STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

PIC.- 762 - 0.19	OHIO
	FHWA REGION 5
BRS - 830(3)	FEDERAL PROJECT

1/65

PIC-762-0.19
PICKAWAY COUNTY
DARBY & SCIOTO TOWNSHIPS

T-2-LT

DESIGN DESIGNATION

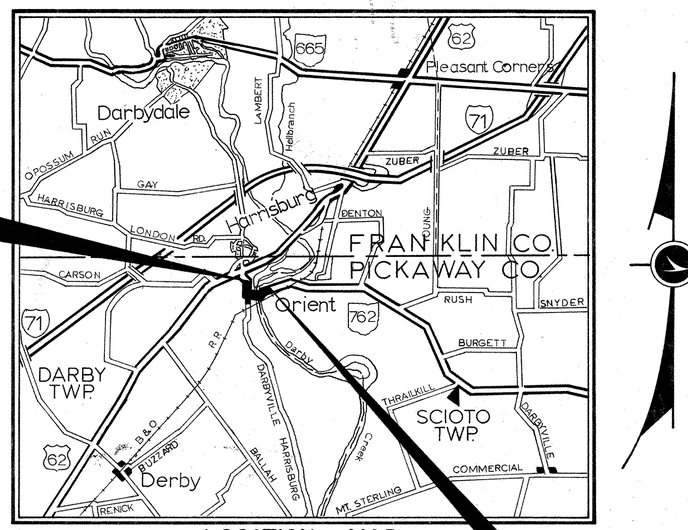
Current A.D.T. (1986)	=	2850
Design Year A.D.T. (2006)	=	3440
D.H.V.	=	344
D	=	60%
T	=	4%
V	=	55 mph with design exceptions (see sht. 2)

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



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 0 50 100, Vertical 0 5 10
Cross Section: Horizontal 0 5 10, Vertical 0 5 10

1987 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 except as noted on Sheet 5, and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved George E. Downing
Date 6-12-86 District Deputy Director of Transportation

Approved Walter D. Hastings / WTF
Date 6-24-87 Engineer, Bureau of Bridges & Structural Design

Approved Wayne H. Kauble
Date 8/28/87 Chief Engineer, Planning & Design

Approved Warren J. Smith
Date 8-28-87 Director, Department of Transportation

LINE DATA

S.R. 762
Begin Project Sta. 43+50.00
End Project Sta. 61+00.00
Length of Project 1750.00 L.F. or 0.331 Mi.

Add for Work
S.R. 762
Sta. 42+00.00 to Sta. 43+50.00 = 150.00 L.F.
Sta. 61+00.00 to Sta. 63+00.00 = 200.00 L.F.
C.R. 26
Sta. 93+50.00 to Sta. 100+00.00 = 650.00 L.F.
Orient Drive
Sta. 6+00.00 to Sta. 9+88.02 = 388.02 L.F.
Length of Work 3138.02 L.F. or 0.594 Mi.

SUPPLEMENTAL SPECIFICATIONS		
824	10-8-82	
836	11-12-85	
847	10-17-83	
947	10-17-83	
932	3-25-85	

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS							
BP-5	1-11-85	GR-5	2-5-82	TC-41.20	3-26-79	FB-1-82	5-10-82
BP-6	6-1-65			TC-42.10	8-19-77		
BP-7	12-6-76	HW-4A	4-1-80	TC-42.20	3-26-79	AS-1-81	11-27-81
		HW-4B	4-1-80	TC-52.10	4-3-79		
CB-2-2B	5-1-79			TC-52.20	4-3-79	DBR-2-73	4-10-73
CB-3	5-1-79	MC-1	6-13-69				
		MC-7	10-15-76				
GR-1	1-11-85	MC-11	8-1-78				
GR-2B	2-5-82	MC-4	7-26-76				
GR-3B	1-21-85	LA-1	6-1-79				
GR-4	2-5-82	LA-2	6-1-79				
GR-4A	1-30-84	MT-99.10	11-14-86				
GR-4B	2-5-82	MC-9A	1-11-85				

PLANS PREPARED BY:
STICKLEN-BELSHEIM & ASSOC.
COLUMBUS, OHIO
UNDER THE DIRECTION OF:
Jack L. Williams 5-22-86
REGISTERED ENGINEER 34672 OHIO

STATE OF OHIO JACK L. WILLIAMS 34672 REGISTERED PROFESSIONAL ENGINEER
SEAL

Project:
Date of Letting 19, Contract No.

LD0300 Rev. 11-21-73

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

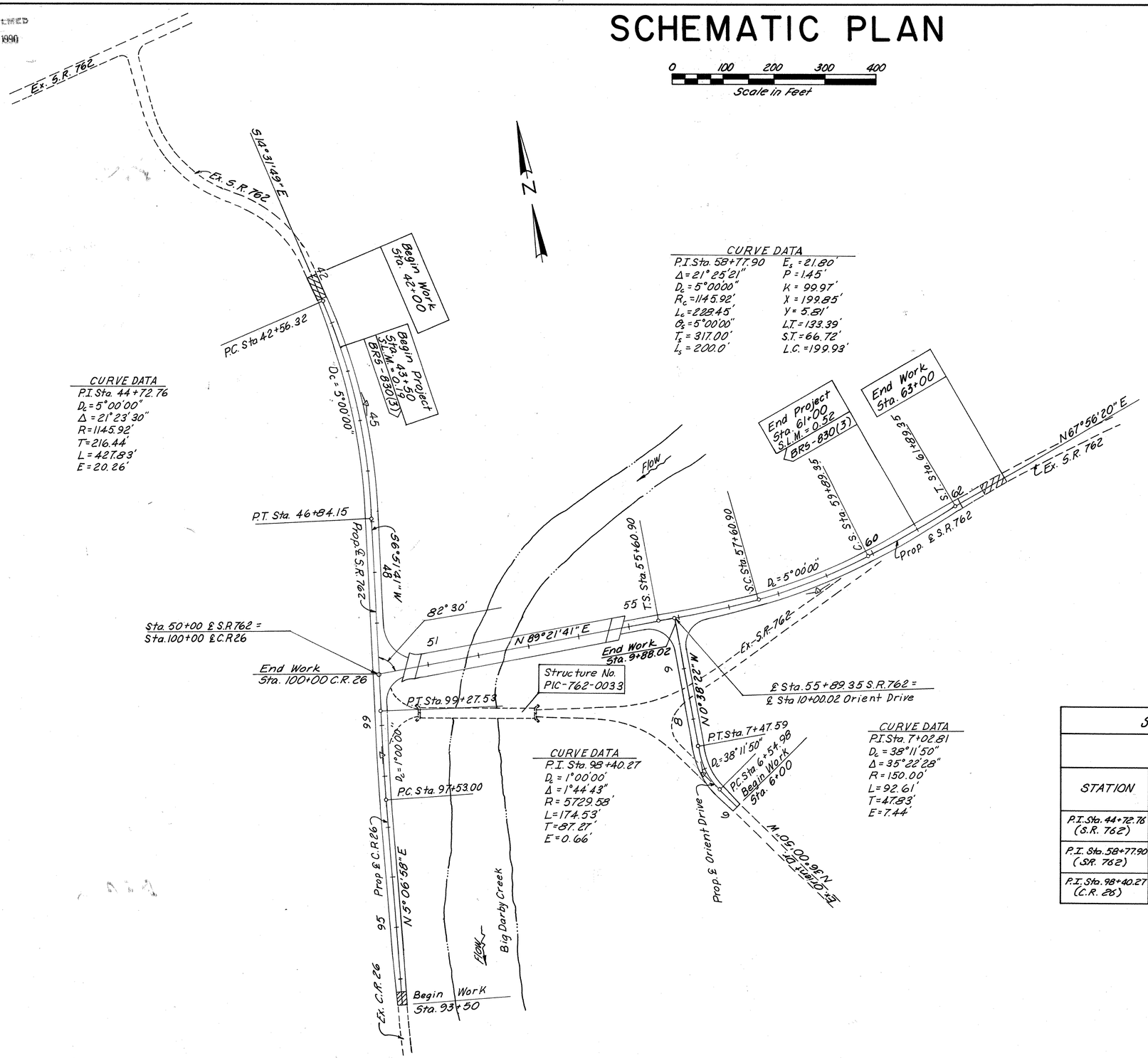
APPROVED:

DIVISION ENGINEER DATE

SCHEMATIC PLAN

CALC. BY	PIC-762-0.19
CHK'D. BY	FHWA REGION 5
DATE	

0 100 200 300 400
Scale in Feet



CURVE DATA
P.I. Sta. 44+72.76
D_c = 5°00'00"
Δ = 21°23'30"
R = 1145.92'
T = 216.44'
L = 427.83'
E = 20.26'

CURVE DATA
P.I. Sta. 58+77.90
Δ = 21°25'21"
D_c = 5°00'00"
R_c = 1145.92'
L_c = 228.45'
D_s = 5°00'00"
T_s = 317.00'
L_s = 200.0'
E_s = 21.80'
P = 1.45'
K = 99.97'
X = 199.85'
Y = 5.81'
L.T. = 133.39'
S.T. = 66.72'
L.C. = 199.93'

CURVE DATA
P.I. Sta. 98+40.27
D_c = 1°00'00"
Δ = 1°44'43"
R = 5729.58'
L = 174.53'
T = 87.27'
E = 0.66'

CURVE DATA
P.I. Sta. 7+02.81
D_c = 38°11'50"
Δ = 35°22'28"
R = 150.00'
L = 92.61'
T = 47.83'
E = 7.44'

SUMMARY OF DESIGN EXCEPTIONS

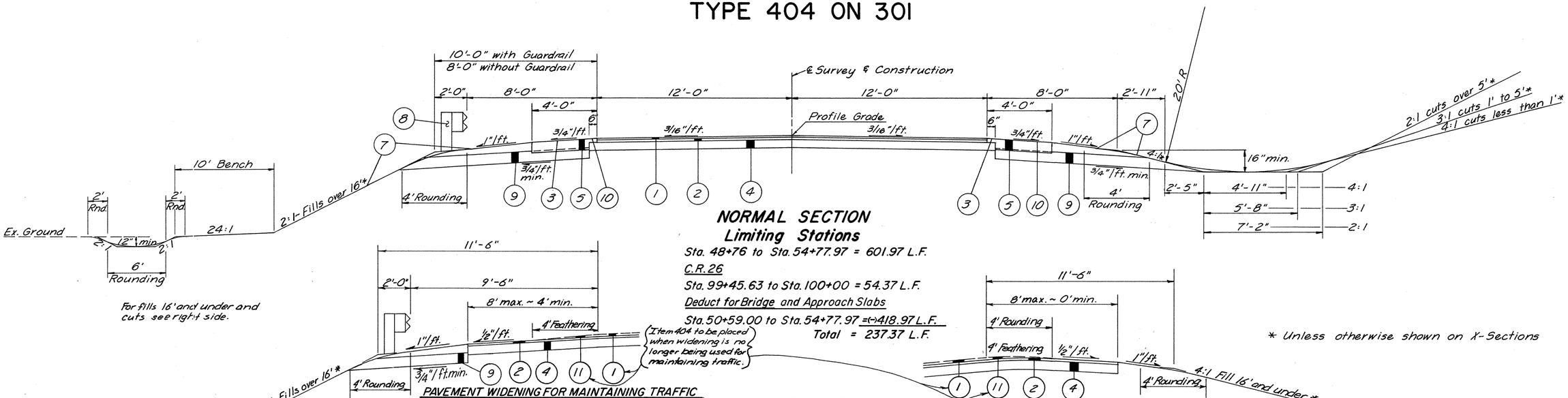
DESIGN SPEED = 55 m.p.h.
LEGAL SPEED LIMIT = 55 m.p.h.

STATION	FEATURE	ACTUAL DESIGN SPEED	EXCEPTION
P.I. Sta. 44+72.76 (S.R. 762)	Horizontal Curve	60 m.p.h.	Absence of Spirals
P.I. Sta. 58+77.90 (S.R. 762)	Horizontal Curve	60 m.p.h.	Shortened Spirals
P.I. Sta. 98+40.27 (C.R. 26)	Horizontal Curve	30 m.p.h.	Lack of Superelevation

CALC. BY		PIC - 762 - 0.19	OHIO	3
DATE			FHWA REGION 5	65
CHKD. BY				
DATE				

TYPICAL SECTIONS

TYPE 404 ON 301



LEGEND

(1) Item 404 1¼" Asphalt Concrete, AC-20

(2) Item 402 1¾" Asphalt Concrete, AC-20

(3) Item 408 Bituminous Prime Coat @ 0.4 gal./S.Y.

(4) Item 301 (3" min.) 6" normal, Bituminous Aggregate Base: AC-20;

(5) Item 304 8" Aggregate Base

(7) Item 659 Seeding and Mulching

(8) Item 606 Type 5 Guardrail

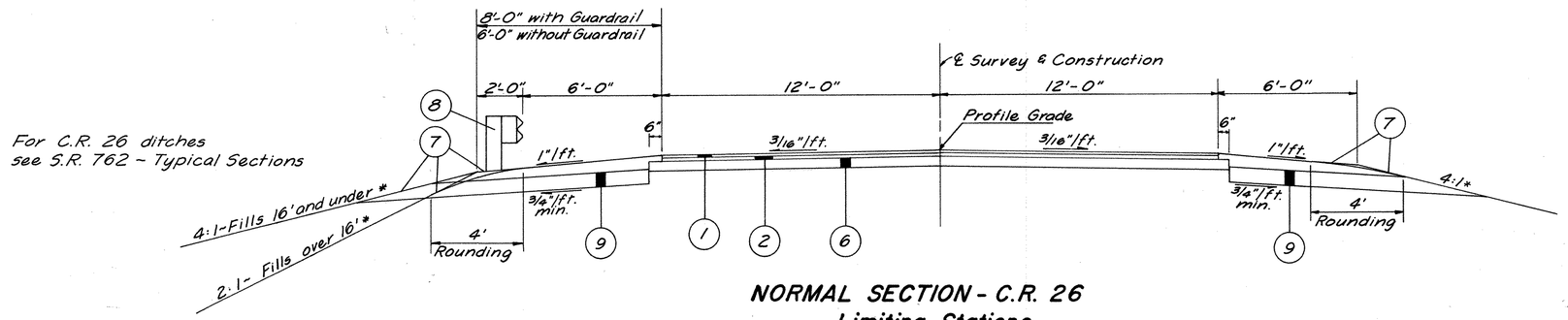
(9) Item 605 Aggregate Drains

(10) Item 409 Seal Coat Bituminous Material @ 0.3 gal./S.Y. and Seal Coat Cover Aggregate, No. 8 @ 0.008 cu. yd. per sq. yd.

(11) Item 404 Asphalt Concrete; AC-20. Varies 0" to 1¼".

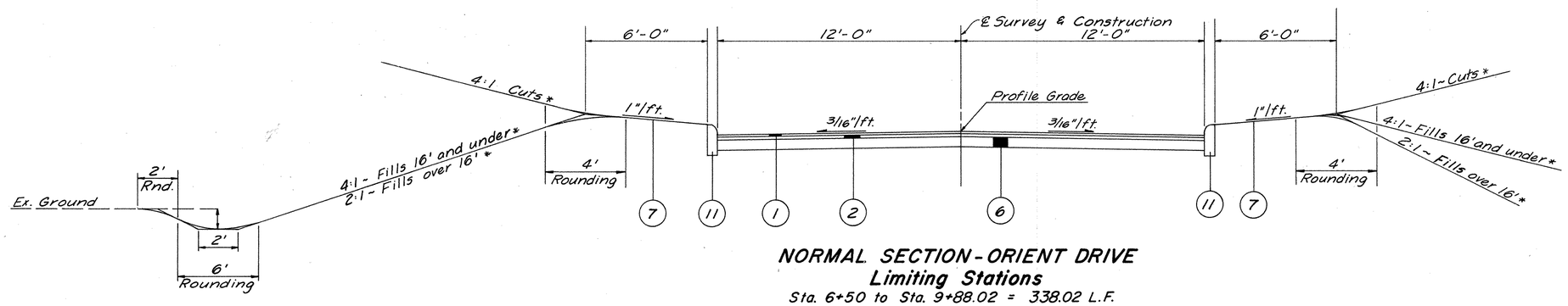
(12) Item 611 Reinforced Concrete Approach Slab, T=15"

TYPICAL SECTIONS
TYPE 404 ON 301



NORMAL SECTION - C.R. 26
Limiting Stations
Sta. 94+75 to Sta. 99+45.63 = 470.63 L.F.

* Unless otherwise shown on X-Sections



NORMAL SECTION - ORIENT DRIVE
Limiting Stations
Sta. 6+50 to Sta. 9+88.02 = 338.02 L.F.

LEGEND

(1) Item 404 1¼" Asphalt Concrete, AC-20
(2) Item 402 1¾" Asphalt Concrete, AC-20
(6) Item 301 5" Bituminous Aggregate Base: AC-20
(7) Item 659 Seeding and Mulching
(8) Item 606 Type 5 Guardrail
(9) Item 605 Aggregate Drains
(11) Item 609 Curb, Standard Type 6

C.R. 26 & ORIENT DRIVE ~ TYPICAL SECTIONS

MAINTENANCE OF TRAFFIC

REV. BY RDA DATE 5/87 | CALC BY RES DATE 5/86 | CHKD. BY GEE DATE 5/86 | PIC - 762 - 0.19 | OHIO | FHWA REGION 5 | 5 / 65

MAINTENANCE OF TRAFFIC

This work shall consist of maintaining traffic and the work as per Item 614 and Item 104.4 of the ODOT Construction and Material Specifications, and the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, and as supplemented by plan notes and drawings.

GENERAL

Before work is started on this project, the Contractor shall submit a schedule of operations in writing to ODOT for approval. The schedule of operations shall be in accordance with the approved construction sequence.

Two-way, two lane traffic shall be maintained at all times on S.R. 762 by use of the existing pavement, the proposed pavement, and/or temporary pavement as shown on the plans. Temporary pavement shall consist of 6" of Item 301 and 1-3/4" of Item 402, conforming to Item 615.05 and payment shall be at the square yard price bid for Item 615 Temporary Pavement, As Per Plan. It is not intended that temporary pavement be used exclusively for maintaining traffic on this project, but that maximum usage be made of existing and proposed pavements. The limits and duration for use of temporary pavement shall be held to an absolute minimum and in all cases shall be subject to the approval of the Engineer.

Two-way, two-lane traffic shall be maintained at all times during construction of Orient Drive except that Orient Drive may be closed to traffic between Station 6+00 and Station 9+00 for a maximum single period of 60 consecutive days.

Two-way, two-lane traffic shall be maintained at all times during construction on C.R. 26 except that C.R. 26 may be closed to through traffic between Station 93+50 and Station 99+85 for a maximum single period of 90 consecutive days. * *

Detours and road closures used for Orient Drive and C.R. 26 shall be in accordance with construction sequence and detour as shown on the detour maps and in the Maintenance of Traffic Plans.

CONSTRUCTION SEQUENCE

The following is a suggested sequence of construction for this project. If the Contractor so elects, he may submit alternate plans for the Maintenance of Traffic, provided the intent of these provisions are followed and no additional inconvenience to the traveling public results therefrom. No alternate plan shall be placed into effect until approval has been granted, in writing, by the Ohio Department of Transportation.

All permanent construction shall be completed to the top of Item 402 in each phase of construction, prior to using for Maintenance of Traffic.

During all phases of construction, two-way, two-lane traffic shall be maintained on S.R. 762, with a minimum 20 foot pavement width and a minimum of 23 feet between drums, barrier and guardrail, using the existing roadway, temporary roadway, temporary pavement or newly constructed proposed pavement, with drums and/or barricades used to protect the work.

PHASE 1

During Phase 1 construction, temporary pavement will be constructed and used with the existing roadway and bridge to maintain two-way, two-lane traffic.

During this Phase the Contractor shall perform the following work, as shown on Sheets 8 and 9.

* * However, the Contractor will be required to maintain local access, to and from the north, at all times, to Parcel 6 at Station 99+04 left; Parcel 7 at Station 93+00 right and; Parcel 8 at Station 96+51 left.

It is expected that 150 canoes per day will be picked up from the Big Darby Creek from Parcel 7 between the Memorial Day weekend and the Labor Day weekend.

PHASE 1a

1. Construct the temporary culvert extension left of C.R. 26 Station 99+85 and the outlet end of the proposed culvert right of Sta. 99+92 C.R. 26. Sheeting as per 503 may be used as needed to construct the culvert and the adjacent embankment. All costs for sheeting shall be included in the lump sum price bid for Item 614 Maintaining Traffic.
2. Construct the proposed bridge and approach slabs, channel, and roadway from Sta. 50+59 to Sta. 58+00 including the intersection at Orient Dr. back to Sta. 9+00 and culvert as per detail on Sheet 41.
3. Construct the temporary road and pavement right of Sta. 42+00 S.R. 762 to left of Sta. 98+35 C.R. 26 and the temporary road and pavement right of Sta. 58+88 to Sta. 62+94 S.R. 762 as shown on the cross sections and Sheets 8 and 9.

PHASE 1b

Two-way, two-lane traffic shall be routed and maintained on the existing and temporary roadway. During this phase the Contractor shall perform the following work as shown on Sheets 8 and 9.

1. Construct the east portion of the proposed S.R. 762 from Sta. 42+00 to Sta. 50+59 and the north portion from Sta. 58+00 to Sta. 63+00 as shown on the cross sections.
2. After completion of Phase 1b, Step 1, two-way, two-lane traffic will be routed and maintained on the newly constructed east and north portions of the proposed S.R. 762. Remove the temporary pavement from Phase 1a, construct the remaining part of the proposed culvert at C.R. 26 Sta. 99+92, the remaining west portion of the proposed S.R. 762 from Sta. 42+00 to Sta. 50+00 and the south portion from Sta. 59+00 to Sta. 62+00 as shown on the cross sections and Sheets 8 and 9.

PHASE 1c

Two-way, one-lane traffic shall be maintained during this Phase of construction.

Construct the Item 404 surface course on all the roadway pavement including drives and intersections, constructed under Phase 1a and 1b.

PHASE II

1. Remove the existing pavement and complete the proposed grading at both ends of the existing bridge.
2. Construct the remaining portions of Orient Drive and C.R. 26. Orient Drive and C.R. 26 may be closed for maximum periods of 60 consecutive days and 90 consecutive days, respectively, to accomplish this work.

The following are estimated quantities for Maintaining Traffic, and are carried to the General Summary.

ITEM	QUANTITY	UNIT	DESCRIPTION
404	5	C.Y.	Asphalt Concrete
410	300	C.Y.	Traffic Compacted Surface, Type A or B (For Maintaining Ingress and Egress for Drives)
614	Lump Sum		Maintaining Traffic
615	2197	S.Y.	Temporary Pavement, as per plan
615	Lump Sum		Temporary Roads
616	6	M/Gal.	Water
616	6	Tons	Calcium Chloride
622	75	L.F.	Temporary Concrete Barrier,
	100	L.F.	Guardrail, Type 5 } Guardrail and anchor to be included in 615 For payment
	2	Each	Anchor Assembly, Type A }
614	0.69	Miles	Temp. Center Lines, Class I
614	0.56	Miles	Temp Center Lines, Class II
614	12	Lin. Ft.	Temp. Stop Lines, Class I
614	2	Each	Work Zone Marking Signs *

* "No Edge Lines"

MAINTENANCE OF CANOE TRAFFIC

CANOE TRAFFIC SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION OF THE PROJECT EITHER THROUGH THE EXISTING RIVER CHANNEL OR THROUGH AN APPROVED PORTAGE TRAIL.

ADEQUATE SIGNING BOTH UPSTREAM AND DOWNSTREAM SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR OR APPLICANT. THE FOLLOWING TYPE SIGNS ARE CONSIDERED TO BE THE MINIMUM TREATMENT:

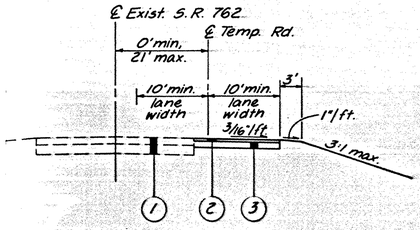
a. APPROXIMATELY 1/4 MILE UPSTREAM, DUAL, ADVANCED WARNING TYPE SIGNS
b. APPROXIMATELY 300 FEET UPSTREAM, DUAL INSTALLATIONS GIVING ACTIONS REQUIRED OF CANOEIST.
c. APPROXIMATELY 1/4 MILE DOWNSTREAM, DUAL, ADVANCED WARNING TYPE SIGNS.
d. APPROXIMATELY 300 FEET DOWNSTREAM, DUAL INSTALLATIONS GIVING ACTIONS REQUIRED OF CANOEIST.

THE ABOVE SIGNING SHALL BE MOUNTED IN SUCH A WAY AS TO BE A MINIMUM OF 4 FEET ABOVE THE WATER LEVEL AND 90 DEGREES TO THE FLOW OF THE RIVER. THE METHOD OF SUPPORTING THE SIGNS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. UPON COMPLETION OF THE PROJECT, THE SIGNS AND SUPPORT SYSTEMS SHALL BE COMPLETELY REMOVED FROM THE RIVER CHANNEL.

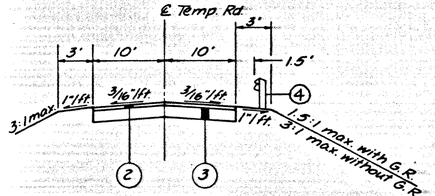
THE CONTRACTOR SHALL NOTIFY LOCAL CANOE LIVERIES USING THIS PORTION OF THE RIVER AT LEAST 10 DAYS PRIOR TO ANY CHANGES AFFECTING CANOE TRAFFIC.

PORTAGE TRAILS IF USED SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR WITHIN THE RIGHT-OF-WAY AND WITH THE LEAST DISTURBANCE TO THE SURROUNDING AREA. THE TRAIL SHALL BE ADEQUATELY MARKED IN BOTH DIRECTIONS.

IN THE EVENT PIPES ARE USED TO DIVERT OR CARRY RIVER WATER, BOTH THE INLET AND OUTLET ENDS SHALL BE ADEQUATELY PROTECTED BY GRATES OR FENCE SO THAT PEOPLE OR CANOES ARE NOT DRAWN THROUGH OR HELD BY THEM.



LIMITING STATIONS
Sta. 42+00 to Sta. 47+00 S.R. 762
Sta. 58+89 to Sta. 63+00 S.R. 762
Sta. 98+35 to Sta. 99+35 C.R. 26



LIMITING STATIONS
Sta. 47+00 to Sta. 50+00 S.R. 762
Sta. 99+75 to Sta. 100+00 C.R. 26

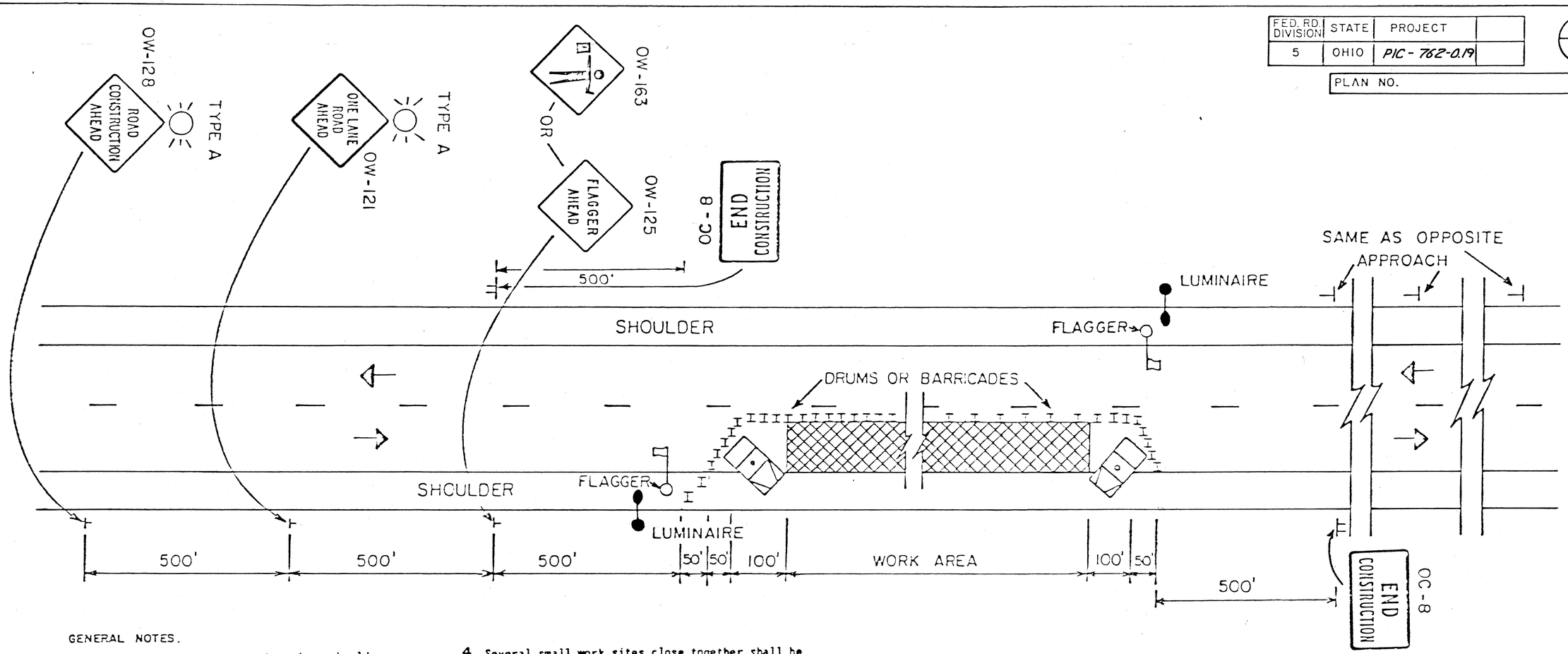
TYPICAL SECTIONS OF TEMPORARY ROAD AND PAVEMENT

LEGEND

(1) Existing Pavement
(2) 402 - 1¾" Asphalt Concrete, AC-20 } ITEM 615 TEMPORARY PAVEMENT, AS PER PLAN
(3) 301 - 6" Bituminous Aggregate Base, AC-20 }
(4) Item 606 - Guardrail, Type 5

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	PIC - 762-0.19	

PLAN NO.



GENERAL NOTES.

1. The location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment. The distances shown are minimums.

2. Flaggers shall be used to control traffic continuously for as long as a one lane operation is in effect. The flaggers shall communicate with each other at all times as described in the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) in Section 7H: Control of Traffic Through Work Areas.

3. Drums or barricades shall be spaced at approximately 50' to 60' center to center for the first 1000 feet of the work area and at a maximum of 100' to 120' center to center for the balance of the work area. Drums or barricades on the advance and return tapers shall be spaced at 10' center to center. Cones may be substituted for barricades or drums for short term lane closures during daylight hours only.

4. Several small work sites close together shall be combined into one work area to make a closure not more than 2000 feet long including tapers. Closures of more than 2000 feet may be approved by the Engineer. The minimum length between closures shall be 2000 feet. Only one side of the road shall be closed in any one work area.

5. The work vehicles shown at the beginning and end of the work area shall be in place and unoccupied whenever workers are in the work area. These work vehicles 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 vehicles shown when approved by the Engineer. The vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of a ½ mile.

6. The Type A flashing barricade warning lights shown on the "Road Construction Ahead" and the "One Lane Road Ahead" signs are required whenever a night lane closure is necessary.

7. 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 3.

8. Adequate area illumination to clearly identify the flagger station at night for long term operations shall be provided by using 150 watt minimum high pressure sodium luminaires or 250 watt minimum mercury luminaires. Luminaires shall be located adjacent to one flagger station for each direction of traffic as shown above. The mounting height for temporary luminaires shall be a minimum of 27 feet above the pavement and the overhead conductor clearance shall be 20 feet above the pavement.

OHIO DEPARTMENT OF TRANSPORTATION

FLAGGERS CLOSING 1 LANE OF A 2 LANE HIGHWAY

DATE 12/82

7G-1

Rev EEF 9/84

CALC. BY ____ DATE ____
CHK'D. BY ____ DATE ____

PIC-762-0.19

OHIO
FHWA REGION 5

8/65

PHASE Ib

Edge of Pvmt. POT Temp. Rd. Sta. 42+00 Begin Temporary Solid Double Centerline

Edge of Pvmt. PC Temp. Rd. Sta. 42+48, 12.14' Lt.

Edge of Pvmt. PCC Temp. Rd. Sta. 43+88, 20' Lt.

Match Line Sta. 44+50

Prop. ℄ S.R. 762

Ex. S.R. 762

Drums (Phase Ib, Step 2)

ON Type III Barricade (36"x 36") O.C. 8' (24")

CONSTRUCTION END

100'

Match Line Sta. 44+50

Drums (Phase Ib, Step 1)

46+00

ON-I-71 (36"x 36") ON-I-71 (36"x 36") ON-I-71 (36"x 36")

ON-I-43-18

25 MPH

3' 20' 29'

Drums (Phase Ia)

Temp. Rd. Pvmt.

25' Typ.

Drums (Phase Ib, Step 2)

Drums (Phase Ia)

ROAD CLOSED

R-25 (48"x 30") ON

Prop. ℄ S.R. 762

50+84 End Temp. Solid Double Centerline

Tie Temp. Conc. Barrier (Connect to G.R. w/Terminal Connector)

Ex. S.R. 762

R-1-30 (36"x 36")

STOP

Temp. Solid Double Centerline

Prop. ℄ C.R. 26, PT Sta. 99+27.53

99+40

Existing Pvmt. Marking to be Removed (Phase Ic (Step 1))

Ex. Pvmt. to remain thru Phase I

STOP

ON-G-36 (36"x 36")

ON-I-143-18

97+00 25 MPH

C.R. 26

Drums (Phase Ia)

℄ Temp. Pavement 100 G.R. Type 3a

Drums (Phase Ib, Step 1)

Type A Anchor Assembly

Type A Anchor Assembly

Prop. ℄ PT Sta. 46+84.15

25 MPH

(24"x 24") 81-671-10

(36"x 36") 92-110

Prop. ℄ PC Sta. 47+84.63

Prop. ℄ PT Sta. 47+52

20'

Drums (Phase Ib, Step 2)

Temporary Culvert Extension, Phase Ic (Step 1)

Sta. 99+60 End Temporary Solid Double Centerline

PRC Temp. Rd. = ℄ 762 Sta. 42+00 Begin Temporary Solid Double Centerline

Prop. ℄ PC Sta. 42+36.32

PRC Temp. Rd. = ℄ 762 Sta. 43+00.28, 11.81' Rt.

PRC Temp. Rd. = ℄ 762 Sta. 43+56.00, 17.61' Rt.

PRC Temp. Rd. = ℄ 762 Sta. 47+86.63, 27.32' Rt.

PRC Temp. Rd. = ℄ 762 Sta. 49+75.99, 30.83' Rt.

PRC Temp. Rd. = ℄ C.R. 26 Sta. 99+38.85, 15.42' Lt.

PRC Temp. Rd. = ℄ C.R. 26 Sta. 98+34.90

A B C D E F G

PHASE Ia

A	B	C	D	E	F	G
D_c = 15°	D_c = 15°	D_c = 5°	D_c = 5°	D_c = 15°	D_c = 15°	D_c = 10°30'
Δ = 15°24'09"	Δ = 8°00'35"	Δ = 21°15'30"	Δ = 9°28'38"	Δ = 13°01'07"	Δ = 15°49'50"	Δ = 11°24'12"
R = 381.97'	R = 381.97'	R = 1145.92'	R = 1145.92'	R = 381.97'	R = 381.97'	R = 545.67'
L = 102.68'	L = 53.40'	L = 425.17'	L = 189.52'	L = 86.79'	L = 105.54'	L = 108.60'
T = 51.65	T = 26.74'	T = 215.06'	T = 94.99'	T = 43.58'	T = 53.11'	T = 54.48'

U.S. 62

S.R. 3

50'

ON-5-36 (36"x 36")

ON-I-43-18 (16"x 16") (Phase Ib Only)

ROAD CONSTRUCTION AHEAD

ON-128-48 (48"x 48") c/Type B Lights

(To remain thru Phase II)

PICKAWAY COUNTY

26 CLOSED

DETOUR

(Phase II only)

M1-G-24 (48"x 24")

R-101 (48"x 24")

OC-14 R (48"x 24")

780
775
770

Temp. Rd. Profile Grade

Profile Ex. Ground

Temp. Rd. Profile Grade	779.6	778.7	778.2	778.3	778.1	778.4	778.0	777.6	777.2	777.0	776.7	776.4	776.3	776.3	776.4	776.8	777.4	778.2	778.6	777.7	776.3
Profile Ex. Ground	779.6	778.7	778.2	778.3	777.9	778.0	777.9	777.2	777.1	776.6	776.6	776.5	777.0	777.0	776.5	776.0	776.1	777.0	777.4	777.7	778.3
	42			43		44		45		46		47		48		49		50		99	

Profile Temporary Road

NOTE: For Typical Sections Temporary Road, See Sheet 5.

STICKLEN - BELSHEIM & ASSOCIATES

MAINTENANCE OF TRAFFIC, PHASE Ia AND Ib

CALC. BY ____ DATE ____
CHK'D. BY ____ DATE ____

PIC - 762 - 0.19

OHIO
FHWA REGION 5

9
65

Sta. 50+84 Begin Temp. solid & broken centerline

Sta. 53+40 End temp. solid & broken centerline Begin temp. single broken centerline

N

Prop. S.R. 762

Phase Ia

Phase II

Phase Ia Phase Ib (Step 2)

Drums, Phase Ib (Step 1)

Drums, Phase Ib (Step 1)

Sta. 58+00 C.S. Sta. 57+60.90

End temp. single broken centerline (Phase Ia)

S.T. Sta. 61+89.35

Sta. 63+00

Ex. S.R. 762

200'

600'

200'

NOTE: Guardrail to be placed when bridge is no longer being used for maintenance of traffic.

Prop. Orient Drive

Phase II

Phase II

Prop. S.R. 762

C.R. 26

99+80

95+00

93+45

9+85

5+95

ROAD CLOSED

R-75 (48"x30")

On Type III Barricade w/ Type B light (Phase II)

OM-23 24"x12"

M-G-18 18"x18"

M-24-21L 21"x15"

ROAD CONSTRUCTION AHEAD

OW-128-36 36"x36" (To remain thru Phase II)

END CONSTRUCTION

OC-8 (24"x24") (To remain thru Phase II)

ROAD CLOSED

R-75 (48"x30")

On Type III Barricade w/ Type B Lights (Phases Ib and II)

ROAD CLOSED

R-75 (48"x30")

OC-14L (48"x24")

On Type III Barricade w/ Type B light

ROAD CLOSED

R-75 (48"x30")

OW-32 (48"x24")

On Type III Barricade w/ Type B Lights (Phases Ib and II)

DETOUR

OM-23 24"x12"

M-G-18 18"x18"

M-24-21R 21"x15"

DETOUR

OM-23 24"x12"

M-G-18 18"x18"

M-24-21R 21"x15"

25 MPH

OM-143-18 (18"x18") (Phase Ib) (Step 1)

OM-G-36 (36"x36")

OM-128-36 (36"x36") w/ Type B light

ROAD CONSTRUCTION AHEAD

END CONSTRUCTION

OC-8 (24"x24")

OM-143-18 (18"x18") (Phase Ib) (Step 1)

OM-G-36 (36"x36")

	A	B	C	D
	$D_c = 15°$	$D_c = 5°$	$D_c = 15°$	$D_c = 15°$
	$\Delta = 10°22'49"$	$\Delta = 9°42'40"$	$\Delta = 9°29'07"$	$\Delta = 12°45'00"$
	$R = 381.97'$	$R = 1145.92'$	$R = 381.97'$	$R = 381.97'$
	$L = 69.20'$	$L = 194.22'$	$L = 63.24'$	$L = 85.00'$
	$T = 34.70'$	$T = 97.34'$	$T = 31.69'$	$T = 42.68$

P.C. Temp. Rd. = ℄ 762 Sta. 58+88.87 Rt. 31.38' Rt. Prop. Sta. 58+88 Begin Temp. Solid Double Centerline

P.R.C. Temp. Rd. = ℄ 762 Sta. 59+55.86 23.41' Rt.

P.C. Temp. Rd. = ℄ 762 (Tan) Sta. 61+47.44 19.47' Rt.

P.R.C. Temp. Rd. = ℄ 762 Sta. 62+09.91 10.62' Rt.

P.T. Temp. Rd. = ℄ 762 Sta. 62+94.21 2.12' Rt. Ex. ℄ Sta. 63+00 End Temp. Solid Double Centerline (Phase Ia)

Phase Ia Temp. Road

Phase Ib (Step 1)

End Temp. Single Broken Centerline

Sta. 59+00 Begin Temp. Broken Centerline

Sta. 63+00

Sta. 62+00

Drums Phase Ia

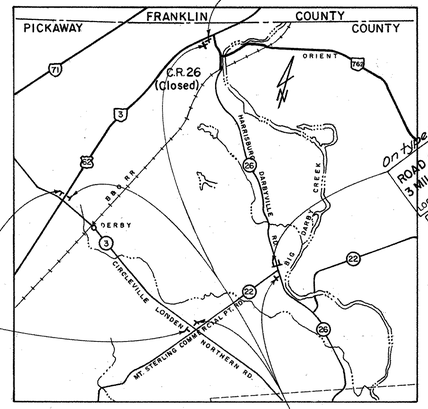
Drums Phase Ib (Step 2)

Ex. S.R. 762

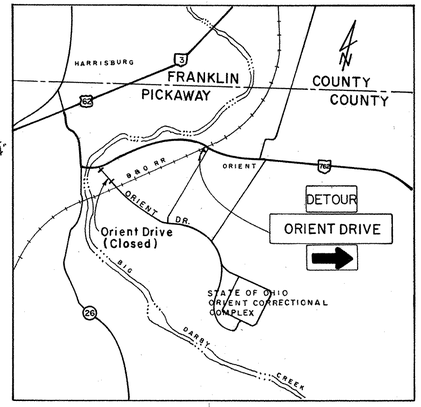
Phase Ib (Step 2)

25' Typ.

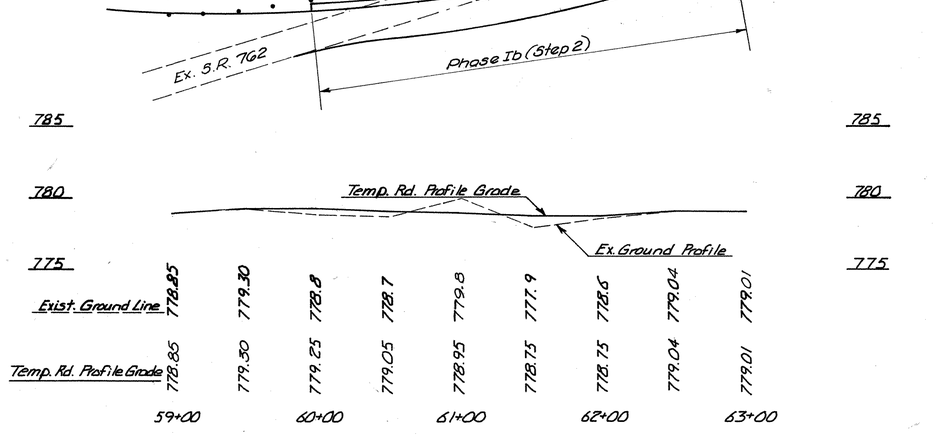
60'



DETOUR MAP
SCALE : 1" = 1 MILE
C.R. 26
(PHASE II)



DETOUR MAP
SCALE : 1" = 2000'
ORIENT DR.
(PHASE II)



Profile Temporary Road

NOTE: For Typical Section Temporary Road, See Sheet 5

STICKLEN - BELSHEIM & ASSOCIATES

MAINTENANCE OF TRAFFIC, PHASE Ia, Ib AND PHASE II

GENERAL NOTES

ITEM 605 AGGREGATE DRAINS

Aggregate drains shall be placed at fifty (50) foot intervals on each side of normal crowned sections and at twenty-five (25) foot intervals on the low side only of superelecated sections, except where Item 605 Pipe Underdrains have been provided.

An aggregate drain shall be placed at the low point of each sag vertical curve.

FARM DRAINS

All farm drains, which are encountered during construction, shall be provided with unobstructed outlets under the direction of the Engineer. Existing collectors which are located below the roadway ditch elevations, and which cross the roadway, shall be replaced within the construction limits by Item 603 Conduit, Type B, one commercial size larger than the existing conduit.

Existing collectors and isolated farm drains, which are encountered above the elevation of the roadway ditches, shall be outletted into the roadway ditch by 603 Type F Conduit. The optimum outlet elevation shall be, if possible, one foot above the flowline elevation of the ditch. Lateral tile fields which cross the roadway shall be intercepted by 603, Type E Conduit, and carried in a longitudinal direction to an adequate outlet or roadway crossing.

The location, type, size and grade of required replacements shall be determined by the Engineer during construction, and payment shall be made on final measurements.

The following estimated quantities have been included in the General Summary for the work noted above:

Item 603	6" Conduit, Type B	100 Lin. Ft.
Item 603	6" Conduit, Type E	100 Lin. Ft.
Item 603	6" Conduit, Type F	100 Lin. Ft.
Item 603	8" Conduit, Type B	100 Lin. Ft.
Item 603	8" Conduit, Type E	100 Lin. Ft.
Item 603	8" Conduit, Type F	100 Lin. Ft.

LOCATION OF GUARDRAIL

The locations of guardrail 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.

SEEDING

Quantities for seeding are calculated for the soil areas between ten (10) feet outside the work limits, as shown on the cross sections, or to the right-of-way line, if such line is less than ten (10) feet from the work limits.

WATERING AND MOWING PERMANENT SEEDED AREAS

The following estimated quantities are 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	30 M. Gal.
659	Mowing	10 M. Sq.Ft.

PART-WIDTH CONSTRUCTION

Because of the necessity of building (portions of) this project under traffic and constructing the full pavement width in stages, extreme care shall be taken to prevent the construction of a butt joint on centerline in the base courses. Longitudinal joints shall be lapped as shown on Standard Construction Drawing BP-5.

CONDUIT END TREATMENT

Immediately after placement of any conduits, the Contractor shall construct the end treatments required by the plans at both the outlet and inlet ends. This shall include headwalls, concrete riprap, rock channel protection, sodding, etc.

STREAM DISTURBANCE

Work involving placement or removal of any material in the stream shall not occur between March 1 and June 1.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantities are to be used as directed by the Engineer, for temporary erosion and sediment control measures:

207	Temporary Seeding and Mulching	4000 Sq.Yd.
207	Straw or Hay Bales	30 Each
207	Temporary Slope Drains	220 Lin. Ft.
207	Temporary Benches, Dikes Dams and Sediment Basins	110 Cu. Yd.
601	Type C Rock Channel Protection (without filter)	9 Cu. Yd.
659	Mowing	5 M. Sq.Ft.
659	Commercial Fertilizer	0.1 Ton
659	Repair Seeding and Mulching	1000 Sq. Yd.
659	Water	1.0 M. Gal.

EROSION CONTROL

Items 601 and 660 are provided in the plans for erosion control. Rock or turf of a stable nature will not be removed in order to place any of these items, and turf of a stable nature will not be removed in order to place 660. The Engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

ITEM 659 AGRICULTURAL LIMING, AS PER PLAN

The location and need for agricultural liming will be determined by laboratory tests, after rough grading operations have been performed. Quantities of agricultural liming, as shown on the plans, are sufficient for the entire project, but will be non-performed for the areas where tests show that the liming is not required.

EXCAVATE EXISTING PAVEMENT

The existing pavement right of Sta. 52+95 to Sta. 55+70, between the existing bridge and proposed Orient Drive shall be obliterated as set forth in Item 203.04 and seeded as set forth in Item 659.

The following quantities are included in the General Summary for this work:

Item 203	Excavation not including embankment construction	600 Cu.Yd.
Item 203	Embankment	600 Cu.Yd.
Item 659	Seeding and Mulching	1870 Sq.Yd.
Item 659	Commercial fertilizer	0.2 Ton
Item 659	Agricultural liming	0.8 Ton
Item 659	Water	2 M. Gal.

SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS

The plan makes no provision for connecting, nor shall the Engineer or Contractor connect, any existing or new drainage into the highway drainage system when such drains carry flow from any plumbing fixtures, including floor drains and sink drains, or drains from livestock lots or barns.

Existing pipe carrying flow which comes within the category outlined above, shall be plugged with Class C concrete in the right-of-way line. Payment for said plugging shall be included in the unit price bid for Item 203 Excavation (or the pertinent 202 Item).

TEMPORARY STREAM CROSSING FORDS

Where stream crossing fords are required for equipment crossings, the following shall apply to the Contractor's operations:

The crossing shall consist of clean non-toxic granular or rock material, properly maintained to prevent erosion with provisions for conveyance of anticipated high flows.

Furthermore, it shall follow Part 330.5 Specific Categories of Discharges-Nationally Permitted, paragraph (a) (14) Minor Road Crossing Fills - of the Federal Register - Corps of Engineers Interim Final Regulations published July 22, 1982.

MONUMENTS

Monuments shall be constructed in accordance with details shown on Standard Construction Drawing MC-1. See Sh. 60 for locations

FIELD OFFICE

The Contractor shall provide a suitable field office having a minimum of 400 sq.ft. of floor space. Payment shall be at the lump sum price bid for item 619, Field Office.

UTILITY OWNERSHIP

The following utilities and owners are located within the work limits of this project:

Telephone

Ohio Bell Telephone Co.
150 East Gay Street, 11 G
Columbus, Ohio 43215
614-223-8262

Electric

Columbus & Southern Ohio Electric Co.
215 North Front Street
Columbus, Ohio 43215
614-464-7911

Water

State of Ohio
Department of Corrections
Orient, Ohio 43146

Ohio Department Of Natural Resources
Michael D. Craden - Outdoor Recreation, Att: Michael Colvin
Fountain Square, Columbus, OH. 43224

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

The rounded corners shown on the typical sections, apply to all cross sections even though otherwise shown on these plans.

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.

REMOVAL OF TREES OR STUMPS AND REFORESTATION

All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum price bid for Item 201, Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

The following is an approximate estimate of the number of trees and stumps to be removed:

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	25	2	27
30"	5	5	10
48"	2	1	3
60"	1	0	1

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201, Clearing and Grubbing.

All trees 4"DBH or greater which are removed will be replaced with indigenous nursery stock trees of at least 1" DBH, furnished and planted by the Contractor in accordance with ODOT Standard Drawing LA-2 Planting And Bracing. The Engineer shall keep an accurate record of the number of 4"DBH or larger trees removed so that a comparable number of 1"DBH can be planted. The reforestation work shall be performed after final grading. The planting layout shall be at random locations as directed by the Engineer.

The material, equipment, and labor needed for this work shall be included in the Lump Sum Bid for 201 Clearing and Grubbing; 663 Planting Trees.

CALCULATIONS

Item 605 Aggregate Drains
S.R. 762

Sta. 43+50 to Sta. 48+76 = 526 L.F.
Sta. 54+78 to Sta. 62+00 = 722 L.F.
Total = 1248 L.F.

(1248 ÷ 25 + 1) = 50.92 (use 51)
51 x 12' avg. = 612 L.F.

Sta. 48+76 to Sta. 50+59 = 183 L.F.
Sta. 94+75 to Sta. 99+45 = 470 L.F.
Total = 653 L.F.

(653 ÷ 50 x 2 + 1) = 27.12 (use 28)
28 x 12' avg. = 336 L.F.

Item 605 Aggregate Drains Total = 948 L.F.

Item 203 Excavation not including Embankment Constr.
S.R. 762

Sta. 42+50 to Sta. 50+00 = 1349 C.Y.
Sta. 50+00 to Sta. 60+00 = 1218 C.Y.
Sta. 60+00 to Sta. 62+50 = 1294 C.Y.
C.R. 26
Sta. 93+75 to Sta. 100+00 = 564 C.Y.
Orient Drive
Sta. 6+00 to Sta. 9+38 = 408 C.Y.
Channels = 419 C.Y.

Item 203 Excavation Total = 5852 C.Y.

Item 203 Embankment
S.R. 762

Sta. 42+50 to Sta. 50+00 = 7244 C.Y.
Sta. 50+00 to Sta. 60+00 = 11,443 C.Y.
Sta. 60+00 to Sta. 62+50 = 133 C.Y.
C.R. 26
Sta. 93+75 to Sta. 100+00 = 5174 C.Y.
Orient Drive
Sta. 6+00 to Sta. 9+38 = 3522 C.Y.
Channels = 635 C.Y.

Item 203 Embankment Total = 28,151 C.Y.

Item 659 Seeding and Mulching

Protection Area = 26,866 S.Y.
Deduct for Drives & Mailbox Appr. (from Drive Detail Sheet 39) = -4,391 S.Y.
Deduct for R.C.P. = - 829 S.Y.
Deduct for Riprap = - 76 S.Y.
21,570 S.Y.
Area to Commercial Fertilizer Agricultural Liming & Water = 21,570 S.Y.
Deduct Sodding = - 252 S.Y.

Item 659 Seeding and Mulching Total = 21,318 S.Y.

Item 659 Commercial Fertilizer
21570 S.Y. x 9 x 20 lbs ÷ 1000 ÷ 2000 = 1.9 Tons

Item 659 Agricultural Liming
21570 S.Y. x 9 x 100 lbs ÷ 1000 ÷ 2000 = 9.7 Tons

Item 659 Water
21570 S.Y. x 9 x 120 Gal. ÷ 1000 ÷ 1000 M/Gal. / Application x 2 = 47 M.Gal.

Rev. 10-14-87

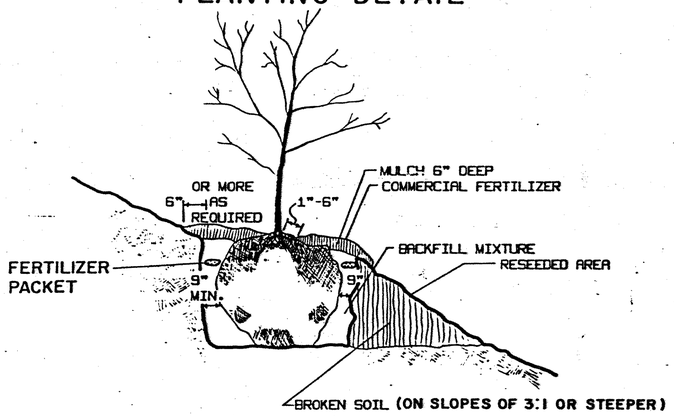
CALC BY _____ DATE _____
CHKD BY HWB DATE 9-30-86

FHWA REGION	STATE	PROJECT	
5	OHIO	—	

10A/65

GENERAL NOTES

PLANTING DETAIL



THE TOP OF THE ROOT BALL SHALL BE 2 INCH ABOVE THE NORMAL GROUND LINE IN AVERAGE SOILS, 3 INCHES IN HEAVY CLAY SOILS AND 6 INCHES WHERE IMPERMEABILITY IS ENCOUNTERED.

ON SLOPES WHERE HEAVY CLAY AND IMPERMEABLE SOILS ARE PRESENT THE DOWN HILL SIDE OF THE POCKET HOLE SHALL BE BROKEN OR LOOSENED AND RETURNED TO ITS NATURAL GRADE TO PROVIDE DRAINAGE FOR THE HOLE.

PLANTING HOLE AND BED PREPARATION

AND GROUNDCOVER

AFTER THE LAYOUT IS APPROVED BY THE ENGINEER, SHRUB BEDS SHALL BE CULTIVATED TO A MINIMUM DEPTH OF SIX (6) INCHES BY A PLOW, HARROW OR DISC, OR OTHER METHOD APPROVED BY THE ENGINEER. THE CULTIVATION SHALL TAKE PLACE AS FAR IN ADVANCE OF THE PLANTING OPERATION AS POSSIBLE. WHERE SHRUBS ARE SHOWN, INDIVIDUAL HOLES SHALL BE DUG ON CENTERS AS SHOWN ON THE PLANS. THESE HOLES SHALL ALLOW FOR A MINIMUM OF NINE (9) INCHES OF BACKFILL MIXTURE AROUND THE SIDES OF THE BALLS. THE BOTTOM OF THE HOLE SHALL BE NO DEEPER THAN THE BALL TO BE PLANTED. THE MATERIAL REMOVED FROM THE HOLES SHALL BE TAKEN FROM THE PROJECT IF IT IS FOUND TO BE UNACCEPTABLE FOR USE AS BACKFILL AS DETERMINED BY THE ENGINEER. THE PLANT SHALL THEN BE SET AND THE HOLE FILLED WITH BACKFILL MIXTURE, AND THE PLANTING OPERATION PERFORMED AS SPECIFIED IN ITEMS 662.17 AND 662.18. ALL EXCESS DIRT SHALL BE REMOVED FROM THE SITE.

EXISTING TREES AND SHRUBS SHALL TAKE PRIORITY OVER PROPOSED PLANTINGS. THE LOCATIONS OF THE PROPOSED TREES AND SHRUBS ARE APPROXIMATE AND MAY BE REARRANGED AT THE DIRECTION OF THE ENGINEER WHEN OBSTRUCTIONS ARE ENCOUNTERED.

IF AN AUGER IS USED IN DIGGING POCKET HOLES AND POLISHED (SHINY) SIDES OCCUR IN CLAY OR HEAVY SOILS, THE USE OF SUCH AN AUGER SHALL BE DISCONTINUED AND THE HOLES SHALL BE DUG WITH A BACKHOE OR ANOTHER APPROVED METHOD.

BACKFILL NO. 1 - THE BACKFILL MIXTURE USED TO FILL POCKET HOLES IN LIGHT AND MEDIUM SOILS (SAND & AVERAGE) SHALL CONSIST BY VOLUME OF: 2 PARTS *SOIL CONDITIONER, 2 PARTS COMPRESSED SPHAGNUM PEAT OR 3 PARTS SEDGE PEAT, AND 2 PARTS APPROVED TOPSOIL.

BACKFILL NO. 2 - THE BACKFILL MIXTURE USED TO FILL POCKET HOLES IN HEAVY SOILS (CLAY & SHALE) SHALL CONSIST BY VOLUME OF : 1 PART *SOIL CONDITIONER, 1 PART COMPRESSED SPHAGNUM PEAT OR 2 PARTS SEDGE PEAT, AND 2 PARTS APPROVED TOPSOIL.

INCORPORATE THOROUGHLY INTO THE BACKFILL MIXTURES 5 LBS. OF COMMERCIAL FERTILIZER (0-20-20) PER CUBIC YARD. THE ENGINEER, AFTER CONSULTATION WITH THE LANDSCAPE ARCHITECT, SHALL DETERMINE THE LOCATIONS WHERE THE BACKFILL MIXTURES SHALL BE USED.

SCHEDULING

ALL DIGGING AND PLANTING OF DECIDUOUS PLANTS SHALL BE DONE AFTER OCTOBER 1, AND BEFORE JUNE 1. EVERGREENS SHALL BE DUG AND PLANTED AFTER MARCH 15, AND BEFORE JUNE 1.

ITEMS 662 & 663

ALL TREES AND SHRUBS SHALL BE SPECIMEN (NO. 1 GRADE) PLANTS WITH GROWTH AND BRANCHING HABIT TYPICAL OF THE SPECIES SPECIFIED. NO PARK GRADE (NO. 2 OR 3 GRADE) PLANTS WILL BE ACCEPTED.

FERTILIZER

FOUR OUNCE (8 YEAR) COMMERCIAL FERTILIZER PACKETS USED IN PLANTING OPERATION SHALL BE DELIVERED DRY IN ORIGINAL, UNOPENED CONTAINERS. FERTILIZER ANALYSIS SHALL BE 16% NITROGEN, 8% PHOSPHORIC ACID AND 16% POTASH. FERTILIZER SHALL BE OF A SLOW RELEASE TYPE IN A POLYETHYLENE PERFORATED PACKET WITH MICROPORE HOLES.

THE PACKETS SHALL BE PLACED 6 TO 8 INCHES DEEP AND EVENLY SPACED AROUND THE PERIMETER OF THE PLANTING HOLE, ADJACENT TO THE BALL OR ROOT MASS BUT NOT IN DIRECT CONTACT WITH THE ROOTS. THE PACKETS SHALL NOT BE CUT, RIPPED OR DAMAGED.

EACH SHRUB OR TREE SHALL BE FERTILIZED ACCORDING TO THE FOLLOWING SCHEDULE:

SHRUBS 1'-2'	2 PACKETS
SHRUBS 2'-3'	2 PACKETS
SHRUBS 3'-4'	3 PACKETS
TREES 5'-6'	3 PACKETS
TREES 6'-8'	4 PACKETS
TREES 1½"-2" CAL.	2 PACKETS
TREES 2'-2½" CAL.	3 PACKETS
TREES 2½-3" CAL.	4 PACKETS
TREES 3"-3½" CAL.	5 PACKETS

IF IT BECOMES NECESSARY TO REMOVE AND REPLACE MISSING, DEAD OR UNHEALTHY PLANTS, ALL OLD PACKETS SHALL BE REPLACED WITH NEW PACKETS.

THE FOUR OUNCE 16-8-16 FERTILIZER PACKETS SHALL BE DESIGNATED BY THE MANUFACTURER TO BE EFFECTIVE FOR EIGHT YEARS. PACKETS SUCH AS "EEESY GROW"(SPECIALTY FERTILIZER, INC. BOX 355, SUFFERN, N.Y. 10901: (914) 357-7722), "THE UNIQUE FEEDER" (UNIQUE FERTILIZER, INC. P.O. BOX 99, DEPTFORD, N.J. 08096:(609)848-4444) OR APPROVED EQUAL.

ITEM 661.21 WATERING

WATER SHALL BE FURNISHED BY THE CONTRACTOR AND ALL PLANT MATERIAL SHALL BE WATERED THOROUGHLY AT THE TIME OF PLANTING REGARDLESS OF AMPLE MOISTURE CONTENT OF THE SURROUNDING SOIL. SUSPENSION OF WATERING OPERATIONS BECAUSE OF RAINFALL WILL BE DETERMINED BY THE ENGINEER IN CONSULTATION WITH THE LANDSCAPE ARCHITECT. AN AVERAGE OF ONE INCH OF RAINFALL PER WEEK SHALL BE CONSIDERED ADEQUATE. DETERMINATION OF RAINFALL SHALL BE BASED UPON THE USE OF A RAIN GAUGE APPROVED BY THE PROJECT ENGINEER.

MULCH

MULCH SHALL BE AS PER ITEM 661.04 WITH THE FOLLOWING EXCEPTIONS: WOOD SHAVINGS OR PEAT MOSS OR CORN COBS SHALL NOT BE USED AS A TOP MULCH. WOOD CHIPS SHALL BE AGED (STOCKPILED) AT LEAST 6 MONTHS PRIOR TO PLACEMENT AROUND PLANTS. MULCH SHALL BE SIX INCHES LOOSE MEASUREMENT.+ AFTER MULCHING, COMMERCIAL FERTILIZER (12-12-12) SHALL BE APPLIED AS SPECIFIED IN ITEM 662.18.
+ GROUNDCOVER BEDS SHALL BE MULCHED AS PER 661.23.

PRUNING

ALL PLANTS SHALL BE PRUNED WITHIN SEVEN DAYS AFTER PLANTING. THE PRUNING SHALL BE DONE ACCORDING TO SELECTED TYPICAL PLANTS OF EACH SPECIES PRUNED AND USED AS A SAMPLE AS DIRECTED BY THE ENGINEER.

ANY CANDLE GROWTH ON NEEDLE EVERGREENS WHICH EXCEED 3 INCHES AT PLANTING TIME SHALL BE CUT BACK TO THAT LENGTH IMMEDIATELY.

STORAGE AREAS

PLANT

THE CONTRACTOR MAY STORE MATERIALS AND EQUIPMENT 30 FEET FROM PAVEMENT, BEHIND GUARDRAIL AND WITHIN OR ADJACENT TO THE PROJECT LIMITS BY OBTAINING OFFICAL PERMISSION OF THE ENGINEER. NO PEDESTRIAN OR VEHICULAR TRAFFIC MAY BE IMPEDED NOR HAZARDOUS CONDITION CREATED AS A RESULT OF SUCH STORAGE.

THE STORAGE OF ALL DUG PLANTS SHALL CONFORM TO 661.14 WHETHER WITHIN THE PROJECT LIMITS, ADJACENT THERETO, OR AT SOME OTHER LOCATION. THESE AREAS SHALL BE DESIGNATED PRIOR TO ACTUAL PLANT STORAGE AND SHALL BE OPEN TO INSPECTION UPON REQUEST OF THE ENGINEER.

STAKING MATERIALS

ALL TREES SHALL BE STAKED AS SHOWN IN THE STANDARD DRAWING LA-2. STAKING OF SMALL ORNAMENTAL TREES SHALL BE SIMILAR TO THAT OF EVERGREENS. ALL DECIDUOUS TREE TRUNKS ARE TO BE TREATED WITH LINDANE SPRAY BEFORE WRAPPING.

PLANTING PERIOD OF ESTABLISHMENT

BEFORE FINAL INSPECTION, ALL PLANTINGS SHALL BE IN PLACE AND UNDER THE CARE OF THE CONTRACTOR FOR A PERIOD OF ESTABLISHMENT. THIS PERIOD SHALL BEGIN IMMEDIATELY UPON COMPLETION OF THE PLANTING OPERATION FOR ANY PLANT OR SPECIES GROUP AND CONTINUE UNTIL OCTOBER 1. IN NO CASE SHALL IT BE LESS THAN ONE GROWING SEASON, JUNE 1 TO OCTOBER 1.

DURING THIS PERIOD OF ESTABLISHMENT, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW SUCH HORTICULTURAL PRACTICES AS REQUIRED TO ASSURE THE VIGOR AND GROWTH OF THE TRANSPLANTED MATERIAL. THIS CARE SHALL INCLUDE WATERING, REMULCHING, RESTAKING, GUYING AND CULTIVATING. THERE SHALL BE A MINIMUM OF TWO WEEDING AND MOWING (BED EDGES, AROUND TREES AND GUY STAKES) PROGRAMS OF SUCH INTENSITY AS TO COMPLETELY RID THE PLANTED AND MULCHED AREAS OF WEEDS AND GRASSES. THE FIRST PROGRAM SHALL BEGIN ON OR ABOUT JUNE 15 AND THE OTHER APPROXIMATELY 8 WEEKS LATER.

EACH PLANT SHALL HAVE SUFFICIENT WATER TO KEEP IT IN A HEALTHY, GROWING CONDITION. IF LOCAL WEATHER CONDITIONS WARRANT, THE ENGINEER MAY REQUIRE WEEKLY WATERING. WHEN WATERING IS REQUIRED, A SCHEDULE FOR WATERING EACH PLANT SHALL BE SUPPLIED TO AND APPROVED BY THE ENGINEER. THE WATER SHALL BE APPLIED IN SUCH A MANNER AS TO SATURATE THE ROOT AND MULCHED AREA OF EACH PLANT WITHOUT CAUSING RUNOFF (SEE WATERING TABLE). IN CASE OF FALL PLANTINGS, THESE WATERINGS SHALL CONTINUE UNTIL SOIL FREEZE-UP AND RECOMMENCE AFTER THE SPRING THAW UNLESS OTHERWISE DIRECTED.

ON OR ABOUT SEPTEMBER 15, THE ENGINEER SHALL INSPECT THE PLANTING AND SUPPLY THE CONTRACTOR WITH A LISTING OF THOSE PLANTS HAVING DIED, DIED BACK BEYOND NORMAL PRUNING LINES OR ARE MISSING FROM THE PLANTING. THE CONTRACTOR SHALL MAKE THE REPLANTING AS REQUIRED AND IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE ORIGINAL MATERIAL. THESE REPLACEMENTS ARE NOT SUBJECT TO THE PERIOD OF ESTABLISHMENT. HOWEVER, PLANTS PLANTED INITIALLY IN THE FALL WHICH HAVE DIED BEFORE THE SPRING PLANTING SEASON SHALL BE REPLACED IMMEDIATELY AND ARE SUBJECT TO THE ESTABLISHMENT PERIOD.

AFTER REPLACEMENTS HAVE BEEN PLANTED, THE FINAL INSPECTION SHALL BE MADE AND THE ACTUAL COUNT OF LIVE PLANTS OF EACH VARIETY AND SPECIES LISTED FOR PAYMENT.

WATERING TABLE

SHRUBS 1'-2' SIZE	2 GALLON PER PLANT
SHRUBS 2'-3' SIZE	4 GALLONS PER PLANT
SHRUBS 4'-5' SIZE	7 GALLONS PER PLANT
TREES 5'-6' SIZE	10 GALLONS PER PLANT
TREES 1-1/4" - 1-1/2" CAL.	15 GALLONS PER PLANT
TREES 1-1/2" - 2" CAL.	20 GALLONS PER PLANT
TREES 2"-3" CAL.	25 GALLONS PER PLANT
TREES 3"-4" CAL.	30 GALLONS PER PLANT

THE METHOD OF MEASUREMENT FOR SUMMER WATERING SHALL BE BY APPROVED METERING FROM TANKS OR BY INDIVIDUALLY MEASURED CONTAINERS TO EACH PLANT TO BE WATERED. PAYMENT FOR PLANTING PERIOD OF ESTABLISHMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS 661, 662 AND 663.

*SOIL CONDITIONER

A SOIL CONDITIONER SUCH AS "HAYDITE", "PERLITE" OR AN APPROVED EQUAL SHALL BE USED. THE PARTICLE SIZE GRADATION OF THE SOIL CONDITIONER SHALL BE AT LEAST 80% PASSING A NO. 6 SIEVE AND NOT MORE THAN 5% PASSING A NO. 50 SIEVE.

HERBICIDE PLANT BED TREATMENT

TWO WEEKS BEFORE THE CULTIVATION AND PLANTING OPERATION BEGINS, THE SHRUB AND GROUNDCOVER BEDS SHALL BE TREATED WITH "ROUNDUP" OR APPROVED EQUAL HERBICIDE. RATE AND METHOD OF APPLICATION SHALL BE IN STRICT CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS AND UNDER THE DIRECT SUPERVISION OF A PESTICIDE APPLICATOR LICENSED BY THE STATE OF OHIO.

TOPSOIL TESTING

TOPSOIL FAILING CURRENT TEST STANDARDS MAY BE ALTERED, UPON APPROVAL OF THE ENGINEER, BY ADDING APPROVED CONDITIONERS TO CORRECT THE DEFICIENCIES. TOPSOIL SHALL BE FREE OF JOHNSON GRASS AND CONFORM TO ITEM 653 AS DETERMINED BY THE ENGINEER.

CALCULATIONS

PAVEMENT QUANTITIES

Item 404 - Asphalt Concrete
S.R. 762

Sta. 42+00 to Sta. 42+50 (Feathering)
$[(\frac{21.6' + 26'}{2} \times 50') \times 0.072$ Avg. Depth$] \div 27$ = 3.17 C.Y.

Sta. 42+50 to Sta. 43+50
$[(100' \times \frac{22' + 24'}{2}) \times 1.25 \div 12] \div 27$ = 8.87 C.Y.

Sta. 43+50 to Sta. 50+00
$[(650' \times 24') \times 1.25 \div 12] \div 27$ = 60.19 C.Y.

Sta. 50+12.10 to Sta. 50+59
(Area by Planimeter)
$(3150$ S.F. $\times 1.25 \div 12) \div 27$ = 12.15 C.Y.

Sta. 54+77.97 to Sta. 61+00
$[(622.03' \times 24') \times 1.25 \div 12] \div 27$ = 57.60 C.Y.

Sta. 61+00 to Sta. 62+00
$[(100' \times \frac{24' + 20'}{2}) \times 1.25 \div 12] \div 27$ = 8.49 C.Y.

Sta. 62+00 to Sta. 62+50 (Resurfacing)
$[(20' \times 50' \times 1.25 \div 12)] \div 27$ = 3.86 C.Y.

Sta. 62+50 to Sta. 63+00
$[(50' \times \frac{20' + 22'}{2}) \times 0.050'$ Avg. Depth$] \div 27$ = 1.94 C.Y.

Pavement Widening

Sta. 42+50 to Sta. 49+26.43 (Feathering)
$[(676.43' \times 4') \times \frac{1.25" + 0"}{24}] \div 27$ = 5.22 C.Y.

Sta. 58+00 to Sta. 62+00 (Feathering)
$[(400' \times 4') \times \frac{1.25" + 0"}{24}] \div 27$ = 3.09 C.Y.

Sta. 62+00 to Sta. 62+50 (Feathering)
$[(50' \times \frac{2' + 4'}{2}) \times \frac{1.25" + 0"}{24}] \div 27$ = 0.29 C.Y.

C.R. 26

Sta. 93+50 to Sta. 93+75 (Feathering)
$[(10' \times 20' \times \frac{1.25" + 0"}{24}) + (15' \times 20' \times 1.25 \div 12)] \div 27$ = 1.54 C.Y.

Sta. 93+75 to Sta. 94+75
$[(100' \times \frac{20' + 24'}{2}) \times 1.25 \div 12] \div 27$ = 8.49 C.Y.

Sta. 94+75 to Sta. 100+00
$[(525' \times 24') \times 1.25 \div 12] \div 27$ = 48.61 C.Y.

Orient Drive

Sta. 6+00 to Sta. 6+50
$[(50' \times \frac{19.2' + 24'}{2}) \times 1.25 \div 12] \div 27$ = 4.17 C.Y.

Sta. 6+50 to Sta. 9+38.02
$[(288.02' \times 24') \times 1.25 \div 12] \div 27$ = 26.67 C.Y.

Sta. 9+38.02 to Sta. 9+88.02
(Area by Planimeter)
$(2262.8$ S.F. $\times 1.25 \div 12) \div 27$ = 8.73 C.Y.

Item 404 Total 263.08 C.Y.

Item 402 - Asphalt Concrete
S.R. 762

Sta. 42+00 to Sta. 42+50 (Feathering)
$(10' \times 22' \times \frac{0.5"}{24}) \div 27$ = 0.17 C.Y.

Sta. 42+50 to Sta. 43+50
$[(100' \times \frac{22' + 24'}{2}) \times 1.75 \div 12] \div 27$ = 12.42 C.Y.

Sta. 43+50 to Sta. 50+00
$[(650' \times 24') \times 1.75 \div 12] \div 27$ = 84.26 C.Y.

Sta. 50+12.10 to Sta. 50+59
(Area by Planimeter)
$(3150$ S.F. $\times 1.75 \div 12) \div 27$ = 17.01 C.Y.

Sta. 54+77.97 to Sta. 61+00
$[(622.03' \times 24') \times 1.75 \div 12] \div 27$ = 80.63 C.Y.

Sta. 61+00 to Sta. 62+00
$[(100' \times \frac{24' + 20'}{2}) \times 1.75 \div 12] \div 27$ = 11.88 C.Y.

Pavement Widening

Sta. 42+00 to Sta. 42+50
$[(50' \times \frac{0' + 4'}{2}) \times 1.75 \div 12] \div 27$ = 0.54 C.Y.

Sta. 42+50 to Sta. 43+50
$[(100' \times \frac{4' + 8'}{2}) \times 1.75 \div 12] \div 27$ = 3.24 C.Y.

Sta. 43+50 to Sta. 48+76.43
$[(526.43' \times 8') \times 1.75 \div 12] \div 27$ = 22.75 C.Y.

Sta. 48+76.43 to Sta. 49+26.43
$[(50' \times \frac{8' + 4'}{2}) \times 1.75 \div 12] \div 27$ = 1.62 C.Y.

Sta. 58+00 to Sta. 62+00
$[(400' \times 4') \times 1.75 \div 12] \div 27$ = 8.64 C.Y.

Sta. 62+00 to Sta. 63+00
$[(100' \times \frac{4' + 0'}{2}) \times 1.75 \div 12] \div 27$ = 1.08 C.Y.

C.R. 26

Sta. 93+50 to Sta. 93+75 (Feathering)
$(15' \times 20' \times \frac{1.8"}{24}) \div 27$ = 0.83 C.Y.

Sta. 93+75 to Sta. 94+75
$[(100' \times \frac{20' + 24'}{2}) \times 1.75 \div 12] \div 27$ = 11.88 C.Y.

Sta. 94+75 to Sta. 100+00
$[(525' \times 24') \times 1.75 \div 12] \div 27$ = 68.06 C.Y.

Orient Drive

Sta. 6+00 to Sta. 6+50
$[(50' \times \frac{19.2' + 24'}{2}) \times 1.75 \div 12] \div 27$ = 5.83 C.Y.

Sta. 6+50 to Sta. 9+38.02
$[(288.02' \times 24') \times 1.75 \div 12] \div 27$ = 37.34 C.Y.

Sta. 9+38.02 to Sta. 9+88.02
(Area by Planimeter)
$(2262.8$ S.F. $\times 1.75 \div 12) \div 27$ = 12.22 C.Y.

Item 402 Total 380.40 C.Y.

Item 301 - Bituminous Aggregate Base
S.R. 762

Sta. 42+00 to Sta. 42+50
$[(50' \times \frac{0' + 4'}{2}) \times 6" \div 12] \div 27$ = 1.85 C.Y.

Sta. 42+50 to Sta. 43+50
$[(100' \times \frac{26.5' + 32.5'}{2}) \times 6" \div 12] \div 27$
Less Salvage of <27.5 C.Y.> = 27.13 C.Y.

Sta. 43+50 to Sta. 48+76.43
$[(526.43' \times 32.5') \times 6" \div 12] \div 27$
Less Salvage of <15.1 C.Y.> = 301.73 C.Y.

Sta. 48+76.43 to Sta. 50+00
$[(123.57' \times 24.5') \times 6" \div 12] \div 27$ = 56.06 C.Y.

Sta. 50+00 to Sta. 99+45.63 (C.R. 26)
$[(54.37' \times 24.5') \times 6" \div 12] \div 27$ = 24.67 C.Y.

Sta. 50+12.10 to Sta. 50+59
(Area by Planimeter)
$(3469.3$ S.F. $\times 6" \div 12) \div 27$ = 64.25 C.Y.

Sta. 54+77.97 to Sta. 55+27.35
$[(49.38' \times 25') \times 6" \div 12] \div 27$ = 22.86 C.Y.

Sta. 55+27.35 to Sta. 56+50.77
$[(123.42' \times 24.5') \times 6" \div 12] \div 27$ = 56.00 C.Y.

Sta. 56+50.77 to Sta. 58+00
$[(149.23' \times 25') \times 6" \div 12] \div 27$ = 69.09 C.Y.

Sta. 58+00 to Sta. 61+00
$[(300' \times 28.5') \times 6" \div 12] \div 27$ = 158.33 C.Y.

Sta. 61+00 to Sta. 62+00
$[(100' \times \frac{28.5' + 24.5'}{2}) \times 6" \div 12] \div 27$ = 49.07 C.Y.

Sta. 62+00 to Sta. 63+00
$[(100' \times \frac{4' + 0'}{2}) \times 6" \div 12] \div 27$ = 3.70 C.Y.

C.R. 26

Sta. 93+75 to Sta. 94+75
$[(100' \times \frac{21' + 25'}{2}) \times 5" \div 12] \div 27$ = 35.49 C.Y.

Sta. 94+75 to Sta. 99+45.63
$[(470.63' \times 25') \times 5" \div 12] \div 27$ = 181.57 C.Y.

Orient Drive

Sta. 6+00 to Sta. 6+50
$[(50' \times \frac{19.2' + 24'}{2}) \times 5" \div 12] \div 27$ = 16.67 C.Y.

Sta. 6+50 to Sta. 9+38.02
$[(288.02' \times 24') \times 5" \div 12] \div 27$ = 106.67 C.Y.

Sta. 9+38.02 to Sta. 9+88.02
(Area by Planimeter)
$(2291.1$ S.F. $\times 5" \div 12) \div 27$ = 35.36 C.Y.

Item 301 Total = 1210.50 C.Y.

Item 611 - Approach Slabs (T= 15")

$(25' \times 32') \div 9 = 88.89$ = 89 S.Y.

AS PER PLAN 831.3 S.F. $\div 9 = 92.36$ = 92 S.Y.

Item 304 - Aggregate Base (8")
S.R. 762

Sta. 49+26.43 to Sta. 50+68 Lt. = 55.4 L.F.
Sta. 42+50 to Sta. 50+00 Rt. = 750.0 L.F.
Sta. 54+85 to Sta. 58+00 Lt. = 315.0 L.F.
Sta. 54+71 to Sta. 55+53 Rt. = 83.9 L.F.
Sta. 56+25 to Sta. 62+00 Rt. = 576.3 L.F.

C.R. 26

Sta. 99+45.63 to Sta. 50+52 Rt. = 68.2 L.F.
Sta. 99+45.63 to Sta. 100+00 Lt. = 54.4 L.F.
Total Length = 1903.2 L.F.

(1903.2 L.F. $\times$ 2.46 S.F.) $\div 27$ = Item 304 Total = 173.4 C.Y.

Item 408 - Bituminous Prime Coat

From Item 304 = $(1903.2' \times 4') \div 9 \times 0.4$ Gal. = 338.3 Gal.

Item 409 - Seal Coat Bituminous Material

From Item 304 = $(1903.2' \times 4') \div 9 \times 0.3$ Gal. = 253.8 Gal.

Item 409 - Seal Coat Aggregate No. 8

From Item 304 = $(1903.2' \times 4') \div 9 \times 0.008$ C.Y. per S.Y. = 6.8 C.Y.

ITEM 203 - SUBGRADE COMPACTION
S.R. 762

Sta. 42+50 to Sta. 44+50
$(200' \times 20.2'$ Avg.$) \div 9$ = 448.89 S.Y.

Sta. 44+50 to Sta. 50+00
$(550' \times 24') \div 9$ = 1466.67 S.Y.

Sta. 50+12.10 to Sta. 50+59
(Area by Planimeter)
3150 S.F. $\div 9$ = 350.00 S.Y.

From Item 611 - Approach Slabs = 181.26 S.Y.

Sta. 54+77.97 to Sta. 58+00
$(322.03' \times 24') \div 9$ = 858.75 S.Y.

Sta. 58+00 to Sta. 59+50
$(150' \times 28') \div 9$ = 466.67 S.Y.

Sta. 59+50 to Sta. 61+67
$(217' \times 15.6'$ Avg.$) \div 9$ = 376.13 S.Y.

C.R. 26
Sta. 93+75 to Sta. 94+75
$(100' \times \frac{20' + 24'}{2}) \div 9$ = 244.44 S.Y.

Sta. 94+75 to Sta. 100+00
$(525' \times 24') \div 9$ = 1400.00 S.Y.

Orient Drive
Sta. 6+50 to Sta. 9+38.02
$(288.02' \times 24') \div 9$ = 768.05 S.Y.

Sta. 9+38.02 to Sta. 9+88.02
(Area by Planimeter)
2262.8 S.F. $\div 9$ = 251.42 S.Y.

Item 203 - Subgrade Compaction Total 6812.28 S.Y.

GENERAL SUMMARY

Revised 6/10/87 PAJ

CALC BY RES DATE 5/86 | CHKD BY HEC DATE 5/86 | PIC -762-0.19 | OHIO | FHWA REGION 5 | 12 / 65

ITEM	FROM SHEET NUMBER											ITEM	TOTAL	UNIT	DESCRIPTION
	5	10	11	13	14	15	27	32	40	41	60				
															ROADWAY
201		Lump										201	Lump		Clearing and Grubbing
663		Lump										663	Lump		Planting trees
202				Lump				Lump				202	Lump		Structures Removed
202								63				202	63	Lin. Ft.	Pipe Removed, 24" and under
202							54					202	54	Lin. Ft.	Pipe Removed, over 24"
202					463							202	463	Lin. Ft.	Guardrail Removed
202				1275	160	250	620	468				202	2773	Lin. Ft.	Fence Removed
202				40								202	40	Sq. Ft.	Walk Removed
203		5852										203	5852	Cu. Yd.	Excavation not including Embankment Construction
203		28751										203	28751	Cu. Yd.	Embankment
203			6812									203	6812	Sq. Yd.	Subgrade Compaction
410	300											410	300	Cu. Yd.	Traffic Compacted Surface, Type A or B
604											16	604	16	Each	Reference Monuments, Standard
614	0.56											614	0.56	Miles	Temporary Center lines, Class II
614	2											614	2	Each	Work Zone Marking Signs
606				350	587.5		525					606	1362.5	Lin. Ft.	Guardrail, Type 5
606				1	1		1					606	3	Each	Anchor Assembly, Standard Type A
606					1							606	1	Each	Anchor Assembly, Standard Type T
606					4							606	4	Each	Bridge Terminal Assembly, Standard Type B
608				128								608	128	Sq. Ft.	4" Concrete Walk
614	12.0											614	12.0	Lin. Ft.	Temporary Stop Lines, Class I
614	0.69											614	0.69	Mile	Temporary Centerlines, Class I
615	2197											615	2197	Sq. Yd.	Temporary Pavement, as per plan
615	Lump											615	Lump		Temporary Road
616	6											616	6	M. Gal.	Water
616	6											616	6	Ton	Calcium Chloride
															EROSION CONTROL
207		30										207	30	Each	Straw or Hay Bales
207		4000										207	4000	Sq. Yd.	Temporary Seeding and Mulching
207		220										207	220	Lin. Ft.	Temporary Slope Drains
207		110										207	110	Cu. Yd.	Temporary Benches, Dikes, Dams and Sediment Basins
601									76			601	76	Sq. Yd.	Riprap using 6" Reinforced Concrete Slab
601									69			601	69	Cu. Yd.	Rock Channel Protection, Type A with Filter
601								1		2		601	3	Cu. Yd.	Rock Channel Protection, Type C with Filter
601		9			565							601	574	Cu. Yd.	Rock Channel Protection, Type C without Filter
659		15										659	15	M. Sq. Ft.	Mowing
659		78										659	78	M. Gal.	Water
659		21,318										659	21,318	Sq. Yd.	Seeding and Mulching
659		1000										659	1000	Sq. Yd.	Repair Seeding and Mulching
659		2.0										659	2.0	Ton	Commercial Fertilizer
659		10.5										659	10.5	Ton	Agricultural Liming, as per plan
660				118	67		67					660	252	Sq. Yd.	Sodding
															DRAINAGE
602				0.2				0.2	9.2	0.7		602	10.3	Cu. Yd.	Concrete Masonry
603										136		603	136	Lin. Ft.	Conduit, Type A, 15" 706.02; or 18" 707.01
603									168			603	168	Lin. Ft.	Conduit, Type A, 78" 706.02; or 90" 707.02
603		100										603	100	Lin. Ft.	6" Conduit, Type B
603		100										603	100	Lin. Ft.	8" Conduit, Type B
603				98				23				603	121	Lin. Ft.	12" Conduit, Type B
603								41				603	41	Lin. Ft.	12" Conduit, Type C
603				55			44					603	99	Lin. Ft.	15" Conduit, Type D
603		100										603	100	Lin. Ft.	6" Conduit, Type E
603		100										603	100	Lin. Ft.	8" Conduit, Type E
603		100										603	100	Lin. Ft.	6" Conduit, Type F
603		100										603	100	Lin. Ft.	8" Conduit, Type F
604				1								604	1	Each	Catch Basin, Std. No. 2-28
604								2				604	2	Each	Catch Basin, Std. No. 3
605		948										605	948	Lin. Ft.	Aggregate Drains

ITEM	FROM SHEET NUMBER						ITEM	TOTAL	UNIT	DESCRIPTION
	5	10	11	32	39	13				
										PAVEMENT
301			1211				301	1211	Cu. Yd.	Bituminous Aggregate Base, AC-20
304			173		96		304	269	Cu. Yd.	Aggregate Base
402			380				402	380	Cu. Yd.	Asphalt Concrete, AC-20
404			263				404	263	Cu. Yd.	Asphalt Concrete, AC-20
404					27		404	27	Cu. Yd.	Asphalt Concrete, AC-20 (for Driveways)
408			338				408	338	Gal.	Bituminous Prime Coat
409			254				409	254	Gal.	Seal Coat Bituminous Material
409			7				409	7	Cu. Yd.	Seal Coat Cover Aggregate, No. 8
609				776			609	776	Lin. Ft.	Curb, Standard, type 6
611			89				611	89	Sq. Yd.	Reinforced Concrete Approach Slab (T=15")
611			92				611	92	Sq. Yd.	Reinforced Concrete Approach Slab, modified as per plan (T=15")
622	75						622	75	Lin. Ft.	Temporary Concrete Barrier
614	Lump						614	Lump		Maintaining Traffic
619		Lump					619	Lump		Field Office
623							623	Lump		Construction Layout Stakes
624							624	Lump		Mobilization

For structures over 20' span - For quantities - See sheet 59

For traffic control quantities - See sheet 42

BUILDING REMOVAL

202	Lump	202	Lump	Parcel No. 5 WD-T, Removal of one frame Barn, one frame shed, one frame privy, one wood light pole with electric
202	Lump	202	Lump	Parcel No. 6 AT, Removal of one panel sign on 2 wood posts

RECEIVED
JUN 27 1986

CALC BY R.E.S. DATE 5/86
CHK'D BY H.E.C. DATE 5/86

PIC - 762 - 0.19

OHIO
FHWA REGION 5

13
65

N41BC in PP#P4-66 | N41BC in Guy Pole | N41BC in OBT#10 | R.R.S. | P.C.C. Sta. 42+56.32

R N41BC in PP#P4-69 | ½" Rebar | P.I. | Conc. Cor. 3" above grd. | Conc. Cor. 4" above grd. | Mill Bldg. | P.I. Sta. 44+72.76

Punch holes in metal fence | RR's | N41BC in P#1 13 | P.T. Sta. 46+84.15

N41BC in PP | N41BC in P#1 15 | RR's | S.R. 762, Sta. 50+00 = C.R. 28, Sta. 100+00

Z

Begin Work Sta. 42+00

Begin Project Sta. 43+50 SLM = 0.19 BR5-830(31)

Miriam Briner 43+50 / W=12' Gravel Drive

100' Taper | 50' Feathering | Ex. 15" C.M.P. | Ex. R/W | Temp. R/W | R/W | Ex. 12" C.M.P. | Ex. 6" C.M.P. | Ex. 12" C.M.P. | Ex. R/W

Frame Bldg. (Old Mill) | Gravel Dr. | Portable Shed | Frame Barn | Barbed Wire Fence | Wood Post Fence | Work Limits | Ex. R/W | R/W | Barbed Wire Fence

Big Darby Creek

℄ Sta. 50+00.00 ℄S.R. 762 = ℄ Sta. 100+00.00 ℄C.R. 28

David E. and Roberta C. Gochenour

Begin Taper Sta. 48+76.42, 12' Lt. | Ex. O.B.T. Boxes | R=60' | N89°21'41"E | Sta. 50+00 = Sta. 100+00 | Match Line

Mailbox | Dc=5° | ℄S.R. 762 | 12" Maple | 25R | 56°51'41"W | 82°30'00" | Ex. R/W | Work Limits | R/W

Block Wall Steps | Gravel Dr. | Conc. Metal Barn | 1 Story Fr. Res. | Block Gar. | Temp. R/W | Sidewalk | Gravel Dr. | P.T. Sta. 46+84.15 | 9' Sod | End Stone Sta. 49+26.42, 20' Lt. | Gravel Dr.

B.M. Elev. 779.40

Ex. R/W | S 51°43'49" E | 19.32' | Sta. 42+00

David E. Gochenour

Existing S.R. 762

Rayburn T. and Carole E. Ratcliff

1 Story Brick | Conc. Block | Conc. Block | 1 Story Conc. Blk.

For Culvert Details See Sheet 40

Note: (1P) For Drive Pavement Quantities and Details, See Sheet 39

1SW 4' × 32' = 128 S.F.

CURVE DATA

P.I. Sta. 44+72.76
Dc = 5°00'00"
Δ = 21°23'30"
R = 1145.92'
T = 216.44'
L = 427.83'
E = 20.26'

State of Ohio (Dept. of Mental Retardation)
Vactual = 60 m.p.h.

Bench Mark; Elev. 779.40
Ex. M.S. in P.P. # P4-66
S.R. 762
Sta. 41+93.7; 24.3' Rt.

TYPICAL SECTION ADJOINING PAVEMENT (S.R. 762 Sta. 42+00)

21.6' | 5:1 | Var. | A | B

LEGEND — (A) 6" Asphalt Concrete; (B) 8" Aggregate Base

Road Profile

	Left Edge	Profile Grade	Right Edge
Sta. 42+00 Meet Existing	778.44	778.34	778.24
	778.51	778.31	778.20
	778.64	778.32	778.00
	778.80	778.36	777.92
	779.01	778.44	777.87
	779.24	778.55	777.86
	779.50	778.69	777.88
	779.77	778.87	777.97
	780.04	779.08	778.12
	780.31	779.31	778.31
	780.54	779.54	778.54
	780.77	779.77	778.77
	781.00	780.00	779.00
	781.20	780.23	779.26
	781.36	780.46	779.56
	781.49	780.69	779.89
	781.59	780.92	780.25
	781.70	781.15	780.60
	781.80	781.38	780.86
	781.91	781.61	781.31
PVC Sta. 42+50	782.01	781.84	781.62
	782.11	782.06	781.87
	782.21	782.25	782.06
	782.31	782.43	782.24
	782.41	782.58	782.39
	782.51	782.70	782.51
PVT Sta. 44+50		782.81	
		782.89	
PVC Sta. 47+50		782.94	
		782.98	
P.V.T. Sta. 50+00		782.99	

50' Feathering | 200' V.C. K=182 | P.V.I. Sta. 43+50, Elev. 778.16 | SSD = 477' (57 mph)

250' V.C. K=272 | P.V.I. Sta. 48+75, Elev. 782.99 | SSD = 450' (55 mph) | 1SD = 1806' (>70 mph) | PSD 1806' (50 mph)

-0.18% | 0.92% | 0.92% | 0.00%

98' 12" conduit, Type B @ 0.40%

Sta. 44+85.28' Rt. ℄ Std. No. 2-28 C.B. ℄ 12" IE Grate = 776.50 ℄ 12" IE S = 774.50

Sta. 45+85.28' Rt. ℄ Std. No. 2-28 C.B. ℄ 12" IE Grate = 776.50 ℄ 12" IE S = 774.10

12" Outlet w/ HW-44 or HW-45

780 | 775 | 770

40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50

779.77 | 779.10 (+75) | 778.67 | 778.38 (+125) | 778.20 | 778.13 (+75) | 778.15 | 778.15 | 778.04 | 777.82 | 777.35 | 777.01 | 776.93 | 776.71 | 776.51 (+84.15) | 776.33 | 776.02 | 775.71 | 775.34 | 775.34 | 776.00 | 777.32

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 Structural Building Removed Each	202 Fence Removed Lump	202 Walk Removed Lump	202 Concrete Masonry Lump	608 Concrete Slope Walk Lump	609 Type B 12" Lin. Ft.	609 Type D 15" Lin. Ft.	SEE SHEET NO.
1SD	42+22 to 42+50	RT.								16
2SD	45+70 to 45+90	RT.								18
3SD	48+90 to 49+76	RT.								19
1D	44+85 to 45+85	RT.						98	55	13
2D	46+78 to 47+33	RT.								18
1R	42+04 to 43+72	RT.		185	40					
2R	43+73 to 44+38	RT.								
3R	45+47 to 45+72	LT.								
4R	47+15 to 50+00	RT.		Lump	Lump	0.21	128			
5R	43+88 to 44+40	LT.								
6R	44+68 to 45+48	LT.								
7R	45+80 to 50+00	RT.								
8R	46+35 to 47+00	RT.								
1SW	44+11 to 44+43	RT.								
1GR	48+51.6 to 49+24.01	LT.								
TOTALS			Lump	Lump	1275	40	0.21	128	98	55

Sta. 42+50 to Sta. 50+00

REV. BY R.D.M. DATE 5/87
CALC BY R.F.S. DATE 5/86
CHK'D BY H.E.C. DATE 5/86

PIC - 762 - 0.19

OHIO
FHWA REGION 5

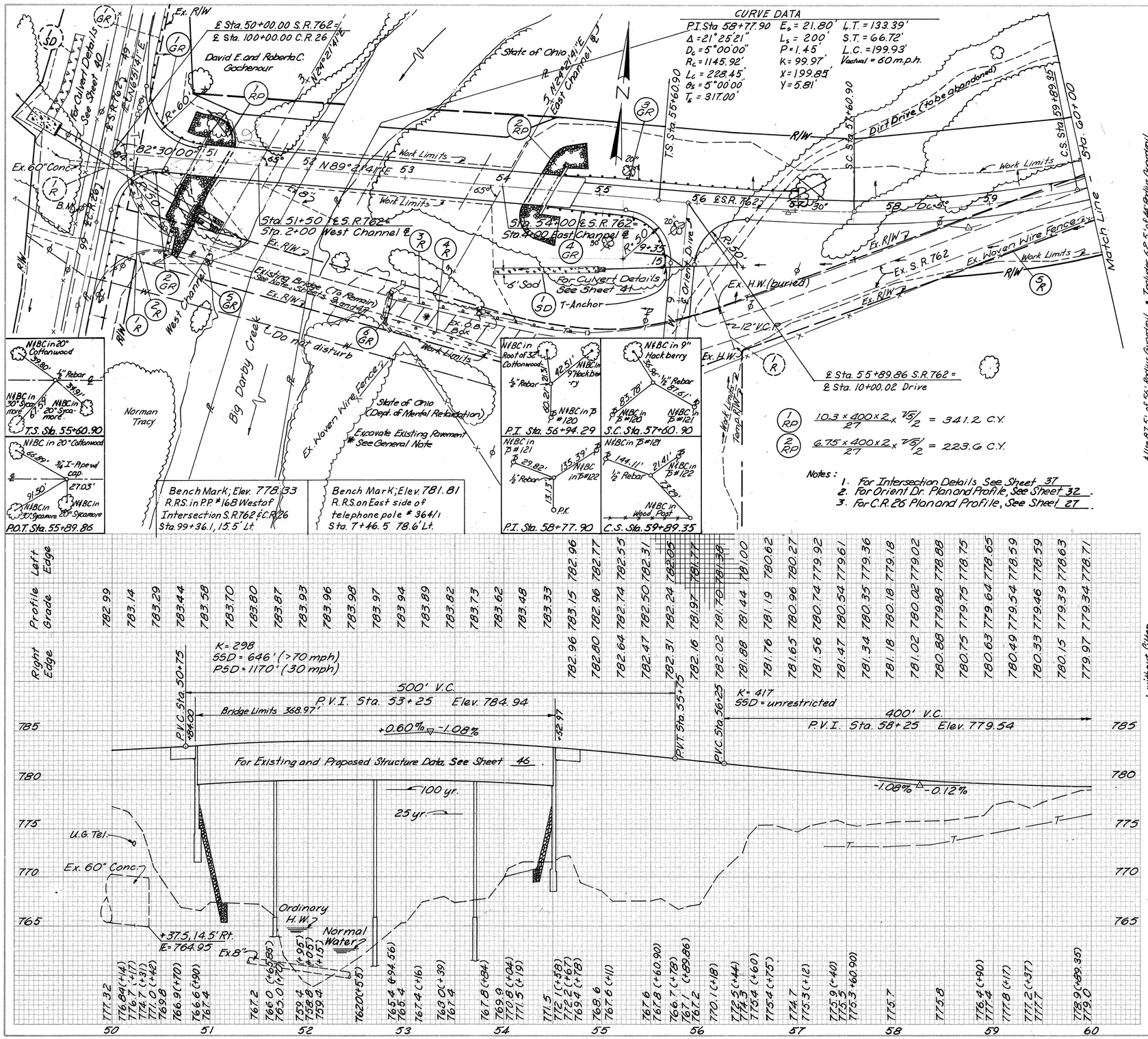
14
65

SEE SHEET NO. 14 14 23

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	202 Guard-rail Removed Lin. Ft.	202 Fence Removed Lin. Ft.	606 Guard Anchor Assembly Type 5 Each	606 Anchor Bridge Terminal Assembly Type A Each	606 Anchor Assembly Std. Type T Each	G01 Rock Channel Protection Type A Cu. Yd.	G20 Seeding Sq. Yd.	
1RP	50+57 Rt. to 51+25 Lt.	Rt+Lt						341.2		
2RP	54+20 Lt. to 54+65 Lt.	Rt+Lt						223.6		
1SD	54+00 to 55+00	Rt.							GT	
1GR	30+33.41 to 60+88.75	Lt.								
2GR	30+11.10 to 30+13.21	Rt.								
3GR	54+03.75 to 57+01.25	Lt.								
4GR	54+48.21 to 55+29.46	Rt.								
5GR	30+65	Rt.								
6GR	52+98	Rt.								
1R	30+20 to 30+70	Rt.	75							
2R	50+10 to 50+65	Rt.	63							
3R	52+94 to 54+90	Rt.	200							
4R	52+90 to 54+12	Rt.	125							
5R	58+52 to 60+00	Rt.		160						
TOTALS			463	160	1	4	1	587.5	GT	5648

& without filter



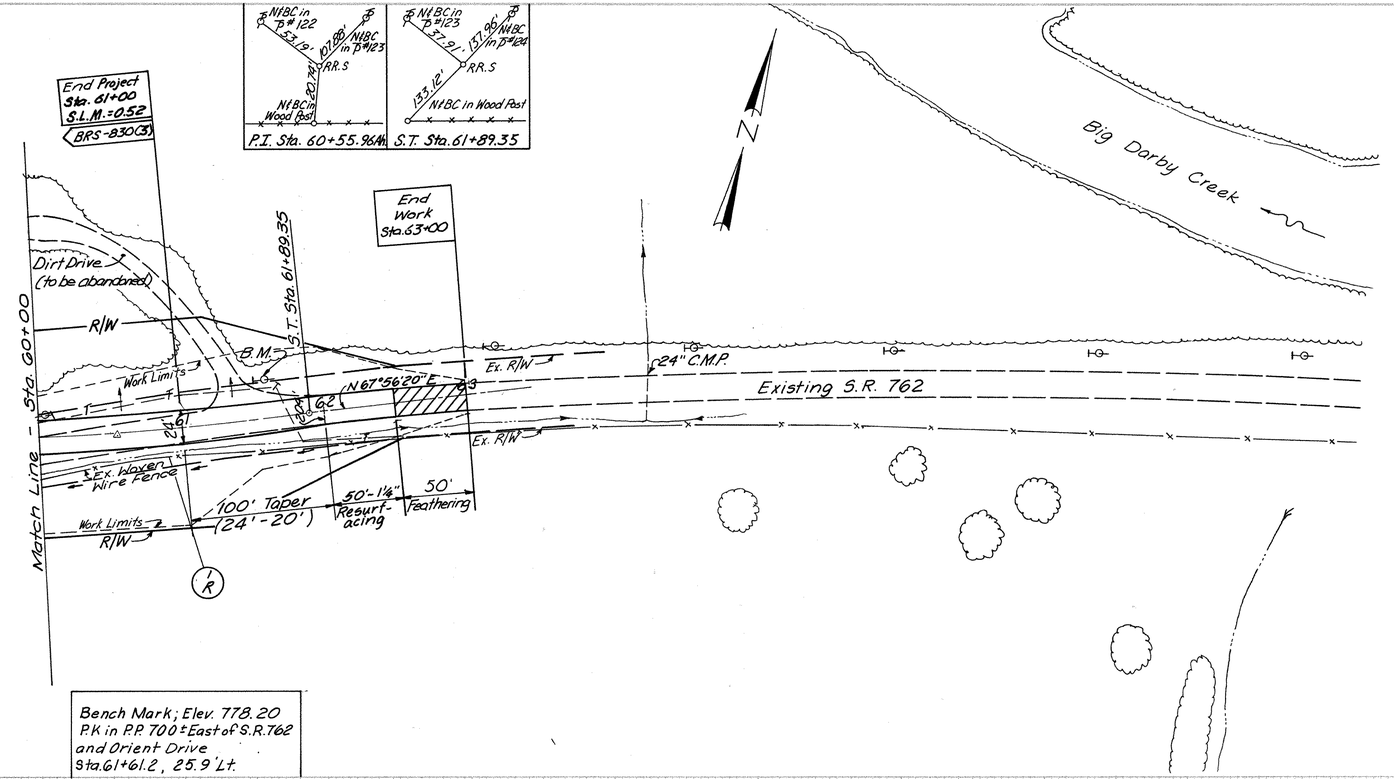
Sta. 50+00 to Sta. 60+00

CALC BY RES DATE 5/86
CHKD BY H.E.C DATE 5/86

PIC-762-0.19

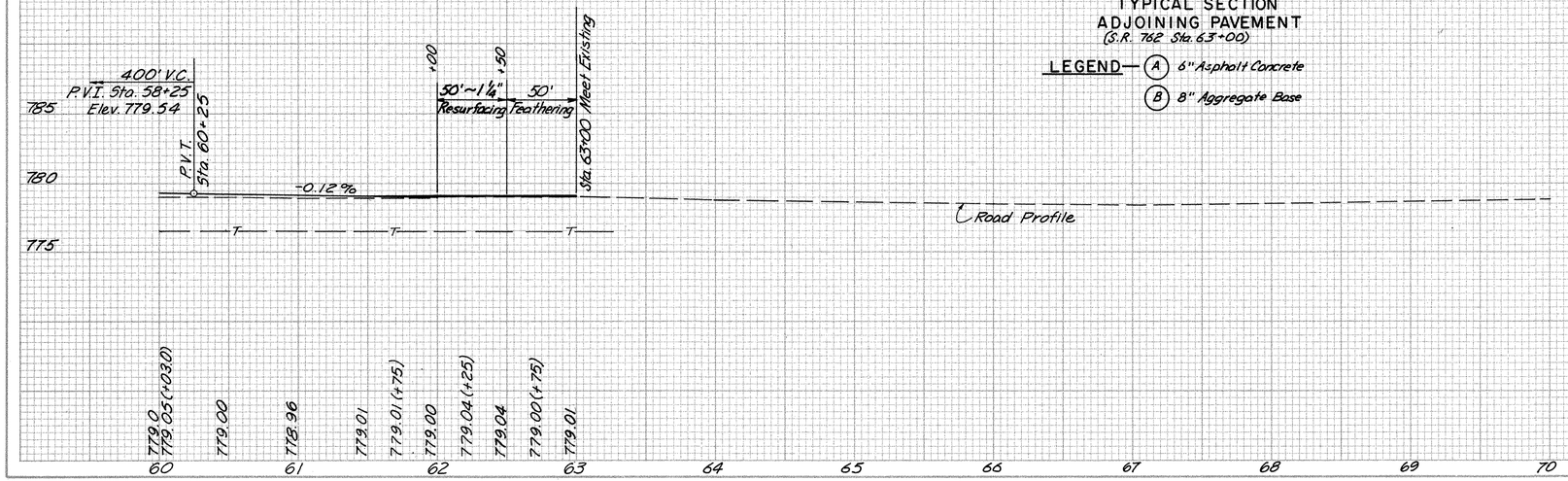
OHIO FHWA REGION 5

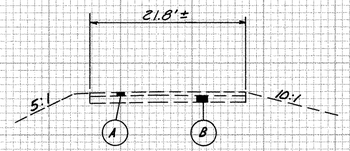
15 / 65



Bench Mark; Elev. 778.20
P.K in P.P. 700' East of S.R. 762
and Orient Drive
Sta. 61+61.2, 25.9' Lt.

Right Edge	779.97	779.80	779.64	779.48	779.33	779.19	779.10	779.01	778.98													
Profile Grade	779.34	779.30	779.27	779.24	779.21	779.18	779.15	779.12	779.10													
Left Edge	778.71	778.80	778.87	778.91	778.93	778.94	778.96	778.97	778.99													
	779.0	779.05 (+03.0)	779.00		778.96		779.01	779.01 (+75)	779.00	779.04 (+25)	779.04	779.00 (+75)	779.01									
	60				61				62				63	64	65	66	67	68	69	70		





TYPICAL SECTION
ADJOINING PAVEMENT
(S.R. 762 Sta. 63+00)

LEGEND— (A) 6" Asphalt Concrete
(B) 8" Aggregate Base

ESTIMATED QUANTITIES

SEE SHEET NO.

REF. NO.	STATION TO STATION	SIDE	202 Fence Removed Lin. Ft.
1R	60+00 to 62+50	Rt.	250
			250
		TOTALS	

Sta. 60+00 to Sta. 66+00

SEEDING	
END WIDTH	SQ. YDS
60	
344	
64	
356	
64	

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

CALC BY RES DATE 5/86
CHKD BY ppt DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

16
65

END AREA		VOLUME	
CUT	FILL	CUT	FILL
28	47		
		47	80
23	39		
		18	22
9	0		
		3	0
0	0		

780
775
770

℄ Temp. Rd.
Salvage Area
4:1
F=1
C=1
2'
6:1
4:1
778.32
43+00
778.15
776.15

℄ Temp. Rd.
4:1
2'
4:1
3:1
778.34
42+50 (End Feathering)
778.20
775.91

Sta. 42+50
End 6' sod

(1/SD) 28'x6'÷9=18.7 S.Y.

Sta. 42+20

42+20± Begin Slope Grading
1.7'
℄ Temp. Rd.
777.6 Ex.
Ex. 15"
5:1
Sta. 41+85.3 Rt. 23.3'
Ex. 12" C.M.P.
Outlet It=777.30
42+21.9 Rt. 21' (Begin 6' sod)
Ex. It=774.87

Ahead Only
Ex. 15" Conc.
42+00
778.67
Meet Existing (Begin Feathering)
Begin Work
42+17.6 Lt. 21.5'
Ex. IE 773.25

℄ Ex. S.R. 762
785
780
775
770
Sta. 41+56.3 Rt. 24.8'
Ex. 12" C.M.P.
Inlet It=778.07
41+50
779.77

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

Sta. 41+50 to Sta. 43+00

CALC BY RES DATE 5/86
CHKD BY GDL DATE 5/86

PIC-762-0.19

OHIO | FHWA REGION 5 | 17 / 65

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
64	353	6	134	18	222
				(-)2	(+)13
63	331	13	106	25	159
					(+)48
				(-)5	
56	311	14	60	48	87
56		38	34	59	84
59	319	26	57	50	96
	331				

780.00
45+50
777.01

779.73
45+21
777.11
Drive Right (Loop)

779.54
45+00
777.35

779.31
44+75
777.62
Drive Left

779.08
44+50
777.82
Drive Right
Skew, Right Forward 9°30'

778.69
44+00
778.04

778.44
43+50
778.15

43+50
Field Dr. Lt.

℄ Temp. Rd.

Ex. Metal Barn 45+65

Prop. 12"

776.67

Prop. 12"

776.71

Grading at Sta. 44+85

For Details, see sheet 13

776.87

Ex. House Sta. 44+30±

Ex. Block Wall to be removed

776.63

776.39

Salvage Area

Add for Drive Sta. 45+21 Rt.

Add for Drive Sta. 44+75 Lt.

Add for Drive Sta. 44+50 Rt.

Add Per Drive 43+50 Lt.

Sta. 43+50 to Sta. 45+50

SEEDING	
END WIDTH	SQ YDS
	93
	308
	90
	494
	88
	464
	79
	397

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

CALC BY RES DATE 5/86
CHKD BY DT DATE 5/86

PIC-762-0.19

OHIO | FHWA REGION 5 | 18 / 65

END AREA		VOLUME	
CUT	FILL	CUT	FILL
	64		328
		140	562
	87		279
		153	497
	78		258
		126	438
	58		215
		59	323
		(-)107	(+)39

780 / 775 / 770

2:1 1.5:1 ℄ Temp. Rd. 4:1 4:1 C=30 3:1

781.84
47+50
776.02

773.44

Mast. Exist. 66'

℄ Dr. @ 47+05 Rt.

4:1 4:1

55'-15" Conduit Type D @ 0.40%

Sta. 46+78 Rt. 47'
15" Inlet E = 773.74

Sta. 47+33 Rt. 51'
15" Outlet E = 773.52

6.0%

Prop. 15"

781.43
47+05 Drive Right
776.27 Skew Right Forward 5°30'

Add for Dr. Sta. 47+05

780 / 775

2:1 Drive Rt. 2 C=20 Prop. 15"

781.38
47+00
776.33

2.5:1 4:1 3:1 C=13 3:1

780.92
46+50
776.71

773.84

3:1 ℄ Temp. Rd. 1.5:1 4:1 C=8 3:1 3:1

780.46
46+00
776.93

774.04

End 6' Sod Sta. 45+90

4:1 8:1 4:1 3:1

776.45
Ditch @ 45+75 28' Rt.

Begin 6' Sod, Sta. 45+70

Sta. 45+85, Prop. 12" Outlet 40.4' Rt ℄

2/3D 20' x 6' ÷ 9 = 13.3 S.Y.

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

Sta. 46+00 to Sta. 47+50

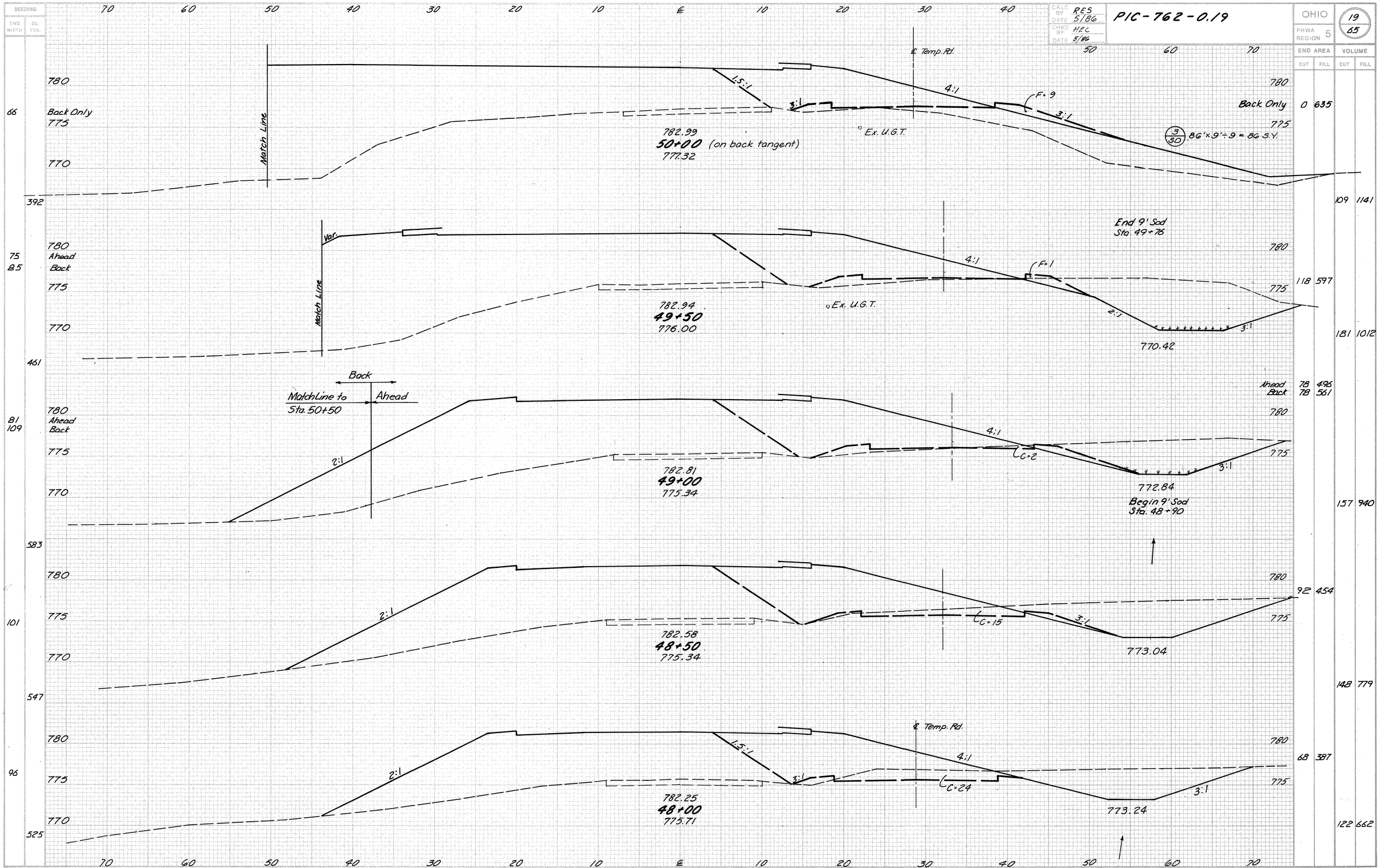
CALC BY RES DATE 5/86
CHKD BY HEC DATE 5/86

PIC-762-0.19

OHIO | FHWA REGION 5 | 19 / 65

SEEDING — END WIDTH | SQ. YDS.

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Back Only	0	635		
			109	1141
	118	597		
			181	1012
Ahead	78	496		
Back	78	561		
			157	940
	92	454		
			148	779
	68	397		
			122	662



Sta. 48+00 to Sta. 50+00

SEEDING	
END WIDTH	SQ. YDS.
97	
105	

CALC BY RES DATE 5/86
CHKD BY HEC DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

20
65

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	1437		
0	1978		
0	1751		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

785 780 775 770 765

Proposed Abutment

2:1 Normal

Back Only

Proposed Abutment

Back Only C.R. 26

783.49
50+83.5
766.7

Skewed 25° Lt. Fwd.
(along back wall)

376

Match to Sta. 49+00 Ahead Only

Var.

775

100 90 80 70 770

a a

2:1 normal

Ahead Only C.R. 26

Var.

Ahead Only

Ex. U.G.T.

Ahead Only

783.29
50+50
769.8

Sta. 50+50 to Sta. 50+83.5

SEEDING	
END WIDTH	SQ. YDS.

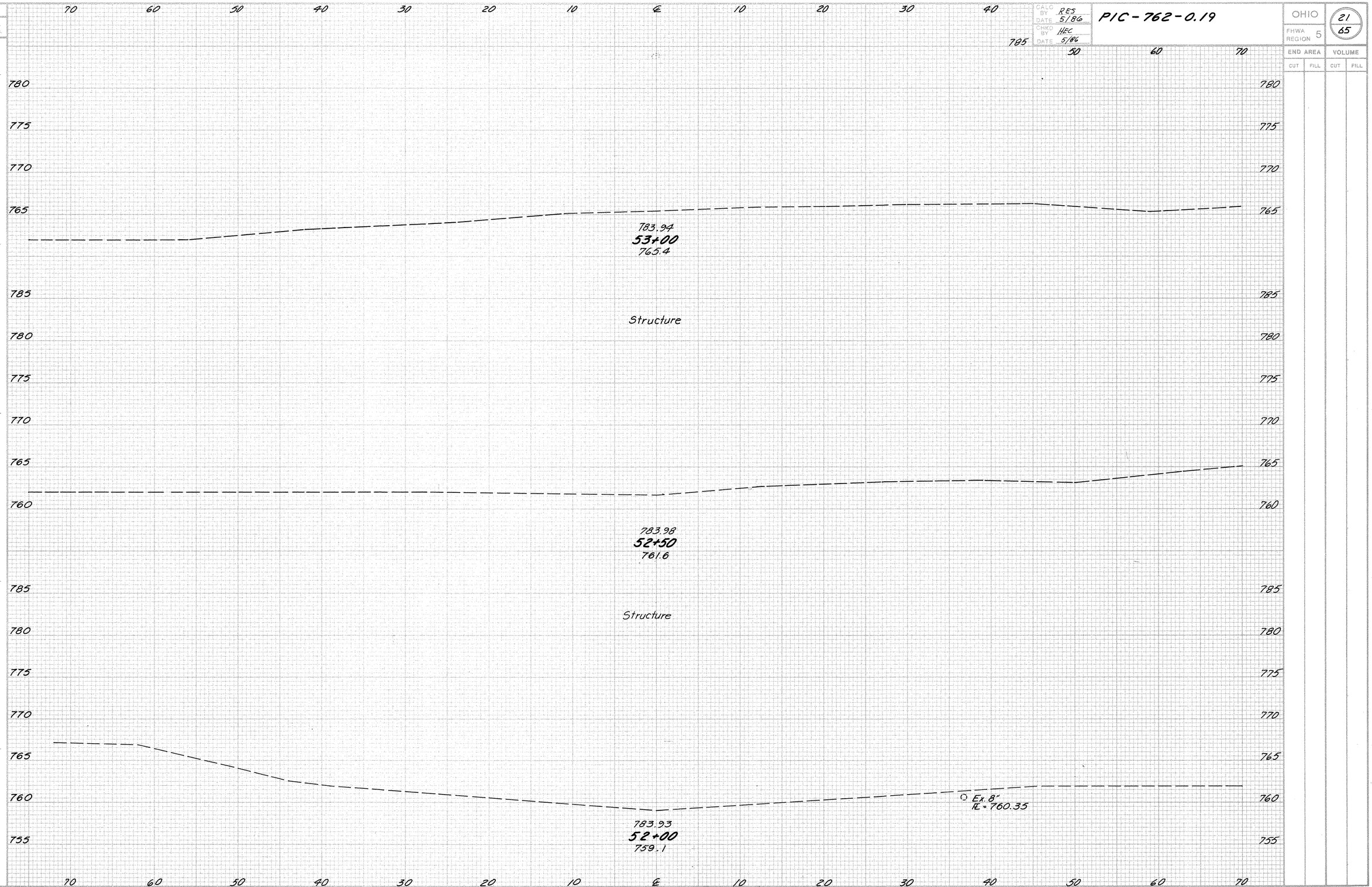
CALC BY RES DATE 5/86
CHKD BY HEC DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

21
65

END AREA		VOLUME	
CUT	FILL	CUT	FILL



Sta. 52+00 to Sta. 53+00

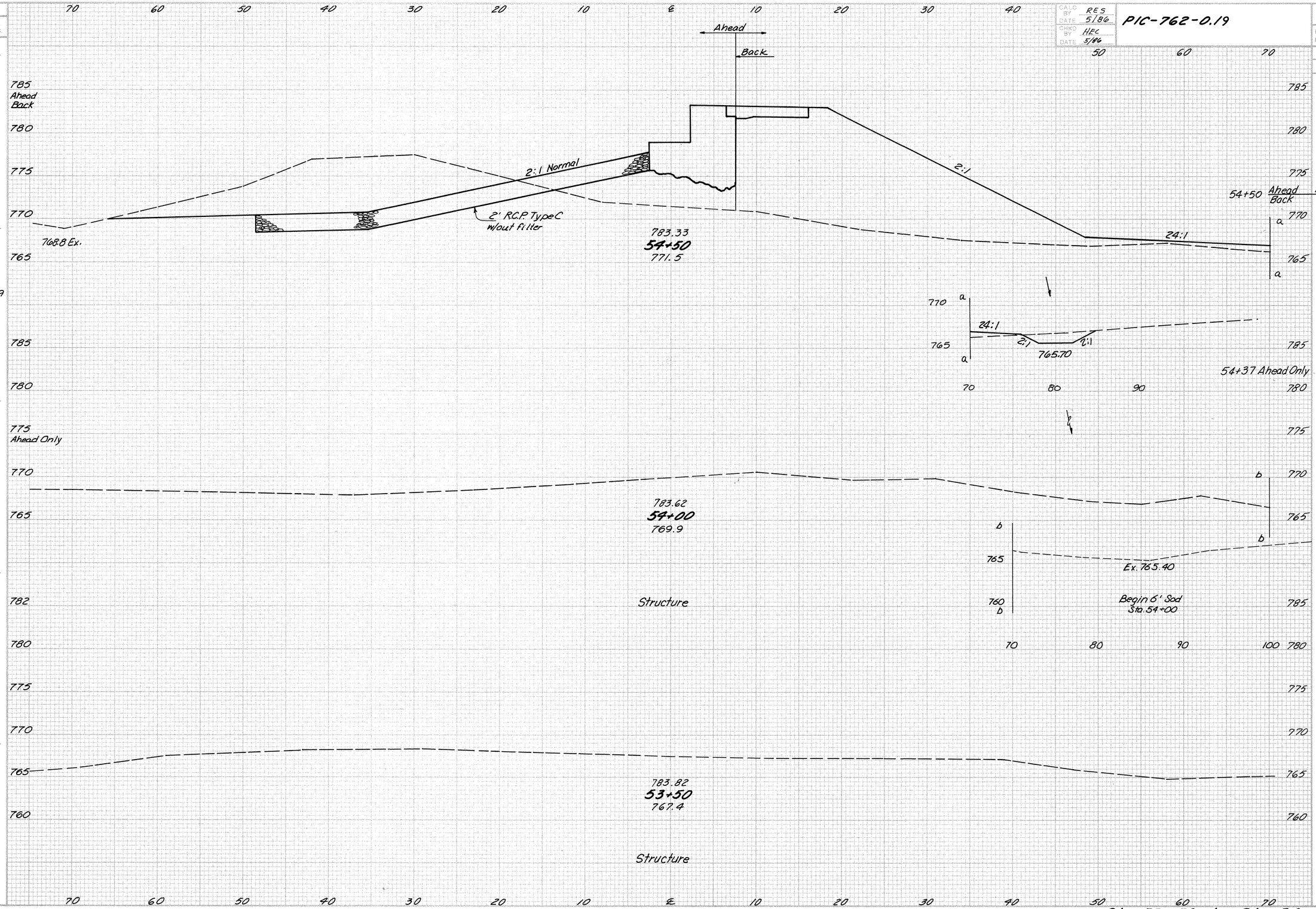
CALC BY RES DATE 5/86
CHKD BY HEC DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

22
65

SEEDING		END AREA		VOLUME	
END WIDTH	SQ YDS.	CUT	FILL	CUT	FILL
98	139			2	90
24					
26					



Sta. 53+50 to Sta. 54+50

SEEDING END WIDTH	SEEDING SQ. YDS.
92	517
94	650
140	661

CALC BY RES DATE 5/86
CHKD BY DPL DATE 5/86

PIC-762-0.19

OHIO FHWA REGION 5

23 / 65

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	1059		
		0	2112
0	1222		
		26	2063
28	1005		
		193	1397

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

S.R. 762 Orient Drive

785 780 775 770 765

3:1 24:1 Prop. 15"

781.97
56+00
767.2

S.R. 762 Ahead Orient Dr.

Var.

24:1 Prop. 15"

782.50
55+50
767.6

770 a 765 a

Prop. 15"

24:1 2:1 2:1

766.00

70 80

See Sheet 41 for Details

3:1 48:1

782.96
55+00
768.6

End 6' Sod
Sta. 55+00

1/SD 100' x 6' ÷ 9 = 66.7 S.Y.

3:1 24:1

Sta. 55+00 to Sta. 56+00

SEEDING	
END WIDTH	SQ. YDS.
84	508
99	619
124	747
145	
124	
97	525

CALC BY RES DATE 5/86
CHKD BY DL DATE 5/85

PIC-762-0.19

OHIO
FHWA REGION 5

24
65

END AREA		VOLUME	
CUT	FILL	CUT	FILL
88	153		
		164	324
89	197		
		149	426
72	263		
		122	527
60	306		
54	306		
		58	742
9	496		
		8	1440

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

780.88
58+50
775.8

780.18
58+00
775.7

780.54
57+50
775.5

780.96
57+00
774.7

781.44
56+50
774.3

6:1 4:1 3:1 24:1 Ex. U.G.T. 774.50

6:1 4:1 3:1 24:1 774.00

6:1 4:1 60:1 3:1 Ex. U.G.T. 773.50

b b 60:1 80 90 100

4:1 Ahead Back 3:1 773.00

a a 3:1 15:1 96:1 80 90 100 110 120

3:1 24:1 Ahead Back

S.R. 762 Back Orient Dr. 4:1

772.50 Sta. 56+46.5, 57.3' Rt. 770
Prop. 15" Inlet
See Sheet 41 for Details

Sta. 56+50 to Sta. 58+50

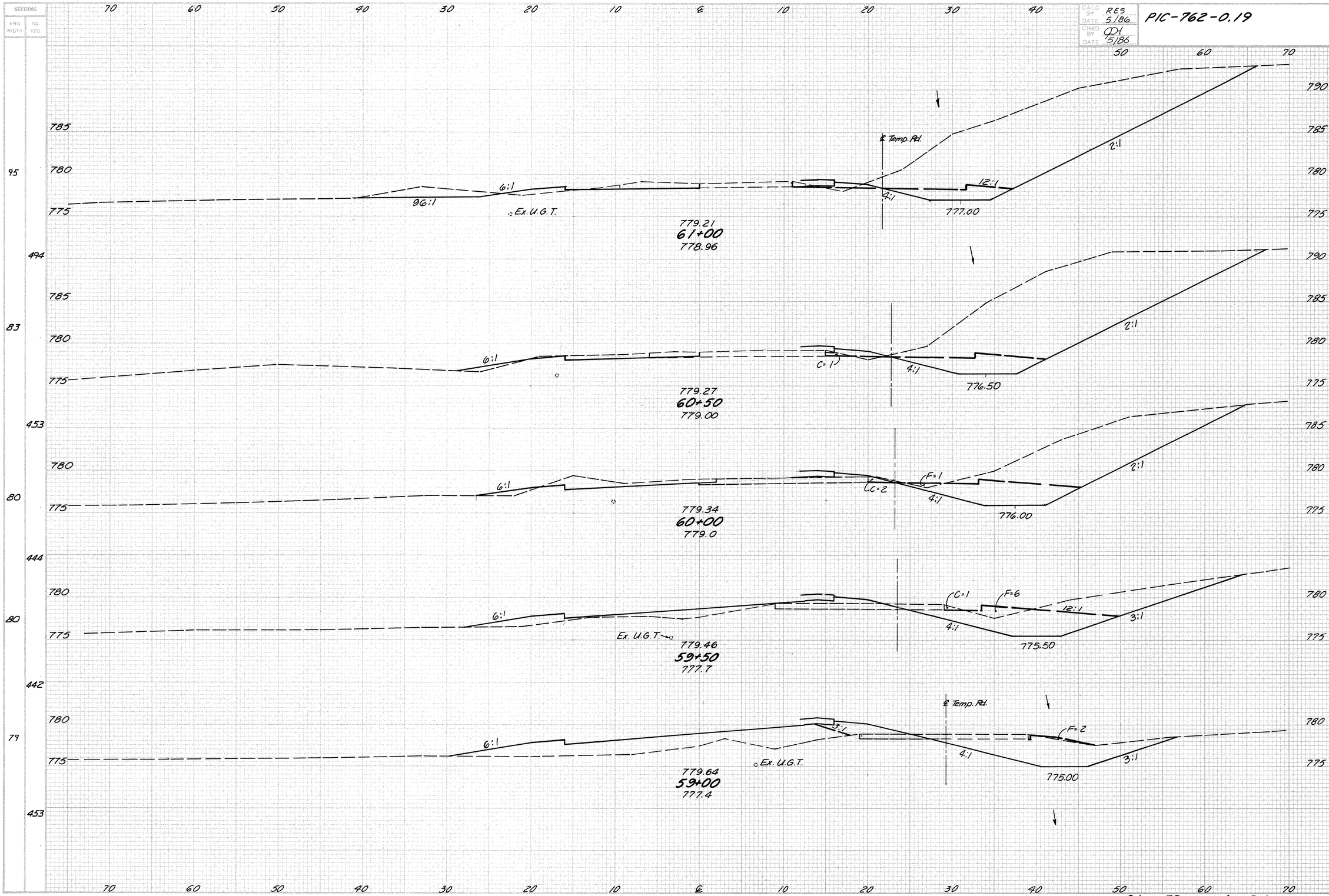
CALC BY RES DATE 5/86
CHKD BY DH DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

25
65

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
95	494	285	7	524	13
83	453	281	7	413	14
80	444	165	8	230	31
80	442	83	25	131	97
79	453	58	80	135	216



Sta. 59+00 to Sta. 61+00

SEEDING	
END WIDTH	SQ. YDS.
	34
	267
	62
	386
	77
	478

CALC BY RES DATE 5/86
CHKD BY [illegible] DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

26
65

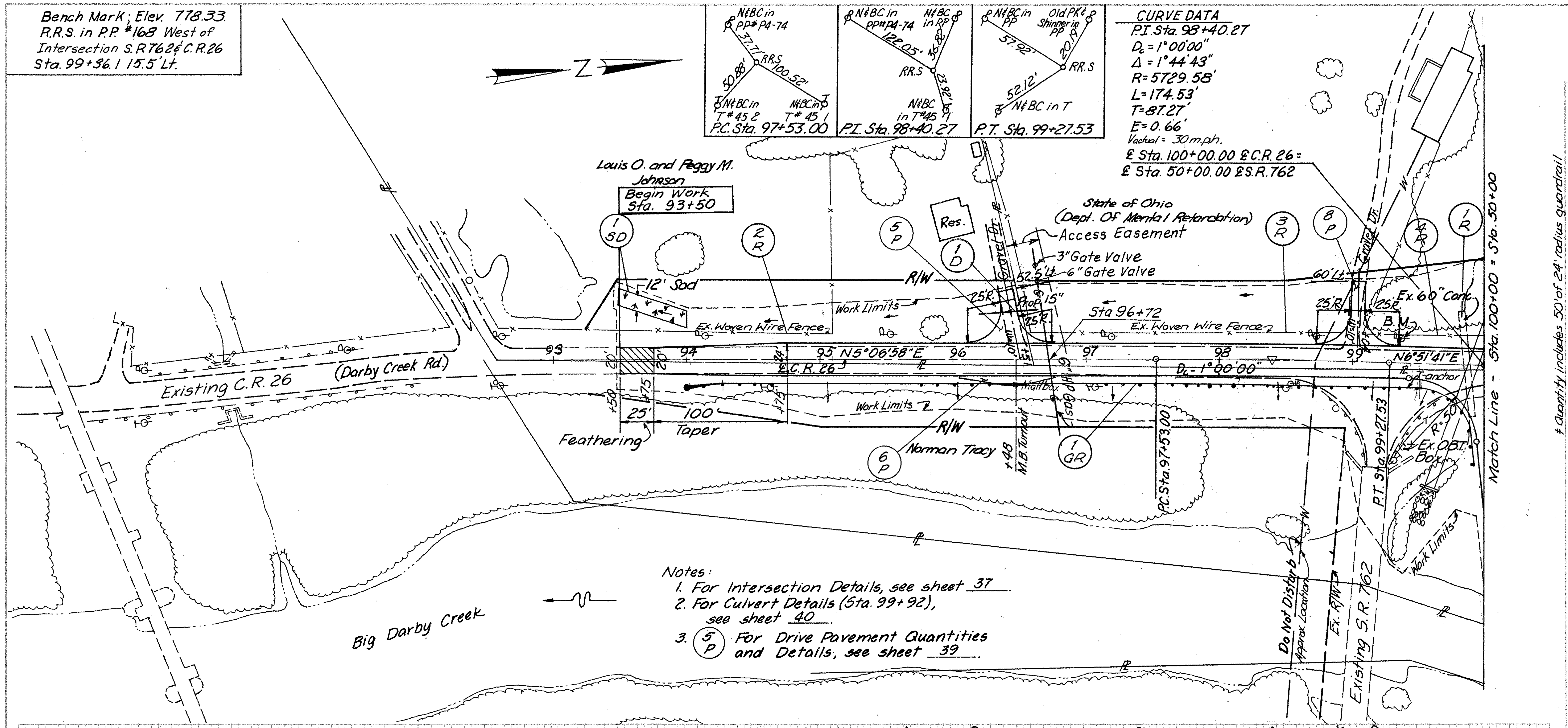
END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		17	46
18	50		
		46	50
32	4		
		294	10

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

℄ Temp. Rd.
1.2'
780
775
770
63+00
779.01
Meet Existing Pavement (End Feathering)
F=4
4:1
°Ex. U.G.T.
62+50
779.04
End 1¼" Resurfacing
Begin Feathering
4:1
C=2
F=1
4:1
3:1
°Ex. U.G.T.
777.40
779.10
62+00
779.00
℄ Temp. Rd.
6:1
96:1
°Ex. U.G.T.
4:1
3:1
777.20
779.15
61+50
779.01

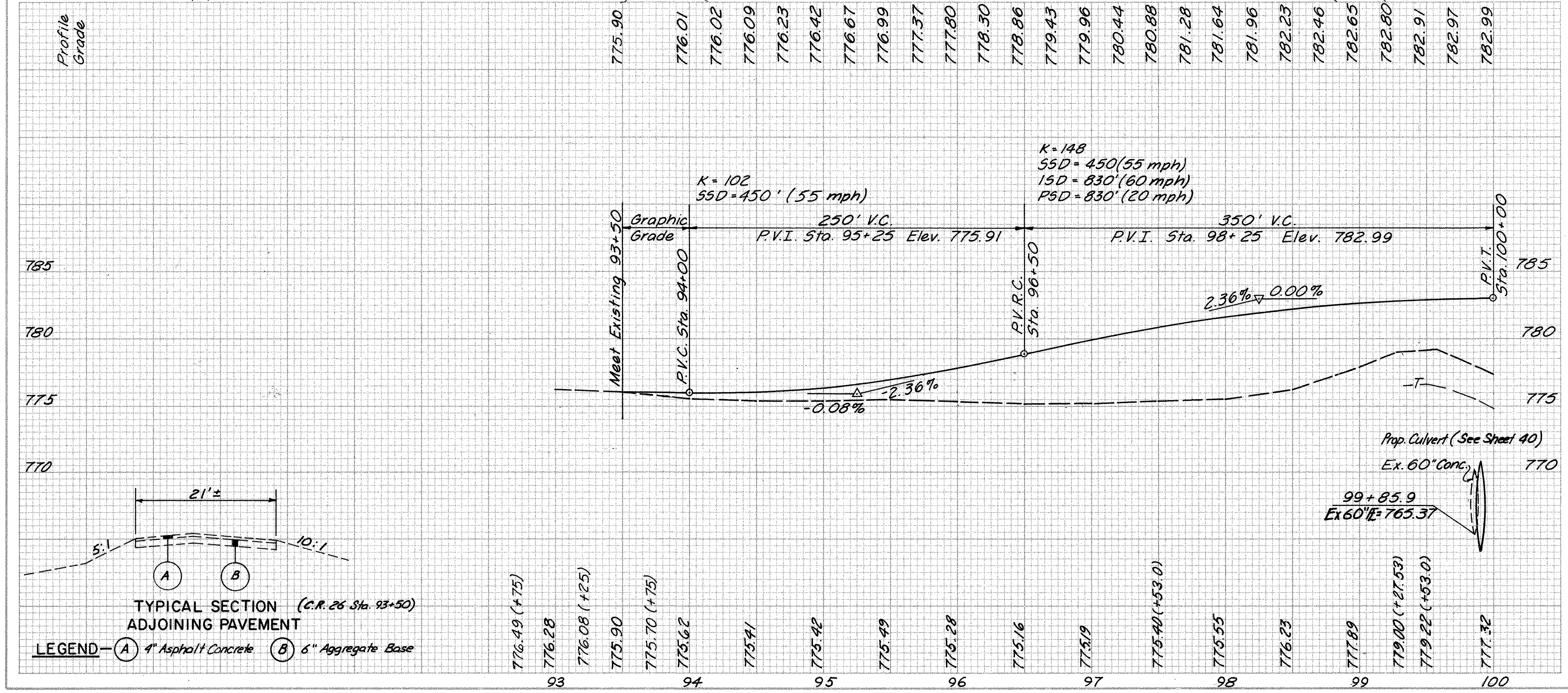
Sta. 61+50 to Sta. 63+00

Bench Mark; Elev. 778.33
R.R.S. in P.P. #168 West of
Intersection S.R.762 & C.R.26
Sta. 99+36.1 15.5' Lt.



CURVE DATA
P.I. Sta. 98+40.27
$D_c = 1°00'00"$
$\Delta = 1°44'43"$
R = 5729.58'
L = 174.53'
T = 87.27'
E = 0.66'
Vactual = 30 m.p.h.
℄ Sta. 100+00.00 ℄ C.R. 26 =
℄ Sta. 50+00.00 ℄ S.R. 762

Notes:
1. For Intersection Details, see sheet 37.
2. For Culvert Details (Sta. 99+92), see sheet 40.
3. (5 P) For Drive Pavement Quantities and Details, see sheet 39.



TYPICAL SECTION (C.R. 26 Sta. 93+50)
ADJOINING PAVEMENT

LEGEND — (A) 4" Asphalt Concrete (B) 6" Aggregate Base

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 Pipe Removed over 24" Lin. Ft.	202 Fence Removed Lin. Ft.	603 Type D 15" Lin. Ft.	606 Guard-rail Type 5 Lin. Ft.	606 Anchor Assembly Type A Each	660 Sodding Sq. Yd.	SEE SHEET NO.
1R	99+81.2 to 99+90.5	Lt.&Rt.	54						
2R	93+25 to 95+10	Lt.		210					
3R	96+53 to 98+92	Lt.		275					
4R	99+07 to 100+00	Lt.		135					
1SD	93+50 to 94+00	Lt.						67	28
1D	96+22 to 96+66	Lt.			44				29
1GR	93+98.33 to 99+48.33	Rt.				525	1		
TOTALS			54	620	44	525	1	67	

‡ Quantity includes 50' of 24' radius guardrail

SEEDING END WIDTH	SEEDING SQ. YDS.
83	
	433
73	
	372
61	
	314
52	

Ahead Only 93+50

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

780 775 770

3:1 4:1

773.35

776.42
95+00
775.42

773.20

776.09
94+50
775.41

773.05

776.01
94+00
775.62

Sta. 94+00
End 12' sod

93+75 Begin 100' Taper
End Feathering

93+75

(1/SD) 50'×12'÷9 = 66.7 S.Y.

775.90 Meet Exist. @ +50
93+50 Begin Feathering
775.90

Sta. 93+50
Begin 12' sod

93+00
776.28

CALC BY	RES
DATE	5/86
CHKD BY	CDL
DATE	5/86

PIC-762-0.19

OHIO
FHWA REGION 5

28
65

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
22	77		
		35	97
16	28		
		32	37
19	12		
		9	6
0	0		

C.R. 26 — Sta. 93+00 to Sta. 95+00

SEEDING		
END WIDTH	SQ. YDS.	
91	494	
87	472	
83	461	
83	461	

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

CALC BY RES DATE 5/86
CHKD BY PJ DATE 5/86

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OHIO
FHWA REGION 5

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65

END AREA		VOLUME	
CUT	FILL	CUT	FILL
64	293		
		96	453
40	196		
		67	284
		(→)50	38
32	111		
		57	168
30	70		
		48	136

780
775
770

3:1 4:1 2:1
℄ 6" Gate Valve
773.95
℄ 6" H.P. Gas
779.96
9+00
775.19

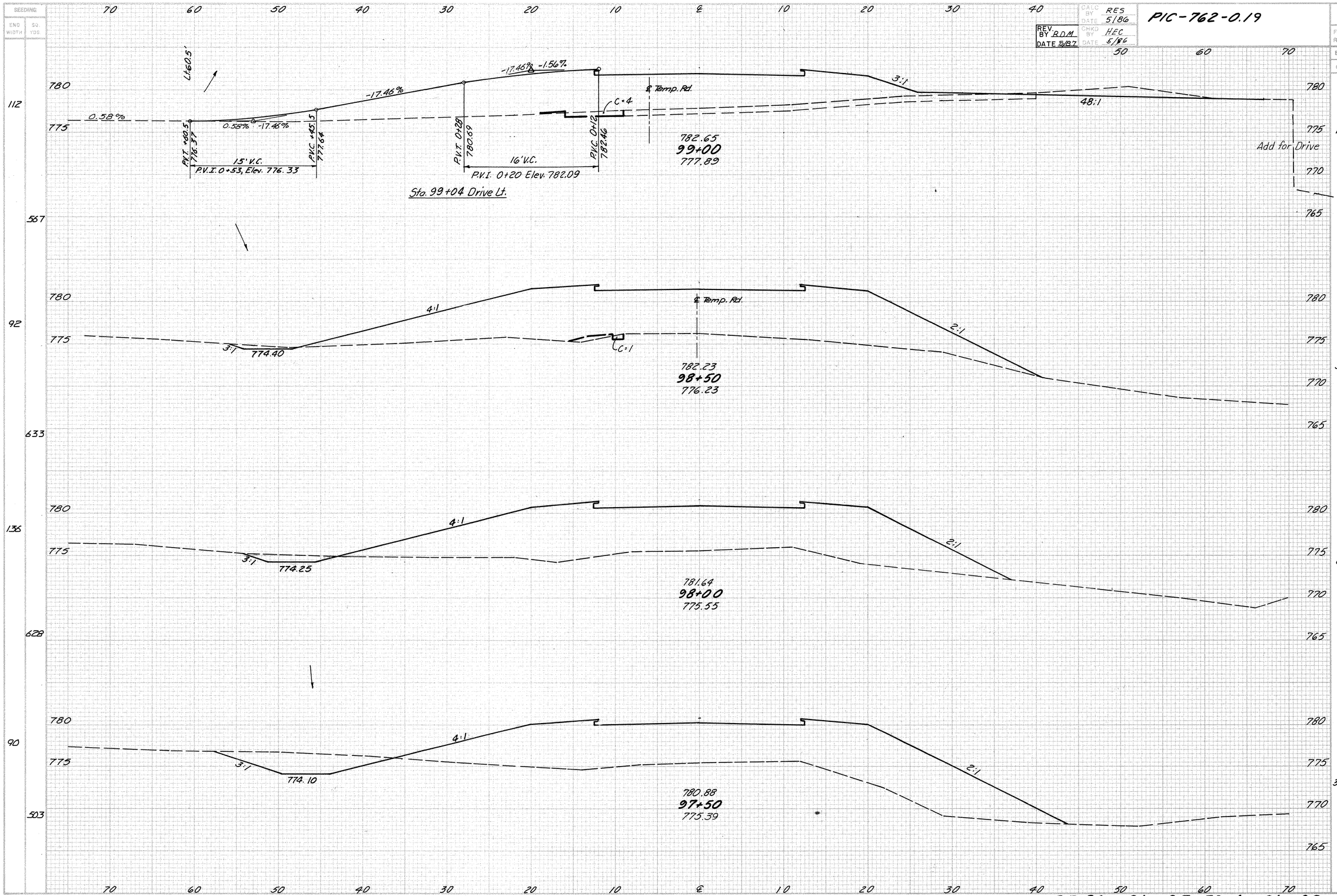
780
775
3:1 4:1 2:1
773.80
℄ Dr. @ 96+51 Lt.
4:1 4:1
44' ~15" Conduit, Type D @ 0.30%
778.86
96+50
775.16
Sta. 96+66, 39' Lt.
15" Inlet ℄ = 773.83
Sta. 96+22, 36' Lt.
15" Outlet ℄ = 773.72
772.67
Lt 52.5'
- 5%
Prop. 15"
Drive Left
778.86
96+51
775.19
Skewed 11°00' Lt. Fwd.
Add for drive

780
775
3:1 4:1 2:1
773.65
777.80
96+00
775.28

780
775
3:1 4:1 3:1
773.50
776.99
95+50
775.49

C.R. 26 – Sta. 95+50 to Sta. 97+00

SEEDING		CALC BY RES	PIC-762-0.19	OHIO	30
END WIDTH	SQ. YDS.	DATE 5/86		FHWA REGION 5	65
		REV. BY R.D.M		END AREA	VOLUME
		DATE 5/87	CHKD BY HEC DATE 5/86	CUT / FILL	CUT / FILL



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
14	286		46
		16	606
3	369		
		10	669
8	353		
		38	660
33	360		
		90	605

C.R. 26 – Sta. 97+50 to Sta. 99+00

SEEDING
END AREA SQ. YDS.
WIDTH

CALC BY RES DATE 5/86
CHKD BY HEC DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

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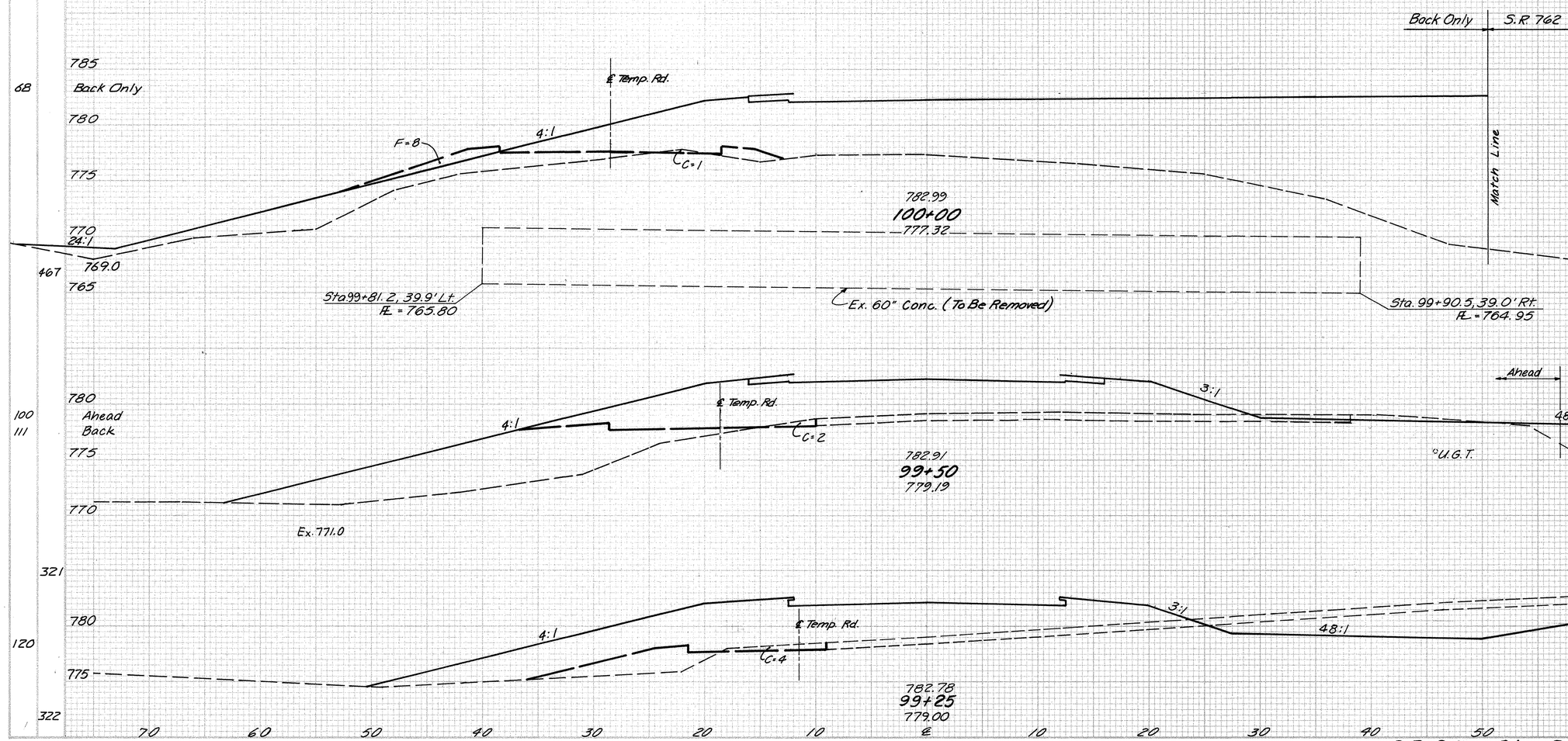
65

END AREA		VOLUME	
CUT	FILL	CUT	FILL

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

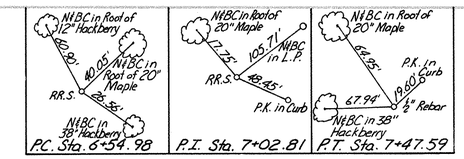


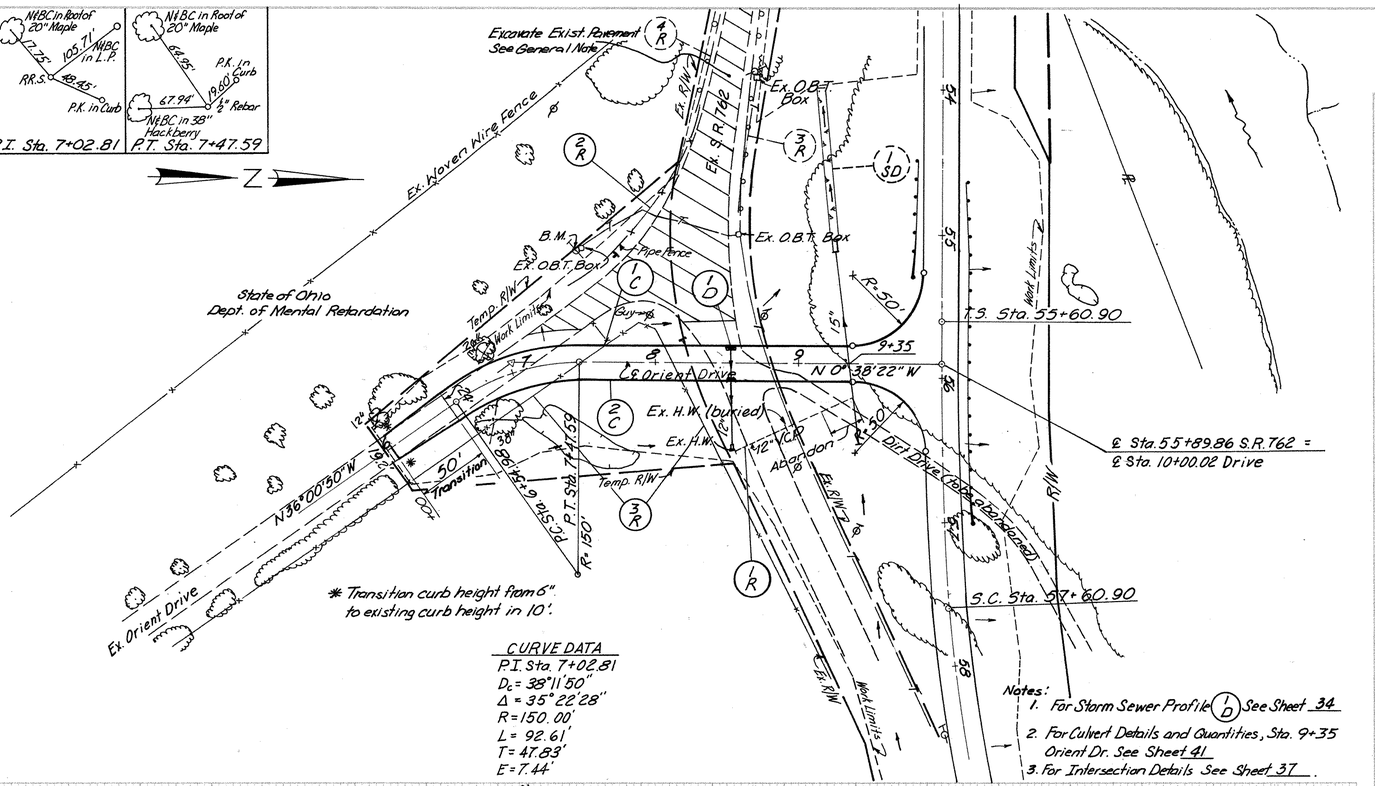
C.R. 26 – Sta. 99+25 to Sta. 100+00

CALC BY R.E.S. DATE 5/86
CHK'D BY H.E.C. DATE 5/86

PIC 762 - 0.19

OHIO | FHWA REGION 5 | 32 / 65

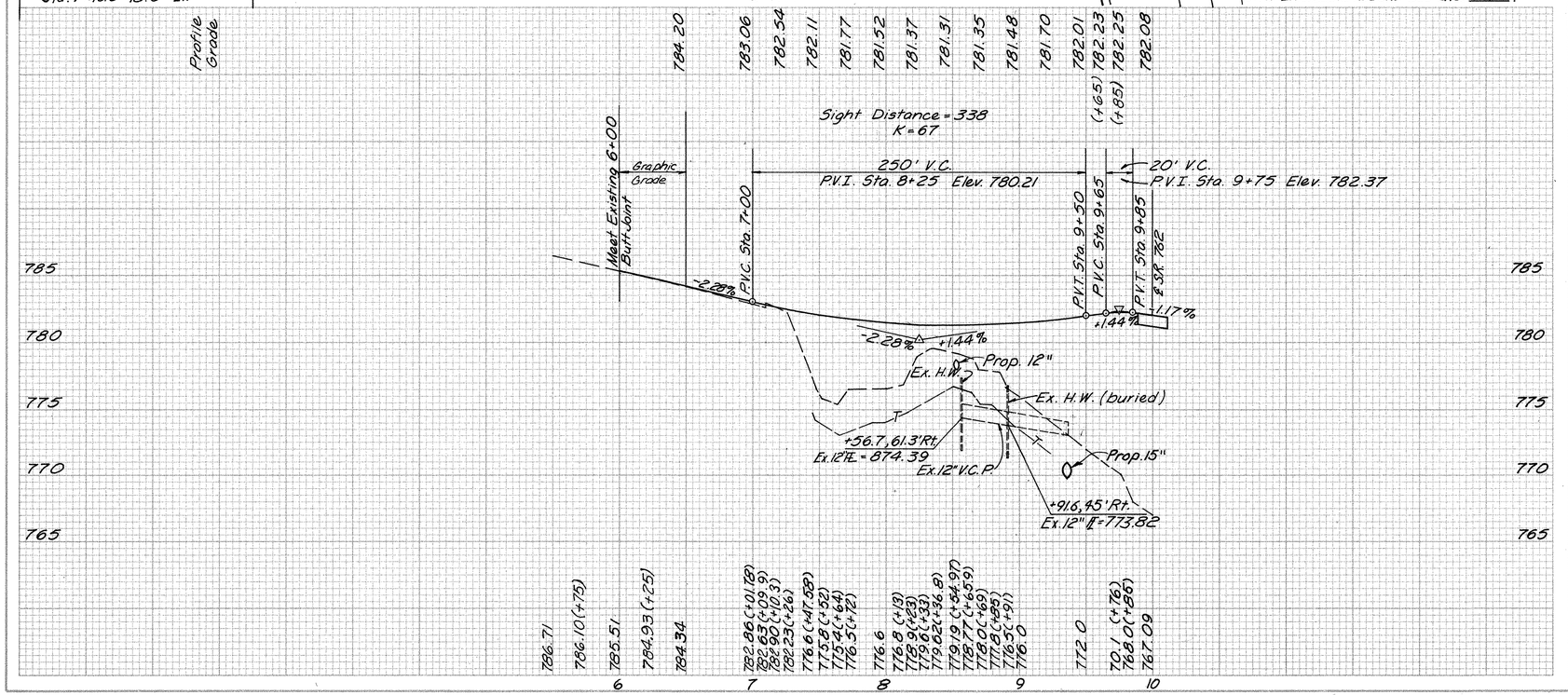




CURVE DATA
P.I. Sta. 7+02.81
D_c = 38°11'50"
Δ = 35° 22'28"
R = 150.00'
L = 92.61'
T = 47.83'
E = 7.44'

Bench Mark, Elev. 781.81
R.R.S. on East side of Telephone Pole # 364/1
Sta. 7+46.5 78.6' Lt.

Notes:
1. For Storm Sewer Profile (1/D) See Sheet 34
2. For Culvert Details and Quantities, Sta. 9+35 Orient Dr. See Sheet 41
3. For Intersection Details See Sheet 37.



ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	SEE SHEET NO.	202 Structure Removed Lump	202 Pipe Removed 24" or Under Lin. Ft.	203 Fence Removed Lin. Ft.	601 R.C.P. Type C w/ Fitter Cu. Yd.	602 Concrete Masonry Cu. Yd.	603 Conduit 8" Lin. Ft.	603 Conduit 12" Lin. Ft.	604 Catch Basin Std. No. 3 Type G Each	609 Curb Std. Lin. Ft.	TOTALS
1D	8+53	Lt & Rt	34	Lump	63	158 310	1	0.21	23	41	2	385 381	Lump 63 / 468 / 1 / 0.21 / 23 / 41 / 2 / 776
1R	8+57 to 9+13	Rt.											
2R	7+38 to 8+39	Lt.											
3R	6+00 to 8+48	Lt & Rt											
1C	6+00 to 9+80	Lt.											
2C	6+00 to 9+80	Rt.											

Orient Drive Sta. 6+00 to Sta. 10+00

CALC BY RES DATE 5/86
CHKD BY QDI DATE 5/86

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OHIO
FHWA REGION 5

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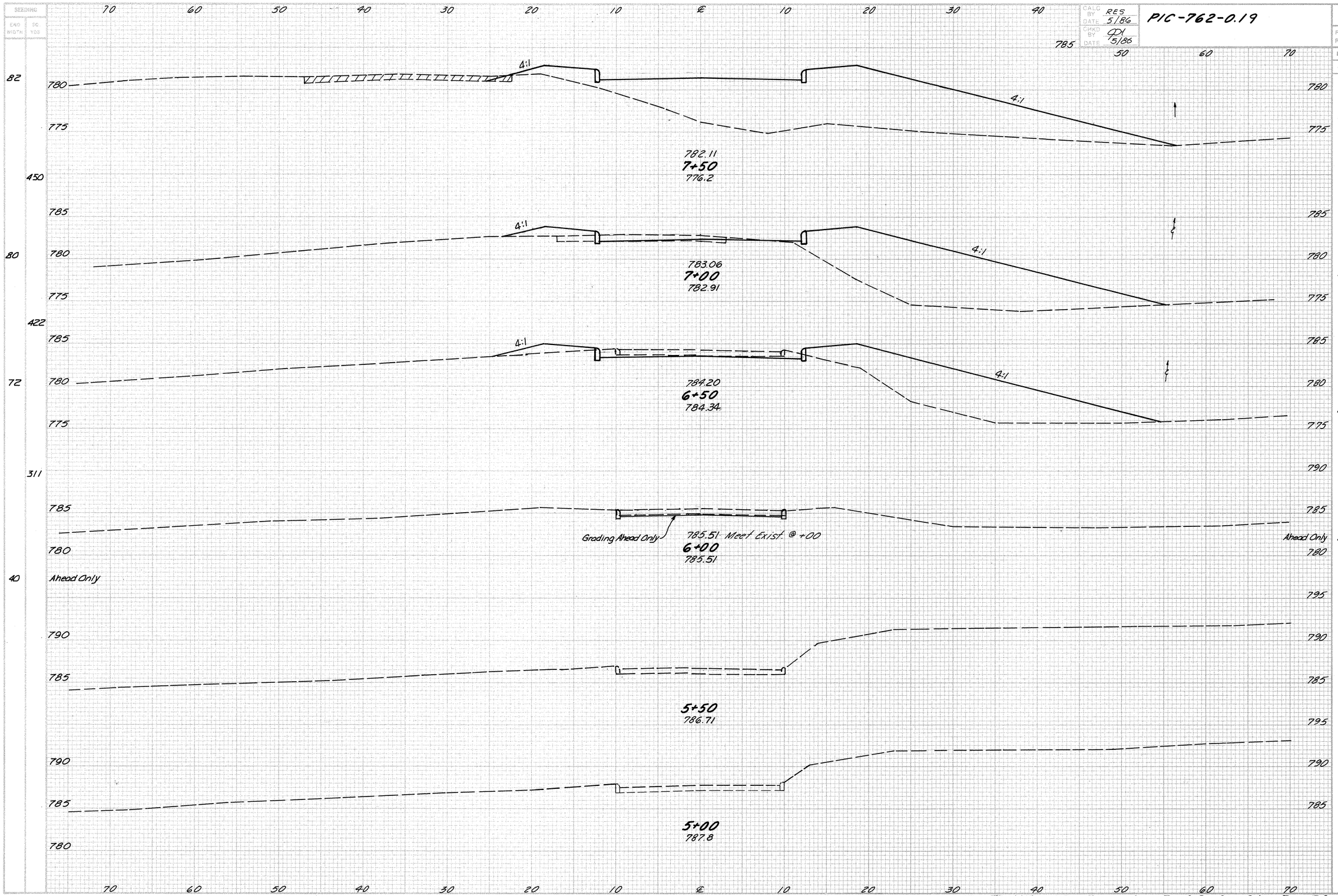
65

SEEDING END WIDTH	SEEDING SQ YDS	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
82	450	0	303	9	472
80	422	10	207	25	329
72	311	17	148	31	137
40	Ahead Only	16	0		



ORIENT DRIVE – Sta. 5+00 to Sta. 7+50

SEEDING	
END WIDTH	SQ YDS
76	
167	
101	
93	
675	
744	
539	
486	

CALC BY RES DATE 5/86
CHKD BY DL DATE 5/86

PIC-762-0.19

OHIO
FHWA REGION 5

34
65

END AREA		VOLUME	
CUT	FILL	CUT	FILL
7	768		
100	491		
70	98		
12	271		
99	1166		
157	545		
76	342		
11	531		

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

780 775 770 765 785

S.R. 762 Pavement ℄

S.R. 762 | Orient Dr. Back Only

782.08
10+00
767.09

Orient Dr. | S.R. 762 Back Only

9+50 Back Only

Back Only 9+50

Var.

4:1 (Normal)

Var.

12" V.C.P.

782.01
9+50
772.0

4:1

4:1

4:1

Sta. 8+91.6, Rt. 45'
Ex. I.E. 12" V.C.P. (out) = 773.82

Ex. U.G.T.

4:1

772.68

Ex. H.W. buried (To Be Removed)

781.48
9+00
776.0

a a

4:1

Var.

80 90 100 110

Orient Dr. S.R. 762

4:1

Sta. 8+53, 12' Lt. ℄
Std. No. 3 C.B.
I.E. Grate = 780.96
I.E. 12" E = 777.93

23'-12" Type B @ 1.00%

781.31
8+50
779.31

Sta. 8+53, 12' Rt.
Std. No. 3 C.B.
I.E. Grate = 780.96
I.E. 12" E = 774.68
I.E. 12" W = 777.70

41'-12" Type C @ 4.00%

Ex. H.W. (To Be Removed)
Sta. 8+56.7, 61.3' Rt.
Ex. I.E. 12" V.C.P. (in) 774.39

4:1

772.93

7'x2'x18" R.C.P. Type C w/ Filter

Sta. 8+53, 52.5' Rt. ℄
12" Outlet w/ HW-4A or HW-4B
I.E. 12" = 773.04

4:1

779.40

781.52
8+00
776.6

4:1

4:1

4:1

773.17

(1/D) R.C.P. 7'x2'x1.5' = 27 = 0.8 C.Y.

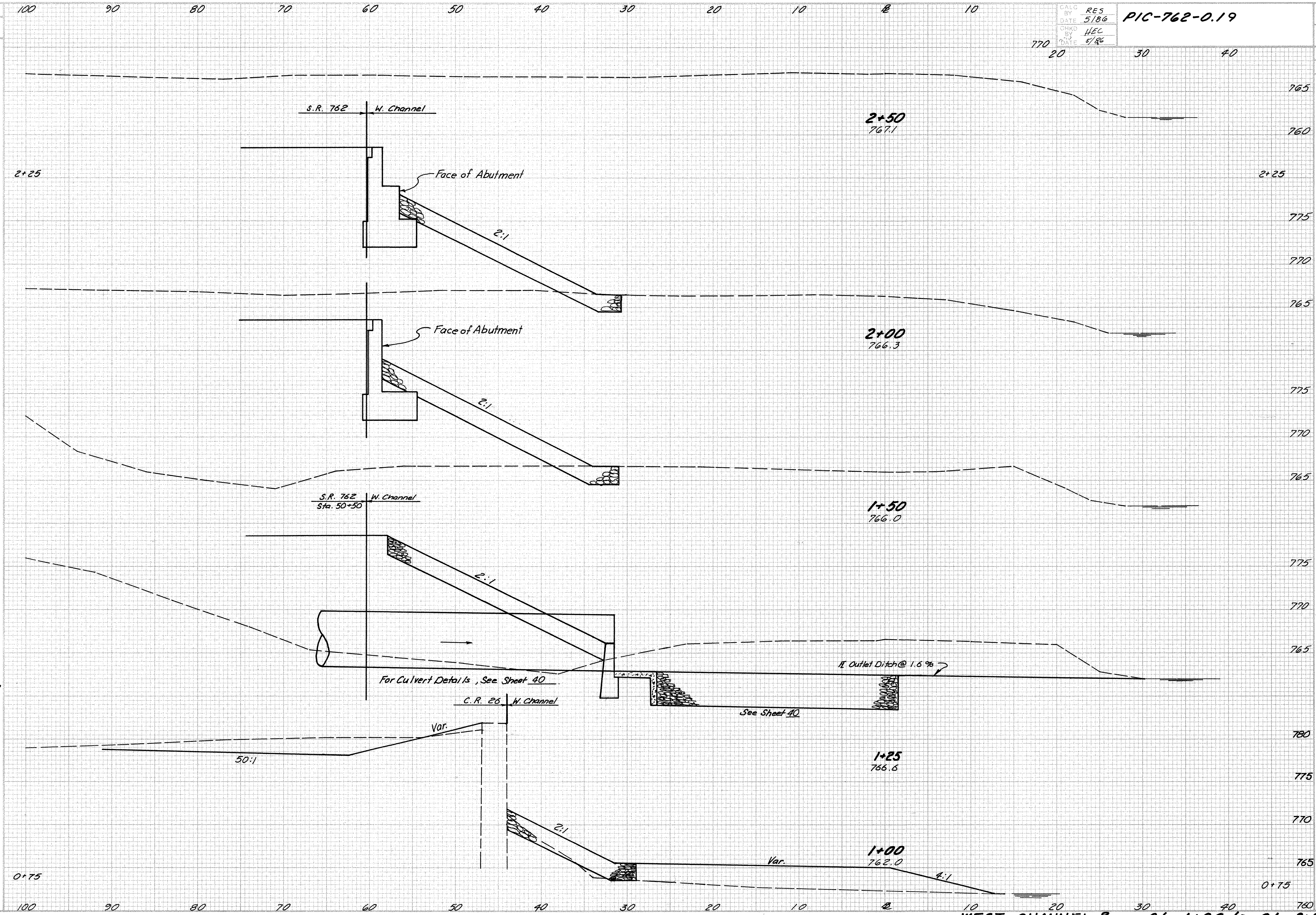
ORIENT DRIVE - Sta. 8+00 to Sta. 10+00

CALC BY	RES
DATE	5/86
CHKD BY	HEC
DATE	5/86

PIC-762-0.19

OHIO
FHWA REGION 5

SEEDING END WIDTH	SEEDING SQ YDS
0	
	57
41	
	233
43	
	197
99	
	222
61	
	85
0	



END AREA CUT	END AREA FILL
0	0
0	99
0	99
207	215
0	91
0	0

VOLUME CUT	VOLUME FILL
0	46
0	183
96	145
96	142
0	42

WEST CHANNEL ℄ - Sta. 1+00 to Sta. 2+50

SEEDING	
END WIDTH	SQ. YDS.
0	
	102
61	
	336
60	
	70
0	

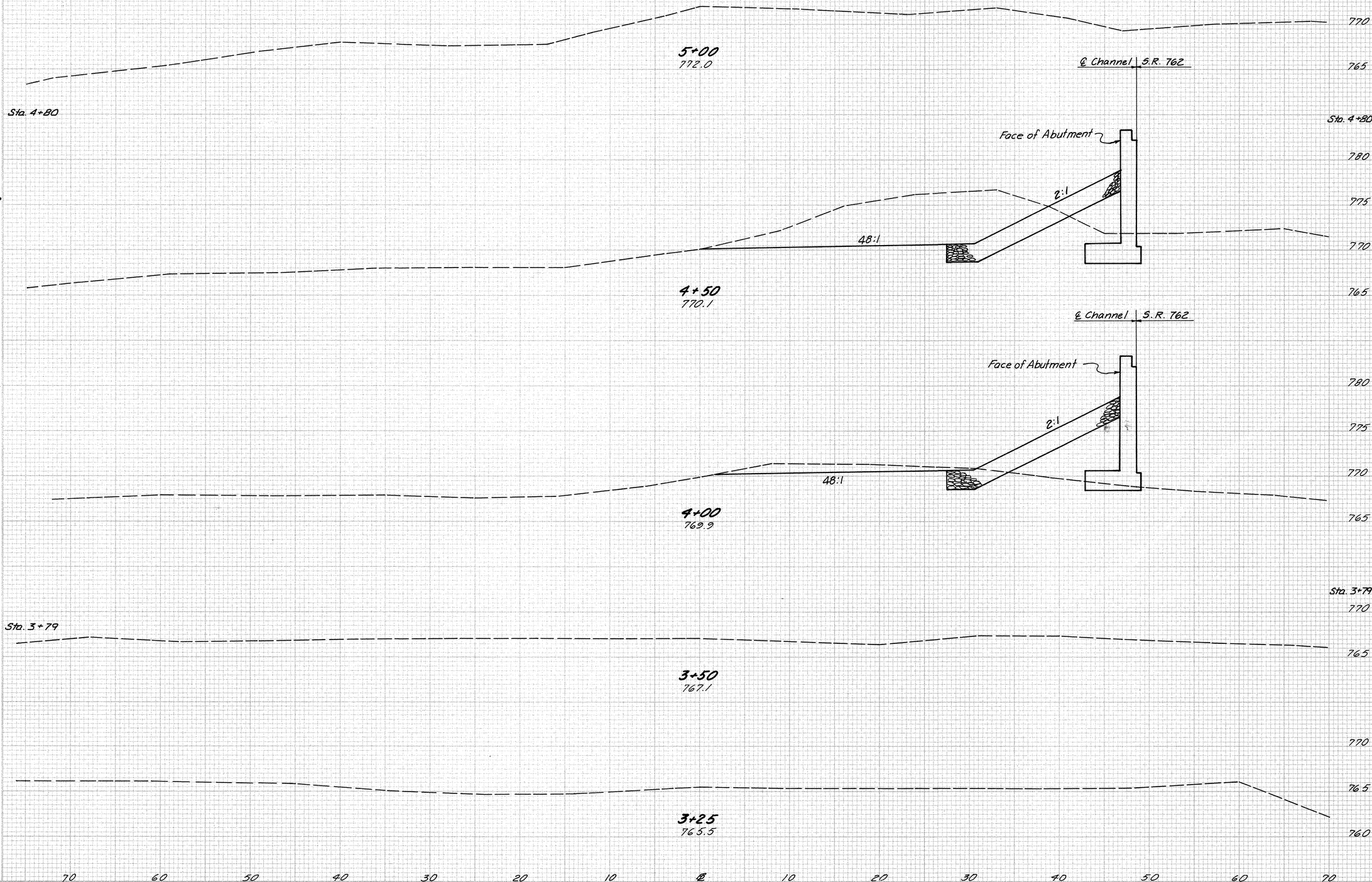
70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

CALC BY RES DATE 5/86
CHKD BY HEC DATE 5/86

PIC-762-0.19

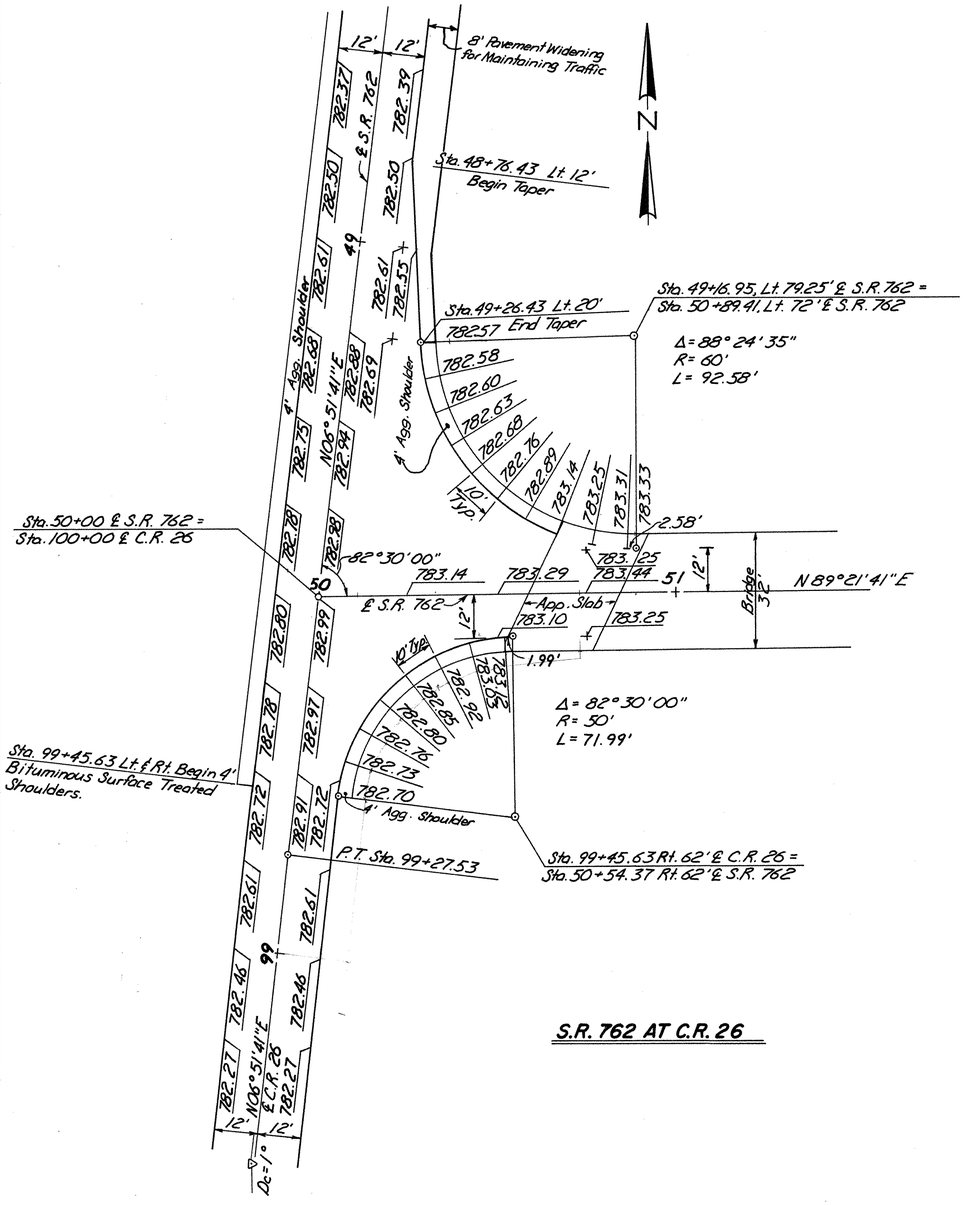
OHIO | FHWA REGION 5 | 36 / 65

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		75	8
135	15		
		144	53
20	42		
		8	16
0	0		

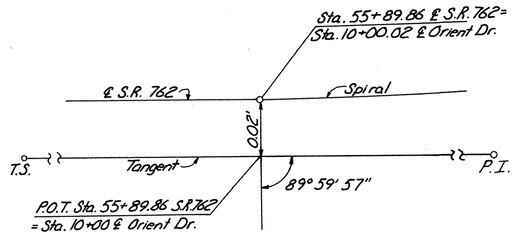


EAST CHANNEL ℄ - Sta. 3+25 to Sta. 5+00

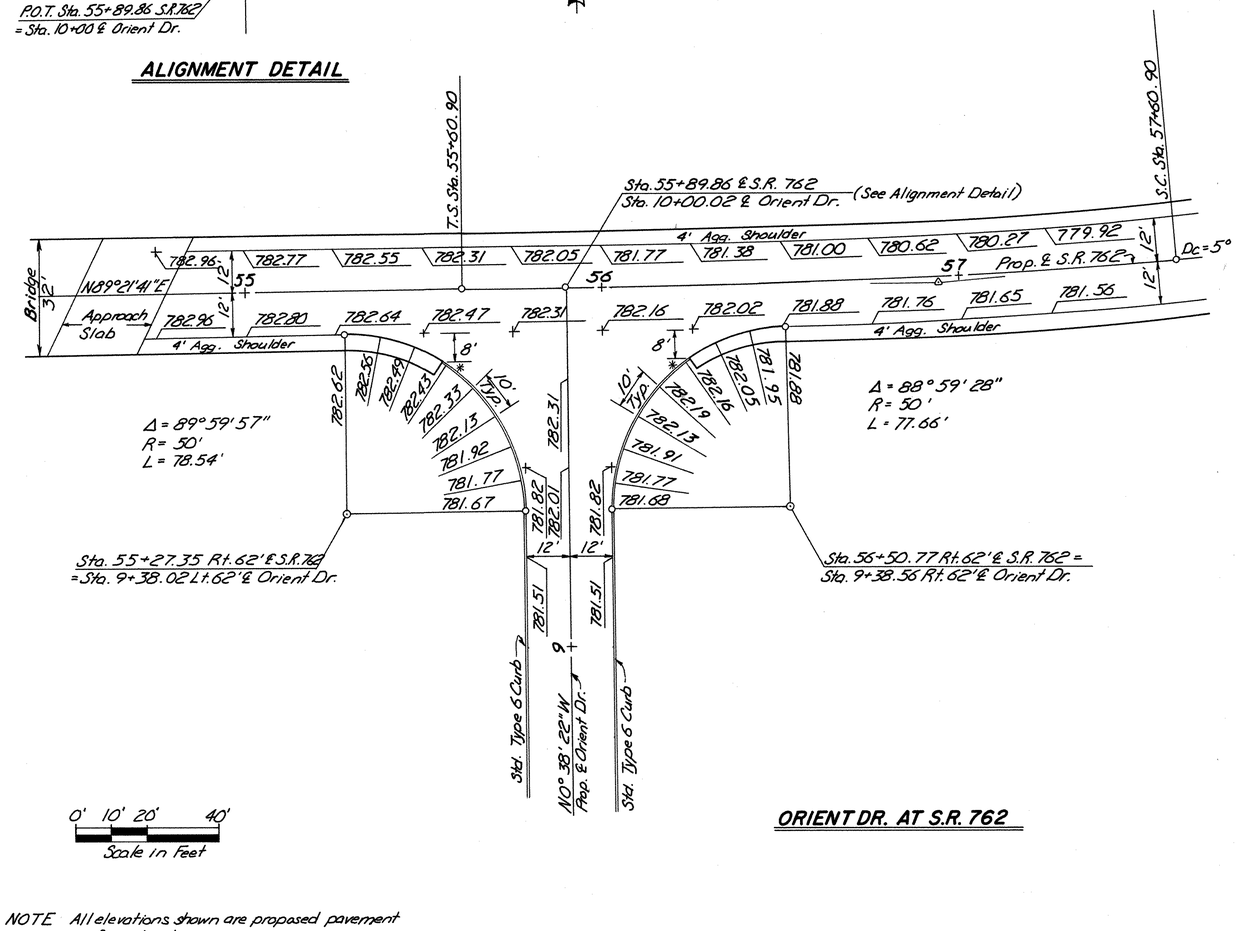
CALC. BY		PIC-762-0.19	OHIO	37
DATE			FHWA REGION 5	65
CHK'D. BY				
DATE				



S.R. 762 AT C.R. 26



ALIGNMENT DETAIL



ORIENT DR. AT S.R. 762

0' 10' 20' 40'
Scale in Feet

NOTE All elevations shown are proposed pavement surface elevations.

* Sta. 9+80 Lt. & Rt. End Type 6 Curb (Transition Height 0" to 6" in 10 Ft)

STICKLEN - BELSHEIM & ASSOCIATES

INTERSECTION DETAILS

NOTE: For additional Details and Notes, see STD. DWG. AS-1-81, Sheet 1 and 2 of 3.

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

PIC-762-0.19

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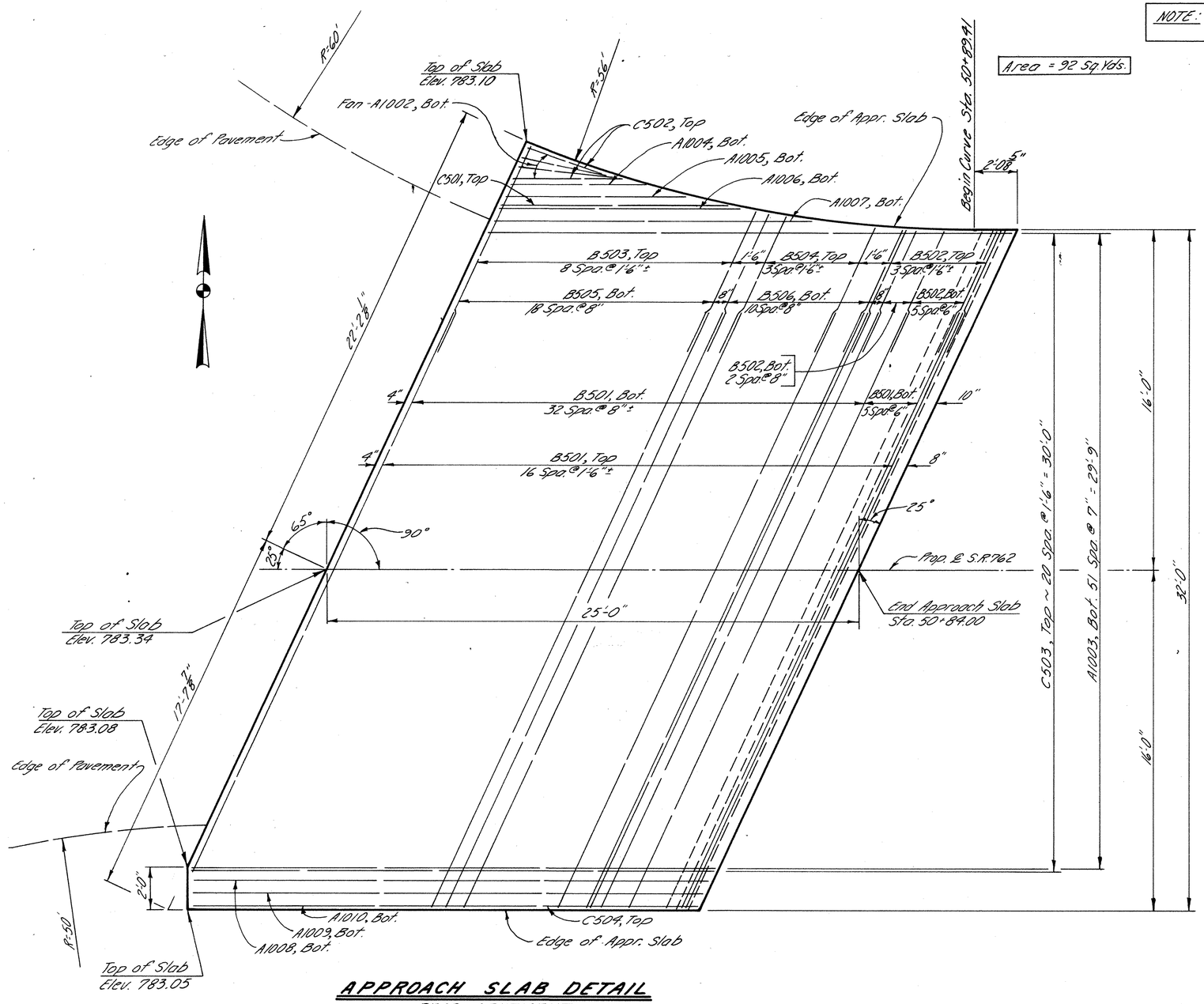

APPROACH SLAB REINFORCING STEEL LIST

MARK	NO.	LENGTH	TYPE	DIM. "A"	BENDING DIAGRAM
A1002	4	4'-6"	St.		
A1003	52	25'-10"	1	24'-5"	A — Type 1
A1004	1	6'-6"	St.		
A1005	1	8'-6"	St.		
A1006	1	11'-4"	St.		
A1007	1	15'-3"	St.		
A1008	1	24'-2"	St.		
A1009	1	23'-11"	St.		
A1010	1	23'-8"	St.		
B501	55	30'-0"	St.		
B502	12	6'-10"	St.		
B503	1 Series of 9	8'-2" to * 11'-2"	St.		* Length varies by 4½" increments
B504	1 Series of 4	7'-0" to * 7'-6"	St.		* Length varies by 2" increments
B505	1 Series of 19	8'-2" to ⊕ 11'-2"	St.		⊕ Length varies by 2" increments
B506	1 Series of 11	7'-0" to △ 7'-6"	St.		△ Length varies by ½" increments
C501	1	10'-1"	St.		
C502	2	9'-10"	St.		
C503	21	24'-5	St.		
C504	1	23'-8"	St.		

Minimum Reinforcing Bar Splice Lap Length
No. 5 bar = 1'-10"

St. IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

REINFORCING STEEL SAMPLES:
Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

APPROACH SLAB DETAIL
REAR ABUTMENT

STICKLEN - BELSHEIM & ASSOCIATES ENGINEERS
WORTHINGTON OHIO

APPROACH SLAB DETAILS

BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
STA. 50+84.00
54+52.97
PICKAWAY CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	P.D.Y.		G.T.	D.B.T.	8/20/85	

HILLS CO. 10-7155-250-183

REV BY RDM DATE 5/87 | CALC. BY ____ DATE ____ | CHK'D. BY ____ DATE ____

PIC - 7.62 - 0.19

OHIO | FHWA REGION 5

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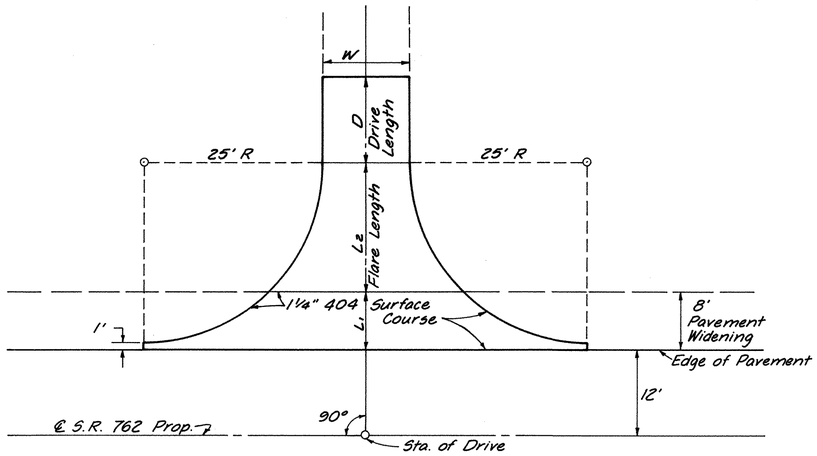
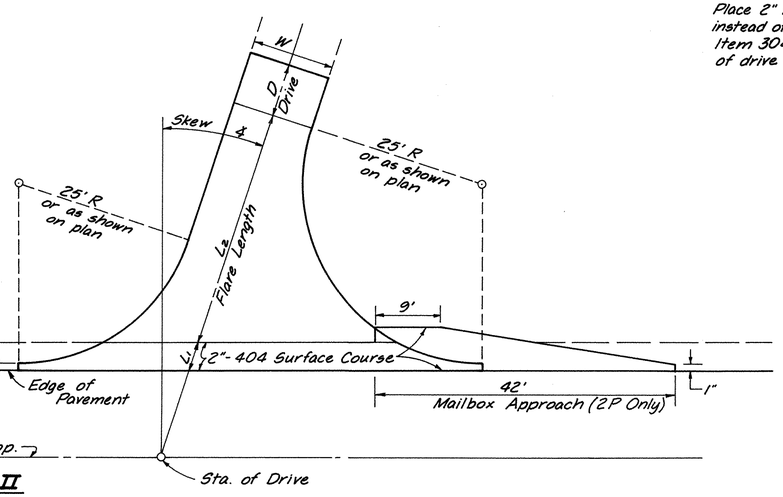
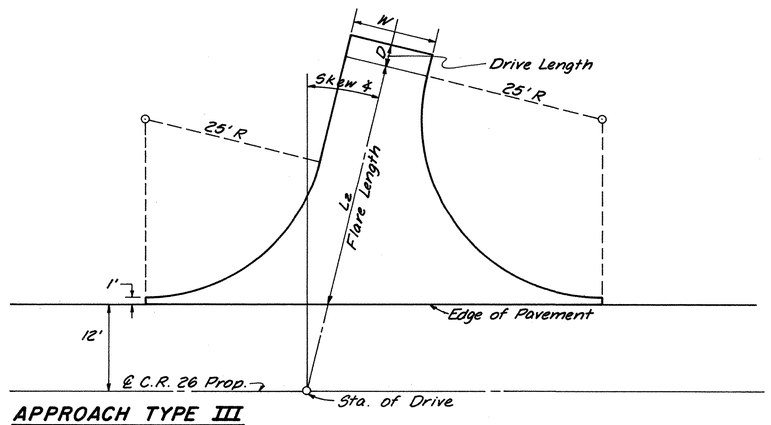


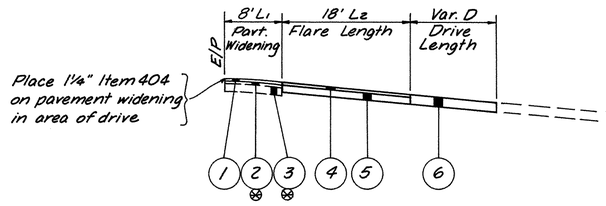
APPROACH TYPE I



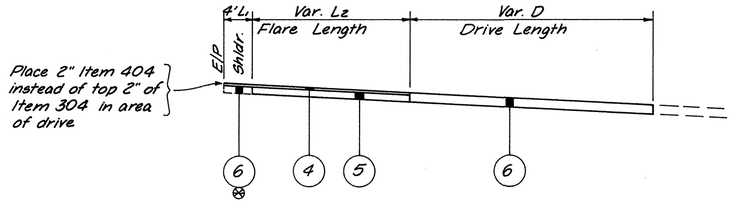
APPROACH TYPE II



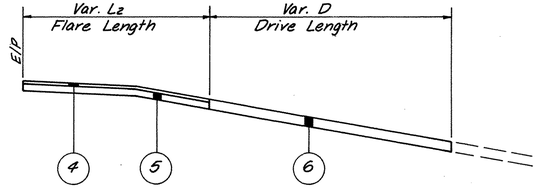
APPROACH TYPE III



APPROACH TYPE I PAVEMENT

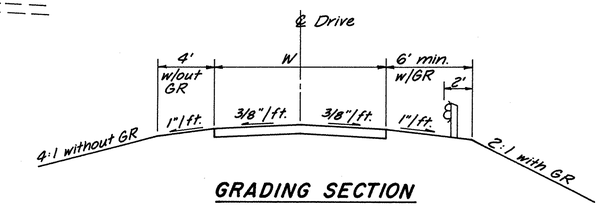


APPROACH TYPE II PAVEMENT



APPROACH TYPE III PAVEMENT

(1) Item 404 1¼" Asphalt Concrete
⊗ (2) Item 402 1¾" Asphalt Concrete
⊗ (3) Item 301 6" Bituminous Aggregate Base
(4) Item 404 2" Asphalt Concrete
(5) Item 304 6" Aggregate Base
(6) Item 304 8" Aggregate Base
⊗ Carried in the Pavement Quantities



GRADING SECTION FOR DRIVES

Quantities Carried to General Summary — Calc. By: RES 3/86 — Checked By: HEC 4/86

Sheet No.	Reference No.	Station	Side	Skew	Approach Type	W Drive Width	Li Length Across Shoulder	*Ai Area Across Shoulder S.F.	Lz Flare Length	*Az Area Flare S.F.	D Drive Length	Area Drive S.F.	Item 304 Aggregate Base 6" C.Y.	Item 304 Aggregate Base 8" C.Y.	Item 404 for Drives & Mailbox Approach 1¼" C.Y.	Item 404 for Drives & Mailbox Approach 2" C.Y.	
	1P	44+75 (S.R. 762)	Lt.		I	12'	8'	321.23	17.59'	291.09	29.41'	≠561.0	5.39	13.85	1.24	1.80	
	2P	44+50 "	Rt.	9°30' Rt. Fwd.	II	19'	4.06'	290.71	16.90'	440.58	4'	76.0	8.16	1.88		4.51	
	3P	45+21 "	Rt.		II	10'	4'	193.53	16.21'	217.73	5'	50.0	4.03	1.23		2.54	
	4P	47+05 "	Rt.	5°30' Rt. Fwd.	II	12' ≤ 20'	4'	201.39	25.09'	472.70	22'	≠302.8	8.75	7.42		4.16	
	5P	96+51 (C.R. 26)	Lt.	11°00' Lt. Fwd.	III	10'			32.32'	665.76	7.96'	79.6	12.62	1.98		4.21	
	6P*	96+48 "	Rt.		III			≠277.50					5.14			1.71	
	8P	99+04 "	Lt.		III	10'			25.93'	575.12	22.57'	225.75	10.65	5.57		3.55	
	9P	43+50 S.R. 762	Lt.		I	12'	8'	321.0	18.0'	291.0	12.0'	144.0	5.39	3.60	1.24	1.80	
SUB-TOTALS								1605.36		2953.98		1436.95	60.13	35.53	2.48	24.28	
TOTALS										≠4390.93			95.66		26.76		

* See BP-6 • Computer Area ≠ Areas deducted from Seeding and Mulching

DRIVE DETAILS

CALC BY RES DATE 6/85	PIC. – 762 – 0.19	OHIO
CHKD BY HEC DATE 6/85		FHWA REGION 5

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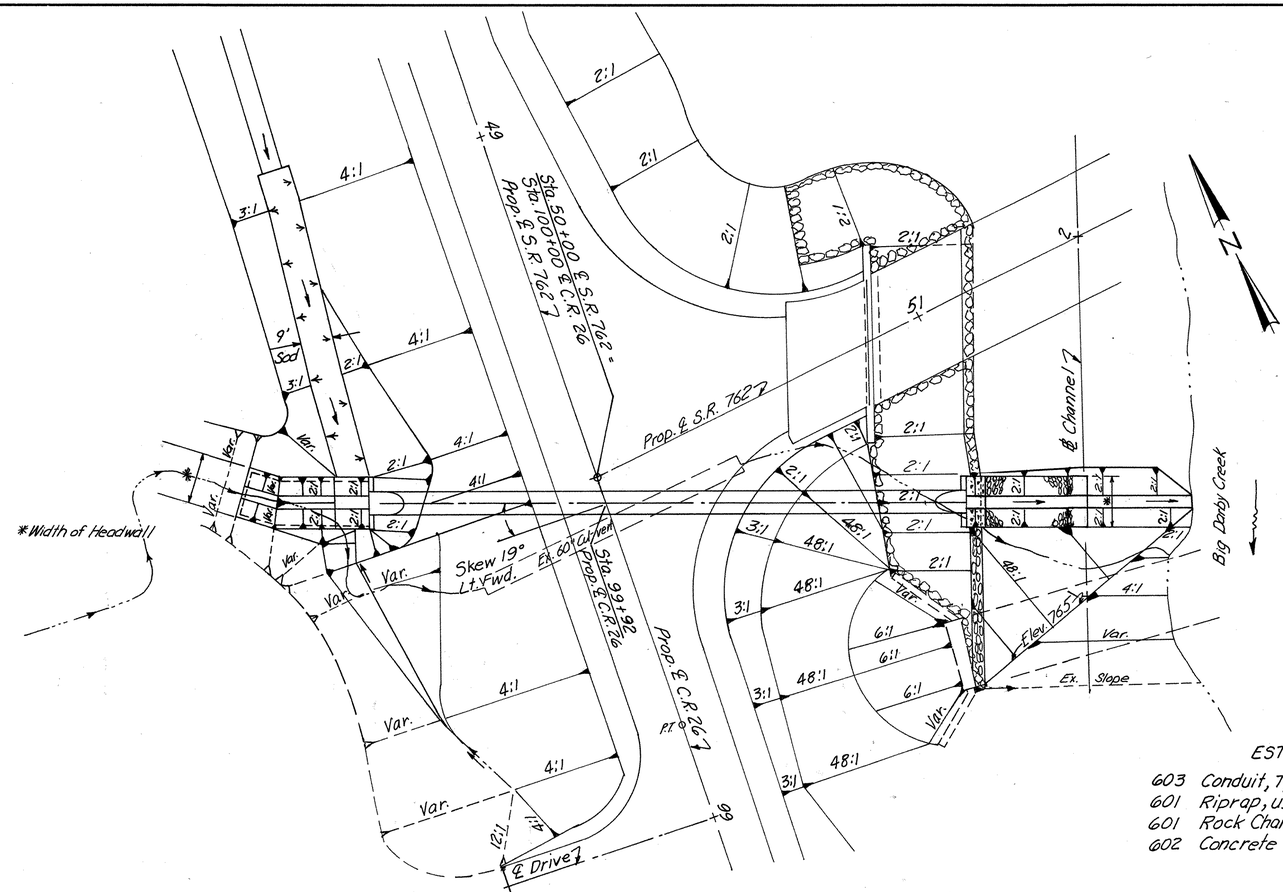
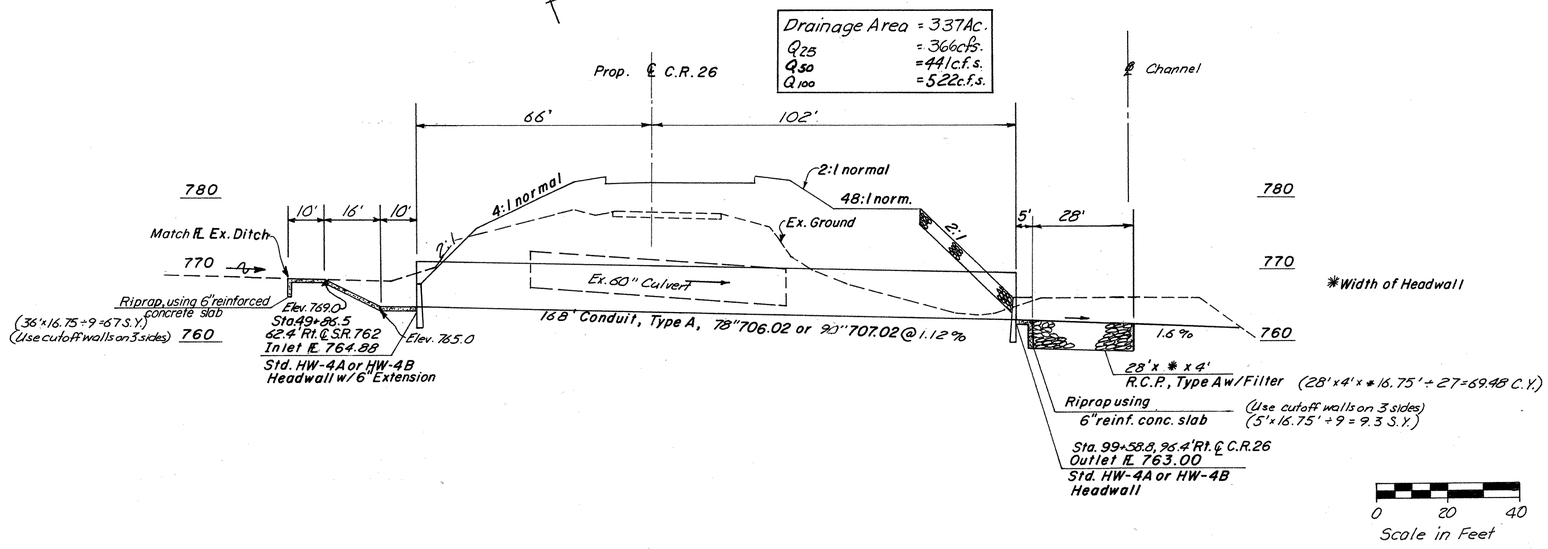


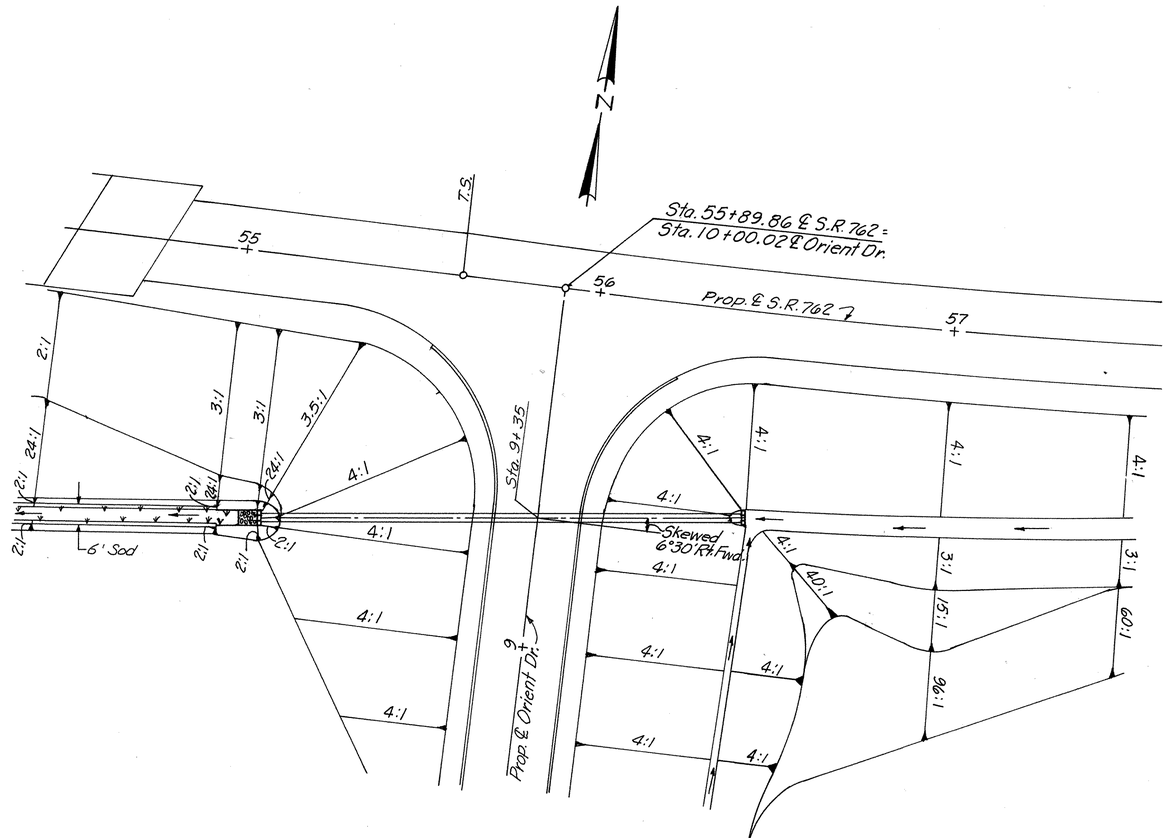
ESTIMATED QUANTITIES

603	Conduit, Type A 78"706.02 or 90"707.02	168 Lin. Ft.
601	Riprap, using 6" Reinf. Conc. Slab	76 Sq. Yd.
601	Rock Chan. Protect., Type A w/filter	69 Cu. Yd.
602	Concrete Masonry	9.2 Cu. Yd.

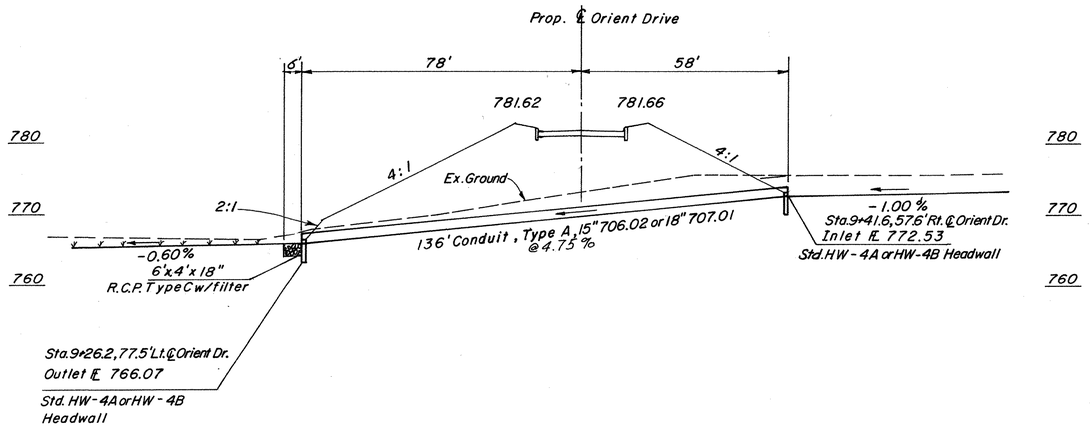


CULVERT DETAILS STA. 99+92 C.R. 26

CALC. BY RES DATE 6/85	PIC.-762-0.19	OHIO	41
CHK'D. BY HEC DATE 6/85		FHWA REGION 5	65



Drainage Area = 4.5 Ac.
Q_{10} = 9.5 cfs
Q_{100} = 14.8 cfs



ESTIMATED QUANTITIES

603	Conduit, Type A, 15" 706.02 or 18" 707.01	136 Lin. Ft.
601	Rock Chan. Protect, Type C w/filter	2 Cu. Yd.
602	Concrete Masonry	0.66 Cu. Yd.

0 20 40
Scale in Feet

Orient Drive
CULVERT DETAILS STA. 9+35

TRAFFIC CONTROL

CALC. BY R.F.S. DATE 5/86
CHK'D BY G.F.E. DATE 5/86
PIC-762-0.19
OHIO FHWA REGION 5
42 / 65

SUB-SUMMARY

621 PAVEMENT MARKING

Ref.	Side	Station From	Station To	4" edge lines	center lines single dashed	center lines solid double	center lines, double, solid and broken	12" stop line	stop line	
				L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	
S.R. 762	Lt.	42+00	50+89	819						
" "	℄	42+00	49+50			750				
S.R. 762	Rt.	42+00	50+00	800						
" "	Lt.	50+89	63+00	1211						
" "	℄	50+40	59+00				860		32	
" "	℄	59+00	63+00		400					
" "	Rt.	50+54	55+55	502						
" "	Rt.	56+24	63+00	676						
Orient Dr.	℄ Rt.	9+60							13	
" "	℄	6+00	9+60			360				
C.R. 26	Lt.	93+50	100+00	650						
C.R. 26	℄	93+50	99+50			600				
" "	℄ Rt.	99+50						17		
" "	Rt.	93+50	50+54 S.R. 762	668						
TOTALS				5326	400	1710	860	17	45	
MILES				1.01	0.56					

GENERAL SUMMARY

TRAFFIC CONTROL ESTIMATED QUANTITIES

Sheet Numbers			Totals	Unit	Item	Description
42						
1.01			1.01	Miles	621	Edge lines
0.56			0.56	Miles	621	Center lines
17			17	Lin. Ft.	621	12" Stop line
45			45	Lin. Ft.	621	Stop line
234			234	Lin. Ft.	630	Ground-mounted supports, No. 3 post
28			28	Lin. Ft.	630	Ground-mounted supports, No.4 post
52			52	Sq. Ft.	630	Signs, flat sheet
19			19	Sq. Ft.	630	Signs, flat sheet, Type G Sheeting
29			29	Each	630	Removal of ground-mounted sign and storage
5			5	Each	630	Removal of ground-mounted sign and reerection
31			31	Each	630	Removal of ground-mounted post support

SIGN SUMMARY

Ref. No.	Station Location	630 Signs Flat Sheet	630 Ground Mounted Supports Post No.	Post #3 L.F.	Post #4 L.F.	Removal Ground Mounted Sign & Storage	Removal Ground Mounted Sign & Reerection	Removal Ground Mounted Post Support
		S.F.	Ea.	L.F.	L.F.	Each	Each	Each
S.R.762								
1S	43+25 Rt.	7.2	1	13.5				
2S	49+90 Rt.	7.2	2	28.0				
3S	49+94 Rt.	15.2	2	28.3				
4S	55+15 Lt.	7.2	1	13.5				
5S	9+60 Rt. Orient	6.3*	1	12.0				
6S	99+50 Rt. CR 26	6.3*	1	12.0				
7S	46+95 Lt.	8.5	1	13.0				
8S	93+55 Lt. CR 26	6.3	1	13.0				
9S	50+40 Lt.	6.3*	1	13.0				
1R	46+95 Lt.					2		1
2R	46+80 Rt.					2		1
3R	48+05 Rt.					1		1
4R	49+30 Rt.					1		1
5R	99+35 Lt. CR 26					2		1
6R	99+30 Lt. " "					2		1
7R	W. End Ex. Bridge					1		1
8R	" " " "					1		1
9R	" " " "					1		1
10R	E. End Ex. Bridge					1		1
11R	" " " "					1		1
12R	35' E. Ex. Bridge Rt.					2		1
13R	100' " " Lt.					2		1
14R	190' " " "					1		1
15R	80' E. Ex. Orient Dr. Rt.					1		1
16R	200' " " " Lt.					1		1
17R	375' " " " "					1		1

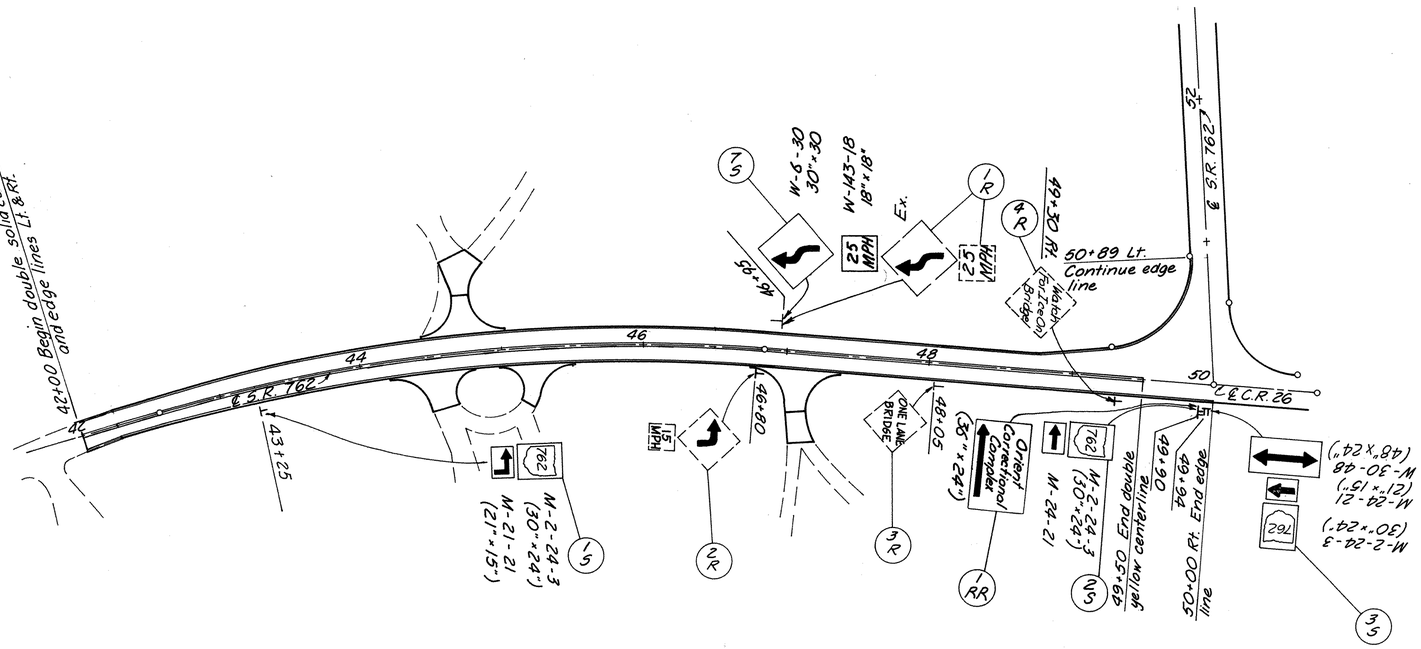
Ref. No.	Station Location	630 Signs Flat Sheet	630 Ground Mounted Supports Post No.	Post #3 L.F.	Post #4 L.F.	Removal Ground Mounted Sign & Storage	Removal Ground Mounted Sign & Reerection	Removal Ground Mounted Post Support
		S.F.	Ea.	L.F.	L.F.	Each	Each	Each
S.R.762								
18R	535' E. Ex. Orient Dr. Lt.					2		1
19R	93+55 Lt. CR 26					1		1
20R	98+50 Rt. " "					1		1
21R	98+65 Rt. " "					1		1
22R	Intersect. Orient Dr. Lt.					1		1
1RR	49+90 Rt. to 2S			24.0			1	2
2RR	Ex. Entrance to 9+60 Lt.			27.0			1	2
	Prop. Orient Dr.							
3RR	Ex. Entrance to 9+75 Rt.				28.0		1	2
	Prop. Orient Dr.							
4RR	Ex. Orient Dr. to 9+00 Lt.			26.0			1	2
	Prop. Orient Dr.							
5RR	Ex. Orient Dr. to							
	8+50 Lt. Prop. Orient Dr.			11.0			1	1
	*	18.9						
TOTALS		51.6		234.3	28.0	29	5	31

* Type G Sheeting

TRAFFIC CONTROL
SUB-SUMMARY & GENERAL SUMMARY

CALC. BY / DATE	PIC-762-0.19	OHIO
CHK'D. BY / DATE		FHWA REGION 5

43/65



S.R. 762 Sta. 42+00 to Sta. 50+89
Signing and Pavement Markings

STICKLEN - BELSHEIM & ASSOCIATES

TRAFFIC CONTROL PLANS

CALC. BY		PID - 762 - 0.19	OHIO	44
CHK'D. BY			FHWA REGION 5	65
DATE				

N

50+40.24 "Stop" Line Begin double, solid and broken center line

50+89 Continue edge line Lt.

R-1-30 30"x30"

STOP

S9

49

50+54 Continue edge line Rt.

Ex. Street Sign

STOP Ex.

Ex. Bridge

Ex. Bridge Limit 8'-8" 6&7 Insp.

Big Darby Creek

97

C.R. 287

C.R. 287

1 RR Orient Correctional Complex

5 R Ex. Ex. +35

762 Ex. +40

6 R

8 R

9 R

21 R

20 R

12 R

Ex. 15 MPH

Ex.

1 RR

S4 M-2-24-3 (30"x24") M-19-21 (21"x15")

762

55+15 End edge line Rt.

55+55 End edge line Rt.

36+24 Begin edge line Rt.

32 34 36 38 60 62

© S.R. 762

10 R Ex.

13 R Ex. 15 MPH

14 R Ex. Bridge Limit

9+60 Lt.

9+00 Lt.

22 R

Reerect

Reerect

Reerect

8+50 Lt.

STOP Ex.

S3 Ex. Speed Limit 20

S1 Ex. 15 MPH

5 RR 2'-3"x4' Special State Sign

4 RR

2 RR State of Ohio Orient Correctional Complex 6'x3'

9+75 Rt.

9+60 12" stop line

End double solid centerline

STOP

5 S

R-1-30 (30"x30")

762

15 R

16 R

Ex. ONE LANE BRIDGE

Ex. WATCH FOR ICE ON BRIDGE

17 R

53+00 End double, solid & broken centerline

Begin single broken centerline

18 R

25 MPH

63+00 End single broken centerline and edge lines Lt. & Rt.

3 RR Admin. Delivries E.T.C. 5'x2'

Special State Sign for Directions to Facilities Of Orient Correctional Complex

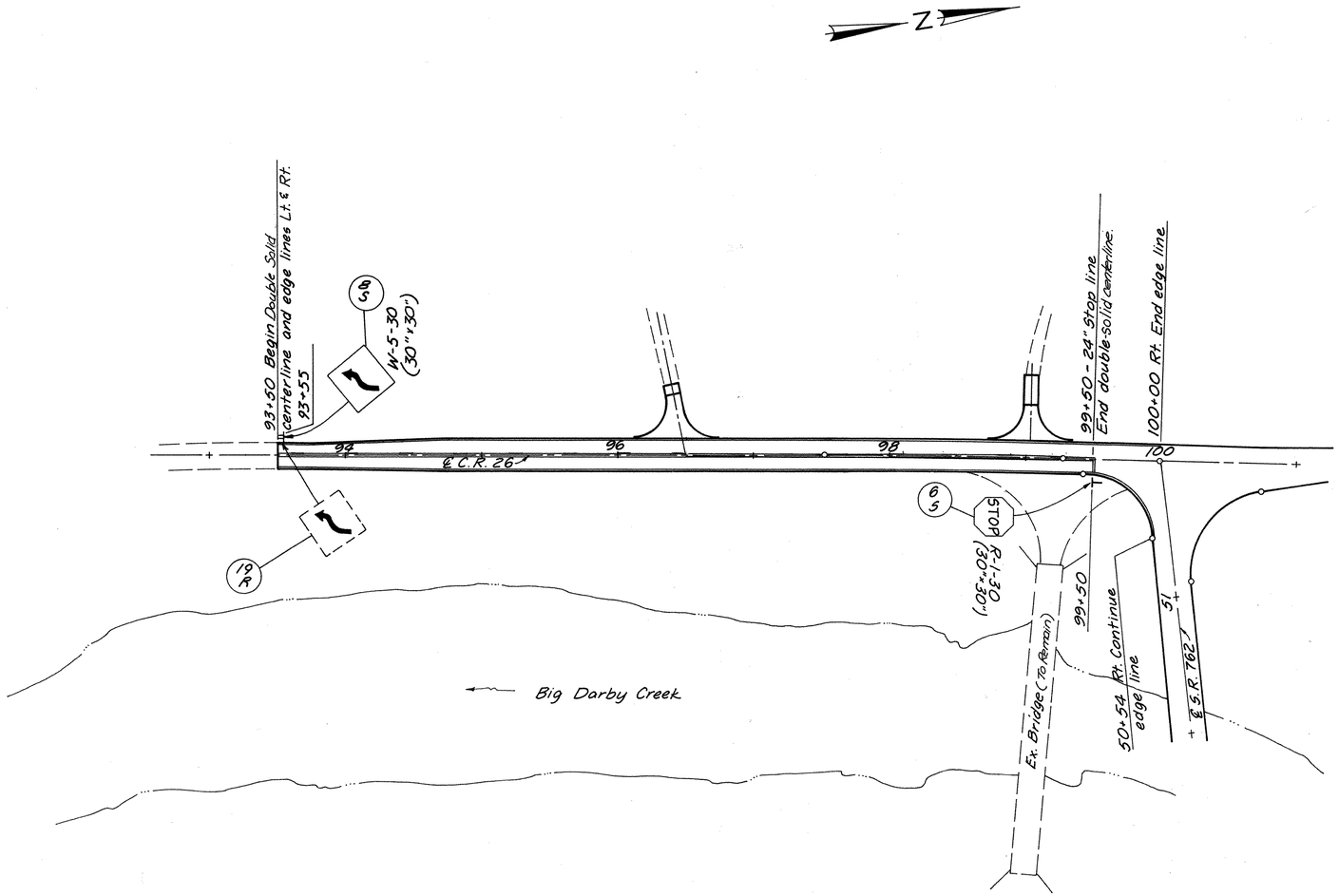
6+00 Begin double, solid centerline

S.R. 762 Sta. 50+54 to Sta. 63+00

Signing and Pavement Markings

TRAFFIC CONTROL PLANS

STICKLEN - BELSHEIM & ASSOCIATES



C.R. 26 Sta. 93+50 to Sta. 100+00
Signing and Pavement Markings

TRAFFIC CONTROL PLANS

EARTHWORK LIMITS shown are approximate. Actual slopes shall conform to plan cross-sections.

CALC. BY		PIC-762-0.19	OHIO	46/65
CHK'D. BY			FHWA REGION 5	
DATE				

End Appr. Slab Sta. 50+84.00
℄ Post Sta. 50+88.75
West Channel ℄
Big Darby Creek FLOW
Skew = 25°
Sta. 54+00 ℄ S.R. 762 = Sta. 4+00 East Channel ℄
℄ Post Sta. 54+63.75
East Channel ℄
Prop. ℄ S.R. 762
Junction Box 82"-90"
(Ex. 60" Conc. Pipe (To be removed)
16'-0" 32'-0" ℄ Roadway 16'-0" 33'-4" ℄ Deck
P.G. Line ℄ Survey
Prop. ℄ S.R. 762
TO ORIENT
25' (Typical)
℄ Post Sta. 50+73.21
Begin Appr. Slab Sta. 54+52.97
℄ Post Sta. 54+48.21
Prop. ℄ C.R. 26
Ex. 116'T.
Junction Box
Sta. 50+00.00 ℄ S.R. 762 = Sta. 100+00.00 ℄ C.R. 26
Sta. 51+50 ℄ S.R. 762 = Sta. 2+00 West Channel ℄
℄ 6"-8" Metal Pipe (Abandoned)
Existing Structure (To Remain and be painted)
East Slope
Existing S.R. 762
500' V.C.
P.V.C. Sta. 50+25
Ex. 20:1
Ex. 3.5:1

HARRISBURG QUADRANGLE
Lat. = 39°-48'-08"
Long. = 83°-10'-10"

TRAFFIC: 2006 ADT = 3,440
ADTT = 138

DRAINAGE AREA = 447 sq. mi.

Q_{10} = —— cfs, V_{10} = —— /sec, Elev. ——
Q_{25} = 22,500 cfs, V_{25} = 6.5 /sec, Elev. 776.5±
Q_{50} = —— cfs, V_{50} = —— /sec, Elev. ——
Q_{100} = 31,400 cfs, V_{100} = 7.3 /sec, Elev. 779.0±

Clears 100 yr. H.W. by 0.3'

EXISTING STRUCTURE

TYPE: Steel Whipple Truss
SPAN: 224' Clear Span (228' Overall)
ROADWAY: 16'-0"
SKEW: None
LOADING: Posted 3½ ton load limit
DECK: Timber strip
WEARING SURFACE: Asphalt
APPROACH SLABS: None
ALIGNMENT: Tangent
DATE BUILT: 1885
CONDITION: Poor
SFN: 6503756

(To Remain in Place and be Painted)

PROPOSED STRUCTURE

TYPE: 4-span continuous composite steel (A588) beams with reinforced concrete deck and substructure.
SPAN: 80'-102'-102'-80' ℅ bearings
SKEW: 25° Lt. Fwd.
LOADING: HS 20-44 & Alternate Military Loading (Case II)
WEARING SURFACE: Monolithic Concrete
APPROACH SLABS: AS-1-81 (25' long)
ALIGNMENT: Tangent
SUPERELEVATION: None
ROADWAY: 32' f/f Guardrail

BRIDGE LIMITS = 368.97'

BENCH MARK, Elev. 778.31
R.R. Spike in P. Pole #168 West of Intersection S.R. 762 & C.R. 26
Sta. 99+36.10, 15.5' Lt.

ESTIMATED AVERAGE PAY LENGTH OF HP10X42 Steel Piles at the Rear Abutment is 20'.

* Include with roadway quantities for payment
Top of Slope Elev. 778.0
P.V.I. Sta. 53+25 Elev. 784.94
Top of Slope Elev. 777.8
Highest Known Water Elev. 780.7 — Jan. 1959
+0.60%
-1.08%
Q100 Elev. 779.0±
Q25 Elev. 776.5±
Ftg. Elev. 791.90
2:1 Normal
Ordinary High Water Elev. 764.8
Normal Water Elev. 762.7
Existing Ground Line
48:1 Normal
2:1 Normal
Ftg. Elev. 768.50
APPROX. ROCK LINE
*2' Rock Channel Protection Type "C" (without Filter)

PROFILE ALONG ℄ SURVEY

Sta.	50+00	+50	51+00	+50	52+00	+50	53+00	+50	54+00	+50	55+00
	782.99	783.14	783.29	783.44	Sta. 50+84.00	783.58	783.70	783.80	783.87	783.93	783.96	783.98	783.97	783.94	783.89	783.82	783.73	783.62	783.48	783.33	Sta. 54+52.97	783.15	782.96
	777.32	776.84 (+14) 776.74 (+17)	774.7 (+31)	771.0 (+42)	769.8	766.9 (+70)	766.6 (+90)	767.4	767.2 766.0 (+65.85) 765.0 (+70)	762.29 (+32) 762.20 (+35) 760.8 (+84)	759.94 (+95) 759.1 (+40)	758.8 (+105) 759.3 (+108)	759.4 (+45)	760.0 (+23)	760.4 (+30) 760.6 (+33) 760.9 (+37)	761.2 (+45)	762.21 (+55)	763.8 (+72)	764.8 (+90) 765.4 (+94.58) 765.4	767.4 (+46)	768.0 (+39)	767.4	767.8 (+84)	766.9 9 770.8 (+104)	771.5 (+119)	771.5	772.1 (+58)	772.2 (+67)	769.4 (+78)	768.6	767.6 (+11)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.T.	R.D.Y.	R.D.Y.	TRO	TRO	5/16/90	

1/14

STICKLEN — BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

SITE PLAN

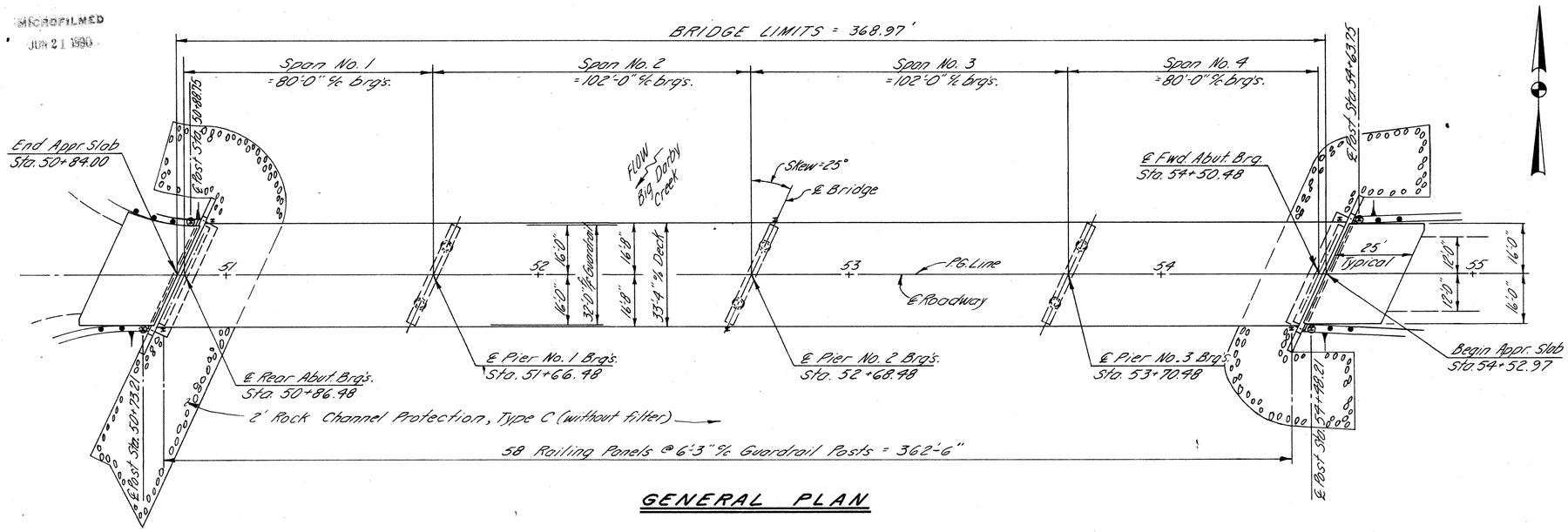
BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

E.O. 379

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

PIC-762-0.19

47/65



GENERAL PLAN

GENERAL NOTES

PROPOSED STRUCTURE

REFERENCE shall be made to Standard Drawings:

FB-1-82	Dated 5-10-82
AS-1-81 Sheets 1 and 2	Dated 11-27-81
DBR-2-73	Dated 4-10-73'

and to Supplemental Specifications:

824	Dated 10-08-82
836	Dated 11-12-85

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1983, and the Ohio "Supplement" to these specifications.

DESIGN DATA:

Design Loading - HS20-44 Case II and the Alternate Military Loading.

Monolithic wearing surface thickness is assumed for design purposes to be 1".

Deck Protection Method: Epoxy coated reinforcing steel, top mat only.

Concrete Class S - compressive strength 4500 p.s.i.

Concrete Class C - compressive strength 4000 p.s.i.

Reinforcing Steel - ASTM A615, A616, A617 - Grade 60 minimum yield strength 60,000 p.s.i.

Spiral reinforcement may be plain bars, ASTM A82 or A615.

Structural Steel ASTM A588 - yield strength 50,000 p.s.i.
ASTM A36 - yield strength 36,000 p.s.i.

PILE DRIVING CONSTRAINTS: Prior to driving piles at the rear abutment, the spill-thru slope embankment shall be constructed to the level of the subgrade for a minimum distance of 60 feet back of the rear abutment. After the embankment is completed within the above required limits, the excavation for the abutment footing may be made and piles can be driven.

PILE POINTS: Steel pile points shall be used to protect the tips of the proposed piling. The steel points shall be furnished by the Associated Pile and Fitting Corporation, 262 Rutherford Boulevard, Clifton, New Jersey 07014; the International Construction Equipment, Inc., 301 Warehouse Drive, Matthews, North Carolina 28105; or by a manufacturer that can furnish a steel point that is acceptable to the Director.

PILES shall be driven to refusal on bedrock. Refusal shall be considered as attained by penetrating soft bedrock with a minimum resistance of 20 blows per inch, or refusal shall be considered as attained after the pile has contacted hard bedrock and the pile has then received at least 20 blows.

The design load is 31 tons per pile for the Rear Abutment piles.

EMBANKMENT CONSTRUCTION: The embankment shall be constructed to the level of the subgrade for a minimum distance of 200 feet beyond the forward abutment. Excavation may then be made for the abutment.

FOUNDATION BEARING PRESSURE: The Forward Abutment footing, as designed, produces a maximum bearing pressure of 2.5 tons per sq. ft. and shall extend a minimum of 3 inches into bedrock or to the elevation shown, whichever is lower.

EXISTING STRUCTURE

TUCK POINTING

This item consists of the removal of loose and disintegrated mortar from the existing abutment block joints, where necessary and as directed by the Engineer, including the repair of the joints by Tuck Pointing by an experienced stone mason.

The quantity for payment shall be the actual number of lineal feet of joints repaired.

PAINTING: When no longer needed to maintain traffic, the existing truss bridge shall be closed to traffic and painted in accordance with Item 514 utilizing Painting System The Contractor shall arrange his work in such a manner so as to avoid interference with existing utility lines.

Plans indicating truss member sizes can be reviewed at ODOT District 6, office, Delaware, Ohio.

2/14

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

GENERAL PLAN & GENERAL NOTES

BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK

PICKAWAY CO. STA. 50+84.00 54+52.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.Y.	R.D.Y.	G.T.	D.S.B.	4/16/35	

FHWA REGION	STATE	PROJECT		
5	OHIO			

18
65

PICKAWAY COUNTY
PID-762-0.19

ITEM SPECIAL - DRILLED SHAFTS

DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING DRILLED SHAFTS OF THE TYPE AND SIZE CALLED FOR BY THE PLANS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND APPURTENANCES REQUIRED TO COMPLETE THE WORK AS SPECIFIED. THE LENGTH(S) OF THE DRILLED SHAFTS SHOWN IN THESE PLANS HAS BEEN ESTIMATED FROM THE AVAILABLE SUBSURFACE INFORMATION. THE CONTRACTOR IS EXPECTED TO FURNISH THE PROPOSED DRILLED SHAFTS AS PER THESE PLAN REQUIREMENTS WITH THE UNDERSTANDING THAT THE ESTIMATED LENGTH SHOWN ON THE PLANS MAY BE DIFFERENT FROM THE ACTUAL LENGTH DETERMINED TO BE NECESSARY AT THE TIME OF CONSTRUCTING THE DRILLED SHAFTS.

THE LIMITS OF EACH DRILLED SHAFT SHALL BE DEFINED AT THE TOP BY THE PLAN ELEVATION AND AT THE BOTTOM BY THE ELEVATION OF THE BOTTOM OF THE BEDROCK SOCKET.

A CASING WILL BE NECESSARY FOR EACH PIER DRILLED SHAFT AND THE CASINGS SHALL BE LEFT IN PLACE.

THE CASING FOR THE DRILLED SHAFTS OF PIER NO. 3 MAY BE REMOVED PROVIDED ALL PLAN REQUIREMENTS ARE SATISFIED. CASINGS LEFT IN PLACE SHALL BE PAINTED IN ACCORDANCE WITH ITEM 507.11.

CONTRACTOR QUALIFICATION

THE CONTRACTOR SHALL SUBMIT INFORMATION TO DOCUMENT THAT HIS PERSONNEL ARE EXPERIENCED IN THE CONSTRUCTION OF DRILLED SHAFTS OF THE TYPE AND SIZE DESCRIBED BY THE PLANS. THIS INFORMATION SHALL BE SUBMITTED AT THE PRECONSTRUCTION CONFERENCE.

DEVIATION FROM PLAN

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS INVOLVED WHEN MAKING CORRECTIONS TO HIS UNAUTHORIZED DEVIATIONS FROM THE PLANS. THE DIRECTOR SHALL DECIDE WHEN CORRECTIONS ARE NECESSARY.

IF A DRILLED SHAFT(S) IS CONSTRUCTED OUTSIDE OF THE PLAN TOLERANCES, THE CONTRACTOR MAY BE SUBJECT TO REDUCED PAYMENT AS DETERMINED BY THE DIRECTOR.

CASING

THE CASINGS SHALL BE MADE OF STEEL AND SHALL BE WATER TIGHT AND SHALL BE OF AMPLE STRENGTH TO WITHSTAND HANDLING STRESSES AND EXTERNAL SUBSURFACE PRESSURES. THE CASINGS SHALL BE SEATED INTO THE BEDROCK, THUS ATTEMPTING TO SEAL OFF INCOMING WATER, AND THE CASING LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT.

THE DIAMETER OF THE FURNISHED CASING(S) SHALL BE LARGE ENOUGH TO ALLOW THE CONSTRUCTION OF A BEDROCK SOCKET WHICH HAS A DIAMETER THAT IS EQUAL TO OR GREATER THAN THE PLAN DIAMETER.

EXCAVATION

EXCAVATION FOR THE DRILLED SHAFTS SHALL BE PERFORMED BY ROTARY DRILLING METHODS USING PRACTICAL METHODS AND MACHINERY ACCEPTABLE TO THE ENGINEER. WHEN OBJECTS SUCH AS LARGE BOULDERS ARE ENCOUNTERED, THEY SHALL BE REMOVED. BLASTING METHODS MAY BE USED ONLY AFTER RECEIVING PERMISSION FROM THE ENGINEER AND WHEN USED SHALL BE SO CONDUCTED AS TO AVOID DISTURBANCE OF THE BEDROCK FORMATION BELOW AND OUTSIDE THE LIMITS OF THE PROPOSED DRILLED SHAFT EXCAVATIONS. THE CONTRACTOR SHALL CARRY LIABILITY INSURANCE AND SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS GOVERNING THE USE OF EXPLOSIVES. THE DRILLED SHAFTS SHALL PENETRATE INTO SOLID BEDROCK TO A DEPTH THAT PROVIDES A BEDROCK SOCKET LENGTH THAT IS NOT LESS THAN THE BEDROCK SOCKET LENGTH SHOWN IN THE PLANS. WHEN A CASING IS USED, THE BEDROCK SOCKET SHALL BE MEASURED FROM THE BOTTOM OF THE CASING TO THE BOTTOM OF THE DRILLED BEDROCK EXCAVATION. WHEN THE ENGINEER IS ASSURED THAT A PORTION OF THE METAL CASING IS EMBEDDED IN SOLID BEDROCK, THE EMBEDDED DISTANCE MAY BE INCLUDED AS PART OF THE BEDROCK SOCKET UPON THE DIRECTOR'S CONCURRENCE.

DEWATERING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ANY INCOMING WATER TO THE EXTENT THAT THE SHAFT EXCAVATION IS MAINTAINED DRY ENOUGH FOR PERFORMANCE OF THE REQUIRED INSPECTION OPERATION. THE PREFERRED METHOD OF CONSTRUCTION IS TO PLACE THE CONCRETE IN A CLEAN DRY EXCAVATION. THE CONTRACTOR IS EXPECTED TO MAKE A REASONABLE ATTEMPT TO SEAL WATER OUT OF THE DRILLED SHAFT EXCAVATION.

BOTTOM CLEANOUT

THE BOTTOM OF THE DRILLED SHAFT EXCAVATION SHALL BE AS CLEAN AS PRACTICABLE (NO MORE THAN ONE QUARTER INCH OF LOOSE MATERIAL ON THE BOTTOM) PRIOR TO CONCRETE PLACEMENT. DRILLING SPOILS THAT ADHERE TO THE VERTICAL SIDES OF THE BEDROCK SOCKET ARE TO BE REMOVED.

APPROVAL BEFORE CONCRETE PLACEMENT

THE CONTRACTOR SHALL SUBMIT TO THE PROJECT ENGINEER A WRITTEN REPORT OF STEPS AND PROCEDURES THAT HE PROPOSES TO FOLLOW WHEN PLACING AND MONITORING THE CONCRETE PLACEMENT. CONCRETE SHALL NOT BE PLACED IN ANY DRILLED SHAFT EXCAVATION WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE DRILLED SHAFT EXCAVATION SHALL BE INSPECTED IMMEDIATELY BEFORE THE CONCRETE IS PLACED. A LIGHT POWERFUL ENOUGH TO THOROUGHLY INSPECT THE SIDES, BOTTOM, AND REINFORCING STEEL CAGE OF THE DRILLED SHAFT IS REQUIRED. NO CONCRETE SHALL BE PLACED DURING INCLEMENT WEATHER CONDITIONS WHICH PROHIBIT A THOROUGH INSPECTION.

CONCRETE PLACEMENT

THE CONCRETE FOR THE DRILLED SHAFTS SHALL BE PLACED AS PER 511 EXCEPT AS MODIFIED BY THE PLANS. THE CONCRETE PLACEMENT OPERATION SHOULD BE CONTINUOUS FROM START TO FINISH. THE CONCRETE FOR THE BEDROCK SOCKET SHALL BE PLACED AGAINST THE INSITU BEDROCK AND SHALL BE PLACED PROMPTLY AFTER THE FINAL INSPECTION OF THE SHAFT. IF PRACTICABLE, THE CONCRETE SHALL BE PLACED IN A CLEAN DRY EXCAVATION. CARE SHALL BE TAKEN TO ENSURE THAT CONCRETE IS NOT BEING PLACED IN MOVING WATER. THE CONCRETE CAN BE PLACED IN A DRY DRILLED SHAFT EXCAVATION BY THE FREE FALL METHOD PROVIDED THE CONCRETE FALLS TO ITS FINAL POSITION THROUGH AIR WITHOUT STRIKING THE SIDES OF THE HOLE, THE REINFORCING STEEL CAGE, OR ANY OTHER OBSTRUCTION. THE FREE FALL METHOD ALLOWS THE CONCRETE TO BE DROPPED FROM THE TOP THROUGH A CENTERING CHUTE TO THE CONCRETE'S FINAL POSITION.

IF THE ENGINEER DETERMINES THAT DEWATERING IS NOT PRACTICABLE, THE CONTRACTOR WILL BE GIVEN PERMISSION TO PLACE THE CONCRETE UNDER WATER. TO PLACE CONCRETE UNDER WATER, THE DRILLED SHAFT EXCAVATION SHALL BE FILLED WITH WATER TO SUCH A DEPTH THAT ALL WATER MOTION HAS CEASED. THE CONCRETE SHALL THEN BE PLACED BY MEANS OF A CONCRETE PUMP. THE CONCRETE PUMP PIPE SHALL HAVE A DIAMETER THAT IS NOT LESS THAN 4 INCHES. THE CONCRETE PUMP EQUIPMENT SHALL BE SO ARRANGED THAT NO VIBRATIONS RESULT WHICH MIGHT DAMAGE FRESHLY PLACED CONCRETE. PIPES CARRYING CONCRETE FROM THE PUMP TO THE SHAFT SHOULD BE LAID OUT WITH A MINIMUN NUMBER OF BENDS. THE PIPE USED TO CONVEY THE CONCRETE TO THE BOTTOM OF THE DRILLED SHAFT EXCAVATION SHALL BE ANCHORED TO THE STEEL CASING TO PREVENT THE PIPE FROM UNDULATING DURING THE INITIAL PLACEMENT OF THE CONCRETE.

THE PUMPING EQUIPMENT SHALL BE SUITABLE IN KIND AND ADEQUATE IN CAPACITY FOR THE WORK REQUIRED. THE USE OF ALUMINUM PIPE AS A CONVEYANCE FOR THE CONCRETE WILL NOT BE PERMITTED. AN ADEQUATE QUANTITY OF GROUT MORTAR OR CONCRETE WITH COARSE AGGREGATE OMITTED SHALL BE PUMPED THROUGH THE EQUIPMENT AHEAD OF THE SPECIFICATION CONCRETE TO PROVIDE LUBRICATION TO THE PUMPING SYSTEM. THE CONCRETE USED FOR LUBRICATION SHALL NOT BE PLACED IN THE SHAFT. THE LUBRICATION PROCESS WILL NOT BE REPEATED AS LONG AS THE PUMPING OPERATIONS ARE CONTINUOUS. THE OPERATION OF THE PUMP SHALL BE SUCH THAT A CONTINUOUS STREAM OF CONCRETE WITHOUT AIR POCKETS IS PRODUCED. IN ORDER TO PREVENT THE CONTAMINATION OF THE CONCRETE PLACED INITIALLY AT THE BOTTOM OF THE SHAFT, THE OUTLET END OF THE PUMPING PIPE SHALL BE SEALED WITH A DIAPHRAGM OR PLUG THAT IS FLUSHED OUT WHEN THE HYDROSTATIC PRESSURE FROM THE COLUMN OF CONCRETE EXCEEDS THAT OF THE WATER IN THE SHAFT. THE INITIAL RATE OF CONCRETE PLACEMENT MUST BE CAREFULLY CONTROLLED SO AS NOT TO LIFT OR DISPLACE THE CAGE OF REINFORCING STEEL. THE CONVEYING SYSTEM SHALL BE WATER TIGHT AND THE OUTLET END SHALL ALWAYS REMAIN WELL BELOW THE TOP OF THE FRESHLY PLACED CONCRETE. THE PREFERRED CONCRETE PLACEMENT PROCEDURE IS TO MAINTAIN THE OUTLET END OF THE PUMPING SYSTEM AT APPROXIMATELY 10 FEET BELOW THE TOP OF THE FRESH CONCRETE. WHEN THE CONCRETE REACHES THE TOP OF THE DRILLED SHAFT COLUMN ALL LAITANCE SHALL BE REMOVED.

ALTERNATE CONSTRUCTION METHODS

THE CONTRACTOR MAY PROPOSE ALTERNATE CONSTRUCTION METHODS WHICH WILL BE APPROVED OR REJECTED BY THE DIRECTOR.

TOLERANCES

THE CONTRACTOR SHALL LOCATE AND CONSTRUCT THE TOP CENTER OF THE PIER DRILLED SHAFTS WITHIN A ONE-INCH RADIUS OF THE POSITION INDICATED BY THE PLANS. THE PIER SHAFTS ARE TO BE INSTALLED VERTICALLY AND MUST BE WITHIN 1.0 PERCENT OF PLUMB FOR THE TOTAL LENGTH OF THE DRILLED SHAFT.

CONCRETE

CONCRETE FOR ALL DRILLED SHAFTS SHALL BE CLASS S CONCRETE AND SHALL BE IN ACCORDANCE WITH 511 EXCEPT AS MODIFIED AND SUPPLEMENTED HEREIN. THE REQUIRED SLUMP IS SIX (6) INCHES, PLUS OR MINUS ONE-HALF INCH. THE MAXIMUM WATER TO CEMENT RATIO SHALL BE 0.50. IF CONCRETE IS PLACED UNDER WATER, THE REQUIREMENT OF ADDING 10 PERCENT MORE CEMENT TO THE CONCRETE MIX SHALL BE WAIVED. THE TOP 5 TO 10 FEET OF CONCRETE IN THE DRILLED SHAFTS ARE REQUIRED TO BE VIBRATED. ONLY A MINIMAL VIBRATORY EFFORT IS NECESSARY. SPECIAL CARE SHALL BE TAKEN NOT TO OVER-VIBRATE THE DRILLED SHAFT CONCRETE.

IF THE CASINGS FOR THE DRILLED SHAFTS OF PIER NO. 3 ARE TO BE WITHDRAWN, THE CONCRETE SHALL NOT BE VIBRATED UNTIL THE CASING IS COMPLETELY REMOVED AND THE SHAFT TOP IS FORMED TO THE PLAN CROSS-SECTION. THE CONTRACTOR SHALL FURNISH A PRECONSTRUCTED TOP FORM FOR USE IN ACCURATELY CONFINING THE CONCRETE AT THE TOP OF THE DRILLED SHAFT WHEN THE CASING IS REMOVED.

REINFORCING STEEL

REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF 509. THE REINFORCING STEEL SHALL BE GRADE 60. THE SPIRAL REINFORCING STEEL MAY BE PLAIN BARS ASTM A82 OR A615. THE REINFORCING STEEL SHALE BE COMPLETELY ASSEMBLED PRIOR TO PLACEMENT AND THE LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT. SEE PLAN SHEETS FOR DETAILS OF REINFORCING STEEL. VERTICAL BAR LENGTHS AS GIVEN IN THE REINFORCING STEEL LIST HAVE BEEN ESTIMATED.

INSPECTION

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE MEANS FOR ACCESS AND SAFE DESCENT INTO ALL DRILLED SHAFT EXCAVATIONS THAT ARE PROTECTED BY A CASING AND HAVE A DIAMETER THAT IS LARGE ENOUGH TO ALLOW A PERSON TO SAFELY ENTER AND PERFORM THE REQUIRED INSPECTION. ACCESS CAN BE PROVIDED BY A POSITIVE FORWARD AND REVERSE HYDRAULIC WINCH OR A POWER-UP AND POWER-DOWN HOIST ON A CRANE. THE METHOD CHOSEN FOR ENTERING AND LEAVING THE SHAFT SHALL BE CONVENIENT, SAFE AND NOT UNCOMFORTABLE FOR THE USER. THE CONTRACTOR SHALL ALSO PROVIDE PROTECTIVE CLOTHING FOR USE BY THOSE MAKING AN INSPECTION OF THE SHAFT.

AN INSPECTION RECORD CHART HAS BEEN INCLUDED WITH THE PLANS ON SHEET 4 OF 14 AND SHALL BE COMPLETED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT NEEDED TO OBTAIN THE MEASUREMENTS FOR COMPLETING THE CHART, AND THE CONTRACTOR SHALL ASSIST THE ENGINEER IN OBTAINING THESE MEASUREMENTS. MEASUREMENTS SHALL BE OBTAINED PRIOR TO PLACING CONCRETE. WHEN THE INSPECTION RECORD CHART IS COMPLETED, THE PROJECT ENGINEER SHALL SUBMIT A COPY TO THE BUREAU OF BRIDGES. ATTENTION: FOUNDATION ENGINEER.

THE ENGINEER SHOULD OBTAIN PHOTOGRAPHS OF THE CONTRACTOR'S CONSTRUCTION PROCEDURES.

SAFETY PROVISIONS

THE CONTRACTOR SHALL HAVE AT THE JOB SITE ALL EQUIPMENT AND MATERIALS NEEDED TO PROVIDE SAFE CONSTRUCTION AND INSPECTION OF THE DRILLED SHAFTS AS REQUIRED BY CITY, STATE, AND FEDERAL SAFETY REQUIREMENTS.

SAFETY PROVISIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE REQUIREMENTS SPECIFIED BY THE PLANS, SPECIAL PROVISIONS, AND PROPOSAL.

THE CONTRACTOR SHALL PROVIDE CONTINUOUS SURVEILLANCE OF ALL PERSONS IN THE PIER DRILLED SHAFT EXCAVATION. AT ALL TIMES WHEN A PERSON IS IN THE DRILLED SHAFT EXCAVATION, PROVISION SHALL BE MADE FOR PUMPING FRESH AIR TO SAID PERSON. ALL LIGHTING SHALL BE WITH ELECTRIC LIGHTS. MECHANICAL EQUIPMENT USED INSIDE THE SHAFT SHALL BE OPERATED BY AIR OR ELECTRICITY. THE USE OF GASOLINE ENGINES OR OTHER TYPES OF EQUIPMENT PRODUCING FUMES THAT MAY ENTER THE EXCAVATION WILL NOT BE PERMITTED. THE CONTRACTOR SHALL PROVIDE GAS DETECTION AND OXYGEN ANALYZERS, AND SHALL TEST THE DRILLED SHAFT EXCAVATION ATMOSPHERE QUALITATIVELY THROUGHOUT THE COLUMN'S ENTIRE LENGTH AND ASSURE THAT THE QUANTITIES OF GASES AND OXYGEN PRESENT ARE IN SAFE AMOUNT AND SAFE PROPORTIONS PRIOR TO PERMITTING ANY PERSON TO ENTER THE SHAFT.

METHOD OF MEASUREMENT

THE TOTAL LENGTH OF EACH DRILLED SHAFT TO BE PAID FOR SHALL BE THE COMPLETED AND ACCEPTED LENGTH, MEASURED ALONG THE AXIS OF THE DRILLED SHAFT FROM THE BOTTOM OF THE BEDROCK SOCKET TO THE PROPOSED TOP ELEVATION, AS PER PLAN. THE REINFORCING STEEL THAT PROJECTS FROM THE DRILLED SHAFT INTO THE PIER COLUMN AS SPECIFIED BY THE PLANS IS INCLUDED WITH THE DRILLED SHAFT FOR PAYMENT BUT SHALL NOT BE INCLUDED IN THE MEASURED LENGTH OF THE DRILLED SHAFT.

THE TOTAL LENGTH OF EACH DRILLED SHAFT SHALL BE DIVIDED INTO TWO SEGMENTS. THE LENGTH OF THE LOWER SEGMENT IS THE LENGTH OF THE BEDROCK SOCKET AND THE LENGTH OF THE UPPER SEGMENT IS THE LENGTH OF THE DRILLED SHAFT ABOVE THE BEDROCK SOCKET.

BASIS OF PAYMENT

PAYMENT FOR FURNISHING AND INSTALLING DRILLED SHAFTS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ACCEPTED SHAFTS AS PER ITEM SPECIAL DRILLED-SHAFTS ABOVE THE BEDROCK SOCKET AND ITEM SPECIAL DRILLED-SHAFTS IN BEDROCK, WHICH SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ITEM AS SPECIFIED.

CLASSIFICATION OF ROCK FOR PAY PURPOSES:

ROCK IS DEFINED AS ANY MATERIAL WHICH CANNOT BE DRILLED WITH A CONVENTIONAL EARTH AUGER AND/OR UNDERREAMING TOOL AND REQUIRES THE USE OF SPECIAL ROCK AUGERS, CORE BARRELS, AIR TOOLS, BLASTING AND/OR OTHER METHODS OF HAND EXCAVATION. ALL EARTH SEAMS, ROCK FRAGMENTS, AND VOIDS INCLUDED IN THE ROCK EXCAVATION AREA WILL BE CONSIDERED ROCK FOR THE FULL VOLUME OF THE SHAFT FROM THE INITIAL CONTACT WITH ROCK FOR PAY PURPOSES.

DESIGN PARAMETERS

THE DESIGN LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 264 TONS AT THE PIER, WHICH IS ASSUMED TO BE RESISTED BY SHAFT ADHESION WITHIN A PORTION OF THE BEDROCK SOCKET AND ALSO BY SHAFT END BEARING PRESSURE. THE ALLOWABLE BEDROCK SOCKET ADHESION IS ONE TON PER SQUARE FOOT WHICH IS ASSUMED TO ACT ALONG THE BOTTOM 5 FEET OF THE BEDROCK SOCKET. THE ALLOWABLE END BEARING PRESSURE IS 35 TONS PER SQUARE FOOT. THE CALCULATED END BEARING IS 196 TONS, WHICH IS EQUAL TO A DESIGN BEARING PRESSURE OF 13.9 TONS PER SQUARE FOOT.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						3 of 4
DRILLED SHAFT NOTES BRIDGE NO. PIC-762-0033 OVER BIG DARBY CREEK PICKAWAY COUNTY				STA 50+84.00 34+32.97		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JW	REF		CKT WJ	4 3 85		

INSPECTION RECORD FOR DRILLED SHAFTS

FHWA REGION	STATE	PROJECT	
5	OHIO		

49/65

PICKAWAY COUNTY
PIC-762-0.19

PROJECT NO. _____

GENERAL CONTRACTOR _____

DRILLING CONTRACTOR _____

PROJECT ENGINEER _____

TYPE & MODEL OF DRILLING MACHINERY _____

MAX. CONTINUOUS TORQUE _____ FT.-LB.

CROWD (MAX. CONTINUOUS DOWNWARD FORCE) _____ LBS.

TYPE OF CONCRETE PUMP _____

HOSE DIAMETER _____ INCHES

CAPACITY _____ CU. FT./MIN.

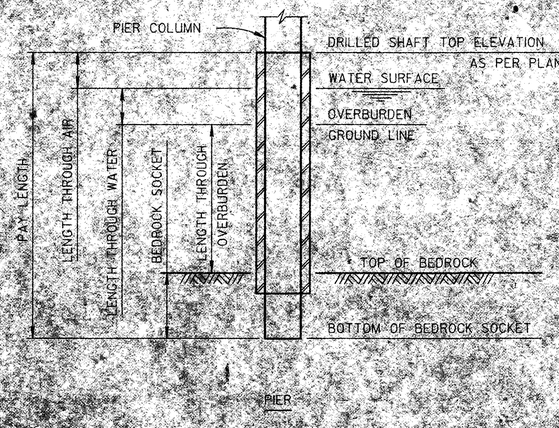
COST PER LINEAL FOOT
ABOVE THE BEDROCK SOCKET _____
IN BEDROCK SOCKET _____
TYPE OF ROCK _____

SUBSTRUCTURE		DATE AND TIME OF DRILLING		APPROX. ELEVATION OF TOP OF OVER BURDEN	LENGTH OF DRILLED SHAFTS ABOVE THE BEDROCK SOCKET				OBSTRUCTIONS ENCOUNTERED			LENGTH OF DRILLED SHAFTS IN BEDROCK SOCKET			STEEL CASING			REINFORCING STEEL				CONCRETE					TOLERANCES			PLAN SHAFT DIAMETER (INCH)	CONSTRUCTED SHAFT DIAMETER (INCH)
																		VERTICAL		SPIRAL							DEVIATION FROM PLUMB OR PLAN BATTER		DEVIATION OF COLUMN TOP CENTER FROM PLAN LOCATION HORIZONTALLY (INCH)		
PIER	NUMBER	STARTED	FINISHED		THROUGH AIR (FEET)	THROUGH WATER (FEET)	THROUGH OVER BURDEN (FEET)	PAY LENGTH (FEET)	NUMBER	SIZE (INCH)	ELAPSED TIME FOR REMOVAL (HR.)	APPROX. ELEVATION OF TOP OF BEDROCK	ELEV. OF BOTT. OF BEDROCK SOCKET	LENGTH OF BEDROCK SOCKET (FEET)	LENGTH (FEET)	CASING GAUGE	WAS CASING LEFT IN PLACE ?	BAR SIZE NO.	NO. OF REBARS	BAR SIZE NO.	PITCH (INCH)	SLUMP TEST RESULT (INCH)	CYLINDER STRENGTH f'_c (P.S.I.)	AIR TEMP. (F)	TIME NEEDED TO PLACE CONCRETE (HR.)	QUANTITY (CU.YD.)	N-S (INCH)	E-W (INCH)			
PIER 1	P11																														
	P12																														
PIER2	P21																														
	P22																														
PIER3	P31																														
	P32																														

PROJECT ENGINEER COMMENTS

LOCATION AND EXTENT OF CAVITIES

COMMENTS ON WATER CONDITION (I.E. FLOW VOLUME, HYDROSTATIC HEAD, WHERE ENCOUNTERED, ETC.)



WHEN INSPECTION RECORD IS COMPLETED SUBMIT A COPY TO BUREAU OF BRIDGES ATTN: FOUNDATION ENGINEER

THIS SHEET IS TO BE USED ONLY FOR RECORDING "AS-BUILT" INFORMATION.

STATE OF OHIO — DEPARTMENT OF TRANSPORTATION — BUREAU OF BRIDGES AND STRUCTURAL DESIGN — 4/14

DRILLED SHAFTS INSPECTION RECORD

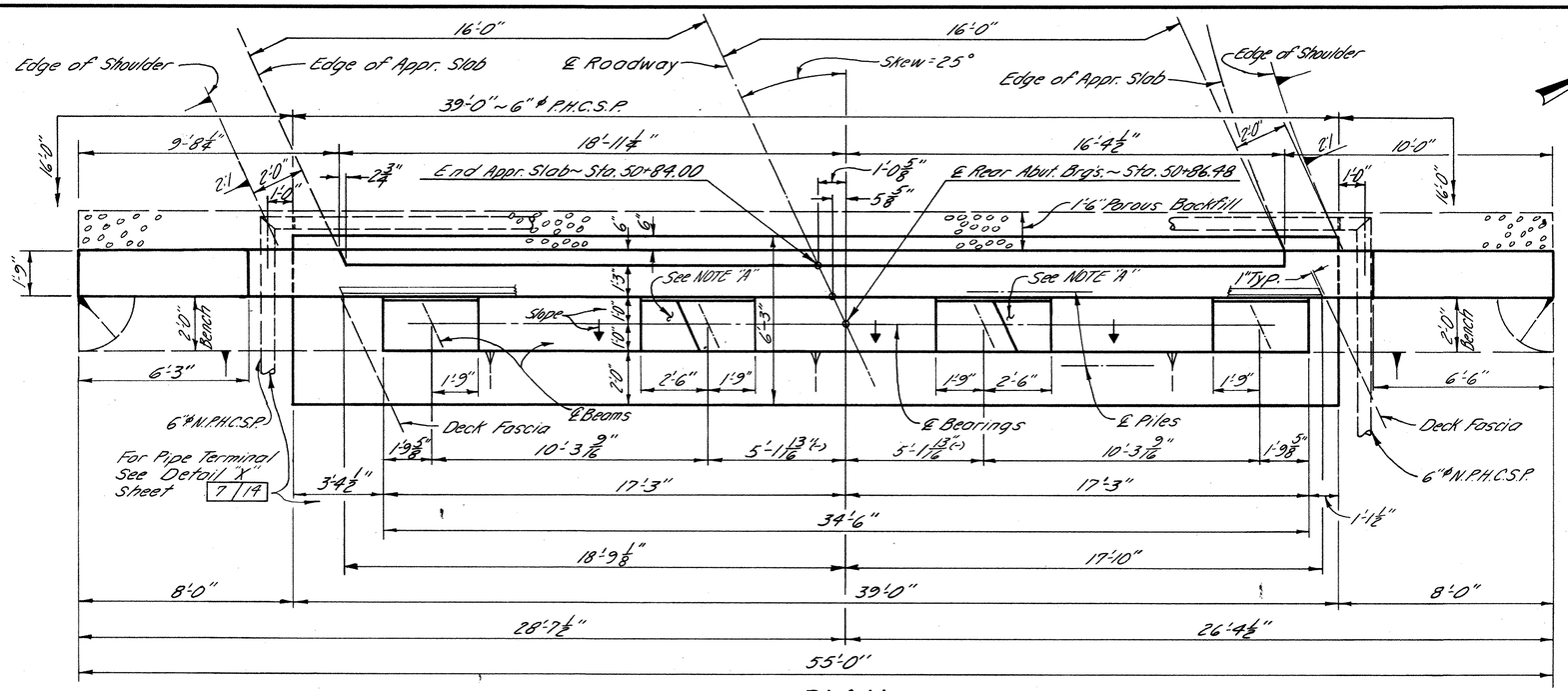
BRIDGE NO. PIC-762-0003.37
OVER
BIG DARBY CREEK
STA. 30+84.00
PICKAWAY COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JM	REC		OKT	WJG	4-14-14	

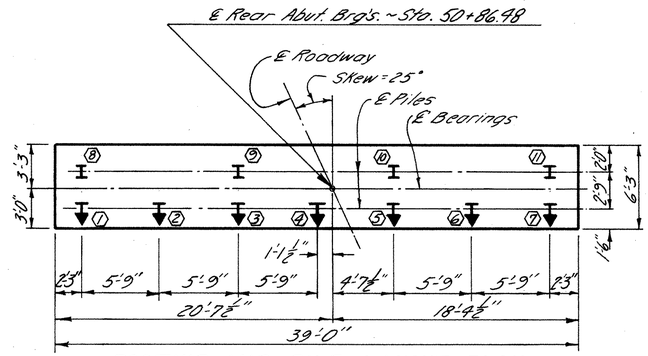
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

50/65

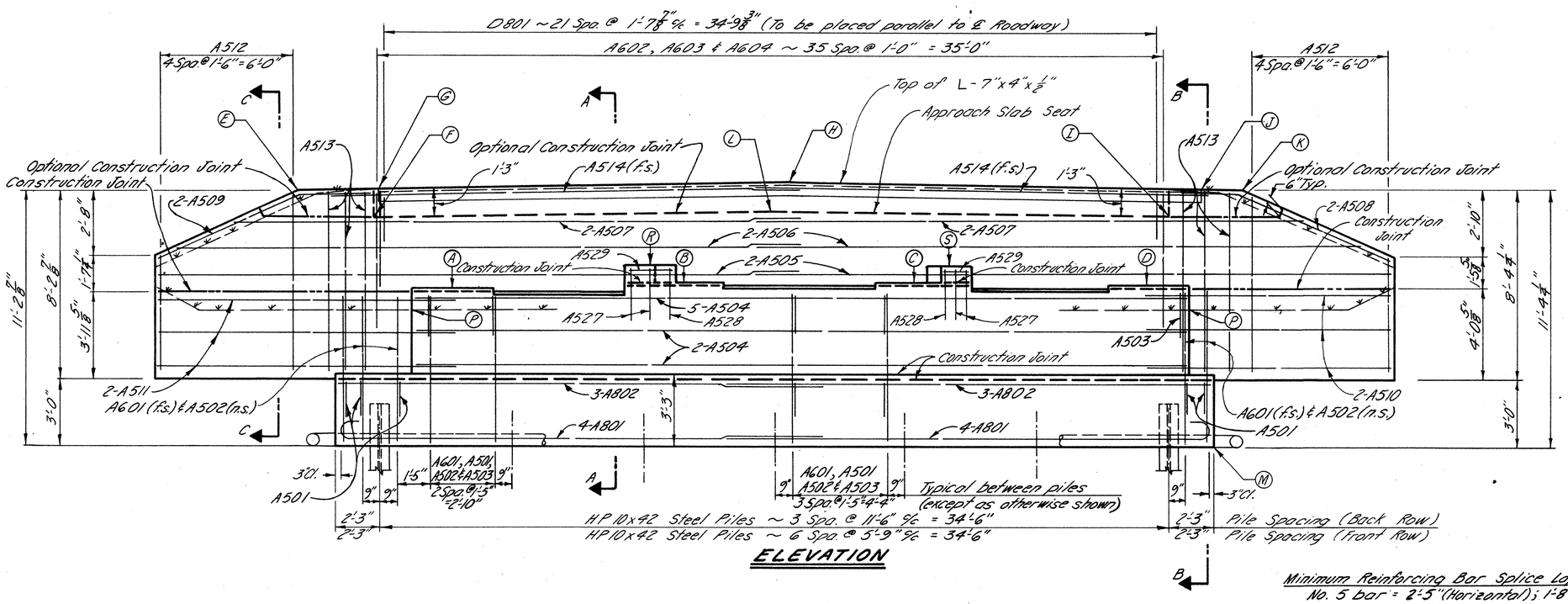
PIC-762-0.19



PLAN



FOOTING AND PILE LAYOUT PLAN



ELEVATION

ELEVATION TABLE	
LOCATION	ELEVATION
A	778.95
B	779.12
C	779.15
D	779.03
E	783.14
F	781.95
G	783.20
* H	783.50
I	782.03
J	783.28
K	783.25
* L	782.24
M	771.90
P	778.0
R	779.75
S	779.78

* Elevations given along ℄ Roadway.

BRIDGE SEAT ELEVATIONS have been adjusted upward ¼" at abutments to compensate for the vertical deformation of the bearings.

NOTE "A": The lateral beam restraints shall be constructed after the laminated elastomeric bearing and steel beams are placed. See LATERAL BEAM RESTRAINT DETAILS, Sheet 12/14

NOTE: For additional Details, Notes and Sections, see Sheet 7/14.

Minimum Reinforcing Bar Splice Lap Length
No. 5 bar = 2'-5" (Horizontal); 1'-8" (Vertical)
No. 6 bar = 2'-0"
No. 8 bar = 4'-9"

5/14

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

REAR ABUTMENT DETAILS

BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
STA. 50+84.00
54+52.97
PICKAWAY CO.

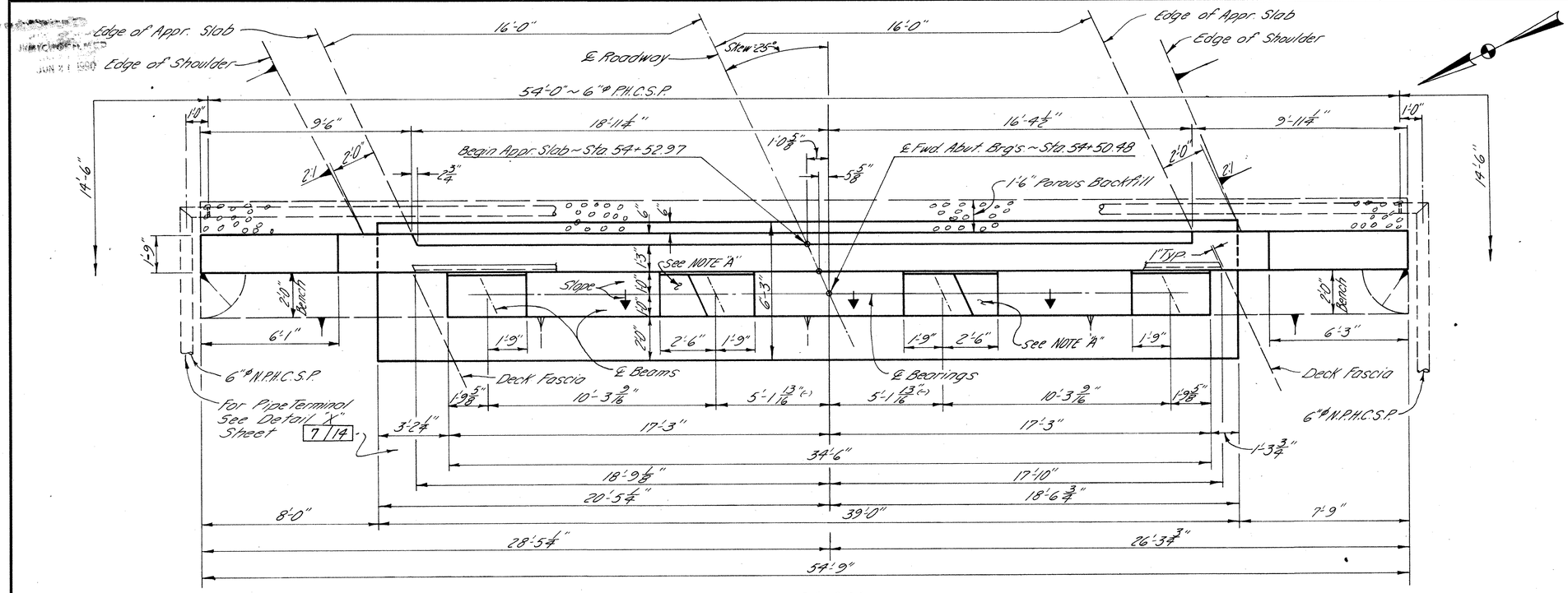
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.K.		G.T.	D.G.H.	4/16/85	

HILLS CO. 10-7155-280-183

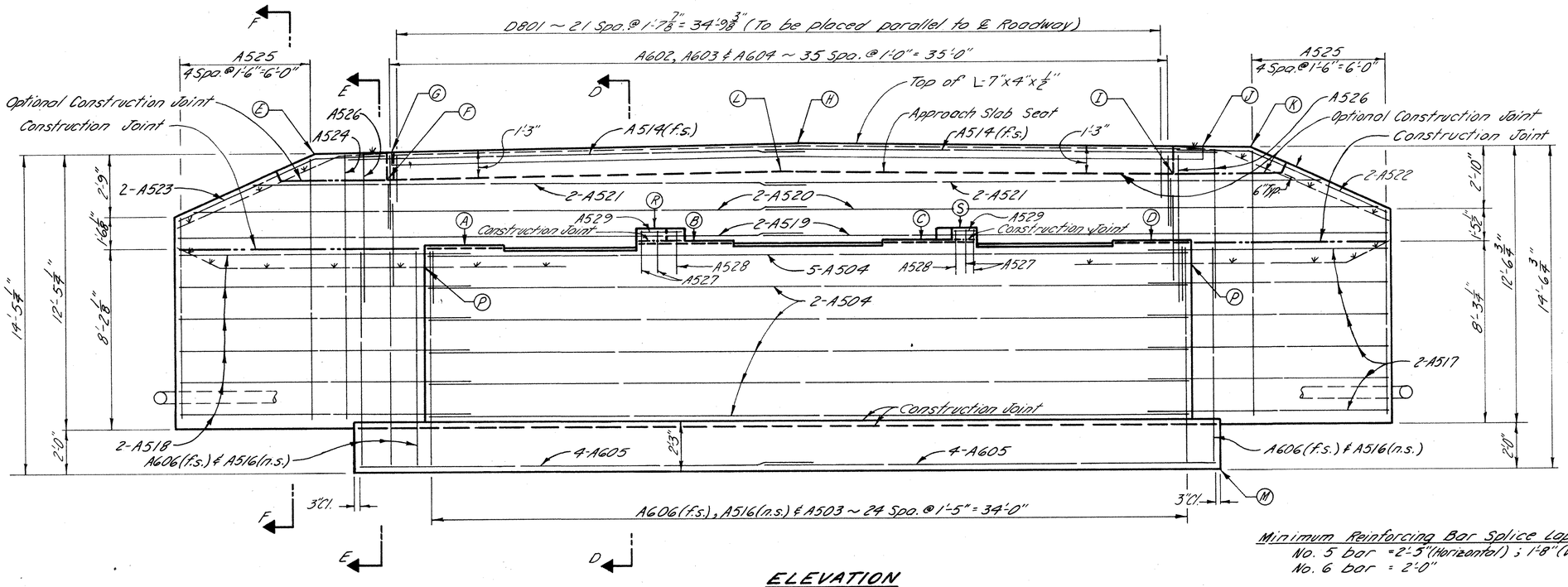
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

PIC-762-0.19

51/65



PLAN



ELEVATION

ELEVATION TABLE	
LOCATION	ELEVATION
A	778.76
B	778.94
C	778.97
D	778.85
E	782.94
F	781.76
G	783.00
* H	783.32
I	781.85
J	783.11
K	783.06
* L	782.06
M	768.50
P	777.8
R	779.57
S	779.60

* Elevations given along ℄ Roadway.

BRIDGE SEAT ELEVATIONS have been adjusted upward ½" at abutments to compensate for the vertical deformation of the bearings.

NOTE "A": The lateral beam restraints shall be constructed after the laminated elastomeric bearing and steel beams are placed. See LATERAL BEAM RESTRAINT DETAILS, Sheet 12/14

NOTE: For additional Details, Notes and Sections, see Sheet 7/14.

Minimum Reinforcing Bar Splice Lap Length
No. 5 bar = 2'-5" (Horizontal); 1'-8" (Vertical)
No. 6 bar = 2'-0"

6/14

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

FORWARD ABUTMENT DETAILS

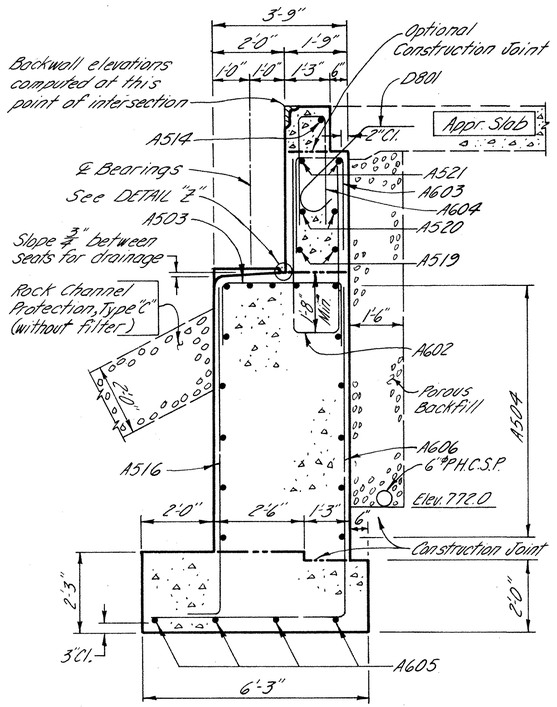
BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
STA. 50+84.00
54+52.97
PICKAWAY CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.Y.		G.T.	DGT	3/19/85	

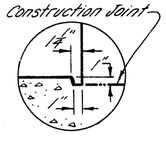
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

52/65

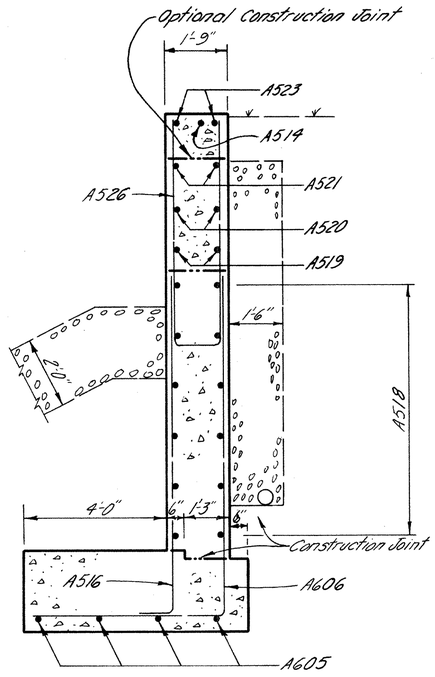
PIC-762-0.19



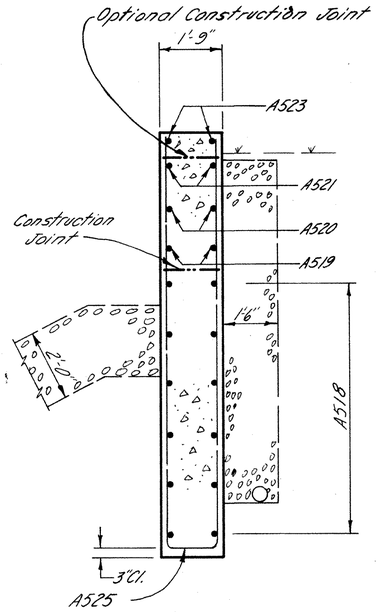
SECTION D-D



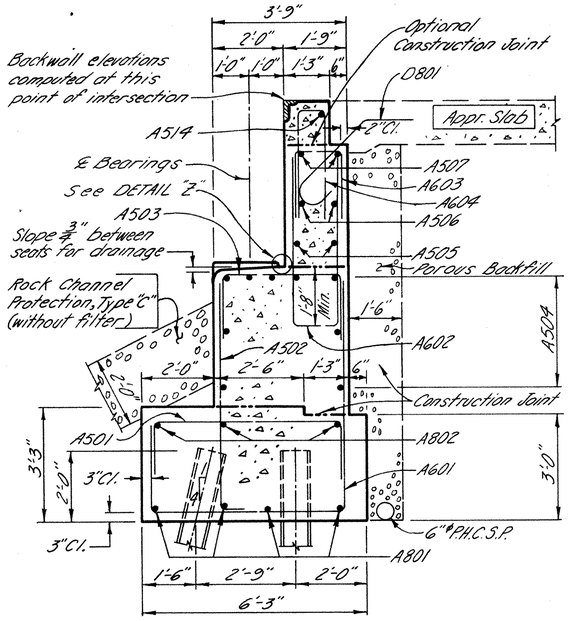
DETAIL "Z"



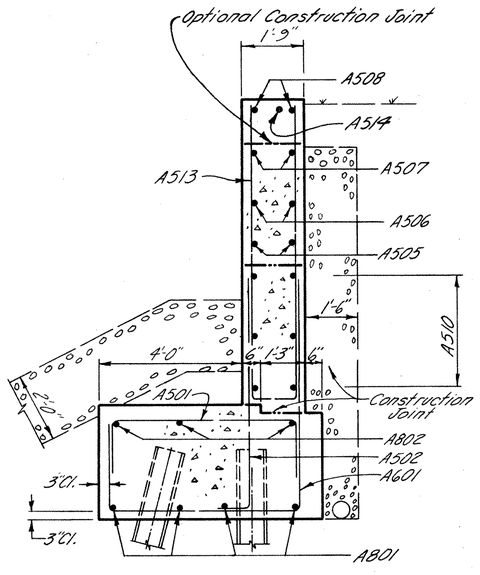
SECTION E-E



SECTION F-F



SECTION A-A



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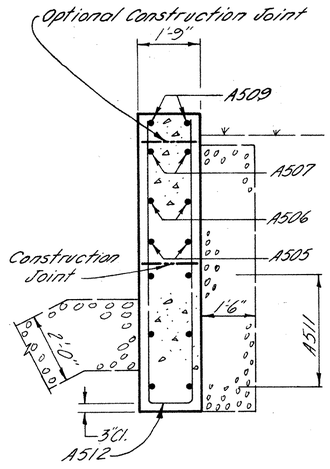


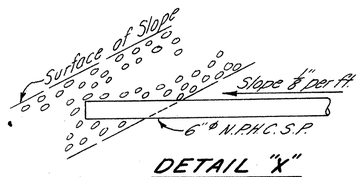
SECTION C-C

BACKWALL CONCRETE: In addition to the provisions of 511.08, backwall concrete above the optional construction joint at the approach slab seat shall not be placed until after the deck concrete in the span adjacent to the abutment has been placed.

POROUS BACKFILL shall extend upward to the plane of the subgrade and laterally to the end of abutment wings.

LEGEND

P.H.C.S.P. = Perforated Helical Corrugated Steel Pipe
N.P.H.C.S.P. = Non-Perforated Helical Corrugated Steel Pipe
n.s. = near side
f.s. = far side
T = Indicates bottered piles
③ = Indicates pile number



DETAIL "X"

7/14

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

ABUTMENT DETAILS

BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

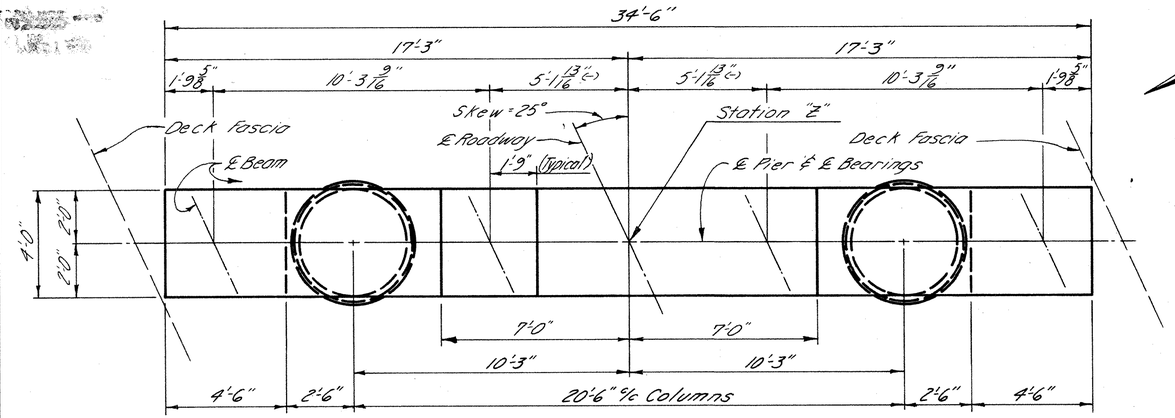
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.Y.		G.T.	D.G.H.	3/19/85	

HILLS CO. 10-7155-250-183

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

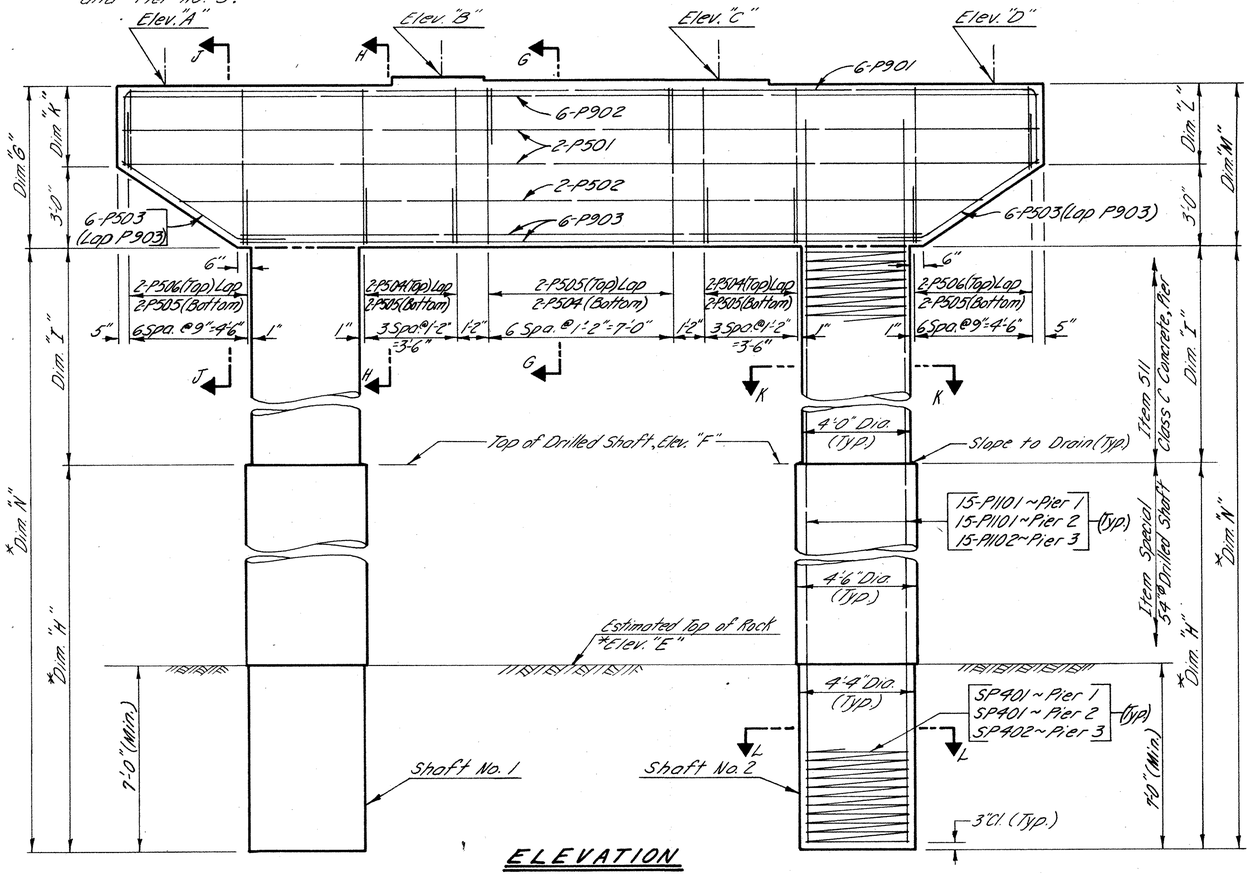
53/65

PIC-762-0.19



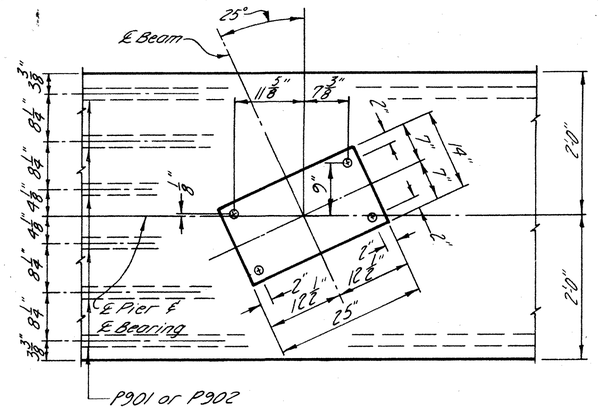
PLAN

NOTE: Bearing seats shown are for Pier No. 1, provide similar arrangement for Pier No. 2 and Pier No. 3.



ELEVATION

LOCATION	Station "Z"	Elev. "A"	Elev. "B"	Elev. "C"	Elev. "D"	*Elev. "E"	Elev. "F"	Dim. "G"	*Dim. "H"	Dim. "I"	Dim. "K"	Dim. "L"	Dim. "M"	*Dim. "N"
Pier No. 1	51+66.48	779.49	779.63	779.62	779.46	755.6	765.80	6'-0 3/8"	17'-2"±	7'-7 7/8"	3'-0 3/8"	3'-0"	6'-0"	24'-9 7/8"
Pier No. 2	52+68.48	779.13	779.28	779.28	779.14	755.0	765.80	6'-0"	17'-10"±	7'-4"	3'-0"	3'-0 1/8"	6'-0 1/8"	25'-2"
Pier No. 3	53+70.48	779.35	779.51	779.53	779.40	761.2	767.60	6'-0"	13'-5"±	5'-9"	3'-0"	3'-0 5/8"	6'-0 5/8"	19'-2"



FIXED BEARING AND ANCHOR ROD LAYOUT
(Pier No. 2)

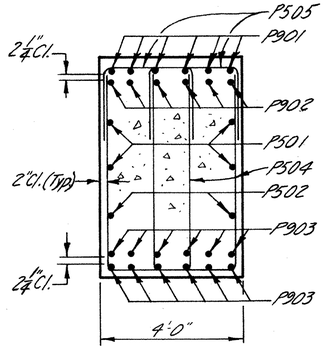
BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors in Pier No. 2.

BEARING ANCHORS: At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates, may be cast in place.

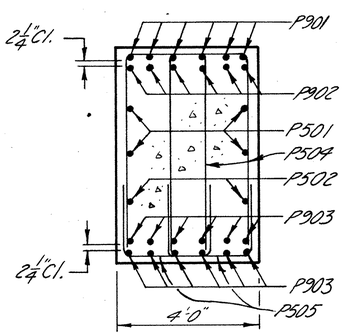
BRIDGE SEAT ELEVATIONS have been adjusted upward ½" at Pier No. 1 and Pier No. 3 to compensate for the vertical deformation of the bearings.

Minimum Reinforcing Bar Splice Lap Length
No. 5 bar = 1'-8"

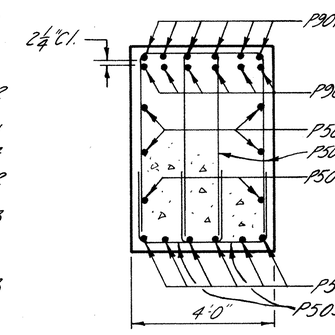
NOTE: See Sheet 3/14 for Drilled Shaft Specifications.



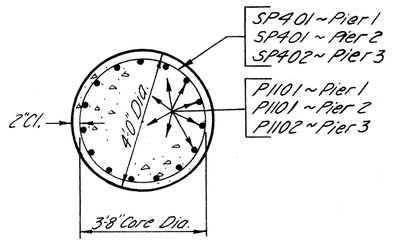
SECTION G-G



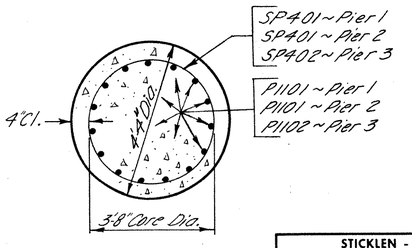
SECTION H-H



SECTION J-J



SECTION K-K



SECTION L-L

* Approximate Dimensions and Elevations. Final dimensions and elevations shall be based upon the elevation of the top of rock as determined by the Engineer.

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ENGINEERS
WORTHINGTON OHIO

PIER DETAILS

BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

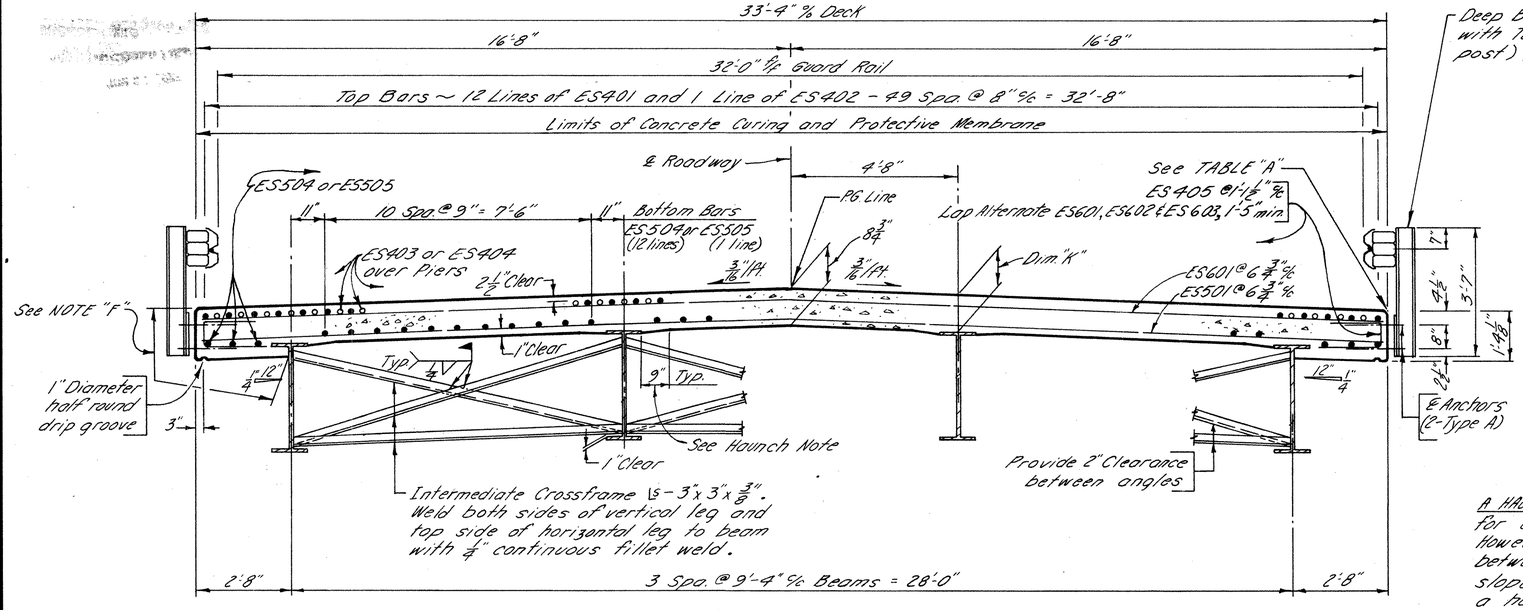
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.K.		G.T.	D.G.T.	2/20/85	

NILLS CO. 10-7155-250-183

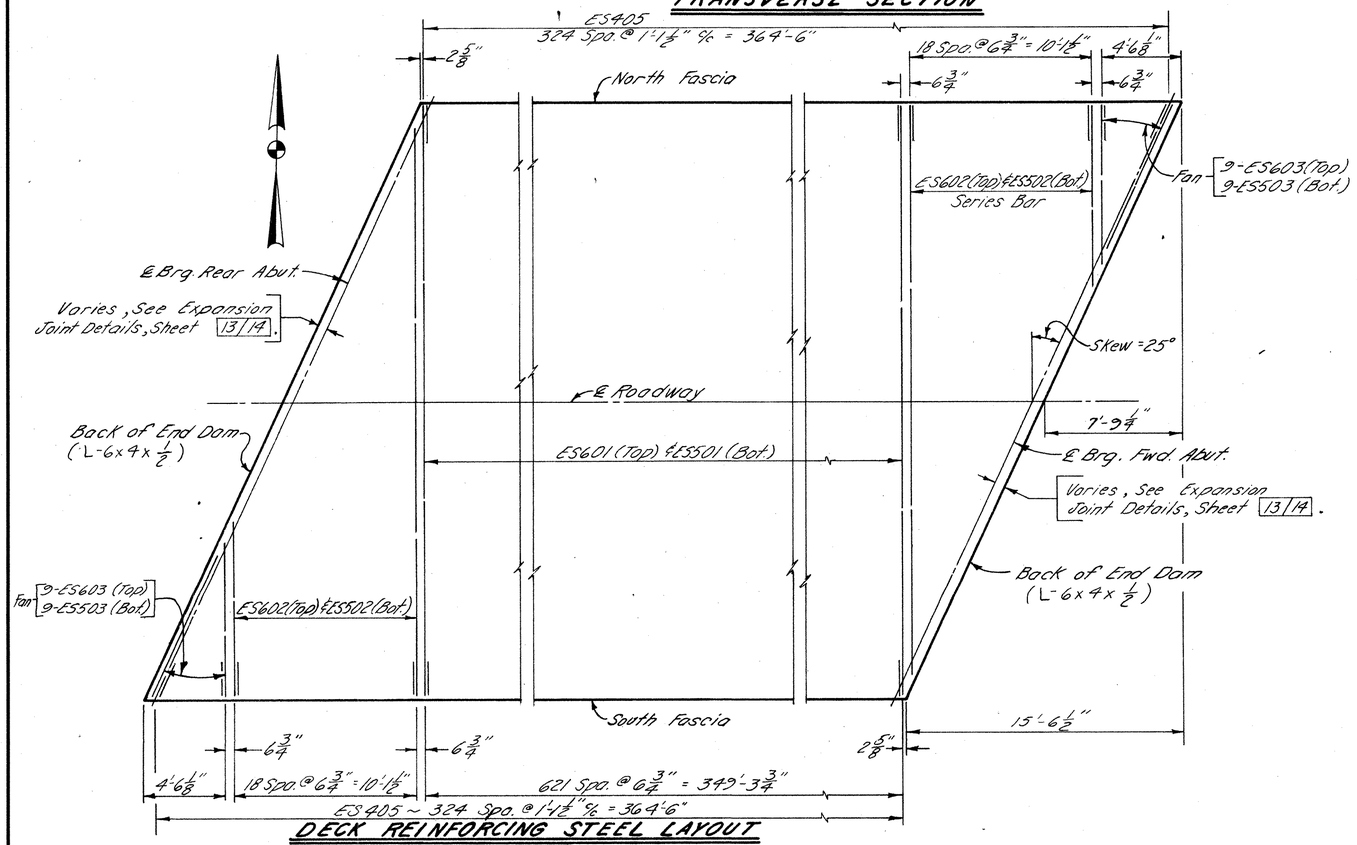
F.H.W.A. REGION	STATE	PROJECT		
5	OHIO			

54/65

PIC-762-0.19



TRANSVERSE SECTION



DECK REINFORCING STEEL LAYOUT

± The elevations shown of edge of deck are those which are required before the concrete deck is placed. Proper allowance has been made for the dead load deflections caused by the weight of the concrete

DECK SLAB DEPTH AT ℄ BEAMS	
Beam	Dimension "K"
W 36 x 182	8 3/4"
W 36 x 230	9"
W 36 x 245	8 7/8"

A HAUNCH WIDTH of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" (provided that the slope shall be not more than 1:4 for a haunch less than 9" width.)

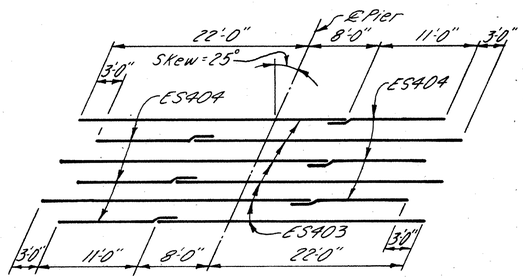
DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

NOTE "F":
ITEM SPECIAL, SEALING OF CONCRETE SURFACES: A concrete sealer, either silane or an epoxy sealer, shall be applied to the designated concrete surfaces on both sides of deck. See the Proposal Note for surface preparation requirements, application rates, materials requirements and application procedures including Method A of 511.14.

TABLE "A" ± DECK CONSTRUCTION CONTROL ELEVATIONS			
NORTH EDGE		SOUTH EDGE	
Station	Elevation	Station	Elevation
50+94.25	783.29	50+78.71	783.20
51+14.25	783.46	50+98.71	783.38
51+34.25	783.55	51+18.71	783.49
51+54.25	783.58	51+38.71	783.53
51+74.25	783.61	51+58.71	783.56
51+94.25	783.69	51+78.71	783.65
52+14.25	783.77	51+98.71	783.75
52+34.25	783.80	52+18.71	783.78
52+54.25	783.75	52+38.71	783.75
52+76.25	783.71	52+60.71	783.71
52+98.25	783.72	52+82.71	783.74
53+18.25	783.73	53+02.71	783.76
53+38.25	783.68	53+22.71	783.72
53+58.25	783.56	53+42.71	783.62
53+78.25	783.45	53+62.71	783.52
53+98.25	783.40	53+82.71	783.47
54+18.25	783.34	54+02.71	783.42
54+38.25	783.21	54+22.71	783.30
54+58.25	783.01	54+42.71	783.11

ES ___ bars are Epoxy Coated.

Minimum Reinforcing Bar Splice Lap Lengths
No. 4 bar = 1'-10"
No. 5 bar = 1'-8"



STAGGER DIAGRAM SHOWING BARS OVER PIERS

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STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

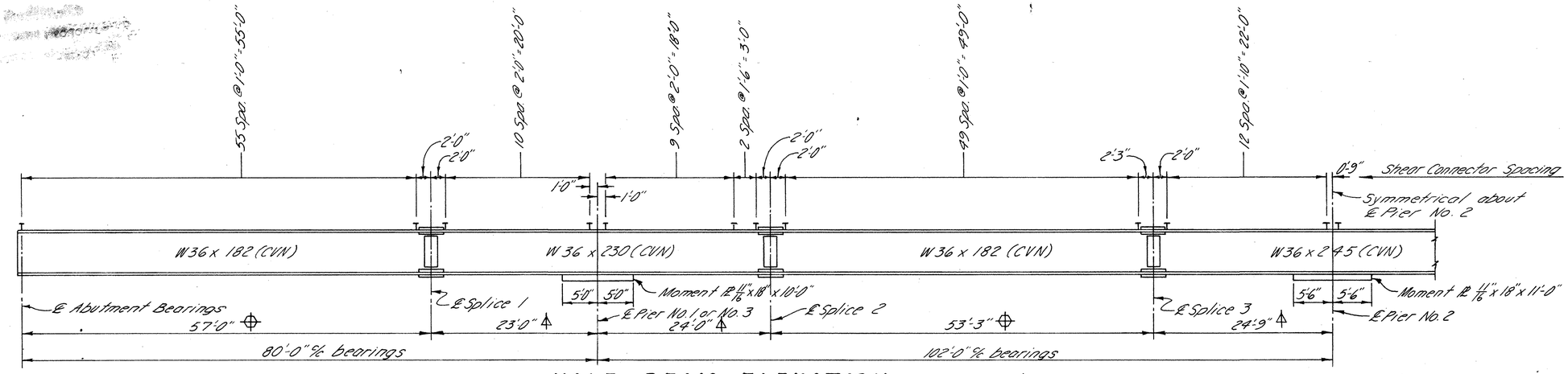
SUPERSTRUCTURE DETAILS
BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.U.	R.D.Y.	R.D.Y.	G.T.	D.C.J.	2/13/85	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

55/65

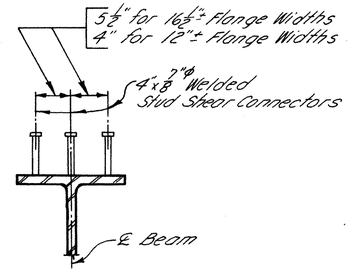
PIC-762-0.19



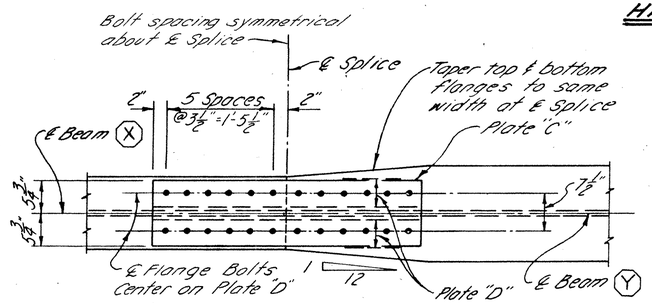
HALF BEAM ELEVATION

△ - Indicates the top flange is in Tension.

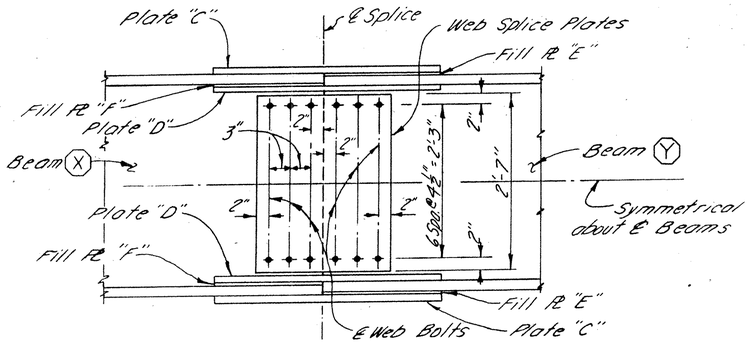
⊕ - Indicates the top flange is in Compression.



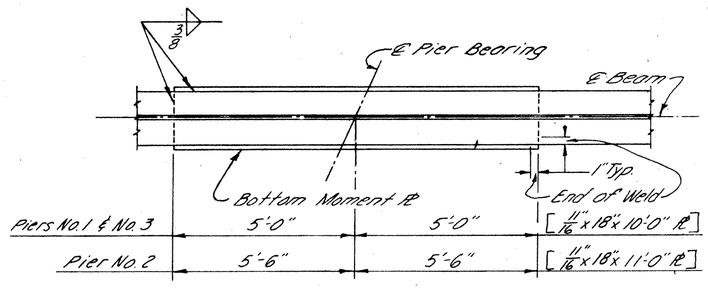
DETAIL AT SHEAR CONNECTOR



PLAN OF FLANGE SPLICE



BEAM SPLICE DETAIL



BOTTOM FLANGE MOMENT PLATE DETAILS

BEAM SPLICE DATA

SPLICE NUMBER	BEAM (X)	BEAM (Y)	FLANGE SPLICE: FILL PLATES: PLATE "E" 2-Required	FLANGE SPLICE: FILL PLATES: PLATE "F" 4-Required	FLANGE SPLICE: FLANGE PLATES: PLATE "C" 2-Required	FLANGE SPLICE: FLANGE PLATES: PLATE "D" 4-Required	FLANGE SPLICE: FLANGE BOLTS: Number of Flange Bolts	WEB SPLICE: WEB PLATES 2-Required	WEB SPLICE: FILL PLATE	WEB SPLICE:	WEB SPLICE: Number of Web Bolts
1 & 2	W36 x 182	W36 x 230	1/4" x 11 1/2" x 1'-9 1/2"	5/16" x 4 1/2" x 1'-9 1/2"	5/8" x 11 1/2" x 3'-7"	5/8" x 4 1/2" x 3'-7"	48	1/2" x 20" x 2'-7"	None		42
3	W36 x 182	W36 x 245	1/8" x 11 1/2" x 1'-9 1/2"	5/16" x 4 1/2" x 1'-9 1/2"	5/8" x 11 1/2" x 3'-7"	5/8" x 4 1/2" x 3'-7"	48	1/2" x 20" x 2'-7"	None		42

NOTES:

All beams and field splice material (except fill plates) shall meet specified minimum notch toughness requirements. The Fabricator shall submit to the Director a procedure designed for positive identification of material through all phases of fabrication. No material shall be fabricated until the Director has approved the procedure.

Where a shape or plate is designated (CVN) the material shall meet specified minimum notch toughness requirements as specified in 711.01 of CMS.

Place bolt heads on exposed side of fascia beams and on the bottom surface of the lower flange splice.

WELDED ATTACHMENT of supports for concrete deck finishing machine may be made to areas of the fascia stringer flanges designated "Compression". Attachments shall not be made to areas designated "Tension". Fillet welds to compression flanges shall be not closer than 1" from edge of flange and be not more than 2" long.

A588 STEEL is to be left unpainted except as otherwise noted. See CMS 513.221 for cleaning requirements.

PARTIAL PAINTING OF A588 STEEL, SYSTEM A: An eight foot length of the ends of beams adjacent to abutments, and all crossframes and other A588 steel within these limits shall be painted. Paint shall be 514, System A. The prime coat shall be 708.17. The top coat shall be 708.18 except that the color shall closely approach Federal Standard No. 595a - 20045 or 20059.

HIGH STRENGTH BOLTS shall be 1" diameter A325.

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STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.M.	R.D.Y.	R.D.Y.	G.T.	D.G.H.	2/13/75	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

PIC-762-0.19

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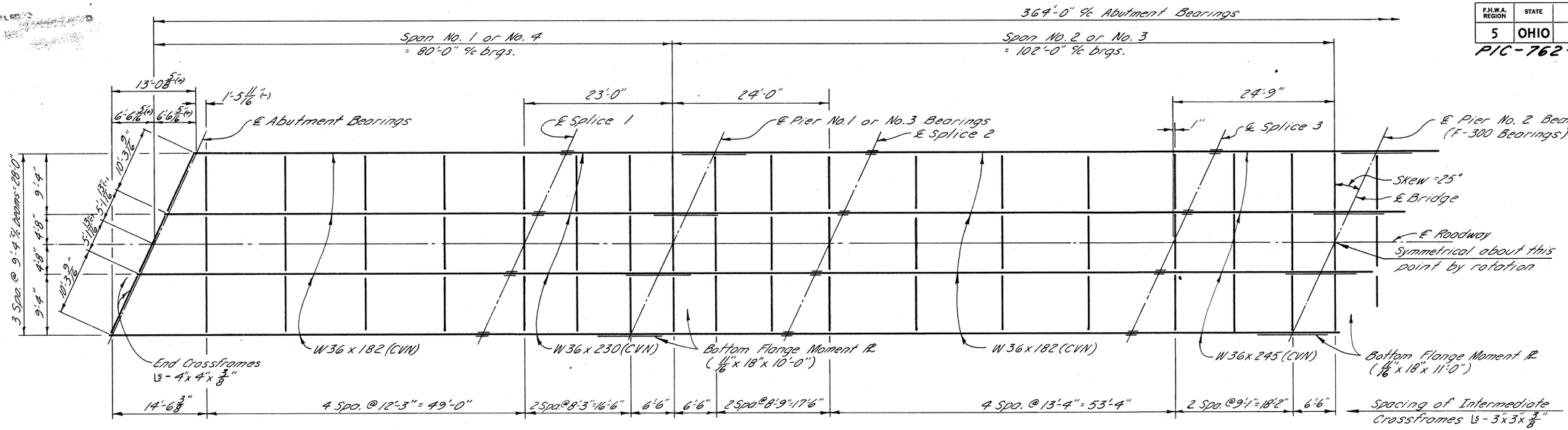
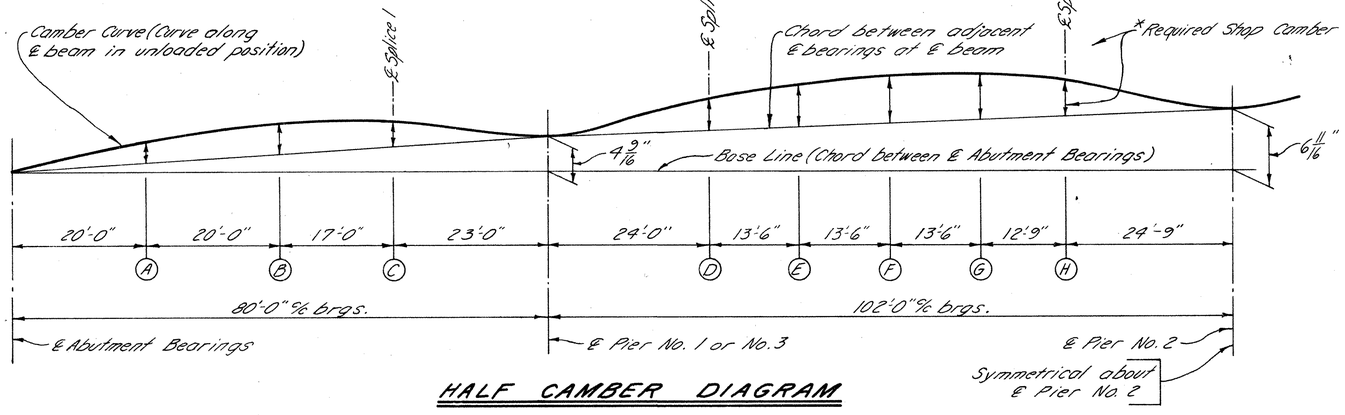


HALF STEEL FRAMING PLAN



HALF CAMBER DIAGRAM

HALF CAMBER TABLE (Dimensions in inches)

LOCATION	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Deflection due to weight of steel	1/8	3/16	1/16	1/8	3/16	3/16	3/16	1/8
Deflection due to remaining dead load	13/16	15/16	1/2	9/16	15/16	1 1/8	15/16	9/16
Adjustment required for vertical curve	1/4	5/16	1/4	3/8	1/2	1/2	1/2	3/8
* REQUIRED SHOP CAMBER	1 3/16	1 7/16	13/16	1 1/16	1 5/8	1 13/16	1 5/8	1 1/16

NOTES:

F-300 BEARINGS: In lieu of A588 steel, A36 steel, galvanized, may be furnished for bearings, except for upper plate element of bearings. This A36 steel shall be included with A588 steel quantity for payment.

See STD. DRWG. FB-1-82 for Fixed Bearing Details at PIER No. 2. Bearing weight is included with structural steel for payment.

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STICKLEN - BELSHEIM & ASSOCIATES ENGINEERS
WORTHINGTON OHIO

SUPERSTRUCTURE DETAILS

BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.Y.	R.D.Y.	G.T.	D.G.H.	2/19/85	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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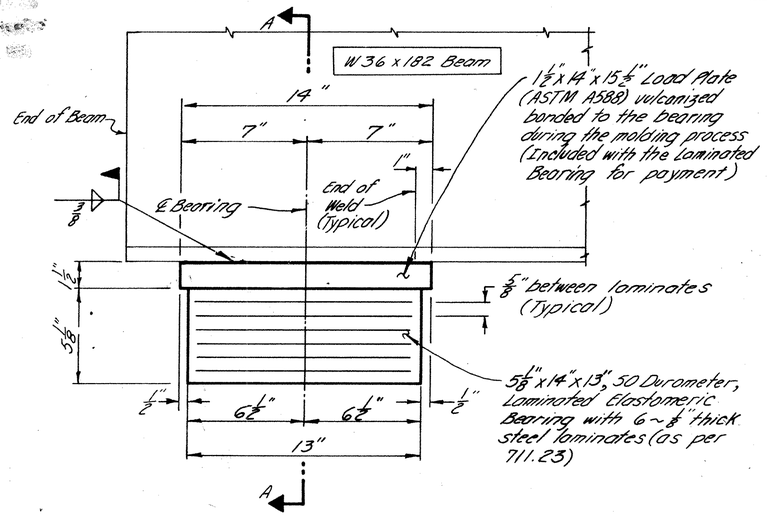
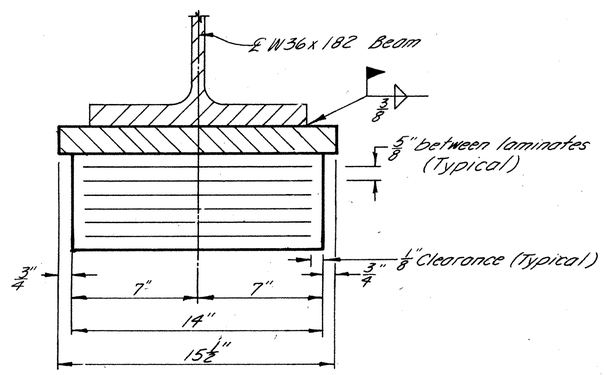
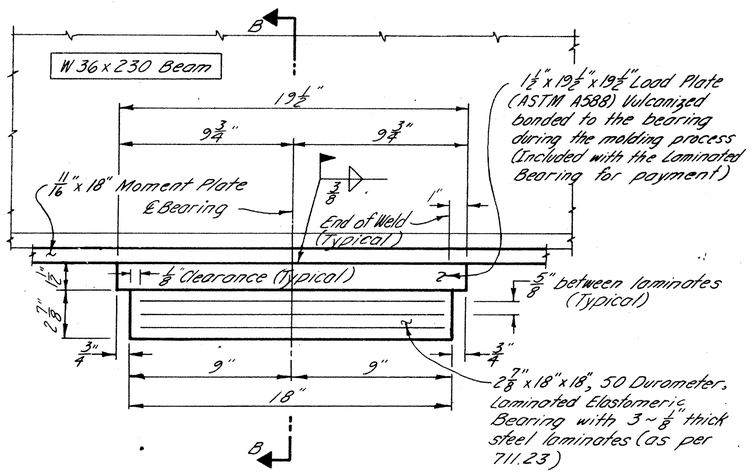
PIC-762-0.19



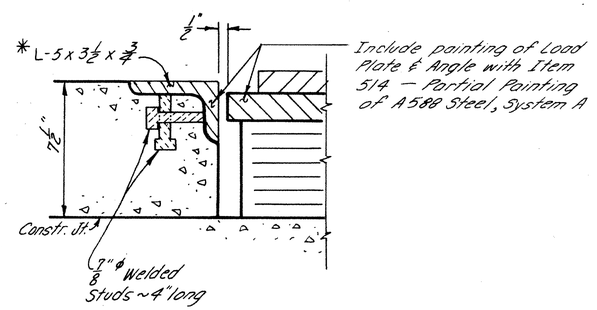
LAMINATED ELASTOMERIC BEARING DETAIL
(Abutments)



SECTION A-A

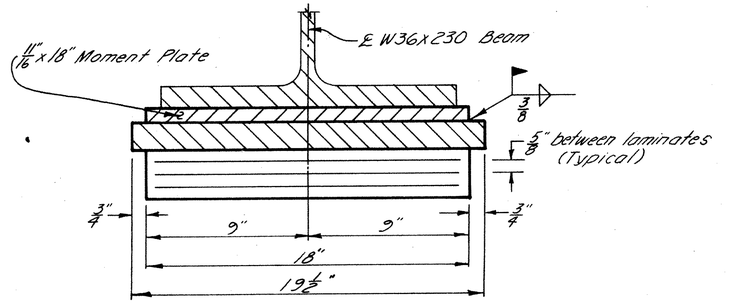


LAMINATED ELASTOMERIC BEARING DETAIL
(Pier No.1 or Pier No.3)

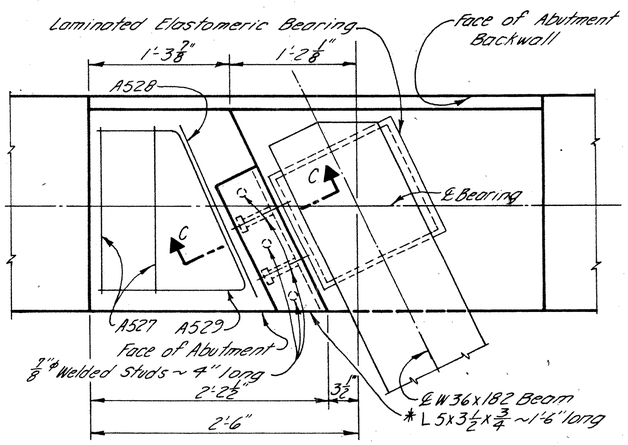


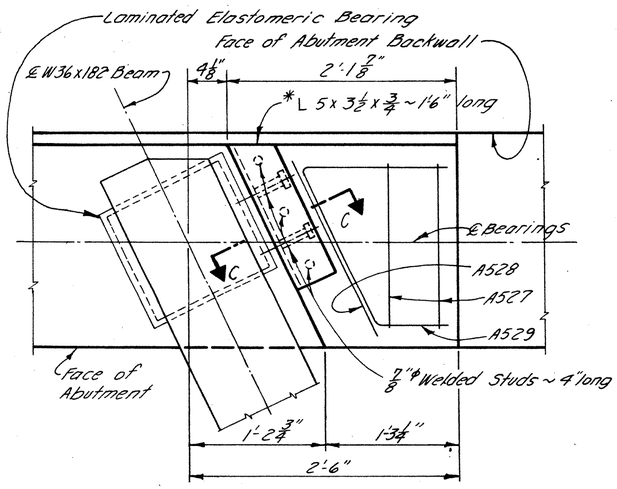
SECTION C-C

* Angle may be either A36 or A588 Steel. Angle to be included with Item 513 - Structural Steel for payment.



SECTION B-B





LATERAL BEAM RESTRAINT DETAILS

WELDING shall be controlled so that the plate temperature at the elastomer bonded surface does not exceed 300°F as determined by use of pyrometric sticks or other temperature monitoring devices.

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STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

LAMINATED BEARING DETAILS
BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

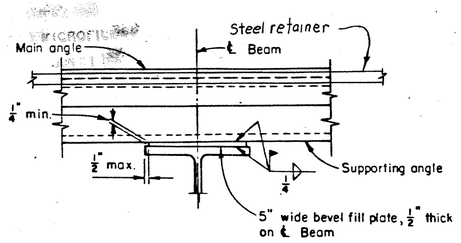
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.K.		G.T.	D.G.H.	2/16/85	

HILLS CO. 10-7155-250-183

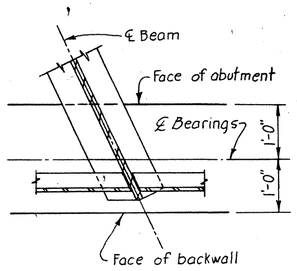
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

58/65

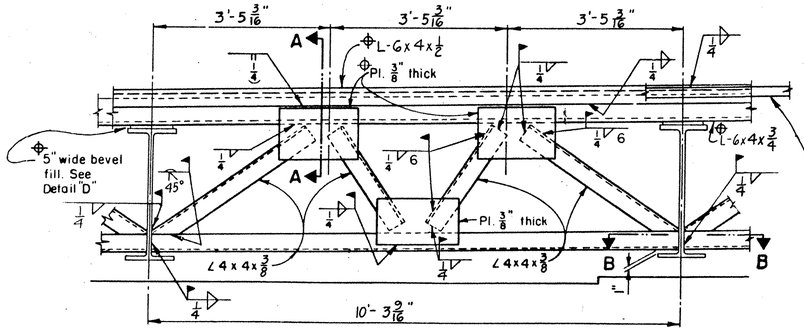
PIC-762-0.19



DETAIL "D"



SECTION B-B
(Bearing Not Shown)



END CROSSFRAME

NOTE:
Items marked thus ⊕ are included with Item 516 - "Structural expansion joints including elastomeric strip seals".

GENERAL NOTES

CONSTRUCTION PROCEDURE

1. Abutment backwall concrete shall not be placed until after superstructure concrete in the span adjacent to the abutment has been placed.
2. Place backwall concrete during stable or rising ambient temperatures and conclude placement at or immediately before the day's peak ambient temperature.
3. Not more than 4-hours prior to the day's peak ambient temperature, set abutment expansion joint width to dimension Z_1.
4. Loosen temporary support bolts after initial set of concrete, preferably not later than 2-hours after conclusion of concrete backwall placement.

INSTALLATION NOTES:

The preformed strip seal shall be an extruded polymerized neoprene material meeting the requirements of ASTM D2628. Due to the configurations of the Strip Seal, the recovery tests are not applicable. Physical Properties shall meet the requirements specified in Table "P,".

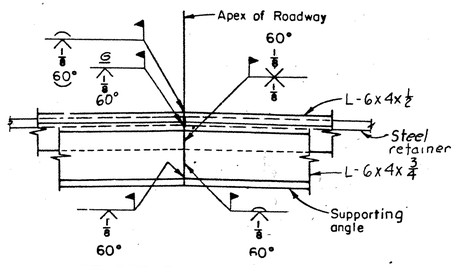
The neoprene seal shall be continuous for the full length of the joint. Lubricant-adhesive shall be used when installing the preformed strip seals and shall be a compound consisting of the same base polymer as the seals (unless otherwise approved by the Director) blended with suitable volatile solvents. It shall have suitable consistency at the temperature at which the seals are installed and shall be compatible with the seals and the steel retainers.

Every surface to receive the strip seal shall be cleaned of all dirt, water, oil, rust or any other foreign debris that would prove detrimental to the effectiveness of the sealing system, prior to the application of the lubricant-adhesive to both joint interfaces.

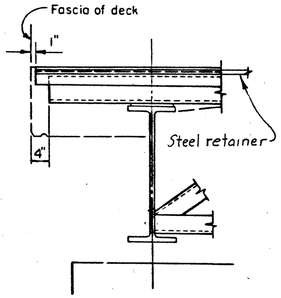
MATERIALS: Structural steel for the Strip Seal expansion-contraction joint shall conform to ASTM A588 or A36, with System A field paint on exposed steel surfaces. Field paint shall consist of one prime coat and one finish coat. Color should be the same as used on beam ends (Sheet 10/14).

MEASUREMENT for pay purposes shall be based on the linear foot of sealed joint system, measured horizontally along the joint centerlines and between the outer limits of the fabricated joint, furnished and placed, including all labor, materials and equipment necessary to complete the joint in place, including the joint armor, 1/2" steel plates, anchoring devices, temporary supports and end cross frame gusset plates. Payment shall be made per linear feet for Item 516 "Structural Expansion Joints, Including Elastomeric Strip Seals".

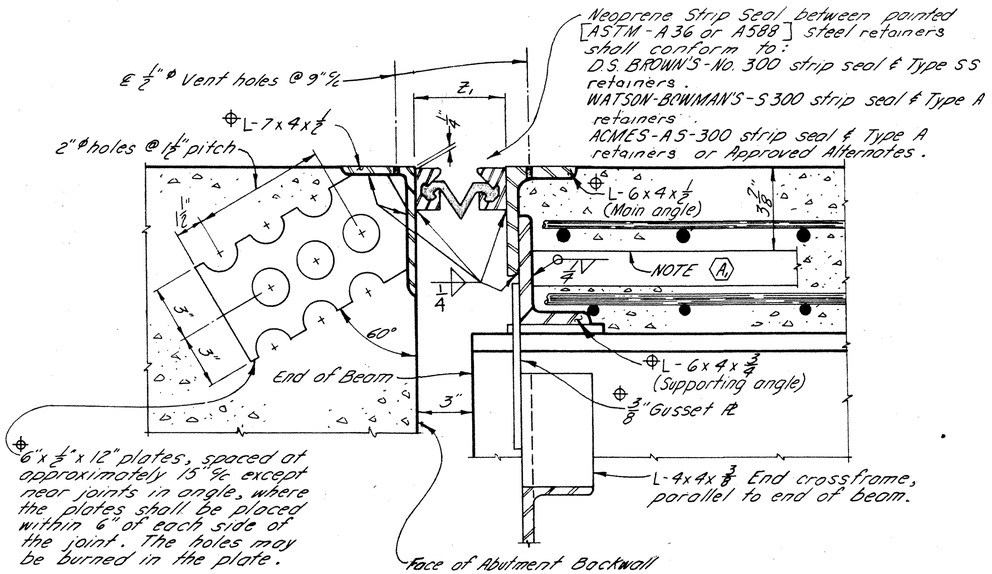
INSTALLATION OF SEAL: During installation of the support/armor for the superstructure side of the expansion joint seal, the seating of beams on bearings shall be carefully observed to assure that positive bearing is maintained. Proper vertical fit of the support/armor on the beams shall be achieved by positioning of the bevel fill plates rather than by clamping force.



WELDED BUTT JOINT IN SUPERSTRUCTURE EXPANSION JOINT



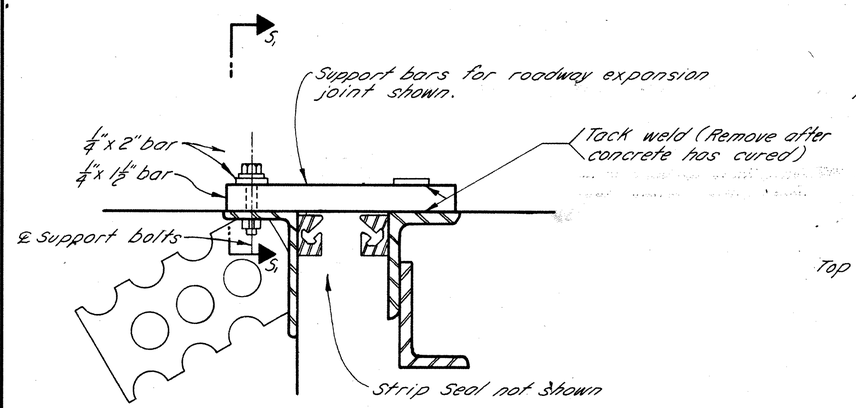
EXPANSION JOINT AT FASCIA BEAM



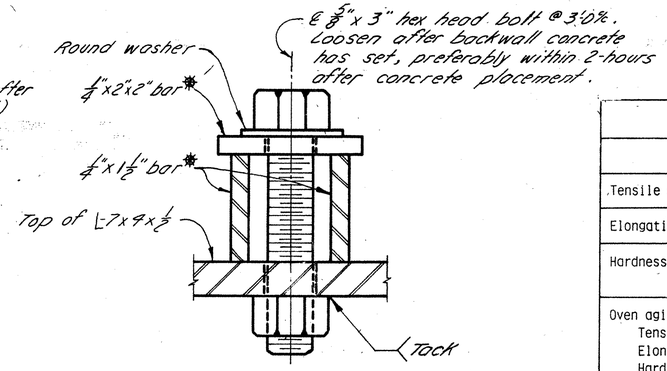
SECTION A-A

NOTE A1: ⊕ Anchor bars 2"x½"x1'-6" (Spaced @ 12" ℄).

for an anticipated peak ambient temperature (F°)	
$Z_1 = 4\frac{7}{8}$" @ 30°	$Z_1 = 4\frac{3}{4}$" @ 40°
$Z_1 = 4\frac{5}{8}$" @ 50°	$Z_1 = 4\frac{1}{2}$" @ 60°
$Z_1 = 4\frac{3}{8}$" @ 70°	$Z_1 = 4\frac{1}{4}$" @ 80°
$Z_1 = 4\frac{1}{8}$" @ 90°	



TEMPORARY SUPPORT DETAIL OF EXPANSION JOINT



SECTION S1-S1

* Alternate parts may be used subject to the Directors approval

TABLE "P,"		
PROPERTY	REQUIREMENTS	ASTM METHOD
Tensile strength, min. p.s.i.	2000	D412
Elongation at break, min. per cent	250	D412
Hardness, Type A durometer	60±7	D2240 (modified)
Oven aging, 70 hr. @ 212°F Tensile strength, loss, max. Elongation, loss, max. Hardness, Type A durometer (points change)	 20 percent 20 percent 0 to +10	D 573
Ozone resistance 20 percent strain, 300 pphm, in air at 104° F (wiped with toluene to remove surface contamination)	No Cracks	D1149

13/14

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

EXPANSION JOINT DETAILS
BRIDGE No. PIC-762-0C33
OVER
BIG DARBY CREEK
PICKAWAY CO.
STA. 50+84.00
54+52.97

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.		R.D.K.	G.T.	D.O.K.	2/19/85	

St. IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

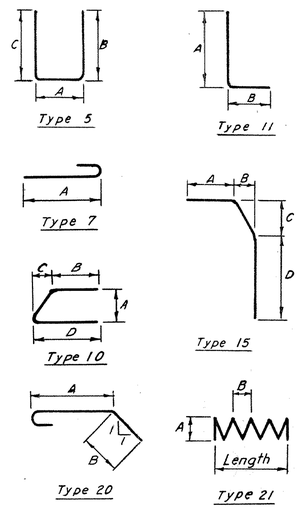
REINFORCING STEEL LIST

CALC BY _____ DATE _____
CHK'D BY _____ DATE _____

PIC-762-0.19

OHIO
FHWA REGION 5

BENDING DIAGRAM



ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	TYPE	ABUTMENT Rear	ABUTMENT Fwd.	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D	DIMENSION E
D801	44	4'-11"	578	20	22	22	2'-7"	1'-5"			
A801	8	22'-7"	482	7	8	—	21'-8"				
A802	6	21'-8"	347	St.	6	—					
A601	28	19'-1"	592	5	28	—	5'-9"	6'-6"	2'-7"		
A602	72	10'-7"	1,195	5	36	36	1'-5"	4'-9"	4'-9"		
A603	72	4'-7"	496	5	36	36	1'-5"	1'-9"	1'-9"		
A604	72	7'-1"	766	5	36	36	0'-11"	3'-3"	3'-3"		
A605	8	20'-3"	243	St.	—	8					
A606	29	14'-10"	646	11	—	29	9'-8"	5'-4"			
A501	28	8'-5"	246	5	28	—	5'-4"	1'-8"	1'-8"		
A502	28	7'-0"	209	11	28	—	6'-6"	0'-7⅞"			
A503	49	7'-2"	366	5	24	25	3'-5"	2'-0"	2'-0"		
A504	24	34'-2"	855	St.	9	15					
A505	4	28'-7"	119	St.	4	—					
A506	4	27'-10"	116	St.	4	—					
A507	4	24'-9"	103	St.	4	—					
A508	2	10'-0"	21	15	2	—	3'-2"	6'-4"	2'-7"	0"	
A509	2	9'-6"	20	15	2	—	3'-1"	6'-0"	2'-5"	0"	
A510	6	11'-7"	72	St.	6	—					
A511	6	13'-10"	87	St.	6	—					
A512	2 Series of 5	11'-4" to 16'-8"	146	5	2 Series of 5	—	1'-5"	5'-1" to ⌖ 7'-9"	5'-1" to ⌖ 7'-9"		

ABUTMENTS (Cont.)

MARK	NO.	LENGTH	WEIGHT	TYPE	ABUTMENT Rear	ABUTMENT Fwd.	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D	DIMENSION E
A513	6	16'-6"	103	5	6	—	1'-5"	7'-8"	7'-8"		
A514	4	21'-5"	89	St.	2	2					
A516	29	10'-1"	305	11	—	29	9'-7"	0'-7⅞"			
A517	12	11'-6"	144	St.	—	12					
A518	12	13'-7"	170	St.	—	12					
A519	4	28'-5"	119	St.	—	4					
A520	4	27'-10"	116	St.	—	4					
A521	4	25'-0"	104	St.	—	4					
A522	2	10'-1"	21	15	—	2	3'-6"	6'-1"	2'-8"	0"	
A523	2	9'-8"	20	15	—	2	3'-3"	5'-11"	2'-7"	0"	
A524	1	25'-0"	26	5	—	1	1'-5"	11'-11"	11'-11"		
A525	2 Series of 5	19'-8" to 25'-0"	233	5	—	2 Series of 5	1'-5"	9'-3" to ⌖ 11'-11"	9'-3" to ⌖ 11'-11"		
A526	3	13'-2"	41	5	—	3	1'-5"	6'-0"	6'-0"		
A527	8	6'-4"	53	5	4	4	1'-7"	2'-6"	2'-6"		
A528	4	6'-6"	27	5	2	2	1'-9"	2'-6"	2'-6"		
A529	4	3'-2"	13	10	2	2	1'-7"	0'-6"	0'-8"	1'-2"	

PIERS

MARK	NO.	LENGTH	WEIGHT	TYPE	PIER No.1	PIER No.2	PIER No.3	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D	DIMENSION E
P1101	60	32'-9"	*	St.	30	30	—					
P1102	30	26'-9"	*	St.	—	—	30					
P301	18	38'-11"	2,382	5	6	6	6	34'-2"	2'-8"	2'-8"		
P302	18	34'-2"	2,091	St.	6	6	6					
P303	36	25'-5"	3,111	St.	12	12	12					
P501	12	34'-2"	428	St.	4	4	4					
P502	6	29'-4"	184	St.	2	2	2					
P503	36	7'-9"	291	15	12	12	12	0"	3'-0"	4'-4"	2'-6"	
P504	90	13'-5"	1,259	5	30	30	30	2'-4"	5'-8"	5'-8"		
P505	174	6'-1"	1,104	5	58	58	58	2'-4"	2'-0"	2'-0"		
P506	12 Series of 7	7'-9" to 13'-3"	920	5	4 Series of 7	4 Series of 7	4 Series of 7	2'-4"	2'-10" to ≠ 5'-7"	2'-10" to ≠ 5'-7"		
SP401	4	26'-8"	*	21	2	2	—	3'-8"	0'-3"			
SP402	2	20'-9"	*	21	—	—	2	3'-8"	0'-3"			

SUPERSTRUCTURE

EPOXY COATED REINFORCING

ES501	622	33'-0"	21,409	St.								
ES502	2 Series of 19	10'-3" to ▲ 32'-0"	837	St.								
ES503	18	9'-0"	169	St.								
ES504	468	30'-0"	14,644	St.								
ES505	39	24'-9"	1,007	St.								
ES601	622	33'-0"	30,830	St.								
ES602	2 Series of 19	10'-3" to ▲ 32'-0"	1,206	St.								
ES603	18	9'-0"	243	St.								
ES401	600	30'-0"	12,024	St.								
ES402	50	26'-9"	893	St.								
ES403	147	30'-0"	2,946	St.								
ES404	147	12'-10"	1,260	St.								
ES405	650	3'-8"	1,592	5				0'-9"	1'-5"	1'-8"		

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Abuts.	Piers	Superst.	General	Truss
503	233	Cu.Yd.	Unclassified excavation including rock	233				
503	Lump		Cofferdams, cribs and sheeting				Lump	
505	Lump		Pile driving equipment mobilization				Lump	
507	220	Lin.Ft.	Steel piles HP 10x42	220				
507	11	Each	Steel points	11				
509	21,004	Lb.	Reinforcing steel, Grade 60	9,234	11,770			
511	375	Cu.Yd.	Class S concrete, superstructure (See proposal note)			375		
511	108	Cu.Yd.	Class C concrete, pier caps and columns		108			
511	101	Cu.Yd.	Class C concrete, abutments above footings	101				
511	48	Cu.Yd.	Class C concrete, abutment footings	48				
513	342,300	Lb.	Structural steel (AISC Category I)(ASTM A588)			342,300		
513	3,928	Each	Welded stud shear connectors			3,928		
514	Lump		Partial painting of A588 steel, System A (as per plan)			Lump		
514	Lump		Field painting of existing steel, surface preparation, System B					Lump
514	Lump		Field painting of existing steel, spot prime, System B					Lump
514	Lump		Field painting of existing steel, complete coat prime, System B					Lump
514	Lump		Field painting of existing steel, complete coat Finish, System B					Lump
516	73.18	Lin.Ft.	Structural expansion joints including elastomeric strip seals, as per plan			73.18		
516	8	Each	Laminated elastomeric bearings (2⅛"x18"x18" elastomeric pad with ⅛"x19⅛"x19⅛" steel load plate)			8		
516	8	Each	Laminated elastomeric bearings (5⅝"x13"x14" elastomeric pad with ⅛"x14"x15⅝" steel load plate)			8		
517	750.00	Lin.Ft.	Railing (deep beam rail with steel tubular back-up and Type I steel posts and bolts			750.00		
518	54	Cu.Yd.	Porous backfill	54				
518	93	Lin.Ft.	6" perforated, helical corrugated steel pipe, 707.01	93				
518	61	Lin.Ft.	6" non-perforated helical corrugated steel pipe, including specials, 707.01	61				
824	89,060	Lb.	Epoxy coated reinforcing steel, Grade 60			89,060		
Special	326	Sq.Yd.	Sealing of concrete surfaces (See proposal note)			326		
Special	2,549	Sq.Ft.	Protection of concrete surfaces (See proposal note)		2,549			
Special	900	Lin.Ft.	Tuck point existing stone abutments					900
Special	55	Lin.Ft.	54"⌀ Drilled shafts above the bedrock socket		55			
Special	42	Lin.Ft.	52"⌀ Drilled shafts in bedrock		42			

⌖ Varies by 8" Increments

≠ Varies by 5⅛" Increments

▲ Varies by 1'-2⅛" Increments

* Lengths required as per plan have been increased 2' (Include with Item Special - 54"⌀ Drilled Shafts for payment).

Quantities Calculated By J.M. 1/29/85

Quantities Checked By G.T. Feb. 4, 1985

NOTE:
Bar Marks for reinforcing bars which are to be EPOXY COATED include a letter prefix "E". Payment for these bars shall be under Item 824 - Epoxy coated reinforcing steel, Grade 60.

REINFORCING STEEL SAMPLES:
Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

14/14

STICKLEN - BELSHEIM & ASSOCIATES
ENGINEERS
WORTHINGTON OHIO

REINFORCING STEEL LIST & ESTIMATED QUANTITIES
BRIDGE No. PIC-762-0033
OVER
BIG DARBY CREEK
STA. 50+84.00
54+52.97
PICKAWAY CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	R.D.V.		G.T.	D.S.H.	8/20/85	

CALC BY V.K. DATE 5/86	PIC-762-0.19	OHIO	60/65
CHK'D BY LMM DATE 5-86		FHWA REGION 5	1/6

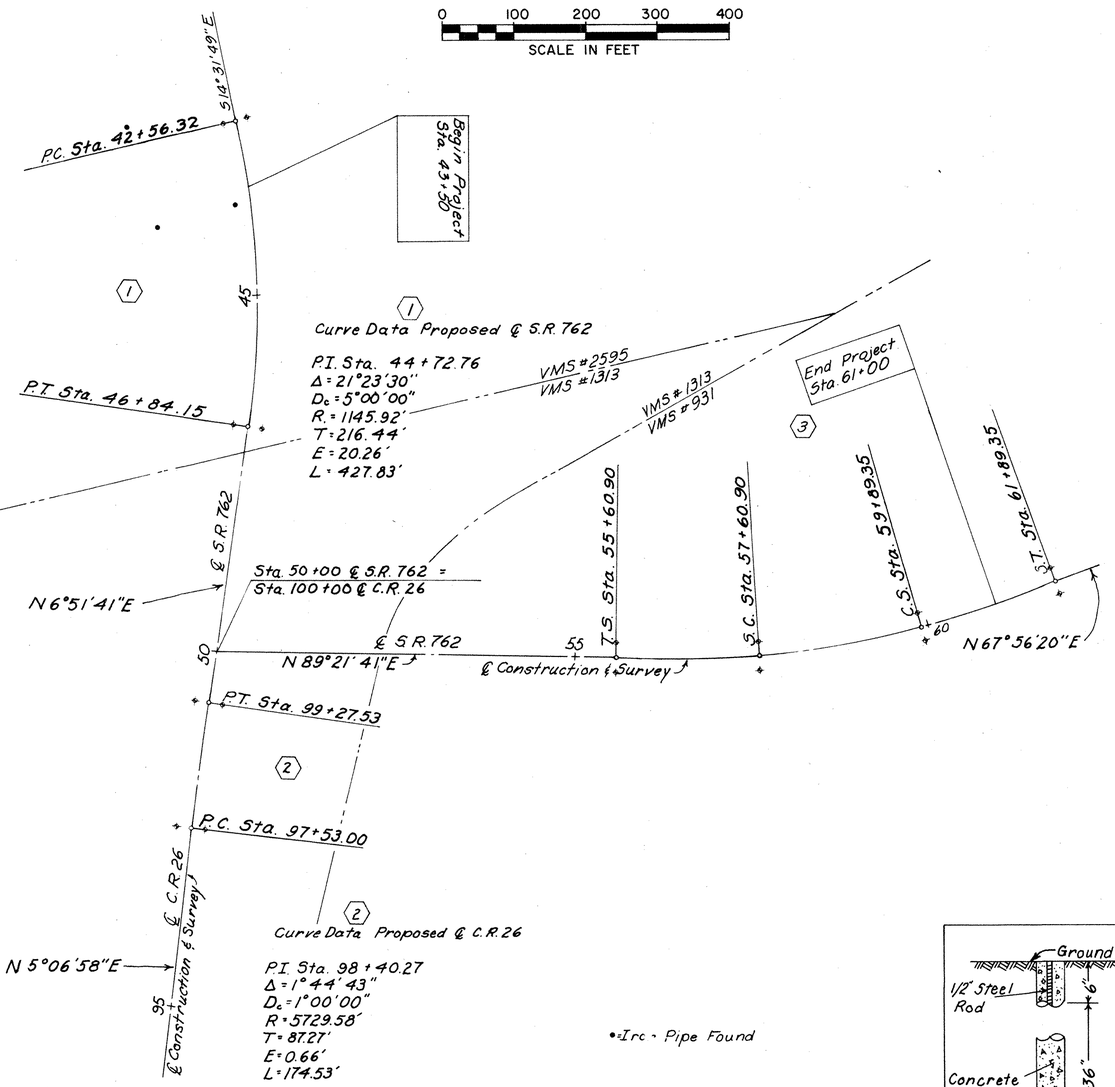
FEDERAL PROJECT NO. BRS-830(3)
SHEET 1 OF 1

CENTER LINE SURVEY PLAT

PICKAWAY COUNTY

DARBY & SCIOTO TOWNSHIPS

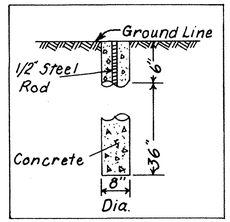
VIRGINIA MILITARY SURVEYS 931, 1313 & 2595



CENTER LINE REFERENCE MONUMENTS ARE TO BE SET AT THE FOLLOWING LOCATIONS BY A REGISTERED SURVEYOR	
LOCATION	OFFSET
42+56.32	17' Lt. & 17' Rt.
46+84.15	21' Lt. & 20' Rt.
55+60.90	22' Lt. & 22' Rt.
57+60.90	20' Lt. & 20' Rt.
59+89.35	20' Lt. & 20' Rt.
61+89.35	19' Lt. & 19' Rt.
97+53.00	18' Lt. & 20' Rt.
99+27.53	20' Lt. & 20' Rt.

+ ℄ Reference Monument
Item 604 - Reference Monument, Total = 16

•=Irc - Pipe Found



Reference Monument

RECORDED _____ 19____
PLAT BOOK _____ PAGE _____

PICKAWAY COUNTY RECORDER

PICKAWAY COUNTY ENGINEER

I hereby certify that this plat is a true delineation of a center line survey

Alden M. McGee Date 5-27-86

Alden M. McGee, Professional Surveyor No. 5679

CALC BY		PIC-762-0.19	OHIO	61/65
DATE			FHWA REGION 5	
CHK'D BY				2/6
DATE				

FEDERAL PROJECT NO. BRS-830(3)

PROPERTY MAP

0 400 800 1200 1600

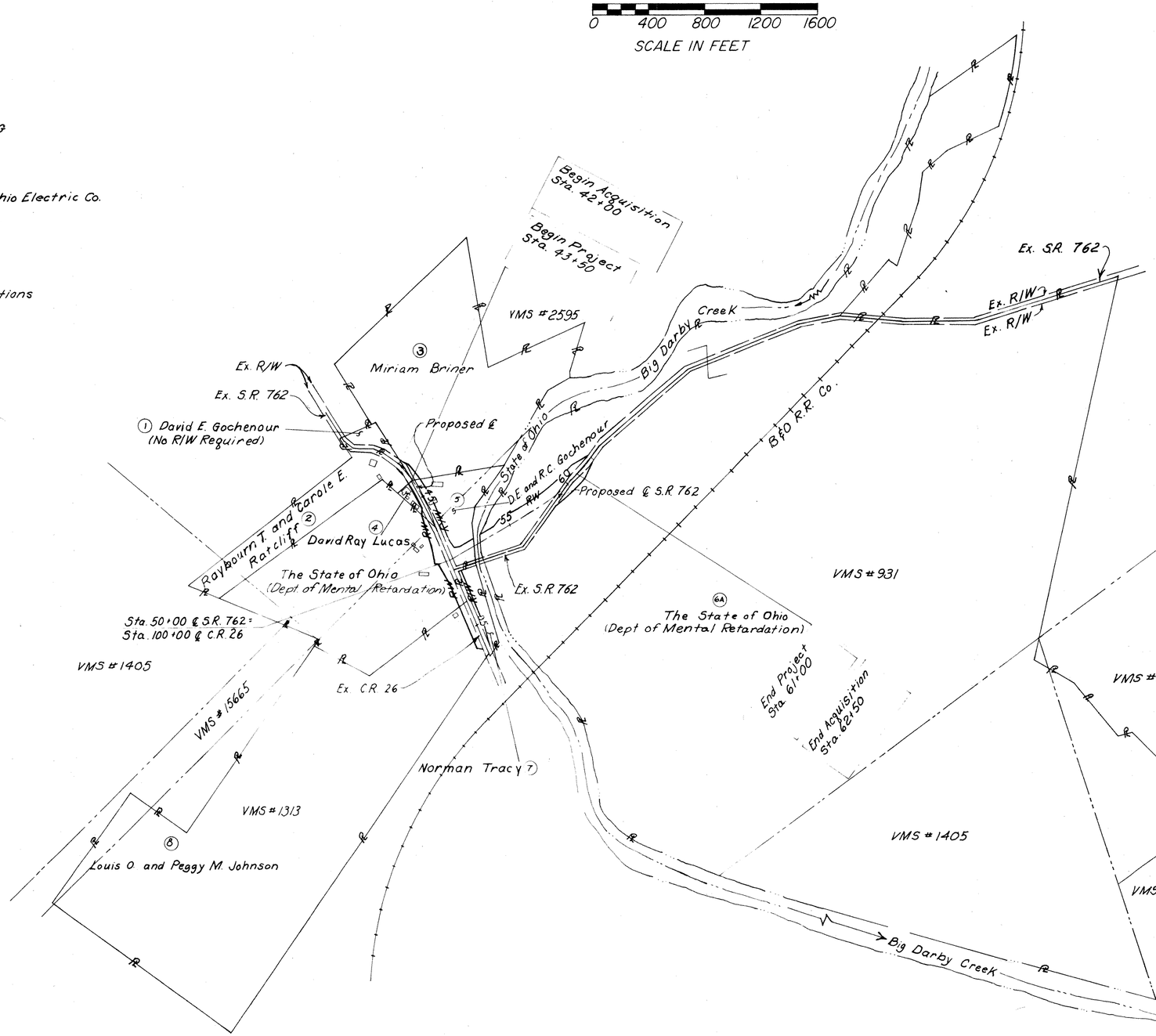
SCALE IN FEET

UTILITIES

Telephone
Ohio Bell Telephone
150 East Gay Street, 11G
Columbus, Ohio 43215
(614) 223-8262

Electric
Columbus & Southern Ohio Electric Co.
215 North Front Street
Columbus, Ohio 43215
(614) 464-7911

Water
State of Ohio
Department of Corrections
Orient, Ohio 43146



PROPERTY MAP

DATE	REVISION	BY
COMPLETION DATE		

STICKLEN - BELSHEIM & ASSOCIATES

SUMMARY OF ADDITIONAL RIGHT OF WAY

CALC BY	
DATE	
CHK'D BY	
DATE	

PIC-762-0.19

OHIO | FHWA REGION 5

62/65

STATE JOB NO. 06127(0)
FEDERAL PROJECT NO. BRS-830(3)

3/6

TOTAL NUMBER OF ____
7 OWNERS
0 TOTAL TAKES
1 OWNERS WITH STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

PARCEL	OWNER	AUDITORS PARCEL NO.	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1	David E. Gochenour	06228	4	280	564	0.944 Ac.					–				No R/W Required		
2 WD 2T	Raybourn T. Ratcliff and Carole E. Ratcliff	0303	4	260	45	9.056 Ac.	0.303 Ac.	0.098 Ac. 0.036 Ac.	0.088 Ac. 0	0.010 Ac. 0.036 Ac.	–	—	8.958 Ac.		 Grading		
3 WD	Miriam Briner	05254	4	271	775	33.586 Ac.	0.740 Ac.	0.212 Ac.	0.099 Ac.	0.113 Ac.	–	33.374 Ac.	—				
4 WD 4T	David Ray Lucas	10438	4	272	522	0.52 Ac.	0.105 Ac.	0.173 Ac. 0.077 Ac.	0.105 Ac. 0	0.068 Ac. 0.077 Ac.	–	—	0.347 Ac.		 Grading		
5 WD 5T 5T-1	David E. Gochenour and Roberta C. Gochenour	23236	4-6	220	188	5.21 Ac.	0.606 Ac.	1.473 Ac. 0.103 Ac. 0.051 Ac.	0.606 Ac. 0 0	0.867 Ac. 0.103 Ac. 0.051 Ac.	Yes	3.737 Ac.	—	State	Frame Barn Remove Building and Construct a Drive Grading		
6 WD	State of Ohio (Department of Mental Retardation)		4-6	72	193	29.4 Ac.	0.386 Ac.	1.111 Ac.	0.386 Ac.	0.725 Ac.	–	—	28.289 Ac.	100%			
6A WD 6A T 6A T-1	State of Ohio (Department of Mental Retardation)		5-6	71	187	422.35 Ac.	4.725 Ac.	3.637 Ac. 0.682 Ac. 0.070 Ac.	0.619 Ac. 0 0	3.018 Ac. 0.682 Ac. 0.070 Ac.	–	27.005 Ac.	391.708 Ac.		 Grading Grading		
7 WD	Norman Tracy	00436	5-6	260	177	1.92 Ac.	0.418 Ac.	0.653 Ac.	0.383 Ac.	0.270 Ac.	–	1.267 Ac.	—				
8 WD	Louis O. Johnson and Peggy M. Johnson	23787	6	259	431	82.55 Ac.	0.248 Ac.	0.451 Ac.	0.204 Ac.	0.247 Ac.	–	82.099 Ac.	—				

DATE	REVISION	BY
5-28-87	Deleted Parcel 7T	RD/M
COMPLETION DATE		

R/W SUMMARY SHEET

CALC BY ____ DATE ____
CHK'D BY ____ DATE ____

PIC-762-0.19

OHIO
FHWA REGION 5

63/65

4/6

FEDERAL PROJECT NO. BRS-830(3)

DARBY TOWNSHIP
VIRGINIA MILITARY SURVEYS
1313 & 2595

N

0 50 100 150 200
SCALE IN FEET

Begin Acquisition Sta 42+00

Begin Project Sta 42+50

Big Darby Creek

Miriam Briner

3 WD Cont = 0.212 Ac
PRO = 0.099 Ac
Net = 0.113 Ac

Fame Bldg (Old Mill)

David E and Roberta C. Gochenour

5 WD Cont = 1.473 Ac
PRO = 0.606 Ac
Net = 0.867 Ac

Match to Sheet 5/6

Sta 50+00.00 ℄ SR 762
Sta 100+00.00 ℄ CR 15

Const Limits

R/W

Ex R/W

Ex O.B.T.

Boren

Curbed Wire Fence

Construction and Survey

Cont = 0.098 Ac
PRO = 0.088 Ac
Net = 0.010 Ac

Cont = 0.071 Ac

Cont = 0.173 Ac
PRO = 0.105 Ac
Net = 0.068 Ac

Cont = 1.111 Ac
PRO = 0.386 Ac
Net = 0.725 Ac

David Ray Lucas

30' Pl Metal Barn WD

Gar

Res

1 Sty Frame

1 Sty Brick

Conc Block

Brick Block

Brush

Gravel Dr

P.T. Sta 48+08.54

VMS #2595

VMS #1313

David E Gochenour (No R/W Required)

State of Ohio

• = Iron Pipe Found

Match to Sheet 6/6

DATE	REVISION	BY
COMPLETION DATE		

CALC BY	
DATE	
CHKD. BY	
DATE	

PIC-762-0.19

OHIO
FHWA REGION 5

64/65

5/6

FEDERAL PROJECT NO. BRS-830(3)

DARBY & SCIOTO TOWNSHIPS
VIRGINIA MILITARY SURVEYS
931 & 1313

S.R. 762
CURVE DATA
P.I. Sta. 58+77.90
Δ = 21°25'0"
Dc = 5°00'00"
Rc = 1145.92'
Lc = 228.45'
θs = 5°00'00"
Ts = 317.00'
Es = 21.80'
Ls = 200'
P = 1.45'
K = 99.97'
X = 199.85'
Y = 5.81
L.T. = 133.39'
S.T. = 66.72'
L.C. = 199.93'

Orient Drive
CURVE DATA
P.I. Sta. 7+02.81
Dc = 38°11'50"
Δ = 35°22'28"
R = 150.00'
L = 92.61'
T = 47.83'
E = 7.44'

R/W Transition Curve Data
Δ = 4°59'59"
Dc = 3°44'58"
R = 1528.14'
T = 66.72'
L = 133.35'
E = 1.46'

5-27-87	Drive at Sta. 98+00, right, deleted	R.D.M.
DATE	REVISION	BY
COMPLETION DATE		

CALC. BY / DATE	PID-762-0.19	OHIO
CHK'D. BY / DATE		FHWA REGION 5

65/65

6/6

FEDERAL PROJECT NO. BRS-830(3)

DARBY TOWNSHIP
VIRGINIA MILITARY SURVEYS
931 & 1313

0 50 100 150 200
SCALE IN FEET

N

CURVE DATA
P.I. Sta. 98+40.27
Dc=1°00'00"
Δ=1°44'43"
R=5729.58'
L=174.53'
T=87.27'
E=0.66'

Louis O. and Peggy M. Johnson

State of Ohio (Department of Mental Retardation)

Out House

Sta.100+00.00 ℄ C.R. 26 = Sta.50+00.00 ℄ S.R. 762

Access Easement

5.50' Rt 99+20.86 ℄ C.R.26

3.96' Rt 96+60.66 ℄ C.R.26

60' Lt 98+50 ℄ C.R.26

59.51' Lt 96+46.16 ℄ C.R.26

60' Lt 93+50 ℄ C.R.26

25' Lt 93+25 ℄ C.R.26

Ex. R/W

N84°53'02"W 49.90'

N5°12'40"E 296.16'

Cont = 0.451 Ac.
P.R.O. = 0.204 Ac.
Net = 0.247 Ac.

8 WD

Res.

Prop. 15"

204.85' R/W N5°12'40"E

Const. Limits

N0°53'27"W 152.20'

Block Bldg.

Cont = 1.111 Ac.
P.R.O. = 0.386 Ac.
Net = 0.725 Ac.

6 WD

N52°10'29"W, 29.16'

N36°36'23"E, 40.31'

End 15" Pipe

Sta. 49+42.20 Lt.

Ex. 60" R.C.P.

Ex. R/W

N5°06'58"E 335.70'

℄ Construction and Survey 98

Ex. C.R. 26

R 395.74' 96

Mail Box

Dc=1°00'00"

N6°51'41"E 182°30'00"

S85°59'42"W, 561.49'

R/L 301.44'

Ex. O.B.T. Boxes

Ex. R/W

S13°37'26"W, 176.56'

Brush and Trees

Const. Limits

R/W S5°06'58"W, 396.87'

Norman Tracy

25' Rt 93+25 ℄ C.R. 26

50' Rt 95+00 ℄ C.R. 26

118' Lt 93+25 ℄ C.R. 26

Cont = 0.653 Ac.
P.R.O. = 0.383 Ac.
Net = 0.270 Ac.

7 WD

51.12' Rt 97+21.49 ℄ C.R. 26

P.C. Sta. 97+53.00

107.56' Rt 50+35.63

R=50'

Ex. O.B.T.

126.60' S2°13'42"E

Cont = 1.473 Ac.
P.R.O. = 0.606 Ac.
Net = 0.867 Ac.

5 WD

David E. and Roberta C. Gochenour

5 T-1 Cont = 0.051 Ac.

Match to Sheet 5/6

Big Darby Creek

Cont = 0.190 Ac.

S17°59'42"W 118.42'

N39°22'41"E 100.18'

S39°22'41"W 100.18'

S 2°32'42"W

N39°22'41"E 174.76'

125.11' Rt 51+29.02

129.03' Rt 51+49.89

S11°25'19"W, 19.84'

102.63' Rt 51+54.03

Ex. S.R. 762

VMS #1313
VMS #931

Ex. R/W

Ex. R/W

Match to Sheet 4/6

℄ Construction and Survey

State of Ohio (Department of Mental Retardation)

DATE	REVISION	BY
5-27-87	Drive at Sta. 98+00 right, deleted	R.D.M.
COMPLETION DATE		

OHIO DEPT. of TRANSPORTATION	OHIO FHWA REGION 5
PIC-762-0.19	

1/6

GENERAL INFORMATION

BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8-INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS, DIRVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

THE BORING LOG SHEET SHOWS A GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH OF THE SAMPLE, ELEVATION REFERENCE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, DEPTH OF PRESS SAMPLES, FIELD SAMPLE NUMBER AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

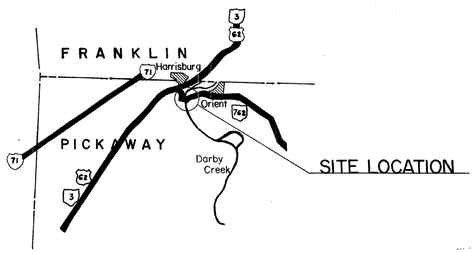
AT DEPTHS WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLER CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION, TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRENT LABORATORY TESTING.

N

LOCATION MAP

PICKAWAY COUNTY
SR-762 OVER BIG DARBY CREEK

SCALE: 3/4" = 2000'



LEGEND

ROTARY BORING — PLAN

X/Y | #

ROTARY BORING — PROFILE — PLOTTED TO VERTICAL SCALE ONLY
— INDICATES MOISTURE CONTENT IN PERCENT
X — INDICATES NUMBER OF BLOWS FOR SECOND SIX INCHES
Y — INDICATES NUMBER OF BLOWS FOR THIRD SIX INCHES

—— w — INDICATES FREE WATER

● — MOISTURE CONTENT ≥ LL-3

⊖ — MOISTURE CONTENT OF A NON-PLASTIC SOIL > 25

SOIL TYPES

GRAVEL and/or STONE FRAGMENTS (A-1-a)

GRAVEL and/or STONE FRAGMENTS with SAND (A-1-b)

GRAVEL and/or STONE FRAGMENTS with SAND and SILT (A-2-4)

SANDY SILT (A-4a)

SILT and CLAY (A-6a)

TOPSOIL

LIMESTONE

INTRODUCTION

THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE TO REPLACE THE EXISTING STRUCTURE ON STATE ROUTE 762 OVER BIG DARBY CREEK WEST OF ORIENT, OHIO.

GEOLOGY

THE SITE LIES STRATIGRAPHICALLY NEAR THE MIDDLE OF THE LOWER DEVONIAN COLUMBUS FORMATION. THE COLUMBUS AT THE SITE IS A GRAY TO WHITE FINE GRAINED LIMESTONE THAT HAS BEEN PARTIALLY DOLOMITIZED, AS EVIDENCED IN CORE A-4, AND IS A FAIR RESERVOIR. BELOW THE DOLOMITIZED SECTION IS A RED FINE SANDY LIMESTONE (OXIDE-STAINED) UNDERLAIN BY A TAN FINE SANDY LIMETONE.

EXPLORATION

THE EXPLORATION CONSISTS OF 5 EXPLORATORY BORINGS, DESIGNATED A-1 THROUGH A-5, DRILLED TO DEPTHS OF 12.5 FEET, 22.1 FEET, 13.4 FEET, 12.5 FEET, AND 5.0 FEET, RESPECTIVELY. SEVENTEEN SAMPLES WERE OBTAINED, VISUALLY CLASSIFIED AND TESTED TO DETERMINE THE NATURAL MOISTURE CONTENT. EIGHT SAMPLES WERE DETERMINED TO BE REPRESENTATIVE OF THE SITE SOILS AND TESTED FOR ATTERBERG LIMITS AND GRADATION.

INVESTIGATIONAL FINDINGS

THE MAJORITY OF THE SOIL IS GRANULAR OF THE A-1-a TO A-2-4 CATEGORY. LIMESTONE BEDROCK WAS ENCOUNTERED IN ALL FIVE BORINGS AT A SHALLOW DEPTH. THE SOIL ENCOUNTERED STRATIGRAPHICALLY ABOVE THE LIMESTONE IS DUE LARGELY TO DIFFERENTIAL WEATHERING OF THE LIMESTONE. THERE IS ALSO SOME EVIDENCE OF CHANNEL DEPOSITS OF THE A-1-a CATEGORY. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

PARTICLE SIZE DEFINITION

BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
8"	3"	2mm (NO. 10)	.42mm (NO. 40)	.074mm (NO. 200)	.005mm	

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PIC-762-0033
STRUCTURE FOUNDATION INVESTIGATION

DATE: 8/6/84	DRAWN BY: JJG	CHECKED BY: TAE	

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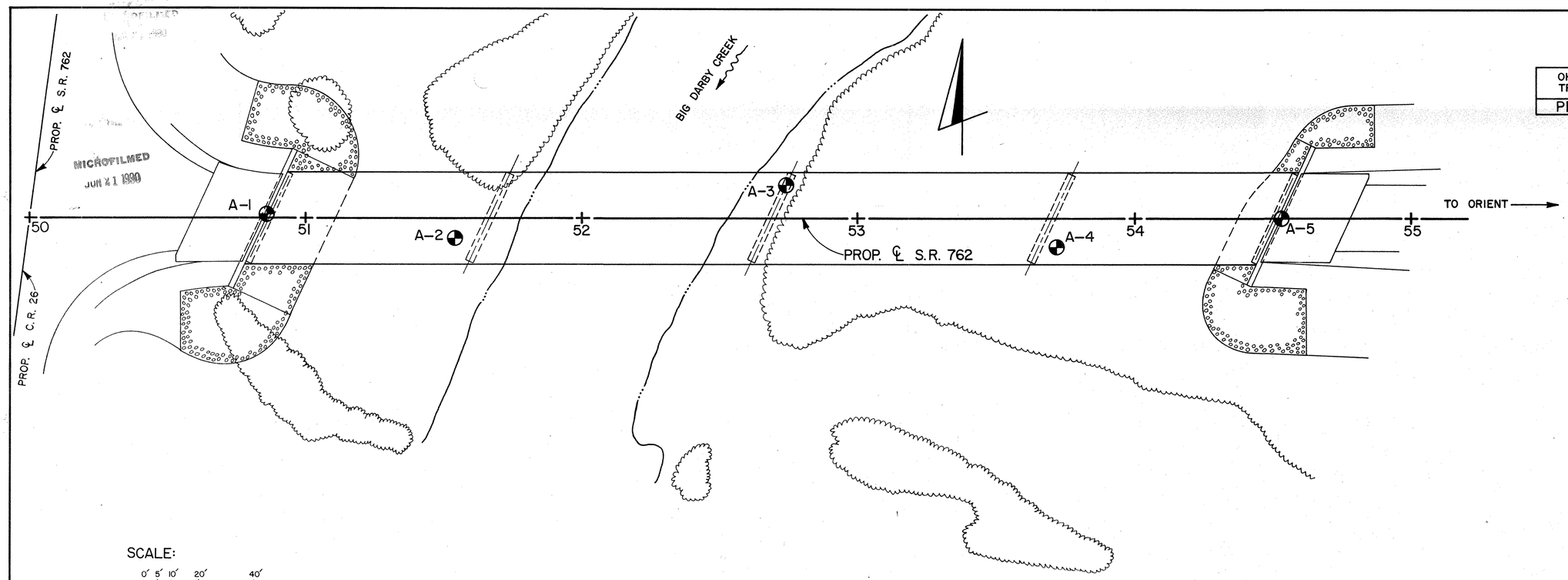
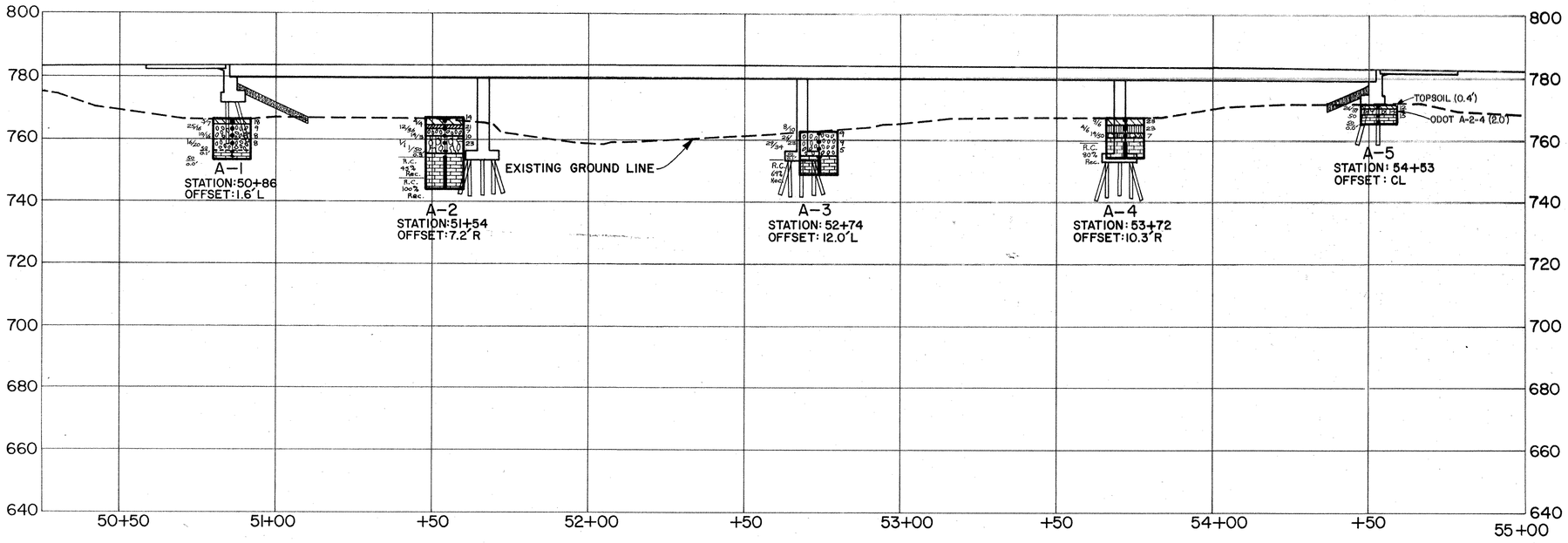
PIC-762-0.19	FHWA REGION 5

2/6



SCALE:
0' 5' 10' 20' 40'



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OHIO DEPT of TRANPORTATION	OHIO FHWA REGION 5
PIC-762-0.19	

3/6

BORING LOG: A-1
STATION AND OFFSET: 50 + 86, 1.6' L
SURFACE ELEVATION: 766.4'
DATE STARTED: 6/29/84
DATE FINISHED: 6/29/84
SAMPLER TYPE: All 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC.	DEPTH	SOIL DESCRIPTION	WC	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
764.9	S-1	2 5 7			Topsoil 1.5	18								
	S-2	10 25 16			Brown fine to coarse gravel, some fine to coarse sand, trace to little silt, cobbles.	9	--	--	64	15	11	-1	0-	A-1-a
	S-3	5 10 16		5		8								
	S-4	7 16 20			Brown fine to coarse gravel, trace fine to coarse sand, trace silt, cobbles.	8	--	--	91	4	2	-3	-	A-1-a
		50/0.1'	NR	10										
753.9		50/0.0'	NR		Limestone.									

Bottom of boring at 12.5 feet.

BORING LOG: A-2
STATION AND OFFSET: 51+54, 7.2' R
SURFACE ELEVATION: 766.6'
DATE STARTED: 6/29/84
DATE FINISHED: 7/02/84
SAMPLER TYPE: 2S, Rock Core

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC.	DEPTH	SOIL DESCRIPTION	WC	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
764.6	S-1	4 4 4			Topsoil 2.0	14								
	S-2A	2 12 36			Brown clayey silt, some fine to coarse sand, little fine gravel. 3.0	21	29	11	19	6	19	38	10	A-6a
761.2	S-2B				Brown fine to coarse gravel, some fine to coarse sand, little silt, cobbles. 5.4	7								
	S-3	12 14 3		5		10	--	--	68	13	8	-1	1-	A-1-a
	S-4	1 1 1			Gray fine to coarse sand, some fine gravel, some silt, trace clay.	23	-N	P-	29	14	28	22	7	A-2-4
755.6		1 1 50/0.3'	NR	10	11.0									
	RC-1		45%	15	Limestone.									
744.5	RC-2		100%	20										

Bottom of boring at 22.1 feet.

NP = Non-Plastic.

BORING LOG: A-3
STATION AND OFFSET: 52+74, 12.0'L
SURFACE ELEVATION: 762.5'
DATE STARTED: 7/3/84
DATE FINISHED: 7/3/84
SAMPLER TYPE: 2S, Rock Core

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC.	DEPTH	SOIL DESCRIPTION	WC	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
	S-1	6 8 10			Brown fine to coarse gravel, some fine to coarse sand, trace silt. Cobbles.	9								
	S-2	14 26 23				9	-	-	65	14	9	-1	2-	A-1-a
	S-3	11 29 34		5		5								
755.0		50/0.1'	NR		7.5									
	RC-1		64%	10	Limestone.									
749.1														

Bottom of boring at 13.4 feet.

BORING LOG: A-4
STATION AND OFFSET: 53 + 72, 10.3' R
SURFACE ELEVATION: 767.2'
DATE STARTED: 7/2/84
DATE FINISHED: 7/3/84
SAMPLER TYPE: 2S, Rock Core

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC.	DEPTH	SOIL DESCRIPTION	WC	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
765.2	S-1	2 9 6			Topsoil 2.0	23								
	S-2	1 4 6			Brown fine to coarse sand and clayey silt, trace fine gravel, some organic material. 4.5	23	29	5	2	38	13	32	15	A-4a
761.2	S-3	14 50		5	Brown fine to coarse sand and fine to coarse gravel, trace silt. Cobbles. 6.0	7								
	RC-1		80%	10	Limestone.									
754.7														

Bottom of boring at 12.5 feet.

BORING LOG: A-5
STATION AND OFFSET: 54 + 53, ℄
SURFACE ELEVATION: 771.1'
DATE STARTED: 7/3/84
DATE FINISHED: 7/3/84
SAMPLER TYPE: All 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC.	DEPTH	SOIL DESCRIPTION	WC	ATT L LL	ATT L PI	PHYSICAL CHARACTERISTICS % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
769.1	S-1	9 26 39			Topsoil 0.4	12	--	--	42	10	22	-2	6-	A-2-4
	S-2	50			Brown fine to coarse gravel, some fine to coarse sand, some silty clay, rock fragments 3.4	15								
766.1		50/0.0'	NR		Limestone									

Bottom of boring at 5.0 feet.

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DATE: 8/6/84	DRAWN BY: JJG	CHECKED BY: TJR	

OHIO DEPT. OF TRANSPORTATION	OHIO FHWA REGION 5
PIC-762-0.19	

4/6

INTRODUCTION

THE PROJECT CONSISTS OF RELOCATING S.R. 762 AND CONSTRUCTING A NEW BRIDGE OVER BIG DARBY CREEK BETWEEN APPROXIMATE STATIONS 42+00 AND 63+00.

GEOLOGY

THE SITE LIES STRATIGRAPHICALLY NEAR THE MIDDLE OF THE LOWER DEVONIAN COLUMBUS FORMATION. THE COLUMBUS AT THE SITE IS A GRAY TO WHITE FINE GRAINED LIMESTONE THAT HAS BEEN PARTIALLY DOLOMITIZED, AND IS A FAIR RESERVOIR. BELOW THE DOLOMITIZED SECTION IS A RED, FINE SANDY LIMESTONE (OXIDE-STAINED) UNDERLAIN BY A TAN FINE SANDY LIMESTONE.

EXPLORATION

SIX EXPLORATORY BORINGS, DESIGNATED B-1 THROUGH B-6 WERE DRILLED TO DEPTHS RANGING FROM 6 TO 10 FEET BY A TRUCK MOUNTED ROTARY DRILLING MACHINE USING CONTINUOUS FLIGHT AUGERS TO ADVANCE THE HOLES. STANDARD PENETRATION TESTS WERE PERFORMED AT 2.5-FOOT AND 5-FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. EIGHTEEN SAMPLES WERE OBTAINED AND VISUALLY CLASSIFIED AND ALL SAMPLES WERE TESTED TO DETERMINE THE NATURAL MOISTURE CONTENT. NINE SAMPLES WERE SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS AND WERE TESTED FOR GRADATION AND ATTERBERG LIMITS.

INVESTIGATIONAL FINDINGS

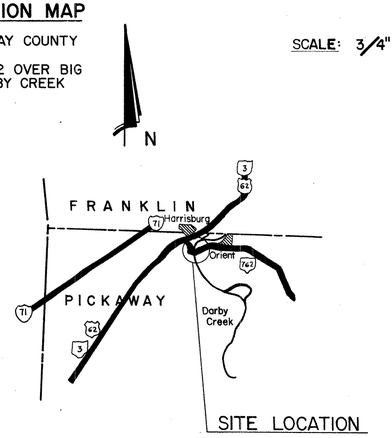
THE TEST DATA INDICATES THAT THE SOIL TYPE IS PREDOMINANTLY COHESIVE SOILS OF THE A-4a TO A-7-6 CATEGORY, ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. GRANULAR SOILS OF THE A-1-a TO A-2-7 WERE ALSO ENCOUNTERED. A LIMESTONE BEDROCK LAYER WAS ENCOUNTERED IN ALL BORINGS EXCEPT B-5, AND RANGED IN DEPTH FROM 2.5 TO 8.3 FEET BELOW THE EXISTING GRADE. SOILS ENCOUNTERED STRATIGRAPHICALLY ABOVE THE LIMESTONE ARE DUE LARGELY TO DIFFERENTIAL WEATHERING OF THE LIMESTONE.

LOCATION MAP

PICKAWAY COUNTY

S.R. 762 OVER BIG DARBY CREEK

SCALE: 3/4" = 2000'



LEGEND FOR PROJECT — AVERAGE RESULTS OF TESTS — 9 SAMPLES TESTED

ROTARY BORING — PLAN

X/Y | # ROTARY BORING — PROFILE — PLOTTED TO VERTICAL SCALE ONLY
#— INDICATES MOISTURE CONTENT IN PERCENT
X — INDICATES NUMBER OF BLOWS FOR SECOND SIX INCHES
Y — INDICATES NUMBER OF BLOWS FOR THIRD SIX INCHES

—W INDICATES FREE WATER

● MOISTURE CONTENT ≥ LL-3

⊖ MOISTURE CONTENT OF A NON PLASTIC SOIL > 25

SOIL SYMBOL and DESCRIPTION	HRB CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE CONTENT	SAMPLES TESTED
GRAVEL and/or STONE FRAGMENTS	A-1-a	A-1-a(0)	63	16	9	-12-		—	—	12	2
GRAVEL and/or STONE FRAGMENTS with SAND	A-1-b	A-1-b(0)	48	19	16	-17-		20	3	8	2
GRAVEL and/or STONE FRAGMENTS with SAND, SILT & CLAY	A-2-6	A-2-6(0)	25	39	5	15	16	40	12	31	1
GRAVEL and/or STONE FRAGMENTS with SAND, SILT & CLAY	A-2-7	A-2-7(0)	45	20	8	12	15	42	13	17	1
SANDY SILT	A-4	A-4a	VISUAL CLASSIFICATION								
SILT and CLAY	A-6	A-6a	VISUAL CLASSIFICATION								
ELASTIC CLAY	A-7-5	A-7-5(14)	2	25	7	21	45	63	28	36	3
CLAY	A-7-6	A-7-6	VISUAL CLASSIFICATION								
TOPSOIL			VISUAL CLASSIFICATION								
LIMESTONE			VISUAL CLASSIFICATION								
WEATHERED LIMESTONE			VISUAL CLASSIFICATION								
VARIOUS OTHER MATERIALS			VISUAL CLASSIFICATION								

PROJECT INDEX

STATION FROM	STATION TO	PLAN SHEET	PROFILE SHEET	CUT MAX.	FILL MAX.
S.R. 762 42+00	63+00	2	2	0.0'	17.0'
C.R. 26 94+00	100+00	2	2	0.0'	6.0'

PARTICLE SIZE DEFINITION

BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
8"	3"	2mm NO. 10	.42mm NO. 40	.074mm NO. 200	.005mm	

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SOIL PROFILE

DATE: 8/6/84	DRAWN BY: JJG	CHECKED BY: TAE	

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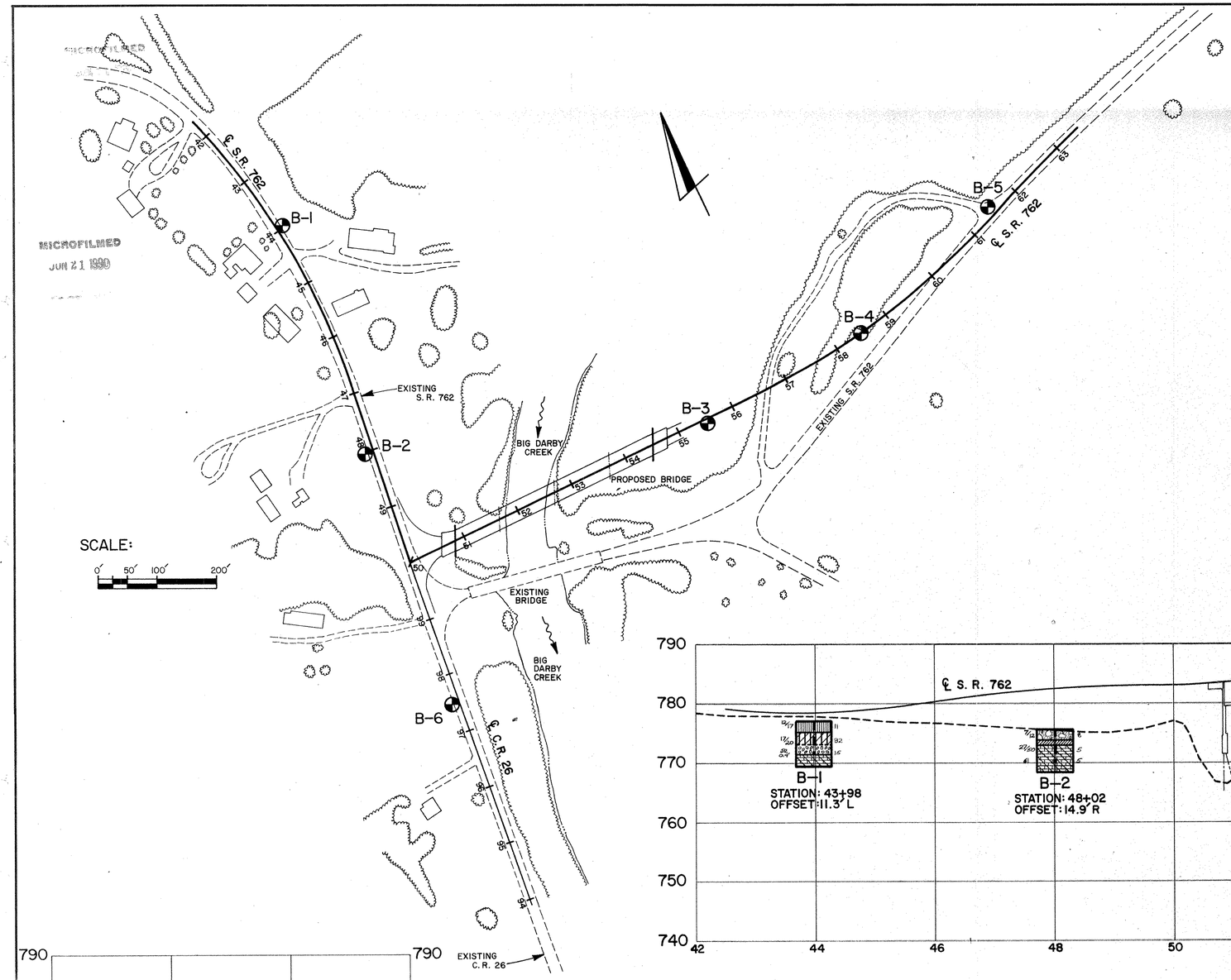
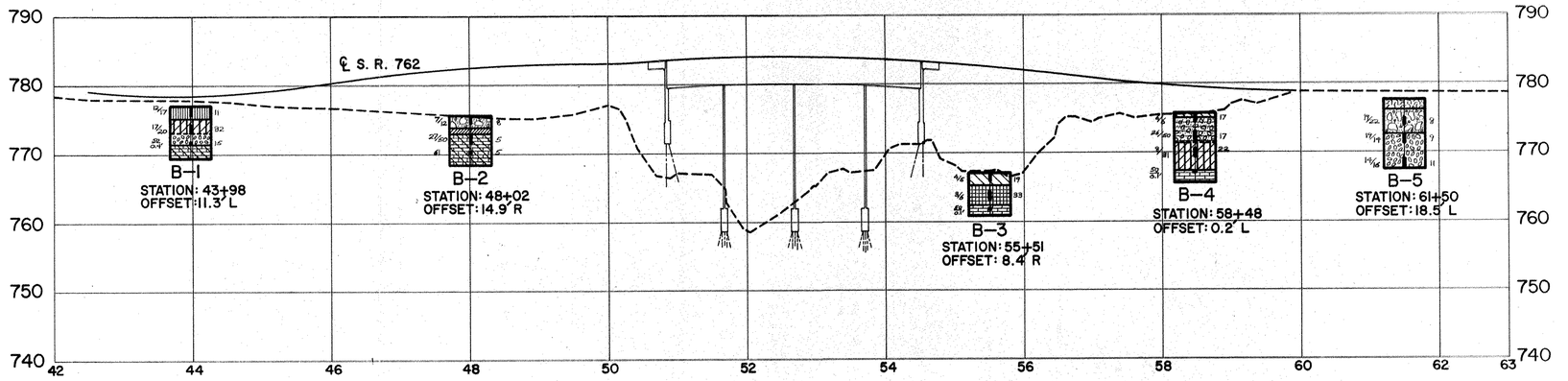
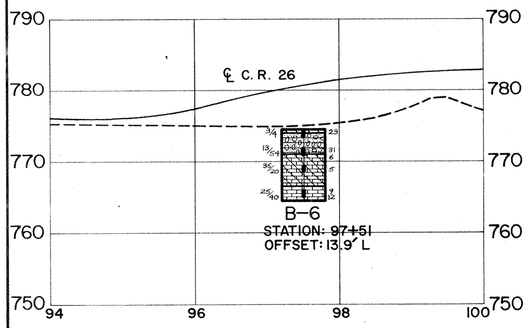
5/6







SCALE (for both profiles):

(HOR.) 0 50 100 200

(VERT.) 0 5 10 20

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PIC-762-0033
SOIL PROFILE

DATE: 8/6/84	DRAWN BY: BJH	CHECKED BY: TAR

SUMMARY OF SOIL TEST DATA

OHIO DEPT. OF TRANSPORTATION	OHIO FHWA REGION 5
PIC -762-0.19	

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BORING	STATION OFFSET	DEPTH (FT.) FROM	TO	% AGG	% C S	% F S	% SI	% CL	LL	PI	% W C	ODOT CLASS
B-1	43+98, 11.3' L	2.5	3.7	3	18	9	23	47	54	20	32	A-7-5(13)
B-1	43+98, 11.3' L	5.0	5.3	60	17	11	—12—		—	—	15	A-1-a(0)
B-2	48+02, 14.9' R	0.0	1.1	43	22	21	—14—		—	—	8	A-1-b(0)
B-3	55+51, 8.4' R	2.5	3.7	0	40	1	15	44	76	41	43	A-7-5(15)
B-4	58+48, 0.2' L	2.5	3.8	45	20	8	12	15	42	13	17	A-2-7(0)
B-4	58+48, 0.2' L	5.0	6.3	3	17	11	24	45	59	22	32	A-7-5(15)
B-5	61+50, 18.5' L	2.5	3.5	53	16	10	15	6	20	3	8	A-1-b(0)
B-5	61+50, 18.5' L	5.0	6.3	66	15	7	—12—		—	—	9	A-1-a(0)
B-6	97+51, 13.9' L	2.5	3.5	25	39	5	15	16	40	12	31	A-2-6(0)

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