Information for File #2014-04118-CLJ

Applicant:	**Lon Aune, Marshall County Highway Department**
Corps Contact:	Craig L. Jarnot
Address:	4111 Technology Drive, Suite 295, Bemidji MN, 56601
E-Mail:	Craig.L.Jarnot@usace.army.mil
Phone:	(218) 444-6381
Primary County :	Marshall
Sec/Township/Range:	Sections 8, 9, 10, 15, 16, & 17, T. 158W., R. 48W.
Information Complete On:	**December 9, 2014**
Posting Expires On:	**January 15, 2015**
Authorization Type:	LOP-05-MN (A);

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction under Sections 9 & 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act (CWA) identified in Regulatory Guidance Letter 07-01. We have made a preliminary determination that the aquatic resources that would be impacted by the proposed project are regulated by the Corps of Engineers under Section 404 of the Clean Water Act. The jurisdictional review determines the scope of the projects regulated impacts and compensatory mitigation requirements.

PROJECT PURPOSE & NEED: The purpose of the project is to reconstruct approximately 2.8 miles of Marshall County State Aid Highway (CSAH) 24 between U.S. Route 75 and 360th Avenue NW. Currently, CSAH 24 is a rural gravel roadway that ranges from 26 to 28 feet in width. The existing inslopes vary from 2.5:1 to 4:1 (H:V). Large agricultural machinery and inefficient roadside ditches have lead to a deteriorated driving surface. In addition, the current roadway dimensions pose a safety hazard when agricultural equipment meets oncoming traffic as there is no space for vehicles to safely pass.

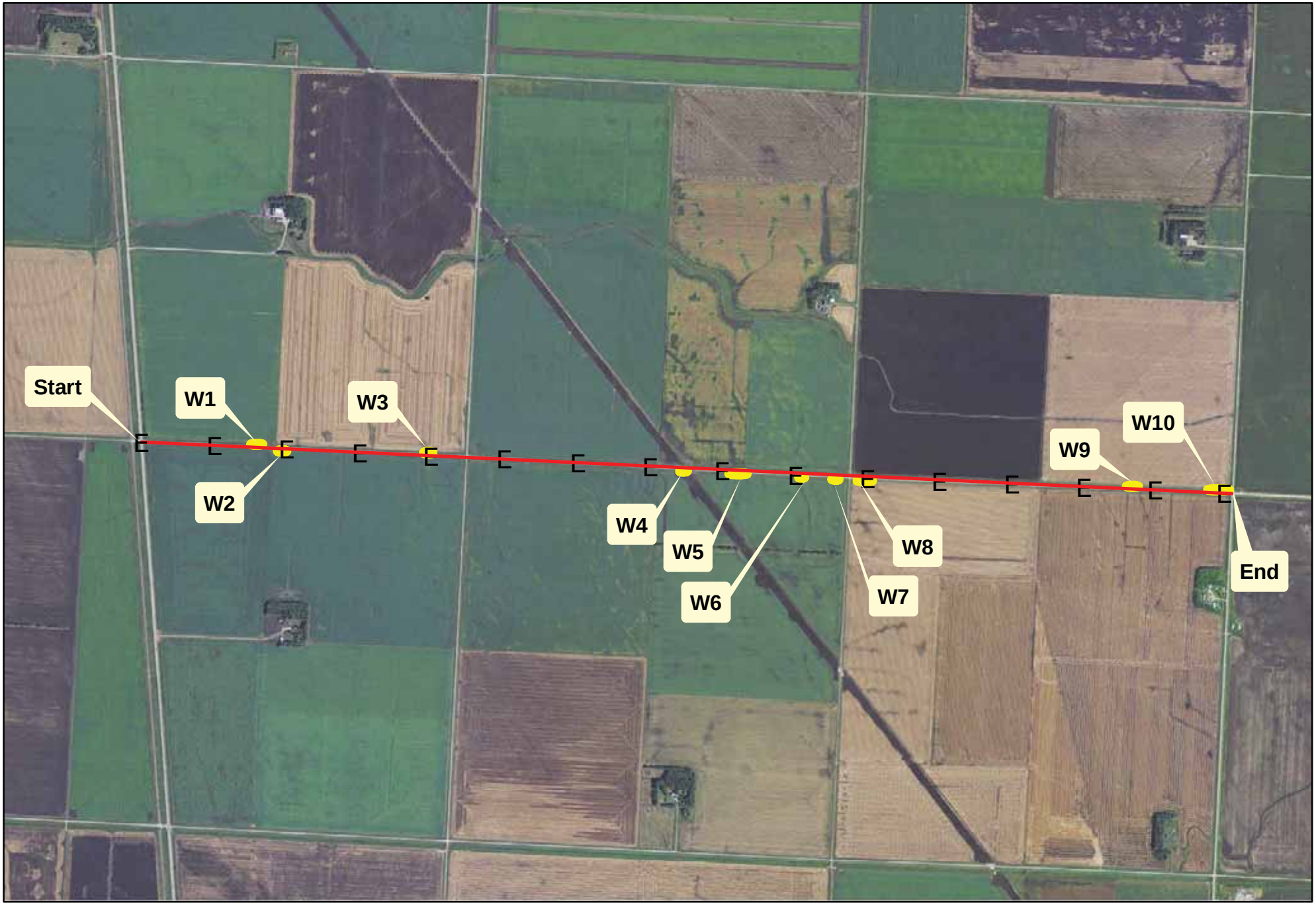
PROJECT DESCRIPTION: The applicant proposes to reconstruct this portion of CSAH 24 to minimum design standards for a roadway with a projected ADT of 50 to 149 vehicles per day. The reconstruction would include road surface reconstruction using class I aggregate, shoulder widening, and roadside ditch grading. The project as proposed would restore 11-foot wide driving lanes with 3-foot wide aggregate shoulders, a 9-foot recovery area, and roadway in-slopes constructed at 4:1 (H:V). The applicant has indicated the existing ditches have been filled in from agricultural activities which has resulted in inefficient drainage of the roadway. The proposal would replace the roadside ditches to the original as-built dimensions.

NAME, AREA AND TYPES OF WATERS (INCLUDING WETLANDS) SUBJECT TO LOSS: Approximately, 0.46 acres of Wet Meadow (Type 2) wetland would be impacted as a result of placing fill material required for the road reconstruction and 0.67 acres of wetland would be impacted as a result of excavation required to replace the roadside ditches. Reconstruction activities would also temporarily impact 0.10 acres of wetland as a result of grading and topsoil storage.

ALTERNATIVES CONSIDERED: The no-build alternative would avoid all impacts to wetlands; however, the no-build alternative was dismissed as it would not meet the project purpose to improve road conditions and degraded ditches. Constructing the roadway on a new alignment was assessed; however, constructing a new roadway would require a significant purchase of right-of-way corridors and likely result in increased environmental impacts.

COMPENSATORY MITIGATION: The applicant has proposed compensatory mitigation for the permanent impact to wetlands as a result of reconstruction the roadway through the Minnesota Board of Soil and Water Resources (BWSR) Local Road Replacement Program.

Drawings: 2014-04118-CLJ 1 of 36 through 36 of 36. See attached



US Army Corps of Engineers ®
St. Paul District

MVP-2014-004118-CLJ
CSAH 24 Maintenance
Marshall County, MN
Basin Locator
UTM 15N 215295, 5380665

2010 Farm Service Agency Color Photo

0 1,200 2,400 Feet

Reported_Basins

MINNESOTA DEPARTMENT OF TRANSPORTATION
MARSHALL COUNTY

MINN. PROJ. NO.

CONSTRUCTION PLAN FOR GRADING, CULVERTS AND AGGREGATE BASE

LOCATED ON C.S.A.H. 24 BETWEEN U.S. T.H. 75 AND C.S.A.H. 23 (GEOGRAPHIC DESC.)

FROM 777.71' EAST OF THE N.W. COR. SEC. 17, T. 158 N., R. 48 W. TO THE N.E. COR. SEC. 15, T. 158 N., R. 48 W. (LEGAL DESC.)

S.A.P. 045-624-003

GROSS LENGTH	15,106.13	FEET	2.861	MILES
BRIDGE LENGTH		FEET		MILES
EXCEPTIONS		FEET		MILES
NET LENGTH	15,106.13	FEET	2.861	MILES

RECEIVED DEC 0 8 2014 BY:

PLAN SYMBOLS

COUNTY LINE
SECTION LINE
QUARTER LINE
RIGHT-OF-WAY
PRESENT RIGHT-OF-WAY
PROPERTY LINE (EXCEPT LAND LINES)
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RAILROAD
RIVER OR CREEK — NAME
DRAINAGE DITCH — DITCH NO.
DRAINAGE
CULVERT
BARBED WIRE FENCE
TIMBER ORCHARD
BRUSH NURSERY
BRIDGE
BUILDING (ONE STORY)
B BRICK F FRAME C CONCRETE
ST STUCCO S STONE T TILE
GRAVEL PIT (G)
BORROW PIT (B)

UTILITIES SYMBOLS

TEMPORARY EASEMENT — TE
POWER POLE LINE
ANCHOR
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN — G
WATER MAIN — I
BURIED FIBER OPTIC CABLE — FO-BUR
BURIED TELEPHONE CABLE — T-BUR
BURIED ELECTRICAL CABLE — P-BUR
SEWER (SANITATION OR STORM)
SEWER MANHOLE

ROAD SYMBOLS

TRUNK HIGHWAY (59)
COUNTY (116)
COUNTY STATE AID (43)

BEGIN S.A.P. 045-624-003
STA. 0+00.00

WARNING: PETROLEUM PRODUCTS PIPELINE

N

PROJECT LOCATION

SCALES

PLAN AS SHOWN
PROFILE AS SHOWN
CROSS SECTIONS 10'
INDEX MAP 1 MILE

GOVERNING SPECIFICATIONS

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE 2014 EDITION OF THE "MATERIAL LAB SUPPLEMENTAL SPECIFICATION FOR CONSTRUCTION" SHALL GOVERN

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET/TYPICAL SECTION
3	CONSTRUCTION QUANTITIES/DETAILS
4-9	PLAN AND PROFILE SHEETS
10-35	CROSS SECTION SHEETS
36	TRAFFIC CONTROL

THIS PLAN CONTAINS 36 SHEETS

UTILITIES

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"

TELEPHONE = FRONTIER COMMUNICATIONS
ELECTRIC = PKM ELECTRIC
ELECTRIC = OTTERTAIL POWER
WATER = KITTSON-MARSHALL RURAL WATER

DESIGN DESIGNATION

ADT (2014): 45
PROJ. ADT (2034): 50
SOIL FACTOR: 130
NO. OF TRAFFIC LANES: 2-11'
SHOULDER WIDTH: 3
DESIGN SPEED: 55 MPH:
BASED ON: STOPPING SIGHT DISTANCE
HEIGHT OF EYE: 3.5' HEIGHT OF OBJECT: 2.0'
DESIGN SPEED NOT ACHIEVED AT: NONE
STOP CONDITION:

LOCAL AGENCY SIGNATURES:

SIGNATURE: _____ LON P. AUNE

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: _____ LICENSE NO. 23385

STATE AID APPROVALS:

_____ DATE _____
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY.

_____ DATE _____
FOR STATE AID ENGINEER: APPROVED FOR FEDERAL AND STATE AID FUNDING

ESTIMATED QUANTITIES

NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITIES
	2051.501	MAINT & RESTORATION OF HAUL ROADS	LS	1
	2104.501	REMOVE METAL CULVERT	LF	576
1	2105.501	COMMON EXCAVATION	CY	33,334 (P)
	2111.501	TEST ROLLING	RDST	152
2	2118.501	AGGREGATE SURFACING CLASS 1	TON	5,717
3	2211.501	AGGREGATE BASE CLASS 5 MOD	TON	18,207
	2451.507	GRANULAR BEDDING (CV)	CY	173 (P)
	2501.511	18" CS PIPE CULVERT	LF	152
	2501.511	24" CS PIPE CULVERT	LF	88
	2501.511	24" RC PIPE CULVERT	LF	108
	2501.511	36" RC PIPE CULVERT	LF	44
	2501.515	18" GS PIPE APRON	EACH	6
	2501.515	24" GS PIPE APRON	EACH	4
	2501.515	24" RC PIPE APRON	EACH	4
	2501.515	36" RC PIPE APRON	EACH	2
	2501.521	42" SPAN CS PIPE-ARCH CULVERT	LF	216
	2501.525	42" SPAN GS PIPE-ARCH APRON	EACH	10
4	2511.501	RANDOM RIPRAP CLASS II	CY	83 (P)
	2563.601	TRAFFIC CONTROL	LS	1
5	2574.508	FERTILIZER TYPE 1	LB	4,365
	2575.501	SEEDING	ACRE	29.1 (P)
	2575.502	SEED MIXTURE 25-142	LB	1,310
	2575.511	MULCH MATERIAL TYPE 1	TON	58.2
	2575.519	DISK ANCHORING	ACRE	29.1 (P)
6	2575.523	EROSION CONTROL BLANKETS CATEGORY 1	SY	388

NOTES:

(1) COMMON EXCAVATION INCLUDES 7,713 CU. YDS. TOPSOIL.

(2) AGGREGATE SURFACING CL. 1 INCLUDES 288 TON FOR APPROACHES AND ENTRANCES.

(3) AGGREGATE BASE CL. 5 INCLUDES 576 TON FOR APPROACHES AND ENTRANCES. MODIFY 200 SIEVE TO 6-12% PASSING.

(4) GEOTEXTILE FILTER MATERIAL WILL BE CONSIDERED INCIDENTAL TO CL. II RIPRAP CONSTRUCTION AND NO DIRECT COMPENSATION WILL BE MADE.

(5) EROSION CONTROL BLANKETS TO BE PLACED ON ALL CULVERT ENDS THAT DO NOT HAVE RIPRAP. THIS ITEM INCLUDES APPROXIMATELY 100 SQ. YDS. FOR FIELD DRAINAGE DITCH OUTLETS.

(6) FERTILIZER ANALYSIS 40-20-10.

CONSTRUCTION NOTES:

MATERIAL FROM THE UPPER 1' OF NATURAL TOPSOIL SHALL NOT BE USED IN THE UPPER 1' OF THE ROADBED.

3" (APPROX.) TOPSOIL TO BE SPREAD UNIFORMLY ON THE INSLOPE FROM THE CL. 5 SHOULDER PI TO THE TOE OF THE INSLOPE AND FROM THE TOE OF THE BACKSLOPE TO NATURAL GROUND.

PAYMENT FOR COMMON EXCAVATION, RANDOM RIPRAP, GRANULAR BEDDING, SEEDING AND DISK ANCHORING IS TO BE MADE BASED ON PLANNED QUANTITY.

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE UTILITY LOCATIONS AND DEPTHS AS REQUIRED FOR CONSTRUCTION. ANY EXCAVATION REQUIRED TO LOCATE UNDERGROUND UTILITIES SHALL BE INCIDENTAL TO COMMON EXCAVATION.

BASIS FOR QUANTITIES

EXCAVATION

EARTHWORK SHRINKAGE — 14.3%

AGGREGATE BASE

COMPACTED DRY DENSITY — 140 LBS./CU. FT.
MOISTURE BY WEIGHT — 5%

EROSION CONTROL

RANDOM RIPRAP — STANDARD PLATE DIMENSION
EROSION CONTROL BLANKETS — STANDARD PLATE DIMENSION
SEEDING — DISTURBED AREA
COMMERCIAL FERTILIZER — 150 LBS./ACRE
MULCH MATERIAL — 2 TONS/ACRE

STANDARD PLATES

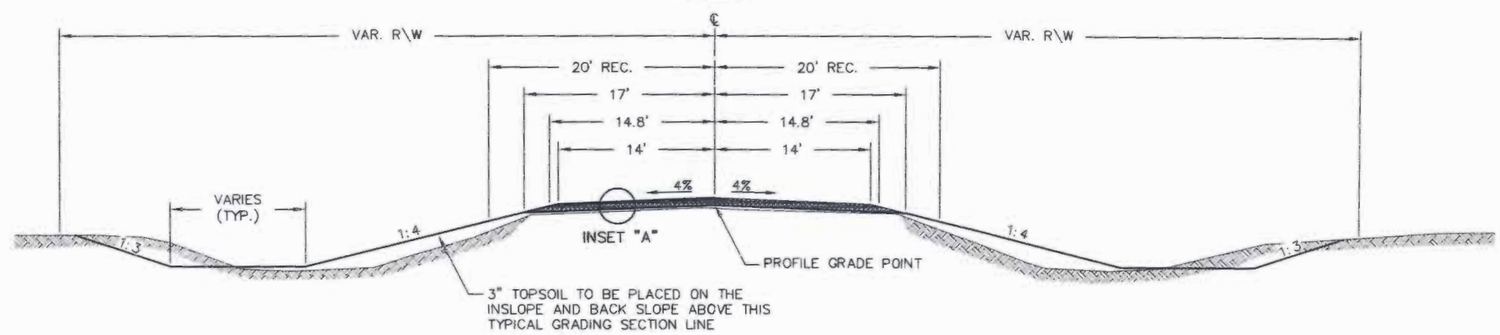
NOTE:
THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY ON THIS PROJECT

PLATE NO.	DESCRIPTION
3000 L	REINFORCED CONCRETE PIPE (5 SHEETS)
3040 F	CORRUGATED METAL PIPE CULVERT (2-2/3" X 1/2" CORR.)
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123 J	METAL APRON FOR C.S. PIPE
3133 D	RIPRAP AT RCP OUTLETS
3145 G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
3221 C	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
8000 I	STANDARD BARRICADES
9000 E	APPROACHES AND ENTRANCES (MOD 1:4 SLOPES)
9102 D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

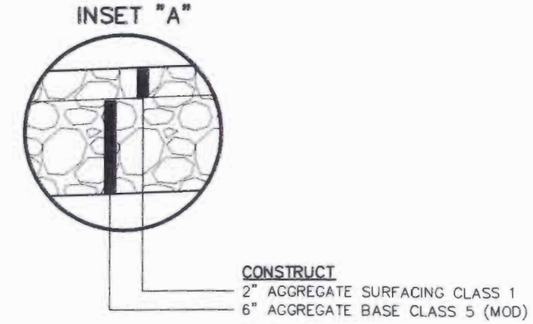
TYPICAL GRADING AND SURFACE SECTION

STA. 0+00.00 TO 151+06.13

NO SCALE



INSET "A"



CERTIFIED _____ LON P. AUNE LICENSE NO. 23385 DATE _____

STATE AID PROJECT NO. 045-624-003

WETLAND LEGEND

WETLAND IMPACT – FILL

WETLAND IMPACT – CUT

WETLAND IMPACT – TEMP.

STA. 0+63 = ℄ CULV.
INP. 24" X 64' C.S. PIPE CULV. – REM.
F & I 24" X 54' R.C. PIPE CULV.
F & I 2–24" R.C. PIPE APRONS
58 CU. YD. (C.V.) GRANULAR BEDDING REQUIRED
PLACE 6 CU. YD. CL. II RIPRAP AT OUTLET END

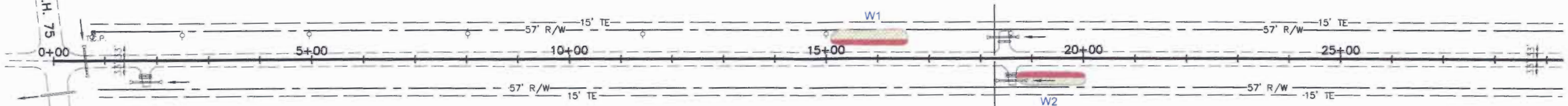
PARCEL #1
SW1/4 LYING EASTERLY OF T.H. 75
SEC. 8, T. 158 N., R. 48 W.
JOHN AND JANE JENSEN etal.
0.97 ACRES R/W
0.60 ACRES TE

T. 158 N., R. 48 W.

STA. 18+26.87 = 1/4 COR. & P.I.
DEF = 00°03'37" LT.

STA. 18+47 = FIELD ENT. LT.
INP. 18" X 24' C.S. PIPE CULV. – REM.
F & I 18" X 50' C.S. PIPE CULV.
F & I 2–18" G.S. PIPE APRONS

PARCEL #2
SE1/4
SEC. 8, T. 158 N., R. 48 W.
ARLO AND JEAN DUPONT
1.47 ACRES R/W
0.92 ACRES TE



STA. 0+00 = U.S. T.H. 75 APP. RT.
INP. 30" X 68' R.C. PIPE CULV. – LEAVE AS IS

N

STA. 1+78 = FIELD ENT. RT.
INP. 2 – LINES 24" X 24' C.S. PIPE CULV. – REM.
F & I 42" SPAN C.S. PIPE–ARCH CULV. 36' LONG
F & I 2–42" C.S. PIPE–ARCH APRONS
PLACE 11 CU. YD. CL. II RIPRAP AT OUTLET END

PARCEL #3
W1/2 LYING EASTERLY OF T.H. 75
LESS THE EAST 35'
SEC. 17, T. 158 N., R. 48 W.
GUARDIAN CHARITABLE TRUST
0.95 ACRES R/W
0.59 ACRES TE

STA. 18+61 = FIELD ENT. RT.
INP. 24" X 24' C.S. PIPE CULV. – REM.
INP. 24" X 26' C.S. PIPE CULV. – REM.
F & I 42" SPAN C.S. PIPE–ARCH CULV. 42' LONG
F & I 2–42" C.S. PIPE–ARCH APRONS
PLACE 11 CU. YD. CL. II RIPRAP AT OUTLET END

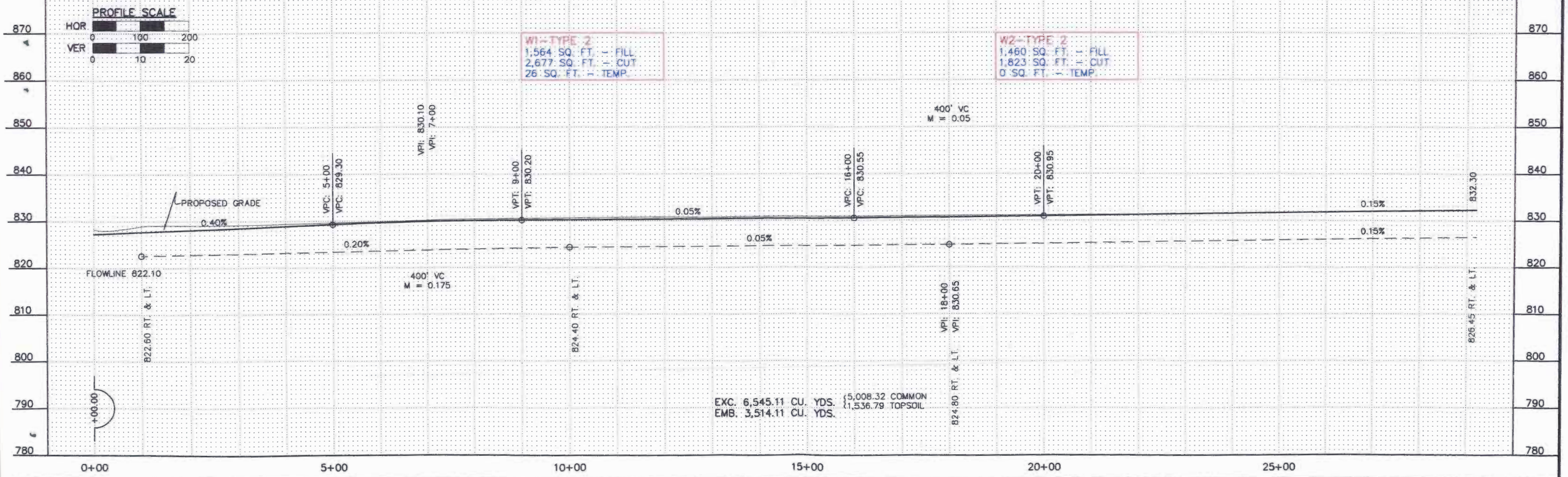
PARCEL #4
EAST 35' OF THE NW1/4 AND
THE NE1/4
SEC. 17, T. 158 N., R. 48 W.
DEAN STENGTIN
1.49 ACRES R/W
0.93 ACRES TE

PLAN SCALE
0 100 200

PROFILE SCALE
HOR. 0 100 200
VER 0 10 20

W1 – TYPE 2
1,564 SQ. FT. – FILL
2,677 SQ. FT. – CUT
26 SQ. FT. – TEMP.

W2 – TYPE 2
1,460 SQ. FT. – FILL
1,823 SQ. FT. – CUT
0 SQ. FT. – TEMP.



CERTIFIED BY: _____ LICENSE NO. 23385 DATE: _____

MARSHALL COUNTY, MINNESOTA | STATE AID PROJECT NO. 045–624–003 | SHEET 4 OF 36 SHEETS

WETLAND LEGEND

WETLAND IMPACT – FILL

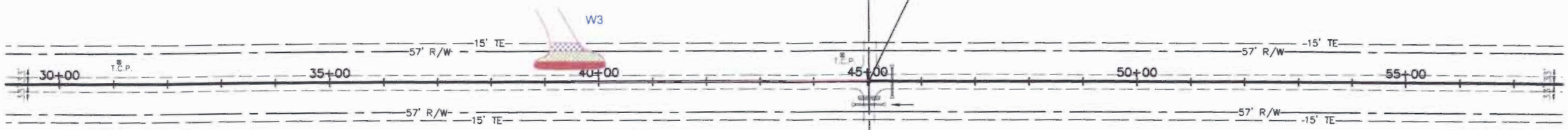
WETLAND IMPACT – CUT

WETLAND IMPACT – TEMP.

STA. 45+02.43 = SEC. COR. & P.I.
DEF = 0°20'19" RT.

PARCEL #5
SW1/4
SEC. 9, T. 158 N., R. 48 W.
GARRIT AND STACI WINGE
1.46 ACRES R/W
0.91 ACRES TE

STA. 45+02 = TWP. APP. LT.
INP. DRY CROSSING – REPLACE



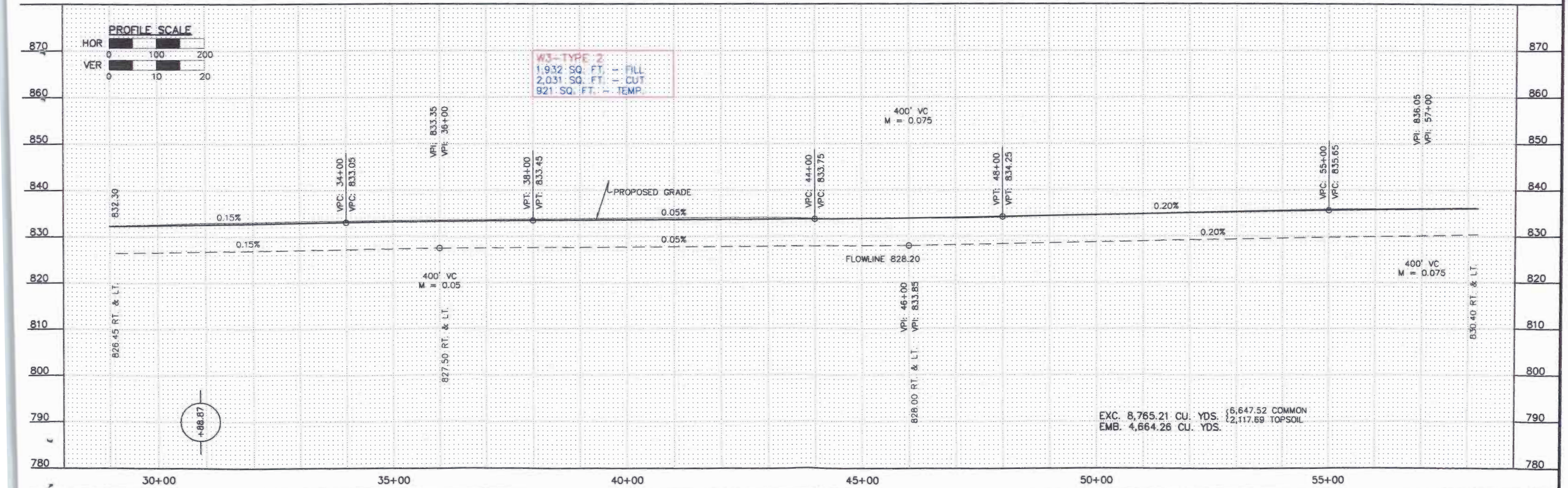
N

PLAN SCALE
0 100 200

STA. 45+02 = TWP. APP. RT.
INP. 24" X 40' C.S. PIPE CULV. – REM.
INP. 24" X 38' C.S. PIPE CULV. – REM.
F & I 42" SPAN C.S. PIPE-ARCH CULV. 52' LONG
F & I 2-42" C.S. PIPE-ARCH APRONS
PLACE 11 CU. YD. CL. II RIPRAP AT OUTLET END

STA. 45+45 = ℄ CULV.
INP. 18" X 52' C.S. PIPE CULV. – REM.
F & I 24" X 54' R.C. PIPE CULV.
F & I 2-24" R.C. PIPE APRONS
58 CU. YD. (C.V.) GRANULAR BEDDING REQUIRED
PLACE 6 CU. YD. CL. II RIPRAP AT OUTLET END

PARCEL #7
NW1/4
SEC. 16, T. 158 N., R. 48 W.
LAWRENCE AND BARBARA KUZNIA
1.46 ACRES R/W
0.91 ACRES TE



EXC. 8,765.21 CU. YDS. {6,647.52 COMMON
EMB. 4,664.26 CU. YDS. {2,117.69 TOPSOIL

CERTIFIED BY: _____ LICENSE NO. 23385 DATE: _____

MARSHALL COUNTY, MINNESOTA | STATE AID PROJECT NO. 045-624-003 | SHEET 5 OF 36 SHEETS

WETLAND LEGEND

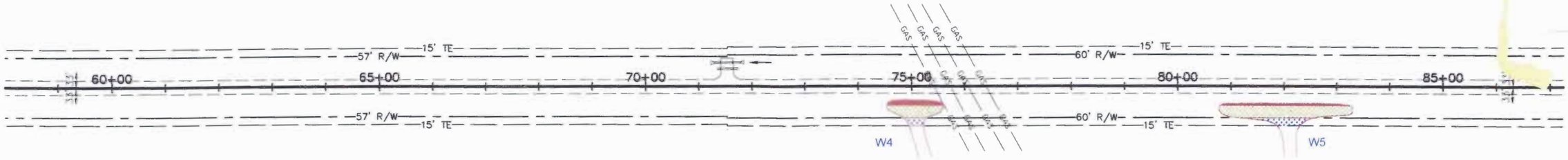
WETLAND IMPACT – FILL

WETLAND IMPACT – CUT

WETLAND IMPACT – TEMP.

STA. 71+54 = FIELD ENT.. LT.
INP. 18" X 40' C.S. PIPE CULV. – REM.
F & I 18" X 46' C.S. PIPE CULV.
F & I 2–18" G.S. PIPE APRONS

PARCEL #6
SE1/4
SEC. 9, T. 158 N., R. 48 W.
BRIAN AND BETSY JENSEN
1.64 ACRES R/W
0.91 ACRES TE



PARCEL #8
NE1/4
SEC. 16, T. 158 N., R. 48 W.
TAMARA JO DEMARIA
1.64 ACRES R/W
0.91 ACRES TE

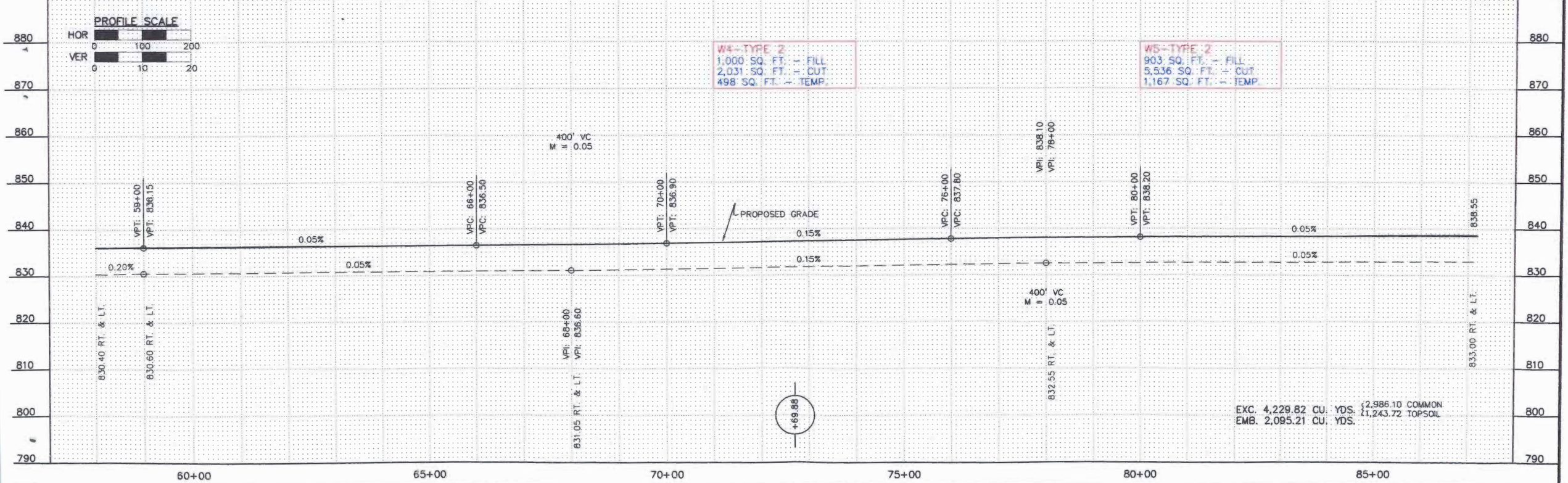
N

PLAN SCALE
0 100 200

PROFILE SCALE
HOR 0 100 200
VER 0 10 20

W4 - TYPE 2
1,000 SQ. FT. – FILL
2,031 SQ. FT. – CUT
498 SQ. FT. – TEMP.

W5 - TYPE 2
903 SQ. FT. – FILL
5,536 SQ. FT. – CUT
1,167 SQ. FT. – TEMP.



EXC. 4,229.82 CU. YDS. { 2,986.10 COMMON
EMB. 2,095.21 CU. YDS. { 1,243.72 TOPSOIL

CERTIFIED BY: _____ LICENSE NO. 23385 DATE: _____

MARSHALL COUNTY, MINNESOTA | STATE AID PROJECT NO. 045–624–003 | SHEET 6 OF 36 SHEETS

WETLAND LEGEND

WETLAND IMPACT – FILL
WETLAND IMPACT – CUT
WETLAND IMPACT – TEMP.

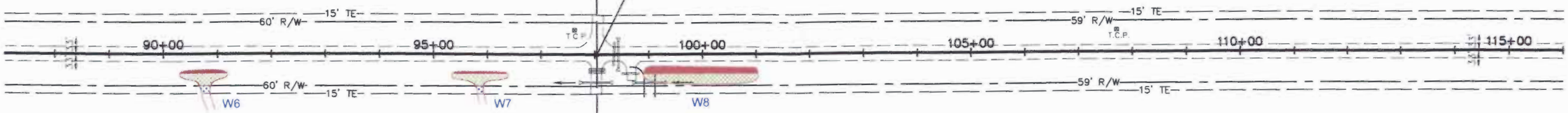
STA. 98+35 = ℄ CULV.
INP. 36" X 44' C.S. PIPE CULV. – REM.

STA. 98+03.97 = SEC. COR. & P.I.
DEF = 0°43'52" RT.

STA. 98+04 = TWP. APP. LT.
INP. DRY CROSSING – REPLACE

STA. 98+42 = ℄ CULV.
F & I 36" X 44' R.C. PIPE CULV.
F & I 2–36" R.C. PIPE APRONS
57 CU. YD. (C.V.) GRANULAR BEDDING REQUIRED
PLACE 5 CU. YD. CL. II RIPRAP AT INTLET END
PLACE 11 CU. YD. CL. II RIPRAP AT OUTLET END

PARCEL #9
SW1/4
SEC. 10, T. 158 N., R. 48 W.
RUDY BRANDT TRUST
1.58 ACRES R/W
0.91 ACRES TE



N

PLAN SCALE
0 100 200

STA. 98+67 = FIELD ENT. RT. – REM.
INP. 36" X 32' C.S. PIPE CULV. – REM.

STA. 98+04 = TWP. APP. RT.
INP. 2 – LINES 24" X 30' C.S. PIPE CULV. – REM.
F & I 42" SPAN C.S. PIPE–ARCH CULV. 48' LONG
F & I 2–42" C.S. PIPE–ARCH APRONS
PLACE 11 CU. YD. CL. II RIPRAP AT OUTLET END

STA. 99+00 = FIELD ENT. RT.
F & I 42" SPAN C.S. PIPE–ARCH CULV. 38' LONG
F & I 2–42" C.S. PIPE–ARCH APRONS
PLACE 11 CU. YD. CL. II RIPRAP AT OUTLET END

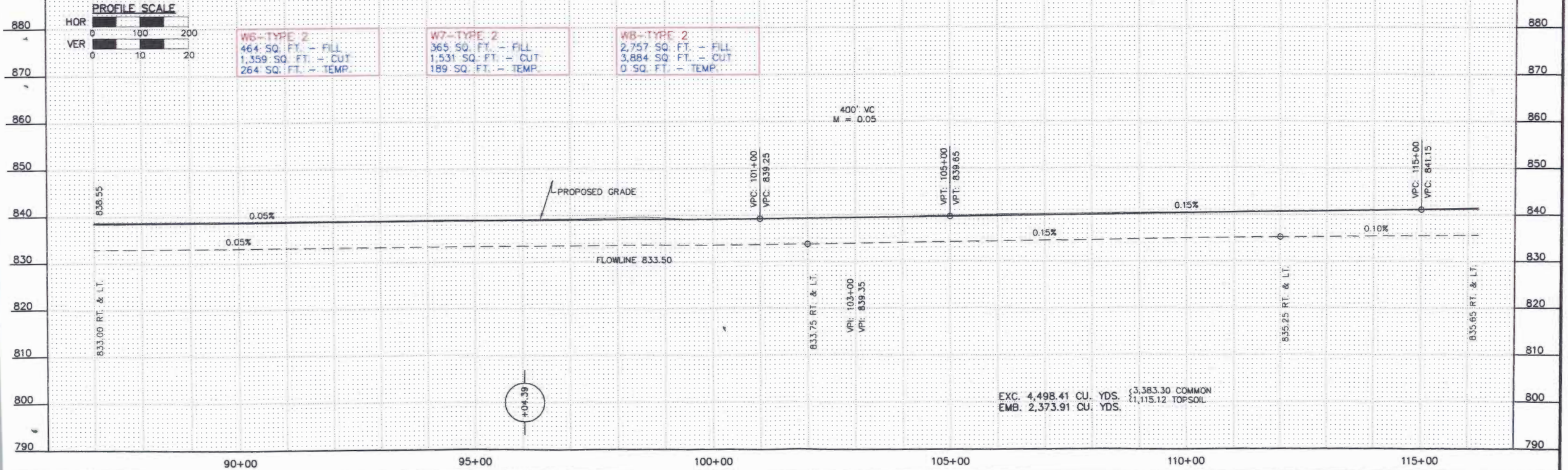
PARCEL #11
N1/2NW1/4
SEC. 15, T. 158 N., R. 48 W.
JOHN AND JANE JENSEN
1.59 ACRES R/W
0.91 ACRES TE

PROFILE SCALE
HOR 0 100 200
VER 0 10 20

W6–TYPE 2
464 SQ. FT. – FILL
1,359 SQ. FT. – CUT
264 SQ. FT. – TEMP.

W7–TYPE 2
365 SQ. FT. – FILL
1,531 SQ. FT. – CUT
189 SQ. FT. – TEMP.

W8–TYPE 2
2,757 SQ. FT. – FILL
3,884 SQ. FT. – CUT
0 SQ. FT. – TEMP.



EXC. 4,498.41 CU. YDS. { 3,383.30 COMMON
EMB. 2,373.91 CU. YDS. { 1,115.12 TOPSOIL

CERTIFIED BY: _____ LICENSE NO. 23385 DATE: _____

MARSHALL COUNTY, MINNESOTA | STATE AID PROJECT NO. 045–624–003 | SHEET 7 OF 36 SHEETS

WETLAND LEGEND

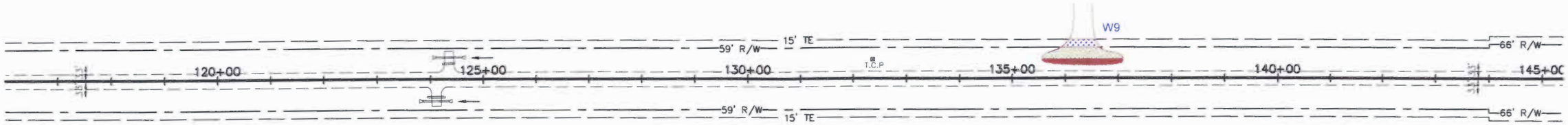
WETLAND IMPACT - FILL

WETLAND IMPACT - CUT

WETLAND IMPACT - TEMP.

STA. 124+36 = FIELD ENT. LT.
INP. 24" X 24' C.S. PIPE CULV. - REM.
F & I 18" X 44' C.S. PIPE CULV.
F & I 2-18" G.S. PIPE APRONS

PARCEL #10
SE1/4
SEC. 10, T. 158 N., R. 48 W.
LUTHER AND CAROL JOHNSON etal.
1.67 ACRES R/W
0.90 ACRES TE

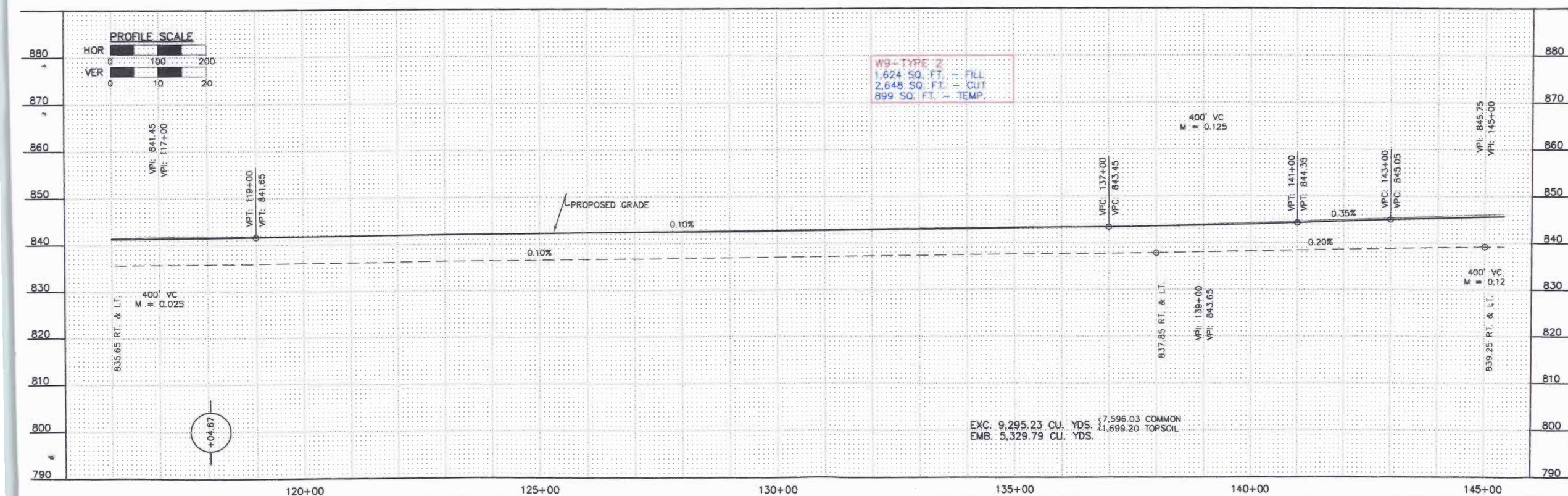


N

STA. 124+12 = FIELD ENT. RT.
INP. 48" X 34' C.S. PIPE CULV. - REM.
F & I 24" X 44' C.S. PIPE CULV.
F & I 2-24" G.S. PIPE APRONS

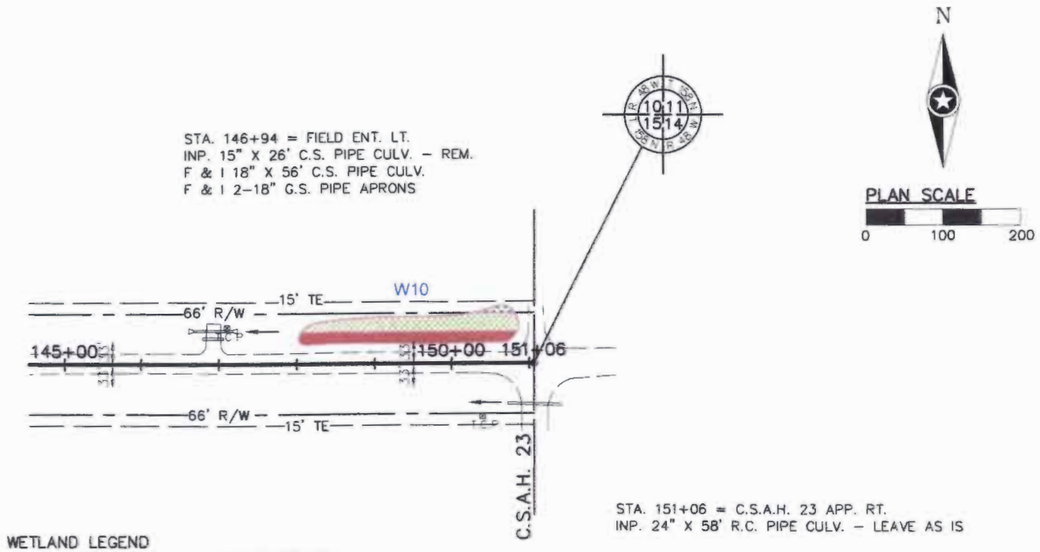
PARCEL #12
NE1/4
SEC. 15, T. 158 N., R. 48 W.
MARY ANN HENRICKSON etal.
1.65 ACRES R/W
0.89 ACRES TE

PLAN SCALE
0 100 200



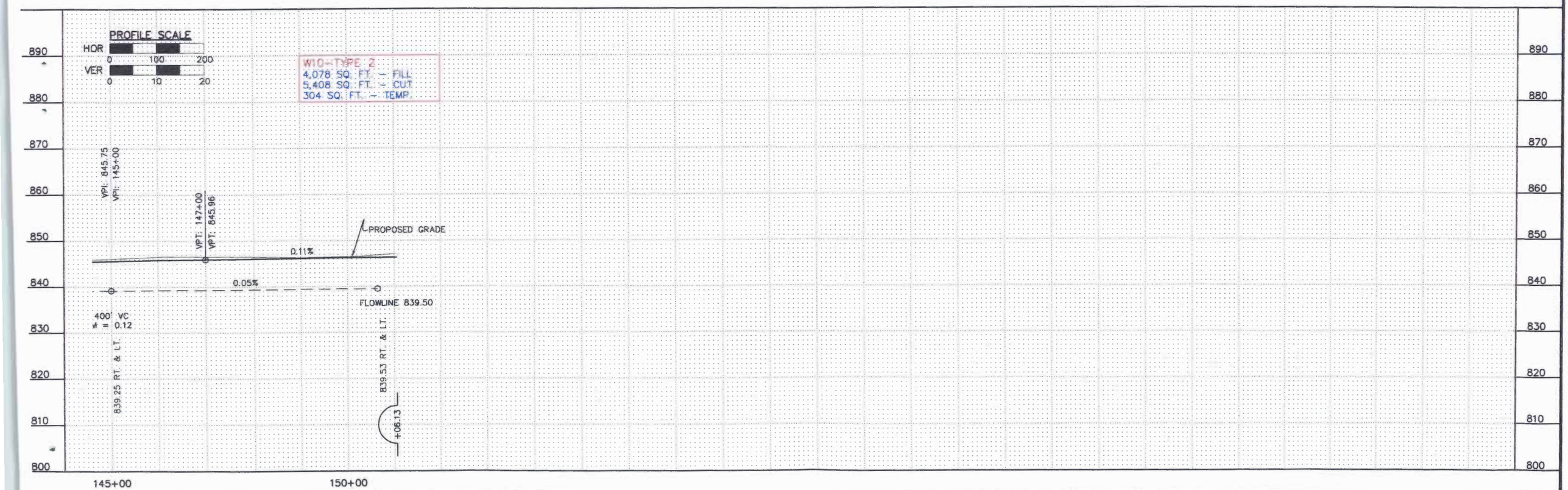
CERTIFIED BY: _____ LICENSE NO. 23385 DATE: _____

MARSHALL COUNTY, MINNESOTA | STATE AID PROJECT NO. 045-624-003 | SHEET 8 OF 36 SHEETS



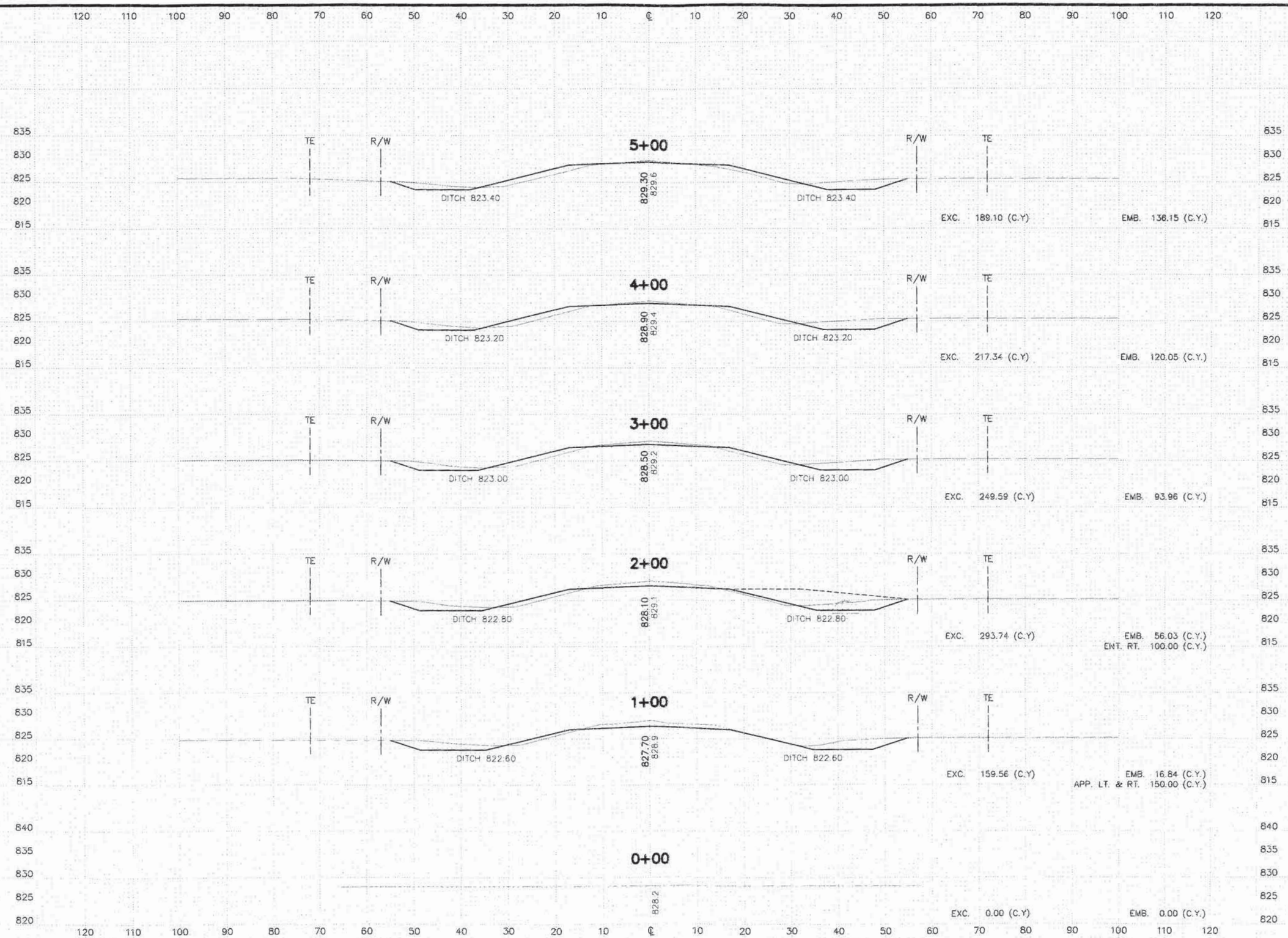
WETLAND LEGEND

- WETLAND IMPACT - FILL
- WETLAND IMPACT - CUT
- WETLAND IMPACT - TEMP.



CERTIFIED BY: _____ LICENSE NO. 23385 DATE: _____

MARSHALL COUNTY, MINNESOTA | STATE AID PROJECT NO. 045-624-003 | SHEET 9 OF 36 SHEETS



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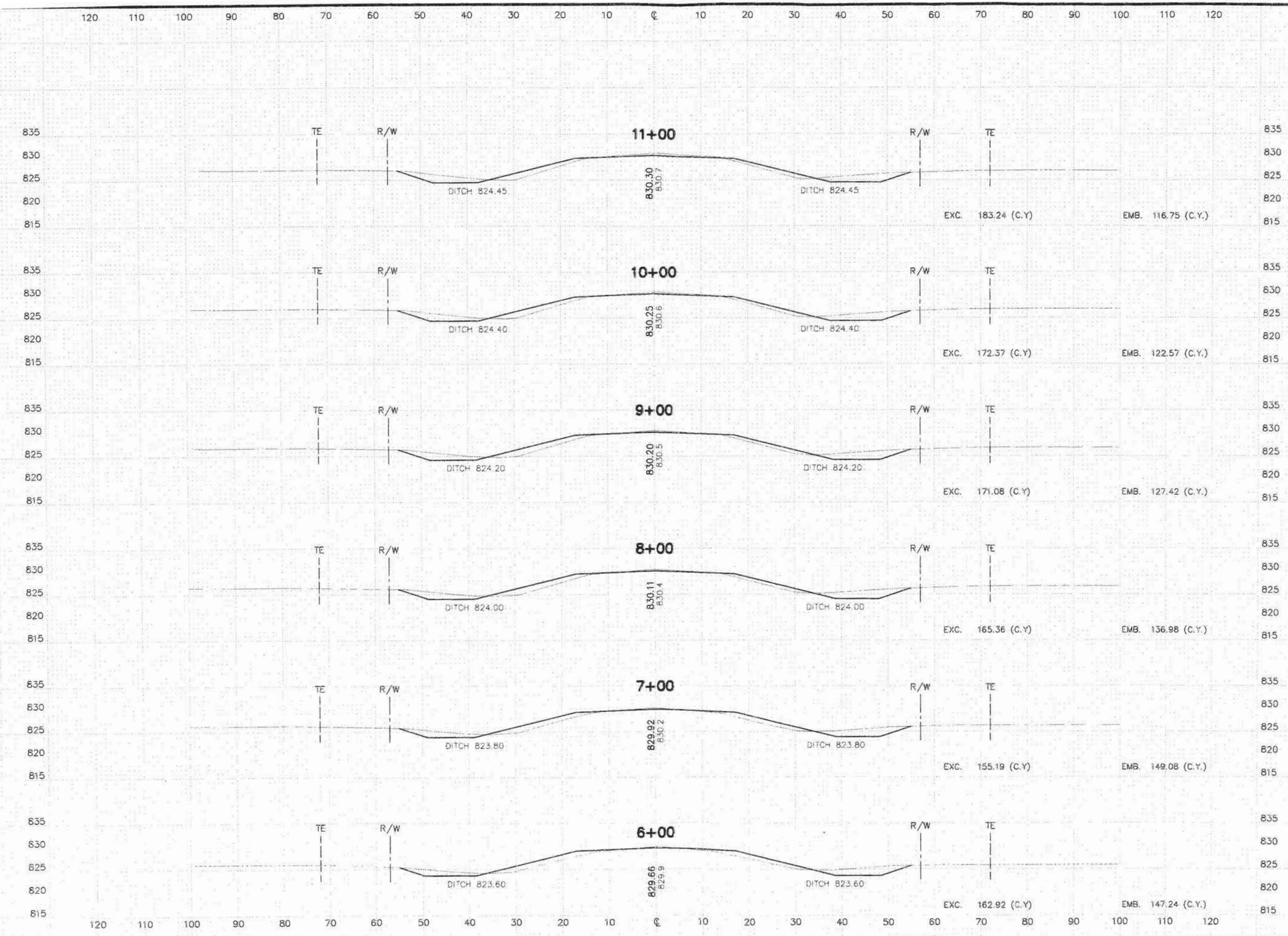

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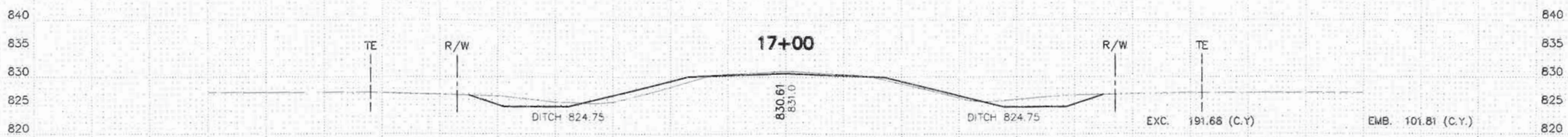
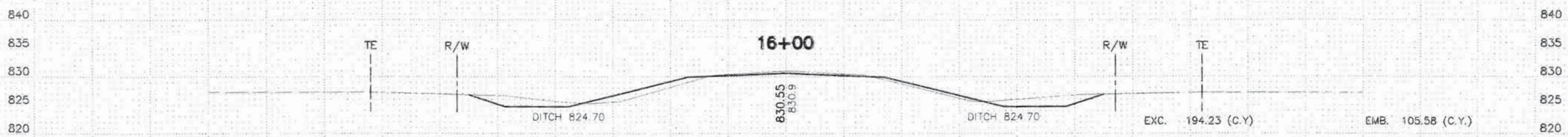
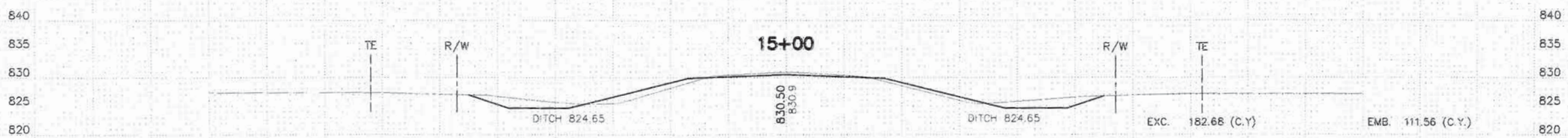
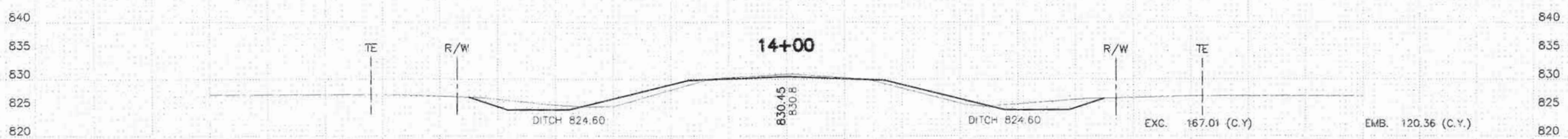
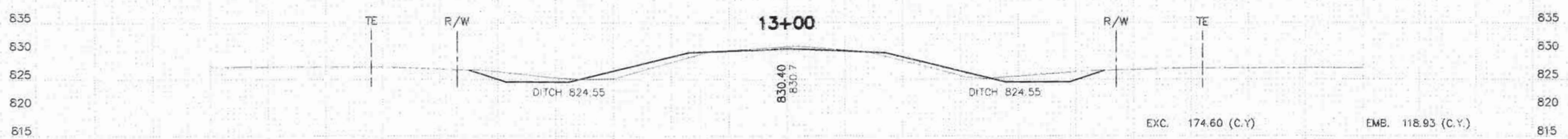
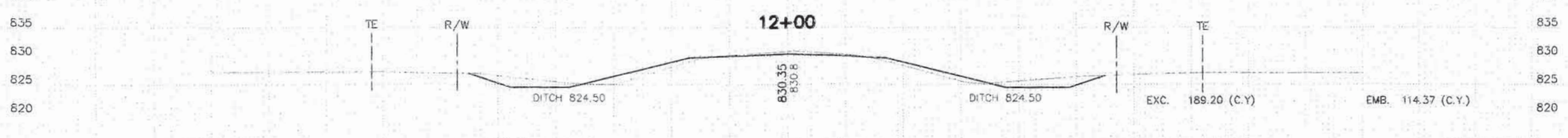

17+00
TE
R/W
R/W
TE
DITCH 824.75
830.61
831.0
DITCH 824.75
EXC. 191.68 (C.Y)
EMB. 101.81 (C.Y.)

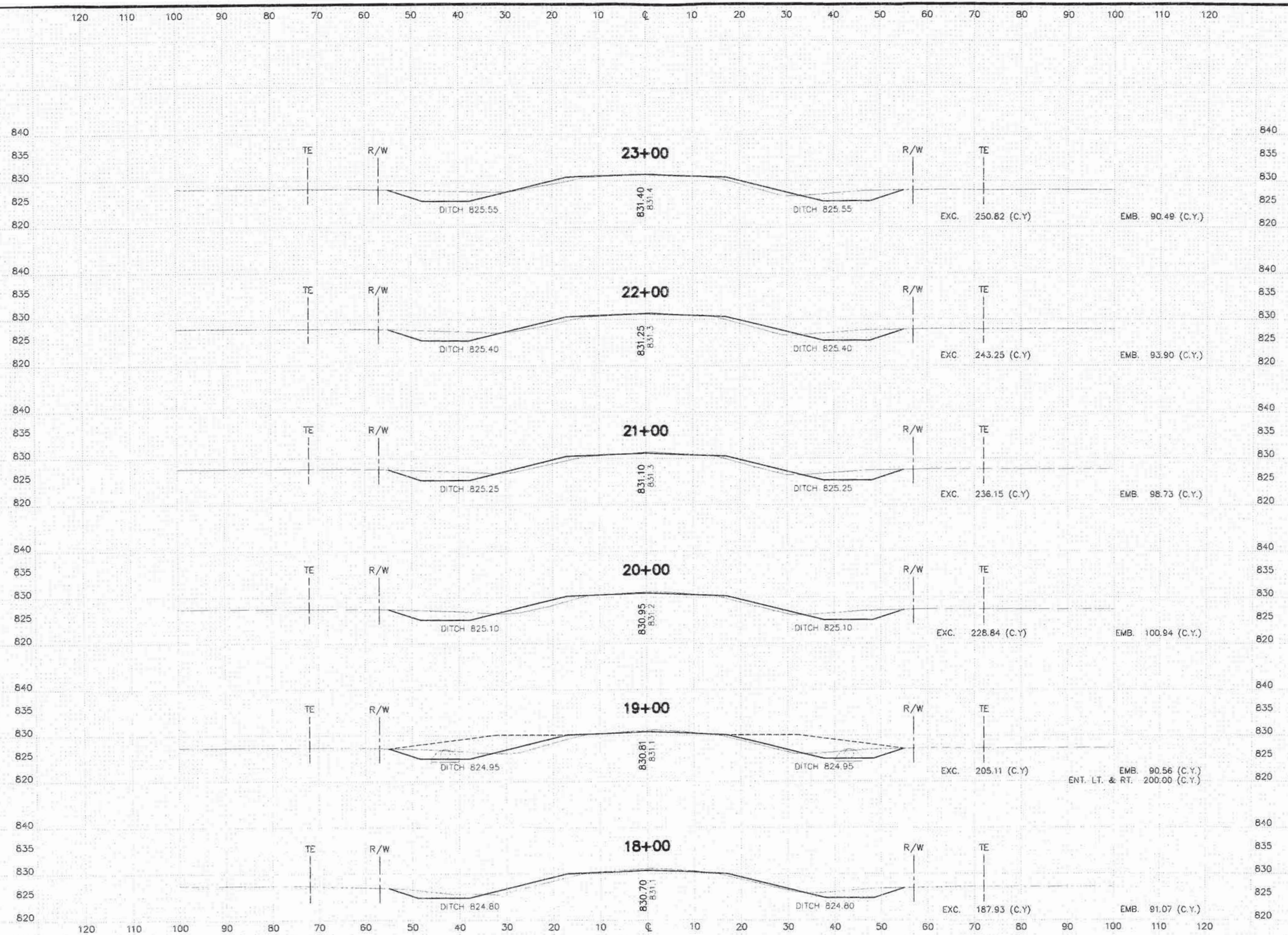

16+00
TE
R/W
R/W
TE
DITCH 824.70
830.55
830.9
DITCH 824.70
EXC. 194.23 (C.Y)
EMB. 105.58 (C.Y.)


15+00
TE
R/W
R/W
TE
DITCH 824.65
830.50
830.9
DITCH 824.65
EXC. 182.68 (C.Y)
EMB. 111.56 (C.Y.)

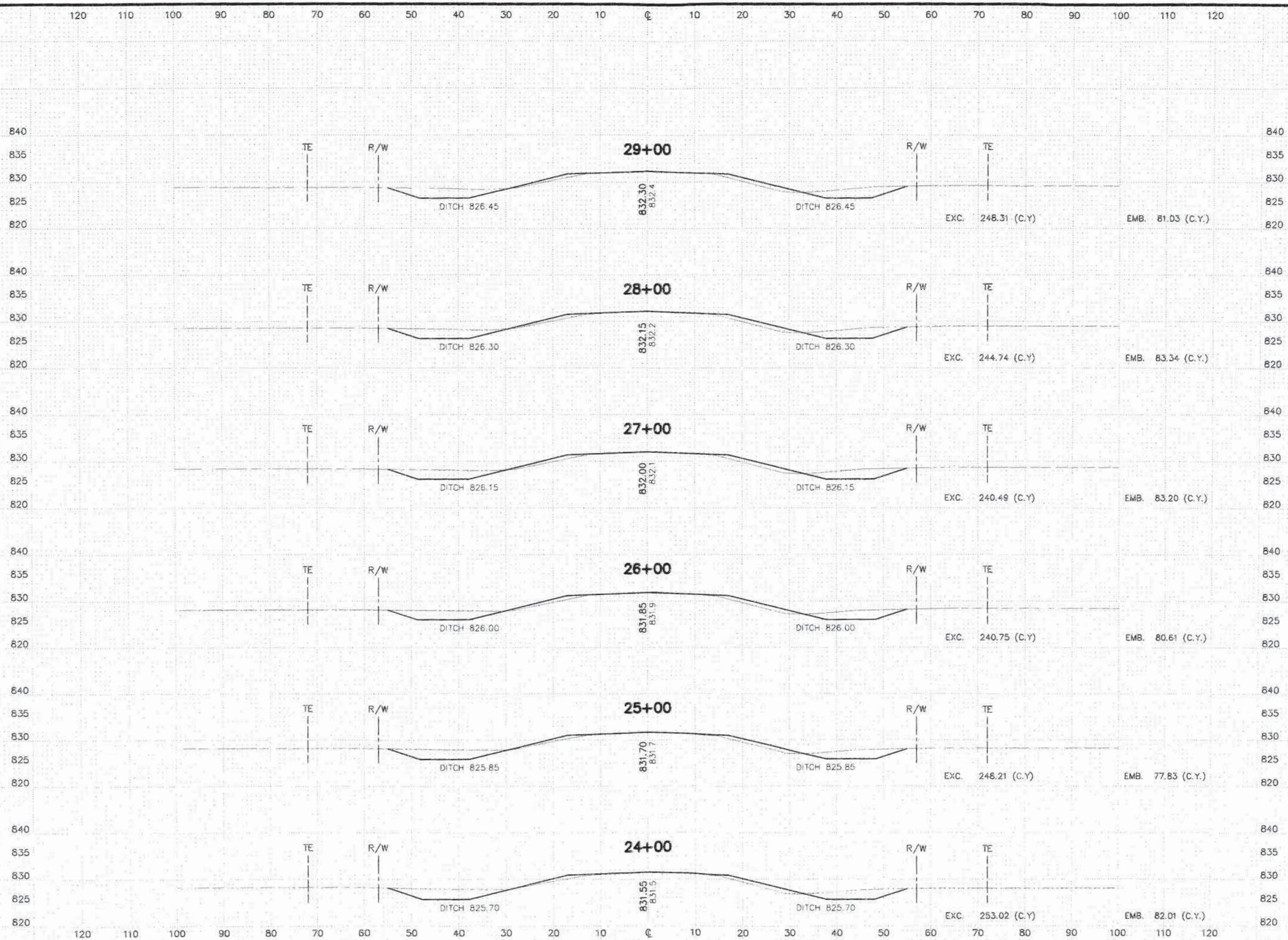

14+00
TE
R/W
R/W
TE
DITCH 824.60
830.45
830.8
DITCH 824.60
EXC. 167.01 (C.Y)
EMB. 120.36 (C.Y.)


13+00
TE
R/W
R/W
TE
DITCH 824.55
830.40
830.7
DITCH 824.55
EXC. 174.60 (C.Y)
EMB. 118.93 (C.Y.)


12+00
TE
R/W
R/W
TE
DITCH 824.50
830.35
830.8
DITCH 824.50
EXC. 189.20 (C.Y)
EMB. 114.37 (C.Y.)



STATE AID PROJECT NO. 045-624-003 SHEET 13 OF 36 SHEETS



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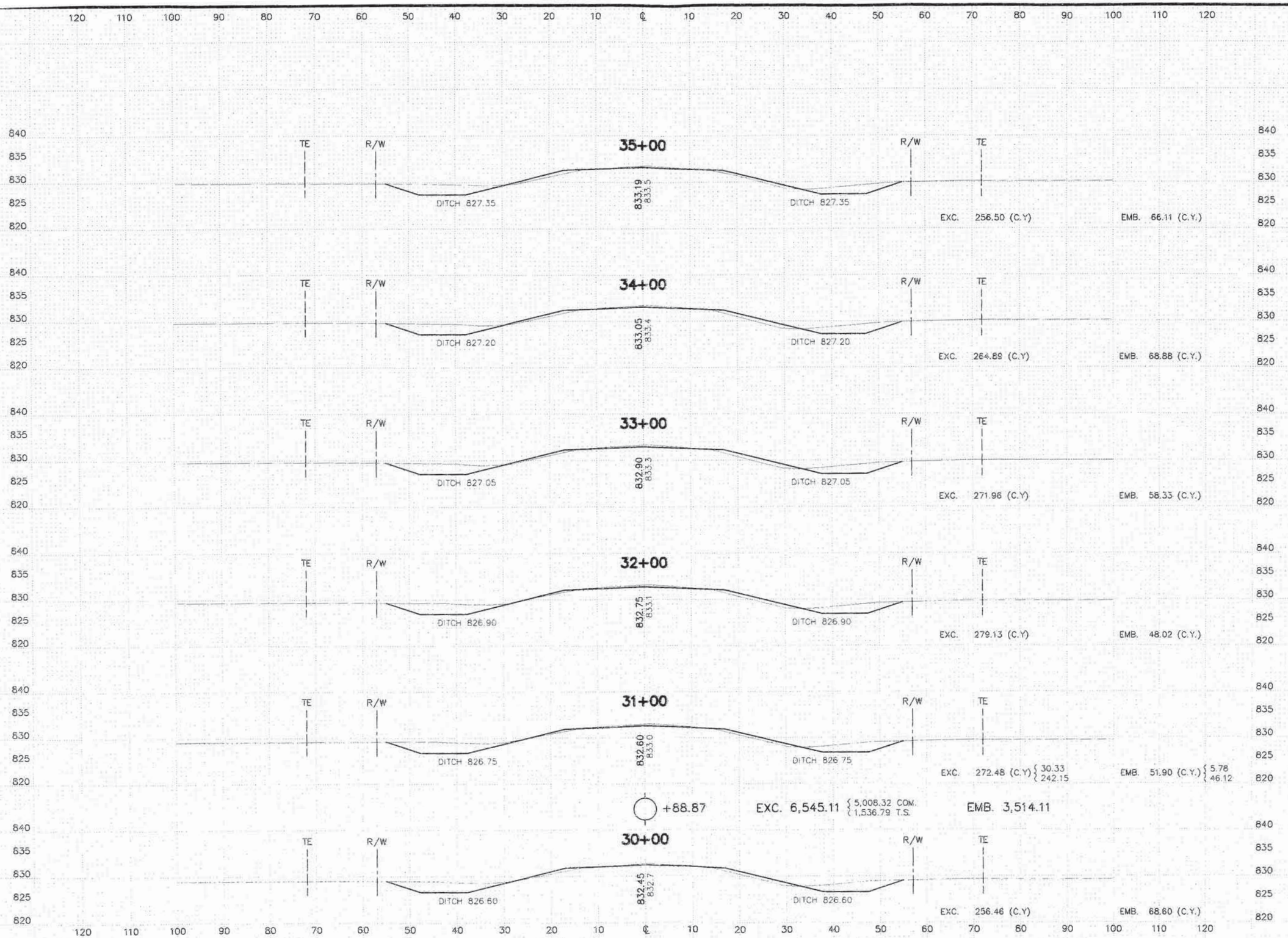
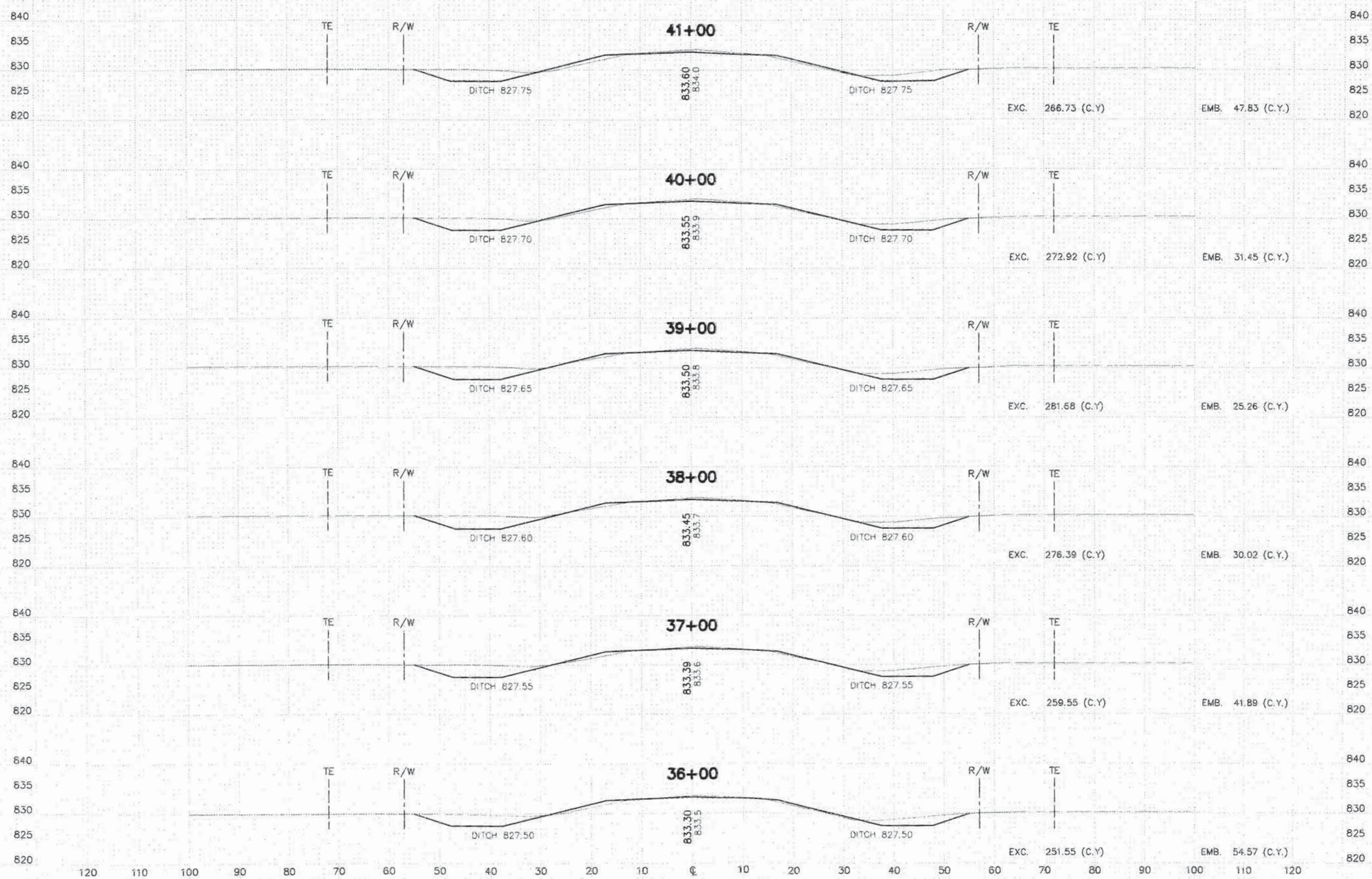
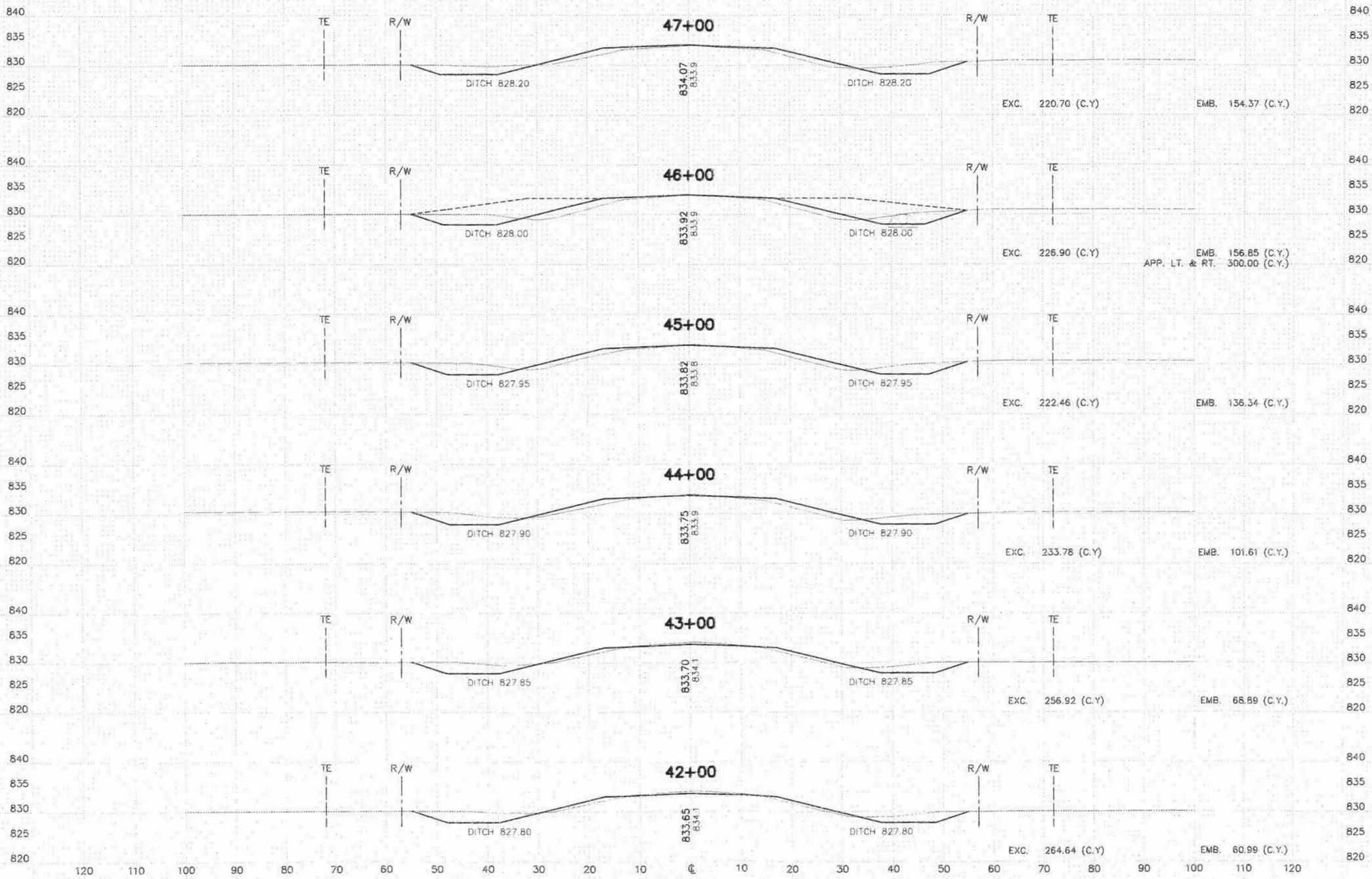


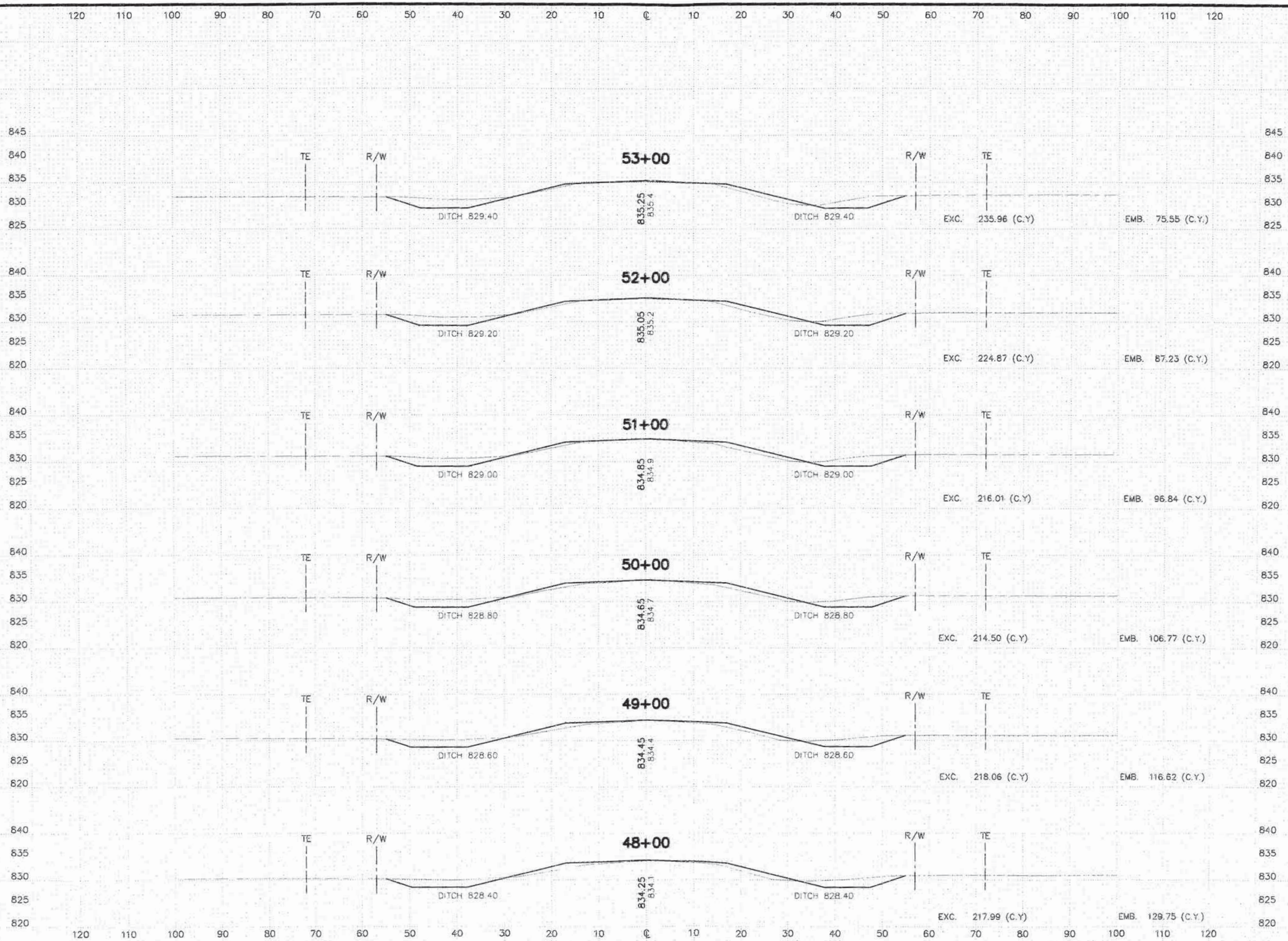
STATE AID PROJECT NO. 045-624-003 SHEET 15 OF 36 SHEETS



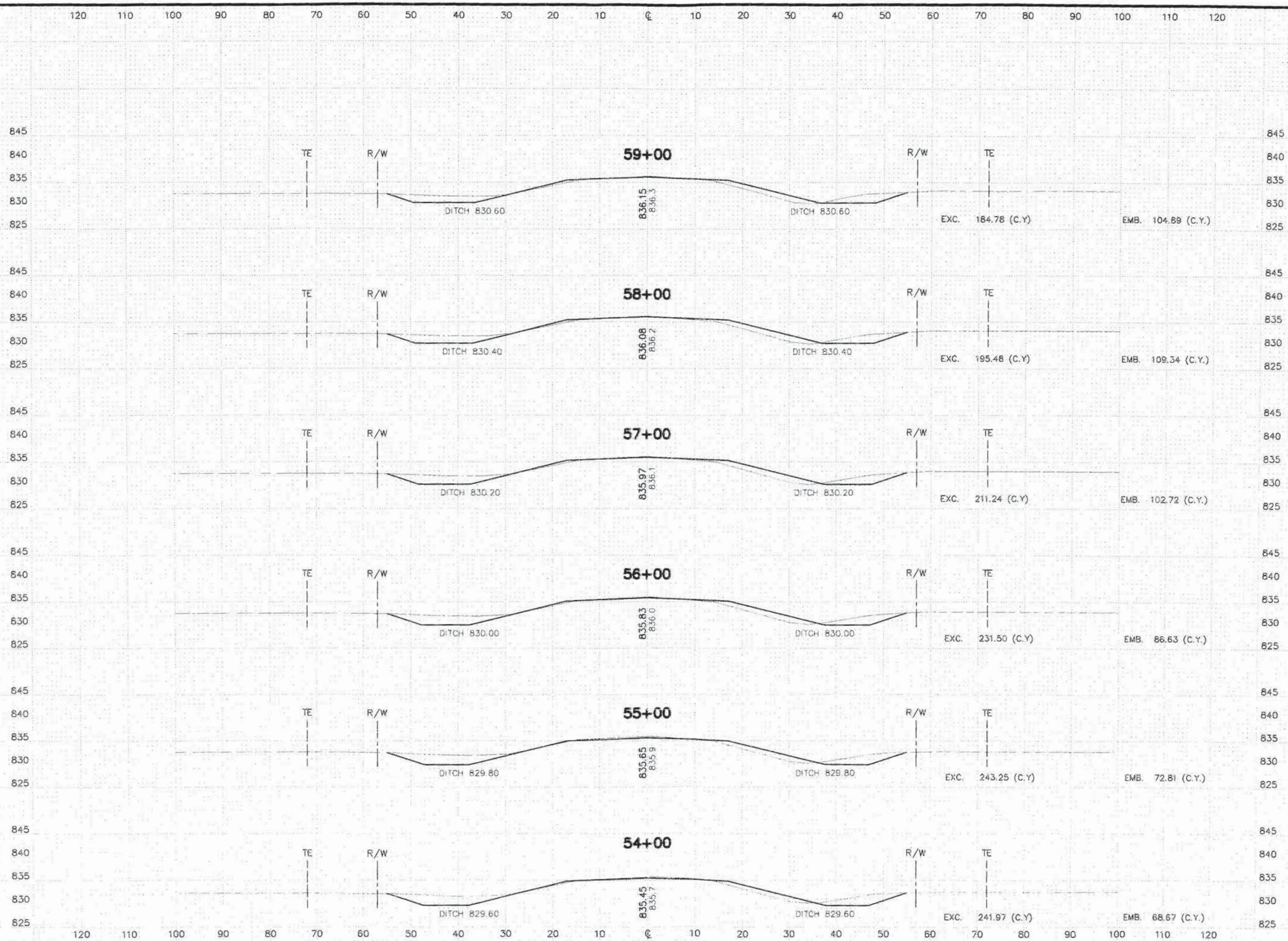
STATE AID PROJECT NO. 045-624-003 SHEET 16 OF 36 SHEETS



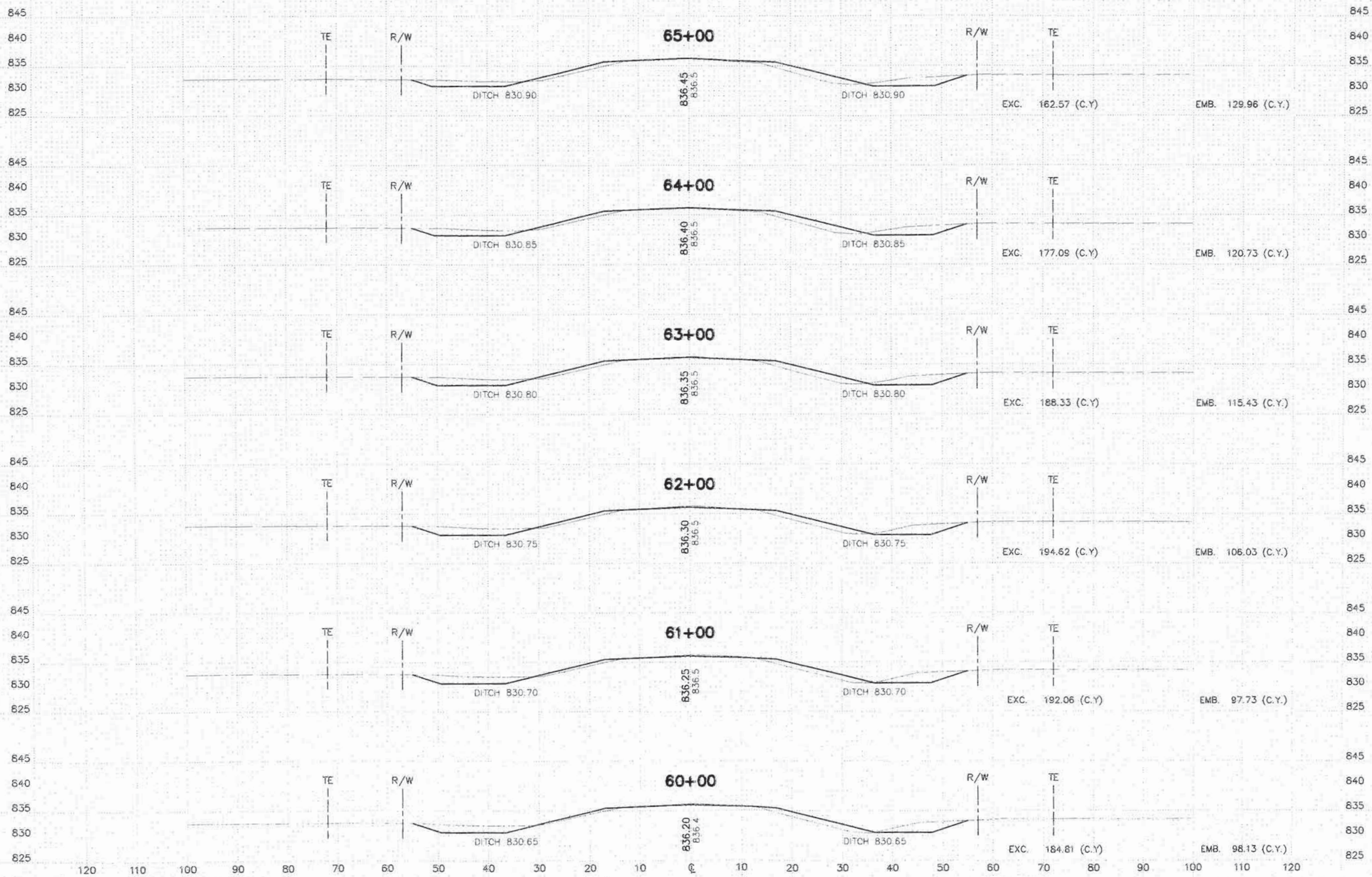
STATE AID PROJECT NO. 045-624-003 SHEET 17 OF 36 SHEETS



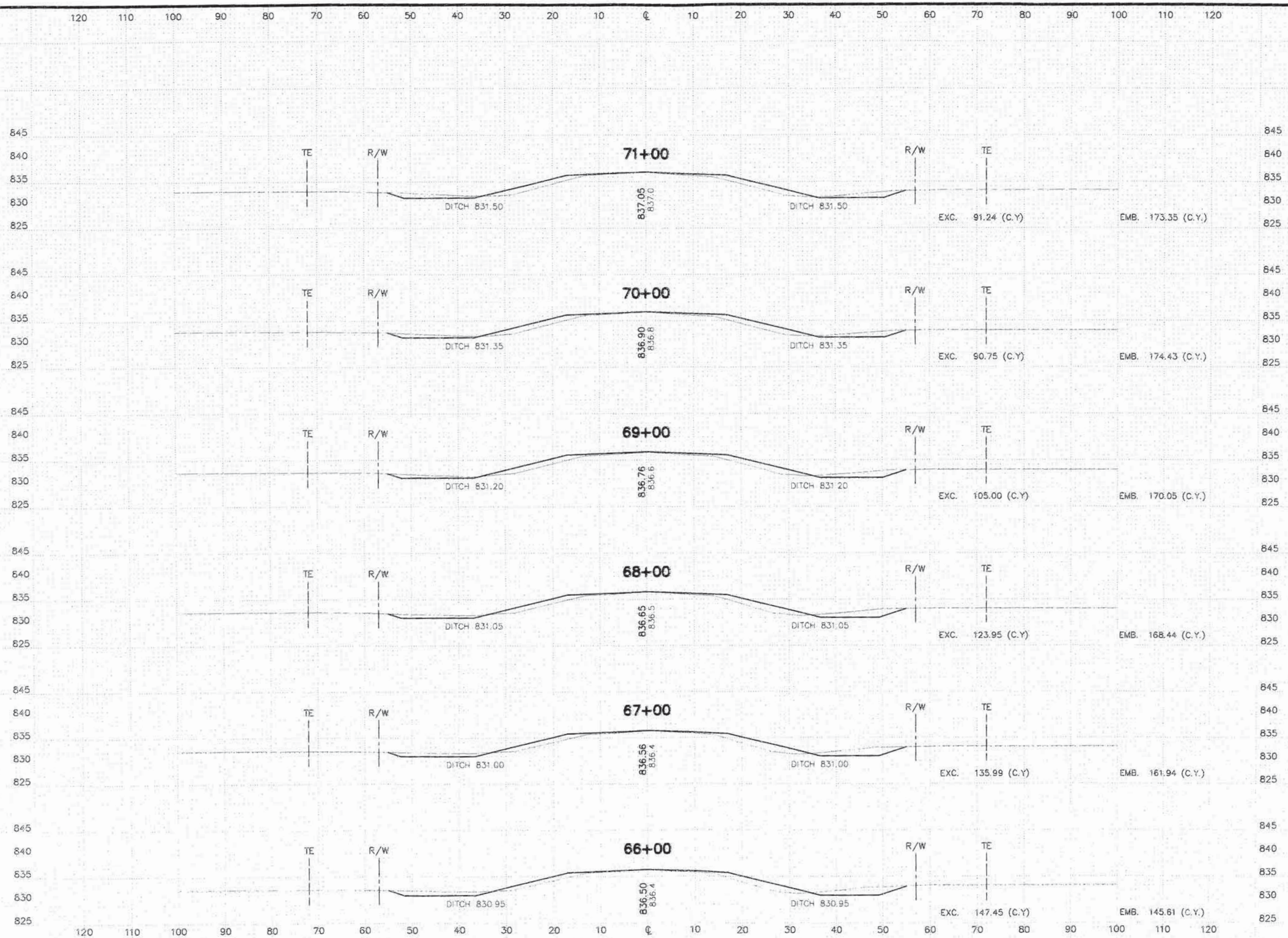
STATE AID PROJECT NO. 045-624-003 SHEET 18 OF 36 SHEETS



STATE AID PROJECT NO. 045-624-003 SHEET 19 OF 36 SHEETS

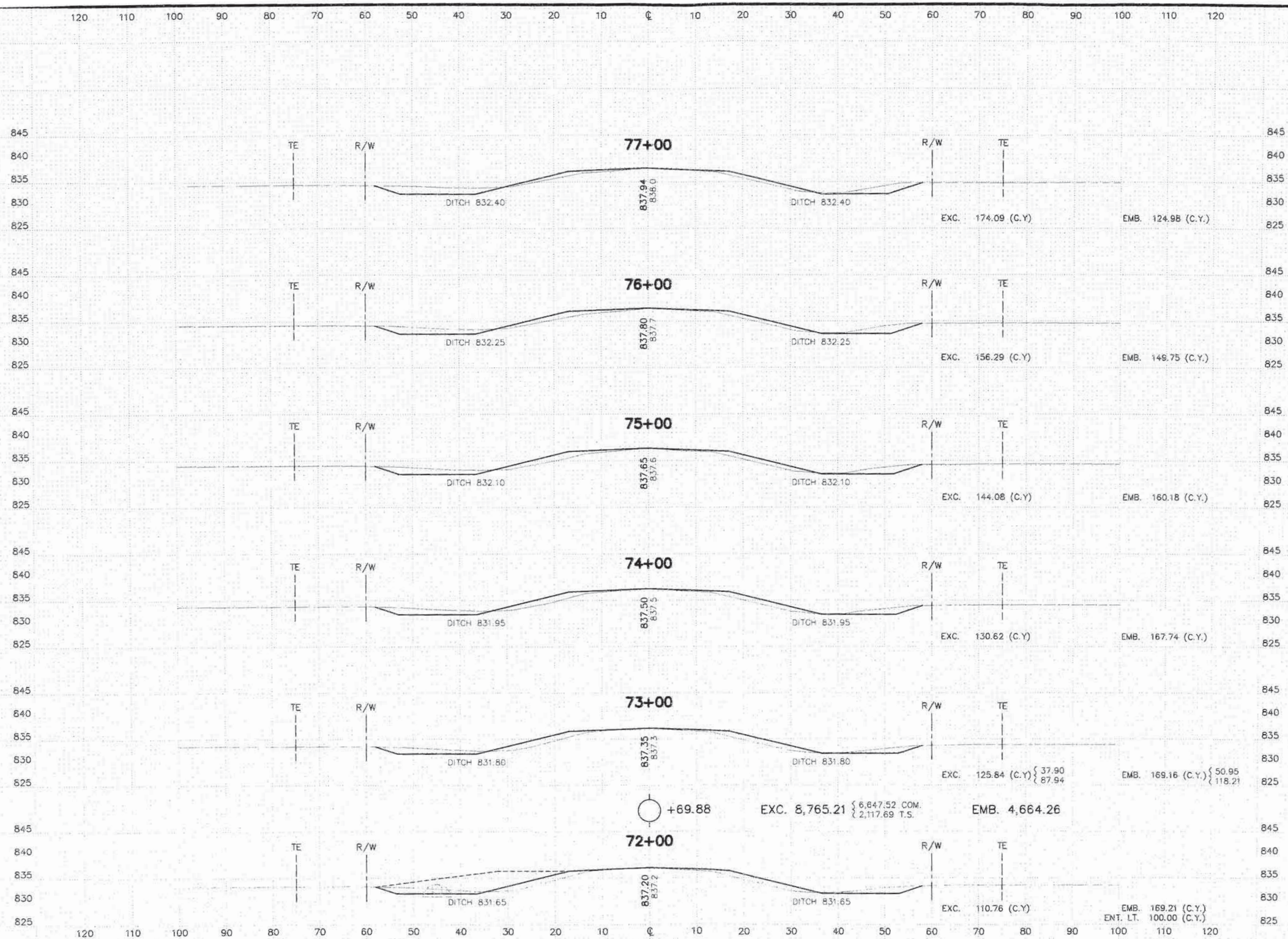


STATE AID PROJECT NO. 045-624-003 SHEET 20 OF 36 SHEETS

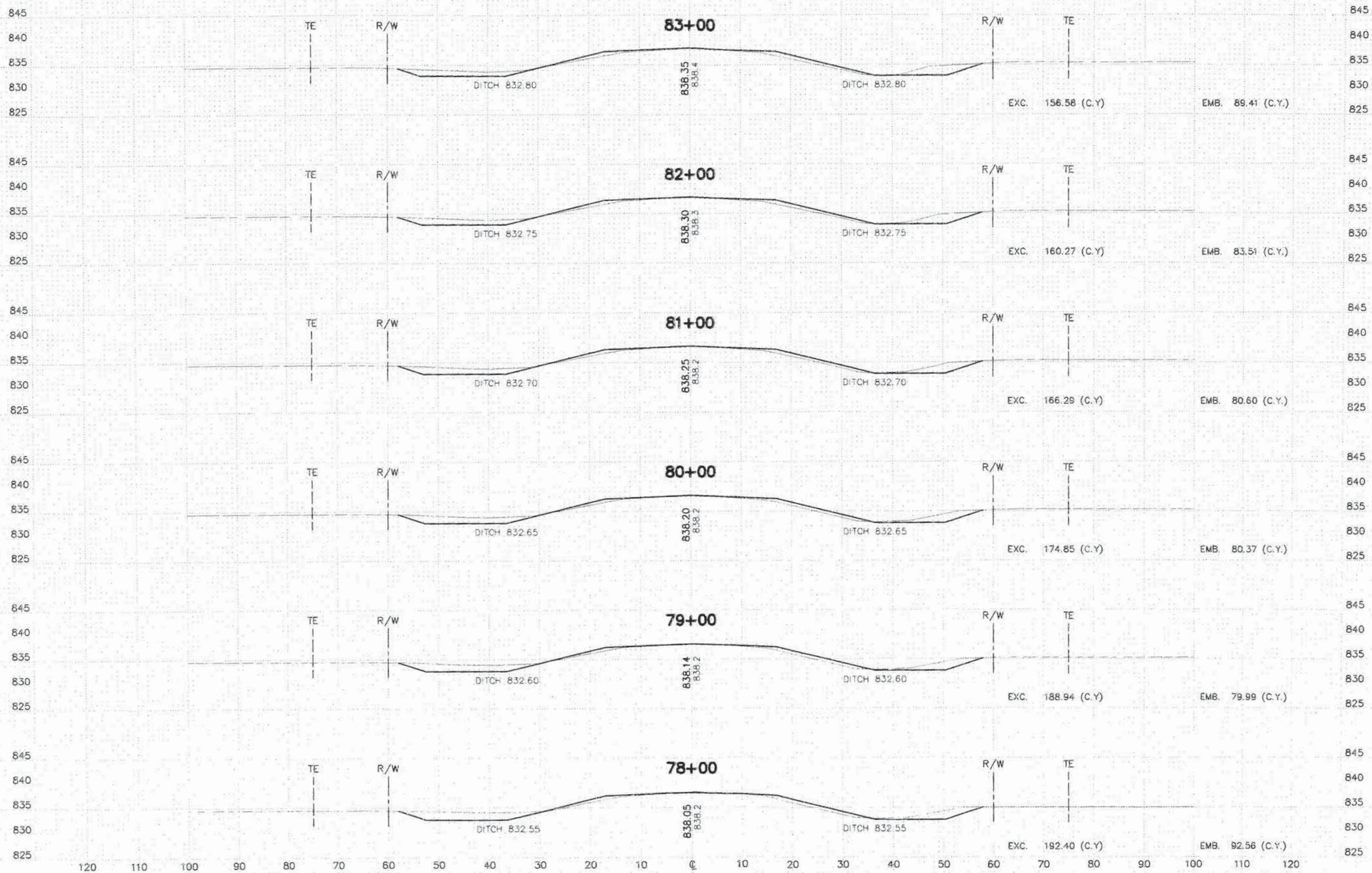


STATE AID PROJECT NO. 045-624-003

SHEET 21 OF 36 SHEETS



STATE AID PROJECT NO. 045-624-003 SHEET 22 OF 36 SHEETS



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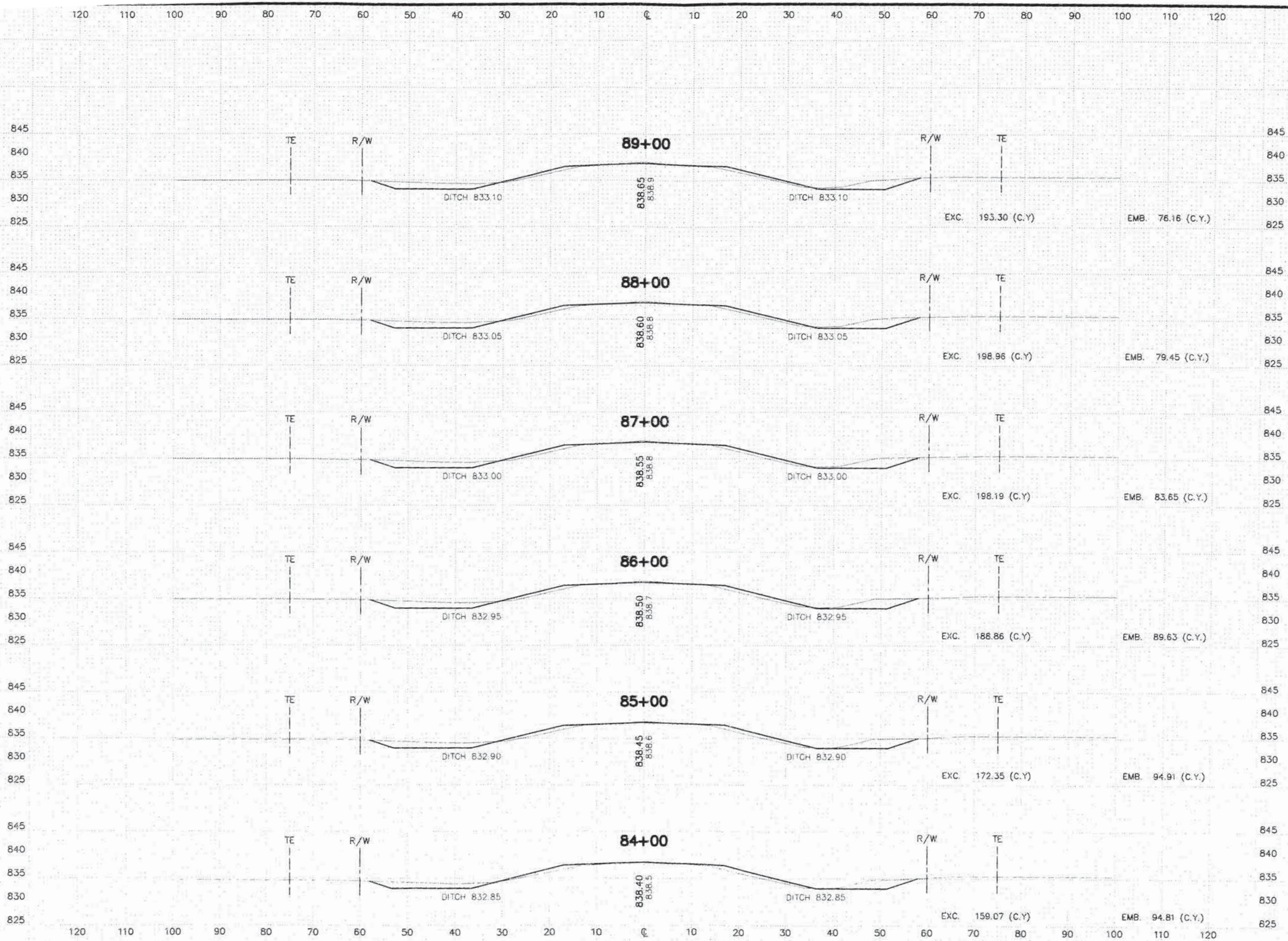
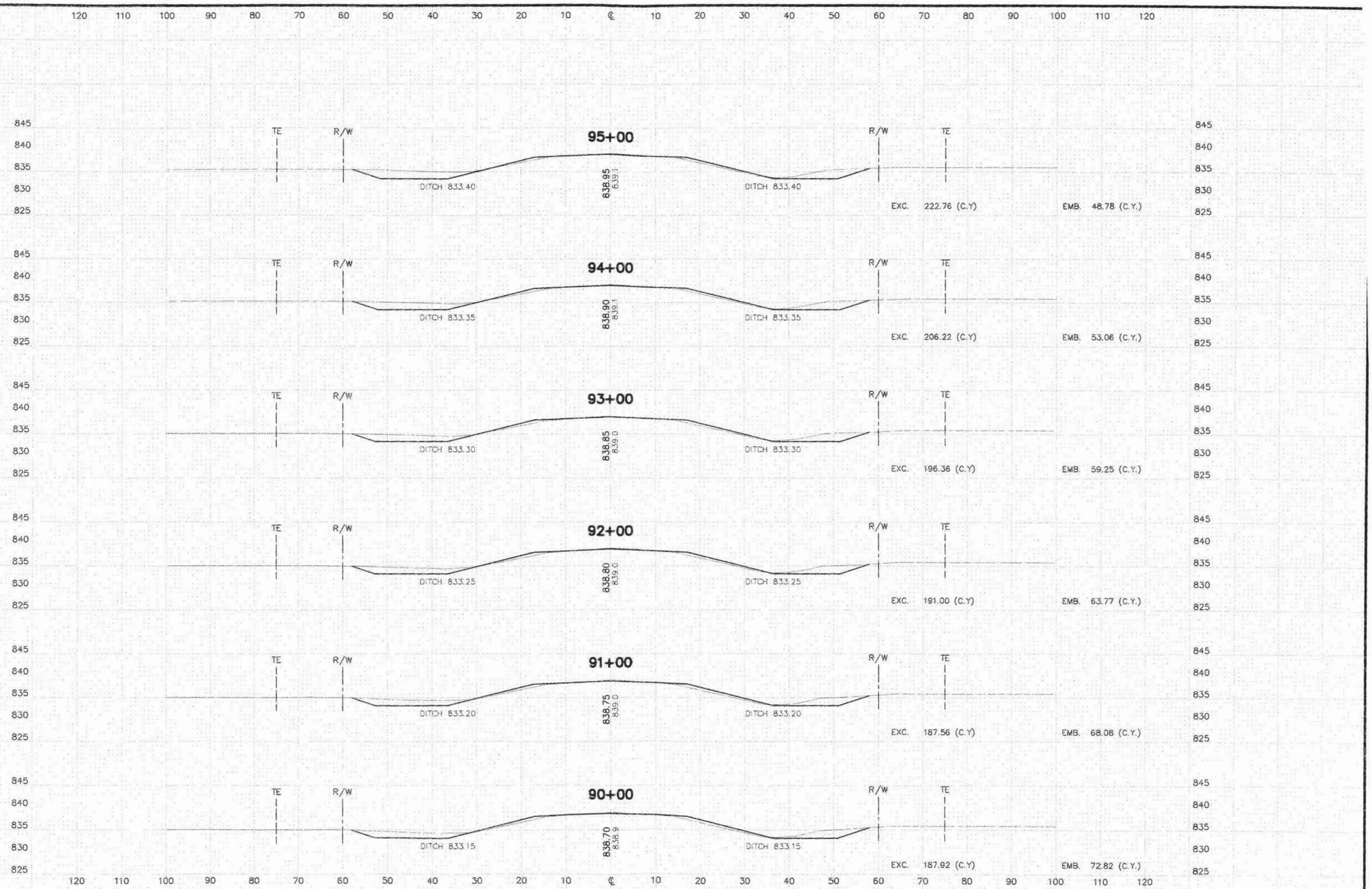


STATE AID PROJECT NO. 045-624-003 SHEET 24 OF 36 SHEETS



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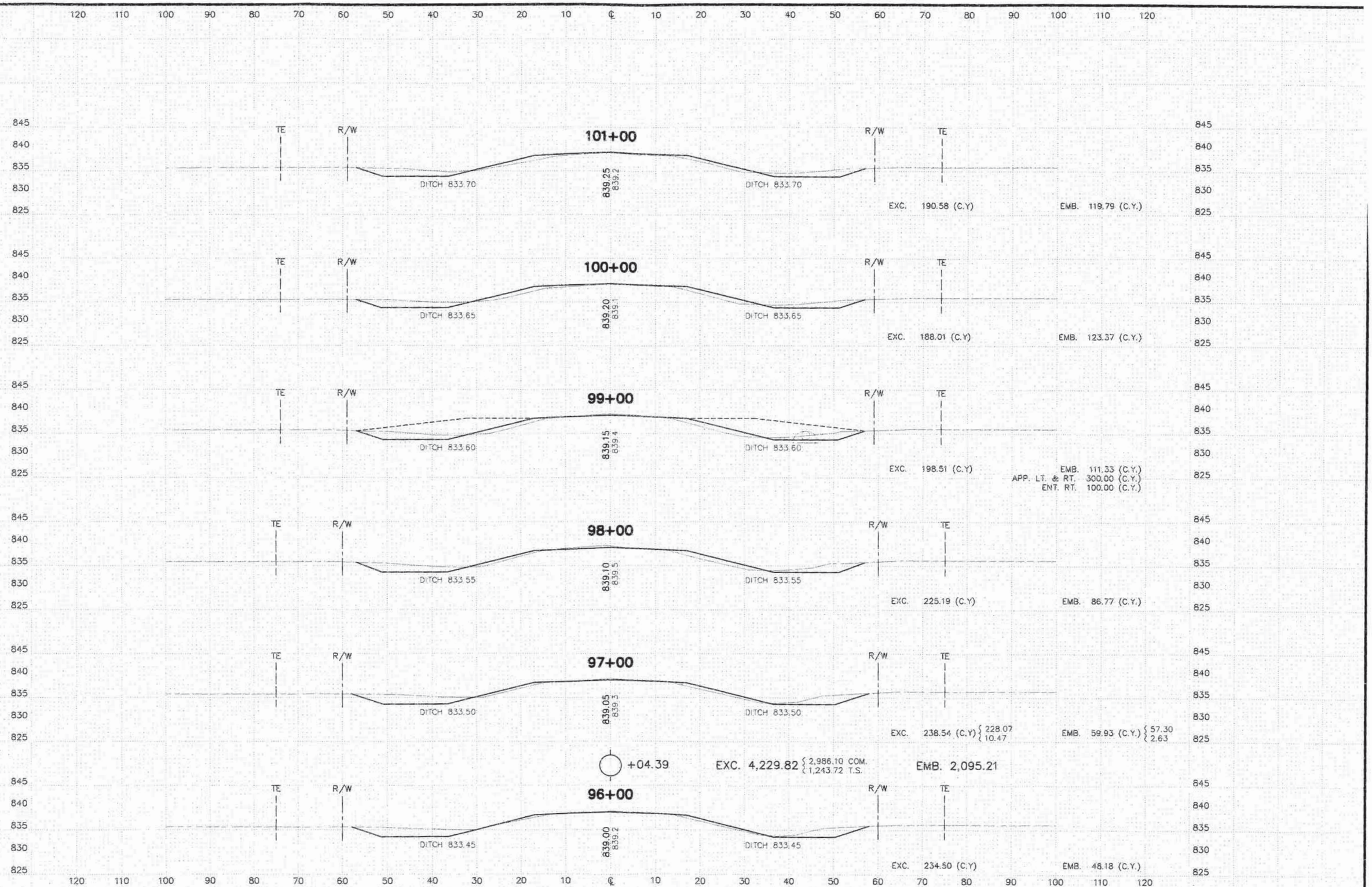
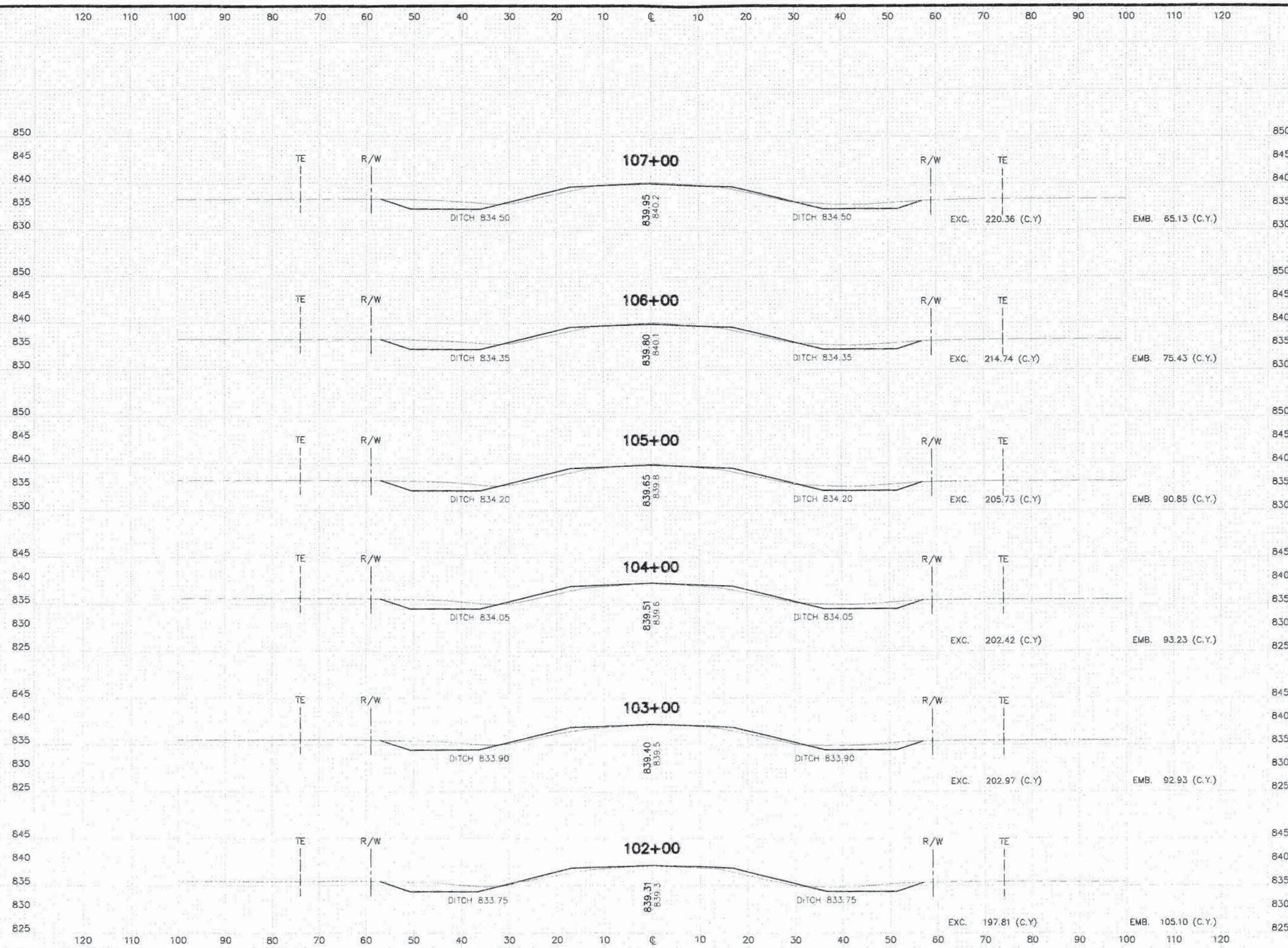
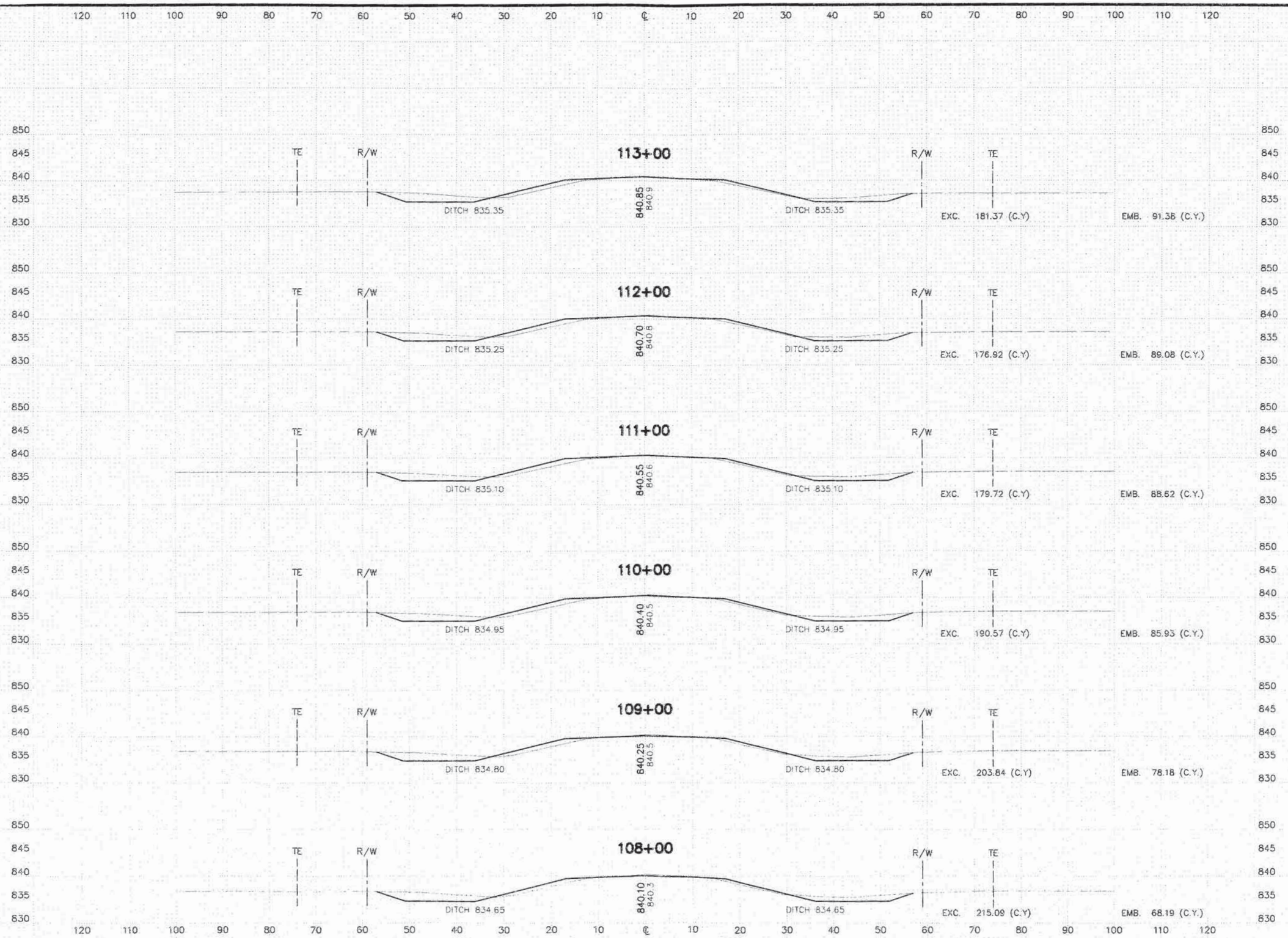


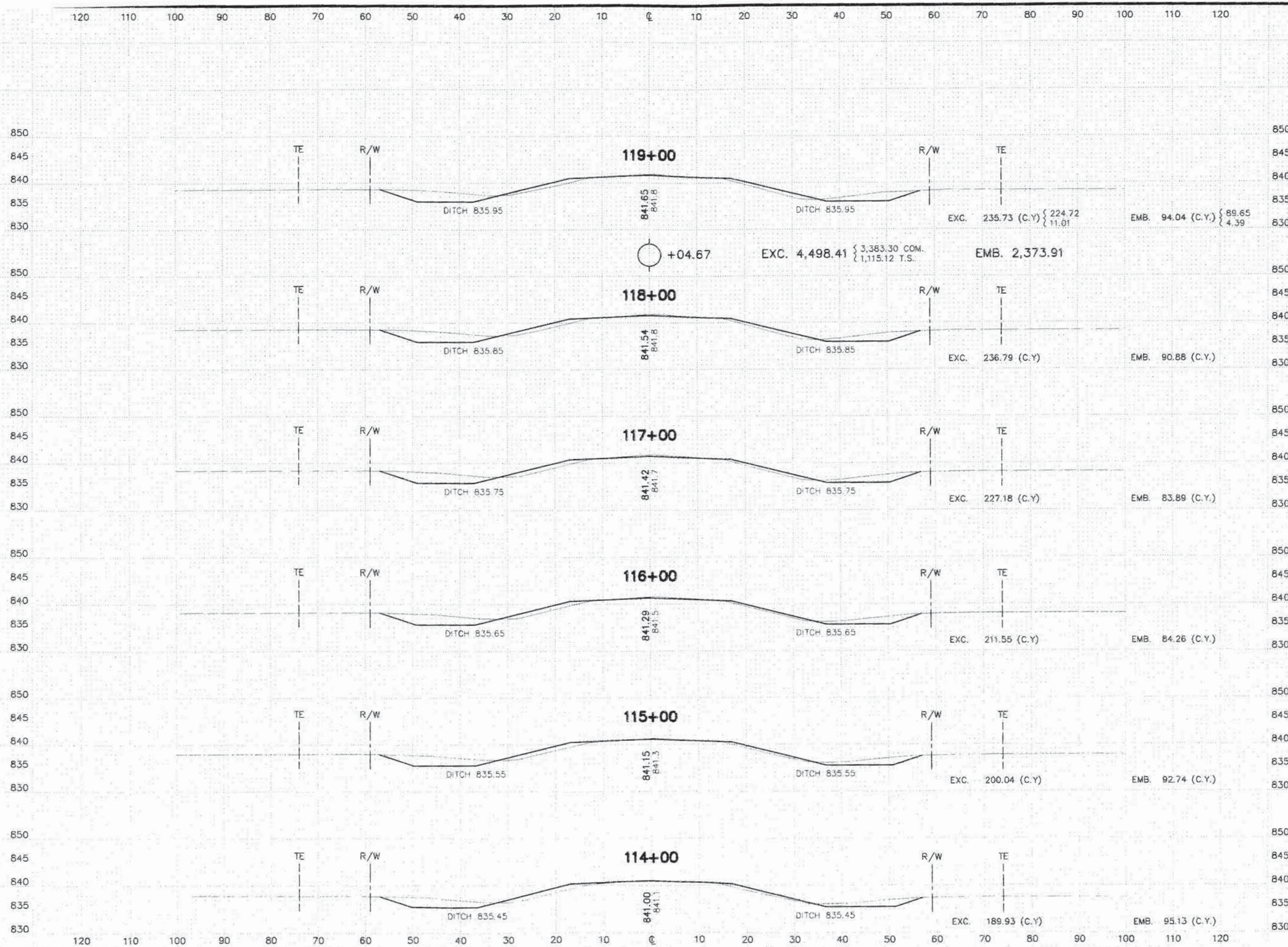
STATE AID PROJECT NO. 045-624-003 SHEET 26 OF 36 SHEETS



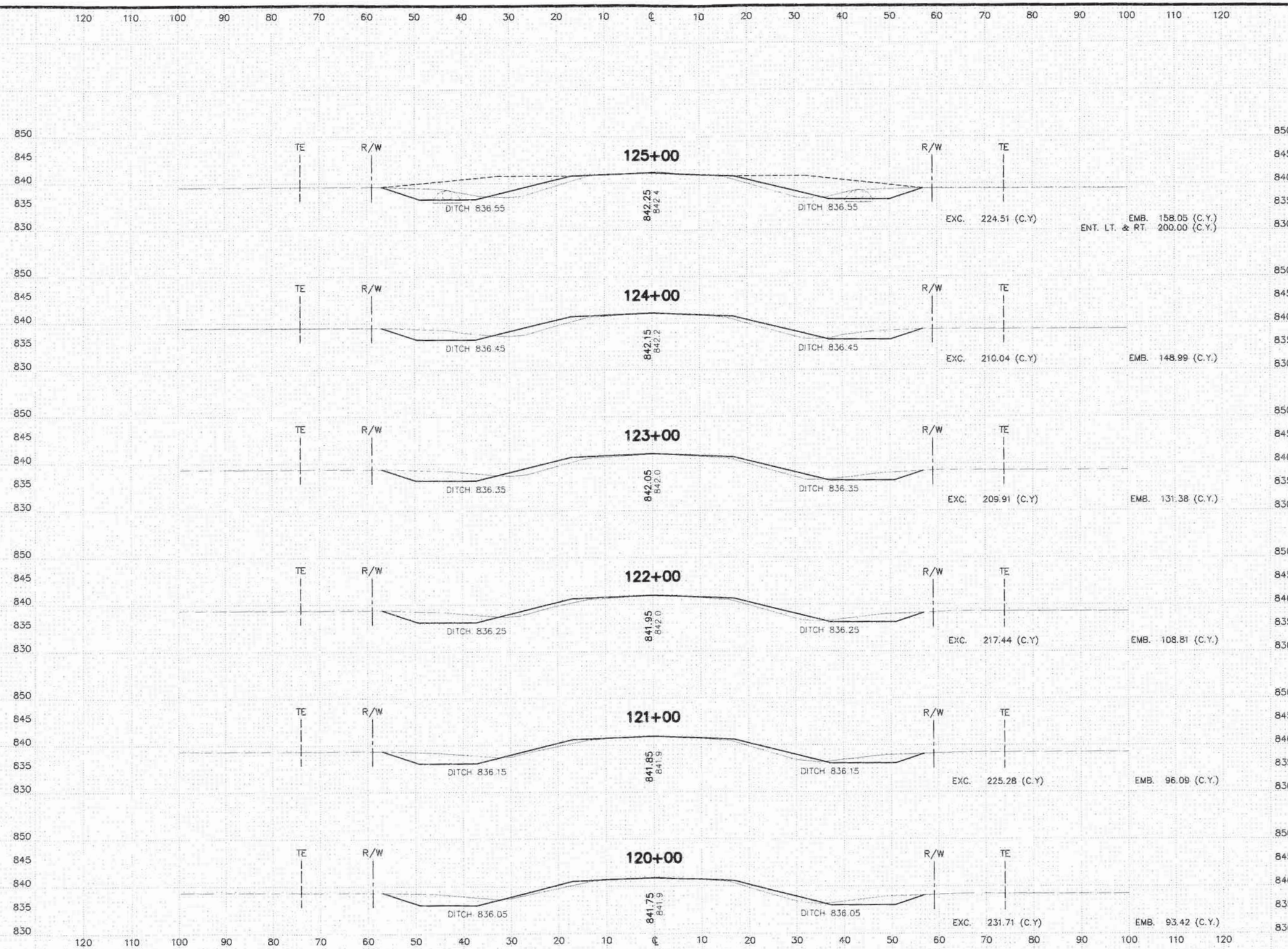
STATE AID PROJECT NO. 045-624-003 SHEET 27 OF 36 SHEETS



STATE AID PROJECT NO. 045-624-003 SHEET 28 OF 36 SHEETS



STATE AID PROJECT NO. 045-624-003 SHEET 29 OF 36 SHEETS



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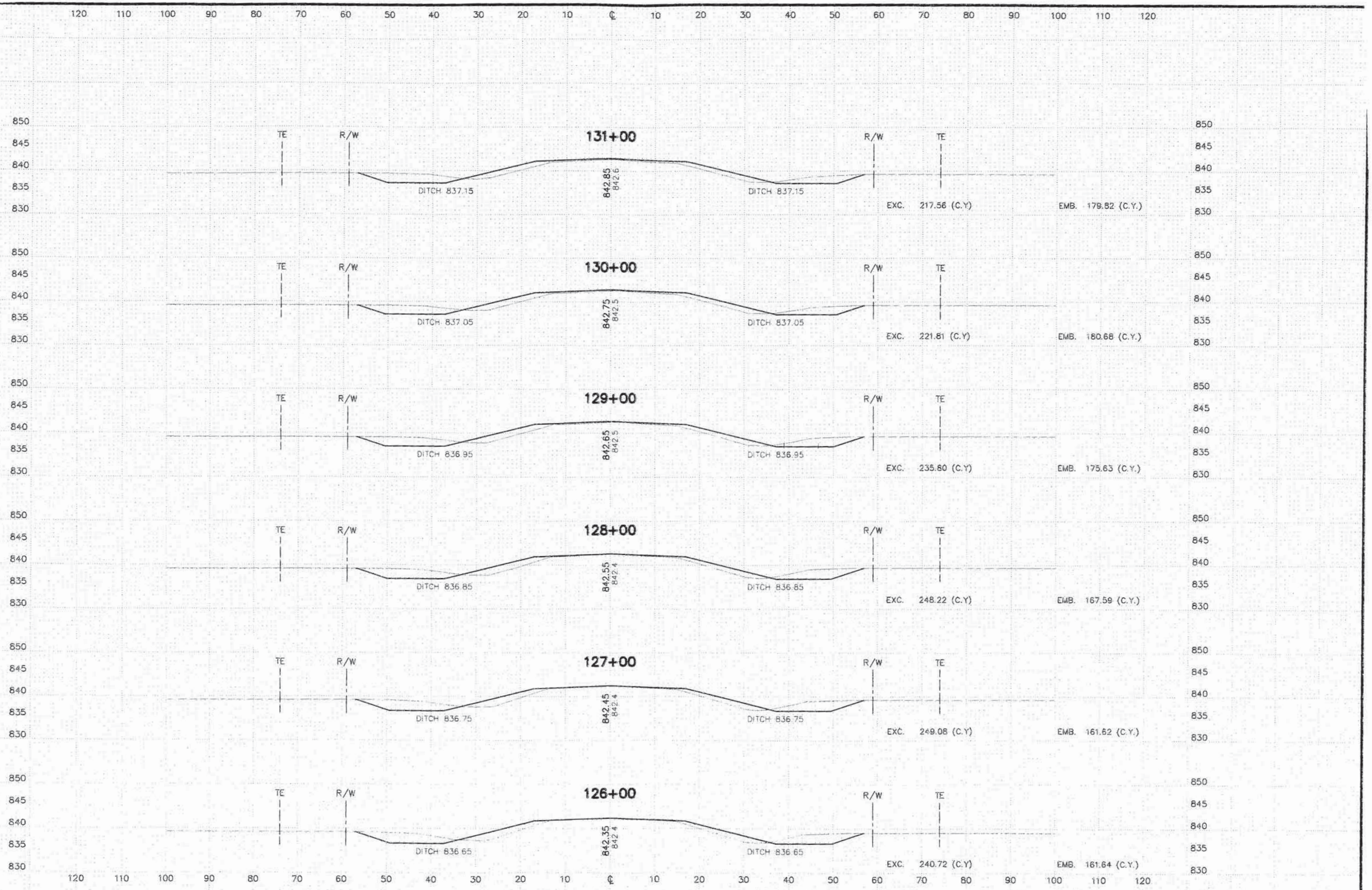
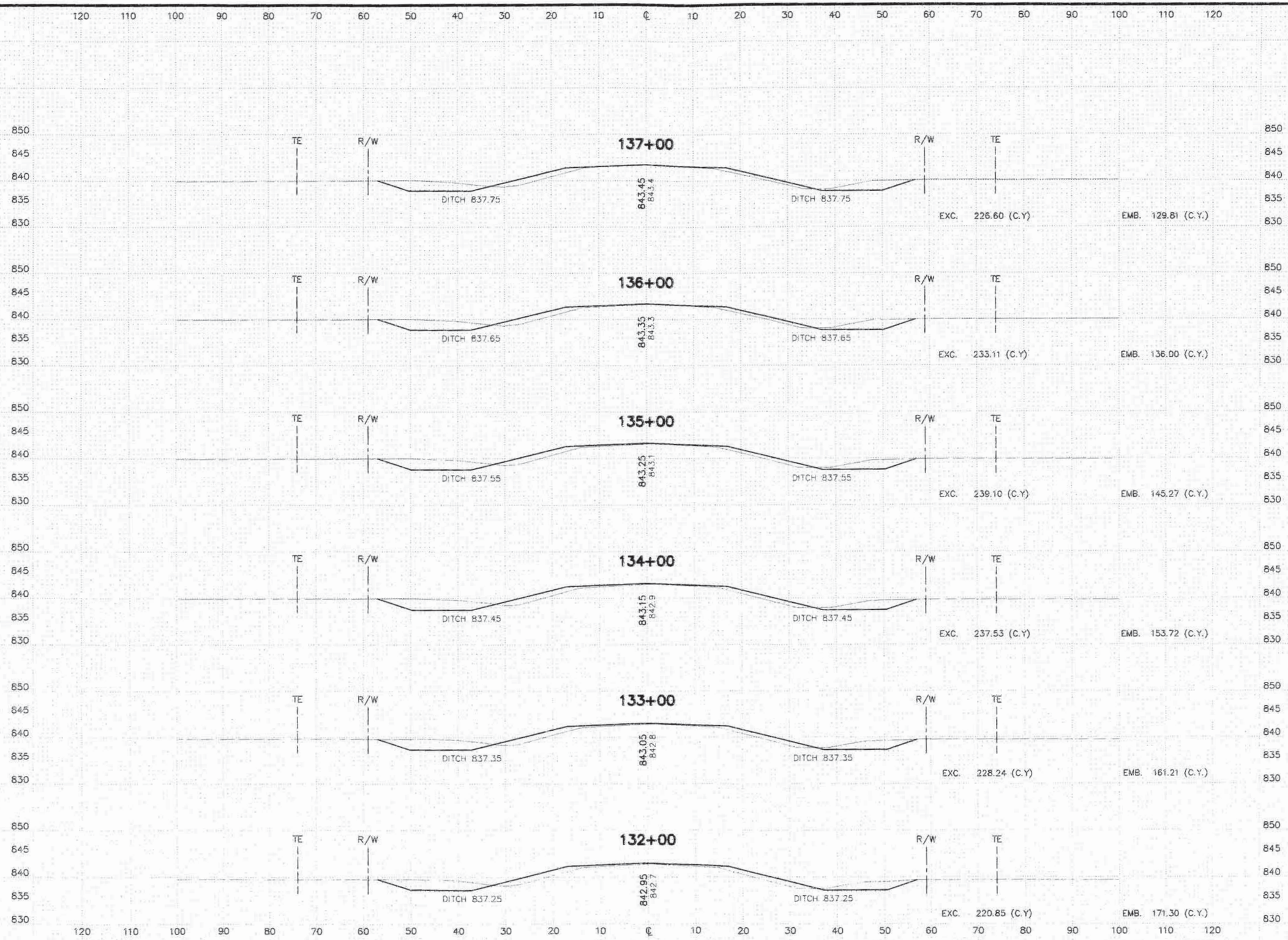
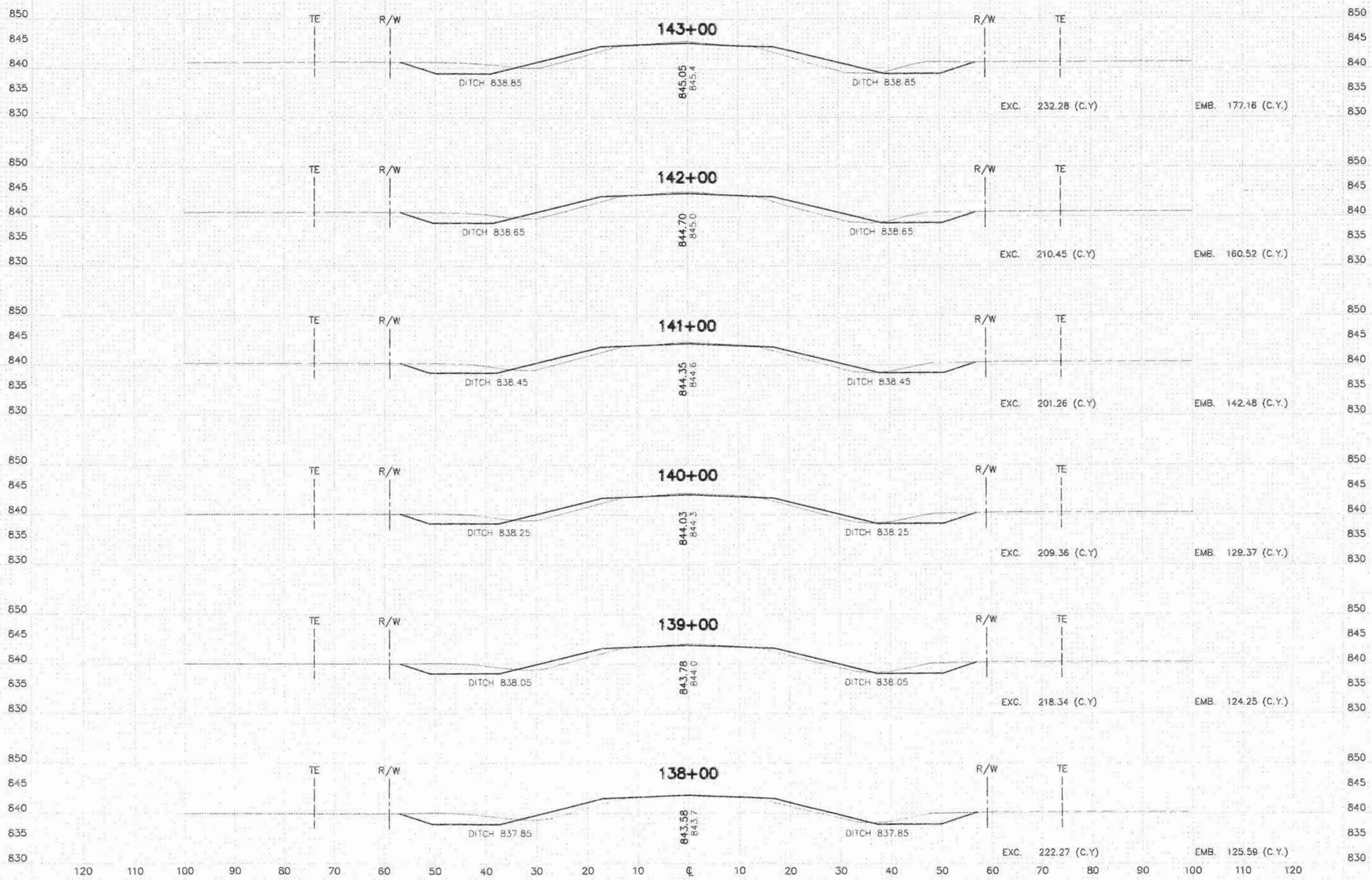


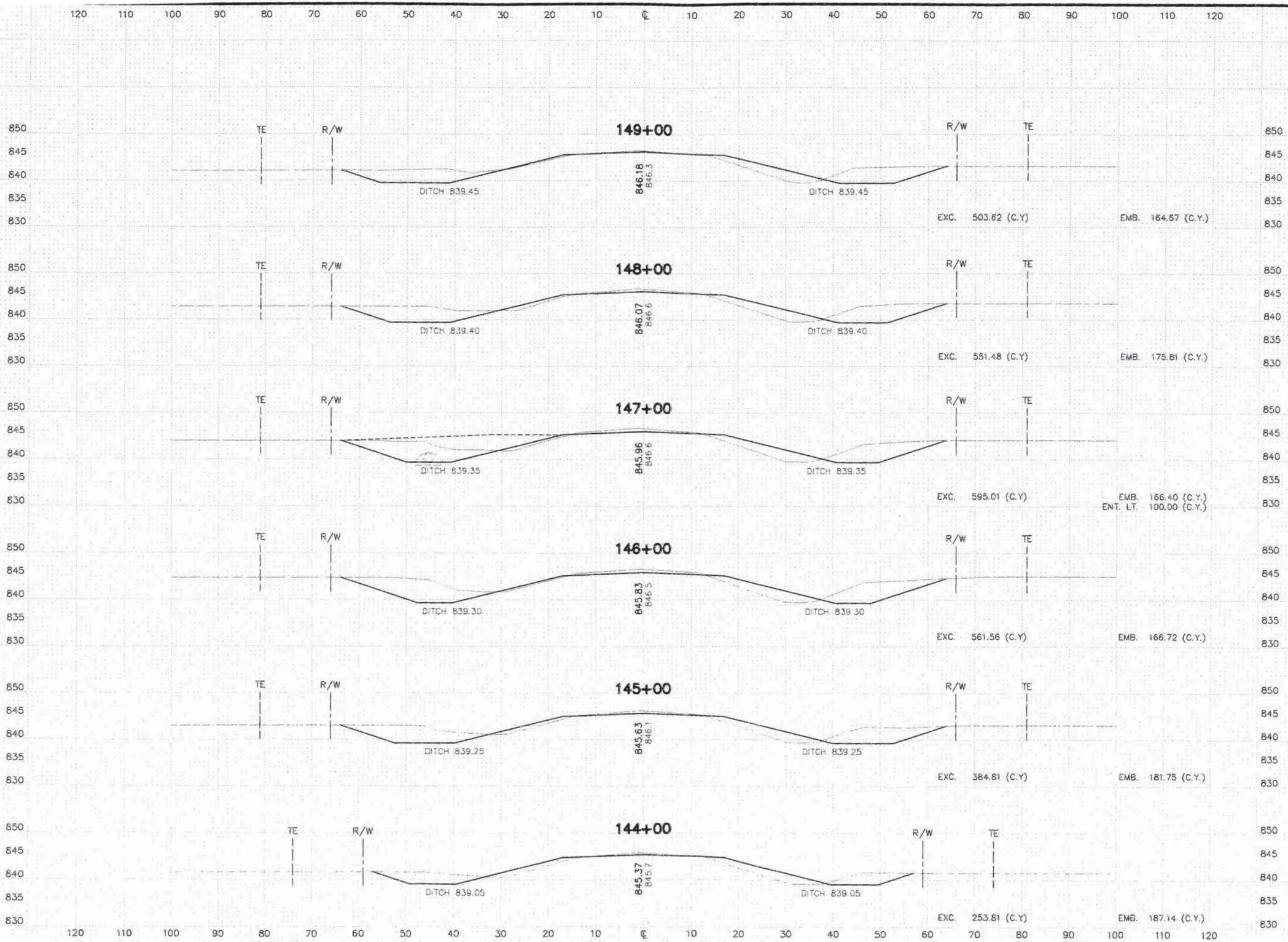
STATE AID PROJECT NO. 045-624-003 SHEET 31 OF 36 SHEETS



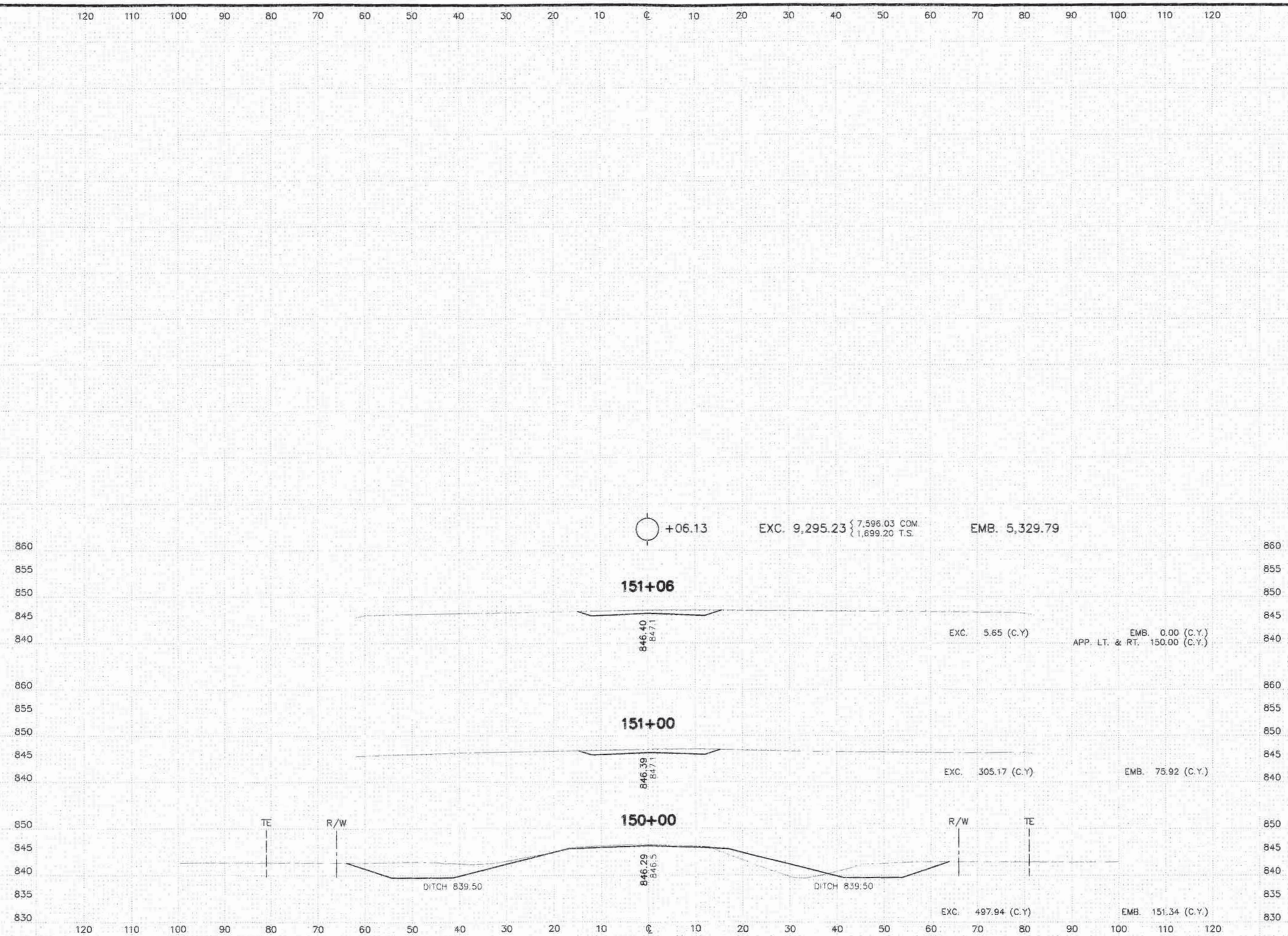
STATE AID PROJECT NO. 045-624-003 SHEET 32 OF 36 SHEETS



STATE AID PROJECT NO. 045-624-003 SHEET 33 OF 36 SHEETS



STATE AID PROJECT NO. 045-624-003 SHEET 34 OF 36 SHEETS



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