STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

FR-49 (33)

VAN-30-4.05

TULLY, UNION, AND PLEASANT TOWNSHIP
VAN WERT COUNTY

VAN WERT COUNTY VAN-30-4.05	OHIO	1 / 65
FR-49 (33)	FHWA REGION 5 FEDERAL PROJECT	

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) (proposed)
Center Line 352 353
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light

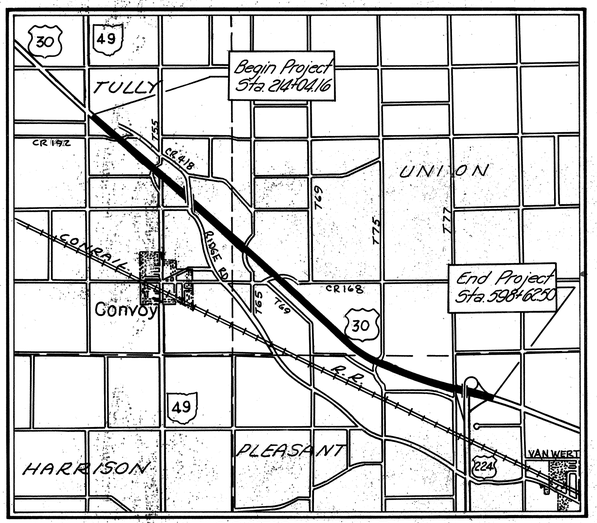
Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)

INDEX OF SHEETS

LINE DATA

	Length
Begin Project ~ Sta 214+04.16	
Suspend Project ~ Sta 313+01.56	= 9,897.40 Lin. Ft.
Resume Project ~ Sta 314+66.44	
Suspend Project ~ Sta 491+06.63	= 17,640.19 Lin. Ft.
Resume Project ~ Sta 493+13.37	
Suspend Project ~ Sta 510+30.24	= 1,716.87 Lin. Ft.
Resume Project ~ Sta 512+49.76	
End Project ~ Sta 598+62.50	= 8,612.74 Lin. Ft.
(Sta. 225+38.17 Bk. = Sta 231+97.54 Ahd.)	
Deduct for Station Equation	= -659.37 Lin. Ft.
Total Length of Project = 37,207.83 Lin. Ft.	= 7.047 Miles
Begin Work ~ Sta 212+66.66	
End Work ~ Sta 600+00.00	= 38,733.34 Lin. Ft.
(Sta. 225+38.17 Bk. = Sta 231+97.54 Ahd.)	
Deduct for Station Equation	= -659.37 Lin. Ft.
U.S.R. 224	
Begin Work ~ Sta 617+96.98	
End Work ~ Sta 632+36.75	= 1,439.77 Lin. Ft.
Total Length of Work = 39,513.74 Lin. Ft.	= 7.484 Miles

Plan Prepared By:
DISTRICT NO. 1
OHIO DEPARTMENT
OF TRANSPORTATION



LOCATION MAP

SCALE IN MILES
0 1 2 3 4

Portion to be improved
State & Federal Routes
Other Roads

SCALES

Plan 0' 50' 100'
Profile: Horizontal, Vertical
Cross Section: Horizontal 0' 5' 10', Vertical 0' 5' 10'

1983 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will *not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.*

Approved James L Schwenk
Date 12-20-83 District Deputy Director of Transportation

Approved Robert B Chenault
Date 1-6-84 Engineer, Bureau of Bridges and Structural Design

Approved Wayne H. Kauble
Date 3-6-84 Chief Engineer, Planning and Design

Approved Warren J Smith
Date 3-6-84 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

UNDERGROUND UTILITIES
48 HOURS
BEFORE YOU DIG
Call---800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

SUPPLEMENTAL SPECIFICATIONS		
803	5-27-83	
848	2-17-83	
847	4-3-76	
921	12-4-72	

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

		GR-4	2-5-82		
BP-5	7-16-81	GR-4A	2-5-82		
BP-11	1-3-75	GR-6	2-5-82		
		GR-6A	2-5-82		
CB-4	5-1-79				
CB-5	5-1-79				
		MC-3	6-1-73		
		MC-4	7-26-76		
GR-1	2-5-82	DBR-2-73	4-10-73		
GR-2B	2-5-82	TC-35.10	10-5-77		
GR-3	2-5-82	TC-72.20	2-26-82		
GR-3A	2-5-82				
GR-3B	2-5-82				

SEAL

Project: VAN-30-4.05
Date of Letting ____ 19__, Contract No. ____

LD 0300 Rev. 1-1-81

TITLE SHEET

FHWA REGION	STATE	PROJECT	
5	OHIO		

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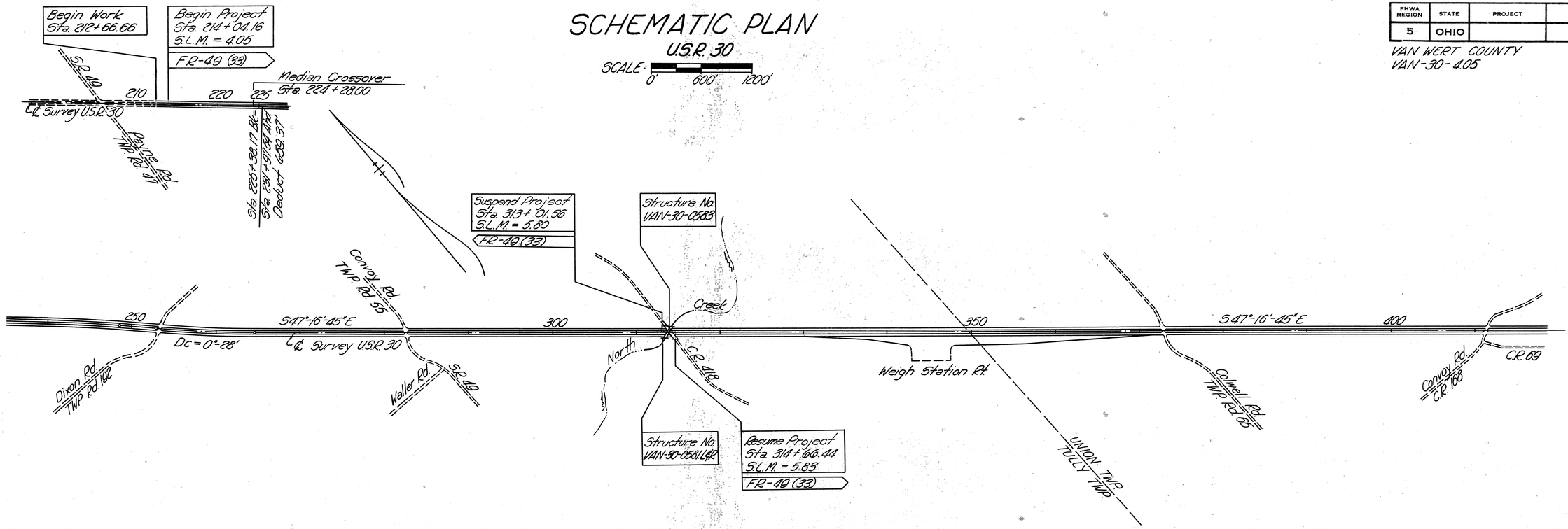
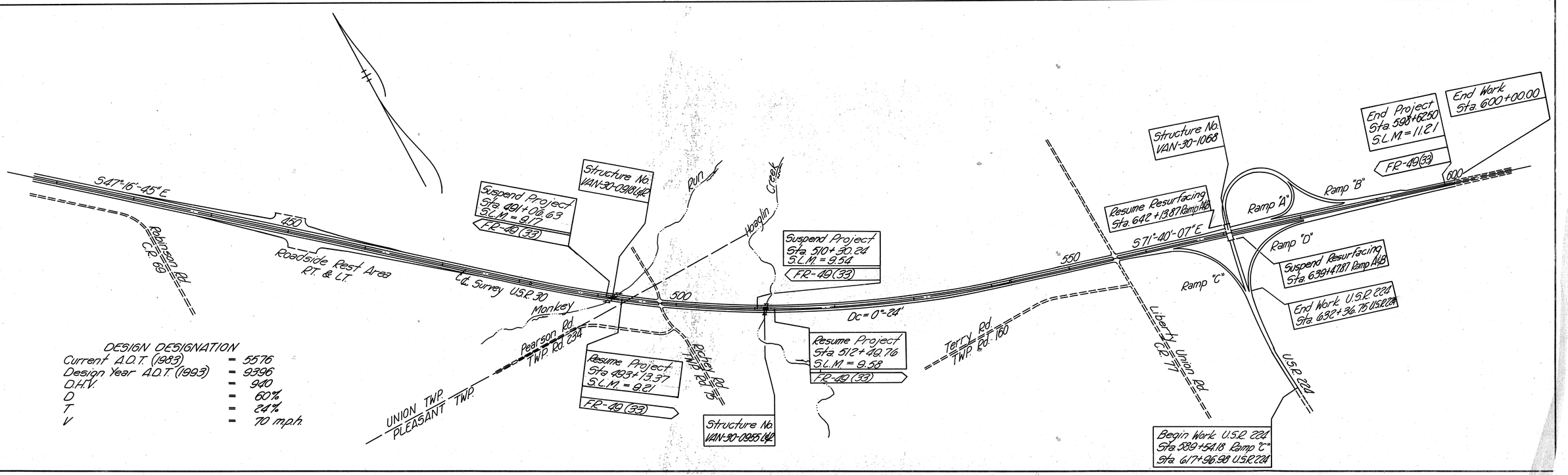
VAN WERT COUNTY
VAN-30-4.05

SCHEMATIC PLAN

U.S.R. 30

SCALE: 0' 600' 1200'





DESIGN DESIGNATION

Current A.D.T. (1983)	=	5576
Design Year A.D.T. (1993)	=	9396
D.H.V.	=	940
D	=	60%
T	=	24%
V	=	70 m.p.h.

SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	
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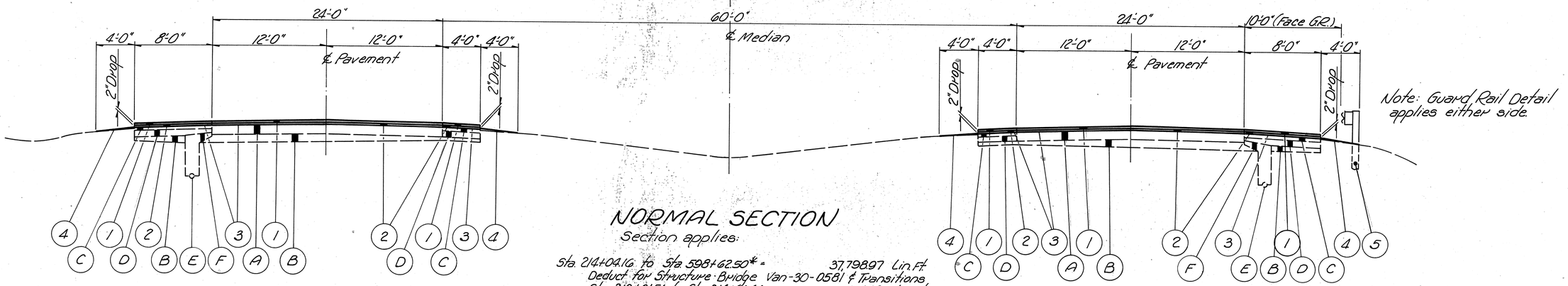
VAN WERT COUNTY
VAN-30-4.05

TYPICAL SECTIONS
TYPE 848



Note: Guard Rail Detail applies either side.

NORMAL SECTION

Section applies:

Sta 214+04.16 to Sta 598+62.50* =	37,798.97 Lin. Ft.
Deduct for Structure-Bridge Van-30-0581 & Transitions	
Sta 313+01.56 to Sta 314+66.44 =	-164.88 Lin. Ft.
Deduct for Structure-Bridge Van-30-0918 & Transitions	
Sta 491+06.63 to Sta 493+13.37 =	-206.74 Lin. Ft.
Deduct for Structure-Bridge Van-30-0955 & Transitions	
Sta 510+30.24 to Sta 512+49.76 =	-219.52 Lin. Ft.
Deduct for Structure-Bridge Van-30-1068 & Transitions	
Sta 569+26.53 to Sta 572+31.85 =	-305.32 Lin. Ft.
Total Length	36,902.51 Lin. Ft.

* Sta. Equation: Sta. 225+38.17 Bk. = Sta. 231+97.54 Ahd.

EXISTING LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement.
- (B) Subbase.
- (C) Waterproofed Aggregate Base.
- (D) Aggregate Base.
- (E) 6" Pipe Underdrain
- (F) No. 6 Aggregate

PROPOSED LEGEND

- (1) Item 848 1¼" Asphalt Concrete Surface Course Type 1, AC-20
- (2) Item 848 1½" Asphalt Concrete Intermediate Course Type 2, AC-20
- (3) Item 407 Tack Coat with Cover Aggregate.
- (4) Item 617 Reconditioning Shoulders Including Shoulder Preparation, Compacted Aggregate and Water.
- (5) Item 606 Guard Rail, Type 5.

FHWA REGION	STATE	PROJECT	
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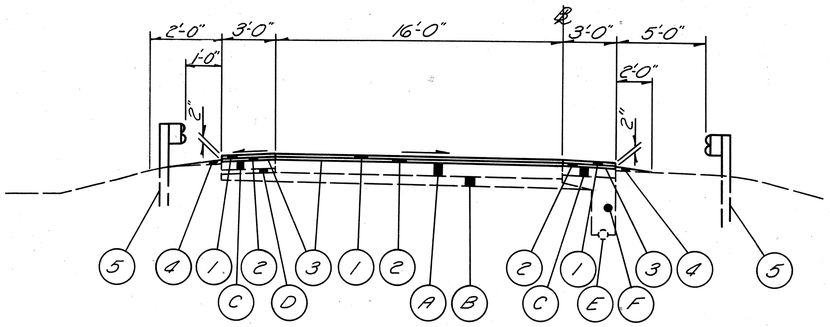
VAN WERT COUNTY
VAN-30-4.05

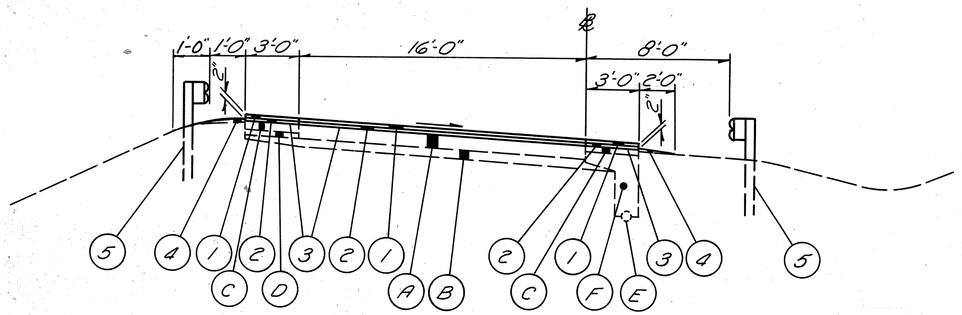
TYPICAL SECTIONS
TYPE 848



NORMAL RAMP

Section Applies:

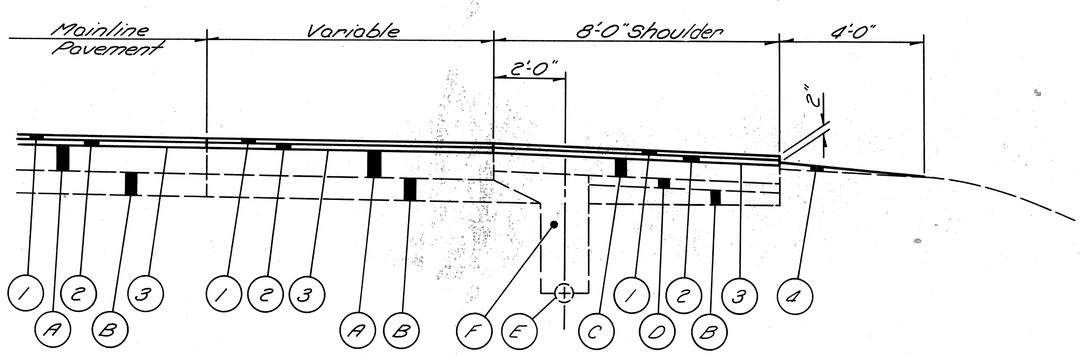
Weigh Station Ramp "B"		
Sta. 350+12.08 to Sta. 352+96.79 =	284.71	Lin. Ft.
Rest Area Ramp "B"		
Sta. 453+75.46 to Sta. 456+26.92 =	251.46	Lin. Ft.
Rest Area Ramp "C"		
Sta. 445+87.08 to Sta. 448+38.54 =	251.46	Lin. Ft.
USR 224 Interchange Ramp "B"		
Sta. 655+19 to Sta. 657+16.99	197.99	Lin. Ft.
Total Length =	985.62	Lin. Ft.



SUPERELEVATED RAMP

Section Applies:

Weigh Station Ramp "A"		
Sta. 338+08.21 to Sta. 341+85.62 =	377.41	Lin. Ft.
Weigh Station Ramp "B"		
Sta. 348+81.18 to Sta. 350+12.08 =	130.90	Lin. Ft.
Sta. 352+96.79 to Sta. 355+50 =	253.21	Lin. Ft.
Rest Area Ramp "A"		
Sta. 444+85 to Sta. 446+48.72 =	163.72	Lin. Ft.
Rest Area Ramp "D"		
Sta. 455+65.28 to Sta. 457+40 =	174.72	Lin. Ft.
USR 224 Interchange Ramp "A"		
Sta. 655+19 to Sta. 660+19.80 =	500.80	Lin. Ft.
USR 224 Interchange Ramp "B"		
Sta. 657+16.99 to Sta. 663+44.96 =	627.97	Lin. Ft.
USR 224 Interchange Ramp "C"		
Sta. 563+73.81 to Sta. 573+52 =	978.19	Lin. Ft.
USR 224 Interchange Ramp "D"		
Sta. 567+84.74 to Sta. 579+18.18	1133.44	Lin. Ft.
Total Length	4340.36	Lin. Ft.



SPEED CHANGE LANE

Section Applies:
Weigh Station Ramp "A"
Weigh Station Ramp "B"
Rest Area Ramp "A", "B", "C" & "D"
USR 224 Interchange Ramps "A", "B", "C" & "D"

EXISTING LEGEND

(A) 9" Reinforced Portland Cement Concrete Pavement
(B) Subbase
(C) Waterproofed Aggregate Base
(D) Aggregate Base
(E) 6" Pipe Underdrain
(F) No. 6 Aggregate

PROPOSED LEGEND

(1) Item 848 1¼" Asphalt Concrete Surface Course, Type 1, AC-20
(2) Item 848 1½" Asphalt Concrete Intermediate Course, Type 2, AC-20
(3) Item 407 Tack Coat with Cover Aggregate
(4) Item 617 Reconditioning Shoulders Including Shoulder Preparation, Compacted Aggregate and Water
(5) Item 606 Guard Rail, Type 5

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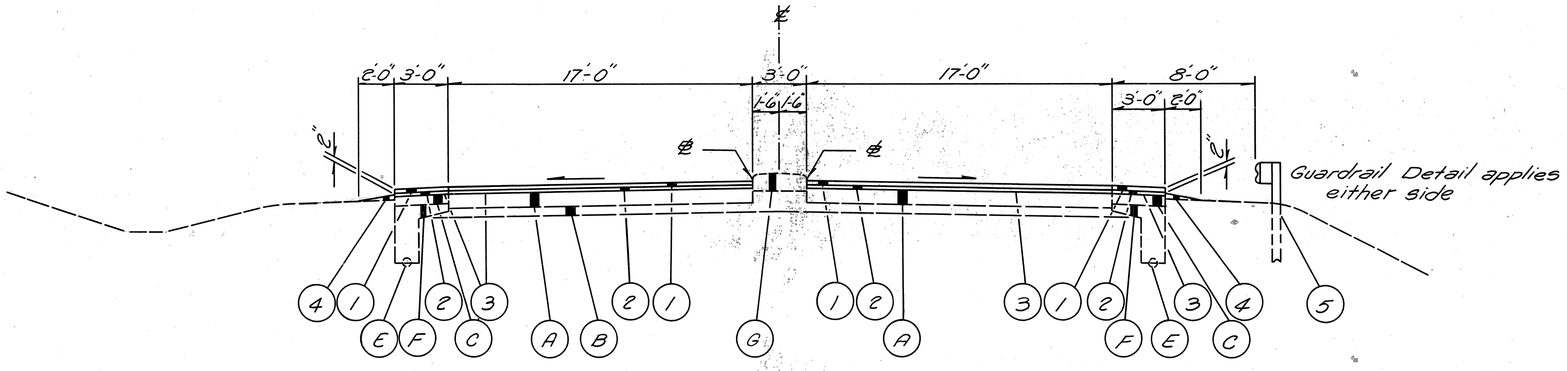
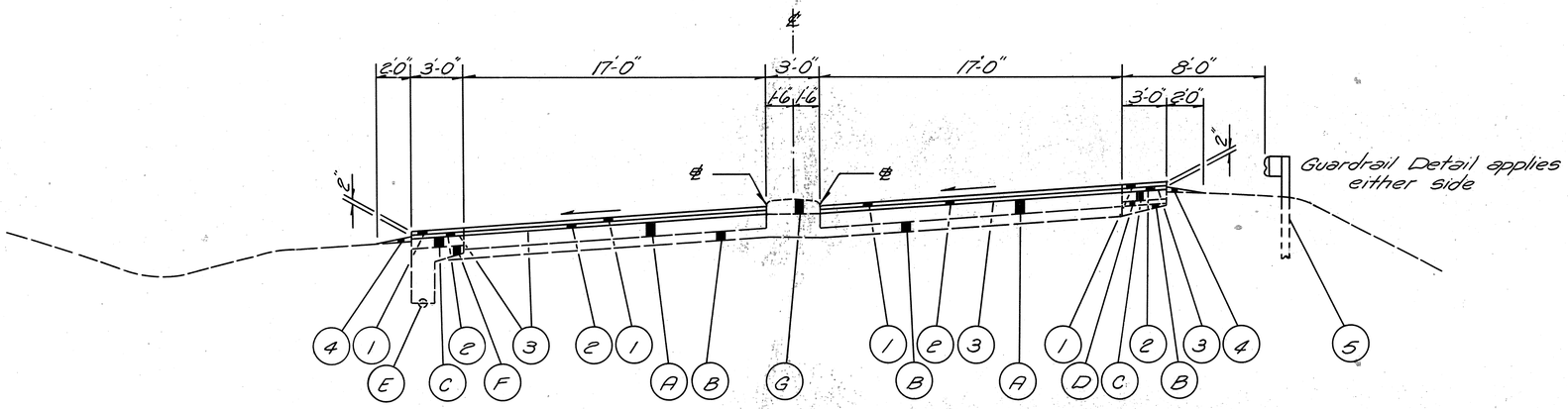
TYPICAL SECTIONS

TYPE 848



TWO WAY NORMAL RAMP

Section Applies:
U.S.R. 224 Interchange Ramps "A" & "B"
Sta. 632+68.88 to Sta. 643+99.93 Ramp = 1,131.05 Lin. Ft.
Deduct for Structure ~ Bridge VAN-30-1068 & Transitions
Sta. 638+77.75 to Sta. 642+84.55 Ramp = -406.80 Lin. Ft.
Total Length = 724.25 Lin. Ft.



TWO WAY SUPERELEVATED RAMP

Section Applies:
U.S.R. 224 Interchange Ramps "A" & "B"
Sta. 643+99.93 to Sta. 655+19.00 Ramp = 1,119.07 Lin. Ft.
Total Length = 1,119.07 Lin. Ft.

EXISTING LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement
- (B) Subbase
- (C) Waterproofed Aggregate Base
- (D) Aggregate Base
- (E) 6" Pipe Underdrain
- (F) No. 6 Aggregate
- (G) Portland Cement Concrete Median Pavement

PROPOSED LEGEND

- (1) Item 848 1 1/4" Asphalt Concrete Surface Course, Type 1, AC-20
- (2) Item 848 1 1/2" Asphalt Concrete Intermediate Course, Type 2, AC-20
- (3) Item 407 Tack Coat with Cover Aggregate
- (4) Item 617 Reconditioning Shoulders Including Shoulder Preparation, Compacted Aggregate & Water
- (5) Item 606 Guardrail, Type 5

GENERAL NOTES

Computations By		
Initials JMS	Date 12/20/83	
Computations Checked By		
Initials JMP	Date 12-2083	
Revisions By		
Initials	Date	

FHWA REGION	STATE	PROJECT	
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VAN WERT COUNTY
VAN-30-4.05

STATIONING — The Stations within the limits of this project have been established from the plans of former construction projects. Copies of these plans are on file at the District One Office of the Ohio Department of Transportation, Lima, Ohio.

CONTINGENCY QUANTITIES — The Contractor shall not order materials or perform work for plan items set up to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used at the Engineer's discretion shall be made a matter of record by incorporation into the final change order governing completion of this project.

FIELD OFFICE — The Contractor shall provide a suitable Field Office having a minimum of 800 Sq.Ft. of floor space. Payment shall be at the lump sum price bid for Item 619 Field Office.

PIPE UNDERDRAINS — Any Pipe Underdrains broken or damaged as a result of construction operations shall be replaced by the Contractor at no cost to the State of Ohio.

WATERING PERMANENT SEEDED AREAS — The following estimated quantity is to be used as directed by the Engineer to promote growth and to care for the permanent seeded areas as per 659.09; 659 Water 10 M Gallon.

ITEM 617, COMPACTED AGGREGATE — In addition to the calculated quantities, an estimated quantity of 500 Cu.Yds. of Item 617 Compacted Aggregate is included to be used as directed by the Engineer for the purpose of filling ruts and depressions in the area adjacent to the paved shoulder.

ITEM 617, WATER (COMPACTING AGGREGATE) — An estimated quantity of 50 M. Gal. of Water is included in this item to aid compaction. Its use shall be as directed by the Engineer.

ITEM 407 TACK COAT — The Tack Coat and Cover Aggregate Operation shall be determined as per Spec. 407.05. Plan quantities indicate average application rate of 0.10 Gallons per Square Yard of Tack Coat and 7 Pounds per Square Yard of Cover Aggregate for estimating purposes only.

ITEM 848, ASPHALT CONCRETE — On this project, Supplemental Specification 848, Table 2-2 properties of mixtures for heavy traffic volume shall apply.

GUARD RAIL REPLACEMENT — No hazard shall be left unprotected except for the actual time necessary to remove grade and reinstall Guard Rail in a continuous operation. The removal of all Guard Rail shall at all times be as directed by the Engineer. No Guard Rail shall be removed until the replacement material is on site, ready for installation. Failure to comply with this requirement shall be deemed sufficient cause to order work suspended on this project until such time that the Engineer is assured of said compliance.

ELEVATION DATUM — The Elevations shown in these plans are not based on USGS Datum. Rather they are based on assumed Bench Marks noted throughout the plans. The Elevations derived from one particular Bench Mark are not relative to any Elevations derived from another Bench Mark unless both Bench Marks are in the same general work areas.

PROFILE — The Profile of the proposed Asphalt Concrete shall be approximately 2¾" (inches) above that of the existing pavement except as otherwise noted.

UTILITY OWNERSHIP — The following Utilities and Owners are located within the work limits of this project:

Pipe Line - Michigan & Wisconsin Pipe Line Co, 20095 Gilbert, Big Rapids, Mich. 49307 (313) 965-1616
Electric & Telephone - Ohio Dept. of Transportation, 2100 N. West St. Rd, Lima, Ohio 45801 (419) 222-9055

UNDERGROUND UTILITIES — The locations of the Underground Utilities shown on the plans are as obtained from the owners of the utility as required by Section 153.64 ORC.

UTILITIES NOTIFICATION — At least two working days prior to commencing construction operations in an area which may involve underground utility facilities, the Contractor shall notify the Project Engineer, the registered utility protection service and the owners of each underground utility facility shown in the plans.

The owner of the underground utility facility shall, within forty-eight hours excluding Saturdays, Sundays and Legal Holidays after notice is received, stake, mark or otherwise designate the location of the underground utility facilities in the construction area in such manner as to indicate their course together with the approximate depth at which they were installed. The marking or locating shall be coordinated to stay approximately two days ahead of the planned construction.

PAVEMENT REPAIR — Prior to the start of any construction on the project the Engineer will have marked with paint all pavement repair locations. All pavement repairs shall be 10 (ten) ft. in length.

310 SUBBASE — In areas of pavement replacement where unsuitable subgrade material is encountered, the Engineer shall require the replacement of the unsuitable subgrade. Included in the General Summary is 400 Cu.Yd. of 310 Subbase Grading "A" to be used as directed by the Engineer for subgrade replacement. The cost of removing and disposing of the unsuitable subgrade and the reshaping of the subgrade will be included in the unit price bid for 310 Subbase, Type 1, Grading A, as per plan.

ITEM SPECIAL, PAVEMENT SAWING — The areas of pavement repair shall be outlined generally rectangular in shape with paint prior to the start of pavement sawing. The existing rigid pavement shall be sawed full depth as detailed on Sheet 8. The Contractor may elect to make additional cuts to facilitate the removal of the pavement. However, only cuts designated by the Engineer will be measured for payment.

The unit price bid per Lin.Ft. for Item Special, Pavement Sawing shall be full compensation for completing the saw cuts at locations designated by the Engineer.

TRAFFIC MAINTENANCE — One lane traffic areas shall be controlled with temporary traffic control devices arranged as indicated in the "Ohio Manual of Uniform Traffic Control Devices for Streets and Highways," current edition and the application standards appearing in these plans. The Contractor shall furnish, place and maintain yellow alternating Flasher Beacon Lights on all "Road Construction Ahead" signs when and as directed by the Engineer. It shall be understood that the cost of Electrical Services shall be included in the lump sum bid for Item 614 Maintaining Traffic.

The maximum length of any one lane traffic zone shall be two miles. The minimum distance between one lane traffic zones shall be two miles.

No work on US 30 Pavement or Berms shall be performed by the Contractor from 4:00 P.M. Friday to 6:00 A.M. Monday. Two-lane traffic in each direction shall be maintained during these periods. No work on US 30 Pavement or Berms shall be performed by the Contractor 24 hours preceding or on a Legal Holiday during which two-lane traffic in each direction shall be maintained.

Payment for providing watchmen, erecting, maintaining and removing signs, barricades, cones, markers, special lighting, etc. shall be included in the lump sum bid Item 614 Maintaining Traffic.

There shall not be more than one proposed course placed on existing pavement or shoulders before adjacent courses are placed. Permanent pavement marking shall be placed within three weeks after completion of final Surface Courses.

All drums and barricades used as channelizing devices for traffic and placed adjacent to a lane in use by traffic shall be equipped with Type "C" steady burn barricade warning lights in accordance with O.M.U.T.C.D.. Refer to lane closure drawings included in plans for further details of "set-ups" required for the above closures. Lane width for all phases shall be a minimum of 12 Ft.

During the initial first day "set-up" period and the last day "tear-down" period of each traffic control sequence a Law Enforcement Officer with Patrol Car shall be present to assist in traffic control operations. The Contractor may at his option use such a Law Enforcement Officer with Patrol Car to assist in Traffic Control at other times.

The use of the Law Enforcement Officer with Patrol Car for Traffic Control as required by the plans shall be paid on a unit price (hourly) basis under the Item Special shown. A quantity of 800 hours of Item Special "Law Enforcement Officer with Patrol Car" has been included in the General Summary. All optional use of such a Law Enforcement Officer with Patrol Car and all other labor, equipment and materials required for Traffic Control shall be included in the lump sum price bid for Item 614 Maintaining Traffic.

While Pavement Repair is being conducted on the ramps at the US 224 Interchange, the ramps shall be closed to traffic. No ramp shall be closed for more than fifteen days. The Contractor shall contact the District One Operations Engineer at the Ohio Department of Transportation, Lima, Ohio, seven days prior to beginning Pavement Repair on the ramps to allow for detours to be set up.

Before removing existing Guard Rail from the bridge decks, Type 6 Guard Rail will be placed as temporary protection and remain in place until the installation of deep beam rail with tubular back-up has been completed. See "Temporary Guard Rail Protection at Bridges" detail on Sheet 7 for placement of Type 6 Guard Rail. A quantity of 2750.00 Lin.Ft. of Type 6 Guard Rail has been included in the General Summary for temporary protection at bridges. Type 6 Guard Rail may be re-used from location to location as the feasibility of the work schedule provides. All labor, material and equipment necessary to install and remove the temporary Guard Rail as well as the cost of traffic control in administering the temporary protection, shall be included in Item 614.

ALTERNATE METHODS — If the Contractor so elects, he may submit Alternate Methods for Maintenance of Traffic provided the intent of the above provisions are followed and no additional inconvenience to the traveling public results there from. No Alternative plan shall be placed into effect until approval has been granted, in writing, by the Director of Transportation.

JOINT

ITEM SPECIAL, PARTIAL DEPTH PAVEMENT REPAIR — The small spalling areas, where full depth pavement repair is not necessary, shall be chipped out, cleaned using compressed air and tacked in accordance with Item 407. The Area will be filled and compacted with asphaltic material, such as Item 402 or 404. An estimated quantity of 350 Sq.Yds. is provided to be used at the direction of the Engineer. Payment for all of the above work shall be at the unit price bid for Item Special, Partial Depth Pavement Repair, measured in Square Yards of spalled area. Average depth of pavement removal will be 4".

ITEM SPECIAL, PRESSURE RELIEF JOINT — Pressure Relief Joints shall be placed at intervals of 1000' and also at the East and West ends of each mainline bridge Lt. and Rt. as per Std. Dwg. BP-11. Payment for the above shall be at the unit price bid for Item Special, Pressure Relief Joint Std. Type "D" measured in Lin.Ft.

GENERAL NOTES

CATCH BASIN, WITHOUT APRON, AS PER PLAN — Any Embankment required around the proposed Catch Basin due to existing concrete pad removal or washout shall be included in the unit price bid for Catch Basin Std. No. 4 (or Std. No. 5), Without Apron, As Per Plan. Topsoil will be used for backfill prior to placing sod around the proposed C.B.

LOCATION OF GUARD RAIL — The locations of Guard Rail runs as shown in these plans are subject to adjustment prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.

CONNECTION TO EXISTING PIPE — Where the plans provide for proposed conduit to be connected to, or to cross either over or under an existing sewer, it shall be the responsibility of the Contractor to locate the existing pipe both as to line and grade before he starts to lay the proposed conduit.

Payment for all operations described above shall be included in the unit price bid for the pertinent 603 Conduit Items.

FASTENING OF BRIDGE TERMINAL ASSEMBLIES — Bridge terminal assemblies which are to be fastened to existing concrete parapets by steel box blockouts shall be attached by means of through bolts. Expansion anchor bolts will not be permitted.

Where self-drilling anchors are permitted and are used the holes shall be drilled with the tubular expansion shell, rather than with a bit, to insure a proper fit. The anchors shall be installed flush with the surface of the concrete.

Where anchorage by expansion bolts to a deteriorated concrete surface would result in a questionable attachment, through bolts shall be used instead at the discretion of the Engineer.

GUARD RAIL REMOVED, FOR STORAGE — Guard Rail, including all post and accessories designated for removal on this project, shall be carefully dismantled and stored on the project for removal by State Forces. All material not considered salvageable shall be disposed of as directed. All post holes shall be carefully filled and tamped and the site cleaned and restored. The storage location shall be approved by the Engineer.

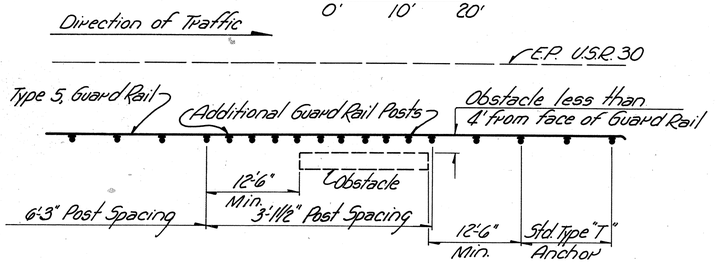
Payment for all of the above shall be at the unit price bid for Item 202, Guard Rail Removed for Storage measured by the linear foot center to center of the terminal posts.

CATCH BASIN REMOVED — The existing concrete pads around the Catch Basins to be removed are considered to be part of the Catch Basin and will be removed with the Catch Basin. The pad sizes are generally 8'x14'x6". Castings of Catch Basins to be removed shall be salvaged and remain the property of the State of Ohio. The castings shall be stored on the job in an area designated by the Engineer to be later removed by State Forces.

PRE-CAST CATCH BASINS — In the event the Contractor elects to use Pre-cast Catch Basins, it shall be the responsibility of the Contractor to determine from the elevations on the plans whether or not the Pre-cast Catch Basin top will clear the conduit in the Catch Basin. Should adequate clearance not exist, the Contractor shall provide clearance by sawing the Pre-cast top to fit over the conduit at no additional expense to the State.

GUARD RAIL TYPE 5, 3'-1½" POST SPACING DETAIL

0' 10' 20'

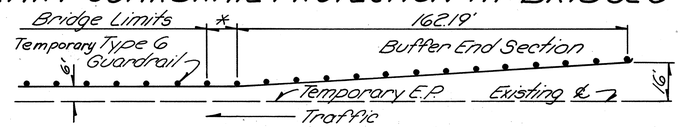


When obstacles are less than 4' from the face of Guard Rail, additional posts will be installed to obtain 3'-1½" post spacing in front of the obstacle and for a minimum distance of 12'-6" from the approach end of the obstacle.

Payment for all additional Guard Rail Posts, spacer blocks, hardware and labor necessary to install the additional Guard Rail Posts shall be included in the unit price of Item 606 Guard Rail, Type 5.

For Locations where additional Guard Rail Posts are necessary, See Sheets 36 & 47.

TEMPORARY GUARDRAIL PROTECTION AT BRIDGES



SEEDING

Sheet	659 Seeding & Mulching Sq. Yd.
31	744
38	228
42	698
47	740
48	116
50	1960
51	1479
52	1419
53	1389
Total	8773

EARTHWORK

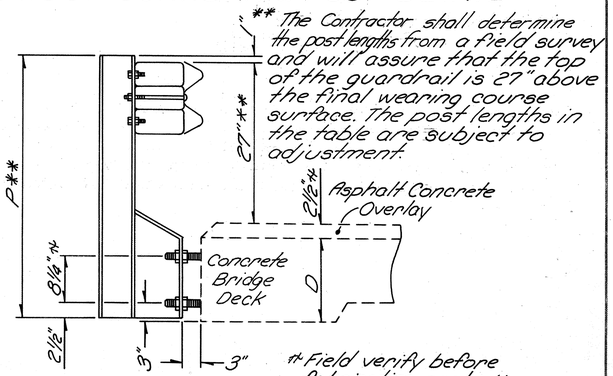
Sheet	203 Excavation Cu. Yd.	203 Embankment Cu. Yd.
31	72	22
50	169	40
51	28	65
52	52	66
53	0	429
Total	321	622

TYPE 6 GUARDRAIL

Structure Number	Bridge Limits	*	Length per Side	Total Length per Bridge
VAN-30-0581 ø	24.88	12.62'	200.00'	800.00'
VAN-30-0918 ø	66.74	8.26'	237.50'	950.00'
VAN-30-0955 ø	79.52	7.98'	250.00'	1000.00'
Total				2750.00'

ø Left & Right

BRIDGE GUARDRAIL POST DETAIL



Bridge Guardrail Post Dimensions

Bridge No.		D	P**
VAN-30-0581		16"	46"
VAN-30-0918		16"	46"
VAN-30-0955		17½"	47½"

MISCELLANEOUS COMPUTATIONS

659 Seeding and Mulching (from Table) =	8773	Sq. Yd.
Deduct for Sodding =	26	Sq. Yd.
Deduct for Piers =	2	Sq. Yd.
Net Seeding and Mulching	8745	Sq. Yd.
659 Commercial Fertilizer: (8745)(9)(1/1000)(20)(1/2000) =	0.79	Ton

FHWA REGION	STATE	PROJECT	
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VAN WERT COUNTY
VAN-30-4.05

Computations By Initials J.M.D. Date 12/20/83
Computations Checked By Initials [illegible] Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
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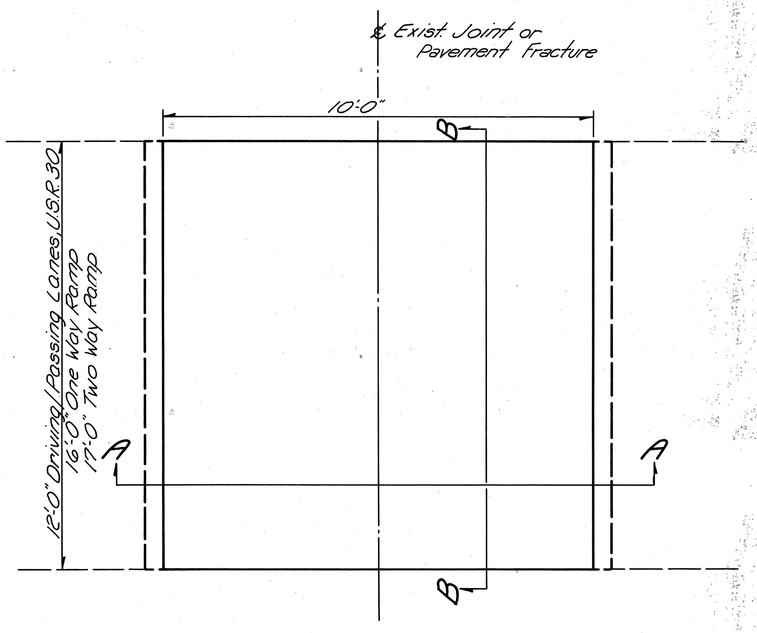
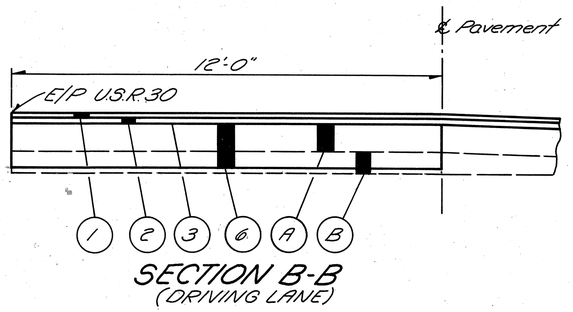
VAN WERT COUNTY
VAN-30-4.05

PAVEMENT REPAIR

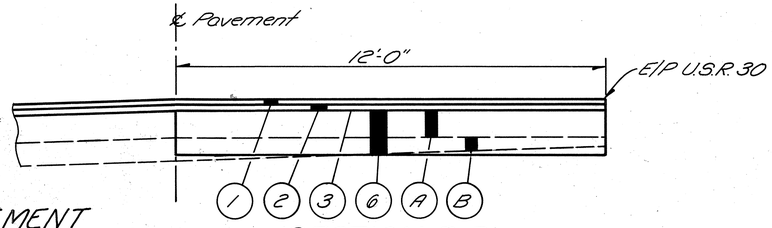


PLAN VIEW

THE LENGTH OF ALL PAVEMENT REPAIRS WILL BE 10 (TEN) FEET

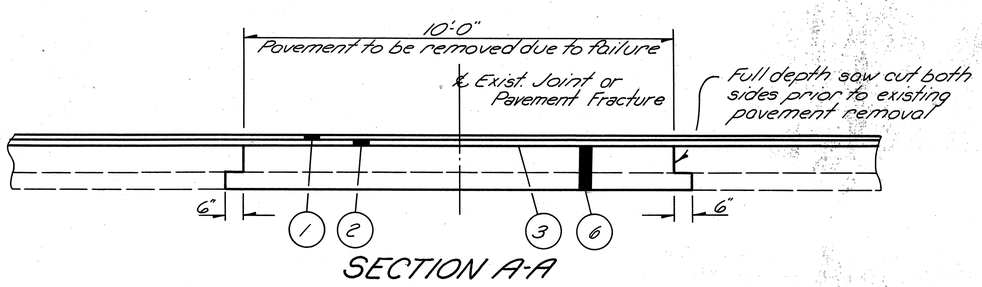


SECTION B-B
(DRIVING LANE)

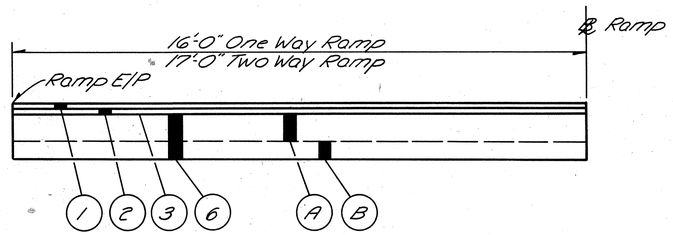


SECTION B-B
(PASSING LANE)

NOTE: All locations of pav't. repairs will be marked by the "Engineer" prior to the start of any construction.



SECTION A-A



SECTION B-B
(RAMPS)

EXISTING LEGEND

(A) 9" Reinforced Portland Cement Concrete Pavement

(B) Subbase

PROPOSED LEGEND

(1) Item 848 1¼" Asphalt Concrete Surface Course, Type 1, AC-20

(2) Item 848 1½" Asphalt Concrete Intermediate Course, Type 2, AC-20

(3) Item 407 Tack Coat with Cover Aggregate

(6) Item 305 15" Portland Cement Concrete Base (See Proposal Note)

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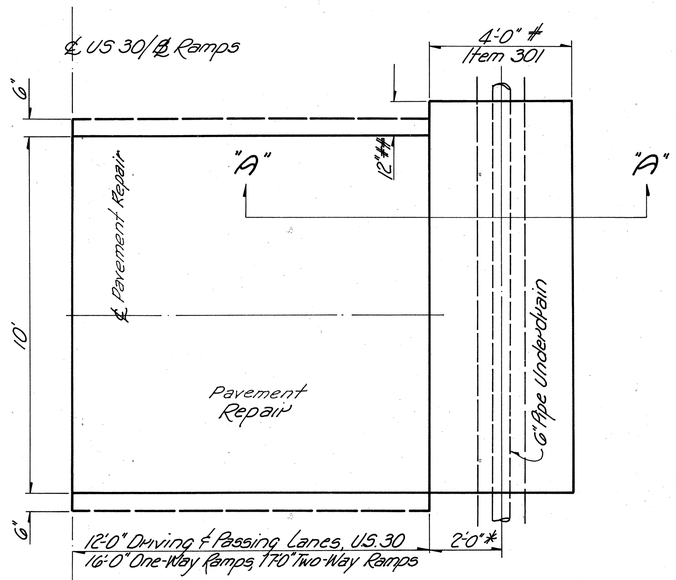
YAN WERT COUNTY
YAN-30-4.05

LONGITUDINAL AGGREGATE DRAINS "AS PER PLAN"

(Applies where existing Pipe Underdrains are present)

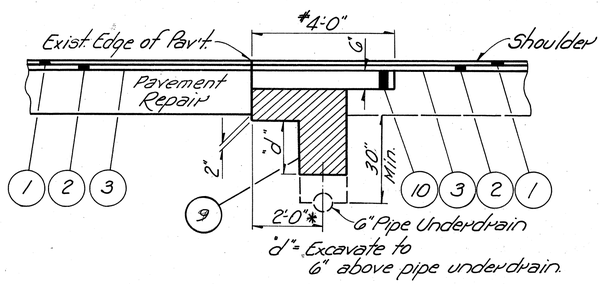


PLAN VIEW

* = Mainline; For location of pipe underdrain on Ramps, See Typical Sections Sheets 4 & 5.

\# = Mainline; 3'-0" on Ramps.

\## = The 12" additional Longitudinal Drain length shall apply at the up-grade end of the Pavement Repair Area.



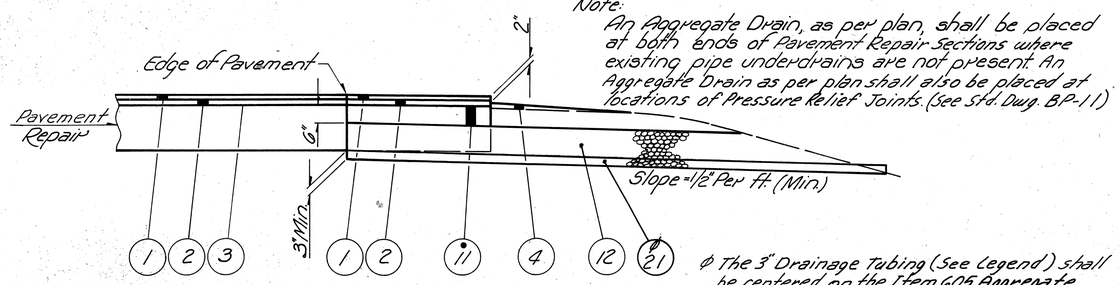
SECTION "A"-"A"

605 LONGITUDINAL AGGREGATE DRAIN, AS PER PLAN

In addition to the provisions of Item 605, the following shall apply to this item:

The cross-hatched area noted above shall be excavated to a depth "d" and back-filled with No. 8 Aggregate. Payment for the above excavation, disposal of excavated material, No. 8 Aggregate, placing of No. 8 Aggregate, Item 301 material and placing of Item 301 material shall all be included in the unit price bid per linear foot of "Item 605 Longitudinal Aggregate Drain, as per plan" measured parallel to the pavement edge.

AGGREGATE DRAIN "AS PER PLAN"



Note:
An Aggregate Drain, as per plan, shall be placed at both ends of Pavement Repair Sections where existing pipe underdrains are not present. An Aggregate Drain as per plan shall also be placed at locations of Pressure Relief Joints. (See Std. Dwg. BP-1.1)

Ø The 3" Drainage Tubing (See Legend) shall be centered on the Item 605 Aggregate Drain as per plan

•• The length of Item 301 shall equal the width of Item 605 Aggregate Drain as per plan. Cost of excavation, disposal of material, Item 301 material and placing of Item 301 material shall all be included in the unit price bid per linear foot of Item 605 Aggregate Drain, as per plan measured perpendicular to the Edge of Pavement.

PROPOSED LEGEND

(1)	Item 848	Asphalt Concrete Surface Course, Type 1, AC-20
(2)	Item 848	Asphalt Concrete Intermediate Course, Type 2, AC-20
(3)	Item 407	Tack Coat with Cover Aggregate.
(4)	Item 617	Reconditioning Shoulder Including Shoulder Preparation, Compacted Aggregate, and Water
(9)	Item 605	Longitudinal Aggregate Drain, as per plan.
(10)	Item 301	Bituminous Aggregate Base, AC-20, RT-11, or RT-12. (Cost to be included in the unit price bid of Item 605 Longitudinal Aggregate Drain, as per plan).
(11)	Item 301	Bituminous Aggregate Base, AC-20, RT-11 or RT-12. (Cost to be included in the unit price bid of Item 605 Aggregate Drain, as per plan).
(12)	Item 605	Aggregate Drain, as per plan.
(21)	Item 605	3" Perforated Corrugated Polyethylene Drainage Tubing, 707.15 (Cost to be included in the unit price bid of Item 605 Aggregate Drain, as per plan)

AGGREGATE DRAIN DETAILS

PAVEMENT TABLE
"MAINLINE"

Computations By Initials JMS Date 12/20/83
Computations Checked By Initials JDB Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

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VAN WERT COUNTY
VAN-30-4.05

Station From	Station To	Lin. Ft.	848 Asphalt Concrete Surface Course, Type 1 Cu.Yd.	848 Asphalt Concrete Intermediate Course, Type 2 Cu.Yd.	407 Tack Coat Gal.	407 Cover Aggregate Ton	617 Shoulder Preparation Sq.Yd.	617 Compacted Aggregate Cu.Yd.	202 Wearing Course Removed Sq.Yd.	Special Pressure Relief Joint, Std. Type D Lin.Ft.	605 Aggregate Drain, as per plan * Lin.Ft.
U.S.R. 30 Mainline E.B. & W.B.											
212+66.66	214+04.16	137.5					244.44	12.73	500.00		
Pavement (Transition)			34.95	4.63	73.33	2.57					
Median Shoulder (Transition)			5.83	0.77	12.22	0.43					
Outside Shoulder (Transition)			11.65	1.54	24.44	0.86					
214+04.16	313+01.56	9238.03					15089.37	1571.80		480.0	720
Sta. 225+38.17 Bk. = Sta. 231+97.54 Ah.											
Pavement			1710.74	2052.89	4926.95	172.45					
Median Shoulder			247.13	296.57	711.74	24.92					
Outside Shoulder			552.97	663.56	1592.56	55.74					
313+01.56	313+31.56	30.00					53.33	2.78			
Pavement (Transition)			5.11	1.11	16.00	0.56					
Median Shoulder (Transition)			0.85	0.19	2.67	0.09					
Outside Shoulder (Transition)			1.70	0.37	5.33	0.19					
313+31.56	314+36.44	104.88									
Bridge No. Van-30-0581 C.E.R.											
NO WORK											
314+36.44	314+66.44	30.00					53.33	2.78			
Pavement (Transition)			5.11	1.11	16.00	0.56					
Median Shoulder (Transition)			0.85	0.19	2.67	0.09					
Outside Shoulder (Transition)			1.70	0.37	5.33	0.19					
314+66.44	491+06.63	17,640.19					26,875.10	2799.47		912.0	1368
Pavement			3266.70	3920.04	9408.10	329.29					
Median Shoulder			514.62	617.56	1482.09	51.89					
Outside Shoulder			837.08	1004.51	2410.82	84.38					
491+06.63	491+36.63	30.00					53.33	2.78			
Pavement (Transition)			5.11	1.11	16.00	0.56					
Median Shoulder (Transition)			0.85	0.19	2.67	0.09					
Outside Shoulder (Transition)			1.70	0.37	5.33	0.19					
491+36.63	492+83.37	146.74									
Bridge No. Van-30-0918 C.E.R.											
NO WORK											
492+83.37	493+13.37	30.00					53.33	2.78			
Pavement (Transition)			5.11	1.11	16.00	0.56					
Median Shoulder (Transition)			0.85	0.19	2.67	0.09					
Outside Shoulder (Transition)			1.70	0.37	5.33	0.19					
493+13.37	510+30.24	1716.87					2502.40	260.67		144.0	216
Pavement			317.94	381.53	915.66	32.05					
Median Shoulder			37.94	45.53	109.27	3.83					
Outside Shoulder			97.90	117.48	281.94	9.87					
510+30.24	510+60.24	30.00					53.33	2.78			
Pavement (Transition)			5.11	1.11	16.00	0.56					
Median Shoulder (Transition)			0.85	0.19	2.67	0.09					
Outside Shoulder (Transition)			1.70	0.37	5.33	0.19					
510+60.24	512+19.76	159.52									
Bridge No. Van-30-0935 C.E.R.											
NO WORK											
512+19.76	512+49.76	30.00					53.33	2.78			
Pavement (Transition)			5.11	1.11	16.00	0.56					
Median Shoulder (Transition)			0.85	0.19	2.67	0.09					
Outside Shoulder (Transition)			1.70	0.37	5.33	0.19					

Station From	Station To	Lin. Ft.	848 Asphalt Concrete Surface Course, Type 1 Cu.Yd.	848 Asphalt Concrete Intermediate Course, Type 2 Cu.Yd.	407 Tack Coat Gal.	407 Cover Aggregate Ton	617 Shoulder Preparation Sq.Yd.	617 Compacted Aggregate Cu.Yd.	202 Wearing Course Removed Sq.Yd.	Special Pressure Relief Joint, Std. Type D Lin.Ft.	605 Aggregate Drain, as per plan * Lin.Ft.
512+49.76	569+26.53	5676.77					8859.92	922.90		288.0	432
Pavement			1051.25	1261.50	3027.61	105.97					
Median Shoulder			160.20	192.25	461.38	16.15					
Outside Shoulder			294.86	353.84	849.21	29.72					
569+26.53	570+01.53	75.00					100.00	8.33			
Pavement (Transition)			17.59	4.63	40.00	1.40					
Median Shoulder (Transition)			2.93	0.77	6.67	0.23					
Outside Shoulder (Transition)			2.93	0.77	6.67	0.23					
570+01.53	571+56.85	155.32					207.09	12.94			
Pavement			28.76		82.84	2.90					
Median Shoulder			4.79		13.81	0.48					
Outside Shoulder			4.79		13.81	0.48					
571+56.85	572+31.85	75.00					100.00	8.33			
Pavement (Transition)			17.59	4.63	40.00	1.40					
Median Shoulder (Transition)			2.93	0.77	6.67	0.23					
Outside Shoulder (Transition)			2.93	0.77	6.67	0.23					
572+31.85	598+62.50	2630.65					3323.21	346.17		144.0	216
Pavement			487.16	584.59	1403.01	49.11					
Median Shoulder			81.19	97.43	233.83	8.19					
Outside Shoulder			68.39	82.07	196.97	6.89					
598+62.50	600+00	137.50					244.44	12.73	500.00		
Pavement (Transition)			34.95	4.63	73.33	2.57					
Median Shoulder (Transition)			5.83	0.77	12.22	0.43					
Outside Shoulder (Transition)			11.65	1.54	24.44	0.86					
Totals to Sheet 12			9962.13	11,707.59	28,592.26	1000.79	57,865.95	5972.75	1000.00	1968.0	2952

* Aggregate Drain, "as per plan" quantities shown on this sheet are for drains at Pressure Relief Joint locations. See Std. Drawing BP-11 and Aggregate Drain, "as per plan" detail on Sheet 9.

PAVEMENT TABLE

"RAMPS & AT-GRADE INTERSECTIONS"

Computations By Initials	JMD	Date	12/20/83
Computations Checked By Initials	JDB	Date	12-20-83
Final Revisions By Initials		Date	

FHWA REGION	STATE	PROJECT	
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VAN WERT COUNTY
VAN-30-4.05

Station		848		407		617		202	Special	605
		Asphalt Concrete Surface Course, Type 1	Asphalt Concrete Intermediate Course, Type 2	Tack Coat	Cover Aggregate	Shoulder Separation	Compacted Aggregate	Wearing Course Removed	Pressure Relief Joint, Std. Type "D"	Aggregate Drain, as per plan *
From	To	Cu.Yd.	Cu.Yd.	Gal.	Ton	Sq.Yd.	Cu.Yd.	Sq.Yd.	Lin.Ft.	Lin.Ft.
Weigh Station - Ramp "A"						584.45	58.34		16.0	18
Pavement		80.00	89.75	232.01	8.12					
Shoulder		36.81	41.82	106.60	3.73					
Weigh Station - Ramp "B"						1017.54	103.45		36.8	36
Pavement		133.56	154.03	386.30	13.51					
Shoulder		103.46	87.28	247.62	8.66					
Rest Area - Ramp "A"						825.44	83.89		20.8	18
Pavement		103.65	118.13	300.13	10.50					
Shoulder		97.33	74.31	227.47	7.96					
Rest Area - Ramp "B"						533.48	53.03		16.0	18
Pavement		72.87	81.19	211.47	7.40					
Shoulder		38.27	43.57	107.14	3.75					
Rest Area - Ramp "C"						532.63	52.94		16.0	18
Pavement		72.82	81.14	211.34	7.39					
Shoulder		38.15	43.43	107.05	3.75					
Rest Area - Ramp "D"						825.44	83.89		20.8	18
Pavement		103.65	118.13	300.13	10.50					
Shoulder		97.28	74.30	227.40	7.96					
U.S.R. 224 - Ramp "A"						1802.99	183.02	178.89	124.8	126
Pavement		373.86	430.27	1071.46	37.49					
Shoulder		150.16	141.21	388.23	13.59					
U.S.R. 224 - Ramp "B"						1154.76	118.65	178.89	67.0	72
Pavement		236.33	271.06	673.82	23.58					
Shoulder		74.55	87.24	210.00	7.34					
U.S.R. 224 - Ramp "C"						1413.89	144.10		55.0	54
Pavement		240.09	282.26	692.96	24.25					
Shoulder		104.40	121.37	290.79	10.18					
U.S.R. 224 - Ramp "D"						1319.82	137.48		36.8	36
Pavement		161.93	194.32	466.36	16.32					
Shoulder		124.18	111.54	303.89	10.64					
Dixon Rd. Intersection (Median)										
249+55.44	257+86.94					401.85	41.86			
Pavement		36.60	43.93	105.42	3.96					
Shoulder		13.95	16.74	40.18	1.41					
Dixon Rd. Intersection (North)										
253+38.11	254+88.45					55.85	5.82			
Pavement		11.34	4.84	34.75	1.22					
Shoulder		3.23	2.05	8.38	0.29					

Station		848		407		617		202	Special	605
		Asphalt Concrete Surface Course, Type 1	Asphalt Concrete Intermediate Course, Type 2	Tack Coat	Cover Aggregate	Shoulder Separation	Compacted Aggregate	Wearing Course Removed	Pressure Relief Joint, Std. Type "D"	Aggregate Drain, as per plan *
From	To	Cu.Yd.	Cu.Yd.	Gal.	Ton	Sq.Yd.	Cu.Yd.	Sq.Yd.	Lin.Ft.	Lin.Ft.
Dixon Rd. Intersection (South)										
252+56.31	254+03.88					55.85	5.82			
Pavement		10.67	4.71	32.63	1.14					
Shoulder		3.23	2.05	8.38	0.29					
S.R. 49 (Median)										
278+52.19	286+94.81					401.85	41.86			
Pavement		36.60	43.93	105.42	3.69					
Shoulder		13.95	16.74	40.18	1.41					
S.R. 49 (North)										
281+88.57	283+19.51					54.34	5.66			
Pavement		9.82	3.99	30.14	1.06					
Shoulder		3.15	1.99	8.15	0.29					
S.R. 49 - (South)										
282+32.49	283+63.43					54.34	5.66			
Pavement		9.83	3.99	30.16	1.06					
Shoulder		3.15	1.99	8.15	0.29					
Colwell Rd-Intersection (Median)										
368+91.19	377+28.81					401.85	41.86			
Pavement		38.63	46.35	111.24	3.89					
Shoulder		13.95	16.74	40.18	1.41					
Colwell Rd. - Intersection (North)										
372+22.58	373+53.50					54.34	5.66			
Pavement		9.82	3.99	30.16	1.06					
Shoulder		3.15	1.99	8.15	0.29					
Colwell Rd-Intersection (South)										
372+66.50	373+97.42					54.34	5.66			
Pavement		9.82	3.99	30.16	1.06					
Shoulder		3.15	1.99	8.15	0.29					
Convoy Rd-Intersection (Median)										
407+25.69	415+54.57					401.85	41.86			
Pavement		36.60	43.93	105.42	3.69					
Shoulder		13.95	16.74	40.19	1.41					
Convoy Rd-Intersection (North)										
411+07.13	412+56.12					55.85	5.82			
Pavement		12.50	4.77	38.47	1.35					
Shoulder		3.23	2.05	8.38	0.29					
Convoy Rd-Intersection (South)										
410+24.14	411+73.13					55.85	5.82			
Pavement		11.72	4.77	35.98	1.26					
Shoulder		3.23	2.05	8.38	0.29					
Sub-Totals to Sheet 12		2758.62	2942.66	7678.97	269.02	12058.60	1232.15	357.78	410.0	414

* Aggregate Drain, "as per plan" quantities shown on this sheet are for drains at Pressure Relief Joint locations. See Std. Drawing BP-11 and Aggregate Drain, "as per plan" detail on Sheet 9.

Computations By Initials J.M.S. Date 12/20/83
Computations Checked By Initials [illegible] Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
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VAN WERT COUNTY
VAN-30-4.05

PAVEMENT TABLE

"Ramps & At Grade Intersections" Continued

Station From	Station To		848 Asphalt Concrete Surface Course Type I	848 Asphalt Concrete Intermediate Course Type I	407 Tack Coat	407 Cover Aggregate	617 Shoulder Preparation	617 Compacted Aggregate	202 Wearing Course Removed	Special Pressure Relief Joint Std. Joint D	605 Aggregate Drains as per plan *
			Cu. Yd.	Cu. Yd.	Gal.	Ton	Sq. Yd.	Cu. Yd.	Sq. Yd.	Lin. Ft.	Lin. Ft.
Richey Rd. Intersection (Median)											
493+91.95	502+29.53						401.85	41.86			
Pavement			38.63	46.35	111.24	3.89					
Shoulder			13.95	16.74	40.19	1.41					
Richey Rd. Intersection (North)											
497+21.93	498+53.90						54.34	5.66			
Pavement			10.13	4.04	31.11	1.09					
Shoulder			3.15	1.99	8.15	0.29					
Richey Rd. Intersection (South)											
497+66.88	498+96.78						54.34	5.66			
Pavement			9.86	3.94	30.30	1.06					
Shoulder			3.15	1.99	8.15	0.29					
Liberty Rd. Intersection (Median)											
552+13.93	560+50.07						401.85	41.86			
Pavement			38.28	45.94	110.26	3.86					
Shoulder			13.95	16.74	40.18	1.41					
Liberty Rd. Intersection (North)											
555+49.79	556+80.31						54.34	5.66			
Pavement			9.71	3.97	29.81	1.04					
Shoulder			3.15	1.99	8.15	0.29					
Liberty Rd. Intersection (South)											
555+82.73	557+13.19						54.34	5.66			
Pavement			10.35	3.97	31.84	1.11					
Shoulder			3.15	1.99	8.15	0.29					
Sheet Totals			157.96	149.65	457.53	16.03	1021.06	106.36			
Totals Sheet No. 10			9962.13	11,707.59	28,592.26	1000.79	57,865.95	5972.75	1000.00	1968.0	2952
Totals Sheet No. 11			2758.62	2942.66	7678.97	269.02	12,058.60	1232.15	357.78	410.0	414
Grand Totals to Sheets 23 & 24			12,878.21	14,799.90	36,728.76	1285.84	70,945.61	7311.26	1357.78	2378.0	3366

** Aggregate Drain, "as per plan" quantities shown on this sheet are for drains at Pressure Relief Joint locations. See Std. Drawing BP-11 and Aggregate Drain, as per plan Detail on Sheet 9.

PAVEMENT COMPUTATIONS
U.S.R. 30

Computations By Initials: J.M.S. Date: 12/19/83
Computations Checked By Initials: G.R. Date: 12-20-83
Final Revisions By Initials: Date

FHWA REGION	STATE	PROJECT	
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VAN WERT COUNTY
VAN-30-4.05

U.S.R. 30 ~ Mainline ~
Pavement Factors ~
Mainline ~ (Width = 2(24)):
848, Type 1: (1.25)(1 1/12)(48)(1)(1/27) = 0.185185 Cu.Yd./Lin.Ft.
848, Type 2: (1.50)(1 1/12)(48)(1)(1/27) = 0.222222 Cu.Yd./Lin.Ft.
407 Tack Coat: (48)(1)(1/9)(0.10) = 0.533333 Gal./Lin.Ft.
407 Cover Aggregate: (48)(1)(1/9)(7/2000) = 0.018667 Ton/Lin.Ft.
Inside Shoulder ~ (Width = 4):
848, Type 1: (1.25)(1 1/12)(4)(1)(1/27) = 0.015432 Cu.Yd./Lin.Ft.
848, Type 2: (1.50)(1 1/12)(4)(1)(1/27) = 0.018519 Cu.Yd./Lin.Ft.
407 Tack Coat: (4)(1)(1/9)(0.10) = 0.044444 Gal./Lin.Ft.
407 Cover Aggregate: (4)(1)(1/9)(7/2000) = 0.001556 Ton/Lin.Ft.
Outside Shoulder ~ (Width = 8):
848, Type 1: (1.25)(1 1/12)(8)(1)(1/27) = 0.030864 Cu.Yd./Lin.Ft.
848, Type 2: (1.50)(1 1/12)(8)(1)(1/27) = 0.037037 Cu.Yd./Lin.Ft.
407 Tack Coat: (8)(1)(1/9)(0.10) = 0.088889 Gal./Lin.Ft.
407 Cover Aggregate: (8)(1)(1/9)(7/2000) = 0.003111 Ton/Lin.Ft.
Shoulder Reconditioning:
617 Shoulder Preparation: (4)(1)(1/9) = 0.444444 Sq.Yd./Lin.Ft.
617 Compacted Aggregate: (3.75)(1 1/12)(4)(1)(1/27) = 0.046296 Cu.Yd./Lin.Ft.
617 Water ~ Quantity Calculated on total 617 Quantity.

Transition Factors ~
Transition ~ (110') (Weigh Station & Rest Area Ramps):
848, Type 1: (1)(1.25)(1 1/12)(20) + (1/2)(2.25)(1 1/12)(20)(1)(1/27) = 0.389661 Cu.Yd./Ft. of Width
848, Type 2: (1/2)(1.50 + 1.0)(1 1/12)(20)(1)(1/27) = 0.077161 Cu.Yd./Ft. of Width
407 Tack Coat: (110)(1)(1/9)(0.10) = 1.222222 Gals./Ft. of Width
407 Cover Aggregate: (110)(1)(1/9)(7/2000) = 0.042778 Ton/Ft. of Width

Transition (137.50') ~ (@ Begin & End Work):
848, Type 1: (1)(1.25)(1 1/12)(25) + (1/2)(2.25)(1 1/12)(112.50) + (1.25)(1 1/12)(62.50)(1)(1/27) = 0.728202 Cu.Yd./Ft. of Width
848, Type 2: (1/2)(1.50 + 1.0)(1 1/12)(25)(1)(1/27) = 0.096451 Cu.Yd./Ft. of Width
407 Tack Coat: (137.50)(1)(1/9)(0.10) = 1.527778 Gals./Ft. of Width
407 Cover Aggregate: (137.50)(1)(1/9)(7/2000) = 0.053472 Ton/Ft. of Width

Transition ~ (137.50') ~ (Begin Work on U.S.R. 224):
848, Type 1: (1)(1.25)(1 1/12)(25) + (1/2)(2.25)(1 1/12)(112.50)(1)(1/27) = 0.487076 Cu.Yd./Ft. of Width
848, Type 2: (1/2)(1.50 + 1.0)(1 1/12)(25)(1)(1/27) = 0.096451 Cu.Yd./Ft. of Width
407 Tack Coat: (137.50)(1)(1/9)(0.10) = 1.527778 Gals./Ft. of Width
407 Cover Aggregate: (137.50)(1)(1/9)(7/2000) = 0.053472 Ton/Ft. of Width

Transition ~ (30') ~ (Mainline Bridges):
848, Type 1: [(1.25)(1 1/12)(6) + (1/2)(2.25)(1 1/12)(24)](1)(1/27) = 0.106482 Cu.Yd./Ft. of Width
848, Type 2: (1/2)(1.50 + 1.0)(1 1/12)(6)(1)(1/27) = 0.023148 Cu.Yd./Ft. of Width
407 Tack Coat: (30)(1)(1/9)(0.10) = 0.333333 Gal./Ft. of Width
407 Cover Aggregate: (30)(1)(1/9)(7/2000) = 0.011667 Ton/Ft. of Width

Transition ~ (70') ~ (Structure No. VAN-30-1068 on U.S.R. 224, Ramps):
848, Type 1: (1)(10)(1/9)(1.25)(1 3/8) + (1)(60)(1/9)(1 1/2)(2.25 + 1.00)(1 3/8) = 0.339506 Cu.Yd./Ft. of Width
848, Type 2: (1)(10)(1/9)(1.50 + 1)(1 3/8) = 0.038580 Cu.Yd./Ft. of Width
407 Tack Coat: (1)(70)(1/9)(0.10) = 0.777778 Gal./Ft. of Width
407 Cover Aggregate: (1)(70)(1/9)(7/2000) = 0.027222 Ton/Ft. of Width

Sta. 212+66.66 to Sta. 214+04.16 ~ (Transition) ~ Length = 137.50 Lin.Ft.
Pavement ~
848, Type 1: (2)(24)(0.728202) = 34.95 Cu.Yd.
848, Type 2: (2)(24)(0.096451) = 4.63 Cu.Yd.
407 Tack Coat: (2)(24)(1.527778) = 73.33 Gals.
407 Cover Aggregate: (2)(24)(0.053472) = 2.57 Tons
Inside Shoulder ~
848, Type 1: (2)(4)(0.728202) = 5.83 Cu.Yd.
848, Type 2: (2)(4)(0.096451) = 0.77 Cu.Yd.
407 Tack Coat: (2)(4)(1.527778) = 12.22 Gals.
407 Cover Aggregate: (2)(4)(0.053472) = 0.43 Ton
Outside Shoulder ~
848, Type 1: (2)(8)(0.728202) = 11.65 Cu.Yd.
848, Type 2: (2)(8)(0.096451) = 1.54 Cu.Yd.
407 Tack Coat: (2)(8)(1.527778) = 24.44 Gals.
407 Cover Aggregate: (2)(8)(0.053472) = 0.86 Ton
Shoulder Reconditioning: 4 (137.50) = 550.00 Lin.Ft.
617 Shoulder Preparation: (550)(0.444444) = 244.44 Sq.Yd.
617 Compacted Aggregate: (550)(0.046296)(1/2) = 12.73 Cu.Yd.
202 Wearing Course Removed: (2)(62.50)(36)(1/9) = 500.00 Sq.Yd.

Sta. 214+04.16 to Sta. 313+01.56 ~ Length = 9,238.03 Lin.Ft.
(Sta. 225+38.17 Bk. = Sta. 231+97.54 Ahd) ~ Deduct = 659.37'
Pavement ~
848, Type 1: (9,238.03)(0.185185) = 1,710.74 Cu.Yd.
848, Type 2: (9,238.03)(0.222222) = 2,052.89 Cu.Yd.
407 Tack Coat: (9,238.03)(0.533333) = 4,926.95 Gals.
407 Cover Aggregate: (9,238.03)(0.018667) = 172.45 Tons
Inside Shoulder ~
Length: 2(9,238.03) - 480.17 - 480.21 - 487.62 - (2)(280.61) - 492.62 = 16,014.22 Lin.Ft.
848, Type 1: (16,014.22)(0.015432) = 247.13 Cu.Yd.
848, Type 2: (16,014.22)(0.018519) = 296.57 Cu.Yd.
407 Tack Coat: (16,014.22)(0.044444) = 711.74 Gals.
407 Cover Aggregate: (16,014.22)(0.001556) = 24.92 Tons
Outside Shoulder ~
Length: 2(9,238.03) - 2(130.94) - 150.34 - 147.57 = 17,916.27 Lin.Ft.
848, Type 1: (17,916.27)(0.030864) = 552.97 Cu.Yd.
848, Type 2: (17,916.27)(0.037037) = 663.56 Cu.Yd.
407 Tack Coat: (17,916.27)(0.088889) = 1,592.56 Gals.
407 Cover Aggregate: (17,916.27)(0.003111) = 55.74 Tons
Shoulder Reconditioning ~
Length: 16,034.84 + 17,916.27 = 33,951.11 Lin.Ft.
617 Shoulder Preparation: (33,951.11)(0.444444) = 15,089.37 Sq.Yd.
617 Compacted Aggregate: (33,951.11)(0.046296) = 1,571.80 Cu.Yd.

Sta. 313+01.56 to Sta. 313+31.56 ~ (Transition) ~ Length = 30.00 Lin.Ft.
Pavement ~
848, Type 1: (2)(24)(0.106482) = 5.11 Cu.Yd.
848, Type 2: (2)(24)(0.023148) = 1.11 Cu.Yd.
407 Tack Coat: (2)(24)(0.333333) = 16.00 Gals.
407 Cover Aggregate: (2)(24)(0.011667) = 0.56 Ton
Inside Shoulder ~
848, Type 1: (2)(4)(0.106482) = 0.85 Cu.Yd.
848, Type 2: (2)(4)(0.023148) = 0.19 Cu.Yd.
407 Tack Coat: (2)(4)(0.333333) = 2.67 Gals.
407 Cover Aggregate: (2)(4)(0.011667) = 0.09 Ton
Outside Shoulder ~
848, Type 1: (2)(8)(0.106482) = 1.70 Cu.Yd.
848, Type 2: (2)(8)(0.023148) = 0.37 Cu.Yd.
407 Tack Coat: (2)(8)(0.333333) = 5.33 Gals.
407 Cover Aggregate: (2)(8)(0.011667) = 0.19 Ton
Shoulder Reconditioning ~
Length: 4(30') = 120.00 Lin.Ft.
617 Shoulder Preparation: (120)(0.444444) = 53.33 Sq.Yd.
617 Compacted Aggregate: (120)(0.046296)(1/2) = 2.78 Cu.Yd.

Sta. 313+31.56 to Sta. 314+36.44 ~ Length = 104.88 Lin.Ft.
Structure No. VAN-30-0581 Lt. & Rt. & Existing Overlays ~ No Work

Sta. 314+36.44 to Sta. 314+66.44 ~ (Transition) ~ Length = 30.00 Lin.Ft.
Pavement ~
848, Type 1: (2)(24)(0.106482) = 5.11 Cu.Yd.
848, Type 2: (2)(24)(0.023148) = 1.11 Cu.Yd.
407 Tack Coat: (2)(24)(0.333333) = 16.00 Gals.
407 Cover Aggregate: (2)(24)(0.011667) = 0.56 Ton
Inside Shoulder ~
848, Type 1: (2)(4)(0.106482) = 0.85 Cu.Yd.
848, Type 2: (2)(4)(0.023148) = 0.19 Cu.Yd.
407 Tack Coat: (2)(4)(0.333333) = 2.67 Gals.
407 Cover Aggregate: (2)(4)(0.011667) = 0.09 Ton
Outside Shoulder ~
848, Type 1: (2)(8)(0.106482) = 1.70 Cu.Yd.
848, Type 2: (2)(8)(0.023148) = 0.37 Cu.Yd.
407 Tack Coat: (2)(8)(0.333333) = 5.33 Gals.
407 Cover Aggregate: (2)(8)(0.011667) = 0.19 Ton
Shoulder Reconditioning ~
Length: 4(30') = 120.00 Lin.Ft.
617 Shoulder Preparation: (120)(0.444444) = 53.33 Sq.Yd.
617 Compacted Aggregate: (120)(0.046296)(1/2) = 2.78 Cu.Yd.

Sta. 314+66.44 to Sta. 491+06.63 ~ Length = 17,640.19 Lin.Ft.
Pavement ~
848, Type 1: (17,640.19)(0.185185) = 3,266.70 Cu.Yd.
848, Type 2: (17,640.19)(0.222222) = 3,920.04 Cu.Yd.
407 Tack Coat: (17,640.19)(0.533333) = 9,408.10 Gals.
407 Cover Aggregate: (17,640.19)(0.018667) = 329.29 Tons
Inside Shoulder ~
Length: 2(17,640.19) - 2(487.62) - 478.88 - 478.90 = 33,347.36 Lin.Ft.
848, Type 1: (33,347.36)(0.015432) = 514.62 Cu.Yd.
848, Type 2: (33,347.36)(0.018519) = 617.56 Cu.Yd.
407 Tack Coat: (33,347.36)(0.044444) = 1,482.09 Gals.
407 Cover Aggregate: (33,347.36)(0.001556) = 51.89 Tons
Outside Shoulder ~
Length: 2(17,640.19) - 800.00 - 1650 - 903.74 - 904.74 - 1,670.60 - 1,669.80 - 2(130.92) - 2(148.99) = 27,121.68 Lin.Ft.
848, Type 1: (27,121.68)(0.030864) = 837.08 Cu.Yd.
848, Type 2: (27,121.68)(0.037037) = 1,004.51 Cu.Yd.
407 Tack Coat: (27,121.68)(0.088889) = 2,410.82 Gals.
407 Cover Aggregate: (27,121.68)(0.003111) = 84.38 Tons
Shoulder Reconditioning ~
Length: 27,121.68 + 33,347.36 = 60,469.04'
617 Shoulder Preparation: (60,469.04)(0.444444) = 26,875.10 Sq.Yd.
617 Compacted Aggregate: (60,469.04)(0.046296) = 2,799.47 Cu.Yd.

Sta. 491+06.63 to Sta. 491+36.63 ~ (Transition) ~ Length = 30.00 Lin.Ft.
Pavement ~
848, Type 1: (2)(24)(0.106482) = 5.11 Cu.Yd.
848, Type 2: (2)(24)(0.023148) = 1.11 Cu.Yd.
407 Tack Coat: (2)(24)(0.333333) = 16.00 Gals.
407 Cover Aggregate: (2)(24)(0.011667) = 0.56 Ton
Inside Shoulder ~
848, Type 1: (2)(4)(0.106482) = 0.85 Cu.Yd.
848, Type 2: (2)(4)(0.023148) = 0.19 Cu.Yd.
407 Tack Coat: (2)(4)(0.333333) = 2.67 Gals.
407 Cover Aggregate: (2)(4)(0.011667) = 0.09 Ton
Outside Shoulder ~
848, Type 1: (2)(8)(0.106482) = 1.70 Cu.Yd.
848, Type 2: (2)(8)(0.023148) = 0.37 Cu.Yd.
407 Tack Coat: (2)(8)(0.333333) = 5.33 Gals.
407 Cover Aggregate: (2)(8)(0.011667) = 0.19 Ton
Shoulder Reconditioning ~ Length: 4(30') = 120.00 Lin.Ft.
617 Shoulder Preparation: (120)(0.444444) = 53.33 Sq.Yd.
617 Compacted Aggregate: (120)(0.046296)(1/2) = 2.78 Cu.Yd.

Sta. 491+36.63 to Sta. 492+83.37 ~ Length = 146.74 Lin.Ft.
Structure No. VAN-30-0918 Lt. & Rt. & Existing Overlays ~ No Work

Sta. 492+83.37 to Sta. 493+13.37 ~ (Transition) ~ Length = 30.00 Lin.Ft.
Pavement ~
848, Type 1: (2)(24)(0.106482) = 5.11 Cu.Yd.
848, Type 2: (2)(24)(0.023148) = 1.11 Cu.Yd.
407 Tack Coat: (2)(24)(0.333333) = 16.00 Gals.
407 Cover Aggregate: (2)(24)(0.011667) = 0.56 Ton
Inside Shoulder ~
848, Type 1: (2)(4)(0.106482) = 0.85 Cu.Yd.
848, Type 2: (2)(4)(0.023148) = 0.19 Cu.Yd.
407 Tack Coat: (2)(4)(0.333333) = 2.67 Gals.
407 Cover Aggregate: (2)(4)(0.011667) = 0.09 Ton
Outside Shoulder ~
848, Type 1: (2)(8)(0.106482) = 1.70 Cu.Yd.
848, Type 2: (2)(8)(0.023148) = 0.37 Cu.Yd.
407 Tack Coat: (2)(8)(0.333333) = 5.33 Gals.
407 Cover Aggregate: (2)(8)(0.011667) = 0.19 Ton
Shoulder Reconditioning ~
Length: 4(30') = 120.00 Lin.Ft.
617 Shoulder Preparation: (120)(0.444444) = 53.33 Sq.Yd.
617 Compacted Aggregate: (120)(0.046296)(1/2) = 2.78 Cu.Yd.

Sta. 493+13.37 to Sta. 510+30.24 ~ Length = 1,716.87 Lin.Ft.
Pavement ~
848, Type 1: (1,716.87)(0.185185) = 317.94 Cu.Yd.
848, Type 2: (1,716.87)(0.222222) = 381.53 Cu.Yd.
407 Tack Coat: (1,716.87)(0.533333) = 915.66 Gals.
407 Cover Aggregate: (1,716.87)(0.018667) = 32.05 Tons
Inside Shoulder ~
Length: 2(1,716.87) - 488.34 - 486.86 = 2,458.54 Lin.Ft.
848, Type 1: (2,458.54)(0.015432) = 37.94 Cu.Yd.
848, Type 2: (2,458.54)(0.018519) = 45.53 Cu.Yd.
407 Tack Coat: (2,458.54)(0.044444) = 109.27 Gals.
407 Cover Aggregate: (2,458.54)(0.001556) = 3.83 Tons
Outside Shoulder ~
Length: 2(1,716.87) - 131.97 - 129.90 = 3,171.87 Lin.Ft.
848 Type 1: (3,171.87)(0.030864) = 97.90 Cu.Yd.
848 Type 2: (3,171.87)(0.037037) = 117.48 Cu.Yd.
407 Tack Coat: (3,171.38)(0.088889) = 281.94 Gals.
407 Cover Aggregate: (3,171.38)(0.003111) = 9.87 Tons
Shoulder Reconditioning ~
Length: 2,458.54 + 3,171.87 = 5,630.41 Lin.Ft.
617 Shoulder Preparation: (5,630.41)(0.444444) = 2,502.40 Sq.Yd.
617 Compacted Aggregate: (5,630.41)(0.046296) = 260.67 Cu.Yd.

Sta. 510+30.24 to Sta. 510+60.24 ~ (Transition) ~ Length = 30.00 Lin.Ft.
Pavement ~
848, Type 1: (2)(24)(0.106482) = 5.11 Cu.Yd.
848, Type 2: (2)(24)(0.023148) = 1.11 Cu.Yd.
407 Tack Coat: (2)(24)(0.333333) = 16.00 Gals.
407 Cover Aggregate: (2)(24)(0.011667) = 0.56 Ton
Inside Shoulder ~
848, Type 1: (2)(4)(0.106482) = 0.85 Cu.Yd.
848, Type 2: (2)(4)(0.023148) = 0.19 Cu.Yd.
407 Tack Coat: (2)(4)(0.333333) = 2.67 Gals.
407 Cover Aggregate: (2)(4)(0.011667) = 0.09 Ton
Outside Shoulder ~
848, Type 1: (2)(8)(0.106482) = 1.70 Cu.Yd.
848, Type 2: (2)(8)(0.023148) = 0.37 Cu.Yd.
407 Tack Coat: (2)(8)(0.333333) = 5.33 Gals.
407 Cover Aggregate: (2)(8)(0.011667) = 0.19 Ton
Shoulder Reconditioning ~
Length: 4(30') = 120.00 Lin.Ft.
617 Shoulder Preparation: (120)(0.444444) = 53.33 Sq.Yd.
617 Compacted Aggregate: (120)(0.046296)(1/2) = 2.78 Cu.Yd.

Sta. 510+60.24 to Sta. 512+19.76 ~ Length = 159.52 Lin.Ft.
Structure No. VAN-30-0955 Lt. & Rt. & Existing Overlays ~ No Work

PAVEMENT COMPUTATIONS
U.S.R. 30

Computations By Initials JM.S. Date 12/20/23
Computations Checked By Initials JDE Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
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VAN WERT COUNTY
VAN-30-4.05

U.S.R. 30 ~ Mainline ~ (Cont.)~
Sta. 512+19.76 to Sta. 512+49.76 ~ (Transition)~
Length = 30.00 Lin.Ft.

Pavement~
- 848, Type 1: (2)(24)(0.106482) = 5.11 Cu.Yd.
- 848, Type 2: (2)(24)(0.023148) = 1.11 Cu.Yd.
- 407 Tack Coat: (2)(24)(0.333333) = 16.00 Gals.
- 407 Cover Aggregate: (2)(24)(0.011667) = 0.56 Ton

Inside Shoulder~
- 848, Type 1: (2)(4)(0.106482) = 0.85 Cu.Yd.
- 848, Type 2: (2)(4)(0.023148) = 0.19 Cu.Yd.
- 407 Tack Coat: (2)(4)(0.333333) = 2.67 Gals.
- 407 Cover Aggregate: (2)(4)(0.011667) = 0.09 Ton

Outside Shoulder~
- 848, Type 1: (2)(8)(0.106482) = 1.70 Cu.Yd.
- 848, Type 2: (2)(8)(0.023148) = 0.37 Cu.Yd.
- 407 Tack Coat: (2)(8)(0.333333) = 5.33 Gals.
- 407 Cover Aggregate: (2)(8)(0.011667) = 0.19 Ton

Shoulder Reconditioning~
- Length: 4(30) = 120.00 Lin.Ft.
- 617 Shoulder Preparation: (120)(0.444444) = 53.33 Sq.Yd.
- 617 Compacted Aggregate: (120)(0.046296)(1/12) = 2.78 Cu.Yd.

Sta. 512+49.76 to Sta. 569+26.53 ~ Length = 5,676.77 Lin.Ft.

Pavement
- 848, Type 1: (5,676.77)(0.185185) = 1,051.25 Cu.Yd.
- 848, Type 2: (5,676.77)(0.222222) = 1,261.50 Cu.Yd.
- 407 Tack Coat: (5,676.77)(0.533333) = 3,027.61 Gals.
- 407 Cover Aggregate: (5,676.77)(0.018667) = 105.97 Tons

Inside Shoulder~
- Length: 2(5,676.77) - 2(486.14) = 10,381.26 Lin.Ft.
- 848, Type 1: (10,381.26)(0.015432) = 160.20 Cu.Yd.
- 848, Type 2: (10,381.26)(0.018519) = 192.25 Cu.Yd.
- 407 Tack Coat: (10,381.26)(0.044444) = 461.38 Gals.
- 407 Cover Aggregate: (10,381.26)(0.001556) = 16.15 Tons

Outside Shoulder~
- Length: 2(5,676.77) - 130.52 - 130.46 - 760.46 - 788.53 = 9,553.57 Lin.Ft.
- 848, Type 1: (9,553.57)(0.030864) = 294.86 Cu.Yd.
- 848, Type 2: (9,553.57)(0.037037) = 353.84 Cu.Yd.
- 407 Tack Coat: (9,553.57)(0.088889) = 849.21 Gals.
- 407 Cover Aggregate: (9,553.57)(0.003111) = 29.72 Tons

Shoulder Reconditioning~
- Length: 10,381.26 + 9,553.57 = 19,934.83 Lin.Ft.
- 617 Shoulder Preparation: (19,934.83)(0.444444) = 8,859.92 Sq.Yd.
- 617 Compacted Aggregate: (19,934.83)(0.046296) = 922.90 Cu.Yd.

Sta. 569+26.53 to Sta. 570+01.53 ~ (Transition)~
Length = 75.00 Lin.Ft.

Pavement~
- 848, Type 1: (48)[(25)(1.25)(1/12) + (2.25+1.25)(1/2)(1/12)(50)](1/27) = 17.59 Cu.Yd.
- 848, Type 2: (1+1.50)(1/2)(1/12)(25)(48)(1/27) = 4.63 Cu.Yd.
- 407 Tack Coat: (48)(75)(1/9)(0.10) = 40.00 Gals.
- 407 Cover Aggregate: (48)(75)(1/9)(1/2000) = 1.40 Tons

Inside Shoulder~
- 848, Type 1: (8)[(25)(1.25)(1/12) + (2.25+1.25)(1/2)(1/12)(50)](1/27) = 2.93 Cu.Yd.
- 848, Type 2: (1+1.50)(1/2)(1/12)(25)(8)(1/27) = 0.77 Cu.Yd.
- 407 Tack Coat: (2)(4)(75)(1/9)(0.10) = 6.67 Gals.
- 407 Cover Aggregate: (2)(4)(75)(1/9)(1/2000) = 0.23 Ton

Outside Shoulder~
- 848, Type 1: (8)[(25)(1.25)(1/12) + (2.25+1.25)(1/2)(1/12)(50)](1/27) = 2.93 Cu.Yd.
- 848, Type 2: (1+1.25)(1/2)(1/12)(25)(8)(1/27) = 0.77 Cu.Yd.
- 407 Tack Coat: (8)(75)(1/9)(0.10) = 6.67 Gals.
- 407 Cover Aggregate: (8)(75)(1/9)(1/2000) = 0.23 Ton

Shoulder Reconditioning~
- Length: (3)(75.00) = 225.00 Lin.Ft.
- 617 Shoulder Preparation: (225.00)(0.444444) = 100.00 Sq.Yd.
- 617 Compacted Aggregate: [(3.75)(1/12)(4) + (2.25)(1/12)(4)](1/2)(75)(3)(1/27) = 8.33 Cu.Yd.

Sta. 570+01.53 to Sta. 571+56.85 ~ Length = 155.32 Lin.Ft.
(Resurfacing under Structure No. VAN-30-1068

Pavement~ (Cont)~
- 848, Type 1: (1.25)(1/12)(155.32)(48)(1/27) = 28.76 Cu.Yd.
- 407 Tack Coat: (48)(155.32)(1/9)(0.10) = 82.84 Gals.
- 407 Cover Aggregate: (48)(155.32)(1/9)(1/2000) = 2.90 Tons

Inside Shoulder~
- 848, Type 1: (1.25)(1/12)(155.32)(4)(2)(1/27) = 4.79 Cu.Yd.
- 407 Tack Coat: (4)(155.32)(2)(1/9)(0.10) = 13.81 Gals.
- 407 Cover Aggregate: (4)(155.32)(2)(1/9)(1/2000) = 0.48 Ton

Outside Shoulder~
- 848, Type 1: (1.25)(1/12)(155.32)(8)(1/27) = 4.79 Cu.Yd.
- 407 Tack Coat: (8)(155.32)(1/9)(0.10) = 13.81 Gals.
- 407 Cover Aggregate: (8)(155.32)(1/9)(1/2000) = 0.48 Ton

Shoulder Reconditioning~
- Length: (3)(155.32) = 465.96 Lin.Ft.
- 617 Shoulder Preparation: (465.96)(0.444444) = 207.09 Sq.Yd.
- 617 Compacted Aggregate: (2.25)(1/12)(4)(465.96)(1/27) = 12.94 Cu.Yd.

Sta. 571+56.85 to Sta. 572+31.85 ~ (Transition)~
Length = 75.00 Lin.Ft.

Pavement~
- 848, Type 1: (48)[(25)(1.25)(1/12) + (2.25+1.25)(1/2)(1/12)(50)](1/27) = 17.59 Cu.Yd.
- 848, Type 2: (1+1.50)(1/2)(1/12)(25)(48)(1/27) = 4.63 Cu.Yd.
- 407 Tack Coat: (48)(75)(1/9)(0.10) = 40.00 Gals.
- 407 Cover Aggregate: (48)(75)(1/9)(1/2000) = 1.40 Tons

Inside Shoulder~
- 848, Type 1: (8)[(25)(1.25)(1/12) + (2.25+1.25)(1/2)(1/12)(50)](1/27) = 2.93 Cu.Yd.
- 848, Type 2: (1+1.50)(1/2)(1/12)(25)(8)(1/27) = 0.77 Cu.Yd.
- 407 Tack Coat: (2)(4)(75)(1/9)(0.10) = 6.67 Gals.
- 407 Cover Aggregate: (2)(4)(75)(1/9)(1/2000) = 0.23 Ton

Outside Shoulder~
- 848, Type 1: (8)[(25)(1.25)(1/12) + (2.25+1.25)(1/2)(1/12)(50)](1/27) = 2.93 Cu.Yd.
- 848, Type 2: (1+1.25)(1/2)(1/12)(25)(8)(1/27) = 0.77 Cu.Yd.
- 407 Tack Coat: (8)(75)(1/9)(0.10) = 6.67 Gals.
- 407 Cover Aggregate: (8)(75)(1/9)(1/2000) = 0.23 Ton

Shoulder Reconditioning~
- Length: (3)(75) = 225.00 Lin.Ft.
- 617 Shoulder Preparation: (225)(0.444444) = 100.00 Sq.Yd.
- 617 Compacted Aggregated: [(3.75)(1/12)(4) + (2.25)(1/12)(4)](1/2)(75)(3)(1/27) = 8.33 Cu.Yd.

Sta. 572+31.85 to Sta. 598+62.50 ~ Length = 2,630.65 Lin.Ft.

Pavement~
- 848, Type 1: (2,630.65)(0.185185) = 487.16 Cu.Yd.
- 848, Type 2: (2,630.65)(0.222222) = 584.59 Cu.Yd.
- 407 Tack Coat: (2,630.65)(0.533333) = 1,403.01 Gals.
- 407 Cover Aggregate: (2,630.65)(0.018667) = 49.11 Tons

Inside Shoulder~
- Length: (2)(2,630.65) = 5,261.30 Lin.Ft.
- 848, Type 1: (5,261.30)(0.015432) = 81.19 Cu.Yd.
- 848, Type 2: (5,261.30)(0.018519) = 97.43 Cu.Yd.
- 407 Tack Coat: (5,261.30)(0.044444) = 233.83 Gals.
- 407 Cover Aggregate: (5,261.30)(0.001556) = 8.19 Tons

Outside Shoulder~
- Length: (2)(2,630.65) - 501.75 - 902.13 - 1,641.48 = 2,215.94 Lin.Ft.
- 848, Type 1: (2,215.94)(0.030864) = 68.39 Cu.Yd.
- 848, Type 2: (2,215.94)(0.037037) = 82.07 Cu.Yd.
- 407 Tack Coat: (2,215.94)(0.088889) = 196.97 Gals.
- 407 Cover Aggregate: (2,215.94)(0.003111) = 6.89 Tons

Shoulder Reconditioning~
- Length: 5,261.30 + 2,215.94 = 7,477.24 Lin.Ft.
- 617 Shoulder Preparation: (7,477.24)(0.444444) = 3,323.21 Sq.Yd.
- 617 Compacted Aggregate: (7,477.24)(0.046296) = 346.17 Cu.Yd.

Sta. 598+62.50 to Sta. 600+00.00 ~ (Transition)~
Length = 137.50 Lin.Ft.

Pavement~
- 848, Type 1: (2)(24)(0.728202) = 34.95 Cu.Yd.

Sta. 598+62.50 to Sta. 600+00.00 ~ (Transition)~ (Cont)~

Pavement~ (Cont)~
- 848, Type 2: (2)(24)(0.096451) = 4.63 Cu.Yd.
- 407 Tack Coat: (2)(24)(1.527778) = 73.33 Gals.
- 407 Cover Aggregate: (2)(24)(0.053472) = 2.57 Tons

Inside Shoulder~
- 848, Type 1: (2)(4)(0.728202) = 5.83 Cu.Yd.
- 848, Type 2: (2)(4)(0.096451) = 0.77 Cu.Yd.
- 407 Tack Coat: (2)(4)(1.527778) = 12.22 Gals.
- 407 Cover Aggregate: (2)(4)(0.053472) = 0.43 Ton

Outside Shoulder~
- 848, Type 1: (2)(8)(0.728202) = 11.65 Cu.Yd.
- 848, Type 2: (2)(8)(0.096451) = 1.54 Cu.Yd.
- 407 Tack Coat: (2)(8)(1.527778) = 24.44 Gals.
- 407 Cover Aggregate: (2)(8)(0.053472) = 0.86 Ton

Shoulder Reconditioning~
- Length: (4)(137.50) = 550.00 Lin.Ft.
- 617 Shoulder Preparation: (550)(0.444444) = 244.44 Sq.Yd.
- 617 Compacted Aggregate: (550)(0.046296)(1/12) = 12.73 Cu.Yd.
- 202 Wearing Course Removed: (2)(62.50)(36)(1/9) = 500.00 Sq.Yd.

PAVEMENT COMPUTATIONS
U.S.R. 30

Computations By Initials: J.M.S. Date: 12/20/83
Computations Checked By Initials: J.W.B. Date: 12-20-83
Final Revisions By Initials: Date:

FHWA REGION	STATE	PROJECT	
5	OHIO		

15/65

VAN WERT COUNTY
VAN-30-4.05

U.S.R. 30 ~ (Ramps) ~
Weigh Station ~ Ramp "A" ~
Sta. 330+09.87 to Sta. 341+85.62
Pavement ~
Area: (1/9)[(1/2)(12)(100) + (12)(245.27) + 1/2(3,831.72)(456.63) - 1/2(1.90)(15.94) - (6.736/360)π(3,819.72)² + (16)(361.78) + (16)(16.17)] = 2,124.47 Sq.Yd.
848, Type 1: (2,124.47)(1.25)(1/36) = 73.77 Cu.Yd.
848, Type 2: (2,124.47)(1.50)(1/36) = 88.52 Cu.Yd.
407 Tack Coat: (2,124.47)(0.10) = 212.45 Gals.
407 Cover Aggregate: (2,124.47)(7/2000) = 7.44 Tons
Shoulders ~
Area: (1/9)[(100.72 + 245.27 + 456.15)(8) + (1/2)(3+8)(69.86) + (3)(378.58 + 277.35)] = 992.68 Sq.Yd.
848, Type 1: (992.68)(1.25)(1/36) = 34.47 Cu.Yd.
848, Type 2: (992.68)(1.50)(1/36) = 41.36 Cu.Yd.
407 Tack Coat: (992.68)(0.10) = 99.27 Gals.
407 Cover Aggregate: (992.68)(7/2000) = 3.47 Tons
Shoulder Reconditioning ~
Length of 4' Reconditioning: 100.72 + 245.27 + 456.15 = 802.14 Lin.Ft.
Length of Transition: = 99.86 Lin.Ft.
Length of 2' Reconditioning: 260.92 + 16.43 + 362.67 + 15.91 = 655.93 Lin.Ft.
617 Shoulder Preparation: (1/9)[(4)(802.14) + (1/2)(2+4)(99.86) + (2)(655.93)] = 535.56 Sq.Yd.
617 Compacted Aggregate: (3.75)(1/36)(535.56) = 55.79 Cu.Yd.
Sta. 341+85.62 to Sta. 342+97.11 ~ (Transition) ~
Length = 110.00 Lin.Ft.
Pavement Transition ~
848, Type 1: (16)(0.389661) = 6.23 Cu.Yd.
848, Type 2: (16)(0.077161) = 1.23 Cu.Yd.
407 Tack Coat: (16)(1.222222) = 19.56 Gals.
407 Cover Aggregate: (16)(0.042778) = 0.68 Ton
Shoulder Transition ~
848, Type 1: (6)(0.389661) = 2.34 Cu.Yd.
848, Type 2: (6)(0.077161) = 0.46 Cu.Yd.
407 Tack Coat: (6)(1.222222) = 7.33 Gals.
407 Cover Aggregate: (6)(0.042778) = 0.26 Ton
Shoulder Reconditioning ~
Length: 112.23 + 107.77 = 220.00 Lin.Ft.
617 Shoulder Preparation: (220.00)(2)(1/9) = 48.89 Sq.Yd.
617 Compacted Aggregate: (220.00)(2)(1/9)(3.75)(1/36)(1/2) = 2.55 Cu.Yd.

Weigh Station ~ Ramp "A" ~ Summary ~
Pavement ~
848, Type 1: 73.77 + 6.23 = 80.00 Cu.Yd.
848 Type 2: 88.52 + 1.23 = 89.75 Cu.Yd.
407 Tack Coat: 212.45 + 19.56 = 232.01 Gals.
407 Cover Aggregate: 7.44 + 0.68 = 8.12 Tons
Shoulders ~
848, Type 1: 34.47 + 2.34 = 36.81 Cu.Yd.
848, Type 2: 41.36 + 0.46 = 41.82 Cu.Yd.
407 Tack Coat: 99.27 + 7.33 = 106.60 Gals.
407 Cover Aggregate: 3.47 + 0.26 = 3.73 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: 535.56 + 48.89 = 584.45 Sq.Yd.
617 Compacted Aggregate: 55.79 + 2.55 = 58.34 Cu.Yd.

Weigh Station ~ Ramp "B" ~
Sta. 347+70.72 to Sta. 348+81.18 ~ (Transition) ~
Length = 110.00 Lin.Ft.
Pavement Transition ~
848, Type 1: (16)(0.389661) = 6.23 Cu.Yd.
848, Type 2: (16)(0.077161) = 1.23 Cu.Yd.
407 Tack Coat: (16)(1.222222) = 19.56 Gals.
407 Cover Aggregate: (16)(0.042778) = 0.68 Ton
Shoulder Transition ~
848, Type 1: (6)(0.389661) = 2.34 Cu.Yd.
848, Type 2: (6)(0.077161) = 0.46 Cu.Yd.
407 Tack Coat: (6)(1.222222) = 7.33 Gals.

Weigh Station ~ Ramp "B" ~ (Cont.) ~
Sta. 347+70.72 to Sta. 348+81.18 ~ (Transition) ~ (Cont.) ~
Shoulder Transition ~ (Cont.) ~
407 Cover Aggregate: (6)(0.042778) = 0.26 Tons
Shoulder Reconditioning ~
Length: 109.30 + 110.69 = 219.99 Lin.Ft.
617 Shoulder Preparation: (219.99)(2)(1/9) = 48.89 Sq.Yd.
617 Compacted Aggregate: (219.99)(2)(1/9)(3.75)(1/36)(1/2) = 2.55 Cu.Yd.

Sta. 348+81.18 to Sta. 355+50.00 ~
Pavement ~
Area: (16)(284.71 + 253.74 + 130.35)(1/9) = 1,188.98 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,188.98) = 41.28 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,188.98) = 49.54 Cu.Yd.
407 Tack Coat: (1,188.98)(0.10) = 118.90 Gals.
407 Cover Aggregate: (1,188.98)(7/2000) = 4.16 Tons
Shoulder ~ (Lt.) ~
Area: (3)(2)(284.71) + 253.11 + 254.37 + 129.70 + 131.00](1/9) = 445.87 Sq.Yd.
Area of Curb Removal: (8/12)(204.04)(1/9) = 15.11 Sq.Yd.
848, Type 1: (1.25)(1/36)(445.87 + 15.11) = 16.01 Cu.Yd.
848, Type 2: (1.50)(1/36)(445.87 + 15.11) = 19.21 Cu.Yd.
407 Tack Coat: (445.87)(0.10) = 44.59 Gals.
407 Cover Aggregate: (445.87)(7/2000) = 1.56 Tons
Shoulder Reconditioning ~
Length: 2(284.71) + 253.11 + 50.47 + 129.70 + 131.00 = 1,133.70 Lin.Ft.
617 Shoulder Preparation: (1,133.70)(2)(1/9) = 251.93 Sq.Yd.
617 Compacted Aggregate: (251.93)(3.75)(1/36) = 26.24 Cu.Yd.
Sta. 355+50.00 to Sta. 360+00.00 ~
Pavement ~
Area: (16)(50.10) + (17)(100.16) + (16)(300.06)](1/9) = 811.70 Sq.Yd.
848, Type 1: (1.25)(1/36)(811.70) = 28.18 Cu.Yd.
848, Type 2: (1.50)(1/36)(811.70) = 33.82 Cu.Yd.
407 Tack Coat: (811.70)(0.10) = 81.17 Gals.
407 Cover Aggregate: (811.70)(7/2000) = 2.84 Tons
Shoulder ~ (Lt.) ~
Area of Gore Shoulder & Curb: [(1/2)(151.32)(3,850.97) - (1/2)(18)(0.71) - (2,268/360)π(3,837.22)² + (1/2)(15.25 + 11)(300)](1/9) = 701.54 Sq.Yd.
Area of Curb Removal: [(1/2)(6+3)(200) + (3)(250.80)](1/9) = 183.60 Sq.Yd.
Area of 3' to 2' Taper: (1/2)(3+2)(50.23)(1/9) = 13.95 Sq.Yd.
848, Type 1: (1.25)[(1/36)(183.60 + 13.95) + (1/2)(3+1)(1/36)(701.54 - 183.60)] = 35.63 Cu.Yd.
848, Type 2: (1.50)(1/36)(183.60 + 13.95) = 8.23 Cu.Yd.
407 Tack Coat: (701.54 - 183.60 + 13.95)(0.10) = 53.19 Gals.
407 Cover Aggregate: (701.54 - 183.60 + 13.95)(7/2000) = 1.85 Tons
Shoulder ~ (Rt.) ~
Area: (1/9)[(1/2)(3+8)(149.72) + (8)(300.06)] = 358.22 Sq.Yd.
848, Type 1: (1.25)(1/36)(358.22) = 12.44 Cu.Yd.
848, Type 2: (1.50)(1/36)(358.22) = 14.93 Cu.Yd.
407 Tack Coat: (358.22)(0.10) = 35.82 Gals.
407 Cover Aggregate: (358.22)(7/2000) = 1.25 Tons
Shoulder Reconditioning ~
Length of Transition = 149.72 Lin.Ft.
Length of 4' Reconditioning = 300.06 Lin.Ft.
617 Shoulder Preparation: (1/2)(2+4)(149.72)(8)+(300.06)(0.444444) = 183.27 Sq.Yd.
617 Compacted Aggregate: (183.27)(3.75)(1/36) = 19.09 Cu.Yd.
Sta. 360+00.00 to Sta. 372+00.00
Pavement ~
Area: (1/2)(25)(1,200)(1/9) = 1,666.67 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,666.67) = 57.87 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,666.67) = 69.44 Cu.Yd.
407 Tack Coat: (1,666.67)(0.10) = 166.67 Gals.
407 Cover Aggregate: (1,666.67)(7/2000) = 5.83 Tons
Shoulder ~ (Rt.) ~
Length: √(1200)² + (25)² = 1,200.26 Lin.Ft.

Sta. 360+00.00 to Sta. 372+00.00 ~ (Cont.) ~
Shoulder ~ (Rt.) ~
848, Type 1: (1,200.26)(0.030864) = 37.04 Cu.Yd.
848, Type 2: (1,200.26)(0.037037) = 44.45 Cu.Yd.
407 Tack Coat: (1,200.26)(0.088889) = 106.69 Gals.
407 Cover Aggregate: (1,200.26)(0.003111) = 3.73 Tons
Shoulder Reconditioning ~
Length: √(1,200)² + (25)² = 1,200.26 Lin.Ft.
617 Shoulder Preparation: (1,200.26)(0.444444) = 533.45 Sq.Yd.
617 Compacted Aggregate: (1,200.26)(0.046296) = 55.57 Cu.Yd.

Weigh Station ~ Ramp "B" ~ Summary ~
Pavement ~
848, Type 1: 6.23 + 41.28 + 28.18 + 57.87 = 133.56 Cu.Yd.
848, Type 2: 1.23 + 49.54 + 33.82 + 69.44 = 154.03 Cu.Yd.
407 Tack Coat: 19.56 + 118.90 + 81.17 + 166.67 = 386.30 Gals.
407 Cover Aggregate: 0.68 + 4.16 + 2.84 + 5.83 = 13.51 Tons
Shoulders ~
848, Type 1: 2.34 + 16.01 + 35.63 + 12.44 + 37.04 = 103.46 Cu.Yd.
848, Type 2: 0.46 + 19.21 + 8.23 + 14.93 + 44.45 = 87.28 Cu.Yd.
407 Tack Coat: 7.33 + 44.59 + 53.19 + 35.82 + 106.69 = 247.62 Gals.
407 Cover Aggregate: 0.26 + 1.56 + 1.86 + 1.25 + 3.73 = 8.66 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: 48.89 + 251.93 + 183.27 + 533.45 = 1,017.54 Sq.Yd.
617 Compacted Aggregate: 2.55 + 26.24 + 19.09 + 55.57 = 103.45 Cu.Yd.

Rest Area ~ Ramp "A" ~
Sta. 428+02.47 to Sta. 440+02.47
Pavement ~
Area: (1/9)(1/2)(1,200)(25) = 1,666.67 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,666.67) = 57.87 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,666.67) = 69.44 Cu.Yd.
407 Tack Coat: (1,666.67)(0.10) = 166.67 Gals.
407 Cover Aggregate: (1,666.67)(7/2000) = 5.83 Tons
Shoulder ~ (Lt.) ~ (8') ~
Length: √(1,200)² + (25)² = 1,200.26 Lin.Ft.
848, Type 1: (1,200.26)(0.030864) = 37.04 Cu.Yd.
848, Type 2: (1,200.26)(0.037037) = 44.45 Cu.Yd.
407 Tack Coat: (1,200.26)(0.088889) = 106.69 Gals.
407 Cover Aggregate: (1,200.26)(0.003111) = 3.73 Tons
Shoulder Reconditioning ~
Length: √(1,200)² + (25)² = 1,200.26 Lin.Ft.
617 Shoulder Preparation: (1,200.26)(0.444444) = 533.45 Sq.Yd.
617 Compacted Aggregate: (1,200.26)(0.046296) = 55.57 Cu.Yd.

Sta. 440+02.47 to Sta. 446+48.72 ~
Pavement ~
Area: (1/9)[(1/2)(16)(300.06) + (17)(200.37) + (16)(146.51)] = 1,139.04 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,139.04) = 39.55 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,139.04) = 47.46 Cu.Yd.
407 Tack Coat: (1,139.04)(0.10) = 113.90 Gals.
407 Cover Aggregate: (1,139.04)(7/2000) = 3.99 Tons
Shoulder ~ (Lt.) ~ Varies ~
Area: (1/9)[(8)(300.06 + 137.39) + (1/2)(3+3)(99.79) + (3)(108.68)] = 486.05 Sq.Yd.
848, Type 1: (1.25)(1/36)(486.05) = 16.88 Cu.Yd.
848, Type 2: (1.50)(1/36)(486.05) = 20.25 Cu.Yd.
407 Tack Coat: (486.05)(0.10) = 48.61 Gals.
407 Cover Aggregate: (486.05)(7/2000) = 1.70 Tons
Shoulder ~ (Rt.) ~ Varies ~
Area of 5' Shoulder: (3)(99.10)(1/9) = 33.03 Sq.Yd.
Area of 3' to 2' Transition: (1/2)(3+2)(48.3)(1/9) = 13.42 Sq.Yd.
Area of Gore Shoulder & Curb: (1/9)(1/2)(11+15.25)(300) + (1/2)(15.25+18.50)(171.54)] = 759.14 Sq.Yd.
Area of 3' Curb Removal: (3)(171.54 + 300.06)(1/9) = 157.20 Sq.Yd.

Sta. 440+02.47 to Sta. 446+48.72 ~ (Cont.) ~
Shoulder ~ (Rt.) ~ Varies ~ (Cont.) ~
Area of 8" Curb Removal: (8/12)(176.17)(1/9) = 13.05 Sq.Yd.
848, Type 1: (1.25)(1/36)(157.20 + 13.42 + 33.03 + 13.05) + (1/2)(3+1)(1/36)(759.14 - 157.20) = 40.97 Cu.Yd.
848, Type 2: (1.50)(1/36)(157.20 + 13.42 + 33.03 + 13.05) = 9.03 Cu.Yd.
407 Tack Coat: (759.14 - 157.20 + 33.03 + 13.42)(0.10) = 64.84 Gals.
407 Cover Aggregate: (759.14 - 157.20 + 33.03 + 13.42)(7/2000) = 2.27 Tons
Shoulder Reconditioning ~
Length of 4' Reconditioning: 300.06 + 137.39 = 437.45 Lin.Ft.
Length of 4' to 2' Transition = 99.79 Lin.Ft.
Length of 2' Reconditioning = 108.68 Lin.Ft.
617 Shoulder Preparation: (437.45)(0.444444) + (1/2)(4+2)(99.79)(1/9) + (2)(108.68)(1/9) = 251.84 Sq.Yd.
617 Compacted Aggregate: (251.84)(3.75)(1/36) = 26.23 Cu.Yd.
Sta. 446+48.72 to Sta. 447+58.69 ~ (Transition) ~
Length = 110.00 Lin.Ft.
Pavement Transition ~
848, Type 1: (16)(0.389661) = 6.23 Cu.Yd.
848, Type 2: (16)(0.077161) = 1.23 Cu.Yd.
407 Tack Coat: (16)(1.222222) = 19.56 Gals.
407 Cover Aggregate: (16)(0.042778) = 0.68 Ton
Shoulder Transition ~
Area in Curb Removal: (8/12)(39.34)(1/9) = 2.91 Sq.Yd.
848, Type 1: (6)(0.389660) + (1.25)(1/36)(2.91) = 2.44 Cu.Yd.
848, Type 2: (6)(0.077160) + (1.50)(1/36)(2.91) = 0.58 Cu.Yd.
407 Tack Coat: (6)(1.222222) = 7.33 Gals.
407 Cover Aggregate: (6)(0.042778) = 0.26 Ton
Shoulder Reconditioning ~
Length: (2)(110.00) - 39.34 = 180.66 Lin.Ft.
617 Shoulder Preparation: (2)(180.66)(1/9) = 40.15 Sq.Yd.
617 Compacted Aggregate: (2)(180.66)(1/9)(3.75)(1/36)(1/2) = 2.09 Cu.Yd.

Rest Area ~ Ramp "A" ~ Summary ~
Pavement ~
848, Type 1: 6.23 + 57.87 + 39.55 = 103.65 Cu.Yd.
848, Type 2: 1.23 + 69.44 + 47.46 = 118.13 Cu.Yd.
407 Tack Coat: 19.56 + 166.67 + 113.90 = 300.13 Gals.
407 Cover Aggregate: 0.68 + 5.83 + 3.99 = 10.50 Tons
Shoulders ~
848, Type 1: 2.44 + 37.04 + 16.88 + 40.97 = 97.33 Cu.Yd.
848, Type 2: 0.58 + 44.45 + 20.25 + 9.03 = 74.31 Cu.Yd.
407 Tack Coat: 7.33 + 106.69 + 48.61 + 64.84 = 227.47 Gals.
407 Cover Aggregate: 0.26 + 3.73 + 1.70 + 2.27 = 7.96 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: 40.15 + 533.45 + 251.84 = 825.44 Sq.Yd.
617 Compacted Aggregate: 2.09 + 55.57 + 26.23 = 83.89 Cu.Yd.

Rest Area ~ Ramp "B" ~
Sta. 452+64.51 to Sta. 453+75.46 ~ (Transition) ~
Length = 110.00 Lin.Ft.
Pavement Transition ~
848, Type 1: (16)(0.389661) = 6.23 Cu.Yd.
848, Type 2: (16)(0.077161) = 1.23 Cu.Yd.
407 Tack Coat: (16)(1.222222) = 19.56 Gals.
407 Cover Aggregate: (16)(0.042778) = 0.68 Ton
Shoulder Transition ~
848, Type 1: (6)(0.389661) = 2.34 Cu.Yd.
848, Type 2: (6)(0.077161) = 0.46 Cu.Yd.
407 Tack Coat: (6)(1.222222) = 7.33 Gals.
407 Cover Aggregate: (6)(0.042778) = 0.26 Ton
Shoulder Reconditioning ~
Length = 220.00 Lin.Ft.
617 Shoulder Preparation: (220.00)(2)(1/9) = 48.89 Sq.Yd.
617 Compacted Aggregate: (220.00)(2)(1/9)(3.75)(1/36)(1/2) = 2.55 Cu.Yd.

PAVEMENT COMPUTATIONS
U.S.R. 30

Computations By Initials: J.M.S. Date: 12/20/83
Computations Checked By Initials: J.M.B. Date: 12-20-83
Final Revisions By Initials: Date:

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U.S.R. 30 ~ (Ramps) ~
Rest Area ~ Ramp "B" ~ (Cont.) ~
Sta 453+75.46 to Sta 464+30.00 ~
Pavement ~
Area: (1/9)[(1/2)(456.64)(383.72) - 1/2(1.91)(16) - (6.796/360)π(383.72)² + (17)(100) + (16)(151.46) + (1/2)(12)(100) + (12)(250.01)] = 1,919.14 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,919.14) = 66.64 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,919.14) = 79.96 Cu.Yd.
407 Tack Coat: (1,919.14)(0.10) = 191.91 Gals.
407 Cover Aggregate: (1,919.14)(7/2000) = 6.72 Tons
Shoulders ~
Area: ([25].46 + 151.46)(3) + (1/2)(3+8)(100) + (452.60 + 250.01)(3) + (1/2)(100.72)(8) + (1/2)(14+10)(100)(1/9) = 998.06 Sq.Yd.
848, Type 1: (1.25)(1/36)(998.06 + 36.65) = 35.93 Cu.Yd.
848, Type 2: (1.50)(1/36)(998.06 + 36.65) = 43.11 Cu.Yd.
407 Tack Coat: (998.06)(0.10) = 99.81 Gals.
407 Cover Aggregate: (998.06)(7/2000) = 3.49 Tons
Shoulder Reconditioning ~
Length of 4' Reconditioning: 100.72 + 250.01 + 452.60 + 60 = 863.33 Lin.Ft.
Length of Transition = 100.72 Lin.Ft.
Length of 2' Reconditioning: (151.46)(2) = 302.92 Lin.Ft.
6/7 Shoulder Preparation: (1/9)[(4)(863.33) + (1/2)(4+2)(100.72) + (2)(302.92)] = 484.59 Sq.Yd.
6/7 Compacted Aggregate: (484.59)(3.75)/(1/36) = 50.48 Cu.Yd.

Rest Area ~ Ramp "B" ~ Summary ~
Pavement ~
848, Type 1: 6.23 + 66.64 = 72.87 Cu.Yd.
848, Type 2: 1.23 + 79.96 = 81.19 Cu.Yd.
407 Tack Coat: 19.56 + 191.91 = 211.47 Gals.
407 Cover Aggregate: 0.68 + 6.72 = 7.40 Tons
Shoulders ~
848, Type 1: 2.34 + 35.93 = 38.27 Cu.Yd.
848, Type 2: 0.46 + 43.11 = 43.57 Cu.Yd.
407 Tack Coat: 7.33 + 99.81 = 107.14 Gals.
407 Cover Aggregate: 0.26 + 3.49 = 3.75 Tons
Shoulder Reconditioning ~
6/7 Shoulder Preparation: 48.89 + 484.59 = 533.48 Sq.Yd.
6/7 Compacted Aggregate: 2.55 + 50.48 = 53.03 Cu.Yd.

Rest Area ~ Ramp "C" ~
Sta 437+85.00 to Sta 448+38.54 ~
Pavement ~
Area: (1/9)[(1/2)(456.64)(383.72) - (6.796/360)(π)(383.72)² - (1/2)(1.91)(16) + (100)(17) + (16)(151.46) + (12)(249.01) + (1/2)(12)(100)] = 1,917.81 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,917.81) = 66.59 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,917.81) = 79.91 Cu.Yd.
407 Tack Coat: (1,917.81)(0.10) = 191.78 Gals.
407 Cover Aggregate: (1,917.81)(7/2000) = 6.71 Tons
Shoulders ~
Area: (1/12)(100.72)(8) + (249.01 + 452.59)(8) + (100)(1/2)(8+3) + (151.46 + 251.46)(3) + (1/2)(14+10)(100)](1/9) = 997.16 Sq.Yd.
848, Type 1: (1.25)(1/36)(997.16 + 34.03) = 35.81 Cu.Yd.
848, Type 2: (1.50)(1/36)(997.16 + 34.03) = 42.97 Cu.Yd.
407 Tack Coat: (997.16)(0.10) = 99.72 Gals.
407 Cover Aggregate: (997.16)(7/2000) = 3.49 Tons
Shoulder Reconditioning ~
Length of 4' Reconditioning: 100.72 + 249.01 + 452.59 + 60 = 862.32 Lin.Ft.
Length of Transition = 100.12 Lin.Ft.
Length of 2' Reconditioning: 151.46 + 150.54 = 302.00 Lin.Ft.
6/7 Shoulder Preparation: (1/9)[(4)(862.32) + (1/2)(4+2)(100.12) + (2)(302.00)] = 483.74 Sq.Yd.
6/7 Compacted Aggregate: (483.74)(3.75)/(1/36) = 50.39 Cu.Yd.

Rest Area ~ Ramp "C" ~ (Cont.) ~
Sta 448+38.54 to Sta 449+49.49 ~ (Transition) ~
Length = 110.00 Lin.Ft.
Pavement Transition ~
848, Type 1: (16)(0.389661) = 6.23 Cu.Yd.
848, Type 2: (16)(0.077116) = 1.23 Cu.Yd.
407 Tack Coat: (16)(1.222222) = 19.56 Gals.
407 Cover Aggregate: (16)(0.042778) = 0.68 Ton
Shoulder Transition ~
848, Type 1: (6)(0.389661) = 2.34 Cu.Yd.
848, Type 2: (6)(0.077116) = 0.46 Cu.Yd.
407 Tack Coat: (6)(1.222222) = 7.33 Gals.
407 Cover Aggregate: (6)(0.042778) = 0.26 Ton
Shoulder Reconditioning ~
Length = 220.00 Lin.Ft.
6/7 Shoulder Preparation: (220)(2)(1/9) = 48.89 Sq.Yd.
6/7 Compacted Aggregate: (220)(2)(1/9)(3.75)/(1/36)(1/2) = 2.55 Cu.Yd.

Rest Area ~ Ramp "C" ~ Summary ~
Pavement ~
848, Type 1: 66.59 + 6.23 = 72.82 Cu.Yd.
848, Type 2: 79.91 + 1.23 = 81.14 Cu.Yd.
407 Tack Coat: 191.78 + 19.56 = 211.34 Gals.
407 Cover Aggregate: 6.71 + 0.68 = 7.39 Tons
Shoulders ~
848, Type 1: 35.81 + 2.34 = 38.15 Cu.Yd.
848, Type 2: 42.97 + 0.46 = 43.43 Cu.Yd.
407 Tack Coat: 99.72 + 7.33 = 107.05 Gals.
407 Cover Aggregate: 3.49 + 0.26 = 3.75 Tons
Shoulder Reconditioning ~
6/7 Shoulder Preparation: 483.74 + 48.89 = 532.63 Sq.Yd.
6/7 Compacted Aggregate: 50.39 + 2.55 = 52.94 Cu.Yd.

Rest Area ~ Ramp "D" ~
Sta 454+56.31 to Sta 455+65.28 ~ (Transition) ~
Length = 110.00 Lin.Ft.
Pavement Transition ~
848, Type 1: (16)(0.389661) = 6.23 Cu.Yd.
848, Type 2: (16)(0.077116) = 1.23 Cu.Yd.
407 Tack Coat: (16)(1.222222) = 19.56 Gals.
407 Cover Aggregate: (16)(0.042778) = 0.68 Ton
Shoulder Transition ~
Area in Curb Removal: (8/12)(39.34)(1/9) = 2.91 Sq.Yd.
848, Type 1: (6)(0.389661) + (1.25)(1/36)(2.91) = 2.44 Cu.Yd.
848, Type 2: (6)(0.077116) + (1.50)(1/36)(2.91) = 0.58 Cu.Yd.
407 Tack Coat: (6)(1.222222) = 7.33 Gals.
407 Cover Aggregate: (6)(0.042778) = 0.26 Ton
Shoulder Reconditioning ~
Length: 220 - 39.34 = 180.66 Lin.Ft.
6/7 Shoulder Preparation: (180.66)(2)(1/9) = 40.15 Sq.Yd.
6/7 Compacted Aggregate: (180.66)(2)(1/9)(3.75)/(1/36)(1/2) = 2.09 Cu.Yd.

Sta 455+65.28 to Sta 462+11.53
Pavement ~
Area: (1/9)[(16)(146.51) + (17)(200.37) + (15)(300.06)] = 1,139.04 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,139.04) = 39.55 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,139.04) = 47.46 Cu.Yd.
407 Tack Coat: (1,139.04)(0.10) = 113.90 Gals.
407 Cover Aggregate: (1,139.04)(7/2000) = 3.99 Tons
Shoulder ~ (Lt.) ~ Varies ~
Area of 3' Shoulder: (3)(99.10)(1/9) = 33.03 Sq.Yd.
Area of 3' to 2' Transition: (1/2)(3+2)(48.31)(1/9) = 13.42 Sq.Yd.
Area of Gore Shoulder & Curb: (1/2)(18.74 + 15.25)(169.80)(1/9) + (1/2)(11 + 15.25)(300)(1/9) = 758.14 Sq.Yd.
Area of 3' Curb Removal: (3)(170.73 + 300.06)(1/9) = 156.93 Sq.Yd.
Area of 8" Curb Removal: (8/12)(176.86)(1/9) = 13.10 Sq.Yd.
848, Type 1: (1.25)(1/36)(33.03 + 13.42 + 156.93 + 13.10) + (1/2)(3+1)(1/36)(758.14 - 156.93) = 40.92 Cu.Yd.

Rest Area ~ Ramp "D" ~ (Cont.) ~
Sta 455+65.28 to Sta 462+11.53 ~ (Cont.) ~
Shoulder ~ (Lt.) ~ Varies ~ (Cont.) ~
848, Type 2: (1.50)(1/36)(33.03 + 13.42 + 156.93 + 13.10) = 9.02 Cu.Yd.
407 Tack Coat: (33.03 + 13.42 + 758.14 - 156.93)(0.10) = 64.77 Gals.
407 Cover Aggregate: (33.03 + 13.42 + 758.14 - 156.93)(7/2000) = 2.27 Tons
Shoulder ~ (Rt.) ~ Varies ~
Area: [3)(108.68) + (1/2)(3+8)(99.79) + (8)(137.39 + 300.06)](1/9) = 486.05 Sq.Yd.
848, Type 1: (1.25)(1/36)(486.05) = 16.88 Cu.Yd.
848, Type 2: (1.50)(1/36)(486.05) = 20.25 Cu.Yd.
407 Tack Coat: (486.05)(0.10) = 48.61 Gals.
407 Cover Aggregate: (486.05)(7/2000) = 1.70 Tons
Shoulder Reconditioning ~
Length of 4' Reconditioning: 300.06 + 137.39 = 437.45 Lin.Ft.
Length of 4' to 2' Transition = 99.79 Lin.Ft.
Length of 2' Reconditioning = 108.68 Lin.Ft.
6/7 Shoulder Preparation: (437.45)(0.444444) + (1/2)(4+2)(99.79)(1/9) + (2)(108.68)(1/9) = 251.84 Sq.Yd.
6/7 Compacted Aggregate: (251.84)(3.75)/(1/36) = 26.23 Cu.Yd.

Sta 462+11.53 to Sta 474+11.53 ~
Pavement ~
Area: (1/2)(25)(1,200)(1/9) = 1,666.67 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,666.67) = 57.87 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,666.67) = 69.44 Cu.Yd.
407 Tack Coat: (1,666.67)(0.10) = 166.67 Gals.
407 Cover Aggregate: (1,666.67)(7/2000) = 5.83 Tons
Shoulder ~ (Rt.) ~ (8) ~
Length: √(1200)² + (25)² = 1,200.26 Lin.Ft.
848, Type 1: (1,200.26)(0.030864) = 37.04 Cu.Yd.
848, Type 2: (1,200.26)(0.037037) = 44.45 Cu.Yd.
407 Tack Coat: (1,200.26)(0.088889) = 106.69 Gals.
407 Cover Aggregate: (1,200.26)(0.003111) = 3.73 Tons
Shoulder Reconditioning ~ (4) ~
Length = 1,200.26 Lin.Ft.
6/7 Shoulder Preparation: (1,200.26)(0.444444) = 533.45 Sq.Yd.
6/7 Compacted Aggregate: (1,200.26)(0.046296) = 55.57 Cu.Yd.

Rest Area ~ Ramp "D" ~ Summary ~
Pavement ~
848, Type 1: 6.23 + 39.55 + 57.87 = 103.65 Cu.Yd.
848, Type 2: 1.23 + 47.46 + 69.44 = 118.13 Cu.Yd.
407 Tack Coat: 19.56 + 113.90 + 166.67 = 300.13 Gals.
407 Cover Aggregate: 0.68 + 3.99 + 5.83 = 10.50 Tons
Shoulders ~
848, Type 1: 2.44 + 40.92 + 16.88 + 37.04 = 97.28 Cu.Yd.
848, Type 2: 0.58 + 9.02 + 20.25 + 44.45 = 74.30 Cu.Yd.
407 Tack Coat: 7.33 + 64.77 + 48.61 + 106.69 = 227.40 Gals.
407 Cover Aggregate: 0.26 + 2.27 + 1.70 + 3.73 = 7.96 Tons
Shoulder Reconditioning ~
6/7 Shoulder Preparation: 40.15 + 251.84 + 533.45 = 825.44 Sq.Yd.
6/7 Compacted Aggregate: 2.09 + 26.23 + 55.57 = 83.89 Cu.Yd.

U.S.R. 224 Interchange ~ Ramp "A" ~
Pavement ~
Sta 561+36.32 to Sta 573+36.32 ~
Area: (1/2)(25)(1,200)(1/9) = 1,666.67 Sq.Yd.
Sta 573+36.32 (Mainline) = Sta 664+16.40 (Baseline) ~ Ramp "A"
Sta 664+16.40 to Sta 661+16.40 ~
Area: (1/2)(14+16)(300)(1/9) = 500.00 Sq.Yd.
Sta 661+16.40 to Sta 659+80.00 ~
Area: ([36.40) + (9.017453)(136.40/200)² (1/2)(8+9)(23)](1/2)(16+18)(1/9) = 260.64 Sq.Yd.

U.S.R. 224 Interchange ~ Ramp "A" ~ (Cont.) ~
Pavement ~ (Cont.) ~
Sta 659+80.00 to Sta 655+12.00 ~
Area: π(63.60) + (0.017453)(63.60/200)² (8)(23)] + (404.40)(257.11/249.11)² (16)(1/9) = 855.67 Sq.Yd.
Sta 655+12.00 to Sta 654+66.56 ~
Area: (45.44)(257.86/249.11)(1/2)(17+18)(1/9) = 91.46 Sq.Yd.
Sta 654+66.56 ℄ = Sta 654+66.56 ℄ ~ Ramp "A"
Sta 654+66.56 to Sta 642+84.55 ~
Area: π(1,066.63)(467.46/477.46) + (115.38) - (0.017453)(115.38/200)² (10)(11)/2 (17)(1/9) = 2,189.28 Sq.Yd.

Pavement Sub-Summary ~
Sta 561+36.32 (Mainline) to Sta 642+84.55 (Ramp)
Area: 1,666.67 + 500 + 260.64 + 855.67 + 91.46 + 2,189.28 = 5,563.72 Sq.Yd.
848, Type 1: (1.25)(1/36)(5,563.72) = 193.18 Cu.Yd.
848, Type 2: (1.50)(1/36)(5,563.72) = 231.82 Cu.Yd.
407 Tack Coat: (5,563.72)(0.10) = 556.37 Gals.
407 Cover Aggregate: (5,563.72)(7/2000) = 19.47 Tons

Sta 642+84.55 to Sta 642+13.87 ~ (70' Taper) ~
Pavement ~
848, Type 1: (17)(0.339506) = 5.77 Cu.Yd.
848, Type 2: (17)(0.038580) = 0.66 Cu.Yd.
407 Tack Coat: (17)(0.777778) = 13.22 Gals.
407 Cover Aggregate: (17)(0.027222) = 0.46 Ton

Sta 642+13.87 to Sta 639+47.87 ~
Structure No. VAN-30-1068
No Work

Sta 639+47.87 to Sta 638+77.75 ~ (70' Taper) ~
Pavement ~
848, Type 1: (17)(0.339506) = 5.77 Cu.Yd.
848, Type 2: (17)(0.038580) = 0.66 Cu.Yd.
407 Tack Coat: (17)(0.777778) = 13.22 Gals.
407 Cover Aggregate: (17)(0.027222) = 0.46 Ton

U.S.R. 224 Interchange ~ Ramp "A" ~ (Cont.) ~
Pavement ~
Sta 638+77.75 to Sta 633+39.18 ~
Area: (538.57)(5,719.58/5,729.58)(17)(1/9) = 1,015.52 Sq.Yd.
Sta 633+39.18 to Sta 632+39.18 ~
Area: ([70.30)(5,719.23/5,729.58) + (29.70)(3,808.87/3,819.72)](1/2)(17+19)(1/9) = 199.58 Sq.Yd.
Sta 632+39.18 to Sta 629+24.63 ~
Area: (314.55)(3,802.77/3,819.72)(26)(1/9) = 904.67 Sq.Yd.
Sta 629+24.63 to Sta 622+94.50 ~
Area: (626.53)(26)(1/9) = 1,809.98 Sq.Yd.
Sta 622+94.50 to Sta 619+38.00 ~
Area: ([366.45)(1/2)(26+12) - (1/4)π(1.50)²](1/9) = 773.42 Sq.Yd.

Pavement Sub-Summary ~
Sta 638+77.75 to Sta 619+38.00 ~
Area: 1,015.52 + 199.58 + 904.67 + 1,809.98 + 773.42 = 4,703.17 Sq.Yd.
848, Type 1: (1.25)(1/36)(4,703.17) = 163.30 Cu.Yd.
848, Type 2: (1.50)(1/36)(4,703.17) = 195.97 Cu.Yd.
407 Tack Coat: (4,703.17)(0.10) = 470.32 Gals.
407 Cover Aggregate: (4,703.17)(7/2000) = 16.46 Tons

Sta 619+38.00 to Sta 618+00.50 ~ (137.50' Taper) ~
Pavement ~
848, Type 1: (12)(0.487076) = 5.84 Cu.Yd.
848, Type 2: (12)(0.096451) = 1.16 Cu.Yd.
407 Tack Coat: (12)(1.527778) = 18.33 Gals.
407 Cover Aggregate: (12)(0.053472) = 0.64 Cu.Yd.

Ramp "A" ~ Pavement Summary ~
848, Type 1: 193.18 + 5.77 + 5.77 + 163.30 + 5.84 = 373.86 Cu.Yd.
848, Type 2: 231.82 + 0.66 + 0.66 + 195.97 + 1.16 = 430.27 Cu.Yd.
407 Tack Coat: 556.37 + 13.22 + 13.22 + 470.32 + 18.33 = 1,071.46 Gals.
407 Cover Aggregate: 19.47 + 0.46 + 0.46 + 16.46 + 0.64 = 37.49 Tons

PAVEMENT COMPUTATIONS
U.S.R. 30

Computations By Initials J.M.S. Date 12/20/83
Computations Checked By Initials [illegible] Date 12-20-83
Final Revisions By Initials Date

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U.S.R. 30 ~ (Ramps) ~
U.S.R. 224 Interchange ~ Ramp "A" ~ (Cont) ~
Ramp "A" ~
Shoulders ~
Sta. 561+36.32 (Mainline) to Sta. 573+36.32 (Ramp)
Area: (1,200)(8)(1/9) = 1,066.67 Sq.Yd.
Sta. 573+36.32 (Mainline) = Sta. 664+16.40 (Ramp)
Sta. 664+16.40 to Sta. 661+16.40
Area in Curb Removal: (300)(3)(1/9) = 100.00 Sq.Yd.
Area of 1" to 3" Variable Thickness: (300)(1/2)(8+12.25)(1/9) = 337.50 Sq.Yd.
Area of 8' Shoulder: (300)(8)(1/9) = 266.67 Sq.Yd.
Sta. 661+16.40 to Sta. 659+80.00
Area of Shoulder: [(196.40)-(0.01/7453)(136.40/200)²](1/2)(4+1.73)(2.3)(1/2)(8+3.45)(1/9) = 86.43 Sq.Yd.
Area of 3' Curb Removal: (97.28)(3)(1/9) = 32.43 Sq.Yd.
Area of 1" to 3" Variable Thickness: (97.28)(1/2)(12.25+16.50)(1/9) = 155.38 Sq.Yd.
Area of 8' Curb Removal: [(39.80)+(0.01/7453)(39.80/200)²](1/2)(17.75+18.33)(2.3)[8/12](1/9) = 2.97 Sq.Yd.
Sta. 659+80.00 to Sta. 655+12.00
Area of Shoulders: [(13.60)-(0.01/7453)(13.60/200)²](1/2)(1.73+1.50)(23)(1/2)(3.45+3)(1/9) + [(50)-(0.01/7453)(50/200)²](1.50)(23) + (404.40)(247.6/249.11) + (354.40)(266.61/249.11)² (3)(1/9) + (43)(266.36/249.11)(1/2)(2+3)(1/9) + [(63.60)+(0.01/7453)(63.60/200)²](1/2)(17+17.50)(23)(1/2)(2+3)(1/9) = 312.58 Sq.Yd.
Area of 8" Curb Removal: [(63.60)+(0.01/7453)(63.60/200)²](1/2)(18.33+19.33)(23)+(56.66)²[8/12](1/9) = 8.96 Sq.Yd.
Sta. 655+12.00 to Sta. 654+66.56
Area: (45.44)(247.61/249.11)(3)(1/9) = 15.06 Sq.Yd.
Sta. 654+66.56 ℄ = Sta. 654+66.56 ℄ ~ Ramp "A"
Sta. 654+66.56 to Sta. 642+84.55
Area: [(1,066.63)(457.46/477.46)+115.38-(0.01/7453)(115.38/200)²](20)(1/9)(3)(1/9) = 378.68 Sq.Yd.

Shoulder ~ Sub-Summary ~
Sta. 561+36.32 (Mainline) to Sta. 642+84.55 (Ramp)
Area of full depth Shoulder: 1,066.67 + 266.67 + 86.43 + 312.58 + 15.06 + 378.68 = 2,126.09 Sq.Yd.
Area of 1" to 3" Variable Thickness: 337.50 + 155.38 = 492.88 Sq.Yd.
Area of Curb Removal: 100+00 + 32.43 + 2.97 + 8.96 = 144.36 Sq.Yd.
848, Type 1: (1.25)(1/36)(2,126.09 + 144.36)+(1/2)(1+3)(1/36)(492.88) = 106.22 Cu.Yd.
848, Type 2: (1.50)(1/36)(2,126.09 + 144.36) = 94.60 Cu.Yd.
407 Tack Coat: (2,126.09 + 492.88)(0.10) = 261.90 Gals.
407 Cover Aggregate: (2,126.09 + 492.88)(1/2000) = 9.17 Tons

Sta. 642+84.55 to Sta. 642+13.87 ~ (70' Taper) ~
Length of Taper @ Shoulder: 70.68-(0.01/7453)(70.68/200)(20)(11) = 69.32 Lin.Ft.
848, Type 1: (3)(0.3395061)(69.32/70) = 1.01 Cu.Yd.
848, Type 2: (3)(0.038580)(69.32/70) = 0.11 Cu.Yd.
407 Tack Coat: (3)(0.777778)(69.32/70) = 2.31 Gals.
407 Cover Aggregate: (3)(0.027222)(69.32/70) = 0.08 Ton

Sta. 642+13.87 to Sta. 639+47.87
Structure No. VAN-30-1068
No Work

U.S.R. 224 Interchange ~ Ramp "A" ~ (Cont) ~
Sta. 639+47.87 to Sta. 638+77.75 ~ (70' Taper) ~
Length of Taper @ Shoulder: (70/12)(5,709.58/5,729.58) = 69.88 Lin.Ft.
848, Type 1: (3)(0.3395061)(69.88/70) = 1.02 Cu.Yd.
848, Type 2: (3)(0.038580)(69.88/70) = 0.12 Cu.Yd.
407 Tack Coat: (3)(0.777778)(69.88/70) = 2.33 Gals.
407 Cover Aggregate: (3)(0.027222)(69.88/70) = 0.08 Ton
Sta 638+77.75 to Sta 633+39.18
Area: (538.57)(5,709.58/5,729.58)(3)(1/9) = 178.90 Sq.Yd.
Sta 633+39.18 to Sta 632+39.18
Area: [(70.30)(5,708.88/5,729.58)+(29.70)(3,798.02/3,819.72)](3)(1/9) = 33.19 Sq.Yd.
Sta 632+39.18 to Sta 629+24.63
No Shoulders on Ramp "A"
Sta 629+24.63 to Sta 622+94.50
Area: (2)(626.53)(1/9) = 556.92 Sq.Yd.
Sta 622+94.50 to Sta 619+38.00
Area: (2)(366.45)(1/9) = 325.73 Sq.Yd.
Shoulder Sub-Summary ~
Sta. 638+77.75 to Sta. 619+38.00
Area: 178.90 + 33.19 + 556.92 + 325.73 = 1,094.74 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,094.74) = 38.01 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,094.74) = 45.61 Cu.Yd.
407 Tack Coat: (1,094.74)(0.10) = 109.47 Gals.
407 Cover Aggregate: (1,094.74)(1/2000) = 3.83 Tons
Sta. 619+38.00 to Sta. 618+00.50 ~ (137.50' Taper) ~
848, Type 1: (8)(0.487076) = 3.90 Cu.Yd.
848, Type 2: (8)(0.096451) = 0.77 Cu.Yd.
407 Tack Coat: (8)(1.527778) = 12.22 Gals.
407 Cover Aggregate: (8)(0.053472) = 0.43 Ton
Ramp "A" ~ Shoulder Summary ~
848, Type 1: 106.22 + 1.01 + 1.02 + 38.01 + 3.90 = 150.16 Cu.Yd.
848, Type 2: 94.60 + 0.11 + 0.12 + 45.61 + 0.77 = 141.21 Cu.Yd.
407 Tack Coat: 261.90 + 2.31 + 2.33 + 109.47 + 12.22 = 388.23 Gals.
407 Cover Aggregate: 9.17 + 0.08 + 0.08 + 3.83 + 0.43 = 13.59 Tons

Shoulder Reconditioning ~
Sta 561+36.32 to Sta 573+36.32
Length of 4' Reconditioning = 1,200.00 Lin.Ft.
Sta 573+36.32 (Mainline) = Sta 664+16.40 (Ramp) ~
Sta 664+16.40 to Sta 661+16.40
Length of 4' Reconditioning = 300.00 Lin.Ft.
Sta 661+16.40 to Sta 659+66.40
Length of 4' to 2' Transition: 150-(0.01/7453)(150/200)²(1/2)(9+4)(23) = 148.53 Lin.Ft.
Sta 659+66.40 to Sta 655+12.00
Length of 2' Reconditioning: 50-(0.01/7453)(50/200)²(4)(23) + (404.40)(245.11/249.11) + (354.40)(269.11/249.11) - 51.41 = 779.25 Lin.Ft.
Sta 655+12.00 to Sta 654+66.56
Length of 2' Reconditioning: (45.44)(206.11/249.11) = 44.71 Lin.Ft.
Sta. 654+66.56 ℄ = Sta. 654+66.56 ℄ ~ Ramp "A"
Sta. 654+66.56 to Sta. 642+84.55
Length of 2' Reconditioning: (1,066.63)(454.96/477.46)+115.38-(0.01/7453)(115.38/200)²(22.50)(11) = 1,130.31 Lin.Ft.
Sta. 642+84.55 to Sta. 642+13.87 ~ (70' Taper) ~
Length of 2' Reconditioning in Transition: 70.68-(0.01/7453)(70.68/200)(22.50)(11) = 69.15 Lin.Ft.
Sta 642+13.87 to Sta 639+47.87
Structure No. VAN-30-1068
No Work
Sta 639+47.87 to Sta 638+77.75 ~ (70' Taper) ~
Length of 2' Reconditioning in Transition: (70.12)(5,707.08/5729.58) = 69.84 Lin.Ft.

U.S.R. 224 Interchange ~ Ramp "A" ~ (Cont) ~
Sta. 638+77.75 to Sta 633+39.18
Length of 2' Reconditioning: (538.57)(5,707.08/5,729.58) = 536.46 Lin.Ft.
Sta. 633+39.18 to Sta. 632+39.18
No Shoulder on Ramp "A"
Sta. 632+39.18 to Sta. 622+94.50
Length of 4' Reconditioning = 626.53 Lin.Ft.
Sta 622+94.50 to Sta 619+38.00
Length of 4' Reconditioning = 366.45 Lin.Ft.
Sta 619+38.00 to Sta 618+00.50 ~ (137.50' Taper) ~
Length of 4' Reconditioning in Transition = 137.50 Lin.Ft.
Shoulder Reconditioning Summary ~
Length of 4' Reconditioning: 1,200+300+626.53+366.45 = 2,492.98 Lin.Ft.
Length of 4' Reconditioning in Transition = 137.50 Lin.Ft.
Length of 2' Reconditioning: 779.25+44.71+1,130.31+536.46 = 2,490.73 Lin.Ft.
Length of 2' Reconditioning in Transition: 69.15+69.84 = 138.99 Lin.Ft.
Length of 4' to 2' Transition = 148.53 Lin.Ft.
617 Shoulder Preparation: (2,492.98+137.50)(0.444444)+(2,490.73+138.99)(0.222222)+(148.53)(1/2)(4+2)(1/9) = 1,802.99 Sq.Yd.
617 Compacted Aggregate: (2,492.98)(0.046296)+(137.50)(0.046296)(1/2)+(2,490.73)(0.023148)+(148.53)(1/2)(4+2)(1/9)(3.75)(1/36)+(138.99)(0.023148)(1/2) = 183.02 Cu.Yd.
202 Wearing Course Removed Summary: (17+3+3)(70)(1/9) = 178.89 Sq.Yd.

U.S.R. 224 Interchange ~ Ramp "B" ~
Pavement ~
Sta. 662+44.96 to Sta. 663+44.96
Area: [100+(0.01/7453)(100/250)²](1/2)(8+9)(7.50)(1/2)(16+18)(1/9) = 189.23 Sq.Yd.
Sta 663+44.96 to Sta 667+98.03
Area: (2)(1/2)(26.89)(452.80)-203.10]+[(1/2)(14+2)-(1/2)π(2)²]+[(1/2)(22.89)(2)-(1/4)π(2)²](1/9) = 1,060.90 Sq.Yd.
Sta. 667+98.03 (℄ Ramp) = Sta. 591+43.70 (Mainline) ~
Sta 591+43.70 to Sta 593+91.11
Area: (12)(247.41)(1/9) = 329.88 Sq.Yd.
Sta. 593+91.11 to Sta 594+91.11
Area: (1/2)(12)(100)(1/9) = 66.67 Sq.Yd.
Pavement Sub-Summary ~
Sta. 642+83.20 (Ramp) to Sta. 594+91.11 (Mainline) ~
Area: 2,183.07 + 195.57 + 1298.30 + 189.23 + 1,060.92 + 329.88 + 66.67 = 5,323.64 Sq.Yd.
848, Type 1: (1.25)(1/36)(5,323.64) = 184.85 Cu.Yd.
848, Type 2: (1.50)(1/36)(5,323.64) = 221.82 Cu.Yd.
407 Tack Coat: (5,323.64)(0.10) = 532.36 Gals.
407 Cover Aggregate: (5,323.64)(1/2000) = 18.63 Tons
Ramp "B" ~ Pavement Summary ~
848, Type 1: 39.94 + 5.77 + 5.77 + 184.85 = 236.33 Cu.Yd.
848, Type 2: 47.92 + 0.66 + 0.66 + 221.82 = 271.06 Cu.Yd.
407 Tack Coat: 115.02 + 13.22 + 13.22 + 532.36 = 673.82 Gals.
407 Cover Aggregate: 4.03 + 0.46 + 0.46 + 18.63 = 23.58 Tons

Shoulders ~
Sta 632+70.15 to Sta 638+77.99
Area: (607.84)(5,749.58/5,729.58)(3)(1/9) = 203.32 Sq.Yd.
Shoulder Sub-Summary ~
Sta 632+70.15 to Sta 638+77.99
848, Type 1: (1.25)(1/36)(203.32) = 7.06 Cu.Yd.
848, Type 2: (1.50)(1/36)(203.32) = 8.47 Cu.Yd.
407 Tack Coat: (203.32)(0.10) = 20.33 Gals.
407 Cover Aggregate: (203.32)(1/2000) = 0.71 Ton
Shoulders ~
Sta 638+77.99 to Sta 639+47.87 ~ (70' Taper) ~
Length of Taper @ Shoulder: (70)(5,749.58/5,729.58) = 70.24 Lin.Ft.
848, Type 1: (3)(0.3395061)(70.24/70) = 1.02 Cu.Yd.
848, Type 2: (3)(0.038580)(70.24/70) = 0.12 Cu.Yd.
407 Tack Coat: (3)(0.777778)(70.24/70) = 2.34 Gals.
407 Cover Aggregate: (3)(0.027222)(70.24/70) = 0.08 Ton
Sta 639+47.87 to Sta 642+13.87
Structure No. VAN-30-1068
No Work
Sta 642+13.87 to Sta 642+83.20 ~ (70' Taper) ~
Length of Taper @ Shoulder: 69.33+(0.01/7453)(69.33/200)(20)(11) = 70.66 Lin.Ft.
848, Type 1: (3)(0.3395061)(70.66/70) = 1.03 Cu.Yd.
848, Type 2: (3)(0.038580)(70.66/70) = 0.12 Cu.Yd.
407 Tack Coat: (3)(0.777778)(70.66/70) = 2.36 Gals.
407 Cover Aggregate: (3)(0.027222)(70.66/70) = 0.08 Ton
Sta 642+83.20 to Sta 654+16.99
Area: 2[116.73+(0.01/7453)(116.73/200)²(20)(1/2)]+(1,017.06)(487.46/477.46)²(3)(1/9) = 392.57 Sq.Yd.
Sta 654+16.99 ℄ U.S.R. 224 = Sta 654+16.99 ℄ Ramp "B" ~
Sta 654+16.99 to Sta 655+19.00
Area: (102.01)(3)(1/9) = 34.00 Sq.Yd.
Sta 655+19.00 to Sta 662+44.96
Area: 2[(197.99)(3)+(377.97)(762.44/763.94)(3)+(150-(0.01/7453)(150/250)²(1.50)(7.50)(3)+(147.99)(3)+(377.97)(781.44/763.94)(3)+(150+(0.01/7453)(150/250)²(17.50)(7.50)](3)+(50)(1/2)(2+3)²(1/9) = 484.09 Sq.Yd.
Sta 662+44.96 to Sta 663+44.96
Area: [100-(0.01/7453)(100/250)²](1/2)(1.50+4.0)(7.50)[(1/2)(3+3)(1/9)+(100)(1/2)(10+14)(1/9)+(100+(0.01/7453)(100/250)²(1/2)(17.50+12.50)(7.50)](3)(1/9) = 227.87 Sq.Yd.

PAVEMENT COMPUTATIONS
U.S.R. 30

Computations By Initials: J.M.S. Date: 12/01/83
Computations Checked By Initials: AJB Date: 12-20-83
Final Revisions By Initials: Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

18/65

VAN WERT COUNTY
VAN-30-4.05

U.S.R. 30 ~(Ramps)~
U.S.R. 224 Interchange ~ Ramp "B" ~ (Cont.)~
Sta. 662+44.96 to Sta. 663+44.96 ~(Cont.)~
Area of Core Pavement = 35.00 Sq.Yd.
Sta. 663+44.96 to Sta. 667+98.03
Area: (453.07)(3,815.72/3,819.72)(8)(1/9) = 402.31 Sq.Yd.
Sta. 667+98.03 (℄ Ramp "B") = Sta. 591+43.70 (Mainline)~
Sta. 591+43.70 to Sta. 593+91.11
Area: (247.41)(8)(1/9) = 219.92 Sq.Yd.
Sta. 593+91.11 to Sta. 594+91.11
Area: (8)(100)(1/9) = 88.89 Sq.Yd.
Shoulder Sub-Summary~
Sta. 642+83.20 (Ramp) to Sta. 594+91.11 (Mainline)~
Area: 392.57+34.00+484.09+227.87+40.23
+219.92+88.89 = 1,849.85 Sq.Yd.
Area of Core Pavement = 35.00 Sq.Yd.
848, Type I: (1.25)(1/36)(1,849.65+35.00) = 65.44 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,849.65+35.00) = 78.53 Cu.Yd.
407 Tack Coat: (1,849.65)(0.10) = 184.97 Gals.
407 Cover Aggregate: (1,849.65)(7/2000) = 6.47 Tons
Ramp "B"~Shoulder Summary~
848, Type I: 7.06+1.02+7.03+65.44 = 74.55 Cu.Yd.
848, Type 2: 8.47+0.12+0.12+78.53 = 87.24 Cu.Yd.
407 Tack Coat: 20.33+2.34+2.36+184.97 = 210.00 Gals.
407 Cover Aggregate: 0.71+0.08+0.08
+6.47 = 7.34 Tons
Shoulder Reconditioning~
Sta. 632+70.15 to Sta. 638+77.99
Length of 2' Reconditioning: (607.84)
(5,752.08/5,729.58) = 610.23 Lin.Ft.
Sta. 638+77.99 to Sta. 639+47.87~(70' Taper)~
Length of 2' Reconditioning in Transition:
(69.88)(5,752.08/5,729.58) = 70.15 Lin.Ft.
Sta. 639+47.87 to Sta. 642+13.87
Structure No. VAN-30-1068
No Work
Sta. 642+13.87 to Sta. 642+83.20 ~ (70' Taper)~
Length of 2' Reconditioning in Transition:
69.33+(0.017453)(69.33/200)(22.50)(11) = 70.83 Lin.Ft.
Sta. 642+83.20 to Sta. 654+16.99
Length of 2' Reconditioning: (116.73+(0.017453)
(116.73/200)(22.50)(11))+(1,017.06)
(499.96/477.46) = 1,184.24 Lin.Ft.
Sta. 654+16.99 (℄ U.S.R. 224) = Sta. 654+16.99 (℄ Ramp "B")~
Sta. 654+16.99 to Sta. 655+19.00
Length of 2' Reconditioning = 102.01 Lin.Ft.
Sta. 655+19.00 to Sta. 662+44.96
Length of 2' Reconditioning: 197.99+(377.97)
(759.94/763.94)+[150-(0.017453)(150)(250)²
(4)(2.50)]+147.99+(377.97)(783.94/763.94)
+(150+(0.017453)(150)(250)²(20)(7.50)) = 1,440.59 Lin.Ft.
Sta. 662+44.96 to Sta. 663+44.96
Length of 2' to 4' Transition: 100-(0.017453)
(100/250)²(1/2)(4+10)(7.50) = 99.85 Lin.Ft.
Sta. 663+44.96 to Sta. 667+98.03
Length of 4' Reconditioning: (453.07)
(3,809.72/3,819.72) = 451.88 Lin.Ft.
Sta. 667+98.03 (℄ Ramp "B") = Sta. 591+43.70 (Mainline)~
Sta. 591+43.70 to Sta. 593+91.11
Length of 4' Reconditioning = 247.41 Lin.Ft.
Sta. 593+91.11 to Sta. 594+91.11
Length of 4' Reconditioning = 100.00 Lin.Ft.
Ramp "B"~ Shoulder Reconditioning Summary~
Sta. 632+70.15 (Ramp) to Sta. 594+91.11 (Mainline)~
Length of 4' Reconditioning: 451.88+247.41
+100.00 = 799.29 Lin.Ft.
Length of 2' Reconditioning: 610.23+1,184.24
+102.01+1,440.59 = 3,307.07 Lin.Ft.
Length of Transition = 99.85 Lin.Ft.
Length of 2' Reconditioning in Transitions:
70.15+70.83 = 140.98 Lin.Ft.

U.S.R. 224 Interchange ~ Ramp "B"~(Cont.)~
Shoulder Reconditioning~(Cont.)~
617 Shoulder Preparation: (799.29)(0.444444)
+(3,307.07+140.98)(0.222222)
+(99.85)(1/2)(4+2)(1/9) = 1,154.76 Sq.Yd.
617 Compacted Aggregate: (799.29)(0.046296)
+(3,307.07)(0.023148)+(1/2)(140.98)
(0.023148)+(99.85)(1/2)(4+2)(1/9)(3.75)
(1/36) = 118.65 Cu.Yd.
202 Wearing Course Removed: (17+3+3)(70)
(1/9) = 178.89 Sq.Yd.
U.S.R. 224 Interchange ~ Ramp "C"~
Pavement~
Sta. 557+25.00 to Sta. 558+25.00
Area: (1/2)(12)(100)(1/9) = 66.67 Sq.Yd.
Sta. 558+25.00 to Sta. 559+20.74
Area: (12)(95.74)(1/9) = 127.65 Sq.Yd.
Sta. 559+20.74 (℄ U.S.R. 30) = Sta. 559+20.74 (℄ Ramp "C")~
Sta. 559+20.74 to Sta. 563+73.81
Area: ℄(1/2)(26.89)(452.80)-2031.01)+(0.(1/2)(14+2)
-(1/4)π(2)²+(1/2)(22.91)(2)-(1/4)π(2)²
+(12)(454.72)℄(1/9) = 1,060.90 Sq.Yd.
Sta. 563+73.81 to Sta. 564+73.81
Area: (100+(0.017453)(100/200)²(1/2)(9+8)
(3.25)](1/2)(18+16)(1/9) = 189.12 Sq.Yd.
Sta. 564+73.81 to Sta. 572+30.44
Area: ℄(100+(0.017453)(100/200)²(8)(3.25)]
+(656.63)(724.20/716.20)℄(16)(1/9) = 1,308.36 Sq.Yd.
Sta. 572+30.44 to Sta. 573+55.00
Area: [124.56+(0.017453)(124.56/250)²(1/2)
(8+7)(10)](1/2)(16+14)(1/9) = 208.14 Sq.Yd.
Sta. 573+55.00 to Sta. 574+80.44
Area: (125.44+(0.017453)(125.44/250)²(1/2)
(7+8)(10)](1/2)(14+16)(1/9) = 209.62 Sq.Yd.
Sta. 574+80.44 to Sta. 580+25.00
Area: (544.56)(1/2)(35+26)-(1/2)(2)(1)](1/9) = 1,814.29 Sq.Yd.
Sta. 580+25.00 to Sta. 584+51.75
Area: (426.75)(1/2)(26+18)(1/9) = 1,043.17 Sq.Yd.
Sta. 584+51.75 to Sta. 588+16.68
Area: ([364.93)(1/2)(19.50+12)-(1/4)π(1.50)²]
(1/9) = 638.43 Sq.Yd.
Pavement Sub-Summary~
Sta. 557+25.00 (Mainline) to Sta. 588+16.68 (Ramp "C")~
Area: 66.67+127.65+1,060.90+189.12+1,358.36
+208.14+209.62+1,814.29+1,043.17
+638.43 = 6,746.35 Sq.Yd.
848, Type I: (1.25)(1/36)(6,746.35) = 234.25 Cu.Yd.
848, Type 2: (1.50)(1/36)(6,746.35) = 281.10 Cu.Yd.
407 Tack Coat: (6,746.35)(0.10) = 674.63 Gals.
407 Cover Aggregate: (6,746.35)(7/2000) = 23.61 Tons
Sta. 588+16.68 to Sta. 589+54.18 ~ (137.50 Taper)~
848, Type I: (12)(0.487076) = 5.84 Cu.Yd.
848, Type 2: (12)(0.096645) = 1.16 Cu.Yd.
407 Tack Coat: (12)(1.527.778) = 18.33 Gals.
407 Cover Aggregate: (12)(0.053472) = 0.64 Ton
Ramp "C"~Pavement Summary~
848, Type I: 234.25+5.84 = 240.09 Cu.Yd.
848, Type 2: 281.10+1.16 = 282.26 Cu.Yd.
407 Tack Coat: 674.63+18.33 = 692.96 Gals.
407 Cover Aggregate: 23.61+0.64 = 24.25 Tons
Shoulders~
Sta. 557+25.00 to Sta. 558+25.00
Area: (100)(8)(1/9) = 88.89 Sq.Yd.
Sta. 558+25.00 to Sta. 559+20.74
Area: (95.74)(8)(1/9) = 85.10 Sq.Yd.
Sta. 559+20.74 (℄ U.S.R. 30) = Sta. 559+20.74 (℄ Ramp "C")~
Sta. 559+20.74 to Sta. 563+73.81
Area: (453.07)(3,815.72/3,819.72)(8)(1/9) = 402.31 Sq.Yd.
Sta. 563+73.81 to Sta. 564+73.81
Area: ℄(100+(0.017453)(100/200)²(1/2)(19.50+17.50)
(3.25)](3)+(100)(1/2)(14+10)+(100-(0.017453)
(100/200)²(1/2)(4+1.50)(3.25)(1/2)(8+3)℄(1/9) = 227.84 Sq.Yd.

U.S.R. 224 Interchange ~ Ramp "C"~(Cont.)~
Shoulders ~(Cont.)~
Sta. 563+73.81 to Sta. 564+73.81 ~(Cont.)~
Area of Concrete Core Pavement = 35.00 Sq.Yd.
Sta. 564+73.81 to Sta. 572+30.44
Area: ℄(100+(0.017453)(100/200)²(17.50)(3.25)]
+(656.63)(733.70/716.20)+(100-(0.017453)
(100/200)²(1.50)(3.25)]+(656.63)
(714.70/716.20)℄(3)(1/9) = 509.39 Sq.Yd.
Sta. 572+30.44 to Sta. 573+55.00
Area: ℄[124.56+(0.017453)(124.56/250)²(1/2)
(17.50+15.50)(10)](1/2)(3+2)+[124.56
-(0.017453)(124.56/250)²(1/2)(1.50+4.0)
(10)](1/2)(3+8)℄(1/9) = 110.85 Sq.Yd.
Area of Curb Removal: (117.25)(8/12)(1/9) = 8.69 Sq.Yd.
Sta. 573+55.00 to Sta. 574+80.44
Area: ℄[125.44-(0.017453)(125.44/250)²(4)(10)]
(8)+(129.12)(1/2)(4+3.75)℄(1/9) = 238.67 Sq.Yd.
Area of 6' to 3' Variable Width Curb
Removal: (130.30)(1/2)(6+3)(1/9) = 65.15 Sq.Yd.
Sta. 574+80.44 to Sta. 580+25.00
Area: (544.56)(8)(1/9) = 484.05 Sq.Yd.
Sta. 580+25.00 to Sta. 584+51.75
Area: (426.75)(8)(1/9) = 379.33 Sq.Yd.
Sta. 584+51.75 to Sta. 588+16.68
Area: (364.93)(8)(1/9) = 324.38 Sq.Yd.
Shoulder Sub-Summary~
Sta. 557+25.00 (Mainline) to Sta. 588+16.68 (Ramp "C")~
Area: 88.89+85.10+402.31+227.84+509.39
+110.85+238.67+484.05+379.33
+324.38 = 2,850.81 Sq.Yd.
Area of 8" Curb Removal = 8.69 Sq.Yd.
Area of Variable Width Curb Removal = 65.15 Sq.Yd.
Area of Concrete Core Pavement = 35.00 Sq.Yd.
848, Type I: (1.25)(1/36)(2,850.81+8.69+35.00) = 100.50 Cu.Yd.
848, Type 2: (1.50)(1/36)(2,850.81+8.69+35.00) = 120.60 Cu.Yd.
407 Tack Coat: (2,850.81-65.15)(0.10) = 278.57 Gals.
407 Cover Aggregate: (2,850.81-65.15)(7/2000) = 9.75 Tons
Sta. 588+16.68 to Sta. 589+54.18 ~ (137.50 Taper)~
848, Type I: (8)(0.487076) = 3.90 Cu.Yd.
848, Type 2: (8)(0.096645) = 0.77 Cu.Yd.
407 Tack Coat: (8)(1.527.778) = 12.22 Gals.
407 Cover Aggregate: (8)(0.053472) = 0.43 Ton
Ramp "C"~ Shoulder Summary~
848, Type I: 100.50+3.90 = 104.40 Cu.Yd.
848, Type 2: 120.60+0.77 = 121.37 Cu.Yd.
407 Tack Coat: 278.57+12.22 = 290.79 Gals.
407 Cover Aggregate: 9.75+0.43 = 10.18 Tons
Shoulder Reconditioning~
Sta. 557+25.00 to Sta. 558+25.00
Length of 4' Reconditioning = 100.00 Lin.Ft.
Sta. 558+25.00 to Sta. 559+20.74
Length of 4' Reconditioning = 95.74 Lin.Ft.
Sta. 559+20.74 (℄ U.S.R. 30) = Sta. 559+20.74 (℄ Ramp "C")
Sta. 559+20.74 to Sta. 563+73.81
Length of 4' Reconditioning: (453.07)
(3,809.72/3,819.72) = 451.88 Lin.Ft.
Sta. 563+73.81 to Sta. 564+73.81
Length of 4' to 2' Transition: 100-(0.017453)
(100/200)²(1/2)(10+4)(3.25) = 99.90 Lin.Ft.
Sta. 564+73.81 to Sta. 572+30.44
Length of 2' Reconditioning: (100-(0.017453)
(100/200)²(4)(3.25)]+(656.63)(712.20/716.20)
+[100+(0.017453)(100/200)²(20)(3.25)]
+(656.63)(756.20/716.20) = 1,528.16 Lin.Ft.
Sta. 572+30.44 to Sta. 573+55.00
Length of 2' to 4' Transition: 124.56-(0.017453)
(124.56/250)²(1/2)(4+1)(10) = 124.26 Lin.Ft.
Length of 2' Reconditioning = 5.40 Lin.Ft.
Sta. 573+55.00 to Sta. 574+80.44
Length of 4' Reconditioning: 125.44-(0.017453)
(125.44/250)²(10)(10) = 125.00 Lin.Ft.

U.S.R. 224 Interchange ~ Ramp "C"~(Cont.)~
Shoulder Reconditioning~(Cont.)~
Sta. 574+80.44 to Sta. 580+25.00
Length of 4' Reconditioning = 544.56 Lin.Ft.
Sta. 580+25.00 to Sta. 584+51.75
Length of 4' Reconditioning = 426.75 Lin.Ft.
Sta. 584+51.75 to Sta. 588+16.68
Length of 4' Reconditioning = 364.93 Lin.Ft.
Sta. 588+16.68 to Sta. 589+54.18
Length of 4' Reconditioning in Taper = 137.50 Lin.Ft.
Ramp "C"~ Shoulder Reconditioning Summary~
Length of 4' Reconditioning: 100.00+95.74
+451.88+125.00+544.56+426.75+364.93 = 2,108.86 Lin.Ft.
Length of 2' Reconditioning: 1,528.16+5.40 = 1,533.56 Lin.Ft.
Length of 4' to 2' Transitions: 99.90+124.26 = 224.16 Lin.Ft.
Length of 4' Reconditioning in Taper = 137.50 Lin.Ft.
617 Shoulder Preparation: (2,108.86+137.50)
(0.444444)
+(1,533.56)(0.222222)
+(224.16)(1/2)(4+2)
(1/9) = 1,413.89 Sq.Yd.
617 Compacted Aggregate: (2,108.86)(0.046296)
+(1,533.56)(0.023148)
+(137.50)(1/2)(0.046296)
+(224.16)(1/2)(4+2)
(3.75)(1/12)(1/27) = 144.10 Cu.Yd.

U.S.R. 224 Interchange ~ Ramp "D"~
Pavement~
Sta. 564+74.72 to Sta. 567+84.74
Area: (by planimeter) = 179.56 Sq.Yd.
Sta. 567+84.74 to Sta. 568+84.74
Area: (100)(772.44/763.94)(1/2)(16+18)(1/9) = 190.89 Sq.Yd.
Sta. 568+84.74 to Sta. 578+75.00
Area: ℄(924.04)(771.94/763.94)+(66.22-
+(0.017453)(66.22/250)²(8)(9.375)℄
(16)(1/9) = 1,777.83 Sq.Yd.
Sta. 578+75.00 to Sta. 580+58.78
Area: ℄(183.78+(0.017453)(183.78/250)²(1/2)
(9+8)(9.375)℄(1/2)(18+16)(1/9) = 348.56 Sq.Yd.
Sta. 580+58.78 to Sta. 583+58.78
Area: (300)(1/2)(16+14)(1/9) = 500.00 Sq.Yd.
Sta. 583+58.78 (℄ Ramp "D") = Sta. 583+58.78 (℄ U.S.R. 30)
Sta. 583+58.78 to Sta. 595+58.78
Area: (1/2)(25)(1,200)(1/9) = 1,666.67 Sq.Yd.
Ramp "D"~ Pavement Summary~
Area: 179.56+190.99+1,777.83+348.56
+500.00+1,666.67 = 4,663.61 Sq.Yd.
848, Type I: (1.25)(1/36)(4,663.61) = 161.93 Cu.Yd.
848, Type 2: (1.50)(1/36)(4,663.61) = 194.32 Cu.Yd.
407 Tack Coat: (4,663.61)(0.10) = 466.36 Gals.
407 Cover Aggregate: (4,663.61)(7/2000) = 16.32 Tons
Shoulders~
Sta. 564+74.72 to Sta. 567+84.74
Area: ℄(250-(0.017453)(4)(7.49)]+(60.02)
(759.94/763.94)℄(3)(1/9) = 274.83 Sq.Yd.
Sta. 567+84.74 to Sta. 568+84.74
Area: (100)(782.44/763.94)(3)(1/9)+(100)
(761.19/763.94)(1/2)(8+3)(1/9) = 95.03 Sq.Yd.
Area of Concrete Core Pavement = 42.38 Sq.Yd.
Sta. 568+84.74 to Sta. 578+75.00
Area: ℄(924.04)(762.44/763.94)+(891.26)
(781.44/763.94)+(66.22-(0.017453)
(66.22/250)²(1.50)(9.375)℄(3)(1/9)
+℄(32.78)(781.37/763.94)+(66.22+(0.017453)
(66.22/250)²(17.18)(9.375)℄(1/2)(3+2)(1/9) = 661.13 Sq.Yd.
Area of Curb Removal: ℄(32.78)(783.27/763.94)
+(66.22+(0.017453)(66.22/250)²
(18.83)(9.375)℄(8/12)(1/9) = 7.41 Sq.Yd.
Sta. 578+75.00 to Sta. 580+58.78
Area of Shoulder: ℄(183.78+(0.017453)
(183.78/250)²(1/2)(1.50+4)(9.375)℄
(1/2)(3+8)(1/9) = 112.46 Sq.Yd.

PAVEMENT COMPUTATIONS
U.S.R. 30

Computations By Initials J.M.D. Date 12/20/83
Computations Checked By Initials [illegible] Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

19/65

VAN WERT COUNTY
VAN-30-4.05

U.S.R. 30 ~ (Ramps)~
U.S.R. 224 Interchange ~ Ramp "D"~ (Cont.)~
Shoulders ~ (Cont.)~
Sta. 578+75.00 to Sta. 580+58.78 ~ (Cont.)~
Area in Gore not in Curb Removal: (140.60)(1/2)(16.51+12.25)(1/9) = 224.65 Sq.Yd.
Area in Curb Removal: [43.18+(0.017453)(43.18)(250)²(1/2) + (18.33+18.03)(9.375)](3/9) + (1/9)+(140.60+(0.017453)(140.60)(250)²(1/2) + (19.03+17.50)(9.375)](3)(1/9) = 50.39 Sq.Yd.
Sta. 580+58.78 to Sta. 583+58.78
Area of Shoulder: (300)(8)(1/9) = 266.67 Sq.Yd.
Area in Gore not in Curb Removed: (300)(1/2)(12.25+8)(1/9) = 337.50 Sq.Yd.
Area of Curb Removal: (300)(3)(1/9) = 100.00 Sq.Yd.
Sta. 583+58.78 (@ Ramp "D") = Sta. 583+58.78 (@ U.S.R. 30) ~
Sta. 583+58.78 to Sta. 595+58.78
Area: (1,200)(8)(1/9) = 1,066.67 Sq.Yd.
Ramp "D" ~ Shoulder Summary ~
Area: 274.83+95.03+661.13+112.46+266.67+1,066.67 = 2,476.79 Sq.Yd.
Area of Gore not in Curb Removal: 224.65+337.50 = 562.15 Sq.Yd.
Area of Curb Removal: 7.41+50.39+100.00 = 157.80 Sq.Yd.
Area of Concrete Gore Pavement = 42.38 Sq.Yd.
848, Type I: (1.25)(1/36)(2,476.79+157.80+42.38) + (1/2)(1+3)(1/36)(562.15) = 124.18 Cu.Yd.
848, Type 2: (1.50)(1/36)(2,476.79+157.80+42.38) = 111.54 Cu.Yd.
407 Tack Coat: (2,476.79+562.15)(0.10) = 303.89 Gals.
407 Corer Aggregate: (2,476.79+562.15)(1/2000) = 10.64 Tons
Shoulder Reconditioning ~
Sta. 564+74.72 to Sta. 567+84.74
Length of 4' Reconditioning: 250-(0.017453)(10)(749)+(60.00)(753.94/763.94) = 307.93 Lin.Ft.
Sta. 567+84.74 to Sta. 568+84.74
Length of 4' to 2' Transition: (100)(786.94/763.94) = 99.08 Lin.Ft.
Sta. 568+84.74 to Sta. 578+75.00
Length of 2' Reconditioning: (924.04)(759.94/763.94)+(66.22-(0.017453)(66.22)(250)²(2)(9.375)+(891.26)(783.94/763.94) = 1,899.97 Lin.Ft.
Sta. 578+75.00 to Sta. 580+58.78
Length of 2' to 4' Transition: 183.78-(0.017453)(183.78)(250)²(1/2)(4+10)(9.375) = 183.16 Lin.Ft.
Sta. 580+58.78 to Sta. 583+58.78
Length of 4' Reconditioning = 300.00 Lin.Ft.
Sta. 583+58.78 to Sta. 595+58.78
Length of 4' Reconditioning = 1,200.00 Lin.Ft.
Ramp "D" ~ Shoulder Reconditioning Summary ~
Length of 4' Reconditioning: 307.93+300+1,200 = 1,807.93 Lin.Ft.
Length of 4' to 2' Transition: 99.08+183.16 = 282.24 Lin.Ft.
Length of 2' Reconditioning = 1,899.97 Lin.Ft.
617 Shoulder Preparation: (1,807.93)(0.444444)+(282.24)(1/2)(4+2)(1/9)+(1,899.97)(0.222222) = 1,319.82 Sq.Yd.
617 Compacted Aggregate: (1,807.93)(0.046296)+(282.24)(1/2)(4+2)(3.75)(1/12)(1/27)+(1,899.97)(0.023148) = 137.48 Cu.Yd.

U.S.R. 30 ~ At Grade Intersections ~
Intersection of U.S.R. 30 and Dixon Road ~
Median Crossover ~
Sta. 249+55.44 to Sta. 257+86.94
Pavement ~
Area from old plans = 1,054.20 Sq.Yd.

Intersection of U.S.R. 30 and Dixon Road ~
Median Crossover ~
Sta. 249+55.44 to Sta. 257+86.94 ~ (Cont.)~
Pavement ~
848, Type I: (1.25)(1/36)(1,054.20) = 36.60 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,054.20) = 43.93 Cu.Yd.
407 Tack Coat: (1,054.20)(0.10) = 105.42 Gals.
407 Cover Aggregate: (1,054.20)(1/2000) = 3.69 Tons
Shoulders ~
Length: 2[50+300.24+2(43.95/360)π(2)(58)+(92.10/360)π(2)(8)] = 904.16 Lin.Ft.
848, Type I: (904.16)(0.015432) = 13.95 Cu.Yd.
848, Type 2: (904.16)(0.018519) = 16.74 Cu.Yd.
407 Tack Coat: (904.16)(0.044444) = 40.18 Gals.
407 Cover Aggregate: (904.16)(0.001556) = 1.41 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: (904.16)(0.444444) = 401.85 Sq.Yd.
617 Compacted Aggregate: (904.16)(0.046296) = 41.86 Cu.Yd.

Intersection of Westbound U.S.R. 30 and Dixon Road ~ (North Side)
Sta. 253+38.11 to Sta. 254+88.45
Pavement ~
Area 1: 2(1/9)[(1/2)(1/2)(60+12.50)(36.66)-(37.66/360)π(60)²+(77.02)(12.50)(1/9)] = 139.37 Sq.Yd.
Area 2: (1/9)[(68.75)(150.34)-(70/360)π(60)²-1/2(34.64)(60)-(1/2)(72.46+69.28)(8.75)-1/2(59.36)(8.75)-(98.38/360)π(60)²-139.37] = 208.08 Sq.Yd.
848, Type I: (1/2)(2.25)(1/36)(208.08)+(1.25)(1/36)(139.37) = 11.34 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(139.37) = 4.84 Cu.Yd.
407 Tack Coat: (139.37+208.08)(0.10) = 34.75 Gals.
407 Cover Aggregate: (139.37+208.08)(1/2000) = 1.22 Tons
Shoulders ~
Length: 2(39.44+23.39) = 125.66 Lin.Ft.
Area: 2(12.33+29.56) = 83.78 Sq.Yd.
848, Type I: 2[(29.56)(1.25)(1/36)+(12.33)(1/2)(1.20+2.25)(1/36)] = 3.23 Cu.Yd.
848, Type 2: 2[(29.56)(1/2)(1+1.50)(1/36)] = 2.05 Cu.Yd.
407 Tack Coat: (83.78)(0.10) = 8.38 Gals.
407 Cover Aggregate: (83.78)(1/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (125.66)(0.444444) = 55.85 Sq.Yd.
617 Compacted Aggregate: (125.66)(0.046296) = 5.82 Cu.Yd.

Intersection of Eastbound U.S.R. 30 and Dixon Road ~ (South Side)~
Sta. 252+56.31 to Sta. 254+03.88
Pavement ~
Area 1: (1/2)(60+12.50)(36.66)-(37.66/360)π(60)²](2)(1/9)+(12.50)(74.25)(1/9) = 135.53 Sq.Yd.
Area 2: [(68.75)(147.57)-(98.38/360)π(60)²-1/2(8.75)(59.36)-(70/360)π(60)²-1/2(60)(34.64)-(1/2)(72.46+69.28)(8.75)](1/9)-135.53 = 190.76 Sq.Yd.
848, Type I: (1.25)(1/36)(135.53)+1/2(2.25)(1/36)(190.76) = 10.67 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(135.53) = 4.71 Cu.Yd.
407 Tack Coat: (135.53+190.76)(0.10) = 32.63 Gals.
407 Cover Aggregate: (135.53+190.76)(1/2000) = 1.14 Tons
Shoulders ~
Length: 2(39.44+23.39) = 125.66 Lin.Ft.
Area: 2(12.33+29.56) = 83.78 Sq.Yd.
848, Type I: 2[(29.56)(1.25)(1/36)+(12.33)(1/2)(1.20+2.25)(1/36)] = 3.23 Cu.Yd.
848, Type 2: 2[(29.56)(1/2)(1+1.50)(1/36)] = 2.05 Cu.Yd.
407 Tack Coat: (83.78)(0.10) = 8.38 Gals.
407 Cover Aggregate: (83.78)(1/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (125.66)(0.444444) = 55.85 Sq.Yd.

Intersection of Eastbound U.S.R. 30 and Dixon Road ~
Sta. 252+56.31 to Sta. 254+03.88 ~ (Cont.)~
Shoulder Reconditioning ~
617 Compacted Aggregate: (125.66)(0.046296) = 5.82 Cu.Yd.

Intersection of U.S.R. 30 and S.R. 49 ~
Median Crossover ~
Sta. 278+52.19 to Sta. 286+94.81 ~
Pavement ~
Area from old plans = 1,054.20 Sq.Yd.
848, Type I: (1.25)(1/36)(1,054.20) = 36.60 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,054.20) = 43.93 Cu.Yd.
407 Tack Coat: (1,054.20)(0.10) = 105.42 Gals.
407 Cover Aggregate: (1,054.20)(1/2000) = 3.69 Tons
Shoulders ~
Length: 2[(50)+300.24+2(43.95/360)π(2)(58)+(92.10/360)π(2)(8)] = 904.16 Lin.Ft.
848, Type I: (904.16)(0.015432) = 13.95 Cu.Yd.
848, Type 2: (904.16)(0.018519) = 16.74 Cu.Yd.
407 Tack Coat: (904.16)(0.044444) = 40.18 Gals.
407 Cover Aggregate: (904.16)(0.001556) = 1.41 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: (904.16)(0.444444) = 401.85 Sq.Yd.
617 Compacted Aggregate: (904.16)(0.046296) = 41.86 Cu.Yd.

Intersection of Westbound U.S.R. 30 and S.R. 49 ~ (North Side)~
Sta. 281+88.57 to Sta. 283+19.51 ~
Pavement ~
Area 1: (1/2(12.50+75)(41.46)-(33.56/360)π(75)²+1/2(40+12.50)(29.05)-(46.58/360)π(40)²+(12.50)(60.43)](1/9) = 114.93 Sq.Yd.
Area 2: (1/9)[(68.75)(130.94)-(110/360)π(40)²-1/2(28.75)(78.99)+(3)(20)+(9.30)(20)-(11.89)(1/2)(24.23+56.73)-(70/360)π(75)²+1/2(6.25)(17.17)] - 114.93 = 186.51 Sq.Yd.
848, Type I: (1.25)(1/36)(114.93)+1/2(2.25+0)(1/36)(186.51) = 9.82 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(114.93) = 3.99 Cu.Yd.
407 Tack Coat: (114.93+186.51)(0.10) = 30.14 Gals.
407 Cover Aggregate: (114.93+186.51)(1/2000) = 1.06 Tons
Shoulders ~
Length: 43.93+25.62+32.51+20.21 = 122.27 Lin.Ft.
Area: 10.70+24.44+13.48+32.87 = 81.49 Sq.Yd.
848, Type I: (32.87+24.44)(1.25)(1/36)+(10.70+13.48)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(1/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

Intersection of Eastbound U.S.R. 30 and S.R. 49 ~ (South Side)~
Sta. 282+32.49 to Sta. 283+63.43 ~
Pavement ~
Area 1: (1/2(75+12.50)(41.46)-(33.56/360)π(75)²+1/2(40+12.50)(29.05)-(46.58/360)π(40)²+(12.50)(60.43)](1/9) = 114.93 Sq.Yd.
Area 2: (1/9)[(68.75)(130.94)-(110/360)π(40)²-1/2(28.75)(78.99)+(20)(12.39)-(11.89)(24.23+56.73)(1/2)-(70/360)π(75)²+1/2(6.25)(17.17)] - 114.93 = 186.71 Sq.Yd.
848, Type I: (1.25)(1/36)(114.93)+1/2(2.25)(1/36)(186.71) = 9.83 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(114.93) = 3.99 Cu.Yd.
407 Tack Coat: (114.93+186.71)(0.10) = 30.16 Gals.
407 Cover Aggregate: (114.93+186.71)(1/2000) = 1.06 Tons
Shoulders ~
Length: 32.51+20.21+43.93+25.62 = 122.27 Lin.Ft.
Area: 10.70+24.44+13.48+32.87 = 81.49 Sq.Yd.
848, Type I: (32.87+24.44)(1.25)(1/36)+(13.48+10.70)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.

Intersection of Eastbound U.S.R. 30 and S.R. 49 ~
Sta. 282+32.49 to Sta. 283+63.43 ~ (Cont.)~
Shoulders ~
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(1/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

Intersection of U.S.R. 30 and Colwell Road ~
Median Crossover ~
Sta. 368+91.19 to Sta. 377+28.81 ~
Pavement ~
Area from old plans = 1,112.44 Sq.Yd.
848, Type I: (1.25)(1/36)(1,112.44) = 38.63 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,112.44) = 46.35 Cu.Yd.
407 Tack Coat: (1,112.44)(0.10) = 111.24 Gals.
407 Cover Aggregate: (1,112.44)(1/2000) = 3.89 Tons
Shoulders ~
Length: 2[50+300.24+2(43.95/360)π(2)(58)+(92.10/360)π(2)(8)] = 904.16 Lin.Ft.
848, Type I: (904.16)(0.015432) = 13.95 Cu.Yd.
848, Type 2: (904.16)(0.018519) = 16.74 Cu.Yd.
407 Tack Coat: (904.16)(0.044444) = 40.18 Gals.
407 Cover Aggregate: (904.16)(0.001556) = 1.41 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: (904.16)(0.444444) = 401.85 Sq.Yd.
617 Compacted Aggregate: (904.16)(0.046296) = 41.86 Cu.Yd.

Intersection of Westbound U.S.R. 30 and Colwell Road ~ (North Side)~
Sta. 372+22.58 to Sta. 373+53.50 ~
Pavement ~
Area 1: ((1/2)(40+12.50)(29.05)-(46.58/360)π(40)²+(12.50)(60.41)+(1/2)(12.50+75)(41.46)-(33.56/360)π(75)²](1/9) = 114.87 Sq.Yd.
Area 2: (1/9)[(68.75)(130.92)-(110/360)π(40)²-(70/360)π(75)²+(1/2)(6.25)(17.17)-1/2(28.75)(78.99)+(20)(12.39)-(1/2)(24.06+56.73)(11.89)] - 114.87 = 186.73 Sq.Yd.
848, Type I: (1.25)(1/36)(114.87)+(1/2)(2.25)(1/36)(186.73) = 9.82 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(114.87) = 3.99 Cu.Yd.
407 Tack Coat: (114.87+186.73)(0.10) = 30.16 Gals.
407 Cover Aggregate: (114.87+186.73)(1/2000) = 1.06 Tons
Shoulders ~
Length: 32.51+20.21+43.93+25.62 = 122.27 Lin.Ft.
Area: 10.70+24.44+13.48+32.87 = 81.49 Sq.Yd.
848, Type I: (32.87+24.44)(1.25)(1/36)+(3.48+10.70)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(1/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

Intersection of Eastbound U.S.R. 30 and Colwell Road ~ (South Side)~
Sta. 372+66.50 to Sta. 373+97.42 ~
Pavement ~
Area 1: (1/9)[(1/2)(12.50+75)(41.46)-(33.56/360)π(75)²+(1/2)(12.50+40)(29.05)-(46.58/360)π(40)²+(12.50)(60.41)] = 114.87 Sq.Yd.
Area 2: (1/9)[(68.75)(130.92)-(110/360)π(40)²+1/2(6.25)(17.17)-(110/360)π(75)²-1/2(28.75)(78.99)+(2.39)(20)-(1/2)(24.06+56.73)(11.89)] - 114.87 = 186.73 Sq.Yd.

PAVEMENT COMPUTATIONS

PAVEMENT COMPUTATIONS

Computations By Initials D.M.S. Date 12/20/83
Computations Checked By Initials J.H.B. Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

VAN WERT COUNTY
VAN-30-4.05

20/65

U.S.R. 30 ~ At Grade Intersections ~ (Cont.) ~ (South Side)
Intersection of Eastbound U.S.R. 30 and Colwell Road ~
Sta. 372+66.50 to Sta. 373+97.42 ~ (Cont.) ~ Pavement ~
848, Type 1: (1.25)(1/36)(114.87) + (1/2)(2.25)(1/36) (186.73) = 9.82 Cu.Yd.
848, Type 2: (1/2)(1.50+1)(1/36)(114.87) = 3.99 Cu.Yd.
407 Tack Coat: (114.87+186.73)(0.10) = 30.16 Gals.
407 Cover Aggregate: (114.87+186.73)(7/2000) = 1.06 Tons
Shoulders ~
Length: 32.51+20.21+43.93+25.62 = 122.27 Lin.Ft.
Area: 10.70+24.44+13.48+32.87 = 81.49 Sq.Yd.
848, Type 1: (32.87+24.44)(1.25)(1/36) + (13.48+10.70)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(7/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

Intersection of U.S.R. 30 and Convoy Road ~
Median Crossover ~
Sta. 407+25.69 to Sta. 415+54.57 ~
Pavement ~
Area from old plans = 1,054.20 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,054.20) = 36.60 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,054.20) = 43.93 Cu.Yd.
407 Tack Coat: (1,054.20)(0.10) = 105.42 Gals.
407 Cover Aggregate: (1,054.20)(7/2000) = 3.69 Tons
Shoulders ~
Length: 2(50+300.24+2(43.95/360)π(2)(58) + (92.10/360)π(2)(8) = 904.16 Lin.Ft.
Area: (904.16)(2)(1/9) = 401.85 Sq.Yd.
848, Type 1: (1.25)(1/36)(401.85) = 13.95 Cu.Yd.
848, Type 2: (1.50)(1/36)(401.85) = 16.74 Cu.Yd.
407 Tack Coat: (401.85)(0.10) = 40.19 Gals.
407 Cover Aggregate: (401.85)(7/2000) = 1.41 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: (904.16)(0.444444) = 401.85 Sq.Yd.
617 Compacted Aggregate: (904.16)(0.046296) = 41.86 Cu.Yd.

Intersection of Westbound U.S.R. 30 and Convoy Road ~
Sta. 411+07.13 to Sta. 412+56.12 ~ (North Side) ~
Pavement ~
Area 1: 2(1/9)(1/2)(12.50+60)(36.66) - (37.66/360)π(60)² + (12.50)(75.67)(1/9) = 137.50 Sq.Yd.
Area 2: [(68.75)(148.99) - (70/360)π(60)² - (1/2)(8.75+20.52)(66.38) - 1/2(7.47)(20.52) - 1/2(8.75)(59.36) - (108.88/360)π(60)²](1/9) - 137.50 = 247.16 Sq.Yd.
848, Type 1: (1.25)(1/36)(137.50) + 1/2(2.25)(1/36)(247.16) = 12.50 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(137.50) = 4.77 Cu.Yd.
407 Tack Coat: (137.50+247.16)(0.10) = 38.47 Gals.
407 Cover Aggregate: (137.50+247.16)(7/2000) = 1.35 Tons
Shoulders ~
Length: 2(39.44+23.39) = 125.66 Lin.Ft.
Area: 2(29.56+12.33) = 83.78 Sq.Yd.
848, Type 1: 2[(29.56)(1.25)(1/36) + (12.33)(1/2)(1.20+2.25)(1/36)] = 3.23 Cu.Yd.
848, Type 2: 2[(29.56)(1/2)(1.0+1.50)(1/36)] = 2.05 Cu.Yd.
407 Tack Coat: (83.78)(0.10) = 8.38 Gals.
407 Cover Aggregate: (83.78)(7/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (125.66)(0.444444) = 55.85 Sq.Yd.
617 Compacted Aggregate: (125.66)(0.046296) = 5.82 Cu.Yd.

Intersection of Eastbound U.S.R. 30 and Convoy Road ~
Sta. 410+24.14 to Sta. 411+73.13 ~ (South Side) ~
Pavement ~
Area 1: 2(1/9)(1/2)(12.50+60)(36.66) - (37.66/360)π(60)² + (12.50)(75.67)(1/9) = 137.50 Sq.Yd.

Intersection of Eastbound U.S.R. 30 and Convoy Road ~
Sta. 410+24.14 to Sta. 411+73.13 ~ (Cont.) ~
Pavement ~
Area 2: (1/9)[(68.75)(148.99) - 1/2(8.75)(59.36) - (108.88/360)π(60)² - (70/360)π(60)² - (1/2)(60+60.35)(0.96) - (1/2)(14.69+7.73)(19.12) - 1/2(14.69)(37.20) - (41.55/360)π(40)²] - 137.50 = 222.30 Sq.Yd.
848, Type 1: (1.25)(1/36)(137.50) + (1/2)(2.25)(1/36)(222.30) = 11.72 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(137.50) = 4.77 Cu.Yd.
407 Tack Coat: (137.50+222.30)(0.10) = 35.98 Gals.
407 Cover Aggregate: (137.50+222.30)(7/2000) = 1.26 Tons
Shoulders ~
Length: 2(39.44+23.39) = 125.66 Lin.Ft.
Area: 2(29.56+12.33) = 83.78 Sq.Yd.
848, Type 1: 2[(29.56)(1.25)(1/36) + (12.33)(1/2)(1.20+2.25)(1/36)] = 3.23 Cu.Yd.
848, Type 2: 2[(29.56)(1/2)(1.50+1.0)(1/36)] = 2.05 Cu.Yd.
407 Tack Coat: (83.78)(0.10) = 8.38 Gals.
407 Cover Aggregate: (83.78)(7/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (125.66)(0.444444) = 55.85 Sq.Yd.
617 Compacted Aggregate: (125.66)(0.046296) = 5.82 Cu.Yd.

Intersection of U.S.R. 30 and Richey Road ~
Median Crossover ~
Sta. 493+91.95 to Sta. 502+29.53 ~
Pavement ~
Area from old plans = 1,112.44 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,112.44) = 38.63 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,112.44) = 46.35 Cu.Yd.
407 Tack Coat: (1,112.44)(0.10) = 111.24 Gals.
407 Cover Aggregate: (1,112.44)(7/2000) = 3.89 Tons
Shoulders ~
Length: 2(50+300.24+(2)(43.95/360)(2)π(58) + (92.10/360)(2)(π)(8) = 904.16 Lin.Ft.
Area: (904.16)(4)(1/9) = 401.85 Sq.Yd.
848, Type 1: (1.25)(1/36)(401.85) = 13.95 Cu.Yd.
848, Type 2: (1.50)(1/36)(401.85) = 16.74 Cu.Yd.
407 Tack Coat: (401.85)(0.10) = 40.19 Gals.
407 Cover Aggregate: (401.85)(7/2000) = 1.41 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: (904.16)(0.444444) = 401.85 Sq.Yd.
617 Compacted Aggregate: (904.16)(0.046296) = 41.86 Cu.Yd.

Intersection of Westbound U.S.R. 30 and Richey Road ~
Sta. 497+21.93 to Sta. 498+53.90 ~ (North Side) ~
Pavement ~
Area 1: (1/9)[1/2(40+12.50)(29.05) - (46.57/360)π(40)² + 1/2(75+12.50)(41.46) - (33.56/360)π(75)²] + 116.34 = 194.80 Sq.Yd.
Area 2: (1/9)[(68.75)(131.97) - (110/360)π(40)² - 1/2(28.75)(78.99) + (12.16)(20) - 1/2(23.41+56.23)(11.53) - (70/360)π(75)² + 1/2(6.25)(17.17)] - 116.34 = 194.80 Sq.Yd.
848, Type 1: (1.25)(1/36)(116.34) + (1/2)(2.25)(1/36)(194.80) = 10.13 Cu.Yd.
848, Type 2: (1/2)(1.0+1.50)(1/36)(116.34) = 4.04 Cu.Yd.
407 Tack Coat: (116.34+194.80)(0.10) = 31.11 Gals.
407 Cover Aggregate: (116.34+194.80)(7/2000) = 1.09 Tons
Shoulders ~
Length: 43.93+25.62+32.51+20.21 = 122.27 Lin.Ft.
Area: 32.87+13.48+24.44+10.70 = 81.49 Sq.Yd.
848, Type 1: (32.87+24.44)(1.25)(1/36) + (13.48+10.70)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(7/2000) = 0.29 Ton

Intersection of Westbound U.S.R. 30 and Richey Road ~
Sta. 497+21.93 to Sta. 498+53.90 ~ (Cont.) ~
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

Intersection of Eastbound U.S.R. 30 and Richey Road ~
Sta. 497+66.88 to Sta. 498+96.78 ~ (South Side) ~
Pavement ~
Area 1: (1/9)[(1/2)(75+12.50)(41.46) - (33.56/360)π(75)² + (1/2)(40+12.50)(29.05) - (46.57/360)π(40)² + (12.50)(59.39)] = 113.47 Sq.Yd.
Area 2: (1/9)[(68.75)(129.90) - (70/360)π(75)² + (1/2)(6.25)(17.17) - (1/2)(56.73+24.62)(9.87) - (1/2)(78.99)(28.75) + (12.60)(20) - (110/360)π(40)²] - 113.47 = 189.57 Sq.Yd.
848, Type 1: (1.25)(1/36)(113.47) + (1/2)(2.25)(1/36)(189.57) = 9.86 Cu.Yd.
848, Type 2: (1/2)(1.0+1.50)(1/36)(113.47) = 3.94 Cu.Yd.
407 Tack Coat: (113.47+189.57)(0.10) = 30.30 Gals.
407 Cover Aggregate: (113.47+189.57)(7/2000) = 1.06 Tons
Shoulders ~
Length: 43.93+25.62+32.51+20.21 = 122.27 Lin.Ft.
Area: 32.87+13.48+24.44+10.70 = 81.49 Sq.Yd.
848, Type 1: (32.87+24.44)(1.25)(1/36) + (13.48+10.70)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(7/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

Intersection of U.S.R. 30 and Liberty Road ~
Median Crossover ~
Sta. 552+13.93 to Sta. 560+50.07 ~
Pavement ~
Area from old plans = 1,102.60 Sq.Yd.
848, Type 1: (1.25)(1/36)(1,102.60) = 38.28 Cu.Yd.
848, Type 2: (1.50)(1/36)(1,102.60) = 45.94 Cu.Yd.
407 Tack Coat: (1,102.60)(0.10) = 110.26 Gals.
407 Cover Aggregate: (1,102.60)(7/2000) = 3.86 Tons
Shoulders ~
Length: 2(50+300.24+2(43.95/360)π(2)(58) + (92.10/360)π(2)(8) = 904.16 Lin.Ft.
Area: (904.16)(0.015432) = 13.95 Cu.Yd.
848, Type 2: (904.16)(0.018519) = 16.74 Cu.Yd.
407 Tack Coat: (904.16)(0.044444) = 40.18 Gals.
407 Cover Aggregate: (904.16)(0.001556) = 1.41 Tons
Shoulder Reconditioning ~
617 Shoulder Preparation: (904.16)(0.444444) = 401.85 Sq.Yd.
617 Compacted Aggregate: (904.16)(0.046296) = 41.86 Cu.Yd.

Intersection of Westbound U.S.R. 30 and Liberty Road ~
Sta. 555+49.79 to Sta. 556+80.31 ~ (North Side) ~
Pavement ~
Area 1: (1/9)[(1/2)(40+12.50)(29.05) - (46.57/360)π(40)² + (1/2)(12.50+75)(41.46) - (33.56/360)π(75)²] + (12.50)(60.02)] = 114.33 Sq.Yd.
Area 2: (1/9)[(68.75)(130.52) - (107.57/360)π(40)² - (1/2)(28.75)(90.80) + (14.32)(19.57) - (1/2)(35.24+54.29)(6.03) - (72.43/360)π(75)² + (1/2)(6.25)(19.74)] - 114.33 = 183.74 Sq.Yd.
848, Type 1: (1.25)(1/36)(114.33) + (1/2)(2.25)(1/36)(183.74) = 9.71 Cu.Yd.
848, Type 2: (1/2)(1.0+1.50)(1/36)(114.33) = 3.97 Cu.Yd.

Intersection of Westbound U.S.R. 30 and Liberty Road ~
Sta. 555+49.79 to Sta. 556+80.31 ~ (Cont.) ~
Pavement ~
407 Tack Coat: (114.33+183.74)(0.10) = 29.81 Gals.
407 Cover Aggregate: (114.33+183.74)(7/2000) = 1.04 Tons
Shoulders ~
Length: 43.93+25.62+32.51+20.21 = 122.27 Lin.Ft.
Area: 32.87+13.48+24.44+10.70 = 81.49 Sq.Yd.
848, Type 1: (32.87+24.44)(1.25)(1/36) + (13.48+10.70)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(7/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

Intersection of Eastbound U.S.R. 30 and Liberty Road ~
Sta. 555+82.73 to Sta. 557+13.19 ~ (South Side) ~
Pavement ~
Area 1: (1/9)[(1/2)(2.50+75)(41.46) - (33.56/360)π(75)² + (1/2)(12.50+40)(29.05) - (46.57/360)π(40)² + (12.50)(59.95)] = 114.24 Sq.Yd.
Area 2: (1/9)[(68.75)(130.46) - (72.43/360)π(75)² + (1/2)(6.25)(19.74) - (1/2)(54.29+35.24)(4.30) - (1/2)(28.75)(90.80) + (19.48)(20) - (107.57/360)π(40)²] - 114.24 = 204.13 Sq.Yd.
848, Type 1: (1.25)(1/36)(114.24) + (1/2)(2.25)(1/36)(204.13) = 10.35 Cu.Yd.
848, Type 2: (1/2)(1.50+1.0)(1/36)(114.24) = 3.97 Cu.Yd.
407 Tack Coat: (114.24+204.13)(0.10) = 31.84 Gals.
407 Cover Aggregate: (114.24+204.13)(7/2000) = 1.11 Tons
Shoulders ~
Length: 43.93+25.62+32.51+20.21 = 122.27 Lin.Ft.
Area: 32.87+13.48+24.44+10.70 = 81.49 Sq.Yd.
848, Type 1: (32.87+24.44)(1.25)(1/36) + (13.48+10.70)(1/2)(1.20+2.25)(1/36) = 3.15 Cu.Yd.
848, Type 2: (32.87+24.44)(1/2)(1.0+1.50)(1/36) = 1.99 Cu.Yd.
407 Tack Coat: (81.49)(0.10) = 8.15 Gals.
407 Cover Aggregate: (81.49)(7/2000) = 0.29 Ton
Shoulder Reconditioning ~
617 Shoulder Preparation: (122.27)(0.444444) = 54.34 Sq.Yd.
617 Compacted Aggregate: (122.27)(0.046296) = 5.66 Cu.Yd.

PAVEMENT REPAIR COMPUTATIONS

Computations By Initials J.M.S. Date 12/20/83	FHWA REGION	STATE	PROJECT		8
Computations Checked By Initials J.D.S Date 12-20-83	5	OHIO			65
Final Revisions By Initials Date					

VAN WERT COUNTY
VAN-30-4.05

ESTIMATED PAVEMENT REPAIR TABLE

Location	Lane	Estimated No. of Removals	Length	Width		202 Pavement Removed	305 15" Portland Cement Concrete Base (See Prop. Note)	605 Aggregate Drain as per plan	605 Longitudinal Aggregate Drain, as per plan	Special Pavement Sawing
			Ft.	Ft.		Sq. Yd.	Sq. Yd.	Lin. Ft.	Lin. Ft.	Lin. Ft.
Eastbound U.S.R. 30										
	Driving	738	10	12		9,840.00	9,840.00		8,118.00	17,712.00
	Passing	259	10	12		3,453.33	3,453.33	9,324.00		6,216.00
	Ramps	106	10	16		1,884.44	1,884.44		1,166.00	3,392.00
	Speed Change Lane	86	10	12		1,146.67	1,146.67			2,064.00
Sub-Total						16,324.44	16,324.44	9,324.00	9,284.00	29,384.00
Westbound U.S.R. 30										
	Driving	712	10	12		9,493.33	9,493.33		7,832.00	17,088.00
	Passing	285	10	12		3,800.00	3,800.00	10,260.00		6,840.00
	Ramps	77	10	16		1,368.89	1,368.89		847.00	2,464.00
	Speed Change Lane	58	10	12		773.33	773.33			1,392.00
Sub-Total						15,435.55	15,435.55	10,260.00	8,679.00	27,784.00
Totals to Sheets 23 & 24						31,759.99	31,759.99	19,584.00	17,963.00	57,168.00

PAVEMENT REPAIR

Estimated Number of Removals~
Eastbound~
Driving Lane: 461 x 1.6 = 738 Repairs
Passing Lane: 162 x 1.6 = 259 Repairs
Ramps~(16' Width): 66 x 1.6 = 106 Repairs
Speed Change Lanes~(12' Width): 54 x 1.6 = 86 Repairs
Westbound~
Driving Lane: 445 x 1.6 = 712 Repairs
Passing Lane: 178 x 1.6 = 285 Repairs
Ramps~(16' Width): 48 x 1.6 = 77 Repairs
Speed Change Lanes~(12' Width): 36 x 1.6 = 58 Repairs

Per Repair Factors~
202 Pavement Removed: (10)(12)(1/9) = 13.3333333 Sq. Yd. per Mainline Repair
202 Pavement Removed: (10)(16)(1/9) = 17.777778 Sq. Yd. per Ramp Repair (16' Width)
202 Pavement Removed: (10)(12)(1/9) = 13.333333 Sq. Yd. per Speed Change Lane Repair (12' Width)
305 Portland Cement Concrete Base (10)(12)(1/9) = 13.333333 Sq. Yd. per Mainline Repair
305 Portland Cement Concrete Base (10)(16)(1/9) = 17.777778 Sq. Yd. per Ramp Repair (16' Width)
305 Portland Cement Concrete Pavement (10)(12)(1/9) = 13.333333 Sq. Yd. per Speed Change Lane Repair (12' Width)
Item Special ~ Pavement Sawing: (2)(12) = 24 Lin. Ft. per Mainline Repair
Item Special ~ Pavement Sawing: (2)(16) = 32 Lin. Ft. per Ramp Repair (16' Width)
Item Special ~ Pavement Sawing: (2)(12) = 24 Lin. Ft. per Speed Change Lane Joint (12' Width)

Length of Longitudinal Aggregate Drains as per plan = 11'
Length of Aggregate Drain as per plan (2 drains per repair) = 18' per drain (inside) Mainline

Note: Aggregate Drains as per plan and Longitudinal Aggregate Drains as per plan for Ramps (12' Width) are included in the Computations for Driving Lanes.

Eastbound~
Driving Lane~
Percent of Driving Lane Superelevated = 0 %
Percent of Driving Lane with existing pipe underdrains = 100 %
∴ Percent of repair locations to be drained by Longitudinal Aggregate Drains, As Per Plan = 100 %
Quantities~
202 Pavement Removed: (738)(13.333333) = 9,840.00 Sq. Yd.
305~15" Portland Cement Concrete Base (738)(13.333333) = 9,840.00 Sq. Yd.
605~Longitudinal Aggregate Drain as per plan: (738)(11)(1.00) = 8,118.00 Lin. Ft.
605~Aggregate Drain, as per plan = 0 Lin. Ft.
Item Special~Pavement Sawing: (738)(24) = 17,712.00 Lin. Ft.
Passing Lane~
Percent of Passing Lane Superelevated = 0%
Percent of Passing Lane with existing pipe underdrains = 0%
∴ Percent of repair locations to be drained by Aggregate Drains as per plan = 100%

Eastbound~(Cont)~
Passing Lane~(Cont.)~
Quantities~
202 Pavement Removed: (259)(13.333333) = 3,453.33 Sq. Yd.
305~15" Portland Cement Concrete Base: (259)(13.333333) = 3,453.33 Sq. Yd.
605~Longitudinal Aggregate Drains, as per plan = 0 Lin. Ft.
605~Aggregate Drains, as per plan: (2 drains per location): (259)(2)(18) = 9,324.00 Lin. Ft.
Item Special~Pavement Sawing: (259)(24) = 6,216.00 Lin. Ft.
Ramps~(16' Width)~
Percent of ramp pavement with existing pipe underdrains = 100 %
Percent of repair locations to be drained by Longitudinal Aggregate Drains as per plan = 100 %
Quantities~
202 Pavement Removed: (106)(17.777778) = 1,884.44 Sq. Yd.
305~15" Portland Cement Concrete Base: (106)(17.777778) = 1,884.44 Sq. Yd.
605~Longitudinal Aggregate Drain, as per plan: (106)(11)(1.00) = 1,166.00 Lin. Ft.
Item Special~Pavement Sawing: (106)(32) = 3,392.00 Lin. Ft.
Speed Change Lane~(12' Width)~
Quantities~
202 Pavement Removed: (86)(13.333333) = 1,146.67 Sq. Yd.
305~15" Portland Cement Concrete Base: (86)(13.333333) = 1,146.67 Sq. Yd.
Drainage Quantities included with Mainline Calculations
Item Special~Pavement Sawing: (86)(24) = 2,064.00 Lin. Ft.

Westbound~
Driving Lane~
Percent of Driving Lane Superelevated = 0%
Percent of Driving Lane with existing pipe underdrains = 100%
∴ Percent of repair locations to be drained by Longitudinal Aggregate Drains, As Per Plan = 100%
Quantities~
202 Pavement Removed: (712)(13.333333) = 9,493.33 Sq. Yd.
305~15" Portland Cement Concrete Base: (712)(13.333333) = 9,493.33 Sq. Yd.
605~Longitudinal Aggregate Drain, as per plan: (712)(11)(1.00) = 7,832.00 Lin. Ft.
605~Aggregate Drain, as per plan = 0 Lin. Ft.
Item Special~Pavement Sawing: (712)(24) = 17,088.00 Lin. Ft.
Passing Lane~
Percent of Passing Lane Superelevated = 0%
Percent of Passing Lane with existing pipe underdrains = 0%
∴ Percent of repair locations to be drained by Aggregate Drains, As Per Plan = 100%
Quantities~
202 Pavement Removed: (285)(13.333333) = 3,800.00 Sq. Yd.
305~15" Portland Cement Concrete Base: (285)(13.333333) = 3,800.00 Sq. Yd.
605~Longitudinal Aggregate Drains, as per plan = 0 Lin. Ft.
605~Aggregate Drains, as per plan~(2 drains per location): (285)(2)(18) = 10,260.00 Lin. Ft.
Item Special~Pavement Sawing: (285)(24) = 6,840.00 Lin. Ft.
Ramps~(16' Width)~
Percent of ramp pavement with existing pipe underdrains = 100%
Percent of repair locations to be drained by Longitudinal Aggregate Drains, as per plan = 100%
Quantities~
202 Pavement Removed: (77)(17.777778) = 1,368.89 Sq. Yd.
305~15" Portland Cement Concrete Base: (77)(17.777778) = 1,368.89 Sq. Yd.

Westbound~
Ramps~(16' Width)~(Cont)~
Quantities~(Cont)~
605~Longitudinal Aggregate Drain, as per plan: (77)(11) = 847.00 Lin. Ft.
Item Special~Pavement Sawing: (77)(32) = 2,464.00 Lin. Ft.
Speed Change Lane~(12' Width)~
Quantities~
202 Pavement Removed: (58)(13.333333) = 773.33 Sq. Yd.
305~15" Portland Cement Concrete Base: (58)(13.333333) = 773.33 Sq. Yd.
Drainage Quantities included with Mainline Calculations
Item Special~Pavement Sawing: (58)(24) = 1,392.00 Lin. Ft.

CURB REMOVAL COMPUTATIONS

Computations By			
Initials D.M.S.	Date 12/20/83		
Computations Checked By			
Initials E.D.B.	Date 12-20-83		
Final Revisions By			
Initials	Date		

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VAN WERT COUNTY
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CURB REMOVAL

Ramp "B" ~ Weigh Station ~
Sta 353+47.00 to Sta 360+00.00 ~ (Ramp Stationing) ~
- 301 : ∑(200)(1/2)(6+3)+(25)(3)+(205)(3/12)∑(9/12)(1/27) = 49.71 Cu.Yd.
- 304 : ∑(200)(1/2)(6+3)+(25)(3)∑(7/12)(1/27) = 35.71 Cu.Yd.
- 408 : ∑(200)(1/2)(6+3)+(25)(3)∑(1/9)(0.40) = 73.47 Gals.
- 202 Curb Removed = 451.00 Lin.Ft.
- 202 Curb Removed, as per plan "A" = 205.00 Lin.Ft.
- 203 Excavation : ∑(200)(1/2)(5+2)(16/12)+(25)(2)(16/12)+(45)(1)(7/12)∑(1/27) = 69.10 Cu.Yd.
- 203 Subgrade Compaction : ∑(200)(1/2)(6+3)+(25)(3)+(205)(3/12)∑(1/9) = 198.85 Sq.Yd.
- 659 Seeding & Mulching : (205)(10)(1/9) = 227.78 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Ramp "A" ~ Rest Area ~
Sta 440+02.47 to Sta 446+85.00 ~ (Ramp Stationing) ~
- 301 : ∑(472)(3)+(215)(3/12)∑(9/12)(1/27) = 43.31 Cu.Yd.
- 304 : ∑(472)(3)∑(7/12)(1/27) = 30.59 Cu.Yd.
- 408 : ∑(472)(3)∑(1/9)(0.40) = 62.93 Gals.
- 202 Curb Removed = 472.00 Lin.Ft.
- 202 Curb Removed, As Per Plan "A" = 215.00 Lin.Ft.
- 203 Excavation : ∑(472)(2)(16/12)+(472)(1)(7/12)∑(1/27) = 56.81 Cu.Yd.
- 203 Subgrade Compaction : ∑(472)(3)+(215)(3/12)∑(1/9) = 173.26 Sq.Yd.
- 659 Seeding & Mulching : (215)(10)(1/9) = 238.89 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Ramp "B" ~ Rest Area ~
Sta 455+23.26 to Sta 456+25.26 ~ (Mainline Stationing) ~
- 304 : (42.30)(1/2)(4.0+11.30)(9/12)(1/27) = 7.99 Cu.Yd.
- 408 : (42.30)(1/2)(4.0+11.30)(1/9)(0.40) = 14.38 Gals.
- 202 Pavement Removed : (42.30)(1/2)(4.0+11.30)(1/9) = 35.96 Sq.Yd.
- 202 Curb Removed, As Per Plan "B" = 120.00 Lin.Ft.
- 203 Excavation : (42.30)(1/2)(4.0+11.30)(8/12)(1/27) = 7.99 Cu.Yd.
- 203 Subgrade Compaction : (42.30)(1/2)(4.0+11.30)(1/9) = 35.96 Sq.Yd.
- 659 Seeding & Mulching : (60)(1/2)(11.30+21.60)(1/9) = 109.67 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Ramp "C" ~ Rest Area ~
Sta 445+88.74 to Sta 445+90.74 ~
- 304 : (42)(1/2)(3.90+11.10)(9/12)(1/27) = 7.78 Cu.Yd.
- 408 : (42)(1/2)(3.90+11.10)(1/9)(0.40) = 14.00 Gals.
- 202 Pavement Removed : (42)(1/2)(3.90+11.10)(1/9) = 35.00 Sq.Yd.
- 202 Curb Removed, As Per Plan "B" = 120.00 Lin.Ft.
- 203 Excavation : (42)(1/2)(3.90+11.10)(8/12)(1/27) = 7.78 Cu.Yd.
- 203 Subgrade Compaction : (42)(1/2)(3.90+11.10)(1/9) = 35.00 Sq.Yd.
- 659 Seeding & Mulching : (60)(1/2)(11.10+21.60)(1/9) = 109.00 Sq.Yd.
- 848 Quantities included with Ramp Calculations

Ramp "D" ~ Rest Area ~
Sta 455+26.00 to Sta 462+11.53 ~ (Ramp Stationing) ~
- 301 : ∑(471)(3)+(216)(3/12)∑(9/12)(1/27) = 43.25 Cu.Yd.
- 304 : (471)(3)(7/12)(1/27) = 30.53 Cu.Yd.
- 408 : (471)(3)(1/9)(0.40) = 62.80 Gals.
- 202 Curb Removed = 471.00 Lin.Ft.
- 202 Curb Removed, As Per Plan "A" = 216.00 Lin.Ft.
- 203 Excavation : ∑(471)(2)(16/12)+(471)(1)(7/12)∑(1/27) = 56.69 Cu.Yd.
- 203 Subgrade Compaction : ∑(471)(3)+(216)(3/12)∑(1/9) = 173.00 Sq.Yd.
- 659 Seeding & Mulching : (216)(10)(1/9) = 240.00 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Ramp "A" ~ U.S.R. 224 Interchange ~
Sta 658+63.82 to Sta 664+16.40 ~ (Ramp Stationing) ~
- 301 : ∑(397)(3)+(162)(3/12)∑(9/12)(1/27) = 36.08 Cu.Yd.
- 304 : (397)(3)(7/12)(1/27) = 25.73 Cu.Yd.
- 408 : (397)(3)(1/9)(0.40) = 52.93 Gals.
- 202 Curb Removed = 397.00 Lin.Ft.
- 202 Curb Removed, As Per Plan "A" = 162.00 Lin.Ft.
- 203 Excavation : ∑(397)(2)(16/12)+(397)(1)(7/12)∑(1/27) = 47.79 Cu.Yd.
- 203 Subgrade Compaction : ∑(397)(3)+(162)(3/12)∑(1/9) = 144.33 Sq.Yd.
- 659 Seeding & Mulching : (162)(10)(1/9) = 180.00 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Ramp "B" ~ U.S.R. 224 Interchange ~
Sta 585+88.98 to Sta 585+88.98 ~ (Mainline Stationing) ~
- 304 : (42)(1/2)(3.60+11.40)(8/12)(1/27) = 7.78 Cu.Yd.
- 408 : (42)(1/2)(3.60+11.40)(1/9)(0.40) = 14.00 Gals.
- 202 Pavement Removed : (42)(1/2)(3.60+11.40)(1/9) = 35.00 Sq.Yd.
- 202 Curb Removed, As Per Plan "B" = 120.00 Lin.Ft.
- 203 Excavation : (42)(1/2)(3.60+11.40)(8/12)(1/27) = 7.78 Cu.Yd.
- 203 Subgrade Compaction : (42)(1/2)(3.60+11.40)(1/9) = 35.00 Sq.Yd.
- 659 Seeding & Mulching : (60)(1/2)(11.40+23.40)(1/9) = 116.00 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Ramp "C" ~ U.S.R. 224 Interchange ~
Sta 563+73.81 to Sta 564+73.81 ~ (Ramp Stationing)
- 304 : (40)(1/2)(3.80+11.20)(8/12)(1/27) = 7.41 Cu.Yd.
- 408 : (40)(1/2)(3.80+11.20)(1/9)(0.40) = 13.33 Gals.
- 202 Pavement Removed : (40)(1/2)(3.80+11.20)(1/9) = 33.33 Sq.Yd.
- 202 Curb Removed, As Per Plan "B" = 124.00 Lin.Ft.
- 203 Excavation : (40)(1/2)(3.80+11.20)(8/12)(1/27) = 7.41 Cu.Yd.
- 203 Subgrade Compaction : (40)(1/2)(3.80+11.20)(1/9) = 33.33 Sq.Yd.
- 659 Seeding & Mulching : (61.70)(1/2)(11.20+23.60)(1/9) = 119.29 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Sta 572+35.77 to Sta 574+80.44 ~ (Ramp Stationing) ~
- 301 : ∑(130)(1/2)(6+3)+(117)(3/12)∑(9/12)(1/27) = 18.42 Cu.Yd.
- 304 : (130)(1/2)(6+3)(7/12)(1/27) = 12.64 Cu.Yd.
- 408 : (130)(1/2)(6+3)(1/9)(0.40) = 26.00 Gals.
- 202 Curb Removed = 130.00 Lin.Ft.
- 202 Curb Removed, As Per Plan "A" = 117.00 Lin.Ft.
- 203 Excavation : ∑(130)(1/2)(5+2)(16/12)+(130)(1)(7/12)∑(1/27) = 25.28 Cu.Yd.
- 203 Subgrade Compaction : ∑(130)(1/2)(6+3)+(117)(3/12)∑(1/9) = 73.67 Sq.Yd.
- 659 Seeding & Mulching : (117)(10)(1/9) = 130.00 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Sta 584+64.00 to Sta 586+50.00 ~ (Ramp "C" Stationing) ~
- 202 Precast Traffic Divider Removed, *as per plan = 16

* The cost of 407 Tack Coat and Cover Aggregate used to Coat the hole where the precast divider is removed and the 301 Bituminous Aggregate Base used to fill the hole shall be included in the unit bid. Cost of 202 Precast Traffic Divider Removed, as per plan.

Ramp "D" ~ U.S.R. 224 Interchange ~
Sta 567+84.74 to Sta 568+84.74 ~ (Ramp Stationing) ~
- 304 : (41.80)(1/2)(4.0+14.25)(9/12)(1/27) = 9.42 Cu.Yd.
- 408 : (41.80)(1/2)(4.0+14.25)(1/9)(0.40) = 16.95 Gals.
- 202 Pavement Removed : (41.80)(1/2)(4.0+14.25)(1/9) = 42.38 Sq.Yd.
- 202 Curb Removed, As Per Plan "B" = 120.00 Lin.Ft.
- 203 Excavation : (41.80)(1/2)(4.0+14.25)(9/12)(1/27) = 9.42 Cu.Yd.
- 203 Subgrade Compaction : (41.80)(1/2)(4.0+14.25)(1/9) = 42.38 Sq.Yd.
- 659 Seeding & Mulching : (60)(1/2)(14.25+32.00)(1/9) = 154.17 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

Ramp "D" ~ U.S.R. 224 Interchange ~ (Cont.) ~
Sta 577+76.00 to Sta 583+58.78 ~ (Ramp Stationing) ~
- 301 : ∑(441)(3)+(141)(3/12)∑(9/12)(1/27) = 32.35 Cu.Yd.
- 304 : (441)(3)(7/12)(1/27) = 23.58 Cu.Yd.
- 408 : (441)(3)(1/9)(0.40) = 58.80 Gals.
- 202 Curb Removed = 441.00 Lin.Ft.
- 202 Curb Removed, As Per Plan "A" = 141.00 Lin.Ft.
- 203 Excavation : ∑(441)(2)(16/12)+(441)(1)(7/12)∑(1/27) = 53.08 Cu.Yd.
- 203 Subgrade Compaction : ∑(441)(3)+(141)(3/12)∑(1/9) = 157.44 Sq.Yd.
- 659 Seeding & Mulching : (141)(10)(1/9) = 156.67 Sq.Yd.
- 848 Quantities included with Ramp Calculations.

GENERAL SUMMARY

Computations By Initials J.M.S. Date 12/20/83
Computations Checked By Initials J.S.B. Date 12-20-83
Final Revisions By Initials Date

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ITEM	SHEET NUMBER																																					ITEM	TOTAL	UNIT	DESCRIPTION
	6	7		12		21			31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		54	57	58	59											ROADWAY
202						31,760														71					76	35						202	31,942	Sq.Yd.	Pavement Removed
202				1,358																												202	1,358	Sq.Yd.	Wearing Course Removed
202																451				943					968							202	2,362	Lin.Ft.	Curb Removed
202																205				431					420							202	1,056	Lin.Ft.	Curb Removed, as per Plan "A"
202																				240					244	120						202	604	Lin.Ft.	Curb Removed, as per Plan "B"
202																									16							202	16	Each	Precast Traffic Dividers Removed, as per plan
202													300.00	925.00								950.00	925.00		6,300.00							202	11,400.00	Lin.Ft.	Guardrail Removed for Storage
202														200.00								200.00	200.00									202	600.00	Lin.Ft.	Guardrail, Barrier Design, Removed for Storage
202										1	3	3	4	4	3	4	2	4	2	6	3	5	5	3	3	1						202	56	Each	Catch Basin Removed
203		321														69				129					143	8						203	670	Cu.Yd.	Excavation not including Embankment Construction
203		622																														203	622	Cu.Yd.	Embankment
203									266							199				417					451	35						203	1,368	Sq.Yd.	Subgrade Compaction
														125											175							606	300	Lin Ft.	Guardrail Type S as per plan
606													300.00	800.28								658.04	606.92		8,812.50							606	11,377.94	Lin.Ft.	Guardrail, Type S
606														100.00								100.00	100.00									606	300.00	Lin.Ft.	Guardrail, Barrier Design, Type S
606													2	2								2	2		9							606	17	Each	Anchor Assembly, Standard Type A
606													2	4								4	4		9							606	23	Each	Anchor Assembly, Standard Type T
606														2								2	2									606	6	Each	Anchor Assembly, Barrier Design, Standard Type A
606														8								8	8									606	24	Each	Bridge Terminal Assembly, Standard Type B
606																									2							606	2	Each	Bridge Terminal Assembly, Standard Type D
606																									2							606	2	Each	Bridge Terminal Assembly, Standard Type J
517														99.52								266.96	318.08									517	684.56	Lin. Ft.	Railing (Deep Beam Rail with steel tubular back-up - Type 2 Posts and Bolts) as per plan
																																							EROSION CONTROL
659	10																															659	10	M. Gals.	Water
659		8,745																														659	8,745	Sq.Yd.	Seeding and Mulching
659		0.79																														659	0.79	Ton	Commercial Fertilizer
660										21	63	63	84	72	63	84	54	90	42	135	63	90	99	63	63	21						660	1,170	Sq.Yd.	Sodding
																																							DRAINAGE
603										10	10	20	30	10	20	50	20	20		50	30	20	40	10	20	10						603	370	Lin.Ft.	6" Conduit, Type F
603											10		10																			603	20	Lin.Ft.	8" Conduit, Type F
603																						24	8									603	32	Lin.Ft.	12" Conduit, Type C
603										16	24	24	24	32	24	32	16	24	16	32	24	8	32	24	16	8						603	376	Lin.Ft.	15" Conduit, Type C
603													8					8		16		8			8							603	48	Lin.Ft.	18" Conduit, Type C
604										1	3	3	4	4	3	4	2	4	2	4	3	5	5	3	3	1						604	54	Each	Catch Basin, Standard No. 4, Without Apron, as per plan
604																				2												604	2	Each	Catch Basin, Standard No. 5, Without Apron, as per plan
604																									2							604	2	Each	Catch Basin, Adjusted to Grade
605				3,366		19,584																										605	22,950	Lin.Ft.	Aggregate Drains, as per plan
605						17,963																										605	17,963	Lin.Ft.	Longitudinal Aggregate Drains, as per plan

GENERAL SUMMARY

Computations By Initials JMS Date 12/20/83
Computations Checked By Initials AJB Date 12-20-83
Final Revisions By Initials Date

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ITEM	SHEET NUMBER																															ITEM	TOTAL	UNIT	DESCRIPTION
		6	7		12		21			31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		54	57	58	59				
																																			PAVEMENT
301										22							50				87					94							301	253	Cu.Yd.	Bituminous Aggregate Base; AC-20, or RT-11 or RT-12.
304										44							36				77					84	8						304	249	Cu.Yd.	Aggregate Base.
305							31,760																									305	31,760	Sq.Yd.	15" Portland Cement Concrete Base.
310		400																														310	400	Cu.Yd.	Subbase, Type I, Grading "A", as per plan.
407					36,729					37																						407	36,766	Gal.	Tack Coat.
407					1286					1																						407	1287	Ton	Cover Aggregate.
408										107							73				154					168	14						408	516	Gal.	Bituminous Prime Coat.
Spec.							57,168																									Spec.	57,168	Lin.Ft.	Pavement Sawing.
617					70,946																											617	70,946	Sq.Yd.	Shoulder Preparation.
617		500			7311																											617	7311	Cu.Yd.	Compacted Aggregate.
617		50																														617	50	M.Gal.	Water
Spec.					2378																											Spec.	2378	Lin.Ft.	Pressure Relief Joint, Standard Type "D"
Spec.		350																														Spec.	350	Sq.Yd.	Partial Depth Pavement Joint, Repair
848					14,800					27																						848	14,827	Cu.Yd.	Asphalt Concrete Intermediate Course, Type 2, AC-20
848					12,878					22																						848	12,900	Cu.Yd.	Asphalt Concrete Surface Course, Type 1, AC-20
																																			TRAFFIC CONTROL
614																												28.23				614	28.23	Miles	Temporary Lane Lines, Class II Tape.
614																												28.34				614	2834	Lin.Ft.	Temporary Channelizing Lines, Class II Tape.
614																												1200				614	1200	Lin.Ft.	Temporary Gore Marking, Class II Tape.
621																													35.29			621	35.29	Miles	Edge Lines, Polyester, as per plan.
621																													14.53			621	14.53	Miles	4" Lane Lines, Polyester, as per plan.
621																														40		621	40	Sq.Ft.	Island Marking, Polyester, as per plan
621																													826	624		621	1450	Lin.Ft.	Double Yellow Center Lines, Polyester, as per plan.
621																													4630			621	4630	Lin.Ft.	Channelizing Lines, Polyester, as per plan.
621																													2977	162		621	3139	Lin.Ft.	Transverse Lines, Polyester, as per plan.
847																										826						847	826	Sq.Ft.	Stop Lines, Preformed Plastic Pavement Marking, installed, inlaid.
Spec.		800																														Spec.	800	Hrs.	Law Enforcement Officer with Patrol Car.
614		Lump																														614	Lump		Maintaining Traffic.
619		Lump																														619	Lump		Field Office.
623																																623	Lump		Construction Layout Stakes.
624																																624	Lump		Mobilization.

PAVEMENT TRANSITION DETAILS

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VAN WERT COUNTY
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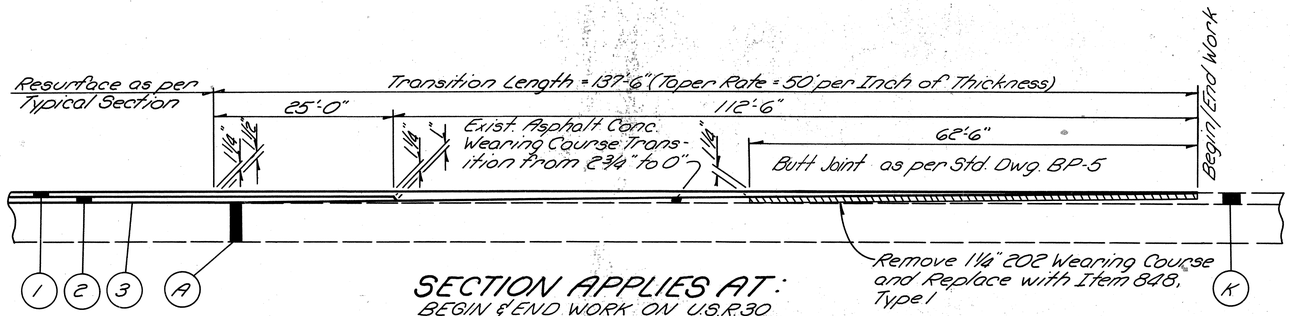
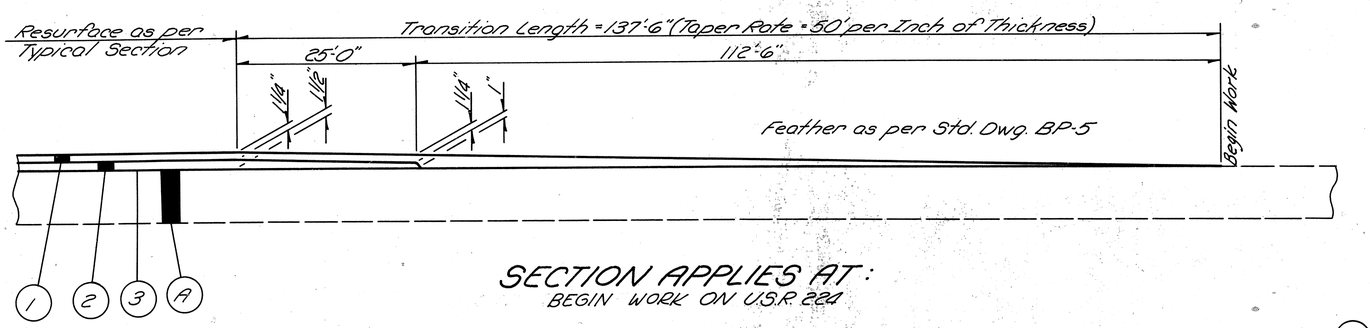
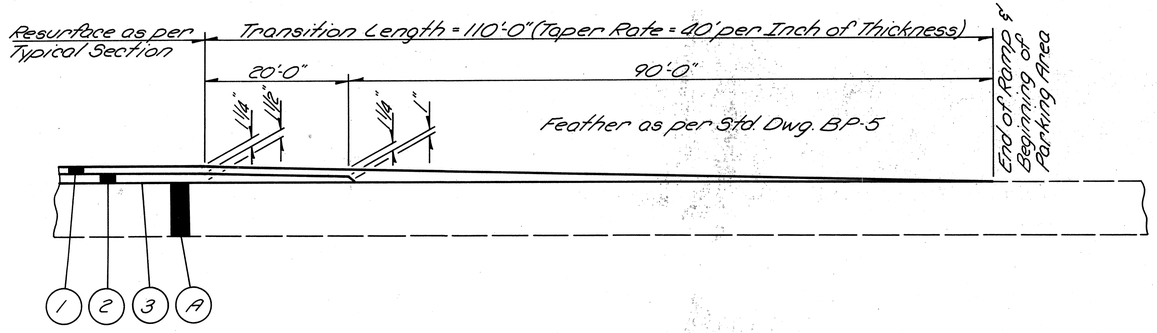


SECTION APPLIES AT:
BEGIN & END WORK ON U.S.R.30



SECTION APPLIES AT:
BEGIN WORK ON U.S.R 224



SECTION APPLIES AT:
REST AREA ENTRANCE AND EXIT RAMPS
WEIGH STATION ENTRANCE AND EXIT RAMPS

PROPOSED LEGEND

(1) Item 848 1¼" Asphalt Concrete Surface Course, Type 1
(2) Item 848 1½" Asphalt Concrete Intermediate Course, Type 2
(3) Item 407 Tack Coat with Cover Aggregate

EXISTING LEGEND

(A) 9" Reinforced Portland Cement Concrete Pavement
(K) 2¾" Asphalt Concrete Overlay

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VAN WERT COUNTY
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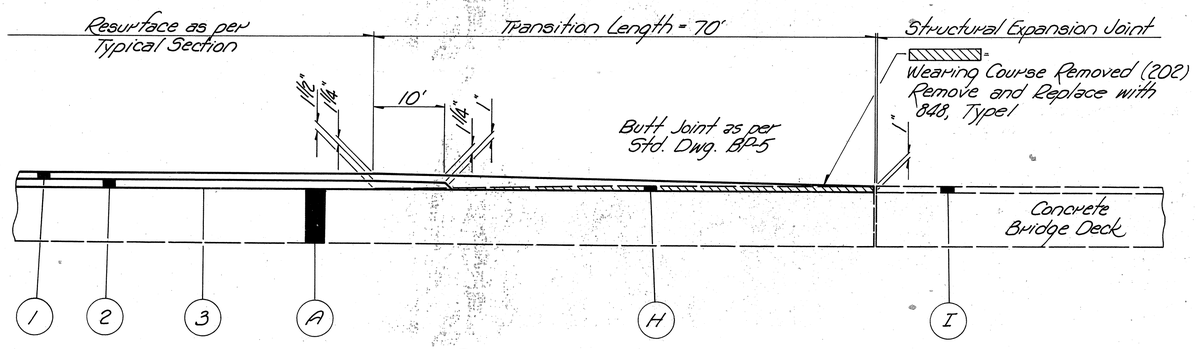
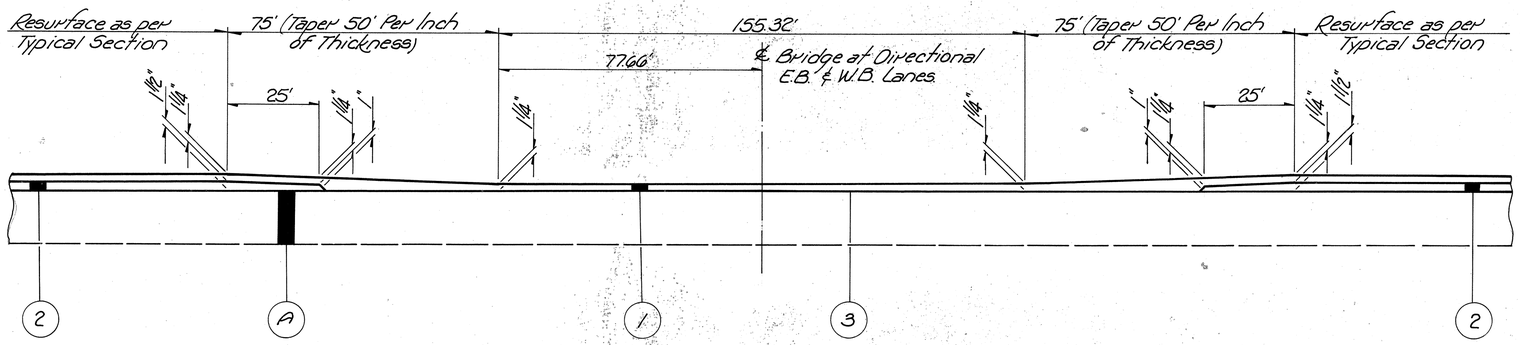
PAVEMENT TRANSITION DETAILS



AT STR. NO. VAN-30-1068
ON U.S. 224



UNDER STR. NO. VAN-30-1068

EXISTING LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement.
- (H) Asphalt Concrete Overlay.
- (I) 1¼" Latex Modified Concrete.

PROPOSED LEGEND

- (1) Item 848 1¼" Asphalt Concrete Surface Course, Type 1.
- (2) Item 848 1½" Asphalt Concrete Intermediate Course, Type 2.
- (3) Item 407 Tack Coat with Cover Aggregate.

FHWA REGION	STATE	PROJECT	
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VAN WERT COUNTY
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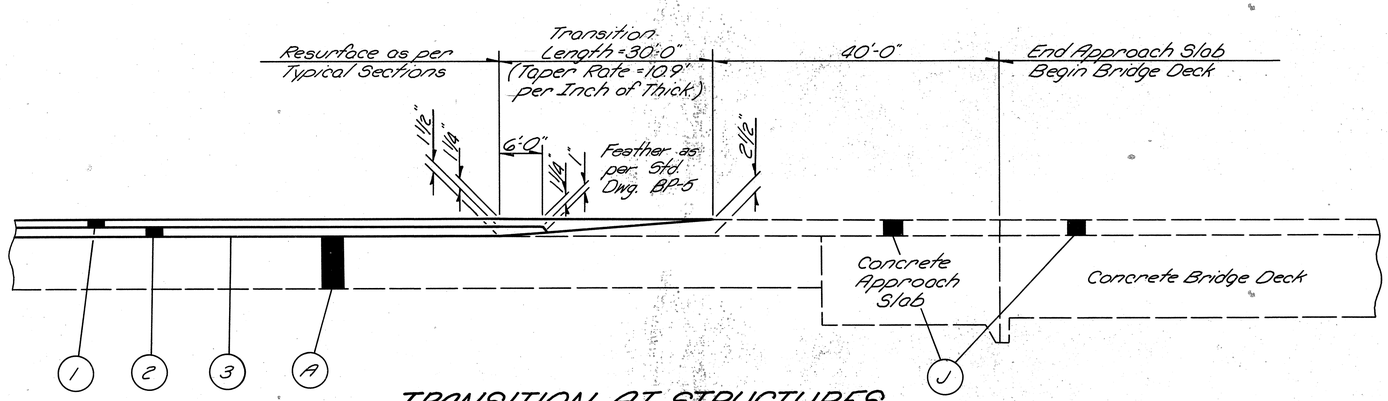
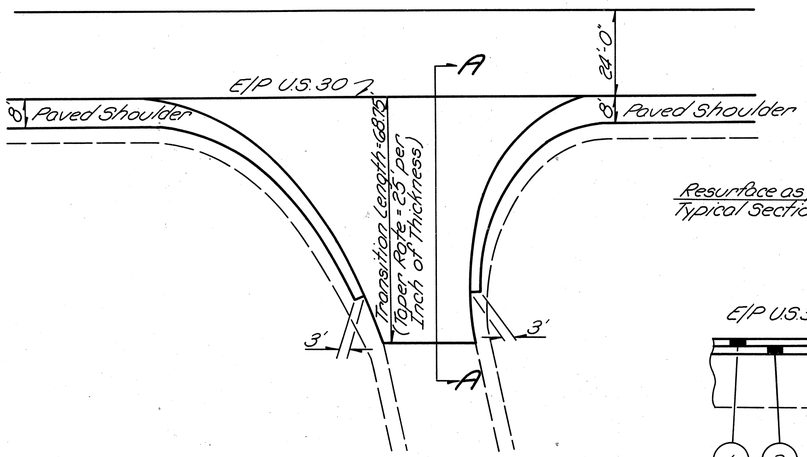
PAVEMENT TRANSITION DETAILS

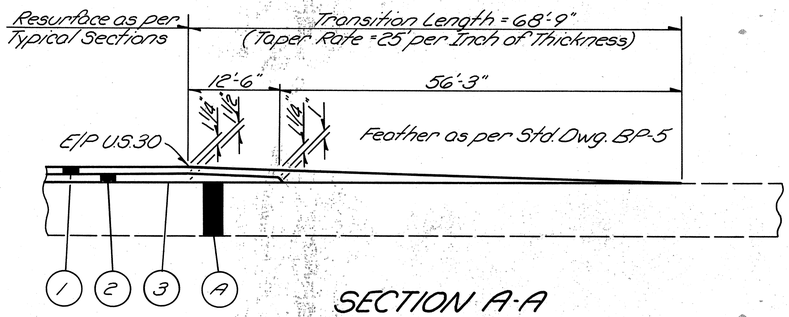


TRANSITION AT STRUCTURES

SECTION APPLIES:
VAN-30-0581 L & R
VAN-30-0918 L & R
VAN-30-0955 L & R



PLAN VIEW



SECTION A-A

TRANSITION DETAIL FOR AT GRADE INTERSECTIONS ON U.S.R. 30

PROPOSED LEGEND

(1) Item 848 1 1/4" Asphalt Concrete Surface Course, Type 1
(2) Item 848 1 1/2" Asphalt Concrete Intermediate Course, Type 2
(3) Item 407 Tack Coat with Cover Aggregate

EXISTING LEGEND

(A) 9" Reinforced Portland Cement Pavement
(J) 2 1/2" Asphalt Concrete Overlay

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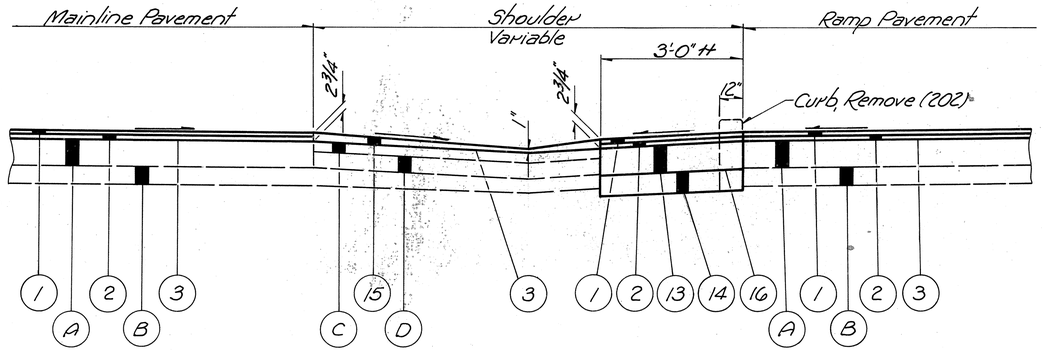
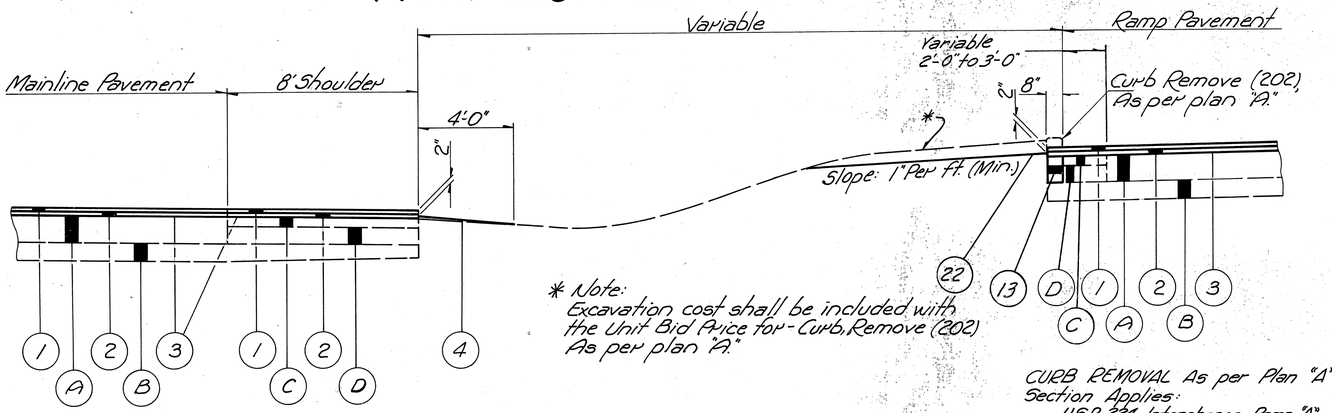
CURB REMOVAL AT ENTRANCE RAMP



H Variable Width 6'-0" to 3'-0" from Sta. 355+50.00 to Sta. 357+49.00 at Weigh Station Ramp "B"

CURB REMOVAL AT ENTRANCE RAMP (Constant Width 3')
Section Applies:
Weigh Station Ramp "B"
Sta. 355+50.00 to Sta. 360+00.00 Ramp
Rest Area Ramp "A"
Sta. 440+02.47 to Sta. 444+74.47 Ramp
Rest Area Ramp "D"
Sta. 457+42.00 to Sta. 462+11.53 Ramp
U.S.R. 224 Interchange Ramp "A"
Sta. 660+19.80 to Sta. 664+16.40 Ramp
U.S.R. 224 Interchange Ramp "D"
Sta. 579+18.18 to Sta. 583+58.78 Ramp

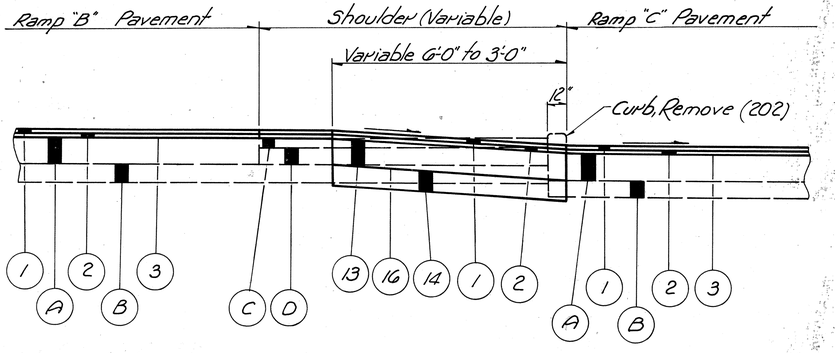
CURB REMOVAL AT ENTRANCE RAMP AS PER PLAN "A"



* Note:
Excavation cost shall be included with the Unit Bid Price for - Curb, Remove (202) As per plan "A."

CURB REMOVAL As per Plan "A"
Section Applies:
U.S.R. 224 Interchange Ramp "A"
Sta. 658+63.82 to Sta. 660+19.80 Ramp
U.S.R. 224 Interchange Ramp "D"
Sta. 577+76.00 to Sta. 579+18.18 Ramp

CURB REMOVAL AT ENTRANCE RAMP



CURB REMOVAL AT ENTRANCE RAMP
Section Applies:
U.S.R. 224 Interchange Ramp "C"
Sta. 573+52.00 to Sta. 574+80.44 Ramp

EXISTING LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement.
- (B) Subbase.
- (C) Waterproofed Aggregate Base.
- (D) Aggregate Base.

PROPOSED LEGEND

- (1) Item 848 1¼" Asphalt Concrete Surface Course, Type 1.
- (2) Item 848 1½" Asphalt Concrete Intermediate Course, Type 2.
- (3) Item 407 Tack Coat with Cover Aggregate.
- (4) Item 617 Reconditioning Shoulders Including Shoulder Preparation Compacted Aggregate and Water.
- (13) Item 301 9" Bituminous Aggregate Base, AC-20, RT-11 or RT-12.
- (14) Item 304 7" Aggregate Base.
- (15) Item 848 Asphalt Concrete Surface Course, Type 1, Variable Thickness.
- (16) Item 408 Bituminous Prime Coat Applied at the Rate of .04 Gal. per Sq. Yd.
- (22) Item 659 Seeding and Mulching

CURB REMOVAL DETAILS

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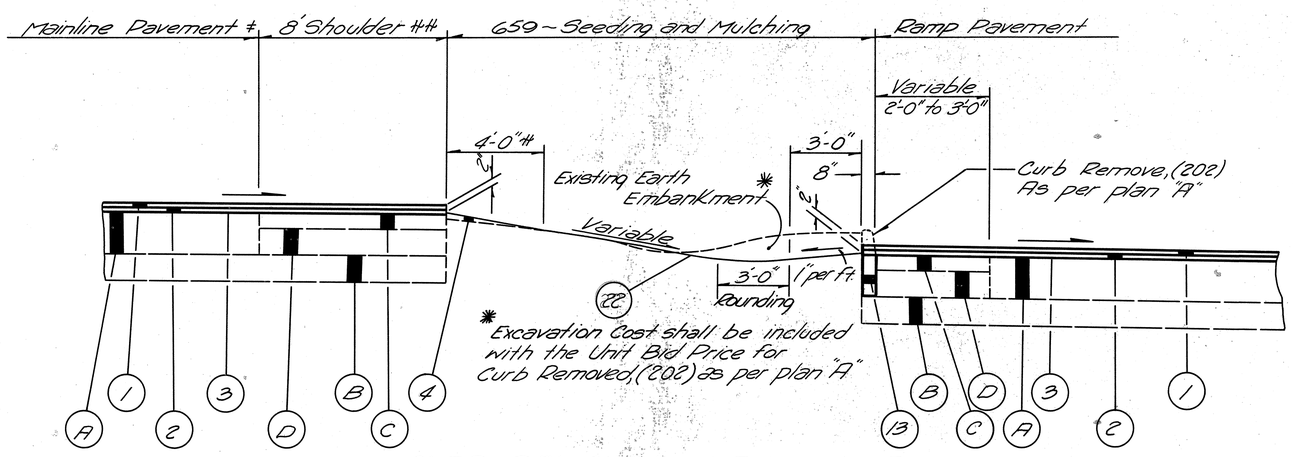
CURB REMOVAL DETAILS



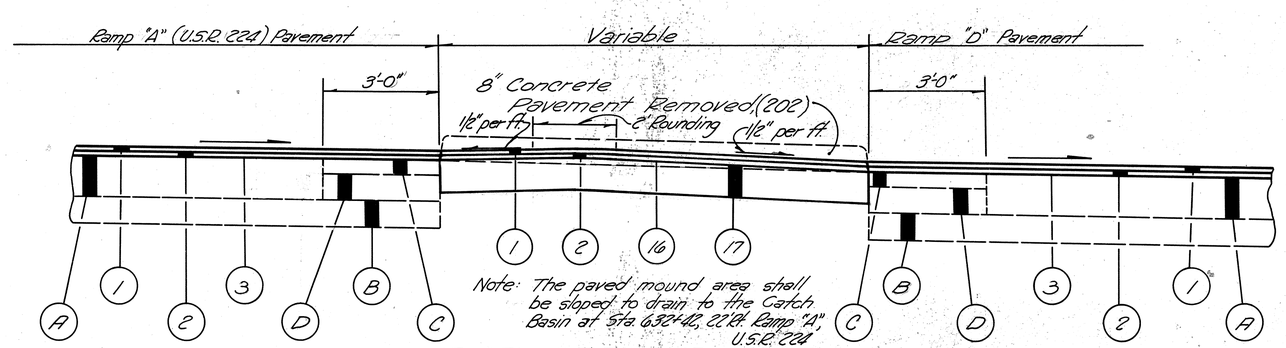
CURB REMOVAL AT ENTRANCE RAMP

‡ : Ramp "A" Pavement for U.S.R. 224 Interchange Ramp "C"

: 2'-0" for U.S.R. 224 Interchange Ramp "C"

: 3' Shoulder for U.S.R. 224 Interchange Ramp "C"

TYPICAL SECTION AT LEFT APPLIES:
Weigh Station Ramp "B"
Sta. 353+47.00 to Sta. 355+50.00
Rest Area Ramp "A"
Sta. 444+74.47 to Sta. 446+86.00
Rest Area Ramp "D"
Sta. 455+26.00 to Sta. 457+42.00
USR 224 Interchange Ramp "C"
Sta. 572+35.77 to Sta. 573+52.00



PAVEMENT REMOVAL AT EXIT RAMP

TYPICAL SECTION AT LEFT APPLIES:
USR 224 Interchange Ramp "D"
Sta. 567+84.74 to Sta. 568+26.54

EXISTING LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement
- (B) Subbase
- (C) Waterproofed Aggregate Base
- (D) Aggregate Base

PROPOSED LEGEND

- (1) Item 848 1 1/4" Asphalt Concrete Surface Course, Type 1
- (2) Item 848 1 1/2" Asphalt Concrete Intermediate Course, Type 2
- (3) Item 407 Tack Coat with Cover Aggregate
- (4) Item 617 Reconditioning Shoulders Including Shoulder Preparation, Compacted Aggregate & Water
- (13) Item 301 9" Bituminous Aggregate Base, AC-20, RT-11 or RT-12
- (16) Item 408 Bituminous Prime Coat Applied at the Rate of 0.4 Gals. per Square Yard
- (17) Item 304 8" Aggregate Base
- (22) Item 659 Seeding and Mulching

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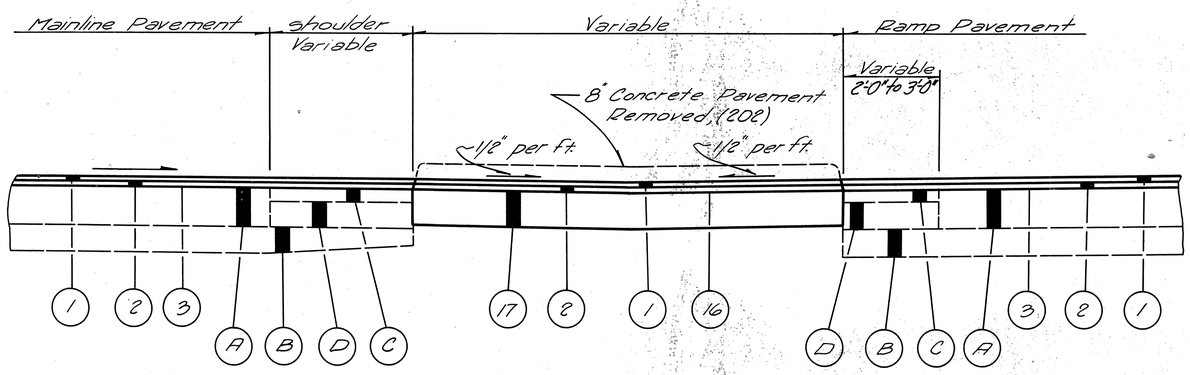
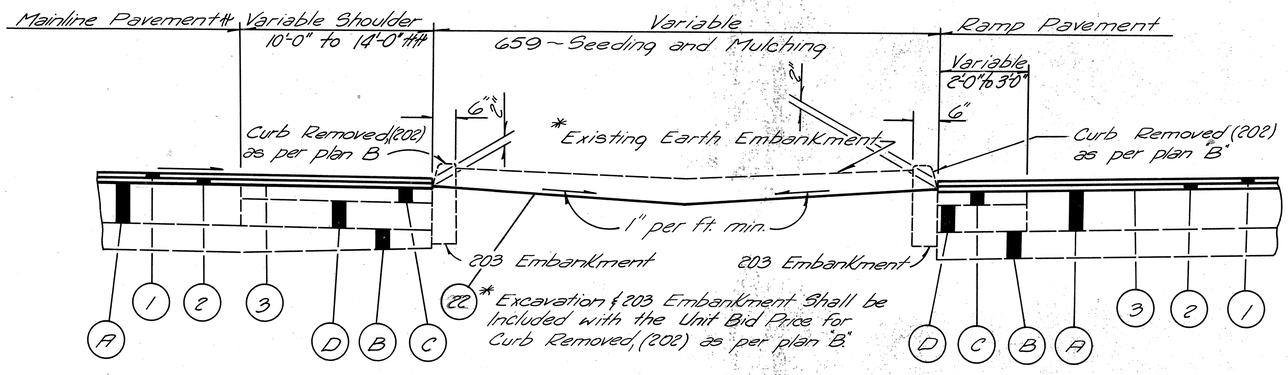
CURB REMOVAL DETAILS



PAVEMENT REMOVAL AT GORE

TYPICAL SECTION AT LEFT APPLIES:
Rest Area Ramp "B"
Sta. 455+82.96 to Sta. 456+25.26
Rest Area Ramp "C"
Sta. 445+88.74 to Sta. 446+28.74
USR 224 Interchange Ramp "B"
Sta. 586+46.68 to Sta. 586+88.98
USR 224 Interchange Ramp "C"
Sta. 563+73.81 to Sta. 564+13.81



TYPICAL SECTION AT LEFT APPLIES:
Rest Area Ramp "B"
Sta. 455+23.26 to Sta. 455+82.96
Rest Area Ramp "C"
Sta. 446+28.74 to Sta. 446+90.74
USR 224 Interchange Ramp "B"
Sta. 585+88.98 to Sta. 586+46.68
USR 224 Interchange Ramp "C"
Sta. 564+13.81 to Sta. 564+73.81
USR 224 Interchange Ramp "D"
Sta. 568+26.54 to Sta. 568+84.74

CURB REMOVAL AS PER PLAN "B"

: Ramp "A" Pavement for U.S.R. 224 Interchange Ramp "C"

: 3' Shoulder for U.S.R. 224 Interchange Ramp "C"

EXISTING LEGEND

- (A) 9" Reinforced Portland Cement Concrete Pavement
- (B) Subbase
- (C) Waterproofed Aggregate Base
- (D) Aggregate Base

PROPOSED LEGEND

- (1) Item 848 1 1/4" Asphalt Concrete Surface Course, Type 1
- (2) Item 848 1 1/2" Asphalt Concrete Intermediate Course, Type 2
- (3) Item 407 Tack Coat with Cover Aggregate
- (16) Item 408 Bituminous Prime Coat Applied at the Rate of 0.4 Gal. per Square Yard
- (17) Item 304 8" Aggregate Base
- (22) Item 659 Seeding and Mulching

MEDIAN CROSSOVER UPGRADE DETAIL

STA. 224+28

Computations By		
Initials	J.M.S.	Date 12/20/83
Computations Checked By		
Initials	J.J.B.	Date 12-20-83
Final Revisions By		
Initials		Date

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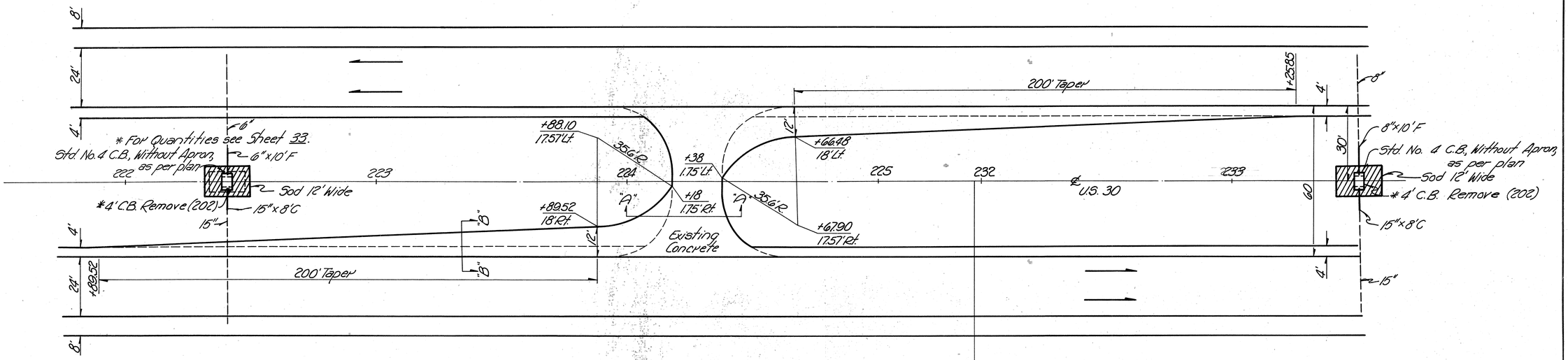
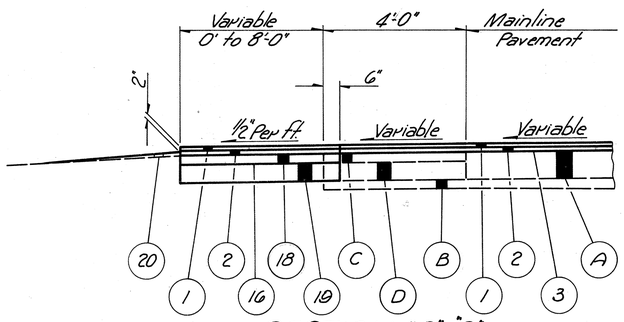
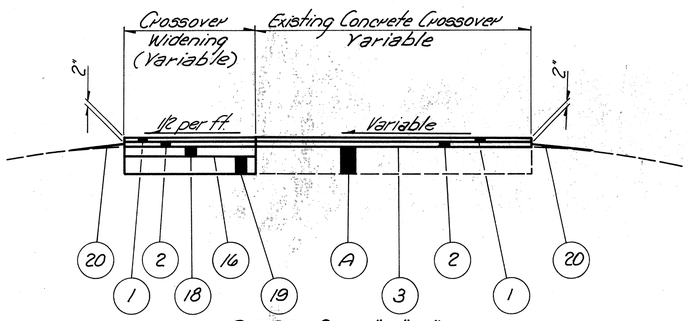


Sta 225+38.17 Bk =
Sta 23/+97.54 Ah.



SECTION "B"-"B"



SECTION "A"-"A"

PROPOSED LEGEND

1. Item 848 1¼" Asphalt Concrete Surface Course, Type 1.
2. Item 848 1½" Asphalt Concrete Intermediate Course, Type 2.
3. Item 407 Tack Coat with Cover Aggregate
16. Item 408 Bituminous Prime Coat Applied at the rate of 0.4 Gal. per Sq. Yd.
18. Item 301 3" Bituminous Aggregate Base, AC-20, RT-11 or RT-12.
19. Item 304 6" Aggregate Base.
20. Item 203 Embankment.

EXISTING LEGEND

A. 9" Reinforced Portland Cement Concrete Pavement.
B. Subbase.
C. Waterproofed Aggregate Base.
D. Aggregate Base.

MEDIAN CROSSOVER ESTIMATED QUANTITIES

Station		203				301	304	407		408	659		848	
		Excavation Not Including Embankment	Subgrade Compaction	Embankment		Bituminous Aggregate Base	Aggregate Base	Tack Coat	Cover Aggregate	Bituminous Prime Coat	Seeding and Mulching		Asphalt Concrete Surface Course Type 1	Asphalt Concrete Intermediate Course Type 2
From	To	Cu.Yd.	Sq.Yd.	Cu.Yd.		Cu.Yd.	Cu.Yd.	Gal.	Ton	Gal.	Sq.Yd.		Cu.Yd.	Cu.Yd.
221+89.52	233+25.85	72	266.34	22		22.20	44.39	37.06	1.30	106.54	744.0		22.12	26.54
Totals		72	266.34	22		22.20	44.39	37.06	1.30	106.54	744.0		22.12	26.54

Quantities for 203 Excavation, 203 Embankment and 659 Seeding and Mulching Carried to Sheet 7.

AREAS USED FOR MEDIAN CROSSOVER QUANTITIES

Area of Existing Concrete Crossover (from Original Plans) = 102.85 Sq.Yd.
Area of Existing Shoulders (By Planimeter) = 201.78 Sq.Yd.
Area of Widening (By Planimeter) = 242.22 Sq.Yd.
Area of Existing Shoulder Removal = 24.12 Sq.Yd.

MEDIAN CROSSOVER UPGRADE DETAIL

Computations By Initials GM.D. Date 12/20/83
Computations Checked By Initials A.B. Date 12-20-83
Final Revisions By Initials Date

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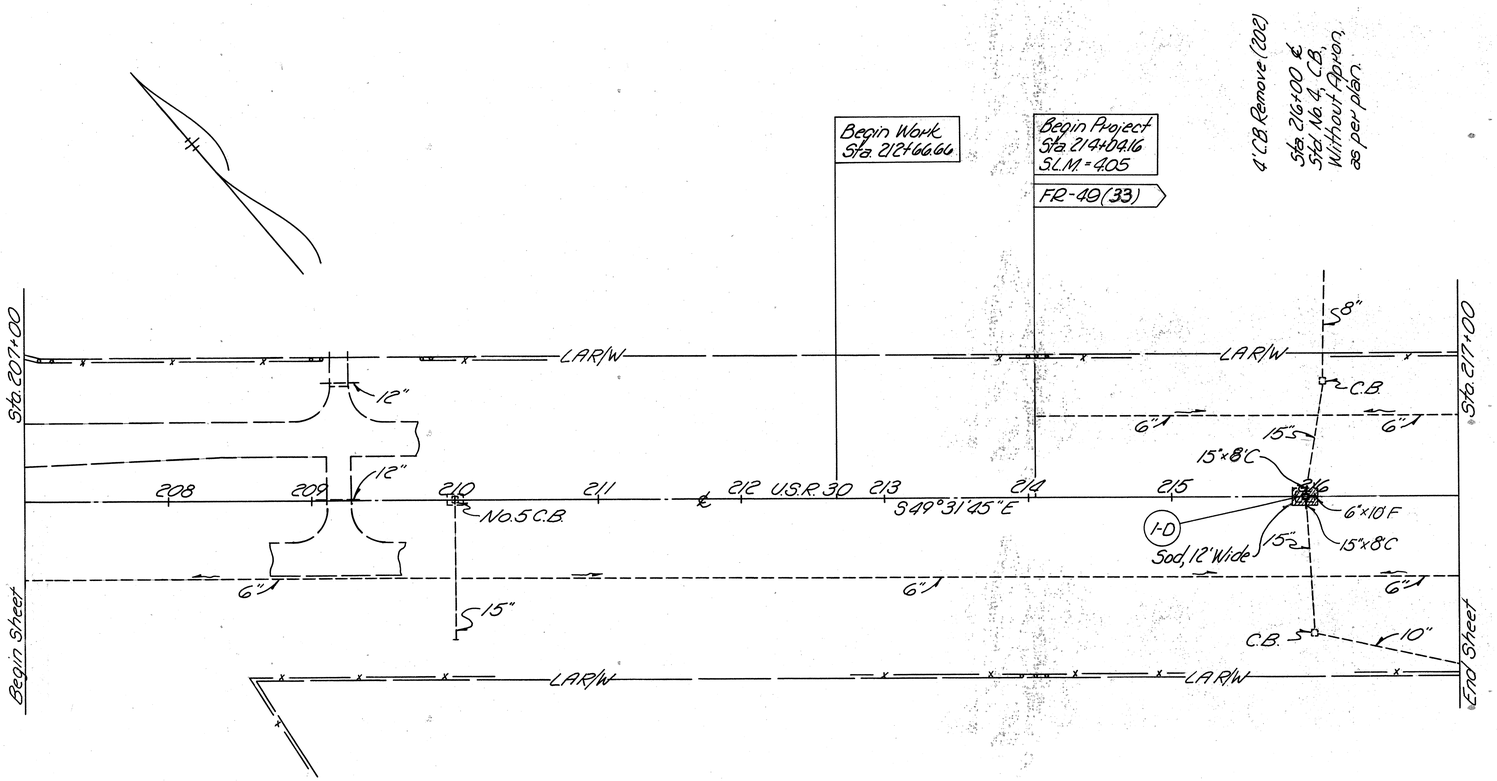

DRAINAGE "D"

Ref. No	Station From	Station To	Side		202 Catch Basin Removed			603 Conduit Lin. Ft. Type F 6"	603 Conduit Lin. Ft. Type C 15"	604 Std. No. 4 Catch Basin Without Apron, as per plan	660 Sodding
					Each					Each	Sq. Yd.
1-D	215+83.63	216+01.63	℄		1			10	16	1	21
Totals					1			10	16	1	21

CATCH BASIN & CONDUIT ELEVATIONS

Station	Exist. E.P. Elev.; Inside Edge; Eastbound U.S. 30	Grate Elev.	Fl. Elev. N. 15" Conduit @ C.B.	Fl. Elev. S. 15" Conduit @ C.B.	Fl. Elev. E. 6" Conduit @ C.B.
215+92.63	100.00	96.44	92.10	92.13	93.82

Sta. 207+00 to Sta. 217+00

Computations By Initials GMS Date 12/20/83
Computations Checked By Initials JJB Date 12-20-83
Final Revisions By Initials Date

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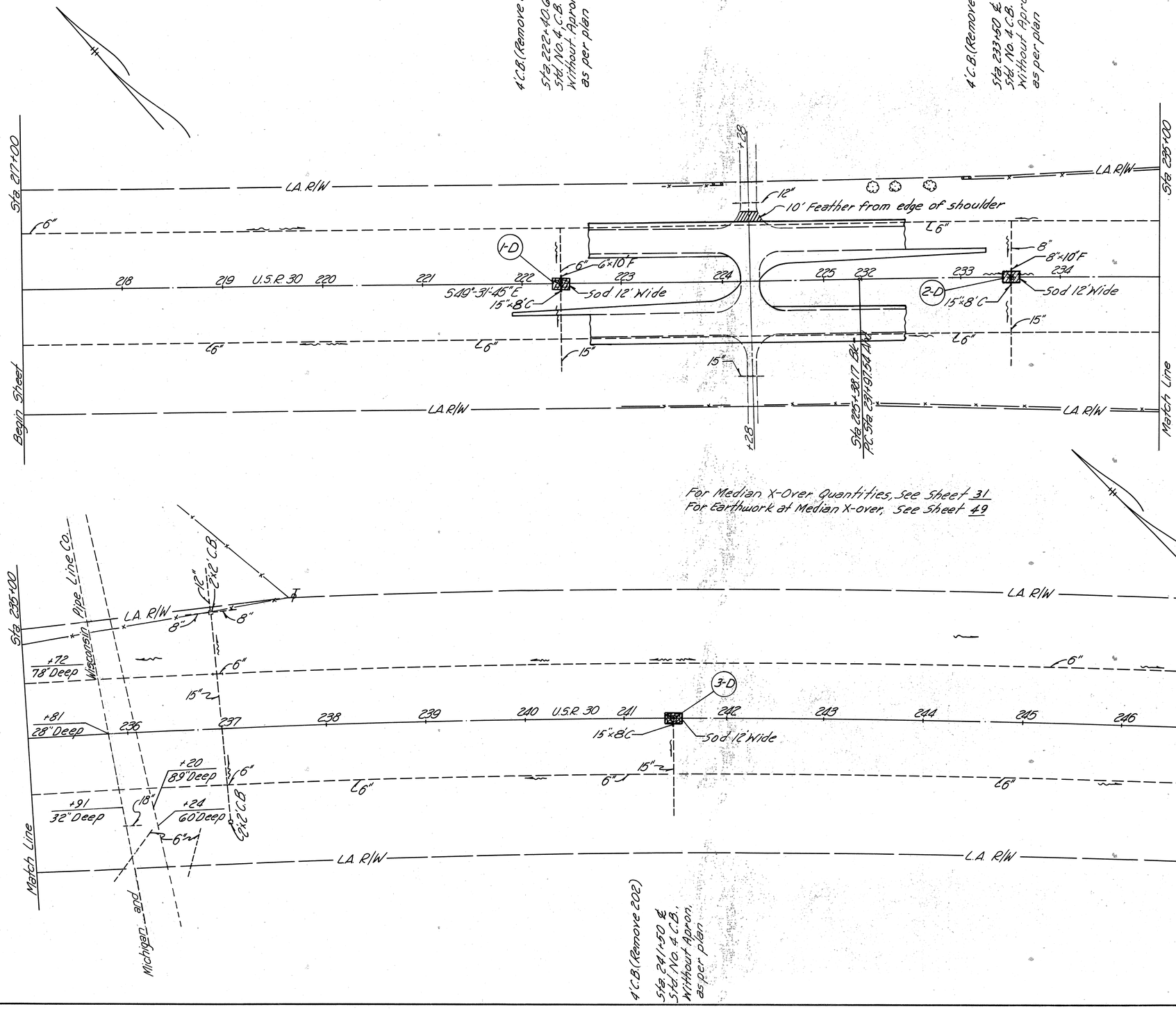
CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing ER Elev.; Inside Edge; Eastbound U.S. 30	Grate Elev.	F.L. Elev. 15" Conduit @ C.B.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 8" Conduit @ C.B.
222+40.63	100.00	97.04	94.48	94.65	
233+50	100.00	96.77	94.46		93.94
241+50	100.00	96.02	93.69		



For Median X-Over Quantities, see Sheet 31
For Earthwork at Median X-over, see Sheet 49

DRAINAGE "D"

Item	Description	Unit	Total
660	Sodding	Sq. Yd.	63
604	Std. No. 4 Catch Basin, Without Apron, as per plan	Each	3
603	Conduit Lin. Ft. Type C 6"		10
	8"		24
	15"		8
202	Catch Basin Removed	Each	3

Reference No.	Station From	Station To	Side
1-D	222+31.63	222+49.63	℄
2-D	233+41	233+59	℄
3-D	241+41	241+59	℄

Sta. 217+00 to Sta. 247+00

Computations By Initials GMS Date 12/20/83
Computations Checked By Initials JDB Date 12-20-83
Final Revisions By Initials Date

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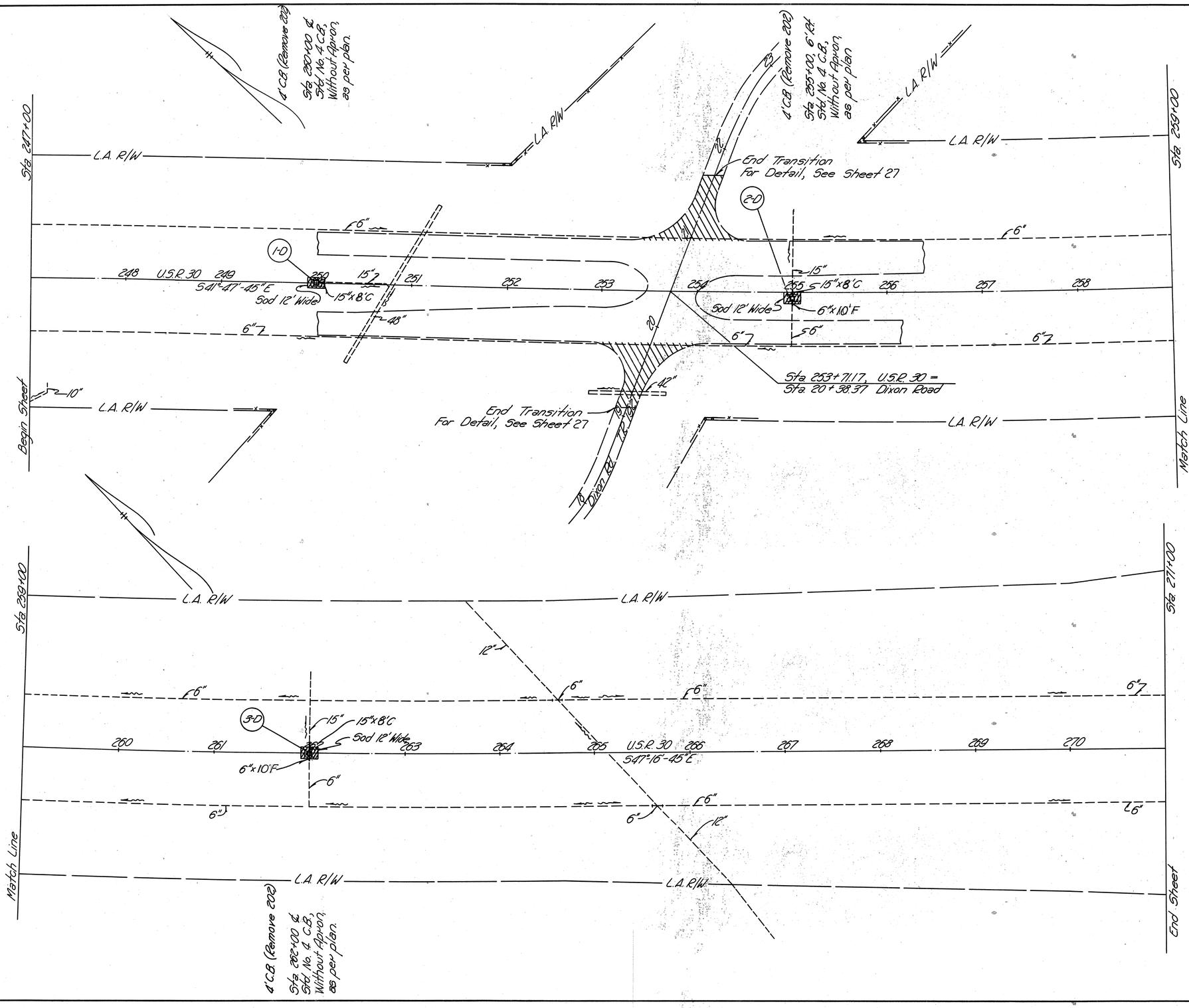

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev.; Inside Edge; Eastbound U.S.R. 30	Grate Elev.	F.L. Elev. 15" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.	F.L. Elev. 6" Conduit @ C.B.
250+00	100.00	96.06	93.83	94.14	94.37
255+00	100.00	96.34	93.34	93.97	94.21
262+00	100.00	96.17	93.17		

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Lin. Ft. 6" Type C	603 Conduit Lin. Ft. 6" Type F	604 Std. No. 4 Catch Basin, Without Apron, as per plan Each	660 Sodding Sq. Yd.
1-D	249+91	250+09	L	/	8		/	21
2-D	254+91	255+09	R	/	8		/	21
3-D	261+91	262+09	L	/	10		/	21
Totals				3	24	20	3	63

Sta. 247+00 to Sta. 271+00

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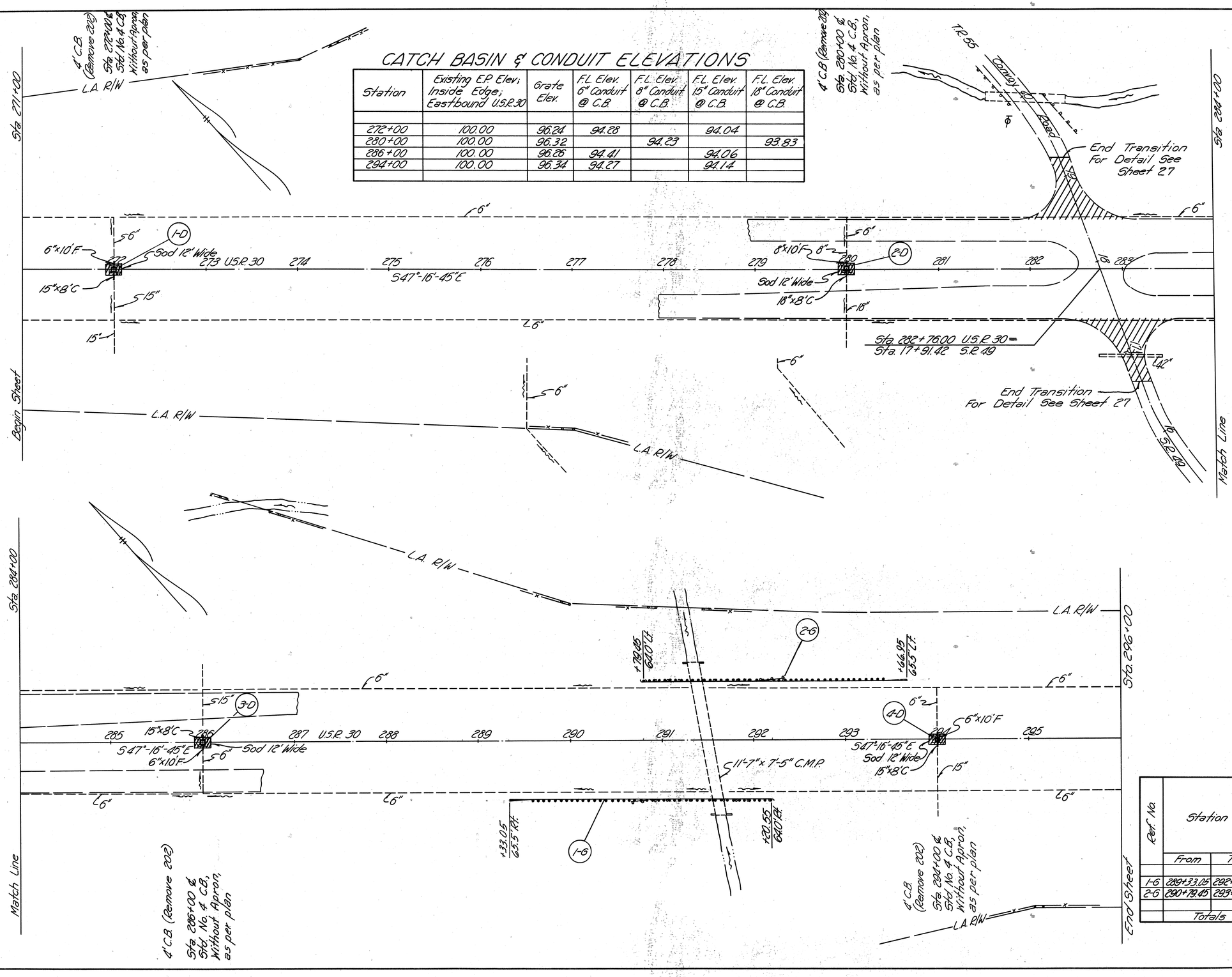
Computations By Initials	Date 12/20/83
Computations Checked By Initials	Date 12-20-83
Final Revisions By Initials	Date

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev; Inside Edge; Eastbound U.S.R.30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 8" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.	F.L. Elev. 18" Conduit @ C.B.
272+00	100.00	96.24	94.28		94.04	
280+00	100.00	96.32		94.23		93.83
286+00	100.00	96.26	94.41		94.06	
294+00	100.00	96.34	94.27		94.14	



DRAINAGE "D"

Ref. No.	Station From	Station To	Side	660 Sodding Sq. Yd.	604 Std. No. 4 Catch Basin Without Apron as per plan Each	603 Conduit Lin Ft Type F 6"	603 Conduit Lin Ft Type F 8"	603 Conduit Lin Ft Type C 15"	603 Conduit Lin Ft Type C 18"	202 Catch Basin Removed Each	202 Side
1-D	271+91	272+00	Lt.	21	1	10		8		1	2
2-D	279+91	280+00	Rt.	21	1	10		8		1	2
3-D	285+91	286+00	Rt.	21	1	10		8		1	2
4-D	293+91	294+00	Lt.	21	1	10		8		1	2
Totals				84	4	30	10	24	8	4	

GUARDRAIL "G"

Ref. No.	Station From	Station To	Side	202 Guardrail Removed/Relocated Lin. Ft.	202 Steel Posts Removed	606 Guardrail Type 5 Lin. Ft.	606 Anchor Assemblies Std. Type A Each	606 Anchor Assemblies Std. Type T Each
1-G	289+33.05	292+20.55	Rt.	150.00		250.00	1	1
2-G	290+79.45	293+66.95	Lt.	150.00		250.00	1	1
	Totals			300.00		500.00	2	2

Sta. 271+00 to Sta. 296+00

Computations By Initials JM.S. Date 12/20/83
Computations Checked By Initials J.D.B Date 12-20-83
Final Revisions By Initials Date

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VAN WERT COUNTY
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CATCH BASIN & CONDUIT ELEV.

Station	Existing E.P. Elev. Inside Edge, Eastbound US-30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.
306+00	100.00	96.12	94.21	93.92
313+37	100.00	97.18		94.19
314+70	100.00	97.20		93.95
317+00	100.00	96.34		94.08

Sta 296+00

Begin Sheet

L.A. R/W

6"

297 298 299 300 U.S.R. 30 301 302 303 304 305 306 307

1-D

6"×10'F

347°16'45"E
15"×8'C

Sod 12 Wide

15"

Sta 320+00

Match Line

See Cross Sections, Sheet 50 for Earthwork & Seeding Quantities for Guard Rail Dikes @ Strs. Van-30-0581 & Van-30-0583

Str. No. VAN-30-0581

Str. No. VAN-30-0583

4 C.B. (Remove 202) Sta. 306+00 & Str. No. 4 C.B., Without Apron, as per plan

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Lin. Ft. Type F 6"	603 Conduit Lin. Ft. Type C 15"	604 Str. No. 4 Catch Basin Without Apron as per plan Each	660 Seeding Sq. Yd.
1-D	305+91	306+09	℄	1		10	8	1	21
2-D	313+28	313+41	℄	1			8	1	12
3-D	314+66	314+79	℄	1			8	1	12
4-D	316+91	317+09	℄	1			8	1	27
	Totals			4		10	32	4	72

L.A. R/W

Suspend Project Sta. 313+01.56 S.L.M – 5.80

FR-49 (33)

Resume Project Sta. 314+66.44 S.L.M – 5.83

FR-49 (33)

18" +11.72 64' Lt.

97 C.F.R.7.1/8

+54.16 64' Lt. 1st Post

+30.16 64' Lt. 1st Post

+63.63 24' Lt. 1st Post

+13.63 24' Lt. 1st Post

+51.18 24' Lt. 1st Post

+82.38 24' Lt. 1st Post

+86.72 65.5' Lt.

309 U.S.R. 30 310 311 312 313 314 315 316 317 318 319

Sod 12' Wide

15"×8'C

347°16'45"E

Sod 12' Wide

+56.44 1.58' Lt.

+54.37 24' Rt. 1st Post

+35.62 24' Rt. 1st Post

+70.37 24' Rt.

+66.36 1.58' Rt.

+31.28 64' Rt. 1st Post

+62.53 64' Rt. 1st Post

+31.28 24' Rt.

+56.28 65.5' Rt.

For Transition Detail @ Str. Van-30-0581, See Sheet 27.

End Sheet

4 C.B. (Remove 202) Sta. 313+37.5 & Str. No. 4 C.B., Without Aprons as per plan

4 C.B. (Remove 202) Sta. 314+70.5 & Str. No. 4 C.B., Without Aprons as per plan

4 C.B. (Remove 202) Sta. 317+00 & Str. No. 4 C.B., Without Apron, as per plan

See Sheet 7 for Detail of Posts on Str. VAN-30-0581 and Detail of Temporary Guardrail over Str. VAN-30-0581.

GUARDRAIL "G"

* Guard Rail Posts to be set at 3'-1 1/2" spacing c/c at:
Sta. 311+47 to Sta. 313+99.22 Lt.
Sta. 314+50.03 to Sta. 315+12.53 Rt.
The cost of the additional guard rail posts shall be included in the unit bid price for Item 606 Guard Rail, Type 5. See Detail on Sheet 7.

Ref. No.	Station From	Station To	Side	Anchor Assemblies Sta. Type B Each	Anchor Assemblies Sta. Type T Each	Barrier Design Sta. Type A Each	Guardrail Barrier Design, Type 5 Lin. Ft.	Guardrail Type 5 Lin. Ft.	Railing (Deep Beam Rail) w/ Steel Tubular Backup Posts & Rail (5) as per plan Lin. Ft.	606 Guard Rail Type 5 as per plan Lin. Ft.	202 Guardrail Barrier Design Removed for Storage Lin. Ft.	202 Guardrail Removed for Storage Lin. Ft.
				606 Bridge Terminal Assemblies					517			
1-G	311+47	313+57.70	Lt.	1		1	200	188.33			100.00	102.58
2-G	313+37	313+65.42	Lt.		1			9.29				28.42
3-G	311+36.28	313+34.61	Rt.			1		153.33				153.11
4-G	313+11.72	314+08.51	Lt.					21.79		62.5		61.51
5-G	313+34.61	313+57.89	Rt.						24.88			24.88
6-G	313+57.70	313+82.58	Rt.						24.88			24.88
7-G	313+82.58	314+10.30	Lt.						24.88			24.89
8-G	314+08.51	314+33.30	Lt.						24.88			24.88
9-G	313+82.58	314+78.59	Rt.							62.5		157.51
10-G	314+33.30	314+78.97	Rt.									53.04
11-G	314+10.30	315+86.72	Lt.									138.61
12-G	314+33.30	316+49.36	Rt.									121.70
	Totals			2	2	4	200	165.83	50.00	125	100.00	995.2
				Each	Each	Each	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.

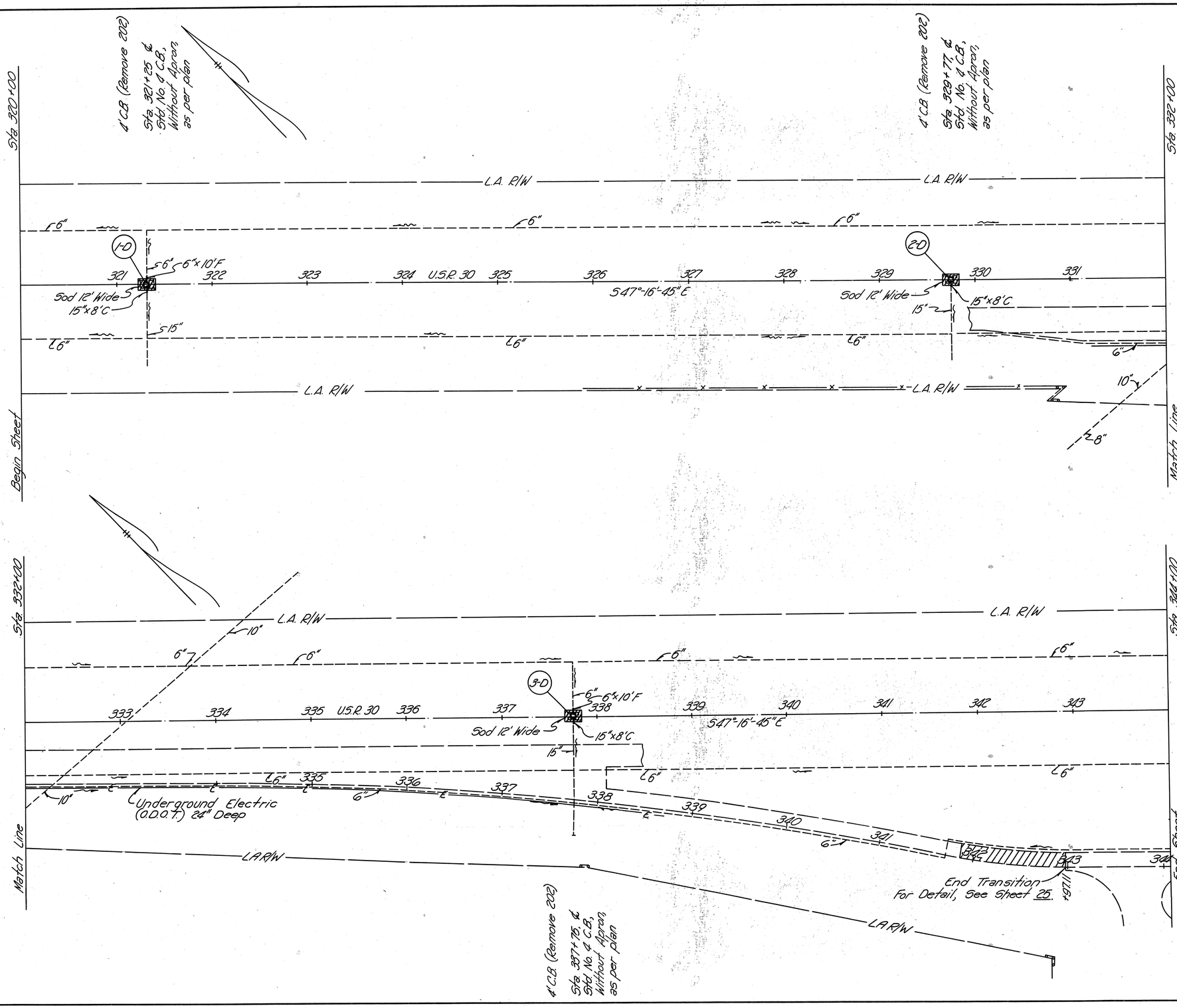
Sta. 296+00 to Sta. 320+00

Computations By Initials	Date
J.M.S.	12/20/83
Computations Checked By Initials	Date
J.A.B.	12-20-83
Final Revisions By Initials	Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

37/65

VAN WERT COUNTY
VAN-30-4.05



CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev. Inside Edge Eastbound U.S.R. 30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.
321+25	100.00	96.29	94.19	94.09
329+77	100.00	96.25	94.17	94.07
337+75	100.00	96.13	94.17	93.93

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Un. Ft. 6" F	603 Conduit Un. Ft. 15" Type C	604 Std. No. 4 Catch Basin, Without Apron, as per plan Each	660 Sodding Sq. Yd.
1D	321+6	321+34	℄	1		8	1	21
2D	329+68	329+86	℄	1		8	1	21
3D	337+66	337+84	℄	1		8	1	21
		Totals		3	20	24	3	63

Sta. 320+00 to Sta. 344+00

Computations By	
Initial	G.M.L. Date 12/20/83
Computations Checked By	
Initials	J.A.B. Date 12-20-83
Final Revisions By	
Initials	Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

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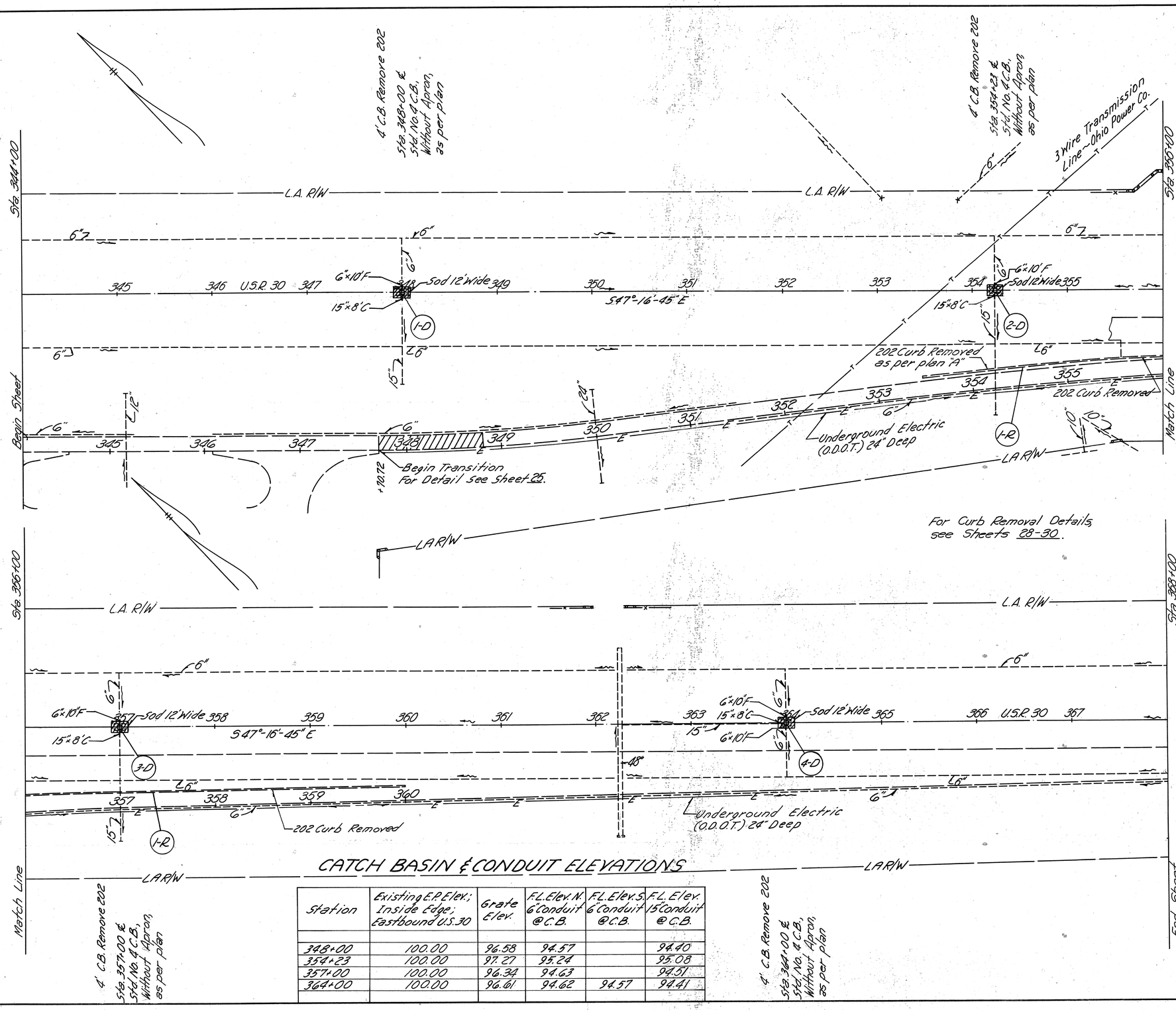
VAN WERT COUNTY
VAN-30-4.05



Note: Quantities of 848 Types 1 & 2 for Curb and Pavement Removal are included in the Ramp quantities.

Note: Quantities for 659 Seeding & Mulching carried to Sheet 2.

659	Seeding and Mulching	Sq. Yd.		227.78	227.78
408	Bituminous Prime Coat	Gal.		73.47	73.47
304	Aggregate Base	Cu. Yd.		35.71	35.71
301	Bituminous Aggregate Base	Cu. Yd.		49.71	49.71
203	Subgrade Compaction	Sq. Yd.		198.85	198.85
203	Excavation	Cu. Yd.		69.10	69.10
202	Curb Removed as per Plan "A"	Lin. Ft.		205	205
202	Curb Removed	Lin. Ft.		451	451
Ramp				8	
Station	From	348+47			
	To	360+00			
		Totals			
Ref. No.		1-R			

660	Sodding	Sq. Yd.	21	21	21	21		84
604	Std. No. 4 Catch Basin Without Apron, as per plan	Each	1	1	1	1		4
603	Conduit in Ft. Type C 15"		8	8	8	8		32
	Conduit in Ft. Type F 6"		10	10	10	20		80
202	Catch Basin Removed	Each	1	1	1	1		4
Side			℄	℄	℄	℄		
Station	From	348+09	354+32	357+09	364+09			
	To	354+32	357+09	364+09	368+00			
		1-D	2-D	3-D	4-D			Totals
Ref. No.								

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev.; Inside Edge; Eastbound U.S. 30	Grate Elev.	F.L. Elev. N. 6" Conduit @ C.B.	F.L. Elev. S. 6" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.
348+00	100.00	96.58	94.57		94.40
354+23	100.00	97.27	95.24		95.08
357+00	100.00	96.34	94.63		94.51
364+00	100.00	96.61	94.62	94.57	94.41

4' C.B. Remove 202 Sta 357+00 ℄ Std. No. 4 C.B. Without Apron, as per plan

4' C.B. Remove 202 Sta 364+00 ℄ Std. No. 4 C.B. Without Apron, as per plan

Sta. 344+00 to Sta. 368+00

Computations By Initials J.M.S. Date 12/20/83
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VAN WERT COUNTY
VAN-30-4.05

Sta. 368+00

L.A. R/W

L 6"

369 370 U.S.R. 30 371 372 373 374 375 376 377 378 379

Sta. 373+10.00 U.S.R. 30 = Sta. 18+02.27 T.R. 65

Begin Sheet

L.A. R/W

4'F.T. 4'F.T.

T.R. 65 16

T.R. 65 16

End Transition For Detail See Sheet 27

End Transition For Detail See Sheet 27

CONNELL RD 16

L.A. R/W

L 6"

S 47°-16'-45" E

15"

1-D

15" x 8'C

6" x 10'F

6"

15"

6"

L.A. R/W

Match Line

Sta. 380+00

L.A. R/W

L 6"

15"

1-D

381 382 U.S.R. 30 383 384 385 386 387 388 389 390 391

Sod 12' Wide

6"

S 47°-16'-45" E

15" x 8'C

15"

2-D

Sod 12' Wide

6" x 10'F

6"

L 6"

L 6"

10"

2'x2'C.B.

8"

L.A. R/W

L.A. R/W

Match Line

Sta. 382+00

End Sheet

4 C.B. (Remove 202) Sta. 388+00 & Sta. 380+00 & Std. No 4 C.B. Without Apron, as per plan

4 C.B. (Remove 202) Sta. 388+00 & Std. No 4 C.B. Without Apron, as per plan

CATCH BASIN & CONDUIT ELEV.

Station	Existing E.P. Elev. Inside Edge Eastbound U.S. 30	Grate Elev.	Fl. Elev. 6" Conduit @ C.B.	Fl. Elev. 6" Conduit to Conduit @ C.B.
380+00	100.00	96.16	94.12	93.96
388+00	100.00	96.30	94.22	94.30

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit In Fill Type C 15"	603 Conduit In Fill Type C 6"	604 Std. No. 4 Catch Basin, Without Apron, as per plan Each	660 Sodding Sq. Yd.
1-D	379+80	380+11	Rt.	1	8	10	1	27
2-D	387+69	388+41	Lt.	1	8	10	1	27
		Total:		2	16	20	2	54

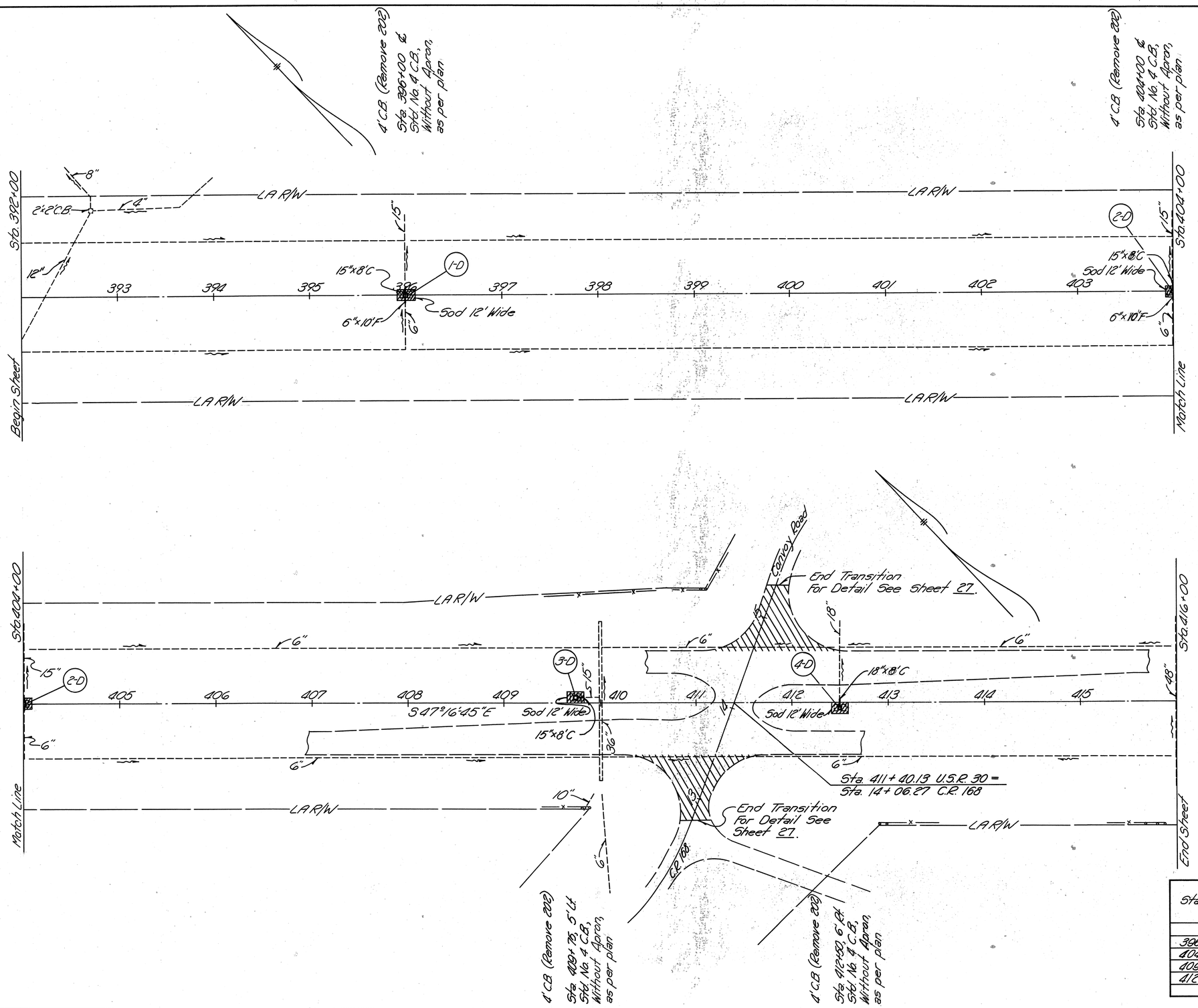
Sta. 368+00 to Sta. 392+00

Computations By	
Initials JM.S.	Date 12/20/23
Computations Checked By	
Initials DJB	Date 12-20-23
Final Revisions By	
Initials	Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

40/65

VAN WERT COUNTY
VAN-30-4.05



DRAINAGE "D"

606 Sodding	Sq. Yd.						
			21	27	21	21	90
604 Std. No. 4 Catch Basin Without Apron as per plan	Each		1	1	1		4
603 Conduit Lin. Ft. Type C 15"			8	8	8	8	24
603 Conduit Lin. Ft. Type F 6"			10	10			20
202 Catch Basin Removed	Each		1	1	1	1	4
Side			4	4	4	4	
Station From	Station To	Ref. No.	1-D	2-D	3-D	4-D	Totals
	396+09		395+91	403+89	409+86	412+41	
	404+11		396+09	404+11	409+84	412+59	

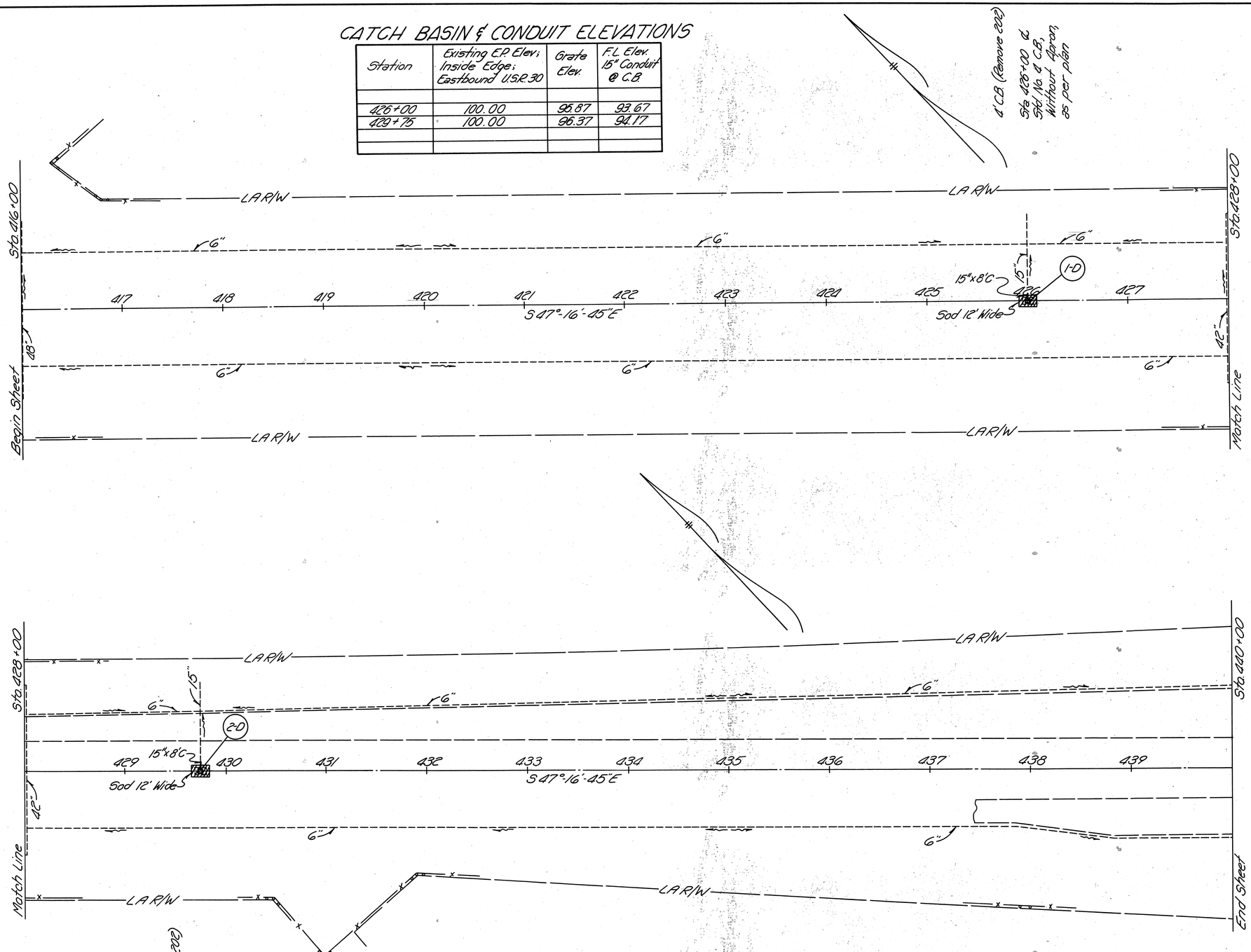
CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing C.P. Elev.; Inside Edge; Eastbound U.S.R.30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.	F.L. Elev. 18" Conduit @ C.B.
396+00	100.00	96.18	94.18	93.98	
404+00	100.00	96.39	94.06	94.05	
409+75	100.00	96.79		94.59	
412+50	100.00	96.13			93.60

Sta. 392+00 to Sta. 416+00

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev.; Inside Edge; Eastbound U.S.R.30	Grate Elev.	F.L. Elev. 15" Conduit @ C.B.
426+00	100.00	95.87	93.67
429+75	100.00	96.37	94.17



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Computations Checked By Initials JAB Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

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VAN WERT COUNTY
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DRAINAGE "D"

660 Sodding						
		Sq. Yd.	31	21		42
604 Std. No. 4 Catch Basin, Without Apron, as per plan		Each	1	1		2
603 Conduit Lin. Ft.	Type C	15"	8	8		16
202 Catch Basin Removed		Each	1	1		2
Side			2	2		
Station	From	To				
Ref. No.			1-D	429+09	429+91	
			2-D	429+66	429+84	
					Totals	

Sta. 416+00 to Sta. 440+00

Computations By Initials JMD Date 12/20/83
Computations Checked By Initials JAB Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

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VAN WERT COUNTY
VAN-30-4.05

Note: Quantities for 659 Seeding and Mulching carried to Sheet 2

Note: Quantities of 448 Types 1 & 2 for Curb and Pavement Removal are included in Ramp Quantities

Sta 440+00

Begin Sheet

L.A. R/W

4-C.B. (Remove 202) Sta 442+50 & Std. No. 4 C.B. Without Apron as per plan

4-C.B. (Remove 202) Sta 446+36.74 Lt. Std. No. 5 C.B. Without Apron as per plan

Service Pole

4-C.B. (Remove 202) Sta 447+00 & Std. No. 4 C.B. Without Apron as per plan

4-C.B. (Remove 202) Sta 447+73.80 Rt. Std. No. 5 C.B. Without Apron as per plan

4-C.B. (Remove 202) Sta 452+00 & Std. No. 4 C.B. Without Apron as per plan

Sta 452+00

202 Curb Removed As per plan "A"

202 Curb Removed

1-R

End Transition For Detail See Sheet 25

Rest Area

Underground Electric (2' Deep)

2-D

Sod 12' Wide

15"×8'C

6"×10'F

3-D

5-D

18"×8'C

18" Sod 12' Wide

U.S.R. 30

S47°-16'-45"E

1-D

4-D

Underground Electric & Telephone (24" Deep)

End Transition For Detail See Sheet 25.

Ramp "C"

2-R

202 Pavement Removed

202 Curb Removed as per plan "B"

+49.49

Match Line

L.A. R/W

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev.; inside edge; Eastbound U.S. 30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.	F.L. Elev. 18" Conduit @ C.B.
442+50	100.00	96.12	94.50		
446+36	100.00 **	96.10	94.31	93.73	93.63
447+00	100.00	96.20			
447+73	100.00 ***	95.96	93.63	93.62	93.35
452+00	100.00	96.28	94.36	94.08	
460+00	100.00	96.26	94.44	94.06	

** Outside E.P. Elev., Westbound U.S. 30
*** Outside E.P. Elev., Eastbound U.S. 30

For Curb Removal Details, see Sheets 28-30.

Sta 452+00

Begin Transition For Detail See Sheet 25.

202 Pavement Removed

3-R

202 Curb Removed as per plan "B"

Ramp "B"

+64.51

5-D

6"×10'F

15"×8'C

U.S.R. 30

S47°-16'-45"E

Sod 12" Wide

6-D

202 Curb Removed

Ramp "D"

202 Curb Removed as per plan "A"

4-R

+55.31

Begin Transition For Detail See Sheet 25.

Match Line

L.A. R/W

4-C.B. (Remove 202) Sta 460+00 & Std. No. 4 C.B. Without Apron as per plan

End Sheet

Sta 464+00

ROADWAY "R"

DRAINAGE "D"

Item		Unit	Totals
659	Seeding and Mulching	Sq. Yd.	697.56
408	Bituminous Prime Coat	Gal.	194.11
304	Aggregate Base	Cu. Yd.	76.89
301	Bituminous Aggregate Base	Cu. Yd.	86.56
203	Subgrade Compaction	Sq. Yd.	411.22
203	Excavation	Cu. Yd.	129.27
202	Pavement Removed	Sq. Yd.	70.96
202	Curb Removed as per Plan "B"	Lin. Ft.	240
202	Curb Removed as per Plan "A"	Lin. Ft.	431
202	Curb Removed	Lin. Ft.	943

Ramp			A	C	B	D	
Station	From	To					Totals
	1-R	440+02.47	4.46+86				
	2-R	445+88.74	446+90.74				
	3-R	453+32.26	456+25.26				
	4-R	455+26	462+11.53				
Ref. No.							

604	Sodding	Sq. Yd.	135
604	Std. No. 5 Catch Basin, Without Apron as per plan	Each	2
604	Std. No. 4 Catch Basin, Without Apron as per plan	Each	4
603	Conduit Lin. Ft. Type C 15" 18"		32 16
603	Conduit Lin. Ft. Type F 6"		80
202	Catch Basin Removed	Each	6

Side			Lt.	Lt.	Rt.	Rt.	
Station	From	To					Totals
	442+41	442+59	1				
	446+25	446+47		1			
	447+00	447+20			1		
	447+64	447+82				1	
	452+51	452+69	1				
	459+91	460+09		1			
Ref. No.							

Sta. 440+00 to Sta. 464+00

Computations By Initials	JM.L.	Date	12/20/83
Computations Checked By Initials	GBB	Date	12-20-83
Final Revisions By Initials		Date	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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VAN WERT COUNTY
VAN-30-4.05

Sta 464+00

L.A. R/W

6"

U.S.R. 30

465 466 467 468 469 470 471 472 473 474 475

S47°-16'-45"E

6"x10'F

1-D

Sod 12' Wide

15"x8'C

15"

Begin Sheet

4' C.B. (Remove 202)
Sta. 472+00 &
Std. No. 4 C.B.
Without Apron,
as per plan

Sta 476+00

Match Line

Sta 476+00

Sta 488+00

477 478 479 480 481 482 483 484 485 486 487

2-D

3-D

End Sheet

4' C.B. (Remove 202)
Sta. 480+00 &
Std. No. 4 C.B.
Without Apron,
as per plan

4' C.B. (Remove 202)
Sta. 484+00 &
Std. No. 4 C.B.
Without Apron,
as per plan

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev.; Inside Edge; Eastbound US 30	Grate Elev.	FL. Elev. 6" Conduit @ C.B.	FL. Elev. 15" Conduit @ C.B.
472+00	100.00	96.22	94.59	94.05
480+00	100.00	96.30	94.35	94.04
484+00	100.00	96.22	94.06	93.61

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Lin. Ft. 6" F	603 Conduit Lin. Ft. 15" C	604 Std. No. 4 Catch Basin, Without Apron as per plan Each	660 Sodding Sq. Yd.
1-D	471+91	472+09	℄	1	10	8	1	21
2-D	479+91	480+09	℄	1	10	8	1	21
3-D	483+91	484+09	℄	1	10	8	1	21
Totals				3	30	24	3	63

Sta. 464+00 to Sta. 488+00

Computations By Initials J.M.S. Date 12/20/83
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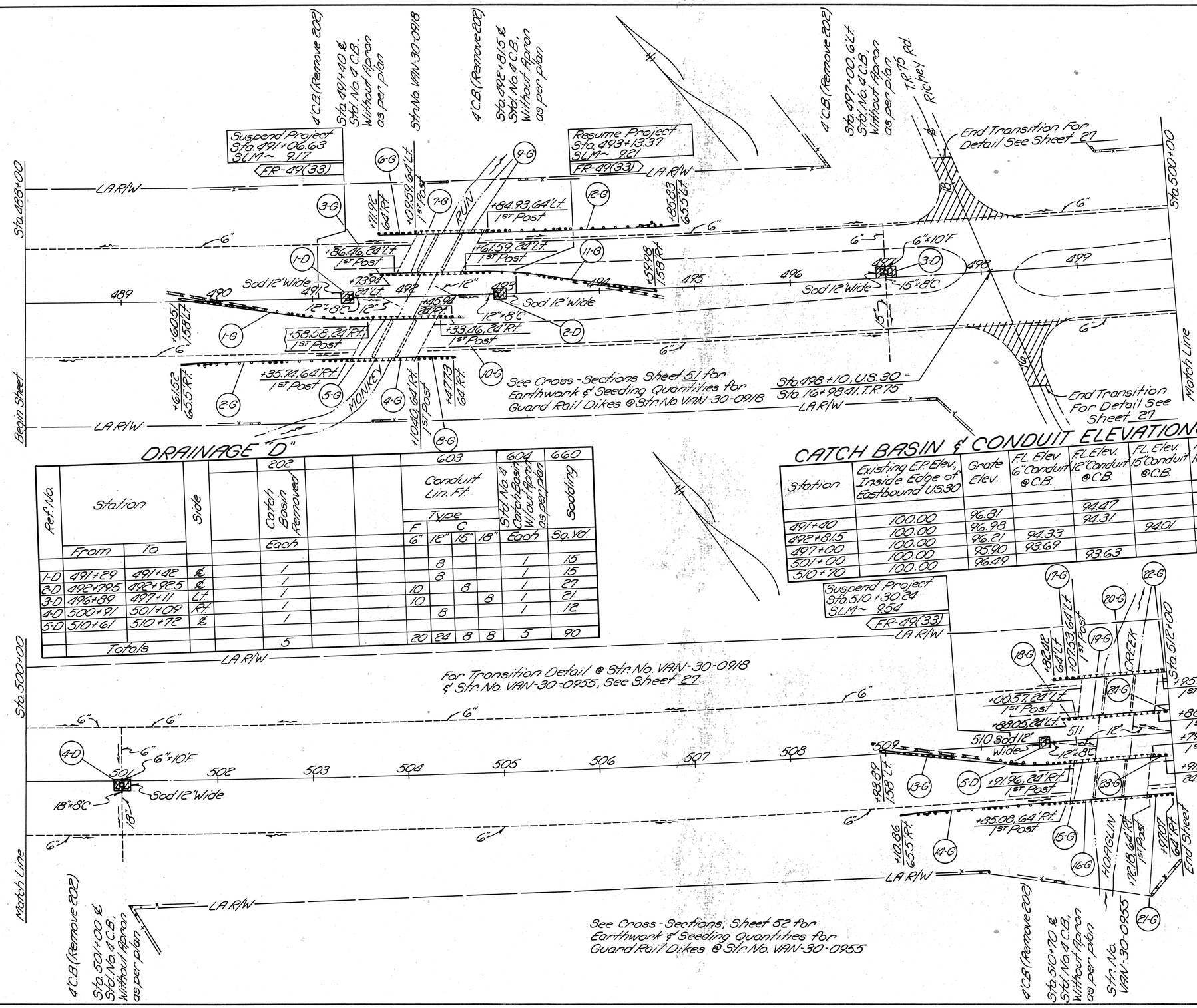
FHWA REGION	STATE	PROJECT	
5	OHIO		

44/65

VAN WERT COUNTY
VAN-30-405



Note: See Sheet 7 for Detail of Guardrail Posts on Strs. VAN-30-0918 & VAN-30-0955 and Detail of Temporary Guardrail over Strs. VAN-30-0918 & VAN-30-0955.

Note: For Quantities under References 13-G thru 21-G, See Sheet 45

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Lin. Ft. Type C 6"	603 Conduit Lin. Ft. Type C 12"	603 Conduit Lin. Ft. Type C 15"	603 Conduit Lin. Ft. Type C 18"	604 Str. No. 4 Catch Basin W/out Apron as per plan Each	660 Seeding & Sodding Sq. yd.
1-D	491+29	491+42	℄	1		8			1	15
2-D	492+79.5	492+92.5	℄	1		8			1	15
3-D	496+89	497+11	Lt.	1	10		8		1	21
4-D	500+91	501+09	Rt.	1		10		8	1	21
5-D	510+61	510+72	℄	1		8			1	12
	Totals			5		20	24	8	5	90

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev. Inside Edge of Eastbound U.S. 30	Grate Elev.	Fl. Elev. 6" Conduit @ C.B.	Fl. Elev. 12" Conduit @ C.B.	Fl. Elev. 15" Conduit @ C.B.	Fl. Elev. 18" Conduit @ C.B.
491+40	100.00	96.81		94.47		
492+81.5	100.00	96.98		94.31		
497+00	100.00	96.21	94.33		94.01	
501+00	100.00	95.90	93.69			93.41
510+70	100.00	96.49		93.63		

Suspend Project Sta. 510+30.24 SLM~ 9.54
FR-49(33)
LA R/W
Sta. 512+00
For Transition Detail @ Str. No. VAN-30-0918 & Str. No. VAN-30-0955, See Sheet 27
Sta. 500+00
6"x10'F
18"x8C
Sod 12' Wide
18"
+82.46 64' Lt. 1st Post
+107.53 64' Lt. 1st Post
+00.57 24' Lt. 1st Post
+88.05, 24' Lt.
+88.22, 24' Lt. 1st Post
+95.43, 64' Lt. 1st Post
+79.30, 24' Rt. 1st Post
+91.78 24' Rt.
+91.96, 24' Rt. 1st Post
+85.08, 64' Rt. 1st Post
+10.86 63.5' Rt.
+98.89 158' Lt.
+22.18, 64' Rt. 1st Post
+9.01 64' Rt.
End Sheet
501
502
503
504
505
506
507
508
509
510
511
512
Notch Line
4 C.B. (Remove 202) Sta. 501+00 & Str. No. 4 C.B. Without Apron as per plan
4 C.B. (Remove 202) Sta. 510+70 & Str. No. 4 C.B. Without Apron as per plan
Str. No. VAN-30-0955
See Cross-Sections, Sheet 52 for Earthwork & Seeding Quantities for Guard Rail Dikes @ Str. No. VAN-30-0955

GUARDRAIL "G"

Ref. No.	Station From	Station To	Side	202 Guardrail Removed for Storage Lin. Ft.	202 Guardrail Barrier Design Removed for Storage Lin. Ft.	517 Railing (Deep Beam Rail w/ Steel Tubular Backup & Type 2 Posts & Bolts), as per plan Lin. Ft.	Guardrail Type 5 Lin. Ft.	Guardrail Barrier Design Type 5 Lin. Ft.	606 Anchor Assemblies Str. Type A Each	606 Anchor Assemblies Barrier Design Str. Type A Each	606 Anchor Assemblies Str. Type T Each	Bridge Terminal Assembly Std. Type B Each
1-G	489+57	491+62.70	Lt. & Rt.	116.63	100.00		129.13	50.00		1		8
2-G	491+16.52	491+39.85	Rt.	154.55			152.13					
3-G	491+61.40	491+90.60	Lt.	29.13			41.13			1		4
4-G	491+39.85	492+06.79	Rt.	66.74		66.74						
5-G	491+62.70	492+29.34	Rt.	66.74		66.74	29.13					
6-G	491+71.92	492+13.74	Lt.	31.83								
7-G	491+90.60	492+57.45	Lt.	66.74		66.74	29.13					
8-G	492+06.79	492+44.73	Rt.	28.71								
9-G	492+13.74	492+80.78	Lt.	66.74		66.74						
10-G	492+44.73	492+58.50	Rt.	29.13			41.13	50.00		1		
11-G	492+57.45	492+67	Lt.	116.63	100.00		129.13			1		
12-G	492+80.78	492+85.83	Lt.	116.63			179.13					
			Subtotals	930.00	200.00	266.96	630.04	100.00	2	4	2	8

Sta. 488+00 to Sta. 512+00

Computations By Initials	J.M.S.	Date	12/20/83
Computations Checked By Initials	[illegible]	Date	12-20-83
Final Revisions By Initials		Date	

FHWA REGION	STATE	PROJECT	
5	OHIO		

45/65

VAN WERT COUNTY
VAN-30-4.05

Sta 512+00
4 C.B. (Remove 202)

Sta 516+00 & Sta No. 4 C.B. Without Apron, as per plan

Resume Project
Sta. 512+49.76
S.L.M. ~ 9.58
F.R-49 (33)

4 C.B. (Remove 202)

Sta 516+00 & Sta No. 4 C.B. Without Apron, as per plan

Sta 524+00

L.A. R/W

22-G

+71.22
65.5 Ft.

6"

4 F.T.

21-G

513 514 U.S.R. 30 515 516 517 518 519 520 521 522 523

Sod 12' Wide

12"x8' C

1-D

+86.61
1.58 Ft.

6"x10' F

15"x8' C

15"

2-D

Begin Sheet

8" C.I.P.

Match Line

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Lin. Ft. Type F 6"	Type C 12"	Type C 15"	604 Sta. No. & Catch Basin without Apron as per plan Each	660 Sodding Sq. Yd.
						8		1	15
1-D	512+08	512+21	℄	1	10		8	1	21
2-D	515+91	516+09	℄	1	10		8	1	21
3-D	525+91	526+09	℄	1	10		8	1	21
4-D	530+66	530+84	℄	1	10		8	1	21
5-D	534+91	535+09	℄	1					
Totals				5	40	8	32	5	99

See Sheet 7 for Detail of Guardrail Posts on Str. VAN-30-0955 and Detail of Temporary Guardrail over Str. VAN-30-0955.

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev. Inside Edge Eastbound U.S.30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 12" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.
512+10	100.00	96.50		94.15	
516+00	100.00	95.91	93.37		93.31
526+00	100.00	96.18	94.62		93.98
530+75	100.00	96.68	94.66		94.48
535+00	100.00	96.28	94.50		94.08

Sta 524+00

L.A. R/W

6"

525 526 U.S.R. 30 527 528 529 530 531 532 533 534 535

Sod 12' Wide

6"x10' F

15"x8' C

15"

3-D

4-D

5-D

Match Line

4' C.B. (Remove 202) Sta. 526+00 & Std. No. 4 C.B. Without Apron, as per plan

4' C.B. (Remove 202) Sta. 530+75 & Std. No. 4 C.B. Without Apron, as per plan

4' C.B. (Remove 202) Sta. 535+00 & Std. No. 4 C.B. Without Apron, as per plan

End Sheet

GUARDRAIL "G" (Sheets 44 & 45)

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	517 Railing (Deep Beam Rail w/ Steel Tubular Backup & Type 2 Posts & Bolts) as per plan Lin. Ft.	606 Guardrail Barrier Design Removed for Storage Lin. Ft.	606 Guardrail Removed for Storage Lin. Ft.	606 Guardrail Type 5 Lin. Ft.	606 Guardrail Barrier Design, Type 5 Lin. Ft.	606 Anchor Assemblies Std. Type A Each	606 Anchor Assemblies Barrier Design Std. Type A Each	606 Anchor Assemblies Std. Type B Each	Bridge Terminal Assemblies Std. Type B Each
A-G	508+086	510+05.92	Lt. & Rt.				116.49						8
B-G	509+086	510+08.05	Rt.			100.00	153.99						
C-G	510+05.92	511+78.32	Rt.		79.52		79.52						
D-G	510+08.05	511+46.21	Rt.		79.52		79.52						
E-G	510+82.12	511+11.54	Lt.				16.09	16.09					
F-G	510+84.22	511+04.57	Lt.				16.09	3.99					
G-G	511+04.57	511+84.22	Lt.		79.52		79.52						
H-G	511+11.54	511+91.42	Lt.		79.52		79.52						
I-G	511+68.27	511+97.07	Rt.					16.09					
J-G	511+73.32	511+91.78	Rt.					153.99					
K-G	511+84.22	513+99	Lt. & Rt.					3.99	50.00		1		
L-G	511+91.42	513+99	Lt.					128.99	50.00	1		2	4
Totals				5	318.08	200.00	1116.49	425.00	100.00	2	2	4	8

Sta. 512+00 to Sta. 536+00

Computations By Initials J.M.L. Date 12/20/83
Computations Checked By Initials JBS Date 12-20-83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

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VAN WERT COUNTY
VAN-30-4.05

Sta 536+00

Begin Sheet

L.A. R/W

6"

537 538 U.S.R.30 539 540 541 542 543 544 545 546 547

S 71°-40'-07" E

8"

6"×10'F

Sod 12' Wide

15"×8'C

15"

I-D

4' C.B (Remove 202) Sta 547+00, 4' Lt. Std. No. 4 C.B. Without Apron, as per plan

Sta 548+00

Match Line

Sta 548+00

Union Road

End Transition For Detail See Sheet 27

Sta 556+32 U.S.R.30 = Sta 50+00 Co.Rd. #77

549 550 U.S.R.30 551 552 553 554 555 556 557 558 559

S 71°-40'-07" E

Sod 12' Wide

15"×8'C

2-D

3-D

48"

4" Clay Tile

8" Conc. Tile

10"

4' C.B (Remove 202) Sta 554+50, 4' Lt. Std. No. 4 C.B. Without Apron, as per plan

4' C.B (Remove 202) Sta 557+00, 6' Lt. Std. No. 4 C.B. Without Apron, as per plan

Sta 560+00

End Sheet

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elevs. Inside Edge, Eastbound U.S.R.30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B	F.L. Elev. 15" Conduit @ C.B
547+00	100.00	96.15	94.51	93.95
554+50	100.00	96.45		94.25
557+00	100.00	96.37		94.17

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Lin. Ft. 6" F	603 Conduit Lin. Ft. 15" Type C	604 Std No. 4 Catch Basin Without Apron, as per plan Each	660 Sodding Sq. Yd.
1-D	546+91	547+09	℄	1	10	8	1	21
2-D	554+41	554+59	Lt.	1		8	1	21
3-D	556+91	557+09	Rt.	1		8	1	21
		Total's		3	10	24	3	63

Sta. 536+00 to Sta. 560+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

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65

VAN WERT COUNTY
VAN-30-4.05

CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev.; Inside Edge; Eastbound U.S.R.30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.	F.L. Elev. 18" Conduit @ C.B.
568+31.50	100.00	96.45			93.96
575+00.00	100.00	96.23	94.61	94.03	
583+00.00	100.00	95.90	94.15	93.70	

4 C.B. (Remove 202)
Sta. 568+31.50 ℄
Std. No. 4 C.B.; Without Apron; as per plan

Str. VAN-30-1068

4 C.B. (Remove 202)
Sta. 583+00 ℄
Std. No. 4 C.B., Without Apron; as per plan

Computations By Initials J.M.S. Date 12/20/82
Computations Checked By Initials J.H.S Date 12-20-83
Final Revisions By Initials Date

Note: Quantities for 659 Seeding and Mulching carried to Sheet 7.

ROADWAY "2"

659	Seeding and Mulching	Sq. Yd.								740.13
408	Bituminous Prime Coat	Gal.								168.01
304	Aggregate Base	Cu. Yd.				7.41	12.64	9.42		83.78
301	Bituminous Aggregate Base	Cu. Yd.				18.42		25.73		93.06
								36.08	52.93	
								39.36	28.58	
203	Subgrade Compaction	Sq. Yd.				33.33	73.67	42.38	144.33	451.15
203	Excavation	Cu. Yd.				7.41	25.28	9.42	47.79	142.98
									53.08	
202	Precast Traffic Dividers Removed, as per plan ØØ	Each							16	16
202	Pavement Removed	Sq. Yd.	33.33			33.33		42.38		75.71
202	Curb Removed as per plan "B"	Lin. Ft.							124	124
202	Curb Removed as per plan "A"	Lin. Ft.							120	120
202	Curb Removed	Lin. Ft.								244

ØØ The Cost of 407 Tack Coat and Cover Aggregate used to coat the hole where the Precast Traffic Divider is removed and the 301 Bituminous Aggregate Base used to fill the hole shall be included in the unit cost of 202 Precast Traffic Divider Removed, as per plan.

Note ~ Quantities for 608 Types 1 & 2 for Curb and Pavement Removal included in Ramp Quantities:

Ref. No.	Station From	Station To		Ramp	202 Curb Removed Lin. Ft.	202 Curb Removed as per plan "A" Lin. Ft.	202 Curb Removed as per plan "B" Lin. Ft.
1-P	563+73.81	564+77.81	℄	C	180	117	124
2-P	#572+38.77	#572+80.44	℄	C			
3-P	#567+84.74	#568+84.74	℄	D			
4-P	#558+63.32	#564+16.40	℄	A	397	162	
5-P	577+76.00	583+58.28	℄	D	441	141	
6-P	*584+64.00	*586+50.00	℄	C			
				Totals	968	420	244

* Sta. on Ramp "C"
#\# Sta. on Ramp "D"
Ø Sta. on Ramp "A"

GUARDRAIL "6"

Ref. No.	Station From	Station To	Side	202 Guardrail Removed for Storage Lin. Ft.	606 Guardrail Type 5 Lin. Ft. Straight	606 Guardrail Type 5 Lin. Ft. 40'/2	606 Guardrail Type 5 Lin. Ft. 5'-2	606 Guardrail Type 5 Lin. Ft. 12½ Bkgr.	606 Guardrail Type 5 Lin. Ft. Lin. Ft.	Anchor Assemblies Std. Type A Each	Anchor Assemblies Std. Type T Each	Bridge Terminal Assemblies Std. Type D Each	Std. Type J Each
1-G	556+82.25	562+46.25	℄	50.00				18.75		1	1		
2-G	562+16.25	563+98.75	℄	50.00				18.75		1	1		
3-G	#557+71.11	#558+42.20	℄	200.00						1	1		
4-G	570+42.69	572+65.19	℄	112.50				68.75		1	1		
5-G	569+04.69	571+40.69	℄	112.50				68.75		1	1		
6-G	#557+65.00	#571+81.75	℄	457.50	418.75					1	1	1	
7-G	569+04.72	571+63.66	℄		275.00	50.00	25.00						
8-G	#559+28.55	#569+32.50	℄	400.00	400.00					1	1		
9-G	#562+23.22	#565+51.50	℄	400.00	325.00					1	1		
10-G	#559+81.60	#560+31.35	℄	225.00	225.00					1	1		
11-G	#562+23.22	#563+01.28	℄	362.50	362.50					1	1		
12-G	#562+23.22	#564+40.44	℄	729.00	729.00					1	1		
13-G	#559+50.00	#561+72.28	℄	2,200.00	2,200.00					2	2		
	SUB-Totals			4,337.00	4,337.50	50.00	25.00	175.00	2,350.00	9	9	2	2
	Totals			4,300.00		812.50			175.00	9	9	2	2

* Station on Ramp "C"
#\# Station on U.S.R. 224
#\#\# Station on Ramp "D"
** Station on Ramp "B"

Begin Sheet

Sta. 560+00

Resume Resurfacing Sta. 562+13.87 ℄

For Transition Detail on U.S.R. 224 @ Str. VAN-30-1068 and Transition Detail on U.S.R. 30 under Str. VAN-30-1068, See Sheet 26.

Ø Guardrail Posts to be set at 3'-1½" spacing c/c at:
Sta. 562+34.25 to Sta. 562+53.00 Rt.
Sta. 562+48.00 to Sta. 562+66.75 Lt.
Sta. 570+52.69 to Sta. 571+21.44 Lt.
Sta. 570+36.94 to Sta. 571+05.69 Rt.
The cost of the additional guardrail posts shall be included in the unit price bid for Item 606, Guardrail, Type 5. See Sheet 7 for Detail.

202 Curb Removed

202 Curb Removed as per plan "A"

202 Curb Removed as per plan "B"

202 Curb Removed

202 Pavement Removed

202 Curb Removed as per plan "A"

202 Curb Removed as per plan "B"

202 Curb Removed

For Curb Removal Details, See Sheets 28-30.

For Guard Rail Dike & Earthwork Quantities under Str. VAN-30-1068, See Sheet 53.

Suspend Resurfacing Sta. 639+47.07 ℄

End Work U.S.R. 224 Sta. 632+36.75 ℄

End Sheet

Sta. 584+00

Match Line

Match Line

4 C.B. (Remove 202)
Sta. 575+00 ℄
Std. No. 4 C.B.; Without Apron; as per plan

DRAINAGE "D"

Ref. No.	Station From	Station To	Side	202 Catch Basin Removed Each	603 Conduit Lin. Ft. Type F 6"	603 Conduit Lin. Ft. Type C 15"	603 Conduit Lin. Ft. Type C 18"	604 Std. No. 4 Catch Basin, Without Apron, as per plan Each	604 Catch Basin Adjusted to Grade Each	660 Sodding Sq. Yd.
1-D	568+22.50	568+40.50	℄	1			8	1		21
2-D	567+87 ##		Lt.						1	
3-D	573+50		Lt.						1	
4-D	574+09.91	575+09	℄	1		10	8	1		21
5-D	582+09.91	583+09	℄	1		10	8	1		21
	Totals			3		20	16	3	2	63

Ramp "D" Stationing

Begin Work U.S.R. 224 Sta. 589+54.18 *
Sta. 617+96.98 #

* Station on Ramp "C"
# Station on U.S.R. 224 +50.68, 21.68' Lt. (U.S.R. 224)

Connect to existing Type 5 Guardrail

End Transition; For Detail, See Sheet 25.

+02, 8' Rt., (Ramp "C") Connect to existing Type 5 Guardrail

Precast Traffic Dividers ~ Remove 202

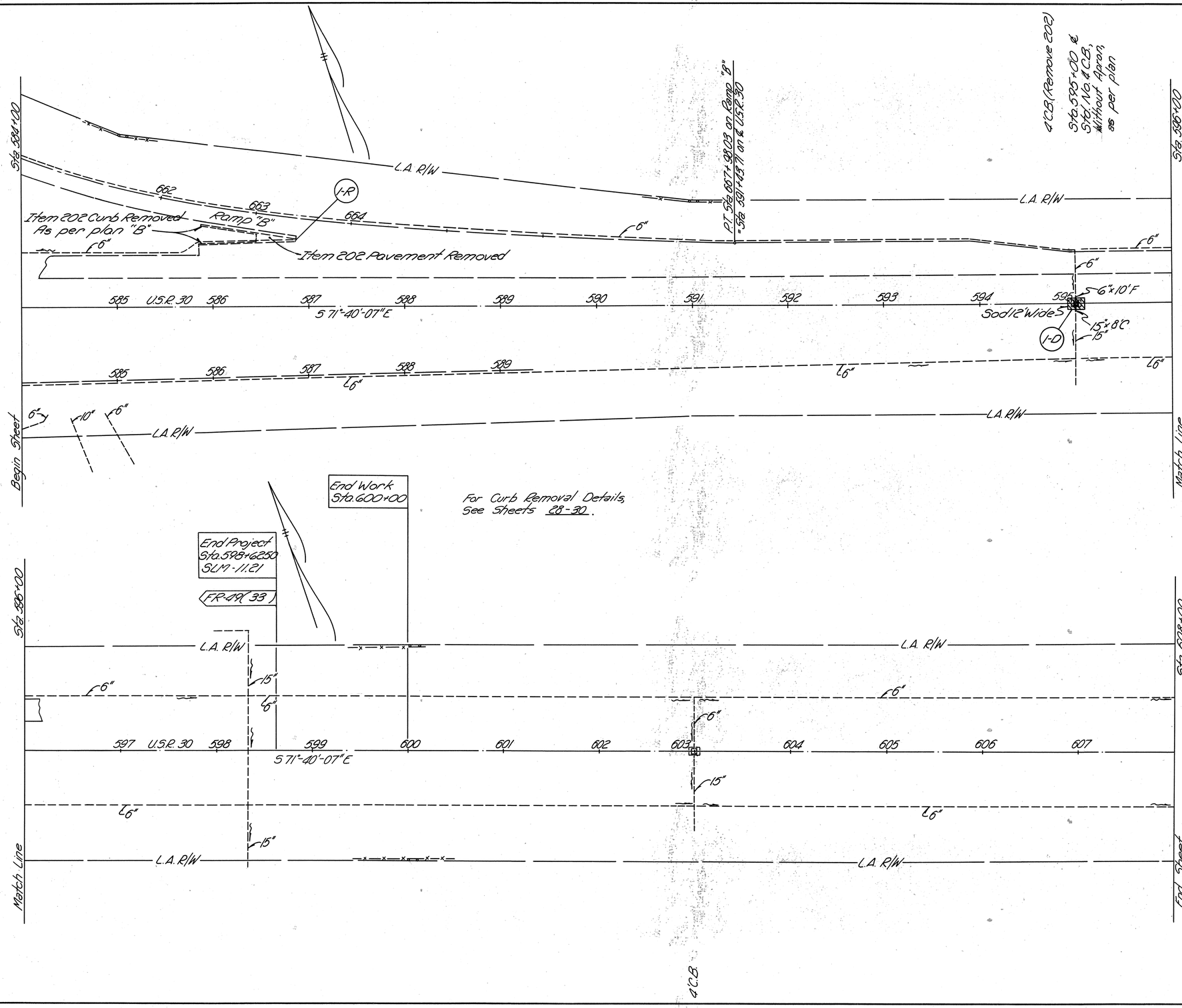
Sta. 560+00 to Sta. 584+00

Computations By Initials J.M.D Date 12/20/83
Computations Checked By Initials JLB Date 12/20/83
Final Revisions By Initials Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

48/65

VAN WERT COUNTY
VAN-30-4.05



CATCH BASIN & CONDUIT ELEVATIONS

Station	Existing E.P. Elev, Inside Edge; Eastbound U.S.30	Grate Elev.	F.L. Elev. 6" Conduit @ C.B.	F.L. Elev. 15" Conduit @ C.B.
595+00	100.00	96.22	94.69	94.02

NOTE: Quantities for 659 Seeding and Mulching carried to Sheet

ROADWAY "P"

Ref. No.	Station From	Station To			
I-P	585+88.88	596+88.88	B	120	120
Totals				35.00	35.00
202	Curb Removed As Per Plan "B"		Lin. Ft.	120	120
	Pavement Removed		Sq. Yd.	35.00	35.00
203	Excavation		Cu. Yd.	7.78	7.78
	Subgrade Compaction		Sq. Yd.	35.00	35.00
304	Aggregate Base		Cu. Yd.	7.78	7.78
408	Bituminous Prime Coat		Gal.	14.00	14.00
659	Seeding and Mulching		Sq. Yd.	116.00	116.00

NOTE: Quantities for 659 Seeding and Mulching, 603 Conduit Lin. Ft. Type C 15" F 6", and Pavement Removal are included in Ramp Quantities

DRAINAGE "D"

Ref. No.	Station From	Station To			
I-D	592+91	595+09			
Totals					
202	Catch Basin Removed		Each	1	1
	Side				
603	Conduit Lin. Ft. Type C	15" F		8	8
		6" F		10	10
604	Std. No. 4 Catch Basin, Without Apron, as per plan		Each	1	1
660	Sodding		Sq. Yd.	21	21

Sta. 584+00 to Sta. 608+00

35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35

Seeding Width	Seeding Sq Yds.			End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		234+59.37 98.25					
		233+59.37 97.45					
10	74	Sta. 233+25.85, Bk.	End Proposed Taper, Lt Sta. 233+25.85				
10	69	232+59.37 98.25					
10		Ahd., 231+97.54					
23	98	Bk., Sta. 225+38.17	Sta. Equation Sta 225+38.17 Bk. = Sta. 231+97.54 Ahd.				
23		16:1					
	132	225+00 98.65					
30		224+55 99.25					
	38						
10		Ahd.	2¾" Resurfacing				
		224+38 99.69					
		℄ Median X-Over Sta. 224+28					
10		Bk.	2¾" Resurfacing				
		224+18 99.72					
	32						
22		224+00 99.11					
	178						
10		223+00 97.81					
	111						
10							
	12	222+00 97.51					
10		Sta. 221+89.52, Ahd.					
		221+00 97.91					
	744	Sheet Total to Sheet 31.					

35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35

Earthwork quantities calculated on Sheet 31.
Seeding quantities carried to Sheet 31.

The Elevations shown on this Sheet from Sta 221+00 to Sta 234+59.37 Ahd are based on an assumed Bench Mark described below and are not relative to any other elevations shown anywhere else on the plans.

B.M. Description: Top of numeral "4" in Sta. 224+00 stamped in E.P. of East bound U.S.R. 30.

Elevation: 100.00

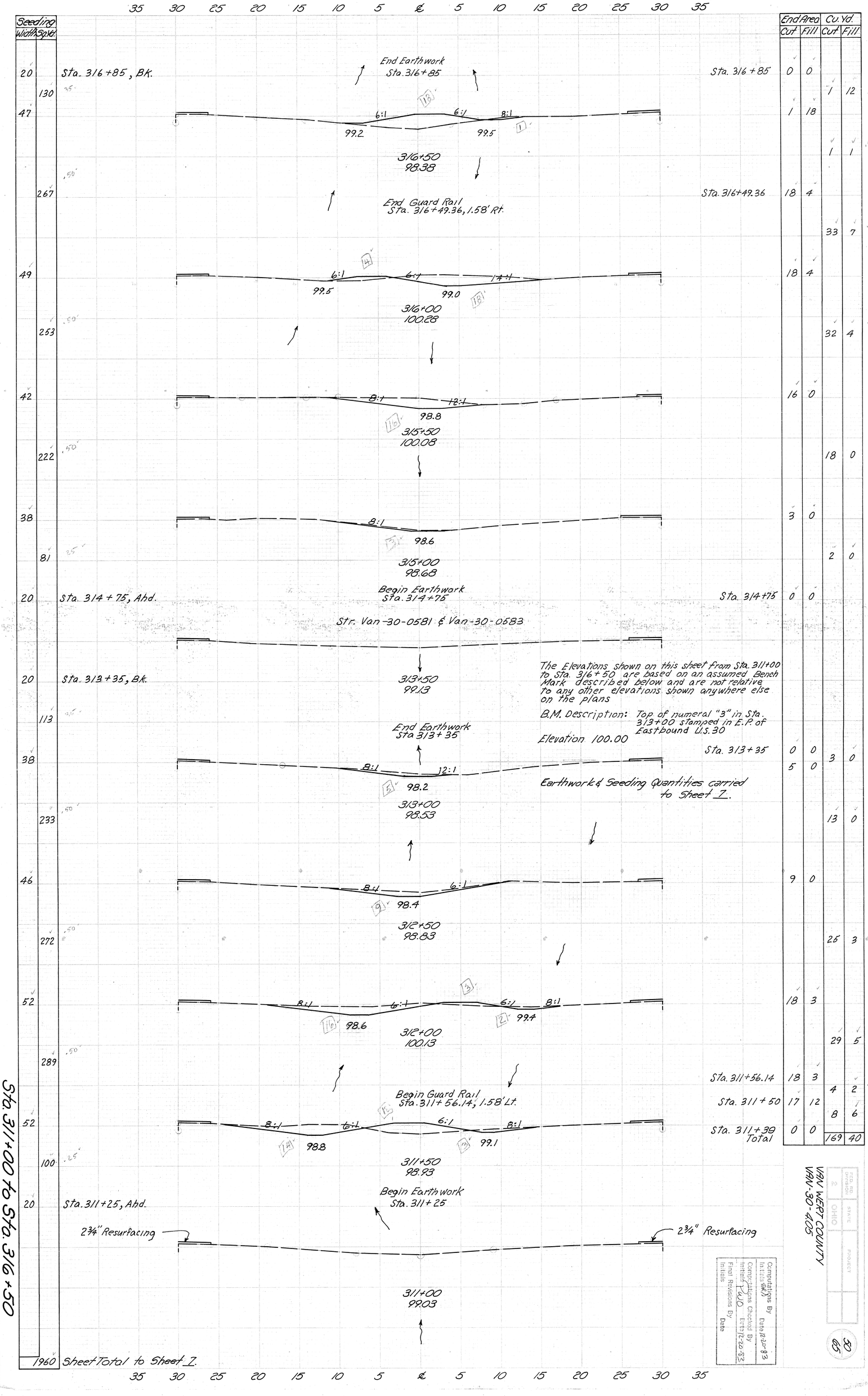
Begin Proposed Taper, Rt. Sta. 221+89.52

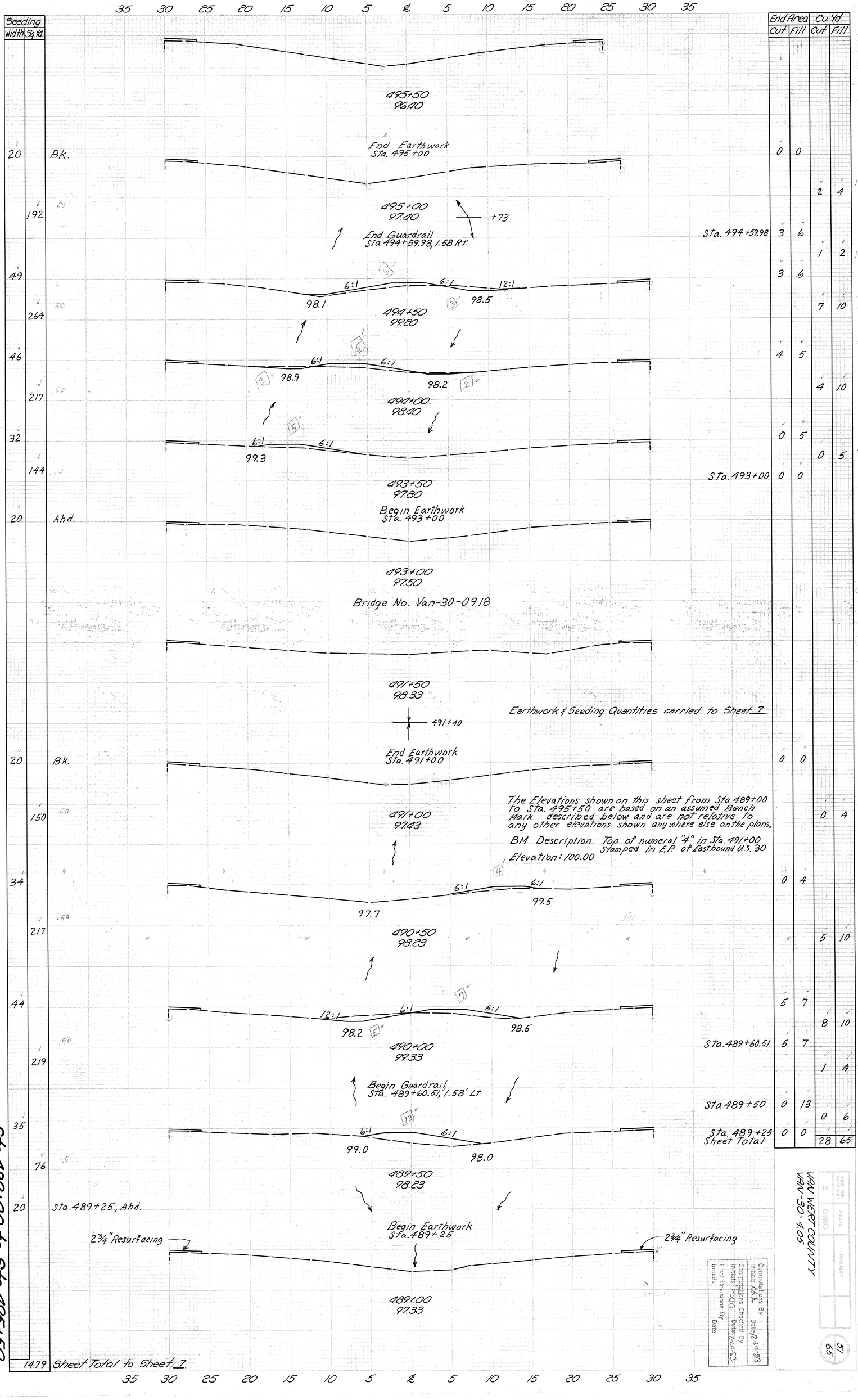
Sta 221+00 to Sta 228+00

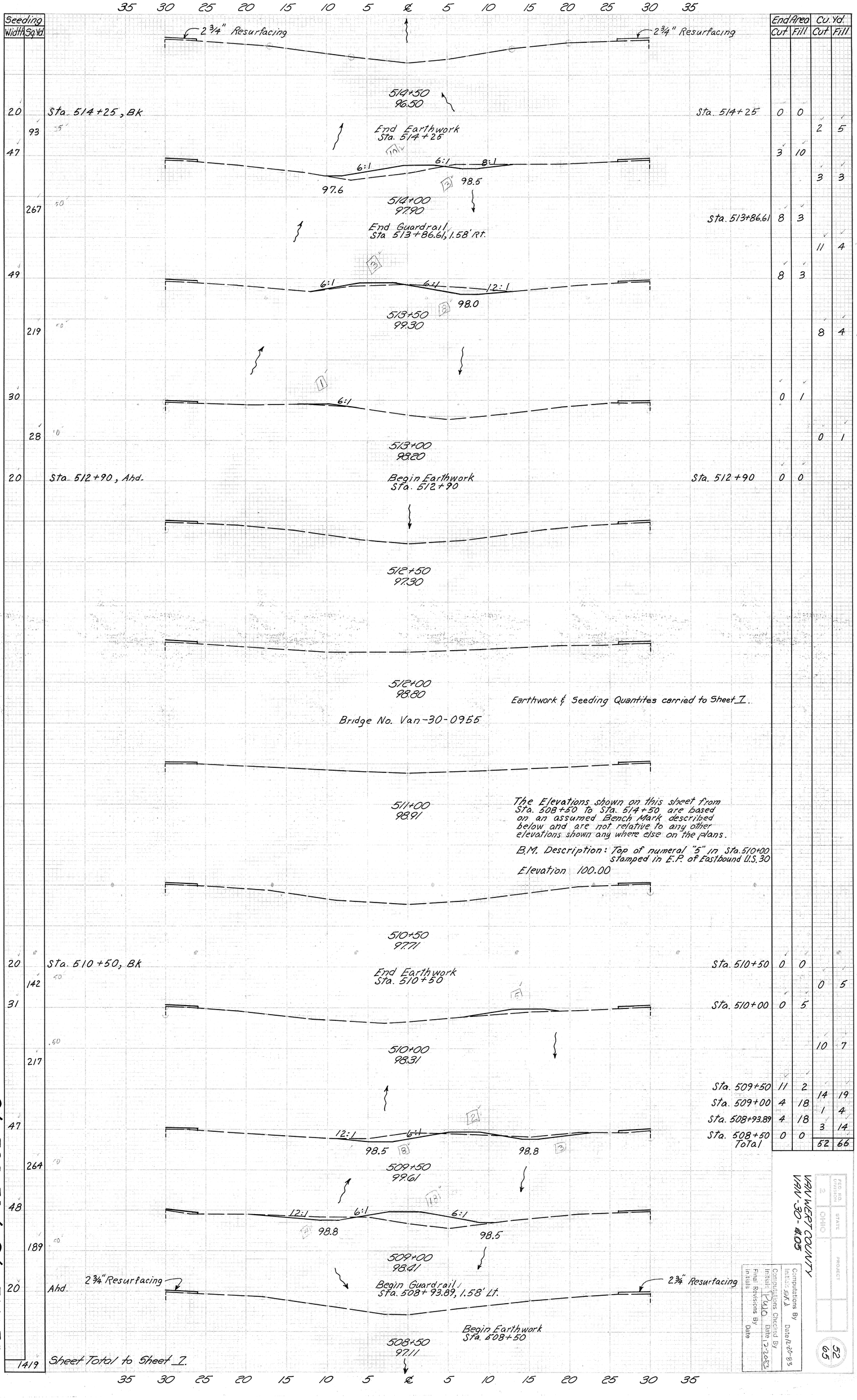
Computations By: Initials BAK Date 12-24-83
Computations Checked By: Initials PWO Date 12-28-83
Final Revisions By: Initials ____ Date ____

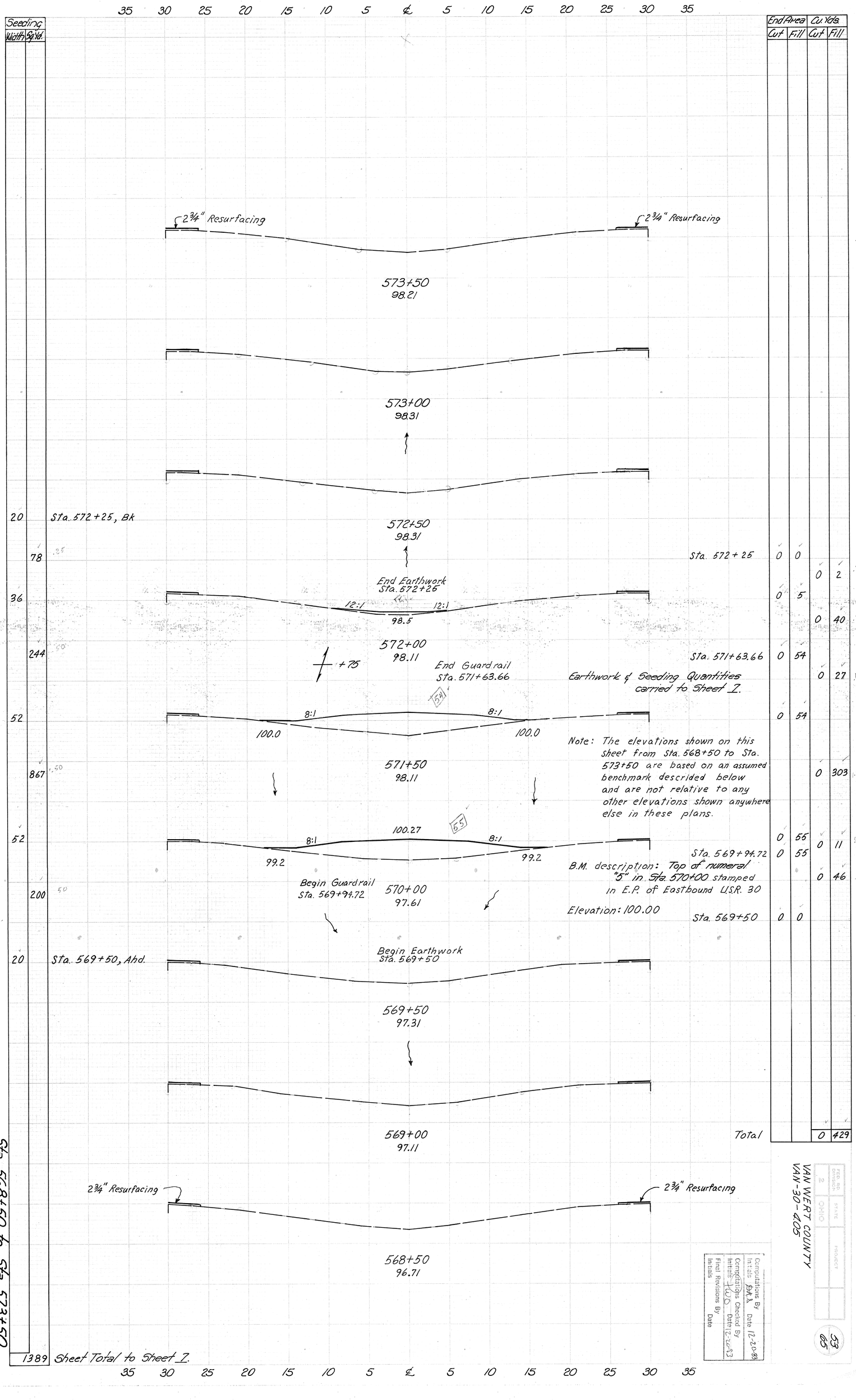
FED. RD. DIVISION 2 | STATE OHIO | PROJECT

VAN WERT COUNTY
VAN-30-4.05


35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35
Seeding Width Spec.
End Earthwork Sta. 3/6+85
Sta. 3/6+85, Bk.
6:1 6:1 8:1
99.2 99.5
3/6+50 98.38
End Guard Rail Sta. 3/6+49.36, 1.58' Rt.
6:1 6:1 4:1
99.5 99.0
3/6+00 100.28
8:1 12:1
98.8
3/5+50 100.08
8:1
98.6
3/5+00 98.68
Begin Earthwork Sta. 3/4+75
Sta. 3/4+75, Ahd.
Str. Van-30-0581 & Van-30-0583
3/3+50 99.13
Sta. 3/3+35, Bk.
End Earthwork Sta 3/3+35
8:1 12:1
98.2
3/3+00 98.53
8:1 6:1
98.4
3/2+50 98.83
8:1 6:1 6:1 8:1
98.6 99.4
3/2+00 100.13
Begin Guard Rail Sta. 3/1+56.14, 1.58' Lt.
8:1 6:1 6:1 8:1
98.8 99.1
3/1+50 98.93
Begin Earthwork Sta. 3/1+25
Sta. 3/1+25, Ahd.
2¾" Resurfacing
2¾" Resurfacing
3/1+00 99.03
Sta. 3/1+00 to Sta. 3/6+50
1960 Sheet Total to Sheet 7
Sta. 3/6+85
Sta. 3/6+49.36
Sta. 3/4+75
Sta. 3/3+35
Sta. 3/1+56.14
Sta. 3/1+50
Sta. 3/1+39 Total
End Area Cut
End Area Fill
Cu. Yd. Cut
Cu. Yd. Fill
0 0
1 12
1 18
1 1
1 1
18 4
33 7
18 4
32 4
16 0
18 0
3 0
2 0
0 0
3 0
5 0
13 0
9 0
25 3
18 3
29 5
18 3
4 2
17 12
8 6
0 0
169 40
The Elevations shown on this sheet from Sta. 3/1+00 to Sta. 3/6+50 are based on an assumed Bench Mark described below and are not relative to any other elevations shown anywhere else on the plans
B.M. Description: Top of numeral "3" in Sta. 3/3+00 stamped in E.P. of Eastbound U.S. 30
Elevation 100.00
Earthwork & Seeding Quantities carried to Sheet 7.
Computations By
Computations Checked By
Final Revisions By
Date
VAN WERT COUNTY
VAN-30-0.05
FED. ROAD DIVISION
STATE
OHIO
PROJECT
65
80


35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35
Seeding Width Sq.Yd.
End Area Cu.Yd. Cut Fill Cut Fill
495+50
96.40
End Earthwork
Sta. 495+00
20 Bk.
0 0
2 4
495+00
97.40
+73
192
End Guardrail
Sta. 494+59.98, 1.58 Rt.
Sta. 494+59.98
3 6
1 2
49
3 6
6:1 6:1 12:1
98.1 98.5
7 10
264
494+50
99.20
46
4 5
6:1 6:1
98.9 98.2
4 10
217
494+00
98.40
32
0 5
6:1 6:1
99.3
0 5
144
493+50
97.80
Sta. 493+00
0 0
Begin Earthwork
Sta. 493+00
20 Ahd.
493+00
97.50
Bridge No. Van-30-0918
491+50
98.33
Earthwork & Seeding Quantities carried to Sheet 7.
491+40
End Earthwork
Sta. 491+00
20 Bk.
0 0
The Elevations shown on this sheet from Sta. 489+00 to Sta. 495+50 are based on an assumed Bench Mark described below and are not relative to any other elevations shown anywhere else on the plans.
150
491+00
97.43
0 4
BM Description Top of numeral "4" in Sta. 491+00 stamped in E.P. of Eastbound U.S. 30
Elevation: 100.00
34
0 4
6:1 6:1
97.7 99.5
217
490+50
98.23
5 10
44
5 7
12:1 6:1 6:1
98.2 98.6
8 10
490+00
99.33
Sta. 489+60.51
5 7
219
1 4
Begin Guardrail
Sta. 489+60.51, 1.58' Lt
Sta 489+50
0 13
0 6
35
6:1 6:1
99.0 98.0
Sta. 489+25
Sheet Total
0 0
28 65
76
489+50
98.23
20 Sta. 489+25, Ahd.
Begin Earthwork
Sta. 489+25
2¾" Resurfacing
2¾" Resurfacing
489+00
97.33
Sta. 489+00 to Sta. 495+50
1479 Sheet Total to Sheet 7.
35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35
Computations By Initials SAK Date 12-20-93
Computations Checked By Initials PWO Date 12-22-93
Final Revisions By Initials Date
VAN WERT COUNTY
VAN-30-4.05
51
65


35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35
Seeding Width Sq.Yd.
End Area Cut Fill
Cu.Yd. Cut Fill
2¾" Resurfacing
2¾" Resurfacing
514+50
96.50
Sta. 514+25, Bk
End Earthwork
Sta. 514+25
6:1
6:1
8:1
97.6
98.5
514+00
97.90
End Guardrail
Sta 513+86.61, 1.58' Rt.
Sta. 513+86.61
6:1
6:4
12:1
98.0
513+50
99.30
6:1
513+00
98.20
Sta. 512+90, Ahd.
Begin Earthwork
Sta. 512+90
512+50
97.30
512+00
98.80
Earthwork & Seeding Quantites carried to Sheet I.
Bridge No. Van-30-0955
511+00
98.91
The Elevations shown on this sheet from Sta. 508+50 to Sta. 514+50 are based on an assumed Bench Mark described below and are not relative to any other elevations shown any where else on the plans.
B.M. Description: Top of numeral "5" in Sta. 510+00 stamped in E.P. of Eastbound U.S. 30
Elevation 100.00
510+50
97.71
Sta. 510+50, Bk
End Earthwork
Sta. 510+50
510+00
98.31
12:1
6:1
98.5
98.8
509+50
99.61
12:1
6:1
6:1
98.8
98.5
509+00
98.41
2¾" Resurfacing
Ahd.
Begin Guardrail
Sta. 508+93.89, 1.58' Lt.
2¾" Resurfacing
Begin Earthwork
Sta. 508+50
508+50
97.11
Sheet Total to Sheet I.
Sta. 514+25 0 0
Sta. 513+86.61 8 3
Sta. 512+90 0 0
Sta. 510+50 0 0
Sta. 510+00 0 5
Sta. 509+50 11 2
Sta. 509+00 4 18
Sta. 508+93.89 4 18
Sta. 508+50 0 0
Total 52 66
Sta. 508+50 to Sta. 514+50
VAN WERT COUNTY
VAN-30-0955
FED. AID DIVISION
OHIO
STATE
PROJECT
Computations By Initials SAS Date 12-20-83
Computations Checked By Initials PWO Date 12-26-83
Final Revisions By Initials
Date
52
65



Computations By Initials SMA Date 12-20-82
Computations Checked By Initials JWO Date 2-22-83
Final Revisions By Initials
Date

VAN WERT COUNTY
VAN-30-4.05

PROJECT | STATE | SHEET NO. | TOTAL SHEETS
2 | OHIO | 53 | 85

Computations By Initials G.H. Date 12-20-83	FHWA	STATE	PROJECT	
Computations Checked By Initials JGG Date 12-20-83	5	OHIO		
Final Revisions By Initials Date				

54/65

VAN WERT COUNTY
VAN-30-4.05

TEMPORARY PAVEMENT MARKINGS
NOTE B

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND WHEN NECESSARY, REMOVE TEMPORARY RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE MAINTAINED IN GOOD CONDITION DURING THE REQUIRED SERVICE PERIOD TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISIBILITY AND/OR REFLECTIVITY AT NO ADDITIONAL COST TO THE STATE.

MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE OF PAINT, PAVEMENT MARKING TAPE OR REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE).

A. PAINT

PAINT SHALL COMPLY WITH 708.14 AND SHALL BE APPLIED IN ACCORDANCE WITH 621 EXCEPT AS MODIFIED HEREIN.

B. PAVEMENT MARKING TAPE

FLEXIBLE RETROREFLECTIVE PREFORMED PRESSURE SENSITIVE TAPE SHALL HAVE STRAIGHT EDGES AND BE FREE OF CRACKS. THE TAPE SHALL CONSIST OF PIGMENT AND FILLERS WITH SUFFICIENT BINDER AND PLASTICIZER TO RETAIN GLASS BEADS HAVING A REFRACTIVE INDEX MEETING THE MINIMUM REFLECTIVE INTENSITY STANDARD STATED IN THE MANUFACTURERS INFORMATION. THE TAPE SHALL BE FLEXOLITE "WET REFLECTIVE", 3M "SCOTCHLANE", OR AN APPROVED EQUAL.

THE GLASS BEADS SHALL BE DISTRIBUTED UNIFORMLY THROUGHOUT THE TAPE WITH SUFFICIENT SURFACE BEADS TO PROVIDE OPTIMUM REFLECTORIZATION AT ALL TIMES.

PAVEMENT MARKING TAPE SHALL COMPLY WITH THE COLOR REQUIREMENTS OF 708.14.

THE TAPE SHALL HAVE A PRECOATED ADHESIVE LAYER FOR PAVEMENT APPLICATION WITHOUT THE USE OF HEAT, SOLVENTS OR ADDITIONAL ADHESIVES. THE ADHESIVE SHALL BE SUFFICIENT TO RETAIN COMPLETE MARKINGS ON THE PAVEMENT SURFACE THROUGHOUT THE USEFUL LIFE OF THE MARKINGS.

IN ADDITION TO THE FOREGOING, ALL TEMPERATURE APPLICATION REQUIREMENTS AND OTHER APPLICABLE MANUFACTURERS MATERIAL AND APPLICATION INSTRUCTIONS SHALL BE FOLLOWED.

WHEN APPROVED BY THE ENGINEER THE CONTRACTOR MAY USE REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE), IN LIEU OF THAT DESCRIBED ABOVE, TO FACILITATE REMOVAL OF MARKINGS.

C. REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE)

THE MARKING MATERIAL SHALL BE A MIXTURE OF POLYMERIC MATERIALS, PIGMENTS, REINFORCING MEDIUM TO FACILITATE REMOVAL, GLASS BEADS THROUGHOUT THE PIGMENTED PORTION, AND A RETROREFLECTIVE LAYER OF GLASS BEADS BONDED TO THE TOP SURFACE.

THE TAPE SHALL BE PRECOATED WITH A PRESSURE SENSITIVE ADHESIVE CAPABLE OF TEMPORARILY BONDING TO ASPHALT CONCRETE OR PORTLAND CEMENT CONCRETE PAVEMENT AT AN AMBIENT TEMPERATURE OF NOT LESS THAN 50° F AND RISING, AT A PAVEMENT TEMPERATURE OF NOT LESS THAN 50° F NOR MORE THAN 150° F, WITHOUT THE USE OF HEAT, SOLVENTS, AND ADDITIONAL ADHESIVES OR ACTIVATORS.

MATERIALS SHALL CONFORM TO THE COLOR REQUIREMENTS OF 708.14.

THE TAPE SHALL BE REMOVABLE FROM APSHALT AND PORTLAND CEMENT CONCRETE INTACT OR IN LARGE PIECES AT TEMPERATURES ABOVE 40° F WITHOUT USE OF HEAT, SOLVENTS, GRINDING, OR SANDBLASTING. REMOVAL SHALL NOT RESULT IN DAMAGE TO OR OBJECTIONABLE STAINING OF THE PAVEMENT.

GLASS BEADS SHALL BE PROVIDED IN A PROPER SIZE, QUANTITY AND DISTRIBUTION TO ASSURE OPTIMUM RETROREFLECTIVITY AS THE FILM WEARS. THE FOLLOWING INITIAL AVERAGE REFLECTANCE VALUES AT 86.0 ENTRANCE ANGLE AS MEASURED IN ACCORDANCE WITH THE TESTING PROCEDURES OF FEDERAL TEST METHOD 370 SHALL BE CERTIFIED:

	WHITE		YELLOW	
OBSERVATION ANGLE	0.2	0.5	0.2	0.5
SPECIFIC LUMINANCE	1770	1270	1310	810

(MCD/FT²)/FC

THE TAPE SHALL BE 3-M COMPANY'S "STAMARK, DETOUR GRADE (SERIES 57L0, 57I1, 6270, 62I1)" OR AN APPROVED EQUAL.

THE CONTRACTOR SHALL FURNISH TO THE ENGINEER CERTIFICATION THAT THE MATERIAL SUPPLIED MEETS THE PROPERTIES SPECIFIED HEREIN.

LAYOUT

THE TEMPORARY MARKINGS SHALL BE ACCURATELY LAID OUT IN CONFORMANCE WITH 621.051 AND SHALL BE LOCATED IN A TRUE LINE ON THE CENTER LINE, LANE LINE, EDGE LINE, OR CHANNELIZING LINE WHERE PERMANENT MARKINGS WOULD LIE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

PLACEMENT

TEMPORARY MARKINGS SHALL BE PLACED IN ACCORDANCE WITH LAYOUTS ON SHEETS _____ AND THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS ARE NO LONGER NEEDED, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134 AND NECESSARY PAVEMENT MARKINGS INSTALLED BEFORE THE FLOW OF TRAFFIC IS CHANGED TO THE NEXT PHASE OR RETURNED TO ITS NORMAL CHANNEL.

WHERE PERMANENT PAVEMENT MARKINGS ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL FURNISH AND PLACE THE PERMANENT MARKINGS WITHIN 30 CALENDAR DAYS FOLLOWING COMPLETION OF ALL SURFACE COURSES IN A SINGLE ROADWAY OR PRIOR TO THE END OF THE CONSTRUCTION SEASON, WHICHEVER COMES FIRST. PERMANENT MARKINGS SHALL NOT BE PLACED OVER ANY TAPE MARKINGS.

A. CLASS I MARKINGS

CLASS I MARKINGS SHALL BE AS DEFINED IN 621, EXCEPT AS FOLLOWS:
1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

GORE MARKINGS SHALL CONSIST OF TWO CHANNELIZING LINES PLACED AT THE THEORETICAL OR TEMPORARY GORE OF RAMPS AND DIVERGING OR CONVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR SOLID 4-INCH LINES, 24 GALLONS PER MILE FOR SOLID 6-INCH LINES, 48 GALLONS PER MILE FOR SOLID 12-INCH LINES, AND 4 GALLONS PER MILE FOR 4-INCH DASHED LINES.

B. CLASS II MARKINGS

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

CHANNELIZING LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 20-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 50-FOOT BY 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR GORE MARKINGS, 0.8 GALLONS PER MILE FOR CHANNELIZING LINE, AND 0.4 GALLONS PER MILE FOR LANE LINE AND CENTER LINE.

CONFLICTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL EXISTING CONFLICTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. DASHED LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED, IN ACCORDANCE WITH 621.15.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS, WHEN REQUIRED.

BASIS OF PAYMENT

PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND NECESSARY REMOVAL OF THE MARKINGS.

ITEM	UNIT	DESCRIPTION
614 28.23	MILES	TEMPORARY LANE LINES, CLASS II, (PAINT, TAPE OR TYPE R TAPE)
614	MILES	TEMPORARY CENTER LINES, CLASS ____, (PAINT, TAPE OR TYPE R TAPE)
614 2834	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS II, (PAINT, TAPE OR TYPE R TAPE)
614	MILES	TEMPORARY EDGE LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614 1200	LIN. FT.	TEMPORARY GORE MARKING, CLASS II, (PAINT, TAPE OR TYPE R TAPE)
614	LIN. FT.	TEMPORARY STOP LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	EACH	TEMPORARY LANE ARROWS, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, (PAINT OR TAPE)
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)

5/13/82

TEMPORARY PAVEMENT MARKINGS ~ NOTE B

ITEM 614 TEMPORARY PAVEMENT MARKING

Computations By Initials R.J.J.	Date 12-20-83
Computations Checked By Initials J.G.G.	Date 12-20-83
Final Revisions By Initials	Date

FHWA REGION	STATE	PROJECT	
5	OHIO		

55/65

VAN WERT COUNTY
VAN-30-4.05

LANE LINE 4"X12"(40'C/C)

Location	Station	Lin. Ft.
SR 30 EB	212+66.66 to 225+38.17(BK)	2543
" " "	231+97.54(AH) to 252+90	4185
" " "	254+14 to 282+34	5640
" " "	283+66 to 372+66	17800
" " "	374+02 to 410+23	7242
" " "	411+70 to 497+63	17186
" " "	498+96 to 555+85	11378
" " "	557+15 to 600+00	8570
SR 30 WB	212+66.66 to 225+38.17(BK)	2543
" " "	231+97.54(AH) to 253+30	4265
" " "	254+58 to 281+86	5456
" " "	283+19 to 372+22	17806
" " "	373+55 to 411+10	7510
" " "	412+58 to 497+21	16926
" " "	498+52 to 555+48	11392
" " "	556+81 to 600+00	8638
	Total Lin. Ft.	149080
	Total Miles	28.23 *

CHANNELIZING LINE 4"x12"(20'C/C)

Location	Station	Lin. Ft.
Ent. Ramp "D" EB	462+12 to 464+29	434
" " " "	583+60 to 586+00	480
" " "B" "	360+00 to 362+29	458
Ent. Ramp "A" WB	437+17 to 440+02	570
	570+51 to 573+37	572
Ent. Ramp "C" EB	573+40 to 575+00	320
	Total Lin. Ft.	2834 *

* Quantities carried to Sheet 54.

GORE LINES 2-4"x50' CONTINUOUS

Location	Station	Lin. Ft.
Ramp "C" EB	445+76 to 446+26	200
Ramp "C" EB	563+67 to 564+17	200
Ramp "A" EB	337+59.87 to 338+09.87	200
Ramp "B" WB	455+90 to 456+40	200
Ramps D & A	632+13 to 632+62	200
Ramp "B" WB	586+50 to 587+00	200
	Total Lin. Ft.	1200 *

621 PAVEMENT MARKING, POLYESTER, AS PER PLAN

VAN WERT COUNTY
VAN-30-4.05

621 PAVEMENT MARKING, POLYESTER, AS PER PLAN

POLYESTER PAVEMENT MARKINGS SHALL CONFORM TO 621 EXCEPT AS FOLLOWS:

ALL REFERENCES TO PAINT SHALL BE CONSIDERED TO READ POLYESTER MATERIAL.

ITEM 621.02 IS DELETED AND THE FOLLOWING SUBSTITUTED:

MATERIALS:

MATERIAL SUPPLIED UNDER THIS SPECIFICATION SHALL BE A TWO-COMPONENT POLYESTER SYSTEM CAPABLE OF BEING APPLIED BY TRUCK-MOUNTED SPRAY EQUIPMENT AT AMBIENT TEMPERATURES DOWN TO 50° F. THE MATERIAL SHALL BE CAPABLE OF RETAINING REFLECTIVE GLASS SPHERES OF THE DROP OR SPRAY ON TYPE AND SHALL BE SUITABLE FOR APPLICATION TO ALL TYPES OF BITUMINOUS PAVEMENT EXCEPT FOR 805 RUBBERIZED SAND ASPHALT, 833 SAND ASPHALT CONCRETE USING EMULSIFIED ASPHALT, 442 ASPHALT CONCRETE, OPEN GRADED ASPHALT, OR SLURRY SEAL.

POLYESTER PAVEMENT MARKINGS SHALL BE STANDARD HIGHWAY WHITE OR YELLOW AS SPECIFIED ON THE PLANS. WHITE POLYESTER PAVEMENT MARKING MATERIAL SHALL BE FREE OF TINT AND SHALL HAVE A DAYLIGHT REFLECTANCE, AT INCIDENT ANGLES FROM PERPENDICULAR TO 45 DEGREES, WHICH IS NOT LESS THAN 80 PERCENT OF THAT OF MAGNESIUM OXIDE. YELLOW POLYESTER PAVEMENT MARKING MATERIAL SHALL CONFORM, WITHIN 5 NATIONAL BUREAU OF STANDARD UNITS, TO COLOR NUMBER 33538 OF FEDERAL STANDARD 595.

THE CATALYTIC COMPONENT OF THE SYSTEM SHALL BE ANY COMMERCIALLY AVAILABLE TYPE RECOMMENDED BY THE MANUFACTURER OF THE POLYESTER.

THE VISCOSITY OF THE UNCATALYZED POLYESTER MATERIAL SHALL BE 80 PLUS OR MINUS 10 KREBS UNITS AT 25° C DETERMINED IN ACCORDANCE WITH ASTM D-562-55.

MARKING MATERIAL CONTAINERS OR PACKAGING SHALL BE PLAINLY MARKED WITH THE CODE NUMBER AND AN INDICATION OF THE MATERIAL COLOR. CONTAINERS SHALL ALSO BE MARKED WITH AN IDENTIFICATION NUMBER OF THE PRODUCTION BATCH OR LOT OF THE MATERIAL.

THE CATALYZED SYSTEM SHALL HAVE A NUMERICAL RATING OF NOT LESS THAN 6 WHEN TESTED FOR BLEEDING IN ACCORDANCE WITH ASTM D-[illegible].

GLASS BEADS SHALL CONFORM TO 712.05. THE CONTRACTOR SHALL PROVIDE STORAGE FOR ALL MATERIALS AND SHALL TRANSPORT MATERIALS TO THE SITE WHERE USED. GLASS BEADS SHALL BE KEPT DRY DURING STORAGE AND PRIOR TO USE.

EQUIPMENT FOR APPLYING THE POLYESTER PAVEMENT MARKING MATERIALS SHALL BE CAPABLE OF MIXING THE COMPONENTS IN PROPORTIONS RECOMMENDED BY THE MANUFACTURER AND APPLYING GLASS BEADS AT THE TIME OF LINE PLACEMENT.

THE MARKING EQUIPMENT USED SHALL BE CAPABLE OF APPLYING POLYESTER MATERIAL AT A UNIFORM THICKNESS OF NOT LESS THAN 15 MILS AT A SPEED OF NOT LESS THAN 7 MPH.

MATERIAL PREQUALIFICATION AND SAMPLING:

MARKING MATERIALS SHALL BE OF A FORMULATION PREQUALIFIED BY THE BUREAU OF TESTS AND IDENTIFIED BY A MANUFACTURER'S CODE NUMBER. PREQUALIFICATION OF MARKING MATERIALS SHALL REQUIRE THAT THE MATERIALS PASS A SERVICE TEST IN ACCORDANCE WITH 708.14 SERVICE TEST IN LIEU OF THE REQUIREMENTS OF 708.14. THE VISCOSITY AND DRYING TIME SHALL BE AS SPECIFIED HEREIN. PAVEMENT MARKING MATERIAL FURNISHED UNDER THE CODE NUMBER SHALL HAVE THE SAME COMPOSITION AND PHYSICAL PROPERTIES AS THE MATERIAL APPROVED BY PREQUALIFICATION.

THE BUREAU OF TESTS WILL FURNISH UPON REQUEST A LIST OF MANUFACTURERS AND CORRESPONDING CODE NUMBERS OF PREQUALIFIED MARKING MATERIALS.

POLYESTER PAVEMENT MARKING MATERIALS PREQUALIFIED BY SERVICE TEST MAY BE TESTED BY THE BUREAU OF TESTS TO DETERMINE FORMULATION SIMILARITY TO PREQUALIFIED MATERIAL AND COMPLIANCE WITH PHYSICAL PROPERTIES SPECIFIED HEREIN. SAMPLES OF MARKING MATERIALS MAY BE REQUESTED FROM THE CONTRACTOR OR SUPPLIER. IN LIEU OF SAMPLES, CERTIFIED TEST DATA FURNISHED BY THE MANUFACTURER OR AN INDEPENDENT TESTING LABORATORY WILL, UPON APPROVAL BY THE BUREAU OF TESTS, BE ACCEPTABLE. FAILURE OF TESTING OR CERTIFIED TEST DATA TO SHOW FORMULATION SIMILARITY TO PREQUALIFIED MATERIAL OR COMPLIANCE WITH SPECIFIED PHYSICAL PROPERTIES SHALL BE CAUSE FOR REMOVAL OF THE MATERIAL FROM THE PREQUALIFIED LIST.

ITEM 621.05 APPLICATION IS HEREBY MODIFIED AS FOLLOWS:

PARAGRAPH 1 THE FIFTH SENTENCE IS DELETED AND THE FOLLOWING SUBSTITUTED:

PAVEMENT MARKINGS SHALL BE APPLIED ONLY WHEN THE SURFACE IS CLEAN AND DRY AND WHEN THE AIR TEMPERATURE IS ABOVE 50° F.

PARAGRAPH 4 IS HEREBY DELETED.

THE APPLICATION RATE TABLE IS HEREBY DELETED AND THE FOLLOWING SUBSTITUTED:

THE MATERIAL SHALL BE APPLIED AT THE RATE OF 16 GALLONS PER MILE FOR A SOLID LINE OF 4 INCHES IN WIDTH TO PROVIDE A UNIFORM WET FILM THICKNESS OF 15 MILS. APPLICATION RATES FOR DASHED OR DOTTED LINES AND FOR LINES WIDER THAN 4 INCHES SHALL BE PROPORTIONAL TO THE SOLID LINE RATES.

PARAGRAPH 5 IS HEREBY MODIFIED AS FOLLOWS:

GLASS BEADS SHALL BE APPLIED TO THE WET POLYESTER SO THAT THE BEADS ARE EMBEDDED AND RETAINED IN THE POLYESTER AND UNIFORMLY COVER THE POLYESTER SURFACE. THE RATE OF APPLICATION SHALL BE 22 POUNDS OF GLASS BEADS PER GALLON OF POLYESTER MATERIAL APPLIED.

PARAGRAPH 6 IS HEREBY DELETED AND THE FOLLOWING SUBSTITUTED:

THE MARKING MATERIAL SHALL DRY TO A "NO-TRACKING" CONDITION IN NOT MORE THAN FORTY-FIVE (45) MINUTES.

NEW ASPHALTIC CONCRETE SHALL BE IN PLACE FOR A PERIOD OF NOT LESS THAN TWO WEEKS PRIOR TO APPLICATION OF POLYESTER PAVEMENT MARKINGS.

PAVEMENT MARKINGS SHALL NOT BE PLACED ON EXISTING PAVEMENT SURFACES THAT SHOW VISIBLE EVIDENCE OF CRACKING, CHIPPING, SPALLING, OR FAILURE OF UNDERLYING BASE MATERIAL AS DETERMINED BY THE ENGINEER.

ITEM 621.051 LAYOUT AND PREMARKING IS MODIFIED BY THE FOLLOWING ADDITIONAL REQUIREMENTS:

(A) THE GAPS NOT MARKED AS A RESULT OF TEMPLATE USE SHALL BE FILLED WITH MARKING MATERIAL AFTER TEMPLATE REMOVAL.

(B) "T" MARKING OF CENTERLINE NO PASSING ZONES SHALL BE CONSIDERED INCIDENTAL TO APPLYING THE LINE.

ITEM 621.14 DEDUCTION FOR DEFICIENCY SHALL BE MODIFIED BY THE FOLLOWING ADDITIONAL REQUIREMENTS:

A DAY'S APPLIED QUANTITY OF LESS THAN 5 GALLONS OF MARKING MATERIAL MAY BE INCLUDED IN THE NEXT DAY'S APPLIED MARKINGS FOR THE PURPOSE OF COMPUTING MARKING MATERIAL AND BEAD APPLICATION RATES.

THE CONTRACTOR SHALL PROVIDE A CALIBRATED MEASURING DEVICE TO MEASURE THE POLYESTER RESIN IN THE TANKS.

THE QUANTITY OF POLYESTER MARKING MATERIAL USED SHALL BE DETERMINED BY MEASURING THE POLYESTER RESIN IN THE TANKS BEFORE AND AFTER MARKING MATERIAL IS APPLIED. THE CONTRACTOR SHALL PERMIT THE ENGINEER TO TAKE MEASUREMENTS WHENEVER REQUESTED. THE MARKING MATERIAL APPLICATION RATE SHALL BE DETERMINED BY DIVIDING THE TOTAL GALLONS USED BY THE APPROPRIATE MARKING UNIT OF MEASURE. ANY DETERMINATION OF PAY DEDUCTION RESULTING FROM SHORTAGES IN MARKING MATERIALS SHALL BE BASED ON THE MEASUREMENTS OBTAINED BY THIS METHOD. THE AMOUNT OF GLASS BEADS APPLIED SHALL BE ASCERTAINED BY THE ENGINEER BY OBSERVATION AND FROM INFORMATION SUPPLIED BY THE CONTRACTOR AS TO QUANTITY USED.

ITEM 621.16 BASIS OF PAYMENT SHALL BE MODIFIED BY ADDING THE WORDS "POLYESTER, AS PER PLAN" TO EACH ITEM DESCRIPTION.

EQUIPMENT

THE CONTRACTOR'S STRIPER SHALL BE EQUIPPED WITH AN ODOMETER GRADUATED TO 1/100 OF A MILE. THE ENGINEER SHALL DETERMINE THE DEGREE OF ACCURACY OF THE CONTRACTOR'S ODOMETER AND ESTABLISH AN ADJUSTMENT FACTOR AS MAY BE REQUIRED TO ACCURATELY DETERMINE THE PAY ITEM QUANTITIES. THE ENGINEER SHALL PERIODICALLY CHECK THE ODOMETER OPERATION TO ASSURE MAINTENANCE OF ACCURATE MEASUREMENTS.

FAILURE OF THE ODOMETER TO FUNCTION PROPERLY SHALL BE CAUSE TO STOP THE WORK UNTIL THE ODOMETER IS MADE TO FUNCTION PROPERLY. IF MEASUREMENT OF THE WORK HAS TO BE PERFORMED THE DEPARTMENT, THE COST OF THE DEPARTMENT LABOR AND EQUIPMENT PLUS 10 PERCENT SHALL BE DEDUCTED FROM PAYMENT DUE THE CONTRACTOR FOR THE WORK.

THE PAVEMENT MARKING EQUIPMENT SHALL BE EQUIPPED WITH A PRESSURE REGULATED AIR JET WHICH SHALL REMOVE ALL DEBRIS FROM THE PAVEMENT IN ADVANCE OF THE APPLICATOR GUN. THE AIR JET SHALL OPERATE WHEN MARKING MATERIAL IS BEING APPLIED AND SHALL BE SYNCHRONIZED WITH MARKING MATERIAL APPLICATION OR REMAIN "ON" AT ALL TIMES.

THE CONTRACTOR SHALL USE AN ACCURATE DASHING MECHANISM, CAPABLE OF BEING EASILY ADJUSTED, TO RETRACE EXISTING LANE OR CENTERLINE MARKINGS AS SPECIFIED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

PROVISIONS FOR THE DESCRIBED SPECIAL EQUIPMENT BY THE CONTRACTOR SHALL BE INCIDENTAL TO THE APPLICATION.

GH:jt5

AUGUST 13, 1979
NOVEMBER 18, 1980
JANUARY 8, 1982
JANUARY 21, 1983

ITEM 621 TRAFFIC ZONE PAVEMENT MARKING
& ITEM 847 PREFORMED PLASTIC PAVEMENT MARKING

FHWA REGION	STATE	PROJECT	
5	OHIO		

57/65

VAN WERT COUNTY
VAN-30-4.05

Computations By Initials RJL Date 9-2023
Computations Checked By Initials JGG Date 12-2023
Final Revisions By Initials Date

4" EDGE LINE

Location	Station	White	Yellow
SR 30 EB RS	212+66.66 to 225+38.17(RBK)	1272	
" " " "	231+97.54(AH) to 252+90	2092	
" " " "	254+14 to 282+34	2820	
" " " "	283+03 to 330+07	4644	
" " " "	338+09.87 to 362+29	2419	
" " " "	372+00 to 372+66	66	
" " " "	374+02 to 410+23	3621	
" " " "	411+70 to 437+84	2614	
" " " "	446+26 to 464+29	1803	
" " " "	474+12 to 497+63	2351	
" " " "	498+96 to 555+85	5689	
" " " "	557+15 to 557+27	12	
" " " "	564+14 to 586+00	2186	
" " " "	595+58.78 to 600+00	441	
SR 30 WB RS	212+66.66 to 225+38.17(RBK)	1272	
" " " "	231+97.54(AH) to 253+30	2132	
" " " "	254+58 to 281+86	2728	
" " " "	283+19 to 372+22	8903	
" " " "	373+55 to 411+10	3755	
" " " "	412+58 to 428+03	1545	
" " " "	444+75 to 455+90	1115	
" " " "	464+30 to 497+21	3291	
" " " "	498+52 to 555+48	5696	
" " " "	556+81 to 561+38	457	
" " " "	573+37 to 586+46	1309	
" " " "	594+92 to 600+00	508	
Exit Ramp "C" EB	437+84 to 449+50	1166	
" " " "	446+26 to 449+50		324
Ent. Ramp "D" EB	454+54 to 474+12	1958	
" " " "	454+54 to 462+12		758
Exit Ramp "B" WB	452+65 to 464+30	1165	
" " " "	452+65 to 455+90		325
Ent. Ramp "A" WB	428+03 to 447+59	1956	
" " " "	444+75 to 447+59		284
Exit Ramp "C" EB	557+27 to 589+26.68	3200	
" " " "	584+58 to 587+30		272
Ent. Ramp "A" WB	561+38 to 573+37(ML)	1199	
" " " "	573+37(ML)=664+16.4(Ramp)	*	
" " " "	564+74.72 to 664+16.4	9942	
" " " "	618+28 to 664+16.4		4588
Ent. Ramp "D" EB	564+74.72 to 595+58.78	3084	
" " " "	568+19 to 583+38.78		1540
Exit Ramp "B" WB	632+68.88 to 667+98.03(Ramp)	3529	
" " " "	591+43.7(ML) to 594+92	348	
" " " "	618+28 to 663+01		4473
Exit Ramp "A" EB	330+07 to 342+97.11	1290	
" " " "	338+09.87 to 342+97.11		487
Ent. Ramp "B" EB	347+70.72 to 372+00	2429	
" " " "	347+70.72 to 355+50		779
	continued		

4" EDGE LINE (CONTINUED)

Location	Station	White	Yellow
SR 30 EB LS	212+66.66 to 225+38.17(RBK)		1272
" " " "	231+97.54(AH) to 253+48		2151
" " " "	253+97 to 282+53		2856
" " " "	283+02 to 372+87		8985
" " " "	373+34 to 411+20		3786
" " " "	411+58 to 497+85		8627
" " " "	498+34 to 556+10		5776
" " " "	556+55 to 600+00		4345
SR 30 WB LS	212+66.66 to 225+38.17(RBK)		1272
" " " "	231+97.54(AH) to 253+48		2150
" " " "	253+97 to 282+53		2856
" " " "	283+02 to 372+87		8985
" " " "	373+34 to 411+20		3786
" " " "	411+58 to 497+85		8627
" " " "	498+34 to 556+10		5776
" " " "	556+55 to 600+00		4345
TR 192 SB Lt.	21+00 to 21+65	65	
" " NB Rt.	19+12 to 19+80	61	
	Continued		

4" WHITE LANE LINE (10-30)

Location	Station	Lin Ft
SR 30 ML EB	212+66.66 to 225+38.17(RBK)	1272
" " " "	231+97.54(AH) to 252+90	2092
" " " "	254+14 to 282+34	2820
" " " "	283+63 to 372+66	8903
" " " "	374+02 to 410+23	3621
" " " "	411+70 to 497+63	8593
" " " "	498+96 to 555+85	5689
" " " "	557+15 to 600+00	4285
SR 30 ML WB	212+66.66 to 225+38.17(BR)	1272
" " " "	231+97.54(AH) to 253+30	2132
" " " "	254+58 to 281+86	2728
" " " "	283+19 to 372+22	8903
" " " "	373+55 to 411+10	3755
" " " "	412+58 to 497+21	8463
" " " "	498+52 to 555+48	5696
" " " "	556+81 to 600+00	4319
Exit Ramp "C" EB	441+20 to 443+50	230
Ent. Ramp "A" WB	432+60 to 437+17	457
Ent. Ramp "D" EB	464+29 to 467+45	316
Exit Ramp "B" WB	458+45 to 460+87.5	243
Exit Ramp "C" EB	559+60.5 to 560+96	136
Ent. Ramp "A" WB	568+42 to 570+60	218
Ent. Ramp "D" EB	586+00 to 589+00	300
Exit Ramp "B" WB	589+00 to 591+50	250
	Total Lin. Ft.	76693
	Total Miles	14.53

8" CHANNELIZING LINE

Location	Station	Lin Ft.
Exit Ramp "C" EB	443+50 to 446+26	552
Ent. Ramp "D" EB	462+12 to 464+29	217
Exit Ramp "C" EB	560+96 to 564+17	642
Ent. Ramp "D" EB	583+60 to 586+00	240
Exit Ramp "A" EB	335+00 to 338+09.87	620
Ent. Ramp "B" EB	360+00 to 362+29	229
Exit Ramp "B" WB	455+90 to 458+45	510
Ent. Ramp "A" WB	437+17 to 440+02	285
Ent. Ramp "A" WB	570+60 to 573+37	277
Ent. Ramp "A" WB	661+38.08 to 664+16.40	278
Exit Ramp "B" WB	586+50 to 589+00	500
Exit Ramp "B" WB	632+68.88 to 634+09	280
	Total Lin. Ft.	4630

4" DOUBLE YELLOW CENTERLINE

Location	Station	Lin Ft.
Exit Ramp "C" EB	587+70 to 589+26.68	157
TR 192 NB	19+13.25 to 19+70	57
" " SB	21+09 to 21+65.75	57
SR 49 NB	16+66 to 17+22	56
" " SB	18+61 to 19+17.75	57
TR 65 NB	16+76 to 17+32	56
" " SB	18+70 to 19+24.75	55
CR 168 NB	12+81 to 13+38	57
" " SB	14+76 to 15+32.75	57
CR 75 NB	15+73 to 16+20	47
" " SB	17+70 to 18+26	56
CR 77 NB	48+74 to 49+31	57
" " SB	50+67 to 51+23.75	57
	Total Lin. Ft	826

4" EDGE LINE (CONTINUED)

Location	Station	White	Yellow
SR 49 NB Rt.	16+57 to 17+08	68	
" " " Lt.	16+64 to 16+85	21	
" " SB Rt.	18+98 to 19+18	20	
" " " Lt.	18+61 to 19+25	62	
TR 65 NB Rt.	16+68 to 17+20	61	
" " " Lt.	16+75 to 16+96	21	
" " SB Rt.	19+09 to 19+30	21	
" " " Lt.	18+82 to 19+38	60	
CR 168 NB Rt.	12+78 to 13+46	71	
" " SB Lt.	14+69 to 15+32	64	
CR 75 NB Rt.	15+64 to 16+11	51	
" " " Lt.	15+71 to 15+90	19	
" " SB Rt.	18+05 to 18+25	20	
" " " Lt.	17+81 to 18+32	60	
CR 77 NB Rt.	48+67 to 49+21	63	
" " " Lt.	48+74 to 48+91	17	
" " SB Rt.	51+08 to 51+25	17	
" " " Lt.	50+78 to 51+31	62	
	Total Lin. Ft.	9691	89425
	Grand Total Lin. Ft.	186336	
	Total Miles	35.29	

847-24" STOP LINE

Location	Station	Lin. Ft
TR 192 SB	21+07	30
SR 49 SB	17+24	40
" " NB	18+59	40
TR 65 NB	17+34	37
" " SB	18+68	40
CR 168 NB	13+40	22
" " SB	14+74	21
TR 75 NB	16+22	40
" " SB	17+68	40
CR 77 NB	49+33	35
" " SB	50+65	38
TR 192 NB	19+72	30
	Total Lin. Ft.	413
	Total Sq. Ft.	826 *

* Quantity carried to Sheet 59.

24" BROAD TRANSVERSE LINE

Location	Station	White	Yellow
Exit Ramp "C" EB	443+50 to 446+26	532	
" " " "	560+96 to 564+17	711	
" " "B" WB	455+90 to 458+45	451	
" " " "	586+53 to 589+00	414	
" " " "	632+68.88 to 634+09	158	
Ent. Ramp "D" WB	631+99 to 632+63	47	
Exit Ramp "A" EB	335+00 to 338+09.87	664	
	Total Lin. Ft.	2977	

PAVEMENT MARKING DETAIL
PAINTED ISLAND DETAIL (224 INTERCHANGE)

Computations By Initials J.L.H. Date 12-20-83	FHWA REGION	STATE	PROJECT
Computations Checked By Initials JGG Date 12-20-83	5	OHIO	
Final Revisions By Initials Date			

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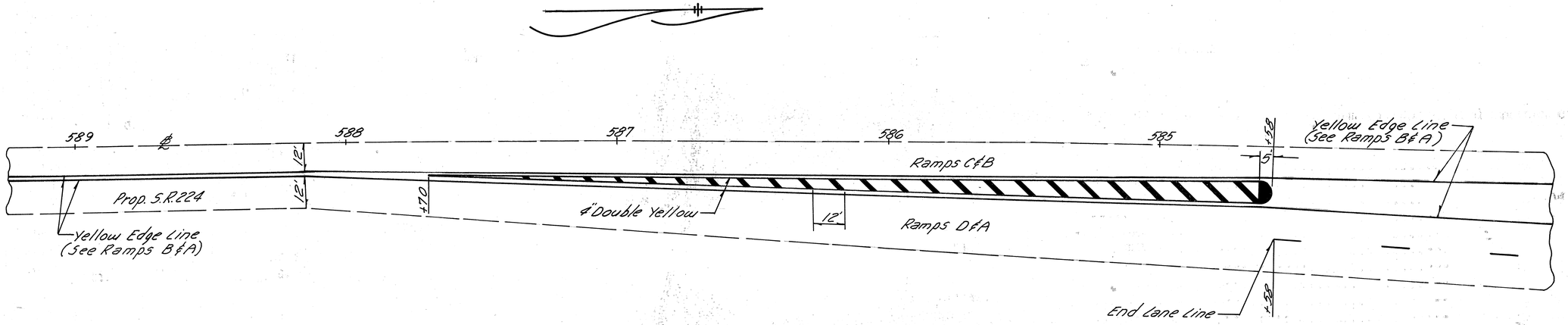
VAN WERT COUNTY
VAN-30-4.05



24" BROAD TRANSVERSE LINES		
Location	Station	Yellow
Ramps C, D & B, A	584+58 to 587+70	162
	Total Lin. Ft.	162

DOUBLE YELLOW CENTER LINE		
Location	Station	Lin. Ft.
Ramps C & B	584+58 to 587+70	312
" D & A	584+58 to 587+70	312
	Total Lin. Ft.	624

ISLAND MARKING (YELLOW)		
LOCATION	STATION	SQ. FT.
RAMPS C, D & B, A	584+58 TO 584+63	40 TOTAL

PAINTED ISLAND DETAIL

GENERAL NOTES

847 PREFORMED PLASTIC PAVEMENT MARKINGS

Computations By Initials R.J.A. Date 12-20-83
Computations Checked By Initials J.G.G. Date 12-20-83
Final Revisions By Initials Date

FED RD DIVISION	STATE	PROJECT	
5	OHIO		

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VAN WERT COUNTY
VAN-30-4.05

General

The installation of preformed plastic pavement markings shall conform to SUPPLEMENTAL SPECIFICATION 847 AND AS REQUIRED HEREIN.

Description

This work shall consist of the application of Department furnished preformed plastic pavement marking material on newly resurfaced pavement surfaces by rolling it into the new surface during the finish rolling operation, in accordance with the lines and dimensions shown on the plans or as described herein.

The Contractor shall furnish all equipment necessary for the required pavement preparation and marking application. All pavement markings shall conform with the requirements of the Ohio Manual of Uniform Traffic Control Devices.

The Engineer will designate the limits of the highway section being marked and will furnish a log or schematic and details of the type and location of markings to be applied at the pre-construction conference.

Materials

The Contractor shall be informed at the pre-construction conference of the location of the Department furnished preformed plastic pavement marking material. The Contractor shall be responsible for all arrangements necessary to facilitate the pick-up of Department furnished preformed plastic pavement marking material at this location for transport to the work site or the Contractor's storage facility. The Contractor shall notify the Engineer in writing at least 5 calendar days prior to pickup of the preformed plastic pavement marking material. The Contractor shall provide receiving tickets to the Department for all preformed plastic pavement marking material received. Procedures for documenting receipt will be furnished to the Contractor at the pre-construction conferences. The Contractor shall store and transport the preformed plastic pavement marking materials to the site where used.

Layout and Premarking

The Contractor shall lay out the location of all lines, words and other symbols to assure their proper placement. When applying longitudinal or transverse lines, the Contractor shall use construction joints or premarking to guide his application equipment.

Premarking shall be located from schematic forms provided at the pre-construction conference.

The layout and premarking lines shall be approved by the Engineer before marking operations are started. Layout and premarking shall be incidental to application of markings.

Placement Tolerance

Line placement tolerance shall conform to 621.052.

Marking Descriptions

Markings applied under this specification shall conform to applicable portions of 621 as follows:

Edge Lines	621.06
Lane Lines	621.05 and .07
Center Lines	621.05 and .08
Channelizing Lines	621.09
Stop Lines and Crosswalk Lines	621.10
Transverse Lines	621.11
Island Marking	621.12
Lane Arrows	621.131
Word on Pavement	621.132
Dotted Lines	621.05 and .133
Railroad Symbol on Pavement shall conform to	*

* RAILROAD SYMBOL ON PAVEMENT

The standard Railroad Symbol shall consist of the following items:

1. One white 16" crossbuck and the white letters "RR". The size of these crossbucks shall be 7', 8' and 10', as specified.
2. Two 24" solid white transverse lines; one ahead of and one behind the crossbuck.
3. One 24" solid white stop line in advance of the railroad crossing.

Where the word "paint" appears in 621 the words "preformed plastic pavement marking material" shall be substituted, and application rates shall not apply to preformed plastic material.

Method of Measurement

Preformed plastic pavement markings will be measured complete in place in the units designated for preformed plastic pavement marking, installed, inlaid.

Basis of Payment

Payment for accepted quantities complete in place will be made at the contract unit prices bid and shall be full compensation for all labor, incidentals and equipment necessary to inlay the preformed plastic pavement markings.

Item	Unit	Description
847	826 Sq. Ft.	preformed plastic pavement marking, installed, inlaid

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FHWA REGION	STATE	PROJECT	
5	OHIO		

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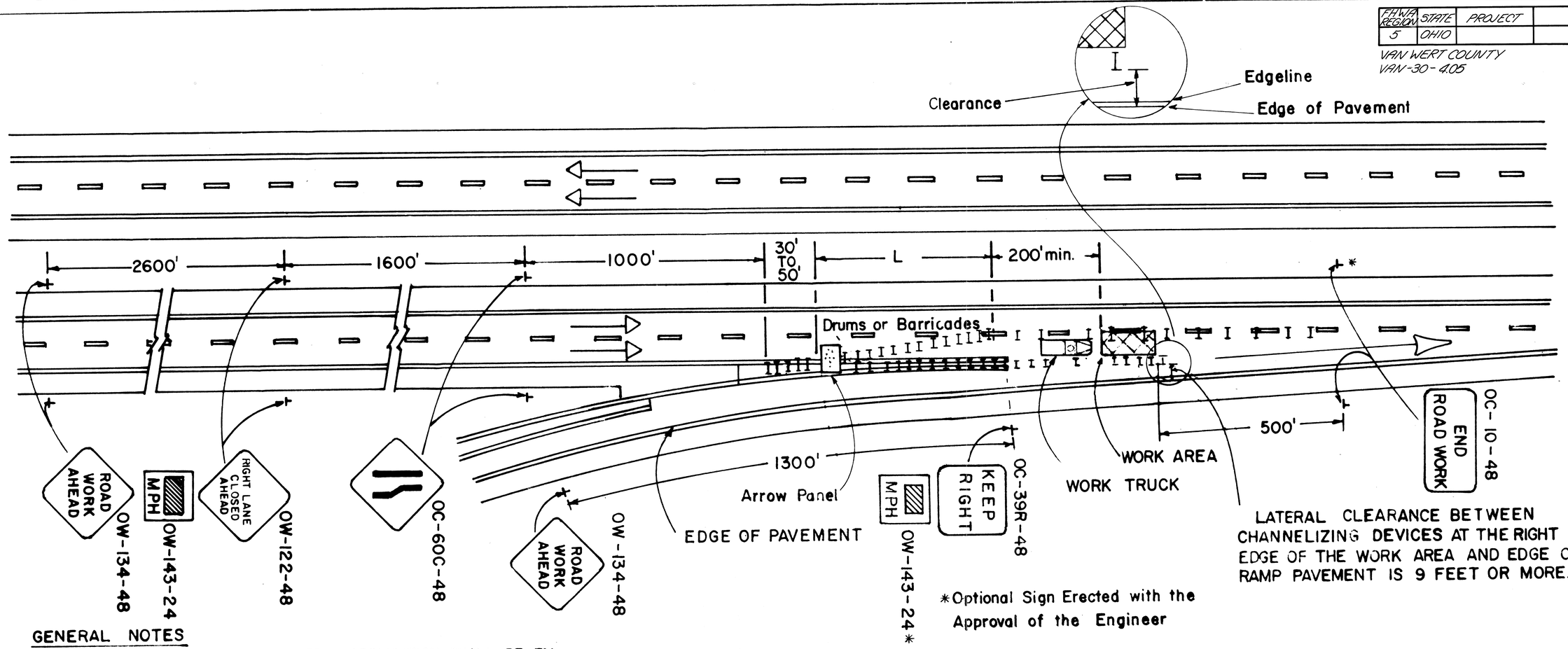
VAN WERT COUNTY
VAN-30-4.05



LATERAL CLEARANCE BETWEEN CHANNELIZING DEVICES AT THE RIGHT EDGE OF THE WORK AREA AND EDGE OF RAMP PAVEMENT IS 9 FEET OR MORE.

*Optional Sign Erected with the Approval of the Engineer

GENERAL NOTES

1. **THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL BE EMPLOYED WHEN THE LATERAL CLEARANCE BETWEEN THE CHANNELIZING DEVICES AT THE RIGHT EDGE OF THE WORK AREA AND THE EDGE OF THE RAMP PAVEMENT IS 9 FEET OR MORE. WHEN THE CLEARANCE IS LESS THAN 9 FEET, THE TRAFFIC CONTROL ON "LANE CLOSURE AT ENTRANCE RAMP: PLAN B" SHOULD BE USED, OR THE RAMP SHOULD BE CLOSED, OR ALLOWING RAMP TRAFFIC TO USE THE BERM SHOULD BE CONSIDERED PROVIDED THE OPERATION IS "SHORT" IN DURATION. WHEN THE RAMP IS CLOSED, APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.**

2. THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. DRUMS OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR **DRUMS FOR** THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.

3. RAMP SIGNS SHALL BE DUAL MOUNTED ON MULTILANE RAMPS.

4. THE FLASHING OR SEQUENCING ARROW PANEL SHALL BE IN ACCORDANCE WITH TC-35.10.

5. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMAN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED IMPACT ATTENUATOR MAY BE EMPLOYED.

6. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

7. TAPER FORMULAE:

   $L = S \times W$ FOR SPEEDS OF 45 OR MORE.
   $L = WS^2/60$ FOR SPEEDS OF 40 OR LESS.

   WHERE:

   L = MINIMUM LENGTH OF TAPER.
   S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED.
   W = WIDTH OF OFFSET.

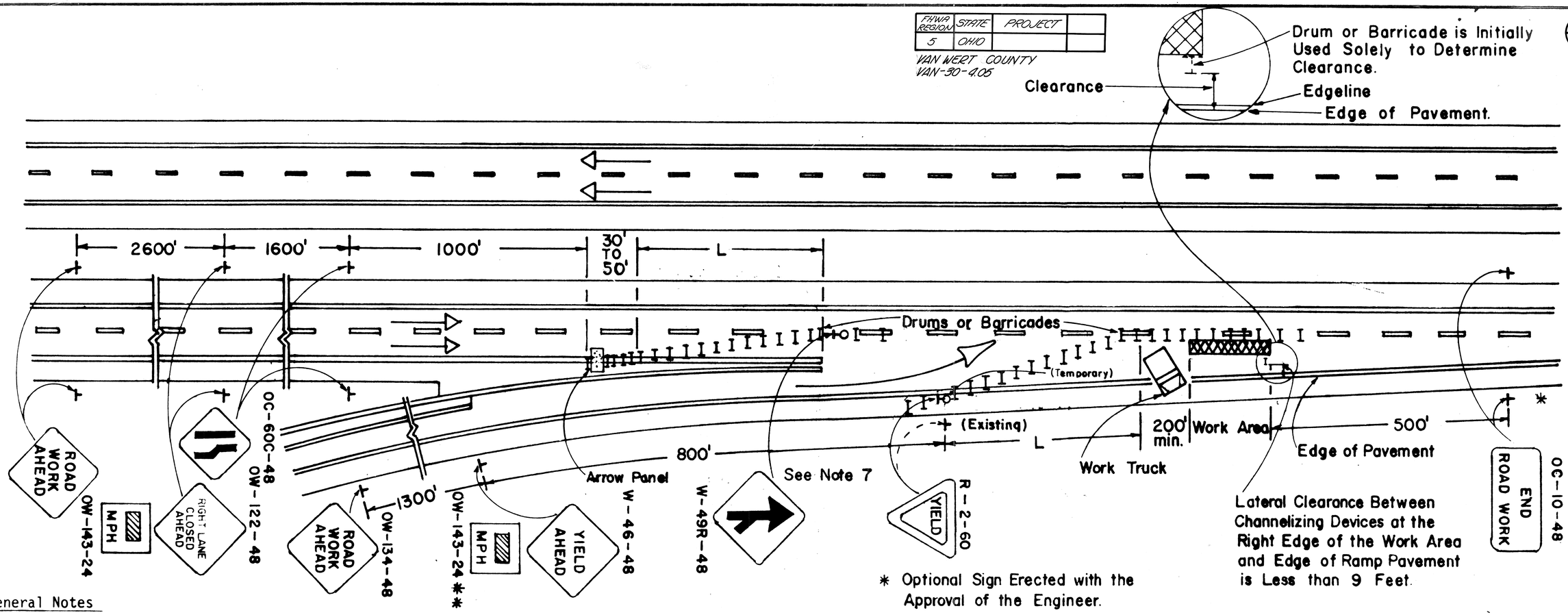
8. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER TNAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION

LANE CLOSURE AT ENTRANCE RAMP: PLAN A	DATE 8-3-79

FHWA REGION	STATE	PROJECT	
5	OHIO		

VAN WERT COUNTY
VAN-30-4.05



* Optional Sign Erected with the Approval of the Engineer.

General Notes

1. This work area traffic control application shall be employed when the lateral clearance between channelizing devices at the right edge of the work area and the edge of the ramp pavement is less than 9 feet. When the clearance is more than 9 feet, the traffic control on "Lane Closure at Entrance Ramp: Plan A" should be used, or the ramp should be closed. When the ramp is closed, appropriate detour signs shall be provided.

2. Thirteen (13) drums or barricades shall be used to form the lane transition taper in advance of the work area. Five (5) channelizing devices shall be used to form the taper on the shoulder. drums or barricades shall be spaced at 50 foot centers. Cones may be substituted for barricades or drums for the lane closures during daylight hours only.

3. Ramp signs shall be dual mounted on multi-lane ramps. When the ramp is not long enough to allow placement as specified above, the signs may be spaced proportionately within the space available as determined by the Engineer (a 200' minimum spacing must be maintained).

4. The flashing or sequencing arrow panel shall be in accordance with TC-35.10.

5. The work truck shown at the beginning of the work area shall be in place and unoccupied whenever men are working within the work area. This truck shall be moved from the pavement whenever workmen are not in the work area. Other protective devices may be used in lieu of work truck shown when approved by the Engineer.

6. Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. Maximum spacing shall be 50' center to center in advance of the work area and 200' center to center within the limits of the work area.

7. It may be necessary to move the location of an existing Yield condition In these cases, the permanent R-2 sign installation shall be covered and the temporary installation shall be mounted upon a drive post which shall be banded to a drum with stainless steel strapping material or other techniques subject to the approval of the Engineer.

8. Taper Formulae:

   $L = S \times W$ for Speeds of 45 or more.
   $L = WS^2/60$ for Speeds 40 or less.

   Where:

   L = Minimum length of taper.
   S = Numerical value of posted speed limit prior to work or 85 percentile speed.
   W = Width of offset.

9. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION

LANE CLOSURE AT ENTRANCE RAMP PLAN B	DATE 8-3-79

FHWA Region	State	Project		
5	OHIO			

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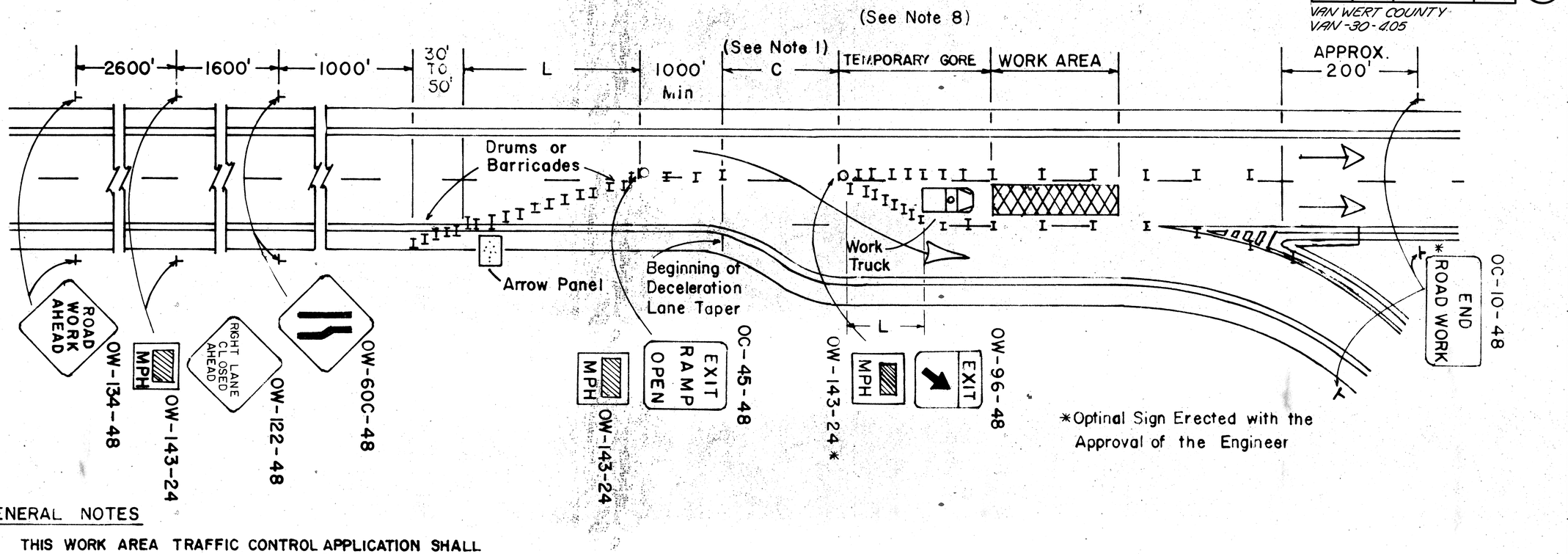
VAN WERT COUNTY
VAN-30-4.05



GENERAL NOTES

1. **THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL ONLY BE USED WHEN THE DISTANCE "C" IS 100 FEET OR GREATER. WHEN "C" IS LESS THAN 100 FEET, THE TRAFFIC CONTROL SHOWN ON THE "LANE CLOSURE BEFORE EXIT GORE" DETAIL SHOULD BE USED, OR THE EXIT SHOULD BE CLOSED, OR THE TRAFFIC CONTROL ON THIS DRAWING MAY BE USED WITH APPROVAL OF THE ENGINEER. WHEN THE EXIT IS CLOSED, APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.**

2. WHEN WORK IS BEING PERFORMED IN ONLY THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, REFER TO THE TYPICAL WORK AREA TRAFFIC CONTROL SHOWN IN FIGURE C-21 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

3. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED IMPACT ATTENUATOR MAY BE EMPLOYED.

4. THE FLASHING OR SEQUENCING ARROW PANEL SHALL BE IN ACCORDANCE WITH TC-35.10.

5. THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. DRUMS OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR **DRUMS FOR THE LANE** CLOSURES DURING DAYLIGHT HOURS ONLY.

6. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

7. TAPER FORMULAE:

   $L = S \times W$ FOR SPEEDS OF 45 OR MORE.
   $L = WS^2/60$ FOR SPEEDS OF 40 OR LESS.

   WHERE:

   L = MINIMUM LENGTH OF TAPER.
   S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED.
   W = WIDTH OF OFFSET.

8. WHEN CREATING A TEMPORARY GORE, CHANNELIZING DEVICES SHOULD BE SPACED 25' CENTER TO CENTER SO AS TO CREATE A "SOLID GORE" **EFFECT.**

9. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION

LANE CLOSURE AT EXIT GORE

DATE 8-3-79

FHWA REGION	STATE	PROJECT	
5	OHIO		

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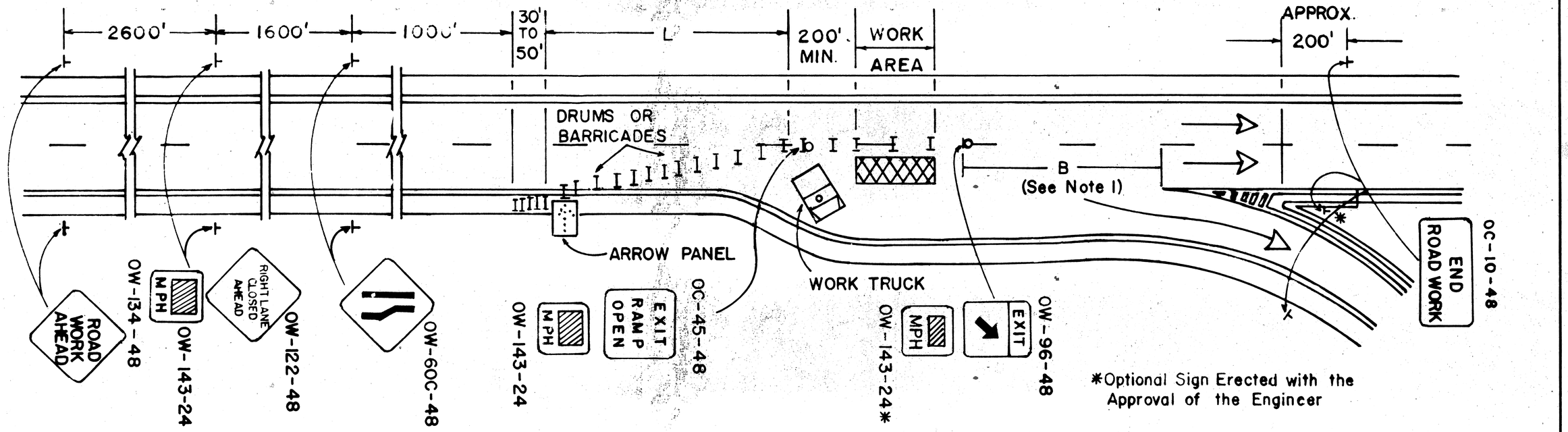
65

VAN WERT COUNTY
VAN-30-4.05



GENERAL NOTES

1. THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL ONLY BE USED WHEN THE DISTANCE "B" IS 100 FEET OR GREATER. WHEN "B" IS LESS THAN 100 FEET, THE TRAFFIC CONTROL SHOWN ON THE "LANE CLOSURE AT EXIT GORE" DETAIL SHOULD BE USED, OR THE EXIT SHOULD BE CLOSED, OR THE TRAFFIC CONTROL ON THIS DRAWING MAY BE USED WITH APPROVAL OF THE ENGINEER. WHEN THE EXIT IS CLOSED, APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.

2. WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, REFER TO THE TYPICAL WORK AREA TRAFFIC CONTROL SHOWN IN FIGURE C-21 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

3. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER.

4. THE FLASHING OR SEQUENCING ARROW PANEL SHALL BE IN ACCORDANCE WITH TC-35.10.

5. THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. DRUMS OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.

6. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

7. TAPER FORMULAE:

   $L = S \times W$ FOR SPEEDS OF 45 OR MORE.
   $L = WS^2/60$ FOR SPEEDS OF 40 OR LESS.

   WHERE:

   L = MINIMUM LENGTH OF TAPER.
   S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED.
   W = WIDTH OF OFFSET.

8. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION

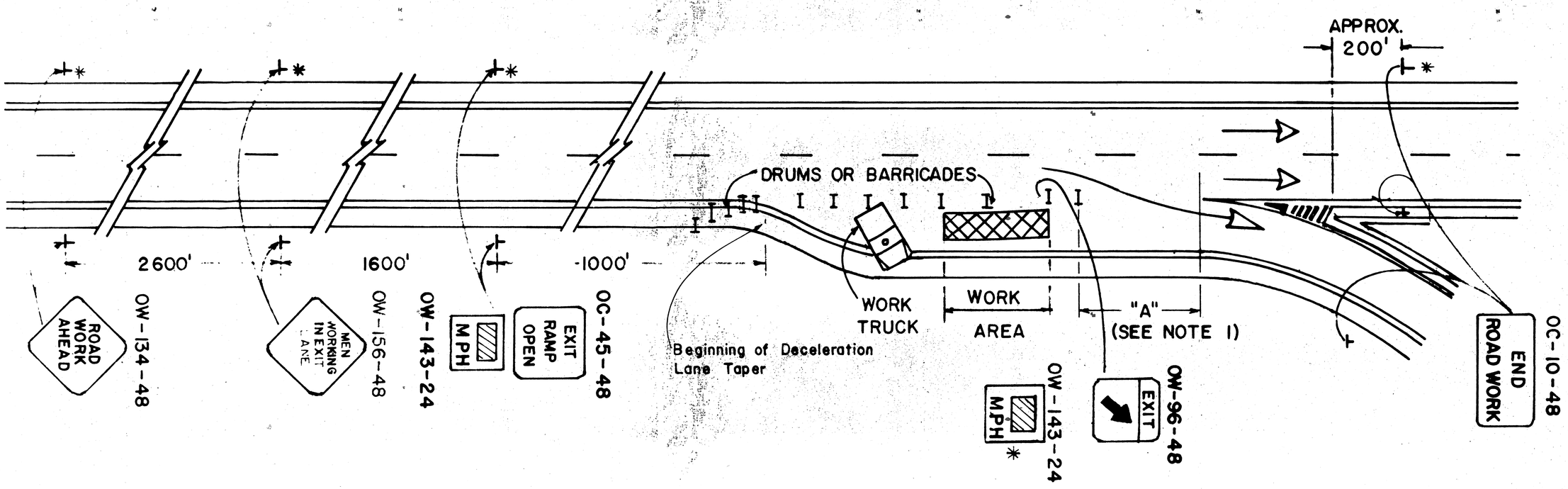
LANE CLOSURE BEFORE EXIT GORE

DATE 8-3-79

FHWA REGION	STATE	PROJECT	
5	OHIO		

64
65

VAN WERT COUNTY
VAN-30-4.05



* OPTIONAL SIGN ERECTED WITH THE APPROVAL OF THE ENGINEER.

GENERAL NOTES.

1. THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL ONLY APPLY WHEN THE DISTANCE "A" IS GREATER THAN 100'. WHEN DISTANCE "A" IS LESS THAN 100', THE RAMP SHALL BE CLOSED. WHEN THE RAMP IS CLOSED, THE TRAFFIC CONTROL SHALL INCLUDE DETOUR SIGNING FOR EXIT RAMP CLOSURES IN ACCORDANCE WITH OMUTCD.

2. DRUMS OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.

3. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

4. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER.

5. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION

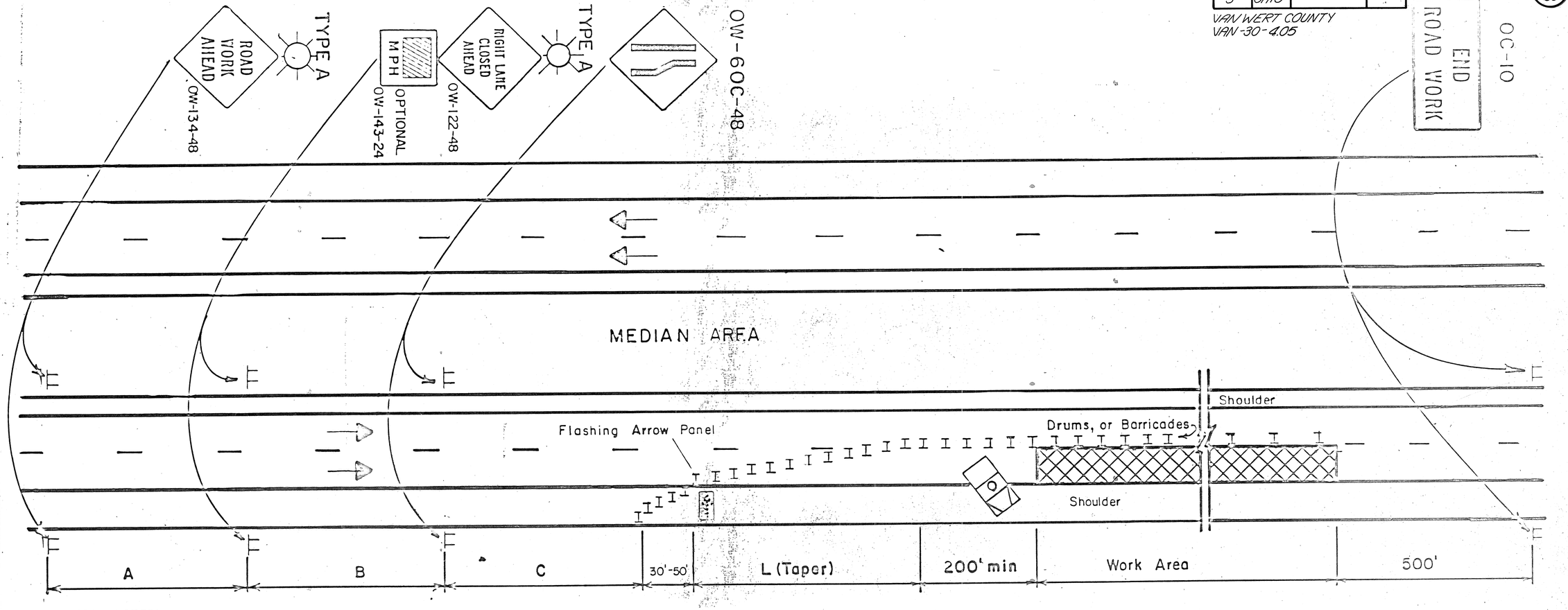
LANE CLOSURE IN DECELERATION LANE

DATE 8-3-79

FHWA REGION	STATE	PROJECT	
5	OHIO		

VAN WERT COUNTY
VAN-30-4.05

OPE - MAV - 48



GENERAL NOTES:

1. The taper length (L) shall be in accordance with Section 7F-17 of the OMUTCD. The location of the transition taper and location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment. In order to determine the minimum number of channelizing devices for the transition taper see Table 7-5 OMUTCD. For a 55 MPH prevailing speed and a 12 ft. lane, not less than thirteen (13) drums or barricades shall be used to form the lane transition taper in advance of the work area. Not less than five (5) drums or barricades shall be used to form the taper on the shoulder. drums or barricades shall be spaced approximately 50' to 60' center to center for the first 1000 feet of the work area and at a maximum of 100 to 120 feet for the balance of the work area. Cones may be substituted for barricades or drums for short term lane closures during daylight hours only.

2. The major standard level warning sign sizes may be used on divided streets or highways that are not classified as freeways or expressways.

3. When work is being performed in the lane adjacent to the median on a divided highway an OW-123-48 sign(s) shall be substituted for the OW-122-48 sign(s) and an OW-60D-48 sign(s) shall be substituted for the OW-60C sign(s).

4. The work vehicle shown at the beginning of the work area shall be in place and unoccupied whenever workers are in the work area. This work vehicle shall be removed from the pavement whenever workers are not in the work area. Other protective devices may be used in lieu of the work vehicle shown when approved by the Engineer. The vehicle shall be equipped with a 360° rotating or flashing amber beacon clearly visible in all directions a minimum of a ½ mile.

5. The flashing arrow panel shall meet requirements contained in TC-35.10.

6. Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 1.

MINIMUM DISTANCE	A	B	C
MAJOR STANDARD	500'	500'	500'
URBAN FREEWAY & EXPRESSWAY	500' TO 1000'	500' TO 1000'	500' TO 1000'
RURAL FREEWAY & EXPRESSWAY	2600'	1500'	1000'

7. Type A flashing barricade warning lights shown on the "Road Work Ahead" and the "Right Lane Closed Ahead" signs are required whenever a night lane closure is necessary.

8. Some work area locations may require more than just static or conventional signs to enhance communication with the driver. At these locations Portable Changeable Message Signs (PCMS) units are recommended. These devices should be located approximately 3/4 mile in advance of a lane closure or other point of required action. See Section 7G-8.1, OMUTCD for further guidance on use of PCMS units.

OHIO DEPARTMENT OF TRANSPORTATION

CLOSING ONE LANE OF A FOUR LANE DIVIDED HIGHWAY

DATE 2/82