MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

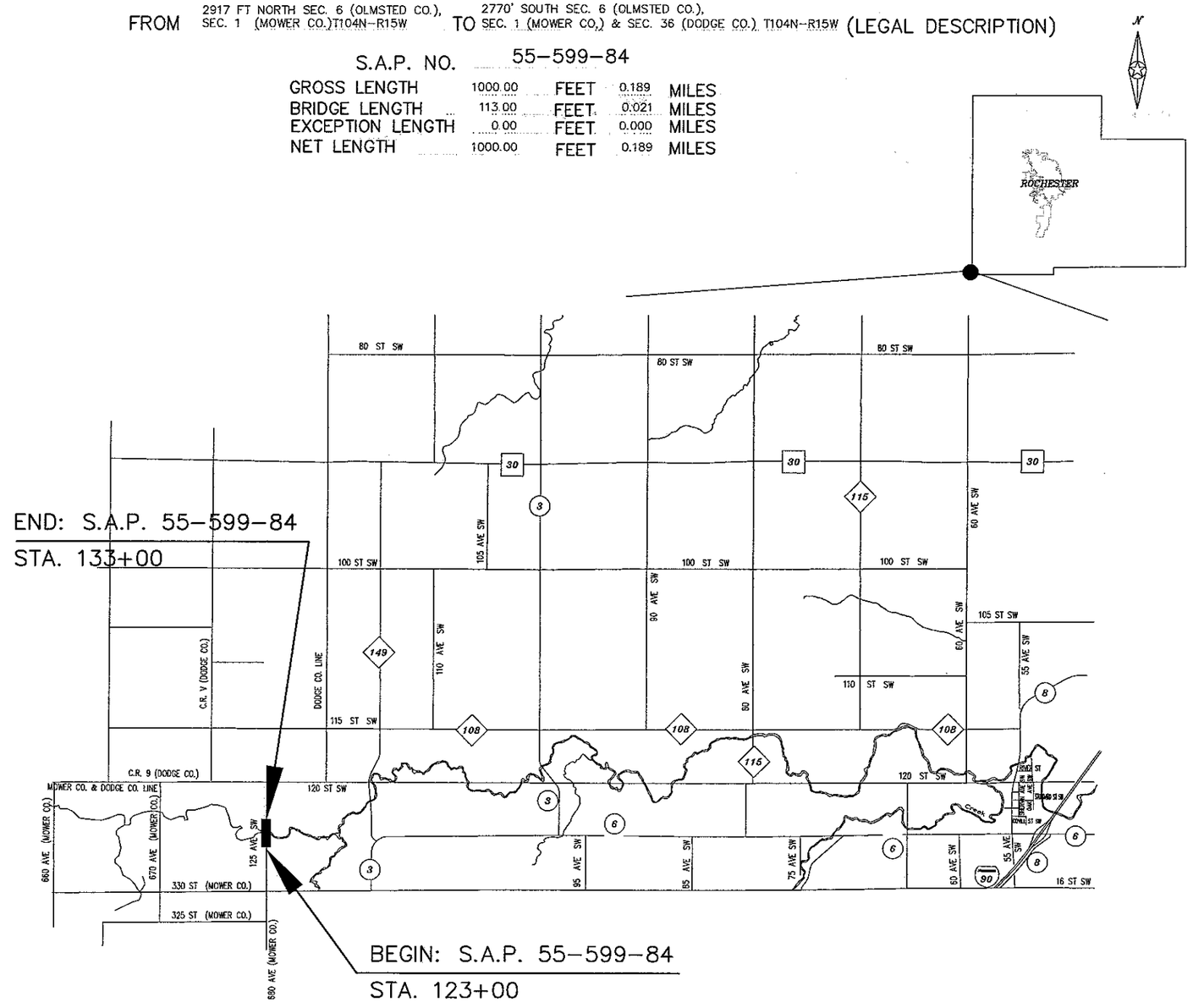
CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, AND BRIDGE NO. 55580 (OLD BR. NO. 2489)

LOCATED ON 125 AVE. S.W. BETWEEN 120 ST. S.W. AND SOUTH COUNTY LINE (GEOGRAPHIC DESCRIPTION)

FROM 2917 FT NORTH SEC. 6 (OLMSTED CO.), SEC. 1 (MOWER CO.) T104N–R15W TO 2770' SOUTH SEC. 6 (OLMSTED CO.), SEC. 1 (MOWER CO.) & SEC. 36 (DODGE CO.) T104N–R15W (LEGAL DESCRIPTION)

S.A.P. NO. 55–599–84

GROSS LENGTH	1000.00	FEET	0.189	MILES
BRIDGE LENGTH	113.00	FEET	0.021	MILES
EXCEPTION LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	1000.00	FEET	0.189	MILES



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 0 100'
PROFILE 0 100' HORIZ 0 10' 20' VERT
CROSS SECTIONS 0 10' 20' HORIZ 0 5' 10' VERT

INDEX MAP· NOT TO SCALE

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 2000 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	PLAN & PROFILE
SHEET NO. 4 – 5	CROSS SECTION
SHEET NO. 6 – 11	EROSION CONTROL
SHEET NO. 12	TRAFFIC
SHEET NO. 1B –22B	BRIDGE PLANS & DETAILS

THIS PLAN CONTAINS 34 SHEETS.

DESIGN DESIGNATION: S.A.P. 55–599–84

ADT (Current Year) = <50(2004) Design Speed 55 MPH
ADT (Future Year) = <50(2024) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5 FT. Height of object 0.5 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%

LANE WIDTH 11 FT.
SHOULDER WIDTH 3 FT

TOWNSHIP APPROVALS:

Kevin Wallek 12/6/04
APPROVED: TWP CHAIRPERSON DATE

LOCAL APPROVALS:

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 11/18/04 REG. NO. 19917

PRINTED NAME: KAYE M. BIENIEK

SIGNED NAME: Kaye M Bieniek
COUNTY DESIGN ENGINEER

DATE 11/19/04 REG. NO. 10397

Richard L Sheehan
APPROVED: OLMSTED COUNTY ENGINEER

Wm L Wagyam DATE: 12/28/04
STATE BRIDGE ENGINEER

STATE AID APPROVALS:

Asst Judy Schmidt DATE: 12-15-04
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

Patt J. Simmons DATE: 1/4/05
APPROVED FOR STATE AID FUNDING:
STATE AID ENGINEER

AS-BUILT
FEB 01 2006
ENGINEERING

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.	48		48
	2105.515	UNCLASSIFIED EXCAVATION	CU. YD.	1,646		1,646 (P)
	2105.523	COMMON BORROW (CV)	CU. YD.	3,428		3,428 (P)
(2)	2211.501	AGGREGATE BASE CL.2	TON	1,200		1,200
	2501.511	18" C.S. PIPE CULVERT	LIN. FT.	90		90
	2501.515	18" G.S. PIPE APRON	EACH	4		4
(3)	2575.555	TURF ESTABLISHMENT	LUMP SUM	1		1

(P) PLAN

QUANTITY NOTES:

(1) APPROX 3 TREES

(2) INCLUDES 150 TON FOR ENTRANCES

(3) APPROX 2 ACRES

BASIS OF PLANNED QUANTITIES

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

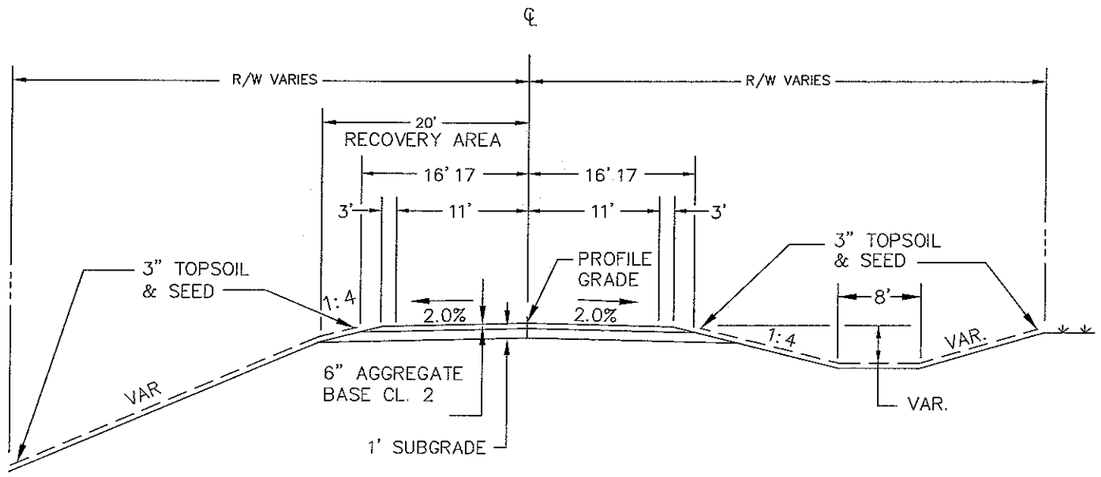
STANDARD PLATES

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

TYPICAL SECTION

STA. 123+00 TO STA. 133+00



NOTES: ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE LOCATED OUTSIDE THE 20 FT. RECOVERY AREA BY OTHERS

AS-BUILT

FEB 01 2006

ENGINEERING

CERTIFIED BY Gary M Bierwick LICENSED PROFESSIONAL ENGINEER REG. NO. 19917 11/18 2004

S.A.P. NO. 55-599-84 HIGH FOREST TWP.

SHEET 2 OF 12 SHEETS

BR. NO. 2489 STA. 129+10
53' x 18' STEEL LOW TRUSS
REMOVE BRIDGE

RES. ENT. LT. STA. 129+89
INPL. 15"x 26' CMP
NO APRON INPL.
REMOVE 26 LIN FT

MOVE LT. STA. 130+32
18"x 48' C.S. PIPE CULV.
2 – 18" G.S. APRONS

F.E. LT. STA. 125.33
18"x44' C.S. Pipe Culv.
2-18" GS Aprons

BEGIN: STA. 123+00
STA. 126+62.0968
END: STA. 133+00
EXIST. 33'
60' R/W
50' R/W
40' T.E.
75' T.E.
50' T.E.
+83
+32
+74

F.E. RT. STA. 129+74
INPL. 15"x 22' CMP
NO APRON INPL.
REMOVE 22 LIN FT

MOVE RT. STA. 130+32
18"x 42' C.S. PIPE CULV.
2 – 18" G.S. APRONS

SCALES:
0 100' HORIZ.
0 10' 20' VERT.

FINISHED PROFILE
EXISTING PROFILE

1281.74 1280.90 1280.64 1280.60 1280.95 1281.35 1281.75 1282.15 1282.55 1282.65 1282.75

1281.74 1280.98 1277.84 1275.53 1275.54 1276.04 1279.67 1280.78 1282.16 1282.85 1282.85

BEGIN: STA. 123+00
EL. 1281.74
P.I. STA. 123+50
EL. 1281.36
V.C. 0
P.V.C. STA. 123+67.50
EL. 1281.18
P.I. STA. 124+50
EL. 1280.35
V.C. 165
E = 0.29
P.V.T. STA. 125+32.50
EL. 1280.68
P.I. STA. 130+00
EL. 1282.55
V.C. 0
END: STA. 133+00
EL. 1282.85

-0.76% -1.01% 0.40% 0.10%

1320 1310 1300 1290 1280 1270 1260 1250 1240 1230

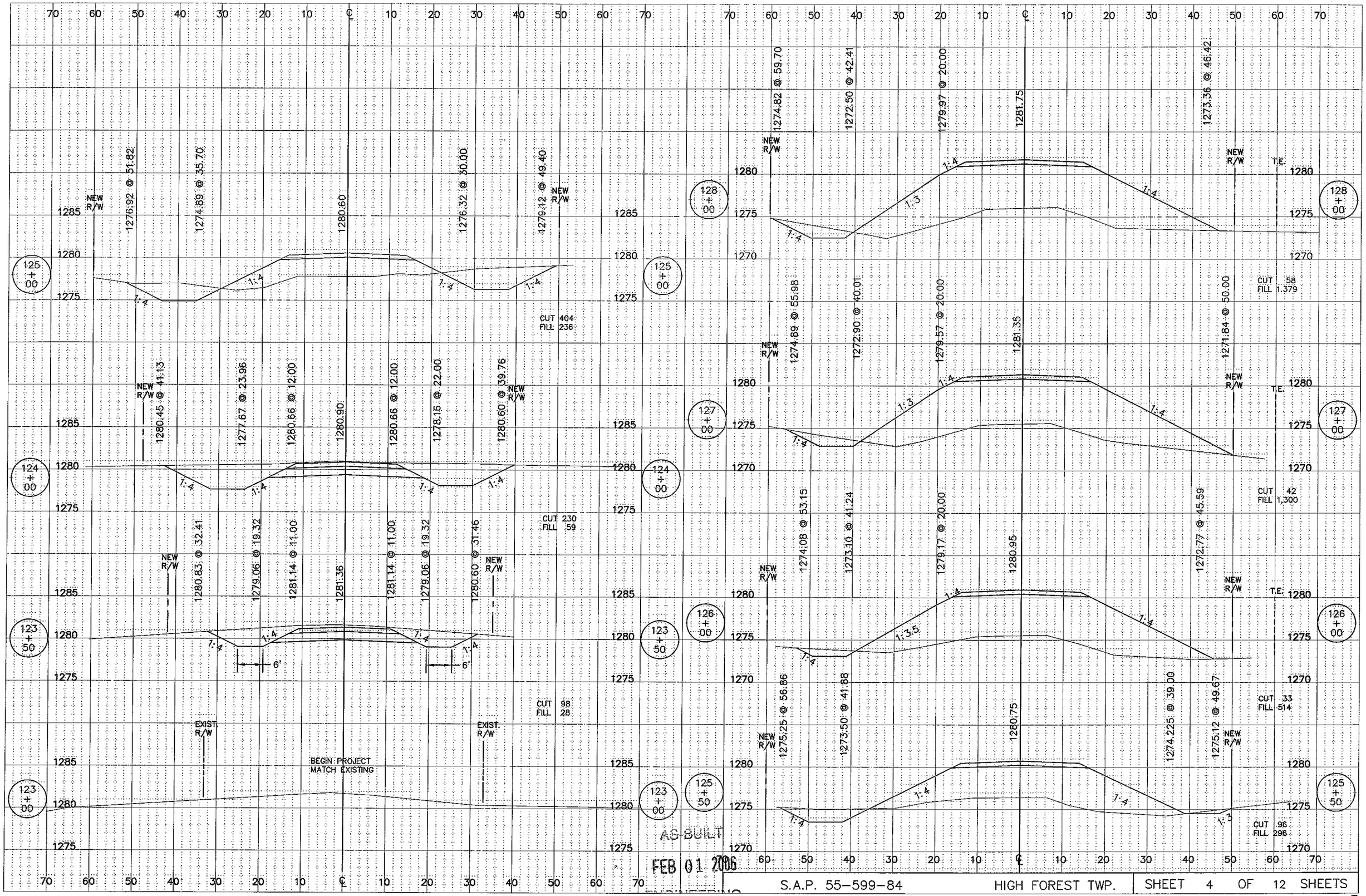
121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00 134+00 135+00 136+00

AS-BUILT
FEB 01 2006
ENGINEERING

CERTIFIED BY Kevin M Biernick REG. NO. 19917 11/18 2004
LICENSED PROFESSIONAL ENGINEER

S.A.P. 55-599-84 HIGH FOREST TWP.

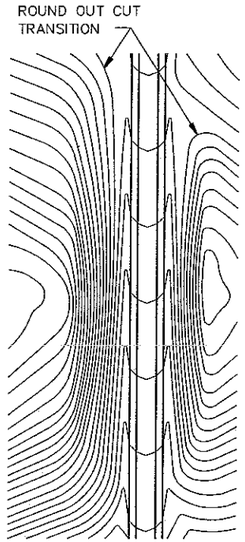
SHEET 3 OF 12 SHEETS


70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70
1285
1280
1275
1270
NEW R/W
EXIST. R/W
T.E.
1:4
1:3
1:3.5
6'
1276.92 @ 51.82
1274.89 @ 35.70
1280.60
1276.32 @ 30.00
1279.12 @ 49.40
1274.82 @ 59.70
1272.50 @ 42.41
1279.97 @ 20.00
1281.75
1273.36 @ 46.42
1271.84 @ 50.00
1280.45 @ 41.13
1277.67 @ 23.96
1280.66 @ 12.00
1280.90
1280.66 @ 12.00
1278.15 @ 22.00
1280.60 @ 39.76
1274.89 @ 55.98
1272.90 @ 40.01
1279.57 @ 20.00
1281.35
1280.83 @ 32.41
1279.06 @ 19.32
1281.14 @ 11.00
1281.36
1281.14 @ 11.00
1279.06 @ 19.32
1280.60 @ 31.46
1274.08 @ 53.15
1273.10 @ 41.24
1279.17 @ 20.00
1280.95
1272.77 @ 45.59
1275.25 @ 56.86
1273.50 @ 41.88
1280.75
1274.225 @ 39.00
1275.12 @ 49.67
125 + 00
128 + 00
124 + 00
127 + 00
123 + 50
126 + 00
123 + 00
125 + 50
CUT 404
FILL 236
CUT 58
FILL 1,379
CUT 230
FILL 59
CUT 42
FILL 1,300
CUT 98
FILL 28
CUT 33
FILL 514
CUT 96
FILL 296
BEGIN PROJECT
MATCH EXISTING
AS BUILT
FEB 01 2006

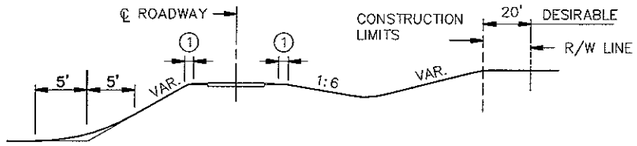
UNCLASSIFIED EXC. 1,646 CU. YDS.
EMBANKMENT 5,074 CU. YDS.
COMMON BORROW 3,428 CU. YDS. (CV)

EXIST. R/W
END PROJECT MATCH EXISTING
EXIST. R/W
CUT 127
FILL 84
CUT 223
FILL 200
CUT 239
FILL 214
CUT 69
FILL 161
CUT 27
FILL 603
END BRIDGE
START BRIDGE
RES. ENT
FIELD ENT
NEW R/W
50' T.E.
40' T.E.
T.E.
1:4
1:2
1:3
6'
1.2%
6%
1280.28 @ 50.51
1277.71 @ 32.24
1282.55
1278.98 @ 45.34
1280.55 @ 44.30
1278.47 @ 30.00
1283.10
1279.53 @ 40.22
1270.59 @ 40.03
1280.61 @ 20.00
1282.39
1277.55 @ 32.23
1278.76 @ 45.00
1279.84 @ 46.42
1278.11 @ 31.04
1282.65
1279.28 @ 43.71
1280.40 @ 169.00
1274.14 @ 58.84
1272.31 @ 43.54
1280.16 @ 20.00
1281.94
1272.98 @ 48.72
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1282.58
130 + 00
131 + 00
132 + 00
133 + 00
129 + 59.50
128 + 46.50
130 + 32

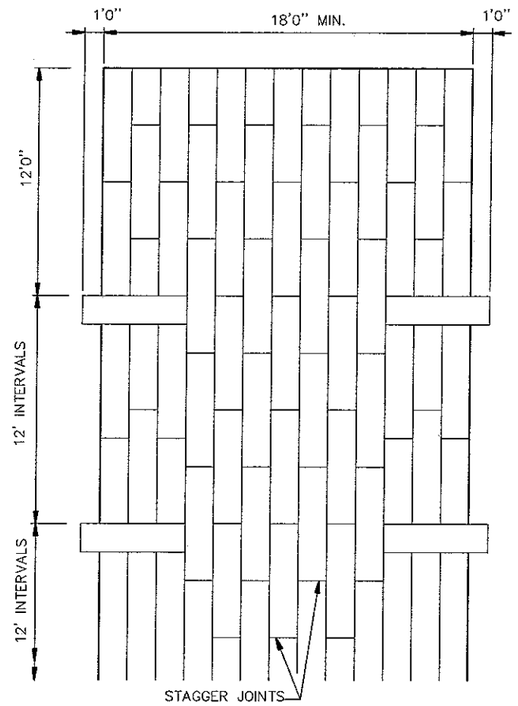
AS-BUILT
FEB 01 2006
ENGINEERING



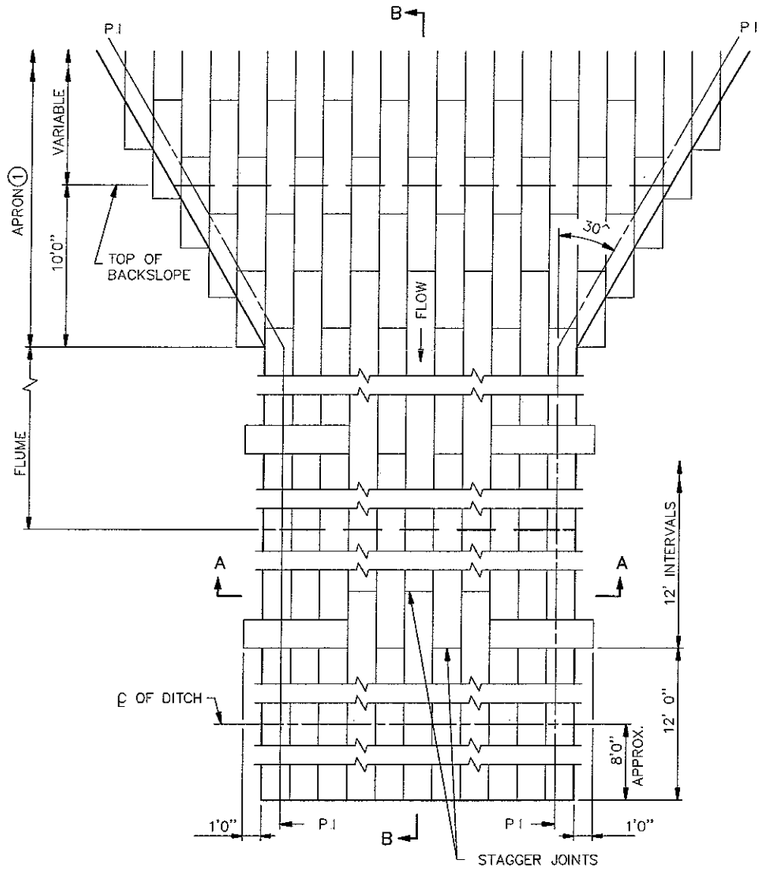
CONTOURING ROAD CUTS



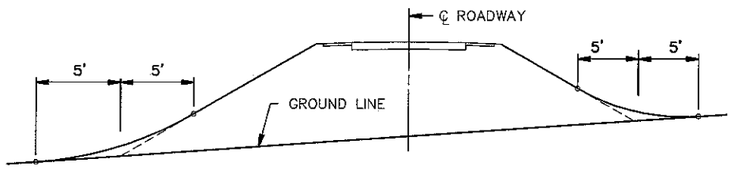
ROUNDING SHOULDERS AND BACKSLOPES



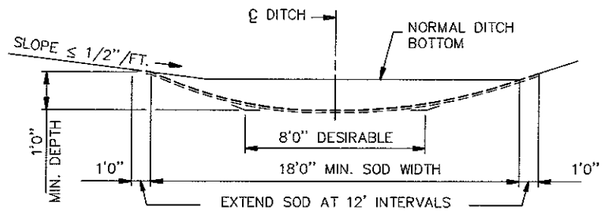
PLAN VIEW



PLAN VIEW

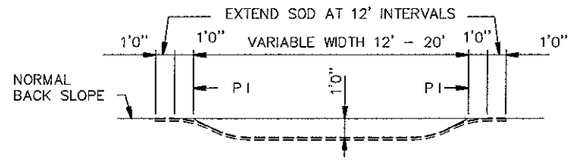


SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

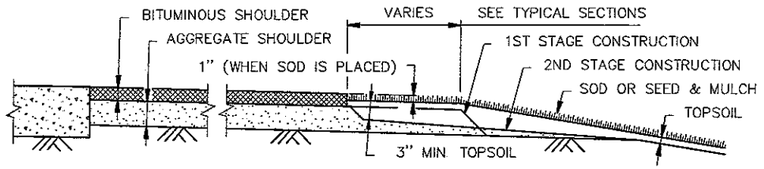


SODDED DITCH CROSS SECTION

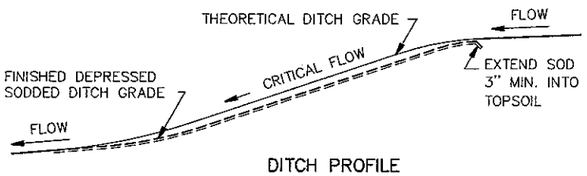
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



SECTION A–A

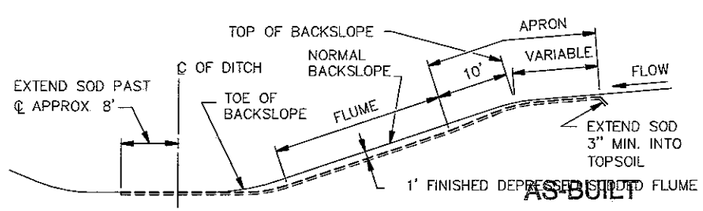


SHAPING AND TOPSOILING INSLOPES



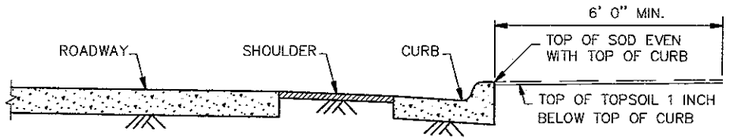
DITCH PROFILE

SODDED DITCH DETAILS



SECTION B–B

SODDED FLUME DETAILS



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

AS-BUILT

FEB 01 2006

ENGINEERING

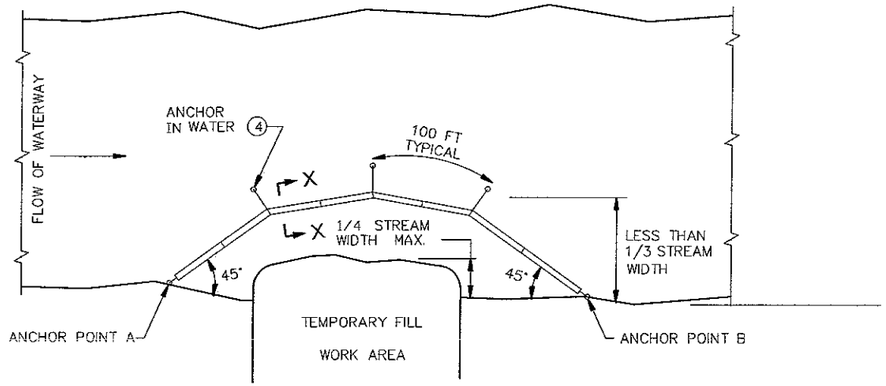
NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION

① CONSTRUCT TAPER AS DIRECTED BY ENGINEER.

STANDARD SHEET NO. 5–297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	

S.A.P. 55–599–84 HIGH FOREST TWP. SHEET NO 6 OF 12 SHEETS



PLAN VIEW

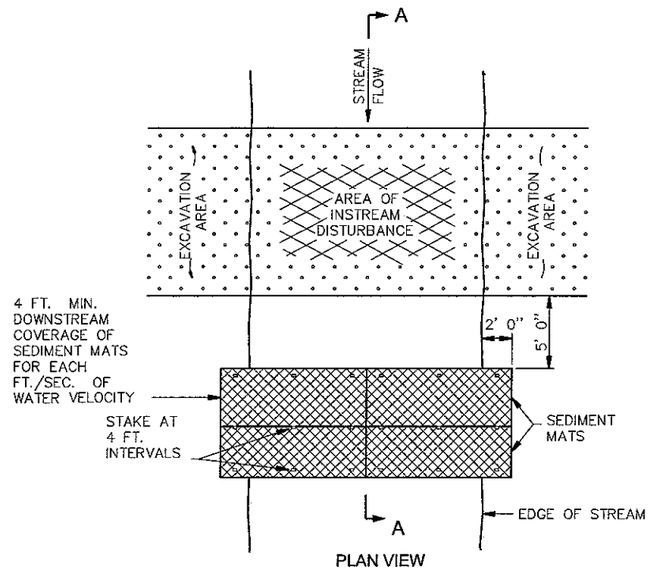
FLOTATION SILT CURTAIN - TYPE WORK AREA

(SPEC. 3887)

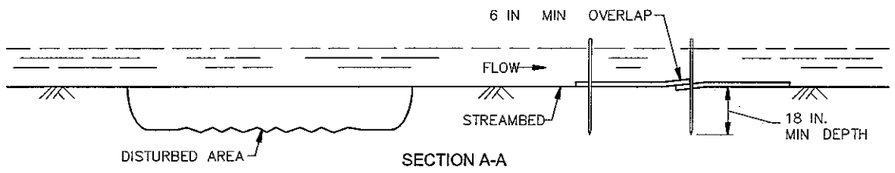
FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

DESIGN GUIDELINES:

WHEN TEMPORARY FILL ENCROACHES LESS THAN 1/4 OF THE WIDTH OF STREAM.
MAXIMUM WATER VELOCITY: 5 FT /SEC.
MAXIMUM WATER DEPTH: 11 FT



PLAN VIEW



SECTION A-A

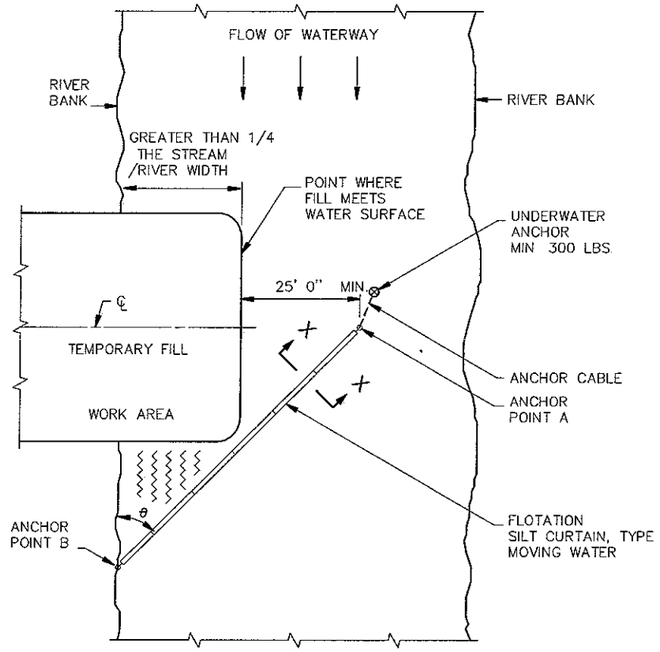
SEDIMENT MAT

(SPEC. 3894)

TYPICAL STREAMBED INSTALLATION

DESIGN GUIDELINES:

MAXIMUM FLOW VELOCITY: 5 FT /SEC.
MAXIMUM FLOW DEPTH: 2 FT



∠ θ	RIVER VELOCITY
45°	SLOW, LESS THAN 3 FT./SEC.
35°	MODERATE, 3 – 5 FT./SEC.

PLAN VIEW

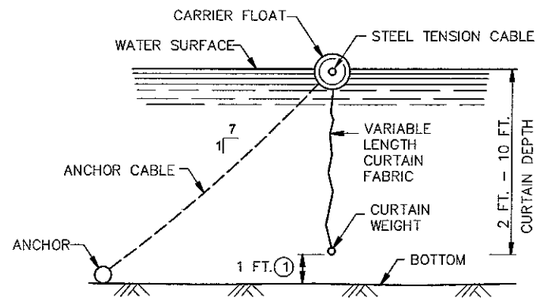
FLOTATION SILT CURTAIN - TYPE MOVING WATER

(SPEC. 3887)

DESIGN GUIDELINES:

WHEN TEMPORARY FILL ENCROACHES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM

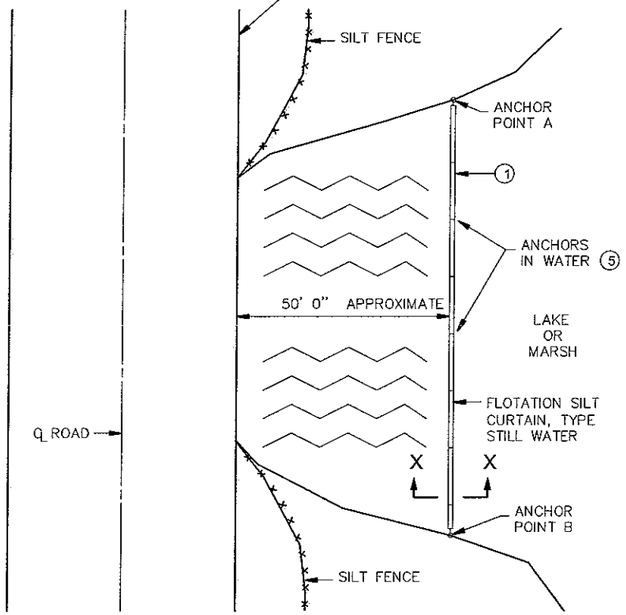
MAXIMUM WATER DEPTH: 11 FT (1)
MINIMUM WATER DEPTH: 3 FT
MAXIMUM WATER VELOCITY: 5 FT /SEC.



SECTION X-X

FLOATATION SILT CUTAIN

(SPEC. 3887)



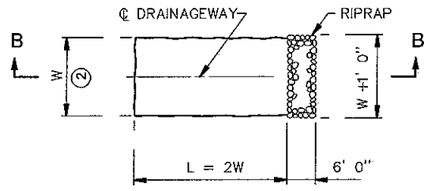
PLAN VIEW

FLOTATION SILT CURTAIN - TYPE STILL WATER

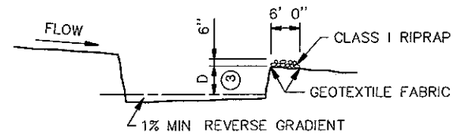
(SPEC. 3887)

DESIGN GUIDELINES:

MAXIMUM WATER DEPTH: 11 FT (1)
MINIMUM WATER DEPTH: 3 FT



PLAN



SECTION B-B

SEDIMENT TRAP DETAIL

(SPEC. 2573)

AS-BUILT

FEB 01 2006

ENGINEERING

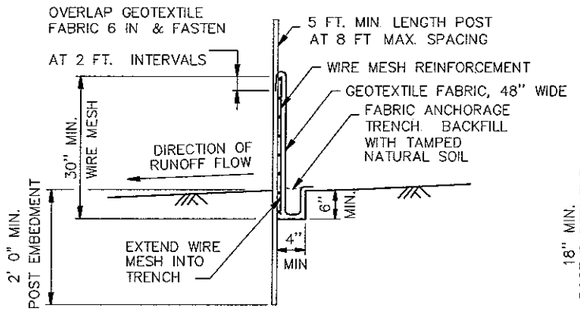
NOTES:

SEE SPECS. 2573, 3887 & 3894.

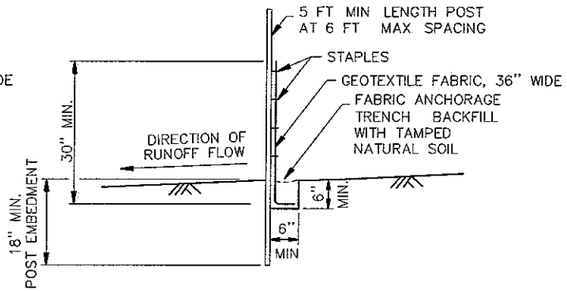
(1) CURTAIN 1 FT. FROM BOTTOM
(2) W = 10 FT MIN, 20 FT MAX.
(3) D = 2 FT
(4) 100 FT. MAX. SPACING BETWEEN ANCHORS, MIN 40 LBS.
(5) USE ENOUGH ANCHORS TO HOLD SILT CURTAIN IN PLACE.

STANDARD SHEET NO.	TITLE:
5-297.405 (1 OF 4)	TEMPORARY EROSION CONTROL
STANDARD APPROVED: July 30, 2001	

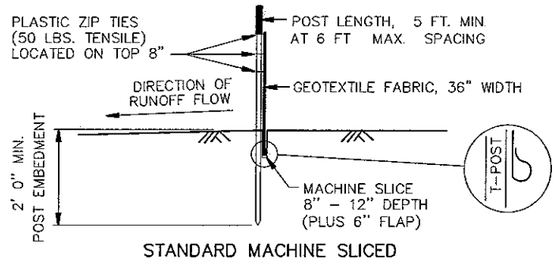
S.A.P. 55-599-84 HIGH FOREST TWP. SHEET NO 7 OF 12 SHEETS



HEAVY DUTY



PREASSEMBLED

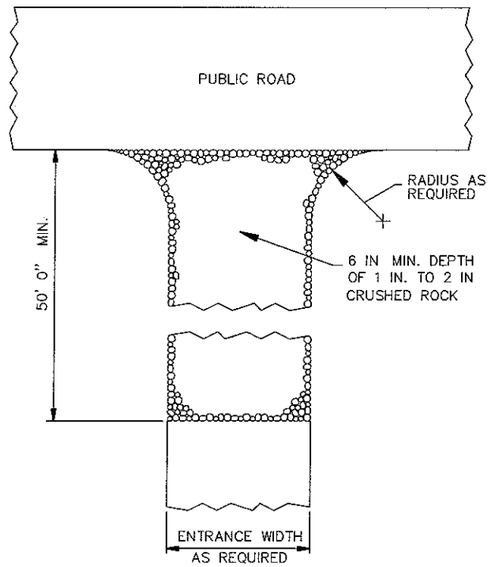


STANDARD MACHINE SLICED

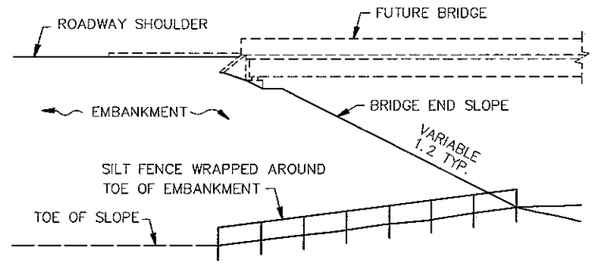
SILT FENCE DETAILS

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

DESIGN GUIDELINES:
MAXIMUM CONTRIBUTING AREA: 3 ACRES

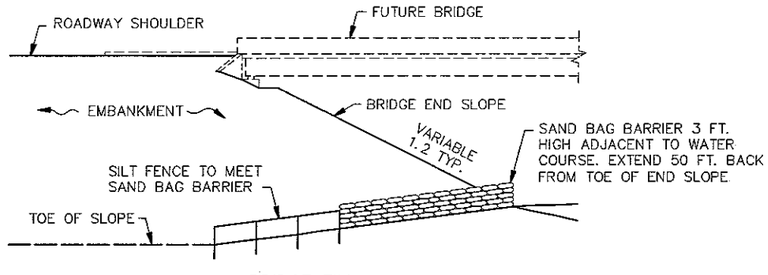


ROCK CONSTRUCTION ENTRANCE①



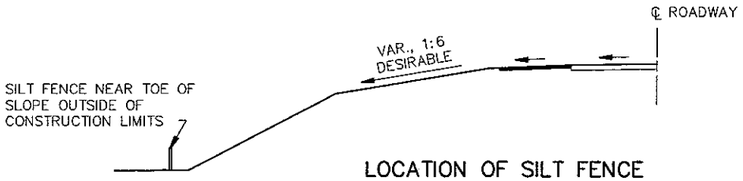
BRIDGE FILL

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

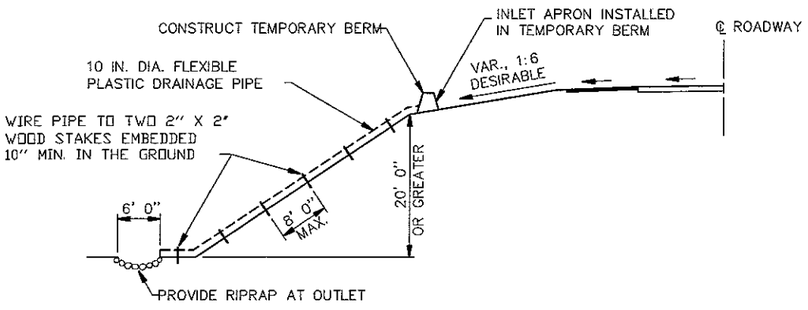


BRIDGE FILL

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

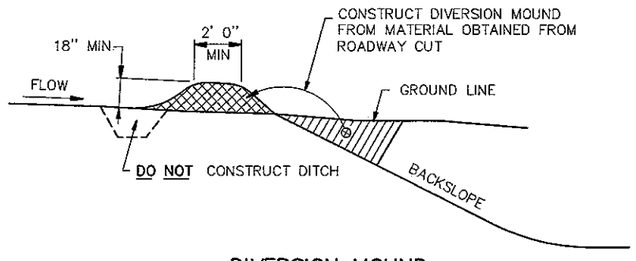


LOCATION OF SILT FENCE
AT TOE OF ROADWAY EMBANKMENT



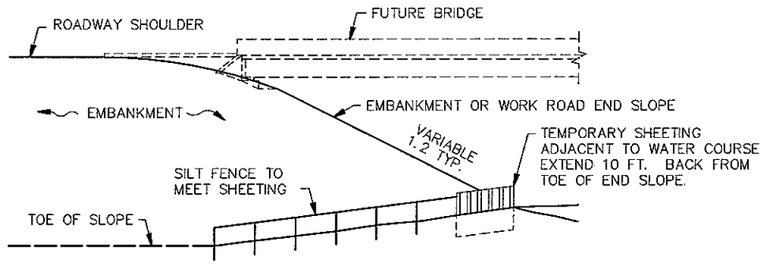
TEMPORARY DRAIN ON FILL SLOPE

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%



EMBANKMENT OR WORK ROAD FILL

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

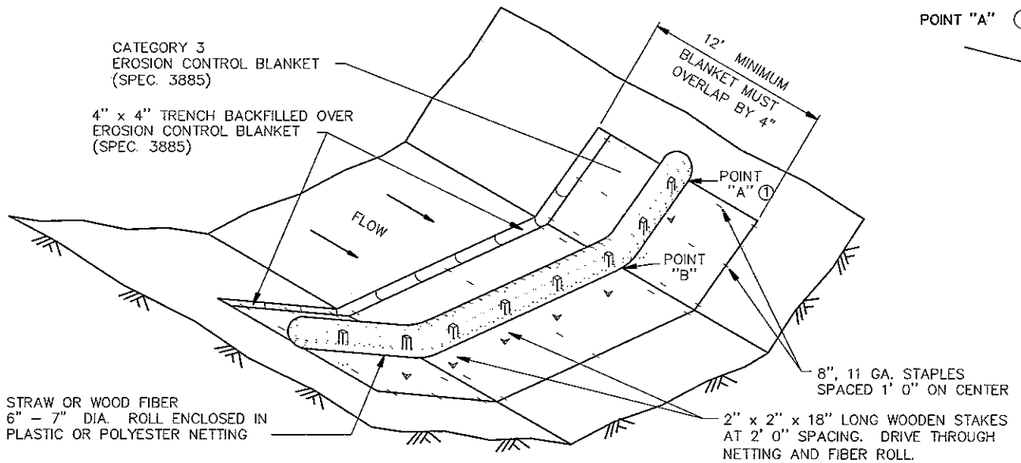
SILT FENCE AT BRIDGE EMBANKMENT

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ENGINEERING

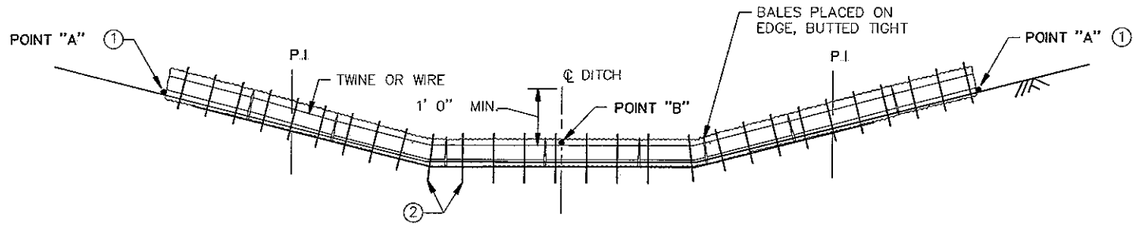
NOTES:
SEE SPECS. 2573 & 3886.

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.

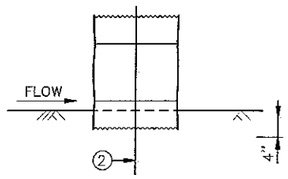
STANDARD SHEET NO. 5-297.405 (2 OF 4)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: JULY 30, 2001	



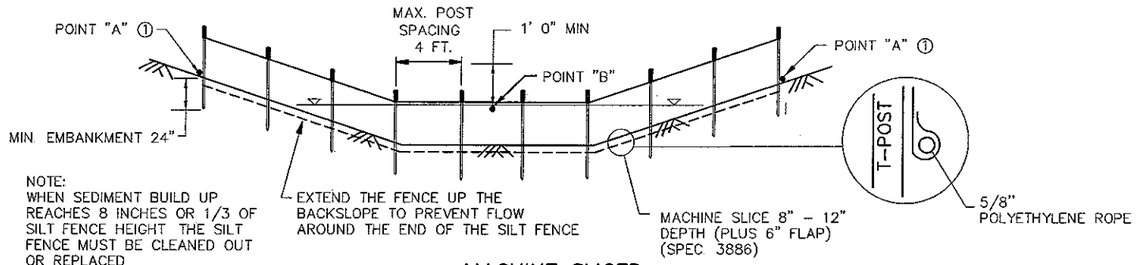
BIOROLL BLANKET SYSTEM
(TYPE 3 SPEC. 3889)



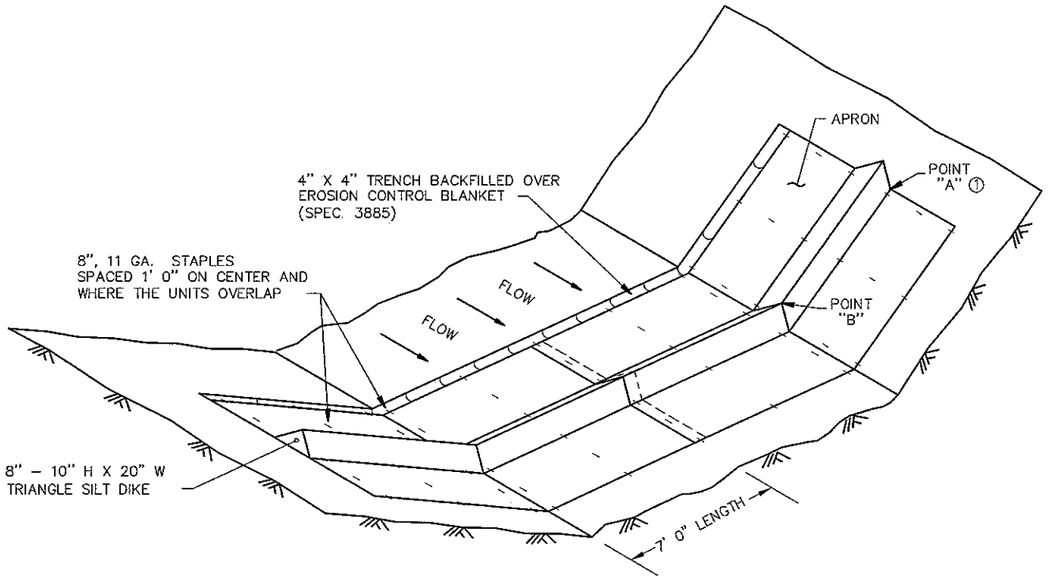
BALE DITCH CHECK
(USED ON ROUGH GRADED SOIL. REMOVE AFTER ROUGH GRADING IS COMPLETED CAN BE USED AT WETLAND PERIMETERS ANYTIME)



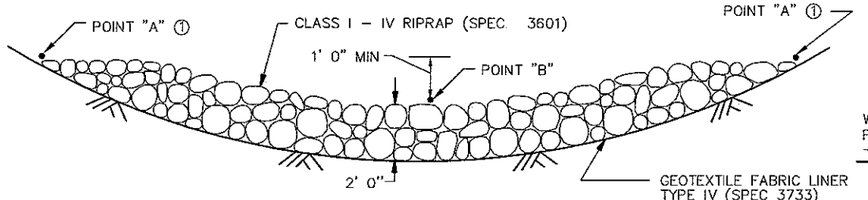
EMBEDMENT METHOD
BALE CHECK DETAIL



MACHINE SLICED
(TYPE 1 SPEC. 3889)

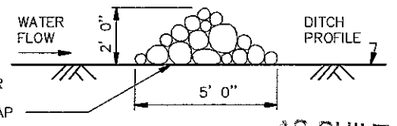


GEOTEXTILE TRIANGULAR DIKE
(TYPE 6 SPEC. 3889)



CROSS SECTION

NOTE:
ROCK DITCH CHECK SHALL BE REMOVED FROM THE CLEAR ZONE AFTER SEEDING OR TURF IS ESTABLISHED AND PRIOR TO FINAL ACCEPTANCE.



PROFILE VIEW

ROCK CHECK
(TYPE 7 SPEC. 3889)

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NOTES:

SEE SPECS. 2573, 3885, 3886 & 3889.

SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM SPACING FORMULA:

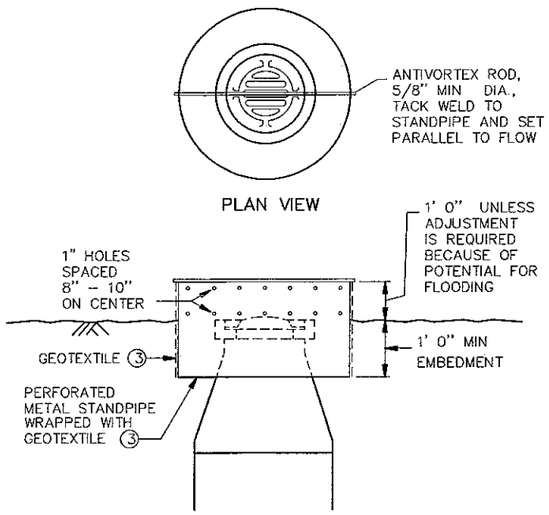
$$\text{SPACING OF DITCH CHECKS (FT)} = \frac{\text{HEIGHT OF DITCH CHECK (FT.)} \times 100}{\text{DITCH GRADE IN PERCENT}}$$

① POINT "A" MUST BE 1' 0" MIN. HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② TWO 2 IN. x 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE AND ENBEDDED IN THE GROUND 10 IN MIN

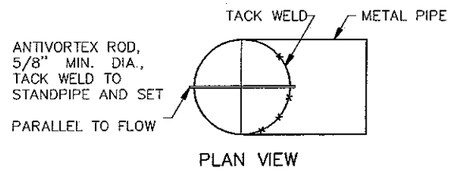
STANDARD SHEET NO. 5-297.405 (3 OF 4)	TITLE: TEMPORARY EROSION CONTROL DITCH CHECKS
STANDARD APPROVED: NOVEMBER 5, 2002	

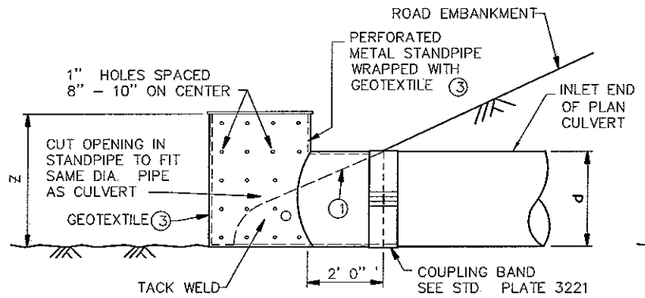
S.A.P. 55-599--84 HIGH FOREST TWP. SHEET NO 9 OF 12 SHEETS



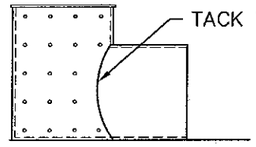
RISER STANDPIPE
TO PROTECT DROP INLET

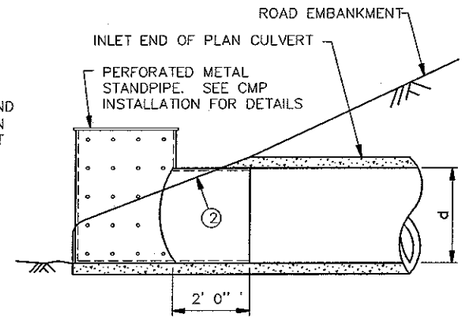
DESIGN GUIDELINES:
STORM FREQUENCY· 10 YEAR – 24 HOUR





ELEVATION OF CMP INSTALLATION



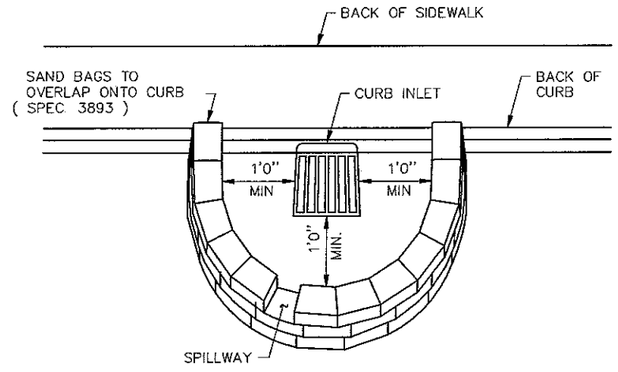


ELEVATION OF RCP INSTALLATION

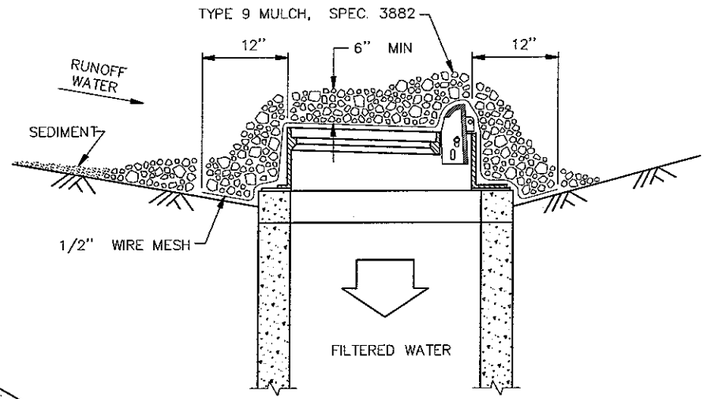
RISER STANDPIPE
FOR SEDIMENT CONTROL ON CULVERT INLET
(TYPE D SPEC. 3891)

d = DIA. OF STANDPIPE EQUAL TO DIA. OF PLAN CULVERT
z = LENGTH OF PERFORATED STANDPIPE (12")

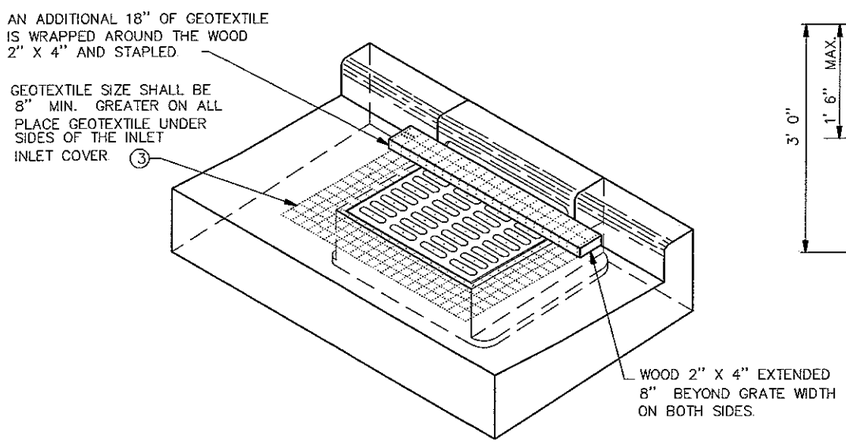
DESIGN GUIDELINES:
CULVERT SIZE: 12" – 36"
STORM FREQUENCY· 10 YR. – 24 HR



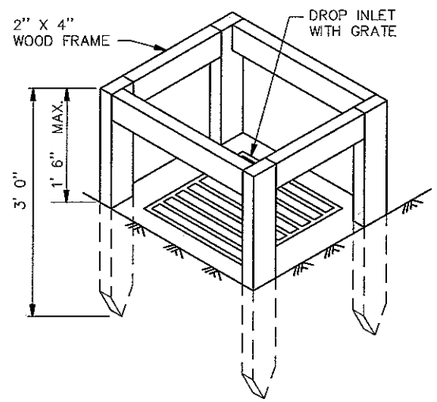
SANDBAG BARRIER AT STREET INLET
THIS INLET PROTECTION IS USED DURING ROUGH GRADING ONLY USE BEFORE ROAD IS OPEN TO TRAFFIC OR IS PAVED
(TYPE B OR C SPEC. 3893)

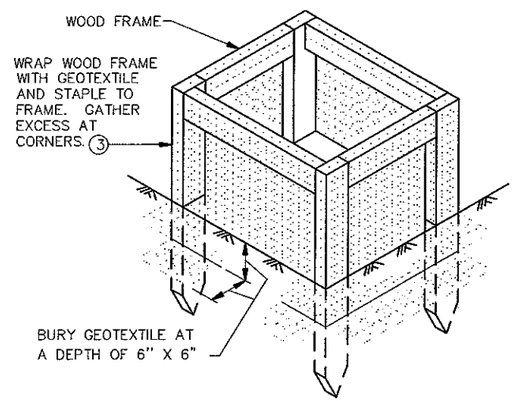


AGGREGATE FILTER AT CURB INLET
(TYPE B WITHOUT CURB SPEC. 3891)
(TYPE C WITH CURB SPEC. 3891)



GEOTEXTILE FILTER AT STREET INLET WITH CURB BOX
(TYPE A SPEC. 3891)





SILT FENCE BOX TO PROTECT DROP INLETS
USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 or LESS
(TYPE A SPEC. 3891)

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NOTES:
SEE SPECS. 2573, 3891 & 3893.
MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED

(1) FOR CMP, REMOVE TEMPORARY STANDPIPE AND INSTALL CULVERT APRON AFTER VEGETATION IS ESTABLISHED

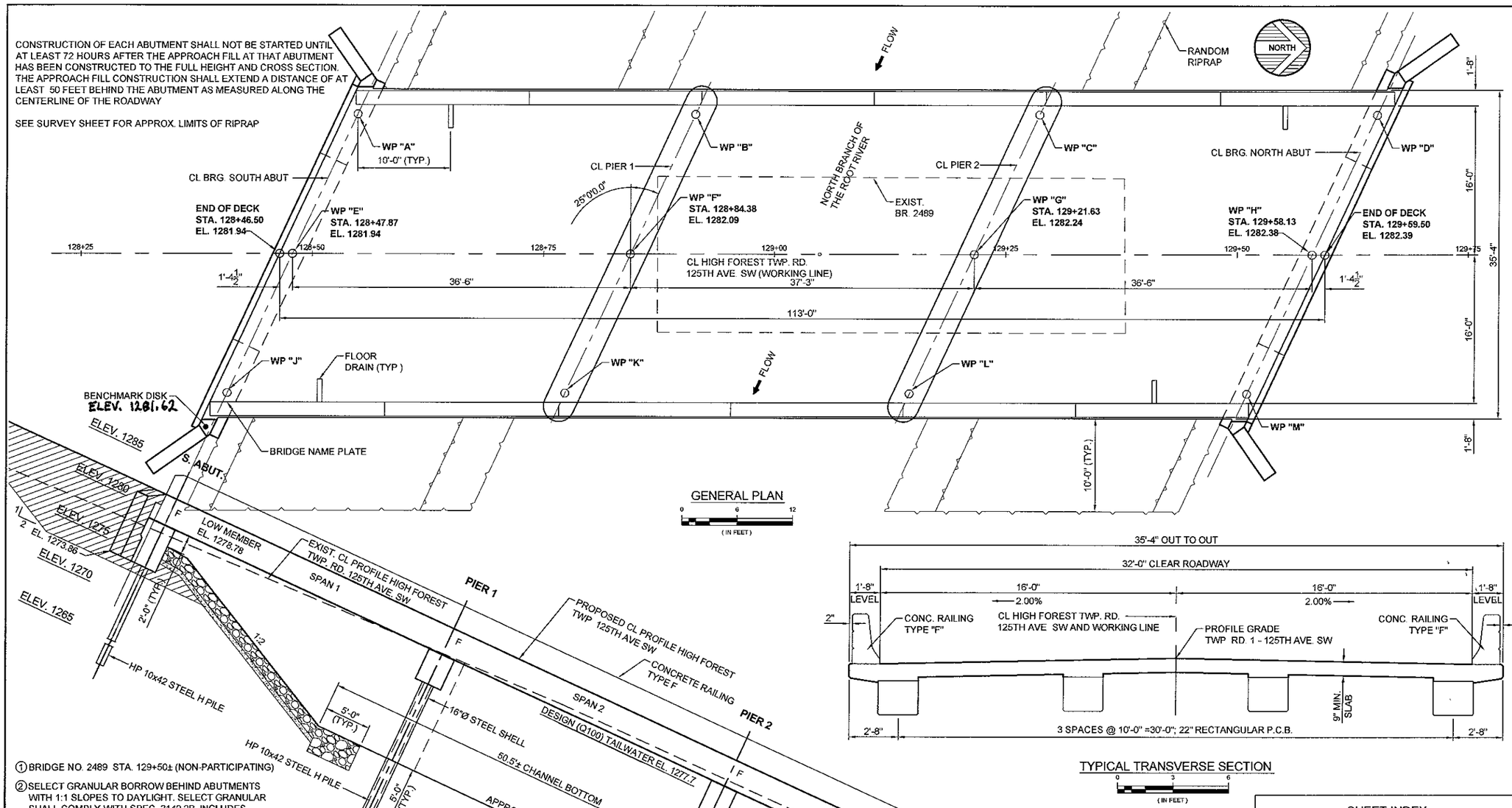
(2) FOR RCP, INSTALL CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO RCP. AFTER VEGETATION IS ESTABLISHED REMOVE TEMPORARY STANDPIPE

(3) ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONO/MONO, MEETING SPEC. 3886 FOR MACHINE SLICED SLICED

STANDARD SHEET NO. 5-297.405 (4 OF 4)	TITLE: TEMPORARY EROSION CONTROL TEMPORARY INLET PROTECTION
STANDARD APPROVED: NOVEMBER 5, 2002	
S.A.P. 55-599-84 HIGH FOREST	SHEET NO 10 OF 12 SHEETS

CONSTRUCTION OF EACH ABUTMENT SHALL NOT BE STARTED UNTIL AT LEAST 72 HOURS AFTER THE APPROACH FILL AT THAT ABUTMENT HAS BEEN CONSTRUCTED TO THE FULL HEIGHT AND CROSS SECTION. THE APPROACH FILL CONSTRUCTION SHALL EXTEND A DISTANCE OF AT LEAST 50 FEET BEHIND THE ABUTMENT AS MEASURED ALONG THE CENTERLINE OF THE ROADWAY

SEE SURVEY SHEET FOR APPROX. LIMITS OF RIPRAP



GENERAL PLAN

0 6 12 (IN FEET)

GENERAL ELEVATION

0 6 12 (IN FEET)

TYPICAL TRANSVERSE SECTION

0 3 6 (IN FEET)

① BRIDGE NO. 2489 STA. 129+50± (NON-PARTICIPATING)

② SELECT GRANULAR BORROW BEHIND ABUTMENTS WITH 1:1 SLOPES TO DAYLIGHT. SELECT GRANULAR SHALL COMPLY WITH SPEC. 3149.2B. INCLUDES APPROX. 391 CU. YDS. OF (C.V.) PARTICIPATING AND APPRAOX. 331 CU. YDS. OF (C.V.) NON-PARTICIPATING

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	2021.501	2105.522	2401.501	2401.512
ITEM	MOBILIZATION	SELECT GRANULAR BORROW (CV) ②	STRUCTURAL CONCRETE (3Y43)	BRIDGE SLAB CONCRETE (3Y33A)
UNIT	LUMP SUM	CU. YD.	CU. YD.	SQ. FT.
QUANTITY	1	722 (P)	92 (P)	3,993 (P)

ITEM NO.	2401.513	2401.541	2401.601	2401.601	2402.521	2402.546	2402.590	2442.501
ITEM	TYPE F RAILING CONCRETE (3Y46A)	REINFORCEMENT BARS (EPOXY COATED)	STRUCTURE EXCAVATION	SLOPE PREPARATION	STRUCTURAL STEEL (3306)	FLOOR DRAIN TYPE (B706) MODIFIED	ELASTOMERIC BEARING PAD TYPE 1	REMOVE OLD BRIDGE ①
UNIT	LIN. FT.	POUNDS	LUMP SUM	LUMP SUM	POUNDS	EACH	EACH	LUMP SUM
QUANTITY	225 (P)	47,100 (P)	1	1	577 (P)	4	24	1

ITEM NO.	2405.502	2452.510	2452.511	2452.520	2452.602	2452.603	2511.501	
ITEM	RECTANGULAR PRESTRESSED CONCRETE BEAMS 22"	STEEL H-PILING DRIVEN 10x42	STEEL H-PILING DELIVERED 10x42	STEEL H-TEST PILE 65 FT LONG 10"	PILE TIP PROTECTION 10"	16"Ø STEEL PILE SHELLS	RANDOM RIPRAP CLASS III	
UNIT	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.	CU. YD.	
QUANTITY	444	1100	1100	4	24	210	220	

DESIGN DATA

2002 AND CURRENT INTERIM A.A.S.H.T.O. DESIGN SPECIFICATIONS
LOAD FACTOR DESIGN METHOD. HS 25 LOADING

DEAD LOAD INCLUDES:
17 PSF ALLOWABLE FOR FUTURE WEARING COURSE

MAXIMUM ALLOWABLE DESIGN STRESSES:

PRESTRESSED CONCRETE:
f'c = 8500 p.s.i. n = 1
fs = 270,000 p.s.i. Low Relaxation Strands
75 f's for Initial Prestress

REINFORCED CONCRETE:
f'c = 4000 p.s.i. n = 8 fy = 60,000 p.s.i. Reinf.

STRUCTURAL STEEL:
fy = 36,000 p.s.i. Spec. 3306

DESIGN SPEED 55 MPH

DECK AREA: 3,993 SQ.FT

CURRENT ADT <50 (2004)

BRIDGE OPERATING RATING HS 52

CONSTRUCTION NOTES

THE 2000 EDITION OF THE MINNESOTA DEPT. 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 IN ACCORDANCE WITH 3301

BENCHMARK
ELEV. 1279.30 (M.S.L. 1929 adj)
1" SQUARE PIPE WITH CAP, 0.5' DOWN ON WEST SHOULDER, 22.0' SOUTH OF CL OF RES. DRIVE AND 11.5' WEST OF THE CL OF 125TH AVE SW.

SHEET INDEX

SHEET NO.	DESCRIPTION
B1	GENERAL PLAN & ELEVATION
B2	BRIDGE LAYOUT
B3-B5	ABUTMENT LAYOUT, REINFORCEMENT & DETAILS
B6-B8	PIER LAYOUT, REINFORCEMENT & DETAILS
B9	BRIDGE FRAMING PLAN
B10	22" RECTANGULAR CONCRETE BEAM
B11-B13	SUPERSTRUCTURE LAYOUT & DETAILS
B14	CONCRETE END DIAPHRAGM
B15	CONTINUITY DIAPHRAGM
B16	CONCRETE RAILING (TYPE F)
B17-B20	BRIDGE DETAILS
B21	BRIDGE SURVEY
B22	BRIDGE SURVEY PLAN & PROFILE

AS-BUILT

FEB 01 2006

ENGINEERING

WSN 460A486

COUNTY APPROVAL
11/28/04 Marlan A. Thilman
DATE COUNTY ENGINEER, OLMSTED CO.

WIDSETH SMITH NOLTING
ENGINEERS
ARCHITECTS
LAND SURVEYORS
PROJECT MANAGERS
ALEXANDRIA, MN.
PHONE 320-762-8149
FAX 320-762-0263
www.wsn-mn.com

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

PROFESSIONAL ENGINEER / TIMOTHY J. MOE

DATE 7/23/2004 LICENSE NO. 14280

HIGH FOREST TWP RD 125TH AVE. SW — OLMSTED COUNTY

MINNESOTA DEPARTMENT OF TRANS.

Bridge No. 55580

TWP. RD. 1 OVER NORTH BRANCH OF THE ROOT RIVER ON WEST COUNTY LINE ON 125 AVE. SW

3-37.0' PRESTRESSED CONCRETE BEAM SPAN. 32'-0" ROADWAY, CAST-IN-PLACE CONCRETE RAILING TYPE F 25° SKEW.

SPAN IDENT. NO. 501

GENERAL PLAN AND ELEVATION

SEC. 6 T 104 N R 15 W

HIGH FOREST TOWNSHIP OLMSTED COUNTY

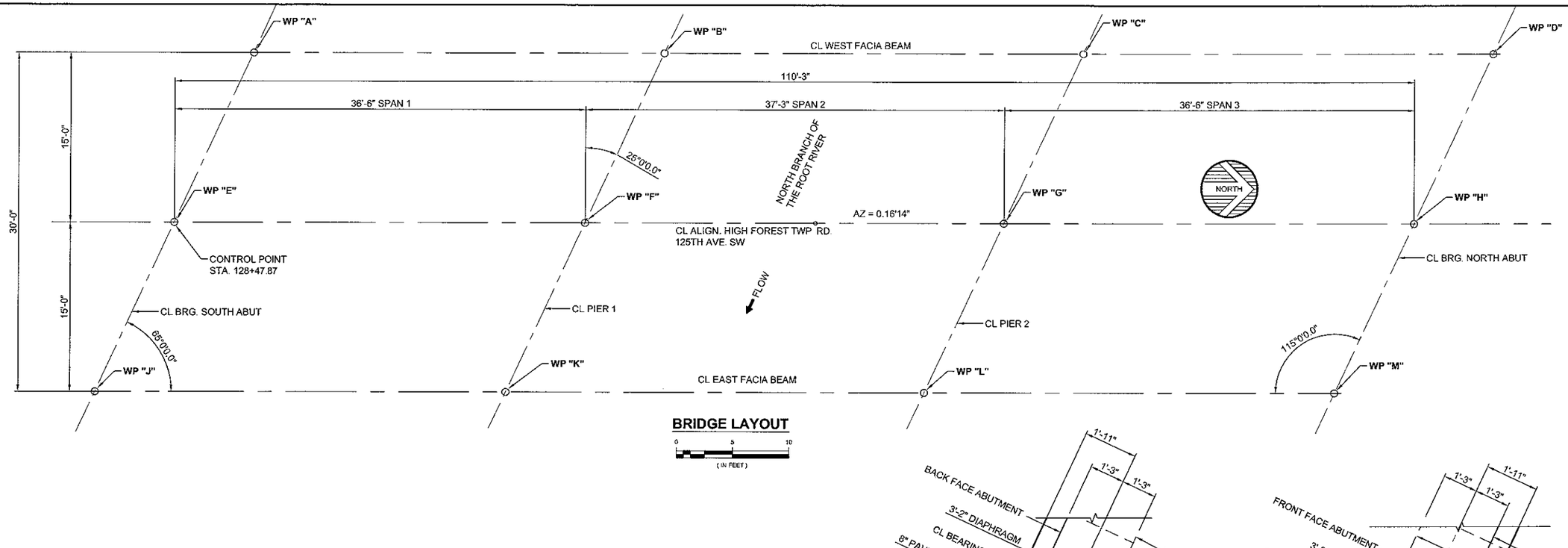
APPROVED
12/28/04
STATE BRIDGE ENGINEER DATE

STATE AID PROJ NO. 55-599-84

DES. BY	T.J.M.	DR. BY	G.A.M.
CHK. BY	K.A.R.	CHK. BY	T.J.M.

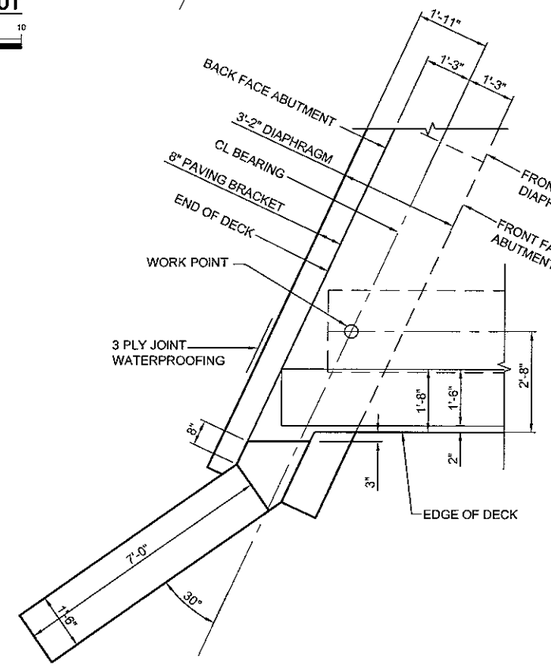
SHEET NO B1 OF B22 SHEETS

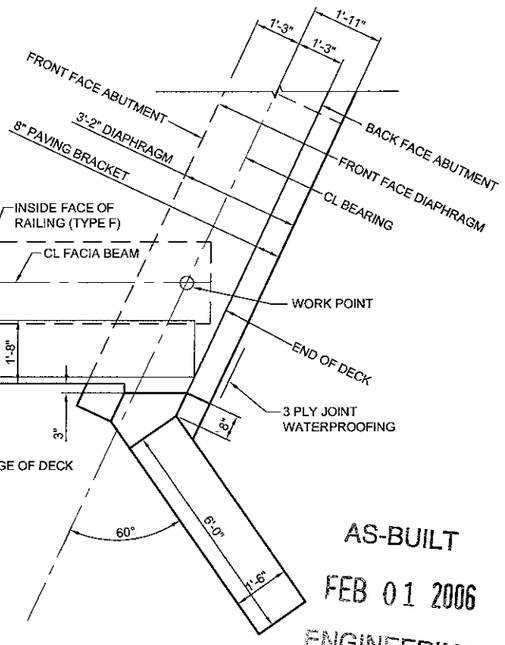
H:\Job\460BRIDG\486\CADD\TwpRd1\C-BR-PE.dwg, PE Sheet, 7/23/2004 9:54:36 AM, Gary, HP8550 PCL5C.pc3, 1:2



BRIDGE LAYOUT

0 5 10
(IN FEET)





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TOP OF ROADWAY TO BRIDGE SEAT				
	SOUTH ABUT.	PIER 1	PIER 2	NORTH ABUT.
SLAB THICKNESS	9"	9"	9"	9"
STOOL HEIGHT	2 1/8"	2 1/8"	2 1/8"	2 1/8"
BEAM HEIGHT	22"	22"	22"	22"
BEARING ASSEMBLY	1/2"	1/2"	1/2"	1/2"
TOTAL	2'-9 5/8"	2'-9 5/8"	2'-9 5/8"	2'-9 5/8"

DIMENSIONS BETWEEN WORKING POINTS															ELEVATIONS			
POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M		TOP OF SLAB EL.	TOP OF SLAB TO BR. SEAT	BRIDGE SEAT EL.	POINT
A	128+54.87		36.50			16.55	33.10				37.51	66.87			1281.65	2.80	1278.85	A
B	128+91.37			37.25			16.55	33.77		58.73		37.96	66.87		1281.80	2.80	1278.99	B
C	129+28.62				36.50			16.55	33.10	92.73	59.38		37.51		1281.94	2.80	1279.14	C
D	129+65.12								16.55		92.73	58.73			1282.09	2.80	1279.29	D
E	128+47.87						36.50			16.55	33.10				1281.94			E
F	128+84.38							37.25			16.55	33.77			1282.09			F
G	129+21.63								36.50			16.55	33.10		1282.24			G
H	129+58.13												16.55		1282.38			H
J	128+40.88										36.50				1281.59	2.80	1278.79	J
K	128+77.38											37.25			1281.74	2.80	1278.94	K
L	129+14.63												36.50		1281.89	2.80	1279.09	L
M	129+51.13														1282.03	2.80	1279.23	M

SOUTHEAST CORNER DETAIL (WP J)

0 2 4
(IN FEET)

SOUTHEAST CORNER SHOWN NORTHWEST CORNER SIMILAR

NORTHEAST CORNER DETAIL (WP M)

0 2 4
(IN FEET)

NORTHEAST CORNER SHOWN SOUTHWEST CORNER SIMILAR

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BRIDGE LAYOUT

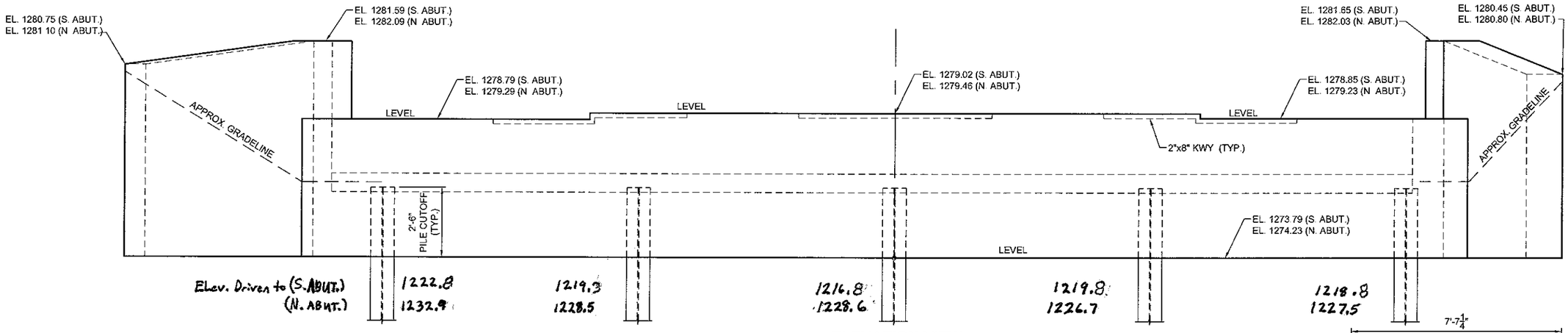
APPROVED
DES. BY T.J.M. | DR. BY G.A.M. | BRIDGE NO. 55580
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LICENSE NO. 14280 DATE: 7/23/ MONTH & DAY 2004

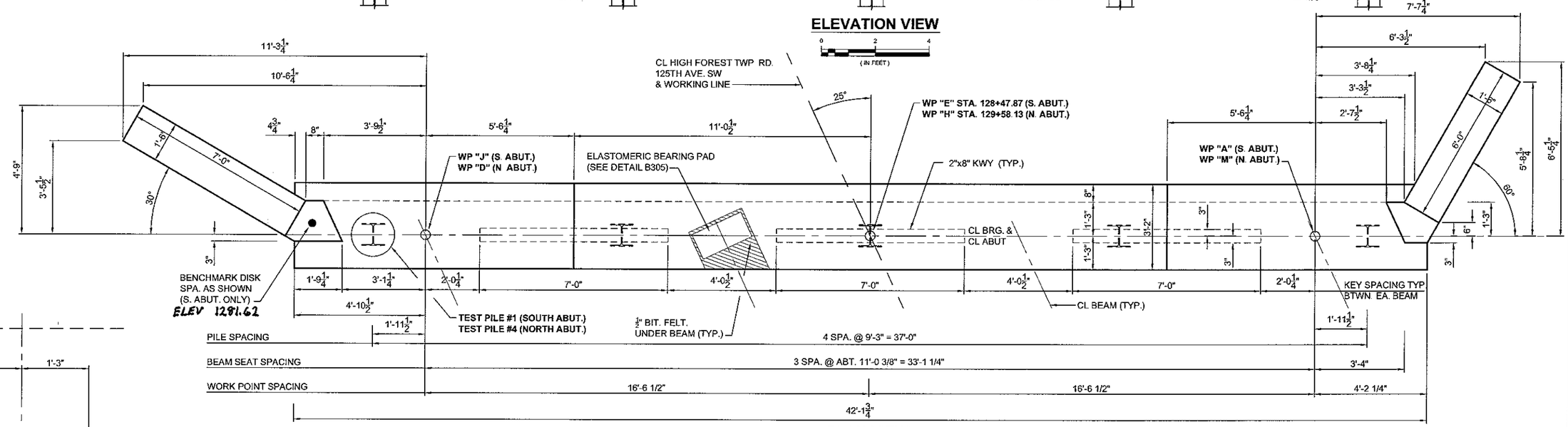
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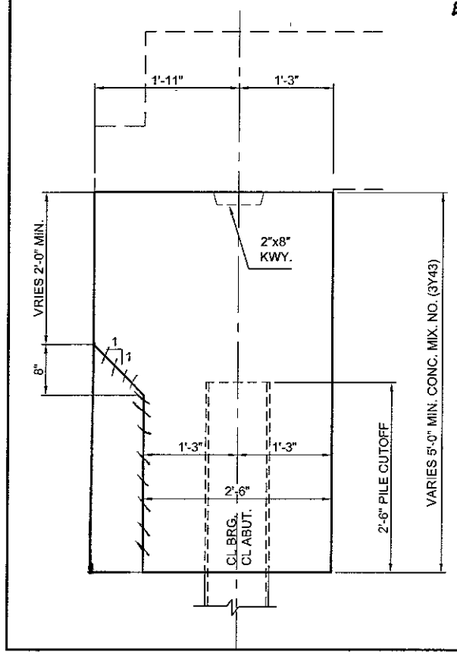
ELEVATION VIEW

0 2 4 (IN FEET)



PLAN VIEW

0 2 4 (IN FEET)



SECTION THRU ABUTMENT

0 1 2 (IN FEET)

SUMMARY OF QUANTITIES FOR BOTH ABUTMENTS

	STRUCTURE CONCRETE (3Y43)	57	CU.YD.
	REINFORCEMENT BARS (EPOXY COATED)	7130	POUND
(2)	BENCH MARK DISK (STD PL NO.9300)	1	EACH
(1)	STEEL H-PILE DEL'D. 10"	440	LIN.FT.
	STEEL H-TEST PILES 65 FT. LONG 10"	2	EACH
(1)	STEEL H-PILE DRIVEN 10"	440	LIN.FT.
	PILE TIP PROTECTION 10"	10	EACH

(1) DOES NOT INCLUDED TEST PILES

(2) COUNTY WILL FURNISH DISK. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STD PLATE NO.9301 FOR PLACING.

COMPUTED PILE LOADS -	TONS/PILE
DEAD LOAD *	40
LIVE LOAD	14
DESIGN LOAD	54

* INCLUDES 10 TONS/PILE FOR DOWNDRAG

PILE NOTES:
ALL PILES TO BE HP 10x42
SEE DETAIL B202 FOR PILE SPLICES
FOR TEST PILE LOCATIONS, SEE SURVEY SHEET

2 - HP 10x42 TEST PILE, ESTIMATED LENGTH 65 FT. LONG
8 - HP 10x42 PILES, ESTIMATED LENGTH 55 FT. LONG
10 - HP 10x42 PILES REQUIRED FOR BOTH ABUTMENTS

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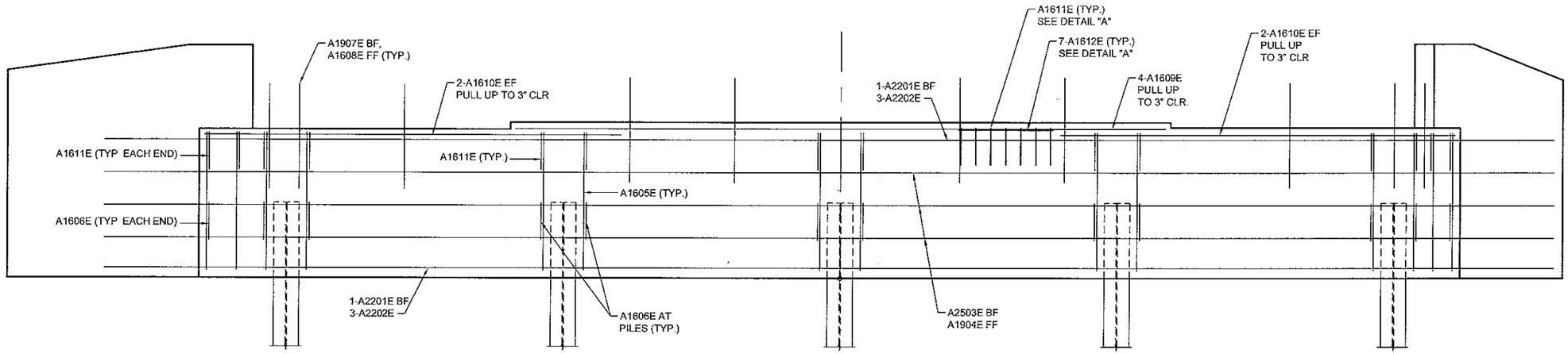
ABUTMENT LAYOUT

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CHK. BY K.A.R.	CHK. BY T.J.M.	

JOB NUMBER: 460A486 S.A.P. NO. 55-599-84 SHEET NO. B3 OF B22 SHEETS

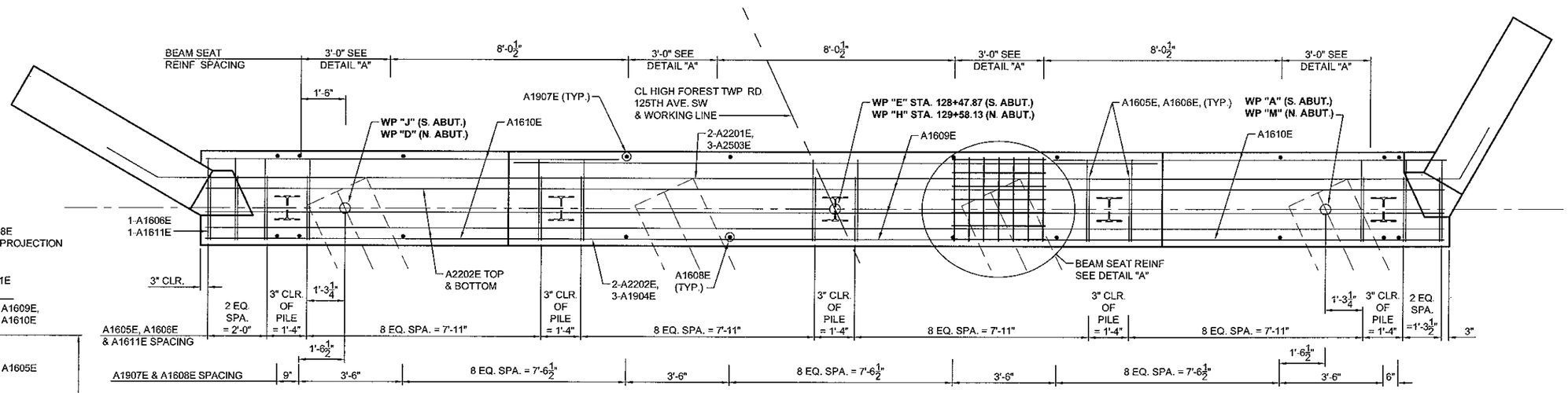
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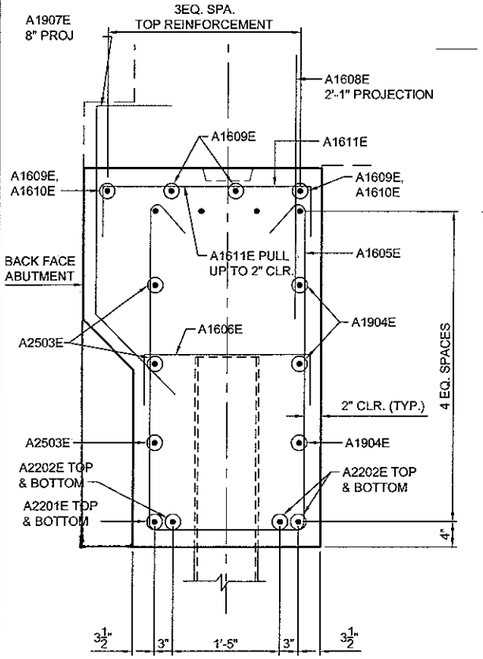


ELEVATION VIEW

0 2 4
(IN FEET)

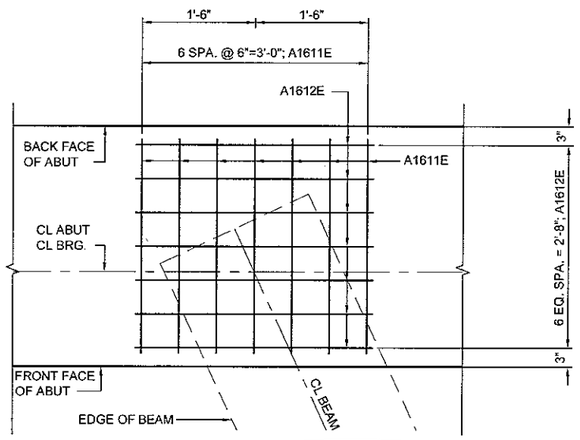
SEE ABUTMENT DETAILS SHEET FOR
WINGWALL REINFORCEMENT LAYOUT





SECTION THRU ABUTMENT

0 1 2
(IN FEET)



PLAN VIEW

0 2 4
(IN FEET)

DETAIL "A" (BEAM SEAT)

0 1 2
(IN FEET)

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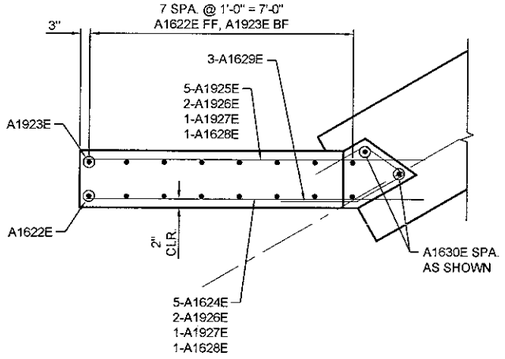
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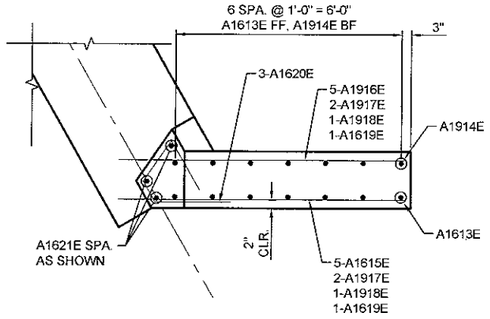
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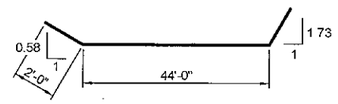
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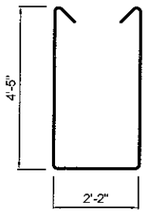




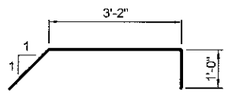
BAR SHAPES:



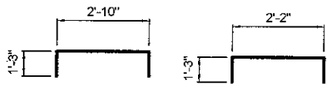
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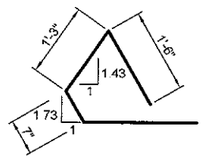
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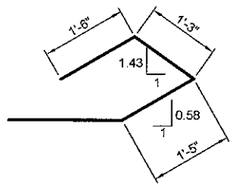
A1907E



A1611E A1606E



A1620E

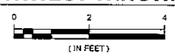


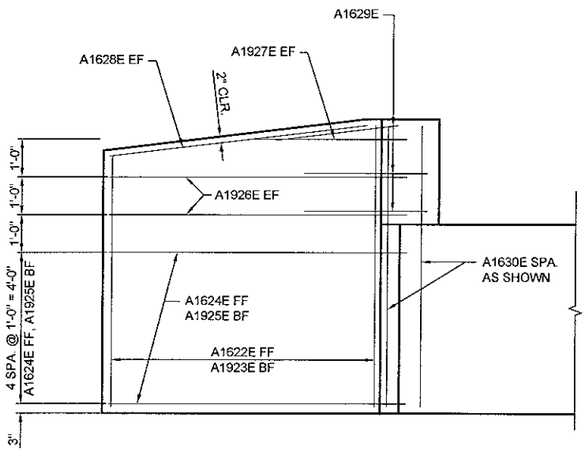
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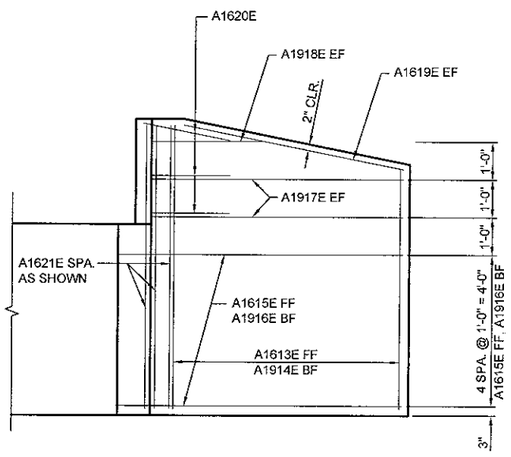
SOUTHEAST WINGWALL WP "J" & WP "D"



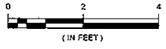
SOUTHWEST WINGWALL WP "A" & WP "M"



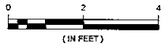




SOUTHEAST WINGWALL WP "J" & WP "D"



SOUTHWEST WINGWALL WP "A" & WP "M"



BILL OF REINFORCEMENT FOR NORTH AND SOUTH ABUT.

BAR	SOUTH ABUT.	NORTH ABUT.	LENGTH	SHAPE	LOCATION
A2201E	2	2	48'-0"	BENT	ABUT. HORZ. BF
A2202E	6	6	41'-9"	STRAIGHT	ABUT. HORZ.
A2503E	3	3	48'-0"	BENT	ABUT. HORZ. BF
A1904E	3	3	41'-9"	STRAIGHT	ABUT. HORZ.
A1605E	42	42	11'-11"	BENT	ABUT. STIRRUP
A1606E	12	12	4'-8"	BENT	ABUTMENT TIE
A1907E	31	31	5'-8"	BENT	DECK TIE BF
A1608E	31	31	4'-1"	STRAIGHT	DECK TIE FF
A1609E	4	4	21'-8"	STRAIGHT	ABUT. HORZ. TOP
A1610E	4	4	13'-11"	STRAIGHT	ABUT. HORZ. TOP
A1611E	70	70	5'-4"	BENT	ABUTMENT TIE & BEAM SEAT
A1612E	28	28	3'-2"	STRAIGHT	BEAM SEAT
A1613E	1 SETS OF 7	1 SETS OF 7	6'-5" TO 7'-4"	STRAIGHT	VERT. WINGWALL FF
A1914E	1 SETS OF 7	1 SETS OF 7	6'-5" TO 7'-4"	STRAIGHT	VERT. WINGWALL BF
A1615E	5	5	7'-7"	STRAIGHT	HORZ. WINGWALL FF
A1916E	5	5	8'-0"	STRAIGHT	HORZ. WINGWALL BF
A1917E	4	4	8'-8"	STRAIGHT	HORZ. WINGWALL EF
A1918E	2	2	3'-0"	STRAIGHT	HORZ. WINGWALL EF
A1619E	2	2	5'-11"	STRAIGHT	HORZ. WINGWALL TOP
A1620E	3	3	5'-4"	BENT	WINGWALL TIE
A1621E	3	3	7'-4"	STRAIGHT	WINGWALL VERT. CORNERS
A1622E	1 SETS OF 8	1 SETS OF 8	6'-2" TO 7'-5"	STRAIGHT	VERT. WINGWALL FF
A1923E	1 SETS OF 8	1 SETS OF 8	6'-2" TO 7'-5"	STRAIGHT	VERT. WINGWALL BF
A1624E	5	5	8'-11'	STRAIGHT	HORZ. WINGWALL FF
A1925E	5	5	8'-11"	STRAIGHT	HORZ. WINGWALL BF
A1926E	4	4	7'-0"	STRAIGHT	HORZ. WINGWALL EF
A1927E	2	2	3'-6"	STRAIGHT	HORZ. WINGWALL EF
A1628E	2	2	6'-10"	STRAIGHT	HORZ. WINGWALL TOP
A1629E	3	3	6'-2"	BENT	WINGWALL TIE
A1630E	2	2	7'-5"	STRAIGHT	WINGWALL VERT. CORNERS

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JOB NUMBER: 460A486

S.A.P. NO. 55-599-84

SHEET NO. B5 OF B22 SHEETS

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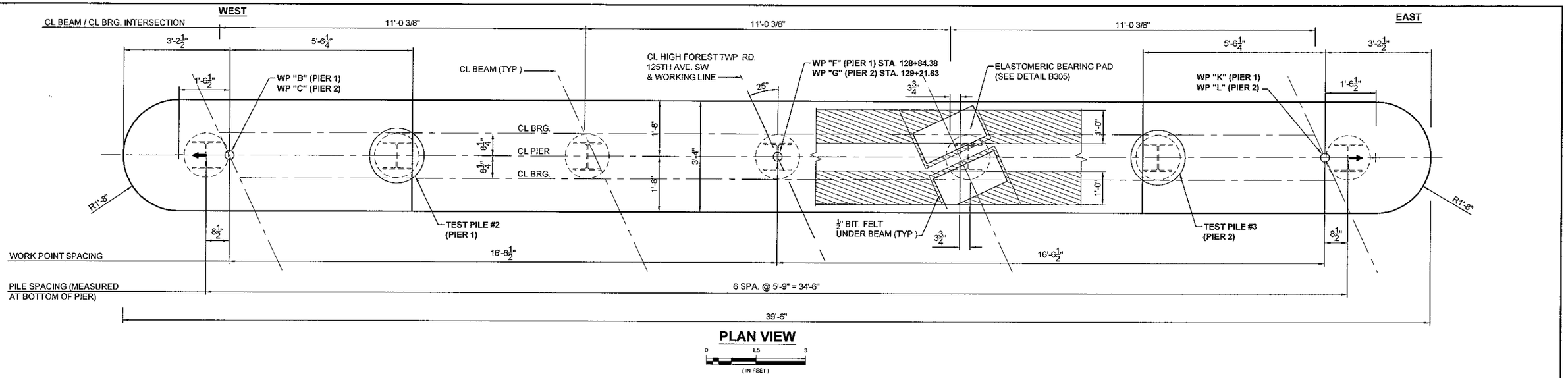
ABUTMENT DETAILS

APPROVED

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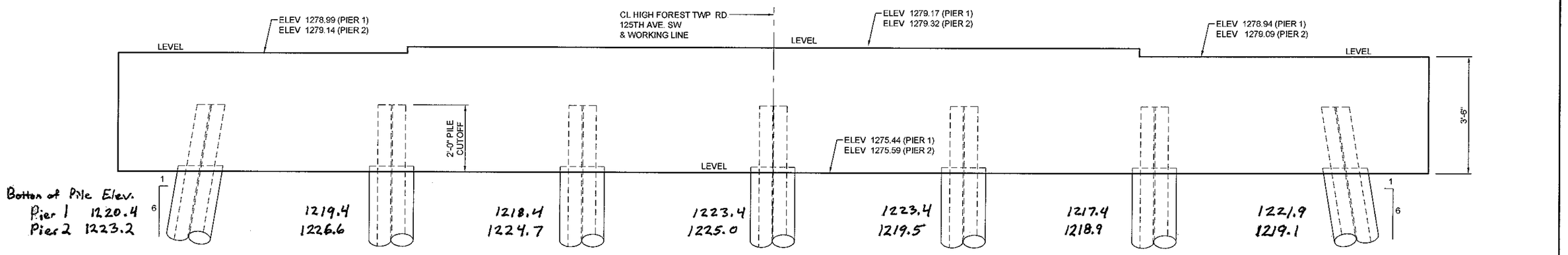
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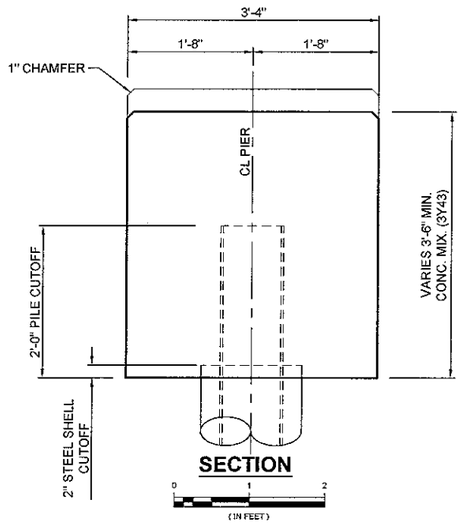
PLAN VIEW

0 1.5 3
(IN FEET)



ELEVATION VIEW

0 1.5 3
(IN FEET)



SECTION

0 1 2
(IN FEET)

COMPUTED PILE LOADS -	TONS/PILE
DEAD LOAD *	39
LIVE LOAD	12
DESIGN LOAD	51

* INCLUDES 10TONS/PILE FOR DOWN DRAG

PILE NOTES:
ALL PILES TO BE HP 10x42
SEE DETAIL B202 FOR PILE SPLICES
FOR TEST PILE LOCATIONS, SEE SURVEY SHEET

ALL PILES MARKED THUS → TO BE BATTERED 2"/FT IN DIRECTION SHOWN

1 - HP 10x42 TEST PILE, ESTIMATED LENGTH 65 FT LONG (PIER 1)
1 - HP 10x42 TEST PILE, ESTIMATED LENGTH 65 FT. LONG (PIER 2)
6 - HP 10x42 PILES, ESTIMATED LENGTH 55 FT LONG (PIER 1)
6 - HP 10x42 PILES, ESTIMATED LENGTH 55 FT. LONG (PIER 2)
14 - HP 10x42 PILES REQUIRED FOR BOTH PIERS

SUMMARY OF QUANTITIES FOR PIER 1 & 2			
	STRUCTURAL CONCRETE (3Y43)	35	CU. YD.
	REINFORCEMENT BARS (EPOXY COATED)	4930	POUND
(1)	STEEL H-PILE DEL'D. 10"	660	LIN. FT.
	STEEL H-TEST PILES 65 FT. LONG 10"	2	EACH
(1)	STEEL H-PILING DRIVEN, 10"	660	LIN. FT.
	16"Ø STEEL SHELL CASING	210	LIN. FT.
	PILE TIP PROTECTION	14	EACH

(1) DOES NOT INCLUDE TEST PILES

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JOB NUMBER: 460A486

S.A.P. NO. 55-599-84

SHEET NO. B6 OF B22 SHEETS

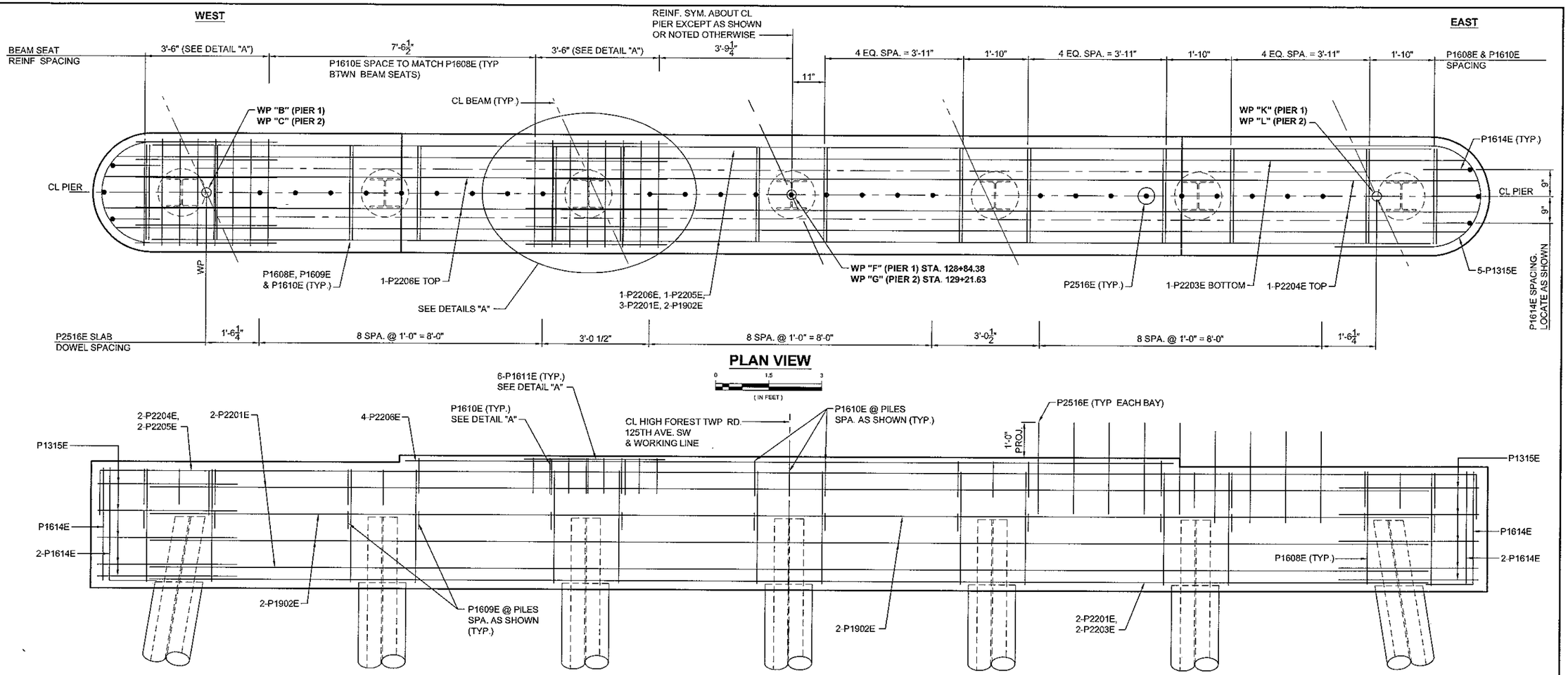
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PIER LAYOUT

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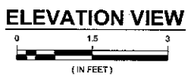
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CHK. BY K.A.R.	CHK. BY T.J.M.	55580

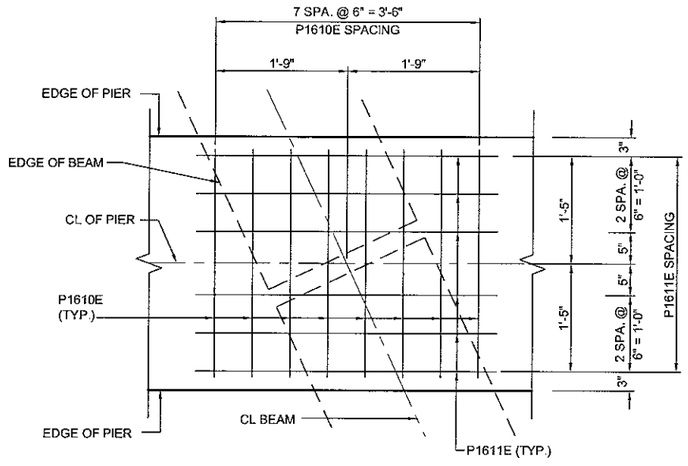
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PLAN VIEW

ELEVATION VIEW





DETAIL "A" (BEAM SEAT)

0 1 2
(IN FEET)

AS-BUILT

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PIER REINFORCEMENT

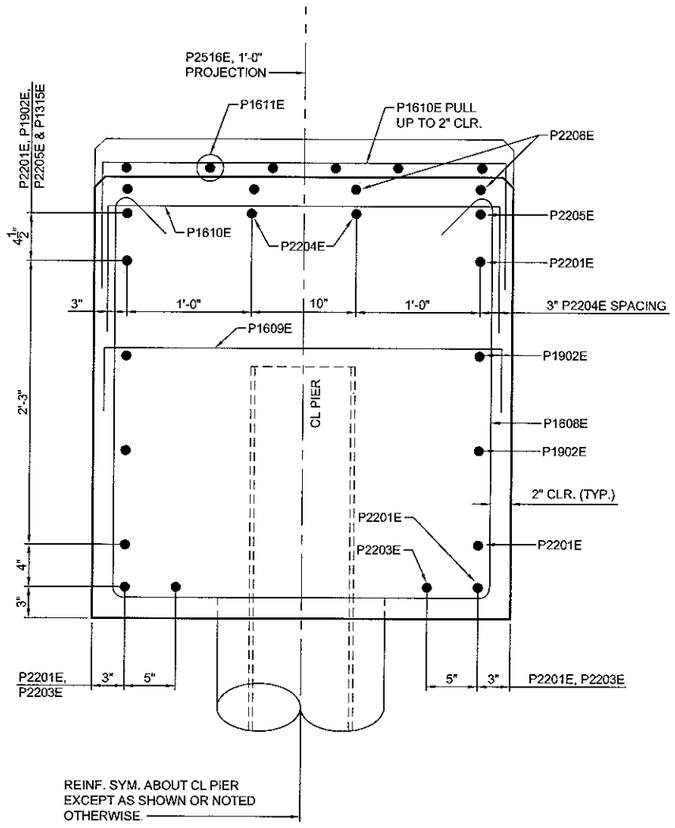
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CHK. BY K.A.R.	CHK. BY T.J.M.	55580

JOB NUMBER: 460A486 S.A.P. NO. 55-599-84 SHEET NO. B7 OF B22 SHEETS

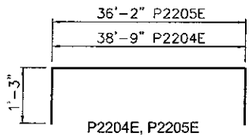
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BILL OF REINFORCEMENT PIER 1 & PIER 2					
BAR	PIER 1	PIER 2	LENGTH	SHAPE	LOCATION
P2201E	6	6	36'-0"	STRAIGHT	HORZ. CAP
P1902E	4	4	36'-0"	STRAIGHT	HORZ. CAP
P2203E	2	2	38'-1"	STRAIGHT	HORZ. CAP
P2204E	2	2	41'-3"	BENT	HORZ. CAP
P2205E	2	2	38'-8"	BENT	HORZ. CAP
P2206E	4	4	21'-8"	STRAIGHT	HORZ. CAP
P1608E	32	32	10'-3"	BENT	STIRRUP
P1609E	14	14	4'-0"	BENT	CAP TIE
P1610E	71	71	5'-0"	BENT	CAP TIE
P1611E	24	24	4'-0"	STRAIGHT	BEAM SEAT
P1614E	6	6	4'-6"	BENT	VERT. CAP TIE AT ENDS
P1315E	10	10	9'-8"	BENT	CAP TIE AT ENDS
P2516E	27	27	2'-6"	STRAIGHT	SLAB DOWEL

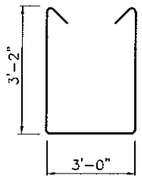


SECTION

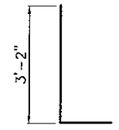
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(IN FEET)



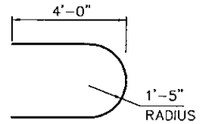
P2204E, P2205E



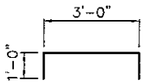
P1608E



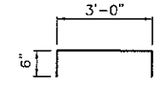
P1614E



P1315E



P1610E



P1609E

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PIER DETAILS

APPROVED

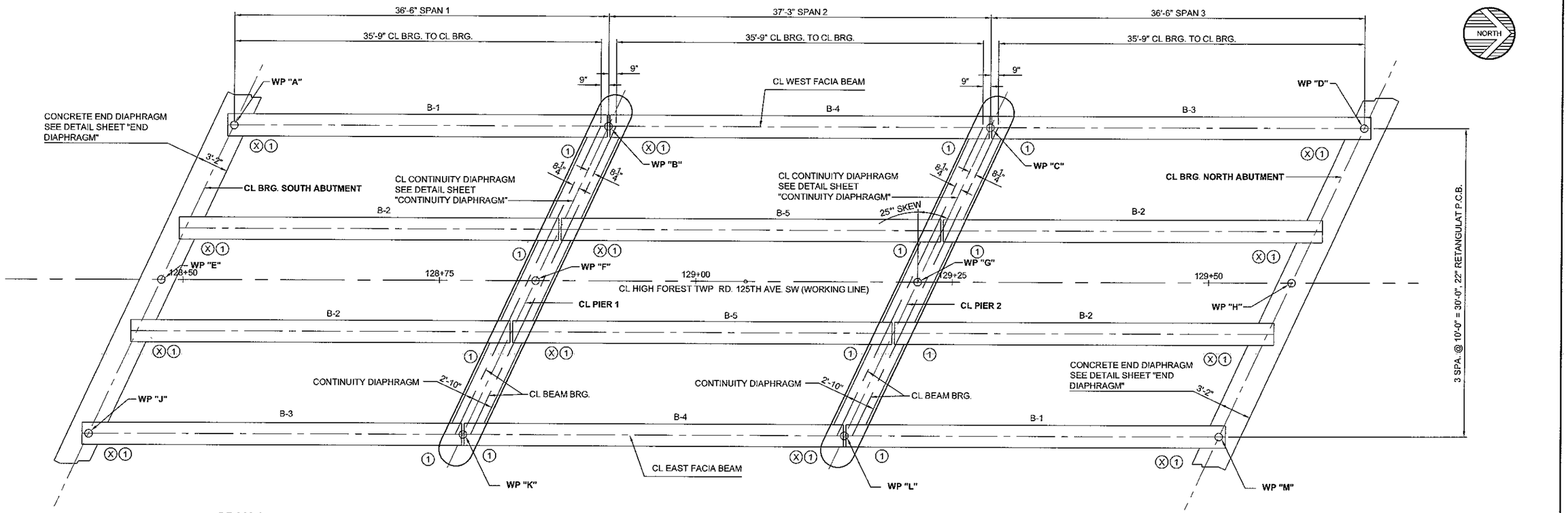
DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55580

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JOB NUMBER: 460A486 S.A.P. NO. 55-599-84 SHEET NO. B8 OF B22 SHEETS

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SPAN 1 **SPAN 2** **SPAN 3**

BRIDGE FRAMING PLAN

0 5 10
(IN FEET)

(X) "X" END OF BEAM

(1) ELASTOMERIC BEARING PAD, TYPE 1

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ENGINEERING

H:\Job\460BRIDG\486\CADD\TwpRd11C-BR-FRAMING.dwg, Stand. Plan Sheet, 7/22/2004 4:22:48 PM, Gary, HP8550 PCL5C.pc3, 1:2

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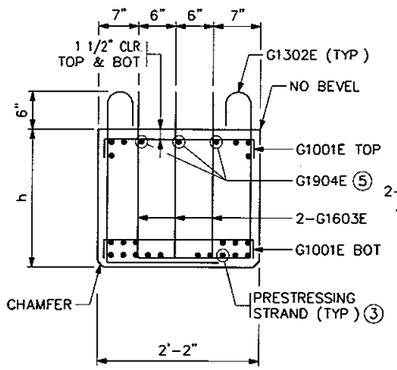
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BRIDGE FRAMING PLAN

APPROVED

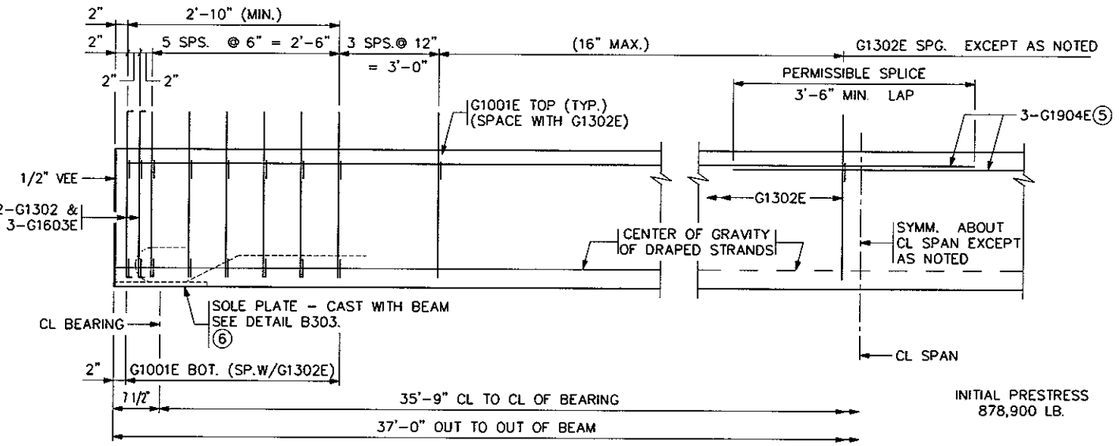
DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO.
CHK. BY K.A.R.	CHK. BY T.J.M.	55580

JOB NUMBER: 460A486 S.A.P. NO. 55-599-84 SHEET NO. B9 OF B22 SHEETS



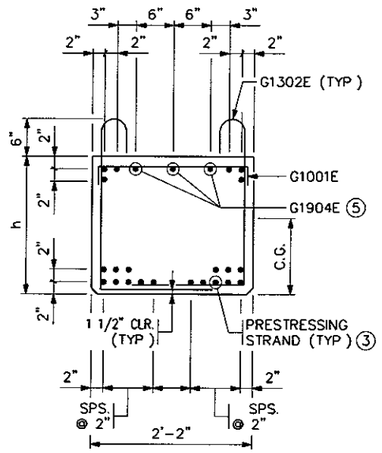
END VIEW

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



INITIAL PRESTRESS 878,900 LB.

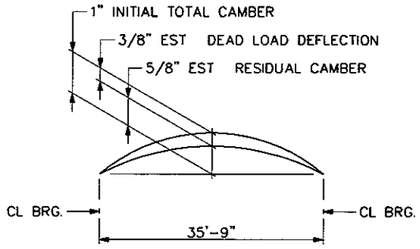
BEAM ELEVATION



SECTION AT CL SPAN

STRAND ARRANGEMENT	
LOCATION	NO. OF STRANDS
ROW - TOP	4
ROW - 2ND FROM TOP	2
ROW - 2ND FROM BOTTOM	6
ROW - BOTTOM	10
TOTAL	22
C.G. = 7.27 INCHES	

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



CAMBER DIAGRAM

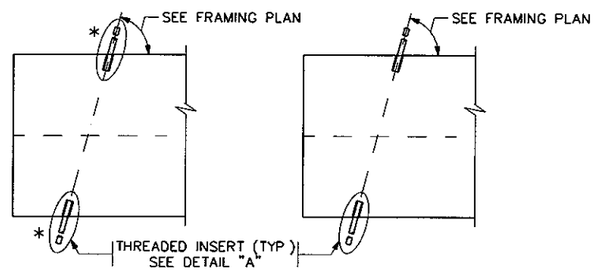
DEAD LOAD DEFLECTION SHOWN IS FOR WEIGHT OF SLAB, WEARING COURSE, RAILING, SIDEWALK AND MEDIAN WHERE APPLICABLE.

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

CONTRACTOR SHALL PROVIDE TEMPORARY BRACING [redacted] (SEE SPECIAL PROVISIONS)

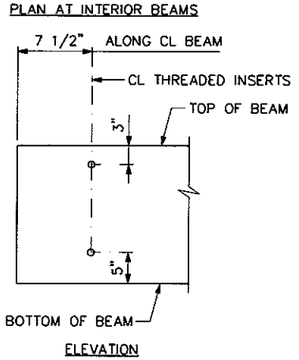
AT THIS TIME RECTANGULAR BEAMS ARE USED WITH INTEGRAL ABUTMENTS ONLY

* NOT REQUIRED AT OUTSIDE FACE OF FACIA BEAMS



PLAN AT FASCIA BEAMS

PLAN AT INTERIOR BEAMS



ELEVATION

CONCRETE END & CONTINUITY DIAPHRAGM

PILE BENT ABUTMENT

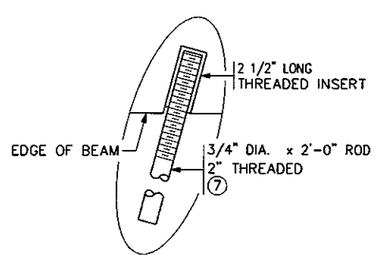
SECTION HEIGHT "h"		
14" ☐	18" ☐	22" ☒

PLACE AN "X" IN THE APPROPRIATE BOX.

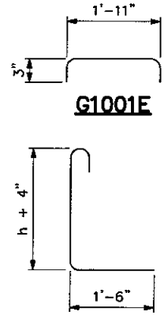
MINIMUM CONCRETE STRENGTH - P.S.I.	
(1) f'ci	(2) f'c
7000	8500

PRESTRESSING STRAND DIAMETER	
(3)	1/2" ☐
(3)	0.60" ☒

PLACE AN "X" IN THE APPROPRIATE BOX TO INDICATE THE STRAND DIAMETER USED FOR THE DESIGN.



DETAIL "A"



GENERAL NOTES

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

PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR

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

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

SEE FRAMING PLAN FOR BEAM END MARKED "X"

APPROXIMATE WEIGHT OF BEAM IS 11 4 TONS.

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

(1) MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER

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

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

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

(5) PROVIDE 2" CLEARANCE AT ENDS OF BEAM.

(6) FOR INTEGRAL ABUTMENT. SOLE PLATE CAN BE ELIMINATED OR BE REPLACED WITH APPROVED PROTECTED PLATE.

(7) FOR INSERTS IN THE OUTSIDE OF FASCIA BEAM, THE LENGTH SHALL BE ADJUSTED ACCORDING TO THE OVERHANG DIMENSION

AS-BUILT

FEB 01 2006

ENGINEERING

460A486

REVISED:

APPROVED: APRIL 29, 2003

STATE BRIDGE ENGINEER

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER 7/23/04 DATE

NAME: LIC. NO. 14280

S.A.P. 55-599-84 BEAMS B1-B5 FIG. 5-397.550

TITLE: 14", 18" & 22" RECTANGULAR PRESTRESSED CONCRETE BEAM (PRETENSIONED) RB-22-37

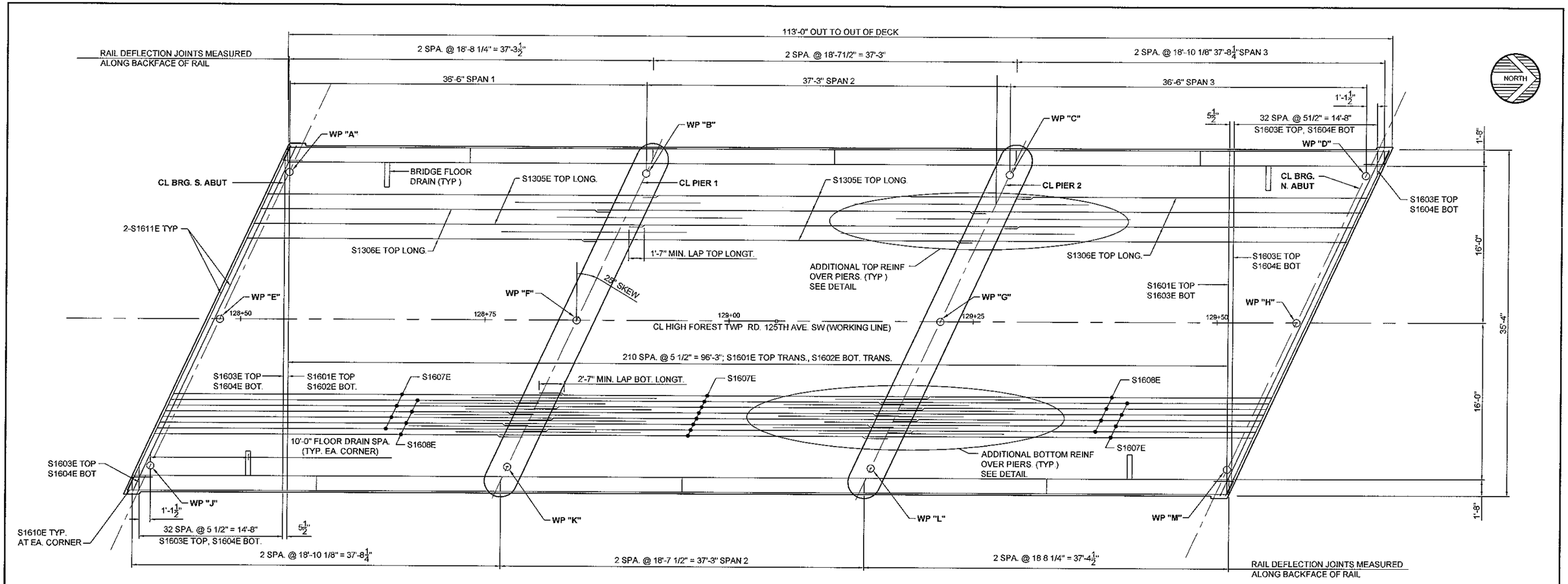
DES: T.J.M. DR: G.A.M. CHK: K.A.R. CHK: T.J.M.

APPROVED:

SHEET NO. B10 OF B22 SHEETS

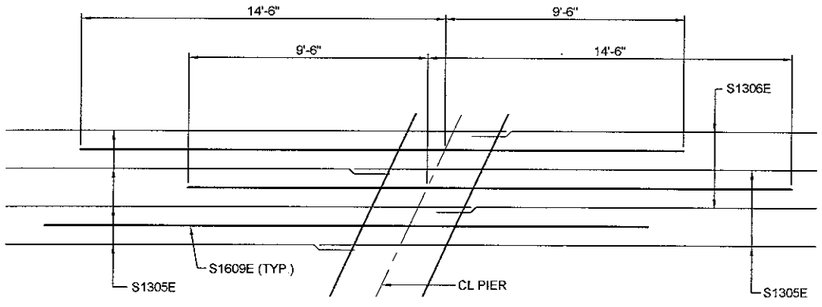
BRIDGE NO. 55580

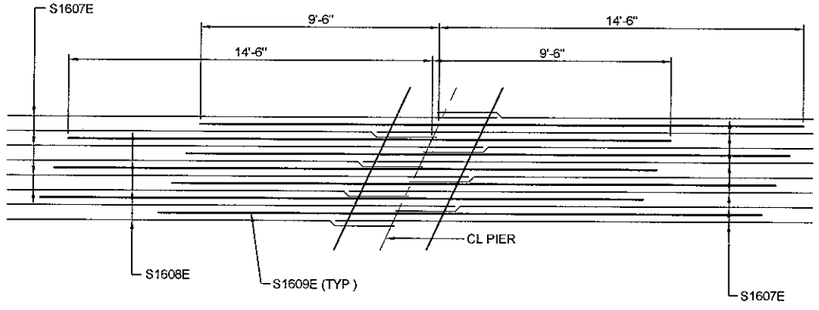
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BRIDGE DECK REINFORCEMENT

0 5 10
(IN FEET)





ADDITIONAL TOP LONGITUDINAL REINF. OVER PIER

0 3 6
(IN FEET)

ADDITIONAL BOTTOM LONGITUDINAL REINF. OVER PIER

0 3 6
(IN FEET)

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ENGINEERING

WIDSETH SMITH NOLTING

ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
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SUPERSTRUCTURE LAYOUT

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CHK. BY K.A.R.	CHK. BY T.J.M.	55580

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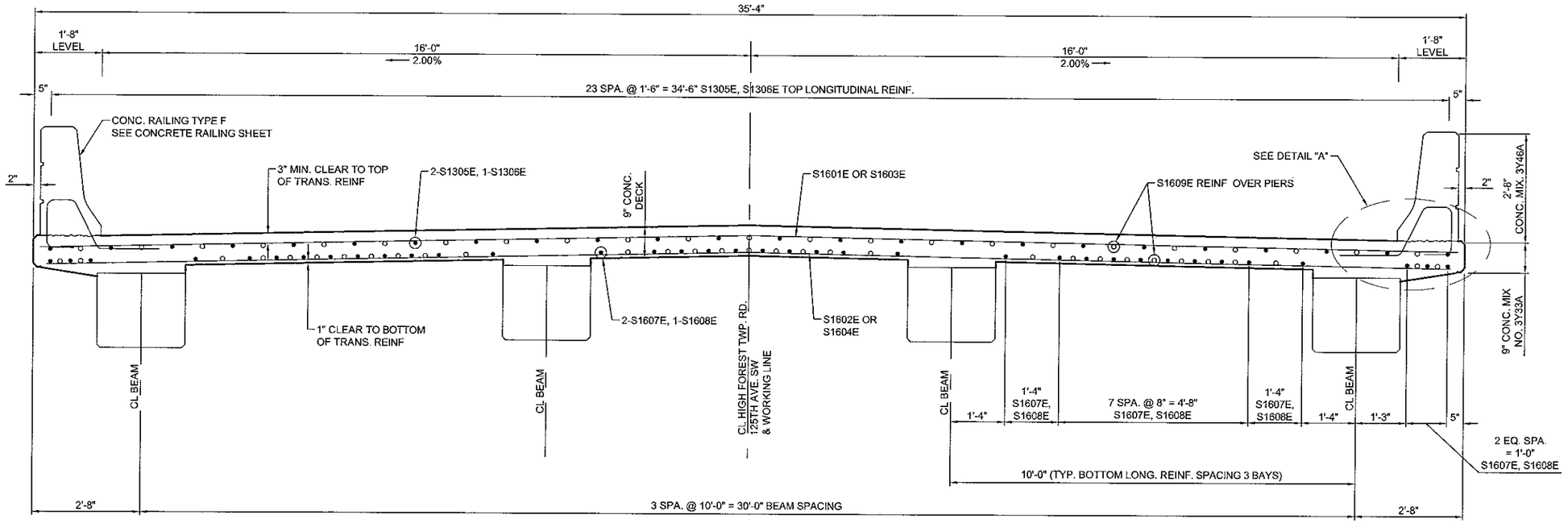
CERTIFIED BY: _____ PROFESSIONAL ENGINEER — TIMOTHY J. MOE LICENSE NO. 14280 DATE: 7/23/2004

JOB NUMBER: 460A486

S.A.P. NO. 55-599-84

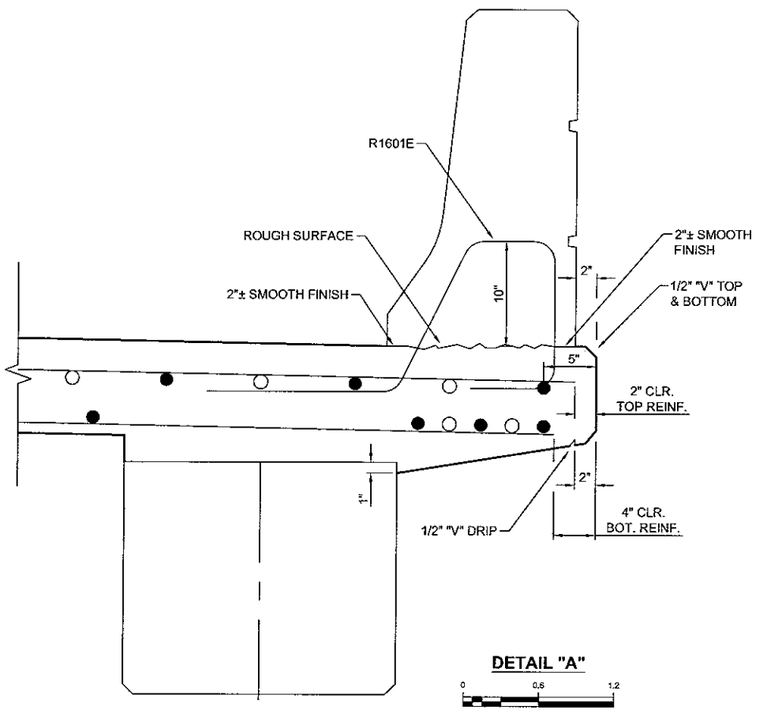
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TRANSVERSE SECTION THRU DECK

0 1.5 3
(IN FEET)



DETAIL "A"

0 0.6 1.2
(IN FEET)

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JOB NUMBER: 460A486

S.A.P. NO. 55-599-84

SUPERSTRUCTURE DETAILS

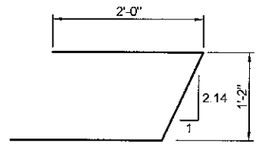
APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO. 55580
CHK. BY K.A.R.	CHK. BY T.J.M.	

SHEET NO. B12 OF B22 SHEETS

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BILL OF REINFORCEMENT FOR SUPERSTRUCTURE				
BAR	NO.	LENGTH	SHAPE	LOCATION
S1601E	211	35'-0"	STRAIGHT	TOP TRANSVERSE
S1602E	211	34'-8"	STRAIGHT	BOTTOM TRANSVERSE
S1603E	2 SETS OF 33	2'-7" TO 34'-1"	STRAIGHT	TOP TRANSVERSE
S1604E	2 SETS OF 33	2'-5" TO 33'-11"	STRAIGHT	BOTTOM TRANSVERSE
S1305E	48	40'-0"	STRAIGHT	TOP LONGITUDINAL
S1306E	24	35'-11"	STRAIGHT	TOP LONGITUDINAL
S1607E	72	40'-0"	STRAIGHT	BOTTOM LONGITUDINAL
S1608E	36	37'-8"	STRAIGHT	BOTTOM LONGITUDINAL
S1609E	108	24'-0"	STRAIGHT	ADDITIONAL REINF. OVER PIER
S1610E	8	5'-2"	BENT	ADDITIONAL REINF. DECK CORNER
S1611E	8	38'-9"	STRAIGHT	ADDITIONAL REINF. DECK ENDS



S1610E

① SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE			
④	BRIDGE SLAB CONCRETE (3Y33A)	3,993	SQ. FT.
⑧	TYPE F RAILING CONCRETE (3Y46A)	225	LIN. FT.
②	REINFORCEMENT BARS, EPOXY COATED	35,040	POUND
	STRUCTURAL STEEL	577	POUND
⑦	RECTANGULAR PRESTRESSED CONCRETE BEAMS, TYPE 22-37	12	EACH
	RECTANGULAR PRESTRESSED CONCRETE BEAMS, TYPE 22-37	444	LIN. FT.
	ELASTOMERIC BEARING PAD, TYPE 1	24	EACH
	FLOOR DRAINS TYPE B706 MODIFIED	4	EACH
⑤	NAME PLATE (SEE DETAIL B101)	1	EACH
③⑤	CORK 1"x10" (RAILING)	19	LIN. FT.
③⑤	BIT. FELT 1/2" x 3" (PIER)	142	LIN. FT.

①INCLUDES RAILING, END & CONTINUITY DIAPHRAGM QUANTITIES.

②INCLUDES RAILING, END & CONTINUITY DIAPHRAGM REINFORCEMENT

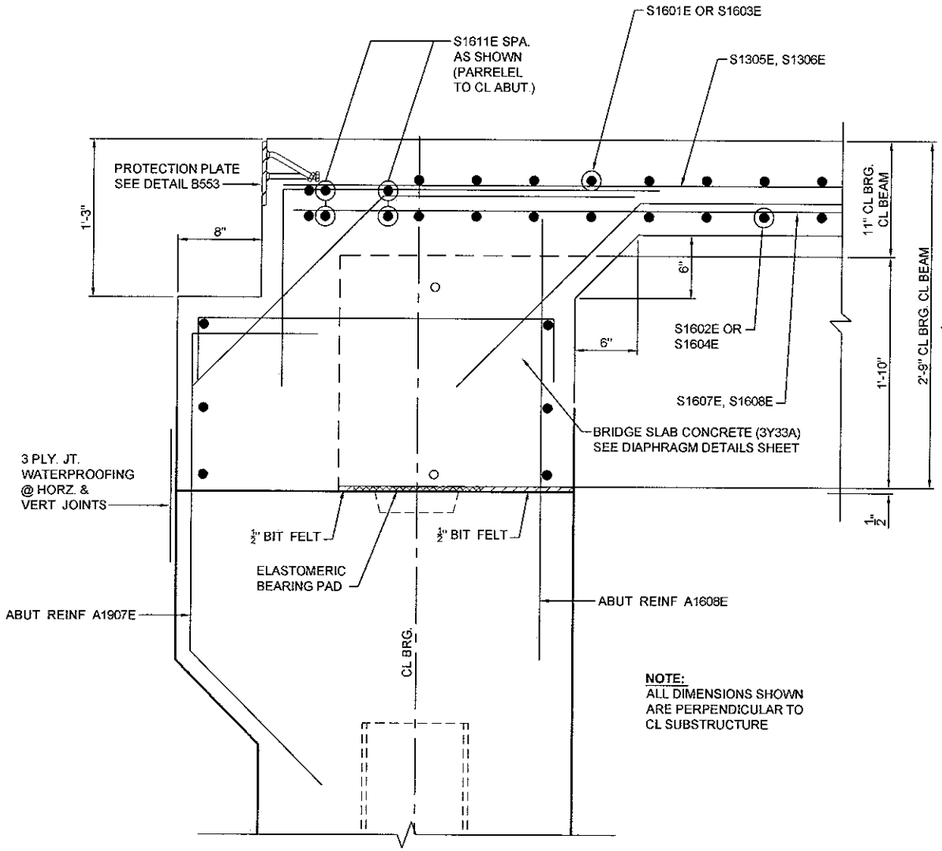
③SEE SPECIAL PROVISIONS

④APPROX. VOLUME 141 CU. YDS. BASED ON AN AVERAGE STOOL HEIGHT OF 1 7/8". INCLUDES 11 CU. YD. FOR CONTINUITY DIAPHRAGM & 15 CU. YD. FOR END DIAPHRAGM.

⑤TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS

⑦PAYMENT FOR BEAMS INCLUDED IN ITEM RECTANGULAR PRESTRESSED CONCRETE BEAMS TYPE 22-37 PER LINEAR FOOT

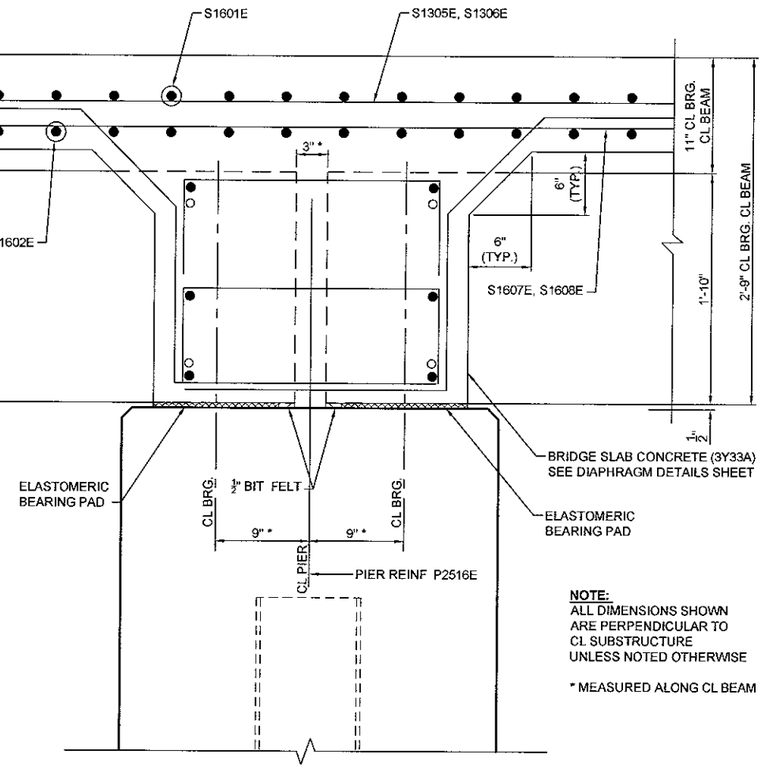
⑧APPROX. VOLUME 25 CU. YDS.



NOTE:
ALL DIMENSIONS SHOWN ARE PERPENDICULAR TO CL SUBSTRUCTURE

SECTION AT ABUTMENT

0 0.6 1.2
(IN FEET)



NOTE:
ALL DIMENSIONS SHOWN ARE PERPENDICULAR TO CL SUBSTRUCTURE UNLESS NOTED OTHERWISE

* MEASURED ALONG CL BEAM

SECTION AT PIER

0 0.6 1.2
(IN FEET)

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SUPERSTRUCTURE DETAILS

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CHK. BY K.A.R.	CHK. BY T.J.M.	55580

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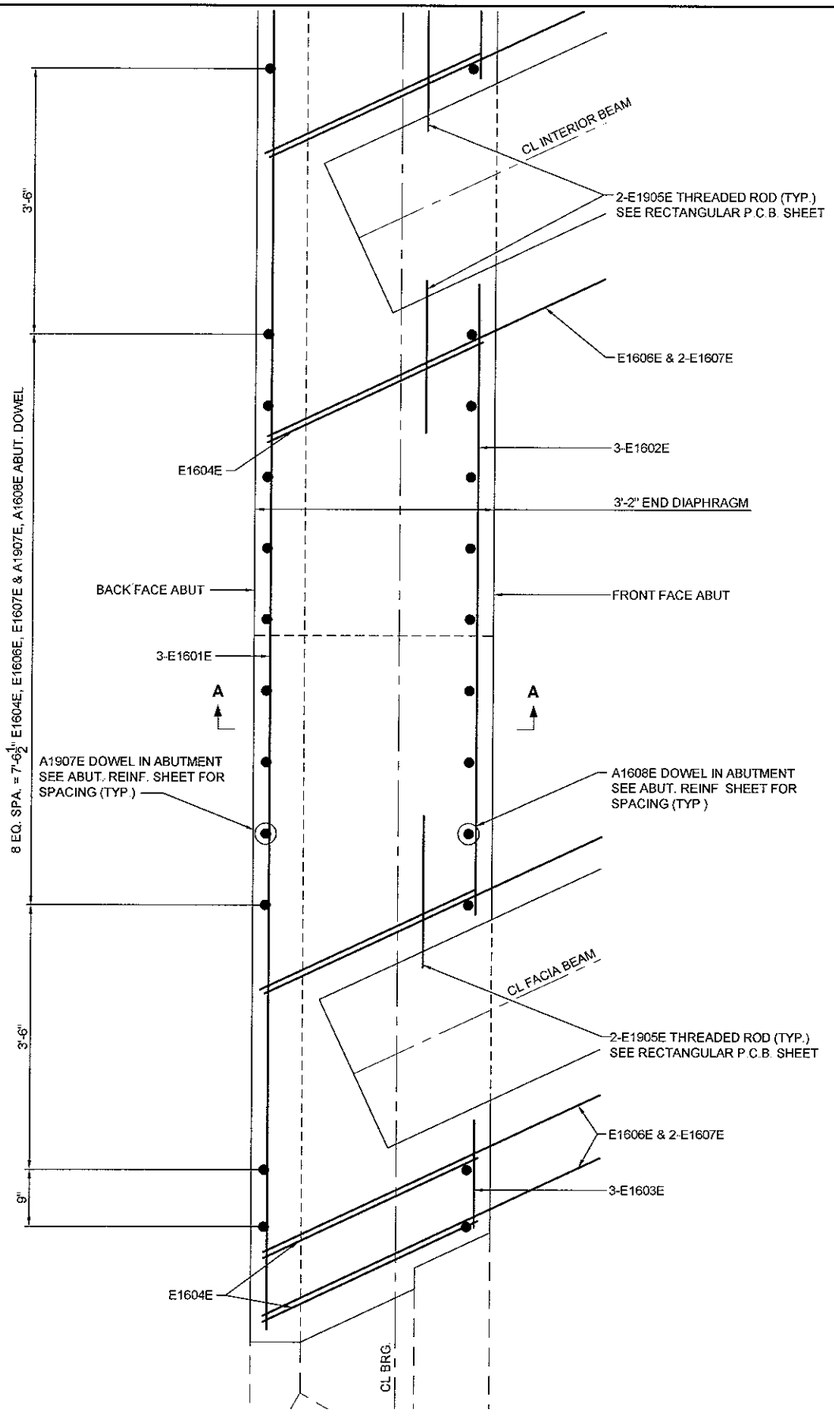
CERTIFIED BY: _____ PROFESSIONAL ENGINEER TIMOTHY J. MOE LICENSE NO. 14280 DATE: 7/23/2004

JOB NUMBER: 460A486

S.A.P. NO. 55-599-84

SHEET NO. B13 OF B22 SHEETS

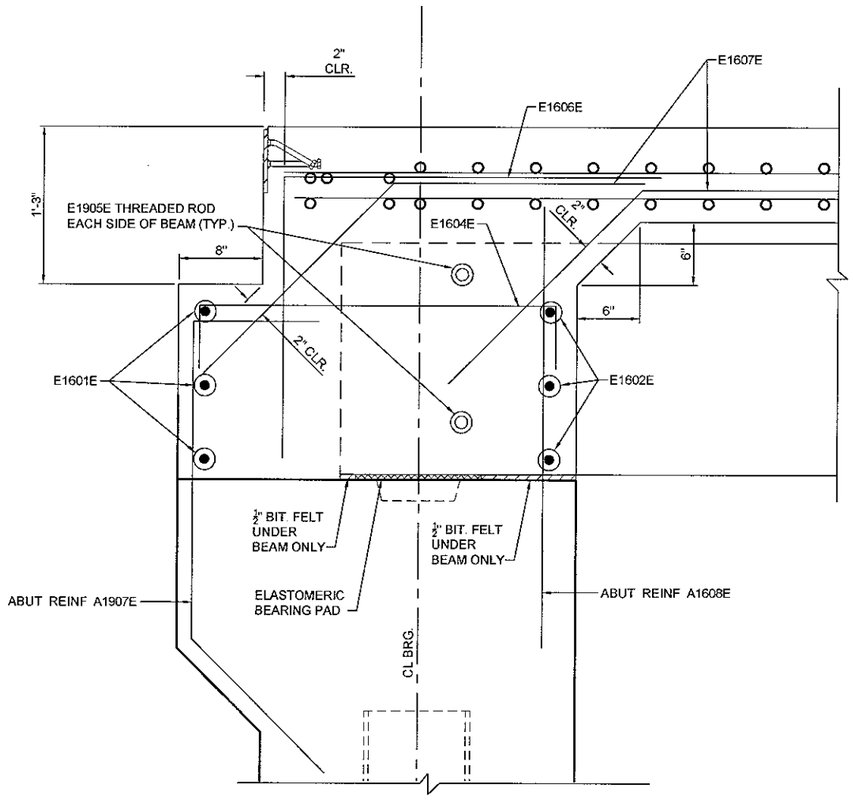
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REINFORCEMENT SHOWN
IS TYPICAL FOR ALL BAYS.

END DIAPHRAGM PLAN

0 1 2
(IN FEET)



END DIAPHRAGM SECTION "A"

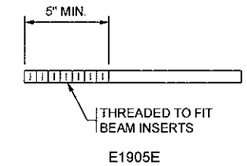
0 0.6 1.2
(IN FEET)

BILL OF REINFORCEMENT FOR DIAPHRAGM (N. & S. ABUT.)				
BAR	NO.	LENGTH	SHAPE	LOCATION
E1601E	6	39'-2"		LONGITUDINAL BF
E1602E	18	8'-3"		LONGITUDINAL FF
E1603E	12	1'-5"		LONGITUDINAL FF
E1604E	62	4'-1"		TIE
E1905E	24	2'-6"		THREADED ROD
E1606E	62	5'-2"		VERTICAL TIE
E1607E	124	4'-2"		VERTICAL TIE

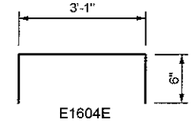
NOTES:
THE DIAPHRAGMS AT THE BENTS SHALL BE POURED INTEGRALLY WITH THE DECK SLAB. PLACEMENT OF DIAPHRAGMS AT THE BENTS SHALL NOT SLOW DOWN THE RATE OF DECK CONCRETE PLACEMENT AND FINISHING. THE CONTRACTOR SHALL PLACE THE CONCRETE FOR THE SPECIFIED DIAPHRAGMS AHEAD OF THE DECK CONCRETE IN SUCH A MANNER THAT ADVANCEMENT OF THE DECK CONCRETE REACHES THE DIAPHRAGM JUST AS PLACEMENT OF CONCRETE IN THE DIAPHRAGM IS COMPLETE.

DIAPHRAGM CONCRETE TO BE MIX. NO. 3Y33A.

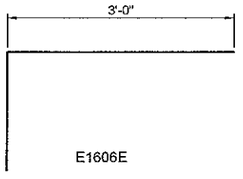
ALL DIAPHRAGM CONCRETE AND REINFORCEMENT BARS SHOWN ON THIS DETAIL SHALL BE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.



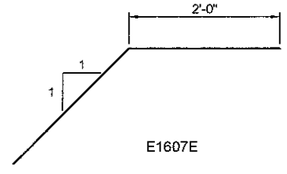
E1905E



E1604E



E1606E



E1607E

AS-BUILT

FEB 01 2006

ENGINEERING

WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BISMARCK
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS WWW.WSNMN.COM

CONCRETE END DIAPHRAGM

APPROVED

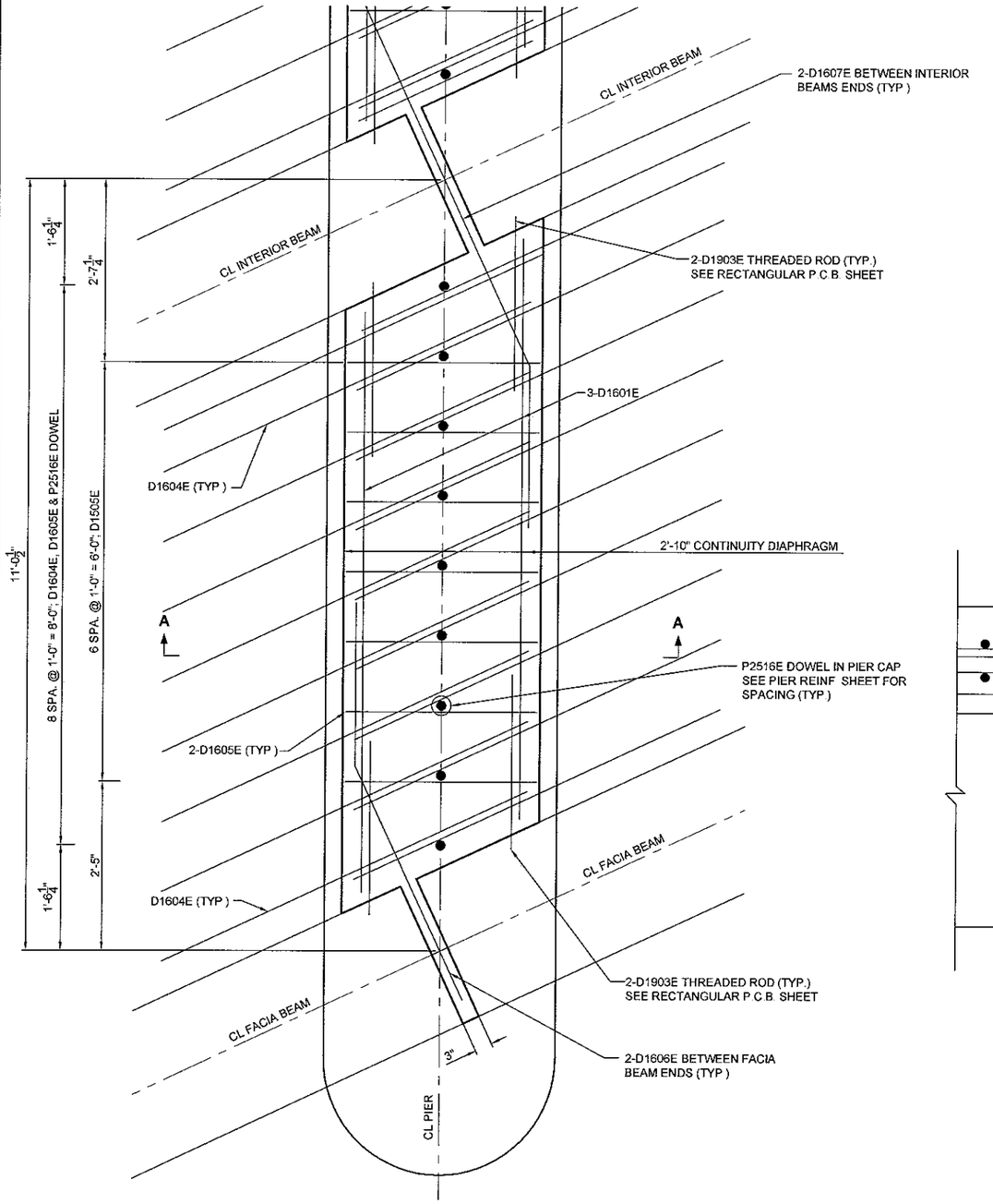
DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55580

© 2004 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ LICENSE NO. 14280 DATE: 7/23/2004
PROFESSIONAL ENGINEER: TIMOTHY J. MOE

JOB NUMBER: 460A486 | S.A.P. NO.55-599-84 | SHEET NO. B14 OF B22 SHEETS

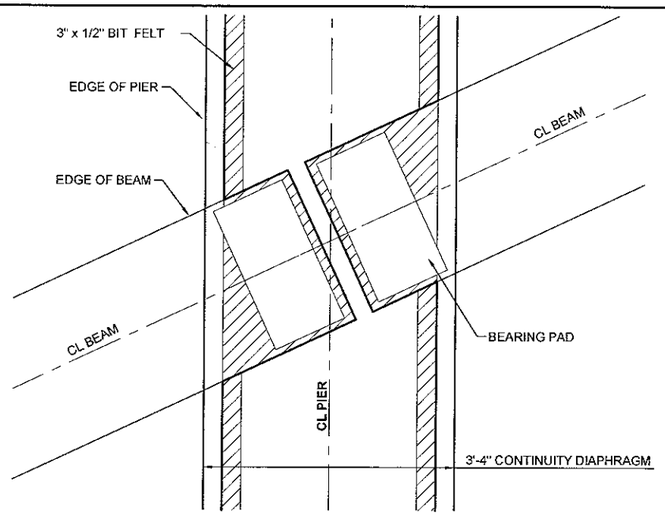
H:\Job\460BRIDG\486\CADD\TwpR61\C-BR-END-DIAPH.dwg, end diaph plan, 7/22/2004 4:24:08 PM, Gary, HP8550 PCL5C.pc3, 1:2



REINFORCEMENT SHOWN IS TYPICAL FOR ALL BAYS.

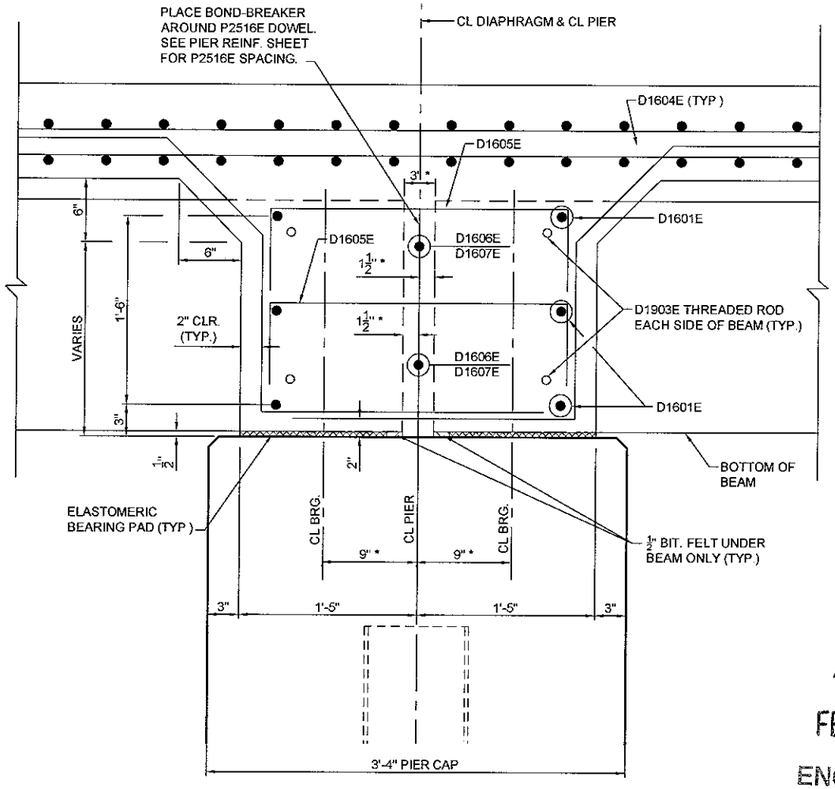
CONTINUITY DIAPHRAGM PLAN

0 1 2 (IN FEET)



BIT. FELT DETAIL

0 1 2 (IN FEET)



NOTE:
ALL DIMENSIONS SHOWN ARE PERPENDICULAR TO CL OF SUB STRUCTURE UNLESS OTHERWISE NOTED.

* MEASURE ALONG CL BEAM

DIAPHRAGM SECTION "A"

0 0.6 1.2 (IN FEET)

BILL OF REINFORCEMENT FOR DIAPHRAGM (PIER 1 & 2)

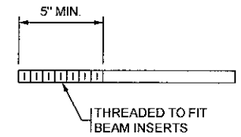
BAR	NO.	LENGTH	SHAPE	LOCATION
D1601E	36	8'-3"	——	LONGITUDINAL
D1903E	48	2'-6"	——	THREADED ROD
D1604E	108	6'-9"		VERTICAL TIE
D1605E	84	4'-0"		TIE
D1606E	8	6'-0"		HORIZ., BETWEEN FACIA BMS
D1607E	8	10'-10"		HORIZ., BETWEEN INTERIOR BMS

NOTES:
THE DIAPHRAGMS AT THE BENTS SHALL BE POURED INTEGRALLY WITH THE DECK SLAB. PLACEMENT OF DIAPHRAGMS AT THE BENTS SHALL NOT SLOW DOWN THE RATE OF DECK CONCRETE PLACEMENT AND FINISHING. THE CONTRACTOR SHALL PLACE THE CONCRETE FOR THE SPECIFIED DIAPHRAGMS AHEAD OF THE DECK CONCRETE IN SUCH A MANNER THAT ADVANCEMENT OF THE DECK CONCRETE REACHES THE DIAPHRAGM JUST AS PLACEMENT OF CONCRETE IN THE DIAPHRAGM IS COMPLETE.

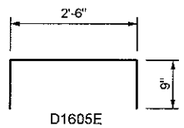
EXPOSED PORTION OF P2516E DOWEL IS TO BE COATED WITH ASPHALT PAINT OR WRAPPED WITH TAR PAPER TO A MIN. THICKNESS OF 1/16"

DIAPHRAGM CONCRETE TO BE MIX. NO. 3Y33A.

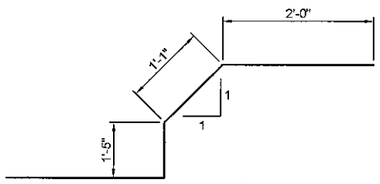
ALL DIAPHRAGM CONCRETE AND REINFORCEMENT BARS SHOWN ON THIS DETAIL SHALL BE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.



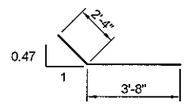
D1903E



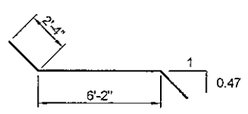
D1605E



D1604E



D1606E



D1607E

AS-BUILT
FEB 01 2006
ENGINEERING

WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA, BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS
WWW.WSN-MN.COM

CONTINUITY DIAPHRAGM

APPROVED

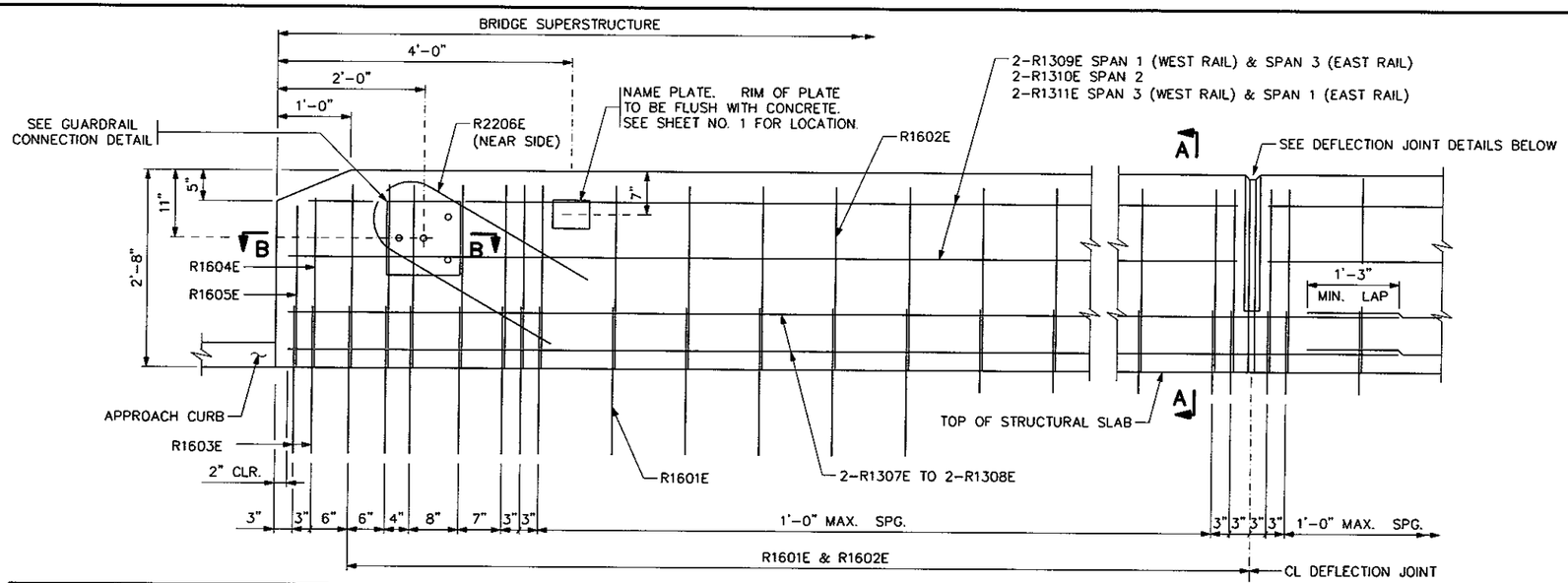
DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO.
CHK. BY K.A.R.	CHK. BY T.J.M.	55580

© 2002 WIDSETH SMITH NOLTING

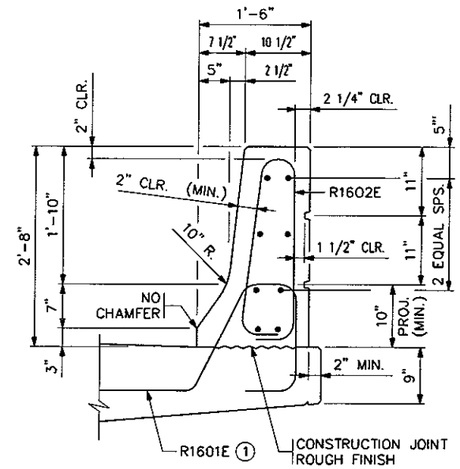
CERTIFIED BY: _____ PROFESSIONAL ENGINEER TIMOTHY J. MOE LICENSE NO. 14280 DATE: 7/23/2004

JOB NUMBER: 460A486 S.A.P. NO. 55-599-84 SHEET NO. B15 OF B22 SHEETS

H:\Job\460BRIDG\486\CADD\TwpRd1\C-BR-CONT-DIAPH.dwg, Stand. Plan Sheet, 7/28/2004 10:04:40 AM, Gary, HP8550 PCL5C.pc3, 1:2



DEFLECTION JOINT



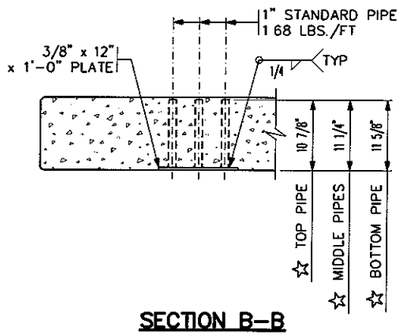
SECTION A–A

DESIGNER NOTE:
VERIFY BAR R1601E HAS 10" MIN. PROJECTION WHEN CROSS SLOPE VARIES FROM NORMAL 0.02 FT/FT

INSIDE ELEVATION OF RAILING

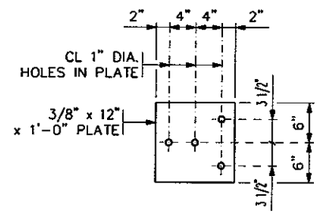
RAIL MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350.

BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	260	5'-8"		RAIL DOWEL
R1602E	260	6'-3"		RAIL VERTICAL
R1603E	8	6'-6"		RAIL VERTICAL
R1604E	4	5'-9"		RAIL VERTICAL
R1605E	4	5'-7"		RAIL VERTICAL
R2206E	4	6'-6"		RAIL VERTICAL
R1307E	16	40'-0"		RAIL LONGITUDINAL
R1308E	8	34'-5"		RAIL LONGITUDINAL
R1309E	16	18'-4"		RAIL LONGITUDINAL
R1310E	16	18'-3"		RAIL LONGITUDINAL
R1311E	16	18'-6"		RAIL LONGITUDINAL
R13 E				RAIL LONGITUDINAL
R13 E				RAIL LONGITUDINAL



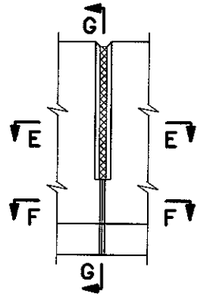
SECTION B–B

(REINFORCEMENT NOT SHOWN)
☆ DIMENSIONS INCLUDE 3/8" PLATE

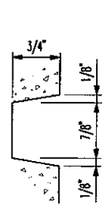


GUARDRAIL CONNECTION DETAIL

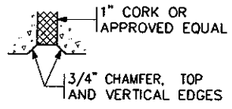
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS



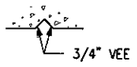
ELEVATION



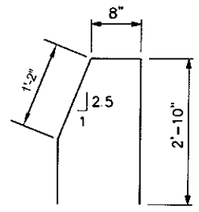
RAIL RUSTICATION



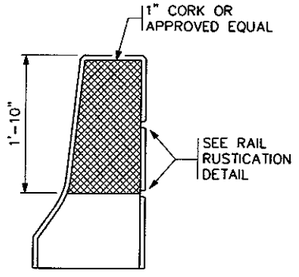
SECTION E–E



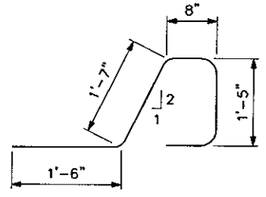
SECTION F–F



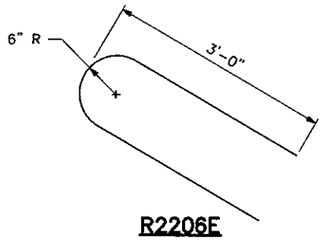
R1603E



SECTION G–G

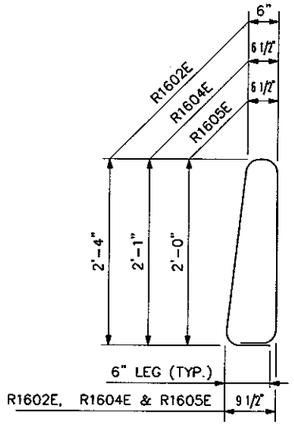


R1601E



R2206E

AS-BUILT
FEB 01 2006
ENGINEERING



R1602E, R1604E & R1605E

GENERAL NOTES

LENGTH OF "TYPE F RAILING CONCRETE (3Y46 OR 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 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.

(1) PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.

REVISED:

APPROVED: DECEMBER 18, 2003
STATE BRIDGE ENGINEER

S.A.P. 55–599–84

DEFLECTION JOINT DETAILS

460A486

CERTIFIED BY: LICENSED PROFESSIONAL ENGINEER DATE 7/23/04
NAME: LIC. NO. 19780

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

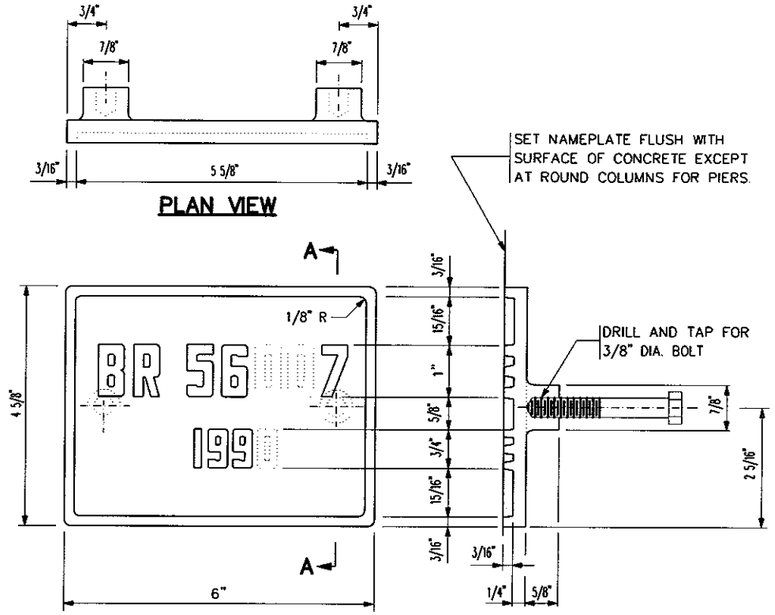
DES: T.J.M.	DR: G.A.M.	APPROVED:
CHK: K.A.R.	CHK: T.J.M.	

SHEET NO. B16 OF B22 SHEETS

FIG. 5–397.115 MODIFIED

BRIDGE NO. 55580

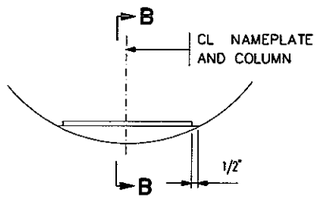
H:\Job\460BRIDG\486\CADD\TwpRd11\fig7115e.dwg, Model, 7/22/2004 4:25:03 PM, Gary, HP8550 PCL5C.pc3, 0.99:2



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

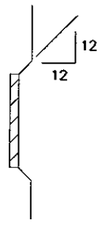
BRIDGE 55580

YEAR 2004



NAMEPLATE PLACEMENT

(ROUND CONCRETE PIER COLUMNS)



SECTION B–B



NUMBERS FOR NAMEPLATE

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"

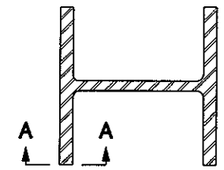
HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.

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

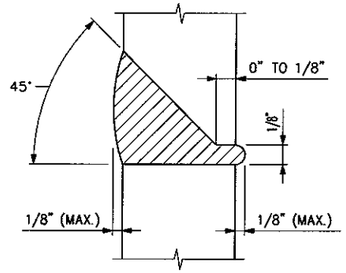
FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.

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 T. Morgan STATE BRIDGE ENGINEER	**BRIDGE NAMEPLATE** (FOR NEW BRIDGES)		**B101**



SECTION AT JOINT



SECTION A–A

100% BUTT WELDED PILE SPLICE

AS-BUILT

FEB 01 2006

ENGINEERING

NOTES:

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

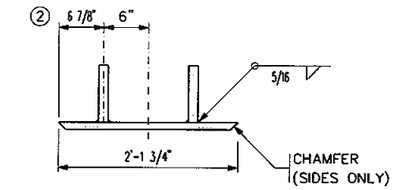
ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.

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.

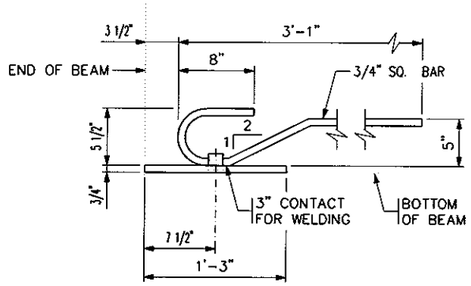
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel T. Morgan STATE BRIDGE ENGINEER	**PILE SPLICE** (STEEL H BEARING PILES 10" TO 14")		**B202**

CERTIFIED BY: PROFESSIONAL ENGINEER LIC NO 14280 7/23/2004	DES: T.J.M.	DR: J.A.K.	APPROVED:	TITLE: DETAILS 460A486	STATE AID PROJ. NO 55-599-84	Sheet No. B17 of B22 Sheets	Bridge No. 55580
	CHK: K.A.R.	CHK: T.J.M.					

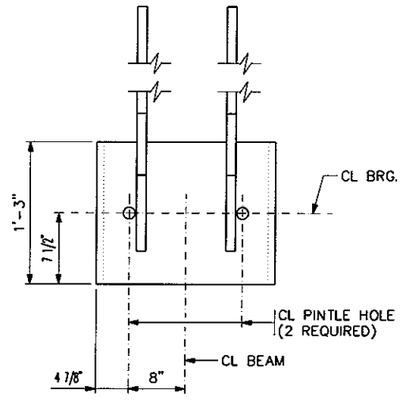
H:\Job\460BRIDG\486\CADD\TwpRd1\C-BR-DETAILS.dwg, Sheet 1, 7/22/2004 4:25:36 PM, Gary, HP8550 PCL5C.pc3, 1:2



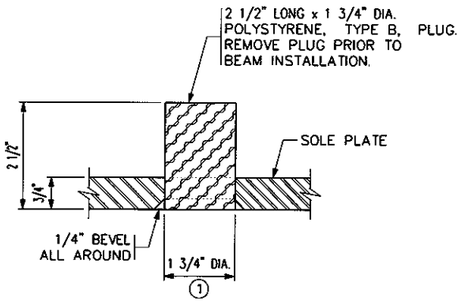
FRONT VIEW



SIDE VIEW



TOP VIEW



PINTLE HOLE DETAIL

NOTES:

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

SOLE PLATE FOR BEARING ASSEMBLY TO BE GALVANIZED PER Mn/DOT SPEC. 3394 AFTER FABRICATION.

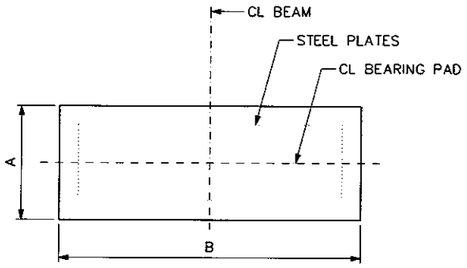
PINTLE HOLES SHALL BE FREE OF ZINC BUILD UP FROM GALVANIZING.

PAYMENT FOR SOLE PLATES TO BE INCLUDED IN PRICE BID FOR PRESTRESSED CONCRETE BEAMS.

① FOR 1 1/2" DIA. PINTLES.

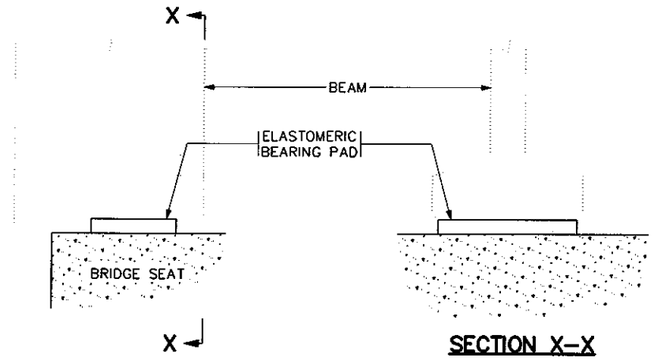
② THESE DIMENSIONS MAY BE MODIFIED TO CLEAR PRESTRESSED STRANDS. HOWEVER, CHANGES MUST BE APPROVED BY THE ENGINEER

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel J. Thorson STATE BRIDGE ENGINEER	**SOLE PLATE** (PRESTRESSED CONCRETE BEAMS) (FOR BEARINGS WITH PINTLES)		**B303**



PLAN

(BEAM NOT SHOWN)



SIDE ELEVATION

SECTION X–X

TABLE						
PAD TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE A	BEARING PAD SIZE B	BEARING PAD SIZE D	SHAPE FACTOR
1	P1 & P2	22" RB	12	24	1/2	8.0
1	N & S ABUT.	22" RB	12	24	1/2	8.0

(SEE DESIGNER NOTE)

NOTES:

ELASTOMERIC MATERIALS AND PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741

PAYMENT FOR ELASTOMERIC BEARING PAD, TYPE 1, INCLUDED IN ITEM "ELASTOMERIC BEARING PAD" PER EACH

AS-BUILT

FEB 01 2006

ENGINEERING

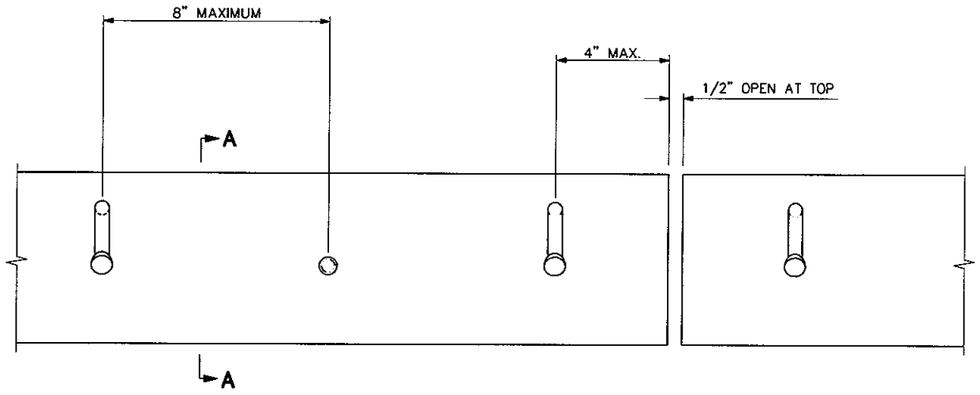
DESIGNER NOTE:

USE 1/2" UNREINFORCED PAD WITH CONTINUITY DIAPHRAGMS OR INTEGRAL ABUTMENTS.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel J. Thorson STATE BRIDGE ENGINEER	**ELASTOMERIC BEARING PAD** (PRESTRESSED CONCRETE BEAMS)		**B305**

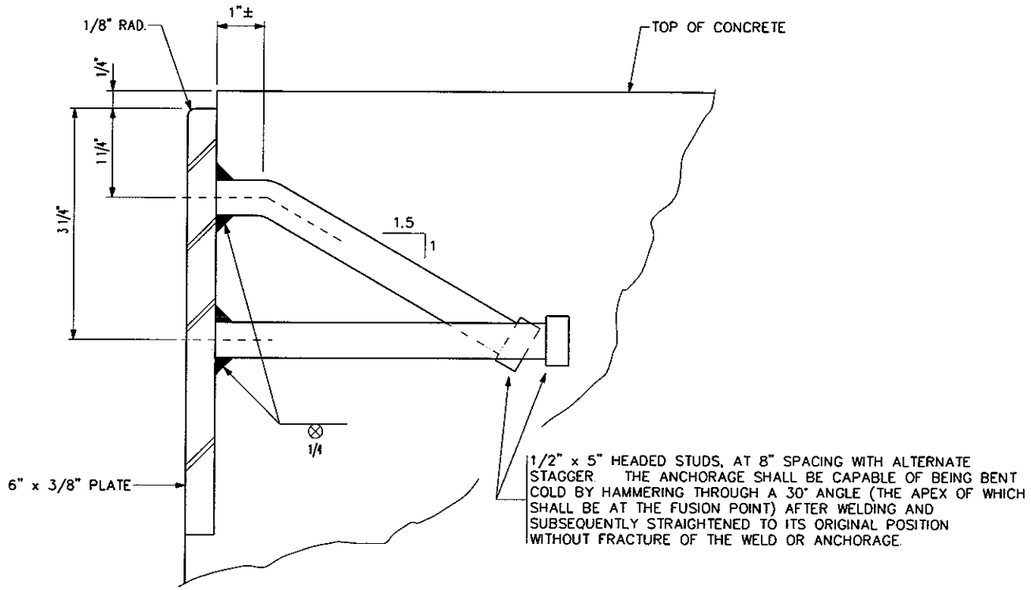
CERTIFIED BY: PROFESSIONAL ENGINEER LIC. NO. 14780 7/23/2004	DES: T.J.M.	DR: J.A.K.	APPROVED:	TITLE: DETAILS 460A486	STATE AID PROJ. NO. 55-599-84	Sheet No. B18 of B22 Sheets	Bridge No. 55580
	CHK: K.A.R.	CHK: T.J.M.					

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ELEVATION

CONCRETE NOT SHOWN



SECTION A–A

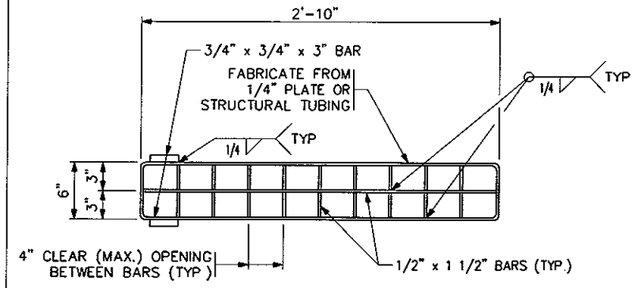
NOTES:

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

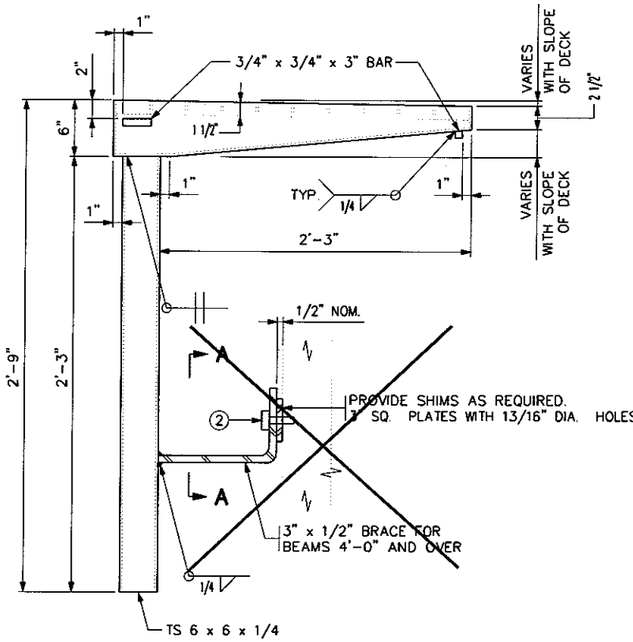
MATERIALS: STRUCTURAL STEEL PER Mn/DOT SPEC. 3306. GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394

SET PLATE TO PROPER GRADE AND CROWN.

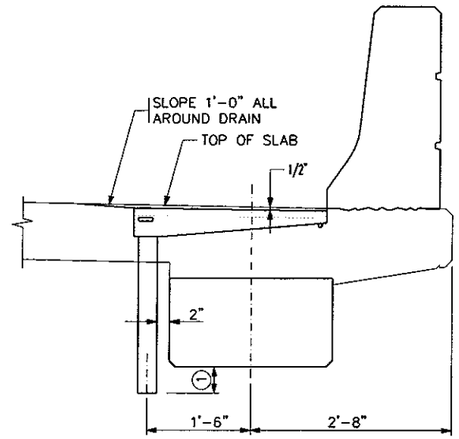
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel T. Morgan STATE BRIDGE ENGINEER	**PROTECTION PLATE** (FOR END OF SLAB)		**B553**



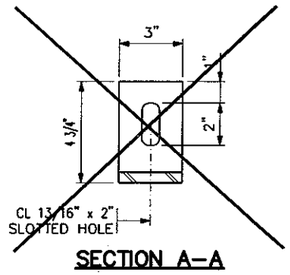
PLAN



ELEVATION



FLOOR DRAIN PLACEMENT DIAGRAM



SECTION A–A

AS-BUILT

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ENGINEERING

NOTES:

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

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

PAYMENT FOR FLOOR DRAIN, TYPE B706 MODIFIED SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

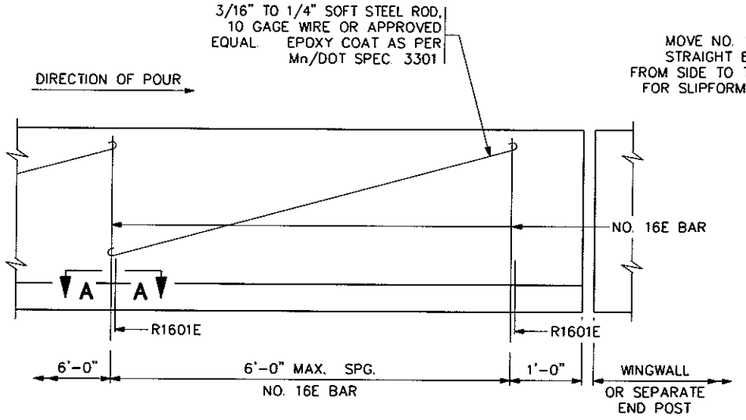
① 1"" BELOW BOTTOM OF BEAM EXCEPT ON RURAL STREAM CROSSINGS WHERE DRAIN SHOULD BE EVEN TO BOTTOM OF BEAM.

② ATTACH TO BEAM WITH 3/4" DIA. BOLT, LOCKWASHER AND NUT AS REQUIRED. SEE SPECIAL PROVISIONS FOR APPROVED ANCHORAGE REQUIRED FOR CONCRETE BEAMS. ANCHORAGE TO MISS DRAPED STRANDS.

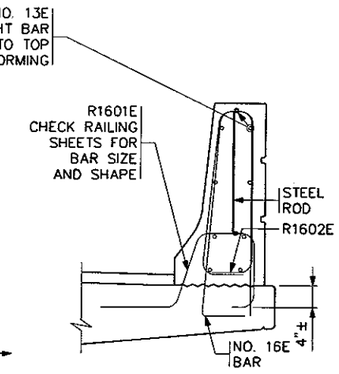
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel T. Morgan STATE BRIDGE ENGINEER	**BRIDGE OFFSET FLOOR DRAIN** (STRUCTURAL TUBE)		**MODIFIED B706**

CERTIFIED BY: PROFESSIONAL ENGINEER LIC. NO. 14280 7/23/2004	DES: T.J.M.	DR: J.A.K.	APPROVED:	TITLE: DETAILS 460A486	STATE AID PROJ. NO. 55-599-84	Sheet No. B19 of B22 Sheets	Bridge No. 55580
	CHK: K.A.R.	CHK: T.J.M.					

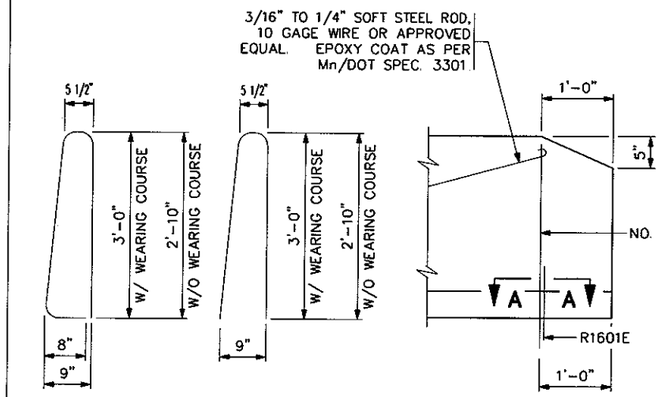
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INSIDE ELEVATION OF RAILING



RAILING SECTION

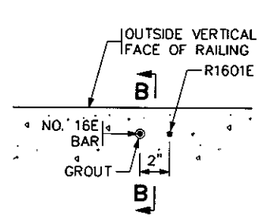


NO. 16E BAR NO. 16E BAR

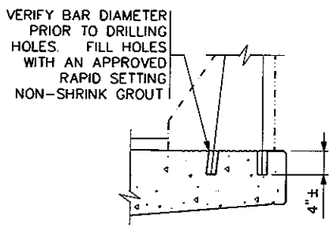
DRILLED IN ALTERNATE

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.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel T. Morgan STATE BRIDGE ENGINEER	CONCRETE RAILING (TYPE F) (SLIPFORM ALTERNATE)		B830

AS-BUILT
FEB 01 2006
ENGINEERING

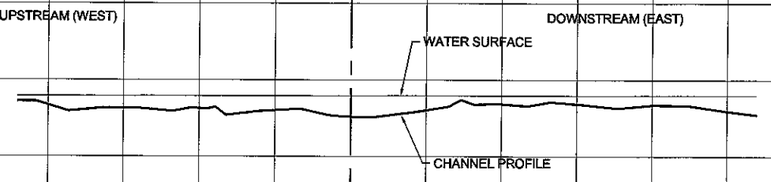
CERTIFIED BY: _____ PROFESSIONAL ENGINEER LIC. NO 14280 7/23/2004

DES: T.J.M.	DR: J.A.K.	APPROVED:	TITLE: DETAILS 460A486	STATE AID PROJ. NO. 55-599-84	Sheet No. B20 of B22 Sheets	Bridge No. 55580
CHK: K.A.R.	CHK: T.J.M.					

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CHANNEL PROFILE

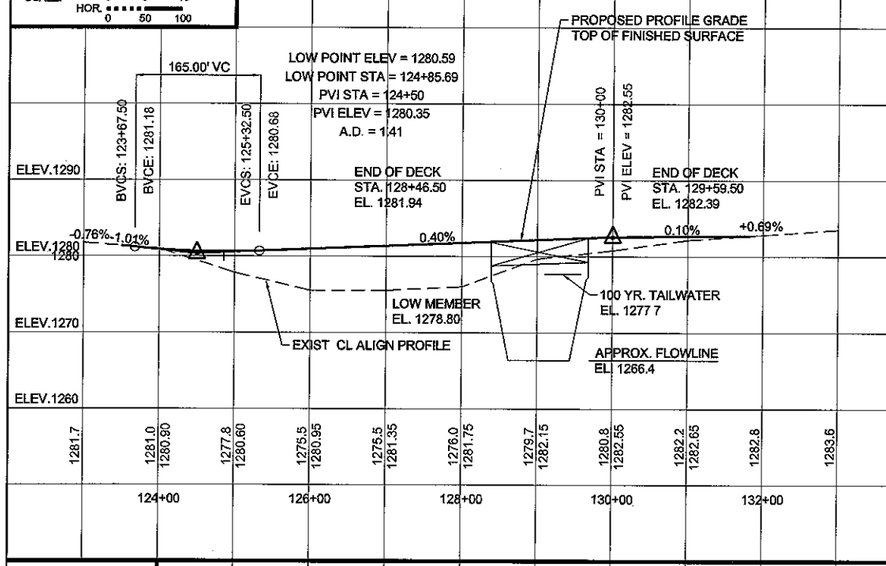
SCALE: HOR. 0 50 100 VERT 0 5 10



ROAD PROFILE

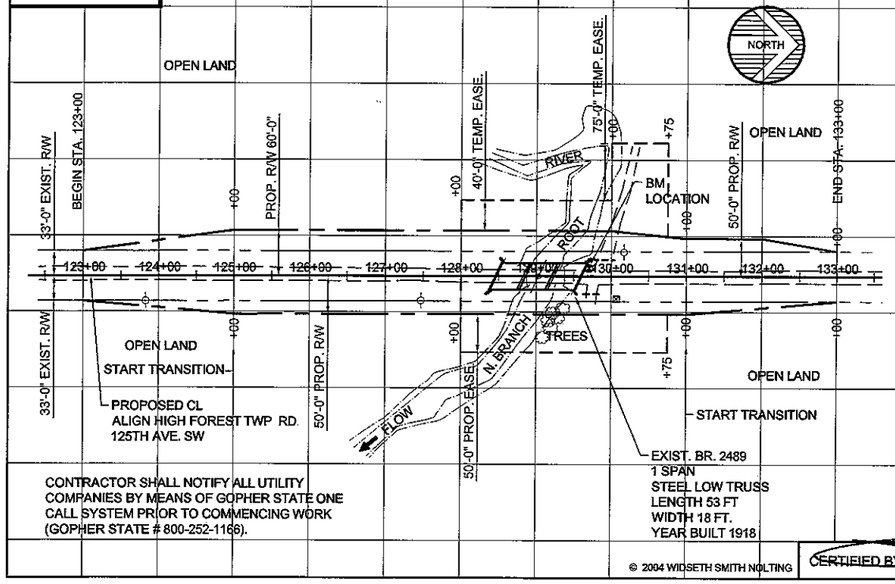
SCALE: VERT 0 5 10 HOR. 0 50 100

55 MPH DESIGN VERT & HORZ.



PLAT

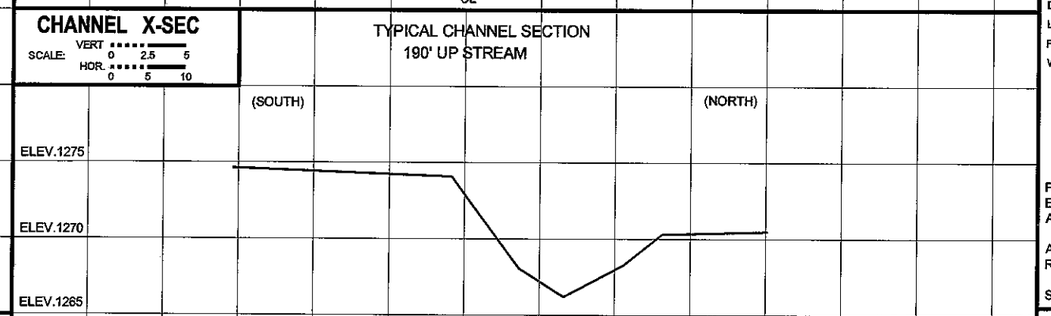
SCALE: HOR. 0 50 100



CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES BY MEANS OF GOPHER STATE ONE CALL SYSTEM PRIOR TO COMMENCING WORK (GOPHER STATE # 800-252-1166).

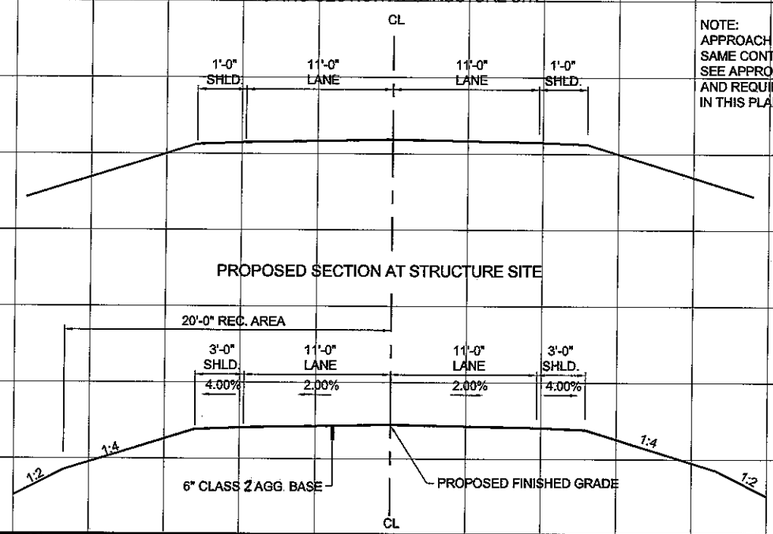
CHANNEL X-SEC

SCALE: VERT 0 2.5 5 HOR. 0 5 10



TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN



NOTE:
APPROACH GRADING UNDER SAME CONTRACT.
SEE APPROACH GRADING DETAILS AND REQUIREMENTS ELSEWHERE IN THIS PLAN SET

Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls,dams,floods,ice,debris,sliding banks,recreational boating.

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 ENGINEERS RECOMMENDATION

DATE AUG. 26, 2003

Stream or ditch designation NORTH BRANCH OF THE ROOT RIVER
Drainage area 20.3 SQ. MI.
Max. flood on record UNKNOWN Design flood(100 yr.freq.) 2670 C.F.S.
Max. observed highwater elevation UNKOWN Design tailwater elevation 1277.7
Design mean velocity through structure 3.4 F.P.S.
Low superstructure at or above elevation 1278.7
Flowline elevation 1266.4 Skew angle 25°
Waterway area req'd. below elevation 1277.7 = 780 Sq.Ft.at Rt.angles to channel

POTENTIAL CONTRACTION SCOUR 1.0 FT
ESTIMATED PIER SCOUR DEPTH 2.0 FT
APPROXIMATE SCOUR ELEVATION 1263.4

ABUTMENT SCOUR - NEGLIGIBLE - CLASS III RIPRAP PROTECTION REQUIRED ON INSLOPES.

SCOUR CODE L

FOUNDATION ENGINEERS RECOMMENDATION

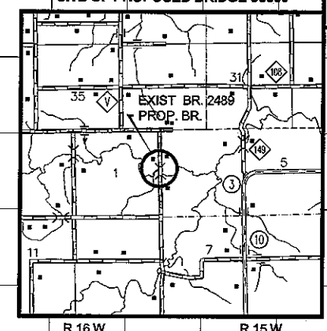
DATE AS-BUILT

FEB 01 2006

ENGINEERING

Bridge survey sheets made from: OLMSTED COUNTY HIGHWAY DEPARTMENT
Bench mark elevation 1279.30 (M.S.L. 1929 Adj.)
Location 1" SQUARE PIPE WITH CAP, 0.5' DOWN ON WEST SHOULDER, 22.0' SOUTH OF CL OF RES. DRIVE AND 11.5' WEST OF THE CL OF 125TH AVE SW

SITE OF PROPOSED BRIDGE 55580



INDEX MAP

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

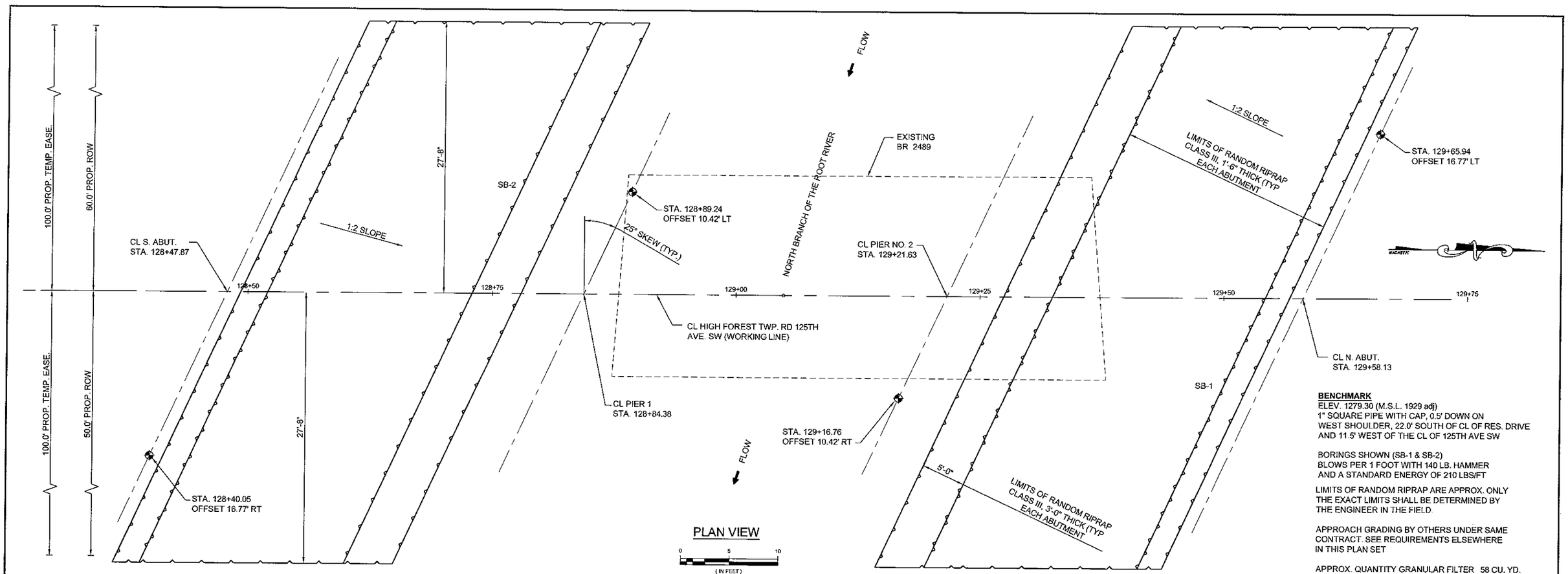
AT MILE POINT TWP RD. 1 ON 125TH AVE. SW
PROPOSED BRIDGE LOCATED MILES ON WEST COUNTY LINE, ON 125 AVE. SW (HIGH FOREST TWP RD)
SEC. 6 TWP 104 N R. 15 W
TOWNSHIP HIGH FOREST COUNTY OLMSTED
BRIDGE NO. 2489 (EXISTING)
BRIDGE NO. 55580 (PROPOSED)

© 2004 WIDSETH SMITH NOLTING

CERTIFIED BY: [signature] LICENSE NO. 14280 DATE: 7/23/2004
PROFESSIONAL ENGINEER - TIMOTHY J. MAY

JOB NUMBER: 460A486 S.A.P. NO. 55-599-84 SHEET NO. B21 OF B22 SHEETS

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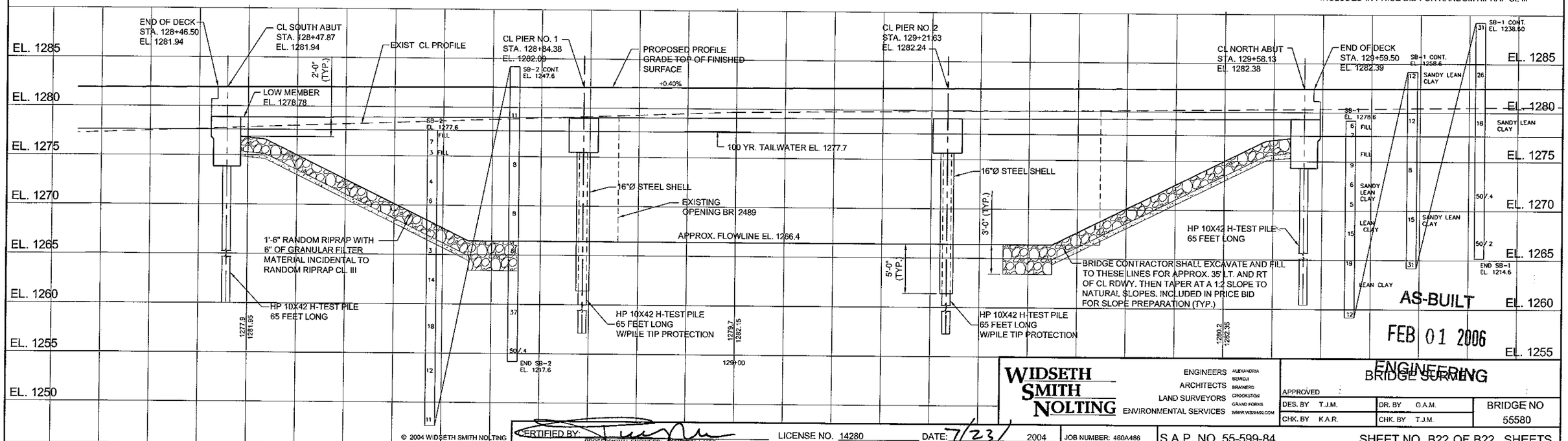
BENCHMARK
ELEV. 1279.30 (M.S.L. 1929 adj)
1" SQUARE PIPE WITH CAP, 0.5' DOWN ON
WEST SHOULDER, 22.0' SOUTH OF CL OF RES. DRIVE
AND 11.5' WEST OF THE CL OF 125TH AVE SW

BORINGS SHOWN (SB-1 & SB-2)
BLOWS PER 1 FOOT WITH 140 LB. HAMMER
AND A STANDARD ENERGY OF 210 LBS/FT

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

APPROACH GRADING BY OTHERS UNDER SAME
CONTRACT. SEE REQUIREMENTS ELSEWHERE
IN THIS PLAN SET

APPROX. QUANTITY GRANULAR FILTER 58 CU. YD.
INCLUDED IN PRICE BID FOR RANDOM RIPRAP CL. III



AS-BUILT
FEB 01 2006
ENGINEERING
BRIDGE SURVEY

© 2004 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ LICENSE NO. 14280 DATE: 7/23/2004
PROFESSIONAL ENGINEER: TIMOTHY J. MOE

WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS
WWW.WSN-MN.COM

APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55580

JOB NUMBER: 460A486 | S.A.P. NO. 55-599-84 | SHEET NO. B22 OF B22 SHEETS

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