PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (HIGHWAY OVER)
UNDERPASS (HIGHWAY UNDER)
BRIDGE
BUILDING (ONE STORY FRAME)
F – FRAME C – CONCRETE
S – STONE T – TILE
B – BRICK ST – STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY
SLOPE EASEMENT

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLE
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRICAL CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRICAL MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRICAL CABLE
AERIAL TELEPHONE CABLE
SEWER (SANITARY OR SEWER)
SEWER MANHOLE

EROSION CONTROL SYMBOLS

TEMPORARY SILT FENCE
RIP RAP DITCH CHECKS

SCALES

PLAN 0 50'
PROFILE 0 50' HORIZ. 0 10' VERT.
CROSS SECTIONS 0 10' HORIZ. 0 10' VERT.
INDEX MAP NOT TO SCALE

MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR REPLACE BRIDGE NO. L-6160 (NEW BR. NO. 55582) AND APPROACH GRADING

LOCATED ON 60th Ave. S.W. BETWEEN 60th St. S.W. AND 70TH St. S.W. (GEOGRAPHIC DESCRIPTION)

FROM T105N - R15W CENTER SECTION 31, 36, 1, & 6 TO T105N - R15W APPROX. 1,700' SOUTH IN SECTION 1 & 6 (LEGAL DESCRIPTION)

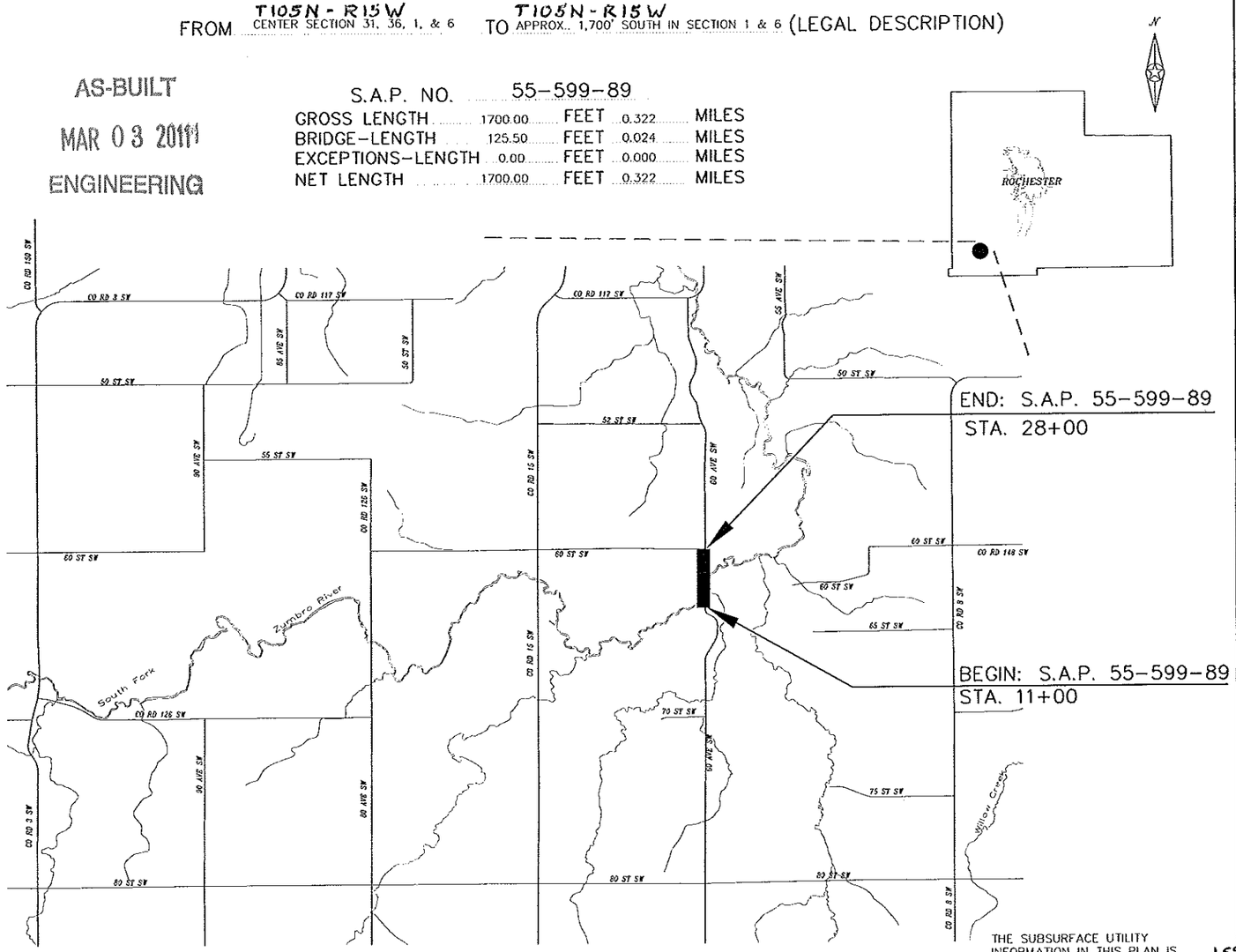
AS-BUILT

MAR 03 2011

ENGINEERING

S.A.P. NO. 55-599-89

GROSS LENGTH	1700.00	FEET	0.322	MILES
BRIDGE-LENGTH	125.50	FEET	0.024	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	1700.00	FEET	0.322	MILES



THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATE OF QUANTITIES & TYPICAL SECTION
SHEET NO. 3 & 4	PLAN AND PROFILE
SHEET NO. 5 – 7	CROSS-SECTIONS
SHEET NO. 8 – 15	EROSION CONTROL
SHEET NO. 16	TRAFFIC CONTROL PLANS
SHEET NO. 1B – 13B	BRIDGE SHEETS

THIS PLAN CONTAINS 29 SHEETS.

DESIGN DESIGNATION: S.A.P. 55-599-89

R ΣN18(20)
ADT (Current Year) = 167(2007) Design Speed 40 MPH
ADT (Future Year) = 268(2027) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5 FT. Height of object 2.0 FT.
D (Directional Distr.) = Design Speed not achieved at:
T (Heavy Commercial) = STA. TO STA. MPH
SUBGRADE = K=150 STA. TO STA. MPH
SOIL FACTOR = 130%
SHOULDER WIDTH 3 FT.

TOWNSHIP APPROVALS:

APPROVED: TWP. CHAIRPERSON DATE 9/27/07

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 8/8/07 REG. NO. 19917

PRINTED NAME: KAYE M BIENIEK

SIGNED NAME: Kaye M Bieniek
COUNTY DESIGN ENGINEER

DATE 8/24/07 REG. NO. 10392

APPROVED: OLMSTED COUNTY ENGINEER

RECOMMENDED FOR APPROVAL Nancy Daubenberger
for STATE BRIDGE ENGINEER 11/9/07

STATE AID APPROVALS:

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/ POLICY DATE: 10-19-07

APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER DATE: 11/29/07

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	NON PARTICIPATING	PARTICIPATING	TOTAL ESTIMATED QUANTITIES
(1)	2101.511	CLEARING AND GRUBBING	LUMP SUM	1		1
	2104.501	REMOVE METAL CULVERT	LIN. FT.	52		52
(2)	2104.501	REMOVE FENCE	LIN. FT.	245		245
(3)	2104.505	REMOVE CONC. PAVEMENT	SQ. YD.	1,653		1,653(P)
(4)	2105.515	UNCLASSIFIED EXCAVATION	CU. YD.	2,617		2,617(P)
	2105.523	COMMON BORROW (CV)	CU. YD.	8,345		8,345(P)
(5)	2211.501	AGGREGATE BASE CL.2	TON	2,135		2,135
	2501.511	18" C.S. PIPE CULVERT	LIN. FT.	48		48
	2501.511	30" C.S. PIPE CULVERT	LIN. FT.	60		60
	2501.515	18" G.S. PIPE APRON	EACH	2		2
	2501.515	30" G.S. PIPE APRON	EACH	4		4
(6)	2511.501	RANDOM RIPRAP CL. II	CU. YD.	30		30
(7)	2573.502	SILT FENCE TYPE MACHINE SLICED	LIN. FT.	170		170
(8)	2573.512	TEMPORARY DITCH CHECK TYPE 2	LIN. FT.	390		390
(9)	2575.523	EROSION CONTROL BLANKET CATEGORY 3 (INCLUDES MAINTENANCE)	SQ. YD.	2,040		2,040
(10)	2575.555	TURF ESTABLISHMENT	LUMP SUM	1		1

(P) PLAN

QUANTITY NOTES:

(1) 0.6 ACRES WOODS.

(2) REMOVAL OF GATE F.E. RT. STA. 141+82 & GATE F.E. LT. STA. 21+53 WILL BE INCIDENTAL TO ITEM NO. 2104.501 FENCE REMOVAL. SPEC. NO. 1903 DOES NOT APPLY TO ITEM NO. 2104.501 REMOVE FENCE

(3) LOCATION STA. 14+91 TO STA. 19+56.

(4) ITEM NO. 2105.515 UNCLASSIFIED EXCAVATION TO INCLUDE RIPRAP REMOVAL. APPROX. LOCATION LT. STA. 23+05 TO STA. 23+80.

(5) 2,023 TON FOR MAINLINE AND 112 TON FOR ENTRANCE.

(6) APPROX. LOCATION LT. STA. 23+00 TO STA. 24+00 AS DIRECTED BY THE ENGINEER IN THE FIELD. RIPRAP TO BE PLACED ON 6" OF GRANULAR BEDDING OR GEOTEXTILE FABRIC THAT WILL BE INCIDENTAL TO ITEM NO. 2511.501 RANDOM RIPRAP. SPEC. NO. 1903 DOES NOT APPLY TO ITEM NO. 2511.501.

(7) SEE TABLE FOR SILT FENCE APPROX. LOCATIONS. SPEC. NO. 1903 DOES NOT APPLY TO ITEM NO. 2573.502

(8) LOCATION START LT. STA. 22+10 TO STA. 25+00 10' SPACING. SPEC. NO. 1903 DOES NOT APPLY TO ITEM NO. 2573.512

(9) SEE TABLE FOR EROSION CONTROL BLANKET APPROX. LOCATIONS. SPEC. NO. 1903 DOES NOT APPLY TO ITEM NO. 2575.523.

(10) APPROX. 2.5 ACRES.

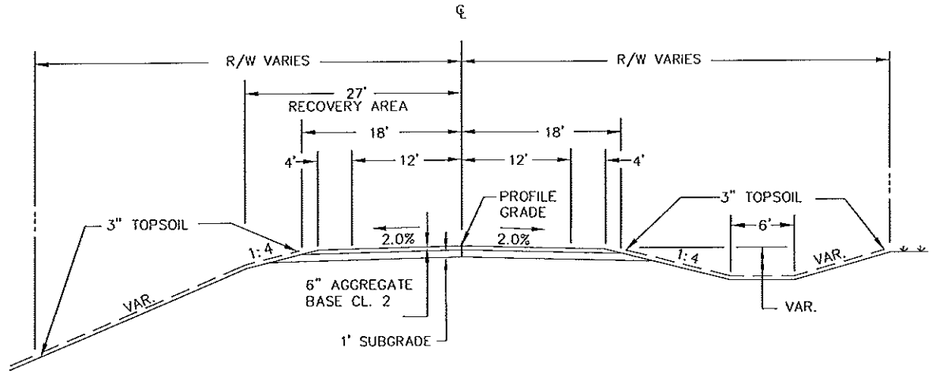
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BASIS OF PLANNED QUANTITIES

AGGREGATE BASE CLASS 2 – 140 LBS / CU. FT. COMPACTED.

TYPICAL SECTION

STA. 11+00 TO STA. 28+00



NOTES: ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE LOCATED OUTSIDE THE 27 FT. RECOVERY AREA BY OTHERS.

EROSION CONTROL BLANKET

LOCATION	REMARKS	SQ. YDS.
RT. STA. 16+50 TO STA. 19+07.25	INSLOPE, DITCH & BACKSLOPE	625
LT. STA. 17+50 TO STA. 19+07.25	INSLOPE, DITCH & BACKSLOPE	400
RT. STA. 20+32.72 TO STA. 21+00	INSLOPE, DITCH & BACKSLOPE	160
LT. STA. 20+32.72 TO STA. 21+00	INSLOPE	180
LT. STA. 21+75 TO STA. 25+00	INSLOPE, DITCH & BACKSLOPE	675
	TOTAL	2,040

SILT FENCE

LOCATION	REMARKS	LIN. FT.
LT. STA. 19+07.25	DITCH	15
RT. STA. 18+50 TO STA. 19+07.25	DITCH	15
LT. STA. 20+32.72	DITCH & INSLOPE	75
RT. STA. 20+32.72 TO STA. 20+82.72	DITCH & INSLOPE	65
	TOTAL	170

STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
	NUMERICAL INDEX OF STANDARD PLATES
3040F	CORRUGATED METAL PIPE CULVERT
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3221C	CORRUGATED STEEL PIPE COUPLING BAND
8000I	STANDARD BARRICADES
9000D	APPROACHES AND ENTRANCES

NOTE: PLATE 9000D 1:6 SIDE SLOPES TO BE 1:4 SIDE SLOPES.

BEGIN: S.A.P. 55-599-89
STA. 11+00

33' EXIST. R/W

START TRANSITION +00

END TRANSITION +00

50' R/W

CONSTRUCTION LIMITS

F.E. Lt. Sta. 14+50
48" x 18" C.S. Culvert
2 - 18" Aprons

REMOVE EXIST. CONC PAVEMENT
APPROX. STA. 14+91 TO
STA. 19+56 32' WIDE

200' P.E. 4" Perf. tile outlet in Rip Rap

Placed C.I. Rip Rap

SILT FENCE

EXIST. BR. L6160 STA. 19+65
NEW BR. 55582
SEE BRIDGE PLAN

F.E. LT. STA. 21+53
INPL. 24" x 24' C.M.P.
NO APRON INPL.
30" x 28' C.S. PIPE CULV.
2 - 30" G.S. PIPE APRONS

METAL GATE

EXIST. RIPRAP

SPRING

4" Tile

F.E. RT. STA. 141+82
NO CULV. INPL.
18" x 48' C.S. PIPE CULV.
2 - 18" G.S. PIPE APRONS

P.C. STA. 15+04.2

P.T. STA. 17+12.3

P.C. STA. 20+46.8

+00 +25 +40 +50 +53 +75

25' T.E.

11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

SCALES: HOR. 0 50' 100'
VER. 0 10' 20'

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GRADE

EXIST.

BEGIN: STA. 11+00
EL. 1094.44

P.V.C. STA. 11+40
EL. 1094.12

P.V.T. STA. 12+60
EL. 1093.64

P.V.C. STA. 17+40
EL. 1093.64

P.V.T. STA. 18+60
EL. 1094.42

P.V.C. STA. 20+12
EL. 1096.40

P.V.T. STA. 23+48
EL. 1109.68

-0.8%
0.0%
1.30%
6.6%

P.I. STA. 12+00
EL. 1093.64
V.C. 120
E = 0.12

P.I. STA. 18+00
EL. 1093.64
V.C. 120
E = 0.20

P.I. STA. 21+80
EL. 1098.59
V.C. 336
E = 2.22

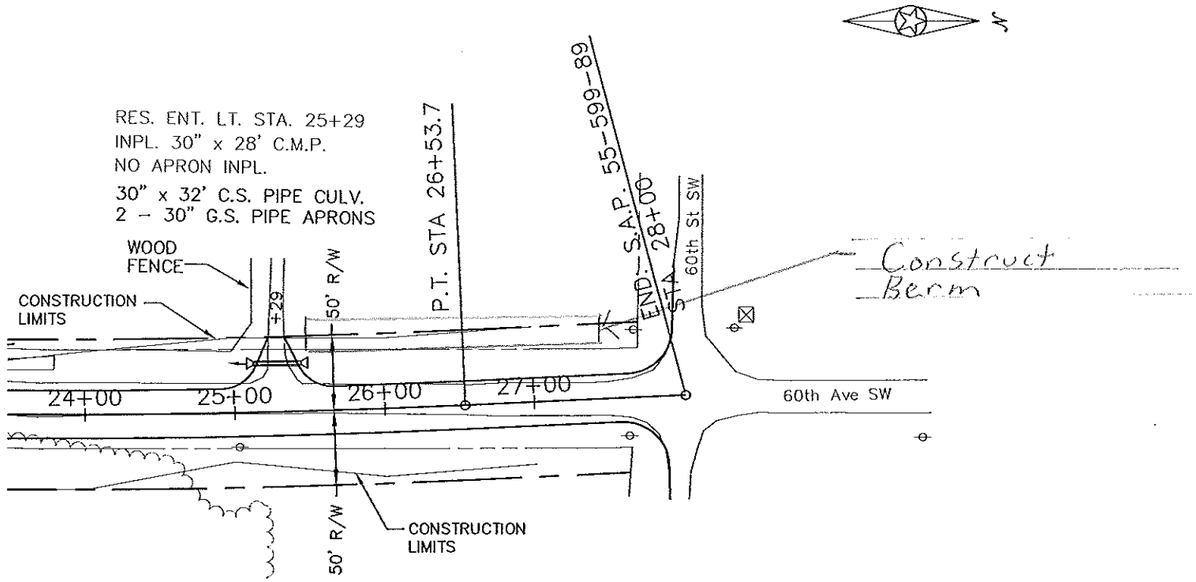
1140 1130 1120 1110 1100 1090 1080 1070 1060 1050

10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50 14+00 14+50 15+00 15+50 16+00 16+50 17+00 17+50 18+00 18+50 19+00 19+50 20+00 20+50 21+00 21+50 22+00 22+50 23+00 23+50 24+00 24+50 25+00

CERTIFIED BY Kaye M Bowman REG. NO. 19917 10/10 2007
LICENSED PROFESSIONAL ENGINEER

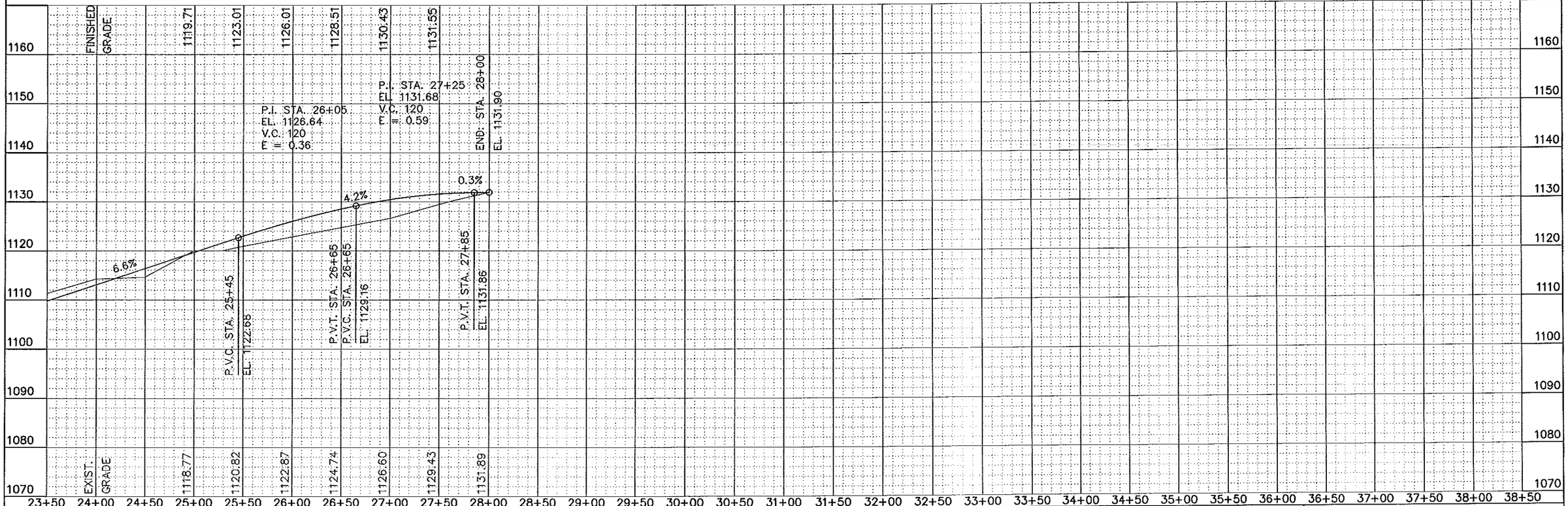
S.A.P. 55-599-89

SHEET 3 OF 16 SHEETS



SCALES: HOR. 0 50' 100'
VER. 0 10' 20'

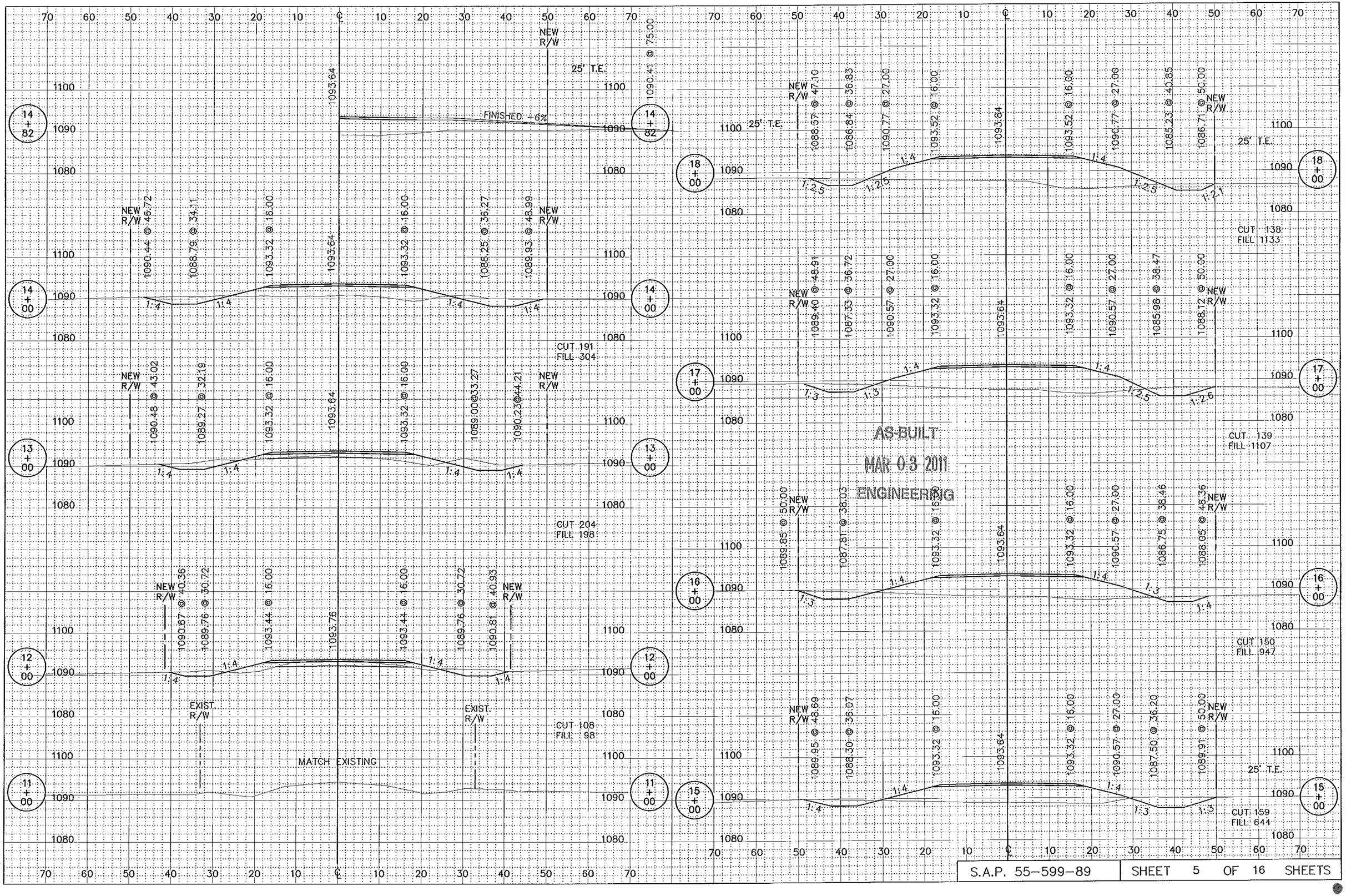
AS-BUILT
MAR 03 2011
ENGINEERING



CERTIFIED BY Paul M Pommerich REG. NO. 19917 10/10 2007
LICENSED PROFESSIONAL ENGINEER

S.A.P. 55--599--89

SHEET 4 OF 16 SHEETS

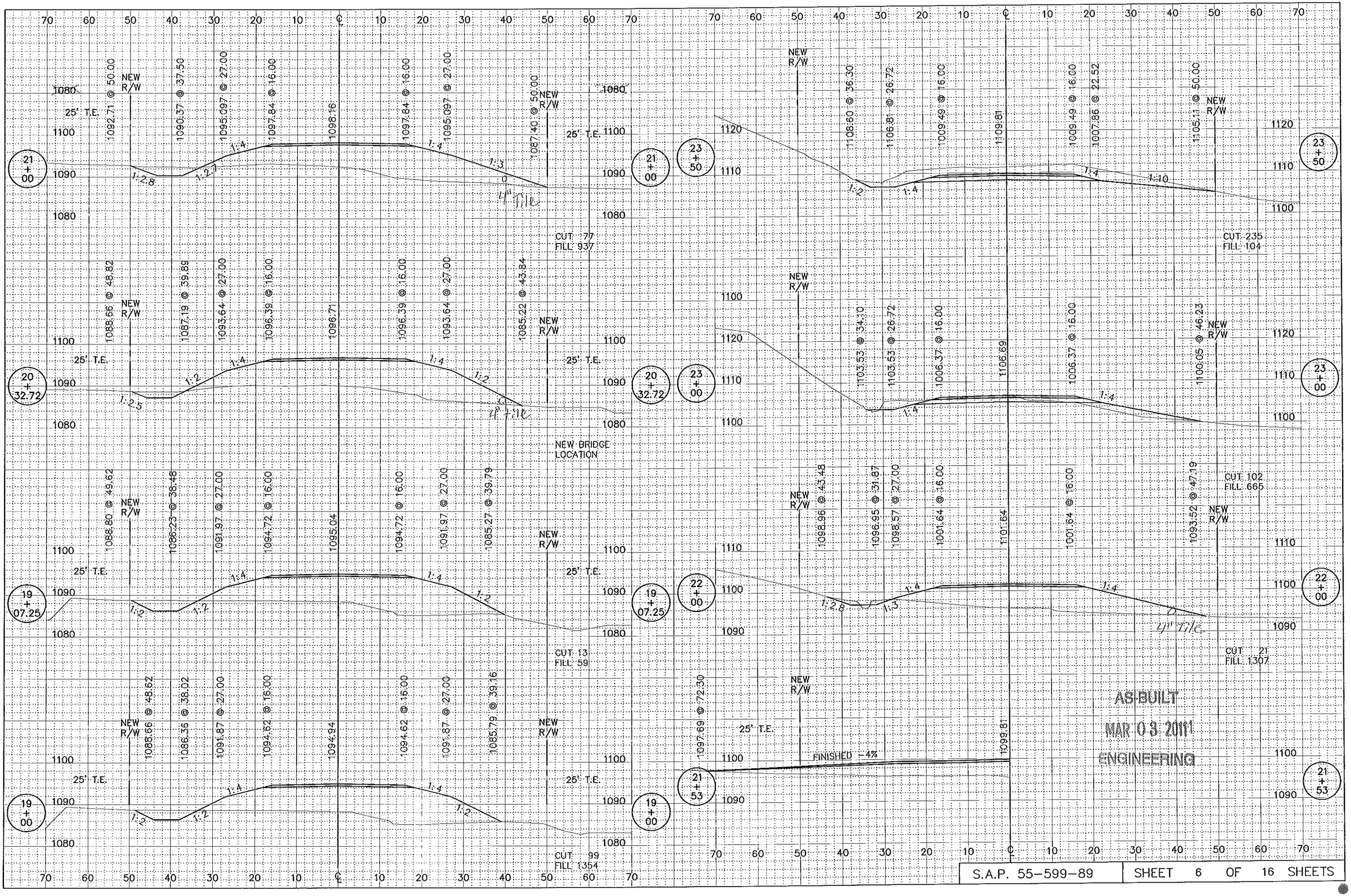


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MAR 03 2011

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S.A.P. 55-599-89 | SHEET 5 OF 16 SHEETS



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MAR 03 2011
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S.A.P. 55-599-89 | SHEET 6 OF 16 SHEETS

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

NEW R/W @ 46.98
1122.82
1121.13 @ 34.22
1125.69 @ 16.00
1126.01
1125.69 @ 16.00
1118.39 @ 45.17
NEW R/W

1130
1120
1110

26 + 00

Berm
1:4
1:4
1:4

CUT 202
FILL 561

NEW R/W @ 50.00
1121.51
1121.62

1130
1120
1110

25 + 29

FINISHED: 0.5%

NEW R/W @ 50.00
1121.51
1116.41 @ 27.91
1119.39 @ 16.00
1119.71
1119.39 @ 16.00
1115.22 @ 32.69
NEW R/W

1130
1120
1110

25 + 00

1:3.1
1:4
1:4

CUT 608
FILL 222

NEW R/W
1114.69 @ 41.88
1110.11 @ 26.72
1112.79 @ 16.00
1113.11
1112.79 @ 16.00
1110.04 @ 27.00
1109.56 @ 50.00
NEW R/W

1130
1120
1110

24 + 00

1:2
1:4
1:4
1:53

CUT 359
FILL 75

1140
1130
1120

28 + 00

CUT 65
FILL 418

NEW R/W @ 50.00
1127.67
1124.96 @ 56.61
1130.11 @ 16.00
1130.43
1130.11 @ 16.00
1123.77 @ 41.35
NEW R/W

1140
1130
1120

27 + 00

Berm
1:2.7
1:4
1:4

CUT 88
FILL 829

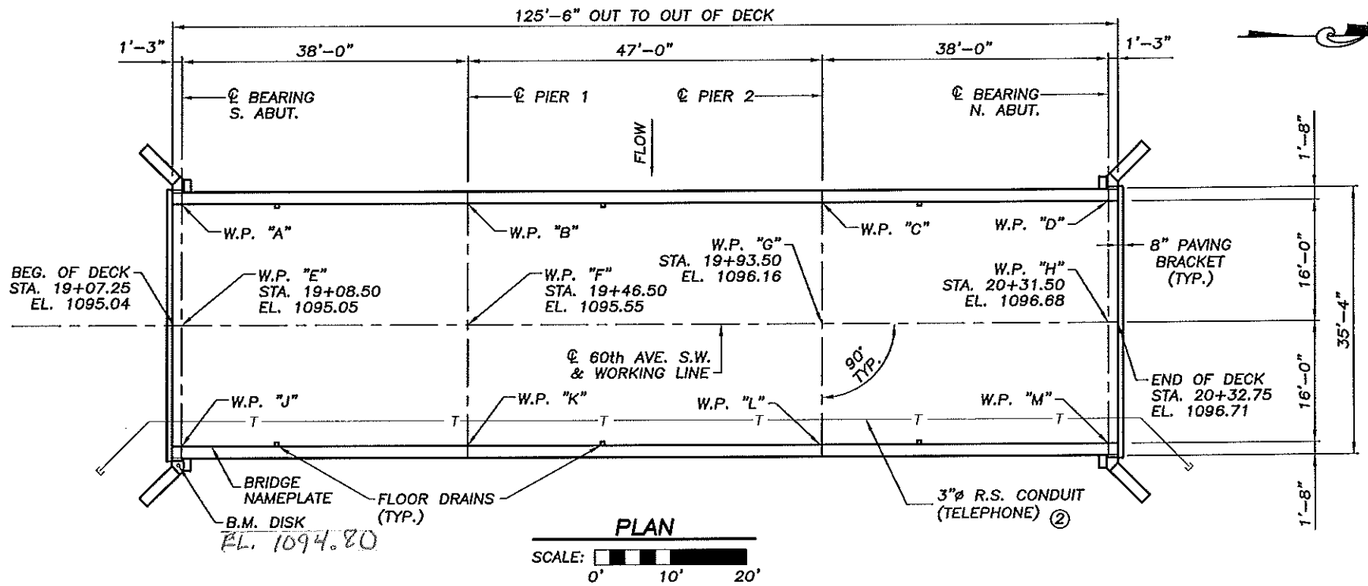
COMMON EXC. SUBTOTAL 2893 CU. YDS.
CONC. PAVEMENT REMOVAL 276 CU. YDS.
COMMON EXC. TOTAL 2617 CU. YDS.

EMBANKMENT 10,962 CU. YDS.

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MATCH EXISTING

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



PLAN

SCALE: 0' 10' 20'

B.M. ELEV. 1088.86

LOCATION: 1" SQUARE PIPE WITH CAP, APPROX. 30' S.W. OF EXIST. BR. L6160

CONSTRUCTION NOTES

THE 2005 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.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE SURVEY USED IN DEVELOPING THIS BRIDGE PLAN MUST BE VERIFIED WITH THE ACTUAL STREAM LOCATION AT THE TIME OF CONSTRUCTION STAKING. IF THE BRIDGE POSITION IS NOT COMPATABLE WITH THE STREAM, THE ENGINEER SIGNING THESE PLANS SHALL BE NOTIFIED. IF STATIONING IS CHANGED, THE REVISED PLANS SHALL BE SUBMITTED TO THE OWNER AND THE STATE AID BRIDGE UNIT FOR APPROVAL.

THE PILE LOADS SHOWN IN THE PLANS AND THE CORRESPONDING NOMINAL PILE BEARING RESISTANCE (Rn) WERE COMPUTED USING LRFD METHODOLOGY. PILE BEARING RESISTANCE DETERMINED IN THE FIELD SHALL INCORPORATE THE METHODS AND/OR FORMULAS DESCRIBED IN THE SPECIAL PROVISIONS.

DESIGN DATA

2004 & CURRENT INTERIM. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS LOAD & RESISTANCE FACTOR DESIGN METHOD ~ HL-93 LIVE LOAD
DEAD LOAD INCLUDES 20 PSF 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 = 4,434 SQ. FT.
CURRENT ADT. = 164 (2007)
OPERATING RATING = HS 44
DESIGN SPEED = 40 MPH

LIST OF SHEETS

NO.	TITLE
B1	GENERAL PLAN & ELEVATION
B2	BRIDGE LAYOUT
B3-B4	ABUTMENT DETAILS
B5	PIER DETAILS
B6-B7	SUPERSTRUCTURE DETAILS
B8	CONCRETE BARRIER (TYPE F, TL-4)
B9-B11	MISC. BRIDGE DETAILS
B12	BRIDGE SURVEY
B13	BRIDGE SURVEY ~ PLAN & PROFILE

AS-BUILT

MAR 03 2011

ENGINEERING

APPROVED: Michael Sheehan
COUNTY ENGINEER
OLMSTED COUNTY
DATE: 8/24/07

I HEREBY CERTIFY THAT THIS PLAN (SHEETS B1-B13) 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.

Dale Draves
DALE DRAVES
DATE: 8-8-07 LIC. NO. 20666

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

60th AVE. S.W. OLMSTED COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55582

LOCATED 2.9 MILES NORTH OF JCT. T.H. 30 ON 60th AVE. S.W. OVER THE SOUTH FORK ZUMBRO RIVER.

38'-47'-38' CONTINUOUS CONC. SLAB SPANS
0° SKEW ~ 32 FT. RDWY.
SPAN IDENT. NO. 209

GENERAL PLAN & ELEVATION

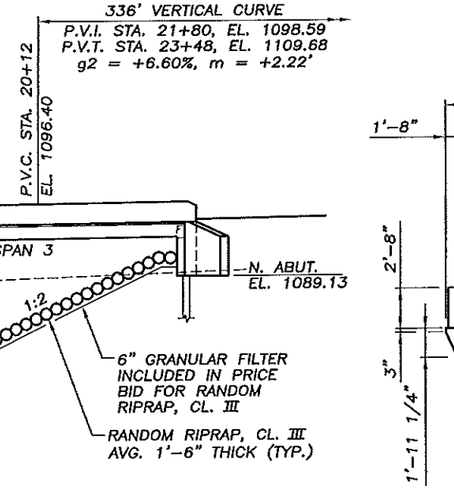
SEC. 1 TWP. 105 N R 15 W

TOWNSHIP: ROCK DELL
COUNTY: OLMSTED

APPROVED: Nancy Daubenberger for STATE BRIDGE ENGINEER
DATE: 11/9/07

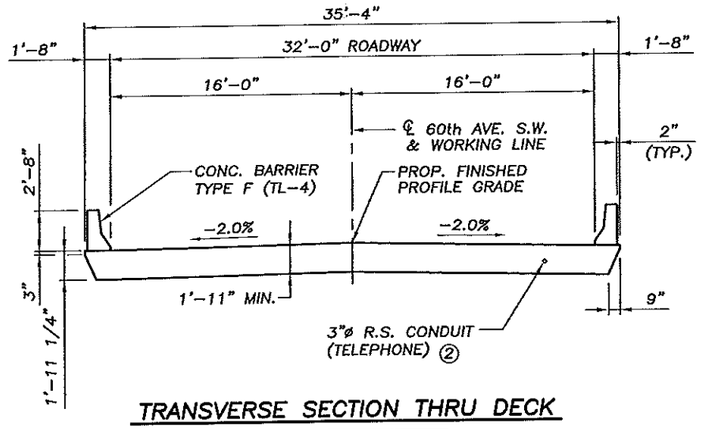
S.A.P. 55-599-89
SHEET B1 OF B13 SHEETS

DES.:	JAS	DRN.:	MJF	55582
CHK.:	DAD	CHK.:	CGD	



ELEVATION

SCALE: 0' 10' 20'



TRANSVERSE SECTION THRU DECK

SCALE: 0' 5' 10'

NOTE:
ABUT. PILES ARE TO BE HP10x42 STEEL H-PILES WITH PILE TIP PROTECTION.
PIER PILES ARE TO BE HP10x57 STEEL H-PILES WITH PILE TIP PROTECTION & 16" STEEL PILE SHELLS.

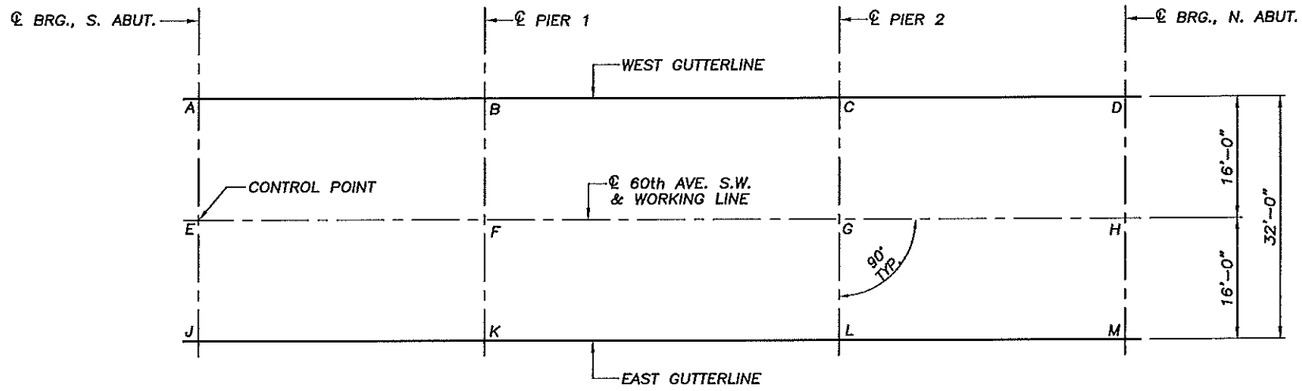
① STA. 19+67 ~ NON.-PARTICIPATING

② SEE SHEETS B6 & B7 FOR REQUIREMENTS, NON-PARTICIPATING.

SUMMARY OF QUANTITIES FOR THE ENTIRE BRIDGE

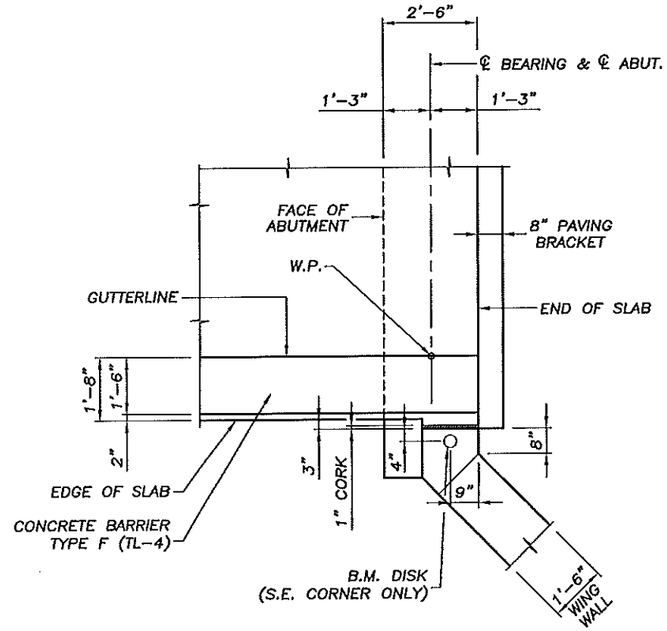
ITEM NO.	2021.501	2401.501	2401.512	2401.513	2401.541	2401.601	2401.601	2402.521	2402.546	2442.501	2452.510	2452.510
ITEM	MOBILIZATION	STRUCTURAL CONCRETE (3Y43)	BRIDGE SLAB CONCRETE (3Y33A)	TYPE F (TL-4) RAILING CONCRETE (3Y46A)	REINFORCEMENT BARS (EPOXY COATED)	STRUCTURE EXCAVATION	SLOPE PREPARATION	STRUCTURAL STEEL (3306)	FLOOR DRAIN, TYPE B702 MOD.	REMOVE EXISTING BRIDGE ①	STEEL H-PILING DRIVEN 10x42	STEEL H-PILING DRIVEN 10x57
QUANTITY	1	76 (P)	4434 (P)	251 (P)	64970 (P)	1	1	530 (P)	6	1	400	500
UNIT	LUMP SUM	CU. YD.	SQ. FT.	LIN. FT.	POUND	LUMP SUM	LUMP SUM	POUND	EACH	LUMP SUM	LIN. FT.	LIN. FT.

ITEM NO.	2452.511	2452.511	2452.520	2452.520	2452.602	2452.603	2511.501	2545.509
ITEM	STEEL H-PILING DELIVERED 10x42	STEEL H-PILING DELIVERED 10x57	STEEL H-TEST PILE 60 FT. LONG 10x42	STEEL H-TEST PILE 60 FT. LONG 10x57	PILE TIP PROTECTION 10"	16" STEEL PILE SHELLS	RANDOM RIPRAP, CLASS III	CONDUIT SYSTEM (TELEPHONE) ②
QUANTITY	400	500	2	2	22	180	242	1
UNIT	LIN. FT.	LIN. FT.	EACH	EACH	EACH	LIN. FT.	CU. YD.	LUMP SUM



LAYOUT SHOWING WORKING POINTS

SCALE: 0 5' 10'



TYPICAL CORNER DETAILS

SCALE: 0 5'

LIST OF STANDARD PLATES	
PLATE NO.	DESCRIPTION
8000 I	STANDARD BARRICADES

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

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DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M
A	19+08.50		38.00			16.00	41.23				49.68	90.82	
B	19+46.50			47.00			16.00	49.65		49.68		56.86	90.82
C	19+93.50				38.00			16.00	41.23	90.82	56.86		49.68
D	20+31.50								16.00		90.82	49.68	
E	19+08.50						38.00			16.00	41.23		
F	19+46.50							47.00			16.00	49.65	
G	19+93.50								38.00			16.00	41.23
H	20+31.50												16.00
J	19+08.50										38.00		
K	19+46.50											47.00	
L	19+93.50												38.00
M	20+31.50												

ELEVATIONS

TOP OF SLAB	SLAB TO BRIDGE SEAT	BRIDGE SEAT	POINT
1094.73	2.17	1092.56	A
1095.23	2.06	1093.17	B
1095.84	2.06	1093.78	C
1096.36	2.17	1094.19	D
1095.05	2.17	1092.88	E
1095.55	2.06	1093.49	F
1096.16	2.06	1094.10	G
1096.68	2.17	1094.51	H
1094.73	2.17	1092.56	J
1095.23	2.06	1093.17	K
1095.84	2.06	1093.78	L
1096.36	2.17	1094.19	M

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PROFESSIONAL ENGINEER/ DALE DRAVES

LIC. NO. 20666 8-8 2007

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55582

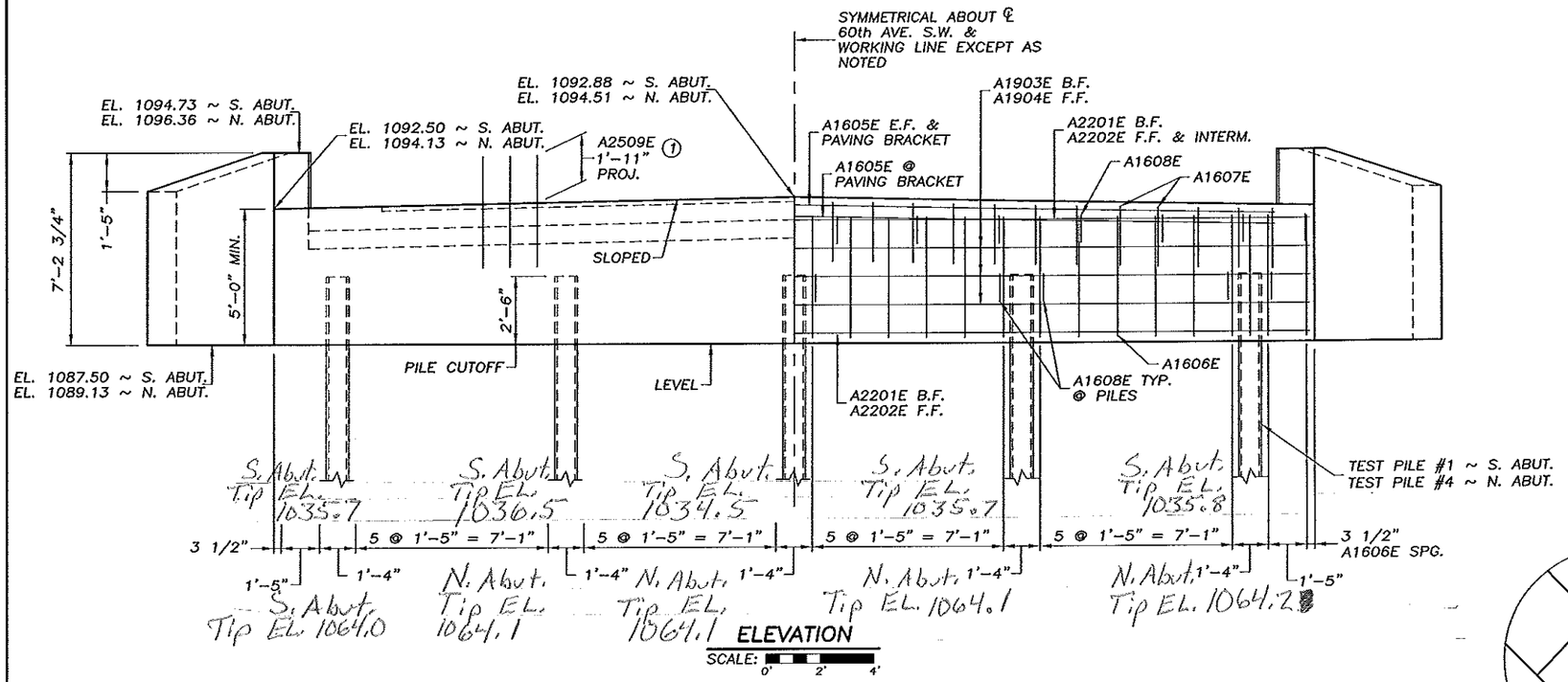
BRIDGE LAYOUT

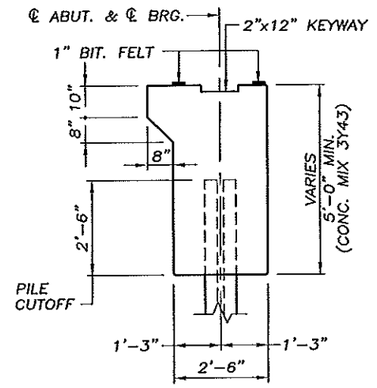
APPROVED:

S.A.P. 55-599-89

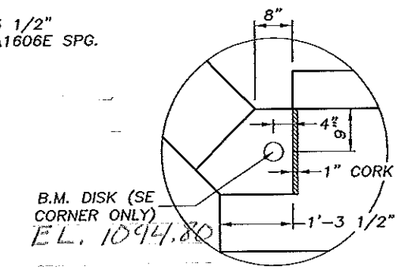
SHEET B2 OF B13 SHEETS

DES.:	JAS	DRN.:	MJF	55582
CHK.:	DAD	CHK.:	CGD	





TYPICAL SECTION
SCALE: 0' 2' 4'



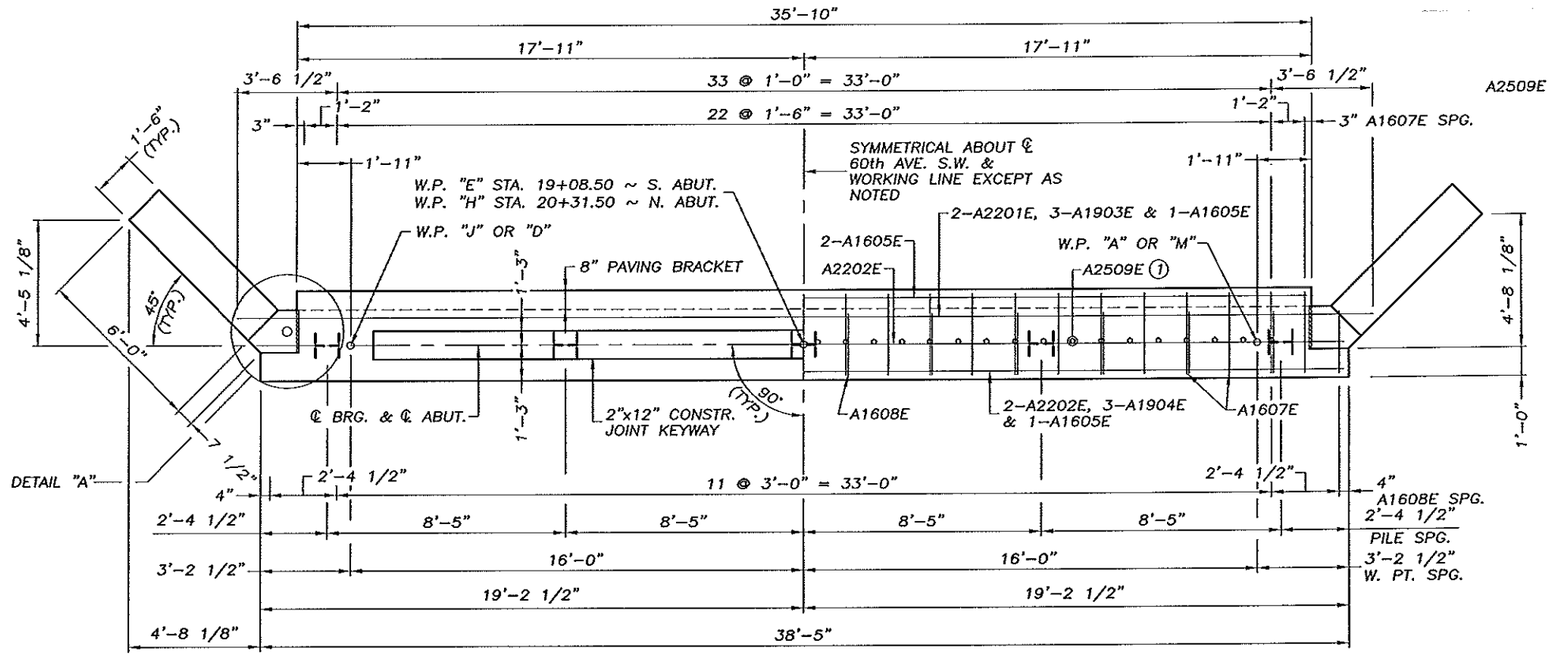
DETAIL "A"

NORTH & SOUTH ABUTMENTS COMPUTED PILE LOAD – TONS/PILE	
FACTORED DEAD LOAD + EARTH PRESSURE	33.3
FACTORED LIVE LOAD	20.7
*FACTORED DESIGN LOAD	54.0

*BASED ON STRENGTH I LOAD COMBINATION.

NORTH & SOUTH ABUTMENTS REQUIRED NOMINAL PILE BEARING RESISTANCE R_n – TONS/PILE		
FIELD CONTROL METHOD	φ_{dyn}	$*R_n$
Mn/DOT NOMINAL RESISTANCE FORMULA	0.40	134.9
PDA	0.60	89.9

$*R_n$ =(FACTORED DESIGN LOAD)/φ_{dyn}



PLAN
SCALE: 0' 2' 4'

A2509E SPG. ①

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PILE NOTES:

2 – STEEL H–TEST PILE, 60' LONG.
8/10 – STEEL H–PILES, EST. LENGTH 50'.
– STEEL H–PILES REQ'D FOR 2 ABUTMENTS.

ALL ABUTMENT PILES ARE TO BE HP10x42, STEEL H–PILES.

SEE DETAIL B202 FOR SPLICES.

SEE SURVEY SHEET FOR TEST PILE LOCATIONS.

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

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

① PLACE HORIZONTAL LEG PARALLEL TO ℄ ROADWAY.

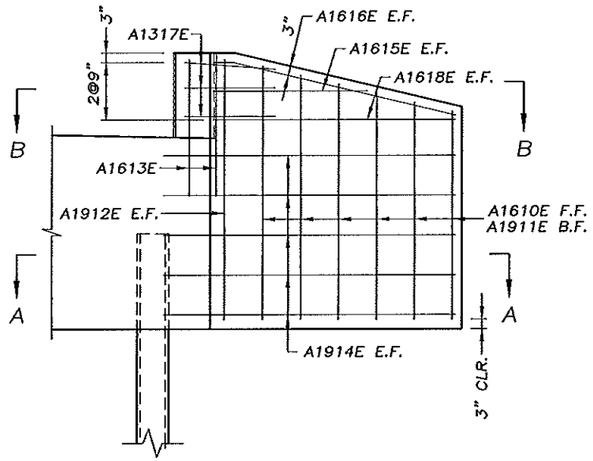
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PROFESSIONAL ENGINEER/ DALE DRAVES
LIC. NO. 20666 8-8 2007

MINNESOTA DEPARTMENT OF TRANSPORTATION

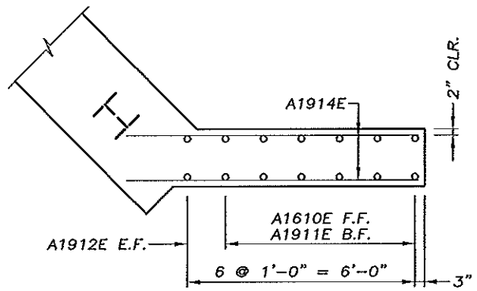
BRIDGE NO. 55582
ABUTMENT DETAILS

APPROVED:

S.A.P. 55-599-89				
SHEET B3 OF B13 SHEETS				
DES.:	JAS	DRN.:	MJF	55582
CHK.:	DAD	CHK.:	CGD	

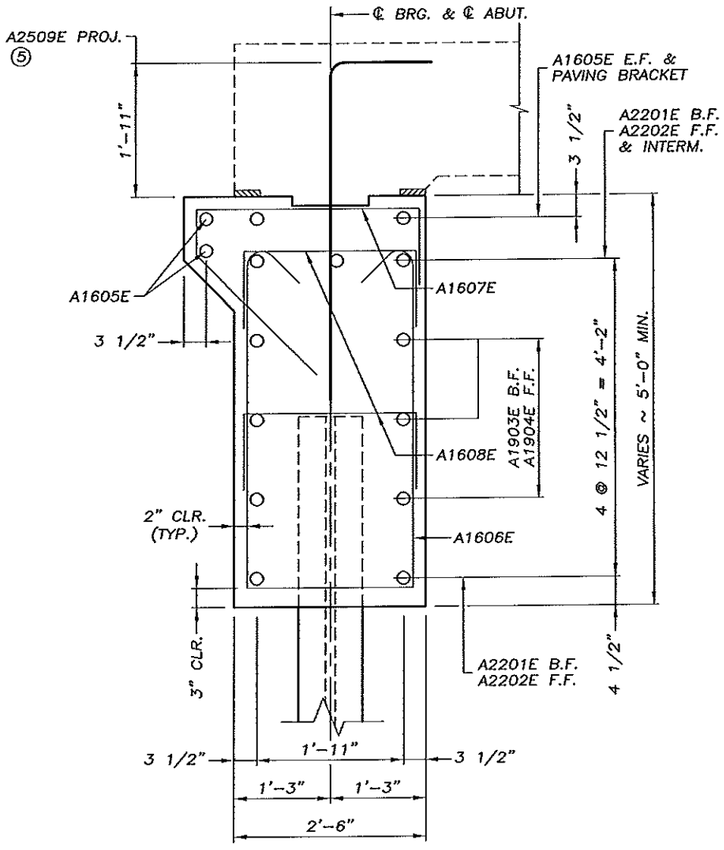


WINGWALL ELEVATION
SCALE: 0' 1' 2'

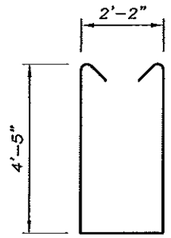


SECTION A-A
SCALE: 0' 1' 2'

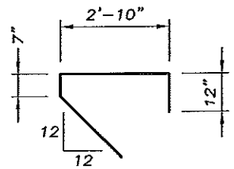
SECTION B-B
SCALE: 0' 1' 2'



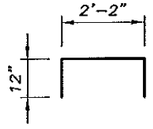
SECTION THRU ABUTMENT
SCALE: 0' 1' 2'



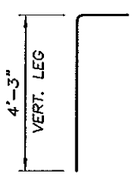
A1606E



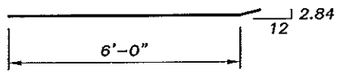
A1607E



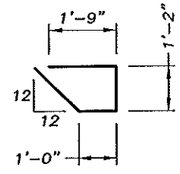
A1608E



A2509E



A1616E



A1317E

BILL OF REINFORCEMENT ~ 2 ABUTMENTS				
BAR	NO.	LENGTH	SHAPE	LOCATION
A2201E	4	40'-1"	STRT.	CAP ~ HORIZONTAL
A2202E	6	38'-1"	STRT.	CAP ~ HORIZONTAL
A1903E	6	40'-1"	STRT.	CAP ~ HORIZONTAL
A1904E	6	38'-1"	STRT.	CAP ~ HORIZONTAL
A1605E	8	35'-6"	STRT.	CAP ~ HORIZONTAL
A1606E	56	11'-11"	BENT	CAP ~ STIRRUP
A1607E	50	6'-7"	BENT	CAP ~ TIE
A1608E	48	4'-2"	BENT	CAP ~ TIE
A2509E	68	5'-7"	BENT	CAP ~ DOWEL @ SLAB
A1610E	4 SER. OF 6	FROM '5-5" TO 6'-7"	STRT.	WINGWALL ~ VERTICAL
A1911E	4 SER. OF 6	FROM '5-5" TO 6'-7"	STRT.	WINGWALL ~ VERTICAL
A1912E	8	6'-9"	STRT.	WINGWALL ~ VERTICAL
A1613E	8	3'-7"	STRT.	WINGWALL ~ VERTICAL
A1914E	40	7'-8"	STRT.	WINGWALL ~ HORIZONTAL
A1615E	8	4'-1"	STRT.	WINGWALL ~ HORIZONTAL
A1616E	8	6'-6"	BENT	WINGWALL ~ HORIZONTAL
A1317E	12	5'-6"	BENT	WINGWALL ~ TIE
A1618E	8	6'-4"	STRT.	WINGWALL ~ HORIZONTAL

SUMMARY OF QUANTITIES ~ 2 ABUTMENTS		
STRUCTURAL CONCRETE (3Y43)	49	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	5180	POUND
①② STRUCTURE EXCAVATION	1	LUMP SUM
③ STEEL H-PILING DELIVERED, 10x42	400	LIN. FT.
③ STEEL H-PILING DRIVEN, 10x42	400	LIN. FT.
STEEL H-TEST PILE, 60 FT. 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 264 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.

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

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER/ DALE DRAVES
LIC. NO. 20666 8-8 2007

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55582

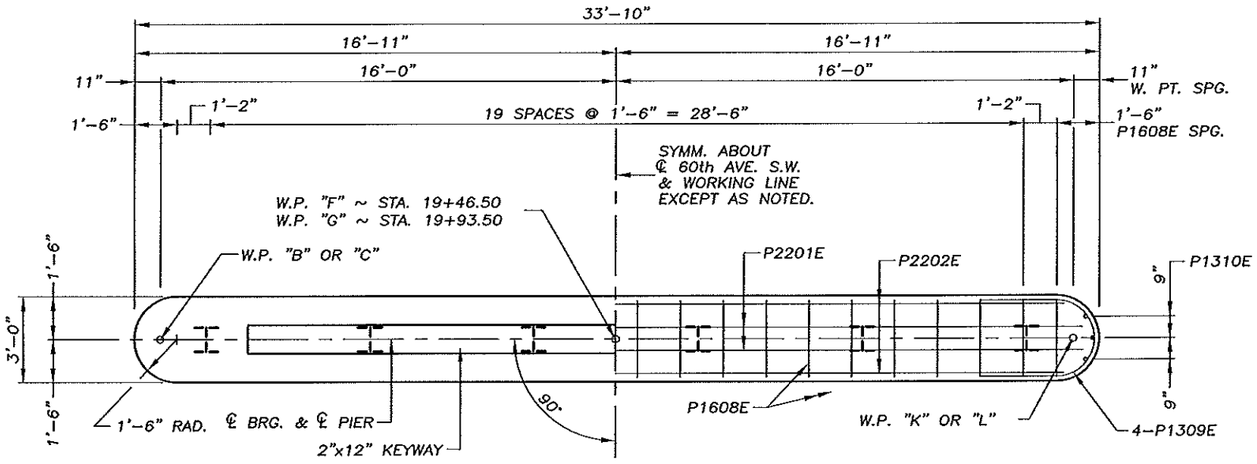
ABUTMENT DETAILS

APPROVED:

S.A.P. 55-599-89

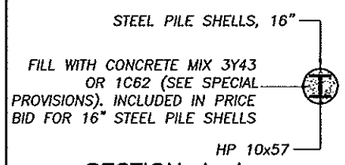
SHEET B4 OF B13 SHEETS

DES.:	JAS	DRN.:	MJF	55582
CHK.:	DAD	CHK.:	CGD	

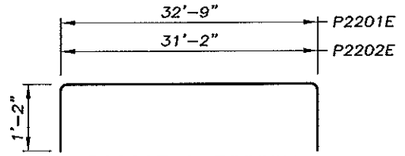


PLAN

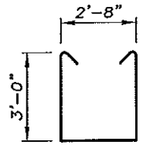
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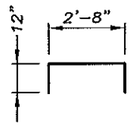
SECTION A–A



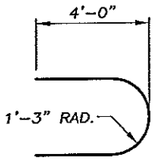
P2201E & P2202E



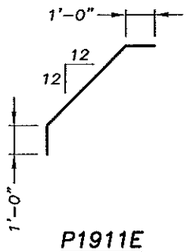
P1607E



P1608E



P1309E



P1911E

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	4	30'-8"	STRT.	CAP ~ LONGITUDINAL
P1607E	48	9'-7"	BENT	CAP ~ STIRRUP
P1608E	68	4'-8"	BENT	CAP ~ TIE
P1309E	16	9'-6"	BENT	CAP ~ TIE @ ENDS
P1310E	12	3'-2"	STRT.	CAP ~ VERTICAL @ ENDS
P1911E	124	6'-2"	BENT	CAP ~ DOWEL

SUMMARY OF QUANTITIES ~ 2 PIERS		
STRUCTURAL CONCRETE (3Y43)	27	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	4160	POUND
(1) STEEL H-PILING DELIVERED, 10x57	500	LIN. FT.
(1) STEEL H-PILING DRIVEN, 10x57	500	LIN. FT.
STEEL H-TEST PILES, 60' LONG, HP10x57	2	EACH
(2) PILE TIP PROTECTION, 10"	12	EACH
(2) 16" STEEL PILE SHELLS	180	LIN. FT.

(1) DOES NOT INCLUDE TEST PILES.
(2) SEE SPECIAL PROVISIONS
(3) PLACE P1911E PARALLEL TO ℄ OF ROAD.

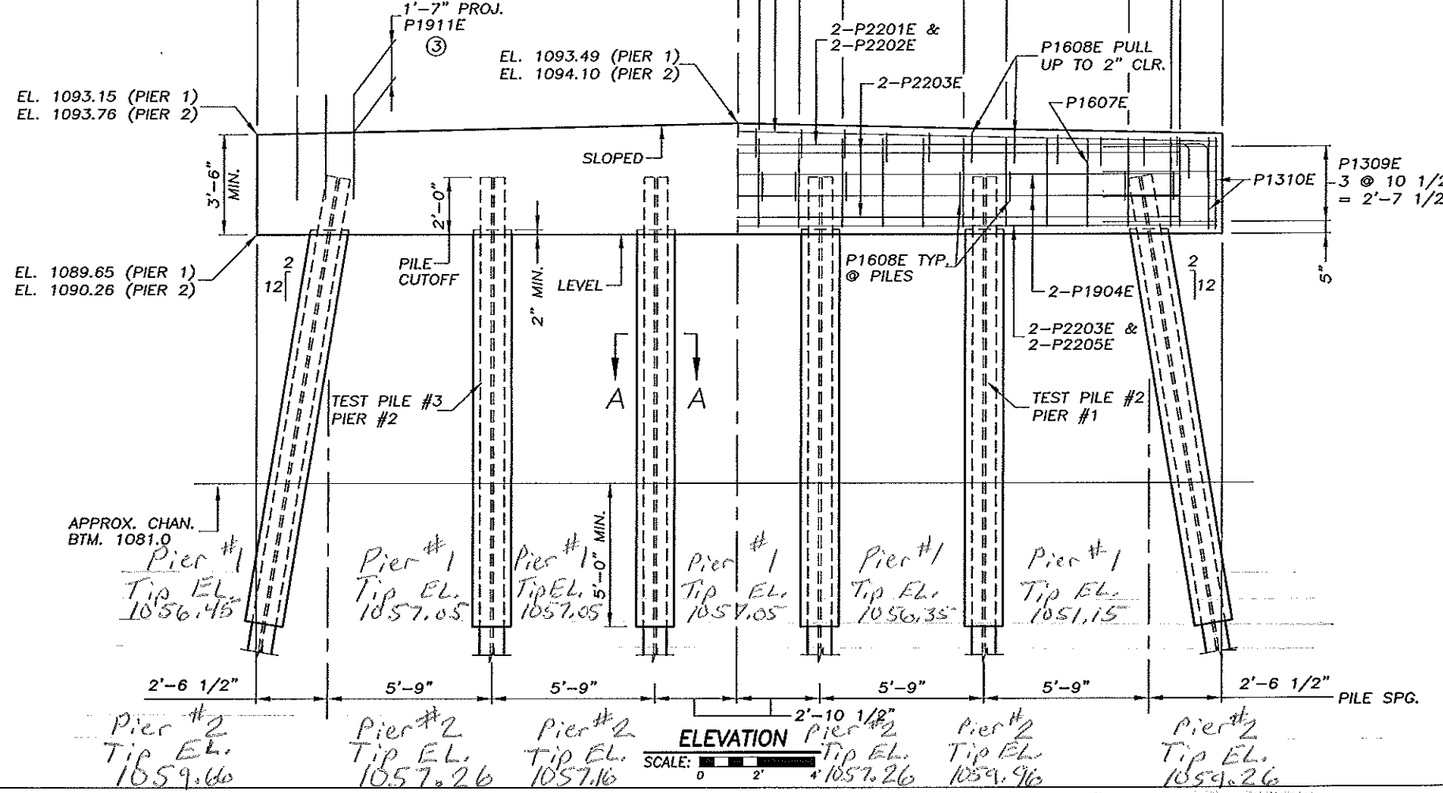
PIERS 1 & 2 COMPUTED PILE LOAD – TONS/PILE	
FACTORED DEAD LOAD	60.9
FACTORED LIVE LOAD	46.8
*FACTORED DESIGN LOAD	107.7

*BASED ON STRENGTH I LOAD COMBINATION.

PIERS 1 & 2 REQUIRED NOMINAL PILE BEARING RESISTANCE R_n – TONS/PILE		
FIELD CONTROL METHOD	φ_{dyn}	$*R_n$
Mn/DOT NOMINAL RESISTANCE FORMULA	0.40	269.3
PDA	0.60	179.5

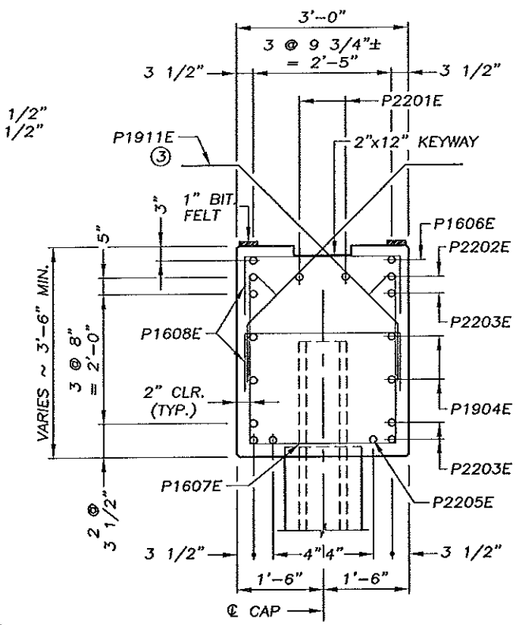
$*R_n$ =(FACTORED DESIGN LOAD)/φ_{dyn}

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ELEVATION

SCALE: 0 2' 4'



SECTION THRU CAP

SCALE: 0 1' 2'

PILE NOTES:

2 – STEEL H-TEST PILES, 60' LONG.
10 – STEEL H-PILES, EST. LENGTH 50'.
12 – STEEL H-PILES REQ'D FOR 2 PIERS.

12 – 16" STEEL PILE SHELLS, 15' LONG.

ALL PIER PILES SHALL BE HP10x57, STEEL H-PILES, ENCASED IN 16" STEEL PILE SHELLS AS SHOWN.

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

PILE SPACING SHOWN IS AT BOTTOM OF CAP.

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

SEE DETAIL B202 FOR SPLICES.

SEE SURVEY SHEET FOR TEST PILE LOCATIONS.

ALL PIER PILES SHALL BE DRIVEN TO ELEVATION 1060.2 OR BELOW.

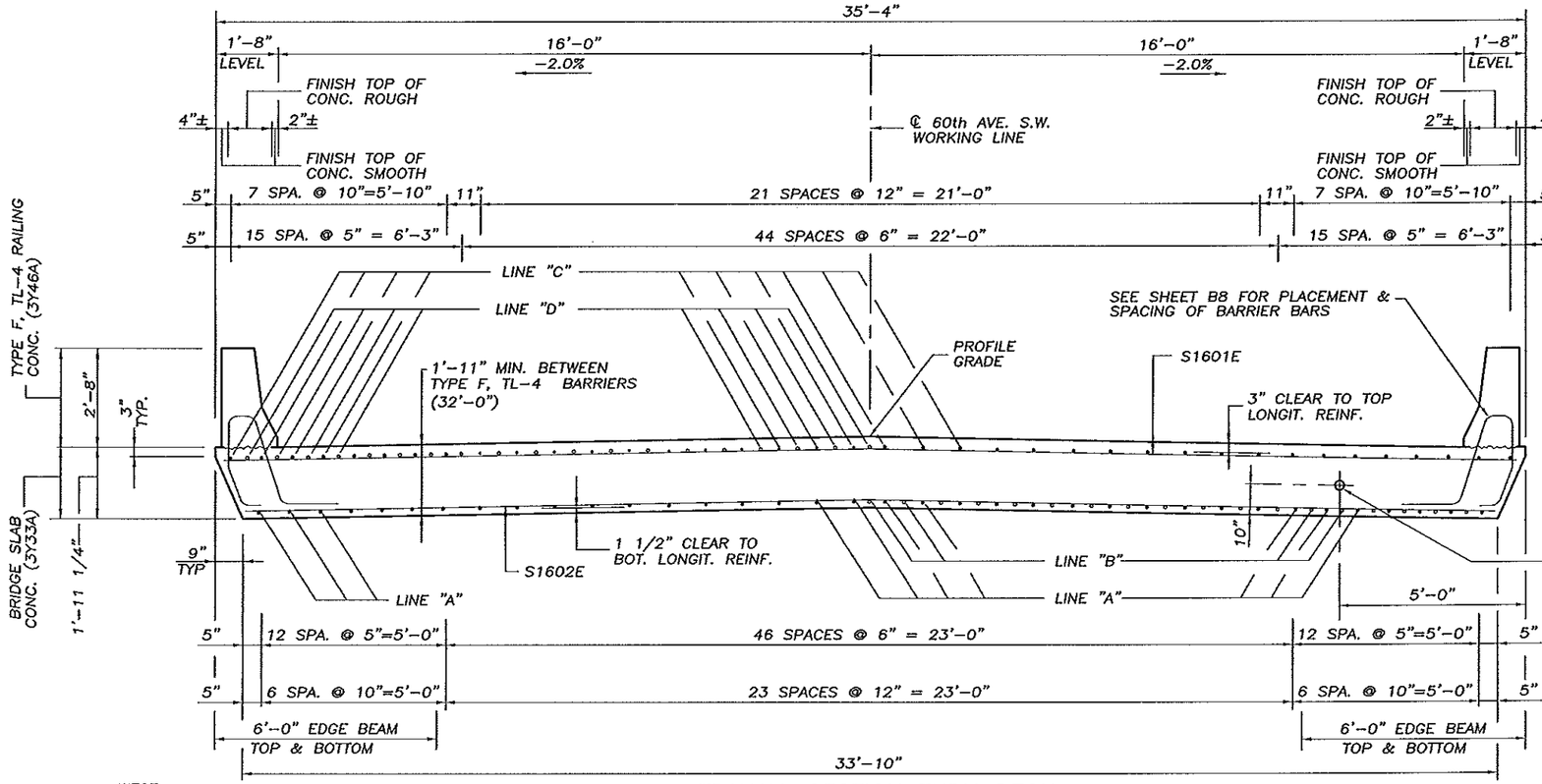
CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER/ DALE DRAVES
LIC. NO. 20666 8-8 2007

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55582
PIER DETAILS

APPROVED:

S.A.P. 55-599-89			
SHEET B5 OF B13 SHEETS			
DES. JAS	DRN. MJF		55582
CHK. DAD	CHK. CGD		



LINE "C" SPACING ENTIRE LENGTH OF SLAB. SEE PLACEMENT DIAGRAM BELOW.

LINE "C" ALTERNATING WITH LINE "D" SPACING OVER PIERS. SEE PLACEMENT DIAGRAM BELOW.

LINE "A" REINF. CONSISTS OF: 2-S2503E & 1-S2504E.

LINE "B" REINF. CONSISTS OF 2-S2505E & 1-S2506E

LINE "C" REINF. CONSISTS OF: 2-S1607E, 2-S3208E & 1-S1610E.

LINE "D" REINF. CONSISTS OF: 2-S3209E

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LINE "A" ALTERNATING WITH LINE "B" BTM. LONGIT. REINF. SPACING AT ℄ SPANS & ABUTMENTS. SEE PLACEMENT DIAGRAM BELOW.

LINE "A" SPACING ENTIRE LENGTH OF SLAB. SEE PLACEMENT DIAGRAM BELOW.

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

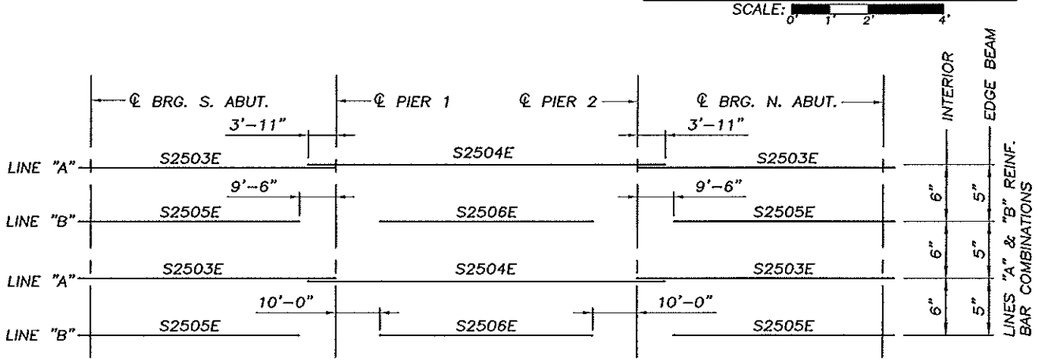
WEST — SHOWING REINFORCEMENT OVER PIERS

TRANSV. SECTION THRU DECK

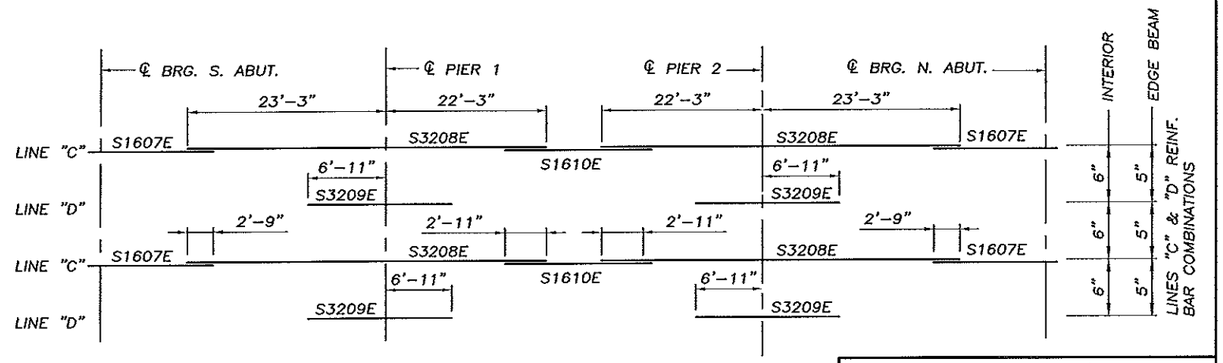
SCALE: 0' 1' 2' 4'

SHOWING REINFORCEMENT AT ℄ SPANS. — EAST

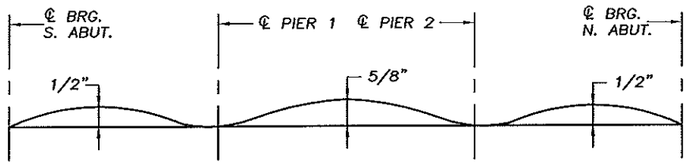
(1) SEE SHEET B7 FOR DETAILS.



BOTTOM LONGITUDINAL REINFORCEMENT



TOP 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

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER/DALE DRAVES
LIC. NO. 20666 8-8 2007

MINNESOTA DEPARTMENT OF TRANSPORTATION

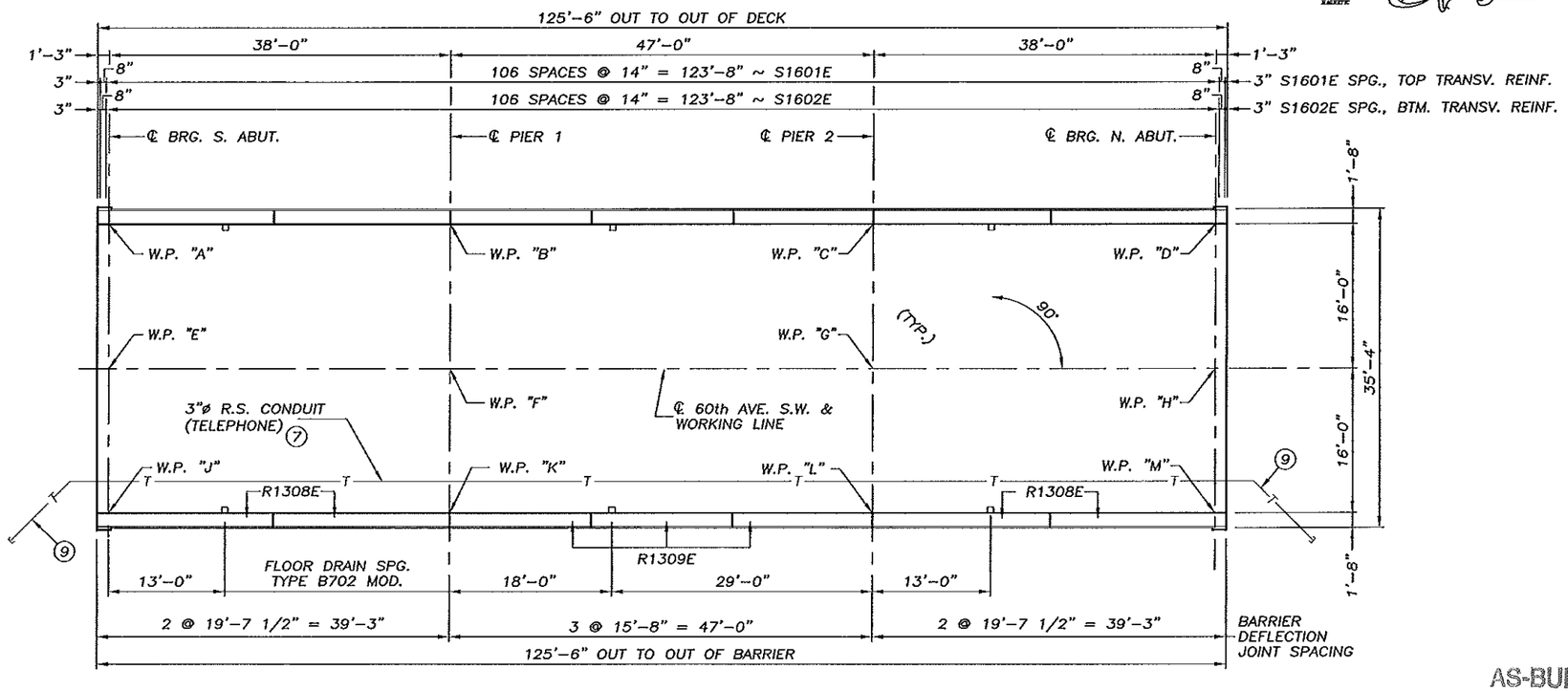
BRIDGE NO. 55582
SUPERSTRUCTURE DETAILS

APPROVED:

S.A.P. 55-599-89

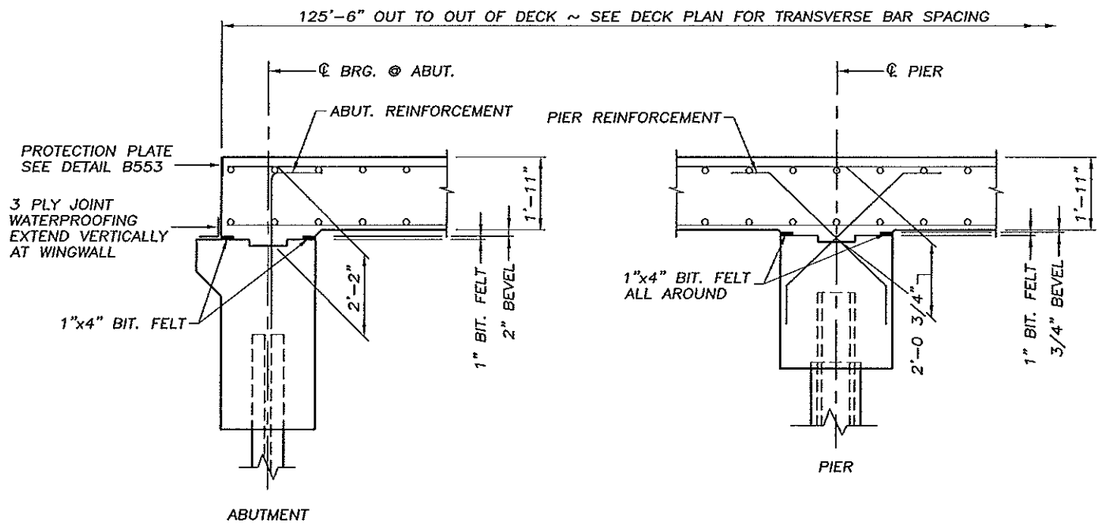
SHEET B6 OF B13 SHEETS

DES.: JAS	DRN.: MJF	55582
CHK.: DAD	CHK.: CGD	



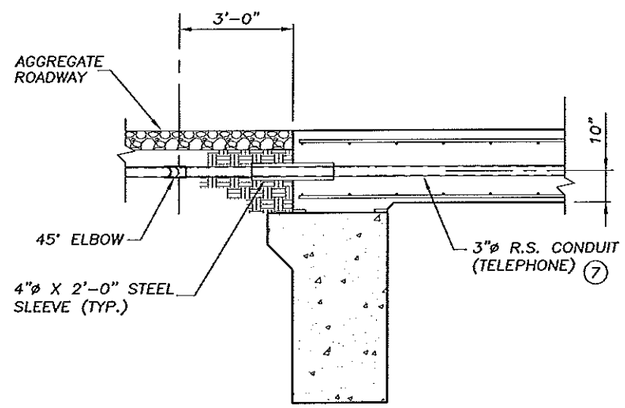
DECK PLAN

SCALE: 0' 4' 8'



PART. LONGITUDINAL SECTION

SCALE: 0' 1' 2'



CONDUIT AT END OF SLAB 7 9

SCALE: 0 2' 4'

AS-BUILT

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ENGINEERING

BILL OF REINFORCEMENT ~ SUPERSTRUCTURE				
BAR	NO.	LENGTH	SHAPE	LOCATION
S1601E	109	34'-10"	STRT.	SLAB ~ TRANSVERSE, TOP
S1602E	109	33'-8"	STRT.	SLAB ~ TRANSVERSE, BOTTOM
S2503E	72	39'-1"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2504E	36	54'-10"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2505E	70	29'-7"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S2506E	35	27'-0"	STRT.	SLAB ~ LONGITUDINAL, BOTTOM
S1607E	76	18'-7"	STRT.	SLAB ~ LONGITUDINAL, TOP
S3208E	76	45'-6"	STRT.	SLAB ~ LONGITUDINAL, TOP
S3209E	74	13'-10"	STRT.	SLAB ~ LONGITUDINAL, TOP
S1610E	38	8'-4"	STRT.	SLAB ~ LONGITUDINAL, TOP

LIST OF PREFORMED JOINT FILLERS				
	TYPE	LIN. FT.	SIZE	LOCATION
4 6	CORK	22	1"x13"	RAIL DEFLECTION JOINT
5 6	CORK	9	1"x18"	ABUTMENT RECESS
5 6	BIT. FELT	143	1"x4"	PIER
5 6	BIT. FELT	144	1"x4"	ABUTMENT

SUMMARY OF QUANTITIES ~ SUPERSTRUCTURE		
2	BRIDGE SLAB CONCRETE (3Y33A)	4434 SQ. FT.
3	TYPE F (TL-4) RAILING CONCRETE (3Y46A)	251 LIN. FT.
	REINFORCEMENT BARS (EPOXY COATED)	55630 POUND
	STRUCTURAL STEEL (3306)	530 POUND
8	PROTECTION PLATE (SEE DETAIL B553)	
4	BRIDGE NAMEPLATE (DETAIL B101)	1 EACH
5	3-PLY JOINT WATERPROOFING	81 LIN. FT.
	PREFORMED JOINT FILLER (SEE LIST)	
	FLOOR DRAIN, TYPE B702 (MODIFIED)	6 EACH
6 7	CONDUIT SYSTEM (TELEPHONE)	1 LUMP SUM

1. INCLUDES BARRIER QUANTITIES.
2. "BRIDGE SLAB CONCRETE (3Y33A)" VOLUME IS APPROXIMATELY 312 CUBIC YARDS.
3. "TYPE F (TL-4) RAILING CONCRETE (3Y46A)" VOLUME IS APPROXIMATELY 27 CUBIC YARDS.
4. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO "TYPE F (TL-4) RAILING CONCRETE (3Y46A)".
5. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO "BRIDGE SLAB CONCRETE (3Y33A)".
6. SEE SPECIAL PROVISIONS.
7. INCLUDES 150 LIN. FT. OF 3" DIA. RIGID STEEL CONDUIT (LAST 3" OF CONDUIT SHALL BE THREADED), 2-3" DIA. 45° ELBOWS, 2-3" DIA. END CAPS & 2-4" DIA. X 2'-0" LONG STEEL SLEEVES. SLEEVES SHALL CONFORM TO SPEC. 3306 AND BE GALVANIZED ACCORDING TO SPEC. 3394. ALL MATERIALS SHALL BE FURNISHED & INSTALLED BY THE CONTRACTOR. SEE SHEETS B6 & THIS SHEET FOR DETAILS.
8. INCLUDED IN WEIGHT OF "STRUCTURAL STEEL (3306)".
9. PLACE 3"ø R.S. CONDUIT USING TWO 45° ELBOWS AND TERMINATE BEHIND ABUTMENTS BEYOND DECK SLAB. CAP EACH END OF CONDUIT.

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER/ DALE DRAVES
LIC. NO. 20666 8-8 2007

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55582

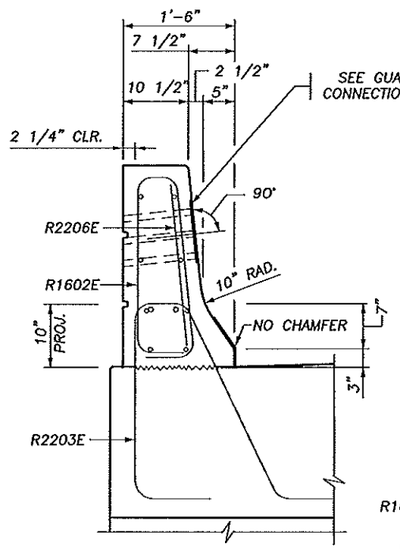
SUPERSTRUCTURE DETAILS

APPROVED:

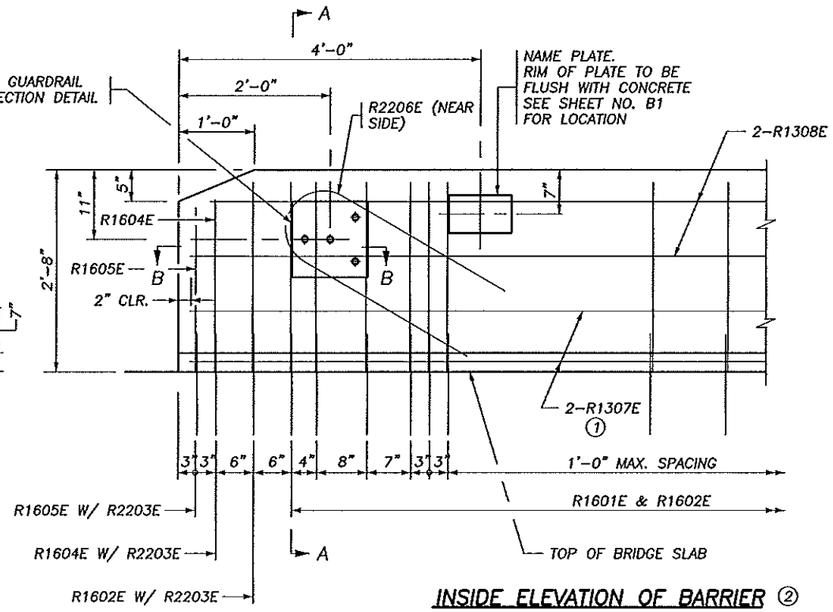
S.A.P. 55-599-89

SHEET B7 OF B13 SHEETS

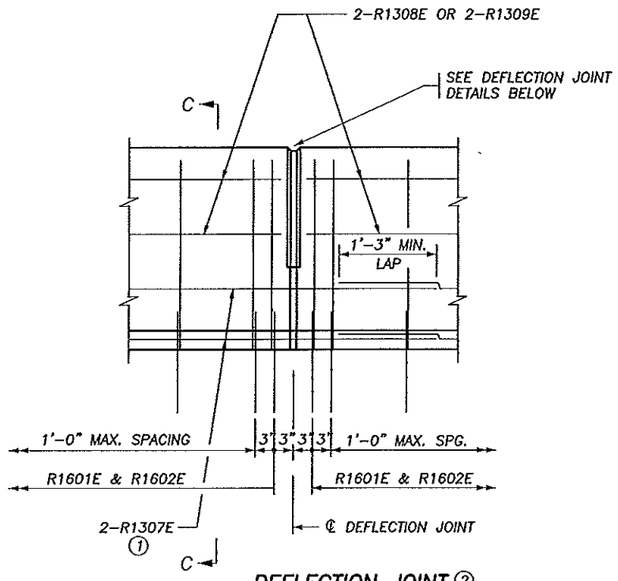
DES.:	JAS	DRN.:	MJF	55582
CHK.:	DAD	CHK.:	CGD	



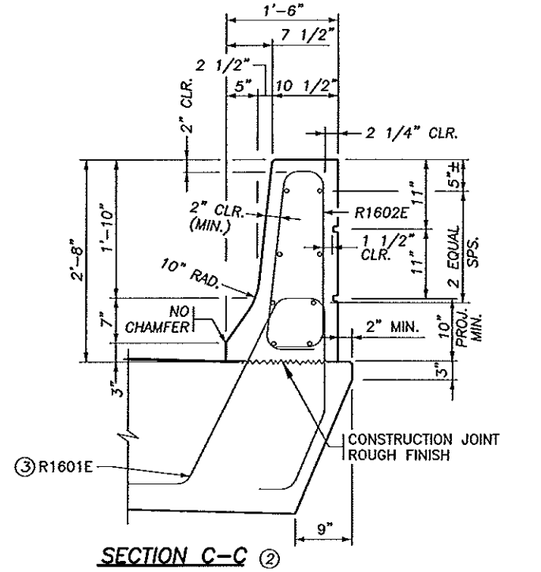
SECTION A–A ②



INSIDE ELEVATION OF BARRIER ②



DEFLECTION JOINT ②

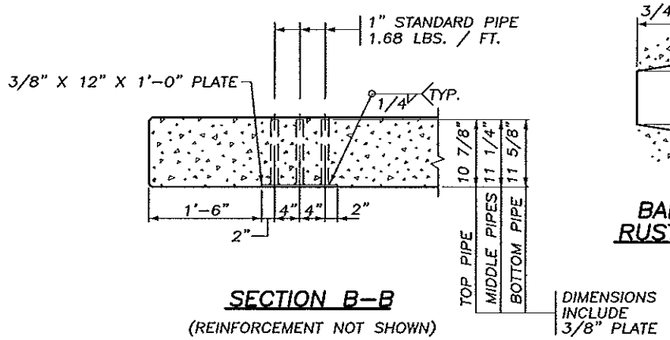


SECTION C–C ②

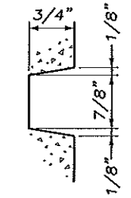
BARRIER MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350.

BILL OF REINFORCEMENT FOR BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
③ R1601E	288	7'–11"		BARRIER DOWEL
R1602E	292	6'–3"		BARRIER VERTICAL
R2203E	12	7'–9"		BARRIER DOWEL
R1604E	4	5'–9"		BARRIER VERTICAL
R1605E	4	5'–7"		BARRIER VERTICAL
R2206E	4	6'–6"		BARRIER VERTICAL
① R1307E	32	32'–3"		BARRIER LONGITUDINAL
R1308E	32	19'–2"		BARRIER LONGITUDINAL
R1309E	24	15'–3"		BARRIER LONGITUDINAL

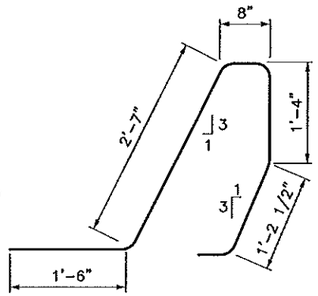
① 4 BARS PER LINE WITH 1'–3" MIN. LAP
② DETAIL MODIFIED
③ PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.



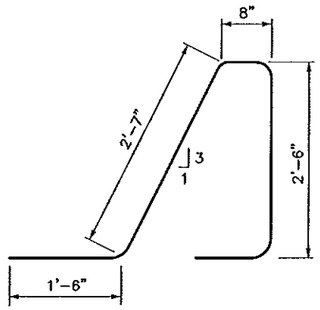
SECTION B–B
(REINFORCEMENT NOT SHOWN)



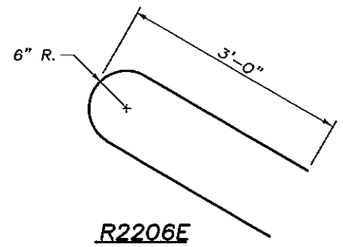
BARRIER RUSTICATION



R1601E ②

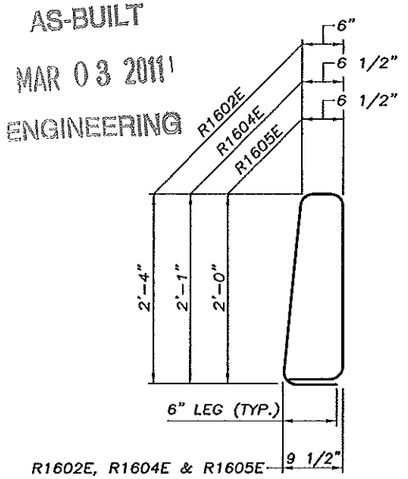


R2203E ②

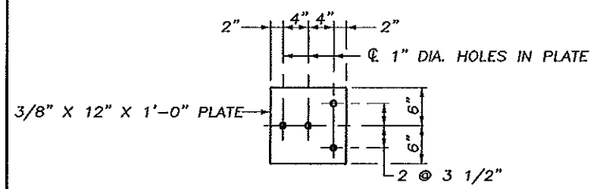


R2206E

AS-BUILT
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ENGINEERING

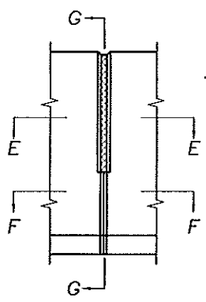


R1602E, R1604E & R1605E ②

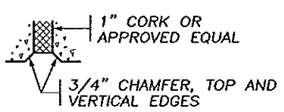


GUARDRAIL CONNECTION DETAIL

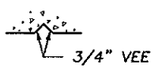
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS.



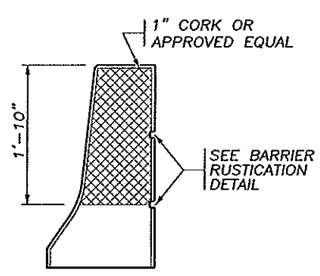
ELEVATION



SECTION E–E



SECTION F–F



SECTION G–G

DEFLECTION JOINT DETAILS

REVISED: 05–26–2006	
APPROVED: DECEMBER 18, 2003	
STATE BRIDGE ENGINEER	

CERTIFIED BY Dale Draves PROFESSIONAL ENGINEER/DALE DRAVES
LIC. NO. 20666 8-8 2007

TITLE: CONCRETE BARRIER (TYPE F, TL–4)
WITH INTEGRAL END POST
(WITHOUT CONCRETE WEARING COARSE)

S.A.P. 55–599–89		FIG. 5–397.115 MOD.
DES.: JAS	DRN.: MJF	APPROVED: MODIFIED
CHK.: DAD	CHK.: CGD	BRIDGE NO. 55582
SHEET NO. B8 OF B13 SHEETS		

GENERAL NOTES

LENGTH OF "TYPE F (TL–4) RAILING CONCRETE (3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.

CONCRETE BARRIER = 439 LBS./FT. (0.108 CU. YD./FT.)

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

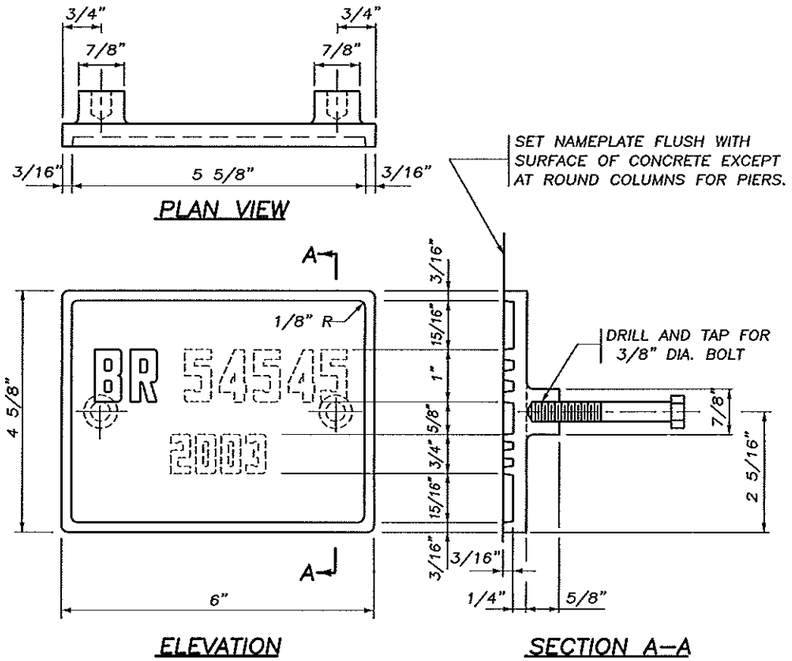
MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.

SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.

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

GUARDRAIL CONNECTION, CORK, & NAME PLATE TO BE CONSIDERED INCIDENTAL TO "TYPE F (TL–4) RAILING CONCRETE (3Y46A)".

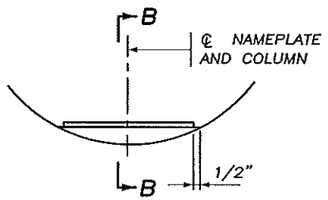
BARRIER QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.



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

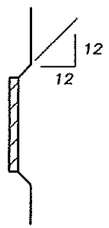
BRIDGE 55582

YEAR 2007



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".

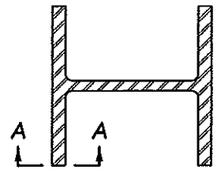
HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.

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

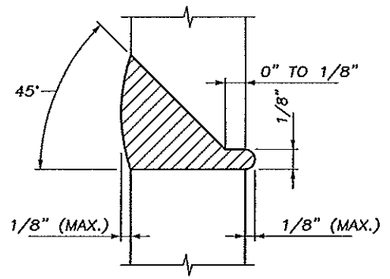
FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.

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	REVISION	DETAIL NO.
Daniel J. Hegyan STATE BRIDGE ENGINEER	BRIDGE NAMEPLATE (FOR NEW BRIDGES)		B101



SECTION AT JOINT



SECTION A–A

100% BUTT WELDED PILE SPLICE

AS-BUILT

MAR 03 2011

ENGINEERING

NOTES:

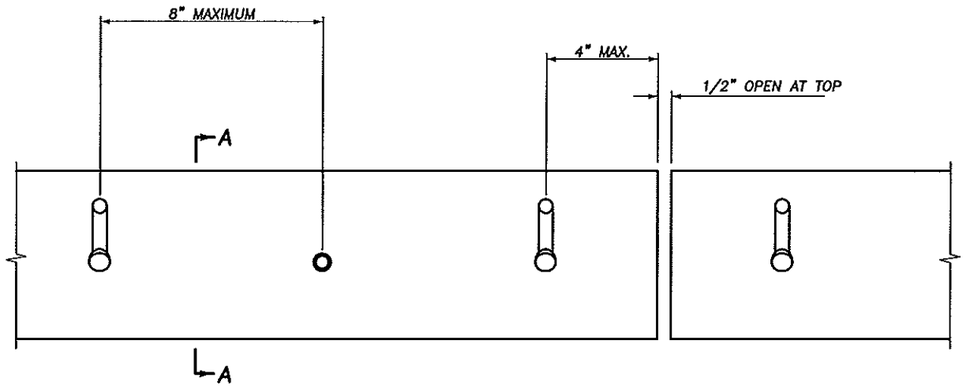
CELLULOSIC TYPE ELECTRODES E–6010 OR E–6011 SHALL BE USED FOR 100% BUTT WELDED SPLICES.

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.

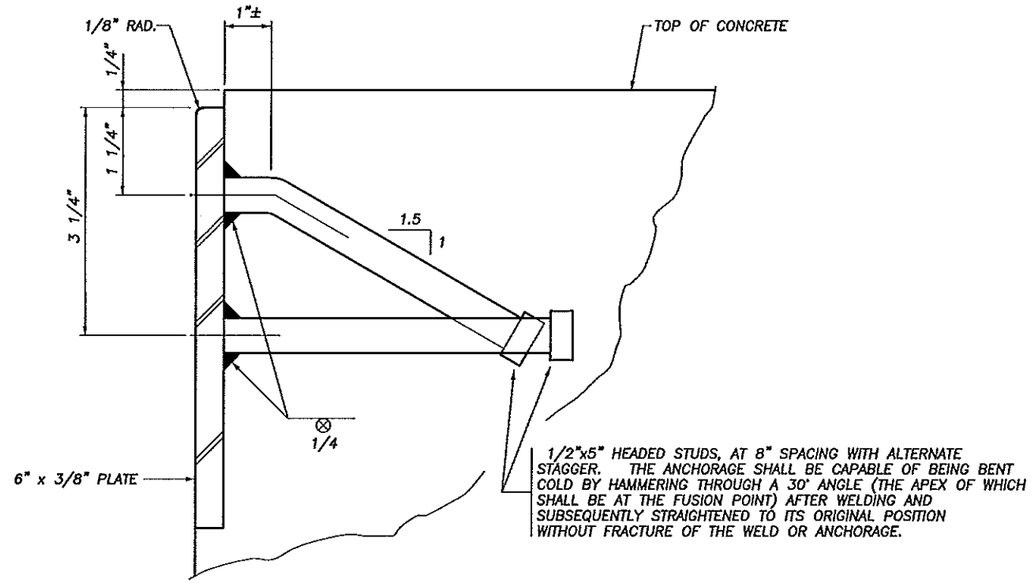
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel J. Hegyan STATE BRIDGE ENGINEER	PILE SPLICE (STEEL H BEARING PILES 10" TO 14")		B202

CERTIFIED BY Dale Draves PROFESSIONAL ENGINEER/DALE DRAVES LIC. NO. 20666 8-8 2007	MISC. BRIDGE DETAILS	DES.: JAS / DRN.: MJF / APPROVED: CHK.: DAD / CHK.: CGD S.A.P. 55–599–89 SHEET B9 OF B13 SHEETS	BRIDGE NO. 55582



ELEVATION

CONCRETE NOT SHOWN



SECTION A–A

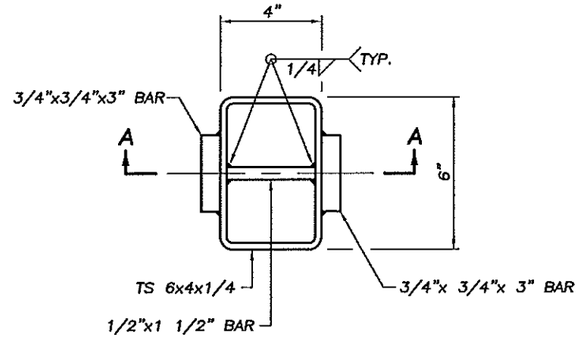
NOTES:

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.

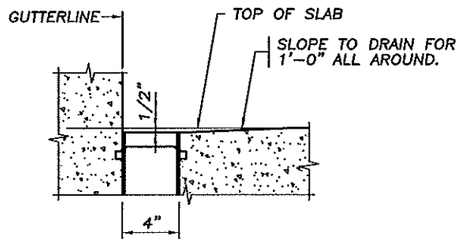
MATERIALS: STRUCTURAL STEEL PER Mn/DOT SPEC. 3306. GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394

SET PLATE TO PROPER GRADE AND CROWN.

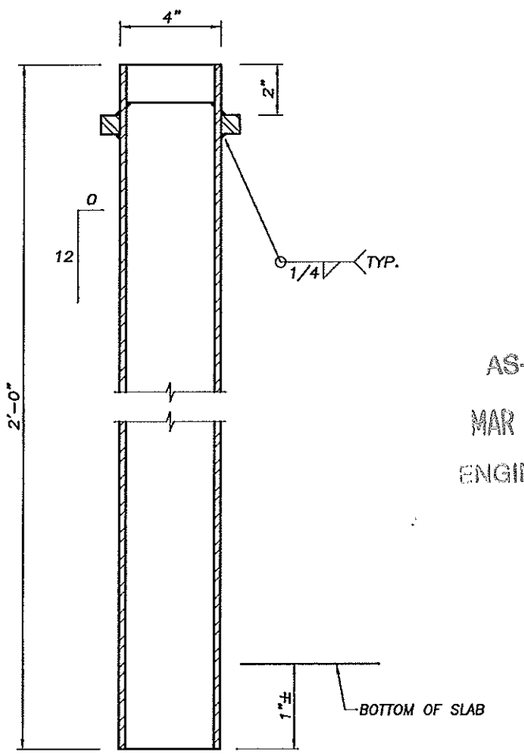
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel D. Morgan STATE BRIDGE ENGINEER	PROTECTION PLATE (END OF SLAB)		B553



PLAN VIEW ①



PLACEMENT DIAGRAM ①



SECTION A–A ①

AS-BUILT
MAR 03 2011
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

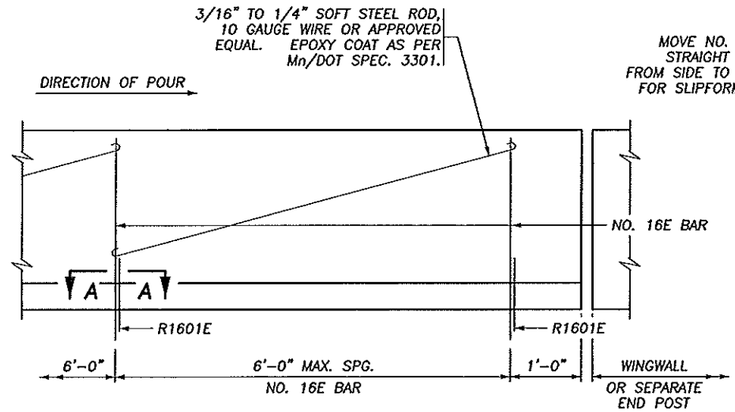
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION 01–13–2004	DETAIL NO.
Daniel D. Morgan STATE BRIDGE ENGINEER	BRIDGE FLOOR DRAIN (STRUCTURAL TUBING)		B702 MODIFIED

CERTIFIED BY Dale D. Draves PROFESSIONAL ENGINEER/DALE DRAVES
LIC. NO. 20666 8-8 2007

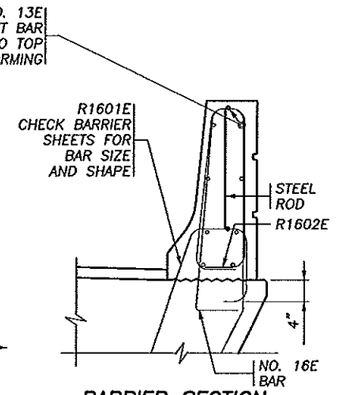
MISC. BRIDGE DETAILS

DES.: JAS	DRN.: MJF	APPROVED:
CHK.: DAD	CHK.: CGD	
S.A.P. 55–599–89		
SHEET B10 OF B13 SHEETS		

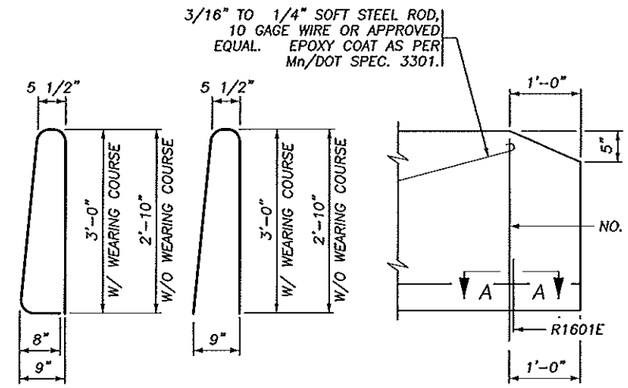
BRIDGE NO. 55582



INSIDE ELEVATION OF BARRIER

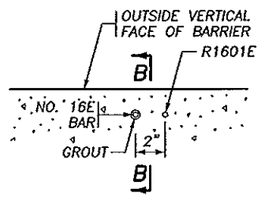


BARRIER SECTION

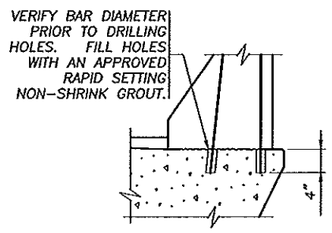


NO. 16E BAR NO. 16E BAR DRILLED IN ALTERNATE

INSIDE ELEVATION OF BARRIER 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 BARRIER IS CAST AND SHALL EXTEND V–GROOVE AROUND ENTIRE PERIMETER OF BARRIER.

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

FORM BARRIER 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 BARRIERS OR MODIFIED VERSIONS OF THIS BARRIER.

AS-BUILT
MAR 03 2011
ENGINEERING

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

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER (TYPE F, TL–4)

(SLIPFORM ALTERNATE)

REVISION

DETAIL NO. B830

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER/DALE DRAVES
LIC. NO. 20666 8-8 2007

MISC. BRIDGE DETAILS

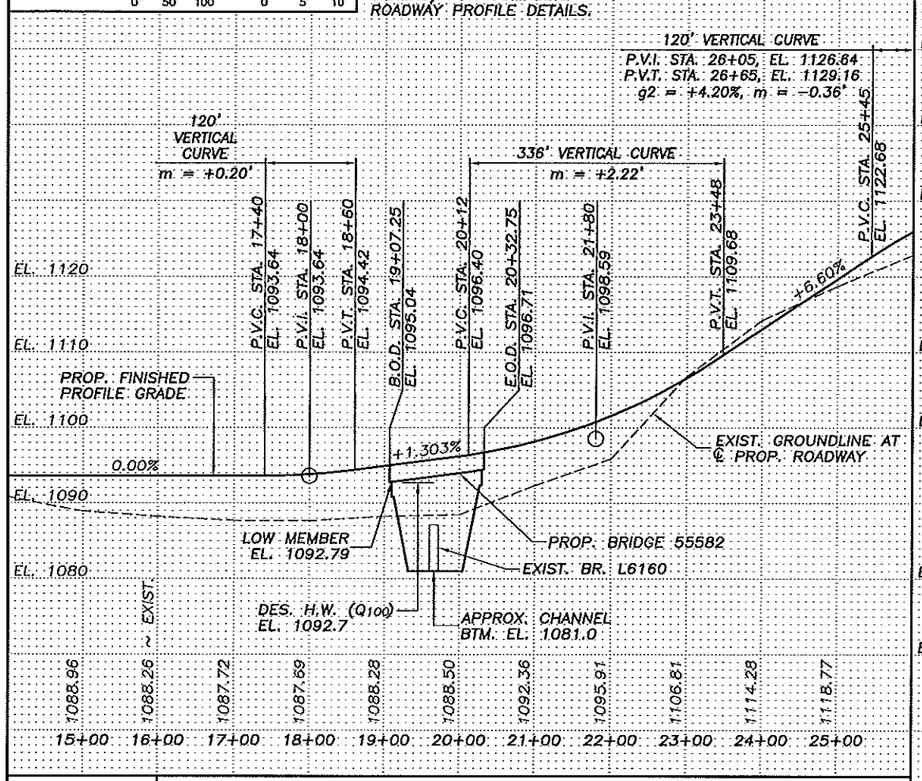
DES.: JAS	DRN.: MJF	APPROVED:
CHK.: DAD	CHK.: CGD	
S.A.P. 55–599–89		
SHEET B11 OF B13 SHEETS		

BRIDGE NO. 55582

CONTRACTED PROFILE

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

NOTE: SEE GRADING PLANS (BY OTHERS) FOR COMPLETE ROADWAY PROFILE DETAILS.



PLAT

SCALE: 0' 50' 100'

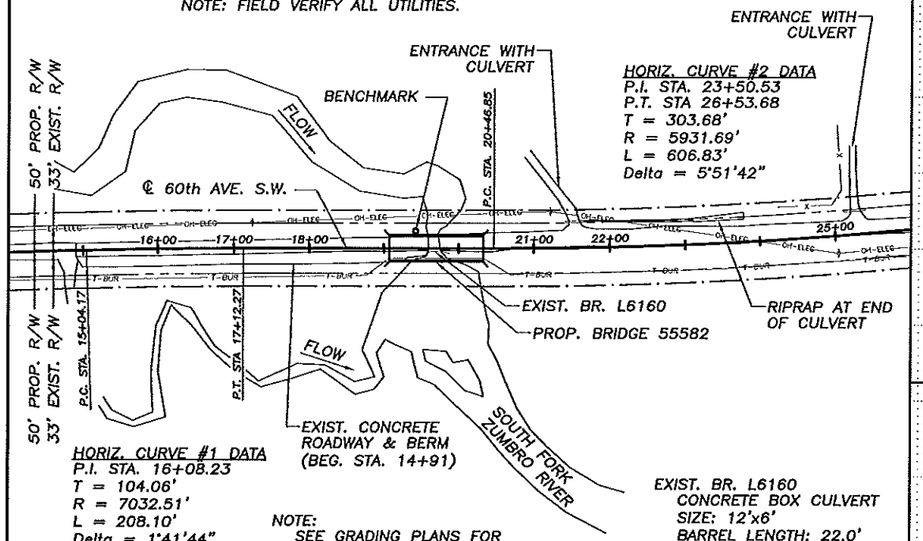
UTILITY INFORMATION

WARNING: DIAL GOPHER STATE ONE CALL AT 1-800-252-1166 48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS TO OBTAIN COMPLETE UTILITY PROPERTY OWNERSHIP AND LOCATION INFORMATION.

UTILITY INFO AVAILABLE FOR PLAN PREPARATION:

KASSON-MANTORVILLE TELEPHONE (VERIFY)	507-634-2511
PEOPLES CO-OP POWER (VERIFY)	800-940-1579

NOTE: FIELD VERIFY ALL UTILITIES.

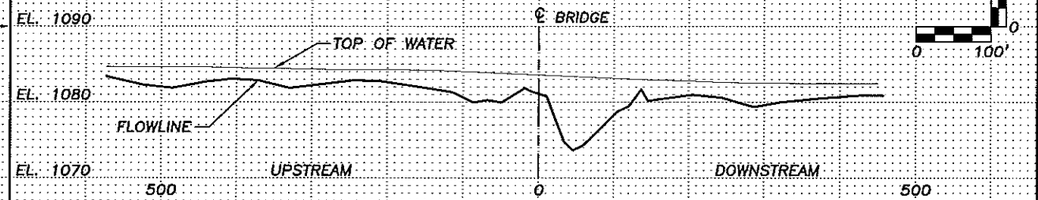


NOTE: SEE GRADING PLANS FOR COMPLETE ROADWAY ALIGNMENT DETAILS.

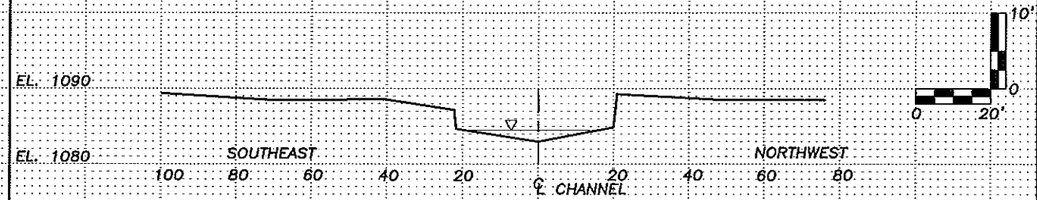
EXIST. BR. L6160
CONCRETE BOX CULVERT
SIZE: 12'x6'
BARREL LENGTH: 22.0'
ROAD WIDTH: 20.1'
YEAR BUILT: 1940

TYPICAL SECTIONS & PERTINENT DATA

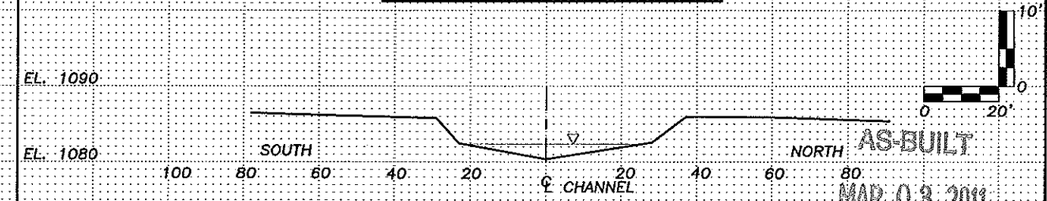
SCALES AS SHOWN



CHANNEL PROFILE



X-SECTION 400' UPSTREAM

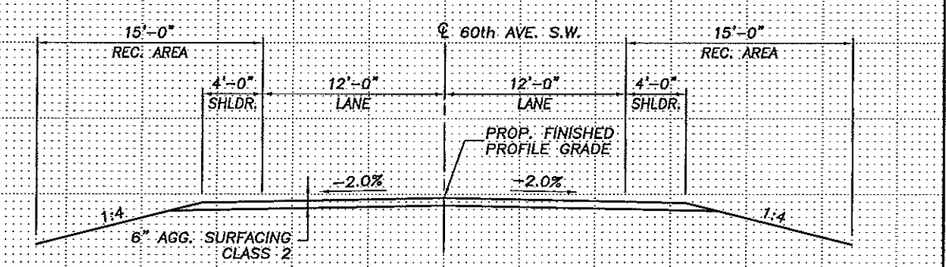


X-SECTION 350' DOWNSTREAM

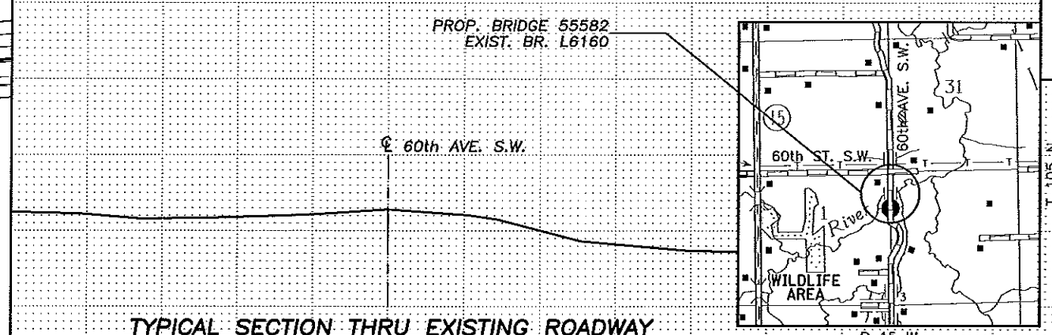
AS-BUILT

MAR 03 2011

ENGINEERING



TYPICAL SECTION THRU PROPOSED ROADWAY



TYPICAL SECTION THRU EXISTING ROADWAY

CERTIFIED BY Dale Drake LIC. NO. 20666 8-8 2007

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 1093.0 Obtained from OLMSTED COUNTY
4. Other data: Approx. velocity of water at time of survey .....

HYDRAULIC ENGINEER'S RECOMMENDATION

DATE 11-22-2006

Stream or ditch designation SOUTH FORK ZUMBRO RIVER
Drainage area 63.5 SQ. MI.
Max. flood on record UNKN Design flood (100 yr. freq.) 6300 C.F.S.
Max. observed highwater elev. 1093.0 Design highwater elev. 1092.7
Design mean velocity through structure 5.7 F.P.S.
Low superstructure at or above elevation 1092.7
Flowline elevation 1081.0 Skew angle 0°
Waterway area req'd. below elev. 1092.7 = 1100 Sq. Ft. ● Rt. angles to channel
In the interest of flood plain zoning the regional flood (100 yr. freq.) is 6300 C.F.S. at stage 1092.7 and mean velocity of 5.7 F.P.S. with 0.1 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.

SCOUR CODE: L
ESTIMATED PIER SCOUR ELEVATION: 1070.2

ENGINEER'S RECOMMENDATION

DATE 11-22-2006

38'-47'-38' CONTINUOUS CONCRETE SLAB SPANS
0° SKEW, 32 FT. ROADWAY WIDTH

Bridge survey sheets made from: SURVEY NOTES FROM OLMSTED COUNTY

Benchmark elevation 1088.86
Location: 1" SQUARE PIPE WITH CAP, APPROX. 30' S.W. OF EXIST. BR. L6160

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

ON 60th AVE. S.W. (TWP. RD. 24)
PROPOSED BRIDGE LOCATED 2.9 MILES NORTH OF JCT. T.H. 30 OVER SOUTH FORK ZUMBRO RIVER
SEC. 1 TWP. 105 N R. 15 W
TOWNSHIP ROCK DELL COUNTY OLMSTED
EXIST. BRIDGE NO. L6160
PROP. BRIDGE NO. 55582

State Aid Proj. No. 55-599-89

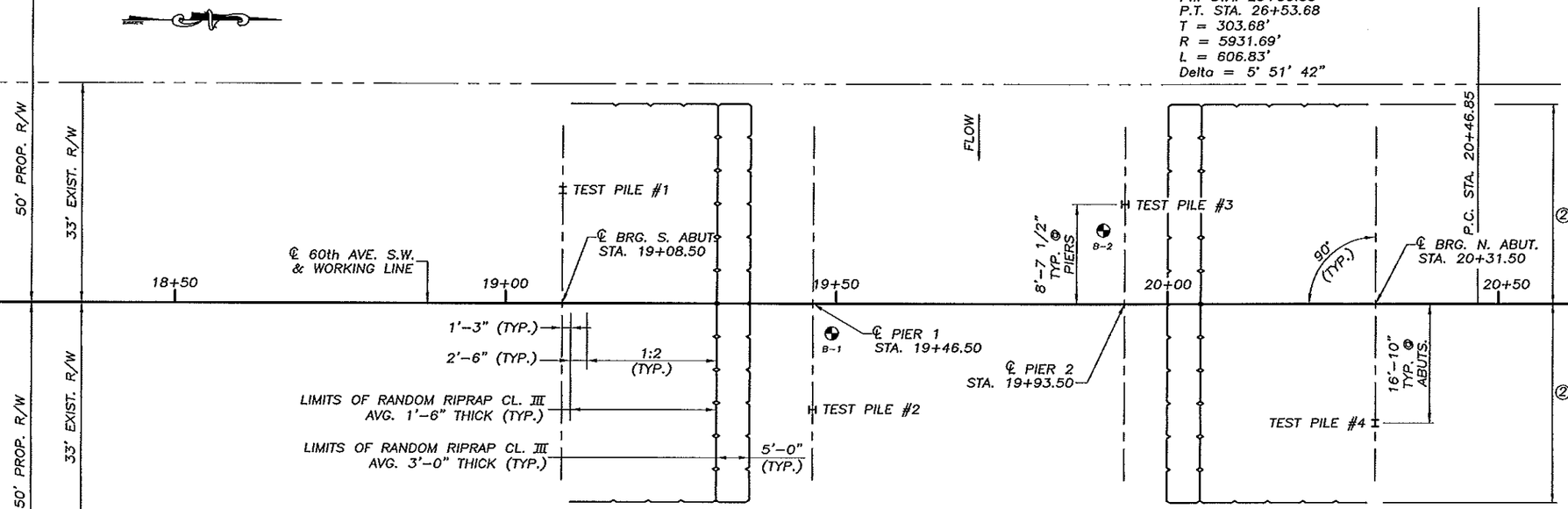
Sheet No. B12 of B13 Sheets

Fed. Proj. No.

HORIZ. CURVE #2 DATA
P.I. STA. 23+50.53
P.T. STA. 26+53.68
T = 303.68'
R = 5931.69'
L = 606.83'
Delta = 5° 51' 42"

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

APPROACH GRADING WITH THIS CONTRACT.



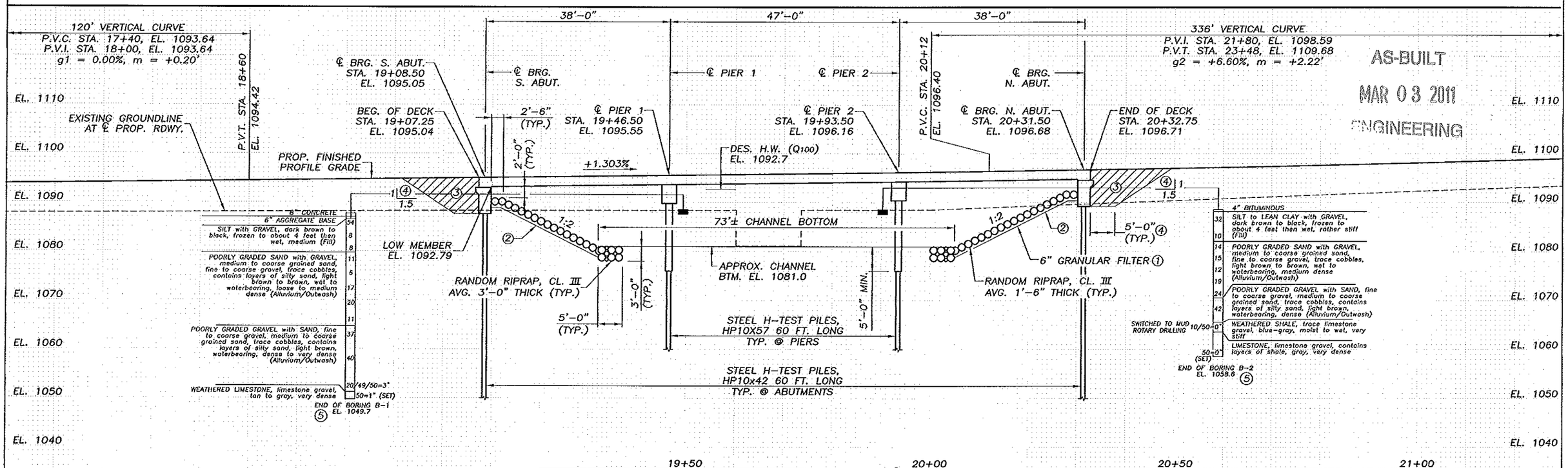
① GRANULAR FILTER IS INCLUDED IN PRICE BID FOR RANDOM RIPRAP, CL. III. APPROX. QUANTITY = 59 CU. YDS.

② BRIDGE CONTRACTOR SHALL EXCAVATE AND FILL TO THESE LINES FOR APPROX. 30' LT. & RT. OF ℄ RDWY., 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 PERPENDICULALR TO THE BACK OF THE ABUTMENT. SEE SHEET B4 FOR REQUIREMENTS.

④ MEASURED PERPENDICULAR TO BACK FACE OF ABUTMENT.

⑤ 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 ENGINEER'S OFFICE.



BORINGS SHOWN B-1 & B-2 TAKEN WITH STD 140 LB HAMMER 30 INCH DROP 2 INCH O.D. SAMPLER	CERTIFIED BY Dale Draves PROFESSIONAL ENGINEER DALE DRAVES LIC. NO. 20666 8-8 2007	**BRIDGE SURVEY PLAN & PROFILE**	DES.: JAS DRN.: MJF CHK.: DAD CHK.: CGD	APPROVED:	**Bridge No. 55582**
		State Aid Proj. No. 55-599-89	**Sheet No. B13 of B13 Sheets**		