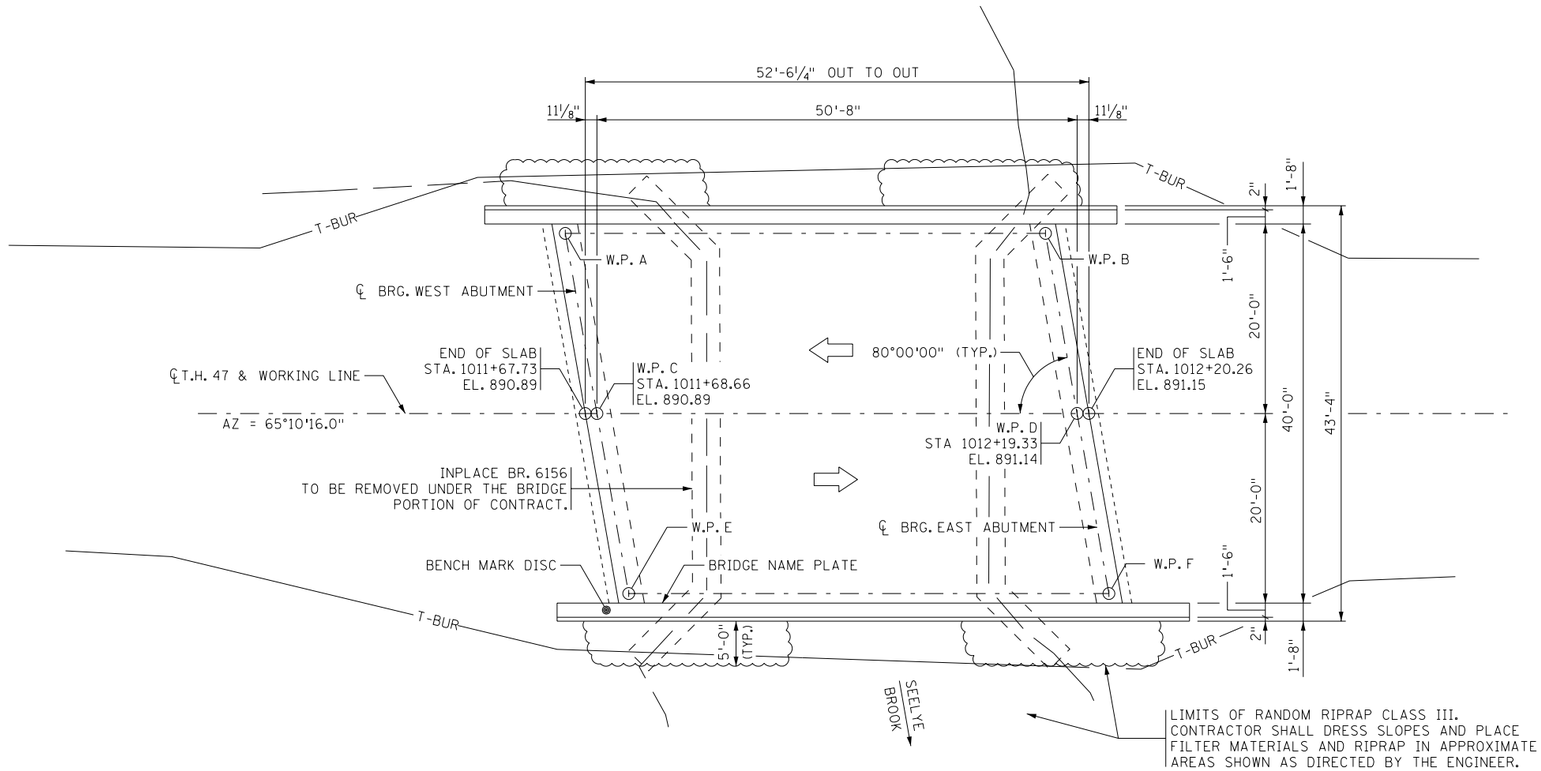
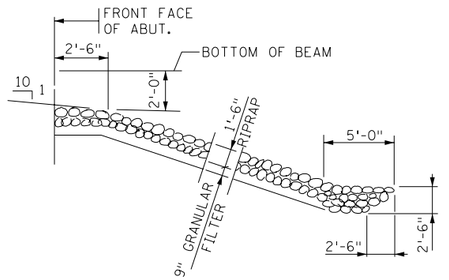
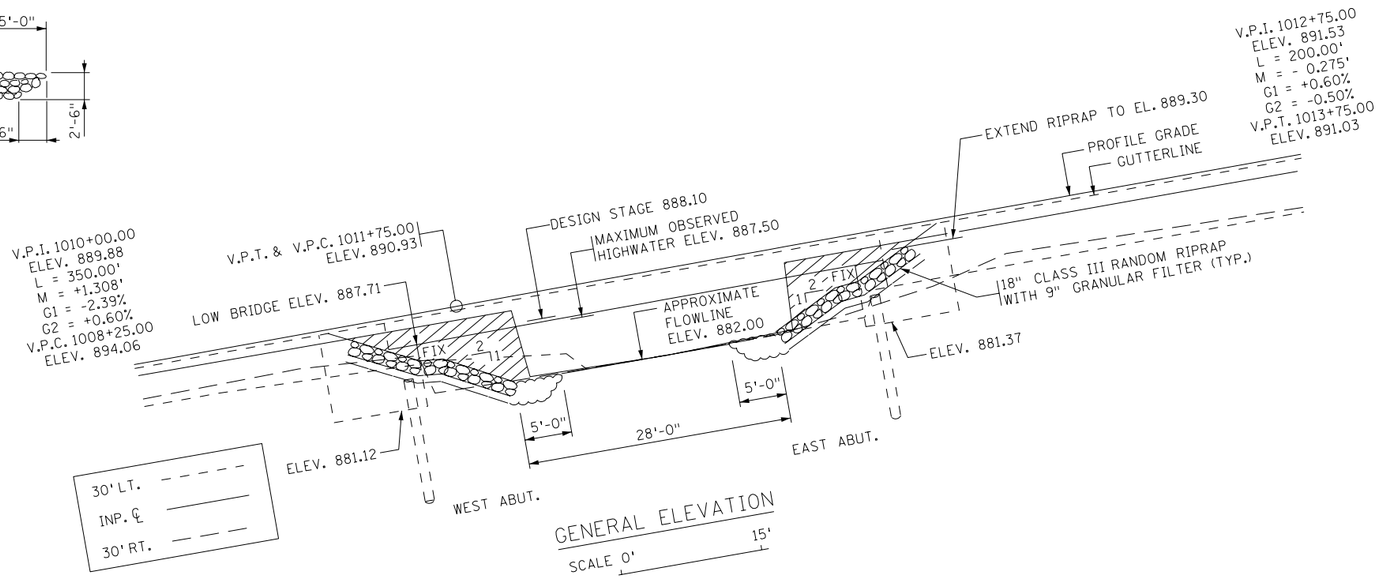


GENERAL PLAN

SCALE 0' 15'



RIPRAP DETAIL



GENERAL ELEVATION

SCALE 0' 15'

NOTES:

T.H. 47 TRAFFIC TO BE DETOURED DURING CONSTRUCTION.

HATCHED AREA IS TO BE REMOVED UNDER GRADING PORTION OF CONTRACT.

INPLACE BURIED TELEPHONE LINES TO BE ADJUSTED BY QWEST.

APPROXIMATELY 217 SQ. FT. OF WATERWAY AREA IS AVAILABLE BELOW ELEV. 887.5

FED. PROJ. NO. STATE FUNDS

DESIGN DATA

1996 (AND CURRENT INTERIM) A.A.S.H.T.O. DESIGN SPECIFICATIONS
LOAD FACTOR DESIGN METHOD
DESIGN LOADING HS 25 LIVE LOAD
DEAD LOAD INCLUDES 17 P.S.F. ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS.
MAXIMUM ALLOWABLE DESIGN STRESSES :
REINFORCED CONCRETE :
f'c = 4000 P.S.I. n=8
fy = 60000 P.S.I. REINFORCEMENT
PRESTRESSED CONCRETE:
f'c=8500 P.S.I. n=1
f's=270000 P.S.I. LOW RELAXATION STRANDS
DECK AREA 2276 SQ. FT.
9000 PROJECTED A.D.T. FOR YEAR 2020
OPERATING RATING HS 43.2

LIST OF SHEETS

NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	SCHEDULE OF QUANTITIES
3	BRIDGE LAYOUT
4-5	ABUTMENT DETAILS
6-7	ABUTMENT REINFORCEMENT
8	FRAMING PLAN
9	PRESTRESSED CONCRETE BEAM TYPE 22
10-11	SUPERSTRUCTURE DETAILS & REINFORCEMENT
12	CONCRETE RAILING TYPE F
13-14	DETAILS
15	AS-BUILT BRIDGE DATA
16	BRIDGE SURVEY
17-18	BRIDGE SURVEY PLAN AND PROFILE

CONSTRUCTION NOTES

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR NUMBER WHICH APPROXIMATES THE NOMINAL DIAMETER.

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNED .....

DATE DECEMBER 5, 2000 REG NO. 10783

B.M. ELEV. 907.41 (M.S.L. NAVD 1988 ADJ.)

TRUNK HIGHWAY NO. 47
MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 02049

T.H. 47 OVER SEELYE BROOK
13.0 MILES NORTH OF JUNCTION
OF T.H. 10 AND T.H. 47
51' PRESTRESSED CONCRETE BEAM SPAN
10°00'00" SKEW 40'-0" ROADWAY
TWO TYPE F BARRIER RAILS
IDENTIFICATION NO. 501

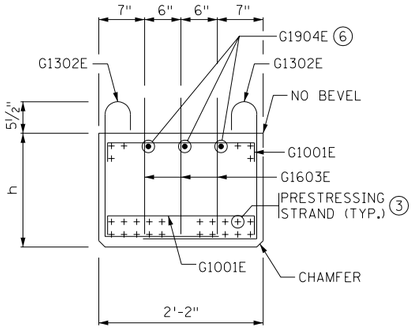
GENERAL PLAN AND ELEVATION

SEC. 6 TWP. 33 N. R. 24 W.
OAK GROVE TOWNSHIP ANOKA COUNTY

APPROVED _____
STATE BRIDGE ENGINEER

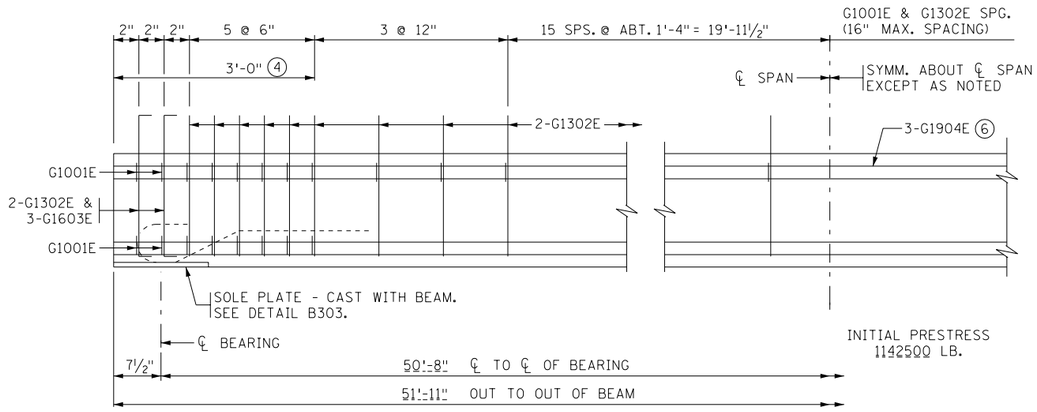
DATE _____

DES. J.A.L.		DR. J.B.J.	02049
CHK. C.S.C.		CHK. N.S.L.	

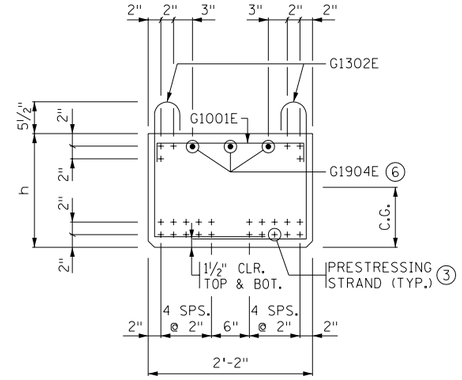


END VIEW

CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.



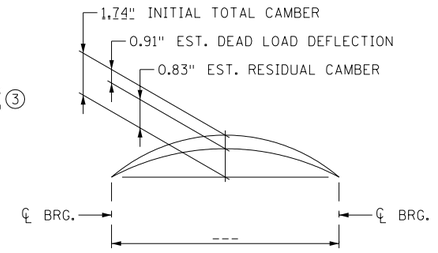
BEAM ELEVATION



SECTION AT ℄ SPAN

STRAND ARRANGEMENT (IN INCHES)	
NO.	C.G.
26	6.77

NOTE: C.G. = DISTANCE TO CENTER OF GRAVITY OF STRANDS FROM BOTTOM OF BEAM. ALL STRANDS SPACED 2" CENTER TO CENTER HORIZONTALLY AND VERTICALLY EXCEPT AS NOTED.

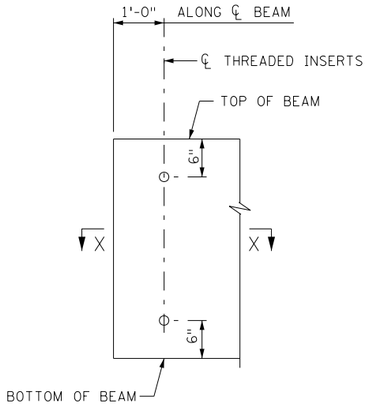


CAMBER DIAGRAM

DEAD LOAD DEFLECTION SHOWN IS FOR WEIGHT OF SLAB, WEARING COURSE, RAILING, SIDEWALK AND MEDIAN WHERE APPLICABLE.

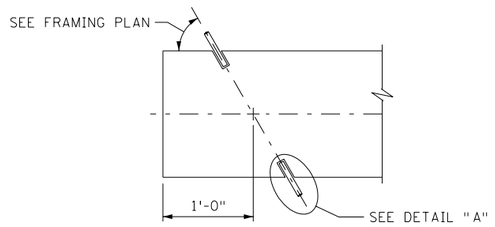
ENGINEER WILL TAKE ELEVATIONS AT TOP OF BEAMS AFTER ERECTION AND WILL ALLOW FOR DEFLECTION SHOWN TO ENABLE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.

CONTRACTOR SHALL PROVIDE TEMPORARY BRACING IF NEEDED



CONCRETE END DIAPHRAGM

(PILE BENT ABUTMENT)

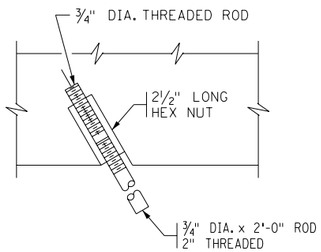


SECTION X-X

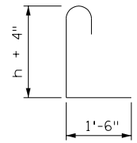
SECTION HEIGHT "h"		
14" ☐	18" ☐	22" ☒

MINIMUM CONCRETE STRENGTH - P.S.I.		
	(1) f'ci	(2) f'c
REQUIRED MIN. CONCRETE STRENGTH	6500	8000

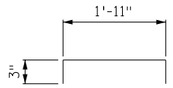
PRESTRESSING STRAND DIAMETER	
0.50" ☐	
(3) 0.60" ☒	



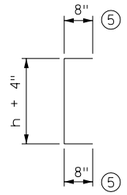
DETAIL "A"



G1302E



G1001E



G1603E

GENERAL NOTES

TOPS OF BEAMS SHALL BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BOND.

PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR.

EACH BEAM SHALL BE MARKED, SHOWING BRIDGE NUMBER, CASTING DATE, AND INDIVIDUAL IDENTIFICATION LETTERS AND NUMBERS. MARKINGS SHALL BE MADE ON THE FACE OF THE BEAM, NEAR THE END, SO LOCATED THAT THEY WILL BE EXPOSED AFTER THE END DIAPHRAGMS HAVE BEEN CAST. FASCIA BEAMS SHALL BE MARKED ON THE INSIDE FACE. ALL MARKINGS SHALL BE STENCILLED AND BE CLEARLY LEGIBLE. FOR LOCATION OF BEAMS SEE FRAMING PLAN.

ALL MATERIAL AND WORK SHOWN OR NOTED ON THIS SHEET SHALL BE INCLUDED IN UNIT PRICE BID FOR PRESTRESSED CONCRETE BEAMS. SEE Mn/DOT SPEC. 2405.

SEE FRAMING PLAN FOR BEAM END MARKED "X".

APPROXIMATE WEIGHT OF BEAM IS 16 TONS.

AS AN ALTERNATE TO THE DIAPHRAGM ANCHORAGES SHOWN, THE CONTRACTOR MAY SUBMIT DETAILS OF A CAST-IN-PLACE ANCHORAGE TO THE ENGINEER FOR APPROVAL. ANCHORAGE MUST PROVIDE AN ULTIMATE PULL OUT STRENGTH OF 15 KIPS PER ANCHORAGE.

(1) MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.

(2) MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.

(3) PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.

(4) G1001E IN LOWER PART OF BEAM REQUIRED IN THIS LENGTH ONLY.

(5) IF SPACING IS LESS THAN THE DIMENSION SHOWN, STAGGER BARS TO AVOID INTERFERENCE.

(6) G1904E STOPS 2" FROM END OF BEAM. 3'-6" PERMISSIBLE LAP AT CENTER OF BEAM.

BEAMS B1, B2

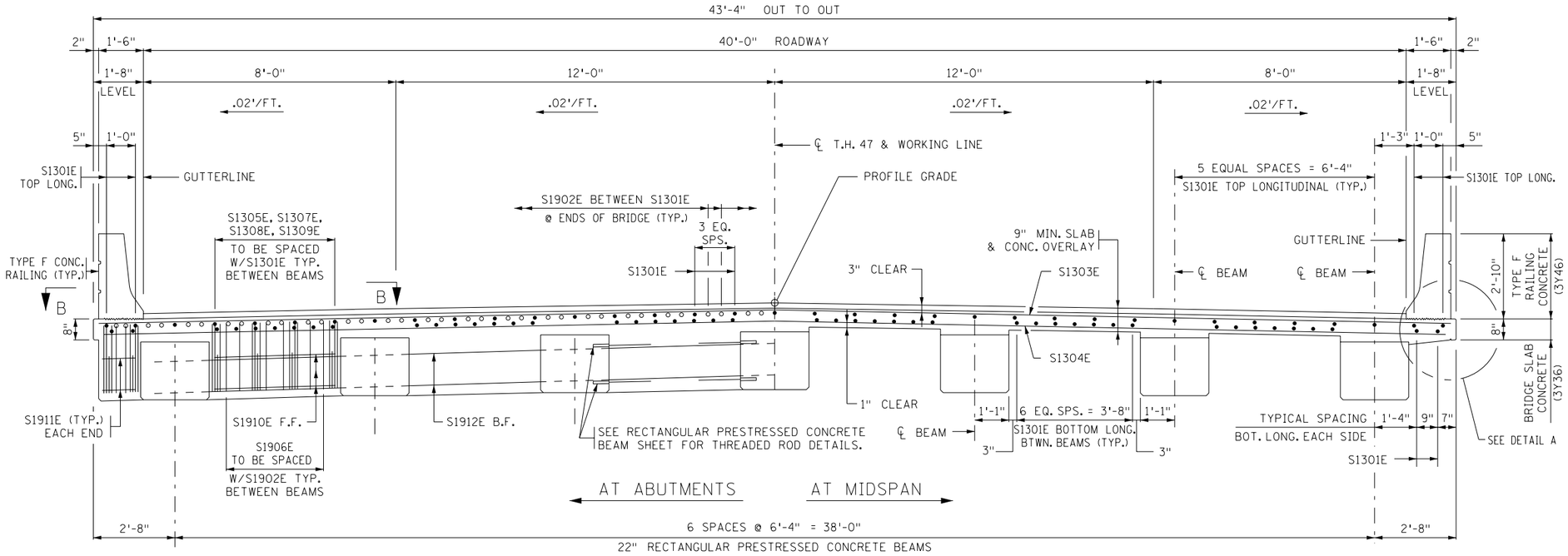
CERTIFIED BY Steven W. Ellis PROFESSIONAL ENGINEER
REG. NO. 10783 DECEMBER 5, 2000

TITLE: RECTANGULAR PRESTRESSED CONCRETE BEAM (PRETENSIONED) TYPE 22-52

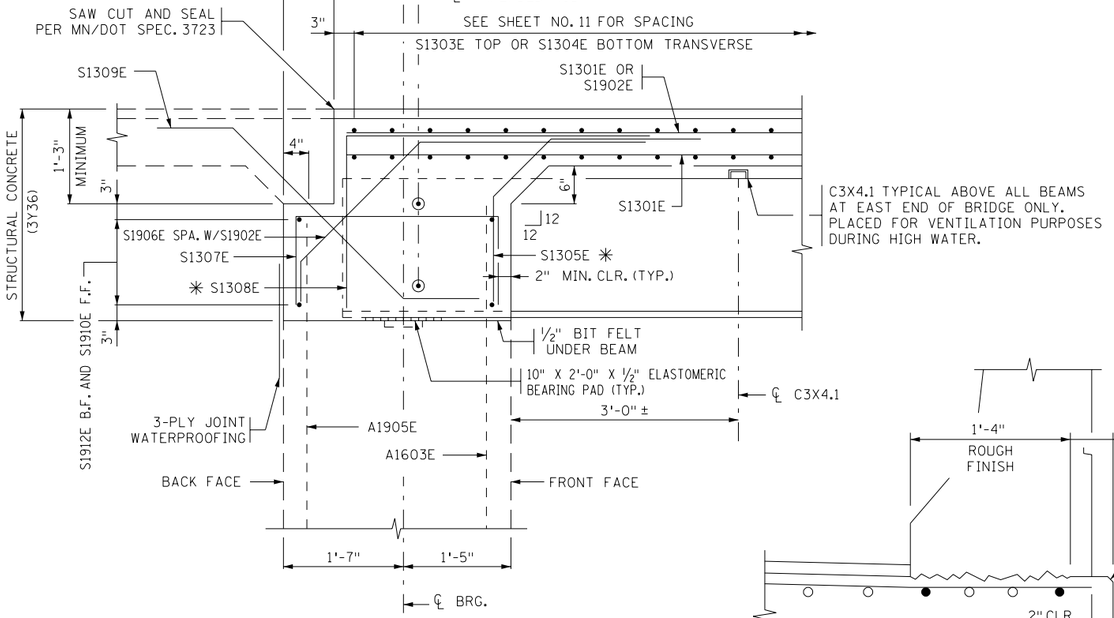
DES: J.A.L.	DR: LAB/JBJ	APPROVED:
CHK: C.S.C.	CHK: N.K.L.	

SHEET NO. 9 OF 18 SHEETS

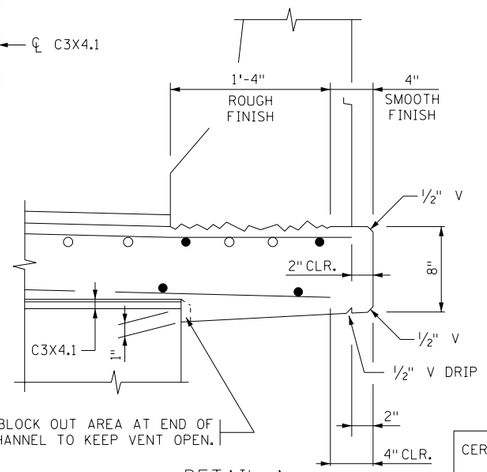
BRIDGE NO. 02049



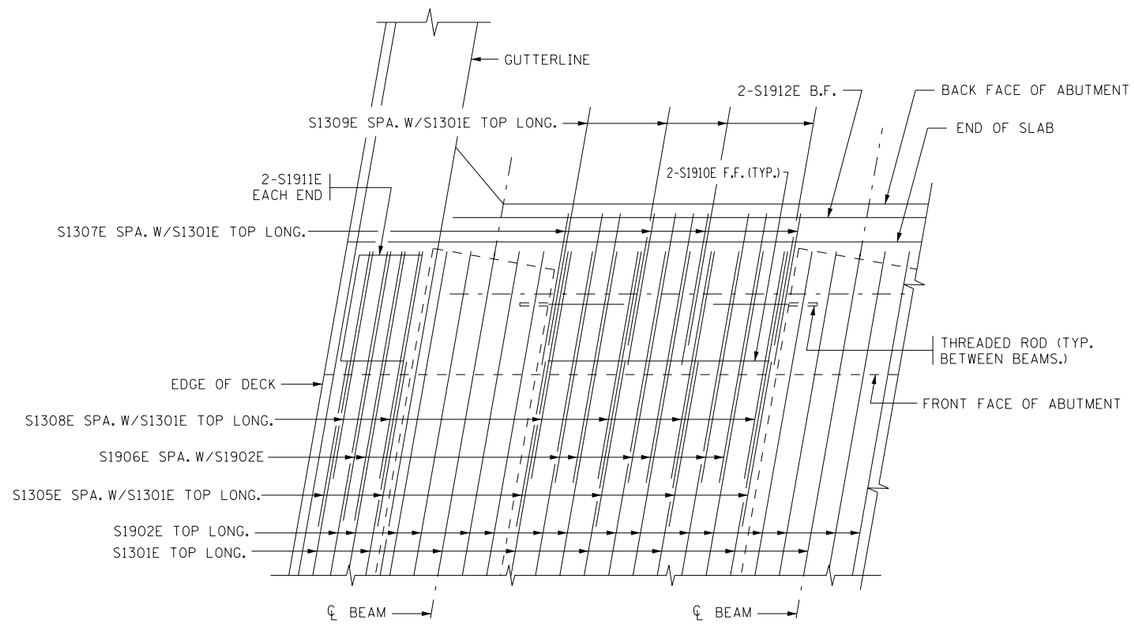
TRANSVERSE SECTION



SECTION A-A
(DIMENSIONS NORMAL TO SUBSTRUCTURE)
✳ SPACE WITH S1301E



DETAIL A



VIEW B-B
(SW OR NE CORNER SHOWN
SE OR NW CORNER SIMILAR)

SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE

①	BRIDGE SLAB CONCRETE (3Y36)	2276 SQ. FT.
②	CONCRETE OVERLAY (3U17A)	4307 SQ. FT.
③	TYPE F RAILING CONCRETE (3Y46)	134 LIN. FT.
④	REINFORCEMENT BARS (EPOXY COATED)	16230 POUND
⑤	RECTANGULAR PRESTRESSED CONCRETE BEAMS 22"	363 LIN. FT.
⑥	BENCH MARK DISK	1 UNIT
⑦	BRIDGE NAME PLATE	1 EACH
	ELASTOMERIC BEARING PAD TYPE 1	14 EACH
⑦	1" THICK CORK	13 SQ. FT.
⑦	3-PLY JOINT WATERPROOFING	83 LIN. FT.

① BRIDGE SLAB CONCRETE (3Y36) VOLUME IS APPROXIMATELY 73 CU. YD. USING AN AVERAGE STOOL HEIGHT OF 1⅝" INCHES. INCLUDES END DIAPHRAGM.

② CONCRETE OVERLAY, (3U17A) VOLUME IS APPROXIMATELY 27 CU. YD. ITEM INCLUDES 2206 SQ. FT. FOR BRIDGE APPROACH PANELS.

③ TYPE F RAILING CONCRETE (3Y46) VOLUME IS APPROXIMATELY 16 CU. YDS.

④ INCLUDES RAILING AND DECK REINFORCEMENT.

⑤ PAYMENT FOR BEAMS INCLUDED IN ITEM "RECTANGULAR PRESTRESSED CONCRETE BEAMS 22" " PER LIN. FT.

⑥ STATE WILL FURNISH DISK. BEND PRONGS OUTWARD TO ANCHOR DISK IN CONCRETE. BOTTOM OF DISK TOP TO BE PLACED FLUSH WITH CONCRETE. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

⑦ INCLUDED IN PRICE BID FOR OTHER ITEMS.

NOTES:

SEE SHEET NO. 11 FOR SECTION A-A LOCATION.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

CERTIFIED BY Steven W. Ellis
PROFESSIONAL ENGINEER
REG. NO. 10783 DECEMBER 5, 2000

TITLE: SUPERSTRUCTURE DETAILS AND REINFORCEMENT

DES: J.A.L. | DR: L.A.B. | APPROVED:
CHK: C.S.C. | CHK: N.K.L.

SHEET NO. 10 OF 18 SHEETS

BRIDGE NO. 02049