FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649(4)	

1/34

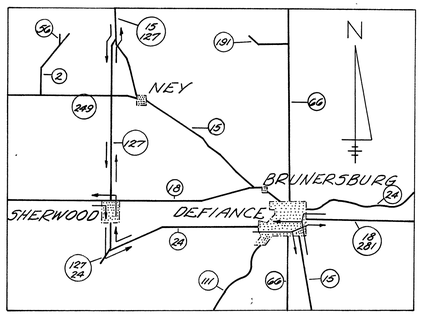
DEFIANCE COUNTY
DEF-15-12.57

F-649(4)

MICROFILMED
APR 10 1965

AUG 4 1965
GROUND PHOTOLAB

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DEF-15-12.57
DEFIANCE COUNTY
NOBLE TOWNSHIP



DETOUR MAP

0 1 2 3 4 5 6
SCALE OF MILES

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE
FENCE LINE
CENTER LINE
PROPERTY LINE
RAILROAD
GUARD RAIL (PROPOSED)
GUARD RAIL (EXISTING)
POWER POLES
TELEPHONE POLES

INDEX OF SHEETS

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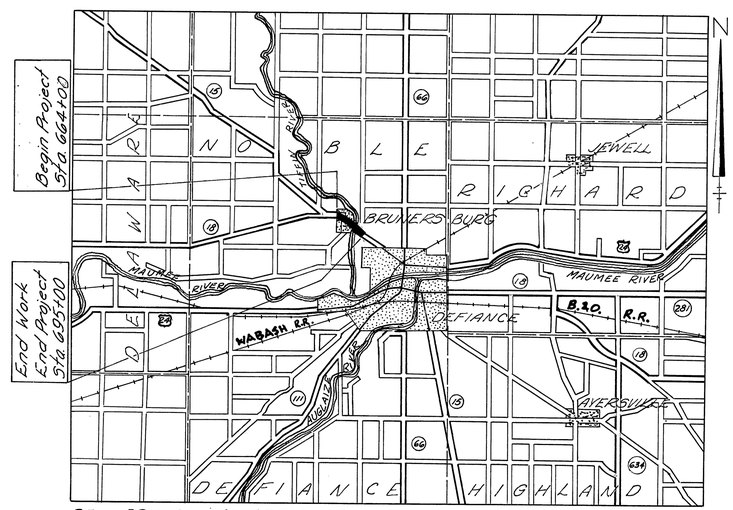
STRUCTURES OVER 20' SPAN	30-33
RIGHT-OF-WAY	34
LOCATION PLAN	5

Sheets 5, 6, 7 & 8 Revised 12-19-63 C.E.H.



DELIVERY POINT: DEFIANCE AVERAGE HUAL 2 MI.

SCALE OF MILES
0 1 2 3 4 5 6

LOCATION MAP

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS
DETOUR ROUTES

LINE DATA

BEGIN WORK	STA. 663+50	
END WORK	STA. 695+00	
NO ADDITIONS NOR DEDUCTIONS		
NET LENGTH OF WORK	3,150 LIN. FT.	0.596 MI.
BEGIN PROJECT	STA. 664+00	
END PROJECT	STA. 695+00	
NO ADDITIONS NOR DEDUCTIONS		
NET LENGTH OF PROJECT	3,100 LIN. FT.	0.587 MI.

SCALES

PLAN	1 INCH = 50 FEET
PROFILE (HORIZONTAL)	1 INCH = 50 FEET
PROFILE (VERTICAL)	1 INCH = 50 FEET
CROSS SECTIONS	1 INCH = 50 FEET

1963 SPECIFICATIONS

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

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 No. 3, and that provisions for the maintenance and safety of traffic will be as set forth on the plans & estimates.

Approved Norman R. Ross
Date 3-8-63 Division Deputy Director

Approved R. H. Overman
Date 4-2-63 Engineer of Bridges

Approved R. N. Ricketts
Date 8-1-63 Engineer of Location and Design

Approved R. E. Shultz
Date 8-2-63 Deputy Director of Design and Construction

Approved T. H. Boone
Date 4-18-63 Deputy Director of Right of Way

Approved E. W. Wilson
Date 8-5-63 Deputy Director of Planning and Programming

Approved
Date First Assistant Director

Approved P. E. Masheter
Date 8/15/63 Director of Highways

AUG 4 1965
GROUND PHOTOLAB

AUG 4 1965
GROUND PHOTOLAB

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER DATE

SUPPLEMENTAL SPECIFICATIONS

S-101	7-12-62				
M-106.6 (c)	2-17-59				
C.E.-101.04	5-22-56				

STANDARD DRAWINGS

DR-1	1-3-55	L-1	4-1-50	FACI-1	3-8-63
G-7.07	6-1-56	L-3	4-1-50	FACI-2	3-8-63
I-1	11-15-60	L-3-A	4-1-50	AS-1-54	7-5-62
I-8 CB.1-2A & B	2-1-63	CSB-2-56 SH.1,2,3 & 6	2-2-59	SP-53	6-30-61
I-8 CB.2-2-A & B	2-1-63	RI-1	7-15-58		
I-15 No. 2-A	8-17-60	T-35	1-2-56		
I-15 No. 1	11-15-60	FSB-1-62	1-15-63		

File No.	DEF-15-12.57
	DATE OF LETTING 1963
	CONTRACT No.

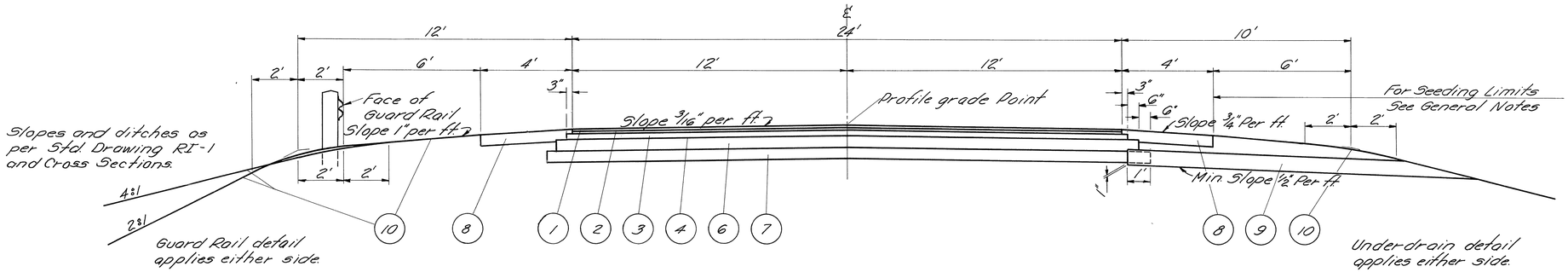
C025400 1

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649(4)	

DEFIANCE COUNTY
DEF-15-12.57

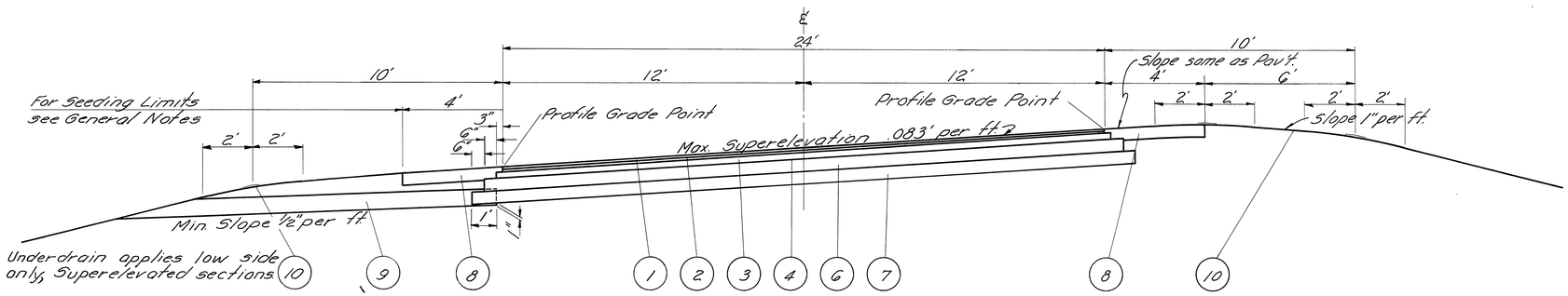
TYPICAL SECTIONS

TYPE T-35 ON B-19



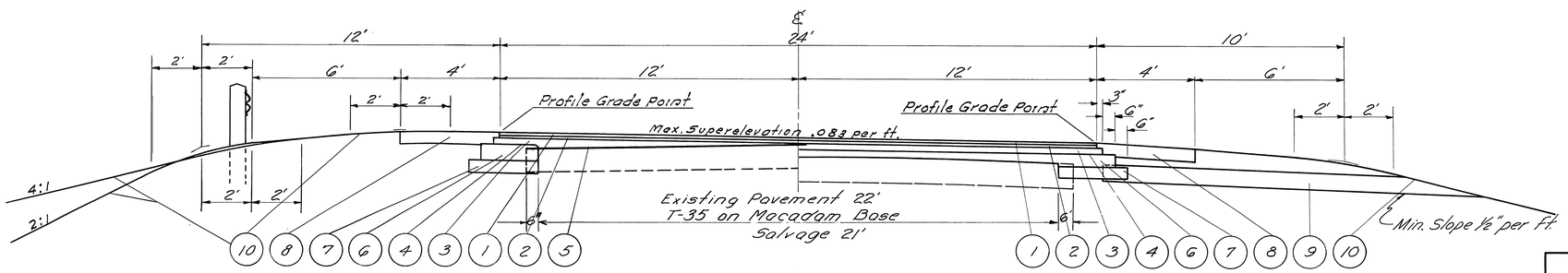
Applies From Sta. 682+71.75 to Sta. 687+75

503.25 Lin. Ft.



Applies From Sta. 667+50 to Sta. 679+96.25
Applies From Sta. 687+75 to Sta. 692+75

1746.25 Lin. Ft.

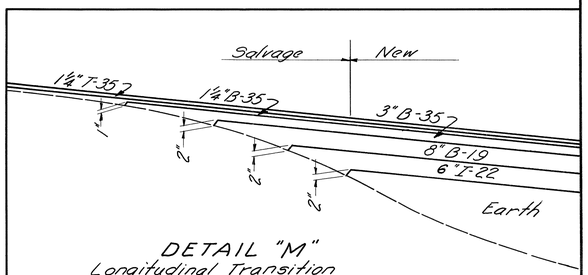


Applies From Sta. 664+00 to Sta. 667+50
Applies From Sta. 692+75 to Sta. 695+00

575.00 Lin. Ft.

1. *T-35 1¼" Asphaltic Concrete Surface Course, Type "C" (70-85)
2. *B-35 1¼" Asphaltic Concrete Leveling Course, (70-85) (1" Min. to 2¼" Max. over existing pavement)
3. *B-35 3" Asphaltic Concrete Base Course (70-85) (1" Min. to 5" Max. over exist Pavem't)
4. T-30 Bituminous Prime Coat Sec. M-5.7, RT-2 or RT-3 applied at the rate of 0.4 Gal. per Sq. Yd.
5. T-30 Bituminous Tack Coat Sec. M-5.5, MS-2 or RS-1, or Sec. M-5.2, RC-1, or R.C.2, as per Sec. T-30.02, applied at the rate of 0.10 Gal. per Sq. Yd.
6. B-19 8" Aggregate Base Course (2" Min. to 10" Max. over existing Pavement)
7. I-22 6" Subbase, using Sec. M-2.7 Screenings (2" Min. to 8" Max. over existing pavement)
8. I-18 6" Stabilized Crushed Aggregate Shoulders‡
9. I-9 Stone Underdrains, where called for on plans, No. 2
10. L-9 Seeding and protecting, as per plan.

*Thicknesses shown are "design" thicknesses as described in Section T-35.01, and Section B-35.01
‡For additional Stabilization with Calcium Chloride see note in proposal.



DETAIL "M"
Longitudinal Transition
Salvage to New Pavement

C025400 2

GENERAL NOTES

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:~ The rounded corners shown on Standard Drawing RI-1, as modified by the typical sections, apply to all cross sections, even though otherwise shown on these plans.

UTILITY ADJUSTMENT:~ Any or all work required for removing, relocating and construction of new facilities for Public or Private Utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.

FIELD OFFICE:~ The Contractor shall, in accordance with Sec. 5-0.01(b), provide for the exclusive use of the State's employees, a suitable field office having a minimum of 200 Sq. Ft of floor space. The Contractor shall have a telephone installed and maintained in this field office during the construction of this project.

DESIGN SPEED:~ The geometrics for this project have been planned for a design speed of 60 miles per hour.

SUPERELEVATION:~ Superelevated curves shall be built without crown. The crown shall be worked out of the pavement in the portion between the beginning of the transition and the point where the superelevation equals twice the crown.

NON-RIGID PAVEMENT REMOVAL:~ Removal and disposal of existing non-rigid pavement, unless otherwise indicated on these plans, shall be measured and paid for as Item E-1, Roadway Excavation.

REMOVAL OF EXISTING PIPE:~ The removal of all existing pipe drains within the limits of proposed excavation items shall be included for payment in the unit prices bid for the respective excavation items, unless otherwise itemized in the plans.

REMOVAL OF EXISTING GUARD RAIL:~ Existing guard rail will be removed by others, except as noted on Sheet No. 7.

SEEDING:~ Quantities for seeding are calculated for the soil areas between lines 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. No payment for areas beyond these limits will be allowed, unless authorized by the Engineer.

SEEDING FORMULA:~ The following seed mixture shall, in lieu of the mixtures listed in section L-9.11, be used throughout the limits of this project:

60% Kentucky 31 Fescue 25% Kentucky Blue grass, and 15% Red Top

In addition to the above mixture, for an area 3 ft. each way from the ditch center line, the following shall be added: from January 1 to July 1, 5 lbs. of Oats per 1,000 sq. ft. or from July 1 to January 1, 5 lbs. of Northern Rye per 1,000 sq. ft. A rotary type mixer shall not be used and no mulching will be permitted in this area. Any stone or other debris 2" or over in diameter shall be removed from the exposed surface of the seed bed.

REMOVAL OF TREES AND STUMPS:~ Trees and Stumps to be removed or preserved as indicated on the plans by the following symbols:

Trees or Stumps to be removed. Trees to be preserved.

The number of trees or stumps to be removed as indicated by the above symbols is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps, even though not indicated on the plans or indicated to be preserved.

DRIVEWAYS:~ Unless otherwise shown on these plans, all driveways on this project shall be type 1 Standard Drawing DR-1, modified by deleting the 12" offset at the edge of the pavement. Pavement courses and thicknesses are as follows:

TYPE OF APPROACH:	Drive Aprons T-35 *	Drive Aprons I-18	Other Areas T-35 *	Other Areas I-18
Mailbox Approaches	2"	5"		
Residence Drive	2"	5"	*	8"
Commercial Drive	2"	7"	*	9"
Field Drive	0"	6"	0"	6"

* If existing drive is hard-surfaced the same courses and thicknesses shall be used beyond the drive aprons as within the drive aprons.

* Two 1" Courses.

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS:~ The Contractor shall furnish, erect, maintain and subsequently remove Federal Aid Construction Identification signs at each of the following locations:

1. Approximately Sta. 663+50 on the Right
2. Approximately **Sta. 695+00 on the Left**

Sign details shall be as specified on Standard Drawing FACI-1, Code **N-44(2)-102**, and the signs shall be erected in accordance with Standard Drawing FACI-2. Additional requirements shall be in accordance with notes in the proposal.

ITEM I-9 STONE UNDERDRAINS, NO. 2:~ Stone Underdrains 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 superelevated sections. In the final finishing of slopes and ditches, care shall be exercised to assure that the exposed ends of I-9 Underdrains shall be left free of cover that would impede free drainage.

CATCH BASINS AS PER PLAN:~ All pipe joints within eight (8) feet of a Catch Basin or Inlet shall be sealed in accordance with Section I-1.05 of the specifications regardless of the type of backfill specified. Additional cost of all incidentals necessary to seal the joints of open joint pipe within eight (8) feet of the Catch Basins or Inlets shall be included in the unit price bid for Item I-8, Catch Basins or Inlets, as per plan.

ELEVATION DATUM:~ All elevations refer to U.S.G.S. datum.

U.S.G.S. BENCH MARK:~ Special care shall be taken by the Contractor to preserve the U.S.G.S. Bench Mark, located at Sta. 686+25, 60' Rt., until it is referenced by the State Survey Crew.

DETOUR LIMITATION:~ The length of time of detour shall be held to a minimum and in no case shall exceed 45 consecu-**tive calendar** days. Two way traffic shall be maintained at all other times, except one way traffic will be permitted consistent with requirements of the specifications for the placement of the pavement items.

TACK COAT:~ Item T-30, Bituminous Tack Coat may be non-performed of the discretion of the Engineer. Pay quantities for this **item shall be determined by final measurement.**

ITEM SPECIAL DRILLED WELL ABANDONED:~ The existing concrete or stone slab cover shall be removed and disposed of. The pump and all other salvageable parts shall be carefully removed and stored on the abutting property. The casing shall be cut off at least two feet below the proposed finished grade outside proposed pavement areas or at least two feet below the proposed subgrade elevation inside the proposed pavement areas and capped with Class "E" Concrete or a standard threaded pipe cap. The unit price bid for each "Drilled Well Abandoned" shall include payment for all labor, tools, materials and incidentals necessary to complete this item.

ITEM S.S. CE-101.04 COMPACTION USING HEAVY PNEUMATIC-TIRED ROLLER:~ An estimated quantity for this item has been provided in the General Summary, for use as directed by the Engineer, in proof rolling of all subgrade on the Main Line only, except for areas where rock or shale is encountered. The pneumatic-tired roller shall be operated at 50-ton gross load for the final proof rolling.

ESTIMATED QUANTITIES:~ Specific locations and usage of estimated quantities set up on this plan to be used "as directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project.

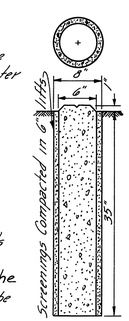
CONSTRUCTION LAYOUT STAKES:~ See note in proposal describing the work included in this lump sum pay item.

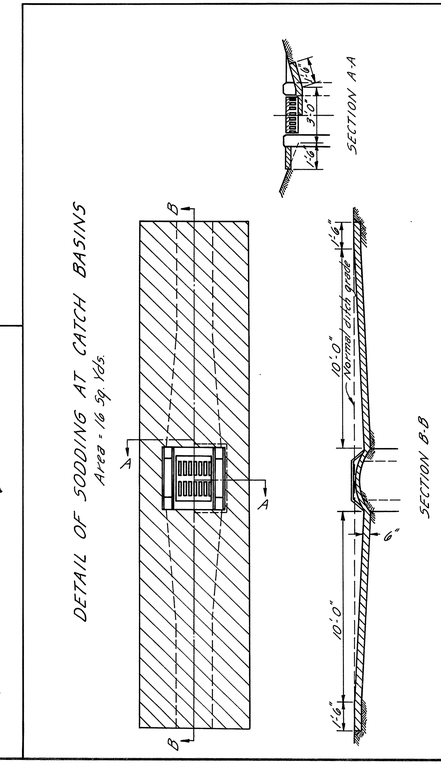
DETAIL OF REFERENCE MONUMENT

Notes

1. Monuments shall be set plumb with the center marker on the exact location as established by the Engineer.

2. The Item, Setting Reference Monuments shall include all labor, equipment, and materials necessary to complete this Item - except for the monuments, which will be delivered to the field office by the State.





C0254003

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649(4)	

DEFIANCE COUNTY
DEF-15-12.57

PAVEMENT COMPUTATIONS

Station From	Station To	Length Lin. Ft.	T-35 1½" Asph. Concrete Sur. Course Cu. Yd.	B-35 1½" Asph. Concrete Lev. Course Cu. Yd.	B-35 3" Asph. Concrete Base Course Cu. Yd.	T-30 0.4 gal/SY. Bituminous Prime Coat Gal.	T-30 0.1 gal/SY. Bituminous Tack Coat Gal.	B-19 8" Aggregate Base Course Cu. Yd.	I-22 6" Subbase Cu. Yd.	E-1 Compacted Subgrade Sq. Yd.	I-7 Approach Slabs Sq. Yd.	I-18 6" Crushed Agg. Shoulders & Approach Cu. Yd.	Remarks
663+50	667+50	400.00	36.42	32.58	59.43	212	56	109.80	59.70			56.48	Salvage
667+50	679+96.25	1,246.25	115.39	115.39	282.71	1,412		784.68	611.59	3,323		175.98	New
679+96.25	682+71.75	275.50							22.22	132	133.33	7.06	Br. & App. Slabs
682+71.75	692+75	1,003.25	92.89	92.89	227.59	1,137		631.68	492.34	2,675		141.67	Salvage
692+75	695+00	225.00	17.66	14.10	26.43	128	35	48.71	20.46			31.77	
												* - 1.41	
Int.	1-P		9.4	9.4		108		62.0		270			*Correction for Int.
Int.	2-P		11.4	11.4		132		75.1		329			
Int.	3-P		12.3	12.3		142		82.0		354			*Correction for App.
Int.	4-P		28.4	26.1		307	9	170.0		775			
												# -24.71	
From Table Sheet #8			30.5			198						154.70	
Total			354.36	314.16	596.16	3,776	100	1,963.97	1,206.31	7858	133.33	541.54	

MISCELLANEOUS COMPUTATIONS

Item E-11 WATER
Embankment 53,919 Cu. Yd.
I-22 1,206 Cu. Yd.
B-19 1,964 Cu. Yd.
I-18 542 Cu. Yd.
Vol. 5 gal./Cu. Yd. 5÷1000 × 57,631 Cu. Yd. 288 M. Gal.

Item L-9 COMMERCIAL FERTILIZER @ 20#/1000 S.F.
Area Seeding 27,119 Sq. Yd.
Sodding 1,905 Sq. Yd.
20 ÷ 2000 × 9 ÷ 1000 × 29,024 Sq. Yd. 2.61 Tons

Item I-9 STONE UNDERDRAINS Estimated @ 50 ft. intervals 1,638 L.F.

Item M-10 CALCIUM CHLORIDE
For maintaining traffic (Estimated) 1 Ton

Item Special Mixing Calcium Chloride & Crushed Aggregate for 6" Stabilized Shoulders
2,924.5 × 2 × 4 ÷ 9 - (174 ÷ 9 × 7) - (204 ÷ 9 × 1) 2,441 Sq. Yd.

Item E-4 BORROW
Embankment +20% 64,703 Cu. Yd.
Less Excavation 2,159 Cu. Yd.
Less Usable Channel Excavation 3,904 Cu. Yd.
58,640 Cu. Yd. 58,640 Cu. Yd.

SEEDING		
Sheet No.	Sq. Yd.	
9	3862	
10	3118	
11	2604	
12	3065	
13	1657	
14	1663	
15	2322	
16	1998	
17	1715	
18	2486	
19	1059	
20	891	
21	1003	
22	1581	
Totals	29,024	
-Sodding	1905	
Net	27,119	

GENERAL SUMMARY

CODE TYPE 6201

Item			Unit	Description
				Roadway
E-1		2159	Cu. Yds.	Roadway Excavation, Method "B", as per plan
E-1		7858	Sq. Yds.	Compacted Subgrade
E-4		58,640	Cu. Yds.	Borrow
E-8		176	Sq. Ft.	Removal and Disposal of Existing Sidewalk
E-9		52	Each	Removal of Trees and Stumps
E-11		288	M. Gals.	Water
I-8		10	Each	Setting Reference Monuments, as per plan
I-13		52	Sq. Ft.	Sidewalks, 4" Concrete
I-13		20	Lin. Ft.	Concrete Steps
I-15		1974	Lin. Ft.	Guard Rail, Steel Beam Standard Type (Deep)
I-15		150	Lin. Ft.	Guard Rail Removed and Rebuilt
I-18		542	Cu. Yds.	Stabilized Crushed Aggregate Shoulders and Approaches
L-9		2.61	Tons	Commercial Fertilizer (12-12-12)
L-9		27,119	Sq. Yds.	Seeding and Protecting, as per plan
L-10		1,905	Sq. Yds.	Sodding
T-10		50	Cu. Yds.	Traffic Compacted Surface Course For Maintaining Traffic
I-4		1	Ton	Calcium Chloride, for Dust Control
E-10		Lump	Lump	Removal of one Frame and Concrete Block Residence, Parcel Nº 95
Spec.		2,441	Sq. Yds.	Furnishing and Mixing Calcium Chloride with Aggregate
Spec.		3	Each	Drilled Well Abandoned
Spec		Lump	Lump	Removal and Desposal of Existing Underground Storage Tanks
SS. CE-101.04		3	Hours	Compaction Using Heavy Pneumatic-Tired Roller
				Drainage
E-3		51	Cu. Yds.	Channel Excavation
S-22		Lump	Lump	Removal of Portions of Existing Structures
S-24		Lump	Lump	Removal of Existing Structure
I-1		198	Lin. Ft.	12" Pipe, Class A-1
I-1		69	Lin. Ft.	15" Pipe, Class A-1
I-1		144	Lin. Ft.	96" Pipe, Class A-1, M-106.6(c)
I-1		289	Lin. Ft.	12" Pipe, Class B-1
I-1		12	Lin. Ft.	6" Pipe, Class B-1
I-1		324	Lin. Ft.	8" Pipe, Class B-1
I-1		247	Lin. Ft.	12" Pipe, Class B-2
I-1		38	Lin. Ft.	12" Pipe, Class F-4
I-1		220	Lin. Ft.	15" Pipe, Class B-1
I-2		10.4	Cu. Yds.	Masonry
I-5		1	Each	6" Pipe Special for B-1
I-5		1	Each	12" Pipe Special for B-2
I-8		3	Each	Std. No. 1-2B Catch Basins, as per plan
I-8		1	Each	Std. No. 2-2B Catch Basins, as per plan
I-9		1638	Lin. Ft.	Stone Underdrains, No. 2
I-10		92	Cu. Yds.	Dumped Rock Channel Protection
				Pavement
B-19		1964	Cu. Yds.	Aggregate Base Course
B-35		314	Cu. Yds.	Asphaltic Concrete Leveling Course (70-85)
B-35		596	Cu. Yds.	Asphaltic Concrete Base Course (70-85)
T-30		3,776	Gals.	Bituminous Prime Coat: Sec. M-5.7, RT-2 or RT-3
T-30		100	Gals.	Bituminous Tack Coat: Sec. M-5.5, MS-2 or RS-1; or Sec. M-5.2, RC-1 or RC-2 as per Sec. T-30.02
T-35		355	Cu. Yds.	Asphaltic Concrete Surface Course, Type "C" (70-85)
I-7		134	Sq. Yds.	Reinforced Concrete Approach Slab (T-13)
I-22		1207	Cu. Yds.	Subbase using Sec. M-2.7 Screenings
		Lump	Lump	Construction Layout Stakes
I-3		Lump	Lump	Maintaining Traffic
				Structures Over 20' Span
				For Quantities on Bridge No. Def 15-12.95 See Sheet No. 31

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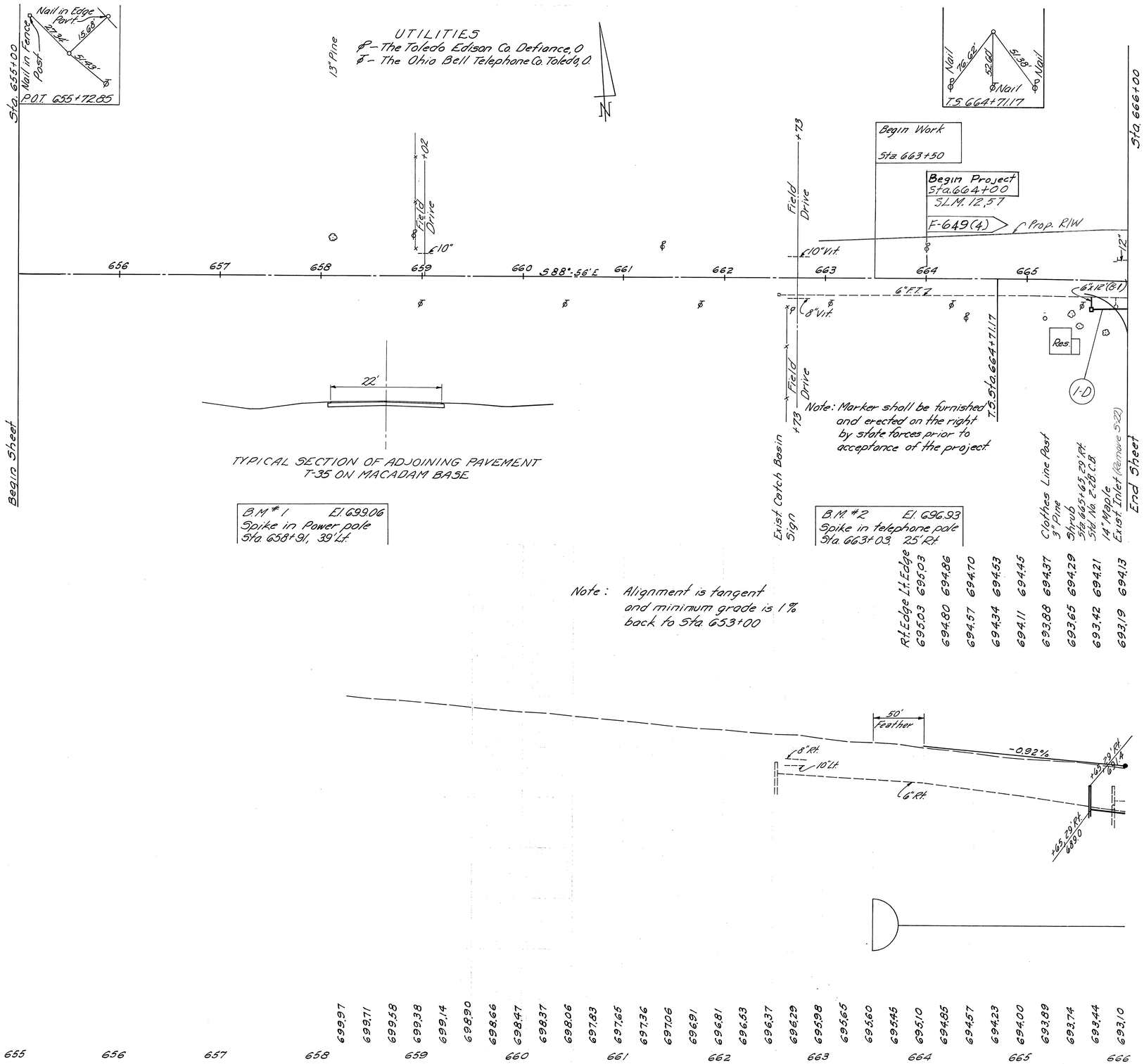
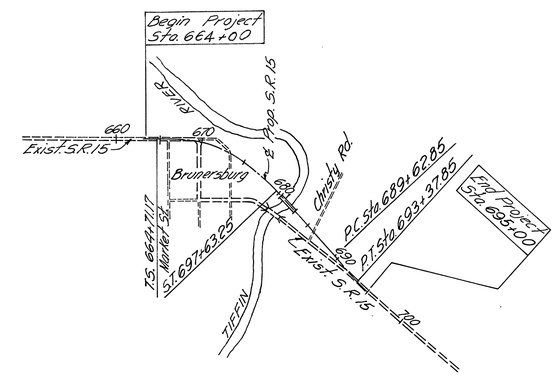


LOCATION PLAN
Scale: 1" = 800'



Revised 12-19-63 C.E.H.
Sta. 655+00 to Sta. 666+00

C025400S

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DEFIANCE COUNTY
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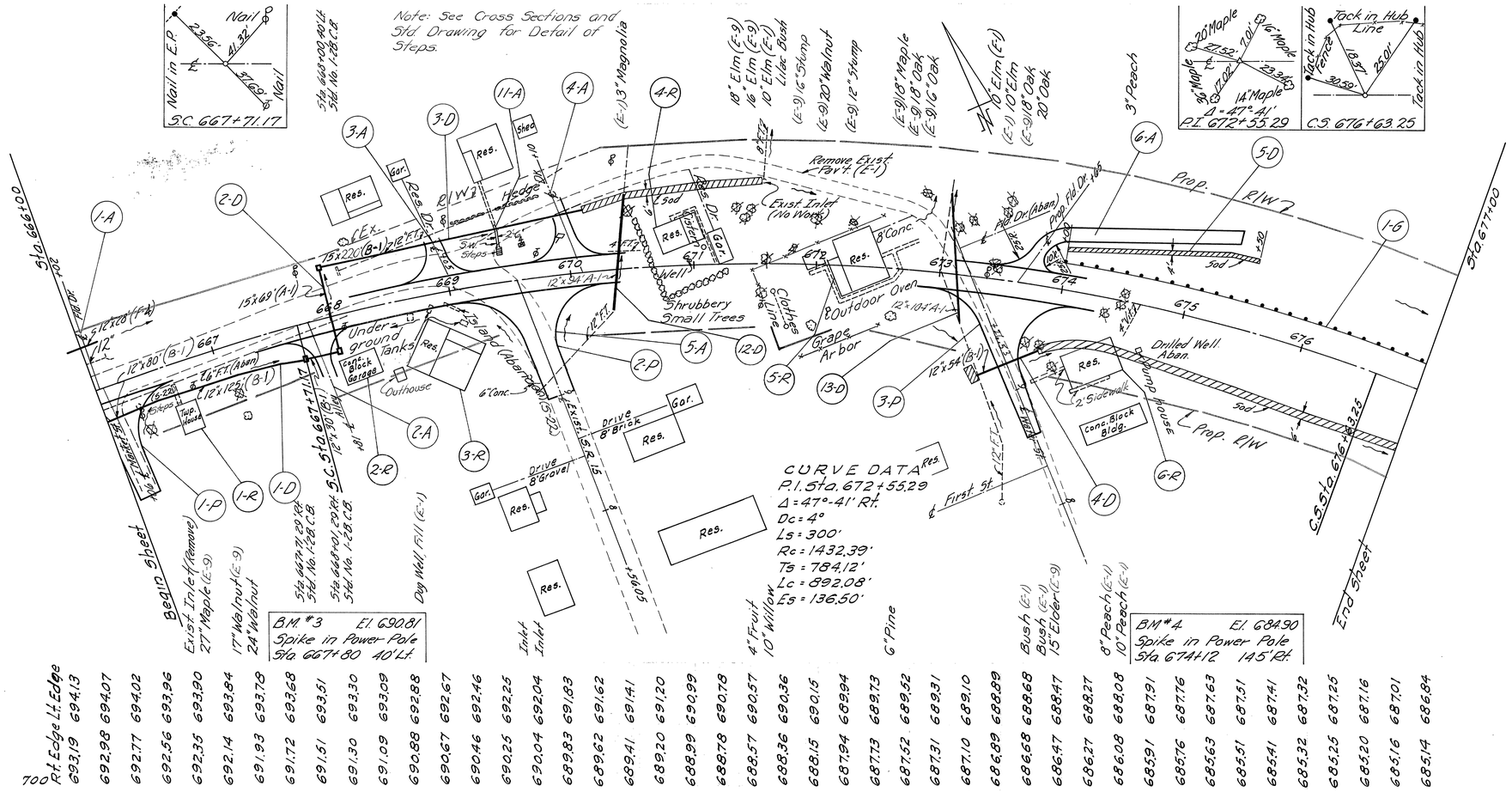
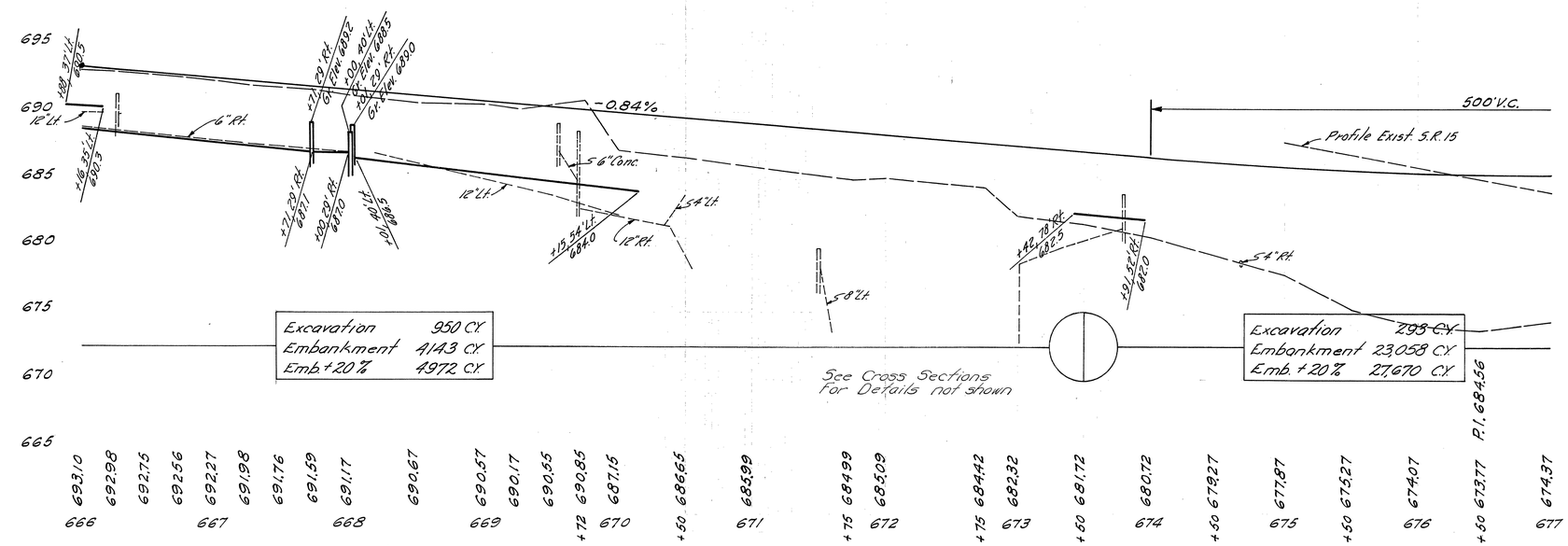
E-9 Removal of Trees 10 Each
E-9 Removal of Stumps 2 Each





Revised 12-19-63 C.E.H.
Sta. 666+00 to Sta. 677+00

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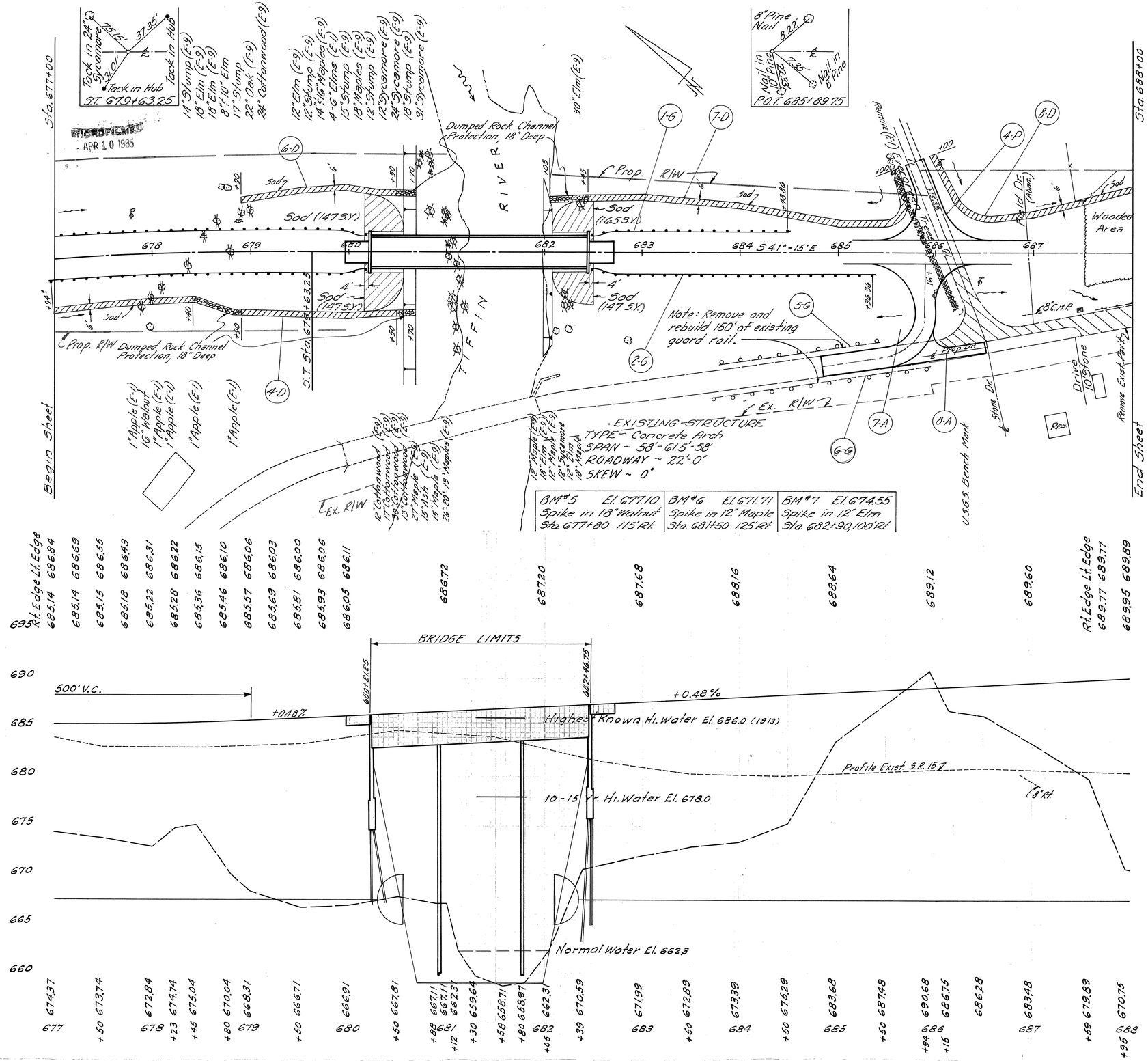
DEFIANCE COUNTY
DEF.-15-12.57

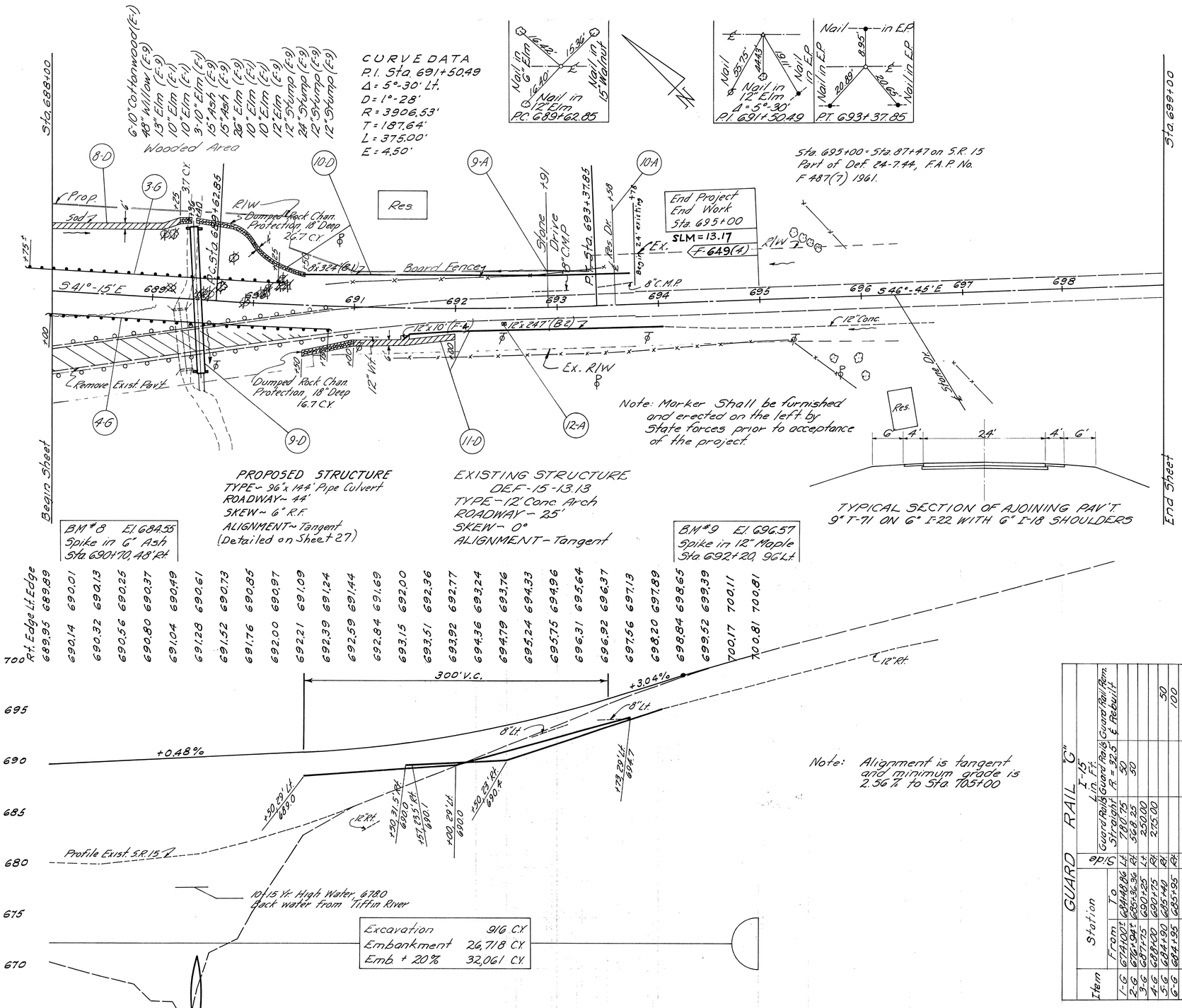


PROPOSED STRUCTURE
TYPE ~ Continuous Steel Beams with reinforced concrete deck and substructure.
SPANS ~ 68'-85'-68' ℄ brgs.
ROADWAY ~ 30'-0" f/f 2'-3" Safety Curbs.
LOAD FREQUENCY ~ CF = 400 (57)
SKEW ~ None
WEARING SURFACE ~ 1" Monolithic concrete
APPROACH SLABS ~ AS-1-54, 25' Long
ALIGNMENT ~ Tangent

E-9	Removal of Trees	25 Each
E-9	Removal of Stumps	5 Each

Revised 12-19-63 C.E.H.
Sta. 677+00 to Sta. 688+00

F-649(4)
DEFIANCE COUNTY
DEF.-15-12.57



Note: Alignment is tangent and minimum grade is 2.56% to Sta. 705+00

GUARD RAIL "G"

Item	Station From	Station To	Side	Guard Rail Straight	Guard Rail R = 32.5'	Guard Rail & Rebuilt
				I-15 Lin. Ft.		
1-G	674+02±	684+48.86	Lt.	780.75		
2-G	676+94±	685+36.36	Rt.	568.25	50	
3-G	687+75	690+25	Lt.	250.00		
4-G	688+00	690+75	Rt.	275.00		
5-G	684+90	685+40	Rt.			50
6-G	684+95	685+95	Rt.			100
	Total			1874.00	100	150

ESTIMATED QUANTITIES

Ref. No.	Station to Station	Side	Remarks	T-30 Gal.	T-30 Lime	T-35 Asph. Conc. Surf. Cu. Yd.	T-18 Asph. Stab. Cr. Agg. Cu. Yd.	5"	6"	8"	12"	I-1 Pipe Lin. Ft. Class A-1	12"	15"	18"	24"	36"	48"	96"	144"	289"	220"	324"	247"	130"	305"	154.7"	130"	325"	3"	320"	Lump Lump	1/325"	Lump Lump	1/92"	51"	1/92"	1/31"	1/1"	38"	1/1"	1/38"	1/93"	1/130"	154.7"
1-A	666+02	Lt.	Fld. Dr.	38	12	2.0	13.4																																								
2-A	667+03	Rt.	Alley	25	12	2.0																																									
3-A	669+05	Lt.	Res. Dr.	28	12	2.0	8.8	3.5	8.8		1.5																																				
4-A	670+10	Rt.	Res. Dr.	18	12	2.0	8.8	3.5	8.8		0.5																																				
5-A	669+90± (on Side Rd.)	Rt.	N.B.A.	14		2.0	5.1		11.3																																						
6-A	673+65	Lt.	Fld. Dr.	18	12																																										
7-A	683+60± (on Side Rd.)	Rt.	N.B.A.	14		2.0	5.1																																								
8-A	685+90 (on Side Rd.)	Rt.	Res. Dr.	75	12	7.0	17.4																																								
9-A	692+9	Lt.	Res. Dr.	25	12	3.5	8.8																																								
10-A	693+38	Lt.	Res. Dr.	25	12	3.5	8.8																																								
11-A	669+45	Lt.	Sidewalk	12	20	2.0	5.1																																								
12-A	692+50±	Rt.	N.B.A.		14																																										
1-D	665+65 to 666+00	Rt.																																													
2-D	666+00 to 667+50	Rt.																																													
3-D	673+42 to 680+70	Lt.																																													
4-D	674+00 to 675+50	Rt.																																													
5-D	674+90 to 680+70	Lt.																																													
6-D	682+05 to 685+75	Rt. & Lt.																																													
7-D	685+95 to 689+86	Lt.																																													
8-D	689+05 to 689+73	Lt. & Rt.																																													
9-D	689+40 to 689+73	Lt.																																													
10-D	689+30 to 689+65	Rt.																																													
11-D	670+40	Lt. & Rt.																																													
12-D	675+15	Lt. & Rt.																																													
1-E	666+65	Rt.																																													
2-E	668+10	Rt.																																													
3-E	669+10	Rt.																																													
4-E	671+00	Lt.																																													
5-E	672+35	Rt. & Lt.																																													
6-E	673+30	Rt.																																													
Total						30.5	154.7																																								

E-9, Removal of Trees 6 Each
E-9, Removal of Stumps 4 Each

* Well point for island

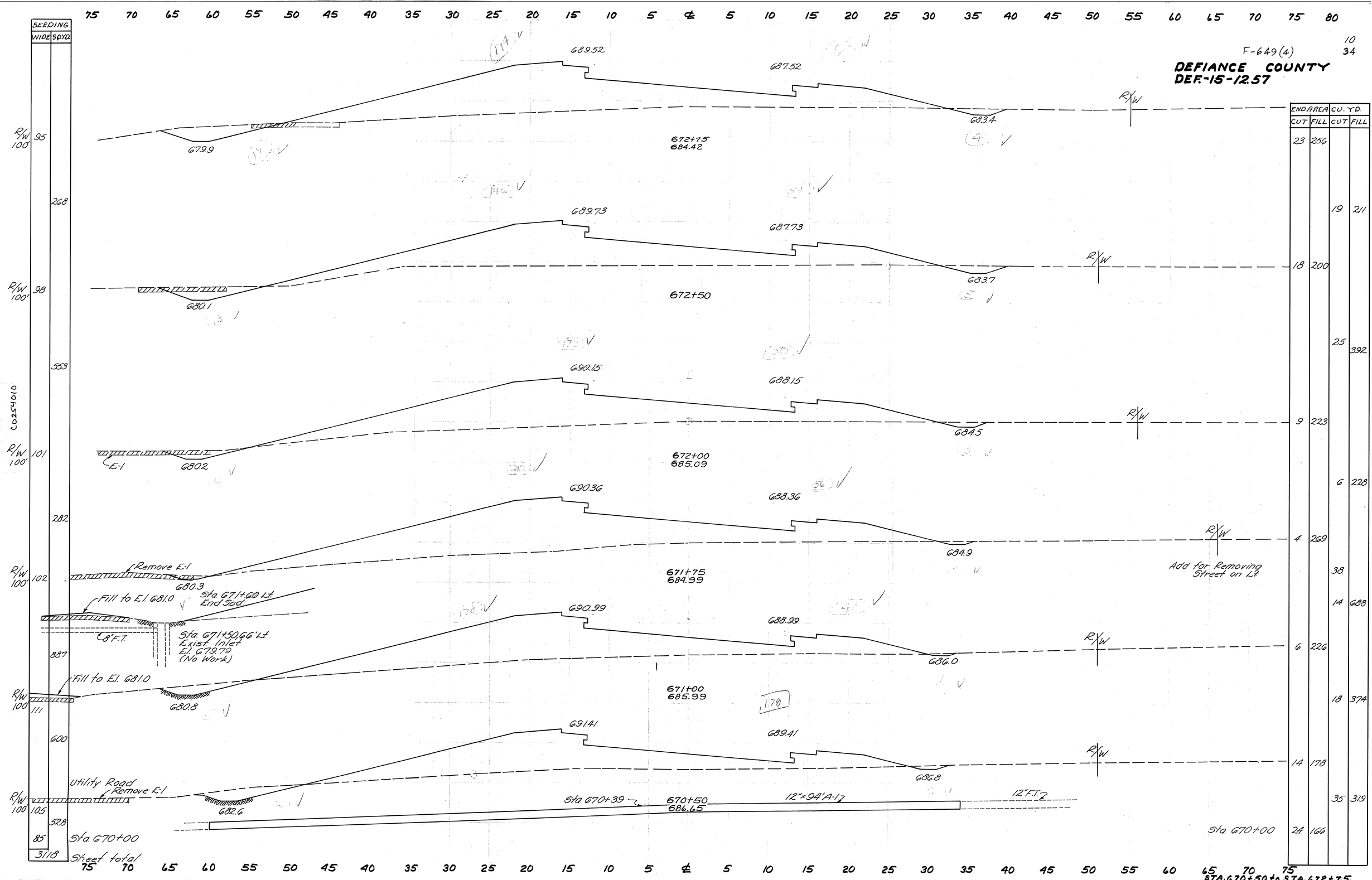
** Six Underground Tanks

Revised 12-19-63 C.E.H.
Sta. 688+00 to Sta. 699+00

C0254008

DEFIANCE COUNTY
DEF.-15-12.57

STA. 660+00 to STA. 670+00.



END AREA CUT	END AREA FILL	CU. YD. CUT	CU. YD. FILL
23	256		
		19	211
18	200		
		25	392
9	223		
		6	228
4	269		
		38	
		14	688
6	226		
		18	374
14	178		
		35	319
24	166		

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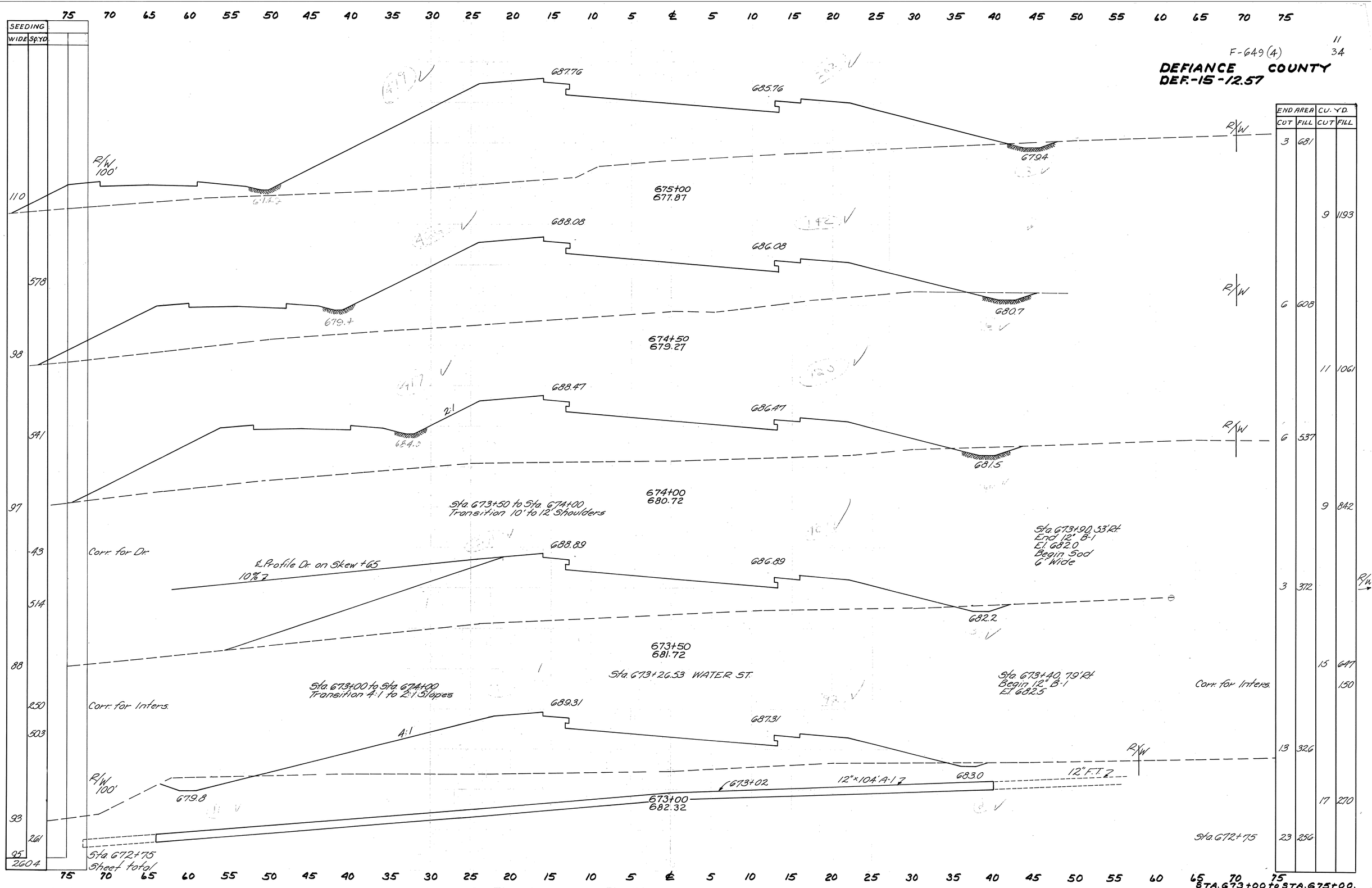
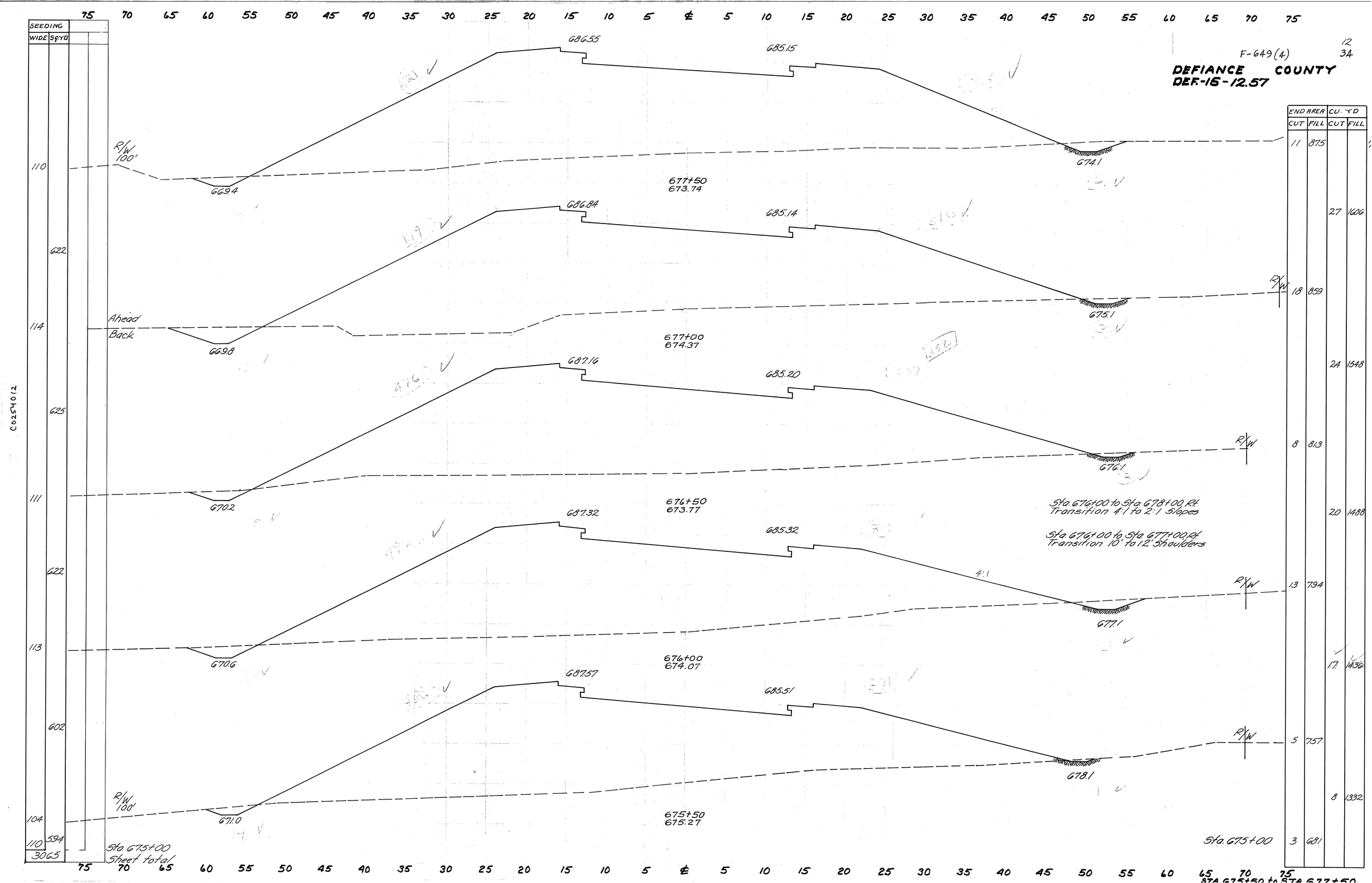
DEFIANCE COUNTY
DEF.-15-12.57





END AREA CUT	END AREA FILL	CU. YD CUT	CU. YD FILL
11	875		
		27	1606
18	859		
		24	1548
8	813		
		20	1488
13	794		
		17	1396
5	757		
		8	1332
3	681		

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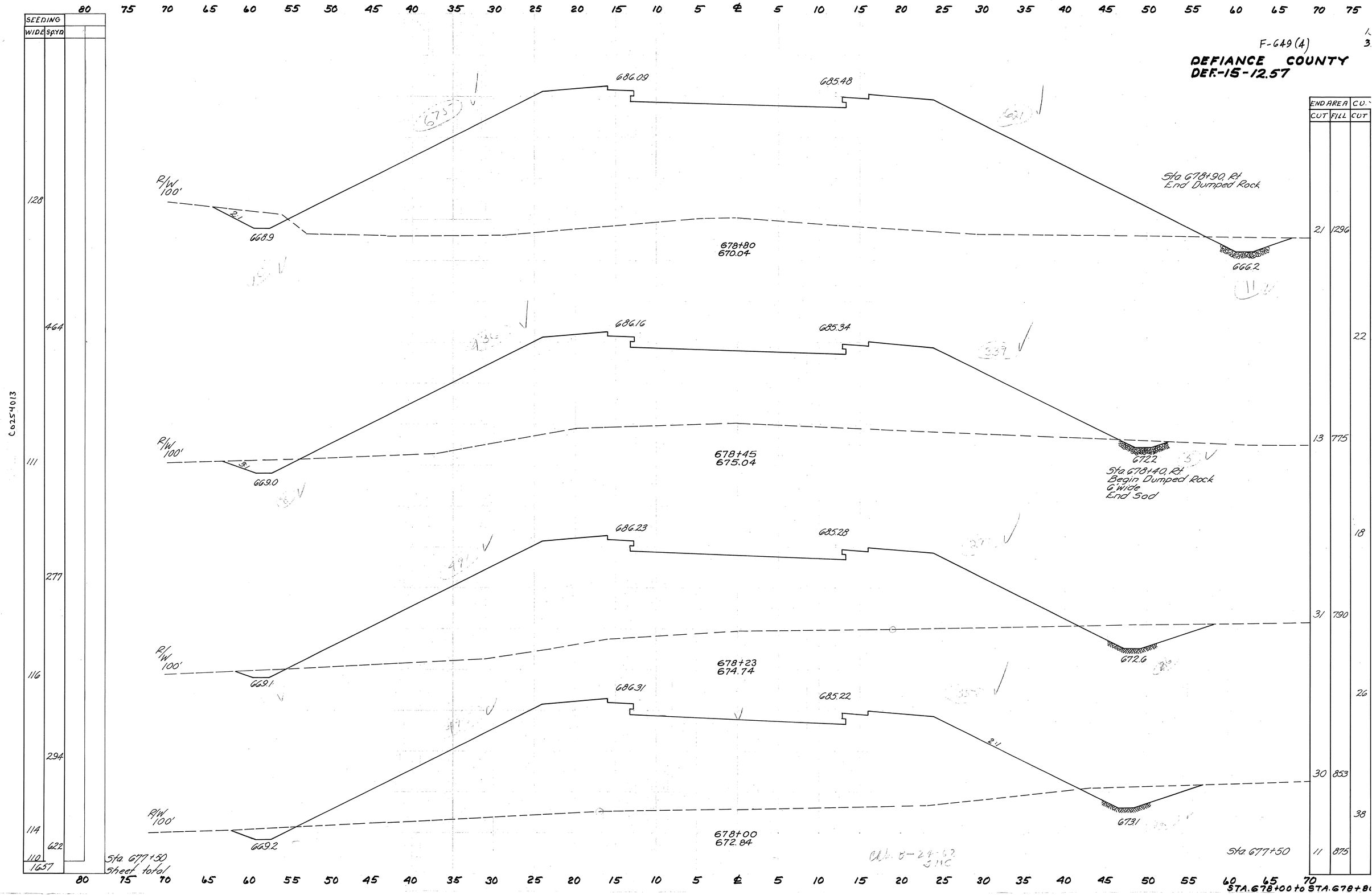
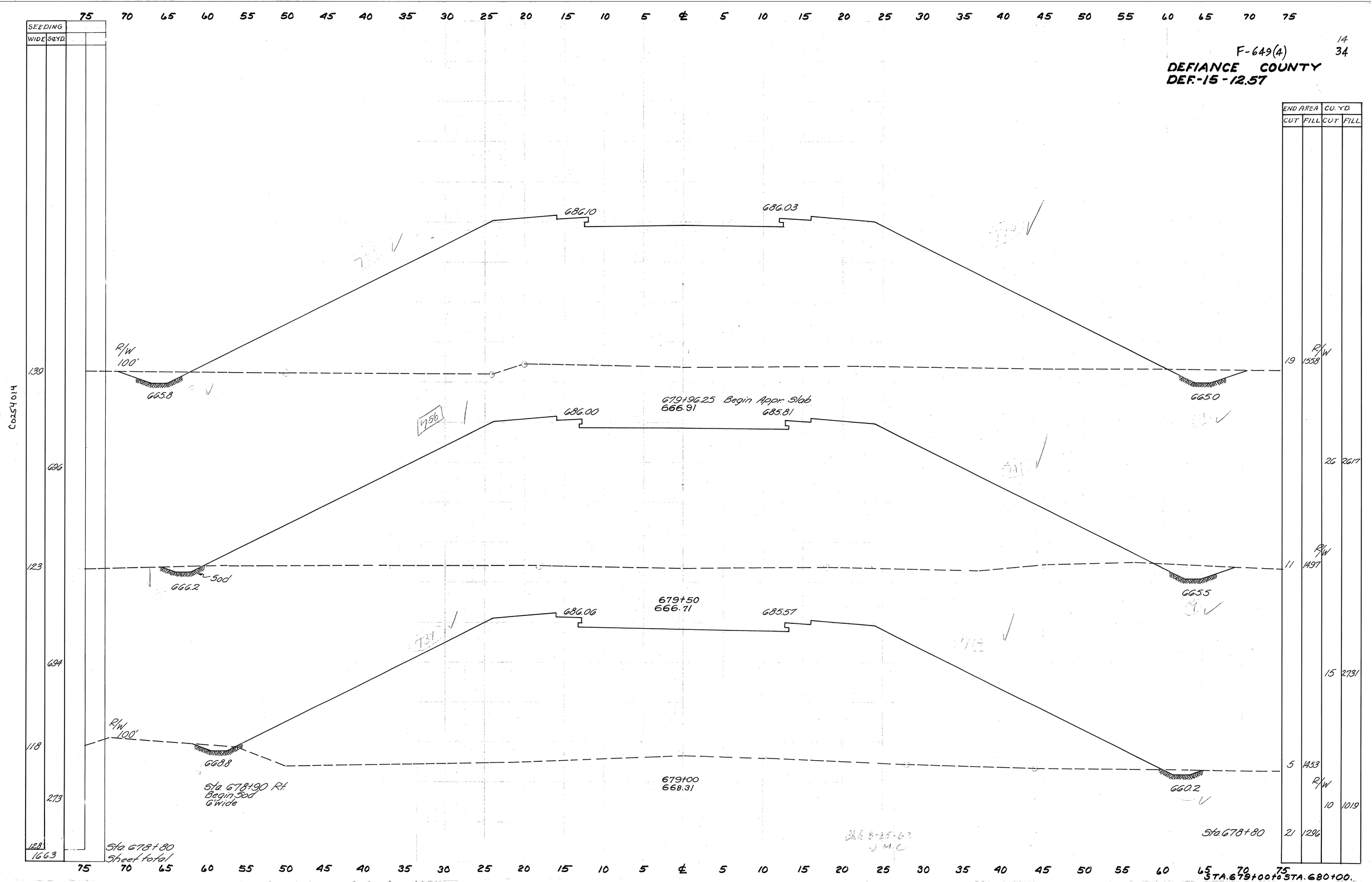
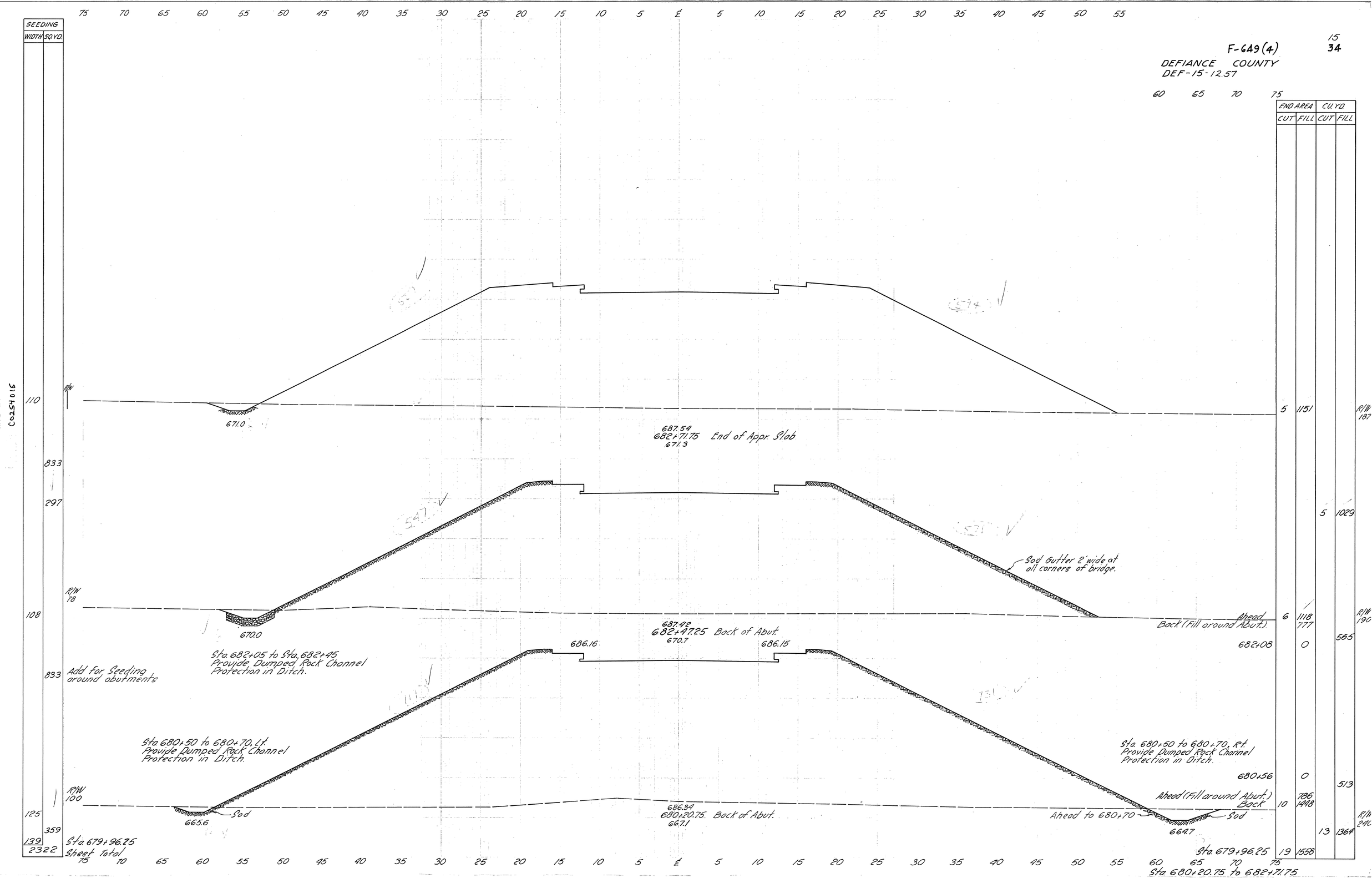
DEFIANCE COUNTY
DEF-15-12.57




F-649(4)
14
34
DEFIANCE COUNTY
DEF-15-12.57
SEEDING
WIDE SQ.YD.
END AREA
CUT FILL
CU. YD.
CUT FILL
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
686.10
686.03
R/W 100'
665.8
665.0
679+96.25 Begin Appr. Slab
666.91
685.81
686.00
1756
666.2
Sod
665.5
679+50
666.71
685.57
686.06
1731
R/W 100'
668.8
Sta. 678+90 Rt.
Begin Sod
6' wide
679+00
668.31
660.2
Sta 678+80
Sheet total
Sta 678+80
130
126
123
118
128
1663
273
694
19 1558
26 2617
11 1497
15 2731
5 1453
10 1019
21 1296
C0254014
STA. 679+00 to STA. 680+00.

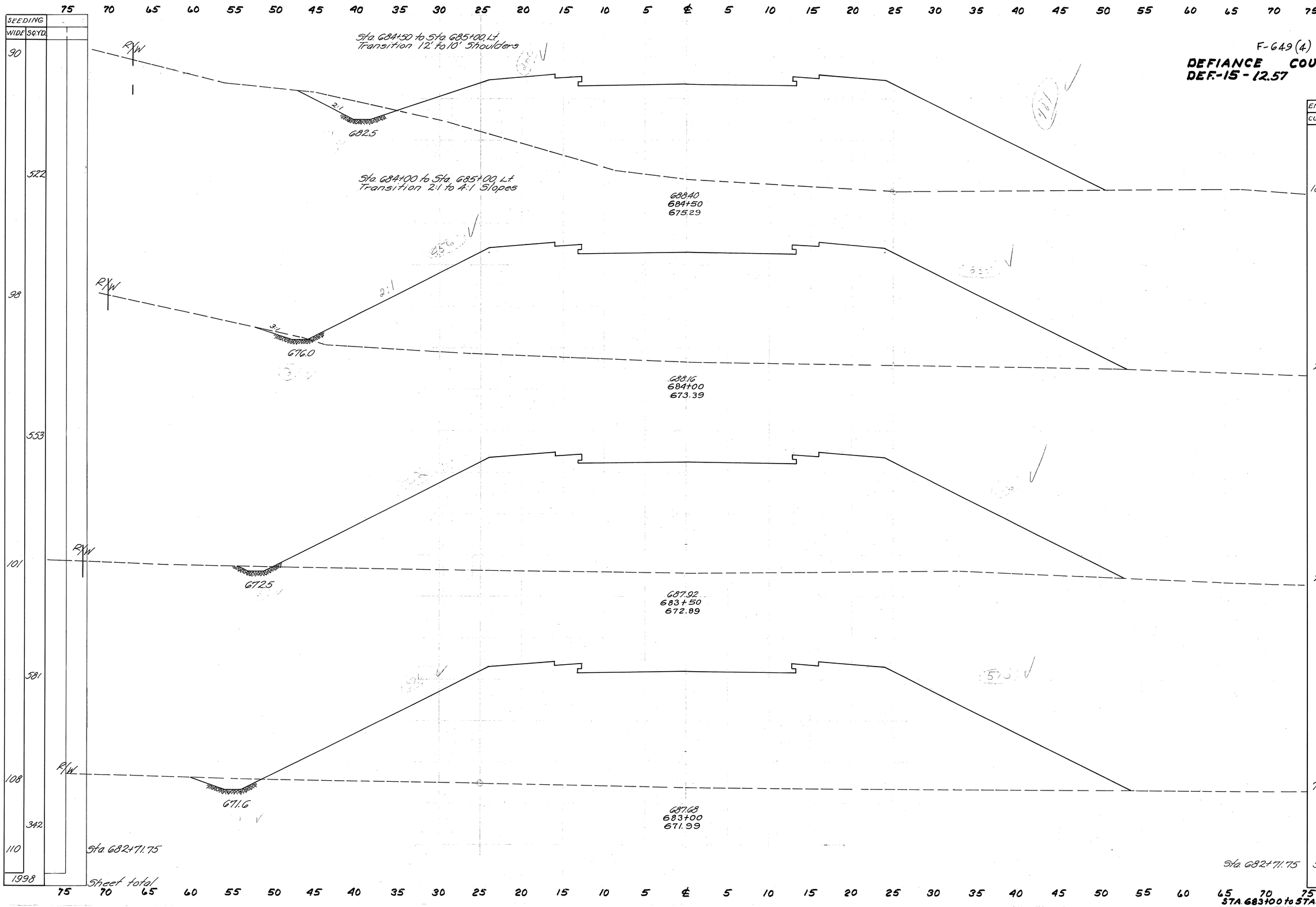
F-649(4)
DEFIANCE COUNTY
DEF-15-12.57



F-649(4)

16
34

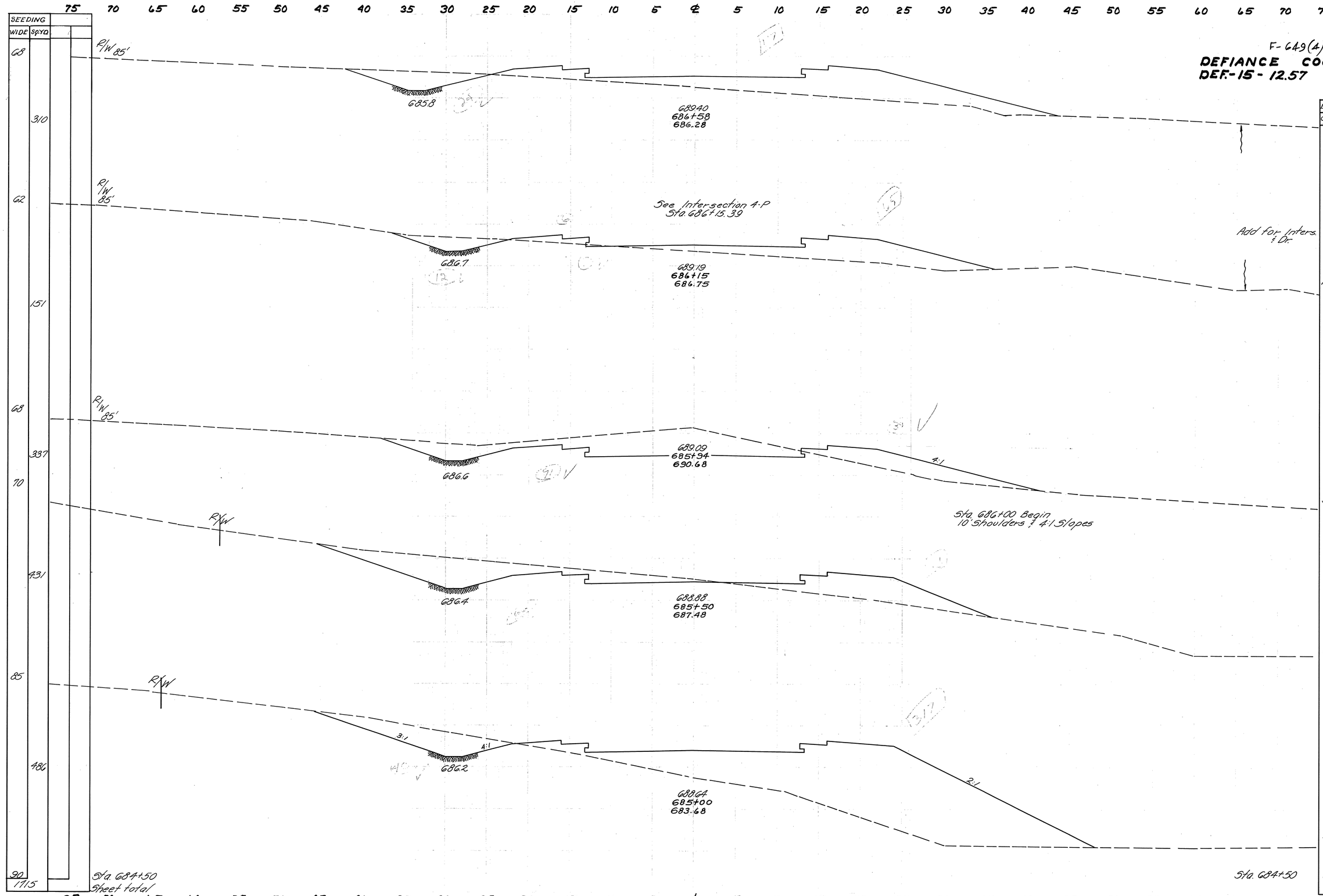
DEFIANCE COUNTY
DEF-15-12.57

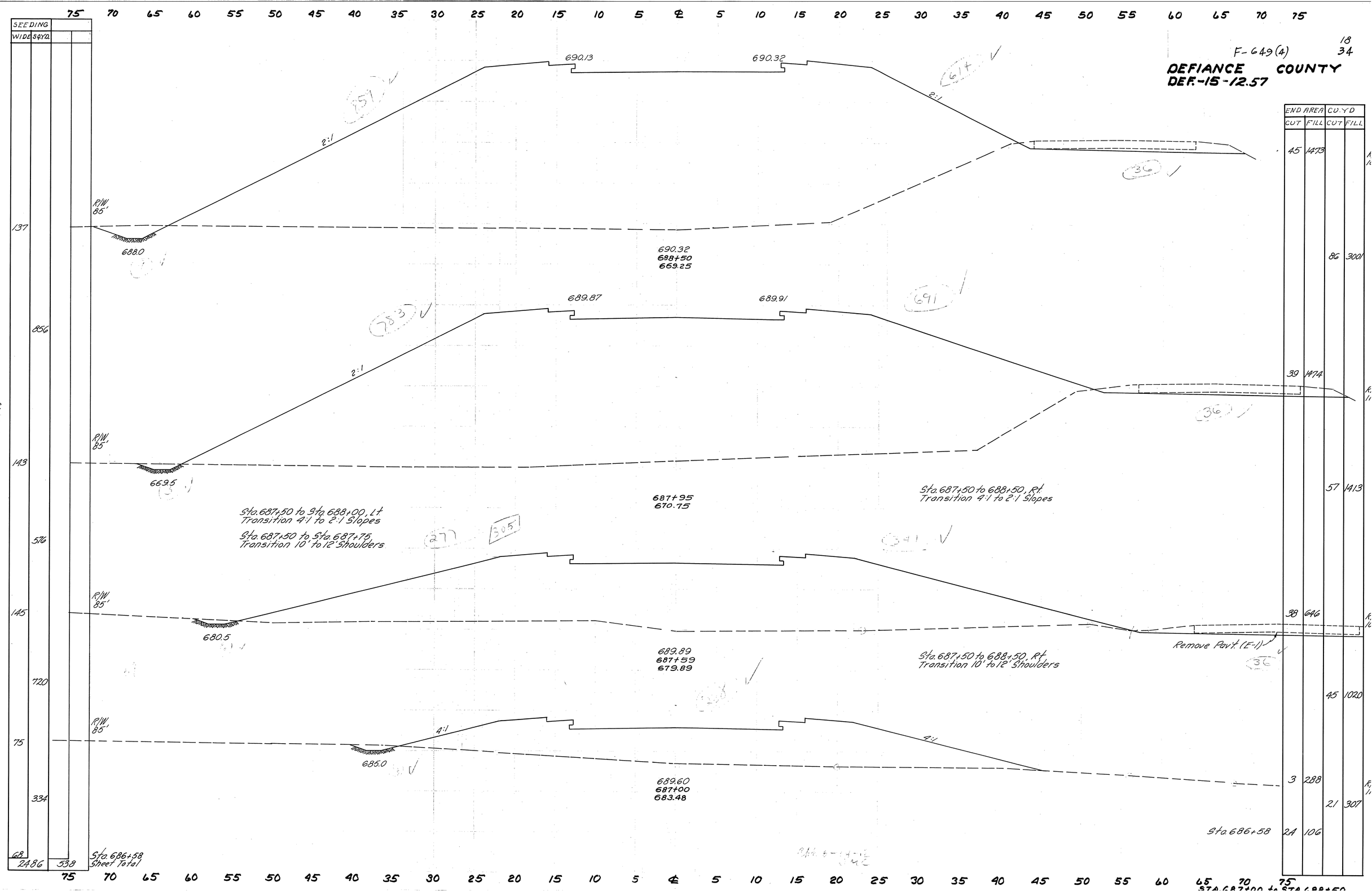


C0259016

F-649(4)

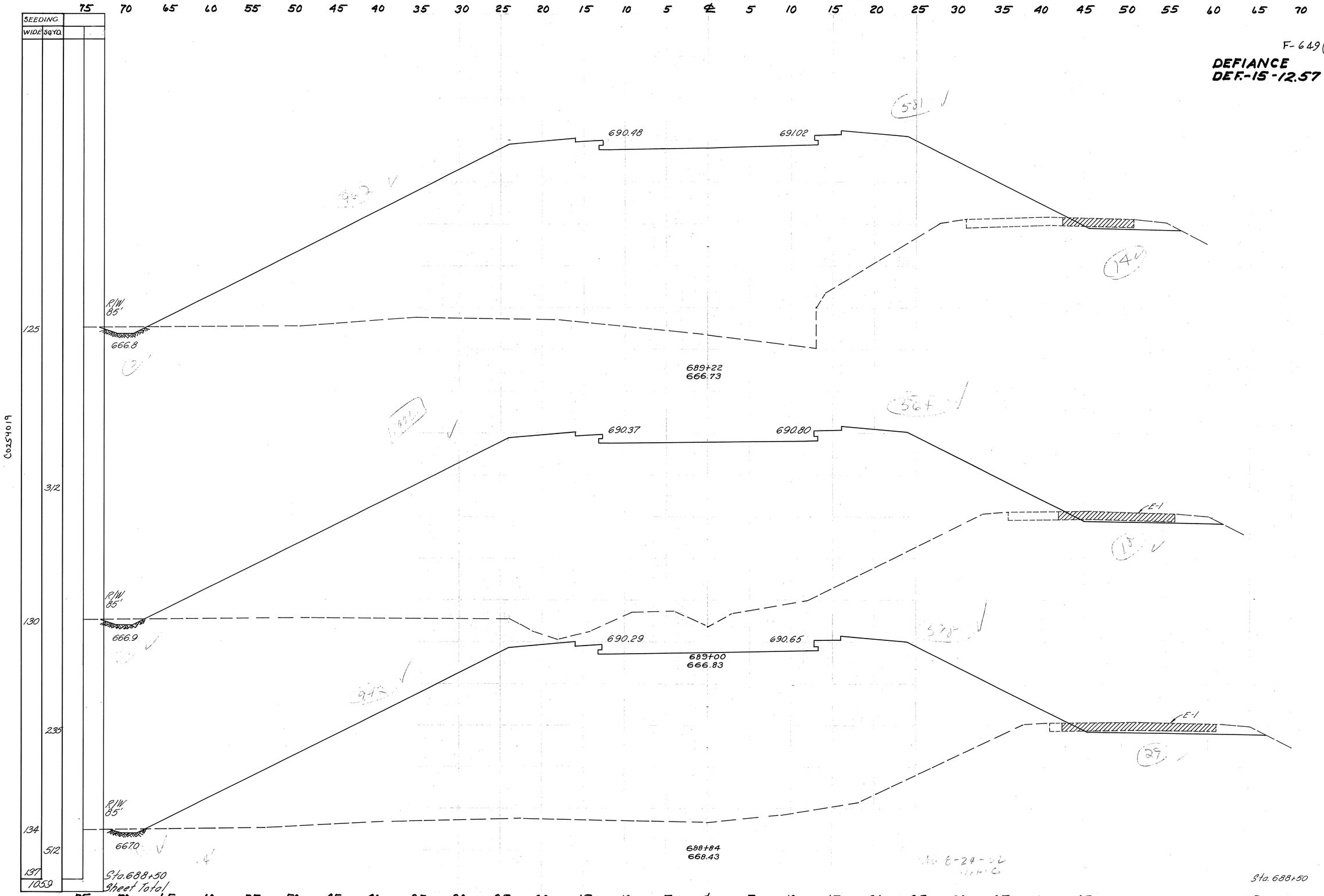
DEFIANCE COUNTY
DEF-15-12.57




F-649(4)
18
34
DEFIANCE COUNTY
DEF.-15-12.57
SEEDING
WIDE SQ.YD.
137
856
143
576
145
720
75
334
68
2486
538
Sta. 686+58 Sheet Total
R/W 85'
688.0
690.13
690.32
690.32
688+50
669.25
2:1
669.5
689.87
689.91
687+95
670.75
Sta. 687+50 to Sta. 688+00, Lt
Transition 4:1 to 2:1 Slopes
Sta. 687+50 to Sta. 687+75
Transition 10' to 12' Shoulders
Sta. 687+50 to 688+50, Rt
Transition 4:1 to 2:1 Slopes
680.5
689.89
687+59
679.89
Sta. 687+50 to 688+50, Rt
Transition 10' to 12' Shoulders
Remove Pav't. (E-1)
4:1
685.0
689.60
687+00
683.48
Sta. 686+58
END AREA
CUT FILL
CU.YD
CUT FILL
45 1473
86 300
39 1474
57 1413
38 646
45 1020
3 288
21 307
24 106
Sta. 687+00 to Sta. 688+50

F-649(4) 19 34

DEFIANCE COUNTY
DEF.-15-12.57



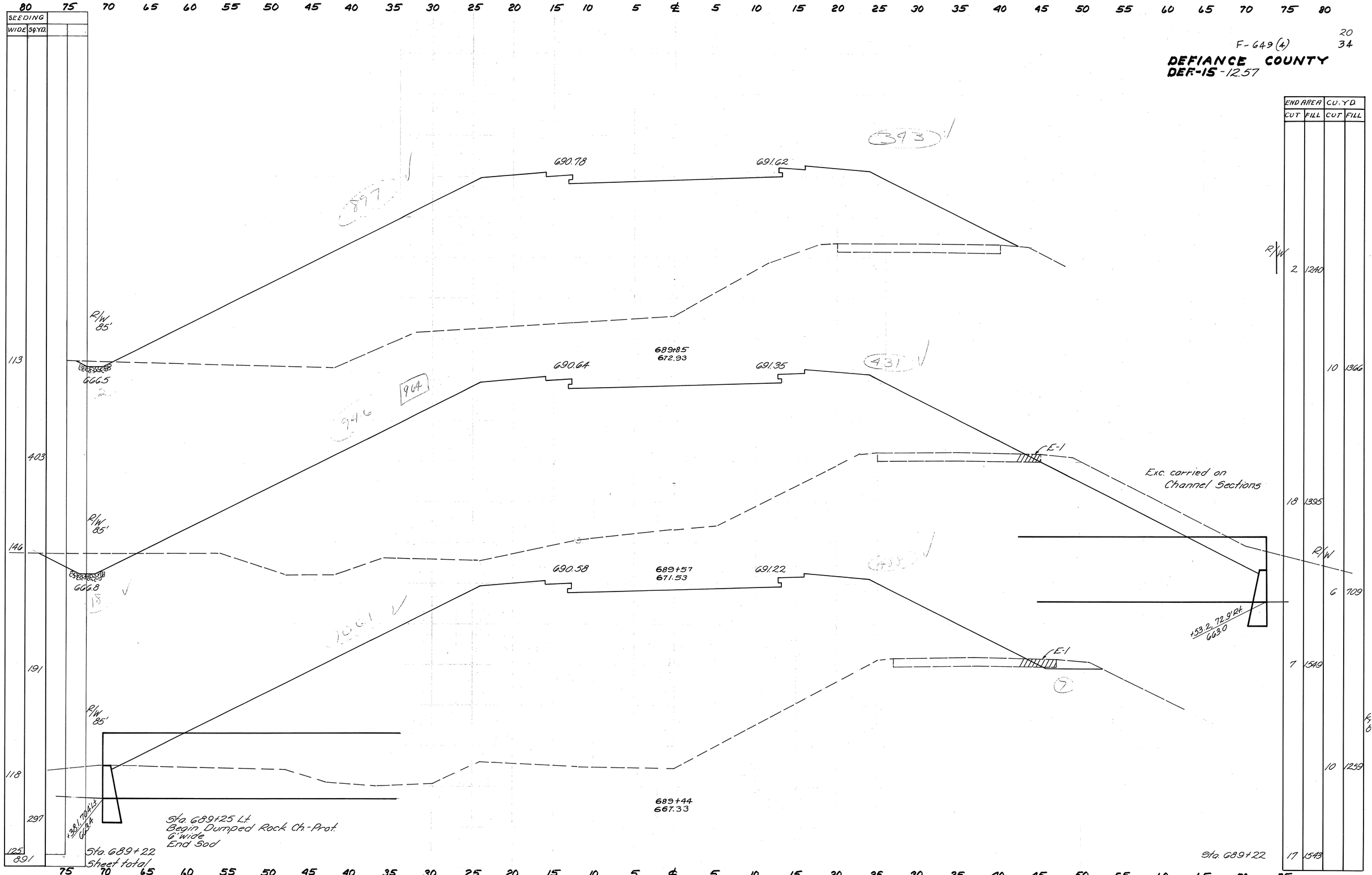
END AREA		CU. YD	
CUT	FILL	CUT	FILL
17	1543		
		15	1266
21	1566		
		15	917
31	1540		
		48	1897
45	1473		

STA. 688+84 to STA. 689+22.

F-649(4)

20
34

DEFIANCE COUNTY
DEF-15-12.57

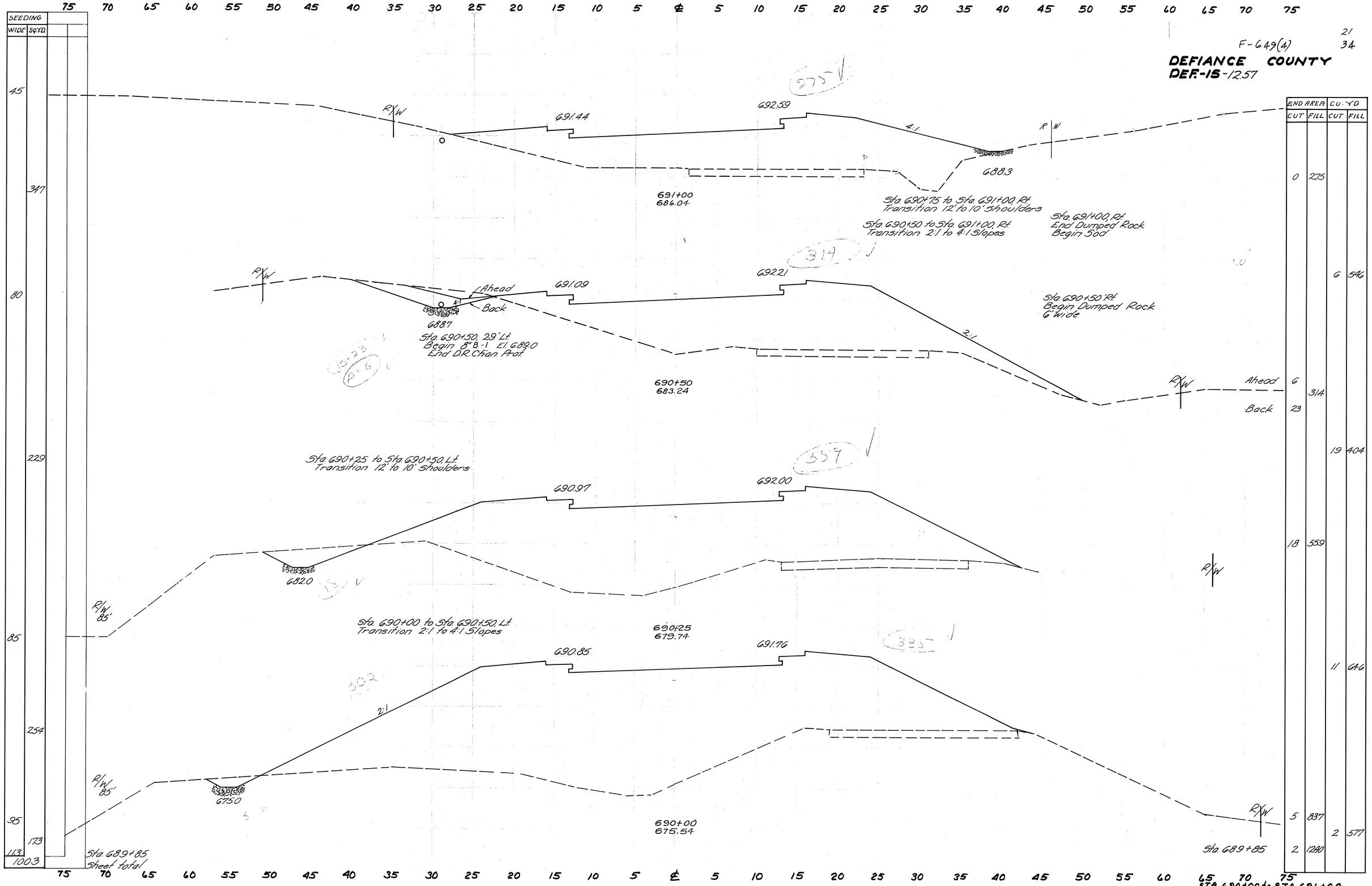


END AREA		CU. YD	
CUT	FILL	CUT	FILL
R/W			
2	1240		
		10	1366
18	1395		
R/W			
6	709		
7	1549		
		10	1259
17	1543		

C0259020

F-649(4) 21 34

DEFIANCE COUNTY
DEF.-15-12.57



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34

DEFIANCE COUNTY
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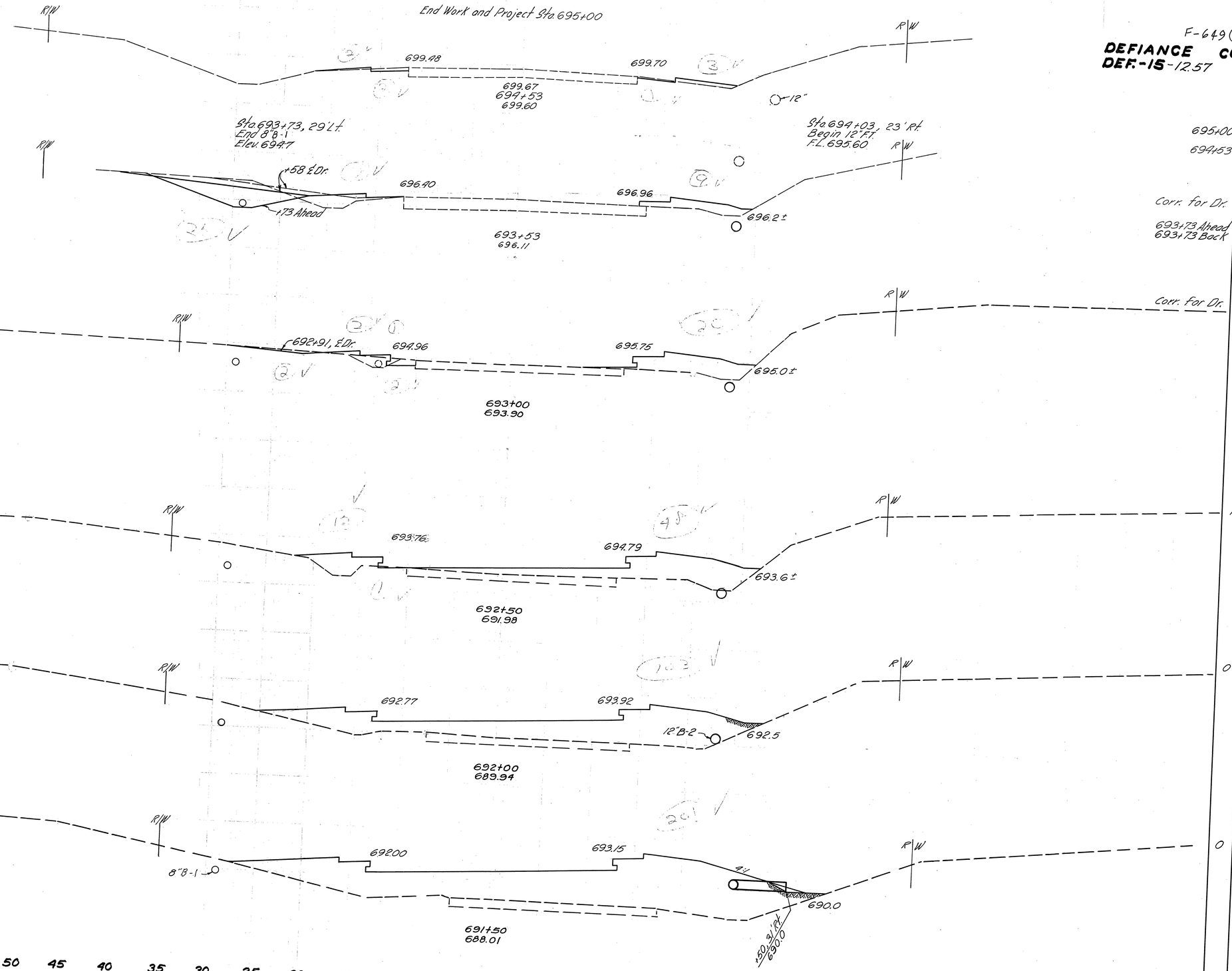
SEEDING WIDE	SEEDING SQ.YD.	
20		695+00
	141	
34		
	483	
53		
	-50	Deduct for Dr.
	259	
35		
	-30	Deduct for Dr.
	186	
32		
	181	
33		
	189	
35		
	222	
45		
	1581	Sta 691+00 Sheet Total



	END AREA CUT	END AREA FILL	CU.YD CUT	CU.YD FILL
695+00	4	0		
694+53	3	5	6	4
			41	31
Corr. for Dr.			15	
693+73 Ahead	25	16		
693+73 Back	0	16		
			5	53
Corr. for Dr.	4	23	4	
			5	77
	1	60		
			1	15
	0	103		
			0	282
	0	201		
			0	491

C0259022

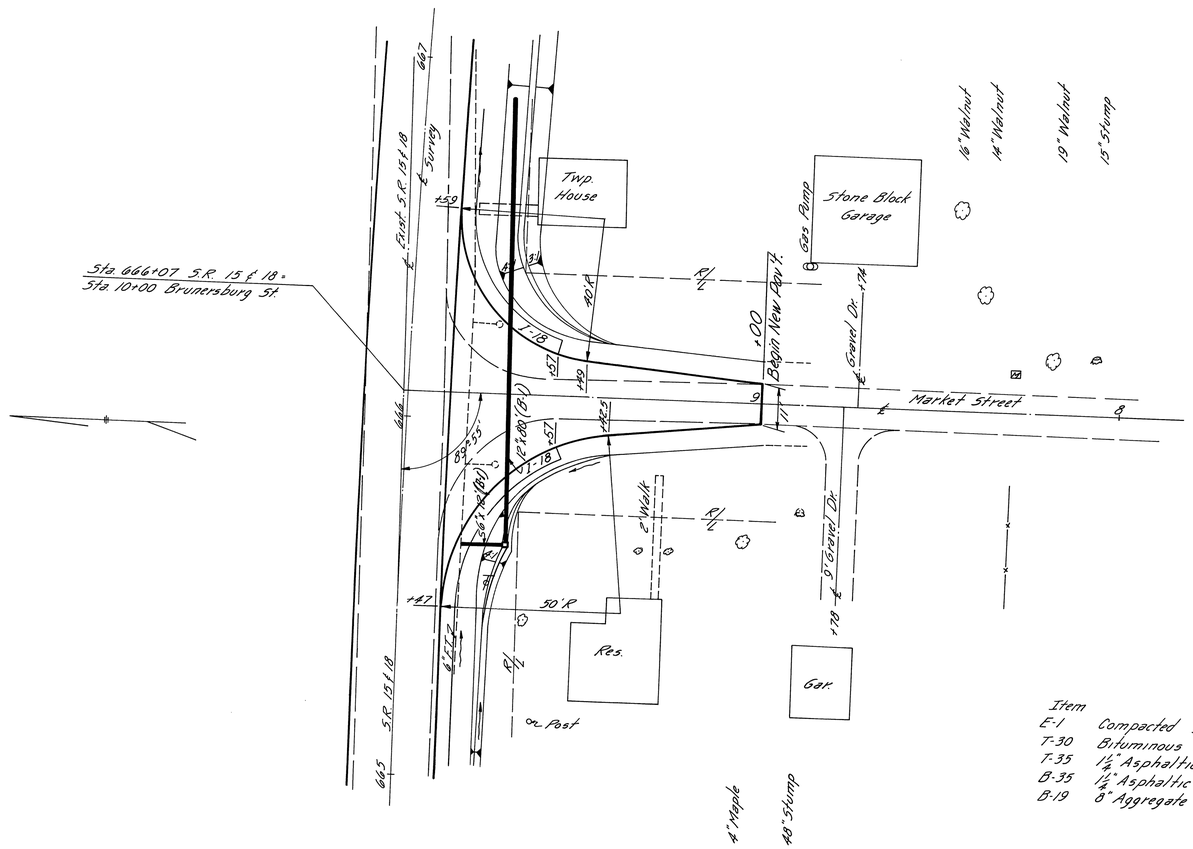
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649(4)	

23
34

DEFIANCE COUNTY
DEF.-15-12.57

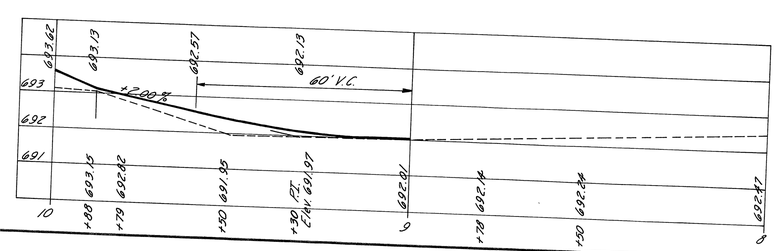
INTERSECTION -1-P

Sta. 666+07
Scale = 0 5 10 20 Feet



ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-1	Compacted Subgrade	270	Sq. Yds.
T-30	Bituminous Prime Coat	108	Gals.
T-35	1½" Asphaltic Conc. Surface Course	9.4	Cu. Yds.
B-35	1½" Asphaltic Conc. Leveling Course	9.4	Cu. Yds.
B-19	8" Aggregate Base Course	62	Cu. Yds.



C0254023

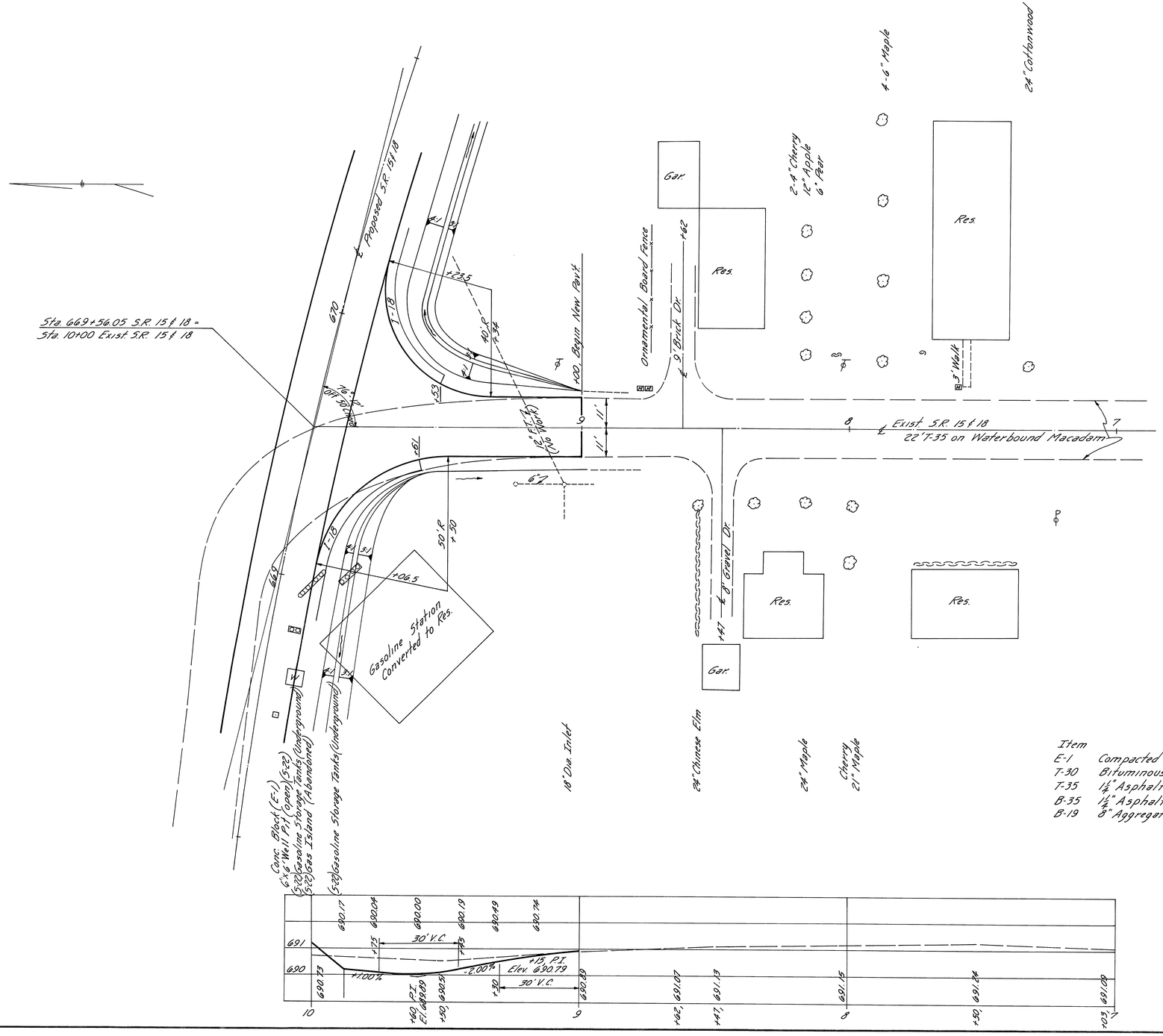
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649(4)	

24/34

DEFIANCE COUNTY
DEF.-15-12.57

INTERSECTION -2-P

Sta. 669+56.05 on S.R. 15 & 18
Scale = 0 5 10 20 Feet



ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-1	Compacted Subgrade	329	Sq. Yds.
T-30	Bituminous Prime Coat	131.5	Gals.
T-35	1½" Asphaltic Conc. Surface Course	11.4	Cu. Yds.
B-35	1½" Asphaltic Conc. Leveling Course	11.4	Cu. Yds.
B-19	8" Aggregate Base Course	75.1	Cu. Yds.

C0254024

INTERSECTION NO. 2-P

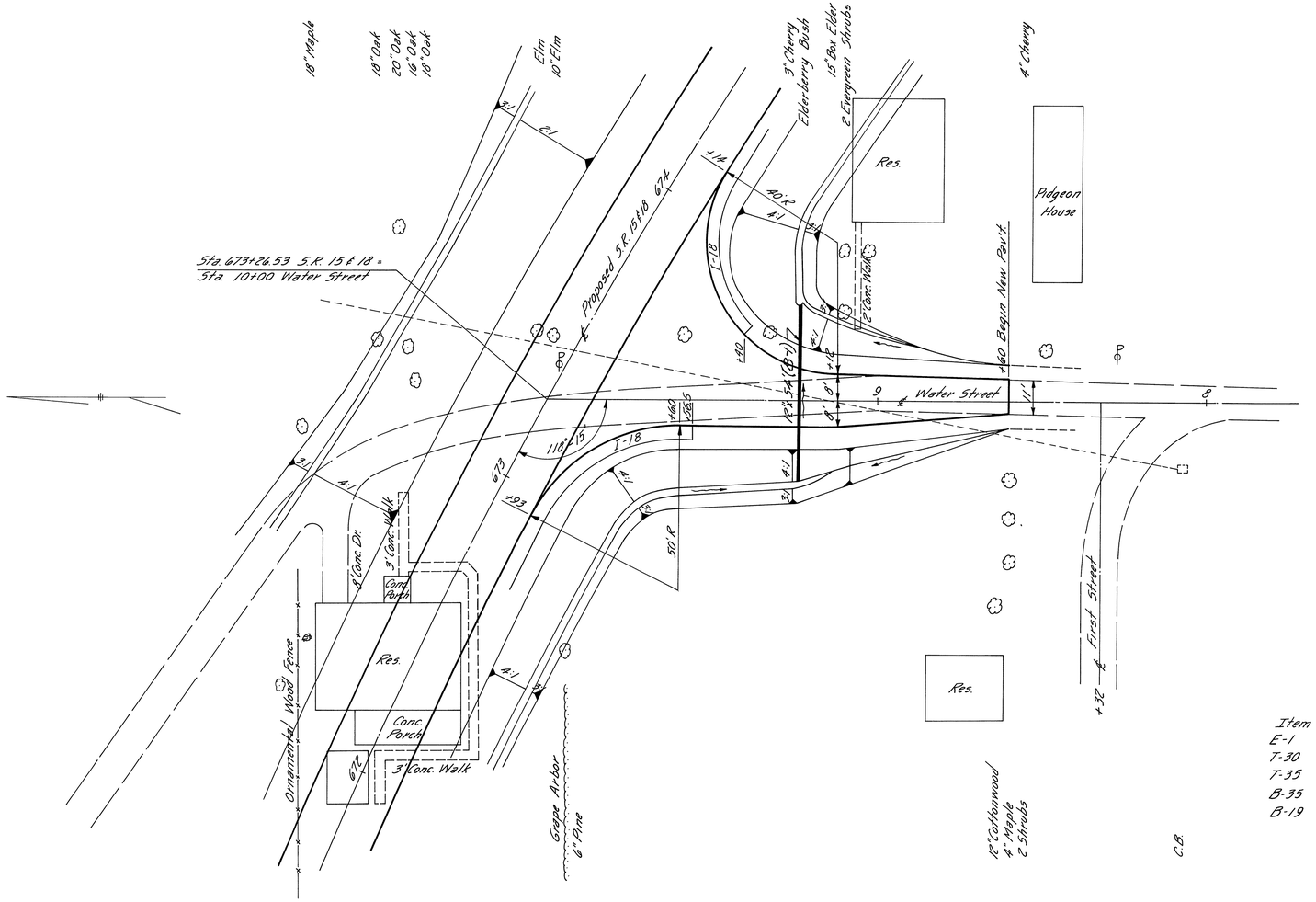
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649(4)	

25/34

DEFIANCE COUNTY
DEF.-15-12.57

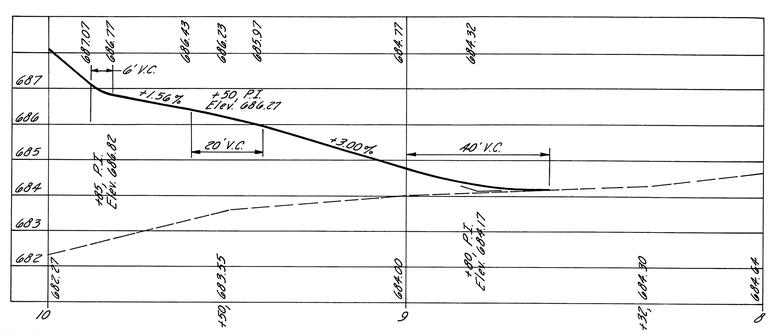
INTERSECTION -3-P

Sta 673+26.53 on S.R. 15 & 18
Scale: 0 5 10 20 Feet



ESTIMATED QUANTITIES

Item	Description	Quantity	Unit
E-1	Compacted Subgrade	354	Sq. Yds.
T-30	Bituminous Prime Coat	142	Gals.
T-35	1½" Asphaltic Conc. Surface Course	12.3	Cu. Yds.
B-35	1½" Asphaltic Conc. Leveling Course	12.3	Cu. Yds.
B-19	8" Aggregate Base Course	82	Cu. Yds.



INTERSECTION NO. 3-P

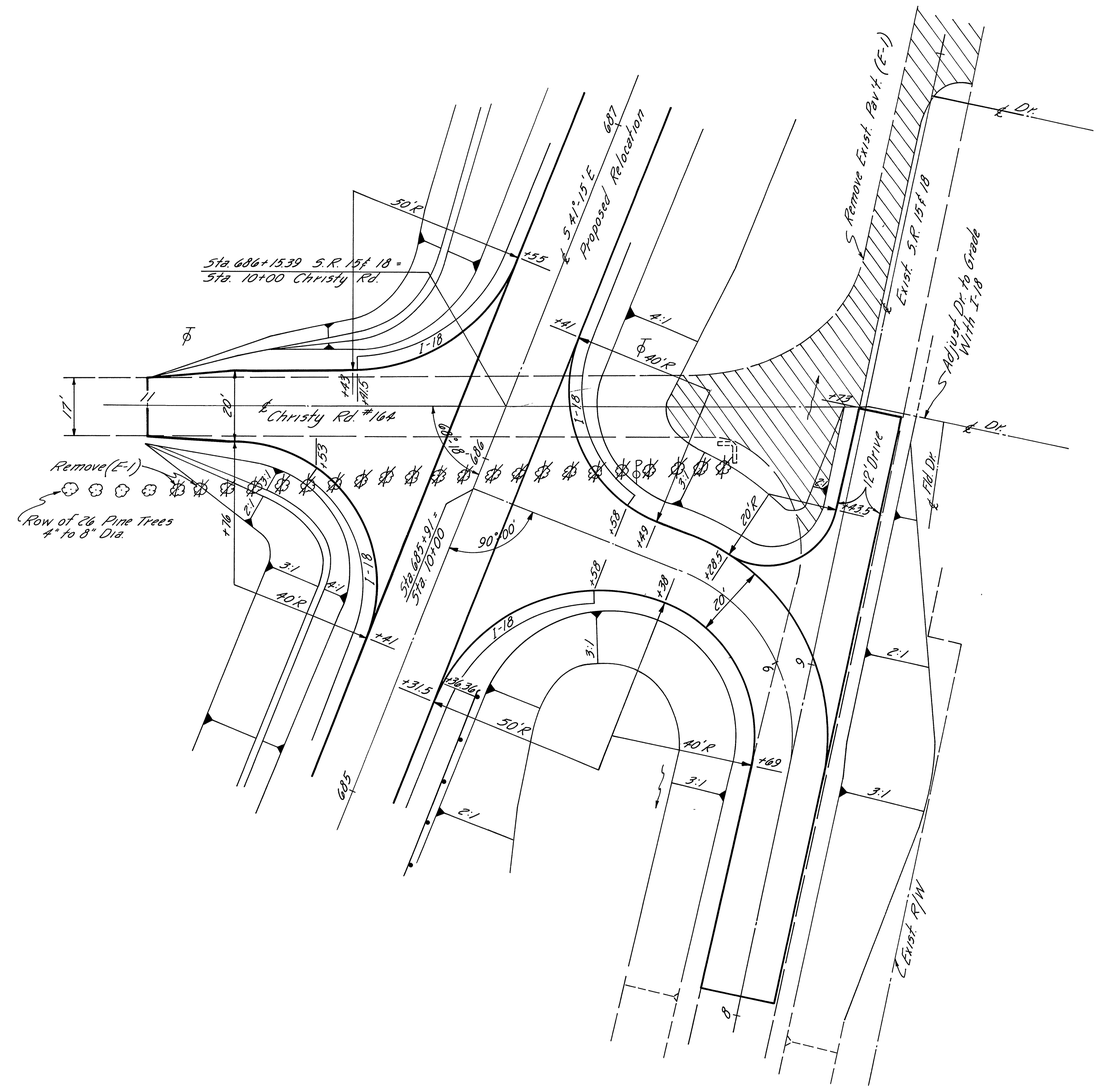
C025402S

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649 (4)	

DEFIANCE COUNTY
DEF.-15-12.57

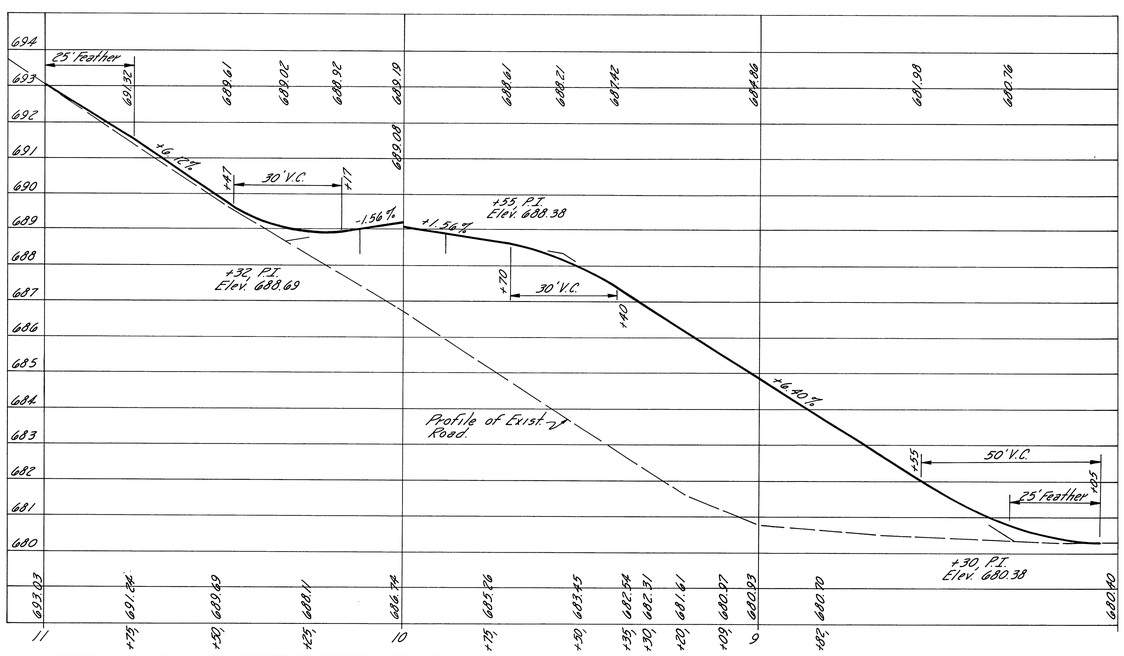
INTERSECTION - 4-P

Sta. 686+15.39 on S.R. 15 & 18
Scale = 0 5 10 20 Feet



ESTIMATED QUANTITIES

Item	Description	Lt. Appr.	Rt. Appr.	Total	Unit
E-1	Compacted Subgrade	255	520	775	Sq. Yds.
T-30	Bituminous Prime Coat	107	200	307	Gals.
T-35	1½" Asphaltic Conc. Surface Course	10.6	17.8	28.4	Cu. Yds.
B-35	1¼" Asphaltic Conc. Leveling Course	9.0	17.1	26.1	Cu. Yds.
B-19	8" Aggregate Base Course	60	110	170	Cu. Yds.
T-30	Bituminous Tack Coat	4	5	9	Gals.



C02S4026

INTERSECTION NO. 4-P

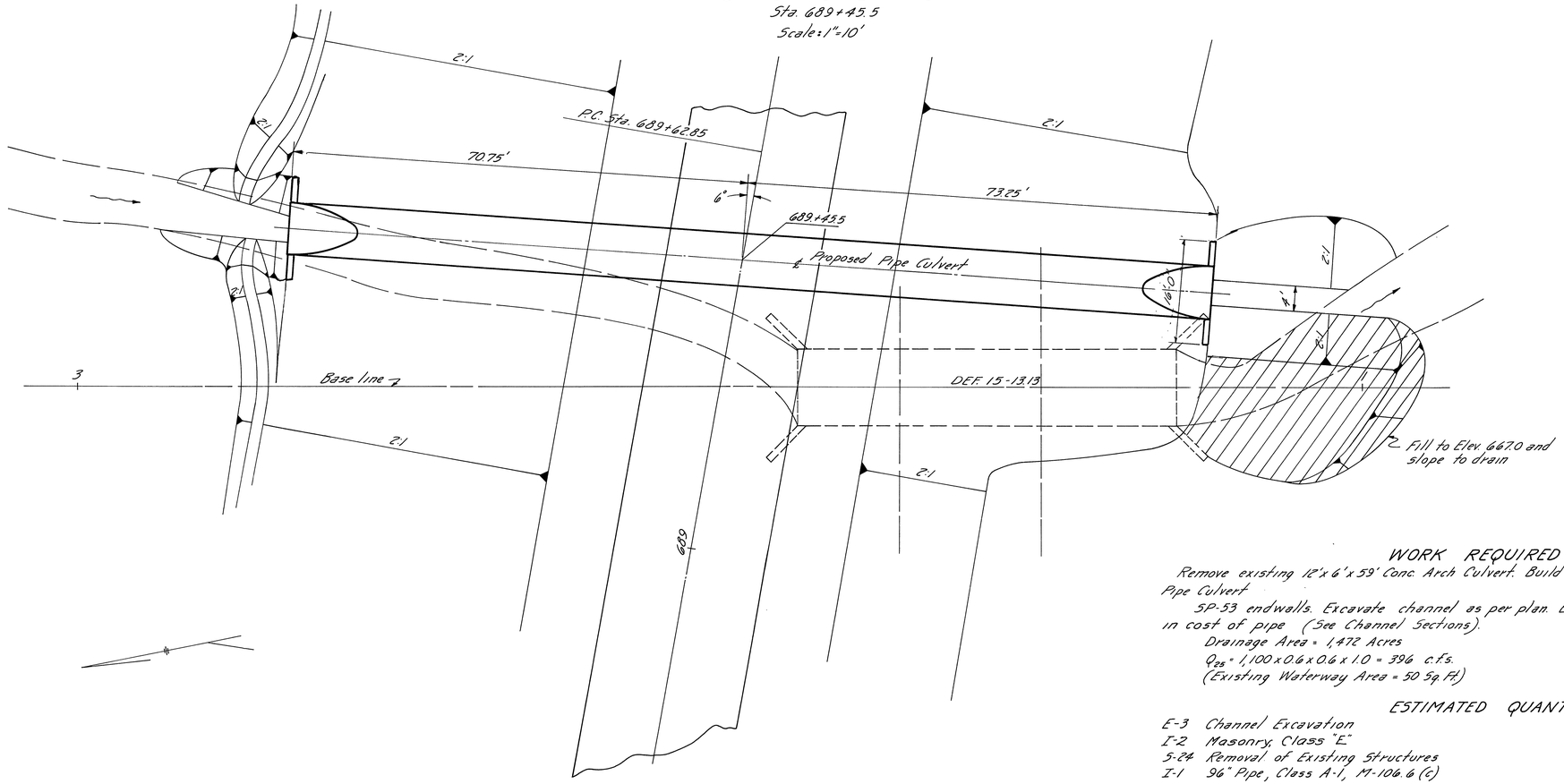
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	F-649(4)	

27
34

DEFIANCE COUNTY
DEF.-15-12.57

STRUCTURE - 1-C

Sta. 689+43.5
Scale: 1" = 10'



WORK REQUIRED

Remove existing 12'x 6'x 59' Conc. Arch Culvert. Build 96"x 144' Reinforced Concrete Pipe Culvert

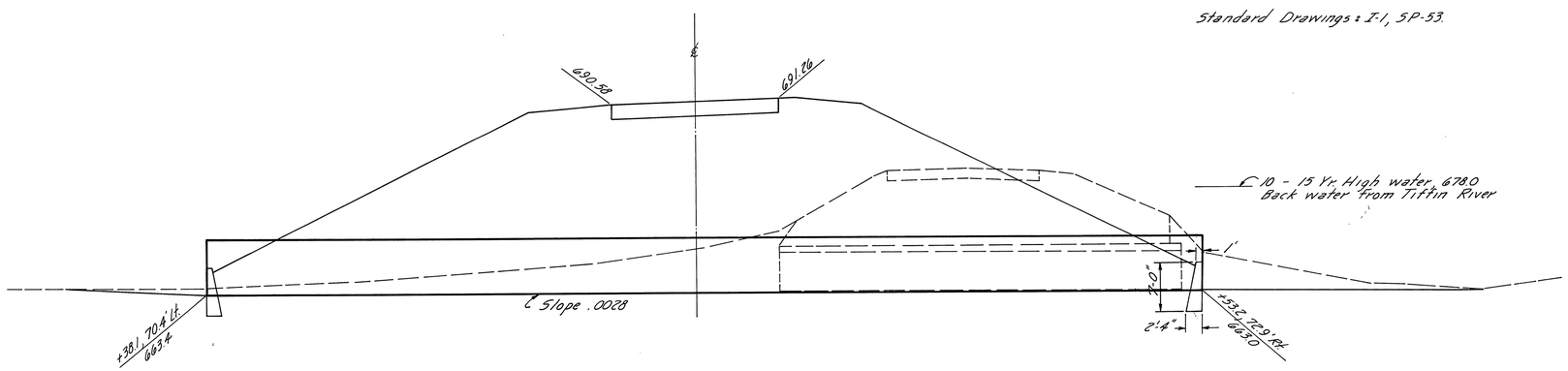
SP-53 endwalls. Excavate channel as per plan. Excavation for Pipe included in cost of pipe (See Channel Sections).

Drainage Area = 1,472 Acres
Q_{25} = 1,100 x 0.6 x 0.6 x 1.0 = 396 c.f.s.
(Existing Waterway Area = 50 Sq. Ft.)

ESTIMATED QUANTITIES

E-3	Channel Excavation	51	Cu. Yds.
I-2	Masonry, Class "E"	10.4	Cu. Yds.
S-24	Removal of Existing Structures		Lump
I-1	96" Pipe, Class A-1, M-106.6 (c)	144	Lin. Ft.

Standard Drawings: I-1, SP-53.



C025401 27

F-649 (4)

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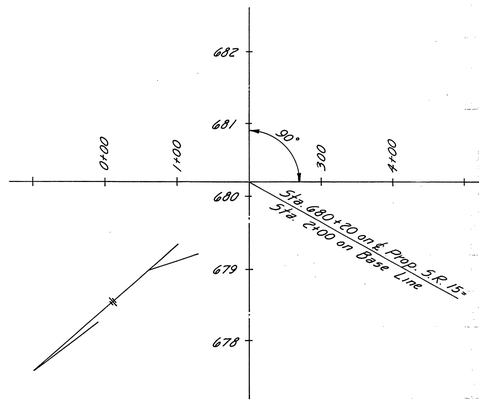
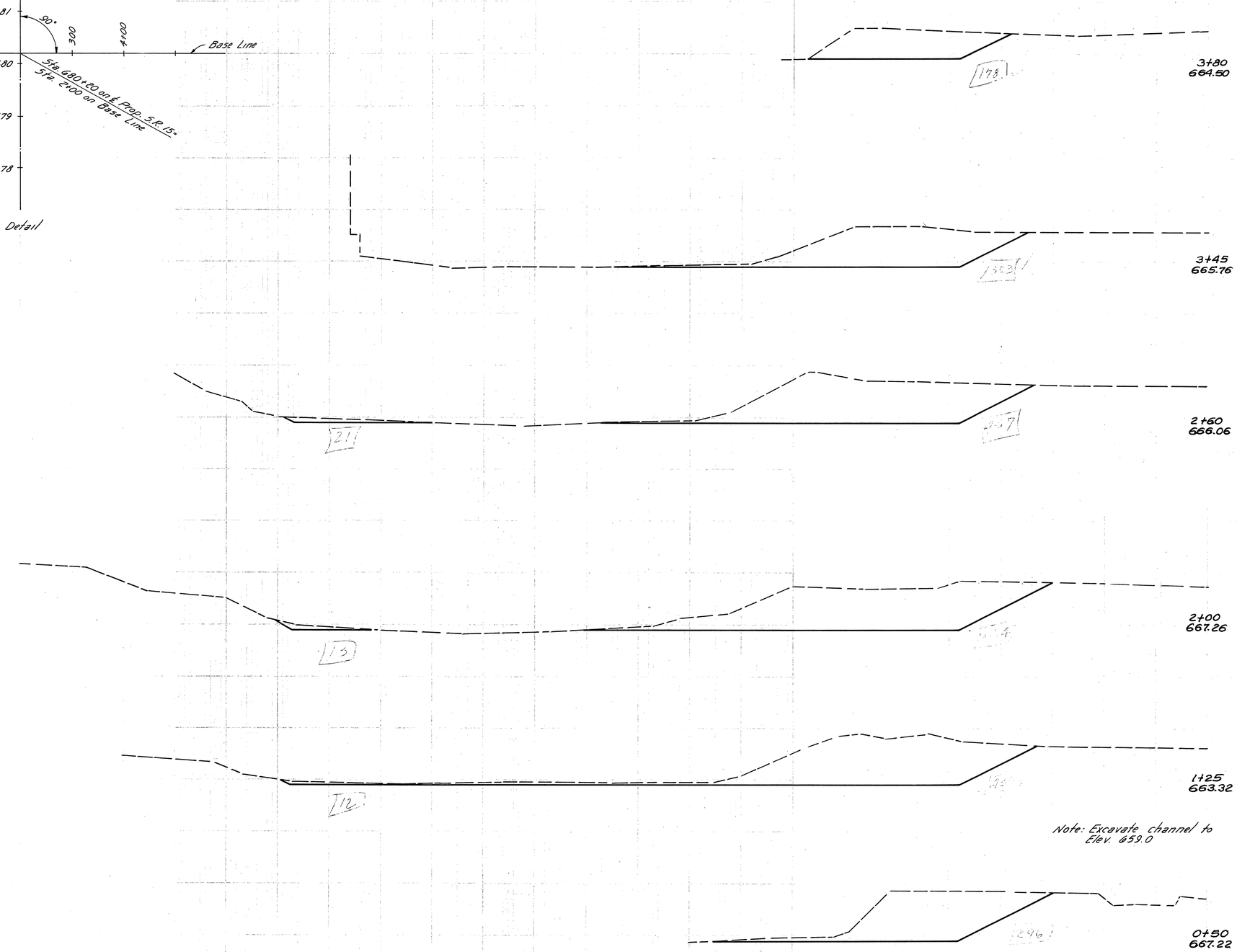
34

DEFIANCE COUNTY
DEF.-15- 12.57

SEEDING	
WIDE	SQ.YD.



Alignment Detail



Note: Excavate channel to Elev. 659.0

5,134 Cu. Yd. Est. 70% usable for Emb.
5,134 x 70% = 3,594 Cu. Yd.

	END AREA		CU. YD.	
	CUT	FILL	CUT	FILL
4+00	0	0		
	178	0	66	0
	303	0	312	0
	428	0	1,151	0
	407	0	1,016	0
	442	0	1,290	0
	296	0	1,025	0
0+00	0	0	274	0
Total			5,134	0

Sheet total

C025402%

CHANNEL SECTIONS, BR. NO. DEF 15-12.95 STA. 0+50 to STA. 3+80.

F-649(4)

DEFIANCE COUNTY
DEF-15-12.57

	END AREA CUT	END AREA FILL	CU.YD CUT	CU.YD FILL
	0	0	0	0
2+86	25	0	8	0
Ahead	15	0	10	0
2+68 Back				
	15	0	29	0
	30	0	30	0
	59	0	30	0
	119	0	268	0
	126	0	16	0
	42	0	10	7
Ahead	67	46		
1+24 Back	67	46	30	32
	14	40	3	7
0+00 Total	0	0	434	46
Total E-3 Channel Excav.			51	
Total Excav. for Pipe			383	

434-46 = 388 Cu. Yd.
25% 80% usable for Emb.
388 x 80% = 310 Cu. Yd.

SEEDING	
WIDE S&Y.O.	

CHANNEL SECTIONS STRUCTURE NO. 1-C

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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DEFIANCE COUNTY
DEF-15-12.57

At Brunersburg

FIRST BRIDGE UPSTREAM
Over Tiffin River 0.57 Mi. Stever Rd # 153
Type - High Steel Truss
Span - 130'
Waterway Area 2225 Sq.Ft.

EXISTING BRIDGE
Over Tiffin River 0.03 Mi.
Type - Concrete Arch
Span - 58'-61.5'-58'
Waterway Area 3753 Sq.Ft.
Roadway ~22'-0"

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Curve Data
P.I. Sta. 672+55.29
Δ = 47° 41' Rt.
Dc = 4°
Ls = 300'
Rc = 1432.39
Ts = 764.12'
Lc = 892.08'
Es = 136.50'

Tack in Hub
35'
℄
35'
Tack in Hub
P.O.T. Sta. 680+00
Elev. 666.91

Tack in Hub
35'
℄
35'
Tack in Hub
P.O.T. Sta. 683+00
Elev. 671.99

End Appr. Slab
STA. 680+21.25

Begin Appr. Slab
STA. 682+46.75

3'-0" Limit of Protection (typ.)

El. 659.0 ±

S 41°-15' E

ST. Sta. 679+63.25

B.M. No. 7 Spike in 12" Elm 100' Right Sta. 682+90 El. 674.55

Clears assumed 20 yr. highwater elevation 2.7' ±

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division office.

Drainage Area 798 Sq.Mi.

BRIDGE LIMITS

Rt. Edge Lt. Edge

Assumed 50 yr. H.W. El. 683.0
Assumed 20 yr. H.W. El. 680.0

Highest-Known-Water El. 686.0 (1913) (backwater)
10-15 Yr. Hi. Water El. 678.0
Top of Slope El. 680.7 ±
Ftg. El. 674.60
Top of Slope El. 681.8 ±
Ftg. El. 675.70
Excavate channel thru structure to El. 659.0 ±
Normal Water El. 662.3
Ftg. El. 654.00
El. 653.00
All piles 10BP42
Estimated Avg. Pay Length: 20' (Both Abutments)

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinforced concrete deck and substructure
SPANS: 68'-95'-68' c/c brgs.
ROADWAY: 30'-0" f/f 2'-3" safety curbs
LOAD FREQUENCY: CF = 400 (57)
SKEW: None
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54, 25' long
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. DEF-15-1295
OVER TIFFIN RIVER
DEFIANCE CO. SR-15

STA. 680+21.25
682+46.75

SCALE 1" = 20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	D.H.S.	D.H.S.	J.H.B.	P.E.L.

BFG 10-31-62

C025-1030

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

31/34

DEFIANCE COUNTY
DEF-15-12.57

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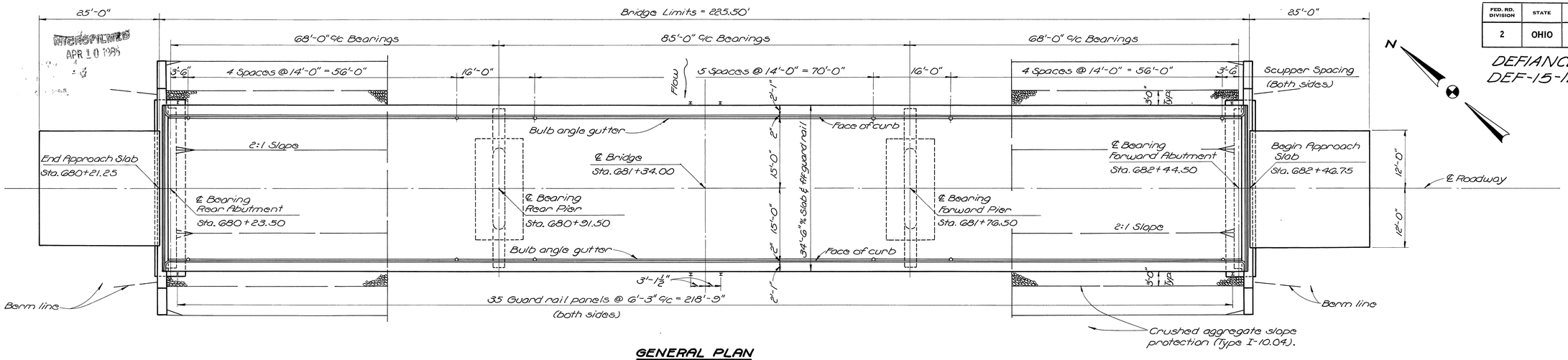
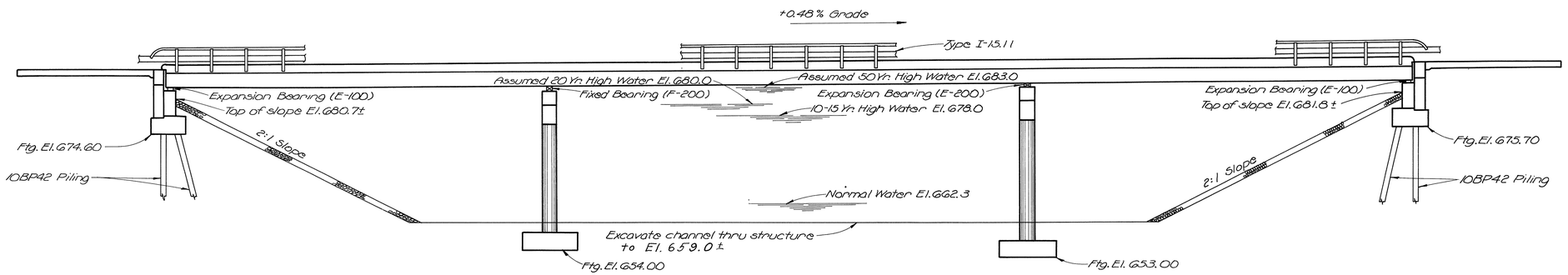


GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superst.	Abuts	Piers	Gen'l		
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump		
E-2	291	Cu. Yds.	Unclassified excavation (including rock and shale)		178	113			
E-3	5134	Cu. Yds.	Channel excavation				5134		
S-1	229	Cu. Yds.	Class "C" concrete, superstructure	229					
S-1	96	Cu. Yds.	Class "C" concrete, piers above footings			96			
S-1	130	Cu. Yds.	Class "E" concrete, abutments		130				
S-1	39	Cu. Yds.	Class "E" concrete, pier footings			39			
S-4	80,505	Lbs.	Reinforcing steel	59,866	7,320	13,319			
S-7	267,233	Lbs.	Structural steel	267,233					
S-8	267,233	Lbs.	Field painting of structural steel	267,233					
S-14	451.00	Lin. Ft.	Railing (Type I-15.11 with handrail and galvanized	451.00					
			steel posts and bolts).						
S-16	Lump	Sum	First test pile				Lump		
S-18	320	Lin. Ft.	Steel piles, 10BP42		320				
S-29	31	Cu. Yds.	Porous backfill		31				
S-29	32	Each	Scuppers (including supports)	32					
I-10	452	Sq. Yds.	Crushed aggregate slope protection		452				
S-101	229	Each	Water-reducing, set-retarding admixture	229					

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-2-56, sheets 1, 2, 3 and 6, revised 2-2-59 and to Standard Drawing FSB-1-62, revised 1-15-63 and to Supplemental Specification S-101, dated 7-12-62.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

PILES shall be driven with a hammer of not less than 11,000 ft. lb. per blow to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

51 tons per pile using an 11,000 ft. lb. hammer
46 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 3.5 tons per sq. ft.

BEAM WEB WELDS: Butt welds in webs of beams may have convex reinforcement in accordance with Sect. S-7.22. Finishing flush by grinding is not required.

CONTINUOUS BEAM SPLICES: If beams having depths differing by more than ⅛" are to be spliced by butt welding, the depth of the smaller-depth beam shall be increased by splitting the web longitudinally at a distance of 1½" below the bottom of the top flange and for a distance sufficient to allow the flange to be bent up at a slope of not more than ⅜" per foot, after which the split in the web shall be completely welded with full depth penetration and ground flush.

SHOP PAINTING STEEL: The surface preparation of all steel, requiring shop painting as per the Plans and Specifications, shall be accomplished by blast cleaning or power-tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

SHEET LEAD shall conform to the requirements of ASTM Designation B 29 without restriction to the Common Desilverized type.

DECK SLAB HAUNCH: The haunch in the deck slab adjacent to the top of steel beams, which is 9" wide, may vary from this dimension between the limits of 6" and 12" except that the maximum slope shall not exceed 3" per foot. Payment for deck slab concrete shall be based on the 9" width.

SLAB THICKNESS is 8¼" which includes 1" for monolithic wearing surface.

CLEARANCE OF REINFORCING STEEL from top surface of concrete deck is 2", which includes 1" for monolithic wearing surface.

MACHINE FINISH: At the Contractor's option, the concrete deck may be finished by the use of a finishing machine.

SURFACE FINISH OF CONCRETE: The requirements of Sec. S-1.22, Rubbed Finish, shall apply to the superstructure fascia and curb faces only.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN, ELEVATION NOTES & ESTIMATED QUANTITIES

BRIDGE NO. DEF-15-1295
OVER TIFFIN RIVER

DEFIANCE COUNTY — STA. 680+21.25 — 682+46.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIS
OPM	OPM	MKH	FFE	BFG	10-31-62	

C02541031

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APR 10 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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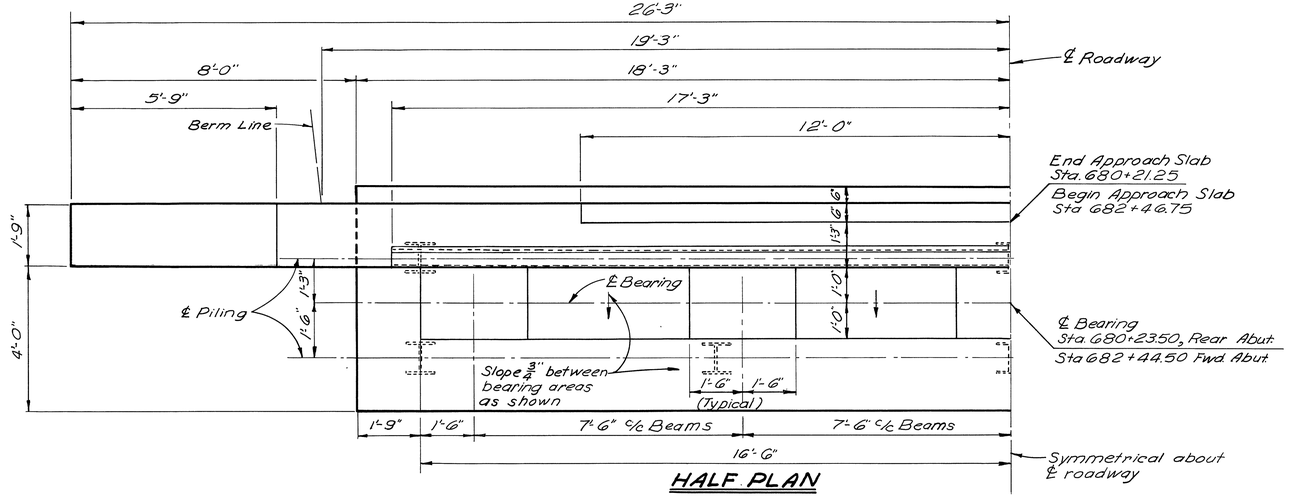
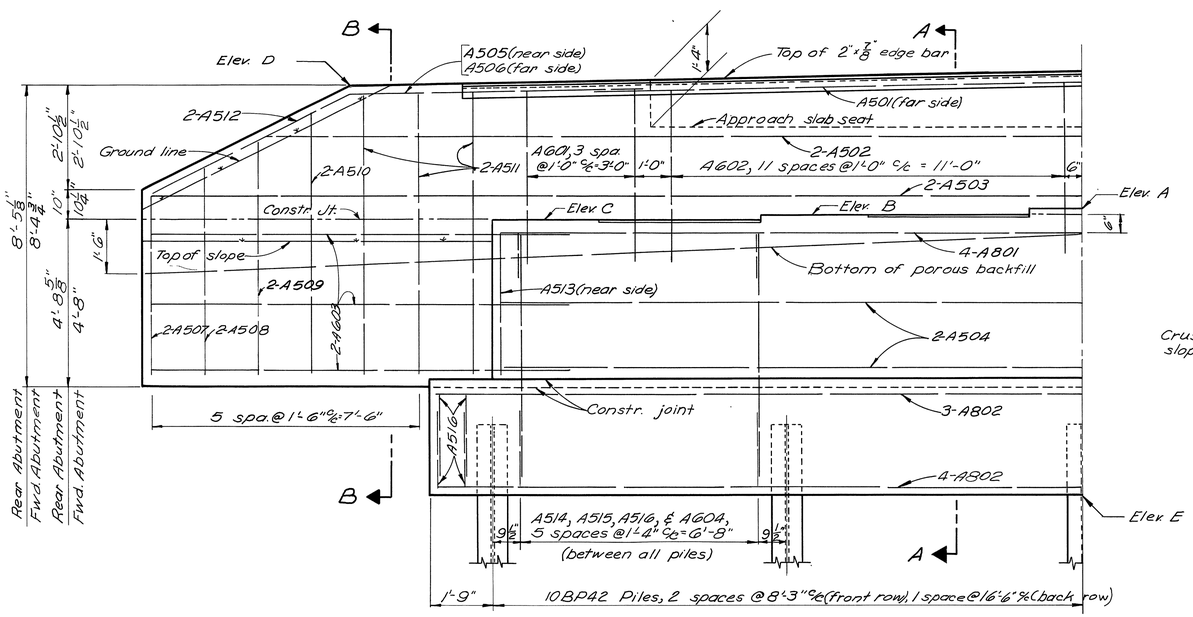
DEFIANCE COUNTY
DEF-15-12.57

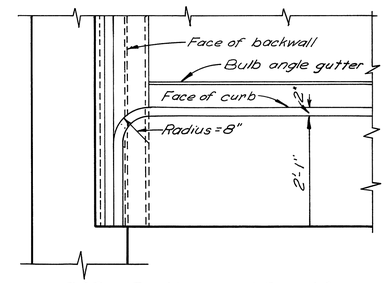


HALF PLAN

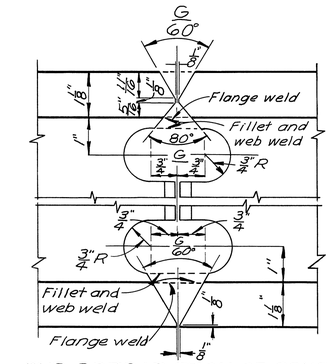


HALF ELEVATION

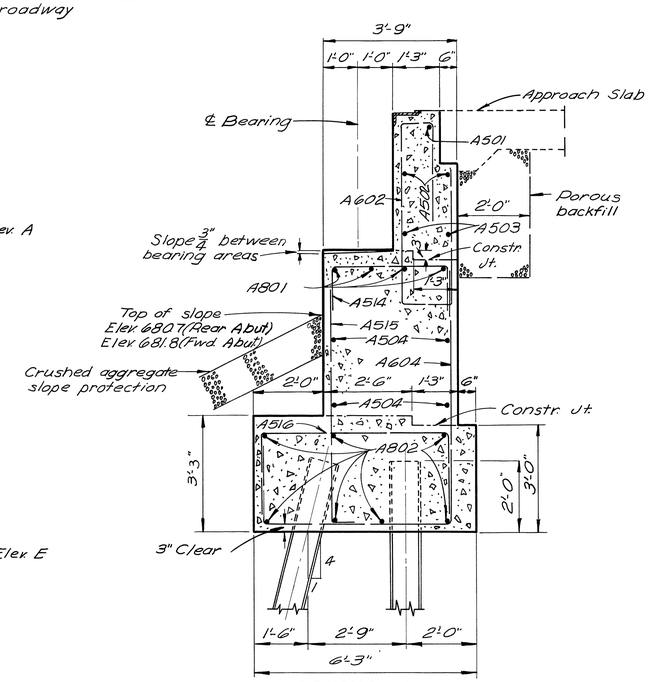
ABUTMENT ELEVATIONS					
POINT	A	B	C	D	E
Rear Abut.	682.54	682.42	682.32	686.03	674.60
Fwd. Abut.	683.60	683.48	683.37	687.10	675.70



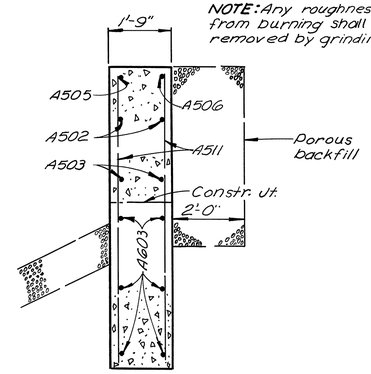
PART PLAN AT ABUTMENT SHOWING CURB TREATMENT



END PREPARATION OF 33WF200 ROLLED BEAMS FOR FIELD WELDING



SECTION A-A



SECTION B-B

NOTE: Any roughness from burning shall be removed by grinding.

NOTE: Beam sizes shall be 33 WF 200 in all spans. Moment plate size shall be:
Top Plate 14" x 1/2 x 20'-6"
Bottom Plate 17" x 11/16" x 20'-6"

DEFLECTION AND CAMBER		
LOCATION	ALL BEAMS END SPANS	ALL BEAMS CENTER SPAN
Deflection due to weight of steel	1/8"	5/32"
Deflection due to remaining dead load	7/16"	19/32"
Total dead load deflections	9/16"	3/4"
Required camber	0"	0"

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and piles driven.

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS & MISCELLANEOUS SUPERSTRUCTURE DETAILS

BRIDGE NO. DEF-15-1295
OVER TIFFIN RIVER

DEFIANCE COUNTY STA. 680+21.25 / 682+46.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM	OPM	CAM.	FFE	BFG	10-31-62	

C0254032

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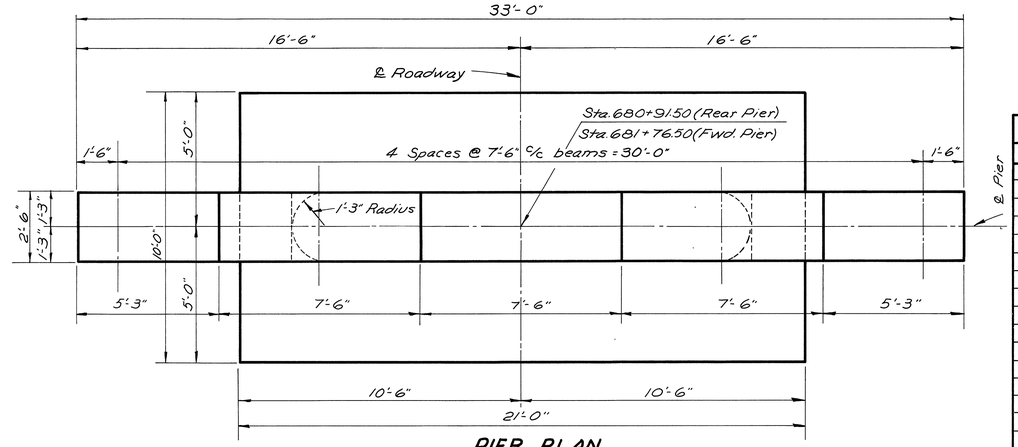
APR 20 1995

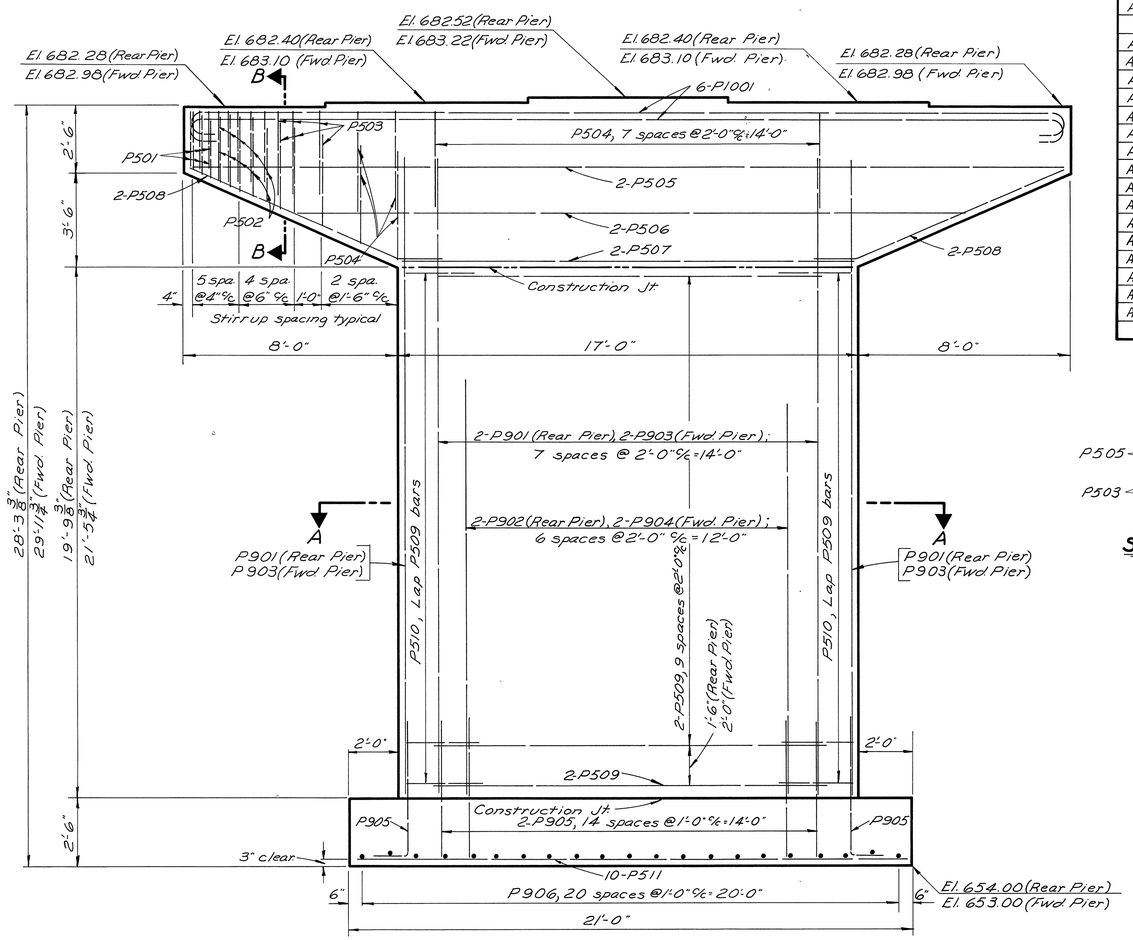
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

33/34

DEFIANCE COUNTY
DEF-15-12.57



PIER PLAN

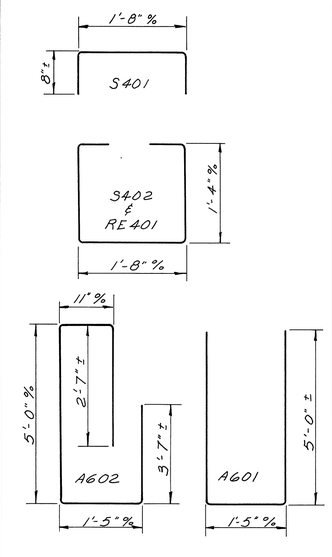


ELEVATION

REINFORCING STEEL LIST

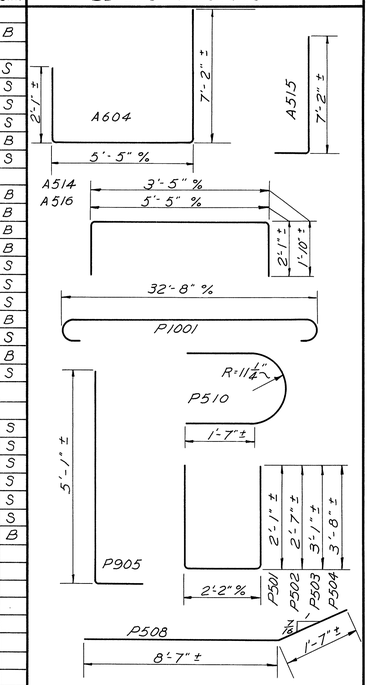
Mark	No.	Length	Weight	Shp
Superstructure				
S701	297	34'-2"	20,742	S
S601	297	34'-2"	15,242	S
S602	342	38'-9"	19,905	S
S603	48	34'-0"	2,451	S
S401	298	2'-9"	547	B
S402	298	4'-11"	979	B
Abutments				
A801	8	32'-8"	698	S
A802	14	36'-2"	1352	S
A601	16	11'-1"	266	B
A602	48	12'-10"	925	B
A603	24	11'-8"	421	S
A604	48	14'-4"	1033	B
A501	2	27'-2"	57	S
A502	8	23'-8"	197	S
A503	8	26'-11"	225	S
A504	8	32'-8"	273	S
A505	4	3'-0"	13	S
A506	4	8'-2"	34	S
A507	8	5'-1"	42	S
A508	8	5'-10"	49	S
A509	8	6'-7"	55	S
A510	8	7'-4"	61	S
A511	24	8'-0"	200	S
A512	8	6'-3"	52	S
A513	4	4'-3"	18	S
A514	48	6'-10"	342	B
A515	48	7'-8"	384	B
A516	64	9'-4"	623	B

Bending Diagrams

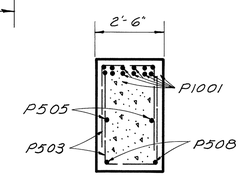


Mark	No.	Length	Weight	Shp
Piers				
P1001	24	35'-6"	3,666	B
P901	18	23'-9"	1,454	S
P902	14	11'-10"	563	S
P903	18	25'-5"	1,556	S
P904	14	13'-6"	643	S
P905	64	6'-1"	1324	B
P906	42	9'-8"	1380	S
P501	24	6'-1"	152	B
P502	40	7'-1"	296	B
P503	24	8'-1"	202	B
P504	32	9'-3"	309	B
P505	4	32'-8"	136	S
P506	4	24'-10"	104	S
P507	4	16'-10"	70	S
P508	8	10'-2"	85	B
P509	44	14'-6"	665	S
P510	44	6'-2"	283	B
P511	20	20'-8"	431	S
Replacement Bars				
RE1001	1	7'-2"	——	S
RE901	1	6'-10"	——	S
RE801	1	6'-6"	——	S
RE701	2	6'-2"	——	S
RE601	3	5'-11"	——	S
RE501	1	5'-7"	——	S
RE401	1	4'-11"	——	B

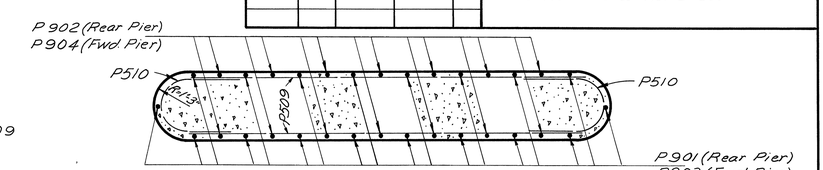
Bending Diagrams



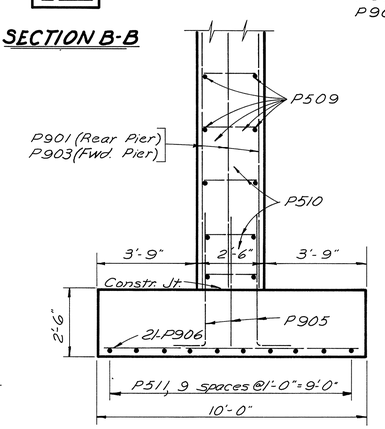
BAR SIZE for reinforcing steel is indicated in the bar mark. The first digit indicates the bar size number. For example, P1001 is a No. 10 bar and A601 is a No. 6 bar.



SECTION B-B



SECTION A-A



PARTIAL END VIEW OF PIER

CONCRETE shall be Class "C" for pier walls and Class "E" for pier footings.

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS AND REINFORCING STEEL LIST

BRIDGE No. DEF-15-1295
OVER TIFFIN RIVER
DEFIANCE COUNTY — STA. 680+21.25 / 682+46.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM	OPM	JLK	FFE	BFG	10-31-62	

C0254033

MICROFILMED
APR 10 1985

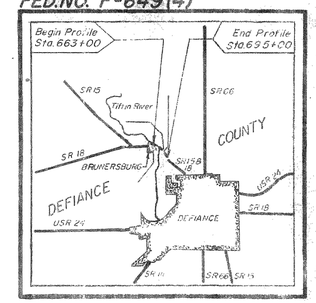
SOIL PROFILE
DEFIANCE COUNTY
DEF-15-12.57

OHIO STATE HIGHWAY TESTING LABORATORY
COLUMBUS, OHIO

1/2

NOTE. INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

FED.NO. F-649(4)



LOCATION MAP

Recon - R.L.H. - 4/3/62

Drilling - Auger - C.M.C. - 5/15/62 to 5/16/62

Drafting - W.H.W. - 6/13/62

GENERAL INFORMATION

INTRODUCTION

This project consists of the slight alignment change, widening, and resurfacing of 0.6 mile of SR 15, beginning on SR 15, 1000 feet west of the Tiffin River, extending southeastward, and terminating 1800 feet east of the river, on SR 15.

Proposed grade indicates fill embankment, maximum 27 feet in height.

GEOLOGY OF THE PROJECT

The alignment traverses the valley of the Tiffin River, and crosses the Tiffin River, where moderately deep lacustrine deposits and glacial drift, overlie shale bedrock of Devonian age.

EXPLORATION

Exploratory borings were made by means of truck-mounted mechanical earth auger and hand auger (in areas of difficult access), on May 22, 1962. Included in this report is the log of a drive sample-core boring, made in conjunction with the bridge foundation investigation.

INVESTIGATIONAL DISCLOSURES

Materials immediately below grade consist of sandy silts, silt clays, and clays, in the A-4a, A-6a, and A-7-6 classifications, having moisture contents in the lower portion of the plastic range. Wet materials were encountered at station 603+00.

Soils in the embankment foundation areas consist predominantly of sandy silts and silt clays, in the A-4a and A-6a classifications, generally having moisture contents in the lower portion of the plastic range, except at stations 670+00 and 670+50, where wet materials were encountered.

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 35 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Gravel	A-1-a(0)	A-1-a	72	13	7	- 8 -		NP	NP	10	1
Fine sand	A-3(0)	A-3	8	25	57	4	6	NP	NP	21	1
Coarse and fine sand	----	A-3a	25	10	31	15	19	NP	NP	19	1
Sandy silt	A-4(4)	A-4a	11	4	30	31	24	22	3	17	13
Silt	A-4(8)	A-4b	0	5	12	60	23	25	10	17	1
Silt and clay	A-6(8)	A-6a	15	5	13	29	38	30	13	16	13
Silty clay	A-6(10)	A-6b	17	2	10	21	50	34	17	17	2
Clay	A-7-6(19)	A-7-6	0	4	7	35	54	53	32	21	3

Various other materials Shale Visual classification

Auger boring plotted to vertical scale only.

Water content nearly equal to or greater than liquid limit.

Indicates a non-plastic material with high water content.

W Free water.

NOTE: Figures beside borings indicate water content in percent. e.g. 15

Drive sample - core boring plotted to vertical scale only.

Auger boring - plan view.

Drive sample - core boring - plan view.

Sod and/or Topsoil = X' = Approximate depth.

Berm material.

Number of blows for "Standard Penetration" test.
X = number of blows for the first 6 inches.
Y = number of blows for the second 6 inches.

SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
*Denotes sample taken at or near grade.

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% N.C.	SHTL CLASS.
603+00	12'Rt	0.5-5.0	0	3	55	22	20	NP	NP	20	A-4a*
		5.0-7.0	0	4	5	33	59	43	25	25	A-7-6
		7.0-10.0	8	25	57	4	6	NP	NP	21	A-3
		10.0-12.0	0	5	12	60	23	25	10	17	A-4b
660+00	CL	0.5-5.0	27	3	33	23	24	NP	NP	21	A-4a*
		5.0-8.0	25	10	31	15	19	NP	NP	19	A-3a
		8.0-10.0	16	6	12	20	36	30	13	14	A-6a
670+00	CL	0.5-2.5	0	0	34	40	26	NP	NP	20	A-4a
		2.5-7.0	16	5	14	19	46	30	13	16	A-6a
		7.0-12.0	29	5	11	30	20	25	11	10	A-6a
670+00	CL	0.5-3.0	19	0	17	36	28	NP	NP	17	A-4a
		3.0-7.0	6	2	39	26	28	NP	NP	18	A-4a
		7.0-9.5	0	2	45	38	15	NP	NP	18	A-4a
		9.5-15.0	27	5	13	37	18	22	7	13	A-4a
670+00	CL	0.5-5.0	0	0	43	16	30	NP	NP	22	A-4a
		5.0-10.5	0	3	45	33	19	NP	NP	24	A-4a
		10.5-13.0	21	10	18	36	15	20	9	9	A-4a
670+50	CL	0.5-5.0	0	1	28	37	34	31	11	23	A-6a
		5.0-9.0	0	1	29	33	37	30	11	31	A-6a
		9.0-11.0	72	13	7	- 8 -		NP	NP	18	A-1-a
		11.0-11.5	19	12	3	34	32	32	13	12	A-6a
603+00	CL	0.5-5.0	6	6	31	35	34	27	8	19	A-4a
		5.0-10.0	0	15	33	33	29	21	8	17	A-4a
		10.0-15.0	50	5	8	19	18	18	5	8	A-1a
609+00	CL	0.5-5.0	17	4	10	20	49	33	14	14	A-6a*
		5.0-10.0	20	5	13	25	37	32	14	12	A-6a
		10.0-15.0	25	1	11	27	36	31	15	12	A-6a
620+00	CL	0.5-3.0	20	0	7	14	59	38	16	19	A-6b
		3.0-5.0	19	8	14	20	39	28	15	22	A-6a
631+00	CL	0.5-3.0	13	7	13	17	50	31	14	20	A-6a
		3.0-5.0	11	5	15	16	53	27	13	15	A-6a
		5.0-10.0	15	4	12	29	40	31	17	14	A-6b
		10.0-15.0	10	0	9	31	42	29	13	13	A-6a
698+00	CL	0.5-6.0	0	1	3	45	51	50	37	27	A-7-6*
		6.0-10.0	0	8	14	25	53	48	33	30	A-7-6

DRIVE SAMPLE SOIL TEST DATA

602+55	15'Lt	2.5-3.5	0	1	21	51	27	38	6	19	A-4a
		5.0-6.0	0	1	23	45	30	31	13	23	A-6a
		7.5-8.5	27	2	13	31	27	30	14	25	A-6a
		10.0-10.5	27	12	22	26	13	NP	NP	9	A-4a

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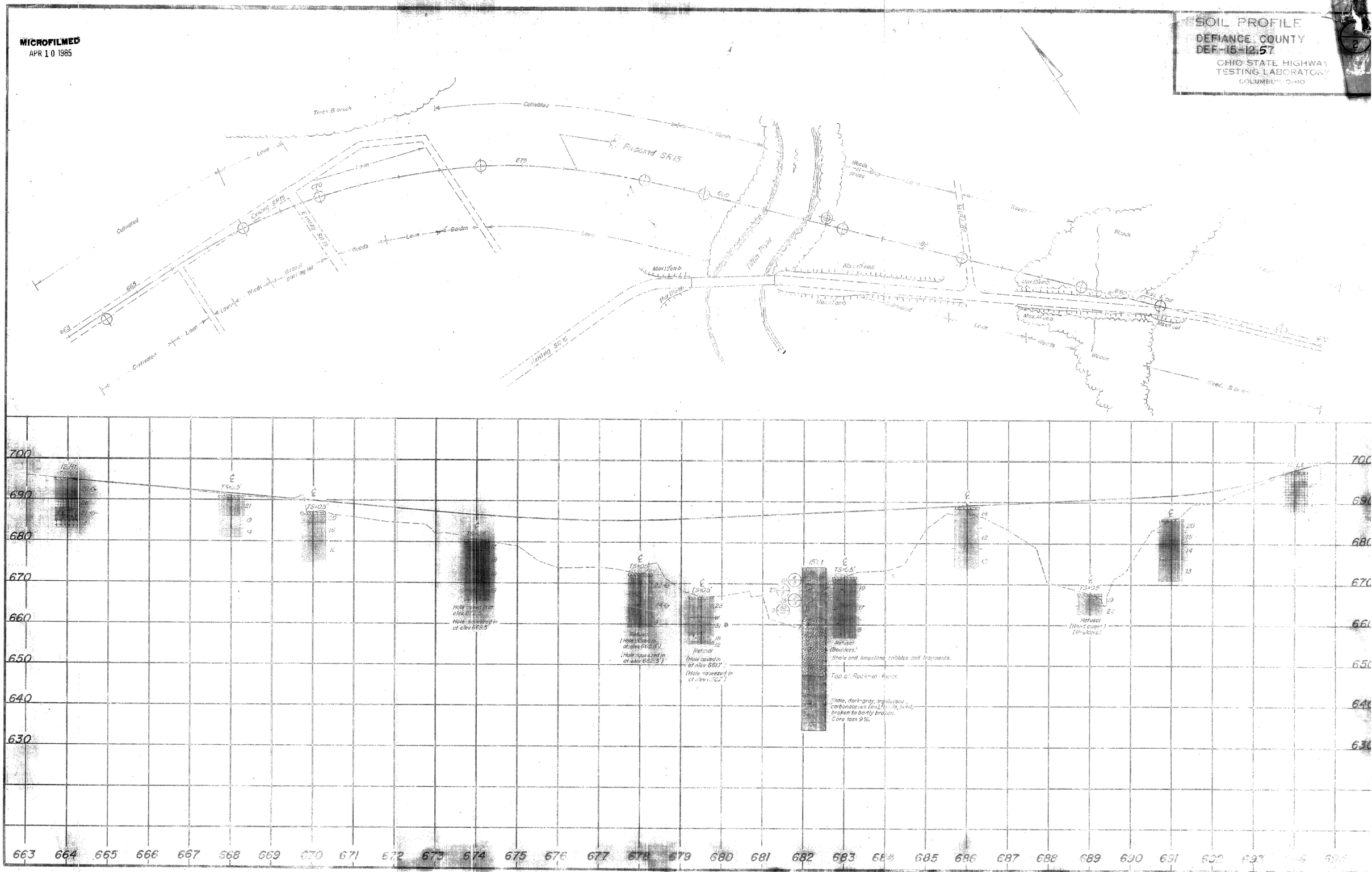
SOIL PROFILE
DEFIANCE COUNTY
DEF-15-12.57
OHIO STATE HIGHWAY
TESTING LABORATORY
COLUMBUS, OHIO



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