Brent Rauhut Engineering Inc.

Folx / TN SPS-6

19 March 1997

Mr Aramis Lopez
Pavement Performance Division - LTPP
Federal Highway Administration
Turner-Fairbanks Highway Research Center
6300 Georgetown Pike, Room F-215
McLean, Virginia 22101

Subject Final Report - Construction of SPS-6 Project (4706) on I-4 Westbound in Madison County, Tennessee

Dear Aramis,

Enclosed is the Final Report for the Specific Pavement Studies (SPS-6) project on I-40 Westbound in Madison County, Tennessee This report documents the construction of the test sections at this location, as well as monitoring of the project to date

Please feel free to contact me should you have any questions or comments regarding any of the information included in this report

Sincerely,

Mark P Gardner, P E
Project Engineer, SRCO

MPG dmj

Enclosure As stated

c w/Enc Harris Scott, TNDOT
Steve Allen, TNDOT (2 copies)

8240 Mopac, Suite 220 • Austin, Texas 78759 • (512) 346-0870 • FAX (512) 346-8750

FINAL REPORT

SPS-6 PROJECT 4706: REHABILITATION OF JOINTED PORTLAND CEMENT CONCRETE PAVEMENTS I-40, WESTBOUND MADISON COUNTY, TENNESSEE

FHWA/LTPP

SOUTHERN REGION COORDINATION OFFICE

March 1997

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FINAL REPORT - SPS-6 PROJECT 4706

REHABILITATION OF JOINTED PORTLAND CEMENT CONCRETE PAVEMENTS I-40, WESTBOUND MADISON COUNTY, TENNESSEE

INTRODUCTION

In 1987, Congress authorized funding for the Strategic Highway Research Program (SHRP) SHRP's purpose was to conduct focused research in the areas of asphalt, concrete, pavement performance, structures, and highway operations In 1992, funding for SHRP ended An extension of SHRP, the Long Term Pavement Performance (LTPP) program continued to be funded through the Intermodal Surface Transportation Efficiency Act (ISTEA) Operation of the LTPP program was transferred to the Federal Highway Administration (FHWA) in June of 1992

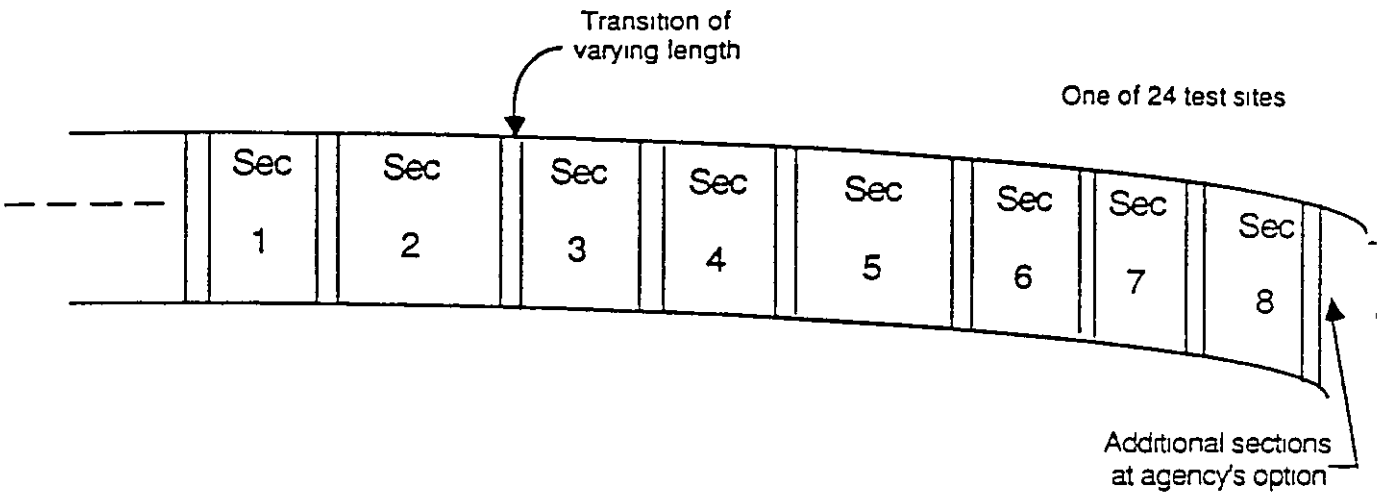
As part of the LTPP studies, sections of highway are being selected for Specific Pavement Studies (SPS) SPS sites have been incorporated into new and rehabilitation projects throughout the nation This report signifies the inclusion and construction of an SPS-6 site located on I-40 in Madison County, Tennessee

SPS-6 General Experiment Design

The SPS-6 experiment was designed to help highway agencies determine the best way to treat existing jointed concrete pavements Agencies today must determine which rehabilitation procedures work best under which circumstances, and the most appropriate time to apply such rehabilitation treatments Since the existing pavements have various levels of deterioration, one must carefully consider all the possible rehabilitation treatments and, at the same time, keep in mind the limited funding for such projects Therefore, the objective of the SPS-6 is to improve the performance prediction capabilities for jointed plain concrete (JPC) and jointed reinforced concrete (JRC) pavement by determining the additional pavement life that can be expected from the application of a variety of rehabilitation methods

Methods for restoration of concrete pavements vary in extent Examples of such methods include diamond grinding, subsealing, full-depth repair, partial-depth spall repair, restoration of load transfer, resealing of transverse joints, resealing of longitudinal lane/shoulder joints, pressure relief joints, retrofit tied PCC concrete shoulders, and longitudinal subdrains Asphalt concrete overlays may also be applied if necessary Figure 1 demonstrates a typical SPS-6 layout As can be seen in figure 1, the highway agency is encouraged to include extra test sections within the SPS-6 project to evaluate local practices and/or other innovative features

In addition to monitoring rehabilitation methods, other site related factors are recorded for future data analysis Such data includes environmental (climatic) factors, existing pavement condition and type of pavement, subgrade soil, traffic volume and traffic load Table 1 depicts this information in tabular form



SPS-6 SECTION	JC PAVEMENT PREPARATION	OTHER TREATMENTS	OVERLAY THICKNESS
1	Routine Maintenance		0
2	Minimum Restoration		0
3	Minimum Restoration		4-inch
4	Minimum Restoration	Saw and seal joints in AC	4-inch
5	Maximum Restoration (CPR)		0
6	Maximum Restoration (CPR)		4-inch
7	Crack/Break and Seat		4-inch
8	Crack/Break and Seat		8-inch

Figure 1 Illustrative Test Section Layout for SPS-6, Rehabilitation of Jointed Portland Cement Concrete Pavements

Table 1 Experimental Design for SPS-6,
Rehabilitation of Jointed Portland Cement Concrete Pavements

Rehabilitation Procedures	Factors for Moisture, Temperature, Pavement Type, and Pavement Condition	WET FREEZE				WET, NO FREEZE				DRY FREEZE				DRY, NO FREEZE	
		JPCP		JRCP		JPCP		JRCP		JPCP		JRCP		JPCP	
		FAIR	POOR	FAIR	POOR	FAIR	POOR	FAIR	POOR	FAIR	POOR	FAIR	POOR	FAIR	POOR
PREPARATION	OVERLAY THICKNESS														
Routine Maintenance (Control)	0	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x
Minimum Restoration	0	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x
	4"	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x
	4" *	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x
Maximum Restoration (CPR)	0	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x
	4"	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x
Crack/Break and Seat	4"	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x
	8"	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	x	x	x	x

* with saw AC overlay joints above JCP joints and seal

Subgrade Soil Fine
Traffic >200 KESAL/Year

Each "x" designates a test section

Selection/Nomination of I-40, Westbound

This project was first offered for consideration by the State of Tennessee in July 1990 After reviewing the details provided by the state on this project, and preparation of a tentative layout of the test sections, the project was officially nominated in November 1990 and approved in December 1990 Appendix A contains the nomination forms which provide specific information on the project location, significant dates, traffic information and the state agency's structural pavement design for the SPS-6 project

PRECONSTRUCTION MONITORING

On 9 May 1991, Mark Gardner of the Southern Region Coordination Office (SRCO) met with Ken Arnold and David Donoho of the Tennessee Department of Transportation (Tennessee DOT) to discuss the layout of the SPS-6 project The meeting resulted in a revision of the test section layout Section 05 was repositioned after Section 02 to maintain a consistent layer thickness of Hot Mix Asphalt Concrete (HMAC) This resulted in a smoother ride due to the gradual transition of different HMAC thicknesses A second revision to the SPS-6 test section layout occurred 18 January 1992, when the SRCO learned that the Tennessee DOT Maintenance Division placed a "skin patch" on parts of I-40, including the SPS-6 Sections 04 and 08 The revision was simply a matter of swapping test Section 04 with Section 06 in order to meet the SPS-6 criteria

During the week of 24-28 April 1995, the SRCO's Falling Weight Deflectometer (FWD) conducted preconstruction testing on the SPS-6 test sections Joint Load Transfer Efficiency (LTE) tests were conducted on the existing concrete joints within Sections 05 and 06 The resulting LTE values were generally in the high 80s and low 90s, well above the threshold value of 70 percent Although there was a surface patch of asphalt concrete covering the first 330 feet of Section 06, the consistency of LTE values on the remaining tests did not indicate a need for joint load transfer restoration

The first official preconstruction meeting was held on 24 July 1995 in Jackson, Tennessee Present at the meeting were Mark Gardner of the SRCO, Bob Williams of the Tennessee DOT, and Corbin Hamil of the Dement Construction Company Dement Construction Co was the primary contractor for the construction of the SPS-6 project A second preconstruction meeting was held on 6 February 1996 During this meeting, it was conveyed that the profile measurement data would be collected sometime during mid-February 1996

On 11 March 1996, SRCO personnel observed preconstruction sampling and coring Test pits were dug in places where the concrete slab was completely removed and replaced, and subgrade samples were collected These samples were sent to Law Engineering in Atlanta, Georgia, to be tested Nuclear density and moisture readings were also taken for the subgrade layer The final preconstruction activities included a distress survey, rod and level readings, and coring (4-inch and 6-inch cores)

CONSTRUCTION MONITORING

Construction monitoring of the SPS-6 project commenced on 30 April 1996 Three note-worthy deviations occurred during the construction process First, the crack and seat process did not crack the concrete Only in places where slabs had been replaced did the concrete actually crack The second deviation occurred before the FWD was able to test on the crack and seat sections Prior to the FWD testing of the crack and seat sections, a chip seal was placed on the crack and seat sections However, the FWD operator did test on top of the chip seal Results from the FWD testing were acceptable The third deviation included a 0 25 inch "scratch course" placed prior to the surface layer This "scratch course" was made up of AC-20, sand and fines This layer was suppose to "help even up" the outside travel lane The final surface layer was placed on 13 May 1996

POSTCONSTRUCTION MONITORING

On 30 May 1996, the postconstruction coring of the HMAC sections was underway Fourteen days later, the saw and sealing operation was conducted on designated sections throughout the SPS-6 project The subcontractor for the saw and sealing operation was Harper Construction Company Also, rod and level measurements were collected at this time The results of the rod and level measurements were generated into layer thicknesses and can be viewed in graphical form These graphs are located in appendix B

Since the construction of the SPS-6, FWD and profile data has been collected and will continue to be collected annually until project expiration

SUMMARY

Having completed the construction and initial monitoring of the SPS-6 project, it appears that the test sections within the project will contribute significantly to the evaluation of the rehabilitation processes for existing jointed concrete pavements The test sections will continue to be monitored for surface distress, surface profile and structural capacity The results from the monitoring efforts will be compared against other similar projects throughout the country This comparison will ultimately result in an increased knowledge of which rehabilitation procedures work best for jointed concrete pavements

APPENDIX A

SITE NOMINATION FORMS
AND
OTHER PERTINENT CORRESPONDENCE

RECEIVED JAN 0 2 1991

STRATEGIC HIGHWAY RESEARCH PROGRAM

NATIONAL ACADEMY OF SCIENCES / NATIONAL RESEARCH COUNCIL
818 Connecticut Avenue, N.W., 4th Floor, Washington D.C 20006
SHRP Telecopier (202) 223-2875 Verification: (202) 334-3774

MEMORANDUM

DATE: December 31, 1990

TO: Homer Wheeler, Southern Region

FROM: Amir N. Hanna

SUBJECT: Nomination for an SPS-6 from Tennessee

We have completed the review of the nomination from Tennessee Department of Transportation for an SPS-6 site on I-40 (Tennessee DOT submission of July 3, 1990 and BRE's transmittal of November 27, 1990).

The proposed site meets the requirements for the SPS-6 experimental cell for jointed plain concrete pavements in the "wet-no freeze" environmental zone. Therefore, the test site is acceptable and will be included in the experiment unless discrepancies arise during site verification. Also, this approval stipulates the agreement of Tennessee DOT to conform to all design and participation requirements for the experiment.

Layout of the test section indicates a relatively short distance between some test sections. Therefore, careful planning of the field sampling and testing program is essential to avoid influence of the sampling activities on the performance of the test sections. It is advisable the test sections be constructed for a length equal to that of the monitoring length plus one hundreded feet to facilitate the field sampling activities. Please develop the sampling and testing plan for this test site with consideration to this issue and submit it to us for review prior to implementation.

Please inform Tennessee DOT staff of the acceptance of the proposed test site and proceed with coordination of related activities.

cc: N.F. Hawks
D. Donnelly
P-001B (S. Tayabji)

Brent Rauhut Engineering Inc.

November 27, 1990

Dr Amir Hanna
Strategic Highway Research Program
818 Connecticut Avenue, N W - 4th Floor
Washington, DC 20006

Subject. Nomination of an SPS-6 Project in Tennessee

Dear Amir,

This letter is provided to serve as a formal nomination of an SPS-6 project in Tennessee, to be located on Interstate Highway 40 in Madison County, TN. Enclosed please find copies of a July 3 letter from Ken Arnold nominating the section, Candidate Project Nomination and Information Forms, a Field Verification Form completed during my visit to the site on November 15, and a reduced copy of the plans for the project showing a tentative layout for the test sections. This project will be constructed in 1991, specific dates for construction have not been set.

I am submitting at this time because Ken Arnold was apprehensive about nomination of this project prior to our project verification activities Ken Arnold and I visited the project on November 15 and laid out tentative test section locations as shown on the plans (enclosed) We also removed seven 6" cores of the JPCP surface and augered to penetrate the subgrade The Field Verification Form provided documents the results of the coring

It should be noted that in exploring the subgrade, the materials encountered may not be classified as A-4, A-5, A-6 or A-7 soils when tested to determine gradation My field observation of the materials left me with the impression that the subgrade will generally be silty or clayey sand. There is sufficient fine-grained content to bind the sand together, such that it can be squeezed into a well-formed ball and retain its shape

Other than the consideration for subgrade as discussed above, this project appears to be an ideal candidate for SPS-6 Ken Arnold has since informed me that Tennessee is considering a supplemental section with this project. Ken has done a very thorough job of soliciting support for this project among the ranks of the TN-DOT

8240 Mopac Suite 220 • Austin Texas A 3 • (512) 346-0870 • FAX (512) 346 8750

Construction of this project will occur next summer (1991), if approved. I would be pleased to discuss this with you further, if you so desire. I appreciate your consideration in this matter.

Sincerely,

Mark P. Gardner, P.E.
Project Engineer, SRCO

Enclosures: As stated.

cc.w/Encl: Ken Arnold, TN-DOT
Homer Wheeler, SHRP RE-SRCO
Dr. Shiraz Tayabji, PCS/LAW

MPG:dmj

RECEIVED JUL 0 9 1990

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37243

July 3, 1990

Mr. Mark P. Gardner, P.E.
Brent Rauhut Engineering, Inc.
8240 Mopac, Suite 220
Austin, Texas 78759

Subject: SPS-6 "Rehabilitation of Portland Cement Concrete Pavements"

Dear Mark:

As per our recent conversation I am formally submitting the nomination of a site on Interstate Route 40 in Madison County, Tennessee for a SPS-6 project. In addition to the nomination form I am transmitting a portion of the grade and drain plans, and the paving plans for your review.

After SHRP has officially accepted this site we can schedule a field review to locate and mark the test sections.

If you have any questions regarding this transmittal, please contact me.

Sincerely,

Ken

Kenneth W. Arnold
SHRP Contact Engineer

KWA/bp

cc: Mr. E. R. Terrell
Mr. Clellon Loveall
Mr. Harris Scott

NOMINATION OF TEST SITES FOR
SPS-6, "REHABILITATION OF PORTLAND CEMENT CONCRETE PAVEMENTS"

Agency Tenn Dept. of Transportation

Name Kenneth W. Arnold

Title Civil Engineering Specialist

Phone (615) 741-1816

Our agency is proposing the following site* for experiment SPS-6 on rehabilitation of portland cement concrete pavements

Highway (Class and Number) I-40

District 4

Year Open 1964

Traffic for the Year 1989

AADT 24,610

Trucks. 39 %

Subgrade Type Fine

Traffic 1400 KESAL/Yr

Pavement Type Conc (Plain)

Dowels (Yes or No) Yes

Joint Spacing 25 ft

PCC Thickness 9 in

Base Type Soil-Cement

Base Thickness 6 in

*Rehabilitation is planned for 1991

Please return to:
Strategic Highway Research Program
SPS Site Nominations
818 Connecticut Avenue, N W
Washington, DC 20006

SHEET A SPS-6 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE TENNESSEE (47)

PROJECT LOCATION

ROUTE NUMBER 40

ROUTE SIGNING [✓] Interstate [ ] U S [ ] State [ ] County

Other _____

** PLAN/PROFILE ATTACHED

PROJECT LOCATION Start Milepost _____ End Milepost _____

Start Station 615+00 End Station 526+00

PROJECT LOCATION DESCRIPTION Potential Sections begin approx 18 mi west of the Madison/Henderson Co Line, and end approx. 47 mi east of US 70, in the Westbound Lanes

COUNTY Madison

HIGHWAY AGENCY DISTRICT NUMBER 4

SHRP ENVIRONMENTAL ZONE

[ ] WET FREEZE [✓] WET NO-FREEZE [ ] DRY FREEZE [ ] DRY NO-FREEZE

SIGNIFICANT DATES

LATEST DATE OF APPROVAL NOTIFICATION FROM SHRP Dec '90

CONTRACT LETTING DATE April '91 (Est)

ESTIMATED CONSTRUCTION START DATE June 91 (Est)

PROJECT DESCRIPTION

YEAR OPENED TO TRAFFIC 1964

NUMBER OF LANES (One Direction) 2

[✓] Divided [ ] Undivided

OUTSIDE LANE WIDTH (Feet) 12

OUTSIDE SHOULDER TYPE

[ ] Turf [ ] Granular [ ] Asphalt Concrete [✓] Surface Treatment

[ ] PCC [ ] Tied PCC [ ] Curb and Gutter Other _____

OUTSIDE SHOULDER WIDTH (Feet) 12

SUBSURFACE EDGE DRAINS [ ] Placed at initial construction [✓] Not Used

[ ] Retrofitted Retrofit Date _____

ASSESSMENT OF PRESENT PAVEMENT CONDITION [✓] Fair [ ] Poor

PREDOMINATE DISTRESSES

[ ] D Cracking [ ] Other Cracking [✓] Faulting [ ] Pumping [ ] Joint Failure

Comments _____

SHEET B. SPS-6 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE TENNESSEE (47)

PAVEMENT STRUCTURE DETAILS

PCC PAVEMENT TYPE [✓] Jointed Plain [ ] Jointed Reinforced

JOINT SPACING (Feet) 25 ft

JOINTS [✓] Perpendicular [ ] Skewed [✓] Doweled [ ] Other Load Transfer

PCC FLEXURAL STRENGTH (Psi) UNKNOWN

MODULUS OF SUBGRADE REACTION (k) UNKNOWN

PAVEMENT STRUCTURE LAYER DESCRIPTIONS

LAYER[1] NO	LAYER[2] DESCRIPTION CODE	MATERIAL TYPE[3] CLASS CODE	THICKNESS[4] (INCHES)
1	SUBGRADE (7)	5 3 * Mostly A-6, Some A 4 soils (Silt to Silty Clay)	
2	0 5	2 7	6 0
3	0 3	0 4	9 0
4			
5			
6			
7			
8			
9			

NOTES

1 Layer 1 is the natural occurring subgrade soil The existing surface will have the largest assigned layer number

2 Layer description codes

Overlay	01	Base Layer	05	Porous Friction Course	09
Seal Coat	02	Subbase Layer	06	Surface Treatment	10
Original Surface	03	Subgrade	07	Embankment (Fill)	11
Subsurface HMAC	04	Interlayer	08		

3 Refer to Tables 1 through 4 for material class codes

4 If subgrade depth to a rigid layer is known, enter this depth for subgrade, otherwise leave blank for subgrade layer

SHEET C. SPS-6 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE TENNESSEE (47)

TRAFFIC DATA

ANNUAL AVERAGE DAILY TRAFFIC (TWO DIRECTION)	24,610
% HEAVY TRUCKS AND COMBINATIONS (OF AADT)	39 %
COUNT YEAR OF AADT ESTIMATE	1989
TRAFFIC GROWTH RATE SINCE PROJECT OPENED TO TRAFFIC (%/YR)	3 % / YR
18K ESAL RATE IN PROPOSED STUDY LANE (1,000 ESAL/YR)	1,400
YEAR OF ESAL RATE ESTIMATE	1989
ESTIMATED TOTAL 18K ESAL APPLICATIONS IN STUDY LANE[1]	

REHABILITATION INFORMATION[2]

PRIMARY CAUSE FOR REHABILITATION NO OTHER PLANNED REHAB WORK AT THIS TIME SPS-6 PROJECT WILL BE CONSTRUCTED ON ITS OWN

OVERLAY	Thickness (Inches)	Material Type Class Code
Surface Course		
Binder Course		

Saw and Seal above joints? [] Yes [] No

SURFACE PREPARATION PRIOR TO OVERLAY

[] Joint Sealing [] Crack Sealing [] Undersealing [] Crack & Seat

[] Patching [] Joint Replacement % Joints Replaced _____

Other _____

OTHER CONSTRUCTION ACTIVITIES TO BE PERFORMED DURING REHABILITATION

NOTES

1. Leave blank if estimate is not available

2 This information concerns the planned rehabilitation work to be performed by the agency on the non-experimental portions of the project

SHEET D SPS-6 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE TENNESSEE (47)

TEST SECTION LAYOUT

NUMBER OF TEST SECTIONS ENTIRELY ON FILL _____ CUT 8

SHORTEST TRANSITION BETWEEN CONSECUTIVE TEST SECTIONS (Feet) 100

COMMENTS ON DEVIATIONS FROM DESIRED SITE LOCATION CRITERIA Section 1 overlaps a cut/fill transition in first 150'±. Section 6 has a median drain at station 5.

Cut/fill considerations, underground pipes, and one overpass with on/off ramps limit selection ability. If proposed sections can't be used due to considerations in the field, project will be much more spread out

OTHER SHRP TEST SECTIONS

DOES PROJECT CONFORM TO GPS-3 OR GPS-4 PROJECT CRITERIA?	[✓] YES	[ ] NO
DOES AGENCY APPLIED TREATMENT QUALIFY FOR GPS-7B?	[ ] YES	[✓] NO
IS PROJECT SUITABLE FOR SPS-4 TEST SECTIONS?	[✓] YES	[ ] NO
IS AGENCY INTERESTED IN USE OF PROJECT AS SPS-4 SITE?	[ ] YES	[✓] NO
DISTANCE TO NEAREST GPS TEST SECTION ON SAME ROUTE (Miles)	None	
NEAREST GPS TEST SECTION NUMBER	472008	

SUPPLEMENTAL TEST SECTIONS

IF SUPPLEMENTAL EXPERIMENTAL TEST SECTIONS ARE PROPOSED, COMPLETE THE FOLLOWING

TOTAL NUMBER OF SUPPLEMENTAL TEST SECTIONS UNKNOWN

FACTORS TO BE INVESTIGATED Possibly, but not known at this time what will be investigated. Will evaluate once testing is done (site exploratory matls sampling, FWD, etc)

Table 1 Pavement surface material type classification codes

MATERIAL TYPE	CODE
Hot Mixed, Hot Laid, Asphalt Concrete, Dense graded	01
Hot Mixed, Hot Laid, Asphalt Concrete, Open Graded (Porous Friction Course)	02
Sand Asphalt	03
Jointed Plain Portland Cement Concrete	04
Jointed Reinforced Portland Cement Concrete	05
Continuously Reinforced Portland Cement Concrete	06
Prestressed Portland Cement Concrete	07
Fiber Reinforced Portland Cement Concrete	08
Plant Mix, Cold Laid, Emulsified Asphalt Material	09
Plant Mix, Cold Laid, Cutback Asphalt Material	10
Single Surface Treatment	11
Double Surface Treatment	12
Hot Recycled, Central Plant Mix, Asphalt Concrete	13
Central Plant Mix, Cold Laid, Recycled Asphalt Concrete	14
Mixed-in-place, Cold Laid, Recycled Asphalt Concrete	15
Heater Scarification/Recompaction, Recycled Asphalt Concrete	16
Jointed Plain Recycled Portland Cement Concrete	17
Jointed Reinforced Recycled Portland Cement Concrete	18
Other	20

Table 2 Base and subbase material type classification codes

MATERIAL TYPE	CODE
No Base (Pavement Directly on Subgrade)	21
Uncrushed Gravel	22
Crushed Stone, Gravel or Slag	23
Sand	24
Soil-Aggregate Mixture, Predominately Fine-Grained Soil	25
Soil-Aggregate Mixture, Predominately Coarse-Grained Soil	26
Soil Cement	27
BITUMINOUS BOUND BASE OR SUBBASE MATERIALS	
Dense Graded, Hot laid, Central Plant Mix	28
Dense Graded, Cold Laid, Central Plant Mix	29
Dense Graded, Cold Laid, Mixed-in-Place	30
Open Graded, Hot Laid, Central Plant Mix . .	31
Open Graded, Cold Laid, Central Plant Mix	32
Open Graded, Cold Laid, Mixed-in-place	33
Recycled Asphalt Concrete, Plant Mix, Hot Laid	34
Recycled Asphalt Concrete, Plant Mix, Cold Laid	35
Recycled Asphalt Concrete, Mixed-in-Place .	36
Sand Asphalt . .	46
Cement Aggregate Mixture	37
Lean Concrete (< 3 sacks/cy) .	38
Recycled Portland Cement Concrete	39
Sand-Shell Mixture	40
Limerock, Caliche (Soft Carbonate Rock)	41
Lime-Treated Subgrade Soil . .	42
Cement Treated Subgrade Soil	43
Pozzolanic-Aggregate Mixture .	44

Table 3 Subgrade soil description codes

MATERIAL TYPE	CODE
FINE-GRAINED SUBGRADE SOILS	
Clay (Liquid Limit > 50)	51
Sandy Clay	52
Silty Clay	53
Silt	54
Sandy Silt	55
Clayey Silt	56
COARSE-GRAINED SOILS	
Sand	57
Poorly Graded Sand	58
Silty Sand	59
Clayey Sand	60
Gravel	61
Poorly Graded Gravel	62
Clayey Gravel	63
Shale	64
Rock	65

Table 4 Material type classification codes for thin seals and interlayers

MATERIAL TYPE	CODE
Chip Seal Coat	71
Slurry Seal Coat	72
Fog Seal Coat	73
Woven Geotextile	74
Nonwoven Geotextile	75
Stress Absorbing Membrane Interlayer	77
Dense Graded Asphalt Concrete Interlayer	78
Aggregate Interlayer	79
Open Graded Asphalt Concrete Interlayer	80
Chip Seal with Modified Binder (Excluding Crumb Rubber)	81
Sand Seal	82
Asphalt Rubber Seal Coat (Stress Absorbing Membrane)	83
Sand Asphalt	84
Other	85

11/27/89

SPS
SECTION FIELD VERIFICATION FORM

Date 11/15/90

Rater MFG

State Project Code ___ ___ ___ ___
State Code 4 7
SHRP SPS ID 0 6
GPS ID N O N E

Project and Section Identification

~~State~~ Region 4 District No. ___ ___ County or Parish Madison

Route Signing (Numeric Code) 1
Interstate ..... 1 State 3
Primary ..... 2 Other 4
Route Number ___ ___ 4 0
Number of Through Lanes (One Direction) 2
Direction of Travel 2
Eastbound ..... 1 Northbound 3
Westbound ..... 2 Southbound 4

	Start Point	End Point
Test Section Milepoints	9 3 . 3	___ ___ ___ . ___ ___

Additional Site Locations*:

Site 1	615+00 - 610+00	Site 6	561+00 - 556+00
Site 2	609+00 - 599+00	Site 7	543+00 - 538+00
Site 3	592+00 - 587+00	Site 8	531+00 - 526+00
Site 4	586+00 - 581+00	Site 9	
Site 5	576+00 - 566+00	Site 10	

Additional Sites

* Include distances from GPS site.

Landmark Locations: Upstream 1400' West of Law Rd Overpass (SR 152)
Downstream 4.7 mi east of US 70 Overpass

Location of monument:

Geometric Information

Lane Width (Feet) 1 2 .

Shoulder Data:	Outside Shoulder	Inside Shoulder
Total Width (Feet)	1 2 .	1 0 .
Paved Width (Feet)	1 0 .	4 .
Surface Type		3

Turf ..... 1 Concrete 4
Granular ..... 2 Surface Treatment .. 5
Asphalt Concrete .. 3 Other 6

Additional Data for PCC Shoulders:

Average Joint Spacing (Feet)	N .	N .
Skewness of Joints (Feet)	. N	. N
Joints Match Pavement Joints? (Yes - 1; No - 2)	N	N

11/27/89

SECTION FIELD VERIFICATION FORM (CONTINUED)

State Code 4 7
SHRP SPS ID 0 6

Joint Information for JCP

Average Contraction Joint Spacing (Feet) 2 5 . 0
Average Intermediate Sawed Joint Spacing (Feet) (JRCP Only) . N
Skewness of Joints (Feet/Lane) . 0

	Thicknesses					Brief Material Description
	Hole 1	Hole 2	Hole 3	Hole 4	Hole 5	
	9.25"	9.0"	9.0"	9.0"	9.0"	JPCP
	6.0"±	9.0"	10.0"	6.0"	7.5"	Soil Cement (Cut Treated Subgrade)
	[illegible]	[illegible]	Subgrade	Subgrade	Sandy Clay	Reddish Brown Clayey Sand/Sandy Clay
	[illegible]	[illegible]	Sandy Clay	Sandy Clay		
*						
	609+50	586+50	576+30	563+50	543+50	Station Location

Notes:

	Thicknesses					Brief Material Description
	Hole 6	Hole 7	Hole 8	Hole 9	Hole 10	
	9.0"	9.0"				JPCP
	7.0"	5.0"				Soil Cement
Brown to Lt Gray Clayey Sand		[illegible]				Clayey Sand/Sandy Clay, Subgrade
*						
	532+00	525+50				Station Location

Notes:

* Use these blanks to indicate the presence of Cut or Fill at each site along with the depth in feet.

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INDEX OF SHEETS

SHEET NO. 1 TITLE PAGE
SHEET NO. 2 [illegible] TYPICAL CROSS SECTIONS ESTIMATED QUANTITIES AND [illegible] CONSTRUCTION DETAILS
SHEET NO. 3 [illegible] PROP LAYOUT PROFILES AND GRADES
SHEET NO. 22 METAL LONGITUDINAL JOINTS DWG. P-E-10
SHEET NO. 23 [illegible] DETAIL OF EXPANSION CONSTRUCTION & DUMMY JOINTS, DWG. P-E-3[illegible] (2 SHEETS)
SHEET NO. 25 STD. PLAIN SAWED GROOVE JOINTS FOR CONC. PAVEMENT, DWG. P-E-31
SHEET NO. 26 STD. METAL KEEP BEAM GUARDRAIL, DWG. RD-R-3[illegible]
SHEET NO. 27 SUPERELEVATIONS DETAILS DWG. [illegible]
SHEET NO. 28 [illegible] CONSTRUCTION IDENTIFICATION SIGNS, DWG. NO. [illegible] (3 SHEETS)

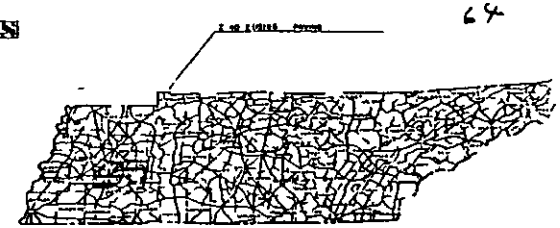
SHEET NOS. 3 [illegible] FILED UNDER E. [illegible] IN FILE NO. [illegible]
SEE NOTE ON SHEET NO. 2[illegible] REGARDING THESE SHEETS.

STATE OF TENNESSEE

DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

FEDERAL AID PROJECT NO. E 40 [illegible] PAVING



MADISON - HENDERSON CO'S

1,000'S EAST OF STATE ROUTE NO. 1
TO 1,700'S EAST OF MADISON HENDERSON CO. LINE

INTERSTATE HIGHWAY NO. 40 F.A.H.S. NO.

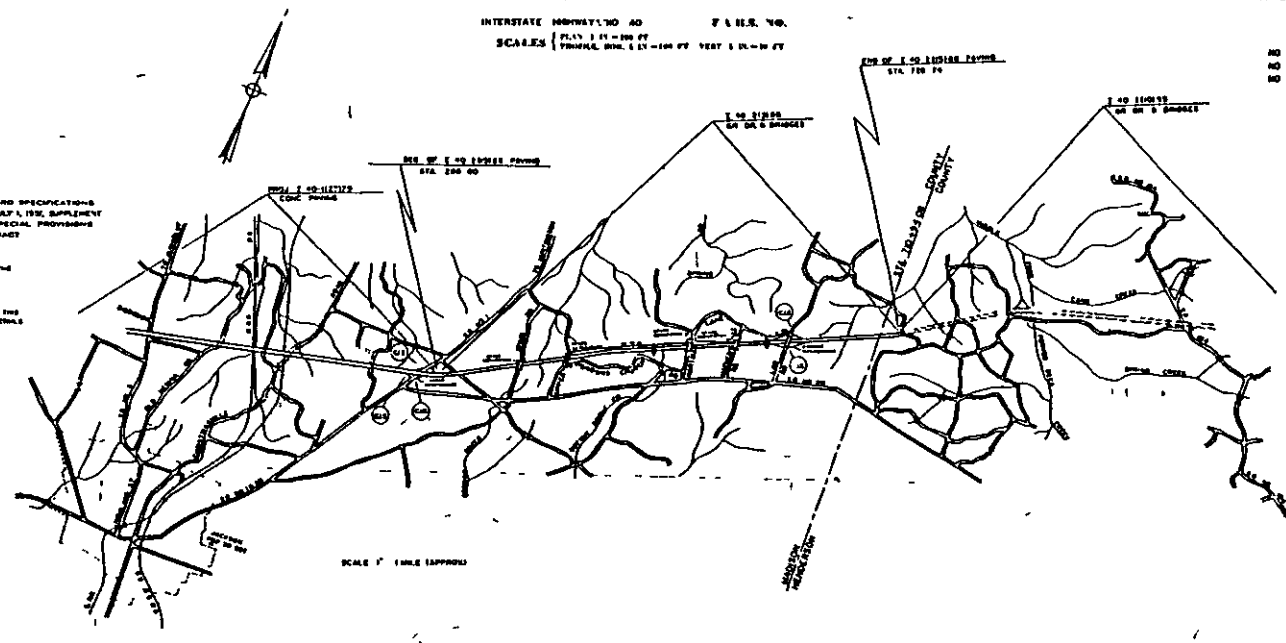
SCALES { PLAN 1 IN. = 100 FT. PROFILE, HOR. 1 IN. = 100 FT. VERT. 1 IN. = 10 FT.

NO EQUATIONS
NO EXCEPTIONS
NO EXCLUSIONS

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF HIGHWAYS DATED JULY 1, 1957, SUPPLEMENT DATED AUG. 1, 1960, AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

THE [illegible] WILL BE REQUIRED TO MAINTAIN TRAFFIC ACROSS THE [illegible] DURING [illegible] OF THIS PROJECT.

NOTE REGARDING [illegible] IDENTIFICATION SIGNS
[illegible] SHALL BE ERECTED ON THIS PROJECT AT LOCATIONS DESIGNATED BY THE SYMBOL [illegible] OR DETAILS SEE DWG. NO. [illegible] (3 SHEETS)



SCALE 1" = 1 MILE (APPROX)

APPROVED [signature] ENGINEER OF SURVEYS AND
DATE
APPROVED [signature] STATE HIGHWAY
DATE
APPROVED [signature] COMM.

CONVENTIONAL SIGNS

COUNTY LINE
CITY VILLAGE OR BOROUGH
CULVERTS
POWER POLE
TELEPHONE OR TELEGRAPH POLE
FENCE LINE
GUARD RAIL
UNFENCED PROPERTY
RIGHT OF WAY LINE
TRAVELED WAY
RAILROAD
RETAINING WALL
BASE OR SURVEY LINE
DROP INLET
BRIDGE OVER 20 FT. SPAN

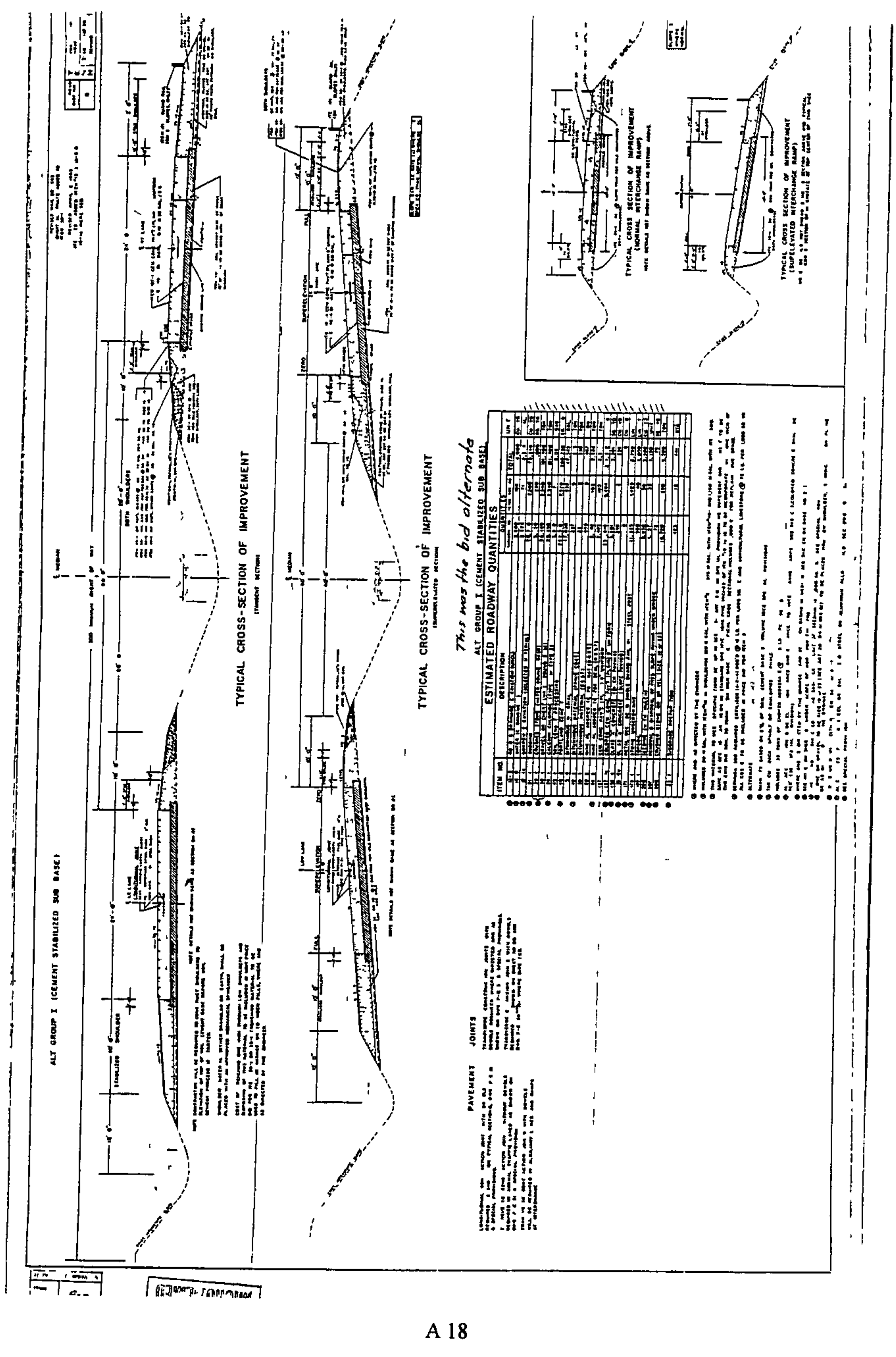
DESIGN DATA

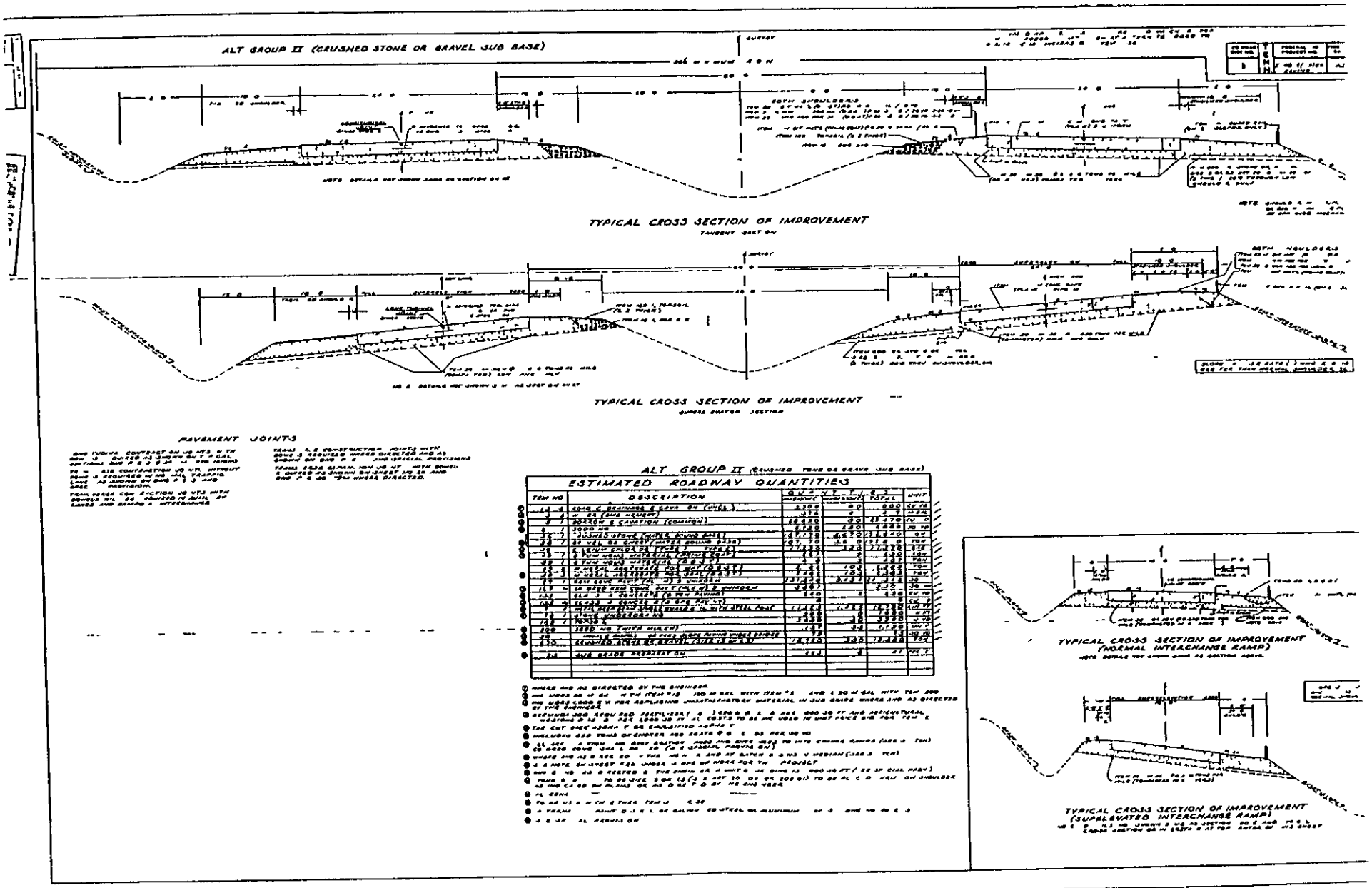
ADT. [illegible]
DHV [illegible]
D [illegible]
T [illegible]
V [illegible]

		MADISON	HENDERSON	TOTAL	
ROADWAY	LENGTH	8.010	0.337	8.347	MILES
BRIDGE	LENGTH	0.000	0.000	0.000	MILES
PROJECT	LENGTH	8.010	0.337	8.347	MILES

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:
DIVISION ENGINEER


ALT GROUP I (CEMENT STABILIZED SUB BASE)
TYPICAL CROSS-SECTION OF IMPROVEMENT
(TANGENT SECTION)
TYPICAL CROSS-SECTION OF IMPROVEMENT
(SUPERELEVATED SECTION)
This was the bid alternate
ALT GROUP I (CEMENT STABILIZED SUB BASE)
ESTIMATED ROADWAY QUANTITIES
ITEM NO.
DESCRIPTION
QUANTITIES
PAVEMENT
JOINTS
TYPICAL CROSS SECTION OF IMPROVEMENT
(NORMAL INTERCHANGE RAMP)
TYPICAL CROSS SECTION OF IMPROVEMENT
(SUPERELEVATED INTERCHANGE RAMP)
MEDIAN
SUPERELEVATION


ALT GROUP II (CRUSHED STONE OR GRAVEL SUB BASE)
TYPICAL CROSS SECTION OF IMPROVEMENT
TYPICAL CROSS SECTION OF IMPROVEMENT
PAVEMENT JOINTS
ESTIMATED ROADWAY QUANTITIES
TYPICAL CROSS SECTION OF IMPROVEMENT (NORMAL INTERCHANGE RAMP)
TYPICAL CROSS SECTION OF IMPROVEMENT (SUPERELEVATED INTERCHANGE RAMP)

STATE OF TENNESSEE

DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

FEDERAL AID PROJECT NO F40-2(3)96(T)R.O.W.
I-40 2(3)86 CONST.

MADISON-HENDERSON CO'S

FROM 0.25 MILES EAST OF STATE ROUTE NO 1
TO A POINT 0.44 MILES EAST OF MADISON HENDERSON COUNTY LINE

INTER STATE HIGHWAY NO 40 F.A.H.S. NO

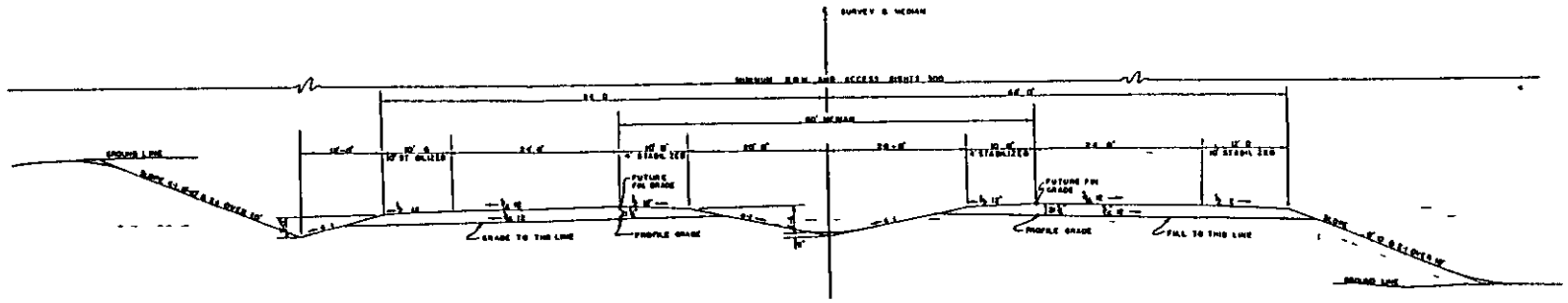
SCALES { PLAN 1 IN = 100 FT
PROFILE HORZ 1 IN = 100 FT VERT 1 IN = 10 FT

NO DESCRIPTIONS
NO EXCLUSIONS

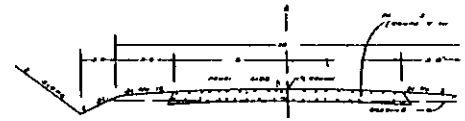
INDEX OF SHEETS

PROJECT F40-2(3)96(T)R.O.W.
I-40-2(3)86 CONST.

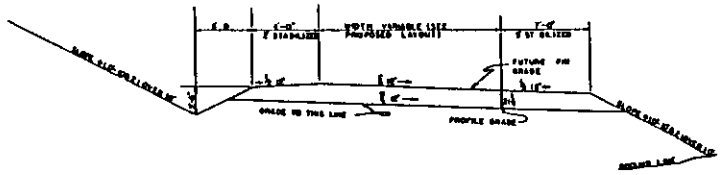
SHEET NO	
1	TYPICAL CROSS SECTION OF IMPROVEMENT
2 & 2A	ESTIMATED QUANTITIES & TABULATION OF QUANTITIES
3 & 3A	PLAN & PROFILE (ENG AND FROM R.O.W. & PROFILE GRADE)
9	PLAN & PROFILE OF SPAN ROAD REPAIR THRU (OVER)
20	PLAN & PROFILE OF UPPER BROWN'S CHURCH ROAD REPAIR THRU (OVER)
21	PLAN & PROFILE OF NORTH & LANE SEPARATION (O.E.R.)
22	PLAN & PROFILE OF H THERY ROAD REPAIR (OVER)
23	PLAN & PROFILE OF LAW ROAD DIAMOND INTERCHANGE (OVER)
24	LAYOUT OF PROPOSED DIAMOND INTERCHANGE & FRONTAGE ROAD AT LAW ROAD (OVER)
25	PROFILE GRADE OF FRONTAGE ROAD STA 400 + 70 TO 530 +
26	PROFILE GRADE OF FRONTAGE ROAD STA 371 + 70 TO 390 & STA 440 TO 470 +
27	PROFILE GRADE OF CAR ROAD INTERCHANGE RAMPS & FRONTAGE ROAD STA 425 TO 530
28-30	PROPERTY MAP SHOWING PROPOSED ACCESS RIGHTS O.R.O.W.
30	LAYOUT OF BRIDGE SPAN ROAD OVER I 40 STA. 371 + 00.00 DWG H-12 120
31	LAYOUT OF BRIDGE UPPER BROWN'S CHURCH ROAD OVER I 40 STA. 414 + 00.00 DWG. H 12-122
32	LAYOUT OF BRIDGE NORTH & LANE OVER I 40 STA. 536 + 34.72 DWG. H-12-120
33	LAYOUT OF BRIDGE: HATHENT ROAD OVER I 40 STA. 575 + 33 DWG. H-12 142
34	LAYOUT OF BRIDGE: LAW RD & OVER I 40 STA. 625 + 00.00 DWG H-12 140
35-36	DETAILS OF BRIDGE G H 42 100 J H 12 129 130, 131 132 134 135 136 137 138 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179



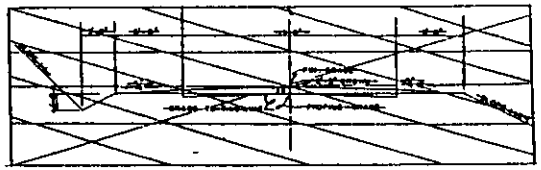
—TYPICAL CROSS-SECTION OF IMPROVEMENT—



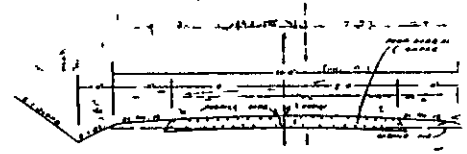
TYPICAL CROSS SECTION



TYPICAL CROSS-SECTION OF TURNING RAMPS

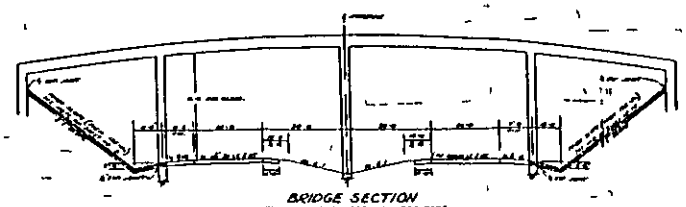


TYPICAL CROSS-SECTION OF CROSS ROADS

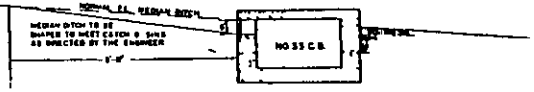


TYPICAL CROSS SECTION

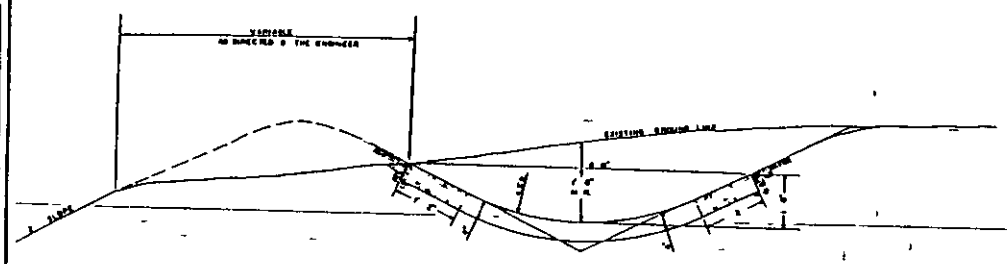
TYPICAL CROSS-SECTION OF BRIDGE



BRIDGE SECTION



DETAIL OF MEDIAN DITCH AT CATCH BASINS



TYPICAL SECTION OF PAVED DITCH
FOR TOP OF CUT
SCALE 1 : 1.0

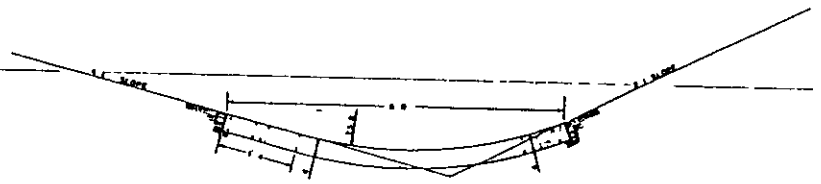
ESTIMATED QUANTITIES 0.0822 CU.YD./LIN.FT.

NOTES

EXPANSION JOINTS [illegible] EVERY 20' OR AS DIRECTED BY THE ENGINEER

1 EXPANSION JOINTS TO BE PLACED WHERE PAVED DITCH IS IN CONTACT WITH CATCH BASINS

COST OF ALL EXPANSION JOINTS & MARKINGS TO BE INCLUDED IN UNIT PRICE BID PER CU.YD. CLASS "B" CONC. 135-44

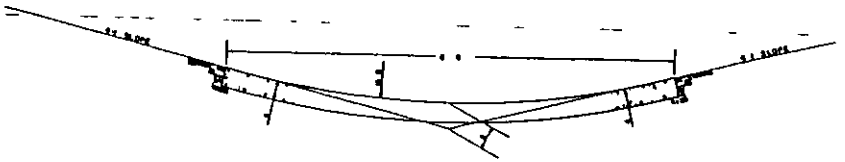


TYPICAL SECTION OF PAVED DITCH
FOR SIDE DITCHES WITH 2:1 BACK SLOPE
SCALE 1 : 1.0

ESTIMATED QUANTITIES 0.0767 CU.YD./LIN.FT.

DETAIL OF SODDING
FOR MEDIAN DITCH
SCALE 1 : 1-0

ESTIMATED QUANTITIES 0.0889 SQ.YD./LIN.FT.



TYPICAL SECTION OF PAVED DITCH
FOR MEDIAN & SIDE DITCHES WITH 4:1 BACK SLOPE
SCALE 1 : 1.0

ESTIMATED QUANTITIES 0.101 CU.YD./LIN.FT.

—NOTES—

GRADE ON CROSS SECTIONS SAME AS GRADE ON PROFILE AND SAME AS PROFILE GRADE ON TYPICAL CROSS SECTION

ON ALL SUPERELEVATED CURVES PROFILE GRADE FOLLOWS INSIDE EDGE OF FUTURE PAVEMENT

SEE PLAN AND PROFILE SHEETS AND DWG NO. D E 1 FOR SUPERELEVATION DETAILS

SOIL DATA WHERE NOTED ON PROFILE IS APPROX AND IS NOT NECESSARILY CORRECT

ALL NECESSARY CONSTRUCTION JOINTS IN CONCRETE BOX CULVERTS [illegible] IN LIEU OF THE CUTT TYPE LOCATION OF THE JOINTS TO BE DETERMINED BY THE ENGINEER ON CONSTRUCTION

[illegible]

THE COST OF CULVERT EXCAVATION FOR CATCH BASINS CONCRETE BOXES PIPE CULVERTS END WALLS AND END SECTIONS IN TO BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "A" CONCRETE AND PIPE

[illegible]

ALL CONCRETE BOX TYPE CULVERTS [illegible] ARE DESIGNED FOR HS 20-44 OR ALTERNATE MILITARY LOAD

[illegible]

UNDER ITEM 13 3 THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUITABLE BORROW MATERIAL FROM A SITE APPROVED BY THE ENGINEER THE BORROW MATERIAL SHALL BE TAKEN IN A MANNER THAT MAY BE MEASURED

OWNERS TO RESET REL OR ADJUST POWER AND TELEPHONE LINES AND POLES WATER LINES AND ALL OTHER PUBLIC UTILITIES CONFLICTING WITH THE PROPOSED IMPROVEMENT

TOP SOIL SHALL NOT BE REQUIRED ON CUT SLOPES STEEPER THAN 3:1

THE EXISTING TOPSOIL BETWEEN SLOPE STAKE POINTS ON BOTH CUT AND FILL AREAS SHALL BE STRIPPED ON STOCKPILED WHERE AND AS DIRECTED BY THE ENGINEER. THE QUANTITY OF TOPSOIL TO BE STRIPPED AND STOCKPILED SHALL BE SUFFICIENT TO PROVIDE A MINIMUM 3 DEPTH OVER ALL AREAS REQUIRING TOPSOIL TOPSOIL FROM BOTH CUT AND FILL AREAS WILL BE MEASURED AND PAID FOR AT THE UNIT PRICE BID FOR ITEM NO 13 3 ROAD AND DRAINAGE EXCAVATION (MISC.) PER CU YD WHICH PRICE SHALL INCLUDE ALL COSTS OF STRIPPING AND STOCKPILING AND SPREADING

ALL NEWLY GRADED EARTHEN AREAS ON THE PROJECT THAT ARE NOT TO BE PAVED STOCKPILED OR BORROW S ALL BE SEEDED IN ACCORDANCE WITH THE SPECIAL PROVISION DESCRIBING SECTION 800 PRIOR TO SEEDING A 3 LAYER OF TOPSOIL SHALL BE PLACED ON ALL NEWLY GRADED EARTHEN AREAS EXCEPT ON CUT SLOPES STEEPER THAN 3:1

FENCES SHALL BE TURNED IN AT DRAINAGE STRUCTURES WHERE DIRECTED BY THE ENGINEER SO AS TO AVOID WINGWALLS ENDWALLS AND/OR APPURTENANCES

CLEAR IN PORTIONS OF THE RIGHT OF WAY AS DESIGNATED BY THE ENGINEER SHALL BE FENCED IN AND TO THE REMOVAL OF EXISTING FENCES AND PRIOR TO THE BEGINNING OF CONSTRUCTION OPERATIONS

ESTIMATED ROADWAY QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
11 1	CLEARING AND GRUBBING	1	LUMP SUM
13 3	ROAD AND DRAINAGE EXCAVATION (MISC)	13,000	CU YD
13 5	WATER (SEND)	4,541	M G L
13 5	BORROW E CH A STRIP (MISC)	23,000	CU YD
21 1	SODDING	16,9 4	SQ YD
33C 10	GRANULAR BACK FILLING FOR PIPE CULVERTS	1,330	CU YD
34 1	TRAFFIC BOUND GRAVEL ON CHERT SURFACE ROADWAY	35,42	TONS
35C 1	CRUSH AND STONE (T B R)	31	TONS
35C 10	FL E CALCIUM CHLORIDE (IN DWD ROWT)	36	TONS
35C 14	CONCENTRATED CALCIUM CHLORIDE (IN DWD ROWT)	10	TONS
5 1	5 TUM MOUS MATERIAL (PRIME COAT)	34	TONS
33 1	BITUMINOUS MATERIAL (IN B E C)	21	TONS
35 1	MINERAL AGGREGATE (IN B E C)	20	TO N
33 1	BITUMINOUS MATERIAL (IN B T)	199	TONS
37 3	MINERAL AGGREGATE (IN B T)		
43 49	BRIDGE FOR CAST IRON (CL 50 300)	3,363	LB
53 4	CL 50 CONCRETE	3 19	CU YD
53 44	CLASS "A" CONCRETE (PAVED SLOPES)	225	CU YD
53 13	STEEL BAR REINFORCEMENT	273,727	LB
1 1 3	15" CONCRETE PIPE CULVERT	40	LIN FT
1 1 5	18" CONCRETE PIPE CULVERT	130	LIN FT
1 1 4	24" CONCRETE PIPE CULVERT	1185	LIN FT
1 1 5	30" CONCRETE PIPE CULVERT	1524	LIN FT
1 1 6	36" CONCRETE PIPE CULVERT	814	LIN FT
1 1 7	42" CONCRETE PIPE CULVERT	242	LIN FT
1 1 8	54" CONCRETE PIPE CULVERT	664	LIN FT
1 44	15" CORRUGATED METAL PIPE CULVERTS (BIT CO TED)	1136	LIN FT
1 44	18" CORRUGATED METAL PIPE CULVERTS (BIT CO TED)	584	LIN FT
1 44	24" CORRUGATED METAL PIPE CULVERTS (BIT COATED)	466	LIN FT
1 44	30" CORRUGATED METAL PIPE CULVERTS (BIT COATED)	138	LIN FT
1 44	42" CORRUGATED METAL PIPE CUL EARTS (BIT COATED)	50	LIN FT
1 6 44	8" CORRUGATED METAL PIPE DRAINS	4	LIN FT
33	15" GRT L END SECTION PIPE CUL EAT	8	E CH
153	18" METAL END SECTION PIPE CULVERT	3	E CH
153	24" WEL L END SECTION PIPE CUL EAT	4	EACH
32	30" METAL END SECTION PIPE CULVERT	1	EACH
170	42" METAL END SECTION PIPE CULVERT	1	EACH
173 1	STOCK FENCE	22,110	LIN FT
173 10	6 TE FOR DITCH	240	SQ FT
173 18	W TYP CROSS NO	300	LIN FT
17 - 3	MAR END (4 8 W POST)	133	EACH
75	RIP R P	5	CU YD
500	SEEDING	5 16	UNIT
150 5	CL 50 CONCRETE (PAVED DITCHES)	1,036	CU YD
1 5	REMOVAL OF BRIDGE NO R 22 AS TEMPORARY HOUSE (SEE SHEET 40)	1	LUMP SUM
1 12	[illegible]	1	LUMP SUM
1 12	[illegible]	1	LUMP SUM
1 12	[illegible]	1	LUMP SUM
1 12	[illegible]	1	LUMP SUM
1 12	REMOVAL OF BRIDGE NO R 22 AS TEMPORARY HOUSE (SEE SHEET 40)	1	LUMP SUM

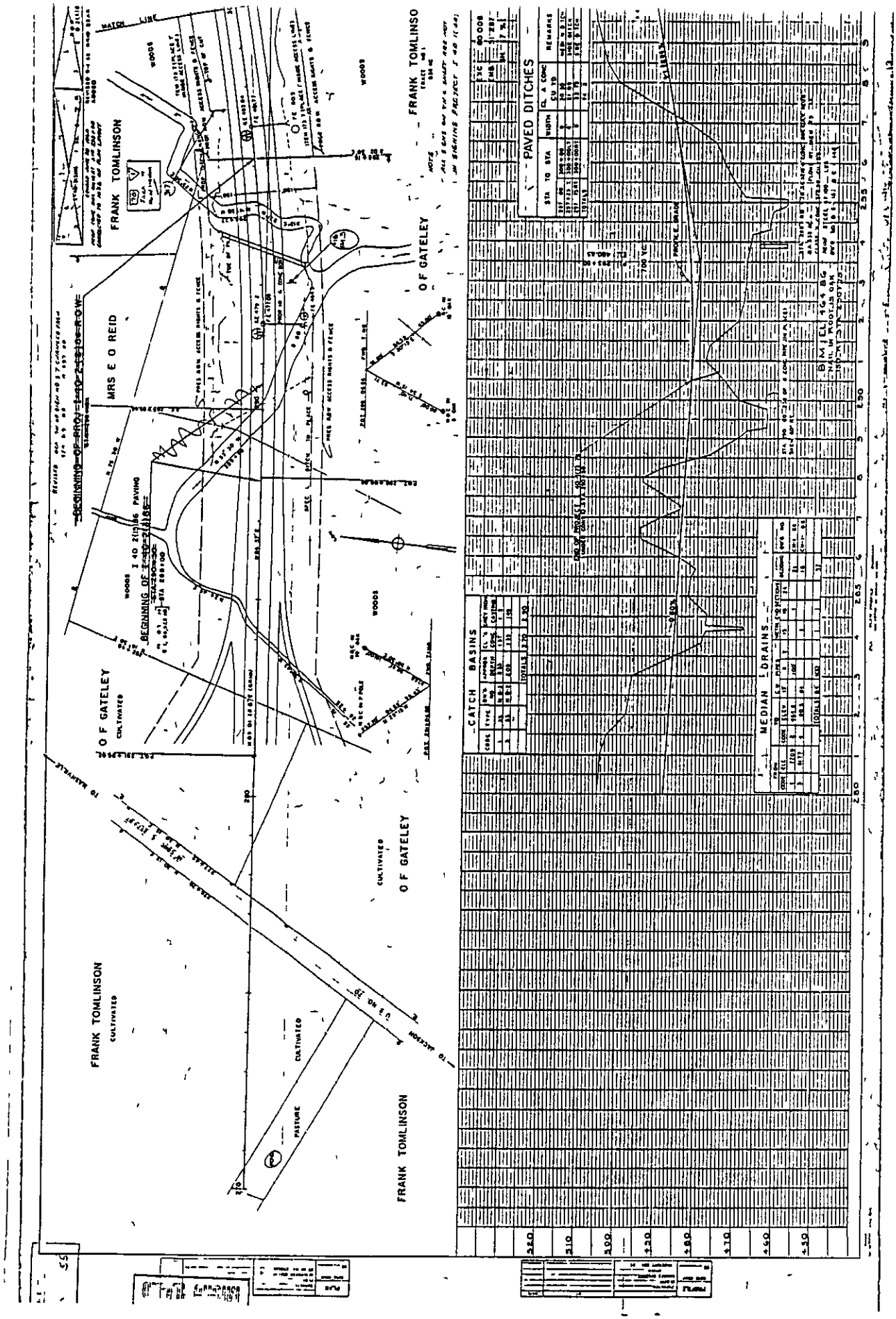
1. INCLUDES [illegible] GAL PER GALS [illegible] GAL PER SQ YD FOR SHOULDERS
2. FERTILIZER (4 8 4) REQUIRED AT 15 LB/1000 SQ FT & AGRICULTURAL LIMESTONE AT 75 LB/1000 SQ FT
3. ALL COSTS TO BE INCLUDED IN UNIT PRICE BID FOR ITEM NO 21 1
4. INCLUDES 75 TONS FOR COARSE AGGREGATE 8 10 LB TO 10 LB PER SQ YD
5. DOUBLE STONE (PL 201) OR BACK BAND CEMENT
6. BASE ALTERNATES INCLUDE ADD TONS FOR DOUBLE CHANGE AND 2,000 TONS FOR MAINTAINING TRAFFIC ACROSS COUNTY ROAD BRIDGE MATERIAL FOR MAINTAINING TRAFFIC TO BE PLACED WHERE AND AS DIRECTED BY ENGINEER
7. TAR OR CUT-BACK ASPHALT OR EMULSIFIED ASPHALT
8. A A S H O DESIGNATION M 226-59 OR [illegible]
9. TO BE PLACED WHERE AND AS DIRECTED BY THE ENGINEER QUANTITIES ARE APPROXIMATE ONLY
10. INCLUDES 2 500 C Y FOR CONSTRUCTING SHOULDERS ON CROSS ROADS ONLY
11. SEE SECTION H ARTICLE H 08 IN STANDARD SPECIFICATIONS
12. INCLUDES 100 L.F. OF 8"Ø DRAIN
13. INCLUDES 100 L.F. OF 8"Ø DRAIN
14. INCLUDES 24 L.F. OF PIPE DRAIN
15. ALTERNATES W TH BASE ALTERNATE AMOUNT AS DETERMINED BY THE ENGINEER

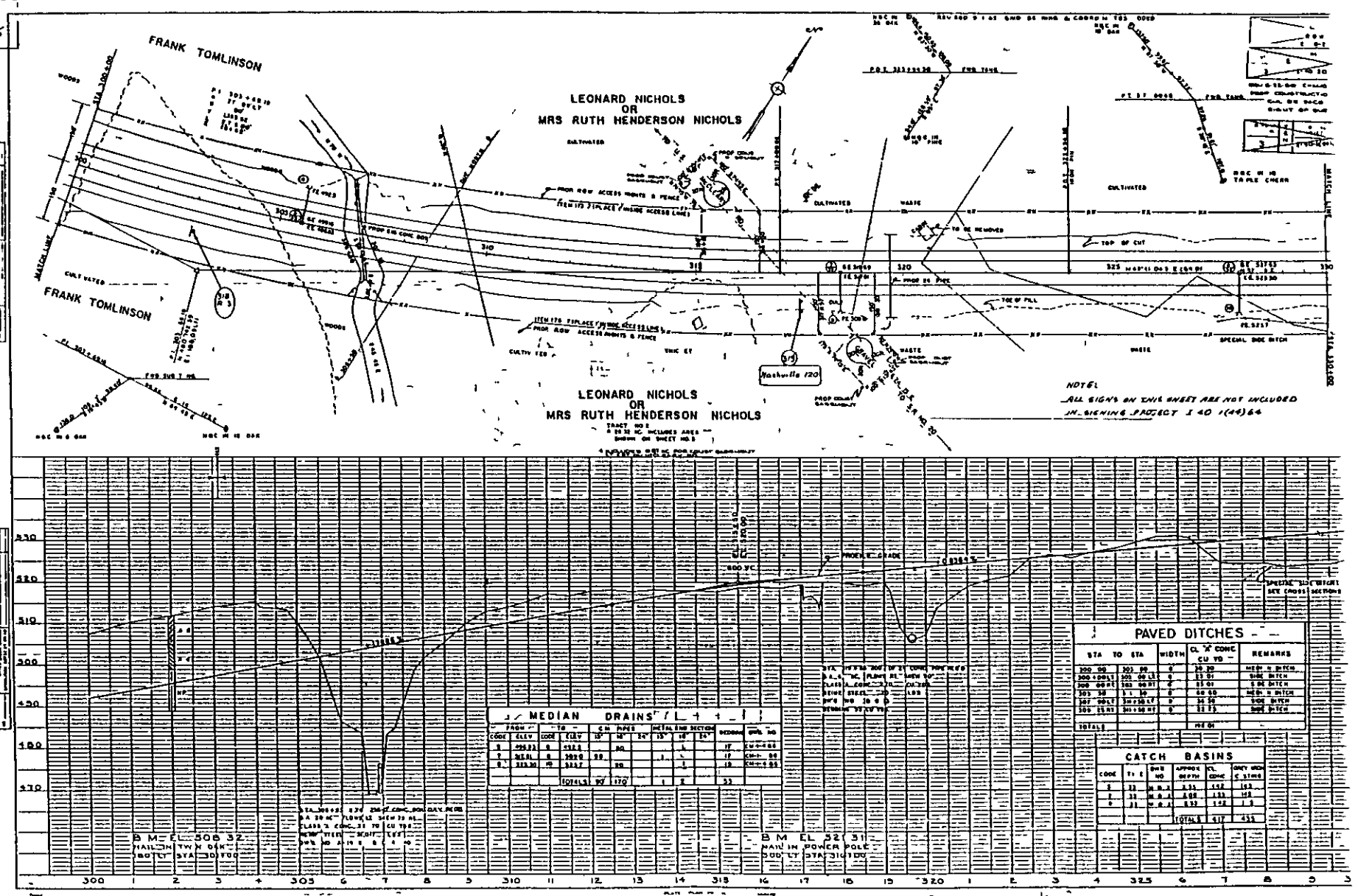
ESTIMATED BRIDGE QUANTITIES

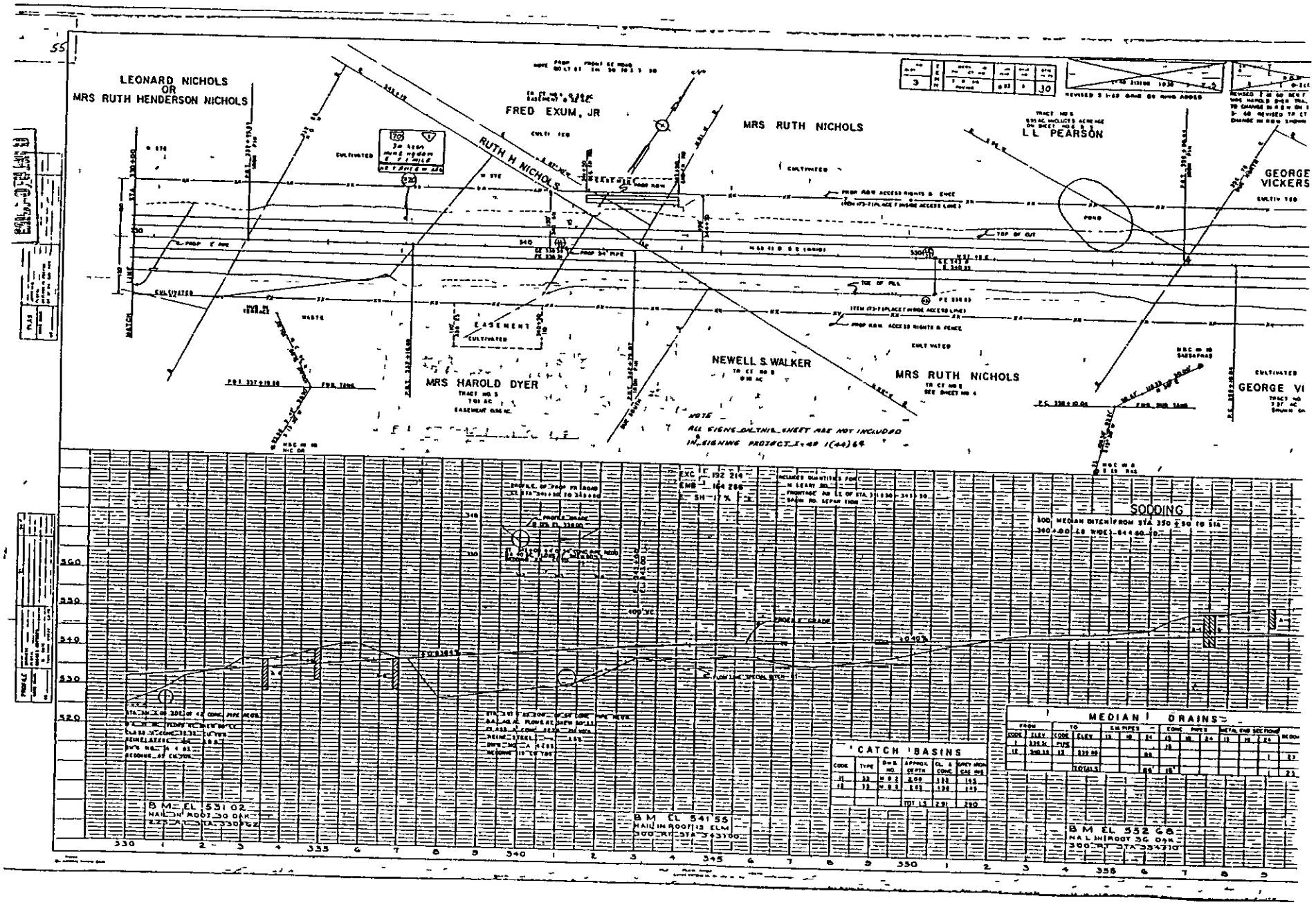
ITEM NO	DESCRIPTION	2 V	3	5	7	1	2 3
11 2	DEBRIS (ALWAYS)	1	1	1	1	1	1
28 1	5 STRUCTURAL STEEL	4371	370	4 70	4,370	2,300	
134 6	PRESTRESS STRAND	306	306	306	306	1,318	
53 2	CL 5 A" CONCRETE	4 2 5	413 6	3 5 0	346 2	463 1	
153 16	3 CEL BAR REINFORCEMENT	135,000	14 367	163,0 0	80,010	100 340	
32 1	PRESTRESS BOX TYPE PILING	20	120	120	120	20	
33 3	PRESTRESS TONE PILING (SEE)	3,000	1,000	12,000	3,000	2 000	
170	STEEL HANDRAIL (3 RAIL)	310	231	231	31	231	

1. THE TRIANGLE SHOWN PRIOR TO AN "STEEL" SHALL INDICATE THAT AN ALTERNATE STEEL HAS BEEN SUBSTITUTED
2. IF IT BECOMES NECESSARY TO USE BOLTS & PLATE THE CONSTRUCTION WILL BE PAID FOR AT PROPORTION OF A.S.T. PRICE

A 23


FRANK TOMLINSON
MRS E O REID
O F GATELEY
CULTIVATED
PASTURE
WOODS
MATCH LINE
PAVED DITCHES
CATCH BASINS
MEDIAN DRAINS
PROFILE DRAIN
TO MASHVILLE
TO JACKSON


FRANK TOMLINSON
LEONARD NICHOLS
OR
MRS RUTH HENDERSON NICHOLS
CULTIVATED
WOODS
WASTE
TOP OF CUT
TOE OF FILL
SPECIAL SIDE DITCH
NOTE:
ALL SIGNS ON THIS SHEET ARE NOT INCLUDED
IN SIGNING PROJECT I 40 1(44)64
PROFILE GRADE
MEDIAN DRAINS
PAVED DITCHES
CATCH BASINS
B.M. EL. 508.32
NAIL IN TWIN OAK
B.M. EL. 521.31
NAIL IN POWER POLE


LEONARD NICHOLS
OR
MRS RUTH HENDERSON NICHOLS
FRED EXUM, JR
MRS RUTH NICHOLS
L L PEARSON
GEORGE
VICKERS
RUTH H NICHOLS
EASEMENT
MRS HAROLD DYER
NEWELL S. WALKER
MRS RUTH NICHOLS
GEORGE VI
NOTE
ALL SIGNS ON THIS SHEET ARE NOT INCLUDED
IN SIGNING PROJECT I-40 1(44)64
SODDING
MEDIAN DRAINS
CATCH BASINS
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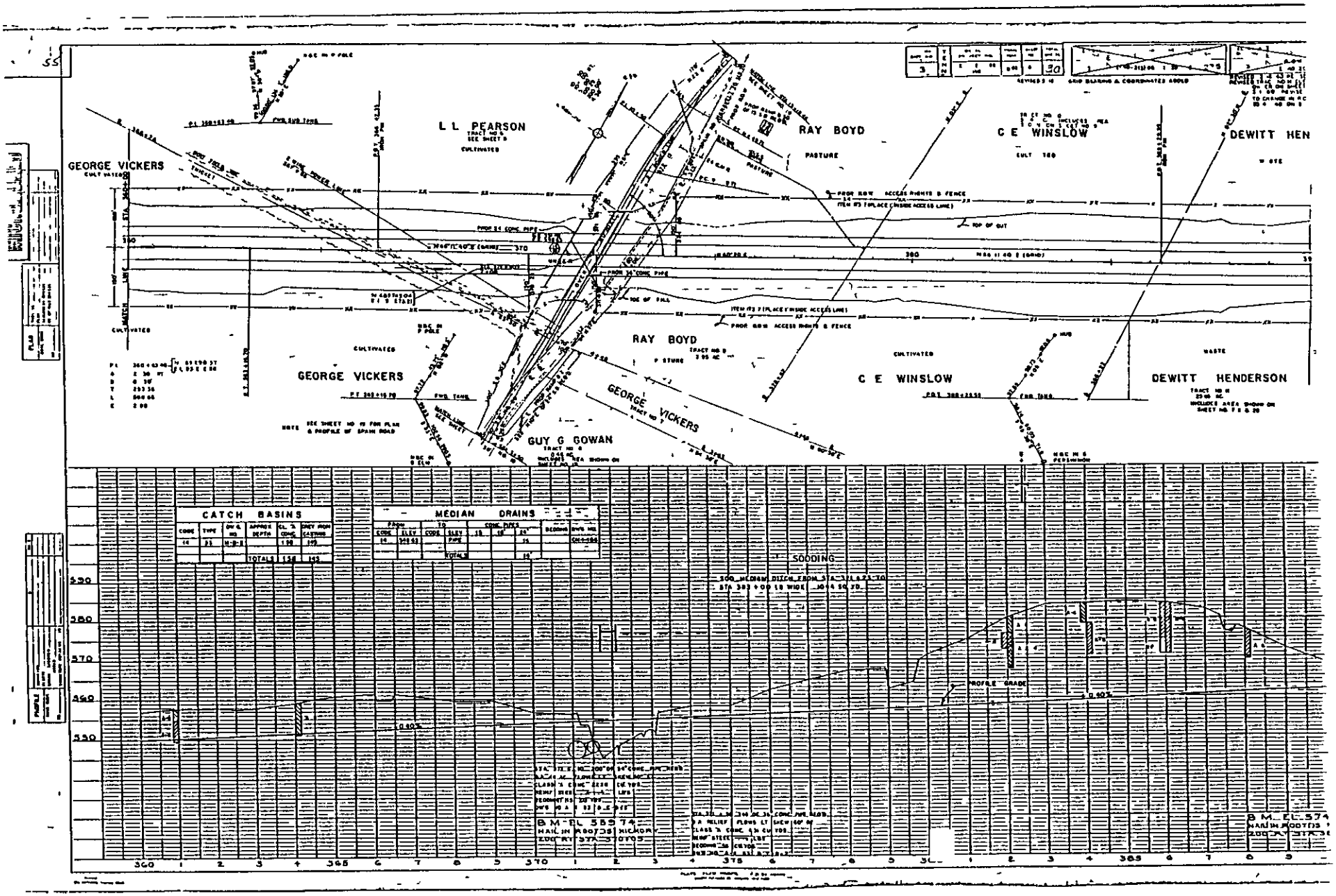
B M EL 541.55
B M EL 552.68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RAY BOYD
C E WINSLOW
DEWITT HEN
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RAY BOYD
C E WINSLOW
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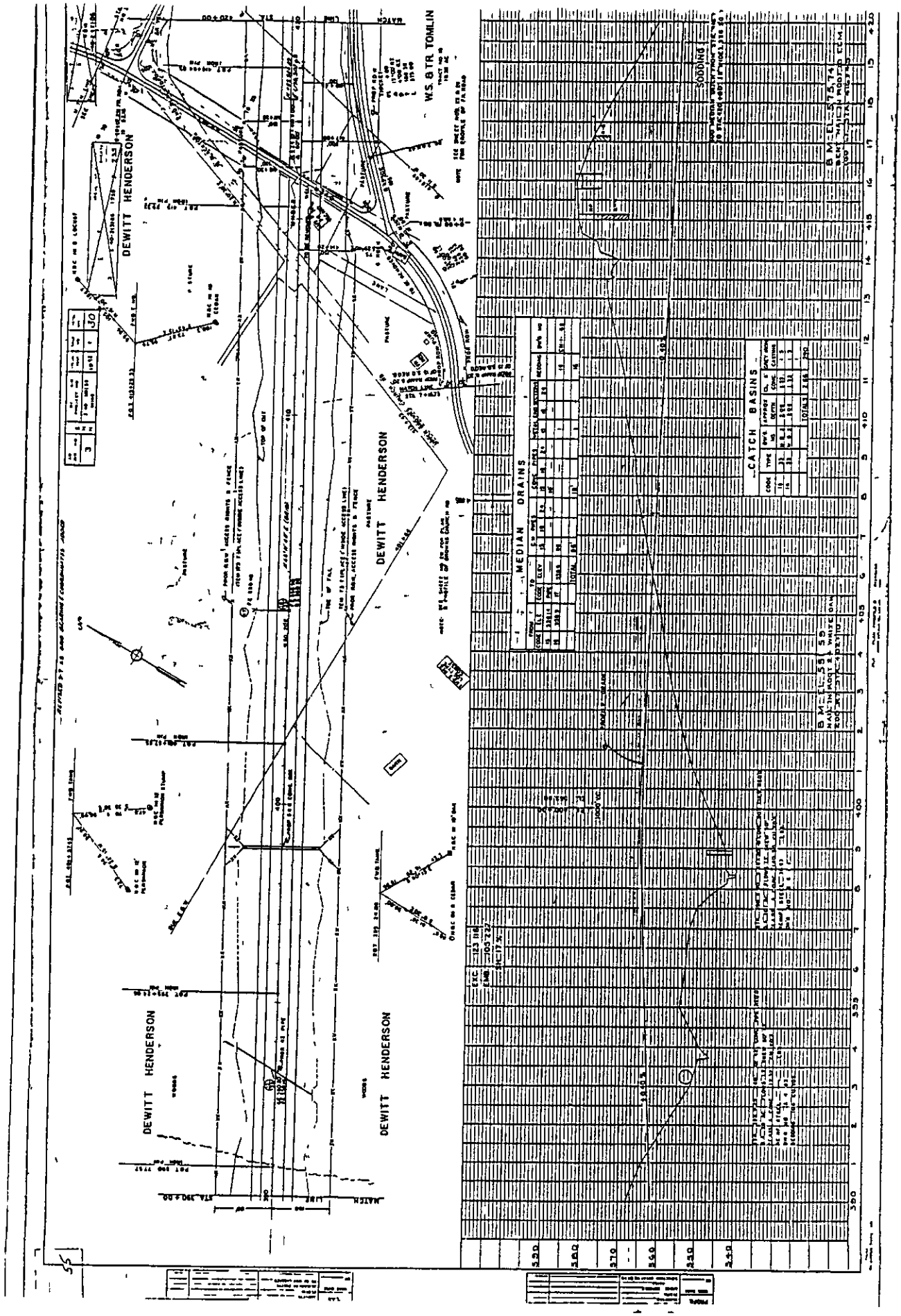
GUY G GOWAN
CATCH BASINS
MEDIAN DRAINS
SODDING
PROFILE GRADE
B.M. EL. 574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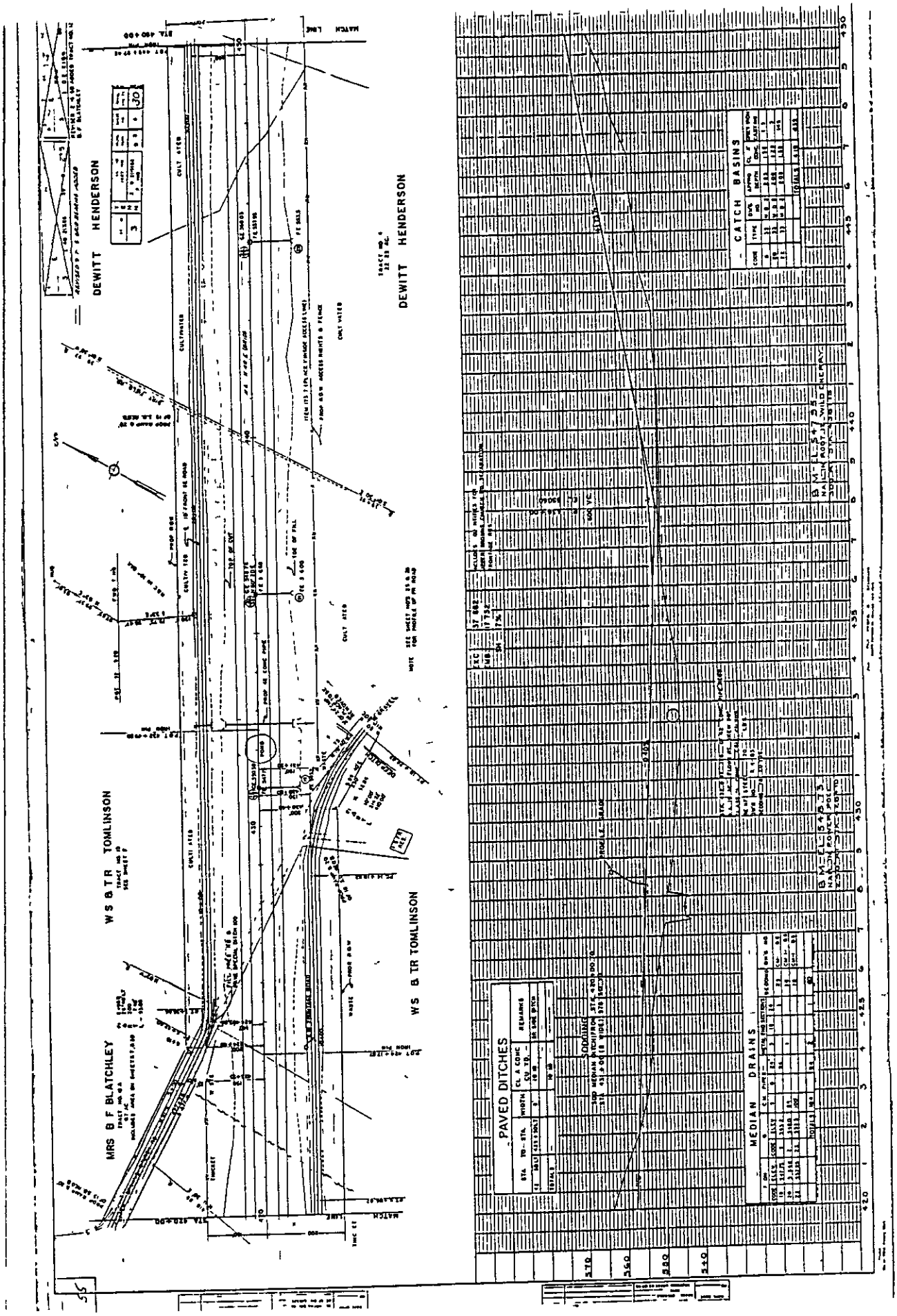
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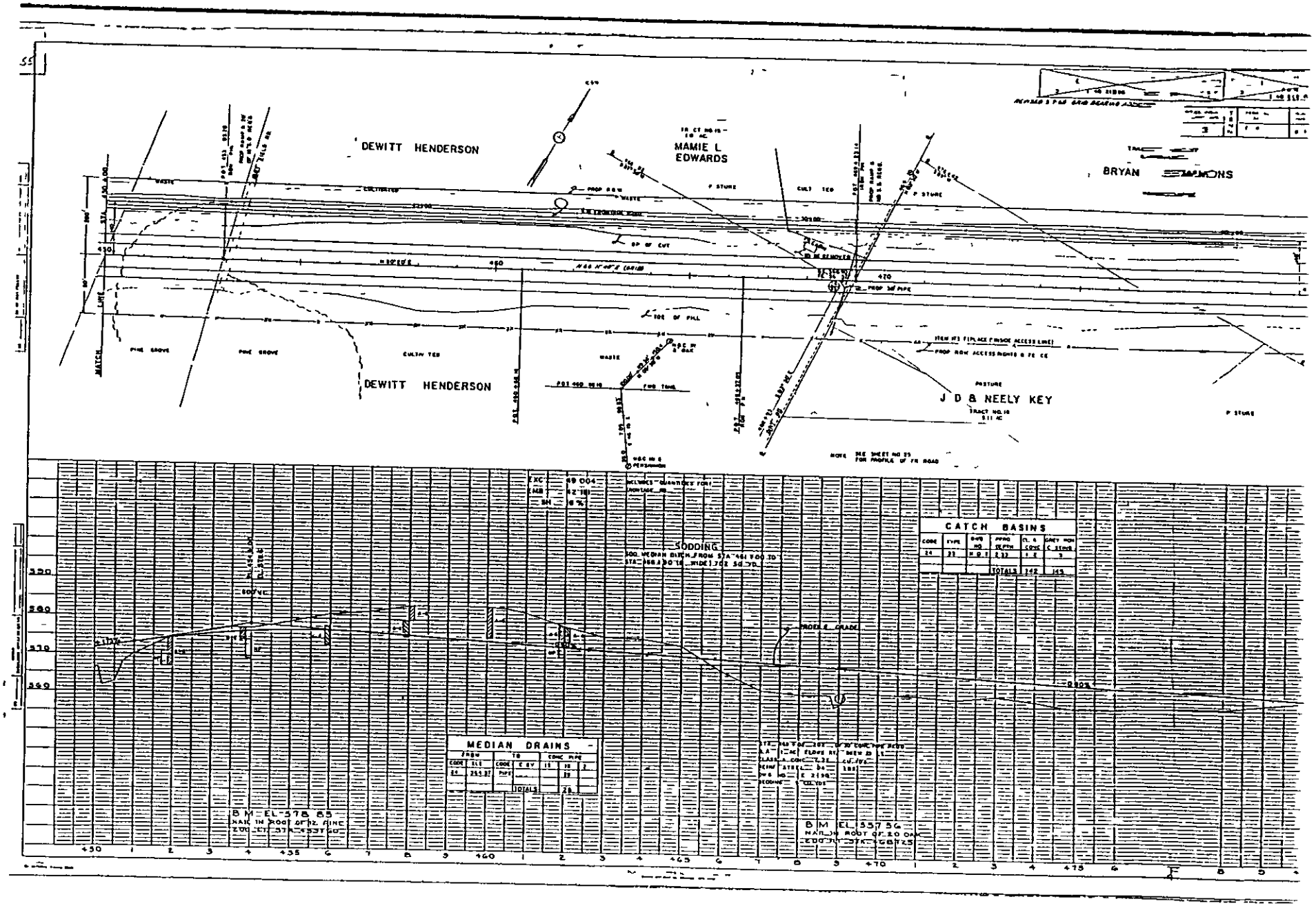
W S & TR TOMLINSON
MRS B F BLATCHLEY
CATCH BASINS
PAVED DITCHES
MEDIAN DRAINS
SODDING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MAMIE L EDWARDS
BRYAN
DEWITT HENDERSON
J D & NEELY KEY
PINE GROVE
CULTIVATED
WASTE
PASTURE
P STURE
MATCH LINE
SODDING
PROFILE GRADE
CATCH BASINS
MEDIAN DRAINS
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B M EL 557.56
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460
465
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475
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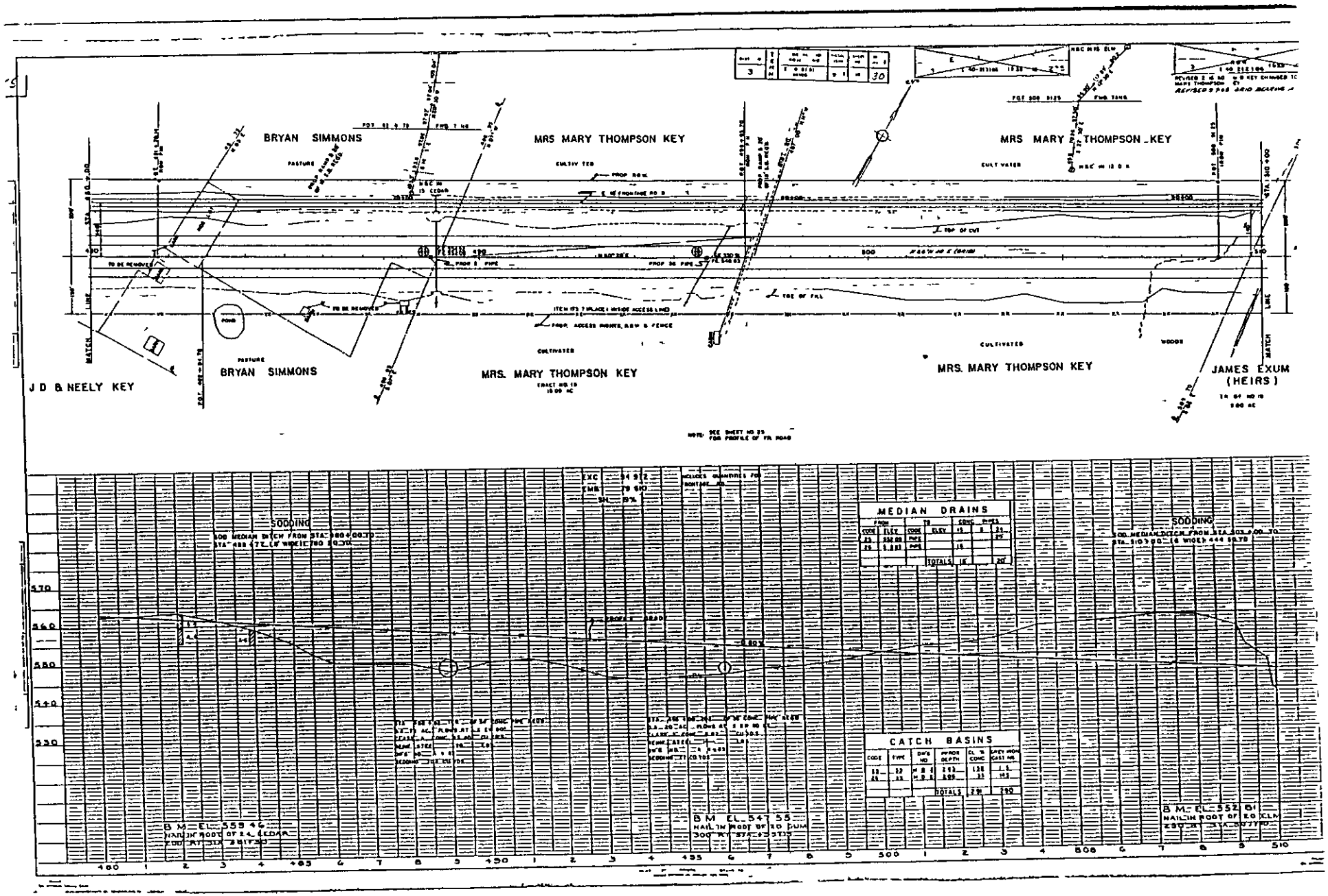
550
560
570
580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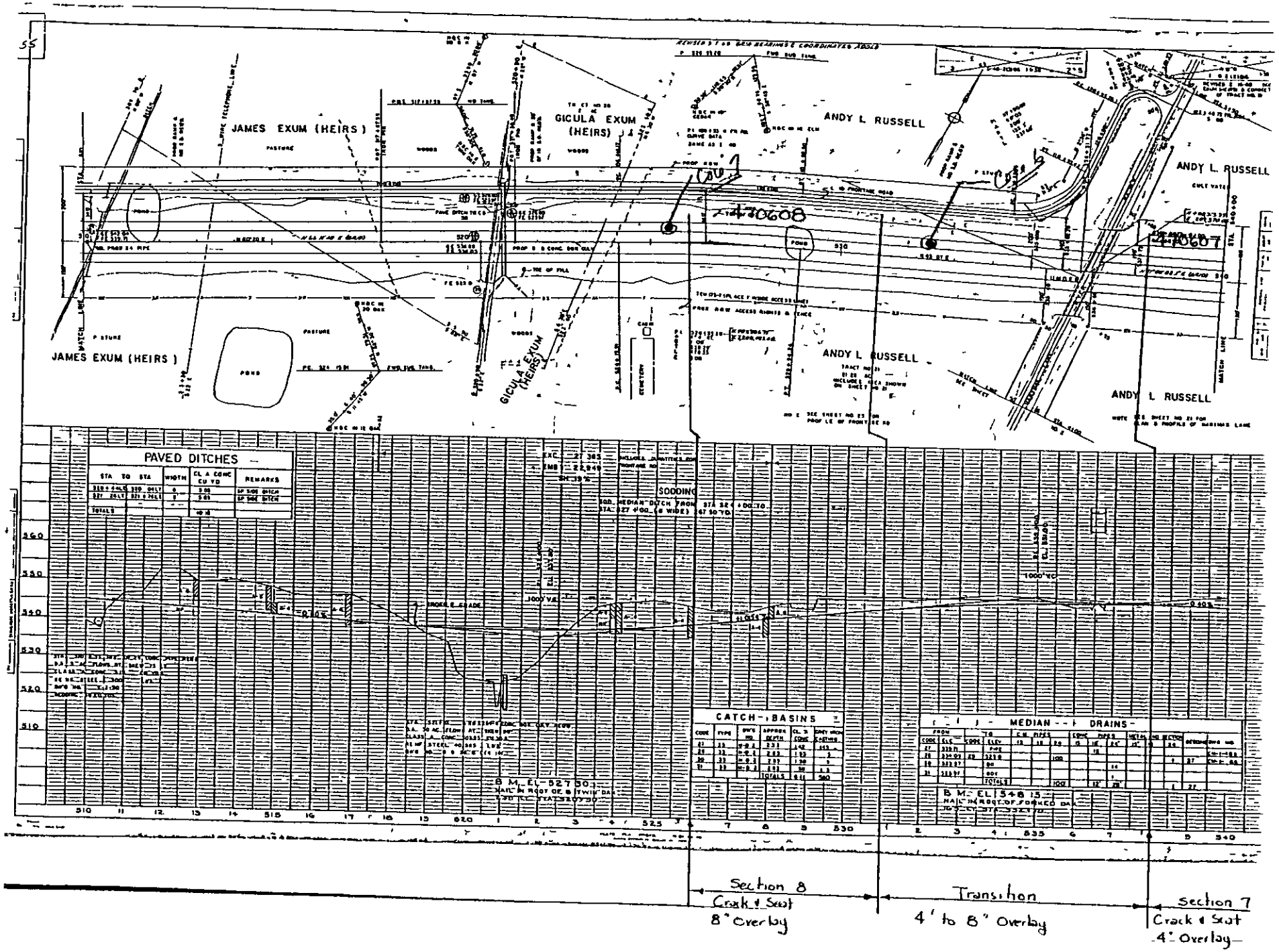
MRS MARY THOMPSON KEY
MRS MARY THOMPSON KEY
J D & NEELY KEY
BRYAN SIMMONS
MRS. MARY THOMPSON KEY
MRS. MARY THOMPSON KEY
JAMES EXUM (HEIRS)
SODDING
SODDING
MEDIAN DRAINS
CATCH BASINS
B.M. EL. 55.46
B.M. EL. 54.55
B.M. EL. 55.61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GICULA EXUM (HEIRS)
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PAVED DITCHES
CATCH-BASINS
MEDIAN-DRAINS
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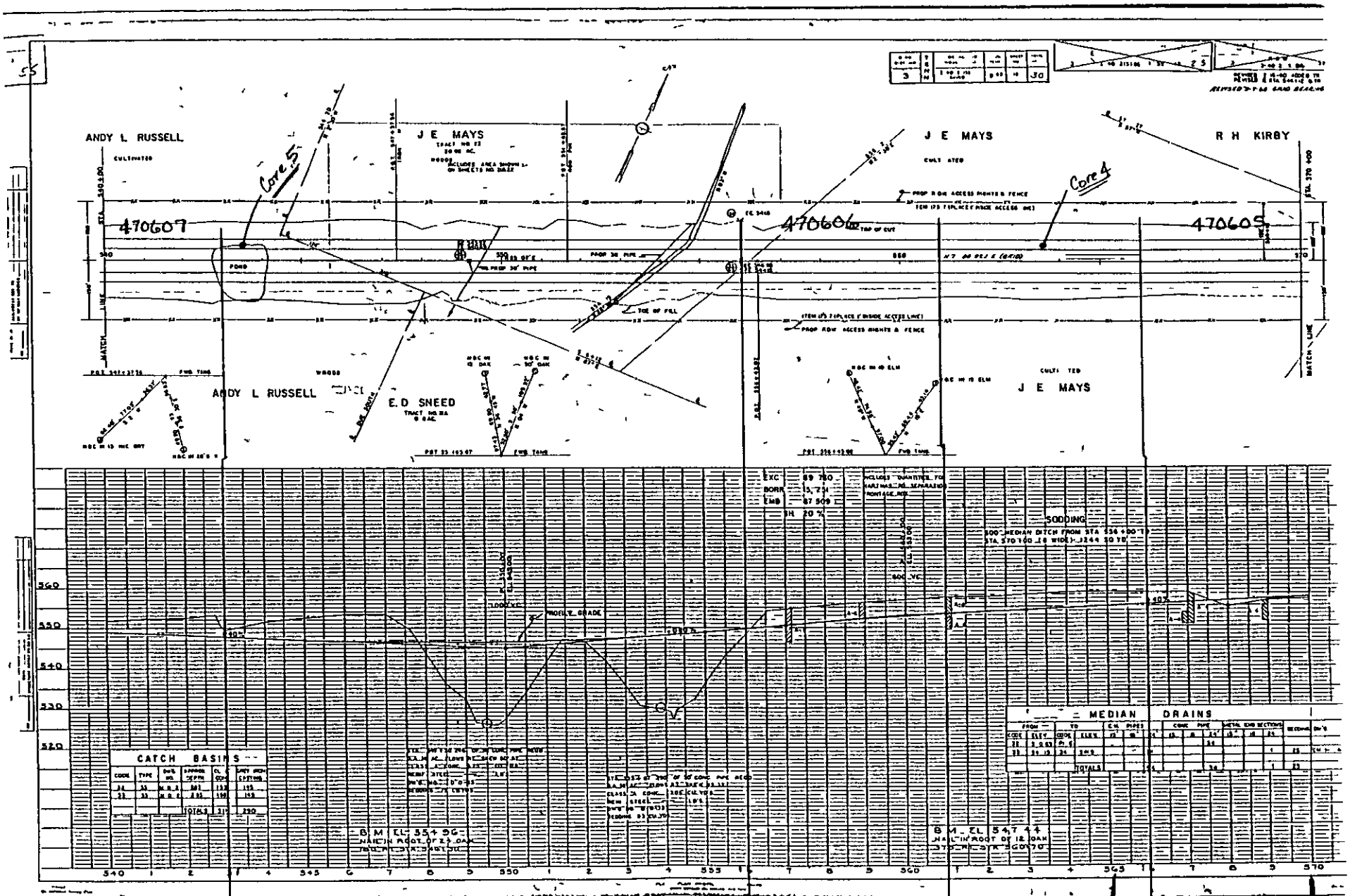
Crack & Seat
8" Overlay
Transition
4' to 8" Overlay
Section 7
Crack & Seat
4" Overlay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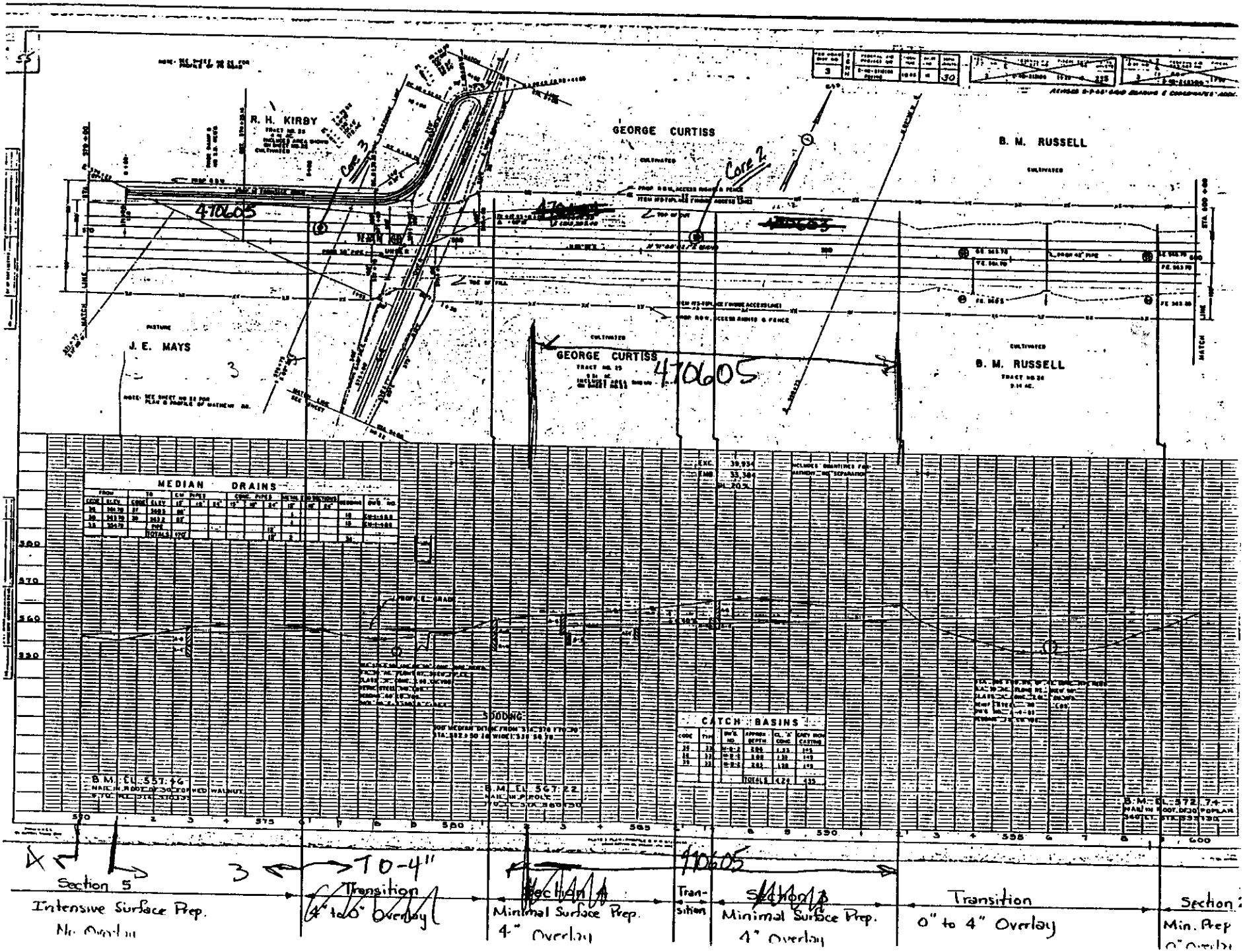
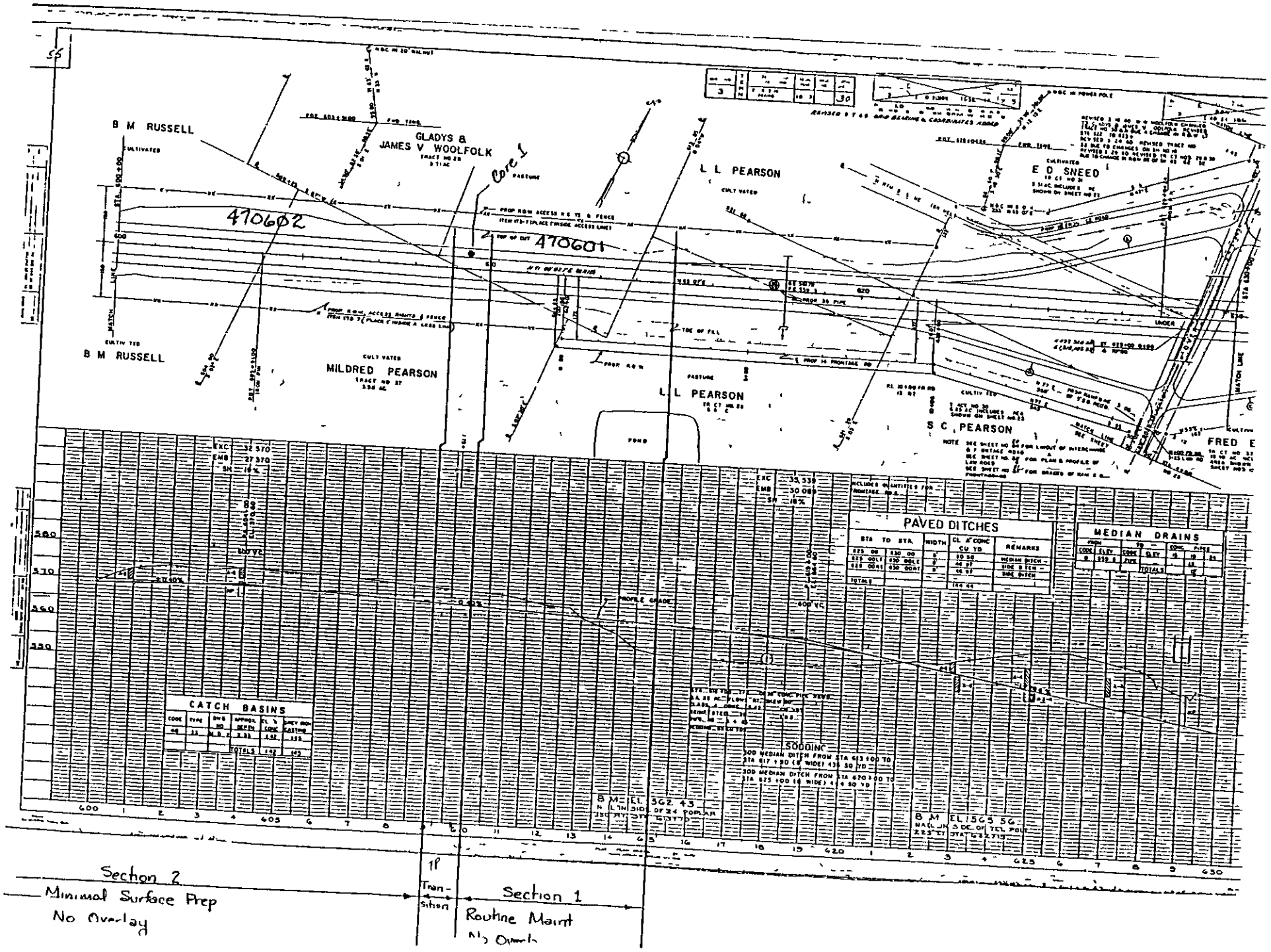
J E MAYS
J E MAYS
R H KIRBY
470607
470606
470605
Core 5
Core 4
ANDY L RUSSELL
E.D SNEED
J E MAYS
SODDING
CATCH BASINS
MEDIAN DRAINS
Section 7
Crack & Seat
4" Overlay
Transition
Section 6
Intensive Surface Prep
4" Overlay
Transition
4" to 0" Overlay
Section 5
Intensive Surface Prep
No Overl


R. H. KIRBY
GEORGE CURTISS
B. M. RUSSELL
J. E. MAYS
GEORGE CURTISS
B. M. RUSSELL
470605
Core 3
Core 2
MEDIAN DRAINS
CATCH BASINS
PROFILE GRADE
B.M. EL. 557.46
B.M. EL. 567.22
B.M. EL. 572.74
Section 5
Intensive Surface Prep.
No Overlay
Transition
4" to 0" Overlay
Minimal Surface Prep.
4" Overlay
Transition
Minimal Surface Prep.
4" Overlay
Transition
0" to 4" Overlay
Min. Prep
0" Overlay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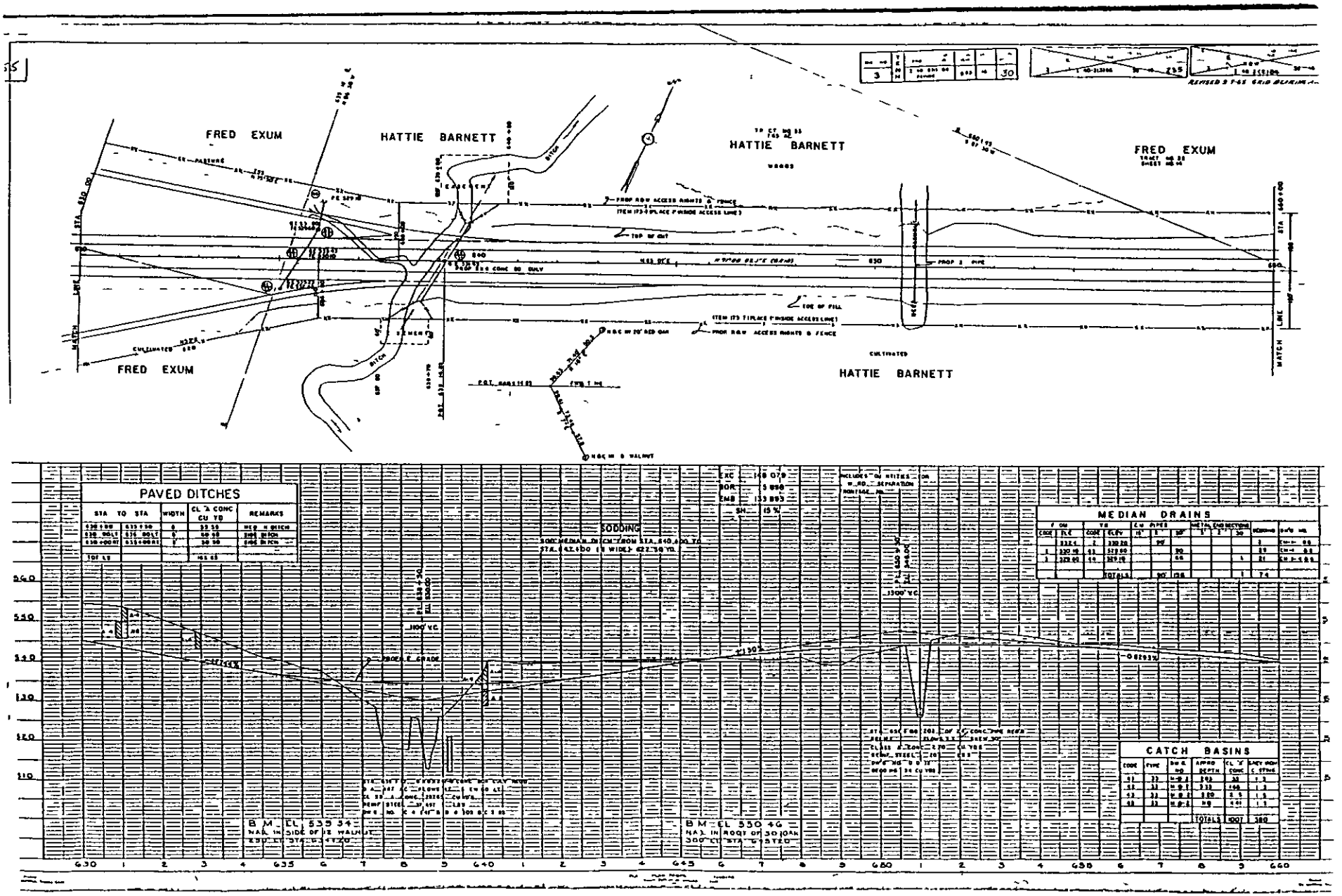
L L PEARSON
E D SNEED
470602
470601
B M RUSSELL
MILDRED PEARSON
L L PEARSON
S C PEARSON
FRED E
PAVED DITCHES
MEDIAN DRAINS
CATCH BASINS
500DINC
Section 2
Minimal Surface Prep
No Overlay
Tran-sition
Section 1
Routine Maint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HATTIE BARNETT
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FRED EXUM
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PAVED DITCHES
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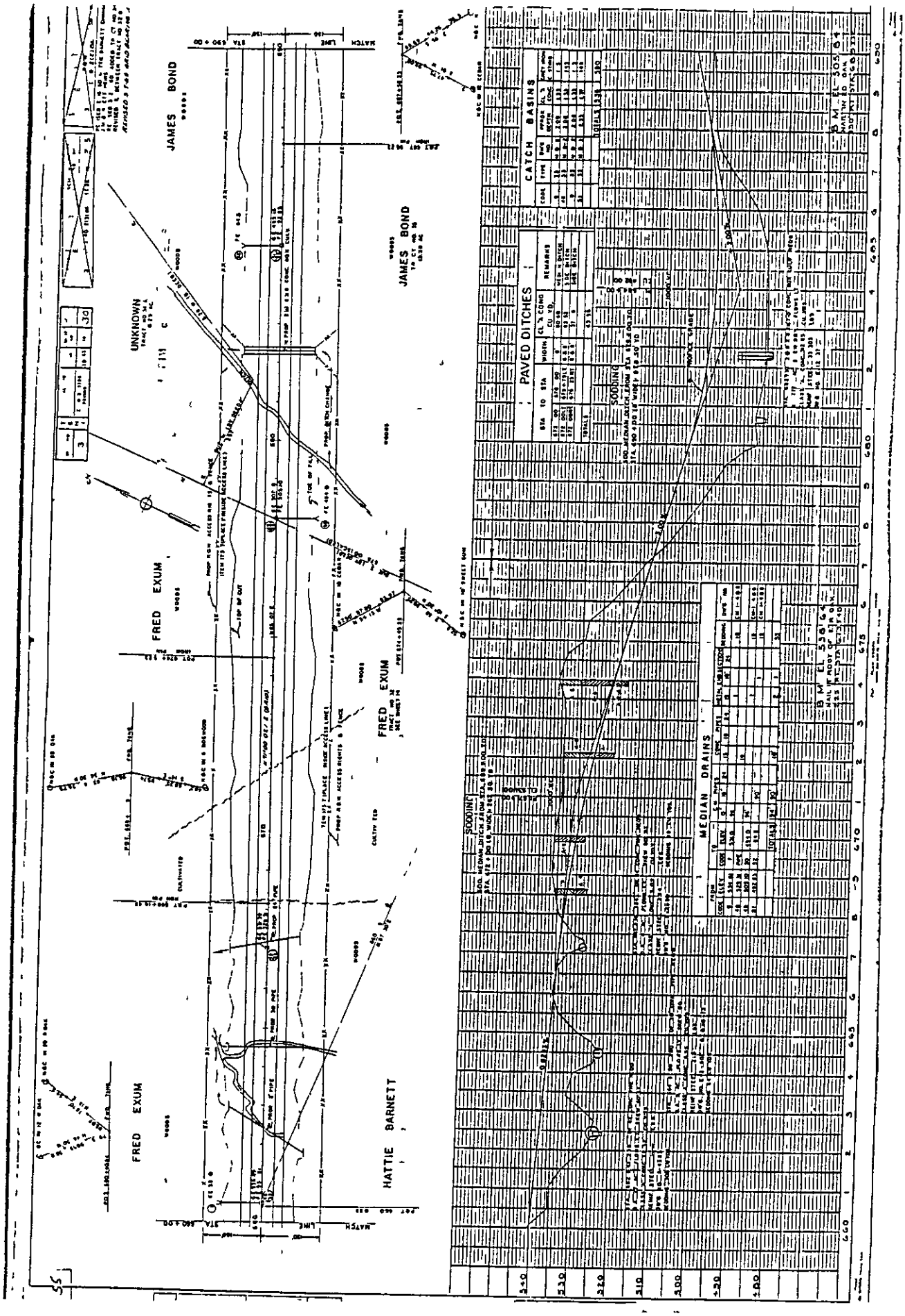
MEDIAN DRAINS
CATCH BASINS
B.M. EL 535.34
B.M. EL 550.46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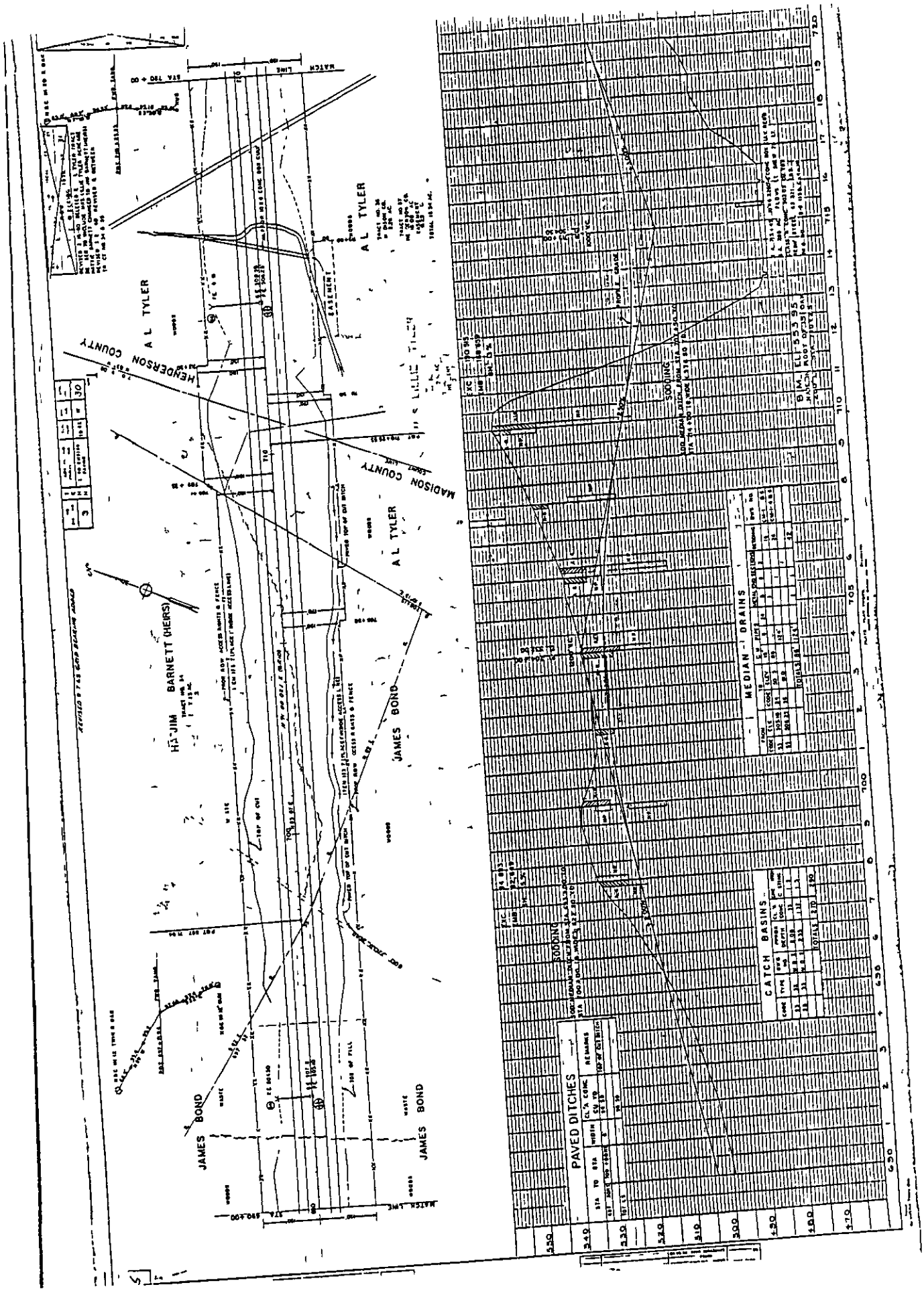
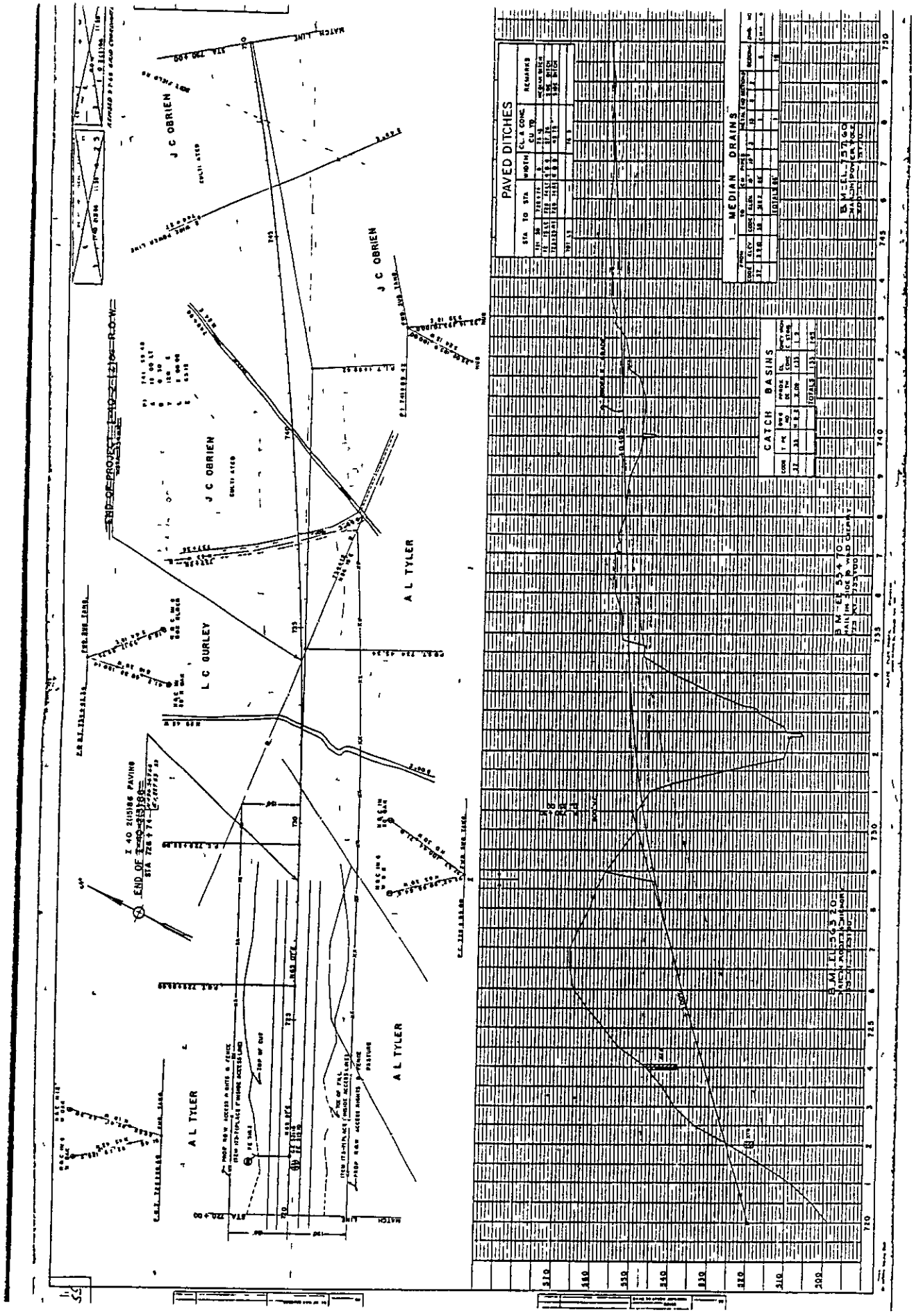
PAVED DITCHES
CATCH BASINS
MEDIAN DRAINS
SODDING


HENDERSON COUNTY
MADISON COUNTY
A L TYLER
A L TYLER
A L TYLER
HAJIM BARNETT (HEIRS)
JAMES BOND
JAMES BOND
JAMES BOND
EASEMENT
MATCH LINE
MATCH LINE
PAVED DITCHES
CATCH BASINS
MEDIAN DRAINS
SODDING
SODDING


PAVED DITCHES
MEDIAN DRAINS
CATCH BASINS
J C OBRIEN
L C GURLEY
A L TYLER
END OF PROJECT
I 40 2(15)86 PAVING

APPENDIX B

MATERIALS SAMPLING AND TESTING PLAN

Brent Rauhut Engineering Inc.

26 June 1995

Mr Steve Allen
Roadway Specialist 3
Tennessee Department of Transportation
James K Polk Bldg, Suite 900
Nashville, Tennessee 37243-0334

Subject. Tennessee SPS-6 Project (470600) Materials Sampling and Testing Plan

Dear Steve,

Enclosed is the revised plan for materials sampling and testing activities for the Tennessee SPS-6 project, located in the westbound lanes of IH-40 near Jackson, Tennessee This plan has been prepared to identify details of the materials sampling, field testing, and laboratory materials testing to occur as part of the SPS-6 project construction

This plan was originally developed in May 1991 It was later revised in January 1992, due to a re-ordering of the test sections Construction of the project has been delayed since that time A number of changes have occurred since 1991, that prompted the development of this updated sampling plan (third revision) An important development is the provision for a FHWA contracted laboratory (Law Engineering, Atlanta, Georgia) that is responsible for a portion of the material testing This will be discussed in Section C of this document

If you have any questions or comments regarding the information provided in this plan, please do not hesitate to contact me A copy of this document is also being provided to Mr Monte Symons of the FHWA, for review and approval

Sincerely,

Mark P Gardner
Project Engineer, SRCO

MPG dmj

Enclosure As stated

c w/Enc Monte Symons, FHWA/LTPP-DC
Bob Payne, FHWA-TN Div
Gonzalo Rada, PCS/LAW

c w/o Enc Morris Reinhardt, RE-SRCO

8240 Mopac Suite 220 • Austin Texas 78759 • (512) 346-0870 • FAX (512) 346-8750

MATERIAL SAMPLING
AND
FIELD TESTING PLAN

TENNESSEE SPS-6 PROJECT 470600
IH-40, WESTBOUND
MADISON COUNTY, TENNESSEE

PREPARED BY:

BRENT RAUHUT ENGINEERING INC.
FHWA/LTPP SOUTHERN REGION COORDINATION OFFICE
8240 MOPAC, SUITE 220
AUSTIN, TEXAS 78759

MAY 1991

REVISED JANUARY 1992

REVISED JUNE 1995

MATERIAL SAMPLING AND FIELD TESTING PLAN
TENNESSEE SPS-6 PROJECT (470600)
IH-40, WESTBOUND
MADISON COUNTY, TENNESSEE

INTRODUCTION

As part of their participation in the SHRP/FHWA Long Term Pavement Performance studies, the State of Tennessee has elected to construct an SPS-6 project to study the rehabilitation of rigid pavements This project will consist of multiple test sections with similar details and materials along a stretch of IH-40, in the westbound lane, near Jackson, Tennessee It is the intent of this document to provide a plan for the materials sampling and field testing, and a listing of the laboratory materials testing that will occur as a part of this project

This document has been prepared in accordance with the guidelines provided by the Strategic Highway Research Program in Operational Memorandum Nº SHRP-LTPP-OM-019, entitled "Specific Pavement Studies Materials Sampling and Testing Requirements for Experiment SPS-6, Rehabilitation of Jointed Portland Cement Concrete Pavements, January 1991" Recognizing the apparent variability in the construction of roadway projects, the goal of this effort is to develop a sampling and testing plan for the project materials that will be consistent with other projects in this experiment, and therefore make the information obtained suitable for analysis

The objective of the SPS-6 study is to evaluate rehabilitation methods that can be used to restore the condition and extend the service life of jointed portland cement concrete pavements The pavement type and condition, environment, traffic, intended pavement preparation, and use of asphalt concrete overlay are primary considerations in selecting an appropriate rehabilitation method The standard SPS-6 experiment layout includes eight test sections In order to extend the findings of this study even further, Tennessee DOT has elected to construct an additional two test sections, including a latex-modified HMAC overlay and a polymer-modified HMAC overlay The in-service tests proposed in this experiment will help quantify the influence of these parameters on pavement performance and life expectancy, and improve current design procedures Consequently, the experiment will help highway agencies select methods and strategies for rehabilitation of existing jointed portland cement concrete pavements

This sampling and testing plan was developed by Brent Rauhut Engineering Inc, the Southern Region Coordination Office, under contract to the Federal Highway Administration If, during the construction activities, any questions arise regarding the sampling and/or testing to be conducted, one should first coordinate these questions with the Tennessee Department of Transportation, who may refer them to the Southern Region Coordination Office

This document has been prepared in three distinct parts

A General Layout Information

B Materials Sampling and Testing

C Laboratory Materials Testing

The General Layout section provides tables and figures of the layout showing the ten test sections along the roadway and the layer structure of each test section

The Material Sampling and Testing section defines in detail all of the material samples to be obtained, testing to be performed in the field, and provides an itemized list showing where each sample is to be shipped for laboratory testing

Finally, the Laboratory Material Testing section outlines the laboratory material test program to be conducted and provides tracking charts showing the testing to be performed on each sample of each material in each laboratory

SECTION A

GENERAL LAYOUT INFORMATION

SECTION A

GENERAL LAYOUT INFORMATION

This section of the plan provides a description of the SPS-6 project in terms of the location of the test sections along the roadway Table A-1 lists the test sections in order by station, providing an indication of the cross-section of each test section Note that since the test sections are in the westbound lane, stations decrease from the beginning of a test section to the end Table A-2 tracks the test sections from the beginning of the first section at Station 615+00 to the end of the last section at Station 515+00 This table indicates transition areas between sections and the variation of pavement layer materials within these transitions

Finally, Figure A-1 depicts the layout of the test sections along the roadway and shows the variation of material type and layer thickness

The referenced project stationing was provided by the Tennessee DOT If there are significant changes in alignment or stationing, this plan should be reviewed closely to determine if revisions are warranted

TABLE A-1. TEST SECTION LAYOUT

Section	Cross Section	Begin Station	End Station
470601	Existing JPCP	615+00	610+00
	Routine Maintenance		
	No Overlay		
470602	Existing JPCP	609+00	599+00
	Min Restoration		
	No Overlay		
470605	Existing JPCP	592+00	582+00
	Max Restoration (CPR)		
	No Overlay		
470603	Existing JPCP	576+00	571+00
	Min Restoration		
	4" AC Overlay		
470606	Existing JPCP	570+00	565+00
	Max Restoration (CPR)		
	4" AC Overlay		
470604	Existing JPCP	561+00	556+00
	Min Restoration		
	4" AC Overlay w/Saw Joints		

TABLE A-1. TEST SECTION LAYOUT (Continued)

Section	Cross Section	Begin Station	End Station
470607	Existing JPCP	543+00	538+00
	Crack and Seat		
	4" AC Overlay		
470608	Existing JPCP	531+00	526+00
	Crack and Seat		
	8" AC Overlay		
470662	Existing JPCP	525+00	520+00
	Routine Surface Preparation		
	Latex Modified HMAC Overlay		
470661	Existing JPCP	520+00	515+00
	Routine Surface Preparation		
	Polymer Modified HMAC Overlay		

TABLE A-2. ORDERING OF SECTIONS ALONG CENTERLINE STATIONING

Section ID	Begin Sta.	End Sta.	Treatment/Overlay Thickness			
			Restoration	Crack/ Break & Seat	(1) AC Surface (in)	Retrofitted Edgedrains
470601	615+00	610+00	Min	No	0	No
Transition	610+00	609+00	Min	No	0	No
470602	609+00	599+00	Min	No	0	No
Transition	599+00	592+00	Min -Max	No	0	No-Yes
470605	592+00	582+00	Max	No	0	Yes
Transition	582+00	576+00	Max -Min	No	0-4	Yes-No
470603	576+00	571+00	Min	No	4	No
Transition	571+00	570+00	Min -Max	No	4	No-Yes
470606	570+00	565+00	Max	No	4	Yes
Transition	565+00	561+00	Max -Min	No	4	Yes-No
470604	561+00	556+00	Min	No	4(2)	No
Transition	556+00	543+00	Min	No-Yes	4	No-Yes
470607	543+00	538+00	Min	Yes	4	Yes
Transition	538+00	531+00	Min	Yes	4-8	Yes
470608	531+00	526+00	Min	Yes	8	Yes
Transition	526+00	525+00	Min	Yes-No	8-9 5	Yes
470662	525+00	520+00	Min	No	9 5(3)	Yes
Transition	520+00	520+00	Min	No	9 5	Yes
470661	520+00	515+00	Min	No	9 5(4)	Yes
Transition						

Notes
1 Combined binder and wearing course thickness
2 With saw AC overlay joints above JCP joints and seal
3 Latex modified HMAC overlay
4 Polymer modified HMAC overlay

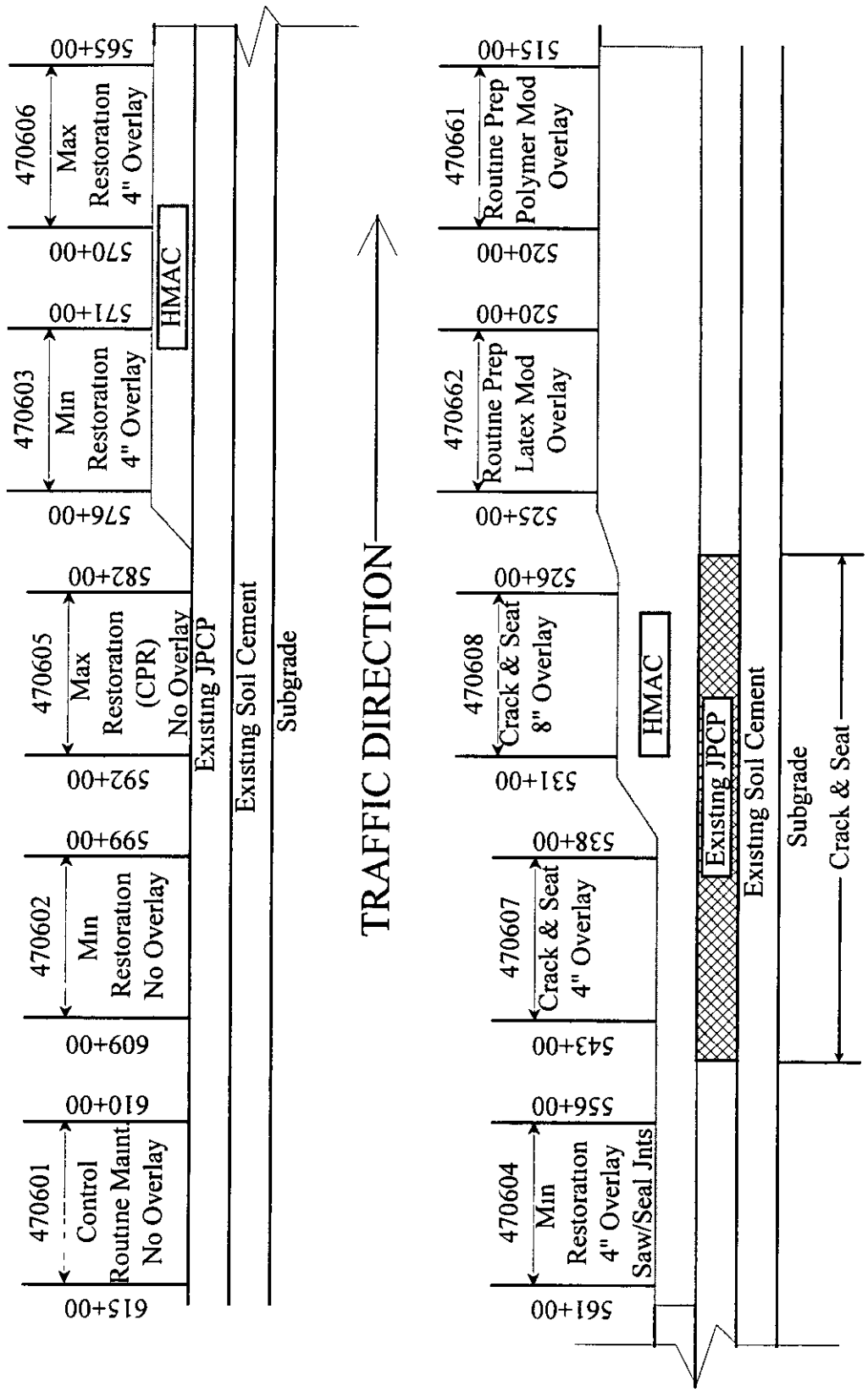


FIGURE A-1. LAYOUT OF TEST SECTIONS
TENNESSEE SPS-6 PROJECT (470600)

SECTION B

MATERIAL SAMPLING AND TESTING

SECTION B

MATERIAL SAMPLING AND TESTING

This section of the plan provides for the material sampling and testing activities that occur in the field Table B-1 provides the scope of the material sampling and testing activities Table B-2 describes special sampling needs for the Materials Reference Library and provides contact information to coordinate sample shipping arrangements

Figures B-1 through B-13 show the locations and numbering scheme for the many samples and tests scheduled Figures B-2 and B-3 show the sampling and testing to occur for preconstruction and postconstruction, respectively, while Figures B-4 through B-13 show all sampling and testing scheduled for each test section

Finally, Tables B-3 and B-4 list samples to be shipped to the state laboratory (or their designee), and those samples to be shipped to the FHWA/LTPP testing contractor, respectively Shipment of samples to the FHWA/LTPP testing contractor, LAW Engineering in Atlanta, Georgia, should be coordinated through the Southern Region Coordination Office

TABLE B-1. SCOPE OF MATERIAL SAMPLING AND FIELD TESTING

MATERIAL & SAMPLING DESCRIPTION	Nº OF MATERIAL SAMPLES	SAMPLE TYPE DESIGNATION
PRE-CONSTRUCTION SAMPLING		
1 PCC (Original Layer)		
Coring - 102 mm diameter cores	24	C1-C24
Coring - 152 mm diameter cores	3	A1-A3
Coring - 305 mm diameter cores	3	BA1-BA3
2 Bound Base (Soil Cement)		
Coring - 102 mm diameter cores	3	C5, C11, C19
Coring - 152 mm diameter cores	3	A1-A3
Coring - 305 mm diameter cores	3	BA1-BA3
3 Subgrade		
Splitspoon Sampling	6*	A1-A3
Thin-walled Tube Sampling (* 2 tubes or 2 spoons or combination per hole)	6*	A1-A3
Bulk Sampling in 305 mm diameter holes	3	BA1-BA3
Bulk Sampling in Test Pits (91 kg/sample)	2	TP1-TP2
In Situ Density & Moisture Content (Nuclear Gauge)	2	TP1-TP2
Moisture Content Samples	7	TP1-TP2, BA1-BA3
5 Shoulder Auger Probes	3	S1-S3
POST-CONSTRUCTION SAMPLING		
1 Asphaltic Concrete (Overlay)		
Coring - 102 mm diameter cores	28	C25-C52
Bulk Samples from Plant (100 lb ea)	5	BV1-BV5

TABLE B-2. MATERIAL SAMPLING FOR THE MATERIALS REFERENCE LIBRARY (MRL)

Material & Sample Description[2]	Nº. of Samples	Vol. Each Sample	Sampling Location
Asphalt Cement[1]			
Surface Mix	3	20 l (5 gal)	Plant
Binder Mix	3	20 l (5 gal)	Plant
Base Mix	3	20 l (5 gal)	Plant
Combined Graded Coarse & Fine Aggregate[1]			
Surface Mix	1	200 l (55 gal)	Plant
Binder Mix	1	200 l (55 gal)	Plant
Base Mix	1	200 l (55 gal)	Plant
Finished HMAC Mix (Uncompacted)			
Surface Mix	3	20 l (5 gal)	Paver
Binder Mix	3	20 l (5 gal)	Paver
Base Mix	3	20 l (5 gal)	Paver

Notes:

1 Where identical material types are used for different layers, it is not necessary to duplicate sampling For example, if only one grade of asphalt cement is used for all three layers, then only three 20 l (5 gal) samples are needed

2 Only those materials for the standard SPS-6 experiment sections will be sampled and stored at the MRL

3 Containers for this sampling will be provided by the LTPP **Materials Reference Library (MRL). Shipping of the sample containers and samples to the MRL will be paid for by the MRL.** Scheduling information including (1) date containers needed, (2) state agency contact name, and (3) shipping address and telephone number should be provided to the MRL Contractor as soon as it is feasible to do so The contact name, address and telephone number for the MRL Contractor are as follows

Mr Andrew Brigg
Nichols Consulting Engineers, Chtd
1885 So Arlington Ave , Suite 111
Reno, Nevada 89509
(702) 329-4955

These samples should be labeled according to applicable guidelines provided elsewhere and shipped to the MRL Contractor upon completion of sampling activities

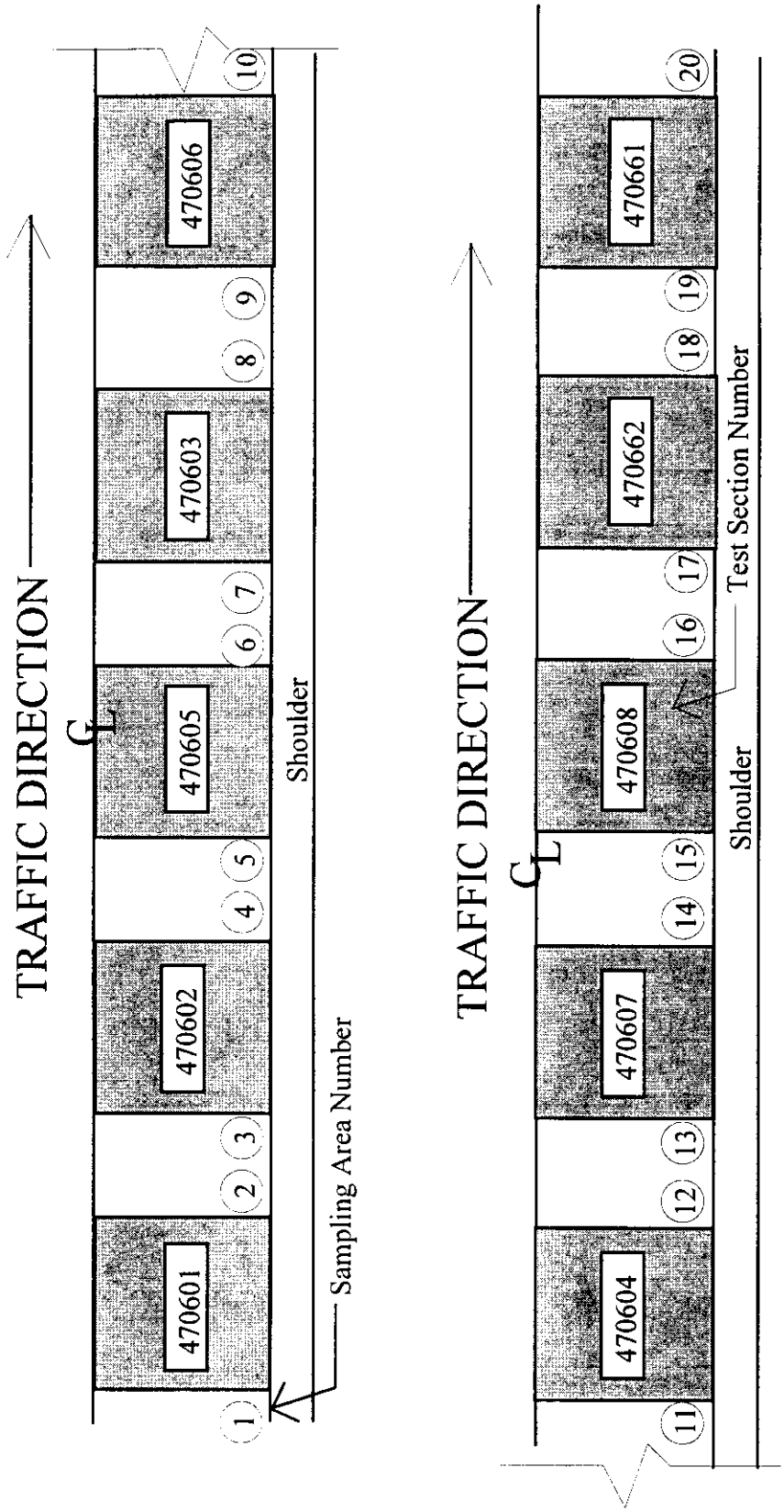


FIGURE B-1. SITE LAYOUT WITH SAMPLING AREA LOCATIONS

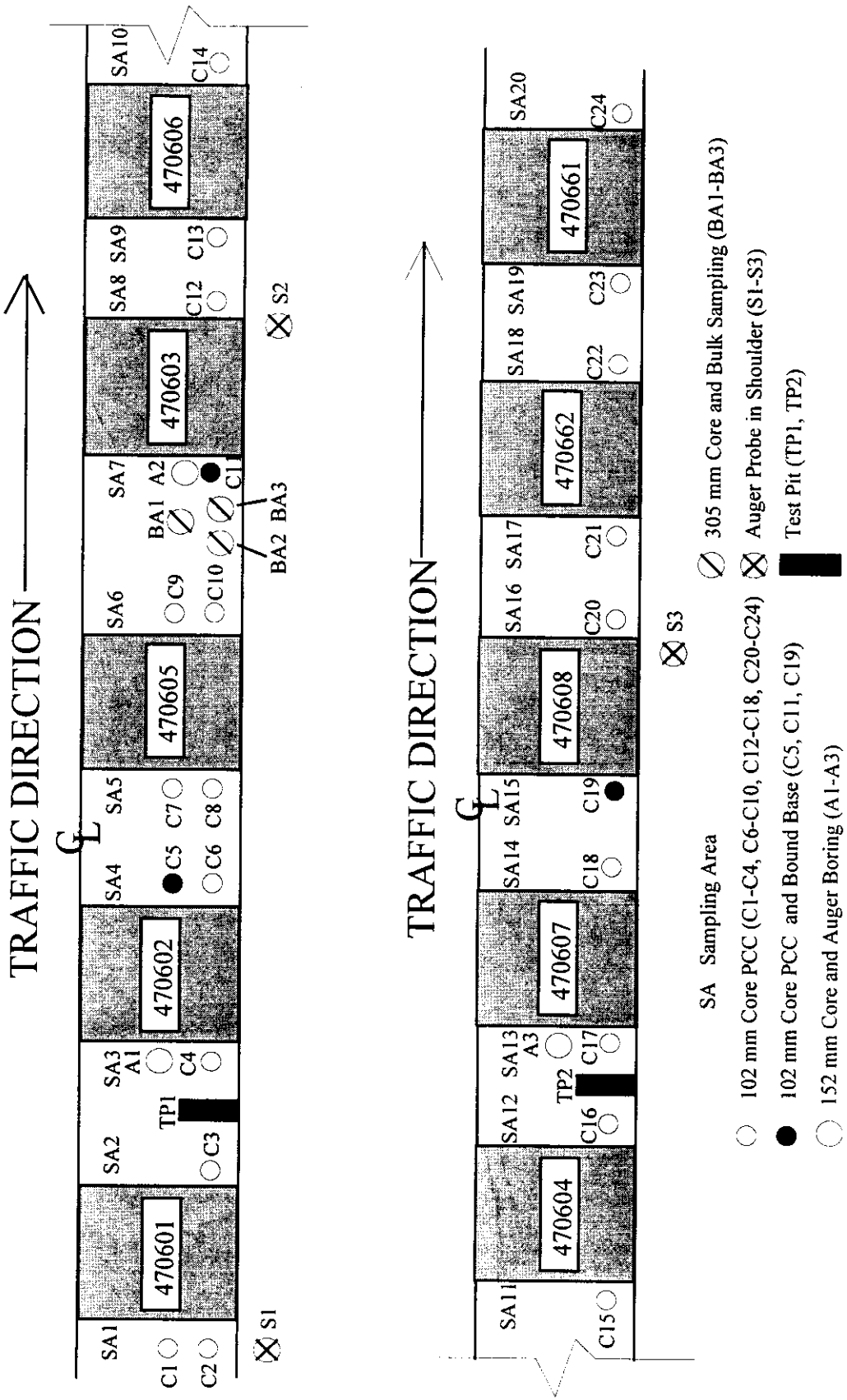


FIGURE B-2. PRECONSTRUCTION SAMPLING

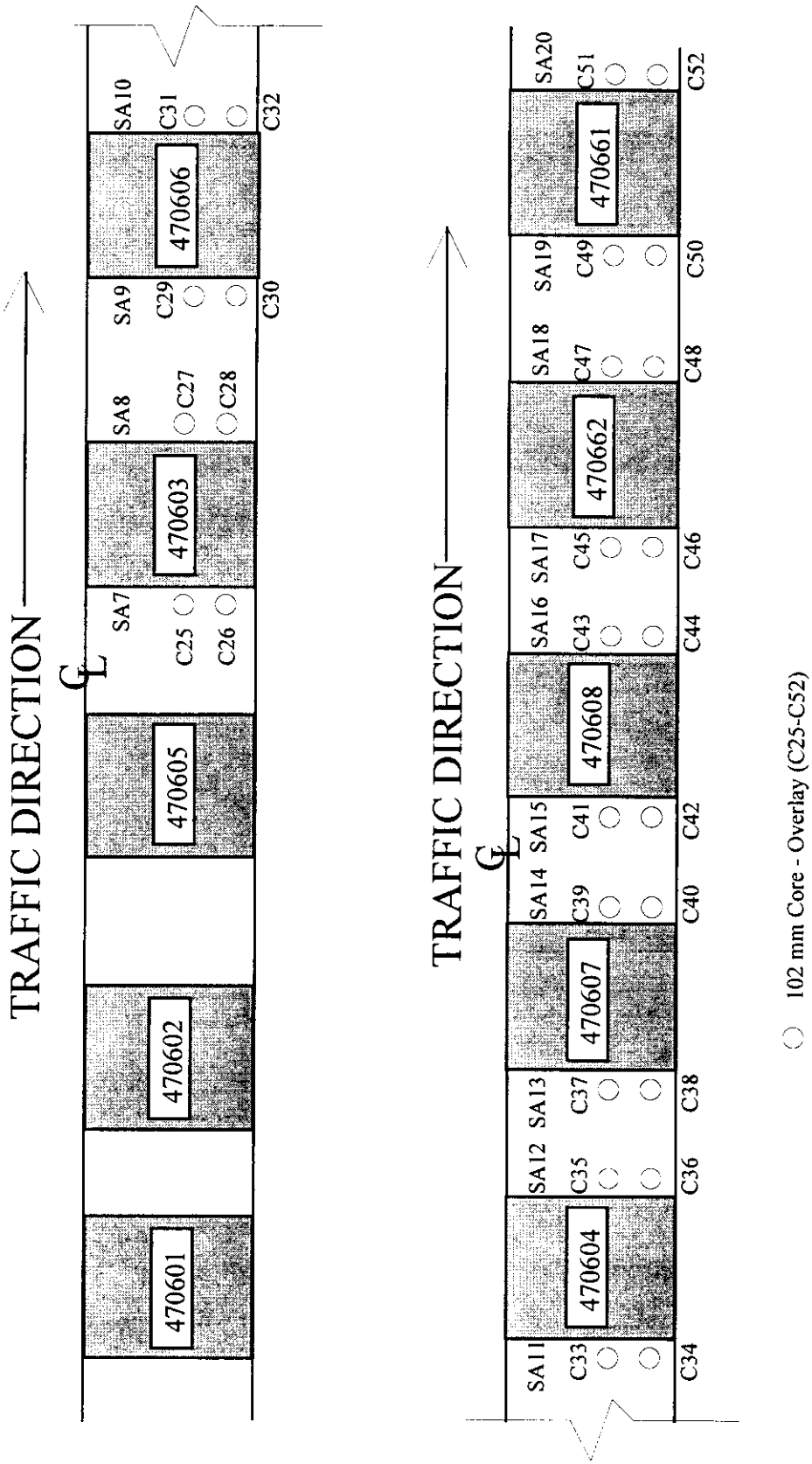


FIGURE B-3. POSTCONSTRUCTION SAMPLING

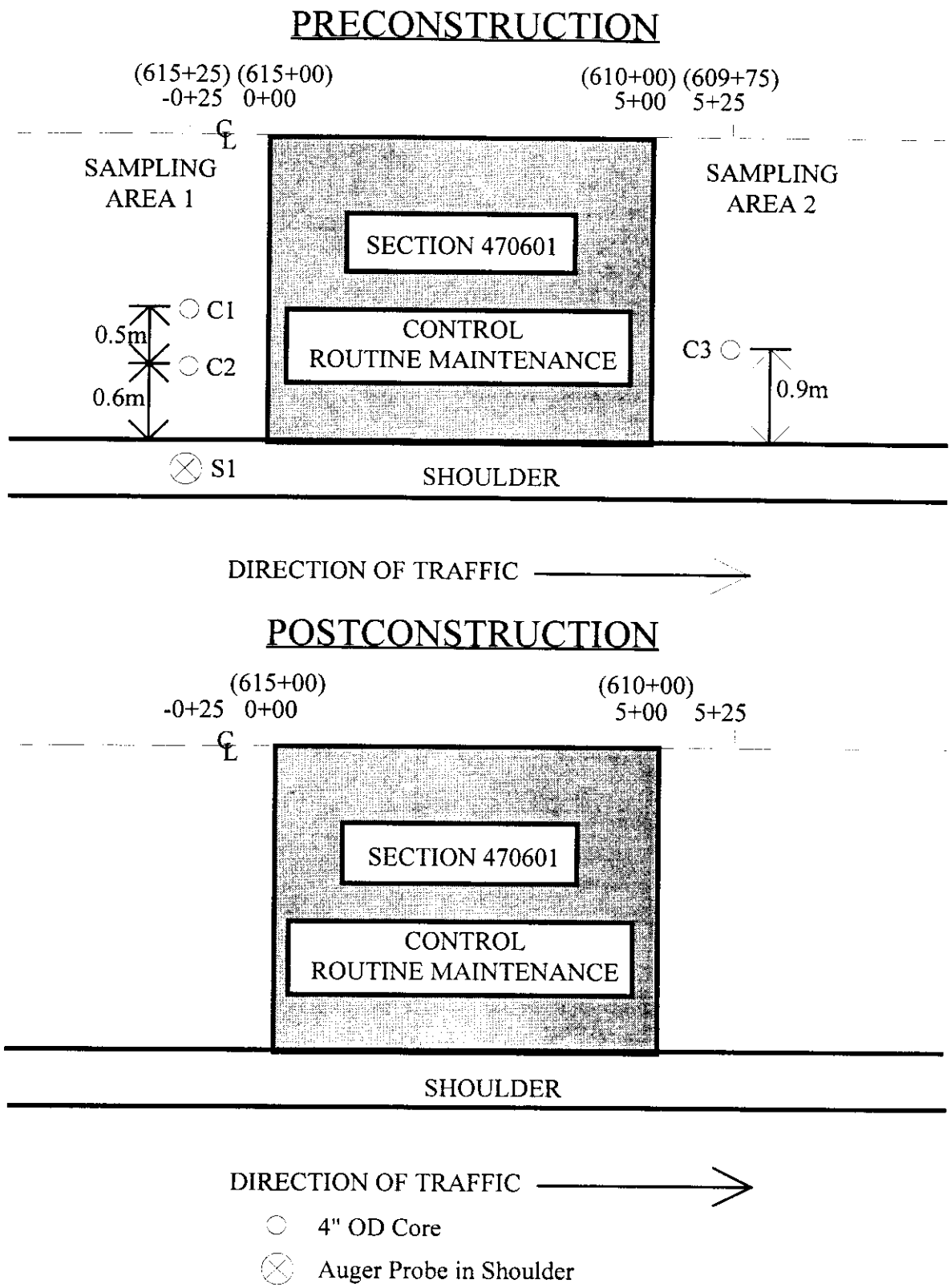


FIGURE B-4. SAMPLING PLAN FOR TEST SECTION 470601

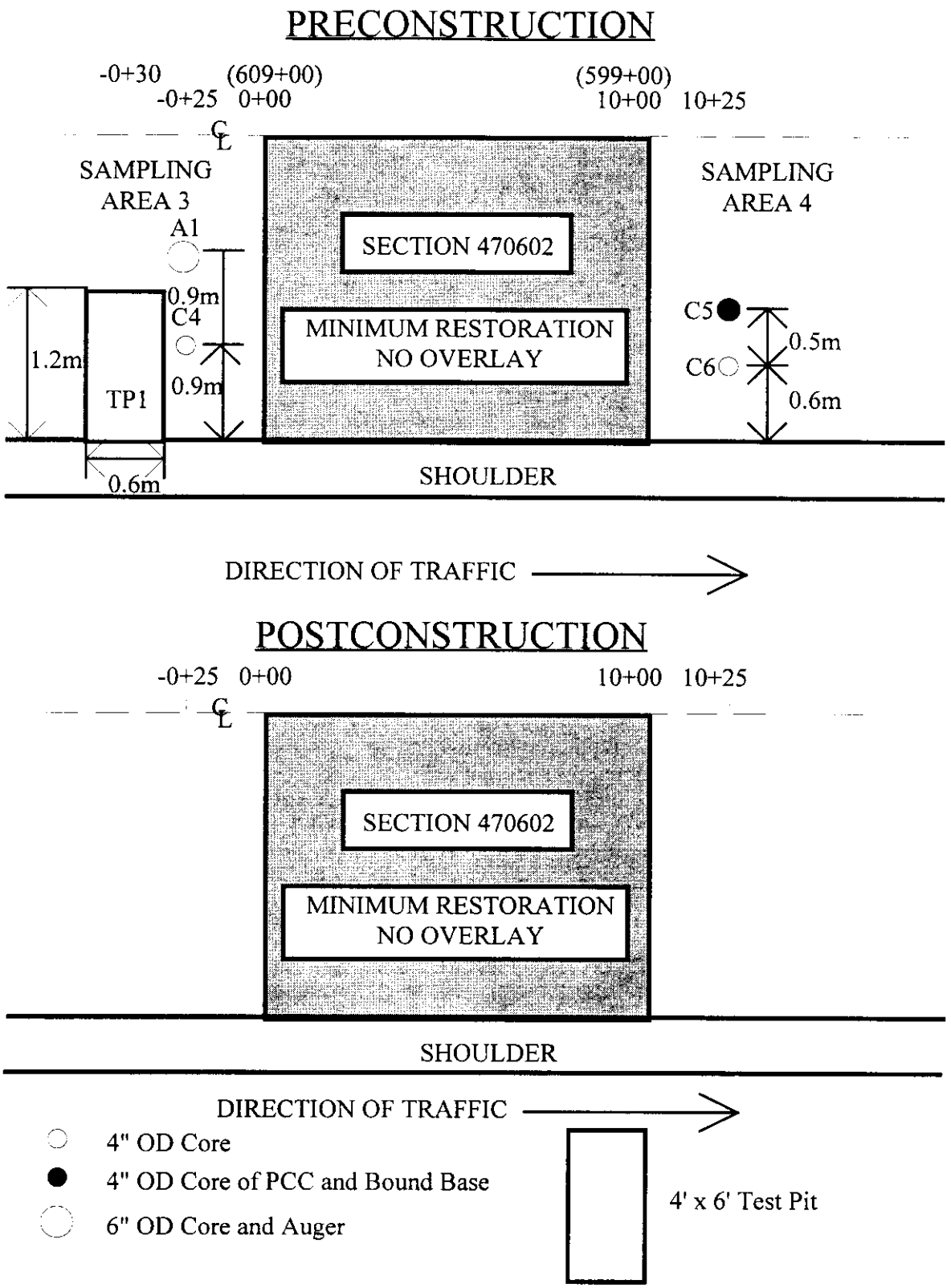


FIGURE B-5. SAMPLING PLAN FOR TEST SECTION 470602

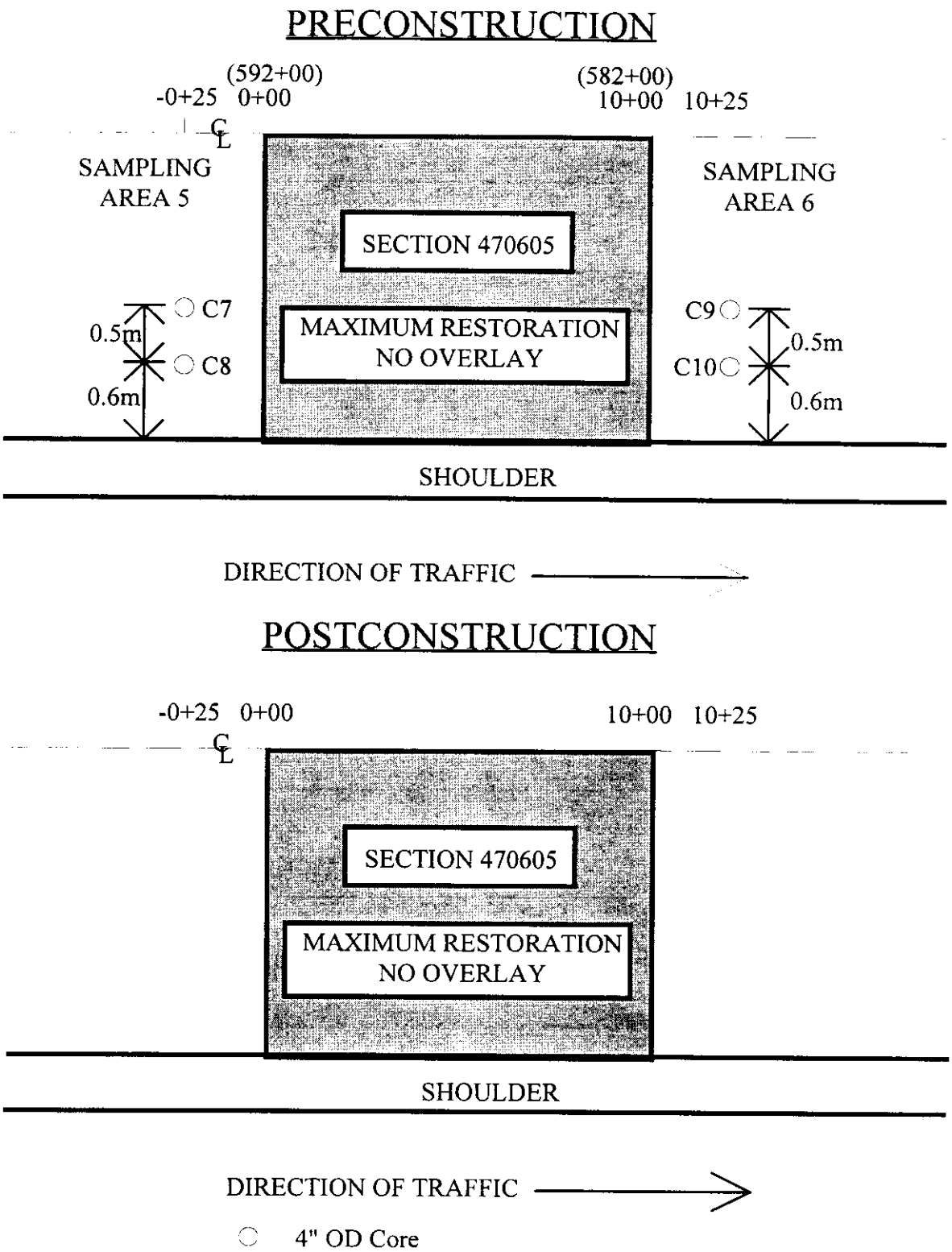


FIGURE B-6. SAMPLING PLAN FOR TEST SECTION 470605

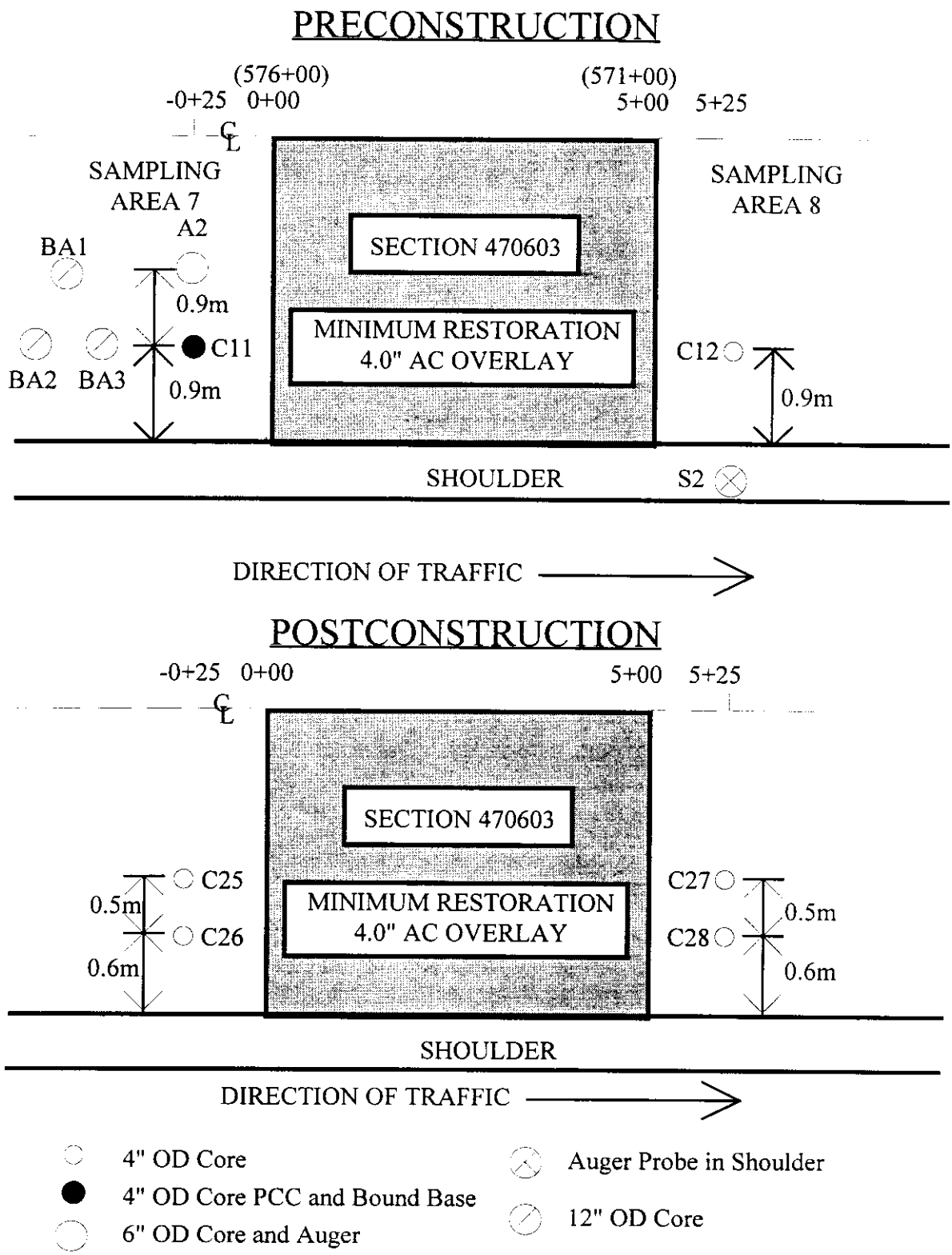


FIGURE B-7. SAMPLING PLAN FOR TEST SECTION 470603

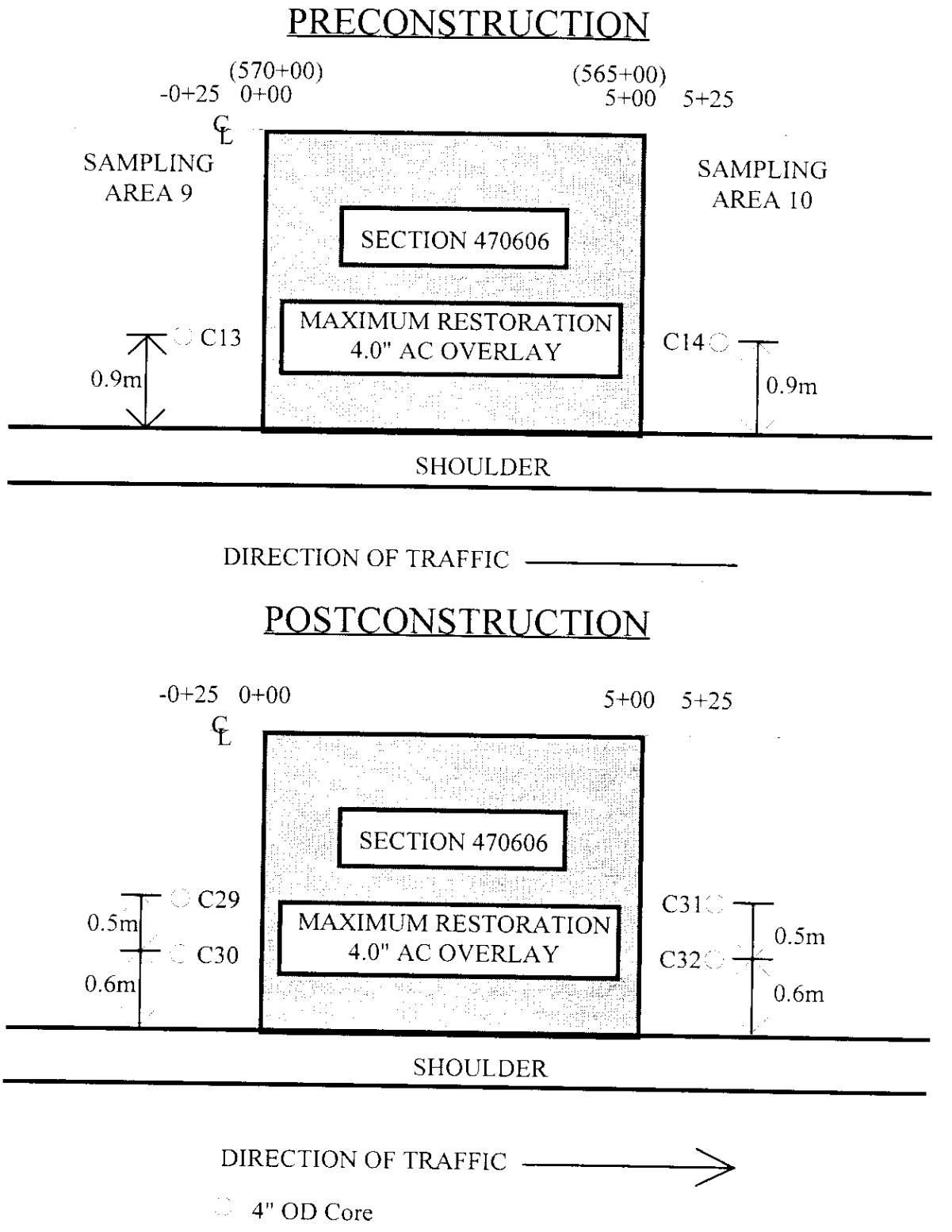


FIGURE B-8. SAMPLING PLAN FOR TEST SECTION 470606

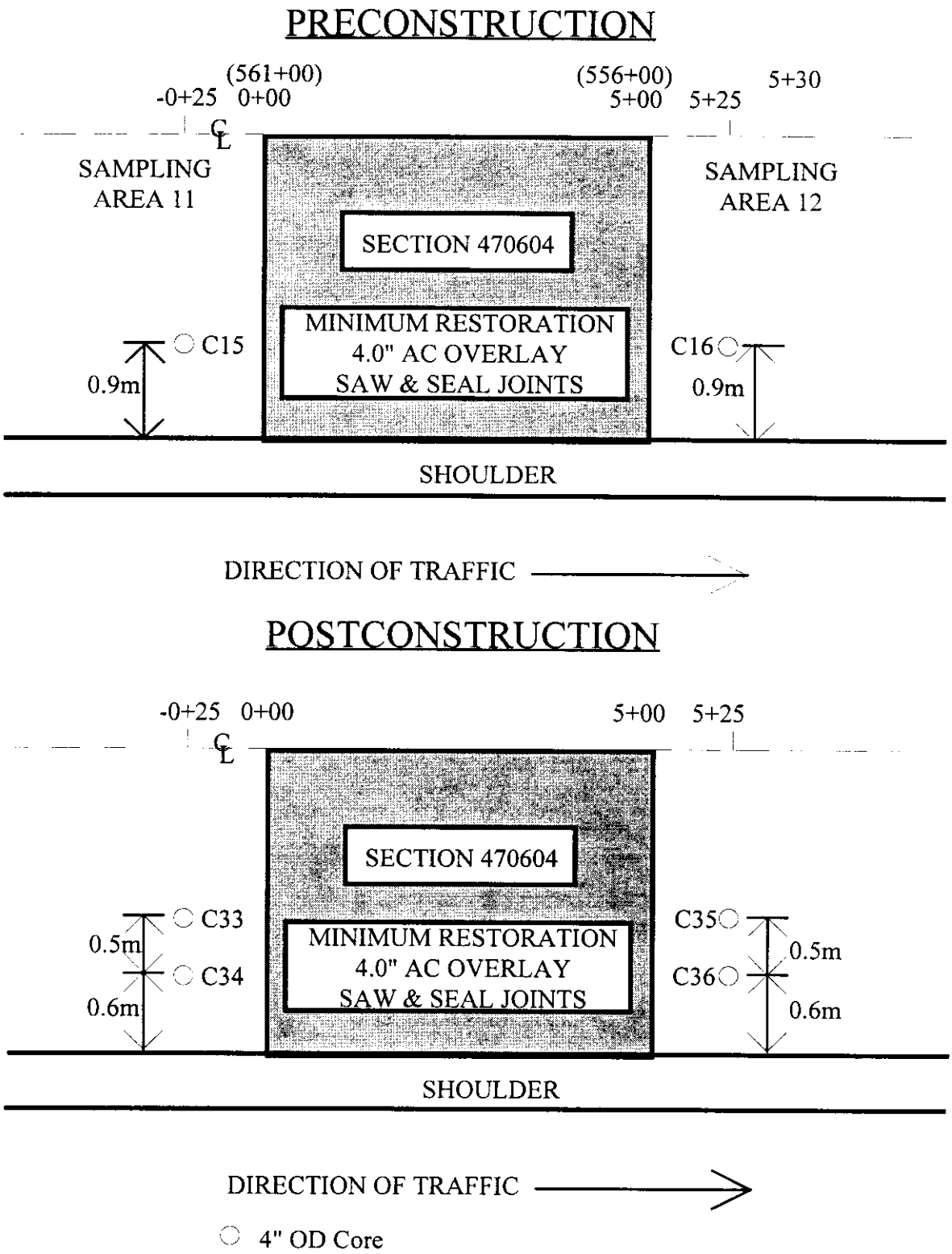


FIGURE B-9. SAMPLING PLAN FOR TEST SECTION 470604

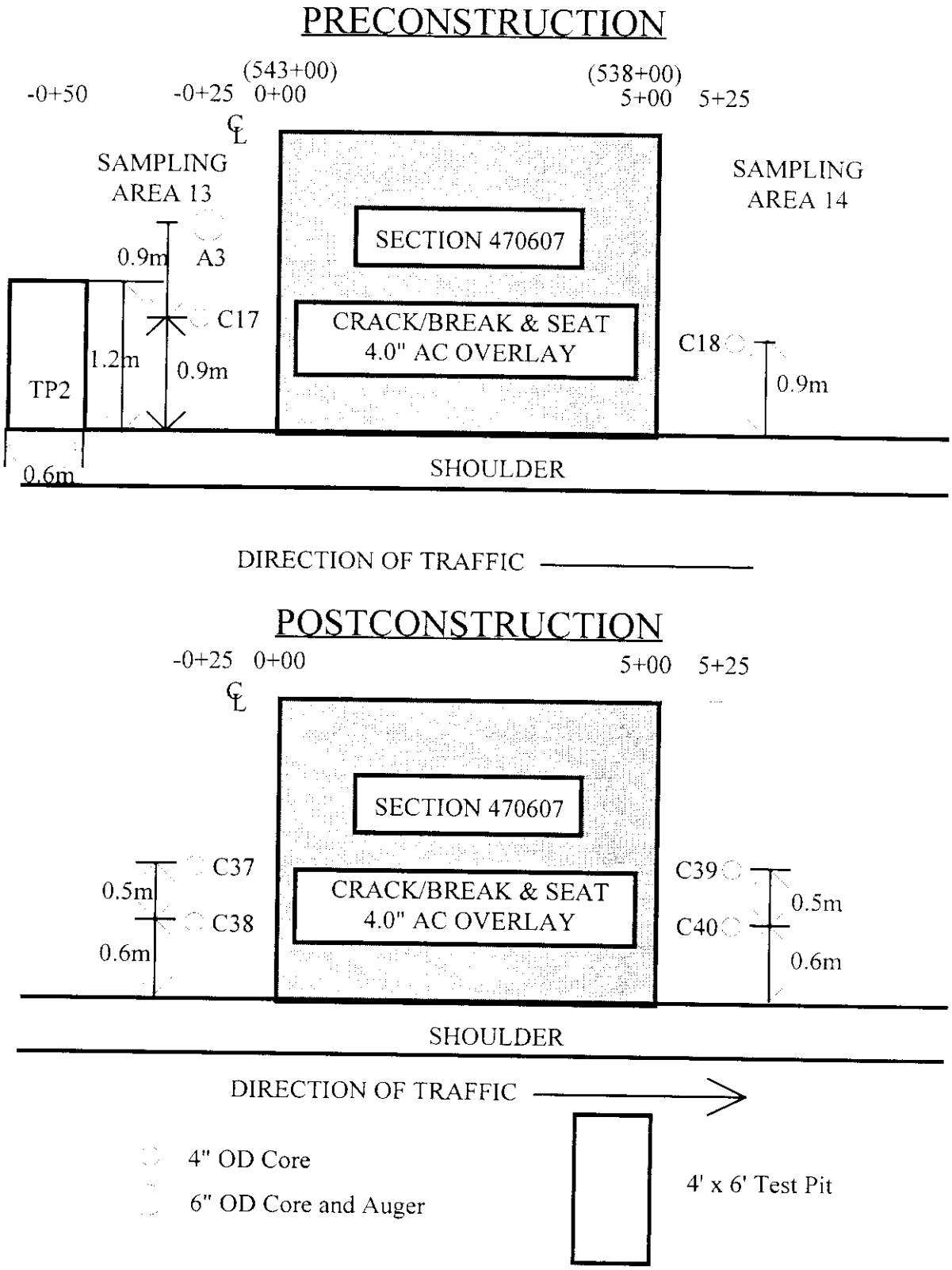


FIGURE B-10. SAMPLING PLAN FOR TEST SECTION 470607

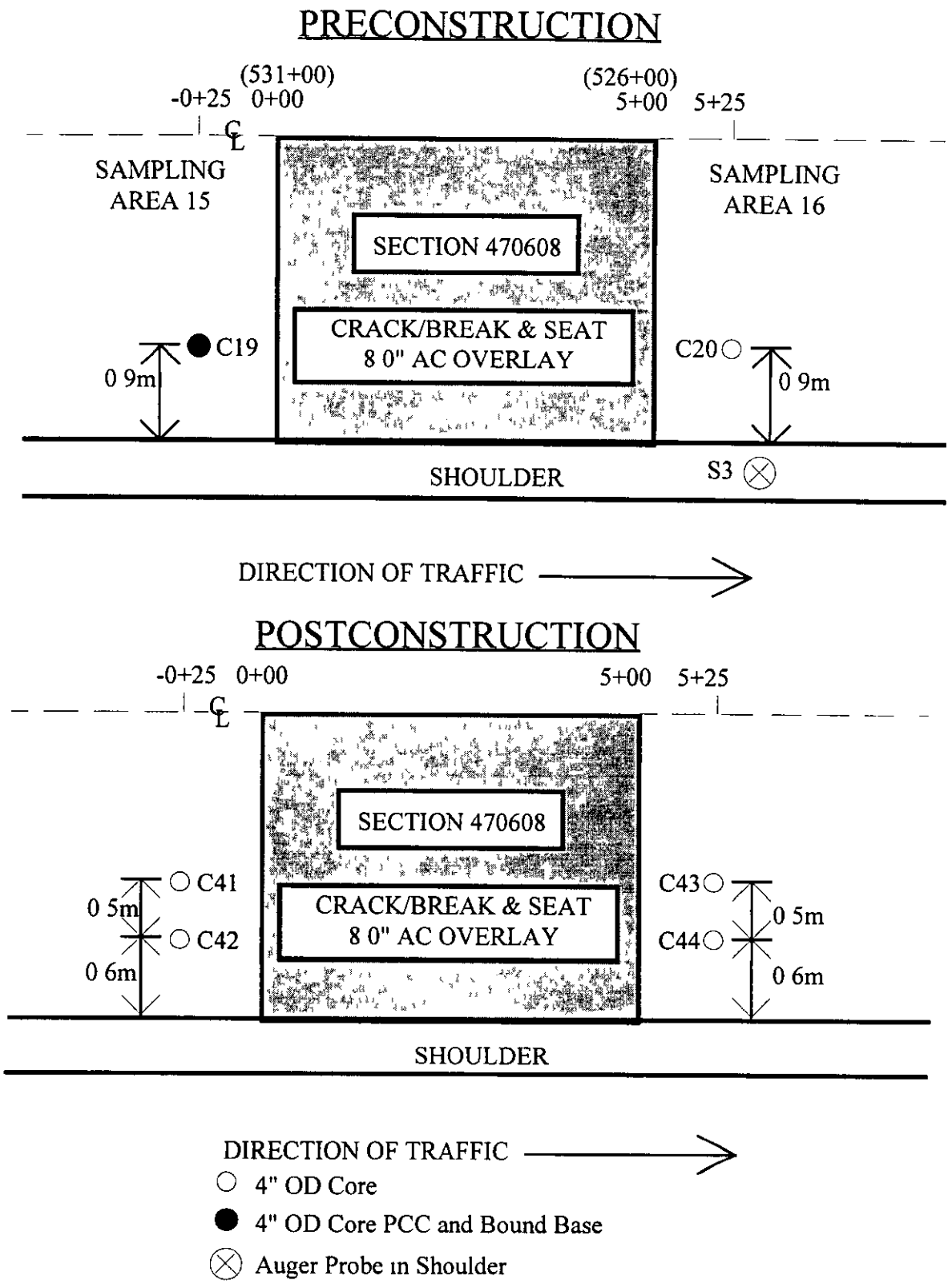


FIGURE B-11. SAMPLING PLAN FOR TEST SECTION 470608

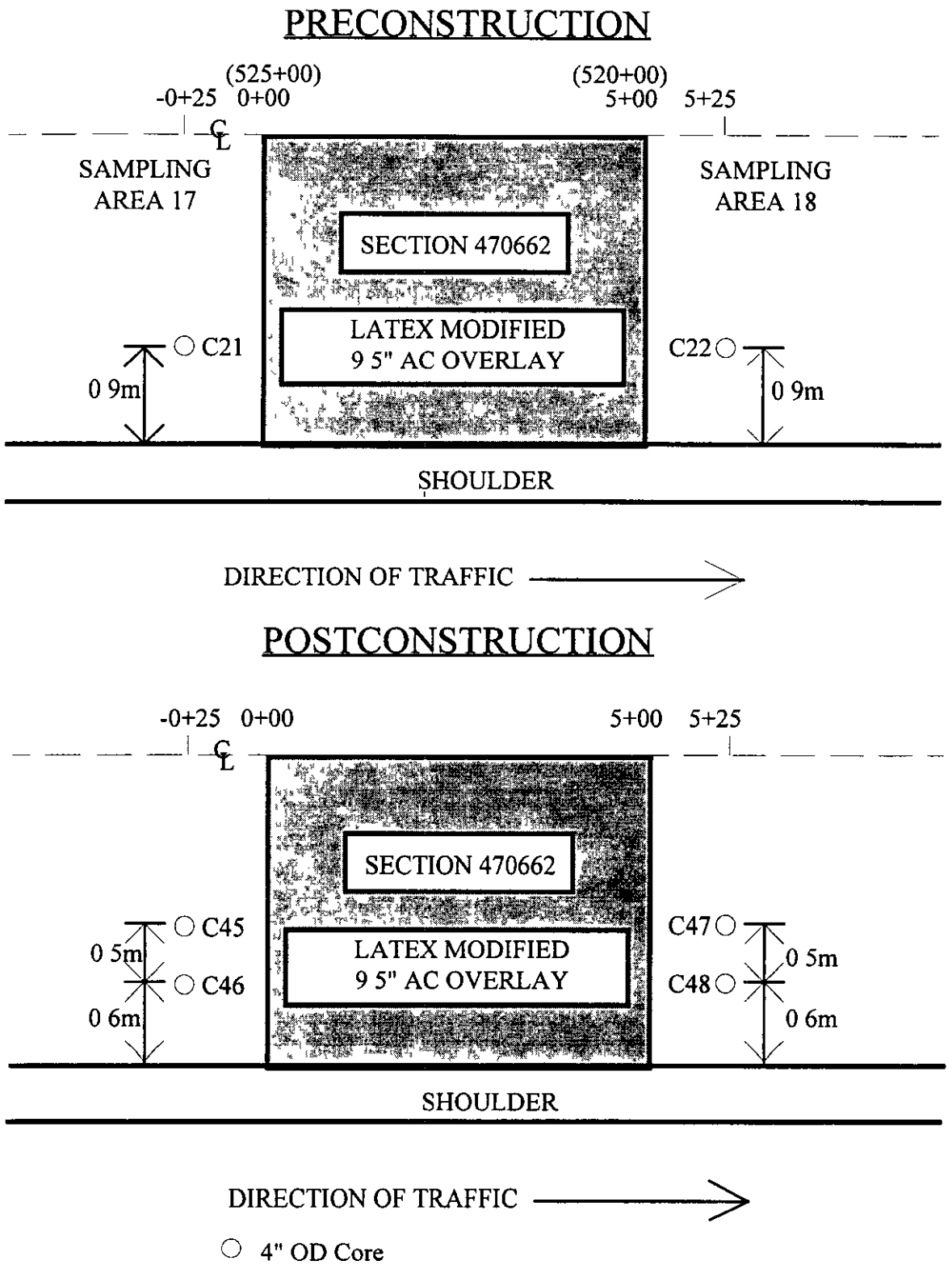


FIGURE B-12. SAMPLING PLAN FOR TEST SECTION 470662

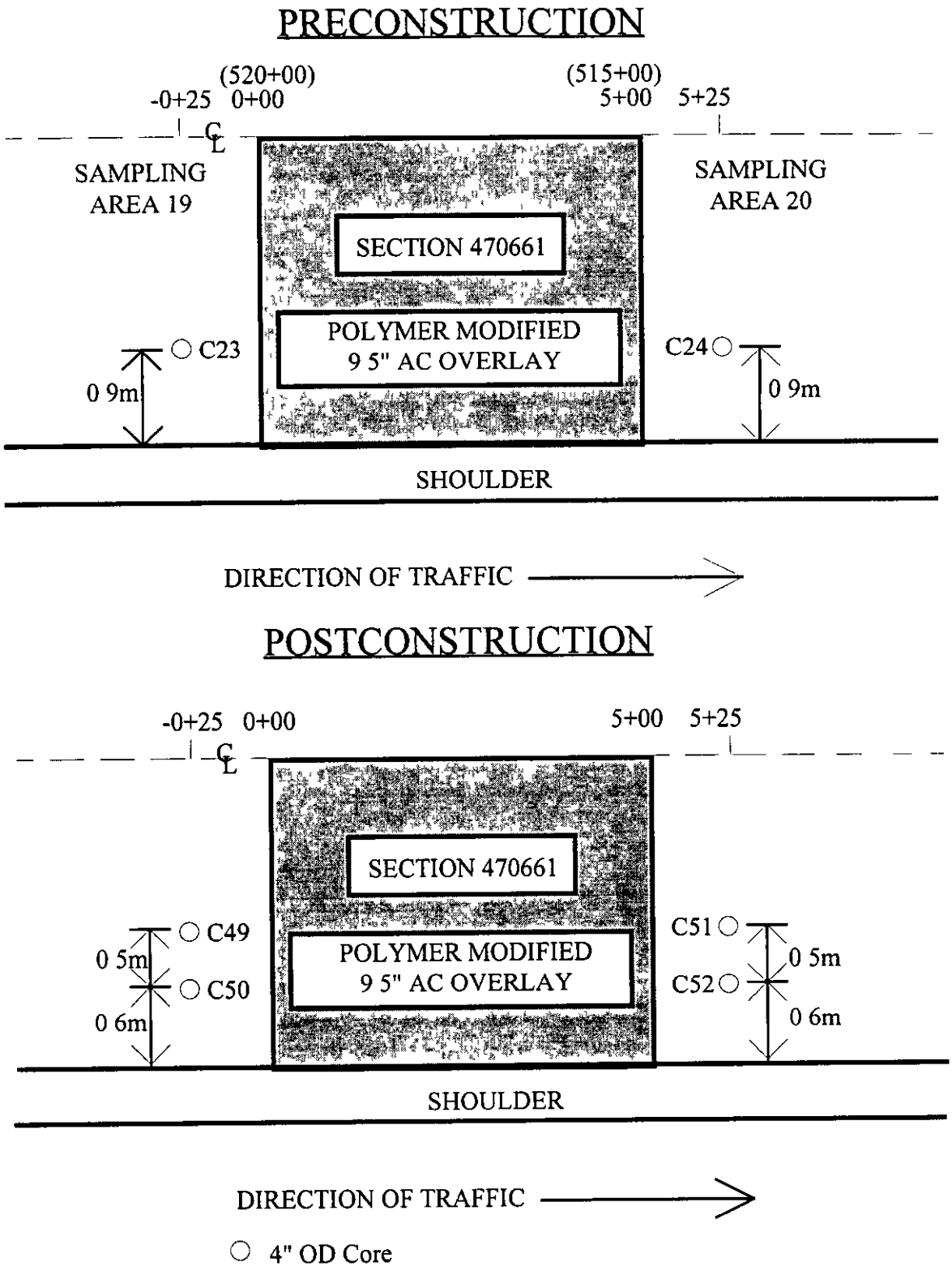


FIGURE B-13. SAMPLING PLAN FOR TEST SECTION 470661

TABLE B-3. SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Number	Lab Test Number (1)	Type of Sample
Portland Cement Concrete			
C1	CP01	1	102 mm (4 in.) Core
C2	CP02	1	102 mm (4 in.) Core
C3	CP03	2	102 mm (4 in.) Core
C4	CP04	1	102 mm (4 in.) Core
C5	CP05	2	102 mm (4 in.) Core
C6	CP06	2	102 mm (4 in.) Core
C7	CP07	1	102 mm (4 in.) Core
C8	CP08	1	102 mm (4 in.) Core
C9	CP09	2	102 mm (4 in.) Core
C10	CP10	2	102 mm (4 in.) Core
C11	CP11	1	102 mm (4 in.) Core
C12	CP12	2	102 mm (4 in.) Core
C13	CP13	1	102 mm (4 in.) Core
C14	CP14	2	102 mm (4 in.) Core
C15	CP15	1	102 mm (4 in.) Core
C16	CP16	2	102 mm (4 in.) Core
C17	CP17	1	102 mm (4 in.) Core
C18	CP18	2	102 mm (4 in.) Core
C19	CP19	1	102 mm (4 in.) Core
C20	CP20	2	102 mm (4 in.) Core
C21	CP21	1	102 mm (4 in.) Core
C22	CP22	2	102 mm (4 in.) Core
C23	CP23	1	102 mm (4 in.) Core
C24	CP24	2	102 mm (4 in.) Core

TABLE B-3. SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location	Sample Number	Lab Test Number [1]	Type of Sample
BA1	BP01	1	305 mm (12 in) Core
BA2	BP02	1	305 mm (12 in) Core
BA3	BP03	1	305 mm (12 in) Core
Asphalt Concrete Overlay			
C29	CA29	1	102 mm (4 in) Core
C30	CA30	1	102 mm (4 in) Core
C31	CA31	2	102 mm (4 in) Core
C32	CA32	2	102 mm (4 in) Core
C37	CA37	1	102 mm (4 in) Core
C38	CA38	1	102 mm (4 in) Core
C39	CA39	2	102 mm (4 in) Core
C40	CA40	2	102 mm (4 in) Core
C45	CA45	1	102 mm (4 in) Core
C46	CA46	1	102 mm (4 in) Core
C47	CA47	2	102 mm (4 in) Core
C48	CA48	2	102 mm (4 in) Core
C49	CA49	1	102 mm (4 in) Core
C50	CA50	1	102 mm (4 in) Core
C51	CA51	2	102 mm (4 in) Core
C52	CA52	2	102 mm (4 in) Core
BV1	BA01	4	45 kg (100 lb) Bulk Sample
BV2	BA02	4	45 kg (100 lb) Bulk Sample
BV3	BA03	4	45 kg (100 lb) Bulk Sample
BV4	BA04	4	45 kg (100 lb) Bulk Sample
BV5	BA05	4	45 kg (100 lb) Bulk Sample

TABLE B-3. SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location	Sample Number	Lab Test Number [1]	Type of Sample
Subgrade			
BA1	BS01	1	23 kg (50 lb) Bulk Sample
BA2	BS02	1	23 kg (50 lb) Bulk Sample
BA3	BS03	1	23 kg (50 lb) Bulk Sample
TP1	BS55	1	23 kg (50 lb) Bulk Sample
TP2	BS56	1	23 kg (50 lb) Bulk Sample
A1	TS02	1	Thin-Wall Tube
A2	TS04	1	Thin-Wall Tube
A3	TS06	2	Thin-Wall Tube

[1] Lab Test Number

1 Sample from Approach End of Section

2 Sample from Leave End of Section

3 Sample from Within Section

4 From Plant

TABLE B-4. SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample Number	Lab Test Number	Type of Sample
Portland Cement Concrete			
A1	CP51	1	152 mm (6 in.) Core
A2	CP52	1	152 mm (6 in.) Core
A3	CP53	1	152 mm (6 in.) Core
Asphalt Concrete			
C25	CA25	1	102 mm (4 in.) Core
C26	CA26	1	102 mm (4 in.) Core
C27	CA27	2	102 mm (4 in.) Core
C28	CA28	2	102 mm (4 in.) Core
C33	CA33	1	102 mm (4 in.) Core
C34	CA34	1	102 mm (4 in.) Core
C35	CA35	2	102 mm (4 in.) Core
C36	CA36	2	102 mm (4 in.) Core
C41	CA41	1	102 mm (4 in.) Core
C42	CA42	1	102 mm (4 in.) Core
C43	CA43	2	102 mm (4 in.) Core
C44	CA44	2	102 mm (4 in.) Core
Bound Base (Soil Cement)			
C5	CT01	2	102 mm (4 in.) Core
C11	CT02	1	102 mm (4 in.) Core
C19	CT03	1	102 mm (4 in.) Core
Subgrade			
BA1	BS01	1	68 kg (150 lb.) Bulk Sample
BA2	BS02	1	68 kg (150 lb.) Bulk Sample
BA3	BS03	1	68 kg (150 lb.) Bulk Sample

TABLE B-4. SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (Continued)

Sample Location	Sample Number	Lab Test Number	Type of Sample
TP1	BS55	1	68 kg (150 lb.) Bulk Sample
TP2	BS56	1	68 kg (150 lb.) Bulk Sample
A1	TS01	1	Thin wall Tube Sample
A2	TS03	1	Thin wall Tube Sample
A3	TS05	1	Thin wall Tube Sample
BA1	MS01	1	Moisture Content Jar Sample
BA2	MS02	1	Moisture Content Jar Sample
BA3	MS03	1	Moisture Content Jar Sample
TP1	MS55	1	Moisture Content Jar Sample
TP2	MS56	1	Moisture Content Jar Sample

SECTION C

LABORATORY MATERIAL TESTING

SECTION C

LABORATORY MATERIAL TESTING

It is the intent of this section of the sampling and testing plan to provide an outline for the laboratory testing that is planned for the Tennessee SPS-6 project The previous section ended with lists of samples to be shipped to each of two laboratories, the state designated laboratory and the FHWA/LTPP contracted laboratory In this section, the tests to be performed on each sample are listed

Table C-1 provides a reference project layer numbering scheme It is important that the two laboratories reference the same layer by number to ensure meaningful results

Table C-2 provides a listing of the tests to be performed for each material type and pavement layer, and the associated laboratory testing protocol It is imperative that the protocols listed be strictly followed during testing

Tables C-3 through C-6 provide tracking tables for the state designated laboratory for each material type These tables itemize the testing to occur on each sample and provide an indication of whether the sample is to be disposed of Tables C-7 through C-10 provide similar information for the FHWA/LTPP contracted laboratory

TABLE C-1. PROJECT LAYER NUMBERING

Layer Nº.	LTPP Description	Tennessee Description
1	Subgrade	Subgrade
2	Bound Base (Soil Cement)	Soil Cement
3	Jointed Plain Concrete Pavement (JPCP)	Jointed Plain Concrete Pavement (JPCP)
4	HMAC Base Course	Bituminous Plant Mix Base (BPMB-HM) - Type A Mix
5	HMAC Leveling Course	Bituminous Plant Mix Leveling Course (BPMLC-HM)
6	HMAC Surfacing	Asphalt Concrete Surfacing (ACS) - Type D Mix

TABLE C-2. TENNESSEE SPS-6 LABORATORY TESTING PLANS - PRECONSTRUCTION

MATERIAL TYPE AND PROPERTIES	SHRP TEST DESIGNATION	SHRP PROTOCOL	Nº. OF TESTS PER LAYER	MATERIAL SOURCE/ [1] TEST LOCATIONS	TEST CONDUCTED BY: STATE	FHWA
PORTLAND CEMENT CONCRETE						
Compressive Strength	PC01	P61	12	C1,C3,C5,C7,C9,C11,C13, C15,C17,C19,C21,C23	X	
Splitting Tensile Strength	PC02	P62	12	C2,C4,C6,C10,C12,C14, C16,C18,C20,C22, C24	X	
PCC Coefficient of Thermal Expansion	PC03	P63	3	A1,A2,A3		X
Static Modulus of Elasticity	PC04	P64	6	C3,C5,C7,C11,C15,C17	X	
PCC Unit Weight	PC05	P65	12	C1,C3,C5,C7,C9,C11,C13, C15,C17,C19,C21,C23	X	
Core Examination/Thickness	PC06	P66	27	C1-C24, A1,A2,A3	X	X
BOUND BASE (SOIL CEMENT)						
Type and Classification of Material and Treatment	TB01	P31	3	C5,C11,C19		X
Compressive Strength	TB02	P32	3	C5,C11,C19		X
SUBGRADE						
Sieve Analysis	SS01	P51	3	TP1,[BA1-BA3],TP2		X
Hydrometer to 0.001mm	SS02	P42	3	TP1,[BA1-BA3],TP2		X
Atterberg Limits	SS03	P43	3	TP1,[BA1-BA3],TP2		X
Classification	SS04	P52	6	TP1,[BA1-BA3],TP2, A1,A2,A3	X	X
Moisture-Density Relations	SS05	P55	3	TP1,[BA1-BA3],TP2		X
Resilient Modulus	SS07	P46	3	A1,A2,A3		X
Unit Weight	SS08	P56	6	TP1,[BA1-BA3],TP2, A1,A2,A3	X	
Natural Moisture Content	SS09	P49	3	TP1,[BA1-BA3],TP2		X

NOTE 1: Samples within brackets are from the same sampling location.

TABLE C-2. TENNESSEE SPS-6 LABORATORY TESTING PLANS - POSTCONSTRUCTION

MATERIAL TYPE AND PROPERTIES	SHRP TEST DESIGNATION	SHRP PROTOCOL	Nº. OF TESTS PER LAYER	MATERIAL SOURCE/ [1] TEST LOCATIONS	TEST CONDUCTED BY: STATE	FHWA
ASPHALTIC CONCRETE						
Core Examination/Thickness	AC01	P01	28	All Cores	X	X
Bulk Specific Gravity	AC02	P02	28	All Cores	X	X
Maximum Specific Gravity	AC03	P03	5	BV1,BV2,BV3,BV4,BV5	X	
Asphalt Content (Extraction)	AC04	P04	5	BV1,BV2,BV3,BV4,BV5	X	
Moisture Susceptibility	AC05	P05	5	BV1,BV2,BV3,BV4,BV5	X	
Resilient Modulus	AC07	P07	3	[C25,C26,C27], [C33,C34,C35], [C41,C42,C43]		X
Tensile Strength	AC07	P07	3	C28,C36,C44		X
EXTRACTED AGGREGATE						
Bulk Specific Gravity:						
Coarse Aggregate	AG01	P11	5	From Uncompacted Mix	X	
Fine Aggregate	AG02	P12	5	From Uncompacted Mix	X	
Type and Classification:						
Coarse Aggregate	AG03	P13	5	From Uncompacted Mix	X	
Fine Aggregate	AG03		5	From Uncompacted Mix	X	
Gradation of Aggregate	AG04	P14	5	From Uncompacted Mix	X	
NAA Test for Fine Aggregate Particle Shape	AG05	P14A	5	From Uncompacted Mix	X	
ASPHALT CEMENT (FROM MIX)						
Abson Recovery	AE01	P21	5	From Uncompacted Mix	X	
Penetration at 10°C, 25°C, 32°C (50°F, 77°F, 90°F)	AE02	P22	5	From Uncompacted Mix	X	
Specific Gravity at 16°C (60°F)	AE03	P23	5	From Uncompacted Mix	X	
Viscosity at 25°C (77°F)	AE04	P24	5	From Uncompacted Mix	X	
Viscosity at 60°C & 135°C (140°F & 275°F)	AE05	P25	5	From Uncompacted Mix	X	

TABLE C-3. TRACKING TABLE OF PORTLAND CEMENT CONCRETE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C1	CP01	1	PC06/P66	PC05/P65	PC01/P61		No	(a)	Yes
C2	CP02	1	PC06/P66	PC02/P62			No	(a)	Yes
C3	CP03	2	PC06/P66	PC05/P65	PC04/P64	PC01/P61	No	(a)	Yes
C4	CP04	1	PC06/P66	PC02/P62			No	(a)	Yes
C5	CP05	2	PC06/P66	PC05/P65	PC04/P64	PC01/P61	No	(a)	Yes
C6	CP06	2	PC06/P66	PC02/P62			No	(a)	Yes
C7	CP07	1	PC06/P66	PC05/P65	PC04/P64	PC01/P61	No	(a)	Yes
C8	CP08	1	PC06/P66	PC02/P62			No	(a)	Yes
C9	CP09	2	PC06/P66	PC05/P65	PC01/P61		No	(a)	Yes
C10	CP10	2	PC06/P66	PC02/P62			No	(a)	Yes
C11	CP11	1	PC06/P66	PC05/P65	PC04/P64	PC01/P61	No	(a)	Yes
C12	CP12	2	PC06/P66	PC02/P62			No	(a)	Yes
C13	CP13	1	PC06/P66	PC05/P65	PC01/P61		No	(a)	Yes
C14	CP14	2	PC06/P66	PC02/P62			No	(a)	Yes
C15	CP15	1	PC06/P66	PC05/P65	PC04/P64	PC01/P61	No	(a)	Yes
C16	CP16	2	PC06/P66	PC02/P62			No	(a)	Yes
C17	CP17	1	PC06/P66	PC05/P65	PC04/P64	PC01/P61	No	(a)	Yes
C18	CP18	2	PC06/P66	PC02/P62			No	(a)	Yes
C19	CP19	1	PC06/P66	PC05/P65	PC01/P61		No	(a)	Yes
C20	CP20	2	PC06/P66	PC02/P62			No	(a)	Yes
C21	CP21	1	PC06/P66	PC05/P65	PC01/P61		No	(a)	Yes
C22	CP22	2	PC06/P66	PC02/P62			No	(a)	Yes
C23	CP23	1	PC06/P66	PC05/P65	PC01/P61		No	(a)	Yes
C24	CP24	2	PC06/P66	PC02/P62			No	(a)	Yes

TABLE C-4. TRACKING TABLE OF ASPHALT CONCRETE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C29	CA29	1	AC01/P01	AC02/P02			Yes	(a)	No
C30	CA30	2	AC01/P01	AC02/P02			Yes	(a)	No
C31	CA31	2	AC01/P01	AC02/P02			Yes	(a)	No
C32	CA32	1	AC01/P01	AC02/P02			Yes	(a)	No
C37	CA37	1	AC01/P01	AC02/P02			Yes	(a)	No
C38	CA38	2	AC01/P01	AC02/P02			Yes	(a)	No
C39	CA39	2	AC01/P01	AC02/P02			Yes	(a)	No
C40	CA40	2	AC01/P01	AC02/P02			Yes	(a)	No
C45	CA45	1	AC01/P01	AC02/P02			Yes	(a)	No
C46	CA46	1	AC01/P01	AC02/P02			Yes	(a)	No
C47	CA47	2	AC01/P01	AC02/P02			Yes	(a)	No
C48	CA48	2	AC01/P01	AC02/P02			Yes	(a)	No
C49	CA49	1	AC01/P01	AC02/P02			Yes	(a)	No
C50	CA50	1	AC01/P01	AC02/P02			Yes	(a)	No
C51	CA51	2	AC01/P01	AC02/P02			Yes	(a)	No
C52	CA52	2	AC01/P01	AC02/P02			Yes	(a)	No
BV1	BA01	3	See Figure C-1				No	(a)	Yes
BV2	BA02	3	See Figure C-1				No	(a)	Yes
BV3	BA03	3	See Figure C-1				No	(a)	Yes
BV4	BA04	3	See Figure C-1				No	(a)	Yes
BV5	BA05	3	See Figure C-1				No	(a)	Yes

TABLE C-5. TRACKING TABLE OF SUBGRADE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
BA1	BS01	1	No testing - samples stored				Yes	(b)	No
BA2	BS02	1	No testing - samples stored				Yes	(b)	No
BA3	BS03	1	No testing - samples stored				Yes	(b)	No
TP1	BS55	1	No testing - samples stored				Yes	(b)	No
TP2	BS56	1	No testing - samples stored				Yes	(b)	No
A1	TS02	1	SS04/P52	SS08/P56			No	(c)	Yes
A2	TS04	1	SS04/P52	SS08/P56			No	(c)	Yes
A3	TS06	1	SS04/P52	SS08/P56			No	(c)	Yes

TABLE C-6. TRACKING TABLE OF PORTLAND CEMENT CONCRETE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
A1	CP51	1	PC06/P66	PC03/P63			No	(a)	Yes
A2	CP52	1	PC06/P66	PC03/P63			No	(a)	Yes
A3	CP53	1	PC06/P66	PC03/P63			No	(a)	Yes

TABLE C-7. TRACKING TABLE OF ASPHALT CONCRETE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C25	CA25	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C26	CA26	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C27	CA27	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C28	CA28	2	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C33	CA33	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C34	CA34	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C35	CA35	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C36	CA36	2	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C41	CA41	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C42	CA42	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C43	CA43	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C44	CA44	2	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes

TABLE C-8. TRACKING TABLE OF BOUND BASE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample No	Lab Test No	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
C5	CT01	2	TB01/P31	TB02/P32					No	(b)	Yes
C11	CT02	1	TB01/P31	TB02/P32					No	(b)	Yes
C19	CT03	1	TB01/P31	TB02/P32					No	(b)	Yes

TABLE C-9. TRACKING TABLE OF SUBGRADE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample No.	Lab Test No.	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
BA1	BS01	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
BA2	BS02	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
BA3	BS03	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
TP1	BS55	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
TP2	BS56	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
A1	TS01	1	SS04/P52	SS07/P46					No	(c)	Yes
A2	TS03	1	SS04/P52	SS07/P46					No	(c)	Yes
A3	TS05	1	SS04/P52	SS07/P46					No	(c)	Yes
B1	MS01	1	SS09/P49	SS07/P46 *					No	(b)	Yes
B2	MS02	1	SS09/P49	SS07/P46 *					No	(b)	Yes
B3	MS03	1	SS09/P49	SS07/P46 *					No	(b)	Yes
TP1	MS55	1	SS09/P49	SS07/P46 *					No	(b)	Yes
TP2	MS56	1	SS09/P49	SS07/P46 *					No	(b)	Yes

* **Note:** SS07/P46 testing for bulk subgrade samples only required when tube samples are <u>not</u> available or suitable for testing

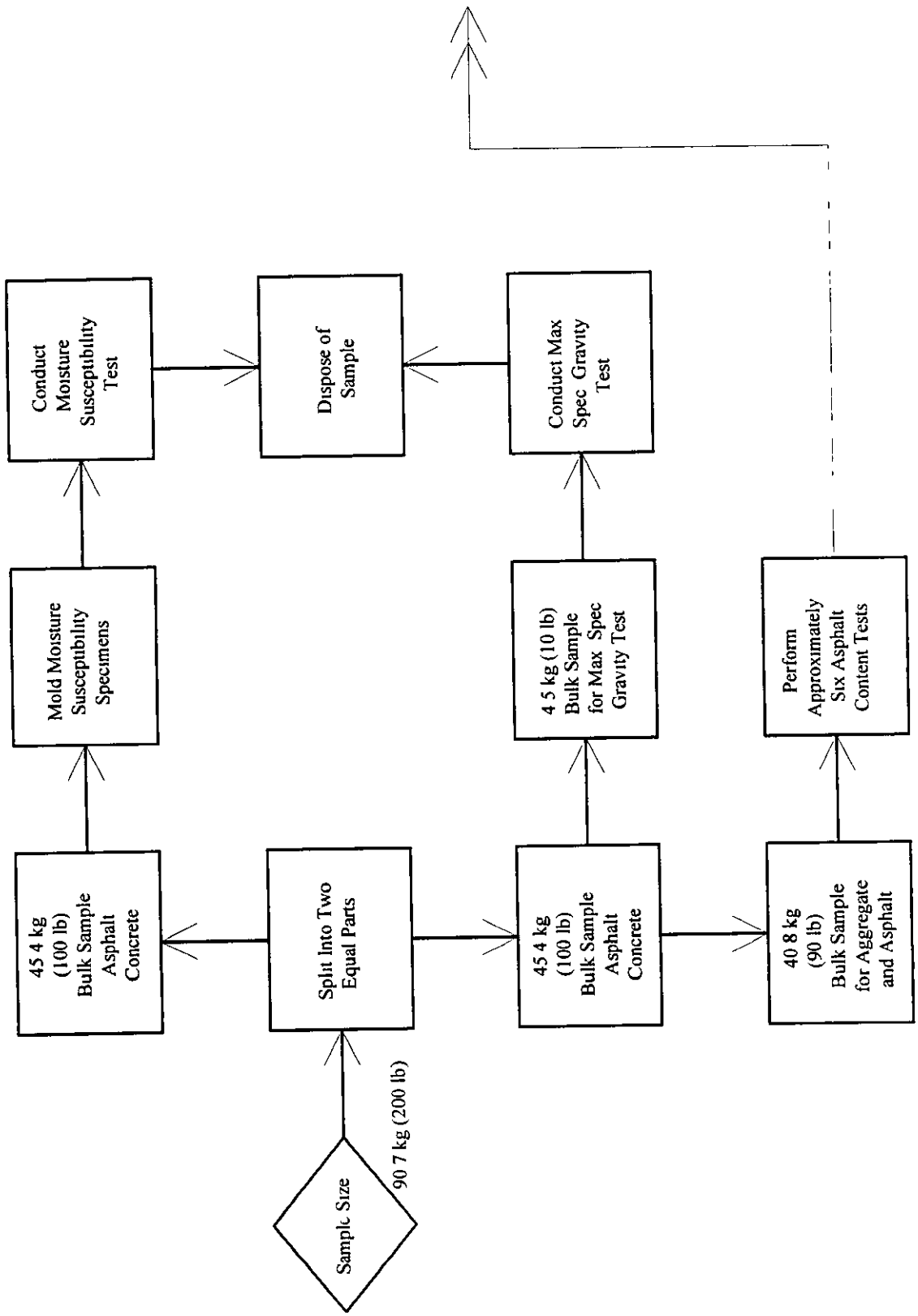


FIGURE C-1. FLOWCHART FOR ASPHALT CONCRETE BULK SAMPLES

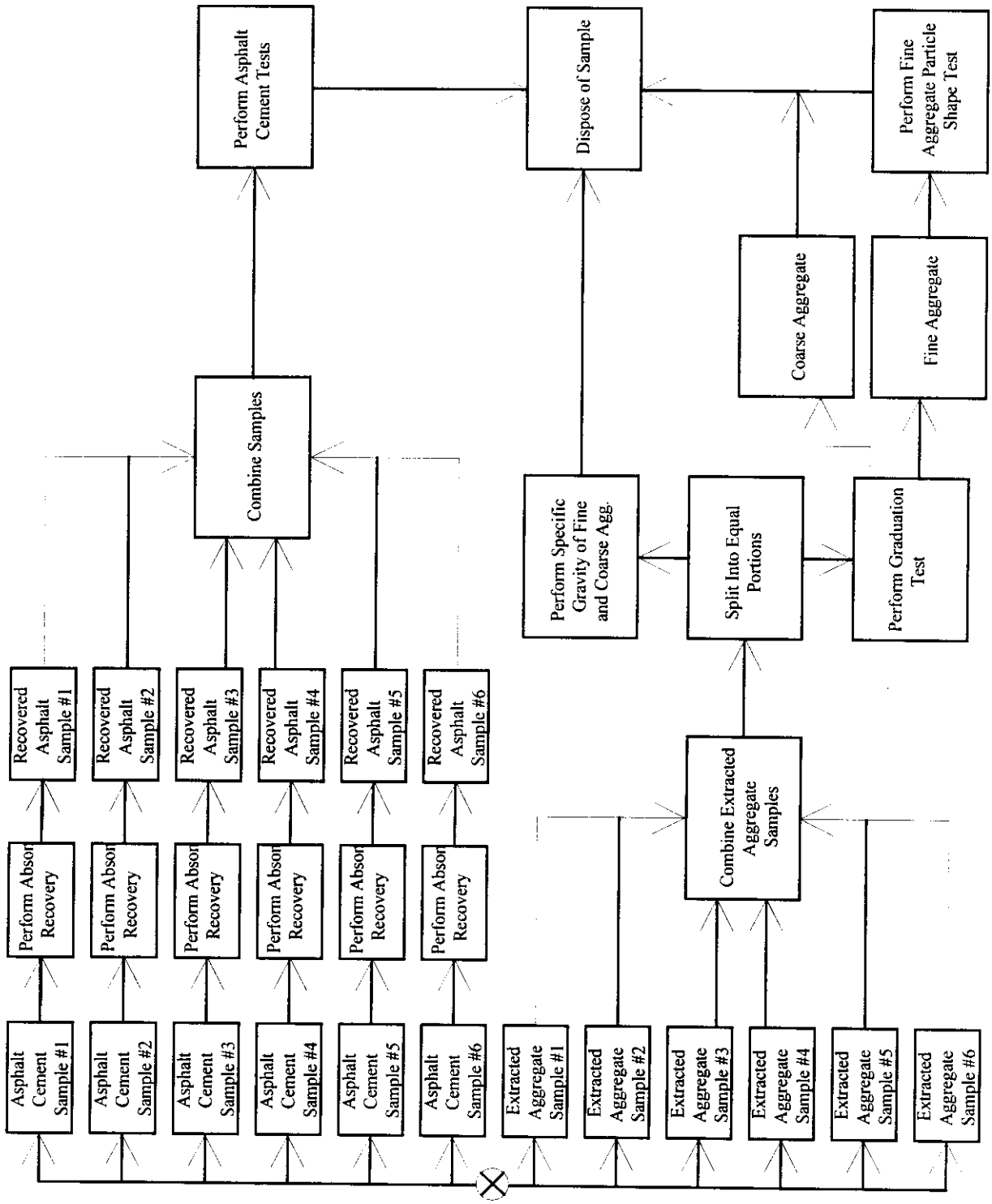


FIGURE C-1. FLOWCHART FOR ASPHALT CONCRETE BULK SAMPLES (Continued)

APPENDIX C

LAYER THICKNESSES

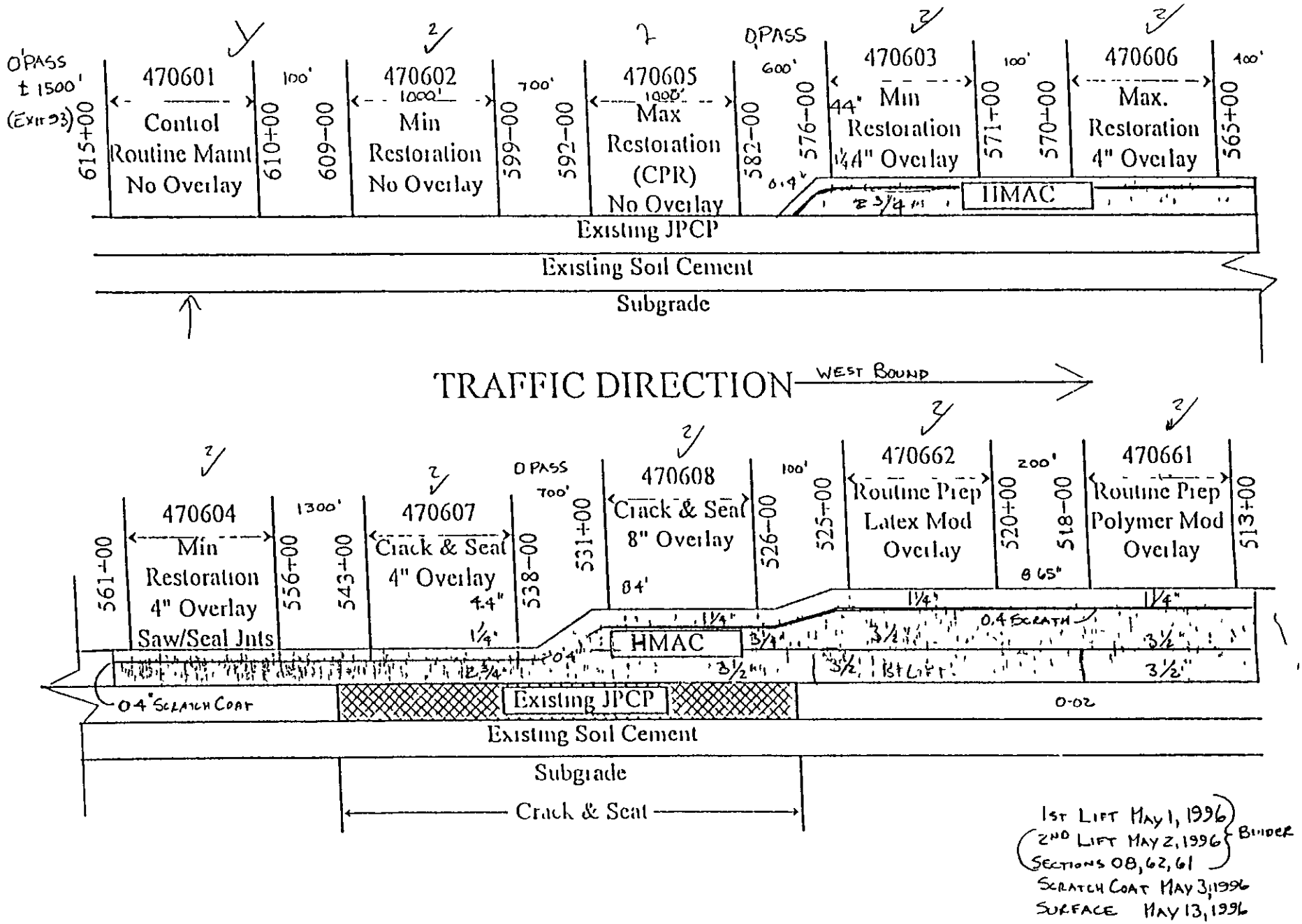
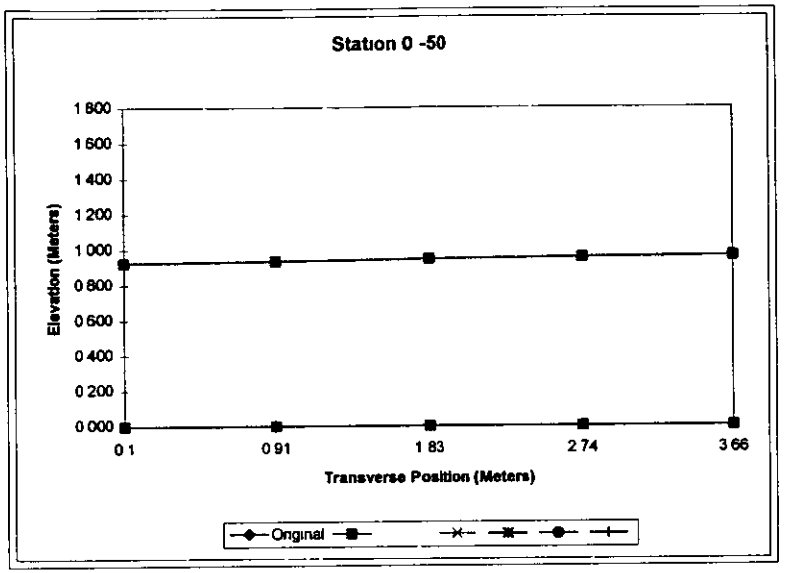
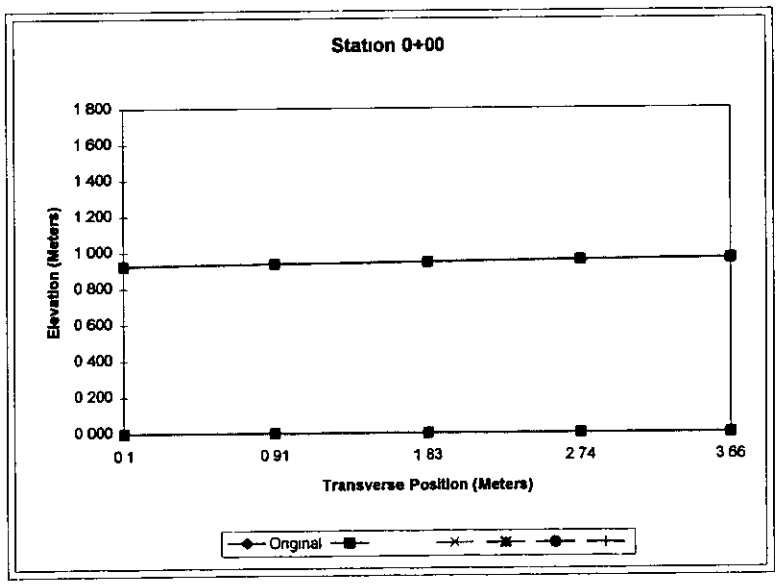


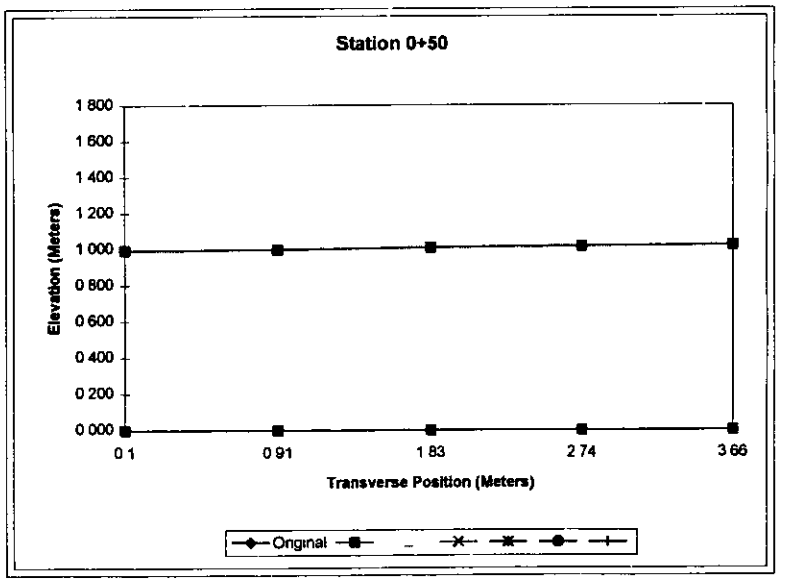
FIGURE A-1. LAYOUT OF TEST SECTIONS
TENNESSEE SPS-6 PROJECT (470600)

Tennessee SPS-6 Project (470601)

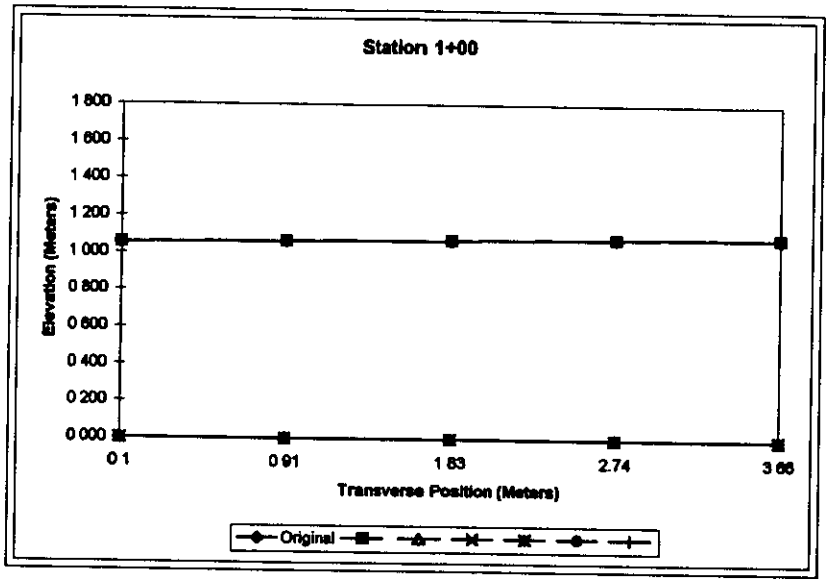
Transverse Offset	LAYER	ELEVATION 0.4 Meters	Original THICKNESS Meters	ELEVATION 0.91 Meters	Original THICKNESS Meters	ELEVATION 1.83 Meters	Original THICKNESS Meters	ELEVATION 2.74 Meters	Original THICKNESS Meters	ELEVATION 3.66 Meters	Original THICKNESS Meters
0 -50	Original	0 926	0 000	0 936	0 000	0 946	0 000	0 955	0 000	0 963	0 000
		0 926		0 936		0 946		0 955		0 963	
0+00	Original	0 926	0 000	0 936	0 000	0 946	0 000	0 955	0 000	0 963	0 000
		0 926		0 936		0 946		0 955		0 963	
0+50	Original	0 994	0 000	0 999	0 000	1 009	0 000	1 016	0 000	1 022	0 000
		0 994		0 999		1 009		1 016		1 022	
1+00	Original	1 056	0 000	1 065	0 000	1 073	0 000	1 081	0 000	1 089	0 000
		1 056		1 065		1 073		1 081		1 089	
1+50	Original	1 121	0 000	1 129	0 000	1 138	0 000	1 146	0 000	1 153	0 000
		1 121		1 129		1 138		1 146		1 153	
2+00	Original	1 176	0 000	1 185	0 000	1 194	0 000	1 202	0 000	1 209	0 000
		1 176		1 185		1 194		1 202		1 209	
2+50	Original	1 237	0 000	1 245	0 000	1 253	0 000	1 262	0 000	1 271	0 000
		1 237		1 245		1 253		1 262		1 271	
3+00	Original	1 297	0 000	1 305	0 000	1 313	0 000	1 321	0 000	1 332	0 000
		1 297		1 305		1 313		1 321		1 332	
3+50	Original	1 357	0 000	1 367	0 000	1 375	0 000	1 384	0 000	1 392	0 000
		1 357		1 367		1 375		1 384		1 392	
4+00	Original	1 419	0 000	1 426	0 000	1 436	0 000	1 444	0 000	1 453	0 000
		1 419		1 426		1 436		1 444		1 453	
4+50	Original	1 482	0 000	1 491	0 000	1 501	0 000	1 509	0 000	1 519	0 000
		1 482		1 491		1 501		1 509		1 519	
5+00	Original	1 540	0 000	1 548	0 000	1 557	0 000	1 566	0 000	1 574	0 000
		1 540		1 548		1 557		1 566		1 574	
5+50	Original	1 601	0 000	1 609	0 000	1 620	0 000	1 626	0 000	1 634	0 000
		1 601		1 609		1 620		1 626		1 634	
	AVG		0 000		0 000		0 000		0 000		0 000
	MAX		0 000		0 000		0 000		0 000		0 000
	MIN		0 000		0 000		0 000		0 000		0 000
	STD		0 000		0 000		0 000		0 000		0 000

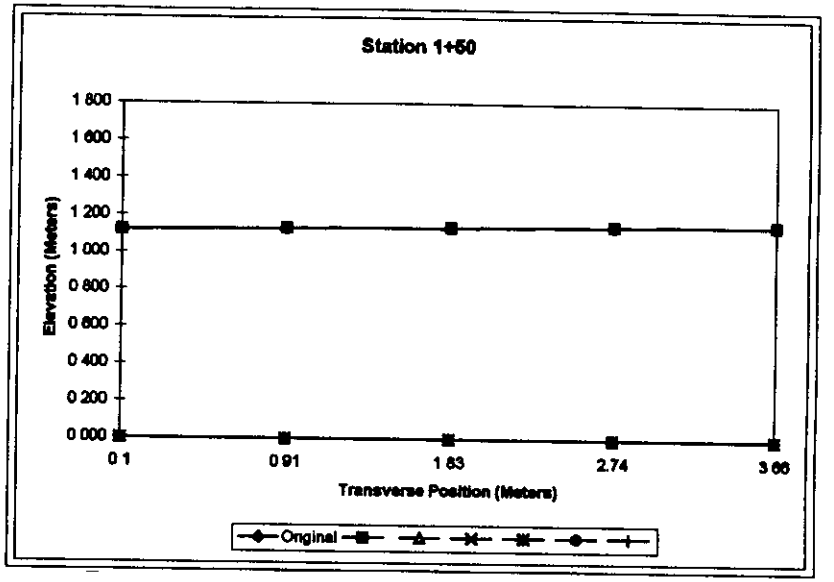

Station 0 -50
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Original

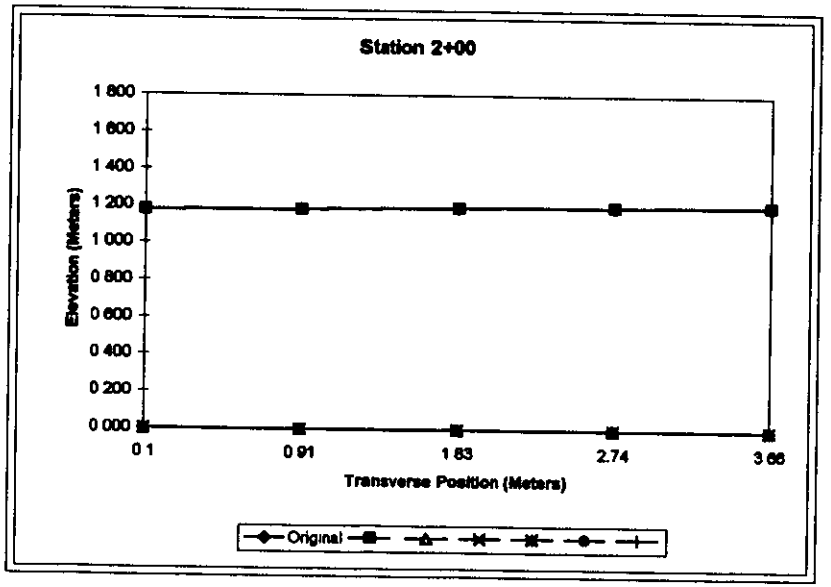

Station 0+00
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Original

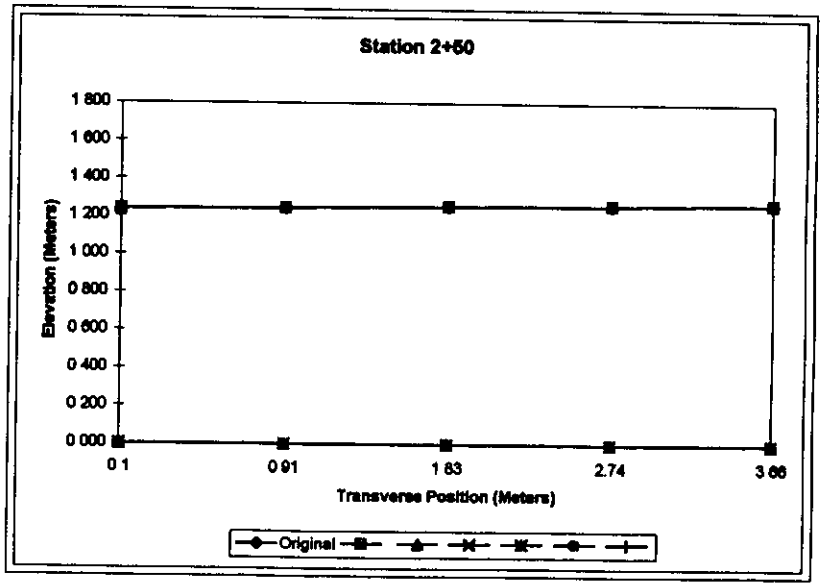

Station 0+50
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Original

C 4


Station 1+00
Elevation (Meters)
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Original


Station 1+50
Elevation (Meters)
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Original


Station 2+00
Elevation (Meters)
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Original


Station 2+50
Elevation (Meters)
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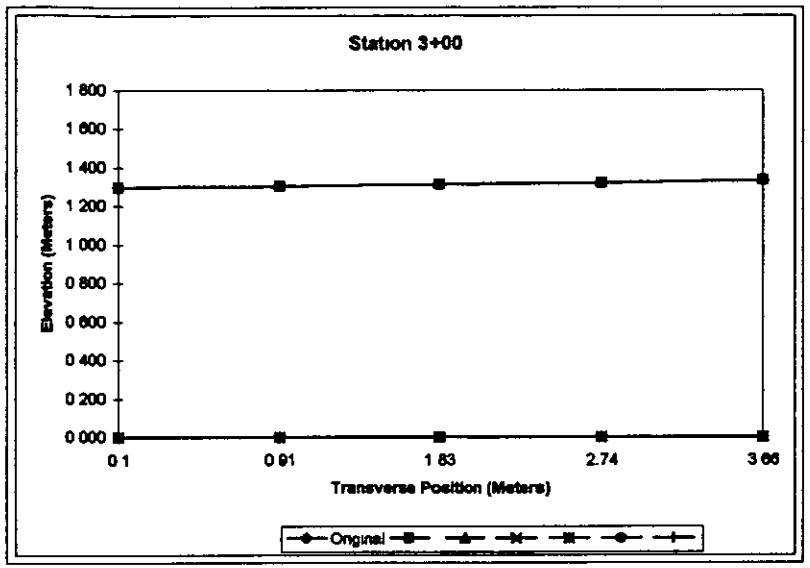
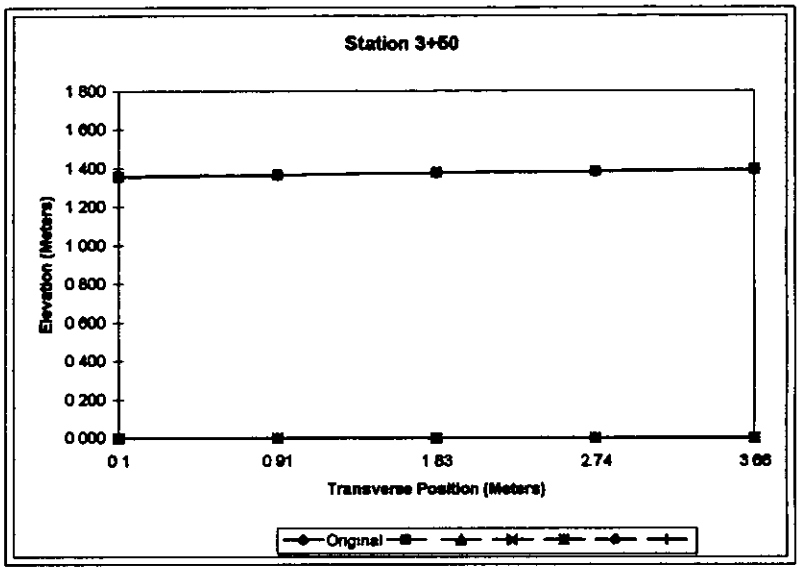
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Original


Station 3+00
Elevation (Meters)
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Original


Station 3+50
Elevation (Meters)
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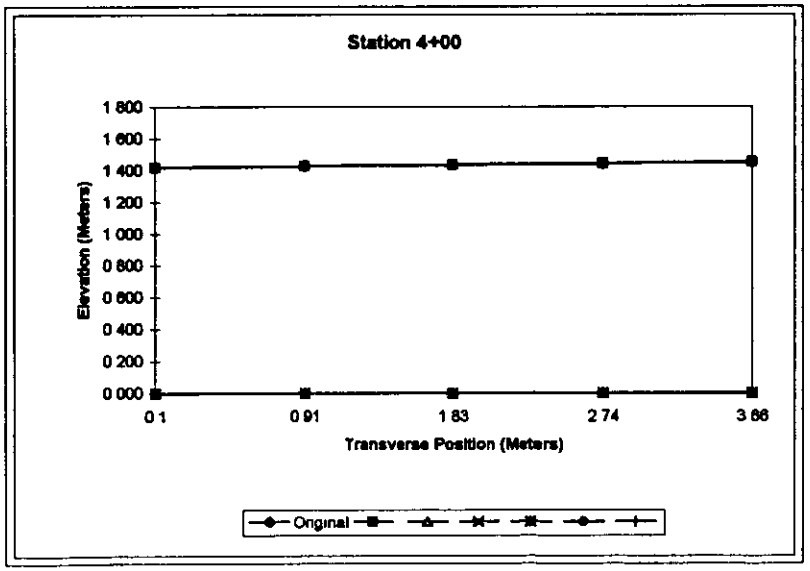
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Original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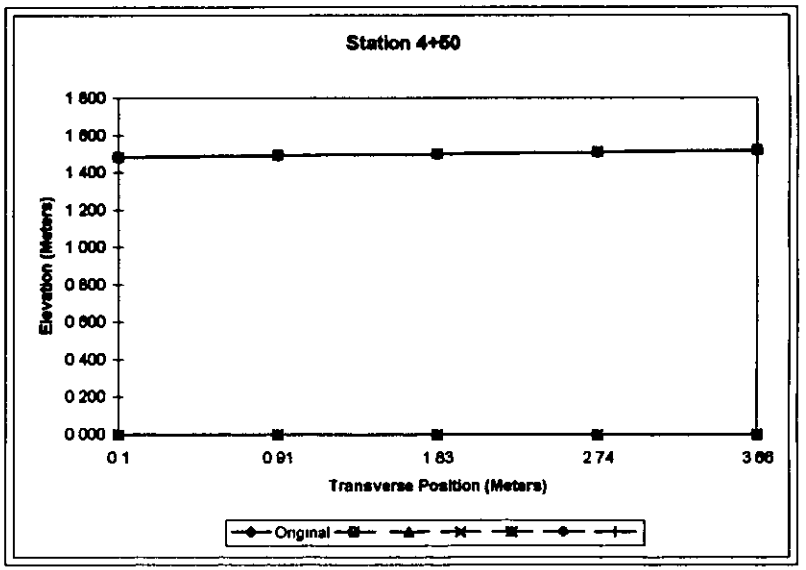
Elevation (Meters)
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Original


Station 4+50
Elevation (Meters)
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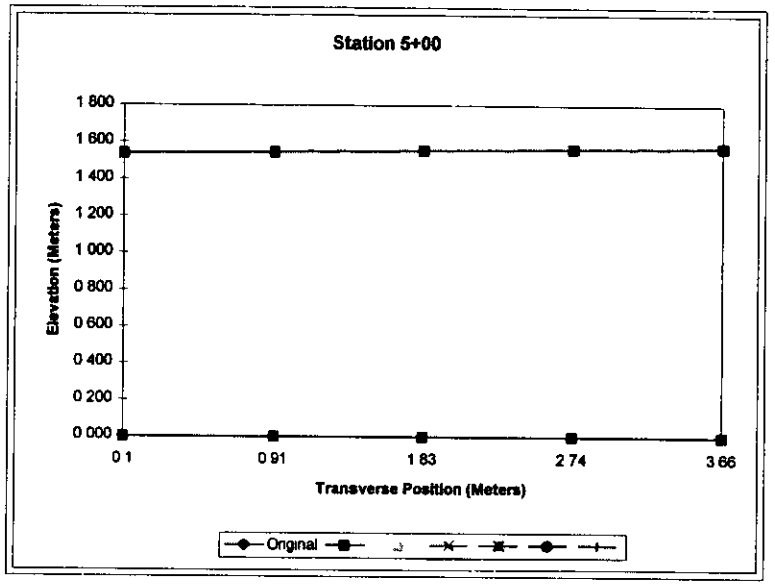
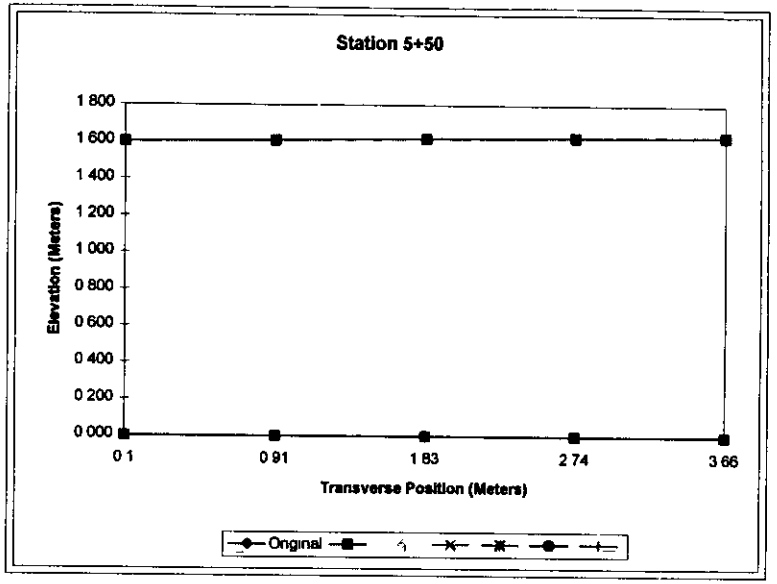
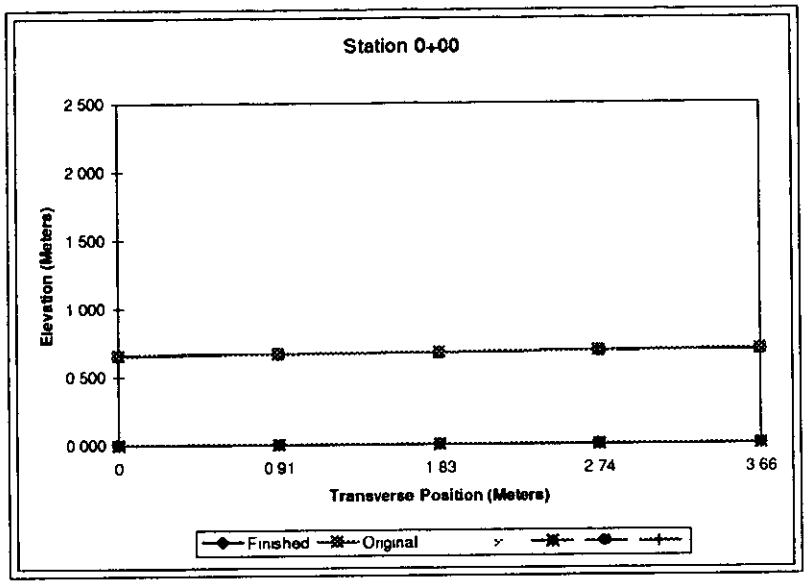
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Original

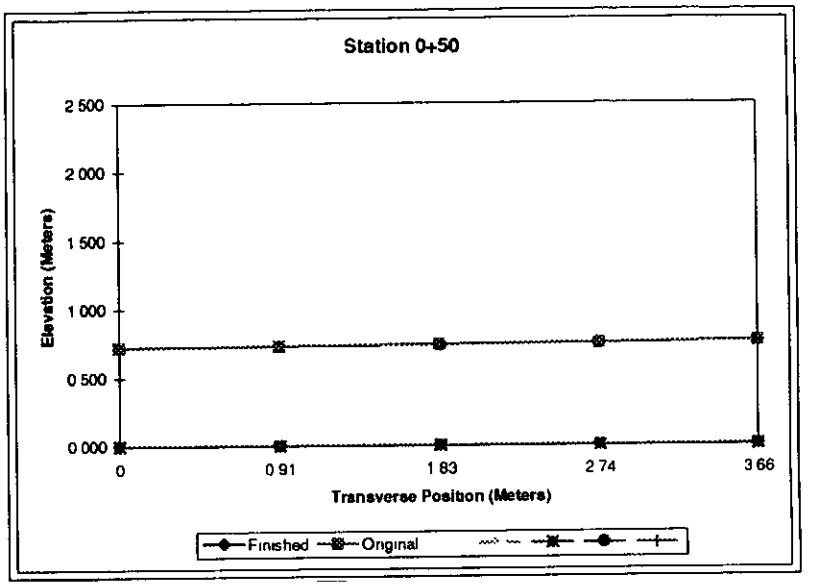

Station 5+00
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Original

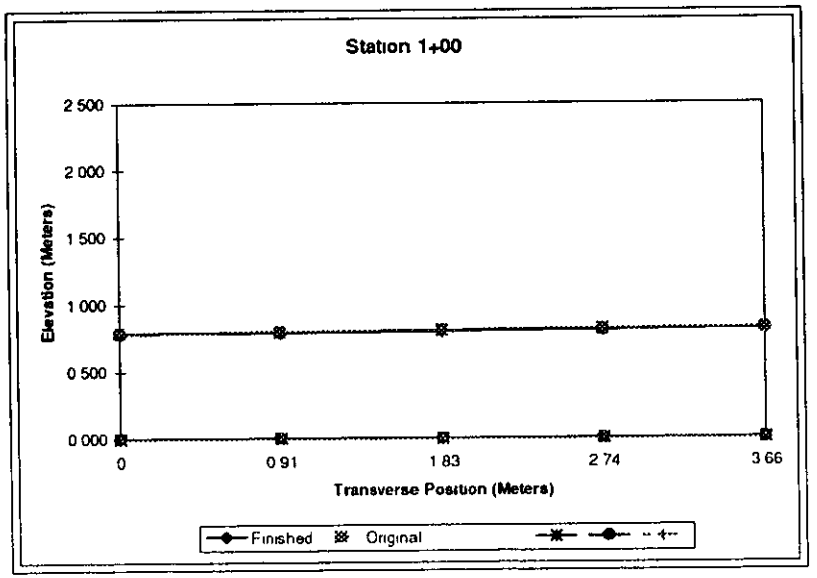

Station 5+50
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Original

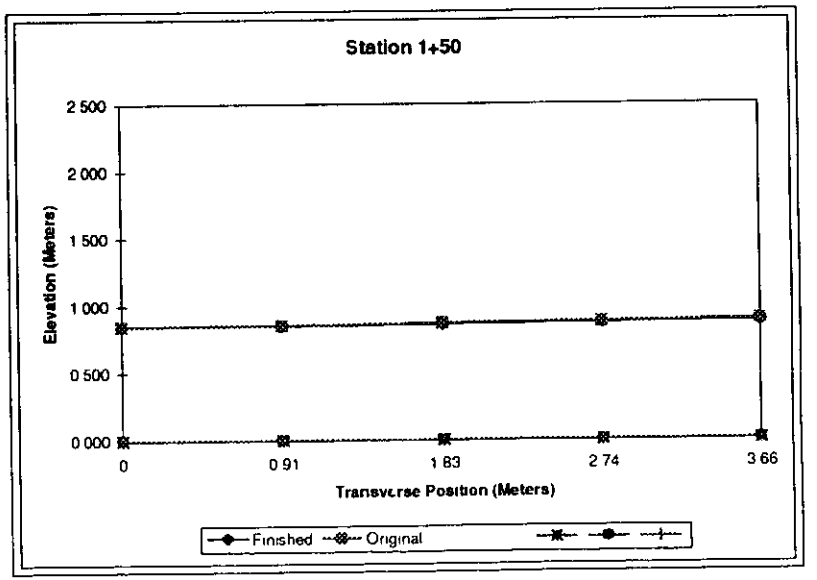
Tennessee SPS-6 Project (470602), 1of 2

Transverse Offset	7 LAYER	ELEVATION 0 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0+00	Finished	0.660	0.002	0.666	-0.001	0.676	0.000	0.683	-0.002	0.691	-0.003
	Original	0.658		0.667		0.676		0.685		0.694	
0+50	Finished	0.720	0.000	0.727	0.000	0.736	-0.002	0.746	0.000	0.755	-0.003
	Original	0.720		0.727		0.738		0.746		0.758	
1+00	Finished	0.780	-0.001	0.785	-0.006	0.798	-0.002	0.804	-0.005	0.814	-0.004
	Original	0.781		0.791		0.800		0.809		0.818	
										-1Y	
1+50	Finished	0.844	-0.001	0.850	-0.003	0.862	-0.003	0.869	-0.006	0.880	-0.002
	Original	0.845		0.853		0.865		0.875		0.882	
2+00	Finished	0.908	-0.002	0.913	-0.003	0.923	-0.002	0.928	-0.002	0.936	-0.002
	Original	0.910		0.916		0.925		0.930		0.938	
2+50	Finished	0.960	-0.001	0.964	-0.003	0.976	0.000	0.984	-0.001	0.991	-0.004
	Original	0.961		0.967		0.976		0.985		0.995	
3+00	Finished	1.008	-0.002	1.016	-0.004	1.029	0.000	1.036	-0.002	1.045	-0.002
	Original	1.010		1.020		1.029		1.038		1.047	
3+50	Finished	1.038	-0.002	1.045	-0.003	1.057	-0.002	1.065	-0.003	1.074	-0.002
	Original	1.040		1.048		1.059		1.068		1.076	
4+00	Finished	1.060	-0.003	1.067	-0.003	1.079	-0.003	1.087	-0.004	1.095	-0.005
	Original	1.063		1.070		1.082		1.091		1.100	
4+50	Finished	1.074	-0.002	1.080	-0.005	1.093	-0.002	1.101	-0.004	1.110	-0.005
	Original	1.076		1.085		1.095		1.105		1.115	
5+00	Finished	1.076	-0.006	1.083	-0.005	1.096	-0.003	1.103	-0.005	1.113	-0.006
	Original	1.082		1.088		1.099		1.108		1.119	
		AVG	**-0.002**		**-0.003**		**-0.002**		**-0.003**		**-0.004**
		MAX	**0.002**		**0.000**		**0.000**		**0.000**		**-0.002**
		MIN	**0.002**		**0.000**		**0.000**		**0.000**		**-0.002**
		STD	**0.002**		**0.002**		**0.001**		**0.002**		**0.001**

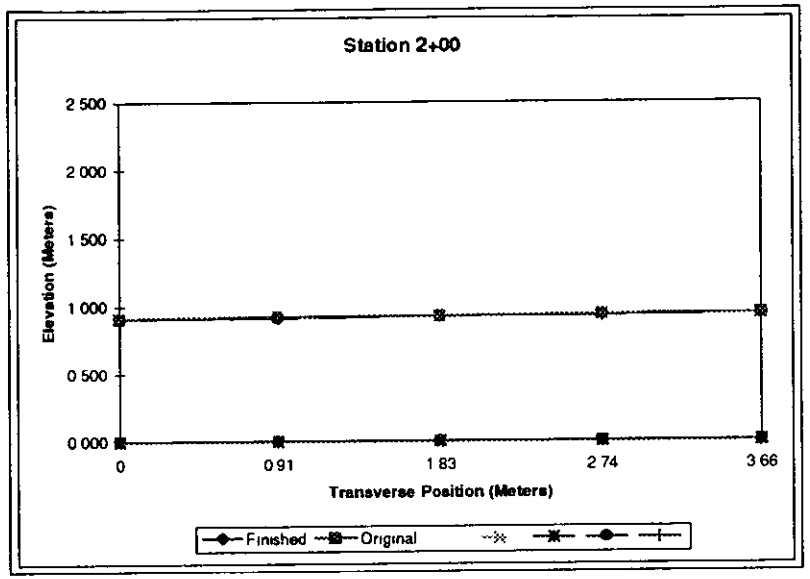

Station 0+00
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

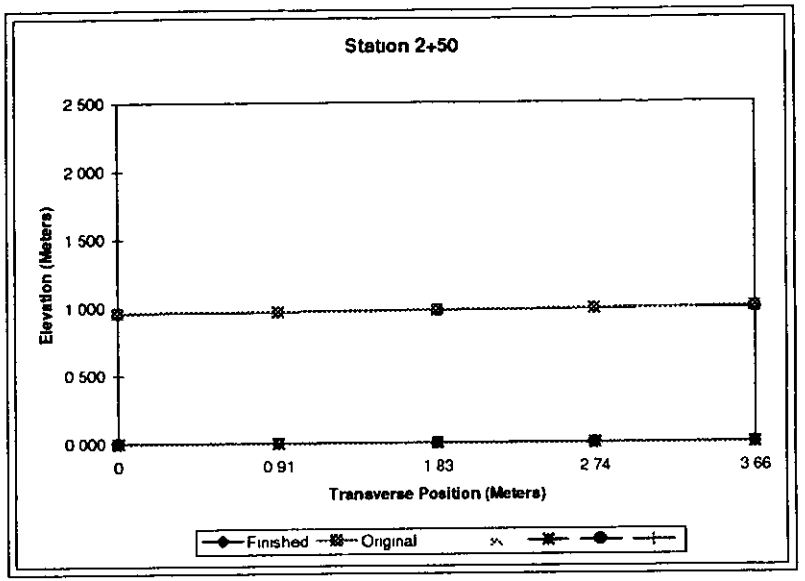

Station 0+50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

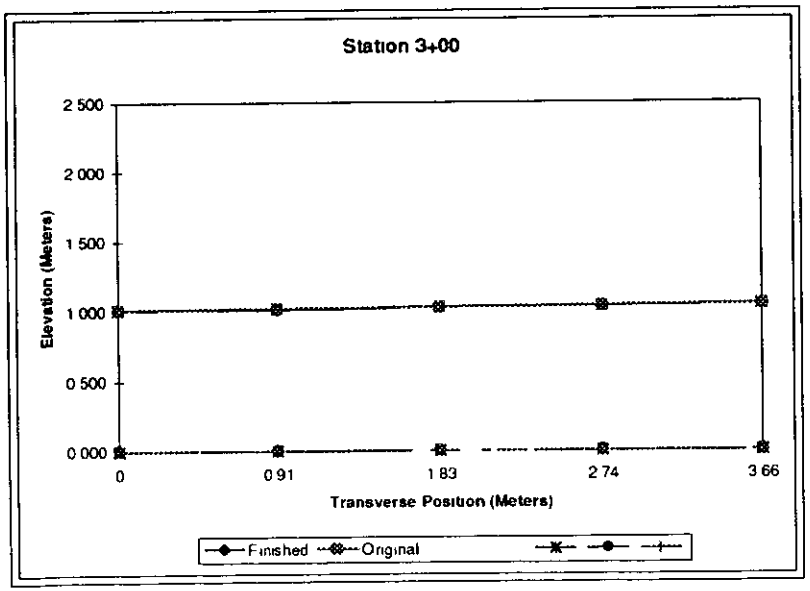

Station 1+00
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

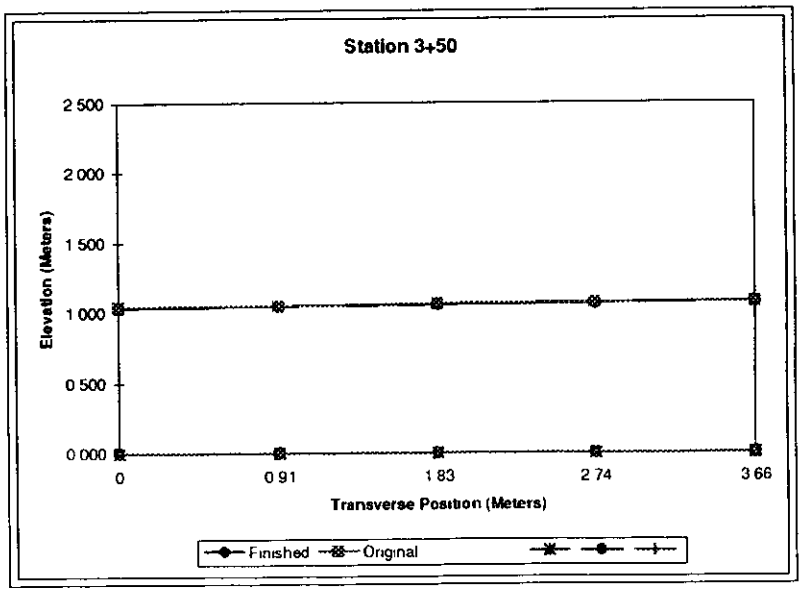

Station 1+50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

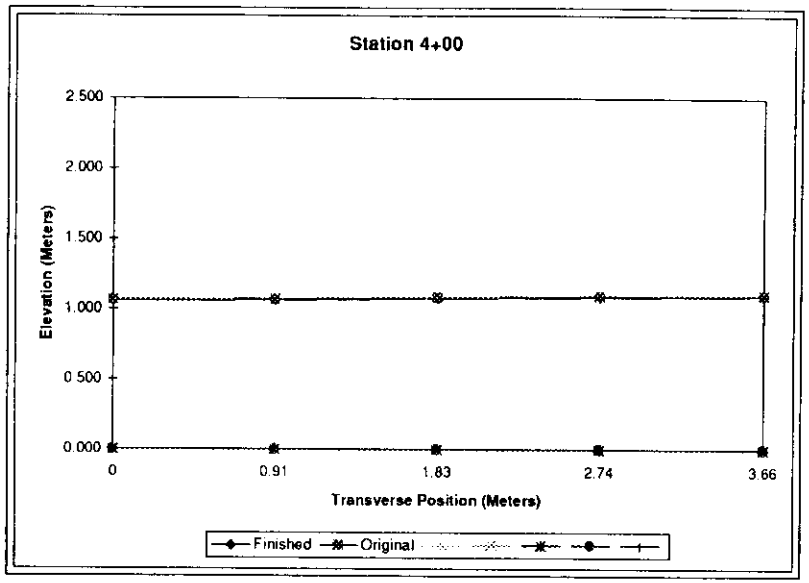
C 9

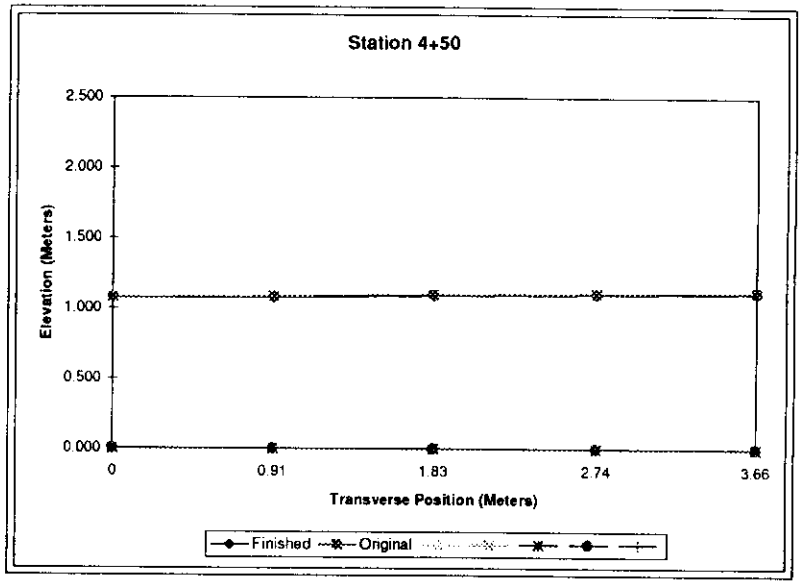

Station 2+00
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

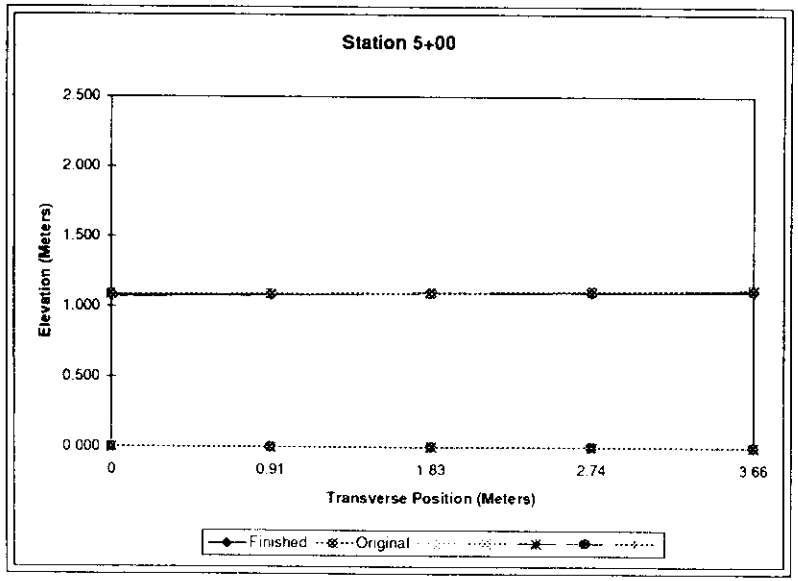

Station 2+50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 3+00
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 3+50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

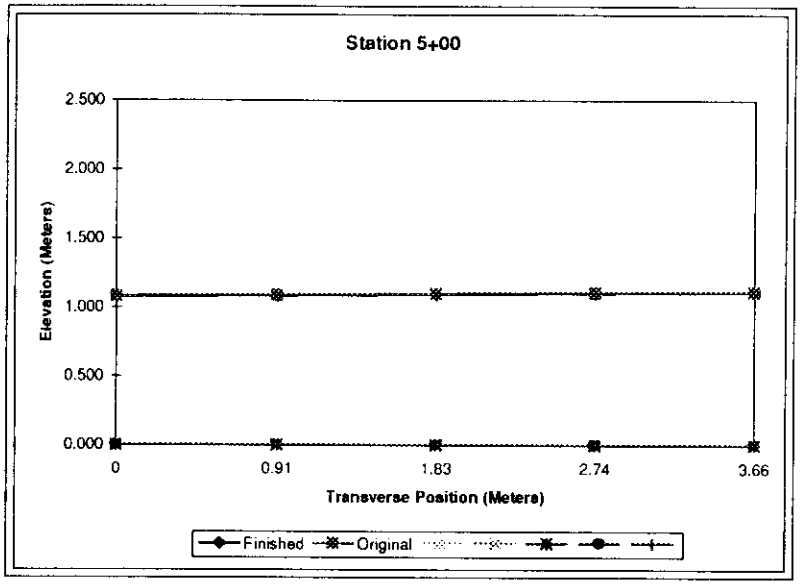

Station 4+00
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

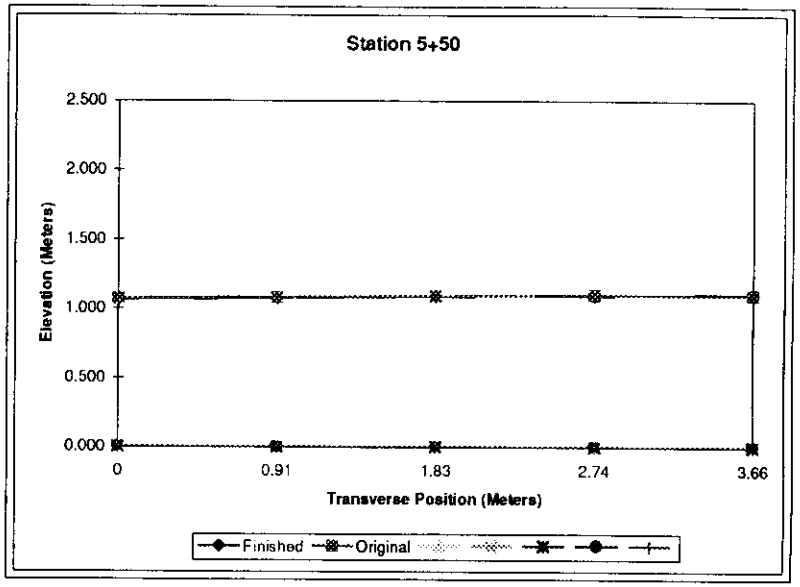

Station 4+50
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

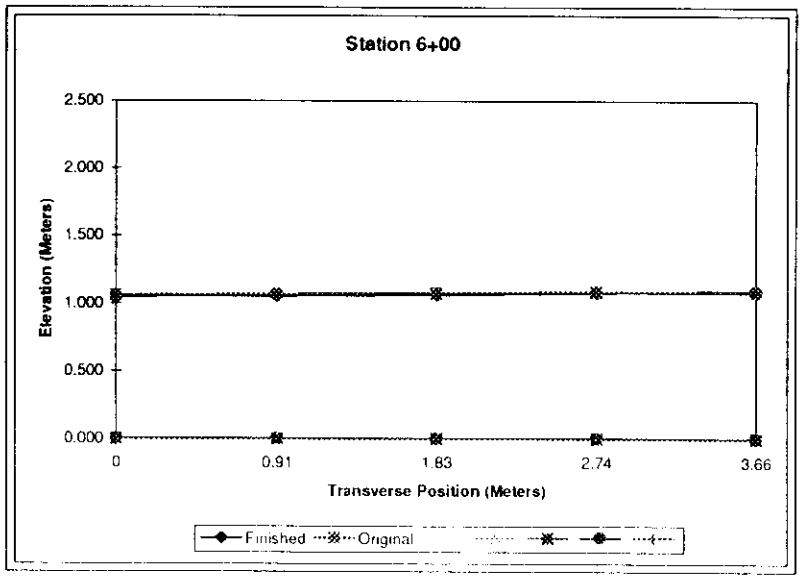

Station 5+00
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

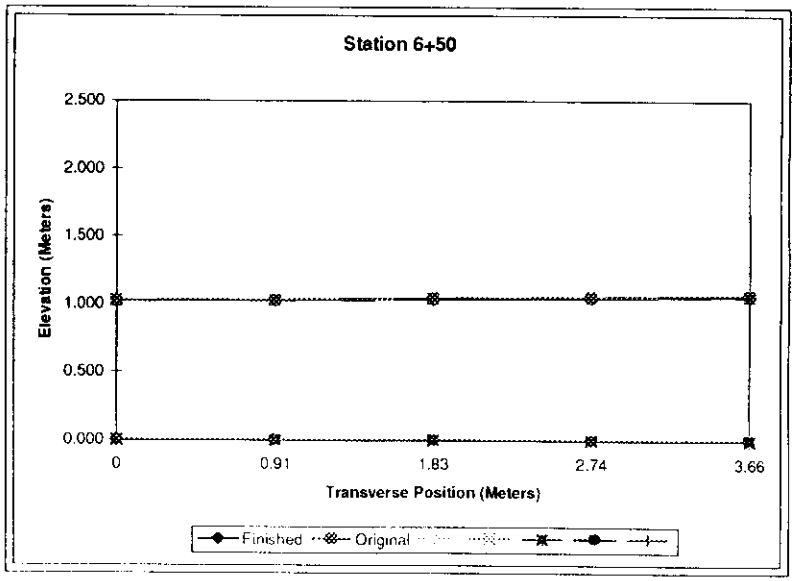
Tennessee SPS-6 Project (470602), 2 of 2

Transverse Offset	7 LAYER	ELEVATION 0 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
5+00	Finished	1.076	-0.006	1.083	-0.005	1.096	-0.003	1.103	-0.005	1.113	0.001
	Original	1.082		1.088		1.099		1.108		1.112	
5+50	Finished	1.065	-0.008	1.075	-0.007	1.088	-0.004	1.096	-0.004	1.105	0.005
	Original	1.073		1.082		1.092		1.100		1.100	
6+00	Finished	1.052	-0.005	1.057	-0.008	1.064	-0.011	1.079	-0.005	1.089	0.005
	Original	1.057		1.065		1.075		1.084		1.084	
6+50	Finished	1.023	0.000	1.026	0.000	1.039	-0.002	1.049	-0.004	1.060	-0.004
	Original	1.023		1.026		1.041		1.053		1.064	
7+00	Finished	0.983	-0.006	0.990	-0.008	1.004	-0.006	1.013	-0.005	1.024	0.007
	Original	0.989		0.998		1.010		1.018		1.017	
7+50	Finished	0.942	-0.007	0.951	-0.004	0.962	-0.003	0.970	-0.005	0.980	-0.003
	Original	0.949		0.955		0.965		0.975		0.983	
8+00	Finished	0.894	-0.003	0.899	-0.005	0.910	-0.003	0.916	-0.004	0.923	-0.006
	Original	0.897		0.904		0.913		0.920		0.929	
8+50	Finished	0.836	-0.007	0.844	-0.005	0.854	-0.002	0.859	-0.002	0.866	-0.003
	Original	0.843		0.849		0.856		0.861		0.869	
9+00	Finished	0.771	-0.003	0.781	-0.003	0.791	-0.003	0.799	-0.002	0.804	-0.005
	Original	0.774		0.784		0.794		0.801		0.809	
9+50	Finished	0.709	-0.003	0.716	-0.004	0.725	-0.003	0.732	-0.003	0.740	-0.003
	Original	0.712		0.720		0.728		0.735		0.743	
10+00	Finished	0.645	-0.005	0.652	-0.005	0.665	-0.001	0.671	-0.004	0.680	-0.004
	Original	0.650		0.657		0.666		0.675		0.684	
		AVG	-0.005		-0.005		-0.003		-0.004		-0.002
		MAX	0.000		0.000		-0.001		-0.002		0.005
		MIN	0.000		0.000		-0.001		-0.002		0.005
		STD	0.002		0.002		0.003		0.001		0.004

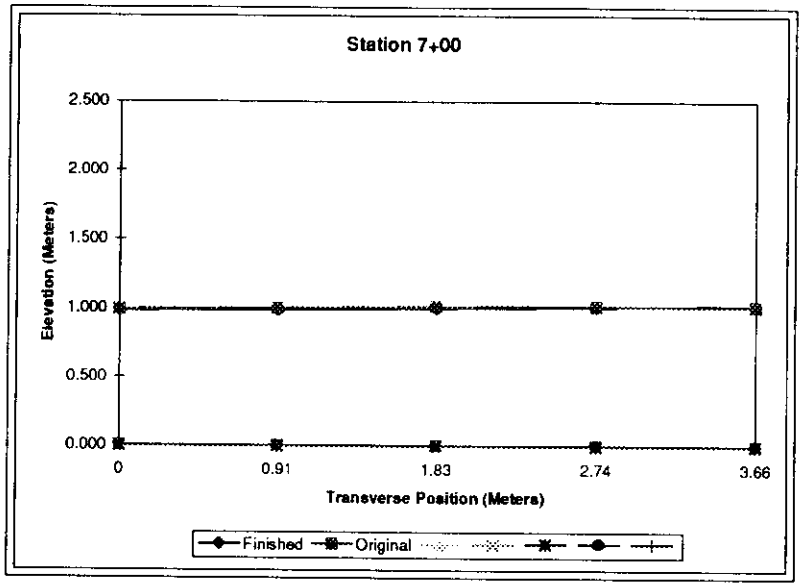


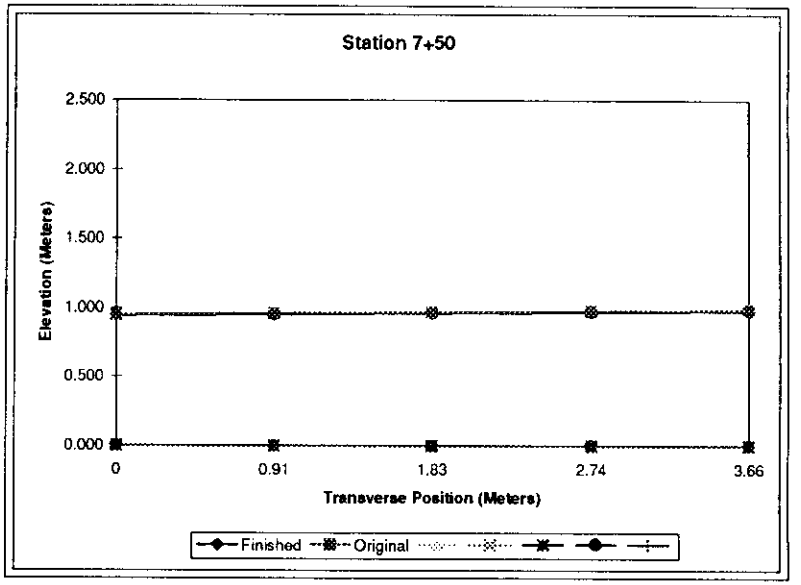


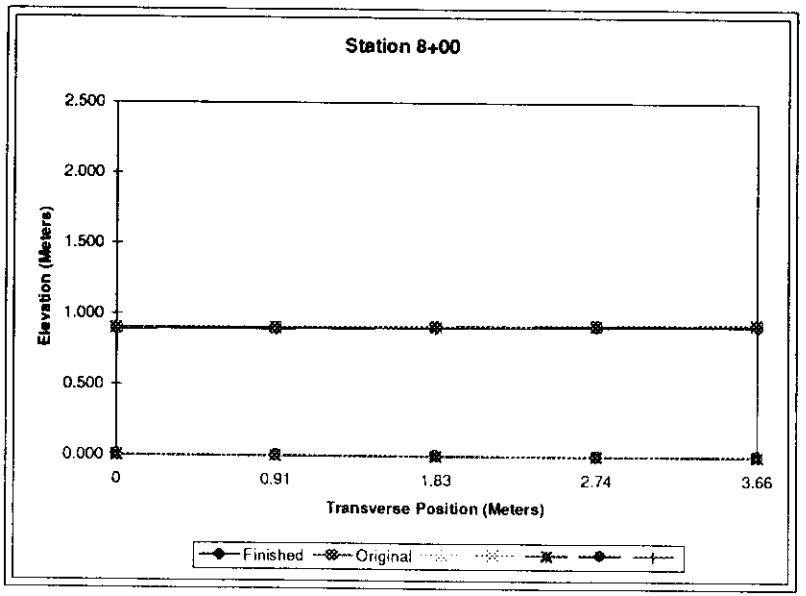


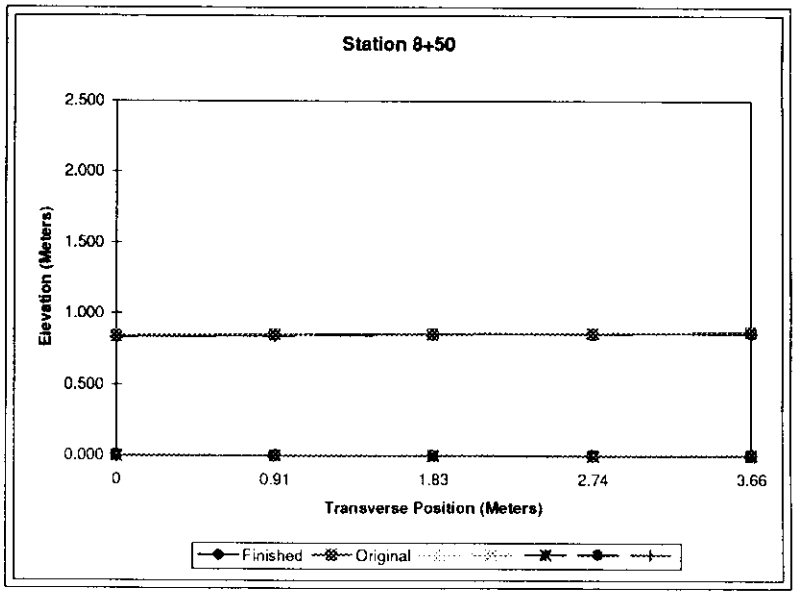


Tennessee SPS-6 Project (470602 Post Diamond-Ground), 2 of 2

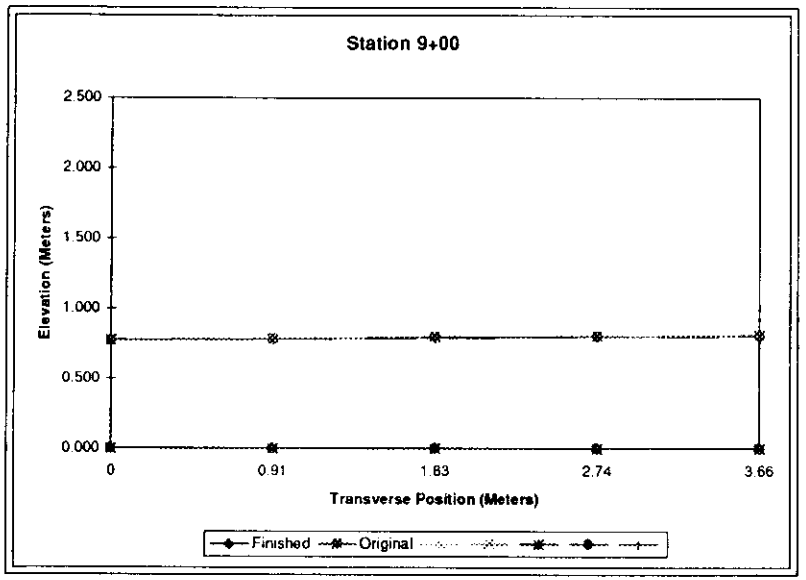


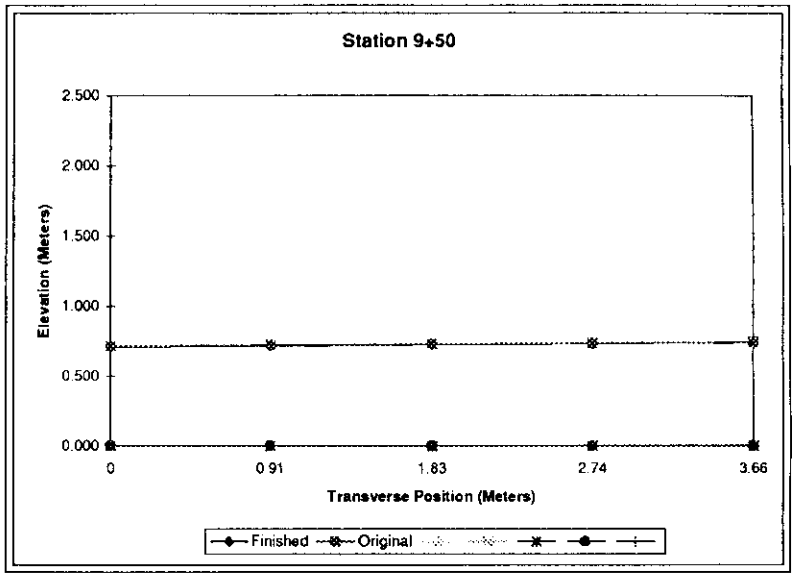


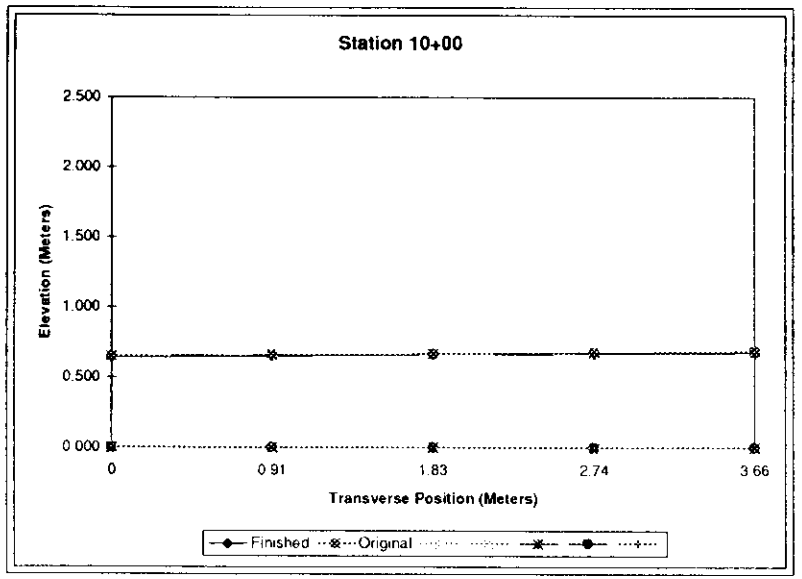




Tennessee SPS-6 Project (470602 Post Diamond-Ground), 2 of 2

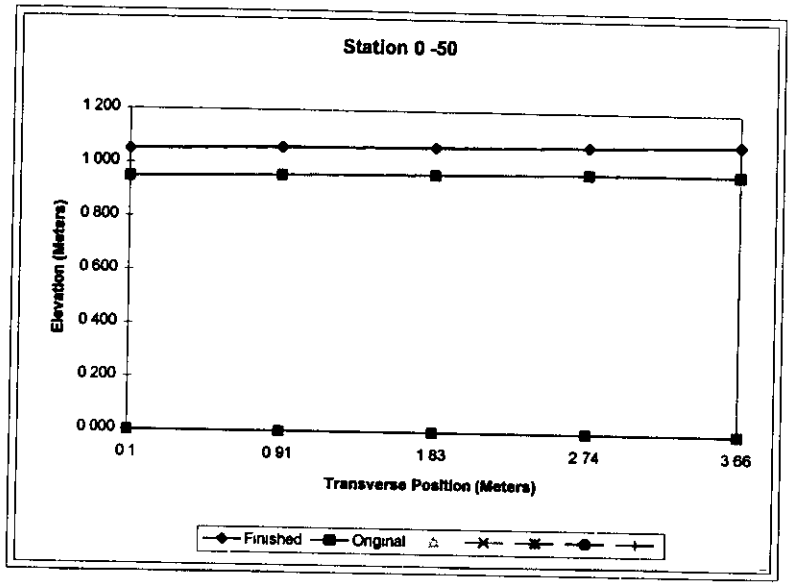

Station 9+00
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

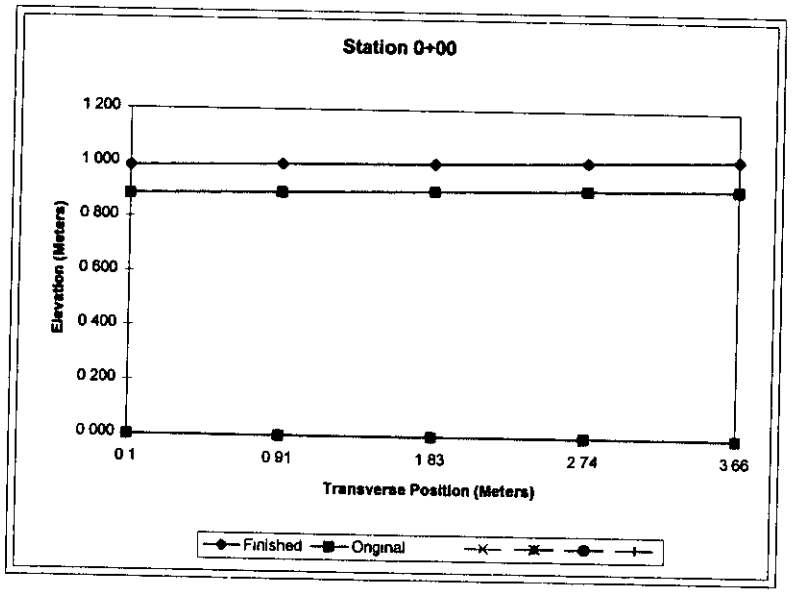

Station 9+50
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

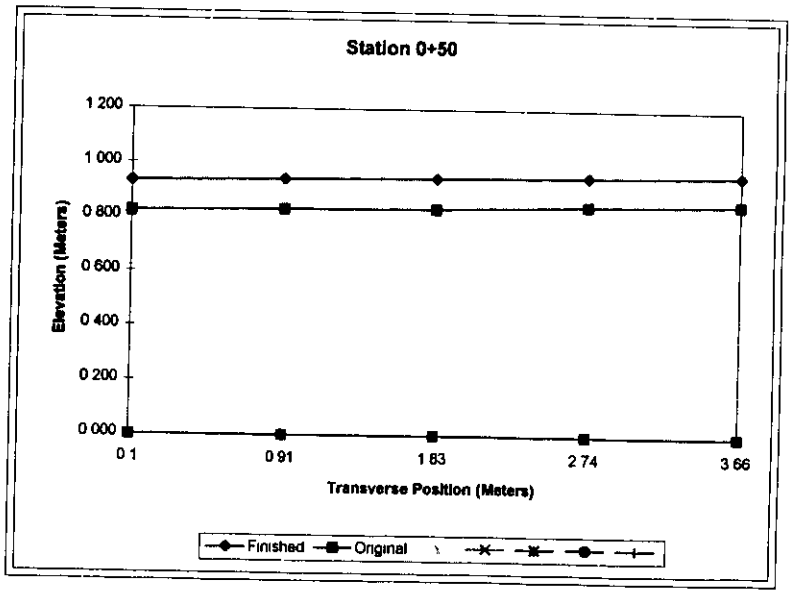

Station 10+00
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

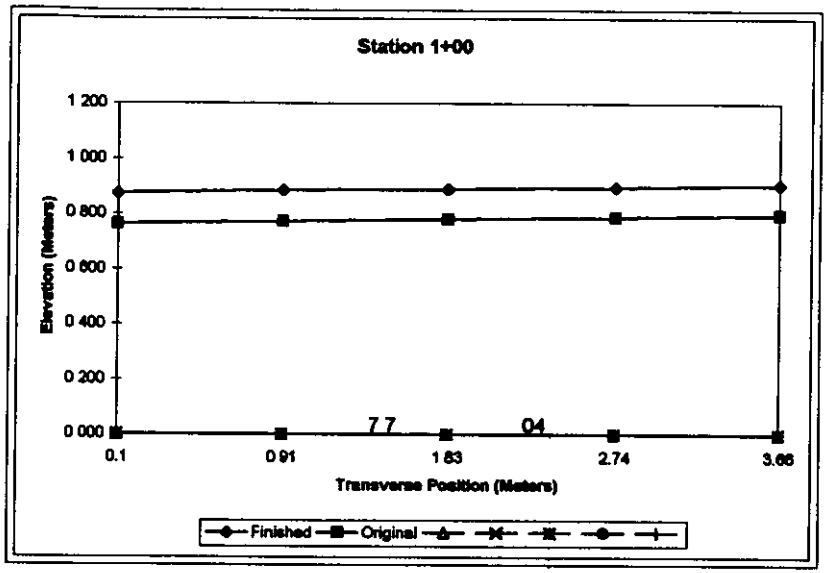
Tennessee SPS-6 Project (470603)

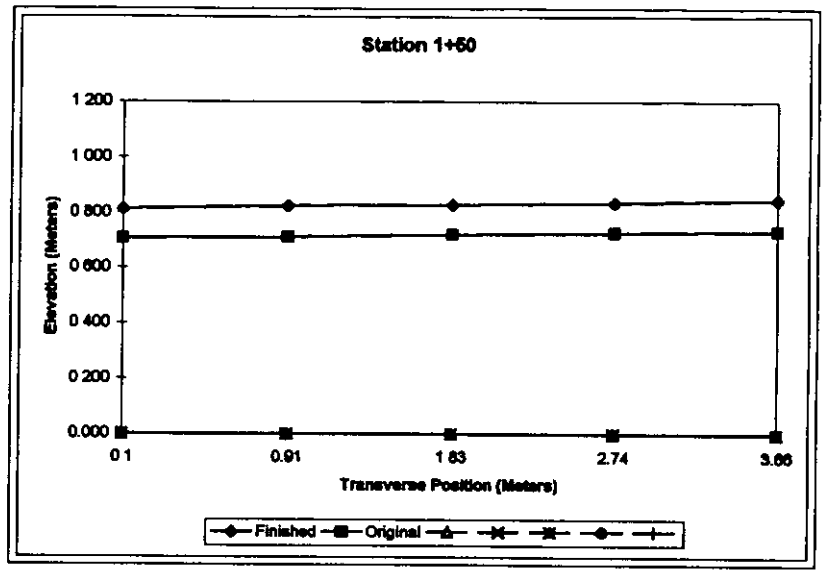
Transverse Offset	? LAYER	ELEVATION 0.1 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	1 052	0 102	1 062	0 104	1 067	0 102	1 074	0 102	1 085	0 111
	Original	0 950		0 958		0 965		0 972		0 974	
0+00	Finished	0 988	0 103	0 997	0 104	1 003	0 102	1 012	0 103	1 024	0 108
	Original	0 885		0 893		0 901		0 909		0 916	
0+50	Finished	0 932	0 109	0 941	0 111	0 946	0 113	0 953	0 106	0 962	0 107
	Original	0 823		0 830		0 833		0 847		0 855	
1+00	Finished	0 875	0 112	0 886	0 114	0 890	0 108	0 896	0 107	0 907	0 109
	Original	0 763		0 772		0 782		0 789		0 798	
1+50	Finished	0 814	0 107	0 824	0 112	0 830	0 108	0 837	0 109	0 847	0 113
	Original	0 707		0 712		0 722		0 728		0 734	
2+00	Finished	0 752	0 107	0 761	0 110	0 767	0 107	0 774	0 107	0 788	0 113
	Original	0 645		0 651		0 660		0 667		0 675	
2+50	Finished	0 693	0 107	0 702	0 111	0 708	0 110	0 714	0 108	0 727	0 113
	Original	0 586		0 591		0 598		0 606		0 614	
3+00	Finished	0 627	0 102	0 637	0 106	0 645	0 105	0 653	0 107	0 666	0 111
	Original	0 525		0 531		0 540		0 546		0 555	
3+50	Finished	0 566	0 111	0 578	0 115	0 584	0 111	0 591	0 109	0 604	0 114
	Original	0 455		0 463		0 473		0 482		0 490	
4+00	Finished	0 505	0 110	0 514	0 111	0 522	0 108	0 529	0 108	0 542	0 112
	Original	0 395		0 403		0 414		0 421		0 430	
4+50	Finished	0 443	0 084	0 452	0 083	0 459	0 068	0 468	0 069	0 480	0 062
	Original	0 359		0 369		0 391		0 399		0 418	
5+00	Finished	0 379	0 053	0 390	0 054	0 398	0 048	0 406	0 051	0 419	0 046
	Original	0 326		0 336		0 350		0 355		0 373	
5+50	Finished	0 326	0 065	0 336	0 065	0 344	0 057	0 353	0 060	0 365	0 059
	Original	0 261		0 271		0 287		0 293		0 306	
	AVG		0 098		0 099		0 095		0 095		0 097
	MAX		0 112		0 115		0 113		0 109		0 114
	MIN		0 112		0 115		0 113		0 109		0 114
	STD		0 018		0 020		0 022		0 021		0 024

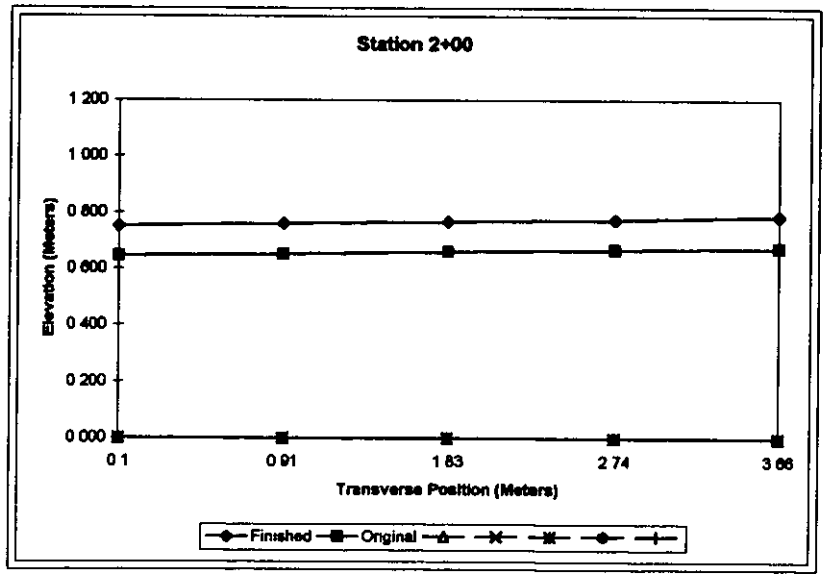

Station 0 -50
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

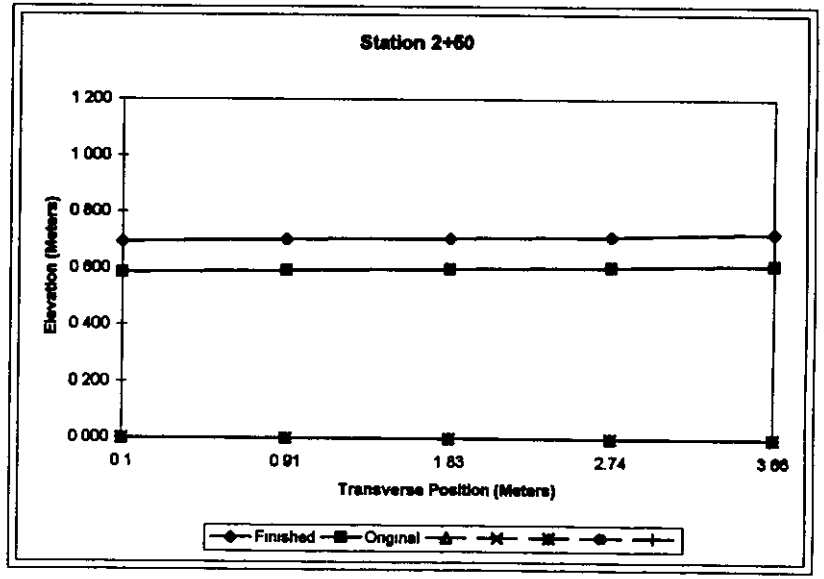

Station 0+00
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

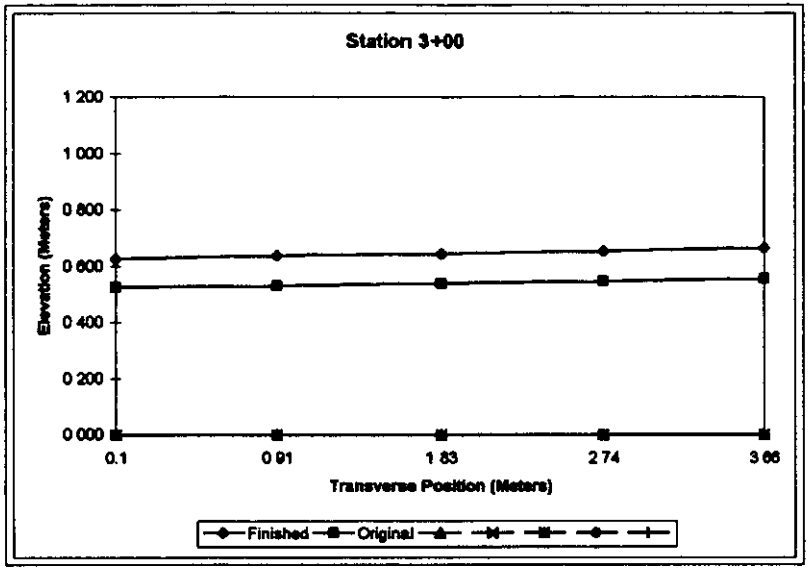

Station 0+50
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

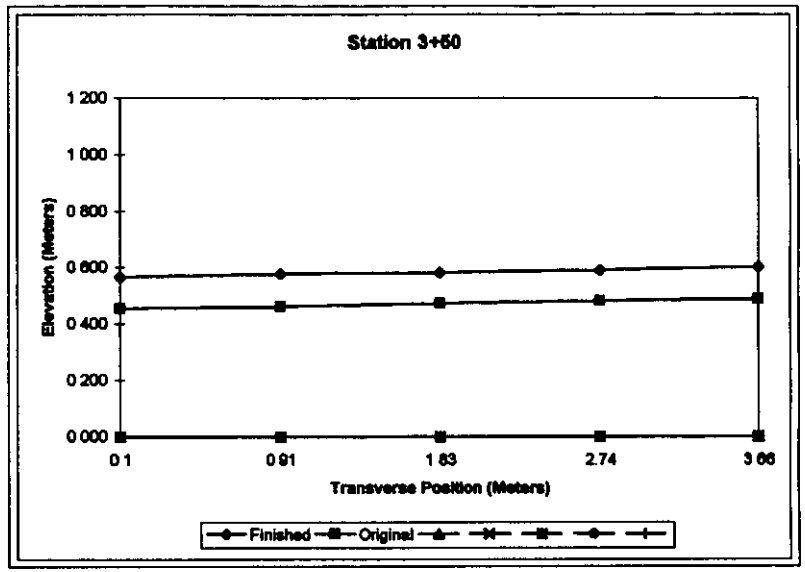

Station 1+00
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0.1
0 91
1 83
2.74
3.66
Transverse Position (Meters)
Finished
Original

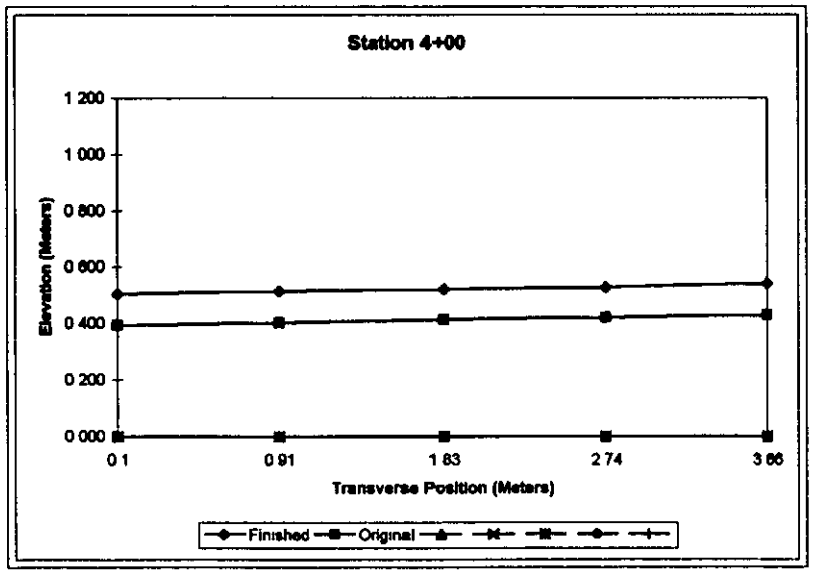

Station 1+50
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0.000
0 1
0.91
1 83
2.74
3.66
Transverse Position (Meters)
Finished
Original

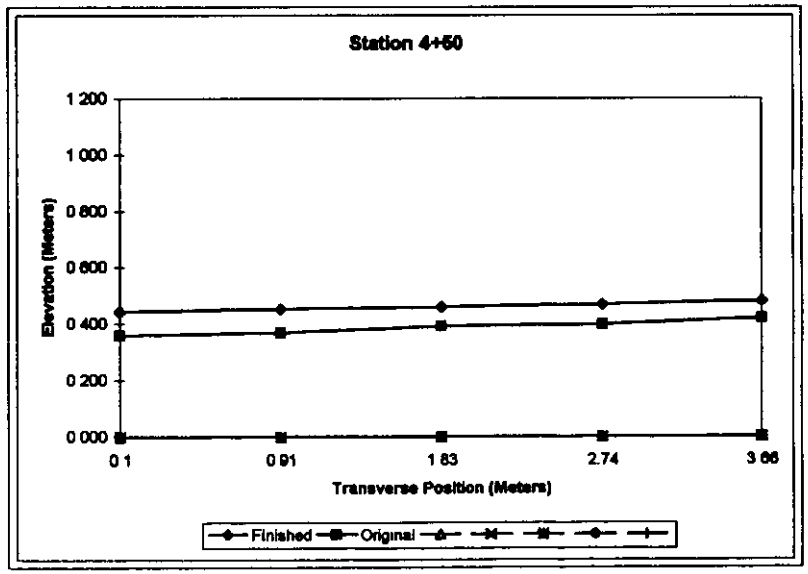

Station 2+00
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

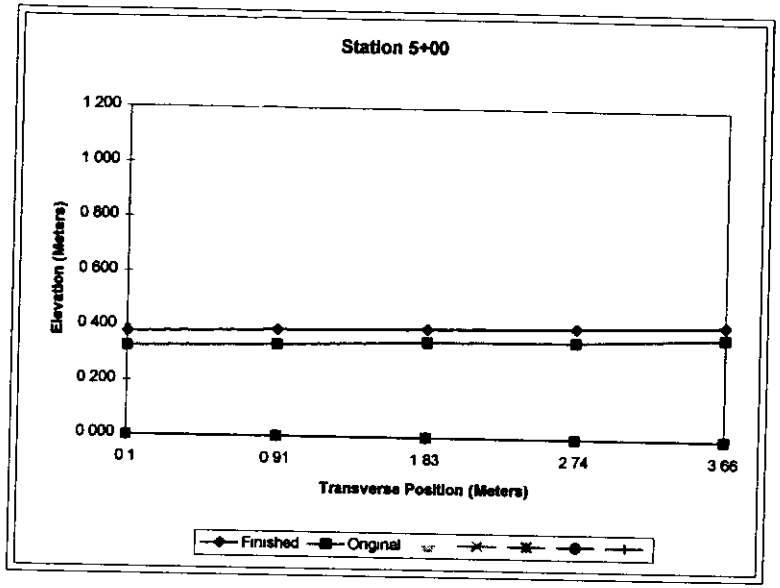

Station 2+50
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Finished
Original

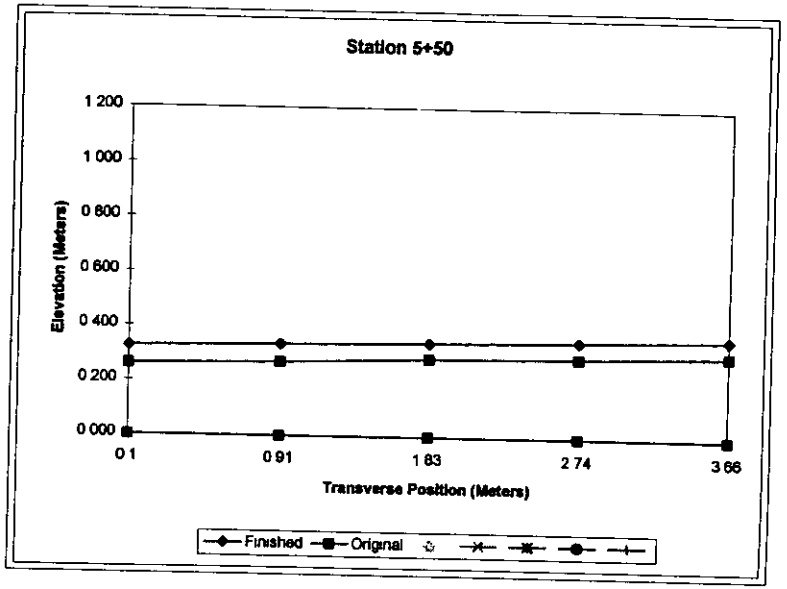

Station 3+00
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0.1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 3+50
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Finished
Original


Station 4+00
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

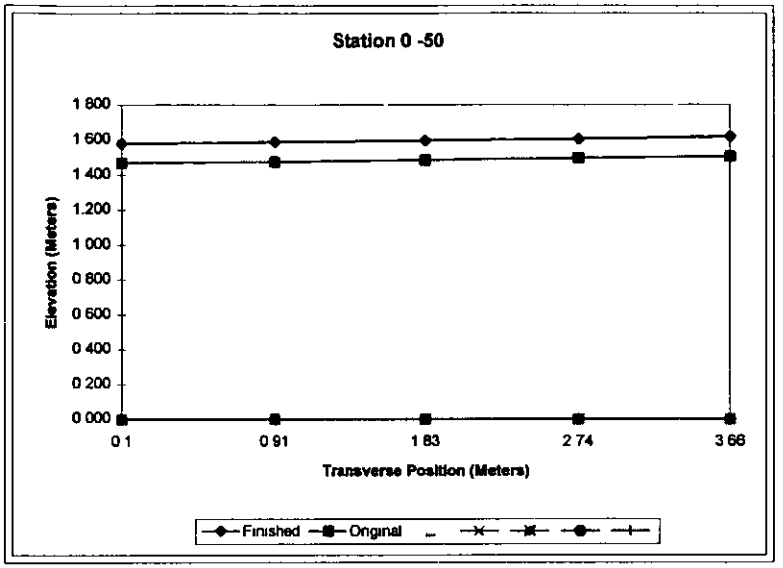

Station 4+50
Elevation (Meters)
1 200
1 000
0 800
0 600
0 400
0 200
0 000
0 1
0 91
1 83
2.74
3 66
Transverse Position (Meters)
Finished
Original

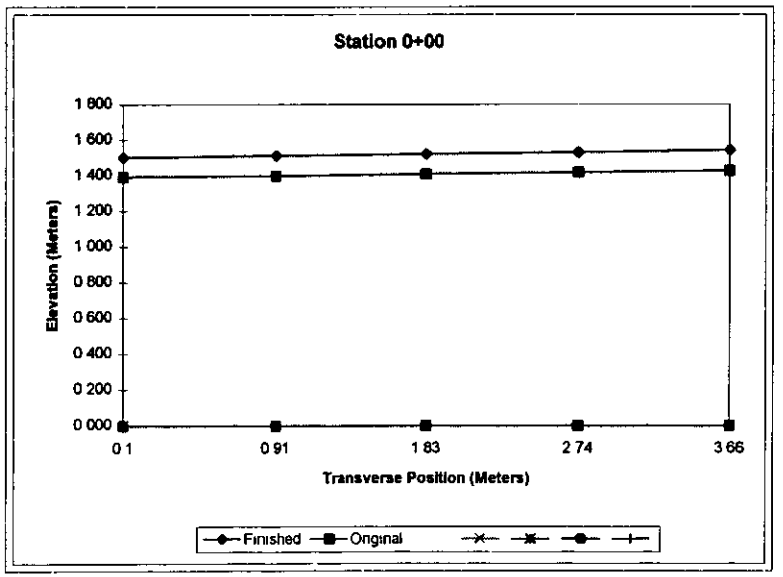

Station 5+00
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

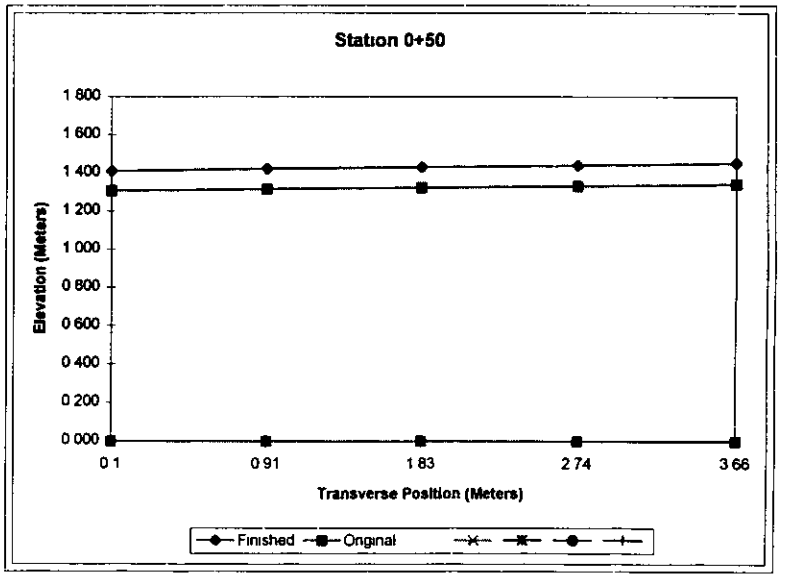

Station 5+50
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

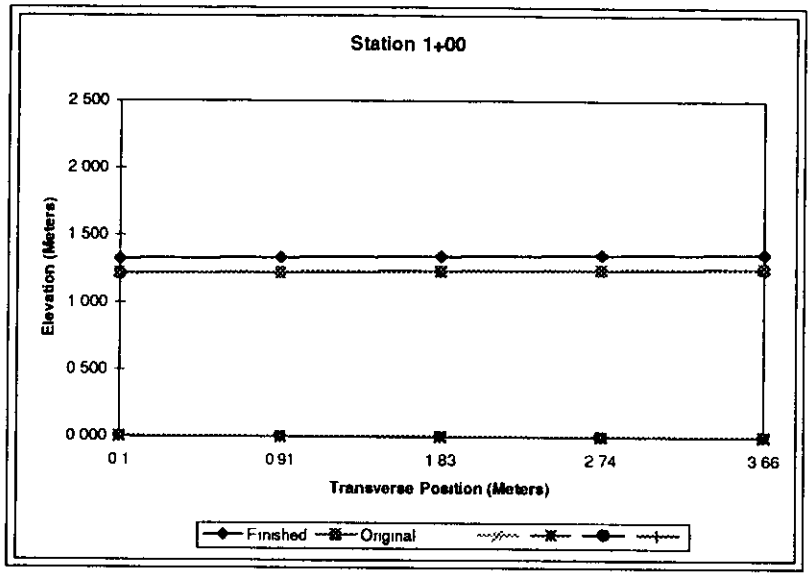
Tennessee SPS-6 Project (470604)

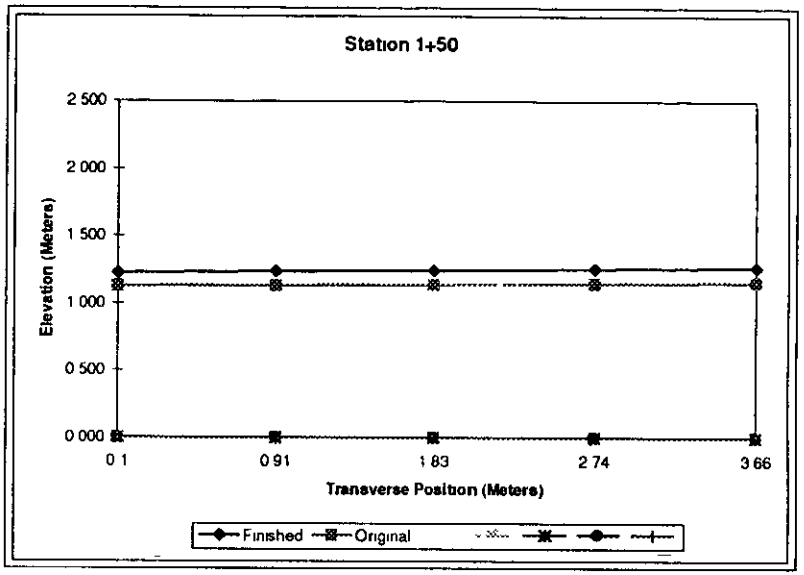
Transverse Offset	LAYER	ELEVATION 0.1 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	1 578	0 109	1 590	0 114	1 598	0 112	1 607	0 111	1 619	0 114
	Original	1 469		1 476		1 486		1 496		1 505	
0+00	Finished	1 502	0 110	1 513	0 115	1 522	0 113	1 531	0 114	1 543	0 117
	Original	1 392		1 398		1 409		1 417		1 426	
0+50	Finished	1 409	0 102	1 422	0 108	1 430	0 107	1 439	0 107	1 452	0 110
	Original	1 307		1 314		1 323		1 332		1 342	
1+00	Finished	1 324	0 109	1 335	0 112	1 343	0 110	1 352	0 111	1 364	0 113
	Original	1 215		1 223		1 233		1 241		1 251	
1+50	Finished	1 225	0 097	1 238	0 106	1 245	0 106	1 255	0 107	1 267	0 109
	Original	1 128		1 132		1 139		1 148		1 158	
2+00	Finished	1 134	0 104	1 143	0 106	1 153	0 107	1 163	0 108	1 175	0 111
	Original	1 030		1 037		1 046		1 055		1 064	
2+50	Finished	1 030	0 101	1 042	0 109	1 050	0 107	1 060	0 109	1 072	0 111
	Original	0 929		0 933		0 943		0 951		0 961	
3+00	Finished	0 922	0 107	0 931	0 108	0 940	0 107	0 949	0 110	0 960	0 112
	Original	0 815		0 823		0 833		0 839		0 848	
3+50	Finished	0 806	0 105	0 817	0 110	0 825	0 110	0 835	0 111	0 846	0 112
	Original	0 701		0 707		0 715		0 724		0 734	
4+00	Finished	0 682	0 099	0 693	0 105	0 702	0 107	0 711	0 108	0 722	0 111
	Original	0 583		0 588		0 595		0 603		0 611	
4+50	Finished	0 562	0 079	0 573	0 106	0 581	0 105	0 590	0 109	0 602	0 114
	Original	0 483		0 467		0 476		0 481		0 488	
5+00	Finished	0 436	0 104	0 448	0 110	0 456	0 109	0 465	0 111	0 478	0 114
	Original	0 332		0 338		0 347		0 354		0 364	
5+50	Finished	0 309	0 110	0 319	0 114	0 327	0 113	0 336	0 113	0 349	0 116
	Original	0 199		0 205		0 214		0 223		0 233	
	AVG		0 103		0 110		0 109		0 110		0 113
	MAX		0 110		0 115		0 113		0 114		0 117
	MIN		0 110		0 115		0 113		0 114		0 117
	STD		0 008		0 003		0 003		0 002		0 002

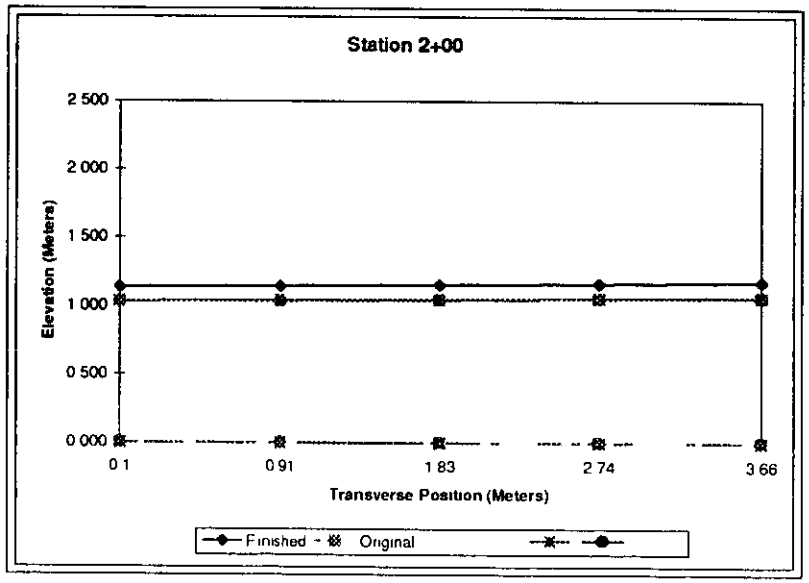

Station 0 -50
1 800
1 600
1 400
1.200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

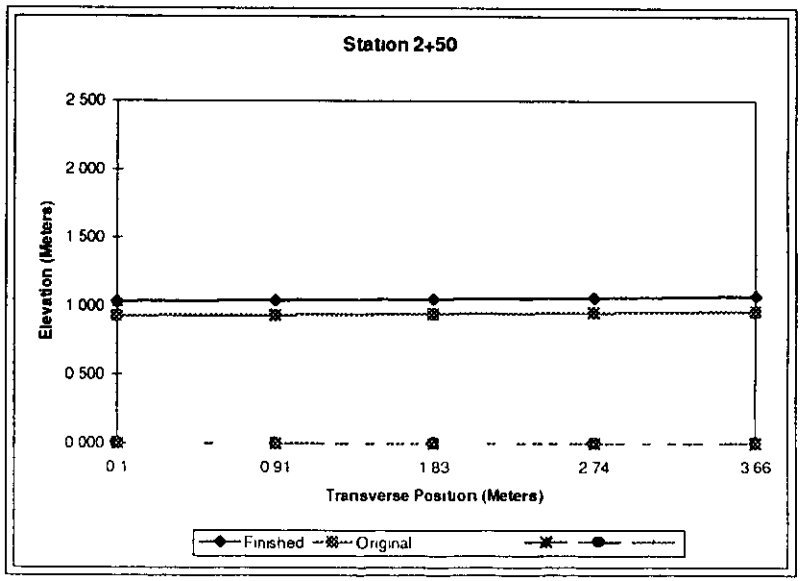

Station 0+00
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

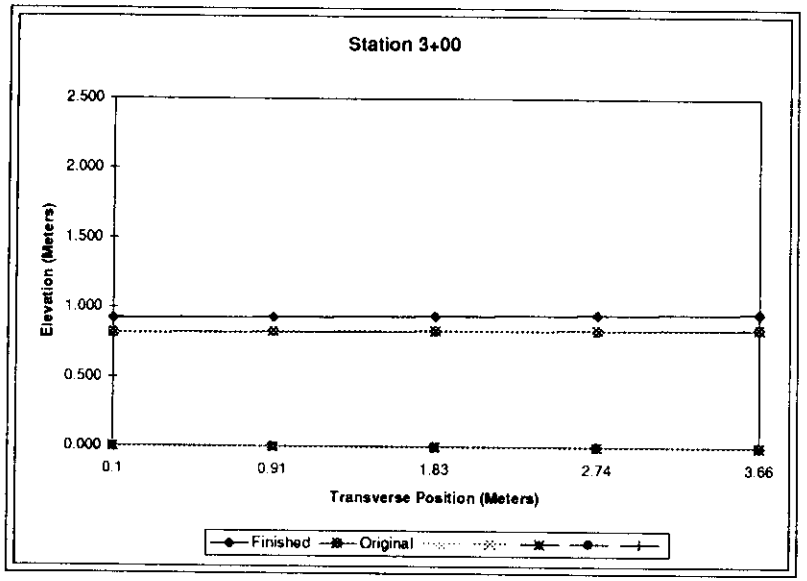

Station 0+50
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

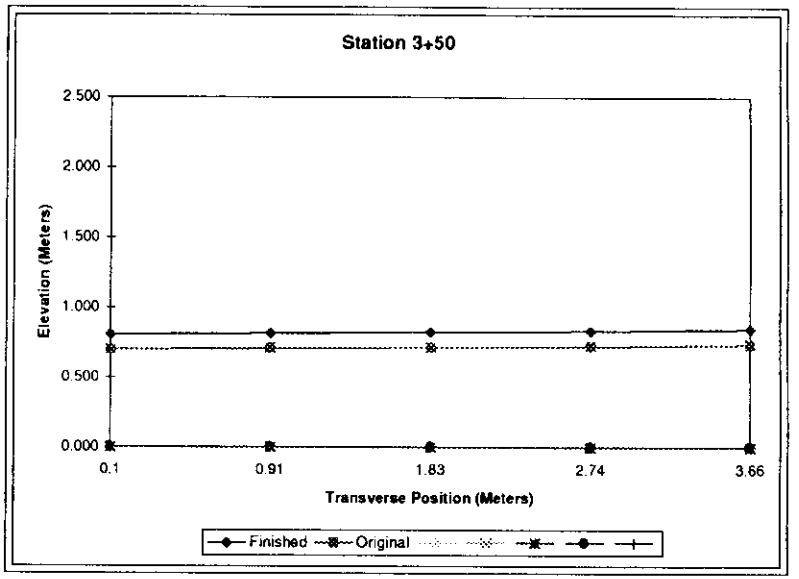

Station 1+00
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

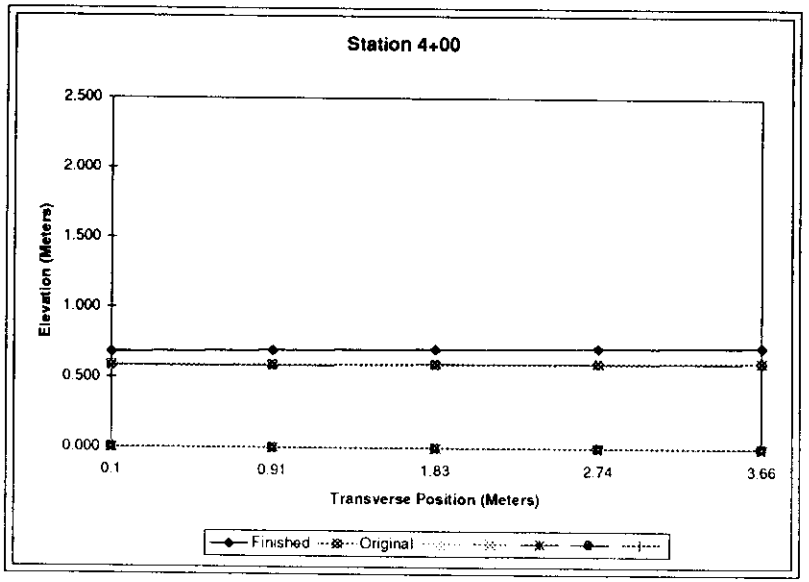

Station 1+50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

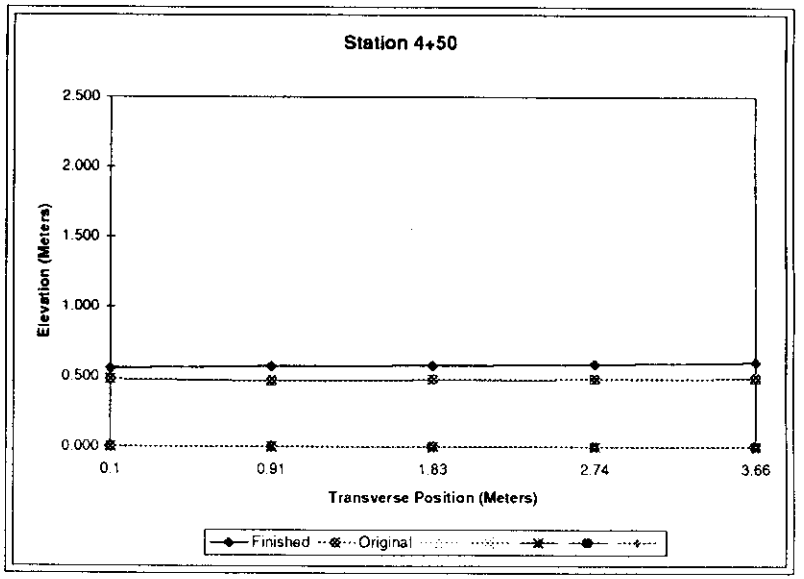

Station 2+00
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

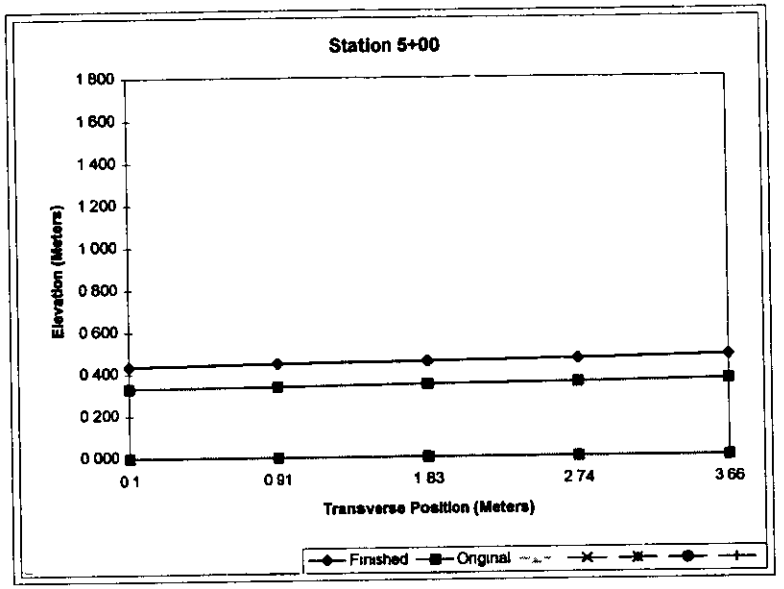

Station 2+50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

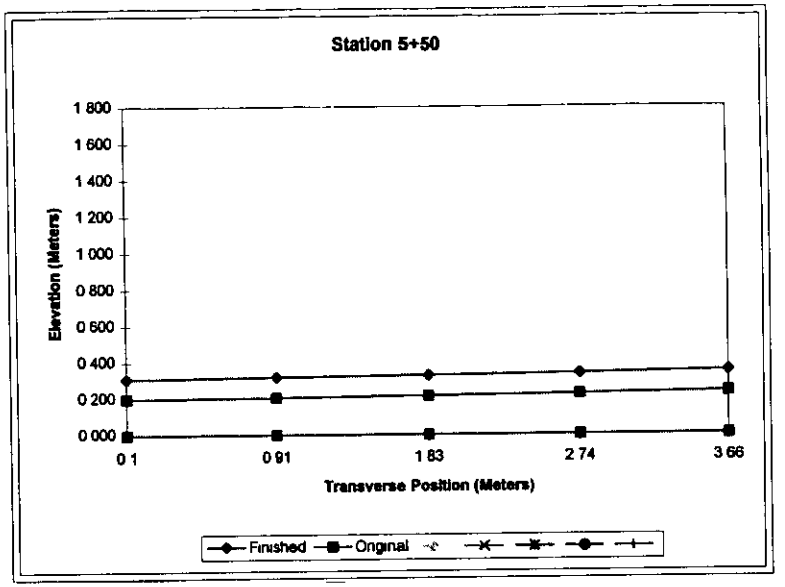

Station 3+00
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 3+50
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 4+00
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

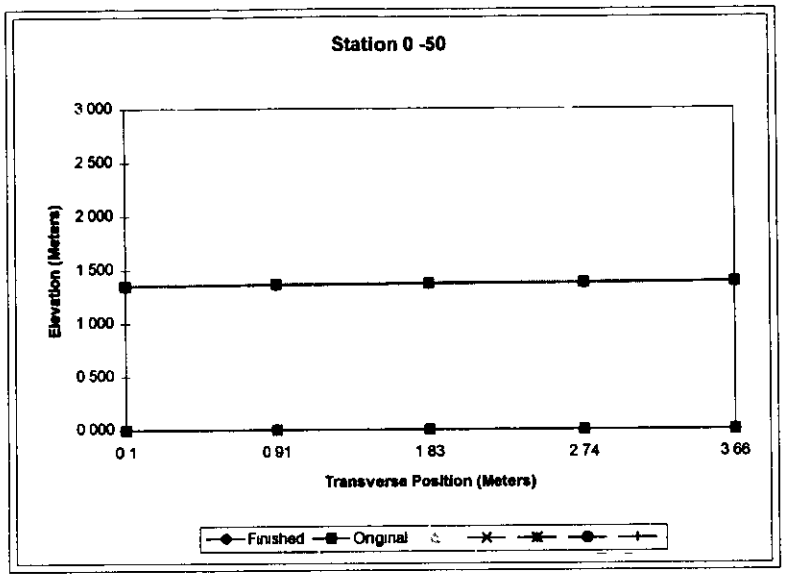

Station 4+50
2.500
2.000
1.500
1.000
0.500
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

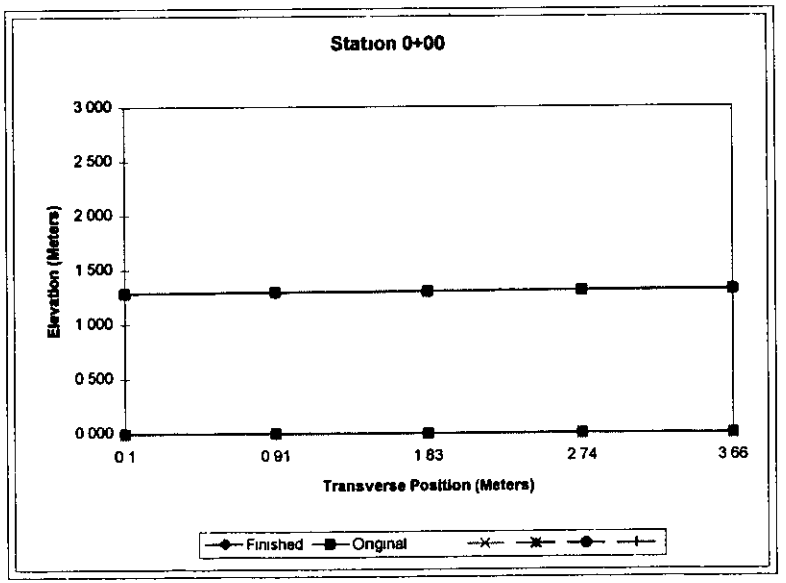

Station 5+00
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

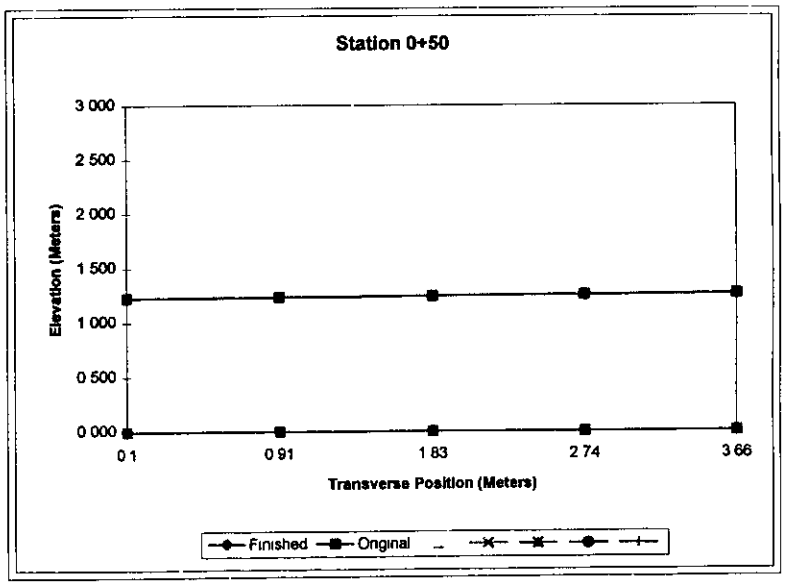

Station 5+50
1 800
1 600
1 400
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

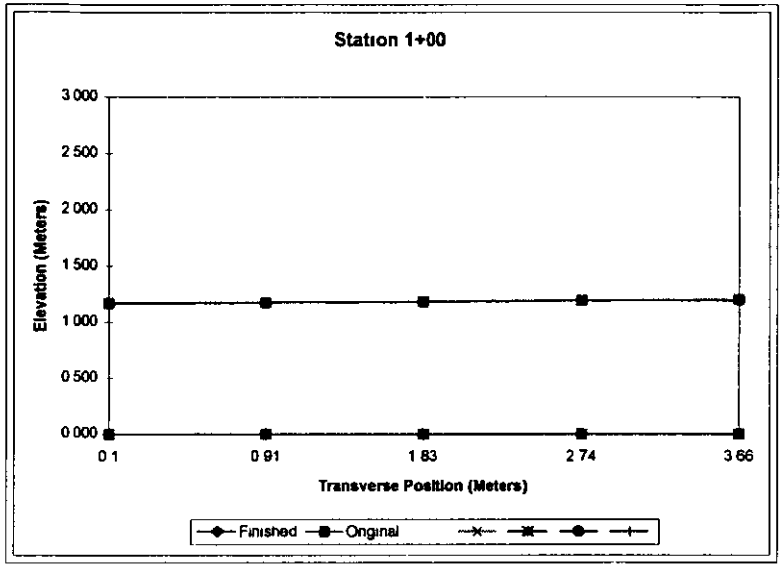
Tennessee SPS-6 Project (470605), 1 of 2

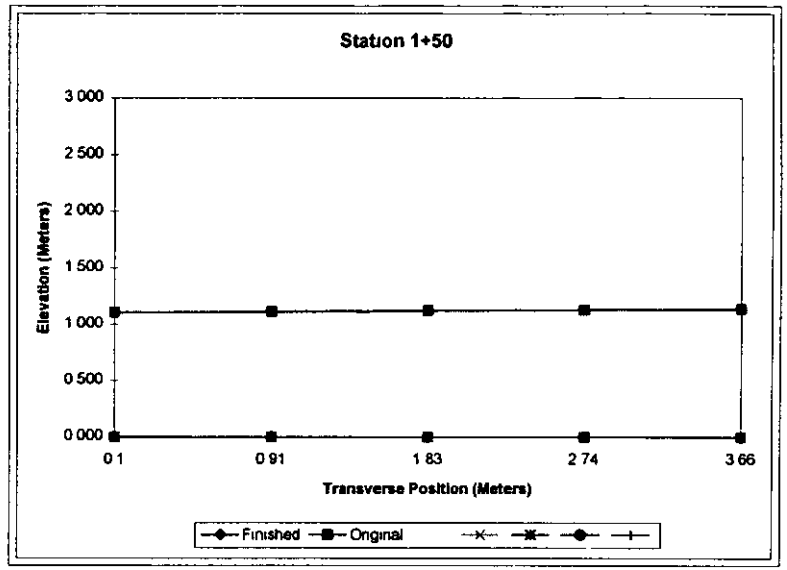
Transverse Offset	2 LAYER	ELEVATION 0.4 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	1 350	-0 002	1 360	-0 003	1 370	-0 001	1 376	-0 002	1 383	-0 001
	Original	1 352		1 363		1 371		1 378		1 384	
0+00	Finished	1 285	-0 002	1 291	-0 004	1 301	-0 001	1 310	-0 001	1 317	-0 003
	Original	1 287		1 295		1 302		1 311		1 320	
0+50	Finished	1 224	-0 002	1 230	-0 004	1 241	-0 001	1 248	-0 002	1 256	-0 003
	Original	1 226		1 234		1 242		1 250		1 259	
1+00	Finished	1 166	-0 004	1 175	-0 002	1 183	-0 002	1 192	-0 001	1 197	-0 004
	Original	1 170		1 177		1 185		1 193		1 201	
1+50	Finished	1 105	-0 003	1 113	-0 002	1 122	-0 002	1 129	-0 002	1 136	-0 004
	Original	1 108		1 115		1 124		1 131		1 140	
2+00	Finished	1 050	-0 003	1 057	-0 003	1 067	-0 003	1 073	-0 002	1 080	-0 002
	Original	1 053		1 060		1 070		1 075		1 082	
2+50	Finished	0 983	-0 002	0 991	-0 002	1 001	-0 001	1 009	-0 001	1 019	-0 001
	Original	0 985		0 993		1 002		1 010		1 020	
3+00	Finished	0 922	-0 003	0 930	-0 002	0 939	-0 001	0 949	0 000	0 957	-0 003
	Original	0 925		0 932		0 940		0 949		0 960	
3+50	Finished	0 861	-0 003	0 871	-0 001	0 880	-0 001	0 889	-0 001	0 896	-0 004
	Original	0 864		0 872		0 881		0 890		0 900	
4+00	Finished	0 802	-0 002	0 811	0 000	0 818	-0 002	0 826	-0 003	0 834	-0 003
	Original	0 804		0 811		0 820		0 829		0 837	
4+50	Finished	0 740	-0 003	0 746	-0 002	0 757	-0 002	0 765	-0 002	0 773	-0 002
	Original	0 743		0 748		0 759		0 767		0 775	
5+00	Finished	0 680	0 000	0 685	0 000	0 695	0 000	0 702	0 000	0 710	-0 001
	Original	0 680		0 685		0 695		0 702		0 711	
5+50	Finished	0 618	0 000	0 624	-0 001	0 634	0 000	0 642	0 000	0 650	0 000
	Original	0 618		0 625		0 634		0 642		0 650	
	AVG		-0 002		-0 002		-0 001		-0 001		-0 002
	MAX		0 000		0 000		0 000		0 000		0 000
	MIN		0 000		0 000		0 000		0 000		0 000
	STD		0 001		0 001		0 001		0 001		0 001

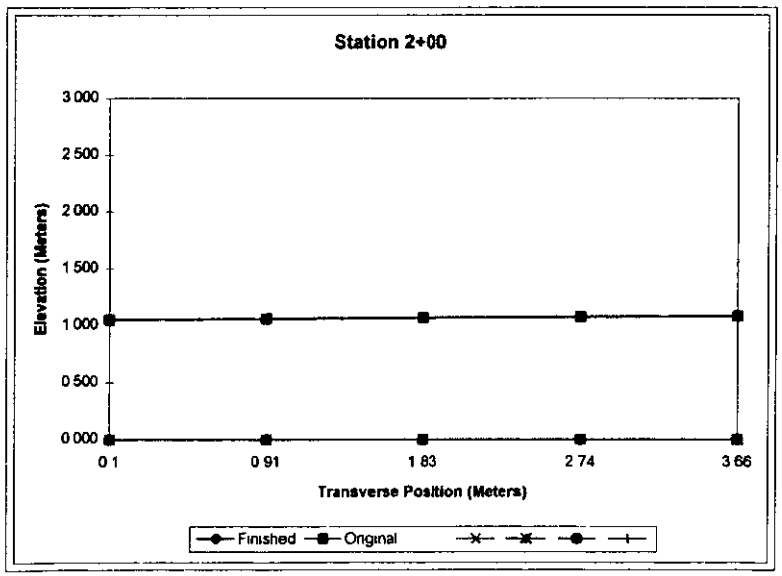

Station 0 -50
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

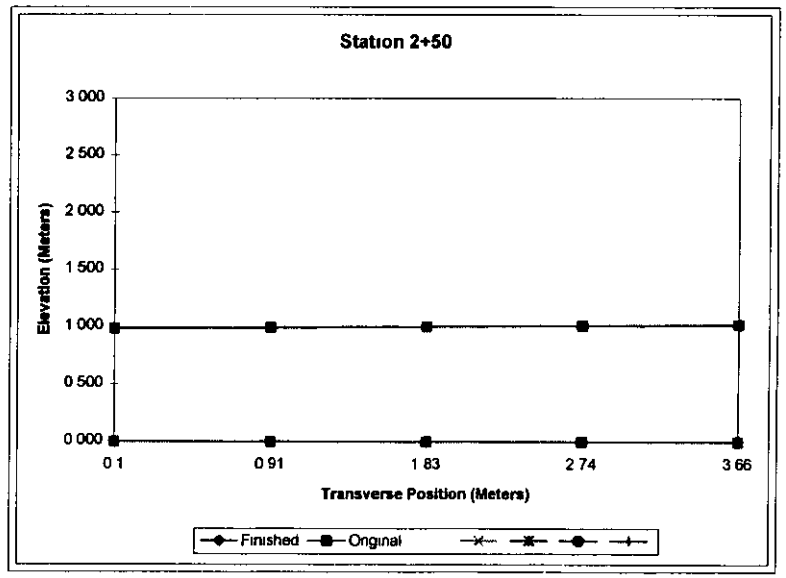

Station 0+00
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

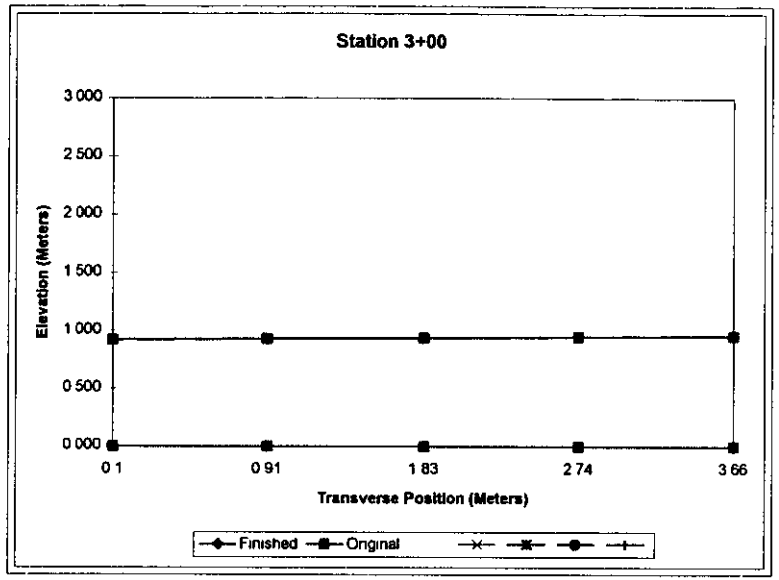

Station 0+50
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

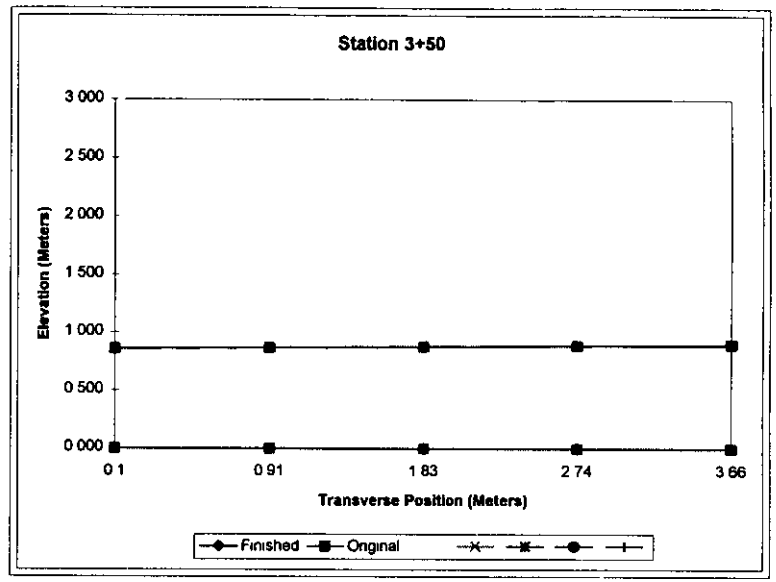

Station 1+00
Elevation (Meters)
3 000
2 500
2 000
1 500
1 000
0 500
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

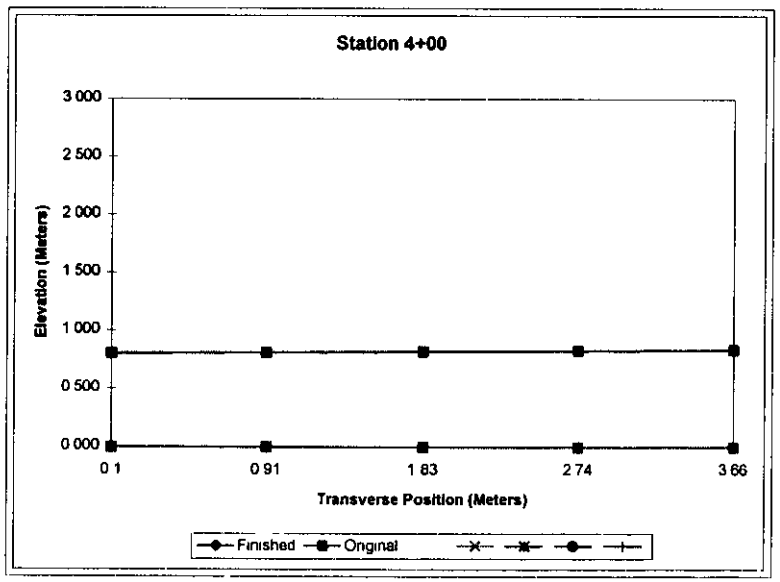

Station 1+50
Elevation (Meters)
3 000
2 500
2 000
1 500
1 000
0 500
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

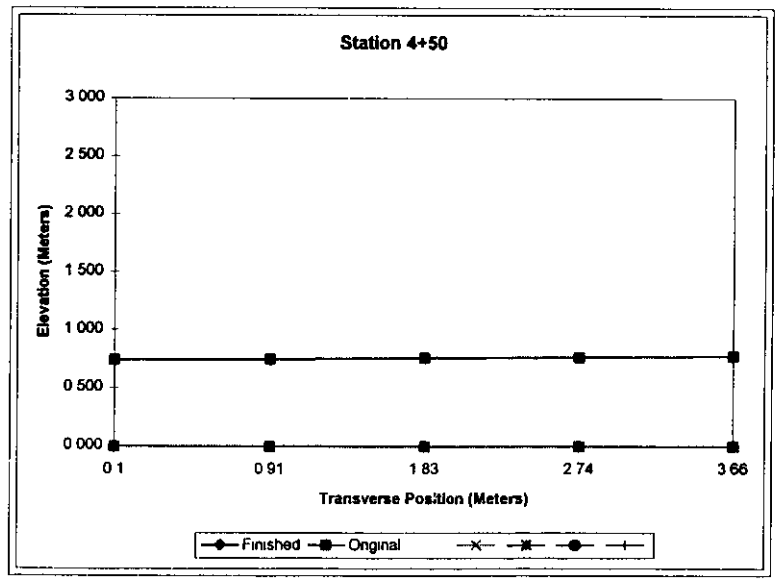

Station 2+00
Elevation (Meters)
3 000
2 500
2 000
1 500
1 000
0 500
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

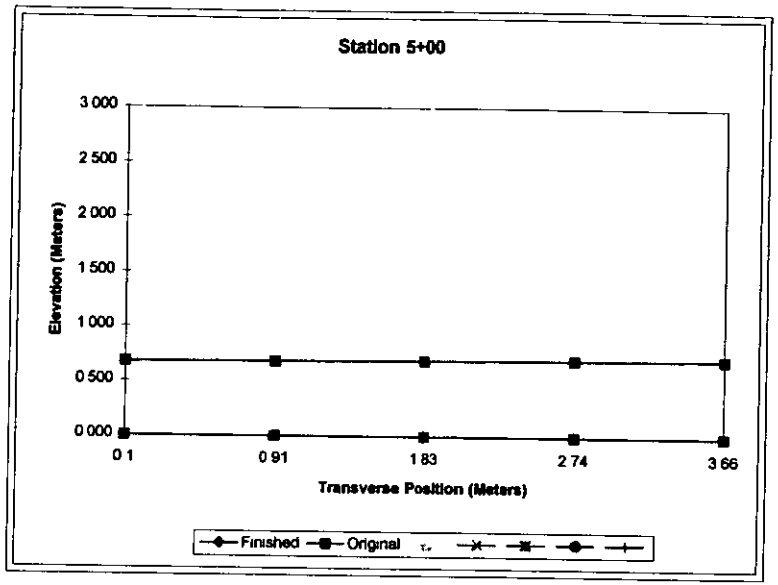

Station 2+50
Elevation (Meters)
3 000
2 500
2 000
1 500
1 000
0 500
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

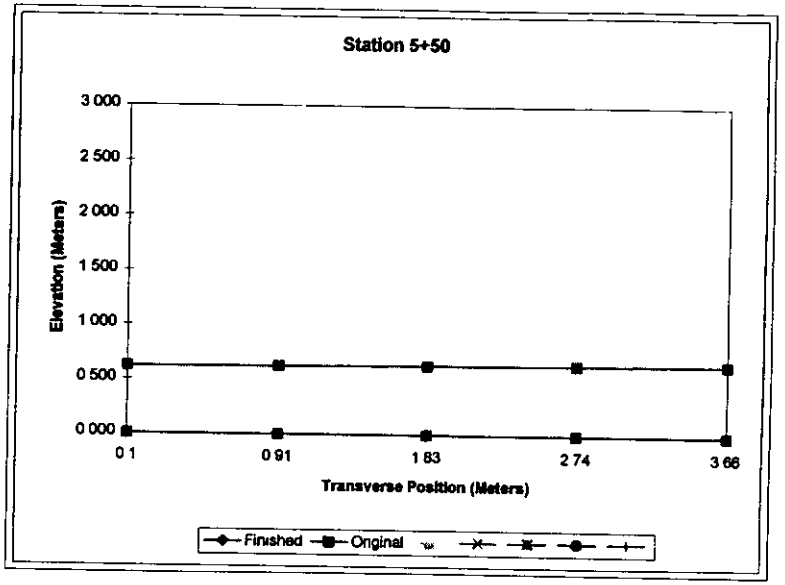

Station 3+00
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 3+50
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 4+00
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

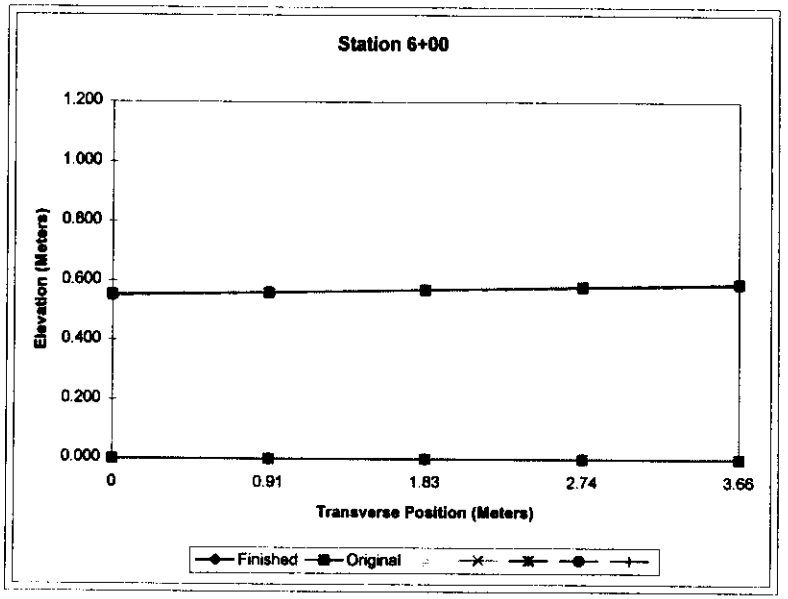

Station 4+50
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

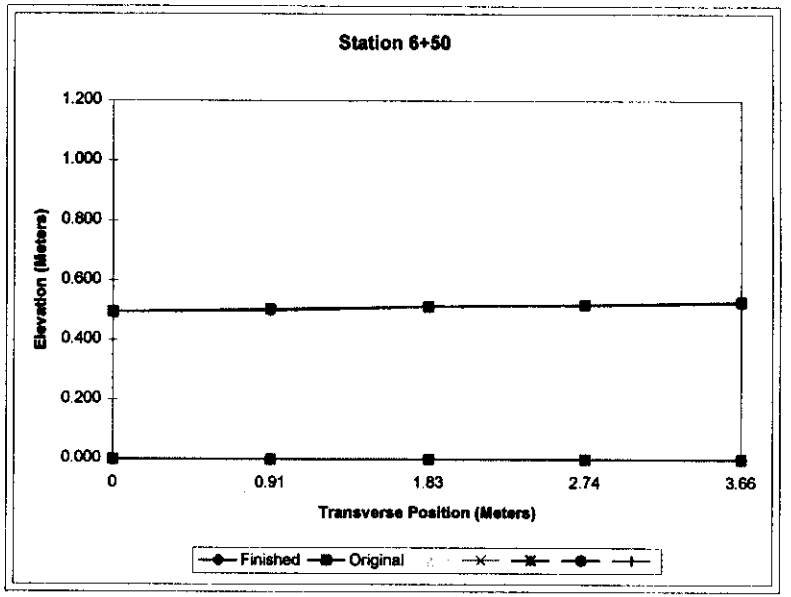

Station 5+00
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

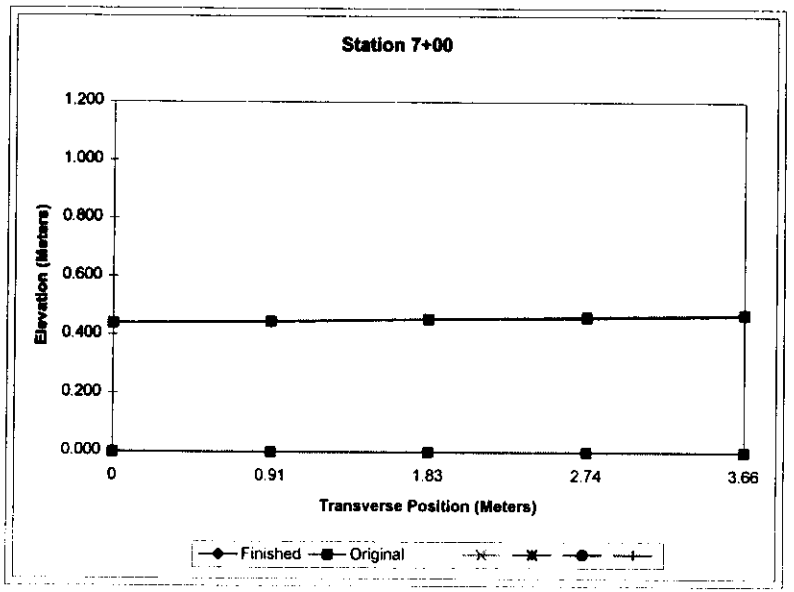

Station 5+50
3 000
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

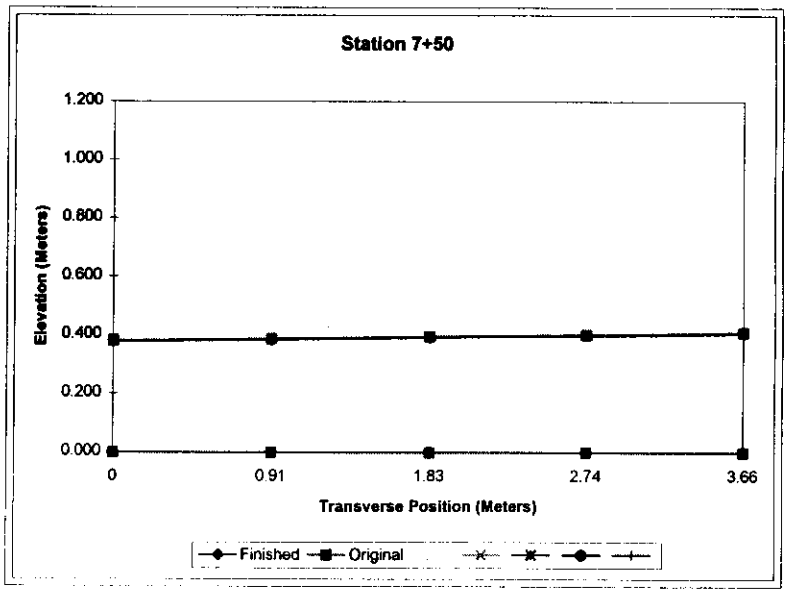
Tennessee SPS-6 Project (470605), 2 of 2

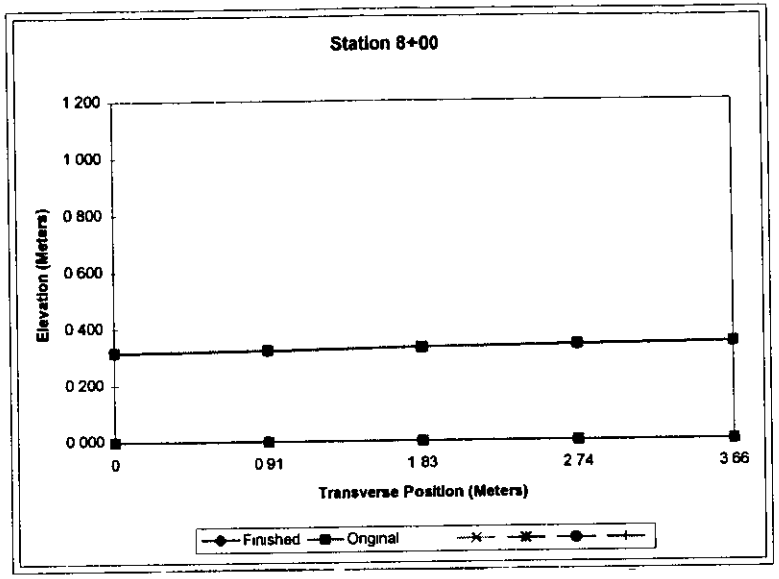
Transverse Offset	2 LAYER	ELEVATION 0 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
6+00	Finished	0 552	-0 002	0 561	0 000	0 571	0 000	0 580	-0 001	0 590	-0 002
	Original	0 554		0 561		0 571		0 581		0 592	
6+50	Finished	0 495	0 000	0 500	-0 004	0 513	0 000	0 519	-0 001	0 526	-0 003
	Original	0 495		0 504		0 513		0 520		0 529	
7+00	Finished	0 440	0 000	0 445	-0 001	0 454	0 000	0 460	-0 002	0 469	-0 002
	Original	0 440		0 446		0 454		0 462		0 471	
7+50	Finished	0 379	-0 001	0 385	-0 002	0 392	-0 002	0 399	-0 002	0 407	-0 003
	Original	0 380		0 387		0 394		0 401		0 410	
8+00	Finished	0 316	-0 001	0 322	-0 002	0 332	0 000	0 338	-0 002	0 344	-0 001
	Original	0 317		0 324		0 332		0 340		0 345	
8+50	Finished	0 250	0 000	0 256	-0 003	0 267	-0 001	0 273	-0 002	0 284	-0 002
	Original	0 250				0 268		0 275		0 286	
9+00	Finished	0 189	-0 001	0 192	-0 005	0 206	0 000	0 213	-0 002	0 222	-0 003
	Original	0 190		0 197		0 206		0 215		0 225	
9+50	Finished	0 126	-0 002	0 131	-0 004	0 145	-0 001	0 153	-0 002	0 162	-0 002
	Original	0 128		0 135		0 146		0 155		0 164	
10+00	Finished	0 065	-0 004	0 075	-0 003	0 084	-0 002	0 092	-0 002	0 100	-0 002
	Original	0 069		0 078		0 086		0 094		0 102	
10+50	Finished	0 008	0 000	0 014	0 000	0 024	0 000	0 033	0 000	0 044	0 000
	Original	0 008		0 014		0 024		0 033		0 044	
	AVG		-0 001		-0 002		-0 001		-0 001		-0 002
	MAX		0 000		0 000		0 000		0 000		0 000
	MIN		0 000		0 000		0 000		0 000		0 000
	STD		0 001		0 002		0 001		0 001		0 001

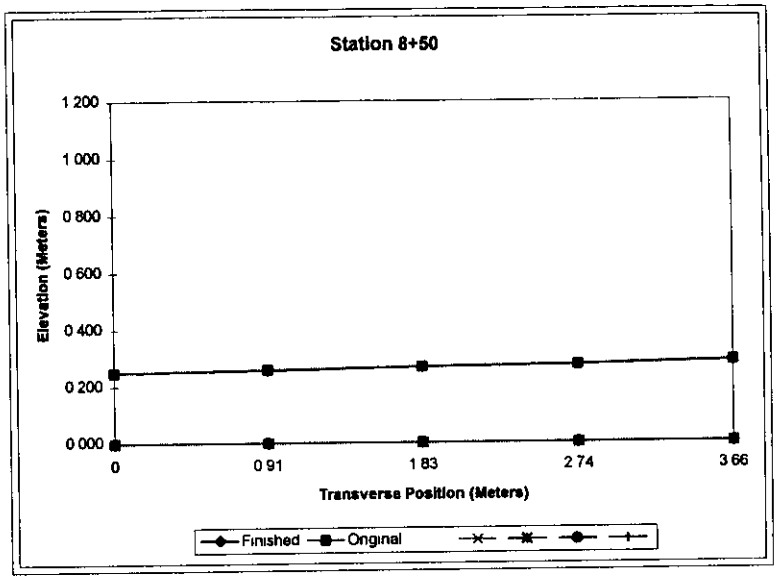

Station 6+00
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

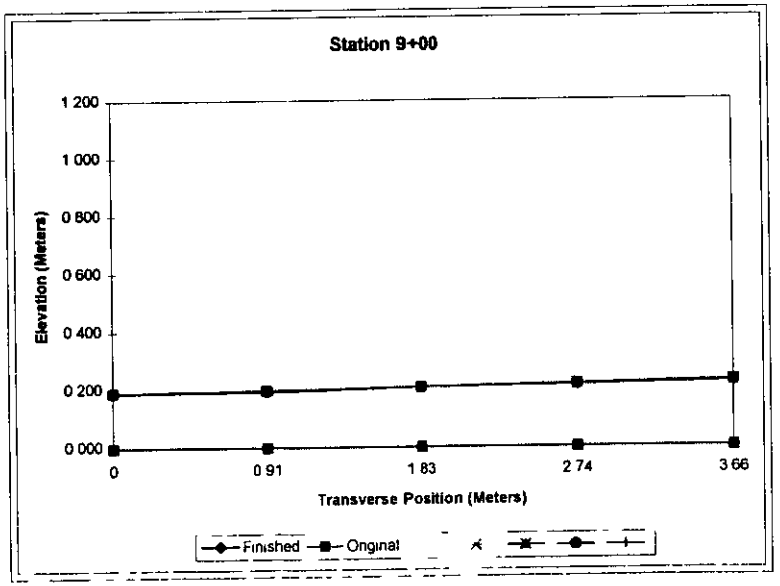

Station 6+50
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

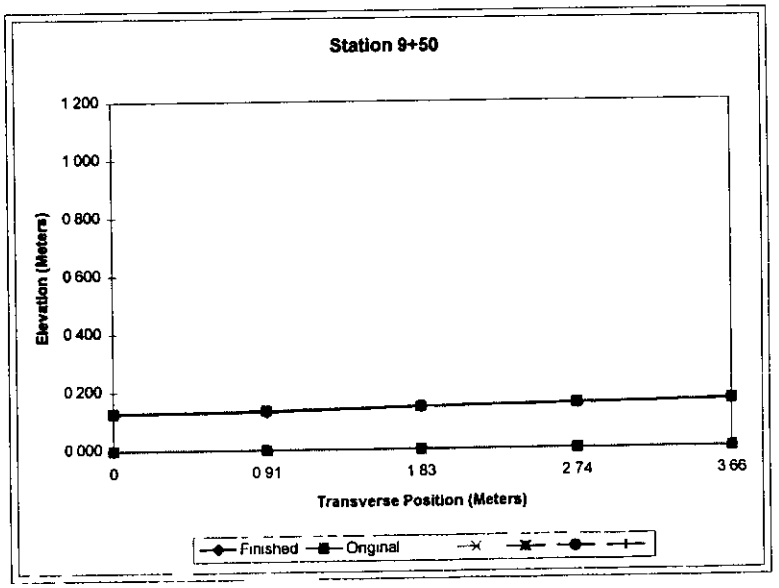

Station 7+00
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

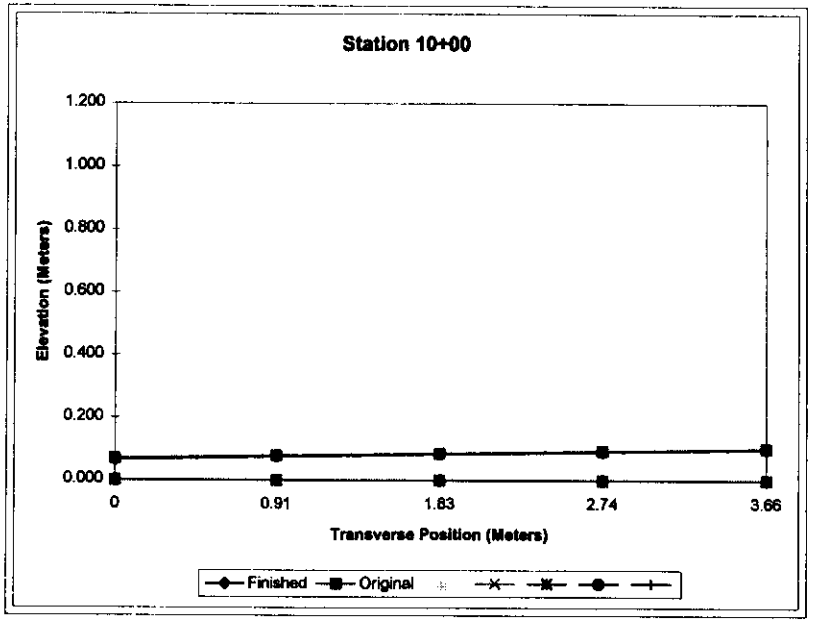

Station 7+50
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

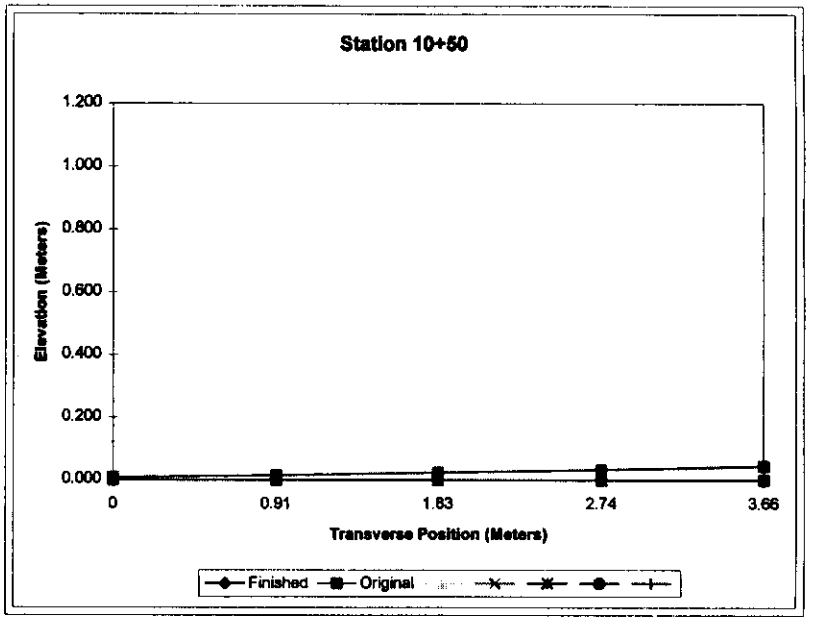

Station 8+00
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 8+50
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 9+00
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

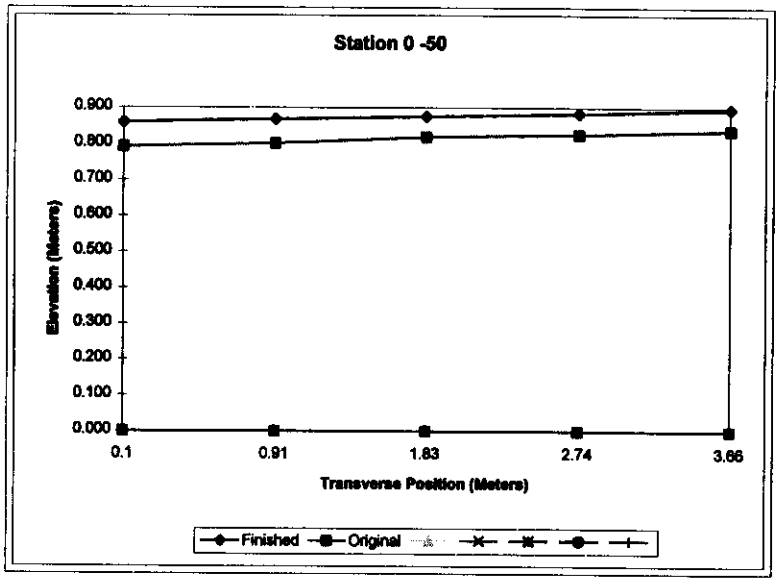

Station 9+50
1 200
1 000
0 800
0 600
0 400
0 200
0 000
Elevation (Meters)
0
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

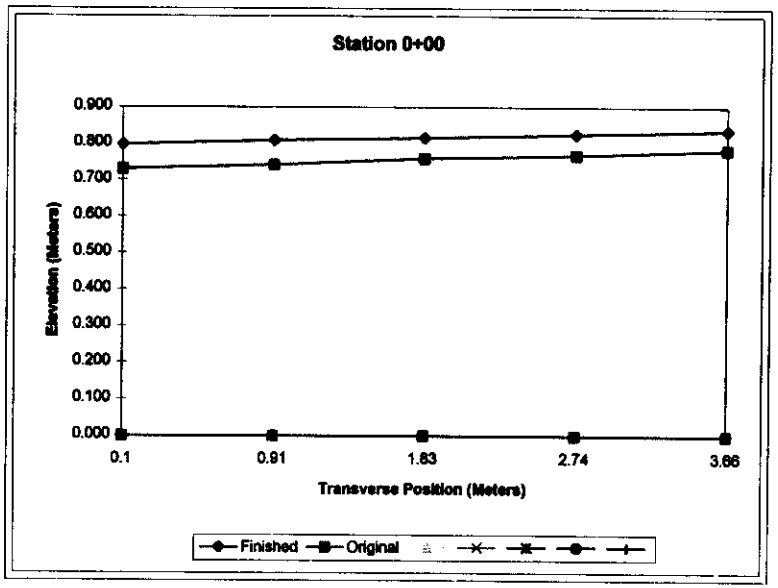

Station 10+00
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

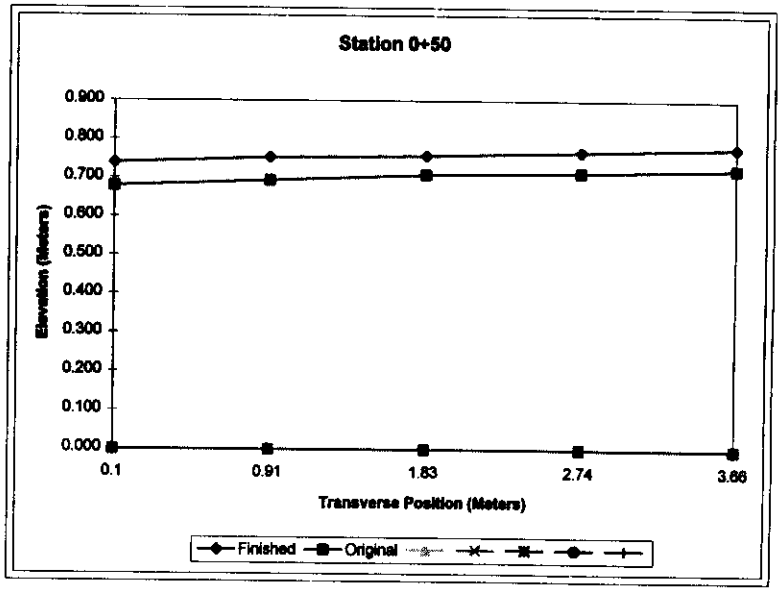

Station 10+50
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

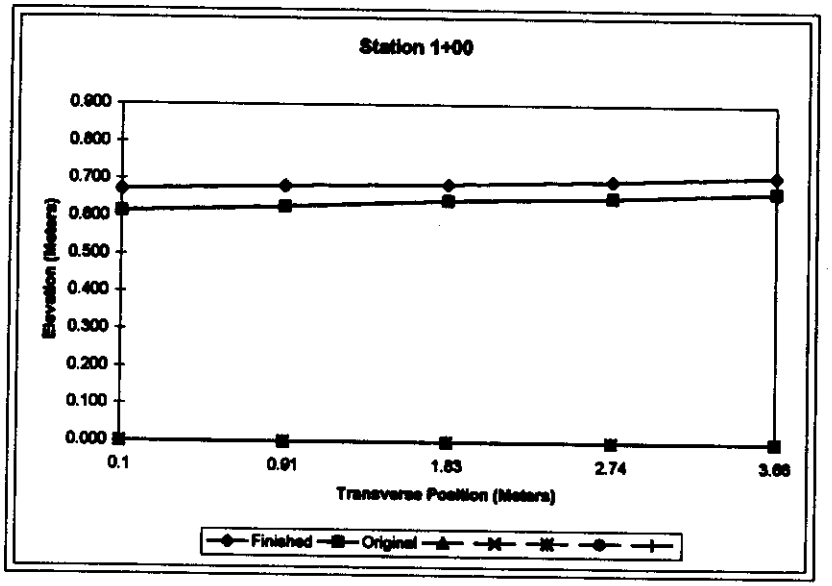
Tennessee SPS-6 Project (470606)

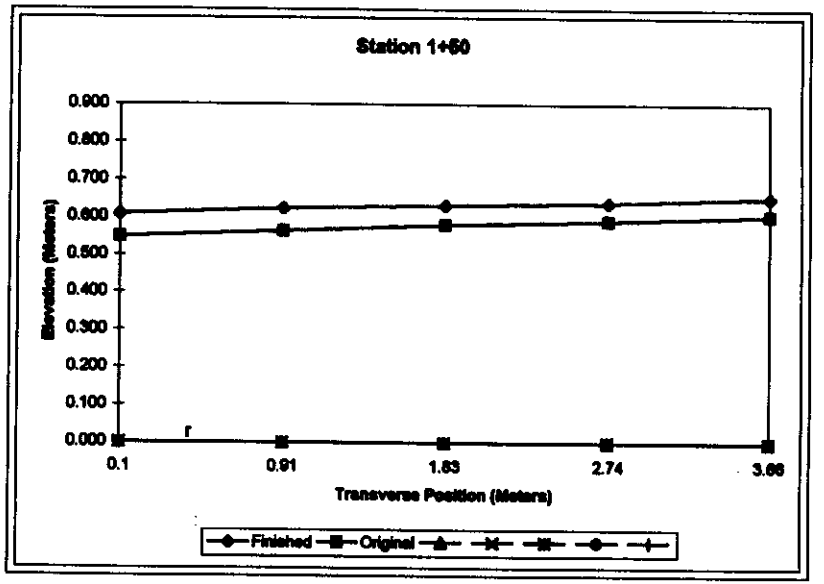
Transverse Offset	1 LAYER	ELEVATION 0.4 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	0 859	0 067	0 868	0 066	0 876	0 057	0 884	0 058	0 896	0 058
	Original	0 792		0 802		0 819		0 826		0 838	
0+00	Finished	0 797	0 067	0 809	0 067	0 816	0 057	0 826	0 058	0 836	0 053
	Original	0 730		0 742		0 759		0 768		0 783	
0+50	Finished	0 739	0 060	0 752	0 059	0 757	0 049	0 767	0 054	0 778	0 055
	Original	0 679		0 693		0 708		0 713		0 723	
1+00	Finished	0 672	0 058	0 683	0 055	0 689	0 044	0 698	0 044	0 712	0 043
	Original	0 614		0 628		0 645		0 654		0 669	
1+50	Finished	0 608	0 060	0 623	0 060	0 632	0 051	0 639	0 049	0 653	0 049
	Original	0 548		0 563		0 581		0 590		0 604	
2+00	Finished	0 547	0 063	0 561	0 062	0 569	0 051	0 578	0 059	0 589	0 045
	Original	0 484		0 499		0 518		0 519		0 544	
2+50	Finished	0 483	0 075	0 495	0 079	0 503	0 071	0 514	0 077	0 527	0 072
	Original	0 408		0 416		0 432		0 437		0 455	
3+00	Finished	0 423	0 105	0 434	0 108	0 443	0 108	0 453	0 110	0 466	0 112
	Original	0 318		0 326		0 335		0 343		0 354	
3+50	Finished	0 360	0 102	0 374	0 108	0 381	0 107	0 390	0 107	0 404	0 111
	Original	0 258		0 266		0 274		0 283		0 293	
4+00	Finished	0 300	0 104	0 309	0 106	0 319	0 109	0 327	0 109	0 339	0 112
	Original	0 196		0 203		0 210		0 218		0 227	
4+50	Finished	0 238	0 109	0 251	0 116	0 259	0 114	0 267	0 113	0 279	0 116
	Original	0 129		0 135		0 145		0 154		0 163	
5+00	Finished	0 176	0 104	0 188	0 108	0 195	0 105	0 203	0 105	0 218	0 110
	Original	0 072		0 080		0 090		0 098		0 108	
5+50	Finished	0 116	0 108	0 126	0 109	0 134	0 108	0 143	0 109	0 156	0 112
	Original	0 008		0 017		0 026		0 034		0 044	
	AVG		0 083		0 087		0 082		0 083		0 084
	MAX		0 109		0 116		0 114		0 113		0 116
	MIN		0 109		0 116		0 114		0 113		0 116
	STD		0 021		0 023		0 028		0 027		0 029

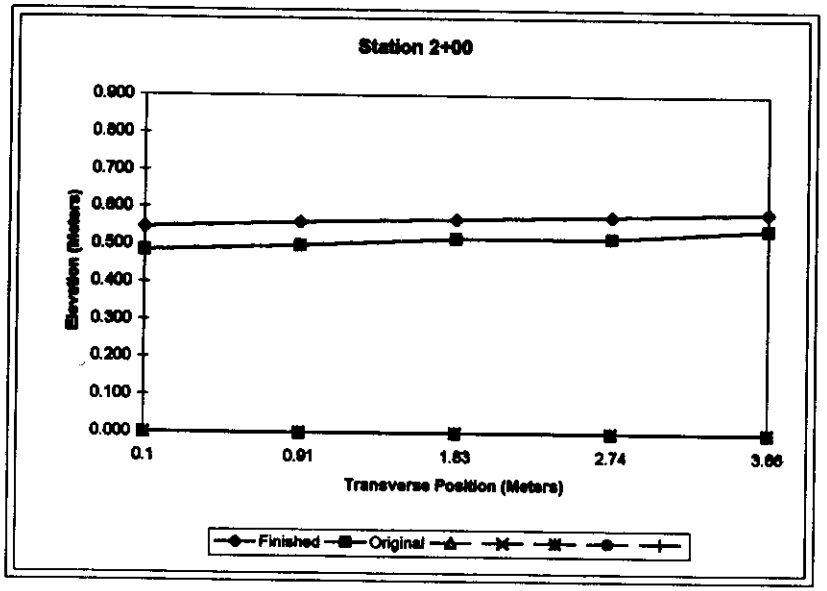

Station 0 -50
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

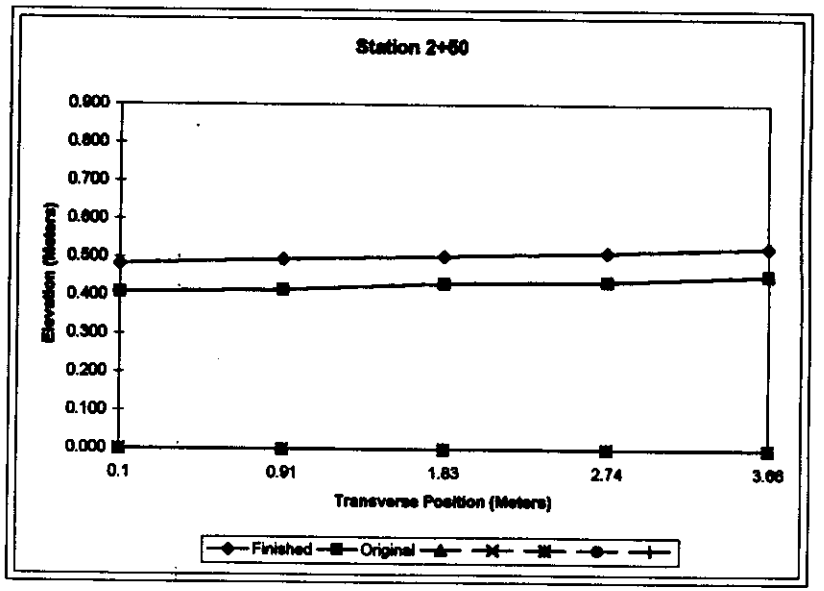

Station 0+00
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

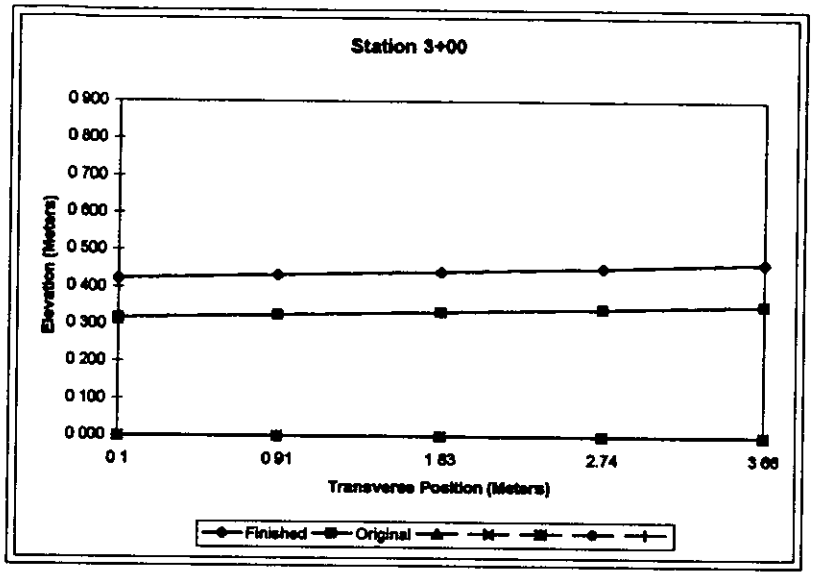

Station 0+50
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

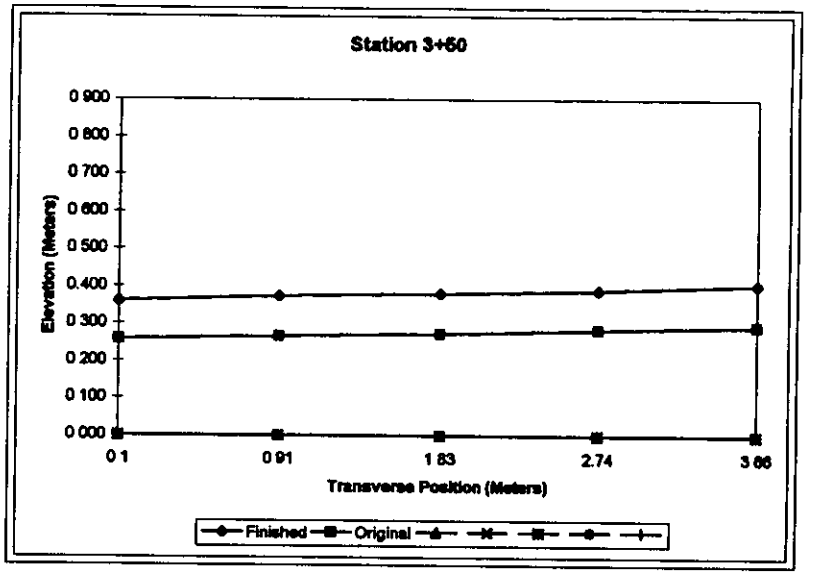

Station 1+00
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

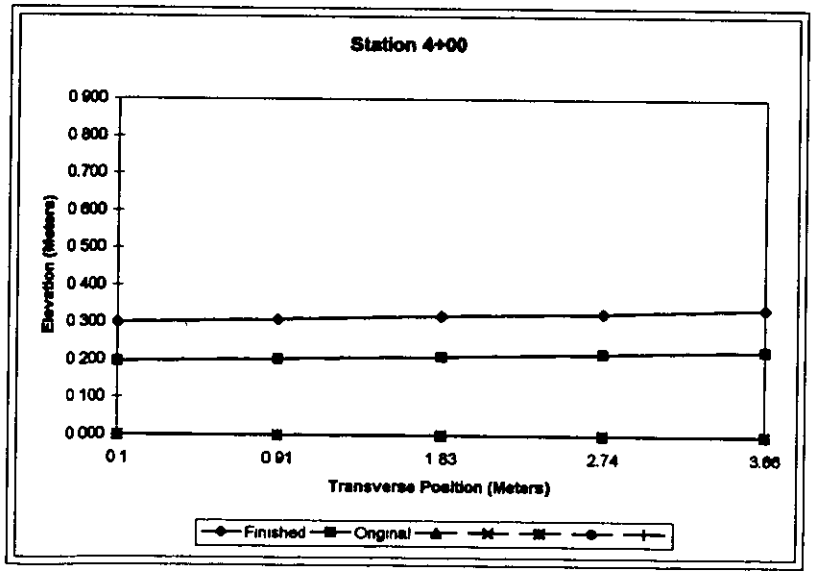

Station 1+50
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

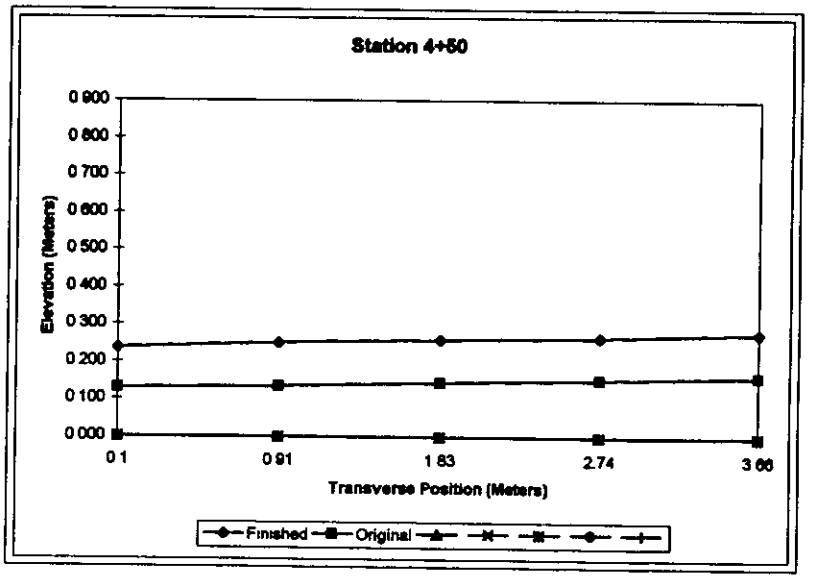

Station 2+00
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 2+50
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 3+00
Elevation (Meters)
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 3+50
Elevation (Meters)
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 4+00
Elevation (Meters)
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 4+50
Elevation (Meters)
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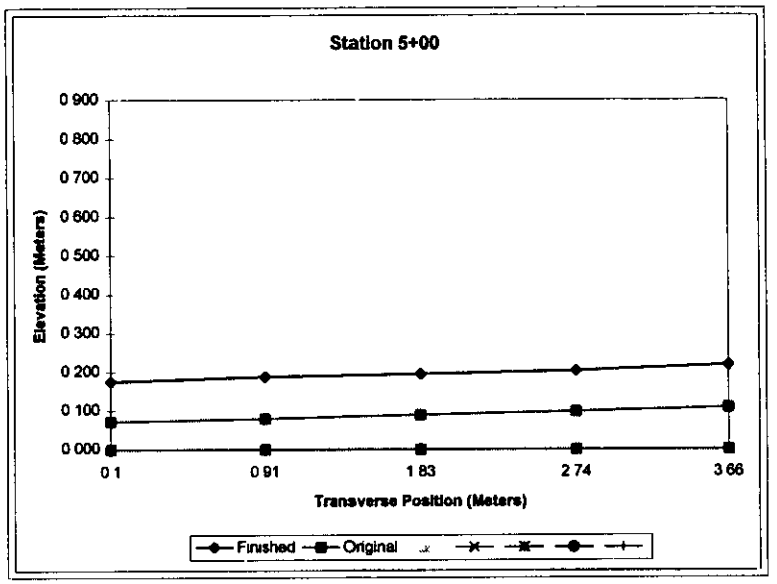
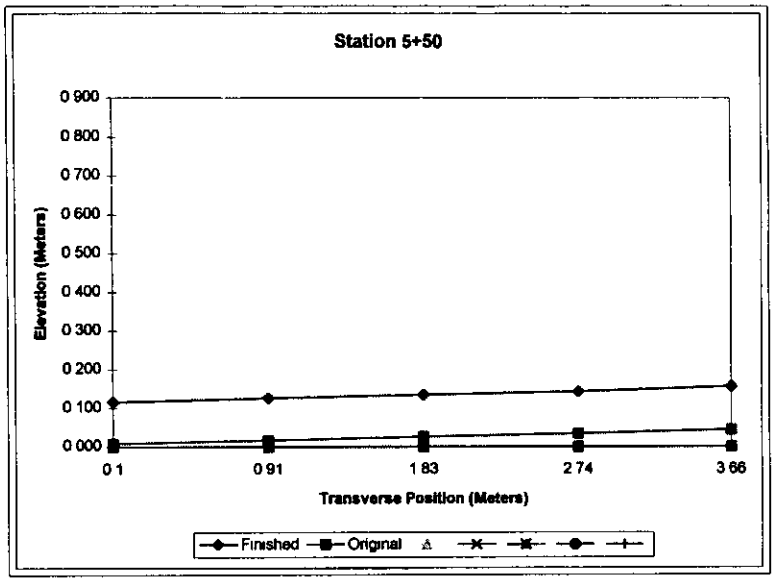
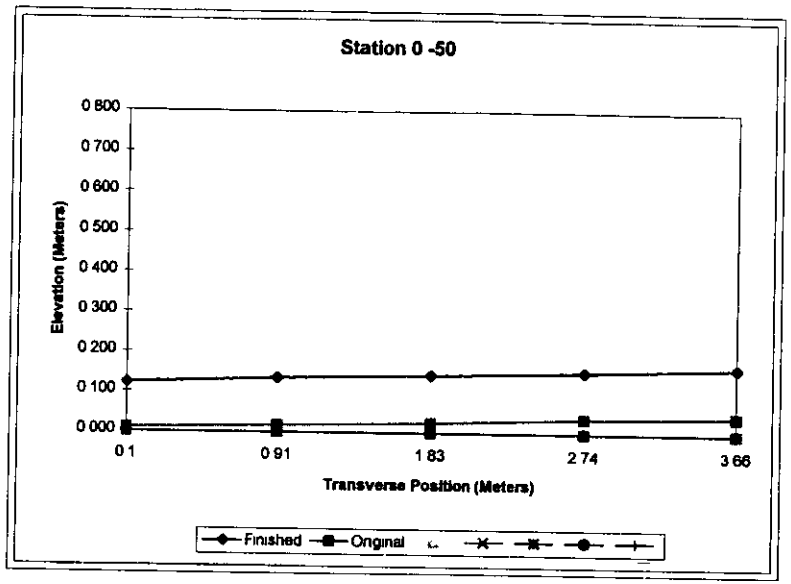
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

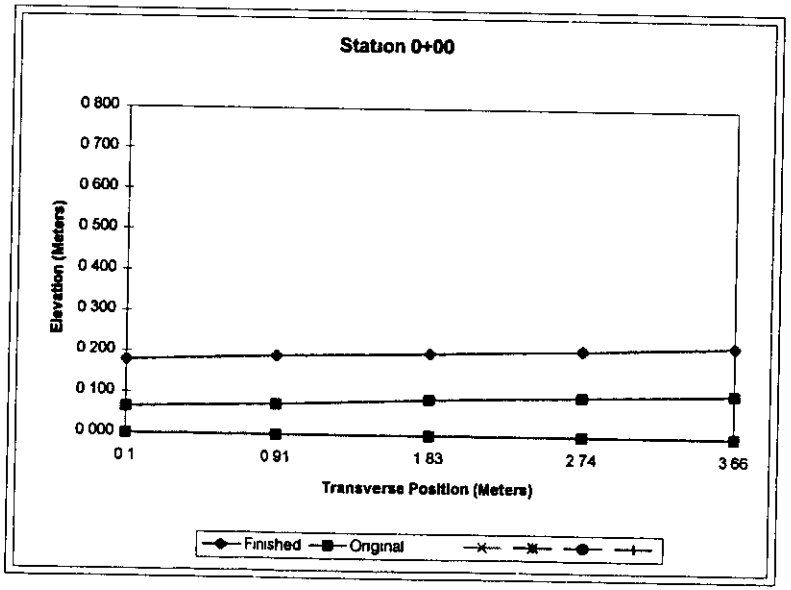

Station 5+00
0 900
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

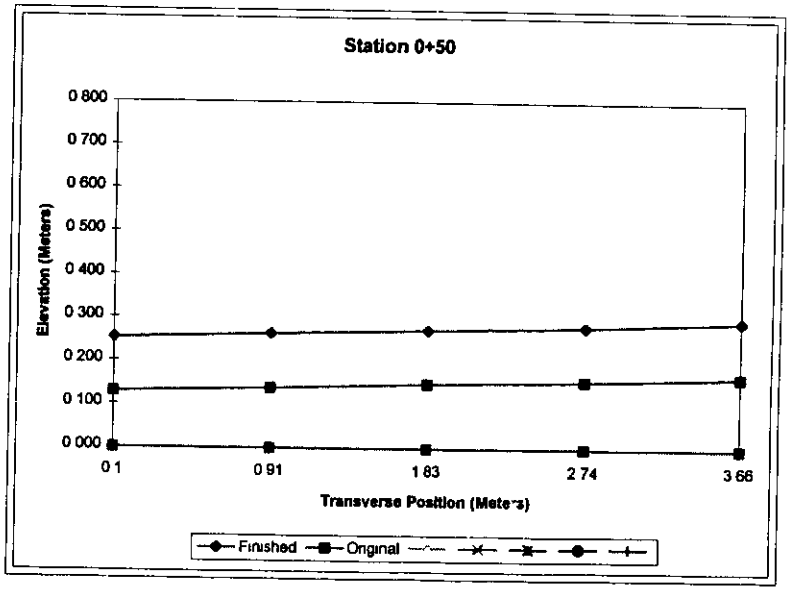

Station 5+50
0 900
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

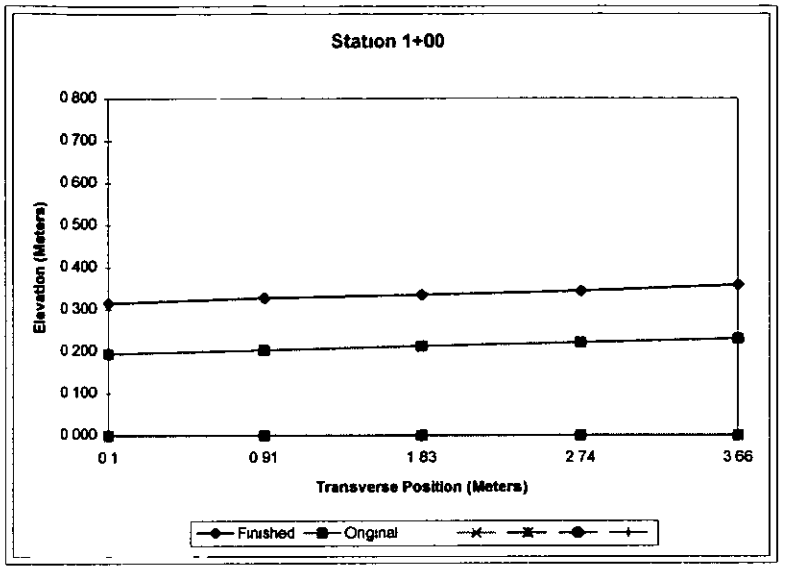
Tennessee SPS-6 Project (470607)

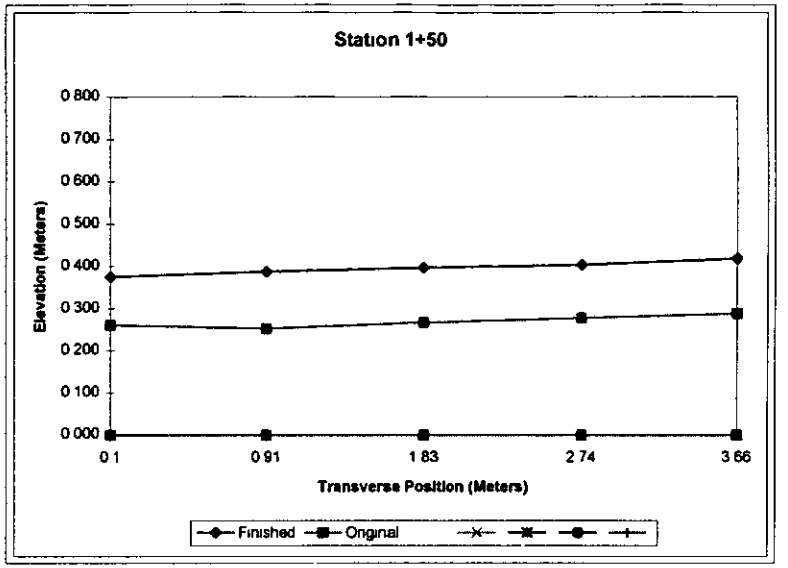
Transverse Offset	7 LAYER	ELEVATION 0.1 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	0 123	0 113	0 136	0 119	0 144	0 119	0 153	0 116	0 165	0 122
	Original	0 010		0 017		0 025		0 037		0 043	
0+00	Finished	0 179	0 114	0 192	0 118	0 200	0 113	0 210	0 114	0 221	0 116
	Original	0 065		0 074		0 087		0 096		0 105	
0+50	Finished	0 253	0 124	0 263	0 125	0 272	0 124	0 280	0 125	0 294	0 129
	Original	0 129		0 138		0 148		0 155		0 165	
1+00	Finished	0 315	0 120	0 327	0 124	0 335	0 122	0 344	0 123	0 358	0 128
	Original	0 195		0 203		0 213		0 221		0 230	
1+50	Finished	0 375	0 114	0 388	0 135	0 397	0 130	0 404	0 126	0 418	0 130
	Original	0 261		0 253		0 267		0 278		0 288	
2+00	Finished	0 434	0 118	0 446	0 123	0 454	0 123	0 463	0 125	0 473	0 126
	Original	0 316		0 323		0 331		0 338		0 347	
2+50	Finished	0 490	0 115	0 503	0 122	0 510	0 121	0 520	0 123	0 531	0 125
	Original	0 375		0 381		0 389		0 397		0 406	
3+00	Finished	0 559	0 122	0 569	0 125	0 576	0 122	0 585	0 122	0 598	0 125
	Original	0 437		0 444		0 454		0 463		0 473	
3+50	Finished	0 606	0 111	0 620	0 120	0 626	0 117	0 635	0 117	0 648	0 122
	Original	0 495		0 500		0 509		0 518		0 526	
4+00	Finished	0 654	0 113	0 669	0 121	0 676	0 118	0 683	0 116	0 696	0 120
	Original	0 541		0 548		0 558		0 567		0 576	
4+50	Finished	0 691	0 113	0 705	0 119	0 713	0 115	0 723	0 116	0 736	0 121
	Original	0 578		0 586		0 598		0 607		0 615	
5+00	Finished	0 713	0 100	0 728	0 107	0 734	0 105	0 743	0 109	0 757	0 114
	Original	0 613		0 621		0 629		0 634		0 643	
5+50	Finished	0 732	0 105	0 747	0 113	0 753	0 110	0 761	0 111	0 776	0 119
	Original	0 627		0 634		0 643		0 650		0 657	
	AVG		0 114		0 121		0 118		0 118		0 123
	MAX		0 124		0 135		0 130		0 126		0 130
	MIN		0 124		0 135		0 130		0 126		0 130
	STD		0 006		0 007		0 006		0 005		0 005

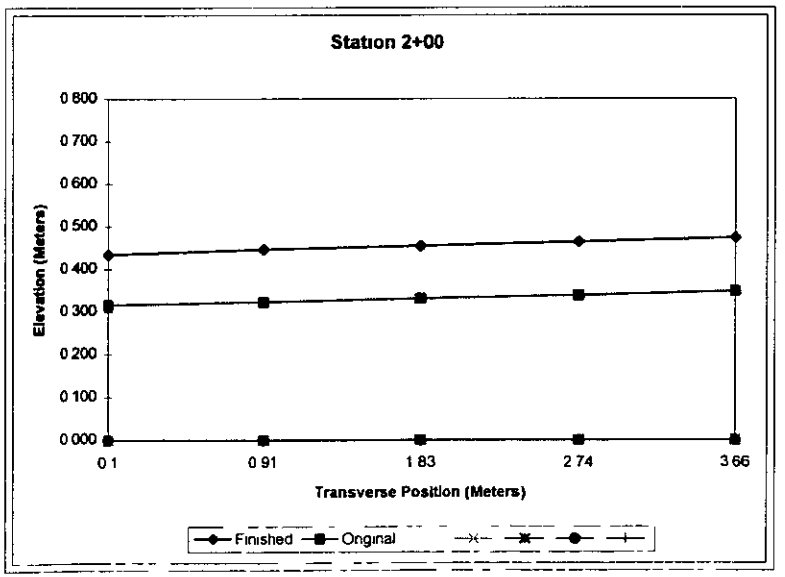

Station 0 -50
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

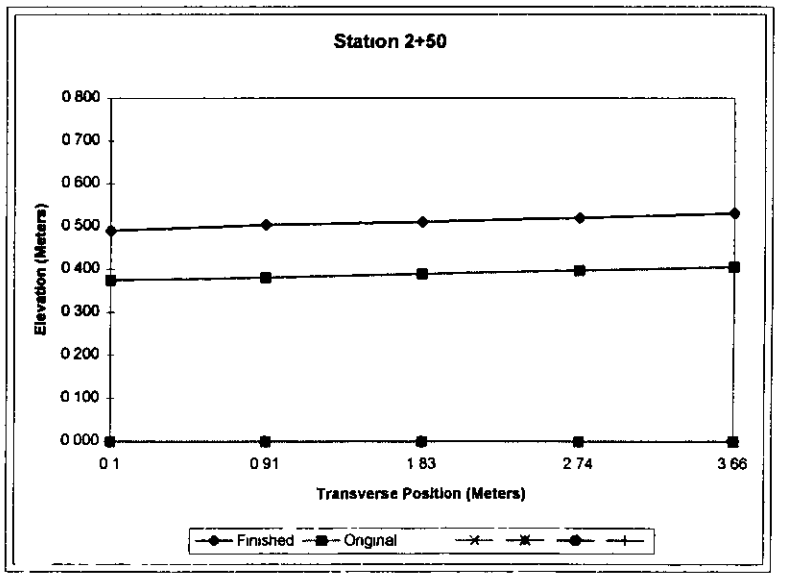

Station 0+00
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

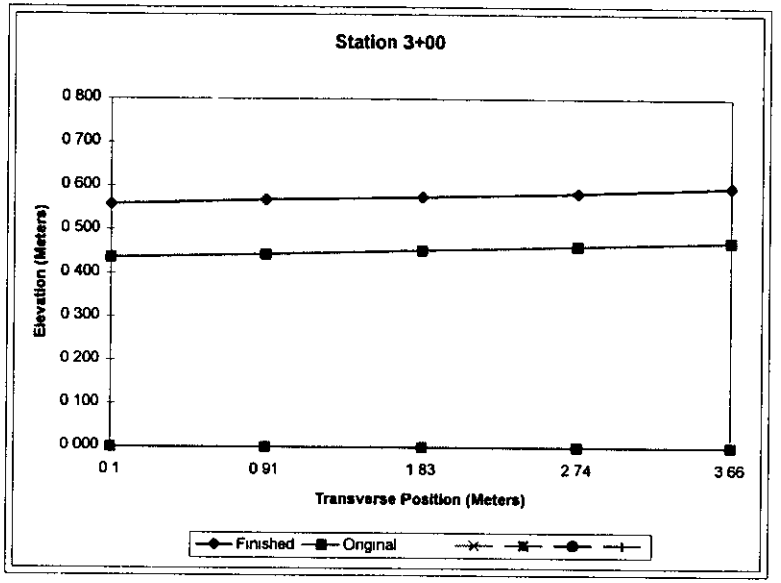

Station 0+50
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

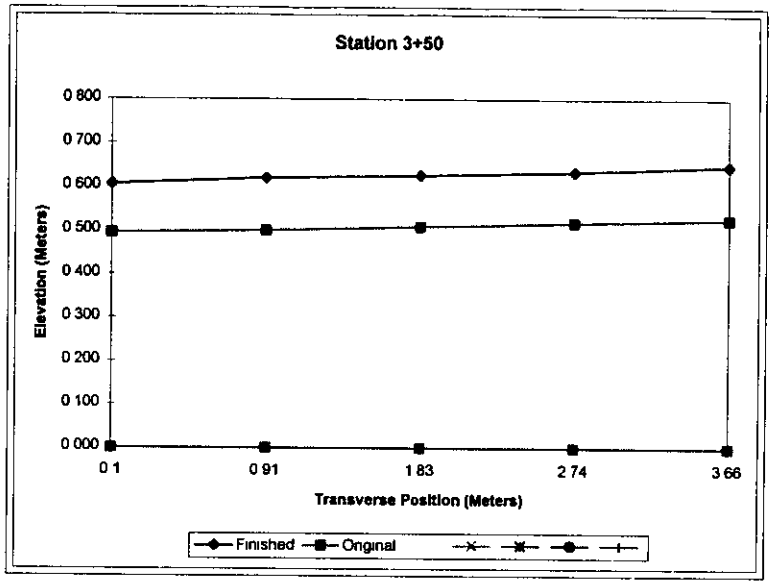

Station 1+00
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 1+50
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 2+00
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 2+50
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 3+00
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 3+50
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0 700
0 600
0 500
0 400
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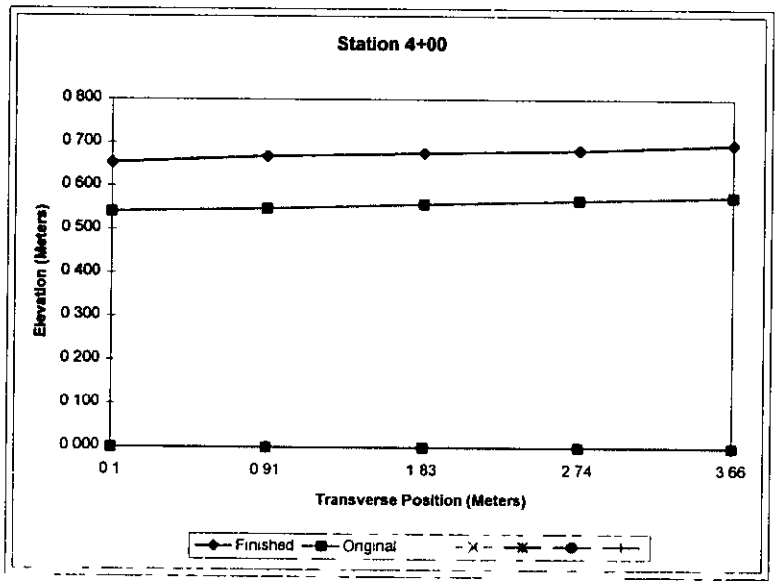
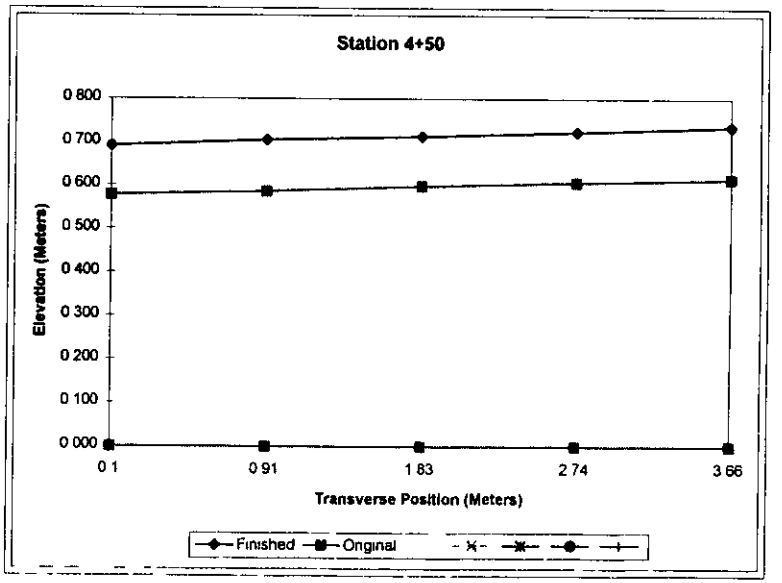
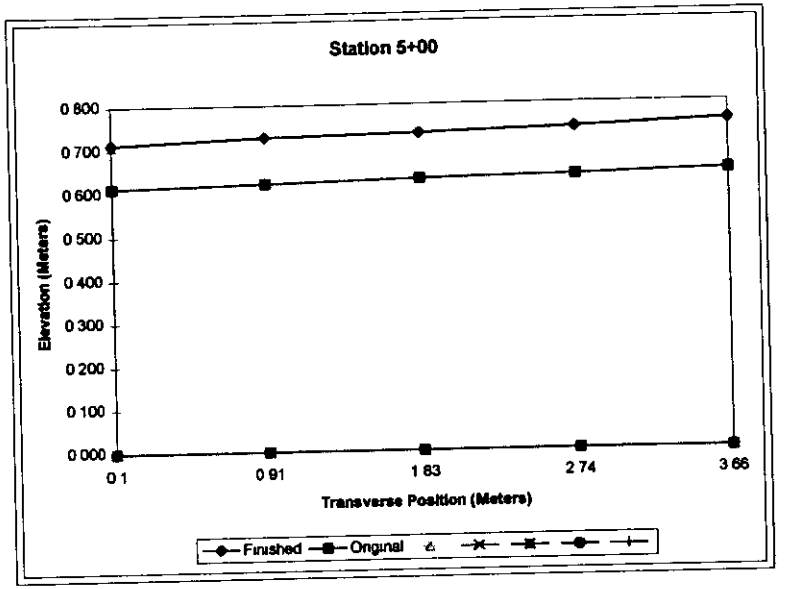
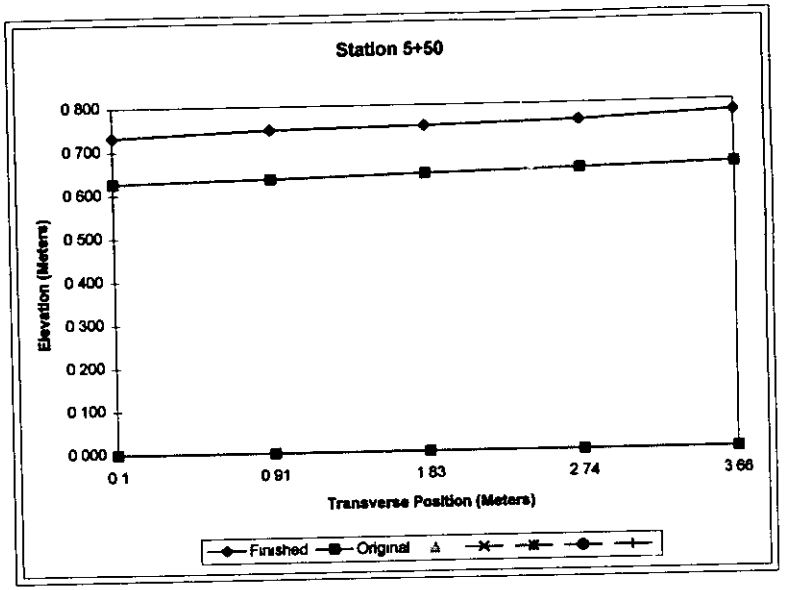
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 4+00
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 4+50
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 5+00
0 800
0 700
0 600
0 500
0 400
0 300
0 200
0 100
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 5+50
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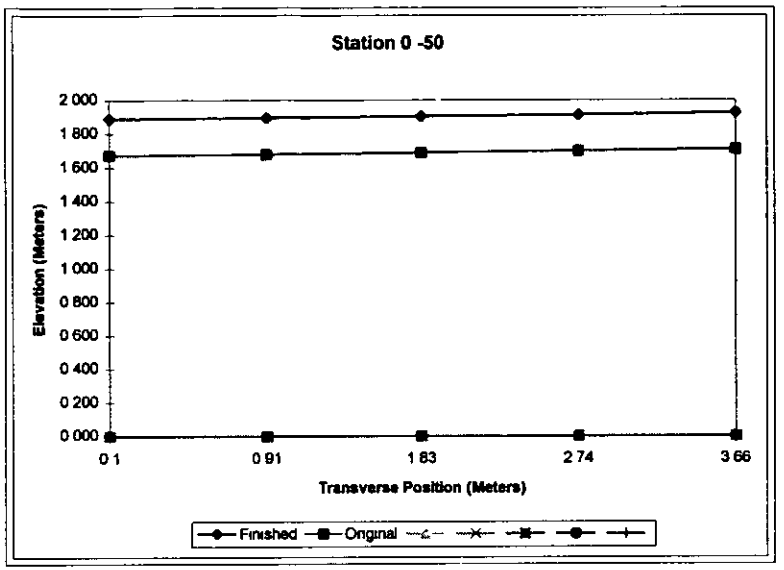
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

Tennessee SPS-6 Project (470608)

Transverse Offset	7 LAYER	ELEVATION 0.1 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	1.890	0.216	1.898	0.218	1.905	0.215	1.912	0.212	1.925	0.215
	Original	1.674		1.680		1.690		1.700		1.710	
0+00	Finished	1.761	0.208	1.770	0.210	1.773	0.204	1.782	0.206	1.790	0.206
	Original	1.553		1.560		1.569		1.576		1.584	
0+50	Finished	1.630	0.219	1.640	0.224	1.674	0.246	1.649	0.213	1.658	0.212
	Original	1.411		1.416		1.428		1.436		1.446	
1+00	Finished	1.503	0.228	1.508	0.228	1.510	0.221	1.515	0.217	1.524	0.217
	Original	1.275		1.280		1.289		1.298		1.307	
1+50	Finished	1.397	0.232	1.398	0.230	1.393	0.222	1.392	0.220	1.390	0.215
	Original	1.165		1.168		1.171		1.172		1.175	
2+00	Finished	1.317	0.234	1.308	0.230	1.295	0.224	1.283	0.220	1.274	0.220
	Original	1.083		1.078		1.071		1.063		1.054	
2+50	Finished	1.250	0.250	1.230	0.241	1.206	0.233	1.182	0.229	1.159	0.223
	Original	1.000		0.989		0.973		0.953		0.936	
3+00	Finished	1.147	0.240	1.123	0.236	1.092	0.229	1.064	0.226	1.038	0.221
	Original	0.907		0.887		0.863		0.838		0.817	
3+50	Finished	1.018	0.235	0.991	0.227	0.959	0.223	0.927	0.221	0.899	0.217
	Original	0.783		0.764		0.736		0.706		0.682	
4+00	Finished	0.878	0.204	0.848	0.198	0.815	0.192	0.782	0.194	0.752	0.183
	Original	0.674		0.650		0.623		0.588		0.569	
4+50	Finished	0.723	0.212	0.697	0.209	0.663	0.194	0.631	0.193	0.604	0.192
	Original	0.511		0.488		0.469		0.438		0.412	
5+00	Finished	0.604	0.236	0.575	0.230	0.538	0.222	0.504	0.221	0.472	0.219
	Original	0.368		0.345		0.316		0.283		0.253	
5+50	Finished	0.479	0.242	0.447	0.234	0.412	0.229	0.378	0.226	0.348	0.222
	Original	0.237		0.213		0.183		0.152		0.126	
		AVG	0.227		0.224		0.219		0.215		0.212
		MAX	0.250		0.241		0.246		0.229		0.223
		MIN	0.250		0.241		0.246		0.229		0.223
		STD	0.014		0.012		0.015		0.011		0.012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0 800
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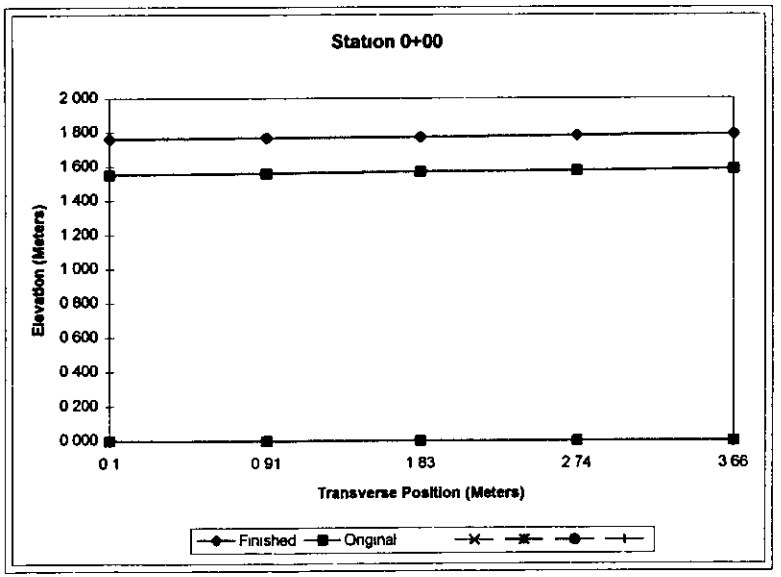
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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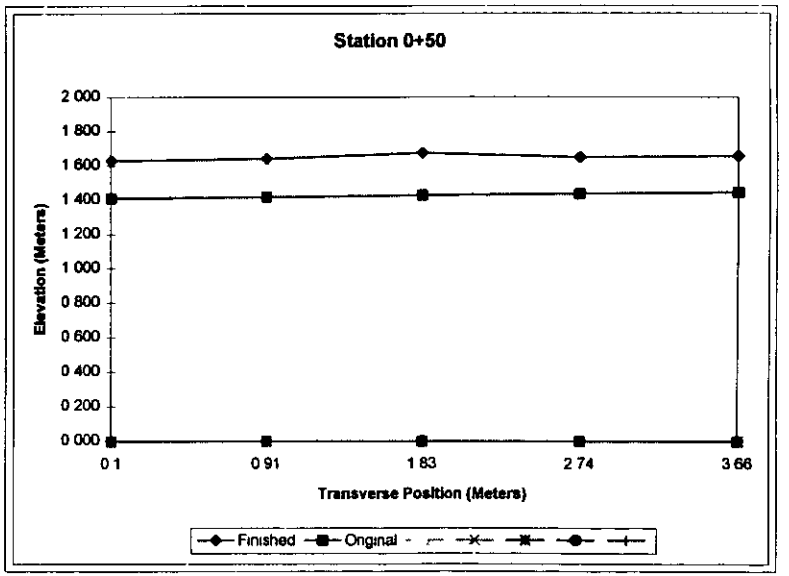
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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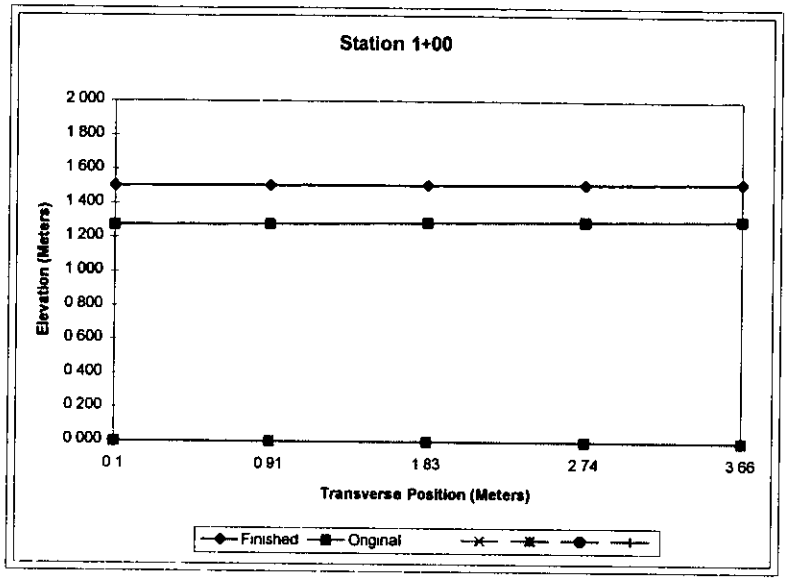
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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0 1
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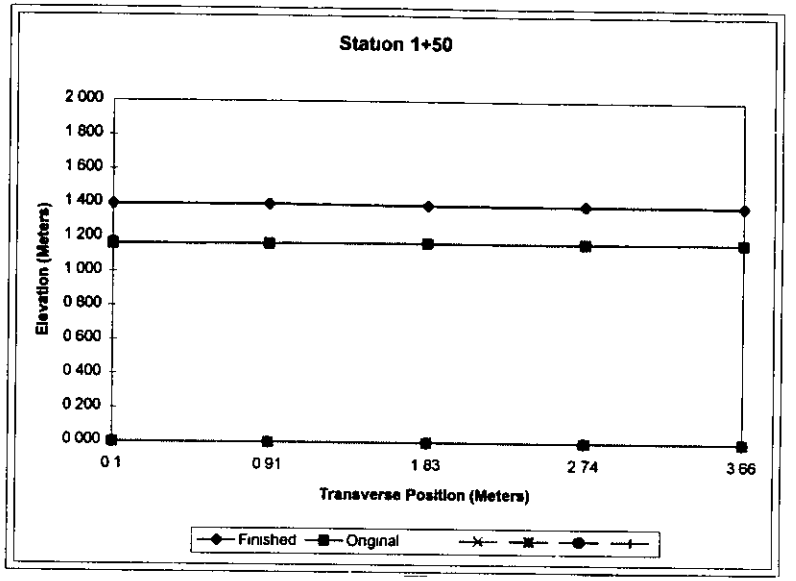
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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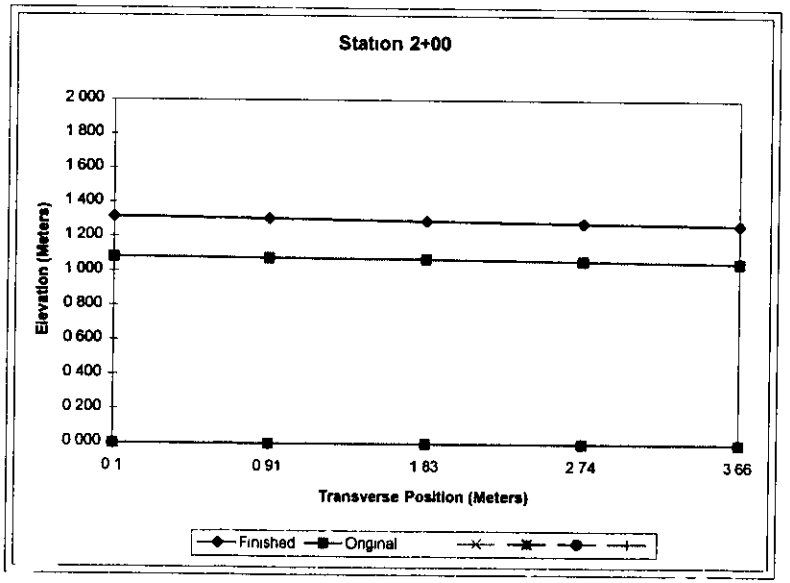
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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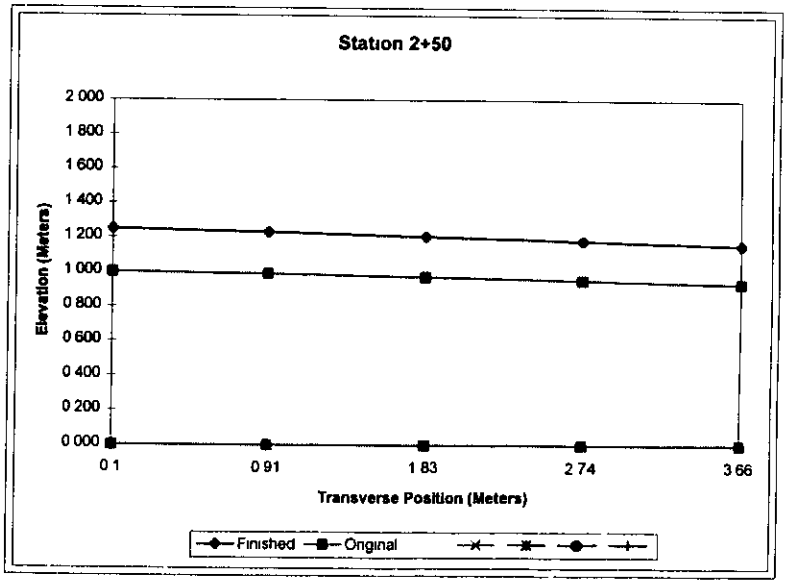
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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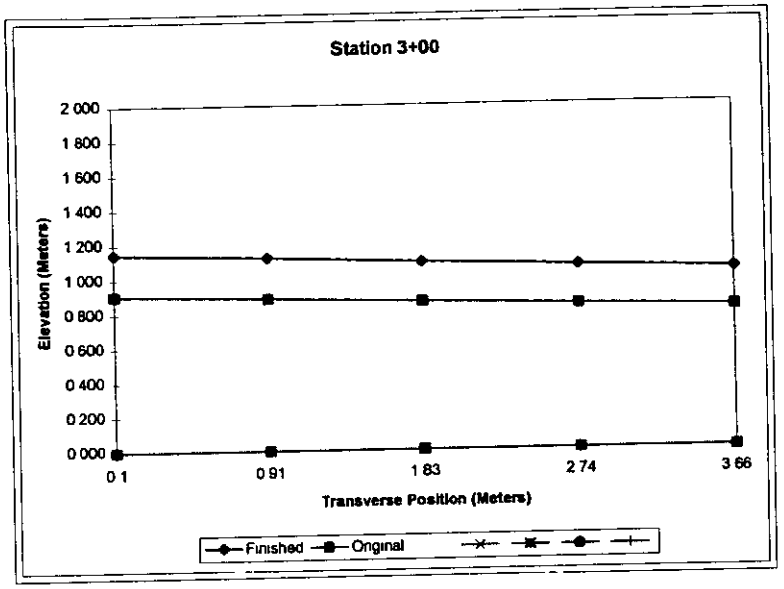
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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1 400
1 200
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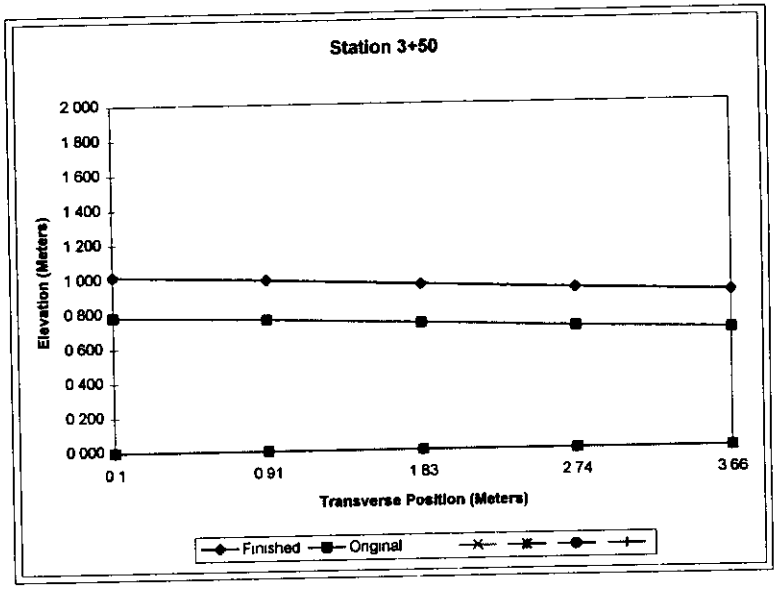
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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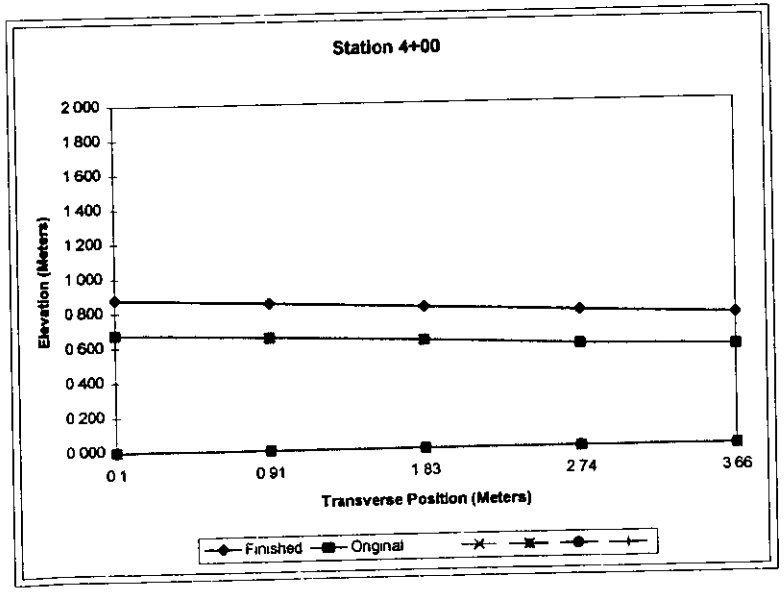
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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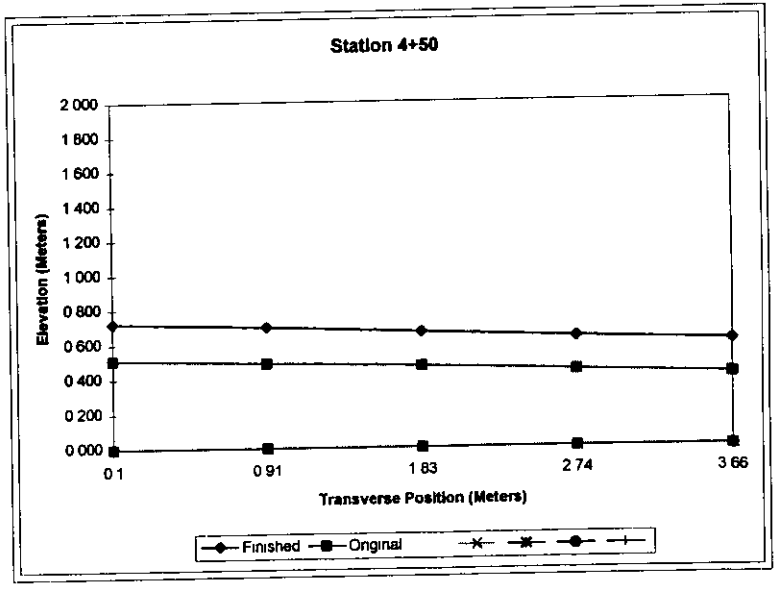
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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2 74
3 66
Transverse Position (Meters)
Finished
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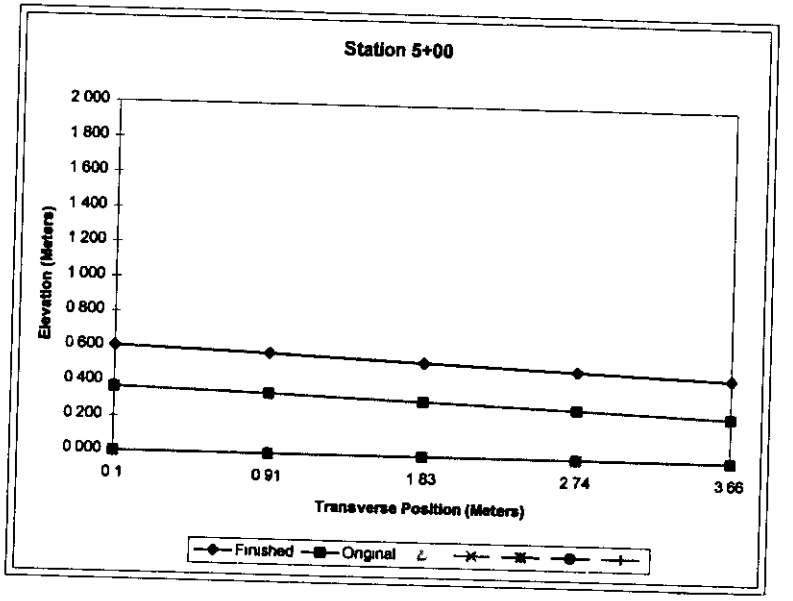
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Elevation (Meters)
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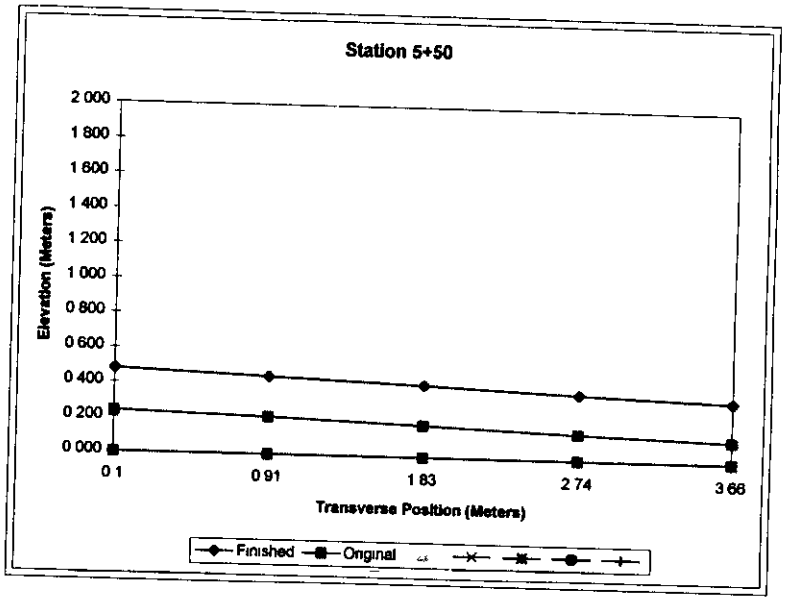
2 74
3 66
Transverse Position (Meters)
Finished
Original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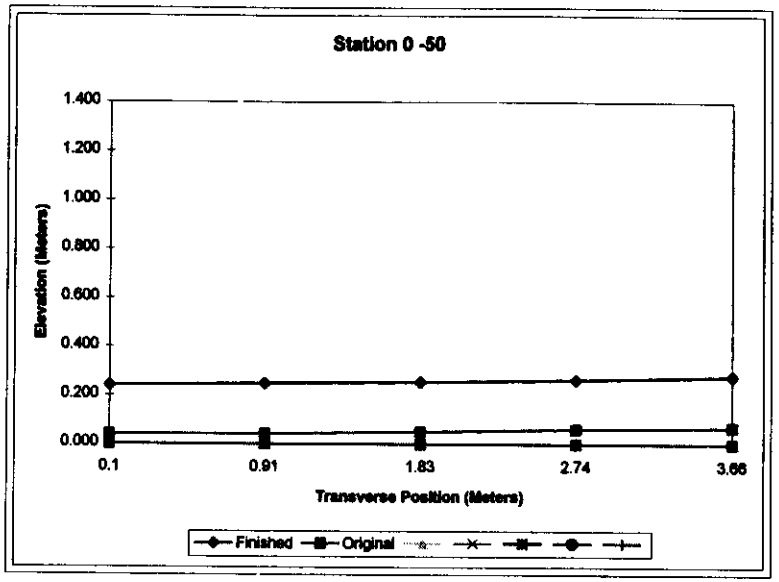
0 200
0 000
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

Tennessee SPS-6 Project (470661)

Transverse Offset	7 LAYER	ELEVATION 0.1 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	0.240	0.200	0.248	0.207	0.255	0.204	0.265	0.204	0.279	0.210
	Original	0.040		0.041		0.051		0.061		0.069	
0+00	Finished	0.311	0.218	0.320	0.222	0.329	0.220	0.336	0.217	0.352	0.223
	Original	0.093		0.098		0.109		0.119		0.129	
0+50	Finished	0.389	0.225	0.401	0.225	0.407	0.222	0.418	0.225	0.433	0.230
	Original	0.164		0.176		0.185		0.193		0.203	
1+00	Finished	0.480	0.223	0.490	0.228	0.500	0.229	0.510	0.230	0.527	0.238
	Original	0.257		0.262		0.271		0.280		0.289	
1+50	Finished	0.569	0.223	0.583	0.231	0.591	0.231	0.602	0.233	0.617	0.238
	Original	0.346		0.352		0.360		0.369		0.379	
2+00	Finished	0.658	0.221	0.669	0.230	0.681	0.232	0.691	0.232	0.703	0.234
	Original	0.437		0.439		0.449		0.459		0.469	
2+50	Finished	0.748	0.219	0.762	0.226	0.773	0.229	0.783	0.232	0.797	0.238
	Original	0.529		0.536		0.544		0.551		0.559	
3+00	Finished	0.838	0.216	0.850	0.221	0.861	0.223	0.873	0.226	0.888	0.233
	Original	0.622		0.629		0.638		0.647		0.655	
3+50	Finished	0.921	0.207	0.934	0.212	0.945	0.213	0.957	0.216	0.973	0.224
	Original	0.714		0.722		0.732		0.741		0.749	
4+00	Finished	1.021	0.212	1.033	0.215	1.044	0.217	1.057	0.222	1.073	0.230
	Original	0.809		0.818		0.827		0.835		0.843	
4+50	Finished	1.108	0.216	1.118	0.219	1.130	0.221	1.142	0.224	1.158	0.228
	Original	0.892		0.899		0.909		0.918		0.930	
5+00	Finished	1.206	0.217	1.219	0.223	1.230	0.225	1.243	0.228	1.258	0.234
	Original	0.989		0.996		1.005		1.015		1.024	
5+50	Finished	1.286	0.203	1.297	0.211	1.308	0.213	1.319	0.216	1.334	0.220
	Original	1.083		1.086		1.095		1.103		1.114	
		AVG	**0.215**		**0.220**		**0.221**		**0.223**		**0.229**
		MAX	**0.225**		**0.231**		**0.231**		**0.233**		**0.238**
		MIN	**0.225**		**0.231**		**0.231**		**0.233**		**0.238**
		STD	**0.008**		**0.007**		**0.008**		**0.008**		**0.008**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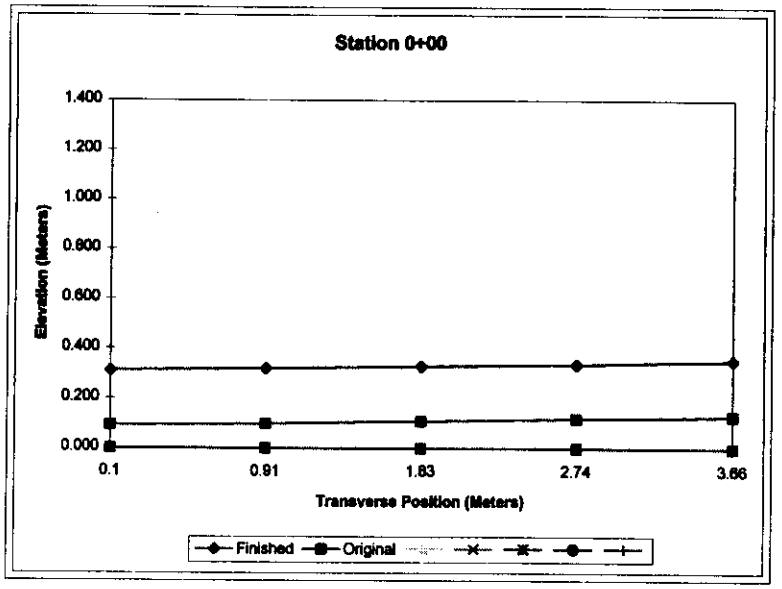
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 0+00
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Elevation (Meters)
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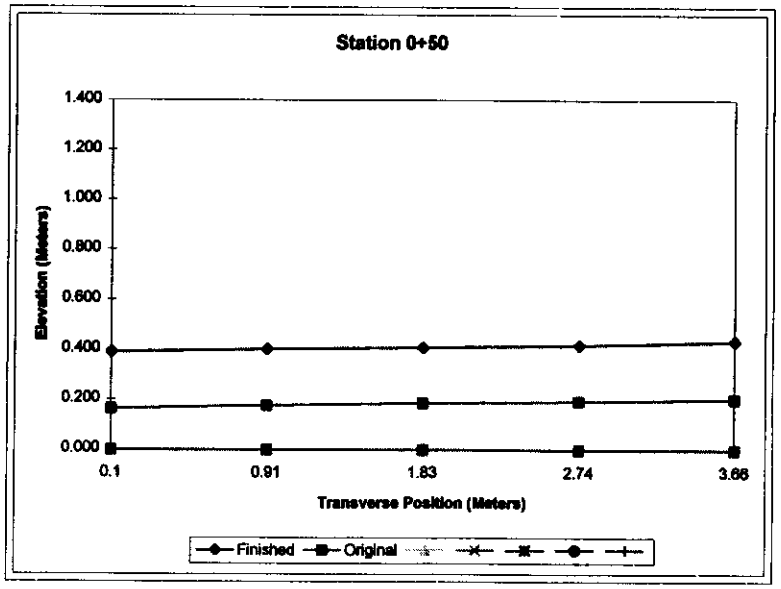
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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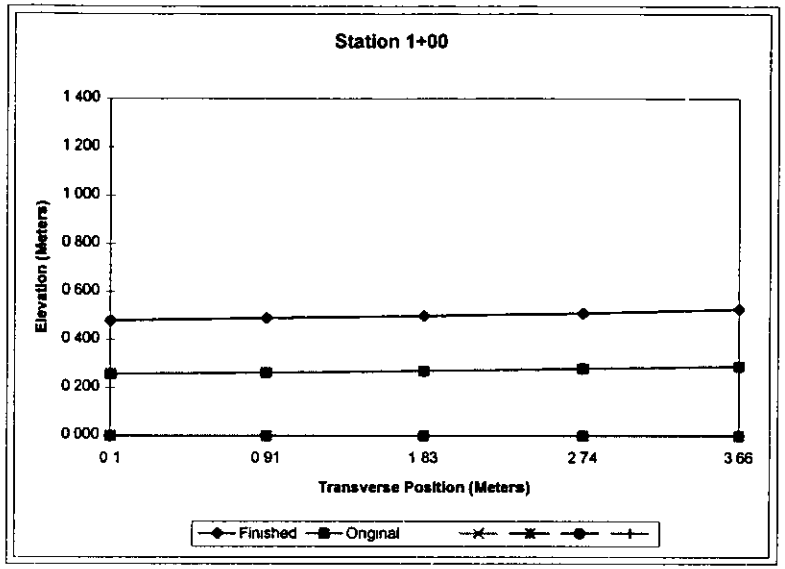
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 1+00
Elevation (Meters)
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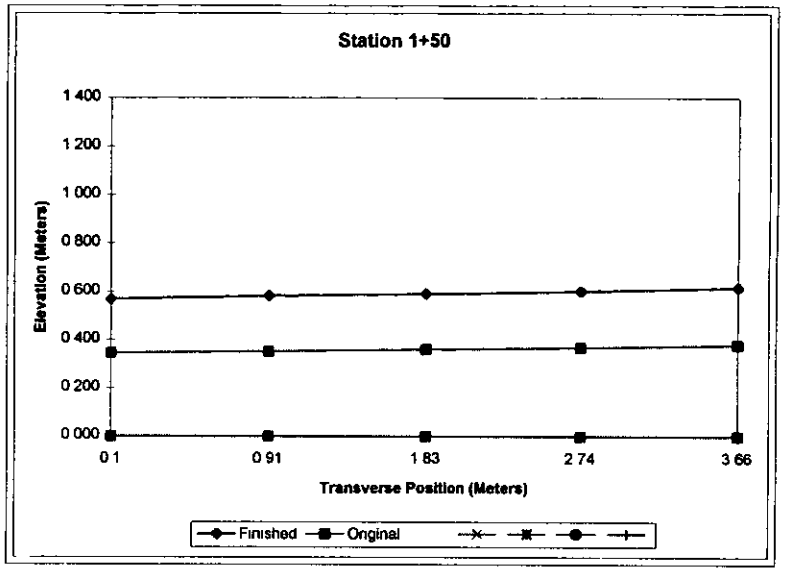
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 1+50
Elevation (Meters)
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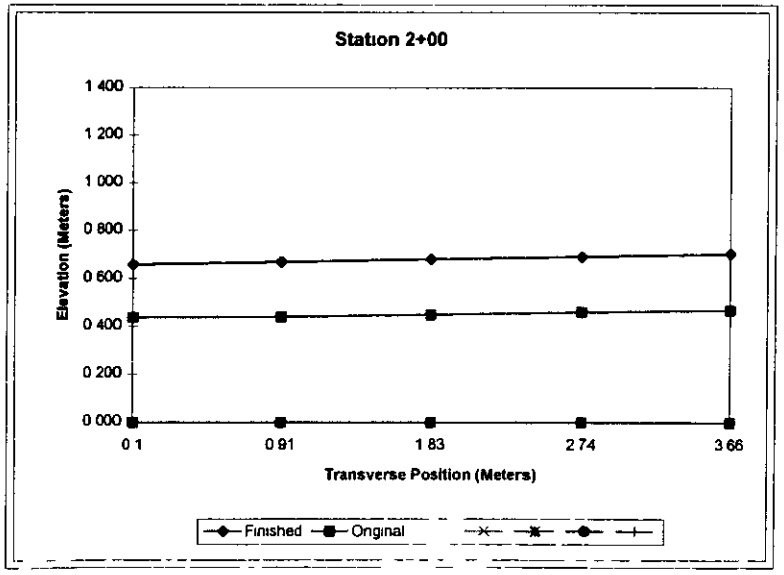
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 2+00
Elevation (Meters)
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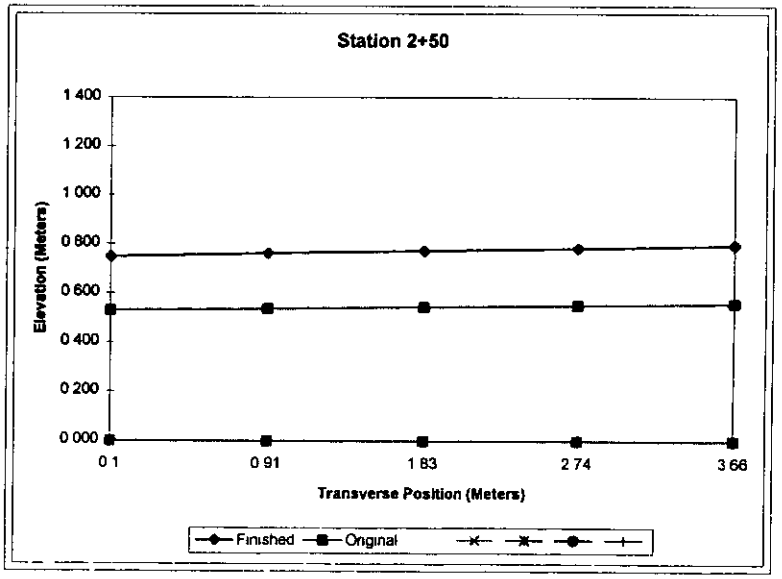
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 2+50
Elevation (Meters)
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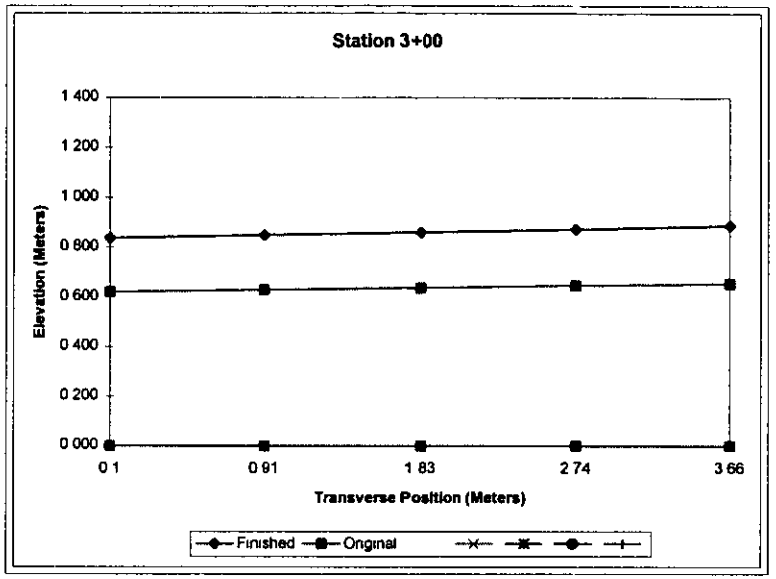
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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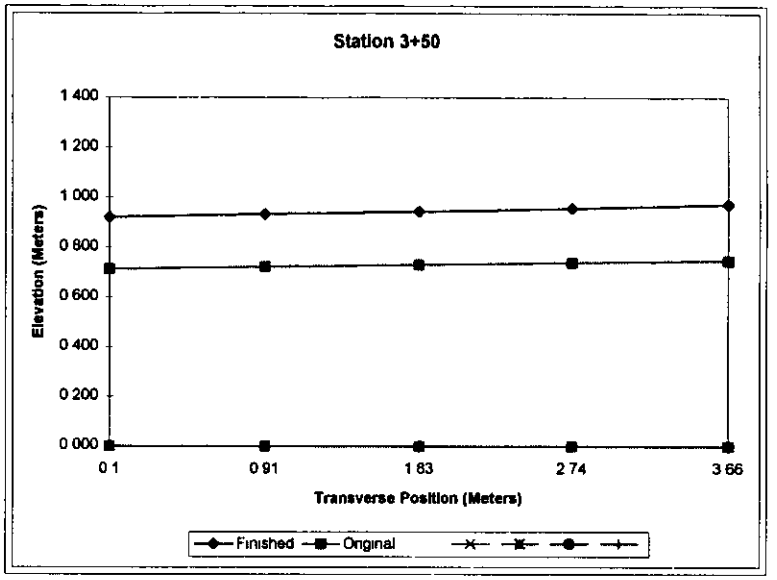
2 74
3 66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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2 74
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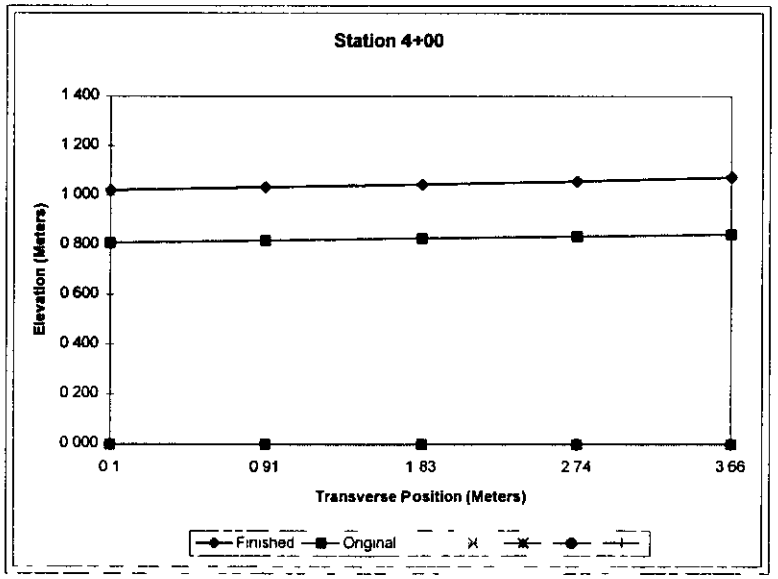
Transverse Position (Meters)
Finished
Original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1 200
1 000
0 800
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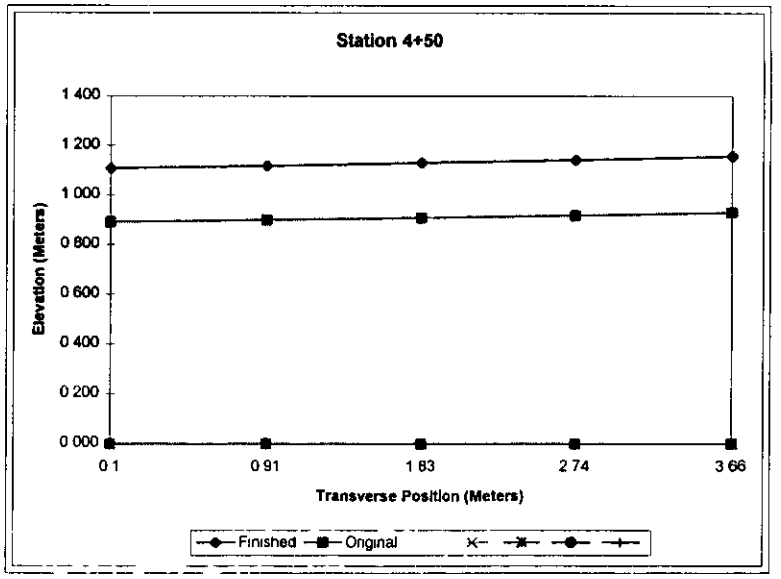
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 4+50
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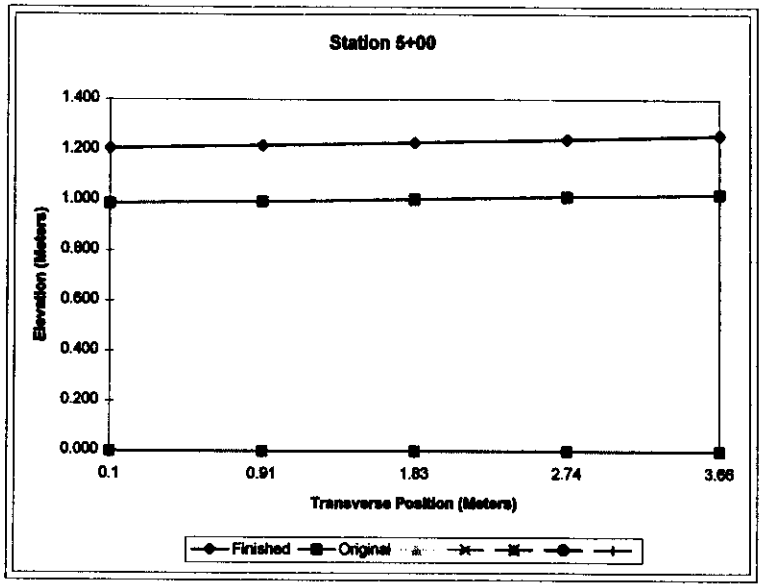
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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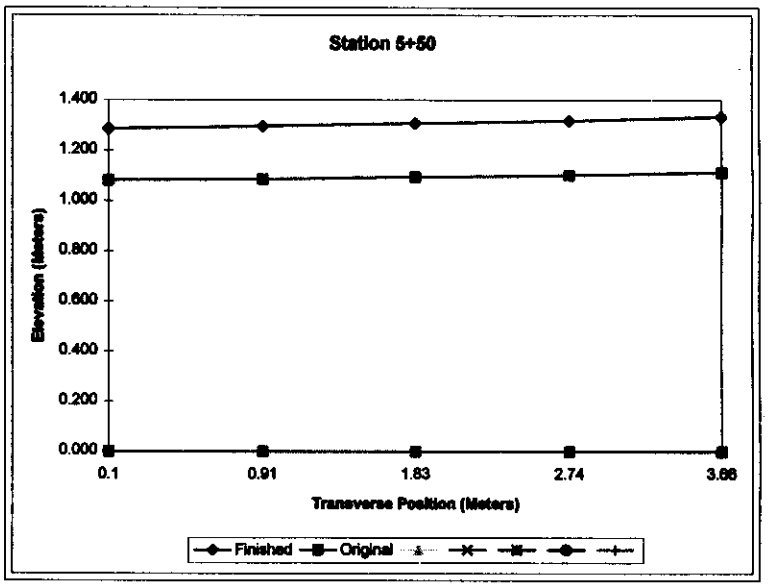
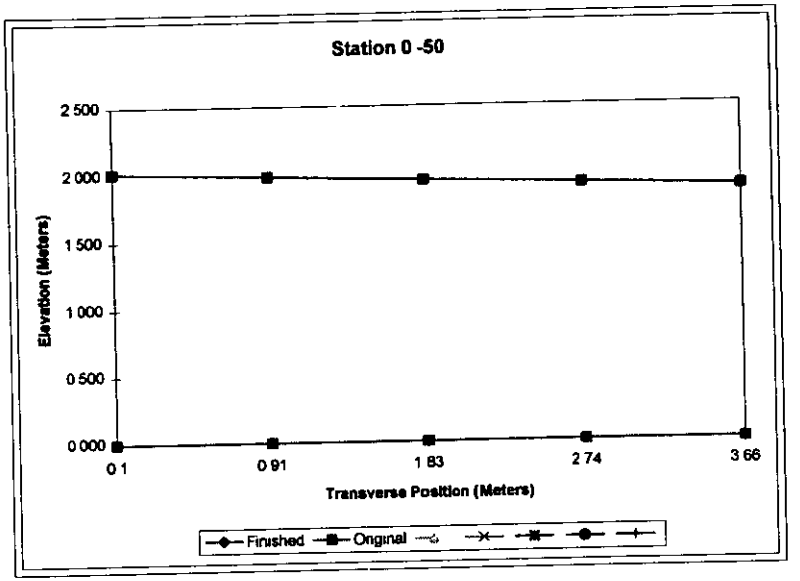
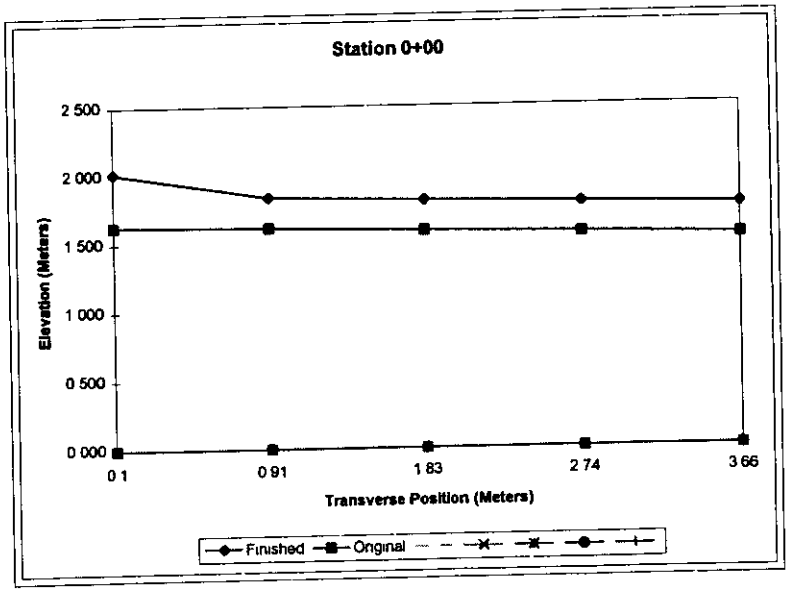
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original


Station 5+50
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Elevation (Meters)
0.1
0.91
1.83
2.74
3.66
Transverse Position (Meters)
Finished
Original

Tennessee SPS-6 Project (470662)

Transverse Offset	LAYER	ELEVATION 0.0 Meters	Finished THICKNESS Meters	ELEVATION 0.91 Meters	Finished THICKNESS Meters	ELEVATION 1.83 Meters	Finished THICKNESS Meters	ELEVATION 2.74 Meters	Finished THICKNESS Meters	ELEVATION 3.66 Meters	Finished THICKNESS Meters
0 -50	Finished	2.016	0.000	1.985	0.000	1.950	0.000	1.916	0.000	1.886	0.000
	Original	2.016		1.985		1.950		1.916		1.886	
0+00	Finished	2.016	0.388	1.834	0.224	1.807	0.222	1.782	0.221	1.759	0.223
	Original	1.628		1.610		1.585		1.561		1.536	
0+50	Finished	1.685	0.218	1.667	0.215	1.644	0.211	1.624	0.209	1.609	0.211
	Original	1.467		1.452		1.433		1.415		1.398	
1+00	Finished	1.531	0.223	1.522	0.225	1.507	0.216	1.494	0.211	1.488	0.214
	Original	1.308		1.297		1.291		1.283		1.274	
1+50	Finished	1.388	0.224	1.384	0.221	1.377	0.214	1.370	0.207	1.369	0.203
	Original	1.164		1.163		1.163		1.163		1.166	
2+00	Finished	1.267	0.219	1.269	0.217	1.269	0.207	1.272	0.205	1.277	0.205
	Original	1.048		1.052		1.062		1.067		1.072	
2+50	Finished	1.194	0.218	1.202	0.219	1.207	0.214	1.215	0.213	1.226	0.210
	Original	0.976		0.983		0.993		1.002		1.016	
3+00	Finished	1.166	0.221	1.173	0.221	1.177	0.214	1.182	0.212	1.192	0.215
	Original	0.945		0.952		0.963		0.970		0.977	
3+50	Finished	1.133	0.215	1.142	0.215	1.148	0.208	1.156	0.212	1.167	0.209
	Original	0.918		0.927		0.940		0.944		0.958	
4+00	Finished	1.107	0.222	1.115	0.222	1.122	0.217	1.130	0.218	1.144	0.223
	Original	0.885		0.893		0.905		0.912		0.921	
4+50	Finished	1.098	0.209	1.109	0.211	1.117	0.206	1.126	0.207	1.142	0.214
	Original	0.889		0.898		0.911		0.919		0.928	
5+00	Finished	1.104	0.198	1.115	0.202	1.123	0.201	1.133	0.205	1.147	0.189
	Original	0.906		0.913		0.922		0.928		0.958	
5+50	Finished	1.129	0.197	1.142	0.205	1.149	0.202	1.160	0.226	1.173	0.212
	Original	0.932		0.937		0.947		0.934		0.961	
	AVG		0.212		0.198		0.194		0.195		0.194
	MAX		0.388		0.225		0.222		0.226		0.223
	MIN		0.388		0.225		0.222		0.226		0.223
	STD		0.077		0.060		0.059		0.059		0.059


Station 0 -50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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2 000
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Elevation (Meters)
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0 91
1 83
2 74
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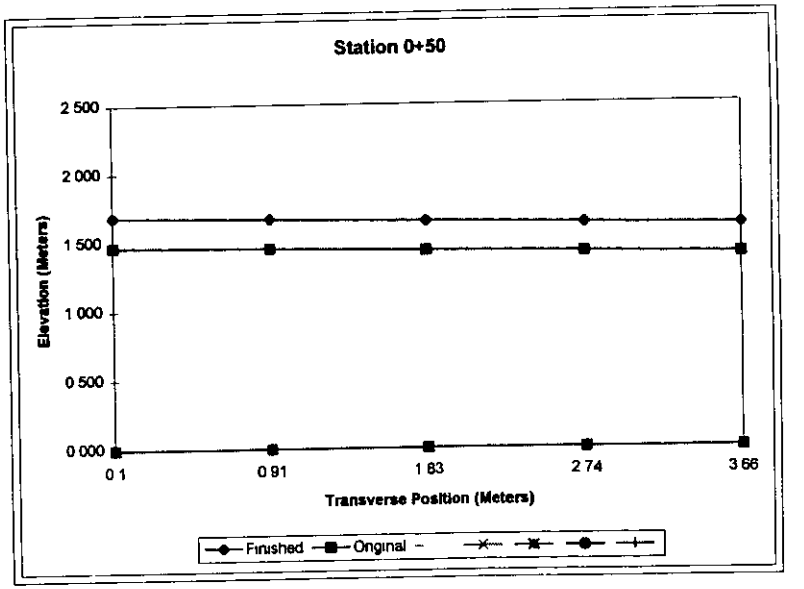
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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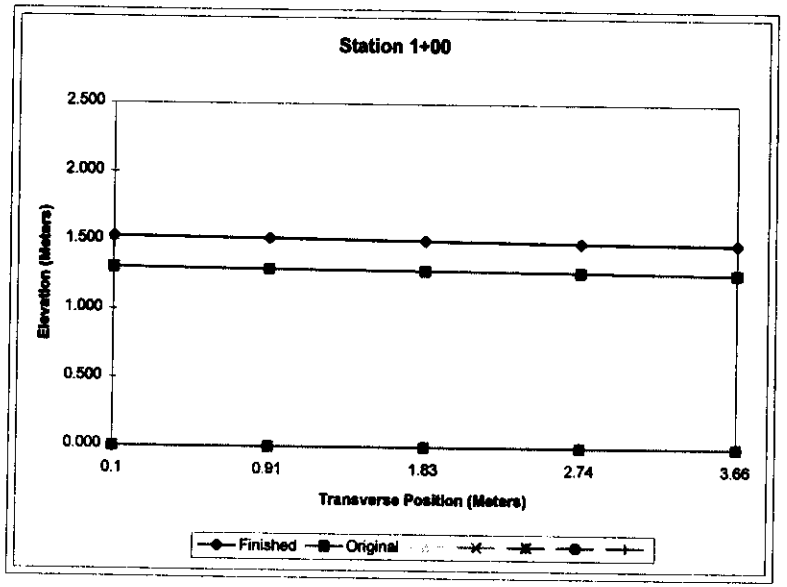
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original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2.000
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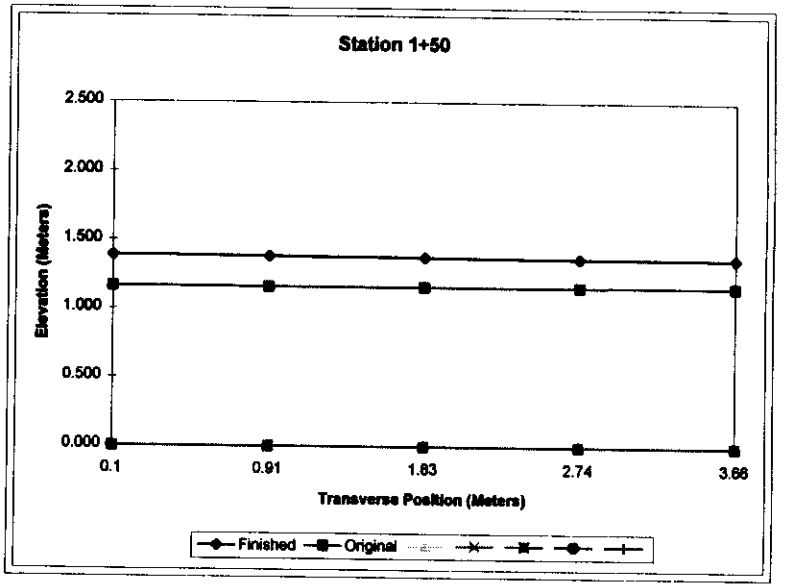
3.66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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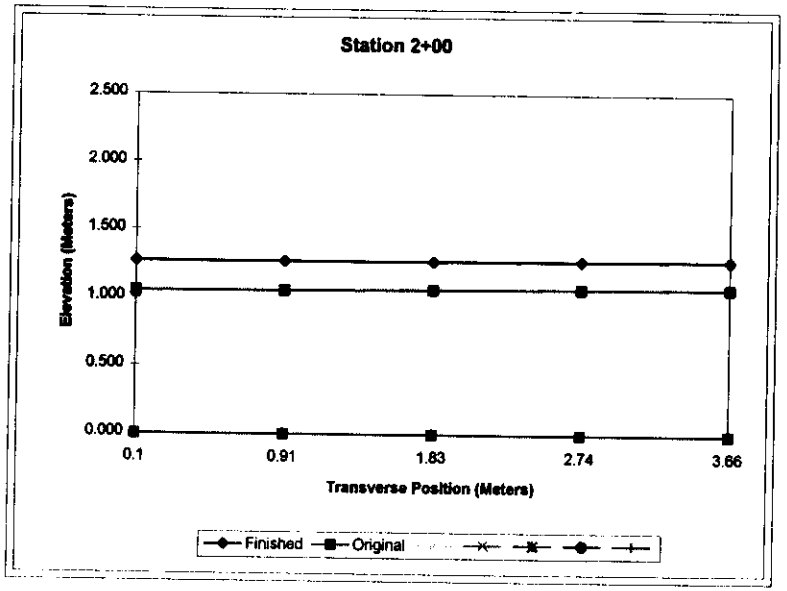
2.74
3.66
Transverse Position (Meters)
Finished
Original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Elevation (Meters)
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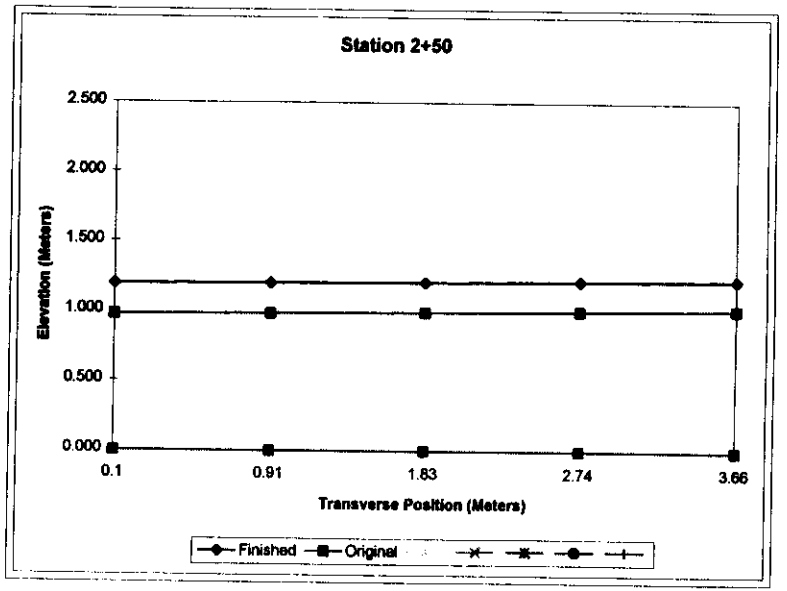
3.66
Transverse Position (Meters)
Finished
Original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Transverse Position (Meters)
Finished
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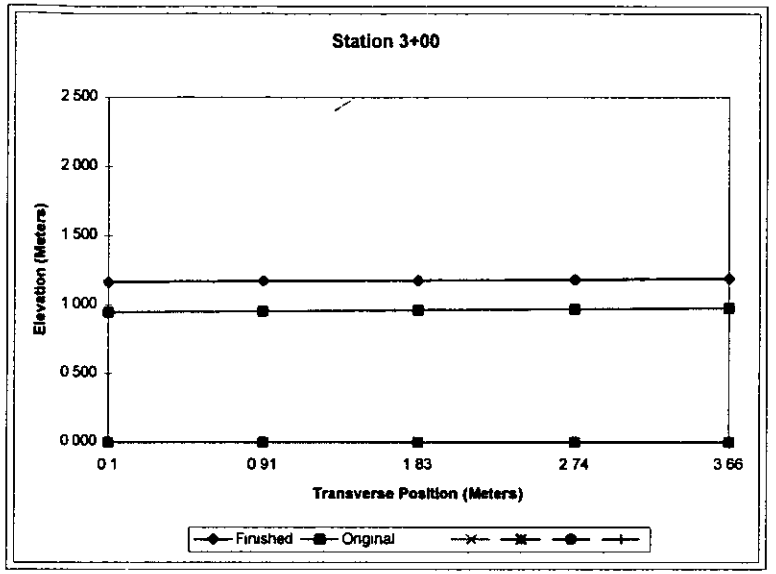
Station 3+00
2 500
2 000
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1 000
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Elevation (Meters)
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0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
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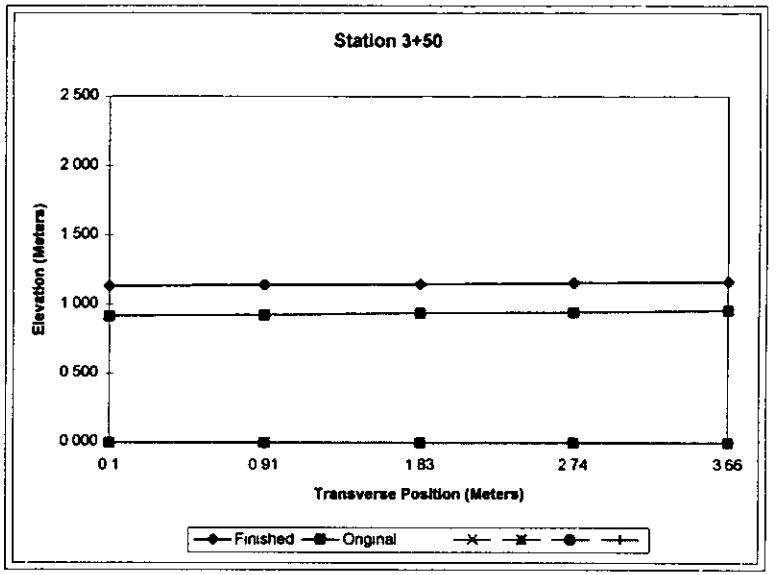
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Elevation (Meters)
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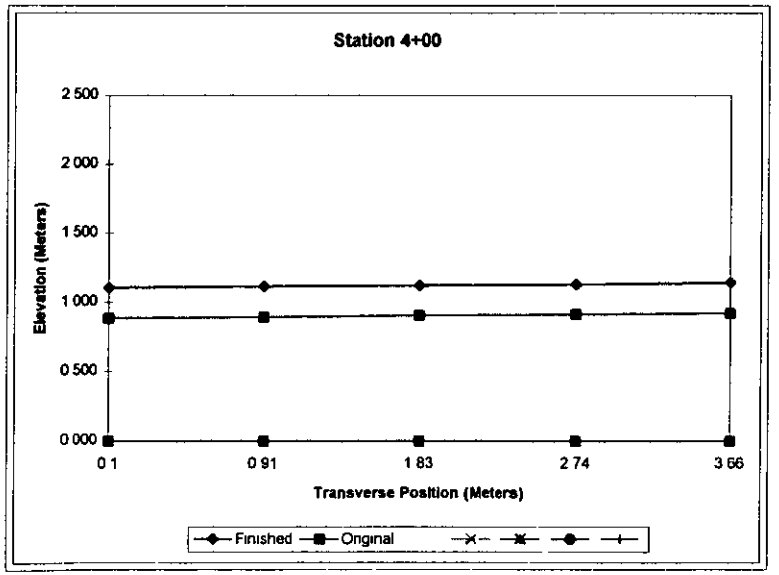
2 74
3 66
Transverse Position (Meters)
Finished
Original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2 000
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1 000
0 500
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Elevation (Meters)
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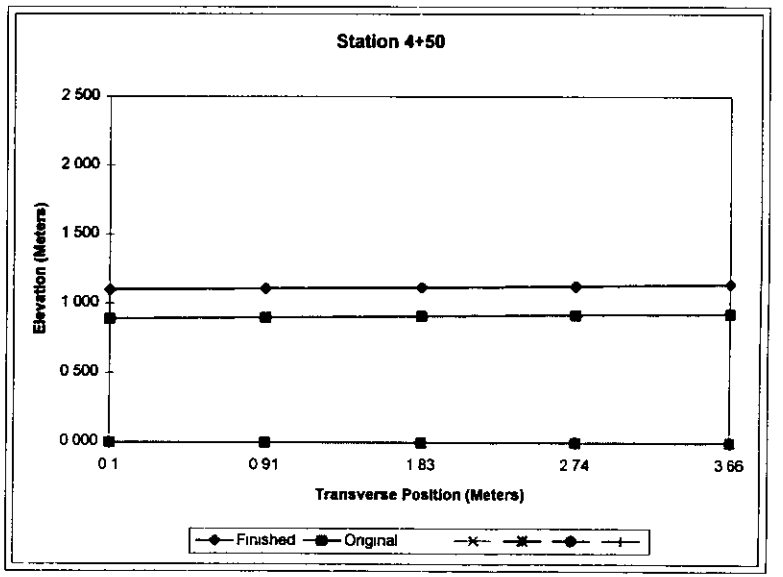
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 4+50
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Elevation (Meters)
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0 91
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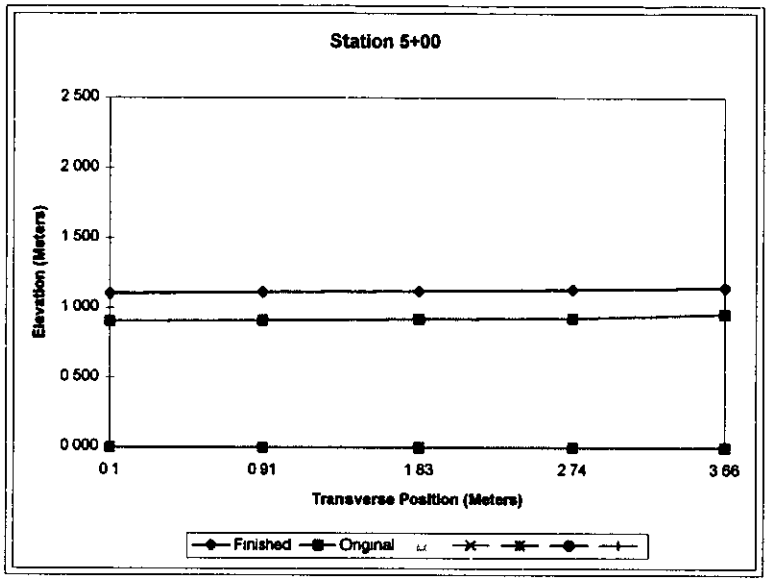
2 74
3 66
Transverse Position (Meters)
Finished
Original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2 000
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Elevation (Meters)
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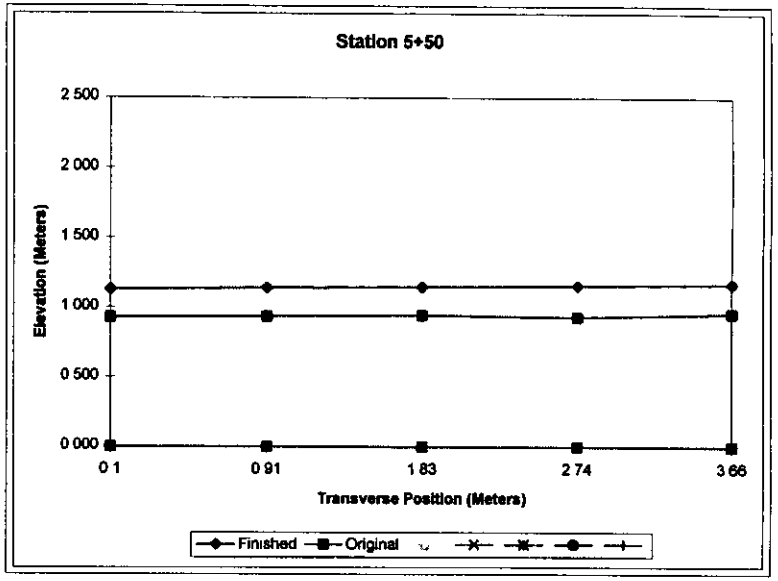
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original


Station 5+50
2 500
2 000
1 500
1 000
0 500
0 000
Elevation (Meters)
0 1
0 91
1 83
2 74
3 66
Transverse Position (Meters)
Finished
Original

APPENDIX D

PHOTOGRAPHS

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Photo 1. Condition Prior to Rehabilitation, Section 470601

Photo 2. Condition Prior to Construction, Section 470602

Photo 3. Skin Patch Overlay Within Section 470603

Photo 4. Sampling of Subgrade from the Test Pit

Photo 5. Cleaning Out Existing Joints in Concrete Pavement Prior to Overlay

Photo 6. Joint Maintenance Prior to Rehabilitation

Photo 7. Preconstruction Material Sampling

Photo 8. Polymer Modified Overlay on Inside Lane, Section 470661

Photo 9. Surface Layer on Inside Lane, Section 470604

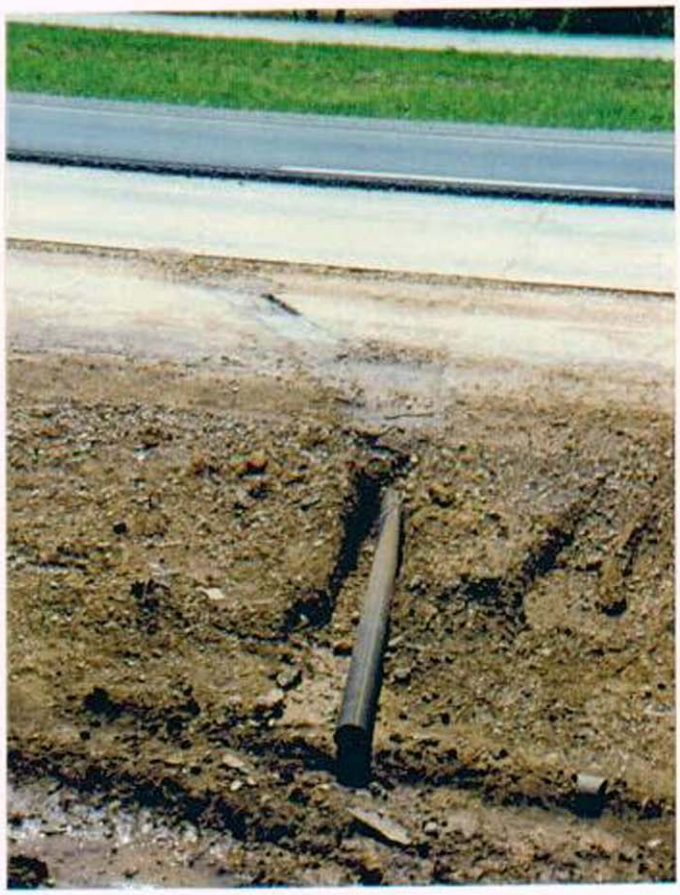

Photo 10. Installation of Edge Drain, Section 470603

Photo 11. Diamond Grinding Machine

Photo 12. Blaw-Knox HMAC Laydown Machine

Photo 13. HMAC Laydown Process

Photo 14. Dement Construction Company's Asphalt Plant

Photo 15. Box Trailer Weighted to 50 Tons for Crack and Seat Process

Photo 16. Saw Cutting and Air Blasting HMAC Surface Layer

Photo 17. Sealing of HMAC Saw Cut

Photo 18. Postconstruction Coring

Photo 19. Elevation Measurements on Final Surface Layer

Photo 20. Material Storage for Law Engineering and the Materials Reference Library