MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING AND AGGREGATE BASE

LOCATED ON C.R. 133 **BETWEEN** 55TH ST. N.W. ROCHESTER **AND** C.S.A.H. 14 **(GEOGRAPHIC DESCRIPTION)**

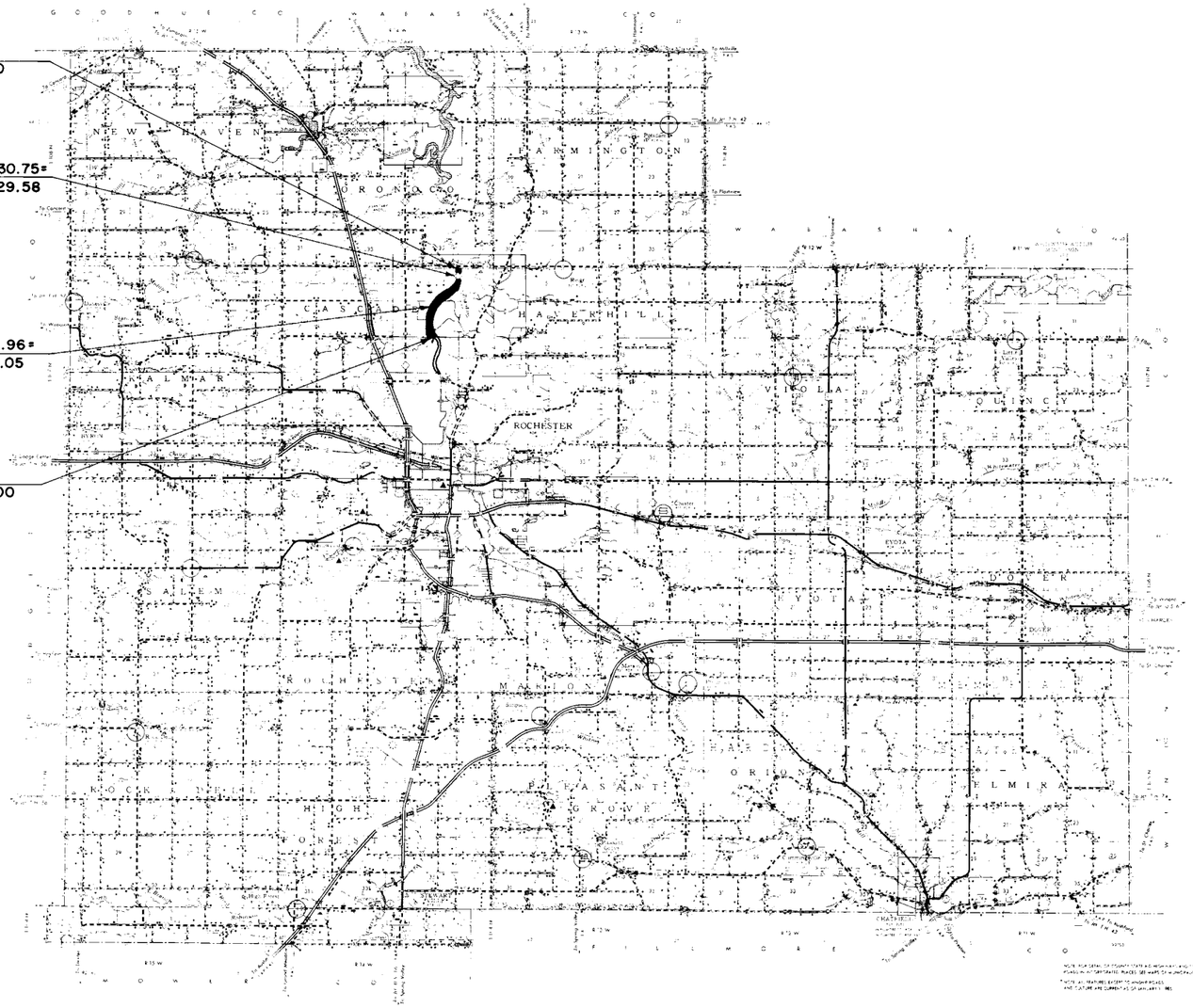
FROM 24.67' N. OF S.W. COR. SEC. 11 T107N R14W **TO** 167.09' S. OF N. SEC. COR OF SEC. COR. 1&2 T107N-R14W **(LEGAL DESCRIPTION)**

~~**STATE PROJ. NO.**~~ C133-92-1

GROSS LENGTH	12,595.08	FEET	2.385 MILES
BRIDGES-LENGTH	0	FEET	0 MILES
EXCEPTIONS-LENGTH	0	FEET	0 MILES
NET LENGTH	12,595.08	FEET	2.385 MILES

STATE PROJ. NO. .....

GROSS LENGTH		FEET	MILES
BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH		FEET	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 Large Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY LINE
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 POLES
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
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRICAL CABLE
AERIAL TELEPHONE CABLE
SEWER (SANITARY OR STORM)
SEWER MANHOLE

SCALES

PLAN	50'
PROFILE	50' HOR. & 5' VERT.
INDEX MAP	10,560
CROSS SECTIONS	10'

ALBINSON MPLS 55405

72065

MINN. PROJ. NO. .....

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION 'STANDARD SPECIFICATIONS FOR CONSTRUCTION' SHALL GOVERN, INCLUDING THE JANUARY 1991 SUPPLEMENTAL SPECIFICATIONS TO THE 1988 STANDARD SPECIFICATION FOR CONSTRUCTION.

INDEX

SHEET NO. 1	TITLE SHEET AND LAYOUT MAP
SHEET NO. 2	ESTIMATE OF QUANTITIES & TYPICAL SECTIONS
SHEET NO. 3	DETAIL DRAWIN & TYPICAL SECTIONS
SHEET NO. 4-13	PLAN & PROFILE SHEETS
SHEET NO. 14-42	CROSS SECTIONS
SHEET NO. 13A	TRAFFIC CONTROL

DESIGN DESIGNATION

R .....
ADT (Current Year) = 1040 (1992)
ADT (Future Year) = 1872 (2012)
DHV (Design Hr. Vol.) = ...
D (Directional Distr.) = ... %
T (Heavy Commercial) = 5 %
SOIL FACTOR 130
9 TON DESIGN
SHOULDER WIDTH 8'

ΣN18 (20) .....
Design Speed 40 MPH
Based on STOPPING Sight Distance
Height of eye 3.5 Height of object 0.5
Design Speed not achieved at:

STA.	TO STA.	MPH
STA.	TO STA.	MPH
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 1/23/92 REG. NO. 10397 ENGR. Michael Sheehan

COUNTY Olmsted

Recommended for Approval ..... 19 .....
DISTRICT STATE AID ENGINEER

Recommended for Approval ..... 19 .....
STATE AID PLANS AND SPECS ENGINEER

Approved ..... 19 .....
STATE AID ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

..... DATE
DIVISION ADMINISTRATOR

~~**STATE AID PROJ. NO.**~~ C133-92-1
~~**STATE PROJ. NO.**~~ C.R. 133

SHEET NO. 1 **OF** 42 **SHEETS**

ESTIMATED QUANTITIES

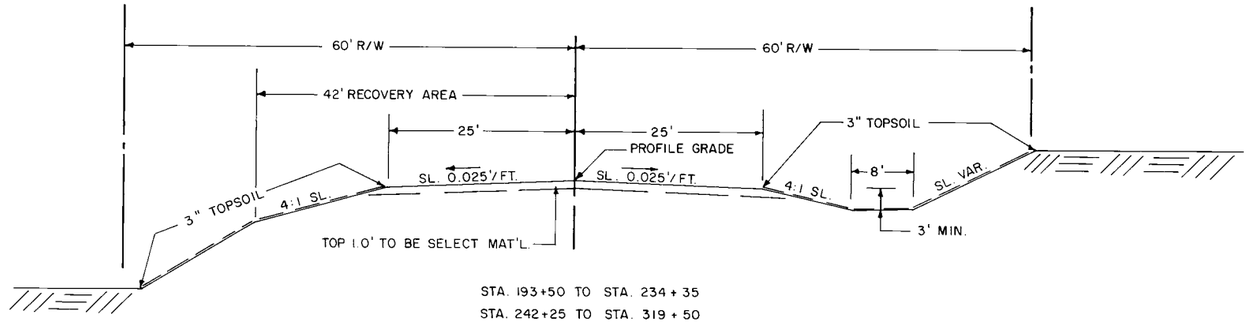
	SPECIFICATION NO.	ITEM	UNIT	MUNICIPAL	RURAL	TOTAL ESTIMATED QUANTITIES
	2101.501	CLEARING	ACRE		4.4	4.4
	2101.502	CLEARING	TREE		383	383
	2101.506	GRUBBING	ACRE		4.4	4.4
	2101.507	GRUBBING	TREE		294	294
①	2104.501	REMOVE PIPE CULVERTS	LIN. FT.		1,210	1,210
	2104.509	REMOVE BOX CULVERT	EACH		1	1
	2104.513	SAWING BITUMINOUS PAVEMENT	LIN. FT.		90	90
	2104.521	SALVAGE PIPE CULVERT	LIN. FT.		28	28
	2104.523	SALVAGE 18" G.S. PIPE APRON	EACH		2	2
	2104.523	SALVAGE 24" R.C. PIPE APRON	EACH		1	1
②	2105.515	UNCLASSIFIED EXCAVATION (P)	CU. YD.		145,025	145,025
③	2123.501	COMMON LABORERS	HOUR		24	24
③	2123.503	MOTOR GRADER	HOUR		24	24
③	2123.508	15 CU. YD. SCRAPER	HOUR		24	24
③	2123.509	DOZER	HOUR		32	32
④	2130.501	WATER	(M) GAL.		100	100
⑤	2211.501	AGGREGATE BASE CLASS 2	TON		14,230	14,230
⑥	2211.501	AGGREGATE BASE CLASS 5 (MODIFIED)	TON		11,015	11,015
	2501.511	18" C.S. PIPE CULVERT	LIN. FT.		468	468
	2501.511	24" C.S. PIPE CULVERT	LIN. FT.		280	280
	2501.511	30" C.S. PIPE CULVERT	LIN. FT.		70	70
	2501.511	72" C.S. PIPE CULVERT	LIN. FT.		62	62
	2501.511	24" R.C. PIPE CULVERT CLASS III	LIN. FT.		296	296
	2501.511	30" R.C. PIPE CULVERT CLASS II	LIN. FT.		92	92
	2501.511	30" R.C. PIPE CULVERT CLASS IV	LIN. FT.		118	118
	2501.511	36" R.C. PIPE CULVERT CLASS IV	LIN. FT.		100	100
	2501.511	36" R.C. PIPE CULVERT CLASS V	LIN. FT.		72	72
	2501.515	18" G.S. PIPE APRON	EACH		28	28
	2501.515	24" G.S. PIPE APRON	EACH		16	16
	2501.515	30" G.S. PIPE APRON	EACH		4	4
	2501.515	72" G.S. PIPE APRON	EACH		2	2
	2501.515	24" R.C. PIPE APRON	EACH		8	8
	2501.515	30" R.C. PIPE APRON	EACH		4	4
	2501.515	36" R.C. PIPE APRON	EACH		2	2
	2501.521	49" SPAN C.S. PIPE CULVERT	LIN. FT.		32	32
	2501.521	57" SPAN C.S. PIPE CULVERT	LIN. FT.		156	156
	2501.521	36" SPAN R.C. PIPE-ARCH CULVERT CLASS IIA	LIN. FT.		236	236
	2501.521	73" SPAN R.C. PIPE-ARCH CULVERT CLASS IIA	LIN. FT.		232	232
	2501.521	88" SPAN R.C. PIPE-ARCH CULVERT CLASS IIA	LIN. FT.		78	78
	2501.525	49" SPAN G.S. PIPE-ARCH APRON	EACH		2	2
	2501.525	57" SPAN G.S. PIPE-ARCH APRON	EACH		2	2
	2501.525	36" SPAN R.C. PIPE-ARCH APRON	EACH		8	8
	2501.525	73" SPAN R.C. PIPE-ARCH APRON	EACH		4	4
	2501.525	88" SPAN R.C. PIPE-ARCH APRON	EACH		2	2
	2501.571	INSTALL 18" C.S. PIPE CULVERT	LIN. FT.		28	28
	2501.573	INSTALL 18" G.S. PIPE APRON	EACH		2	2
	2501.573	INSTALL 24" R.C. PIPE APRON	EACH		1	1
⑦	2511.50	RANDOM RIPRAP CLASS III	TON		128	128
⑧	2511.50	RANDOM RIPRAP CLASS II	TON		510	510
⑨	2575.501	ROADSIDE SEEDING (P)	ACRE		24	24
⑩	2575.502	SEED, MIXTURE 500	POUND		1,200	1,200
⑪	2575.502	SEED, MIXTURE 1100	POUND		1,920	1,920
	2575.505	SODDING TYPE EROSION	SQ.YD.		20,247	20,247
⑫	2575.511	MULCH MATERIAL TYPE 1	TON		48	48
	2575.519	DISC ANCHORING (P)	ACRE		24	24
⑬	2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON		2.4	2.4
	0563.601	TRAFFIC CONTROL	LUMP SUM		1.0	1.0

(P) PLAN QUANTITY

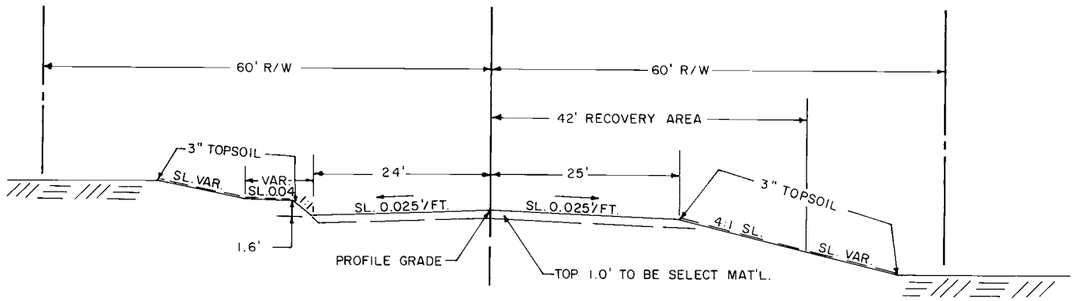
① REMOVAL OF CONCRETE HEADWALLS SHALL BE CONSIDERED INCIDENTAL TO REMOVAL OF PIPE CULVERTS.
② UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN IN THE PLANS.
8841 CU.YDS. UNCLASSIFIED EXCAVATION TO BE USED AS SALVAGED TOPSOIL AND PLACED AS SHOWN IN THE PLANS.
EXCESS UNCLASSIFIED EXCAVATION IN BALANCE STA. 289+36.72 TO STA. 297+19.53 WILL BE PLACED IN THE OBLITERATED OLD ROAD AREA LT. STA. 292+00 TO STA. 298+00.
③ LABORER AND EQUIPMENT HOURS TO BE USED TO OBLITERATE THE OLD ROADWAY RT. STA. 220+00 TO STA. 228+00 AND RT. STA. 292+50 TO STA. 298+00, AND AS DIRECTED BY THE ENGINEER.
④ WATER TO BE USED AS A DUST PREVENTATIVE AS DIRECTED BY THE ENGINEER.
⑤ INCLUDES 2,395 TONS FOR APPROACHES & TEMPORARY CONNECTIONS, AND 594 TONS FOR 62D ST. N.W.
⑥ INCLUDES 626 TONS FOR APPROACHES & TEMPORARY CONNECTIONS, AND 472 TONS FOR 62D ST. N.W.
⑦ GRANULAR FILTER OR GEOTEXTILE FILTER MATERIAL SHALL BE CONSIDERED INCIDENTAL TO RIPRAP CONSTRUCTION.
⑧ TO BE USED TO CONSTRUCT DITCH CHECKS AS DIRECTED BY THE ENGINEER.
⑨ INCLUDES 0.5 ACRES FOR OBLITERATE OLD ROAD AREAS RT. STA. 220+00 TO STA. 228+00, AND 1.0 ACRES LT. STA. 292+50 TO STA 298+00.
⑩ APPLICATION RATE 50 POUNDS PER ACRE.
⑪ APPLICATION RATE 80 POUNDS PER ACRE.
⑫ APPLICATION RATE 2 TONS PER ACRE.
⑬ APPLICATION RATE 200 POUNDS PER ACRE.

ALBINSON, INC. MINNEAPOLIS, MINN.

TYPICAL GRADING SECTIONS

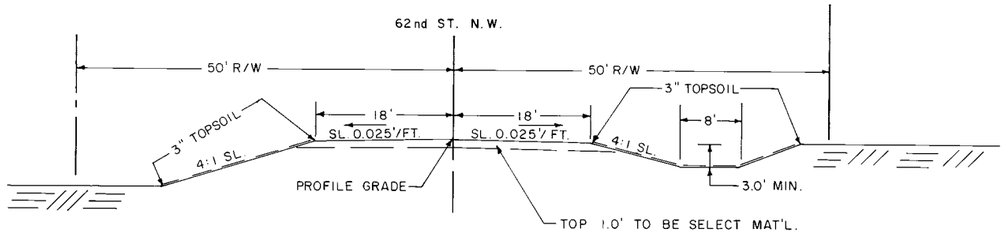


STA. 193+50 TO STA. 234+35
STA. 242+25 TO STA. 319+50



STA. 234+35 TO STA. 242+25

ALL UTILITY POLES AND UNYIELDING OBJECTS SHALL BE RELOCATED OUTSIDE THE 42' RECOVERY AREA. (BY OTHERS)



STA. 7+50 TO STA. 16+00

~~S.A.P~~
~~State Proj. No.~~ C133-92-1 C.R. 133

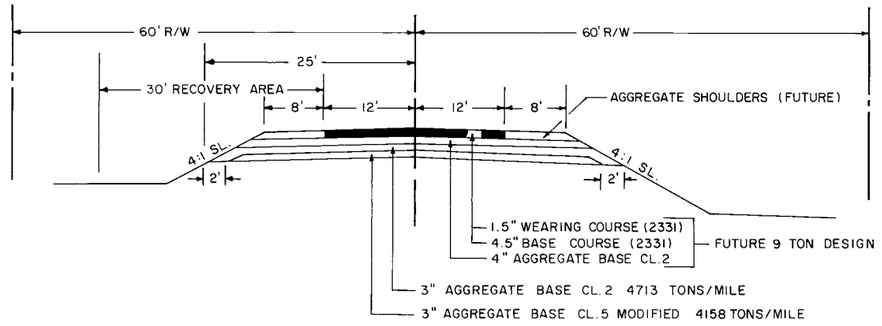
STANDARD PLATES

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

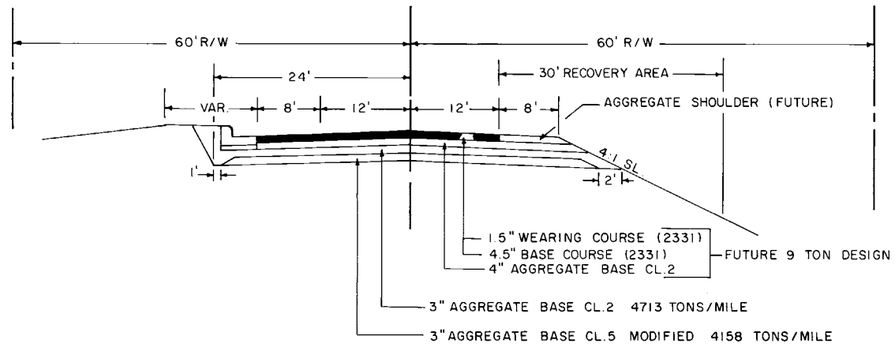
PLATE NO.	DESCRIPTION
0005 A	SPECIFICATION REFERENCE TO STANDARD PLATES.
3000 L	REINFORCED CONCRETE PIPE.
3007 B	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES.
3014 J	REINFORCED CONCRETE PIPE ARCH DETAIL.
3040 F	CORRUGATED METAL PIPE CULVERT.
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE.
3110 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH.
3122 K	METAL APRON FOR C.M. PIPE-ARCH CULVERT.
3123 J	METAL APRON FOR C.S. PIPE.
3124 B	METAL APRON CONNECTION.
3133 B	RIPRAP AT R.C.P. OUTLETS.
3145 E	CONCRETE PIPE TIES (EYE BOLT TIE).
3221 C	CORRUGATED STEEL PIPE COUPLING BAND.
8000 I	STANDARD BARRICADES.
9000 B	APPROACHES AND ENTRANCES.
9102 C	SODDING AT PIPE CULVERT ENDS.

SODDING LOCATIONS		SQ.YDS.
DITCH & SLOPES	LT. STA. 209+40 TO STA. 210+75	708
" "	RT. STA. 209+62 TO STA. 210+22	222
" "	RT. STA. 212+63 TO STA. 212+93	222
" "	RT. STA. 227+00 TO STA. 231+00	1,777
" "	RT. STA. 232+86 TO STA. 235+30	667
" "	LT. STA. 239+80 TO STA. 241+77	719
" "	LT. STA. 245+69 TO STA. 246+69	222
" "	LT. STA. 251+25 TO STA. 252+25	178
" "	RT. STA. 247+00 TO STA. 255+00	2,917
" "	RT. STA. 266+00 TO STA. 270+00	1,306
" "	LT. STA. 268+25 TO STA. 270+75	521
" "	RT. STA. 287+50 TO STA. 288+50	500
" "	RT. STA. 302+80 TO STA. 308+40	1,977
" "	RT. STA. 312+00 TO STA. 314+00	556
" "	RT. STA. 315+00 TO STA. 316+95	521
12' DITCH LINER	RT. STA. 201+50 TO STA. 206+00	600
" " "	RT. STA. 226+10 TO STA. 227+00	120
" " "	RT. STA. 231+00 TO STA. 234+35	447
" " "	RT. STA. 241+35 TO STA. 247+00	753
" " "	RT. STA. 277+00 TO STA. 282+50	732
" " "	RT. STA. 293+50 TO STA. 298+00	600
" " "	LT. STA. 294+25 TO STA. 297+25	400
" " "	LT. STA. 298+75 TO STA. 304+00	700
" " "	RT. STA. 306+50 TO STA. 309+50	400
" " "	LT. STA. 306+50 TO STA. 314+00	1,000
CULVERT INLETS AND OUTLETS		1,481
TOTAL SQ. YDS. SOD		20,247

TYPICAL SURFACING SECTIONS

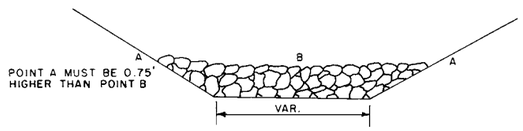


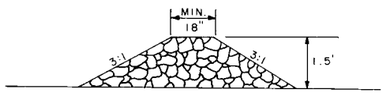
STA. 194+00 TO STA. 234+35
STA. 242+25 TO STA. 319+50



STA. 234+35 TO STA. 242+25

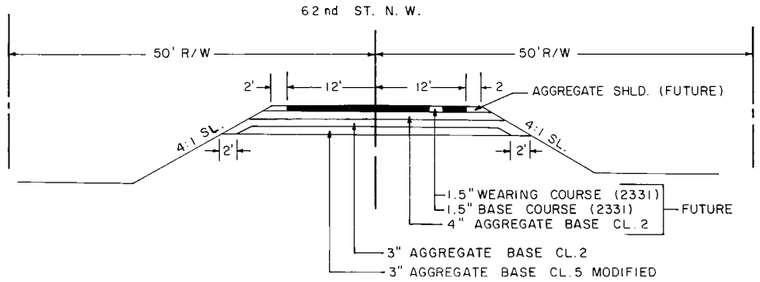
ROCK OR STONE DITCH CHECK SECTIONS



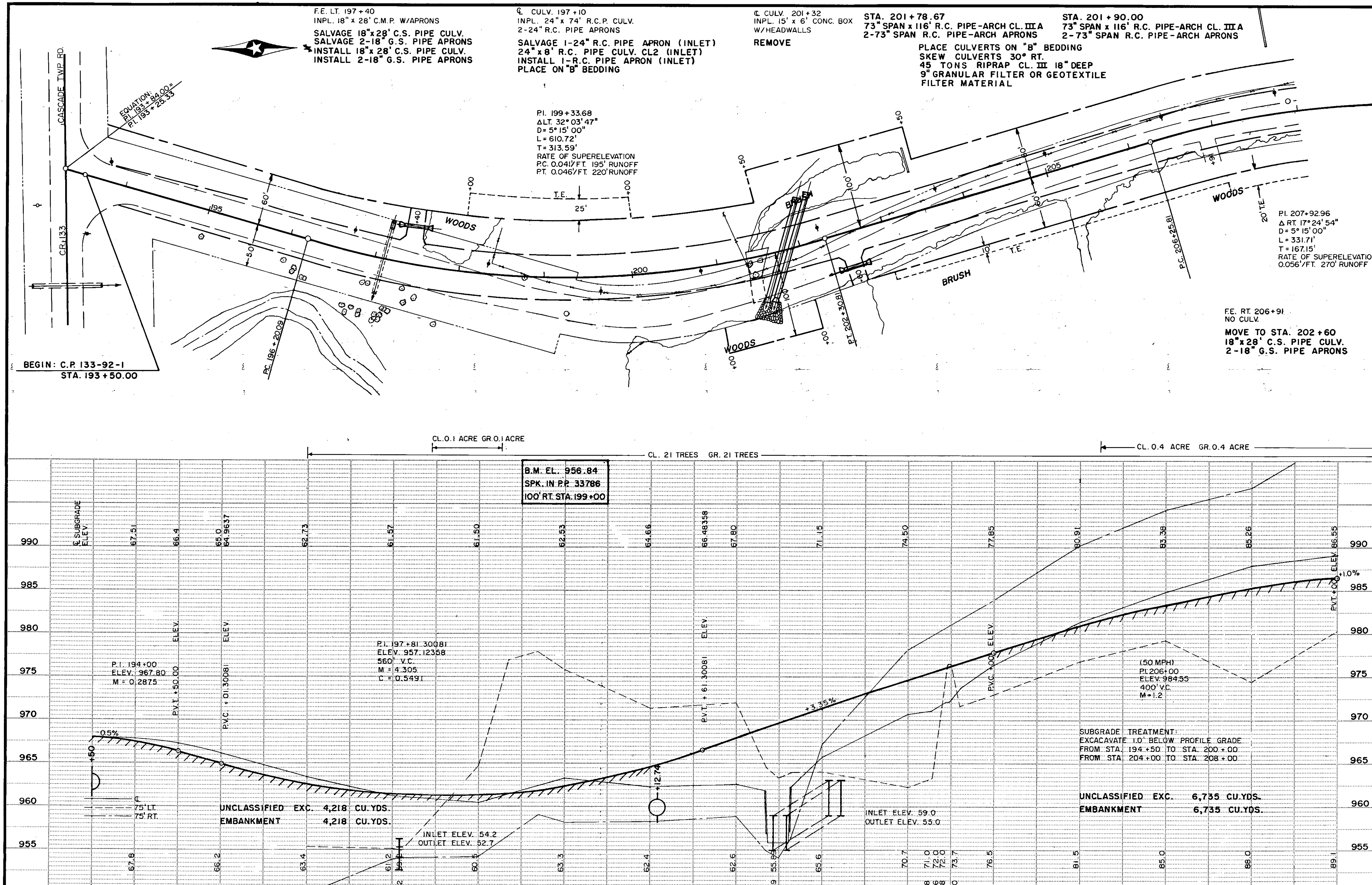


NOTES FOR ROCK DITCH CHECKS

1. DITCH CHECKS SHALL BE LEFT IN PLACE.
2. BASIS OF PAYMENT FOR DITCH CHECK SHALL BE UNDER ITEM NO. 2511.502 RANDOM RIPRAP CLASS II.
3. DITCH CHECKS SHALL BE CONSTRUCTED AT LOCATIONS DESIGNATED BY THE ENGINEER DURING CONSTRUCTION.
4. APPROXIMATELY 85 DITCH CHECKS TO BE CONSTRUCTED ON PROJECT.



STA. 7+50 TO STA. 16+00


F.E. LT. 197 + 40
INPL. 18" x 28' C.M.P. W/APRONS
SALVAGE 18"x 28' C.S. PIPE CULV.
SALVAGE 2-18" G.S. PIPE APRONS
INSTALL 18"x 28' C.S. PIPE CULV.
INSTALL 2-18" G.S. PIPE APRONS
℄ CULV. 197 + 10
INPL. 24" x 74' R.C.P. CULV.
2-24" R.C. PIPE APRONS
SALVAGE 1-24" R.C. PIPE APRON (INLET)
24" x 8' R.C. PIPE CULV. CL2 (INLET)
INSTALL 1-R.C. PIPE APRON (INLET)
PLACE ON "B" BEDDING
℄ CULV. 201 + 32
INPL. 15' x 6' CONC. BOX
W/HEADWALLS
REMOVE
STA. 201 + 78.67
73" SPAN x 116' R.C. PIPE-ARCH CL. IIIA
2-73" SPAN R.C. PIPE-ARCH APRONS
STA. 201 + 90.00
73" SPAN x 116' R.C. PIPE-ARCH CL. IIIA
2-73" SPAN R.C. PIPE-ARCH APRONS
PLACE CULVERTS ON "B" BEDDING
SKEW CULVERTS 30° RT.
45 TONS RIPRAP CL. III 18" DEEP
9" GRANULAR FILTER OR GEOTEXTILE
FILTER MATERIAL
CASCADE TWP. RD.
C.R. 133
EQUATION:
P.I. 193 + 84.00 =
P.I. 193 + 25.33
P.I. 199 + 33.68
ΔLT. 32° 03' 47"
D = 5° 15' 00"
L = 610.72'
T = 313.59'
RATE OF SUPERELEVATION
P.C. 0.041'/FT. 195' RUNOFF
P.T. 0.046'/FT. 220' RUNOFF
T.E.
25'
WOODS
BRUSH
P.C. 196 + 20.09
P.T. 202 + 30.81
P.C. 206 + 25.81
20' T.E.
10' T.E.
P.I. 207+92.96
Δ RT. 17° 24' 54"
D = 5° 15' 00"
L = 331.71'
T = 167.15'
RATE OF SUPERELEVATION
0.056'/FT. 270' RUNOFF
F.E. RT. 206+91
NO CULV.
MOVE TO STA. 202 + 60
18" x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS
BEGIN: C.P. 133-92-1
STA. 193 + 50.00
CL. 0.1 ACRE GR. 0.1 ACRE
CL. 21 TREES GR. 21 TREES
CL. 0.4 ACRE GR. 0.4 ACRE
B.M. EL. 956.84
SPK. IN P.P. 33786
100' RT. STA. 199 + 00
℄ SUBGRADE ELEV.
67.51
66.4
65.0
64.9637
62.73
61.57
61.50
62.53
64.66
66.48358
67.80
71.15
74.50
77.85
80.91
83.38
85.26
ELEV. 86.55
P.I. 194 + 00
ELEV. 967.80
M = 0.2875
P.V.T. + 50.00 ELEV.
P.V.C. + 01.30081 ELEV.
P.I. 197 + 81.30081
ELEV. 957.12358
560' V.C.
M = 4.305
C = 0.5491
P.V.T. + 61.30081 ELEV.
P.V.C. + 00 ELEV.
P.V.T. + 00 ELEV. 86.55
-0.5%
+3.35%
+1.0%
(50 MPH)
P.I. 206 + 00
ELEV. 984.55
400' V.C.
M = 1.2
SUBGRADE TREATMENT:
EXCACAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 194 + 50 TO STA. 200 + 00
FROM STA. 204 + 00 TO STA. 208 + 00
℄
75' LT.
75' RT.
UNCLASSIFIED EXC. 4,218 CU. YDS.
EMBANKMENT 4,218 CU. YDS.
UNCLASSIFIED EXC. 6,735 CU. YDS.
EMBANKMENT 6,735 CU. YDS.
INLET ELEV. 54.2
OUTLET ELEV. 52.7
INLET ELEV. 59.0
OUTLET ELEV. 55.0
+50
+12
+12.74
+49
+28
+46
+48
+60
67.8
66.2
63.4
61.2
60.5
63.3
62.4
62.6
55.8
65.6
70.7
71.0
72.0
72.0
73.7
76.5
81.5
85.0
88.0
89.1
990
985
980
975
970
965
960
955
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208

℄ CULV. 209+30
INPL. 18" x 33' C.M.P

REMOVE
MOVE TO STA. 209+00
24"x 70' R.C. PIPE CULV. CL. III
2-24" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
CONST. DITCH BLOCK AT INLET

RES. DR. LT. 209+63
NO CULV.

2-57" SPAN x 50' C.S. PIPE-ARCH CULVERTS
(NO APRONS)

CONST. F.E. 214+50 LT.
NO CULV. REQ'D

℄ CULV. 217+47
INPL. 24" x 34' C.M.P

REMOVE

℄ CULV. 217+52
INPL. 30" x 34' C.M.P

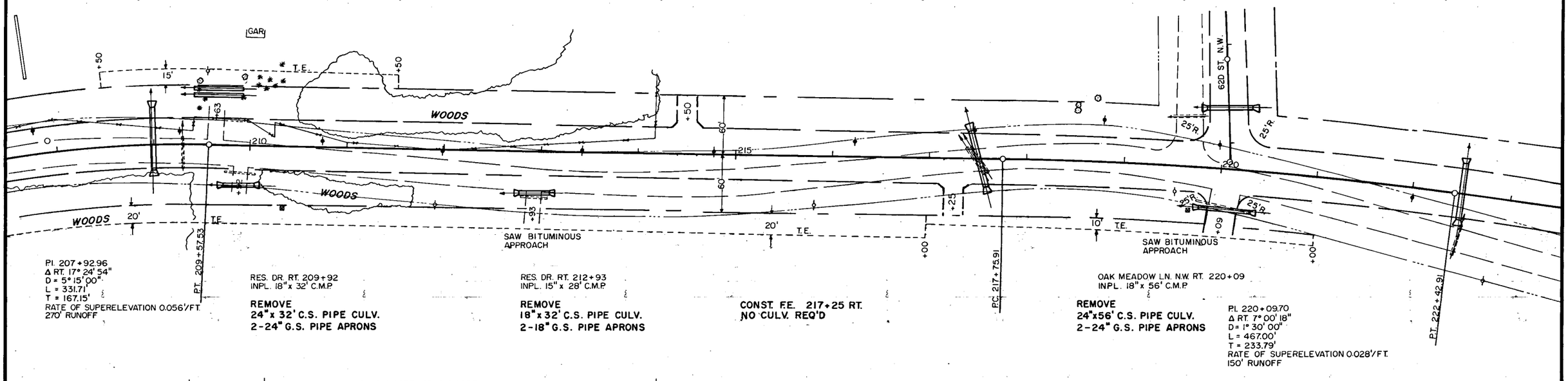
REMOVE
36" SPAN x 58' R.C. PIPE-ARCH CL. IIA
2-36" SPAN R.C. PIPE-ARCH APRONS
PLACE CULV. ON "B" BEDDING
SKEW CULV. 15°
CONST. DITCH BLOCK AT INLET

62nd ST. N.W. LT. 219+67
INPL. 36" x 28' C.M.P

REMOVE
57" SPAN x 56' C.S. PIPE-ARCH CULV.
2-57" SPAN G.S. PIPE-ARCH APRONS

℄ CULV. 222+51
INPL. 18" x 32' C.M.P

REMOVE
24"x 58' R.C. PIPE CULV. CL. II
2-24" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
CONST. DITCH BLOCK AT INLET



P.I. 207+92.96
Δ RT. 17° 24' 54"
D = 5° 15' 00"
L = 331.71'
T = 167.15'
RATE OF SUPERELEVATION 0.056'/FT.
270' RUNOFF

P.T. 209+57.53

RES. DR. RT. 209+92
INPL. 18" x 32' C.M.P

REMOVE
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

RES. DR. RT. 212+93
INPL. 15" x 28' C.M.P

REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

CONST. F.E. 217+25 RT.
NO CULV. REQ'D

P.C. 217+75.91

OAK MEADOW LN. N.W. RT. 220+09
INPL. 18" x 56' C.M.P

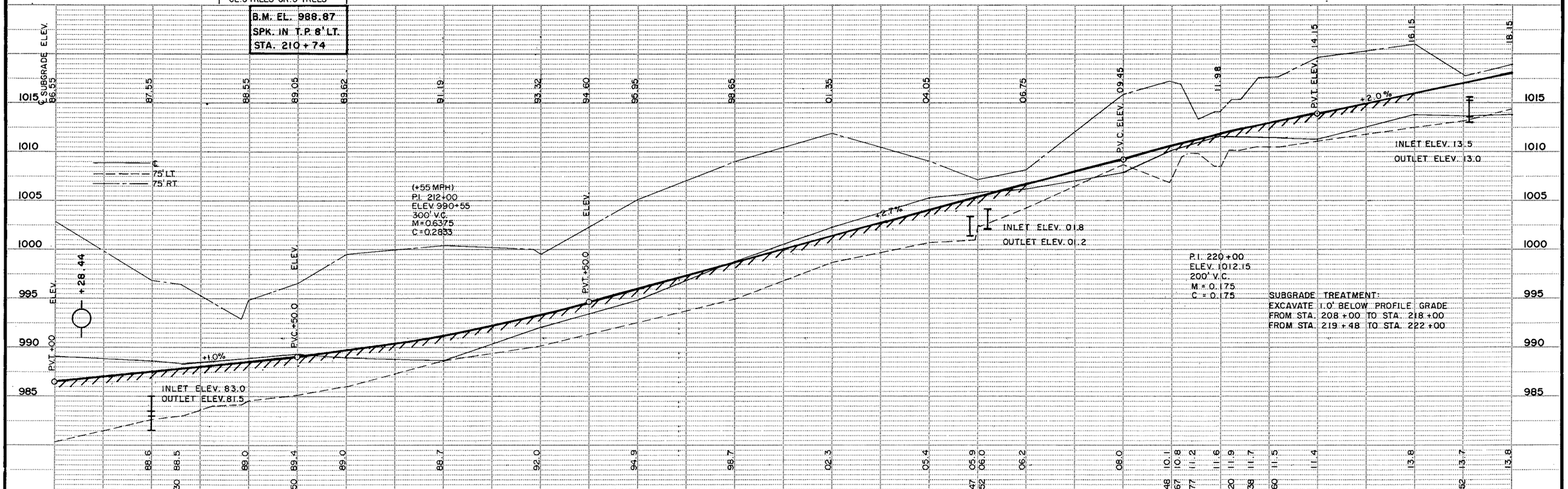
REMOVE
24"x56' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

P.I. 220+09.70
Δ RT. 7° 00' 18"
D = 1° 30' 00"
L = 467.00'
T = 233.79'
RATE OF SUPERELEVATION 0.028'/FT.
150' RUNOFF

P.T. 222+42.91

CL. 3 TREES GR. 3 TREES
CL. 0.4 ACRE GR. 0.4 ACRE

B.M. EL. 988.87
SPK. IN T.P. 8' LT.
STA. 210+74



~~State Proj. No.~~ C133-92-1 C.R. 133 **Sheet No. 5 of 42 Sheets**

℄ CULV. 226+24
INPL. 24"x 40' CMP
REMOVE
36" SPAN x 54' R.C. PIPE-ARCH CL. IIA
2-36" SPAN R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
CONST. DITCH BLOCK AT INLET

F.E. LT. 227+55
NO CULV.
REMOVE
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ CULV. 232+30
INPL. 18" x 35' C.M.P.
REMOVE
24"x 78' R.C. PIPE CULV. CL. II
2-24" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
CONST. DITCH BLOCK AT INLET

PI. 229+73.35
Δ LT. 12° 59' 52"
D = 2° 30' 00"
L = 519.91'
T = 261.08'
RATE OF SUPERELEVATION 0.04'/FT.
190' RUNOFF

P.C. 227+12.27

P.T. 232+32.18

OBLITERATE OLD ROAD STA. 222+00 TO STA. 229+00

SAW BITUMINOUS APPROACH

HOUSE

GAR.

CORN CRIB

SHED

WOODS

T.E.

P.C. 235+74.41

HOUSE

F.E. RT. 226+93
INPL. 15"x 26' C.M.P.
REMOVE
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.M. DR. RT. 228+33
INPL. 18"x 30' C.M.P.
REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

RES. DR. RT. 234+63
INPL. 15"x 30' C.M.P.
REMOVE
NO CULV. REQ'D.

CL. 0.5 ACRE / GR. 0.5 ACRE

CL. 174 TRESS GR. 105 TREES

B.M. EL. 1026.15
SPK. IN T.P. 55'
RT. STA. 225+40

B.M. EL. 1075.45
SPK. IN T.P. 30'
LT. STA. 236+24

BEGIN BERM RT. STA. 234+35

℄ SUBGRADE ELEV.

(+50 MPH)
P.I. 226+50
ELEV. 300' V.C.
M = 1.25
C = 0.5

℄
75' LT.
75' RT.

ELEV.

P.V.C. +00

P.V.T. +00

+2.0%

+5.0%

INLET ELEV. 22.7
OUTLET ELEV. 22.0

INLET ELEV. 50.2
OUTLET ELEV. 45.0

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 227+50 TO STA. 232+00
FROM STA. 235+00 TO STA. 238+00

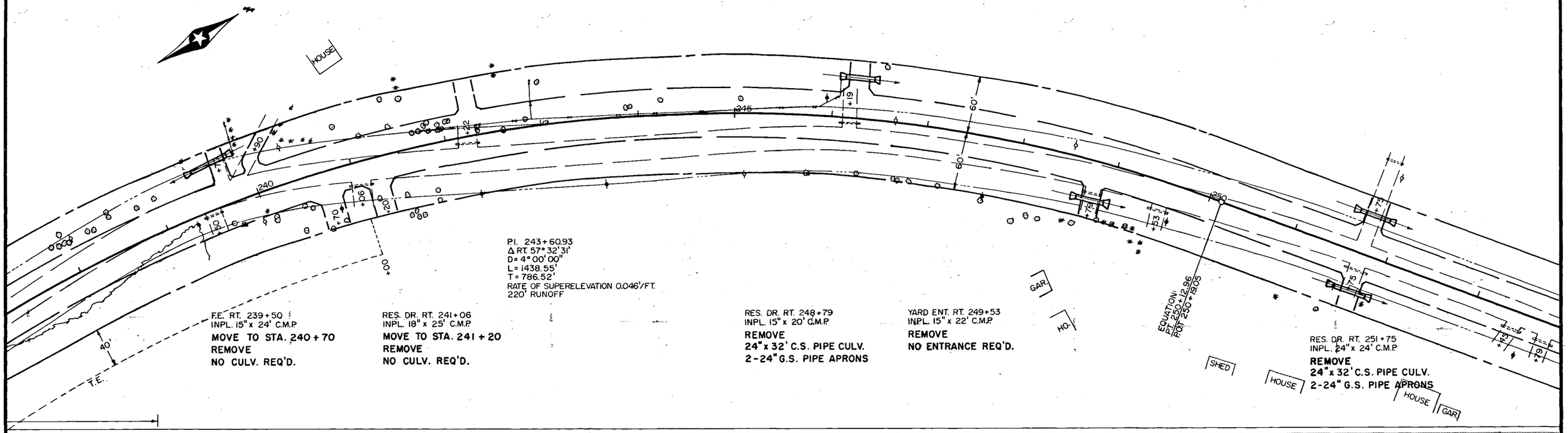
RES. DR. LT. 239+70
NO CULV
18"x 50' C.S. PIPE CULV.
2-18" G.S. APRONS

RES. DR. LT. 239 + 90
NO CULV.
MOVE TO STA. 240+05
NO CULV. REQ'D.

F.E. LT. 242+22
INPL. 15"x 25' C.M.P
REMOVE
NO CULV. REQ'D.

RES. DR. LT. 246 + 19
INPL. 18" x 24' C.M.P
REMOVE
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

FARM DR. LT. 251+75
CULV. 100' LT.
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS



P.I. 243+60.93
Δ RT. 57°32'31"
D= 4°00'00"
L= 1438.55'
T= 786.52'
RATE OF SUPERELEVATION 0.046'/FT.
220' RUNOFF

F.E. RT. 239+50
INPL. 15"x 24' C.M.P
MOVE TO STA. 240+70
REMOVE
NO CULV. REQ'D.

RES. DR. RT. 241+06
INPL. 18"x 25' C.M.P
MOVE TO STA. 241+20
REMOVE
NO CULV. REQ'D.

RES. DR. RT. 248+79
INPL. 15"x 20' C.M.P
REMOVE
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

YARD ENT. RT. 249+53
INPL. 15"x 22' C.M.P
REMOVE
NO ENTRANCE REQ'D.

EQUATION:
P.T. 250+12.96
POT 250+19.05

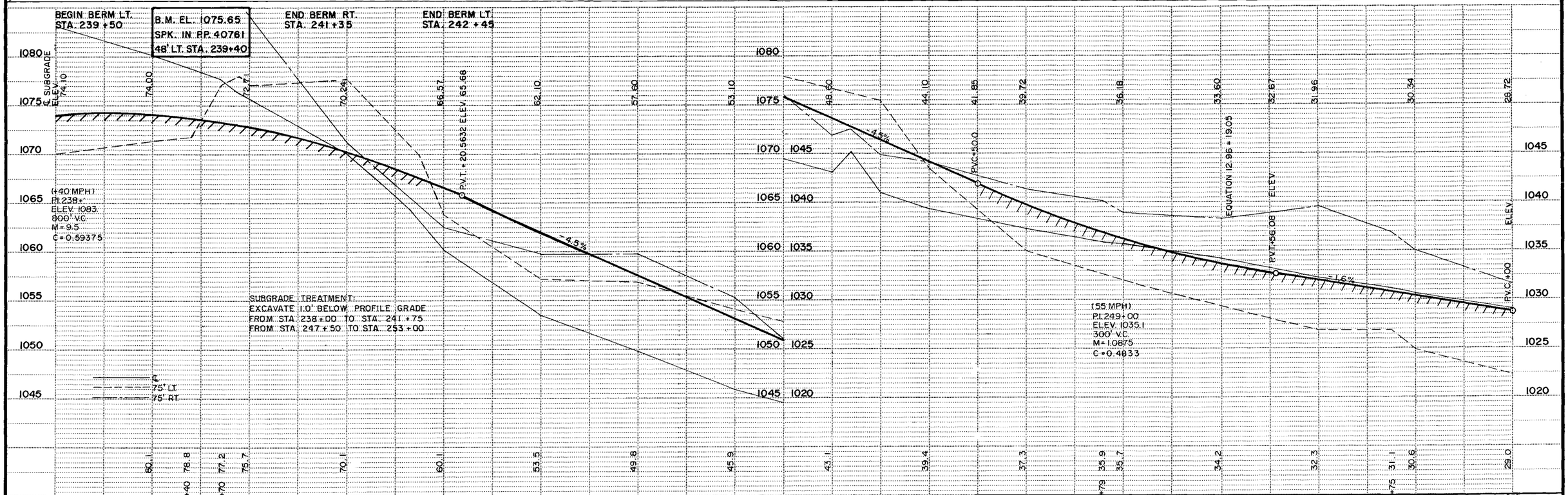
RES. DR. RT. 251+75
INPL. 24" x 24' C.M.P
REMOVE
24"x 32' C.S. PIPE CULV.
2-24" G.S. PIPE APRONS

BEGIN BERM LT.
STA. 239+50

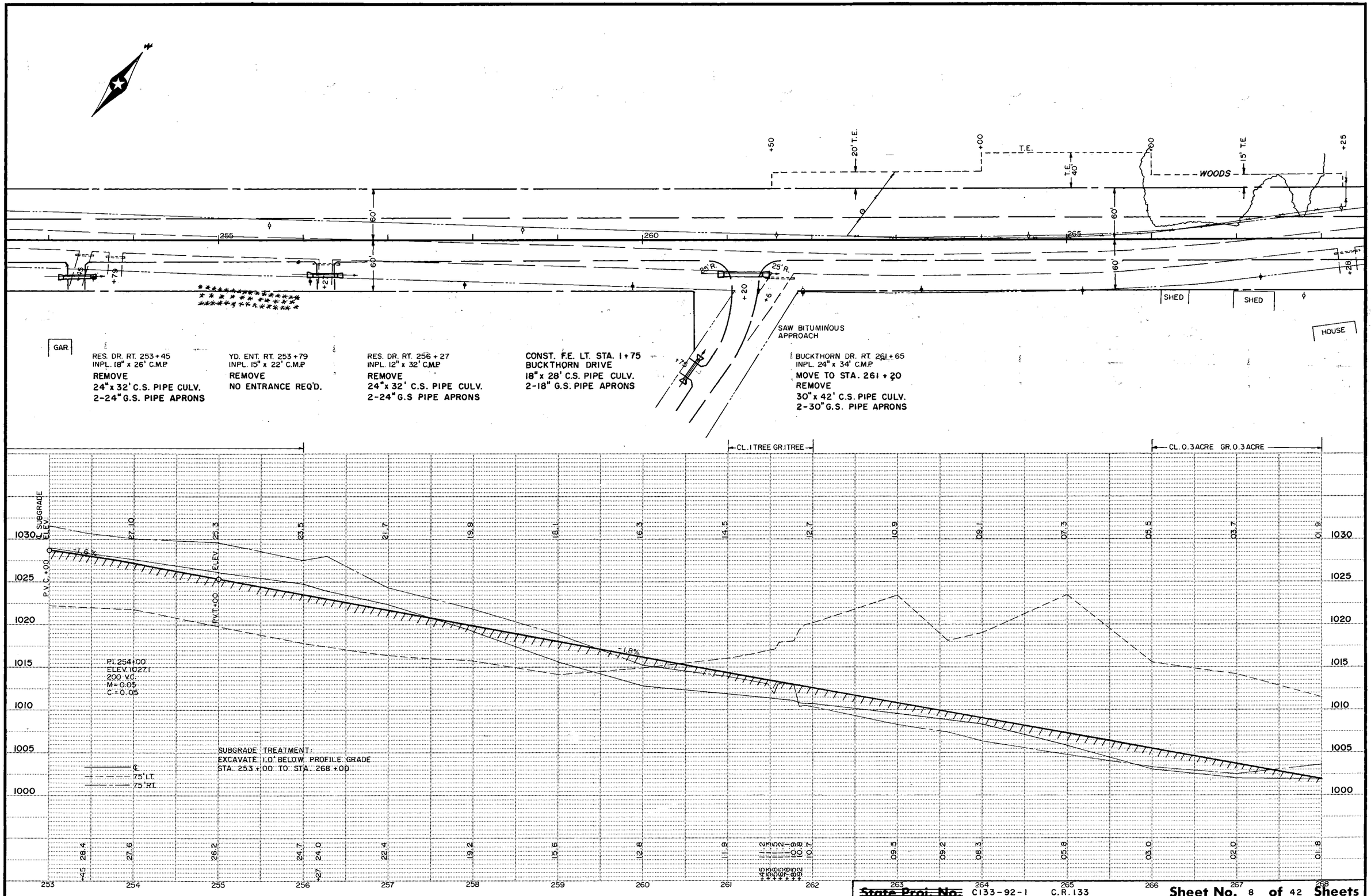
B.M. EL. 1075.65
SPK. IN PP 40761
48' LT. STA. 239+40

END BERM RT.
STA. 241+35

END BERM LT.
STA. 242+45



~~State Proj. No.~~ C133-92-1 C.R. 133



~~State Proj. No.~~ C133-92-1 C.R. 133 **Sheet No.** 8 **of** 42 **Sheets**

RES. DR. LT. 269 + 67
INPL. 36" x 24'
REMOVE
49" SPAN x 32' C.S. PIPE CULV.
2-49" G.S. SPAN PIPE APRONS

℄ CULV 270 + 62
INPL. 30" x 28' C.M.P.
REMOVE

F.E. LT. 282 + 76
NO CULV.
NO CULV. REQ'D.

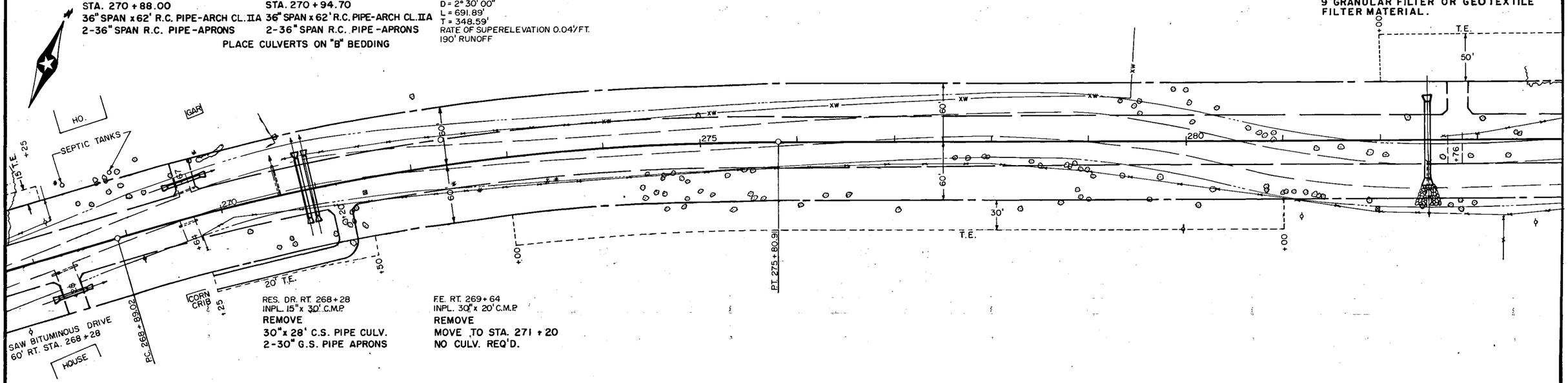
CATTLE PASS 282+49
INPL. 6' x 3.5' x 28' C.M.P. W/CONC. HWLS.
REMOVE
88" SPAN x 78' R.C. PIPE-ARCH CL. IIA
2-88" SPAN R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
30 TONS RIPRAP CL. III 18" DEEP
9" GRANULAR FILTER OR GEOTEXTILE FILTER MATERIAL.

STA. 270 + 88.00
36" SPAN x 62' R.C. PIPE-ARCH CL. IIA
2-36" SPAN R.C. PIPE-APRONS

STA. 270 + 94.70
36" SPAN x 62' R.C. PIPE-ARCH CL. IIA
2-36" SPAN R.C. PIPE-APRONS

PLACE CULVERTS ON "B" BEDDING

P.I. 272+37.61
Δ RT. 17° 17' 50"
D = 2° 30' 00"
L = 691.89'
T = 348.59'
RATE OF SUPERELEVATION 0.04'/FT.
190' RUNOFF



RES. DR. RT. 268+28
INPL. 15" x 30' C.M.P.
REMOVE
30" x 28' C.S. PIPE CULV.
2-30" G.S. PIPE APRONS

F.E. RT. 269+64
INPL. 30" x 20' C.M.P.
REMOVE
MOVE TO STA. 271 + 20
NO CULV. REQ'D.

CL. 132 TREES GR. 115 TREES

B.M. EL. 975.95
PAINTED ROD N.W.
COR. CULV. HDWL.
LT. STA. 282 + 49



State Proj. No. C133-92-1 C.R. 133

Sheet No. 9 of 42 Sheets

℄ CULV. 288 + 57
INP. 18" x 38' C.M.P.

REMOVE
MOVE TO STA. 288 + 70
30"x118' R.C. PIPE CL. IV
2-30" R.C. PIPE APRONS
PLACE CULVERT ON "B" BEDDING

℄ CULV. 291+55
INP. 48" x 70' C.M.P.
CONC. HEADWALL INLET
NO APRONS

REMOVE
36"x 100' R.C. PIPE CL. IV
36"x 72' R.C. PIPE CL. V
2-36" R.C. PIPE APRONS
SKEW CULV. 30°
PLACE CULVERT ON "B" BEDDING
13 CU.YDS. RIPRAP CL.III 18"DEEP
9"GRANULAR FILTER OR
GEOTEXTILE FILTER MATERIAL.

P.I. 292 + 69.65
Δ LT. 79°40'07"
D = 7°00'00"
L = 1138.12'
T = 682.79
RATE OF SUPERELEVATION 0.06'/FT.
290' RUNOFF

P.T. 287 + 24.98

RES. DR. RT. 288 + 20
INPL. 42"x 24' C.M.P.

REMOVE
72"x 62' C.S. PIPE
2-72" G.S. PIPE APRONS
40 CU.YDS. RIPRAP CL.III 18" DEEP
9"GRANULAR FILTER OR
GEOTEXTILE FILTER MATERIAL.

P.C. 285 + 86.66

WOODS
OBLITERATE OLD ROAD
T.E.
50'
60'
40'
110'
1285
1290
1295

CL. 1.3 ACRES GR. 1.3 ACRES
CL. 1.1 ACRES GR. 1.1 ACRES
CL. 40 TREES GR. 35 TREES

B.M. EL. 971.07
X TOP CONC. HDWL.
LT. STA. 291+65

B.M. EL. 1043.18
SPK. IN P.P. LT. 3'
STA. 298 + 44

P.I. 287+75
ELEV. 959.70
910' V.C.
M = 11.6020
C = 0.56044

+36.72

+19.55

+70%

-70%

INLET ELEV. 63.5
OUTLET ELEV. 52.5

INLET ELEV. 67.0
OUTLET ELEV. 58.0

℄
75' LT.
75' RT.

UNCLASSIFIED EXC. 67,500 CU.YDS.
EMBANKMENT 76,563 CU.YDS.
NOTE: 9,355 CU.YDS. UNCL. EXC. FROM TWP. RD. STA. 220 + 00.

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
STA. 283 + 00 TO STA. 285 + 25
STA. 293 + 50 TO STA. 298 + 00.

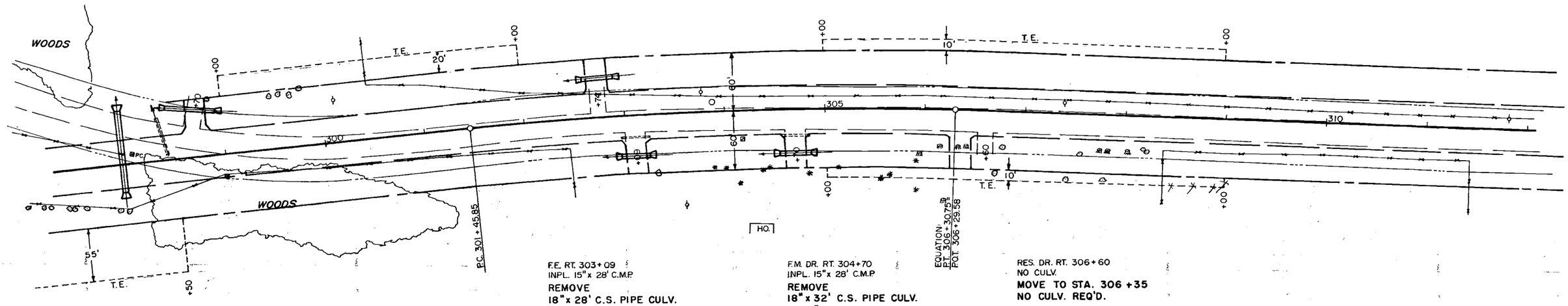
UNCLASSIFIED EXC. 32,767 CU.YDS.
EMBANKMENT 29,016 CU.YDS.
NOTE: 3,751 CU.YDS. EXCESS UNCLASSIFIED EXC. TO BE PLACED IN OLD ROAD AREA. STA. 292 + 00 TO STA. 298 + 00.

℄ CULV LT.
OUTLET 298+35
INLET 298+43
INPL. 30"x 36' C.M.P.
REMOVE
MOVE TO STA. 298+00
24"x 82' R.C. PIPE CULV. CL.2
2-24" R.C. PIPE APRONS [HO]
CONST. DITCH BLOCK AT INLET

RES. DR. LT. 298+70
INPL. 15" x 48' C.M.P.
W/ WOOD HEADWALLS
REMOVE
18"x 62' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.E. LT. 302+74
NO CULV.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

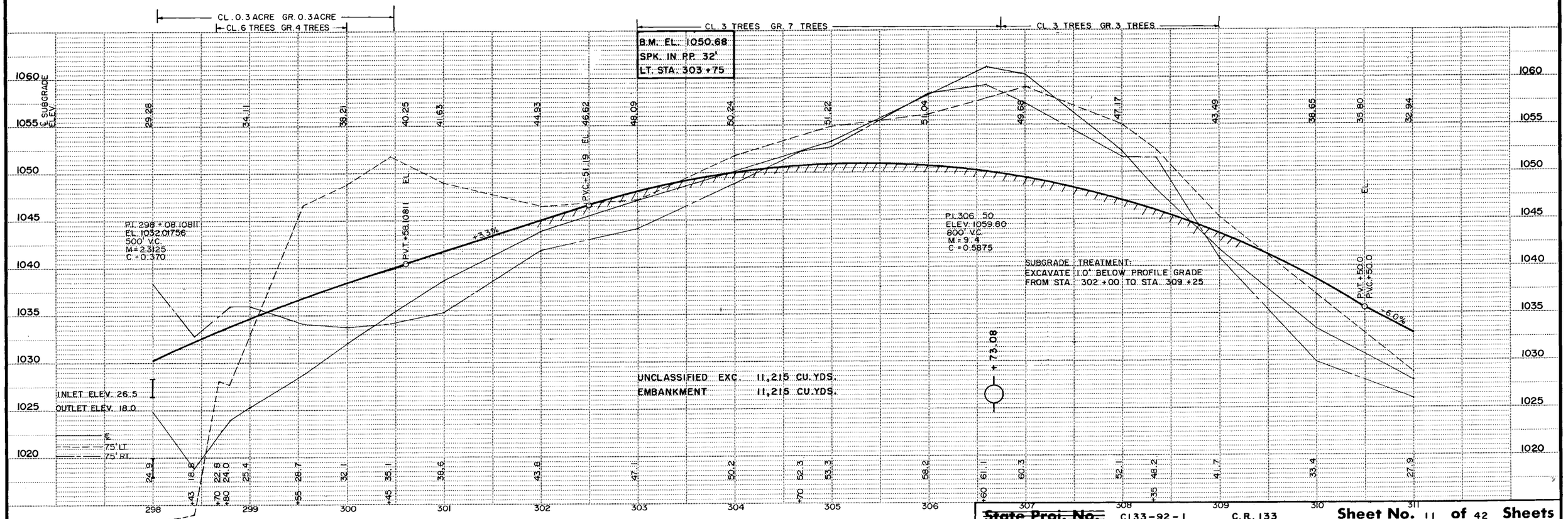
P.I. 303+88.75
Δ RT. 8°29'09"
D= 1°45'00"
L= 484.90'
T= 242.90'
RATE OF SUPERELEVATION 0.024'/FOOT
RUNOFF LENGTH 100'



F.E. RT. 303+09
INPL. 15"x 28' C.M.P.
REMOVE
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.M. DR. RT. 304+70
INPL. 15"x 28' C.M.P.
REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

RES. DR. RT. 306+60
NO CULV.
MOVE TO STA. 306+35
NO CULV. REQ'D.



UNCLASSIFIED EXC. 11,215 CU.YDS.
EMBANKMENT 11,215 CU.YDS.

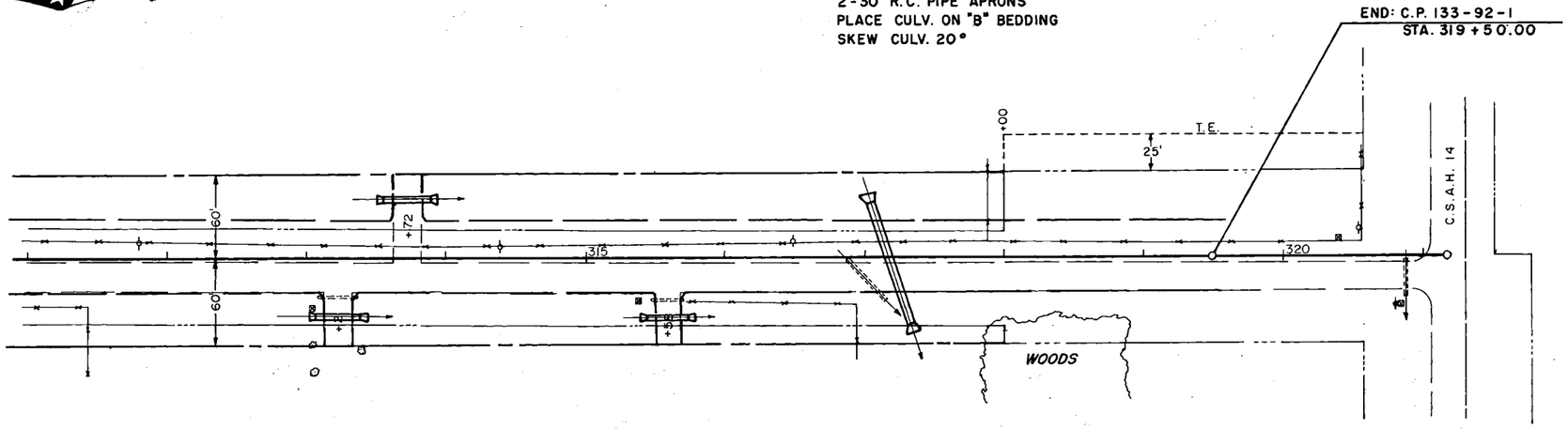
SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 302+00 TO STA. 309+25

F.E. LT. 313+72
NO CULV.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ CULV
INLET LT. 316+88
OUTLET RT. 317+15
INPL. 24"x 40' C.M.P.
REMOVE
MOVE TO STA. 317+03
30"x 92' R.C. PIPE CULV. CL. II
2-30" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
SKEW CULV. 20°

℄ CULV. 320+88
INPL. 15"x 24' C.M.P.

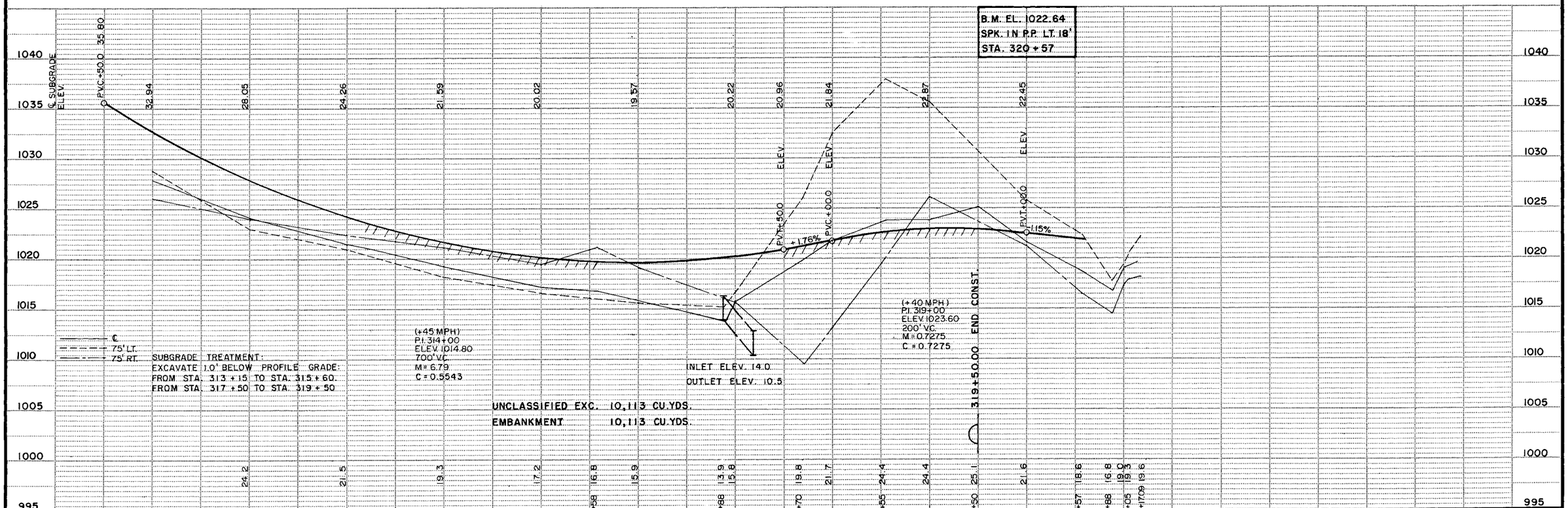
END: C.P. 133-92-1
STA. 319+50.00



RES. DR. RT. 313+21
INPL. 15"x 28' C.M.P.
REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

FARM DR. RT. 315+58
INPL. 15"x 24' C.M.P.
REMOVE
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

SHED



℄
75' LT.
75' RT.

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE:
FROM STA. 313+15 TO STA. 315+60
FROM STA. 317+50 TO STA. 319+50

(+45 MPH)
PI. 314+00
ELEV. 1014.80
700' V.C.
M=6.79
C=0.5543

INLET ELEV. 14.0
OUTLET ELEV. 10.5

UNCLASSIFIED EXC. 10,113 CU.YDS.
EMBANKMENT 10,113 CU.YDS.

(+40 MPH)
PI. 319+00
ELEV. 1023.60
200' V.C.
M=0.7275
C=0.7275

B.M. EL. 1022.64
SPK. IN P.P. LT. 18'
STA. 320+57

RES. DR. LT. 7+29
NO CULV.
NO CHANGE

℄ CULV. STA. 15+77
INPL. 36"x 28' C.M.P.
NO APRONS
REMOVE
MOVE TO STA. 15+70
57"SPAN x 56' C.S. PIPE-ARCH CULV.
2-57"SPAN C.S. PIPE-ARCH APRONS

P.O.T. 16+18.90 =
P.O.T. 220+07.57 ON TANGENT LINE

P.I. 8+97.93
Δ LT. 3°56'13"
D - 1°00'00"
T - 196.92'
L - 393.69'
R - 5729.58'

P.C. 7+01.01

P.T. 10+94.70

T.E.

5'

50'

10'

15'

WOODS

PROP. COR.

OLD SCHOOL

WATER PUMP

BEGIN GRADING 7+50.00

℄ CULV. STA. 7+04
INPL. 24"x 61' C.M.P.
W/APRONS
NO CHANGE

P.C. 12+57.56

P.I. 13+86.88
Δ RT. 4°31'26"
D - 1°45'00"
T - 129.32'
L - 258.51'
R - 3274.04'

P.T. 15+16.07

B.M. EL. 1022.96
SPK. IN P.P. SW. COR. INT.
12TH AVE NW. & 62nd ST. NW.

B.M. EL. 1010.58
SPK. IN P.P. RT. 27'
STA. 219+34

℄ SUBGRADE ELEV

P.V.T. +8 5.0 ELEV

P.V.T. +15.0 ELEV. 21.37
P.V.C. +25.0 ELEV. 21.725

P.V.T. +25.0 ELEV. 20.475

P.V.C. +51.875 ELEV. 15.439

P.V.T. +81.875 ELEV. 12.80

-3.2%

+4.0%

-4.0%

P.I. 10+75.0
ELEV. 1030.475
500' V.C.
M = 4.6875
C = 0.75

P.I. 6+50.0
ELEV. 1015.60
330' V.C.
M = 2.76375
C = 1.0152

P.I. 15+16.785
ELEV. 1012.80
130' V.C.
M = 0.65
C = 1.5384

℄ PROFILE
PROFILE 75' LT.
PROFILE 75' RT.

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 7+50 TO STA. 14+50

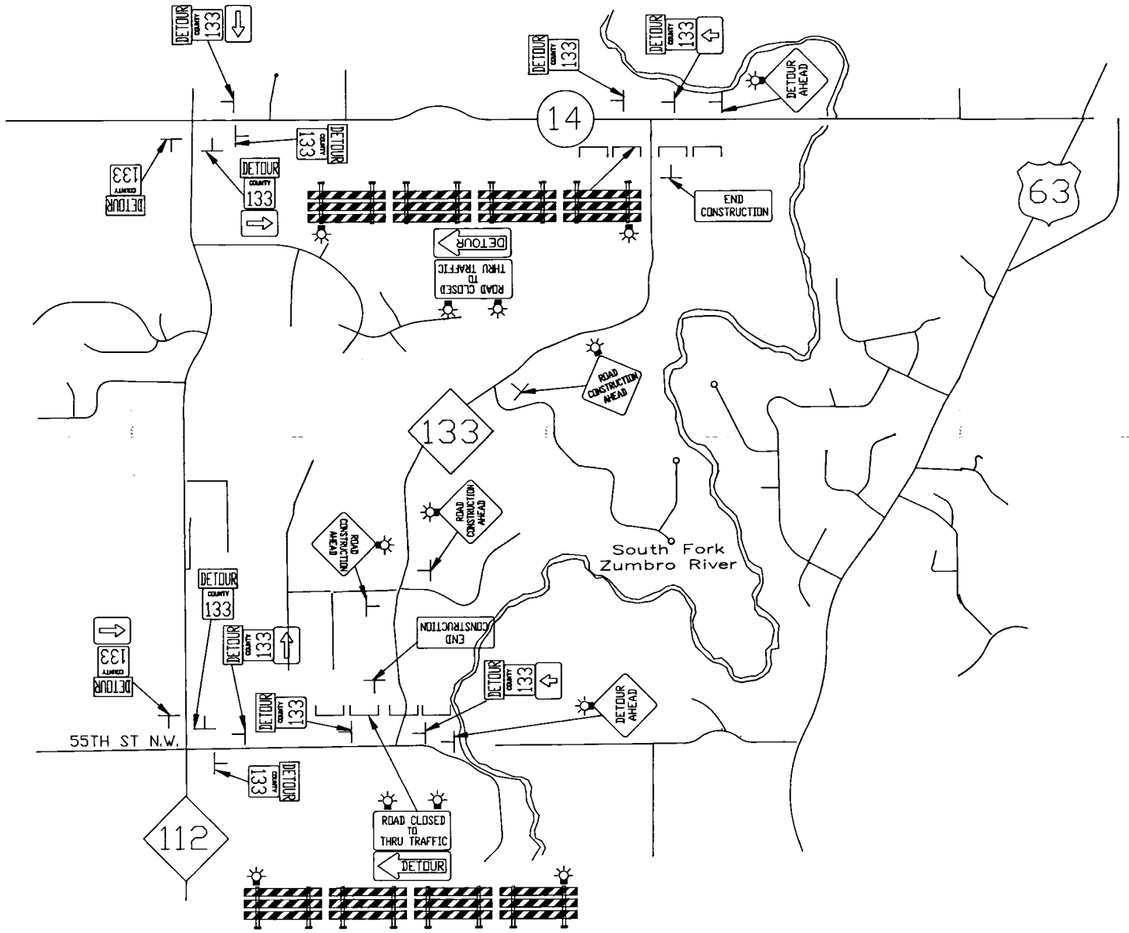
UNCLASSIFIED EXC.	12,477 CU.YDS.
EMBANKMENT	2,248 CU.YDS.

NOTE: 9,355 CU.YDS. UNCLASSIFIED EXC. TO BE USED IN C.R. 133
BALANCE STA. 208+28.44 TO STA. 289+36.72.

INLET ELEV. 08.0
OUTLET ELEV. 07.0

1035 1030 1025 1020 1015 1010 1005 1000 995 990

4 5 6 7 8 9 10 11 12 13 14 15 16



TRAFFIC CONTROL LEGEND

- ⊥ POST OR STAND MOUNTED SIGN
- └┘ TYPE III BARRICADE
- ☼ TYPE 'A' AMBER FLASHING LAMP

ESTIMATE OF TRAFFIC CONTROL DEVICES

DEVICE	NUMBER	SIZE	COLOR	QUANTITY	DEVICE	NUMBER	SIZE	COLOR	QUANTITY
ROAD CLOSED TO THRU TRAFFIC	R11-4	60 x 30	BLK/WH	2	DETOUR	M4-10L	48 x 18	BLK/OR	1
END CONSTRUCTION	G20-2	60 x 24	BLK/OR	2	DETOUR	M4-10R	48 x 18	BLK/OR	1
ROAD CONSTRUCTION AHEAD	W20-1	48 x 48	BLK/OR	3	⇨	M6-1	21 x 15	BLK/WH	4
DETOUR AHEAD	W20-2	48 x 48	BLK/OR	2	⇧	M6-3	21 x 15	BLK/WH	2
COUNTY 133	M1-X4A	24 x 24	BLK/WH	12		TYPE III	MIN. 6'	OR & BLK	8
DETOUR	M4-8	24 x 12	BLK/WH	12	☼	TYPE A	FLASHING LAMP	AMBER	13

TRAFFIC CONTROL NOTES

1. TRAFFIC CONTROL LAYOUTS NOT DRAWN TO SCALE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THIS PROJECT.
3. THE LOCATION OF SIGNS AND DEVICES WILL BE STAKED BY THE ENGINEER IN THE FIELD.
4. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING APPENDIX B DATED MARCH 1990.
5. CONSTRUCTION ZONE SIGNING SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL INCLUDE, BUT NOT BE LIMITED TO SIGNS FOR LANE CLOSURES, MACHINERY AHEAD, BUMP, DIP, LOOSE GRAVEL ETC. THE NUMBER AND LOCATION WILL BE DETERMINED BY THE CONTRACTORS OPERATION.