MINNESOTA DEPARTMENT OF TRANSPORTATION

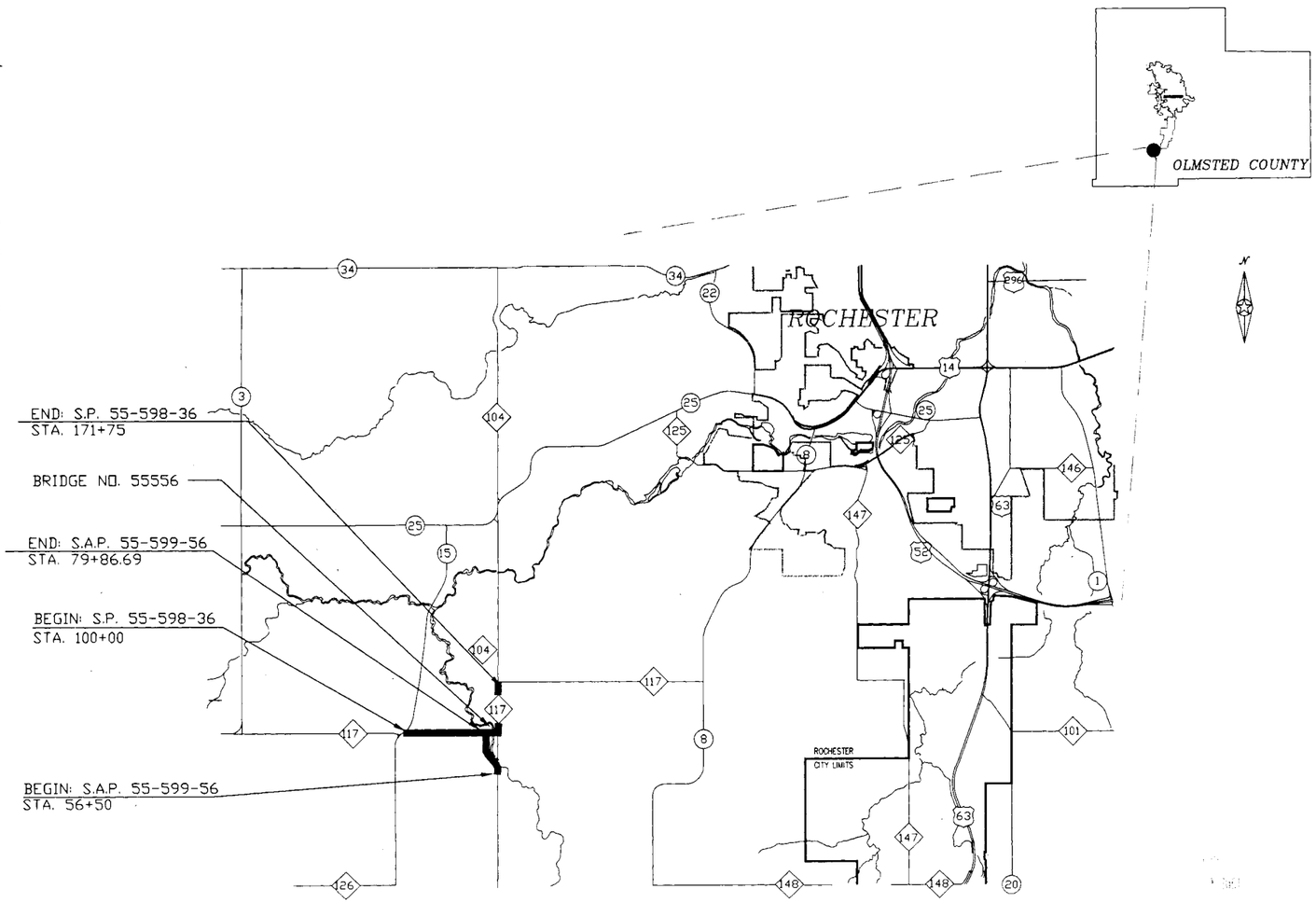
THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, & BRIDGE 55556

LOCATED ON C.R. 117 BETWEEN C.S.A.H. 15 AND C.R. 104: 5 MILES S.W. OF ROCHESTER (GEOGRAPHIC DESCRIPTION)
TWP. RD. 24 0.44 MILES SOUTH
LOCATED ON (60th AVE. S.W.) BETWEEN C.R. 117 AND 5 MILES S.W. OF ROCHESTER (GEOGRAPHIC DESCRIPTION)

2,110 FT. WEST OF CENTER
FROM SEC. 25 OF T106N R15W TO N.E. COR. SEC.25 T106N R15W (LEGAL DESCRIPTION)

STATE PROJ. NO. 55-598-36 (C.R. 117)					S.A.P. NO. 55-599-56 (TWP. RD. 24)				
GROSS LENGTH	7,175.00	FEET	1.359	MILES	GROSS LENGTH	2,336.69	FEET	0.443	MILES
BRIDGE-LENGTH	227.16	FEET	0.043	MILES	BRIDGE-LENGTH		FEET		MILES
EXCEPTIONS-LENGTH		FEET		MILES	EXCEPTIONS-LENGTH		FEET		MILES
NET LENGTH	7,175.00	FEET	1.359	MILES	NET LENGTH	2,336.69	FEET	0.443	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 50'
PROFILE 0 50' HORIZ. 0 10' VERT.
INDEX MAP 0 10560'
CROSS SECTIONS 0 10'

MINN. PROJ. NO. BROS 5595(207)

GOVERNING SPECIFICATIONS

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

INDEX FOR GRADING OF C.R. 117 & TWP. RD. 24

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATE OF QUANTITIES
SHEET NO. 3	TYPICAL SECTIONS
SHEET NO. 4 - 8	EROSION CONTROL
SHEET NO. 9 - 12	GRADING AND EROSION CONTROL
SHEET NO. 13 - 29	CROSS SECTIONS
SHEET NO. 30	TRAFFIC CONTROL
SHEET NO. 30A	GUARDRAIL DETAILS
SHEET NO. 31 - 32	GUARDRAIL INSTALLATION & END TREATMENTS

INDEX FOR BRIDGE CONSTRUCTION (#55556)

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	GENERAL PLAN & ELEVATION
SHEET NO. 3	BRIDGE LAYOUT
SHEET NO. 4 - 10	WEST ABUTMENT DETAILS
SHEET NO. 11 - 17	EAST ABUTMENT DETAILS
SHEET NO. 18 - 22	PIER DETAILS
SHEET NO. 23	FRAMING PLAN
SHEET NO. 24	PRESTR. CONC. BEAM DETAILS
SHEET NO. 25 - 27	SUPERSTRUCTURE DETAILS
SHEET NO. 28	CONC. RAIL TYPE J
SHEET NO. 29 - 31	WATERPROOF EXPANSION DEVICE
SHEET NO. 32 - 38	DETAILS
SHEET NO. 39	BRIDGE SURVEY
SHEET NO. 40	BRIDGE SURVEY - PLAN & PROFILE

THIS PLAN CONTAINS 73 SHEETS.

DESIGN DESIGNATION: 55-598-36 (C.R. 117)

ADT (Current Year) = 266(1997) Design Speed 55 MPH
ADT (Future Year) = 399(2017) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5 Height of object 0.5
D (Directional Distr.) = Design Speed not achieved at:
T (Heavy Commercial) = STA.100+61.43 TO STA.102+81.40 MPH 30 *
SUBGRADE = K=150 STA.142+34.76 TO STA.150+40.57 MPH 40
SHOULDER WIDTH = 4 FT. * STOP CONDITION
SOIL FACTOR = 130%

DESIGN DESIGNATION: 55-599-56 (TWP. RD. 24)

ADT (Current Year) = <50(1997) Design Speed 40 MPH
ADT (Future Year) = <50(2017) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5 Height of object 0.5
D (Directional Distr.) = Design Speed not achieved at:
T (Heavy Commercial) = STA. TO STA. MPH
SUBGRADE = K=150 STA. TO STA. MPH
SHOULDER WIDTH = 2 FT.
SOIL FACTOR = 130%

LOCAL AGENCY

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

Kaye M Bierwerk DATE 7/30/97 REGISTRATION NUMBER 19917
APPROVED: DESIGN ENGINEER

Michael Kirchner DATE 7/30/97 REGISTRATION NUMBER 10397
APPROVED: COUNTY ENGINEER

DATE: _____
RECOMMEND FOR APPROVAL:

DATE: _____
RECOMMEND FOR APPROVAL:

DATE: _____
RECOMMEND FOR APPROVAL:

STATE AID & FEDERAL AID APPROVALS:

DATE: 7/31/97
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE- AID RULES/POLICY

DATE: 8-18-97
APPROVED FOR STATE AID & FEDERAL AID FUNDING: STATE AID ENGINEER

STATE PROJ. NO. 55-598-36 (C.R. 117)
STATEAID PROJ. NO. 55-599-56 (TWP.RD. 24) SHEET NO. 1 OF 32 SHEETS

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	S.P. 55-598-36		S.A.P. 55-599-56	
					PARTICIPATING RURAL	NON PARTICIPATING RURAL	PARTICIPATING RURAL	NON PARTICIPATING RURAL
	2031.501	FIELD OFFICE, TYPE D	EACH	1	0.94		0.06	
(1)	2101.511	CLEARING AND GRUBBING	LUMP SUM	1	0.95		0.05	
	2104.501	REMOVE PIPE CULVERT	LIN. FT.	625	589		36	
(2)	2104.521	SALVAGE PIPE CULVERT	LIN. FT.	140	38		102	
	2104.513	SAWING BITUMINOUS PAVEMENT	LIN. FT.	100	100			
(3)	2105.515	UNCLASSIFIED EXCAVATION	CU. YDS.	134,871(P)	127,089(P)		7,782(P)	
(4)	2123.503	MOTOR GRADER	HOUR	32			32	
(4)	2123.508	15 CU. YD. SCRAPER	HOUR	32			32	
(4)	2123.509	DOZER	HOUR	32			32	
(5)	2130.501	WATER	M-GAL.	63	53		10	
(6)	2211.501	AGGREGATE BASE CL. 5	TON	9,829	8,487		1,342	
	2211.501	AGGREGATE BASE CL. 5 MOD.	TON	6,957	5,596		1,361	
	2451.507	GRANULAR BEDDING (CV)	CU. YDS.	129	117		12	
	2501.511	18" C.S. PIPE CULVERT	LIN. FT.	268	144		124	
	2501.511	24" C.S. PIPE CULVERT	LIN. FT.	188	188			
	2501.511	24" R.C. PIPE CULVERT	LIN. FT.	52	52			
	2501.511	36" R.C. PIPE CULVERT	LIN. FT.	198	168		30	
	2501.511	36" R.C. PIPE CULVERT CL. III	LIN. FT.	138	98		40	
	2501.515	18" G.S. PIPE APRON	EACH	14	8		6	
	2501.515	24" G.S. PIPE APRON	EACH	8	8			
	2501.515	24" R.C. PIPE APRON	EACH	2	2			
	2501.515	36" R.C. PIPE APRON	EACH	8	6		2	
	2501.521	21" SPAN C.S. PIPE-ARCH CULVERT	LIN. FT.	124	124			
	2501.521	36" SPAN R.C. PIPE-ARCH CULVERT CL. II A	LIN. FT.	66	66			
	2501.521	73" SPAN R.C. PIPE-ARCH CULVERT CL. II A	LIN. FT.	72	72			
	2501.521	122" SPAN R.C. PIPE-ARCH CULVERT CL. II A	LIN. FT.	66	66			
	2501.525	21" SPAN G.S. PIPE-ARCH APRON	EACH	8	8			
	2501.525	36" SPAN R.C. PIPE-ARCH APRON	EACH	2	2			
	2501.525	73" SPAN R.C. PIPE-ARCH APRON	EACH	2	2			
	2501.525	122" SPAN R.C. PIPE-ARCH APRON	EACH	2	2			
	2502.521	8" C.S. PIPE DRAIN	LIN. FT.	297	297			
	2502.551	8" C.S. INSPECTION TEE	LIN. FT.	20	20			
	2554.501	TRAFFIC BARRIER DESIGN B8307	LIN. FT.	350	350			
	2554.501	TRAFFIC BARRIER DESIGN SPECIAL	LIN. FT.	100	100			
	0554.602	T-BARRIER BRIDGE CONN DES 8318	EACH	4	4			
	0554.602	ECCENTRIC LOADER BCT	EACH	4	4			
	0563.601	TRAFFIC CONTROL	LUMP SUM	1	0.94		0.06	
(7)	2573.501	BALE CHECKS	EACH	130	70		60	
(8)	2573.502	SILT FENCE, TYPE HEAVY DUTY	LIN. FT.	6,582	3,050		3,532	
	2575.501	SEEDING	ACRE	14	8		6	
	2575.502	SEED MIXTURE 500	POUND	700	400		300	
	2575.502	SEED MIXTURE 1100	POUND	1,120	640		480	
	2575.505	SODDING TYPE EROSION	SQ. YD.	8,342	8,070		272	
	2575.511	MULCH MATERIAL TYPE 1	TON	28	16		12	
	2575.519	DISK ANCHORING	ACRE	12	6(P)		6(P)	
	2575.531	COMMERCIAL FERTILIZER ANALYSIS 10-10-10	TON	1.4	0.8		0.6	

QUANTITY NOTES

① APPROX. 100 TREES AND 1.4 ACRES WOODS IN R/W, EXCEPT THOSE DESIGNATED BY THE ENGINEER.

② 122' x 78' x 38' STRUCTURAL PLATE ℄ CULV AT STA. 125+48, SEE SHEET NO. 9.

③ UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN IN TYPICAL SECTIONS AND CROSS SECTIONS FROM C.R. 117. 3,591 CU. YDS. UNCLASSIFIED EXCAVATION, TO BE USED AS SALVAGE TOPSOIL ON C.R. 117, AND 1,165 CU. YDS UNCLASSIFIED EXCAVATION TO BE USED AS SALVAGED TOPSOIL ON NEW TWP. RD., AND 251 CU. YDS. UNCLASSIFIED EXCAVATION TO BE USED AS FILL ON TWP. RD. ALL VOLUMES TO BE PLACED AS SHOWN IN THE PLANS.

④ EQUIPMENT HOURS ARE FOR OBLITERATING EXISTING TWP. RD. AS DIRECTED BY ENGINEER IN THE FIELD. SPECIFICATION 1903 DOES NOT APPLY TO THIS ITEM.

⑤ WATER TO BE USED AS A DUST PREVENTATIVE AS DIRECTED BY THE ENGINEER.

⑥ INCLUDES 5,708 TONS FOR MAINLINE, 1,849 TONS FOR APPROACHES AND ENTRANCES, AND 930 TONS FOR BRIDGE APPROACHES ON C.R. 117. INCLUDES 1,252 TONS FOR MAINLINE, AND 90 TONS ENTRANCES ON NEW TWP. RD.

⑦ 70 BALES USED ON CR. 117 LOCATED FROM STA. 117+75 TO STA. 122+75 SPACED 75 FT. APART. 60 BALES USED ON TWP. RD. LOCATED FROM STA. 57+50 TO STA. 63+50, SPACED 50 FT. APART.

⑦ TO BE PLACED AS DIRECTED BY THE ENGINEER. SILT FENCE TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION. SILT FENCE SHALL BE MAINTAINED BY CONTRACTOR DURING CONSTRUCTION.

BASIS OF PLANNED QUANTITIES

APPROX. COMPACTION FACTOR	34.7% FROM STA. 100+16 TO STA. 116+46
APPROX. COMPACTION FACTOR	30.2% FROM STA. 116+46 TO STA. 152+15
APPROX. COMPACTION FACTOR	38% FROM STA. 152+15 TO STA. 171+51
APPROX. COMPACTION FACTOR	38% FROM STA. 56+50 TO STA. 70+49.2
APPROX. COMPACTION FACTOR	27% FROM STA. 70+49.2 TO STA. 79+86.69
AGGREGATE BASE CLASS 5 -	140 LBS / CU. FT. COMPACTED
SEED MIXTURE 500 -	50 LBS / ACRE
SEED MIXTURE 1100 -	80 LBS / ACRE
MULCH MATERIAL -	2 TONS / ACRE
DISC ANCHOR -	ALL SEEDING AREA'S, EXCLUDING 2:1 SLOPES
COMMERCIAL FERTILIZER -	200 LBS / ACRE

NOTE: ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE RELOCATED OUTSIDE THE 32' RECOVERY AREA FOR S.P. 55-598-36 & THE 20' RECOVERY RECOVERY AREA FOR S.A.P. 55-599-56, BY OTHERS.

SODDING *

LOCATION	SQ. YDS.	REMARKS:
RT. STA. 130+31 TO STA. 132+80	747	DISTURBED AREA IN R/W AND RES. DR. CULV. OPENINGS
NEW BRIDGE 55556	880	BACKSLOPES
OLD BRIDGE ON C.R. 117	147	DISTURBED SLOPES
LT. STA. 150+90 TO STA. 153+00	806	DISTURBED AREA IN R/W, T.E. AND RES. DR. CULV. OPENINGS
LT. STA. 154+00 TO STA. 158+00	1628	DISTURBED AREA IN R/W, T.E. AND RES. DR. CULV. OPENINGS
RT. STA. 154+20 TO STA. 158+20	1471	DISTURBED AREA IN R/W, T.E. AND RES. DR. CULV. OPENINGS
RT. STA. 155+25 TO STA. 154+00	466	DISTURBED AREA IN R/W
RT. STA. 160+80 TO STA. 161+20	241	DISTURBED AREA IN R/W, T.E., RES. DR. & ℄ CULV. OPENINGS
RT. STA. 169+50 TO STA. 171+20	305	DISTURBED AREA IN R/W
LT. STA. 168+00 TO STA. 171+00	555	DISTURBED AREA IN R/W AND RES. DR. CULV. OPENINGS
RT. STA. STA. 171+20	206	DISTURBED DITCH ALONG W.-E. SECT. C.R. 117 & ℄ CULV ENDS

*NOTE: 618 SQ. YDS. OF SOD ON CR. 117 & 272 SQ. YDS. OF SOD ON THE TWP. RD., TO BE PLACED AROUND CULVERT OPENINGS PER PLATE NO. 9120D.

STANDARD PLATES

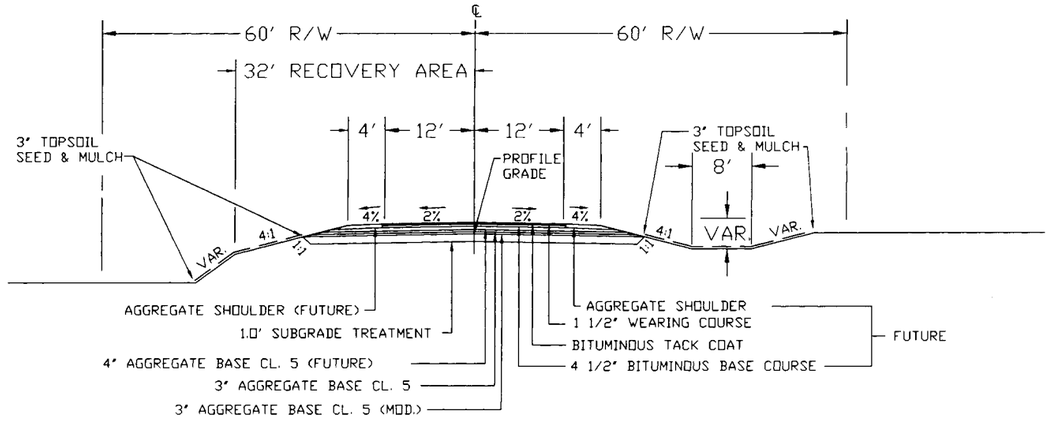
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
3000L	REINFORCED CONCRETE PIPE
3007B	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014J	REINFORCED CONCRETE PIPE-ARCH
3040F	CORRUGATED METAL PIPE CULVERT
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3114H	SECTIONAL CONCRETE APRON FOR REINFORCED CONCRETE ARCH-PIPE
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3143C	INSPECTION TEE
3145E	CONCRETE PIPE TIES
3221C	CORRUGATED STEEL PIPE COUPLING BAND
8000I	STANDARD BARRICADES
8307P	STEEL PLATE BEAM GUARDRAIL
8318C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCT'S
8329F	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)
*9000C	APPROACHES AND ENTRANCES
9102D	TURF ESTABLISHMENT AREAS

*NOTE: ALL BACKSLOPES ON APPROACHES AND ENTRANCES ARE 4:1 SLOPES.

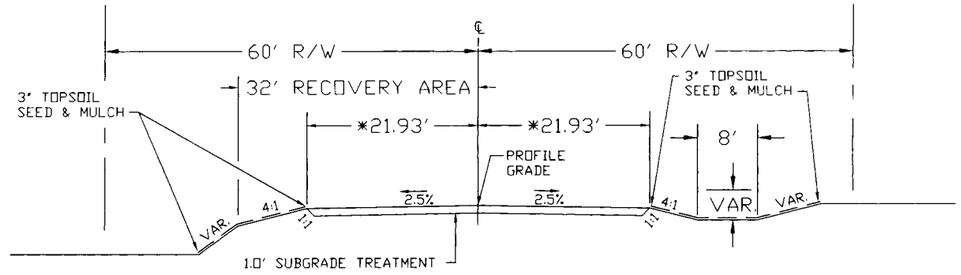
CERTIFIED BY Kaye M Brunick PROFESSIONAL ENGINEER REG. NO. 19917 7/30 1997

TYPICAL SURFACING SECTION C.R. 117



STA. 100+00 TO STA. 167+71

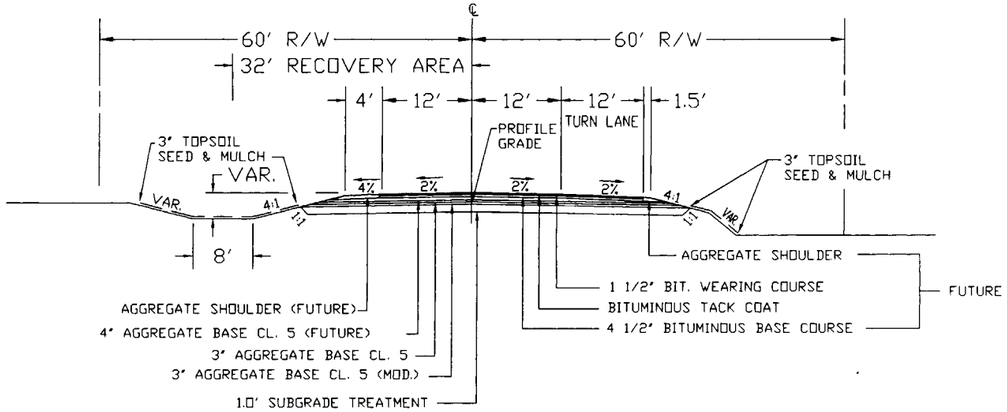
TYPICAL GRADING SECTION C.R. 117



STA. 100+00 TO STA 167+71

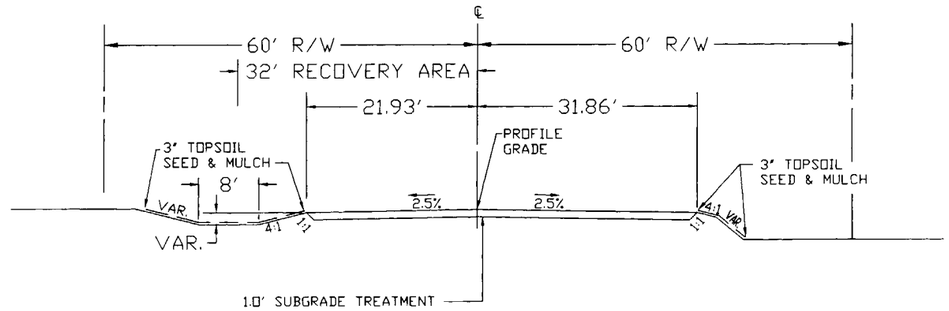
* DISTANCE VARIES IN SUPER

TYPICAL SURFACING SECTION RIGHT TURN LANE C.R. 117



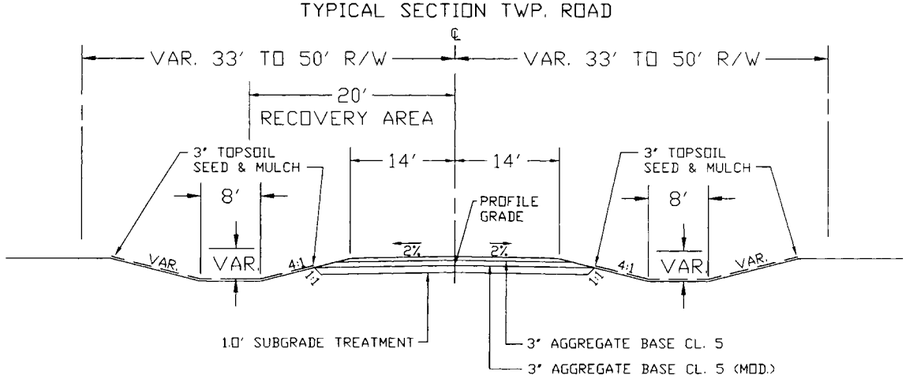
STA. 167+71 TO STA 171+75

TYPICAL GRADING SECTION RIGHT TURN LANE C.R. 117

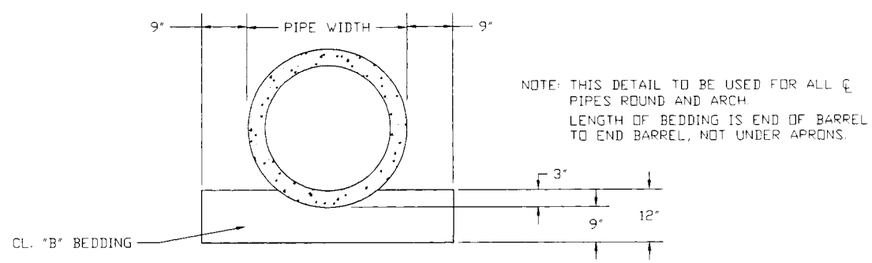


STA. 167+71 TO STA 171+75

TYPICAL SECTION TWP. ROAD



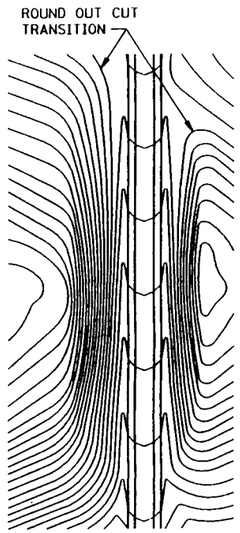
STA. 60+00 TO STA. 79+86.79



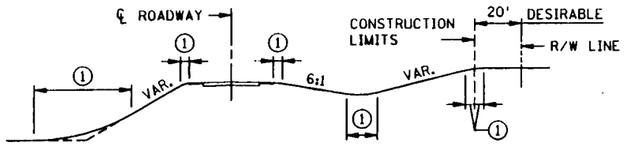
TYP. DETAIL
℄ PIPE CL. "B" BEDDING

CERTIFIED BY Kaye M Brenek PROFESSIONAL ENGINEER REG. NO. 19917 7/30 1997

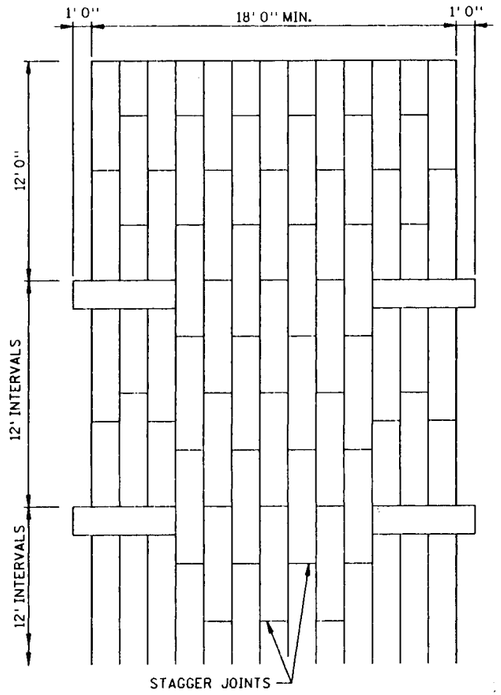
PROJECT NO. S.P. 55-598-36 & S.A.P. 55-599-56 SHEET 3 OF 32 SHEETS



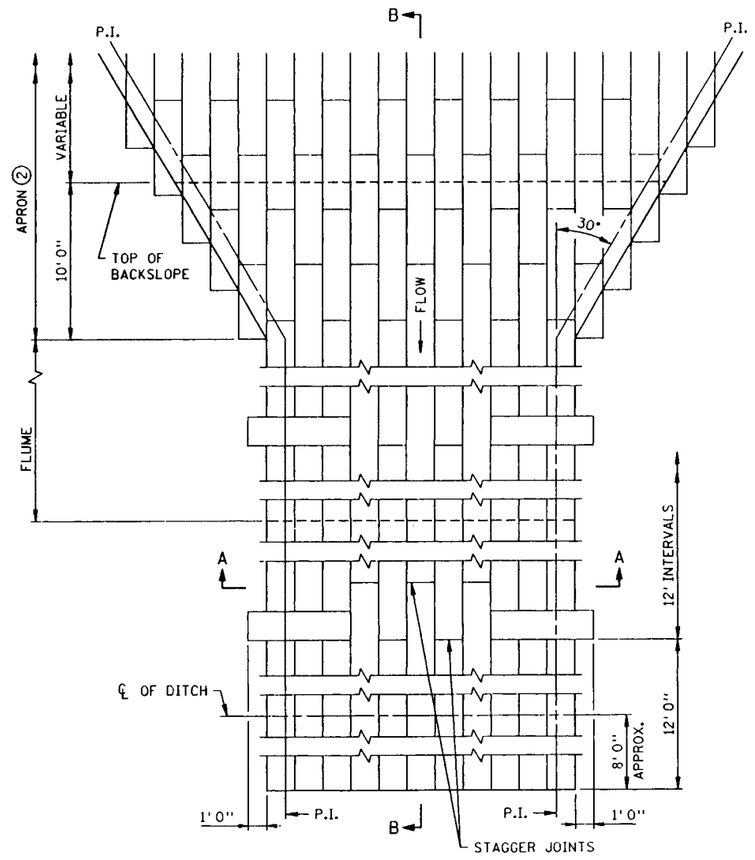
CONTOURING ROAD CUTS



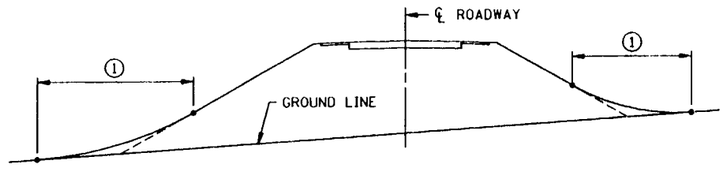
ROUNDING SHOULDERS AND BACKSLOPES



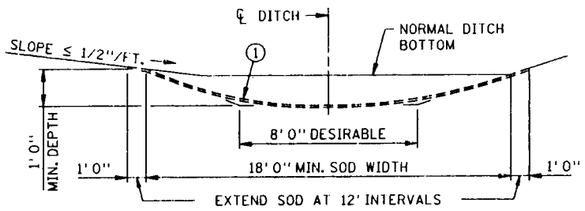
PLAN VIEW



PLAN VIEW

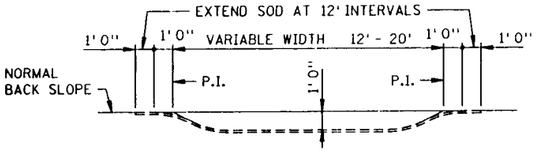


SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

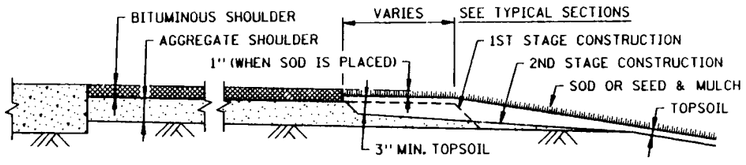


SODDED DITCH CROSS SECTION

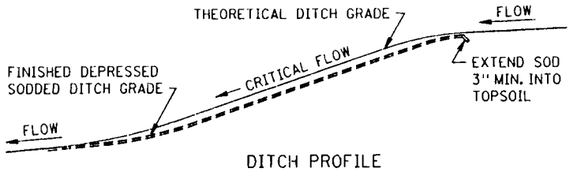
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THAN PROVIDE ROUNDING.



SECTION A-A

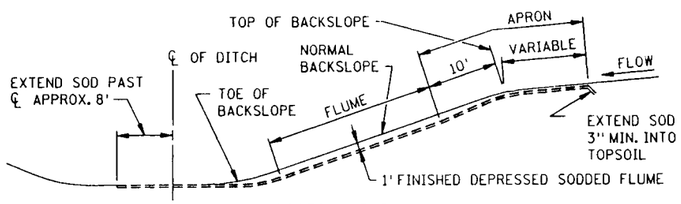


SHAPING AND TOPSOILING INSLOPES



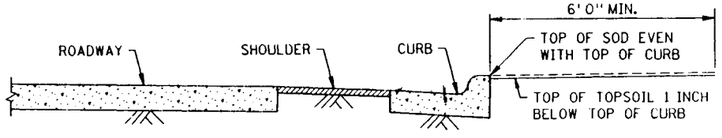
DITCH PROFILE

SODDED DITCH DETAILS



SECTION B-B

SODDED FLUME DETAILS



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

NOTES:

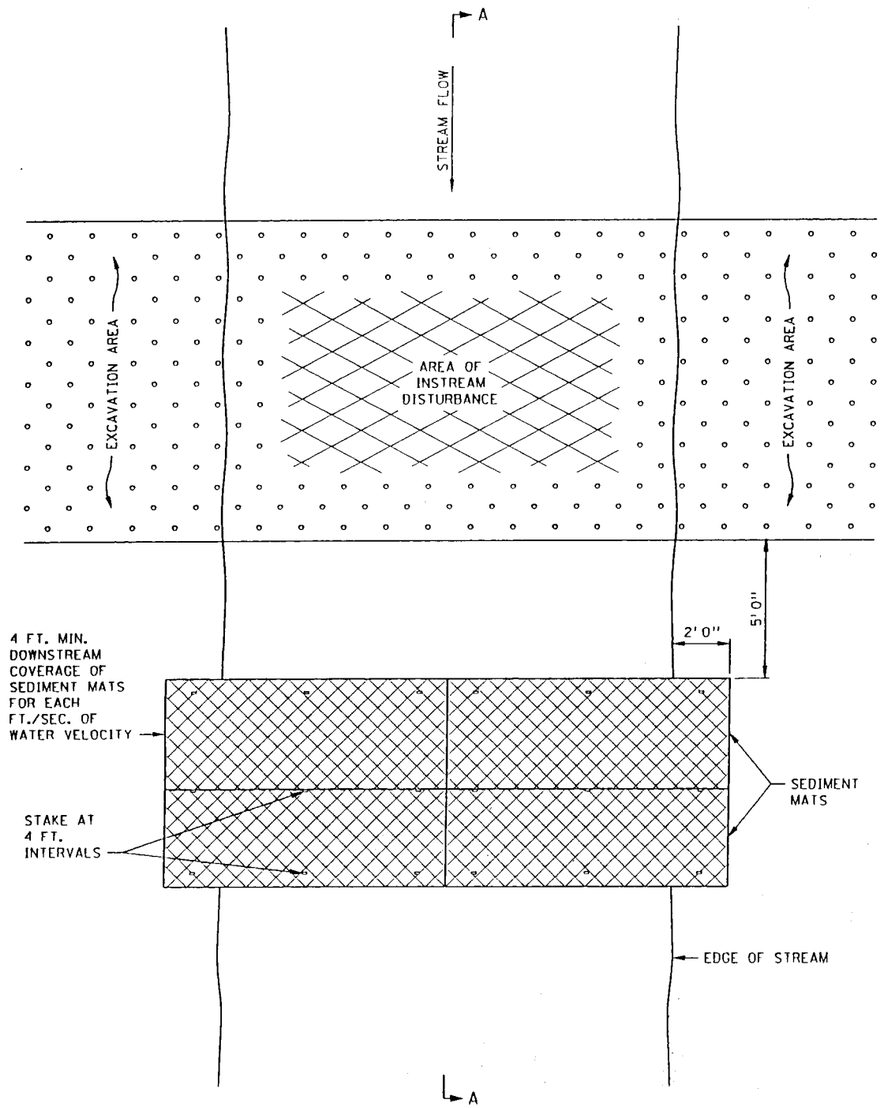
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① FOR ROUNDING, SEE ROAD DESIGN MANUAL.

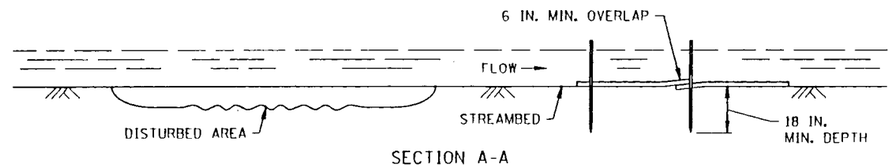
② CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ. NO. 55-[illegible] & 55-599-56	SHEET NO. 4 OF 32 SHEETS

AX780 QSA3:[45.100] FILE NAME S404L90.SPN



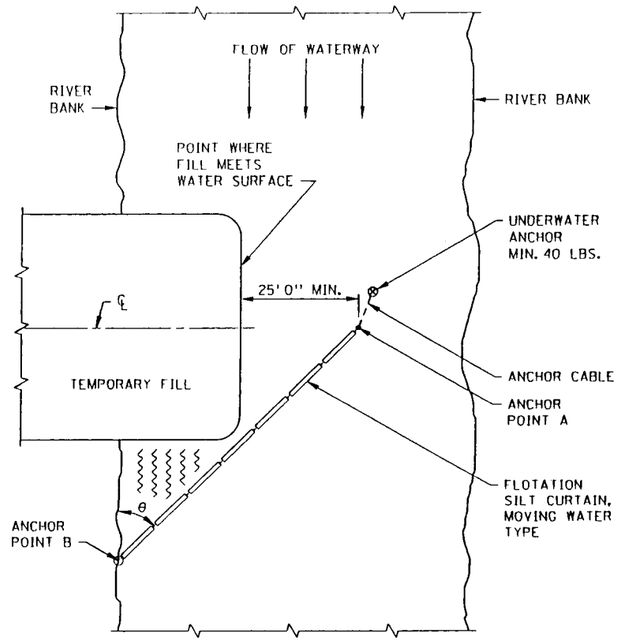
PLAN VIEW



SECTION A-A

SEDIMENT MAT
TYPICAL STREAMBED INSTALLATION

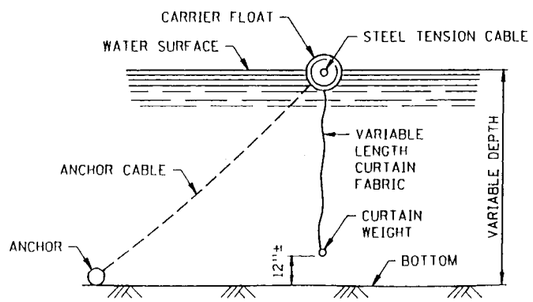
DESIGN CRITERIA:
MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 2 FT.



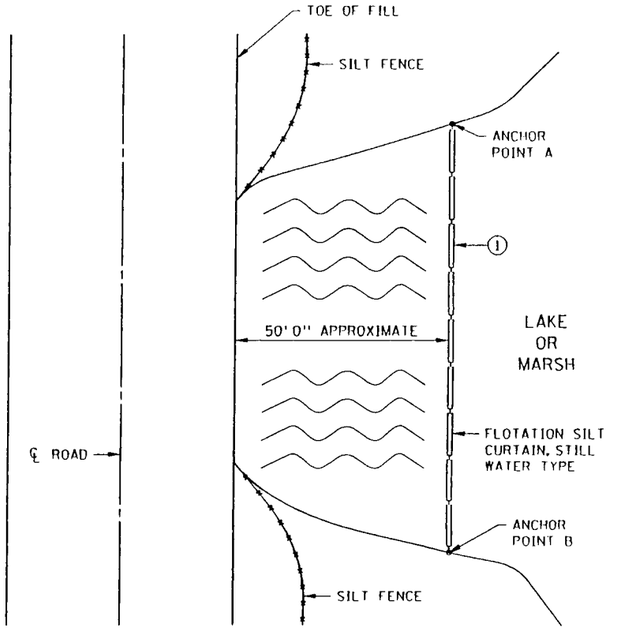
∠ θ	RIVER VELOCITY
45°	SLOW, LESS THAN 5 FT./SEC.
35°	MODERATE, 5 - 7 FT./SEC.

PLAN VIEW OF SILT CURTAIN - MOVING WATER

DESIGN CRITERIA:
MAXIMUM WATER DEPTH: 12 FT.
MAXIMUM WATER VELOCITY: 7 FT./SEC.

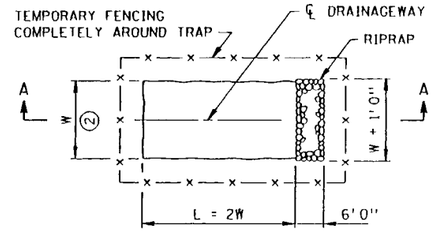


FLOTATION SILT CURTAIN DETAIL
(SEE SPEC. 3887)

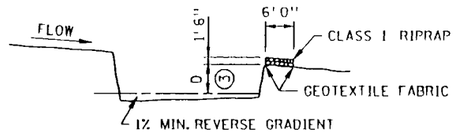


PLAN VIEW OF SILT CURTAIN - STILL WATER

DESIGN CRITERIA:
MAXIMUM WATER DEPTH: 12 FT.



PLAN



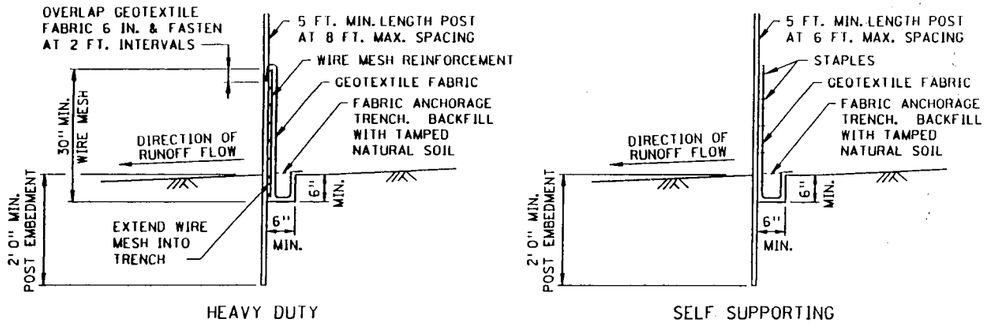
SECTION A-A

TEMPORARY SEDIMENT TRAP DETAIL

NOTES:
1. CURTAIN 1 FT. FROM BOTTOM
2. W = 10 FT. MIN., 20 FT. MAX.
3. D = 3 FT. MIN., 6 FT. MAX.

STANDARD SHEET NO. 5-297.405 (1 OF 3)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: MAY 1, 1995	
STATE PROJ. NO. 55-596 76 & 55-599-56	SHEET NO. 5 OF 32 SHEETS

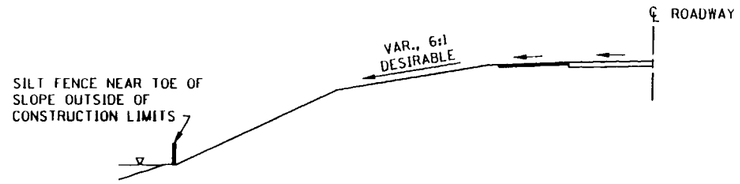
SERVER CA64S1:/USR/STANDARDS FILE NAME S4051E95.SPN



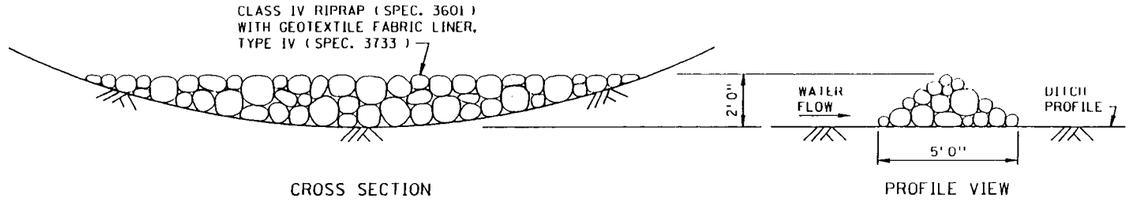
SILT FENCE DETAILS

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

DESIGN CRITERIA:
MAXIMUM CONTRIBUTING AREA: 3 ACRES



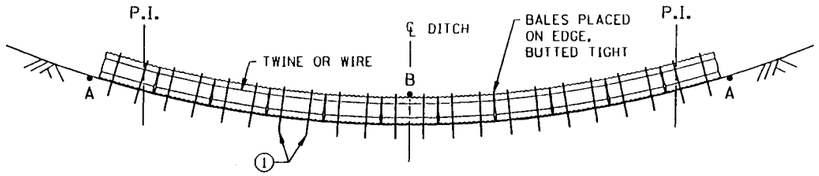
ROADWAY EMBANKMENT



CROSS SECTION

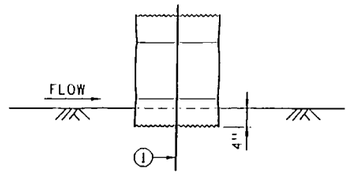
PROFILE VIEW

ROCK DITCH CHECK

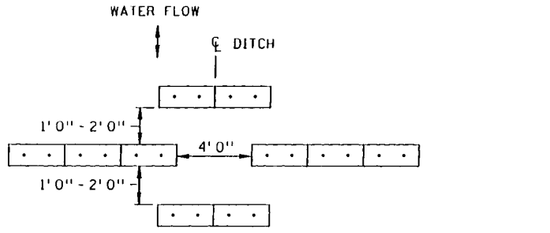


NOTE:
POINT A MUST BE HIGHER THAN POINT B

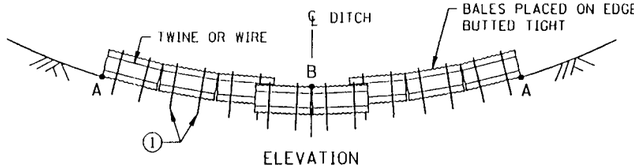
BALE DITCH SEDIMENT CHECK



BALE CHECK DETAIL



PLAN VIEW



ELEVATION

NOTE:
POINT A MUST BE HIGHER THAN POINT B

BALE DITCH VELOCITY CHECKS
(WILL REQUIRE A MINUMUM OF 10 BALES PER SITE)

RECOMMENDED SPACING BETWEEN DITCH CHECKS	
DITCH GRADE (%)	SPACING (FT.)
2	100
4	75
6	50
8	40
10	25

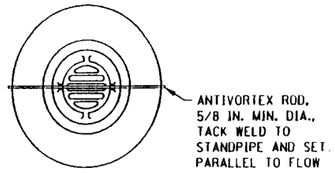
DESIGN CRITERIA:

	BALE	ROCK
STORM FREQUENCY:	2 YR. - 24 HR.	10 YR. - 24 HR.
MAX. FLOW VELOCITY:	5 FT./SEC.	12 FT./SEC.
MAX. DITCH GRADE:	5%	—
MAX. DRAINAGE AREA:	2 ACRES	5 ACRES

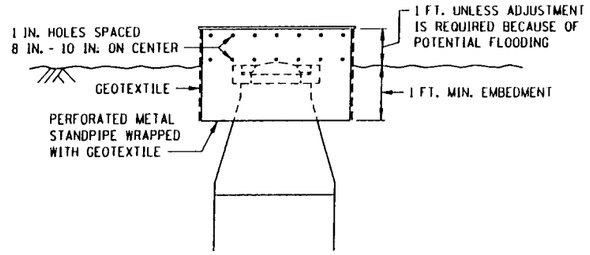
NOTE:
(1) TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10 IN. MINIMUM.

STANDARD SHEET NO. 5-297.405 (2 OF 3)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: MAY 1, 1995	
STATE PROJ. NO. 55-598-36 & 55-599-56	SHEET NO. 6 OF 32 SHEETS

SERVER CA64S1://USR/STANDARDS FILE NAME S4052E95.SPN



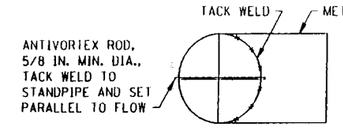
PLAN VIEW



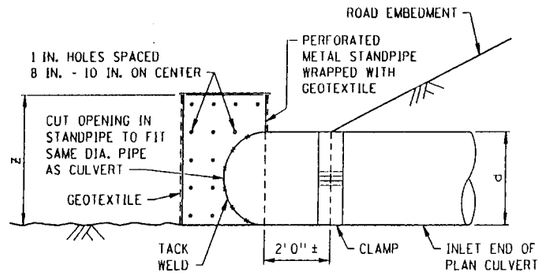
ELEVATION

TEMPORARY STANDPIPE
TO PROTECT DROP INLET

DESIGN CRITERIA:
STORM FREQUENCY: 10 YEAR. - 24 HOUR.



PLAN VIEW

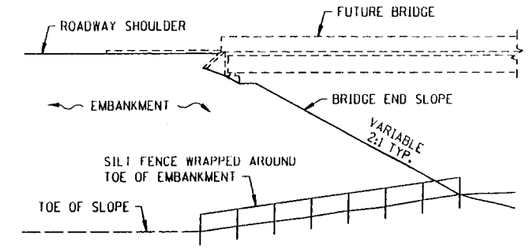


ELEVATION

TEMPORARY STANDPIPE
FOR SEDIMENT CONTROL ON CULVERT INLET

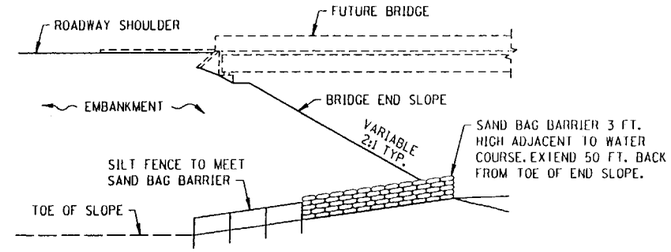
d = DIA. OF STANDPIPE EQUAL TO DIA. OF PLAN CULVERT
Z = LENGTH OF PERFORATED STANDPIPE (d + 1 FT.)

DESIGN CRITERIA:
CULVERT SIZE: 12 - 36 IN.
STORM FREQUENCY: 10 YR. - 24 HR.



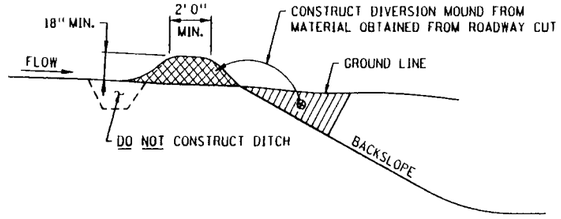
BRIDGE FILL

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



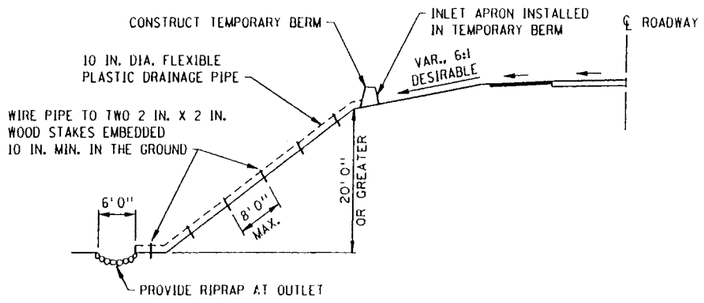
BRIDGE FILL

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



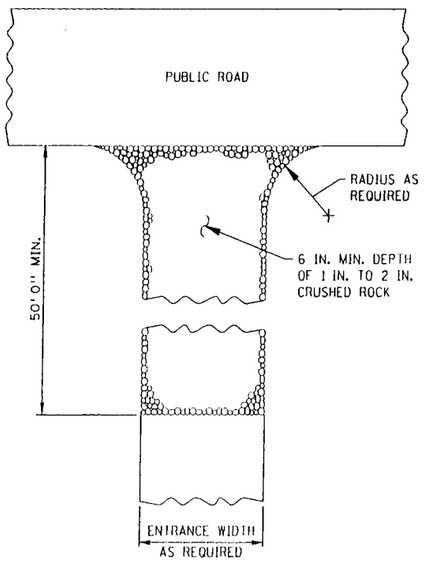
DIVERSION MOUND

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

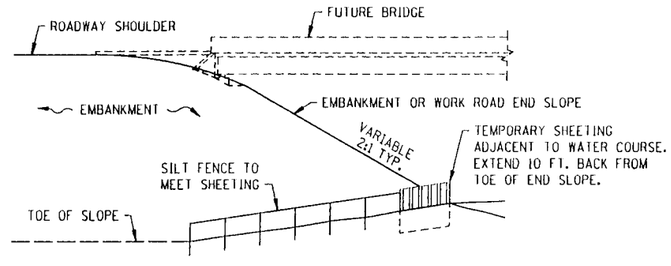


TEMPORARY DRAIN ON FILL SLOPE

DESIGN CRITERIA:
STORM FREQUENCY: 2 YEAR - 24 HOUR
MAXIMUM DRAINAGE AREA: 3 ACRES



ROCK CONSTRUCTION ENTRANCE



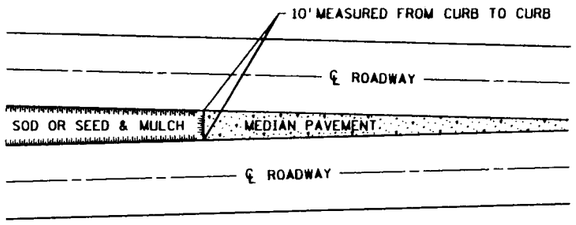
EMBANKMENT OR WORK ROAD FILL

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

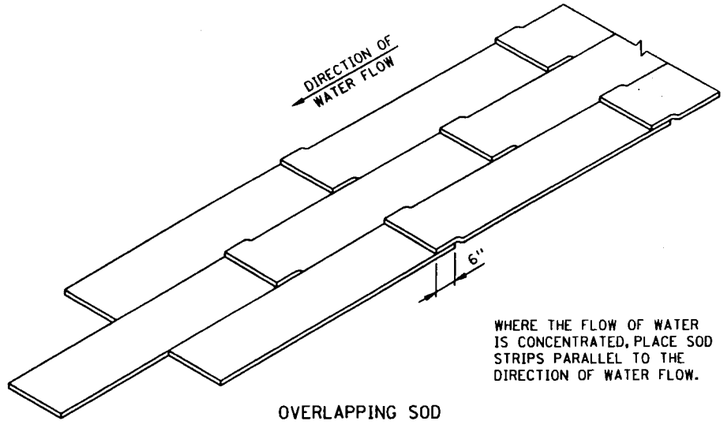
STANDARD SHEET NO.	TITLE:
5-297.405 (3 OF 3)	TEMPORARY EROSION CONTROL
STANDARD APPROVED: MAY 1, 1995	

STATE PROJ. NO. 55-598-36 & 55-599-56 SHEET NO. 7 OF 32 SHEETS

SERVER CA645i:/USR/STANDARDS FILE NAME S405JE05.SPN

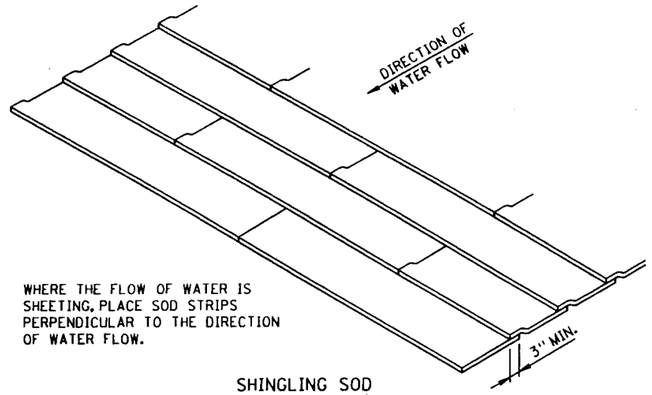


SODDING LIMITS AT GORE AREA



WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.

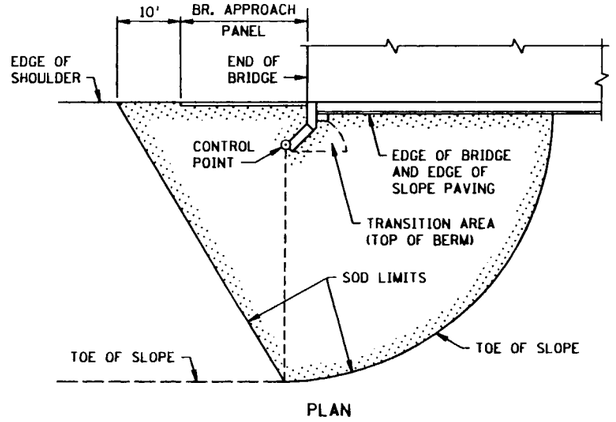
OVERLAPPING SOD



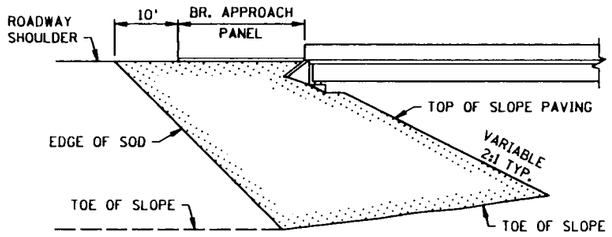
WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

SHINGLING SOD

SPECIAL SOD PLACEMENT TECHNIQUES

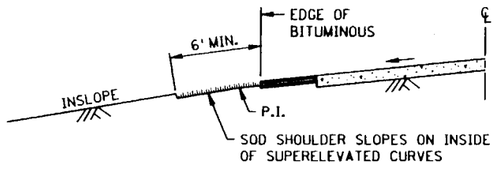


PLAN

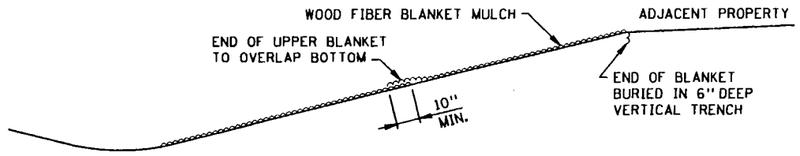


ELEVATION

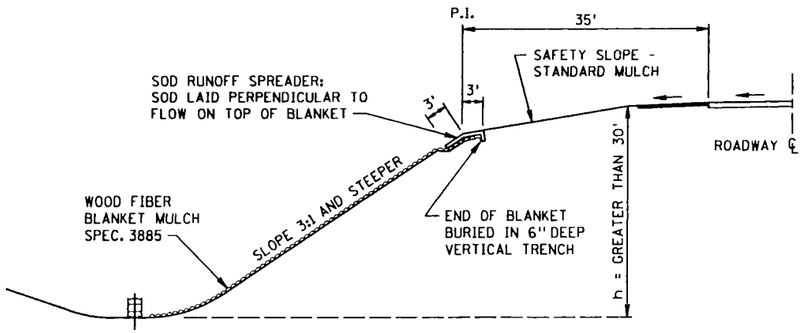
SODDING LIMITS AT BRIDGE APPROACH FILLS



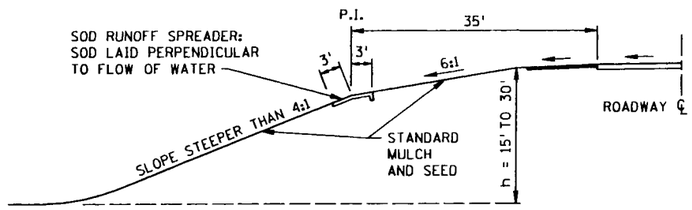
SODDING INSLOPES OF SUPERELEVATED CURVES



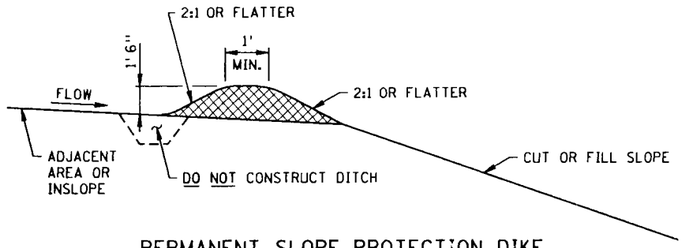
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



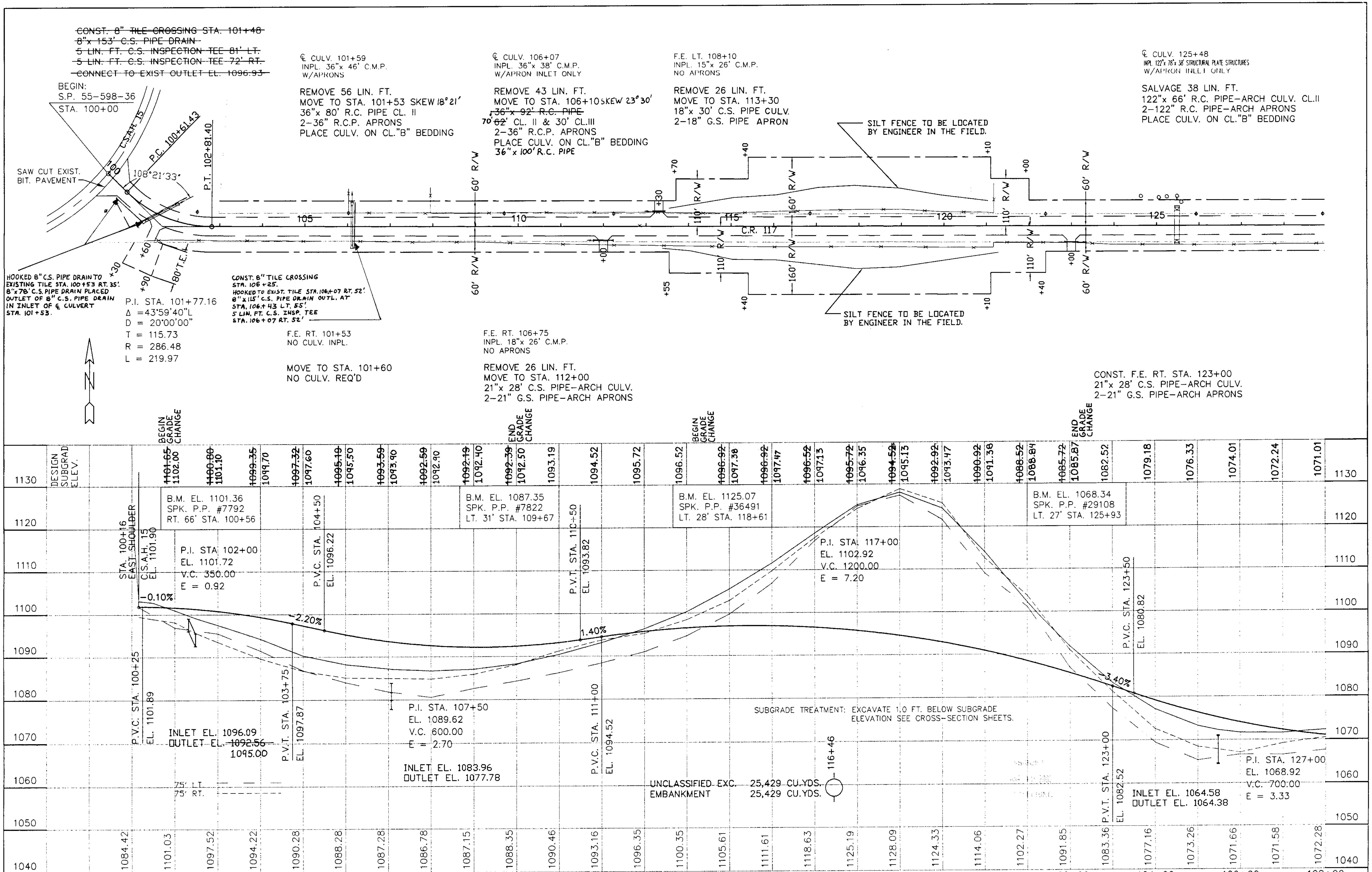
BROKEN-BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE

STANDARD SHEET NO. 5-297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
STATE PROJ. NO. 55-598-36 & 55-599-56	SHEET NO. 8 OF 32 SHEETS

VAX780 QSA3:[45.100] FILE NAME S406A85.SPN



CERTIFIED BY [signature] PROFESSIONAL ENGINEER REG. NO. 19917 3/31 1997

F.E. LT. 130+21
NO CULV. INPL.

NO CULV. REQ'D

℄ CULV. 132+43
INPL. 15"x 30' C.M.P.
NO APRONS

REMOVE 30 LIN. FT.
NO CULV. REQ'D

F.E. LT. 140+18
NO CULV. INPL.

MOVE TO STA. 139+30
~~24"x 74' C.S. PIPE CULV.~~
~~2-24" G.S. PIPE APRONS~~
~~NO CULV. REQ'D~~

℄ CULV. 140+52
INPL. 15"x 30' C.M.P.
NO APRONS

REMOVE 30 LIN. FT.
36"x 94' R.C. PIPE CULV.
26' CL. II & 68' CL. III
2-36" R.C. PIPE APRONS
PLACE CULV. ON CL. "B" BEDDING

CONST. F.E. LT. STA. 141+30
NO CULV. REQ'D

P.T. 150+40.57

P.I. STA. 147+49.90
Δ =90°39'13"L
D = 11°15'00"
T = 515.14
R = 509.30
L = 805.81
e = 0.06 FT./FT.

P.C. 142+34.76

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

BRIDGE NO. L-6231
APPROX. STA. 144+70 RT. 85'
REMOVE BRIDGE #L-6231
BRIDGE CONSTRUCTION SECTION OF PLAN
FOR NEW BRIDGE NO. 55556

℄ CULV. 146+50 APPROX. 190' RT.
INPL. 24"x 26' C.M.P.
NO APRONS

REMOVE 26 LIN. FT.
NO CULV. REQ'D

℄ CULV. STA. 146+20 APPROX. 200' RT
INPL. 48"x 40' C.M.P.
NO APRONS

REMOVE 40 LIN. FT.
NO CULV. REQ'D

60' R/W

C.R. 117 90' R/W

NEW BRIDGE #55556

EXIST. BRIDGE #L-6231

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

C.R. 117 STA. 142+39.41
= TWP. RD. STA. 79+86.69

TWP. RD.

F.E. RT. 130+21
NO CULV. INPL.

NO CULV. REQ'D

FARM ENT. RT. 132+63
NO CULV. INPL.

18"x 36' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ CULV. 133+64
INPL. 15"x 40' C.M.P.
NO APRONS

REMOVE 40 LIN. FT.
36"x 66' R.C. PIPE-ARCH CL. II
2-36" R.C. PIPE APRONS
PLACE CULV. ON CL. "B" BEDDING

CONST. F.E. RT. STA. 139+70
~~24"x 28' C.S. PIPE CULV.~~
~~2-24" G.S. PIPE APRONS~~
~~NO CULV. REQ'D~~

DESIGN SUBGRADE ELEV.

PVT STA = 130+50
EL = 1070.32

B.M. EL. 1065.07
X ON S.E. COR.
HDWL. BR. #L6231

PVI STA = 144+50
EL = 1075.92
V.C. = 300.00
E = 0.15

PVC STA = 147+25
EL = 1075.92

PVT STA = 150+25
EL = 1076.52

B.M. EL. 1083.09
SPK. P.P. #43189
LT. 35' STA. 154+63

0.40%

0.00%

0.40%

PVI STA = 148+75
EL = 1075.92
V.C. = 300.00
E = 0.15

INLET EL. 1065.88
OUTLET EL. 1065.11

INLET EL ~~1061.93~~ 1061.21
OUTLET EL. ~~1059.70~~ 1060.20

PVC STA = 143+00
EL = 1075.32

PVT STA = 146+00
EL = 1075.92

75' LT. — — —
75' RT. - - - - -

SUBGRADE TREATMENT: EXCAVATE 1.0 FT. BELOW SUBGRADE ELEVATION. SEE CROSS-SECTION SHEETS.

152+15

UNCLASSIFIED EXC. 89,253 CU.YDS.
EMBANKMENT 89,253 CU.YDS.

CERTIFIED BY Kaye M Buenck PROFESSIONAL ENGINEER REG. NO. 19917 7/30 19 97

RES. DR. LT. 152+53
INPL. 18"x 28' C.M.P.
NO APRONS

REMOVE 28 LIN. FT.
24"x 42' C.S. PIPE CULV.
2–24" G.S. PIPE APRONS

RES. DR. LT. 156+16
INPL. 12"x 28' C.M.P.
NO APRONS

REMOVE 28 LIN. FT.
18"x 42' C.S. PIPE CULV.
2–18" G.S. PIPE APRONS

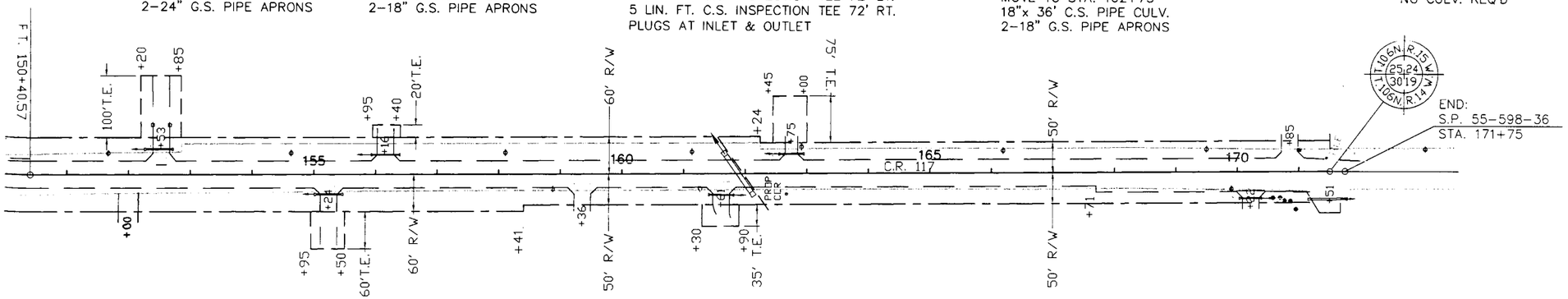
STA. 162+07 SKEW 35°
CONST. 8" TILE CROSSING ~~STA. 161+95~~
8"x 144' C.S. PIPE DRAIN
5 LIN. FT. C.S. INSPECTION TEE 72' LT.
5 LIN. FT. C.S. INSPECTION TEE 72' RT.
PLUGS AT INLET & OUTLET

F.E. LT. 162+53
INPL. 18"x 28' C.M.P.
NO APRONS

REMOVE 28 LIN. FT.
MOVE TO STA. 162+75
18"x 36' C.S. PIPE CULV.
2–18" G.S. PIPE APRONS

RES. DR. LT. 170+85
INPL. 24"x 28' C.M.P.
NO APRONS

REMOVE 28 LIN. FT.
NO CULV. REQ'D



RES. DR. RT. 155+24
INPL. 15"x 28' C.M.P.
NO APRONS

REMOVE 28 LIN. FT.
24"x 44' C.S. PIPE CULV.
2–24" G.S. PIPE APRONS

RES. DR. RT. 159+36
INPL. 18"x 28' C.M.P.
NO APRONS

REMOVE 28 LIN. FT.
NO CULV. REQ'D

F.E. RT. STA. 152+00
24"x 56' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

RES. DR. RT. 161+61
INPL. 18"x 28' C.M.P.
W/APRONS

REMOVE 33 LIN. FT.
21"x 36' C.S. PIPE–ARCH CULV.
2–21" G.S. PIPE-ARCH APRONS

℄ CULV. 162+17 ~~161+89~~ SKEW 35°
INPL. 63"x 35' C.M. PIPE–ARCH
W/APRONS

REMOVE 47 LIN. FT.
73"x 72' R.C. PIPE–ARCH SKEW 35° CL. II
2–73" R.C. PIPE–ARCH APRONS
PLACE CULV. ON CL. "B" BEDDING

RES. DR. RT. 170+22
INPL. 18"x 24' C.M.P.
NO APRONS

REMOVE 24 LIN. FT.
21"x 32' C.S. PIPE–ARCH CULV.
2–21" G.S. PIPE-ARCH APRONS

C.R. 117 RT. 171+51
NO CULV. INPL

24"x 52' R.C. PIPE CULV. CL. II
2–24" R.C. PIPE APRONS
PLACE CULV. ON CL. "B" BEDDING

CERTIFIED BY Gary M Biernek PROFESSIONAL ENGINEER REG. NO. 19317 3/31 1997

NEW F.E. STA. 61+50
18"x 48' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

P.I. STA. 67+48.06
Δ = 20°14'03"R
D = 10°00'00"
T = 102.24
R = 572.96
L = 202.34

~~NEW ℄ CULV. STA. 79+00~~
~~36"x 70' R.C. PIPE CULV.~~
~~30' CL. II & 40' CL. III~~
~~2-36" R.C. PIPE APRONS~~
NO CULV. REQ'D

BEGIN:
S.A.P. 55-599-56
STA. 56+50

P.C. 58+54.05

P.T. 61+39.87

P.C. 66+45.83

P.I. 68+48.17

50' R/W

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

TWP. RD.

130' T.E.

P.C. 142+34.76

END: S.A.P. ~~55-599-56~~
TWP. RD. STA. 79+86.69
= C.R. 117 STA. 142+39.41

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

NEW BRIDGE #L-5556

EXIST. BRIDGE #L-6231

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

OBLITERATE OLD ROAD

P.I. STA. 60+00
Δ = 28°34'56"L
D = 10°00'00"
T = 145.95
R = 572.96
L = 285.82

F.E. RT. 59+10
INPL. 18"x 20' C.M.P.
NO APRONS

REMOVE 20 LIN. FT.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.E. APPROX. 15' RT. 62+70
INPL. 15"x 16' C.M.P.
NO APRONS

REMOVE 16 LIN. FT.
MOVE TO STA. 61+50
18"x 48' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

OBLITERATE OLD ROAD

EXIST. BRIDGE
L-6159
REMOVAL IS COVERED
IN BRIDGE CONSTRUCTION
PORTION OF THIS PLAN.

SILT FENCE TO BE LOCATED BY ENGINEER IN THE FIELD.

DESIGN SUBGRADE ELEV.
1091.67 1086.43 1081.90 1078.08 1074.98 1072.60 1070.93 1069.97 1069.44 1069.39 1069.82 1070.32 1070.82 1071.32 1071.82 1072.32 1072.78 1073.21 1073.61 1073.98 1074.31 1074.61 1074.87 1075.07

B.M. EL. 1080.56
SPK. P.P. #43963
LT. 14' STA. 59+39

B.M. EL. 1063.43
TOP SURVEY CAP
P.I. STA. 67+48.06
1.0' DEEP

B.M. EL. 1063.72
TOP SURVEY CAP
P.O.T. STA. 74+38
18" DEEP

B.M. EL. 1065.07
X ON S.E. COR. HDWL.
BR. #L6231

P.V.C. STA. 57+00
EL. 1091.67

-5.60%

P.I. STA. 60+50
EL. 1072.07
V.C. 700
E = 4

P.V.T. STA. 64+00
EL. 1069.97
P.V.C. STA. 64+50
EL. 1069.67

-0.60%

P.I. STA. 65+50
EL. 1069.07
V.C. 200
E = 0

P.V.T. STA. 66+50
EL. 1069.57

0.50%

P.I. STA. 75+50
EL. 1074.07
V.C. 800
E = 0

0.23%

℄ C.R. 117 STA. 142+39.41
= TWP. RD. STA. 79+86.69
+86.69

P.V.T. STA. 79+50
EL. 1074.99

INLET EL. 1063.33
OUTLET EL. 1063.18

79+89.69

75' LT. — — —
75' RT. ----------

UNCLASSIFIED EXC. 7,782 CU. YDS.
EMBANKMENT 7,782 CU. YDS.

70+49.20

P.V.C. STA. 71+50
EL. 1072.07

UNCLASSIFIED EXC. FROM C.R. 117 23,136 CU. YDS.
EMBANKMENT 23,136 CU. YDS.
UNCLASSIFIED EXC. 0

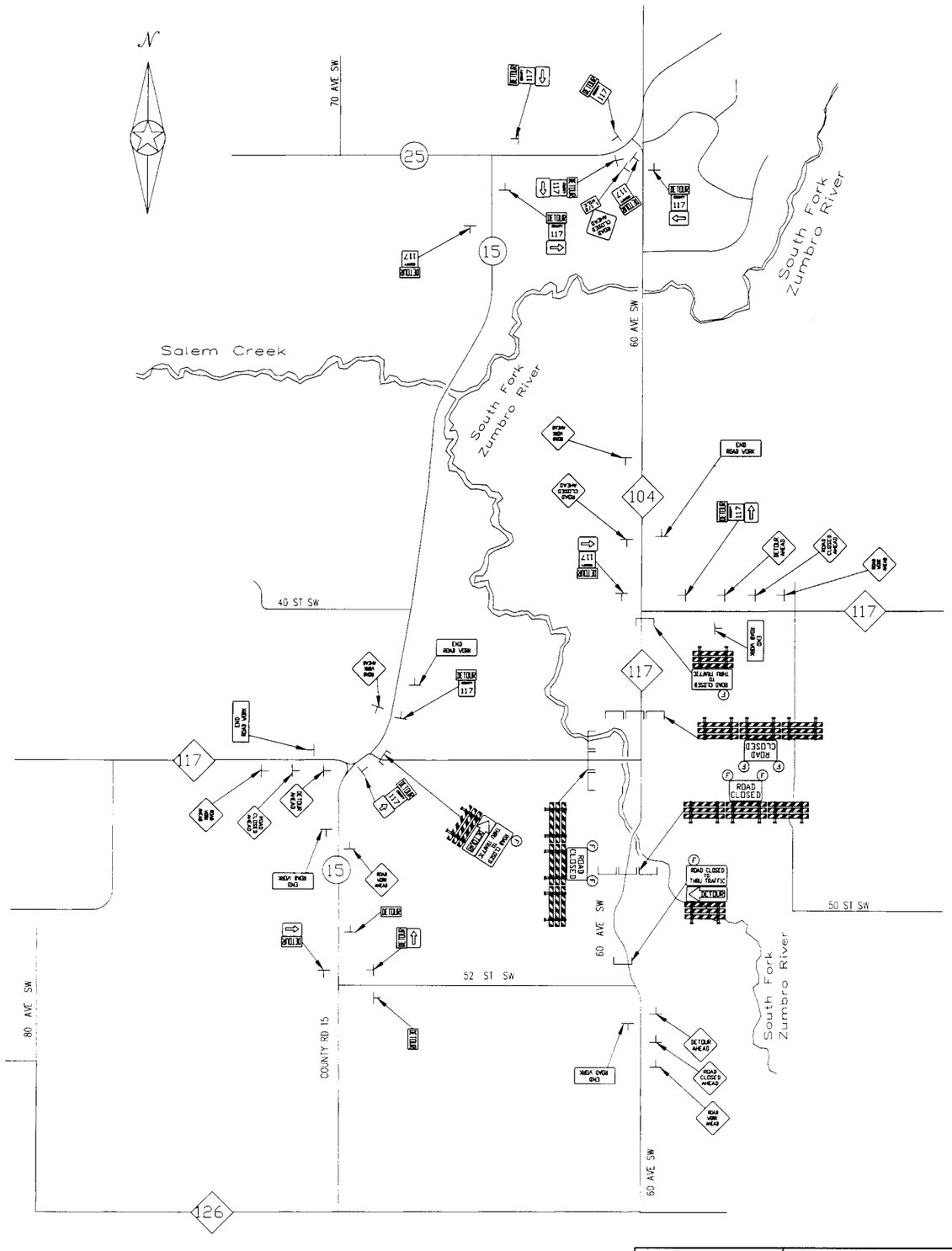
1098.59 1092.17 1086.67 1082.20 1077.28 1074.98 1074.81 1074.31 1074.11 1073.03 1069.73 1064.73 1064.81 1065.71 1065.41 1064.91 1064.87 1064.76 1064.56 1064.36 1064.46 1063.96 1064.16 1063.56

1120 1110 1100 1090 1080 1070 1060 1050 1040 1030

56+00 58+00 60+00 62+00 64+00 66+00 68+00 70+00 72+00 74+00 76+00 78+00 80+00 82+00 84+00

CERTIFIED BY Kaye M Pieniek PROFESSIONAL ENGINEER REG. NO. 19917 7/30 1997

S.A.P. 55-598-36 & 55-599-56



ESTIMATE OF TRAFFIC CONTROL DEVICES

DEVICE	NUMBER	SIZE	COLOR	QUANTITY	DEVICE	NUMBER	SIZE	COLOR	QUANTITY
ROAD CLOSED	R11-2	48 x 30	BLK/WH	3	DETOUR	M4-10L	48 x 18	BLK/OR	2
ROAD CLOSED TO THRU TRAFFIC	R11-4	60 x 30	BLK/WH	3		M6-1	21 x 15	BLK/WH	8
ROAD WORK AHEAD	W20-1	48 X 48	BLK/OR	6		M6-3	21 x 15	BLK/WH	1
DETOUR AHEAD	W20-2	48 x 48	BLK/OR	3	END ROAD WORK	G20-2A	48 x 24	BLK/OR	6
ROAD CLOSED AHEAD	W20-3	48 x 48	BLK/OR	5	1 1/2 MILE	W20-100P	36 x 24	BLK/OR	1
COUNTY 117	M1-X4A	24 x 24	BLK/WH	11		TYPE III	MIN. 6'	OR & BLK	12
DETOUR	M4-8	24 x 12	BLK/OR	14	(F)	TYPE A	FLASHING LAMPS	AMBER	9

TRAFFIC CONTROL LEGEND

⊥ POST OR STAND MOUNTED SIGN

⌊⌋ TYPE III BARRICADE

TRAFFIC CONTROL NOTES

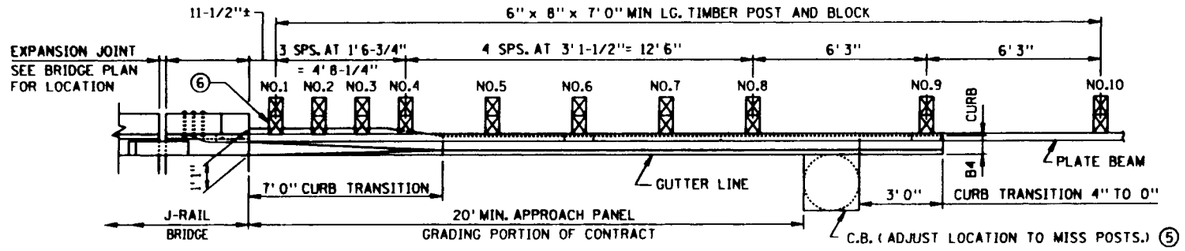
1. THE LOCATION OF SIGNS AND DEVICES WILL BE STAKED BY THE ENGINEER IN THE FIELD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL ON THIS PROJECT.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED APRIL 1995.
4. CONSTRUCTION ZONE SIGNING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL INCLUDE, BUT NOT BE LIMITED TO SIGNS FOR LANE CLOSURE, MACHINERY AHEAD, BUMP, DIP, LOOSE GRAVEL, ETC. THE NUMBER AND LOCATION WILL BE DETERMINED BY THE CONTRACTORS OPERATION.
5. ALL BARRICADES ON THIS PROJECT SHALL BE REFLECTORIZED ON BOTH SIDES.

RECEIVED
MAR 14 1997
ENGINEERING

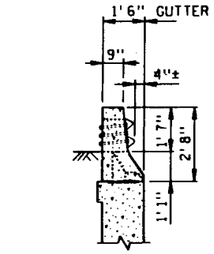
TRAFFIC CONTROL PLAN

CERTIFIED BY Lance M Bierwiak PROFESSIONAL ENGINEER REG. NO. 19917 7/30 19 97

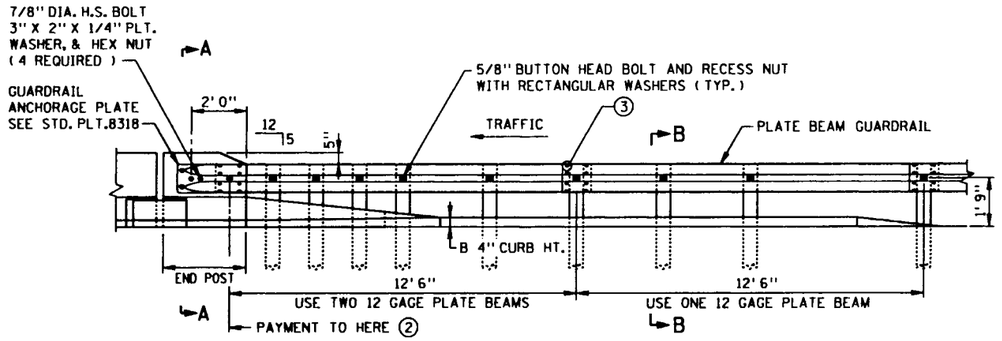
S.P. 55-598-36 (C.R.117) & S.A.P. No. 55-599-56 (TWP. RD. 24)



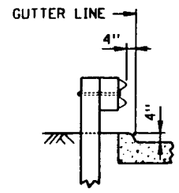
PLAN



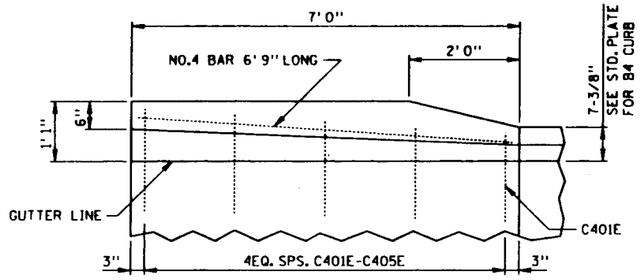
SECTION
A-A
(PARALLEL WINGWALL SHOWN)



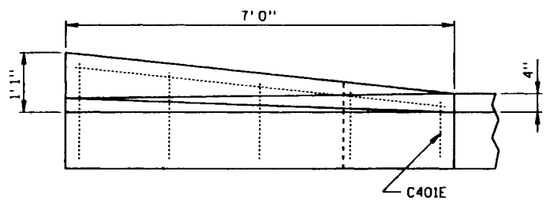
ELEVATION



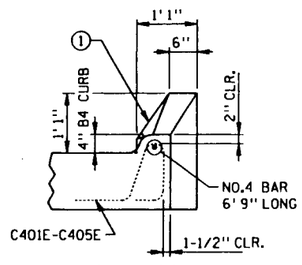
SECTION B-B



PLAN VIEW

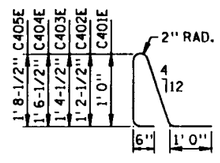


INSIDE ELEVATION



END VIEW

CURB TRANSITION DETAILS



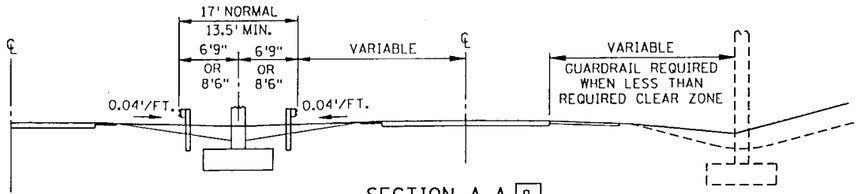
C401E-C405E ④

NOTES:

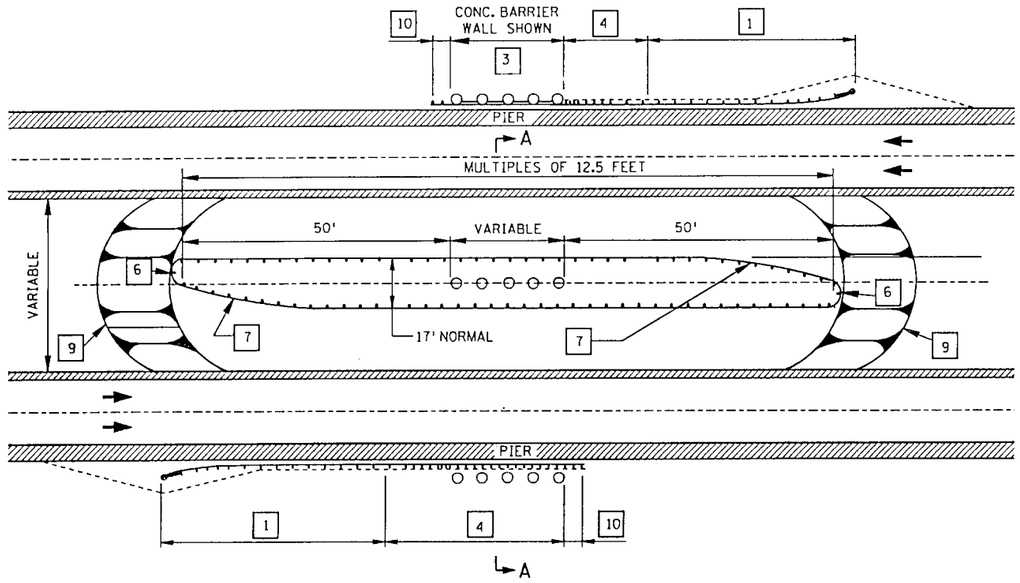
① END OF TRANSITION TO MATCH BRIDGE RAIL SURFACE.
② PAY LENGTH IS 25 FEET.
③ 5/8" DIA. X 1-1/4" LG. BUTTON HEAD BOLTS AND NUTS TYPICAL AT SPLICES.
④ REINFORCEMENT TO BE EPOXY COATED AS PER SPEC. 3301.
⑤ SEE ROAD PLANS TO VERIFY ACTUAL DIMENSION AND LOCATION.
⑥ ADDITIONAL BLOCKING MAY BE REQUIRED TO CLEAR BRIDGE STRUCTURE. VERIFY IN FIELD.

VAX780 QSA3:[45.100] FILE NAME S605A92.SPN

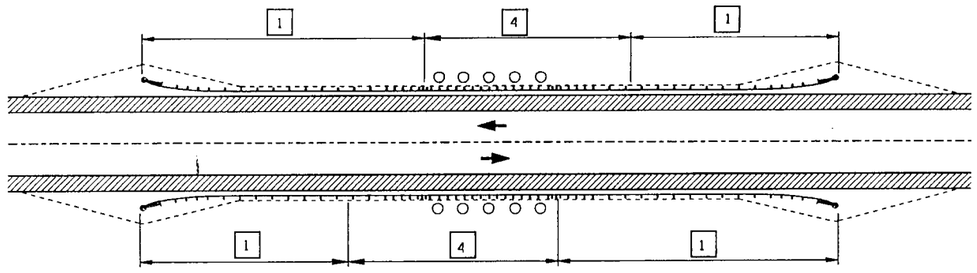
STANDARD SHEET NO. 5-297.605	TITLE: GUARDRAIL TRANSITION FOR NEW TYPE J RAILING WITH APPROACH CURB
STANDARD APPROVED: JANUARY 23, 1992	
STATE PROJ. NO. 55-598-36 & 55-599-56	SHEET NO. 30A OF 32 SHEETS



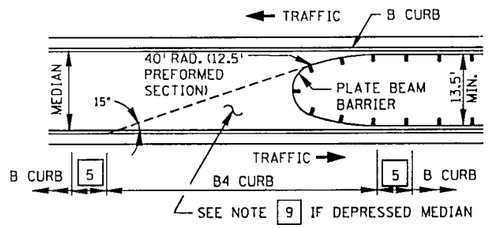
SECTION A-A [9]



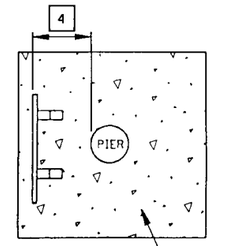
UNDERPASS-DEPRESSED MEDIAN
(DESIGN SPECIAL SHOWN)



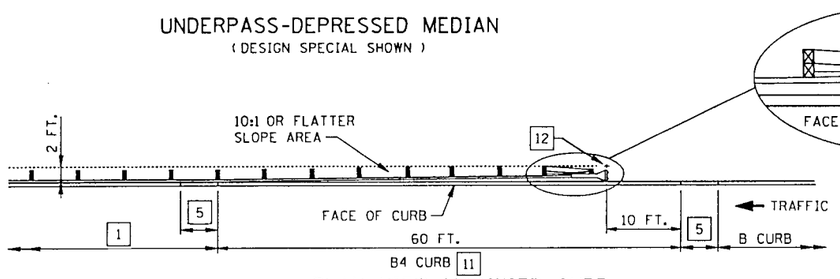
TWO-WAY UNDERPASS
(DESIGN SPECIAL SHOWN)



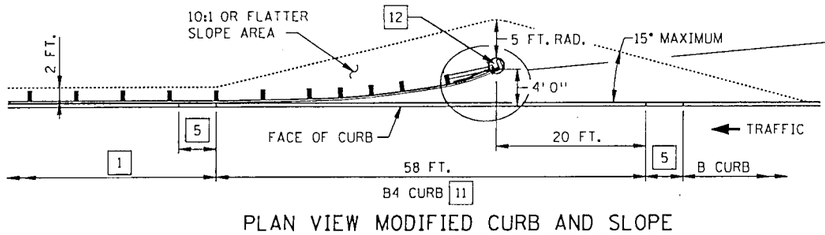
MODIFIED CURB AT MEDIAN
(OPTIONAL GUARDRAIL PLACEMENT SHOWN)



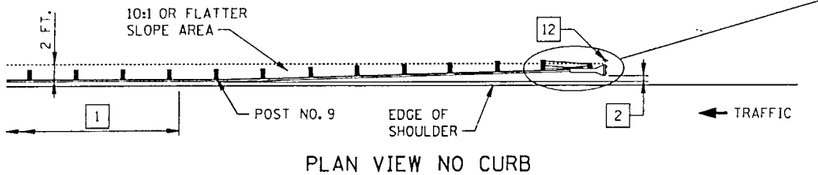
POST REQUIREMENTS



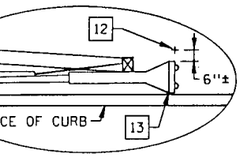
PLAN VIEW MODIFIED CURB

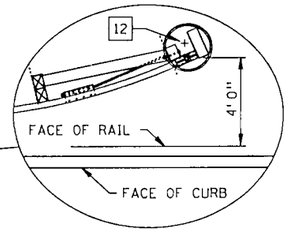


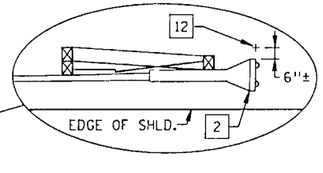
PLAN VIEW MODIFIED CURB AND SLOPE



PLAN VIEW NO CURB







NOTES:

ALL GUARDRAIL POSTS SHALL BE 6' 3" CTR. TO CTR., EXCEPT WHERE NOTED.

THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.

WHEN THE APPROACHING PLATE BEAM FLARE CAN BE BURIED IN THE BACKSLOPE ELIMINATE THE END TREATMENT AND ADD REQUIRED RAIL LENGTH TO REACH BACKSLOPE.

[1] FOR REQUIRED L LENGTH SEE DESIGN MANUAL 10-7.03 FOR DESIGN PARAMETERS SEE STD. PLATE 8329 FOR END TREATMENT SHOWN.

[2] SET EDGE OF EXTRUDER BOX 9" FROM FACE OF RAIL EXTENDED FROM POST NO. 9.

[3] CONCRETE BARRIER WALL BETWEEN PIER COLUMNS MAY BE USED . SEE SHEET NO. -- OF -- FOR WALL DETAILS. CONNECT GUARDRAIL TO BARRIER WALL ANCHORAGE PLATE SEE SHEET NO. 2 FOR DETAILS.

[4]

DISTANCE FROM FACE OF RAIL TO HAZARD	GUARDRAIL POST SPACING
OVER 4 FT.	6' 3"
4 FT. TO 2 FT.	3' 1-1/2"
LESS THAN 2 FT.	DESIGN SPECIAL & [3]

[5] 5 FT. CURB TRANSITION, USE IF ADJACENT CURB IS A DIFFERENT TYPE OR HEIGHT.

[6] 5 FOOT RADIUS NOSE SECTION (12.5' PREFORMED CURVED RAIL SECTION, SEE DETAIL, ON SHEET 2 OF 2).

[7] 25 FT. OF PREFORMED (40' RADIUS) RAIL SECTIONS.

[8] IF EMBEDMENT IS GREATER THAN 3' 0" OR IF EMBEDMENT IS 2' 6" TO 3' 0" AND ADJACENT POSTS ARE EMBEDDED 3' 0" OR MORE, POST SEAT IS NOT REQUIRED.

[9] THE MEDIAN DITCH SHALL BE FILLED TO PROVIDE AN ELEVATION OF GUARDRAIL APPROXIMATELY (WITHIN 6"±) THE SAME AS IF INSTALLED ON THE SHOULDER. EXTEND FILL TO GUARDRAIL NOSE AND TAPER TO MEDIAN DITCH ON 10:1 SLOPE.

[10] 12' 6" MINIMUM, IF ONE WAY TRAFFIC.

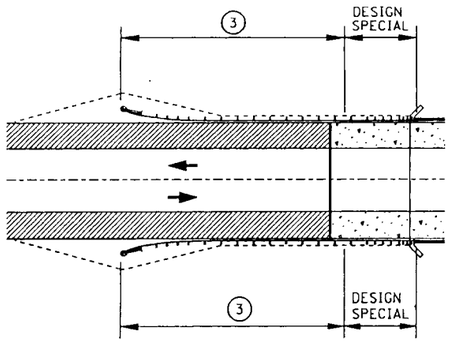
[11] IF 6"+ HIGH CURB, MILL TO 3" HEIGHT. NEW: CONSTRUCT 4" HIGH CURB.

[12] SNOW PLOW MARKER (X4-5) WITH A 2 LB. / FT. DELINEATOR POST 8 FT. LG. (SPEC. 3401) DRIVEN INTO GROUND. EXTEND 3 FT. ABOVE TERMINAL.

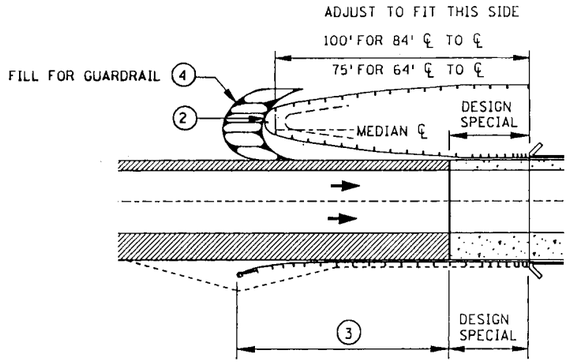
[13] SET EDGE OF EXTRUDER BOX 9" FROM FACE OF CURB.

STANDARD SHEET NO. 5-297.601 (1 OF 2)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: OCTOBER 13, 1995	
STATE PROJ. NO. 55-598-36 & 55-599-56	SHEET NO. 31 OF 32 SHEETS

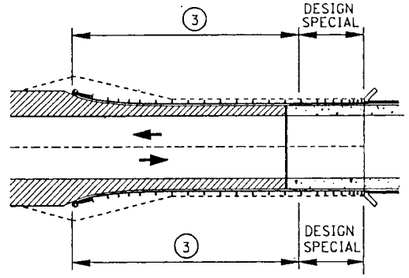
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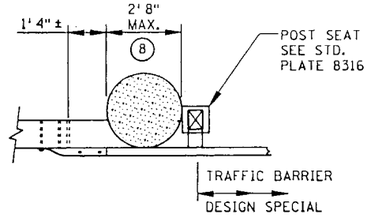
TWO - WAY BRIDGE
WITH FULL SHOULDERS



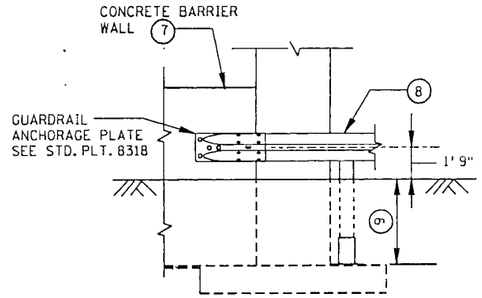
ONE - WAY BRIDGE
WITH FULL RIGHT SHOULDER



TWO - WAY BRIDGE
WITHOUT FULL SHOULDERS

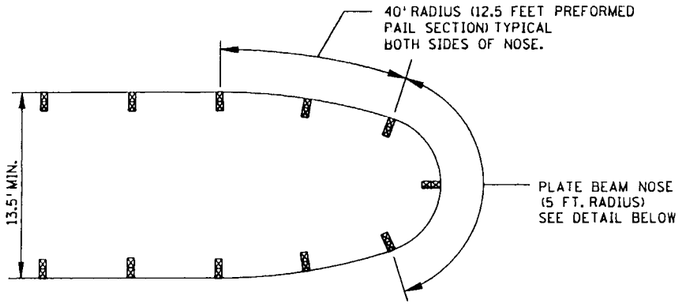


PLAN VIEW

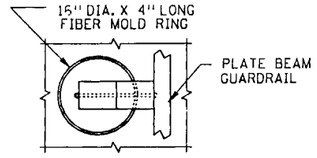


ELEVATION

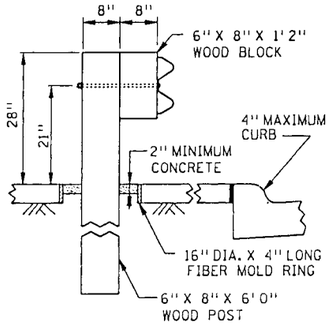
GUARDRAIL POST TO CONCRETE
BARRIER WALL CONNECTION (6)



OPTIONAL GUARDRAIL INSTALLATION (1)



PLAN VIEW



ELEVATION

TYPICAL SECTION AT POST
SET IN CONCRETE

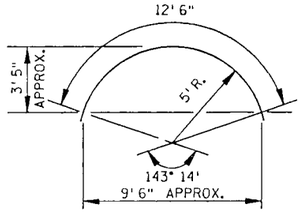


PLATE BEAM NOSE (5)
(5 FOOT RADIUS)

NOTES:

ALL GUARDRAIL POSTS SHALL BE 6' 3" CTR. TO CTR., EXCEPT WHERE NOTED.

WHEN THE APPROACHING PLATE BEAM FLARE CAN BE BURIED IN THE BACKSLOPE ELIMINATE THE END TREATMENT AND ADD REQUIRED RAIL LENGTH TO REACH BACKSLOPE.

THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.

(1) OPTIONAL GUARDRAIL AS DETERMINED BY THE DESIGNER AND SPECIFIED ON SHEET NO. _____ OF _____.

(2) 5 FOOT RADIUS NOSE SECTION (12.5' PREFORMED CURVED RAIL SECTION, SEE DETAIL).

(3) FOR THE REQUIRED L LENGTH SEE ROAD DESIGN MANUAL 10-7.03 FOR DESIGN PARAMETERS. SEE STANDARD PLATE 8329 FOR END TREATMENT SHOWN.

(4) THE MEDIAN DITCH SHALL BE FILLED TO PROVIDE AN ELEVATION OF GUARDRAIL APPROXIMATELY (WITHIN 6" ±) THE SAME AS IF INSTALLED ON THE SHOULDER. EXTEND FILL TO GUARDRAIL NOSE AND TAPER TO MEDIAN DITCH ON 10:1 SLOPE.

(5) STANDARD PLATE BEAM GUARDRAIL SECTION HAVING STANDARD PUNCHING AT BOTH ENDS WITH INTERMEDIATE 3/4" X 2-1/2" SLOT. SEE STANDARD PLATE 8307.

(6) NOTE (7), AND ALTERNATE GUARDRAIL AS DETERMINED BY THE DESIGNER AND SPECIFIED ON SHEET NO. .....

(7) CONCRETE BARRIER WALL BETWEEN BRIDGE PIER COLUMNS . SEE SHEET NO. ..... FOR WALL DETAILS.

(8) FOR COLUMN DIAMETERS LARGER THAN 2' 8", FIELD PUNCH THE GUARDRAIL FOR THE FIRST POST AS SHOWN.

(9) IF EMBEDMENT IS GREATER THAN 3' 0" OR IF EMBEDMENT IS 2' 6" TO 3' 0" AND ADJACENT POSTS ARE EMBEDDED 3' 0" OR MORE, POST SEAT IS NOT REQUIRED.

AS BUILT
MAR 03 '20
ENGINEERING

STANDARD SHEET NO. 5-297.601 (2 OF 2)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: OCTOBER 13, 1995	

STATE PROJ. NO. 55-598-36 & 55-599-56 SHEET NO. 32 OF 32 SHEETS

SERVER CA645I:/USR/STANDARDS FILE NAME S6012J95.SPN