BHS-1215(6)

OHIO	1/19
FHWA REGION 5	
BHS-1215(6)	FEDERAL PROJECT

BEL-149-10.24

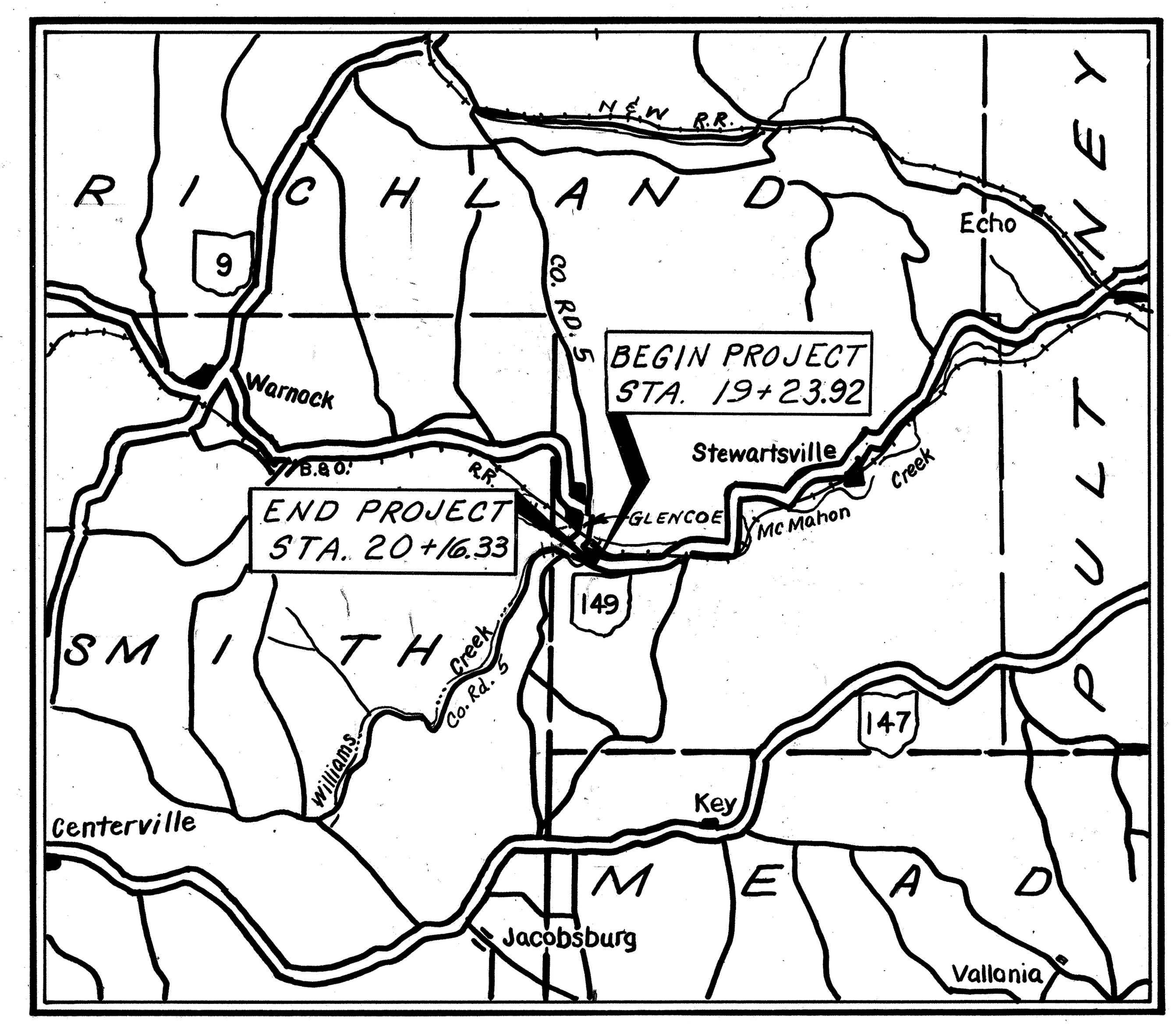
DESIGN DESIGNATION	
Current A.D.T. (1983)	630
Design A.D.T. (2003)	1088
D.H.V.	163
D.	60%
T.	1%
V.	30 mph

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BEL-149-10.24
RICHLAND TOWNSHIP
BELMONT COUNTY

CONVENTIONAL SIGNS

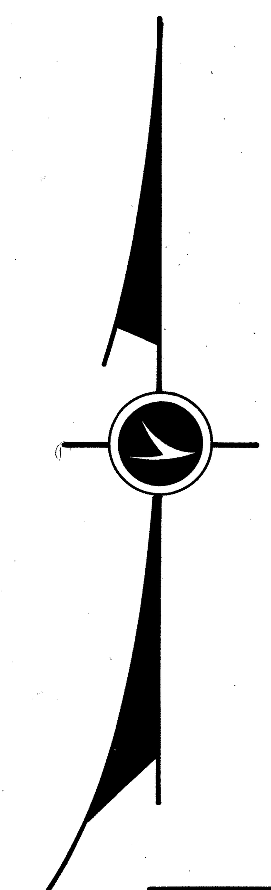
County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) (proposed)
Center Line 352 353
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light.
Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way R/W
Property Line P/L (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 10' 20' 40'
Profile: Horizontal 0 10' 20' 40', Vertical 0 10' 20'
Cross Section: Horizontal 0 10' 20', Vertical 0 10' 20'

1983 SPECIFICATIONS

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

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

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

Approved [signature]
Date 7/18/84 District Deputy Director of Transportation

Approved Walter J. Jestings JWT
Date 8-9-84 Engineer, Bureau of Bridges and Structures

9/27/84 Approved Wayne H. Kauble
Date 12-14-84 Chief Engineer, Planning and Design

Approved Warren J. Smith
Date 12-14-84 Director, Department of Transportation

SUPPLEMENTAL SPECIFICATIONS			
803	5-27-83	847	10.17.83
		947	10.17.83
836	3-12-75	861	9.9.83
853	6-26-78	961	9.9.83
956	6-26-78		

LINE DATA

Begin Project	Sta. 19+23.92	
End Project	Sta. 20+16.33	
Length of Project		92.41 Lin. Ft. or 0.018 Mi.
Begin Work	Sta. 17+50	
End Work	Sta. 21+25	
Length of Work		375 Lin. Ft. or 0.071 Mi.

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
BP-5	7-16-81	AS-1-81	11-27-81		
BP-6	6-1-65				
		DBR-2-73	4-10-73		
GR-1	2-5-82	PSBD-1-81	9-18-81		
GR-2B	2-5-82				
GR-3	2-5-82				
GR-4	2-5-82				
GR-4A	2-5-82	1-30-84			

Plan Prepared By:
OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 11

SEAL

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

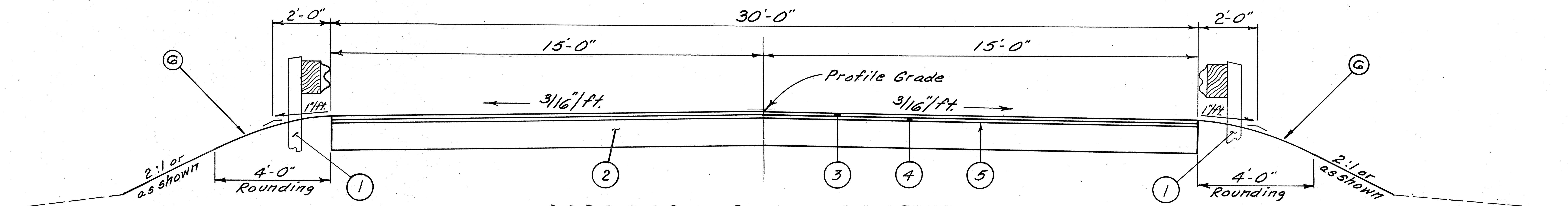
DIVISION ADMINISTRATOR DATE

Project: BEL-149-10.24
Date of Letting ______ 19__, Contract No. ______
LD 0300 Rev. 11-1-78

TYPICAL SECTION

TYPE 404

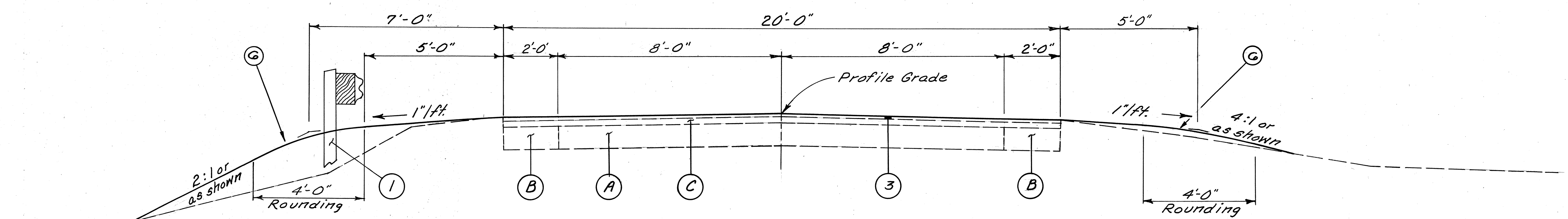
SCALE: 0 1' 2' 4'



APPROACH SLAB SECTION

Sta. 19+23.92 to Sta. 19+38.92 = 15 Lin. Ft.
Sta. 20+01.33 to Sta. 20+16.33 = 15 Lin. Ft.

NOTE: For specific variations in pavement courses, slope and typical section, See Sheet No 7.



NORMAL PAVEMENT SECTION

~ KEY ~

- (A) ~ Existing Concrete Base
- (B) ~ Bituminous Concrete Widening
- (C) ~ Bituminous Concrete Pavement
- (1) ~ Item 606 ~ Guardrail, Type 5
- (2) ~ Item 611 ~ Reinforced Concrete Approach Slab
- (3) ~ Item 404 ~ 1¼" Asphalt Concrete, AC-20
- (4) ~ Item 403 ~ 1¼" Asphalt Concrete, AC-20
- (5) ~ Item 407 ~ Tack Coat * / Cover Aggregate *
- (G) ~ Item 659 - Seeding and Mulching *

* See Note on Sheet No. 3

GENERAL NOTES

QUANTITIES	
Calc. L.J.C. Date: 5-28-84	Chkd. J.A.W. Date: 5-28-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-149-10.24

FIELD OFFICE:

The Contractor shall provide a suitable field office having a minimum of 300 sq.ft. of floor space. Payment shall be at the lump sum price bid for Item 619, Field Office.

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 the plans.

ELEVATION DATUM:

All elevations refer to U.S.G.S. Datum.

LOCATIONS 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.

CONTINGENCY QUANTITIES:

The contractor shall not order materials or perform work listed in the General Summary for items designated by plan note to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used at the Engineer's discretion shall be made a matter of record by incorporation into the final change order governing completion of this project.

UNDERGROUND UTILITIES:

The locations of underground utilities shown on the plans are as obtained from the owners of the utility as required by section 153.64 O.R.C.

UTILITIES NOTIFICATION:

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

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

In addition to the underground utilities listed below the Contractor shall notify at least two working days before breaking ground, all public service corporations having wires, poles, conduit or other structures, which may be affected by the operation. He shall conduct his operations in such a manner to avoid damages to any and all utilities. **Any and all work required for public and private utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.**

Following is a list of the owners of utilities known to be within the area of this project:

Columbia Gas of Ohio, Inc.
200 Civic Center Drive
P.O. Box 117
Columbus, Ohio, 43216-0117
Phone ~ 614/460-6000

Ohio Power Co.
301 Cleveland Ave. S.W.
P.O. Box 400
Canton, Ohio, 44701
Phone 216/438-7040

Ohio Bell Telephone Co.
150 Gay St.
Columbus, Ohio 43215
Phone 614/223-8262

Belmont County Sanitary Sewer Dist.
P.O. Box 457
St. Clairsville, Ohio 43950
Phone: (614) 695-3144

T.C.I. Growth, Inc.
14 North 5th Street
Martins Ferry, Ohio 43935
Phone: (614) 633-2232

SEEDING:

Quantities for seeding are calculated for soil areas between the work limits as shown on the Cross Sections.

WATERING SEEDED AREAS:

The following estimated quantity is to be used as directed by the Engineer to promote growth and to care for the seeded areas, as per 659.09.

659 Water 5 M. Gal.

TEMPORARY STREAM CROSSING FORDS:

Where stream crossing fords are required for equipment crossings, the following shall apply to the contractors 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 Final Regulations published July 22, 1982.

TACK COAT:

The tack coat and cover aggregate operation shall be determined as per Spec. 407.05. Plan quantities indicate average application rates of 0.10 gallons per square yard of tack coat and 7 pounds per square yard of cover aggregate for estimating purposes only.

GUARDRAIL REMOVED FOR STORAGE, AS PER PLAN:

In addition to the requirements of 202.07 of the Specifications this item shall include the removal of designated Standard Type A Anchor Assemblies. The removal of the Standard Type A Anchor Assemblies shall include the complete removal of the guardrail elements, concrete encased posts and concrete anchor.

Guardrail elements, standard terminals, blockouts, and miscellaneous hardware shall be stored at the site on the Right of Way as directed by the Engineer for removal by State Forces. All posts and concrete removed shall become the property of the contractor and be disposed of by him. Payment for the above shall be included in the unit price bid per lin. ft. of Item 202 Guardrail Removed for Storage, as per plan.

REMOVAL OF TREES AND STUMPS:

All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum 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 to be removed.

Sizes	№ Trees	Stumps
18"	3	0

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 bid for Item 201 Clearing and Grubbing.

MAINTAINING TRAFFIC:

The Contractor shall maintain traffic at all times in accordance with the requirements of Item 614. One way traffic shall be maintained by use of temporary signals as shown on sheet 5 and by use of the existing pavement, Item 615 Temporary Road, as per plan (see detail on sheet 6.) Item 502 Temporary Structure with 16' roadway width or the completed pavement.

All signs, drums, barricades, flagmen and lane closures shall be utilized in conformance with the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, current edition, latest revisions.

The quantities shown on sheet 6 & 8 have been carried to the General Summary to be used as required for the purpose of Maintaining Traffic.

Payment for all of the above except Items 615 and 502 shall be included in the price bid for Item 614 Maintaining Traffic.

TEMPORARY 606 - GUARDRAIL, TYPE 5

This item shall consist of furnishing and constructing Type 5 guardrail on posts set plumb in pre-bored holes in the location shown on sheet 6.

Payment for all labor, materials, tools and incidentals necessary to complete the above work shall be included in the contract unit price bid LUMP SUM OF ITEM 615 TEMPORARY ROAD, as per plan.

ITEM 615 ~ TEMPORARY ROAD, AS PER PLAN

The Contractor shall construct the temporary road and pavement in accordance with the details shown on sheet 6. Prior to driving piling for the temporary structure, the Contractor shall encase the existing 8" water line for a distance of 10' on each side of the proposed piling locations, with a 2' minimum encasement. The Belmont County Sanitary Sewer District will uncover the water line at these locations if requested by the Contractor.

The Contractor's attention is directed to the frame building adjacent to the temporary runaround. Caution shall be exercised in construction of the temporary runaround and Type 5 Guardrail, as per plan, so as not to disturb the existing facilities in this area.

Payment for all of the above shall be included in the price bid for Item 615 ~ Temporary Road, as per plan.

For Encasement Detail See Sheet 6.

UNDER GROUND UTILITIES
48 Hours
BEFORE YOU DIG
Call 800-362-2764 (Toll Free)
Ohio Utilities Protection Service
Non-Members
Must Be Called Directly

614 WORK ZONE PAVEMENT MARKINGS

GENERAL

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

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

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMUTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168) SIGN OR BOTH AS MAY BE APPROPRIATE. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL BE REPEATED EVERY 1 TO 2 MILES AND AT OTHER LOCATIONS AS NECESSARY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY. THE COST FOR FURNISHING AND ERECTING AND SUBSEQUENTLY REMOVING THESE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC, UNLESS SPECIFICALLY ITEMIZED.

TEMPORARY PAVEMENT MARKING MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE EITHER 621.02 PAINT OR 947.03 TYPE B OR C PREFORMED MATERIAL.

PAINT

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT THE INCREASE OF 25 PERCENT IN THE APPLICATION RATE FOR NEW BITUMINOUS PAVEMENT AND PARAGRAPH 621.14 SHALL NOT APPLY.

TYPE B AND TYPE C PREFORMED MATERIAL

PREFORMED MATERIAL SHALL COMPLY WITH 947.03 EXCEPT THAT NO PREFORMED MATERIAL CONTAINING METAL SHALL BE PLACED ON ANY SURFACE UNLESS IT WILL BE REMOVED LATER BY THE CONTRACTOR. TEMPORARY PAVEMENT MARKINGS OF 947.03 PREFORMED MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF 621 OR 847 SURFACE COURSE MARKINGS AT THAT LOCATION. PREFORMED MATERIAL SHALL BE APPLIED IN ACCORDANCE WITH 847 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS CONFLICT WITH THE TRAFFIC PATTERN, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134.

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

CLASS I MARKINGS SHALL BE APPLIED TO THE FULL DIMENSIONS AS DEFINED IN 621 WITH THE FOLLOWING ADDITIONS OR EXCEPTIONS:

1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

CLASS II MARKINGS

CLASS II MARKINGS (ABBREVIATED) SHALL BE DEFINED AS FOLLOWS:

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

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

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 1.6 GALLONS PER MILE FOR LANE LINE AND CENTER LINE AND 16 GALLONS PER MILE FOR GORE MARKINGS.

CONFLICTING EXISTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SPECIFICALLY ITEMIZED.

THE CONTRACTOR SHALL ALSO REMOVE THE PRISMATIC RETRO-REFLECTOR WITHIN ANY RAISED PAVEMENT MARKER (RPM) WHICH IS IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. WHEN THE TEMPORARY PAVEMENT MARKINGS ARE REMOVED AND THE RPM IS NO LONGER IN CONFLICT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE RECESSED REFLECTOR ATTACHMENT AREA OF THE CASTING AND INSTALL A NEW PRISMATIC RETRO-REFLECTOR OF THE SAME KIND AND COLOR. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

INTERIM MARKINGS

WITHIN 21 CALENDAR DAYS AFTER OPENING ANY LENGTH OF PAVEMENT TO TRAFFIC, THE 621 OR 847 PAVEMENT MARKINGS CALLED FOR IN THE PLANS OR EQUIVALENT 614 CLASS I, PAINT MARKINGS SHALL BE APPLIED. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I PAINT MARKINGS AS PART OF THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC.

FOR EACH CALENDAR DAY BEYOND 21 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE PROVISIONS OF 108.07 WILL BE INVOKED, EXCEPT THAT BETWEEN NOVEMBER 15 AND APRIL 15 WEATHER CONDITIONS SHALL NOT BE AN ACCEPTABLE REASON FOR EXTENSION.

METHOD OF MEASUREMENT

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

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

BASIS OF PAYMENT

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

ITEM	UNIT	DESCRIPTION
614	MILES	TEMPORARY LANE LINES, CLASS ______, ___*___
614 .06	MILES	TEMPORARY CENTER LINES, CLASS II, * TYPE C, 947.03
614	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, ___*___
614 0.11	MILES	TEMPORARY EDGE LINES, CLASS I, * TYPE C, 947.03
614	LIN. FT.	TEMPORARY GORE MARKINGS, CLASS II, ___*___
614 36	LIN. FT.	TEMPORARY STOP LINES, CLASS I, * TYPE C, 947.03
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, ___*___
614	EACH	TEMPORARY LANE ARROWS, CLASS I, ___*___
614	EACH	TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I, ___*___
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, ___*___
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, ___*___
614	LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, ___*___

*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C

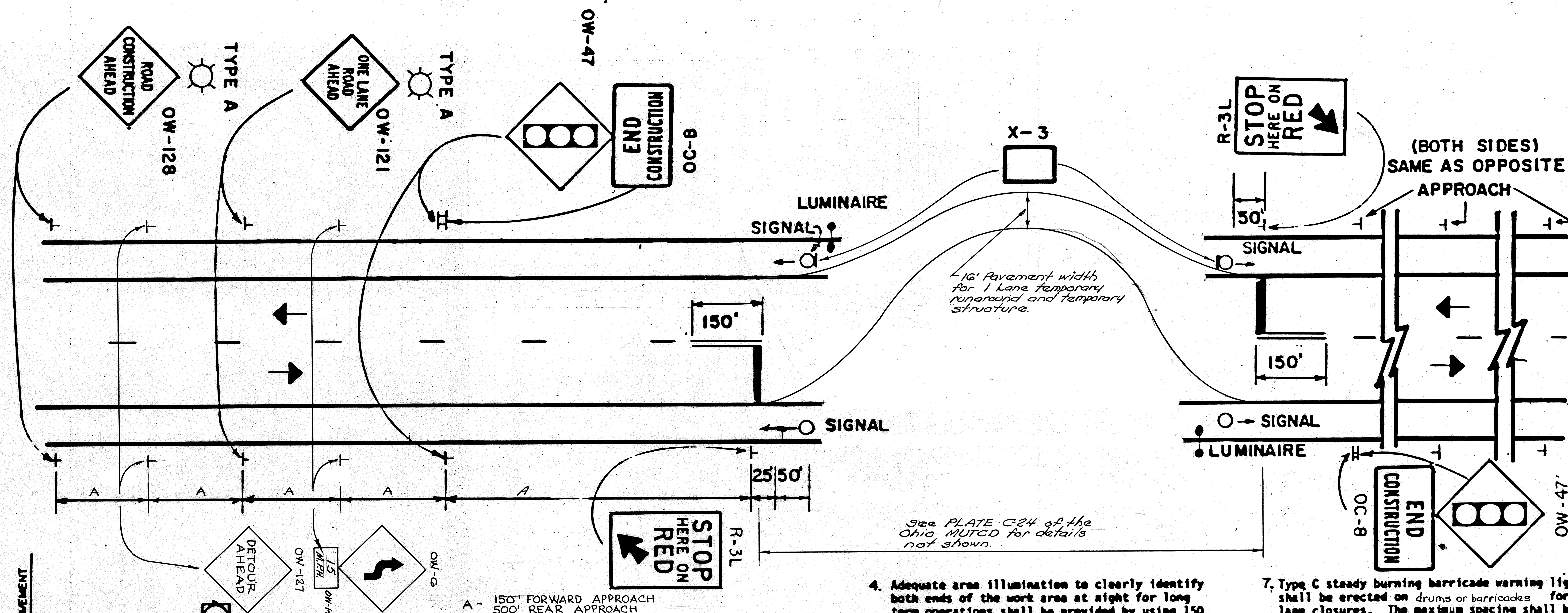
fh4

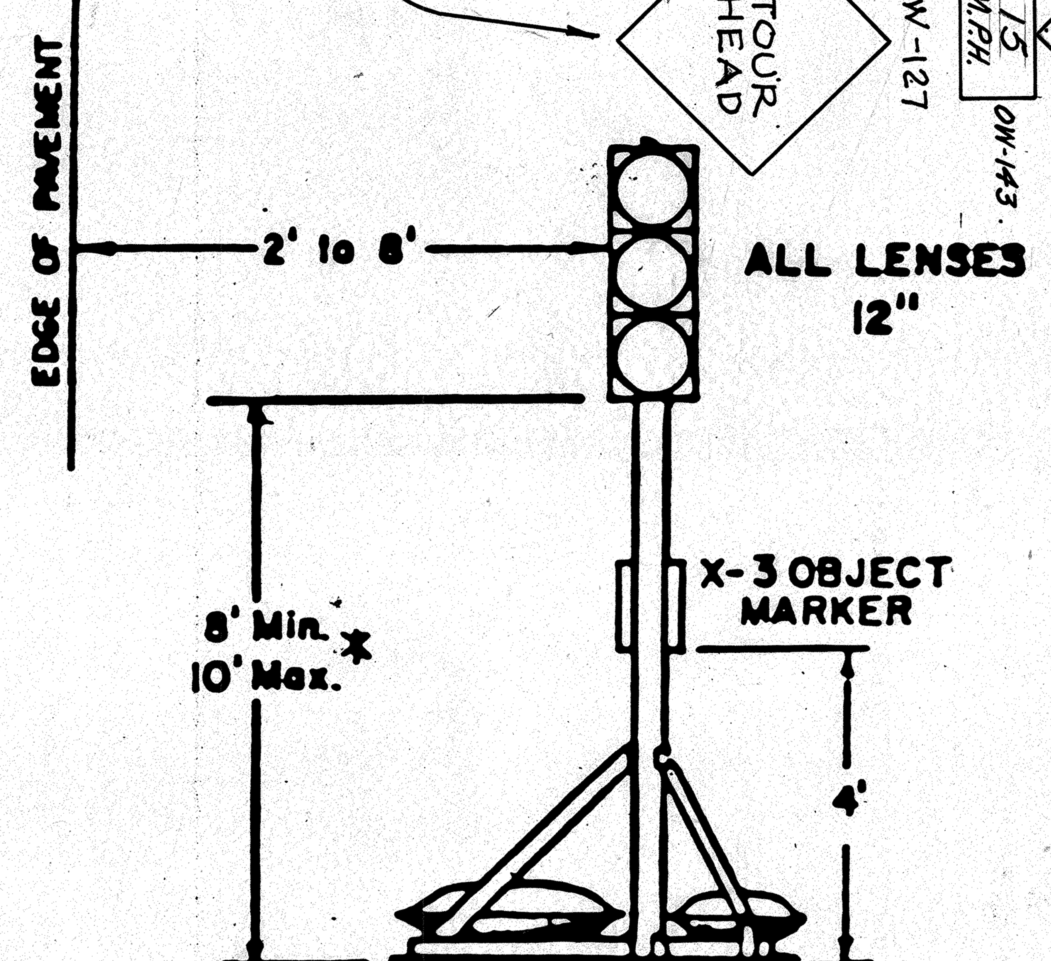
NOTE:
PERMANENT SIGNS AND PAVEMENT MARKINGS TO BE FURNISHED AND INSTALLED BY O.D.O.T. DISTRICT 11, WITHIN 30 DAYS AFTER COMPLETION OF PROJECT.

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-149-10.24

For additional Traffic Signals and Maintenance of Traffic details at County Road #5 intersection See Sheet 6.





TYPICAL POLE SUPPORTED SIGNAL

* Above grade of roadway centerline

GENERAL NOTES

1. The maximum length of work area for one way traffic signal control shall be as shown on Sheet No 6.

   Signal timing shall be approved by the Engineer.

2. Signals shall be installed and operated in accordance with the requirements of Part 6 of the Ohio Manual of Uniform Traffic Control Devices.

3. All traffic signals and equipment used in this traffic signal installation, such as a signal cable and signal heads, shall be in conformance with Specifications 632 and 732. However, the performance test provision noted in Specification 632.27, paragraph 6 and the working drawing requirements of 632.03 are waived. The controller, flashers, load switches, conflict monitor and other controller accessories shall comply with Supplemental Specifications 861 and 961, except that the requirements of 861.03 and 861.05 are waived. Used equipment meeting current ODOT Specifications is acceptable.

   Conflict monitors shall be furnished at all locations unless an electro-mechanical pretimed controller with cam shaft is provided.

   When the signal is changed to a flash condition either manually or automatically, red shall be flashed to both approaches.

4. Adequate area illumination to clearly identify both ends of the work area 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 signal 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.

5. Temporary no passing lines and 24" stop lines shall be installed and maintained where no passing lines are not already in place. Removable pavement markings may be used. Existing conflicting pavement markings between the work area and stop line shall be removed. After completion of the work, temporary markings shall be removed in accordance with 621.134.

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 25'c/c.

8. The horizontal or vertical alignment of the roadway may require adjustments in the location of the advance warning signs (the distances shown for advance warning sign spacings are minimums). The vertical alignment of the roadway may require adjustments in the height of the signal heads within the range specified in the Typical Pole Supported Signal Detail.

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING 1 LANE OF A 2 LANE HIGHWAY

DATE 2/82

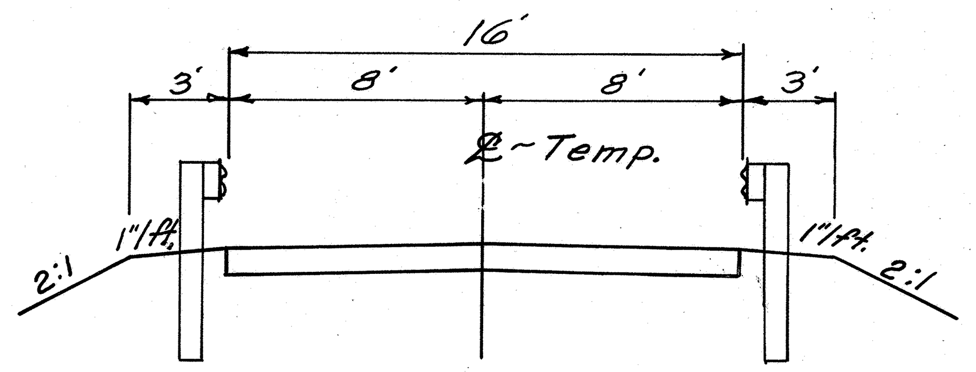
MAINLINE CURVE DATA

P.I. ~ Sta. 18+00.92	P.I. ~ Sta. 18+99.96	P.I. ~ Sta. 20+40.57
P.C. ~ Sta. 17+51.55	P.C. ~ Sta. 18+59.39	P.C. ~ Sta. 20+05.39
P.T. ~ Sta. 18+49.68	P.T. ~ Sta. 19+39.82	P.T. ~ Sta. 20+75.39
Δ = 15°42' Lt.	Δ = 18°30' Rt.	Δ = 14°00' Rt.
Dc = 16°00'	Dc = 23°00'	Dc = 20°00'
T = 49.37'	T = 40.57'	T = 35.18'
Lc = 98.13'	Lc = 80.43'	Lc = 70.00'
E = 3.39'	E = 3.28'	E = 2.15'
R = 358.10'	R = 249.11'	R = 286.48'

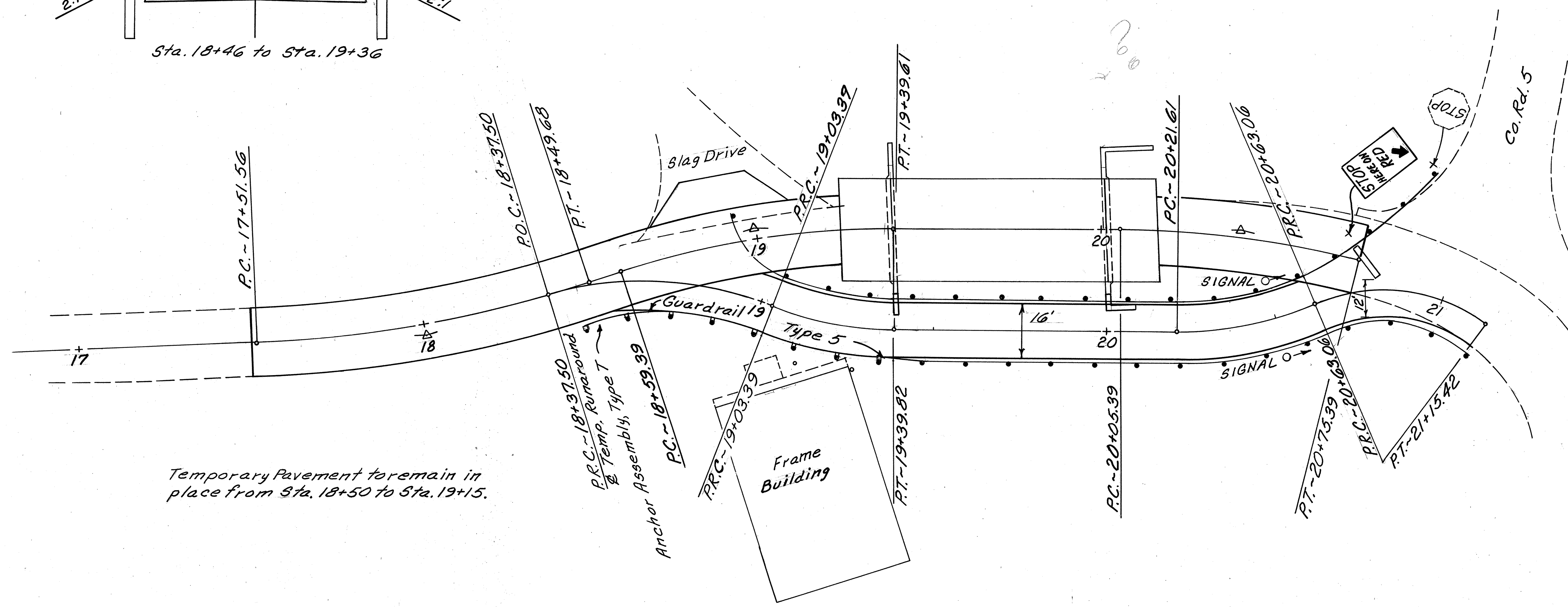
MAINTAINING TRAFFIC ~ COUNTY ROAD 5

In addition to the details shown on sheet 5, two signals, an R3-L-24 sign and stop bar shall be installed as shown on this sheet to maintain traffic at the County Road #5 intersection with S.R. 149. The two additional signals at station 20+50 shall be interconnected with the traffic signal installation shown on sheet 5 and shall display the same phase of the signal cycle as the signals on the forward approach.

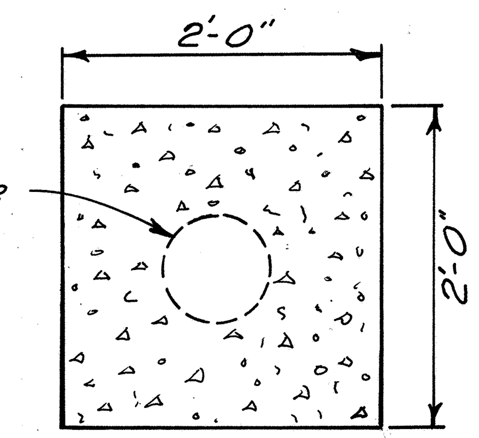
Payment for all of the above shall be included in the price bid for Item 614 ~ Maintaining Traffic.



Sta. 18+46 to Sta. 19+36



Temporary Pavement to remain in place from Sta. 18+50 to Sta. 19+15.



DETAIL
CONCRETE ENCASEMENT
See Note Sheet № 3.

QUANTITIES for information only

~ Guardrail, Type 5, as per plan	87.5	Lin. Ft. *
~ Anchor Assembly, Type T	1	Each *

* Paid for under item 615 Temporary Roads

ITEM 615 ~ TEMPORARY PAVEMENT

Temporary Pavement Course make-up for this project shall consist of 2½" of Item 404 Asphalt Concrete (402.02 composition may be used) and 4" of Item 301 Bituminous Aggregate Base.

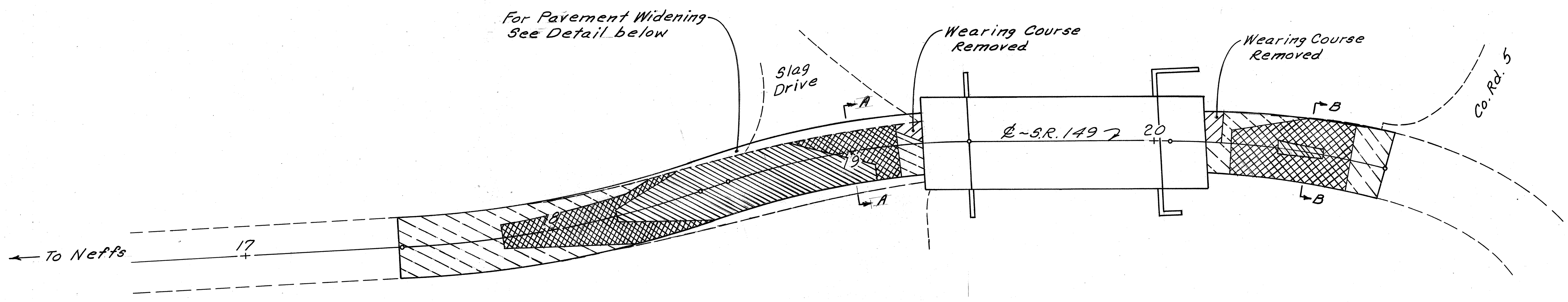
For Temporary Pavement Quantity See Sheet № 8.

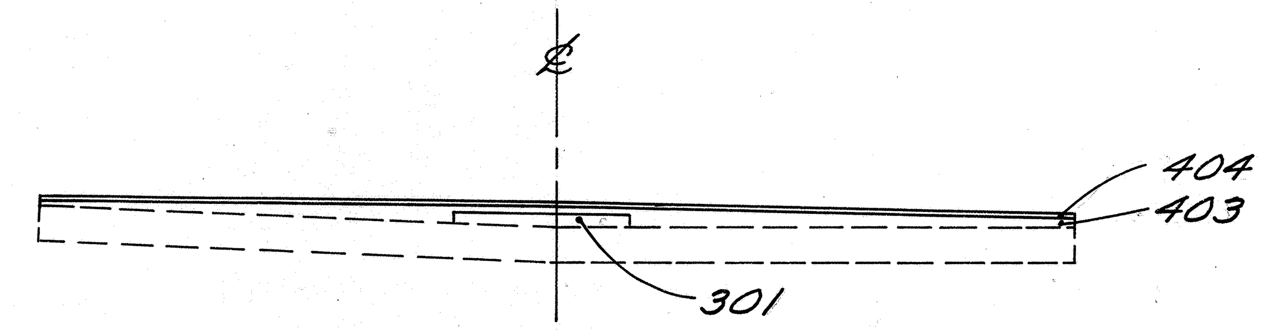
TEMPORARY RUNAROUND CURVE DATA

P.I. ~ Sta. 18+71.69	P.I. ~ Sta. 19+21.70	P.I. ~ Sta. 20+42.64	P.I. ~ Sta. 20+91.93
P.C. ~ Sta. 18+37.50	P.C. ~ Sta. 19+03.39	P.C. ~ Sta. 20+21.61	P.C. ~ Sta. 20+63.06
P.T. ~ Sta. 19+03.39	P.T. ~ Sta. 19+39.61	P.T. ~ Sta. 20+63.06	P.T. ~ Sta. 21+15.42
Δ = 37°45' Rt.	Δ = 20°45' Lt.	Δ = 23°45' Lt.	Δ = 60°00' Rt.
Dc = 57°17'45"	Dc = 57°17'45"	Dc = 57°17'45"	Dc = 114°35'30"
T = 34.19'	T = 18.31'	T = 21.03'	T = 28.87'
Lc = 65.89'	Lc = 36.22'	Lc = 41.45'	Lc = 52.36'
E = 5.68'	E = 1.66'	E = 2.19'	E = 7.74'
R = 100.00'	R = 100.00'	R = 100.00'	R = 50.00'

TEMPORARY RUNAROUND

PAVEMENT DETAILS





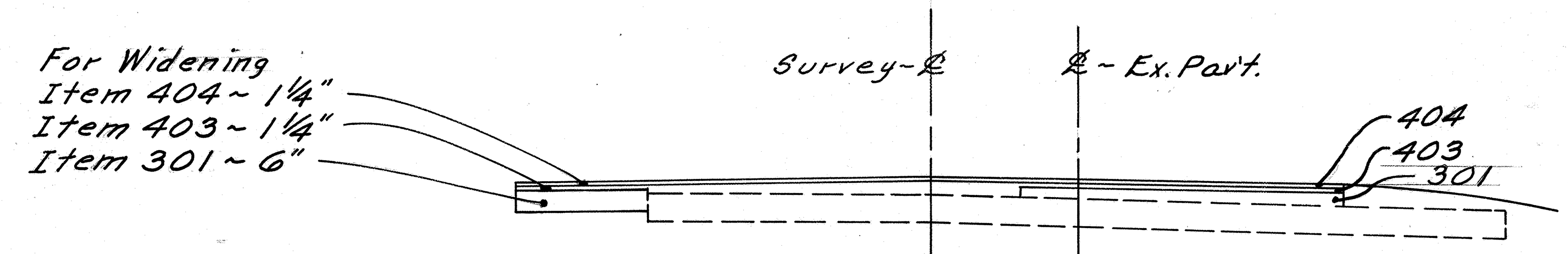
SECTION B-B

404 ~ Surface Course

Crown correction using 403 surfaced with 404

Crown correction using 301 & 403 surfaced with 404

Wearing course removed and surfaced with 404



SECTION A-A

Not to Scale

PAVEMENT ELEVATION					
Lt. Edge Elevation		℄ ~ Survey Station	Profile Elev. ℄ ~ Pavement		Rt. Edge Elevation
Meet Exist.	10'	17+50	824.92	10'	Meet Exist.
825.19		17+75	825.19		825.19
825.53		18+00	825.60		825.67
825.99		18+25	826.16		826.16
826.58		18+50	826.74		826.58
827.73		18+75	827.31		827.15
827.54		19+00	827.70		827.54
827.77		19+24	827.93		827.77
827.94		20+16.25	828.10		827.94
828.03		20+25	827.92		827.76
827.55		20+50	827.39		827.23
Meet Exist.	10'	20+75	826.82	10'	Meet Exist.

CALCULATIONS

Item 404~Asphalt Concrete, AC-20 For Driveways
Dr. Lt. 18+90 ~ 20'x10' + 2(10x10÷2)x(1"÷12) ÷27 = 0.93 C.Y.
Dr. Rt. 18+90 ~ 35'x10+2(10x10÷2)x($\frac{3\frac{1}{2}+0}{2}$÷12) ÷ 27 = 4.86 C.Y.
5.78 C.Y. Use 6 C.Y.

Item 404~Asphalt Concrete, AC-20
Sta. 17+50 to Sta. 19+23.92=173.92
20'x173.92 x (1¼"÷12) ÷27 = 13.42 C.Y.
Sta. 20+16.33 to Sta. 20+75= 58.67 L.F.
(20+22÷2) x58.67 x (1¼"÷12) ÷27 = 4.75 C.Y.
Approach Slabs = 2x(30x15)x(1¼"÷12)÷27 = 3.47 C.Y.
Total 404 = 21.64 C.Y. Use 22 C.Y.

Item 403~Asphalt Concrete, AC-20
Sta. 17+84 to Sta. 19+15 (2" Average)
Planimetered Area = 2068 S.F. x (2"÷12) ÷27 = 12.27 C.Y.
Sta. 20+25 to Sta. 20+64 (2" Average)
Planimetered Area = 724 S.F. x (2"÷12) ÷27 = 4.47 C.Y.
Sta. 18+00 to Sta. 19+23.92
Pav't. Widening~Planimetered Area = 285 S.F. x (1¼"÷12) ÷27 = 1.10 C.Y.
Approach Slabs = 2x(30x15)x(1¼"÷12)÷27 = 3.47 C.Y.
Total 403 = 21.31 C.Y. Use 22 C.Y.

Item 301~Bituminous Aggregate Base
Sta. 18+21 to Sta. 19+07 (5" Average)
Planimetered Area = 1176 S.F. x (5"÷12) ÷27 = 18.15 C.Y.
Sta. 20+40 to Sta. 20+55 (3" Average)
Planimetered Area = 56 S.F. x (3"÷12) ÷ 27 = 0.52 C.Y.
Sta. 18+00 to Sta. 19+23.92
Pav't. Widening~Planimetered Area = 285 S.F. x (6"÷12) ÷27 = 5.28 C.Y.
Dr. Lt. 18+90 = 20x10 + 2(10x10÷2) x (4"÷12) ÷ 27 = 3.70 C.Y.
Total 301 = 27.65 C.Y. Use 28 C.Y.

Item 611~Reinforced Concrete Approach Slabs
2x(30'x15' ÷ 9) = 100 S.Y.

Item 203~Subgrade Compaction
Area from Approach Slabs = 100 S.Y.

Item 202~Pavement Removed
Sta. 19+23.92 to Sta. 19+38.92 = 15 Lin. Ft.
Sta. 20+01.33 to Sta. 20+16.33 = 15 Lin. Ft.
30 Lin. Ft.
30'x20' ÷ 9 = 66.67 S.Y. Use 67 S.Y.

Item 615~Temporary Pavement as per plan
Sta. 18+82 to Sta. 19+46.5 = 1062 (Planimetered) ÷ 9 = 118 S.Y.
Sta. 19+91.5 to Sta. 20+73 1350 (Planimetered) ÷ 9 = 150 S.Y.
Total = 268 S.Y.

Item 202~Wearing Course Removed (2" Average Thickness)
Sta. 19+20 Lt. & Sta. 20+20 Lt.
Planimetered Area = 48 S.F. + 52 S.F ÷ 9 = 11.11 S.Y. Use 12 S.Y.

Item 407~Tack Coat
Sta. 17+50 to Sta. 19+23.92 = 173.92 Lin. Ft.
20'x173.92 ÷ 9 x 0.10 = 38.65 Gal.
Sta. 20+16.33 to Sta. 20+75 = 58.67 Lin. Ft.
(20+22÷2) x58.67 ÷ 9 x 0.10 = 13.69 Gal.
Appr. Slabs ~ 2(30x15) ÷ 9 x 0.10 = 10.00 Gal.
Dr. Lt. 18+90 ~ 20x10 + 2(10x10÷2) ÷ 9 x 0.10 3.34 Gal.
Dr. Rt. 18+90 ~ 35x10 + 2(10x10÷2) ÷ 9 x 0.10 5.00 Gal.
70.68 Gal. Use 71 Gal.

Item 407~Cover Aggregate
From Tack Coat 66 Gal.
71 ÷ 0.1 = 710 S.Y. x (7 ÷ 2000) = 2.49 Use 3 Ton

ITEM 659~COMMERCIAL FERTILIZER
From Seeding ~ 704 S.Y. x 9 ÷ 1000 x 20 ÷ 2000 = 0.06 Ton

ITEM 659~AGRICULTURAL LIMING
From Seeding ~ 704 S.Y. x 9 ÷ 1000 x 100 ÷ 2000 = 0.32 Ton

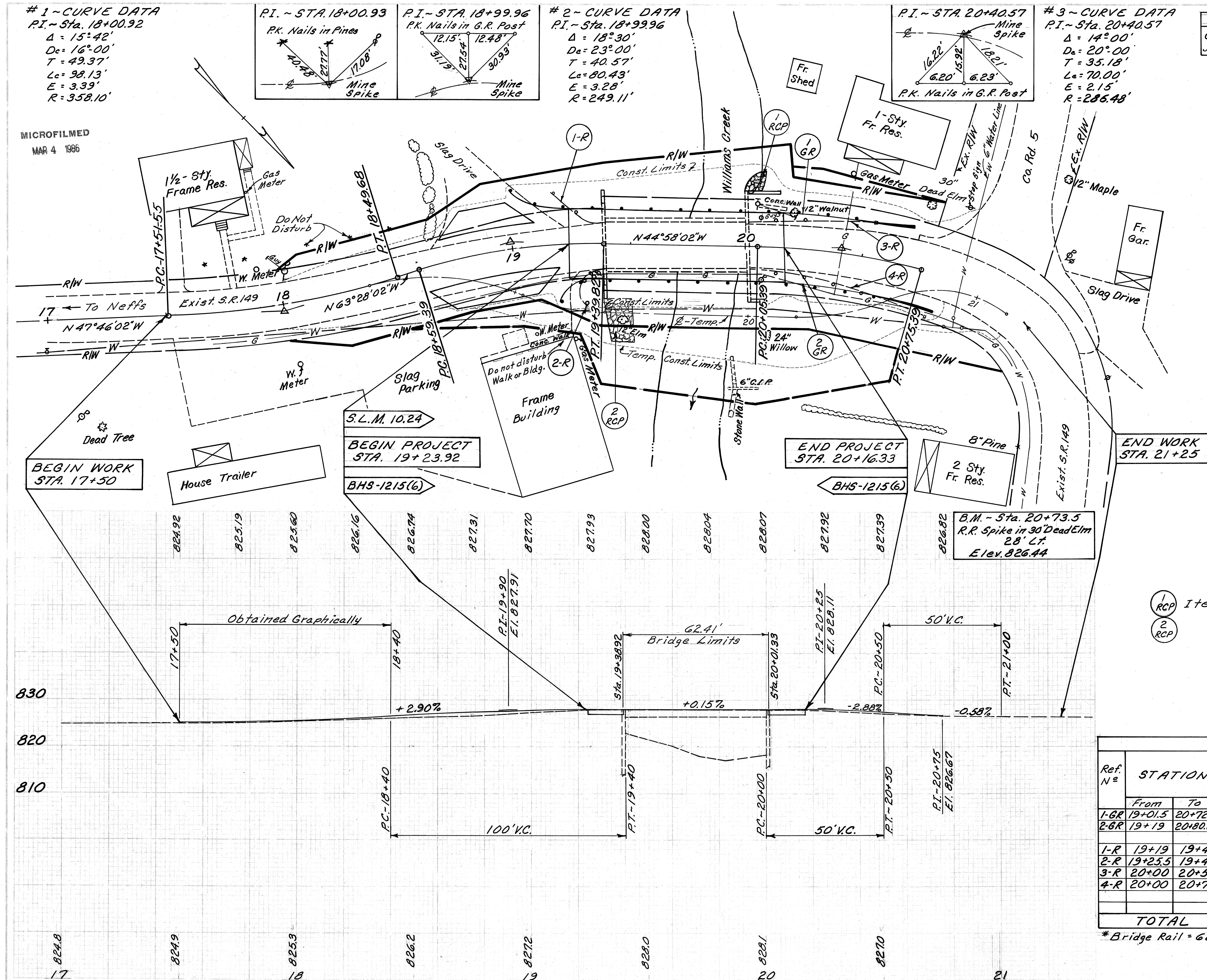
ITEM 203~EARTHWORK & ITEM 659~SEEDING

Sheet Nº	Station From	Station To	Excavation Cu. Yds.	Embankment Cu. Yds.	Seeding Sq. Yds.
10	17+50	21+00	22	59	704
Total			22	59	704

GENERAL SUMMARY

Sheet Numbers 3	4	6	8	9		Item	Quant.	Total	DESCRIPTION
									ROADWAY
Lump						201	Lump		Clearing and Grubbing
			12			202	12	Sq. Yd.	Wearing Course Removed
			67			202	67	Sq. Yd.	Pavement Removed
				175		202	175	Lin. Ft.	Guardrail Removed for Storage, as per plan
			22			203	22	Cu. Yd.	Excavation, not including Embankment Construction
			59			203	59	Cu. Yd.	Embankment
			100			203	100	Sq. Yd.	Subgrade Compaction
				137.68		606	137.68	Lin. Ft.	Guardrail, Type 5
				2		606	2	Each	Anchor Assembly, Standard Type A
				2		606	2	Each	Anchor Assembly, Standard Type T
				4		606	4	Each	Bridge Terminal Assembly, Standard Type B
Lump						615	Lump	Lump	Temporary Roads, as per plan
			268			615	268	Sq. Yd.	Temporary Pavement as per plan
									PAVEMENT
			28			301	28	Cu. Yd.	Bituminous Aggregate Base, AC-20 RT-11 or RT-12
			22			404	22	Cu. Yd.	Asphalt Concrete, AC-20
			22			403	22	Cu. Yd.	Asphalt Concrete, AC-20
			71			407	71	Gals.	Tack Coat
			3			407	3	Ton	Cover Aggregate
			6			404	6	Cu. Yd.	Asphalt Concrete, AC-20 (Driveways)
			100			611	100	Sq. Yd.	Reinforced Concrete Approach Slab (T-12")
									EROSION CONTROL
				24		601	24	Cu. Yd.	Rock Channel Protection, Type B without filter
			0.06			659	0.06	Ton	Commercial Fertilizer
			0.32			659	0.32	Ton	Agricultural Liming
			704			659	704	Sq. Yd.	Seeding and Mulching
5						659	5	M-Gal.	Water
	0.06					614	0.06	Mile	Temporary Center Lines, Class II, Type C, 947.03
	0.11					614	0.11	Mile	Temporary Edge Lines, Class I, Type C, 947.03
	36					614	36	Lin. Ft.	Temporary Stop Lines, Class I, Type C, 947.03
									FOR BRIDGE QUANTITIES, See Sheet 12
Lump						614	Lump		Maintaining Traffic
Lump						619	Lump		Field Office
						623	Lump		Construction Layout Stakes
Lump						624	Lump		Mobilization

QUANTITIES	
Calc. Date	Chk'd. Date
J.A.W. 5-8-84	L.J.C. 5-10-84



EXISTING STRUCTURE
TYPE : Pony Truss
LENGTH : 63'-9"
ROADWAY : 19'-8"
ALIGNMENT : Tangent
SKEW : 2°51' Rt. Forward

PROPOSED STRUCTURE
TYPE : Prestressed Concrete Box Beam Bridge
LENGTH : 61'-3" c/c Bearings
ROADWAY : 30' f/f Guardrail
LOADING : HS-20 & the alternate military loading
WEARING SURFACE : 2½" Min. Asphalt Conc. AC-20
SKEW : 2°-51' Rt. Forward
APPROACH SLAB : AS-1-81 (15'-0" long)
ALIGNMENT : Tangent

(1 RCP) (2 RCP) Item 601 ~ Rock Channel Protection, Type B, without filter

54 S.F. x 2.5' = 35 ÷ 27 = 5.00 Cu. Yds.

$18' \times \left(\frac{12+10}{2}\right) \times 2.5' = 540 \div 27 = 18.33$ Cu. Yds.

TOTAL 23.33 Cu. Yds.

Use 24 Cu. Yds.

GUARDRAIL										
				ITEM ~ 606				ITEM 202		
Ref. Nº	STATION		Side of ℄	Guard-rail Type 5	Anchor Assembly, Type A	Anchor Assembly, Type T	Bridge Terminal Assembly, Type B		Guardrail Removed for Storage	
	From	To		Lin. Ft.	Each	Each	Each		Lin. Ft.	
1-GR	19+01.5	20+72.50	Lt.	75.09*	1	1	2			
2-GR	19+19	20+80.25	Rt.	62.59*	1	1	2			
1-R	19+19	19+40	Lt.						25	
2-R	19+25.5	19+40	Rt.						25	
3-R	20+00	20+50	Lt.						50	
4-R	20+00	20+75	Rt.						75	
TOTAL				137.68	2	2	4		175	

*Bridge Rail = 62.41'

STA. 17+00 to STA. 21+00

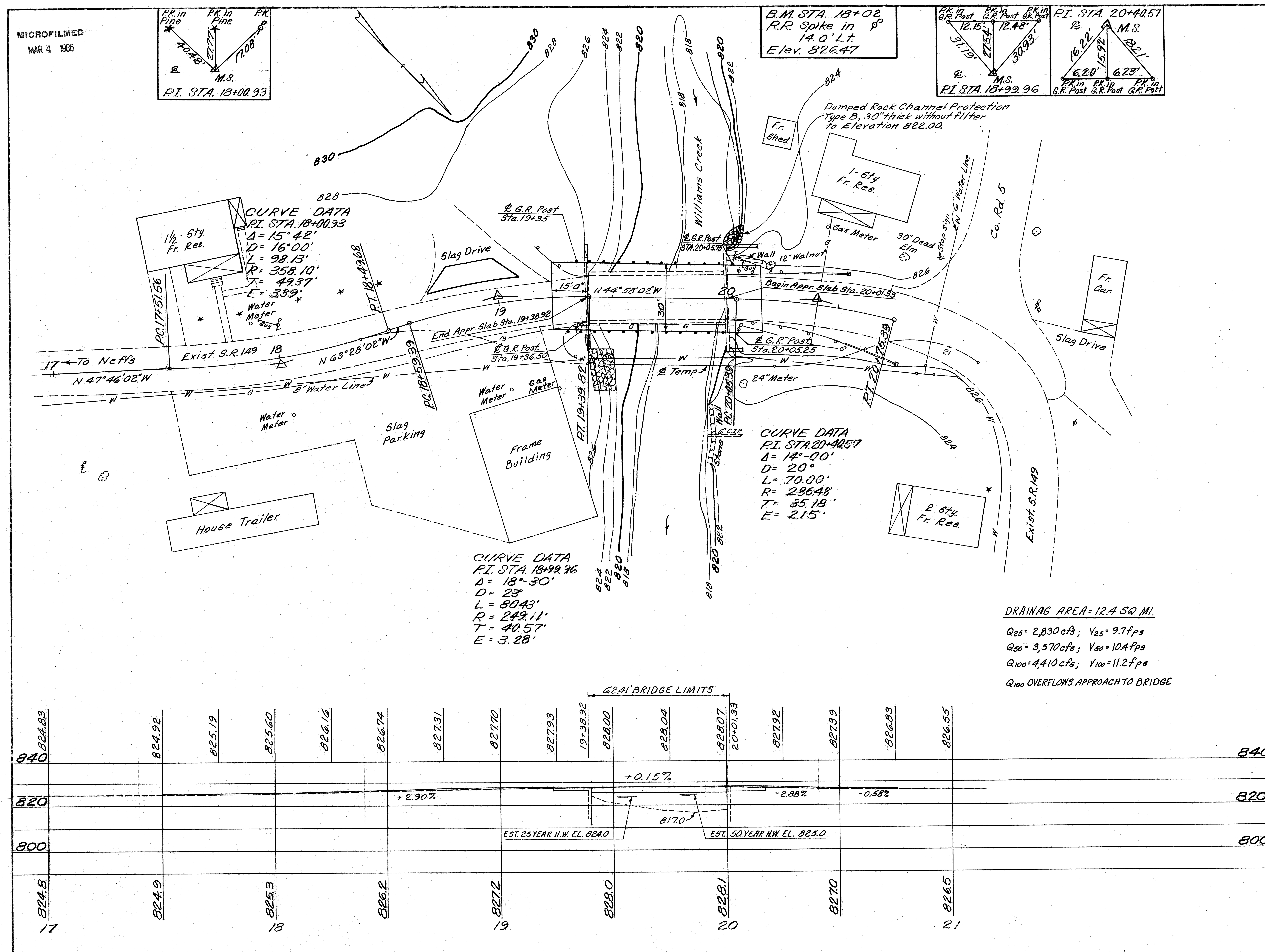
FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-149-10.24

STA. 17+50 to STA. 21+00

FHWA REGION	STATE	PROJECT		
5	OHIO			

BEL-149-10.24



EXISTING STRUCTURE

TYPE: PONY TRUSS
LENGTH: 63'-9"
ROADWAY: 19'-8"
ALIGNMENT: Tangent
SKEW: 2° 51' Rt. Foward

PROPOSED STRUCTURE

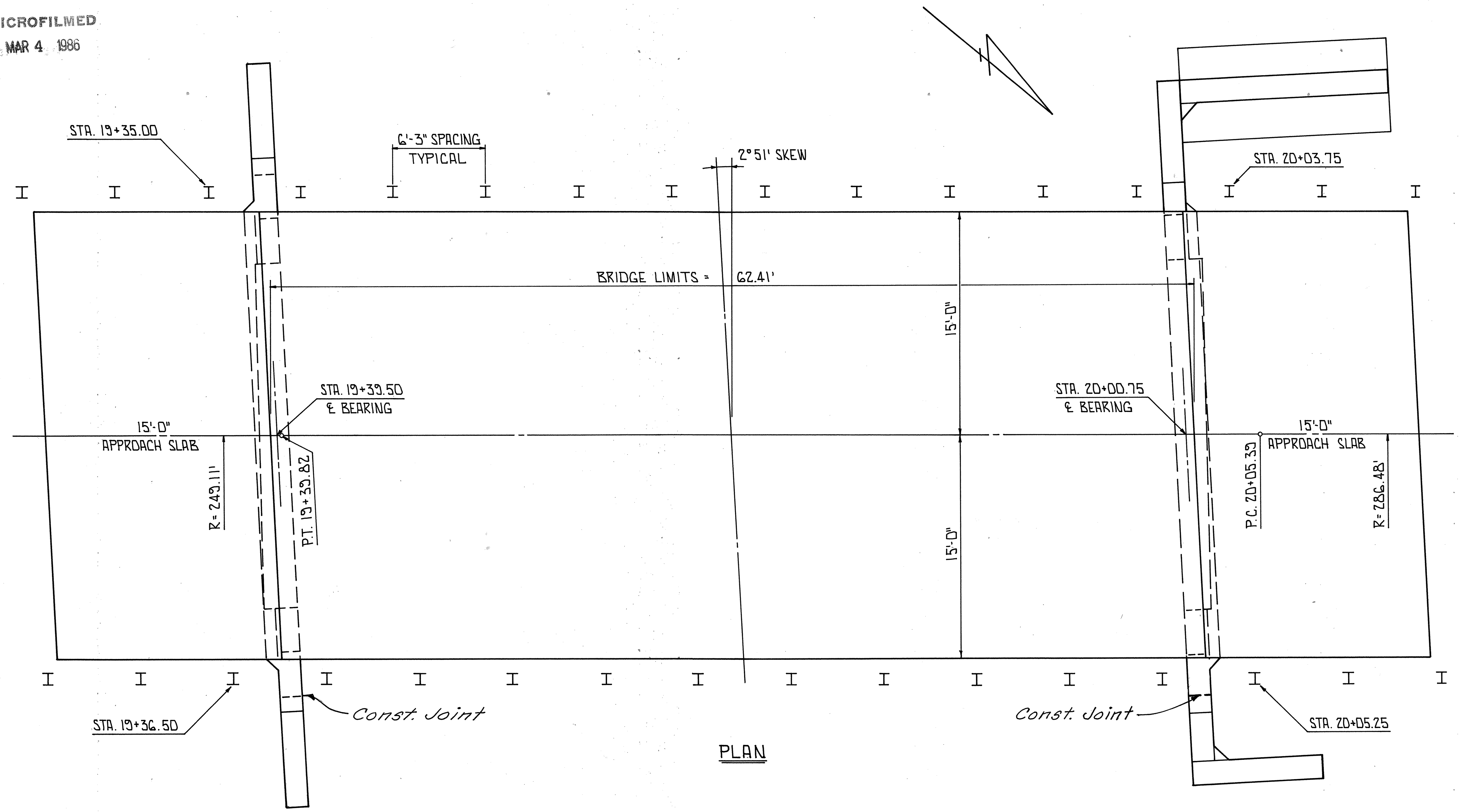
TYPE: PRESTRESSED CONC. BOX BEAM BRIDGE
LENGTH: 61'-3" c/c BEARING
ROADWAY: 30'-0" f/f GUARDRAIL
LOADING: HS 20-44 & ALT. MILITARY LOADING
WEARING SURFACE: 2½" (MIN.) ASPH. CONC.
SKEW: 2°-51' RT. FORWARD
APPROACH SLABS: AS-1-81 (15' LONG)
ALIGNMENT: TANGENT
ADT: 630 (1983), 1088 (2003), 163 (DHV)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES

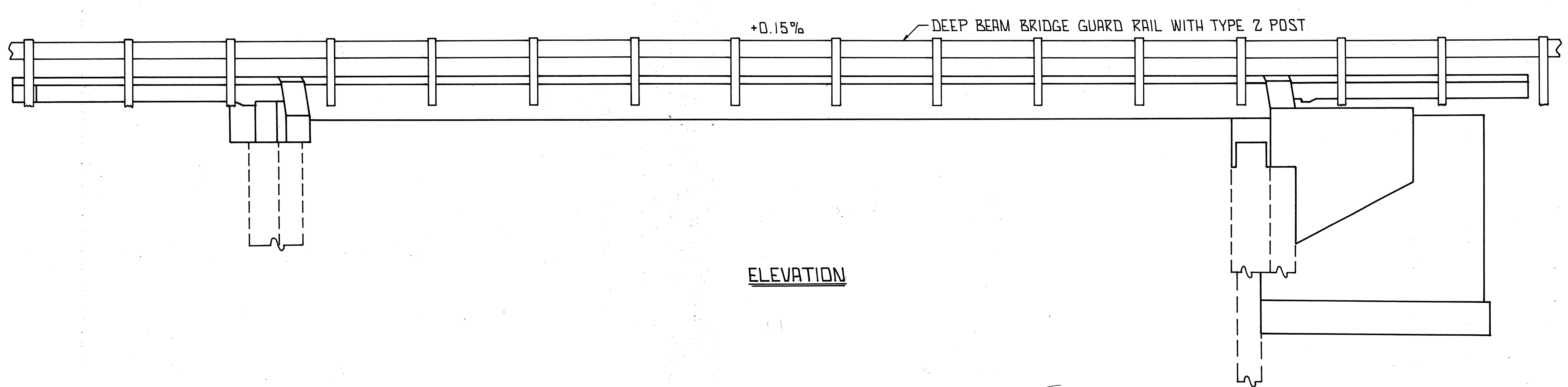
SITE PLAN
BRIDGE Nº BEL-149-1024
OVER
WILLIAMS CREEK
BELMONT COUNTY S.R. 149

SCALE: 1" = 20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED DIST. 11	DRAWN DIST. 11	DESIGNED HM	DRAWN F.F.	CHECKED FA	REVIEWED 3/6-84



PLAN



ELEVATION

ESTIMATED QUANTITIES									
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GEN'L.		
202	LUMP	LUMP	PORTIONS OF STRUCTURES REMOVED				LUMP		
403	12	C.Y.	ASPHALT CONCRETE	12					
404	7	C.Y.	ASPHALT CONCRETE	7					
502	LUMP	LUMP	TEMPORARY STRUCTURE				LUMP		
503	LUMP	LUMP	COFFERDAMS, CRIBS AND SHEETING				LUMP		
503	52	C.Y.	UNCLASSIFIED EXCAVATION		52				
509	3417	LB.	REINFORCING STEEL, GRADE 60		3417				
510	23	EA.	DOWEL HOLES		23				
511	7	C.Y.	CLASS C CONCRETE, ABUTMENT FOOTING		7				
511	28	C.Y.	CLASS C CONCRETE, ABUTMENT ABOVE FOOTING		28				
512	221	S.Y.	TYPE D WATERPROOFING	221					
515	10	EA.	PRESTRESSED CONCRETE BRIDGE MEMBERS, B27-36	10					
516	40	EA.	6" × 3/4" × 14" ELASTOMERIC BEARING PADS, 50 HARDNESS		40				
516	20	EA.	6" × 1/8" × 14" PREFORMED BEARING PADS, 711.21		20				
516	150	S.F.	1" PREFORMED EXPANSION JOINT FILLER	150					
516	65	L.F.	JOINT SEALER	65					
517	124.82	L.F.	RAILING, DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND STEEL POSTS AND BOLTS.	124.82					
518	16	C.Y.	POROUS BACKFILL		16				
518	93	L.F.	6" PERFORATED HELICAL CORRUGATED STEEL PIPE, 707.01		93				
518	24	L.F.	6" NON-PERFORATED HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01		24				
SPECIAL	93	S.F.	STEEL DRIP STRIP	93					

ITEM 502 TEMPORARY STRUCTURE SHALL HAVE A MINIMUM WIDTH OF 16' F/F GUARDRAIL.

DRAINAGE AREA = 12.4 SQ. MI.
Q_{25} = 2,830 CFS.; V_{25} = 9.7 FPS.
Q_{50} = 3,570 CFS.; V_{50} = 10.4 FPS.
Q_{100} = 4,410 CFS.; V_{100} = 11.2 FPS.
Q_{100} OVERFLOWS APPROACH TO BRIDGE

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS DBR-2-73 (4-10-73) AND PSBD-1-81 (9-18-81) ~~AS-1-81 (11-27-81) AND TO~~ SUPPLEMENTAL SPECIFICATIONS 836 (3-12-75), 853 (6-26-78) AND 956 (6-26-78).

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979, 1980, 1981, AND 1982 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

DESIGN LOADING ____ HS 20-44 AND THE ALTERNATE MILITARY LOADING.

CONCRETE CLASS "C" ____ UNIT STRESS 1333 PSI. (SUBSTRUCTURE)

REINFORCING STEEL ASTM A615, A616 OR A617, GRADE 60 ____ UNIT STRESS 24,000 PSI.

CONCRETE FOR PRESTRESSED BEAMS ____ UNIT STRESS 2200 PSI. COMPRESSION
444 PSI. TENSION

PRESTRESSING STRAND ASTM A416 ____ f's = 270,000 PSI.
INITIAL STRESS = 0.70 f's

DECK PROTECTION METHOD: TYPE D WATERPROOFING, ASPHALT CONCRETE WEARING SURFACE AND STEEL DRIP STRIP.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR.

HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

FOUNDATION BEARING PRESSURE: ABUTMENT WINGWALL FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 1½ TONS PER SQ. FT.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 200 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE.

FRANKLIN CONSULTANTS INC. 1/5
Consulting Engineers
COLUMBUS, OHIO

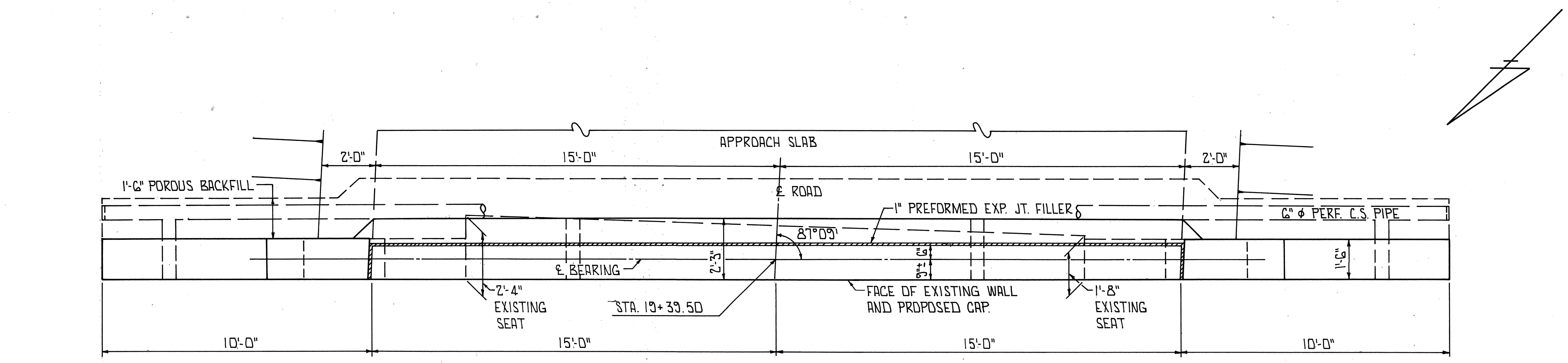
GENERAL PLAN & ELEVATION
GENERAL NOTES
ESTIMATED QUANTITIES
BRIDGE NO. BEL-149-1024
S.R. 149 OVER WILLIAMS CREEK

BELMONT COUNTY S.R. 149

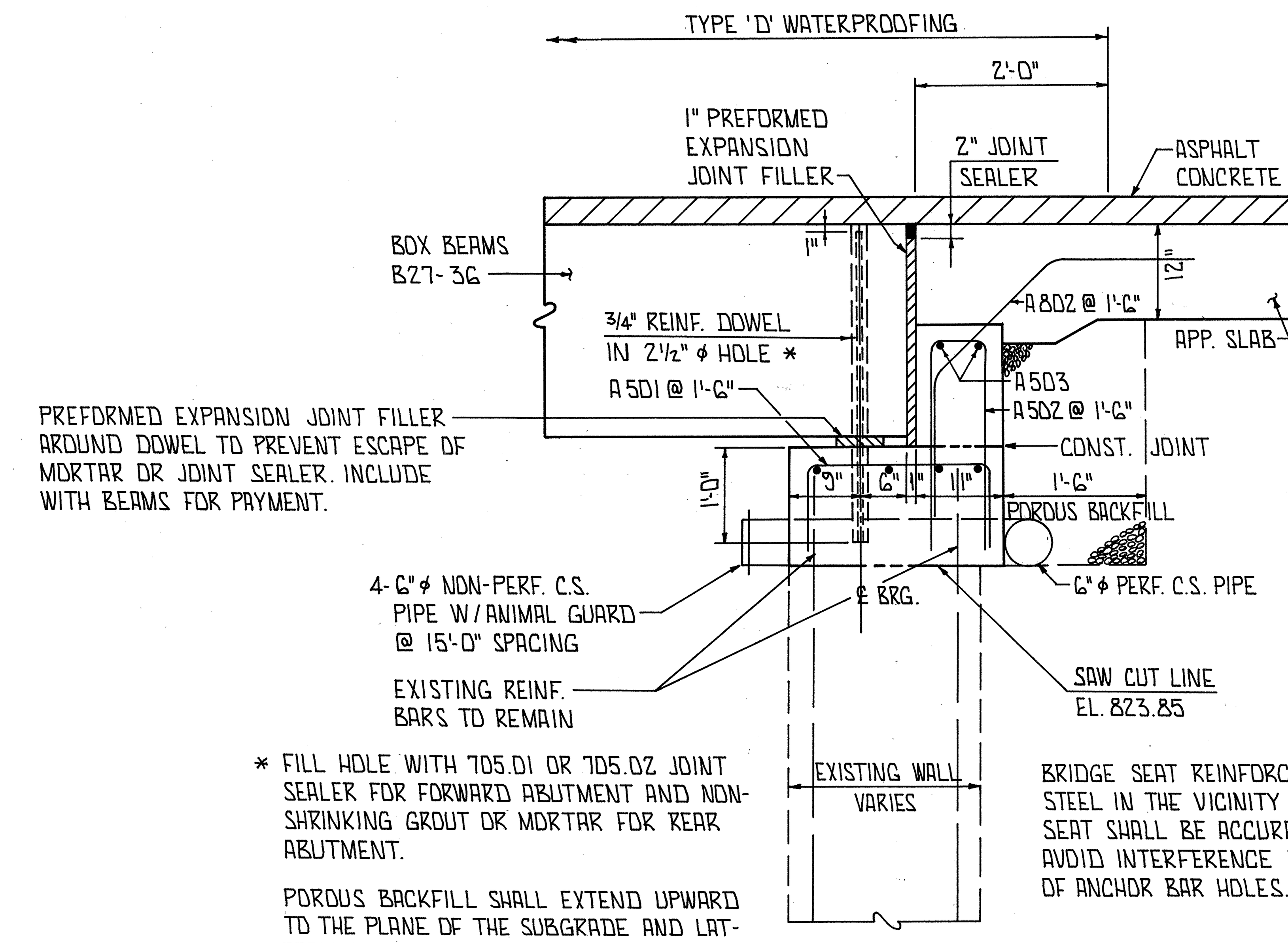
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HM	NK	NK	F.F.	JY	3/7-84	

FHWA REGION	STATE	PROJECT		
5	OHIO			

BELMONT COUNTY
BEL-149-10.24



PLAN

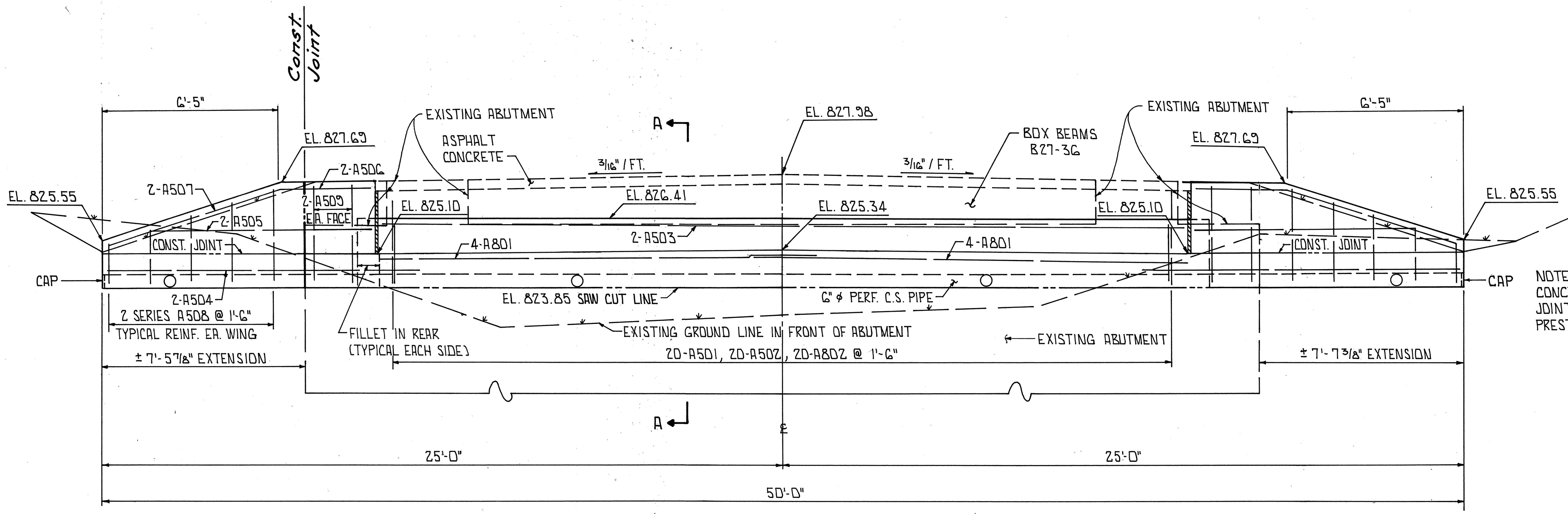


* FILL HOLE WITH 705.01 OR 705.02 JOINT SEALER FOR FORWARD ABUTMENT AND NON-SHRINKING GROUT OR MORTAR FOR REAR ABUTMENT.

POROUS BACKFILL SHALL EXTEND UPWARD TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE SURFACE OF THE EMBANKMENT SLOPES.

BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.

SECTION A-A



ELEVATION

NOTE:
CONCRETE ABOVE THE BRIDGE CONSTRUCTION JOINT SHALL NOT BE PLACED UNTIL AFTER THE PRESTRESSED BEAMS ARE ERECTED.

FRANKLIN CONSULTANTS INC. 2 / 5
Consulting Engineers
COLUMBUS, OHIO

REAR ABUTMENT

BRIDGE NO. BEL-149-10 24
S.R. 149 OVER WILLIAMS CREEK

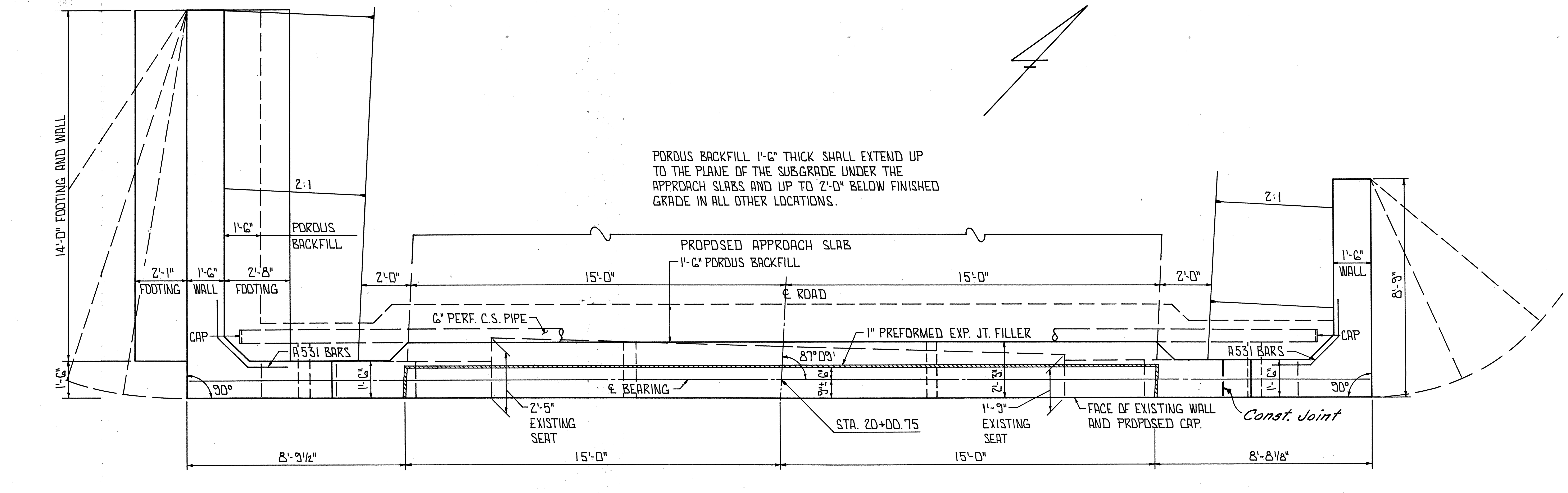
BELMONT COUNTY S.R. 149

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HM	HM	MK	F.F.	JH	3/4-84	

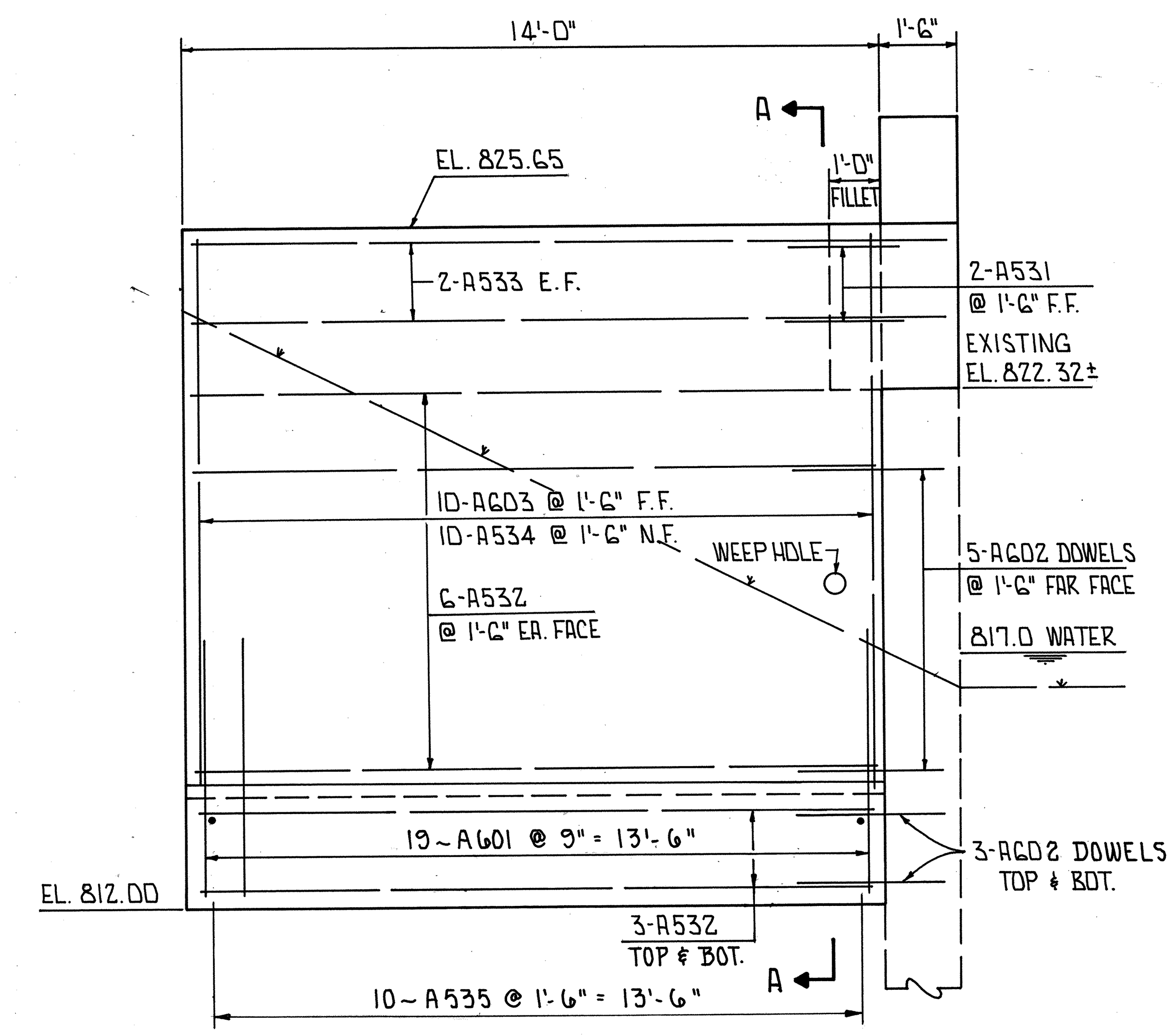
MICROFILMED
MAR 4 1986

FHWA REGION	STATE	PROJECT	
5	OHIO		

BELMONT COUNTY
BEL-149-10.24

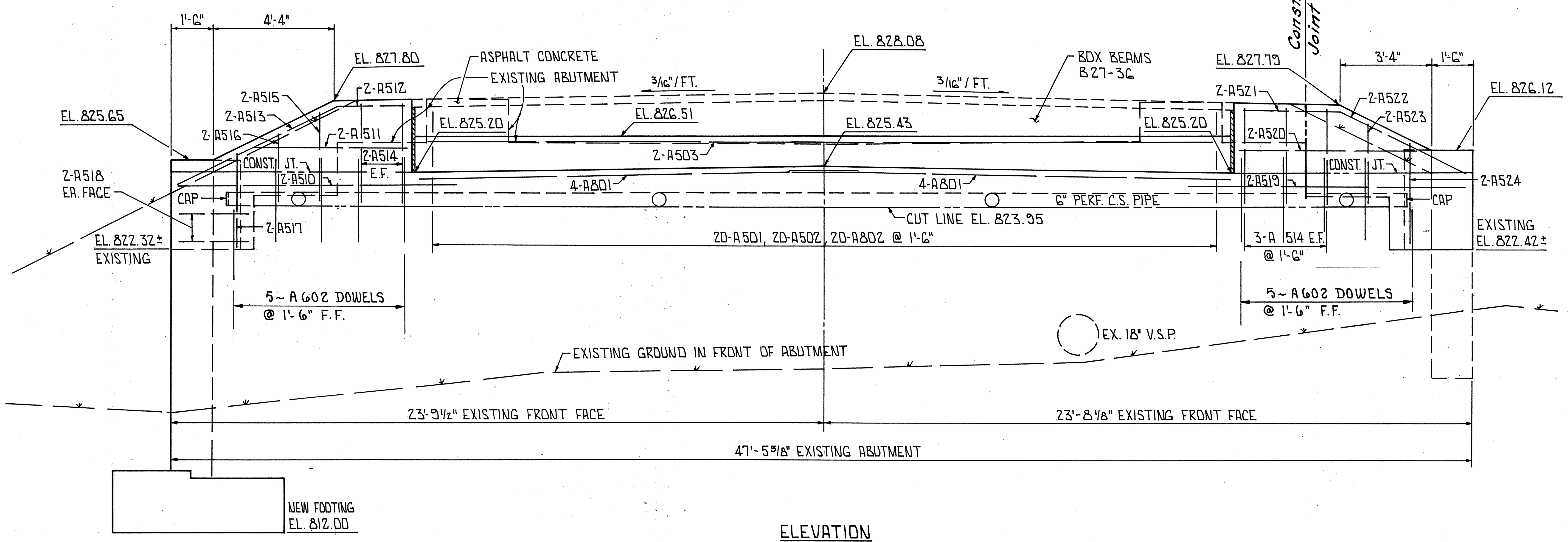


PLAN

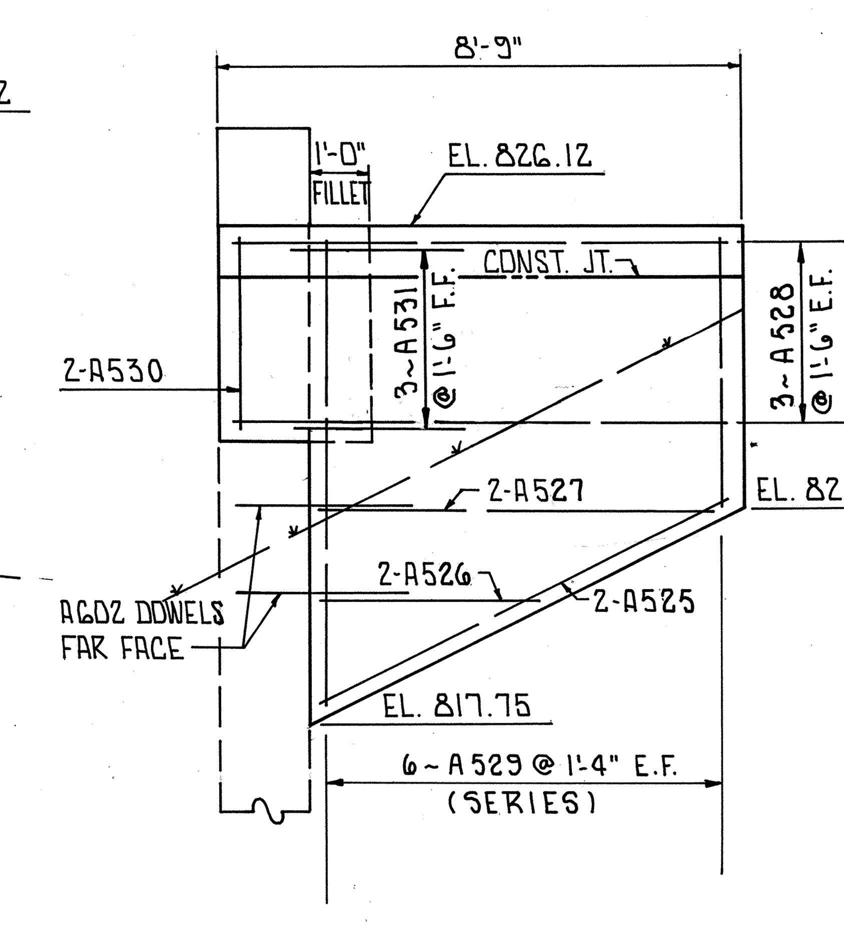


WEST WINGWALL

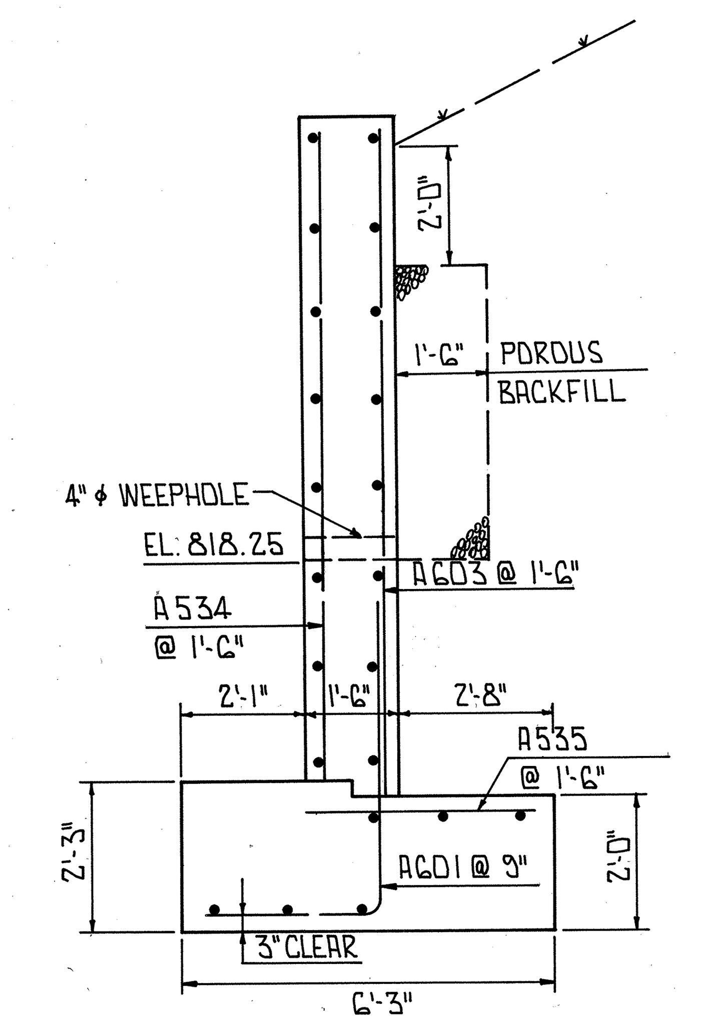
NOTE:
CONCRETE ABOVE THE BRIDGE CONSTRUCTION JOINT SHALL NOT BE PLACED UNTIL AFTER THE PRESTRESSED BEAMS ARE ERECTED.



ELEVATION



EAST WINGWALL



SECTION A-A

LEGEND
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE

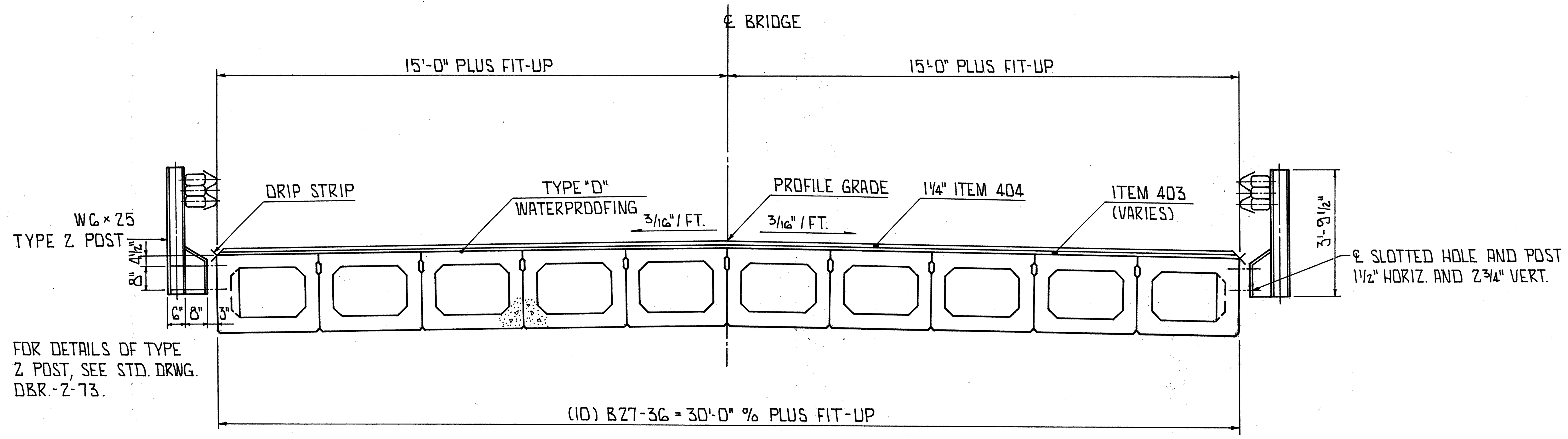
FRANKLIN CONSULTANTS INC. 3/5
Consulting Engineers
COLUMBUS, OHIO

FORWARD ABUTMENT

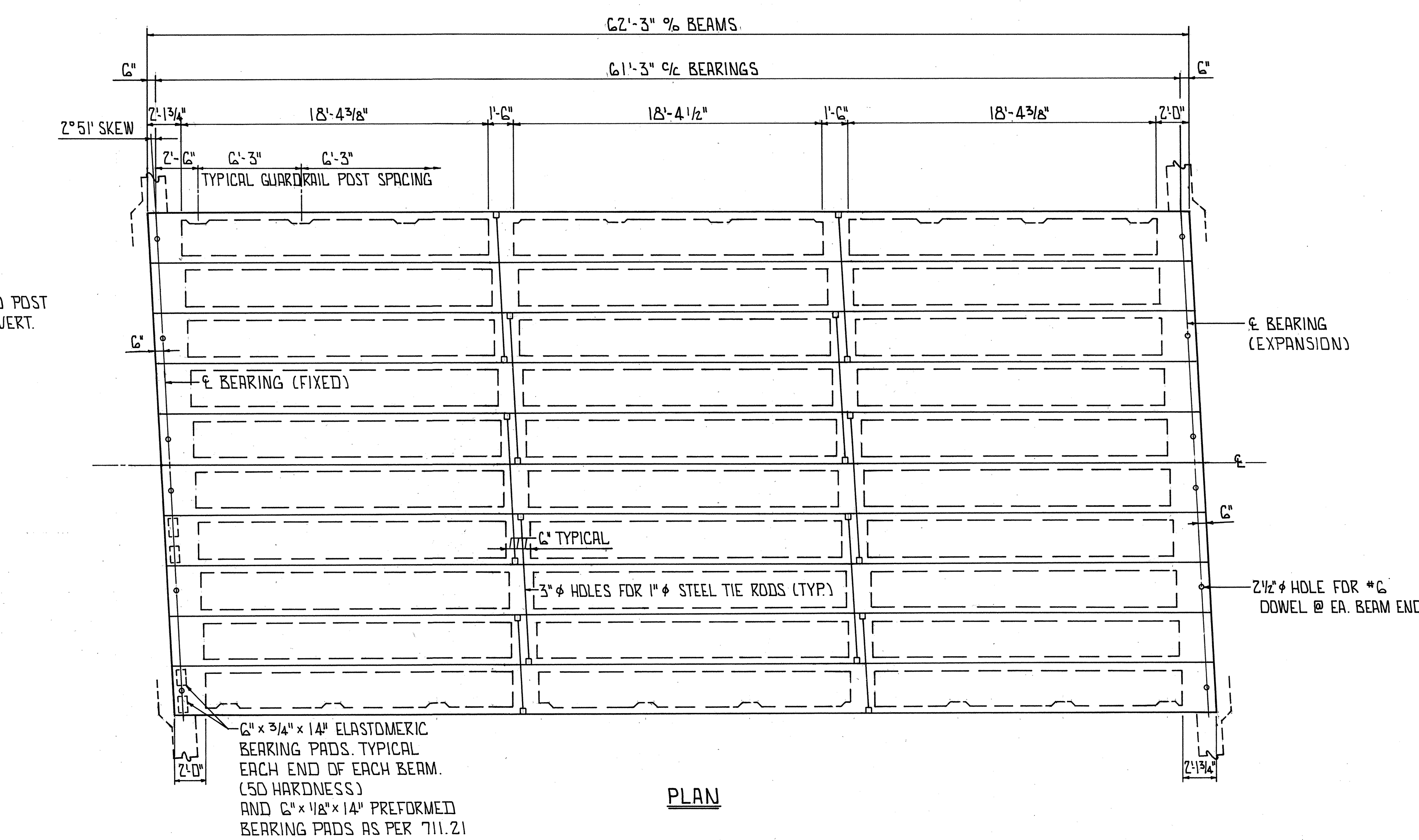
BRIDGE NO. BEL-149-1024
S.R. 149 OVER WILLIAMS CREEK

BELMONT COUNTY S.R. 149

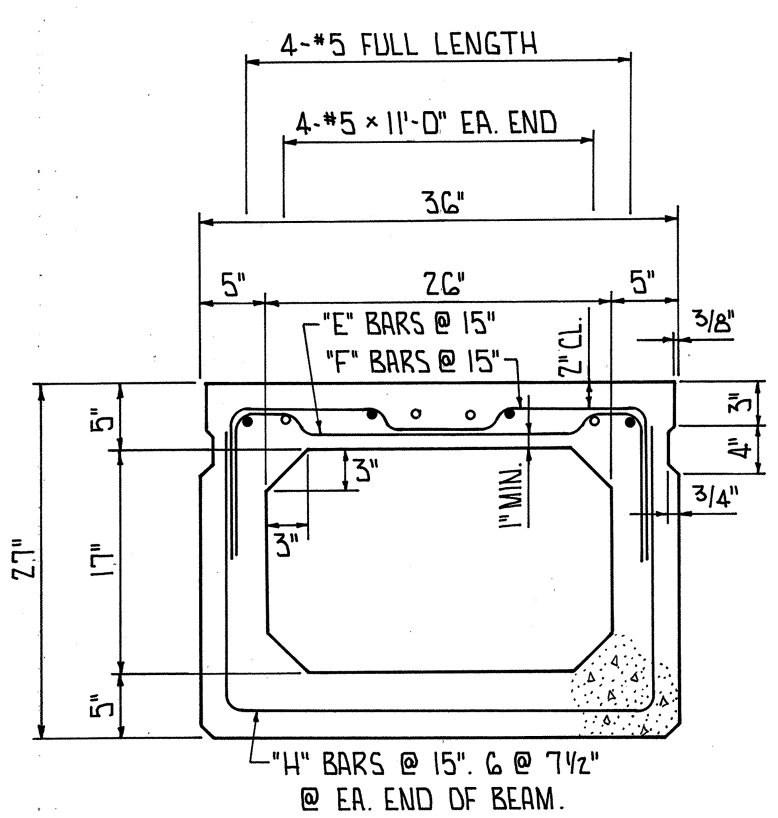
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HM	HM	MK	F.F.	JJ	9/4-84	



TRANSVERSE SECTION

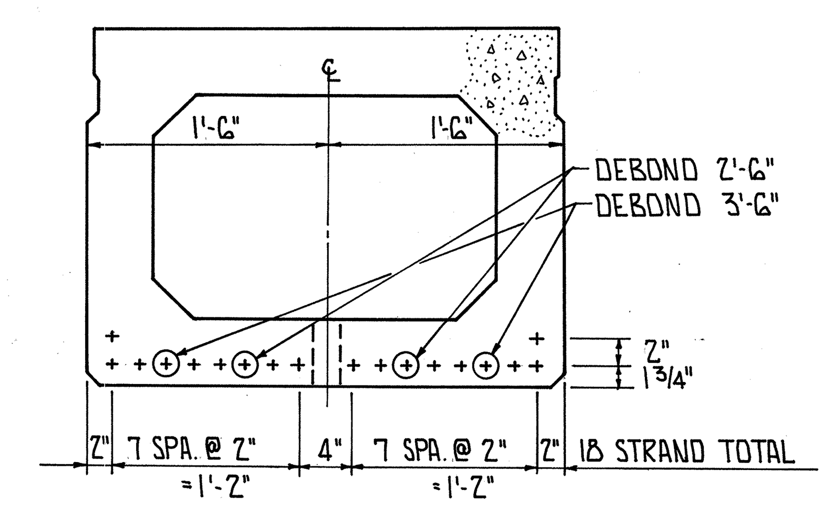


PLAN



B27-36

REFER TO STANDARD DRAWING PSBD-1-81 SHEETS 1,2,3 OF 4 FOR ADDITIONAL DIMENSIONS & DETAILS. ALL STRANDS ½" DIA. 270K SEVEN WIRE, UNCOATED, STRESS RELIEVED STRANDS. DEBOND 2 STRANDS 2'-6" EA. END, & 3'-6" EA. END, SYMMETRICAL ABOUT VERTICAL ℄ OF BEAM.



STRAND LOCATION

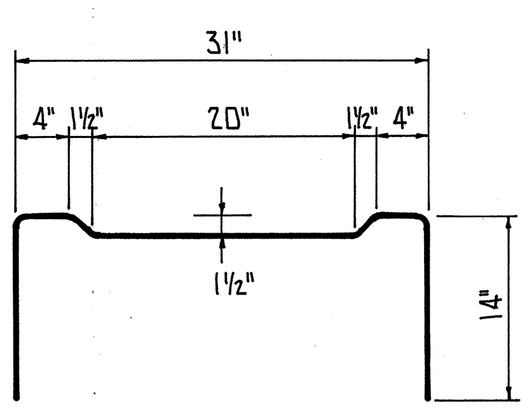
PRIOR TO APPLYING TYPE "D" WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6" c/c MAXIMUM WITH 1¼" × 5/32" × ¼" FLAT HEAD DRIVE PIN AND WASHER (LENGTH × SHANK DIA. × HEAD DIA.) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE ABUTMENT WINGWALL. WHERE SPLICES ARE REQUIRED A 3" (MIN.) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" × 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GUAGE ASTM A167, TYPE 304, MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL, SQ. FT., STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

CALCULATED CAMBER AT TIME OF PAVING INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP IS 1¾".

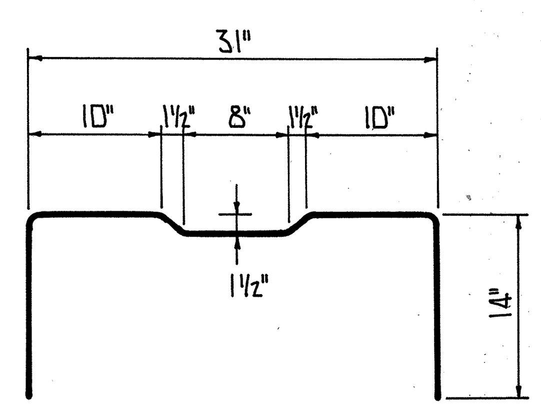
CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS ¼".

NET FINAL CAMBER OF BEAM IS 1½". THIS IS 1½" IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE FROM 1¼" AT THE CENTER OF THE SPAN TO 2¾" AT THE ENDS OF THE SPAN.

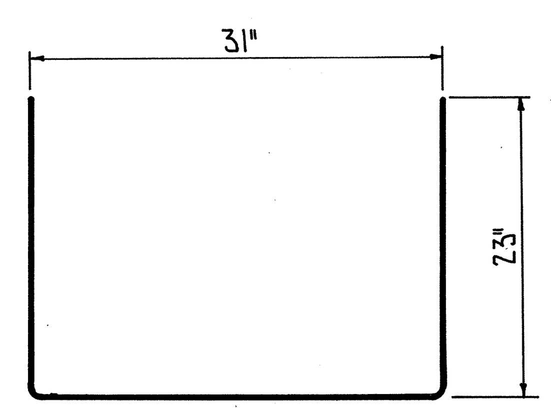
ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND 1¼" THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE A 1¼" UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1¼" BELOW FINAL PAVEMENT SURFACE ELEVATION.



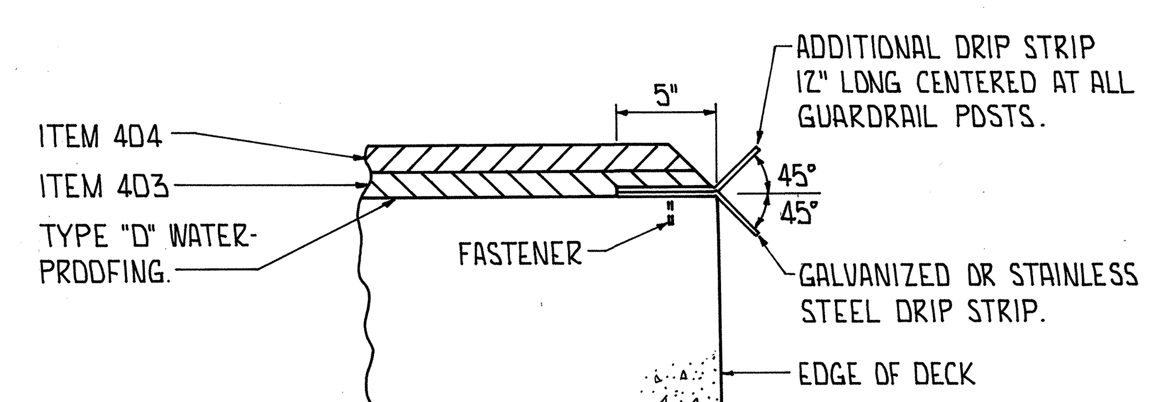
"E" BARS



"F" BARS



"H" BARS



DRIP STRIP

FRANKLIN CONSULTANTS INC. 4 / 5
Consulting Engineers
COLUMBUS, OHIO

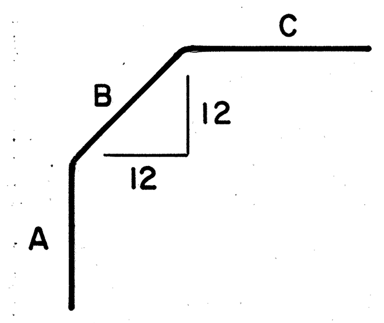
SUPERSTRUCTURE DETAILS

BRIDGE NO. BEL-149-1024
S.R. 149 OVER WILLIAMS CREEK

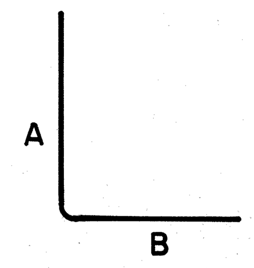
BELMONT COUNTY S.R. 149

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HM	MK	MK	F.F.	J.A.	9/19-84	

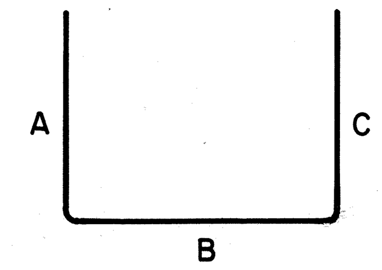
MICROFILMED
MAR 4 1986



TYPE 1



TYPE 2



TYPE 3

REAR ABUTMENT

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	
A801	8	16'-0"	342	STR.						
A802	20	4'-8"	249	1	1'-6"	1'-10"	1'-6"			
A501	20	3'-6"	73	3	0'-11"	1'-11"	0'-11"			
A502	20	4'-8"	97	3	2'-2"	0'-7"	2'-2"			
A503	2	29'-8"	62	STR.						
A504	4	11'-6"	48							
A505	4	8'-1"	34							
A506	4	3'-3"	14							
A507	4	6'-8"	28							
A508	4 SERIES OF 5	1'-5" TO 3'-5" *	50							* 6" INCREMENTS
A509	8	3'-6"	29	STR.						
		TOTAL	1026							

FORWARD ABUTMENT

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	
A801	8	16'-0"	342	STR.						
A802	20	4'-8"	249	1	1'-6"	1'-10"	1'-6"			
A601	19	8'-0"	228	2	3'-2"	5'-0"				
A602	23	3'-0"	104	STR.						
A603	10	11'-7"	174	STR.						
A501	20	3'-6"	73	3	0'-11"	1'-11"	0'-11"			
A502	20	4'-8"	97	3	2'-2"	0'-7"	2'-2"			
A503	2	29'-8"	62	STR.						
A510	2	10'-3"	21							
A511	2	5'-8"	12							
A512	2	2'-6"	5							
A513	2	6'-6"	14							
A514	10	3'-6"	37							
A515	2	3'-3"	7							
A516	2	2'-7"	5							
A517	2	3'-4"	7							
A518	4	2'-8"	11							
A519	2	10'-3"	21							
A520	2	6'-7"	14							
A521	2	3'-7"	7							
A522	2	5'-2"	11							
A523	2	2'-11"	6							
A524	2	3'-8"	8							
A525	2	7'-6"	16							
A526	2	3'-7"	7							
A527	2	6'-7"	14							
A528	6	8'-5"	53							
A529	2 SERIES OF 6	4'-5" TO 7'-9" *	76							* 8" INCREMENTS
A530	2	3'-4"	7	STR.						
A531	5	4'-6"	23	1	1'-7"	1'-5"	1'-7"			
A532	18	13'-8"	257	STR.						
A533	4	15'-2"	63							
A534	10	11'-4"	118							
A535	10	4'-0"	42	STR.						
		TOTAL	2191							

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	

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.

FRANKLIN CONSULTANTS INC. 5/5
Consulting Engineers
COLUMBUS, OHIO

REINFORCING STEEL

BRIDGE NO. BEL-149-1024
S.R. 149 OVER WILLIAMS CREEK

BELMONT COUNTY S.R. 149

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HM	HM	F.F.	NK	JA	3/9-84	

BRUNING 44-132 30645-1

TOTAL NUMBER OF ___
8 OWNERSHIPS
0 TOTAL TAKES
0 OWNERSHIPS WITH STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

PARCEL	OWNER	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 PERSONALITY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1	BERNICE COEN	3	364,572	42,78	0.1694 Ac.	0.022 Ac.	0.023 Ac.	0.022 Ac.	0.001 Ac.	—	0.1464 Ac.	—	STATE			
		3			0.085 Ac.	0.012 Ac.	0.022 Ac.	0.012 Ac.	0.010 Ac.	—	0.063 Ac.	—				
	TOTAL - PARCEL No. 1	3			0.2544 Ac.	0.034 Ac.	0.045 Ac.	0.034 Ac.	0.011 Ac.	—	0.2094 Ac.	—				
2	CHARLES AND OLGA LEIFFER	3	619,617	619,230	0.7713 Ac.	0.102 Ac.	0.129 Ac.	0.102 Ac.	0.027 Ac.	—	—	0.6423 Ac.				
2-T		3					0.025 Ac.	0	0.025 Ac.					To Construct, Maintain and Remove Temporary Runaround		
3	ROBERT MEAGER	3	556	82	15.919 Ac.	0.008 Ac.	0.016 Ac.	0.008 Ac.	0.008 Ac.	—	15.903 Ac.	—				
4	ALBERT ALBERT, JOHN ALBERT AND NASSIF ALBERT	3	498,617	378,530	0.149 Ac.	0.014 Ac.	0.029 Ac.	0.014 Ac.	0.015 Ac.	—	0.120 Ac.	—				
5	CHARLES AND OLGA LEIFFER	3	619,617	619,230	0.0928 Ac.	0.019 Ac.	0.061 Ac.	0.019 Ac.	0.042 Ac.	—	0.0318 Ac.	—				
6	JOSEPHINE ALBERT	3	421	117	*0.164 Ac.	0.084 Ac.	0.108 Ac.	0.084 Ac.	0.024 Ac.	—	—	0.056 Ac.		* Calculated Area		
6-T		3					0.039 Ac.	0	0.039 Ac.					To Construct, Maintain and Remove Temporary Runaround		
7	ROBERT L. BELL	3	614	11	*2832 S.F.	141 S.F.	665 S.F.	141 S.F.	524 S.F.	—	2167 S.F.	—		*Calculated Area Lot No. 1		
		3			*1650 S.F.	—	—	—	—	—	1650 S.F.	—		*Calculated Area East Half Lot No 2		
	TOTAL - PARCEL No. 7	3			4482 S.F.	141 S.F.	665 S.F.	141 S.F.	524 S.F.	—	3817 S.F.	—				
7-T							226 S.F.	0	226 S.F.	—				To Provide Working Area		
8	BOARD OF COMMISSIONERS, BELMONT COUNTY, OHIO	3	319,531	361,541	*7199 S.F.	2943 S.F.	4082 S.F.	2943 S.F.	1139 S.F.	—	21 S.F.	3096 S.F.		*Calculated Area Lot No. 1		
8-T		3					853 S.F.	0	853 S.F.	—				To Construct, Maintain and Remove Temporary Runaround		

UTILITIES

UTILITY & IDENTIFIER	OWNER
(G) Gas Lines	COLUMBIA GAS OF OHIO, INC. 200 CIVIC CENTER DRIVE P.O. BOX 117 COLUMBUS, OHIO 43216-0117 PHONE: (614) 460-6000
(E) Electric Lines	OHIO POWER COMPANY 301 CLEVELAND AVE. S.W. P.O. BOX 400 CANTON, OHIO 44701 PHONE: (216) 438-7040
(T) Telephone Lines	OHIO BELL TELEPHONE COMPANY 150 GAY STREET COLUMBUS, OHIO 43215 PHONE: (614) 223-8262
(W) Water Lines	BELMONT COUNTY SANITARY SEWER DISTRICT P.O. BOX 457 ST. CLAIRSVILLE, OHIO 43950 PHONE: (614) 695-3144
(C) T.V. Cable	T.C.I. GROWTH, INC. 14 NORTH 5th STREET MARTINS FERRY, OHIO 43935 PHONE: (614) 633-2232

REVISION	BY	DATE
COMPLETED		

PARCEL DESCRIPTIONS

PARCEL NO. 1

COURSE	BEARING	DISTANCE
1-2	S 36°56'51"W	11.58'
2-3	N 47°46'02"W	51.95'
3-4	ARC LEN. = 45.89' CHD. LEN. = 45.87' CHD. BRG. = N 50°53'47"W RADIUS = 420.16'	
4-5	N 87°38'14"W	10.84'
5-6	N 61°10'59" W	58.80'
6-7	N 37°19'51" E	17.09'
7-8	S 59°11'57" E	60.39'
8-1	S 50°51'00"E	104.61'

PARCEL NO. 2

COURSE	BEARING	DISTANCE
9-10	N 50°51'00" W	175.77'
10-11	N 50°51'00" W	113.30'
11-12	N 43°58'01" E	27.76'
12-13	S 44°58'02" E	15.88'
13-14	S 23°56'10" E	28.93'
14-15	S 55°51'03" E	31.74'
15-16	S 61°55'33" E	50.13'
16-17	S 41°55'57" E	27.35'
17-18	ARC LEN. = 49.95' CHD. LEN. = 49.93' CHD. BRG. = S 50°56'46"E RADIUS = 450.16'	
18-19	S 47°46'02" E	68.98'
19-9	S 7° 30'03" E	25.45'

PARCEL NO. 2-T

COURSE	BEARING	DISTANCE
56-15	N 61°55'33"W	23.88'
15-14	N 55°51'03"W	31.74'
14-13	N 23°56'10" W	28.93'
13-12	N 44°58'02" W	15.88'
12-20	N 43°58'01" E	26.69'
20-21	S 39°06'22" E	16.46'
21-22	S 21°47'56" W	23.18'
22-23	S 39°24'31" E	25.29'
23-56	S 46°35'50" E	46.72'

PARCEL NO. 3

COURSE	BEARING	DISTANCE
7-6	S 37°19'51"W	17.09'
6-24	N 81°09'22" W	25.97'
24-25	N 22°22'51" E	30.70'
25-26	N 22°22'51" E	2.74'
26-27	S 47°32'09"E	17.21'
27-7	S 47°32'09"E	14.37'

PARCEL NO. 4

COURSE	BEARING	DISTANCE
26-25	S 22°22'51"W	2.74'
25-24	S 22°22'51"W	30.70'
24-28	N 55°44'10"W	37.02'
28-29	N 22°24'51" E	34.41'
29-30	N 22°24'51" E	1.38'
30-26	S 52°13'09"E	37.55'

PARCEL NO. 5

COURSE	BEARING	DISTANCE
30-29	S 22°24'51" W	1.38'
29-28	S 22°24'51" W	34.41'
28-31	N 55°44'10" W	17.49'
31-32	N 51°55'05" W	80.18'
32-33	N 40°07'27" E	21.14'
33-34	S 61°21'19" E	83.80'
34-30	S 61°21'19" E	4.61'

PARCEL NO. 6

COURSE	BEARING	DISTANCE
8-7	N 59°11'57" W	60.39'
7-27	N 47°32'09" W	14.37'
27-26	N 47°32'09"W	17.21'
26-30	N 52°13'09"W	37.55'
30-34	N 61°21'19"W	4.61'
34-33	N 61°21'19"W	83.80'
33-35	N 28°35'09"W	16.10'
35-36	N 54°31'31" E	20.75'
36-37	N 54°31'31" E	8.79'
37-38	N 69°29'50" E	27.43'
38-12	S 44°58'02" E	64.73'
12-11	S 43°58'01" W	27.76'
11-10	S 50°51'00" E	113.30'
10-8	S 50°51'00" E	33.59'

PARCEL NO. 6-T

COURSE	BEARING	DISTANCE
12-38	N 44°58'02" W	64.73'
38-39	N 69°29'50" E	34.93'
39-20	S 39°06'22" E	50.04'
20-12	S 43°58'01" W	26.69'

PARCEL NO. 7

COURSE	BEARING	DISTANCE
33-40	S 40°07'27" W	6.01'
40-41	N 36°47'37" W	65.86'
41-42	N 61°24'51" E	15.00'
42-33	S 28°35'09" E	63.00'

PARCEL NO. 7-T

COURSE	BEARING	DISTANCE
40-43	S 40°07'27"W	5.05'
43-44	N 41°10'46" W	12.73'
44-41	N 30°36'27" W	54.63'
41-40	S 36°47'37" E	65.86'

PARCEL NO. 8

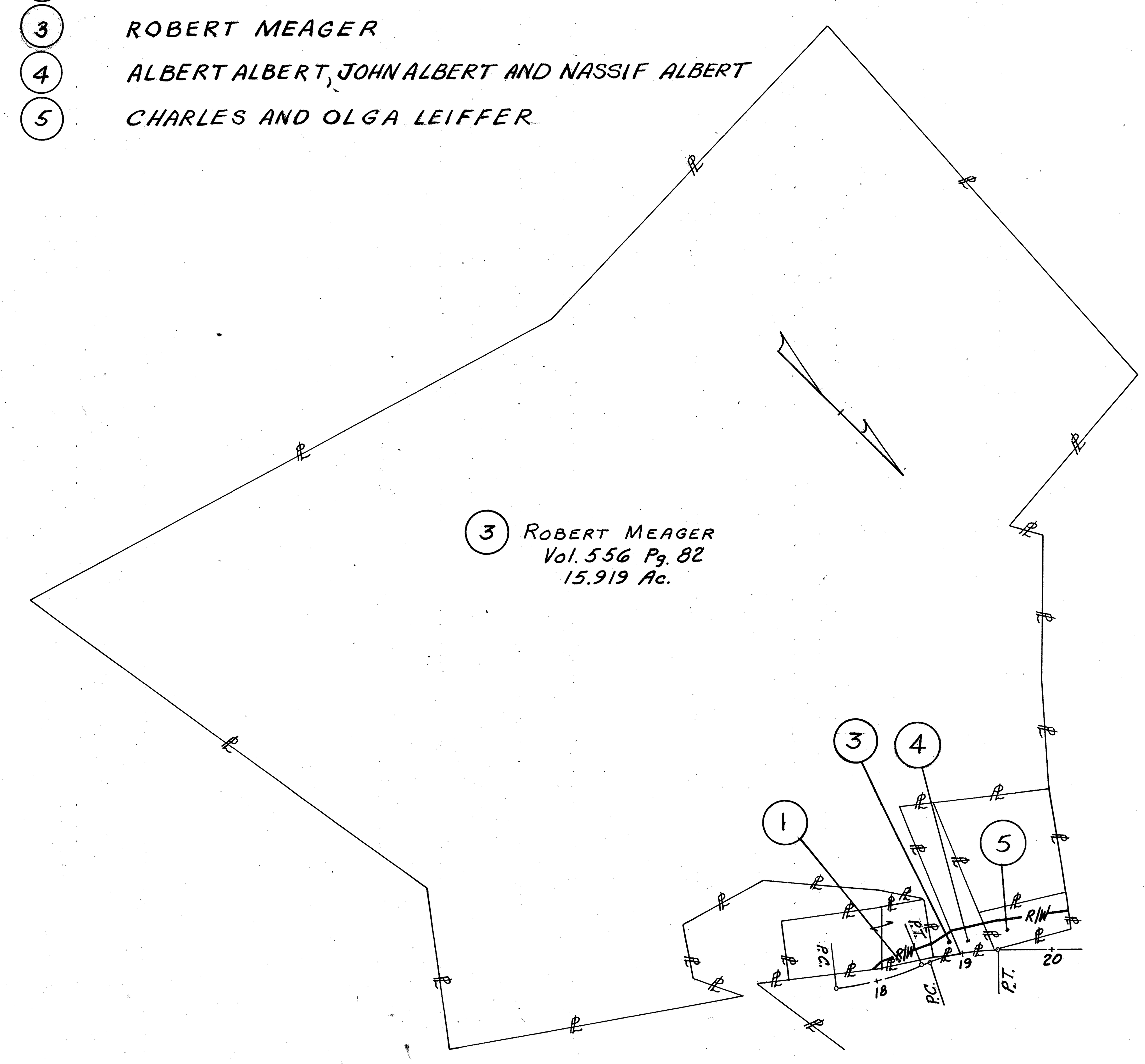
COURSE	BEARING	DISTANCE
37-45	N 36°20'02" W	113.79'
45-46	ARC LEN. = 9.39' CHD. LEN. = 9.39' CHD. BRG. = N 13°08'35" E RADIUS = 83.66'	
46-47	N 54°31'31" E	52.86'
47-48	S 36°20'02" E	22.01'
48-49	S 51°59'18" W	3.43'
49-50	ARC LEN. = 30.49' CHD. LEN. = 29.87' CHD. BRG. = S 31°59'06"W RADIUS = 43.66'	
50-51	S 34°01'03" E	86.41'
51-37	S 54°31'31" W	25.32'

PARCEL NO. 8-T

COURSE	BEARING	DISTANCE
51-52	N 34°01'03" W	39.33'
52-53	N 59°01'58" E	15.00'
53-54	S 54°45'05" E	40.40'
54-51	S 54°31'31" W	29.29'

INDEX OF OWNERS

PARCEL No.	OWNER
1	BERNICE COEN
3	ROBERT MEAGER
4	ALBERT ALBERT, JOHN ALBERT AND NASSIF ALBERT
5	CHARLES AND OLGA LEIFFER



PARCEL NO. 3
ROBERT MEAGER PROPERTY MAP
SCALE IN FEET
0 100 200

REVISION	BY	DATE
COMPLETED		

FHWA REGION	STATE	PROJECT	
5	OHIO		

19/19

BEL-149-10.24
RIGHT OF WAY PLAN

3/3

BELMONT COUNTY
RICHLAND TWP. SEC. 35, T-5-N, R-3-W

P.I. ~ Sta. 18+00.92
Δ = 15°42' Lt.
Dc = 16°-00'
T = 49.37'
Lc = 98.13'
E = 3.39'
R = 358.10'

(3) See R/W Sheet 2 of 3 for map showing the entire property periphery of this parcel.

INDEX OF OWNERS

PARCEL No.	OWNER
1	BERNICE COEN
2	CHARLES AND OLGA LEIFFER
3	ROBERT MEAGER
4	ALBERT ALBERT, JOHN ALBERT AND NASSIF ALBERT
5	CHARLES AND OLGA LEIFFER
6	JOSEPHINE ALBERT
7	ROBERT L. BELL
8	BOARD OF COMMISSIONERS, BELMONT COUNTY, OHIO

BEGIN ACQUISITION
STA. 16+63.72

END ACQUISITION
STA. 21+58.32

BEGIN PROJECT
STA. 19+23.92

S.L.M. 10.24

BHS-1215(   )

END PROJECT
STA. 20+16.33

BHS-1215(   )

P.I. ~ Sta. 18+99.96
Δ = 18°-30' Rt.
Dc = 23°-00'
T = 40.57'
Lc = 80.43'
E = 3.28'
R = 249.11'

P.I. ~ Sta. 20+40.57
Δ = 14°-00' Rt.
Dc = 20°-00'
T = 35.18'
Lc = 70.00'
E = 2.15'
R = 286.48'

UTILITIES

UTILITY IDENTIFIER	OWNER
(G) Gas Lines	Columbia Gas of Ohio, Inc.
(E) Electric Lines	Ohio Power Company
(T) Telephone Lines	Ohio Bell Telephone Company
(W) Water Lines	Belmont County Sanitary Sewer Dist.
(C) T.V. Cable	T.C.I. Growth, Inc.

NOTE: For addresses and telephone numbers of above listed utility owners see R/W Sheet 1 of 3.

COMPLETION DATE

Revision Description	Date

RIGHT OF WAY PLAN