

CHICKASAW \ FLOYD COUNTY HMA RESURFACING W\ MILLING
 CHICKASAW \ FLOYD COUNTY NHSX-218-9(139)--3H-19

LETTING DATE
 OCT. 19, 2021



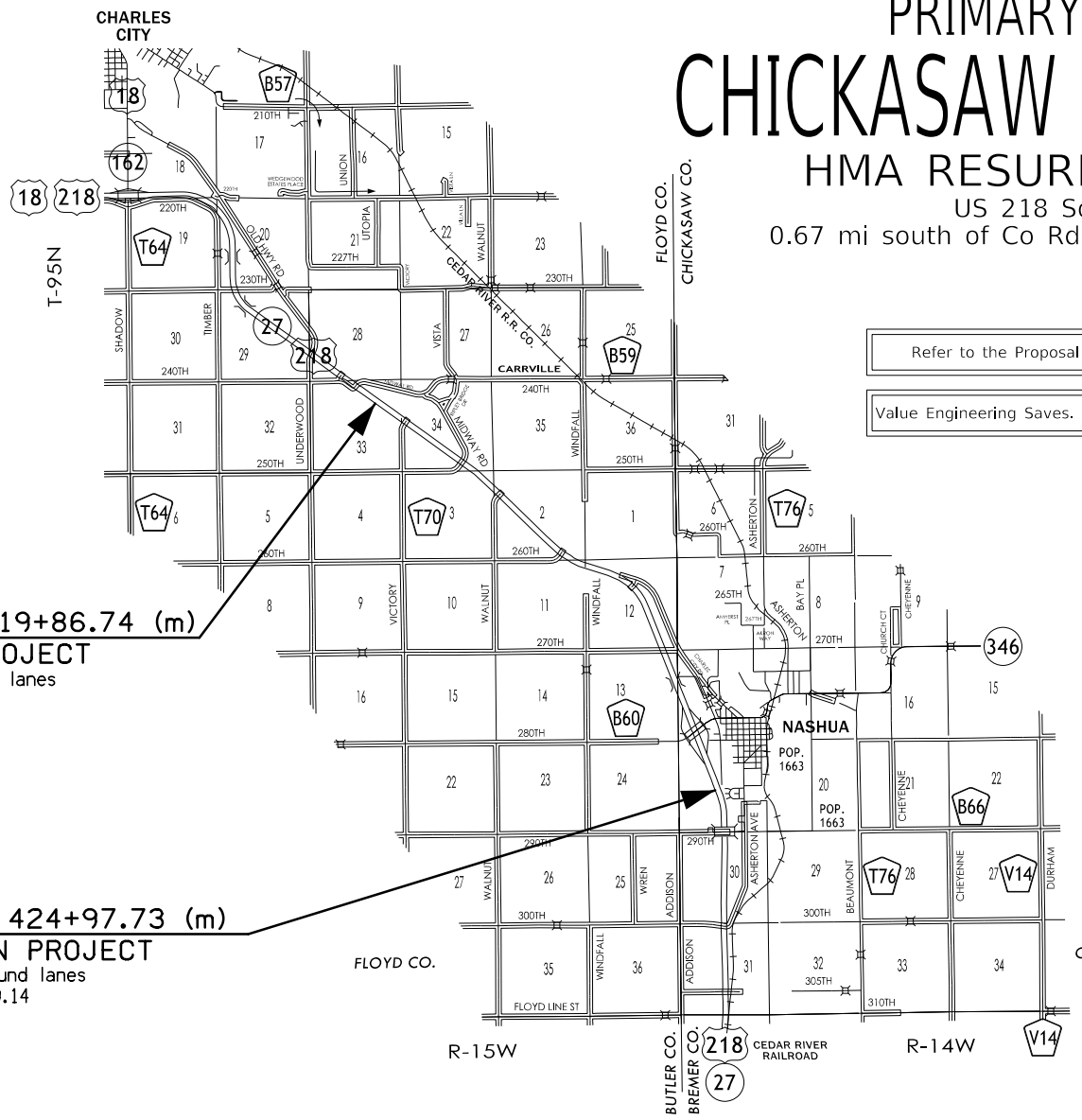
Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM CHICKASAW \ FLOYD COUNTY

HMA RESURFACING w\ MILLING
 US 218 Southbound lanes from
 0.67 mi south of Co Rd B60 to 0.3 mi south of Co Rd B59

SCALES: As Noted



STA. 519+86.74 (m)
 END PROJECT
 Southbound lanes
 R.P. 225.04

STA. 424+97.73 (m)
 BEGIN PROJECT
 Southbound lanes
 R.P. 219.14

Refer to the Proposal Form for list of applicable specifications.
 Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

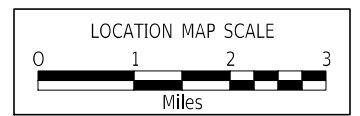
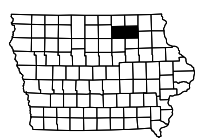


FE via Teams
 5/7/2021
 Mary Kelly
 Duane Nie
 Chris Suntken
 Tracy Meise
 Jason Dighton
 Jeremy Weber
 Ken Howe
 Jason Ruter

REVISIONS	TOTAL
	35
PROJECT IDENTIFICATION NUMBER	
21-19-218-010	
PROJECT NUMBER	
NHSX-218-9(139)--3H-19	
R.O.W. PROJECT NUMBER	

INDEX OF SHEETS		105-3 10-18-05
A.1	Title sheet and Location Map	
B.1	Typical Sections	
C.1-C.7	Estimate of Quantities, General Notes and Tabulations	
D.1-D.14	Plan and Profile Sheets	
J.1	Traffic Control Sheet	
U.1-U.11	Special Detail Sheets	

MILEAGE SUMMARY				105-1 09-27-94
Div.	Location	Lin. Ft.	Miles	
	Sta. 424+97.73 to Sta. 519+86.74	31,131.92	5.896	



DESIGN DATA RURAL			
2023	AADT	10,900	V.P.D.
2043	AADT	15,100	V.P.D.
2043	DHV	1560	V.P.H.
	TRUCKS	30	%
	Total		
	Design ESALs	--	

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN – Date: MAY 7, 2021

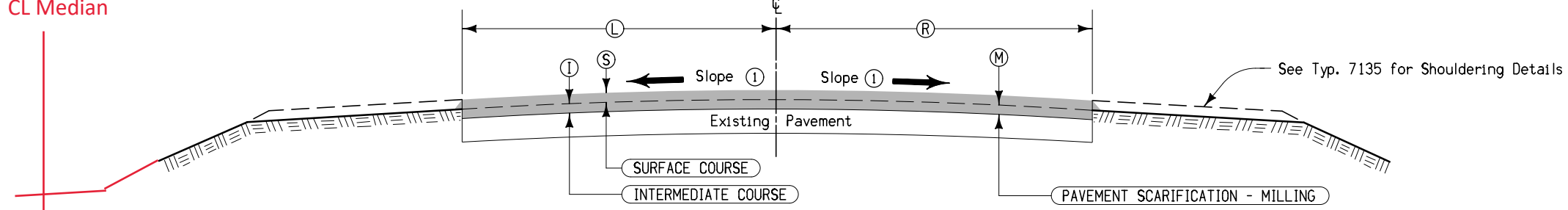
CL Median

Notes:

Section shown in the direction of travel

① Match finished slope to existing pavement, except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the Engineer through areas of special shaping.

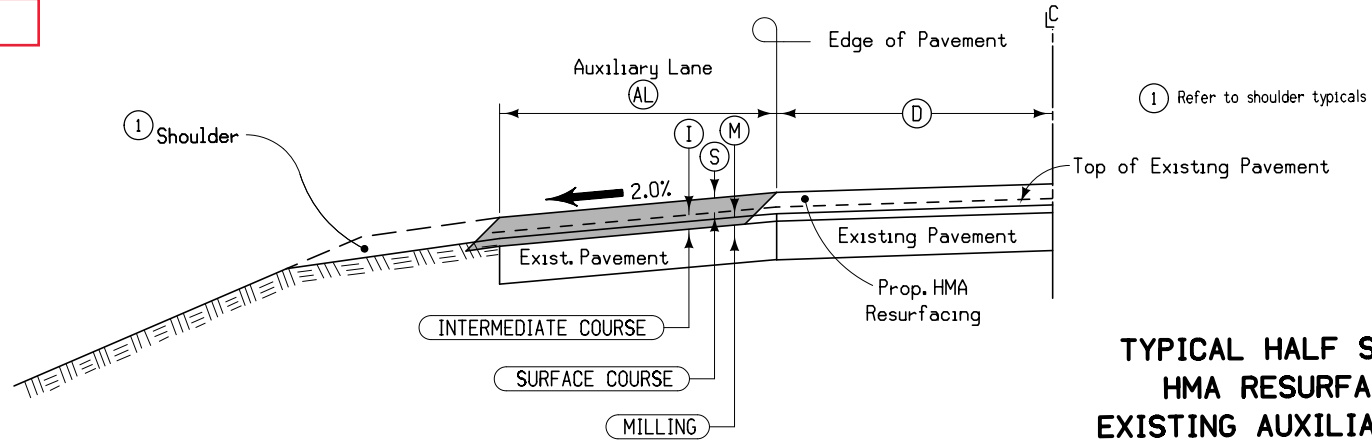
Refer to tabulation listing of superelevated curves and Standard Road Plans for additional requirements through superelevated curves.



Location		S	I	M	L	R	Remarks
Road Identification	Station To Station	Inches	Inches	Inches	Feet	Feet	
US 218 Southbound Lanes	520+09.744 * 424+97.726 *	1.5	1.5	1.5	16	18	* Stations shown are metric

4-LANE DIVIDED ROADWAY → TYPICAL CROSS SECTION
HMA RESURFACING & PAVEMENT SCARIFICATION

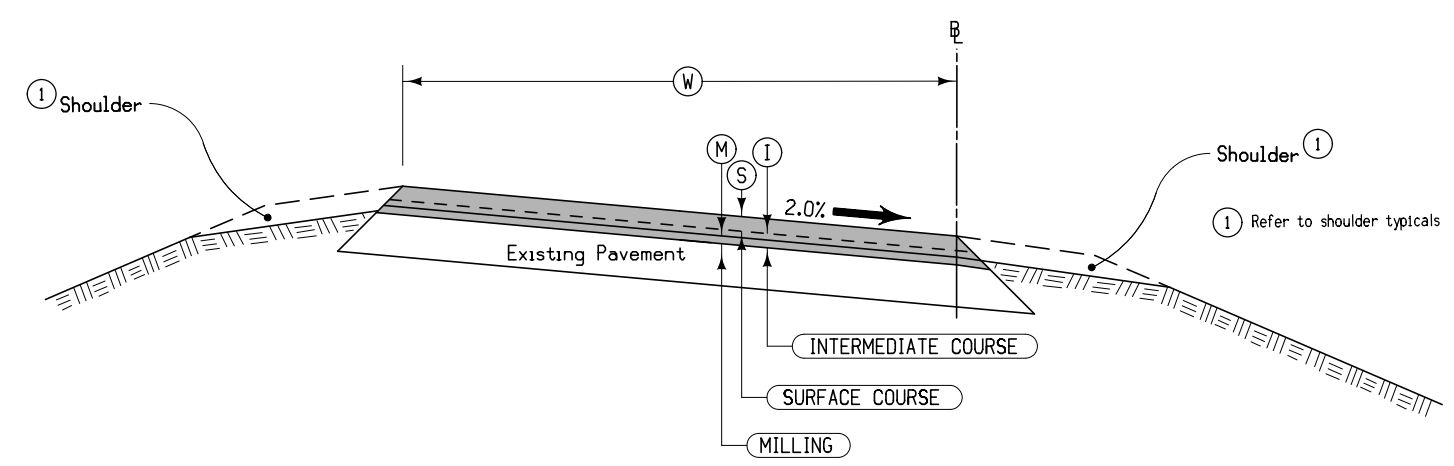
S+I = 4" total



TYPICAL HALF SECTION
HMA RESURFACING
EXISTING AUXILIARY LANE

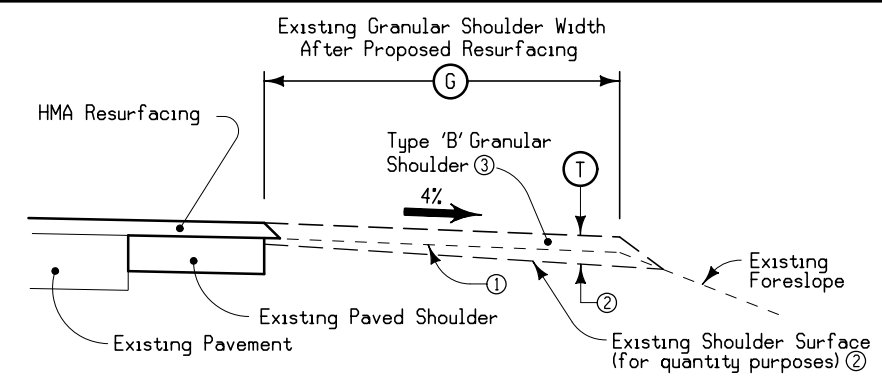
* Refer to Special Detail Sheets for locations

Location					D	AL	S	I	M
Road Identification	Direction of Travel	Station To Station	Side		Feet	Feet	Inches	Inches	Inches
US 218 turn lanes	Northbound left turn lanes	* *	Lt.		12	12	1.5	1.5	1.5



TYPICAL CROSS SECTION
RAMP HMA RESURFACING &
PAVEMENT SCARIFICATION

Location		S	I	M	W
Road Identification	Station To Station	Inches	Inches	Inches	Feet
US 218 SB Ramp B	2540+30.00 2535+21.97	1.5	1.5	1.5	16
US 218 SB Ramp D	4535+49.53 4530+80.00	1.5	1.5	1.5	16



- Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material. Shape to ensure the thickness of the granular shoulder material is not less than the thickness of the resurfacing.
- Nominal thickness adjusted to account for low shoulders & existing slopes greater than 4% (For quantity purposes Existing Shldr are measured 1" low and 4.2% Inside & 4.4% Outside in tangent sections & 3.9% High side & 4.47% Low side shoulders in the superelevated sections)
- Placing granular shoulder material in advance of Class 13 Excavation for widening and base widening shall be performed as part of the 'Granular Shoulders, Type 'B' bid item.
- Outside Design Shoulder width is 10' (6' paved and 4' granular) Inside Design Shoulder width is 6' (4' paved and 2' granular)
- Refer to Tabulation 112-9 for additional information.

LOCATION			T	G	
ROAD IDENTIFICATION	LOCATION TO LOCATION	SIDE	Inches ^②	Feet ^④	
US 218 SBL	520+09.74	500+14.72	Lt.	2.52	2
US 218 SBL	500+14.72 *	497+86.86	Lt.	2.82	2
US 218 SBL	497+86.86	479+32.54	Lt.	2.52	2
US 218 SBL	479+32.54 *	473+59.38	Lt.	2.38	2
US 218 SBL	473+59.38	469+22.12	Lt.	2.52	2
US 218 SBL	469+22.12 *	459+30.37	Lt.	2.25	2
US 218 SBL	459+30.37	424+97.73	Lt.	2.52	2
US 218 SBL	520+09.74	500+14.72	Rt.	2.60	4
US 218 SBL	500+14.72 *	497+86.86	Rt.	2.25	4
US 218 SBL	497+86.86	479+32.54	Rt.	2.60	4
US 218 SBL	479+32.54 *	473+59.38	Rt.	3.10	4
US 218 SBL	473+59.38	469+22.12	Rt.	2.60	4
US 218 SBL	469+22.12 *	459+30.37	Rt.	2.25	4
US 218 SBL	459+30.37	424+97.73	Rt.	2.60	4
US 218 SB Ramps			Lt.	2.50	4
US 218 SB Ramps			Rt.	2.50	6

* Approximate sections of roadway in superelevation. See U sheets for turn lanes

TYPICAL SECTION
FOR TYPE 'B'
GRANULAR SHOULDER
ADJACENT TO HOT MIX ASPHALT RESURFACING

**ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)**

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2121-7425010	GRANULAR SHOULDERS, TYPE A	TON	3,340.6	
2	2125-2225050	RESHAPING DITCHES	STA	17.30	
3	2214-5145150	PAVEMENT SCARIFICATION	SY	120,234.7	
4	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE	TON	90.0	
5	2303-1052500	HOT MIX ASPHALT VERY HIGH TRAFFIC, INTERMEDIATE COURSE 1/2 IN. MIX	TON	11,296.37	
6	2303-1053502	HOT MIX ASPHALT VERY HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-2	TON	10,781.88	
7	2303-1258285	ASPHALT BINDER, PG 58-28V, VERY HIGH TRAFFIC	TON	1,330.09	
8	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1.00	
9	2303-7000610	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR)	EACH	7437	
10	2303-7000620	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE FIELD VOIDS (FORMULA - BY PAY FACTOR)	EACH	7437	
11	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE)	EACH	21585	
12	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	4	
13	2507-3250005	ENGINEERING FABRIC	SY	97.8	
14	2507-6800061	REVTMENT, CLASS E	TON	54.5	
15	2520-3350010	FIELD LABORATORY	EACH	1	
16	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
17	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	814.30	
18	2527-9270111	GROOVES CUT FOR PAVEMENT MARKINGS	STA	258.23	
19	2528-8445110	TRAFFIC CONTROL	LS	1.00	
20	2533-4980005	MOBILIZATION	LS	1.00	
21	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	189.7	
22	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	205.6	
23	2599-9999005	('EACH' ITEM) APRON GUARDS FOR 24 INCH DR-201	EACH	4	
24	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200.0	
25	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	200.0	

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2121-7425010	GRANULAR SHOULDERS, TYPE A Refer to typical 7135 and tabulation 112-9 for additional information.
-	-	-
2	2125-2225050	RESHAPING DITCHES Refer to Reshaping Ditches tabulation for additional information.
-	-	-
3	2214-5145150	PAVEMENT SCARIFICATION Refer to typicals 2618, 2619 & MK-1 tabulations 102-5A & 102-5A for additional information. An additional 145 SY has been added for entrance fillets outside of the mainline milling.
-	-	-
4	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE
5	2303-1052500	HOT MIX ASPHALT VERY HIGH TRAFFIC, INTERMEDIATE COURSE 1/2 IN. MIX
6	2303-1053502	HOT MIX ASPHALT VERY HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-2
7	2303-1258285	ASPHALT BINDER, PG 58-28V, VERY HIGH TRAFFIC
8	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES Refer to typicals 2618, 2619 & MK-1 and tabulations 100-25, 102-16 & 106-2 for additional information. Includes an additional 12 tons of intermediate and 12 tons of surface for entrance fillets outside of mainline typical. Intermediate quantities have been increased by 5% to account for irregularities.
-	-	-
9	2303-7000610	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR)
-	-	-
10	2303-7000620	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE FIELD VOIDS (FORMULA - BY PAY FACTOR)
-	-	-
11	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE)
-	-	-
12	2416-0100024	APRONS, CONCRETE, 24 IN. DIA. Refer to tabulation 104-13 for additional information.
-	-	-
13	2507-3250005	ENGINEERING FABRIC
14	2507-6800061	REVTMENT, CLASS E Refer to tabulation 100-23 for additional information.
-	-	-
15	2520-3350010	FIELD LABORATORY
-	-	-
16	2526-8285000	CONSTRUCTION SURVEY
-	-	-
17	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
18	2527-9270111	GROOVES CUT FOR PAVEMENT MARKINGS Refer to tabulation 108-22 for additional information.
-	-	-
19	2528-8445110	TRAFFIC CONTROL Refer to tabulation 108-23A for additional information.
-	-	-
20	2533-4980005	MOBILIZATION
-	-	-
21	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE
22	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS) Refer to tabulation 112-10 for additional information.
-	-	-
23	2599-9999005	('EACH' ITEM) APRON GUARDS FOR 24 INCH DR-201 Refer to tabulation 104-13 for additional information.
-	-	-
-	-	Method of measurement and basis of payment is full compensation for all work, including means necessary to remove old apron guard, furnishing and installing new DR-213 Pipe apron guard to the satisfaction on the Engineer.
-	-	-
24	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.
25	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE Refer to tabulation 100-19 for additional information.
-	-	-

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks	
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source			Type
1	34	218	2	220.29	225.03	2003		NHSN-218-9(94)--2R-19	AAC	1.5	AAC	2	BAC	10			Warnholtz	C.Lst				
2	19	218	2	219.17	220.29	2009		NHSN-218-9(130)--2R-19	HMA	1	HMA	2					Warnholtz	C.Lst			Riding course	
2	19	218	2	219.17	220.29	2003		NHSN-218-9(94)--2R-19	AAC	3.5	AAC	2	BAC	9								

EXISTING HMA PAVEMENT FOR RECYCLING

For informational purposes only. When designed RAP is specified, process the RAP to control the uniformity of the final mixture.

Route No.	Location	Year Placed	Layer	Thickness	Asphalt Binder		Mix											
					Grade	Content	Description	Quality Type	Size	Content	% of -4 that is Type 2	% of +4 that is Type 2	% of +4 that is Type 3	% of +4 that is Type 4	% Crushed	% Limestone		
218	SB from MP 225.03 to MP 219.14	2010 & 200	surface	1.5"	64-28	0.0585		A		1/2"					0.45	0.45	0.8	0

**UTILITIES
(NOT A POINT 25 PROJECT)**

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

UTILITIES

Brad Fleming Principal Engineer Black Hills Energy (Gas Transmission & Distribution) 1102 E. First St. Papillion, NE 68046-7641 (402) 221-2714 Cell: (402) 660-0812 brad.fleming@blackhillscorp.com	Stuart Dietz Plant Manager Butler-Bremer Comm (Telephone, Cable TV & Fiber Distribution) 715 Main Street Plainfield, IA 50666 (319) 276-4458 stuart@butler-bremer.biz	Jason Dale TEA - Office Of Traffic Operations IA Dept of Transportation (Fiber Trans., Fiber Distr. & Elect. Distr.) 800 Lincoln Way Ames, IA 50010 (515) 239-1995 Jason.Dale@iowadot.us
Mark Siefken Engineering Manger Butler County REC (Electric Distribution) 521 N Main St Allison, IA 50602 (319) 267-2726 Cell: (319) 240-9333 sief@butlerrec.coop	Brent Geise Engineer II Lumen/Centurylink (Telephone) 3565 Utica Ridge Rd Bettondorf, IA 52722 (563) 355-2592 Cell: (563) 650-0147 Brent.Geise@CenturyLink.com	George McElvain Senior Engineer Lumen/Centurylink (Fiber Transmission) 700 W. Mineral Ave Littleton, CO 80120 (303) 992-9931 George.McElvain@lumen.com
Steve Parker Manager of Engineering & Construction Lumen/Centurylink (Fiber Distribution) 2103 E. University Ave. Des Moines, IA 50317 (515) 265-0968 Cell: (507) 358-1978 Steven.Parker4@lumen.com	Kent Studer Construction Supervisor Mediacom Communications Corp. (Cable TV) 12251 265th St. Mason City, IA 50401 (641) 430-4048 Ext. 354 kstuder@mediacomcc.com	Molly Brower Gas Engineering Tech MidAmerican Energy Co. (Gas Distribution) 212 S. Main St. Clarksville, IA 50619 (319) 291-4737 Cell: (319) 231-7606 mcbrouwer@midamerican.com
William Barry Mgr Gas Projects MidAmerican Energy Co. (Gas Transm.) 602 D Ave NW Cedar Rapids, IA 52405 (319) 298-5146 Cell: (319) 350-4952 WBarry@midamerican.com	David Kline Sr. Distribution Engineer, P.E. MidAmerican Energy Co. (Electric Distribution) 260 Fairview Ave Waterloo, IA 50703 (319) 231-4726 Cell: (319) 230-2781 dkline@midamerican.com	William Schierbrock Manager, High Voltage Engineering MidAmerican Energy Co. (Electric Trans.) 106 East Second Street Davenport, IA 52801 (563) 333-8155 wjschierbrock@midamerican.com
Jason Godwin Right of Way Agent Northern Natural Gas Company (Gas Transmission & Gas Distribution) 1120 Centre Pointe Dr., Ste. 400 Mendota Heights, MN 55120 (651) 456-1711 Cell: (651) 236-7501 jason.godwin@nngco.com	Terry Burke Manager OSP Engineering Windstream Communications (Telephone & Fiber Distribution) 641 West Street South Grinnell, IA 50112 (641) 787-2259 Cell: (641) 218-0198 Terry.r.burke@windstream.com	Luke Niles Analyst II-Permitting Windstream Communications (Cable TV & Fiber Transmission) 4001 N. Rodney Parham Rd Little Rock, AR 72212 (501) 748-5893 Cell: (682) 554-6784 luke.t.niles@windstream.com

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
DR-205	04-21-20	Concrete Apron with End Wall
DR-213	04-21-20	Pipe Apron Guard
EC-204	04-20-21	Perimeter, Slope and Ditch Check Sediment Control Devices
PM-110	04-21-20	Line Types
PM-120	10-21-14	Stop Lines and Islands
PM-310	04-21-20	Entrance and Exit Ramps
PM-420	10-15-19	Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition)
PM-562	10-15-19	Divided Multi-Lane Roadway with Left Turn Lanes
PM-760	10-15-19	Divided Multi-Lane Roadway Median
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	10-20-20	Milled Shoulder Rumble Strips
PV-202	04-21-20	Hot Mix Asphalt Resurfacing
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-21-15	Work Within 15 ft of Traveled Way
TC-418	04-21-20	Lane Closure on Divided Highway
TC-432	10-17-17	Shoulder Rumble Strip Operations

INDEX OF TABULATIONS

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	Utilities (Not a Point 25 Project)	C.2
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NOTCHES AND RUNOUTS FOR RESURFACING

Refer to PR-201 and PR-202.

① Bid item. Applies only to Types 'N1' and 'N3' on PR-202. Refer to 100-25 for remaining values.

Location Station	Type of Notch or Runout	(S)	(I)	(DI)	(L)	(M)	Pavement Scarification ①	Remarks
		IN	IN	IN	FT	IN	SY	
519+86.74	Type 'N5'	1.5	1.5		75.0	1.5		EOP
424+97.73	Type 'N5'	1.5	1.5		75.0	1.5		BOP
2535+21.97	Type 'N5'	1.5	1.5		37.5	1.5		Edge of pavement Co Rd B60
4535+49.53	Type 'N5'	1.5	1.5		37.5	1.5		Edge of pavement Co Rd B60

LEVELING COURSES

Location				Hot Mix Asphalt Pavement		Remarks
Begin Ref. Location Sign	End Ref. Location Sign	Begin Station	End Station	Average Thickness Inches	Tons	
		480+70.00	480+40.00	3.0	30.000	A, Mill prior to leveling
		477+00.00	476+70.00	3.0	30.000	A, Mill prior to leveling
		429+60.00	429+30.00	3.0	30.000	A, Mill prior to leveling
Totals					90.000	
A Nominal thickness of 3" was used for quantity purposes. Actual depth calculated shall be field verified						

FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (MAINLINE PIPES)

Refer to Standard Road Plans DR-121, DR-122, and DR-213.

* Not a bid item

Existing Information		New Information		Length of New Const. LF	Flow Line Elevations		Dimensions				Removal and Reinstallation of Culvert Aprons and Pipes				New Apron No.		Apron Guard* (DR-213) NO.	Type 'C' Connections* (DR-122) TYPE NO.		Connecte d Pipe Joint* (DR-121) TYPE	Embank.- In-Place CY	Class 20 CY	Remarks	
Location	Size and Type of Culvert	Size IN	Type of Culvert		LEFT	RIGHT	Total (LF)		Extensions (LF)		Aprons		Culvert Sections											
							LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	NO.*	FT	NO.*	FT								
518+20	24" RCP																						U.A.C.	
516+00	24" RCP																							U.A.C.
515+87	6' x 4' RCB																							U.A.C.
515+76	24" RCP																							U.A.C.
514+99	42" RCP																							C, U.A.C.
513+90	24" RCP																							U.A.C.
510+08	37" x 23" RCP																							E, U.A.C.
509+20	24" RCP																							U.A.C.
507+82	30" RCP																							U.A.C.
505+98	24" RCP																							U.A.C.
505+86	48" RCP																							U.A.C.
505+20	24" RCP																							U.A.C.
502+25	24" RCP																							U.A.C.
499+85	60" RCP																							U.A.C.
498+60	24" RCP																							U.A.C.
497+50	???																							U.A.C.
497+43	10' x 10' RCB																							U.A.C.
493+18	37" x 23" RCP																							U.A.C.
493+15	37" x 23" RCP																							U.A.C.
492+95	24" RCP																							U.A.C.
490+62	24" RCP																							U.A.C.
486+06	24" RCP																							U.A.C.
482+86	24" RCP																							U.A.C.
480+63	24" RCP																							U.A.C.
480+49	12' x 6' RCB																							C, U.A.C.
480+37	24" RCP																							U.A.C.
476+94.5	8' x 4' RCB																							U.A.C.
474+13	60" RCP																							U.A.C.
471+40	24" RCP																							U.A.C.
470+60???	???																							U.A.C.
465+68	36" RCP																							U.A.C.
464+15	24" RCP																							U.A.C.
464+00 West Ent.	24" CMP																							C, U.A.C.
462+36	54" RCP																							C, U.A.C.
460+20	24" RCP																							A, B, U.A.C.
459+32	24" RCP																							B, U.A.C.
459+24	52" x 32" RCP																							B, U.A.C.
454+88	24" RCP																							U.A.C.
453+80	42" RCP																							U.A.C.
452+27	24" RCP																							D
448+98	24" RCP																							C, F
448+75	24" RCP																							U.A.C.
447+50	24" RCP																							U.A.C.
444+72	Triple 10' x 8' RCB																							U.A.C.
443+54	48" RCP																							B, U.A.C.
442+60	24" RCP																							B, U.A.C.
442+00	24" RCP																							B, U.A.C.
438+22	42" RCP																							U.A.C. west end
438+13	24" RCP																							U.A.C.
432+00	24" RCP																							U.A.C.
430+00	24" RCP																							B, U.A.C.
429+33	12' x 8' RCB																							U.A.C.
428+00	24" RCP																							U.A.C.
424+90	24" RCP																							A, U.A.C.
Note: All culvert notes below, within US 218 SBL are either median culverts or Lt. end (with Sta.) only construction if they are buried under both lanes. US 218 NBL median or Rt. end (buried under both lanes) culverts are under separate project																								
A West end silted in																								
B Refer to Reshaping Ditches tab																								
C Refer to tabulation 100-23																								
D Replace apron with wood plank endwall on west end with Std Road Plan DR-205																								
E Lt. end silted in																								
F Undermined apron. Bedding material is incidental																								

RESHAPING DITCHES						100-26 10-15-13
Refer to MK-__ for additional information						
LOCATION	FEATURE	LENGTH	DIRECTION	LENGTH		Remarks
460+20	Pipe end	2	south	1	north	A, West ditch. Shape to ditch grade on plans.
459+32	Pipe end	1	north			A, West ditch. Shape to ditch grade on plans.
459+24	Pipe end	1	south	0.3	north	A, West ditch. Shape to ditch grade on plans.
440+00	Pipe end	11.61	north			A, West ditch. Shape to ditch grade on plans.
424+90	Pipe end	0.2	south	0.2	north	A, West ditch. Shape to ditch grade on plans.
totals		15.81		1.5		17.3 Station of Reshaping Ditches
A Length in feet (Stations), Cleaning out apron is included in bid.						

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES							100-19 Modified	
Possible Standards: EC-204								
Location		Perimeter and Slope			Ditch Check		Remarks	
Begin Station	End Station	Side	Length of Installation			Length of Installation		
			9 inch Dia	12 inch Dia	20 inch Dia	12 inch Dia		20 inch Dia
		LF		LF	LF			LF
513+90		Lt		40			A	
492+95		Lt		40			A	
464+15		Lt		40			A	
452+27		Lt		40			A	
448+98		Lt		40			A	
Totals				200				
A Install around apron and inlet per EC-204								

ROCK EROSION CONTROL													100-23 04-17-18	
Refer to EC-301 and Detail 570-8														
Location				Rock Erosion Control (REC)					Material Bid Quantities			Remarks		
Road Identification	Begin Station	End Station	Side	L	W	Type 1	Type 2	Type 3	Type 4	Type 5	Eng. Fabric		Class E Revetment	Erosion Stone
						Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection				
			Lt./Rt.	FT	FT									
US 218 SBL	???????	480+49.00	Lt.		20									West ditch
US 218 SBL		464+00.00	Lt.	8	8				X		16.0	6.7		South end of pipe
US 218 SBL		462+36.00	Lt.	14	12				X		32.0	17.6		West ditch
US 218 SBL		448+98.00	Lt.	24	12				X		49.8	30.2		A, West Ditch
Totals											97.8	54.5		
A Incorporate both median and mainline Sta. 448+75 cross pipe														

EROSION CONTROL (NATIVE GRASS SEEDING)		232-3C 04-16-19
Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:		
SEED MIX:		
Big bluestem (Andropogon gerardii)	6 lbs. PLS/Acre (7.0 kg/ha)	
Indiangrass (Sorghastrum nutans)	6 lbs. PLS/Acre (7.0 kg/ha)	
Little bluestem (Schizachyrium scoparium)	6 lbs. PLS/Acre (7.0 kg/ha)	
Partridge Pea (Chamaecrista fasciculata)	4 lbs. PLS/Acre (4.5 kg/ha)	
Sideoats grama (Bouteloua curtipendula)	4 lbs. PLS/Acre (4.5 kg/ha)	
Canada wildrye (Elymus canadensis)	2 lbs. PLS/Acre (2.2 kg/ha)	
Switchgrass (Panicum virgatum)	1 lbs. PLS/Acre (1.1 kg/ha)	
Oats (Avena sativa)	32 lbs./Acre (36.0 kg/ha)	
Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debarbed or equal to facilitate the application of seed.		
Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement.		
Place seed according to the requirements of Article 4169.02 of the Standard Specifications.		
Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.		
Preparing the seedbed, furnishing and applying seed and mulch are incidental to mobilization and will not be paid for separately.		

EROSION CONTROL (RURAL SEEDING)		232-3A 04-16-19
Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:		
Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.		
Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.		
Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.		

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project. ***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose ;

**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00 NPY4: No Passing Zone Line (Yellow) @ 1.25 BLW4: Broken Lane Line (White) @ 0.25 ELW4: Edge Line Right (White) @ 1.00
 ELY4: Edge Line Left (Yellow) @ 1.00 SLW4: Solid Lane Line (White) @ 1.00 CHW8: Channelizing Line (White) @ 2.00 DLW4: Dotted Line (White) @ 0.33 SLW2: Stop Line (White) @ 6.00

Road ID	Station to Station		Dir. of Travel	Location Marking Type	Side			Length by Line Type (Unfactored)												Remarks						
								BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	SLW4	CHW8	DLW4	SLW2									
								L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA		STA	STA	STA	STA	STA	
US 218	424+97.73	520+09.74	SB	Waterborne/Solvent Paint	X	X	X					95.12	95.12	95.12	5.60	18.95	2.14	2.20							After milling, incl. ramps	
US 218	424+97.73	520+09.74	SB	Waterborne/Solvent Paint	X	X	X					95.12	95.12	95.12	5.60	18.95	2.14	2.20							After interm., incl. ramps	
US 218	424+97.73	520+09.74	SB	Waterborne/Solvent Paint	X	X	X					95.12	95.12	95.12	5.60	18.95	2.14	2.20							After surf., incl. ramps	
US 218	424+97.73	520+09.74	SB	Grooves Cut for Pavement Markings	X	X	X					95.12	95.12	95.12	5.60	18.95	2.14									
								Factored Total: Waterborne/Solvent Paint	-	-	-	71.34	285.36	285.36	16.80	113.70	2.14	39.60	-	-	-	-	-			
								Factored Total: Grooves Cut for Pavement Markings	-	-	-	23.78	95.12	95.12	5.60	37.90	0.71	-	-	-	-	-				
								Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based				814.30														
								Bid Quantity: Grooves Cut for Pavement Markings				258.23														

MILLED RUMBLE STRIPS

See PV-12 and PV-13

* Calculated at 18" width for Shoulder.

Road Identification	Station to Station		Shoulder Pavement Type	Rumble Strip Type (Centerline, Rt or Lt Shoulder)	Installation Length	Fog Seal* (Milled Rumble Strip) Shoulder GAL	Effective Shoulder Width			Remarks
							PCC Paved	HMA Paved	Granular\Earth	
							FT	FT	FT	
US 218 SBL	519+86.74	424+97.73	HMA	Left Shoulder	94.89	102.8		4.0	2.0	
US 218 SBL	519+86.74	424+97.73	HMA	Right Shoulder	94.89	102.8		6.0	4.0	
Totals					PCC	HMA	Fog Seal			
HMA Shoulders						189.78				
PCC Shoulders					0.00					
PCC or HMA Shoulders					0.00	0.00	0.0			
HMA Centerlines						0.00				
PCC Centerlines					0.00					
PCC or HMA Centerlines					0.00	0.00				

BRADFORD TWP.
T-94N R-14W
SEC. 19

NHSX-218-9(96)-3H-19
Sta. 429+33 - Des. 201
3.6m x 2.4m RCB

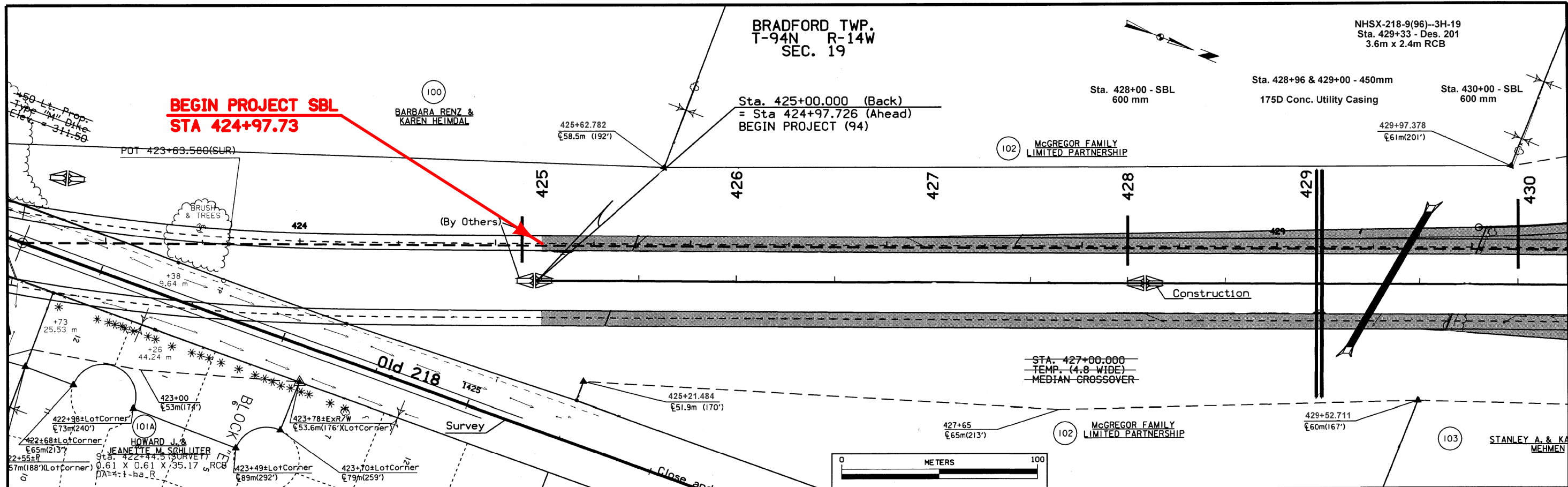
BEGIN PROJECT SBL
STA 424+97.73

Sta. 425+00.000 (Back)
= Sta 424+97.726 (Ahead)
BEGIN PROJECT (94)

Sta. 428+00 - SBL
600 mm

Sta. 428+96 & 429+00 - 450mm
175D Conc. Utility Casing

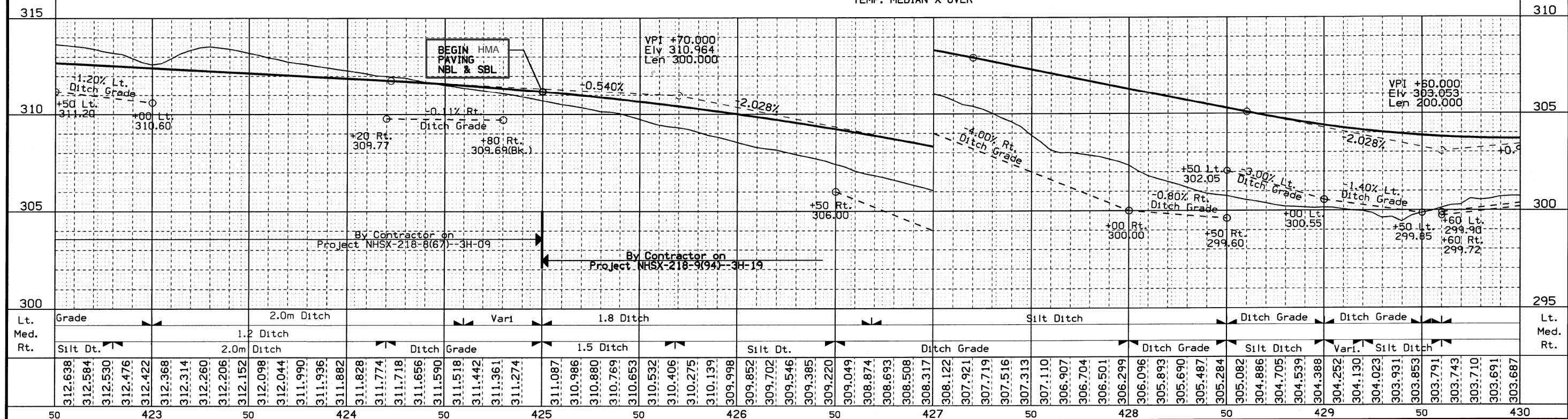
Sta. 430+00 - SBL
600 mm



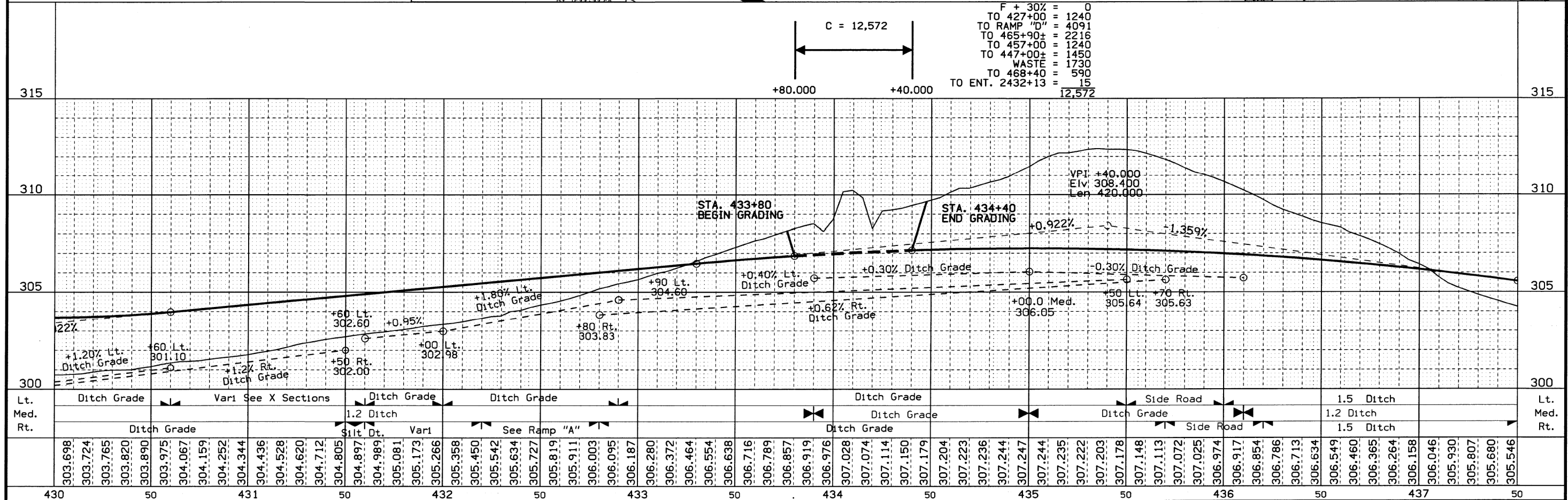
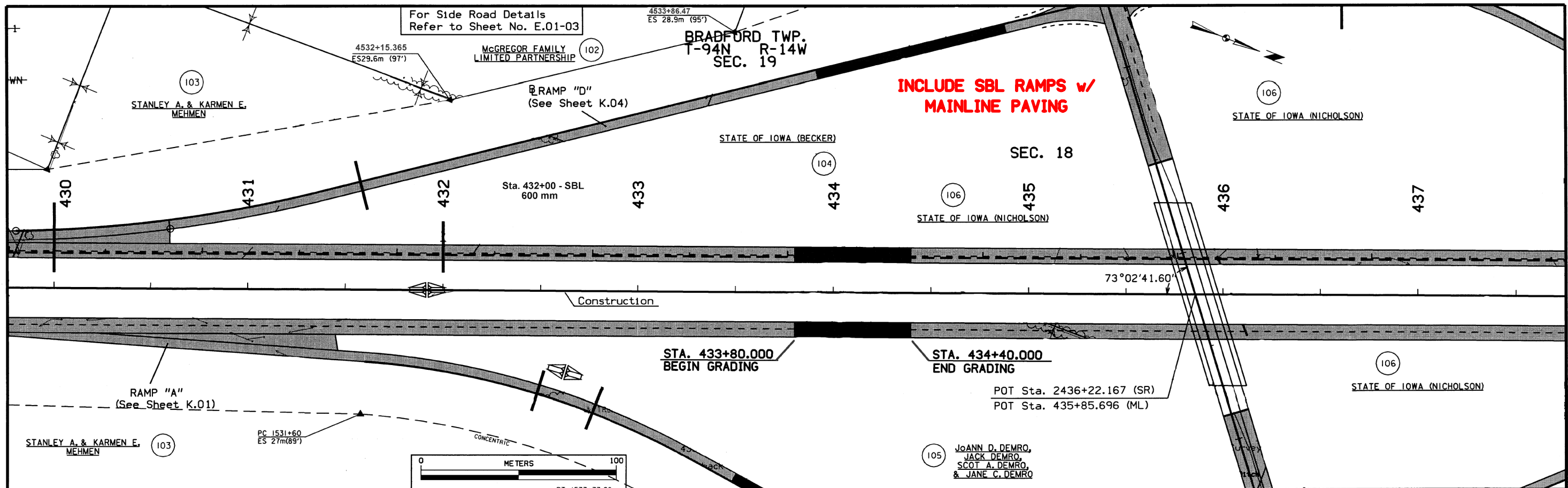
Refer To NHSN-218-8(67)-2R-09 for
removal of old 218 & n.b.l. connection.

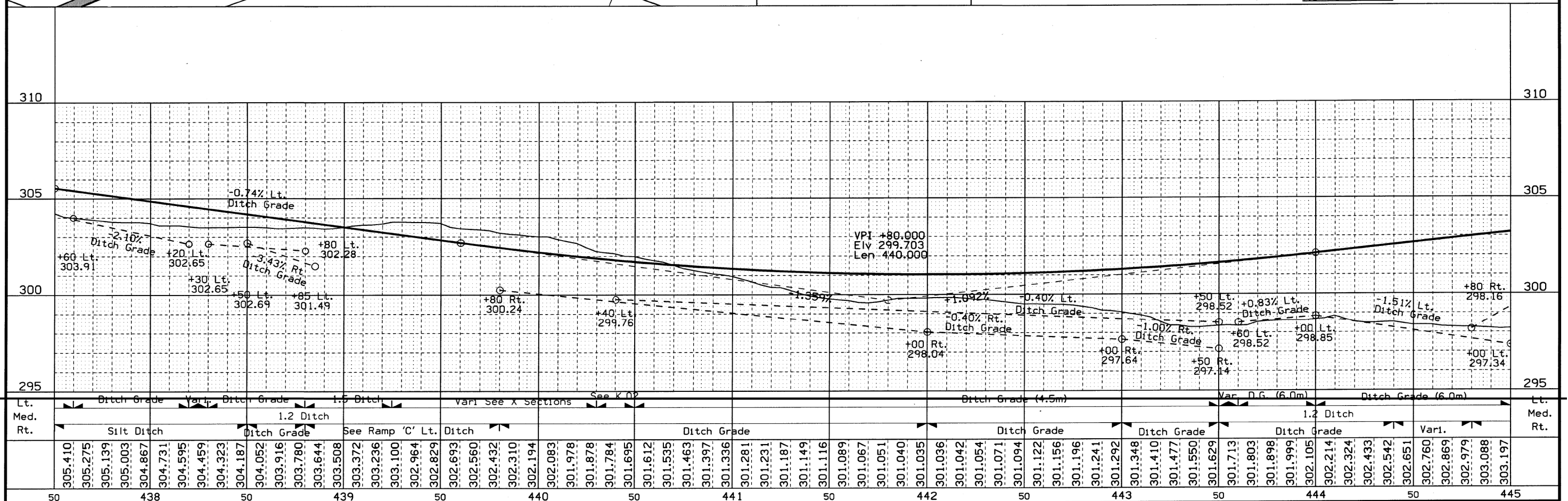
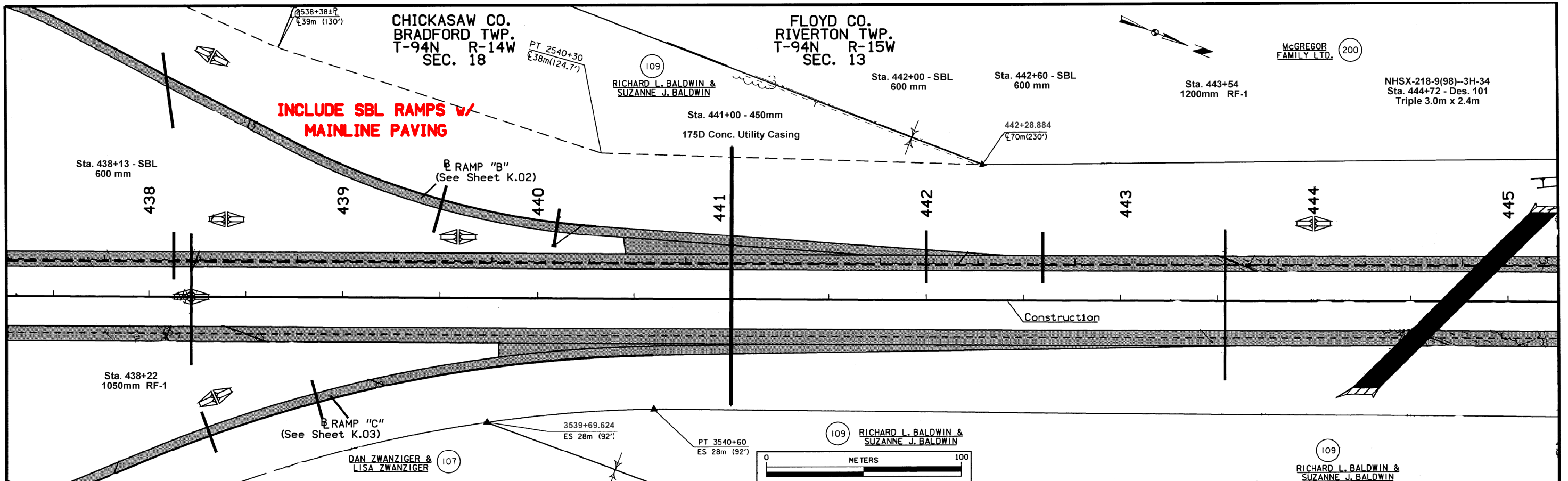
C = 0 F+30% = 1240
FROM 433+90± = 1240
1240

TEMP. MEDIAN X-OVER



FILE NO.	ENGLISH	DESIGN TEAM Kelly \ Sunken	CHICKASAW \ FLOYD COUNTY	PROJECT NUMBER NHSX-218-9(139)-3H-19	SHEET NUMBER D1	REVISED
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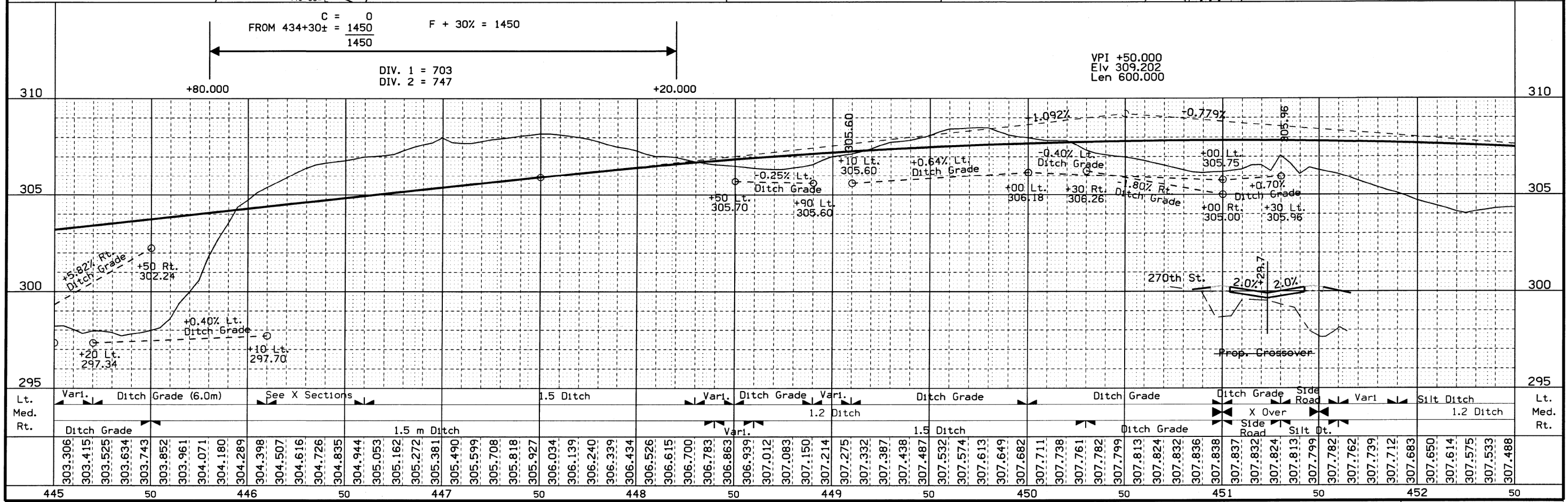
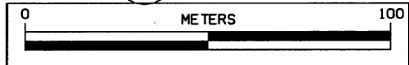
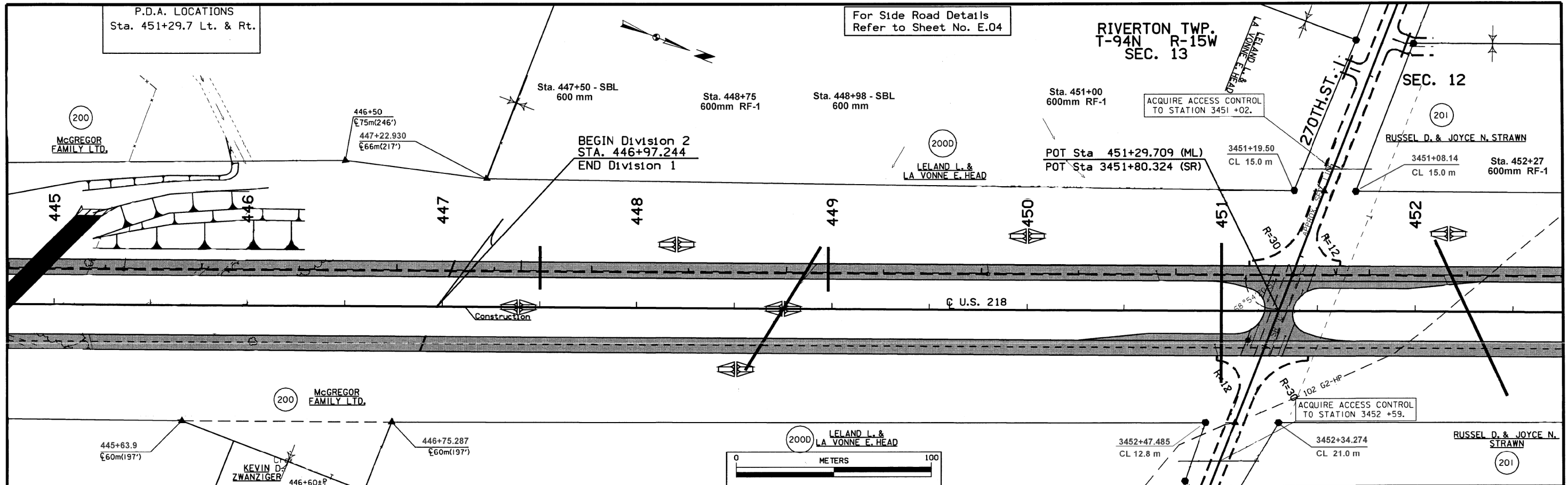


P.D.A. LOCATIONS
Sta. 451+29.7 Lt. & Rt.

For Side Road Details
Refer to Sheet No. E.04

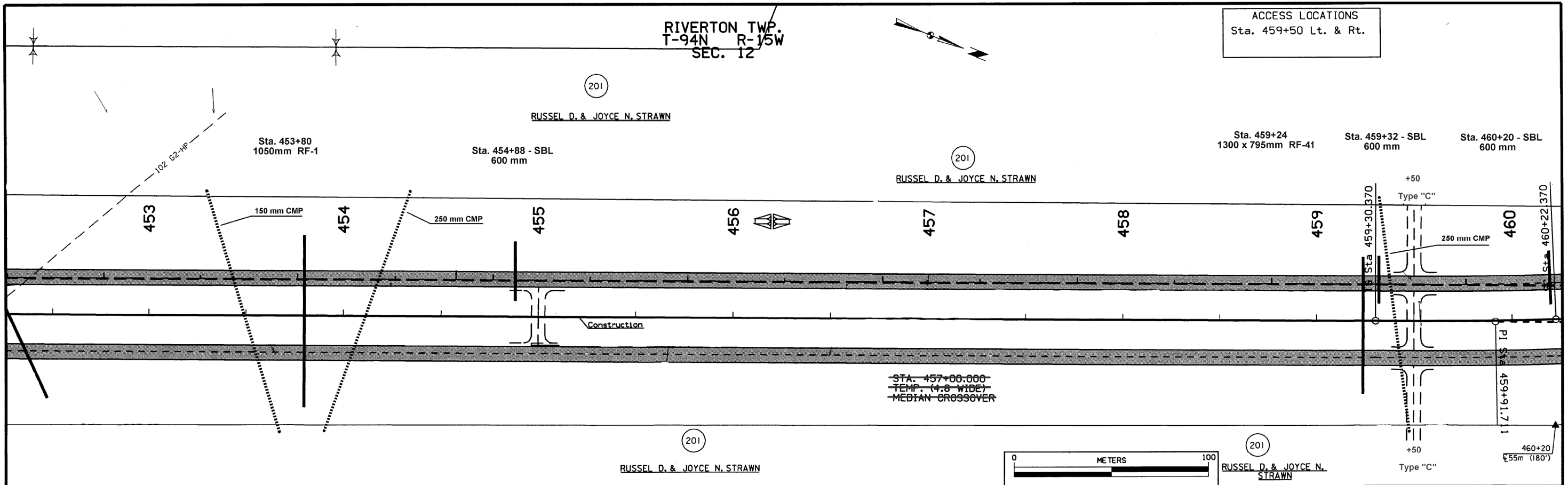
RIVERTON TWP.
T-94N R-15W
SEC. 13

SEC. 12

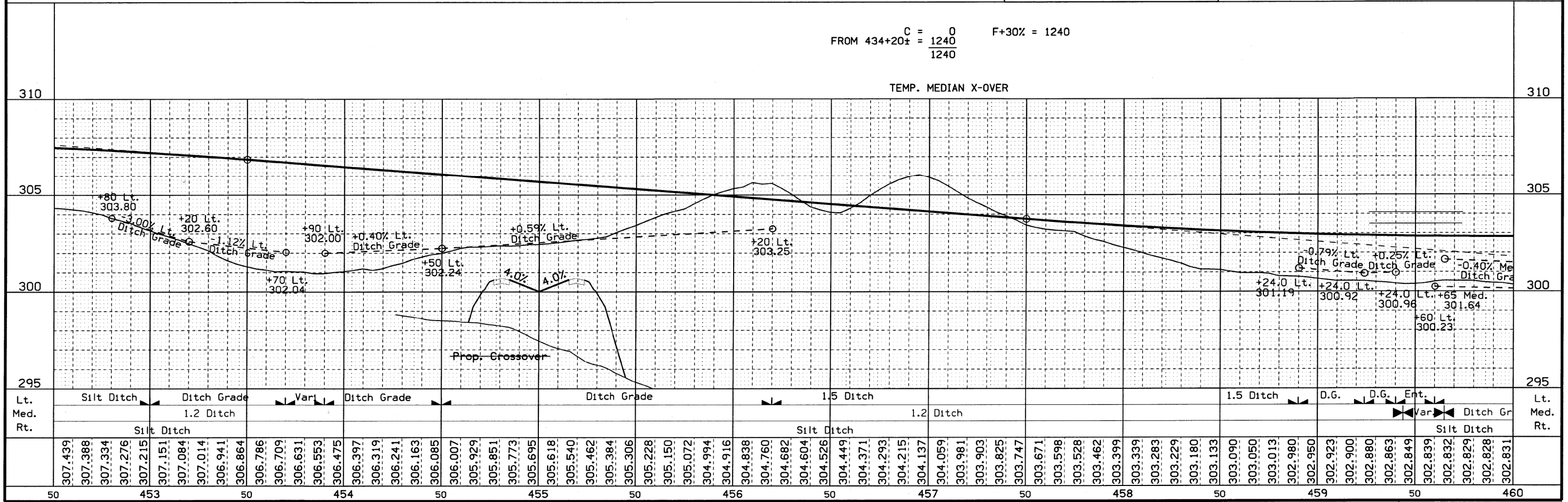


RIVERTON TWP.
T-94N R-15W
SEC. 12

ACCESS LOCATIONS
Sta. 459+50 Lt. & Rt.



FROM 434+20± $C = \frac{0}{1240}$ F+30% = 1240



Lt.	Silt Ditch	Ditch Grade	Var.	Ditch Grade	Ditch Grade	1.5 Ditch	1.5 Ditch	D.G.	D.G.	Ent.	Ditch Gr	Lt.
Med.		1.2 Ditch					1.2 Ditch					Med.
Rt.	Silt Ditch										Silt Ditch	Rt.

ACCESS LOCATIONS
Sta. 459+50 Lt. & Rt.
Sta. 464+00 Lt. & Rt.

For Accessway Details
Refer to Sheet No. E.11

RIVERTON TWP.
T-94N R-15W
SEC. 12

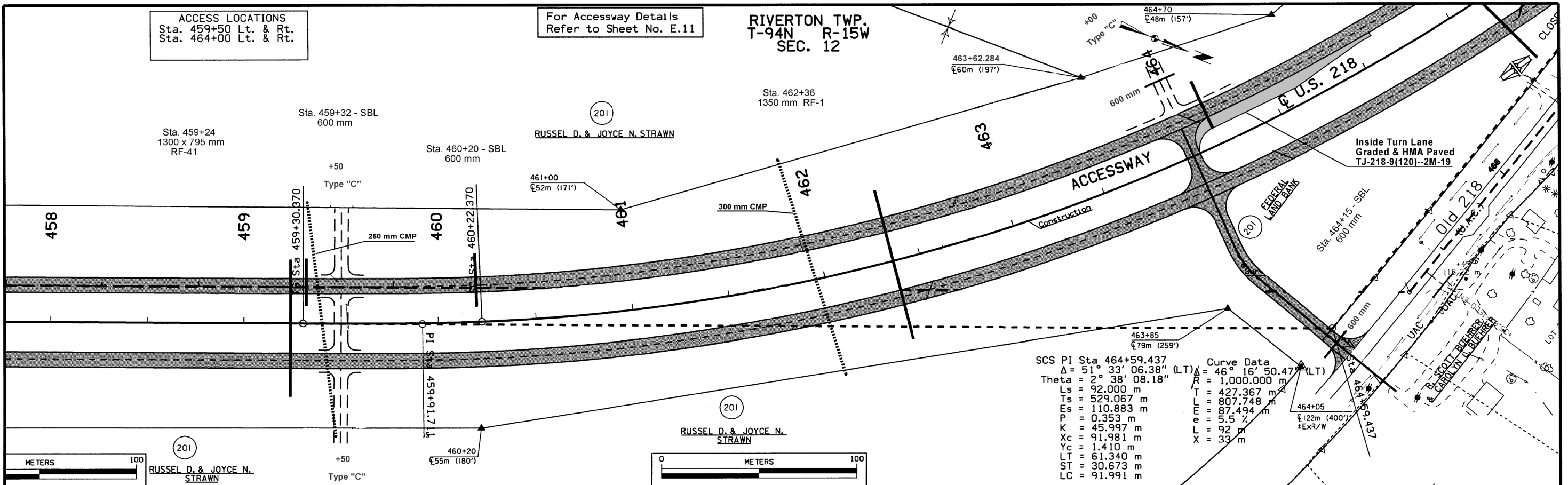
Sta. 462+36
1350 mm RF-1

Sta. 459+24
1300 x 795 mm
RF-41

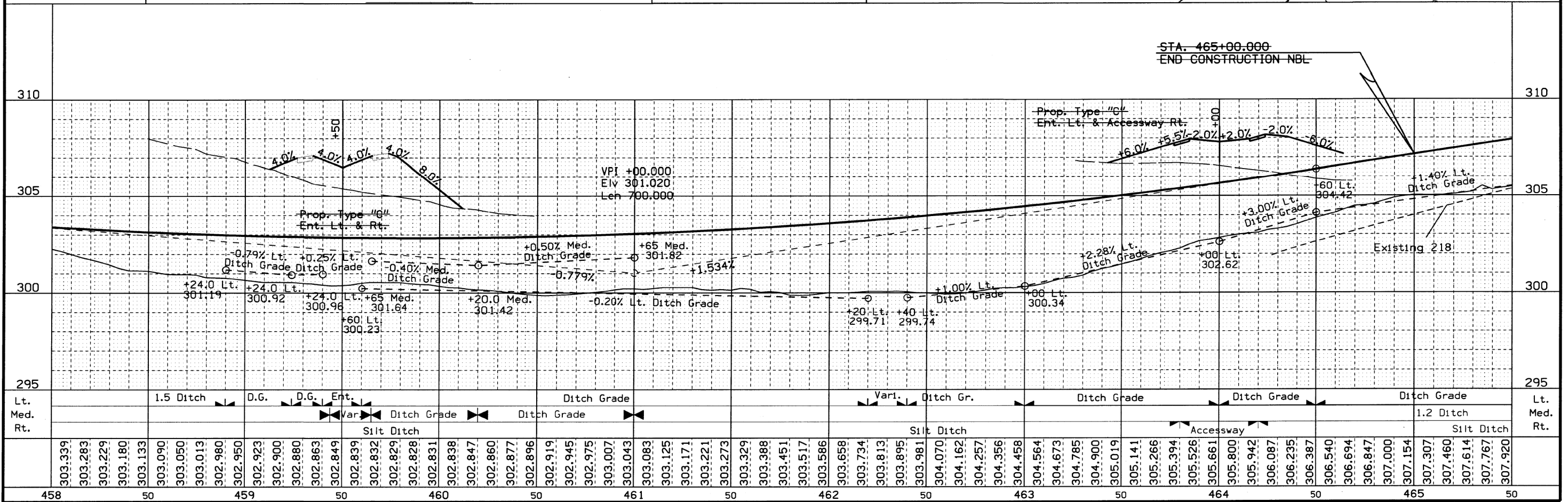
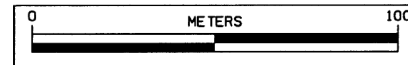
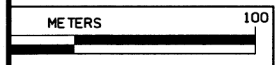
Sta. 459+32 - SBL
600 mm

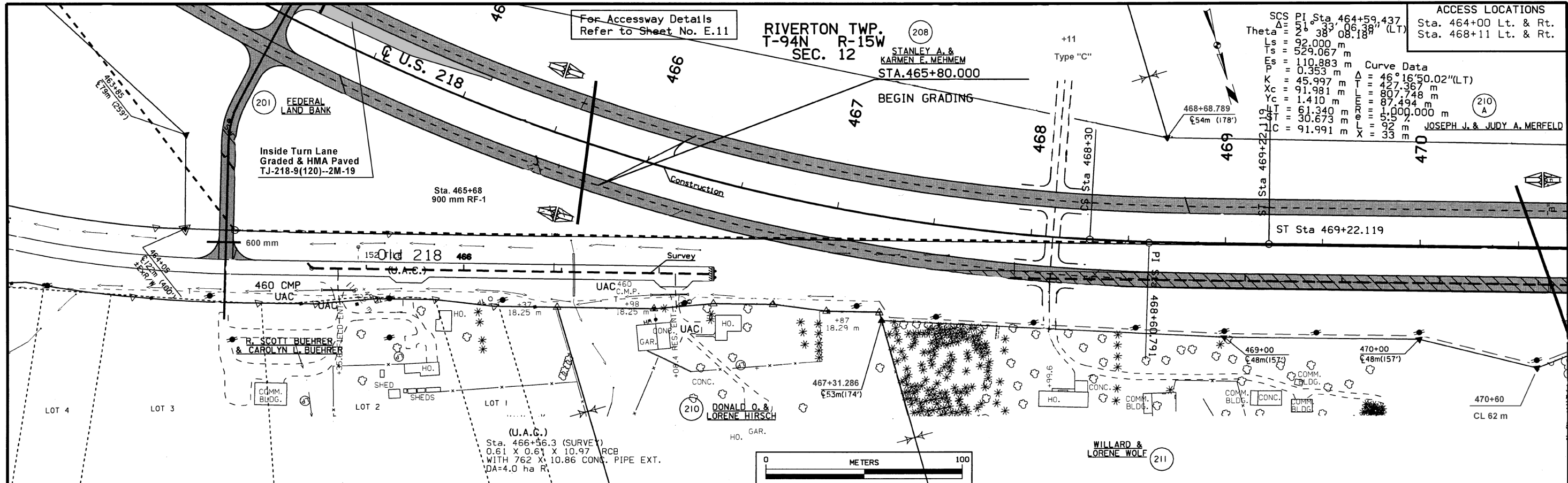
Sta. 460+20 - SBL
600 mm

RUSSEL D. & JOYCE N. STRAWN

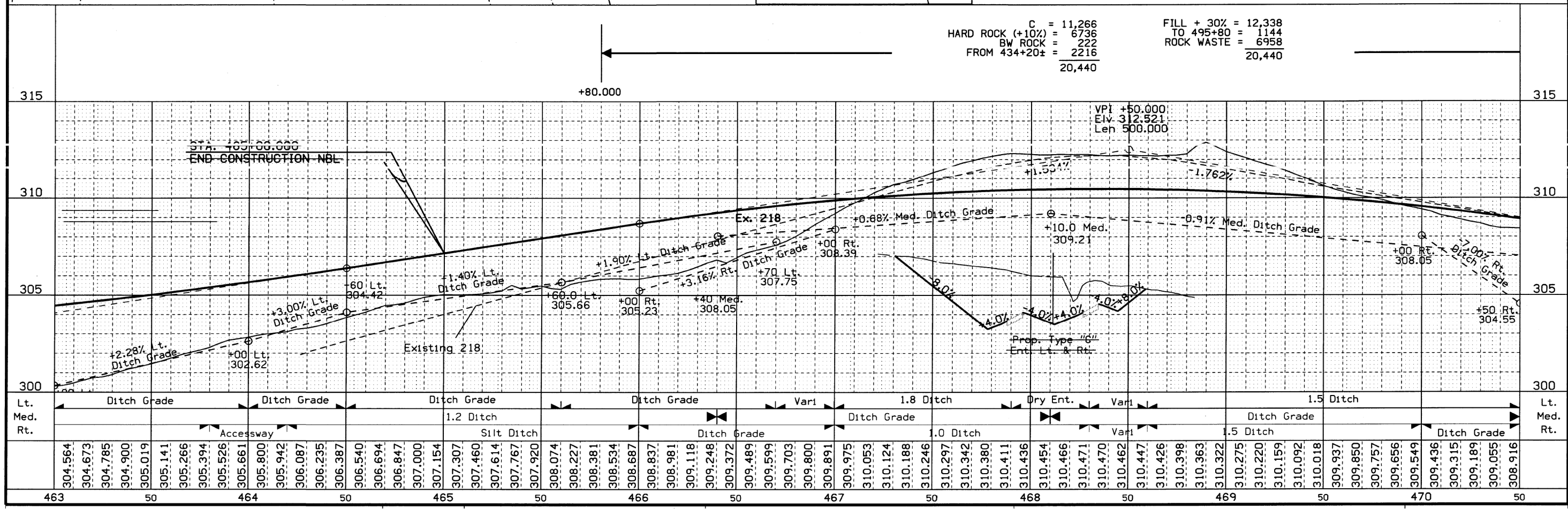


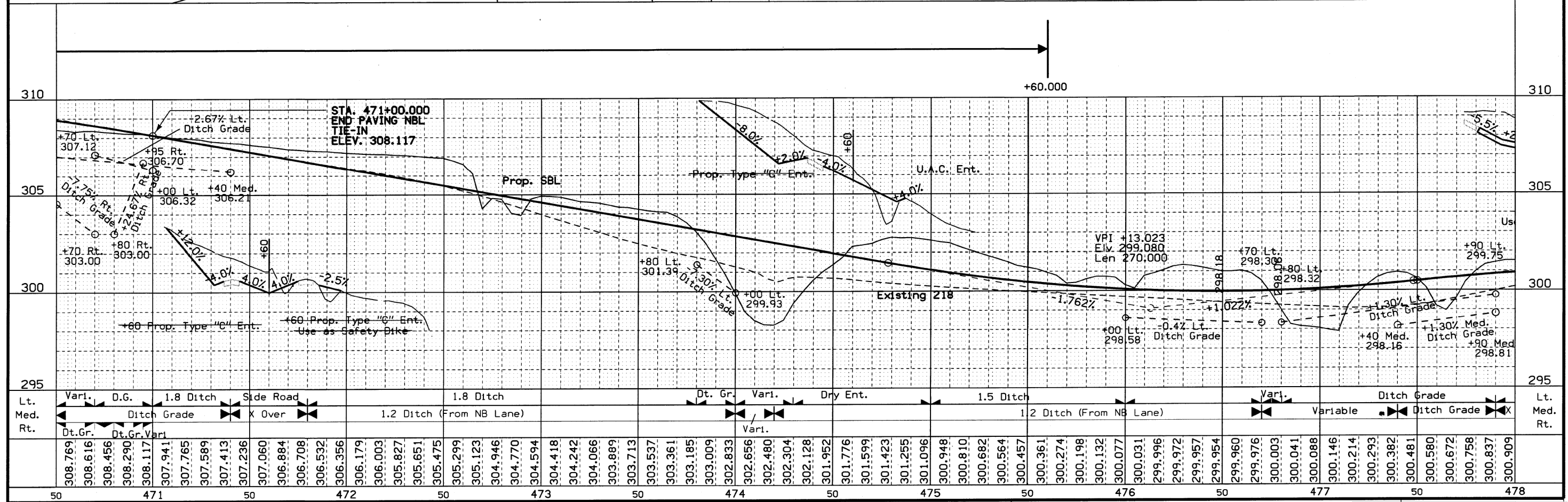
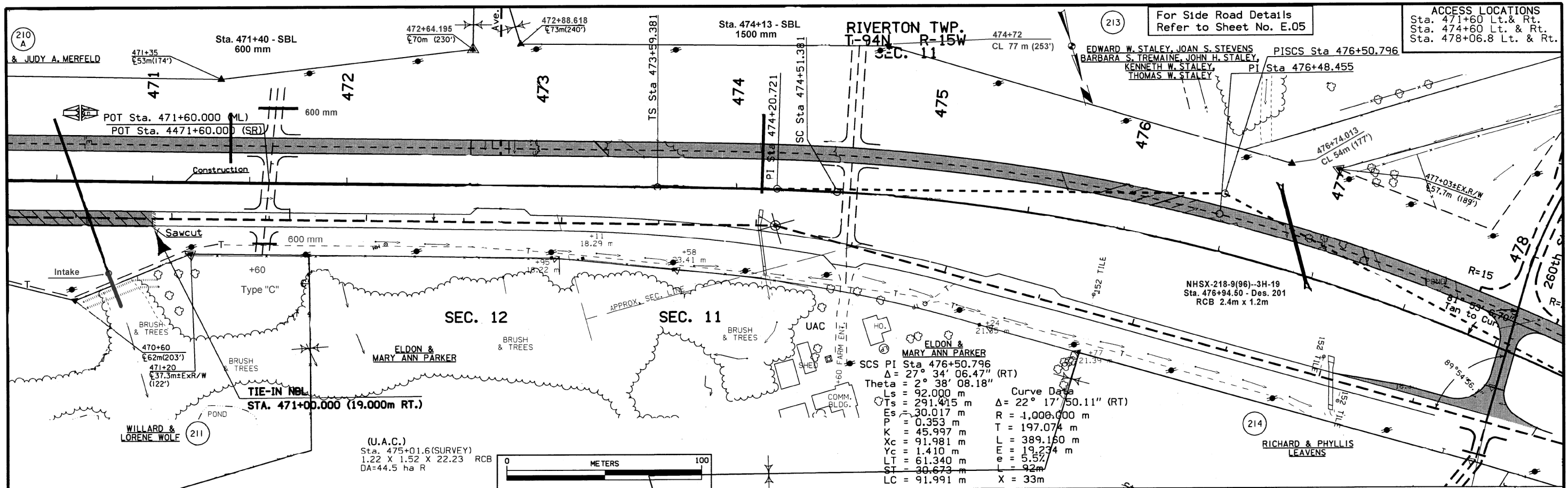
SCS PI Sta 464+59.437
 $\Delta = 51^\circ 33' 06.38''$ (LT) $\Delta = 46^\circ 16' 50.47''$ (LT)
 $\text{Theta} = 2^\circ 38' 08.18''$ (LT)
 $R = 1,000.000$ m
 $L_s = 92.000$ m
 $T_s = 529.067$ m
 $E_s = 110.883$ m
 $P = 0.353$ m
 $K = 45.997$ m
 $X_c = 91.981$ m
 $Y_c = 1.410$ m
 $LT = 61.340$ m
 $ST = 30.673$ m
 $LC = 91.991$ m

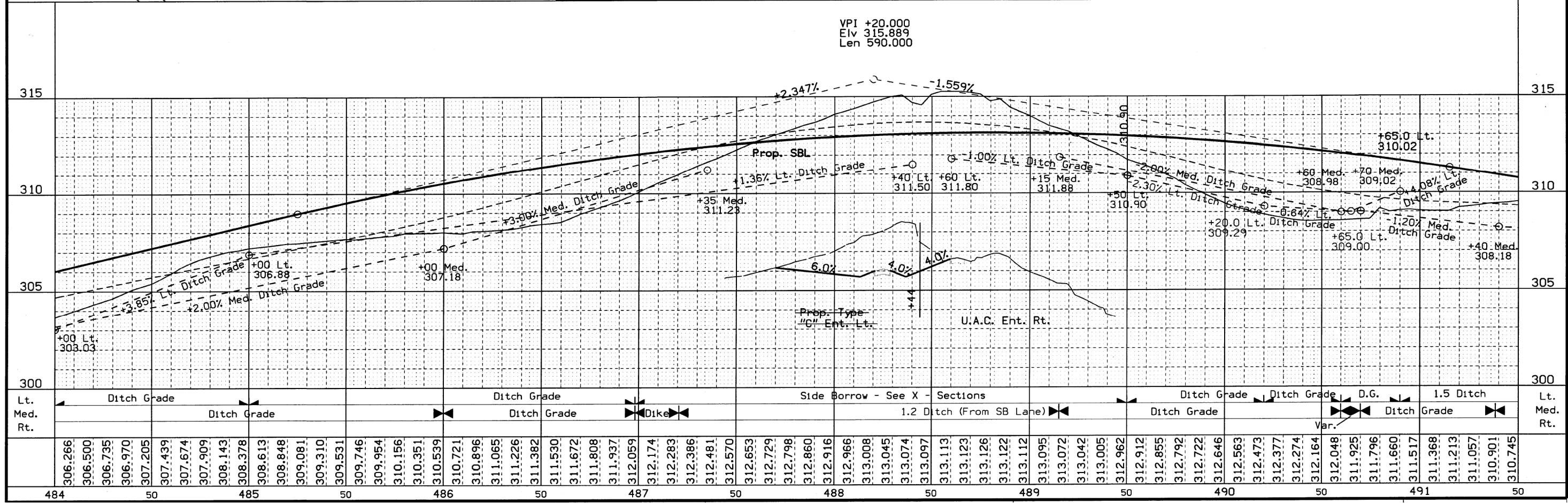
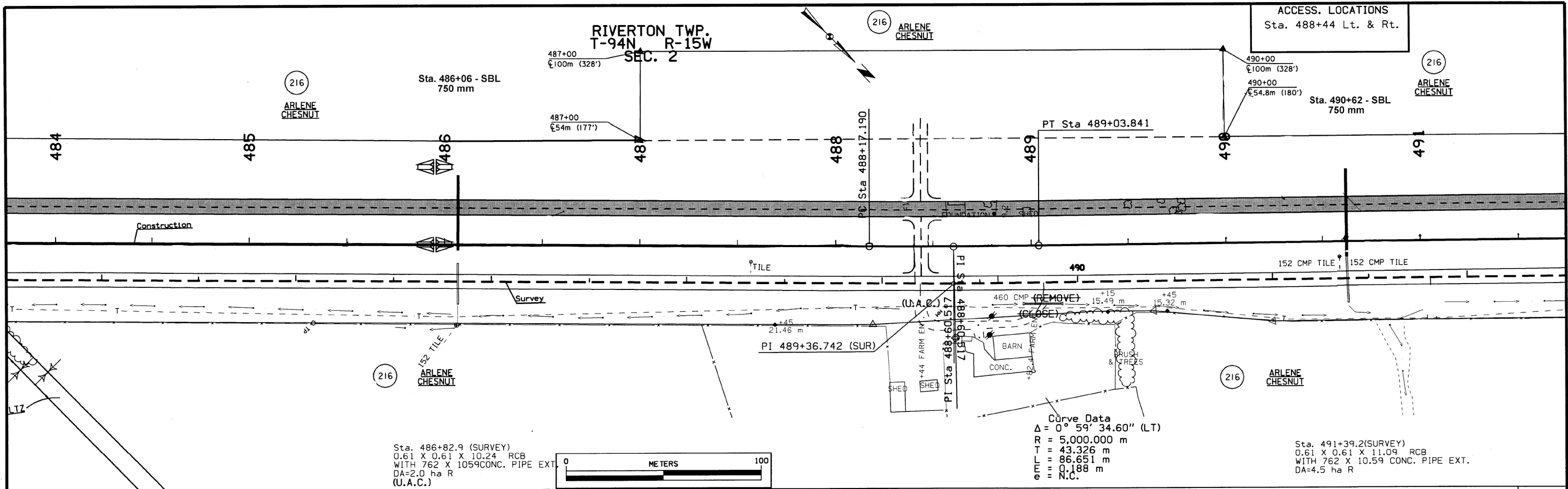


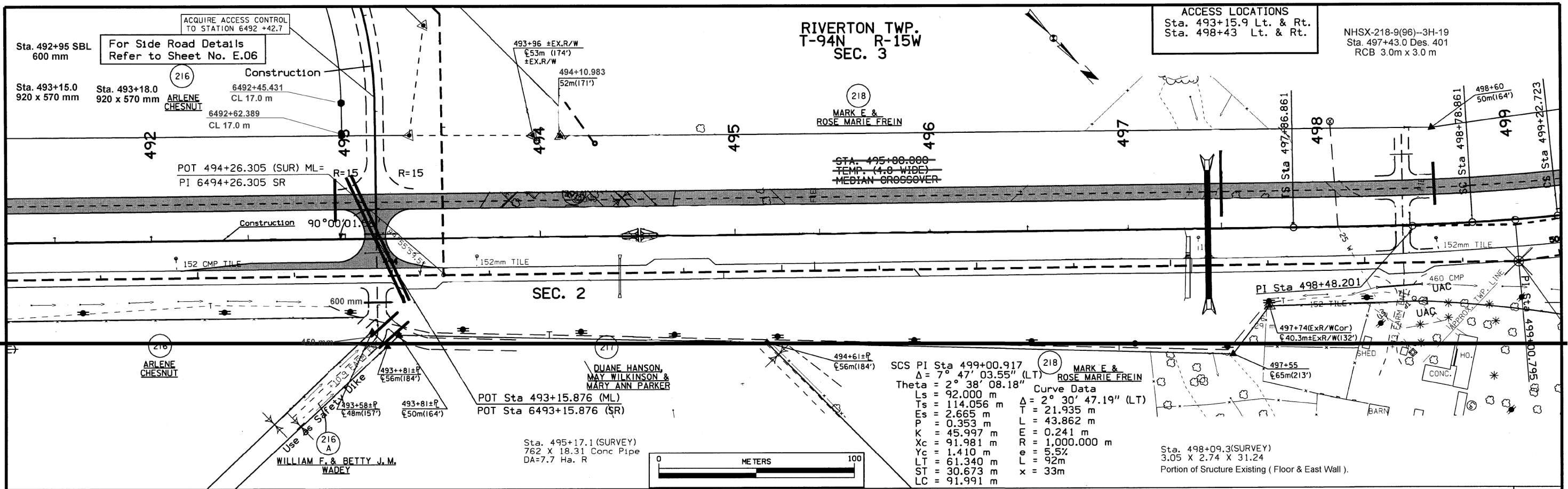


C	=	11,266	FILL + 30%	=	12,338
HARD ROCK (+10%)	=	6736	TO 495+80	=	1144
BW ROCK	=	222	ROCK WASTE	=	6958
FROM 434+20±	=	2216			20,440
		20,440			



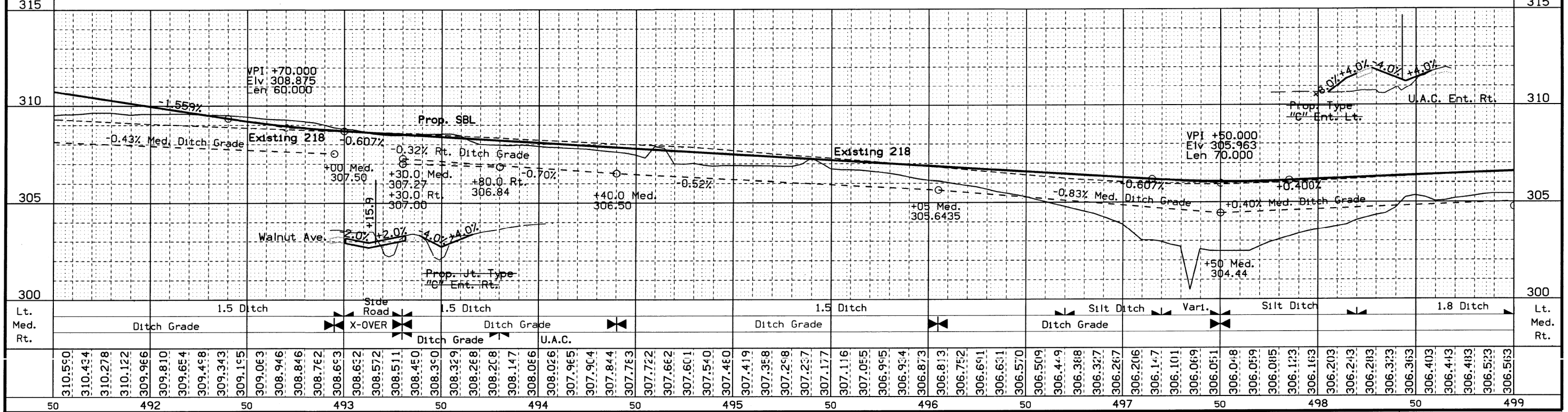


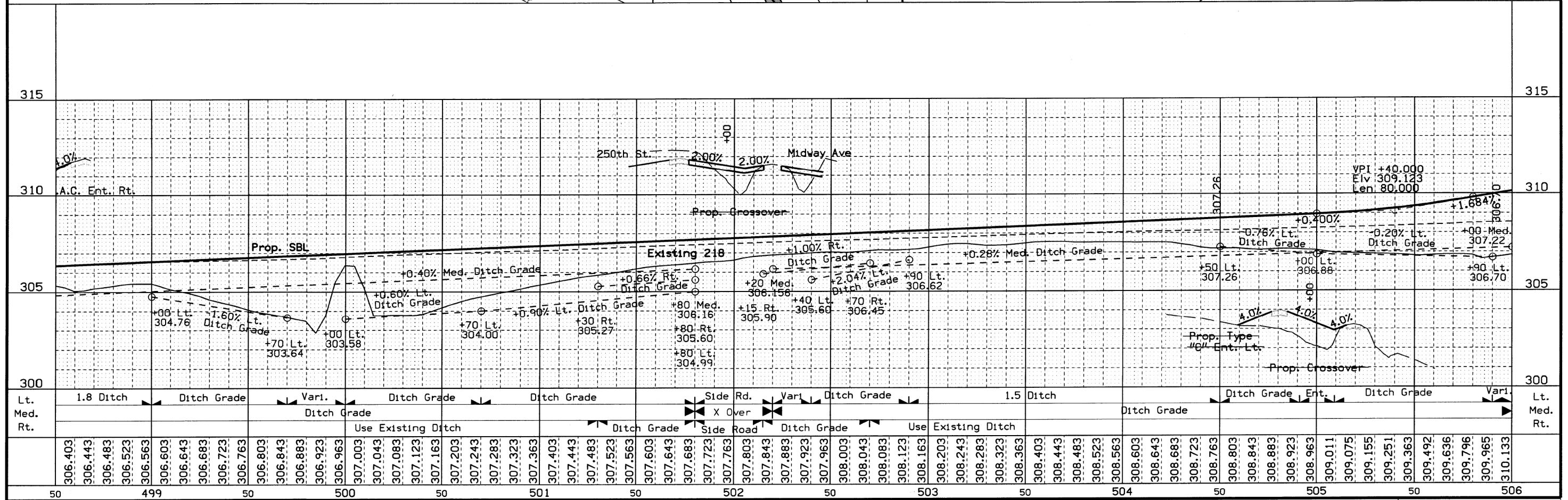
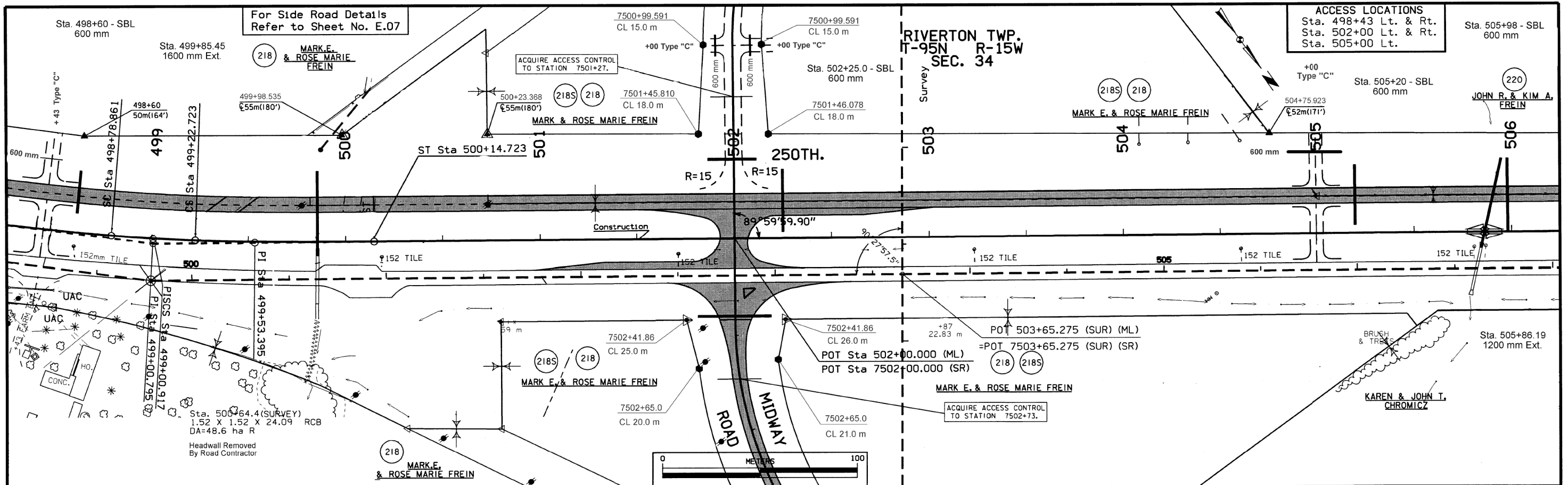




C = 0 F+30% = 1140
FROM 469+60+ = 1140
1140

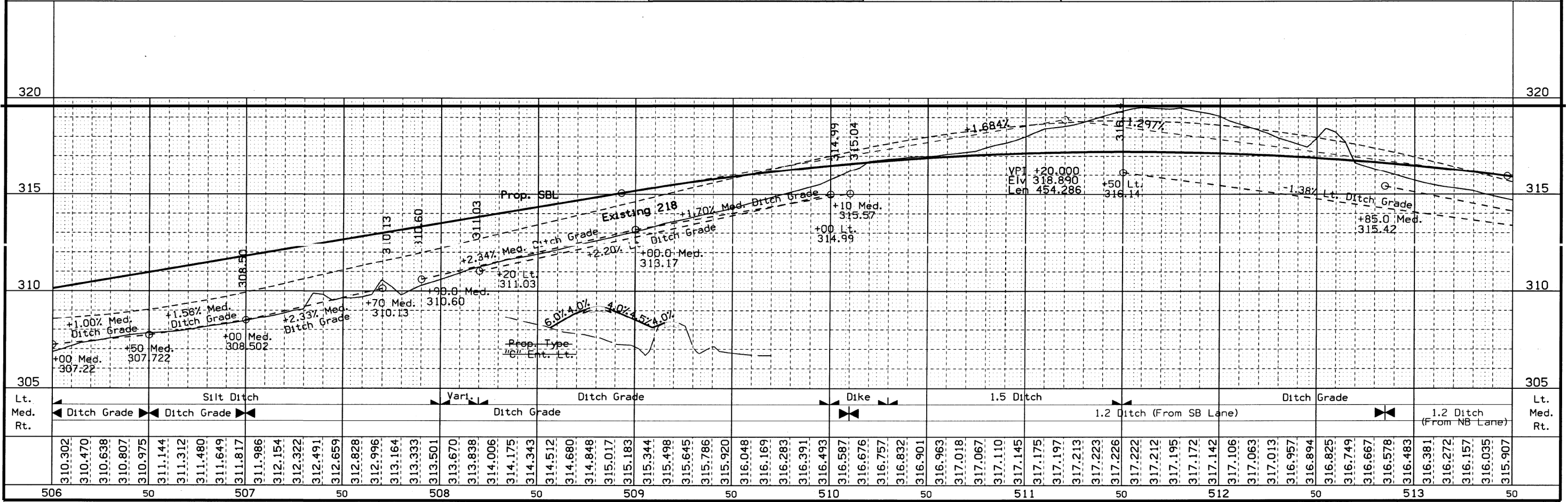
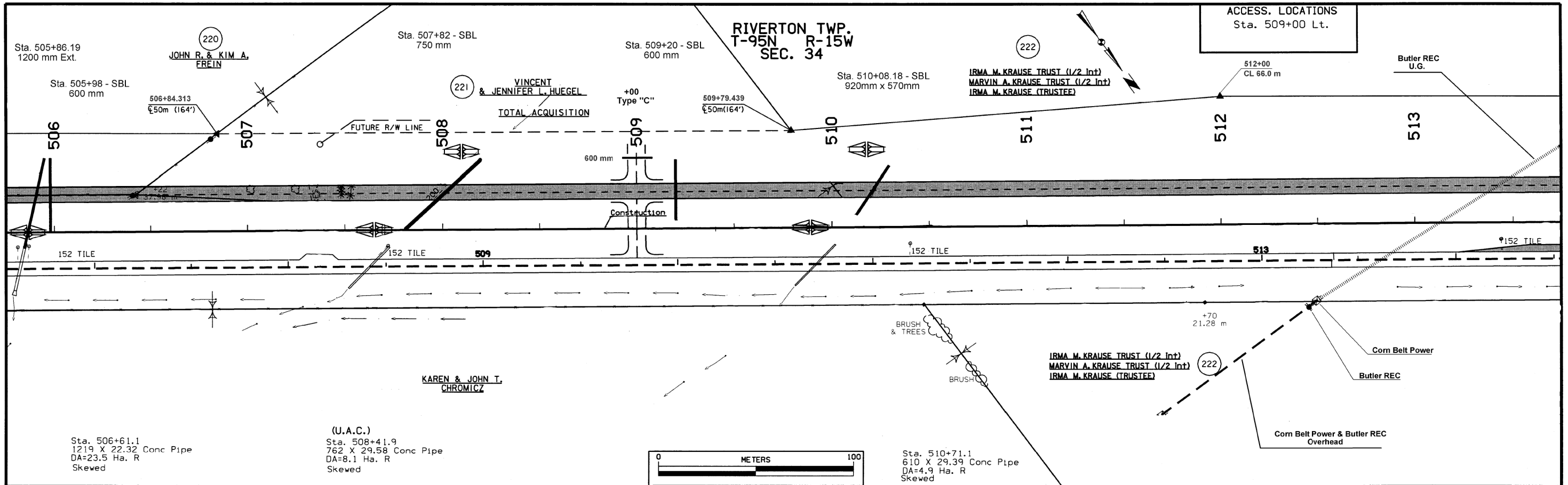
TEMP. MEDIAN X-OVER





RIVERTON TWP.
T-95N R-15W
SEC. 34

ACCESS. LOCATIONS
Sta. 509+00 Lt.



511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
No travel restrictions anticipated												

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Through traffic shall be maintained at all times.

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
NHSX-218-9(140)--3H-34	HMA Resurfacing w/ Milling

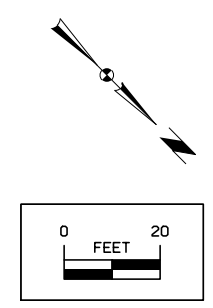


Median totals

- 275.7 Sq Yd of 1.5" Milling
- 22.8 Tons of 1.5" Surf. Course
- 22.8 Tons of 1.5" Interm. Course

Median paving will need to be coordinated with adjacent projects (140) and (141). Median crossovers not at side roads are granular and do not need paving.

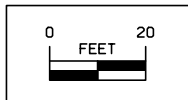
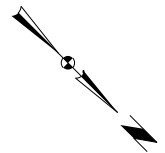
INTERSECTION RESURFACING DETAILS AT 270th ST.



Median totals

- 151.0 Sq Yd of 1.5" Milling
- 12.5 Tons of 1.5" Surf. Course
- 12.5 Tons of 1.5" Interm. Course

INTERSECTION RESURFACING DETAILS AT ACCESS TO OLD HIGHWAY



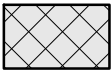
Median totals
 265.1 Sq Yd of 1.5" Milling
 21.9 Tons of 1.5" Surf. Course
 21.9 Tons of 1.5" Intern. Course



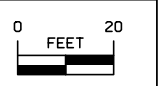
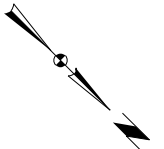
INTERSECTION RESURFACING DETAILS AT 260TH ST.



Median totals


 228.3 Sq Yd of 1.5" Milling
 18.9 Tons of 1.5" Surf. Course
 18.9 Tons of 1.5" Intern. Course

INTERSECTION RESURFACING DETAILS AT WALNUT AVE.



Median totals

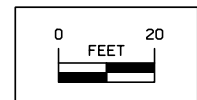
- 261.4 Sq Yd of 1.5" Milling
- 21.6 Tons of 1.5" Surf. Course
- 21.6 Tons of 1.5" Interm. Course

INTERSECTION RESURFACING DETAILS AT 250TH & MIDWAY RD.

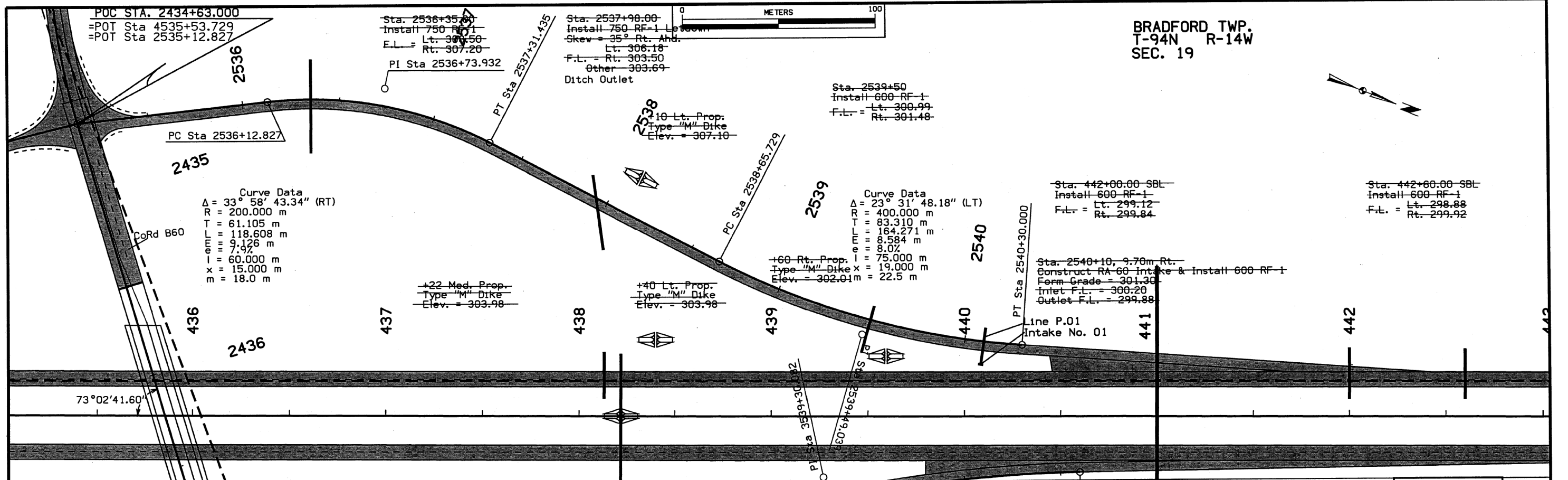


Median totals

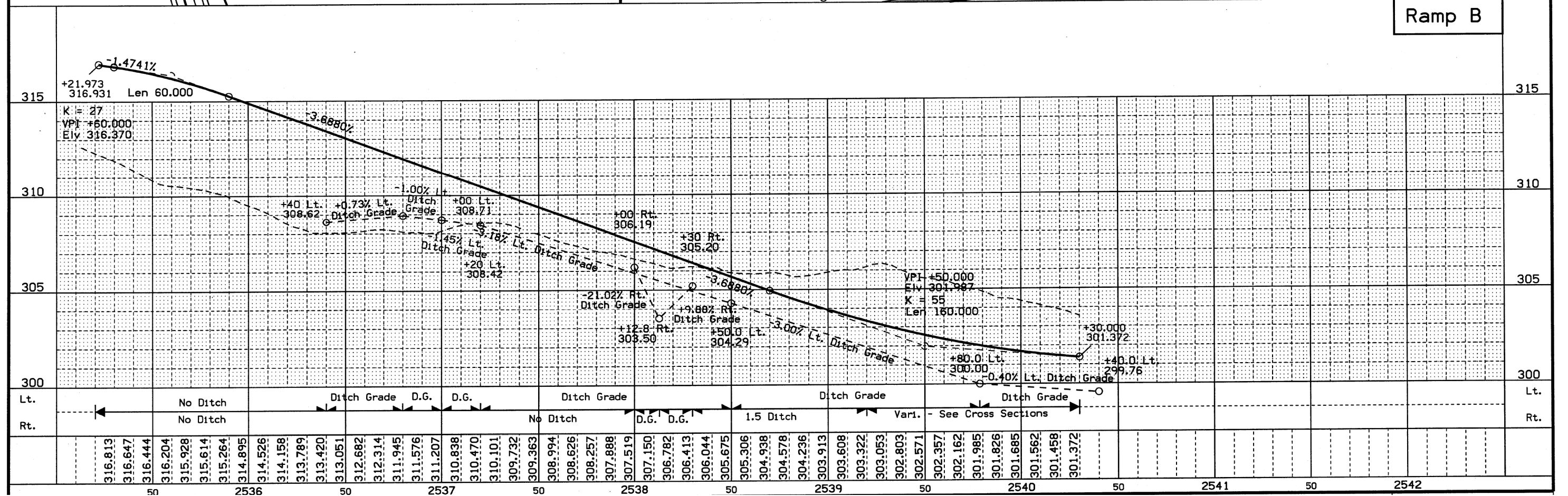
191.3 Sq Yd of 1.5" Milling
 15.8 Tons of 1.5" Surf. Course
 15.8 Tons of 1.5" Intern. Course



INTERSECTION RESURFACING DETAILS AT VICTORY AVE.

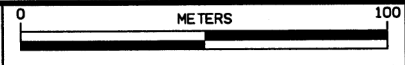


Ramp B



RAMP B - FOR INFORMATION ONLY

BRADFORD TWP.
T-94N R-14W
SEC. 19



Sta. 430+00.00 SBL
Install 600 RF LLETDOWN
Lt. 300.38
Rt. 302.49
Other 300.60

Curve Data
Δ = 13° 03' 58.38" (LT)
R = 700.000 m
T = 80.165 m
M = 159.634 m
e = 4.575 m
X = 65.000 m
m = 19.5 m

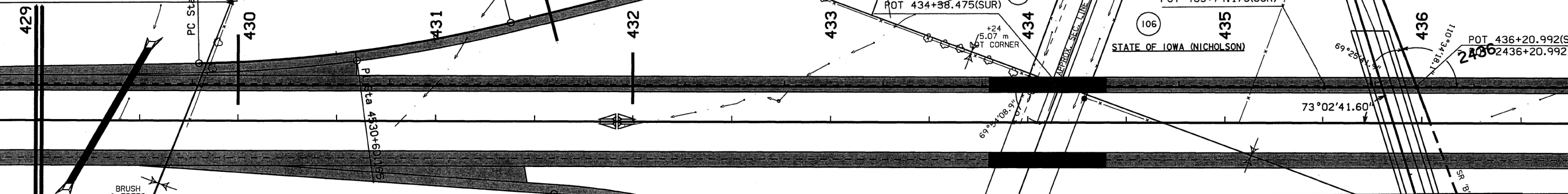
Sta. 4531+60.00
Install 1300 X 975 RF-41
Lt. 302.48
Rt. 302.60

McGREGOR FAMILY LIMITED PARTNERSHIP

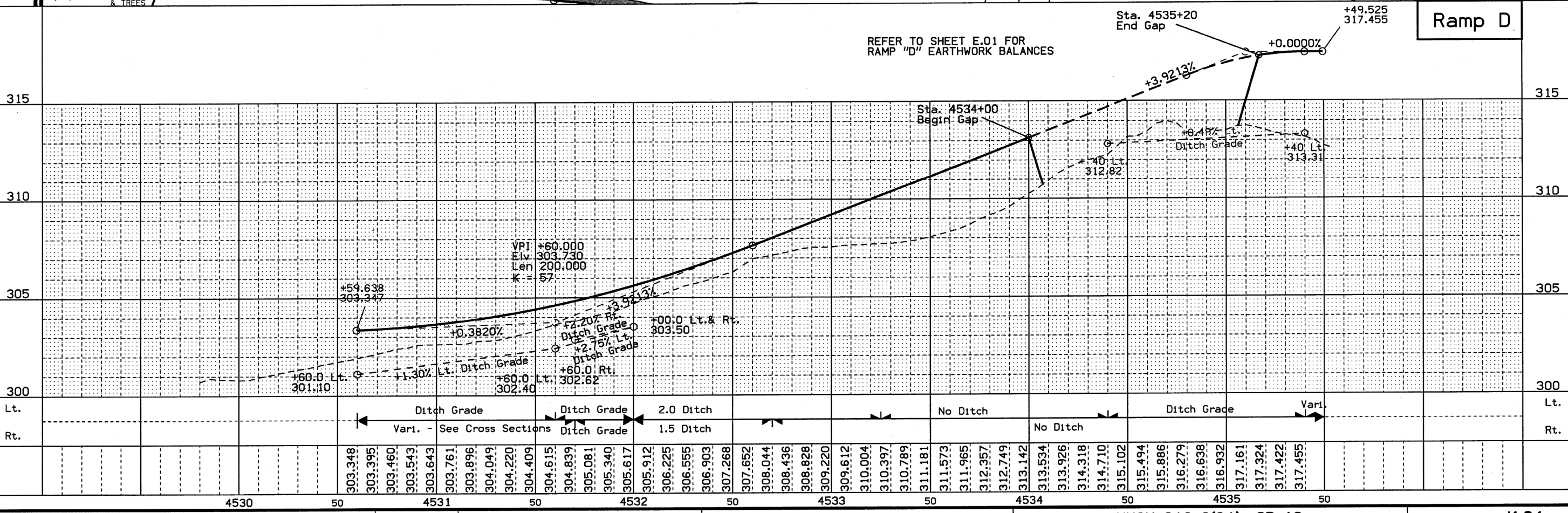
BRADFORD TWP.
T-94N R-14W
SEC. 19

POC STA. 2434+63.000
=POT Sta 4535+53.729
=POT Sta 2535+12.827

Curve Data
Δ = 33° 58' 43.34" (RT)
R = 200.000 m
T = 61.105 m
M = 118.808 m
e = 7.37 m
X = 60.000 m
m = 18.0 m



REFER TO SHEET E.01 FOR
RAMP "D" EARTHWORK BALANCES



RAMP D - FOR INFORMATION ONLY

CIRCULAR CURVE DATA

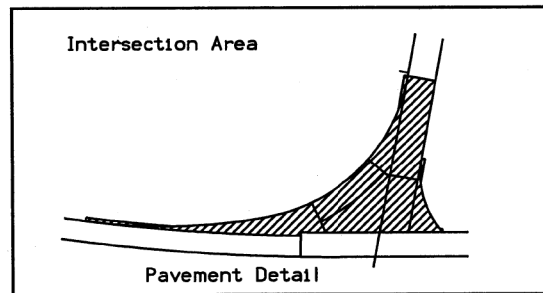
101-10C
09-27-94

NO.	Δ	R	T	L	E
1	38°01'16.70"	350	120.587	232.259	20.191
2		0.6			
3-4	52°18'04.76"	15	7.365	13.693	1.711
5-6	17°41'03.97"	100	15.556	30.865	1.203
6-7	70°10'18.45"	30	21.073	36.742	6.662
8-9	27°09'17.51"	70	16.906	33.176	2.013
10-11	11°26'29.25"	100	10.018	19.969	0.500
11-12	76°12'26.70"	30	23.526	39.902	8.125

INTERSECTION PAVING REQUIREMENTS

101-12
09-27-94

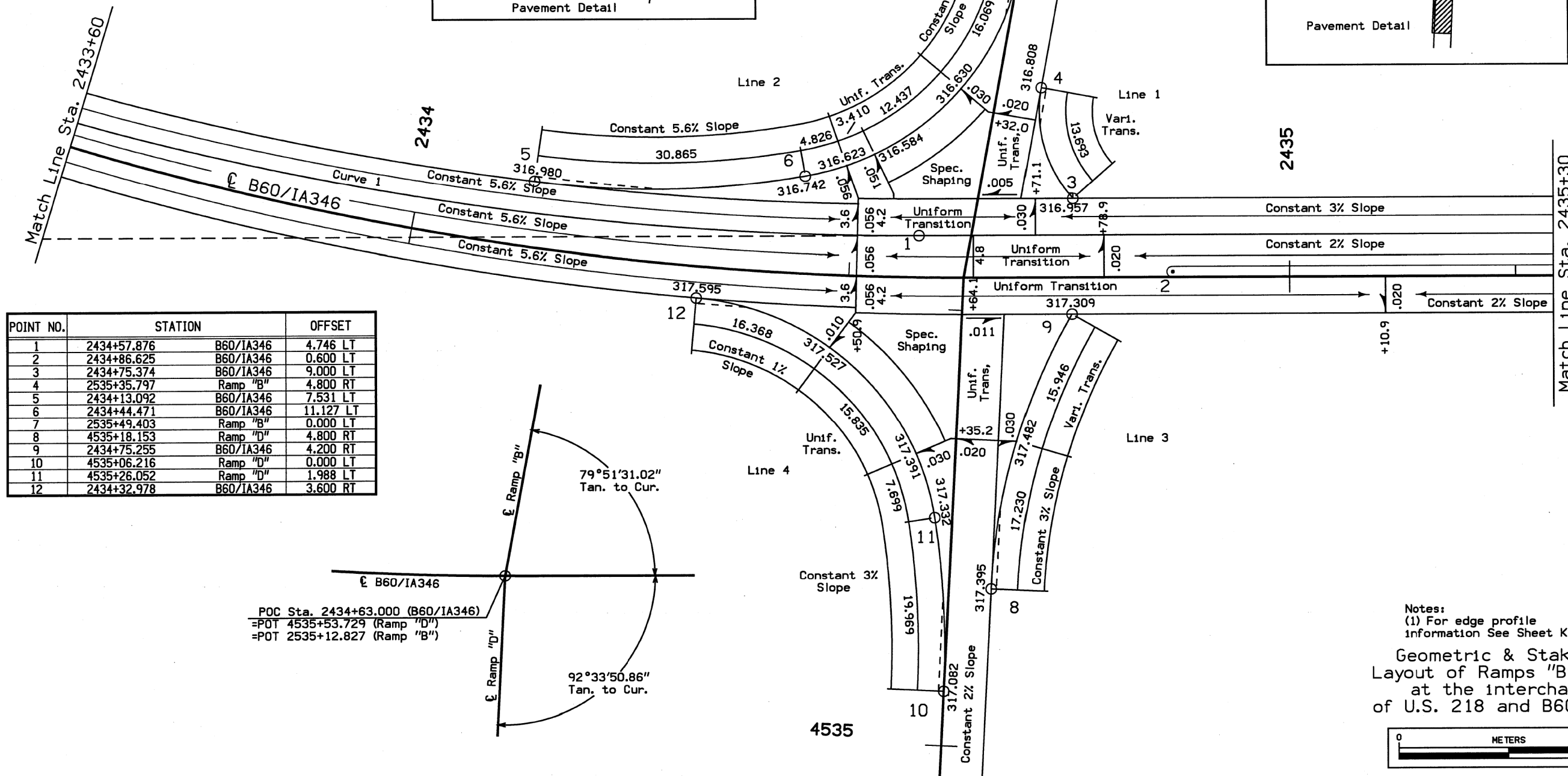
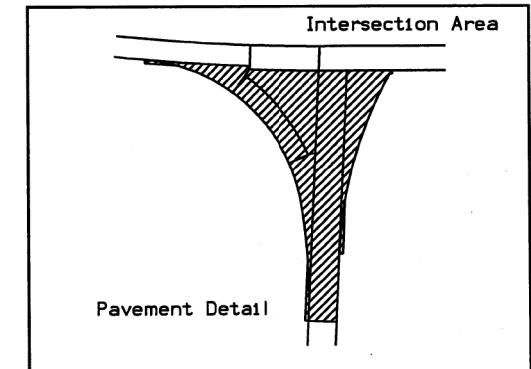
TYPE	UNIT	AMOUNT	DESCRIPTION
Pavement	m ²	364	See Detail:
Island	m ²		From B60/IA346 E.O.S.
Curb	m		to Sta. 2534+49.403



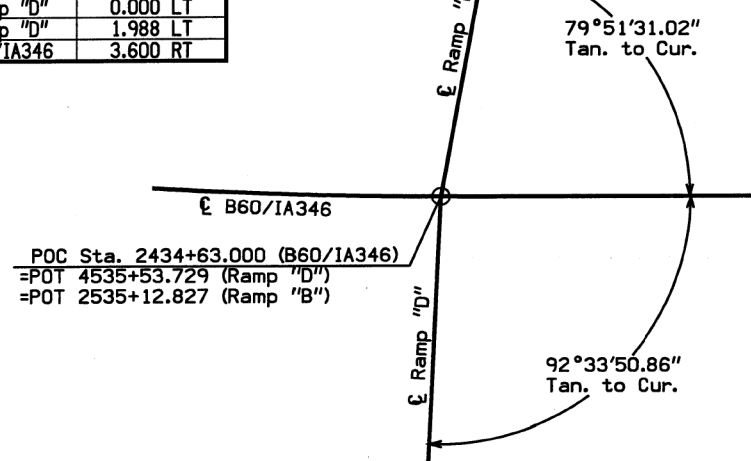
INTERSECTION PAVING REQUIREMENTS

101-12
09-27-94

TYPE	UNIT	AMOUNT	DESCRIPTION
Pavement	m ²	521	See Detail:
Island	m ²		From B60/IA346 E.O.S.
Curb	m		to Sta. 4535+06.216



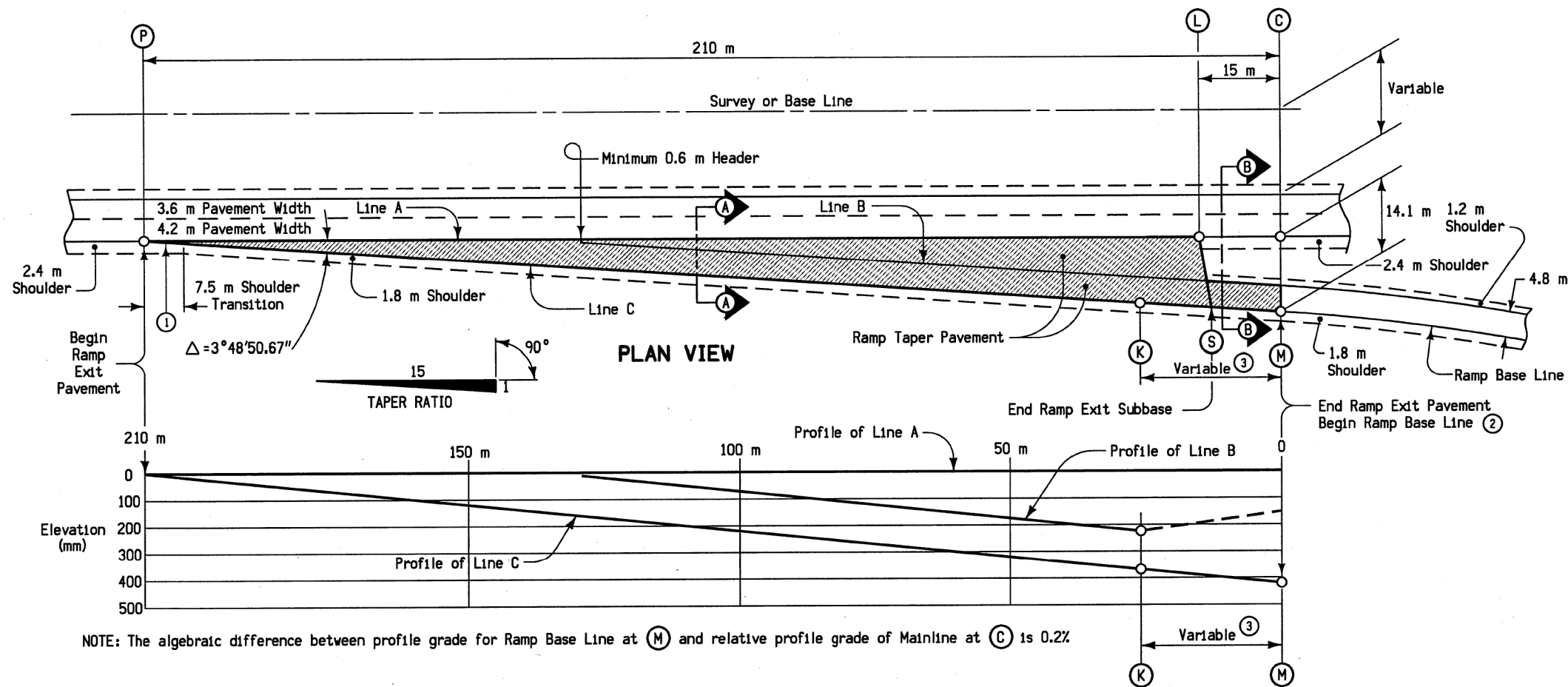
POINT NO.	STATION	OFFSET
1	2434+57.876	B60/IA346 4.746 LT
2	2434+86.625	B60/IA346 0.600 LT
3	2434+75.374	B60/IA346 9.000 LT
4	2535+35.797	Ramp "B" 4.800 RT
5	2434+13.092	B60/IA346 7.531 LT
6	2434+44.471	B60/IA346 11.127 LT
7	2535+49.403	Ramp "B" 0.000 LT
8	4535+18.153	Ramp "D" 4.800 RT
9	2434+75.255	B60/IA346 4.200 RT
10	4535+06.216	Ramp "D" 0.000 LT
11	4535+26.052	Ramp "D" 1.988 LT
12	2434+32.978	B60/IA346 3.600 RT



Notes:
(1) For edge profile information See Sheet K.10
Geometric & Staking Layout of Ramps "B" & "D" at the interchange of U.S. 218 and B60/IA346



CO RD B60 INTERSECTION - FOR INFORMATION ONLY



NOTE: The algebraic difference between profile grade for Ramp Base Line at (M) and relative profile grade of Mainline at (C) is 0.2%

PROFILE

TABLE OF OFFSETS AND DROPS FOR 4.8 m RAMP TAPER																						
Distance (m) From Point C Along Line A	210	200	190	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
Offset (m) From Line A To Line C	0.100	0.767	1.433	2.100	2.767	3.433	4.100	4.767	5.433	6.100	6.767	7.433	8.100	8.767	9.433	10.100	10.767	11.433	12.100	12.767	13.433	14.100
Drop (mm) From Line A To Line C	3	23	43	63	83	103	123	143	162	182	202	222	242	262	282	302	322	342	362	382	402	422

NOTE: The elevations at edge of taper from BEGIN TAPER to POINT (M) are established by a constant 2.99% slope across the appropriate taper widths based on the Taper Ratio of 15:1, Drop = (0.0299) x (Offset).

GENERAL NOTES:

This detail sheet shows ramp alignment and grade data for the ramp exit pavement.

Materials and methods of construction shall be in accordance with current Standard and Supplemental Specifications.

Ramp exit pavement shall be the same thickness as the mainline pavement. Ramp exit subbase for both A.C.C. and P.C.C. pavement shall be the same thickness as the mainline subbase.

Ramp exit pavement area shown by shaded area is 1365 square meters.

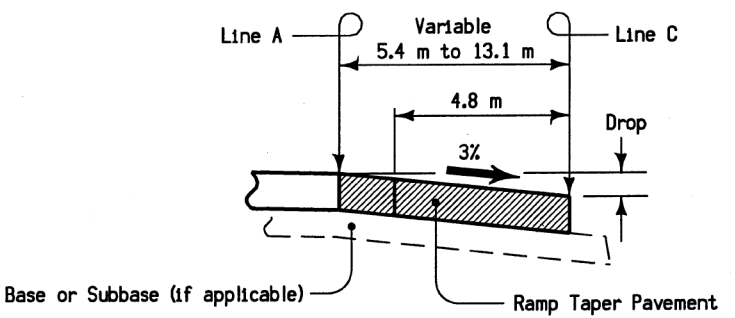
In order to assure proper drainage, any special shaping of exit area between lines A and B shall be accomplished by methods approved by the Engineer.

Refer to typical cross sections and appropriate Standard Road Plans for design details and requirements for shoulders.

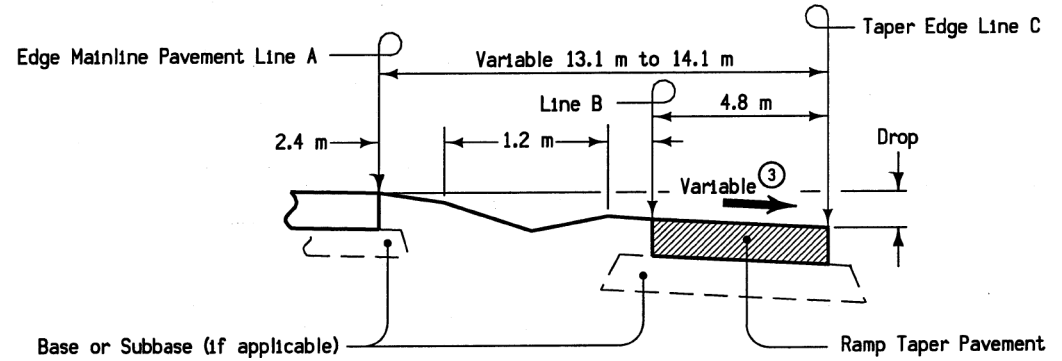
- ① For header construction details at the beginning of taper, refer to Typical 7102.
- ② Refer to detail project plans for ramp alignment and grade data.
- ③ The ramp pavement cross slope is determined by superelevation rotated about line C. Refer to Standard Road Plan RP-3 and detail project plans for superelevation transition requirements.

FOR LOCATION EQUIVALENT STATIONS
SEE TABULATION 101-15

All dimensions given in millimeters unless noted.



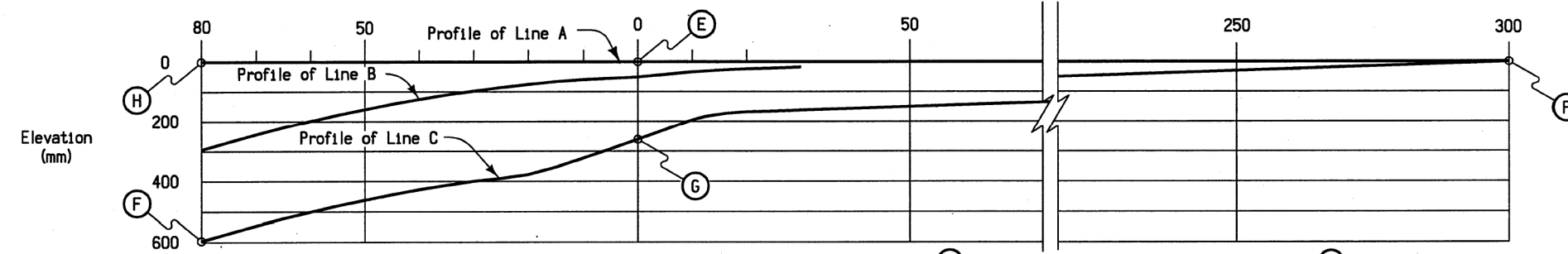
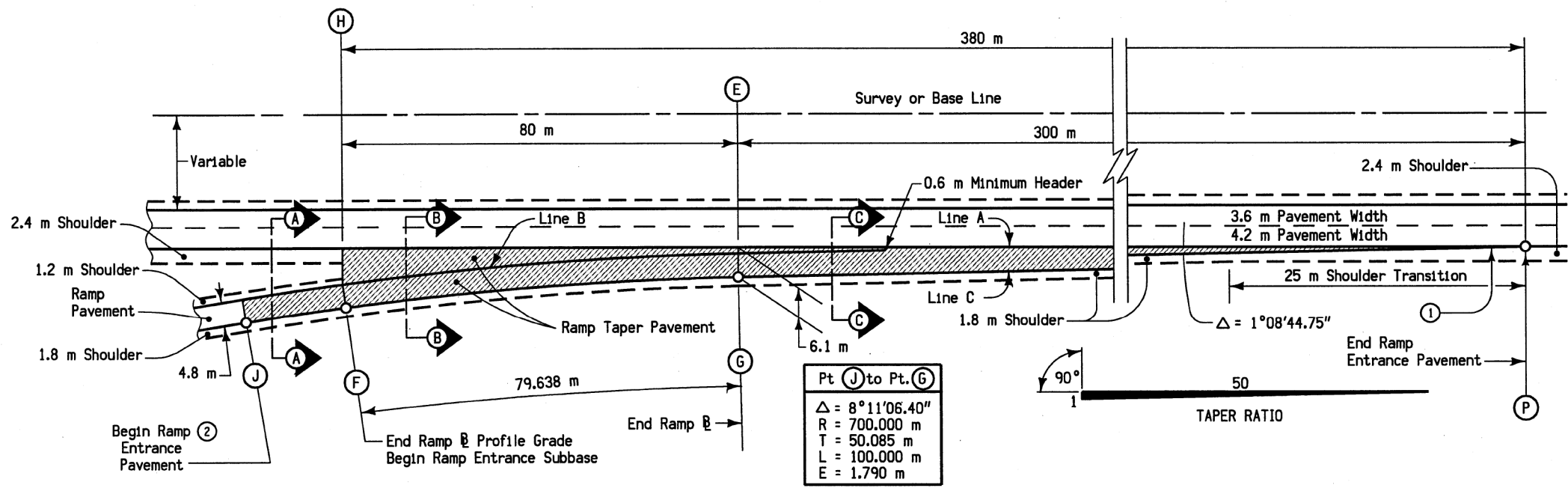
SECTION A-A



SECTION B-B

DECELERATION TAPER FOR 4.8 m EXIT RAMP

DECELERATION TAPER - FOR INFORMATION ONLY



NOTE: The algebraic difference between profile grade for Ramp Base Line at (F) and relative profile grade of Mainline at (H) is 0.54%.

PROFILE

		TABLE OF OFFSETS AND DROPS FOR 4.8 m RAMP TAPER																
		Distance From Point (E) Along Line A (m)									Distance From Point (G) Along Line C (m)							
		80	70	60	50	40	30	20	10	0	10	20	50	100	150	200	250	300
From Line A To Line B	Offset (m)	7.456	6.183	5.055	4.071	3.231	2.535	1.980	1.569	1.300								
	Slope (%)	3.97	3.97	3.96	3.96	3.92	3.92	3.89	3.89	3.85								
	Drop (mm)	296	245	200	161	127	99	77	61	50								
From Line B To Line C	Offset (m)	← Constant 4.8 m Offset →																
	Slope (%)	6.30	6.30	6.30	6.30	6.30	6.30	6.30	5.46	4.41								
	Drop (mm)	302	302	302	302	302	302	302	262	212								
From Line A To Line C	Offset (m)										5.900	5.700	5.100	4.100	3.100	2.100	1.100	0.100
	Slope (%)										3.34	← Constant 2.98% →						
	Drop (mm)	598	547	502	463	429	401	379	323	262	197	170	152	122	92	63	33	3
Distance From Point (G) Along Line C (m)		79.638	69.626	59.631	49.651	39.684	29.728	19.780	9.840	0.000								

GENERAL NOTES:

This detail sheet shows ramp alignment and grade data for the ramp entrance pavement.

Materials and methods of construction shall be in accordance with current Standard and Supplemental Specifications.

Ramp entrance pavement shall be the same thickness as the mainline pavement. Ramp entrance subbase for both A.C.C. and P.C.C. pavement shall be the same thickness as the mainline subbase.

Ramp entrance pavement area shown by shaded area is 1700 square meters.

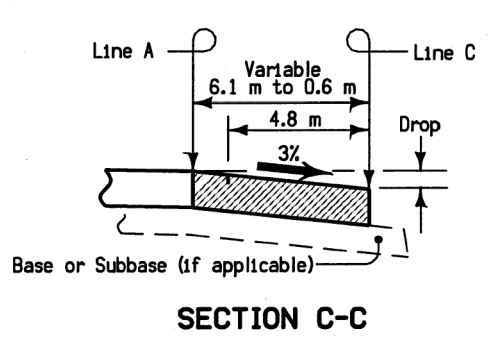
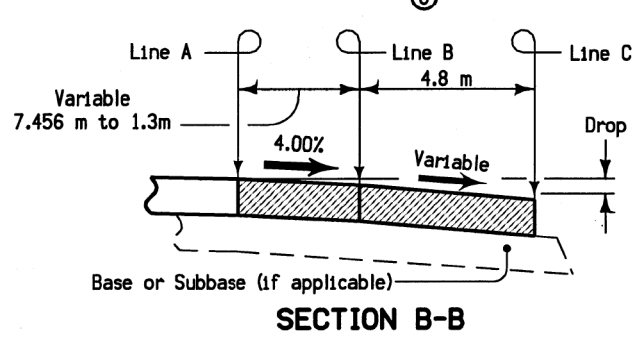
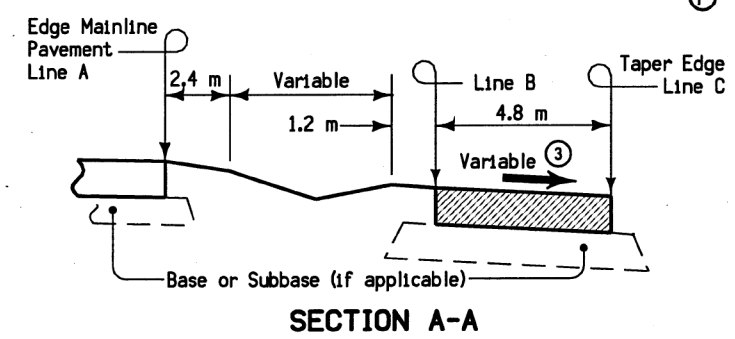
In order to assure proper drainage, any special shaping of entrance area between lines A and B shall be accomplished by methods approved by the Engineer.

Refer to typical cross sections and appropriate Standard Road Plans for design details and requirements for shoulders.

- ① For header construction details at the beginning of taper, refer to Typical 7102.
- ② Refer to detail project plans for ramp alignment and grade data.
- ③ The ramp pavement cross slope between point (J) and point (F) is determined by superelevation rotated about line "C". Refer to Standard Road Plan RP-3 and detail project plans for superelevation transition requirements.

FOR LOCATION EQUIVALENT STATIONS
SEE TABULATION 101-15

All dimensions given in millimeters unless noted.



**ACCELERATION TAPER
FOR 4.8 m ENTRANCE RAMP
(e max. = 8%)**

ACCELERATION TAPER - FOR INFORMATION ONLY