MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING AND AGGREGATE BASE

LOCATED ON C.S.A.H. 5 **BETWEEN** BYRON **AND** WEST COUNTY LINE **(GEOGRAPHIC DESCRIPTION)**

FROM 47.98' SO. CEN. SEC. 29 T107N – R15W **TO** 670.96' SO. W.1/4 COR. SEC. 7 T.107N.-R15W. **(LEGAL DESCRIPTION)**

STATE AID PROJ. NO. 20-616-06

GROSS LENGTH	900.0	FEET	0.170 MILES
BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	900.0	FEET	0.170 MILES

STATE PROJ. NO. SP 55-605-05

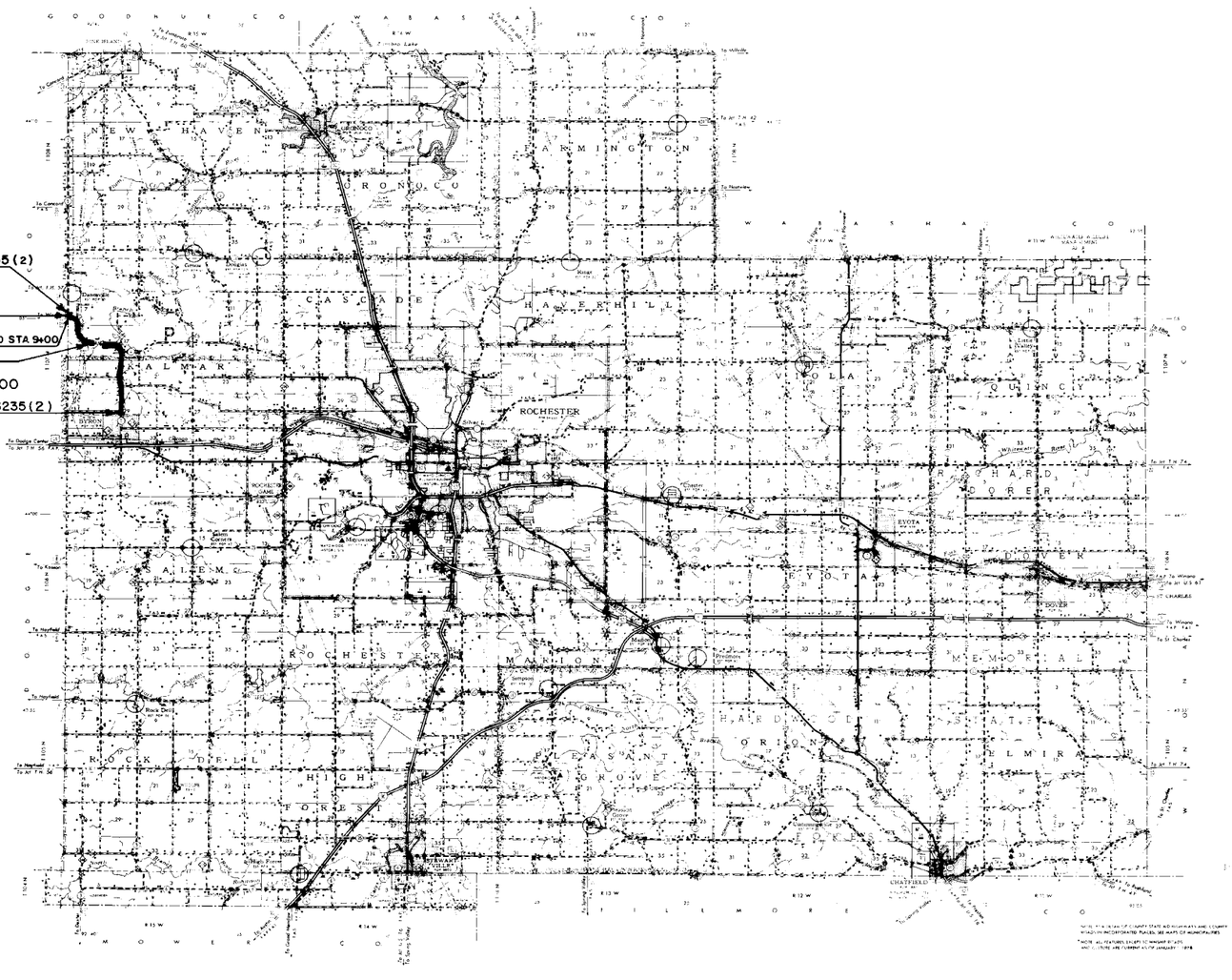
GROSS LENGTH	20916.26	FEET	3.961 MILES
BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH	2900.00	FEET	0.549 MILES
NET LENGTH	18016.26	FEET	3.412 MILES

PLANS 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 LINE
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
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 C.B.
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)
ADDEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY
SLOPE EASEMENT SE

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN G — G
WATER MAIN W — W
CONDUIT
TELEPHONE CABLE IN CONDUIT T
ELECTRIC CABLE IN CONDUIT P
TELEPHONE MANHOLE T
ELECTRIC MANHOLE P
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE



END : S.P 55-605-05 RS 6235(2) STA. 235+00

EQUATION STA. 232+38.76 = STA. 232+41.19

SAP 20-616-06 STA 0+00 TO STA 9+00

EXCEPTION STA. 177+00 STA. 148+00.0

EQUATION 174+43.62 = 148+00

BEGIN : S.P 55-605-05 RS 6235(2) STA. 52+29.79

SCALES

PLAN 100 FEET

PROFILE 100 FEET HORZ. & 10 FEET VERT.

INDEX MAP 10,560 FEET

CROSS SECTION 10 FEET

MINN. PROJ. NO. RS 6235 (2)

SPECIFICATIONS REFERENCE

The 1978 Edition of the Minnesota Department of Transportation "Standard Specifications For Highway Construction" Shall Govern.

INDEX

SHEET	NO. 1	TITLE SHEET & LAYOUT MAP.
"	NO. 2 & 3	ESTIMATE OF QUANTITIES & TYPICAL SECTIONS.
"	NO. 4 TO 11	PLAN & PROFILE SHEETS.
"	NO. 12 TO 58	X-SECTIONS SHEETS.
"	NO. 59	PLAN, PROFILE & X-SECTIONS OF APPROACH RIGHT STA. 113+00.

DESIGN DESIGNATION STA. 52+29.79 TO STA. 145+50.

ADT (CURRENT YEAR) =	779	DESIGN SPEED	50 MPH
ADT (FUTURE YEAR) =	1246	BASED ON	STOPPING SIGHT DIS.
T (HEAVY COMMERCIAL) =	15%	HEIGHT OF EYE	3.75'
SOIL FACTOR =	130	HEIGHT OF OBJECT	0.5'

FUTURE 9 TON DESIGN.

DESIGN DESIGNATION STA. 145+50 TO STA. 235+00

R

$\Sigma N18_{(20)}$

ADT (Current Year)	=	358	Design Speed 55 MPH
ADT (Future Year)	=	573	Based on STOPPING Sight Distance
DHV (Design Hr. Vol.)	=		Height of eye 3.75' Height of object 0.5'
D (Directional Distr.)	=	%	Design Speed not achieved at:
T (Heavy Commercial)	=	15 %	STA. TO STA. MPH
SOIL FACTOR		130	STA. TO STA. MPH
FUTURE 9 TON DESIGN			STA. TO STA. MPH

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 8-30-79 REG. NO. 10219 ENGR. J.K. Odlaw

COUNTY Olmsted

Recommended for Approval _____ 8-30 1979
DISTRICT STATE AID ENGINEER

Recommended for Approval Delbert O. Ofstedal 11-20-1979
STATE AID PLANS AND SPECS ENGINEER

Approved 11/20 1979 _____
STATE AID ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

STATE AID PROJ. NO. 20-616-06
STATE PROJ. NO. 55-605-05 **SHEET NO.** 1 **OF** 59 **SHEETS**

STATE AID TITLE SHEET 5-77 ALMINSON MPLS 55405

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	DODGE CO. NON PART. SAP 20-616-06	OLMSTED CO. PART. SP 55-605-05	TOTAL ESTIMATED QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	0.03	0.97	1
	2101.501	CLEARING	ACRE		0.15	0.15
	2101.502	CLEARING	TREE		188	188
	2101.506	GRUBBING	ACRE		0.15	0.15
	2101.507	GRUBBING	TREE		166	166
	2104.501	REMOVE PIPE CULVERTS	LIN. FT.	34	1063	1097
①	2104.509	REMOVE BOX CULVERT	EACH		4	4
	2104.501	REMOVE C.M. CATTLE PASS	LIN. FT.		52	52
	2105.501	COMMON EXCAVATION	CU. YD.	5,574 (P)	199,632 (P)	205,206 (P)
	2105.503	ROCK EXCAVATION	CU. YD.		294	294
	2105.507	SUBGRADE EXCAVATION	CU. YD.	1,271	20,317	21,588
	2105.511	COMMON CHANNEL EXCAVATION	CU. YD.		2,813 (P)	2,813 (P)
②	2123.501	COMMON LABORERS	HOUR		8	8
②	2123.503	MOTOR GRADER	HOUR		16	16
②	2123.508	14 CU. YD. SCAPER	HOUR		48	48
②	2123.509	DOZER	HOUR		48	48
③	2130.501	WATER	M-GAL.		100	100
④	2211.501	AGGREGATE BASE, CLASS 2	TON	1,177	25,267	26,444
	2451.509	AGGREGATE BEDDING (CV)	CU. YD.		685(P)	685(P)
	2501.511	18" C.S. PIPE CULVERT	LIN. FT.	28	508	536
	2501.511	24" C.S. PIPE CULVERT	LIN. FT.		230	230
	2501.511	30" C.S. PIPE CULVERT	LIN. FT.		28	28
	2501.511	24" R.C. PIPE CULV. CL. II	LIN. FT.	78	244	322
	2501.511	30" R.C. PIPE CULV. CL. II	LIN. FT.		212	212
	2501.511	30" R.C. PIPE CULV. CL. IV	LIN. FT.		126	126
	2501.511	42 R.C. PIPE CULV. CL. II	LIN. FT.		96	96
	2501.511	42" R.C. PIPE CULV. CL. IV	LIN. FT.		270	270
	2501.515	18" G.S. PIPE APRONS	EACH	2	34	36
	2501.515	24" G.S. PIPE APRONS	EACH		14	14
	2501.515	30" G.S. PIPE APRONS	EACH		2	2
	2501.515	24" R.C. PIPE APRONS	EACH	2	6	8
	2501.515	30" R.C. PIPE APRONS	EACH		6	6
	2501.515	42" R.C. PIPE APRONS	EACH		6	6
	2501.521	50" SPAN C.S. PIPE-ARCH CULV.	LIN. FT.		32	32
	2501.521	122" SPAN R.C. PIPE-ARCH CULV. CL. II A	LIN. FT.		160	160
	2501.521	138" SPAN R.C. PIPE-ARCH CULV. CL. II A	LIN. FT.		105	105
	2501.551	138" C.S. STRUCTURAL PLATE PIPE CULVERT 10 GAUGE	LIN. FT.		252	252
	2501.525	50" SPAN G.S. PIPE-ARCH APRONS	EACH		2	2
	2501.525	122" SPAN R.C. PIPE-ARCH APRONS	EACH		4	4
	2501.525	138" SPAN R.C. PIPE-ARCH APRONS	EACH		2	2
	2501.541	72" HIGH R.C. CATTLE PASS CULVERT	LIN. FT.		154	154
	2501.545	72" HIGH R.C. CATTLE PASS APRONS	EACH		4	4
	2511.501	RANDOM RIP RAP CLASS "A"	CU. YD.		301	301
	2511.504	FILTER BLANKET TYPE I	CU. YD.		151	151

① W 86 D x 33.5' CONC. BOX CULV. STA. 69+21, W 106 x 44' CONC. BOX CULV STA. 105+19, W 46 x 46' CONC. BOX CULV. STA. 111+55 AND W 46 x 34' CONC. BOX CULV. STA. 149+76

② EQUIPMENT HOURS TO BE USED FOR OBLITERATING OLD ROAD AT LOCATIONS SHOWN IN THE PLANS.

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

④ ITEM NO. 2211.501 AGGREGATE BASE CLASS 2 INCLUDES 24,511 TONS FOR THE ROAD AND 1,683 TONS FOR 35 APPROACHS AND 250 TONS FOR 5 PUBLIC ROAD APPROACHS.

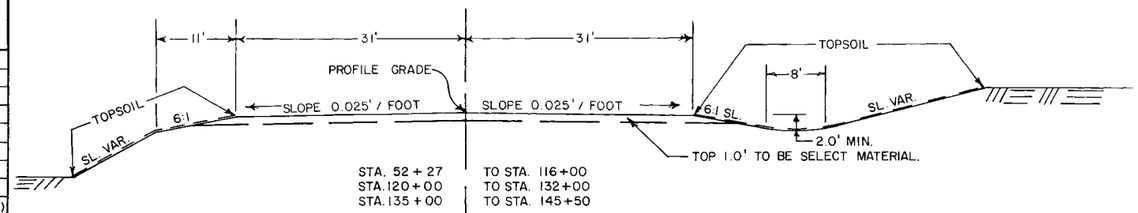
STANDARD PLATES

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

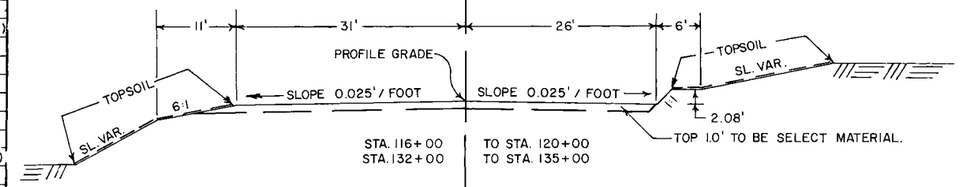
PLATE NO	DESCRIPTION
0003 A	SPECIFICATION REFERANCE TO STANDARD PLATES
3000 H	REINFORCED CONCRETE PIPE.
3014 H	REINFORCED CONCRETE PIPE ARCH DETAIL.
3020 F	REINFORCED PRECAST CONCRETE CATTLE PASS.
3040 F	CORRUGATED METAL PIPE CULVERT.
3100 F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3114 G	SECTIONAL CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH.
3122 H	METAL APRON FOR C.M. PIPE-ARCH CULVERT.
3123 H	METAL APRON FOR C.M. PIPE.
3124 A	METAL APRON CONNECTION.
3133 A	RIPRAP AT RCP OUTLETS.
3145 A	CONCRETE PIPE JOINT TIES. (EYE BOLT)
3221 A	CORRUGATED STEEL PIPE COUPLING BAND.
8000 F	STANDARD BARRICADES.
9000 B	APPROACHES AND ENTRANCES.
3054 A	LENGTH COMPUTATION DATA STRUCTURAL PLATE PIPE & PIPE-ARCH.
3007 A	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES

TYPICAL GRADING SECTIONS

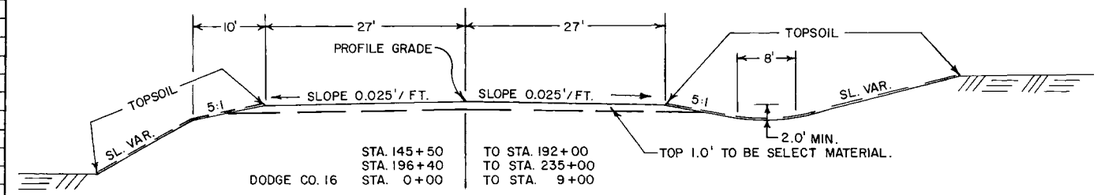
FED PROJ. NO. RS 6235 ( )



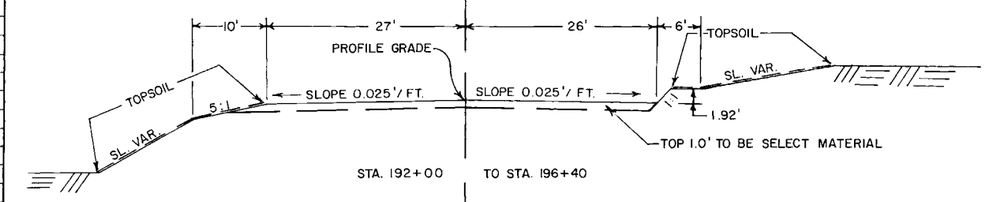
STA. 52 + 27 TO STA. 116+00
STA. 120+00 TO STA. 132+00
STA. 135 + 00 TO STA. 145+50



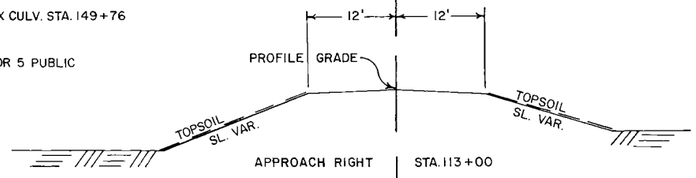
STA. 116+00 TO STA. 120+00
STA. 132+00 TO STA. 135+00



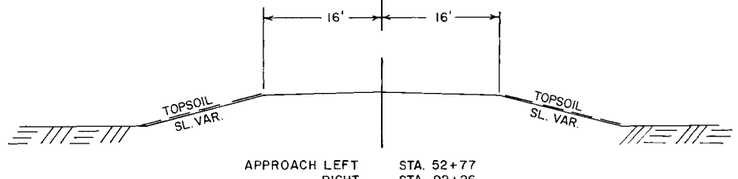
STA. 145+50 TO STA. 192+00
STA. 196+40 TO STA. 235+00
DODGE CO. 16 STA. 0+00 TO STA. 9+00



STA. 192+00 TO STA. 196+40



APPROACH RIGHT STA. 113+00



APPROACH LEFT STA. 52+77
RIGHT STA. 92+26
LEFT STA. 105+71
RIGHT STA. 213+00

NOTE: MATERIAL FROM THE UPPER 1.0' OF THE NATURAL TOP SOIL SHALL NOT BE USED IN THE UPPER 1.0' OF THE ROADBED. PART OF THIS MATERIAL SHALL BE UNIFORMLY SPREAD ON SLOPES AND DITCH BOTTOMS TO A DEPTH OF 3". NO PAYMENT IN ADDITION TO THE CONTRACT PRICE FOR COMMON EXCAVATION WILL BE MADE FOR SPREADING THE TOPSOIL AS ABOVE PROVIDED, NOR WILL ANY UNDERCUTTING MADE IN EXCAVATION PRIOR TO PLACING THE TOPSOIL BE MEASURED FOR PAYMENT.

NOTE: CORRUGATED STEEL AND REINFORCED CONCRETE PIPE CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL, AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR "PIPE CULVERT."

NOTE: SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE FOR COMPACTION, AS SHOWN ON THE PLAN AND PROFILE SHEETS. EXCAVATION HAS BEEN COMPUTED AND IS LISTED AS SUBGRADE EXCAVATION. BACKFILL WITH SELECT MATERIAL FROM R/W. TAPERS SHALL BE 50:1 IN ALL CASES.

NOTE: PLACE SECTIONAL CONCRETE PIPE ON BEDDING AS SHOWN IN THE PLAN OR DIRECTED BY THE ENGINEER. ALL CLASS "B" AND "C" BEDDING TO BE CONSIDERED AS INCIDENTAL AND NO DIRECT COMPENSATION SHALL BE MADE THEREFOR.

NOTE: ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTIONS ARE APPROXIMATE.

ALBINSON, INC. MINNEAPOLIS, MINN.

ESTIMATED QUANTITIES

SPECIFICATION NO.	ITEM	UNIT	DODGE CO NON-PART. SAP 20-616-06	OLMSTED CO PART. SP 55-605-05	TOTAL ESTIMATED QUANTITIES
2575.501	ROADSIDE SEEDING	ACRE	1 (P)	44 (P)	45 (P)
2575.502	SEED MIXTURE 5	POUND	50	2200	2250
2575.511	MULCH MATERIAL, TYPE 1	TON	2	88	90
2575.519	DISC ANCHORING	ACRE	1 (P)	44 (P)	45 (P)
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON		4.4	4.4

(P) PLAN QUANTITY.

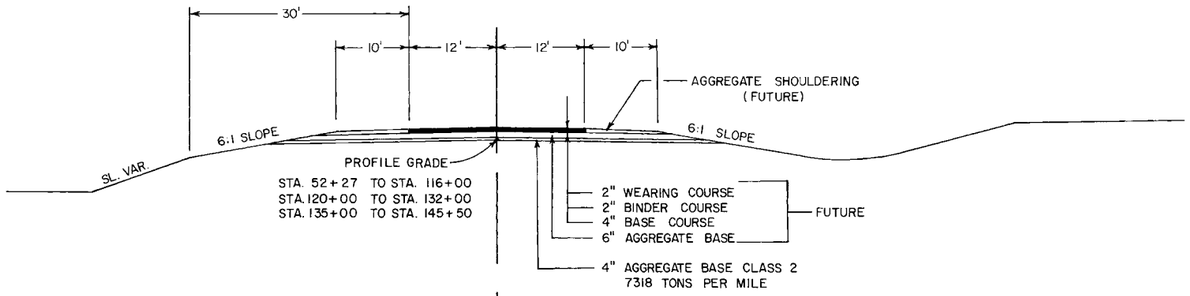
STANDARD PLATES

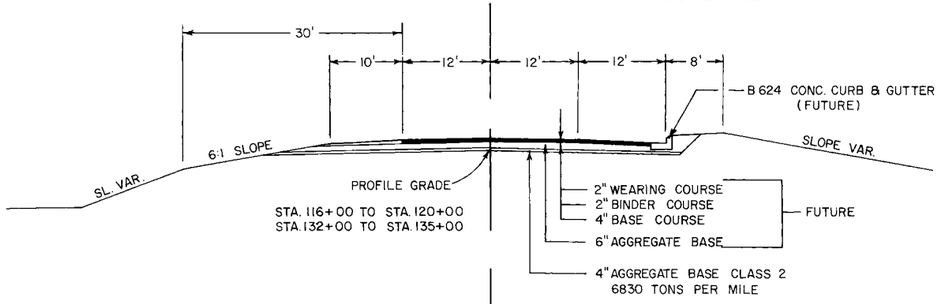
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

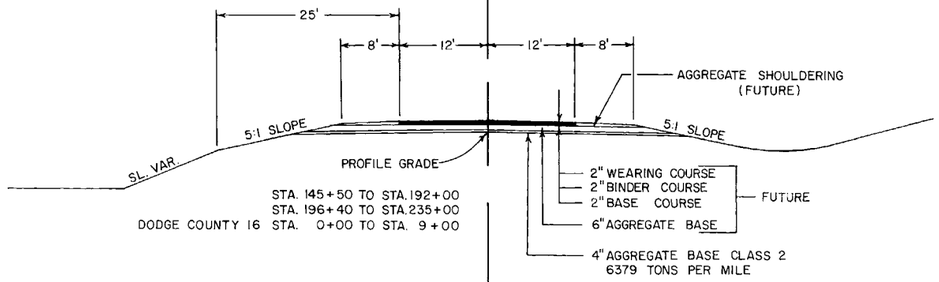
PLATE NO	DESCRIPTION

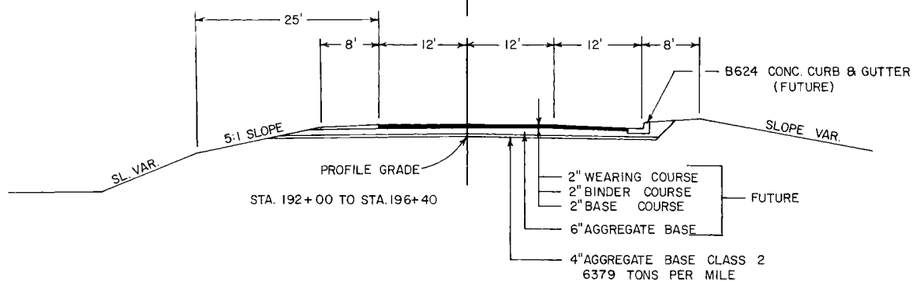
TYPICAL AGGREGATE BASE AND SURFACING SECTIONS

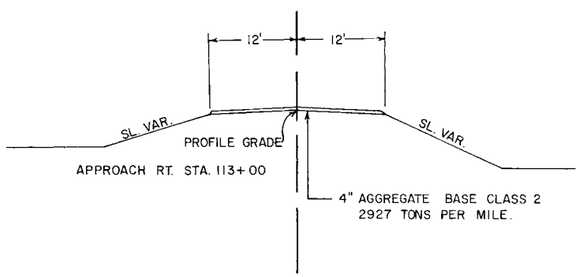
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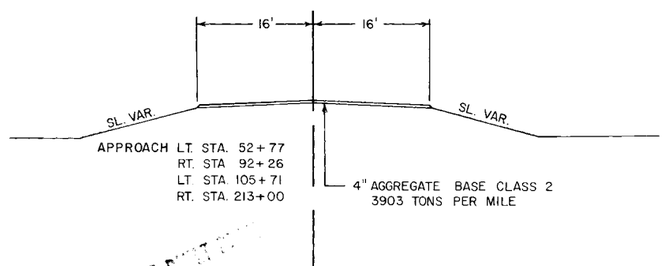












S. A. P. 20-616-06

OLMSTED COUNTY **State Proj. No.** 55-605-05 C.S.A.H. 5 **Sheet No.** 3 **of** 59 **Sheets**

RES. DR. LT. 40+44
NO INPL. CULV.
NO CHANGE

RES. DR. LT. 45+41
INPL. 18" x 32' CMP.
NO CHANGE

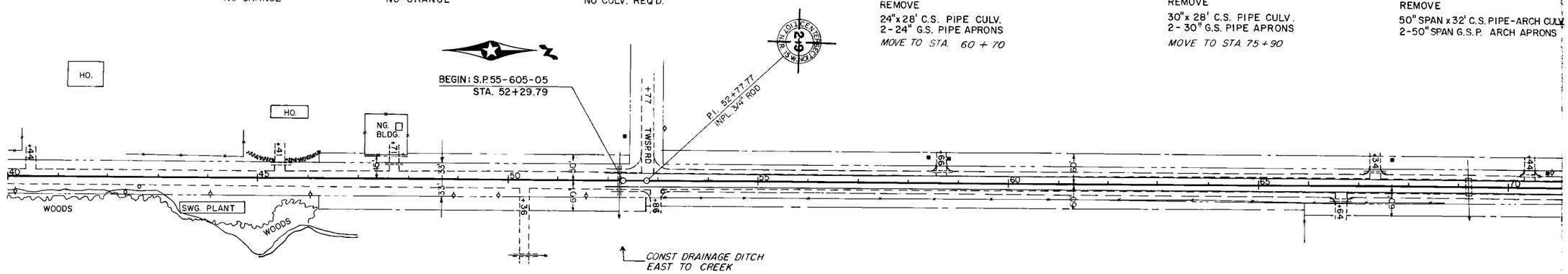
NG. ENT. LT. 47+71
INPL. 18" x 26' CMP.
NO CHANGE

TWSP. RD. LT. 52+77
NO CULV. INPL.
NO CULV. REQ'D.

F.E. LT. 58+66
INPL. 18" x 24' CMP.
REMOVE
24" x 28' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS
MOVE TO STA. 60+70

F.E. LT. 67+34
INPL. 18" x 26' CMP.
REMOVE
30" x 28' C.S. PIPE CULV.
2-30" G.S. PIPE APRONS
MOVE TO STA. 75+90

RES. DR. LT. 70+44
INPL. 24" x 26' CMP.
REMOVE
50" SPAN x 32' C.S. PIPE-ARCH CULV.
2-50" SPAN G.S.P. ARCH APRONS



RES. DR. RT. 50+36
INPL. 48" x 24" CMP.
NO CHANGE

℄ CULV. 52+26
INPL. 24" x 58" CSP. W/A
NO CHANGE

F.E. RT. 52+86
NO CULV. INPL.
NO CULV. REQ'D.

F.E. RT. 66+64
INPL. 15" x 26' CMP.
REMOVE
18" x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ CULV. 69+21
INPL. W 86'D x 33.5' CONCRETE BOX CULVERT
REMOVE BOX CULV.

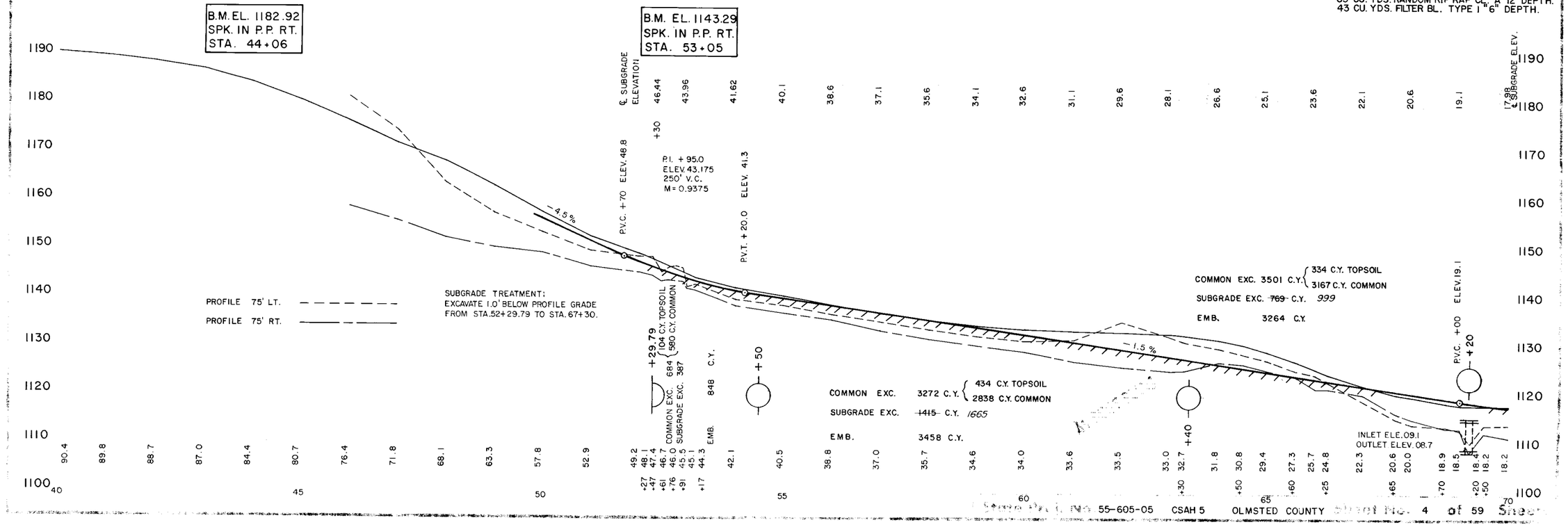
CONST. ℄ CULV. STA. 69+13.6
122" SPAN x 80' R.C.P. ARCH CULV. CL. IIA
2-122" SPAN R.C.P. ARCH APRONS

CONST. ℄ CULV. STA. 69+28.27
122" SPAN x 80' R.C.P.A. CULV. CL. IIA
2-122" SPAN R.C.P.A. APRONS

PLACE CULVERTS ON AGGREGATE BEDDING
369 CU. YDS. (CV)
F & I. APPROVED JOINT TIES.
85 CU. YDS. RANDOM RIP RAP CL. "A" 12" DEPTH.
43 CU. YDS. FILTER BL. TYPE I 6" DEPTH.

VERTICAL CONTROL

ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA-LEVEL DATUM, 1929 ADJ. AND TIED TO TO THE U.S. LEVEL NET.
LOCATION NEAR THE RAILWAY STATION AT BYRON MN.
B.M. NO. D24 ELEV. 1261.845



RES. DR. LT. 40+44
NO INPL. CULV.
NO CHANGE

RES. DR. LT. 45+41
INPL. 18" x 32' CMP.
NO CHANGE

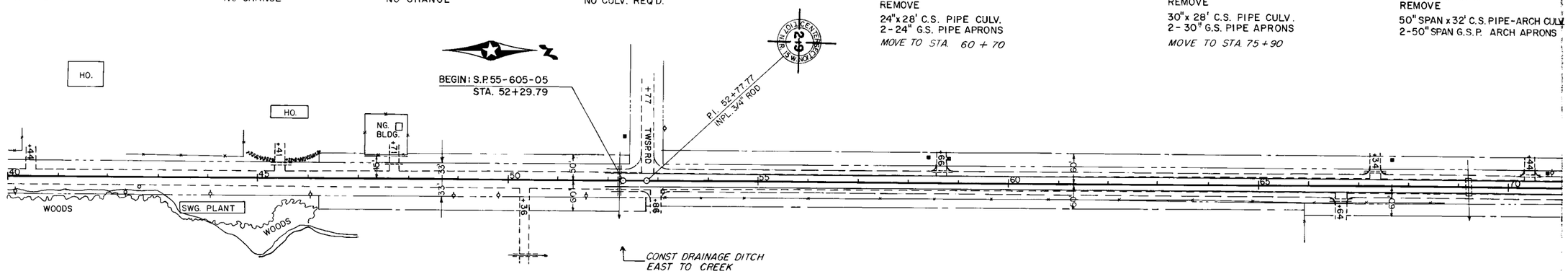
NG. ENT. LT. 47+71
INPL. 18" x 26' CMP.
NO CHANGE

TWSP. RD. LT. 52+77
NO CULV. INPL.
NO CULV. REQ'D.

F.E. LT. 58+66
INPL. 18" x 24' CMP.
REMOVE
24" x 28' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS
MOVE TO STA. 60+70

F.E. LT. 67+34
INPL. 18" x 26' CMP.
REMOVE
30" x 28' C.S. PIPE CULV.
2-30" G.S. PIPE APRONS
MOVE TO STA. 75+90

RES. DR. LT. 70+44
INPL. 24" x 26' CMP.
REMOVE
50" SPAN x 32' C.S. PIPE-ARCH CULV.
2-50" SPAN G.S.P. ARCH APRONS



RES. DR. RT. 50+36
INPL. 48" x 24" CMP.
NO CHANGE

℄ CULV. 52+26
INPL. 24" x 58" CSP. W/A
NO CHANGE

F.E. RT. 52+86
NO CULV. INPL.
NO CULV. REQ'D.

F.E. RT. 66+64
INPL. 15" x 26' CMP.
REMOVE
18" x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ CULV. 69+21
INPL. W 86'D x 33.5' CONCRETE BOX CULVERT
REMOVE BOX CULV.

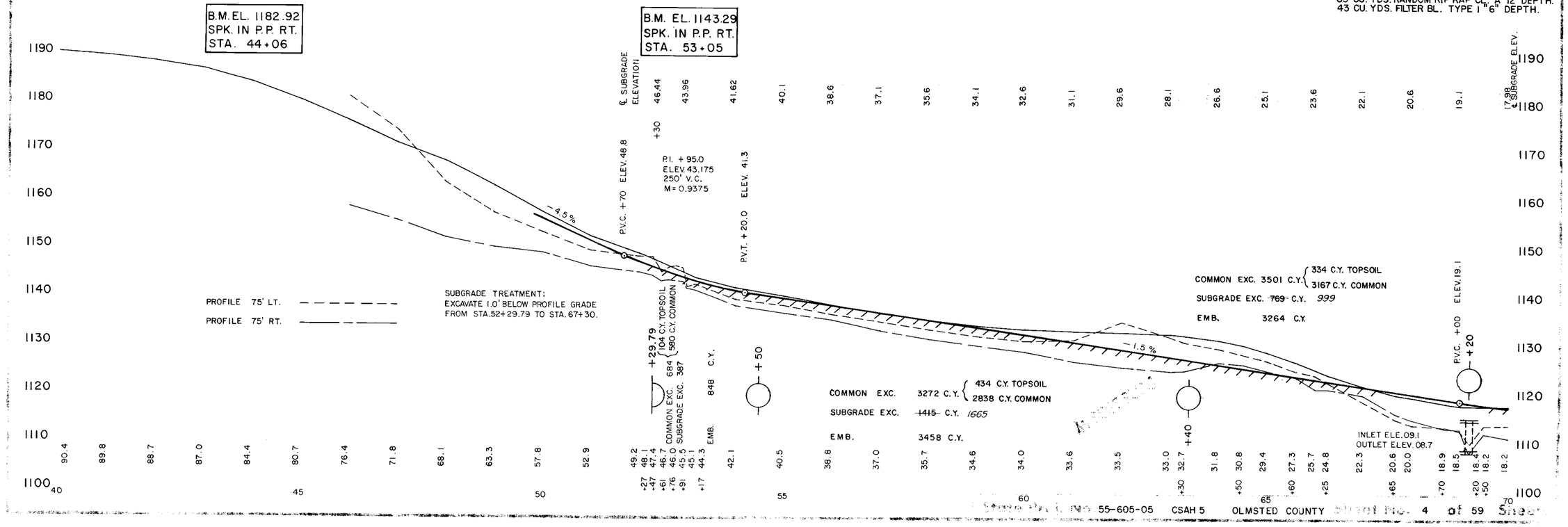
CONST. ℄ CULV. STA. 69+13.6
122" SPAN x 80' R.C.P. ARCH CULV. CL. IIA
2-122" SPAN R.C.P. ARCH APRONS

CONST. ℄ CULV. STA. 69+28.27
122" SPAN x 80' R.C.P.A. CULV. CL. IIA
2-122" SPAN R.C.P.A. APRONS

PLACE CULVERTS ON AGGREGATE BEDDING
369 CU. YDS. (CV)
F & I. APPROVED JOINT TIES.
85 CU. YDS. RANDOM RIP RAP CL. "A" 12" DEPTH.
43 CU. YDS. FILTER BL. TYPE I 6" DEPTH.

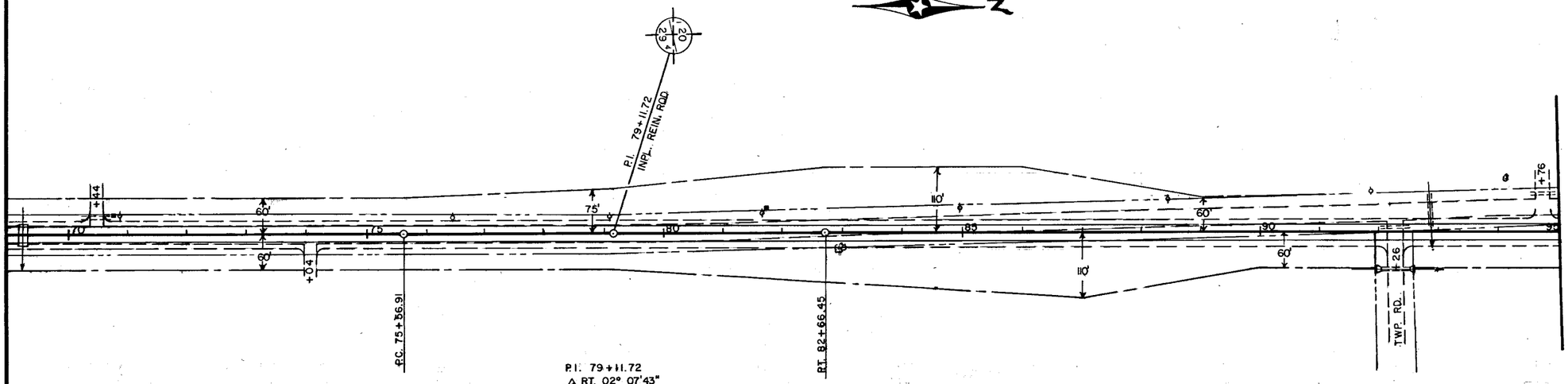
VERTICAL CONTROL

ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA-LEVEL DATUM, 1929 ADJ. AND TIED TO TO THE U.S. LEVEL NET.
LOCATION NEAR THE RAILWAY STATION AT BYRON MN.
B.M. NO. D24 ELEV. 1261.845



Fed. Proj. No. RS 6235 ( )

F.E. LT. STA. 94+76
NO CULV. INPL.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS



RES. DR. RT. STA. 74+04
NO CULV. INPL.

NO CULV. REQ'D.

P.I. 79+11.72
Δ RT. 02° 07'43"
D 00°18'
L 709.54'
T 354.81'
E 3.29'

TWP. RD. RT. STA. 92+26
INPL. 18"x38' CMP.

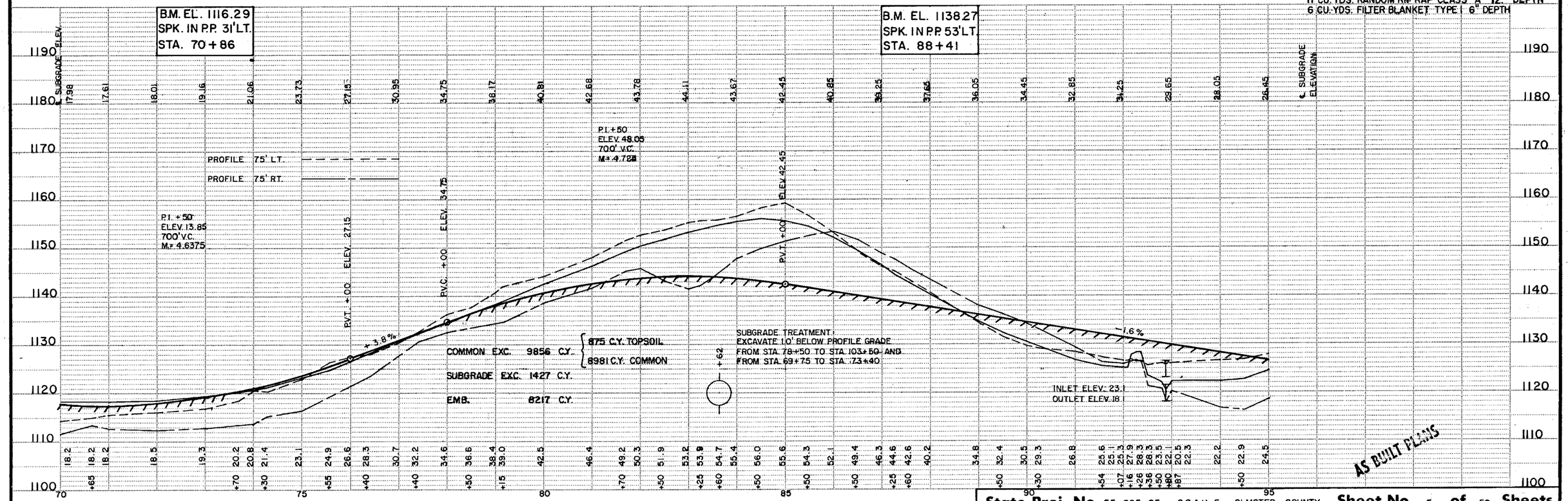
REMOVE
24"x54' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

℄ CULV. STA. 92+87
INPL. 24"x56' CMP.

REMOVE
~~42"x 86'~~ R.C. PIPE CULV. CL. III 114'+30° SKEW
2-42" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F&I APPROVED JOINT TIES.
11 CU. YDS. RANDOM RIP RAP CLASS "A" 12" DEPTH
6 CU. YDS. FILTER BLANKET TYPE I 6" DEPTH

B.M. EL. 1116.29
SPK. IN P.P. 31' LT.
STA. 70+86

B.M. EL. 1138.27
SPK. IN P.P. 53' LT.
STA. 88+41



AS BUILT PLANS

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RES. DR. LT. 97+90
NO CULV. INPL.
MOVE DR. TO LT. STA. 96+00
18"x32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ CULV. 105+19
INPL. W 106 x 44' CONC. BOX CULV.
REMOVE BOX CULV.

MOVE CULV. TO STA. 105+40
SKEW CULV. 25°
138" SPAN x 105' R.C.P.-ARCH CULV.
CLASS II A
2-138" SPAN R.C.P.-ARCH APRONS.
PLACE CULV. ON AGGREGATE BEDDING 316 CU. YDS. (CY.)
F & I. APPROVED JOINT TIES
49 CU. YDS. RANDOM RIP RAP CLASS "A" 12" DEPTH.
24 CU. YDS. FILTER BLANKET TYPE I 6" DEPTH.

P.I. 100+78.90
△LT. 16°30'10"
D - 2°00'
T - 415.45'
L - 825.14
E - 29.97
RATE OF SUPER 0.04'/FOOT
RUN OFF LENGTH 190'

TWP. RD. LT. 105+71
INPL. 15"x 46' C.M.P.
REMOVE
18"x36" C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.E. LT. 110+22
INPL. 18"x 24' CMP
REMOVE
NO CULV. REQ'D.

℄ CULV. 111+55
INPL. W 46x 46' CONC. BOX CULV.
REMOVE BOX CULV.
42"x 150' R.C. PIPE CULV. CL. IV
2-42" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F & I. APPROVED JOINT TIES
11 CU. YDS. RANDOM RIPRAP CLASS "A" 12" DEPTH
6 CU. YDS. FILTER BLANKET TYPE I 6" DEPTH.

RES. DR. LT. 114+74
INPL. 18"x 36' CMP.
REMOVE
18"x32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

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RES. DR. 118+19
NO CULV. INPL.
NO. DRIVE REQ'D.

P.C. 96+63.45
P.T. 104+88.59
P.C. 106+74.95
P.T. 114+63.15
P.C. 121+59.04
TWP. RD. +71
CHANNEL CHANGE

P.I. 110+74.74
/RT 23°38'46"
D - 3°00'
T - 399.79'
L - 788.20'
E - 41.40'
RATE OF SUPER 0.04%/FT
RUN OFF LENGTH 235'

BR. 14'x 20' CONC. SLAB
WOODS
HQ.
MOBILE HQ.

REMOVE CONC. SLAB BR. RT. STA. 115+10

RES. DR. 112+75
NO CULV. INPL.
SEE PLAN SHEET NO. 59 FOR APPROACH DETAIL.

RES. DR. RT. 118+08
NO CULV. INPL.
MOVE RES. DR. TO STA. 116+00
NO CULV. REQ'D.

RES. DR. RT. 119+78
INPL. 15"x 24' CMP.
REMOVE
NO CULV. REQ'D.

CL. 6 TREES GR 6 TREES | CL. 11 TREES GR. 7 TREES | CL. 3 TREES — GR. 3 TREES CL. 0.15 ACRE GR. 0.15 ACRE | CL. 1 TREE — GR. 1 TREE

B.M. EL. 1125.04
SPK. IN P.P. LT.
78' STA. 98+70

B.M. EL. 1118.37
SPK. IN P.P. LT.
161' STA. 115+45

SUBGRADE ELEV.

P.I. +00
ELEV. 21.65 27.57
450' V.C.
M = 1.9125

P.V.C. +75.0 ELEV. 25.25 24.77
P.V.T. +25.0 ELEV. 10.4 16.92
P.V.C. +00 +9.57
P.V.C. +50 ELEV. 94.15
P.I. +00
ELEV. 76.65 27.57
700' V.C. 800'
M = 9.06 9.2
C = 0.575
P.V.T. +50 ELEV. 95.15
P.V.T. +00 44.17
P.V.C. +50 ELEV. 95.55 92.47
P.I. +50
ELEV. 20.75 21.67
1200' V.C.
M = 13.5
P.V.T. +50 ELEV. 91.85 97.87

1.6%
5.0%
+4.2%
4.8%

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 78+50 TO STA. 103+50

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 114+75 TO STA. 122+20

PROFILE 75' LT.
PROFILE 75' RT.

COMMON EXC. ~~50033~~ ~~50293~~ C.Y. { 2135 C.Y. TOPSOIL, ~~48068~~ C.Y. COMMON 47900
SUBGRADE EXC. ~~3431~~ C.Y. 3373
ROCK EXC. ~~25~~ C.Y. 35
COMMON CHANNEL EXC. 1461 C.Y.
EMB. 39501 C.Y.

INLET ELEV. 74.8
OUTLET ELEV. 74.0

INLET ELEV. 76.4
OUTLET ELEV. 71.2

COMMON EXC. 32184 C.Y. { 1000 C.Y. TOPSOIL, 31184 C.Y. COMMON
COMMON CHANNEL EXC. 595 C.Y.
SUBGRADE EXC. 721 C.Y.
EMB. 24771 C.Y.

AS BUILT PLANS

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20-616-06

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F.E. LT. 127+33
INPL. 18"x 30' CMP.
REMOVE
MOVE F. ENT. TO STA. 123+00
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

CULV. LT. 128+19
INPL. 18"x 48' CMP.
REMOVE
30"x 108' R.C. PIPE CULV.
CLASS III
2-30" R.C. PIPE APRONS
F&I APPROVED JOINT TIES

F.E. LT. 132+03
NO CULV. INPL.
NO CULV. REQ'D

GARAGE E. LT. 133+80
NO CULV. REQ'D

F.E. LT. 142+63
INPL. 24"x 30' CMP.
REMOVE
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

℄ BOX CULV. CATTLE PASS 149+76
INPL. W 46 x 34' CONC. BOX CULV.
REMOVE BOX CULVERT
72" HIGH x 72' R.C. CATTLE PASS CULERT
2-72" HIGH R.C. CATTLE PASS APRONS
PLACE CULV. ON "B" BEDDING
F&I APPROVED JOINT TIES
MOVE TO STA. 147+90

P.I. 152+90.55
∠LT. 91° 02' 06"
D - 4° 00'
T - 1458.51'
L - 2275.88'
E - 611.87'
RATE OF SUPER 0.055'/FOOT
LENGTH OF RUN OFF 260

P.C. 121+59.04

P.I. 126+01.64
∠LT. 8° 50' 04"
D - 1° 00'
T - 442.60'
L - 883.45'
E - 17.07'
RATE SUPER 0.023'/FOOT
RUN OFF LENGTH 115'

P.T. 130+42.49

P.C. 138+32.04

F.E. RT. 129+27
NO CULV. INPL.
~~18"x 28' C.S. PIPE CULV.~~
~~2-18" G.S. PIPE APRONS~~
MOVE TO STA. 130+30
NO CULV. REQ'D

F.E. RT. 137+11
INPL. 15"x 24' CMP.
REMOVE
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.E. RT. 139+47
INPL. 24"x 24' CMP.
REMOVE
NO F. ENT. REQ'D.

CHANGE
C.S.A.H. 4 RT. 145+00
INPL. DOUBLE-6'x10'x 54'
NO CHANGE

CR 105

CL. 9 TREES — GR. 6 TREES

CL. 21 TREES — GR. 6 TREES.

B.M. EL. 1067.01
SPK. IN P.P. 59'
LT. STA. 134+15

B.M. EL. 1049.92
X S.E. COR. BOX
CULV. C.S.A.H. 4

P.V.T. +50
ELEV. 91.95

P.I. +93.5484
ELEV. 75.45968
400' V.C. Tg. 3.7466
M = 1.65

P.V.T. +93.5484
ELEV. 72.06

P.V.C. +93.5484
ELEV. 85.00

INLET ELEV. 64.9
OUTLET ELEV. 63.9

P.I. +17.85714
ELEV. 49.54644
400' V.C.
M = 0.7

P.V.C. +17.85714
ELEV. 52.94643

P.V.T. +17.85714
ELEV. 48.94643

INLET ELEV. 38.9
OUTLET ELEV. 38.5

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 130+10 TO STA. 147+20.

COMMON EXC. 38327 C.Y. — 1750 C.Y. TOPSOIL, 36577 C.Y. COMMON
COMMON CHANNEL EXC. 757 C.Y.
SUBGRADE EXC. 2737 C.Y.
EMB. 30260 C.Y.

AS BUILT PLANS

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Fed. Proj. No. RS 6235 ( )

F.E. LT. 160+28
NO CULV. INPL.
~~24"x28' C.S. PIPE CULV.~~
~~2-24" G.S. PIPE APRONS~~
NO F.ENT. REQ'D

F.E. LT. 162+88
INPL. 18"x24' CMP.
REMOVE
24"x28' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

BEGIN EXCEPTION: SP 55-605-05
STA. 174+43.63

SAP 55-605-04 STA. 148+00
GRADED 1977

P.T. 161+07.92

F.E. RT. 160+37
INPL. 18"x28' CMP.
REMOVE
18"x28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

RES. DR. RT. 167+57
NO CULV. INPL.
18"x32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

CONST. F. ENT. STA. 165+62
18" x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

CONST. F. ENT. STA. 168+83
18" x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

STA. 174+43.62 = STA. 148+00
EQUATION

P.C. 149+82.26

MID. BRANCH ZUMBRO

B.M. EL. 1045.62
SPK. IN P.P. SO. SIDE. STA. 157+50

B.M. EL. 1048.58
SPK. IN P.P. LT. STA. 173+80

℄ SUBGRADE ELEVATION

PROFILE 75' LT. — — — —
PROFILE 75' RT. ——————

P.I. +50
ELEV. 44.9
400' V.C.
M = 0.3

P.V.C. +50 ELEV. 45.5

P.V.T. +50 ELEV. 45.5

-0.3%

+0.3%

COMMON EXC.	10,856	C.Y.	1306 C.Y. TOPSOIL 9550 C.Y. COMMON
SUBGRADE EXC.	454	C.Y.	
EMB.	8046	C.Y.	

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 153+50 TO STA. 174+43.62

COMMON EXC.	3263	C.Y.	654 C.Y. TOPSOIL 2609 C.Y. COMMON
SUBGRADE EXC.	2344	C.Y.	
EMB.	4589	C.Y.	

AS BUILT PLANS

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℄ CULV. 185+19 SKEWED 20°
INPL. 30"x 68' CMP
REMOVE
30"x 104' R.C.PIPE CULV. CL. II
SKEW CULV. 20°
2-30" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F & I APPROVED JOINT TIES
7 CU. YDS. RANDOM RIPRAP CLASS "A" 12" DEPTH
3 CU. YDS. FILTER BLANKET TYPE I 6" DEPTH

END EXCEPTION-SP-55-605-05
STA. 177+00

P.O.T. 177+45.10

SAP 55-605-04 STA. 177+00
GRADED 1977

P.T. 173+61.69

F.E. RT. 185+07
NO CULV. INPL.
NO CULV. REQ'D.

℄ CULV. 190+10 SKEWED 16°
INPL. 42"x 86' CMP.
REMOVE
42"x 120' R.C. PIPE CULV. CL. IV
SKEW CULV. 16°
2-42" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F & I APPROVED JOINT TIES
11 CU. YDS. RANDOM RIPRAP CLASS "A" 12" DEPTH
6 CU. YDS. FILTER BLANKET TYPE I 6" DEPTH

RES. DR. LT. 194+82
INPL. 15"x 30' CMP.
REMOVE
NO CULV. REQ'D.

℄ CULV. 199+11
INPL. 24"x 90' CMP.
REMOVE
30"x 126' R.C. PIPE CULV. CL. IV
2-30" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F & I APPROVED JOINT TIES.
7 CU. YDS. RANDOM RIPRAP CLASS "A" 12" DEPTH
3 CU. YDS. FILTER BLANKET TYPE I 6" DEPTH.

204+91
CONST. ℄ CULV. STA. ~~205+00~~
24"x 88' R.C. PIPE CULV. CL. II
2-24" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F & I APPROVED JOINT TIES.

F.E. LT. 203+42
NO CULV. INPL.
~~18"x 28' C.S. PIPE CULV.~~
~~2-18" C.S. PIPE APRONS~~
MOVE TO STA. 203+60
NO CULV. REQ'D

RES. DR. RT. 205+70
INPL. 15"x 30' C.M.P.
REMOVE
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

P.I. 191+48.48
∠RT. 46° 54' 41"
D - 4° 00'
T - 621.51'
L - 1172.51'
E - 129.02'
RATE SUPER 0.055'/FT
260' RUNOFF

F.E. LT. 196+30
NO CULV. INPL.
NO F. ENT. REQ'D

P.T. 196+98.75

F.E. RT. 197+10
NO CULV. INPL.
~~18"x 28' C.S. PIPE CULV.~~
~~2-18" C.S. PIPE APRONS~~
NO CULV. REQ'D

GAS METER
NAT. GAS MARKER
GAS METER
NAT. GAS MARKER
PINES
PINES
GAR

CL. 108 TREES — GR. 108 TREES

BM. EL. 1086.62
SPK. IN P.P. 71'
RT. STA. 174+76

BM. EL. 1173.06
SPK. COR. F.P. 34'
LT. STA. 196+37

P.I. +00
ELEV. 03.15
400' V.C.
M = 1.65

P.V.C. +00
ELEV. 97.87

P.V.T. +00
ELEV. 107.87

+2.6%
+5.9%
+5.9%
+1.3%

75' LT.
75' RT.

INLET ELEV. 97.1
OUTLET ELEV. 93.9

INLET ELEV. 27.2
OUTLET ELEV. 19.3

P.I. +00
ELEV. 73.95
900' V.C.
M = 5.175

P.V.C. +50
ELEV. 97.4

P.V.T. +50
ELEV. 79.8

INLET ELEV. 81.0
OUTLET ELEV. 78.9

INLET ELEV. 68.8
OUTLET ELEV. 54.3

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 776+00 TO STA. 214+35

COMMON EXC.	*30056* 30345	2473 CU. YDS. TOPSOIL *27583* 27872 CU. YDS. COMMON EXC.
ROCK EXC.	*830*	269 CU. YDS.
SUBGRADE EXC.		516 CU. YDS.
EMB.		25,868 CU. YDS.

AS BUILT PLANS

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F.E. RT. 213+30
NO CULV. INPL.
~~18"x 28' C.S. PIPE CULV.~~
~~2-18" G.S. PIPE APRONS~~
MOVE TO STA. 214+15
NO CULV. REQ'D

℄ CULV. 214+84
INPL. 24"x 74' CMP.
REMOVE
24"x 76' R.C. PIPE CULV. CL. II
2-24" R.C. PIPE CULV. APRONS
PLACE CULV. ON "B" BEDDING
F.&I. APPROVED JOINT TIES

℄ CULV. 218+53
INPL. 6'x 4'x 40' CMP.
W/APRONS
REMOVE 52 LIN. FT. C.M. CATTLE PASS
MOVE CATTLE PASS TO STA. 218+82
SKEW CATTLE PASS 30°
72" HIGH x 82' R.C. CATTLE PASS CULV.
2-72" HIGH R.C. CATTLE PASS APRONS
PLACE CULV. ON "B" BEDDING.
F.&I. APPROVED JOINT TIES.

F.E. LT. 219+87
INPL. 15"x 30' CMP.
REMOVE
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS.

SEE SHEET NO 11 FOR
DODGE COUNTY 16 APPROACH

℄ CULV. 230+40
INPL. 18"x 36' CSP
W/APRONS
REMOVE 41 LIN. FT.
24"x 80' R.C. PIPE CULV. CLASS II
2-24" R.C. PIPE CULV. APRONS
PLACE CULV. ON "B" BEDDING
F.&I. APPROVED JOINT TIES.

F.E. LT. 233+11
INPL. 18"x 24' CMP.
REMOVE
24"x 28' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

P.C. 206+72.10

RATE SUPER 0.058'/FOOT
280' RUN OFF
P.I. 212+87.82
Δ LT. 56° 30' 00"
D - 5° 00'
T - 615.72
L - 1130.00
E - 154.94

P.T. 218+02.10

P.C. 220+99.88

P.I. 227+22.90
Δ RT. 57° 04' 00"
D - 5° 00'
T - 623.04
L - 1141.33
E - 158.43
RATE SUPER 0.058'/FT.
280' RUN OFF

P.C. 1+31.56

OBLITERATE OLD ROAD
CONST. 50' RADIUS
OBLITERATE OLD ROAD
OBLITERATE OLD ROAD
HIGH VOLTAGE POWER LINES
HO.

Δ 49°±
T 100.04'
L 187.73'
R 219.52'

F.E. RT. 209+60
INPL. 15"x 28' CMP.
REMOVE
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS.
MOVE TO STA. 208+75

TWP. RD. RT. 212+38
NO CULV. INPL.
18"x 36' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS
MOVE APPROACH TO STA. 213+00

RES. DR. RT. 216+88
INPL. 15"x 30' CMP.
REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

P.T. 232+41.19 =
EQUATION
232+38.76

DODGE COUNTY

END: SP 55-605-05 RS 6235 ( )
STA. 235+00

OLMSTED COUNTY

CONST F. ENT. RT. STA. 235+40
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

CL. 2 TREES — GR. 2 TREES
CL. 27 TREES — GR. 27 TREES

B.M. EL. 1204.69
SPK. IN COR. F.E.
RT. STA.

B.M. EL. 1219.55
SPK. IN P.P. LT.
28' STA. 233+28

SUBGRADE ELEV.

75' LT.
75' RT.

+1.3%

INLET ELEV. 95.0
OUTLET ELEV. 93.8

INLET ELEV. 95.6
OUTLET ELEV. 95.1

P.V.C. +00 ELEV. 10.35

P.I. +00
ELEV. 12.95
400' V.C.
M = 0.25

P.V.T. +00

+0.8%

INLET ELEV. 12.5
OUTLET ELEV. 11.5

EQUATION
STA. 232+41.19 =
STA. 232+38.76

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
STA. 215+20 TO STA. 218+60
STA. 225+00 TO STA. 228+00
STA. 232+00 TO STA. 235+00

COMMON EXC.	~~16617~~ 17141	1182 CU. YDS. TOPSOIL 15435 ~~15959~~ CU. YDS. COMMON EXC.
SUBGRADE EXC.	1471	CU. YDS
ROCK EXC.	*60*	*CU. YDS*
EMB.	20716	CU. YDS.

NOTE: 4230 CU. YDS. COMMON EXCAVATION FROM DODGE COUNTY 16 APPROACH TO BE USED IN BALANCE STA. 211+60 TO STA. 235+00. QUANTITY INCLUDED IN BALANCE STA. 0+00 TO STA. 9+00 DODGE COUNTY 16 APPROACH.

AS BUILT PLANS

Fed. Proj. No. RS 6235 ( )

℄ CULV. LT. 1+46
INPL. 18"x 34' CMP.
REOVE
NO CULV. REQ'D.

F.E. LT. 2+93
NO CULV. INPL.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.E. LT. 10+53
NO CHANGE

OLMSTED COUNTY
DODGE COUNTY

END CONST. S.P. 20-616-06 -CSAH 16
STA. 9+00

OBLITERATE OLMSTED OLD ROAD
C.S.A.H. 5

DODGE C.S.A.H. 16

+93
+53
60'
60'
10
5
P.T. 5+08.98

P.C. 220+39.86

P.I. 3+27.40
Δ RT. 37°44'30"
D - 10°00'
T - 195.84'
L - 377.42'
E - 32.55'

OBLITERATE OLD ROAD

P.C. 1+31.56

DODGE COUNTY CSAH 16 APPROACH
CONST. ℄ CULV. STA. 0+25
24"x 78' R.C. PIPE CULV. CL. II
2-24" R.C. PIPE APRONS
PLACE CULV ON "B" BEDDING
F & I. APPROVED JOINT TIES.

P.I. 2+27.90
Δ RT. 57°04'00"
D - 5°00'
T - 623.03
L - 1141.33
E - 158.43

BEGIN CONST. S.A.P. 20-616-06 (CSAH 16)
STA 0+00

B.M. EL. 1204.69
SPK. IN COR. FE. P.
137' RT. 221+67

℄ SUBGRADE ELEVATION

+33 11.74 12.14 12.74 13.34 13.91 14.0 13.49 12.39 10.72 08.92

P.I. +65.83333
ELEV. 14.935
400' V.C.
M = 1.2

PROFILE 75' LT. - - - - -
PROFILE 75' RT. ———

P.V.C. +65.83333
ELEV. 13.735

P.V.T. +65.83333
ELEV. 11.335

1220
1210
1200

+0.6%
-1.8%

INLET ELEV. 08.8
OUTLET ELEV. 08.4

SUBGRADE TREATMENT:
EXCAVATE 10' BELOW PROFILE GRADE
FROM STA. 0+50 TO STA. 9+00

+50	COMMON EXC.	5574	431 CU. YDS. TOPSOIL 5143 CU. YDS. COMMON EXC.
	SUBGRADE EXC.	1271	CU. YDS.
	EMB.	2201	CU. YDS.

+00

NOTE : 4230 CU. YDS. COMMON EXCAVATION FROM DODGE COUNTY 16 APPROACH TO BE USED IN EMBANKMENT STA. 211+60 TO STA. 235+00

+50 11.1 +17 11.1 09.6 +28 13.0 +54 13.9 +70 10.9 13.3 +50 14.6 15.8 +25 15.7 +60 14.8 18.6 +25 18.7 +70 18.3 18.0 15.9 13.2 11.1 10.0 08.9 07.3

0 5 10

DODGE COUNTY 16 APPROACH.

AS BUILT PLANS

S.A.P. 20-616-06

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