MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR COLD RECYCLE, BITUMINOUS OVERLAY, CONCRETE CURB AND GUTTER, AND PAVEMENT EDGE DRAINS

LOCATED ON C.S.A.H. 12 BETWEEN U.S. HIGHWAY 52 AND U.S. HIGHWAY 63 (GEOGRAPHIC DESCRIPTION)

FROM 200 FEET WEST OF N-S 1/4 LINE SEC 7, T108N, R14 TO SE CORNER SECTION 7, T108N, R13W (LEGAL DESCRIPTION)

S.A.P. NO. 55-612-17

GROSS LENGTH	35,232	feet	6.673	miles
BRIDGE-LENGTH	496	feet	0.094	miles
EXCEPTIONS-LENGTH	496	feet	0.094	miles
NET LENGTH	34,736	feet	6.579	miles

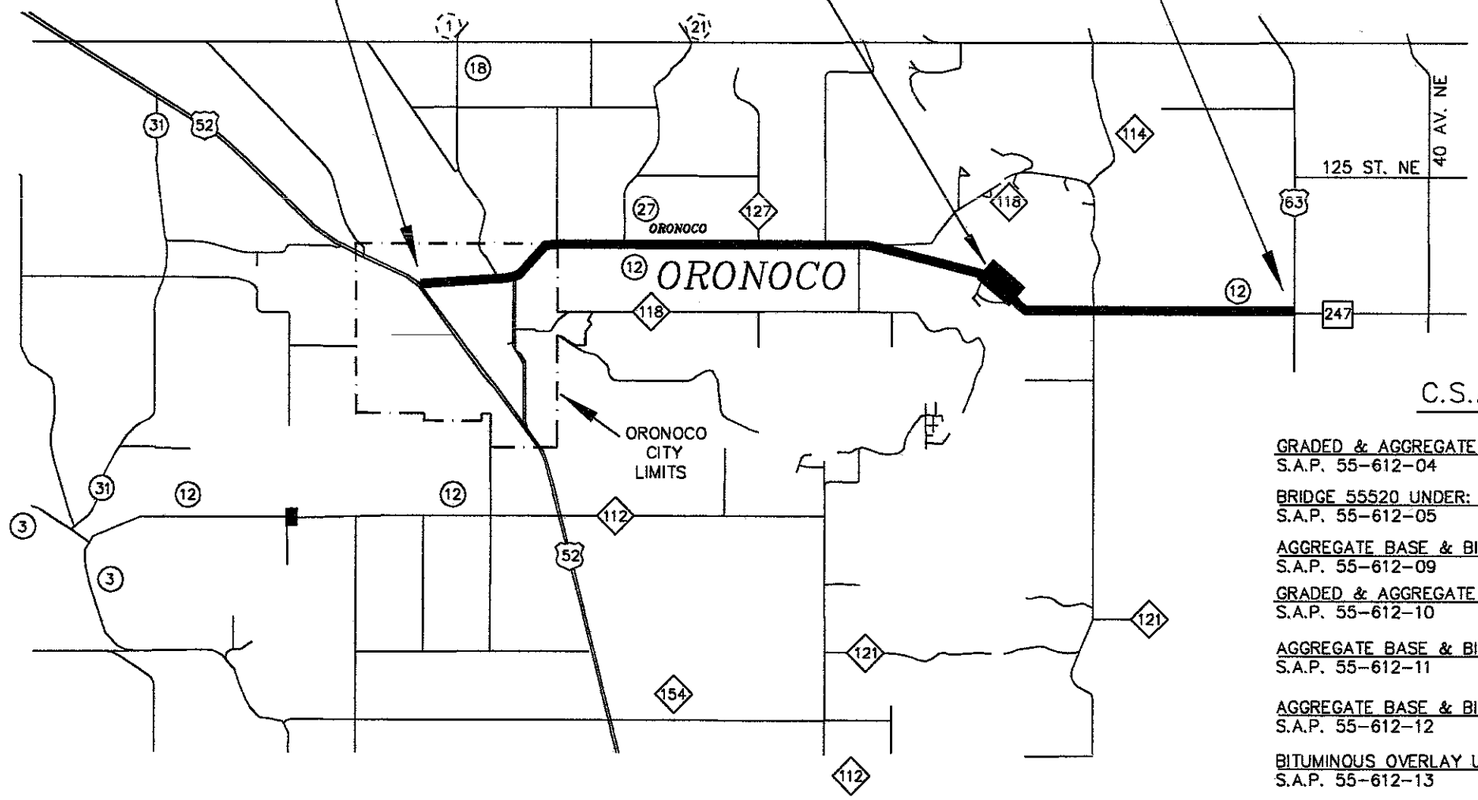
Legend

- Interstate Highway
- U.S. Highway
- Minnesota State Highway
- County State Aid Highway
- County Road
- City Limits
- S.A.P. Overlay Projects
- COUNTY FUNDS Overlay Projects

BEGIN: S.A.P. 55-612-17
STA. 0+00

BRIDGE NO. 55520
EXCEPTION STA. 214+43 TO 219+37

END: S.A.P. 55-612-17
STA. 352+32



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ENGINEERING

C.S.A.H. 12

GRADED & AGGREGATE BASE UNDER: S.A.P. 55-612-04	1974
BRIDGE 55520 UNDER: S.A.P. 55-612-05	1975
AGGREGATE BASE & BITUMINOUS SURFACING UNDER: S.A.P. 55-612-09	1977
GRADED & AGGREGATE BASE UNDER: S.A.P. 55-612-10	1984
AGGREGATE BASE & BITUMINOUS SURFACING UNDER: S.A.P. 55-612-11	1986
AGGREGATE BASE & BITUMINOUS SURFACING UNDER: S.A.P. 55-612-12	1986
BITUMINOUS OVERLAY UNDER: S.A.P. 55-612-13	1986

S.A.P. 55-612-17 C.S.A.H. 12

GOVERNING SPECIFICATIONS

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

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATED QUANTITIES
SHEET NO. 3-5	TYPICAL SECTIONS
SHEET NO. 6-7	DETAILS
SHEET NO. 8-9	EDGE DRAIN DETAILS/TABULATED QUANTITIES
SHEET NO. 10-13	TRAFFIC CONTROL
SHEET NO. 14-18	STATIONING SCHEMATIC
SHEET NO. 19-31	PLAN/PROFILE- INFORMATION ONLY

THIS PLAN CONTAINS 31 SHEETS

S.A.P. 55-612-17
DESIGN DESIGNATION: C.S.A.H.

R ΣN18(20)
ADT (Current Year) = 3338(2001) Design Speed 50 mph
ADT (Future Year) = 5341(2021) 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) = EST. % STA. TO STA. mph
SUBGRADE = K= STA. TO STA. mph
SHOULDER WIDTH 8 ft.
FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL
SOIL FACTOR = 130%
10 ton DESIGN

APPROVALS:

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

DATE 4/11/01 LICENSE NUMBER 19917

PRINTED NAME: KAYE M. BIENIEK

SIGNED NAME: Kaye M. Bieniek

APPROVED: COUNTY DESIGN ENGINEER

DATE 4/11/01 LICENSE NUMBER 10387

Michael L. Sheehan

APPROVED: OLMSTED COUNTY ENGINEER

STATE AID APPROVALS:

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH MN STATE-AID RULES/POLICY DATE:

Andy Schmidt DATE: 4-24-01

for APPROVED FOR STATE AID FUNDING: MN STATE AID ENGINEER

S.A.P. 55-612-17
LOCATION: C.S.A.H. 12 SHEET NO. 1 OF 31 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	MUNICIPAL		RURAL		TOTAL ESTIMATED QUANITIES
				NON-PARTICIPATING	PARTICIPATING	NON-PARTICIPATING	PARTICIPATING	
①	2104.501	REMOVE BITUMINOUS CURB	LIN FT				2176	2176
①	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD				846	846
②	2105.501	COMMON EXCAVATION	CU YD				(P)555	(P)555
	2105.523	COMMON BORROW	CU YD				700	700
	2105.525	TOPSOIL BORROW (LV)	CU YD				160	160
③	2211.501	AGGREGATE BASE, CLASS 5	TON				1140	1140
④	2221.501	AGGREGATE SHOULDERING, CLASS 2	TON		700		7972	8672
⑤	2232.501	MILL BITUMINOUS SURFACE	SQ YD		2050		1330	3380
	2331.601	COLD RECYCLE INPLACE BITUMINOUS MIXTURE	SQ YD		15360		76070	91430
	2331.603	SEASONAL SAW CUT- 4 1/2" DEPTH	LIN FT		5675		24630	30305
	2331.602	BITUMINOUS MATERIAL FOR MIXTURE	TON		114		565	679
	2350.609	TYPE MV4 WEARING COURSE MIXTURE (MVWE45035B)	TON		1285		6470	7755
	2350.609	TYPE MV4 NON WEARING COURSE MIXTURE (MVNW45035B)	TON		1740		11245	12985
	2350.609	TYPE MV4 BITUMINOUS MIXTURE PRODUCTION	TON				2000	2000
⑥	2350.609	TYPE LV4 WEARING COURSE MIXTURE (LVWE45035B)	TON		574		961	1535
	2350.609	TYPE LV4 NON WEARING COURSE MIXTURE (LVNW45035B)	TON		861		1525	2386
	2355.502	BITUMINOUS MATERIAL FOR FOG SEAL	GALLON		1535		7605	9140
⑦	2502.521	4" TP PIPE DRAIN	LIN FT		176		1312	1488
⑦	2502.541	4" PERF. PE PIPE DRAIN	LIN FT		6020		45603	51623
⑦	2502.601	4" PRECAST CONCRETE HEADWALL	EACH		11		82	93
	2531.501	CONCRETE CURB AND GUTTER, TYPE B624	LIN FT				2176	2176
	2563.601	TRAFFIC CONTROL	LUMP SUM		0.17		0.83	1
	2564.603	4" SOLID LINE WHITE-EPOXY	LIN FT		11670		58630	70300
	2564.603	4" BROKEN LINE YELLOW-EPOXY	LIN FT		650		5022	5672
	2564.603	4" SOLID LINE YELLOW-EPOXY	LIN FT		1930		12940	14870
	2564.603	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT		2600		4435	7035
	2575.505	SODDING, TYPE LAWN	SQ YD				1450	1450
	2580.502	TEMPORARY LANE MARKING	LIN FT		1400		9415	10815

QUANITY NOTES:

① FROM STA. 150+14 TO STA. 160+83 RT., STA. 153+67 TO STA. 159+03 LT., AND STA. 275+37 TO STA. 281+08 RT. ALL BITUMINOUS REMOVAL REQUIRES FULL DEPTH SAW CUT(APPROXIMATELY 3"). SAW CUT IS INCIDENTAL TO CONSTRUCTION.

② QUANITY INCLUDES 6" SUB CUT.

③ AGGREGATE BASE IS PROVIDED FOR CONCRETE CURB AND GUTTER AND RT. TURN LANE.

④ INCLUDES 565 TONS FOR 2 ROAD APPROACHES, 13 FARM/RESIDENTIAL ENTRANCES, AND 31 FIELD ENTRANCES.

⑤ SEE MILLING DETAILS ON SHEET 4.

⑥ ITEM PROVIDED FOR 15 ROAD APPROACHES, 37 FARM/RESIDENTIAL ENTRANCES, AND 9 RT. TURN LANES.

⑦ SEE SHEET 9 FOR PERFORATED PIPE & HEADWALL LOCATIONS.

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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
3131 B	PRECAST CONCRETE HEADWALL FOR SUBSURFACE DRAINS
7100 G	CONCRETE CURB AND GUTTER
8000 I	STANDARD BARRICADES
9000 C	APPROACHES AND ENTRANCES

BASIS OF PLANNED QUANTITIES

BITUMINOUS MATERIAL FOR MIXTURE – 3% OF MIXTURE BY WEIGHT.
AGGREGATE BASE CLASS 5 – 140 LBS/FT^3
AGGREGATE SHOULDERING CLASS 2 – 140 LBS/FT^3
2350 BITUMINOUS MIXTURE – 146.67 LBS./FT.^{3} (OR) 110 LBS./SQ. YD./INCH OF DEPTH
BITUMINOUS MATERIAL FOR FOG SEAL – .102 GALLONS/YD^2
BITUMINOUS MATERIAL FOR TACK COAT –.051 GALLONS/YD^2

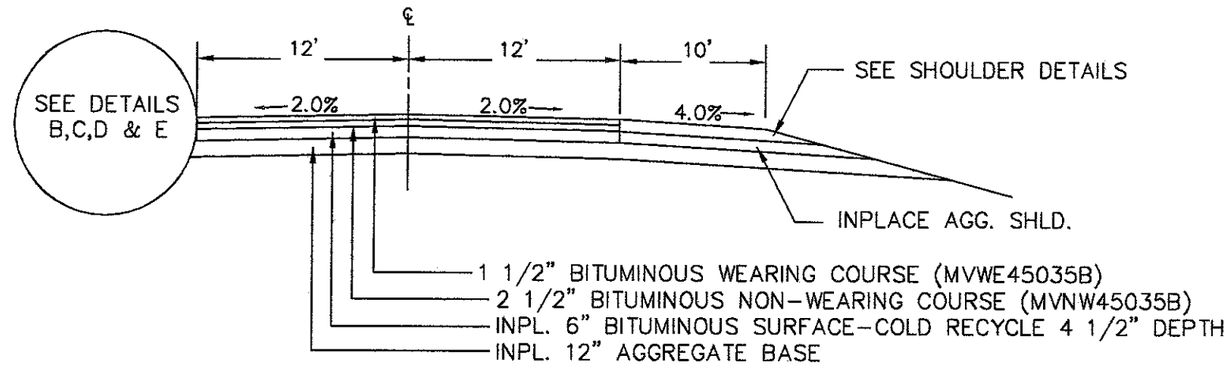
CERTIFIED BY Kaye M Bierniele LIC. NO. 19917 4/11 2001
LICENSED PROFESSIONAL ENGINEER

S.A.P. 55-612-17

ESTIMATED QUANTITIES

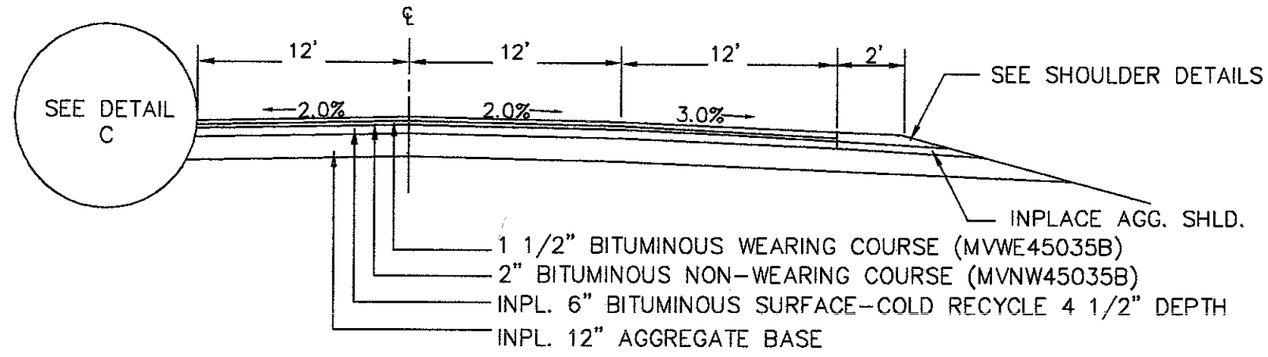
C.S.A.H. 12

STA. 57+00 TO STA. 352+32



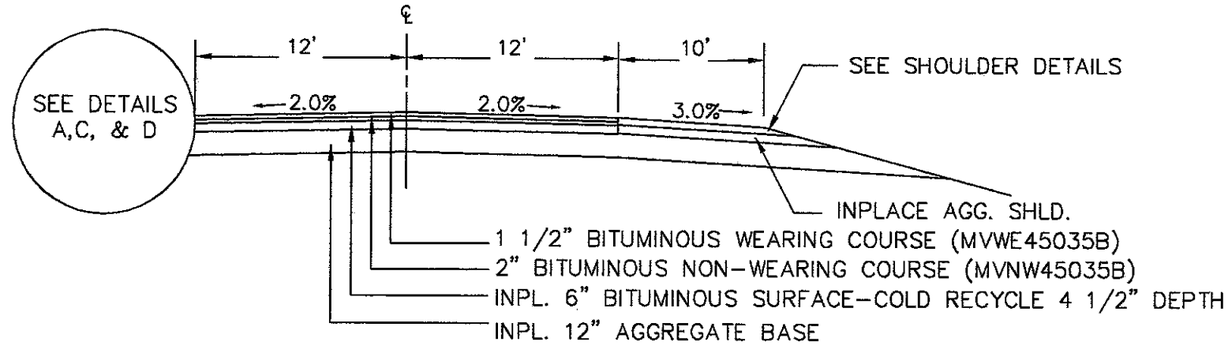
C.S.A.H. 12

STA. 37+00 TO STA. 48+00



C.S.A.H. 12

STA. 0+00 TO STA. 37+00
STA. 48+00 TO STA. 57+00



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ENGINEERING

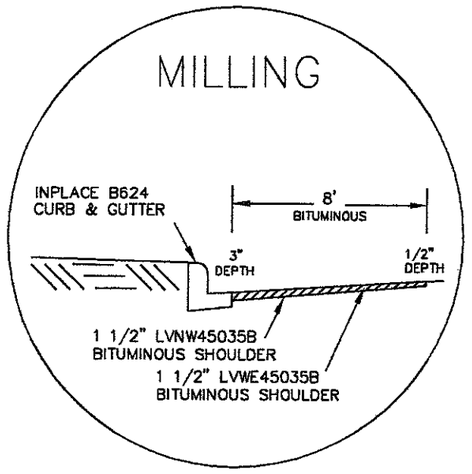
NOTE: COLD RECYCLE EMULSION TO BE CSS-1.

CSAH 12 TYPICAL SECTIONS

CERTIFIED BY Wayne M Biermeier LICENSED PROFESSIONAL ENGINEER LIC. NO. 19917 4/11 2001

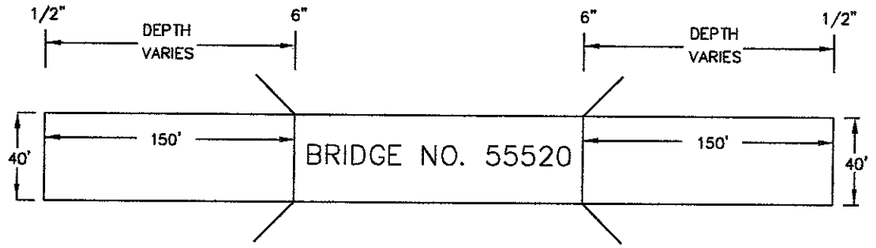
S.A.P. 55-612-17

DETAIL "A"



STA. 4+29 TO 27+10 LT.

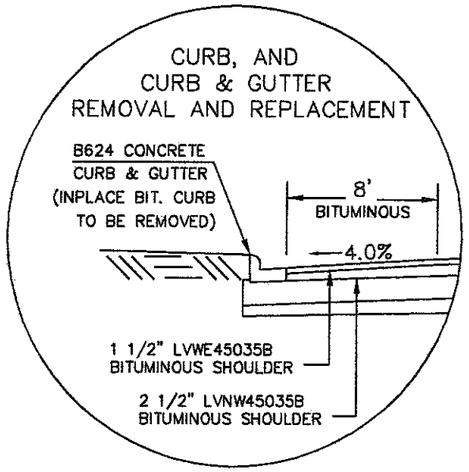
MILLING DETAIL @ BRIDGE NO. 55520



STA. 212+93 TO 214+43

STA. 219+37 TO 220+87

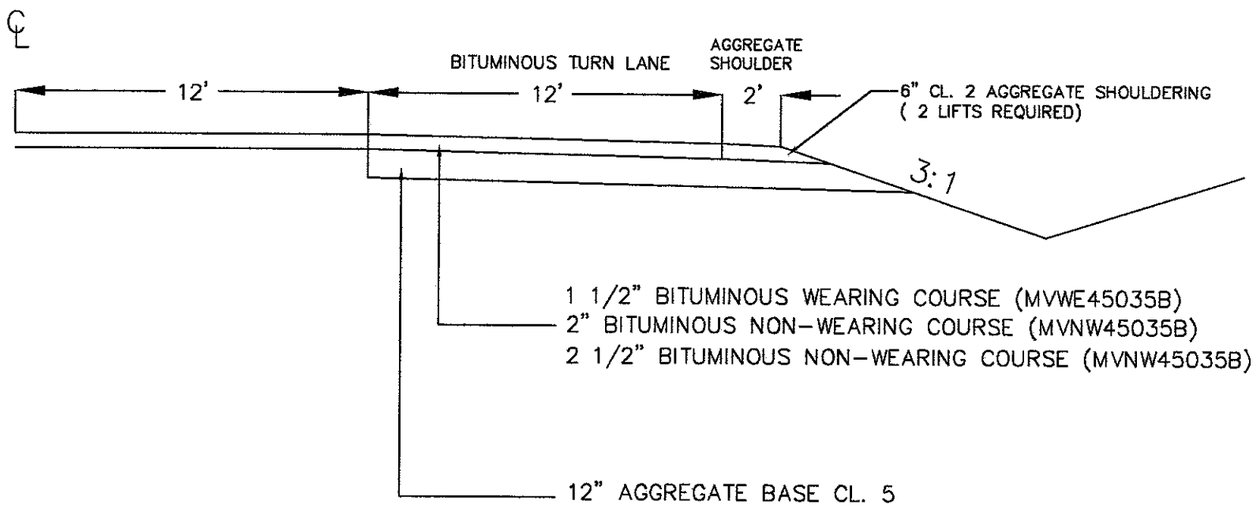
DETAIL "B"



STA. 150+14 TO 160+83 RT
STA. 153+67 TO 159+03 LT
STA. 275+37 TO 281+08 RT.

TYPICAL SECTION– TURN LANE

C.S.A.H. 12 STA. 84+70 TO 89+70 RT



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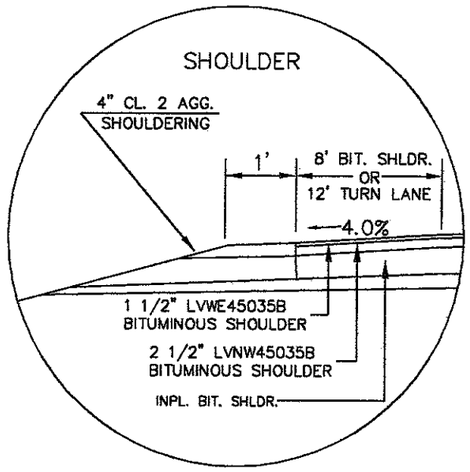
CSAH 12 TYPICAL SECTIONS

CERTIFIED BY Kaye M Bierniek LICENSED PROFESSIONAL ENGINEER LIC. NO. 19917 4/11 2001

S.A.P. 55-612-17

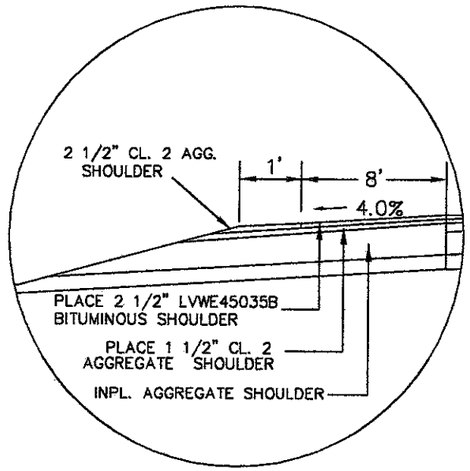
SHEET 4 OF 31 SHEETS

DETAIL "C"



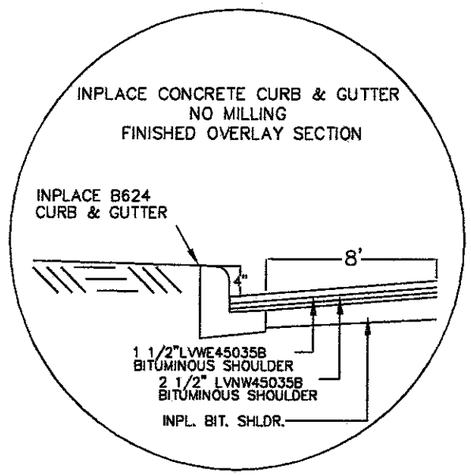
STA. 9+54 TO 13+94 RT
STA. 26+40 TO 36+00 RT
STA. 27+10 TO 47+50 LT
STA. 48+97 TO 59+30 RT
STA. 172+83 TO 177+83 RT
STA. 187+00 TO 191+19 LT
STA. 219+37 TO 240+64 RT
STA. 242+99 TO 254+84 LT
STA. 349+85 TO 352+32 LT & RT

DETAIL "D"



STA. 0+00 TO 4+29 LT
STA. 0+00 TO 9+54 RT
STA 13+94 TO 26+40 RT
STA. 36+00 TO 48+97 RT
STA. 47+50 TO 72+44 LT
STA. 59+30 TO 150+14 RT
STA. 76+15 TO 103+38 LT
STA. 106+64 TO 153+67 LT
STA. 159+03 TO 187+00 LT
STA. 160+83 TO 172+83 RT
STA. 177+83 TO 219+37 RT
STA. 191+19 TO 242+99 LT
STA 240+64 TO 275+37 RT
STA. 281+08 TO 309+17 RT
STA. 254+84 TO 288+26 LT
STA. 291+68 TO 308+90 LT
STA. 311+49 TO 349+85 LT & RT

DETAIL "E"



STA. 72+44 TO 76+15 LT.
STA. 103+38 TO 106+64 LT.
STA. 288+26 TO 291+28 LT.
STA. 308+90 TO 311+49 LT.
STA. 309+17 TO 311+49 RT.

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CSAH 12 TYPICAL SECTIONS

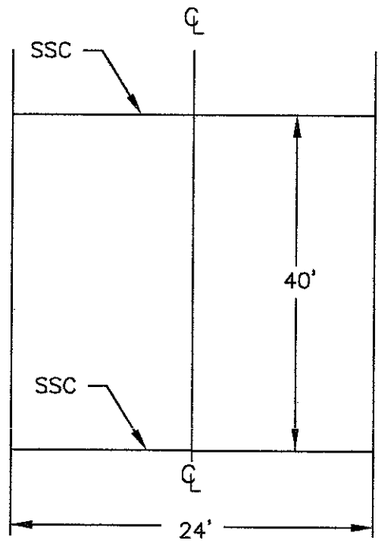
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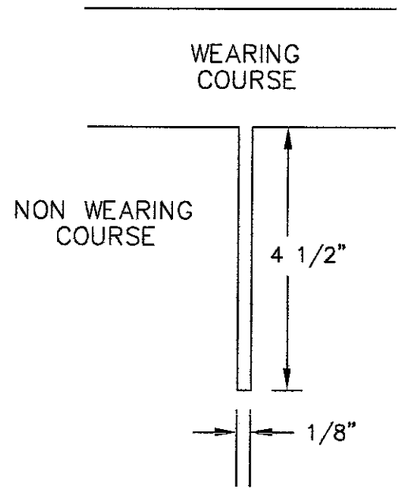
SHEET 5 OF 31 SHEETS

SEASONAL SAW CUT

TYPICAL SEASONAL SAW CUT



TYPICAL SAW CUT



STA. 0+50 TO STA. 352+32

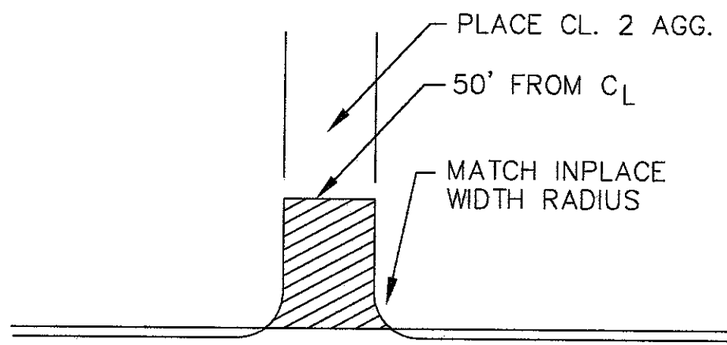
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CSAH 12 TYPICAL SECTIONS

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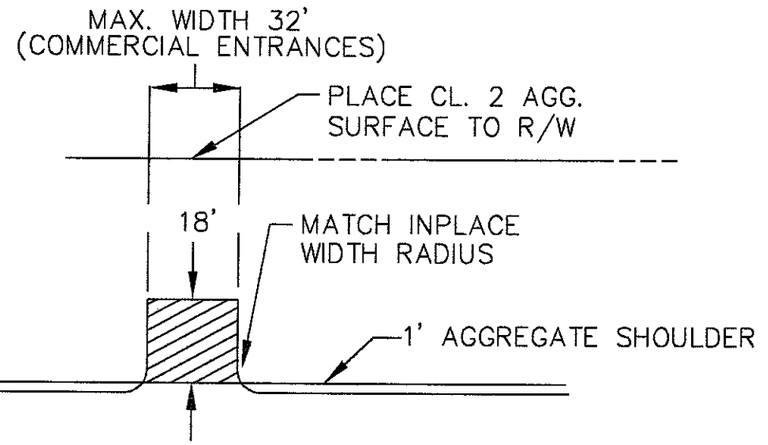
S.A.P. 55-612-17 | SHEET 6 OF 31 SHEETS

ROAD APPROACHES



COMMERCIAL ENTRANCES

FARM OR RESIDENTIAL ENTRANCES



PLACE WEARING COURSE

ROAD APPROACHES 15

FARM OR RESIDENTIAL ENTRANCES 37

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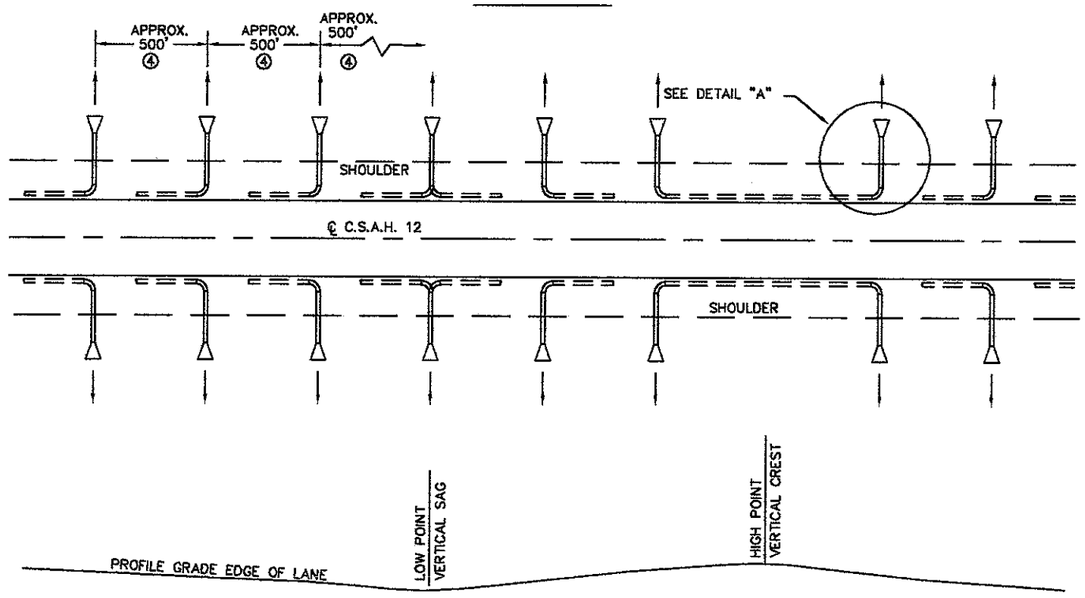
ENTRANCE DETAILS

S.A.P. 55-612-17

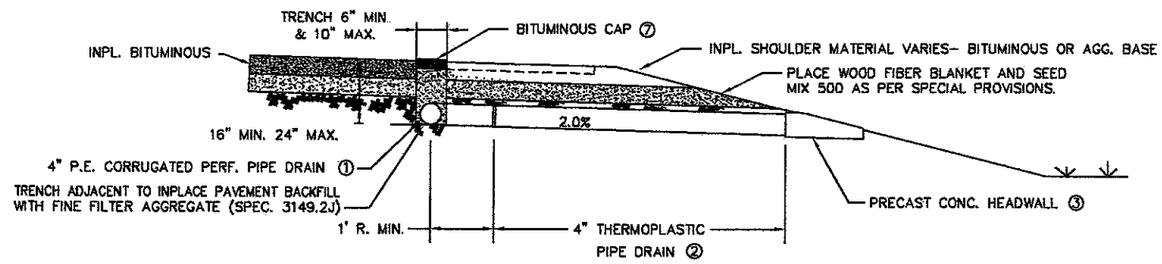
SHEET 7 OF 31 SHEETS

EDGE DRAIN DETAILS AND CONSTRUCTION NOTES

PLAN VIEW

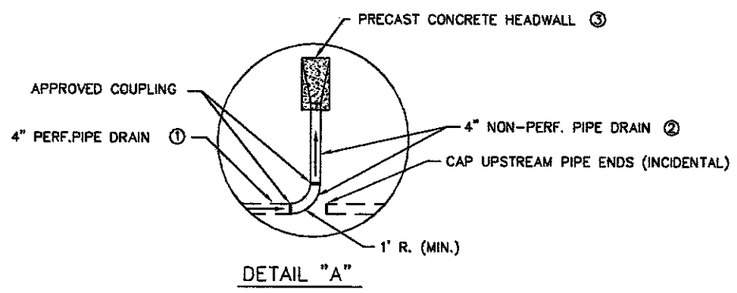


X-SECTION VIEW



LEGEND

⊂ = = =	4" PERFORATED PIPE DRAIN
═══	4" NON–PERFORATED PIPE DRAIN
▷	PRECAST CONCRETE HEADWALL



DETAIL "A"

CONSTRUCTION NOTES

① PAYMENT FOR 4" PERFORATED PIPE DRAIN SHALL BE FULL COMPENSATION FOR TRENCHING, FABRIC WRAPPED P.E. PIPE, INSTALLATION, FILTER AGGREGATE BACKFILL AND COMPACTION, BITUMINOUS OR AGGREGATE CAP, AND ALL OTHER ASSOCIATED WORK.

② PAYMENT FOR 4" NON–PERFORATED PIPE DRAIN SHALL BE FULL COMPENSATION FOR TRENCHING, FURNISHING AND PLACING PIPE AND CONNECTIONS, BACKFILL AND COMPACTION, AND ALL OTHER ASSOCIATED WORK.

③ PAYMENT FOR PRECAST CONCRETE HEADWALLS SHALL BE FULL COMPENSATION FOR PLACING HEADWALL, WOOD FIBER BLANKET AND SEED, AND ALL OTHER ASSOCIATED WORK.

④ IF AN OUTLET HAPPENS TO FALL WITHIN A CROSS–OVER OR DITCH–BLOCK INCREASE THE LENGTH OF THE PERFORATED PIPE TO A POINT WHERE AN OUTLET CAN BE SATISFACTORLY CONSTRUCTED AS DIRECTED BY THE ENGINEER.

⑤ EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH MN/DOT SPEC. 2104.303.

⑥ NO EDGEDRAINS WILL BE PLACED ON ELEVATED SUPER SIDE AS DIRECTED BY ENGINEER.

⑦ WHERE THERE IS AN INPLACE BITUMINOUS SHOULDER THE TRENCHED HOLE SHALL BE FINISHED WITH A BITUMINOUS CAP HAVING THE SAME DEPTH AS THE BITUMINOUS SHOULDER AND COMPACTED TO 1 INCH ABOVE EXISTING PAVEMENT

⑧ ALL EDGE DRAINS AND OUTLET PIPES SHALL BE INSTALLED PRIOR TO ANY SHOULDER PAVING.

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ENGINEERING

CERTIFIED BY Kaye M Bienek LICENSED PROFESSIONAL ENGINEER LIC. NO. 19917 4/11 2001

S.A.P. 55–612–17

CSAH 12 EDGE DRAIN TABULATIONS

STATIONS	LOCATION	PERF. PIPE (FEET)	TP PIPE (FEET)	HEADWALLS (EACH)	HEADWALL STATIONS
0+55 – 5+80	RT	525	16	1	0+55
11+50 – 17+80	RT	630	16	1	14+39 LOW PT.
	RT		16	1	26+00 LOW PT.
17+80 – 30+20	RT	1240	16	1	17+80
30+20 – 34+70	RT	450	16	1	30+20
30+20 – 35+25	LT	505	16	1	30+20
35+25 – 41+00	LT	575	16	1	35+25
41+00 – 46+00	LT	500	16	1	41+00
42+40 – 47+00	RT	460	16	1	42+40
47+00 – 53+00	RT	600	16	1	47+00
53+00 – 63+18	RT	1018	32	2	53+00–63+18
59+20 – 64+18	LT	498	16	1	64+18
63+18 – 67+40	RT	422	16	1	67+40
64+18 – 67+40	LT	322	16	1	67+40
67+40 – 71+00	LT	360	16	1	71+00
67+40 – 73+00	RT	560	16	1	73+00
71+00 – 76+00	LT	500	16	1	76+00
73+00 – 79+00	RT	600	16	1	79+00
76+00 – 79+00	LT	300	16	1	79+00
79+00 – 83+68	LT	468	16	1	83+68
79+00 – 96+18	RT	1718	32	2	96+18–85+58 LOW PT.
90+78 – 96+18	LT	540	16	1	96+18
96+18 – 101+18	RT & LT	1000	32	2	101+18
101+18 – 112+00	RT & LT	2164	32	2	107+80 LOW PT.
112+00 – 117+20	RT & LT	1040	32	2	112+00
117+20 – 121+68	RT & LT	896	32	2	117+20
121+68 – 126+48	RT & LT	960	32	2	121+68
126+48 – 131+48	RT & LT	1000	32	2	126+48
131+48 – 136+48	RT & LT	1000	32	2	131+48
136+48 – 141+68	RT & LT	1040	32	2	136+48
141+68 – 146+68	RT & LT	1000	32	2	141+68
146+68 – 151+50	RT & LT	964	32	2	146+68
151+50 – 162+68	LT	1118	32	2	151+50–162+68
151+50 – 164+00	RT	1250	32	2	151+50–164+00
162+68 – 168+28	LT	560	16	1	168+28
164+00 – 168+28	RT	428	16	1	168+28
168+28 – 174+08	RT & LT	1160	32	2	174+08
174+08 – 177+43	LT	335	16	1	177+43
174+08 – 184+66	RT	1058	16	1	179+70 LOW PT.
184+66 – 194+25	RT	959	32	2	184+66–194+25
189+35 – 194+25	LT	490	16	1	194+25
244+30 – 249+40	LT	510	16	1	244+30
249+40 – 253+40	LT	400	16	1	249+40
253+40 – 258+40	RT & LT	1000	32	2	253+40

STATIONS	LOCATION	PERF. PIPE (FEET)	TP PIPE (FEET)	HEADWALLS (EACH)	HEADWALL STATIONS
258+40 – 263+40	RT & LT	1000	32	2	258+40
263+40 – 268+00	RT & LT	920	32	2	263+40
268+00 – 273+40	RT & LT	1080	32	2	268+00
273+40 – 280+50	RT & LT	1420	32	2	273+40
280+50 – 284+05	RT & LT	710	32	2	280+50
284+05 – 293+14	RT & LT	1818	64	4	284+05–293+14
293+14 – 303+64	RT & LT	2100	32	2	298+64 LOW PT.
303+64 – 314+14	RT & LT	2100	64	4	303+64–314+14
314+14 – 320+00	RT & LT	1172	32	2	320+00
320+00 – 324+14	RT & LT	828	32	2	324+14
324+14 – 333+44	RT & LT	1860	32	2	328+50 LOW PT.
333+44 – 337+84	RT & LT	880	32	2	333+44
337+84 – 350+90	RT & LT	2612	64	4	337+84–347+84 LOW PT.
TOTALS:		51,623	1488	93	

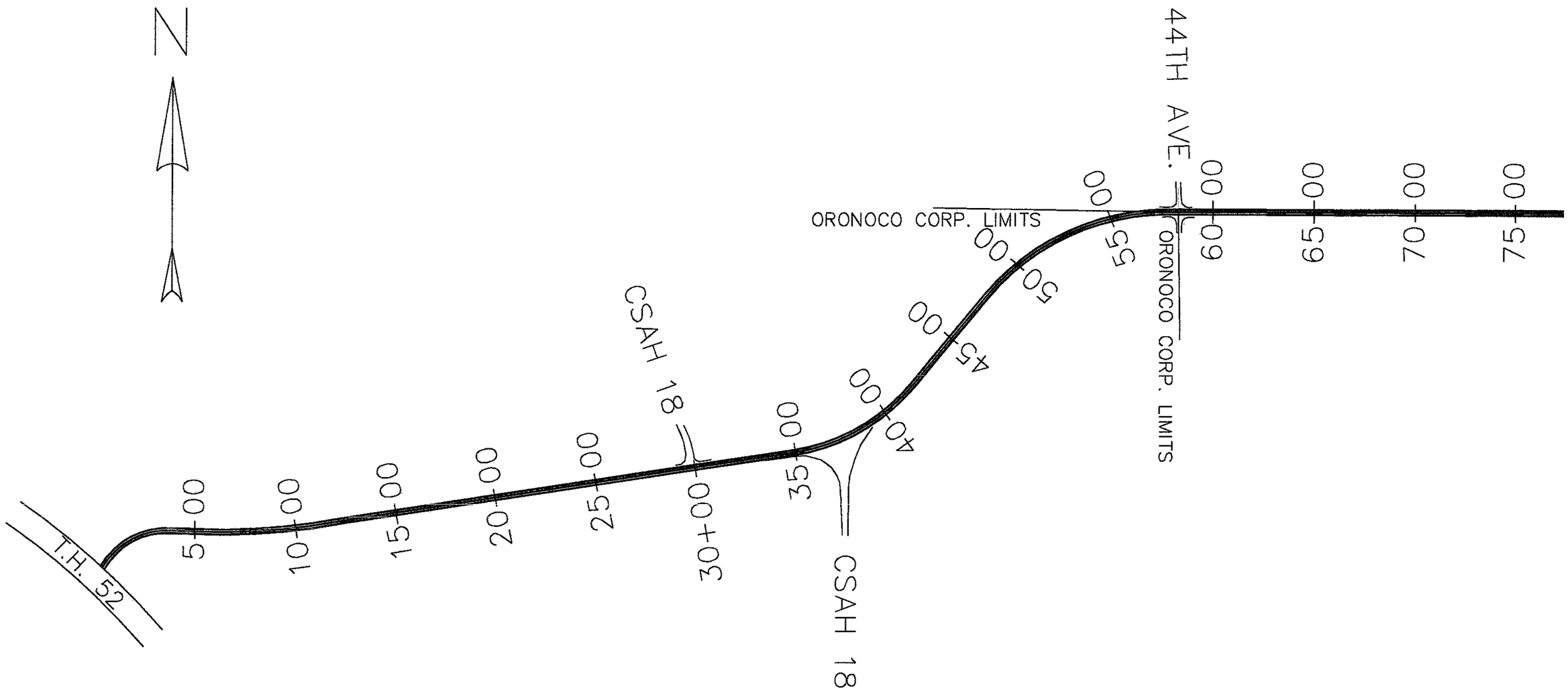
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ENGINEERING

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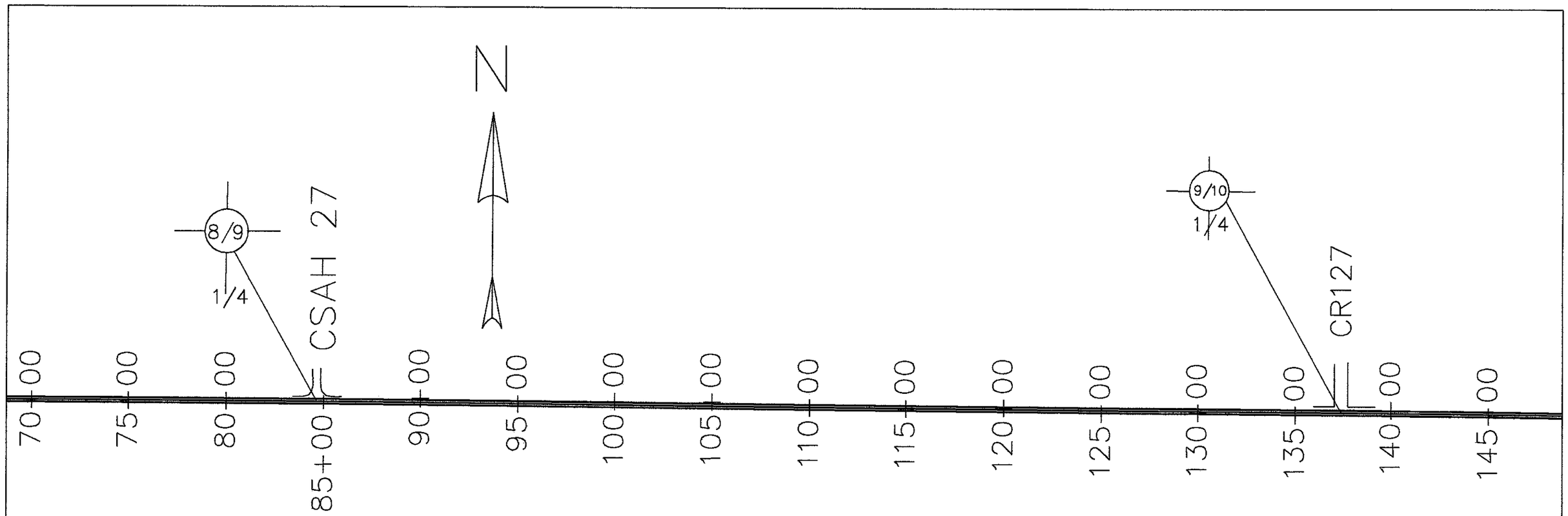
ENGINEERING

CSAH 12 STATIONING

CERTIFIED BY Kaye M Bierwirth LICENSED PROFESSIONAL ENGINEER LIC. NO. 19917 4/11/2001

S.A.P. 55-612-17

SHEET 14 OF 31 SHEETS



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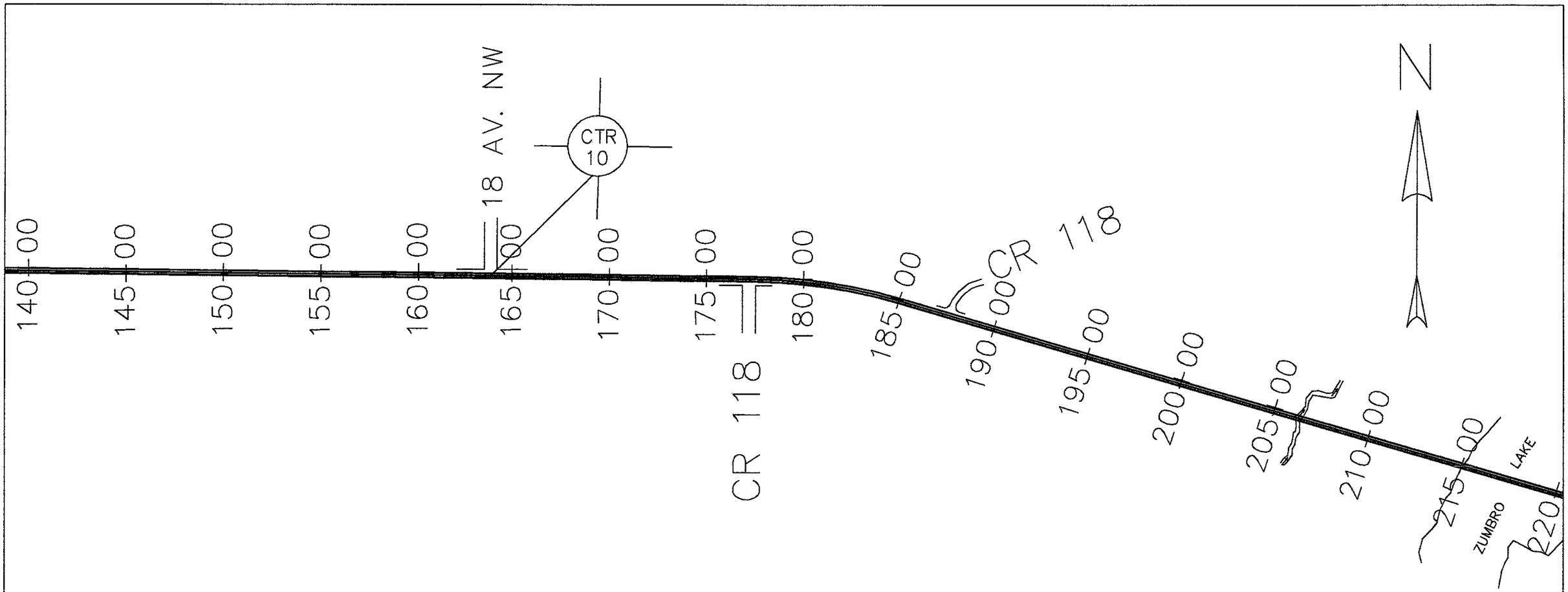
ENGINEERING

CSAH 12 STATIONING

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SHEET 15 OF 31 SHEETS



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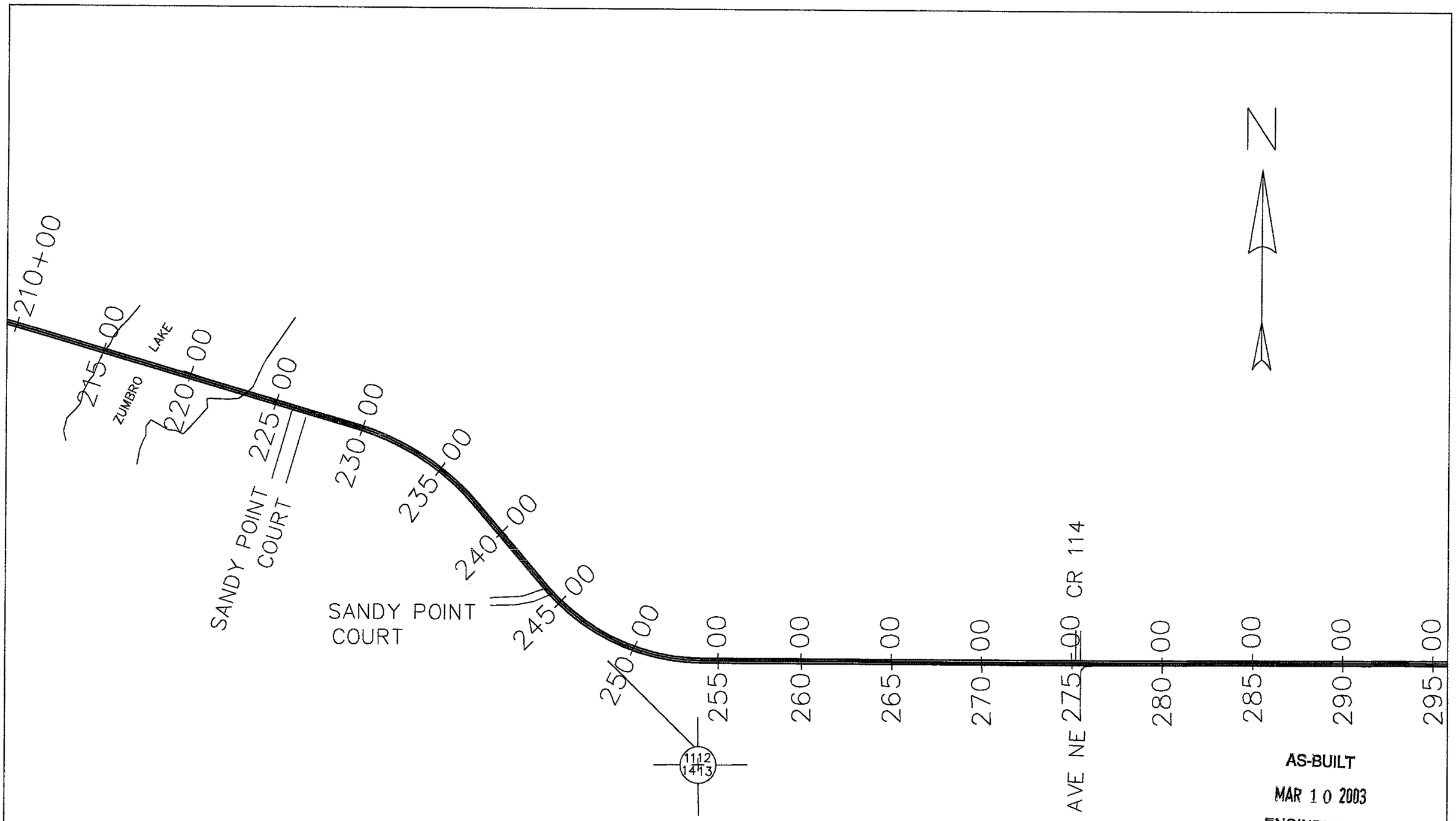
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CSAH 12 STATIONING

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LICENSED PROFESSIONAL ENGINEER

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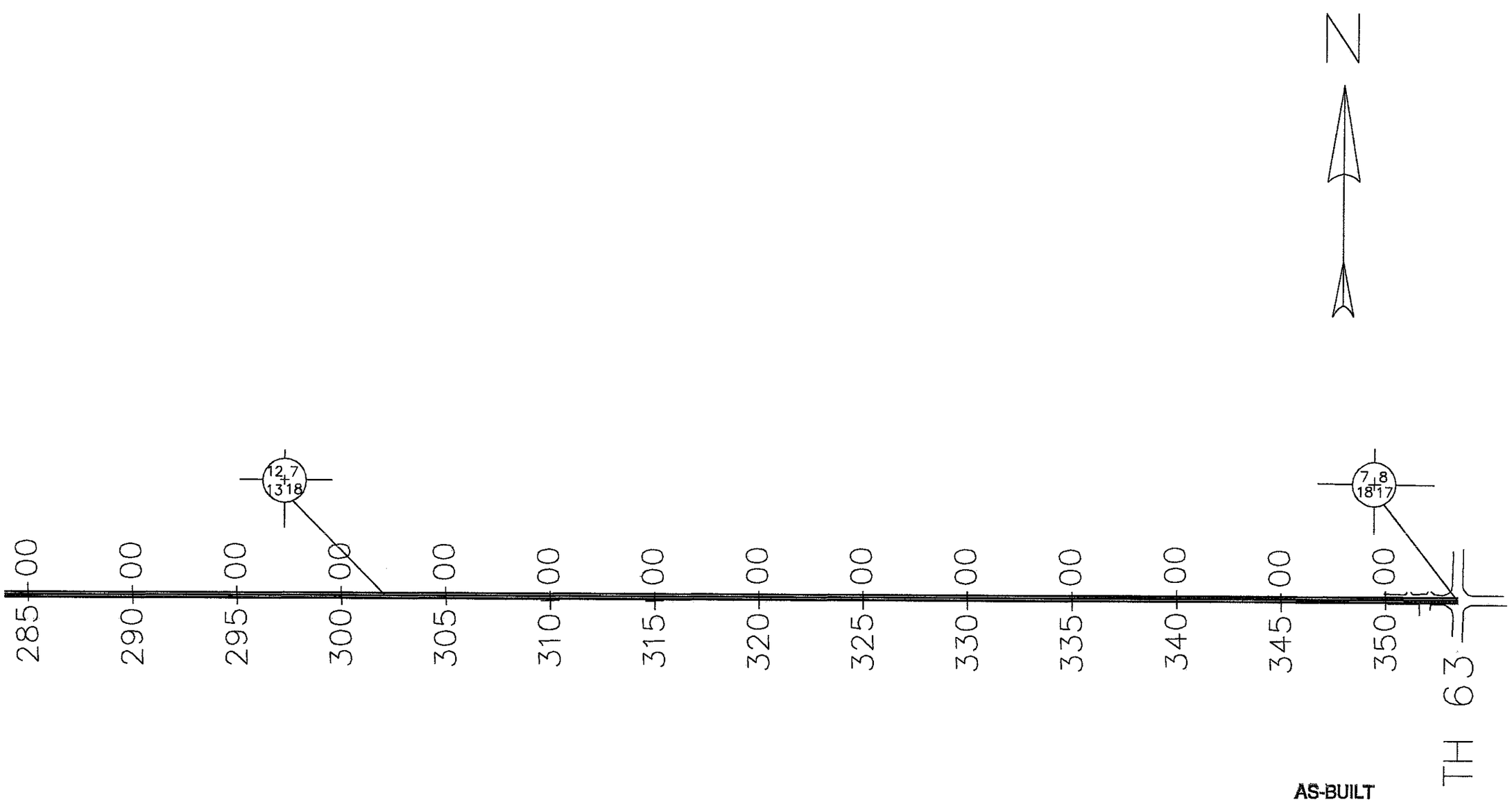
ENGINEERING

CSAH 12 STATIONING

CERTIFIED BY Kane M Pieniek LICENSED PROFESSIONAL ENGINEER LIC. NO. 19917 4/11/2001

S.A.P. 55-612-17

SHEET 17 OF 31 SHEETS



AS-BUILT

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ENGINEERING

CSAH 12 STATIONING

CERTIFIED BY Kevin M Briesach LIC. NO. 19917 4/11/2001
LICENSED PROFESSIONAL ENGINEER

S.A.P. 55-612-17

℄ Culv. 2+06
Inpl. 18"x 65' CMP
NO CHANGE

Res. Drive Lt. 3+53
Inpl. 18" x 30' CMP
NO CHANGE

℄ Culv. 5+18
Inpl CMP X 36
NO CHANGE

Dr. Lt. 6+56
Inpl. 15"X 34' CMP
NO CHANGE

Business Drive Lt. 9+12
No Culv. Inpl.
NO CULV. REQ'D.
CONST. 2 DRIVES
STA. 8+28
STA. 8+80

Drive Lt. 14+36
No Culv. Inpl.
NO CULV. REQ'D

CONST. B624 CONC. CURB & GUTTER LT STA:
7+50 TO STA. 30+20

T.H. 52 N.B.L.

T.H. 52 S.B.L.

BEGIN S.A.P. 55-612-11
STA. 7+00

Pl. 11+74.66
Δ Lt. 12°18'30"
D 1° 45'
T 353.03'
L 703.33'

P.T. 5+24.96

P.C. 8+21.63

TO BE CONST. BY OTHERS

Woods

Conc. Slab

Bldg.

Rock Wall

Gd.

Cable Marker

M.H.2

M.H.3

M.H.4

C.B.1

C.B.2

T-BUR

FE Rt 4+42
No Culv. Inpl.
NO CHANGE

Res. Dr. Rt. 8+66
No Culv. Inpl.
18"x 32' C.S. PIPE CULV.
2-18"G S. PIPE APRONS

Res. Drive Rt. 13+18
No Culv. Inpl.
NO CULV. REQ'D.

Res. Drive Rt. 14+34
No Culv. Inpl.
NO CULV. REQ'D.

AS-BUILT

MAR 1 0 2003

ENGINEERING

B.M. Elev. 968.52
Spk. in tree 51' Lt.
Sta. 2+83

B.M. Elev. 975.79
Spk. in PP 37' Rt.
Sta. 12+98

CL 28 TREES — GR. 32 TREES

℄ SUBGRADE ELEV.

74.4 76.48 78.09 78.98 79.18 78.7 78.01 77.3 76.74 ℄ SUBGRADE ELEV.

P.I. +78.57142
ELEV. 80.25
400' V.C.

P.V.C. +78.57142
ELEV. 76.04999

P.V.T. +78.57142
ELEV. 78.85

P.V.C. +85.33809
ELEV. 77.33334

C.B.1 STA. 14+60.0

M.H.2 STA. 15+42

+2.1%

-0.7%

82 LIN. FT 15"R.C.P. CL IV

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA 7+00 TO STA 45+00

COMMON EXC.	3152	CU YDS	
SALVAGED TOPSOIL (EV)	576	CU YDS	
ROCK EXC	2840	CU. YDS	EMB 6552
SUBGRADE EXC	1709	CU YDS	

10 1000 90 80 70 960

+00 +72 +66 +97 +06 +15 +70 +77 +95 +19 +32 +60 +65 +71 +72 +45 +57 +20 +59 +09 +32 +47 +76 +16 +42

670 67.3 67.6 67.8 68.2 69.6 70.0 70.4 70.7 70.6 70.7 71.4 72.0 73.5 75.3 76.4 78.2 78.3 78.9 80.0 98.01 80.2 79.9 79.7 79.4 78.8 78.7 78.6 78.4 78.3 78.1 78.0 78.0 78.2

0 5 10 15

C.S.A.H. 12 S.A.P. 55-612-11

SHEET 4 OF 35 SHEETS

VERTICAL CONTROL

ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA-LEVEL DATUM, 1929 ADJ. AND TIED TO THE U.S. LEVEL NET B.M. NO. 5508K LOCATED S.E. COR. BR NO. 9234 ON T.H. NO. 52 ELEV. 963.36

Profile 75' Lt.
Profile 75' Rt

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S.A.P. 55-612-17

SHEET 19 OF 31 SHEETS

℄ Culv. 15+43
Inpl. 36"X 46" CMP
REMOVE

Drive Lt. 16+42
Inpl. 15"X 42" CMP
REMOVE
NO CULV. REQ'D.

℄ Culv. 25+45
Inpl. 42"X 30" CMP-A
REMOVE

Res. Drive Lt. 26+08
Inpl. 24"X 28" CMP
REMOVE
NO CULV. REQ'D.

CONST. DR. LT 25+70
NO CULV. REQ'D.

Drive Lt. 29+86
Inpl. 18"X 30' CMP
REMOVE
NO CULV. REQ'D

℄ Box Culv. 30+02
Inpl. 10'X 8'X 82'
REMOVE
SEE PLAN SHEETS NO.32 THRU. 35 FOR BOX CULV. DETAIL.

C.S.A.H. 18 Lt. 33+29
No Culv. Inpl.
58" SPAN x 82' R C.P. A. CULV. CL. II A
2-58" SPAN R.C.P. A. APRONS.
F & I. CONC. PIPE JOINT TIES
PLACE CULV ON "B" BEDDING 7.3 CU. YDS.

℄ Culv. 34+48
Inpl. 18"X 54 CMP
Skewed 10°
REMOVE
NO CULV. REQ'D.

FE Lt. 36+28
Inpl 15"X 24" CMP
REMOVE
NO F.E. REQ'D.

℄ Culv. 43+90
Inpl 24"X 100' CMP
REMOVE
NO CULV. REQ'D.

C.B. 1
CONST. CATCH BASIN DESIGN "C"
21' LT. STA. 14+60
GRATE ELEV. 77.83 OUTGOING
ELEV. N. 74.00
GRATE FRAME NO. 802 A
GRATE NO. 811
CURB BOX NO. 823 A
(8 LIN. FT 15" R.C. SEWER CL. IV)

M.H. 1
CONST. MANHOLE DESIGN "C"
29' LT. STA. 14+60
RING ELEV. 78.71
OUTGOING ELEV. E. 73.76
INCOMING ELEV. SO. 73.96
RING CASTING NO. 700-9
COVER CASTING NO. 712
(82 LIN. FT 15" R.C. SEWER CL. IV)
F & I. CONC. PIPE JOINT TIES

C.B. 2
CONST. CATCH BASIN DESIGN "C"
21' LT. STA. 16+66
GRATE ELEV. 77.45 OUTGOING ELEV. N. 73.56
GRATE FRAME NO. 802 A GRATE NO. 811
CURB BOX NO. 823 A
(8 LIN. FT 12" R.C. SEWER CL. IV)

M.H. 3
CONST MANHOLE DESIGN "C"
29' LT STA. 16+66
RING ELEV 78.23 OUTGOING ELEV. W. 73.08
INCOMING ELEV. SO. 73.50 INCOMING ELEV. E. 73.28
RING CASTING NO. 700-9 COVER CASTING NO. 712
(124 LIN. FT. 18" R.C. SEWER CL. IV)
F & I. CONC. PIPE JOINT TIES

C.B. 3
CONST. CATCH BASIN DESIGN "C"
21' LT. STA. 18+10
GRATE ELEV. 78.04 OUTGOING EL. N 74.80
GRATE FRAME NO. 802 A GRATE NO. 811
CURB BOX NO. 823 A
(8 LIN. FT 15" R.C. SEWER CL IV)

M.H. 4
CONST. MANHOLE DESIGN "C"
29' LT. 18+10
RING EL. 78.82 OUTGOING EL. W. 74.54
INCOMING EL SO. 74.74
RING CASTING NO. 700-9
COVER CASTING NO. 712
(144 LIN. FT. 15" R.C. SEWER CL. IV)
F & I. CONC. PIPE JOINT TIES

CONST. BY-PASS LANE LEFT FROM STA. 37+10 TO 43+20
SEE PLAN SHEET NO. 3

RATE SUPERELEVATION 0.050'/FT
240' RUNOFF
P.I. 41+66.30
Δ Lt. 42°06'30"
D 6°00'
T 367.91'
L 701.81'

P.T. 45+00.60

PT 15+24.96

PT 2+01.41

P.C. 37+68.69

PLACE RANDOM RIPRAP CL. III
24" DEPTH 78' TO 90' RT. STA. 18+10
TO STA. 20+50
213 CU. YDS.

M.H. 2
CONST MANHOLE DESIGN "A"
29' LT. STA. 15+42
RING ELEV. 78.38 OUTGOING ELEV. SO. 70.45
INCOMING ELEV. W. 72.20 INCOMING EL. E. 71.95
INCOMING ELEV. N. 70.95
RING CASTING NO. 700-9 COVER CASTING NO. 712
(14 LIN. FT. 30" R.C. SEWER CL. II & 1-30" R.C.P. APRON INLET) APRON INLET ELEV. 73.70
(68 LIN. FT. 36" R.C. SEWER CL. II & 1-36" R.C.P. APRON OUTLET) APRON OUTLET ELEV. 69.92
PLACE 36 R.C. SEWER ON "B" BEDDING 3.2 CU. YDS.
F & I. CONC. PIPE JOINT TIES.

C.B. 4
CONST. CATCH BASIN DESIGN "C" 21' LT. STA. 21+60
GRATE EL. 79.26 OUTGOING EL. SO. 72.79
GRATE FRAME NO. 802 A GRATE NO. 811 CURB BOX NO. 823 A
(62 LIN. FT. 24" R.C. SEWER CL. IV & 1-24" R.C.P. APRON OUTLET) APRON OUTLET ELEV. 72.00
PLACE PIPE ON "B" BEDDING 2 CU YDS.
F & I. CONC. PIPE JOINT TIES

℄ Box Culv. 29+46
4'x 2.5'x 22' Stone Arch.
REMOVE BOX CULV.

County Park Drive Rt. 30+09
No Culv. Inpl.
NO CULV. REQ'D.

Res. Drive Rt. 31+47
Inpl. 15" X 34' CMP
REMOVE
18"x 32' C.S.P. CULV.
2-18" G.S.P. APRONS

2 Ave. N.W. (Oronoco) Rt. 32+85
Inpl. 18" X 44' CMP
REMOVE
18"x 44' C.S.P. CULV.
2-18" G.S.P. APRONS

Res. Dr. 36+35 Rt.
No Culv. Inpl
NO CULV. REQ'D.

C.S.A.H. 18 Rt.
No Culv. Inpl.
NO CULV. REQ'D.

F.E. Lt. 0+94 (CSAH 18 Sa)
No Culv. Inpl.
MOVE F.E. TO STA. 1+50
18"x 28" C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

Res. Dr. Lt. 2+56 (CSAH 18 Sa)
Inpl. 18" X 30" CMP
REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S.P. ARCH APRONS

Res. Dr. Lt. 3+57 (CSAH 18 Sa)
Inpl. 15" x 24" CMP
REMOVE
21" SPAN x 32' C.S.P.-ARCH CULV.
2-21" SPAN G.S.P. ARCH APRONS

Res. Dr. Lt. 4+17 (CSAH 18 Sa)
Inpl. 15" x 26" CMP
REMOVE
21" SPAN x 32' C.S.P.- ARCH CULV.
2-21" SPAN G.S.P. ARCH APRONS

Res. Dr. Rt. 2+15 (CSAH 18 Sa)
NO Culv. Inpl.
18"x 32' C.S.P. CULV.
2-18" G.S.P. APRONS

Res. Dr. Rt. 4+49 (CSAH 18 Sa)
Inpl. 12" x 24" CMP
REMOVE
21" SPAN x 32' C.S.P.- ARCH CULV.
2-21" SPAN G.S.P. ARCH APRONS

M.H. 42' Lt. Sta. 0+95 (CSAH 18 Sa)
REMOVE M.H.
REMOVE 60' LIN. FT. CULV

Res. Dr. Rt. 16+22
Inpl. 15" x 32' CMP W/Aprons
REMOVE 36 LIN. FT.
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

Res. Drive Rt. 16+82
No Culv. Inpl.
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

C.B. 5
CONST CATCH BASIN DESIGN "C" 21' LT. STA. 29+65
GRATE ELEV. 78.81 OUTGOING EL. SO. 73.10
GRATE FRAME NO. 802 A GRATE NO. 811 CURB BOX NO. 823 A
(44 LIN. FT. 15" R.C. SEWER CL. IV) OUTLET EL. 71.42
CONST. 114' P.C. CONC. BOX x 15" R.C.P. TEE FIELD CONNECTION
PLACE SEWER ON "B" BEDDING 0.9 CU YDS.
F & I. CONC. PIPE JOINT TIES

CL. 0.6 ACRES — GR. 0.6 ACRES

CL. 8 TR — GR. 10 TREES

B.M. Elev. 977.24
Top 3/4" Reinf. Bar in Wing
S.E. Cor. Bridge Sta. 30+60

B.M. Elev. 975.99
In Conc. water tank 100' Rt. 38+31

P.I. 3+02.31
Δ Rt. 19°00'
D 7°
T 136.97'
L 271.43'

P.I. 2+86.53
Δ Rt. 16°00'
D 7°
T 146.50'
L 291.91'

P.I. 1+74.74
Δ Rt. 16°00'
D 7°
T 146.50'
L 291.91'

P.I. 0+54.91
Δ Rt. 16°00'
D 7°
T 146.50'
L 291.91'

P.T. 4+36.97

END CONSTRUCTION STA. 5+00

P.T. 32+93.12
ALT 90.00 TO P.T. 1+28.65

P.C. 1+67.81

P.I. +95.23809
ELEV. 75.93334
400' V.C.
M = 0.525

P.I. +00
ELEV. 79.1
400' V.C.
M = 0.35

P.I. +00
ELEV. 77.35
400' V.C.
M = 0.425

P.I. +47.72727
ELEV. 82.08864
400' V.C.
M = 4.125

Profile 75' Lt
Profile 75' Rt

P.V.T. +95.23809
ELEV. 76.63333

P.V.C. +00 ELEV. 78.40

P.V.T. +00 ELEV. 78.40

P.V.C. +00 ELEV. 78.05

P.V.T. +00 ELEV. 78.35

P.V.C. +93.72727
ELEV. 80.83864

P.V.T. +97.72727
ELEV. 83.66562

+0.35%

-0.35%

+0.5%

+0.7%

+1.2%

+7.1%

SPECIAL DITCH LT.

SP. DITCH LT.

DROP INLET ELEV. 71.0
FLOWLINE ELEV. 66.0
OUTLET ELEV. 65.8

INLET ELEV. 73.8
OUTLET ELEV. 73.1

SUBGRADE TREATMENT
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 2+00 TO STA. 5+00 CSAH 18 SO

COMMON EXC.	27469	CU. YD.			
SALVAGED TOPSOIL (EV)	2469	CU. YD.			
SUBGRADE EXC.	5064	CU. YD.	EMB.	26127	

AS-BUILT
MAR 10 2003
ENGINEERING

C.S.A.H. 12

SHEET 5 OF 35 SHEETS

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S.A.P. 55-612-17

SHEET 20 OF 31 SHEETS

CONST. F.E. LT. 53+80
18"x28' C.S. PIPE CULV.
2-18" C.S. PIPE APRONS

℄ Culv. 52+10
Inpl 24" X 72' CMP SKEWED 30°
REMOVE
MOVE CULV. TO STA. 52+00 SKEW 15°
24"x 84' R.C. PIPE CL. II.
2-24° R.C. PIPE APRONS
F.&I. CONC. PIPE JOINT TIES.
PLACE CULV. ON "B" BEDDING, 3.4 CU YDS.
PLACE 40 SQ.YDS. SOD AROUND CULV APRONS
10 CU.YDS. RANDOM RIP-RAP CL. III. 18" DEPTH
5 CU.YDS. GRANULAR FILTER 9" DEPTH
CONST. DITCH BLOCK AT INLET

Twp Rd Lt 61+17
Inpl. 15" X 30' CMP
REMOVE
NO CULV REQ'D.

FE Lt. 65+92
Inpl. 15" X 24' CMP
REMOVE
18"x28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ Culv. 69+53
Inpl 36" X 72" CMP
REMOVE
30"x 109' R.C. PIPE CULV. CL III
2-30" R.C. PIPE APRONS
F.&I. CONC. PIPE JOINT TIES
PLACE CULV. ON "B" BEDDING, 4.3 CU.YDS.
PLACE 40 SQ.YDS. SOD AROUND CULV. APRONS
10 CU YDS. RANDOM RIP-RAP CL. III. 18" DEPTH
5 CU YDS. GRANULAR FILTER 9" DEPTH

Res. Drive Lt. 74+99
Inpl 15" X 24' CMP
REMOVE
OUTLET 43.79' LT. STA. 78+75.79
INLET 43.79' LT. STA., 74+76.21
FROM STA. 74+95 TO STA. 78+57
CULV. IS LOCATED 25' LT ℄
18"x 410' C.S. PIPE CULV
2-18" G.S. PIPE APRONS
CULV. LENGTH INCLUDES 2-15° BENDS
CONST. 8624 CONC. CURB & GUTTER
LT. STA. 74+88 TO STA 79+64

ORONOCO CORPORATE LIMITS
END CONSTRUCTION STA 4+00
POST 61+07.16
Center Section 8 T.18N R.8W
Found Iron Monument
NO Lt. 61+07.16
T-BUR
Pine Grove
Ho.
Woods
(2) Brick Posts 3 X 3'
NO CHANGE
OFFICE REVISION
P.I. 55+93.35
ΔRT. 90° 17'
D = 5° 00'
T = 537.80'
L = 1005.67'
E = 119.93'
RATE SUPERELEVATION 0.056'/FT.
270' RUNOFF
P.O.T. 60+43.71
P.O.T. 60+61.22
P.T. 45+00.60
P.C. 50+55.53
Cemetery Drive Rt. 52+95
Inpl. 24" X 46' CMP
REMOVE
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS
F.E. Rt. 53+80
Inpl. 18" X 30' CMP
REMOVE
24"x 28' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS
Twp. Rd. Rt. 61+13
Inpl. 15" X 30' CMP
REMOVE
NO CULV REQ'D
Res. Drive Rt. 70+95
Inpl 18" X 28' CMP
REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS
CONST. ACCELERATION LANE RT. STA. 40+00 TO STA. 50+00
END CONSTRUCTION STA 5+00
CL 1 2 ACRES — GR 1 2 ACRES
TWP ROAD APPROACH RT STA 61+13 CL 29 GR 20

B.M. Elev 1107.02
Spk. in B P 29' Rt.
Sta. 61+58

Profile 75' Lt.
Profile 75' Rt.
℄ SUBGRADE ELEV.
+7.1%
P.V.C. +20.0 ELEV. 72.42
P.I. +50.0
ELEV 24.25
1460' V.C.
M = 20.6225
SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 53+70 TO STA 65+25
INLET ELEV. 65.8
OUTLET ELEV. 64.0
P.T. 60+68.96*
P.O.T. 60+35.97
EQUATION +72
-4.2%
P.V.T. +67.01
ELEV 93.58598
P.V.C. +00 ELEV. 75.4
P.I. +00
ELEV. 67.0
400' V.C.
M = 1.025
INLET ELEV. 77.6
OUTLET ELEV. 67.3
P.V.T. +00 ELEV. 62.7
INLET ELEV. 59.57
STA. 74+76.21
+2.15%
+2.20%

AS-BUILT
MAR 10 2003
ENGINEERING

FOR INFORMATION ONLY

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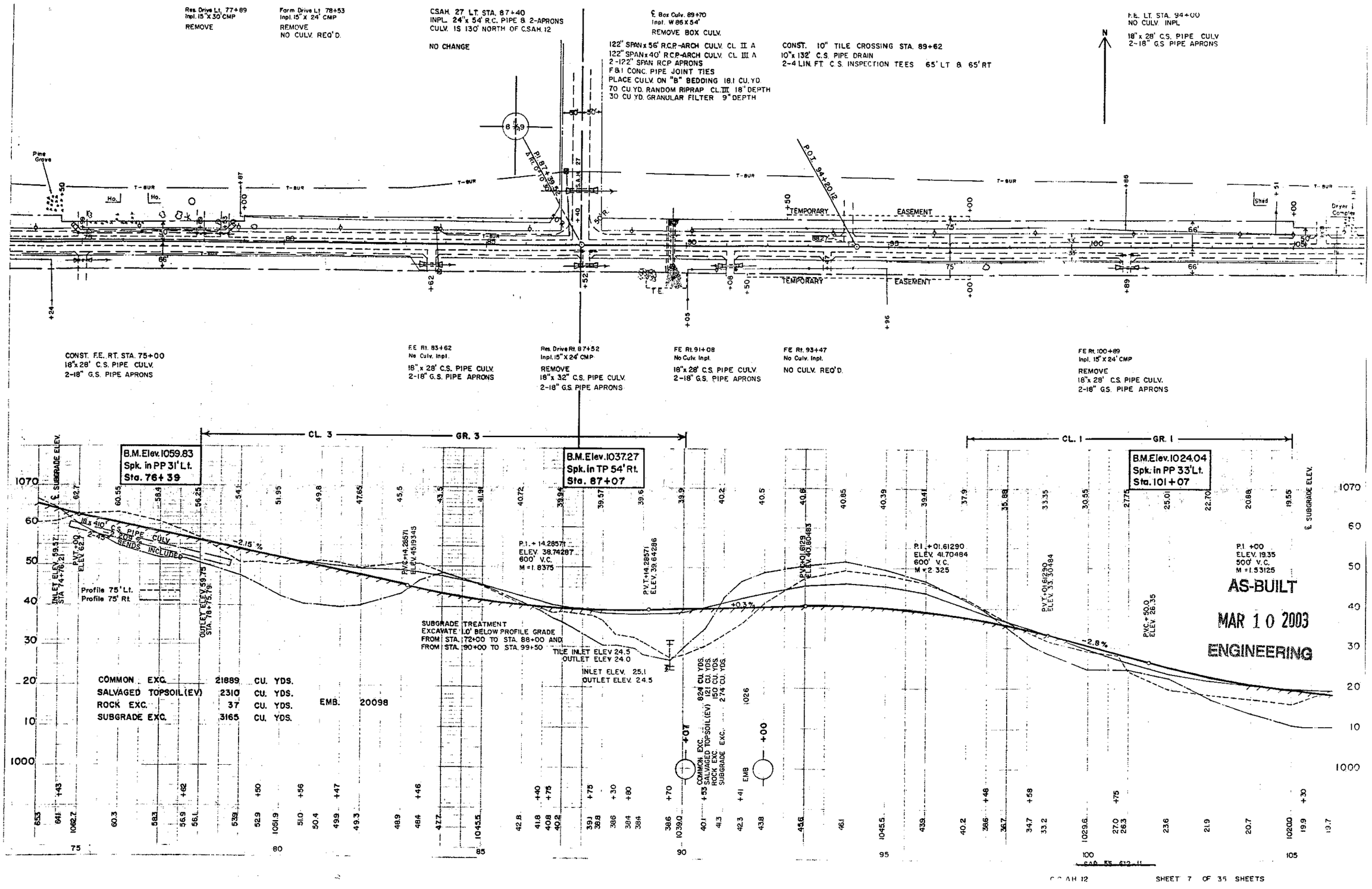
S.A.P. 55-612-17

SHEET 21 OF 31 SHEETS

~~S.A.P. 55-612-11~~

C.S.A.H. 12

SHEET 6 OF 35 SHEETS



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S.A.P. 55-612-17

SHEET 22 OF 31 SHEETS

C.S.A.H. 12 SHEET 7 OF 35 SHEETS

Drive Lt 105+68
No Culv. Inpl.

30"x32' C.S. PIPE CULV.
2-30" G.S. PIPE APRONS

℄ Culv. 106+04
Inpl. 24" X 36'

REMOVE
30"x70' R.C. PIPE CULV. CL. II
2-30" R.C. PIPE APRONS
F. & I. CONC. PIPE JOINT TIES.
PLACE CULV. ON "B" BEDDING. 2.8 CU.YDS.
PLACE 40 SQ.YDS. SOD AROUND CULV. APRONS.
10 CU.YDS. RANDOM RIP-RAP CL. III. 18" DEPTH.
5 CU.YDS. GRANULAR FILTER 9" DEPTH.
CONST. DITCH BLOCK LT STA 106+50

Drive Lt. 107+73
No Culv. Inpl.

NO CULV. REQ'D

Farm Ent. 108+96
Inpl. 15" X 40' CMP

REMOVE
18"x32' C.S.P. CULV.
2-18" G.S.P. APRONS

Res. Drive 112+86
Inpl. 18" X 24' CMP

REMOVE
18"x32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.E. Lt. 113+86
No Culv. Inpl

18"x28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ Culv. 120+18
Inpl. 30"X 47' CMP

REMOVE
30"x82' R.C. PIPE CULV. CL. II.
2-30" R.C. PIPE APRONS
F. & I. CONC. PIPE JOINT TIES
PLACE CULV. ON "B" BEDDING. 3.3 CU.YDS.
PLACE 40 SQ.YDS. SOD AROUND CULV. APRONS.
10 CU.YDS RANDOM RIP-RAP CL. III. 18" DEPTH
5 CU.YDS. GRANULAR FILTER 9" DEPTH
CONST DITCH BLOCK AT INLET.

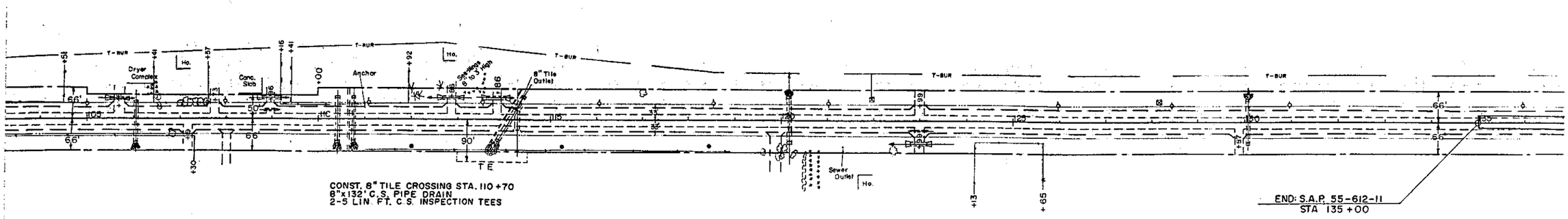
FE Lt. 122+99
No Culv. Inpl.

NO CULV. REQ'D.

℄ Culv. 130+03
Inpl. 24" X 39' CMP

REMOVE
24"x80' R.C. PIPE CULV CL. II
2-24" R.C. PIPE APRONS
F. & I. CONC. PIPE JOINT TIES.
PLACE 29 SQ.YDS. SOD AROUND CULV. APRONS
PLACE CULV. ON "B" BEDDING. 2.6 CU.YDS.
7 CU.YDS. RANDOM RIP-RAP CL III. 18" DEPTH.
4 CU.YDS. GRANULAR FILTER 9" DEPTH

CONST. B624 CONC. CURB & GUTTER
LEFT STA. 106+35 TO STA. 108+00



CONST. 8" TILE CROSSING STA. 110+70
8"x132' C.S. PIPE DRAIN
2-5 LIN. FT. C.S. INSPECTION TEES

END: S.A.P. 55-612-11
STA 135+00

CONST. F.E. RT. 108+00
NO. CULV. REQ'D.

F.E. Rt. 107+19
No Culv. Inpl

NO CULV REQ'D.

℄ Culv. 110+45
Inpl. 36"X 56' RCP

EXTEND
INLET 36"x14' R.C.P CULV. CL. II.
OUTL. 36"x8' R.C.P CULV. CL. II.
2-36" R.C.P. APRONS
F.&I. CONC. PIPE JOINT TIES.
PLACE CULV. ON "B" BEDDING.
1 CU. YD.
PLACE 50 SQ.YDS. SOD AROUND CULV. APRON
13 CU.YDS. RANDOM RIPRAP CL. III. 18" DEPTH.
7 CU.YDS. GRAN. FILTER 9" DEPTH

℄ Culv. 110+77
Inpl. 36"x 40' CMP

REMOVE
36"x78' R.C.P CULV. CL. II
2-36" R.C.P. APRONS
F.&I. CONC. PIPE JOINT TIES.
PLACE CULV. ON "B" BEDDING.
3.7 CU YDS.
PLACE 50 SQ.YDS SOD AROUND CULV. APRON.
13 CU.YDS. RANDOM RIP-RAP CL. III. 18" DEPTH
7 CU.YDS. GRANULAR FILTER 9" DEPTH.

℄ Box Culv. 114+29
Inpl. C 84 X 29'

REMOVE BOX CULV.
MOVE CULV. TO STA. 114+15 SKEW 30°
102" SPAN x 94' R.C. PIPE-ARCH CULV. CL IIA
2-102" SPAN R.C PIPE-ARCH APRONS
F.&I. CONC. PIPE JOINT TIES.
PLACE CULV. ON "B" BEDDING. 14.8 CU. YDS.
65 CU.YDS. RANDOM RIP-RAP CL. III. 18" DEPTH
26 CU.YDS. GRANULAR FILTER 9" DEPTH
CONST. TIMBER WEIR AT INLET APRON

Res. Drive Rt. 122+99
Inpl. 24" X 20' CMP

8" TILE OUTLET 18' LT. STA. 114+25
REMOVE 36 LIN. FT SUBSURFACE DRAIN
F.&I. 3 LIN.FT C.S. INSP. TEE 60' LT.
STA. 114+28 ± SKEW 30°
F.&I. 10"x138' C.S. PIPE DRAIN.
OUTLET ELEV. 12.0
F.&I OUTLET SCREEN FOR 10" C.M. PIPE.

REMOVE
24"x32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS.

CONST. F.E. RT. STA. 119+90
NO CULV. REQ'D.

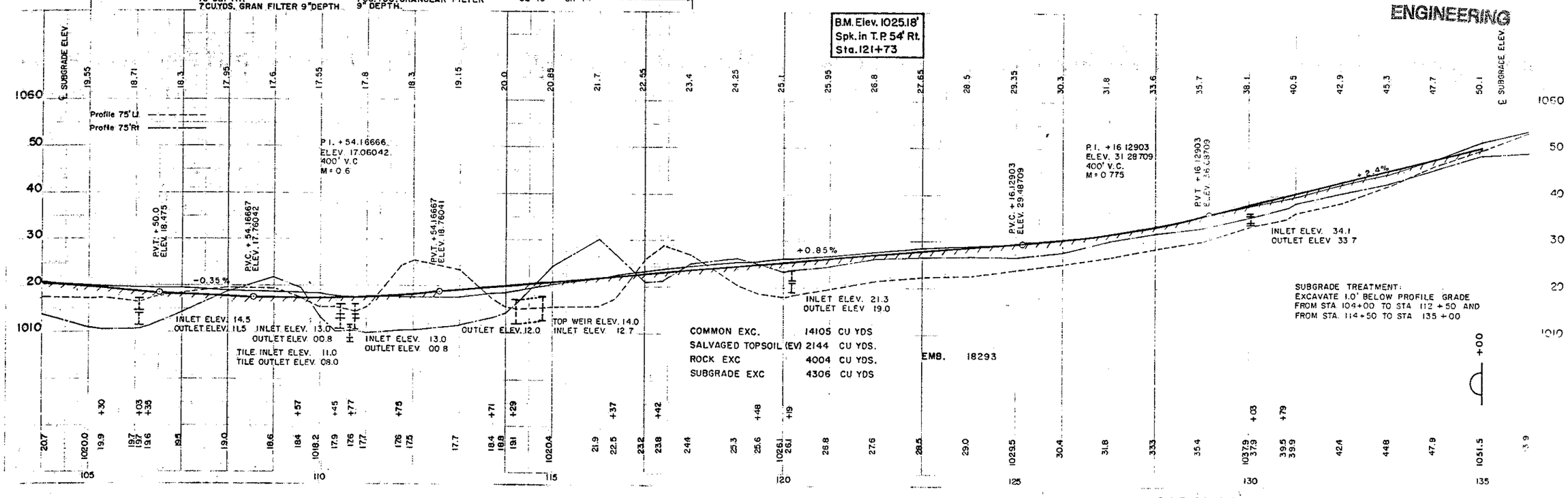
FE Rt. 129+87
No Culv. Inpl

NO CULV REQ'D

AS-BUILT

MAR 10 2003

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S.A.P. 55-612-11 CS AH 12

SHEET 8 OF 35 SHEETS

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S.A.P. 55-612-17

SHEET 23 OF 31 SHEETS

Twp Rd. Lt. 139+91
Inpl. 15" X 32' CMP
Remove
18" X 36' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

℄ Culv. 143+88
Inpl. 30"X 50' CMP
Remove 146+00 SKEW 35°
Move to Sta. ~~146+00~~
30" X 164' R.C. Pipe Culv. Cl. III
2-30" R.C. Pipe Culv. Aprons
Place Culv. on "C" Bedding

RES. DR. RT. STA. 145+29
INPL. 15" X 28' CMP
REMOVE
MOVE TO STA. 148+00
30" X 72' C.S. PIPE
2-30" METAL APRONS

℄ Culv. 153+26
Inpl. 18" X 74' CMP
Remove
No Culv. Req'd.

Res. Drive Lt. 157+18
Inpl. 18" X 80' CMP
REMOVE
No Culv. Req'd.

RES. DR. LT. STA. 156+01
NO CULV.

RES. DR. LT. STA. 158+56
NO CULV.

FE Lt. 161+56
Inpl. 15" X 24' CMP
Remove
No Culv. Req'd

FE. LT. STA. 2+00 TWP. RD.
INPL. 15" X 20' C.M.P.
REMOVE

BLOCK RET. WALL
32'± LT STA. 156+51 TO STA 157+98

BEGIN S.P. 55-612-04
Sta 135+00

P.I. 139+33.69
Δ RT 01°05'00"

P.O.T. 156+80.98

P.I. 165+26.00
Δ RT 0°28'00"

Woods
Windmill
Anchor
Garage
Woods
Woods

FE Rt. 139+86
No Culv. Inpl.
No Culv. Req'd.

FE Rt. 146+57
No Culv. Inpl.
Remove F.E

RES. DR.
~~FE~~ Rt 153+00
No Culv. Inpl.
18" X 28' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

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B.M. Elev. 1060.87
Spk. in PP 31' Lt.
Sta. 140+25

Profile 75' Lt.
Profile 75' Rt.

+5.0 %

P.I. +00
Elev. 71.7
800' V.C.
M=2.6

P.V.C. +25.0 Elev. 67.99

P.V.T. +00 Elev. 94.7

Inlet Elev. 67.0

Outlet Elev. 61.0

+2.4 %

P.V.C. +00 Elev. 62.1

Note: 32,252 Cu. Yds. Common Excavation to come from balance Sta. 163+58 to Sta. 207+00
31,159 Cu. Yds. Rock Excavation to come from balance Sta. 163+58 to Sta. 207+00
20,237 Cu. Yds. Rock Excavation to come from balance Sta. 207+00 to Sta. 218+30

P.I. +00
Elev. 51.7
1750' V.C.
M=19.46875

COMMON EXC. 6,316 Cu.Yds EMB. 76,825 Cu.Yds.
SUBGRADE EXC. 1,655 Cu.Yds.

Subgrade Treatment
Excavate 10" Below Profile Grade
Sta. 154+50 to Sta. 163+80

AS BUILT

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S.A.P. 55-612-17

SHEET 24 OF 31 SHEETS

Twp. Rd. Lt. 166+27
No Culv. Inpl.
No Culv. Req'd.
Place Culvert 835' North on Twp. Road
24" X 62' C.S. Pipe Culv.
2-24" G.S. Pipe Aprons
Place Culv. on "C" Bedding
Remove Inpl 18" X 22' CMP

℄ Culv. 168+52
Inpl. 24" X 70' CMP
Remove
24" X 146' R.C. Pipe Culv. Class IV
2-24" R.C. Pipe Culv. Aprons
Place Culv. on "C" Bedding

FE Lt. 170+43
No Culv. Inpl.
Move to Sta. 171+00
No Culv. Req'd.

FE. Lt. STA. 174+34
18" X 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

FE Lt. 177+97
No Culv. Inpl.
No Ent. Req'd.

℄ Box Culv. 182+11
Inpl. C.S. 6' X 6' X 31'
Remove
Const. ℄ Culv. Sta. 182+28 skew 30°
84" X 136' R.C. Pipe Culv. Class II
2-84" R.C. Pipe Culv. Aprons
Place Culv. on "C" Bedding

Farm Ent. Lt. ~~183+03~~
Inpl. 30" X 30' CMP
Remove
30" X 32' C.S. Pipe Culv.
2-30" G.S. Pipe Aprons

RES. DR. LT. STA. 183+00
30" X 32' C.S. PIPE CULV.
2-30" G.S. PIPE APRONS

190+00 Const. Approach Lt. (to old C.S.A.H. 12)
24" X 36' C.S. Pipe Culv.
2-24" G.S Pipe Aprons

192+36 Const. F.E. Lt
No Culv. Req'd.

193+00 Const. F.E., Rt.
~~18" X 28' C.S. Pipe Culv.~~
~~2-18" C.S. Pipe Aprons~~
CULV. OMITTED

166+40
Inpl. 12" X 20' CMP
Remove ~~167+66~~
16" X 32' CS. Pipe Culv.
2-18" G.S Pipe Aprons

RES. DR. RT. STA. 169+80 ±
NO CULV.

Res. Drive Rt. 175+69
Inpl. 15" X 24' CMP
Remove
18" X 32' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

FE Rt. 177+95
No Culv. Inpl.
18" X 32' C.S. Pipe Culvert
2-18" G.S. Pipe Aprons

C.R. "118" Rt. 179+59
Inpl. 18" X 34' CMP
Remove
24" X 66' C.S. Pipe Culvert
2-24" G.S. Pipe Aprons

FE Rt. ~~180+81~~ 180+00
No Culv. Inpl.
24" X 28' C.S. Pipe Culv.
2-24" G.S. Pipe Aprons

P.I. 183+52.37 (New)
P.I. 182+14.17 (Old)
Δ Rt. 15°25'
D 2°00'
T 388.27'
L 770.85'
E 26.13'
Super 0.04'/foot
200' Transition

P.I. 1+81.53
Δ Rt. 74° 35'
D 30°
T 146.45'
L 248.61'
R 190.99'

OBLITERATE "OLD ROAD"

Anchor

Tele. Cable Marker

Woods

Cable Marker

Woods

Anchor

Center Section 10 T 96 N R 19 W

P.I. 166+26.00
Inpl. 600 Spk.
Δ Rt. 00°02'00"

166+26.55
Inpl. 3/4" Rebar
1.2' Right of Const. Line

Tw. Rd.

P.C. 179+64.10

P.C. 178+29.90

P.T. 185+98.79

P.O.T. 192+90.34

P.O.T. 194+02.51

Construction ℄

℄ Hub
Sta. 194+01.51

Cast Iron Monument

EQUATION P.T. 187+47.73 = P.O.T. 187+43.36

Scale 1"=20' Vert.
1"=100' Horz.

Profile Twp. Road (℄) 166+26.0 C.S.A.H. 12 = 0+00 Twp. Rd. Lt.

P.I. +88.2692
Elev. 258.8438
100' V.C.
M = 0.65'

P.I. +30.71428
Elev. 81.39715
500' V.C.
M = 7.0

-6.0%

+5.4%

Inlet Elev. 84.0
Outlet Elev. 82.0

B.M. Elev. 1115.87
Spk. in PP 59' Lt.
Sta. 166+04

CL. 0.25 Acres GR. 0.25 Acres

B.M. Elev. 1083.04
Spk. in PP 32' Lt.
Sta. 175+62

CL. 3 GR. 3

B.M. Elev. 1067.01
Spk. in T.P. Lt.
Sta. 185+37

B.M. Elev. 1097.83
℄ Hub
Sta. 194+01.51

Profile 75' Lt.
Profile 75' Rt.

P.V.T. +75.0 Elev. 17.575

-3.9%

Inlet Elev. 00.0
Outlet Elev. 98.0

P.I. +15.20434
Elev. 65.30704
700' V.C.
M = 6.0375

P.V.C. +65.20434 Elev. 78.95704

-3.9%

Inlet Elev. 54.2
Outlet Elev. 53.4

P.V.T. +65.20434 Elev. 76.80703

P.V.C. +23.97.0 Elev. 77.75

+3.0%

Note: 17,391 L. Cu. Yds. dirt from Sta. 163+58 to Sta. 207+00 to be used to construct Twp. Road Lt. Sta. 166+26. This Quantity included in Common Excavation for this balance.

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COMMON EXC. 192,726 Cu. Yds
ROCK EXC. 35,373 Cu. Yds
SUBGRADE EXC. 1,343 Cu. Yds.

EMB. 110,628 Cu. Yds.

Subgrade Treatment:
Excavate 1.0' Below Profile Grade
Sta. 189+50 to Sta. 190+50
Sta. 192+65 to Sta. 195+25

AS BUILT

~~S.A.P. 55-612-04~~ C.S.A.H. 12

SHEET 4 OF 66 SHEETS

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S.A.P. 55-612-17

SHEET 25 OF 31 SHEETS

Const. ℄ Culv. 208+88 skew 15°
138" span X 102' R.C. Pipe Culv. Class III A
138" Span X 48' R.C. Pipe Culv. Class III A
138" Span X 42' R.C. Pipe Culv. Class II A
2-138" Span Pipe Aprons
Place on "B" Bedding
F & I Approved Joint Fasteners

Const. F.E. Lt. 209+70
18" X 28' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

RES. OR. LT. STA. 206+80
24" X 28' C.S. PIPE CULV.
2 - 24" G.S. PIPE APRONS

P.O.T. 194+0.51
P.O.T. 209+33.34
Construction ℄
Woods
EQUATION
P.O.T. 214+34.71= P.O.T. 214+41.06
P.O.T. 214+30.32
P.O.T. 216+24.50
P.O.T. 217+37.16
EQUATION
P.O.T. 225+77.31= P.O.T. 225+67.16
P.O.T. 225+89.24= P.O.T. 225+79.51
LAKE
ZUMBRO
Boat Dock
Gas Pump
Beach

Const. F.E. Rt. 207+55
24" X 28' C.S. Pipe Culv.
2-24" G.S. Pipe Aprons

Const. F.E. Rt. 209+70
18" X 28' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

CL. 0.40 Acres
GR. 0.40 Acres

CL. 30 GR. 30

CL. 2.0 Acres GR. 2.0 Acres

B.M. Elev. 1106.13
℄ Hub
Sta. 200+33.34

B.M. Elev. 997.11
Spk. in 15" Elm 28' Lt. Sta. 209+00

B.M. Elev. 1071.53
℄ Hub
Sta. 214+30.32

B.M. Elev. 926.43
3/4" Reinf. Rod ℄
Sta. 217+36

Profile 75' Lt.
Profile 75' Rt.

P.I. +00
Elev. 07.0
1950' V.C.
M=24.375

Subgrade Treatment
Excavate 10" Below Profile Grade
Sta. 204+20 to Sta. 207+30
Sta. 209+80 to Sta. 210+20

Note: 32,252 Cu. Yds. Common Exc. and 31,159 Cu. Yds. Rock Exc. to be hauled to balance from Sta. 135+00 to Sta. 163+58. Quantities are included in balance Sta. 163+58 to Sta. 207+00.

Inlet Elev. 91.0
Outlet Elev. 88.0

Note: 20,237 Cu. Yds. Rock Excavation to be hauled to balance Sta. 135+00 to Sta. 163+58 Quantity is included in balance Sta 207+00 to Sta 218+30

P.I. +77.86250
Elev. 75.99413
400' V.C.
M=2.0'

COMMON EXC.	36,426 Cu Yds.
ROCK EXC.	178,037 Cu. Yds.
SUBGRADE EXC.	91 Cu Yds.
EMB.	20,330 Cu Yds.

Note: 157,900 Cu. Yds. of Rock Exc. to be crushed and stockpiled. (Under S.A.P. 55-612-08)

Crushed Rock Embankment Material

Finished Centerline Elevations

-7.0%

-3.0%

2:1 Slope

2:1 Slope

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S.A.P. 55-612-17

SHEET 26 OF 31 SHEETS

C.S.A.H. 12

SHEET 5 OF 66 SHEETS

Const. F.Ent. Lt. 227+00
30" X 28' C.S. Pipe Culv.
2-30" G.S. Pipe Aprons

Note All merchantable timber shall be salvaged from Sta. 233+38 to Sta. 240+35 See Special Provisions.

EQUATION POT. 225+7.31= POT. 225+87.15

POT. 225+89.24= EQUATION POT. 226+78.51

P.C. 231+77.83

P.C. 232+13.45

Pt. 235+58.85
Δ Rt. 29°47'30
D 4°00'
T 381.02'
L 744.49'
E 49.787'

Pt. 236+34.99
Δ Rt. 32°47'45"
D 4°
T 421.54'
L 819.90'

P.T. 239+22.62

P.T. 240+33.35

POT 240+10.43

POT 242+45.08

See Plan & Profile Sheet No. 9 for Detail of Approach Right Sta. 226+50.

Const. ℄ Culv. Sta. 239+34
72" X 272' C.S. Structural Plate Pipe Culv. 8 Gage
2 to 1 Bevel Ends included in length
Place Culv. on "B" Bedding

RES. DR. RT. STA. 241+00 ±
18" X 32' C. S. P. CULV.
2 - 18" G. S. P. APRONS

Const Approach Rt. 245+50
18" X 32' CS. Pipe Culv.
2-18" G.S. Pipe Aprons

Const. F.Ent. Lt. 248+00
18" X 28' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

P.C. 246+22.07

P.C. 246+45.97

Construction Line

Pt. 251+44.23
Δ Lt. 47°00'
D 5°00'
T 498.26'
L 940.00'
E 105.64'

Pt. 251+56.43
Δ Lt. 50°00'
D 5°
T 534.36'
L 1000.00'

P.T. 255+85.97

P.T. 256+22.07

Res. Drive Rt. 250+75
No Culv. Inpl.
Move Drive to Sta. 251+00
18" X 32' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

Cast Iron Monument

T.10S. R.14W. T.10S. R.13W.

B.M. Elev. 942.40
Spk. in Oak 10' Lt.
Sta. 226+12

B.M. Elev. 1024.49
Spk. in 12" Stump
℄ Sta. 231+68

B.M. Elev. 1029.18
Spk. in Stump 10' Lt.
Sta. 237+41

B.M. Elev. 1067.24
℄ Hub
Sta. 245+79.98

Profile 75' Lt.
Profile 75' Rt.

Pt. + 38.081
Elev. 40.8439
900' V.C.
M=11.25

P.V.T. + 88.081
Elev. 72.36567

COMMON EXC. 28,826 Cu. Yds.
ROCK EXC. 137,719 Cu. Yds.
EMB 134,735 Cu. Yds.

Note: 20,615 Cu. Yds. Rock Excavation from balance Sta. 221+00 to Sta. 236+60 to be used in the construction of Drive Rt. Sta. 226+50. Quantity included in this balance.

COMMON 2,521
ROCK 12,028
EMB 13,037

Note: 41,394 Cu. Yds. of Rock Excavation from balance Sta. 221+00 to Sta. 236+60 to be crushed and used to construct Embankment Sta. 221+00 to Sta. 223+00

Inlet Elev. 88.8

Outlet Elev. 75.7

COMMON 9,635 Cu. Yds.
ROCK 16,013 Cu. Yds.
EMB 21,303 Cu. Yds.

Pt. + 79.10447
Elev. 62.73731
1300' V.C.
M=10.8875

P.V.C. + 29.10447 Elev. 64.68730

P.V.T. + 88.88888 Elev. 65.46667

+0.3%

Subgrade Treatment
Exc. 1.0' below profile grade
Sta. 245+70 to Sta. 250+50

COMMON EXC. 13,111 Cu. Yds.
ROCK EXC 3,672 Cu. Yds.
SUBGRADE 1,135 Cu. Yds.
EMB 12,212 Cu. Yds.

Pt. + 88.88888
Elev 66.05666
600' V.C.
M= 1.35

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S.A.P. 55-612-17

SHEET 27 OF 31 SHEETS

55-612-04 C.S.AH. 12 SHEET 6 OF 66 SHEETS

℄ Culv. 259+74
Inpl. 18" X 32' CMP
Remove
Const. ℄ Culv. 259+00
24" X 112' R.C. Pipe Culv. Class II
2-24" R.C. Pipe Culv. Aprons
Place Culv. on "C" Bedding
F&I Approved Joint Fasteners

FE Lt. 263+49
Inpl. 15" X 20' CMP
Remove
18" X 28' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

FE Lt. 270+93
Inpl. 15" X 26' CMP
Remove
18" X 32' C.S. Pipe Culv
2-18" G.S. Pipe Aprons

℄ Culv. 326+00 (Old C.S.A.H. 12)
Inpl. 18" X 50' CMP
Remove
No Culv. Req'd.

℄ Culv. 279+60 (Twp. Rd.)
Inpl. 18" X 66' CMP
Remove
Obliterate Old Road as directed by the Engineer

℄ Culv. 286+60
Inpl. 24" X 66' CMP
Remove
24" 114' R.C. Pipe Culv. Cl. III
2-24" R.C. Pipe Culv. Aprons
Place Culv. on "C" Bedding
F&I Approved Joint Fasteners

Const. Approach Lt
Sta. 277+08
No Culv. Req'd.
See Sheet No. 10

Note: All merchantable timber shall be salvaged from Sta. 264+00 to Sta. 277+00
See Special Provisions.

P.T. 255+18.97
P.T. 256+22.07
Pt. 277+08.44
POT 91.56 20 Lt.
POT 13+00
C.S.A.H. 12
Sign
Meter
Brush
Woods
House
School
Ho
Fence
Guard Rail
Guard Rail Post
Power Pole
Culv. 84
Culv. 86

FE Rt. 266+89
No Culv. Inpl.
18" X 28' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

Res. Drive Rt. 270+00
No Culv. Inpl.
18" X 32' C.S. Pipe Culv.
2-18" G.S. Pipe Aprons

Twp. Rd. Rt. 277+08
No Culv. Inpl.
No Culv. Req'd.

Res Drive Rt. 280+19
Inpl. 15" X 74' CMP
Remove
No Culv. Req'd.

AS-BUILT
MAR 10 2003
ENGINEERING

CL. 67 GR 65 — CL. 1.05 Acres GR. 1.05 Acres — CL. 56 GR. 54 — CL. 0.10 Acres GR 0.10 Acres — CL. 15 GR. 15

B.M. Elev. 1100.62
Spk. in T.P. 24' Rt.
Sta. 267+00

Profile 75' Lt.
Profile 75' Rt.

P.V.T. +86.88858
Elev. 72.97666

Inlet Elev. 68.2
Outlet Elev. 60.0

+2.1%
+0.4%
+2.0%

P.V.C. +82.35294 Elev. 03.72594
P.V.T. +82.35294 Elev. 11.22941
P.V.C. +92.67750 Elev. 13.07077

Inlet Elev. 074
Outlet Elev. 98.0

Note: 7,182 Cu. Yds. of Common Excavation from this balance to be used in the construction of approach Lt. & Rt. Sta. 277+08. Quantity is included in this balance.

Subgrade Treatment:
Excavate 1.0' below profile grade
Sta. 256+50 to Sta 257+80

COMMON EXC. 29,188 Cu. Yds.
SUBGRADE EXC. 3,221 Cu. Yds.
EMB 15,401 Cu Yds.

Subgrade Treatment:
Excavate 1.0' below profile grade
Sta. 263+70 to Sta 284+20

P.I. +82.35294
Elev. 10.02941
600' V.C.
M = 1.275

Note: 2,419 Cu.Yds. Common Exc to be obtained from old road. Quantity is included in Common Exc. quantity.

COMMON EXC. 10,183 Cu Yds
SUBGRADE EXC 1,655 Cu Yds.
EMB 7,023 Cu Yds.

P.I. +79.675
Elev. 13.8187
274' V.C.
M = 0.548

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S.A.P. 55-612-17

SHEET 28 OF 31 SHEETS

Res. Drive Lt. 343+50
Inpl 15"x24' CMP
REMOVE
NO CULV. REQ'D.

F.E. Lt. 346+28
Inpl. 18"x28'CMP
REMOVE
NO CULV. REQ'D.

F.E. Lt. 347+25
NO Culv Inpl
NO CULV. REQ'D.

℄ Culv. 351+51
Inpl 36" X 58" CMP
REMOVE
36"x96"R.C.PIPE CULV. CL.III
2-36"R.C.P. APRONS
F.&I. CONC. PIPE JOINT TIES.
14 CU.YDS. RANDAM RIPRAP CL. III
18" DEPTH.
7 CU.YDS. GRANULAR FILTER
9" DEPTH.
PLACE CULV. ON "B" BEDDING
PLACE 48 SQ.YDS. SOD AROUND
CULV. APRON

Res Dr. Lt. 352+91
NO Culv Inpl
NO CULV. REQ'D.

Farm Dr. Lt. 363+80
Inpl 15"X 24' CMP
REMOVE
NO CULV REQ'D.

BEGIN SAP 55-612-10
STA 335+00

P.O.T. 286+64.64

P.O.T. 336+90.90

P.O.T. 342+09.13

Sign

Well

8' SOUTH SURVEY ℄

INPL. P.K. NAIL Rt. 353+63.11
Δ RT. 00°27'

Mobile Ho.

Sewer Outlet

EQUATION 286+64.64 = 336+90.90

FROM STA. 135+00 TO STA. 339+00
GRADED IN 1974 UNDER SAP 55-612-04
SURFACED IN 1977 UNDED SAP 55-612-09

VERTICAL CONTROL

ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA-LEVEL DATUM, 1929 ADJ. AND TIED TO THE U.S. LEVEL NET. B.M. NO. 5508K LOCATED S.E. COR BR. NO. 9234 ON T.H. NO. 52 ELEV. 963.36

CONST. 6" TILE CROSSING STA. 351+46
6"x140' C.S. PIPE DRAIN
6 LIN. FT. C.S. INSPECTION TEE 71' RT.
F.&I. OUTLET SCREEN FOR 6" C.M. PIPE

F.E. Lt. 350+21
No Culv Inpl
NO CULV. REQ'D.

F.E. Rt. 350+42
Inpl. 18"x28'CMP.
REMOVE
24"x28' C.S. PIPE CULV.
2-24' G.S. PIPE APRONS

CONST. F.E. RT. STA. 358+00
18"x28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

CONST. F.E. LT. STA. 360+00
18"x28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

Res. Dr Rt. 361+12
Inpl. 15"x24' CMP
REMOVE
NO CULV. REQ'D.

AS-BUILT

MAR 10 2003

ENGINEERING

CL. 5 TREES — GR. 5 TREES — CL. 26 TREES — GR. 21 TREES — CL. 1 TREE — GR. 1 TREE — CL. 12 TREES — GR. 11 TREES

B.M. Elev. 1108.27
Spk. in PP 42' Rt.
Sta. 337+37

B.M. Elev. 1105.48
Spk. in Cor. Fe. Post
65' Rt. Sta. 353+68

Profile 75' Lt. ——
Profile 75' Rt. - - -
Profile 50' Lt. ——
Profile 50' Rt. - - -
℄ SUBGRADE ELEV.

Subgrade Treatment:
Excavate 1.0' below profile grade
Sta. 339+00 to Sta. 354+75 and
Sta. 358+20 to Sta. 364+30

P.I. +00
Elev. 27.75
1100' V.C.
M=1.7

P.I. +72.22222
ELEV. 92.44999
720' V.C.
M=6.48

P.V.C. +12.22222
ELEV. 05.70001

P.V.T. +32.22222
ELEV. 05.70999

P.V.C. +12.22222
ELEV. 12.19543

P.I. +37.37373
ELEV. 23.89583
650' V.C.
M=4.02188

P.V.T. +62.37373
ELEV. 19.50797

+3.6%

-1.35%

COMMON EXC.	6202	CU. YDS.
SUBGRADE EXC.	2333	CU. YDS.
SALVAGED TOPSOIL	1031	CU. YDS.
EMB.	7346	

6" TILE INLET ELEV 94.0
TILE OUTLET ELEV 84.8

INLET ELEV. 95.7
OUTLET ELEV. ~~86.8~~ 87.2

COMMON EXC.	799	CU. YDS.
SUBGRADE EXC.	223	CU. YDS.
SALVAGED TOPSOIL	177	CU. YDS.
EMB.	895	

COMMON EXC.	967	CU. YDS.
SUBGRADE EXC.	636	CU. YDS.
SALVAGED TOPSOIL	138	CU. YDS.
EMB.	1420	

PLATE 1 — PLAN — PROFILE

~~SAP 55-612-10~~ OLMSTED COUNTY C.S.A.H. 12

SHEET 3 of 13 SHEETS

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SHEET 29 OF 31 SHEETS

℄ Culv. 368+57
Inpl. 30" X 65'CMP/ Aprons
REMOVE 73' LIN FT.

30"x 102' R.C. PIPE CL. III
2-30" R.C. PIPE APRONS
F.& I. CONC. PIPE JOINT TIES
10 CU. YDS. RANDOM RIPRAP CL. III 18" DEPTH.
5 CU. YDS. GRANULAR FILTER 9" DEPTH
PLACE CULV. ON "B" BEDDING
PLACE 40 SQ. YDS. SOD AROUND CULV. APRONS

372+00
F.E. Lt. ~~373+95~~
No Culv. Inpl

18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ Culv. 379+40
Inpl. 36" X 90'CMP
REMOVE

42"x 112' R.C. PIPE CL. III
2-42" R.C. PIPE APRONS
F.& I. CONC. PIPE JOINT TIES
16 CU. YDS. RANDOM RIPRAP CL. III 18" DEPTH
8 CU. YDS. GRANULAR FILTER 9" DEPTH
PLACE CULV. ON "B" BEDDING
PLACE 60 SQ. YDS. SOD AROUND CULV. APRONS

℄ Box Culv. 386+00
Inpl. C46 X 68.5'
REMOVE BOX CULV.

48"x 56' R.C. PIPE CULV. CL. III
48"x 64' R.C. PIPE CULV. CL. III
2-48" R.C. PIPE APRONS
F.& I. CONC. PIPE JOINT TIES
20 CU. YDS. RANDOM RIPRAP CL. III 18" DEPTH
10 CU. YDS. GRANULAR FILTER 9" DEPTH
PLACE CULV. ON "B" BEDDING
PLACE 74 SQ. YDS. SOD AROUND CULV. APRONS

80
CONST. F. E. LT. 383+~~50~~
18"x 28' C.S. PIPE CULV.
2-18" G.S PIPE APRONS

P.O.T. 377+83.31
41.00 @ 50°

P.O.T. 394+43.34

Conc. Posts

F.E. Rt. 370+09
Inpl. 18"x 30' CMP
REMOVE
NO CULV REQ'D.

0.5' NORTH SURVEY ℄

F.E Rt. 379+89
No Culv. Inpl.

60
MOVE F.E. TO RT. 380+~~80~~
NO CULV. REQ'D.

391+00
FE Rt. ~~398+96~~
No Culv. Inpl.
FE RT 392 +80
18"x 28' C.S. PIPE CULV.
2-18" G.S PIPE APRONS

AS-BUILT

MAR 1 0 2003

ENGINEERING

CL. 13 TREES — GR. 10 TREES

B.M. Elev. 1108.84
Spk. in T.P. 37' Lt.
Sta. 371+54

CL. 1 TREE — GR. 1 TREE

B.M. Elev. 1091.46
Spk. in T.P. 37' Lt.
Sta. 380+43

℄ SUBGRADE ELEV.

Profile 50' Lt.
Profile 50' Rt.

-1.35 %

P.V.C. + 60.0
ELEV. 00.775

INLET ELEV. 05.8
OUTLET ELEV. 95.0

SUBGRADE TREATMENT
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 370+00 TO STA 378+30;
FROM STA. 381+50 TO STA. 384+50 AND
FROM STA 390+25 TO STA 401+55.

COMMON EXC. 0255 CU. YDS.
SUBGRADE EXC. 1135 CU. YDS.
SALVAGED TOPSOIL 834 CU. YDS.
EMB. 8836

COMMON EXC. 1629 CU. YDS.
SUBGRADE EXC. 409 CU. YDS.
SALVAGED TOPSOIL 221 CU. YDS.
EMB. 1694

INLET ELEV. 85.5
OUTLET ELEV. 81.6

P.V.T. + 50.0
ELEV. 07.10

+2.5%

P.V.C. HH 59439
ELEV. 11.33935

INLET ELEV. 87.8
OUTLET ELEV. ~~84.6~~ 82.8

COMMON EXC. 13236 CU. YDS.
SUBGRADE EXC. 1712 CU YDS.
SALVAGE TOPSOIL 1394 CU YDS.
EMB. 11759

~~SAP 55-612-16~~

C.S.A.H. 12 OLMSTED CO.

SHEET 4 OF 13 SHEETS

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S.A.P. 55-612-17

SHEET 30 OF 31 SHEETS

FE Lt. 396+63
Inpl. 15" X 20' CMP
REMOVE

18"x 28' C.S. PIPE CULV.
2 - 18" G.S. PIPE APRONS

℄ Culv. 401+83
Inpl. 30" X 60' CMP
REMOVE

FE Lt. 402+38
No Culv. Inpl.
NO CULV. REQ'D.

30"x 88' R.C.P. CULV. CL. II
2 - 30" R.C. PIPE APRONS
F.& I. CONC. PIPE JOINT TIES
10 CU. YDS. RANDOM RIPRAP CL. III 18" DEPTH.
5 CU. YDS. GRANULAR FILTER 9" DEPTH
PLACE CULV. ON "B" BEDDING
PLACE 40 SQ. YDS. SOD AROUND CULV. APRONS

ENT. LT. 403+30
NO CULV. INPL

NO CULV. REQ'D.

CONST. 8" TILE CROSSING STA. 401+78.5
8"x 116' C.S. PIPE DRAIN
7 LIN. FT. C.S. INSPECTION TEE 60' RT.
F.& I. OUTLET SCREEN FOR 8" C.M. PIPE

T.108N R.13W / T.108N R.13W / 7 8 18 17 / SOUTH

POT 394+34.34

ELEV. 404+69.17

END: SAP 55-612-10
STA. 404 + 69.17

R.O.W. Marker

SURVEY LINE

50' R

63

166

75'

400

395

T.H. 247

150'

50'

Sign

Store

Conc. Slab

+20

+66

397+50
FE Rt. 396+66
Inpl. 15" X 24" CMP
REMOVE

18"x 28' C.S. PIPE CULV.
2 - 18" G.S. PIPE APRONS

401+05
CONST. FE. RT. ~~398+00~~
~~18"x 28' C.S. PIPE CULV.~~
~~2 - 18" G.S. PIPE APRONS~~
EXTENDED CULV.

Drive Ent. 403+11
Inpl. 18" X 113" CMP
35 Lt-Apron

REMOVE ~~116~~ 54 LIN. FT
18"x ~~44~~ C.S. PIPE CULV.
1 2 - 18" G.S. PIPE APRONS

150'

AS-BUILT
MAR 10 2003
ENGINEERING

B.M. Elev. 1112.83
Spk. in T.P. 29' Lt.
Sta. 402+95

℄ SUBGRADE ELEV.
17.27 17.65 17.54 16.93 15.89 14.85 13.60 13.41 14.16 15.87 17.9 +46 18.0
℄ SUBGRADE ELEVATIONS

Profile 50' Lt. ——
Profile 50' Rt. ——

P.I. +94.59459
ELEV. 20.71485
750' V.C.
M=3.46875

P.I. +43.94737
ELEV. 11.72264
400' V.C.
M=1.9

P.I. +85.38461
ELEV. 18.00
80' V.C.
M=0.26

P.V.T. +69.59459
ELEV. 16.21481

P.V.C. +43.94737
ELEV. 14.12264

P.V.T. +43.94737
ELEV. 16.92262

P.V.C. +45.38461
ELEV. 16.99998

P.V.T. +25.38461
ELEV. 18.0

1130
20
10
1100

-2%
+2.6%
0.0%

8" TILE INLET ELEV. 06.1
OUTLET ELEV. 03.5

INLET ELEV. 09.0
OUTLET ELEV. 03.5

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 390+25 TO STA. 401+55 AND
FROM STA. 403+90 TO STA. 404+46.

COMMON EXC.	2742	CU. YDS.
SUBGRADE EXC.	768	CU. YDS.
SALVAGED TOPSOIL	397	CU. YDS.
EMB.	2933	

+74 +63 +46 +25 +46 +58 +70

20.5 1121.5 21.6 20.4 18.5 16.6 1115.1 14 13.4 13.5 14.3 17.3 17.8 19.4 19.8 20.1

395 400 405

AS BUILT

~~SAP 55-612-10~~ C.S.A.H. 12 OLMSTED COUNTY SHEET 5 OF 13 SHEETS

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SHEET 31 OF 31 SHEETS