MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

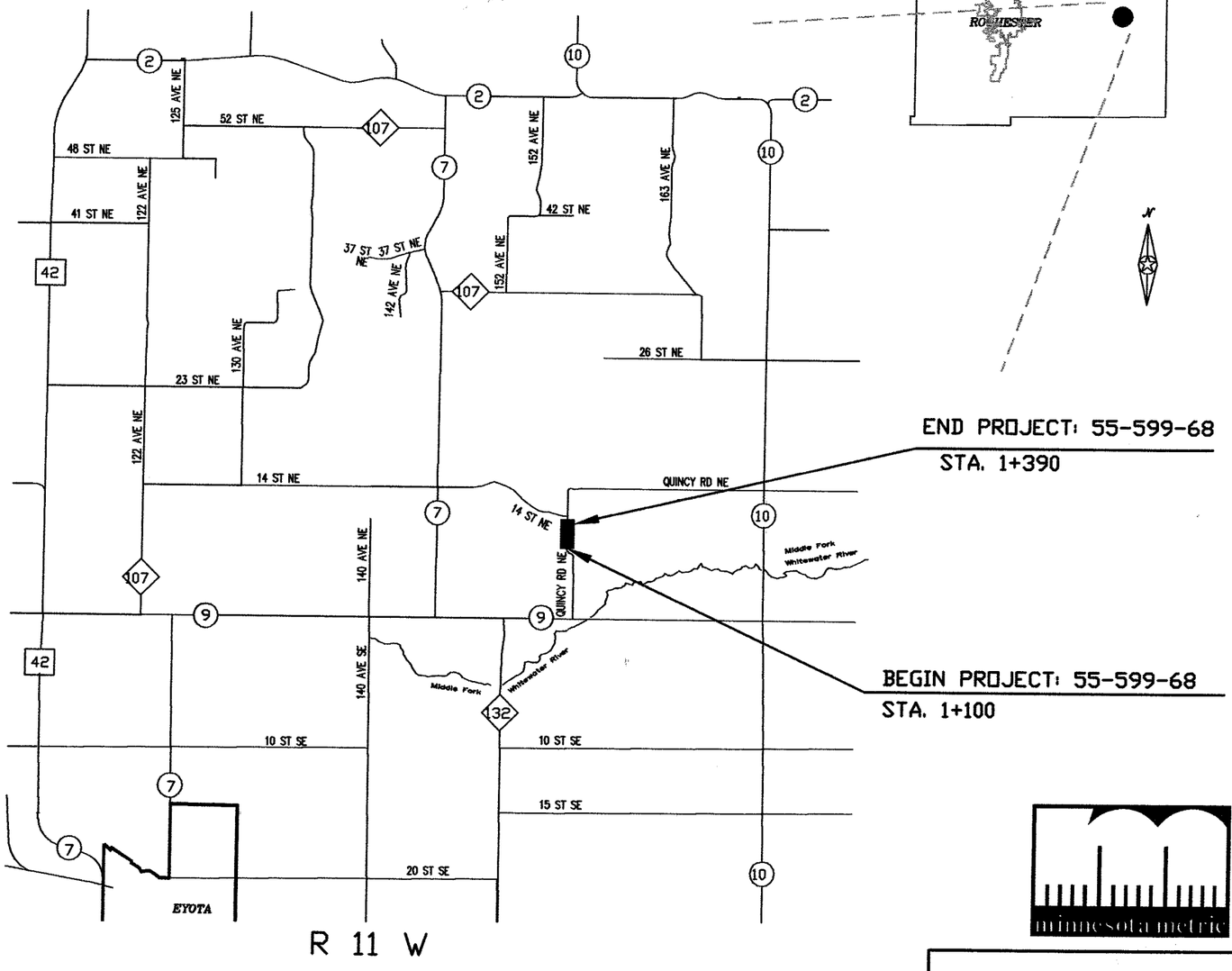
CONSTRUCTION PLAN FOR GRADING & PRECAST CONC. BOX (BRIDGE NO. 55J17)

LOCATED ON QUINCY RD. N.E. BETWEEN .952 kilometers N. C.S.A.H. 9 AND 20 meters S. 14th ST. N.E. (GEOGRAPHIC DESCRIPTION)

FROM 952 m N. OF SOUTH 1/4 COR. SEC. 32, T 107 N - R 11 W TO 364 m S. OF 1/4 COR. SEC. 29 & 32, T 107 N - R 11 W (LEGAL DESCRIPTION)

S.A.P. NO. 55-599-68

GROSS LENGTH	290	meter	0.290	kilometer
BRIDGE-LENGTH		meter		kilometer
EXCEPTIONS-LENGTH		meter		kilometer
NET LENGTH	290	meter	0.290	kilometer



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

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 1995 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION".

ATTENTION: THIS IS A METRIC PLAN

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	TYPICAL SECTION & ESTIMATE OF QUANTITIES
SHEET NO. 3 - 4	BARREL DETAILS
SHEET NO. 5	PRECAST CONC. END SECTION DETAILS
SHEET NO. 6	EMBANKMENT PROTECTION FOR BOX CULV.
SHEET NO. 7	PLAN AND PROFILE
SHEET NO. 8	CROSS SECTIONS
SHEET NO. 9	BRIDGE SURVEY SHEET
SHEET NO. 10	TRAFFIC CONTROL

THIS PLAN CONTAINS 10 SHEETS.

DESIGN DESIGNATION: S.A.P. 55-599-68

R = IN18 (20)
ADT (Current Year) = (50(1998) Design Speed 90 km/h
ADT (Future Year) = (50(2018) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 1070 mm Height of object 150 mm
D (Directional Distr.) = Design Speed not achieved at
T (Heavy Commercial) = STA. TO STA. km/h
SUBGRADE = STA. TO STA. km/h
LANE WIDTH 3.3 m
SHOULDER WIDTH 0.3 m
SOIL FACTOR = 130%

Old Bridge # L-6279

TOWNSHIP APPROVAL:

Gene Lorton 10-29-98
APPROVED: TOWNSHIP CHAIRPERSON DATE

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.

DATE 10/28/98 REGISTRATION NUMBER 19917

Kaye M Brenner
APPROVED: COUNTY DESIGN ENGINEER

DATE 10/30/98 REGISTRATION NUMBER 10397

Michael A Reedquist
APPROVED: OLMSTED COUNTY ENGINEER

STATE AID APPROVALS:

Andy Schmidt DATE: 11-9-98
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

TB DATE: 11/24/98
APPROVED FOR STATE AID FUNDING:
STATE AID ENGINEER

minnesota metric

S.A.P. NO. 55-599-68 QUINCY TWP. SHEET NO. 1 OF 10 SHEETS

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	NON PARTICIPATING	PARTICIPATING	TOTAL ESTIMATED QUANTITIES
	2101.502	CLEARING	TREE	1		1
	2101.507	GRUBBING	TREE	1		1
	2105.515	UNCLASSIFIED EXCAVATION	m^3	322		322
	2105.523	COMMON BORROW (CV) (P)	m^3	1704		1704
	2105.525	TOPSOIL BORROW (CV) (P)	m^3	120		120
	2412.511	2440 mm x 1220 mm PRECAST CONCRETE BOX CULVERT	m		24	24
	2412.512	2440 mm x 1220 mm PRECAST CONC. BOX CULVERT END SECTION	EACH		4	4
	2442.501	REMOVE OLD BRIDGE	LUMP SUM	1		1
	2451.507	GRANULAR BEDDING (CV) (P)	m^3		36	36
	2501.521	530 mm SPAN C.S. PIPE-ARCH CULVERT	m	14		14
	2501.525	530 mm SPAN C.S. PIPE-ARCH APRON	EACH	2		2
①	2511.501	RANDOM RIPRAP CL. III	m^3		61	61

QUANTITY NOTES:

① PLACE RIPRAP ON 230 mm GRANULAR FILTER OR GEOTEXTILE MATERIAL WHICH SHALL BE CONSIDERED INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

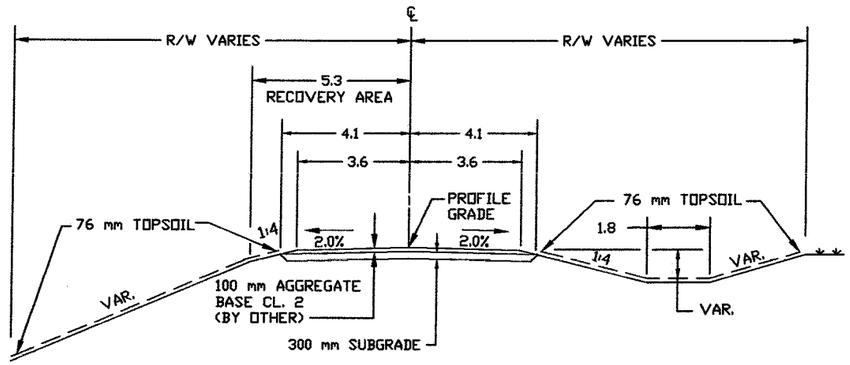
STANDARD PLATES

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

PLATE NO.	DESCRIPTION
	NUMERICAL INDEX OF STANDARD PLATES
M3007 B	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
M3040 F	CORRUGATED METAL PIPE CULVERT
M3122 K	METAL APRON FOR C.M. PIPE-ARCH CULVERT
M3124 B	METAL APRON CONNECTION
M3145 E	CONCRETE PIPE TIES
M8000 I	STANDARD BARRICADES
M9000 C	APPROACHES AND ENTRANCES

TYPICAL SECTION

STA. 1+100 TO STA. 1+390

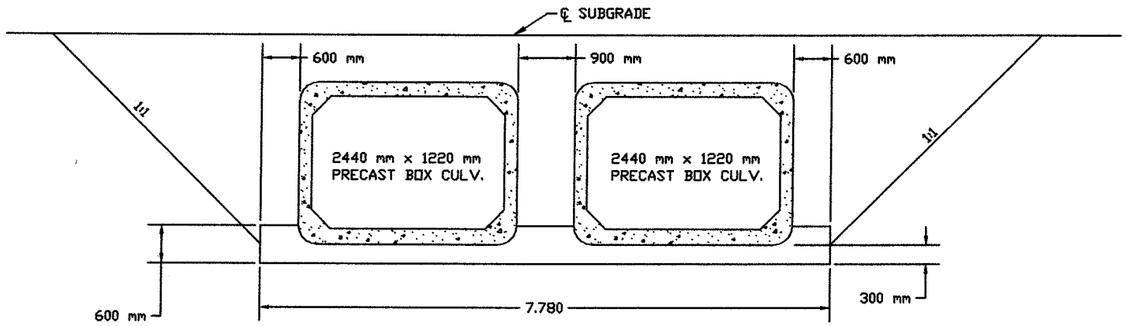


NOTES: ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE LOCATED OUTSIDE THE 5.3 m RECOVERY AREA BY OTHERS.

TURF ESTABLISHMENT BY OTHER.

BEDDING DETAIL

STA. 1+278.130 & STA. 1+281.870



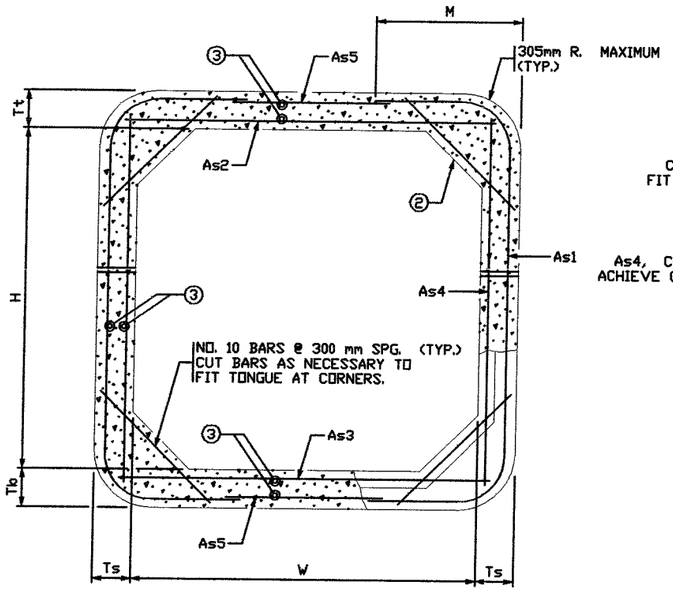
NOTES:
1. CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR ITEM NO. 2412.511 AND ITEM NO. 2412.512.
2. CULVERT TO BE BACKFILLED WITH EXCAVATION MATERIAL AND WILL BE CONSIDERED INCIDENTAL TO UNCLASSIFIED EXCAVATION AND NO DIRECT COMPENSATION WILL BE MADE.
3. ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTION ARE APPROXIMATE.
4. GRANULAR BEDDING TO BE PLACED UNDER 12 m BARREL SECTIONS ONLY.

NOTES: ALL DIMENSION ARE meter UNLESS OTHERWISE SPECIFIED.

S.A.

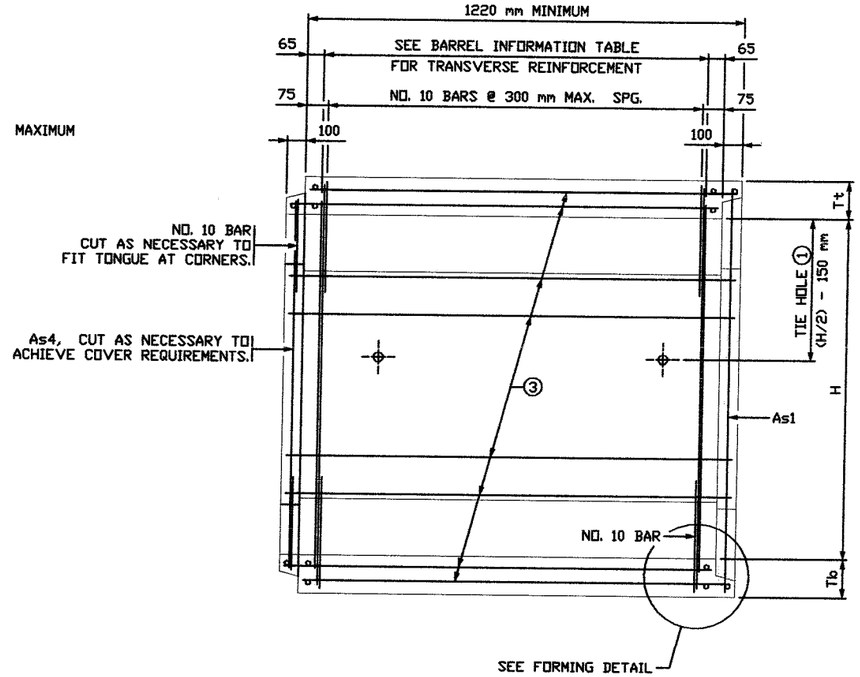
CERTIFIED BY [signature] PROFESSIONAL ENGINEER REG. NO. 19917 10/28 1998

PROJECT NO. 55-599-68 QUINCY TWP. SHEET 2 OF 10 SHEETS



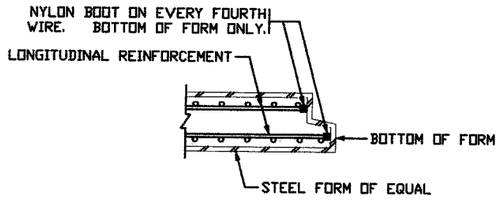
TRANSVERSE BARREL SECTION

BAR REINFORCEMENT OPTION SHOWN.

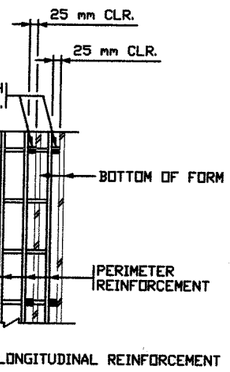


LONGITUDINAL BARREL SECTION

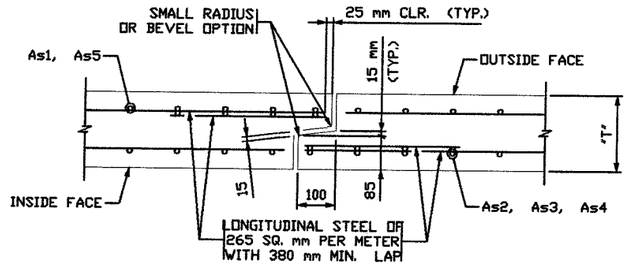
BAR REINFORCEMENT OPTION SHOWN.



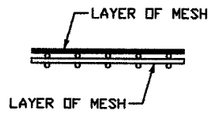
FORMING DETAIL SECTION



FORMING DETAIL PLAN



TONGUE AND GROOVE JOINT DETAIL



FABRIC LAYER DETAIL

WHEN MORE THAN ONE LAYER OF STEEL FABRIC IS USED TO OBTAIN THE REQUIRED REINFORCEMENT AREAS, THE WIRES OF THE STEEL FABRIC SHALL BE PLACED AS SHOWN.

CONSTRUCTION NOTES:

CULVERTS TO BE CONSTRUCTED AS PER SPEC. 2412 EXCEPT AS NOTED.

THE STEEL FABRIC, SHEAR REINFORCEMENT AND REINFORCEMENT BARS SHALL CONFORM TO APPLICABLE REQUIREMENTS OF AASHTO M259.

40 MILLIMETERS MINIMUM AND 50 MILLIMETERS MAXIMUM CONCRETE COVER ON ALL REINFORCEMENT, INCLUDING SHEAR REINFORCEMENT, EXCEPT FOR TONGUE AND GROOVE DETAIL.

ANY OF THE FOLLOWING COMBINATIONS OF STEEL REINFORCEMENT MAY BE USED:
- (a) 1 OR 2 LAYERS OF MESH, OR
- (b) 1 LAYER OF MESH AND 1 LAYER OF REINFORCEMENT BARS, OR
- (c) 1 LAYER OF REINFORCEMENT BARS.

THE REINFORCEMENT SHALL BE DEVELOPED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES". IF BAR REINFORCEMENT IS SUBSTITUTED FOR WIRE MESH, THE AREAS OF REINFORCEMENT SHALL BE INCREASED BY 8%.

THE MAXIMUM SIZE OF REINFORCEMENT BARS SHALL BE NO. 19. THE MAXIMUM MESH SIZE SHALL BE 15 MILLIMETERS DIAMETER PER LAYER (MAXIMUM OF 2 LAYERS).

THE SPACING CENTER TO CENTER OF THE TRANSVERSE WIRES SHALL NOT BE LESS THAN 50 MILLIMETERS NOR MORE THAN 100 MILLIMETERS. THE SPACING CENTER TO CENTER OF THE LONGITUDINAL WIRES SHALL NOT BE MORE THAN 200 MILLIMETERS.

WELDING WILL NOT BE ALLOWED ON REINFORCEMENT BARS OR STEEL FABRIC, EXCEPT THAT THE ORIGINAL WELDING REQUIRED TO MANUFACTURE WIRE FABRIC IS ACCEPTABLE.

WHEN REINFORCEMENT IS CUT, ADDITIONAL REINFORCEMENT SHALL BE ADDED ON BOTH SIDES OF THE CUT MEMBER TO REPLACE OR EXCEED THE CUT STEEL.

CONCRETE SHALL BE MIX. NO. 3W36 WITH NO CALCIUM CHLORIDE ALLOWED.

① CULVERT TIES ARE TO BE 25 MILLIMETER DIAMETER RODS. SEE STANDARD PLATE NO. M3145 FOR CONNECTION DETAILS.

② HAUNCH SIZE AS FOLLOWS:
1830 AND 2440 MILLIMETER WIDTHS - 150 TO 305 MILLIMETERS
3050 MILLIMETER WIDTH - 250 TO 305 MILLIMETERS
3660 MILLIMETER WIDTH - 305 MILLIMETERS

③ MINIMUM LONGITUDINAL STEEL SHALL BE 130 SQ. MILLIMETERS/METER.

SHOP DRAWING APPROVAL PER SPEC. 3238.2A IS NOT REQUIRED UNLESS OPENINGS OR ATTACHMENTS ARE PLACED ON A BARREL SEGMENT.

BARREL INFORMATION

LOCATION	SIZE	CLASS	f'c	FILL HEIGHT RANGE	DIMENSIONS					MASS	STEEL FABRIC REINFORCEMENT									
					W	H	Tt	Tb	Ts		As1			As2		As3		As4		As5	
			(MPa)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/m)	AREA (mm²/m)	LENGTH (mm)	M (mm)	AREA (mm²/m)	LENGTH (mm)	AREA (mm²/m)	LENGTH (mm)	AREA (mm²/m)	LENGTH (mm)	AREA (mm²/m)	LENGTH (mm)
STA. 1+278.130	2440 x 1220	2	35	600-3000	2440	1220	225	250	200	4660	870	2825	775	1210	2600	1120	2600	420	1375	130	1905
STA. 1+281.870	2440 x 1220	2	35	600-3000	2440	1220	225	250	200	4660	870	2825	775	1210	2600	1120	2600	420	1375	130	1905

APPROVED: SEPTEMBER 19, 1996
Donald J. Flemming
STATE BRIDGE ENGINEER

minnesota metric

STATE AID PROJ. NO. 55 - 599 - 68

FIG. 5-395.101M (1 of 2)

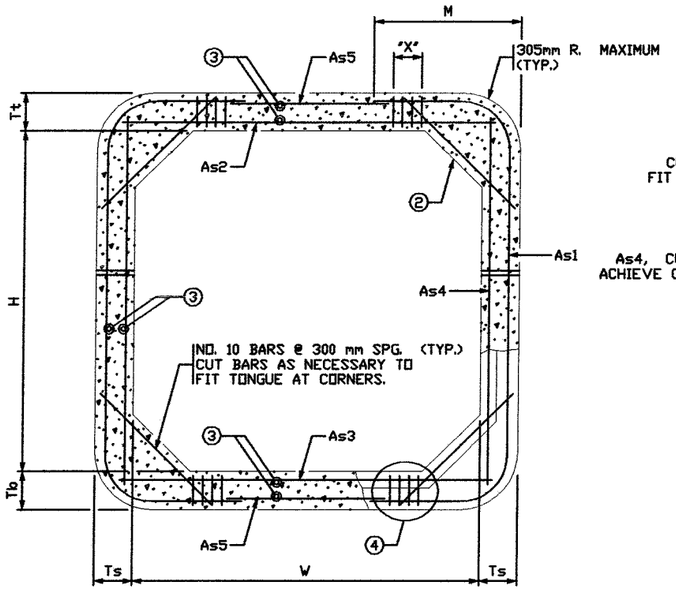
CERTIFIED BY: Kaye M Bienich PROFESSIONAL ENGINEER
REG. NO. 19917 10/28 1998

TITLE: BARREL DETAILS

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CHK: | CHK:

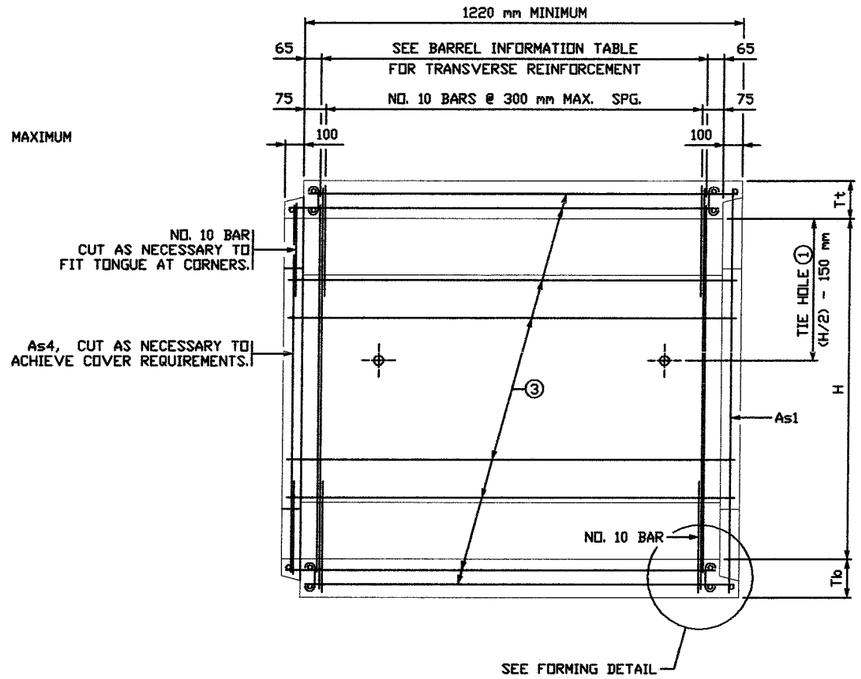
SHEET NO. 3 OF 10 SHEETS

BRIDGE NO. 55J17



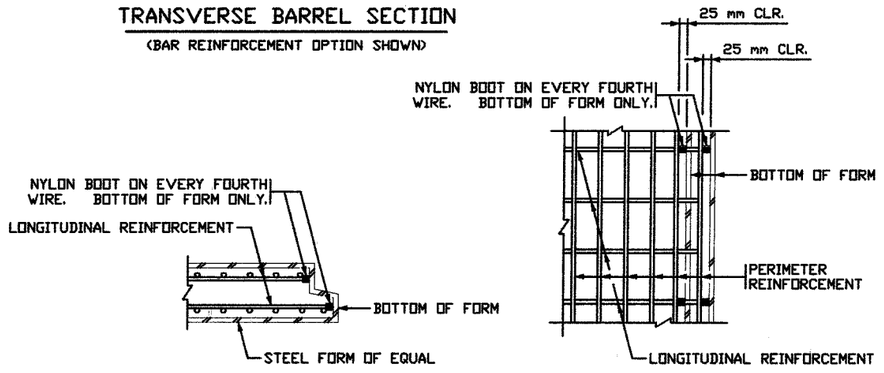
TRANSVERSE BARREL SECTION

(BAR REINFORCEMENT OPTION SHOWN)



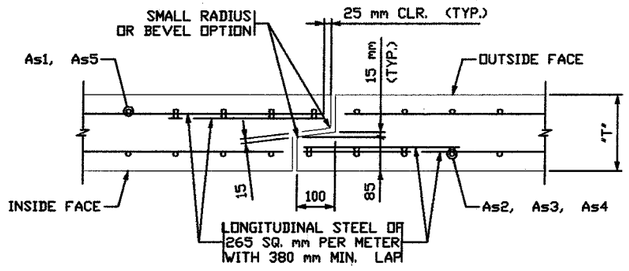
LONGITUDINAL BARREL SECTION

(BAR REINFORCEMENT OPTION SHOWN.)



FORMING DETAIL SECTION

FORMING DETAIL PLAN



TONGUE AND GROOVE JOINT DETAIL

CONSTRUCTION NOTES:

CULVERTS TO BE CONSTRUCTED AS PER SPEC. 2412 EXCEPT AS NOTED.

THE STEEL FABRIC, SHEAR REINFORCEMENT AND REINFORCEMENT BARS SHALL CONFORM TO APPLICABLE REQUIREMENTS OF AASHTO M259.

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ANY OF THE FOLLOWING COMBINATIONS OF STEEL REINFORCEMENT MAY BE USED:
(a) 1 OR 2 LAYERS OF MESH, OR
(b) 1 LAYER OF MESH AND 1 LAYER OF REINFORCEMENT BARS, OR
(c) 1 LAYER OF REINFORCEMENT BARS.
THE REINFORCEMENT SHALL BE DEVELOPED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES". IF BAR REINFORCEMENT IS SUBSTITUTED FOR WIRE MESH, THE AREAS OF REINFORCEMENT SHALL BE INCREASED BY 8%.

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WELDING WILL NOT BE ALLOWED ON REINFORCEMENT BARS OR STEEL FABRIC, EXCEPT THAT THE ORIGINAL WELDING REQUIRED TO MANUFACTURE WIRE FABRIC IS ACCEPTABLE.

WHEN REINFORCEMENT IS CUT, ADDITIONAL REINFORCEMENT SHALL BE ADDED ON BOTH SIDES OF THE CUT MEMBER TO REPLACE OR EXCEED THE CUT STEEL.

CONCRETE SHALL BE MIX. NO. 3W36 WITH NO CALCIUM CHLORIDE ALLOWED.

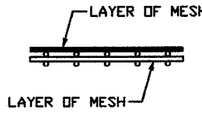
① CULVERT TIES ARE TO BE 25 MILLIMETER DIAMETER RODS, SEE STANDARD PLATE NO. M3145 FOR CONNECTION DETAILS.

② HAUNCH SIZE AS FOLLOWS:
1830 AND 2440 MILLIMETER WIDTHS - 150 TO 305 MILLIMETERS
3050 MILLIMETER WIDTH - 250 TO 305 MILLIMETERS
3660 MILLIMETER WIDTH - 305 MILLIMETERS

③ MINIMUM LONGITUDINAL STEEL SHALL BE 130 SQ. MILLIMETERS/METER.

④ SEE STANDARD PLATE NO. M3007 FOR SHEAR REINFORCEMENT OPTIONS. THE MAXIMUM SHEAR REINFORCEMENT SPACING IN THE LONGITUDINAL DIRECTION SHALL BE 150 MILLIMETERS.

SHOP DRAWING APPROVAL PER SPEC. 3238.2A IS REQUIRED.



FABRIC LAYER DETAIL

WHEN MORE THAN ONE LAYER OF STEEL FABRIC IS USED TO OBTAIN THE REQUIRED REINFORCEMENT AREAS, THE WIRES OF THE STEEL FABRIC SHALL BE PLACED AS SHOWN.

BARREL INFORMATION

LOCATION	SIZE	f'c (MPa)	OVER-FILL LIMITS (mm)	DIMENSIONS W (mm)	H (mm)	Tt (mm)	Tb (mm)	Ts (mm)	MASS (kg/m)	STEEL FABRIC REINFORCEMENT As1 AREA (mm²/m)	As1 LENGTH (mm)	As1 M (mm)	As2 AREA (mm²/m)	As2 LENGTH (mm)	As3 AREA (mm²/m)	As3 LENGTH (mm)	As4 AREA (mm²/m)	As4 LENGTH (mm)	As5 AREA (mm²/m)	As5 LENGTH (mm)	SHEAR REINFORCEMENT TOP AND BOTTOM OF BARREL ④ AREA (mm²/m)	MAX. SPG. (mm)	X (mm)

APPROVED: SEPTEMBER 19, 1996
Donald J. Flemming
STATE BRIDGE ENGINEER

minnesota metric

STATE AID PROJ. NO. 55 - 599 - 68

FIG. 5-395.101M (2 of 2)

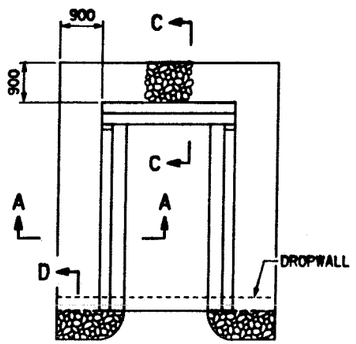
CERTIFIED BY: Kay M Brenner
PROFESSIONAL ENGINEER
REG. NO. 19917 10/28 1998

TITLE: BARREL DETAILS (SPECIAL DESIGNS)

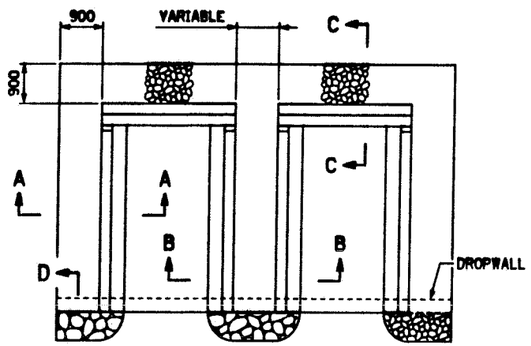
DES: | DR: | APPROVED:
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SHEET NO. 4 OF 10 SHEETS

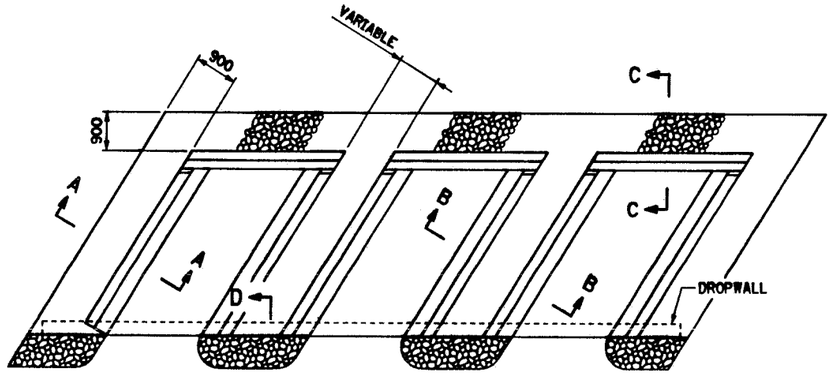
BRIDGE NO. 55J17



PLAN VIEW



PLAN VIEW



PLAN VIEW

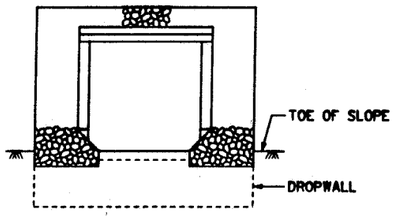
NOTES:

RIPRAP SHALL COMPLY WITH SPECS. 2511 AND 3601. THE CONTRACTOR MAY USE EITHER CLASS III, WITH GEOTEXTILE FILTER MATERIAL, OR CLASS II ENCLOSED IN GABIONS, WITH GEOTEXTILE FILTER MATERIAL. 100 MILLIMETERS TO 200 MILLIMETERS DIAMETER ROCK MAY BE USED IN GABIONS, IF THE MESH OPENINGS ARE 100 MILLIMETERS OR LESS. GABIONS SHALL BE RIVER TYPE, CODE "D", 900 MILLIMETERS WIDE × 450 MILLIMETERS DEEP.

① FOR TYPE OF GEOTEXTILE FILTER MATERIAL REQUIRED, SEE SPEC. 3733. GEOTEXTILE STRIPS SHOULD BE CONTINUOUS WITHOUT OVERLAPS, EXCEPT FOR THE TOP STRIP, WHICH SHOULD SHINGLE VERTICAL STRIPS. THE TOP EDGE SHOULD BE BURIED TO PREVENT UNDERMINING (SPEC. 2511.3B).

② SLOPES 1:2 TO 1:3 MUST BE STEPPED TO MINIMIZE SLIDING POTENTIAL.

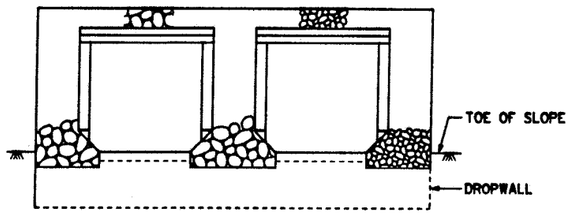
③ IF SLOPES ARE NOT STEPPED, GRANULAR FILTER SHOULD BE USED.



ELEVATION

SINGLE BARREL

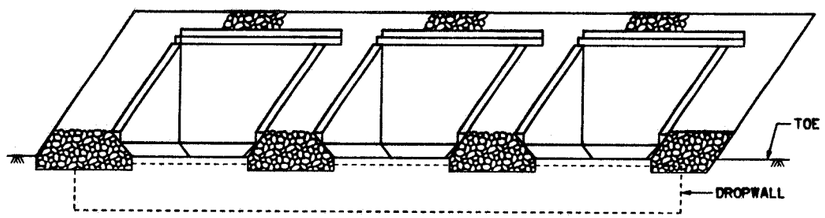
CLASS III SHOWN
(FOR SKEWS UP TO 7½°)



ELEVATION

DOUBLE BARREL

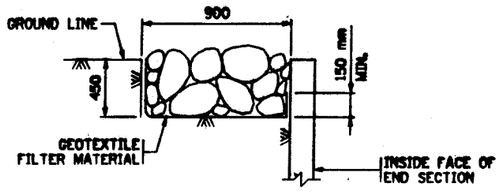
CLASS III SHOWN
(FOR SKEWS UP TO 7½°)



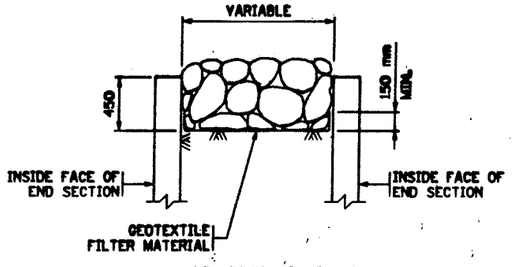
ELEVATION

MULTI BARREL

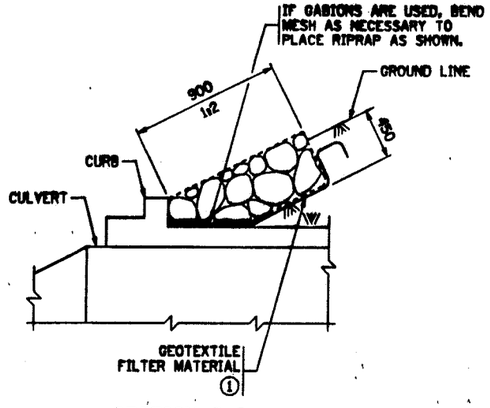
CLASS III SHOWN
(FOR SKEWS OVER 7½°)



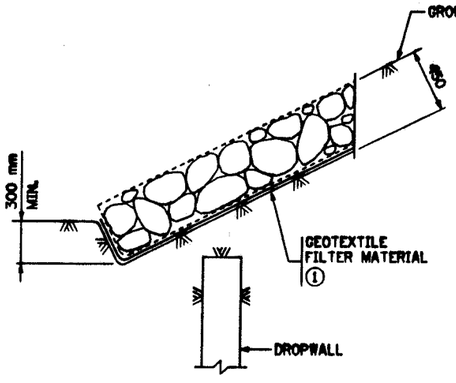
SECTION A-A



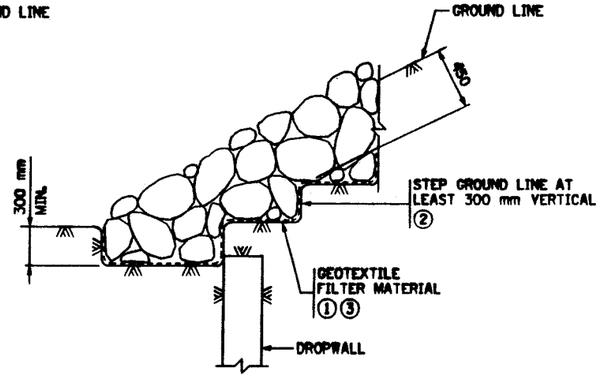
SECTION B-B



SECTION C-C



CLASS II RIPRAP IN GABIONS OPTION



CLASS III RIPRAP OPTION

SECTION D-D

CERTIFIED BY Kenneth M Bierwirth PROFESSIONAL ENGINEER
REG. NO. 19917 10/28 1998

DES: DR: CHK: CHK: APPROVED:

STANDARD SHEET NO. 5-297.425M

STATE BRIDGE ENGINEER APPROVAL: SEPTEMBER 19, 1996

TITLE: EMBANKMENT PROTECTION FOR BOX CULVERTS

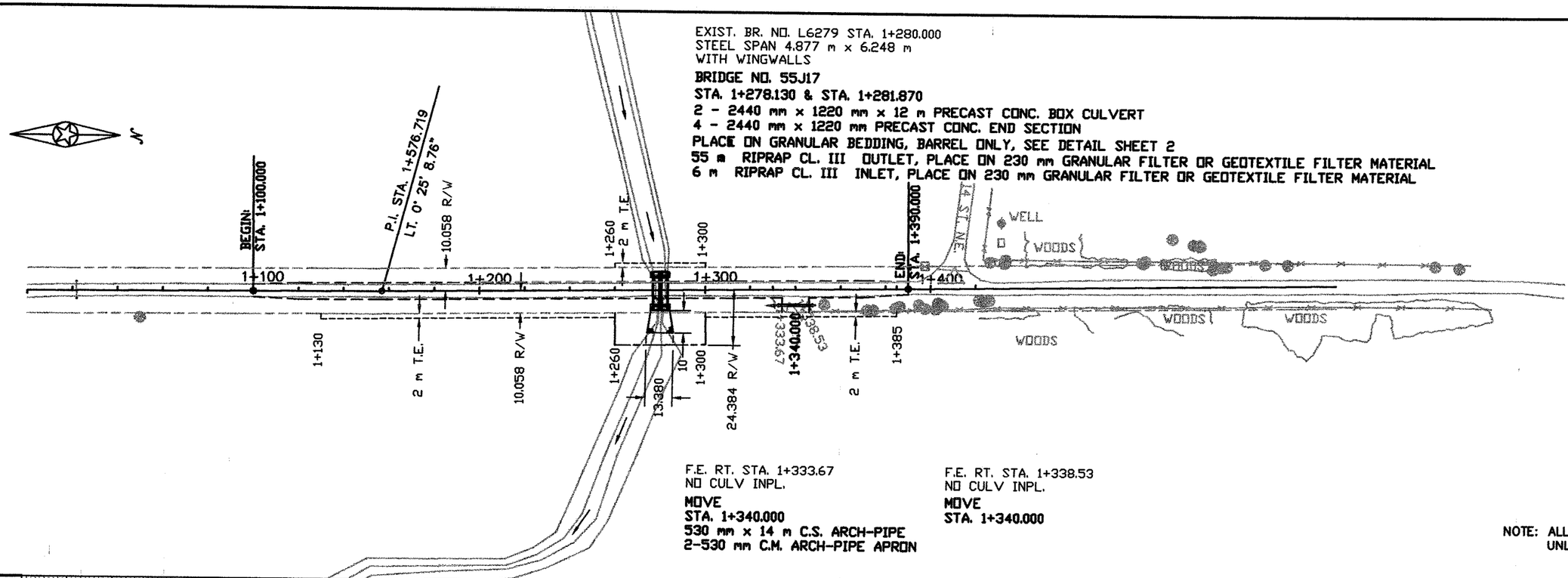
STATE PROJ. NO. 55-599-68

SHEET NO. 6 OF 10 SHEETS

SERVER CA6451a/USR/STANDARDS FILE NAME SM425196.SPN

EXIST. BR. NO. L6279 STA. 1+280.000
STEEL SPAN 4.877 m x 6.248 m
WITH WINGWALLS

BRIDGE NO. 55J17
STA. 1+278.130 & STA. 1+281.870
2 - 2440 mm x 1220 mm x 12 m PRECAST CONC. BOX CULVERT
4 - 2440 mm x 1220 mm PRECAST CONC. END SECTION
PLACE ON GRANULAR BEDDING, BARREL ONLY, SEE DETAIL SHEET 2
55 m RIPRAP CL. III OUTLET, PLACE ON 230 mm GRANULAR FILTER OR GEOTEXTILE FILTER MATERIAL
6 m RIPRAP CL. III INLET, PLACE ON 230 mm GRANULAR FILTER OR GEOTEXTILE FILTER MATERIAL

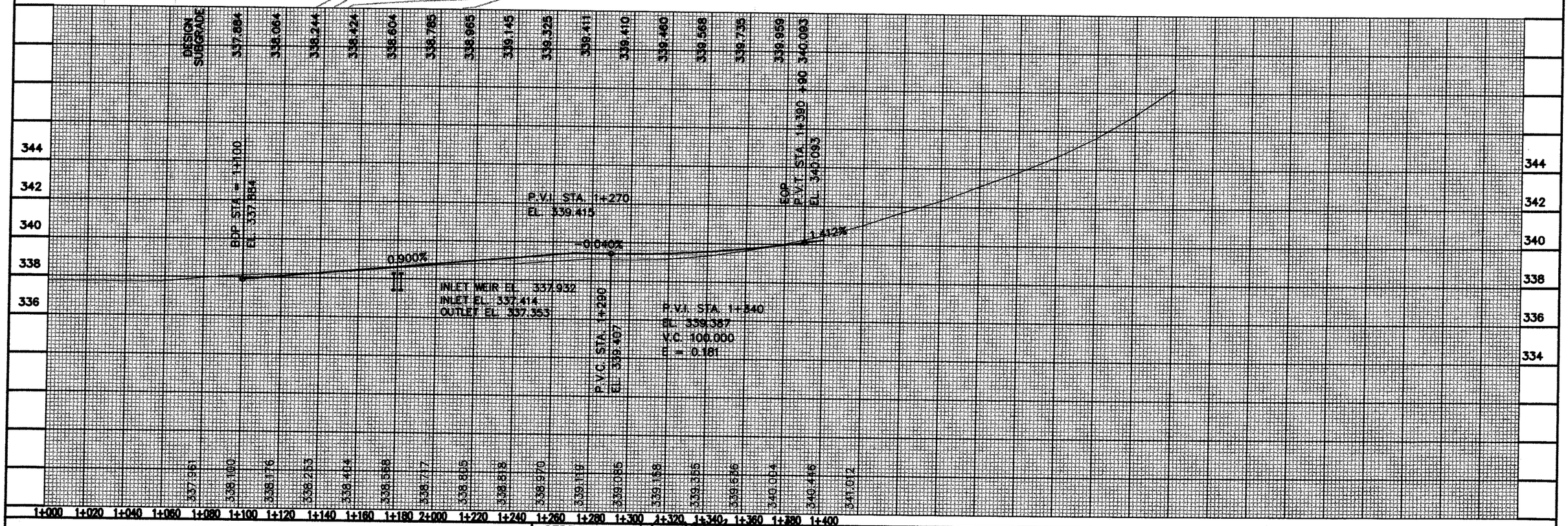


F.E. RT. STA. 1+333.67
NO CULV INPL.
MOVE
STA. 1+340.000
530 mm x 14 m C.S. ARCH-PIPE
2-530 mm C.M. ARCH-PIPE APRON

F.E. RT. STA. 1+338.53
NO CULV INPL.
MOVE
STA. 1+340.000

minnesota metric

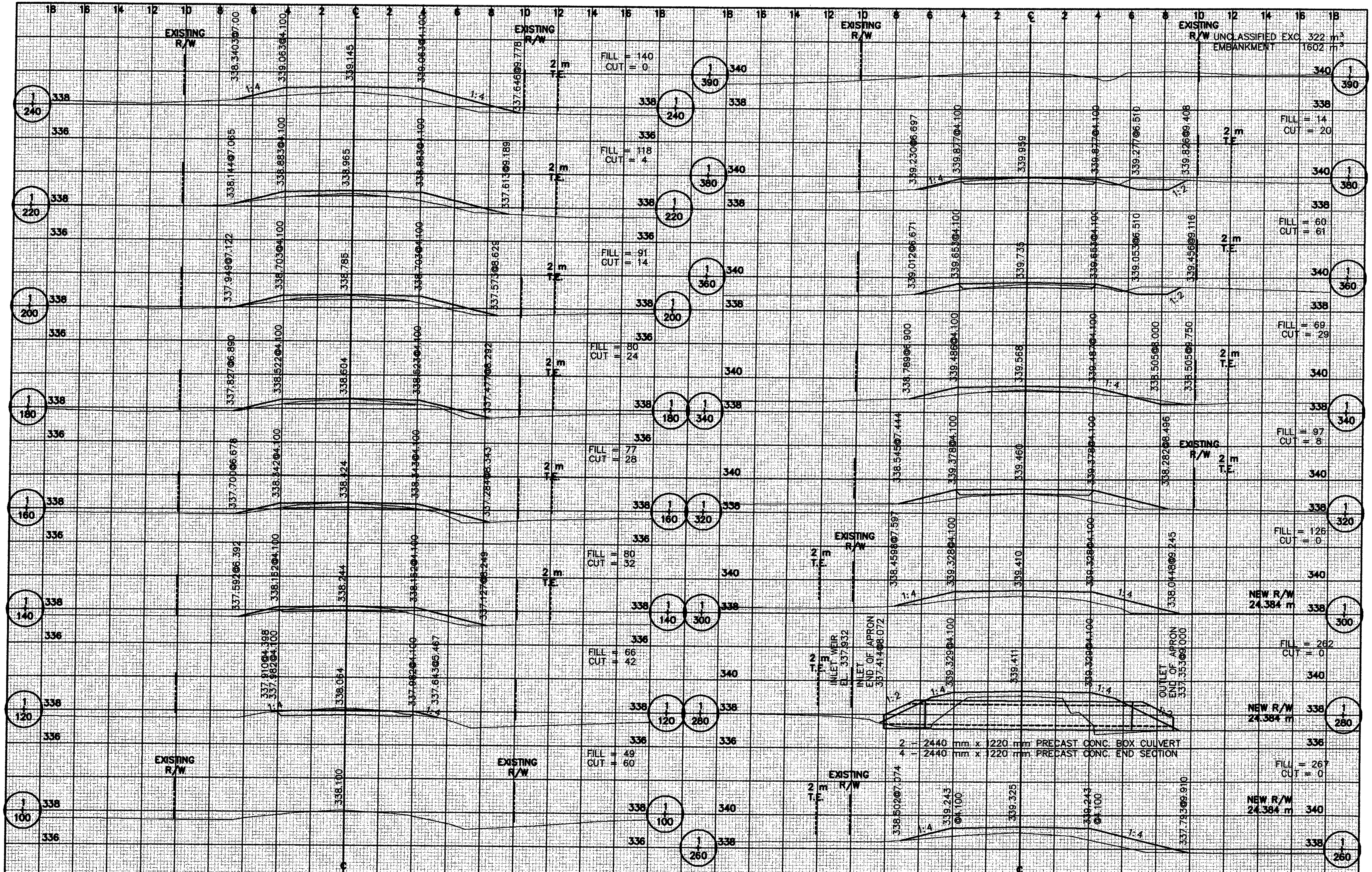
NOTE: ALL DIMENSIONS ARE meter, UNLESS OTHERWISE NOTED.



CERTIFIED BY [signature] PROFESSIONAL ENGINEER REG. NO. 19917 10/28 1998

S.A.P. 55-599-68

SHEET 7 OF 10 SHEETS

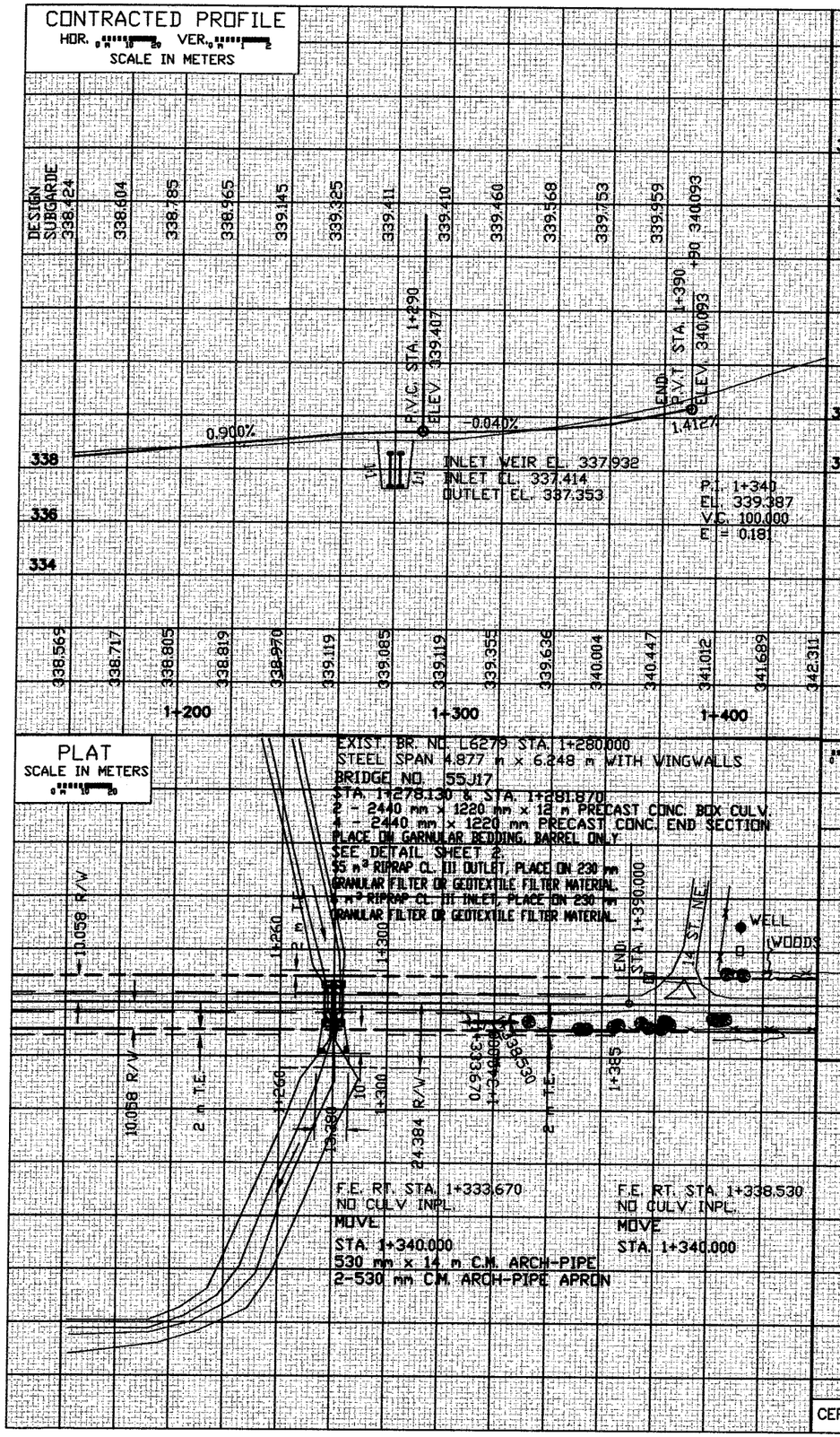


EXISTING R/W
2 m T.E.
UNCLASSIFIED EXC. 322 m³
EMBANKMENT 1602 m³
1/390
FILL = 140
CUT = 0
1/240
338.340@7.00
339.063@4.100
339.145
339.063@4.100
337.646@9.778
1:4
FILL = 14
CUT = 20
1/380
339.230@6.697
339.877@4.100
339.959
339.877@4.100
339.277@6.510
339.826@9.408
1:2
FILL = 118
CUT = 4
1/220
338.144@7.065
338.883@4.100
338.965
338.883@4.100
337.613@9.189
FILL = 60
CUT = 61
1/360
339.012@6.671
339.653@4.100
339.735
339.653@4.100
339.053@6.510
339.456@9.116
FILL = 91
CUT = 14
1/200
337.949@7.122
338.703@4.100
338.785
338.703@4.100
337.573@8.629
FILL = 69
CUT = 29
1/340
338.789@6.900
339.486@4.100
339.568
339.487@4.100
338.505@8.000
338.505@8.750
FILL = 80
CUT = 24
1/180
337.827@6.890
338.522@4.100
338.604
338.523@4.100
337.477@8.292
FILL = 97
CUT = 8
1/320
338.545@7.444
339.378@4.100
339.460
339.378@4.100
338.282@8.496
FILL = 77
CUT = 28
1/160
337.700@6.678
338.342@4.100
338.424
338.343@4.100
337.284@8.343
FILL = 126
CUT = 0
1/300
338.459@7.597
339.328@4.100
339.410
339.328@4.100
338.044@9.245
NEW R/W 24.384 m
FILL = 80
CUT = 32
1/140
337.592@6.392
338.162@4.100
338.244
338.162@4.100
337.127@8.249
FILL = 262
CUT = 0
1/280
INLET WEIR EL. 337.932
INLET END OF APRON 337.414@8.072
339.329@4.100
339.411
339.329@4.100
OUTLET END OF APRON 337.353@9.000
2 – 2440 mm x 1220 mm PRECAST CONC. BOX CULVERT
4 – 2440 mm x 1220 mm PRECAST CONC. END SECTION
FILL = 66
CUT = 42
1/120
337.910@4.398
337.982@4.100
338.064
337.982@4.100
337.643@5.467
FILL = 267
CUT = 0
1/260
338.502@7.074
339.243 @4.100
339.325
339.243 @4.100
337.793@9.910
FILL = 49
CUT = 60
1/100
338.100

CONTRACTED PROFILE

HOR. 0 10 20 VER. 0 1 2

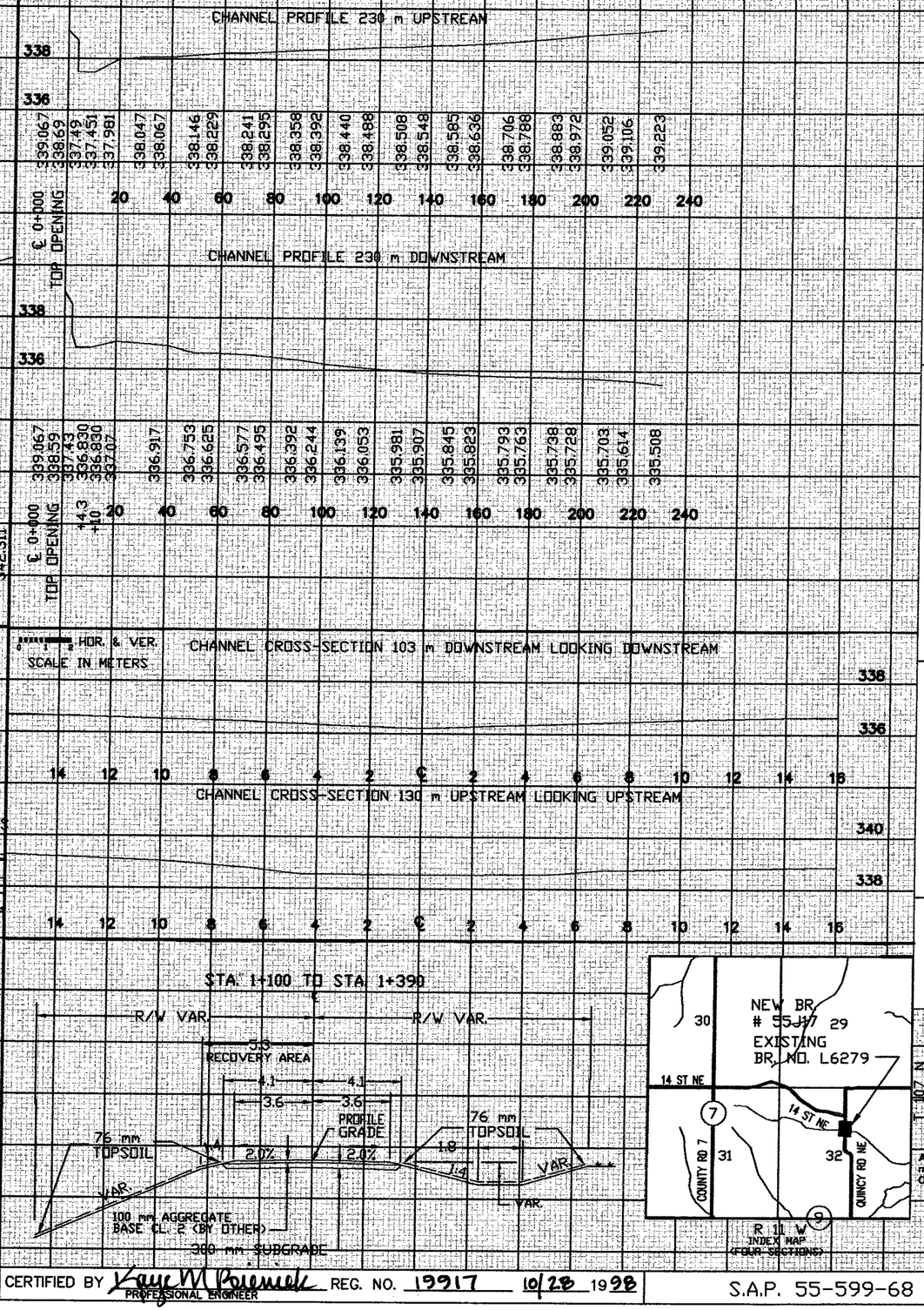
SCALE IN METERS



TYPICAL SECTIONS & PERTINENT DATA

HOR. 0 25 VER. 0 1 2

SCALE IN METERS



PLAT

SCALE IN METERS 0 10 20

HOR. & VER. SCALE IN METERS

CHANNEL CROSS-SECTION 103 m DOWNSTREAM LOOKING DOWNSTREAM

CHANNEL CROSS-SECTION 130 m UPSTREAM LOOKING UPSTREAM

STA. 1+100 TO STA. 1+390

Fed. Proj. No.

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 6-30-98

Stream or ditch designation UNNAMED

Drainage area 1.94 sq. km.

Max. flood on record unknown Design flood (25 yr. freq.) 6.23 m³/s

Max. observed highwater elevation unknown Design highwater elevation 337.856

Design mean velocity through structure 2.74 m/s

Low superstructure at or above elevation 338.63

Flowline 337.414 Skew angle none

Waterway area req'd below elevation ..... = ... Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 11.33 m³/s at stage 338267 and mean velocity of 1.61 m/s with 0.152 m swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of National Resources.

FOUNDATION ENGINEERS RECOMMENDATION

DATE.....

Bridge survey sheets made from .....

Bench mark elevation..... (M.S.L. 1929 Adj.)

Location.....

ALL DIMENSIONS ARE meter UNLESS OTHERWISE NOTED.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT kilometer POINT 1.2 ON TWP. RD. 235 (T.H., C.S.A.H., C.R. etc.)

PROPOSED BRIDGE LOCATED 4.83 km NE OF EYOTA

SEC. 32 TWP. 107 R. 11

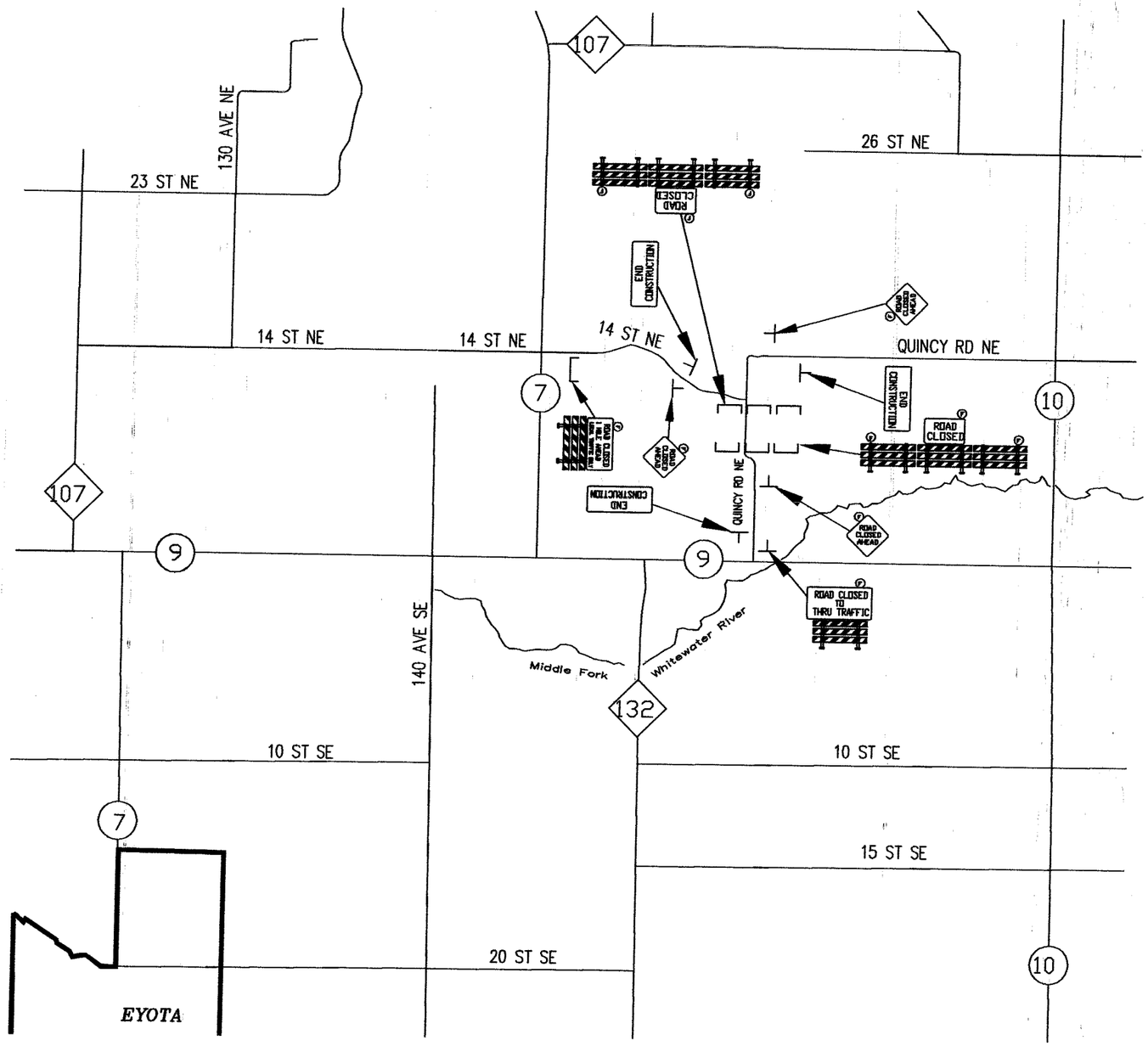
TOWNSHIP QUINCY COUNTY OLMSTED

BRIDGE NO. 55J17

CERTIFIED BY Kayle M Brenneke PROFESSIONAL ENGINEER REG. NO. 19917 10/28 1998

S.A.P. 55-599-68

Sheet No. 9 of 10 Sheets



ESTIMATE OF TRAFFIC CONTROL DEVICES

DEVICE	NUMBER	SIZE	COLOR	QUANTITY	DEVICE	NUMBER	SIZE	COLOR	QUANTITY
END CONSTRUCTION	G20-2	60 x 24	BLK/OR	3	ROAD CLOSED AHEAD	W20-3	48 x 48	BLK/OR	3
ROAD CLOSED	R11-2	48 x 30	BLK/WH	2		TYPE III	MIN. 6'	OR & WHT	8
ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY	R11-3	60 x 30	BLK/WH	1	(F)	TYPE A	FLASHING LAMP	AMBER	11
ROAD CLOSED TO THRU TRAFFIC	R11-4	60 x 30	BLK/WH	1					

N

TRAFFIC CONTROL LEGEND

⊥ POST OR STAND MOUNTED SIGN

└┘ TYPE III BARRICADE

(F) TYPE "A" AMBER FLASHING LAMP

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 TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL DATED JANUARY 1998.
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.

CERTIFIED BY Gary M Pierzina PROFESSIONAL ENGINEER REG. NO. 19917 10/20 1998

S.A.P. 55-599-68 | QUINCY TWP. | SHEET 10 OF 10 SHEETS