MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

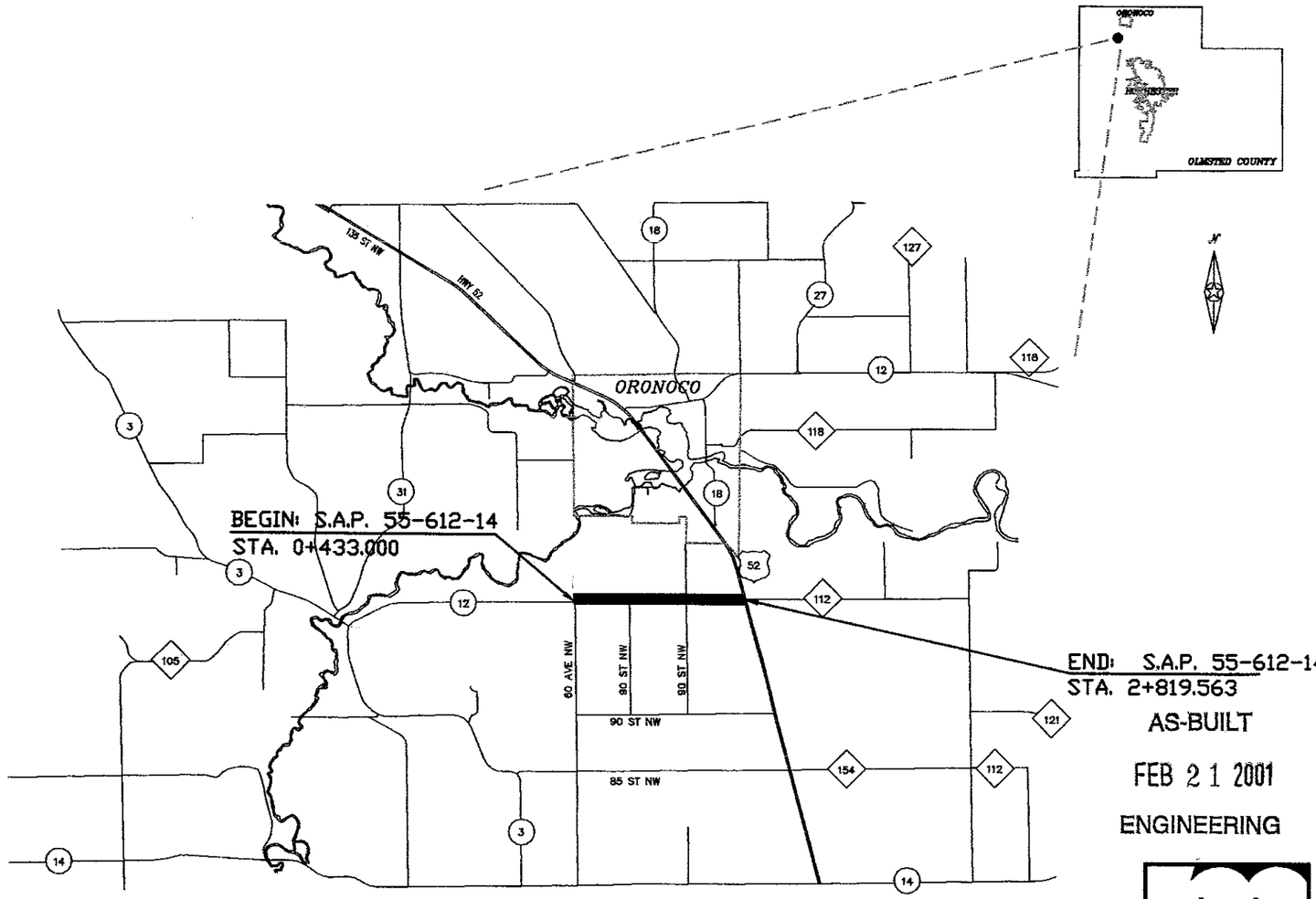
CONSTRUCTION PLAN FOR GRADING, CONCRETE BOX CULVERT (BRIDGE NO. 55J12) & CONCRETE PIPE-ARCH (BRIDGE NO. 55J20)

LOCATED ON C.S.A.H. 12 BETWEEN 60th AVE. NW AND T.H. 52 (GEOGRAPHIC DESCRIPTION)

FROM WEST QUARTER COR. SEC. 19 T108-N-14W TO CENTER COR. SEC. 20 T108-N-R14W (LEGAL DESCRIPTION)

S.A.P. NO. 55-612-14

GROSS LENGTH	2386.563	meter	2.387 kilometer
BRIDGE-LENGTH		meter	kilometer
EXCEPTIONS-LENGTH		meter	kilometer
NET LENGTH	2386.563	meter	2.387 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.

ATTENTION: THIS IS A METRIC PLAN

GOVERNING SPECIFICATIONS

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

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SHEET NO. 7 - 10	PLAN AND PROFILE (CSAH 12)
SHEET NO. 11	PLAN AND PROFILE (55th AVE. N.W.)
SHEET NO. 12 - 23	CROSS SECTIONS (CSAH 12)
SHEET NO. 23	CROSS SECTIONS (55th AVE. N.W.)
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SHEET NO. 29	TRAFFIC CONTROL PLANS

THIS PLAN CONTAINS 29 SHEETS.

DESIGN DESIGNATION: C.S.A.H. 12

R IN18(20)
ADT (Current Year) = 822 (1998) Design Speed 90 km/h
ADT (Future Year) = 1233(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) = EST. 4% STA. TO STA. km/h
SUBGRADE = K=150 STA. TO STA. km/h

SHOULDER WIDTH 1.8 m

FUNCTIONAL CLASSIFICATION:
SOIL FACTOR = 130%

8.2 ton DESIGN (U14.)

APPROVALS:

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 9/16/98 REGISTRATION NUMBER 19917

Kaye M. Bienick
APPROVED: COUNTY DESIGN ENGINEER

DATE 9/17/98 REGISTRATION NUMBER 10397

Michael Steehan
APPROVED: OLMSTED COUNTY ENGINEER

STATE AID APPROVALS:

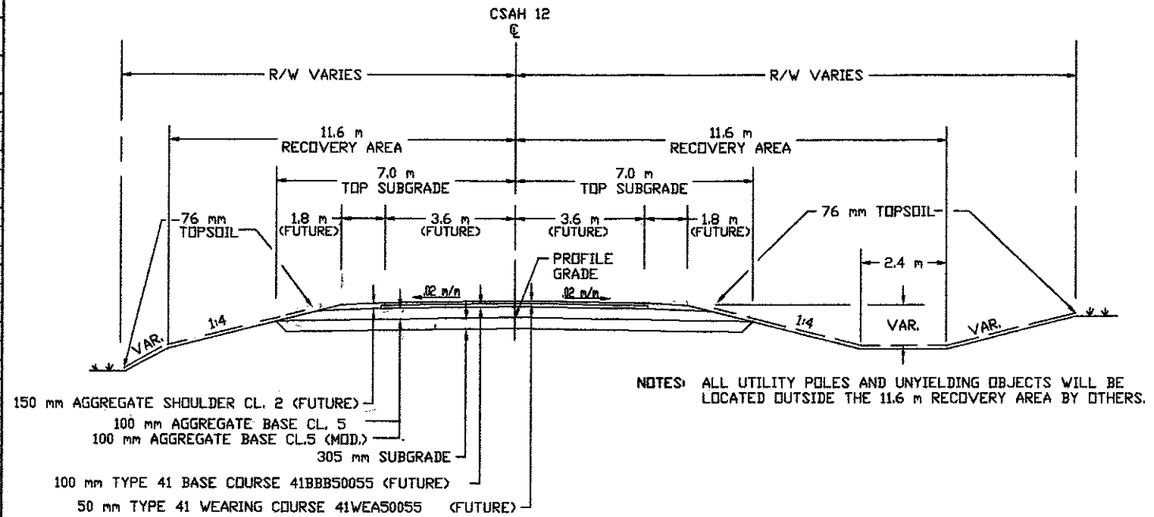
Andy Eshenaur DATE: 10-26-98
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH MN STATE AID RULES/POLICY

for Ken Saleby DATE: 3/11/99
APPROVED FOR STATE AID FUNDING:
MN STATE AID ENGINEER

S.A.P. NO. 55-612-14 SHEET NO. 1 OF 29 SHEETS

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	NON PARTICIPATING	PARTICIPATING	BRIDGE NO. 55J12	BRIDGE NO. 55J20	TOTAL ESTIMATED QUANTITIES
	2031.501	FIELD OFFICE, TYPE D	EACH		1			1
①	2101.511	CLEAR & GRUB	LUMP SUM		1			1
	2104.501	REMOVE CONCRETE CULVERT	m		68			68
	2104.501	REMOVE METAL CULVERTS	m		133			133
②	2105.515	UNCLASSIFIED EXCAVATION	m^3		36 700			36 700(P)
③	2130.501	WATER	m^3		124			124
④	2211.501	AGGREGATE BASE CL. 5	t		9753			9753
	2211.501	AGGREGATE BASE CL. 5 MOD.	t		7217			7217
	2412.511	3050 mm x 1830 mm PRECAST CONC. BOX CULV. CL. II	m			46		46
⑤	2412.512	3050 mm x 1830 mm PRECAST CONC. BOX CULVERT END SECTION	EACH			4		4
	2442.501	REMOVE OLD BRIDGE	LUMP SUM		1			1
⑥	2451.507	GRANULAR BEDDING (CV)	m^3			79	96	175(P)
	2501.511	450 mm C.S. PIPE CULVERT	m		35			35
	2501.511	600 mm C.S. PIPE CULVERT	m		33			33
	2501.511	600 mm R.C. PIPE CULVERT	m		16			16
	2501.511	900 mm R.C. PIPE CULVERT	m		116			116
	2501.515	450 mm C.S. PIPE APRON	EACH		6			6
	2501.515	600 mm C.S. PIPE APRON	EACH		6			6
	2501.515	600 mm R.C. PIPE APRON	EACH		2			2
	2501.515	900 mm R.C. PIPE APRON	EACH		10			10
	2501.521	530 mm SPAN C.S. PIPE-ARCH	m		19			19
	2501.521	2235 mm SPAN R.C. PIPE-ARCH	m				69	69
	2501.525	530 mm SPAN C.S. PIPE-ARCH APRON	EACH		4			4
	2501.525	2235 mm SPAN R.C. PIPE-ARCH APRON	EACH				6	6
⑦	2511.501	RANDOM RIPRAP CL. III	m^3			85	65	150
	2563.601	TRAFFIC CONTROL	LUMP SUM		1			1
⑧	2573.501	BALE CHECKS	EACH		230			230
⑨	2573.502	SILT FENCE, TYPE HEAVY DUTY	m		1130			1130
	2575.501	SEEDING	ha		3.6			3.6(P)
	2575.502	SEED MIXTURE 50A	kg		180			180
	2575.502	SEED MIXTURE 110A	kg		360			360
⑩	2575.505	SODDING TYPE EROSION	m^2		777			777
	2575.511	MULCH MATERIAL TYPE 1	t		16.2			16.2
	2575.519	DISK ANCHORING	ha		2.9			2.9(P)
	2575.531	COMMERCIAL FERT ANALYSIS 12-12-12	kg		1620			1620



NOTES: ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE LOCATED OUTSIDE THE 11.6 m RECOVERY AREA BY OTHERS.

TYPICAL SECTION CSAH 12
STA. 0+433 TO STA. 2+819.563

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

TYPICAL SECTION 55th AVE NW
STA. 10+000 TO STA. 10+200

QUANTITY NOTES:

① APPROX. 58 TREES AND .03 ha WOODS TO BE DESIGNATED IN THE FIELD BY ENGINEER.

② INCLUDES SUBGRADE TREATMENT AS SHOWN IN TYPICAL SECTIONS. 2582 m^3 UNCLASSIFIED EXC. TO BE USED AS SALVAGED TOPSOIL ON CSAH 12 AND 188 m^3 UNCLASSIFIED EXC. AS SALVAGED TOPSOIL ON 55th AVE NW.

③ WATER TO BE USED AS DUST PREVENTATIVE AS DIRECTED BY ENGINEER.

④ INCLUDES 715 t FOR TWP. ROADS AND 1819 t FOR ENTRANCES, RADII AND TAPERS TO EXISTING PAVEMENT.

⑤ WEIR CONSTRUCTION WILL BE CONSIDERED INCIDENTAL TO ITEM 2412.512, 3050 mm x 1830 mm PRECAST CONC. END SECTION.

⑥ GRANULAR BEDDING: 79 m^3 UNDER 3050 mm x 1830 mm PRECAST CONC. BOX CULVERT & 96 m^3 UNDER 2235 mm R.C. PIPE ARCH.

⑦ PLACE RIPRAP ON 230 mm GRANULAR FILTER OR GEOTEXTILE MATERIAL WHICH SHALL BE CONSIDERED INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

⑧ DITCH CHECK LOCATION TO BE DESIGNATED IN THE FIELD BY ENGINEER WITH 14 DITCH CHECKS BETWEEN STA. 2+380 AND STA. 2+560 AND 9 DITCH CHECKS ON 55TH AVE. N.W. EACH DITCH CHECK HAS 10 BALES SEE SHEET 5.

⑨ SEE TABULATION AT RIGHT

⑩ PROVDED FOR CSAH 12 FROM STA. 1+140 TO STA. 1+200 LT. AND 55th AVE NW FROM STA. 10+060 TO STA. 10+115 RT.

BASIS OF QUANTITIES

AGGREGATE — 2160 kg/m^3
SEED MIXTURE 50A — 50 kg/ha
SEED MIXTURE 110A — 100 kg/ha
MULCH MATERIAL — 4.5 t/ha
DISC ANCHOR — ALL SEEDING AREA'S EXCLUDING 1:2 SLOPES
FERTILIZER — 450 kg/ha

SILT FENCE

LOCATION
LT. STA. 0+503
LT. STA. 1+220 TO STA. 1+280
RT. STA. 1+200 TO STA. 1+280
LT. & RT. STA. 1+780 TO STA. 1+950
RT. STA. 2+080 TO STA. 2+120
LT. STA. 2+080 TO STA. 2+200
RT. STA. 2+210 TO STA. 2+390
RT. & LT. STA. 2+460 TO STA. 2+580
RT. & LT. STA. 2+595

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
M3000L	REINFORCED CONCRETE PIPE
M3007C	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
M3014J	REINFORCED CONCRETE PIPE ARCH
M3040F	CORRUGATED METAL PIPE CULVERT
M3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
M3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
M3122K	METAL APRON FOR C.M. PIPE-ARCH CULVERT
M3123J	METAL APRON FOR C.M. PIPE
M3124B	METAL APRON CONNECTION
M3145E	CONCRETE PIPE TIES
M3221C	CORRUGATED STEEL PIPE COUPLING BAND
M8000I	STANDARD BARRICADES
M9000C	APPROACHES & ENTRANCES

AS-BUILT

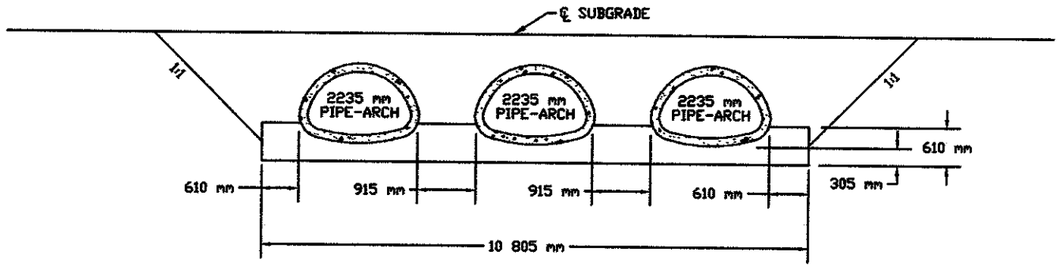
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ENGINEERING

minnesota metric

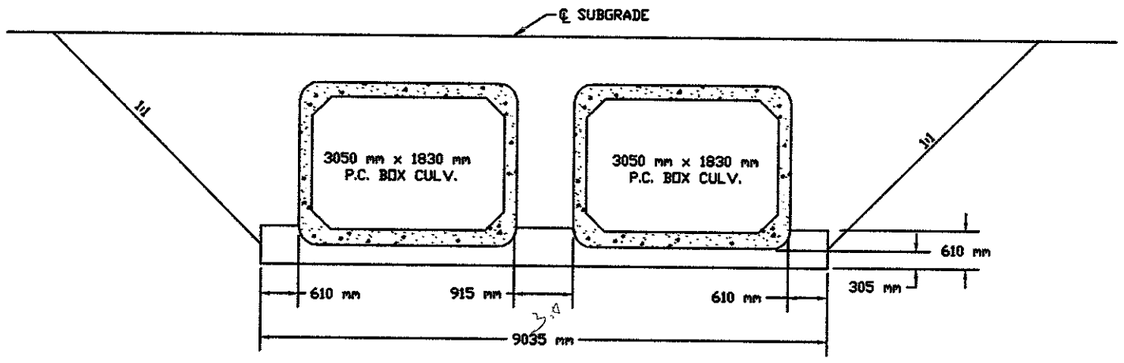
CERTIFIED BY Kevin M Reinert PROFESSIONAL ENGINEER REG. NO. 19917 3/9 1999

S.A.P. 55-612-14



BEDDING DETAIL

STA. 0+503



BEDDING DETAIL

STA. 2+573 & STA. 2+577.365

NOTES:

1. CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR ITEM
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 ARE APPROXIMATE.
4. GRANULAR BEDDING TO BE PLACED UNDER BARREL SECTIONS ONLY.

AS-BUILT

FEB 2 1 2001

ENGINEERING

minnesota metric

CERTIFIED BY Kaye M Brenek PROFESSIONAL ENGINEER REG. NO. 13917 9/16 1998

S.A.P. 55-612-14

SHEET 3 OF 29 SHEETS

N

F.E. LT. STA. 0+435.000
INPL. 450 mm x 9 m C.M.P.
NO APRONS
NO CHANGE

SILT FENCE TO BE LOCATED BY ENGINEER

BEGIN: S.A.P. 55-612-14
STA. 0+433.000

0+490 P.I. STA. 0+500 Rt. 0° 48' 50"

17.780

0+515

SILT FENCE TO BE LOCATED BY ENGINEER

9.000

22.860 R/W

15.240 R/W

15.240 R/W

10.058 R/W

10.058 R/W

0+435

0+490

3 T.E.

60th Ave. N.W.

60TH AVE. N.W. RT. STA. 0+433.000
INPL. 32 m RT. 2-1050 mm x 8 m C.M.P.
W/ CONC. BLOCK HEADWALLS
NO CHANGE

℄ CULV STA. 0+503
INPL. 4-1500 mm x 17 m R.C.P.
NO APRONS
REMOVE 68 m

CONST. BRIDGE NO. 55J20
3 - 2235 mm x 23 m R.C. PIPE-ARCH
6 - 2235 mm R.C. PIPE-ARCH ~~SAFETY~~ APRONS
PLACE ON GRANULAR BEDDING SEE SHEET 3

63 m^3 RIPRAP CL. III OUTLET
2 m^3 RIPRAP CL. III INLET
PLACE ON 230 mm GRANULAR BEDDING OR GEOTEXTILE MATERIAL. THIS WORK SHALL BE INCIDENTAL TO RIPRAP.

0+600 0+700 0+800 0+900 1+000 1+

18.288 R/W

18.288 R/W

0+730

0+898

F.E. RT. STA. 0+737
INPL. 375 mm x 10 m C.M.P.
NO APRON
REMOVE 10 m

MOVE
RT. STA. 0+735
NO CULV REQ'D

℄ CULV STA. 0+944.8
INPL. 2-750 mm x 14 m C.M.P.
NO APRONS
REMOVE 28 m

2 - 900 mm x 23 m R.C.P. CULV.
4 - 900 mm R.C.P. APRON OUTLET
2 - 900 mm R.C.P. ~~SAFETY APRON INLET~~ APRONS
PLACE ON CLASS "B" BEDDING. THIS WORK SHALL BE INCIDENTAL TO PIPE.

RES. ENT RT. STA. 0+898
INPL. 375 mm x 10 m C.M.P.
NO APRON
REMOVE 10 m

~~450 mm x 13 m C.S. PIPE CULV.~~
~~2 - 450 mm C.S. PIPE APRON~~

DOUBLE RES. ENT. RT.
STA. 0+903
450mm x 19m C.S. PIPE CULVERT
2-450mm C.S. PIPE APRONS

minnesota metric

NOTE: ALL DIMENSIONS ARE meter, UNLESS OTHERWISE NOTED.

DESIGN SUBGRADE

P.V.C. 0+400
EL. 309.401
-1.200%
P.V.T. 0+620
EL. 308.774
0.800%
P.V.C. 0+650
EL. 308.814
P.I. 0+750
EL. 309.814
V.C. 200.000
E = -0.500
P.V.C. 0+850
EL. 308.259
-1.200%
P.V.T. 0+880
EL. 308.614
P.V.T. 1+020
EL. 308.894
2.200%
P.V.C. 1+185
EL. 310.394

P.I. 0+510
EL. 307.894
V.C. 220.000
E = 0.550

BOP STA. 0+413
EL. = 308.868

INLET EL. 306.364
OUTLET EL. 306.200

P.I. 0+950
EL. 307.414
V.C. 140.000
E = 0.595

INLET EL. 306.442
OUTLET EL. 305.710

AS-BUILT
FEB 21 2001
ENGINEERING

CERTIFIED BY Kevin M Brenner PROFESSIONAL ENGINEER REG. NO. 12917 9/16 19 98

S.A.P. 55-612-14

SHEET 7 OF 29 SHEETS

RES. ENT ~~RT.~~ LT. STA. 1+132
INPL. 375 mm x 10 m C.M.P.
NO APRON
REMOVE 10 m

530 mm x 11 m C.S. PIPE-ARCH
2 – 530 mm G.S. PIPE-ARCH APRON

CSAH 12 STA. 1+208 =
55th AVE. N.W. STA. 10+000

SILT FENCE TO BE LOCATED BY ENGINEER.

F.E. LT. STA. 1+535
NO CULV. INPL.
MOVE

F.E. STA. 1+500
~~450 mm x 10 m C.S. PIPE CULV.~~
~~2 – 450 mm G.S. PIPE APRON~~
NO CULVERT REQUIRED

℄ CULV STA. 1+550
INPL. 2-900 mm x 14 m C.M.P.
NO APRONS
REMOVE 28 m

2 – 900 mm x 23 m R.C.P. CULV.
4 – 900 mm R.C.P. APRON

SILT FENCE TO BE LOCATED BY ENGINEER.

SILT FENCE TO BE LOCATED BY ENGINEER.

RES. ENT RT. STA. 1+387
INPL. 450 mm x 10 m C.M.P.
NO APRON
REMOVE 10 m

600 mm x 12 m C.S. PIPE CULV.
2 – 600 mm G.S. PIPE APRON

F.E. RT. STA. 1+693
INPL. 375 mm x 8 m C.M.P.
NO APRON
REMOVE 8 m

600 mm x 10 m C.S. PIPE CULV.
2 – 600 mm G.S. PIPE APRON

NOTE: SEE SHEET 11 FOR 55th ST. N.W. PLAN & PROFILE.

NOTE: ALL DIMENSIONS ARE meter, UNLESS OTHERWISE NOTED.

P.I. 1+220
EL. 313.354
V.C. 270 m
E = -4.282

2.200%

1.600%

P.V.C. 1+086
EL. 310.384

P.V.C. 1+410
EL. 310.314

P.V.T. 1+354
EL. 311.194

P.I. 1+500
EL. 308.874
V.C. 180
E = 0.855

INLET EL. 308.394
OUTLET EL. 307.935

P.V.T. 1+590
EL. 310.854

2.200%

P.V.C. 1+720
EL. 313.824

1+208

UNCLASSIFIED EXC. 5042 m³
EMBANKMENT 6139 m³

DESIGN SUBGRADE

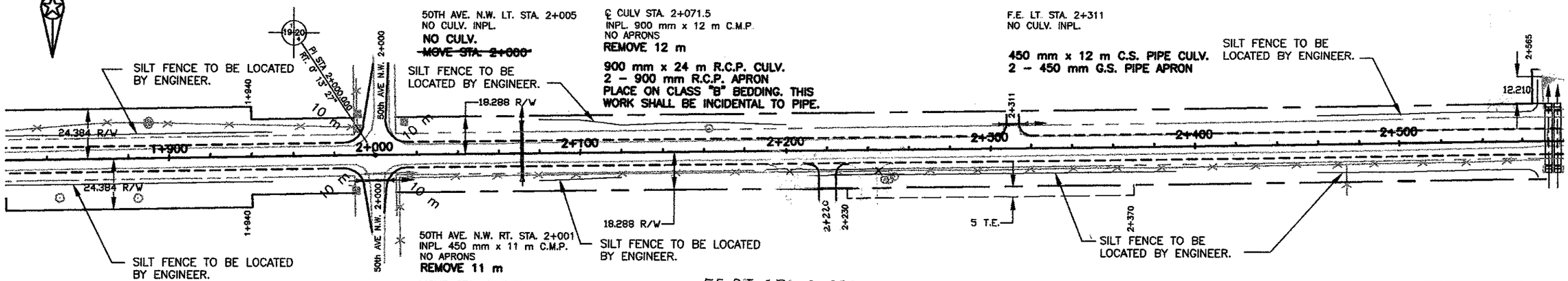
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ENGINEERING

CERTIFIED BY Kevin M Reinitz PROFESSIONAL ENGINEER REG. NO. 19917 9/16 1998

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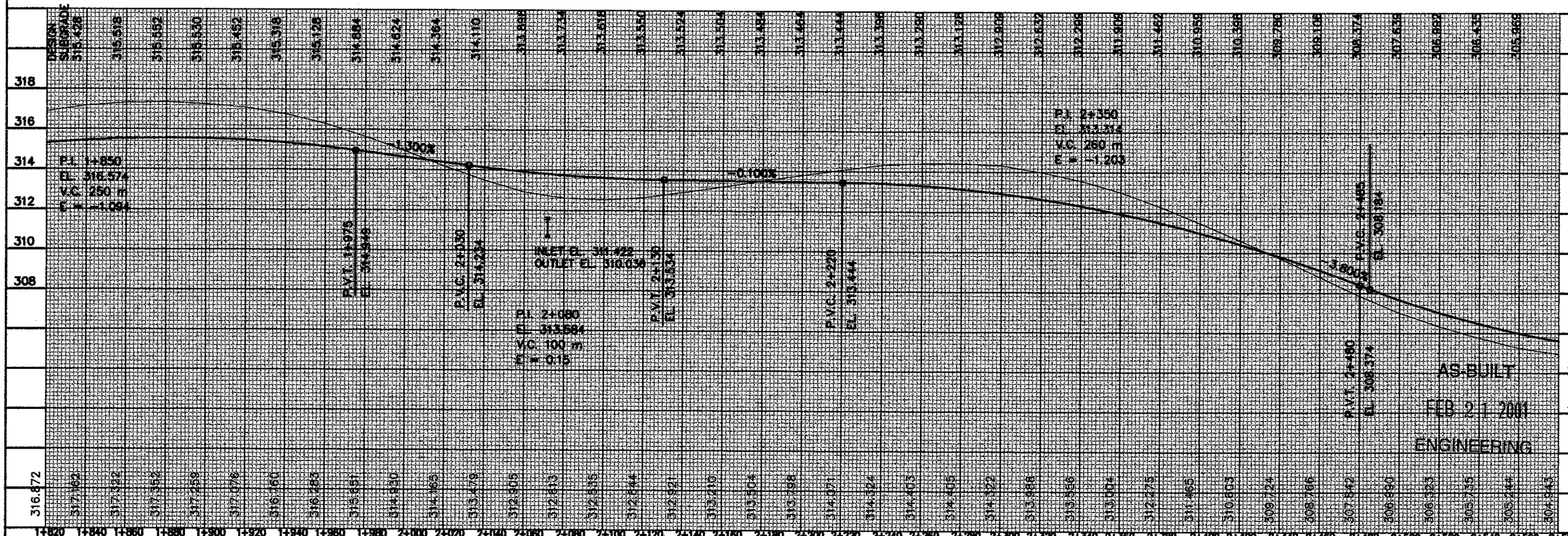
SHEET 8 OF 29 SHEETS

NOTE:
ENTRANCE AT 50TH AVE. NW.
STRAIGHTENED BY COUNTY
FORCES IN 2000



F.E. RT. STA. 2+220
450mm x 13.5m C.S. PIPE CULV.
2-450mm G.S. PIPE APRONS

NOTE: ALL DIMENSIONS ARE meter, UNLESS OTHERWISE NOTED.

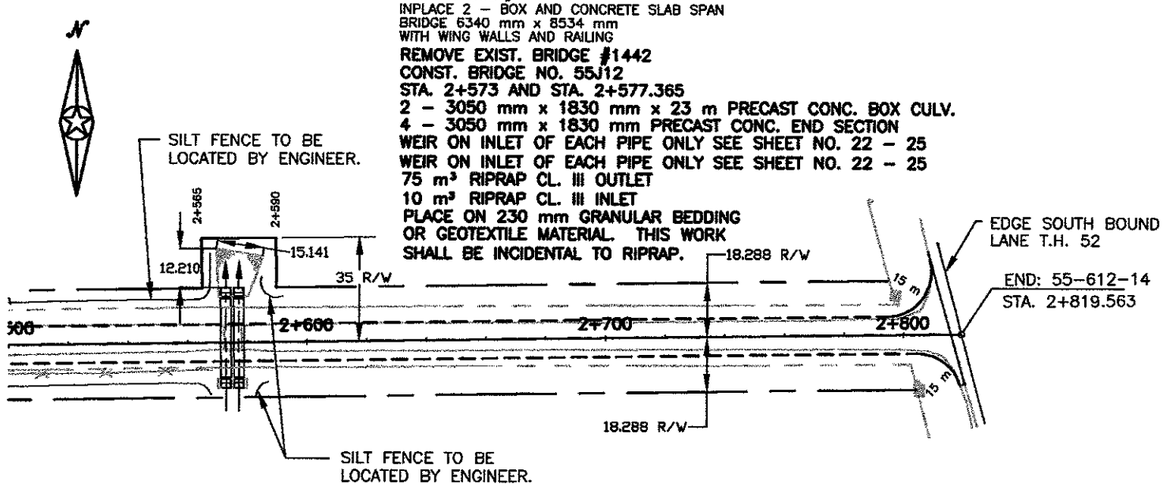


AS-BUILT
FEB 21 2001
ENGINEERING

CERTIFIED BY Kurt M Bauman PROFESSIONAL ENGINEER REG. NO. 19917 9/16 1998

S.A.P. 55-612-14

SHEET 9 OF 29 SHEETS

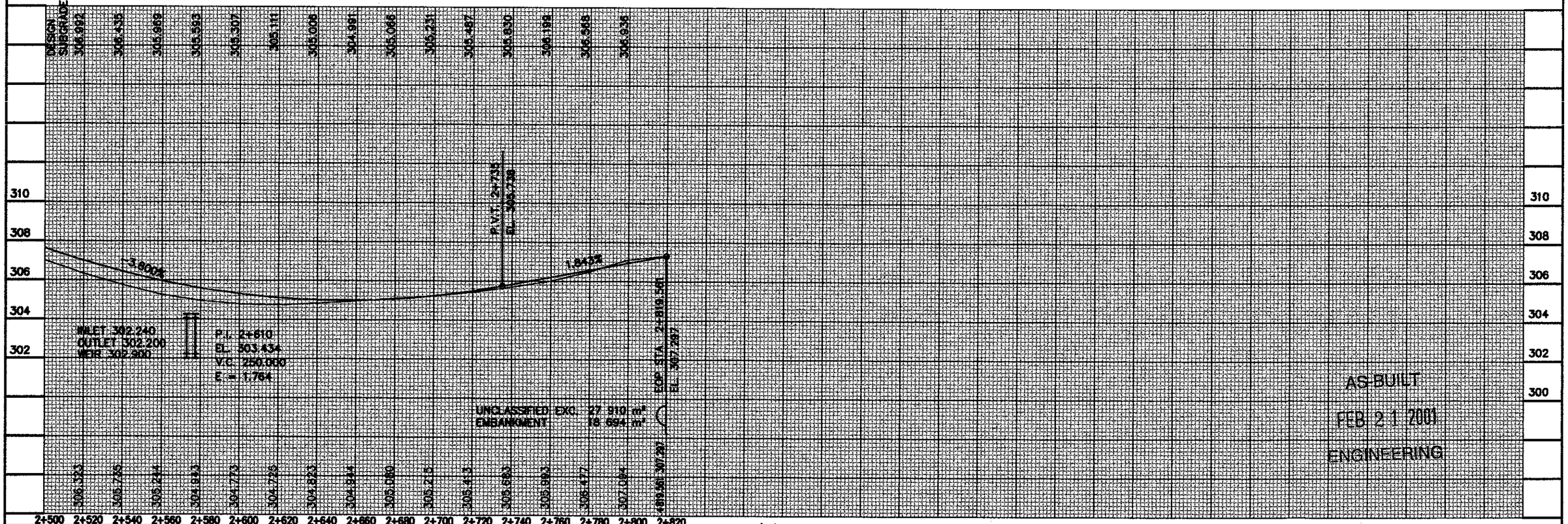


EXIST. BRIDGE #1442 STA. 2+575.093
INPLACE 2 – BOX AND CONCRETE SLAB SPAN
BRIDGE 6340 mm x 8534 mm
WITH WING WALLS AND RAILING

REMOVE EXIST. BRIDGE #1442
CONST. BRIDGE NO. 55J12
STA. 2+573 AND STA. 2+577.365
2 – 3050 mm x 1830 mm x 23 m PRECAST CONC. BOX CULV.
4 – 3050 mm x 1830 mm PRECAST CONC. END SECTION
WEIR ON INLET OF EACH PIPE ONLY SEE SHEET NO. 22 – 25
WEIR ON INLET OF EACH PIPE ONLY SEE SHEET NO. 22 – 25
75 m³ RIPRAP CL. III OUTLET
10 m³ RIPRAP CL. III INLET
PLACE ON 230 mm GRANULAR BEDDING OR GEOTEXTILE MATERIAL. THIS WORK SHALL BE INCIDENTAL TO RIPRAP.

minnesota metric

NOTE: ALL DIMENSIONS ARE meter, UNLESS OTHERWISE NOTED.

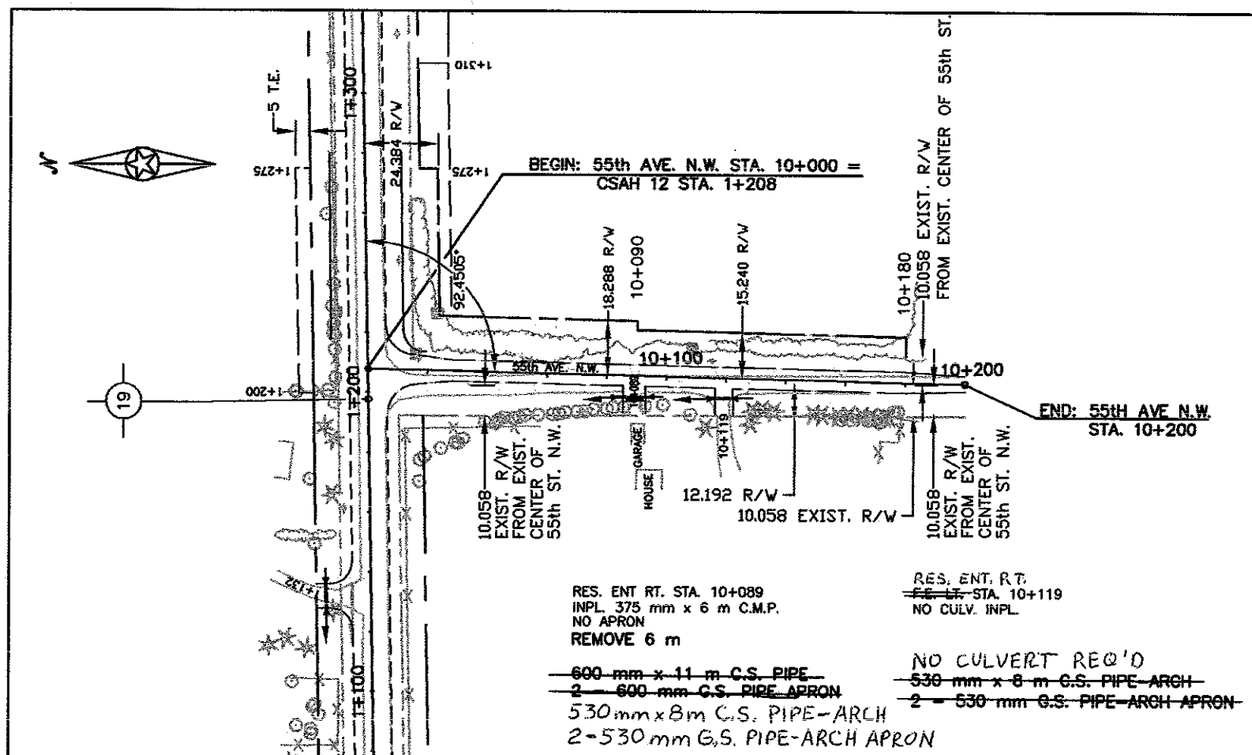


AS BUILT
FEB 21 2001
ENGINEERING

CERTIFIED BY Kaye M Bienieck PROFESSIONAL ENGINEER REG. NO. 19917 9/16 1998

S.A.P. 55-612-14

SHEET 10 OF 29 SHEETS



RES. ENT RT. STA. 10+089
INPL. 375 mm x 6 m C.M.P.
NO APRON
REMOVE 6 m

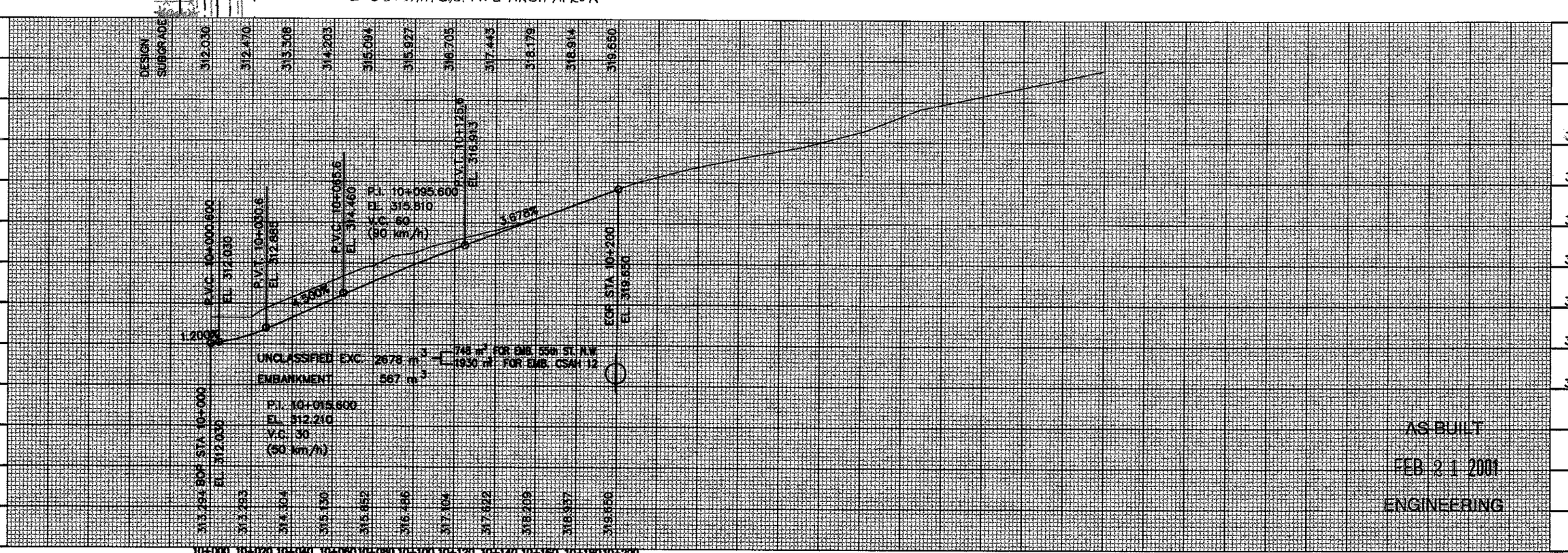
~~600 mm x 11 m C.S. PIPE~~
~~2 — 600 mm C.S. PIPE APRON~~
530mm x 8m C.S. PIPE-ARCH
2-530mm G.S. PIPE-ARCH APRON

RES. ENT. R.T.
~~F.E. LT.~~ STA. 10+119
NO CULV. INPL.

NO CULVERT REQ'D
~~530 mm x 8 m G.S. PIPE-ARCH~~
~~2 — 530 mm G.S. PIPE-ARCH APRON~~

minnesota metric

NOTE: ALL DIMENSIONS ARE meter, UNLESS OTHERWISE NOTED.



AS BUILT
FEB 21 2001
ENGINEERING

CERTIFIED BY Kaye M Bienieki PROFESSIONAL ENGINEER REG. NO. 19917 9/16 1998

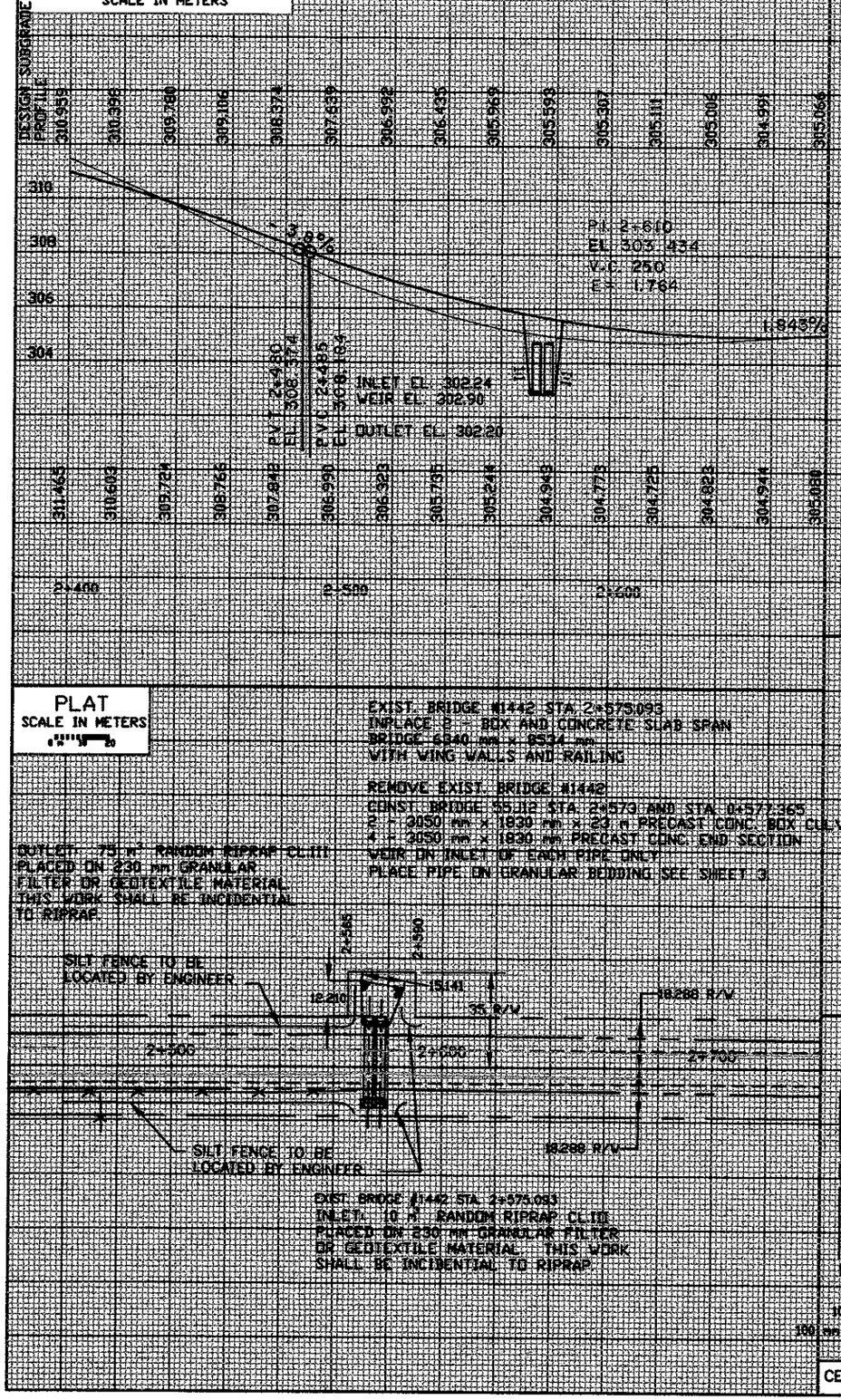
S.A.P. 55-612-14

SHEET 11 OF 29 SHEETS

CONTRACTED PROFILE

HOR. 0 5 10 VER. 0 1 2

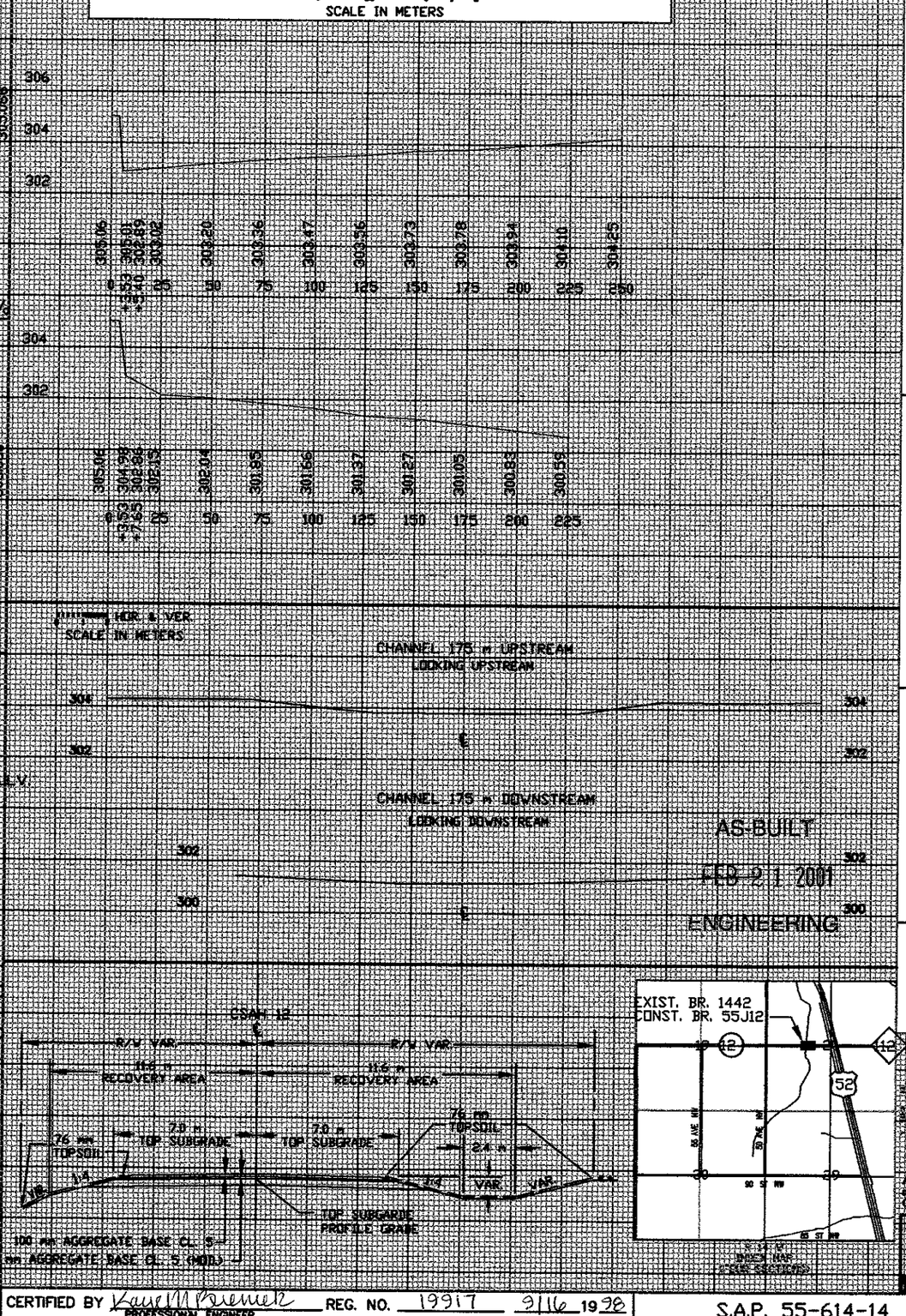
SCALE IN METERS



TYPICAL SECTIONS & PERTINENT DATA

HOR. 0 5 10 VER. 0 1 2

SCALE IN METERS



PLAT

SCALE IN METERS 0 20

EXIST. BRIDGE #1442 STA. 2+575.093
INPLACE 2 - BOX AND CONCRETE SLAB SPAN
BRIDGE 6340 mm x 8534 mm
WITH WING WALLS AND RAILING

REMOVE EXIST. BRIDGE #1442

CONST. BRIDGE 55J12 STA. 2+573 AND STA. 0+577.365
2 - 3050 mm x 1830 mm x 23 m PRECAST CONC. BOX CULV.
4 - 3050 mm x 1830 mm PRECAST CONC. END SECTION
WEIR ON INLET OF EACH PIPE ONLY
PLACE PIPE ON GRANULAR BEDDING SEE SHEET 3

OUTLET: 75 m³ RANDOM RIPRAP CL.III
PLACED ON 230 mm GRANULAR
FILTER OR GEOTEXTILE MATERIAL
THIS WORK SHALL BE INCIDENTAL
TO RIPRAP

SILT FENCE TO BE
LOCATED BY ENGINEER

EXIST. BRIDGE #1442 STA. 2+575.093
INLET: 10 m³ RANDOM RIPRAP CL.III
PLACED ON 230 mm GRANULAR FILTER
OR GEOTEXTILE MATERIAL. THIS WORK
SHALL BE INCIDENTAL TO RIPRAP

ALL DIMENSIONS ARE METRIC UNLESS OTHERWISE NOTED.

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 4/9/97

Stream or ditch designation UNNAMED
Drainage area 199 km² 1.99
Max. flood on record UNKNOWN Design flood (100 yr. freq.) 24.49 m³/s
Max. observed highwater elevation UNKNOWN Design highwater elevation 304.50
Design mean velocity through structure 2.80 m/s
Low superstructure at or above elevation N.A.
Floating 302.20 Skew angle _____
Waterway area req'd. below elevation _____ = _____ Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (500 yr. freq.) is 26.20 m³/s at stage 304.50 and mean velocity of 2.88 m/s with 0.83 m freeboard. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

FOUNDATION ENGINEERS RECOMMENDATION
DATE _____

Bridge survey sheets made from _____

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

AS-BUILT

FEB 21 2001

ENGINEERING

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT kilometer POINT 5.3107 ON C.S.A.H. 12 (T.H., C.S.A.H., C.R. etc.)
PROPOSED BRIDGE LOCATED 0.32 km WEST OF T.H. 52
SEC. 20 TWP. 108 R. 14W
TOWNSHIP ORONOCO COUNTY OLMSTED
BRIDGE NO. 55J12

CERTIFIED BY Kaye M Bruemmer PROFESSIONAL ENGINEER REG. NO. 19917 9/16 1998

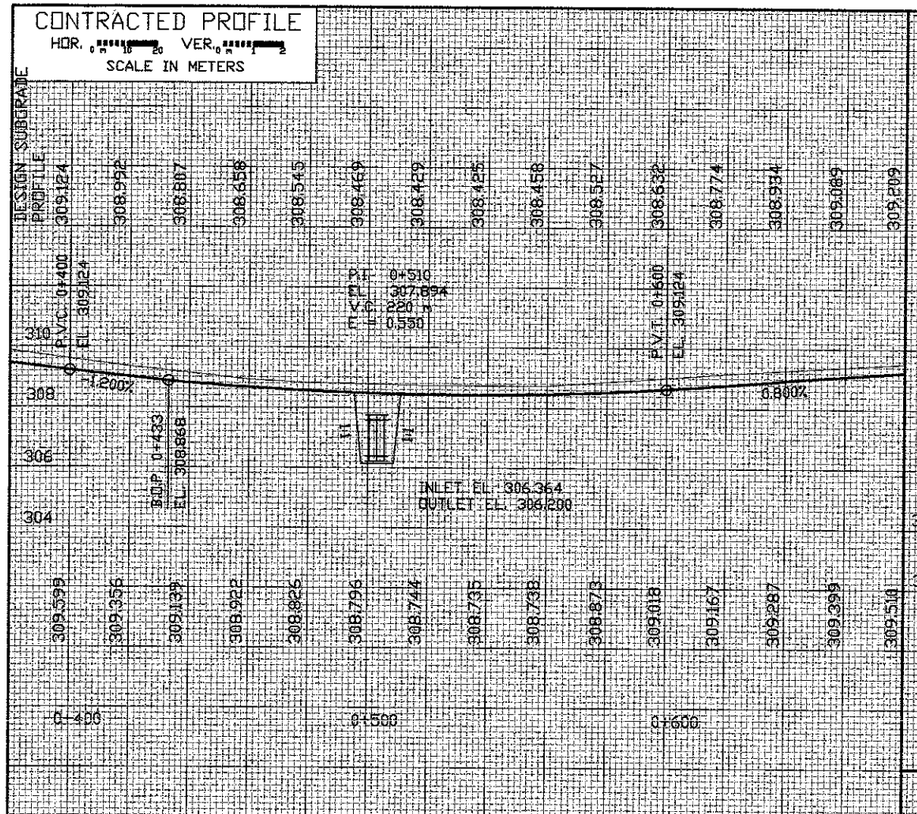
S.A.P. 55-614-14

Sheet No. 24 of 29 Sheets

CONTRACTED PROFILE

HOR. 0 5 10 20 VER. 0 1 2

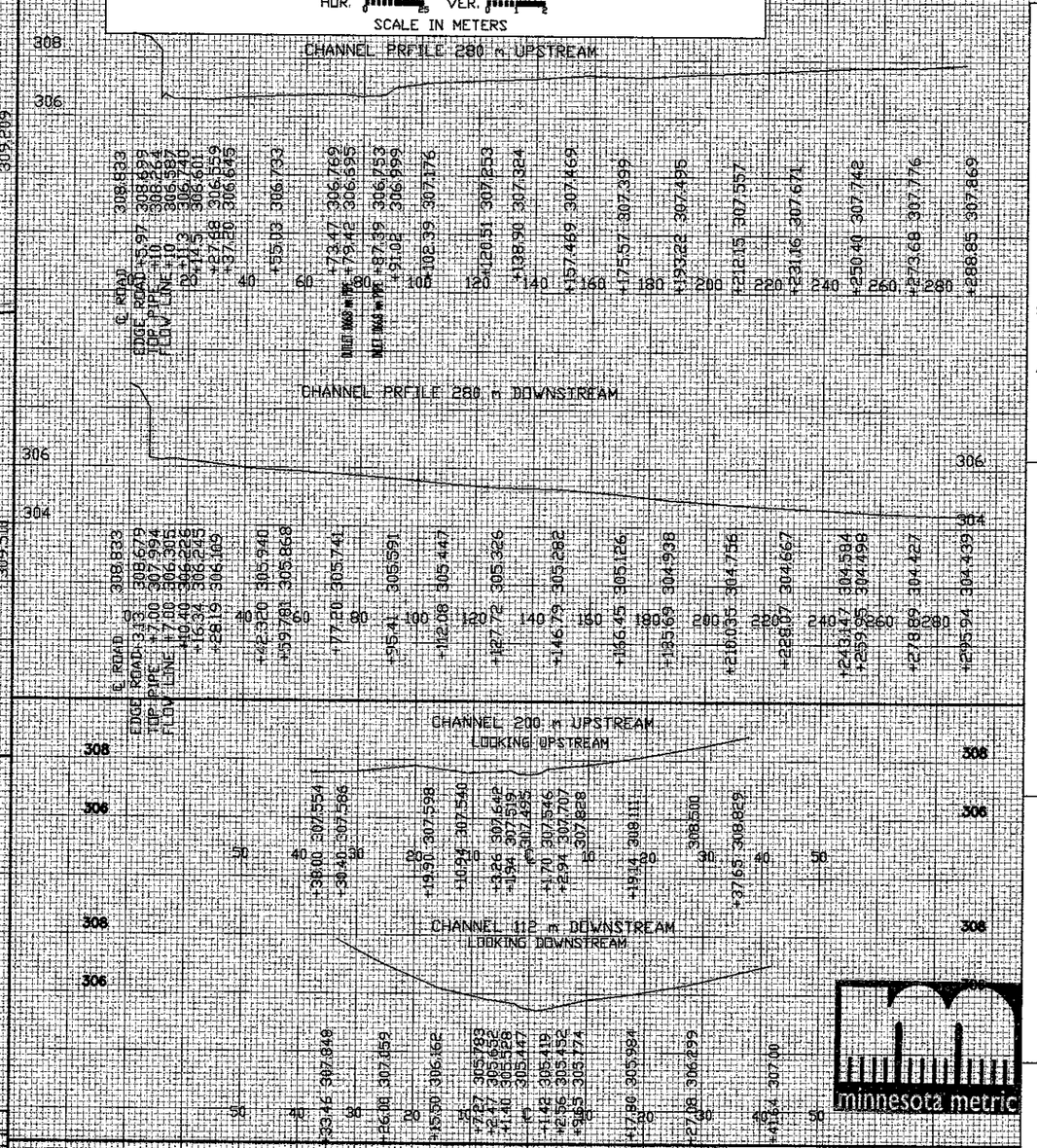
SCALE IN METERS



TYPICAL SECTIONS & PERTINENT DATA

HOR. 0 25 VER. 0 2

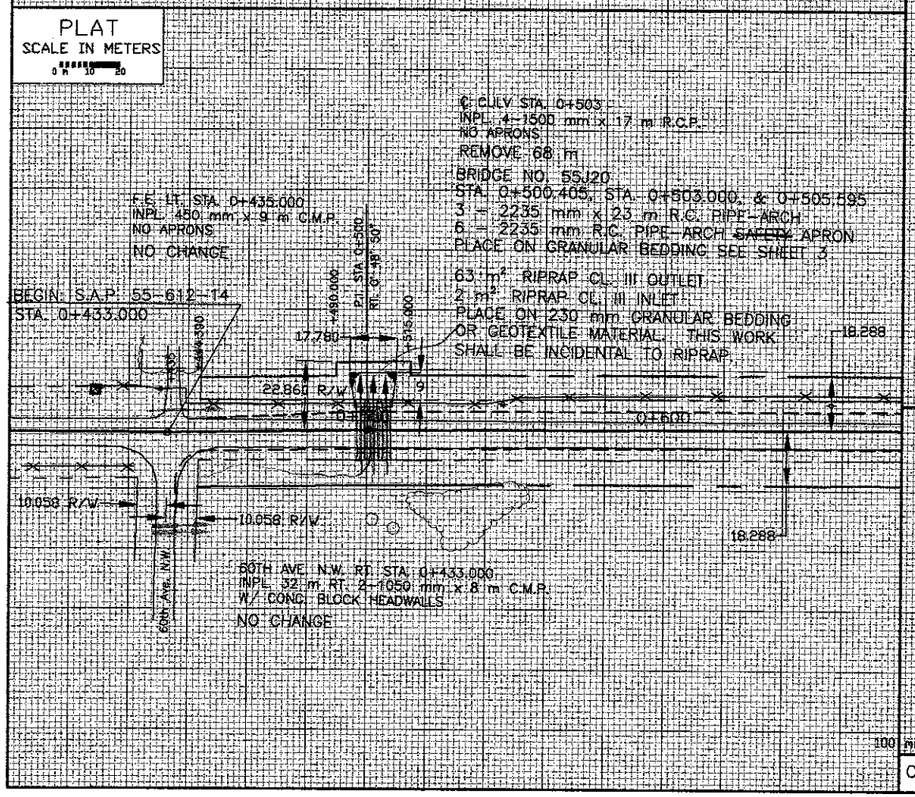
SCALE IN METERS

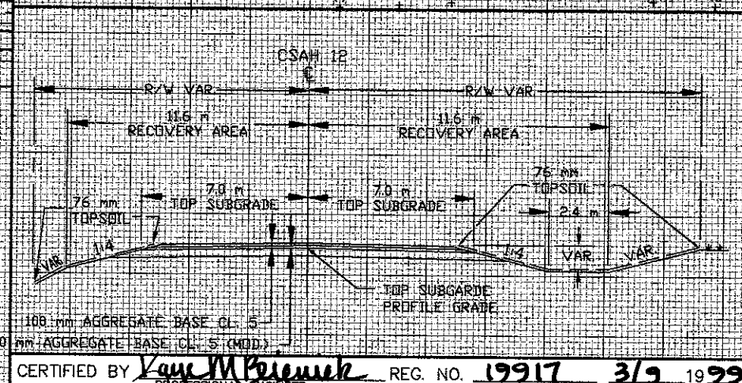


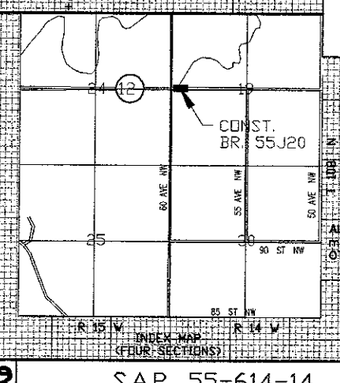
PLAT

SCALE IN METERS

0 5 10 20







ALL DIMENSIONS ARE METER UNLESS OTHERWISE NOTED.

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 the of survey _____

HYDRAULIC ENGINEERS RECOMMENDATION

DATE 2/23/99

1.6

Stream or ditch designation UNNAMED

Drainage area 4.22 sq. km

Max. flood on record UNKNOWN Design flood (70 yr. freq.) 25.485 m³/s

Max. observed highwater elevation UNKNOWN Design highwater elevation 339.242

Design mean velocity through structure 3.566 (rprap outlet)

Low superstructure at or above elevation 307.57

Flowline 306.2 Skew angle _____

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 26.960 m³/s at stage 308.764 and mean velocity of 3.749 m/s with 1.42 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 _____

AS-BUILT

FEB 21 2001

ENGINEERING

Bridge survey sheets made from _____

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

Location _____

minnesota metric

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT kRometer POINT 3.2387 ON C.S.A.H. 12 (T.H., C.S.A.H., C.R. etc.)

PROPOSED BRIDGE LOCATED 2.3 km WEST OF T.H. 52

SEC. 20 TWP. 108 R 14W

TOWNSHIP ORONOCO COUNTY OLMSTED

BRIDGE NO. 55J20

CERTIFIED BY Kaye M Briesach PROFESSIONAL ENGINEER REG. NO. 19917 3/9 1999

S.A.P. 55-614-14

Sheet No. 24A of 29 Sheets