PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING R/W
NEW R/W
TEMP EASE
RAILROAD R/W
UNSURFACED RD. OR SHLD.
EDGE OF LAKE
SWAMP BOUNDARY
MISCELLANEOUS BOUNDARY
CORPORATE OR CITY LIMITS
VACATED PLATTED PROPERTY
RECREATIONAL TRAIL
ALIGNMENT STATIONS 110 112
ALIGNMENT POINTS
RIVER OR CREEK
DRAINAGE DITCH SIZE
BRIDGE
RAILROAD (SINGLE TRACK)
RR CROSSING PAVEMENT MARKING
RR CROSSING GATE
RR CROSSBUCK SIGN
RR CROSSBUCK SIGN W/LIGHTS
BARBED WIRE FENCE
CHAIN LINK FENCE XC
WOVEN WIRE, COMBINATION WOVEN AND BARB XW
WOOD FENCE
BILLBOARD
RETAINING WALL
GUARDRAIL (CABLE)
GUARDRAIL (PLATE BEAM) P
DRAIN TILE
CULVERT
CULVERT WITH APRONS
WOODS OR BRUSH, NURSERY
DECIDUOUS TREES
CONIFER (EVERGREEN) TREES
HEDGE
BUSH OR SHRUB
STUMP
SWAMP OR MARSH
MONUMENT (CI,ACT,ACP,BCP,...)
CONCRETE OR STONE MONUMENT
IRON PIPE
IRON PIN OR REBAR
IRON PIN WITH BRASS DISK
NAIL, PK NAIL, SPIKE, SFP, T-BAR, ...
VERTICAL CONTROL B.M.
HORIZONTAL CONTROL
POWER POLE
LIGHT POLE
LIGHT AND TELEPHONE POLE
LIGHT, TELEPHONE AND POWER POLE
GUY POLE GP
POLE ANCHOR
TELEPHONE POLE
TELEPHONE AND POWER POLE
UNDERGROUND CABLE PEDESTAL PED
TELEPHONE MANHOLE (VAULT) MH
ELECTRIC CABLE IN CONDUIT P
TELEPHONE CABLE IN CONDUIT T
BURIED ELECTRIC CABLE P-BUR
BURIED TELEPHONE CABLE T-BUR
GAS LINE G
WATER LINE
VALVE
FIRE HYDRANT
WATER MANHOLE
WELL WELL
LAWN SPRINKLER HEAD
MANHOLE MH
CATCH BASIN CB
SEPTIC TANK SEPTIC TANK
FORCE MAIN LIFT STA. LIFT
SEWER LINE
PERMANENT BARRICADE
TRAFFIC SIGNAL LIGHT
HAND HOLE
ENTRANCE
BUILDING NUMBER 1-S-F
SATELLITE DISH
STEEL TOWER TOWER
FLAG POLE F.P.

MINNESOTA DEPARTMENT OF TRANSPORTATION
OLMSTED COUNTY
CONSTRUCTION PLAN FOR BRIDGE NO. 55578 AND APPROACH GRADING

LOCATED 0.4 MILES WEST OF JCT. T.H. 52, 2.0 MILES NORTHWEST OF CHATFIELD, MN ON SPRING ROAD SE OVER MILL CREEK. (Geographical Description)

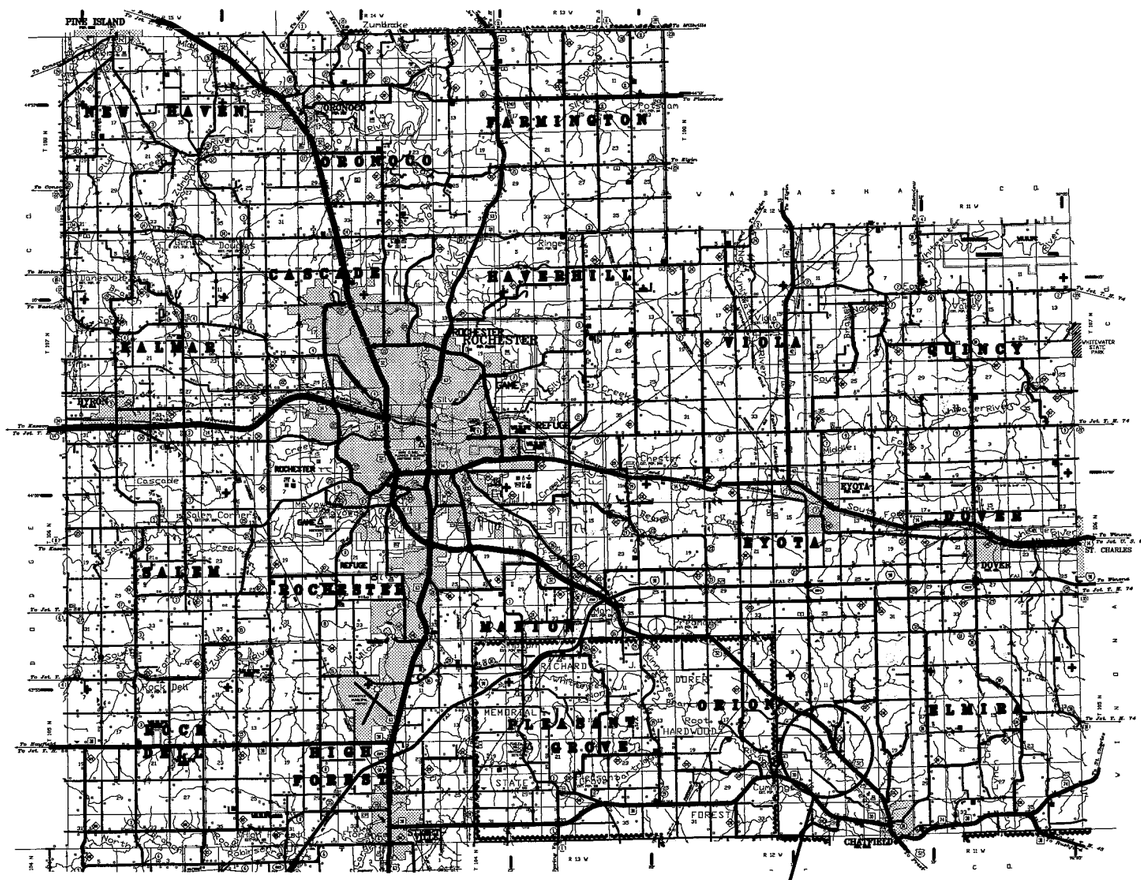
SEC. 23 TWP. 105 N R 12 W (Legal Description)

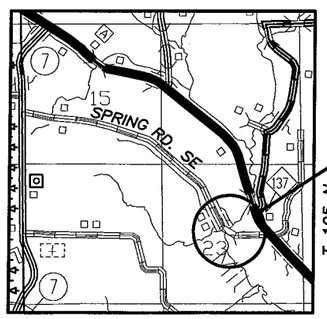
STATE PROJ. NO.

GROSS LENGTH	FEET	MILES
BRIDGES–LENGTH	FEET	MILES
EXCEPTIONS–LENGTH	FEET	MILES
NET. LENGTH	FEET	MILES

STATE AID PROJ. NO. 55–599–80

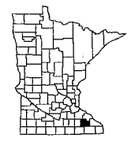
GROSS LENGTH	600.00 FEET	0.114 MILES
BRIDGES–LENGTH	100.52 FEET	0.019 MILES
EXCEPTIONS–LENGTH	FEET	MILES
NET. LENGTH	600.00 FEET	0.114 MILES





PROP. BRIDGE NO. 55578
S.A.P. 55–599–80
BEG. PROJ. 101+00.00
END PROJ. 107+00.00
EXIST. BRIDGE NO. L9526
STEEL BEAM SPAN
LENGTH: 32.0'
DECK WIDTH: 16.0'
YEAR BUILT: 1974

PROJECT LOCATION
Outline Map of Minnesota showing location of the County within the State.



OLMSTED COUNTY

MN. PROJ. NO.

GOVERNING SPECIFICATIONS
THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

LIST OF SHEETS

NO.	TITLE
1	TITLE SHEET
2	GENERAL PLAN & ELEVATION
3	BRIDGE LAYOUT
4–5	ABUTMENT DETAILS
6	PIER DETAILS
7–8	SUPERSTRUCTURE DETAILS
9	CONCRETE RAILING (TYPE F)
10–12	MISC. BRIDGE DETAILS
13	BRIDGE SURVEY
14	BRIDGE SURVEY ~ PLAN & PROFILE
15–16	ROADWAY CROSS–SECTIONS
17–18	TEMPORARY EROSION CONTROL
19	TRAFFIC CONTROL

THIS PLAN CONTAINS 19 SHEETS.

DESIGN DESIGNATION
≤ N18 20
R VALUE
ADT = 79 (2005)
PROJ. ADT
PROJ. HCADT
SOIL FACTOR
TON DESIGN

AS-BUILT

MAR 0 7 2006

ENGINEERING

Design Speed 30 MPH
Based on 200' Stopping Sight Distance
Height of eye 3.5'
Height of object 2.0'
Design Speed not achieved at:

STA.	TO STA.	MPH
STA.	TO STA.	MPH
STA.	TO STA.	MPH

Ronald Benson RONALD BENSON
DESIGN ENGINEER: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 1/19/05 LICENSE NUMBER 22737

Ernest R. Wright DATE 2/14/05
APPROVED: ORION TOWNSHIP

Michael Sheehan DATE 2/4/05
APPROVED: COUNTY ENGINEER

Daniel J Wagner DATE 2/28/05
RECOMMENDED FOR APPROVAL: STATE BRIDGE ENGINEER

~~ASST~~ DATE 2-22-05
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE–AID RULES/POLICY

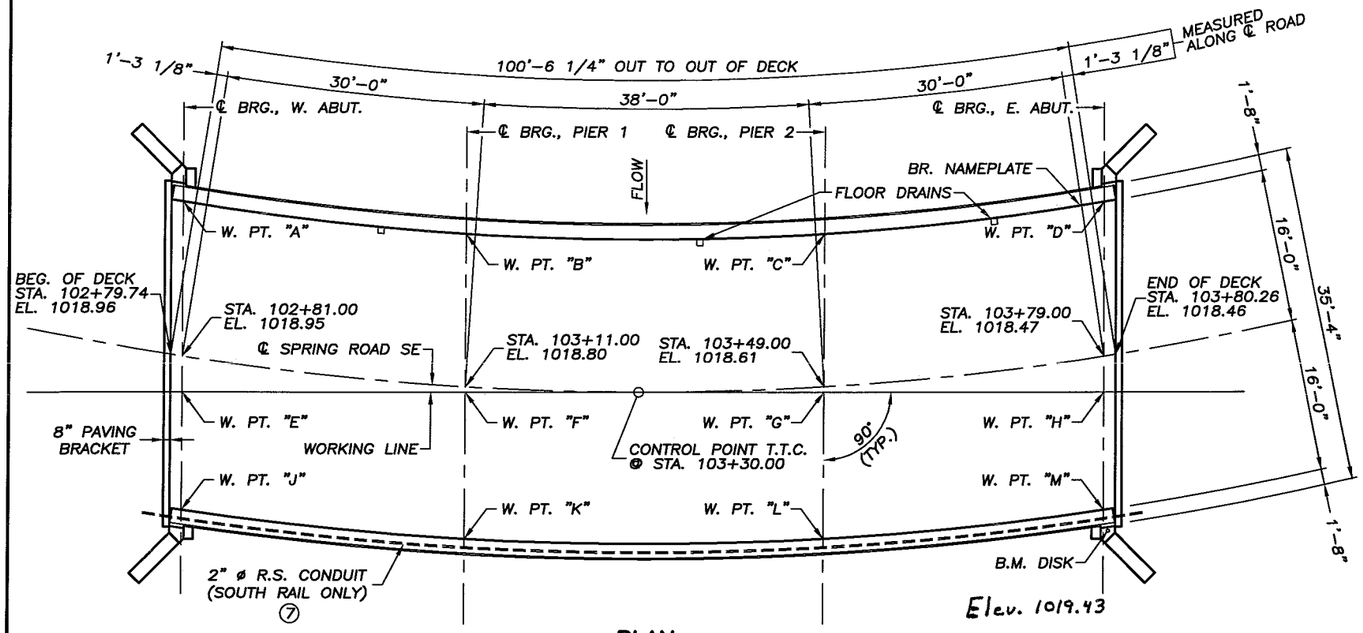
Patt J. Simmons DATE 3/3/05
APPROVED FOR STATE–AID FUNDING: STATE–AID ENGINEER

ERICKSON ENGINEERING
Consulting Engineers

STATE AID PROJ. NO. 55–599–80

STATE PROJ. NO.

SHEET NO. 1 OF 19 SHEETS



PLAN

SCALE: 0' 4' 8'

B.M. ELEV. 1017.20 (M.S.L. 1929 Adj.)

LOCATION: TOP NUT SE WINGWALL EXIST. BRIDGE NO. L9526

DESIGN DATA

2002 A.A.S.H.T.O. DESIGN SPECIFICATIONS
LOAD FACTOR DESIGN METHOD ~ HS25 LOADING
INCLUDES 17 PSF DEAD LOAD ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS.

MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE:
f'c = 4000 PSI n = 8
fy = 60000 PSI REINFORCEMENT
STRUCTURAL STEEL:
fy = 36000 PSI SPEC. 3306

DECK AREA = 3,552 SQ. FT. DESIGN SPEED = 30 MPH
CURRENT ADT. = 79 (2005) OPERATING RATING = HS 50

CONSTRUCTION NOTES

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

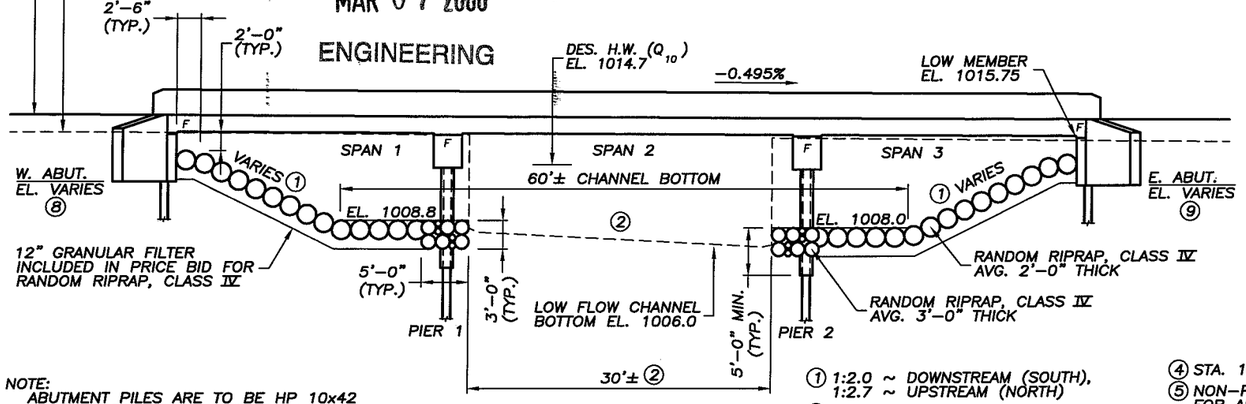
THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE IN MILLIMETERS. BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.

ENGINEER IN THE FIELD SHALL VERIFY PROPER POSITIONING OF THE BRIDGE PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF THE BRIDGE POSITIONING IS NOT COMPATIBLE WITH THE STREAM WHEN STAKING IS COMPLETED, THE SEALING ENGINEER SHALL BE NOTIFIED.

IF STATIONING IS CHANGED, THE REVISED PLANS SHALL BE SUBMITTED TO THE OWNER AND STATE AID BRIDGE OFFICE.

LIST OF SHEETS

NO.	TITLE
1	TITLE SHEET
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14	BRIDGE SURVEY ~ PLAN & PROFILE
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17–18	TEMPORARY EROSION CONTROL
19	TRAFFIC CONTROL

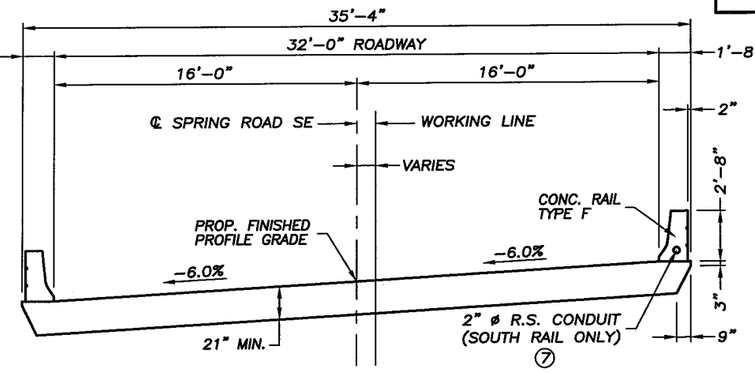


ELEVATION

SCALE: 0' 4' 8'

NOTE:
ABUTMENT PILES ARE TO BE HP 10x42 STEEL H–PILES WITH PILE TIP PROTECTION.
PIER PILES ARE TO BE HP 10x57 STEEL H–PILES WITH PILE TIP PROTECTION & 16" DIA. PILE SHELLS.

HORIZONTAL CURVE DATA
R = 320.00'
T = 212.44'
Δ = 67°09'30" LT.
L = 375.08'
P.I. STA. 104+17.91



TRANSVERSE SECTION THRU DECK

SCALE: 0' 2' 4'

① 1:2.0 ~ DOWNSTREAM (SOUTH), 1:2.7 ~ UPSTREAM (NORTH)
② EXISTING LOW FLOW CHANNEL BOTTOM TO REMAIN UNDISTURBED.
③ SEE SHEET 5 FOR REQUIREMENTS.
④ STA. 103+30 ~ NON–PARTICIPATING
⑤ NON–PARTICIPATING ~ SEE SHEET 16 FOR APPROX. QUANTITIES & REQUIREMENTS.
⑥ SEE SHEET 13 FOR LOCATIONS.
⑦ SEE SHEET 8 FOR REQUIREMENTS, NON–PARTICIPATING.
⑧ NORTH END EL. 1010.80 SOUTH END EL. 1013.08
⑨ NORTH END EL. 1010.28 SOUTH END EL. 1012.62

AS-BUILT

MAR 0 7 2006

ENGINEERING

SCHEDULE OF QUANTITIES FOR THE ENTIRE BRIDGE

ITEM NO.	2021.501	2105.601	2401.501	2401.512	2401.513	2401.541	2401.601	2401.601	2402.521	2402.546	2442.501	2452.510	2452.510	2452.511	2452.511
ITEM	MOBILIZATION	APPROACH GRADING ⑤	STRUCTURAL CONCRETE (3Y43)	BRIDGE SLAB CONCRETE (3Y33A)	TYPE F RAILING CONCRETE (3Y46A)	REINFORCEMENT BARS (EPOXY COATED)	STRUCTURE EXCAVATION ③	SLOPE PREPARATION	STRUCTURAL STEEL (3306)	FLOOR DRAIN TYPE B702 MODIFIED	REMOVE OLD BRIDGE ④	STEEL H–PILING DRIVEN 10x42	STEEL H–PILING DRIVEN 10x57	STEEL H–PILING DELIVERED 10x42	STEEL H–PILING DELIVERED 10x57
QUANTITY	1	1	74 (P)	3,552 (P)	201 (P)	46,060 (P)	1	1	550 (P)	3	1	240	240	240	240
UNIT	LUMP SUM	LUMP SUM	CU. YD.	SQ. FT.	LIN. FT.	POUND	LUMP SUM	LUMP SUM	POUND	EACH	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.

ITEM NO.	2452.520	2452.520	2452.602	2452.602	2452.603	2501.511	2501.515	2511.501	2545.509	2563.601	2573.502	2573.512	2575.555		
ITEM	STEEL H–TEST PILE 40 FT. LONG 10x42	STEEL H–TEST PILE 40 FT. LONG 10x57	PILE TIP PROTECTION 10"	ROCK SOCKET	16" STEEL PILE SHELLS	15" CS PIPE CULVERT ⑤	15" GS PIPE APRON ⑤	RANDOM RIPRAP CLASS IV	CONDUIT SYSTEM (TELEPHONE) ⑦	TRAFFIC CONTROL	SILT FENCE, TYPE MACHINE SLICED ⑤	TEMPORARY DITCH CHECK TYPE 1 ⑤⑥	TURF ESTABLISHMENT ⑤		
QUANTITY	2	2	20	10	150	36	2	320	1	1	1,100	75	1		
UNIT	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	EACH	CU. YD.	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LUMP SUM		

APPROVED: Michael D. Thurlow
COUNTY ENGINEER
OLMSTED COUNTY
DATE: 2/4/05

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

Ronald Benson RONALD BENSON

DATE: 1/19/05 LIC. NO. 22737

PLANS PREPARED BY:
ERICKSON ENGINEERING
9330 JAMES AVENUE SOUTH
BLOOMINGTON, MN 55431

SPRING ROAD SE OLMSTED COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55578

LOCATED 0.4 MILES WEST OF JCT. T.H. 52 ON SPRING ROAD SE OVER MILL CREEK.

30'–38'–30' CONTINUOUS CONCRETE SLAB SPANS, 32 FT. ROADWAY, 0° SKEW
SPAN IDENTIFICATION NO. 209

GENERAL PLAN & ELEVATION

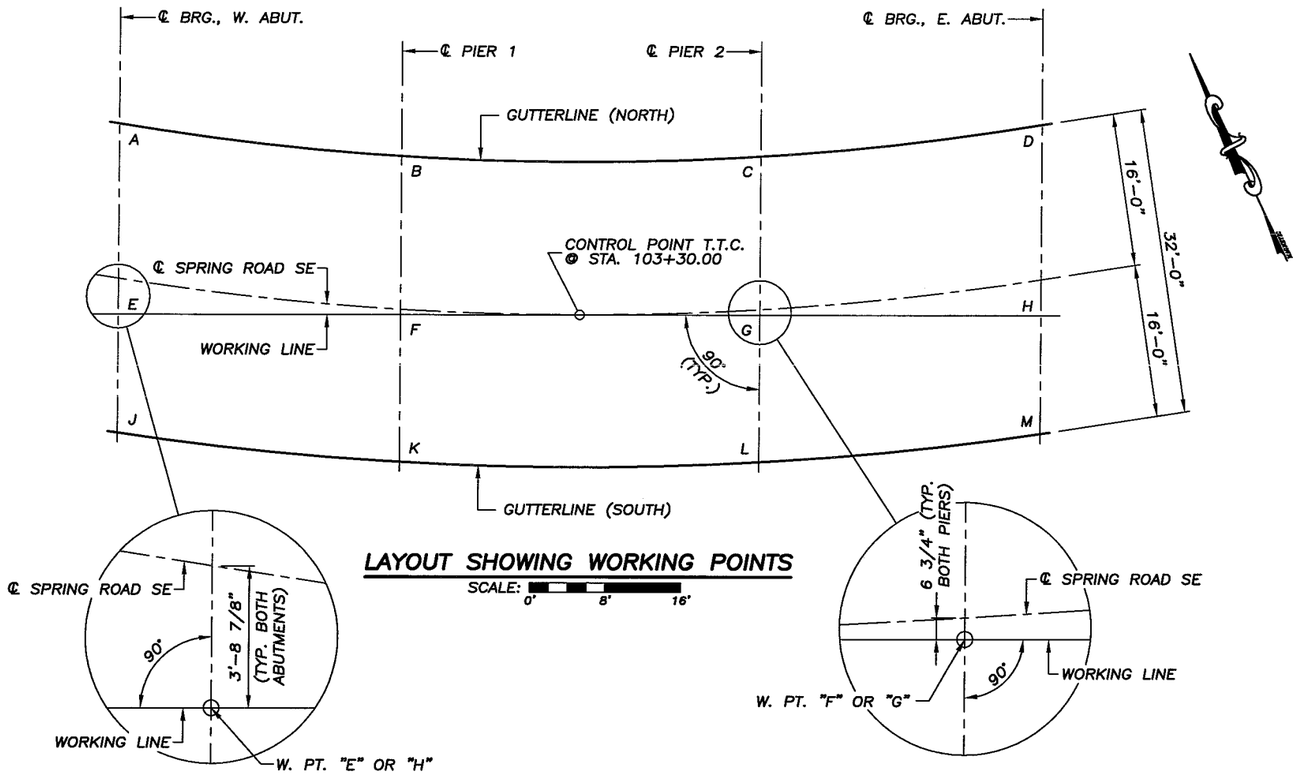
SEC. 23 TWP. 105 N R 12 W

TOWNSHIP: ORION
COUNTY: OLMSTED

APPROVED: Lowell D Wagner
STATE BRIDGE ENGINEER
DATE: 2/28/05

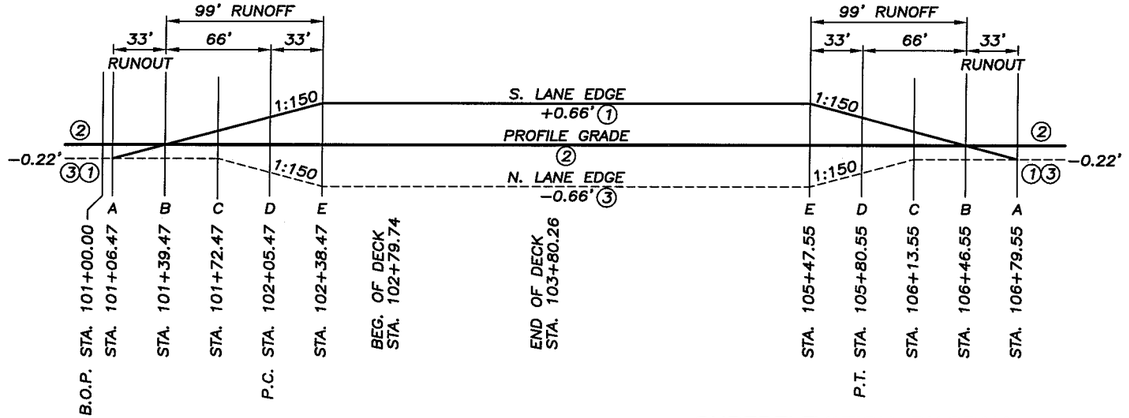
S.A.P. 55–599–80
SHEET 2 OF 19 SHEETS

DES.:	JAS	DRN.:	TJR	55578
CHK.:	CSK	CHK.:	JAS	

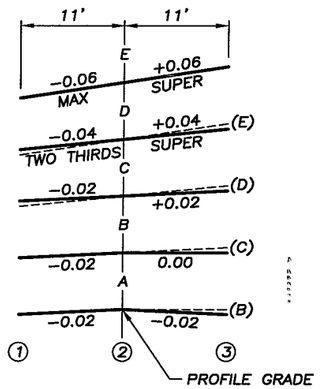


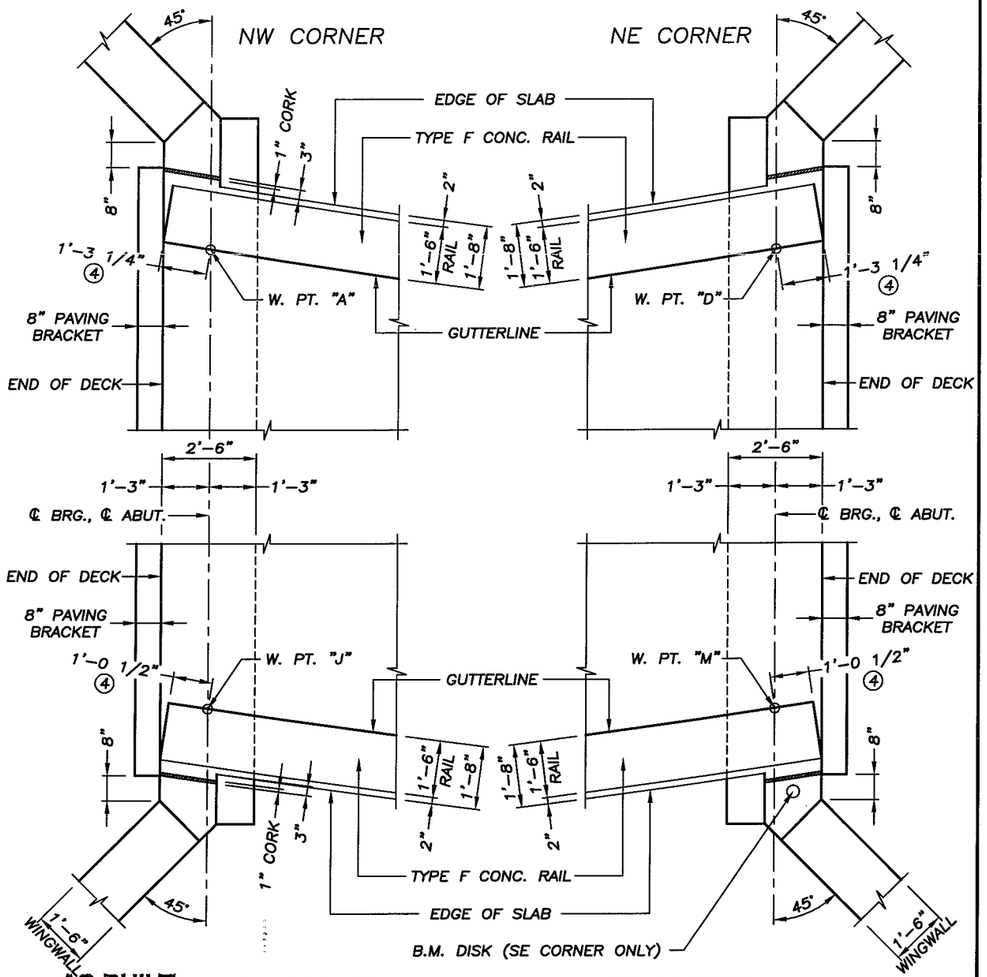
LAYOUT SHOWING WORKING POINTS

SCALE: 0' 8' 16'



SUPERELEVATION DIAGRAM





AS-BUILT

MAR 0 7 2006

ENGINEERING

TYPICAL CORNER DETAILS

SCALE: 0' 2' 4'

(4) MEASURED ALONG GUTTERLINE.

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M
A	102+78.40		30.01			19.94	35.87				46.29	76.49	
B	103+10.00			37.98			16.59	41.44		41.62		49.70	73.75
C	103+50.00				30.01			16.59	34.13	73.75	49.70		41.62
D	103+81.60								19.94		76.49	46.29	
E	102+81.56						29.82			12.44	33.59		
F	103+11.03							37.98			15.46	41.01	
G	103+48.97								29.82			15.46	32.31
H	103+78.44												12.44
J	102+83.35										29.97		
K	103+11.91											37.98	
L	103+48.09												29.97
M	103+76.65												

ELEVATIONS

TOP OF SLAB	SLAB TO BRIDGE SEAT	BRIDGE SEAT	POINT
1018.00	2.00	1016.00	A
1017.85	1.90	1015.95	B
1017.65	1.90	1015.75	C
1017.49	2.00	1015.49	D
1019.17	2.00	1017.17	E
1018.84	1.90	1016.94	F
1018.65	1.90	1016.75	G
1018.69	2.00	1016.69	H
1019.90	2.00	1017.90	J
1019.76	1.90	1017.86	K
1019.58	1.90	1017.68	L
1019.44	2.00	1017.44	M

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 1/19/2005

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55578

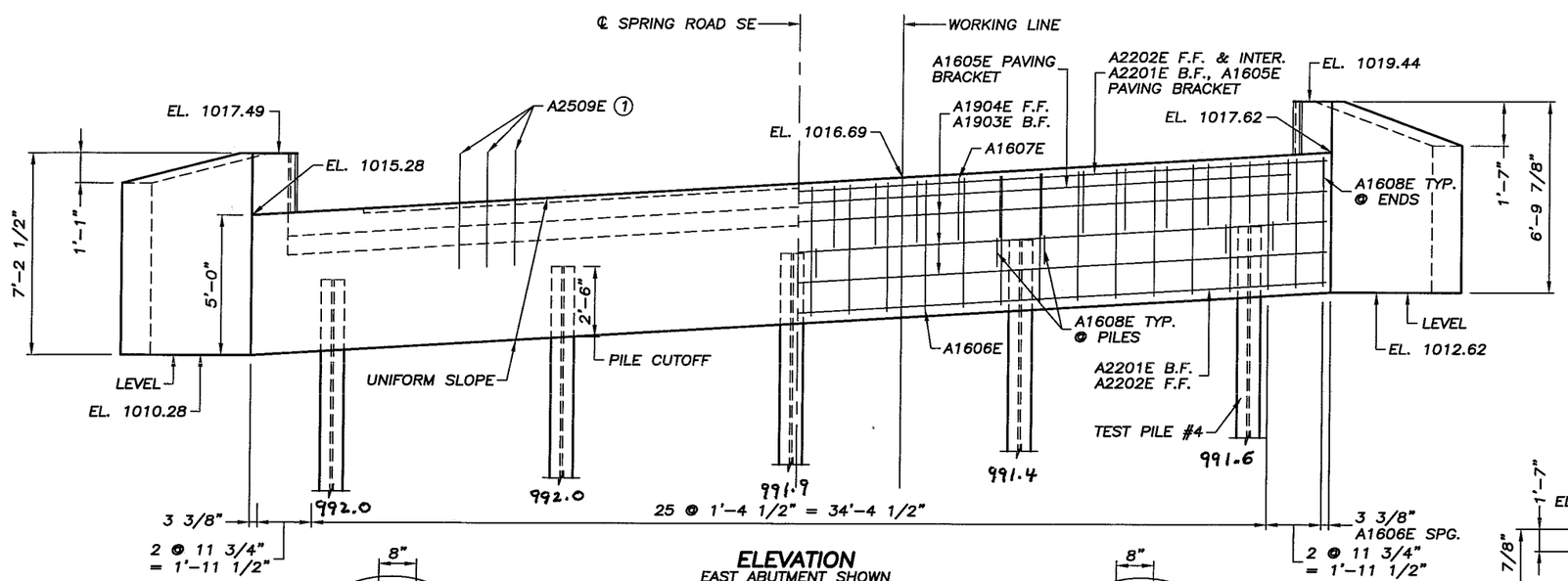
BRIDGE LAYOUT

APPROVED:

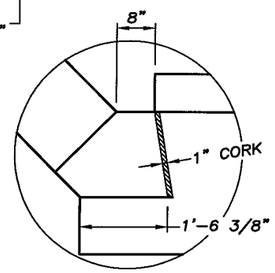
S.A.P. 55-599-80

SHEET 3 OF 19 SHEETS

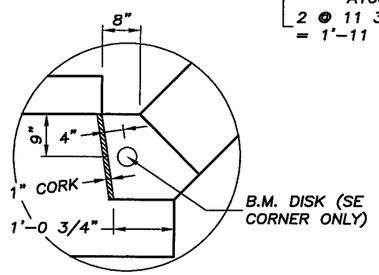
DES.: JAS	DRN.: TJR	55578
CHK.: CSK	CHK.: JAS	



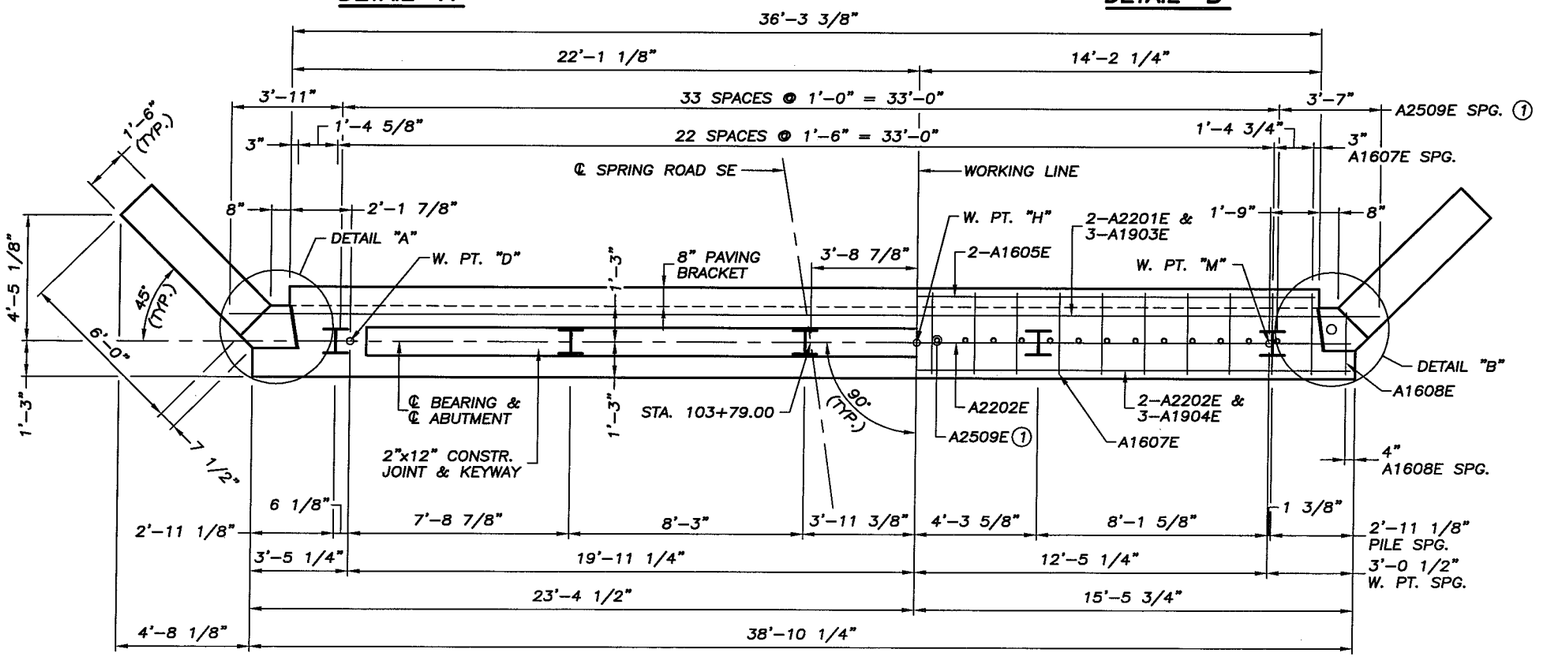
ELEVATION
EAST ABUTMENT SHOWN
SCALE: 0' 2' 4'



DETAIL "A"



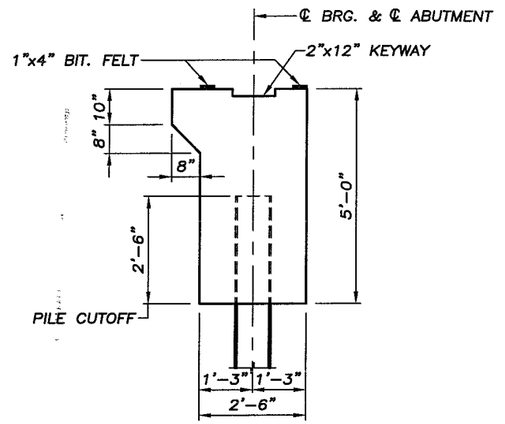
DETAIL "B"



PLAN
EAST ABUTMENT SHOWN
SCALE: 0' 2' 4'

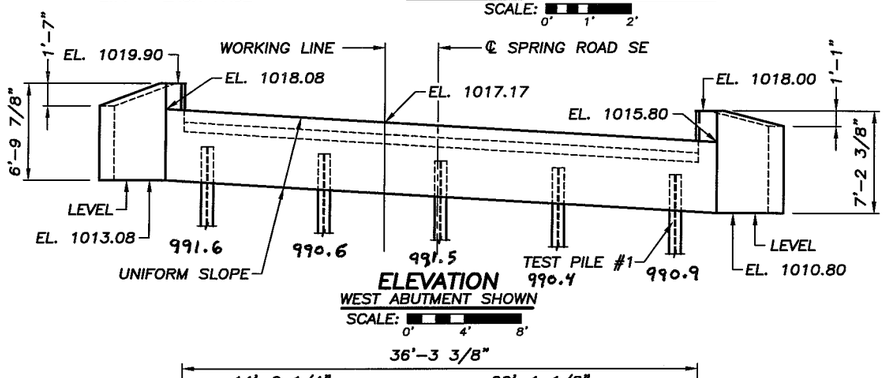
(1) PLACE HORIZONTAL LEG PARALLEL TO ℄ ROAD.

AS-BUILT
MAR 0 7 2006
ENGINEERING

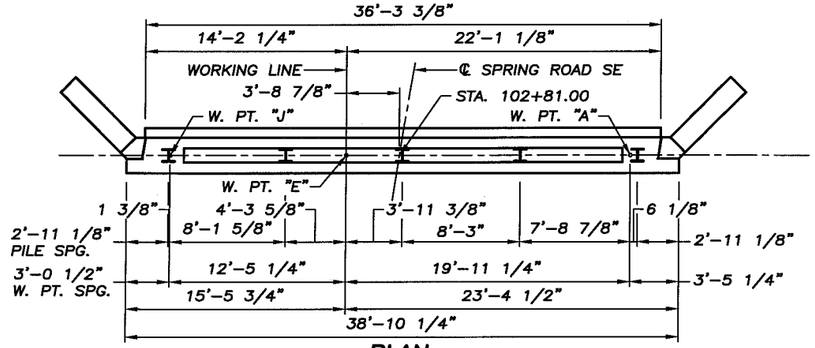


SECTION THRU ABUTMENT
SCALE: 0' 1' 2'

NOTE:
F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE



ELEVATION
WEST ABUTMENT SHOWN
SCALE: 0' 4' 8'



PLAN
WEST ABUTMENT SHOWN
SCALE: 0' 4' 8'

COMPUTED PILE LOADS TONS PER PILE @ ABUTMENTS.	
DEAD LOAD	23.0
LIVE LOAD	11.7
TOTAL	34.7

PILE NOTES:

8 – STEEL H–PILES, EST. LENGTH 30'
2 – STEEL H–TEST PILES, 40' LONG
10 – STEEL H–PILES REQ'D FOR 2 ABUTS.

ALL ABUT. PILES SHALL BE HP 10x42, STEEL H–PILES.

ABUTMENT PILES SHALL HAVE PILE TIP PROTECTION, SEE SPECIAL PROVISIONS.

SEE DETAIL B202 FOR PILE SPLICES.

SEE SURVEY SHEET FOR TEST PILE LOCATIONS.

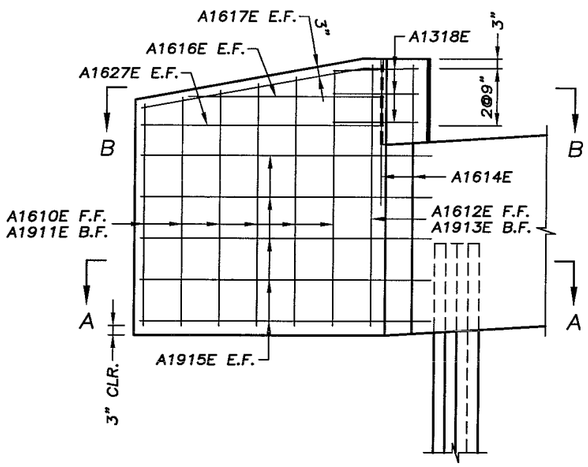
CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/ 2005

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55578
ABUTMENT DETAILS

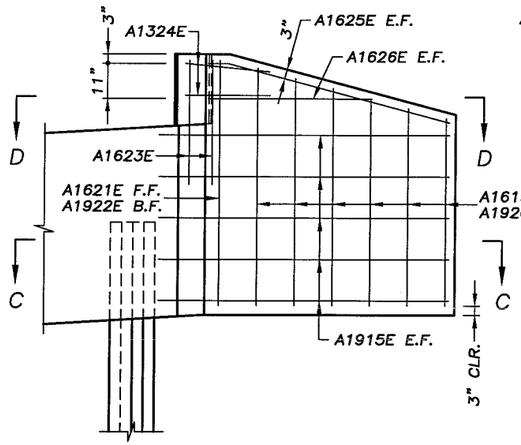
APPROVED:
S.A.P. 55–599–80
SHEET 4 OF 19 SHEETS

DES.:	JAS	DRN.:	TJR	55578
CHK.:	CSK	CHK.:	JAS	



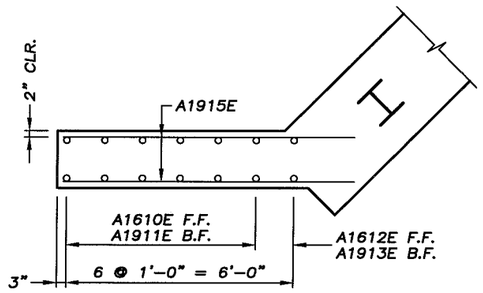
NW & NE WINGWALL ELEVATION

SCALE: 0' 1' 2'



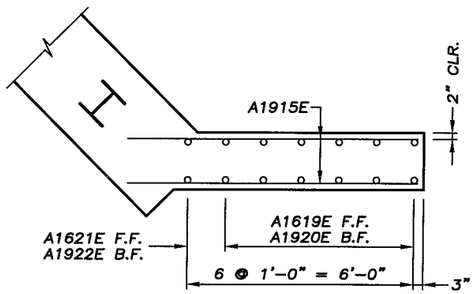
SE & SW WINGWALL ELEVATION

SCALE: 0' 1' 2'



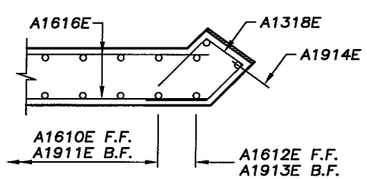
SECTION A-A

SCALE: 0' 1' 2'



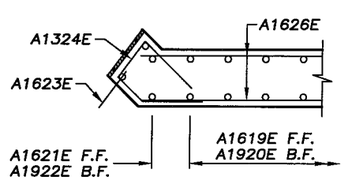
SECTION C-C

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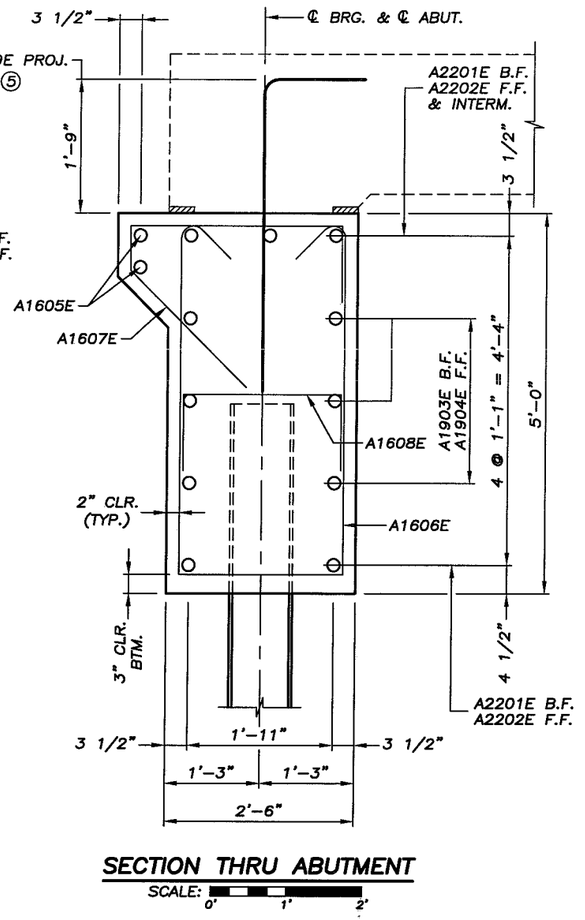
SECTION B-B

SCALE: 0' 1' 2'



SECTION D-D

SCALE: 0' 1' 2'



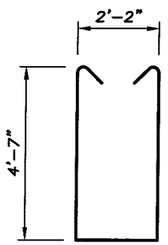
SECTION THRU ABUTMENT

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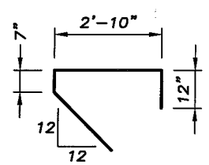
AS-BUILT

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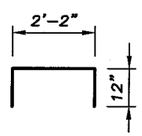
ENGINEERING



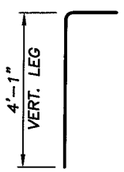
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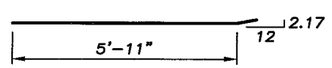
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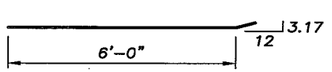
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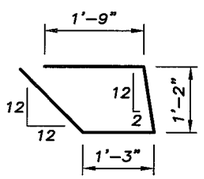
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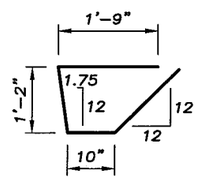
A1617E



A1625E



A1318E



A1324E

BILL OF REINFORCEMENT ~ 2 ABUTMENTS

BAR	NO.	LENGTH	SHAPE	LOCATION
A2201E	4	40'-6"	STRT.	CAP ~ HORIZONTAL
A2202E	6	38'-6"	STRT.	CAP ~ HORIZONTAL
A1903E	6	40'-6"	STRT.	CAP ~ HORIZONTAL
A1904E	6	38'-6"	STRT.	CAP ~ HORIZONTAL
A1605E	4	35'-11"	STRT.	CAP ~ PAVING BRACKET
A1606E	60	12'-3"	BENT	CAP ~ STIRRUP
A1607E	50	6'-7"	BENT	CAP ~ TIE
A1608E	24	4'-2"	BENT	CAP ~ TIE
A2509E	68	5'-5"	BENT	CAP ~ DOWEL @ SLAB
A1610E	2 SER. OF 6	FROM 5'-8" TO 6'-7"	STRT.	NW & NE WINGWALL ~ VERTICAL
A1911E	2 SER. OF 6	FROM 5'-8" TO 6'-7"	STRT.	NW & NE WINGWALL ~ VERTICAL
A1612E	2	6'-9"	STRT.	NW & NE WINGWALL ~ VERTICAL
A1913E	2	6'-9"	STRT.	NW & NE WINGWALL ~ VERTICAL
A1614E	4	3'-8"	STRT.	NW & NE WINGWALL ~ VERTICAL
A1915E	40	7'-8"	STRT.	WINGWALL ~ HORIZONTAL
A1616E	4	5'-1"	STRT.	NW & NE WINGWALL ~ HORIZONTAL
A1617E	4	6'-5"	BENT	NW & NE WINGWALL ~ HORIZONTAL
A1318E	6	5'-9"	BENT	NW & NE WINGWALL ~ TIE
A1619E	2 SER. OF 6	FROM 4'-10" TO 6'-2"	STRT.	SE & SW WINGWALL ~ VERTICAL
A1920E	2 SER. OF 6	FROM 4'-10" TO 6'-2"	STRT.	SE & SW WINGWALL ~ VERTICAL
A1621E	2	6'-4"	STRT.	SE & SW WINGWALL ~ VERTICAL
A1922E	2	6'-4"	STRT.	SE & SW WINGWALL ~ VERTICAL
A1623E	4	3'-3"	STRT.	SE & SW WINGWALL ~ VERTICAL
A1324E	4	5'-4"	BENT	SE & SW WINGWALL ~ TIE
A1625E	4	6'-6"	BENT	SE & SW WINGWALL ~ HORIZONTAL
A1626E	4	4'-3"	STRT.	SE & SW WINGWALL ~ HORIZONTAL
A1627E	4	6'-4"	STRT.	NW & NE WINGWALL ~ HORIZONTAL

SUMMARY OF QUANTITIES ~ 2 ABUTMENTS

	STRUCTURAL CONCRETE (3Y43)	48	CU. YD.
	REINFORCEMENT BARS (EPOXY COATED)	4,930	POUND
①②	STRUCTURE EXCAVATION	1	LUMP SUM
③	STEEL H-PILING DELIVERED, 10x42	240	LIN. FT.
③	STEEL H-PILING DRIVEN, 10x42	240	LIN. FT.
	STEEL H-TEST PILE 40' LONG, 10x42	2	EACH
①	PILE TIP PROTECTION, 10"	10	EACH
④	B.M. DISK	1	EACH

① SEE SPECIAL PROVISIONS

② BACKFILL BEHIND ABUTMENTS SHALL BE SELECT GRANULAR BORROW PER SPEC. 3149. SEE SURVEY SHEET FOR PLACEMENT LIMITS. APPROXIMATE QUANTITY (CV) IS 230 CU. YD., INCLUDED IN PRICE BID FOR STRUCTURE EXCAVATION. BACKFILL DENSITY SHALL BE ATTAINED BY THE QUALITY COMPACTION METHOD IN ACCORDANCE WITH SPEC. 2105.3F2.

③ DOES NOT INCLUDE TEST PILES.

④ COUNTY 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.

⑤ PLACE HORIZONTAL LEG PARALLEL TO ℄ ROADWAY.

NOTE:
F.F. = FRONTFACE
B.F. = BACKFACE
E.F. = EACH FACE

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PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 1/19/2005

MINNESOTA DEPARTMENT OF TRANSPORTATION

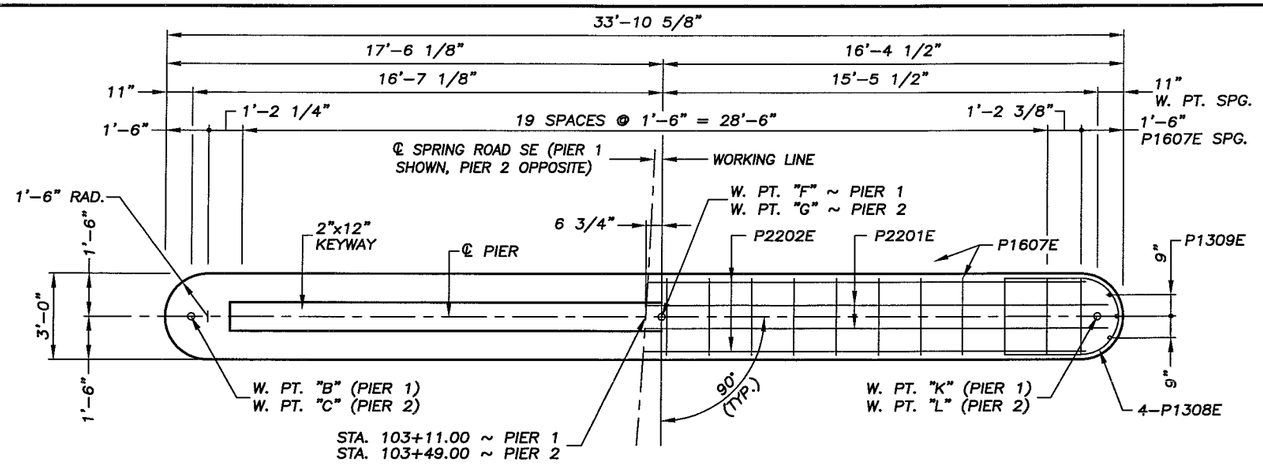
BRIDGE NO. 55578
ABUTMENT DETAILS

APPROVED:

S.A.P. 55-599-80

SHEET 5 OF 19 SHEETS

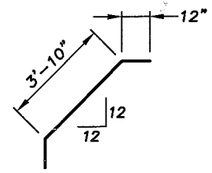
DES.:	JAS	DRN.:	TJR	55578
CHK.:	CSK	CHK.:	JAS	



PLAN
SCALE: 0' 2' 4'

AS-BUILT
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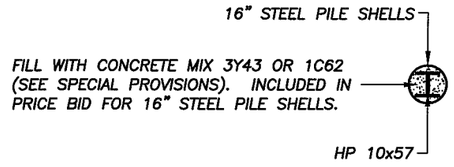
BILL OF REINFORCEMENT ~ 2 PIERS				
BAR	NO.	LENGTH	SHAPE	LOCATION
P2201E	4	35'-1"	BENT	CAP ~ LONGITUDINAL
P2202E	4	33'-6"	BENT	CAP ~ LONGITUDINAL
P2203E	12	30'-8"	STRT.	CAP ~ LONGITUDINAL
P1904E	8	30'-8"	STRT.	CAP ~ LONGITUDINAL
P2205E	4	32'-3"	STRT.	CAP ~ LONGITUDINAL
P1606E	48	9'-11"	BENT	CAP ~ STIRRUP
P1607E	64	4'-4"	BENT	CAP ~ TIE
P1308E	16	9'-6"	BENT	CAP ~ TIE @ ENDS
P1309E	12	3'-2"	STRT.	CAP ~ VERTICAL @ ENDS
P1910E	128	5'-10"	BENT	CAP ~ DOWEL



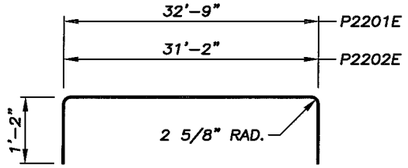
P1910E

SUMMARY OF QUANTITIES ~ 2 PIERS		
STRUCTURAL CONCRETE (3Y43)	26	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	3,980	POUND
(1) STEEL H-PILING DELIVERED, 10x57	240	LIN. FT.
(1) STEEL H-PILING DRIVEN, 10x57	240	LIN. FT.
STEEL H-TEST PILE 40' LONG, 10x57	2	EACH
16" STEEL PILE SHELLS	150	LIN. FT.
(2) PILE TIP PROTECTION, 10"	10	EACH
(2)(4) ROCK SOCKET	10	EACH

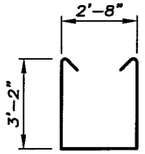
(1) DOES NOT INCLUDE TEST PILES.
(2) SEE SPECIAL PROVISIONS
(3) PLACE P1910E PARALLEL TO ℄ ROADWAY.
(4) DRIVE TEST PILES AT PIERS PRIOR TO CONSTRUCTING ROCK SOCKETS. IF ALL PILES ARE DRIVEN TO MINIMUM ELEVATION, DELETE BID ITEM "ROCK SOCKET".



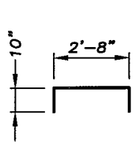
SECTION A-A



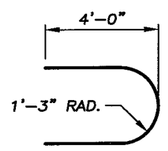
P2201E & P2202E



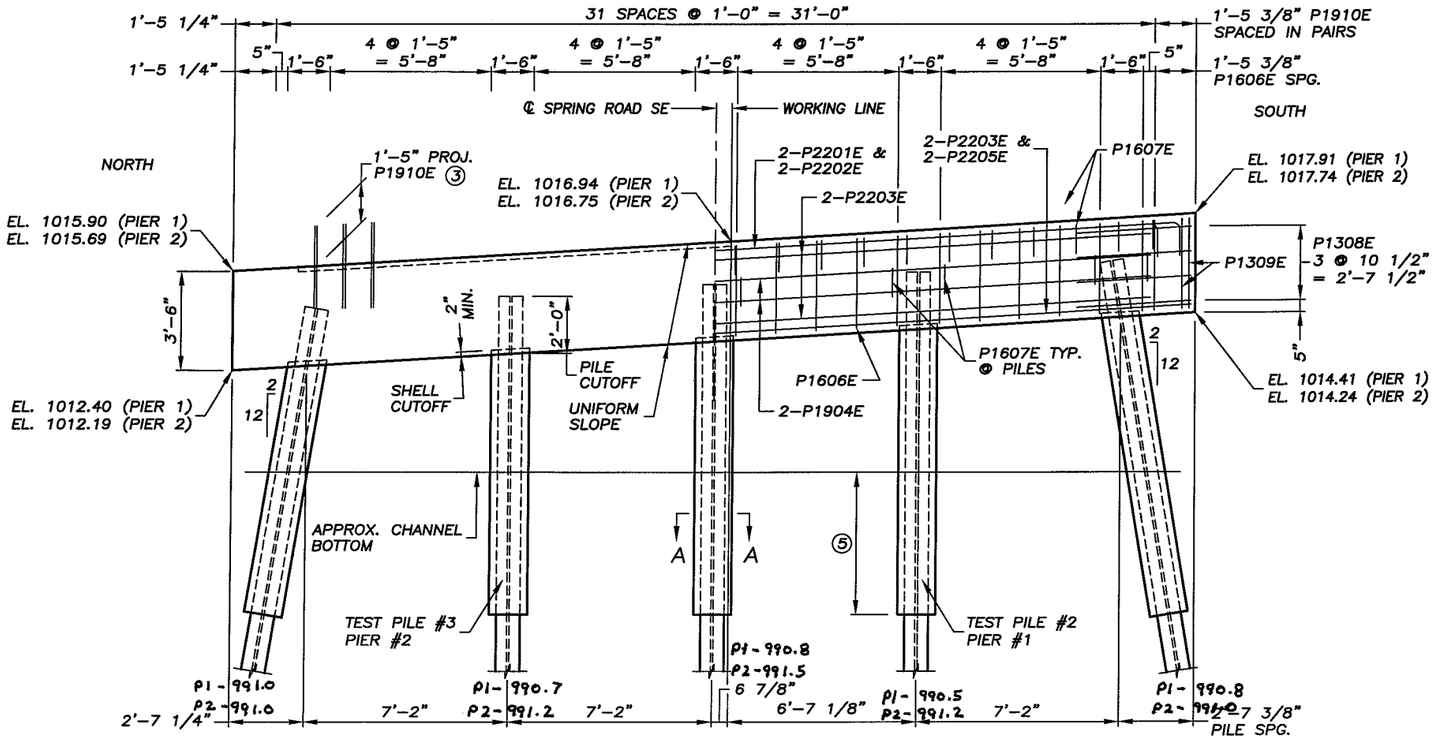
P1606E



P1607E



P1308E



ELEVATION
SCALE: 0' 2' 4'

COMPUTED PILE LOADS TONS PER PILE @ PIERS	
DEAD LOAD	46.1
LIVE LOAD	15.9
TOTAL	62.0

PILE NOTES

2 – STEEL H-TEST PILES, 40' LONG
8 – STEEL H-PILES, EST. LGTH. 30'
10 – STEEL H-PILES REQ'D. FOR 2 PIERS.

10 – 16" STEEL PILE SHELLS, 15' LONG

ALL PIER PILES SHALL BE HP 10x57, STEEL H-PILES ENCASED IN 16" STEEL PILE SHELLS AS SHOWN.

PIER PILES SHALL HAVE PILE TIP PROTECTION, SEE SPECIAL PROVISIONS.

PILE SPACING SHOWN IS AT BOTTOM OF CAP.

SEE DETAIL B202 FOR SPLICES.

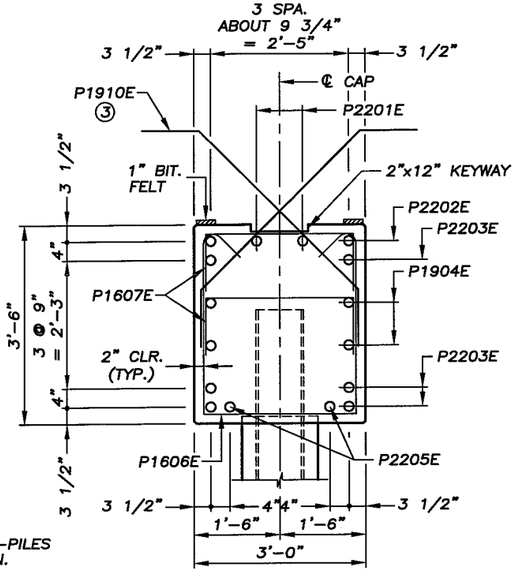
SEE SURVEY SHEET FOR TEST PILE LOCATIONS.

END PILES ARE TO BE BATTERED 2" PER FOOT IN DIRECTION SHOWN.

ALL PIER PILES SHALL BE DRIVEN TO ELEVATION 992.0 OR BELOW OR A MINIMUM OF 5.0 FEET INTO THE ROCK LAYERS (SEE SPECIAL PROVISIONS).

AT LOCATIONS WHERE PILES CANNOT BE DRIVEN TO MINIMUM ELEVATION, ROCK SOCKETS SHALL BE CONSTRUCTED.

(5) SEE SHEET 2 FOR DETAILS.



SECTION THRU CAP
SCALE: 0' 1' 2'

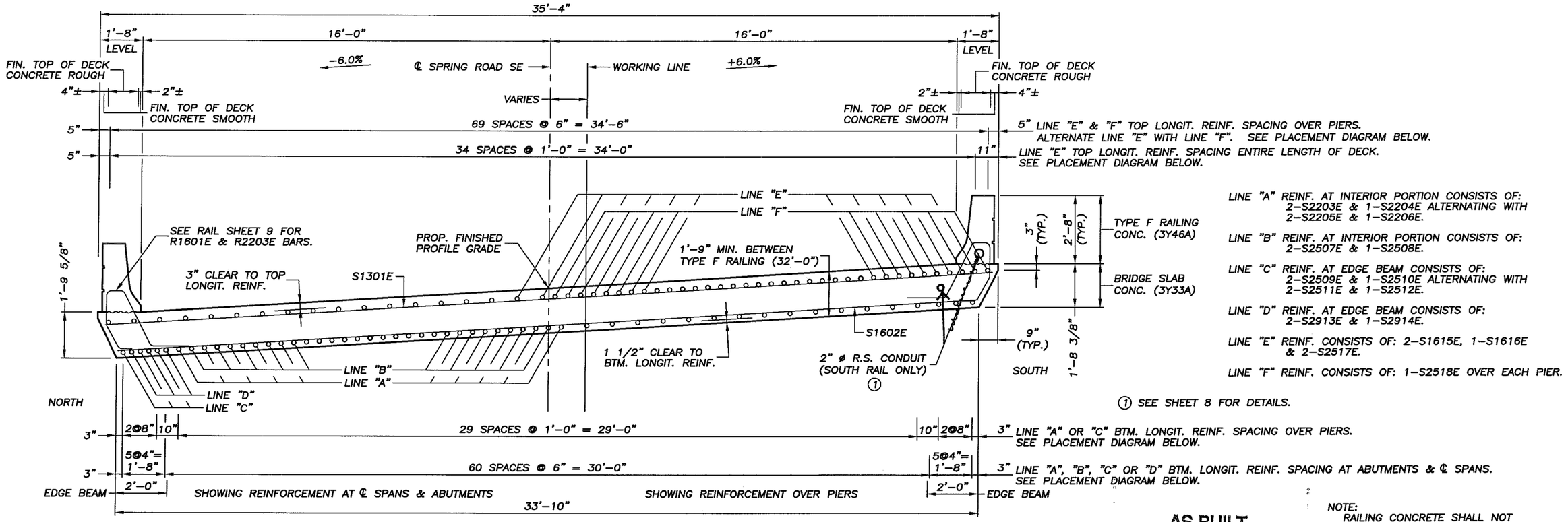
CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55578
PIER DETAILS

APPROVED:

S.A.P. 55-599-80				
SHEET 6 OF 19 SHEETS				
DES.:	JAS	DRN.:	TJR	55578
CHK.:	CSK	CHK.:	JAS	



LINE "A" REINF. AT INTERIOR PORTION CONSISTS OF: 2–S2203E & 1–S2204E ALTERNATING WITH 2–S2205E & 1–S2206E.

LINE "B" REINF. AT INTERIOR PORTION CONSISTS OF: 2–S2507E & 1–S2508E.

LINE "C" REINF. AT EDGE BEAM CONSISTS OF: 2–S2509E & 1–S2510E ALTERNATING WITH 2–S2511E & 1–S2512E.

LINE "D" REINF. AT EDGE BEAM CONSISTS OF: 2–S2913E & 1–S2914E.

LINE "E" REINF. CONSISTS OF: 2–S1615E, 1–S1616E & 2–S2517E.

LINE "F" REINF. CONSISTS OF: 1–S2518E OVER EACH PIER.

1 SEE SHEET 8 FOR DETAILS.

NOTE: RAILING CONCRETE SHALL NOT BE PLACED WHILE SLAB IS SUPPORTED ON FALSEWORK.

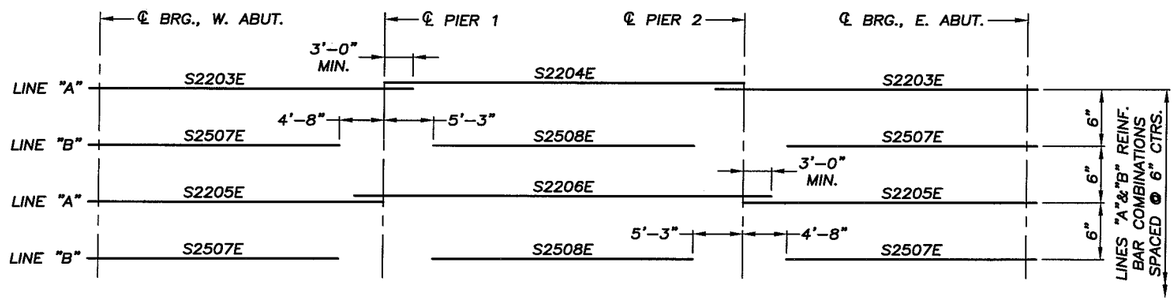
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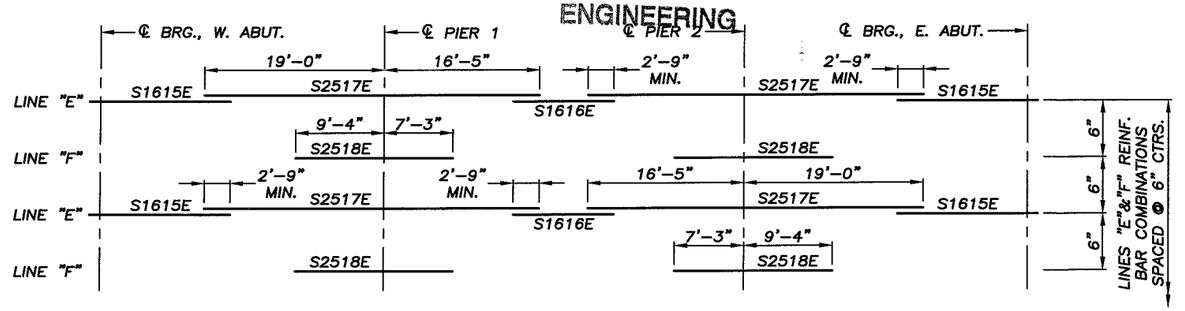
ENGINEERING

TRANSV. SECTION THRU DECK

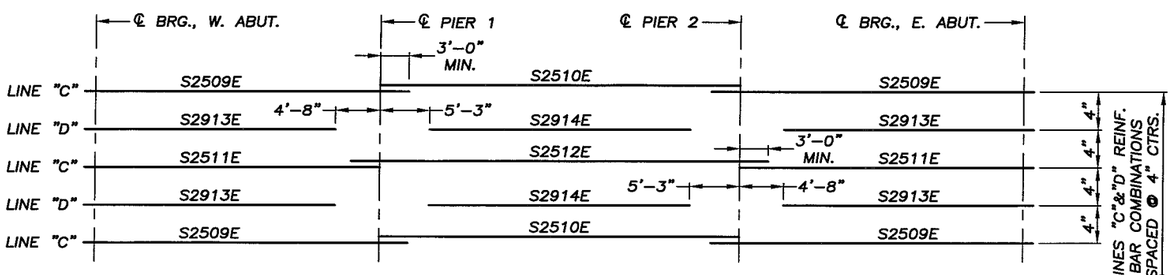
SCALE: 0' 2' 4'



BOTTOM LONGIT. REINF. AT INTERIOR PORTION

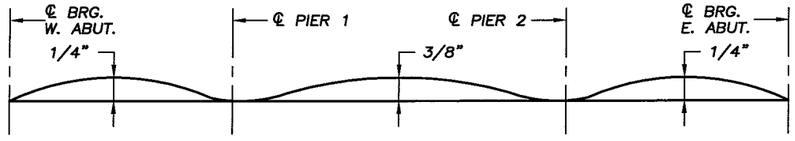


PLACEMENT DIAGRAM FOR TOP LONGITUDINAL REINFORCEMENT



BOTTOM LONGIT. REINF. AT EDGE BEAM

PLACEMENT DIAGRAM FOR BOTTOM LONGITUDINAL REINFORCEMENT



NOTE: THE ABOVE DIAGRAM SHOWS THE CAMBER REQUIRED FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION AND DOES NOT ACCOUNT FOR SETTLEMENT OF FORMS.

CAMBER DIAGRAM

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PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55578

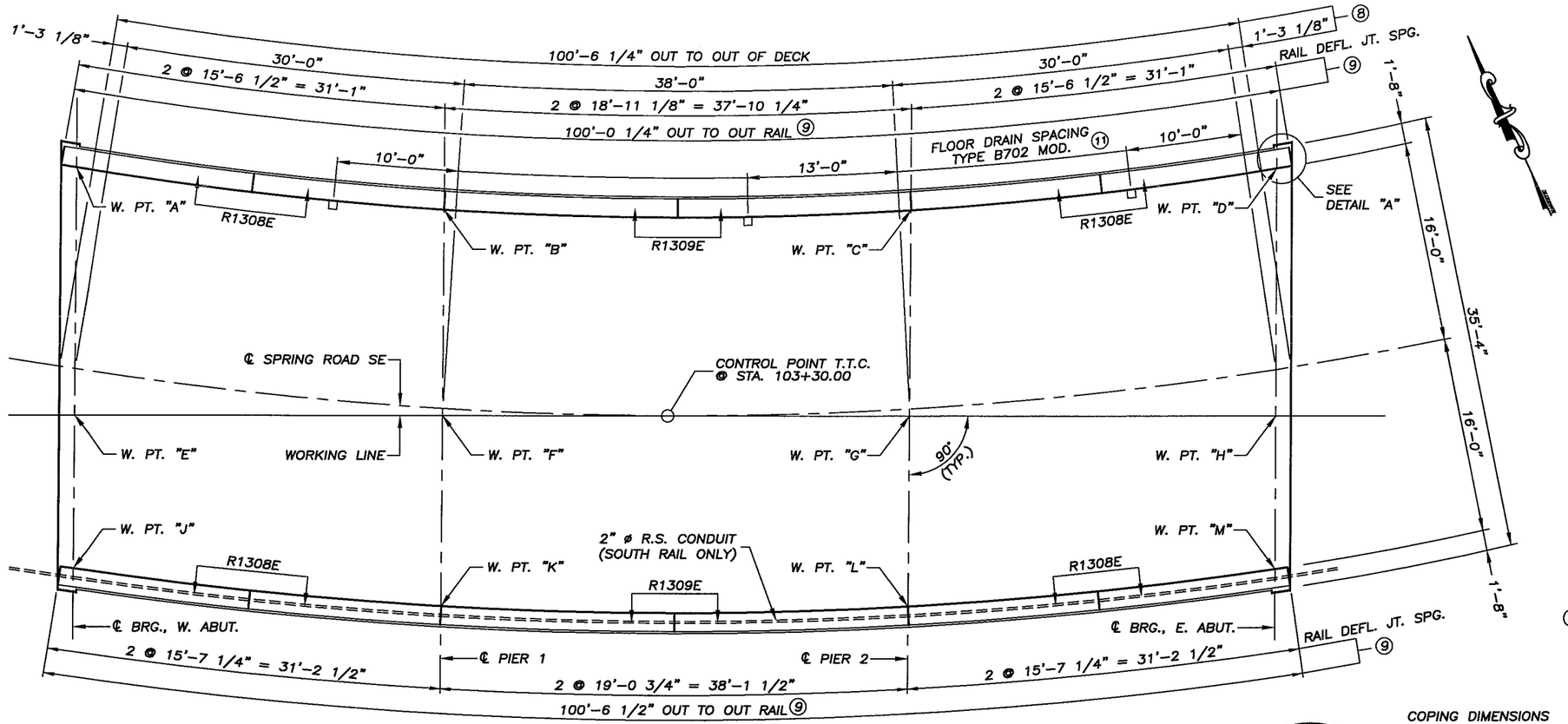
SUPERSTRUCTURE DETAILS

APPROVED:

S.A.P. 55-599-80

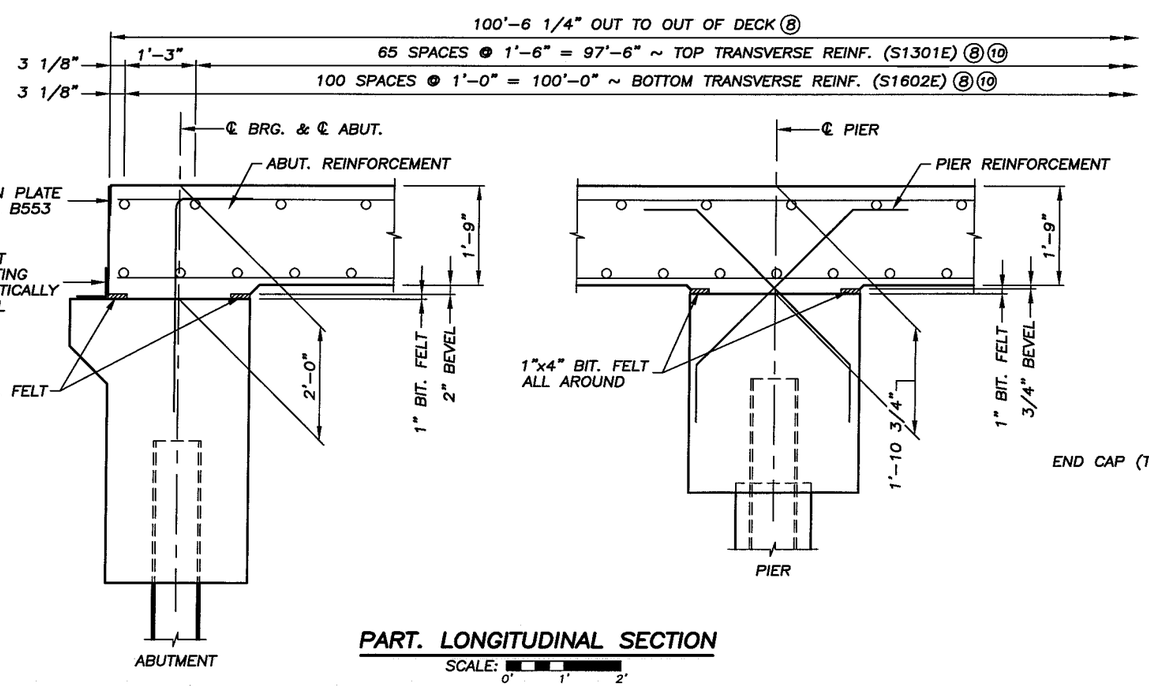
SHEET 7 OF 19 SHEETS

DES.:	JAS	DRN.:	TJR	55578
CHK.:	CSK	CHK.:	JAS	



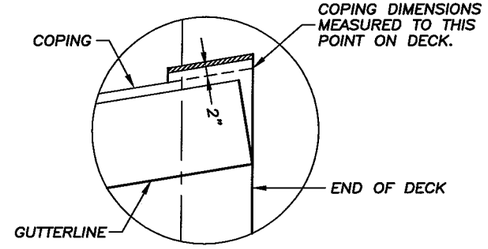
DECK PLAN

SCALE: 0' 4' 8'

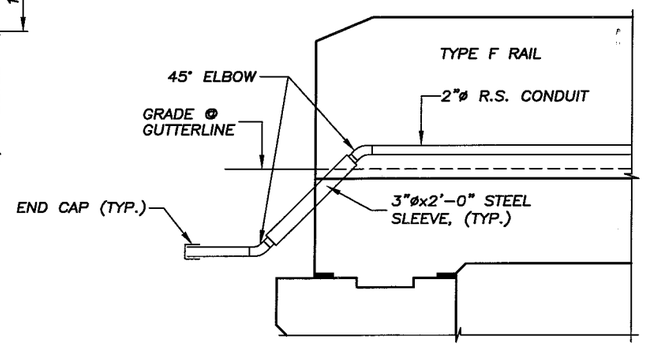


PART. LONGITUDINAL SECTION

SCALE: 0' 1' 2'



DETAIL "A"



RAIL END ELEVATION

(SOUTH RAIL ONLY)

SCALE: 0 1' 2'

BILL OF REINFORCEMENT ~ SUPERSTRUCTURE				
BAR	NO.	LENGTH	SHAPE	LOCATION
S1301E	68	34'-11"	STRT.	SLAB ~ TRANSVERSE, TOP
S1602E	101	33'-9"	STRT.	SLAB ~ TRANSVERSE, BOTTOM
S2203E	30	34'-2"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2204E	15	38'-0"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2205E	30	31'-2"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2206E	15	44'-0"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2507E	58	26'-6"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2508E	29	27'-6"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2509E	6	34'-2"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2510E	3	38'-0"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2511E	6	31'-2"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2512E	3	44'-0"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2913E	12	26'-6"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2914E	6	27'-6"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S1615E	70	14'-11"	STRT.	SLAB ~ LONGITUDINAL, TOP
S1616E	35	10'-8"	STRT.	SLAB ~ LONGITUDINAL, TOP
S2517E	70	35'-5"	STRT.	SLAB ~ LONGITUDINAL, TOP
S2518E	70	16'-7"	STRT.	SLAB ~ LONGITUDINAL, TOP

LIST OF PREFORMED JOINT FILLERS			
TYPE	LIN. FT.	SIZE	LOCATION
CORK	19	1"x13"	RAIL DEFLECTION JOINT
CORK	9	1"x19"	ABUTMENT RECESS
BIT. FELT	143	1"x4"	PIER
BIT. FELT	145	1"x4"	ABUTMENT

	SUMMARY OF QUANTITIES ~ SUPERSTRUCTURE		
(1)			
(2)	BRIDGE SLAB CONCRETE (3Y33A)	3,552	SQ. FT.
(3)	TYPE F RAILING CONCRETE (3Y46A)	201	LIN. FT.
	REINFORCEMENT BARS (EPOXY COATED)	37,150	POUND
	STRUCTURAL STEEL (3306)	550	POUND
(4)	PROTECTION PLATE (SEE DETAIL B553)		
(5)	BRIDGE NAMEPLATE (DETAIL B101)	1	EACH
(5)	3-PLY JOINT WATERPROOFING	81	LIN. FT.
(5)(6)	PREFORMED JOINT FILLER (SEE LIST)		
	FLOOR DRAIN, TYPE B702 (MODIFIED)	3	EACH
(7)	CONDUIT SYSTEM (TELEPHONE)	1	LUMP SUM

(1) INCLUDES RAIL QUANTITIES.

(2) APPROXIMATE VOLUME = 230 CU. YD.

(3) APPROXIMATE VOLUME = 22 CU. YD.

(4) INCLUDED IN STRUCTURAL STEEL (3306).

(5) INCLUDED IN PRICE BID FOR OTHER ITEMS.

(6) SEE SPECIAL PROVISIONS.

(7) CONDUIT SYSTEM INCLUDES 105' OF 2" DIA. RIGID STEEL CONDUIT (LAST 3" OF CONDUIT SHALL BE THREADED). 4-45° ELBOWS, 2 END CAPS & 2-3" DIA. x 2' LONG STEEL SLEEVES. SLEEVES SHALL CONFORM TO SPEC. 3306 AND BE GALVANIZED ACCORDING TO SPEC. 3394. ALL MATERIALS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

(8) MEASURED ALONG ℄ ROADWAY.

(9) MEASURED ALONG COPING. (SEE DETAIL "A")

(10) TRANSVERSE BARS TO BE PLACED PARALLEL TO ℄ BEARINGS.

(11) MEASURED ALONG GUTTERLINE.

AS-BUILT

MAR 07 2006

ENGINEERING

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 1/19/2005

MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55578

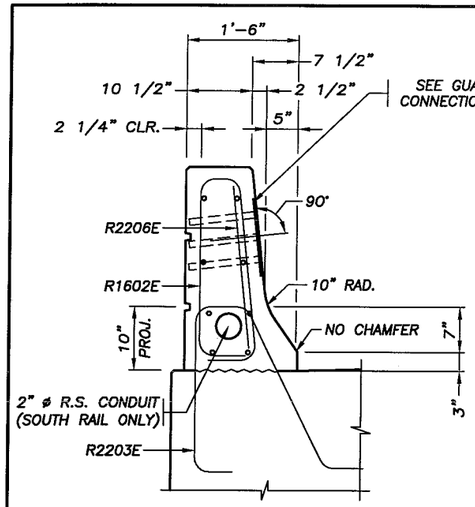
SUPERSTRUCTURE DETAILS

APPROVED:

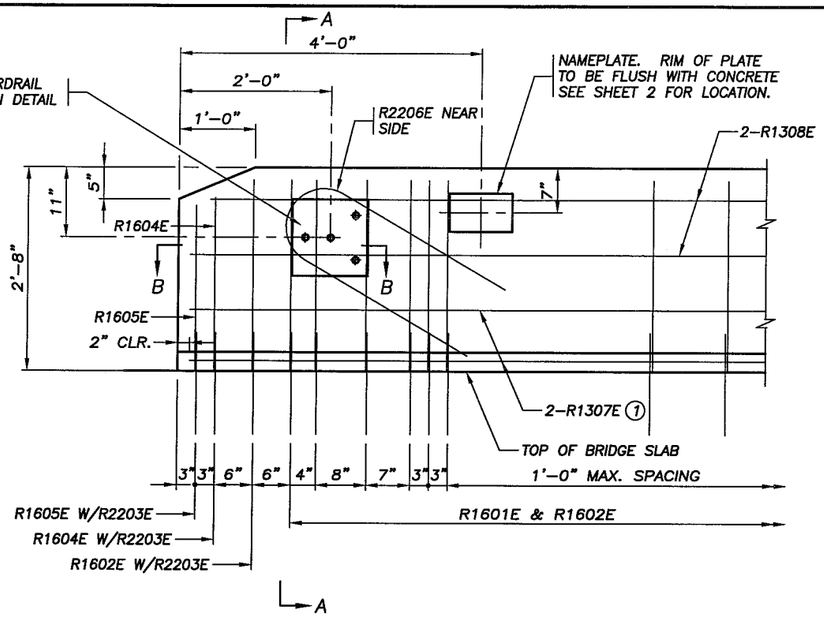
S.A.P. 55-599-80

SHEET 8 OF 19 SHEETS

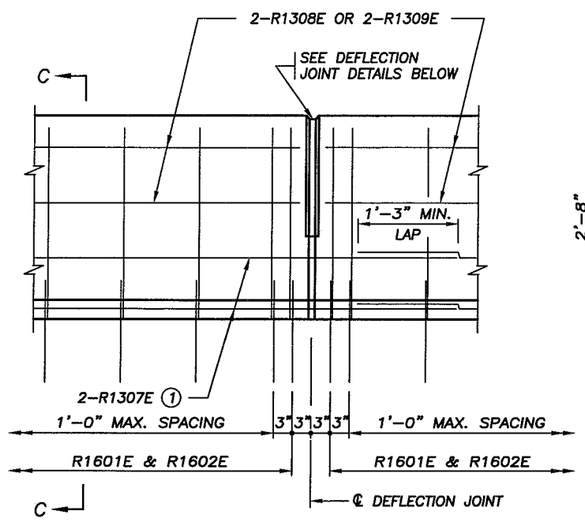
DES.:	JAS	DRN.:	TJR	55578
CHK.:	CSK	CHK.:	JAS	



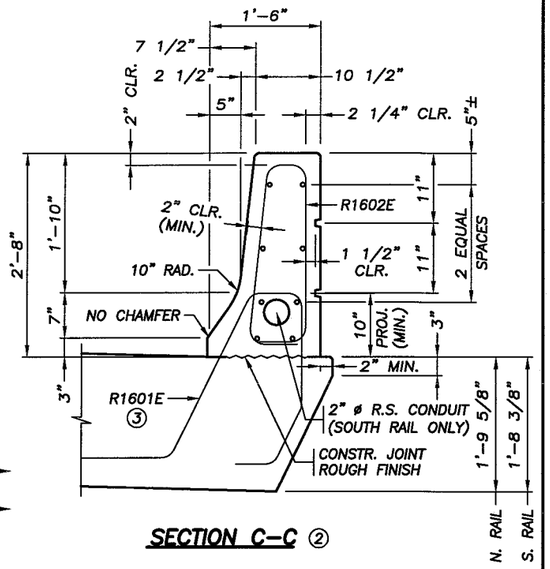
SECTION A–A ②



INSIDE ELEVATION OF RAILING ②



DEFLECTION JOINT



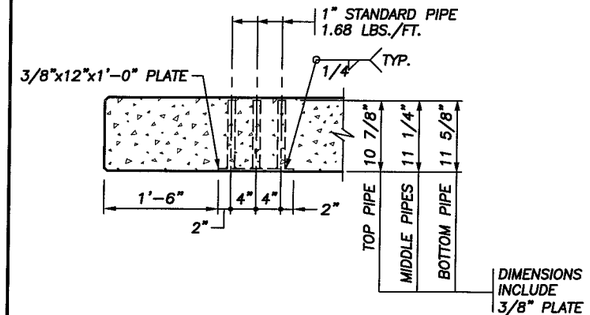
SECTION C–C ②

RAIL MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350.

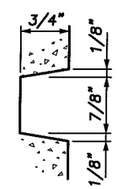
AS-BUILT
MAR 07 2006
ENGINEERING

BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	234	7'-5"		RAIL DOWEL
R1602E	238	6'-3"		RAIL VERTICAL
R2203E	12	7'-4"		RAIL DOWEL
R1604E	4	5'-9"		RAIL VERTICAL
R1605E	4	5'-7"		RAIL VERTICAL
R2206E	4	6'-6"		RAIL VERTICAL
① R1307E	24	34'-4"		RAIL LONGITUDINAL
R1308E	32	15'-1"		RAIL LONGITUDINAL
R1309E	16	18'-6"		RAIL LONGITUDINAL

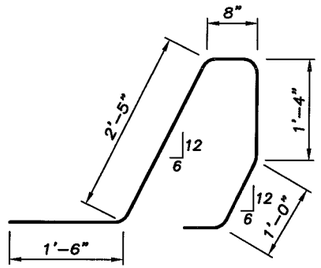
① 3 BARS PER LINE WITH 1'-3" MIN. LAP
② DETAIL MODIFIED
③ PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.



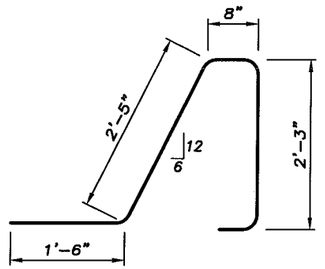
SECTION B–B
(REINFORCEMENT NOT SHOWN)



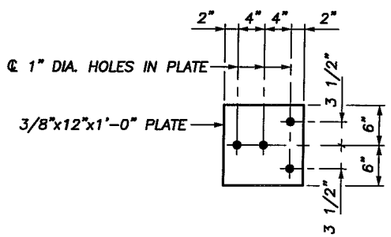
RAIL RUSTICATION



R1601E ②

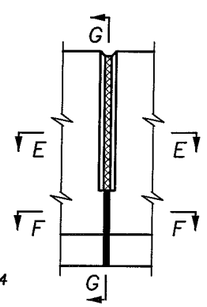


R2203E ②

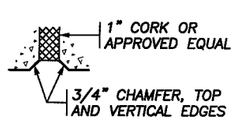


GUARDRAIL CONNECTION DETAIL

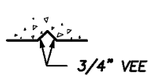
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS



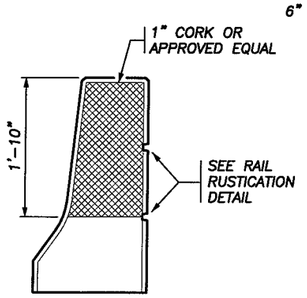
ELEVATION



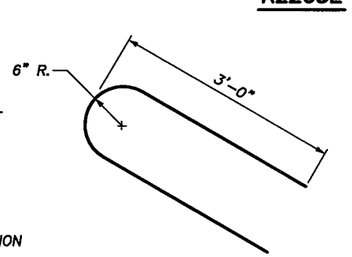
SECTION E–F



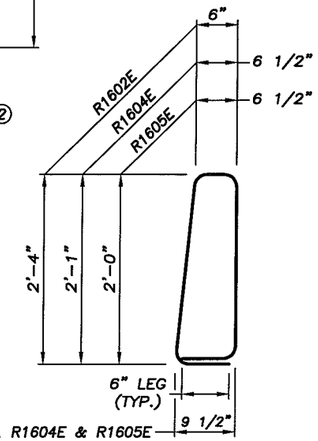
SECTION F–F



SECTION G–G



R2206E



R1602E, R1604E & R1605E ②

GENERAL NOTES

LENGTH OF "TYPE F RAILING CONCRETE 3Y46A" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.

CONCRETE RAILING = 439 LBS./FT. (0.108 CU. YDS./FT.)

FINISH ALL EDGES OF RAIL WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.

MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.

SEE SUPERSTRUCTURE SHEET 8 FOR JOINT SPACING.

GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.

GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

DEFLECTION JOINT DETAILS

REVISED:

APPROVED: DECEMBER 18, 2003
Daniel L Morgan
STATE BRIDGE ENGINEER

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

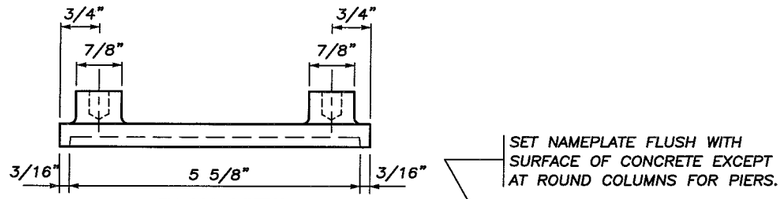
TITLE: **CONCRETE RAILING (TYPE F)**
WITH INTEGRAL END POST
(WITHOUT WEARING COURSE)

FIG. 5–397.115 MODIFIED

DES.: JAS	DRN.: TJR	APPROVED: MODIFIED
CHK.: CSK	CHK.: JAS	

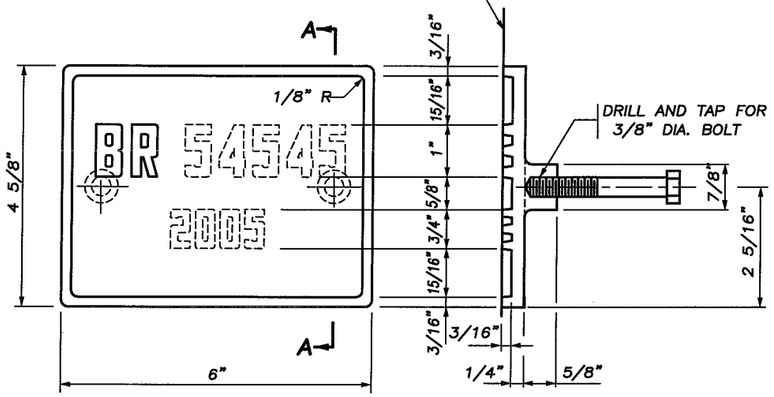
S.A.P. 55–599–80
SHEET NO. 9 OF 19 SHEETS

BRIDGE NO. 55578



PLAN VIEW

SET NAMEPLATE FLUSH WITH SURFACE OF CONCRETE EXCEPT AT ROUND COLUMNS FOR PIERS.



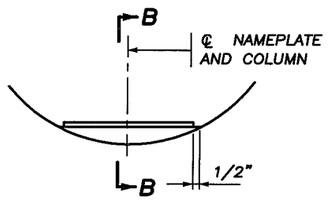
ELEVATION

SECTION A–A

THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION.
DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

BRIDGE 55578

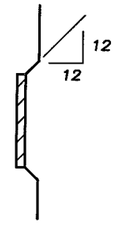
YEAR 2005



NAMEPLATE PLACEMENT

(ROUND CONCRETE PIER COLUMNS)

NUMBERS FOR NAMEPLATE



SECTION B–B

NOTES:

NO SHOP DRAWING REQUIRED.

MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3327.

LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.

DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12".

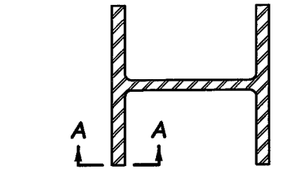
HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.

TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.

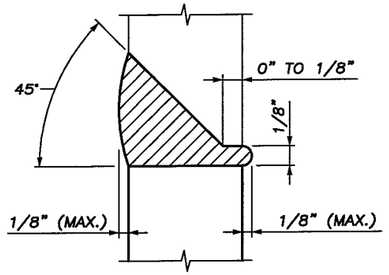
FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.

ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE NAMEPLATE** (FOR NEW BRIDGES)	REVISION	DETAIL NO. B101
Daniel J. Hagen STATE BRIDGE ENGINEER			



SECTION AT JOINT



SECTION A–A

100% BUTT WELDED PILE SPLICE

AS-BUILT

MAR 0 7 2006

ENGINEERING

NOTES:

CELLULOSIC TYPE ELECTRODES E–6010 OR E–6011 SHALL BE USED FOR 100% BUTT WELDED SPLICES.

ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.

WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0° F. OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32° F., THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70° F. AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.

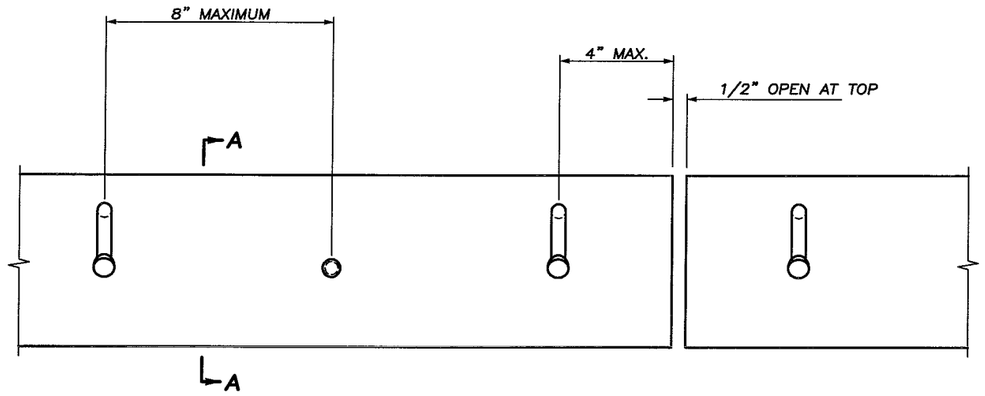
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **PILE SPLICE** (STEEL H BEARING PILES 10" TO 14")	REVISION	DETAIL NO. B202
Daniel J. Hagen STATE BRIDGE ENGINEER			

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

MISC. BRIDGE DETAILS

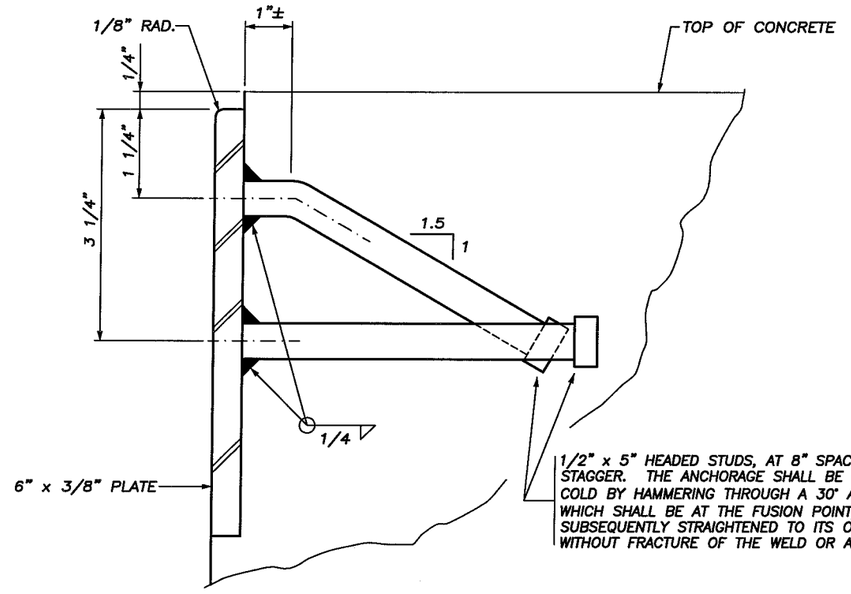
DES.: JAS	DRN.: TJR	APPROVED:
CHK.: CSK	CHK.: JAS	
S.A.P. 55–599–80		
SHEET 10 OF 19 SHEETS		

BRIDGE NO. 55578



ELEVATION

CONCRETE NOT SHOWN



SECTION A–A

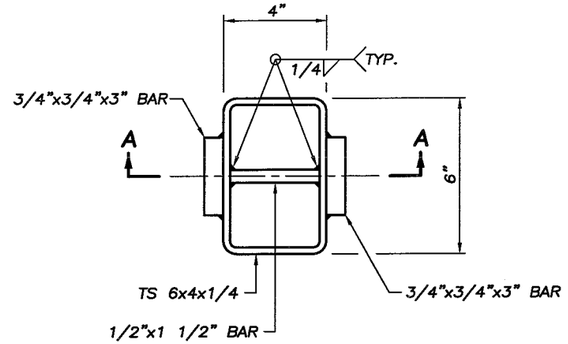
NOTES:

PLATES SHALL EXTEND FULL WIDTH OF ROADWAY BETWEEN GUTTER LINES WITH A 1/2" OPEN JOINT AT EACH BREAK IN CROWN PROFILE. MAX. LENGTH 22 FT.

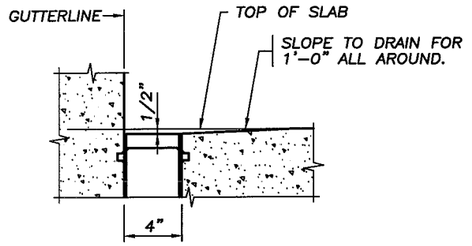
MATERIALS: STRUCTURAL STEEL PER Mn/DOT SPEC. 3306. GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394

SET PLATE TO PROPER GRADE AND CROWN.

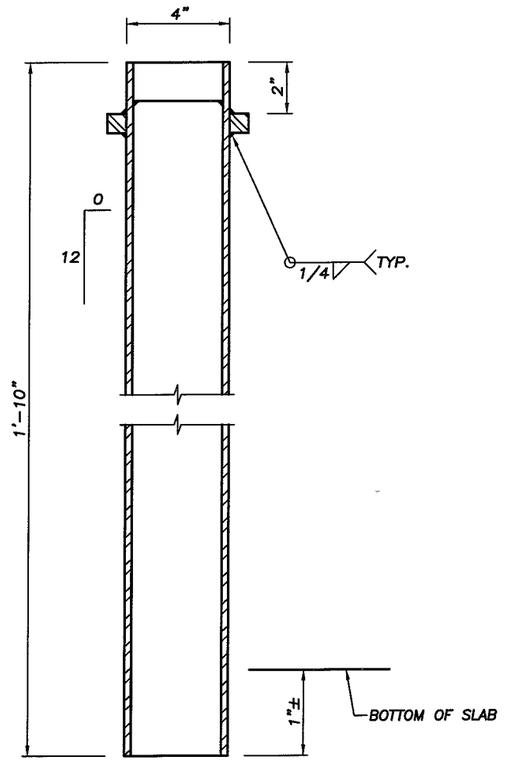
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **PROTECTION PLATE** (FOR END OF SLAB)	REVISION	DETAIL NO. B553
Daniel J. Hagyan STATE BRIDGE ENGINEER			



PLAN VIEW ①



PLACEMENT DIAGRAM ①



SECTION A–A ①

AS-BUILT

MAR 07 2006

ENGINEERING

NOTES:

MATERIAL TO BE STRUCTURAL STEEL PER Mn/DOT SPEC. 3306.

GALVANIZE MATERIALS PER Mn/DOT SPEC. 3394 AFTER FABRICATION.

PAYMENT FOR FLOOR DRAIN TYPE B702 MOD. SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

① DETAIL MODIFIED

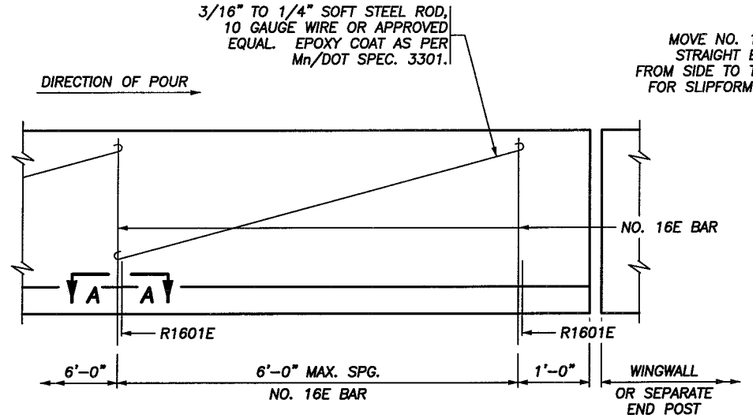
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE FLOOR DRAIN** (STRUCTURAL TUBE)	REVISION	DETAIL NO. B702 MODIFIED
Daniel J. Hagyan STATE BRIDGE ENGINEER			

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

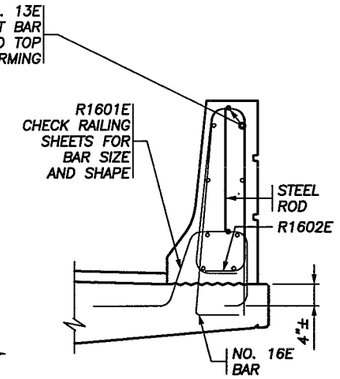
MISC. BRIDGE DETAILS

DES.: JAS	DRN.: TJR	APPROVED:
CHK.: CSK	CHK.: JAS	
S.A.P. 55–599–80		
SHEET 11 OF 19 SHEETS		

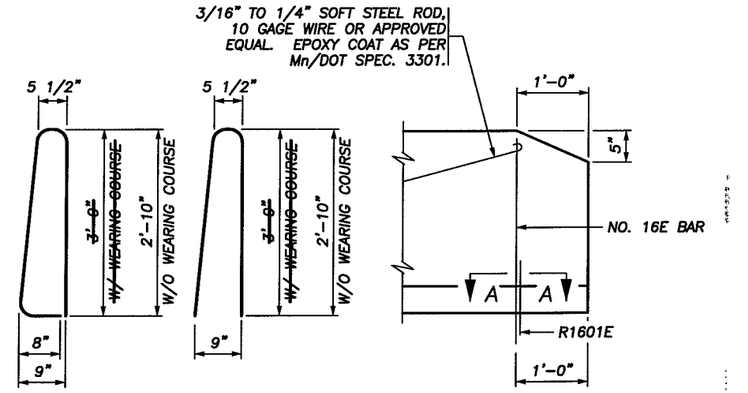
BRIDGE NO. 55578



INSIDE ELEVATION OF RAILING

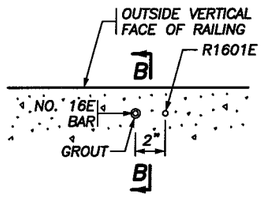


RAILING SECTION

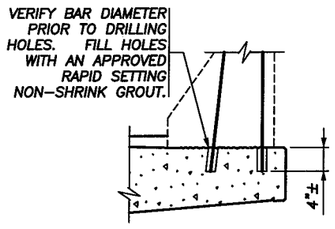


NO. 16E BAR DRILLED IN ALTERNATE **NO. 16E BAR**

INSIDE ELEVATION OF RAILING AT END OF WINGWALL



SECTION A–A



SECTION B–B

INSTALLATION DETAILS FOR NO. 16E (DRILLED IN ALTERNATE)

NOTES:

CONTRACTOR WILL TOOL V–GROOVE AT DEFLECTION JOINTS AT TIME RAIL IS CAST AND SHALL EXTEND V–GROOVE AROUND ENTIRE PERIMETER OF RAIL.

FOR ADDITIONAL DIMENSIONS, DETAILS, REINFORCEMENT AND NOTES SEE RAILING SHEET.

FORM RAIL FOR A MINIMUM OF 2' ON EACH SIDE OF EXPANSION DEVICES, LIGHT STANDARDS AND DECK DRAIN BOX OUTS.

PAY QUANTITIES WILL NOT BE ADJUSTED AS A RESULT OF SELECTING THIS ALTERNATE.

USE A SIMILAR METHOD FOR TALLER RAILINGS OR MODIFIED VERSIONS OF THIS RAILING.

AS-BUILT
MAR 0 7 2006
ENGINEERING

APPROVED: NOVEMBER 22, 2002
Daniel S. Morgan
STATE BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
CONCRETE RAILING (TYPE F)
(SLIPFORM ALTERNATIVE)

REVISION

DETAIL NO. B830

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

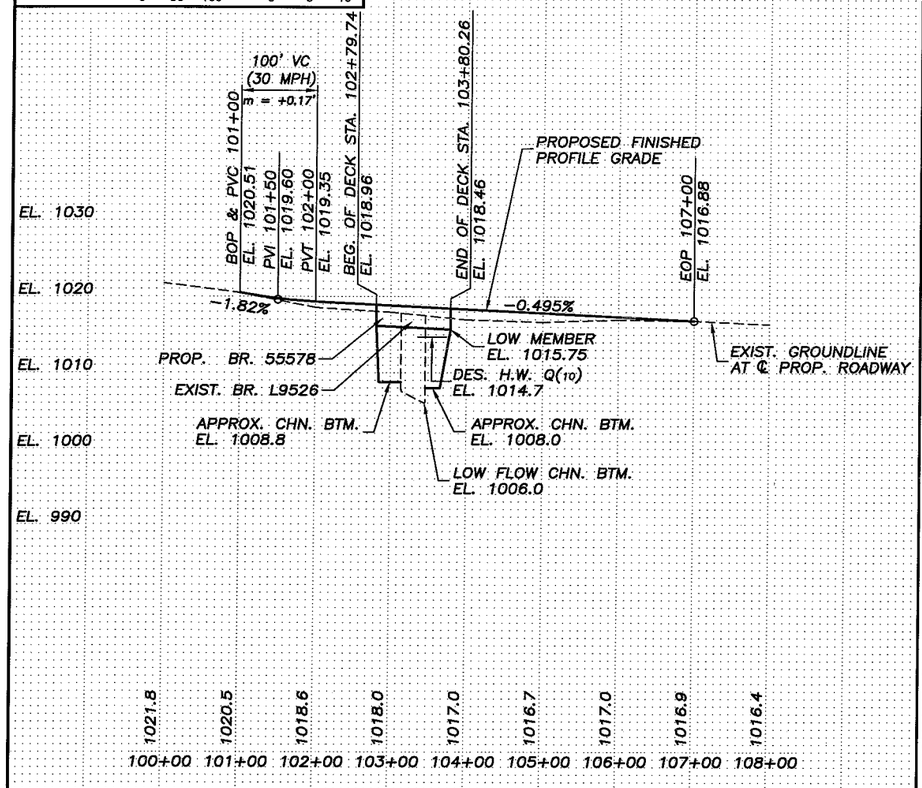
MISC. BRIDGE DETAILS

DES.: JAS	DRN.: TJR	APPROVED:
CHK.: CSK	CHK.: JAS	
S.A.P. 55–599–80		
SHEET 12 OF 19 SHEETS		

BRIDGE NO. 55578

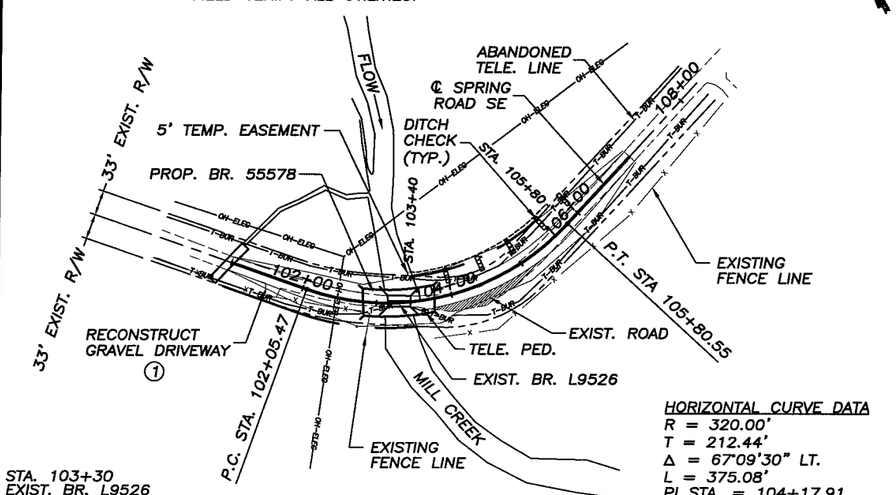
CONTRACTED PROFILE

SCALE: HOR. 0' 50' 100' VER. 0' 5' 10'



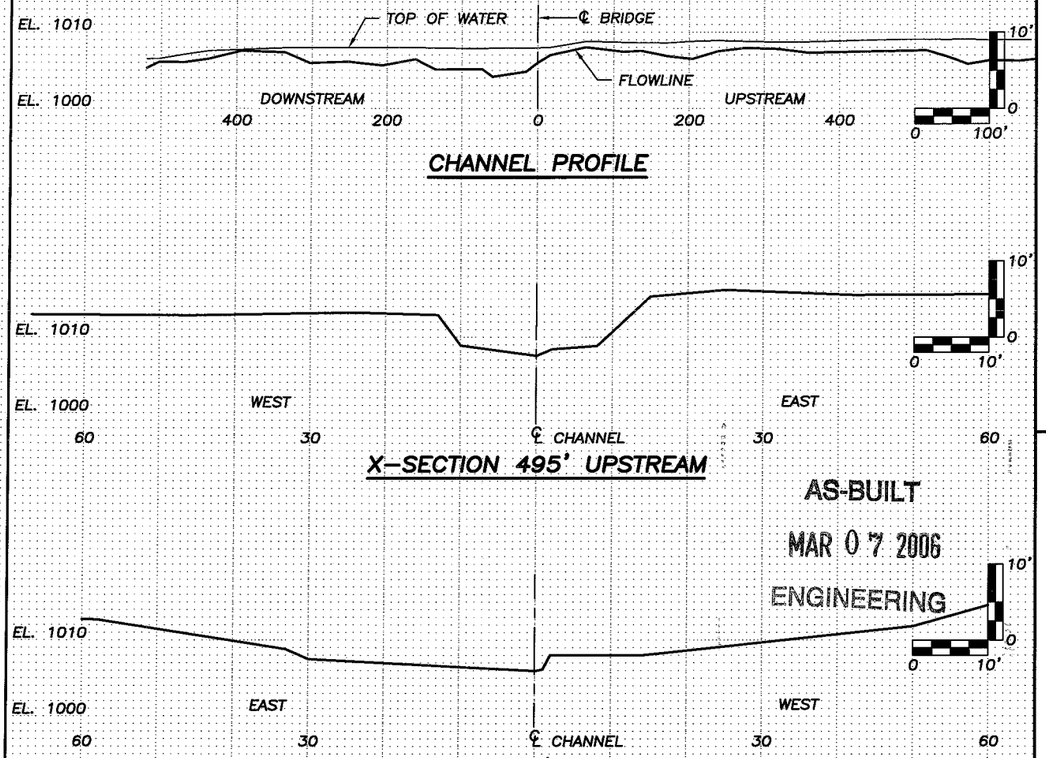
PLAT

SCALE: 0' 50' 100'



TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN



CHANNEL PROFILE

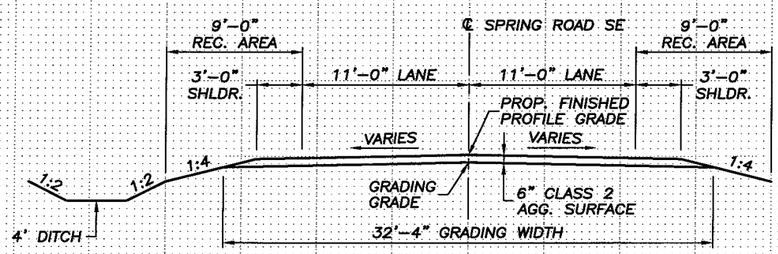
X-SECTION 495' UPSTREAM

AS-BUILT

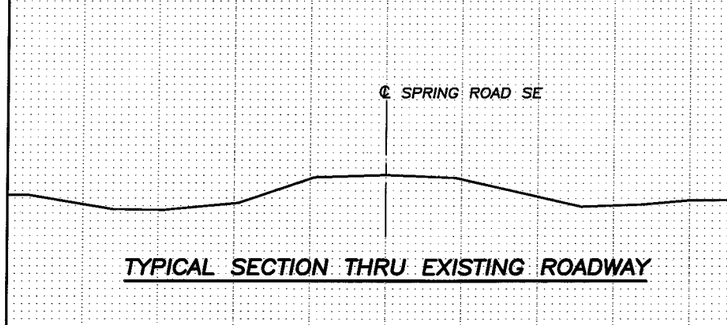
MAR 0 7 2006

ENGINEERING

X-SECTION 331' DOWNSTREAM

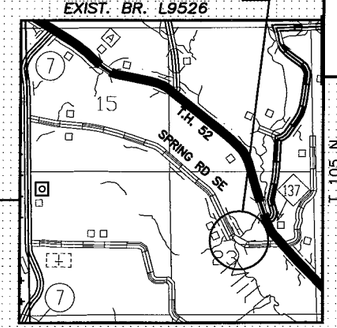


TYPICAL SECTION THRU PROPOSED ROADWAY



TYPICAL SECTION THRU EXISTING ROADWAY

PROP. BRIDGE 55578
EXIST. BR. L9526



T 105 N

R 12 W

INDEX MAP

Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATION AT BRIDGE SITE

DATE

1. Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, rec. boats.

2. Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway) :Given location, type, length, height above high water, cross-sectional area, etc.

3. Apparent highwater elevation Obtained from

4. Other data: Approx. velocity of water at time of survey

HYDRAULIC ENGINEER'S RECOMMENDATION

DATE 5-13-2003

Stream or ditch designation MILL CREEK
Drainage area 22.6 SQ. MI.
Max. flood on record UNKN. Design flood (10 yr. freq.) 4000 C.F.S.
Max. observed highwater elev. UNKN. Design highwater elev. 1014.7
Design mean velocity through structure 8.0 F.P.S.
Low superstructure at or above elevation 1015.7
Flowline elevation 1006.0 Skew angle 0°
Waterway area req'd. below elev. 1014.7 = 499 Sq. Ft. @ Rt. angles to channel
In the interest of flood plain zoning the regional flood (100 yr. freq.) is 8000 C.F.S. at stage 1015.8 and mean velocity of 7.9 F.P.S. with 2.0 Ft. swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

EST. PIER SCOUR EL. 993.5 SCOUR CODE: L

ENGINEER'S RECOMMENDATION

DATE 5-13-2003

30-38-30 FT. CONTINUOUS CONCRETE SLAB SPANS
0° SKEW, 32 FT. ROADWAY WIDTH

Bridge survey sheets made from: SURVEY NOTES FROM OLMSTED COUNTY

Benchmark elevation 1017.20 (M.S.L. 1929 Adj.)
Location: TOP NUT SE WINGWALL EXIST. BRIDGE NO. L9526.

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ON SPRING RD SE
PROPOSED BRIDGE LOCATED 0.4 MILES WEST OF JCT. T.H. 52 OVER MILL CREEK

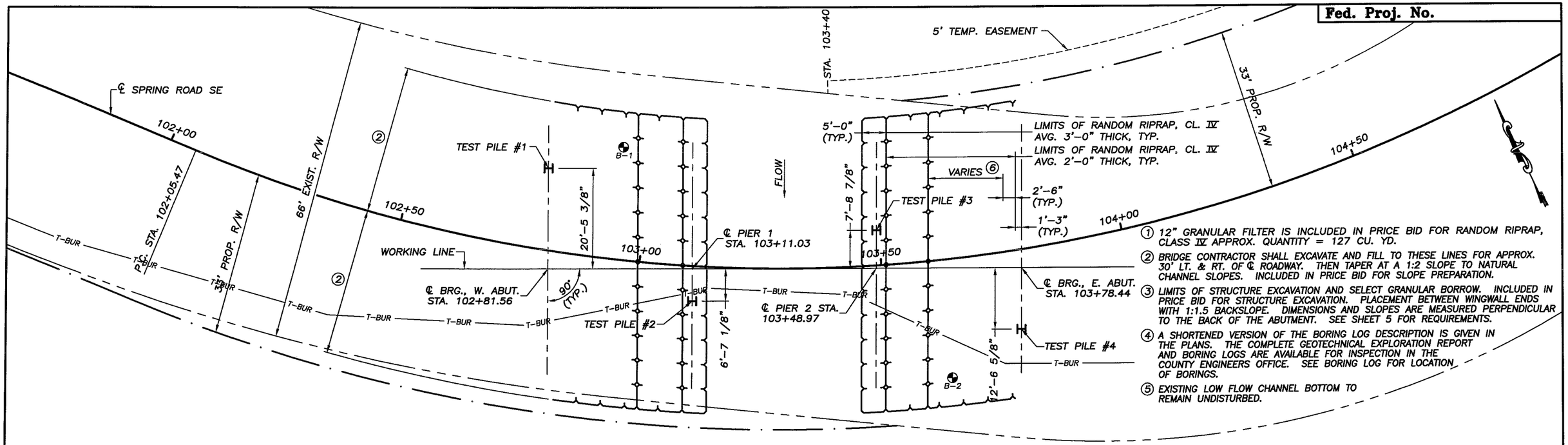
SEC. 23 TWP. 105 N R. 12 W
TOWNSHIP ORION COUNTY OLMSTED
EXIST. BRIDGE NO. L9526
PROP. BRIDGE NO. 55578

CERTIFIED BY Ronald Emerson LIC. NO. 22737 1/19/2005

State Aid Proj. No. 55-599-80

Sheet No. 13 of 19 Sheets

Fed. Proj. No.



① 12" GRANULAR FILTER IS INCLUDED IN PRICE BID FOR RANDOM RIPRAP, CLASS IV APPROX. QUANTITY = 127 CU. YD.

② BRIDGE CONTRACTOR SHALL EXCAVATE AND FILL TO THESE LINES FOR APPROX. 30' LT. & RT. OF ℄ ROADWAY. THEN TAPER AT A 1:2 SLOPE TO NATURAL CHANNEL SLOPES. INCLUDED IN PRICE BID FOR SLOPE PREPARATION.

③ LIMITS OF STRUCTURE EXCAVATION AND SELECT GRANULAR BORROW. INCLUDED IN PRICE BID FOR STRUCTURE EXCAVATION. PLACEMENT BETWEEN WINGWALL ENDS WITH 1:1.5 BACKSLOPE. DIMENSIONS AND SLOPES ARE MEASURED PERPENDICULAR TO THE BACK OF THE ABUTMENT. SEE SHEET 5 FOR REQUIREMENTS.

④ A SHORTENED VERSION OF THE BORING LOG DESCRIPTION IS GIVEN IN THE PLANS. THE COMPLETE GEOTECHNICAL EXPLORATION REPORT AND BORING LOGS ARE AVAILABLE FOR INSPECTION IN THE COUNTY ENGINEERS OFFICE. SEE BORING LOG FOR LOCATION OF BORINGS.

⑤ EXISTING LOW FLOW CHANNEL BOTTOM TO REMAIN UNDISTURBED.

⑥ 1:2.0 ~ DOWNSTREAM (SOUTH)
1:2.7 ~ UPSTREAM (NORTH)

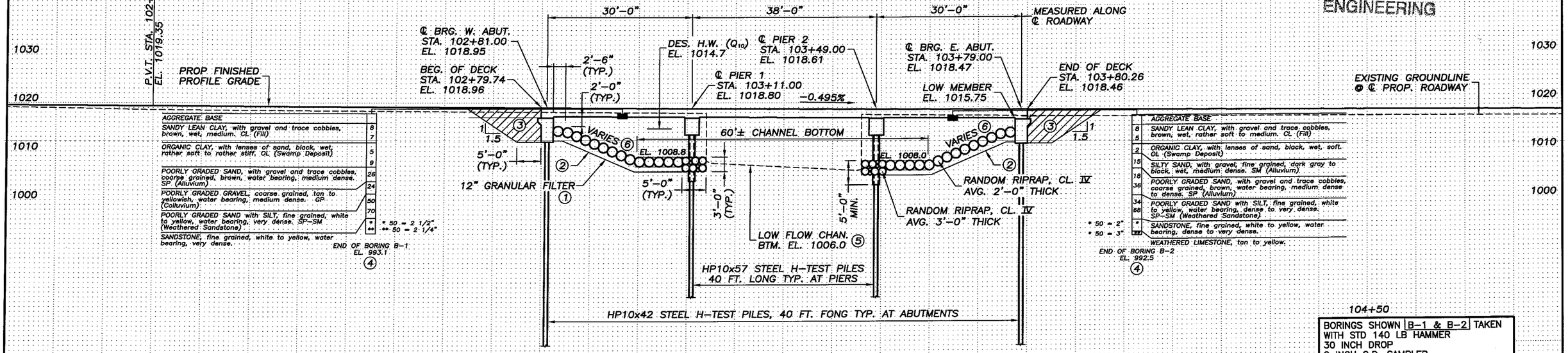
HORIZONTAL CURVE DATA
R = 320.00'
T = 212.44'
Δ = 67°09'30" LT.
L = 375.08'
PI STA. = 104+17.91

LIMITS OF RANDOM RIPRAP AS SHOWN ARE APPROXIMATE ONLY. EXACT LIMITS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

APPROACH GRADING UNDER SAME CONTRACT.

100' V.C. DATA
P.V.I. STA. 101+50
P.V.I. EL. 1019.60
G_1 = −1.82%
G_2 = −0.495%
m = +0.17'

P.V.T. STA. 102+00.00
EL. 1019.35



AGGREGATE BASE	8	
SANDY LEAN CLAY, with gravel and trace cobbles, brown, wet, medium. CL (Fill)	7	
ORGANIC CLAY, with lenses of sand, black, wet, rather soft to rather stiff. OL (Swamp Deposit)	5	
	9	
POORLY GRADED SAND, with gravel and trace cobbles, coarse grained, brown, water bearing, medium dense. SP (Alluvium)	26	
POORLY GRADED GRAVEL, coarse grained, tan to yellowish, water bearing, medium dense. GP (Colluvium)	24	
	50	
POORLY GRADED SAND with SILT, fine grained, white to yellow, water bearing, very dense. SP-SM (Weathered Sandstone)	70	
	*	* 50 = 2 1/2"
SANDSTONE, fine grained, white to yellow, water bearing, very dense.	**	** 50 = 2 1/4"

END OF BORING B-1
EL. 993.1 ④

AGGREGATE BASE	6	
SANDY LEAN CLAY, with gravel and trace cobbles, brown, wet, rather soft to medium. CL (Fill)	5	
ORGANIC CLAY, with lenses of sand, black, wet, soft. OL (Swamp Deposit)	2	
SILTY SAND, with gravel, fine grained, dark gray to black, wet, medium dense. SM (Alluvium)	15	
POORLY GRADED SAND, with gravel and trace cobbles, coarse grained, brown, water bearing, medium dense to dense. SP (Alluvium)	18	
	36	
POORLY GRADED SAND with SILT, fine grained, white to yellow, water bearing, dense to very dense. SP-SM (Weathered Sandstone)	34	
	68	
SANDSTONE, fine grained, white to yellow, water bearing, dense to very dense.	*	* 50 = 2"
	**	** 50 = 3"
WEATHERED LIMESTONE, tan to yellow.		

END OF BORING B-2
EL. 992.5 ④

AS-BUILT
MAR 07 2006
ENGINEERING

BORINGS SHOWN B-1 & B-2 TAKEN
WITH STD 140 LB HAMMER
30 INCH DROP
2 INCH O.D. SAMPLER

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

BRIDGE SURVEY PLAN & PROFILE

State Aid Proj. No. 55-599-80

DES.: JAS	DRN.: TJR	APPROVED:
CHK.: CSK	CHK.: JAS	

Sheet No. 14 of 19 Sheets

Bridge No. 55578

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

102 + 79.74 — 1020 / 1010

1:2 1:4 −1.09' −6.0% +6.0% +1.09' 1:4 1:2

BEG. OF DECK
STA = 102+79.74
EXISTING EL = 1018.0
GRADING EL = 1018.46

DESIGN EARTHWORK
FILL AREA = 99
CUT AREA = 14
FILL VOL = 219
CUT VOL = 37

33' EXIST. & PROP. R/W ①

33' EXIST. R/W ①

33' PROP. R/W ②

102 + 00 — 1020 / 1010

1:2 1:4 −0.59' −3.7% +3.7% +0.59' 1:4 1:2

STA = 102+00
EXISTING EL = 1018.6
GRADING EL = 1018.85

DESIGN EARTHWORK
FILL AREA = 46
CUT AREA = 11
FILL VOL = 85
CUT VOL = 36

101 + 00 — 1020 / 1010

EXIST. GRADE

GRADING GRADE

BEG. OF PROJECT
S.A.P. 55−599−80
STA = 101+00
EXISTING EL = 1020.5
GRADING EL = 1020.01

DESIGN EARTHWORK
FILL AREA = 0
CUT AREA = 8
FILL VOL = 0
CUT VOL = 0

33' EXIST. & PROP. R/W ①

① MEASURED FROM ℄ OF EXISTING ROADWAY.
② MEASURED FROM ℄ OF PROPOSED ROADWAY.

102 + 79.74 — 1020 / 1010

102 + 00 — 1020 / 1010

101 + 00 — 1020 / 1010

STA. 105+80

4' DITCH
EL. 1012.10

4' DITCH
EL. 1011.6

5' TEMP. EASEMENT

105 + 00 — 1020 / 1010

1:2 1:2 1:4 −0.97' −6.0% +6.0% +0.97' 1:4 1:2

STA = 105+00
EXISTING EL = 1016.7
GRADING EL = 1017.37

DESIGN EARTHWORK
FILL AREA = 96
CUT AREA = 16
FILL VOL = 417
CUT VOL = 59

104 + 00 — 1020 / 1010

1:2 1:4 −0.97' −6.0% +6.0% +0.97' 1:4 1:2

STA = 104+00
EXISTING EL = 1017.0
GRADING EL = 1017.86

DESIGN EARTHWORK
FILL AREA = 134
CUT AREA = 16
FILL VOL = 100
CUT VOL = 12

103 + 80.26 — 1020 / 1010

1:2 1:4 −1.09' −6.0% +6.0% +1.09' 1:4 1:2

END OF DECK
STA = 103+80.26
EXISTING EL = 1017.3
GRADING EL = 1017.96

DESIGN EARTHWORK
FILL AREA = 142
CUT AREA = 17
FILL VOL = 0
CUT VOL = 0

STA. 103+40

33' EXIST. R/W ①

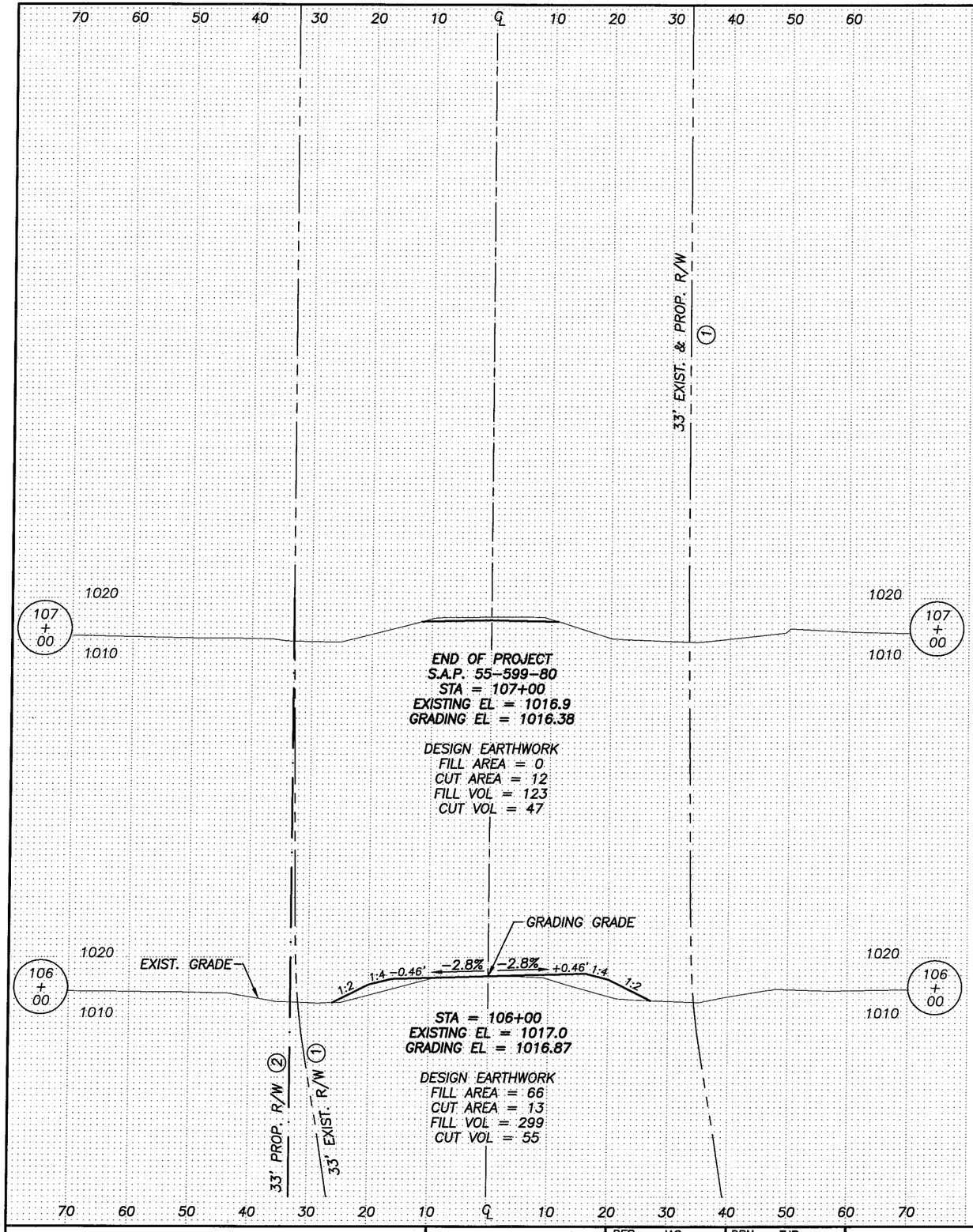
33' PROP. R/W ②

33' EXIST. & PROP. R/W ①

AS-BUILT
MAR 0 7 2006
ENGINEERING

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

APPROVED:	DES.: JAS	DRN.: TJR	ROADWAY CROSS SECTIONS	S.A.P. 55−599−80	SHEET 15 OF 19 SHEETS	55578
	CHK.: CSK	CHK.: JAS				



LIST OF STANDARD PLATES	
PLATE	DESCRIPTION
3040 F	CORRUGATED METAL PIPE CULVERT
3123 J	METAL APRON FOR C.S. PIPE
3124 B	METAL APRON CONNECTION
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
8000 I	STANDARD BARRICADES
9000 D	APPROACHES AND ENTRANCES
9102 D	TURF ESTABLISHMENT AREAS

THE ABOVE STANDARD PLATES, APPROVED BY THE F.H.W.A., SHALL APPLY ON THIS PROJECT.

	SCHEDULE OF APPROXIMATE GRADING QUANTITIES	
(3)	CLEARING & GRUBBING	0.4 ACRE
(3)(4)	SALVAGE FENCE	155 LIN. FT.
(3)(5)	COMMON EXCAVATION	246 CU. YD.
(3)(6)	COMMON BORROW (LV)	1,641 CU. YD.
(3)(7)	AGGREGATE SURFACING (CV) CLASS 2	296 CU. YD.
~~(8)~~	~~15" CS PIPE CULVERT~~	~~30 LIN. FT.~~
(8)	15" GS PIPE APRON	2 EACH
(3)(4)	INSTALL SALVAGED FENCE	155 LIN. FT.
(9)(10)(11)	SILT FENCE, TYPE MACHINE SLICED	1,100 LIN. FT.
(9)(11)(12)	TEMPORARY DITCH CHECK TYPE 1	75 LIN. FT.
(13)	TURF ESTABLISHMENT	1 LUMP SUM

A SHRINKAGE FACTOR OF 140% WAS USED

AS-BUILT

MAR 0 7 2006

ENGINEERING

(1) MEASURED FROM ℄ OF EXISTING ROADWAY.

(2) MEASURED FROM ℄ OF PROPOSED ROADWAY.

(3) INCLUDED IN "APPROACH GRADING", LUMP SUM

(4) EXISTING BARBED WIRE & 3 RAIL WOOD FENCE TO BE SALVAGED AND INSTALLED AS REQUIRED AND APPROVED BY THE ENGINEER IN THE FIELD.

(5) INCLUDES 130 CU. YD. OF SALVAGED TOPSOIL (ASSUMED 3" DEEP).

(6) INCLUDES 17 CU. YD. OF COMMON BORROW FOR RECONSTRUCTION OF DRIVEWAY AT STA. 101+60 RIGHT.

(7) INCLUDES 17 CU. YD. FOR SURFACING OF RECONSTRUCTED DRIVEWAY AT STA. 101+60 RIGHT.

(8) STA. 101+60 RT. RECONSTRUCT DRIVEWAY: 24 FT. WIDE, 25 FT. RADIUS AT CORNERS & 1:4 INSLOPES. ~~INSTALL 15"x30' LONG C.S. PIPE CULVERT 25 FT. RIGHT W/2 G.S. APRONS. INLET EL. 1017.5 (WEST), OUTLET EL. 1017.3 (EAST). ENGINEER IN THE FIELD SHALL APPROVE FINAL PLACEMENT OF THE CULVERTS.~~

(9) MAINTAINED

(10) PLACE SILT FENCE AT TOE OF INSLOPE. SEE SHEET 17 FOR DETAILS.

(11) IF SILT FENCE OR DITCH CHECK IS DAMAGED OR REMOVED BY CONTRACTOR DURING CONSTRUCTION. THE CONTRACTOR SHALL REPLACE WITH NO DIRECT COMPENSATION THEREOF.

(12) SEE SHEET 13 FOR LOCATION & SHEET 18 FOR DETAILS.

(13) TURF ESTABLISHMENT SHALL INCLUDE ALL AREAS DISTURBED BY CONSTRUCTION AND SHALL CONSIST OF SEED MIXTURE NO. 50B, 50 LB./ACRE, COMMERCIAL FERTILIZER 22-5-10 APPLIED AT 300 LB/ACRE, MULCH MATERIAL TYPE 1 APPLIED AT 2 TONS/ACRE, AND DISK ANCHORING FOR APPROX. 0.4 ACRES.

CONSTRUCTION NOTES

NATURAL TOPSOIL SHALL BE SALVAGED FROM ALL AREAS DISTURBED BY CONSTRUCTION AND PLACED ON ALL CONSTRUCTED SLOPES AND DITCH BOTTOMS WITH A DEPTH OF NOT LESS THAN 3". THE CONTRACTOR WILL BE REQUIRED TO TRANSPORT TOPSOIL TO SIDE ROADS AND ENTRANCE AREAS FOR STORAGE DURING GRADING. THE SALVAGING, TRANSPORTING AND PLACING OF TOPSOIL WILL BE INCIDENTAL TO "APPROACH GRADING", LUMP SUM.

SELECTED GRADING MATERIALS SHALL BE USED FOR ALL EMBANKMENT CONSTRUCTION AND SHALL CONSIST OF ALL SOILS ENCOUNTERED EXCEPT TOPSOILS, HIGHLY ORGANIC SOILS, DEBRIS, AND OTHER UNSUITABLE MATERIALS.

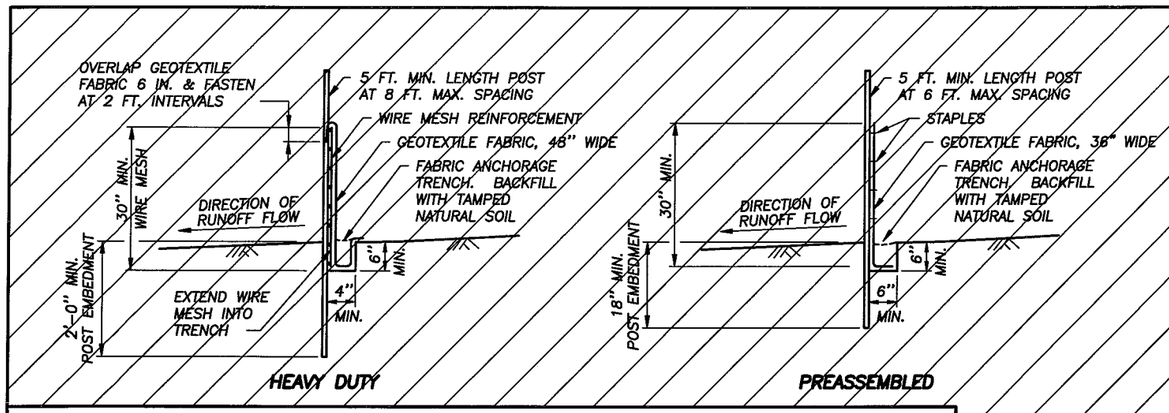
IF SELECTED GRADING MATERIAL IS NOT AVAILABLE OR CANNOT BE OBTAINED FROM THE ONSITE EXCAVATIONS, BORROW MATERIAL SHALL BE FURNISHED FROM SOURCES SELECTED BY THE CONTRACTOR AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO BEING DELIVERED TO THE PROJECT.

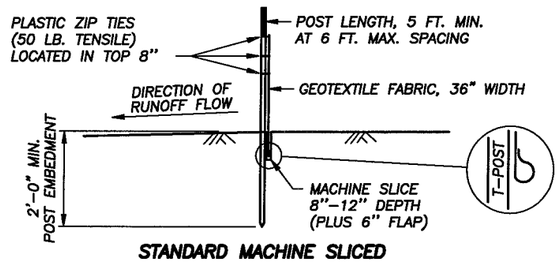
THE DENSITY OF THE SUBGRADE AND THE AGGREGATE SURFACE SHALL BE THAT ATTAINED BY THE METHOD OF QUALITY COMPACTION IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3F2.

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 1/19/2005

APPROVED:	DES.: JAS	DRN.: TJR	ROADWAY CROSS SECTIONS	S.A.P. 55-599-80	SHEET 16 OF 19 SHEETS	55578
	CHK.: CSK	CHK.: JAS				



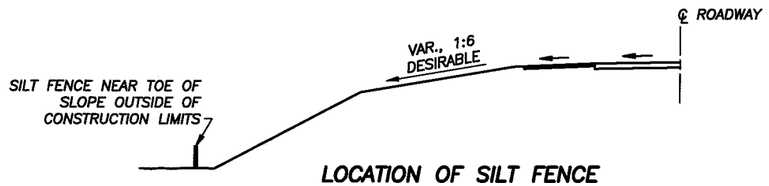


STANDARD MACHINE SLICED

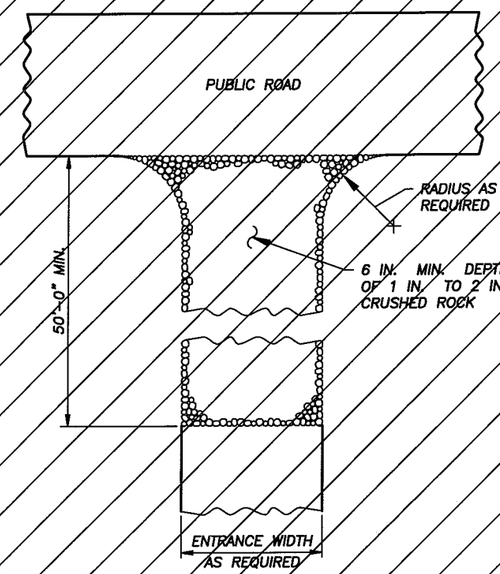
SILT FENCE DETAILS

TO PROTECT AREAS FROM SHEET FLOW
(SEE SPEC. 3886)

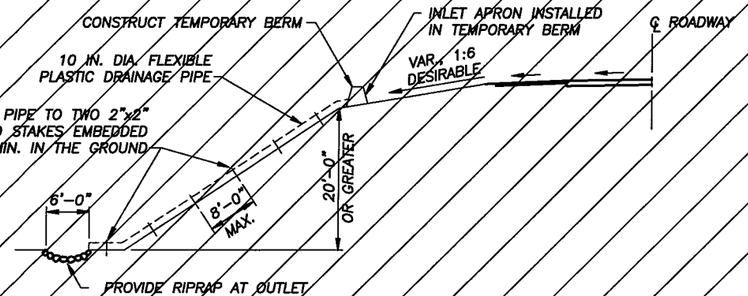
DESIGN GUIDELINES:
MAXIMUM CONTRIBUTING AREA: 3 ACRES



LOCATION OF SILT FENCE
AT TOE OF ROADWAY EMBANKMENT

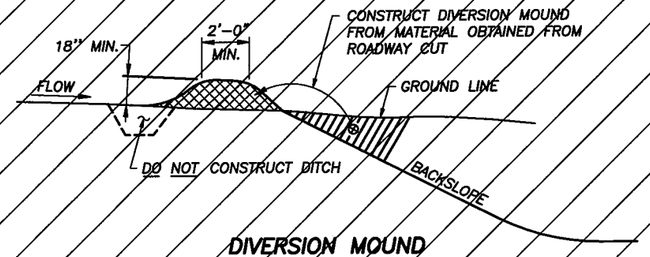


ROCK CONSTRUCTION ENTRANCE ①



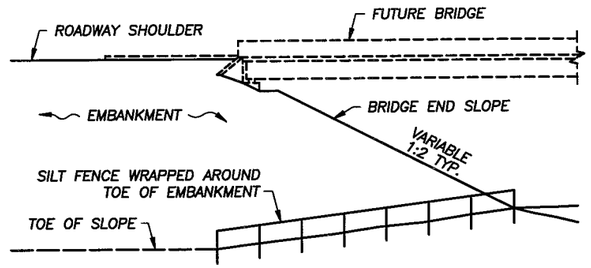
TEMPORARY DRAIN ON FILL SLOPE

DESIGN GUIDELINES:
STORM FREQUENCY: 2 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 3 ACRES



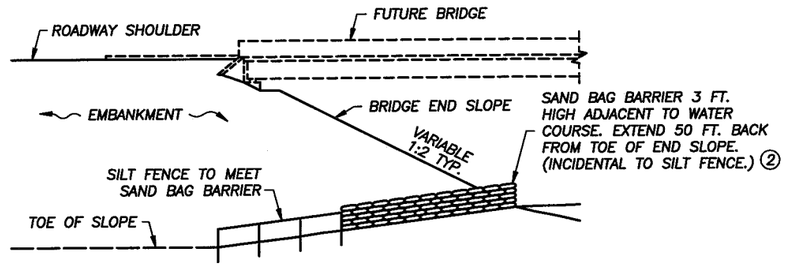
DIVERSION MOUND

DESIGN GUIDELINES:
STORM FREQUENCY: 10 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 5 ACRES
MAXIMUM DIVERSION: GRADE 5%



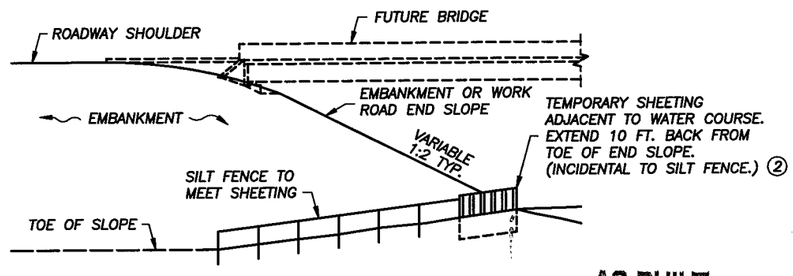
BRIDGE FILL

DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: STAGNANT
CONTRIBUTING SLOPE AREA: 1/2 ACRE



BRIDGE FILL

DESIGN GUIDELINES:
MAX. WATER COURSE FLOW VELOCITY: 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE



EMBANKMENT OR WORK ROAD FILL

DESIGN GUIDELINES:
MAX. WATER COURSE FLOW VELOCITY: 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES

SILT FENCE AT BRIDGE EMBANKMENT

AS-BUILT

MAR 0 7 2006

ENGINEERING

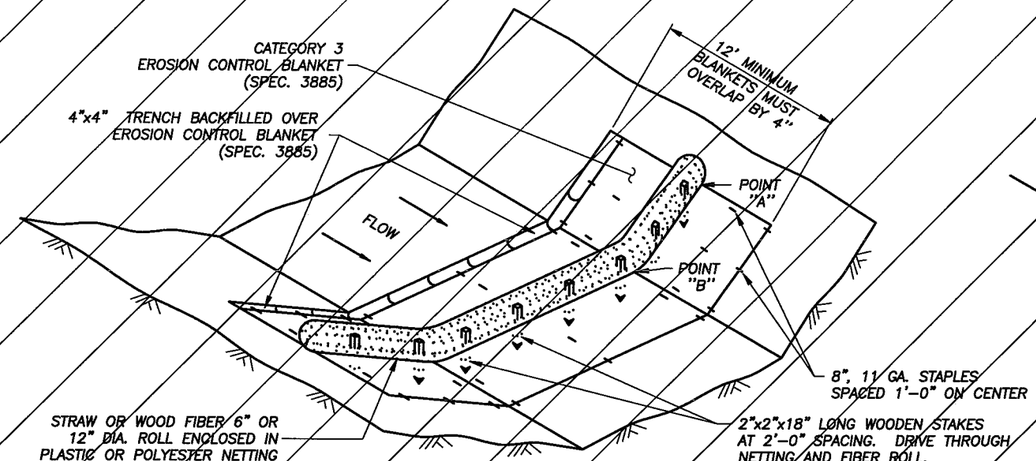
NOTES:
SEE SPECS. 2573 & 3886.

② DETAIL MODIFIED

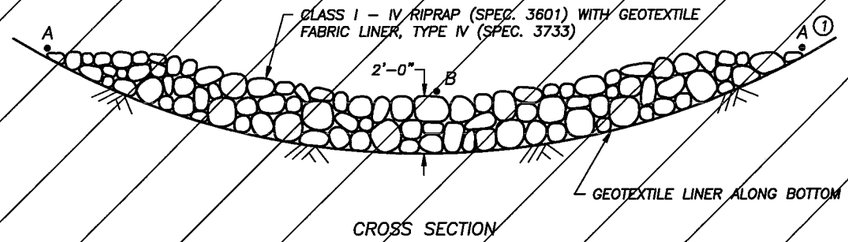
① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE DRIVING ON MAIN ROAD. THIS WILL PREVENT AUTO DAMAGE. WE NEED TO KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS.

CERTIFIED BY: Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

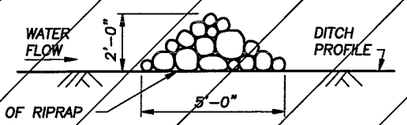
STANDARD SHEET NO. MOD. 5-297.405 (2 OF 4)	DES.: JAS	DRN.: TJR	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: JULY 30, 2001	CHK.: CSK	CHK.: JAS	
STATE AID PROJECT NO. 55-599-80	SHEET NO. 17 OF 19 SHEETS		55578



BIOROLL BLANKET SYSTEM
(TYPE 3 SPEC. 3889)

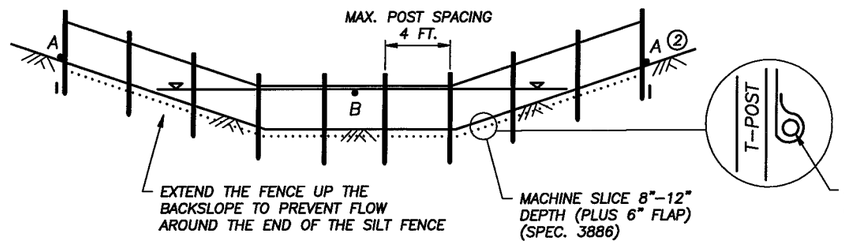


CROSS SECTION



PROFILE VIEW

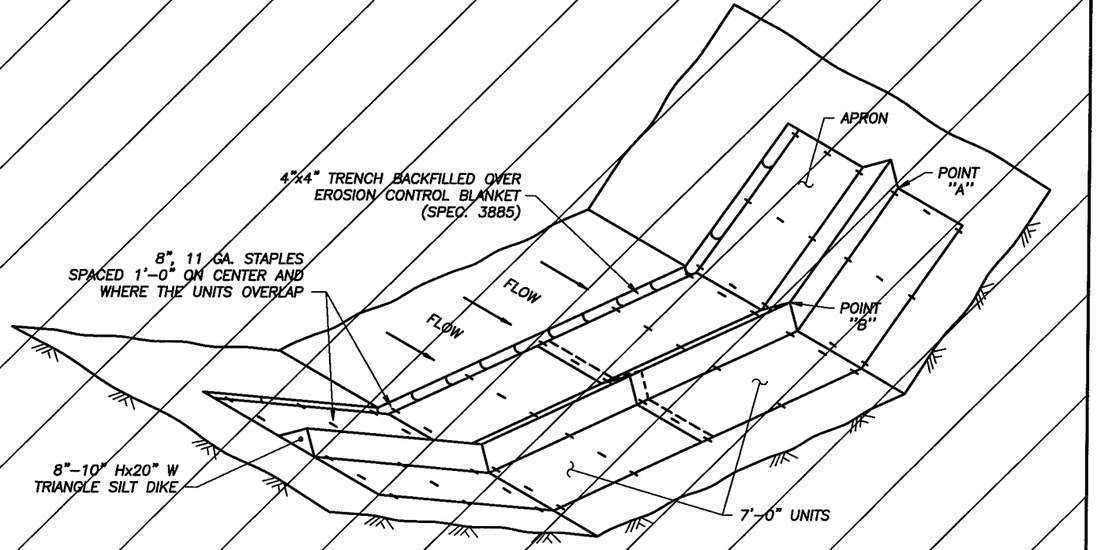
ROCK CHECK
(TYPE 7 SPEC. 3889)



DESIGN GUIDELINES	
STORM FREQUENCY	2 YR.– 24 HR.
MAX. DITCH GRADE	5%
MAX. DRAINAGE AREA	1 ACRE

NOTE:
WHEN SEDIMENT BUILD UP REACHES 1.5 FT., THE SILT SHOULD BE REMOVED OR A SECOND SILT FENCE BUILT UPSTREAM FROM THE EXISTING ONE AT A SUITABLE DISTANCE.

MACHINE SLICED
(TYPE 1 SPEC. 3889)



GEOTEXTILE TRIANGULAR DIKE
(TYPE 6 SPEC. 3889)

AS-BUILT

MAR 0 7 2006

ENGINEERING

NOTES:
SEE SPECS. 2573, 3885, 3886 & 3889.
SPACING OF DITCH CHECKS IS DEPENDENT ON DRAINAGE AREA AND GRADES. SEE DISTRICT HYDRAULICS ENGINEER FOR RECOMMENDATIONS.
~~① POINT A MUST BE 2'-6" MIN. HIGHER THAN POINT B.~~
② POINT A MUST BE 2'-0" MIN. HIGHER THAN POINT B.

CERTIFIED BY: Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 1/19/2005

STANDARD SHEET NO.	DES.:	DRN.:	TITLE:
5-297.405 (3 OF 4)	JAS	TJR	TEMPORARY EROSION CONTROL
STANDARD APPROVED: JULY 30, 2001	CHK.: CSK	CHK.: JAS	DITCH CHECKS

STATE AID PROJECT NO. 55-599-80 | SHEET NO. 18 OF 19 SHEETS | 55578

NOTES:

EXISTING ACCESS TO RESIDENCES SHALL BE MAINTAINED THROUGHOUT THE PROJECT DURATION.

ALL COST INCURRED FOR MATERIALS, INSTALLATION, MAINTENANCE AND REMOVAL OF TRAFFIC CONTROL DEVICES AS SHOWN ON THIS SHEET AND RELATED WORK DURING CONSTRUCTION SHALL BE INCLUDED IN PRICE BID FOR ITEM "TRAFFIC CONTROL".

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MN. M.U.T.C.D., DATED JANUARY 2004, AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS (FIELD MANUAL) DATED JANUARY 2004.

BARRICADE PLACEMENT TO BE DETERMINED IN THE FIELD SO AS NOT TO OBSTRUCT VISION TO OR FROM ROADWAY ENTRANCES.

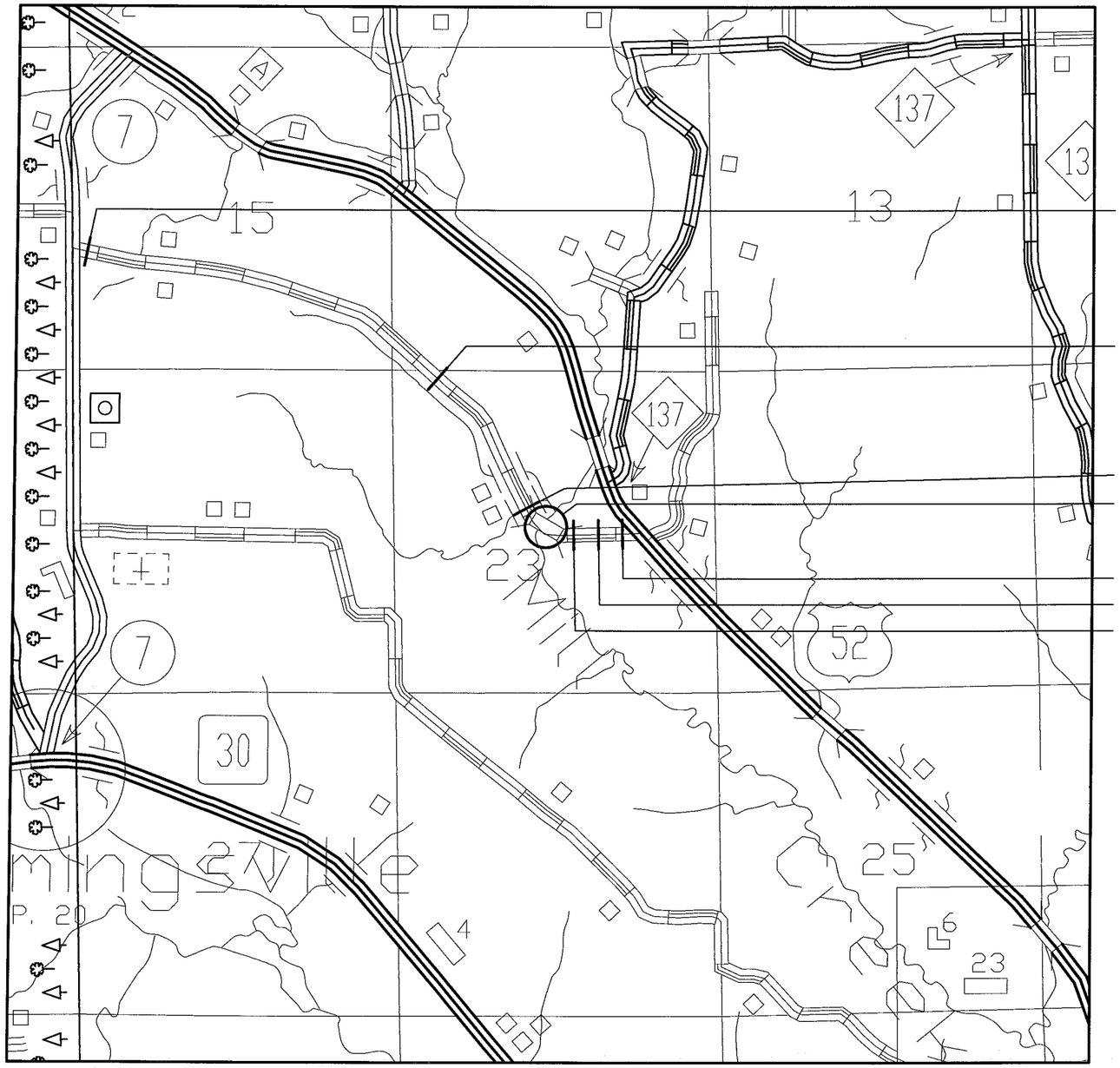
EXACT LOCATION OF TRAFFIC CONTROL DEVICES TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE CONTRACTOR SHALL REMOVE, SALVAGE OR COVER AND RESTORE AS APPROPRIATE, ALL EXISTING SIGNING THAT CONFLICTS WITH THIS TRAFFIC CONTROL PLAN TO THE SATISFACTION OF THE ENGINEER.

ALL INSTALLATIONS REQUIRING POSTS SHALL BE A "U" CHANNEL TYPE. MINIMUM WEIGHT PER FOOT – 2.75 LBS.

ALL TRAFFIC CONTROL DEVICES SHALL HAVE RETROREFLECTIVE SHEETING.

① THE USE OF TEMPORARY ORANGE CONSTRUCTION FENCING MAY BE REQUIRED BY THE ENGINEER TO COMPLETELY CLOSE OFF ANY SPECIFIC WORK AREA.



DETAIL "B"

DETAIL "D"

DETAIL "A"

PROJECT LOCATION
PROP. BR. NO. 55578

DETAIL "B"

DETAIL "C"

DETAIL "A"

TRAFFIC CONTROL DEVICES

ITEM	DESIGN NUMBER	F&I BY CONTRACTOR	SIZE	REMARKS
BARRICADES, TYPE III		10		
FLASHERS (TYPE A)		18		
ROAD CLOSED TO THRU...	R11–4	4	60" x 30"	LETTERING ~ BLACK ON WHITE
BRIDGE CLOSED	R11–2A	2	48" x 30"	LETTERING ~ BLACK ON WHITE
BRIDGE CLOSED AHEAD	W20–X4	2	48" x 48"	LETTERING ~ BLACK ON ORANGE
1/2 MILE	W20–100p	1	24"x18"	LETTERING ~ BLACK ON ORANGE
① ORANGE SAFETY FENCE				



DETAIL "A"





DETAIL "B"

NOTE: FOR SETUP OF DETAIL "B" PLACE ONE BARRICADE ON EACH SIDE OF ROAD, ALLOWING THE PASSAGE OF A SINGLE VEHICLE ONLY.

AS-BUILT

MAR 0 7 2006

ENGINEERING



DETAIL "C"



DETAIL "D"

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 1/19/2005

SPRING ROAD SE OLMSTED COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55578

TRAFFIC CONTROL

APPROVED:

S.A.P. 55–599–80

SHEET 19 OF 19 SHEETS

DES.:	JAS	DES.:	TJR	55578
CHK.:	CSK	CHK.:	JAS	