 | 131000 | 10000 | 1310000 | 6000 | 786000 |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 9/16 IN. | L FT | 582000 | 700 | 40740 | 3000 | 174600 | 750 | 43650 |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 1 5/8 IN. | L FT | 131000 | 10000 | 131000 | 7000 | 91700 | 1810 | 23711 |
| 602 | CLASS AAE-3 CONCRETE | | CU YD | 314000 | 250000 | 7850000 | 200000 | 62800000 | 250000 | 78500000 |
| 602 | CLASS AE-1 CONCRETE | | CU YD | 226000 | 225000 | 5085000 | 200000 | 45200000 | 150000 | 33900000 |
| 602 | SPECIAL SURFACE | FINISH | SQ FT | 3598000 | 850 | 305830 | 800 | 2878400 | 1000 | 3598000 |
| 604 | PRESTRESSED BOX BEAM- | 33 INCHES | L FT | 1323000 | 102000 | 13494600 | 100000 | 13230000 | 90000 | 11907000 |
| 612 | REINFORCING STEEL - | GRADE 60 | LB | 47086000 | 450 | 2118870 | 420 | 1977612 | 400 | 18834400 |
| 612 | REINFORCING STEEL - | GRADE 60 (EPOXY COATED) | LB | 40393000 | 550 | 2221615 | 550 | 2221615 | 500 | 20196500 |
| 616 | STRUCTURAL STEEL M183 | | LB | 1725000 | 900 | 155250 | 1000 | 1725000 | 1000 | 1725000 |
| 622 | STEEL PILING HP12X53 | | L FT | 2856000 | 21000 | 5997600 | 17000 | 48552000 | 21000 | 59976000 |
| 622 | STEEL TEST PILING | HP12X53 | L FT | 310000 | 25000 | 775000 | 22000 | 6820000 | 23000 | 7130000 |
| 701 | VERTICAL DRAINAGE | FABRIC | SQ FT | 1013000 | 2500 | 253250 | 3000 | 3039000 | 2300 | 2329900 |
| 702 | LOOSE ROCK RIPRAP | | CU YD | 1406000 | 20000 | 2812000 | 13000 | 18278000 | 13000 | 18278000 |
| 750 | LINSEED OIL TREATMENT | | GAL | 16000 | 16000 | 25600 | 14000 | 224000 | 20000 | 320000 |
| 900 | BRIDGE BENCH MARKS | | SET | 1000 | 450000 | 450000 | 400000 | 400000 | 250000 | 250000 |
| | SUBTOTAL | | | | | 49426955 | | 44164167 | | 45704841 |

ACTION TAKEN BY STATE HIGHWAY COMMISSION AWARD TO (3)

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

DATE OF AWARD _____ 19 ____

STATE HIGHWAY COMMISSIONER

FORM NO 1421

# NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO 2 OF 6

# ABSTRACT OF BIDS RECEIVED

PROJECT NO BRF-8-018(09)064. TYPE IMP

NO 5

COUNTY & DATE CASS COUNTY APR 19, 1985

LENGTH & TYPE .132

ND18 AT MAPLE R N LEONARD

COMPLETION TIME 11 01 85 GRADE, STRUCTURE & CONCRETE PA

| SPEC NO | ITEM DESCRIPTION | | UNIT | QUANTITY | BIDDER ENGINEERS ESTIMATE CC CHECK RANK 00 BID PRICE | AMOUNT | BIDDER INDUSTRIAL BUILDERS I FARGO, ND CCBOND RANK 01 BID PRICE | AMOUNT | BIDDER WANZEK CONSTRUCTION I FARGO, ND CCBOND RANK 02 BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|---|
| | TOTAL | | | | | 5570845 | | 5136786 | | 5276011 |
| | ALTERNATE 02 | | | | | | | | | |
| 202 | REMOVAL OF STRUCTURE | | L SUM | 1000 | 6000000 | 600000 | 8000000 | 800000 | 000 | 00 |
| 208 | CLASS 1 EXCAVATION | | CU YD | 113000 | 4000 | 45200 | 6000 | 67800 | 000 | 00 |
| 208 | CLASS 2 EXCAVATION | | CU YD | 87000 | 10000 | 87000 | 6000 | 52200 | 000 | 00 |
| 208 | CLASS 3 EXCAVATION | | CU YD | 3000000 | 3000 | 900000 | 1000 | 3000000 | 000 | 00 |
| 208 | FOUNDATION PREP. | | L SUM | 1000 | 5000000 | 500000 | 1500000 | 1500000 | 000 | 00 |
| 228 | SELECT BACKFILL | | CU YD | 221000 | 10000 | 221000 | 10000 | 2210000 | 000 | 00 |
| 5508 | IN.NON-REINF.CONC. | PVMT.-CL.AE | SQ.YD | 1088000 | 22000 | 2393600 | 31000 | 3372800 | 000 | 00 |
| 550 | CONCRETE BRIDGE | APPROACH SLAB | SQ YD | 320000 | 100000 | 3200000 | 65000 | 2080000 | 000 | 00 |
| 550 | DOWELED EXPANSION | JOINT ASSEMBLY | L FT | 131000 | 10000 | 131000 | 10000 | 1310000 | 000 | 00 |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 9/16 IN. | L FT | 582000 | 700 | 40740 | 3000 | 174600 | 000 | 00 |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 1 5/8 IN. | L FT | 131000 | 10000 | 131000 | 7000 | 91700 | 000 | 00 |
| 602 | CLASS AAE-3 CONCRETE | | CU YD | 349000 | 250000 | 8725000 | 220000 | 7678000 | 000 | 00 |
| 602 | CLASS AE-1 CONCRETE | | CU YD | 155000 | 225000 | 3487500 | 210000 | 3255000 | 000 | 00 |
| 602 | SPECIAL SURFACE | FINISH | SQ FT | 3640000 | 850 | 309400 | 800 | 2912000 | 000 | 00 |
| 612 | REINFORCING STEEL - | GRADE 60 | LB | 55769000 | 450 | 2509605 | 450 | 2509605 | 000 | 00 |
| 612 | REINFORCING STEEL - | GRADE 60 (EPOXY COATED) | LB | 40337000 | 550 | 2218535 | 600 | 2420220 | 000 | 00 |
| 616 | STRUCTURAL STEEL | | L SUM | 1000 | 17000000 | 1700000 | 160000000 | 160000000 | 000 | 00 |
| 622 | STEEL PILING HP12X53 | | L FT | 221000 | 21000 | 4643100 | 18000 | 3979800 | 000 | 00 |
| 622 | STEEL TEST PILING | HP12X53 | L FT | 290000 | 25000 | 7250000 | 23000 | 6670000 | 000 | 00 |
| 701 | VERTICAL DRAINAGE | FABRIC | SQ FT | 887000 | 2500 | 2217500 | 3000 | 2661000 | 000 | 00 |
| 702 | LOOSE ROCK RIPRAP | | CU YD | 1406000 | 20000 | 2812000 | 13000 | 1827800 | 000 | 00 |
| 750 | LINSEED OIL TREATMENT | | GAL | 16000 | 16000 | 25600 | 14000 | 224000 | 000 | 00 |
| 900 | BRIDGE BENCH MARKS | | SET | 1000 | 450000 | 450000 | 400000 | 400000 | 000 | 00 |
| | SUBTOTAL | | | | | 35672030 | | 46398225 | | NO BID |
| | TOTAL | | | | | 41953530 | | 53601925 | | |
| | | | | | | | NO LIMIT | | YES, LIMIT 2 PROJ ON STATE & 2 | PROJ ON LO |

ACTION TAKEN BY STATE HIGHWAY COMMISSION AWARD TO (10) WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

POR 121 DATE OF AWARD _____ 19 _____ STATE HIGHWAY COMMISSIONER

# NORTH DAKOTA STATE HIGHWAY DEPARTMENT — ABSTRACT OF BIDS RECEIVED



PROJECT NO BRF-8-018(09)064 TYPE IMP

017

COUNTY & DATE CASS COUNTY APR 19, 1985

LENGTH & TYPE .132

ND18 AT MAPLE R N LEONARD

COMPLETION TIME 11 01 85 GRADE, STRUCTURE & CONCRETE PA

| | | | | BIDDER NO 5 WEIS7 & SONS INC BISMARCK, ND CC BOND RANK 03 | | BIDDER SWINGEN CONSTRUCTION GRAND FORKS, ND CCBOND RANK 04 | | BIDDER NORTHERN IMPROVEMENT FARGO, ND CCBOND RANK 05 | |
|---|---|---|---|---|---|---|---|---|---|
| SPEC NO | ITEM DESCRIPTION | UNIT | QUANTITY | BID PRICE | AMOUNT | BID PRICE | AMOUNT | BID PRICE | AMOUNT |
| 103 | CONTRACT BOND | L SUM | 1000 | 5500000 | 550000 | 3300000 | 330000 | 1500000 | 1500000 |
| 203 | EMBANKMENT-TYPE C | CU.YD | 1325000 | 3750 | 496875 | 1100 | 145750 | 2000 | 2650000 |
| 216 | WATER | M GAL | 38000 | 7500 | 28500 | 8250 | 31350 | 9000 | 342000 |
| 302 | AGGREGATE BASE COURSE CL.5 | TON | 1635000 | 7250 | 1185375 | 11500 | 1880250 | 12000 | 1962000 |
| 630 | 18 IN.CORR.STEEL PIPE .064 IN. | L FT | 72000 | 12500 | 90000 | 15600 | 112320 | 12000 | 864000 |
| 630 | 18 IN. CORR. STEEL END SECTION .064 INCHES | EA | 2000 | 75000 | 15000 | 82000 | 16400 | 85000 | 17000 |
| 705 | MOBILIZATION | L SUM | 1000 | 5000000 | 500000 | 5000000 | 500000 | 20000000 | 20000000 |
| 722 | BOX BEAM GUARD RAIL | L FT | 278000 | 27500 | 764500 | 25000 | 695000 | 25000 | 6950000 |
| 722 | BOX BEAM GUARDRAIL- FLARED END TREAT & TRAN. | EA | 4000 | 625000 | 250000 | 625000 | 250000 | 650000 | 2600000 |
| 724 | TEMPORARY BYPASS | L SUM | 1000 | 9500000 | 950000 | 30000000 | 30000000 | 17000000 | 17000000 |
| 726 | SEEDING TYPE B CL.V | ACRE | 3000 | 375000 | 1125000 | 600000 | 1800000 | 600000 | 1800000 |
| 746 | FLAGGING | M HR | 500000 | 6000 | 300000 | 6000 | 300000 | 6500 | 3250000 |
| 756 | FIELD LABORATORY-TYPE A | EA | 1000 | 2500000 | 2500000 | 2000000 | 2000000 | 1500000 | 1500000 |
| 762 | TRAFFIC CONTROL | L SUM | 1000 | 2000000 | 2000000 | 3700000 | 3700000 | 2500000 | 2500000 |
| 776 | TEMPORARY STRIPING | MILE | 1000 | 100000 | 100000 | 170000 | 170000 | 100000 | 100000 |
| | SUBTOTAL | | | | 5702750 | | 8028070 | | 8084600 |
| | ALTERNATE 01 | | | | | | | | |
| 202 | REMOVAL OF STRUCTURE | L SUM | 1000 | 8500000 | 8500000 | 4700000 | 4700000 | 25000000 | 25000000 |
| 208 | CLASS I EXCAVATION | CU YD | 113000 | 4250 | 480250 | 4500 | 508500 | 10000 | 1130000 |
| 208 | CLASS 2 EXCAVATION | CU YD | 116000 | 6000 | 696000 | 10000 | 1160000 | 16000 | 1856000 |
| 208 | CLASS 3 EXCAVATION | CU YD | 3000000 | 1750 | 5250000 | 1600 | 4800000 | 2000 | 6000000 |
| 208 | FOUNDATION PREP. | L SUM | 1000 | 4500000 | 4500000 | 8000000 | 8000000 | 18000000 | 18000000 |
| 228 | SELECT BACKFILL | CU YD | 221000 | 13000 | 2873000 | 18500 | 4088500 | 15000 | 3315000 |
| 5508 | IN.NON-REINF.CONC. PVMT.-CL.AE | SQ.YD | 1092000 | 23750 | 25935000 | 29000 | 31668000 | 25000 | 27300000 |
| 550 | CONCRETE BRIDGE APPROACH SLAB | SQ YD | 320000 | 110000 | 35200000 | 80000 | 25600000 | 65000 | 20800000 |
| 550 | DOWELED EXPANSION JOINT ASSEMBLY | L FT | 131000 | 10000 | 1310000 | 6800 | 890800 | 7000 | 917000 |
| 550 | PREFORMED COMPRESSION JOINT SEAL 9/16 IN. | L FT | 582000 | 1100 | 640200 | 4100 | 2386200 | 2000 | 1164000 |
| 550 | PREFORMED COMPRESSION JOINT SEAL 1 5/8 IN. | L FT | 131000 | 8500 | 1113500 | 10000 | 1310000 | 8000 | 1048000 |
| 602 | CLASS AAE-3 CONCRETE | CU YD | 314000 | 225000 | 70650000 | 192000 | 60288000 | 190000 | 59660000 |
| 602 | CLASS AE-1 CONCRETE | CU YD | 226000 | 230000 | 51980000 | 160000 | 36160000 | 200000 | 45200000 |
| 602 | SPECIAL SURFACE FINISH | SQ FT | 3598000 | 900 | 3238200 | 1000 | 3598000 | 1000 | 3598000 |
| 604 | PRESTRESSED BOX BEAM- 33 INCHES | L FT | 1323000 | 96500 | 127669500 | 102000 | 134946000 | 98500 | 130315500 |
| 612 | REINFORCING STEEL - GRADE 60 | LB | 4708600 | 440 | 2071784 | 470 | 2213042 | 450 | 2118870 |
| 612 | REINFORCING STEEL - GRADE 60 (EPOXY COATED) | LB | 4039300 | 550 | 2221615 | 620 | 2504366 | 550 | 2221615 |
| 616 | STRUCTURAL STEEL M183 | LB | 172500 | 1000 | 172500 | 900 | 155250 | 2000 | 345000 |
| 622 | STEEL PILING HP12X53 | L FT | 285600 | 19000 | 5426400 | 18000 | 5140900 | 18000 | 5140800 |
| 622 | STEEL TEST PILING HP12X53 | L FT | 31000 | 27000 | 837000 | 22000 | 682000 | 22000 | 682000 |
| 701 | VERTICAL DRAINAGE FABRIC | SQ FT | 101300 | 2000 | 2026000 | 3500 | 354550 | 3000 | 303900 |
| 702 | LOOSE ROCK RIPRAP | CU YD | 140600 | 18500 | 26011100 | 16000 | 2249600 | 14000 | 1968400 |
| 750 | LINSEED OIL TREATMENT | GAL | 1600 | 13000 | 208000 | 15000 | 24000 | 18000 | 28800 |
| 900 | BRIDGE BENCH MARKS | SET | 1000 | 400000 | 400000 | 450000 | 450000 | 550000 | 550000 |
| | SUBTOTAL | | | | 47597364 | | 45379008 | | 47394735 |

ACTION TAKEN BY STATE HIGHWAY COMMISSION

AWARD TO (11)

DATE OF AWARD _____ 19 _____

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

STATE HIGHWAY COMMISSIONER

FORM NO 1421

# NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO 4 OF 6

# ABSTRACT OF BIDS RECEIVED

PROJECT NO BRF-8-018(09)064. TYPE IMP

c17

COUNTY & DATE CASS COUNTY APR 19, 1985

LENGTH & TYPE .132

ND18 AT MAPLE R N LEONARD

COMPLETION TIME 11 01 85 GRADE, STRUCTURE & CONCRETE PA

| | | | | NO 5 BIDDER WEISZ & SONS INC BISMARCK, ND CC BOND RANK 03 | | BIDDER SWINGEN CONSTRUCTION GRAND FORKS, ND CCBOND RANK 04 | | BIDDER NORTHERN IMPROVEMENT FARGO, ND CCBOND RANK 05 | |
|---|---|---|---|---|---|---|---|---|---|
| SPEC NO | ITEM DESCRIPTION | | UNIT | QUANTITY | BID PRICE | AMOUNT | BID PRICE | AMOUNT | BID PRICE | AMOUNT |
| | TOTAL | | | | | 53300114 | | 53407078 | | 55479335 |
| | ALTERNATE 02 | | | | | | | | | |
| 202 | REMOVAL OF STRUCTURE | | L SUM | 1000 | 8500000 | 650000 | 4700000 | 4700000 | 25000000 | 25000000 |
| 208 | CLASS 1 EXCAVATION | | CU YD | 113000 | 4250 | 48025 | 4500 | 508500 | 10000 | 1130000 |
| 208 | CLASS 2 EXCAVATION | | CU YD | 87000 | 6000 | 52200 | 5500 | 478500 | 14000 | 1218000 |
| 208 | CLASS 3 EXCAVATION | | CU YD | 3000000 | 1750 | 525000 | 1600 | 4800000 | 2000 | 6000000 |
| 208 | FOUNDATION PREP. | | L SUM | 1000 | 4500000 | 450000 | 500000 | 500000 | 5000000 | 5000000 |
| 228 | SELECT BACKFILL | | CU YD | 221000 | 13000 | 287300 | 18500 | 4088500 | 15000 | 3315000 |
| 5508 | IN.NON-REINF.CONC. | PVMT.-CL.AE | SQ.YD | 1088000 | 23750 | 2584000 | 29000 | 3155200 | 25000 | 27200000 |
| 550 | CONCRETE BRIDGE | APPROACH SLAB | SQ YD | 320000 | 110000 | 3520000 | 90000 | 2880000 | 65000 | 20800000 |
| 550 | DOWELED EXPANSION | JOINT ASSEMBLY | L FT | 131000 | 10000 | 131000 | 6800 | 890800 | 7000 | 917000 |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 9/16 IN. | L FT | 582000 | 1100 | 64020 | 4100 | 2386200 | 2000 | 1164000 |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 1 5/8 IN. | L FT | 131000 | 8500 | 111350 | 10000 | 1310000 | 8000 | 1048000 |
| 602 | CLASS AAE-3 CONCRETE | | CU YD | 349000 | 225000 | 7852500 | 192000 | 67008000 | 190000 | 66310000 |
| 602 | CLASS AE-1 CONCRETE | | CU YD | 155000 | 230000 | 35650000 | 160000 | 24800000 | 200000 | 31000000 |
| 602 | SPECIAL SURFACE | FINISH | SQ FT | 3640000 | 900 | 327600 | 1000 | 3640000 | 1000 | 3640000 |
| 612 | REINFORCING STEEL - | GRADE 60 | LB | 55769000 | 440 | 2453836 | 470 | 26211443 | 450 | 25096605 |
| 612 | REINFORCING STEEL - | GRADE 60 (EPOXY COATED) | LB | 40337000 | 550 | 2218535 | 620 | 25008940 | 550 | 22185350 |
| 616 | STRUCTURAL STEEL | | L SUM | 1000 | 180000000 | 18000000 | 169000000 | 169000000 | 190000000 | 190000000 |
| 622 | STEEL PILING HP12X53 | | L FT | 2211000 | 19000 | 4200900 | 18000 | 39798000 | 19500 | 43114500 |
| 622 | STEEL TEST PILING | HP12X53 | L FT | 290000 | 27000 | 783000 | 22000 | 6380000 | 22500 | 6525000 |
| 701 | VERTICAL DRAINAGE | FABRIC | SQ FT | 887000 | 2000 | 177400 | 3500 | 3104500 | 3000 | 2661000 |
| 702 | LOOSE ROCK RIPRAP | | CU YD | 1406000 | 18500 | 26011000 | 16000 | 22496000 | 15000 | 21090000 |
| 750 | LINSEED OIL TREATMENT | | GAL | 16000 | 13000 | 208000 | 15000 | 240000 | 18000 | 288000 |
| 900 | BRIDGE BENCH MARKS | | SET | 1000 | 400000 | 400000 | 450000 | 450000 | 550000 | 550000 |
| | SUBTOTAL | | | | | 50863566 | | 46815137 | | 50525190 |
| | TOTAL | | | | | 56566316 | | 54843207 | | 58609790 |
| | | | | | NO LIMIT | | NO LIMIT | | NO LIMIT | |

ACTION TAKEN BY STATE HIGHWAY COMMISSION AWARD TO 12 WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

FOR 121 DATE OF AWARD _____ 19 _____ STATE HIGHWAY COMMISSIONER

# NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO 5 OF 6

# ABSTRACT OF BIDS RECEI

PROJECT NO BRF-8-018(09)064. TYPE IMP

017

COUNTY & DATE CASS COUNTY APR 19, 1985

LENGTH & TYPE .132

ND18 AT MAPLE R N LEONARD

COMPLETION TIME 11 01 85 GRADE, STRUCTURE & CONCRETE PA

| NO | 5 | | |
|---|---|---|---|
| BIDDER | ANNCO INC | KORBY CONTRACTING CO | |
| | BISMARCK, ND | FERGUS FALLS, MN | |
| | CC BOND RANK 06 | CC BOND RANK 07 | CC |

| SPEC NO | ITEM DESCRIPTION | | UNIT | QUANTITY | BID PRICE | AMOUNT | BID PRICE | AMOUNT | BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|---|
| 103 | CONTRACT BOND | | L SUM | 1000 | 3900000 | 390000 | 3800000 | 380000 | | |
| 203 | EMBANKMENT-TYPE C | | CU.YD | 1325000 | 2500 | 331250 | 980 | 129850 | | |
| 216 | WATER | | M GAL | 38000 | 10000 | 38000 | 8000 | 30400 | | |
| 302 | AGGREGATE BASE COURSE | CL.5 | TON | 1635000 | 7000 | 1144500 | 8000 | 1308000 | | |
| 630 | 18 IN.CORR.STEEL PIPE | .064 IN. | L FT | 72000 | 14000 | 100800 | 11500 | 82800 | | |
| 630 | 18 IN. CORR. STEEL | END SECTION .064 INCHES | EA | 2000 | 80000 | 16000 | 75000 | 15000 | | |
| 705 | MOBILIZATION | | L SUM | 1000 | 28000000 | 2800000 | 10000000 | 1000000 | | |
| 722 | BOX BEAM GUARD RAIL | | L FT | 278000 | 24000 | 667200 | 24000 | 667200 | | |
| 722 | BOX BEAM GUARDRAIL- | FLARED END TREAT & TRAN. | EA | 4000 | 625000 | 250000 | 550000 | 220000 | | |
| 724 | TEMPORARY BYPASS | | L SUM | 1000 | 13500000 | 1350000 | 40000000 | 4000000 | | |
| 726 | SEEDING TYPE B CL.V | | ACRE | 3000 | 250000 | 75000 | 220000 | 66000 | | |
| 746 | FLAGGING | | M HR | 500000 | 7000 | 350000 | 10000 | 500000 | | |
| 756 | FIELD LABORATORY-TYPE A | | EA | 1000 | 1500000 | 150000 | 2500000 | 250000 | | |
| 762 | TRAFFIC CONTROL | | L SUM | 1000 | 3000000 | 300000 | 3500000 | 350000 | | |
| 776 | TEMPORARY STRIPING | | MILE | 1000 | 200000 | 20000 | 101000 | 10100 | | |
| | SUBTOTAL | | | | | 7982750 | | 9009350 | | |
| | ALTERNATE 01 | | | | | | | | | |
| 202 | REMOVAL OF STRUCTURE | | L SUM | 1000 | 10000000 | 1000000 | 000 | 00 | | |
| 208 | CLASS 1 EXCAVATION | | CU YD | 113000 | 5000 | 56500 | 000 | 00 | | |
| 208 | CLASS 2 EXCAVATION | | CU YD | 116000 | 12000 | 139200 | 000 | 00 | | |
| 208 | CLASS 3 EXCAVATION | | CU YD | 3000000 | 1900 | 570000 | 000 | 00 | | |
| 208 | FOUNDATION PREP. | | L SUM | 1000 | 12000000 | 1200000 | 000 | 00 | | |
| 228 | SELECT BACKFILL | | CU YD | 221000 | 9000 | 198900 | 000 | 00 | | |
| 550 | 8 IN.NON-REINF.CONC. | PVMT.-CL.AE | SQ.YD | 1092000 | 36000 | 3931200 | 000 | 00 | | |
| 550 | CONCRETE BRIDGE | APPROACH SLAB | SQ YD | 320000 | 80000 | 2560000 | 000 | 00 | | |
| 550 | DOWELED EXPANSION | JOINT ASSEMBLY | L FT | 131000 | 7500 | 98250 | 000 | 00 | | |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 9/16 IN. | L FT | 582000 | 2650 | 154230 | 000 | 00 | | |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 1 5/8 IN. | L FT | 131000 | 8000 | 104800 | 000 | 00 | | |
| 602 | CLASS AAE-3 CONCRETE | | CU YD | 314000 | 240000 | 7536000 | 000 | 00 | | |
| 602 | CLASS AE-1 CONCRETE | | CU YD | 226000 | 245000 | 5537000 | 000 | 00 | | |
| 602 | SPECIAL SURFACE | FINISH | SQ FT | 3598000 | 850 | 305830 | 000 | 00 | | |
| 604 | PRESTRESSED BOX BEAM- | 33 INCHES | L FT | 1323000 | 90000 | 11907000 | 000 | 00 | | |
| 612 | REINFORCING STEEL - | GRADE 60 | LB | 47086000 | 450 | 2118870 | 000 | 00 | | |
| 612 | REINFORCING STEEL - | GRADE 60 (EPOXY COATED) | LB | 40393000 | 590 | 2383187 | 000 | 00 | | |
| 616 | STRUCTURAL STEEL M183 | | LB | 1725000 | 1000 | 172500 | 000 | 00 | | |
| 622 | STEEL PILING HP12X53 | | L FT | 2856000 | 21000 | 5997600 | 000 | 00 | | |
| 622 | STEEL TEST PILING | HP12X53 | L FT | 310000 | 25000 | 775000 | 000 | 00 | | |
| 701 | VERTICAL DRAINAGE | FABRIC | SQ FT | 1013000 | 2500 | 253250 | 000 | 00 | | |
| 702 | LOOSE ROCK RIPRAP | | CU YD | 1406000 | 19500 | 2741700 | 000 | 00 | | |
| 750 | LINSEED OIL TREATMENT | | GAL | 16000 | 20000 | 32000 | 000 | 00 | | |
| 900 | BRIDGE BENCH MARKS | | SET | 1000 | 500000 | 50000 | 000 | 00 | | |
| | SUBTOTAL | | | | | 49823017 | | NO BID | | |

ACTION TAKEN BY STATE HIGHWAY COMMISSION

AWARD TO _____ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

(13) DATE OF AWARD _____ 19 _____ STATE HIGHWAY COMMISSIONER

FORM NO 1421

# NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO 6 OF 7

# ABSTRACT OF BIDS RECEIVED

PROJECT NO BRF-8-018(09)064. TYPE IMP

017

COUNTY & DATE CASS COUNTY APR 19, 1985

LENGTH & TYPE .132

ND18 AT MAPLE R N LEONARD

COMPLETION TIME 11 01 85 GRADE, STRUCTURE & CONCRETE PA

| SPEC NO | ITEM DESCRIPTION | | UNIT | QUANTITY | NO 5 BIDDER ANNCO INC BISMARCK, ND CC BOND RANK 06 BID PRICE | AMOUNT | BIDDER KORBY CONTRACTING CO FERGUS FALLS, MN CCBOND RANK 07 BID PRICE | AMOUNT | BIDDER CC BID PRICE | AMOUNT |
|---|---|---|---|---|---|---|---|---|---|---|
| | TOTAL | | | | | 57805767 | | | | |
| | ALTERNATE 02 | | | | | | | | | |
| 202 | REMOVAL OF STRUCTURE | | L SUM | 1000 | 10000000 | 1000000 | 15000000 | 1500000 | | |
| 208 | CLASS 1 EXCAVATION | | CU YD | 113000 | 5000 | 565000 | 2500 | 282500 | | |
| 208 | CLASS 2 EXCAVATION | | CU YD | 87000 | 8000 | 696000 | 3000 | 261000 | | |
| 208 | CLASS 3 EXCAVATION | | CU YD | 3000000 | 1900 | 5700000 | 3000 | 9000000 | | |
| 209 | FOUNDATION PREP. | | L SUM | 1000 | 900000 | 900000 | 6000000 | 6000000 | | |
| 228 | SELECT BACKFILL | | CU YD | 221000 | 9000 | 1989000 | 8200 | 1812200 | | |
| 5508 | IN.NON-REINF.CONC. | PVMT.-CL.AE | SQ.YD | 1088000 | 36000 | 39168000 | 35000 | 38080000 | | |
| 550 | CONCRETE BRIDGE | APPROACH SLAB | SQ YD | 320000 | 80000 | 25600000 | 90300 | 28896000 | | |
| 550 | DOWELED EXPANSION | JOINT ASSEMBLY | L FT | 131000 | 7500 | 982500 | 7000 | 917000 | | |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 9/16 IN. | L FT | 582000 | 2650 | 1542300 | 1100 | 640200 | | |
| 550 | PREFORMED COMPRESSION | JOINT SEAL 1 5/8 IN. | L FT | 131000 | 8000 | 1048000 | 9000 | 1179000 | | |
| 602 | CLASS AAE-3 CONCRETE | | CU YD | 349000 | 240000 | 83760000 | 225000 | 78525000 | | |
| 602 | CLASS AE-1 CONCRETE | | CU YD | 155000 | 245000 | 37975000 | 225000 | 34875000 | | |
| 602 | SPECIAL SURFACE | FINISH | SQ FT | 3640000 | 850 | 3094000 | 750 | 2730000 | | |
| 612 | REINFORCING STEEL - | GRADE 60 | LB | 55769000 | 450 | 25096050 | 450 | 25096050 | | |
| 612 | REINFORCING STEEL - | GRADE 60 (EPOXY COATED) | LB | 40337000 | 590 | 23798630 | 650 | 26219050 | | |
| 616 | STRUCTURAL STEEL | | L SUM | 1000 | 167000000 | 167000000 | 190580200 | 190580200 | | |
| 622 | STEEL PILING HP12X53 | | L FT | 2211000 | 21000 | 46431000 | 22000 | 48642000 | | |
| 622 | STEEL TEST PILING | HP12X53 | L FT | 290000 | 25000 | 7250000 | 25000 | 7250000 | | |
| 701 | VERTICAL DRAINAGE | FABRIC | SQ FT | 887000 | 2500 | 2217500 | 3000 | 2661000 | | |
| 702 | LOOSE ROCK RIPRAP | | CU YD | 1406000 | 19500 | 27417000 | 25000 | 35150000 | | |
| 750 | LINSEED OIL TREATMENT | | GAL | 16000 | 20000 | 3200000 | 15000 | 24000000 | | |
| 900 | BRIDGE BENCH MARKS | | SET | 1000 | 500000 | 50000000 | 600000 | 60000000 | | |
| | SUBTOTAL | | | | | 51305018 | | 55463620 | | |
| | TOTAL | | | | | 59287768 | | 64472970 | | |
| | | | | | YES, LIMIT OF $1,050 ,000. ON STATE & CO. | | NO LIMIT | | | |

ACTION TAKEN BY STATE HIGHWAY COMMISSION AWARD TO (14) WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

DATE OF AWARD _____ 19 _____

STATE HIGHWAY COMMISSIONER

FOI 421

JOB# 5

| FHWA REGION | STATE | PROJECT | SHEET NO. |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 1 |

## DESIGN DATA

| Traffic | Average Daily | Est. 30th Max. Hr. |
|---|---|---|
| Current Traffic (1985) | 415 Pass. 35-50 Trucks 500 | Total 75 |
| Traffic Forecast ( 2005) | 540 Pass. 45-65 Trucks 650 | Total 100 |
| Design Speed | 60 MPH | |
| Traffic Classification "M" | | |
| Minimum Sight Distance (Stopping) | 650' | |
| Minimum Sight Distance (Safe Passing) | 2300' | |
| Minimum Passing Sight Distance for Marking | 1000' | |
| Bridges | HS 20 | |

# NORTH DAKOTA
# STATE HIGHWAY DEPARTMENT

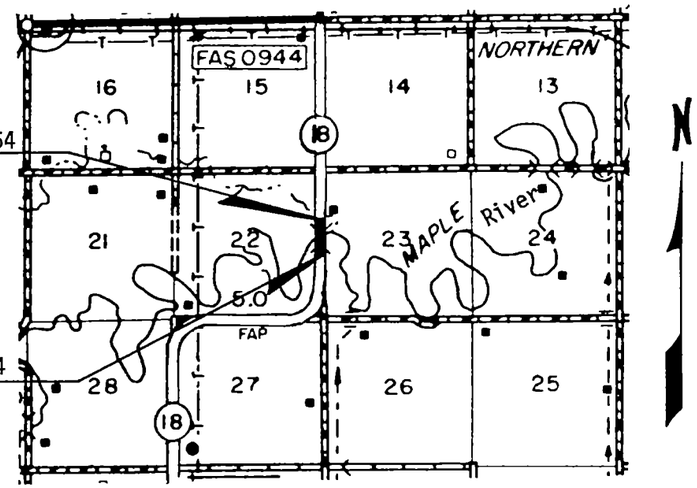
IN CASS COUNTY
FEDERAL AID PROJECT NO. BRF-8-018(09)064
GRADE, STRUCTURE
CONCRETE PAVEMENT

BEG. PROJ. BRF-8-018(09)064

Sta. 451+35
A point 791.98' North of the SE corner of the NE¼ Sec. 22, twp. 138N., rge. 52W.

END PROJ. BRF-8-018(09)064

Sta. 458+35
A point 91.98' North of the SE corner NE¼ of Sec. 22, twp. 138N., rge. 52W.




## GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota State Highway Department, Oct. 1976 and approved by the Federal Highway Administration on Dec. 17, 1976, and Supplemental Specifications thereto adopted July 1, 1983, and approved by the Federal Highway Administration and other Contract Provisions submitted herewith.

## LENGTH OF PROJECT

| Project | Miles-Gross | Miles-Net |
|---|---|---|
| BRF-8-018(09)064 | .132 | .132 |

APPROVED DATE 2-22-85

Ray Zink

CHIEF ENGINEER
NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

RAY ZINK REGISTERED PROFESSIONAL P.E. 972 ENGINEER NORTH DAKOTA

U.S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER DATE

18-064.955

# SYMBOLS

STATE & NATIONAL LINES

COUNTY LINE

TOWNSHIP & RANGE LINES

SECTION LINE

QUARTER SECTION LINE

SECTION CORNER

QUARTER SECTION CORNER

OLD RIGHT OF WAY LINE

NEW RIGHT OF WAY LINE

GRADE LINE

CENTERLINE OF CONSTRUCTION — 500

RAILROAD RIGHT OF WAY LINE

CITY OR VILLAGE CORPORATE LIMITS

PROPERTY LINE

EASEMENT LINE

FENCES

SNOW FENCE

DRAINAGE

WATERS EDGE

MARSH OR SWAMP

RIPRAP

DRAINAGE DITCH

APPROACH — 502 + 00

TRAVELED WAY

RAILROADS — NAME

GUARD RAIL

GURDE POSTS

DELINEATORS

HEDGES AND TREES

INTERCHANGE

HIGHWAY GRADE SEPARATION - NO CONNECTION

OTHER SPAGE

SERVICE ROAD

TERMINATED CROSS-ROAD

BULLDOGS

TELEGRAPH LINES

TELEPHONE LINES

POWER LINES

CULVERTS (In Place)

CULVERTS (Install)

CONCRETE BOX CULVERTS (Install)

BRIDGES (Install)

CONCRETE CURB

CONCRETE CURB AND GUTTER

CONCRETE WALK

CATCH BASIN (Existing)

CATCH BASIN (New)

MANHOLE (Existing)

MANHOLE (New)

CURB INLET (Existing)

CURB INLET (New)

GROUND MOUNTED SIGNS

OVERHEAD SIGNS

HYDRANT

LIGHT STANDARDS

TRAFFIC SIGNALS (Plan & Profile Sheets)

HIGH MAST LIGHTING ASSEMBLY

GROUND ELEVATION 1600 / GRADE 1640 — 240

CENTERLINE

SECTION LINE

DEFLECTION ANGLE (Delta)

500 'OR JUTE MESH

POLES TO BE MOVED

POLES TO BE LOWERED

CONCRETE FOUNDATION

CONDUIT

CONDUCTOR

CONCRETE PULL BOX

FEED POINT

250 WATT LIGHT STANDARDS

400 WATT LIGHT STANDARDS

700 WATT LIGHT STANDARDS

1000 WATT LIGHT STANDARDS

FLASHING BEACON

TRAFFIC SIGNAL - MAST ARM MOUNTED

TRAFFIC SIGNAL - POST MOUNTED

SIGNAL HEAD

PEDESTRIAN PUSH BUTTON POST

TRAFFIC SIGNAL CONTROLLER

FEED POINT - PAD MOUNTED

# ABBREVIATIONS

| | |
|---|---|
| Aggr | Aggregate |
| Ahd | Ahead |
| Alt | Alternate |
| Approx | Approximate or Approximately |
| Appr | Approach |
| Asph Cem or A C | Asphalt Cement |
| Asph Conc | Asphaltic Concrete |
| Bit | Bituminous or Bitumen |
| Bk | Back |
| B M | Bench Mark |
| Bldg | Building |
| Br | Bridge |
| C A E S | Corrugated Aluminum End Section |
| C A P | Corrugated Aluminum Pipe |
| C B | Catch Basin |
| C & G | Curb and Gutter |
| Ch Bk | Channel Block |
| Ch Ch | Channel Change |
| C I | Curb Inlet |
| C I P | Cast Iron Pipe |
| Cl | Class |
| C S E S | Corrugated Steel End Section |
| C S P | Corrugated Steel Pipe |
| CMS | Cationic Medium Setting |
| Comp | Compression |
| Const | Construction |
| Conc | Concrete |
| Cont Reinf Conc Pvm't | Continuously Reinforced Concrete Pavement |
| Contr | Contraction |
| Crn | Crown |
| CRS | Cationic Rapid Setting |
| Crse | Course |
| C S | Curve to Spiral |
| C to C | Center to Center |
| C Y | Cubic Yard |
| D | Degree of Curvature |
| D-Load | Dead Load |
| D B | Ditch Block |
| Def | Deformed |
| Del | Deliver |
| D G | Ditch Grade |
| El or Elev | Elevation |
| Elipt | Elliptical |
| Emb | Embankment |
| Emul | Emulsified |
| Engr | Engineer |
| Eq | Equation |
| E R | East Roadway |
| E S | End Section |
| Esmt | Easement |
| Exc | Excavation |
| Exp | Expansion |
| F D | Field Drive |
| Found | Foundation |
| F P | Fence Post |
| Furn | Furnish |
| Ga | Gage or Gauge |
| Gr | Gravel |
| Grd | Graded |
| G V | Gate Valve |
| Hel | Helical |
| Hyd | Hydrant |
| Ident | Identification |
| Inchg | Interchange |
| I M | Iron Monument |
| Inst | Install |
| Inter | Intersection |
| Inv | Invert |
| Jt | Joint |
| L | Length of Curve |
| Lc | Length of Spiral |
| Levg | Leveling |
| L F | Linear or Lineal Feet |
| Liq | Liquid |
| Long | Longitudinal |
| L P | Light Pole |
| Lt | Left |
| 'M | One Thousand |
| Matl | Material |
| Max | Maximum |
| MC | Medium Curing |
| M H | Manhole |
| Min | Minimum |

| | |
|---|---|
| M L | Main Line |
| N R | North Roadway |
| Off Loc | Office Location |
| O to O | Out to Out |
| P & P | Plan and Profile |
| P C | Point of Curvature |
| P C C | Point of Compound Curve |
| P C C Pvm't | Portland Cement Concrete Pavement |
| P D | Private Drive |
| Pen | Penetration |
| Perf | Perforated |
| P I | Point of Intersection |
| P O C | Point on Curve |
| P O T | Point on Tangent |
| P P | Power Pole |
| P R C | Point of Reverse Curvature |
| Pref | Preformed |
| P S D | Passing Sight Distance |
| P T | Point of Tangency |
| P V C | Polyvinyl Chloride Sewer Pipe |
| Quant | Quantity or Quantities |
| R | Radius |
| R or Rge | Range |
| RC | Rapid Curing |
| R C E S | Reinforced Concrete End Section |
| R C P | Reinforced Concrete Pipe |
| R C P S | Reinforced Concrete Pipe Sewer |
| Rd | Road |
| Rdbd | Roadbed |
| Rdwy | Roadway |
| Refl | Reflectorized |
| R R | Railroad |
| Rt | Right |
| R/W | Right of Way |
| Salv | Salvage |
| San | Sanitary |
| S C | Spiral to Curve |
| SC | Slow Curing |
| Sc | Spiral Deflection Angle |
| S D | Sight Distance |
| S E | Superelevation |
| Sec | Section |
| Sec Line Appr | Section Line Approach |
| Sep | Separation |
| Serv | Service |
| Sgr Prep | Subgrade Preparation |
| Shldr | Shoulder |
| SP | Special Provision |
| S P P | Structural Plate Pipe |
| S P P A | Structural Plate Pipe Arch |
| S R | South Roadway |
| SS | Slow Setting or Supplement Specification |
| S S D | Stopping Sight Distance |
| S T | Spiral to Tangent |
| Sta | Station |
| Std | Standard |
| Std Specs | Standard Specifications |
| Struct | Structure |
| Surf | Surface or Surfacing |
| Surv | Survey |
| S W | Sidewalk |
| S Y | Square Yard |
| T | Tangent Length (circular curve) |
| T or Twp | Township |
| Tel | Telephone |
| Temp. | Temporary |
| T P | Telephone Pole |
| Tr | Traffic |
| Trans | Transverse or Transition |
| Trtd | Treated |
| Ts | Tangent Length (curve with spirals) |
| T S | Tangent to Spiral |
| U S C & G S | United States Coast and Geodetic Survey |
| V C | Vertical Curve |
| V C P | Vitrified Clay Pipe |
| W M | Water Main |
| W M V | Water Main Valve |
| W R | West Roadway |
| Wrng | Warning |
| W S V | Water Service Valve |
| X-Sec | Cross Section |
| Xc | Spiral Coordinate |
| Yc | Spiral Coordinate |

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# GENERAL NOTES

100 GENERAL: The engineer will see to the removal of existing
010 fences to the highway right of way line and to the relocation or adjustment of utility facilities as shown on the plans. All privately-owned light poles, guard posts, signs, etc., within the right of way limits shall be removed by the owners.

100 WORK SCHEDULE: In order to minimize interference with traffic
020 operations, a detailed schedule shall be agreed to prior to beginning work, between the engineer, utility companies, and the contractor and subcontractors, if any.

100 UNDERGROUND UTILITIES: The contractor shall notify the local
030 utility companies prior to the beginning of construction, so they may stake location and depth of all utilities in the project area. Subcutting or scarifying over utility lines may be eliminated if, in the opinion of the engineer, a hazardous situation exists. Separate plans, if any, showing relocation or adjustment work to be performed by utility companies to accommodate highway construction will be made available to the contractor, upon request to the engineer.

100 PROJECT ENGINEER RESPONSIBILITY:
050 (a) USC & G Bench Mark As soon as it has been determined that a bench mark must be moved, consult your Construction Survey Manual (Sec. 150-4.9), for the proper steps needed to preserve the bench mark.

(b) All section corners must be monumented and a corner recordation form must be filed with the County Register of Deeds. See Appendix G of the Preliminary Survey Manual for instructions on how to fill out the form.

100 Excavate, if necessary, where the new surfacing meets existing
120 pavement, bridge ends, or railroad crossings to allow placement of the full depth of the surfaced course. The excavation is not a pay item but shall be considered incidental to other items.

100 TREES, SHRUBS, AND NATIVE GRASSES: The contractor shall exercise
130 care in his construction operations to ensure that trees, shrubs, and native grasses within the right of way and outside the construction area are not disturbed.

100 HISTORICAL INFORMATION: If any scientific or historical
140 information is encountered after construction is in progress, the Highway Department will immediately notify the Historical Society, and efforts will be made to protect the material until it has been examined by an archaeologist from the Historical Society. If future activities should result in the discovery of any cultural resources that are eligible for inclusion in the National Register of Historical Places, this will require compliance with Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation "Procedures for the Protection of Historic and Cultural Properties" (36, CRF, Part 800).

200 SHRINKAGE AND SUBCUT: Twenty-five percent additional volume
011 in yardage computed by the end area method is allowed for shrinkage in earth embankment. Twenty-five percent of the subcut excavation has been added to the excavation and embankment quantities to allow for shrinkage in subcut excavation and shall be obtained within the right of way limits.

200 COMPACTION AND DENSITY CONTROL: Compaction and density controls
021 shall be in accordance with Section 203-2.3.3 of the Standard Specifications, except that, if the subgrade is unstable (as evidenced by sponginess or rutting) when compacted to the required density, it will be necessary to dry the soils to obtain adequate stability. This may require drying below optimum moisture. The cost of such drying will be incidental to the price bid for "Common Excavation" (and/or "Borrow," if used).

200 TEMPORARY BYPASS: Approximately 80 square feet of waterway
440 opening are recommended for the temporary bypass. Approximately 1800 C.Y. of fill material and 350 tons of aggregate base course are required for the temporary bypass. These items are not separate pay items, but shall be included in the price bid for "Temporary Bypass."

550 CURING: Curing materials shall meet the requirements of
020 subsection 880-1 of the Standard Specifications

550 TRANSVERSE JOINT SPACING (P.C.C. PAVEMENT): Mainline - 12' to
040 16' staggered (14' average). See Joint Detail Sheet.

550 MISCELLANEOUS STEEL: The cost for all steel used for tie bars
140 shall be included in the price bid for "P.C.C. Pavement."

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# GENERAL NOTES

700 010 SEEDING: The following seed mixture will be used on this project:

| Percent Pure Live Seed by Weight | Species | Minimum Percent Pure Live Seed (PLS) |
|---|---|---|
| 32 | Western Wheatgrass (Rosanna) | 70 |
| 26 | Thickspike Wheatgrass (Critana) | 80 |
| 18 | Green Needlegrass (Lodorm) | 70 |
| 14 | Little Bluestem (Blaze) | 60 |
| 10 | Switchgrass (NDG-98) | 75 |

EXISTING SURFACING: The contractor shall have the option of salvaging the existing surfacing for his own use. Should the contractor salvage the existing surfacing, he shall replace this material with an equal amount of borrow at his own expense.

EXISTING SIGNS: The existing signs shall be removed and reset as directed by the Engineer. Cost to be included in the price bid for other items.

EXISTING APPROACH PIPE: Removal of Approach Pipe is not a pay item. Cost to be included in the price bid for other items.

722 300 EMBANKMENT FOR GUARDRAIL INSTALLATION: The embankment material required for guardrail installation may be obtained from within the right of way with the approval of the Engineer. The existing topsoil shall be removed from the area to be disturbed, stockpiled, and replaced when embankment is completed. Compaction of the embankment shall be in accordance with Section 203-2.5 of the Standard Specifications. The inslopes in areas that are to be widened shall be benched in accordance with Section 203-2.2.2 of the Standard Specifications unless otherwise directed by the Engineer. All existing drainage patterns shall be maintained. This may involve some excavation and ditch widening. Embankment shall be measured using the average end area method and paid for by the cubic yard of embankment in place. The cost for any excavation to maintain the drainage patterns and for benching, salvaging, stockpiling, and spreading of topsoil shall be included in the price bid for "Embankment, Type C."

# MAPLE RIVER - STEEL ALTERNATE

100 GENERAL: The cost of furnishing and placing asphalt curb seal, preformed expansion joint filler, bar spacers, bar supports, screed chairs, threaded inserts, deck drains, and other miscellaneous items shall be included in the price bid for Class AE-1 and AAE-3 concrete.

100 Dead load deflections have been accounted for in the screed elevations.

100 Deflection of the deck shoring shall be computed using the total dead load plus the weight of the finishing machine. The forming shall be adjusted properly to accommodate the deflection and thereby maintain the total slab thickness specified in the plans.

100 Bearing areas shall be finished true to plan and elevation by grinding, if necessary, before bearing plates are set.

202 REMOVAL OF STRUCTURE: This work shall consist of removing the existing structure. The existing structure is a 120 foot long, two span, steel stringer bridge with a concrete deck. The substructures are supported on timber piling. All salvageable material shall become the property of the contractor. Plans for the existing bridge are available at the Bridge Division of the North Dakota State Highway Department in Bismarck, North Dakota.

202 All concrete removed must be broken into pieces no larger than 18 inches if used as riprap. Concrete riprap shall be placed in a manner that minimizes the exposure of any protruding steel and presents a finished appearance acceptable to the engineer.

208 EXCAVATION: Class 2 excavation, at the piers shall extend from the bottom of the pier wall to the finished channel slope.

208 Excavation Class 1, at the abutments, shall extend from the bottom of the footing to the upper limits as shown on the bridge layout drawing.

228 BACKFILL: All backfilling shall be done according to Sections 203-2.3.2 and 228 of the Standard Specifications. Select backfill shall not be placed above the elevation of the berm until the superstructure has cured.

550 BRIDGE APPROACH SLABS AND CONCRETE PAVEMENT: Mechanical finishing of the approach slabs and the concrete pavement shall be required. Transverse metal tine finish and the surface tolerance of 1/8" in 10 feet are also required.

The contractor has the option of placing the concrete in one continuous operation or two pours with the split determined by a centerline joint.

602 CLASS AAE CONCRETE: The requirements of Section 610-1.2.1 of the Standard Specifications shall be revised for Class AAE concrete to require a cement content of 6.5 sacks per cubic yard, and a maximum water content of 5.5 gallons per sack of cement.

602 DECK-FINISHING MACHINE: In addition to the requirements of Section 602-3.6.2.2 of the Standard Specifications, the deck-finishing machine shall be self propelled, mounted on wheels which ride on a track, and have one or more power-driven, oscillating, rotating, or vibrating screeds.

602 METAL TINE FINISH: Unless otherwise approved by the Engineer, the surface brooming device shall be composed of a single row of four inch to six inch long steel tines, spaced at one-half inch to one inch centers. The device shall produce grooves of a depth of approximately 1/8 inch to 3/16 inch.

The intent is to produce a grooved surface no deeper than is necessary to provide a satisfactory skid resistant surface. The tining shall be stopped 12 inches from the face of the barrier.

602 JERSEY BARRIER - FORMED OR SLIPFORMED: The contractor has the option to coventionally form and cast or slipform the Jersey barrier.

If the contractor chooses to conventionally form the barrier, it may be placed in sections or at one time. If placed in sections, alternate ones shall be placed and cured for three days before the adjacent ones are placed. Adequate tie wires shall be used on the forms to avoid any shifting during the concrete placement. Under either plan, the preformed joint filler at the deflection joints shall be held firmly in place.

A 3/4" triangular grooved at the mid point of each barrier section, both vertical faces and across the top, is required.

If the contractor chooses to use the slipforming method, all work shall be in accordance with special provision: Slipformed Jersey Barrier - 564.

602 If the forms for the barrier railing are held in place by concrete inserts in the deck slab, the inserts shall be removed when the form removal has been completed and the cavities in the deck slab cleaned and filled flush with a nonshrink epoxy mortar approved by the engineer.

602 CURING AAE-3 CONCRETE: The method of curing the deck concrete shall be in accordance with Section 602-3.7.2.2. The intent is to place the covering as soon as possible without causing a significant amount of blemish to the surface. Once the covering operation has started, it shall be a continuous operation to keep pace with the finisher. The covered concrete shall be kept continuously moist by a fog spray for five days, and no waterproof material such as polyethylene shall be used to cover the canvas or burlap.

602 The concrete shall be protected during the interval between final finishing and placement of the covering with a linseed oil-based emulsion containing at least 45 percent linseed oil and meeting the requirements of AASHTO M-148. The minimum rate of application shall be 200 square feet per gallon. This emulsion shall not be applied to surfaces which are to receive the special surface finish.

602 During a period of time when the mean temperature is expected to fall below 40°F, the moist cure by fog spray may be suspended and the concrete protected by the linseed oil base emulsion.

602 SPECIAL SURFACE FINISH: Special surface finish shall be required for all exposed surfaces of barrier, and exposed edges of slab. The intent of the finish is to provide a uniform color and to provide an aesthetic appearance. All surfaces which are to receive the special surface finish should be cleaned to remove laitance, form oil, fins, etc., and roughened by brushing and sandblasting so that special surface finish material will develop adequate bond to the prepared concrete surface.

602 The special surface finish shall be applied in two applications as one of the last items of work and only after the ordinary surface finish and cure period are complete. A spray application of special surface finish is required, and the rate of application for the commercially-packaged mortar shall be as recommended by the manufacturer.

602 The method of cure shall be as stated in the Specifications except that liquid membrane curing compounds will not be allowed on surfaces that are to receive the special surface finish.

610 CONCRETE: All superstructure concrete shall be Class AAE-3 or AAE-4. Concrete for the substructure shall be Class AE-1, AE-3, or AE-4. The class of concrete paid for will be that class shown on the plans.

610 Type I or Type II cement may be used.

610 If the depth of the concrete risers between the tops of the girders and the bottom of the deck slab exceed the theoretical dimensions, the additional concrete required shall be furnished at no expense to the state.

610 The contractor will be expected to place the slab concrete for one bridge in one continuous operation. Minimum rate of placement shall be 30 cubic yards per hour.

612 REINFORCING STEEL: Dimensions for bent bars are given out to out and to tangent intersections unless otherwise noted. Bent bars shall be bent around ACI standard size pins.

612 The top layer of transverse deck slab reinforcement shall be tied down with wire ties to the shear connectors of the beams. The ties shall be at intervals of five to six feet along the full length of all beams. Two wraps with 14-gauge plastic or epoxy-coated ties shall be used for this purpose.

612 All reinforcing steel shall be Grade 60.

612 The top layer of reinforcing steel in the slab and the curb steel indicated on the Reinforcement Details sheet shall be epoxy coated.

616 STRUCTURAL STEEL: Girder flanges and flange splice plates shall be AASHTO M-223 steel. Girder webs, web splice plates and all other structural steel shall be AASHTO M-183. Requirements for Charpy V-Notch test are shown on the girder detail drawings.

616 Painting is not required if the contractor elects to substitute AASHTO M-222 steel for all structural steel items.

616 The girders shall be cambered in the shop as detailed on the plans. The shop cabmer diagram represents the total rise, in inches, to be cut into the web plates of the girder.

616 A minimum of two (2) contiguous beam sections shall be placed in their correct relative positions before drilling the holes for the field splice between those sections. The proper alignment shall be maintained between sections while reaming the holes. Templates shall not be used in lieu of the above shop assembly. Wire rope slings shall not be used to handle the beams; they shall be handled with beam clamps designed for that purpose or other devices approved by the engineer.

616 Shear connector on splice plates shall be moved to clear bolt holes.

616 All field connections shall be made with 7/8 inch diameter, AASHTO M-164 high-strength bolts. Type 3 bolts shall be used with unpainted M-222 Steel.

616 Temporary or permanent attachments or devices that are not shown on the plans as part of the structure shall not be welded to the structural steel members during the fabrication and construction process.

616 If M-222 steel is used, the outer face of the exterior girders shall be sandblasted after fabrication to promote uniform oxidation and improved appearance.

616 Swedge bolts shall be provided by the steel fabricator, and the cost shall be incidental to the total cost of structural steel.

616 At field splice locations, all girder and splice plate contact surfaces shall be sandblasted after fabrication to assure a Class B Surface.

616 The girders shall be blocked and braced for shipping to insure that the correct camber will be maintained during transportation to the bridge site. The method used shall be indicated on the shop plans and shall be subject to the approval of the bridge engineer.

616 STEEL ERECTION: Each splice point shall be brought to its proper elevation before its bolts are tightened to the required tension.

622 PILING: Piling shall be driven with a steam, air, or diesel hammer with a rated energy and ram weight not less than 39,670 foot-pound-tons, as computed by the formula W(E-10,870)+.73(E), where W is the weight of the ram in tons and E is the rated hammer energy as allowed in Section 622 of the Specifications. In no case shall the ram weight be less than 4,000 pounds.

622 Test piles shall be driven to a bearing not less than 125% of the design load as determined by the dynamic formula in section 622-3.3.

701 VERTICAL DRAINAGE FABRIC: Vertical drainage fabric shall be placed against the backface of the abutment before backfilling as shown on the plans. This material shall be Miradrain as manufactured by Mirafi Inc., P.O. Box 240967, Charlotte, NC 28224, CorDrain as manufactured by the Vibroflotation Co., United States Steel Building, 600 Grant Street, Pittsburg, PA 15219, or an approved equal.

The 6" perforated PVC pipe shall be located as shown on the plans and shall extend along the entire length of the abutment and through the seepage trench. The cost of this pipe and its installation shall be incidental to the price bid for the vertical drainage fabric.

718 PAINT AND PAINTING: Paint shall conform to the Standard Specifications, Section 870-1.1 and 870-1.18. The finish coats shall be orange color no. 32169 and shall meet Federal Standard No. 595 colors. The first coat shall be tinted to differentiate it from the second coat. The dry thickness of each finish and spot coat shall not be less than 1.5 mil for any reading. the dry thickness of the shop coat shall not be less than 1.5 mil for any reading.

718 NEW STEEL: Commercial blast cleaning shall be required for all new steel members, both main and secondary, prior to painting. All exposed steel surfaces shall be given one shop coat of red lead paint, one spot coat of red lead paint after erection and concrete work is completed, and two finish coats of enamel.

750 LINSEED OIL TREATMENT: Linseed oil treatment shall not be started until all concrete work is completed and the asphalt curb seal is in place. Only one uniform application of .015 gallons per square yard shall be applied to the deck.

900 The contractor shall submit the following shop drawings for approval by the bridge engineer before fabrication:

1. Structural steel items.
2. Bearings.

900 DESIGN STRENGTH:

| | | |
|---|---|---|
| F'C | 3,000 PSI | Cl. AE-1 concrete |
| F'C | 4,000 PSI | Cl. AAE-3 or AAE-4 concrete |
| FY | 60,000 PSI | Gr. 60 reinforced steel |
| FY | 36,000 PSI | structural steel M-183 |
| FY | 50,000 PSI | structural steel M-223 |

# MAPLE RIVER - CONCRETE ALTERNATE

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100 GENERAL: The cost of furnishing and placing asphalt curb seal, preformed expansion joint filler, bar spacers, bar supports, screed chairs, threaded inserts, deck drains, and other miscellaneous items shall be included in the price bid for Class AE-1 and AAE-3 concrete.

100 Dead load deflections have been accounted for in the screed elevations.

100 Deflection of the deck shoring shall be computed using the total dead load plus the weight of the finishing machine. The forming shall be adjusted properly to accommodate the deflection and thereby maintain the total slab thickness specified in the plans.

202 REMOVAL OF STRUCTURE: This work shall consist of removing the existing structure. The existing structure is a 120 foot long, two span, steel stringer bridge with a concrete deck. The substructures are supported on timber piling. All salvageable material shall become the property of the contractor. Plans for the existing bridge are available at the Bridge Division of the North Dakota State Highway Department in Bismarck, North Dakota.

202 All concrete removed must be broken into pieces no larger than 18 inches if used as riprap. Concrete riprap shall be placed in a manner that minimizes the exposure of any protruding steel and presents a finished appearance acceptable to the engineer.

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550 BRIDGE APPROACH SLABS AND CONCRETE PAVEMENT: Mechanical finishing of the approach slabs and the concrete pavement shall be required. Transverse metal tine finish and the surface tolerance of 1/8" in 10 feet are also required.

The contractor has the option of placing the concrete in one continuous operation or two pours with the split determined by a centerline joint.

602 CLASS AAE CONCRETE: The requirements of Section 610-1.2.1 of the Standard Specifications shall be revised for Class AAE concrete to require a cement content of 6.5 sacks per cubic yard, and a maximum water content of 5.5 gallons per sack of cement.

602 DECK-FINISHING MACHINE: In addition to the requirements of Section 602-3.6.2.2 of the Standard Specifications, the deck-finishing machine shall be self propelled, mounted on wheels which ride on a track, and have one or more power-driven, oscillating, rotating, or vibrating screeds.

602 METAL TINE FINISH: Unless otherwise approved by the Engineer, the surface brooming device shall be composed of a single row of four inch to six inch long steel tines, spaced at one-half inch to one inch centers. The device shall produce grooves of a depth of approximately 1/8 inch to 3/16 inch.

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A 3/4" triangular grooved at the mid point of each barrier section, both vertical faces and across the top, is required.

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602 If the forms for the barrier railing are held in place by concrete inserts in the deck slab, the inserts shall be removed when the form removal has been completed and the cavities in the deck slab cleaned and filled flush with a nonshrink epoxy mortar approved by the engineer.

602 CURING AAE-3 CONCRETE: The method of curing the deck concrete shall be in accordance with Section 602-3.7.2.2. The intent is to place the covering as soon as possible without causing a significant amount of blemish to the surface. Once the covering operation has started, it shall be a continuous operation to keep pace with the finisher. The covered concrete shall be kept continuously moist by a fog spray for five days, and no waterproof material such as polyethylene shall be used to cover the canvas or burlap.

602 The concrete shall be protected during the interval between final finishing and placement of the covering with a linseed oil-based emulsion containing at least 45 percent linseed oil and meeting the requirements of AASHTO M-148. The minimum rate of application shall be 200 square feet per gallon. This emulsion shall not be applied to surfaces which are to receive the special surface finish.

602 During a period of time when the mean temperature is expected to fall below 40°F, the moist cure by fog spray may be suspended and the concrete protected by the linseed oil base emulsion.

602 SPECIAL SURFACE FINISH: Special surface finish shall be required for all exposed surfaces of barrier, and exposed edges of slab. The intent of the finish is to provide a uniform color and to provide an aesthetic appearance. All surfaces which are to receive the special surface finish should be cleaned to remove laitance, form oil, fins, etc., and roughened by brushing and sandblasting so that special surface finish material will develop adequate bond to the prepared concrete surface.

602 The special surface finish shall be applied in two applications as one of the last items of work and only after the ordinary surface finish and cure period are complete. A spray application of special surface finish is required, and the rate of application for the commercially-packaged mortar shall be as recommended by the manufacturer.

602 The method of cure shall be as stated in the Specifications except that liquid membrane curing compounds will not be allowed on surfaces that are to receive the special surface finish.

610 CONCRETE: All superstructure concrete shall be Class AAE-3 or AAE-4. Concrete for the substructure shall be Class AE-1, AE-3, or AE-4. The class of concrete paid for will be that class shown on the plans.

610 Type I or Type II cement may be used.

610 If the depth of the concrete risers between the tops of the girders and the bottom of the deck slab exceed the theoretical dimensions, the additional concrete required shall be furnished at no expense to the state.

610 The contractor will be expected to place the slab concrete for one bridge in one continuous operation. Minimum rate of placement shall be 30 cubic yards per hour.

612 REINFORCING STEEL: Dimensions for bent bars are given out to out and to tangent intersections unless otherwise noted. Bent bars shall be bent around ACI standard size pins.

612 The top layer of transverse deck slab reinforcement shall be tied down with wire ties to the shear connectors of the beams. The ties shall be at intervals of five to six feet along the full length of all beams. Two wraps with 14-gauge plastic or epoxy-coated ties shall be used for this purpose.

612 All reinforcing steel shall be Grade 60.

612 The top layer of reinforcing steel in the slab and the curb steel indicated on the Reinforcement Details sheet shall be epoxy coated.

622 PILING: Piling shall be driven with a steam, air, or diesel hammer with a rated energy and ram weight not less than 42,600 foot-pound-tons, as computed by the formula W(E-10,870)+.78(E), where W is the weight of the ram in tons and E is the rated hammer energy as allowed in Section 622 of the Specifications. In no case shall the ram weight be less than 4,000 pounds.

622 Test piles shall be driven to a bearing not less than 125% of the design load as determined by the dynamic formula in section 622-3.3.

701 VERTICAL DRAINAGE FABRIC: Vertical drainage fabric shall be placed against the backface of the abutment before backfilling as shown on the plans. This material shall be Miradrain as manufactured by Mirafi Inc., P.O. Box 240967, Charlotte, NC 28224, CorDrain as manufactured by the Vibroflotation Co., United States Steel Building, 600 Grant Street, Pittsburg, PA 15219, or an approved equal.

The 6" perforated PVC pipe shall be located as shown on the plans and shall extend along the entire length of the abutment and through the seepage trench. The cost of this pipe and its installation shall be incidental to the price bid for the vertical drainage fabric.

750 LINSEED OIL TREATMENT: Linseed oil treatment shall not be started until all concrete work is completed and the asphalt curb seal is in place. Only one uniform application of .015 gallons per square yard shall be applied to the deck.

900 The contractor shall submit the following shop drawings for approval by the bridge engineer before fabrication:

1. Prestresses box girders

900 DESIGN STRENGTH:

| | | |
|---|---|---|
| F'C | 3,000 PSI | Cl. AE-1 concrete |
| F'C | 4,000 PSI | Cl. AAE-3 or AAE-4 concrete |
| FY | 60,000 PSI | Gr. 60 reinforced steel |
| FY | 5,000 PSI | prestressed girder concrete |

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# SUMMARY OF QUANTITIES

| SPEC | CODE | ITEM DESCRIPTION | UNIT | GRADING | STRUCTURAL ALTERNATES CONCRETE | STRUCTURAL ALTERNATES STEEL |
|---|---|---|---|---|---|---|
| 103 | 0100 | Contract Bond | L. Sum | 1 | | |
| 202 | 0105 | Removal of Structure | L. Sum | | 1 | 1 |
| 203 | 0203 | Embankment Type C | Cu. Yd. | 1,325 | | |
| 208 | 0100 | Class 1 Excavation | Cu. Yd. | | 113 | 113 |
| 208 | 0110 | Class 2 Excavation | Cu. Yd. | | 116 | 87 |
| 208 | 0200 | Foundation Preparation | L. Sum | | 1 | 1 |
| 216 | 0100 | Water | 'M' Gal. | 38 | | |
| 228 | 0100 | Select Backfill | Cu. Yd. | | 221 | 221 |
| 302 | 0120 | Aggregate Base Course Cl. 5 | Ton | 1,635 | | |
| 550 | 0112 | 8 In. Non-Reinf. Concrete Pavement Cl. AE | Sq. Yd. | | 1,092 | 1,088 |
| 550 | 0215 | Concrete Bridge Approach Slab | Sq. Yd. | | 320 | 320 |
| 550 | 0230 | Doweled Expansion Joint Assembly | L. Ft. | | 131 | 131 |
| 550 | 0809 | Preformed Compression Joint Seal 9/16 In. | L. Ft. | | 582 | 582 |
| 550 | 0830 | Preformed Compression Joint Seal 1 5/8 In. | L. Ft. | | 131 | 131 |
| 602 | 0130 | Class AAE-3 Concrete | Cu. Yd. | | 314 | 349 |
| 602 | 1110 | Class AE-1 Concrete | Cu. Yd. | | 226 | 155 |
| 602 | 7000 | Special Surface Finish | Sq. Ft. | | 3,598 | 3,640 |
| 604 | 9620 | Prestressed Box Beam - 33 in. | L. Ft. | | 1,323 | |
| 612 | 0115 | Reinforcing Steel - Grade 60 | Lb. | | 47,086 | 55,769 |
| 612 | 0116 | Reinforcing Steel - Grade 60 (Epoxy Coated) | Lb. | | 40,393 | 40,337 |
| 616 | 0362 | Structural Steel - M183 | Lb. | | 1,725 | |
| 616 | 5890 | Structural Steel | L. Sum | | | 1 |
| 622 | 0040 | Steel Piling HP 12 x 53 | L. Ft. | | 2,856 | 2,211 |
| 622 | 1200 | Steel Test Piling HP 12 x 53 | L. Ft. | | 310 | 290 |
| 630 | 0055 | 18" Corr. Steel Pipe .064" | L. Ft. | 72 | | |
| 630 | 0455 | 18" Corr. Steel Pipe End Sections | Ea. | 4 | | |

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# SUMMARY OF QUANTITIES

| SPEC | CODE | ITEM DESCRIPTION | UNIT | GRADING | STRUCTURAL ALTERNATES CONCRETE | STRUCTURAL ALTERNATES STEEL |
|---|---|---|---|---|---|---|
| 701 | 0105 | Vertical Drainage Fabric | Sq. Ft. | | 1,013 | 887 |
| 702 | 0130 | Loose Rock Riprap | Cu. Yd. | | 1,406 | 1,406 |
| 705 | 0100 | Mobilization | L. Sum | 1 | | |
| 722 | 0118 | Box Beam Guardrail | L. Ft. | 278 | | |
| 722 | 0600 | Box Beam Guardrail Flared End Treatment | Ea. | 4 | | |
| 724 | 0110 | Temporary Bypass | L. Sum | 1 | | |
| 726 | 0180 | Seeding Type B Class V | Acres | 3 | | |
| 746 | 0100 | Flagging | M. Hrs. | 500 | | |
| 750 | 0100 | Linseed Oil Treatment | Gal. | | 16 | 16 |
| 756 | 0100 | Field Laboratory - Type A | Ea. | 1 | | |
| 762 | 3298 | Traffic Control | L.Sum | 1 | | |
| 776 | 0100 | Temporary Striping | Mile | 1 | | |
| 900 | 3000 | Bridge Bench Marks | Set | | 1 | 1 |

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 12 |

## BASIS OF ESTIMATE

| DESCRIPTION | UNIT |
|---|---|
| Aggr. Base Crse. Cl. 5, 1.5 Ton/CY +25% | Ton |
| 40 Ton/P.D. Approach | |
| Water for Dust Palliative Plus 20 Gal./Ton Aggr. Base Crse. | 'M' Gal. |

WATER FOR COMPACTION: 10 Gal./CY of Embankment Quantity.

SEEDING: Entire right of way and construction areas in easements, except graded roadbed.

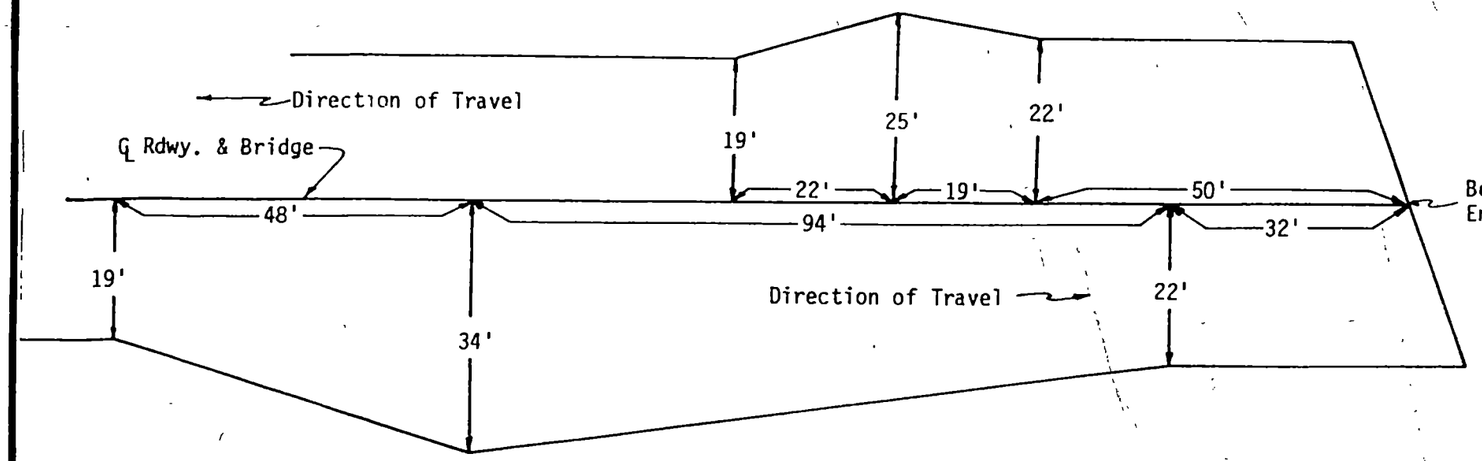
## MAXIMUM SIZE OF AGGREGATE

| DESCRIPTION | TYPE OF AGGREGATE | MAXIMUM SIZE |
|---|---|---|
| Class 5 | Crushed | 3/4" |

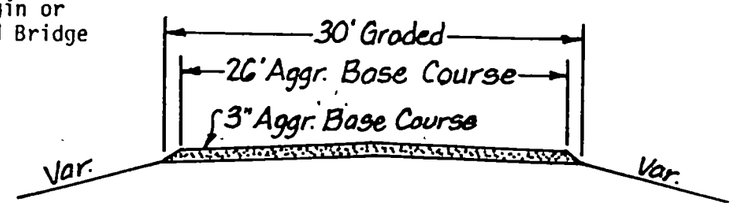
## SPECIAL PROVISIONS

| | | |
|---|---|---|
| 532 | Haul Road Maintenance | |
| 564 | Slipformed Jersey Barrier | |
| 569 | Statewide 404 Permit | |
| 573 | Bidding Requirement and Conditions | SP-102-20 |
| 583 | Flagging | SP-746-2 |
| 584 | Piling | SP-622-10 |
| 601 | Measurement and Payemnt Scope of Work | |
| 611 | Painting (STEEL ALTERNATE) | |
| 618 | Aggregate for Portland Cement Concrete | SP-806-5 |

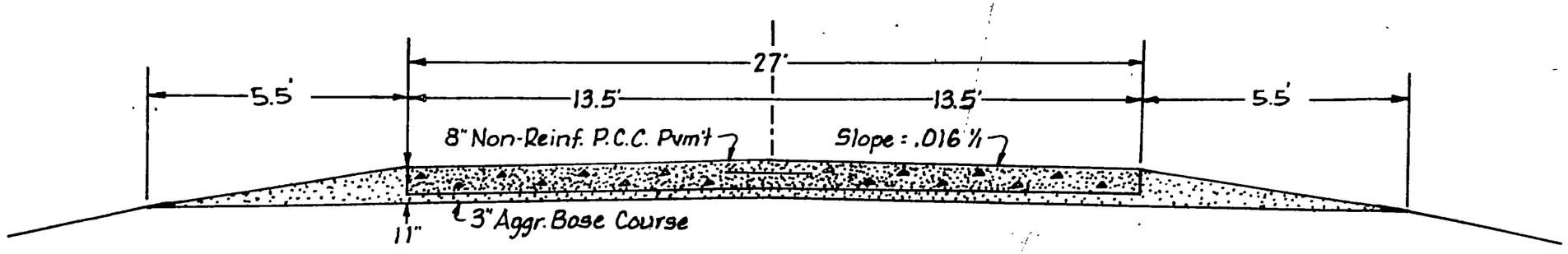
| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09) | 13 |




BOX BEAM GUARDRAIL LAYOUT
Skew 20° Lt. & Bk.

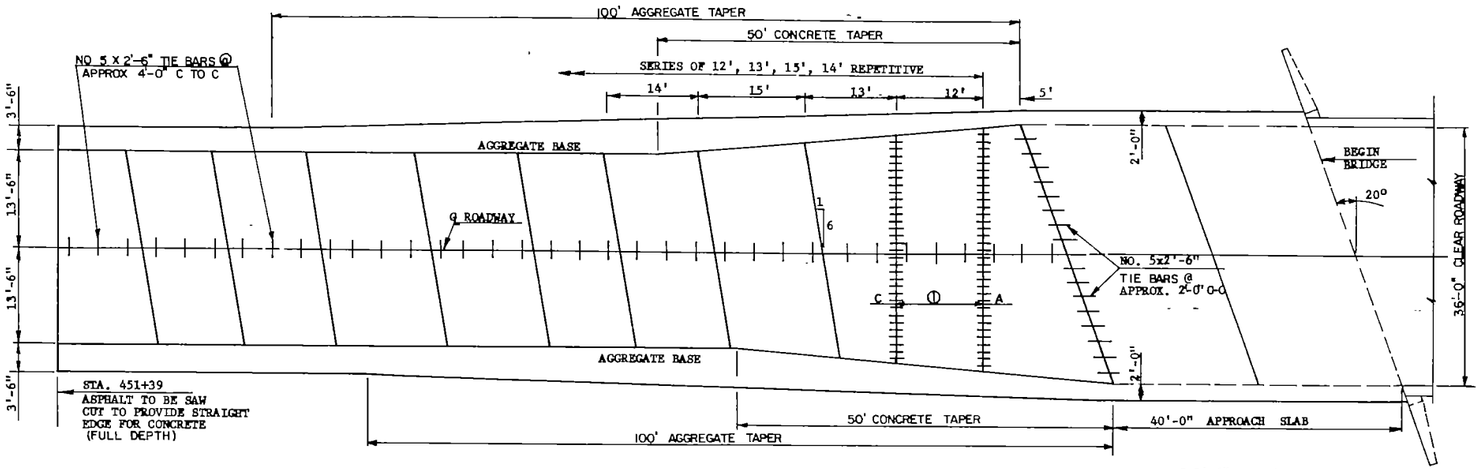



TYPICAL SECTION
DETOUR

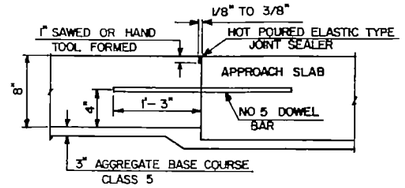



TYPICAL SECTION
TANGENT

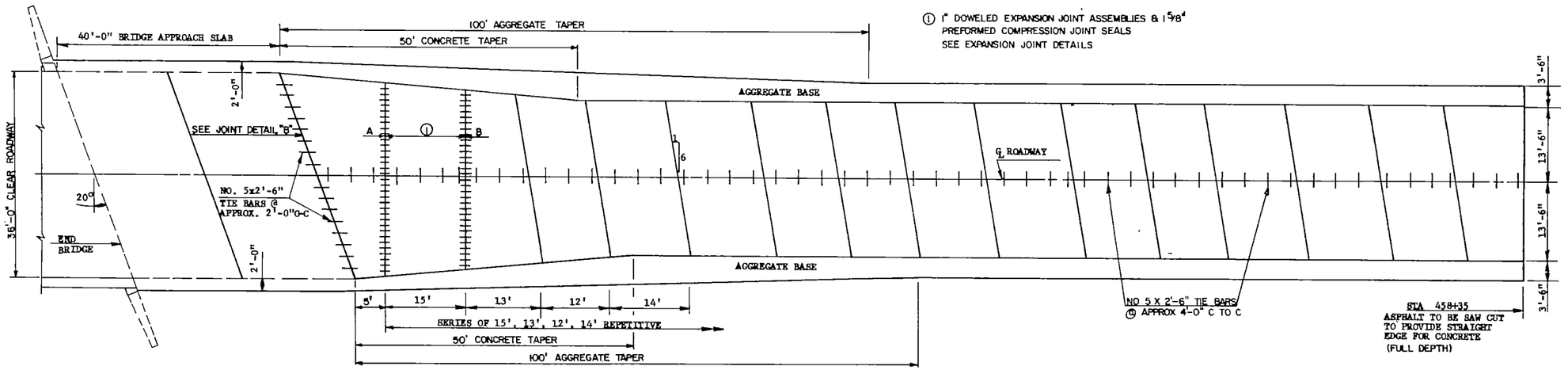
| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 14 |



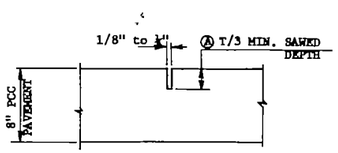

NOTE NO. 5x2'-6" TIE BARS INCIDENTAL TO PAY ITEM "P.C.C. PAVEMENT".




JOINT DETAIL B

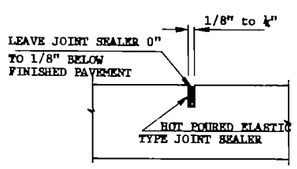



① 1" DOWELED EXPANSION JOINT ASSEMBLIES @ 1 5/8"
PREFORMED COMPRESSION JOINT SEALS
SEE EXPANSION JOINT DETAILS



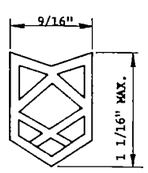

Ⓐ T/3 = ONE-THIRD THICKNESS OF PCC PAVEMENT

℄ LONGITUDINAL JOINT



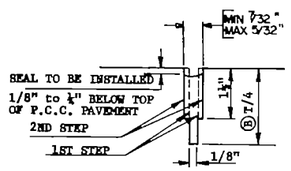

JOINT SEALER DETAIL

APPLIES TO ALL SAW JOINTS EXCEPT SKEWED TRANSVERSE JOINTS




PREFORMED COMPRESSION JOINT SEAL FOR PREFORMED TRANSVERSE CONTRACTION JOINTS

NOTE: PREFORMED COMPRESSION JOINT SEALS OF OTHER SHAPES MAY BE USED. THE SHAPE AND DIMENSIONS SHALL BE APPROVED BY THE ENGINEER.




SAWED TRANSVERSE JOINT

Ⓑ T/4 = ONE-FOURTH THICKNESS OF P.C.C. PAVEMENT

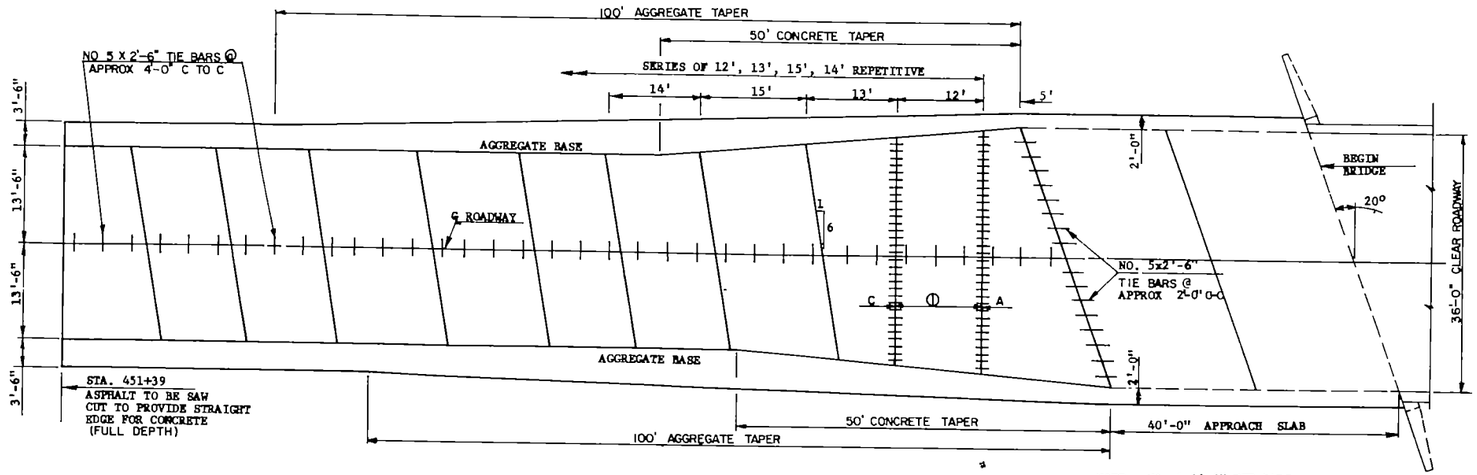
| QUANTITIES | |
|---|---|
| 8 IN NON-REINF CONC. PVMT CL AE | 1088 SY |
| PREFORMED COMP JT SEAL 9/16" | 5816 L.F |
| PREFORMED COMP JT SEAL 1 5/8" | 1308 L.F |
| DOWELED EXP JT ASSEMBLY | 1308 L.F |

MAPLE RIVER

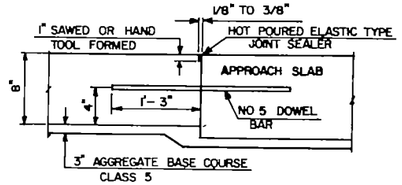
# CONCRETE PAVEMENT DETAILS

STEEL ALTERNATE

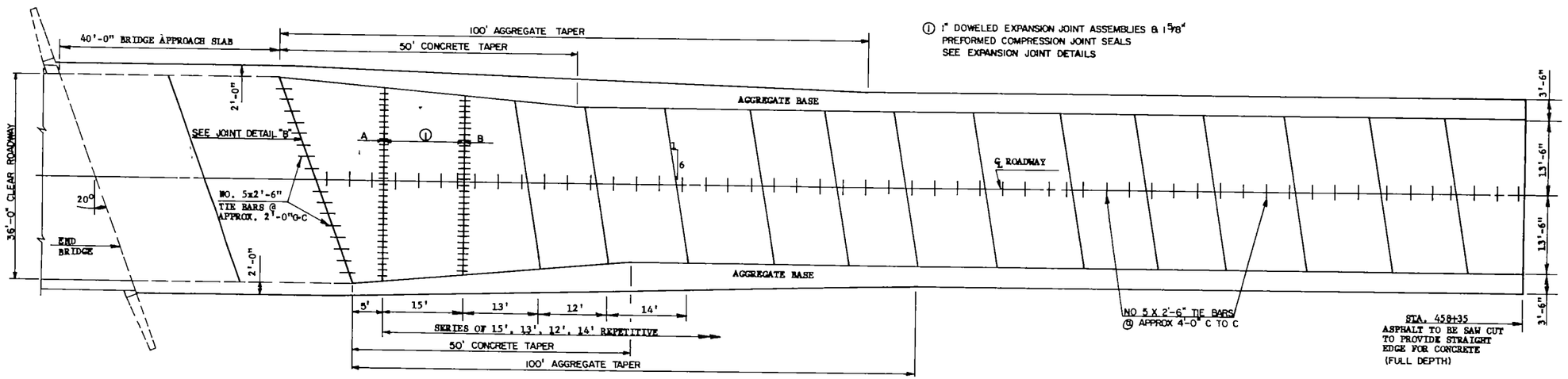
| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 15 |



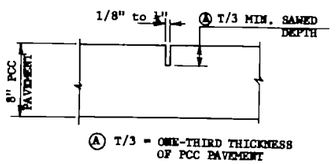

NOTE NO. 5x2'-6" TIE BARS INCIDENTAL TO PAY ITEM "P.C.C. PAVEMENT"




JOINT DETAIL B

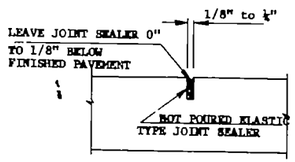



Ⓘ 1" DOWELED EXPANSION JOINT ASSEMBLIES @ 1 5/8" PREFORMED COMPRESSION JOINT SEALS SEE EXPANSION JOINT DETAILS



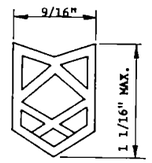

Ⓐ T/3 = ONE-THIRD THICKNESS OF PCC PAVEMENT

℄ LONGITUDINAL JOINT



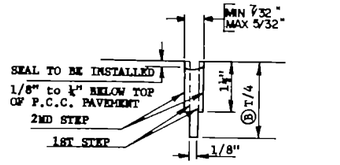

JOINT SEALER DETAIL

APPLIES TO ALL SAW JOINTS EXCEPT SKEWED TRANSVERSE JOINTS




PREFORMED COMPRESSION JOINT SEAL FOR PREFORMED TRANSVERSE CONTRACTION JOINTS

NOTE PREFORMED COMPRESSION JOINT SEALS OF OTHER SHAPES MAY BE USED. THE SHAPE AND DIMENSIONS SHALL BE APPROVED BY THE ENGINEER.




SAWED TRANSVERSE JOINT

Ⓑ T/4 = ONE-FOURTH THICKNESS OF P.C.C. PAVEMENT

| QUANTITIES | | |
|---|---|---|
| 8 IN NON-REINF CONC PVMT CL AE | 1092 | SY |
| PREFORMED COMP JT SEAL 9/16" | 5816 | LF |
| PREFORMED COMP JT SEAL 1 1/16" | 1308 | LF |
| DOWELED EXP JT ASSEMBLY | 1308 | LF |

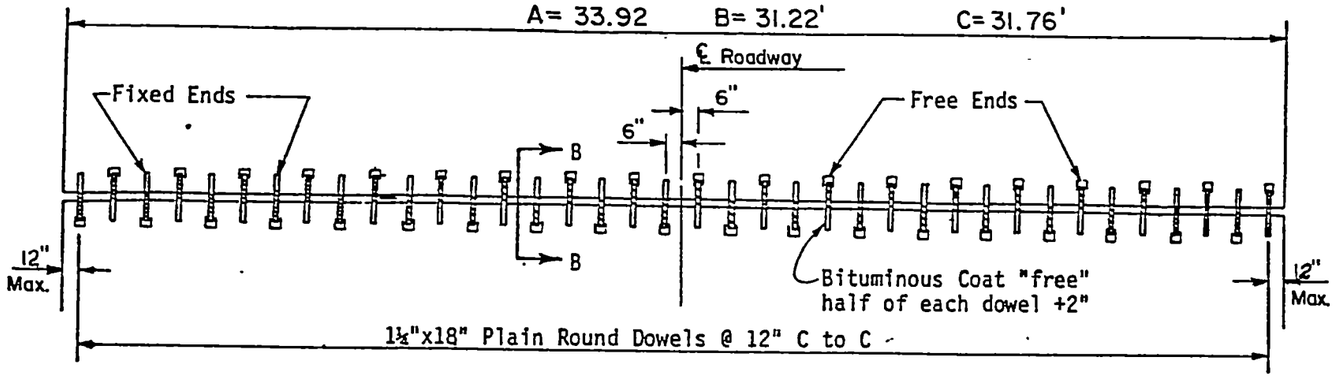
MAPLE RIVER

CONCRETE PAVEMENT DETAILS

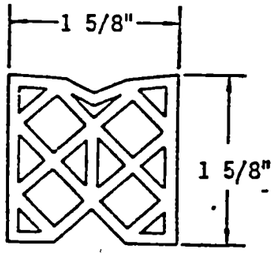
CONCRETE ALTERNATE

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 16 |

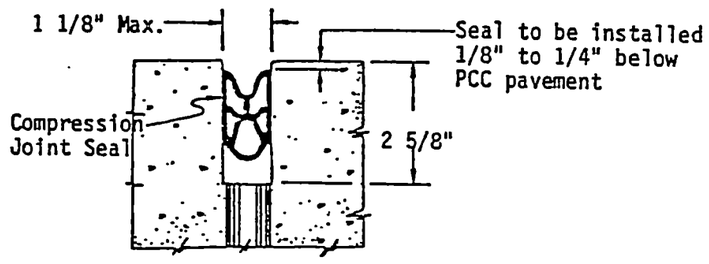
# EXPANSION JOINT DETAILS




EXPANSION JOINT DOWEL BAR ASSEMBLY

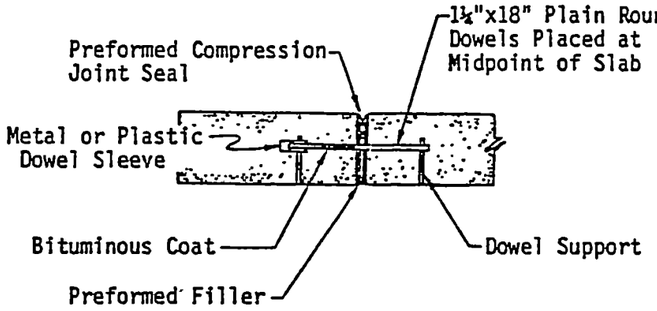



PREFORMED COMPRESSION JOINT SEAL FOR PREFORMED EXPANSION JOINT



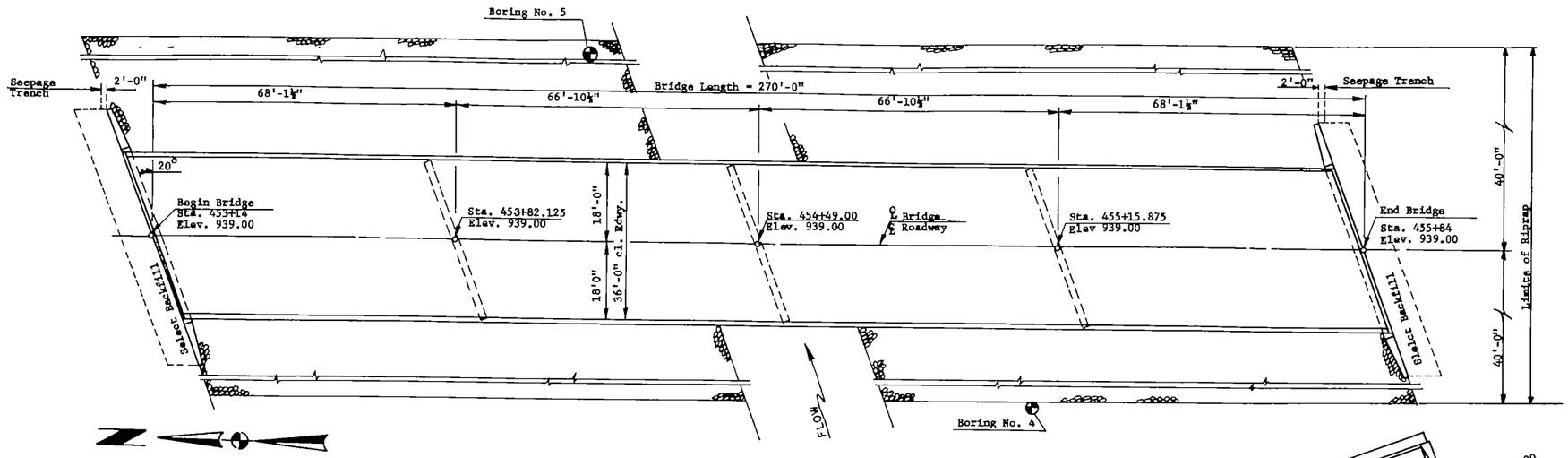

INSTALLATION

(Expansion Joint Seal)

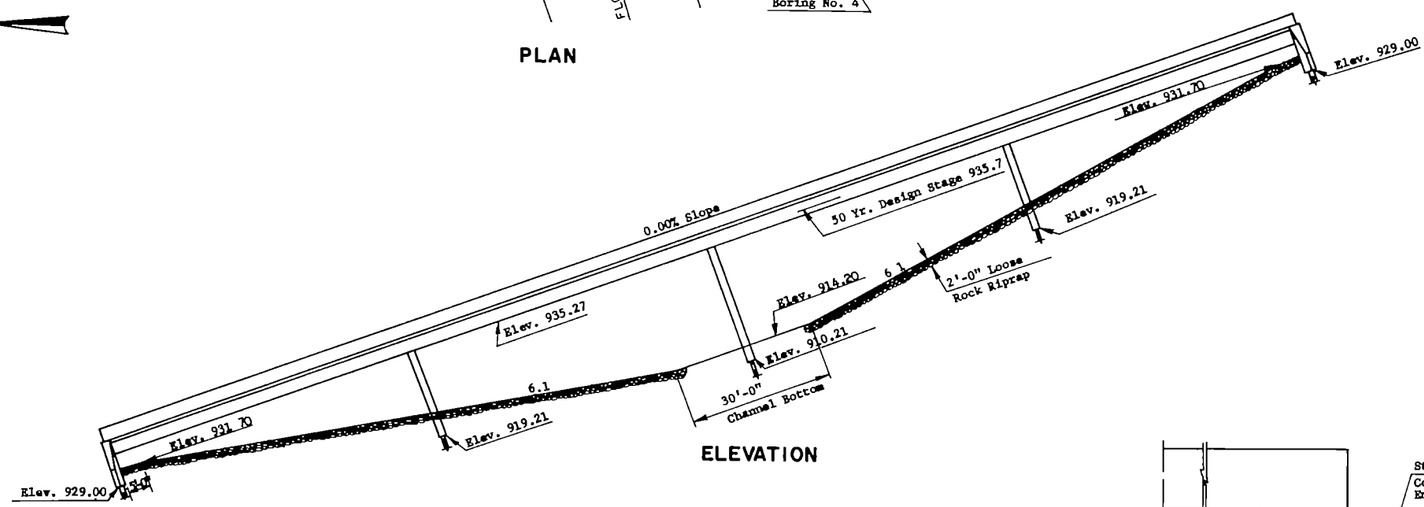



SECTION B-B

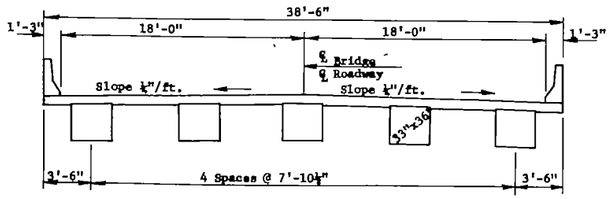
| CODE NO | FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|---|
| X-081 | 8 | N.D. | BRF-8-018(09)064 | 33 |



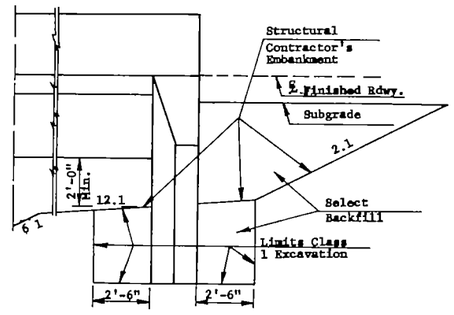

PLAN




ELEVATION




DECK SECTION




DETAIL AT ABUTMENT

NOT TO SCALE

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

MAPLE RIVER
**BRIDGE LAYOUT**
CONCRETE ALTERNATE
PROJECT BRF-8-018(09)064

CASS COUNTY

APPROVED

2/19/85
DATE

Clifford J. Dutt
ENGINEER

CLIFFORD J. DUTT

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 34 |

## HYDRAULIC DESIGN DATA

| | | |
|---|---|---|
| DRAINAGE AREA | 910 | SQ MI |
| DESIGN FREQUENCY | 50- | YEAR |
| DESIGN DISCHARGE | 9860 | CFS |
| DESIGN STAGE (Downstream) | 935 7 | |
| STREAM GRADIENT | 0 000237 | |
| AVERAGE VELOCITY OF FLOW IN NATURAL CHANNEL | 2 6 | FT/SEC |
| DEPTH OF FLOW | 21 5 | FEET |
| MAXIMUM RECORDED STAGE (1975 ) | 1938 0 | |
| MAXIMUM RECORDED DISCHARGE ( 1975 ) | Unknown | CFS |
| 100-YEAR FREQUENCY STAGE | 937 5 | |
| 100-YEAR FREQUENCY DISCHARGE | 13,200 | CFS |

## SPECIAL PROVISIONS

| NO | NAME |
|---|---|
| 564 | SLIPFORMED JERSEY BARRIER |
| 573 | BIDDING REQUIREMENTS AND CONDITIONS |
| 584 | PILING |
| 618 | AGGREGATE FOR PORTLAND CEMENT CONCRETE |
| | |

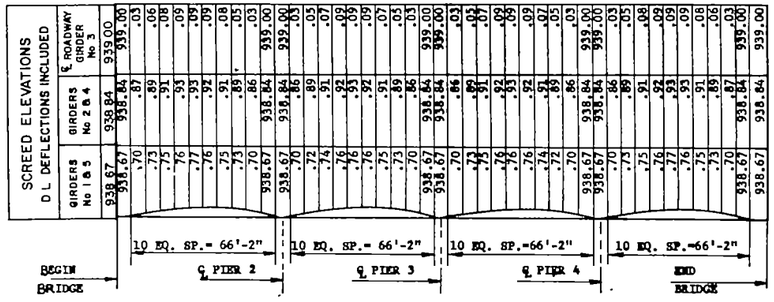
## BENCH MARKS

| NO | DESCRIPTION | LOCATION | ELEV |
|---|---|---|---|
| 1 | U IRON BY TREE - 1x2 GRD | 447+88 - 98' RT | 938.36 |
| 2 | U IRON BY P P - 1x2 GRD | 463+42 - 125' LT | 937.39 |
| | | | |
| | | | |

LIST OF STANDARDS
D-900-1
H-0401
H-7023

## ESTIMATE OF QUANTITIES

| SPEC | CODE | ITEM DESCRIPTION | UNIT | QUANTITY |
|---|---|---|---|---|
| 103 | 100 | CONTRACT BOND | L SUM | 1.0 |
| 202 | 105 | REMOVAL OF STRUCTURE | L SUM | 1.0 |
| 208 | 100 | CLASS 1 EXCAVATION | CU YD | 113.0 |
| 208 | 110 | CLASS 2 EXCAVATION | CU YD | 116.0 |
| 208 | 200 | FOUNDATION PREP. | L SUM | 1.0 |
| 228 | 100 | SELECT BACKFILL | CU YD | 221.0 |
| 302 | 120 | AGGREGATE BASE COURSE CL. 5 | TON | 1635.0 |
| 550 | 112 | 8 IN NON-REIF CONC PVMT CL AE | SQ YD | 1092.0 |
| 550 | 215 | CONCRETE BRIDGE APPROACH SLAB | SQ YD | 320.0 |
| 550 | 230 | DOWELED EXPANSION JOINT ASSEMBLY | L FT | 130.8 |
| 550 | 809 | PREFORMED COMP JT SEAL 9/16 IN | L FT | 381.6 |
| 550 | 830 | PREFORMED COMP JT SEAL 1 5/8 IN | L FT | 130.8 |
| 602 | 130 | CLASS AAE-3 CONCRETE | CU YD | 313.8 |
| 602 | 1110 | CLASS AE-1 CONCRETE | CU YD | 226.0 |
| 602 | 7000 | SPECIAL SURFACE FINISH | SQ FT | 3598.0 |
| 604 | 9620 | PRESTRESS BOX BEAM-33" | L FT | 1323.3 |
| 612 | 115 | REINFORCING STEEL GRADE 60 | LBS | 47086.0 |
| 612 | 116 | REINFORCING STEEL GRADE 60 EC | LBS | 40373.0 |
| 614 | 362 | STRUCTURAL STEEL M183 | LBS | 1725.0 |
| 622 | 60 | STEEL PILING HP 12x53 | L FT | 2856.0 |
| 622 | 1200 | STEEL TEST PILING HP 12x53 | L FT | 310.0 |
| 701 | 105 | VERTICAL DRAINAGE FABRIC | SQ FT | 1013.0 |
| 702 | 130 | LOOSE ROCK RIPRAP | CU YD | 1406.0 |
| 705 | 100 | MOBILIZATION | L SUM | 1.0 |
| 750 | 100 | LINSEED OIL TREATMENT | GAL | 14.1 |
| 900 | 3000 | BENCH MARKS | SET | 1.0 |
| | | | TOTAL | |




## SCREED ELEVATIONS

ELEVATIONS ARE TO THE TOP OF FINISHED CONCRETE

*Measured Below Bottom of Footing

## PILE LOADING

| LOCATION | DEAD LOAD | LIVE LOAD | DESIGN LOAD | MIN* PENETRATION |
|---|---|---|---|---|
| Abut No 1 | 48 2 T | 20 8 T | 69 0 T | 70' |
| Pier No 2 | 47 5 T | 19 2 T | 66 7 T | 60' |
| Pier No 3 | 47 0 T | 16 6 T | 63 6 T | 60' |
| Pier No. 4 | 47.5 T | 19.2 T | 66 7 T | 60' |
| Abut. No. 5 | 48.2 T | 20.8 T | 69 0 T | 70' |
| | | | | |
| | | | | |

## PRESTRESSING DATA

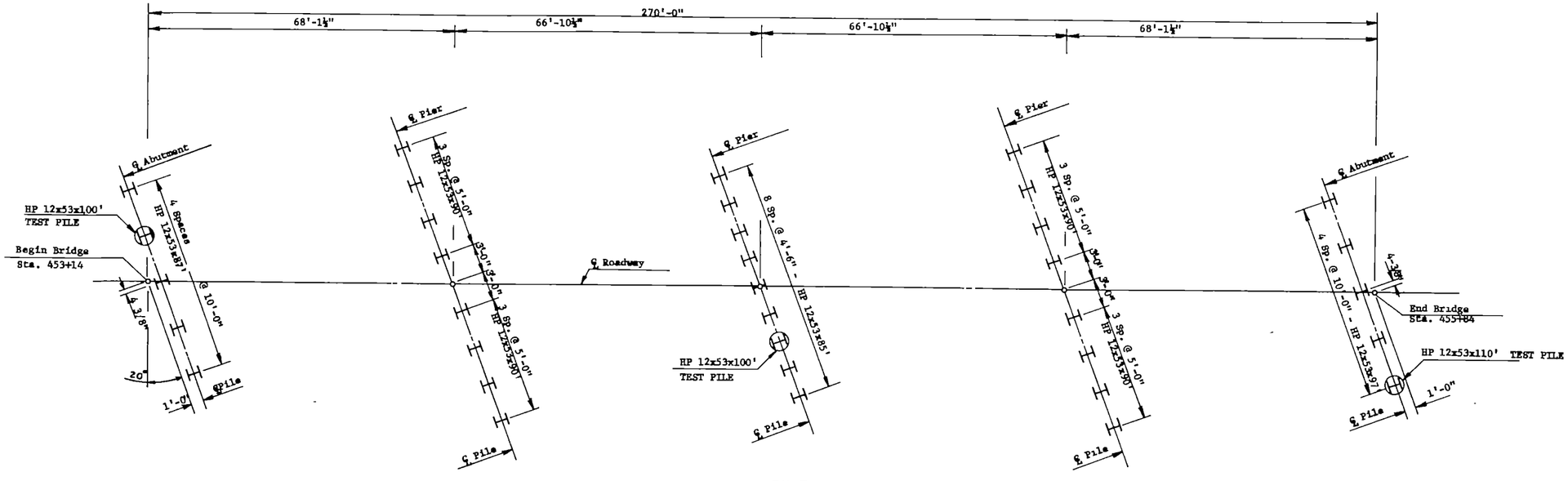
| C G | FINAL FORCE | DETENSION STRENGTH | ACCEPTANCE STRENGTH | WEIGHT TONS | GIRDER LENGTH |
|---|---|---|---|---|---|
| 2 25 | 712 6 K | 4,790 | 5,000 | 20 78 | 66'-2" |
| 2 75 | 729 5 K | | | | |
| 3 25 | 747 3 K | | | | |
| | | | | | |
| | | | | | |

MAPLE RIVER

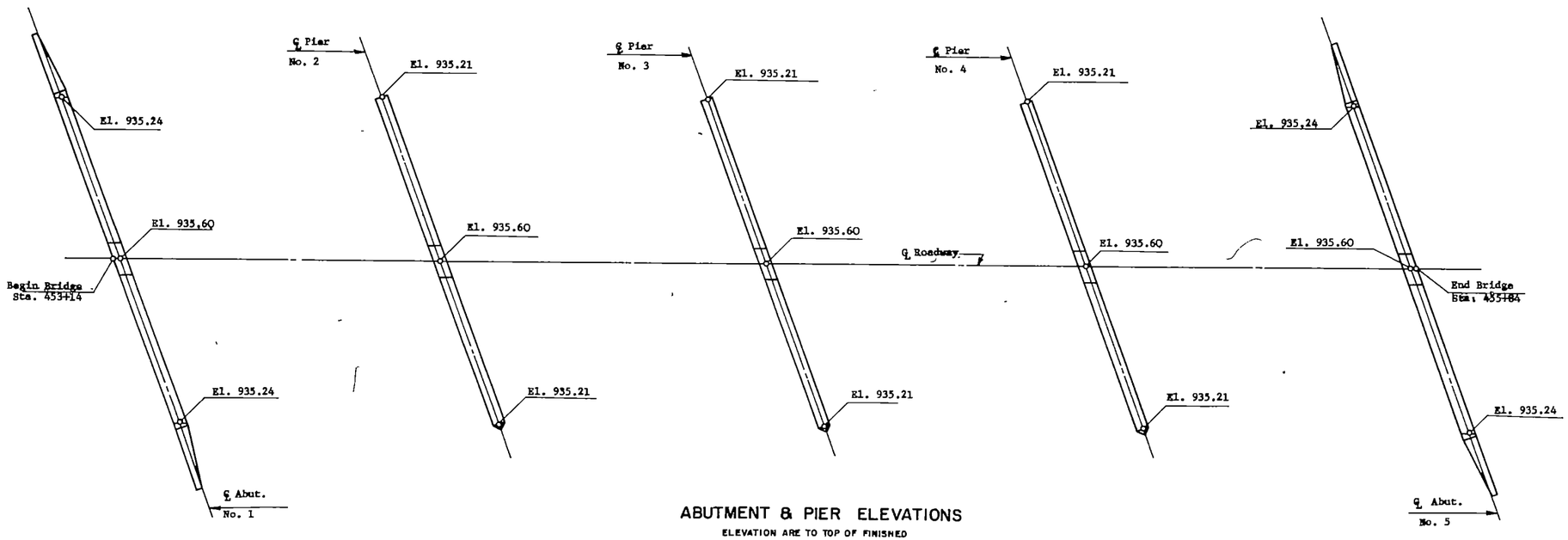
GENERAL INFORMATION

CONCRETE ALTERNATE

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 35 |




## PILE LAYOUT




## ABUTMENT & PIER ELEVATIONS

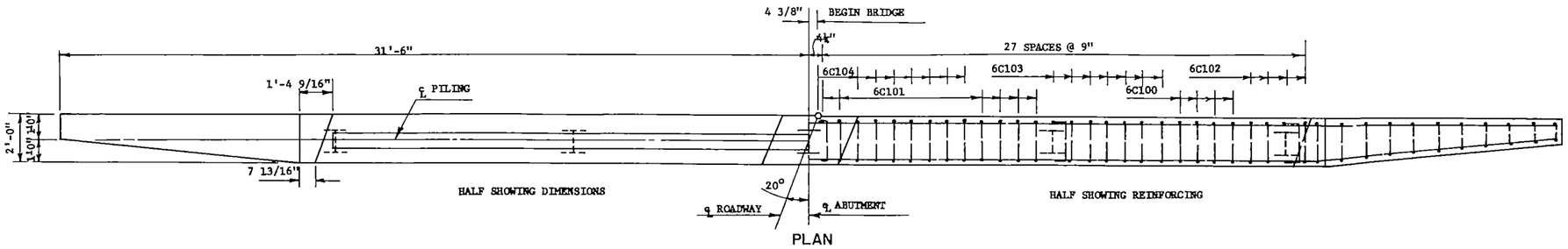
ELEVATION ARE TO TOP OF FINISHED CONCRETE

MAPLE RIVER

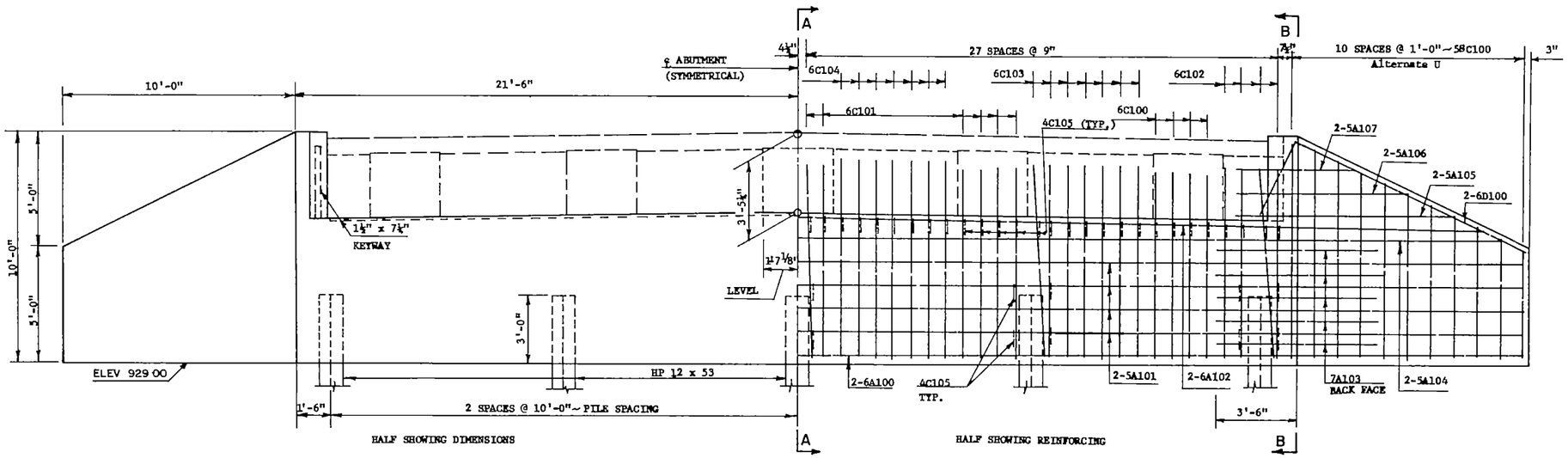
**PILE LAYOUT, ABUTMENT & PIER CAP ELEVATIONS**

CONCRETE ALTERNATE

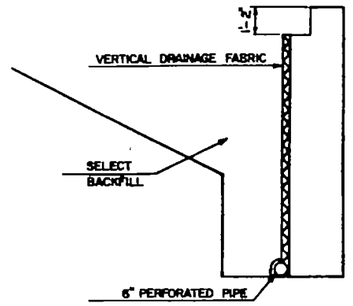
| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 36 |



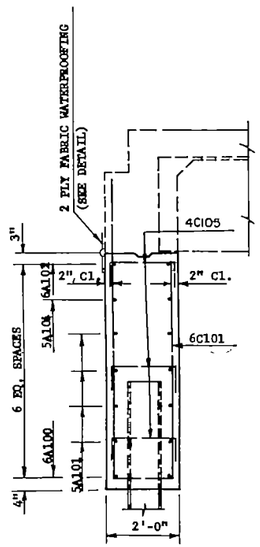

PLAN



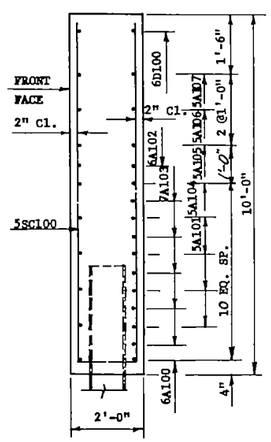

ELEVATION



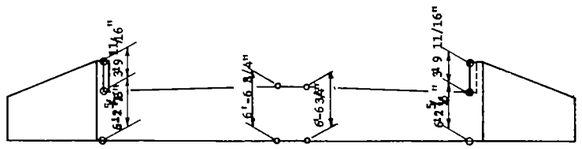

VERTICAL DRAINAGE FABRIC PLACEMENT DETAIL



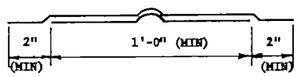

A-A




B-B




ABUTMENT BREASTWALL DIMENSIONS




FABRIC WATERPROOFING DETAIL

NOTE

Two ply fabric waterproofing shall consist of furnishing materials and placing damproofing and fabric waterproofing at areas designated on this sheet in accordance with Sec. 735 of the standard specifications for two ply fabric waterproofing. All materials and work shall be considered incidental to the pay item for Class AE-1 concrete.

| QUANTITIES (ONE ABUT.) | |
|---|---|
| CLASS AE-1 CONCRETE | 29.5 C.Y. |
| REINFORCING STEEL | 3,390 LBS. |

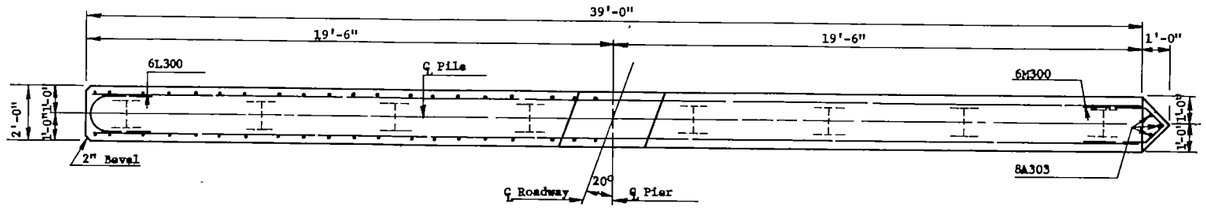
MAPLE RIVER

**ABUTMENT DETAILS**

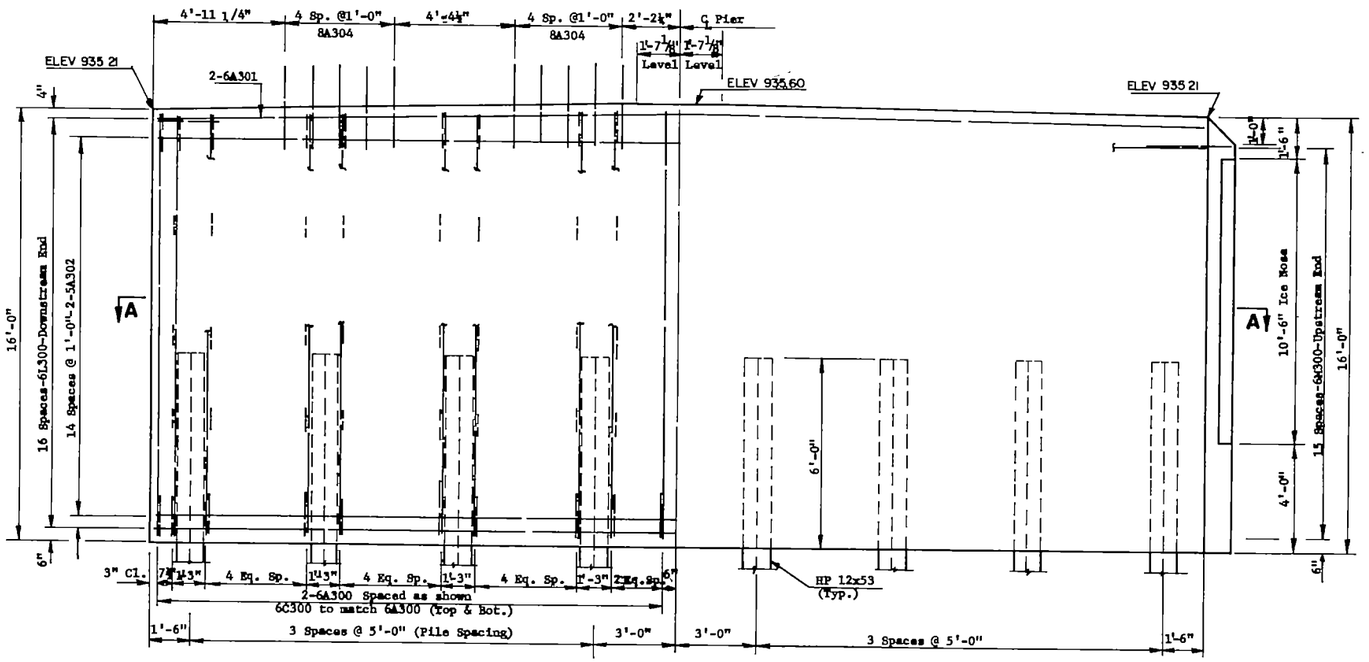
CONCRETE ALTERNATE

36'-0" CLEAR ROADWAY

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 37 |




**PLAN**

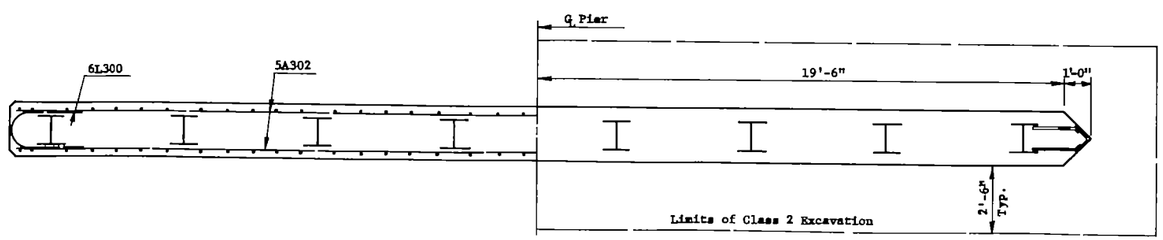



**ELEVATION**

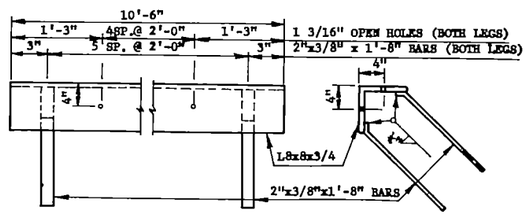



**℄ SECTION**

NOTE: Pier cap should be struck off parallel to ℄ girder.
8A304 bars shall be plain round mild steel. The upper half of this bar shall be greased before placing the diaphragm.




**A-A**




**ICE NOSE ANGLE**

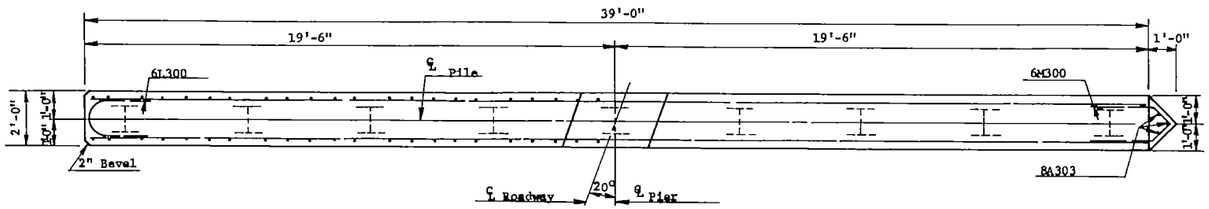
| QUANTITIES | (ONE PIER) | |
|---|---|---|
| CLASS AE-1 CONCRETE | 46.9 | C.Y. |
| REINFORCING STEEL | 4,532 | LBS. |
| STRUCTURAL STEEL M183 | 460 | LBS. |

MAPLE RIVER

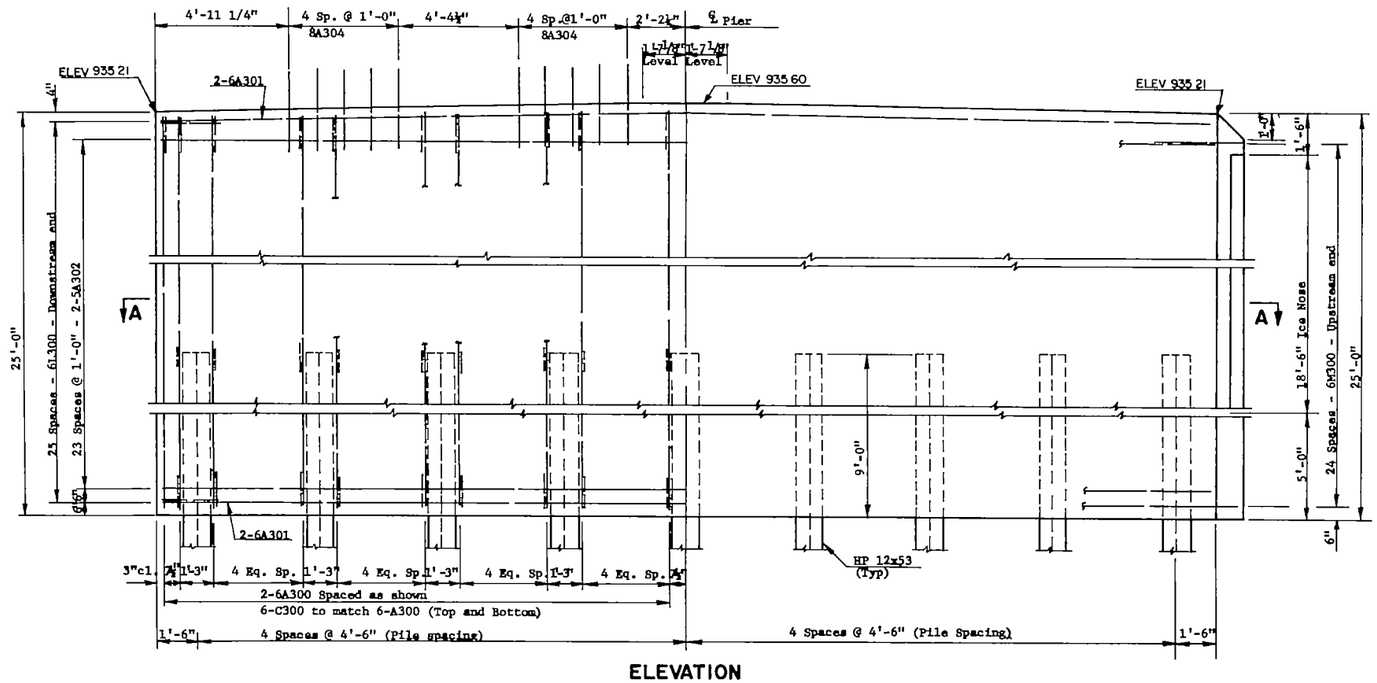
# PIER 2 & 4 DETAILS

CONCRETE ALTERNATE

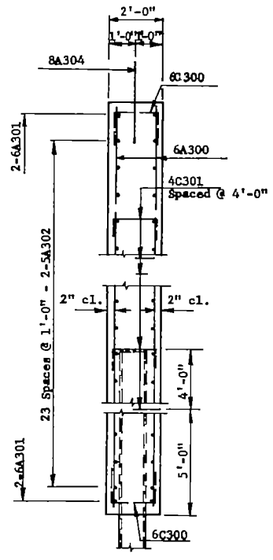
| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 38 |




PLAN



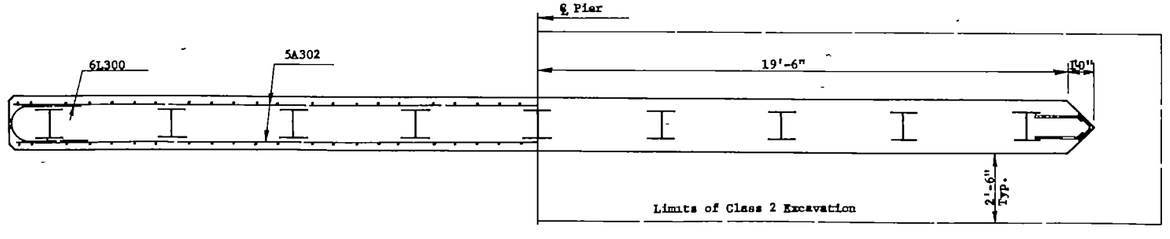

ELEVATION



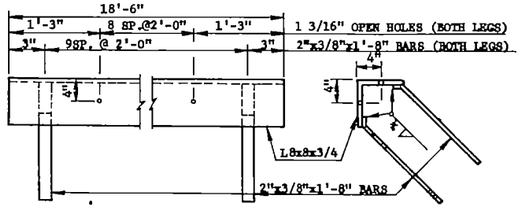

℄ SECTION

NOTE: Pier cap should be struck off parallel to ℄ girder.

8A304 bars shall be plain round mild steel. The upper half of this bar shall be greased before placing the diaphragm.




A-A




ICE NOSE ANGLE

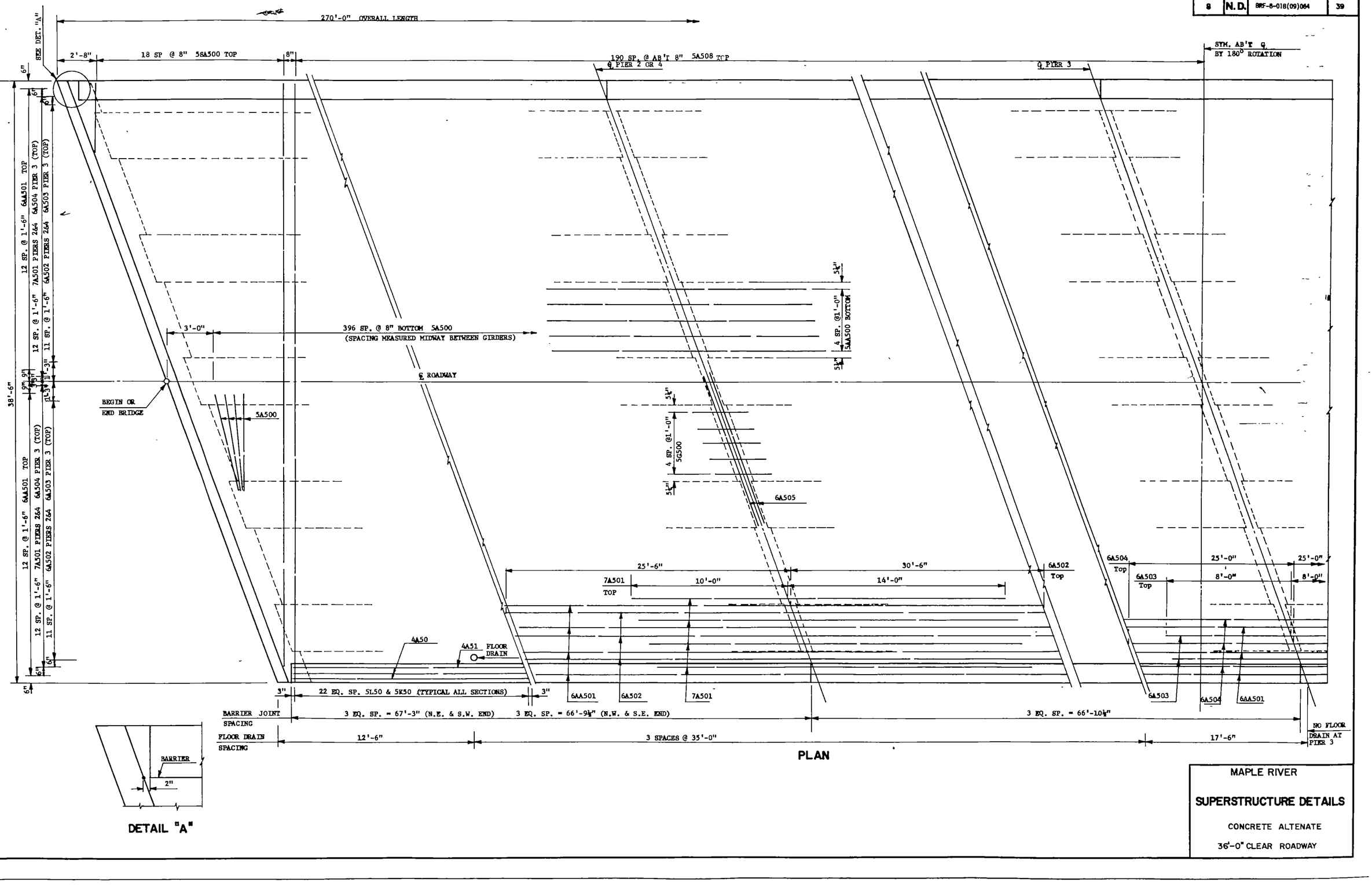
| QUANTITIES | | |
|---|---|---|
| Class AE-1 Concrete | 732 | C.Y. |
| Reinforcing Steel | 7,045 | LBS. |
| Structural Steel M183 | 805 | LBS. |

MAPLE RIVER

# PIER 3 DETAILS

CONCRETE ALTERNATE

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 39 |




PLAN

DETAIL "A"

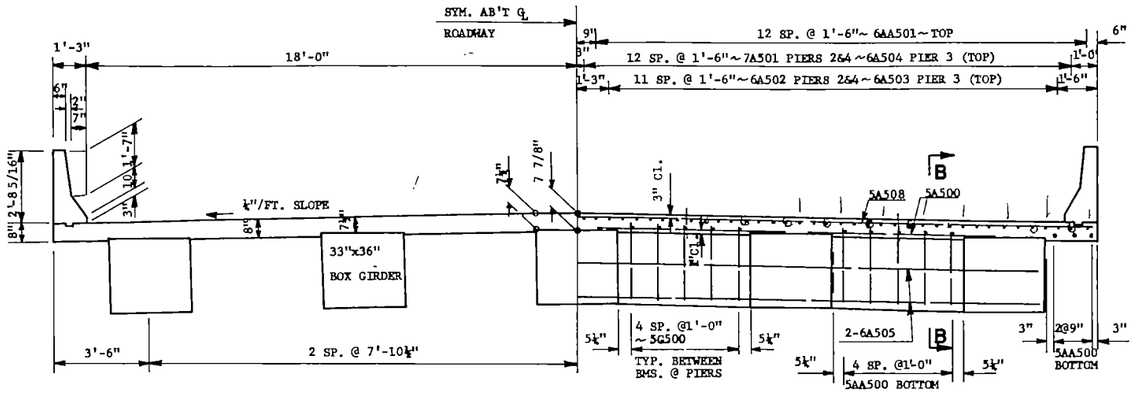
MAPLE RIVER

# SUPERSTRUCTURE DETAILS

CONCRETE ALTENATE

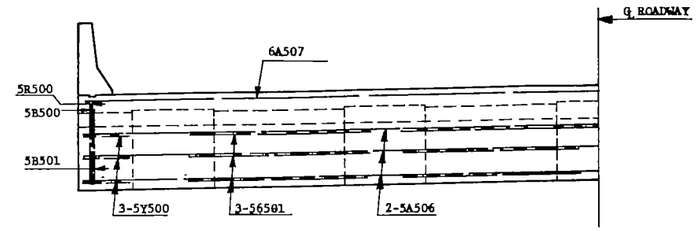
36'-0" CLEAR ROADWAY

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N. D. | BRF-8-018(09)064 | 40 |

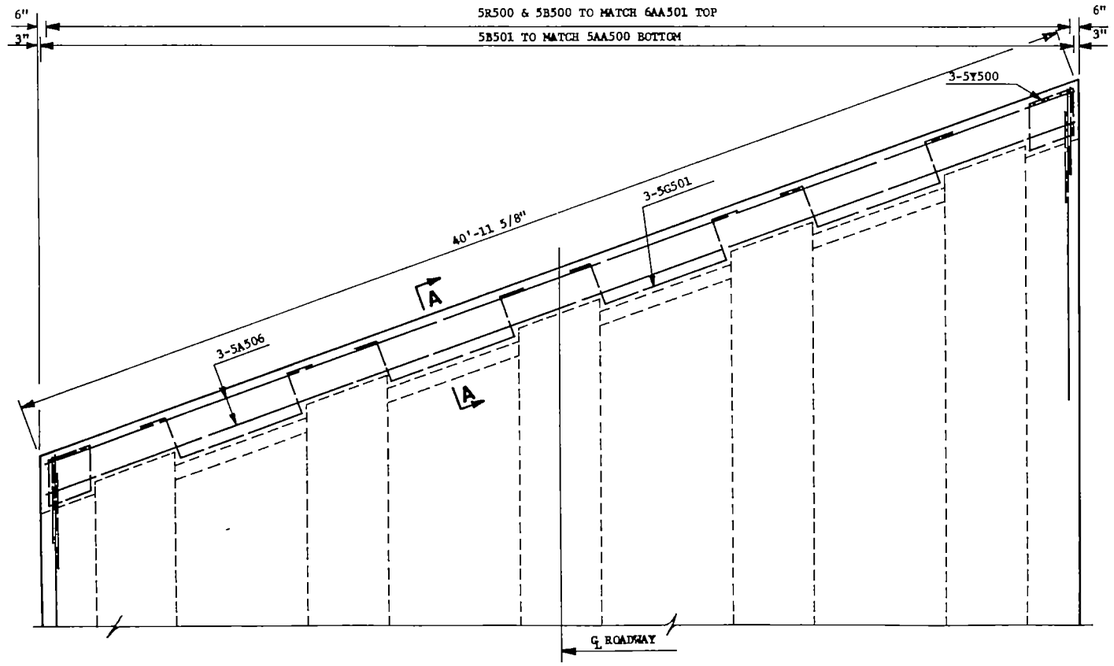



HALF SHOWING DIMENSIONS

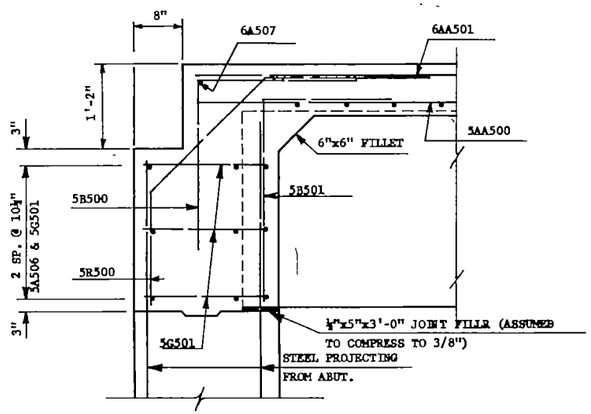
HALF SHOWING REINFORCING



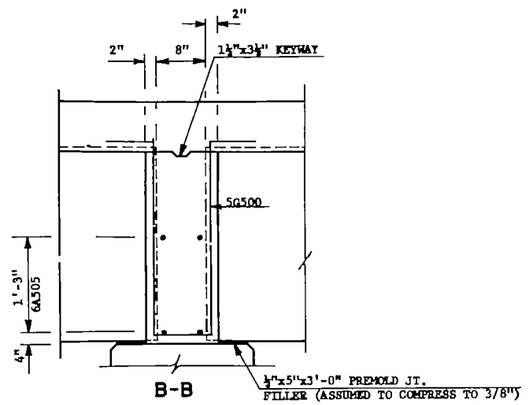

HALF ENDWALL ELEVATION




PLAN VIEW OF ENDWALL




A-A




B-B

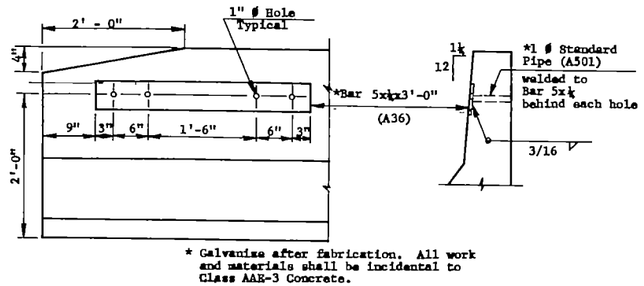
MAPLE RIVER

**SUPERSTRUCTURE DETAILS**

CONCRETE ALTERNATE

36'-0" CLEAR ROADWAY

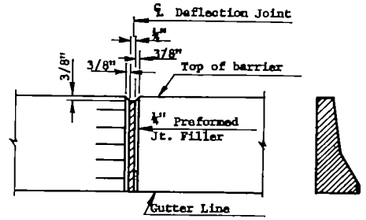
| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 41 |



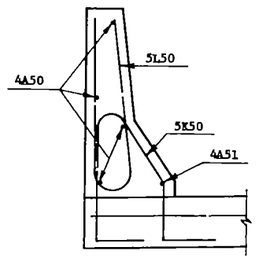

* Galvanize after fabrication. All work and materials shall be incidental to Class AAE-3 Concrete.

ELEVATION

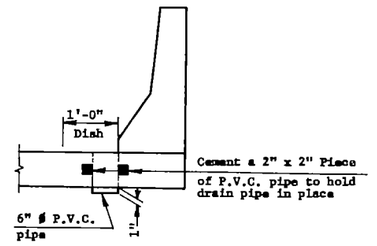
**BARRIER END DETAIL**




**DETAIL AT JOINT**




**TYPICAL CURB SECTION**




**FLOOR DRAIN DETAIL**

Drains shall not be paid for directly but shall be included in the price bid for AAE-3 Concrete.

| QUANTITIES | | |
|---|---|---|
| CONCRETE CLASS AAE-3 | 313 | C.Y. |
| REINFORCING STEEL | 24,197 | LBS. |
| REINFORCING STEEL (EPOXY) | 40,393 | LBS. |

MAPLE RIVER

**SUPERSTRUCTURE DETAILS**

CONCRETE ALTERNATE

36'-0" CLEAR ROADWAY

# BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE - SEE BAR BENDING & CUTTING DIAGRAMS

| LOCATION | SIZE | MARK | NUMBER EACH OR SETS | NOMINAL LENGTH | DETAILING DIMENSIONS a | b | c | d | e | f | g | h | k |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABUTMENTS 1&5 | 6 | A100 | 8 | 32'-9" | | 32'-9" | | | | | | | |
| | 5 | A101 | 32 | 32'-6" | | 32'-6" | | | | | | | |
| | 6 | A102 | 8 | 30'-6" | | 30'-6" | | | | | | | |
| | 7 | A103 | 20 | 7'-0" | | 7'-0" | | | | | | | |
| | 5 | A104 | 8 | 31'-6" | | 31'-6" | | | | | | | |
| | 5 | A105 | 8 | 9'-6" | | 9'-6" | | | | | | | |
| | 5 | A106 | 8 | 7'-3" | | 7'-3" | | | | | | | |
| | 5 | A107 | 8 | 5'-0" | | 5'-0" | | | | | | | |
| | 6 | C100 | 16 | 15'-7" | | 5'-10" | 1'-8" | 8'-1" | | | | | |
| | 6 | C101 | 24 | 15'-11" | | 6'-0" | 1'-8" | 8'-3" | | | | | |
| | 6 | C102 | 16 | 18'-6" | | 8'-1" | 1'-8" | 8'-9" | | | | | |
| | 6 | C103 | 28 | 18'-8" | | 8'-2" | 1'-8" | 8'-10" | | | | | |
| | 6 | C104 | 28 | 18'-10" | | 8'-3" | 1'-8" | 8'-11" | | | | | |
| | 4 | C105 | 152 | 2'-6" | | 5" | 1'-8" | 5" | | | | | |
| | 6 | D100 | 8 | 14'-0" | | 3'-0" | 11'-0" | | | | | 12 | 0 |
| | 5 | SC100 | 4 | 169'-7" | | 4'-8" | 9'-7" | 8" | 1'-8" | 10 | | | |
| PIERS 2&4 | 6 | A300 | 160 | 15'-8" | | 15'-8" | | | | | | | |
| | 6 | A301 | 8 | 38'-8" | | 38'-8" | | | | | | | |
| | 5 | A302 | 60 | 38'-8" | | 38'-8" | | | | | | | |
| | 8 | A303 | 6 | 14'-8" | | 14'-8" | | | | | | | |
| | 8 | A304 | 40 | 3'-0" | | 3'-0" | | | | | | | |
| | 6 | C300 | 160 | 3'-8" | | 1'-0" | 1'-8" | 1'-0" | | | | | |
| | 4 | C301 | 96 | 2'-6" | | 5" | 1'-8" | 5" | | | | | |
| | 6 | L300 | 34 | 8'-4" | | 3'-0" | 2'-4" | 3'-0" | | 9" | | | |
| | 6 | M300 | 32 | 8'-2" | 1'-6" | 3'-0" | 1'-1" | | | | | 12 | 12 |
| PIER 3 | 6 | A300-3 | 88 | 24'-8" | | 24'-8" | | | | | | | |
| | 6 | A301 | 4 | 38'-8" | | 38'-8" | | | | | | | |
| | 5 | A302 | 48 | 38'-8" | | 38'-8" | | | | | | | |
| | 8 | A303-3 | 3 | 23'-8" | | 23'-8" | | | | | | | |
| | 8 | A304 | 20 | 3'-0" | | 3'-0" | | | | | | | |
| | 6 | C300 | 88 | 3'-8" | | 1'-0" | 1'-8" | 1'-0" | | | | | |
| | 4 | C301 | 90 | 2'-6" | | 5" | 1'-8" | 5" | | | | | |
| | 6 | L300 | 26 | 8'-4" | | 3'-0" | 2'-4" | 3'-0" | | 9" | | | |
| | 6 | M300 | 23 | 8'-2" | 1'-6" | 3'-0" | 1'-1" | | | | | 12 | 12 |

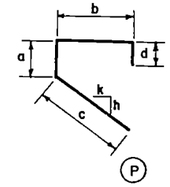
WHENEVER USED, THE FOLLOWING BAR MARK SUFFIXES DENOTE:
(a)-1,-2, ETC REFER TO ABUTMENT OR PIER NUMBERS,
(b)-A,-B, ETC REFER TO PIER COLUMNS;

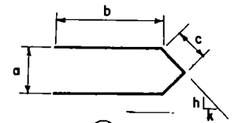
| LOCATION | SIZE | MARK | NUMBER EACH OR SETS | NOMINAL LENGTH | DETAILING DIMENSIONS a | b | c | d | e | f | g | h | k |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUPERSTRUCTURE REGULAR | 5 | AA500 | 26 | 275'-0" | | 60'-0" | 1'-9" | 35'-0" | 4 | 268'-0" | | | |
| | 5 | A500 | 1588 | 6'-0" | | 6'-0" | | | | | | | |
| | 6 | A505 | 12 | 36'-4" | | 36'-4" | | | | | | | |
| | 5 | A506 | 12 | 40'-6" | | 40'-6" | | | | | | | |
| | 5 | B501 | 52 | 5'-6" | | 2'-9" | 2'-9" | | | | | | |
| | 5 | G500 | 60 | 8'-2" | 2'-8" | 10" | 2'-8" | 1'-0" | | | | 0 | 12 |
| | 5 | G501 | 24 | 10'-0" | 1'-8" | 4'-8" | 1'-8" | 1'-0" | | | | 0 | 12 |
| | 5 | Y500 | 12 | 7'-6" | 1'-9" | 1'-9" | 3" | | | | | 12 | 4 3/8 |
| SUPERSTRUCTURE EPOXY | 6 | AA501 | 26 | 276'-4" | | 60'-0" | 2'-1" | 36'-4" | 4 | 268'-0" | | | |
| | 7 | A501 | 52 | 24'-0" | | 24'-0" | | | | | | | |
| | 6 | A502 | 48 | 56'-0" | | 56'-0" | | | | | | | |
| | 6 | A503 | 24 | 16'-0" | | 16'-0" | | | | | | | |
| | 6 | A504 | 26 | 50'-0" | | 50'-0" | | | | | | | |
| | 6 | A507 | 2 | 40'-6" | | 40'-6" | | | | | | | |
| | 5 | A508 | 381 | 38'-0" | | 38'-0" | | | | | | | |
| | 5 | B500 | 52 | 5'-0" | | 2'-6" | 2'-6" | | | | | | |
| | 5 | R500 | 52 | 5'-0" | 1'-0" | 2'-9" | 1'-3" | | | | | 12 | 12 |
| | 6 | SA500 | 2 | 399'-0" | 4'-6" | 37'-6" | | | 18 | | | | |
| BARRIER WALL REGULAR | 4 | A50 | 96 | 22'-1" | | 22'-1" | | | | | | | |
| | 5 | L50 | 552 | 5'-4" | | 2'-3" | 10" | 2'-3" | | 3" | | 1½ | 12 |
| BARRIER WALL EPOXY | 4 | A51 | 24 | 22'-1" | | 22'-1" | | | | | | | |
| | 5 | K50 | 552 | 5'-6" | 1'-5" | 7½" | 11 3/4" | 9" | 10½" | 2 7/8 | | 12 | 8 3/8 |

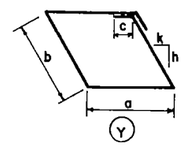
| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 42 |

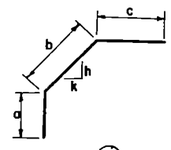
## NOTES

1. FABRICATION AND TOLERANCES SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
2. ALL DIMENSIONS ARE OUT TO OUT OF BARS.
3. NOMINAL LENGTH OF EACH BENT BAR OR CUT BAR IS THE SUM TOTAL OF THE DETAILING DIMENSIONS FOR THAT BAR, UNLESS OTHERWISE NOTED.
4. THE A304 BARS SHALL BE PLAIN ROUND MILD STEEL.

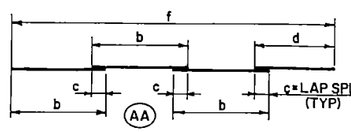


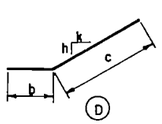



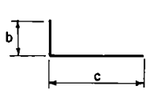



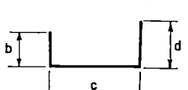

## BAR BENDING AND CUTTING DIAGRAMS

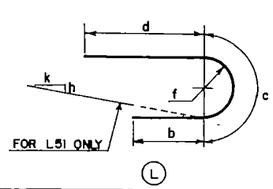


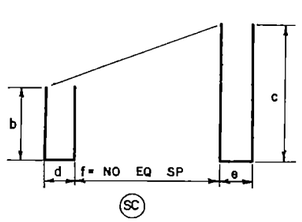



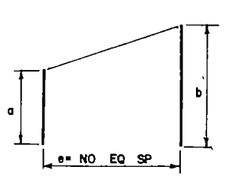


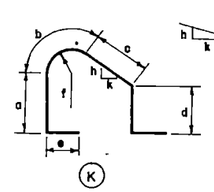


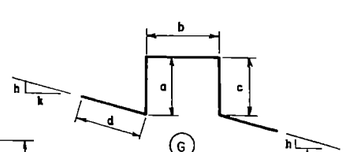



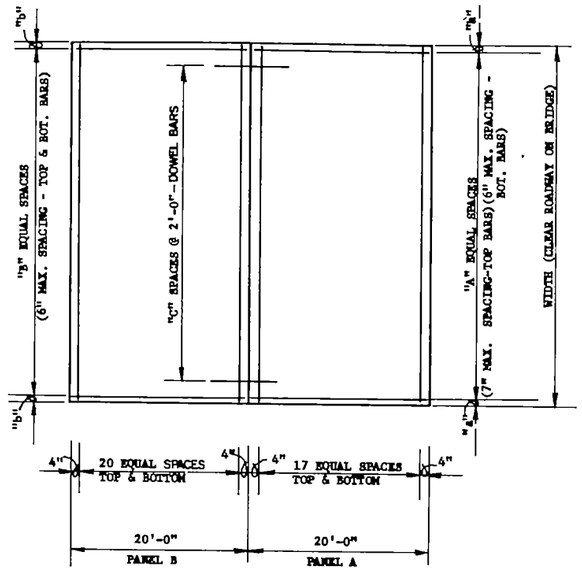




MAPLE RIVER

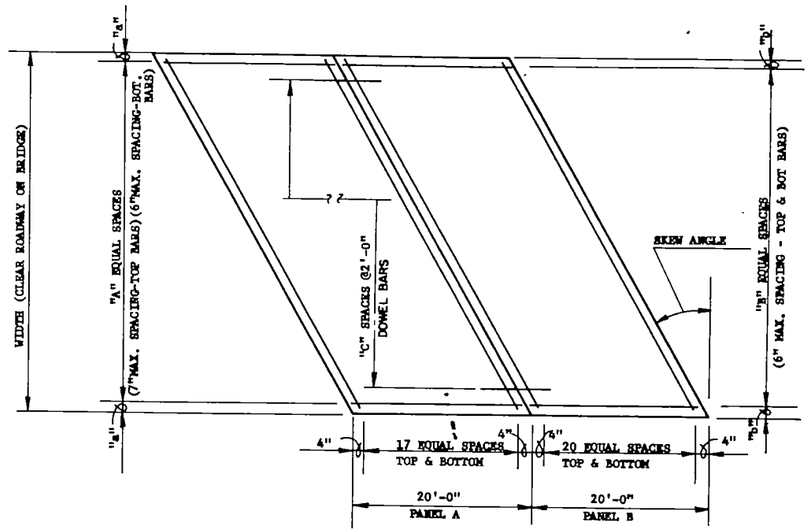
**REINFORCEMENT STEEL DETAILS**

CONCRETE ALTERNATE

| FHWA REGION | STATE | FED AID PROJ NO | SHEET NO |
|---|---|---|---|
| 8 | N.D. | BRF-8-018(09)064 | 43 |

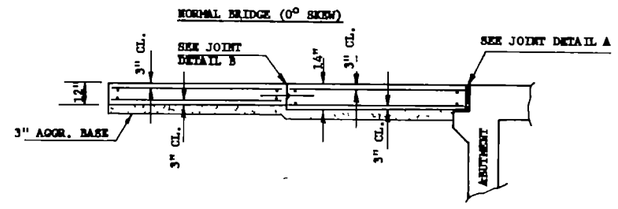



PLAN

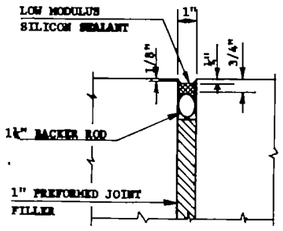



SKEWED BRIDGE

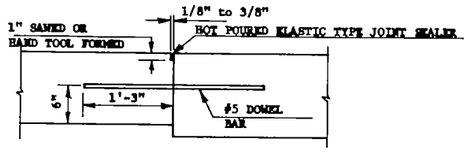
PLAN




ELEVATION




JOINT DETAIL A




JOINT DETAIL B

| WIDTH = 36'-0" | | | | | | |
|---|---|---|---|---|---|---|
| SKEW ANGLE = 20° | | | | | | |
| LONGITUDINAL BARS | | | | | | |
| PANEL A | BARS | "a" | "A" | SIZE | NO | LENGTH |
| | TOP | 6" | 80 | 6 | 61 | 19'-8" |
| | BOT | 3" | 71 | 7 | 72 | 19'-8" |
| PANEL B | BARS | "b" | "B" | SIZE | NO | LENGTH |
| | TOP | 3" | 71 | 6 | 72 | 19'-8" |
| | BOT | 3" | 71 | 6 | 72 | 19'-8" |

| TRANSVERSE BARS | | | | |
|---|---|---|---|---|
| | BARS | SIZE | NO | LENGTH |
| PANEL A | TOP | 5 | 18 | 37'-10" |
| | BOT | 5 | 18 | 37'-10" |
| PANEL B | TOP | 5 | 21 | 37'-10" |
| | BOT | 5 | 21 | 37'-10" |

| DOWEL BARS | | | | |
|---|---|---|---|---|
| | "C" | SIZE | NO | LENGTH |
| | 17 | 5 | 18 | 2'-6" |

| ESTIMATED MATERIAL QUANTITIES | | |
|---|---|---|
| | REINFORCING STEEL (LBS.) | CONCRETE (C.Y.) |
| PANEL A | 6,117 | 311 |
| PANEL B | 5,911 | 267 |
| DOWELS | 47 | |

NOTE: THE ABOVE ESTIMATED MATERIAL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS AND LABOR REQUIRED TO BUILD THE APPROACH SLABS SHALL BE INCIDENTAL TO THE PAY ITEM "BRIDGE APPROACH SLAB." THE ABOVE ESTIMATED MATERIAL QUANTITIES ARE FOR ONE PANEL ONLY

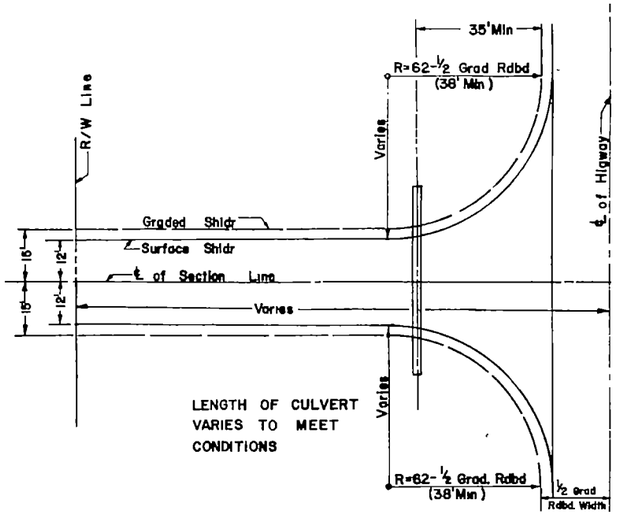
# BRIDGE APPROACH SLAB

# SECTION LINE & PRIVATE DRIVE APPROACHES
(RURAL)

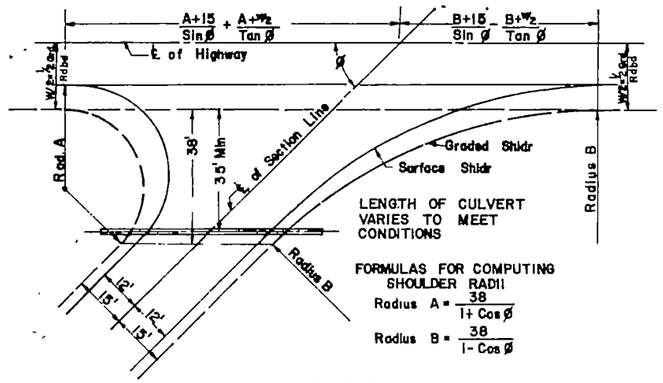
BRF-8-018(09)064

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. |
|---|---|---|---|
| 8 | N D | | 44 |

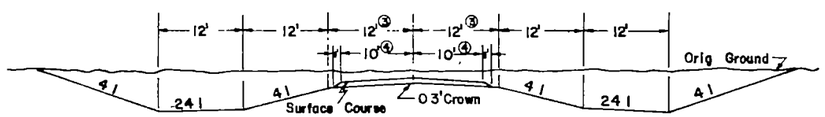
D-203-8



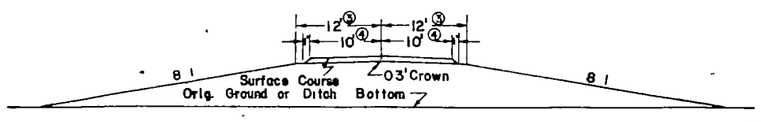

PLAN VIEW SECTION LINE APPROACH (WITHOUT SKEW)



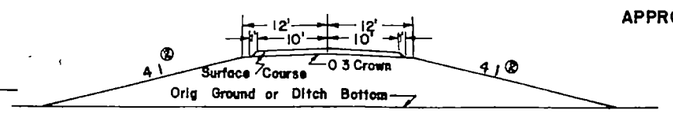

PLAN VIEW SECTION LINE APPROACH (SKEWED)




SECTION A-A




SECTION B-B




SECTION C-C

NOTE

DIMENSIONS SHOWN FOR SURFACING ARE FOR AGGREGATE SURFACE COURSE OR BITUMINOUS SURFACE CONSTRUCTED WITH GRADING CONTRACT.

APPR GRADES AND TYPICAL SECTIONS APPLY TO BOTH PRIVATE DRIVES AND SECTION LINE APPROACHES

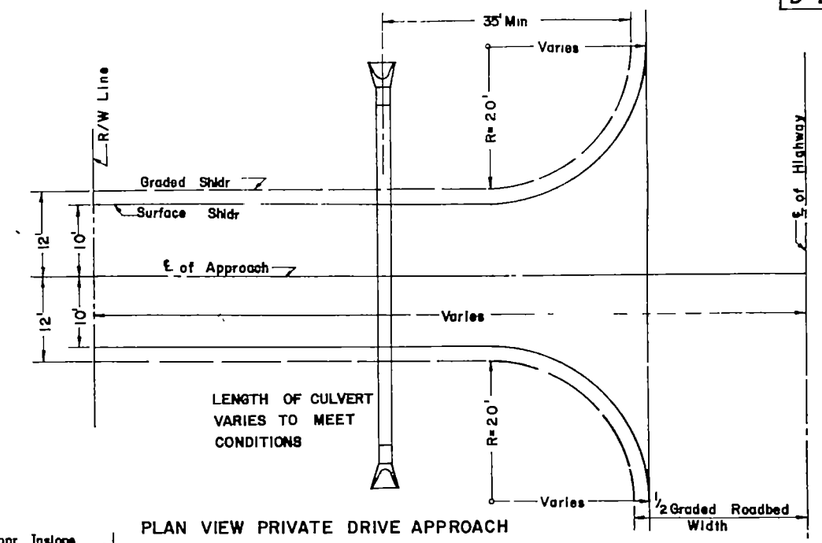
FOOT NOTES

① 10% Max on Field Drives.

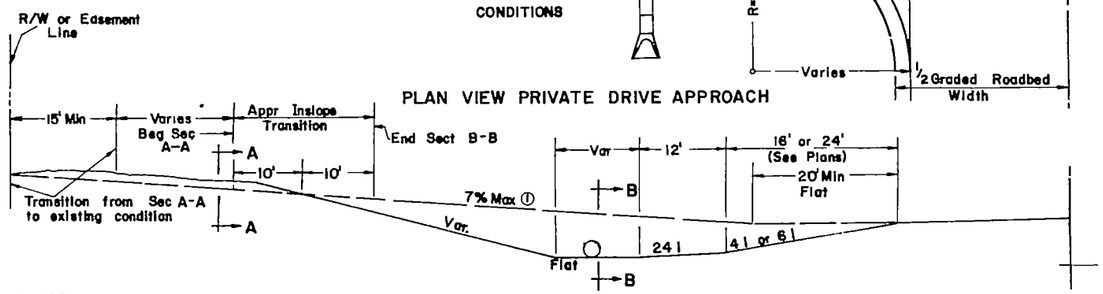
② 3:1 Slope - 20' to 30' Fill
2:1 Slope on Fills over 30'

③ 15' on Sec Line Appr's

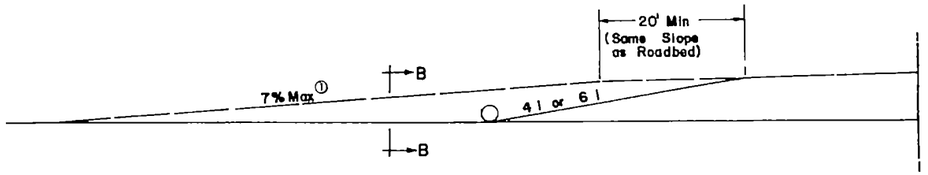
④ 12' on Sec Line Appr's



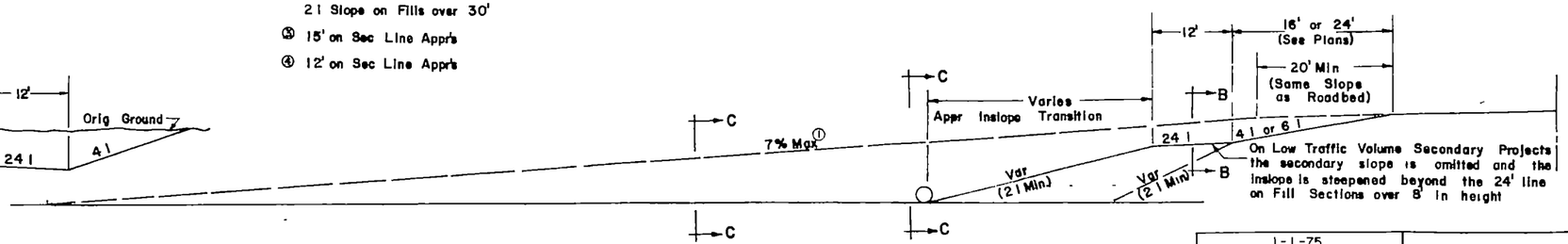

PLAN VIEW PRIVATE DRIVE APPROACH




APPROACH GRADE ON CUT SECTION




APPROACH GRADE ON FILL SECTION 12 FEET OR LESS




APPROACH GRADE ON FILL SECTION OVER 12 FEET

| 1-1-75 REVISIONS | |
|---|---|
| DATE | CHANGE |
| 5-16-84 | Change of Slope |

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

Submitted _____ Design Engineer

Recommended _____ Asst. Chief Engineer Pre-Construction

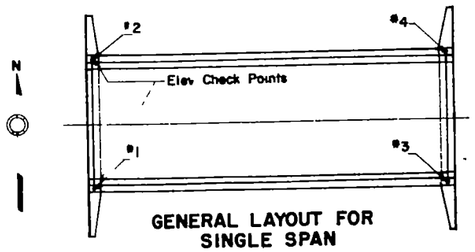
Approved _____ Chief Engineer

BRF-8-018(09)064

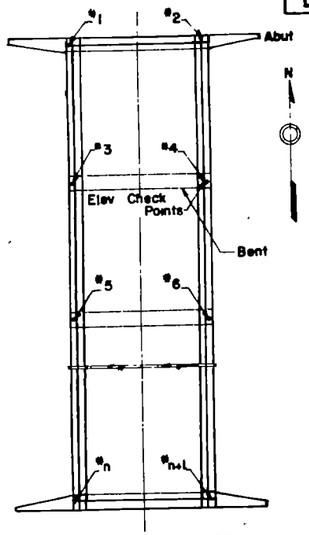
| PRWA REGION | | FED. AID PROJ. NO. | SHEET NO. |
|---|---|---|---|
| 8 | ND | | 59 |

D-900-1

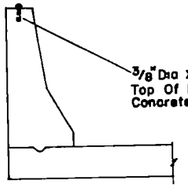
# BRIDGE BENCH MARKS



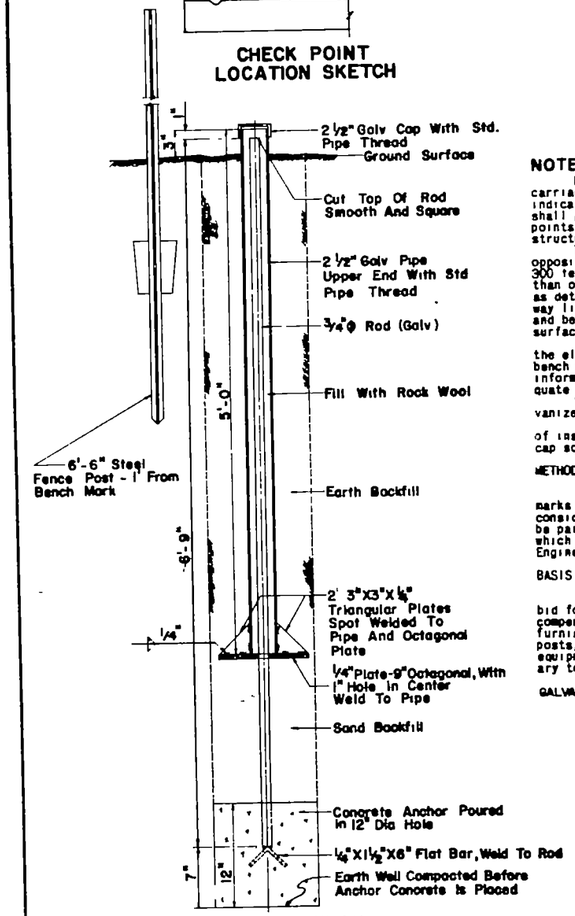

GENERAL LAYOUT FOR SINGLE SPAN




GENERAL LAYOUT FOR MULTIPLE SPAN




CHECK POINT LOCATION SKETCH




BENCH MARK DETAIL

**NOTES:**

Elevation check points shall consist of 3/8"x 3" galvanized carriage bolts (or equal) set in the concrete curb at the points indicated on the General Layout Sketches. The top of bolt head shall project above the finished concrete 1/8". Elevation check points shall be placed on each curb over each unit of the substructure for each bridge at a structural location.

Two bench marks as detailed hereon shall be set at diagonal opposite positions away from the structure location and at least 300 feet from the nearest point on the bridge or bridges (if more than one at a location). These bench marks shall be constructed as detailed on this sheet and located near the Highway Right-of-way lines. The steel fence post shall extend 4'-0" above ground and be painted with two coats of white paint suitable for steel surfaces.

The Project Engineer shall run a set of levels determining the elevation of each check point on the structure and the two bench marks immediately after the completion of the bridge. This information shall be submitted to the Bridge Engineer with adequate information locating each check point and bench mark.

Except for fence posts, all metal parts to be hot dip galvanized after punching, shearing, welding, and fabrication.

Threads of cap and pipe are not to be galvanized. At time of installation these threads are to be coated with grease and cap screwed to snug fit.

METHOD OF MEASUREMENT

Each set of Bridge Bench Marks consisting of two bench marks and the required number of elevation check points shall be considered as one unit for bidding purposes and the quantity to be paid for shall be the number of sets of bridge bench marks which have been installed complete in place and accepted by the Engineer.

BASIS OF PAYMENT

Bridge Bench Marks shall be paid for at the contract price bid for each set of Bridge Bench Marks, which price shall be full compensation for all excavation, backfill and clean-up, and for furnishing, hauling and placing all elevation check points, fence posts, galvanized pipe, caps, rods, sand backfill, concrete, rock equipment, tools and incidentals, including galvanizing, necessary to complete this item.

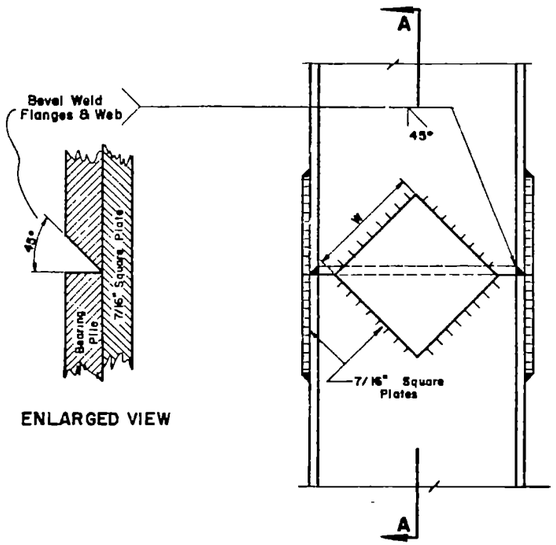
GALVANIZING

After fabrication the complete assembly shall be Hot Dip Galvanized.

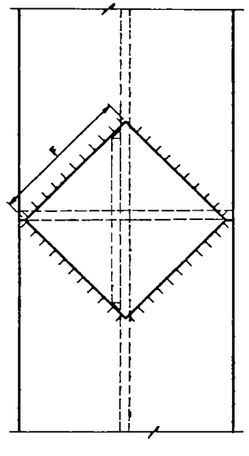
NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

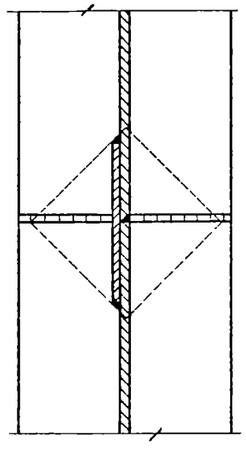
Submitted Joseph R. Turley, Bridge Engineer
Recommended ____, Director, Staff Division
Approved ____, Chief Engineer
Date 3-3-58

Revised 7-26-77
Revised 10-20-59
Revised 6-9-59



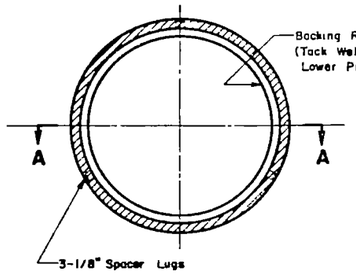

ENLARGED VIEW



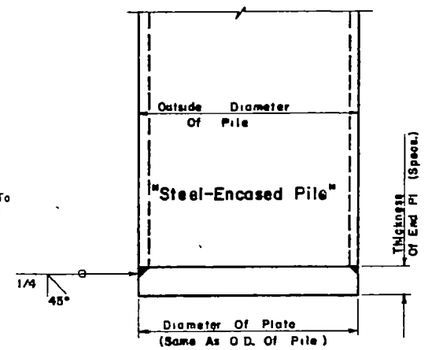



Flame Scarf Inside Of Both Flanges And One Side Of Web Of Upper Section

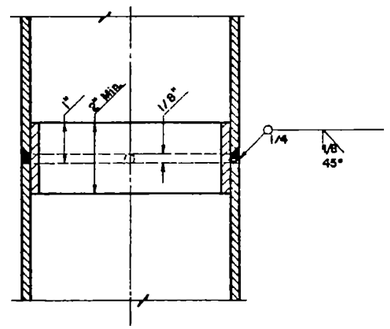
A-A



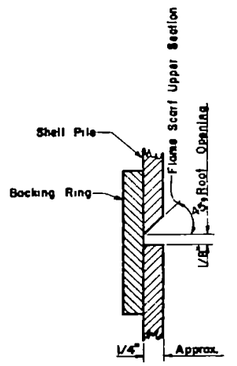

Backing Ring may be made from pile cut-offs or other material of a like quality.




END PLATE DETAIL



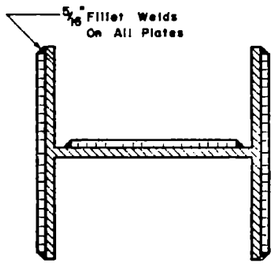

A-A




ENLARGED VIEW

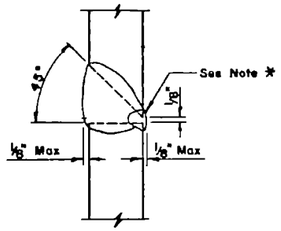
SHELL PILE SPLICE DETAIL

All welding shall conform to the current specification for "Welded Highway and Railway Bridges of the American Welding Society."




| PILE | 8" | 10" | 12" | 14" |
|---|---|---|---|---|
| F FLANGE | 5" | 6½" | 8" | 10" |
| W WEB | 4" | 5½" | 6½" | 8" |

H-PILE SPLICE DETAIL




ALTERNATE H-PILE SPLICE DETAIL

Steel H-Pile may be spliced with complete penetration groove welds in both flanges and web in lieu of using the 7/16" reinforcing plates

AWS classification E70XX low hydrogen electrodes shall be used.

*Welds made without the use of backing material shall have the root gouged to sound metal and welded from the second side

PILE SPLICE DETAILS

REVISED 8-1-78
REVISED 12-12-66

H-0401

H-040

BRF-8-018(09)064

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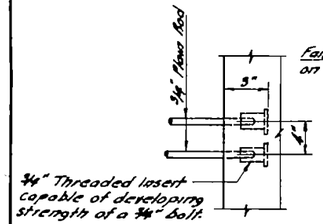
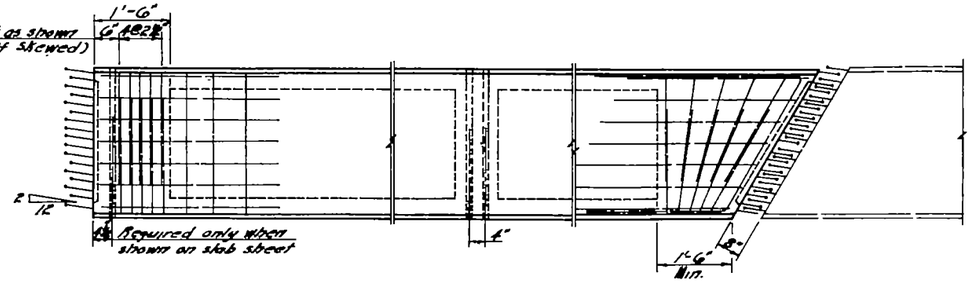
| 8 | N.D. | | 61 |

H-7023

Weight of Girder in Tons = (0.2909)(Length of Girder in Feet) + (0.2150)(No. of Diaphragms) + (0.9672)(1 + Tangent of Skew Angle)

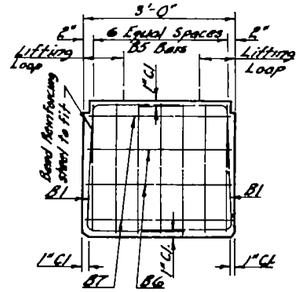



**DIAPHRAGM BAR INSERT**
*Outer Girders Only*

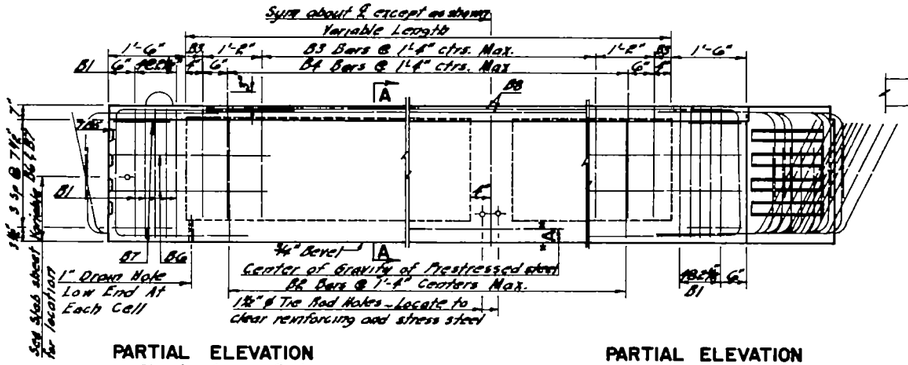



**PARTIAL PLAN**
*Showing Square End*

**PARTIAL PLAN**
*Showing Skewed End*

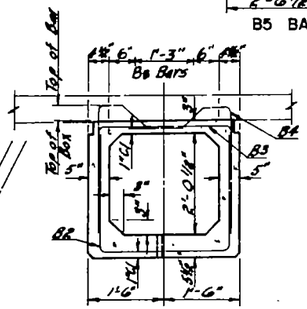



**END BLOCK**

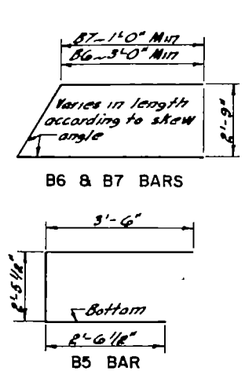



**PARTIAL ELEVATION**
*Showing Square End*

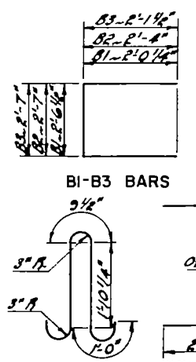
**PARTIAL ELEVATION**
*Showing Skewed End*



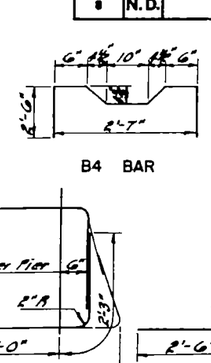

**A-A**




**B6 & B7 BARS**




**B1-B3 BARS**




**B4 BAR**



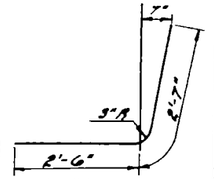

**B5 BAR**




**SUGGESTED LOOP**
*¾" ϕ Mild Steel*

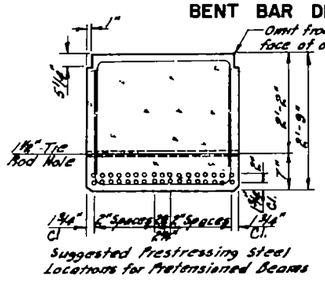


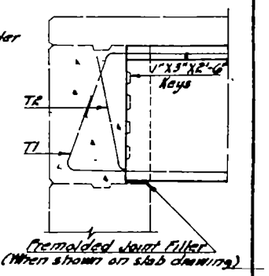

****T1 BAR**
*Tie Bar*
*1'-0" About End Only*




**T2 BAR**
*Suspender Bar*

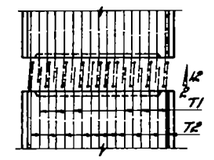
**BENT BAR DETAILS**



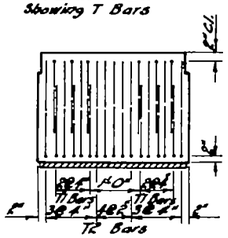




**℄ SECTION OF DIAPHRAGM**

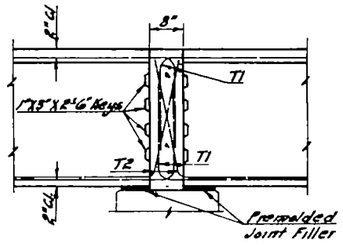
**ASSEMBLY AT ABUTMENT**
*Showing T Bars*




**PLAN VIEW**
*Showing T Bars*




**END VIEW**
*Showing T Bars*




**ASSEMBLY AT PIER**
*Showing T Bars*

** T1 & T2 bars shall be straight when concrete is poured. After the concrete has set the bars shall be bent by the beam fabricator as shown.

**BAR LIST**

| MARK | SIZE | LENGTH | SHAPE |
|---|---|---|---|
| B1 | # | 6'-7" | Bent |
| B2 | # | 7'-3" | " |
| B3 | # | 6'-10" | " |
| B4 | # | 6'-10" | " |
| B5 | # | 8'-6" | " |
| B6 | # | Variable | " |
| B7 | # | " | " |
| B8 | # | " | Str |
| W77 | # | 4'-3" | " |
| W72 | # | 5'-1" | " |
| | | | |

* Welded wire fabric with minimum circumferential steel area of 0.15 in²/ft may be substituted for B2 and B3 bars

**33" X 36" SPREAD SUSPENDED PRESTRESSED BOX GIRDER**

COMPOSITE SLAB

## NOTES:

DESIGN AND SHOP DRAWING AT LEAST 14 DAYS PRIOR TO THE FORMING AND CASTING OF ANY GIRDERS, THE CONTRACTOR SHALL SUBMIT CHECKED DESIGN FIGURES AND SHOP DRAWINGS FOR THE APPROVAL OF THE BRIDGE ENGINEER OF THE STATE HIGHWAY DEPARTMENT. THE DESIGN FIGURES SHALL SHOW THE TOTAL INITIAL PRESTRESS FORCE REQUIRED AS THE SUM OF THE FINAL PRESTRESS FORCE TAKEN FROM THE CONTRACT DRAWINGS AND THE LOSSES IN PRESTRESS DUE TO FRICTION, ELASTIC SHORTENING OF CONCRETE, SHRINKAGE OF CONCRETE, CREEP OF CONCRETE AND RELAXATION OF STEEL STRESS AS DETERMINED BY THE CONTRACTOR FOR HIS METHOD OF STRESSING. IF THE CONTRACTOR WISHES, THE LOSS OF STEEL STRESS NOT INCLUDING FRICTION LOSSES MAY BE ASSUMED AS 45,000 P.S.I. FOR PRETENSIONING AND 33,000 P.S.I. FOR POST TENSIONING.

SHOP DRAWINGS SHALL SHOW WIRE, STRAND OR BAR LAYOUT, END ANCHOR PLATE DETAILS, PULL DOWN LOCATIONS, TENSIONING FORCES, ELONGATION AND ORDER OF TENSIONING AND ANY PROPOSED CHANGES IN REINFORCING STEEL.

THE FINAL PRESTRESS FORCE (REMAINING AFTER ALL LOSSES HAVE BEEN ACCOUNTED FOR) AND ITS CORRESPONDING DIMENSION "A" SHALL BE SELECTED FROM THOSE ON A CURVE DETERMINED BY THE THREE VALUES SHOWN ON THE BRIDGE PLANS.

THE GIRDERS SHALL BE CAST IN ALL-STEEL FORMS. REINFORCING STEEL SHALL BE GRADE 40 OR GRADE 60.

MINOR CHANGES TO THE SHAPE OF THE GIRDER AND TO THE REINFORCING STEEL MAY BE MADE TO ACCOMMODATE THE FORMS OF VARIOUS CONTRACTORS AND THEIR CONSTRUCTION METHODS WITH THE APPROVAL OF THE BRIDGE ENGINEER.

ALL TENSION IN THE TOP OF THE BEAM SHALL BE TAKEN CARE OF BY DRAPING PRESTRESS STEEL, BY ADDING MILD STEEL IN THE TOP OR BY A COMBINATION OF THE TWO.

THE CENTER OF GRAVITY OF THE TENSIONING UNITS AT ALL POINTS ALONG THE GIRDER SHALL LIE ON OR BELOW THE CURVE OF A DRAPED CHALK LINE THAT SAGS FREELY WITH DIMENSION "A" AS SHOWN AND WITH THE END 8" ABOVE THE BOTTOM OF THE GIRDER.

CONCRETE TEST CYLINDER STRENGTH AT TIME OF STRESS TRANSFER SHALL BE AS SHOWN ON THE BRIDGE PLANS.

C.G. = 14.85" FROM BOTTOM
AREA = 558.5 SQ. IN.
MOMENT OF INERTIA = 73,708 IN⁴

18-064 955

1

# NORTH DAKOTA CONCRETE PRODUCTS COMPANY

## SHOP DRAWINGS STRUCTURE

DRAWN BY:
HARVEY KADRMAS
& AUTOCAD

## DESIGN DATA

| | | |
|---|---|---|
| CONCRETE DESIGN | - | 5,000 P.S.I. |
| DETENSION | - | 4,645 |
| STRAND | - | 270 K.S.I. |
| REINFORCING STEEL (Except as noted) | - | GR. 60 |
| PRESTRESS LOSSES | - | 45,000 P.S.I. |
| LOADING | - | HS-20 |

## QUANTITIES

| | SPAN | | | |
|---|---|---|---|---|
| SKEW 20 Deg. | 1 | 2 | 3 | 4 |
| NO. OF BEAMS | 5 | 5 | 5 | 5 |
| HEIGHT | 33" ALL BEAMS | | | |
| LENGTH | 66'- 2" ALL BEAMS | | | |

PROJECT NO. — BRF-8-018(09)064
COUNTY — CASS
ENGINEER — STATE HIGHWAY
CONTRACTOR — IBI

## INDEX OF SHEETS



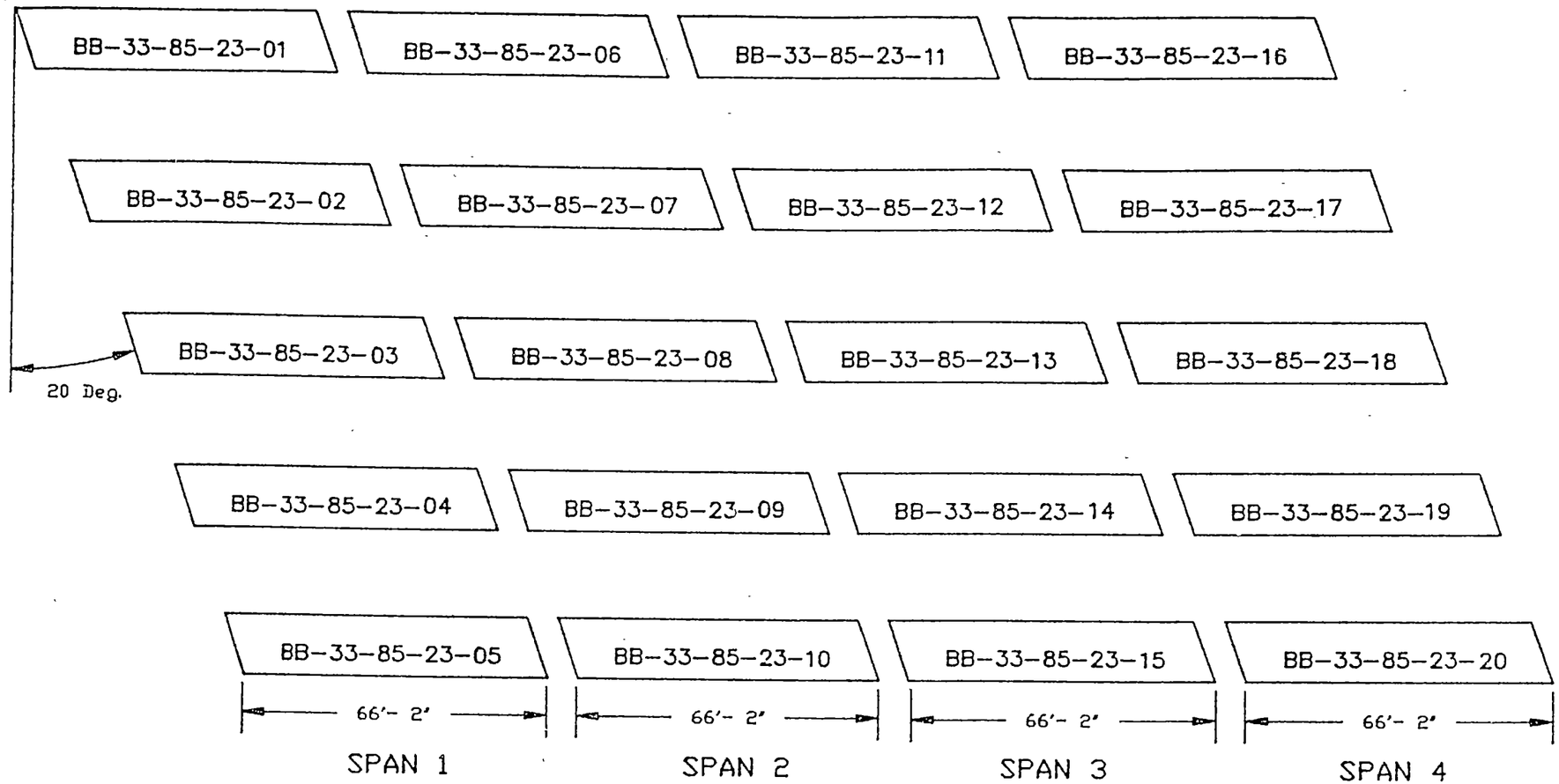

JON K. JENNINGS
P.E. 1968
DATE: 6-24-85


TITLE SHEET

BB-33-85-23

Roll #35-582

Void Drains to be located on EACH end of beam.



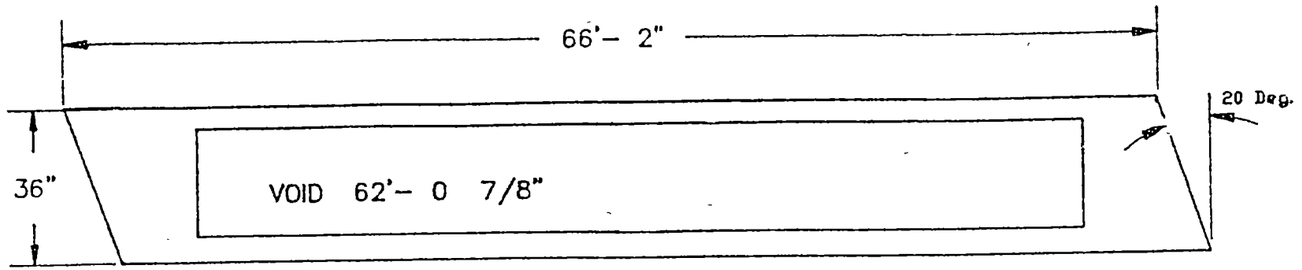

N

PLAN

NO SCALE

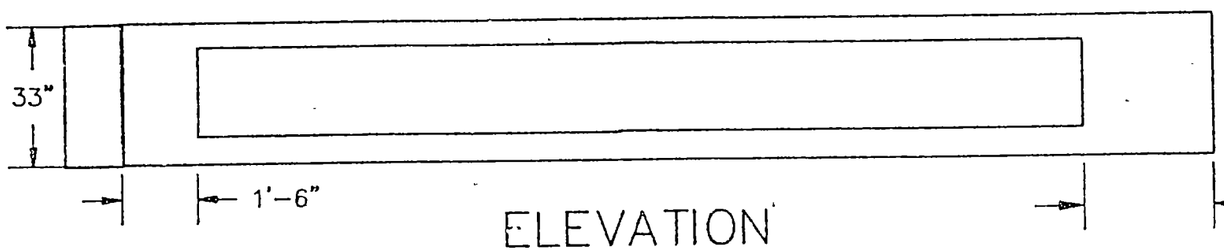
BRIDGE LAYOUT

BB-33-85-23



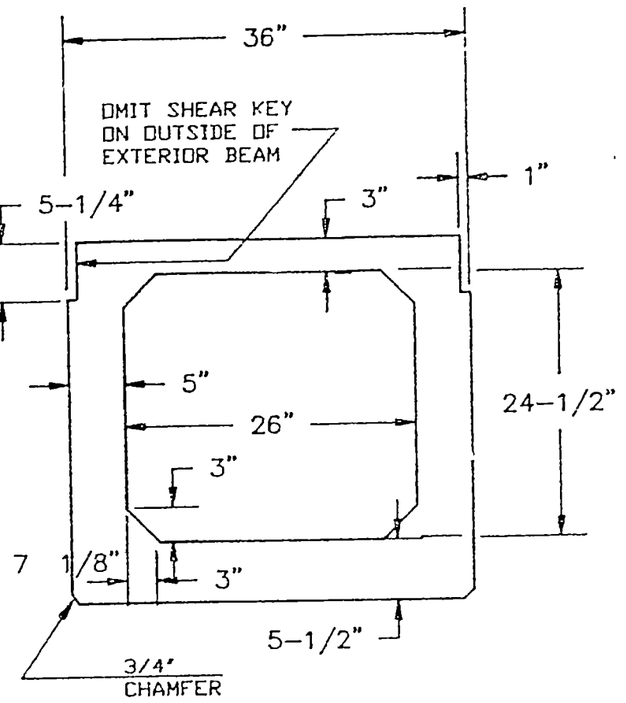

PLAN

NO SCALE

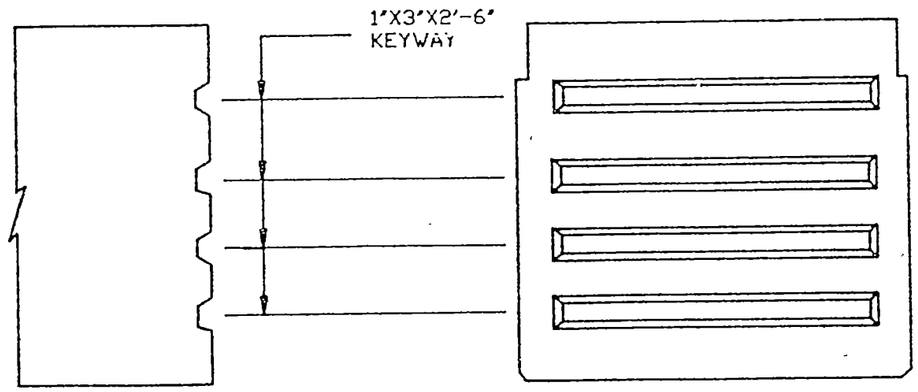



ELEVATION

NO SCALE



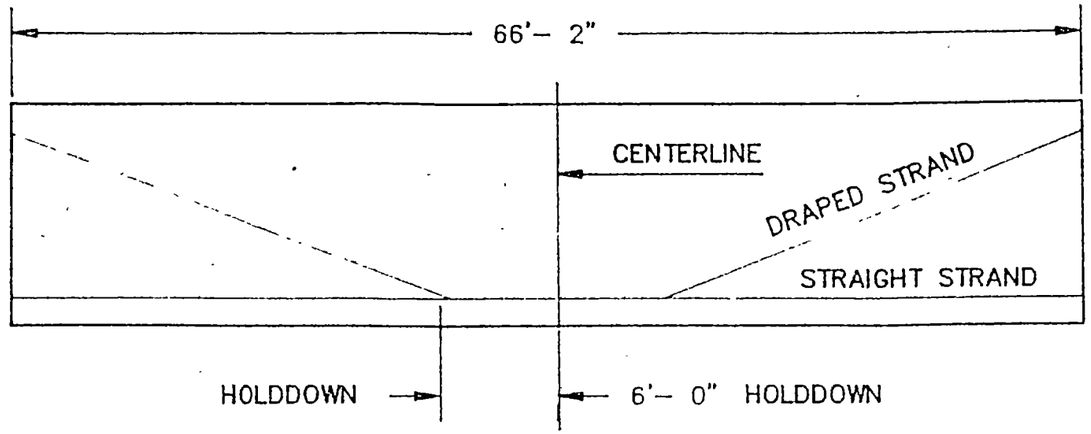

SECTION




PART ELEVATION
SHOWING KEYWAYS

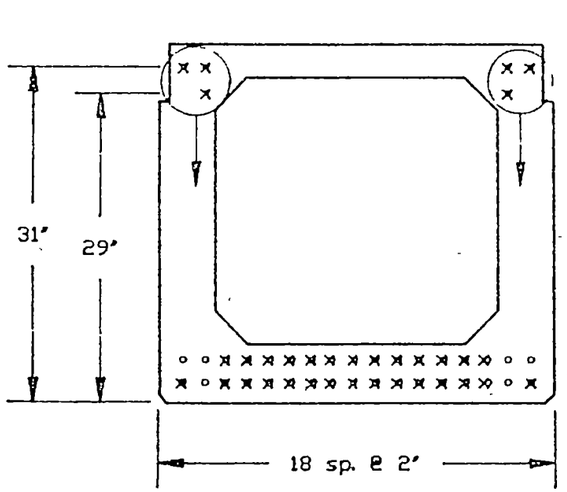
SECTION
SHOWING KEYWAYS

| DIMENSIONS |
| --- |
| SPAN 1,2,3 & 4 |
| BB-33-85-23 |

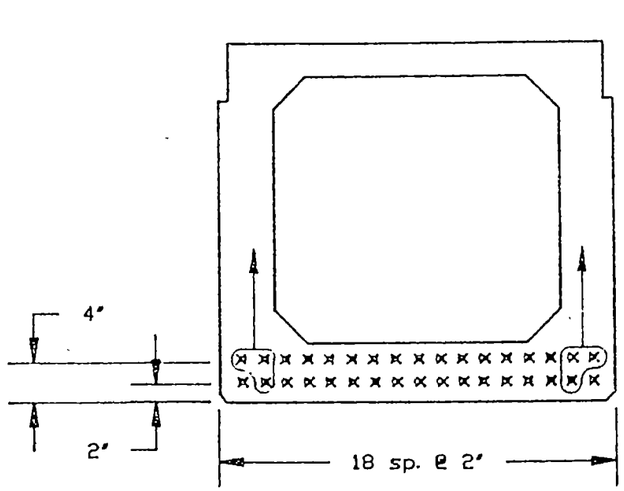



ELEVATION

| | | |
|---|---|---|
| NO. OF DRAPED STRAND | = | 6 |
| NO. OF STRAIGHT STRAND | = | 28 |
| TOTAL NO. 1/2" ϕ STRAND | = | 34 |
| CENTER OF GRAVITY AT END | = | 7.76 |
| CENTER OF GRAVITY AT CNTRLN | = | 3.00 |
| INITIAL FORCE | = | 982.6 |
| FINAL FORCE | = | 749.1 |

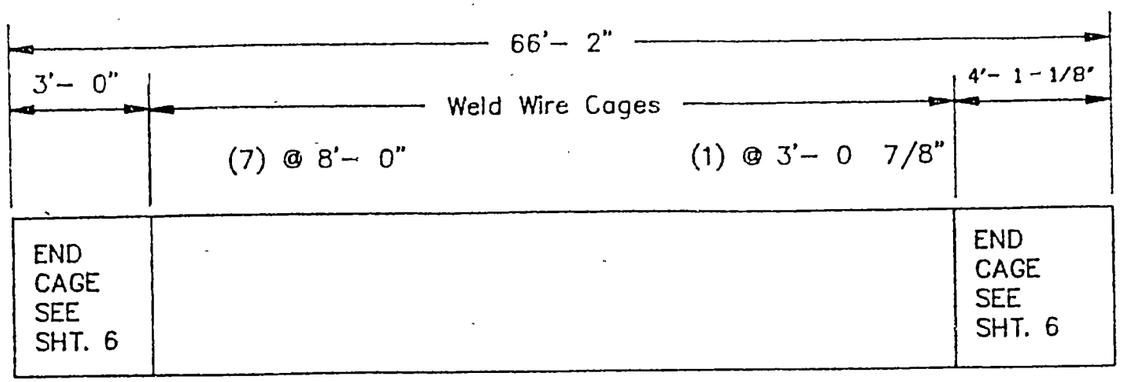



SECTION AT END

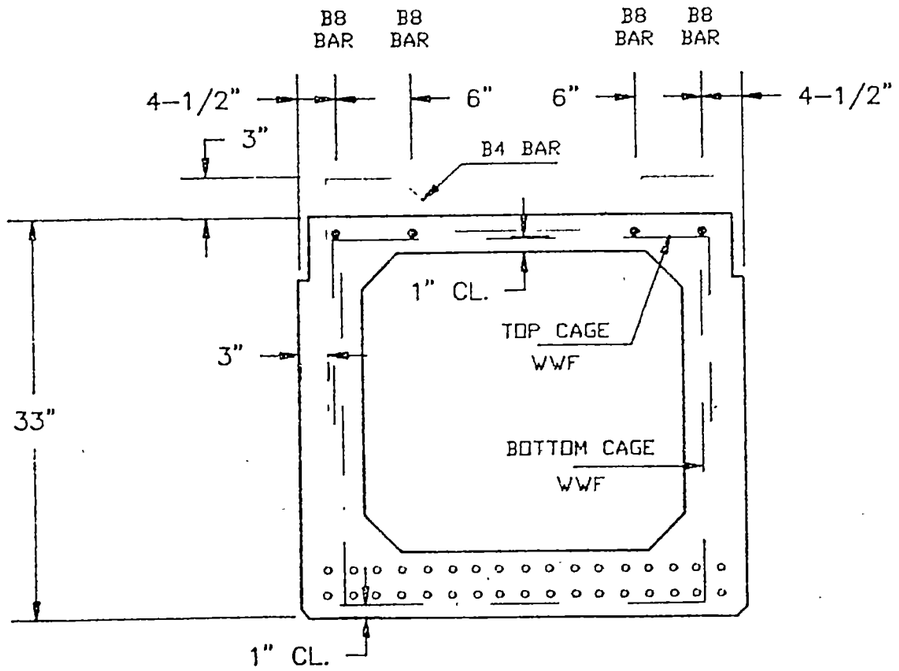



SECTION AT CENTERLINE

| STRAND |
|---|
| SPAN 1,2,3 & 4 |
| BB–33–85–23 |




ELEVATION
NO SCALE



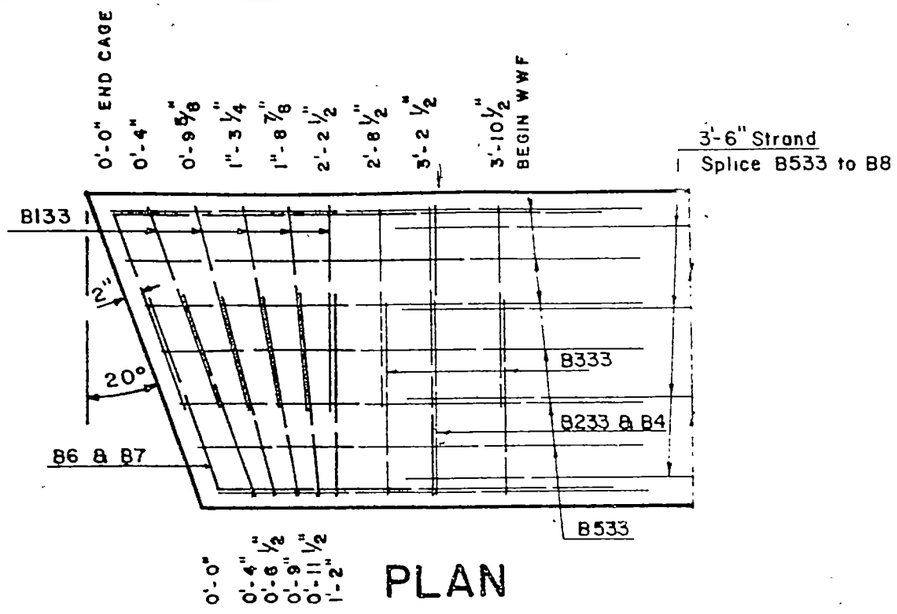

SECTION

NOTES :

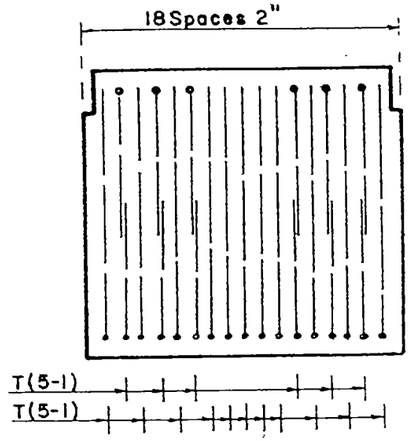
WELDED WIRE FABRIC WILL BE USED TOP AND BOTTOM WITH A CIRCUMFERENTIAL STEEL AREA EQUAL TO A MINIMUM OF 0.15 SQUARE INCHES PER FOOT. TOP AND BOTTOM CAGE LEGS TO OVERLAP A MINIMUM OF 12 INCHES.

B4 BAR IS TO BE SPACED A MAXIMUM OF 1'–4" ACROSS BEAM AND HAVE A MINIMUM OF 15" LEG EMBEDMENT INTO BEAM

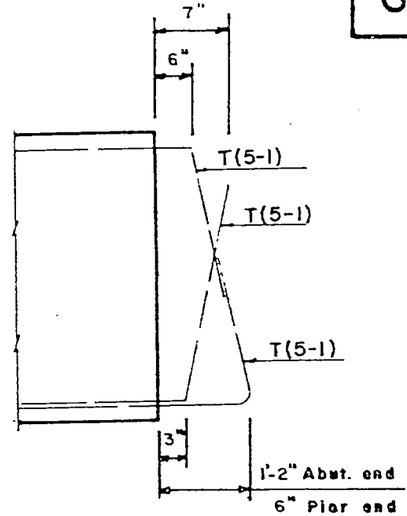
| REINFORCING |
| --- |
| SPAN 1,2,3 & 4 |
| BB–33–85–23 |




PLAN

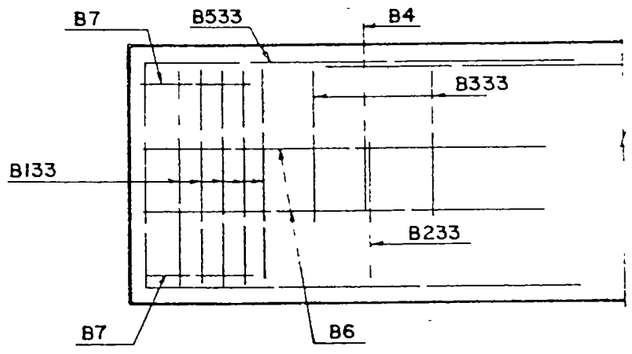



SECTION
SHOWING T BARS

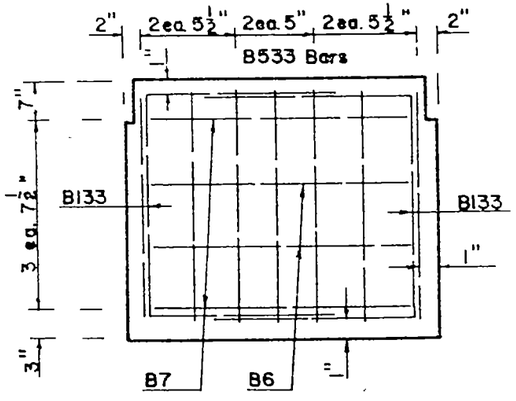



T Bars to extend 2'-7" from end of beam.

ELEVATION
SHOWING T BARS

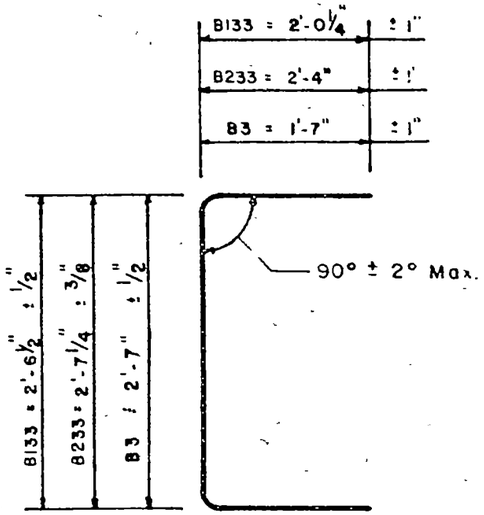


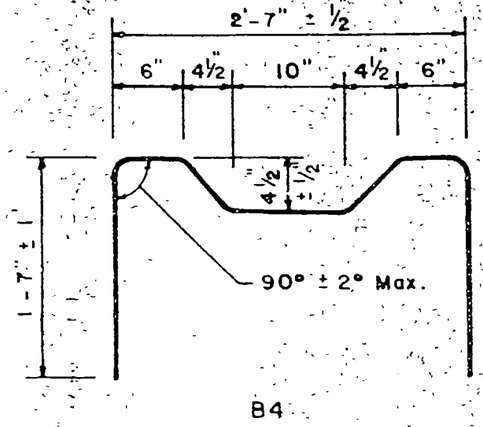

ELEVATION




SECTION

| END STEEL |
| --- |
| SPAN 1,2,3,4 |
| BB-33-85-23 |

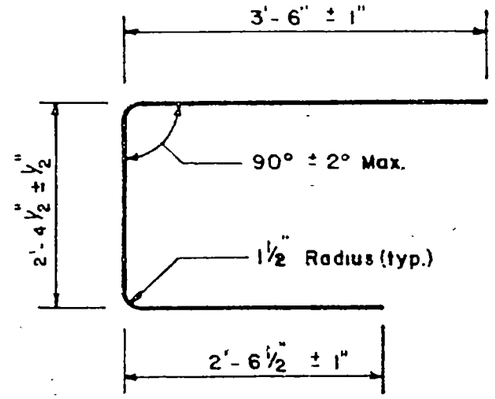


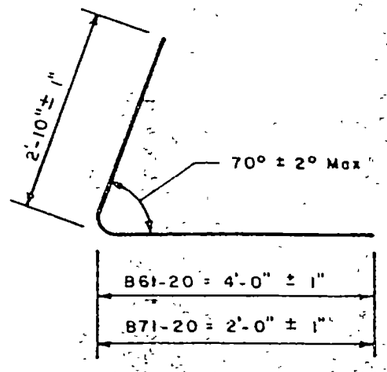

B4

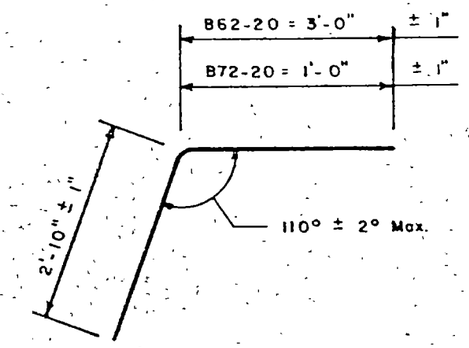
| Rebar Schedule | | | | | | |
|---|---|---|---|---|---|---|
| Mark | Type | Size | Length | Qua./Bea. | Total | |
| B133 | Bent | 4 | 6'-6" | 20 | 400 | |
| B233 | Bent | 4 | 7'-3" | 2 | 40 | |
| B3 | Bent | 4 | 5'-8" | 4 | 80 | |
| B4 | Bent | 4 | 6'-0" | 48 | 960 | |
| B533 | Bent | 4 | 8'-4" | 14 | 280 | |
| B61-20 | Bent | 4 | 6'-10" | 4 | 80 | |
| B62-20 | Bent | 4 | 5'-10" | 4 | 80 | |
| B71-20 | Bent | 4 | 4'-10" | 4 | 80 | |
| B72-20 | Bent | 4 | 3'-10" | 4 | 80 | |
| | | | | | | |
| B8 | Str. | 4 | 8'-6" | 30 | 500 | |
| T(5-1) | Str | 4 | 5'-1" | 46 | 920 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note: All rebar to be grade 60, except "T" rebars are to be grade 40 only.

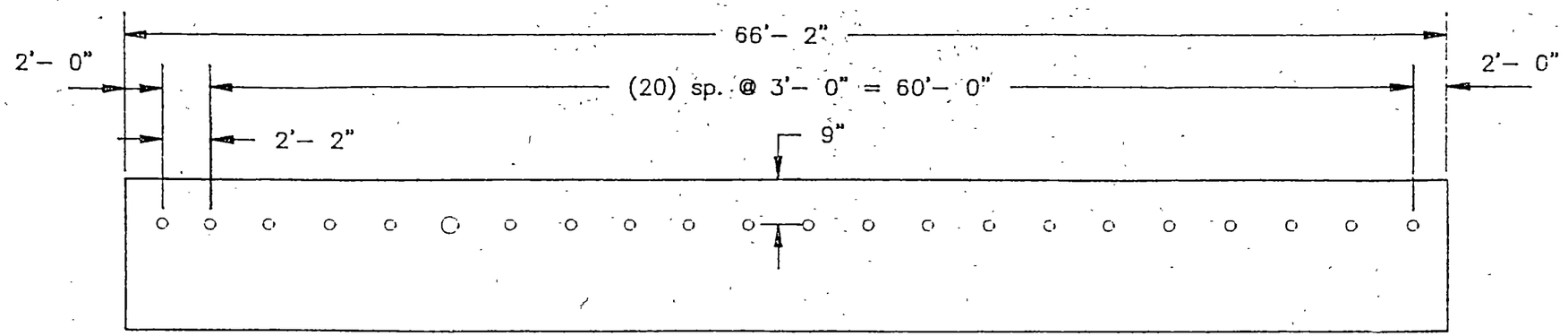



B533



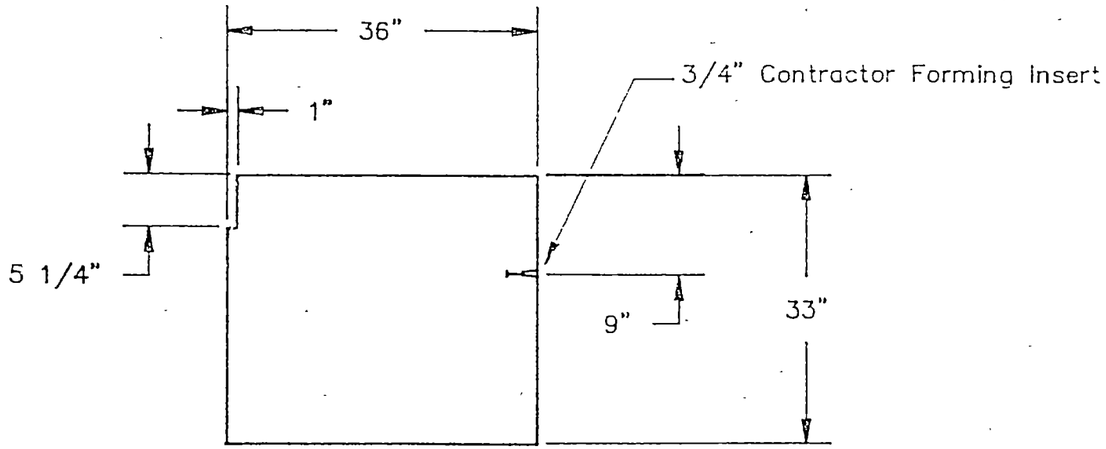




# REBAR DETAILS
## SPAN 1,2,3 & 4
## BB-33-85-23




## Spacing of Contractor Forming Inserts.

(Inserts supplied by the contractor)




| EXTERIOR BEAM |
| --- |
| SPAN 1,2,3 & 4 |
| BB–33–85–23 |