FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1/136

BUTLER COUNTY
BUT-4-(22.97-23.22)

33
33BLACK
1-100

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUT.-4-(22.97-23.22)
BUTLER COUNTY
LEMON & MADISON TOWNSHIPS
CITY OF MIDDLETOWN

LIMITED ACCESS

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

~ CONVENTIONAL SIGNS ~

County Line
Township Line
City or Village Line
Property Line (Fence)
Property Line (No Fence)
Center Line
Pole Line
Railroad
Trees or Stumps to remain
Trees or Stumps to be removed
Manholes, adjusted to grade
Guard Rail
Drain or Utility Pipes

Guy ℄, Telegh. or Teleph. ℄ Power ℄, Light ℄.

New Old
New Old

~ INDEX OF SHEETS ~

Title Sheet	Sheet 1
Typical Section	Sheet 2
General Notes	Sheet 3&4
Summaries	Sheet 4-9
Alignment Sheets	Sheet 10-19
Underground Plans	Sheet 20-24
Sewer and Headwall Details	Sheet 25-27
Cross Sections	Sheet 28-69
Approaches and Pavement Details	Sheet 70-90
Superelevation Table and Appr. Slabs	Sheet 91
Wall, Median and Curb Transition	Sheet 92
Retaining Wall Detail	Sheet 93-95
Underpass Detail	Sheet 96-98
Structures Over 20' Span	Sheet 99-113
Channel Cross Sections	Sheet 114-125
R/W Location Plans and Monuments	Sheet 126-136
Barricades at existing bridge site	Sheet 113A

~ LINE DATA ~

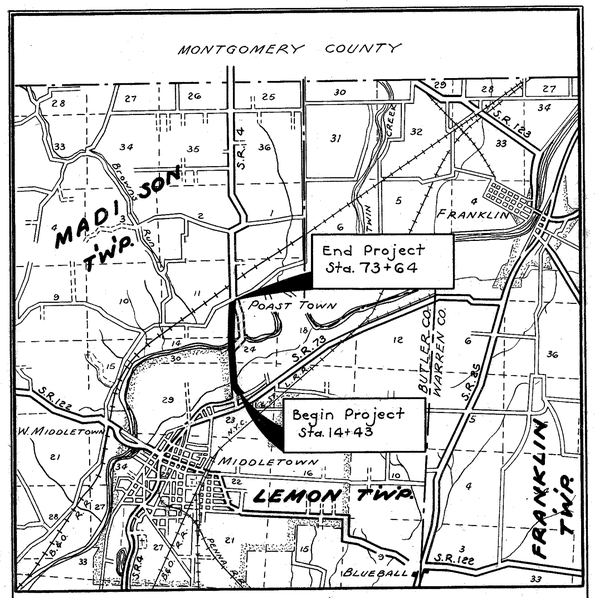
~ PROJECT LENGTH ~

Net Length of Municipal Project	800.86 Lin. Ft. or 0.151 Miles
Net Length of Rural Project	6435.44 Lin. Ft. or 1.218 Miles
NET LENGTH OF PROJECT (MUNICIPAL & RURAL)	7236.30 Lin. Ft. or 1.370 Miles

~ WORK LENGTH ~

Net Length of Municipal Work	993.01 Lin. Ft. or 0.188 Miles
Net Length of Rural Work	7528.41 Lin. Ft. or 1.425 Miles
NET LENGTH OF WORK (MUNICIPAL & RURAL)	8521.42 Lin. Ft. or 1.613 Miles

For Details of Line Data, See Sheet No 10



Delivery Point ——— B. & O. R.R. Siding, Middletown, Ohio
Average Haul ——— 2 Miles

~ LOCATION PLAN ~

0 1/2 1 2 3 4
Scale in Miles

Portion to be Improved
State Highways
Other Roads

~ SCALES ~

Plan	1" = 20' & 50'
Profile-Horiz.	1" = 20' & 50'
Profile-Vert.	1" = 5'
Cross Section	1" = 5'

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 of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: J. Clapton
Date: 5-2-55 — Division Deputy Director.

Approved: John J. Keverey
Date: 6-7-55 — Deputy Director of Planning and Programming.

Approved: Richard Orth
Date: 5-24-55 — Engineer of Bridges.

Approved:
Date: 5-25-55 — Engineer of Location and Design.

Approved: I T Gerard
Date: 5-25-55 — Deputy Director of Design and Construction.

Approved: P. P. Pellacchia
Date: 6-7-55 — First Assistant Director.

Approved: L. O. Linzell
Date: 6-7-55 — Director of Highways.

CONSTRUCTION BUREAU
FEB 29 1960
GROUND PHOTOLAB

APPROVED J. C. Schuster
DATE 5-19-55 ENGINEER OF TRAFFIC

Supplemental Specifications	
B-113	Rev. 12-1-54
L-209.12	7-17-54
M-106.6(d)	11-30-54
M-110.27	9-9-52

Supplemental Prints of Standard Construction Drawings					
T-35	10-1-52	I-8 C.B. No 3	5-1-52	I-15 No 1	12-1-54
RI-1	1-3-55	I-8 C.B. No 3-A	5-1-52	I-15 No 2	12-1-54
L-1	4-1-50	I-8 C.B. No 6	5-1-52	I-21-23	12-1-54
L-3	4-1-50	I-8 C.B. No 7	5-1-52	G-7.07	1-2-53
L-3-A	4-1-50	I-8 C.B. No 9-A	5-1-52	AS-1-54	12-1-54
DR-1	1-3-55	I-8 I. No 2	12-1-54	A-2-54	12-1-54
I-8 M.H. No 1-A	1-3-55	I-8 M.H. No 1	5-1-52	P-1-54	12-1-54
I-1,2,3 & 5	2-20-45	I-8 M.H. No 2	5-1-52	RB-1-47	7-27-49
I-8 C.B. 2-2-A & B	5-1-52	I-12	7-1-54	LBC-45 Sh. 182	9-18-47

File No
Butler County BUT-4-(22.97-23.22)
Date of Letting
Contract No

TYPICAL SECTIONS

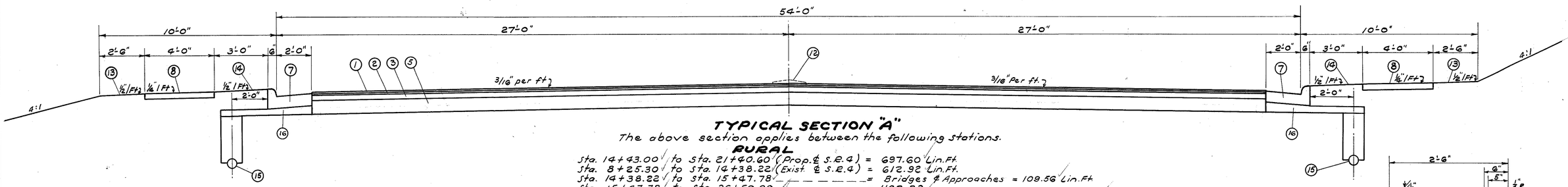
TYPE T-35 ON B-119

SCALE: 3/8" = 1'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2 / 136

BUTLER COUNTY
BUT. 4 (22.97-23.22)



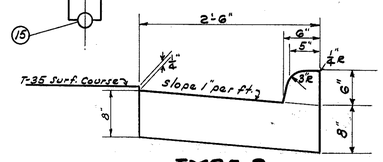
TYPICAL SECTION "A"

The above section applies between the following Stations.

RURAL

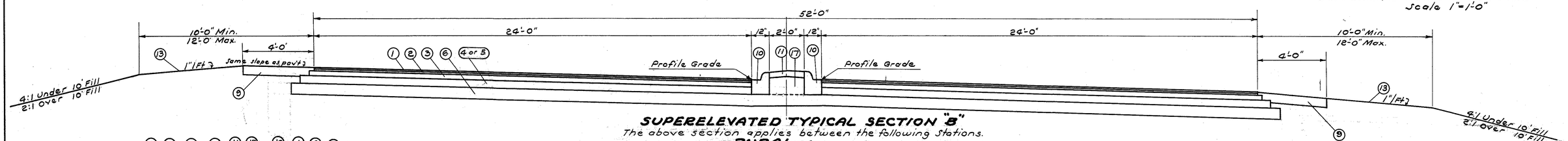
Sta. 14+43.00	to Sta. 21+40.60 (Prop. ℄ S.E.4)	= 697.60	Lin.Ft.
Sta. 8+25.30	to Sta. 14+38.22 (Exist. ℄ S.E.4)	= 612.92	Lin.Ft.
Sta. 14+38.22	to Sta. 15+47.78	= Bridges & Approaches = 109.56	Lin.Ft.
Sta. 15+47.78	to Sta. 26+50.00	= 1102.22	
Sta. 26+50.00	to Sta. 27+00.00	= Flare = 50.00	Lin.Ft.
Total		= 2412.74 Lin.Ft. = 159.56	Lin.Ft.

EQUATION
Sta. 21+40.60 Back = Sta. 8+25.30 Ahead.



TYPE 2
CONCRETE CURB & GUTTER

Scale 1"=1'-0"



SUPERELEVATED TYPICAL SECTION "B"

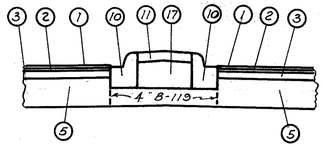
The above section applies between the following Stations.

—RURAL—

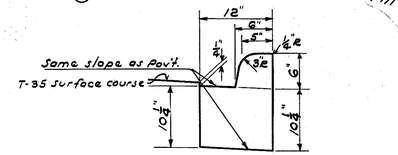
		Using: 1,2,3 & 5	Using: 1,2,3,4 & 6	
Sta. 27+00.00	to Sta. 30+27.50	327.50 Lin.Ft.		
Sta. 30+27.50	to Sta. 31+23.50	Intersection		96.00 Lin.Ft.
Sta. 31+23.50	to Sta. 32+35.99	112.49		
Sta. 58+25.00	to Sta. 70+02.50		1177.50 Lin.Ft.	
Sta. 70+02.50	to Sta. 70+97.50		Intersection	95.00 Lin.Ft.
Sta. 70+97.50	to Sta. 73+64.00		266.50 Lin.Ft.	
Total Rural		439.99 Lin.Ft.	1444.00 Lin.Ft.	191.00 Lin.Ft.

—MUNICIPAL—

Sta. 32+35.99	to Sta. 35+00.00	264.01 Lin.Ft.		
Sta. 35+00.00	to Sta. 38+13.20		313.20 Lin.Ft.	
Sta. 38+13.20	to Sta. 39+09.20		Intersection	96.00 Lin.Ft.
Sta. 39+09.20	to Sta. 40+00.00		90.80 Lin.Ft.	
Total Municipal		264.01 Lin.Ft.	404.00 Lin.Ft.	96.00 Lin.Ft.

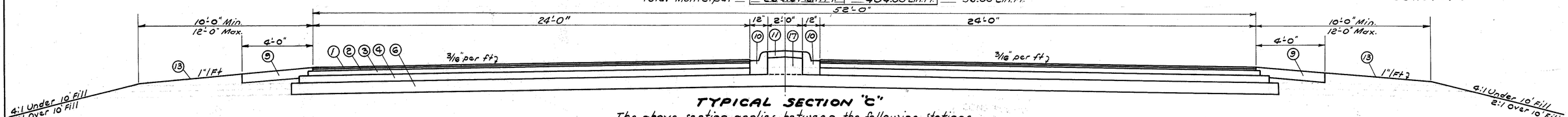


PAVEMENT DETAIL
Sta. 27+00 to Sta. 35+00 = 800. Lin.Ft.



TYPE "A"
CONCRETE CURB AND GUTTER

Scale 1"=1'-0"



TYPICAL SECTION "C"

The above section applies between the following Stations.

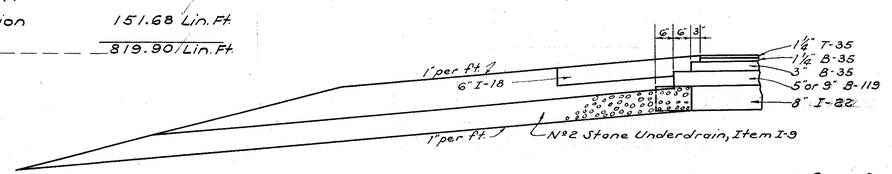
MUNICIPAL

Sta. 40+00.00	to Sta. 40+36.85	= 36.85	Lin.Ft.

RURAL

Sta. 40+36.85	to Sta. 43+98.89	= 362.04	Lin.Ft.
Sta. 43+98.89	to Sta. 50+67.11	= Bridges & Approaches = 668.22	Lin.Ft.
Sta. 50+67.11	to Sta. 56+19.46	= 552.35 Lin.Ft.	
Sta. 56+19.46	to Sta. 57+71.14	= Intersection 151.68	Lin.Ft.
Sta. 57+71.14	to Sta. 58+25.00	= 53.86	
Total Rural		= 968.25 Lin.Ft.	819.90 Lin.Ft.

(1) Item T-35 1½" Asphaltic Concrete Surface Course Type "A" (70-80)
(2) Item B-35 1½" Asphaltic Concrete Leveling Course (70-80)
(3) Item B-35 3" Asphaltic Concrete Base Course.
(4) Item B-119 5" Crushed Aggregate Base Course.
(5) Item B-119 9" Crushed Aggregate Base Course
(6) Item I-22 8" Subbase.
(7) Item I-12 Type 2" Concrete Curb & Gutter.
(8) Item I-13 4" Concrete Sidewalk.
(9) Item I-18 6" Stabilized Crushed Aggregate Shoulders and Approaches
(10) Item I-12 Type "A" Combination Curb & Gutter.
(11) Item I-21 4" Type 1 Concrete Median Pavement
(12) Item I-23 Precast white Portland Cement Concrete Traffic Dividers.
(13) Item L-9 Seeding and protecting as per plan.
(14) Item L-10 Sodding.
(15) Item I-a 6" Pipe Underdrains.
(16) Item B-119 or Porous backfill, sec. I-4.06 (cost included in price bid for I-12)
(17) Item I-22 12¾" Average Subbase



DETAIL OF STONE UNDERDRAIN (№2) AND PAVEMENT EDGE

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

3
136

BUTLER COUNTY
BUT-4 (22.97-23.22)

NOTES

ROAD NAME SIGNS:
All County, Township or Village road or Street name signs that will be disturbed by construction shall be carefully removed and stored by the Contractor at the disposal of their respective owners. Payment for this operation shall be included in the price bid for Roadway Excavation, Item E-1

DESIGN SPEED:
The geometrics for this project have been planned for a design speed of 70 miles per hour.

FIELD OFFICE:
The Contractor shall provide a suitable Field Office for the exclusive use of State Employees, in accordance with Sec. S-0.01(b), having a minimum of 400 Sq. Ft. of floor space. The Contractor shall have a telephone installed and maintained during construction of this Project.

UTILITIES:
All necessary adjustments to the existing water mains and appurtenances will be done by the Contractor and are included as a part of this contract. Within the limits of the project there are also ten sanitary manholes to be adjusted to grade and are included in the Contract. Any and all other work required to adjust Public or Private Utilities will be done by and at the expense of their respective owners.

SCHEDULE OF OPERATIONS & MAINTENANCE OF TRAFFIC:
This project shall be constructed under traffic and the contractor shall plan and conduct his operations so that two way traffic shall be maintained at all times to the satisfaction of the Director.
The existing pavement shall remain in place until after April 1, 1956 with the exception of that in the immediate vicinity of the bridge over the Middletown Hydraulic and of that in the immediate vicinity of the bridge over the Middletown Hydraulic and for necessary sewer & water trenches. Sewer and water shall be installed between the beginning of project and the Miami River with trenches being backfilled immediately and B-119 & M-10 Material applied to the surface of the trenches within the area being used by traffic.

Every effort shall be exerted to complete the proposed bridge over the Middletown Hydraulic before the winter of 1955-1956. Work on that part of the project between Sta. 35+00 and the end of the project may progress without restriction.

After April 1, 1956 enough of the existing pavement between the beginning of project and Sta. 35+00 may be removed to accomodate placing the half width of the proposed B-119 course, in whatever practical part of this length the contractor may choose, traffic being maintained on the remainder of the existing pavement and the berm area surfaced with B-119 & M-10 material. Immediately after the B-119 has been placed and compacted, traffic shall be routed over this course and the remaining half of the section may be excavated and the B-119 course placed. This process shall be repeated until the entire B-119 course has been completed in this area between the beginning of the project and Sta. 35+00.
The Contractor may follow the B-119 course with the B-35 and T-35 courses at his option, placing half width at a time and maintaining traffic on the other half of each course.

Because of the type and intensity of the traffic to be maintained on this project, Crushed Aggregate Base Course Item B-119 shall be used for temporary roadways and an estimated amount of this material and M-10 Calcium Chloride has been included in these plans for this purpose. These materials shall be applied and maintained on tempory roadways between the beginning of the project and Sta. 35+00 as directed and in the amounts requested by the Engineer. An additional amount of Crushed Aggregate Base Course Item B-119 has been estimated to restore the B-119 course in the pavement area to proper grade and cross section after it has been used by traffic and before the placing of any B-35 material there on.
All of the above except Crushed Aggregate Base Course Item B119 and Calcium Chloride Item M-10 are included in the Lump Sum bid for Maintaining Traffic.
In addition to the above, Sec. G-4.05, Maintenance of Local Traffic, and Sec. G-7.07, Barricades Danger and Warning Signs of the Construction and Material Specifications will be in force during the entire life of the contract.

COOPERATION BETWEEN CONTRACTORS:
It is very probable that this project will run concurrently with the contract awarded in March of 1955 for the improvement of BUT-73-22.57, WAR-73-0.00 immediately adjoining the beginning of the work on this project. Close cooperation between the contractor on this project and the contractor on the Route 73 project will be necessary to the placing of sidewalk, underdrains, catch basins and storm sewer, curb & gutter and pavement in the area between Sta. 29+48 and Sta. 32+85 of the route 73 improvement.

R/W MONUMENTS, FEDERAL PROJECT MARKERS & SECTION MARKERS:
Existing R/W Monuments, Bench Marks, Federal Project & Section Markers that will be removed by construction, shall be protected by the Contractor as per Section G-7.09 of the Construction and Material Specifications, until they can be witnessed, referenced and reset by the Construction Field Crews.

AIRPORT INSTALLATIONS:
The City of Middletown Airport shall be notified by the Contractor in ample time to allow the City of Middletown forces to remove or reset any existing clearance lights or towers that may be disturbed during construction.
Any other airport installations that may be disturbed or removed by the Contractor shall be stored on the Right of Way at the disposal of the City of Middletown Airport.

SALVAGING OF MANHOLE, INLET & CATCH BASIN CASTINGS:
Castings on existing manholes, inlets & catch basins, which are not to be incorporated into the proposed work, shall be salvaged and stored on the R/W at the disposal of the state.

ROADWAY EXCAVATION UNSUITABLE MATERIAL:
There is dump area on the right from Sta. 70+32 to Sta. 74+25 which is shown on the cross sections to be excavated and back filled. Material resulting from this excavation shall be disposed of as per Sec. E-1.06(a) of the Construction and Material Specifications and the removal and disposal shall be paid for as Item E-1 Roadway Excavation, Unsuitable Material.

FERTILIZING AREAS TO BE SEEDED OR SODDED:
All areas to be seeded under Item L-9 or sodded under Item L-10 shall have commercial fertilizer (10-6-4 Mix) applied at the rate of twenty (20) pounds per 1000 Sq. Ft.

SEEDING AND PROTECTING ROADWAY AREAS:
Quantities for seeding are calculated for the soil area between lines ten feet (10') outside the construction limits as shown on the cross sections or to the Right of Way line if such line is less than ten feet from the construction limits.
All areas outside these limits where the vegetative groth has been injuriously disturbed or destroyed by the Contractor shall be restored and seeded in accordance with the provisions of Item L-9 by the Contractor at his own expense.
The seed mixture shall be as follows for the area from Sta. 13+90 to Sta. 27+00 and for the area from Sta. 73+64 to Sta. 76+53.37:

20% Kentucky Bluegrass (Popa pratensis)
20% Meadow Fescue (Festuca elatior)
40% Creeping Red Fescue (Festuca rubra)
15% Red Top (Agrostis alba)
5% White Dutch Clover (Trifolium repens)

If Meadow Fescue seed is not available, Kentucky Bluegrass may be substituted therefor at no additional cost to the state.

REMOVAL (miscellaneous):
The removal and disposal of any existing pipes, ornamental brick or stone posts, pavement, sidewalks, headwalls, curbs, foundations, retaining walls or other masonry structures Item E-2 (and not specifically paid for under a separate Item) are classified as excavation and shall be paid for under the excavation item of which they are a part.
Removal of existing sidewalk when replaced by new sidewalk shall be paid for in the unit price bid for the new sidewalk. Removal of existing sidewalk not to be replaced by new sidewalk shall be paid for as Roadway Excavation Item E-1
Payment for removal, disposal & backfill required for tanks etc. is included in the unit price bid for Roadway Excavation Item E-1.
The contents of all existing privies or septic tanks upon which embankment is to be placed, shall be removed and the empty pit backfilled with material meeting the requirements of Sec. E-1.08. Removal and disposal of this material shall be measured and paid for as Item E-1 Roadway Excavation unsuitable Material.

ROUNDING CORNERS ON CROSS SECTIONS:
The rounded corners, shown on Standard Drawing RI-1 apply to all cross sections even though otherwise shown in these plans.

EXCAVATION FOR Item B-119
Excavation for B-119 Material used on Side Approaches, Mail Box Turnouts and Drives has been included in Earthwork Quantities, when same is in "cut." Where Side Approaches, Mail Box Turnouts and Drives are in fill, excavation for B-119 Material shall be made by Contractor at his own expense, if he builds the Embankment up to finished grade before placing B-119 Material.

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

ITEM T-70, PORTLAND CEMENT CONCRETE PAVEMENT:
Wherever this Item abuts combination curb and gutter, bridge piers, bridge abutments, sidewalks or other concrete pavement, expansion joints ½" thick shall be provided, unless otherwise shown on these plans.
Expansion joint material shall meet the requirements of Sec. M 10.02 or Sec. M 10.03. Payment therefore shall be included in the unit prices bid for the various thicknesses of Item T-70, Portland Cement Concrete Pavement.

CATCH BASIN, INLET AND MANHOLE BLOCKOUT:
Where the blockout for Catch Basins, Inlets or Manholes occurs in Curb and Gutter adjacent to the asphaltic concrete base course, the blockouts shall consist of 8" reinforced concrete base course finished 2½ below top of gutter frame and placed one (1) foot outside of sidewalls, also a 1" expansion joint with two (2) dowels shall be placed between the end of the concrete gutter and the 8" concrete base.
Payment for the above shall be included in the unit price bid per Catch Basin, Inlet or Manhole.

SANITARY SEWERS:
In designing the water and sewer lines on this project every effort has been made to prevent interference with the existing sanitary sewers, consistent with information available. However an item of 6" Sanitary sewer has been included in these plans for the replacement of sanitary sewers unavoidably disturbed during construction. Every reasonable effort shall be made to avoid disturbing these sanitary lines when opening trenches for proposed sewer and water lines and this item of 6" Sanitary sewer shall be used only at the express direction of the engineer.

LOCATION AND SIZE OF PIPES:
The location, type, depth and size of all pipes are shown as near exact as the available information will permit. The State will not be responsible for any variations found during construction.

LENGTH OF PIPE SPECIALS:
The number of lineal feet of pipe to be paid for shall be the length of the pipe line less the assumed lengths (4 feet) of specials, regardless of the actual length of Pipe Special used.

TILE FOR SUBGRADE DRAINAGE:
6" Drain tile shall be furnished and placed by the contractor, in manholes catch basins and inlets for subgrade drainage, where, and as directed by the Engineer. Payment for same shall be included in the price bid per "Each" for manholes, catch basins and inlets.

REMOVAL OF TREES AND STUMPS:
Trees or Stumps shall 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 reserves the right to order the removal of additional trees or stumps, even though these trees or stumps are not indicated on the plans or are indicated to be preserved.
Payment for the removal of these additional trees or stumps is included in the lump sum bid for the removal of trees and stumps.

UNDERDRAIN AT FIRE HYDRANT LOCATIONS:
At proposed locations of fire hydrants the 6" I-4 pipe underdrain when necessary to prevent conflict shall be curved out and around the hydrant. The change in pipe alignment shall begin at a station 15' before that of the hydrant and return to normal at a point 15' beyond the hydrant.

SPECIAL WATER ITEMS:
Resetting Existing Curb Box and Stop Cock Item Special & Resetting Water Meter & Meter Chamber Item Special shall include the cost of any change of grade or alignment of the water service line of which they are a part, which might be necessitated by conflict with the other proposed underground installations of the contract.
Resetting Existing Fire Hydrant, Valve and Valve Box Item Special shall include the cost of removing and resetting in the new location any iron or steel guards now in place for the protection of the existing Fire Hydrants.
For additional notes see sheet 4 and proposal.

EMBANKMENT IN POND:
The proposed embankment below elevation 639.50 between Sta. 50+20 plus or minus and Sta. 52+00 plus or minus shall be made of Granular Material as per Sec. E-1.02 of the Construction and Material Specifications, except that at least 80 per cent by weight of the grains or particles are retained on a №200 Sieve. This material may be placed by the method of end dumping into the water and rolling will not be required below elevation 639.50, consistent with Sec. E-108(g) of the Specifications.
An outlet to the Miami River shall be maintained at all times for the existing 36" sewer on left of Sta. 52+05 until the proposed extension of this sewer is in place and functioning. Any additional cost incurred by this operation shall be included for payment in the price bid for Item E-4 Granular Borrow.

CONCRETE BOX UNDERPASS:
The proposed 12'X12' Concrete box underpass at Sta. 53+50 shall be constructed and put in operation before any embankment, or other impediment to traffic between the gravel plant and the concrete block plant over the existing drive at Sta. 52+90, is placed.

GUARD RAIL REMOVAL:
The Removal of any Guard Rail or Guard Rail Posts lying within the Limits of Roadway Excavation or Embankment (and not specifically paid for under a separate Item) is included in the Contract Unit Price per Cubic Yard bid for Item E-1, Roadway Excavation. All resulting materials shall become the property of the Contractor and shall be disposed of by him at no extra cost to the State, except the steel rail on all existing steel beam type Guard Rail shall be stored on the right of way at the disposal of the State Maintenance Forces.

RETAINING WALL:
That portion of the proposed retaining wall that abuts the existing airplane hangar building on the left, Sta. 24+42.16 to Sta. 25+42.55 shall be poured without the use of forms on the side toward the building.
After the wall footer has been poured, the surface of the corrugated metal hanger building shall be cleaned & painted with asphalt material meeting the requirements of Sec. M-5.6 to a neat line two inches below the finished grade of the proposed wall. One inch premolded expansion joint filler Sec. M-10.01 shall be tightly stapled together to form tight joints and shall be placed against the protruding portions of the corrugated metal hangar walls and held in place by suitable methods until the concrete is placed. The contractor shall brace the hangar walls from the inside in such a manner as will use the smallest amount of space and cause a minimum of interference with the parking of airplanes, and will insure against any deflection or deformation and he shall be held responsible for any damage done to the hangar building.
He shall so plan and conduct this operation that the bracing inside the hangar building shall be placed, removed, and the hangar walls & floor restored to their original condition within a maximum of Seven (7) calendar days.
After the concrete wall has set, the recesses in the corrugated metal hangar walls shall be poured full with Hot-Poured Joint Sealer Sec. M-10.23.
The asphalt painting of the hanger building and poured bituminous filler shall be included for payment in the price bid per Sq. Ft for 1" premolded expansion joint filler Item S-9. The cost of all bracing, restoration and other operations as outlined above shall be included in the unit price bid per cu. yd for Item S-1.

TEMPORARY RUN-AROUND BRIDGE AND APPROACHES:
In addition, to the requirements of Item S-15 and the requirements listed on sheet №100 the Contractor shall restore the area covered by the temporary run-around and lying beyond the limits of the permanent construction, to its original condition, including grading, shaping and replacement of sidewalk, drive pavement and sod.
In addition the contractor shall be responsible for protecting the property immediately adjacent to the limits of the temporary run-around from any damage by his own equipment or by the traveling public and shall erect such temporary guard rail, fence or other devices necessary to insure this protection. All of the above shall be included for payment in the Lump Sum bid for Item S-15.

NOTES CONTINUED ON SHEET 4

BUTLER COUNTY
BUT.-4-(22.97-23.22)

PAVEMENT

Station to Station	Side	Asphaltic Concrete Surface Course Item T-35 1¼" Sq.Yd.	2" Sq.Yd.	2½" Sq.Yd.	Var. Depth Cu.Yd.	Asphaltic Concrete Leveling Course Item B-35 1¼" Sq.Yd.	Asphaltic Concrete Base Course Item B-35 3" Sq.Yd.	Crushed Aggregate Base Course Item B-119 5" Sq.Yd.	4"	6"	7"	8"	9"	Stabilized Crushed Aggregate Shoulders & Approach Item I-18 6" Sq.Yd.	Precast White Portland Cement Concrete Traffic Dividers Item I-23 Each	Type 2 Combination Curb and Gutter Item I-12 Lin.Ft.	Type "A" Combination Curb and Gutter as per plan Item I-12 Add Lin.Ft.	Deduct	Reinforced Concrete Approach Slab Item I-7 Sq.Yd.	Bituminous Tack Coat @ 0.10 gal. per sq.yd. (See note in proposal) Item T-30 Sq.Yd.	Subbase Item I-22 8" Sq.Yd.	12¾" Add	12¾" Deduct	Sealing Vertical Face of Exist. Pav't. Item B-35 Lin.Ft.	Concrete Median Pavement Item I-21 Type 1 Add Sq.Yd.	Type 1 Deduct	Type 2 as per plan	6" Portland Cement Concrete Pavement Item T-70 Sq.Yd.	Removal of Existing Structures Item S-24 Lump Sum	Removal & Disposal of Exist. Curb & Gutter Item E-8 Lin.Ft.		See Sheet Nº
MUNICIPAL																																
Typical Section "B" (264.01')	Rt.&Lt.	1408.1				1408.1	1422.7		117.3				1452.1	234.7			528.02					58.7			58.7							2
Typical Section "B" (404.00)	Rt.&Lt.	2154.7				2154.7	2177.1	2222.0						359.1			808.00				2446.4	89.8			89.8							2
Typical Section "C" (36.85)	Rt.&Lt.	196.5				196.5	198.6	202.7						32.8			73.70				223.1	8.2			8.2							2
S.R.73 (29+57-31+31)	Lt.															206.00												46.1				70
(29+48-S.R.73)-3+28.5 Appr.	Lt.&Rt.	409.0				409.0	409.0						409.0			348.00																70
38+13.2-39+09.2 Appr.	Lt.&Rt.	701.2	193.1			701.2	712.1	723.5			201.9			56.0							734.9						5.2					82
38+22 Mail Box	Lt.		20.4					20.4																								82
From Drive Summary												23.6																				5
Sub-Total		4869.5	213.5			4869.5	4919.5	3168.6	117.3		201.9	23.6	1861.1	682.6		554.00	1409.72				3404.4	156.7			156.7		5.2	46.1				
Conversions		169.1	11.9			169.1	410.0	440.1	13.0		39.3	5.2	465.3	113.8							756.5	55.5										
*Place as Directed										120.																						
*For Maintenance of Traffic										50.																						
To General Summary			181.0			169.1	410.0			1132.9				113.8		554.00	1409.72				812.0				156.7		5.2	46.1				8&9
RURAL																																
Typical Section "A" (2412.74')	Lt.&Rt.	13404.1				13404.1	13404.1						13404.1			4825.48																2
Typical Section "B" (439.99')	Lt.&Rt.	2346.6				2346.6	2371.1		195.6				2419.9	391.1			879.98					97.8			97.8							2
Typical Section "B" (1444.00')	Lt.&Rt.	7701.3				7701.3	7781.6	7942.0						1283.6			2888.00				8744.2	320.9			320.9							2
Typical Section "C" (968.25')	Lt.&Rt.	5164.0				5164.0	5217.8	5325.4						860.7			1936.50				5863.3	215.2			215.2							2
14+38.22-14+53.22 Appr. Slab	Lt.&Rt.			90.0															91.7	90.0												91 & 99
15+32.78-15+47.78 Appr. Slab	Lt.&Rt.			90.0															91.7	90.0												91 & 99
43+98.89-44+23.89 Appr. Slab	Lt.&Rt.			136.1										44.4					144.4	136.1	147.2											91 & 106
50+42.11-50+67.11 Appr. Slab	Lt.&Rt.			136.1										44.4					144.4	136.1	147.2											91 & 106
S.R.73 (29+57-31+31)	Lt.															90.00																70
S.R.73 (31+31-32+85)	Lt.	435.0				435.0	435.0						435.0			161.00																70
29+48 (S.R.73)-3+28.5 Appr.	Lt.&Rt.	531.0				531.0	531.0						531.0			282.00													Lump			70
15+28-16+63.5 (Reloc.) S. Avalon	Rt.	374.0				374.0	375.0	28.3					347.6			68.00																70
3+28.5-17+61.5 (Reloc.) Erie	Lt.	436.0				436.0	436.0						436.0			115.00																71
20+04-21+04.5 (Reloc.) Woodburn	Lt.	177.0				177.0	177.0						177.0			31.00													Lump	27.		71
8+59-9+53 N. Avalon	Rt.	307.0				307.0	310.0	167.3					147.5			79.00													Lump			79
10+90.67 (Lt.) & 10+97 (Rt.) Wilbraham	Lt.&Rt.	512.6				512.6	514.7	124.1					394.8			5.00													Lump	20.		80
26+50-27+00 Flare	Lt.&Rt.	283.3				283.3	283.3						283.3			100.00																14
30+27.5-31+23.5 Service Rd.	Lt.&Rt.	549.5	1185.0			549.5	560.0				1239.0		570.6	56.0													5.2					81
31+13 Mail Box	Rt.		18.2					18.2																								81
56+19.46-57+71.14 Appr.	Lt.&Rt.	1593.0				1593.0	1614.7	1647.9				1428.4		40.0			13.40					1.5			1.5		5.2					84
61+39-62+39 Median Opening	Lt.&Rt.	39.2				39.2	44.4	44.4										200.00					22.2			22.2	5.2					17
67+01-67+99 Median Opening	Lt.&Rt.	38.4				38.4	43.6	43.6										196.00					21.8			21.8	5.2					17
70+02.5-70+97.5 Appr.	Lt.&Rt.	1036.9				1036.9	1054.2	1078.5				728.3		42.9		102.00											5.2					86
73+64-76+54.37 Appr.	Lt.&Rt.	2447.7				2447.7	2458.3	2473.3				2057.0		29		640.00	18.00					2.0		36.00	2.0		2.6					88
13+32.85-17+00 (Reloc.)	℄														22																	10
17+00 (Reloc.)-10+00	℄														45																	11
10+00-16+00	℄														36																	12
16+00-22+00	℄														50																	13
22+00-28+00	℄														42																	14
73+00-79+00	℄														12																	18
From Drive Summary			2057.1		5.5			172.4		73.9	1545.4	321.0	276.2																			5
Sub-Total		37376.6	3260.3	452.2	5.5	37376.6	37611.8	19065.4	195.6	73.9	2784.4	4534.7	19423.0	2766.0	207	6498.48	5735.88	396.00	472.2	452.2	14901.9	637.4	44.0	36.00	637.4	44.0	28.6		Lump	47.		
Conversions		1297.8	181.1	31.4	5.5	1297.8	3134.3	2648.0	21.7	12.3	541.4	1007.7	4855.8	461.0						45.2	3311.5	225.7	15.6									
*Place as Directed										1380.																						
*For Maintenance of Traffic										600.																						
To General Summary			1515.8			1297.8	3134.3			11066.9				461.0	207	6498.48	5339.88		472.2	45.2	3521.6			36.00	593.4		28.6		Lump	47.		8&9

* See Note on Sheet Nº 3

RETAINING WALL & UNDERPASS

Station	Side	Excavation for Structure Item E-2 Cu.Yd.	Concrete for Structures Item S-1 "C" Cu.Yd.	"E" Cu.Yd.	Reinf. Steel Item S-4 Lbs.	12" x ½" Premolded Sealing Strip Item S-3 Lin.Ft.	Bituminous Premolded Exp. Joint Filler Item S-9 ½" Sq.Ft.	1" Sq.Ft.	Pipe Railing as per plan Item S-14 Lin.Ft.	See Sheet Nº
RURAL										
24+22.16-26+50	Lt.	110		77.1	3095	60.0	390	260	107.5	93-95
53+50	Lt.&Rt.	24	217.6		31336					96-98
From Drainage Summary				4.5	16					7
To General Summary		134	217.6	81.6	34447	60.0	390	260	107.5	8&9

NOTES (CONTINUED)

FLAP VALVES
The flap valves designated as Neenah, Series R-5040 or equal shall be of the bell end type. R-5040-15 shall be used for 12" pipe.
Payment for Item Special, 15" Flap Valves shall include the furnishing and placing of the flap valves and all other materials and labor required to complete the item.
See Sheet Nº 26 for detail and notes for the 36" Calco Model 102 Flap Gates.

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

ITEM I-2, 30" CAST IRON OR REINF. CONC. PRESSURE PIPE
See Note in Proposal for this item.

CONNECTING NEW 10" WATER MAIN TO EXISTING 10" LINE:
The new 10" water main from Sta. 2+00 to Sta. 6+50 shall be laid without disturbing the existing main and connections to the existing main at Sta. 2+00 and at Sta. 6+50 shall be made between the hours of midnight and 6:00 A.M.

ITEM I-16, VALVE CHAMBER OR METER BOX ABANDONED:
This item involves removal and salvage for reuse of the existing casting and valve or meter, the removal of brick or concrete chamber to a minimum of one foot below subgrade, and the filling of any remaining opening below this pipe.

ITEM I-16, CURB BOX AND STOP COCK ABANDONED:
This item involves closing the stop cock valve, removing the curb box and filling the resulting hole.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

5 / 136

BUTLER COUNTY
BUT-4 (22.97-23.22)

DRIVES

Station	Side	Concrete Pavement Item T-70 7" Sq.Yd.	Concrete Pavement Item T-70 8" Sq.Yd.	Asphaltic Concrete Surface Course Item T-35 2" Sq.Yd.	Asphaltic Concrete Surface Course Item T-35 Var. Depth Cu.Yd.	Crushed Aggregate Base Course Item B-119 5" Sq.Yd.	Crushed Aggregate Base Course Item B-119 7" Sq.Yd.	Crushed Aggregate Base Course Item B-119 8" Sq.Yd.	Crushed Aggregate Base Course Item B-119 9" Sq.Yd.	Crushed Aggregate Base Course Item B-119 6" Sq.Yd.	Removal & Disposal of Existing Concrete Pavement Item E-8 Sq.Yd.	Excavation Carried to Rdway Cross Sec. Item E-1 Cu.Yd.	Removal of Portions of Exist. Structure Item S-22 Lump Sum	Removal & Disposal of Exist. Curb Item E-8 Lin.Ft.	Type "B" Concrete Curb Item I-12 Lin.Ft.
MUNICIPAL															
1+60	Lt.	23.3										3			
1+98.5	Lt.	23.3						23.6				8			
To Pavement Summary								23.6							
To General Summary		46.6													
RURAL															
2+88.5	Lt.	18.7						4.0				3			
17+97 (Reloc.)	Lt.	18.7						17.3				7			
18+56.3 (Reloc.)	Lt.	18.7						13.3				6			
19+13.2 (Reloc.)	Lt.	18.7						8.0				4			
20+53.6 Appr.	Lt.		35.0												
21+05.6-21+40.6 (Reloc.)	Lt.		27.2												
8+25.3- 8+55.3	Lt.		23.3												
9+06 Appr.	Rt.	17.0													
9+09.5+ 9+39.5	Lt.		23.3						41.7			14			
9+92.3-10+37.49	Lt.		44.5									10	Lump		16.1
10+10 -10+61	Lt.			97.0			97.0					27			
10+22 -10+44.18	Rt.		17.3						23.3			7			
10+90.67 & 10+97 Appr.	Rt & Lt.		19.6												
11+50 - 11+80	Rt.		23.3						62.0			18			
12+08	Rt.	48.9									26.0	18			
11+81 -12+97.6	Lt.		46.6		447.0			453.4				170			
12+55	Rt.	47.7									28.9	12			
13+45.3	Lt.		18.7		18.9			19.5				8			
13+60	Rt.	34.2									17.8	5			
13+90	Rt.		18.7		7.5			7.5				3			
14+17	Lt.	18.7							23.9			4			
14+28	Rt.		18.7		4.4			4.4				2			
15+58 -17+25	Lt.		70.7		346.3	2.3						32			
15+64 - 16+20	Rt.		80.3			0.7					114.7				
16+20 - 16+44.5	Rt.		19.1						116.6			11	Lump		
16+87	Rt.	18.7			28.3			28.3					Lump		
17+40	Rt.	18.7			28.3			28.3				1			
17+82 -18+22	Rt.	31.1						62.2				3	Lump		
18+92	Rt.	18.7						8.3				3			
18+95	Lt.		23.3			2.5									
19+24 -19+58	Rt.	31.4									12.2				
19+60	Lt.	18.7						11.6				3			
20+56.5	Lt.		23.3		51.7			51.7				7		19.6	
20+57	Rt.	18.7						9.4				1			
20+92	Rt.		21.0		16.5			16.5				2			
21+70	Lt.		18.7						32.6			6		21.0	
21+77	Rt.		21.0		6.1			6.1				2			
22+09	Rt.	26.2									9.4	3			
22+64.1	Lt.	34.6									28.5				
23+20	Rt.		23.3												
23+67	Rt.		23.3										Lump		
24+07	Lt.		23.3		116.3			116.3				21			
24+85.6	Rt.	30.2									11.4				
0+86 To 1+18 on 30+75 Appr.	Rt.								23.0			5			
1+07 on Appr. 38+61.2	Rt.								140.0						
74+46 -75+45	Lt.		23.3		65.3.0			65.3.0							
75+68 -75+92	Lt.	23.0									8.0		Lump		
75+77 -76+22	Rt.	30.0			44.4			44.4				2			
76+11 -76+35	Lt.	16.0			10.8			10.8				3			
61+76	Rt.				120.0				120.0			4			
67+50	Rt.				60.6			60.6				1			
67+50	Lt.									73.9		3			
23+96	Rt.		18.7												
24+45	Rt.		18.7												
To Pavement Summary					2057.1	5.5		172.4	1545.4	321.0	276.2	73.9			
To General Summary		557.3	721.2								256.9		Lump	40.6	16.1

SIDEWALKS & CONC. STEPS

Station	Side	4" Sidewalks Item I-13 Sq.Ft.	Conc. Step 5" Riser 15" Tread Item I-13 Lin.Ft.
MUNICIPAL			
(S.R.73) 29+48 to 1+97.48	Lt.	543.0	
To General Summary		543.0	
RURAL			
1+97.48 - 3+28.5	Lt.	364.0	
2+32.6	Lt.	51.5	
3+14	Lt.	70.0	
Erie Ave. 3+28.5 - 17+61.5	Lt.	587.0	
(S.R.73) 32+85 - 14+43	Rt.	336.0	
14+43 - 15+28	Rt.	340.0	
Avalon Dr. 15+28 - 16+63.5	Rt.	604.0	
16+63.5 (Reloc.) - 8+59	Rt.	1997.0	
17+61.5 - 20+04 (Reloc.)	Lt.	715.0	
19+45	Lt.	24.5	
Woodburn Ave. 20+04 - 21+04.5	Lt.	376.0	
8+55.3 - 9+92.3	Lt.	428.0	
8+59.3 -	Lt.	45.0	
Avalon Dr. 8+59 - 9+53	Rt.	348.0	
9+53 - 9+83	Rt.	335.0	
9+53 - 10+22	Rt.	276.0	
Wilbraham Rd. 10+90.67 & 10+97	Lt & Rt.	480.0	
11+43.49 - 14+05	Lt.	710.0	
13+73.7	Lt.	33.9	
11+80 - 14+16	Rt.	560.0	
12+85.7	Rt.	22.8	12.0
14+29 - 14+46	Lt.	112.0	
14+40 - 14+61	Rt.	147.0	
15+42 - 15+64	Rt.	150.0	
15+24.5 - 15+71.5	Lt.	329.0	
16+02.5 - 21+58	Lt.	1646.0	
19+25	Lt.	63.0	
20+04.2	Lt.	47.3	
21+18	Lt.	80.0	
15+94 - 21+97	Rt.	1418.0	
16+73.5	Rt.	9.6	20.0
17+71.1	Rt.	24.0	16.0
18+70.5	Rt.	22.5	
19+65	Rt.	7.5	
21+82 - 23+92	Lt.	744.0	
22+93	Lt.	46.0	
22+21 - 25+36	Rt.	732.0	
22+26.5	Rt.	22.5	
22+61	Rt.	36.6	
25+09	Rt.	26.4	
73+64 - 76+53.37	Lt & Rt.	1087.0	
74+91	Rt.	92.0	
20+15 (Reloc)	Rt.	15.0	
To General Summary		15,561.1	48.0

REMOVAL of TREES & STUMPS ITEM E-9

MUNICIPAL	Lump Sum
RURAL	Lump Sum

MAINTAINING TRAFFIC ITEM SPECIAL

MUNICIPAL	Lump Sum
RURAL	Lump Sum

ELECTRICAL EQUIPMENT

Station	Side	3" Galvanized Conduit (Cap both ends) Item S-25 Lin.Ft.	See Sheet Nº
RURAL			
14+31	Lt & Rt.	75	12
To General Summary		75	8

EROSION CONTROL

Station	Side	Sodding Item L-10 Sq.Yd.	Seeding Roadway Areas (See note sheet Nº3) Item L-9 Sq.Yd.	Seeding and Protecting Roadway Areas Item L-9 Sq.Yd.	Commercial Fertilizer Item L-9 Tons	Dumped Rock Fill Item I-10 Sq.Yd.	Aggregate for Tree Root Aeration Item L-8 Cu.Yd.
MUNICIPAL							
0+05.33 - 1+97.48	Lt & Rt.	44	540		.052		
32+35.99 - 40+36.85	Lt & Rt.			9619	.866		
To General Summary		44	10159		0.918		
RURAL							
(1+97.48 - 3+80.55 (13+52.85 - 17+00)	Lt & Rt.	175	2914		.278		
17+00 - 10+00	Lt & Rt.	352	1543		.171		
10+00 - 16+00	Lt & Rt.	116	470		.053		
16+00 - 22+00	Lt & Rt.	259	805		.096		1.
22+00 - 28+00	Lt & Rt.	133	1616	541	.206		
28+00 - 43+00	Lt & Rt.			6841	.616		
43+00 - 58+00	Lt & Rt.			18204	1.638		
58+00 - 73+00	Lt & Rt.			12515	1.126		
73+00 - 73+64	Lt & Rt.			672	.060		
73+64 - 76+53.37	Lt & Rt.	65	994		.095		
47+00 (Channel X-sect)	Rt.					722	
From Drainage		8			.001	4	
To General Summary		1108	47115		4.340	726	1.

EXCAVATION & EMBANKMENT

Station to Station	Roadway Excavation Suitable Material Item E-1 Cu.Yd.	Embankment Cu.Yd.	Embankment +15% Cu.Yd.	Roadway Excavation Unsuitable Material Item E-1 Cu.Yd.	See Sheet Nº
MUNICIPAL					
29+48 (S.R.73) - 14+31.18 (Reloc)	390	290	334		28
32+35.99 - 40+36.85	506	14927	17166		45
To General Summary	896	15217	17500		8
RURAL					
14+31.18 (Reloc.) - 14+72.12	8102	3126	3595		32
15+14.10 - 32+35.99	1673	5907	6793		39
40+36.85 - 44+44	57	17307	19903		51
50+42.89 - 63+00	882	45727	52586		60
63+00 - 76+54.37	1588	16928	19467	3858	68
From Sheet Nº 113-A	450				
To General Summary	12752	88995	102344	3858	8

- BORROW CALCULATION -

Total Roadway Embankment +15%	119,844 Cu.Yd.
Total Roadway Excavation	13,648 Cu.Yd.
GROSS BORROW	106,196 Cu.Yd.
E-4 Granular Borrow	5,534 Cu.Yd.
* E-3 Channel Excavation 71,000 Cu.Yd.	100,662 Cu.Yd.
E-2 Structural Excavation 1,500 Cu.Yd.	
Available Excavation to Reduce Borrow	72,500 Cu.Yd.
TOTAL NET BORROW	28,162 Cu.Yd.
MUNICIPAL NET BORROW	16,604 Cu.Yd.
RURAL NET BORROW	11,558 Cu.Yd.

* It has been estimated that approximately 75% of the available channel excavation will be recovered to reduce borrow. If it is found possible to recover more of this material, the borrow quantity shall be reduced by a like amount.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

6
136

BUTLER COUNTY
BUT. 4 (22.97 - 23.22)

NON PARTICIPATING ITEMS

Station	Side	10" C.I.P. Cement Lined (Class 150) Including Special Castings Item Special: Furnish Only	10" C.I.P. Cement Lined (Class 150) Including Special Castings Item Special: Install	6" C. I. P. Cement Lined Class 150 Incl. Spl. Castings Complete in place Item Special	Resetting Exist. F.H. Incl. Valve, Valve Box and Special Castings Item Special	Adjusting Exist. Valve Chambers to Grade Item I-8	Resetting Exist. Curb Box & Stop Cock Item Special	Abandon Exist. Valve Chamber or Meter Box & Salvage Exist. Valve or Meter & Castings Item I-16	New Water Valve chamber using Salvaged Valve & Castings Complete Item I-8	Lowering and Reconnecting Existing Service Branch Item Special	New ¾" Copper Service Branch Furnish and Install Item Special	Resetting Existing Water Meter & Meter Chamber Item Special	Abandon Existing Curb Box & stop Cock Item I-16	Adjust Existing Sanitary Manholes to Grade Item I-8		6" Sanitary Sewers M-6.8(a) Item I-2		
		Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Each	Each	Lin. Ft.	Each	Each	Each		Lin. Ft.		
CITY OF MIDDLETOWN																		
2+00 - 3+50	Rt.	158	158															
3+50 - 6+50	Rt & Lt.	300																
3+90	Rt & Lt.			70				1	1									
4+91	Rt & Lt.									1								
5+70	Rt & Lt.									1								
6+19	Rt & Lt.						1			1								
0+56.4 (Woodburn Av.)	Lt.													1				
8+48	Lt.						1											
9+10	Lt.						1											
9+72	Lt.						1											
13+43	Lt.						1											
13+67	Lt.						1											
16+57	Lt.				1													
19+70	Lt.				1													
22+08	Lt.				1													
23+07	Lt.						1											
23+27	Lt.						1											
24+40	Lt.						1						1					
25+18 & 26+65	Lt.				1													
25+24 - 26+75	Lt.			155				1	1									
Placed as Directed (See Sheet No 3)				15							100					400		
To Drainage Summary														1				
To General Summary		458	158	240	4		9	2	2	3	100	1		1		400		
BUTLER COUNTY																		
15+60 (Prop. S.R.4)	Rt.							1					1					
2+40	Rt.							1	1	1				1				
3+50 - 6+50	Rt.		300															
3+81.5	Rt.													1				
3+94	Rt.			42	1													
7+38	Rt.													1				
7+96	Rt.					1												
8+32	Rt.				1													
9+34	Rt.					1												
9+39	Rt.													1				
10+68	Rt.					1												
10+94	Rt.													1				
11+04	Rt.					2												
11+27	Rt.					1												
12+43	Rt.						1											
13+06	Rt.						1											
13+20	Rt.						1											
14+31	Rt.					1												
14+40	Rt.													1				
15+75	Rt.						1											
15+78	Lt.																	
							1											
19+06	Rt.						1					1						
19+29	Lt.					1												
19+53	Lt.													1				
19+68	Rt.						1					1						
20+44	Rt.						1					1						
22+02	Lt.													1				
22+39	Rt.						1											
24+97	Lt.													1				
25+00	Rt.						1											
Placed as Directed (See Sheet No 3)				20							100					100		
To Drainage Summary														9				
To General Summary			300	62	2	8	10	2	1	1	100	3	1			100		

PIPE UNDERDRAINS

Station to Station	Side	6" Pipe Underdrain Item I-4 Lin. Ft.	Pipe Specials Item I-5 Bends 6"x45° Each	Pipe Specials Item I-5 Tees 6"x6" Each	8" Pipe Outlet Item I-4 Lin. Ft.
MIDDLETOWN OHIO					
30+02 - 30+25.31 (S.R.73)	Lt.	31	1		
0+52 - 1+25	Rt.	75	1		
29+48 (S.R.73 1+97.47	Rt.	182			
1+25 - 1+97.47	Rt.	70	1		
To General Summary		358	3		
RURAL					
30+25.3 (S.R.73 - 14+31.5 (S.R.4 Prop.)	Lt.	147			
33+00 (S.R.73 - 0+52.5 (Avalon Dr.)	Rt.	226	1		
15+85 - 17+25	Rt.	130	1		
1+97.47 - 15+30 (S.R.4 Prop.)	Rt.	60	1		
1+97.47 - 4+09	Lt.	207			
15+79 (S.R.4 Prop. - 2+90 (S.R.4)	Rt.	78	1		
2+90 - 3+62	Rt.	68	1		
4+05 - 17+31.5	Lt.	26	1		
17+31.5 - 20+85	Lt.	335	1	1	
17+25 - 18+45	Rt.	112	1		
18+45 - 9+10	Rt.	400	1	1	
20+65 - 8+90	Lt.	175	1	1	
9+02+037.3 (Wilberham)	Lt.	156	1		
9+12 - 10+80	Rt.	190	1	1	
10+62.5 - 0+56 (Wilberham)	Rt.	21	1		
10+80 - 11+86	Rt.	104			
0+37.3 (Wilberham) 11+00	Lt.	35	1		
11+08 - 11+88	Lt.	74	1		
11+88 - 14+27	Lt.	234	1		
11+88 - 14+40	Rt.	247	1		
15+59 - 17+06	Rt.	142	1		
15+46 - 17+00	Lt.	148	1		
17+00 - 21+00	Lt.	300	2		
17+06 - 21+06	Rt.	390	2		
21+06 - 25+05	Rt.	389	2		
21+00 - 25+05	Lt.	500	1		
25+05	Lt & Rt			1	60
25+05 - 26+50	Lt.	144			
25+05 - 27+00	Rt.	190	1		
30+30 - 31+50	Rt.	129	1		
74+23 - 76+53.37	Rt.	222		2	
74+26 - 0+84.5 (Franklin Rd.)	Rt.	60			
74+56 - 0+84.5 (Franklin Rd.)	Lt.	50			
74+23 - 76+53.37	Lt.	225		1	
74+42 - 0+81.9 (Trenton Rd.)	Rt.	57			
To General Summary		5961	28	8	60

GUARD RAIL

Station to Station	Side	Guard Rail Steel Beam Type (Deep) Item I-15 Lin. Ft.
— RURAL —		
14+30.07 - 14+42.57	Lt.	12.50
14+48.29 - 14+60.79	Rt.	12.50
15+25.21 - 15+50.21	Lt.	25.00
15+43.43 - 15+55.93	Rt.	12.50
26+52.83 - 27+02.83	Lt.	50.00
40+51.03 - 44+15.78	Lt.	365.74
41+54.45 - 42+32.00	Rt.	278.54
* 90' S. of S. Abut. of Exist. Bu-4-236	Rt.	25.00
* 25' N. of N. Abut. of Exist. Bu-4-236	Rt.	37.50
50+34.00 - 56+24.05	Lt.	591.04
50+50.22 - 56+52.47	Rt.	603.24
73+95 - 74+10	Rt.	25.00
To General Summary		2038.56

* To be used as a road barricade and extend approximately from wing to wing of existing structure. See Sheet 113-A

STONE UNDERDRAIN ITEM I-9

Stone Underdrains No 2 placed as directed by the Engineer.

	MUNICIPAL	RURAL
To General Summary	650 Lin. Ft.	2650 Lin. Ft.

CONCRETE REFERENCE MONUMENTS

Concrete Reference Monuments Cast in Place, Item I-8 Each	See Sheet No
MUNICIPAL	
4	126
RURAL	
32	126

DRAINAGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

7 / 136

BUTLER COUNTY
BUT. 4 (22.97-23.22)

Station to Station	Side	Pipe For Storm Sewers Item I-2 — Class A 12"	Class B 12"	Class B 24"	Under Pavement Class A 12"	Under Pavement Class B 12"	Under Pavement Class B 18"	Under Pavement Class B 24"	M-6.6(a) For Storm Sewers Item I-2 27"	30"	Std. Strength Reinf. Conc. Culvert Pipe Sec. M-6.6 (b) for Storm Sewers Item I-2 33"	36"	Extra Strength Reinf. Conc. Culvert Pipe Sec. M-6.6 (c) for Storm Sewers Item I-2. 36"	Heavy Reinf. Conc. Culvert Pipe for Storm Sewers 33-M-106.6 (d) Item I-2 36"	Cast Iron Pipe or Reinf. Conc. Pressure Pipe Item I-2 30"	3" Cast Iron Soil Pipe Sec. M-6.8 Item I-2	Catch Basins Item I-8 — No 22A	No 3	No 3 Wood	No 3-A	No 6	No 7	No 9-A	Inlet Item I-8 No 2-G	Manhole Item I-8 No 1	Manhole Omit Drop Pipe. Item I-8 No 2	Neenah Flap Valve Series R3040 or equal (Type I end) Item Special 15"	Cb/Co Cast Steel Flap Gate (Model 102) or equivalent. Item Special 36"	Pipe Special for Storm Sewers Item I-5 — Class B Tee Under Pavement 12"x6	12"x18	12"x24	12"x36	Class A Bends 18"x45°	3" Cast Iron 1/4 Bend Long Sweep Sec. M-6.3 Item I-5	Excavation for Structures Item E-2	Channel Excavation Item E-3	Sodding Item L-10	Catch Basin Item I-16	Dumped Rock Fill Item F-10	Pipe Removed Item E-12 8"	12"	Reinforcing Steel Item S-4	Manholes Adjusted to Grade Item I-8	Conc. for Struct. Class "E" Item S-1 Net Hole for Manhole Frame & Cover Item I-8
		Lin. Ft							Lin. Ft.		Lin. Ft.		Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each							Each	Each	Each	Each	Each						Each	Cu. Yd.	Cu. Yd.	Sq. Yd.	Each	Cu. Yd.	Lin. Ft.		Lbs.	Each	Cu. Yd.	Each
MUNICIPAL MIDDLETOWN																																												
30+02 - 1+00	Lt.					55										4		1															1										
1+00 - 1+38	Lt.					35												1																										
1+38 - 1+97.47	Rt.						57																	1																				
1+38 - 1+90	Rt.					80												1		1																								
24+42	Lt.															4																	1										
25+02	Lt.															4																	1										
25+42	Lt & Rt.															4																	1										
From Non-Participating Item																																								1				
To General Summary						170	57									12	3	1						1									3								1			
RURAL																																												
1+97.47 - 2+90	Rt.	13			18		87															1						1														
2+90	Lt & Rt.		54		29	97											1	2		1			1																			
2+90 Ex. - 17+40	Rt.		58			65		80										1																									
17+40	Lt & Rt.					55											2			1																							
17+40 - 9+10	Rt.	3		332	65	54		136										1		2																							
WOODBUEN AVE																																												
0+56.4	Lt & Rt.					29												1	1										2													0.1		
9+10	Lt & Rt.	22			46	128												2	1	2			1																			
9+10 - 10+80	Rt.			131				35																																			
10+80	Lt & Rt.					88											2						1																			
10+80 - 11+88	Rt.			58		3		46										1																						16		2.2		
11+88	Lt & Rt.		3			51											2						1																			
11+88 - 14+41	Rt.								249																																		
14+41	Rt.																							1																			
14+41 - 15+69.5	Rt.														124																											
15+69.5	Rt.																							1																			
15+69.5 + 17+06	Rt.								132																																		
17+06	Lt & Rt.		5			56											1				1		1																			
17+06 - 21+06	Rt.	9							395											1									1														
21+06	Lt & Rt.		5			56											2						1																			
21+06 - 25+05	Rt.								394																																		
25+05	Lt & Rt.		3			57											2						1																			
25+05 - 29+00	Rt.								391																																		
26+21	Rt.	13																		1																							
29+00	Lt & Rt.	9				29											1				1		1						1						2							
29+00 - 34+00	Rt.									491																																	
31+25	Rt.					40															1																						
31+50	Rt.	16															1																		2							
34+00	Rt & Lt.					63															1		1																			
34+00 - 39+00	Rt.												504										1																			
39+00 - 43+93	Lt.												473	15									1		1																	
43+93 - 44+58	Lt.												48	15																			2							1.1		
49+675 - 52+05.5	Lt.												238										1		1							2	8		4				1.1		
55+79.5	Lt.																																					1		1.		
59+62.4	Lt & Rt.					64															1																	1		1.		
63+49	Lt.					75															1																	1		1.		
65+25	Lt.					41															1																					
67+10	Lt.					110															1																					
70+03 - 70+23.6	Lt & Rt.				195												2							1											4				1		1.		
72+30	Lt.					25															1																					
73+39.5	Lt.																																					1		1.		
74+23	Lt & Rt.					118													2			1			1.																	
75+65 + 75+79	Lt & Rt.																																				2		57					
Carried to Erosion Control																																			8		4						
From Non-Participating Items																																							9				
Carried to Retaining Walls																																						16		4.5		
To General Summary		85	70	58 521	353	1304	87	80	217	249	527	785	404	1283	30	124	4	12	1	9	2	8	1	8	6	10	3	2	1	1	2	1	2	4	8	3	71	14		5		

GENERAL SUMMARY

ITEM	QUANTITIES MUNICIPAL	RURAL	TOTAL	UNIT	DESCRIPTION
					ROADWAY
E-1	896.	12 752.	13648.	Cu.Yd.	Roadway Excavation, Suitable Material.
E-1		3858.	3858.	Cu. Yd	Roadway Excavation, Unsuitable Material. as per plan.
E-1	5581	42055	47636	Sq. Yd.	Compacted Subgrade.
E-2		134	134	Cu. Yd.	Excavation for Structures(Retaining Wall and Underpass)
E-4	16604.	11558.	28162	Cu.Yd.	Borrow.
E-4		5534.	5534.	Cu.Yd.	Granular Borrow as per plan.
E-8		257.	257.	Sq. Yd.	Removal and Disposal of Existing Pavement.
E-8		41.	41.	Lin.Ft.	Removal and Disposal of Existing Curb.
E-8		47.	47.	Lin.Ft.	Removal and Disposal of Existing Curb and Gutter.
E-9	Lump	Lump	Lump	Lump Sum	Removal of trees and Stumps.
E-11	87.	496.	583.	M.Gal	Water.
E-12		71.	71.	Lin.Ft.	Pipe Removed 18" and under.
I-13	543.	15,562	16105	Sq. Ft.	4" Concrete Sidewalk.
I-13		48	48	Lin.Ft.	Concrete Steps 5" Risers, 15" Treads as per plan.
I-15		2038.56	2038.56	Lin.Ft.	Guard Rail, Steel Beam Type (Deep)
I-18	114	461	575	Cu.Yd	Stabilized Crushed Aggregate Shoulders and Approaches.
L-8		1.	1.	Cu.Yd.	Aggregate for Tree Root Aeration.
L-9	10159.	47115	57274.	Sq. Yd.	Seeding and Protecting as per plan.
L-9	0.92	4.34	5.26	Ton	Commercial Fertilizer (10-6-4)
L-10	44.	1108	1152	Sq Yd.	Sodding.
S-1		82	82	Cu.Yd.	Concrete for Structures. Class "E"
S-1		218	218	Cu. Yd	Concrete for Structures. Class "C"
S-3		60	60	Lin.Ft.	Waterproofing, Premolded Sealing Strip.
S-4		34447	34447	Lb.	Reinforcing Steel
S-9		260	260	Sq.Ft.	1" Bituminous Premolded Expansion Joint Filler.
S-9		390	390	Sq. Ft.	½ Bituminous Premolded Expansion Joint Filler.
S-14		108	108	Lin Ft.	Pipe Railing as per plan.
S-22		Lump	Lump	Lump Sum	Removal of portions of Existing Structures.
S-24		Lump	Lump	Lump Sum	Removal of Existing Structures.
S-25		75.	75.	Lin. Ft.	3" Galvanized Conduit as per plan.
I-8	4.	32	36	Each	Cast in place Concrete Reference Monuments as per plan.
M-10	4.	40.	44.	Ton	Calcium Chloride or Calcium-Magnesium Chloride, Furnished and Applied for Temporary Roadways.
					DRAINAGE
E-2		4.	4.	Cu.Yd.	Excavation for Structures.
E-3		8.	8.	Cu.Yd.	Channel Excavation.
I-2	12.		12.	Lin.Ft.	3" Cast Iron Soil Pipe Sec. M-6.3 for Storm Sewers
I-2		85.	85.	Lin.Ft.	12" Class "A" Storm Sewers.
I-2		70.	70.	Lin.Ft.	12" Class "B" Storm Sewers.
I-2		58	58.	Lin.Ft.	21" Class "B" Storm Sewers.
I-2		521	521	Lin.Ft.	24" Class "B" Storm Sewers.
I-2		249.	249.	Lin.Ft.	27" Standard Reinforced Concrete Sewer Pipe, Sec. M-6.6(a) For Storm Sewers
I-2		527.	527.	Lin.Ft.	30" Standard Reinforced Concrete Sewer Pipe, Sec. M-6.6(a) For Storm Sewers
I-2	400.	100.	500.	Lin.Ft.	6" Standard Strength Vitrified Sewer Pipe, Sec. M-6.8(a) For Storm Sewers (Sanitary)
I-2		353.	353.	Lin.Ft.	12" Class "A" Storm Sewers Under Pavement or Approaches.
I-2	170.	1304.	1474.	Lin.Ft.	12" Class "B" Storm Sewers Under Pavement or Approaches.
I-2	57.	87.	144.	Lin.Ft.	18" Class "B" Storm Sewers Under Pavement or Approaches.
I-2		80	80.	Lin.Ft.	21" Class "B" Storm Sewers Under Pavement or Approaches.
I-2		217.	217.	Lin.Ft.	24" Class "B" Storm Sewers Under Pavement or Approaches.
I-2		785.	785.	Lin.Ft.	33" Std Strength Reinf Concrete Culvert Pipe Sec. M-6.6(b) for Storm Sewers
I-2		494	494.	Lin.Ft.	36 Std. Strength Reinf. Concrete Culvert Pipe Sec. M-6.6(b) for Storm Sewers
I-2		1263	1263	Lin.Ft.	36" Extra Strength Reinforced Concrete Culvert Pipe Sec. M-6-6(c) for Storm Sewers
I-2		30.	30.	Lin.Ft.	36" Heavy Duty Reinforced Concrete Culvert Pipe Sec M-106.6(d) for Storm Sewers
I-4	358	5961.	6319	Lin.Ft.	6" Underdrains
I-4		60	60	Lin. Ft.	8" Pipe Outlets for Underdrains.
I-5	3.	36	39	Each	6" Pipe Specials for Underdrains.
I-5	3.		3.	Each	3" Pipe Specials for Storm Sewers, Sec. M-6.3
I-5		2.	2.	Each	12 Pipe Specials for Class "A" Storm Sewers.
I-5		1.	1.	Each	24 Pipe Special for Class "B" Storm Sewers.
I-5		1.	1.	Each	12" Pipe Special for Class "B" Storm Sewers, Under Pavement or Approaches.
I-5		1.	1.	Each	18 Pipe Special for Class "B" Storm Sewers, Under Pavement or Approaches.
I-5		2.	2.	Each	24 Pipe Specials for Class "B" Storm Sewers. Under Pavement or Approaches.
I-8		4	4	Each	Standard Nº 2-2A Catch Basins
I-8	3.	12.	15.	Each	Standard Nº 3 Catch Basins
I-8	1	9	10	Each	Standard Nº 3-A Catch Basins
I-8		2.	2.	Each	Standard Nº 6 Catch Basins
I-8		8.	8.	Each	Standard Nº 7 Catch Basins
I-8		1.	1.	Each	Standard Nº 9-A Catch Basin.
I-8		1.	1.	Each	Standard Nº 3 Catch Basin Modified as per plan.
I-8		8.	8.	Each	Standard Nº 2-6 Inlets

SHEET NO. 2 | STATE OHIO | PROJECT BUT-4 (22.97-23.22) | TITLE BUTLER COUNTY

8 / 136

GENERAL SUMMARY

ITEM	QUANTITIES MUNICIPAL	QUANTITIES RURAL	QUANTITIES TOTAL	UNIT	DESCRIPTION
					DRAINAGE
I-8	1	6	7.	Each	Standard Nº 1 Manholes
I-8		10.	10.	Each	Standard Nº 2 Manholes, as per plan.
I-8	1	14	15.	Each	Manholes Adjusted to Grade.
I-8		5.	5	Each	Furnish and Set Standard Nº 1 Manhole Heavy Frame and Cover as per plan.
I-9	650.	2650.	3300.	Lin.Ft.	Stone Underdrain Nº 2
I-10		726.	726.	Cu.Yd.	Dumped Rock Fill.
I-16		3.	3.	Each	Catch Basins Abandoned.
I-2		124.	124.	Lin.Ft.	30" Cast Iron or Reinforced Concrete Pressure Pipe for Storm Sewers, As Per Plan.
Special		3.	3.	Each	15" Flap Valve Neenah, Series R-5040 or equivalent, furnished and placed as per plan.
Special		2.	2.	Each	36" Calco Cast Steel Flap Gate (Model 102) or equivalent, furnished and placed.
					PAVEMENT
T-30		46.	46.	Gals.	Bituminous Tack Coat, as per plan.
T-35	181	1516.	1697.	Cu.Yd.	Asphaltic Concrete Surface Course, Type "A" (70-80)
B-35	170	1298	1468.	Cu.Yd.	Asphaltic Concrete Leveling Course (70-80)
B-35	410	3135	3545	Cu.Yd.	Asphaltic Concrete Base Course (70-80)
B-35		36.	36	Lin.Ft.	Sealing Vertical Face of Existing Pavement.
B-119	1133	11067	12,200	Cu.Yd.	Crushed Aggregate Base.
T-70	47.		47.	Sq.Yd.	6" Portland Cement Concrete Pavement.
T-70	47.	558	605	Sq.Yd.	7" Portland Cement Concrete Pavement.
T-70		725	725	Sq.Yd.	8" Portland Cement Concrete Pavement.
I-7		473	473	Sq.Yd.	Reinforced Concrete Approach Slabs as per plan.
I-12		17	17	Lin.Ft.	Type "B" Curb, as per plan
I-12	554	6495.	7049.	Lin.Ft.	Standard Type 2 Combination Curb & Gutter
I-12	1410	5340.	6750.	Lin.Ft.	Type "A" Combination Curb & Gutter, as per plan.
I-21	157	594	751	Sq.Yd.	Type 1 Portland Cement Concrete Median Pavement
I-21	6	29	35	Sq.Yd.	Type 2 Portland Cement Concrete Median Pavement as per plan.
I-22	812.	3522.	4334	Cu.Yd.	Subbase.
I-23		207.	207	Each	Precast White Portland Cement Concrete Traffic Dividers
					WATER ITEMS
Special	458.		458.	Lin.Ft.	Furnish (only) 10" Cast Iron Pipe, Cement Lined (Class 150) including Special Fittings.
Special	158.	300.	458.	Lin.Ft.	Install 10" Cast Iron Pipe, Cement Lined (Class 150) including Special Fittings.
Special	240.	62.	302.	Lin.Ft.	Furnish and Install 6" Cast Iron Pipe, Cement Lined (Class 150) including Special Fittings.
Special	4.	2.	6.	Each	Fire Hydrants Reset, including Valves and Valve Boxes as per plan.
I-8		8.	8.	Each	Valve Chambers Adjusted to grade.
Special	9.	10.	19	Each	Curb Boxes and Stop Cocks Reset as per plan.
I-16	2.	2.	4.	Each	Valve chambers or Meter Boxes Abandoned as per plan.
I-8	2.	1.	3.	Each	Valve Chambers as per plan.
Special	3.	1.	4.	Each	Lowering and Reconnecting Existing Service Branches
Special	100.	100.	200.	Lin.Ft.	3/4" Copper House Services.
Special	1.	3.	4.	Each	Water Meters and Meter Chambers Reset.
I-16		1.	1.	Each	Curb Box and Stop Cock Abandoned.
					STRUCTURES OVER 20 FT SPAN
					For Quantities, Bridge Nº BU-4-229 See Sheet Nº 100
					For Quantities, Bridge Nº BU-4-236 See Sheet Nº 108
	Lump	Lump	Lump	LumpSum	Construction Layout Stakes
	Lump	Lump	Lump	LumpSum	Maintaining Traffic as per plan.

FED. RD. DIVISION 2 | STATE OHIO | PROJECT | TYPE FUNDS

BUTLER COUNTY
BUT 4 (22.97-23.22)

9
136

BUTLER COUNTY
BUT-4-(22.97-23.22)

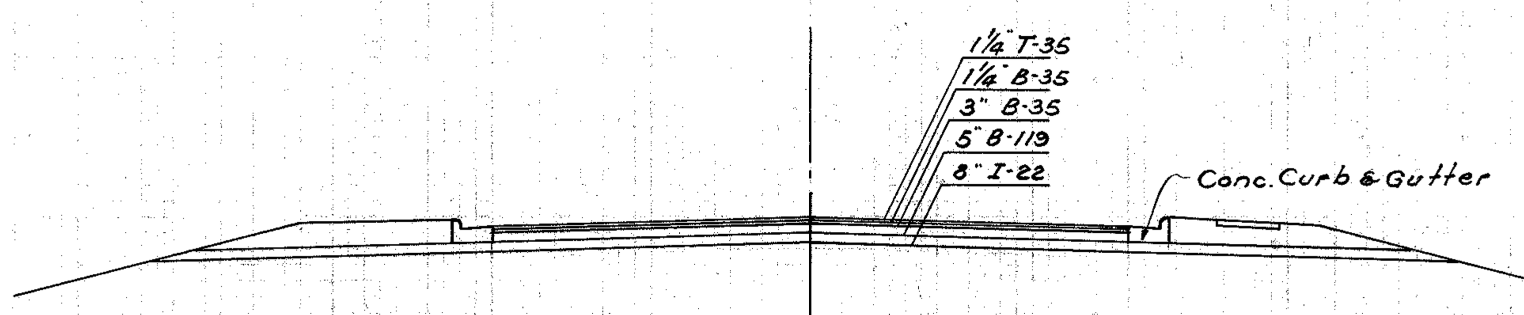
PAVEMENT LEGEND

- 1¼" T-35 Surface, 1¼" B-35 Leveling, 3" B-35 Base, 5" B-119 Base
- 1¼" T-35 Surface, 1¼" B-35 Leveling, 3" B-35 Base, B-119 Base, I-22 Subbase
- 7" T-70 Pavement
- I-13 Sidewalk or Steps
- 2" T-35 Surface, 5" B-119 Base
- T-35 Variable Depth
- 8" T-70 Pavement
- 2" T-35 Surface, 7" B-119 Base
- 9" B-119 Base
- 8" B-119 Base

Note: Relocate S.R. 4 from Sta. 13+52.85 = Sta. 32+15.5 on S.R. 73 to Sta. 21+40.6 on Relocated S.R. 4
Equation = Sta. 21+40.6 Back = Sta. 8+25.3 Ahead

UTILITY OWNERSHIP	
Utility	Owner
Power & Light	Cincinnati Gas and Electric Co. 4th & Main St., Cincinnati, Ohio
Gas	Cincinnati Gas and Electric Co. 4th & Main St., Cincinnati, Ohio
Telephone	Ohio Bell Telephone Co. 1505 Central Ave., Middletown, Ohio
Water	Butler County Commissioners Court House, Hamilton, Ohio
Sanitary Sewer	Butler County Commissioners Court House, Hamilton, Ohio City of Middletown 1425 Central Ave., Middletown, Ohio

B.M. Elev. 654.23
▫ N.E. Cor. Conc. Lamp Post Base
S.W. Cor. Verity Pkwy. & S.R. 4



TYPICAL SECTION OF EXISTING PAVEMENT ADJACENT TO BEGINNING OF PROJECT

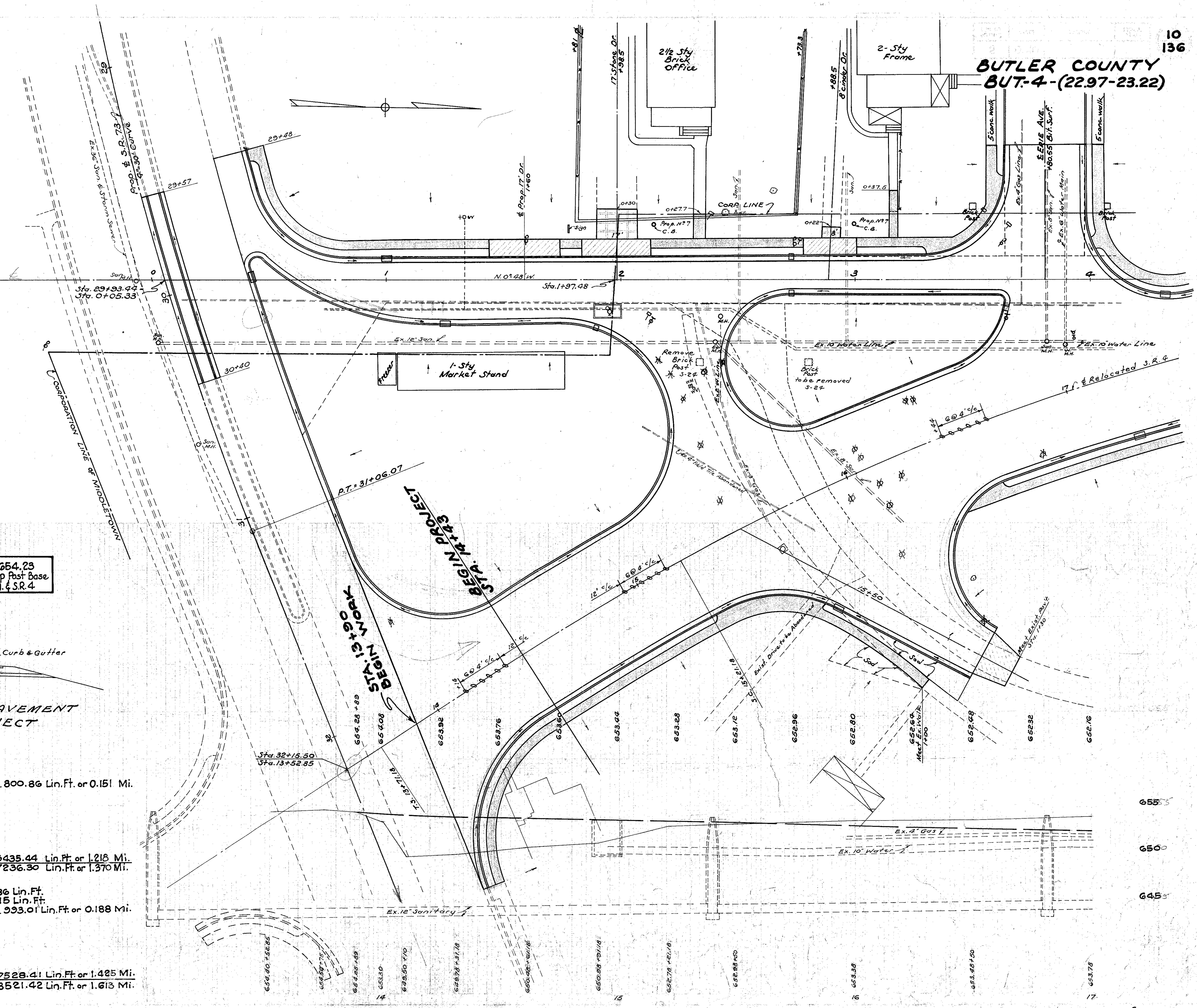
LINE DATA

~ PROJECT LENGTH ~

Begin Municipal = Sta. 32+35.99
End Municipal = Sta. 40+36.85
Net Length of Municipal Project .... 800.86 Lin.Ft. or 0.151 Mi.
Begin Project and Rural = Sta. 14+43.00
End Project and Rural = Sta. 73+64.00
Gross Length of Project .... = 5921.00 Lin. Ft.
Add for Equation:
Sta. 21+40.60 Back = Sta. 8+25.30 Ahead = 1315.30 Lin. Ft.
Sub-Total = 7236.30 Lin. Ft.
Deduct: Net Length of Municipal Project = 800.86 Lin. Ft.
Net Length of Rural Project = ... 6435.44 Lin. Ft. or 1.218 Mi.
NET LENGTH OF PROJECT (MUNICIPAL & RURAL) .... 7236.30 Lin. Ft. or 1.370 Mi.

~ WORK LENGTH ~

Net Length Municipal Project = Gross Length Municipal Work = 800.86 Lin. Ft.
Add for Approach: Sta. 29+48 (S.R. 73) to Sta. 1+97.48 (Appr.) = 192.15 Lin. Ft.
Net Length Municipal Work = ... 993.01 Lin. Ft. or 0.188 Mi.
Net Length Rural Project .... = 6435.44 Lin. Ft.
Add for Approaches:
Sta. 1+97.48 (Appr.) to Sta. 4+40 (Appr.) = 242.52 Lin. Ft.
Sta. 13+90 (Reloc.) to Sta. 14+43 (Reloc.) = 53.00 Lin. Ft.
Sta. 73+64.00 to Sta. 76+54.37 = 290.37 Lin. Ft.
Sta. 0+26 to Sta. 5+33.08 (Service Rd.) = 507.08 Lin. Ft.
Net Length Rural Work .... = ... 7528.41 Lin. Ft. or 1.425 Mi.
NET LENGTH OF WORK (MUNICIPAL & RURAL) = ... 8521.42 Lin. Ft. or 1.613 Mi.



STA. 13+52.85 To STA. 17+00 (Reloc. S.R. 4)

BUTLER COUNTY
BUT-4-(22.97-23.22)

STA. 17+00 (Reloc. S.R.4) TO STA. 10+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

EXISTING BRIDGE DATA
Br. No But-4-229 over Middletown Hydraulic
Type: Concrete Girder
Span: 42'-0"
Roadway: 19'-10" + 2' Sidewalks
Loading: S-3.5
Skew: None
Condition: Critical

B.M. Elev. 652.78
N. Cor. N.W. Wing Wall of Bridge over Hydraulic
Sta. 15+25 18' Lt.

PROPOSED STRUCTURE
TYPE: Continuous reinf. concrete slab with capped pile substructure.
SPANS: 24'-30'-24' ctr. to ctr. of brgs.
ROADWAY: 54' f/f curbs with two 6' S.W.
LOAD FREQUENCY RATING: CF-400-51
SKEW: 15°00' right forward
SURFACE COURSE: Bituminous
APPROACH SLABS: AS-1-54, 15' long
ALIGNMENT: tangent

STA. 10+00 TO STA. 16+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

STA. 16+00 TO STA. 22+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

1-Sty. Frame
2-Sty Frame
Block Top Drive & Parking
Plane Hangar
Boundry Light Standard
Hose Bibs
1/2" cable
Fill Pipes
Gas Pump & Flag Std.
Fill Cap
Vent Pipes
Vent Pipes
*See Sheet No 92 Curb Transition
Middletown - Corporation Line
Prop. Retaining Wall
Ex. 6" Main
Ex. 10" San.
Depress Curb
Ex. 6" Gas
Sign Base
Remove S-22 7 L.F. Base & Wall.
Light Post
Gr. Drive
3" Conc.
4" Conc.
8.5" Conc. Dr.
10" Conc. Walk
2.5 Conc.
Hangar
Tack in Hub
"X" in Walk @ Cor. of Hangar
Prop. Prog. Work 25+36
End Curb (RT)
N.0°48'W.
12" c/c
PC. 26+67.72
PT. 27+01
PC. 26+50
PT. 27+93
B.M. Elev. 653.31
S.W. Cor. Conc. Sign Base (Avalon Dairy)
Sta. 23+42.5 27.5 Rt.
B.M. Elev. 651.25
South Nut on Fire Hydrant
Sta. 25+19 28.1 Lt.

652.92 653.16 653.20 653.16 652.92 652.60 652.92 653.16 653.20 653.16 652.92

955
950
945

+0.32% -0.32% +0.32% -0.32%

P.I. 23+00 El. 653.84
P.I. 27+00 El. 653.24
P.C. 22+76
P.T. 23+76
P.C. 25+00 El. 652.60
P.C. 26+75
P.T. 27+25
50' V.C.
50' V.C.
Ex. 6" Gas
Ex. 6" Water Main
Ex. 10" San.

652.81 652.57 +25 652.44 +50 652.40 +75 652.52 652.48 +25 652.44 +50 652.22 +75 651.74 651.34 +25 651.10 +50 651.14 +25 651.18 651.33 +25 651.23 +50 651.14 +75 650.98 650.98 +25 651.13 +50 651.16 +67.21 651.54 651.52 +50 651.11

22 23 24 25 26 27 28

STA. 22+00 TO STA. 28+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)

Sta. 29+00 ℄
Std. No. 2-6 Inlets
F.L. 12" = 648.60

Sta. 31+25, 41' Rt. Conc. Collar
F.L. 12" = 637.25±
See Sheet No. 26

Sta. 31+18, 28' Rt.
6" x 45° Bend F.L. = 646.68

Sta. 31+25 ℄
Std. No. 2-6 Inlets
F.L. 12" = 643.40

P.T. 32+33.21

Sta. 34+00, 40' Rt.
* Std. No. 2 M.H.
F.L. 36" = 635.26
F.L. 12" = 648.00
Top El. = 652.50
* Omit Drop Pipe

Sta. 34+50 ℄
Std. No. 2-6 Inlets
F.L. 12" = 650.00

Curve Data
Δ = 11°-17' Rt.
D = 1°-00'
R = 5729.58
T = 566.00
L = 1128.33
Ex = 27.89
P.C. = 26+67.21
P.I. = 32+33.21
P.T. = 37+95.54

Nail & Tin in 24" Walnut
P.O.T. 40+55.56
Tack in Hub on Levee

Corporation Line
1 Sty. Fr.
Levee
Conc.
Light Tower
(36" x 488') @ 0.22%
Sta. 40+36.85
N 10°-29' E
Begin 6" Gal. Rail
+51.03
Begin Gal. Rail
+58.45
Access Gate

℄ Clearance Lights
Sta. 30+76.5
Prop. 6" x 138'
I-90
12" x 40'
12" x 63'
(36" x 504') @ 0.22%
Sta. 32+35.99
Begin 6" Z+4.30
F.L. = 647.03
12" x 28'
12" x 9'
(36" x 434') @ 0.22
2" x 16'
Billboard
Conc. Pump House
2 Sty. Fr.
Barn
Floodlight Post & Cable Fence
Middletown Corporation Line
Light Tower
Ex. 12" San. Fr. Dr. (Adandon)
Ex. 8.5" Gas Line
Allowable Future Access Point 38.6i20 For Public Road Only
Sta. 39+00 50' Lt.
Std. No. 2 M.H.
F.L. 36" = 634.15
Top El. = 653.50±
Billboard
Access Gate

Sta. 29+00, 32.5' Rt.
* Std. No. 2 M.H.
F.L. 33" ℄ 36" = 636.35
F.L. 12" (E) = 644.80
F.L. 12" (W) = 647.73
Top El. = 651.21±
* Omit Drop Pipe

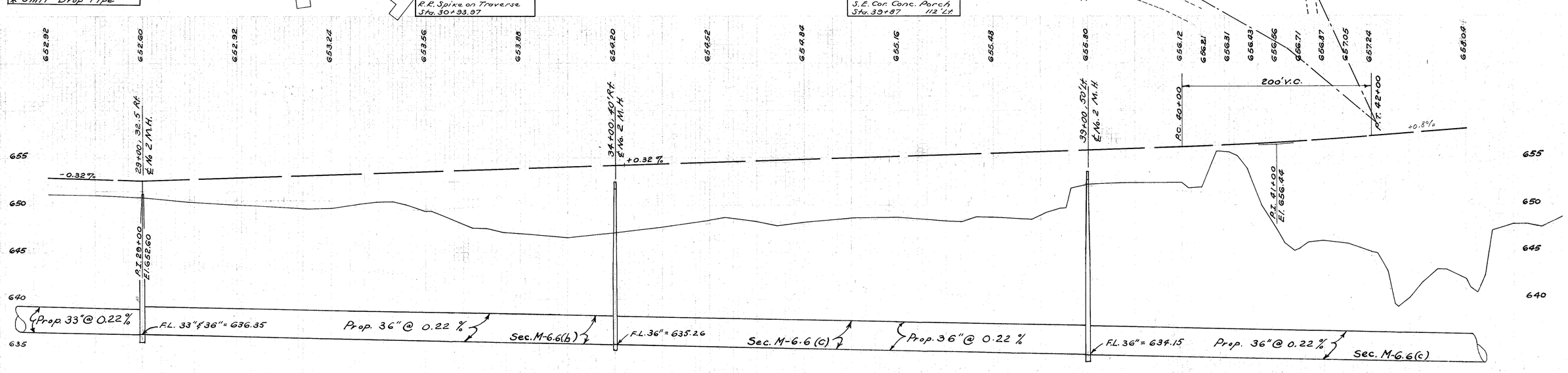
Sta. 29+00, 43.5' Rt.
Std. No. 2-2A C.B.
F.L. 12" = 645.0
Top El. = 649.2

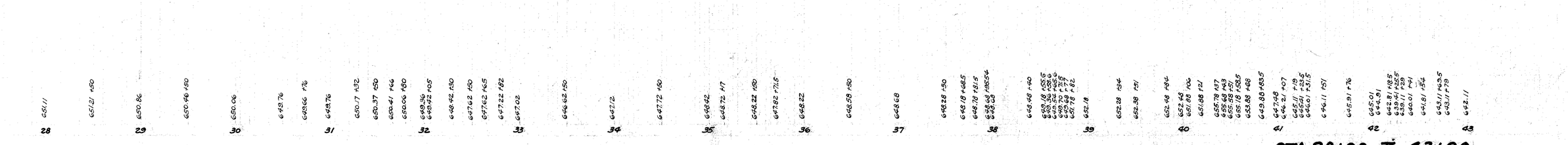
Sta. 31+50, 60' Rt.
Std. No. 2-2A C.B.
F.L. 12" = 645.2
Top El. = 648.2
F.L. 6" = 646.5

Sta. 31+50, 41' Rt. Conc. Collar
F.L. 12" = 637.50±
See Sheet No. 26

B.M. Elev. 650.74
R.R. Spike on Traverse
Sta. 30+93.97

B.M. Elev. 653.93
S.E. Cor. Conc. Porch
Sta. 39+87 112' Lt.





STA. 28+00 To 43+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)

EXISTING BRIDGE DATA
BR. Nº But-4-236 Over Great Miami River
Type: High Steel Truss
Spans: 1@ 342'-0" 1@ 137'-8"
Roadway: 17'-2"
Loading: S-6.7
Skew: None
Condition: Critical
Date Built: 1888 and 1915

Sta. 43+93 50' Lt
Std. Nº 2 M.H.
* F.L. 36"(S) = 633.07
F.L. 36"(N) = 632.57
* 1 Calco. Gate
Top El. = 659.80 ±
See Sheet No. 26

Sta. 44+58 60.5' Lt
F.L. 36" = 632.43
For Special Headwall
See Sheet Nº 27

Sta. 49+67.5 - 55' Lt.
F.L. 36" = 637.50
For Special Headwall
See Sheet Nº 27

Sta 52+05.5 - 25.5' Lt ±
Std. Nº 2 M.H.
* F.L. Exist 36"(N) = 638.70 ±
F.L. Prop. 36"(S) = 638.20
* 1 Calco Gate
See Sheet Nº 26

Sta. 55+79.5 25' Lt
Ex. Nº 2 M.H.
Adjust to Grade.

Tack in Hub @ Foot of Levee
R.O.T. 52+59.66
Tack in Hub on Levee

RIVER
GREAT MIAMI
GRAVEL PIT
Ex. Levee
Ex. Gravel Drive (Abandon)
Oil & Gas Well
1 Sty. Res.
Ex. 36" Storm
Storm M.H.
36"x63' @ 0.22%
36"x238' @ 0.3%
+38.53
+67.55
+77.47
+105.65
+58.47
+26.05
1±50
1±25

PROPOSED STRUCTURE
TYPE: Cont. steel beams with reinf. conc. deck and reinf. conc. substructure.
SPANS: 68'-85'-85'-68' 68'-85'-85'-68' °/c brgs.
ROADWAY: 56'-0" °/o of 2'-0" safety curbs.
LOAD FREQUENCY RATING: CF-400-51
SKEW: 15°00' right forward.
SURFACE COURSE: Bituminous.
APPROACH SLABS: AS-1-54 25' long.
ALIGNMENT: tangent

B.M. Elev. 647.13
R.R. Spike in 30" Sycamore
Sta. 43+75 145' Lt.

B.M. Elev. 653.03
R.R. Spike in 30" Hack
Sta. 56+16 129' Lt.

BRIDGE LIMIT
44+23.89
50+42.11
+0.80%
-0.80%
P.C. 45+00
P.T. 49+00
El. 662.34
P.T. 53+00
800' V.C.
1913 H.W. (Modified) El. = 656.50
1937 H.W. El. = 652.50
3-5 year H.W. El. = 649.50
Elev. 646.0 ± Prop. 12" Road
Calco Gate
F.L. Exist. 36" = 638.70
Ex. 36" Storm
Prop. 36" @ 0.3 %
F.L. 36" = 638.20
F.L. 36" = 637.50
Normal Water Level = 636.00
Prop. Dumped Rock Fill
Prop. Calco Gate
Prop. 36" @ 0.22%
Prop. 36" @ 0.22%
F.L. 36" = 633.07
F.L. 36" = 632.57
F.L. 36" 632.43
Excavate to El. 632

STA. 43+00 To STA. 58+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

Allowable Future Only

Curve Data
Δ = 5°47'Lt.
D = 0°-30'
R = 11459.16
T = 578.86
L = 1156.66
Ex = 14.61'
PC. = 61+23.74
P.I. = 67+02.60
P.T. = 72+80.40

P.I. - 67+02.60
100.0'
Nail & Tin in Corner Post
Tack in Hub
31.8'
33.8'
Nail & Tin in 10" Pear
138.6'
Nail & Tin in 24" Tree

Sta. 59+62.4, 25' Lt.
Ex. No. 2 M.H.
F.L. 12"(N) = 649.35

Ex. Gravel Pit

Sta. 63+49, 25.5' Lt.
Ex. No. 2 M.H.
F.L. 12" = 650.25

Sta. 65+25, 93' Lt.±
Conc. Collar F.L. 12" = 643.50±
See Sheet No. 26

Sta. 67+10, 61.2' Lt.
Ex. No. 2 M.H.
F.L. 12" = 651.65

Sta. 68+01 ℄
St'd. No. 2-6 Inlet
F.L. 12" = 652.50

Sta. 70+23.6, 24' Lt.
Ex. No. 2 M.H.
* F.L. 12" = 649.98
* 1 Flap Valve

Sta. 72+30 ℄
St'd. No. 2-6 Inlet
F.L. 12" = 652.50

Sta. 71+89
Access Point Left
No Median Opening
to be allowed.

Sta. 72+30, 26' Lt
Conc. Collar F.L. 12" = 645.50±
See Sheet No. 26

P.T. 72+80.40

Basin 9/12 +00
P.C. 61+23.74
Fnd. 6/12 +30
Ex. 36" Storm ℄
Storm
12"x69'
12"x75'
12"x101'
Ex. 30" Storm ℄
Barn
Corn Crib & Tool Shed
Milk House
Well
Gar.
Tool Shed
8 sty. Fr.
Toilet
Privy
Tractor Conc. Pits
Sta. 66+25 Allowable Future Access Opening to be allowed. No Median.
P.T. 67+02.60
67+50 ℄ Prop. 10' Dr.
0+70
0+58
0+65
Abandon 20" C.I.P.
12"x130' @ 1.0%
Twin 36" C.I.P. (To remain in place)
1 sty. Block Garage
Sta. 70+03, 72' Rt.
St'd No. 2-2 A C.B.
F.L. 12" = 646.50
Top Grate = 648.70
Sta. 1+05, 50' Lt.
St'd. No. 2-2 A C.B.
F.L. 12" = 647.60
Top Grate = 650.00
Sta. 60+25 ℄
St'd. No. 2-6 Inlet
F.L. 12" = 650.30
Sta. 62+75 ℄
St'd No. 2-6 Inlet
F.L. 12" = 651.00
Sta. 65+25 ℄
St'd No. 2-6 Inlet
F.L. 12" = 651.50
Proj. 20' Drive 3/4" @ 1.0%

B.M. Elev. 654.26
P.P. Spike in 15" Hack
Sta. 62+00 177' Lt.

B.M. Elev. 652.05
P.P. Spike in 30" Maple
Sta. 69+00 192' Rt.

655.64 654.84 654.66 654.51 654.40 654.32 654.28 654.27 654.30 654.36 654.68 655.00 655.32 655.64 655.96 656.28 656.60 656.92 657.24 657.28 657.24 657.08 656.76 656.44

P.C. 59+00
V.C. 200'
P.T. 61+00
-0.80%
+0.32%
-0.32%
P.C. 70+03
50' V.C.
P.T. 70+53
P.I. 70+28
El. 657.32
P.T. 60+00
El. 654.04
Ex. 36" Storm
Ex. 30" Storm
655
650
645

58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73

STA. 58+00 To STA. 73+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)

STA. 73+64
END PROJECT

Future Access Point, Left Only No Median Opening to be allowed.

Sta. 73+34.5 27.0 Lt.
Exist. № 2 M.H.
Adjust to Grade

Allowable Sta. 73+39

End 6" I-4
F.L. 650.55

Sta. 74+82 - 28 Lt.
6"X6" Tee
F.L. 650.32

Ex. 10" Stone Wall

1 Sty. Fr.

1 Sty. Fr.

Conc. Pump Pit

Light Post

IRON PIN
Remove 3L.O
S-22

Prop 6"X318' I-4 @ 0.4%

Depress Curb

Abandoned

Ex. 2-2A C.B.

Sta. 74+23 27' Lt. № 1 M.H.
F/L 12" = 646.00
F/L 6" = 650.00

N 42°42'E

12"X78'

12"X44'

Sta. 74+56 28' Rt.
6"X6" Tee
F.L. 650.96

Sta. 74+26 28' Rt.
6"X6" Tee
F.L. 649.15

2-Sty Frame

2-Sty Frame

12"X6" TEE
F/L = 649.02

Prop 6"X90' I-4 @ 0.4%

Prop 6"X330' I-4 @ 0.4%

Sta. 0+58.8 23.8 Lt.
Std. № 3-A C.B.
F.L. 12" = 651.75

Garage

Sta. 0+47.1 17.7' Rt.
Std. № 3-A C.B.
F.L. 12" (N) 651.50
F.L. 12" (W) 650.20

M.C.D. B.M.

End 6" I-4
F.L. 650.58

6" Conc. Tooker

OVER HANG

Sta. 1+00
Meet Ex. Pav't.

End 6" I-4
F.L. 650.66

Ex. Pav't.

Ex. Pav't.

Storm M.H.

Ex. 8" Sidewalk

Ex. Std. № 3 C.B.

Ex. 16"

Ex. 4' Sidewalk

Fed Aid Marker

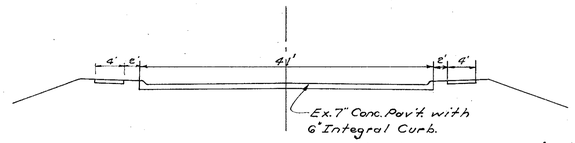
Ex. Std. № 3 C.B.

END WORK
STA. 76+54.37

Remove and replace 1' of curb. Payment incl. as Type 2 Curb & Gutter.

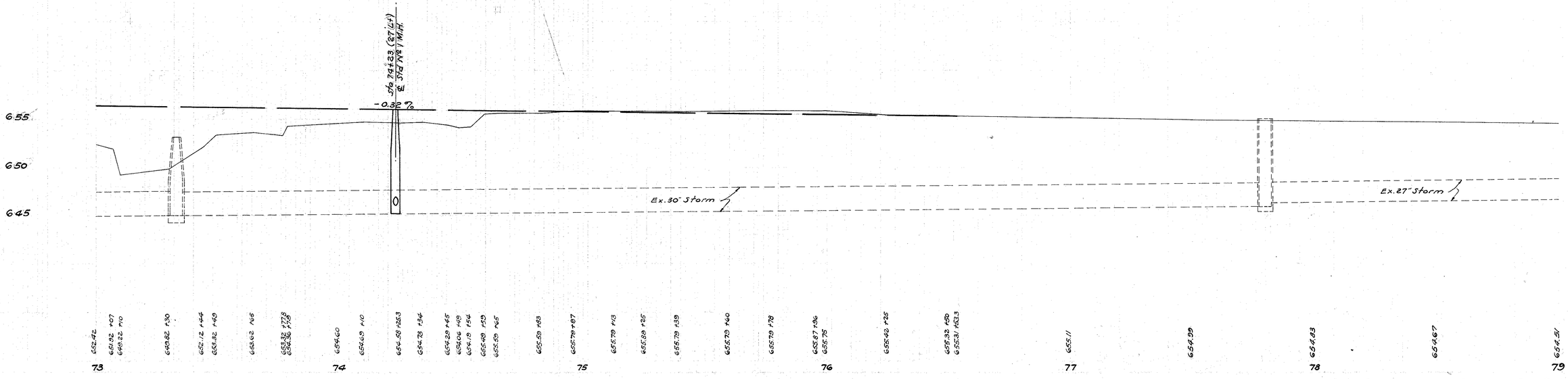
+53.37 End 6" I-4
F.L. = 651.77

+53.37 End 6" I-4
F.L. 651.26



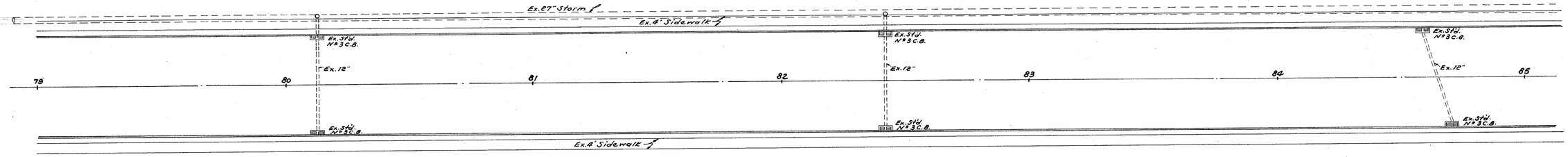
TYPICAL SECTION OF EXIST. PAV'T. ADJACENT TO END OF PROJECT

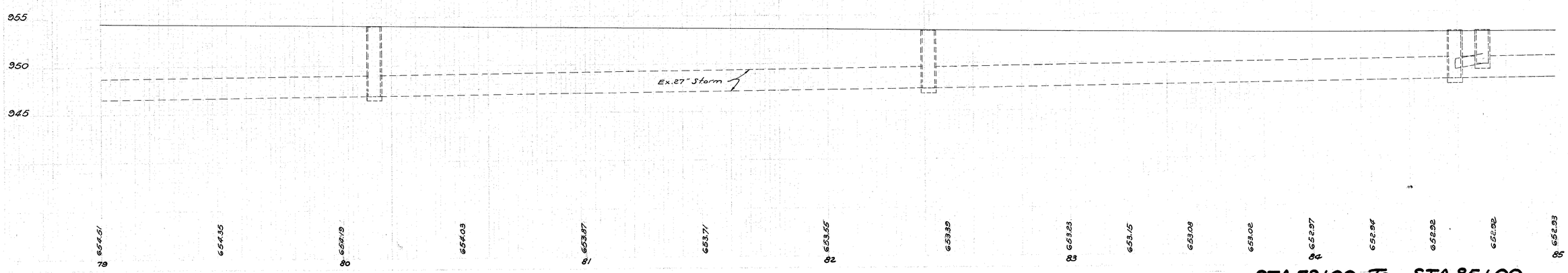
B.M. Elev. 656.66
On Gas Pump Island - S.E. Cor of Int. of Rt. "4 & Trenton Franklin Rd.



STA. 73+00 TO STA. 79+00

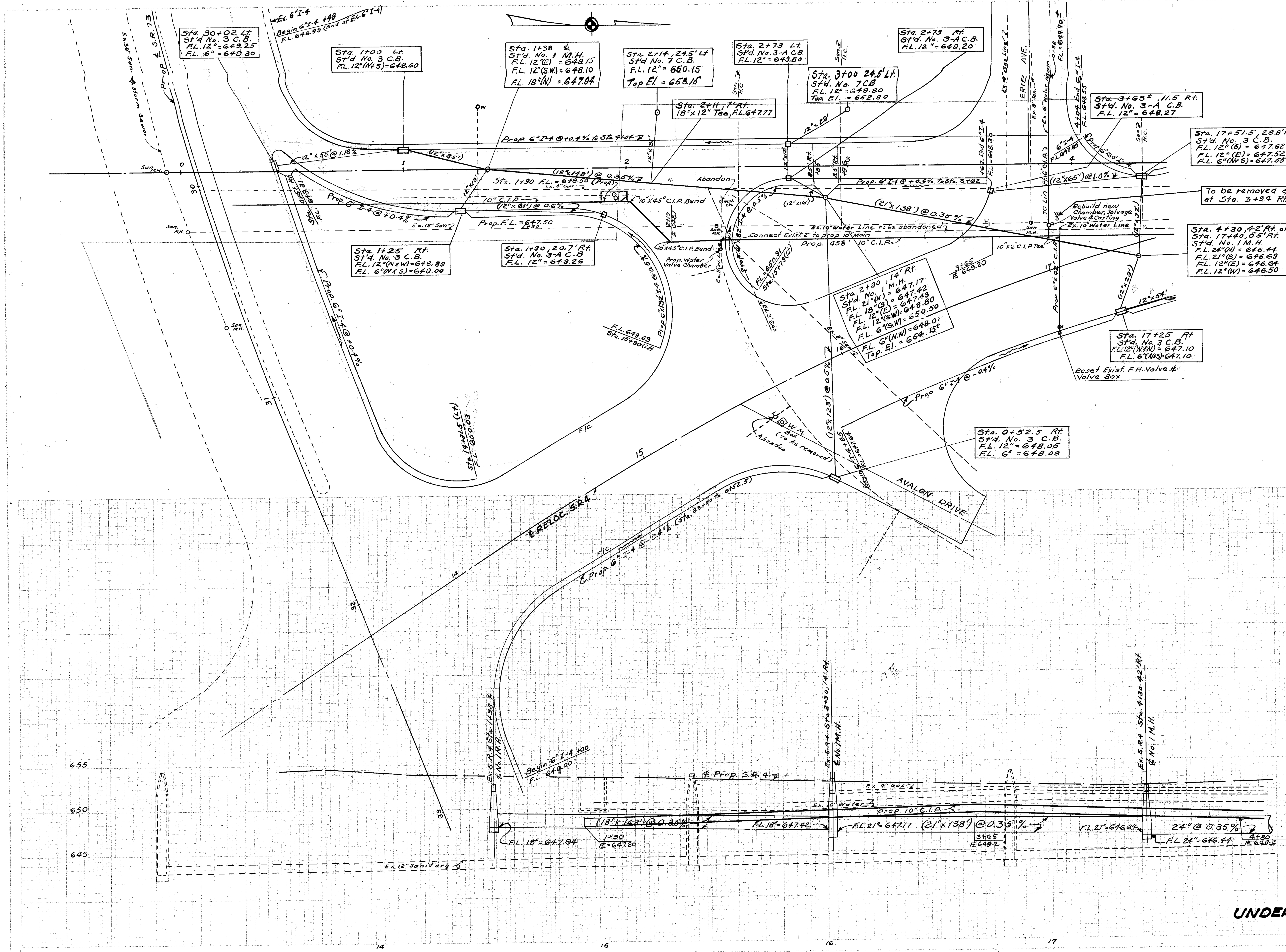
BUTLER COUNTY
BUT-4-(22.97-23.22)





STA.79+00 To STA.85+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)



UNDERGROUND PLAN

STA. 13+52.85 To STA. 17+00 (RELOC. SR. 4

FED. RD. DIVISION | STATE | PROJECT | 2 | OHIO

BUTLER COUNTY
BUT. – 4 – (22.97-23.22)

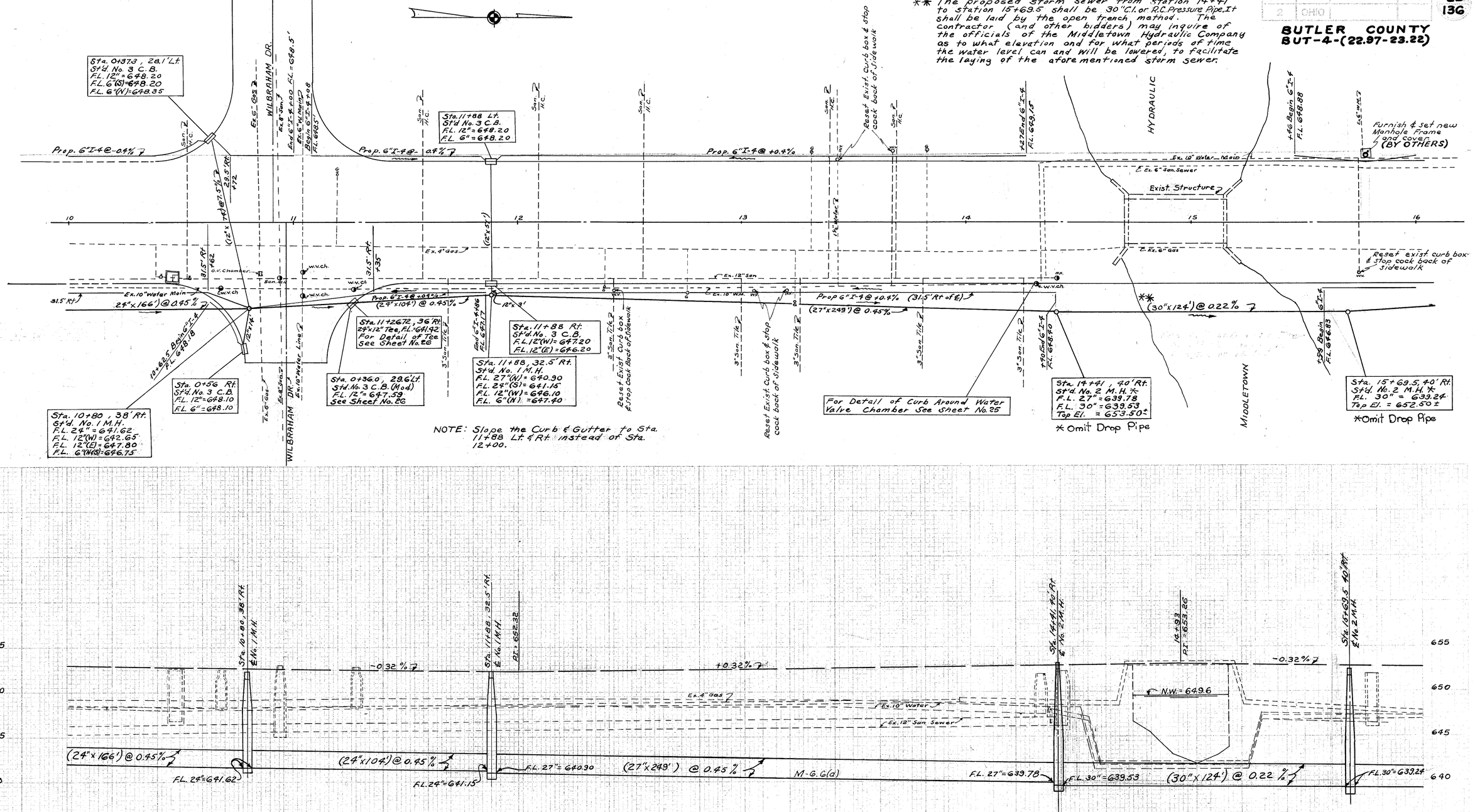
UNDERGROUND PLAN

STA. 17+00 RELOC. SR4 To STA. 10+00

FED. RD. DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		

BUTLER COUNTY
BUT-4-(22.97-23.22)

** The proposed storm sewer from station 14+41 to station 15+69.5 shall be 30" C.I. or R.C. Pressure Pipe. It shall be laid by the open trench method. The contractor (and other bidders) may inquire of the officials of the Middletown Hydraulic Company as to what elevation and for what periods of time the water level can and will be lowered, to facilitate the laying of the aforementioned storm sewer.



UNDERGROUND PLAN

STA. 10+00 To STA. 16+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

Reset exist. F.H. Valve & Valve Box

Sta. 17+00 Lt.
Std. No. 3 A.C.B.
F.L. 12" = 648.20
F.L. 6" = 648.25

Prop. 6" I-4 @ -0.4% ↘

Prop. 6" I-4 @ +0.4% to Sta. 19+00 ↗

Ex. 6" W. Main

Ex. 6" San

(12'x96') @ 4.5% ↘

Septic Tank

Prop. 6" I-4 @ 0.4%

(30"x132') @ 0.22

12"x5"

Sta. 17+12 Rt.
Std. No. 3 C.B.
F.L. 12" = 648.60

Sta. 17+06, 32.5' Rt.
* Std. No. 2 M.H.
F.L. 30" = 638.95
F.L. 12" (W) = 645.68
F.L. 12" (S.W) = 648.50
F.L. 6" = 646.25
* Omit Drop Pipe

Note: Septic tank will have to be undercut to place prop. 30" Sewer. The Contractor shall do whatever bracing & take any other precautions that are necessary and shall be responsible for any damage to septic tank. Cost of above included in price bid for 30" Storm Sewer.

Note: Slope the curb & Gutter to Sta. 17+12 instead of Sta. 17+00.

Sta. 17+50, 44' Rt.
Std. No. 7 C.B.
F.L. = 647.40
Top Grate = 650.40 ±

12"x13"

Reset exist curb box & stop cock back of sidewalk

Sta. 17+50, 32.5' Rt. Conc. Collar
F.L. 12" = 639.25 ±
See Sheet No. 26

Sta. 17+50, 90.5' Rt.
12"x45° Bend F.L. = 647.30

+06 F.L. 647.05

Sta. 19+77 (36.4' Lt.), furnish and set 24" Neenah frame & cover. Cast Iron Marked "WATER" F.F. 3 W.V.S.T. Ex. 8" C.I.W.M.

Sta. 19+77 (36.4' Lt.) Conc. Manhole Top F.L. 699.05

For Detail of Curb Around Water Valve Chamber See Sheet No. 25

Sam. Pump Pit

Ex. 8" W.M.

W.V.Ch.

Reset exist. F.H. Valve & Valve Box.

Ex. 6" W. Main

Sam. P. H.C.

Prop. 6" I-4 @ -0.4% ↗

Sta. 21+00 Lt.
Std. No. 3 C.B.
F.L. 12" = 648.20
F.L. 6" = 648.25

Prop. 6" I-4 @ +0.4% to Sta. 22+50

Ex. 10" San

3.5% ↘ (12'x36') @

Ex. 6" Gas

Reset exist curb box stop cock Meter & Water chamber back of Sidewalk

Prop. 6" I-4 @ -0.4% ↗

W.V.Ch. W.M.C.

Prop. 6" I-4 @ +0.4% to Sta. 23+03

(30"x395') @ 0.22 % ↘

(33"x394') @ 0.22% ↘

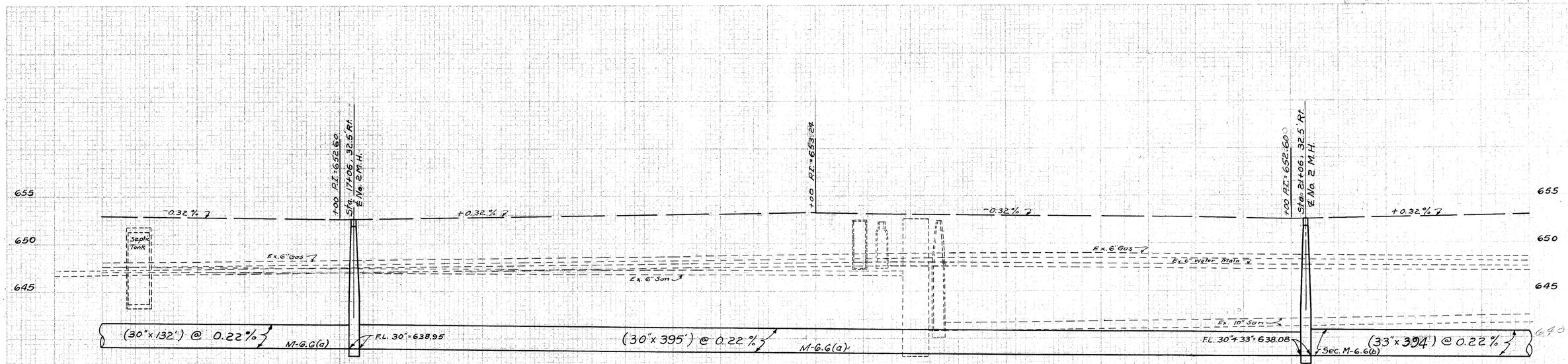
12"x5"

Sta. 21+06, 32.5' Rt.
* Std. No. 2 M.H.
F.L. 30" = 638.08
F.L. 12" (W) = 646.25
F.L. 12" (N.W.) = 648.50
F.L. 6" = 646.25
* Omit Drop Pipe

Sta. 21+12 Rt.
Std. No. 3 C.B.
F.L. 12" = 648.60

NOTE: Slope the Curb & Gutter to Sta. 21+12 Rt. instead of Sta. 21+00 Rt.

16 17 18 N. 0°-48' W 19 20 21 22



16 17 18 19 20 21 22

UNDERGROUND PLAN

STA. 16+00 TO STA. 22+00

BUTLER COUNTY
BUT.-4- (22.97-23.22)

Reset exist F.H. Valve & Valve Box

6" I-4 @ +0.40%

San. M.H. Rim = 648.85 28.5' Lt. End I-4 28.5' Lt. Begin I-4 F.L. = 646.85

Reset exist curb box & stop cock to back of sidewalk

San. M.H.

6" I-4 @ -1.46%

San. M.H.

6" I-4 F.L. = 646.66 24+00 (28.5' Lt.)

Reset exist water meter & Water chamber

San. M.H.

6" I-4 F.L. = 646.00 24+42.16 (28' Lt.)

Down Spout Stock Sta. 24+41.7 (32.5' Lt.)

3"x90° Bend F.L. = 652.40

Std. No. 3 C.B. Sta. 24+80 Lt. F.L. 12" = 646.75 F.L. 6" I = 648.90 F.L. 6" S = 646.75

Down Spout Stock (thru wall) Sta. 25+02 (32.5' Lt.)

3"x90° Bend F.L. = 652.21

6" Tee for I-4 Outlet 25+05 (28' Lt.) FL= 644.50

Remove exist F.H. Valve & Valve Box & relocate at Sta. 26+65 Lt.

Plug exist Tee

Remove exist Valve & Valve chamber & reset Valve at Sta. 26+75

Down Spout Stock Sta. 25+92 (32.25 Lt.)

3"x90° Bend F.L. = 652.34

3-6"x45° C.I.P. Bends See Sheet No. 93

+50 End 6" I-4 28' Lt. F.L. = 646.75

+50 6" C.I.P. Water Main 28.5' Lt.

Prop. F.H. Valve & Valve Box Sta. 26+65 Lt.

Prop. Water Valve chamber Sta. 26+75 29.50' Lt. F.L. 6" = 649.00

3"x4'

3"x4'

3"x4'

6" I-4 under 6" C.I. Water Main

Prop. 6" C.I.P.

Ex. 6" W. Main

Ex. 10" San.

Ex. 6" Gas

22 23 24 N. 0°-48' W 25 26 27 28

(18"x 57') @ 1.18%

8" Pipe Outlet

Prop. 6" I-4 @ +0.4% to Sta. 23+03

Prop. 6" I-4 @ -0.4%

Prop. 6" I-4 @ +0.4%

(33"x 394') @ 0.22%

(33"x 391') @ 0.22%

12"x8"

+93 FL 647.03

Exist Curb Box & Stop to back of sidewalk

Reset Curb box & stop cock to back of sidewalk

Sta. 25+05, 32.5' Rt.
* Std. No. 2 M.H.
F.L. 33" = 637.21
F.L. 12" = 645.75
* Omit Drop Pipe
F.L. 8" outlet = 644.50

Sta. 25+05 Rt. Std. No. 3 C.B. F.L. 12" = 645.86

Sta 26+21, 32.5' Rt. Conc. Collar F.L. 12" = 639.00 ± See Sheet No. 26

12"x17"

Sta. 26+21, 40.5' Rt. 12"x45° Bend F.L. = 645.80

Sta. 26+21, 49' Rt. Std No. 7 C.B. F.L. 12" = 645.90 Top Grate = 648.90

End 6" I-4 +00 FL 647.01

UNDERGROUND PLAN

22 23 24 25 26 27 28

STA. 22+00 To STA. 28+00

G55 G50 G45 G40

+0.32% +0.32% +0.32% -0.32%

100 P.T. = 653.24

100 P.T. = 652.69 Sta. 25+05, 32.5' Rt. & No. 2 M.H.

+00 P.T. = 653.24

Prop. 6" C.I.A.

649.00

E = 649.00

Ex. 6" Gas

Ex. 6" Water Main

Ex. 10" San.

(33"x 394') @ 0.22%

Sec. M-6.6(b)

F.L. 33" = 637.21

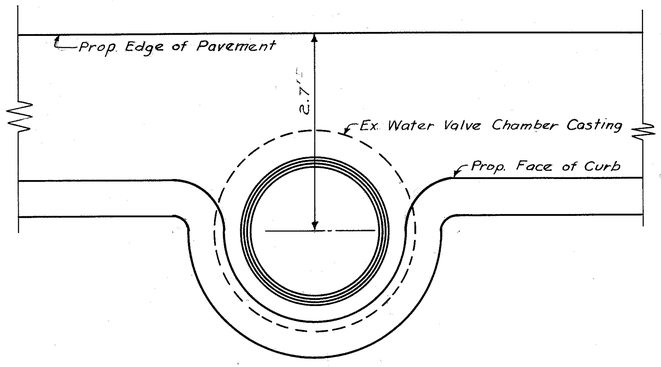
Sec. M-6.6(b)

(33"x 391') @ 0.22%

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

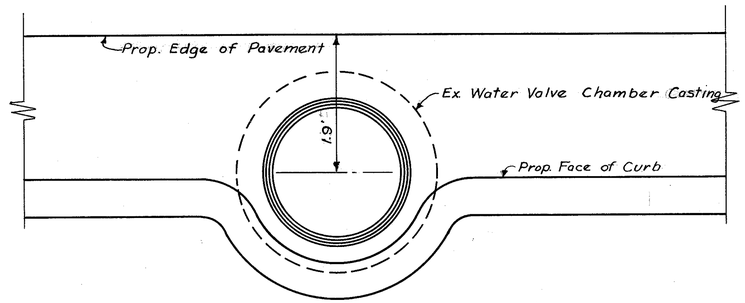
25
136

BUTLER COUNTY
BUT.-4-(22.97-23.22)



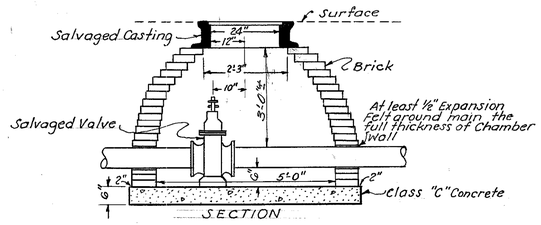
CURB AROUND WATER VALVE CHAMBER
at STA. 14+31 Rt.

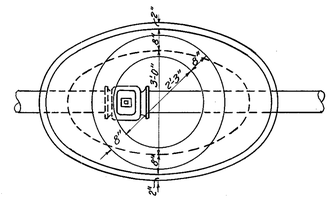
Scale : 1"=1'



CURB AROUND WATER VALVE CHAMBER
at STA. 7+46.5 Rt.

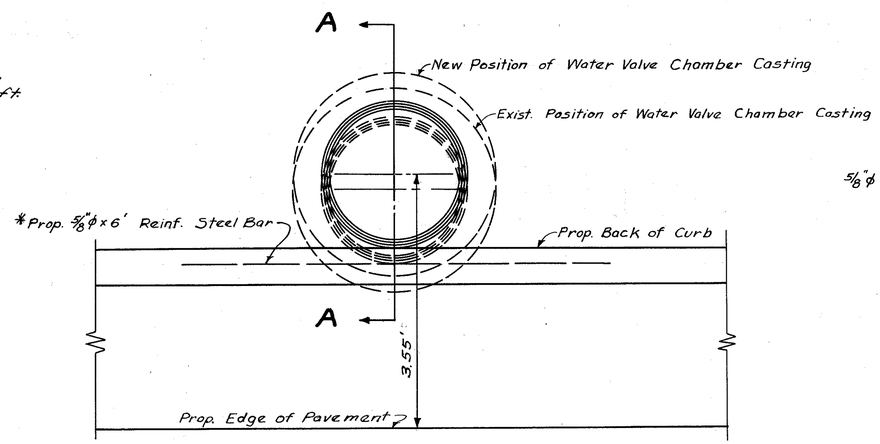
Scale : 1"=1'





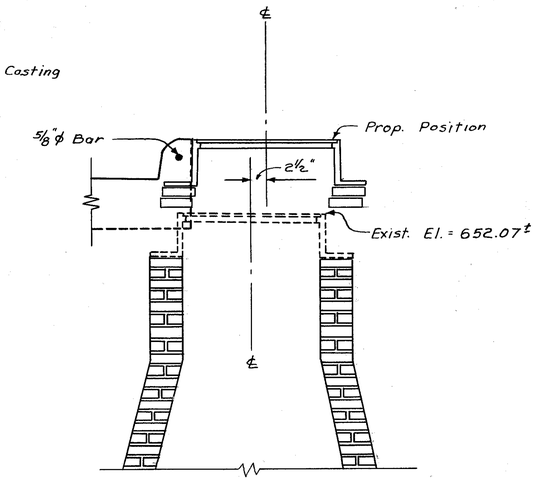
VALVE CHAMBER
WITH SALVAGED VALVE & CASTING

*NOTE: Payment for 5/8" steel bar & curbing shall be included in Price Bid per lin. ft for Item I-12, Conc. Curb & Gutters.



WATER VALVE CHAMBER AT CURB EDGE
at STA. 19+28.5 Lt.

Scale : 1"=1'

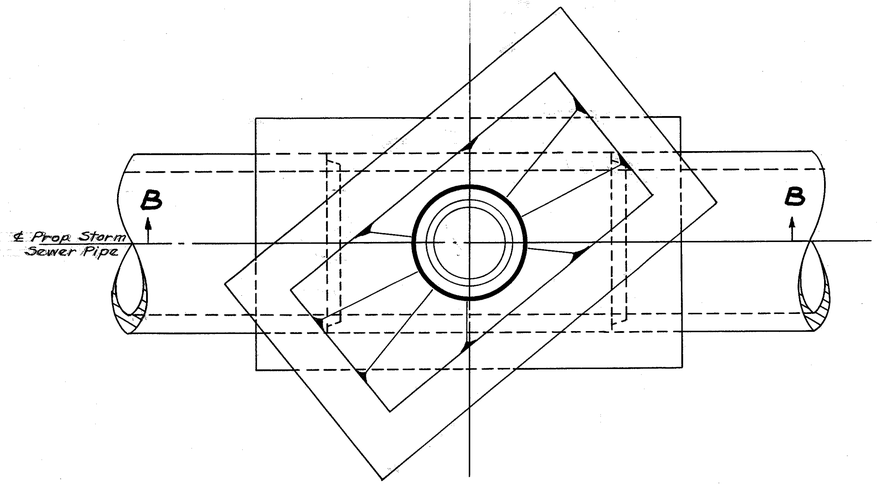


SECTION A-A

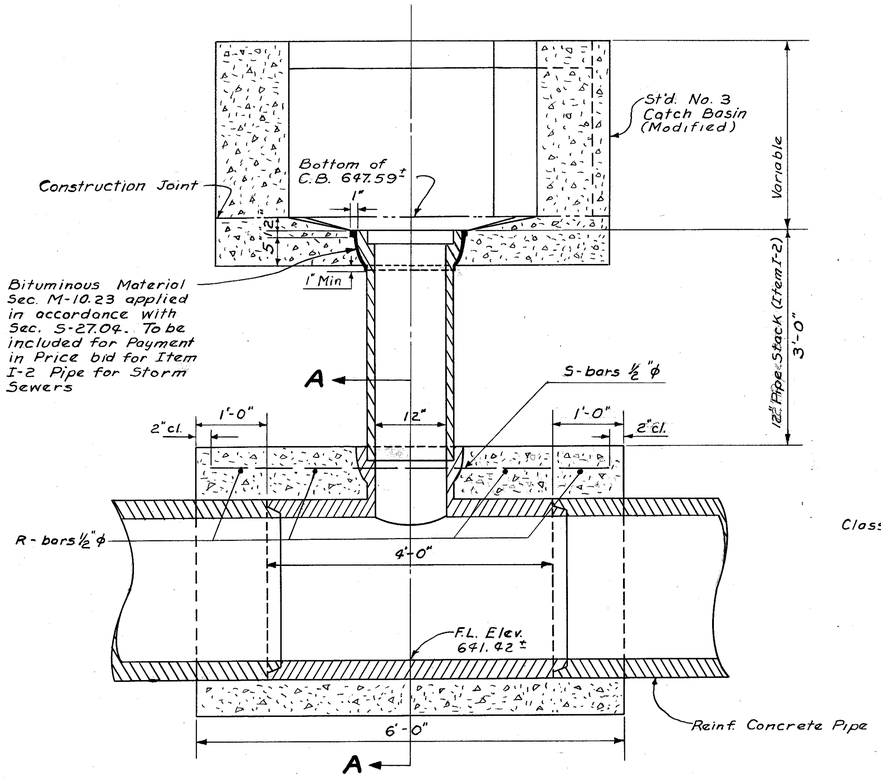
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

26
136

BUTLER COUNTY
BUT.-4-(22.97-23.22)



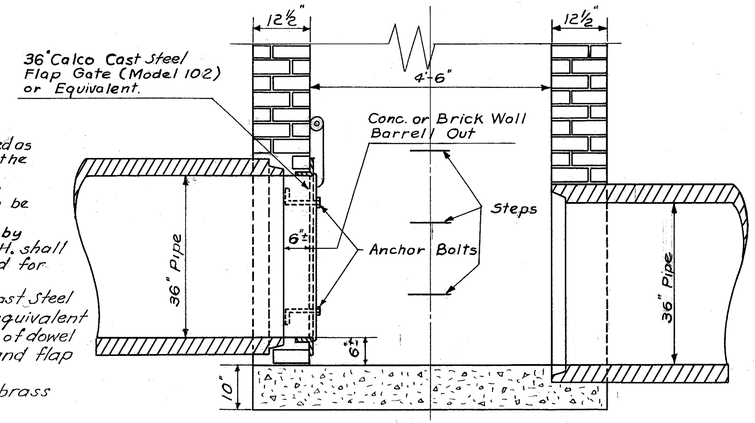
PLAN



SEC. B-B
ASSEMBLY of STACK CONNECTION to CATCH BASIN for REIN. CONC. PIPE at STA. 11+26.72 Rt.

Scale: 1"=1'-0"

NOTE: End of 36" Pipe may be placed as shown in M.H. to accommodate the placing of Anchor Bolts.
Anchor Bolts necessary to attach Gate to wall of M.H. to be furnished with the Gate.
Additional Cost incurred by altering the wall in the No 2 M.H. shall be included in the unit price bid for Item I-8.
Payment for proposed 36" Cast Steel Flap Gates, Calco, Model 102 or equivalent includes furnishing and placing of dowel holes, expansion anchor bolts and flap gates, complete in place.
Gates shall be fitted with brass bushings, studs and nuts.

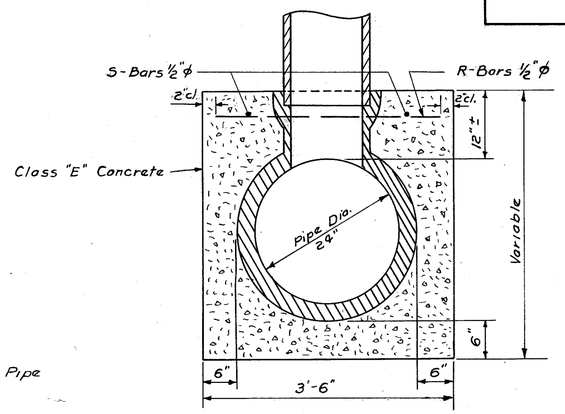


TYPICAL SECTION on ℄ of 36" PIPE SHOWING ALTERATION of WALL in No. 2 M.H.

Scale: ¾"=1'-0"

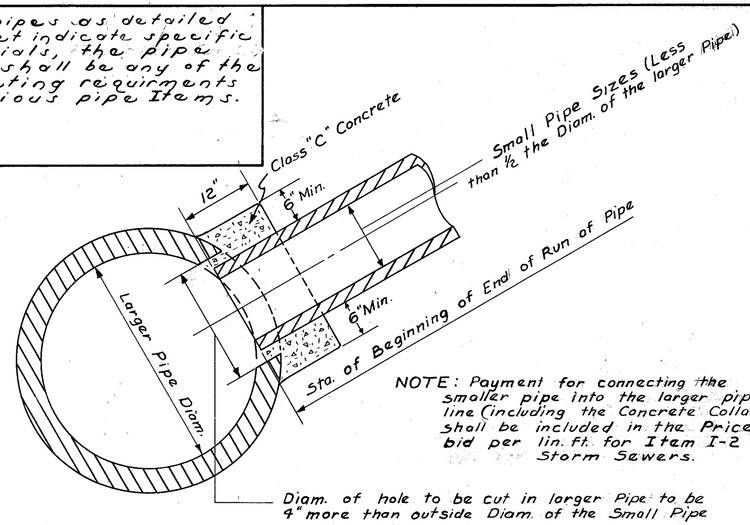
STA. 43+91 ℄ STA. 52+05.5

Concrete Class "E" = 2.2 Cu.Yd.				
Reinforcing Steel S-4				
Mark	Size	No.	Length	Weigh
R	½"ϕ	4	3'-2"	8 lbs
S	½"ϕ	2	5'-8"	8 lbs
		Total		16 lbs



SEC. A-A

NOTE: While pipes as detailed on this sheet indicate specific pipe materials, the pipe furnished shall be any of the types meeting requirments of the various pipe Items.



NOTE: Payment for connecting the smaller pipe into the larger pipe line (including the Concrete Collar) shall be included in the Price bid per lin. ft. for Item I-2 Storm Sewers.

Diam. of hole to be cut in larger Pipe to be 4" more than outside Diam. of the Small Pipe

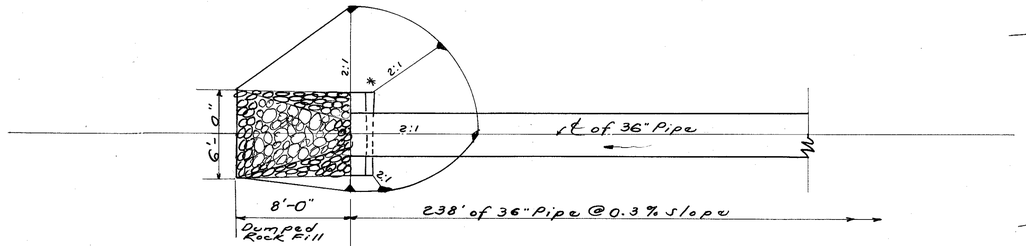
DETAIL FOR SMALL PIPE CONNECTION INTO LARGER PIPE LINES WITHOUT THE USE OF PIPE SPECIALS

Scale: 1"=1'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

27
136

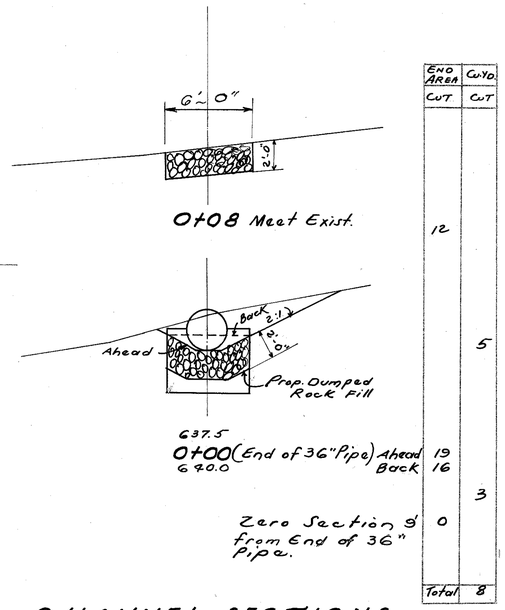
BUTLER COUNTY
BUT. 4 (22.97-23.22)



* For special Headwall, see Detail Below

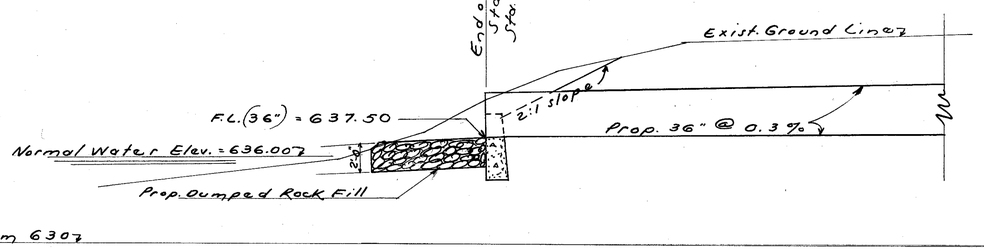
Note: All dumped rock shall be uniformly placed so that at least 50% of the pieces will weigh at least 75 pounds.

PLAN



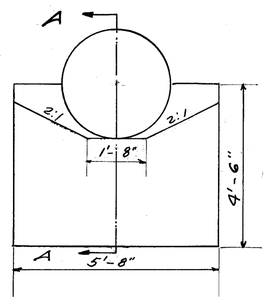
	End Area Cut	Cu Yds. Cut
Meet Exist.	12	
		5
0+00 (End of 36" Pipe) Ahead	19	
Back	16	
		3
Zero Section 9' from End of 36" Pipe.	0	
Total	8	

CHANNEL SECTIONS
Scale 1" = 5'-0"

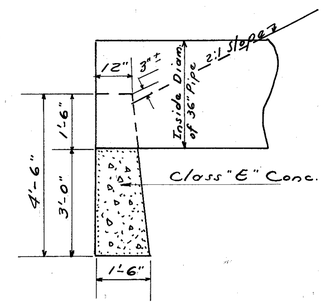


SECTION
Scale 1" = 5'-0"

DETAIL OF END OF 36" PIPE AT STA. 49+67.5, 55' LT.



DETAIL OF SPECIAL HEADWALL
Scale 1" = 2'-0"



SEC. A-A

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

Incl. in Appr. Quant's

653.30
15+21.18
652.78

Incl in Appr. Quant's

653.50
14+91.18
650.88

Incl in S.R. 73 Quant's

100 90 80

653.69
14+61.18
650.48

STA. 14+43
BEGIN PROJECT

Incl in S.R. 73 Quant's

653.88
14+31.18 END SECTION (Ahead Only)
649.78

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA 14+31.18 TO STA 15+21.18 (RELOC. S.R. 4)

	End Area		Volume	
	Cut	Fill	Cut	Fill
		34	254	
				19 374
	0	419		
				0 573
	0	613		
Sta. 30+25.97 to Sta. 32+85 S.R. 73				68 994
Sta. 1+97.48 to Sta. 3+96.9 Appr.				679 125
			0	525
STA. 14+31.18			0	332
Sta. 0150 to Sta. 1+97.48 Appr.				335 272
Sta. 29+48 to Sta. 30+25.97 S.R. 73				55 18

RURAL

Sta. 29+48 to Sta. 14+31.18
MUNICIPAL
Excavation 390. cu. yd.
Embankment 290. cu. yd.
Emb. + 15% 334. cu. yd.

STA. 29+48
SR 73

BUTLER COUNTY
BUT-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

17+97 DR. LT.

	End Area Cut	End Area Fill	Volume Cut	Volume Fill
17+97 Dr. Lt.			1	0
	231	5		
			399	8
	200	4		
			326	20
	152	18		
			307	46
	180	32		
			245	33
	85	4		
Appr. Sta. 15+50 Rt		131	2	
			64	138
STA. 15+21.18	34	254		

Ex. 10" W.M.

652.12
17+50
653.58

Incl. in Appr. Quants.

652.14
17+00
653.78

Incl. in Appr. Quants.

Ex. 10" W.M.

652.48
16+50
653.48

Incl. in Appr. Quants.

Included in Avalon Appr.

652.80
16+00
653.38

Incl. in Appr. Quants.

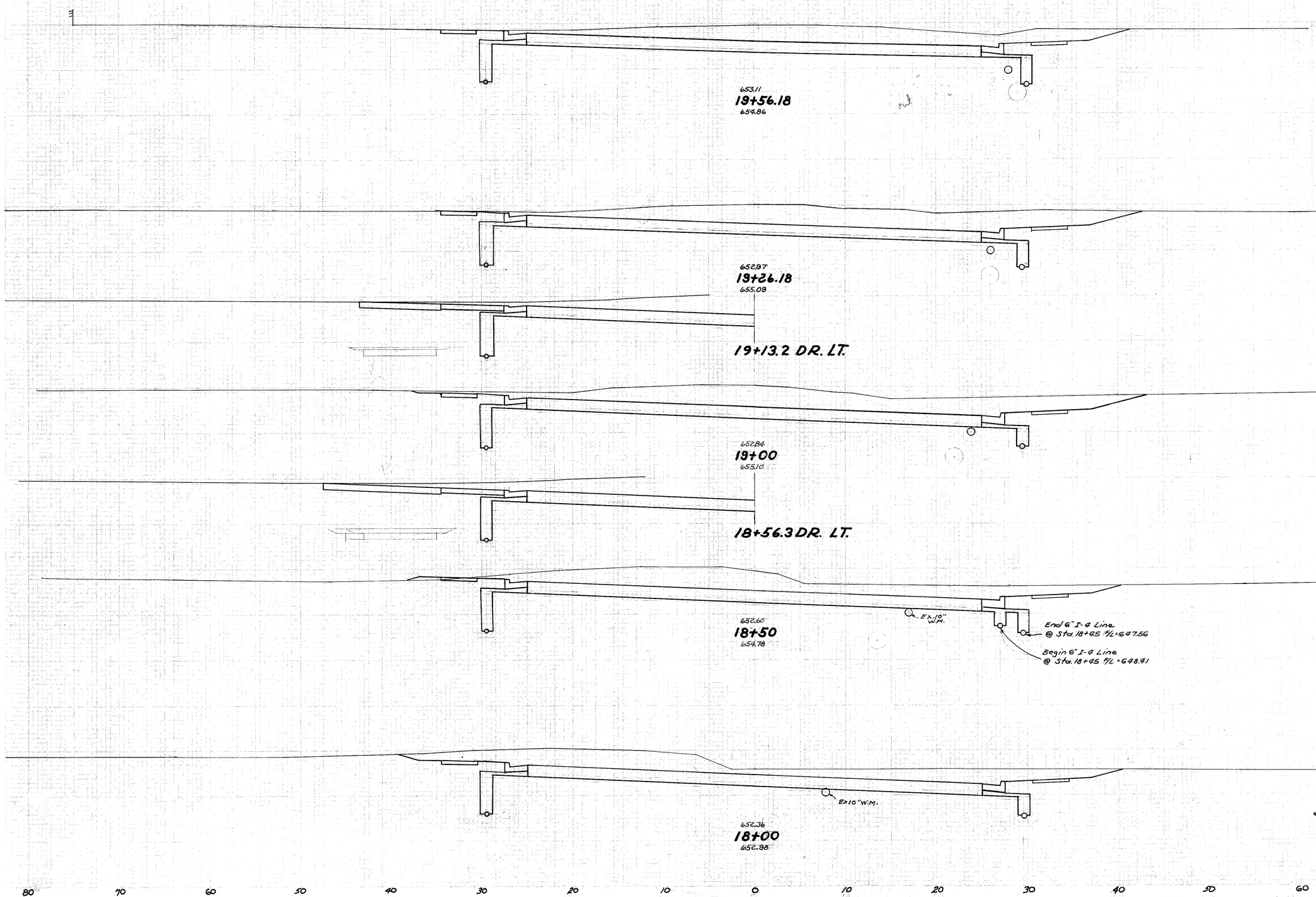
653.12
15+50
652.98

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA 15+50 TO 17+97 (RELOC. S.R. 4)

BUTLER COUNTY
BUT-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60



	End Area		Volume	
	Cut	Fill	Cut	Fill
				-
	166	5		
			198	6
	191	5		
			188	5
19+13.2 Dr. Lt.			4	0
	197	5		
18+56.3 Dr. Lt.			6	0
			350	10
	181	6		
			339	10
	185	5		
			385	9
STA. 17+50	231	5		

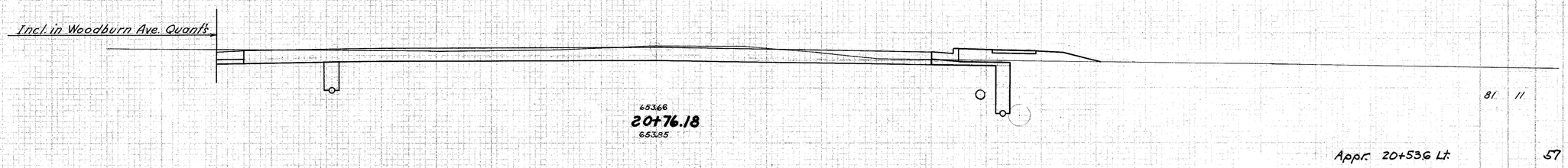
80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA 18+00 TO STA 19+56.18 (RELOC. S.R. 4)

BUTLER COUNTY
BUT-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

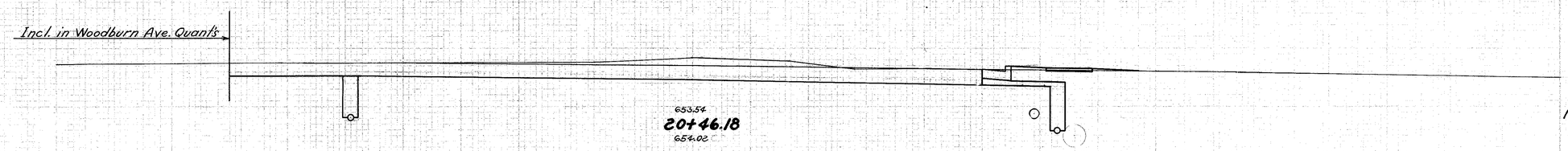
End Area Volume
Cut Fill Cut Fill



81 11

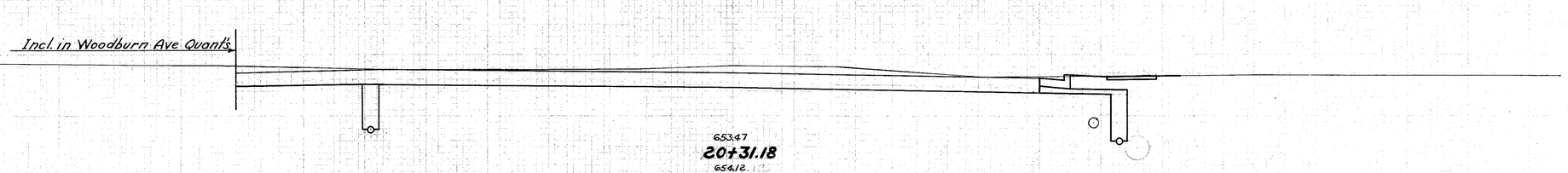
Appr. 20+53.6 Lt: 57 2

103 9



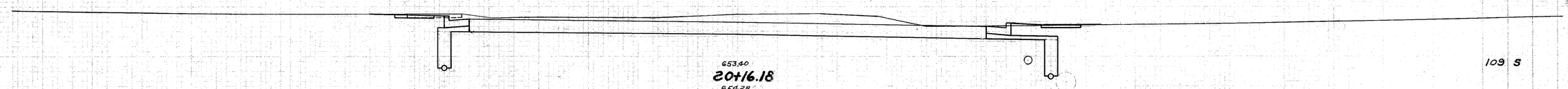
105 5

60 3



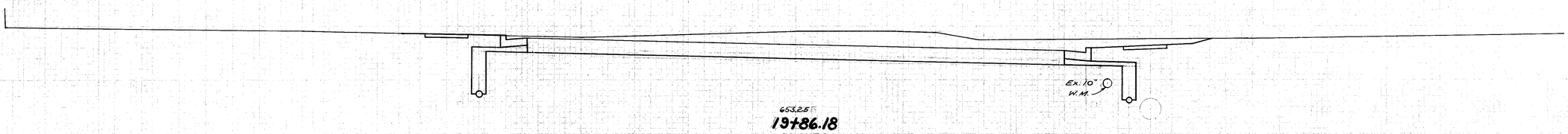
112 5

61 3



109 5

140 7



142 8

171 7

STA. 19+56.18 166 5

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA 19+86.18 TO STA 20+76.18 (RELOC. S.R. 4)

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

0+44

Incl. in Rdwy. Quant's.

653.18
9+30.5 DR. LT.
653.96

Incl. in Appr. Quant's.

653.28
9+00
653.86

Incl. in Appr. Quant's. Ahead Only.

653.34
8+80
653.80

0+49.5

653.40
8+63 CONC. WALK LT.
653.80

0+47

653.47
8+41 DR. LT.
653.80

653.52
STA. 21+40.6 (BACK) = 8+25.3 (AHEAD)
653.81

653.58
21+22.3 (RELOC. S.R. 4)
653.84

653.64
21+03.3 (RELOC. S.R. 4)
653.84

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	120	1		
				127 2
Appr. Rt. Sta. 9+06	104	3		126 8
				70 1
AHEAD	84	1		
BACK	84	1L		
				108 18
				65 14
				40 8
				71 14
				48 9
				70 13
				46 9
				62 13
				72 12
Sta. 20+76.18	81	11		80

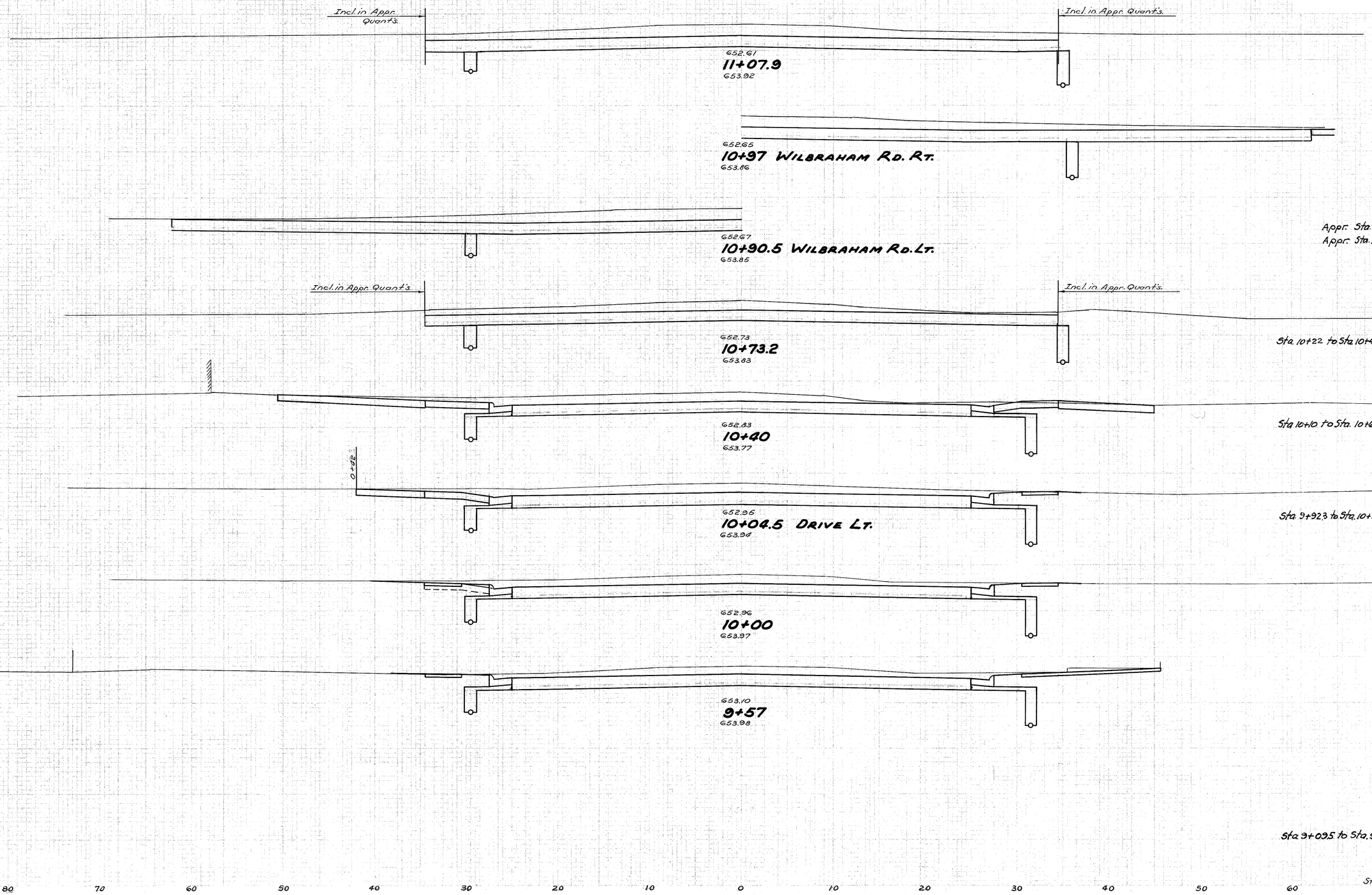
Sta. 14+31.18 to Sta. 14+72.12
RURAL
Excavation 8102 Cu.Yd.
Embankment 3126 Cu.Yd.
Emb. + 15% 3595 Cu.Yd.

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 21+03.3 (RELOC. S.R. 4) to STA. 9+30.5

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60



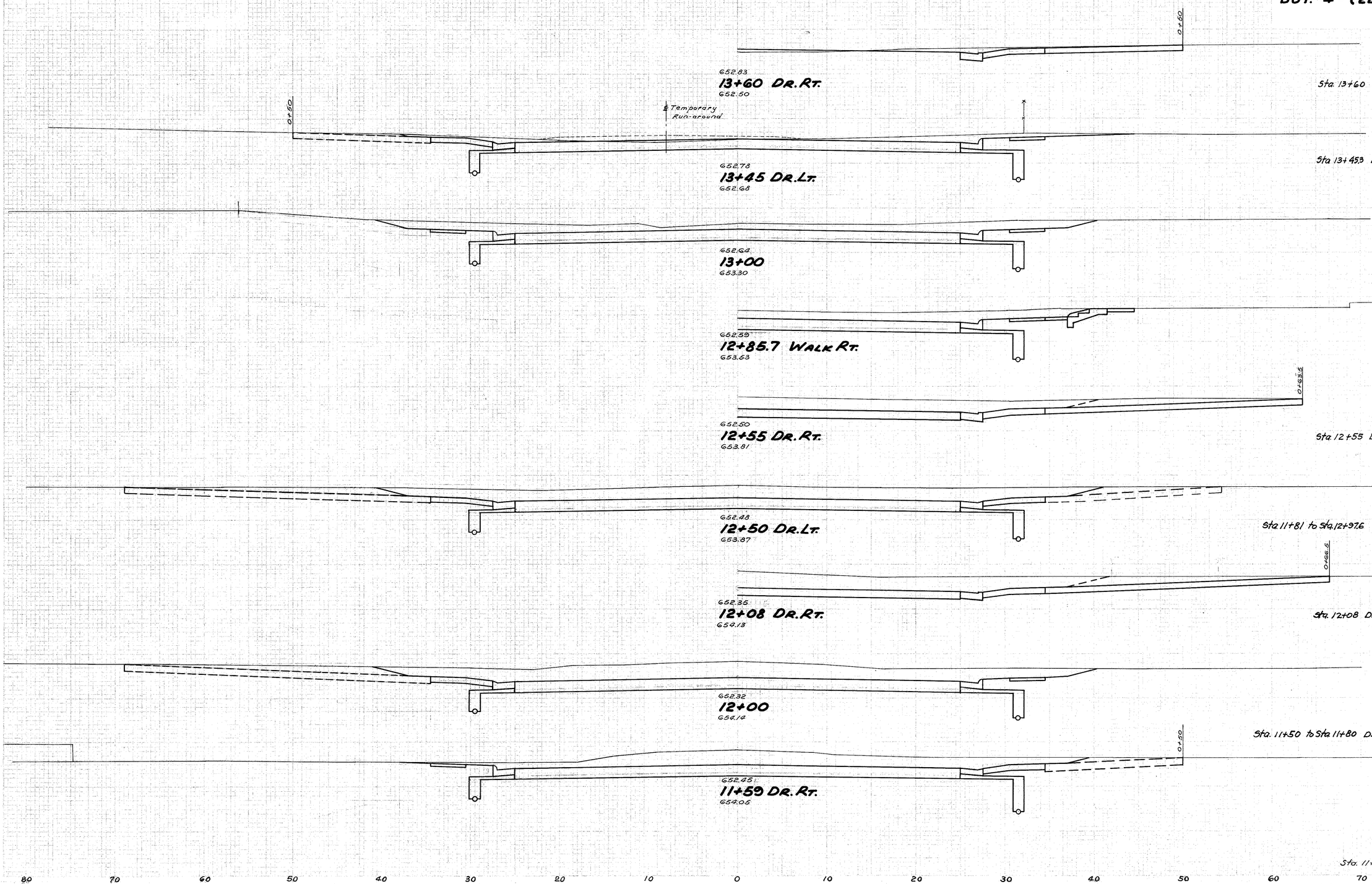
	End Area		Volume	
	Cut	Fill	Cut	Fill
	154	0		
			180	0
Appr. Sta. 10+97 Rt.			135	9
Appr. Sta. 10+90.67 Lt.			80	5
	126	0		
Sta. 10+22. to Sta 10+44.18 Dr. Rt.			7	
			155	4
	126	7		
Sta 10+10 to Sta. 10+61 Dr. Lt.			27	
			174	9
	138	7		
Sta. 9+923 to Sta. 10+37.49 Dr. Lt			10	
			22	1
	130	7		
			210	14
	134	10		
			125	5
Sta. 9+095 to Sta. 9+395 Dr. Lt			14	
Sta. 9+30.5	120	1	80	

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 9+57 TO STA. 11+07.9

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

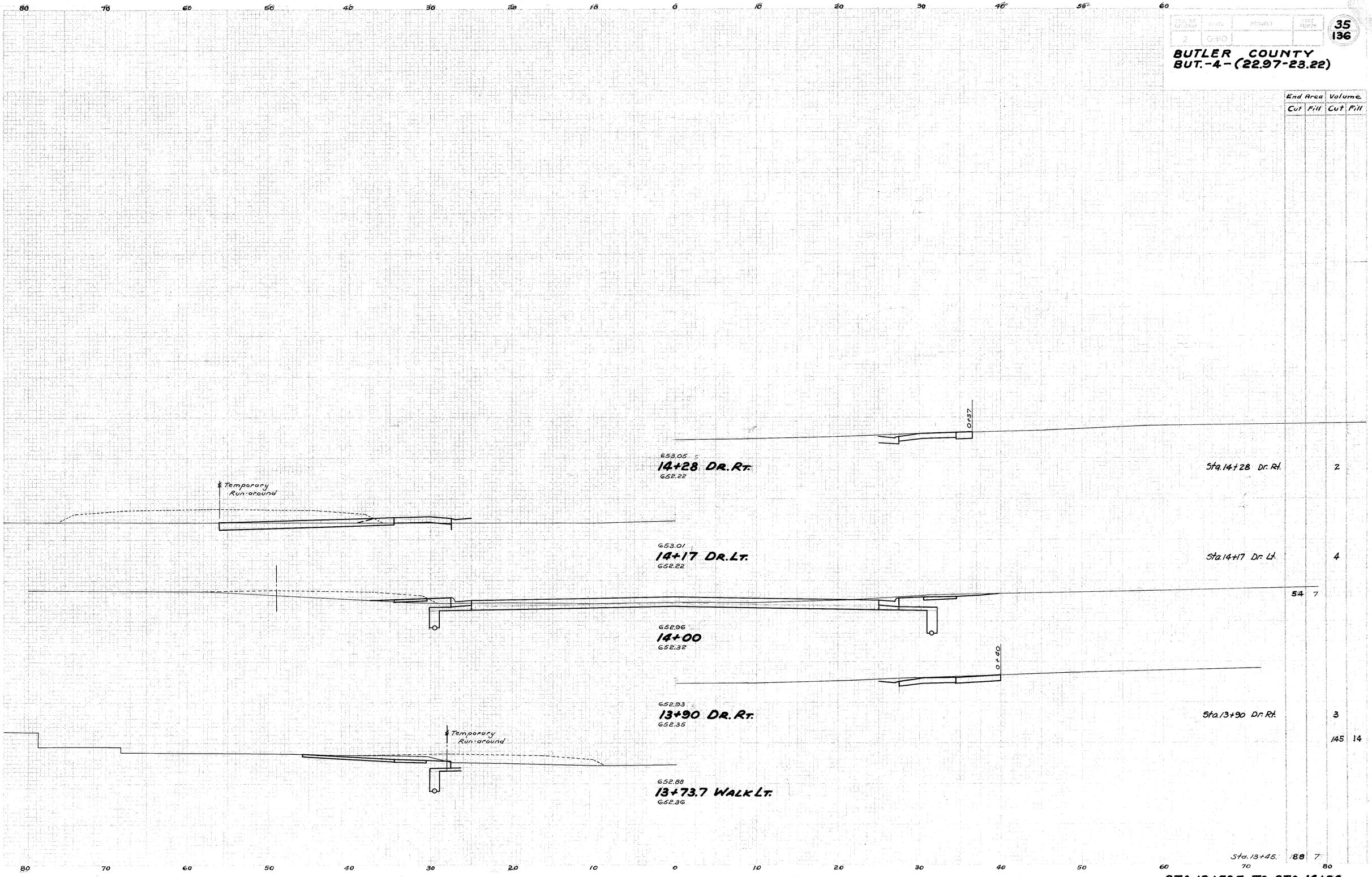


	End Area		Volume	
	Cut	Fill	Cut	Fill
Sta 13+60 Dr. Rt.			5	
		88	7	
Sta 13+45.3 Dr. Lt.			8	
			192	12
		142	7	
			295	13
Sta 12+55 Dr. Rt.			12	
		177	7	
Sta 11+81 to Sta 12+97.6 Dr. Lt.			170	
			356	13
Sta 12+08 Dr. Rt.			18	
		207	7	
			279	11
Sta. 11+50 to Sta 11+80 Dr. Rt.			18	
		161	7	
			298	7
Sta. 11+07.9		154	0	

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 11+59 TO STA. 13+60

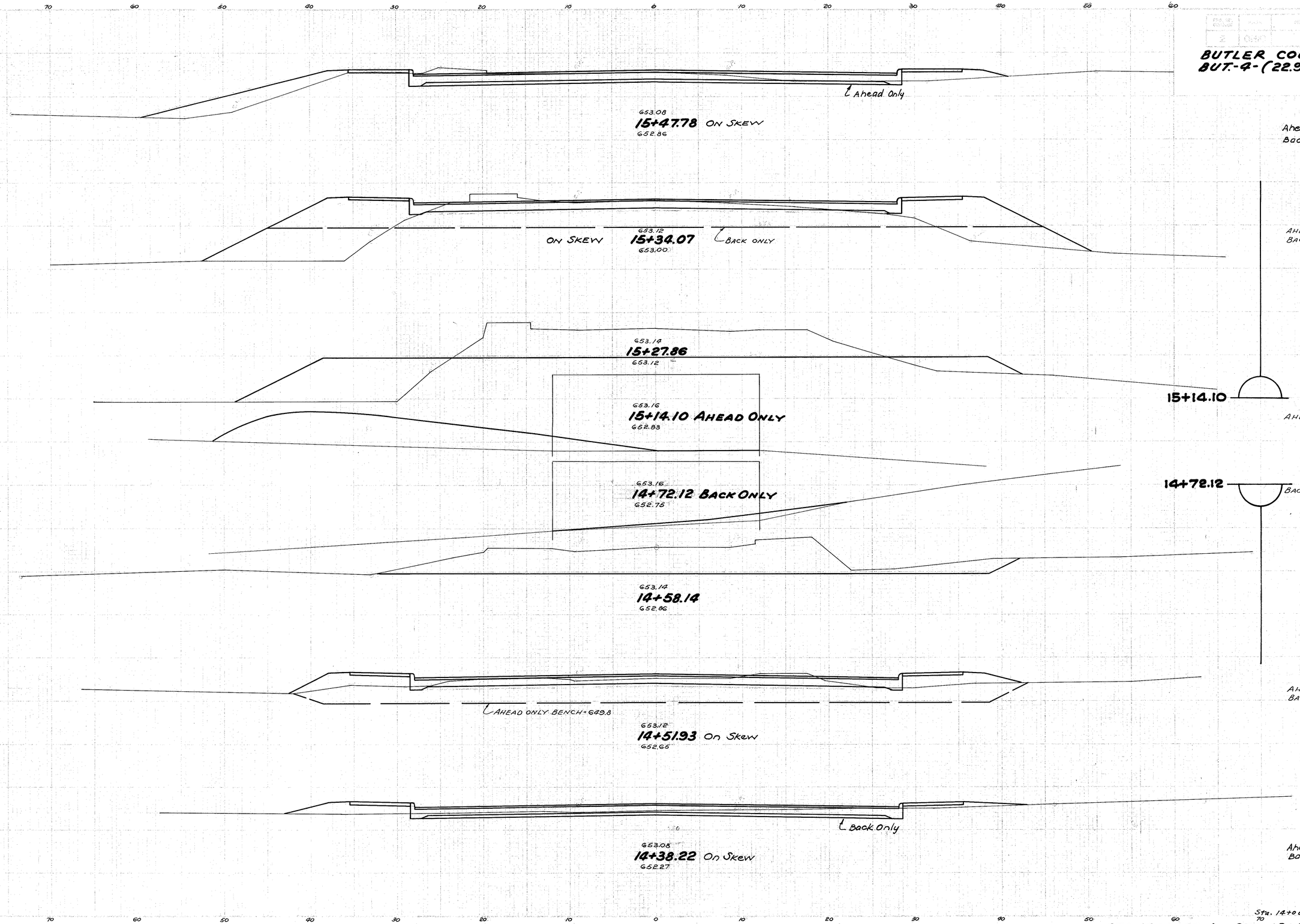
BUTLER COUNTY
BUT.-4-(22.97-23.22)



End Area		Volume	
Cut	Fill	Cut	Fill

STA. 13+73.7 TO STA. 14+28

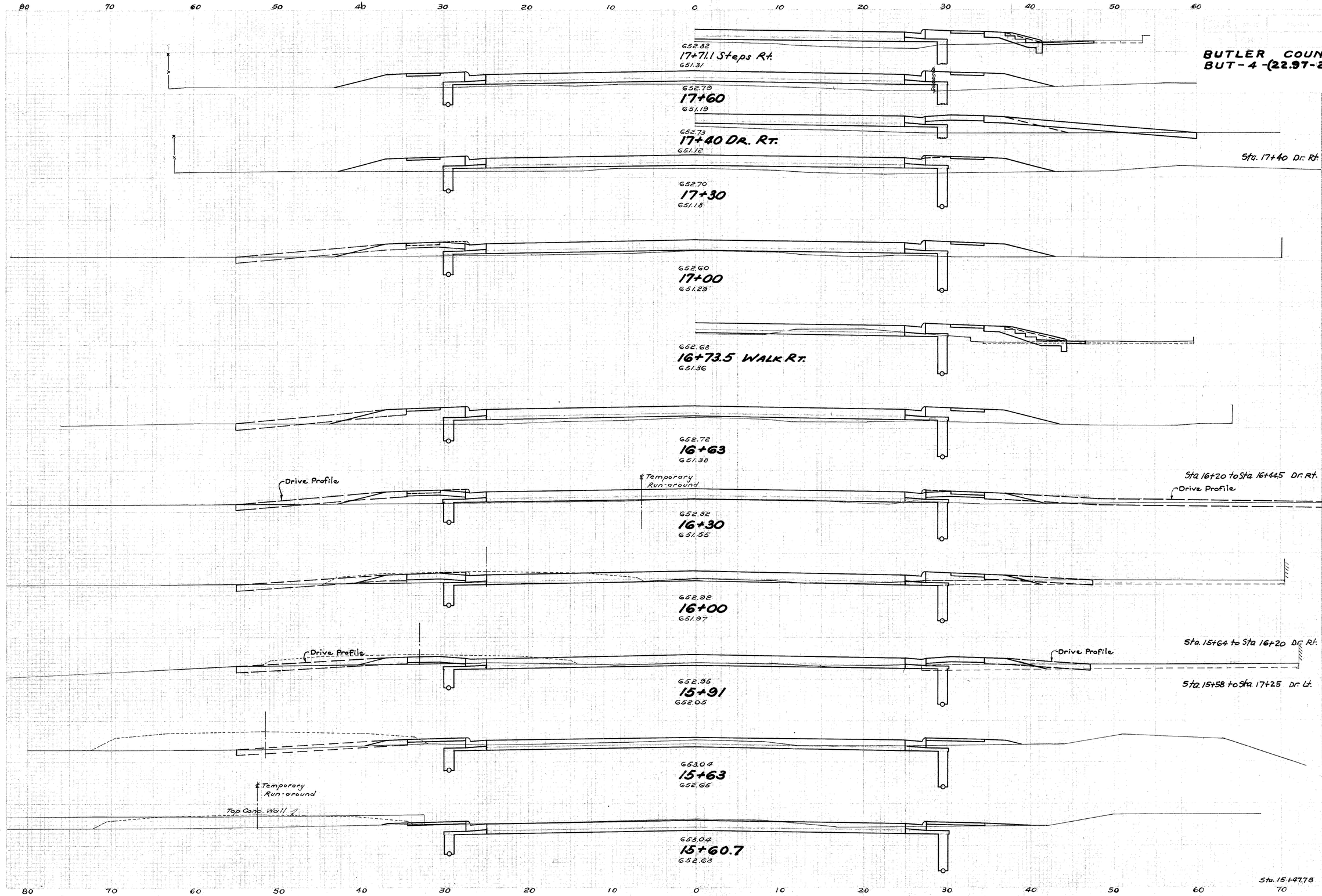
BUTLER COUNTY
BUT-4-(22.97-23.22)



	End Area		Volume	
	Cut	Fill	Cut	Fill
Ahead	62	42		
Back	44	42		
			22	53
AHEAD	43	168		
BACK	167	86		
			36	22
	145	106		
			91	59
15+14.10				
AHEAD	212	127		
14+72.12				
BACK	167	12		
			87	3
	170	0		
			43	0
AHEAD	200	0		
BACK	39	31		
			16	12
Ahead	24	18		
Back	42	18		
			68	18
Sta. 14+00	54	7		

STA. 14+38.22 to STA. 15+47.78

BUTLER COUNTY
BUT-4-(22.97-23.22)



Sta. 17+40 Dr. Rt.

Sta. 16+20 to Sta. 16+44.5 Dr. Rt.

Drive Profile

Sta. 15+64 to Sta 16+20 Dr. Rt.

Sta. 15+58 to Sta. 17+25 Dr. Lt.

Sta. 15+47.78

End Area		Volume	
Cut	Fill	Cut	Fill
35	37		
		37	39
		1	
32	34		
		29	38
20	34		
		31	49
25	37		
		17	39
		11	
3	27		
		8	26
12	20		
		7	6
		0	
30	19	32	
		38	16
44	12		
		5	1
70	8		
		31	12
62	42		

STA. 15+60.7 TO STA. 17+71.1

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

653.16
19+25 WALK LT.
652.96

653.20
19+00
652.78

Sta. 18+95 Dr. Lt.

653.19
18+92 DR. RT.
652.68

Sta. 18+92 Dr. Rt.

653.15
18+70.5 WALK RT.
652.32

653.08
18+48.5
652.72

653.00
18+24.5
651.87

652.96
18+12 DR. RT.
651.70

652.94
18+06
651.64

Top Exist. Wall

652.92
18+00 CONC. WALL RT.
651.56

652.92
18+00
651.56

Sta. 17+82 to Sta. 18+22 Dr. Rt.

652.91
17+96 DR. RT.
651.49

Sta. 17+60

	End Area		Volume	
	Cut	Fill	Cut	Fill
	59	2		
			51	3
	52	4		
			0	
			3	
			62	26
	13	23		
			8	35
	6	55		
			3	43
	2	71		
			0	15
	0	64		
			26	75
			3	
			35	37

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 17+97 TO STA. 19+25

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

652.60
21+00
651.83

652.63
20+92 D.R. RT.

652.72
20+63
651.84

652.74
20+56.5 D.R. RT. & LT.
651.87

652.81
20+34
651.98

652.91
20+04.2 Sidewalk Lt.
652.19

652.92
20+00
652.22

652.97
19+84
652.48

653.03
19+65 Sidewalk Rt.
652.77

653.06
19+55
652.84

653.08
19+48.5 Sidewalk Lt.
652.89

653.08
DR. RT. 19+46
652.90

653.12
DR. RT. 19+36
652.94

Ex. 3" Vents to be removed

Note: Omit earth fill on top of slab.

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

	End Area		Volume	
	Cut	Fill	Cut	Fill
	42	10		
			51	9
Sta. 20+92 Dr. Rt.			2	
	32	3		
			8	2
Sta. 20+57 Dr. Rt.			1	
Sta. 20+56.5 Dr. Lt.	35	4	7	
			25	10
	24	19		
			41	18
	41	10		
			26	6
	46	10		
			56	9
Sta. 19+60 Dr. Lt.			3	
	58	6		
Sta. 19+24 to Sta. 19+58 Dr. Rt.			0	
			65	4
STA-19+25	59	2		

Sta. 15+14.10 to Sta. 32+35.90
RURAL
Excavation 1673 Cu. Yd.
Embankment 5907 Cu. Yd.
Emb. + 15% 6793 Cu. Yd.

STA. 19+36 TO STA. 21+00

BUTLER COUNTY
BUT.-4 - (22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

653.20
23+00
652.50

653.20
22+93 Sidewalk Lt.
652.48

653.18
22+80
652.43

653.13
22+64 DR. LT.
652.33

653.12
22+61 Sidewalk Rt.
652.36

653.03
22+34
652.53

653.00
22+26.5 Sidewalk Rt.
652.59

652.96
22+11 Dr. Rt.
652.58

652.92
22+00
652.51

652.84
21+75
652.21

652.66
21+18 Sidewalk Lt.
651.86

Sta. 22+64.1 Dr. Lt.

Sta. 22+09 Dr. Rt.

Sta. 21+77 Dr. Rt.

Sta. 21+70 Dr. Lt.

Sta. 21+00

End Area		Volume	
Cut	Fill	Cut	Fill
42	8		
		30	7
38	12		
		0	
		73	19
48	10		
		63	11
		3	
52	7		
		47	4
		2	
50	2	6	
		91	16
36	13		
		26	8
42	10	80	

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 21+18 TO STA. 23+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

3" Cast Iron ¼ Bend Long Sweep Item I-5

3" Cast Iron Soil Pipe Sec. M-6.3, Item I-2 on ½" per Ft. slope

652.60
25+00
651.19

652.66
24+81 DR. RT.
651.13

Sta. 24+85.6 Dr. Rt.

652.67
24+77
651.13

3" Cast Iron ¼ Bend Long Sweep Item I-5

3" Cast Iron Soil Pipe Sec. M-6.3 Item I-2 on ½" per Ft. Slope

652.79
24+42
651.12

652.92
24+00 DR. LT.
651.74

Sta. 24+07 Dr. Lt.

652.96
23+88
651.93

652.99
23+79.5 DR. RT.
652.09

Sta. 23+67 Dr. Rt.

653.14
23+31 DR. RT.
652.98

Sta. 23+20 Dr. Rt.

Sta. 23+00

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

Station	End Area Cut	End Area Fill	Volume Cut	Volume Fill
25+00	2	47		
			1	32
24+85.6 Dr. Rt.			0	
24+81 Dr. Rt.	0	43		
			0	7
24+77	0	49		
			0	80
24+42	0	75		
			7	74
24+07 Dr. Lt.	9	20	21	
			4	10
23+88	7	26		
			5	6
23+79.5 Dr. Rt.	27	10		
23+67 Dr. Rt.			0	
			64	14
23+31 Dr. Rt.	44	6		
23+20 Dr. Rt.			0	
			49	8
23+00	42	8	80	

STA. 23+31 TO STA. 25+00

BUTLER COUNTY
BUT. - 4 -(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

652.60
29+00
650.90

652.76
28+50
651.22

652.92
28+00
651.11

653.08
27+50
651.50

653.20
27+00
651.54

653.14
26+67.21 P.C.
651.18

652.92
26+00
650.99

652.76
25+50
651.20

652.63
25+09 Walk Rt.
651.19

652.73
25+42 Down Spout Drain Pipe Lt.
651.3

3"Cast Iron Bend
Long Sweep Item I-5
3"Cast Iron Soil Pipe Sec.M-63
Item I-2 on ½" per Ft. Slope

3:1

End Area		Volume	
Cut	Fill	Cut	Fill
33	116		
		50	211
21	112		
		59	217
43	123		
		77	224
40	119		
		37	216
0	114		
		0	156
0	139		
		0	305
0	106		
		9	142
10	48		
		10	88
		25+00	2 47

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 25+03.5 TO STA. 29+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

653.88
33+00
647.00

1/2" per Ft.
℄ Match Line
℄ 650.0

653.72
32+50
647.60

℄ 649.5

MUNICIPAL

653.56
32+00
649.50

Ahead Only

32+35.99

℄ 649.0

RURAL

653.20
31+50
650.43

1/2" per Ft.
648.5

℄ Match Line

653.24
31+00
649.77

Sta. 30+75.5 Dr. on Appr. Rd.

653.08
30+50
649.80

652.92
30+00
650.01

4:1
649.7

652.76
29+50
650.50

4:1
649.5

Sta. 29+00

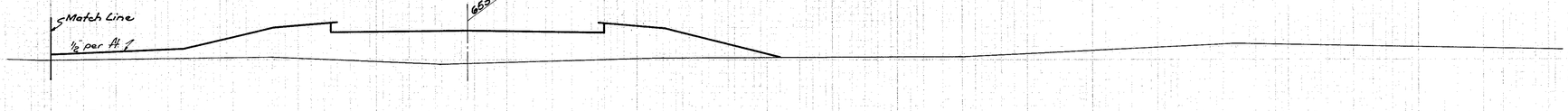
80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

	End Area Cut	End Area Fill	Volume Cut	Volume Fill
	2	583		
			2	1073
	0	576		
			1	267
			5	954
			4	687
Ahead	5	454		
Back	5	472		
			9	792
	5	384		
			19	568
	16	229		
			5	
			15	408
	0	211		
			5	372
	6	191		
			10	340
	5	177		
			35	271
	33	116		

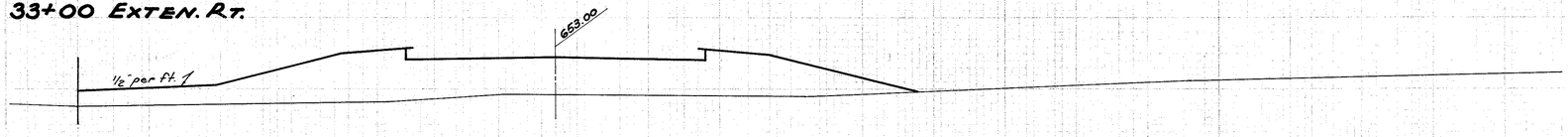
STA. 29+50 TO STA. 33+00

BUTLER COUNTY
BUT. 4-(22.97-23.22)

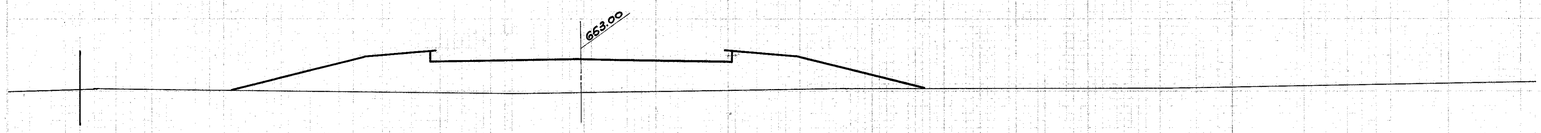
70 80 90 100 110 120 130 140 150 160 170 180 190 200



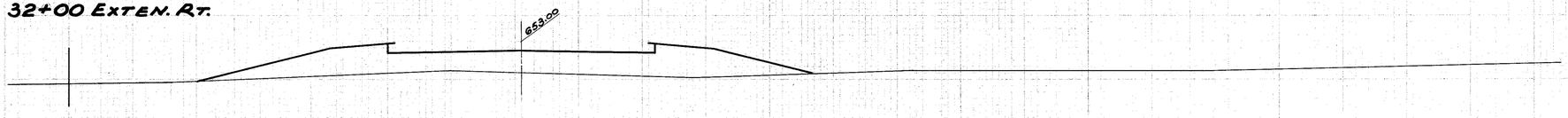
33+00 EXTEN. RT.



32+50 EXTEN. RT.



32+00 EXTEN. RT.



31+50 EXTEN. RT.

31+00 EXTEN. RT.

70 80 90 100 110 120 130 140 150 160 170 180 190 200

STA. 31+00 to STA. 33+00 EXTEN. RT.

45
136

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

655.16
37+00
648.57

655.00
36+50
648.57

654.84
36+00
648.17

654.68
35+50
648.17

654.52
35+00
648.37

654.36
34+50
647.70

654.20
34+00
647.10

654.04
33+50
646.60

Top of Prop. Levee El. 652.0

Match Line

Prop. Levee 34+00

1/8" per ft.

1/8" per ft.

650.5

Match Line

Sta. 32+35.99 to Sta 40+36.85
MUNICIPAL
Excavation 506 cu.yd.
Embankment 14927 cu.yd.
Emb.+15% 17166 cu.yd.

End Area Cut	End Area Fill	Volume Cut	Volume Fill
0	536		
		0	985
0	528		
		0	990
0	541		
			980
0	518		
		7	953
7	511		
		7	988
0	556		
		0	1115
0	648		75
		0	1234
0	685		
		2	1175
2	583		

Sta. 33+00

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 33+50 TO STA. 37+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

70 80 90 100 110 120 130 140 150 160 170 180 190 200

36+00

35+50

℄ Service Rd.
650.97

35+00

652.09

34+50

℄ Match Line
Top Prop. Levee = 652.0
652.92

34+00

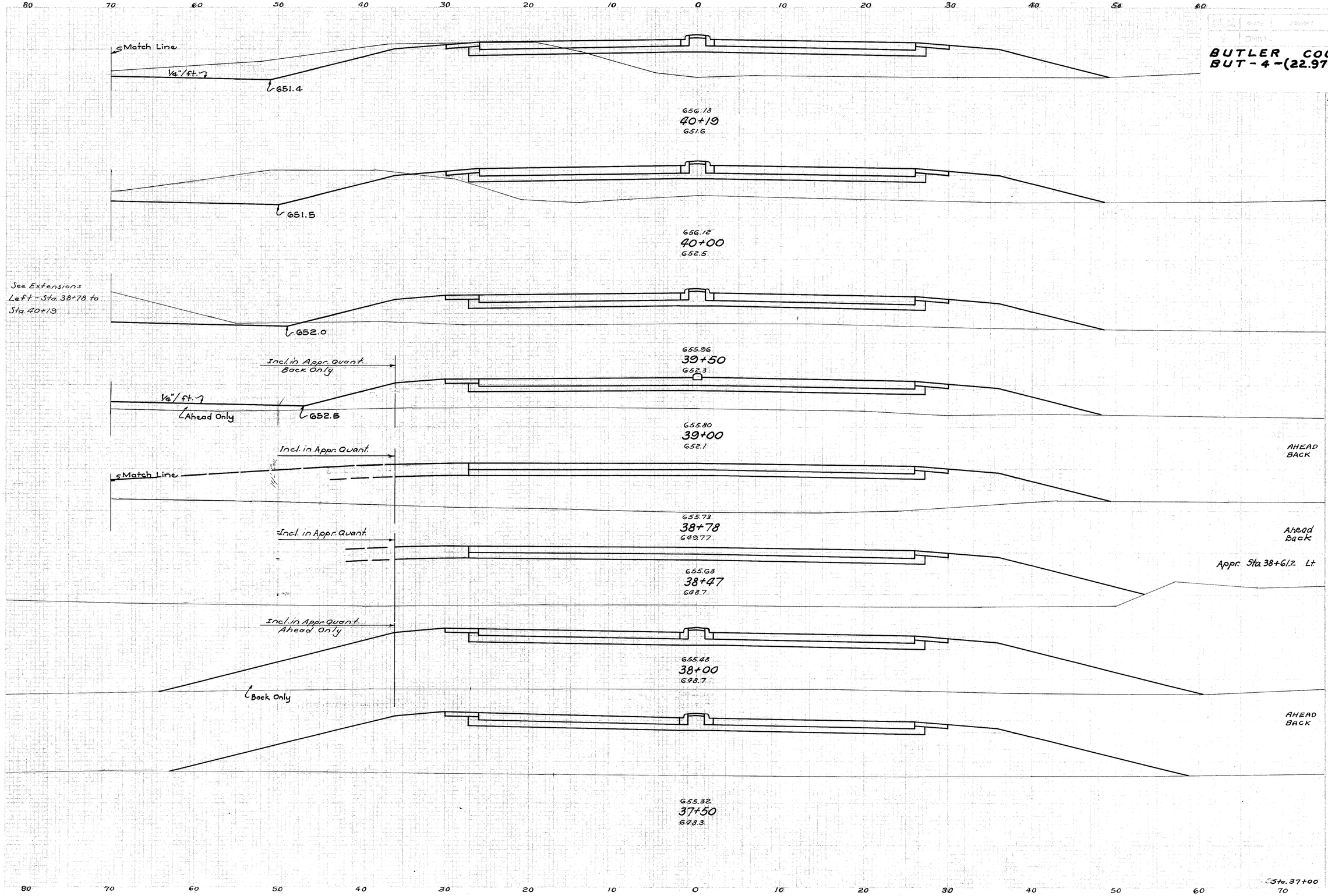
℄ Match Line
653.00

33+50

70 80 90 100 110 120 130 140 150 160 170 180 190 200

STA. 33+50 to STA. 36+00 EXTEN. RT.

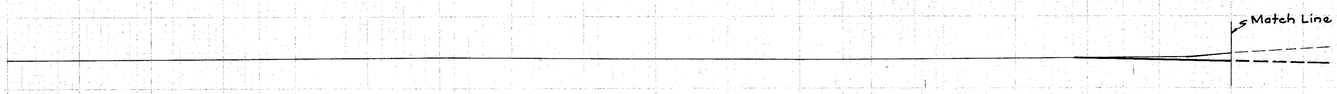
BUTLER COUNTY
BUT-4-(22.97-23.22)



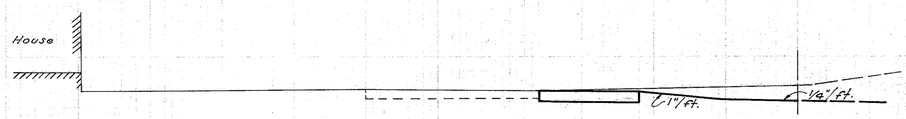
	End Area Cut	End Area Fill	Volume Cut	Volume Fill
	62	150		
			55	111
	94	165		
			171	337
	91	199		
			140	401
AHEAD	60	234		
BACK	60	187		
			68	206
Ahead	108	319		
Back	0	319		
			459	
Appr. Sta 38+612 Lt			23	573
	0	480		
			0	830
AHEAD	0	474		
BACK	0	567		
			0	1052
	0	569		
			0	1023
Sta. 37+00	0	536		

STA. 37+50 TO STA. 40+19

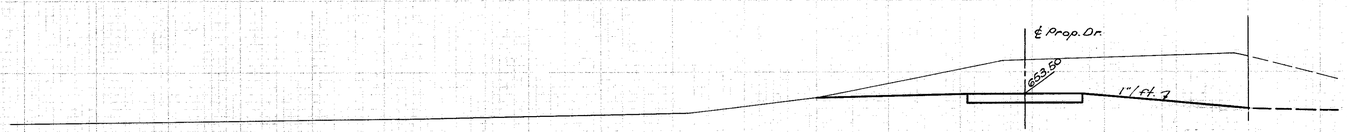
BUTLER COUNTY
BUT. 4-(22.97-23.22)



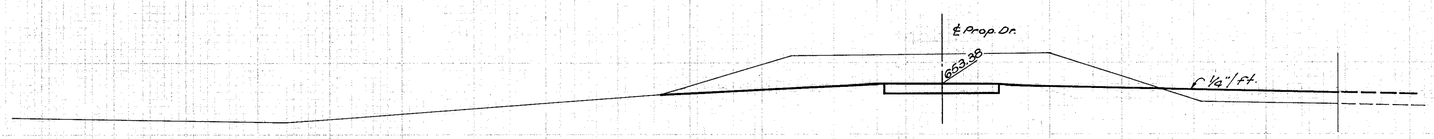
40+19
EXTEN. Lt.



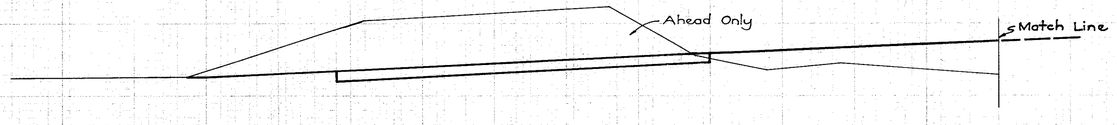
40+00
EXTEN. Lt.



39+50
EXTEN. Lt.



39+00
EXTEN. Lt.



38+78
EXTEN. Lt.

STA. 38+78 to STA. 40+19 EXTENSIONS Lt.

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

2:1

657.22
42+00
645.04

656.92
41+60
645.98

656.71
41+25
645.38

2:1

656.56
41+00
647.38

4:1

656.32
40+55.5
655.32

RURAL

40+36.85

MUNICIPAL
Sta. 40+19

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 40+55.5 TO STA. 42+00

End Area		Volume	
Cut	Fill	Cut	Fill
0	1077		
		0	1523
0	979		
		0	1206
0	882		
		0	739
0	715		
		25	715
30	153		
		32	105
		62	205
		30	100
62	150		

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

Included in Channel Emb.

658.04
43+00
661.84

657.84
42+75
663.54

657.64
42+50
660.94

Sta. 42+65 (R.T.)
Channel Emb.

657.46
42+28
658.74

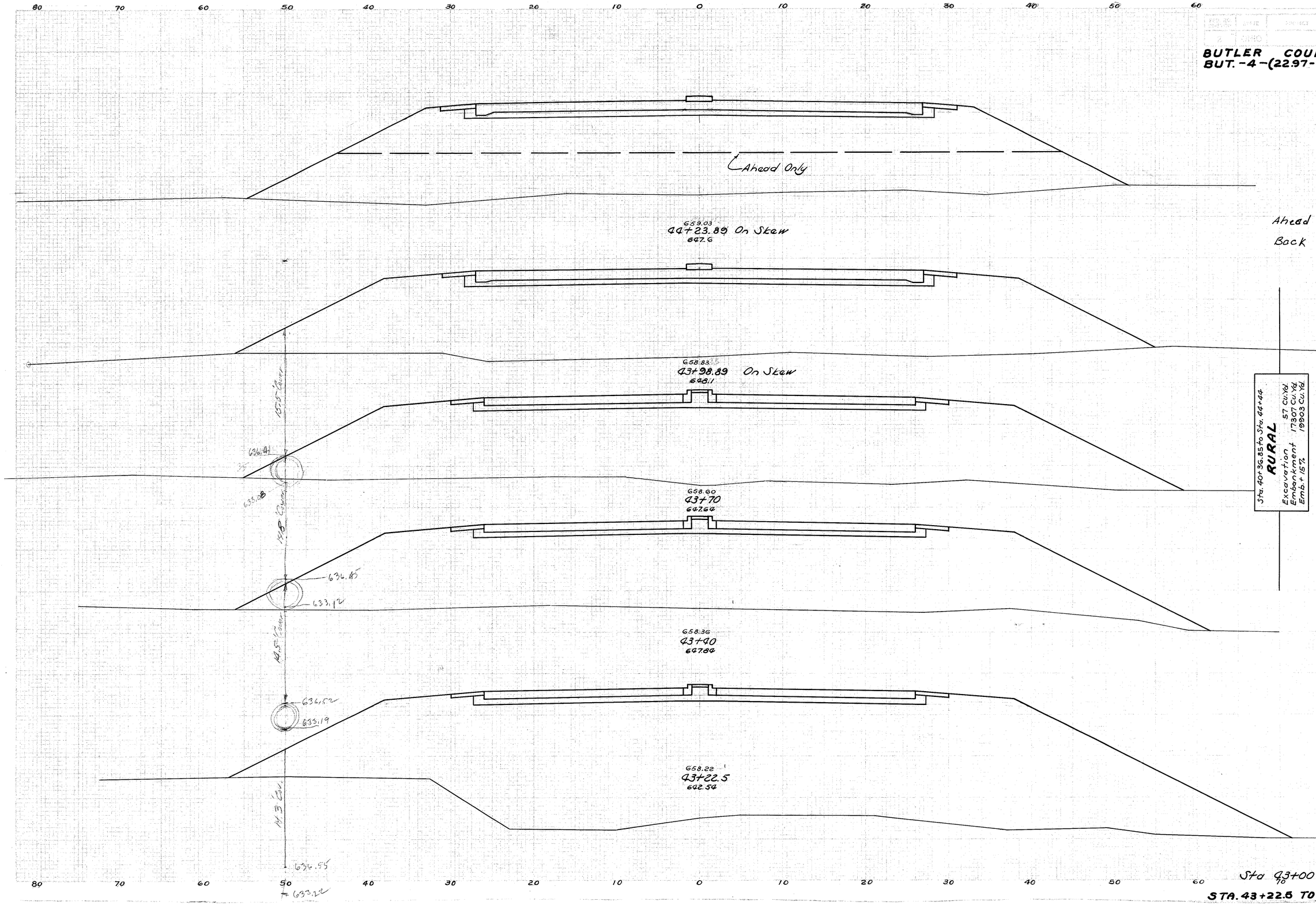
Sta. 42+00

	End Area		Volume	
	Cut	Fill	Cut	Fill
0		1617		
				0 1395
		0	1397	
				0 1354
			2613	
		0	1527	
				0 1303
		0	1670	
				0 1435
		0	1097	

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 80

STA. 42+28 TO STA. 43+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)



	End Area Cut	End Area Fill	Volume Cut	Volume Fill
Ahead	0	360		
Back	0	862		
			0	786
	0	837		
			0	906
	0	857		
			0	963
	0	872		
			0	745
	0	1421		
			0	1266
	0	1617		

STA. 43+22.5 TO STA. 44+23.89

BUTLER COUNTY
BUT-4-(22.97-23.22)

End Area Cut	End Area Fill	Volume Cut	Volume Fill
			1849
20	1920		
0	0		
		0	118
0	534		
		0	135
0	360		

STA. 44+32.07 To STA. 50+42.89

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

75' Lt. 75' Rt.

El. 630.50

E-4 Granular Borrow

660.84
51+00
635.0

End Area		Volume	
Cut	Fill	Cut	Fill
0	4497		
	3		3878
	7		3878
	16		3498

75' Lt. 75' Rt.

639.50

E-4 Granular Borrow

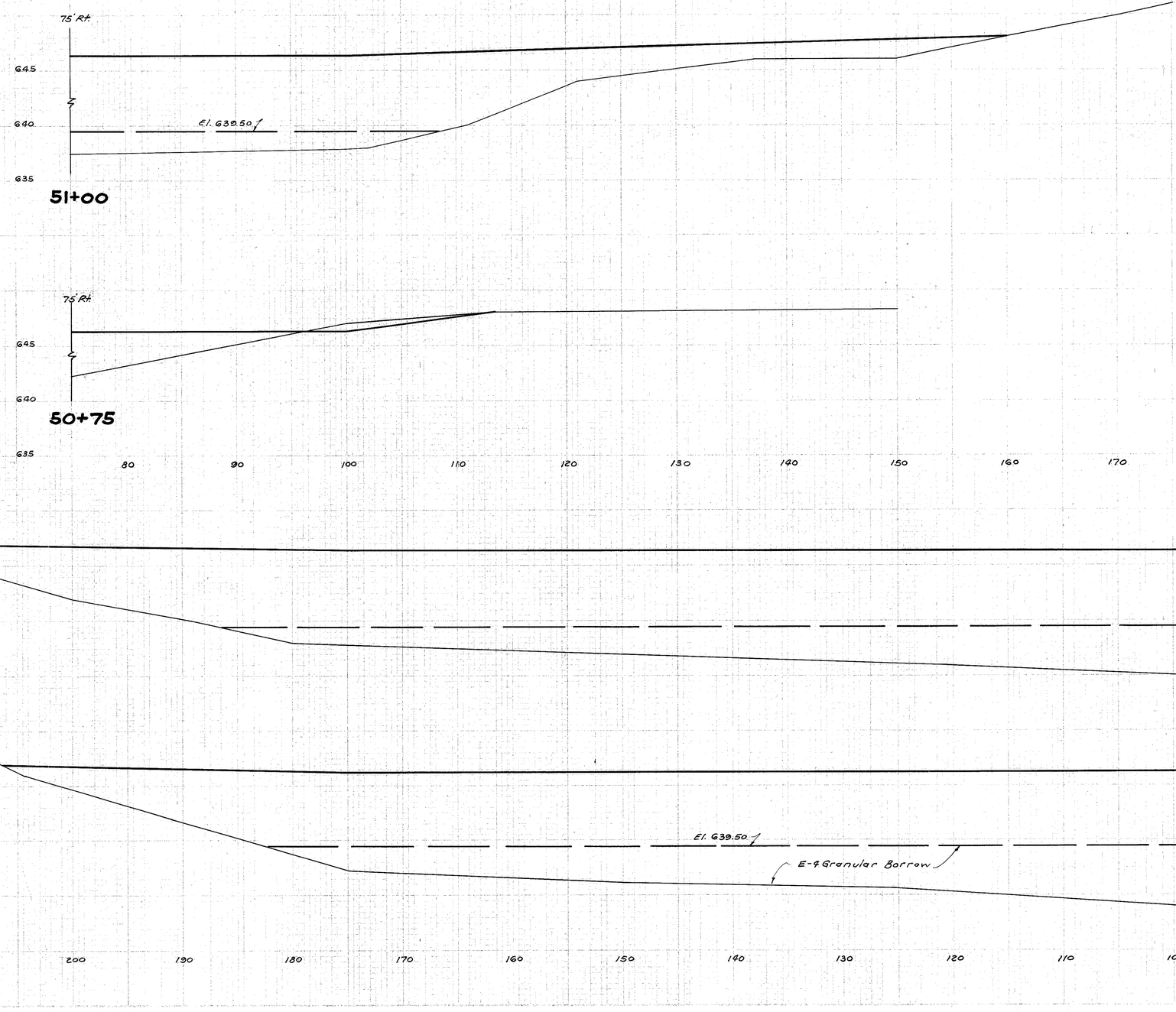
660.93
50+75
638.0

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

Sta. 50+42.89 20 1920

STA. 50+75 To STA. 51+00

BUTLER COUNTY
BUT-4-(22.97-23.22)



EXTENSIONS- RT. & LT. STA. 50+75 To STA. 51+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

75' Lt. 75' Rt.

El. 639.50

E-4 Granular Borrow

GGO.98
51+75
639.5

GGO.62
51+50
635.0

GGO.73
51+25
635.0

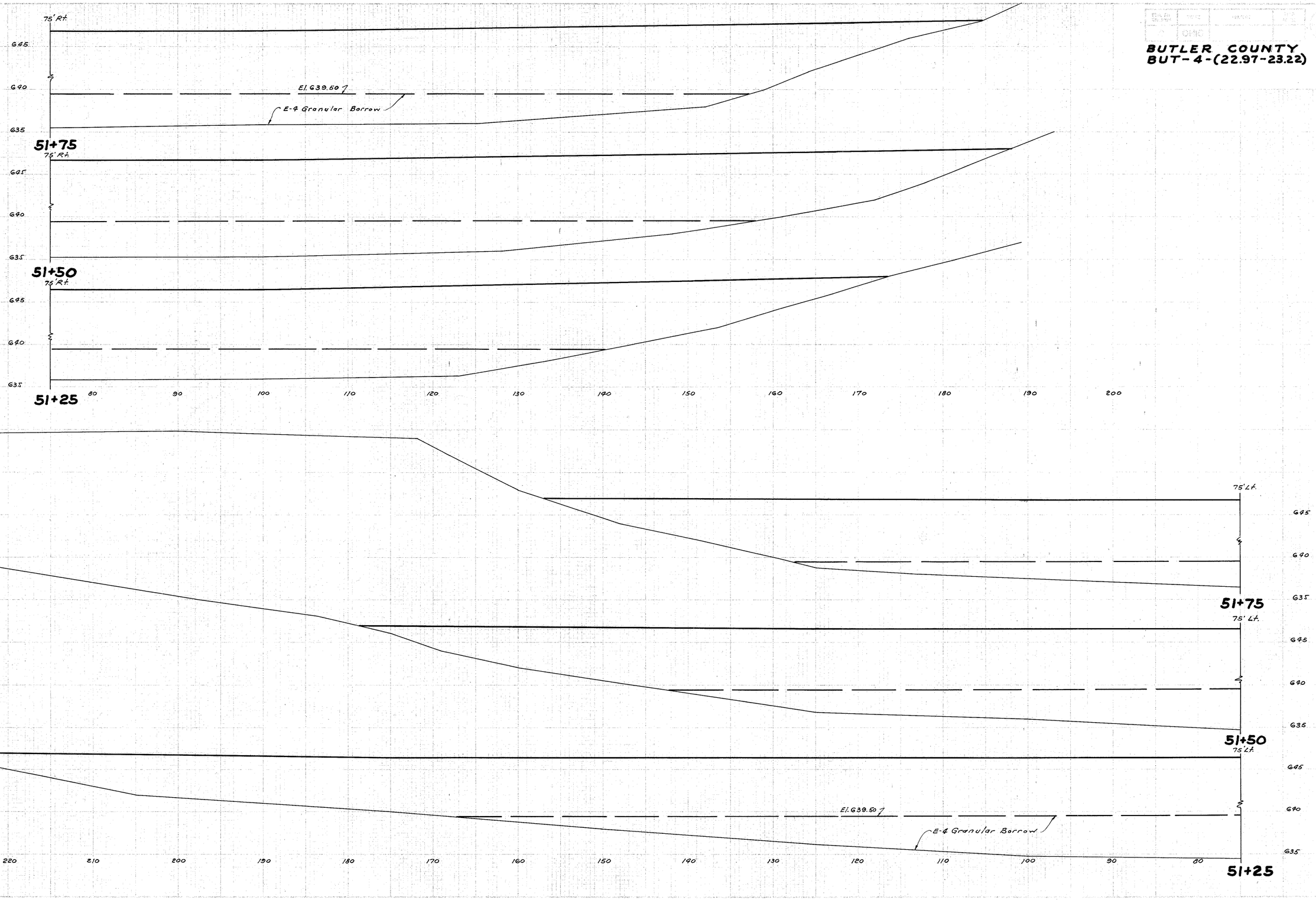
80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

Sta. 51+00

STA. 51+25 To STA. 51+75

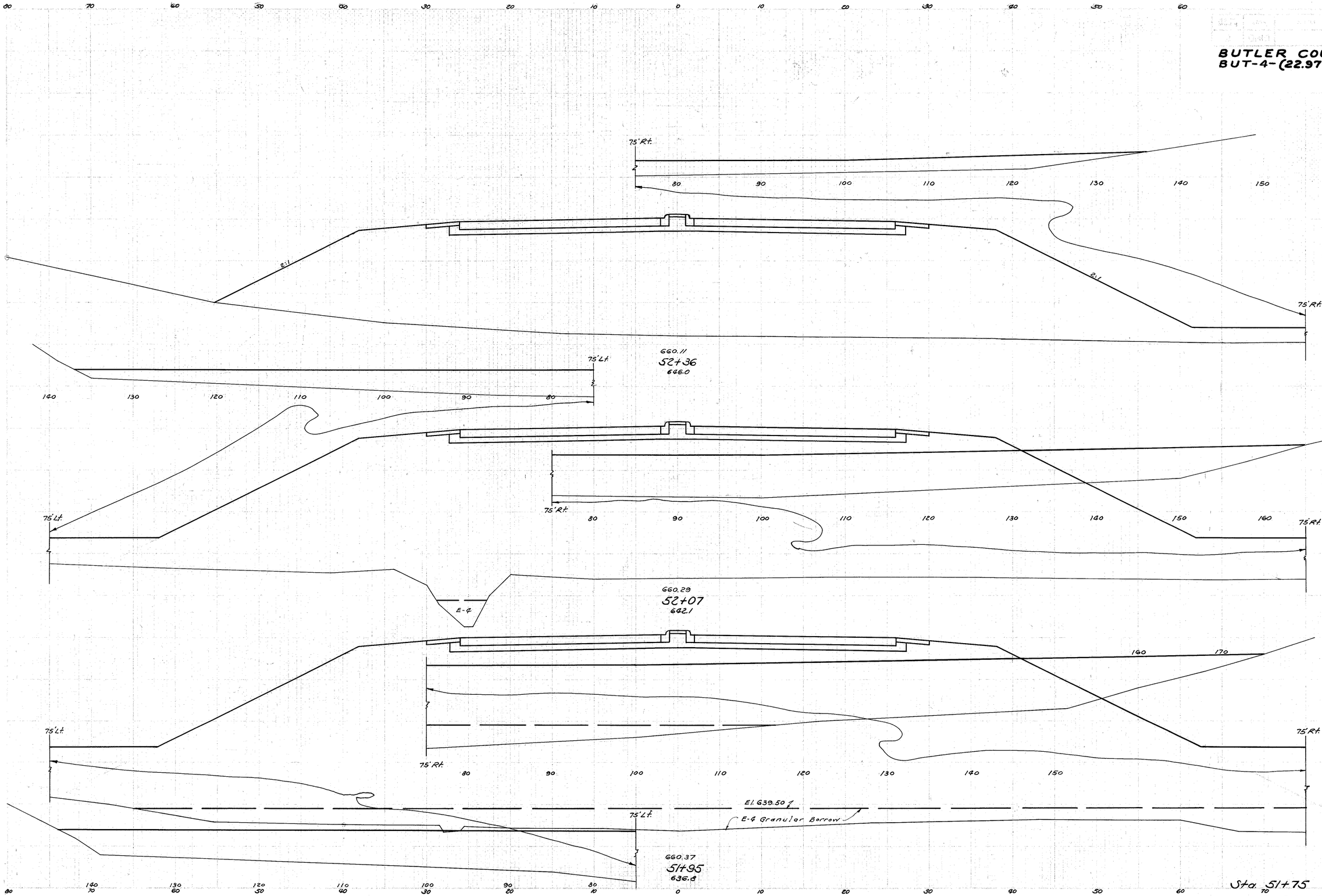
End Area		Volume	
Cut	Fill	Cut	Fill
0	4527		
		0	4353
0	4875		
		0	4610
0	5082		
		0	4435
0	4497		

BUTLER COUNTY
BUT-4-(22.97-23.22)



EXTENSIONS - RT. & LT. STA. 51+25 To STA. 51+75

BUTLER COUNTY
BUT-4-(22.97-23.22)



End Area		Volume	
Cut	Fill	Cut	Fill
0	1311		
0	1998		
0	2408		
0	1317		
0	3517		2980
0	4527		

Sta. 51+75

STA. 51+95 To STA. 52+36

BUTLER COUNTY
BUT.-4-(22.97-23.22

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

2:1

659.83
52+77
643.6

659.91
52+65
654.8

2:1 2:1

659.98
52+56
654.9

End Area		Volume	
Cut	Fill	Cut	Fill
0	793		
		0	261
0	382		
		0	114
0	302		
		0	597
Sta. 52+36		0	1311

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 52+56 To STA. 52+77

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

2:1

658.04
55+00
646.96

658.44
54+50
647.06

658.84
54+00
647.66

659.24
53+50
648.06

659.64
53+00
648.96

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

	End Area		Volume	
	Cut	Fill	Cut	Fill
	0	897		
			0	1692
	0	930		
			0	1701
	0	907		
			0	1699
	0	928		
Underpass Sta. 38+50 Rt. & Lt.				538
			0	1671
	0	877		
				711
Sta. 52+77	0	793		

STA. 53+00 TO STA. 55+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

Incl. in Appr. Quant's.

656.66
56+75
651.19

Incl. in Appr. Quant's.

F 50

3:1

656.84
56+50
649.49

4:1

	End Area		Volume	
	Cut	Fill	Cut	Fill
	0	430		
				0 423
Ahead	0	485		
Back	0	535		
				0 1195

Sta. 50+42.89 to Sta. 63+00
RURAL
Excavation 882 Cu.Yds.
Embankment 45727 Cu.Yds.
Emb. +15% 52586 Cu.Yds.

657.27
56+00
647.79

3:1

			0	756
				0 655

657.43
55+76
647.69

2:1

2:1

			0	717
				0 734

657.69
55+50
647.66

			0	807
				0 1578
Sta. 55+00	0	897		

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

STA. 55+50 TO STA. 56+75

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

G51.8

G54.51
59+50
652.77

G54.82
59+00
651.77

G55.29
58+50
651.27

G55.69
58+00
650.57

Back Only

G56.09
57+50
650.67

Incl. in Appr. Quant's.

Incl. in Appr. Quant's.

G56.29
57+00
652.07

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 80

	End Area		Volume	
	Cut	Fill	Cut	Fill
	15	42		
			14	162
	0	133		
			0	331
	0	225		
			0	510
	0	326		
			0	640
Ahead	0	365		
Back	0	297		
			0	541
	0	287		
			0	332
Appr. Sta. 56+95.3 Rt & Lt			44	467
Sta. 56+75	0	430		

STA. 57+00 TO STA. 59+50

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

654.68
62+00
652.61

654.65
61+76 PROP. DRIVE RT. ON SKEW
652.9

654.52
61+50
652.81

654.36
61+00
652.31

654.27
60+50
652.37

654.32
60+00
652.77

654.45
59+62.5
653.07

Exist. Gravel Pit

1/2 per. ft.

651.5

Drive Profile ℄

0465

DRIVE RT.

	End Area		Volume	
	Cut	Fill	Cut	Fill
		10	82	
			4	4
			21	120
		13	48	
			44	100
		35	60	
			63	102
		33	50	
			66	73
		38	29	
			42	34
		23	20	
			9	14
Sta. 59+50		15	42	

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

STA. 59+62.5 TO STA. 62+00

BUTLER COUNTY
BUT.-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

655.96
66+00
654.32

655.80
65+50
654.32
653.0

655.64
65+00
653.32
652.5

655.48
64+50
653.12
652.2

655.32
64+00
653.12
652.0

655.16
63+50
652.71
651.8

655.00
63+00
652.51
651.5

654.84
62+50
651.91

63+00

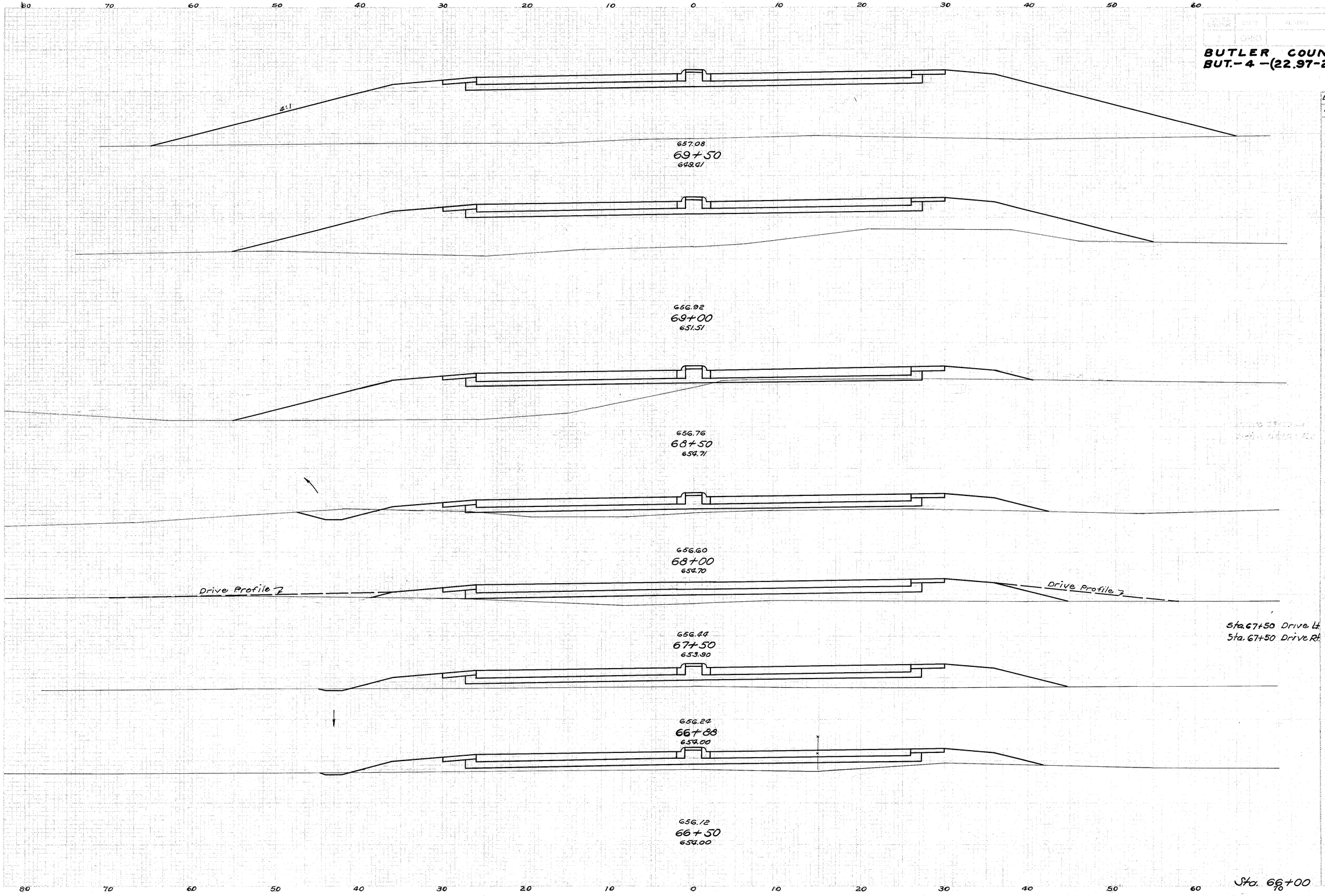
Sta. 62+00

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

End Area		Volume	
Cut	Fill	Cut	Fill
4	32		
		13	47
10	19		
		15	75
6	62		
		8	119
3	66		
		6	110
3	53		
		8	109
6	65		
		9	145
4	92		
		6	204
3	128		
		12	194
10	82	20	

STA. 62+50 TO STA. 66+00

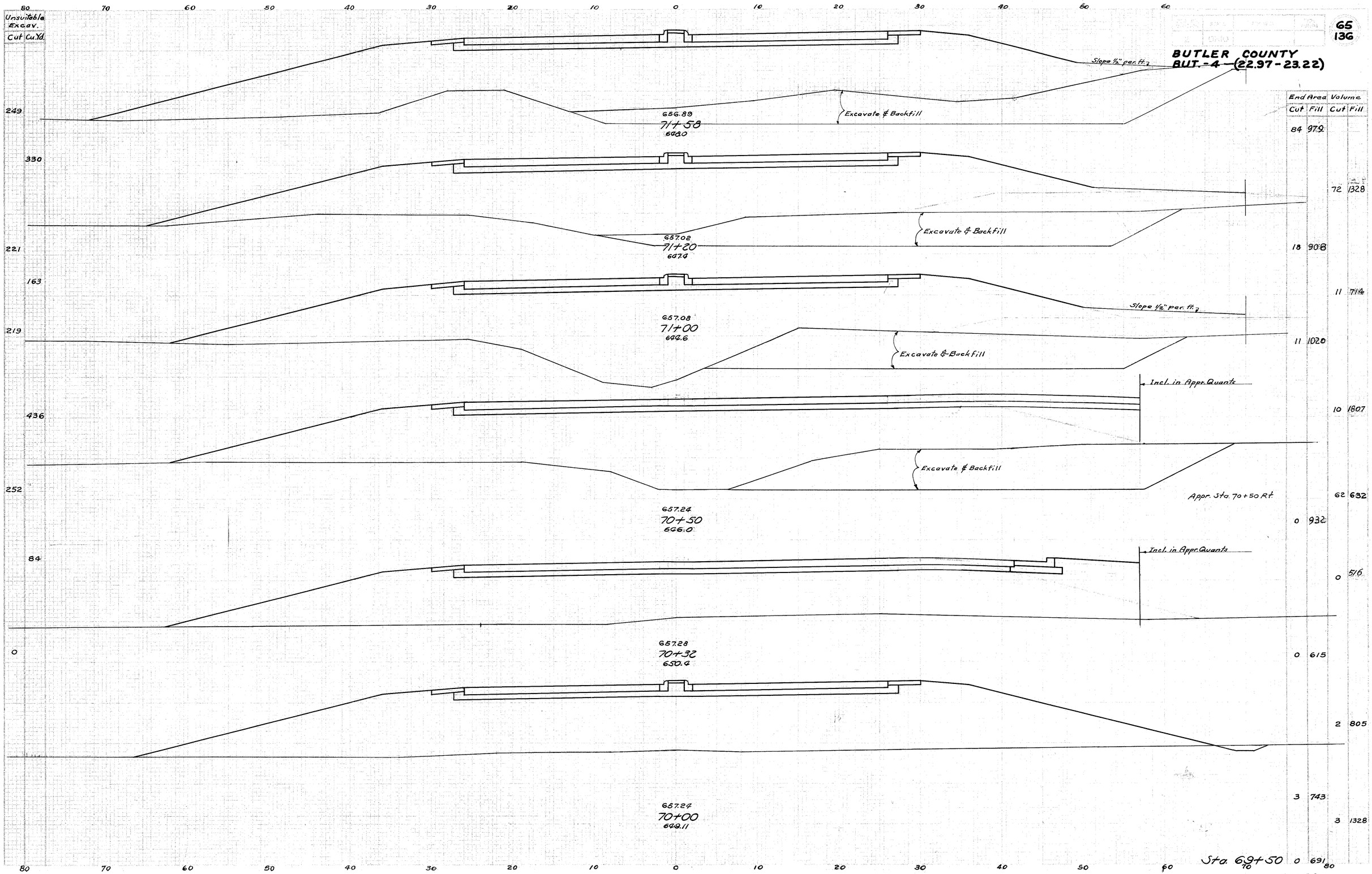
BUTLER COUNTY
BUT.-4 -(22.97-23.22)



Sta.	End Area Cut	End Area Fill	Volume Cut	Volume Fill
69+50				
	0	691		
			0	968
69+00				
	0	354		
			4	498
68+50				
	5	184		
			11	220
68+00				
	7	54		
			9	128
Sta. 67+50 Drive Lt.			3	
Sta. 67+50 Drive Rt.			1	6
67+50	3	84		
			4	207
66+88				
	1	96		
			2	116
66+50				
	1	69		
			4	93
Sta. 66+00	4	32	80	

STA. 66+50 TO STA. 69+50

BUTLER COUNTY
BUT.-4 (22.97-23.22)



End Area Cut	End Area Fill	Volume Cut	Volume Fill
84	979		
		72	1328
18	908		
		11	714
11	1020		
		10	1807
		62	632
0	932		
		0	516
0	615		
		2	805
3	743		
		3	1328
0	691		

Sta. 69+50

STA. 70+00 To STA. 71+58

BUTLER COUNTY
BUT-4-(22.97-23.22)

70 80 90 100 110 120 130 140 150

650

Slope 1/2" per Ft.→

G51.1

72+80.4

650

72+50

G50.9

650

72+00

G50.7

650

71+69

G50.5

650

71+58

G50.4

650

71+20

G50.3

650

Slope 1/2" per Ft.→

71+00

650.00

Ø 12"=647.50

70 80 90 100 110 120 130 140 150

EXTENSIONS-STA. 71+00 TO STA. 72+80.4

BUTLER COUNTY
BUTLER-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

Unsuitable Excav. Cut Cu.Yd.

Back Only — Incl. in Appr. Quant's.

655.96
74+50
654.1

Incl. in Appr. Quant's. — Incl. in Appr. Quant's.

656.04
74+25
654.56

Ahead Only

4:1

190

656.23
73+66
653.6

Excavate & Backfill — 651.5

222

271

656.31
73+40
652.5

Excavate & Backfill — 651.4

749

408

Slope ½" per ft.

Excavate & Backfill

656.50
72+80.40
650.9

459

408

Excavate & Backfill

656.60
72+50
652.4

792

448

656.76
72+00
652.2

Excavate & Backfill

490

4:1

405

Excavate & Backfill

656.86
71+69
649.3

133

249

Sta. 71+58

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

Sta. 71+58

STA. 71+69 To STA. 74+50

	End Area Cut	End Area Fill	Volume Cut	Volume Fill
Ahead	72	6		
Back	68	4		
			37	8
Appr Sta. 74+33.45 Lt. & Rt.			155	188
	13	13		
Basement Fill Sta. 73+85 Rt.				187
			26	160
Ahead	11	134		
Back	11	424		
			13	511
			16	638
			46	1653
			26	860
			41	983
			47	886
			144	1666
			108	913
			104	1099
			74	1001
			32	403
			84	979

BUTLER COUNTY
BUTLER-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

655.48
76+00
655.76

655.52
75+86 Conc. Dr. Lt.
655.8

655.54
75+81.5 Inlet Rt.
655.8

655.59
75+65.5 Inlet Lt.
655.8

Excavate & Backfill

655.69
75+50
655.8

Excavate & Backfill

655.72
75+25
655.9

Excavate & Backfill

655.80
75+00
655.8

Excavate & Backfill

655.83
74+91 Steps Rt. on Stem
655.6

Incl. in Appr. Quant's.

655.88
74+75
655.5

74+50

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

Sta. 75+68 to Sta. 75+92 Dr. Lt.

Sta. 63+00 to Sta. 76+54.37
RURAL

Excavation	1588 cu.yd.
Embankment	16928 cu.yd.
Emb. 15%	19467 cu.yd.
Unsuitable Exc.	3858 cu.yd.

Station	End Area Cut	End Area Fill	Volume Cut	Volume Fill
	90	6		
			0	
			180	39
	104	36		
			99	25
	109	18		
			105	15
	117	15		
			95	9
	88	4		
			74	5
74+50	72	6		

STA. 74+75 to STA. 76+00

BUTLER COUNTY
BUT-4-(22.97-23.22)

End Area		Volume	
Cut	Fill	cut	Fill

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

78+00
656.79

77+50
656.97

77+00
655.11

76+76.5 Conc. Dr. Lt.
655.19

END WORK = STA. 76+54.37

76+54.37

655.30
76+53.37
655.30

75 0

655.41
76+22.5 Blk. Top Dr. Lt.
655.47

Sta 76+11 to Sta. 76+35 Dr Lt. 3

163 6

655.48
76+00 Gravel Alley On Skew
655.76

Sta. 75+77 to Sta. 76+22 Dr. Rt. 14

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

76+00 90 6

STA. 76+00 TO STA. 78+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

70
136

BUTLER COUNTY
BUT.-4-(22.97-23.22)

~ ESTIMATED QUANTITIES ~

S.R.73 STA.29+57 - STA.31+31

		MUNICIPAL	RURAL	
6" Concrete Pavement	Item T-70	46.1		Sq.Yd.
Concrete Curb & Gutter - Type 2	Item I-12	206.0	90.0	Lin.Ft.

Relocated S.R.4 APPROACH [STA.31+31 - STA.32+85 (S.R.73)]

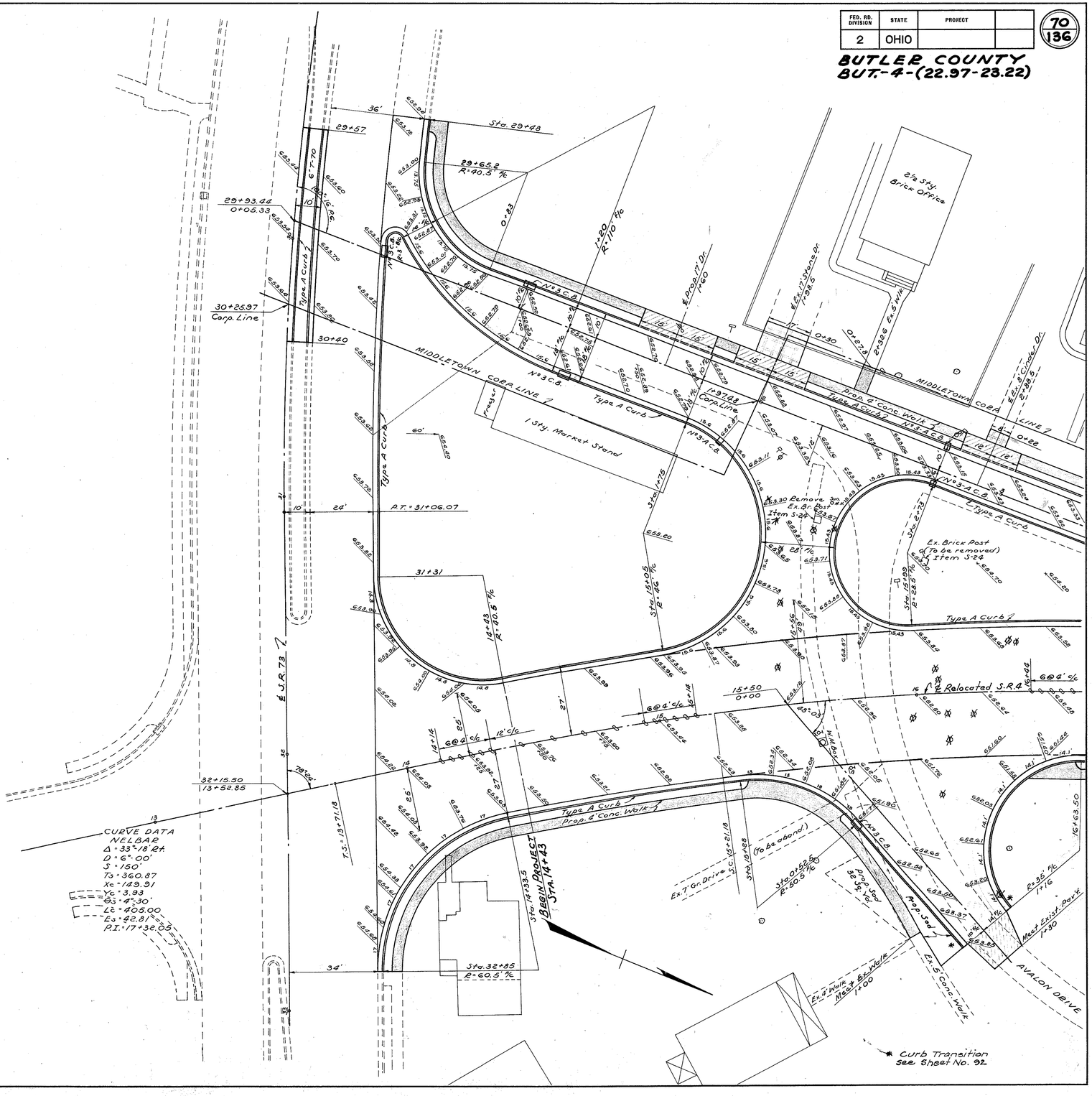
1¼" Asphaltic Concrete Surface Course	Item T-35	435.0	Sq.Yd.
1¼" Asphaltic Concrete Leveling Course	Item B-35	435.0	Sq.Yd.
3" Asphaltic Concrete Base Course	Item B-35	435.0	Sq.Yd.
9" Crushed Aggregate Base Course	Item B-119	435.0	Sq.Yd.
Concrete Curb & Gutter - Type 2	Item I-12	161.0	Lin.Ft.
4" Concrete Sidewalks	Item I-13	336.0	Sq.Ft.

STA.29+48 (S.R.73) to STA.3+28.5

1¼" Asphaltic Concrete Surface Course	Item T-35	409.0	531.0	Sq.Yd.
1¼" Asphaltic Concrete Leveling Course	Item B-35	409.0	531.0	Sq.Yd.
3" Asphaltic Concrete Base Course	Item B-35	409.0	531.0	Sq.Yd.
9" Crushed Aggregate Base Course	Item B-119	409.0	531.0	Sq.Yd.
Concrete Curb & Gutter-Type 2 (Net Add)	Item I-12	348.0	282.0	Lin.Ft.
4" Concrete Sidewalk	Item I-13	543.0	364.0	Sq.Ft.
4" Concrete Sidewalks Lt. Sta. 2+32.6	Item I-13		51.5	Sq.Ft.
4" Concrete Sidewalks Lt. Sta. 3+14	Item I-13		70.0	Sq.Ft.
Removal of Existing Structures	Item S-24		Lump	

AVALON DR. STA.15+28 (Reloc.) to STA.16+63.5 (Reloc.)

1¼" Asphaltic Concrete Surface Course	Item T-35	374.0	Sq.Yd.
1¼" Asphaltic Concrete Leveling Course	Item B-35	374.0	Sq.Yd.
3" Asphaltic Concrete Base Course	Item B-35	375.0	Sq.Yd.
5" Crushed Aggregate Base Course	Item B-119	28.3	Sq.Yd.
9" Crushed Aggregate Base Course	Item B-119	347.6	Sq.Yd.
Concrete Curb & Gutter - Type 2 (Net Add)	Item I-12	68.0	Lin.Ft.
4" Concrete Sidewalks	Item I-13	604.0	Sq.Ft.



BUTLER COUNTY
BUT.- 4-(22.97-23.22)

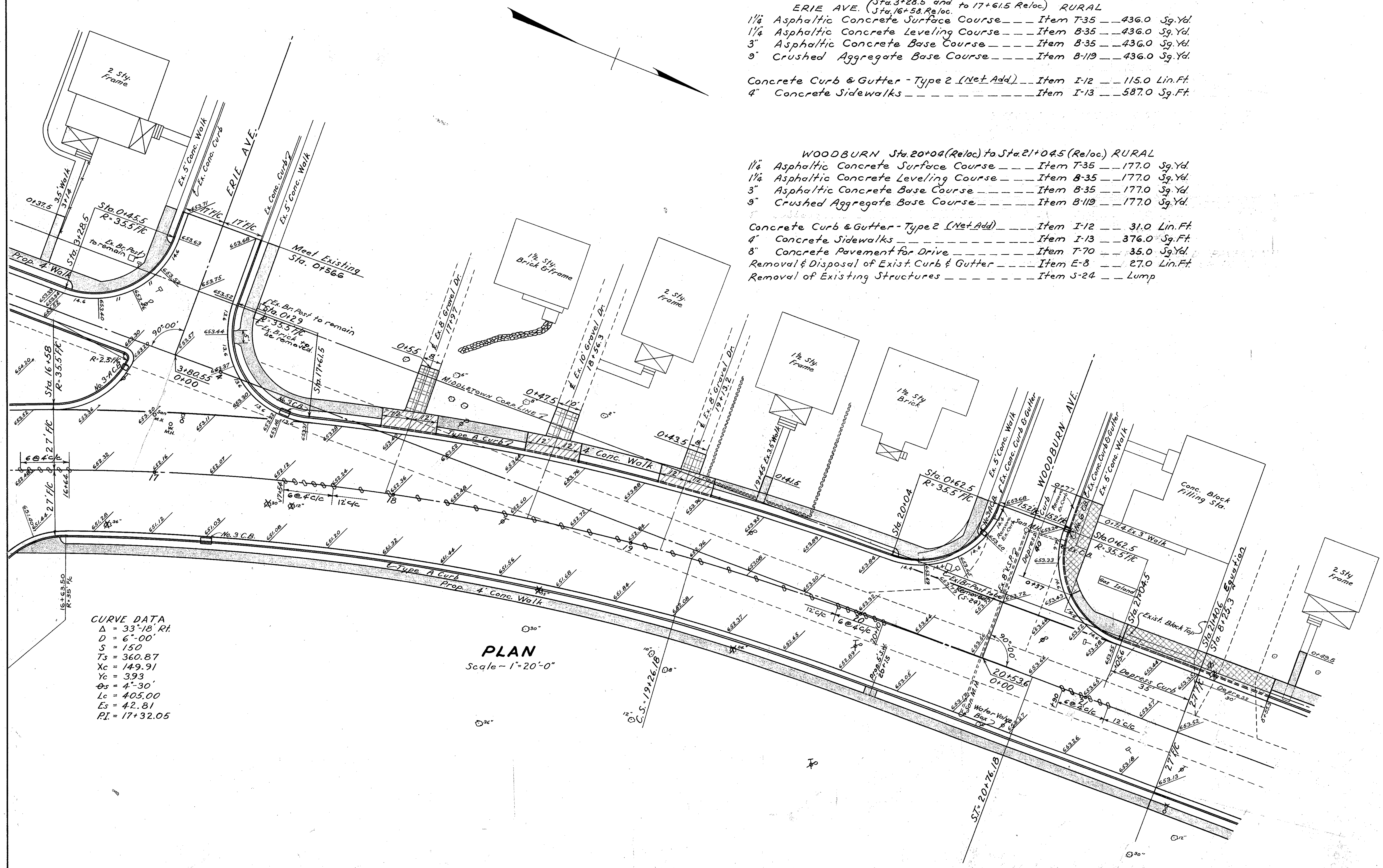
~ ESTIMATED QUANTITIES ~

ERIE AVE. (Sta. 3+28.5 and Sta. 16+58 Reloc. to 17+61.5 Reloc.) RURAL

1¼"	Asphaltic Concrete Surface Course	Item T-35	436.0	Sq. Yd.
1¼"	Asphaltic Concrete Leveling Course	Item B-35	436.0	Sq. Yd.
3"	Asphaltic Concrete Base Course	Item B-35	436.0	Sq. Yd.
9"	Crushed Aggregate Base Course	Item B-119	436.0	Sq. Yd.
	Concrete Curb & Gutter - Type 2 (Net Add)	Item I-12	115.0	Lin. Ft.
4"	Concrete Sidewalks	Item I-13	587.0	Sq. Ft.

WOODBURN Sta. 20+04 (Reloc) to Sta. 21+04.5 (Reloc.) RURAL

1¼"	Asphaltic Concrete Surface Course	Item T-35	177.0	Sq. Yd.
1¼"	Asphaltic Concrete Leveling Course	Item B-35	177.0	Sq. Yd.
3"	Asphaltic Concrete Base Course	Item B-35	177.0	Sq. Yd.
9"	Crushed Aggregate Base Course	Item B-119	177.0	Sq. Yd.
	Concrete Curb & Gutter - Type 2 (Net Add)	Item I-12	31.0	Lin. Ft.
4"	Concrete Sidewalks	Item I-13	376.0	Sq. Ft.
8"	Concrete Pavement for Drive	Item T-70	35.0	Sq. Yd.
	Removal & Disposal of Exist. Curb & Gutter	Item E-8	27.0	Lin. Ft.
	Removal of Existing Structures	Item S-24	Lump	



CURVE DATA
Δ = 33°-18' Rt.
D = 6°-00'
S = 150
Ts = 360.87
Xc = 149.91
Yc = 3.93
θs = 4°-30'
Lc = 405.00
Es = 42.81
P.I. = 17+32.05

PLAN
Scale - 1" = 20'-0"

BUTLER COUNTY
BUT. 4 - (22.97 - 23.22)

70 60 50 40 30 20 10 0 10 20 30 40 50 60

Incl. in Reloc. S.R. 4 Quant's.

90 80 70

31+06.07
654.12

Incl. in Reloc.
S.R. 4 Quant's.

30+75
654.00

Incl. in Reloc.
S.R. 4 Quant's.

30+50
653.90

Incl. in Reloc.
S.R. 4 Quant's.

30+25.97
653.80

Incl. in Reloc.
S.R. 4 Quant's.

30+00
653.70

29+75
653.60

29+48
653.50

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

RURAL
Sta. 30+2597 to Sta. 32+85 (Carried to Sheet No. 28)
Excavation 68 cu.yds.
Embankment 994 cu.yds.

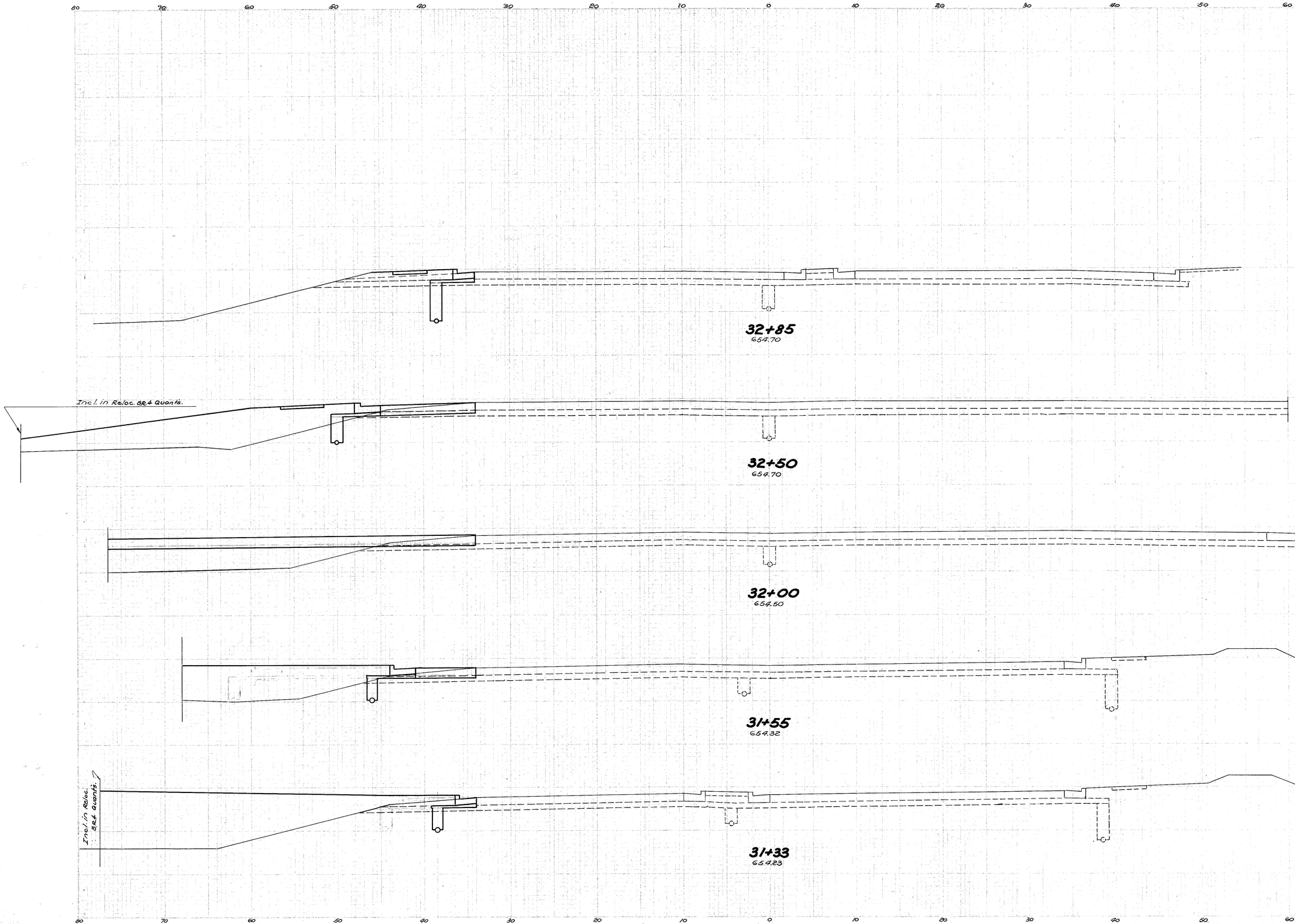
MUNICIPAL
Sta. 29+48 to Sta. 30+2597 (Carried to Sheet No. 28)
Excavation 55 cu.yds.
Embankment 18 cu.yds.

Corp. Line Sta. 30+25.97

Sta.	End Area Cut	End Area Fill	Volume Cut	Volume Fill
	5	297		
			6	218
	5	82		
			6	44
	7	12		
			8	9
	11	9		
			11	7
	11	5		
			19	6
	29	7		
			25	5
	20	4		

STA. 29+48 to STA. 31+06.07 — S.R. 73

BUTLER COUNTY
BUT. 4 – (22.97-23.22)



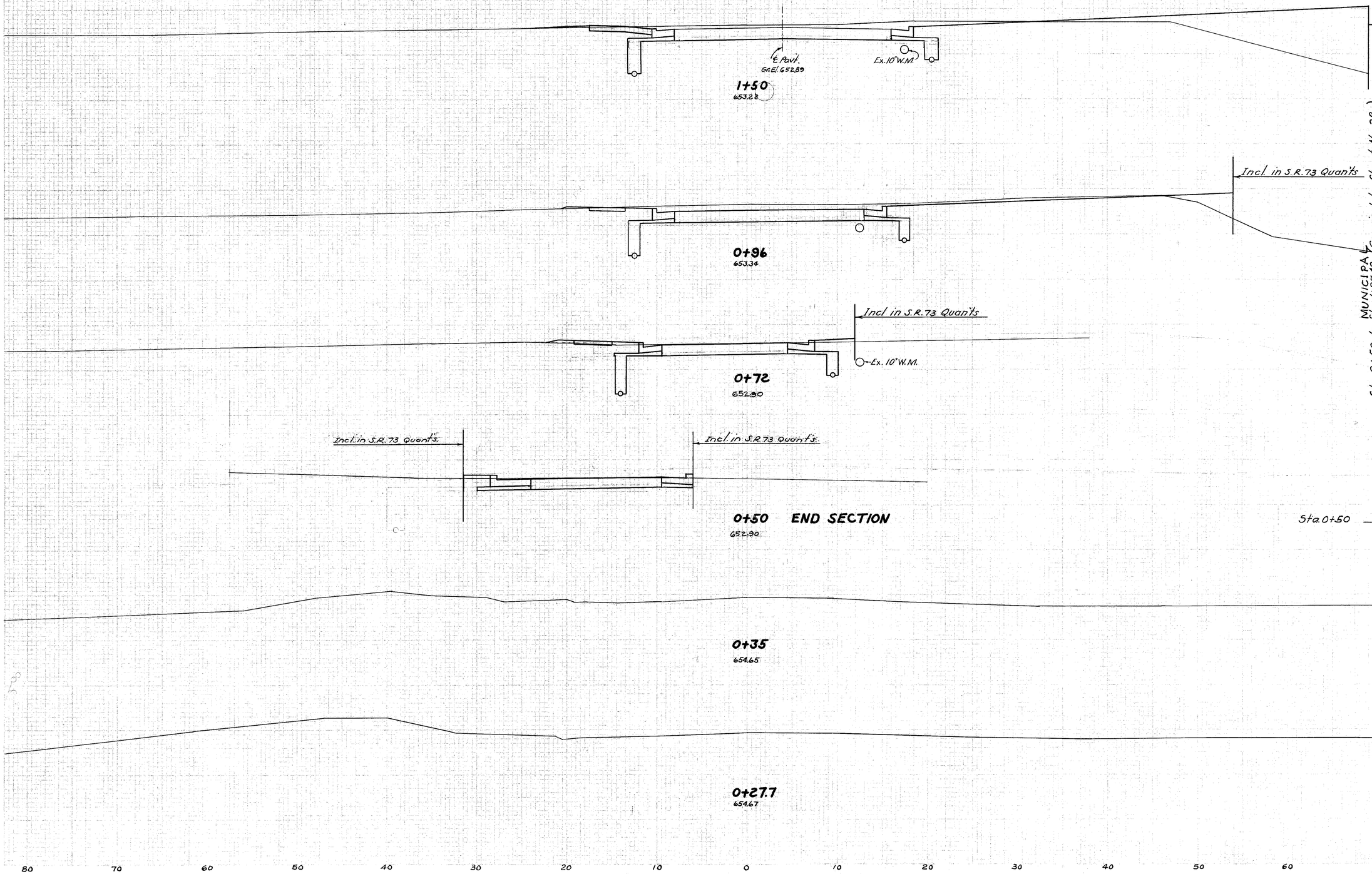
End Area		Volume	
Cut	Fill	Cut	Fill
5	7		
		11	85
11	124		
		19	176
9	66		
		11	123
4	82		
		3	109
4	174		
		4	235
5	297		

Sta. 31+06.07

STA. 31+33 TO STA. 32+85 – S.R. 73

BUTLER COUNTY
BUT-4 (22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60



	END AREA		VOLUME	
Incl. in Reloc. S.R. 4 Quan'ts.	CUT	FILL	CUT	FILL
	62	100		
			130	107
	68	17		
			44	12
	30	9		
			24	6
	30	5		

MUNICIPAL
Sta. 0+50 to Sta. 1+97.48
Excavation 335 Cu. Yd. (Carried to Sheet No. 28)
Embankment 272 Cu. Yd.

Sta. 0+50

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 0+27.7 TO STA. 1+50

BUTLER COUNTY
BUT-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Sta 2+88.5 Dr. Lt.			3	0
			65	1.5
			121	33
			90	28
			48	35
			8	
			59	43
			66	88
			6	0
			64	94
			62	100

2+87.5 DRIVE LT.
654.36

Sta 2+88.5 Dr. Lt.
Incl. in Reloc. SR 4 Quants.

℄ Pavt.
Gr. El. 653.27
Ex. 10" W.M.
2+56
654.19

2+49 BIT. DR. RT.
654.19

2+32.6 5' CONC. WALK LT.
653.97

℄ Pavt.
Gr. El. 653.12
2+14
653.76

Incl. in Reloc. SR 4 Quants.

1+97.3 DRIVE LT.
653.71

Corp. Line Sta 1+97.48

Sta. 1+98.5 Dr. Lt.

Incl. in Reloc. SR 4 Quants

℄ Pavt.
Gr. El. 652.99
Ex. 10" W.M.
1+77
653.58

Dr. Sta. 1+60 Lt.

STA. 1+50

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 1+77 TO STA. 2+87.5

BUTLER COUNTY
BUT-4-(22.97-23.22)

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60

Ex. 10" W.M.

4+52
655.32

4+10
655.34

Incl in Erie Ave. Quant's

Incl in Reloc. SR 4 Quants.

3+96.9 END SECTION
655.29

Incl. in Erie Ave. Quant's

Incl. in Reloc. SR 4 Quants.

3+63.9
654.97

Incl. in Erie Ave. Quant's

Incl. in Reloc. SR 4 Quants.

3+51
654.79

3+13.5 CONC. WALK LT.
654.57

Incl. in Reloc. SR 4 Quants.

Ex. 10" W.M.

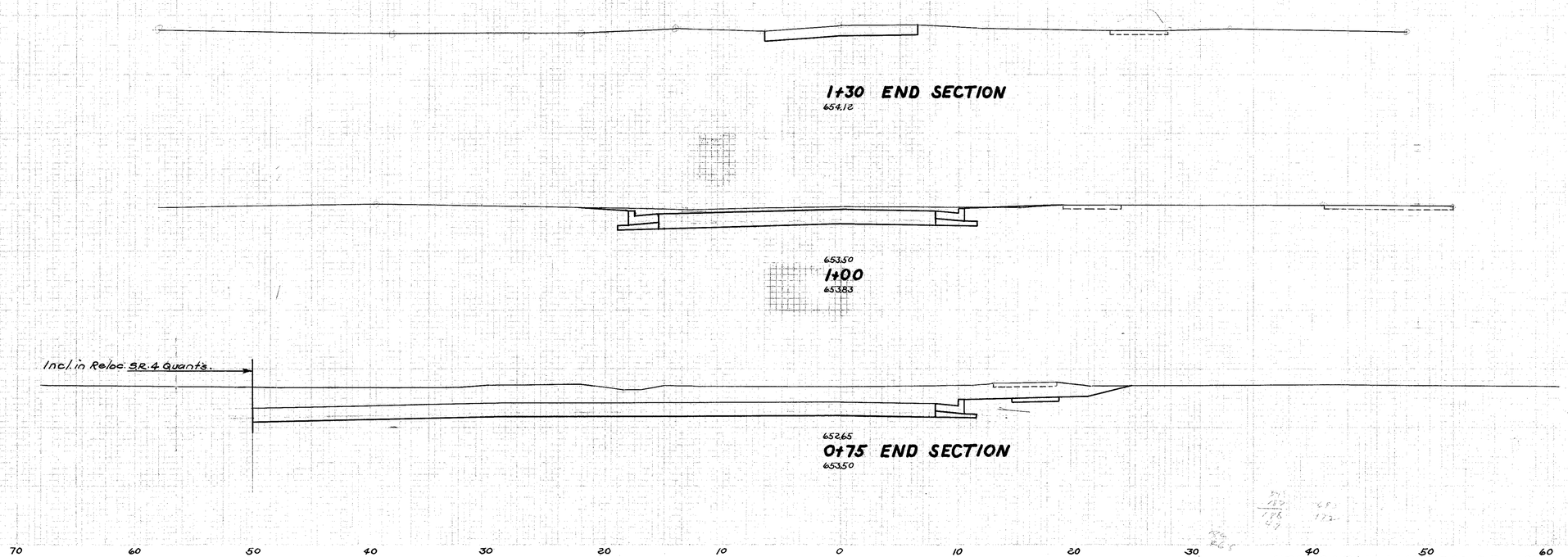
3+00
654.45

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Sta. 3+96.9			131	0
Appr. 3+80.65 Lt.			64	2
			167	0
RURAL Sta. 1+97.48 to Sta. 3+96.9 (Carried to Sheet No 28) Excavation 679 Cu. Yd. Embankment 125 Cu. Yd.			142	0
			55	2
			87	9
			128	26
			49	18
			93	27
STA. 2+56			65	15

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

STA. 3+00 TO STA. 4+52

BUTLER COUNTY
BUT.-4-(22.97-23.22)



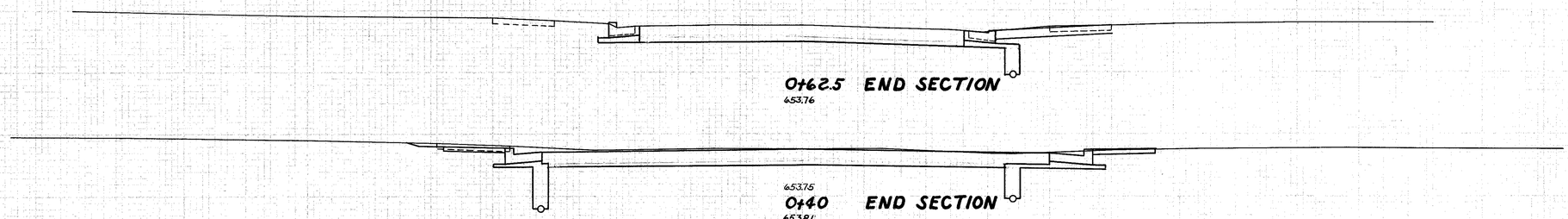
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
12	0		
		31	1
47	2		
		100	1
170	1		
TOTAL		131	2

Carried to Sheet No. 29

APPROACH AVALON DR. STA. 0+75 to STA. 1+30

BUTLER COUNTY
BUT.-(22.97-23.22)

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

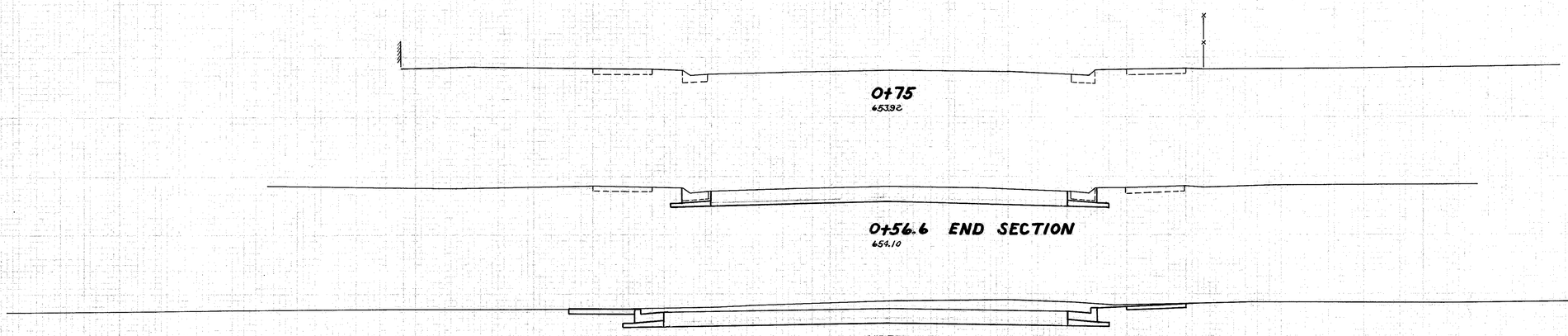


0+62.5 END SECTION
653.76

653.75
0+40 END SECTION
653.81

WOODBURN AVE. 20+53.6 Lt.

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	45	3		
Sta. 0+59.5 Dr. Rt.			10	
			47	2
	67	2		
Carried to Sheet No. 31	TOTAL		57	2



0+75
653.92

0+56.6 END SECTION
654.10

653.75
0+29 END SECTION
654.44

ERIE AVE. 3+80.55 Lt.

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	50	2		
			64	2
	76	2		
Carried to Sheet No. 76	TOTAL		64	2

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80

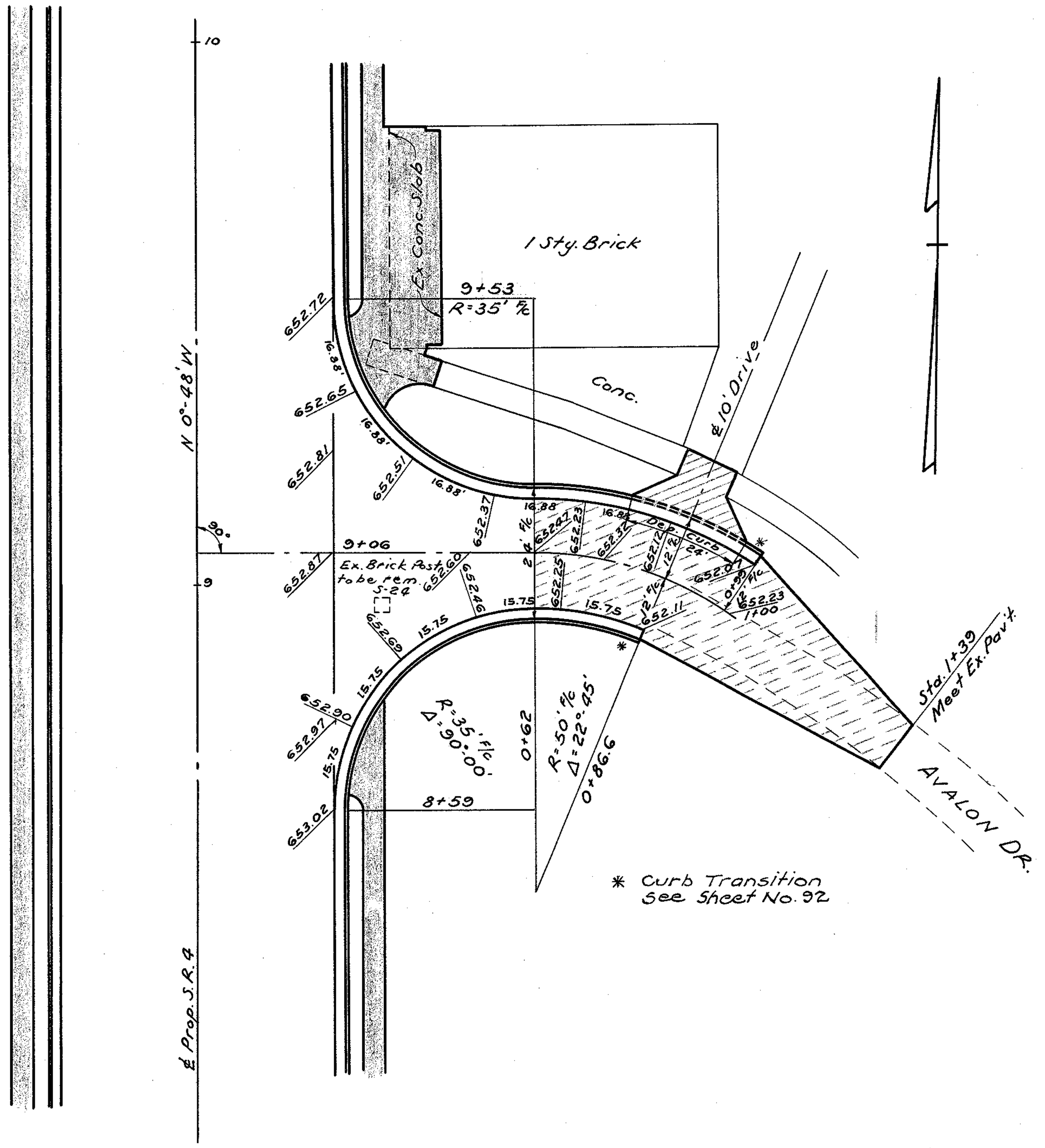
APPROACH ERIE AND WOODBURN AVE.

BUTLER COUNTY
BUT. 4-(22.97-23.22)

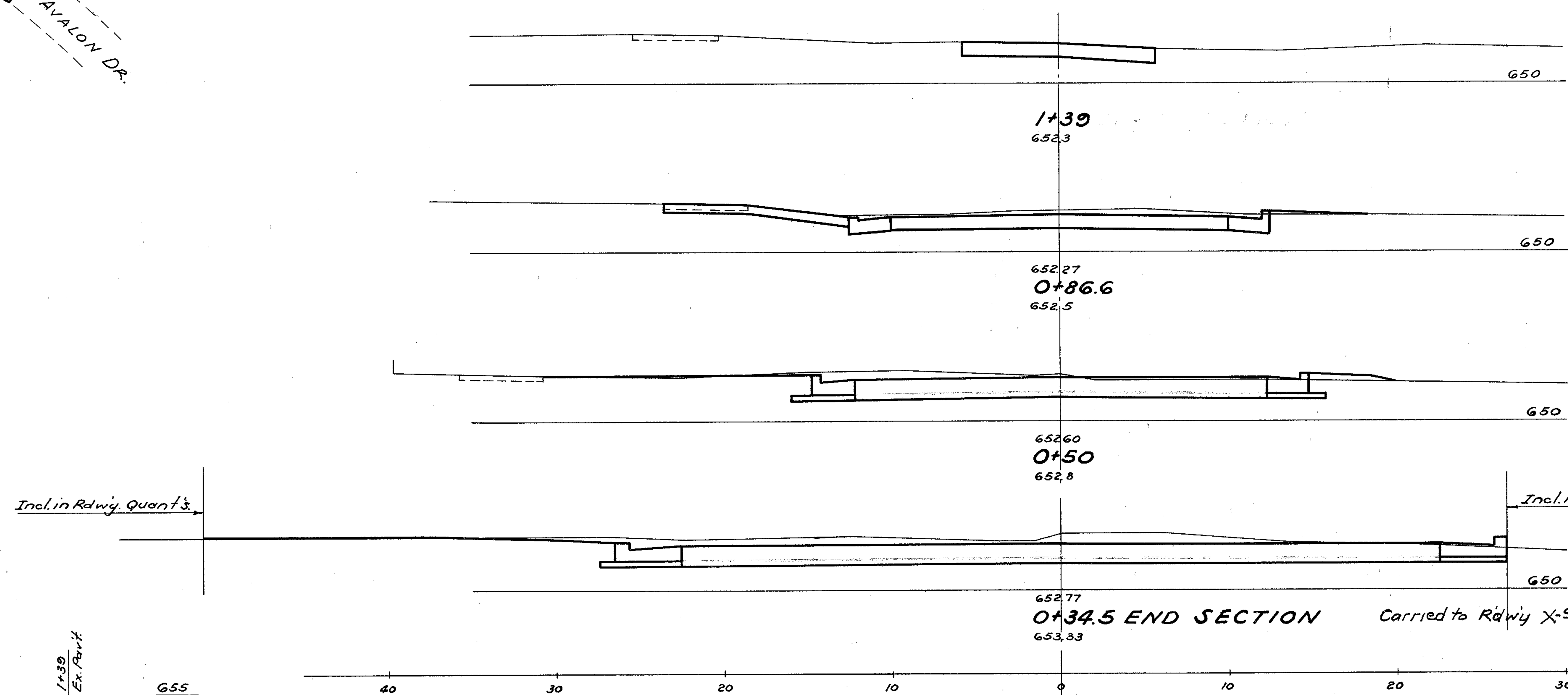
STA. 8+59 to STA. 9+53 (RT.)

~ ESTIMATED QUANTITIES ~

1¼"	Asphaltic Concrete Surface Course	Item T-35	307.0 Sq.Yd.
1¼"	Asphaltic Concrete Leveling Course	Item B-35	307.0 Sq.Yd.
3"	Asphaltic Concrete Base Course	Item B-35	310.0 Sq.Yd.
5"	Crushed Aggregate Base Course	Item B-119	167.3 Sq.Yd.
9"	Crushed Aggregate Base Course	Item B-119	147.5 Sq.Yd.
	Concrete Curb & Gutter - Type 2 (Net Add)	Item I-12	79.0 Lin.Ft.
4"	Concrete Sidewalk	Item I-13	348.0 Sq.Ft.
	Removal of Existing Structure	Item S-24	Lump
	DRIVE STA. 0+86.6		
7"	Concrete Pavement	Item T-70	17.0 Sq.Yd.

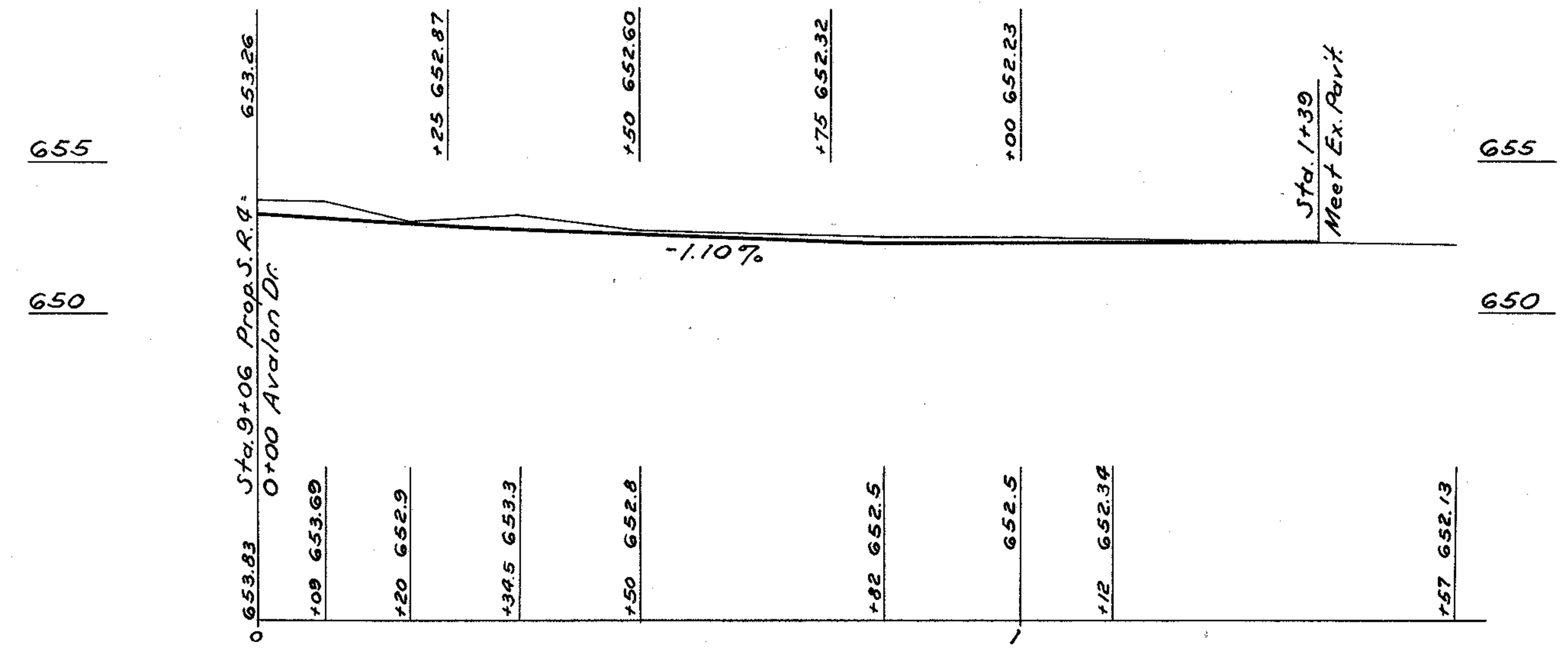


~ PLAN ~
Scale :- 1" = 20'



End Area Cut	End Area Fill	Volume Cut	Volume Fill
9	0		
		40	1
32	1		
		50	5
42	6		
		36	2
82	2		
Total		126	8

~ CROSS SECTIONS ~
Scale :- 1" = 5' Hor. & Vert.

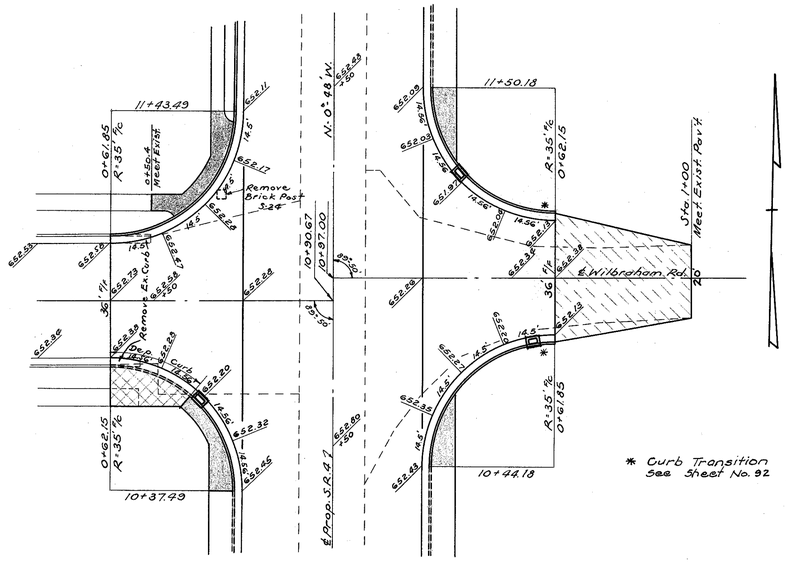


~ PROFILE ~
Scale :- 1" = 20' Hor. 5' Vert.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

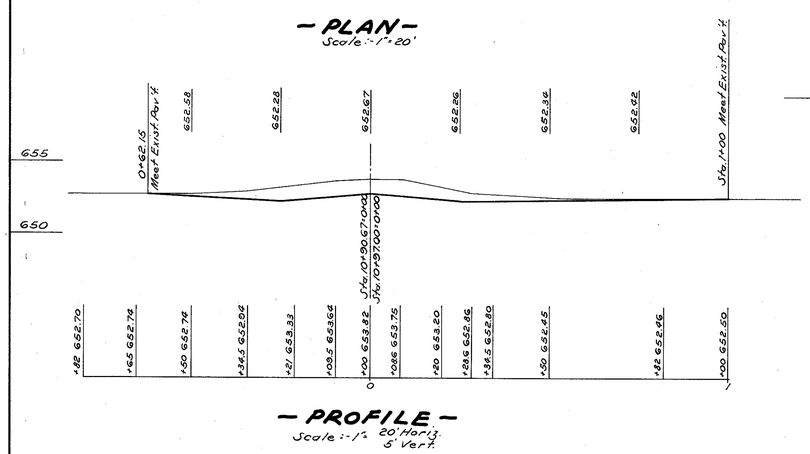
80
136

BUTLER COUNTY
BUT-4-(22.97-23.22)



* Curb Transition See Sheet No. 92

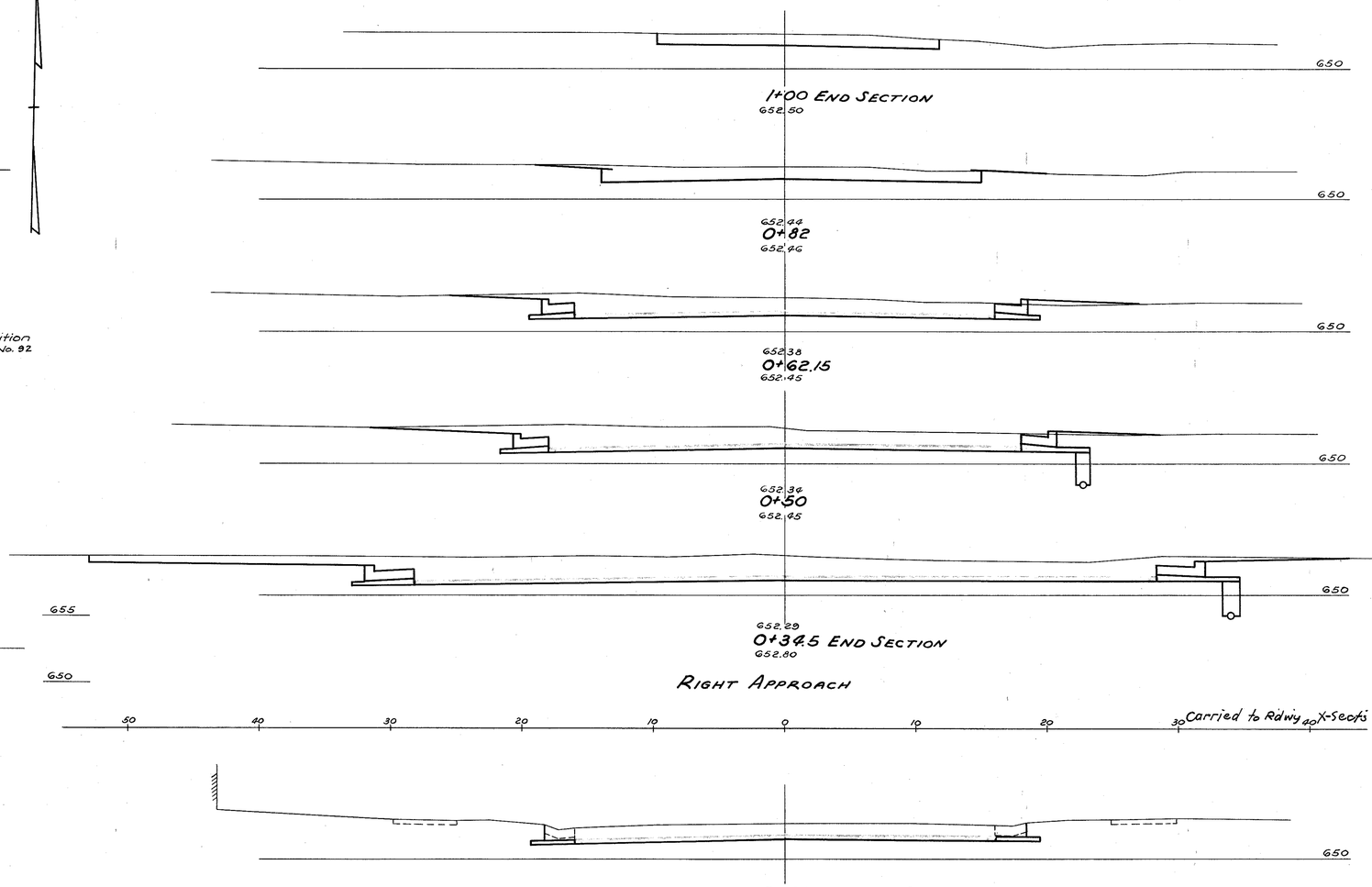
— PLAN —
Scale :- 1"=20'



— PROFILE —
Scale :- 1/2 20' Horiz. 5' Vert.

— ESTIMATED QUANTITIES —

		Left	Right	Total	
1¼"	Asphaltic Concrete Surface Course — Item T-35	197.4	315.2	512.6	Sq. Yd.
1¼"	Asphaltic Concrete Leveling Course — Item B-35	197.4	315.2	512.6	Sq. Yd.
3"	Asphaltic Concrete Base Course — Item B-35	197.4	317.3	514.7	Sq. Yd.
5"	Crushed Aggregate Base Course — Item B-119		124.1	124.1	Sq. Yd.
9"	Crushed Aggregate Base Course — Item B-119	197.4	197.4	394.8	Sq. Yd.
Concrete Curb & Gutter - Type 2 (Net Add) — Item I-12		2.5	2.5	5.0	Lin. Ft.
4"	Concrete Sidewalk — Item I-13	304.0	176.0	480.0	Sq. Ft.
8"	Concrete Pavement (Drive) — Item T-70	19.6		19.6	Sq. Yd.
Removal & Disposal of Existing Curb & Gutter — Item E-8		20.0		20.0	Lin. Ft.
Removal of Existing Structure — Item S-24			Lump		

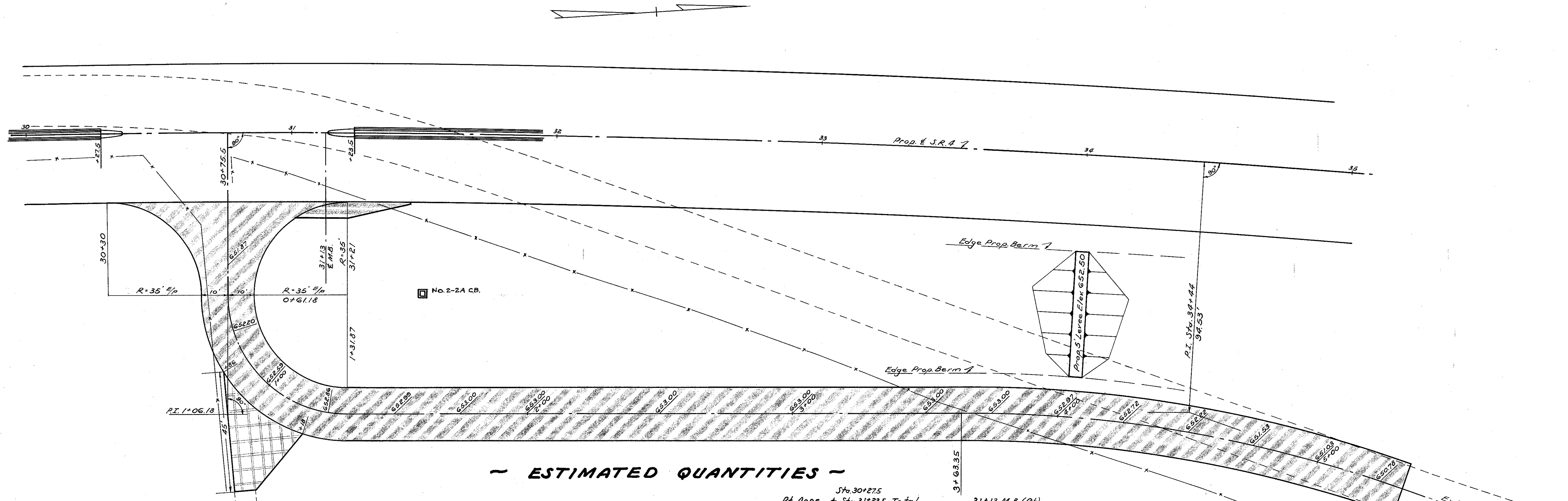


— CROSS SECTIONS —

	End Area		Volume	
	Cut	Fill	Cut	Fill
	18	0		
			16	0
	30	0		
			32	2
	56	6		
			28	3
	71	7		
			59	4
	134	6		
Carried to Rdwy X-Sects.	Total		135	9
	48	4		
			26	2
	68	4		
			54	3
	120	5		
Carried to Rdwy X-Sects.	Total		80	5

WILBRAHAM RD. — STA. 10+90.67 LT. & STA. 10+97.00 RT.

BUTLER COUNTY
BUT-4-(22.97-23.22)



3+63.35

~ ESTIMATED QUANTITIES ~

			Rt. Appr.	Sta. 30+27.5 to Sta. 31+23.5	Total		31+13 M.B. (Rt.)
1¼"	Asphaltic Concrete Surface Course	Item T-35		549.5	549.5	Sq.Yd.	
1¼"	Asphaltic Concrete Leveling Course	Item B-35		549.5	549.5	Sq.Yd.	
2"	Asphaltic Concrete Surface Course	Item T-35	1185.0		1185.0	Sq.Yd.	18.2 Sq.Yd.
3"	Asphaltic Concrete Base Course	Item B-35		560.0	560.0	Sq.Yd.	
9"	Crushed Aggregate Base Course	Item B-119		570.6	570.6	Sq.Yd.	
5"	Crushed Aggregate Base Course	Item B-119					18.2 Sq.Yd.
8½"	Concrete Median Pavement - Type 2 (Var. Width)	Item I-21		5.2	5.2	Sq.Yd.	
6"	Stabilized Aggregate Shoulder	Item I-18		56.0	56.0	Sq.Yd.	
7"	Crushed Aggregate Base Course	Item B-119	1239.0		1239.0	Sq.Yd.	
	Embankment for Levee		75.0		75.0	Cu.Yd.	
	DRIVE 0+86 to 1+18						
8"	Crushed Aggregate Base Course	Item B-119	23.0		23.0	Sq.Yd.	
	Excavation	Item E-1	5.0		5.0	Cu.Yd.	

Δ = 19°27'
R = 500
T = 85.69'
L = 169.73'

Exist. 8' Dr.

5+33.08 Meet Exist. Pav't.

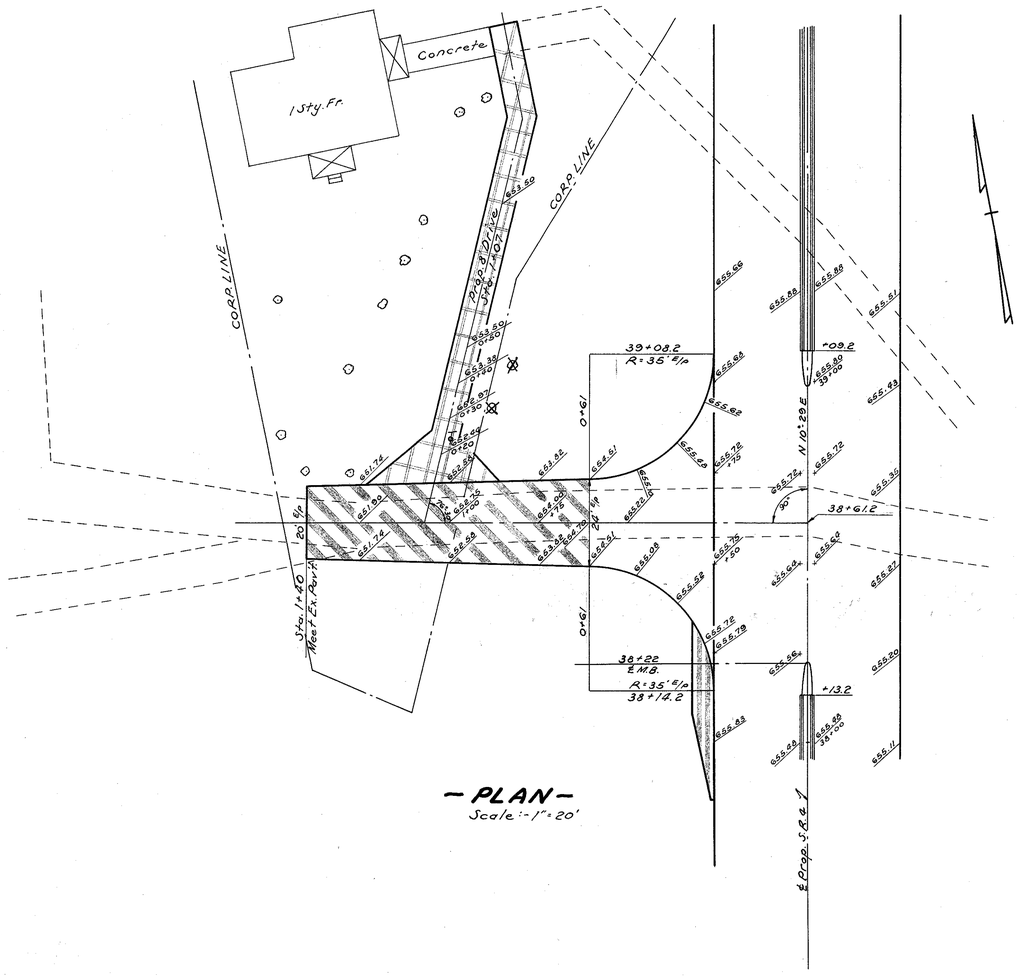
PROFILE
Scale: 1" = 20' Hor.
1" = 5' Vert.

SERVICE ROAD STA. 30+75.5 Rt.

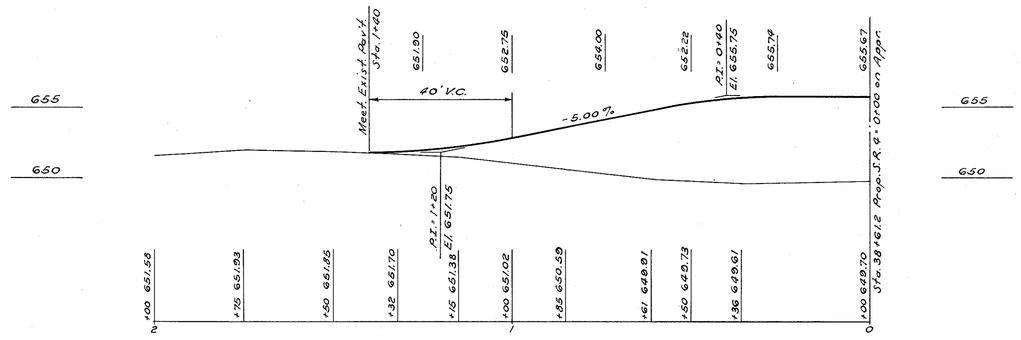
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

82
136

BUTLER COUNTY
BUT-4-(22.97-23.22)



— PLAN —
Scale:- 1"= 20'



— PROFILE —
Scale:- 1"= 20' Horiz.
5' Vert.

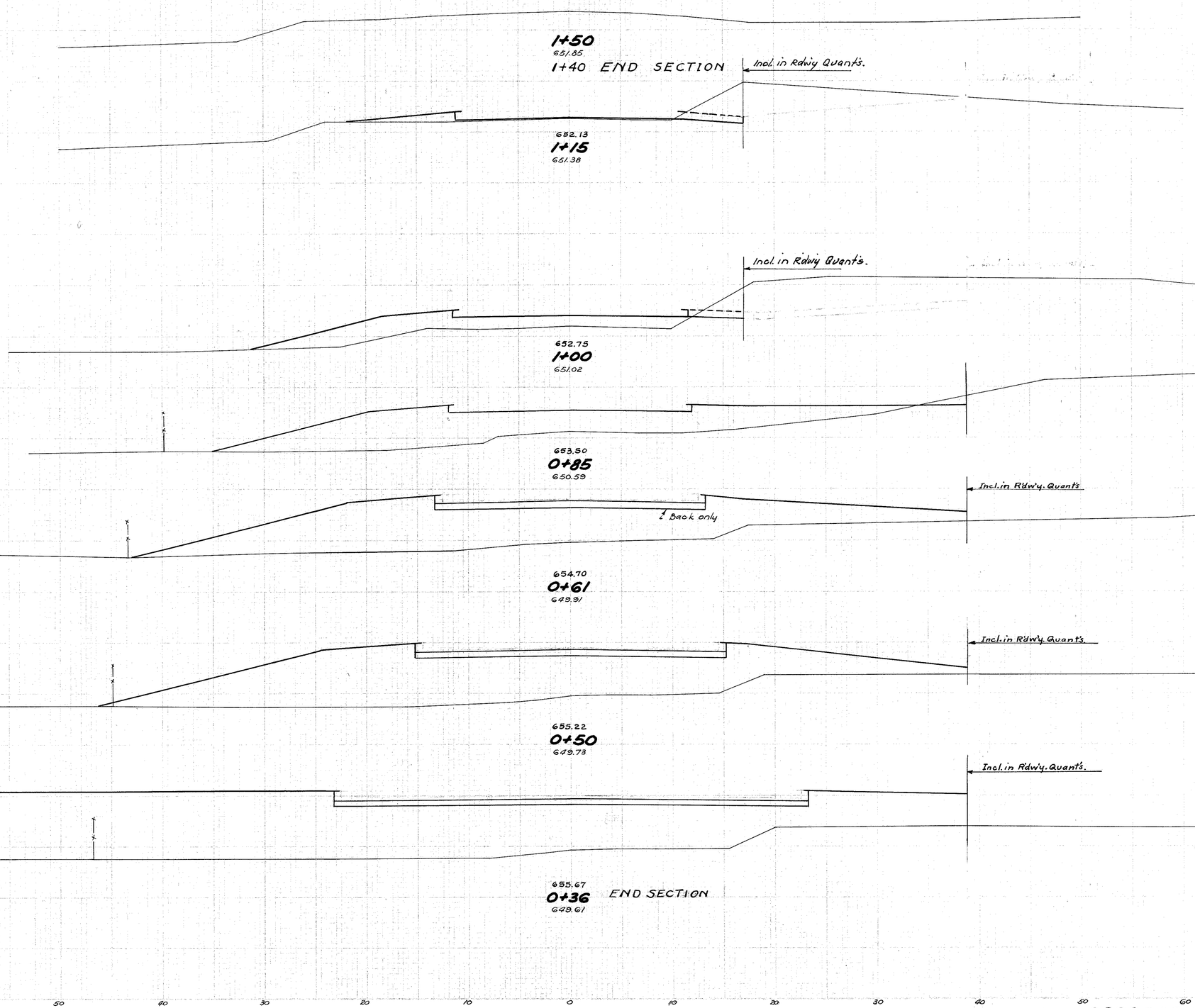
— ESTIMATED QUANTITIES —

(MUNICIPAL)		Appr. Lt.	Sta. 38+13.2 to 39+09.2	Total	38+22 M.B. (Lt.)
1½" Asphaltic Concrete Surface Course	Item 7-35	151.7	549.5	701.2 Sq.Yd.	
1½" Asphaltic Concrete Leveling Course	Item 8-35	151.7	549.5	701.2 Sq.Yd.	
2" Asphaltic Concrete Surface Course	Item 7-35	193.1		193.1 Sq.Yd.	20.4 Sq.Yd.
3" Asphaltic Concrete Base Course	Item 8-35	154.7	557.4	712.1 Sq.Yd.	
5" Crushed Aggregate Base Course	Item 8-119	160.8	562.7	723.5 Sq.Yd.	20.4 Sq.Yd.
8" Subbase	Item I-22	166.9	568.0	734.9 Sq.Yd.	
8½" Concrete Median Pavement - Type 2 (Var. Width)	Item I-21		5.2	5.2 Sq.Yd.	
6" Stabilized Aggregate Shoulder	Item I-18		56.0	56.0 Sq.Yd.	
7" Crushed Aggregate Base Course	Item 8-119	201.9		201.9 Sq.Yd.	

DRIVE STA. 1+07 (RURAL)				
8" Crushed Aggregate Base Course	Item 8-119	140.0		140.0 Sq.Yd.

APPROACH STA. 38+61.2 LT.

BUTLER COUNTY
BUT. 4 - (22.97-23.22)



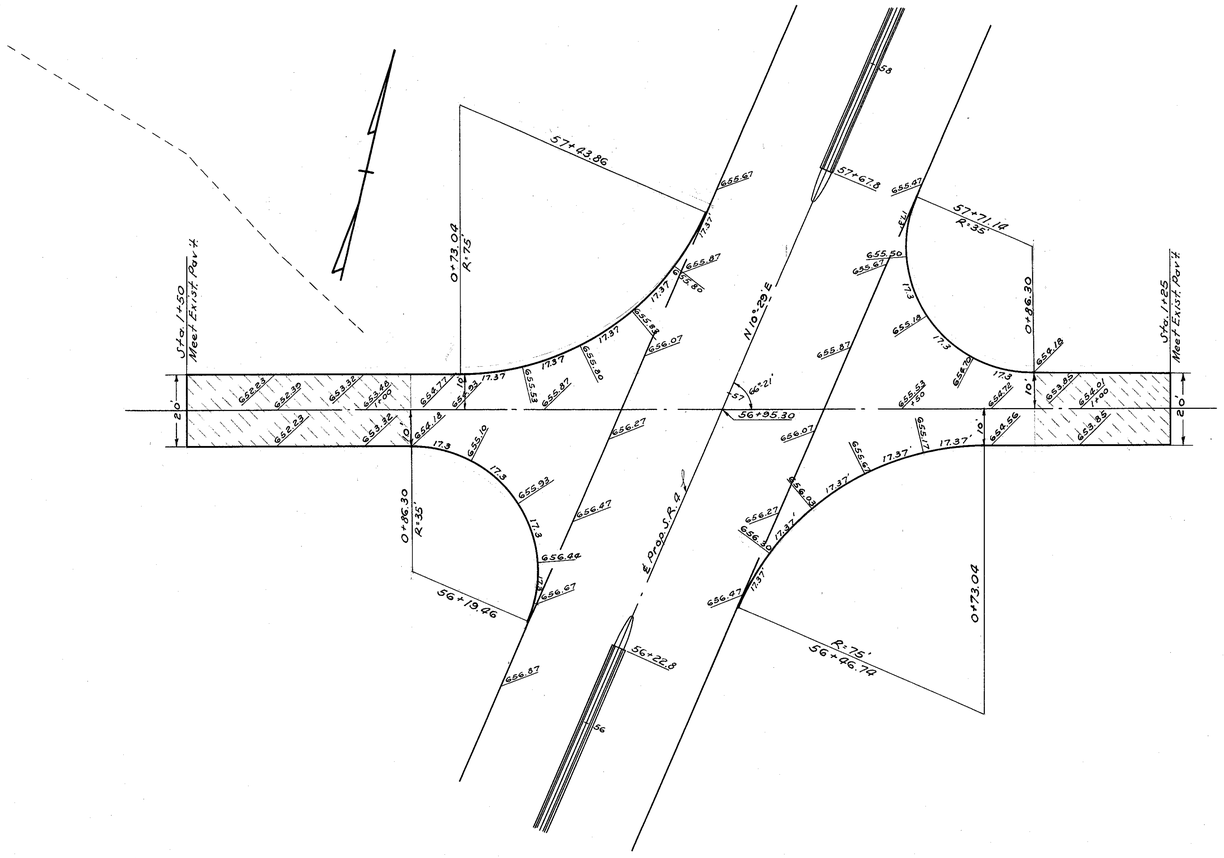
	End Area Cut	End Area Fill	Volume Cut	Volume Fill
Sta. 1+40	15	0		
			13	3
	14	5		
			6	17
	8	56		
			3	58
	3	154		
			1	181
Ahead	0	254		
Back	0	236		
			0	107
	0	290		
			0	207
	0	508		
To Rdwy X-Sect's.		Total	23	573

APPROACH - STA. 38+61.2 Lt.

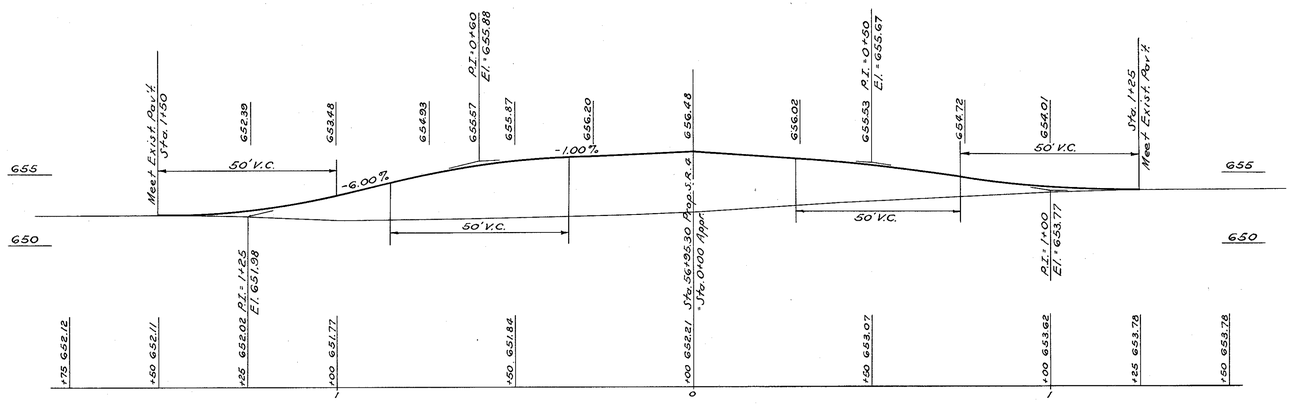
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

84
136

BUTLER COUNTY
BUT-4-(22.97-23.22)



— PLAN —
Scale:- 1"=20'



— PROFILE —
Scale:- 1"= 20' Horiz.
5' Vert.

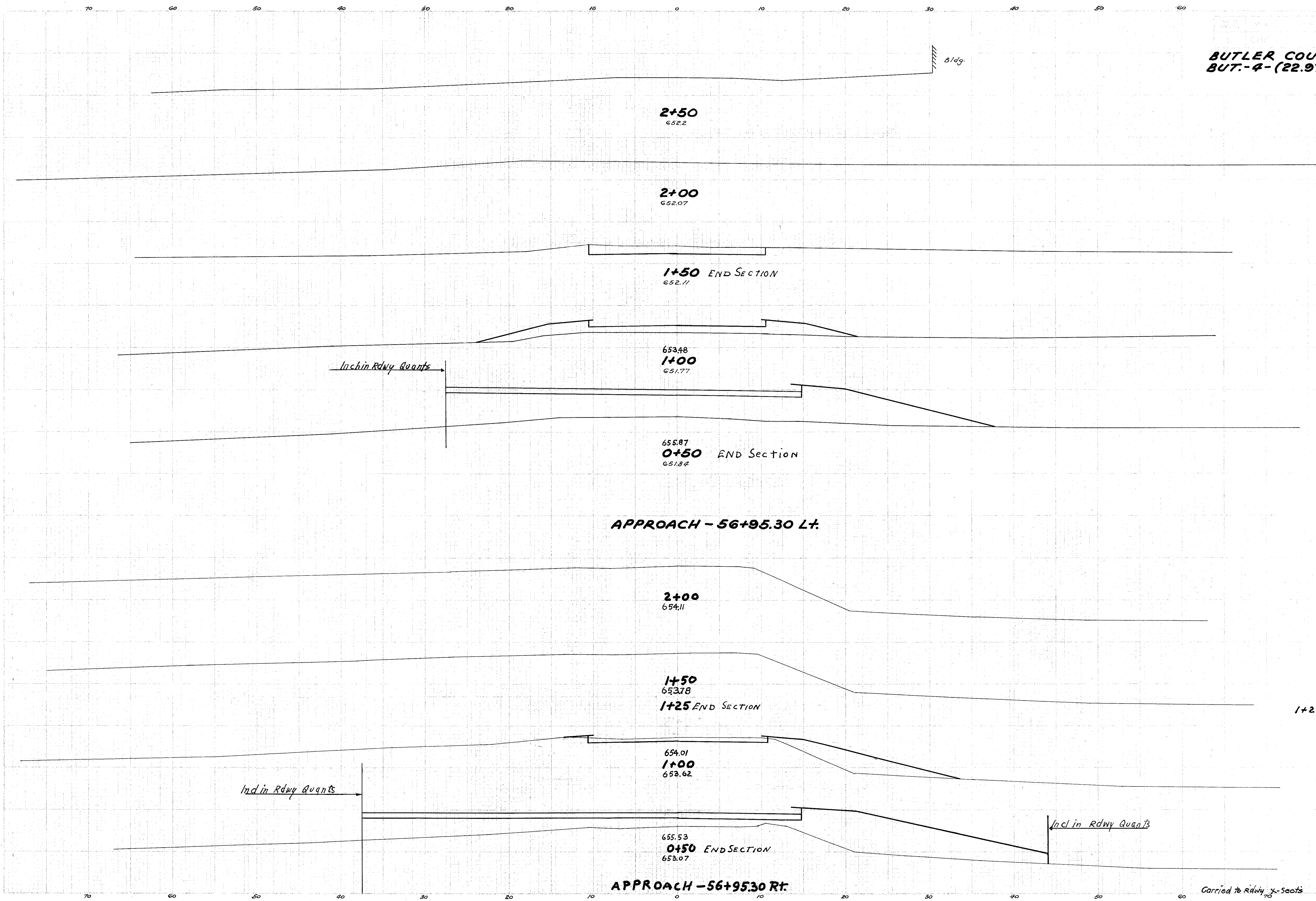
— ESTIMATED QUANTITIES —

Sta. 56+19.46-

		Appr. Lt.	57+71.14	Appr. Rt.	Total	
1½" Asphaltic Concrete Surface Course	Item T-35	390.2	868.2	334.6	1593.0	Sq. Yd.
1½" Asphaltic Concrete Leveling Course	Item B-35	390.2	868.2	334.6	1593.0	Sq. Yd.
3" Asphaltic Concrete Base Course	Item B-35	398.3	874.9	341.5	1614.7	Sq. Yd.
5" Crushed Aggregate Base Course	Item B-119	414.8	877.9	355.2	1647.9	Sq. Yd.
8" Subbase	Item I-22	272.2	884.0	272.2	1428.4	Sq. Yd.
Concrete Curb & Gutter - Type "A"	Item I-12		13.4		13.4	Lin. Ft.
6" Concrete Median Pavement - Type 1	Item I-21		1.5		1.5	Sq. Yd.
8½" Concrete Median Pavement - Type 2 (Var. Width)	Item I-21		5.2		5.2	Sq. Yd.
6" Stabilized Crushed Aggregate	Item I-18		40.0		40.0	Sq. Yd.
12¾" Average Subbase	Item I-22		1.5		1.5	Sq. Yd.

APPROACH — STA. 56+95.30 RT. & LT.

BUTLER COUNTY
BUT.-4-(22.97-23.22)



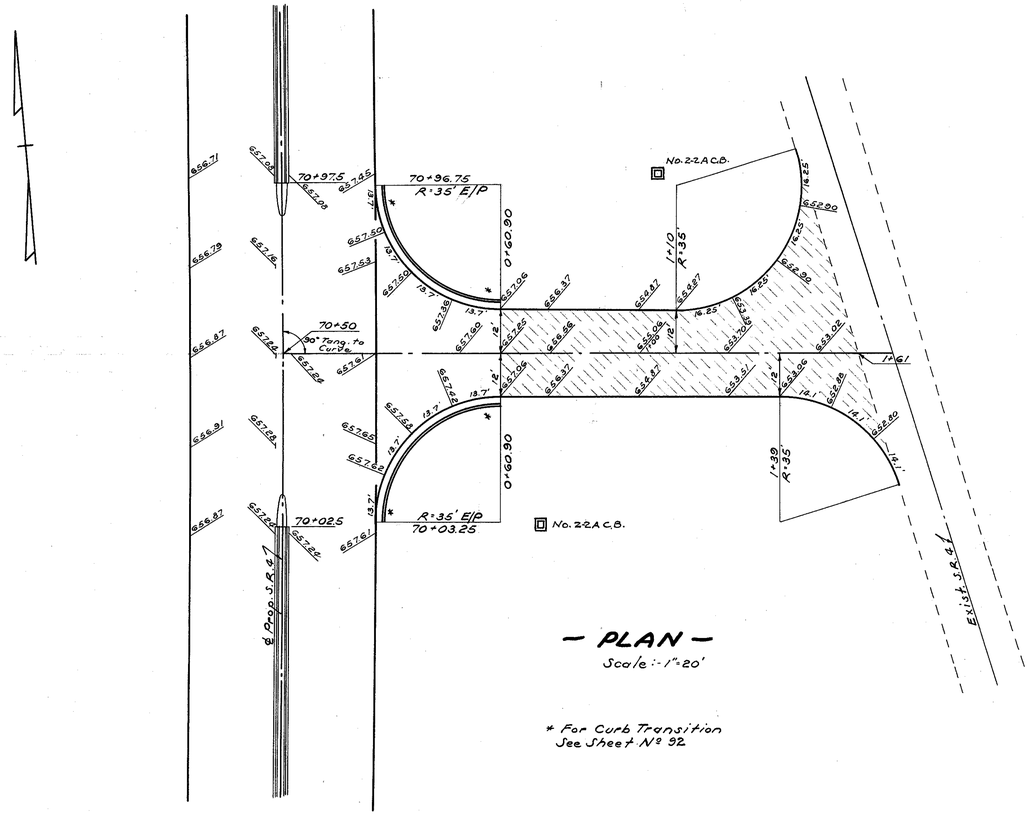
	End Area Cut	End Area Fill	Volume Cut	Volume Fill
	21	0		
			19	41
	0	44		
			0	216
	0	189		
1+25	22	0		
			15	15
	11	32		
			10	195
	0	179		
Carried to Rdwy X-Sects	Total		44	467

APPROACH - STA. 56+95.30 Rt. & Lt.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

86
136

BUTLER COUNTY
BUT-4-(22.97-23.22)



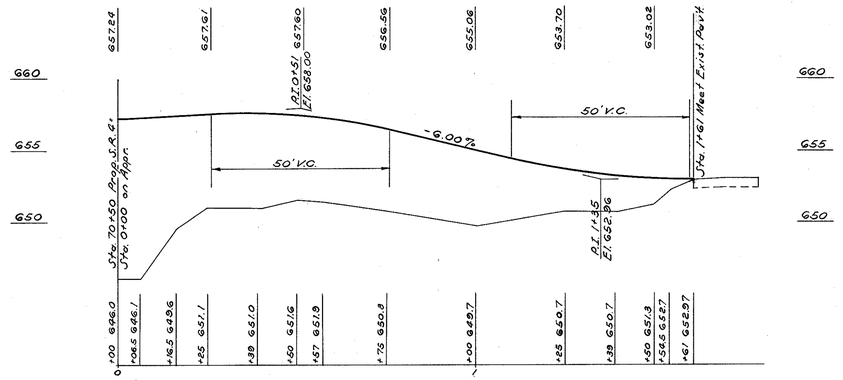
— PLAN —

Scale :- 1"=20'

* For Curb Transition
See Sheet No 92

— ESTIMATED QUANTITIES —

			Sta. 70+02.5- Appr. Rt.	70+97.5	Total	
1½"	Asphaltic Concrete Surface Course	Item T-35	493.2	543.7	1036.9	Sq.Yd.
1½"	Asphaltic Concrete Leveling Course	Item B-35	493.2	543.7	1036.9	Sq.Yd.
3"	Asphaltic Concrete Base Course	Item B-35	502.6	551.6	1054.2	Sq.Yd.
5"	Crushed Aggregate Base Course	Item B-119	521.6	556.9	1078.5	Sq.Yd.
8"	Subbase	Item I-22	166.0	562.3	728.3	Sq.Yd.
8½"	Concrete Median Pavement-Type 2 (Var. Width)	Item I-21		5.2	5.2	Sq.Yd.
6"	Stabilized Crushed Aggregate	Item I-18		42.9	42.9	Sq.Yd.
	Type 2 Concrete Curb & Gutter	Item I-12	102.0		102.0	Lin.Ft.

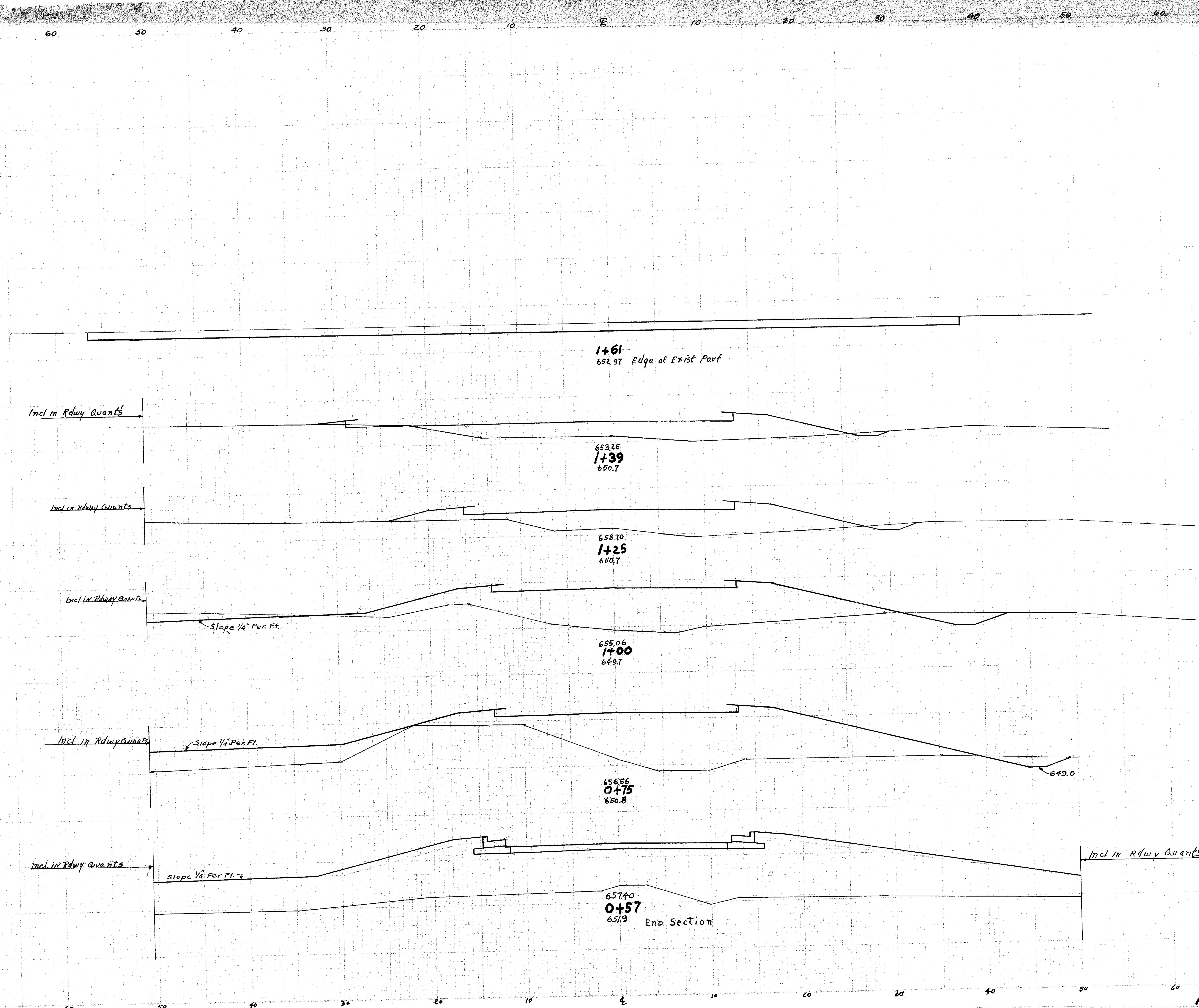


— PROFILE —

Scale :- 1" = 20' Horiz.
5' Vert.

APPROACH STA. 70+50 RT.

BUTLER COUNTY
BUT-4-(22.97-23.22)



End Area Cut	End Area Fill	Volume Cut	Volume Fill
85	0		
		36	30
4	74		
		2	44
3	96		
		10	126
18	177		
		12	195
7	245		
		2	237
0	466		
To Rdwy X-Sects	Total	62	63[illegible]

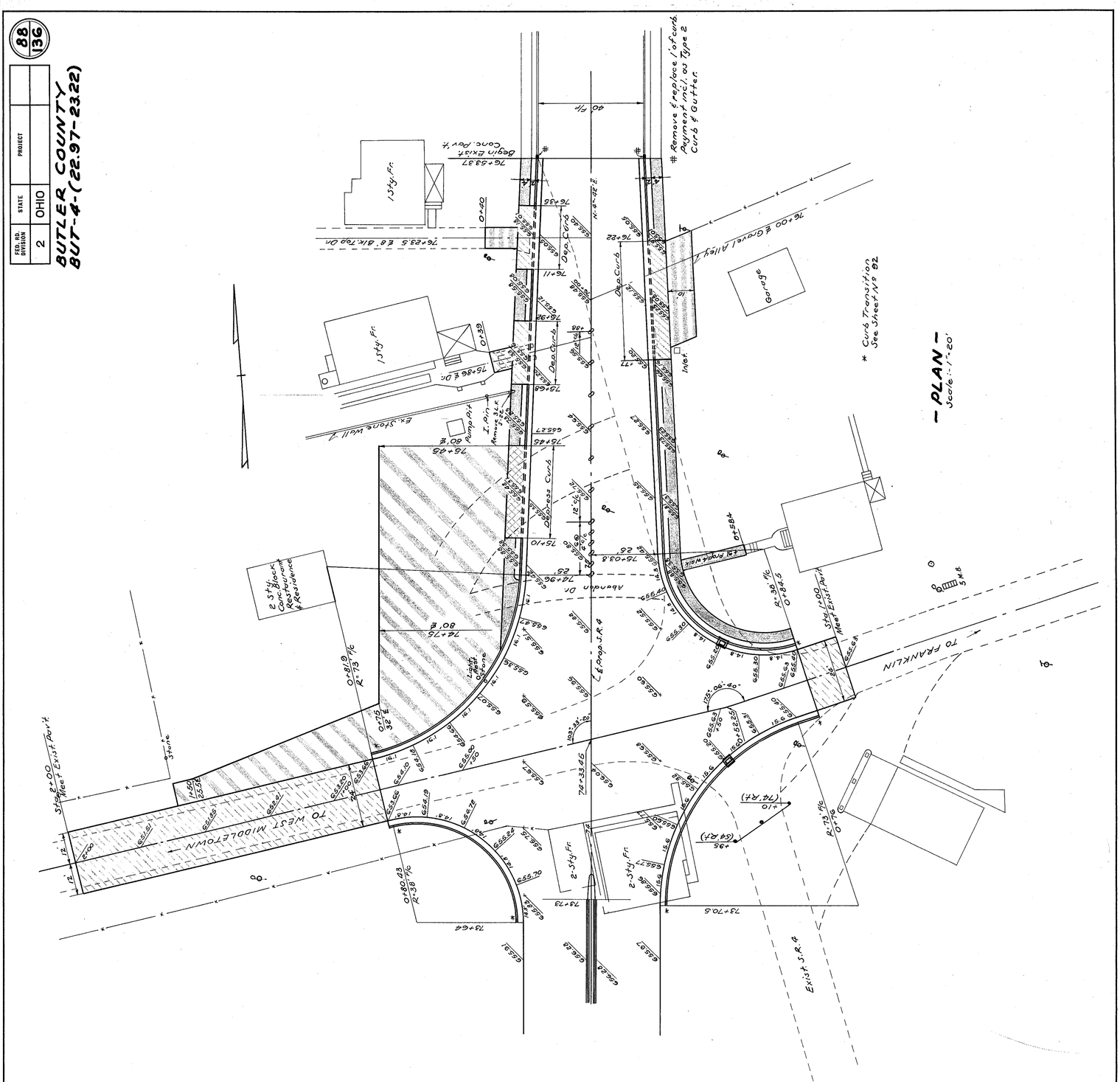
APPROACH- STA. 70+50 RT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

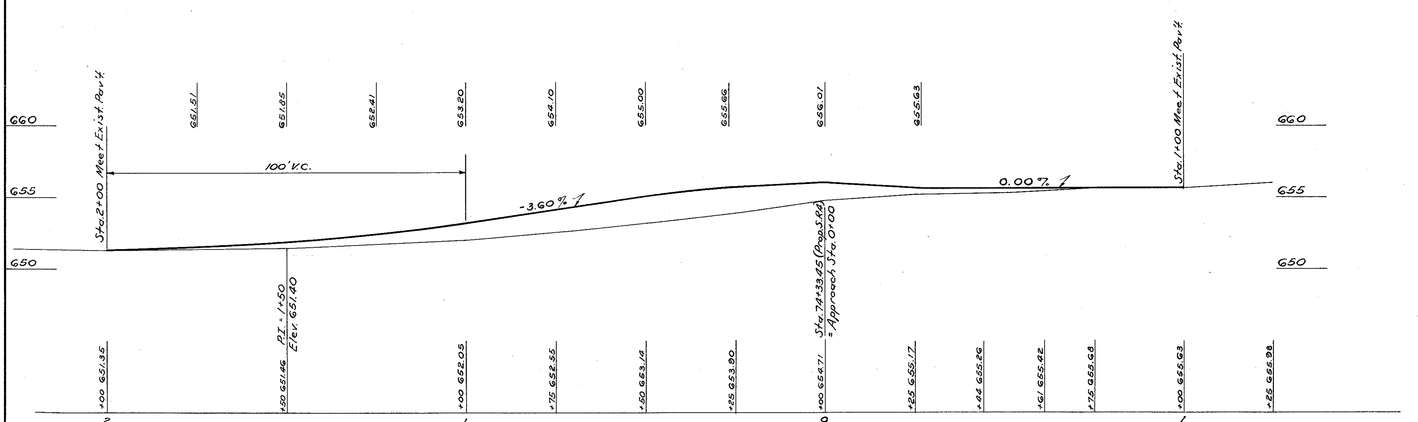
88
136

BUTLER COUNTY
BUT-4-(22.97-23.22)

APPROACH-TRENTON-FRANKLIN RD. STA. 74+33.45



— PLAN —
Scale :- 1" = 20'



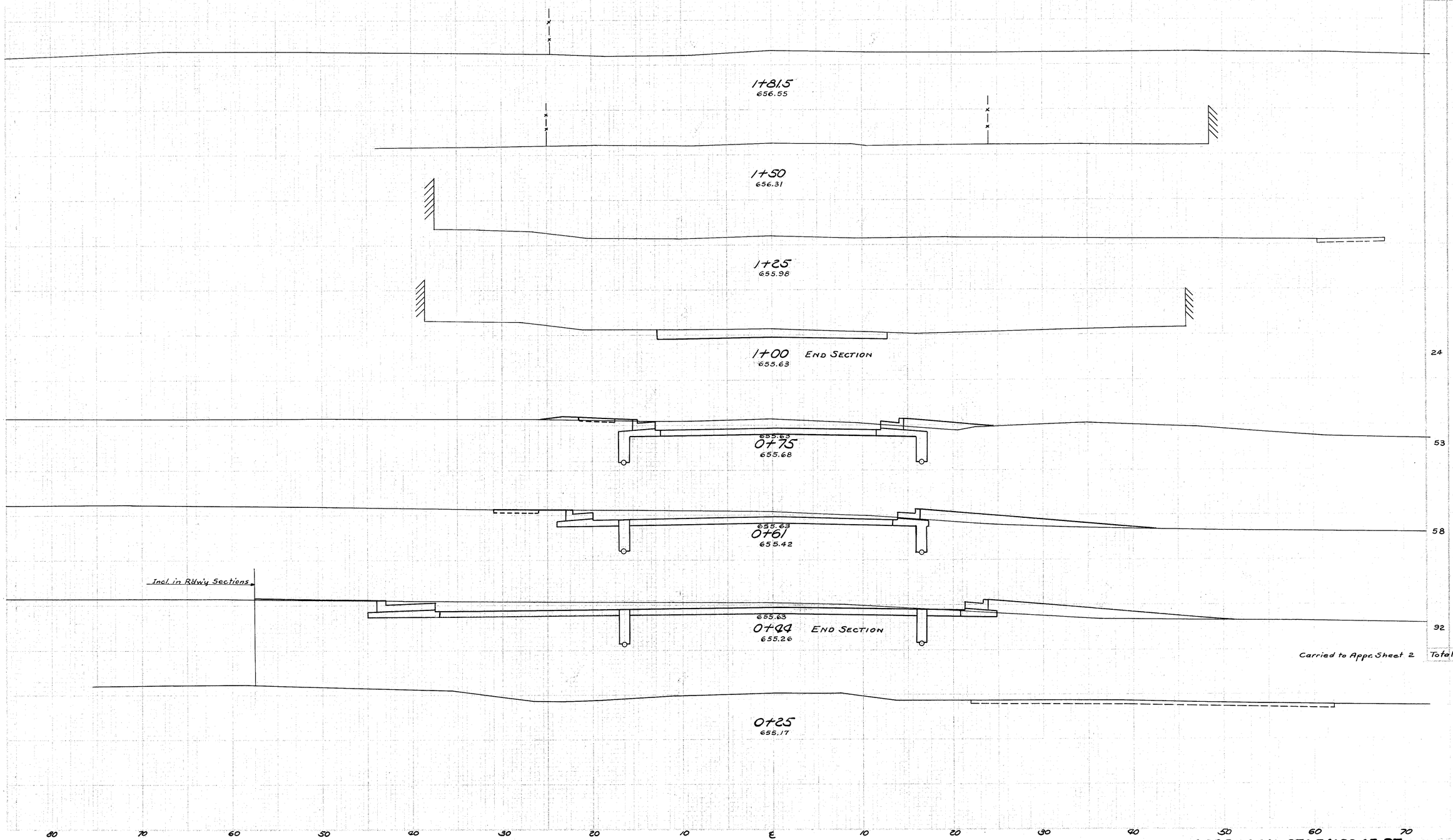
— PROFILE —
Scale :- 1" = 20' Horiz.
1" = 5' Vert.

— ESTIMATED QUANTITIES —

		Appr. Lt.	Sta. 73+64 to Sta. 76+53.37	Appr. Rt.	Total	
1¼" Asphaltic Concrete Surface Course	Item T-35	612.0	1496.7	339.0	2447.7	Sq. Yd.
1¼" Asphaltic Concrete Leveling Course	Item B-35	612.0	1496.7	339.0	2447.7	Sq. Yd.
3" Asphaltic Concrete Base Course	Item B-35	619.0	1499.3	340.0	2458.3	Sq. Yd.
5" Crushed Aggregate Base Course	Item B-119	632.0	1499.3	342.0	2473.3	Sq. Yd.
8" Subbase	Item I-22	287.0	1483.0	287.0	2057.0	Sq. Yd.
12¾" Average Subbase	Item I-22		2.0		2.0	Sq. Yd.
Concrete Curb & Gutter Type 2	Item I-12	163.0	309.0	168.0	640.0	Lin. Ft.
Concrete Curb & Gutter Type A	Item I-12		18.0		18.0	Lin. Ft.
4" Concrete Median Pavement Type 1	Item I-21		2.0		2.0	Sq. Yd.
Concrete Median Pavement Type 2 (Var. Width)	Item I-21		2.6		2.6	Sq. Yd.
Concrete Traffic Dividers	Item I-23		12.0		12.0	Each
6" Stabilized Crushed Aggregate	Item I-18		2.9		2.9	Sq. Yd.
4" Sidewalks	Item I-13	110.0	733.0	244.0	1087.0	Sq. Ft.
Guard Rail	Item I-15			25.0	25.0	Lin. Ft.
Removal of portions of Existing Structure	Item S-22		Lump			
Sealing Vertical Face of Existing Pavement	Item B-35		36.0		36.0	Lin. Ft.

BUTLER COUNTY
BUT-4(22.97-23.22)

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50



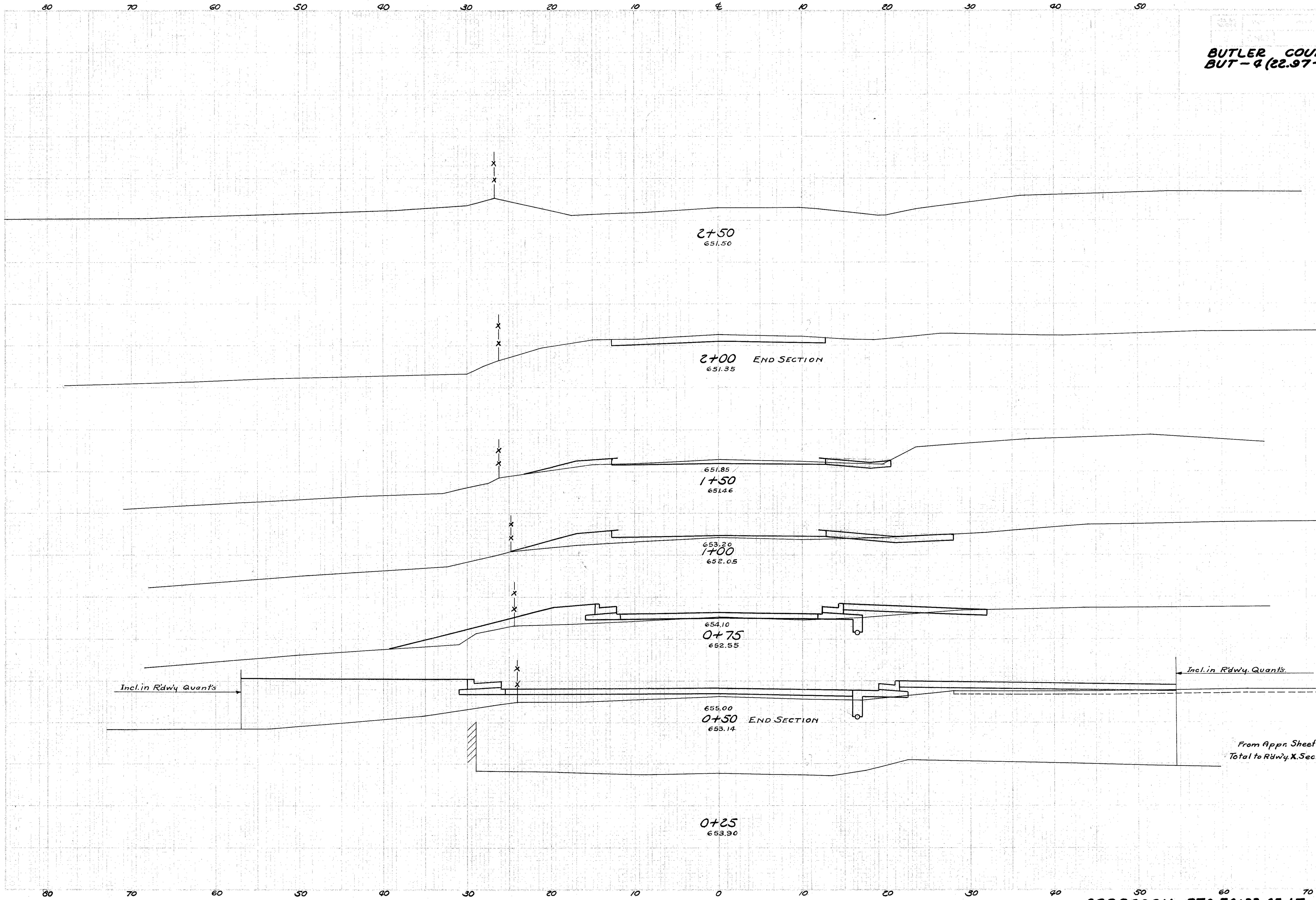
Station	End Area Cut	End Area Fill	Volume Cut	Volume Fill
1+81.5				
1+50				
1+25				
1+00	24	0		
			36	3
0+75	53	7		
			29	7
0+61	58	20		
			47	14
0+22	92	24		
Total			112	24

Carried to Appr. Sheet 2

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80

APPROACH-STA. 74+38.45 RT.

BUTLER COUNTY
BUT-4 (22.97-23.22)



End Area		Volume	
Cut	Fill	Cut	Fill
18	0		
		26	5
10	5		
		13	27
4	24		
		3	29
3	39		
		1	103
0	184		
Total		43	164
From Appr. Sheet 1.		112	24
Total to R'dw'y. X.Sect's.		155	188

APPROACH-STA. 74+33.45 LT.

SUPERELEVATION TABLES

P.C. 26+67.21 | P.I. 32+33.21 | P.T. 37+95.54 | D 1°-00'

Station	Left Edge	Profile Grade	Right Edge
24+50	652.39	652.76	652.39
+75	652.37	652.68	652.31
25+00	652.40	652.60	652.23
+25	652.50	652.68	652.31
+50	652.68	652.76	652.39
+75	652.84	652.84	652.47
26+00	653.02	652.92	652.55
+25	653.19	653.00	652.63
+50	653.38	653.08	652.71
+67.21 P.C.	653.51	653.14	652.77
+75	653.56	653.16	652.78
27+00	653.73	653.20	652.76
+25	653.82	653.16	652.63
+50	653.83	653.08	652.43
+75	653.77	653.00	652.23
28+00	653.69	652.92	652.15
+25	653.61	652.84	652.07
+50	653.53	652.76	651.99
+75	653.45	652.68	651.91
29+00	653.37	652.60	651.83
+25	653.45	652.68	651.91
+50	653.53	652.76	651.99
+75	653.61	652.84	652.07
30+00	653.69	652.92	652.15
+25	653.77	653.00	652.23
+50	653.85	653.08	652.31
+75	653.93	653.16	652.39
31+00	654.01	653.24	652.47
+25	654.09	653.32	652.55
+50	654.17	653.40	652.63
+75	654.25	653.48	652.71
32+00	654.33	653.56	652.79
+25	654.41	653.64	652.87
+50	654.49	653.72	652.95
+75	654.57	653.80	653.03
33+00	654.65	653.88	653.11
+25	654.73	653.96	653.19
+50	654.81	654.04	653.27
+75	654.89	654.12	653.35
34+00	654.97	654.20	653.43
+25	655.05	654.28	653.51
+50	655.13	654.36	653.59
+75	655.21	654.44	653.67
35+00	655.29	654.52	653.75
+25	655.37	654.60	653.83
+50	655.45	654.68	653.91
+75	655.53	654.76	653.99
36+00	655.61	654.84	654.07
+25	655.69	654.92	654.17
+50	655.77	655.00	654.30
+75	655.85	655.08	654.45
37+00	655.88	655.16	654.60
+25	655.90	655.24	654.75
+50	655.89	655.32	654.88
+75	655.86	655.40	655.00
+95.54 P.T.	655.84	655.47	655.10
38+00	655.83	655.48	655.11
+25	655.79	655.56	655.20
+50	655.75	655.64	655.27
+75	655.72	655.72	655.35
39+00	655.68	655.80	655.43
+25	655.66	655.88	655.51
+50	655.66	655.96	655.59
+75	655.69	656.04	655.67
40+00	655.75	656.12	655.75

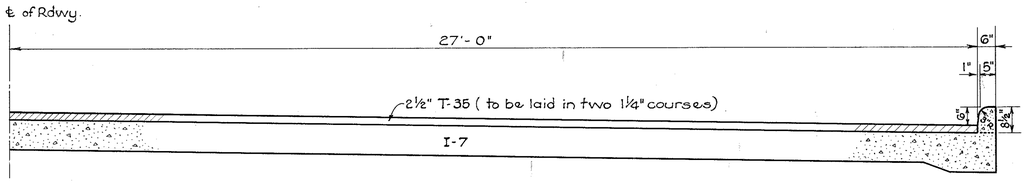
P.C. 61+23.74 | P.I. 67+02.60 | P.T. 72+80.40 | D 0°-30'

Station	Left Edge	Profile Grade	Right Edge
58+75	654.67	655.04	654.67
59+00	654.47	654.84	654.49
+25	654.29	654.66	654.36
+50	654.14	654.51	654.27
+75	654.03	654.40	654.22
60+00	653.95	654.32	654.20
+25	653.91	654.28	654.22
+50	653.90	654.27	654.28
+75	653.93	654.30	654.37
61+00	653.99	654.36	654.50
+23.74 P.C.	654.07	654.44	654.65
+25	654.07	654.44	654.66
+50	654.15	654.52	654.80
+75	654.23	654.60	654.93
62+00	654.31	654.68	655.04
+25	654.39	654.76	655.13
+50	654.47	654.84	655.21
+75	654.55	654.92	655.29
63+00	654.63	655.00	655.37
+25	654.71	655.08	655.45
+50	654.79	655.16	655.53
+75	654.87	655.24	655.61
64+00	654.95	655.32	655.69
+25	655.03	655.40	655.77
+50	655.11	655.48	655.85
+75	655.19	655.56	655.93
65+00	655.27	655.64	656.01
+25	655.35	655.72	656.09
+50	655.43	655.80	656.17
+75	655.51	655.88	656.25
66+00	655.59	655.96	656.33
+25	655.67	656.04	656.41
+50	655.75	656.12	656.49
+75	655.83	656.20	656.57
67+00	655.91	656.28	656.65
+25	655.99	656.35	656.73
+50	656.07	656.44	656.81
+75	656.15	656.52	656.89
68+00	656.23	656.60	656.97
+25	656.31	656.68	657.05
+50	656.39	656.76	657.13
+75	656.47	656.84	657.21
69+00	656.55	656.92	657.29
+25	656.63	657.00	657.37
+50	656.71	657.08	657.45
+75	656.79	657.16	657.53
70+00	656.87	657.24	657.61
+25	656.91	657.28	657.65
+50	656.87	657.24	657.61
+75	656.79	657.16	657.53
71+00	656.71	657.08	657.45
+25	656.63	657.00	657.37
+50	656.55	656.92	657.29
+75	656.47	656.84	657.21
72+00	656.39	656.76	657.10
+25	656.31	656.68	656.96
+50	656.23	656.60	656.78
+75	656.15	656.52	656.55
+80.40 P.T.	656.13	656.50	656.50
73+00	656.07	656.44	656.33
+25	655.99	656.36	656.13
+50	655.91	656.28	655.97
+75	655.83	656.20	655.86

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

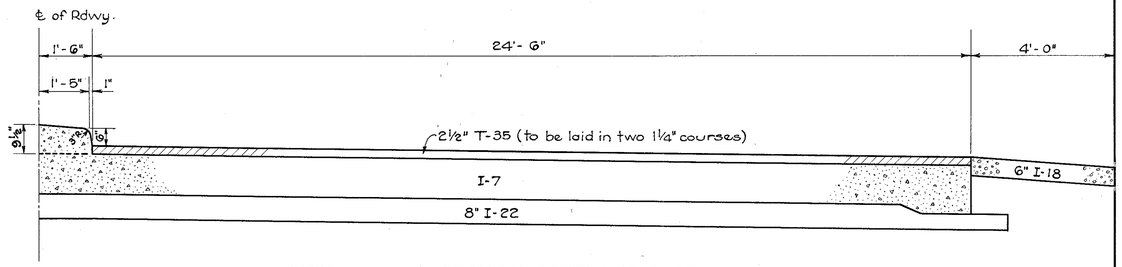
21
136

BUTLER COUNTY
BUT-4-(22.97-23.22)



TYPICAL HALF-SECTION APPROACH SLAB
Sta. 14+38.22 to Sta. 14+53.22 = 15.00 Lin. Ft.
Sta. 15+32.78 to Sta. 15+47.78 = 15.00 Lin. Ft.

Note: For details not shown see Standard Drawing AS-1-54



TYPICAL HALF-SECTION APPROACH SLAB
Sta. 43+98.89 to Sta. 44+23.89 = 25.00 Lin. Ft.
Sta. 50+42.11 to Sta. 50+67.11 = 25.00 Lin. Ft.

ESTIMATED QUANTITIES

		14+38.22 14+53.22	15+32.78 15+47.78	43+98.89 44+23.89	50+42.11 50+67.11	
Reinforced Concrete Approach Slab	Item I-7	91.7	91.7	144.4	144.4	Sq. Yd.
2½" Asphaltic Concrete Surface Course	Item T-35	90.0	90.0	136.1	136.1	Sq. Yd.
Bituminous Tack Coat @ 0.10 gal. per Sq. Yd. (See Note in Proposal)	Item T-30	90.0	90.0	136.1	136.1	Sq. Yd.
8" Subbase	Item I-22			147.2	147.2	Sq. Yd.
6" Stabilized Crushed Aggregate Shoulders & Approaches	Item I-18			44.4	44.4	Sq. Yd.

Note: Curb and Median to be included in unit price bid for Reinf. Conc. Approach Slab, Item I-7.

APPROACH SLABS

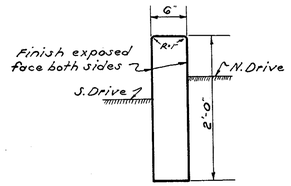
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

92
136

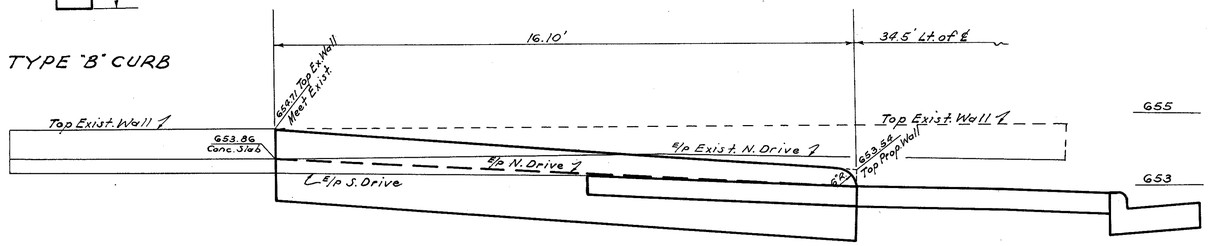
BUTLER COUNTY
BUT-4-(22.97-23.22)

— ESTIMATED QUANTITIES —

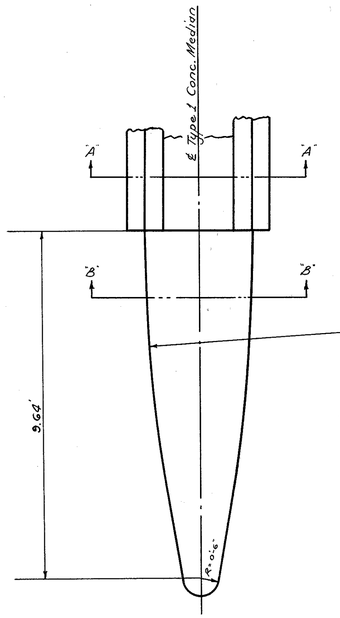
Type "B" Curb _____ Item I-12 _ 16.1 Lin. Ft.
Removal of portions of Exist. Structure _ Item S-22 _ Lump

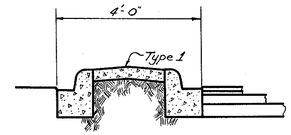


TYPE "B" CURB

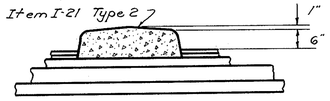


WALL STA. 10+09.5 Lt.





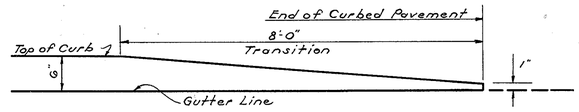
SECTION A-A



SECTION B-B

Note: For details not shown, see Std. Dwg. I-21-23.

DETAIL OF CONC. MEDIAN AT OPENINGS

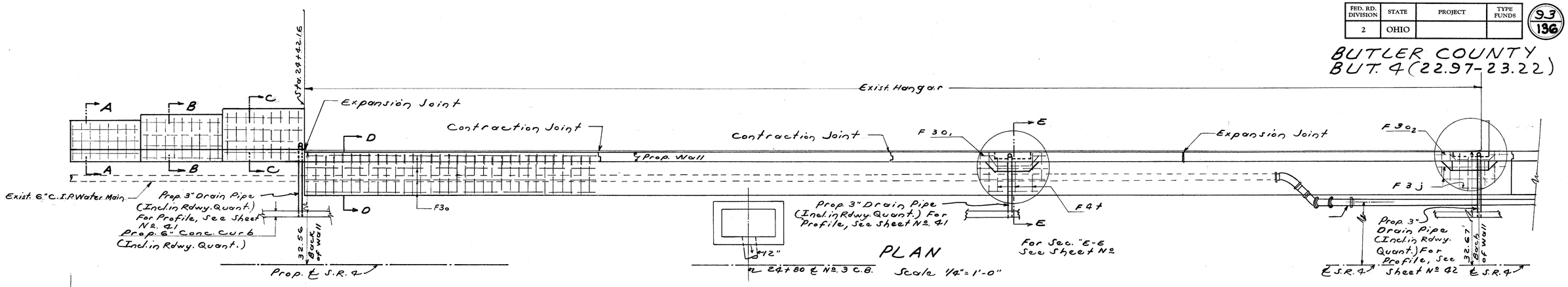


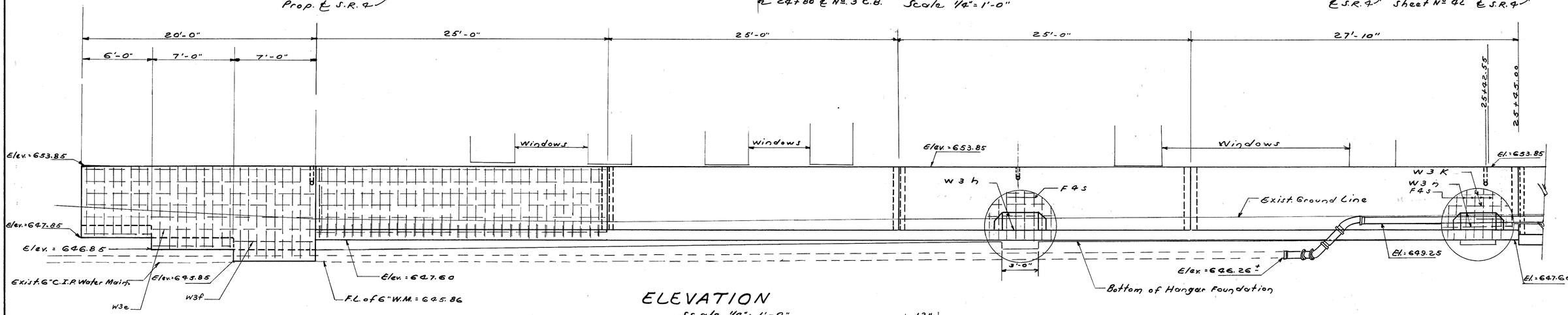
* ELEVATION SHOWING CURB TRANSITION

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

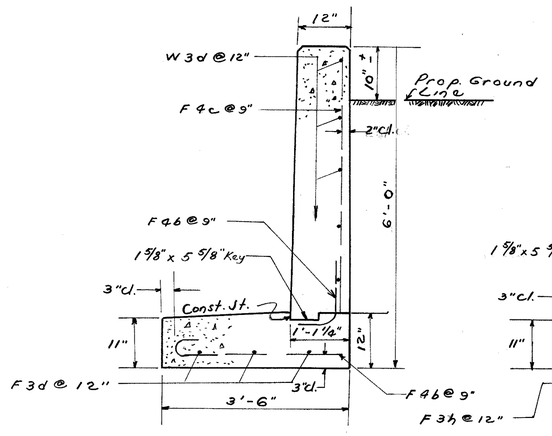
9.3
136

BUTLER COUNTY
BUT. 4 (22.97-23.22)

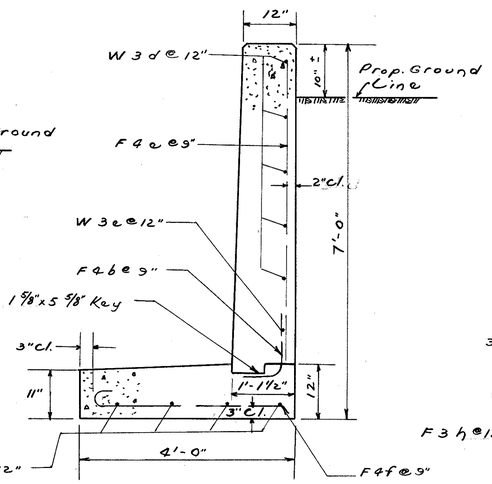




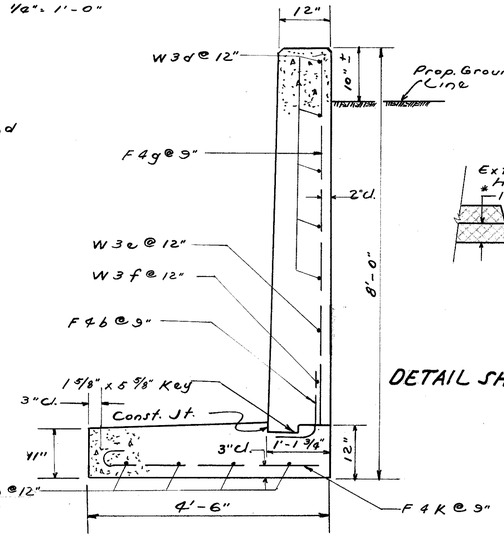
ELEVATION
Scale 1/8" = 1'-0"



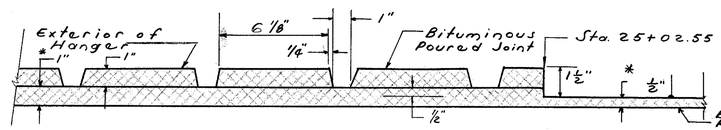
SECTION A-A
Scale 3/4" = 1'-0"



SECTION B-B
Scale 3/4" = 1'-0"



SECTION C-C
Scale 3/4" = 1'-0"



* Use 1" Prem. Exp. Jt. Filler from Sta. 24+42.16 to Sta. 25+02.55
Use 1/2" Prem. Exp. Jt. Filler from Sta. 25+02.55 to Sta. 25+42.55

DETAIL SHOWING JOINT MATERIAL BETWEEN PROP. WALL & EXIST. HANGAR

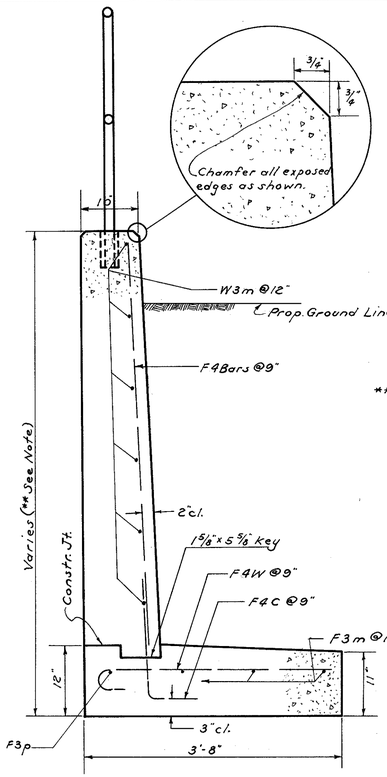
Drawn By:
Checked By:

RETAINING WALL
STA. 24+22.16 TO STA. 26+50 LT.
Sheet 1 of 3 Sheets

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

94/136

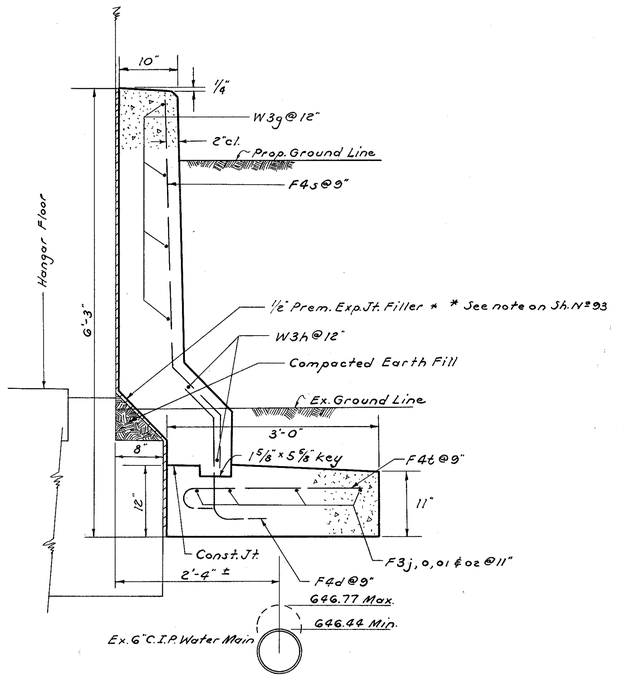
BUTLER COUNTY
BUT-4-(22.97-23.22)



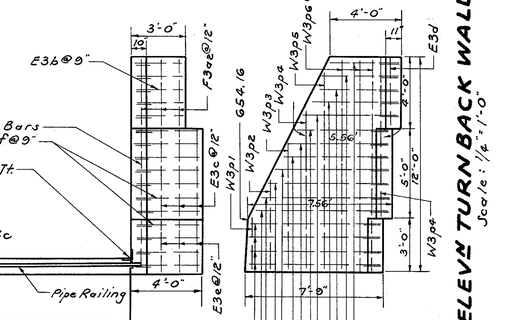
SECTION F-F
Scale: 1"=1'-0"

** Note:

Station to Station	Wall Height
25+45 - 25+71.25	6'-9"
25+71.25 - 25+97.50	7'-3"
25+97.50 - 26+23.75	Min. 7'-3", Max. 7'-9"
26+23.75 - 26+50.00	7'-9"

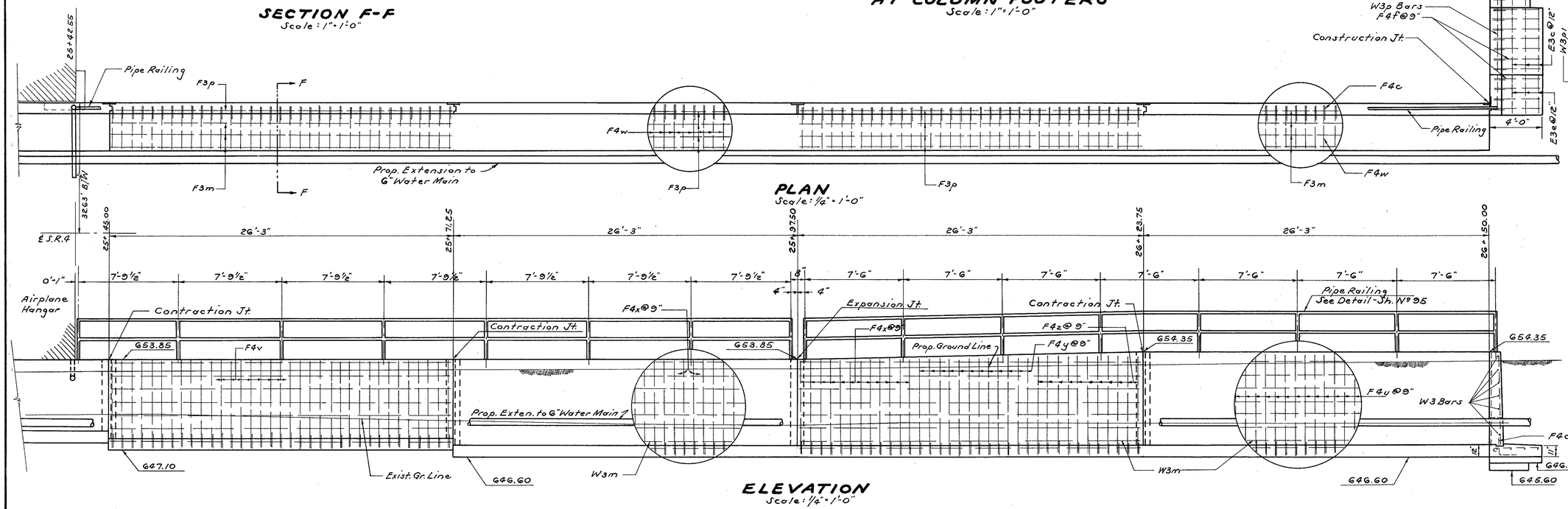


SECTION E-E
SHOWING WALL SECTION
AT COLUMN FOOTERS
Scale: 1"=1'-0"



Note: F3a1 to F4a13 (incl.) spaced @9" %.

ELEVN TURN BACK WALL
Scale: 1/2"=1'-0"



RETAINING WALL - STA. 24+22.16 TO STA. 26+50 Lt.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

95
136

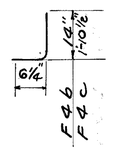
BUTLER COUNTY
BUT. 4 (22.97 - 23.22)

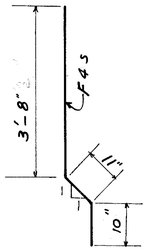
STEEL LIST

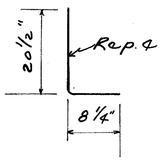
Mark	No.	Shape	Length	Weight-Lb.
F 4b	134	Bent	3'-6"	31
F 4c	8	Strt.	4'-10"	26
F 3d	3	Strt.	5'-6"	6
F 4e	9	Strt.	5'-10"	35
F 4f	20	Bent	4'-0"	53
F 4g	9	Strt.	6'-10"	41
F 3h	8	Strt.	6'-6"	20
F 3j	3	Strt.	27'-8"	31
F 4k	9	Bent	4'-6"	27
F 3m	7	Strt.	25'-11"	68
F 4n	126	Strt.	5'-3"	492
F 30	11	Strt.	26'-0"	108
F 4s	8	Bent	5'-5"	29
F 4t	13	Bent	3'-0"	16
F 4v	35	Strt.	5'-8"	132
F 4w	100	Bent	3'-8"	343
F 4x	47	Strt.	6'-2"	194
F 4y	12	Strt.	6'-5"	51
F 4z	11	Strt.	6'-7"	48
F 4u	35	Strt.	6'-8"	156
F 3p	9	Strt.	27'-3"	92
F 3a1	1	Strt.	3'-1"	1
F 3a2	4	Strt.	3'-6"	5
F 3a3	1	Strt.	3'-10"	1
F 3a4	1	Strt.	4'-3"	2
F 3a5	1	Strt.	4'-7"	2
F 4a6	1	Strt.	4'-6"	3
F 4a7	1	Strt.	4'-10"	3
F 4a8	1	Strt.	5'-3"	4
F 4a9	1	Strt.	5'-7"	4
F 4a10	1	Strt.	6'-0"	4
F 4a11	1	Strt.	6'-4"	4
F 4a12	1	Strt.	6'-9"	5
F 4a13	4	Strt.	6'-8"	18
F 4b	26	Bent	1'-7"	27
F 4c	285	Bent	2'-4"	444
F 4d	8	Bent	2'-4"	12
E 3b	5	Bent	2'-11"	5
E 3c	3	Strt.	4'-6"	5
E 3e	3	Strt.	2'-6"	3
F 30,	1	Bend in Field	25'-7"	10
F 30z	1	Bend in Field	28'-3"	11
W 3d	5	Strt.	19'-8"	37
W 3e	1	Strt.	13'-8"	5
W 3f	1	Strt.	6'-8"	3
W 3g	16	Strt.	24'-8"	148
W 3h	2		25'-2"	19
W 3k	4	Strt.	27'-6"	41
W 3m	27		25'-11"	263
W 3p1	1	Strt.	2'-3"	1
W 3p2	1	Strt.	4'-3"	2
W 3p3	1	Strt.	6'-3"	3
W 3p4	2	Strt.	8'-3"	7
W 3p5	1	Strt.	10'-3"	4
W 3p6	3	Strt.	11'-8"	13
W 3n	2	Bend in Field	28'-0"	21
Rep 3	1	Strt.	5'-0"	2
Rep 4	1	Strt.	5'-3"	4
Total				3095

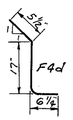
BENDING DIAGRAMS

F4b = 3'-0"
F4f = 3'-6"
F4k = 4'-0"
F4t & F4E36 - 2'-6"
F4w = 3'-2"



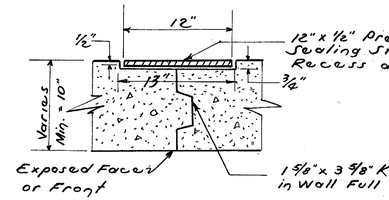




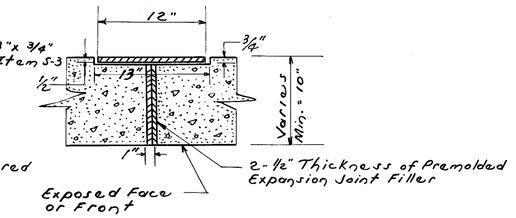


ESTIMATED QUANTITIES

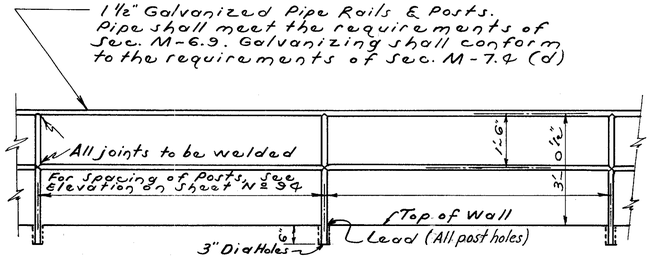
Item	Quantity	Units	Description
S-1	77.1	Cu.Yd.	Class "E" Concrete
S-9	260	Sq.Ft.	1" Bituminous Premolded Exp. Joint Filler
S-4	3095	Lb.	Reinforcing Steel
S-3	60	Lin.Ft.	12" x 1/2" Premolded Sealing Strip
E-2	110	Cu.Yd.	Excavation for Structures
S-14	107.5	Lin.Ft.	Pipe Railing, as per plan
S-9	390	Sq.Ft.	1/2" Bituminous Premolded Exp. Joint Filler



SEC. PLAN
CONTRACTION JOINT
Scale 1 1/2" = 1'-0"

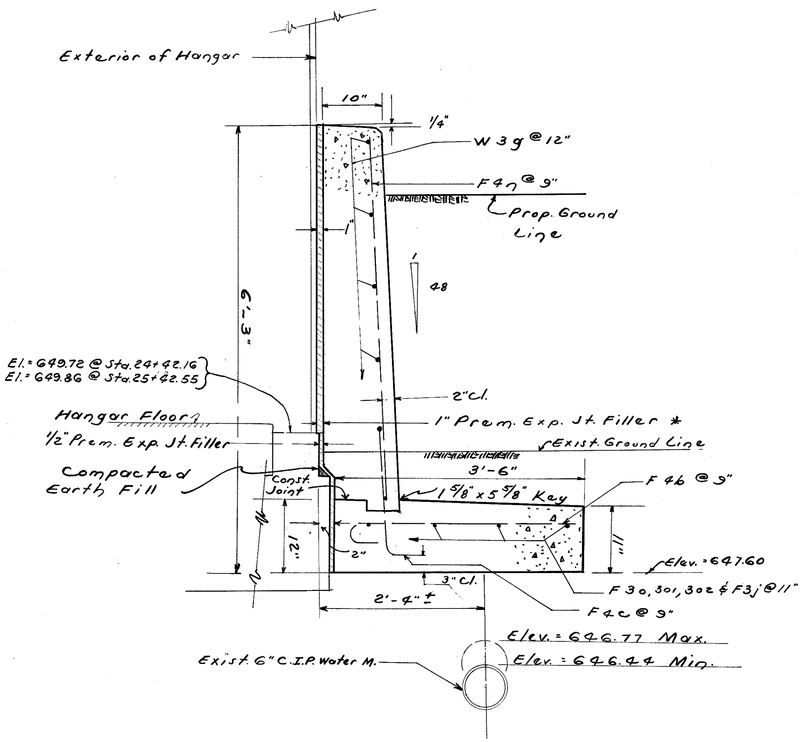


SEC. PLAN
EXPANSION JOINT
Scale 1 1/2" = 1'-0"



Note: Area burned from welding shall be resurfaced with Galvalloy, as manufactured by Metalloy Products Company, or equal. This material shall be applied according to the manufacturers standards.
All welding shall be class "B"

TYPICAL PIPE RAILING DETAILS
Scale 1/2" = 1'-0"



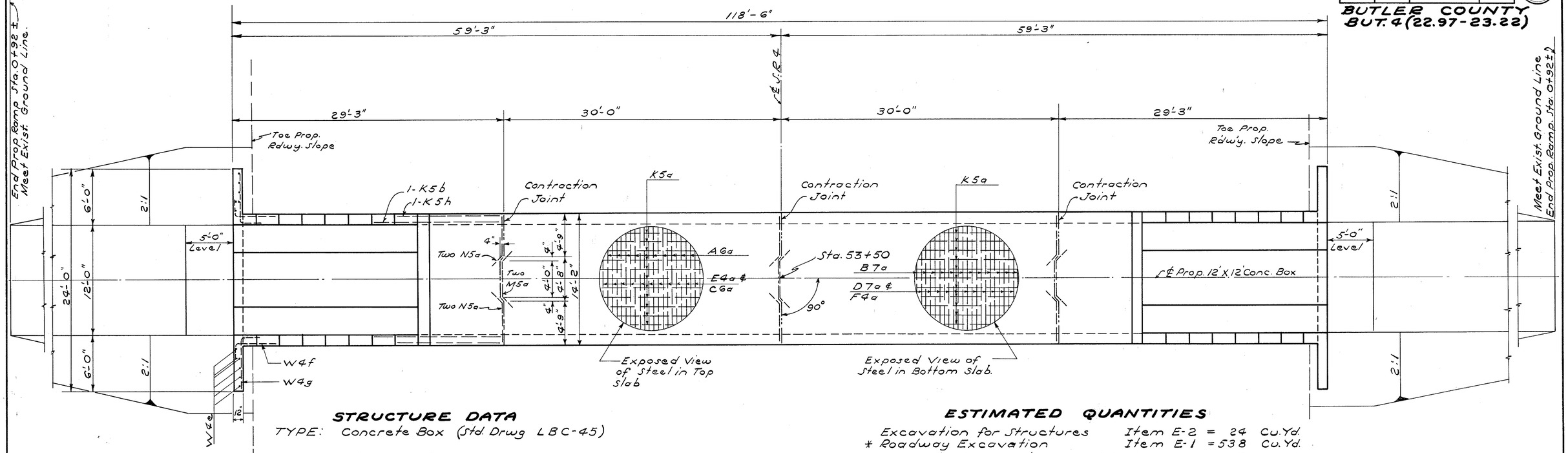
SECTION D-D
Scale 1" = 1'-0"

RETAINING WALL
STA. 24+22.16 TO STA. 26+50 LT.
Sheet 3 of 3 Sheets

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

96
136

BUTLER COUNTY
BUT. 4 (22.97 - 23.22)



STRUCTURE DATA

TYPE: Concrete Box (Std. Drwg LBC-45)

SIZE: 12'-0" X 12'-0" X 118'-6"

WORK REQ'D: Build Concrete Box as detailed. Construct Ramps on a 15% slope at both ends of Box as shown.

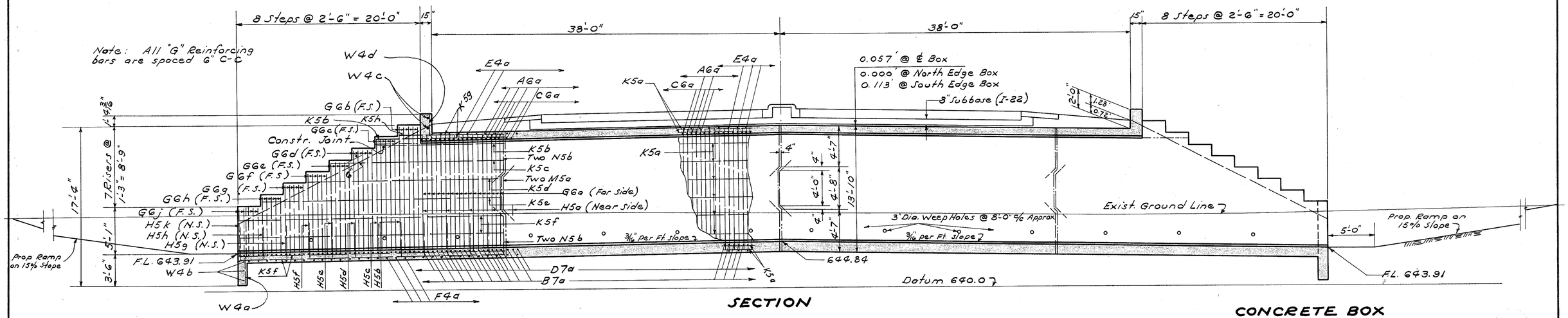
PLAN

Scale 1" = 5'-0"

ESTIMATED QUANTITIES

Excavation for Structures	Item E-2	= 24 Cu.Yd.
* Roadway Excavation	Item E-1	= 538 Cu.Yd.
Concrete for Structures Class "C"	Item S-1	= 217.6 Cu.Yd.
Reinforcing Steel	Item S-4	= 31336 Lb.

* Carried to Roadway Cross Sections.



SECTION

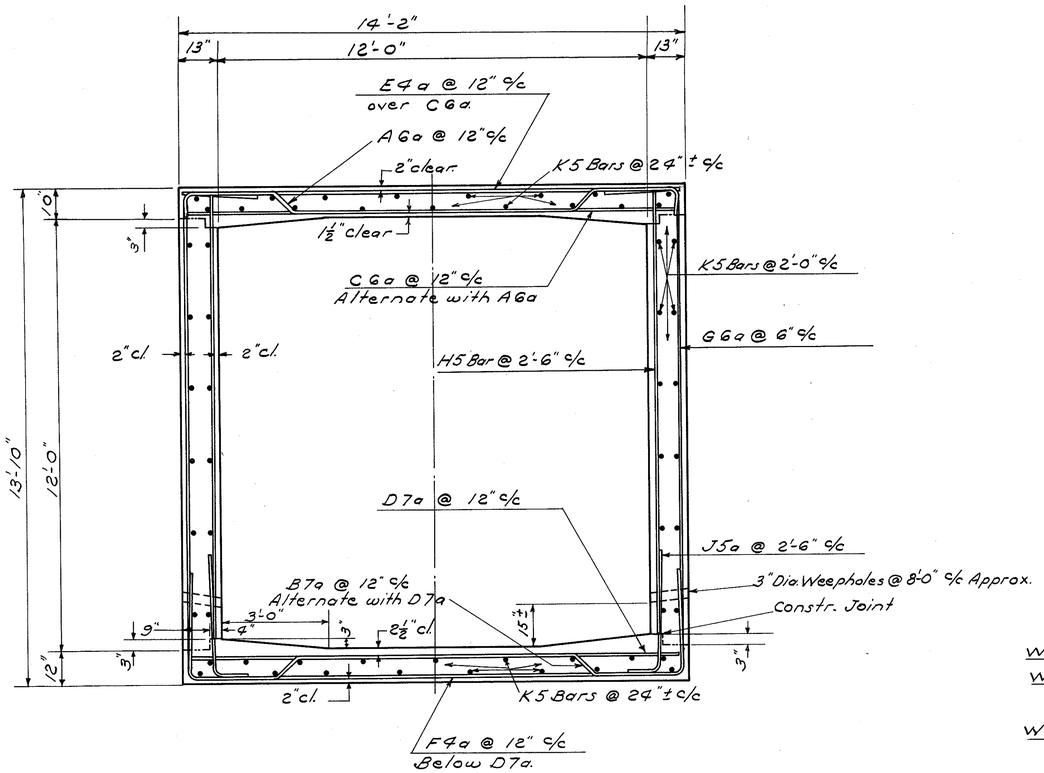
Drawn By H.E.D 4-15-55
Checked By

CONCRETE BOX
STA. 53+50
Sheet 1 of 3 Sheets.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

97/136

BUTLER COUNTY
BUT 4 (22.97-23.22)



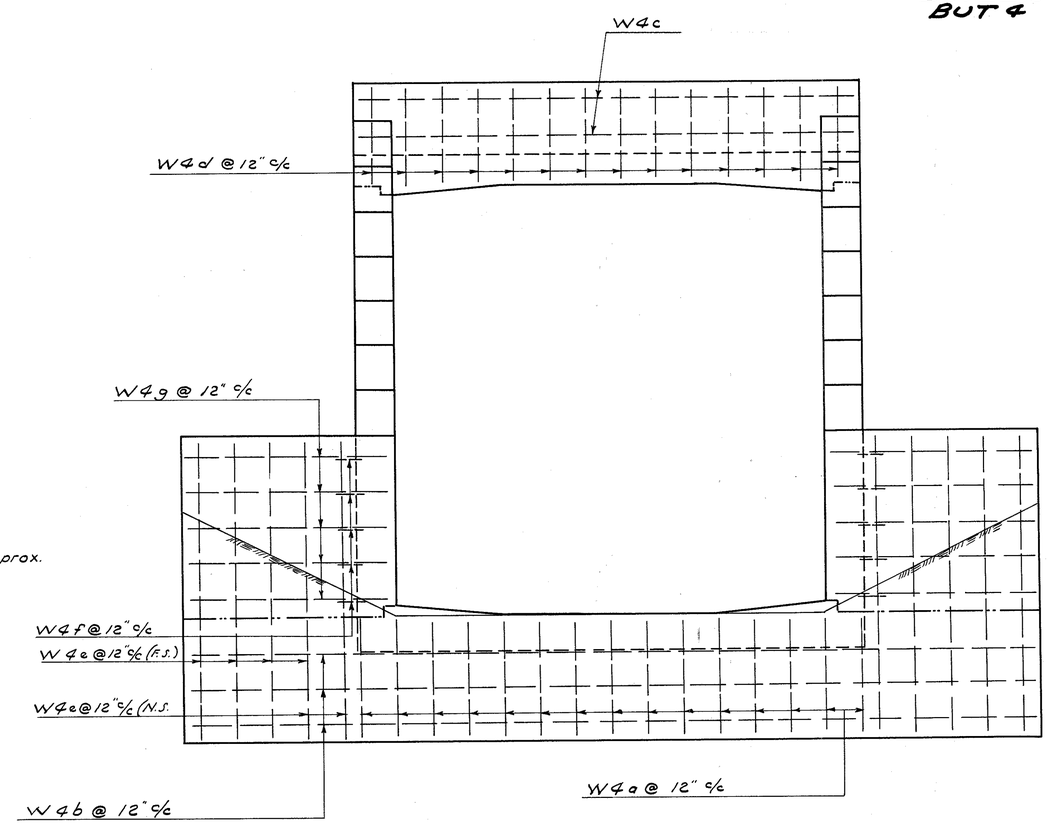
TYPICAL SECTION
Scale ½" = 1'-0"

STEEL LIST

Mark	Size	Shape	No. Req.	Length	Weight Lb.
A6a	¾" ϕ	Bent	79	16'-0"	1899 Lb.
B7a	⅞ ϕ	Bent	116	19'-11	4722
C6a	¾" ϕ	Strt	78	13'-8"	1601
D7a	⅞ ϕ	Strt.	118	13'-8"	3296
E4a.	½" ϕ	Strt	76	13'-8"	694
F4a	½" ϕ	Bent	118	18'-10"	1485
G6a	¾" ϕ	Bent	308	14'-6"	6708
G6b	¾" ϕ	Strt.	20	13'-8"	411
G6c	¾" ϕ	Strt.	20	12'-5"	373
G6d	¾" ϕ	Strt.	20	11'-2"	335
G6e	¾" ϕ	Strt.	20	9'-11"	298
G6f	¾" ϕ	Strt.	20	8'-8"	260
G6g	¾" ϕ	Strt.	20	7'-5"	223
G6h	¾" ϕ	Strt.	20	6'-2"	185
G6j	¾" ϕ	Strt.	20	4'-11"	148
H5a	⅝" ϕ	Strt.	64	12'-5"	829
H5b	⅝" ϕ	Strt.	4	13'-5	56
H5c	⅝" ϕ	Strt.	4	12'-2"	51
H5d	⅝" ϕ	Strt.	4	10'-11"	46
H5e	⅝" ϕ	Strt.	4	9'-8"	40
H5f	⅝" ϕ	Strt.	4	8'-5"	35
H5g	⅝" ϕ	Strt.	4	7'-2"	30
H5h	⅝" ϕ	Strt.	4	5'-11"	25
H5K	⅝" ϕ	Strt.	4	4'-8"	19
J5a	⅝" ϕ	Bent	96	4'-0"	401
K5a	⅝" ϕ	Strt.	116	29'-8"	3589
K5b	⅝" ϕ	Strt.	12	13'-11"	174
K5c	⅝" ϕ	Strt.	8	18'-11"	158
K5d	⅝" ϕ	Strt.	8	21'-1"	176

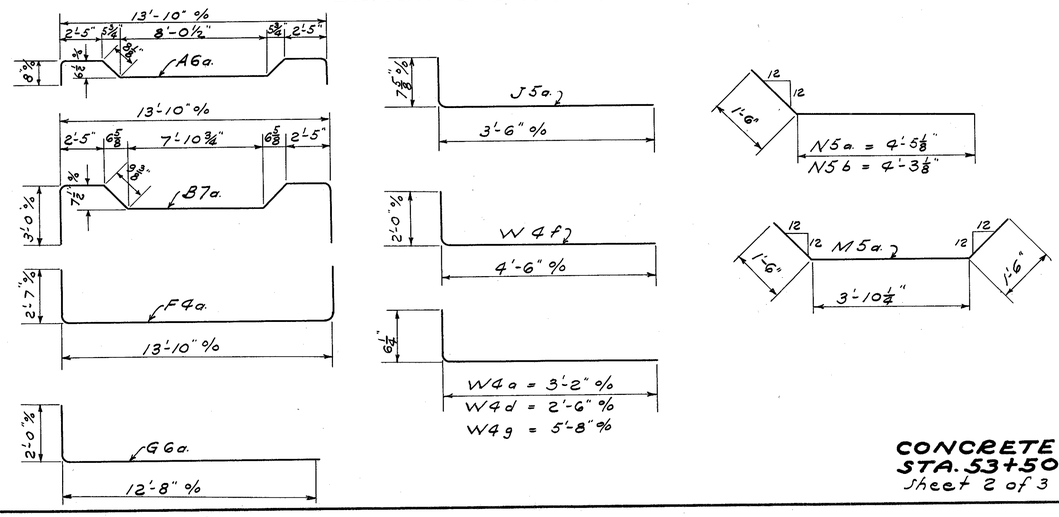
STEEL LIST (CONT'D)

Mark	Size	Shape	No. Req.	Length	Weight Lb.
K5e	⅝" ϕ	Strt.	8	26'-1"	218
K5f	⅝" ϕ	Strt.	50	28'-11"	1508
K5g	⅝" ϕ	Strt.	26	8'-11"	242
K5h	⅝" ϕ	Strt.	4	11'-5"	48
N5a	⅝" ϕ	Bent	24	6'-10"	171
N5a	⅝" ϕ	Bent	24	5'-11"	148
N5b	⅝" ϕ	Bent	24	5'-9"	144
W4a	½" ϕ	Bent.	30	3'-7"	72
W4b	½" ϕ	Strt	6	23'-8"	95
W4c	½" ϕ	Strt.	4	13'-10"	37
W4d	½" ϕ	Bent	28	2'-11"	55
W4e	½" ϕ	Strt.	24	8'-3"	132
W4f	½" ϕ	Bent	20	6'-5"	86
W4g	½" ϕ	Bent	20	6'-1"	81
Rep. 4	½" ϕ	Strt.	1	5'-3"	4
Rep. 5	⅝" ϕ	Strt.	1	5'-7"	6
Rep. 6	¾" ϕ	Strt.	1	5'-11"	9
Rep. 7	⅞" ϕ	Strt.	1	6'-3"	13
Total					3133 Lb.

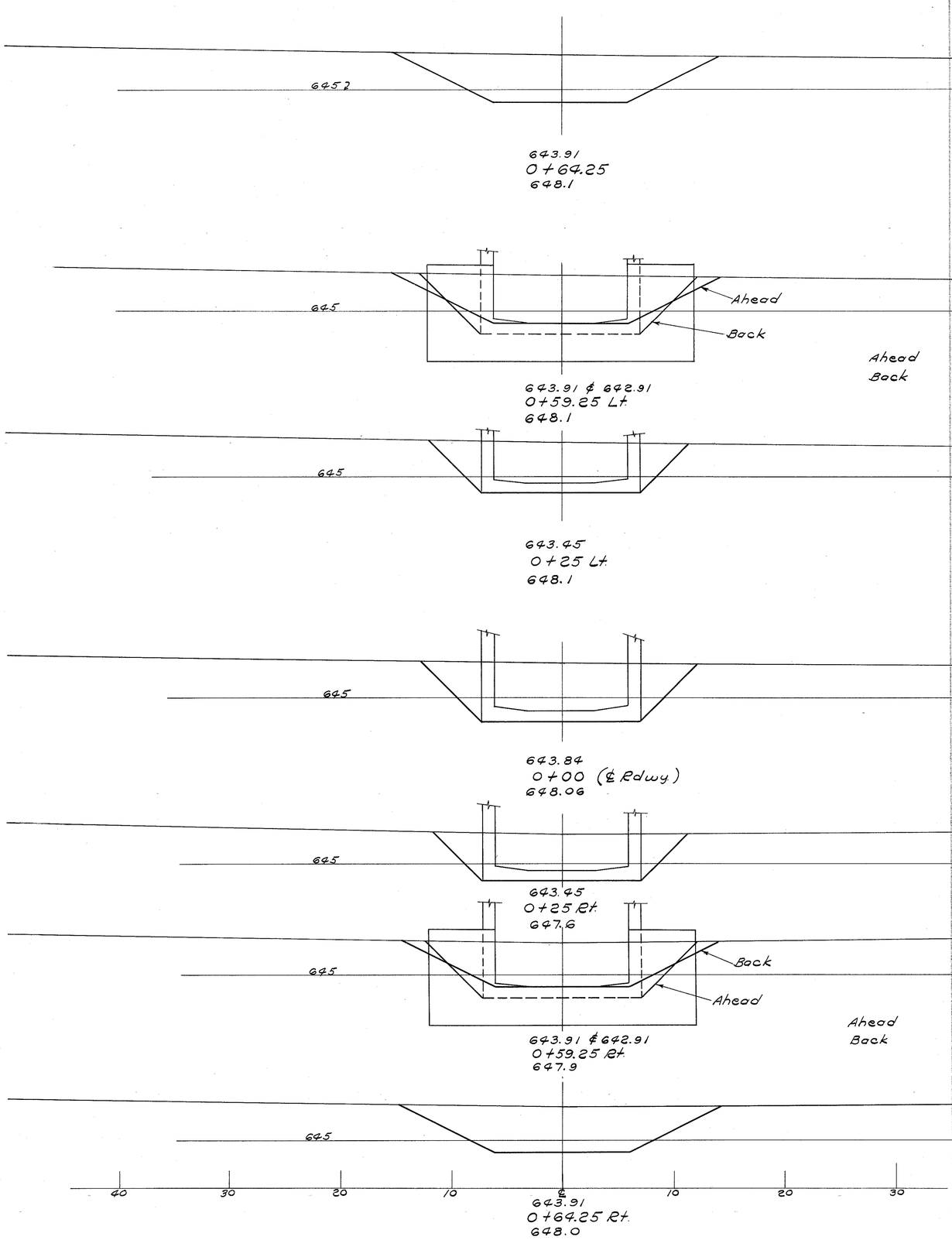


END VIEW
Scale ½" = 1'-0"

BENDING DIAGRAM



CONCRETE BOX
STA. 53+50
Sheet 2 of 3 Sheet.



CHANNEL SECTIONS

Excav. Item E-1	
End Area Cut.	Cu. Yd. Cut.
0	
	46
90	
	17
Ahead 92	
Back 107	
	124
88	
	90
106	
	87
81	
	113
Ahead 97	
Back 84	
	16
87	
	45
0	
Total	538

CONCRETE BOX
STA. 53+50
Sheet 3 of 3 Sheets.

DIST. NO.	STATE	PROJECT	TYPE FUNDS
12	OHIO		

BUTLER COUNTY
BUT-4 (22.97-23.22)

98
136

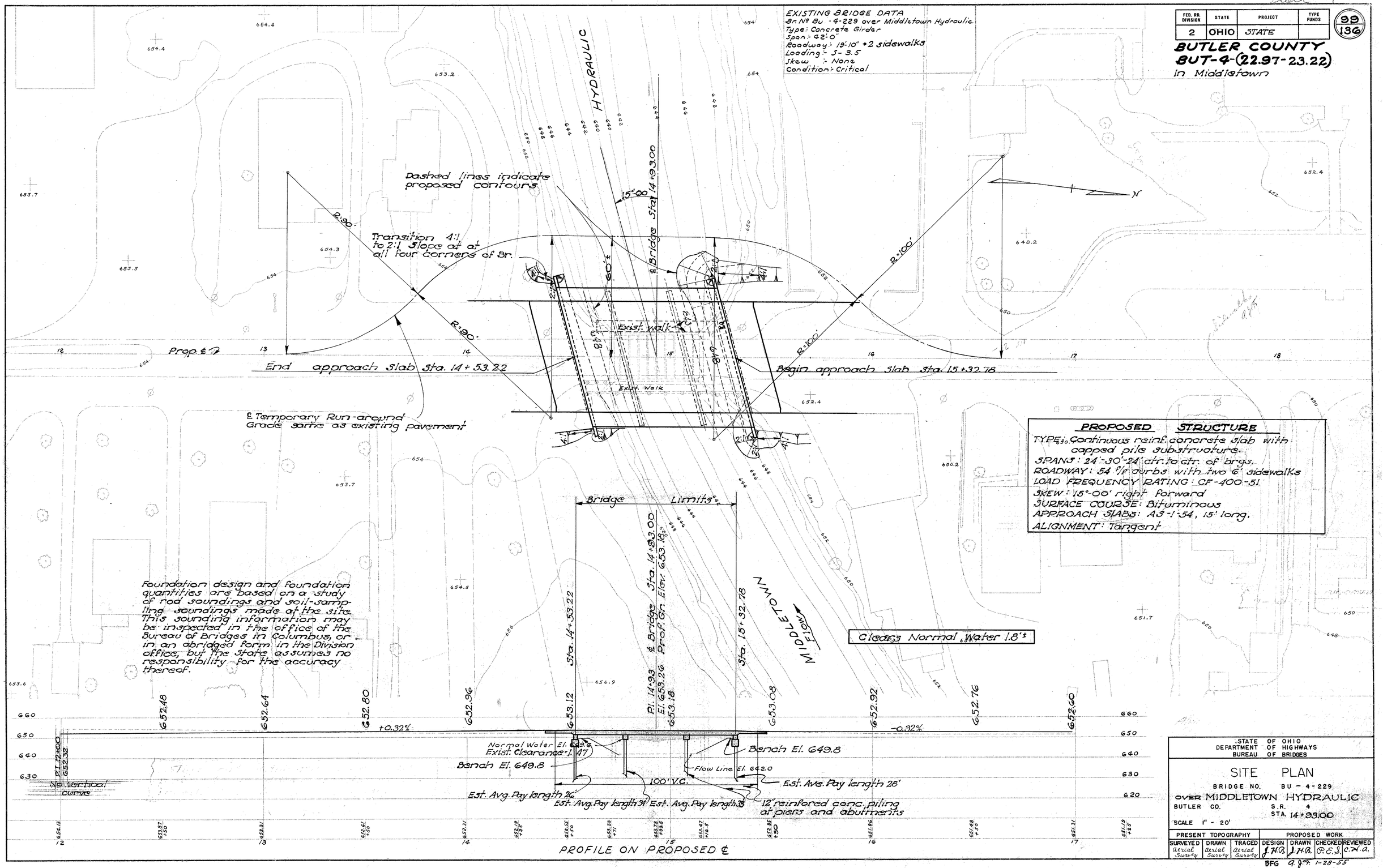
Block 34

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	STATE	

99/136

BUTLER COUNTY
BUT-4-(22.97-23.22)
In Middletown

EXISTING BRIDGE DATA
Br. No. Bu-4-229 over Middletown Hydraulic.
Type: Concrete Girder
Span: 42'-0"
Roadway: 19'-10" + 2 sidewalks
Loading: S-3.5
Skew: None
Condition: Critical



PROPOSED STRUCTURE

TYPE: Continuous reinf. concrete slab with capped pile substructure.
SPANS: 24'-30'-24' ctr. to ctr. of brgs.
ROADWAY: 54 f/f curbs with two 6' sidewalks
LOAD FREQUENCY RATING: CF-400-51
SKEW: 15°-00' right forward
SURFACE COURSE: Bituminous
APPROACH SLABS: AS-1-54, 15' long.
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN
BRIDGE NO. BU-4-229
OVER MIDDLETOWN HYDRAULIC
BUTLER CO. S.R. 4
STA. 14+93.00
SCALE 1" - 20'

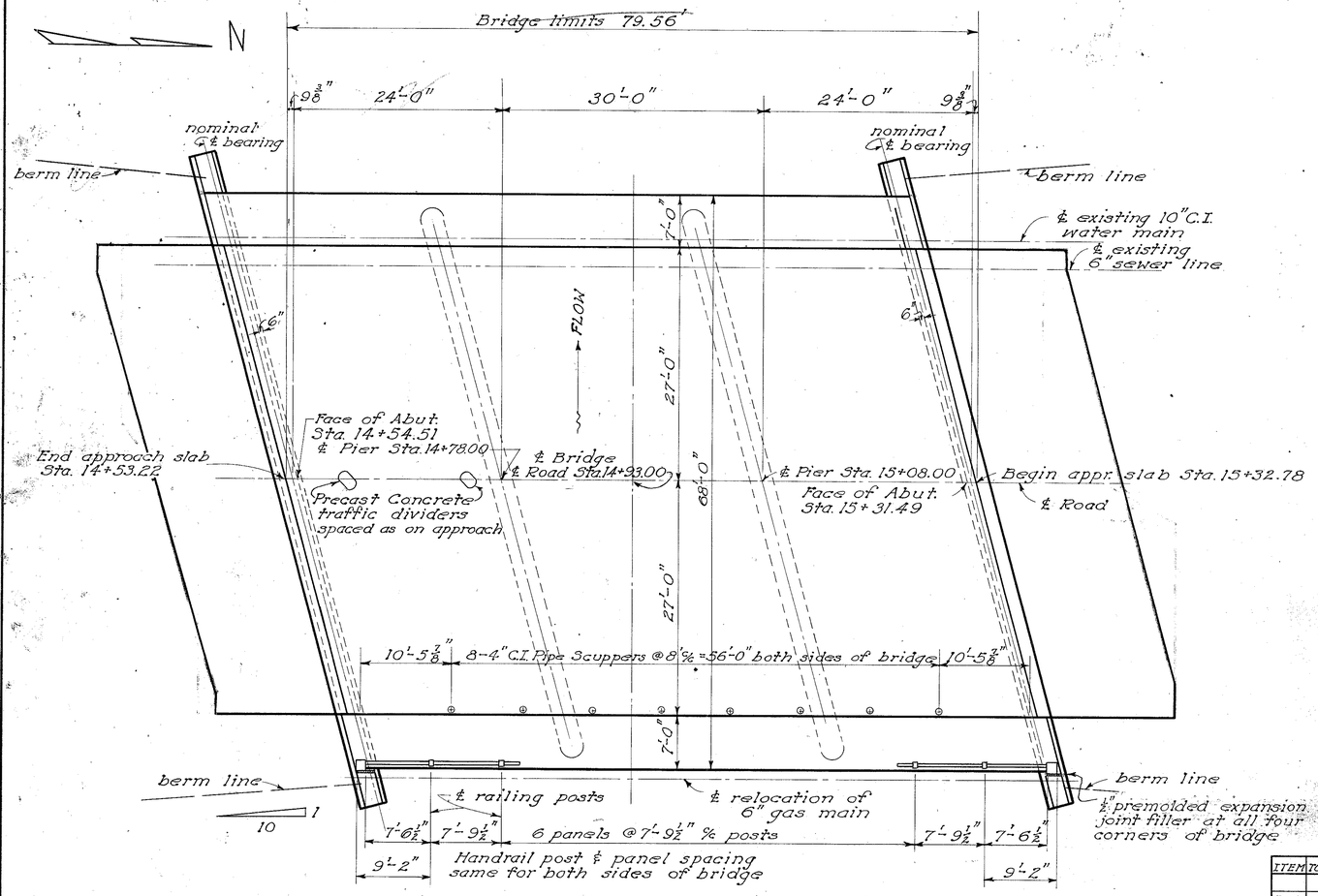
PRESENT TOPOGRAPHY			PROPOSED WORK			
SURVEYED	DRAWN	TRACED	DESIGN	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	Aerial Survey	J.H.B.	J.H.B.	P.E.S.	C.H.A.

BFG A.J.F. 1-28-55

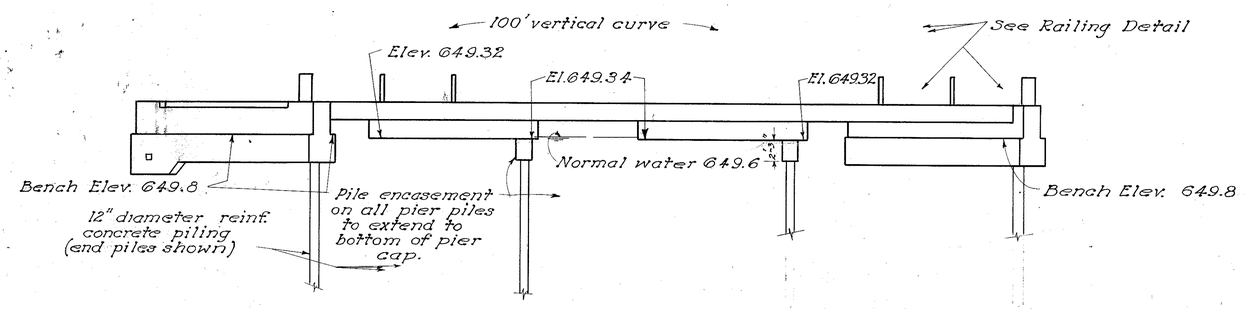
FED. RD. DIVISION	STATE		
2	OHIO	STATE	

100 / 136

BUT-4(22.97-23.22)



~ PLAN ~



~ ELEVATION ~

GRAVEL, if used as the coarse aggregate, shall be according to Sec. M-3.93 instead of M-3.91 for Class "C" concrete superstructure and pier caps. Gravel meeting the requirements of Sec. M-3.93 also may be used for other concrete in this structure.

WATER ELEVATION: The Contractor (and other bidders) may inquire of the officials of the Middletown Hydraulic Company as to what elevation and for what periods of time the water level can and will be lowered, to facilitate construction of this bridge.

~ GENERAL NOTES ~

REFERENCE shall be made to Standard Drawings A-2-54 dated 7-1-54 and P-1-54 dated 7-1-54, and to Supplemental Specifications B-119 revised 12-14-43.

DESIGN SPECIFICATIONS: These plans conform to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated Oct. 1, 1951, together with revisions thereof dated July 15, 1952, and April 1, 1954.

TEMPORARY RUN-AROUND BRIDGE AND APPROACHES: Load frequency CF-130-51. Bridge width, 24' roadway plus 4' sidewalk on west side. Approach width, out-to-out of shoulders, 36'. Approach roadway shall be 24' wide plus 4' asphaltic concrete sidewalk on west side, and of either of the following types and thicknesses:
(1) Portland cement concrete pavement, 9" thick.
(2) Asphaltic concrete pavement with base courses, with a total thickness of 15", consisting of:
(a) 1½" T-35 (Type A) surface course, 1½" B-3.5 leveling course and 2½" B-35 base course on 3" B-35 base course and 7" I-22 sub-base; or
(b) 1½" T-35 (Type A) surface course, 1½" B-3.5 leveling course and 2½" B-35 base course on 4" B-119 base course and 6" I-22 sub-base; or
(c) 1½" T-35 (Type A) surface course and 1½" B-3.5 leveling course on 7" B-20 or I-20 base course and 5" I-22 sub-base.
The above pavement and courses shall be according to Item 5-15, except the I-20 base course shall be according to item I-20 (except that spreading and leveling machines or side forms will not be required), the I-22 sub-base shall be according to item I-22, and the B-119 base course shall be according to Suppl. Spec. B-119. The B-119 material shall be Granulated Slag, Sec. M-3.13; Slacker Aggregate, or Crusher Run Limestone, Slag or Sec. M-3.11 Gravel, meeting the following grading requirements: 2", 100%; 1", 75-100; #4, 25-75; #40, 10-30; and #200, 3-15.
Payment for all portions of the run-around, including the approach surface course, is included in the lump sum price bid for Item 5-15.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. Steel beam guardrails, steel sidewalk stringers (both sides of bridge) and wood railing posts on west side shall be carefully dismantled and piled along the right of way for disposal by the State's forces. The remainder of the removed materials shall become the property of the Contractor. The substructure, including timber piling under sidewalks, shall be removed to at least 6" below proposed ground surface and to whatever extent is necessary to avoid interference with new construction, including pile driving. Proposed ground line to be a uniform bank slope to fit existing channel banks adjacent to existing structure. Removal of embankment behind existing abutments to be included with Item 5-24, "Removal of existing structure," for payment.

EXCAVATION QUANTITY includes the removal of fill material between top of earth bench and bottom of abutment crossbeam.

PILING shall be driven to a minimum bearing capacity of 22 tons for the abutments and 29 tons for the piers.

SURFACE FINISH OF CONCRETE: Railing end posts, curb faces, and fascias of deck shall receive a rubbed surface finish. Bottom of deck slab and sidewalk surface shall be governed by the provisions of Item 5-1. All other exposed surfaces shall be grout cleaned as per Sec. 5-1.22. Form liner shall be used for all surfaces to be grout cleaned.

UTILITIES: Existing 6" sanitary sewer and existing 10" C.I. water main shall remain in place. Contractor shall take care not to damage these pipes during construction and adjacent piles shall be prebored to the elevation of the bottom of the pipe. Existing 6" gas main shall be relocated to the position shown on the plans at the expense of the owner of the main. Contractor shall cooperate with the owner in the relocation of the main.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIERS	GEN'L		
E-2	170	Cu.Yd.	Unclassified excavation		170				
S-1	279	Cu.yd.	Class "C" concr., Superstructure & Pier caps	254		25			
S-1	73	Cu.yd.	Class "E" concr, Abutments		73				
S-3	480	Sq.yd.	Type "C" Waterproofing	480					
S-4	80311	lbs.	Reinforcing steel	64128	8681	7262	130		
S-9	16	Sq.ft.	½" Premolded expansion joint filler		16				
S-14	16133	lin.ft.	Railing, steel with concr. end posts	16133					
S-15		Lump Sum	Temporary run-around bridge & approaches				Jump		
S-16		Lump Sum	First test pile				Jump		
S-18	1480	lin.ft.	12" cast-in-place reinf. concr. piling		650	830			
S-24		Lump Sum	Removal of existing structure				lump		
S-29	25	Cu.yd.	Porous backfill		25				
S-29	154	lin.ft.	Subdrainage for wearing Surface Course	154					
S-29	16	Each	Scuppers, 4" cast iron	16					
T-35	33	Cu.yd.	Asphaltic concr. surface course, Type "A" or "C" (10-80)	33					
I-23	7	Each	Precast concr. traffic dividers	7					

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

GENERAL PLAN & ELEVATION
GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE No. BU-4-229
OVER MIDDLETOWN HYDRAULIC CANAL
BUTLER COUNTY
STA 14+93.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED BPG	DATE	REVISED
JD	JD	FB	N.B.Y.		1-28-55	

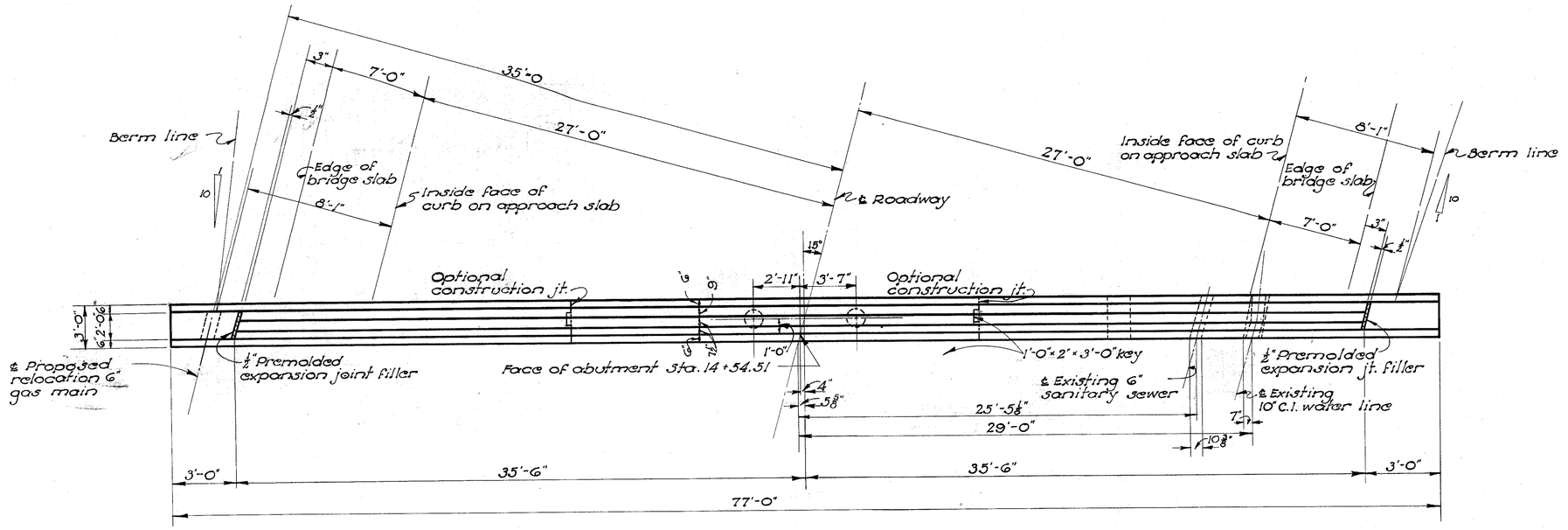
BLACK 34

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

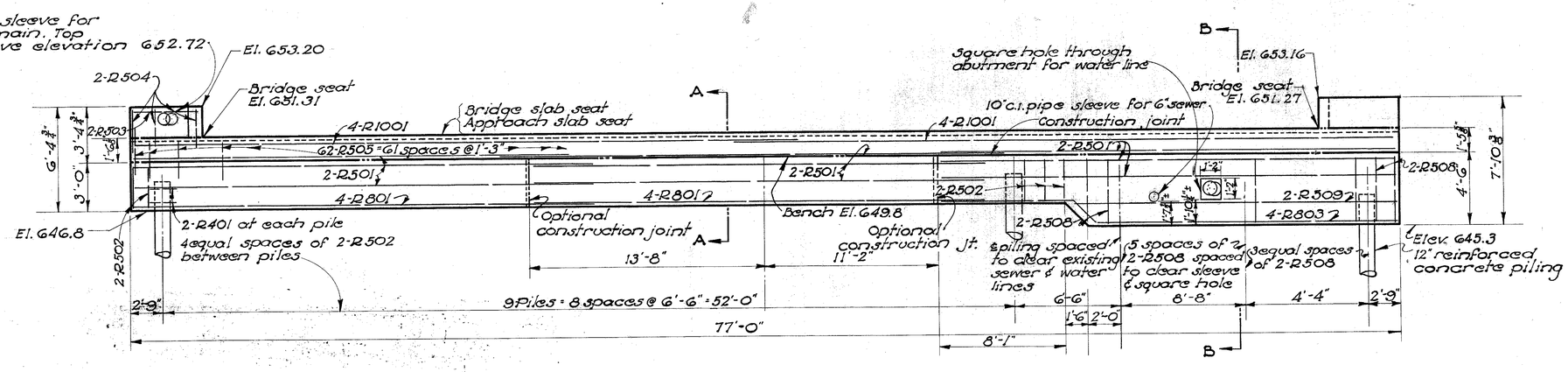
101
136

BUT - 4(22.97-23.22)

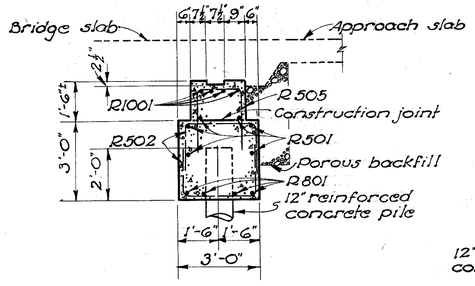
34 BLACK
101 - 136



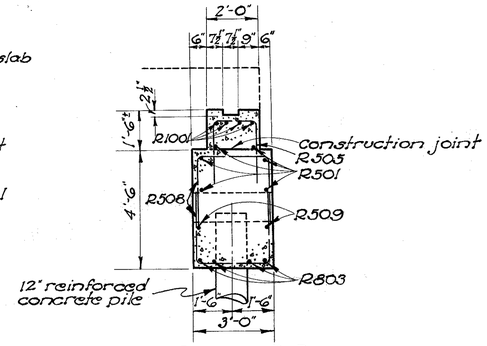
ABUTMENT PLAN



ELEVATION



SECTION A-A



SECTION B-B

For any details not shown see Standard Drawing A-2-54.

Clearance of reinforcing steel from face of concrete shall be 2".

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

REAR ABUTMENT DETAILS

BRIDGE No. BU-4-229
OVER MIDDLETOWN HYDRAULIC CANAL

BUTLER COUNTY

STA.: 14+93.00

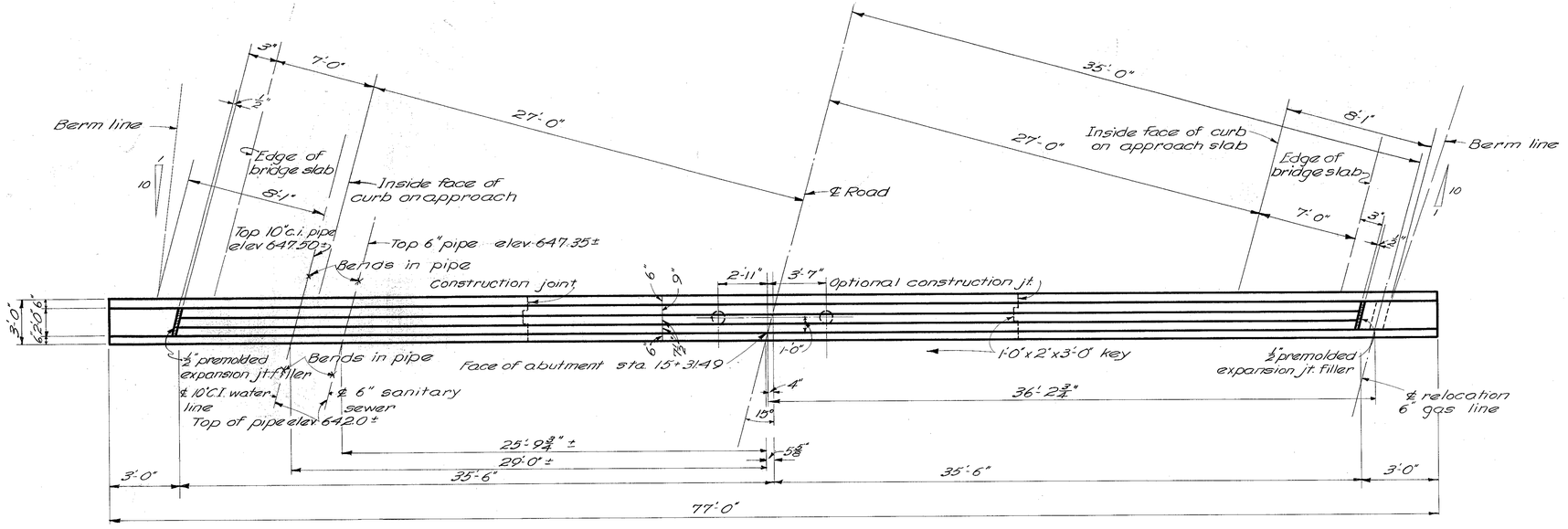
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JD	JD	FDB	N.E.Y.	BFG	1-28-55	

BLACK 34

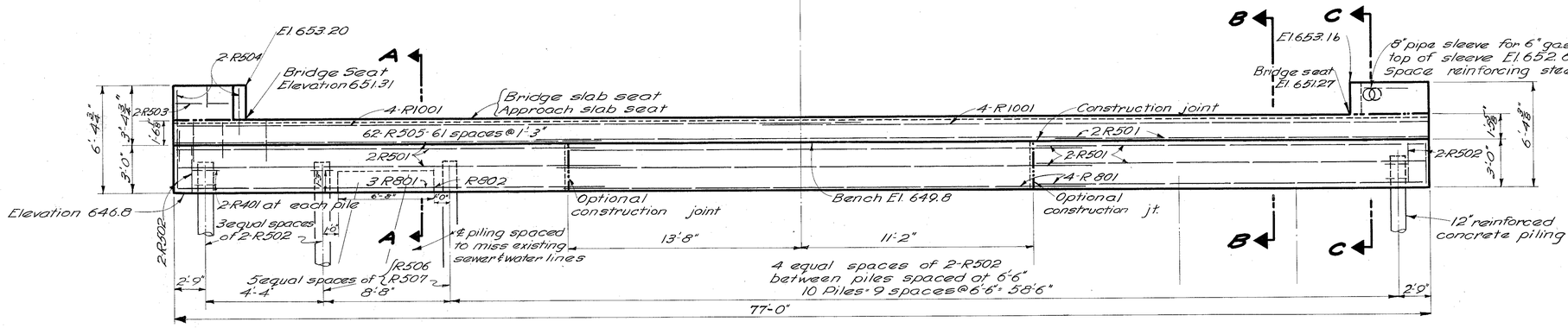
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

102
136

BUT-4-(22.97-23.22)



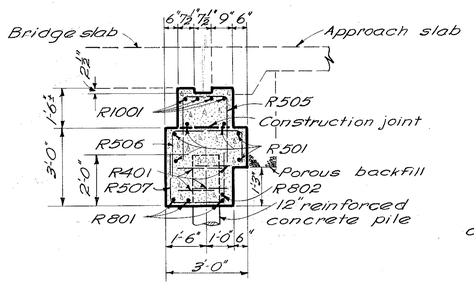
ABUTMENT PLAN



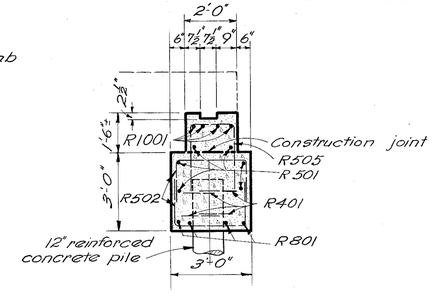
ABUTMENT ELEVATION

For any details not shown see Standard Drwg. A-2-54.

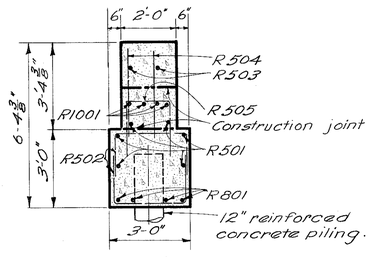
Clearance of reinforcing steel from face of concrete shall be 2".



SECTION A-A



SECTION B-B



SECTION C-C

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

FORWARD ABUTMENT DETAILS

BRIDGE No. BU-4-22.9

OVER MIDDLETOWN HYDRAULIC CANAL

BUTLER COUNTY

Sta. 14+93.00

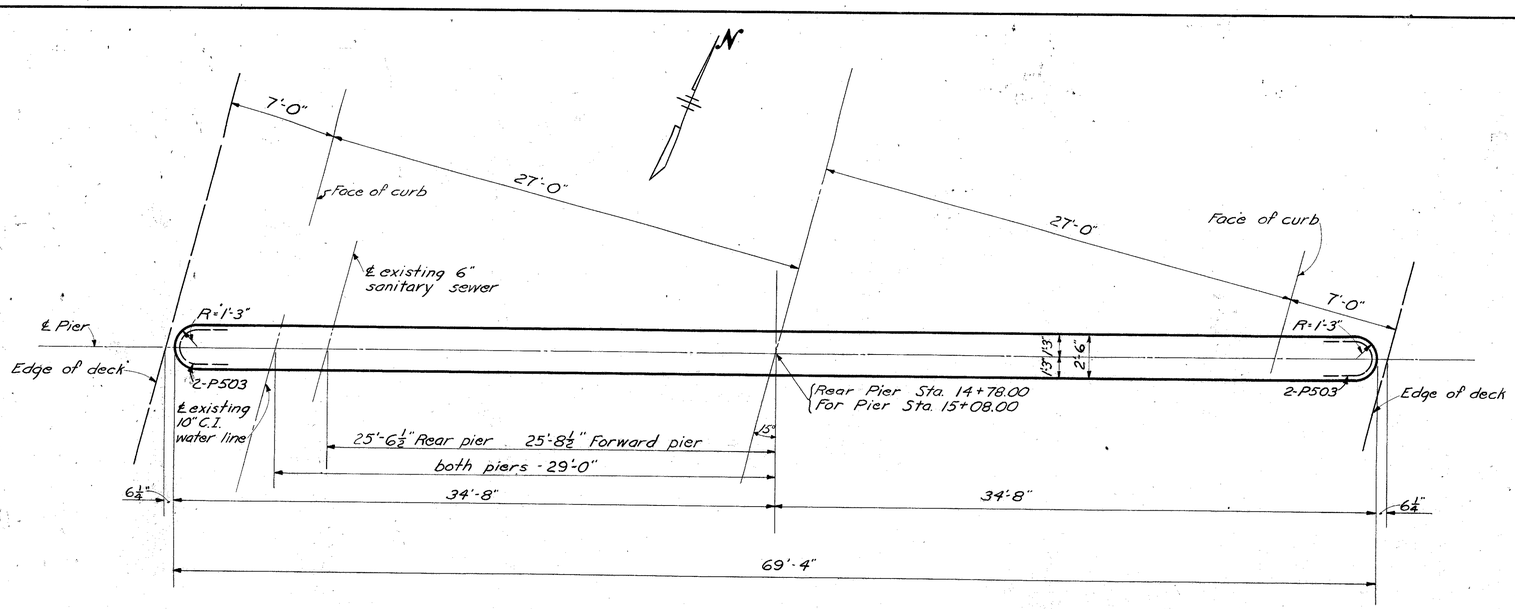
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DO	DO	RHD	NEY	DFG	1-28-55	

BLACK 34

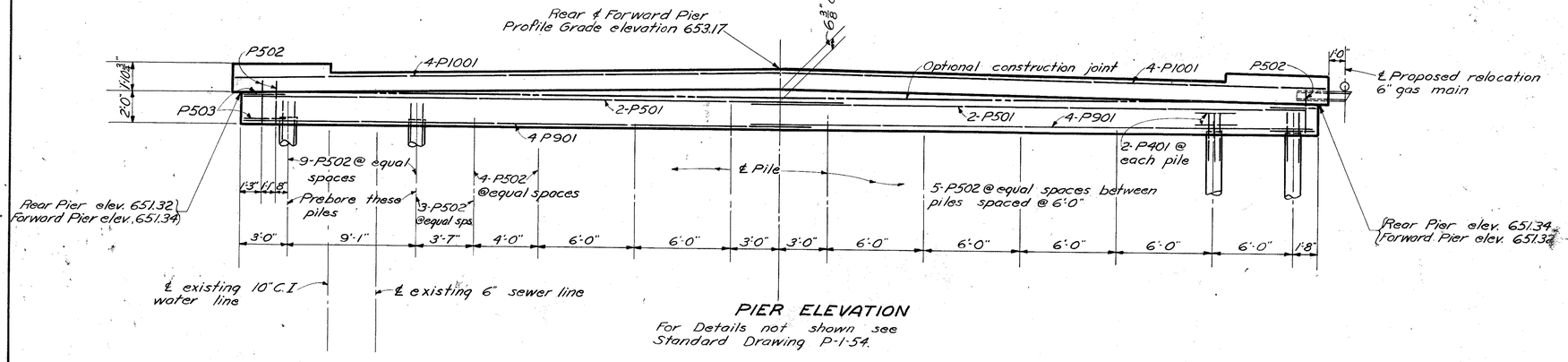
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

103
136

BUT-4(22.97-23.22)



PIER PLAN



PIER ELEVATION

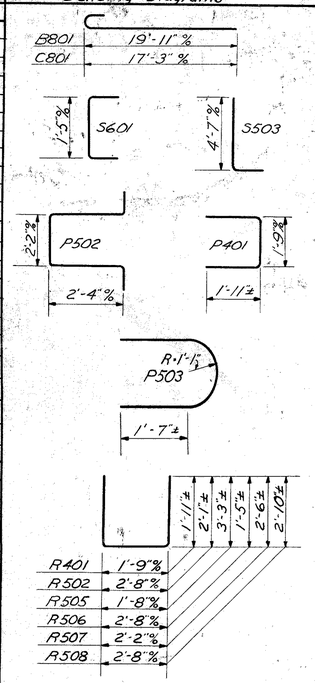
For Details not shown see Standard Drawing P-1-54.

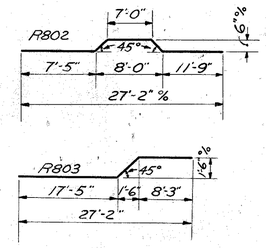
REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp
SUPERSTUCTURE				
A801	204	28'-1"	15296	S
B801	68	21'-0"	3813	B
C801	66	18'-4"	3231	B
D801	34	19'-6"	1770	S
E801	33	15'-10"	1395	S
F901	132	26'-0"	11669	S
G901	66	14'-0"	3142	S
H901	64	10'-1"	2193	S
J601	66	14'-8"	1454	S
K601	33	9'-0"	446	S
M601	174	36'-0"	9409	S
N601	108	36'-0"	5840	S
S601	530	3'-1"	2455	B
S602	106	6'-8"	1062	S
S501	30	27'-3"	853	S
S502	16	12'-0"	200	S
S503	16	5'-4"	*	B
PIERS				
P1001	16	36'-7"	2519	S
P901	16	34'-10"	1895	S
P701	144	4'-0"	1177	S
P501	8	34'-1"	284	S
P502	118	8'-0"	985	B
P503	8	6'-6"	54	B
P401	96	5'-5"	348	B
ABUTMENTS				
R1001	16	40'-0"	2754	S
R801	19	27'-2"	1378	S
R802	1	27'-6"	73	B
R803	4	27'-6"	294	B
R501	36	27'-2"	1021	S
R502	196	6'-7"	1345	B
R503	8	2'-3"	19	S
R504	24	3'-6"	88	S
R505	124	7'-11"	1024	B
R506	6	5'-2"	32	B
R507	6	6'-10"	43	B
R508	28	8'-0"	234	B
R509	2	18'-7"	39	S
R401	96	5'-5"	347	B
REPLACEMENT BARS				
Re1001	1	7'-2"	31	S
Re901	1	6'-10"	23	S
Re801	2	6'-6"	35	S
Re701	1	6'-2"	13	S
Re601	2	5'-11"	18	S
Re501	1	5'-7"	6	S
Re401	1	5'-3"	4	S

*included with railing for payment.

Bending Diagrams





BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number.

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

PIER DETAILS & REINFORCING STEEL LIST

BRIDGE NO. BU-4-22.9
over MIDDLETOWN HYDRAULIC CANAL
BUTLER COUNTY
STA. 14+93.00

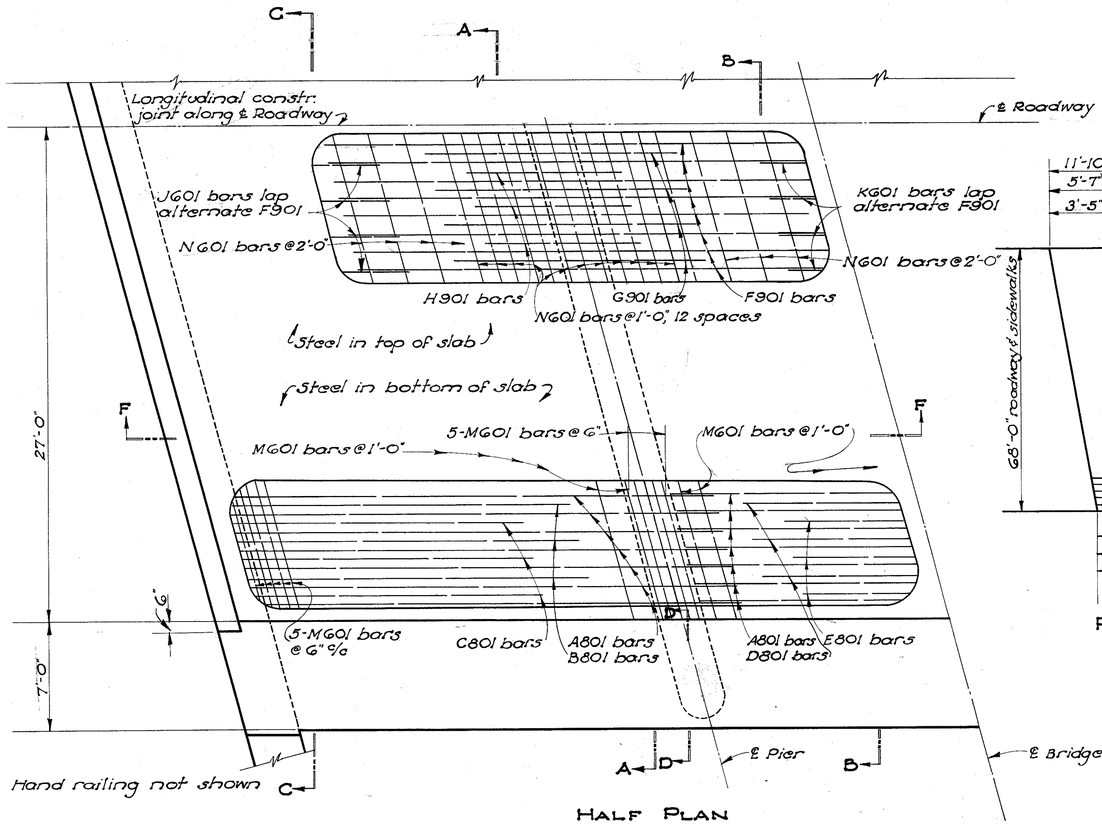
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JD	JD	JGM	-NEY-	BPG G.J.K.	1-28-55	

BLACK 34

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

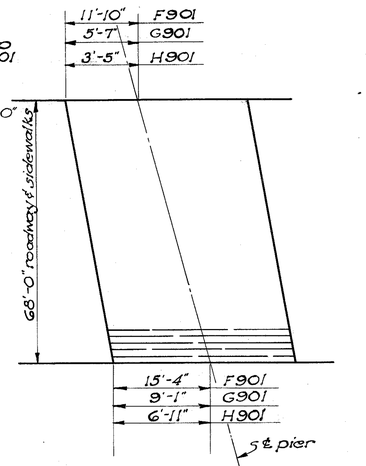
104
136

BUT-4(22.97-23.22)

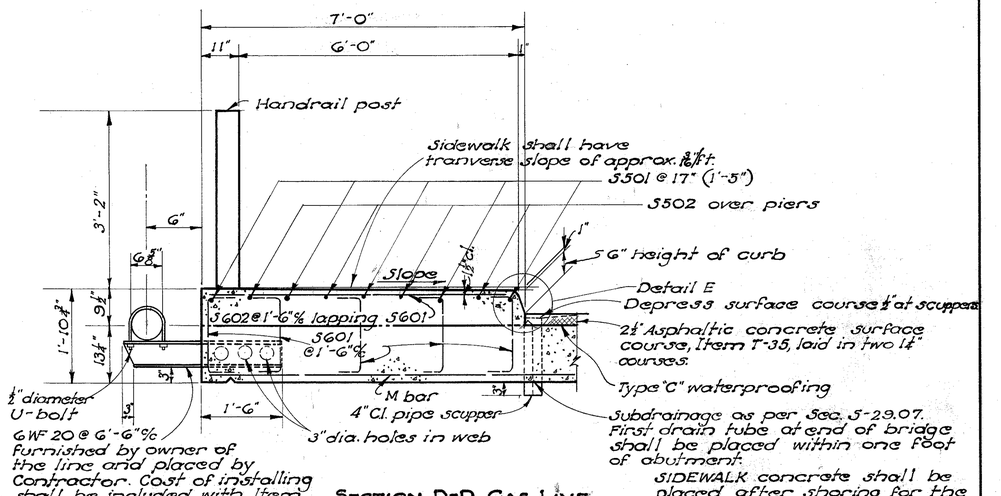


HALF PLAN

CLEARANCE of reinforcing steel from face of concrete shall be 1".



PLACEMENT DIAGRAM FOR F, G & H BARS

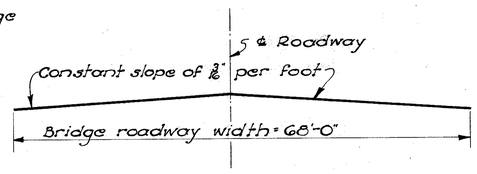


SECTION D-D GAS LINE

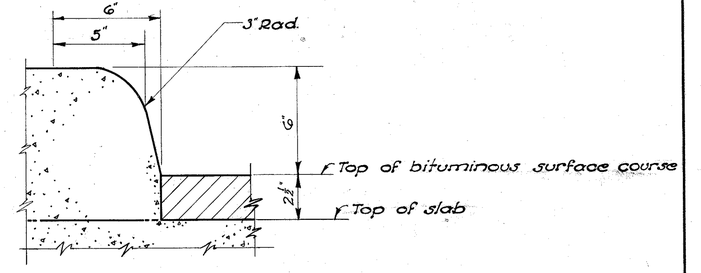
SUPPORT & SIDEWALK DETAIL

All labor and material required for installing the gas line shall be furnished by the owner of the line except that the GWF 20 shall be furnished by the owner of the line and cast in place by the Contractor.

SIDEWALK concrete shall be placed after shoring for the deck slab has been removed or released so that deck has attained full dead load deflection.

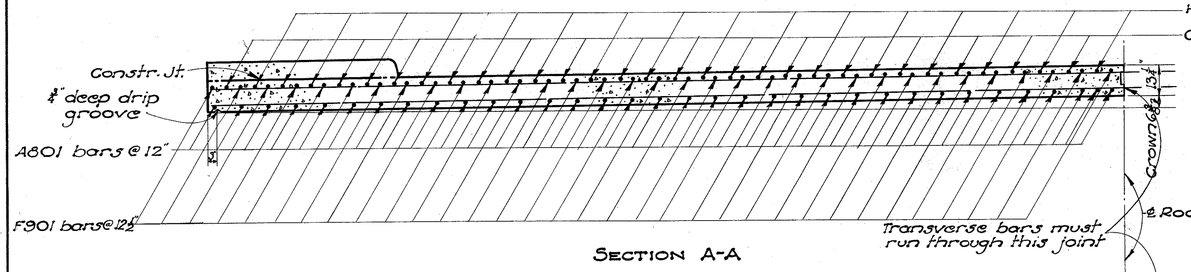


BRIDGE ROADWAY CROWN

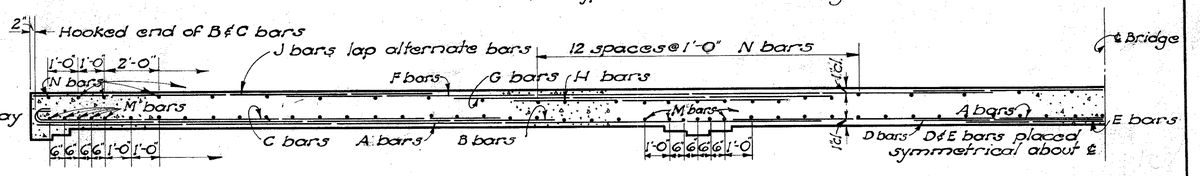


DETAIL E

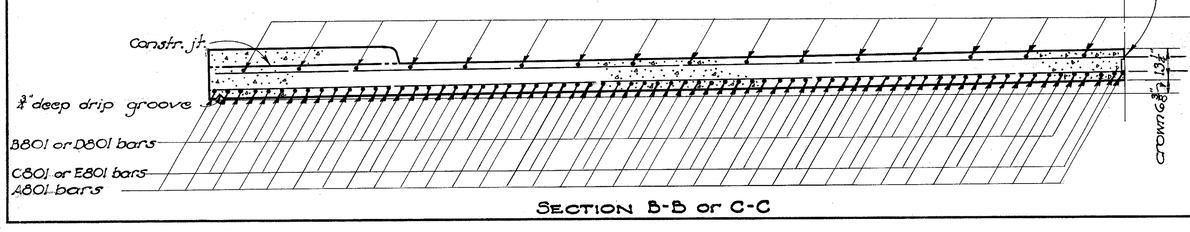
Curb to match approach slab curb (Std. Type 2 concrete curb and gutter)



SECTION A-A



SECTION F-F



SECTION B-B or C-C

CONSTRUCTION JOINTS: One transverse constr. joint in bridge slab shall be placed 6"± off tranverse centerline of middle span to miss transverse reinforcing bars. One longitudinal joint will be permitted on ℄ roadway.

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

SUPERSTRUCTURE & SIDEWALK DETAILS

BRIDGE NO. BU-4-229
OVER MIDDLETOWN HYDRAULIC CANAL

BUTLER COUNTY STA. 14+93.00

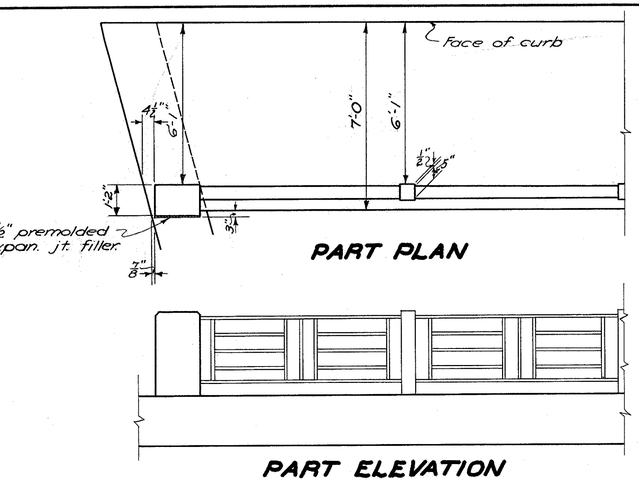
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JD	JD	FGB	N.E.Y.	DFG A.J.K.	1-28-55	

ALACK 34

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

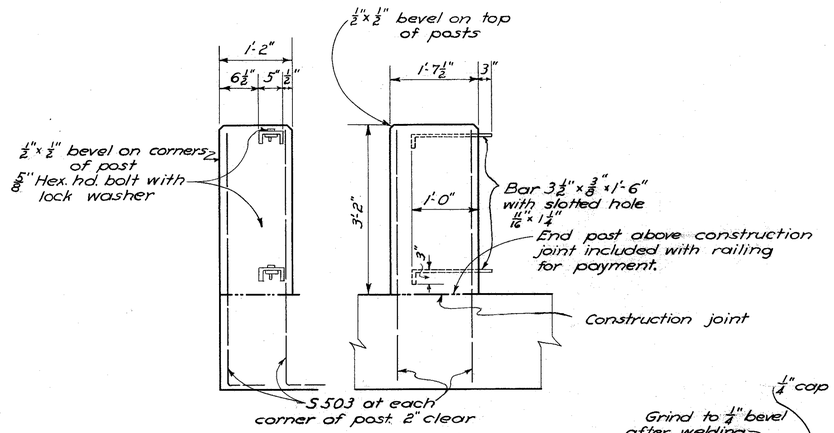
105
136

BUT -4-(22.97-23.22)

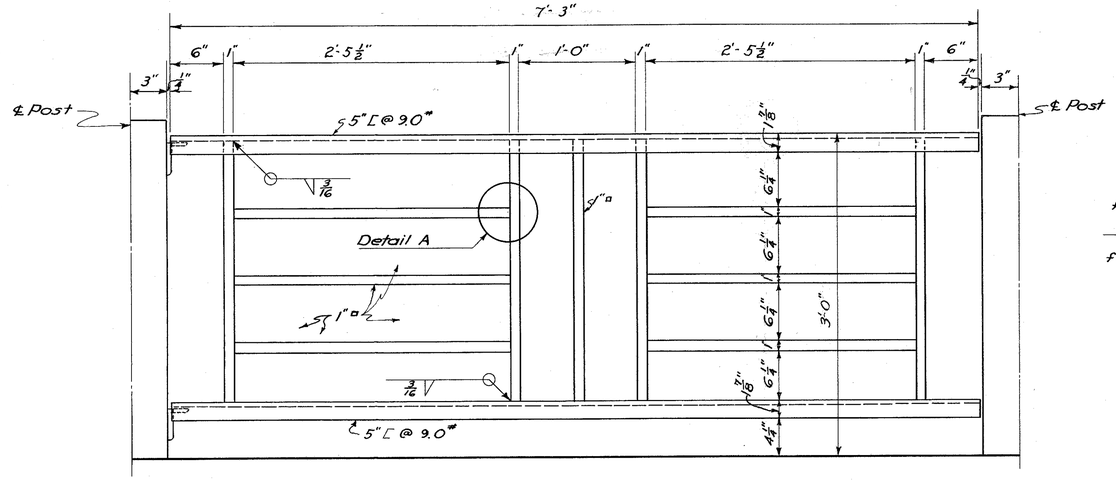


PART PLAN

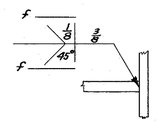
PART ELEVATION



END POST DETAIL

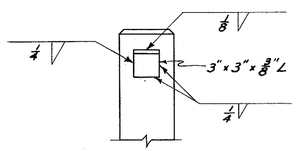


RAILING PANEL DETAIL

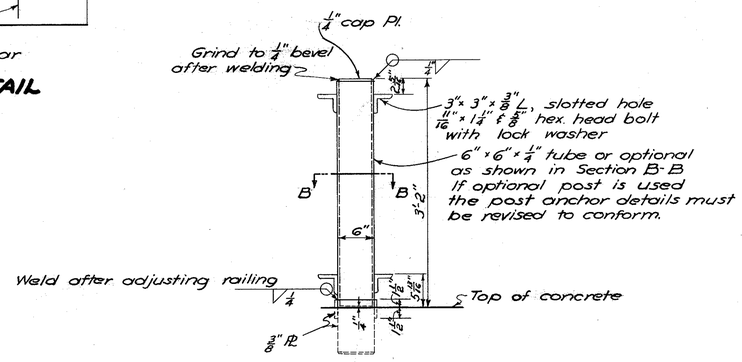


DETAIL A

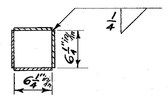
Welding shall be Class "A"



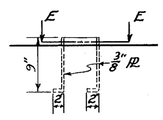
ANGLE DETAIL



RAILING POST DETAILS

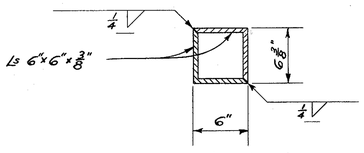


SECTION E-E



ANCHORAGE DETAIL
for Railing Post

Note: Post anchors included with railing for payment.



SECTION B-B
(Optional railing post)

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

RAILING DETAILS

BRIDGE NO. BU-4-229
OVER MIDDLETOWN HYDRAULIC CANAL

BUTLER COUNTY STA 14+93.00

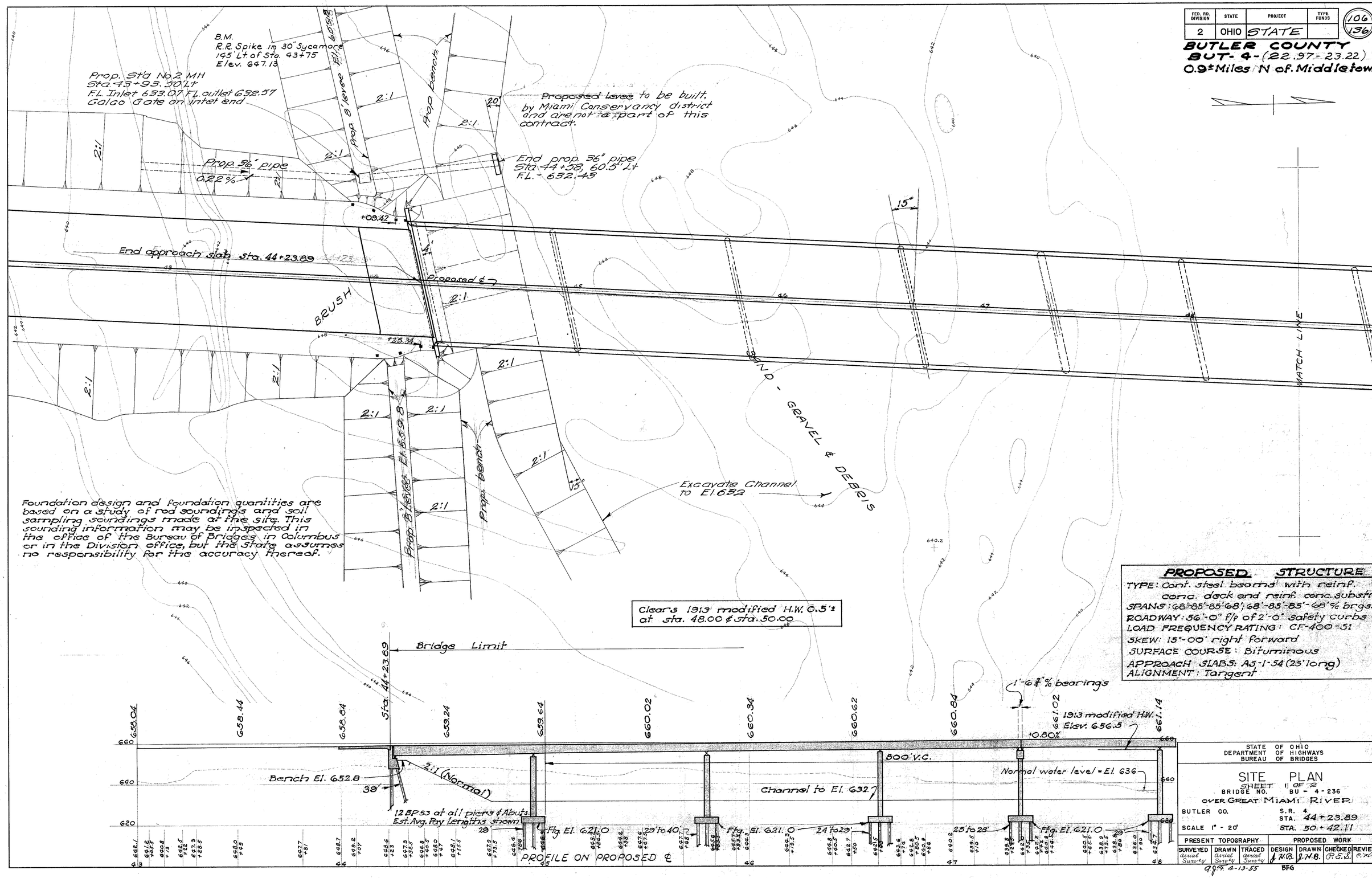
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED BPG	DATE	REVISED
JD	JD	G.O.G.	N.E.Y.		1-28-55	

BLACK. 34

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	STATE	

106/136

BUTLER COUNTY
BUT-4-(22.97-23.22)
0.9± Miles N of Middletown



PROPOSED STRUCTURE

TYPE: Cont. steel beams with reinf. conc. deck and reinf. conc. substr.
SPANS: 68'-85'-85'-68'; 68'-85'-85'-68' ⅝ brgs.
ROADWAY: 56'-0" f/f of 2'-0" safety curbs
LOAD FREQUENCY RATING: CF-400-51
SKEW: 15°-00' right forward
SURFACE COURSE: Bituminous
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN
SHEET 1 OF 2
BRIDGE NO. BU - 4 - 236
OVER GREAT MIAMI RIVER
BUTLER CO. S.R. 4
STA. 44+23.89
SCALE 1" - 20' STA. 50+42.11

PRESENT TOPOGRAPHY			PROPOSED WORK			
SURVEYED	DRAWN	TRACED	DESIGN	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	Aerial Survey	J.H.B.	J.H.B.	P.E.S.	C.H.A.

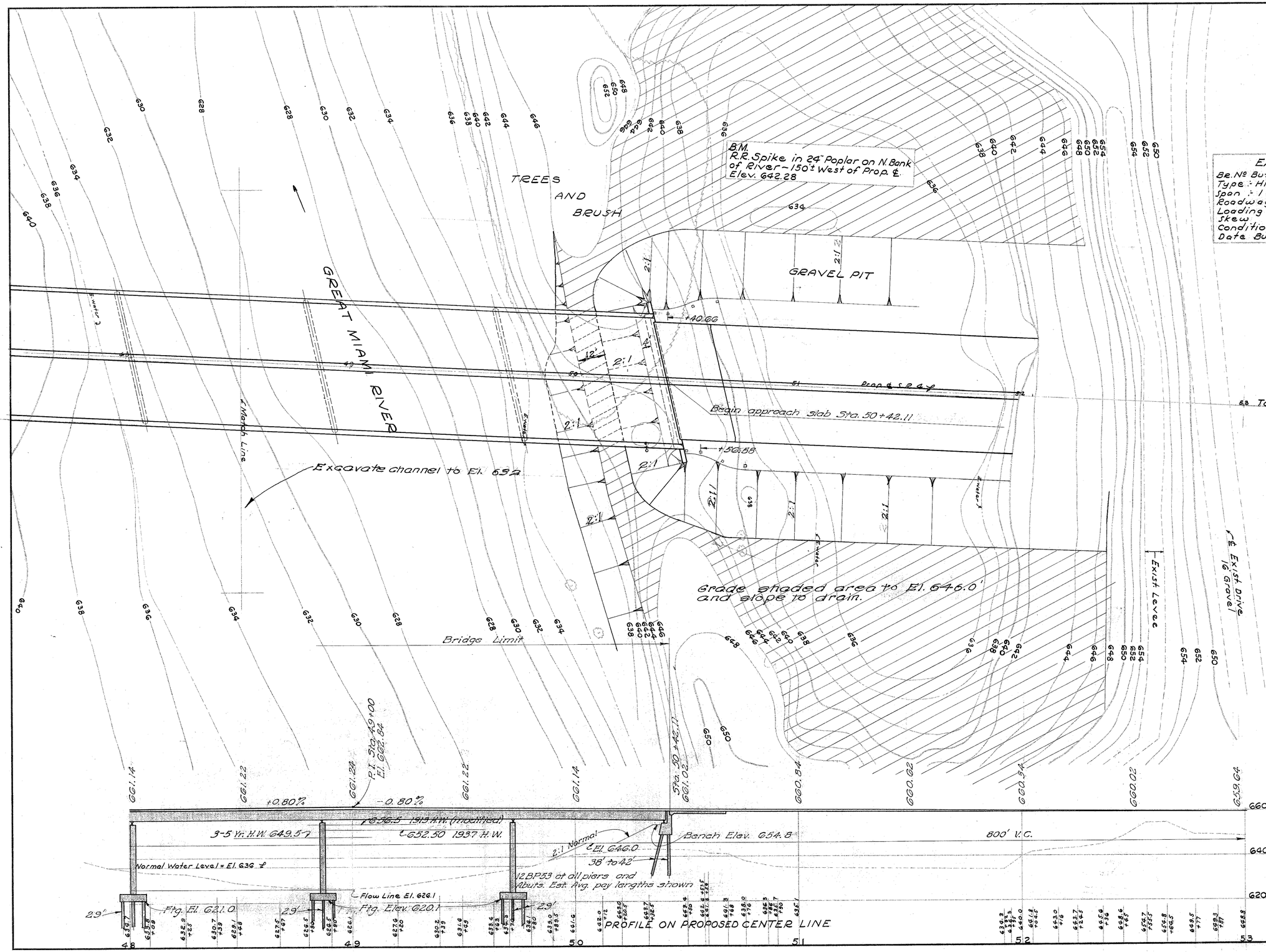
G.J.F. 4-13-55 BFG

BLACK 34

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	STATE	

107
136

BUTLER COUNTY
BUT-4 (22.97-23.22)
0.9± Miles N. of Middletown



EXISTING BRIDGE DATA

Br. No. But-4-236 Over Great Miami River
Type :- High Steel Truss
Span :- 1 @ 342'-0 1 @ 137'-8"
Roadway :- 17'-2"
Loading :- S-6.7
Skew :- None
Condition :- Critical
Date Built :- 1888 and 1915

Drainage Area 3120 Sq. Miles

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN
SHEET 2 OF 2
BRIDGE NO. BU-4-236
OVER GREAT MIAMI RIVER

BUTLER CO. S.R. 4
STA. 44+23.89
50+42.11
SCALE 1" - 20'

PRESENT TOPOGRAPHY			PROPOSED WORK			
SURVEYED	DRAWN	TRACED	DESIGN	DRAWN	CHECKED	REVIEWED
W.C.P.	R.E.L.	E.L.R.	J.H.B.	J.H.B.	P.E.S.	[illegible]

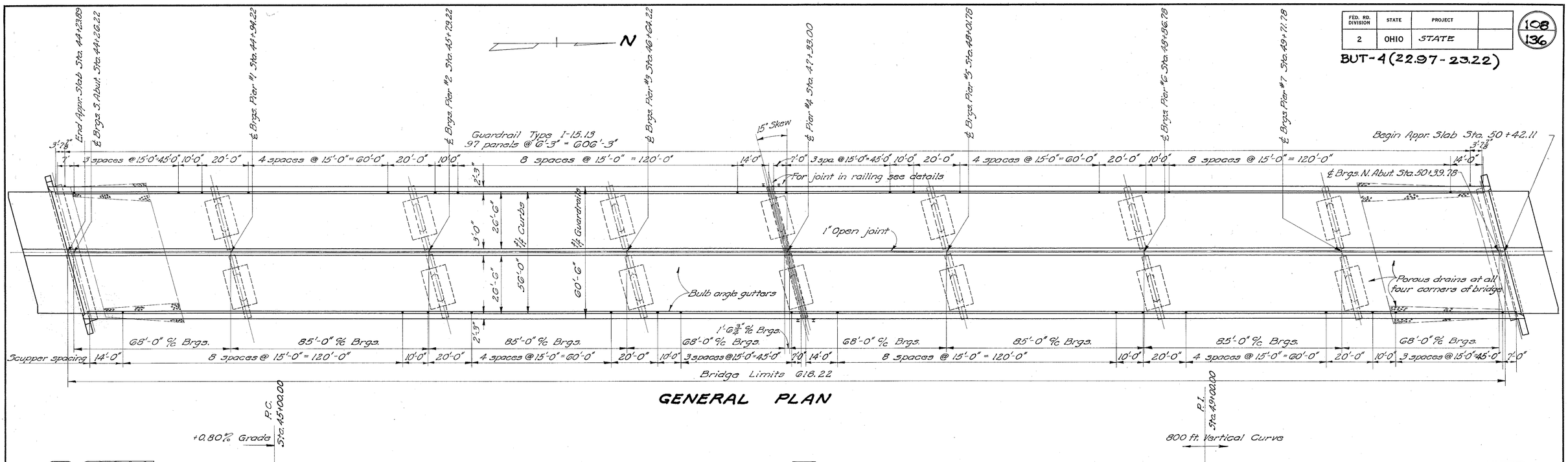
BFG [illegible] 4-13-55

BLACK 34

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

108
136

BUT-4 (22.97 - 23.22)



ESTIMATED QUANTITIES

1610 358,897 322

Item	Total	Unit	Description	Supers	Abuts	Pier #1	Pier #2	Pier #3	Pier #4	Pier #5	Pier #6	Pier #7	Gen'l
E-2	Lump	Sum	Cofferdams, cribs & sheeting										Lump
E-2	~~1530~~	Cu. Yd.	Unclassified excavation		150	~~200~~ 220	~~200~~ 220	~~200~~ 220	~~200~~ 220	~~200~~ 220	~~410~~ 120	~~270~~ 300	
E-3	94,343	Cu. Yd.	Channel excavation										94,343
S-1	1020	Cu. Yd.	Class "C" concrete, superstructure	1020									
S-1	244	Cu. Yd.	Class "C" concrete, pier caps			34	34	34	40	34	34	34	
S-1	615	Cu. Yd.	Class "E" concrete, pier walls			83	85	87	89	88	92	91	
S-1	~~2394~~	Cu. Yd.	Class "E" concrete, pier footings			~~412~~ 416	~~412~~ 416	~~412~~ 416	~~412~~ 416	~~412~~ 416	~~412~~ 416	~~412~~ 416	
S-1	174	Cu. Yd.	Class "E" concrete, abutments		174								
S-3	3620	Sq. Yd.	Type "C" waterproofing	3620		9114	9583	9145	9303	9164	9740	9285	
S-4	~~358,660~~	Lb.	Reinforcing steel	284,735	8594	9083	9550	9112	9270	9131	9707	9252	232
S-7	1,347,000	Lb.	Structural steel	1,347,000									
S-8	1,347,000	Lb.	Field painting of structural steel	1,347,000									
S-9	35	Sq. Ft.	½" preformed expansion joint filler			5	5	5	5	5	5	5	
S-14	1236.44	Lin. Ft.	Railing (Type I-15.13 with top handrail and galvanized steel posts)	1236.44									
S-16	Lump	Sum	First test pile										Lump
S-18	6440	Lin. Ft.	Steel piling, 12 BP 53		1260	700	1040	640	530	700	870	700	
S-24	Lump	Sum	Removal of existing structure										Lump
S-29	28	Cu. Yd.	Porous backfill										28
S-29	1226.80	Lin. Ft.	Subdrainage for wearing surface course	1226.80									
S-29	35	Cu. Yd.	Porous drains on embankment slopes										35
T-35	248	Cu. Yd.	Asphaltic concrete surface course, Type "A" or "C" (70-80)	248									

GENERAL NOTES

REFERENCE shall be made to Standard Drawing RB-1-47, revised 7-27-49.

DESIGN SPECIFICATIONS: This bridge conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Dep't. of Highways, dated Oct. 1, 1951, together with revisions thereof dated July 15, 1952, April 1, 1954, and Feb. 1, 1955.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. The stringers, floor beams and steel beam guardrails shall be carefully dismantled and piled along the right of way for removal by the State's forces. The remainder of the removed materials shall become the property of the Contractor. The abutments are to remain in place and the pier shall be removed to 6" below existing ground line. Suitable waste masonry may be disposed of as bank protection as directed by the Engineer.

EXCAVATION QUANTITY includes the removal of fill material between top of earth bench and bottom of abutment crossbeam.

PILING shall be driven to a minimum bearing capacity of 28 tons per pile or to a minimum penetration of 35 feet at the abutments. Pier piling shall be driven to a minimum bearing capacity of 60 tons per pile for penetrations of 25 feet or less. Piling with a penetration of 45 feet or more shall be driven to a minimum bearing capacity of 45 tons per pile. For intermediate penetrations the minimum pile capacity shall be interpolated between the above limits. The design load is 45 tons per pile.

WELDING of structural steel shall be Class "A" unless otherwise noted. Any welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds shown thus B→

SURFACE FINISH OF CONCRETE: Curb and median faces and fascias of deck shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item S-1.

POROUS DRAINS shall be placed at the four corners of the bridge. They shall extend from face of abutment across earth bench and down embankment to Elev. 636.0. The drains shall be 7 ft. wide at low end tapering to 4 ft. wide at the abutment and one foot thick.

GRAVEL, if used as the coarse aggregate, shall be according to Sec. M-3.93 instead of M-3.91 for Class "C" concrete, superstructure. Gravel meeting the requirements of Sec. M-3.93 also may be used for other concrete in this structure.

DECK CONSTRUCTION PROCEDURE: Deck slab shall be placed in sections, between transverse construction joints, in the numerical order and in the direction indicated on the steel framing plan, in order that the major portion of the dead load deflection may occur prior to placing concrete over each pier.

WELDED STEEL: The steel for the 36 WF 230 beams shall conform to A.S.T.M. designation A-373. All other structural steel shall conform to either A.S.T.M. A-7 (as per Sec. M-7.4(a) of the Construction and Material Specifications) or to A-373.

END FINISH, BULB ANGLE GUTTERS, AND SCUPPERS shall be copper-bearing steel.

Pencil Revisions 7-27-55 AJC

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

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES
BRIDGE NO. BU-4-23.6
OVER GREAT MIAMI RIVER

BUTLER COUNTY STA. 44+23.89 to 50+42.11

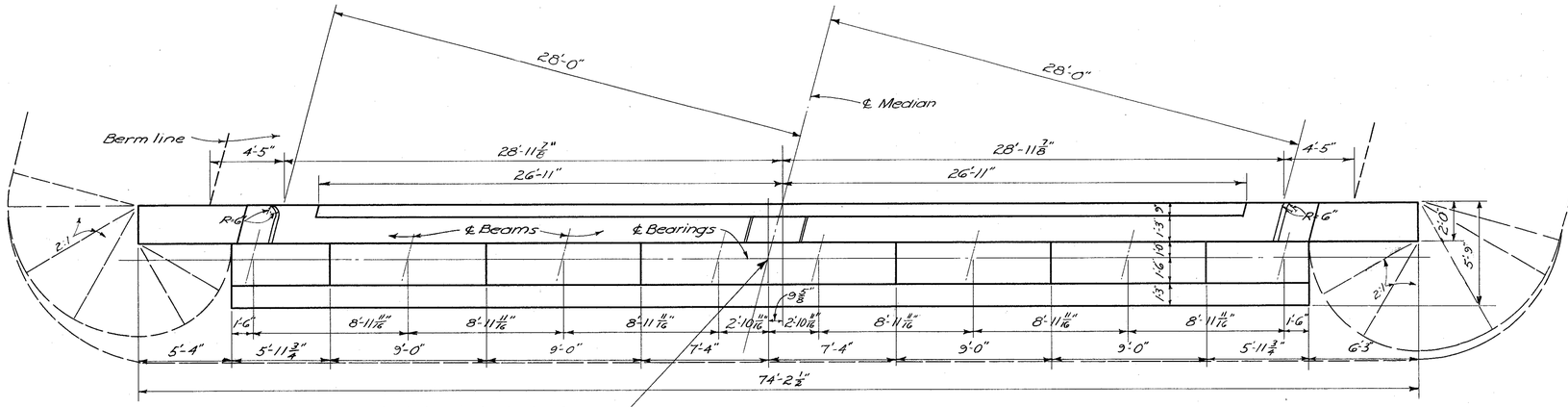
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJC	AJC	JDJ	Kug	BFG A.J.C.	4-13-55	

BLACK 34

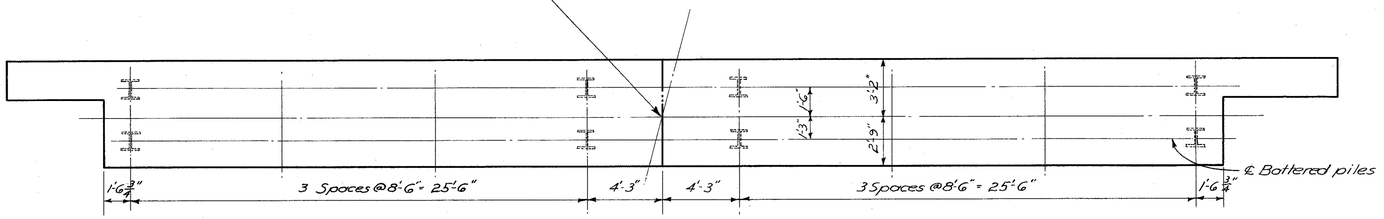
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

109/136

BUT-4-(22.97-23.22)



ABUTMENT PLAN



PILE LAYOUT (12BP53)

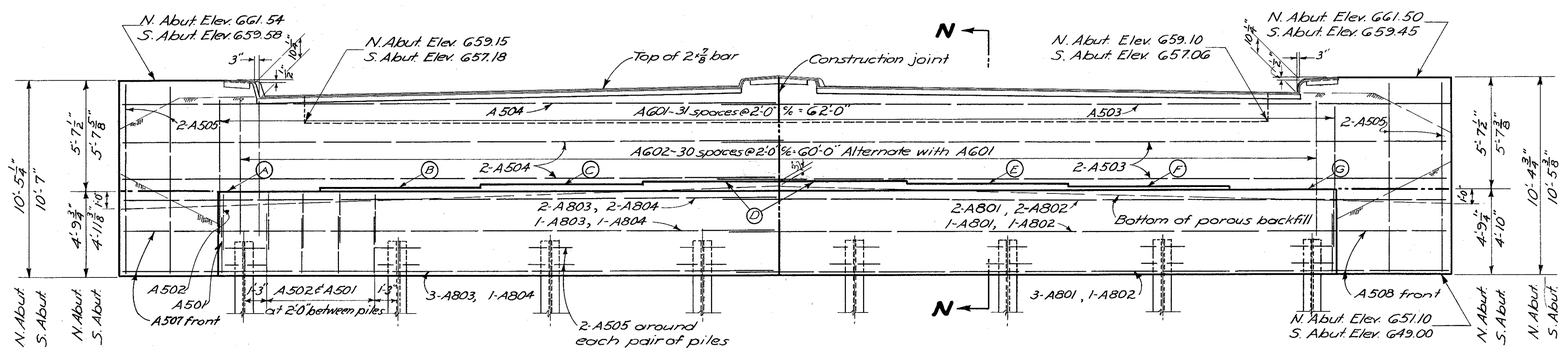
NOTES

EMBANKMENT PROCEDURE: All earth fill around the abutments shall be made full height of earth bench. Excavation shall then be made for the abutment cap, after which piles shall be driven.

BRIDGE SEAT PROCEDURE: Concrete above the bridge seat construction joint shall not be placed until after the steelwork is erected. Steel end finish shall be used as a template for top of backwall.

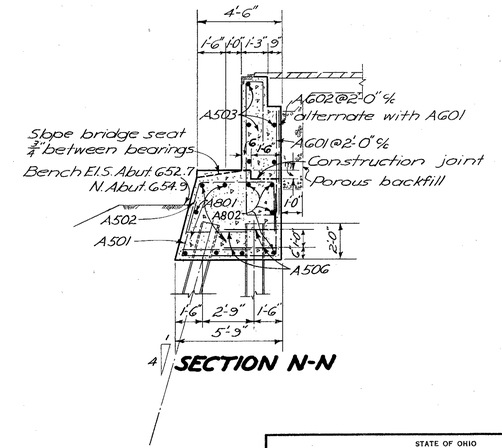
REINFORCING STEEL shall clear face of concrete 2" unless otherwise shown.

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 in excess of that required for construction of footing shall be considered as paid for in the bid price per cubic yard for porous backfill.



ABUTMENT ELEVATION

ELEVATIONS		
Point	North Abutment	South Abutment
A	655.91	653.95
B	656.04	654.07
C	656.17	654.19
D	656.29	654.30
E	656.15	654.14
F	656.01	653.98
G	655.87	653.83



SECTION N-N

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

ABUTMENT DETAILS

BRIDGE NO. BU-4-23G
OVER GREAT MIAMI RIVER
Butler County
Sta. 44+23.89
50+42.11

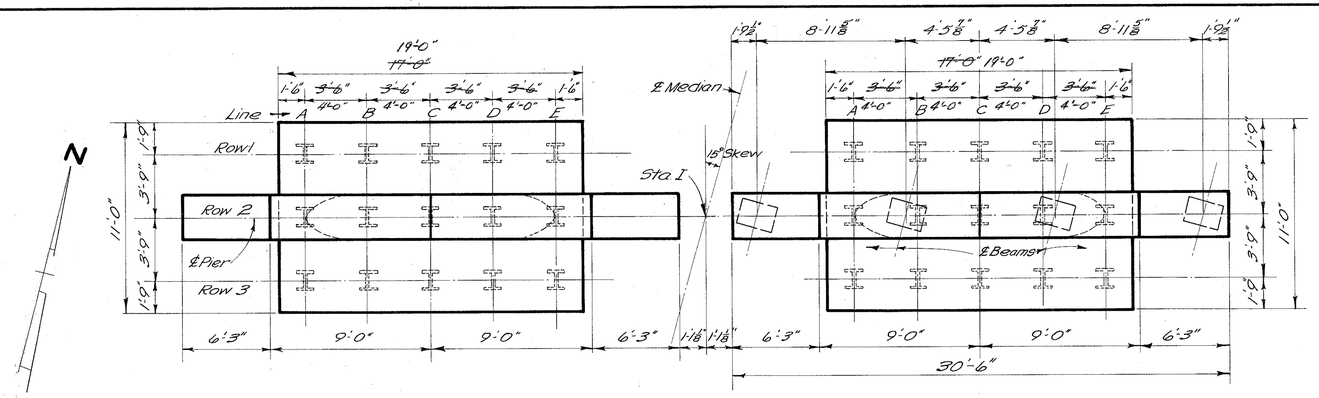
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJC	AJC	©	Kay	BFG A.J.F.	4-13-55	

BLACK 34

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

110/136

BUT-4-(22.97-23.22)

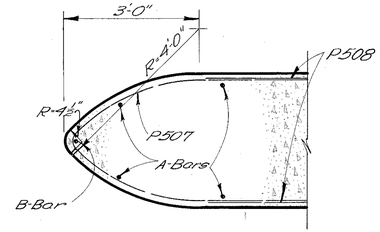


PIER PLAN

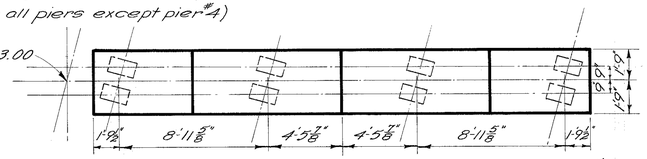
(Beam seat shown for all piers except pier #4)

PILE SCHEDULE

Piers 1, 3, 5 & 7 - Drive lines A, B, D and E only - Omit line C
Piers 2 and 6 - Drive all piles shown in pier plan.
Pier 4 - Drive lines A & E. Drive lines B & D omitting piles in Row 2. Omit line C.



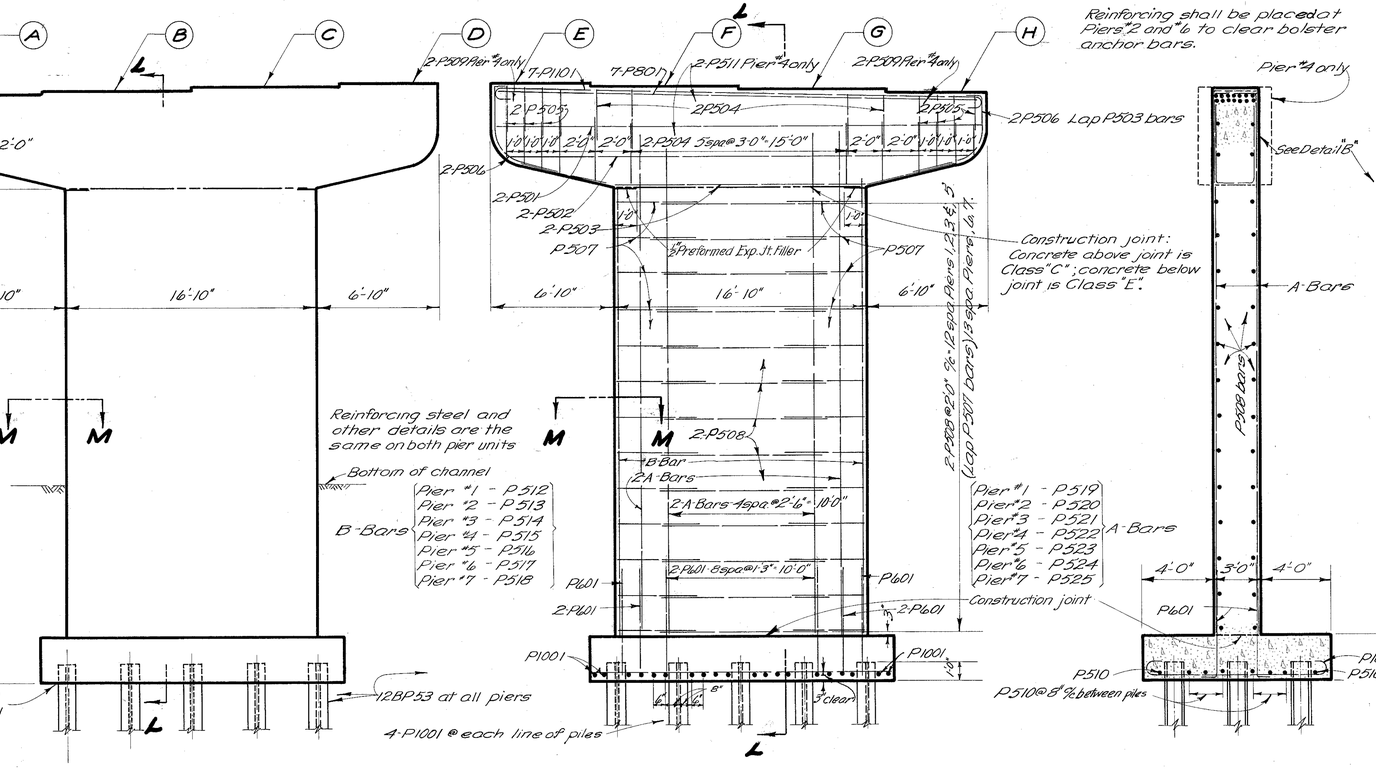
SECTION M-M



HALF PLAN OF BEAM SEAT FOR PIER #4

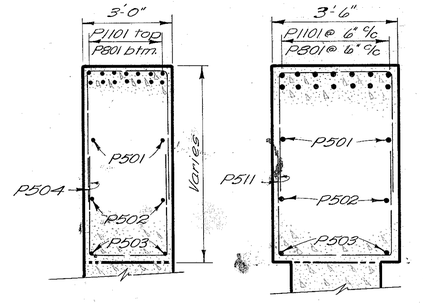
	PIER #1	PIER #2	PIER #3	PIER #4	PIER #5	PIER #6	PIER #7
A	653.81	654.44	654.92	655.77	655.40	655.51	655.47
B	653.96	654.59	655.07	655.92	655.54	655.65	655.61
C	654.11	654.74	655.21	656.06	655.68	655.78	655.74
D	654.27	654.89	655.36	656.20	655.82	655.92	655.87
E	654.28	654.90	655.37	656.21	655.83	655.92	655.87
F	654.16	654.78	655.24	656.08	655.70	655.78	655.73
G	654.05	654.66	655.12	655.95	655.56	655.65	655.59
H	653.93	654.53	654.99	655.83	655.43	655.52	655.45
I	44+94.22	45+79.22	46+64.22	47+33.00	48+01.78	48+86.78	49+71.78

PIER ELEVATIONS AND STATIONS



PIER ELEVATION

SECTION L-L



DETAIL "B" Except Pier #4

DETAIL "B" Pier #4 Only

REINFORCING STEEL shall be 2" clear from face of concrete unless otherwise noted.

Pencil Revisions 9-27-55 AJC

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

PIER DETAILS
BRIDGE No. BU-4-236
over GREAT MIAMI RIVER

Butler County Sta. 44+23.89
50+42.11

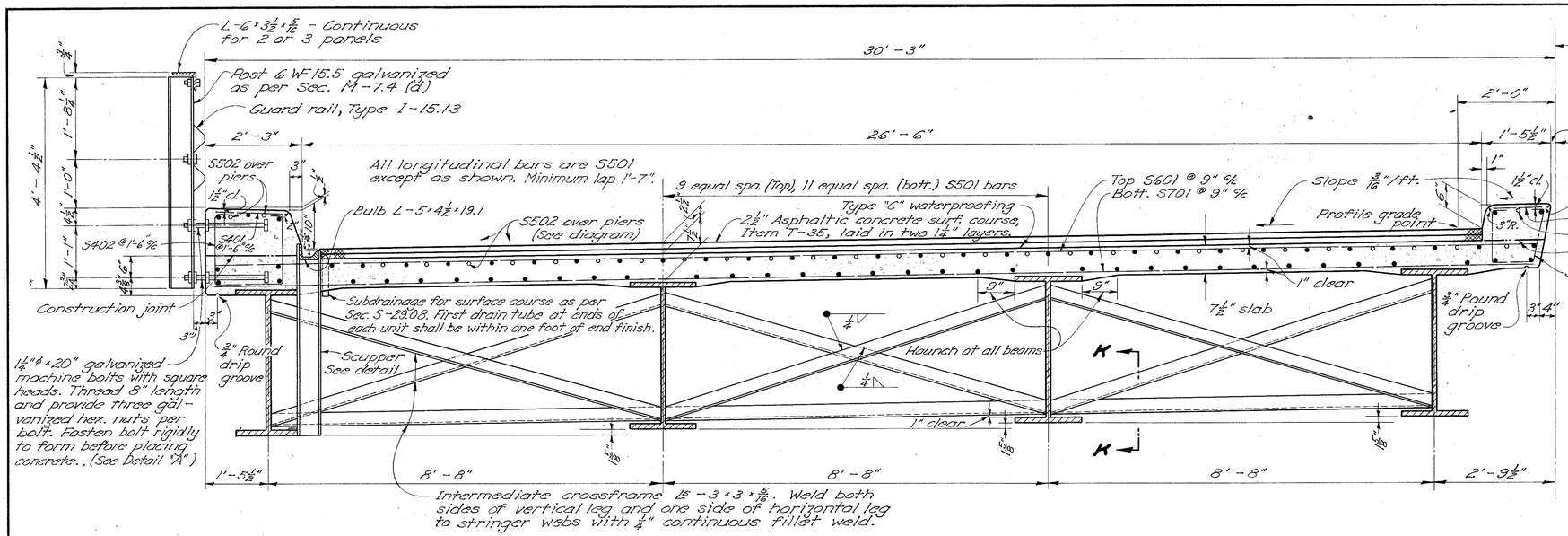
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJC	AJC	RHD	Ray	BFG	4-13-55	

Black 34

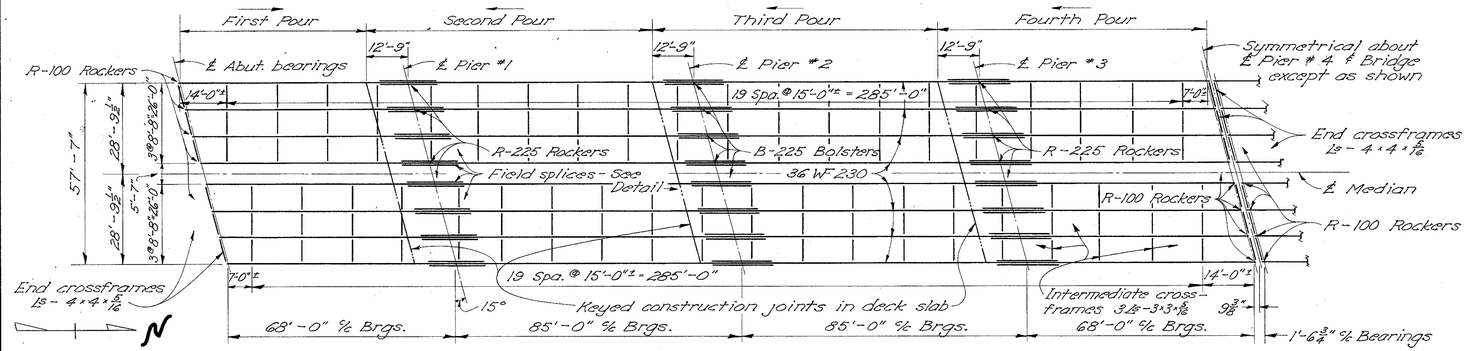
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

111
136

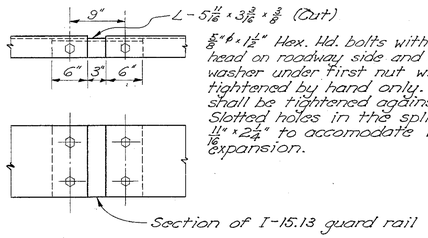
BUT-4-(22.97-23.22)



TRANSVERSE HALF SECTION

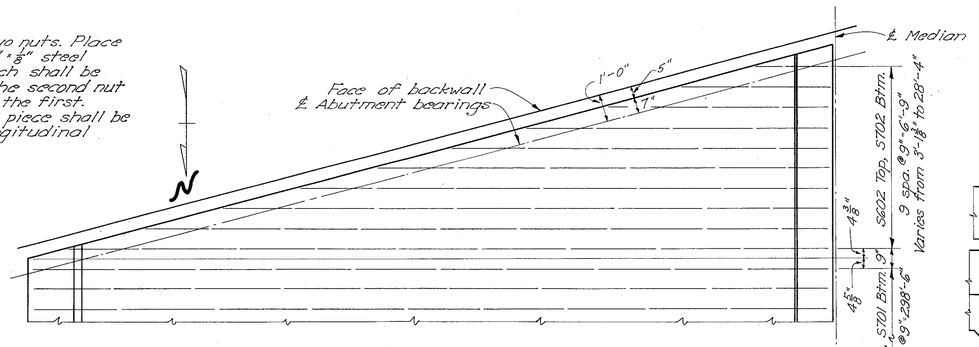


STEEL FRAMING PLAN - ONE UNIT
(Slab pouring sequence shown)



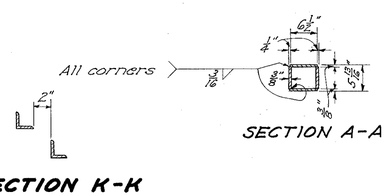
⅝"ϕ×12½" Hex. Hd. bolts with two nuts. Place head on roadway side and 1⅝"×⅜" steel washer under first nut which shall be tightened by hand only. The second nut shall be tightened against the first. Slotted holes in the splice piece shall be 1"×2¼" to accomodate longitudinal expansion.

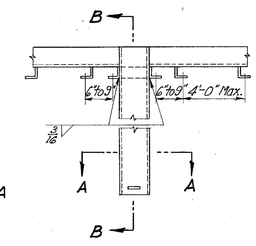
DETAILS OF EXPANSION JOINT IN RAILING

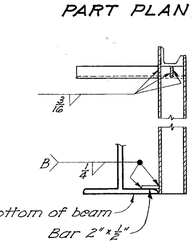


PART PLAN OF DECK
(South Unit - North bound lanes)

Diagram showing location of main reinforcing at ends of deck (Other ends similar)



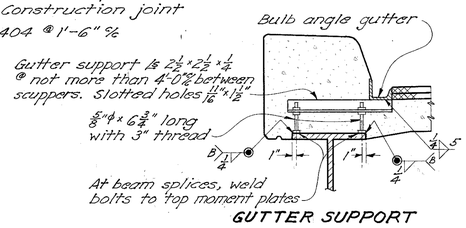


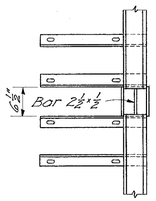


GUTTER AND SCUPPER DETAILS
Include gutters, gutter supports and scuppers with structural steel for payment.

GUTTER AND SCUPPER NOTES:

Gutters shall be accurately adjusted for alignment and grade, with allowance for dead load deflection, before concrete is placed.





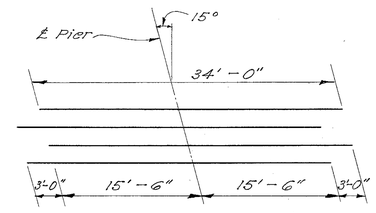
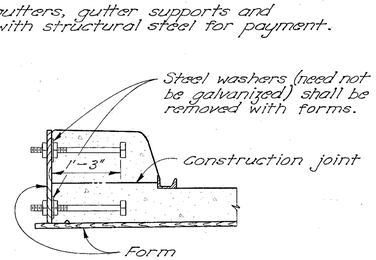
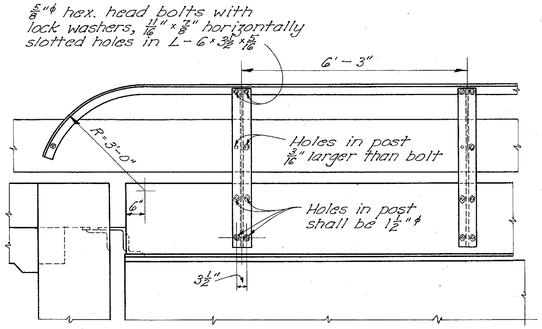


DIAGRAM SHOWING STAGGER OF S502 BARS OVER PIERS



DETAIL "A"



ELEVATION OF RAILING POSTS AND END PANEL

Railing (Item S-14): The price per linear foot of railing includes payment for guard rail, handrail, posts, anchors, connections, galvanizing, painting and the curved portion of handrail projecting beyond ends of deck slabs. The length listed in the "Estimated Quantities" is the distance between ends of deck slabs.

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

SUPERSTRUCTURE DETAILS

BRIDGE No. BU-4-236
over GREAT MIAMI RIVER

Sta. 44+23.89
50+42.11

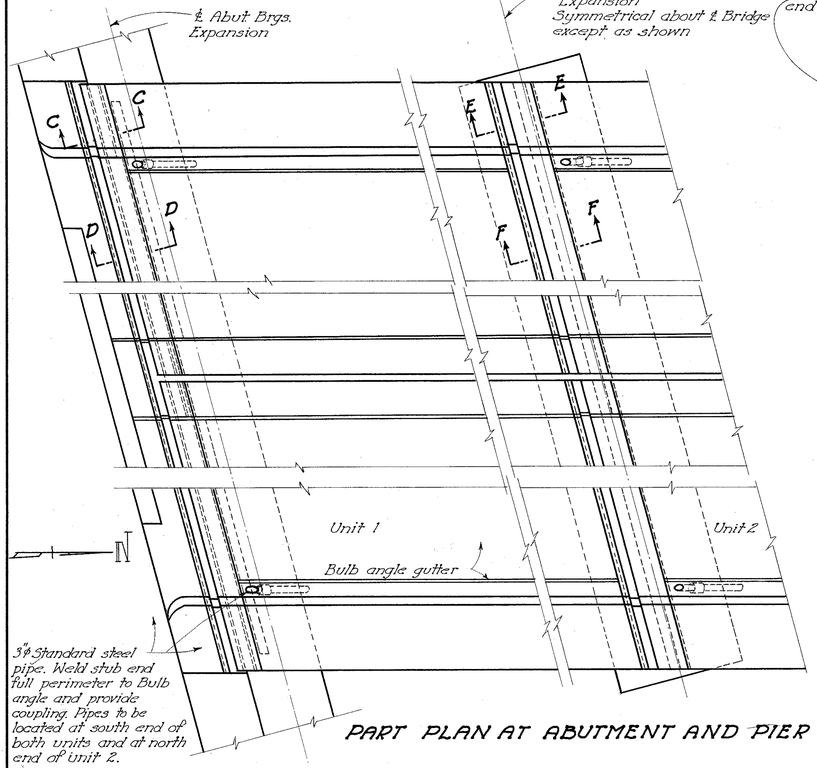
Butler County

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJC	AJC		Kay	BFG	4-13-55	

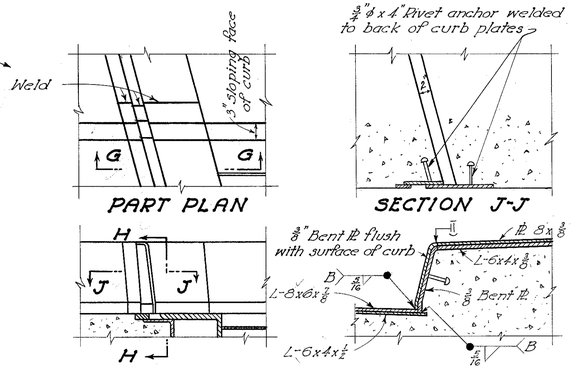
BLACK 34

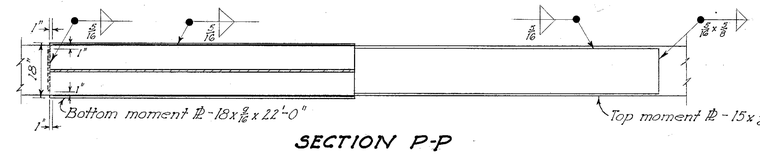
FED. RD. DIVISION	STATE	PROJECT		112 / 136
2	OHIO	STATE		

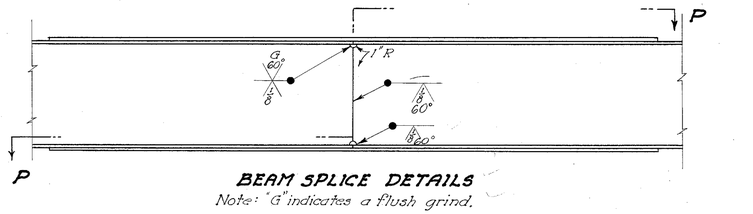
BUT-4-(22.97-23.22)



PART PLAN AT ABUTMENT AND PIER #4

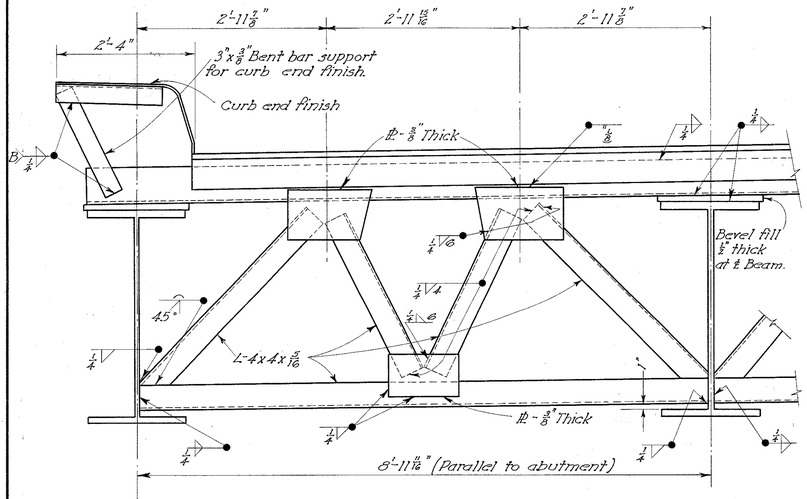




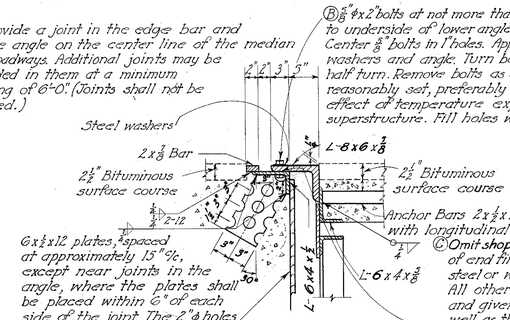


Note: "G" indicates a flush grind.

CAMBER: No cambering of beams is required, but the beams shall be so fabricated that any curved beams will be placed with the convex flange up.



Ⓐ Provide a joint in the edge bar and in the angle on the center line of the median and roadways. Additional joints may be provided in them at a minimum spacing of 6'-0". (Joints shall not be welded.)

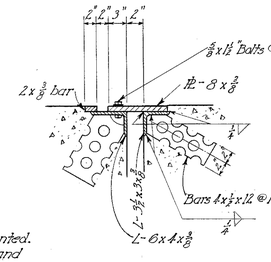


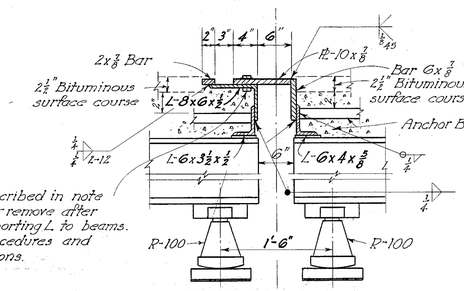
Ⓑ ⅝" ϕ x 2" bolts at not more than 1'-0"℄, with nuts tack-welded to underside of lower angle. 1⅛ holes in upper angle. Center ⅝" bolts in 1" holes. Apply flake graphite between washers and angle. Turn bolt tight and release one-half turn. Remove bolts as soon as concrete has been reasonably set, preferably within two hours, to avoid effect of temperature expansion or contraction of superstructure. Fill holes with bituminous material.

Anchor Bars 2x½x1'-6"@ 15"℄ placed parallel with longitudinal reinforcing steel.

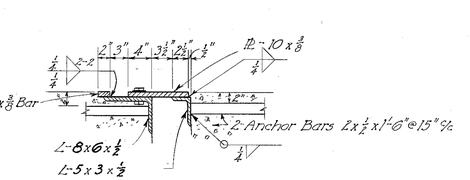
Ⓒ Omit shop coat of paint on all portions of end finish. Portions in contact with steel or with concrete shall not be painted. All other portions shall be cleaned and and given the shop coat in the field as well as the two field coats.

Ⓓ The contact surface between the 8x6x⅞ and 6x4x½ angles shown in Section D-D shall not be painted and shall be lubricated with flake graphite prior to placing of backwall concrete.





⅝" ϕ x 2" bolts as described in note B of Section D-D - remove after welding each supporting L to beams. Omit tightening procedures and graphite applications.



BEAM SPLICE WELDING PROCEDURE:
1. At Pier #1 weld bottom flange moment plate to beam on abutment side of joint only.
2. Raise end of beam at Pier #2 - 3½".
3. Weld beam flanges and web of Pier #1.
4. Weld top flange moment plate at Pier #1. (Both sides of joint.)
5. Complete welding of bottom flange moment plate at Pier #1.
6. Lower end of beam at Pier #2.
7. Repeat steps 1 to 6 inclusive at Piers #2 and #3 except that the end of the beam at Pier #3 shall be raised 2½" for welding at Pier #2, and the end of the beam at Pier #4 shall be raised 2" for welding at Pier #3.
8. Repeat steps 1 to 7 inclusive for second unit of bridge, proceeding from Pier #7 to Pier #6 to Pier #5.

NOTE: Notes A, B, C and D apply in substance to all end finish except as noted.

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

SUPERSTRUCTURE DETAILS
BRIDGE No. BU-4-236
OVER GREAT MIAMI RIVER

BUTLER COUNTY — STA. 44+23.89 — STA. 50+42.11

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJC	AJC	PG.	Ring	BFG.	4-13-55	

BLACK 34

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

113
136

BUT-4-(22.97-23.22)

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHP
Superstructure				
S701	596	29'-6"	96,236	S
S702	8 Spaces @ 6" Ctrs.	3'-1⅞" to 28'-4"	2571	S
S601	596	29'-6"	70,717	S
S602	8 Spaces @ 6" Ctrs.	3'-1⅞" to 28'-4"	1889	S
S501	2520	35'-7"	93,526	S
S502	360	34'-0"	12,766	S
S401	620	1'-8"	913	S
S402	820	5'-6"	3013	B
S403	820	2'-10"	1552	B
S404	820	2'-10"	1552	B
Piers				
P1101	98	33'-0"	17,182	B
P1001	240	13'-2"	13,598	B
P801	98	30'-2"	7893	S
P601	336	5'-6"	2776	B
P501	28	30'-2"	881	S
P502	28	28'-8"	837	S
P503	28	28'-2"	823	B
P504	192	9'-1"	1819	B
P505	192	8'-9"	1752	B
P506	56	6'-7"	385	B
P507	376	10'-0"	3922	B
P508	376	10'-10"	4248	S
P509	32	9'-3"	309	B
P510	112	~~16'-8~~	~~1847~~	S
P511	32	9'-7"	320	B
P512	4	24'-4"	102	S
P513	4	24'-11"	104	S
P514	4	25'-5"	106	S
P515	4	26'-3"	110	S
P516	4	25'-11"	108	S
P517	4	26'-11"	112	S
P518	4	26'-10"	112	S
P519	28	26'-4"	769	S
P520	28	26'-10"	784	S
P521	28	27'-3"	796	S
P522	28	28'-2"	823	S
P523	28	27'-9"	810	S
P524	28	28'-9	840	S
P525	28	28'-8"	837	S
Abutments				
A801	12	33'-8"	1079	S
A802	8	40'-0"	854	S
A803	12	31'-1"	996	S
A804	8	36'-5	778	S
A601	64	16'-2"	1554	B
A602	62	5'-2"	481	S
A501	60	11'-3"	704	B
A502	60	10'-0"	626	B
A503	10	32'-9"	342	S
A504	10	36'-5"	380	S
A505	16	9'-11"	165	S
A506	64	8'-7"	573	B
A507	4	7'-0"	29	S
A508	4	7'-10"	33	S
Replacement Bars				
RE1101	1	7'-7"	40	S
RE1001	1	7'-2"	31	S
RE801	1	6'-6"	17	S
RE701	5	6'-2"	63	S
RE601	4	5'-11"	36	S
RE501	7	5'-7"	41	S
RE401	1	5'-3"	4	S

NO. OF BARS PER NO.

MARK	1	2	3	4	5	6	7
P1101	14	14	14	14	14	14	14
P1001	32	40	32	32	32	40	32
P801	14	14	14	14	14	14	14
P601	48	48	48	48	48	48	48
P501	4	4	4	4	4	4	4
P502	4	4	4	4	4	4	4
P503	4	4	4	4	4	4	4
P504	32	32	32		32	32	32
P505	32	32	32		32	32	32
P506	6	6	6	6	6	6	6
P507	52	52	52	56	52	56	56
P508	52	52	52	56	52	56	56
P509				32			
P510	16	16	16	16	16	16	16
P511				32			
P512	4						
P513		4					
P514			4				
P515				4			
P516					4		
P517						4	
P518							4
P519	28						
P520		28					
P521			28				
P522				28			
P523					28		
P524						28	
P525							28

2181

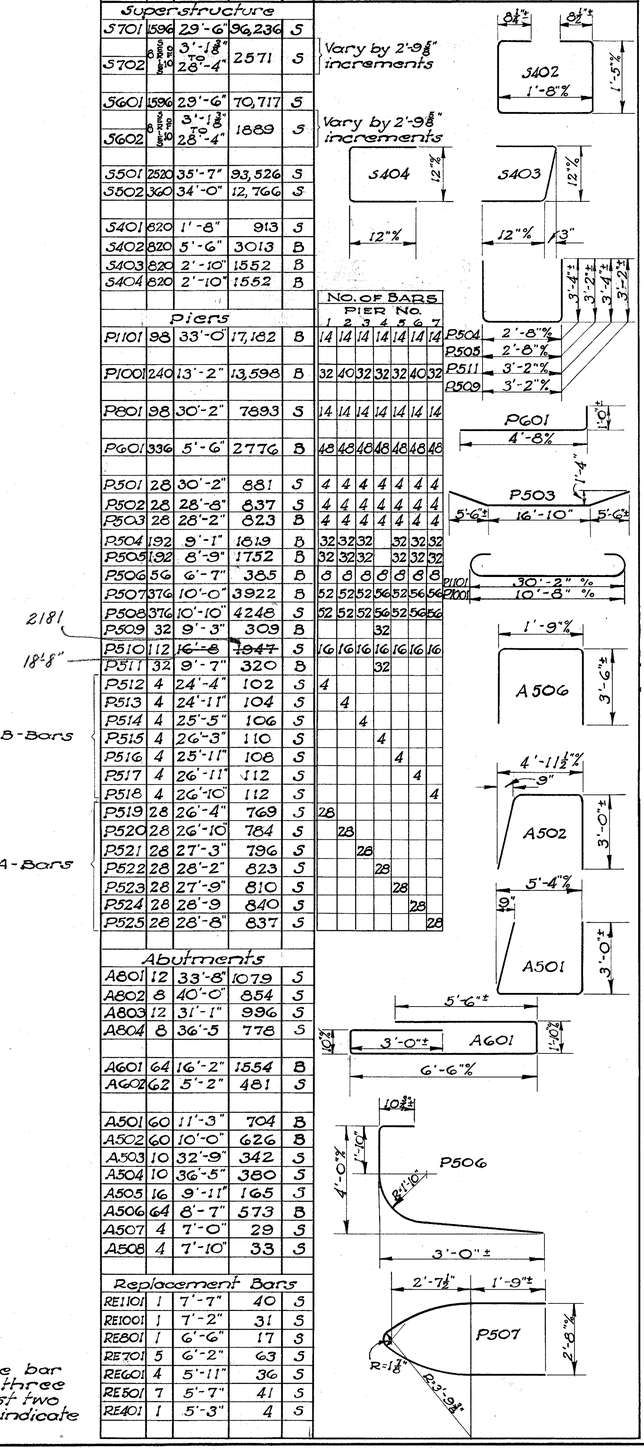
18½"

8-Bars

A-Bars

BAR SIZE is indicated by the bar mark. The first digit where three digits are used and the first two digits where four are used, indicate the bar size number.

BENDING DIAGRAM



Pencil Revisions 9-27-55 AJC

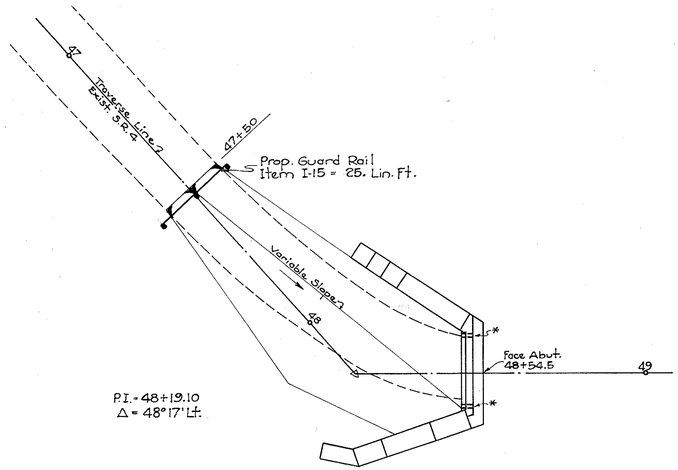
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

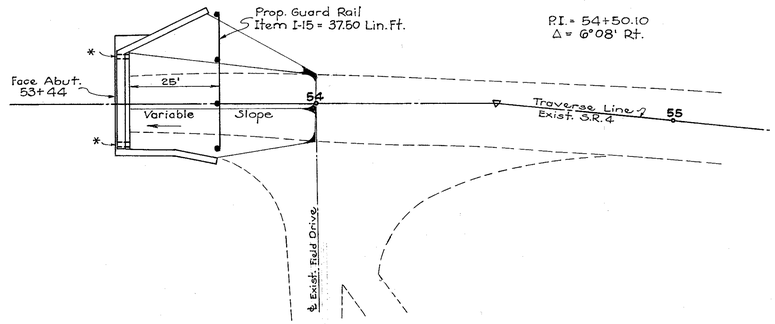
REINFORCING STEEL LIST

BRIDGE NO. BU-4-236
OVER GREAT MIAMI RIVER
BUTLER COUNTY STA. 44+23.89 50 42.11

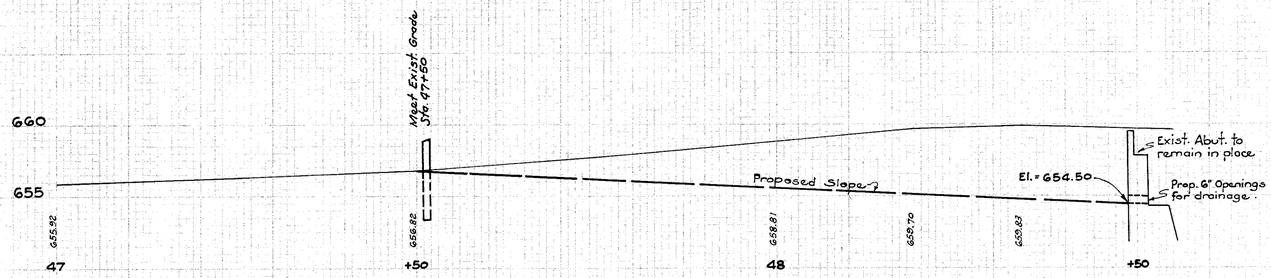
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJC	AJC	RCSB	Ray	BFG	4-13-55	

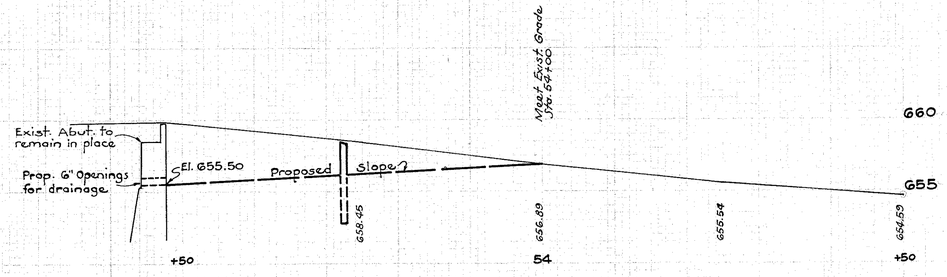
BUTLER COUNTY
BUT-4-(22.97-23.22)





*Note: Proposed 6" openings to be cut into existing abutments for drainage payment to be included in Lump Sum price bid for Item S-24, Removal of Existing Structures.





ESTIMATED QUANTITIES

Roadway Excavation	Item E-1	450. Cu.Yd.
Guard Rail	Item I-15	62.50 Lin.Ft.

BARRICADE OF EXISTING ABUTS. OF BRIDGE OVER GREAT MIAMI RIVER

BUTLER COUNTY
BUT-4-(22.97-23.22)

60 50 40 30 20 10 0 10 20 30 40 50 60

Zero Section 5+00

Prop. Channel Excav.

5' Compact Backfill

644.0
4+50
640.5

644.0
4+00
642.3

644.0
3+50
639.6

644.0
3+00
639.5

644.0
2+50
639.7

644.0
2+00
639.5

644.0
1+50
639.6

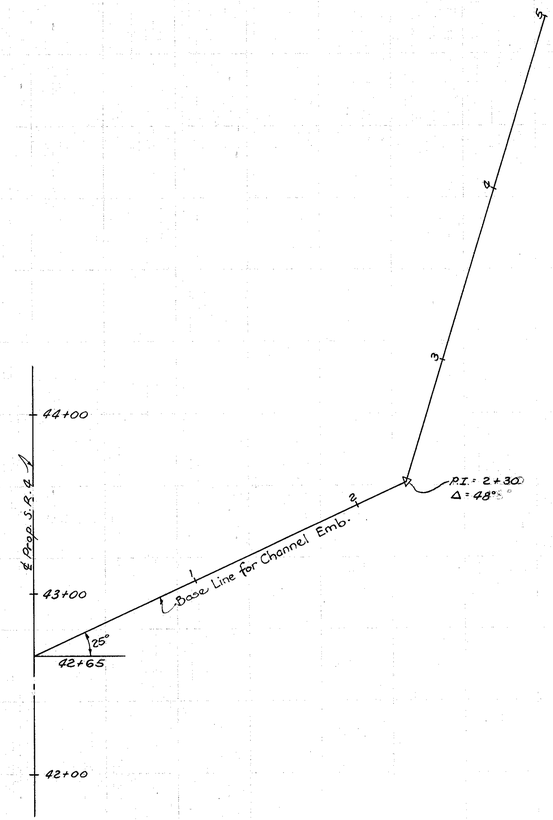
644.0
1+00
641.2

Incl. in Rdwy. X-Sec's.

644.0
0+70
640.0

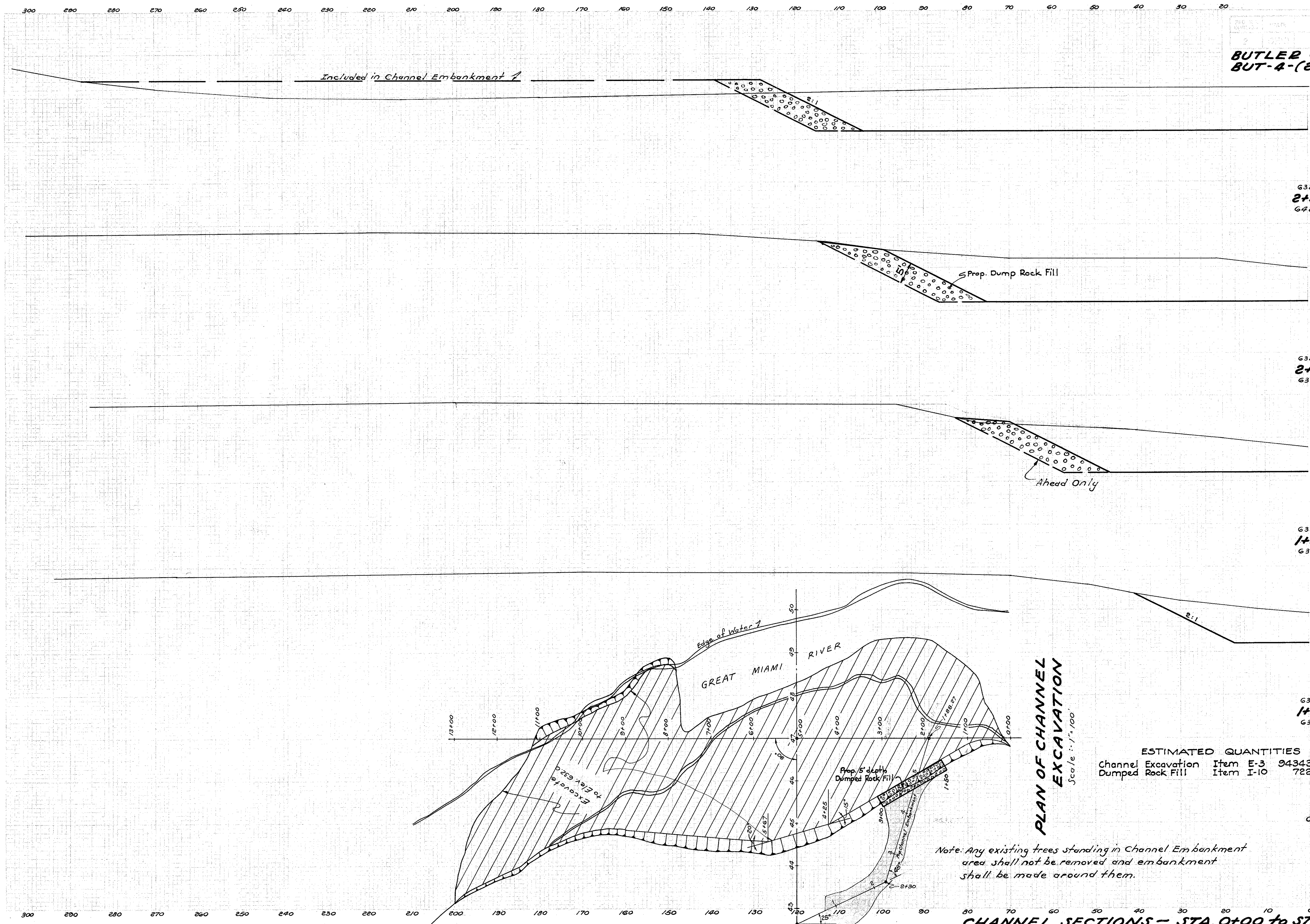
Zero Section 0+40

Channel Emb.	
End Area	Cu. Yd.
0	
	107
116	
	218
118	
	249
150	
	295
169	
	333
191	
	315
149	
	358
238	
	440
237	
	215
150	
	83
0	
Total	2613



CHANNEL EMBANKMENT 42+65 RT.

BUTLER COUNTY
BUT-4-(23.10-23.22)



Station	End Area Cut	Cu. Yd. Cut
2+50	1225	
		2060
2+00	995	
		1509
1+50	Ahead 635 Back 510	
		688
1+00	233	
		431
0+00	0	

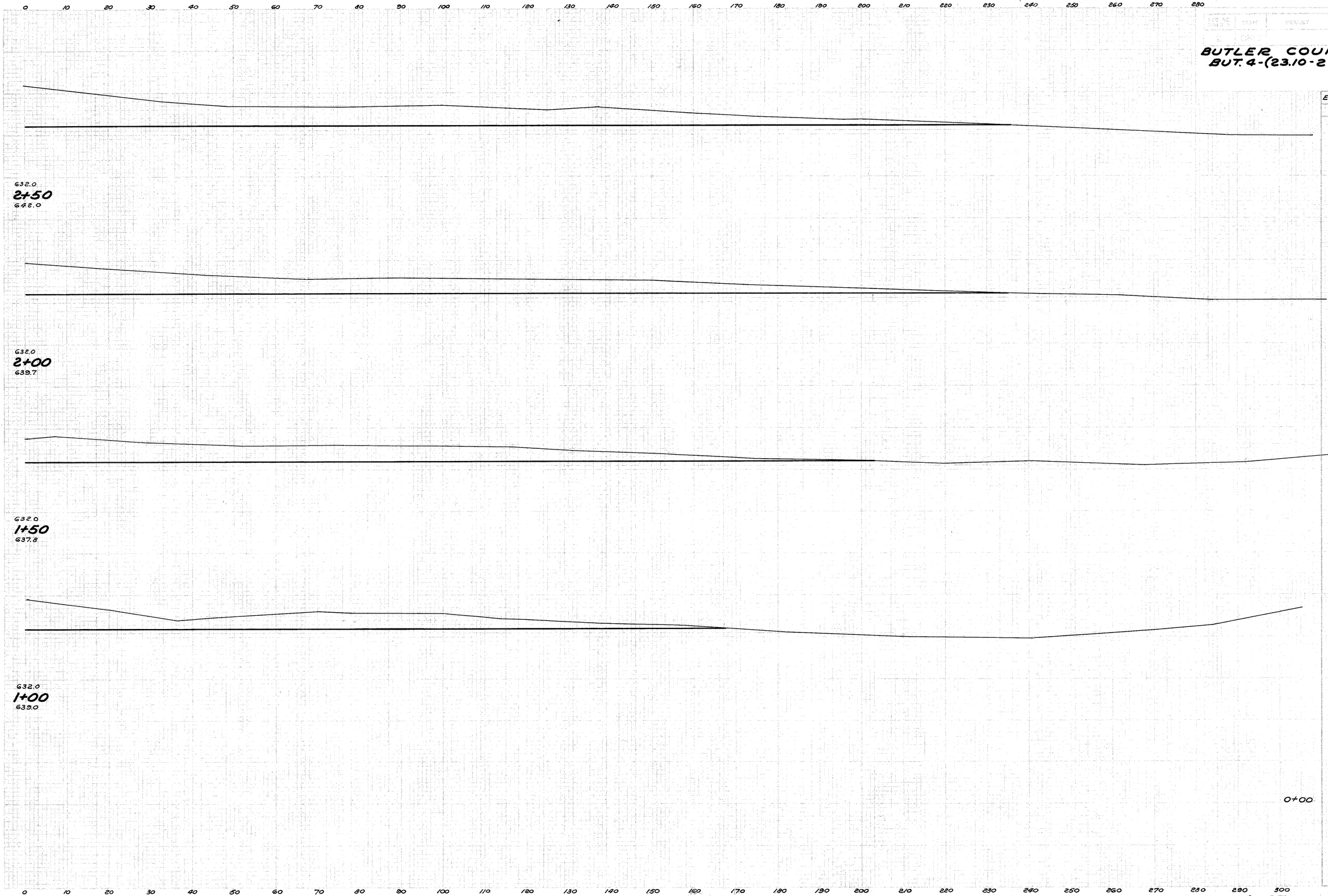
ESTIMATED QUANTITIES

Channel Excavation	Item E-3	94343. Cu. Yd.
Dumped Rock Fill	Item I-10	722. Cu. Yd.

Note: Any existing trees standing in Channel Embankment area shall not be removed and embankment shall be made around them.

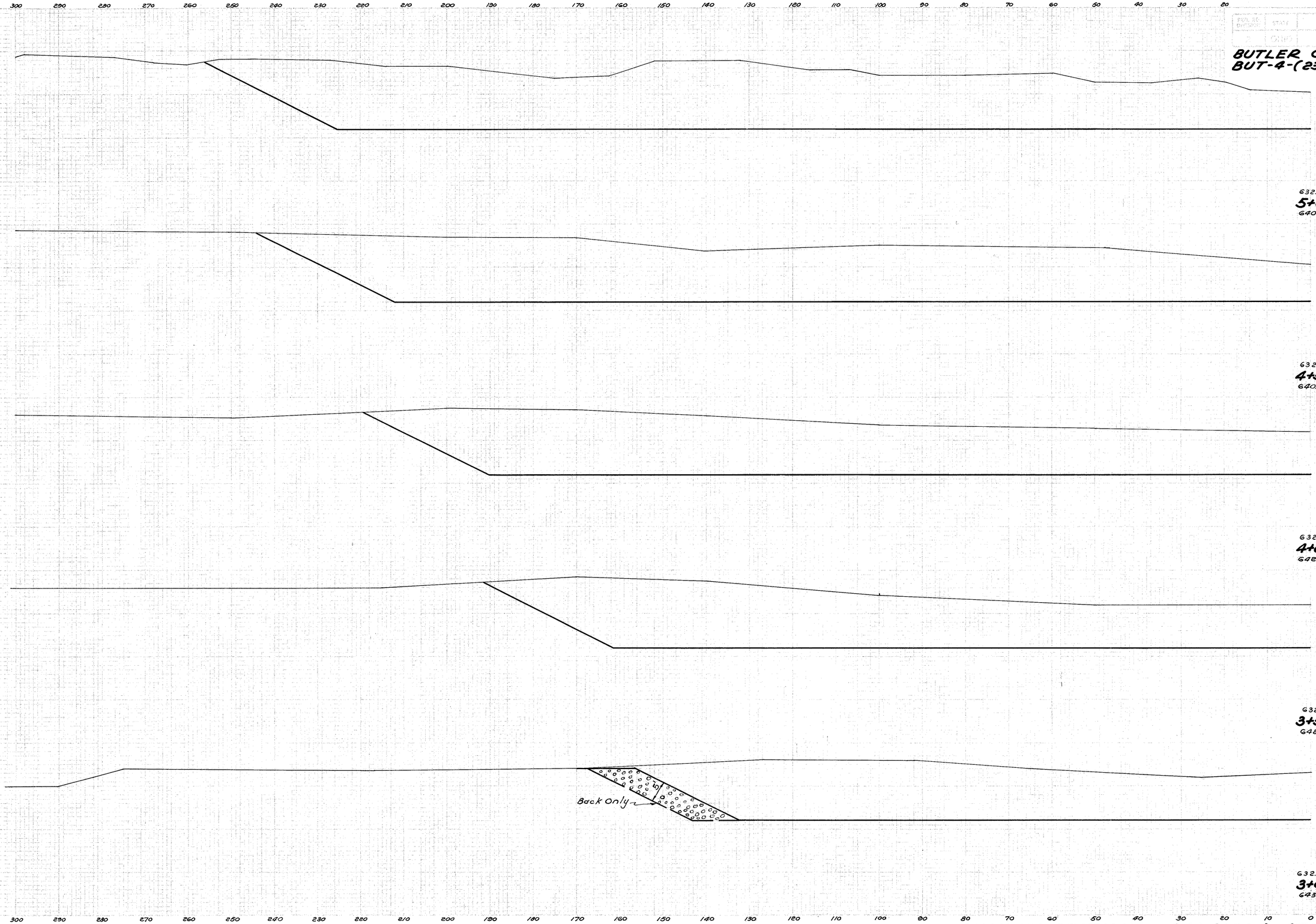
CHANNEL SECTIONS — STA. 0+00 to STA. 2+50 Lt.

BUTLER COUNTY
BUT. 4-(23.10-23.22)



CHANNEL SECTIONS — STA. 0+00 to STA. 2+50 Rt.

BUTLER COUNTY
BUT-4-(23.10-23.22)



	End Area Cut	Cu. Yd. Cut
5+00	3161	
		5703
4+50	2998	
		5169
4+00	2585	
		4459
3+50	2231	
		3788
3+00	1860	
	1985	
2+50	1225	2972

CHANNEL SECTIONS — STA. 3+00 to STA. 5+00 Lt.

BUTLER COUNTY
BUT-4-(23.10-23.22)

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280

End Area Cut	Cu.Yd. Cut
	820
	1634
	945
	1834
	1036
	1964
	1085
	1967
	1040
	1838
	945

632.0
5+00
640.2

632.0
4+50
640.6

632.0
4+00
642.0

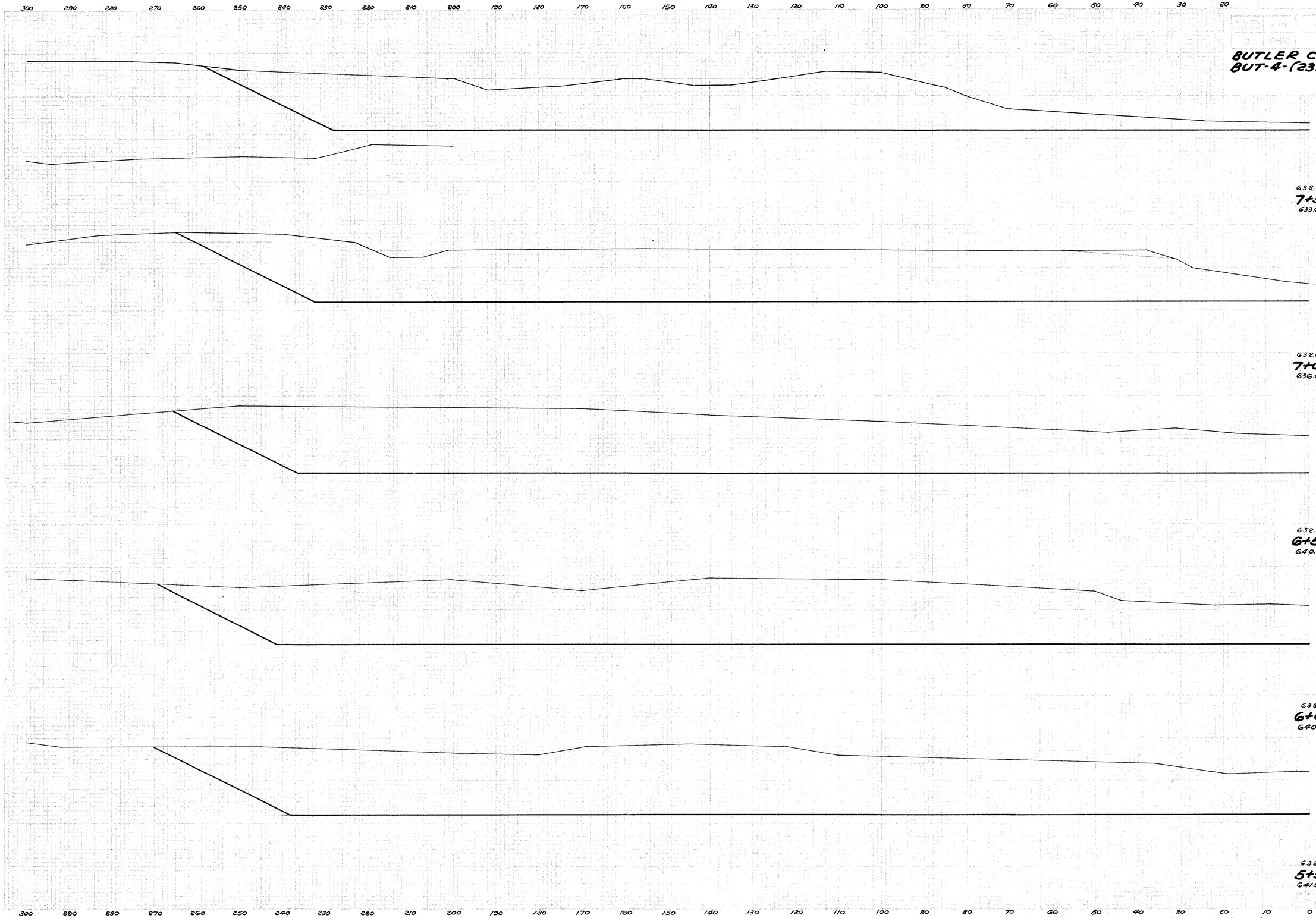
632.0
3+50
642.0

632.0
3+00
643.0

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 2+50

CHANNEL SECTIONS - STA. 3+00 to STA. 5+00 Rt.

BUTLER COUNTY
BUT-4-(23.10-23.22)



	End Area Cut	Cu. Yd. Cut
7+50	2263	
		4832
7+00	2956	
		5756
6+50	3260	
		6190
6+00	3425	
		6528
5+50	3625	
		6283
5+00	3161	

CHANNEL SECTIONS — STA. 5+50 to STA. 7+50 Lt.

120
136

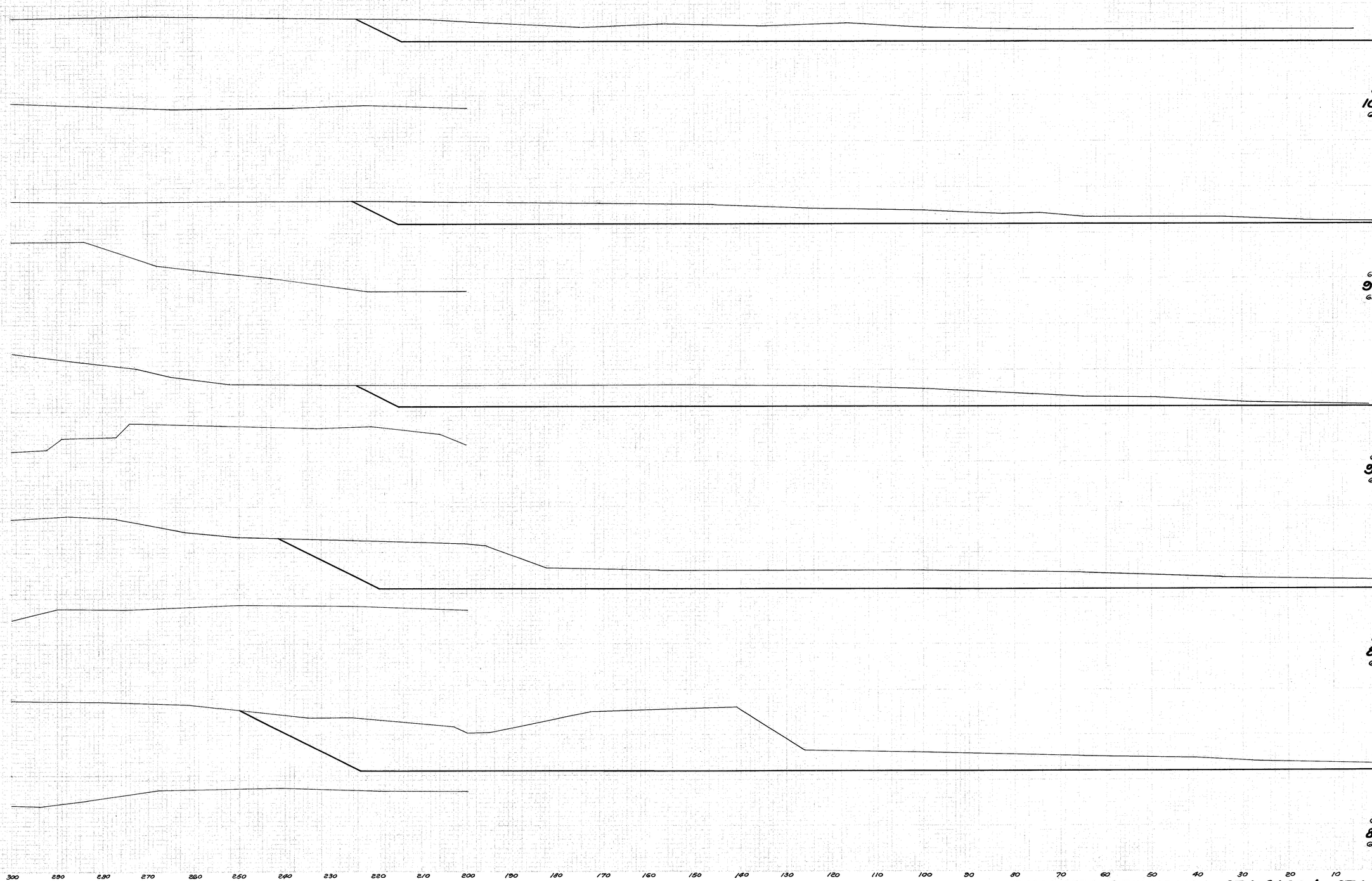
BUTLER COUNTY
BUT-4-(23.10-23.22)

	End Area Cut	Cu.Yd. Cut
632.0 7+50 633.6	15	
		106
	100	
		348
632.0 7+00 636.0		
	276	
		719
632.0 6+50 640.7		
	500	
		1111
632.0 6+00 640.9		
	700	
		1407
632.0 5+50 641.9		
5+00	820	

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300

CHANNEL SECTIONS — STA. 5+50 to STA. 7+50 Rt.

BUTLER COUNTY
BUT-4-(23.10-23.22)

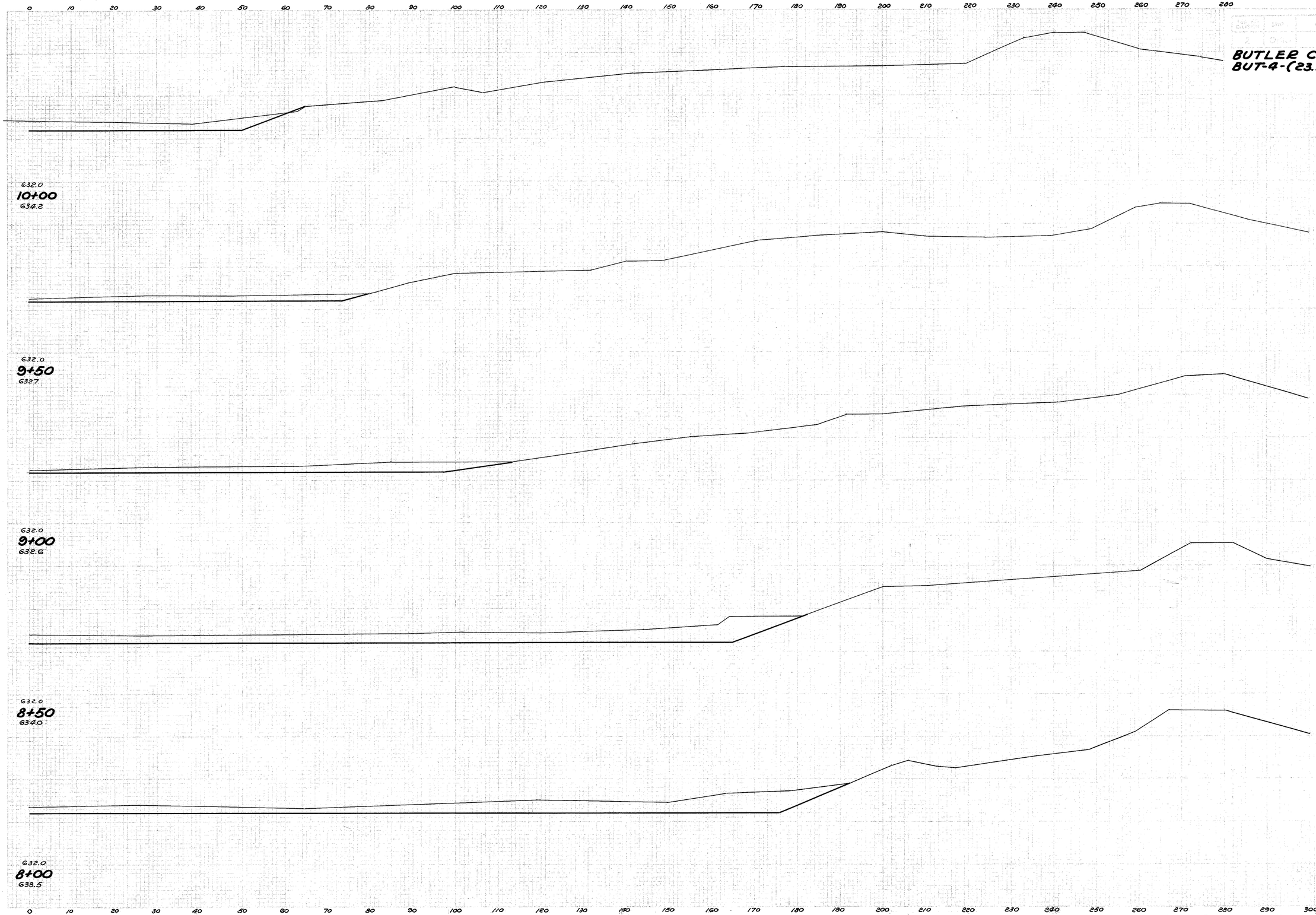


	End Area Cut	Cu. Yd. Cut
10+00		
	700	
		1231
9+50		
	630	
		1264
9+00		
	735	
		1693
8+50		
	1093	
		2540
8+00		
	1650	
		3623
7+50	2263	

CHANNEL SECTIONS – STA. 8+00 to STA. 10+00 Lt.

122
136

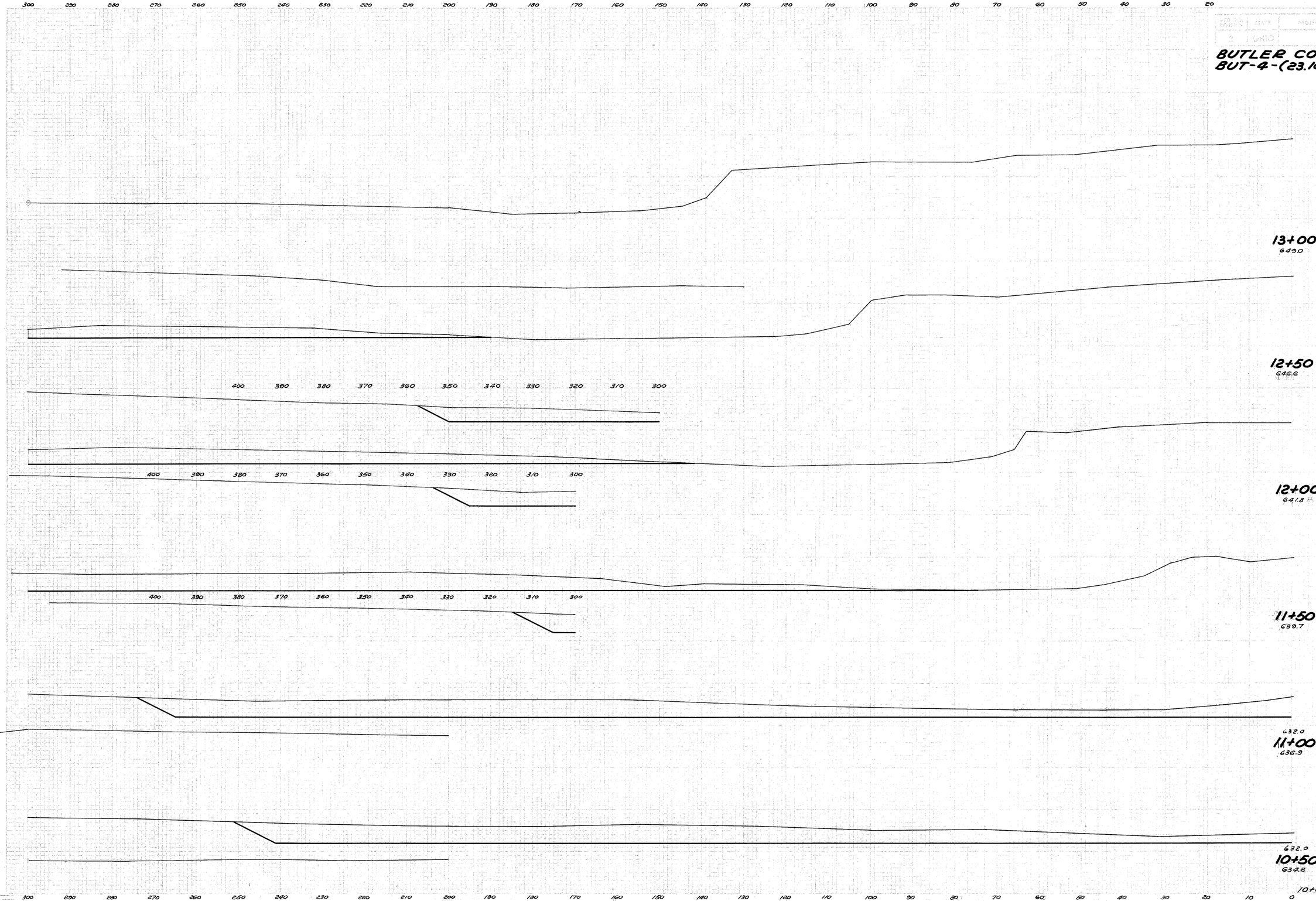
BUTLER COUNTY
BUT-4-(23.10-23.22)



End Area Cut	Cu. Yd. Cut
118	
	202
100	
	255
175	
	593
465	
	856
460	
	440
15	

CHANNEL SECTIONS — STA. 8+00 to STA. 10+00 Rt.

BUTLER COUNTY
BUT-4-(23.10-23.22)

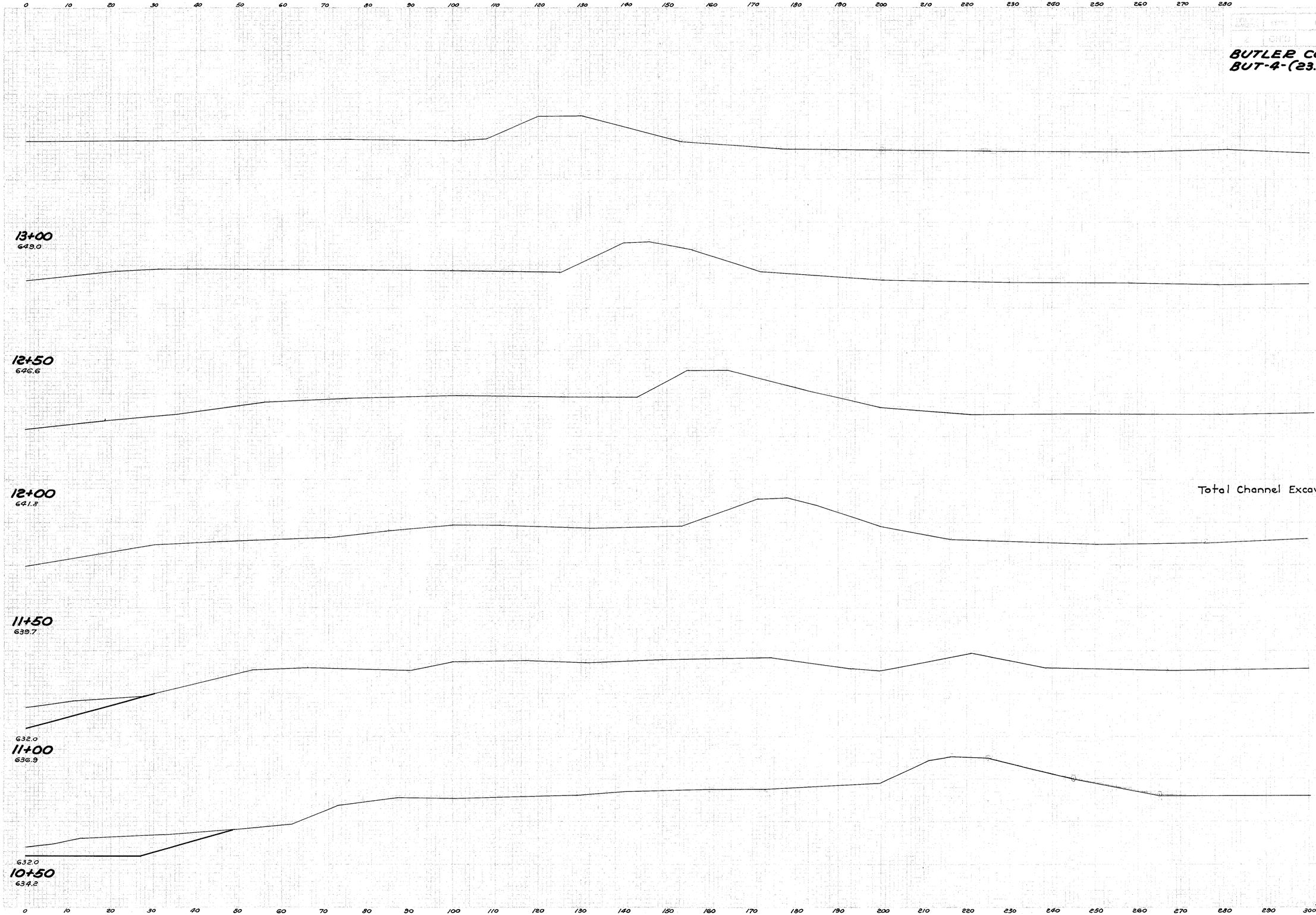


	End Area Cut	Cu.Yd. Cut
13+00	0	
		342
12+50	370	
		815
12+00	510	
		1123
11+50	703	
		1461
11+00	875	
		1597
10+50	850	
		1435
10+00	700	

CHANNEL SECTIONS – STA. 10+50 to STA. 13+00 Lt

124
136

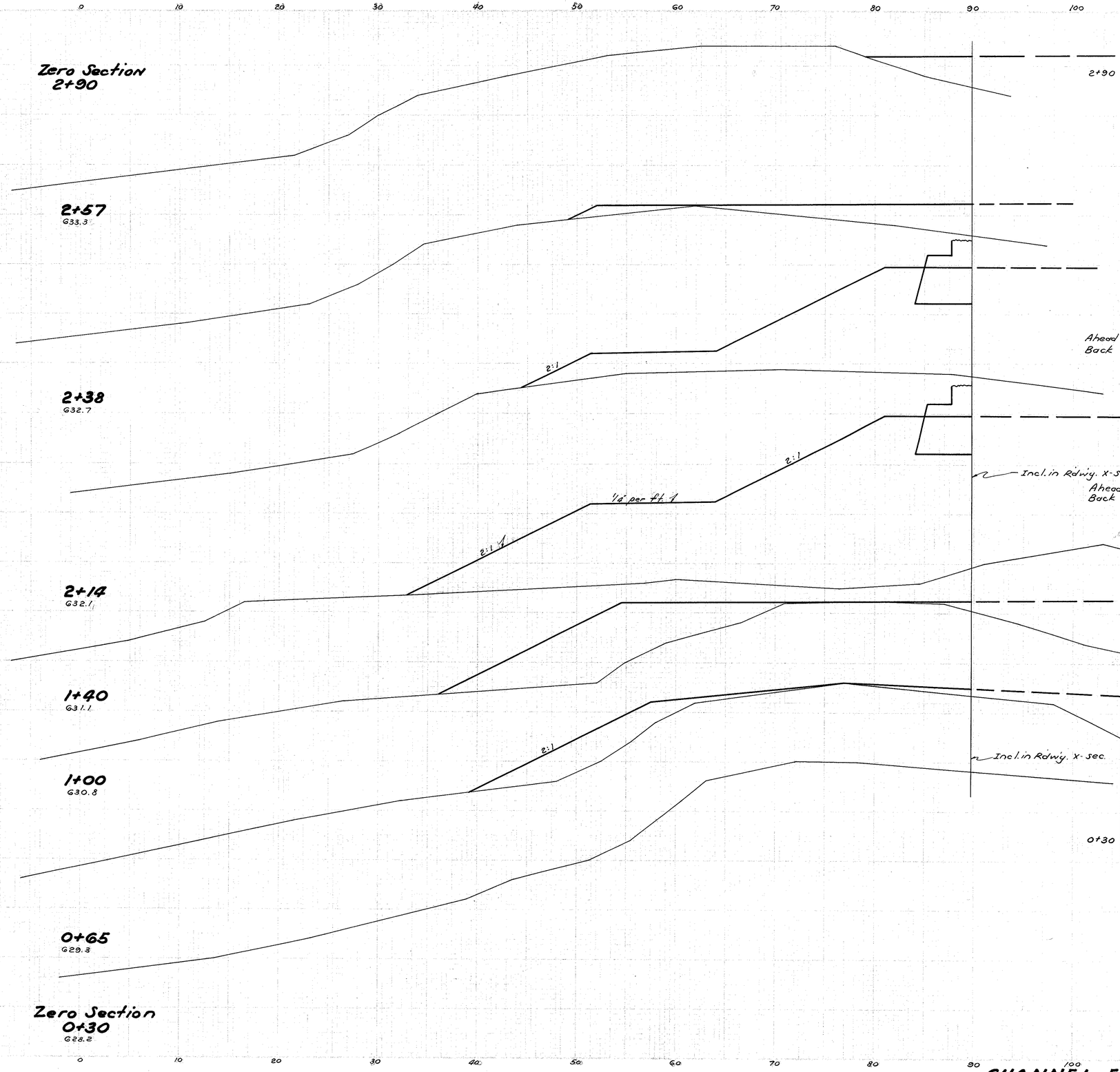
BUTLER COUNTY
BUT-4-(23.10-23.22)



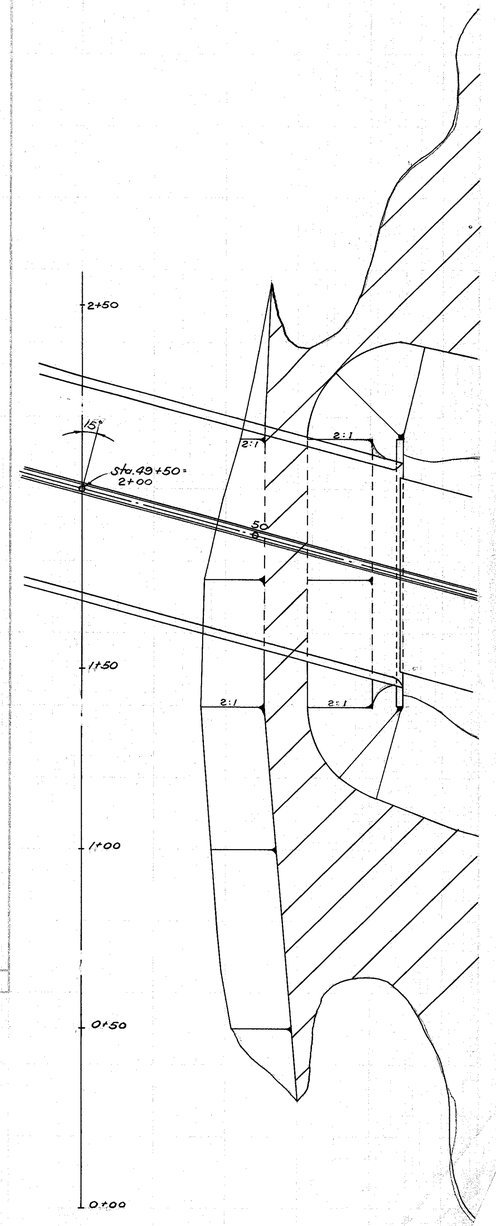
	End Area Cu.Yd. Cut	Cut
Total Channel Excavation		94,343
11+50	0	
		72
	78	
		220
	160	
		257
10+00	118	

CHANNEL SECTIONS — STA. 10+50 to STA. 13+00 Rt.

BUTLER COUNTY
BUT-4-(22.97-23.22)



	Channel Emb. End Area	Channel Emb. Cu. Yd.
2+90	0	
		12
	19	
		25
	52	
		129
Ahead	239	
Back	219	
		1021
Ahead	526	
Back	546	
		499
	128	
		123
	62	
		40
0+30	0	
	Total	1849



CHANNEL EMBANKMENT SECT'S. STA. 49+50 Rt.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

126
136

BUTLER COUNTY
BUT-4-(22.97-23.22)

LOCATION PLAN
BUT. 4 (22.97 - 23.22)
MIDDLETOWN - GERMANTOWN ROAD
BUTLER COUNTY
1954

SCALE: 1" = 100'

I hereby certify that this is a true delineation of a survey made by the Ohio Department of Highways.

Date 3-29-55 Julian S. Clapton
Div. Deputy Director
Registered Surveyor No. 2443
Registered Civil Engr. No. 2159

VERITY BOULEVARD
S.R. 4
EXISTING
P.C.-27+09.77

CURVE DATA
S. R. - 73
P.I. - 29+09.63
Δ - 17° 50' Lt.
D - 4° 30'
R - 1273.24
L - 396.30
T - 199.76
E - 15.39

STA. 29+93.44
PROP. ℄ S.R. 73 =
STA. 0+05.33
EXIST. ℄ S.R. 4

STA. 32+15.50
PROP. ℄ S.R. 73 =
STA. 13+52.85
PROP. ℄ APPR. S.R. 4

3+80.55 ERIE AVE.
20+53.6 WOODBURN AVE.
10+90.67 WILBRAHAM AVE.

CITY OF MIDDLETOWN
CORPORATION LINE
HYDRAULIC CANAL
MIDDLETOWN
℄ EXISTING S.R. 4-J
N. 0° 48' W.
P.T.-31+06.07
PROPOSED APPROACH
AVALON PARK
AVALON DRIVE
C.S.-19+26.18
EQUATION
ST.-20+76.18 =
7+60.88-S.R.4
9+06
15+50
NELBAR ST.
N. 34° 06' W.
CORPL. LINE
℄ PROP. S.R. 73
P.C.-26+67.21
P.C.-27+15.18
S.T.-19+71.18
P.C.-26+67.21
27+98.95 SECTION LINE
SEC. 24

CURVE DATA
PROPOSED APPR.
S.R. 4
P.I. - 17+32.05
Δ - 33° 18' Rt.
D - 6° 00'
Ls - 150.00
Ts - 360.87
Xc - 149.91
Yc - 3.93
Lc - 405.00
Es - 42.81
θs - 4° 30'

LEMON TWP.
SEC. 23 - T. 2 - R. 4

RIVER ROAD
CORPORATION LINE
PROP. APPR. 38+67.2
LEMON TWP.
SEC. 24 - T. 2 - R. 2

FR. SEC. 14
SECTION LINE
RIVER
MADISON TWP.
SEC. 11 - T. 2 - R. 4

CITY OF MIDDLETOWN
N. 0° 48' W. EXIST. S.R. 4
32+35.99
CORPORATION LINE
PROPOSED SERVICE ROAD
EXISTING S.R. 4
30+75.5
P.T.-37+95.54
40+36.85
N. 10° 29' E. PROPOSED ℄ S.R. 4
TOWNSHIP
MIAMI
GREAT
SEC. 11
SEC. 12
SECTION LINE

CURVE DATA
P.I. - 32+33.21
Δ - 11° 17' Rt.
D - 1° 00'
R - 5729.58
T - 566.00
L - 1128.33
E - 27.88

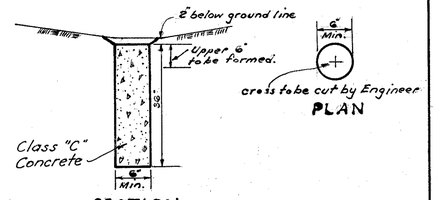
P.C.-26+67.21
SECTION
27+98.85
SEC. 23

LEMON TWP.
SEC. 24 - T. 2 - R. 2

MADISON TWP.
SEC. 12 - T. 2 - R. 4

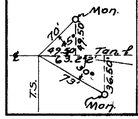
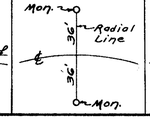
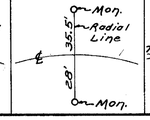
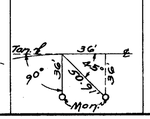
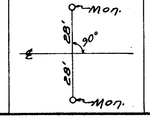
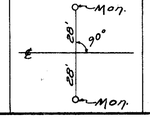
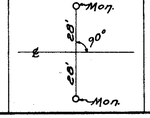
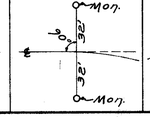
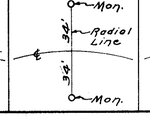
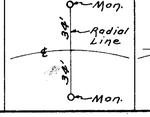
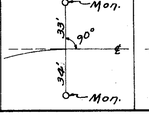
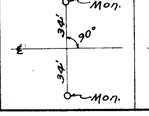
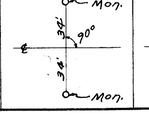
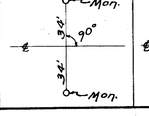
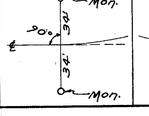
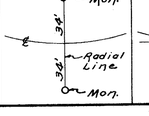
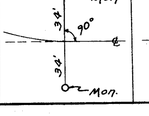
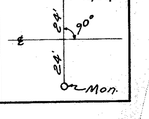
CURVE DATA
P.I. - 67+02.60
Δ - 5° 47' Lt.
D - 0° 30'
R - 11459.16
T - 578.86
L - 1156.66
E - 14.61

P.C.-61+23.74
N. 10° 29' E. PROPOSED ℄ S.R. 4
SECTION LINE
MADISON TWP.
SEC. 11 - T. 2 - R. 4
P.T.-72+80.40
74+33.45
TRENTON-FRANKLIN RD.
76+19.17
END RELOCATED S.R. 4
POAST TOWN
SECTION LINE
N. 4° 42' E. EXISTING S.R. 4
PROP. APPR.-Rt. 70+50.0
EXISTING S.R. 4
MADISON TWP.
SEC. 12 - T. 2 - R. 4



Item I-8, Monuments as per above detail to be placed by Contractor and marked with cross by State Forces at locations indicated below under Centerline Reference Monuments.

CENTERLINE REFERENCE MONUMENTS

T.S.=13+71.18	S.C.=15+21.18	C.S.=19+26.18	S.T.=20+76.18	9+90	13+75	20+00	P.C.=26+67.21	30+00	34+00	P.T.=37+95.54	43+00	51+00	56+00	P.C.=61+23.74	67+00	P.T.=72+80.40	76+95
																	

STA. 13+52.85 To STA. 18+00 S.R. 4 APPROACH

CITY of MIDDLETOWN

HARLAN PARK & FARNSWORTH SUBDIVISION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

128
136

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: RC. date: 3/17/55
revised

8611 PAUL BOWLUS VIRGINIA BOWLUS
8612 REBECCA JANE GROSS
8613 EDGAR STREIFTHAU
8614 MYRTLE M. DECKER
8615 RALPH GILBERT DOROTHY GILBERT
8616 JOHN P. GILBERT
8617 THEODARE C. FOLAND AUDREY L. FOLAND
8618 JOHN P. GILBERT
8619 ROBERT L. MARGERUM BEDENIA C. MARGERUM

ERIE AVE. 3+60.55
WOODBURN AVE. 20+53.60
50'
55'
25'R
EXIST. R/W
constr. limits
N. 0°48' W. EXIST. ℄ S.R. 4
Existing R/W
PROP. ℄ Approach of S.R. 4
PROPOSED R/W
R=904.93'
L=261.72'
℄ PROP. DRIVE 0+86.6
AVALON DR.
Ex. R/W
Middletown Corporation Line
105.70'
60'
Ex. 5' Conc. Walk
Ex. Conc. Curb
Ex. Conc. Curb & Gutter
Ex. 3' Walk
1½ Sty. Brick & Frame
2 Sty. Frame
1½ Sty. Frame
1½ Sty. Brick
Conc. Block Filling Sta.
Gas Tanks
Blacktop
2 Sty. Frame
1 Sty. Hdw. Store
Conc.
1 Sty. Frame
1 Sty. Office Bldg.
Brick Post
Sign
Ex. 10' Gravel Dr.
Ex. 8' Gravel Dr.
Ex. 6' Gravel Dr.
Ex. 6' Gravel Dr.
Ex. 5' Conc. Walk
Ex. Conc. Curb & Gutter
Ex. Conc. Curb & Gutter
Ex. 5' Conc. Walk

17+36.80 60.30'
17+94 53.40'
18+51.20 41.30'
18+81.30 37'
19+08.50 33.30'
19+08.90 37'
19+09.60 45.90'
19+26.18 37'
19+26.18 50'
19+67.50 37.80'
19+67.30 30.10'
20+28.90 53.90'
20+80.00 41'
20+28.90 28.80'
7+69.90 39'
7+83.30 63.57'
7+76.10 34.50'
7+83.80 28.87'
8+25.30 34.50'
8+25.30 36'
8+25.30 23.97'
8+86.30 50'
8+86.30 45'
8+86.30 36'
8+86.30 25.07'
8+87.20 35'
8+96.20 36'
9+05 36'
9+11.80 30.89'
9+43.60 39.90'
9+46.20 30.89'
9+47.30 36'
9+47.30 29.17'
9+60 36'
9+75 30'
8+80 100.10'
20+76.18 30'
19+26.18 50'
C.S. = 19+26.18
EQUATION: Prop. S.R.4 Approx. 20+76.18 = Ex. S.R.4 7+60.88

CURVE DATA
Δ = 33°-18' Rt.
D = 6°-00'
S = 150
T = 360.87
Xc = 149.91
Yc = 3.93
Θs = 4°-30'
Lc = 405.00
Es = 42.81

12
Dedicated to - CITY OF MIDDLETOWN
AVALON PARK
LEMON TOWNSHIP
SEC. 23-T2-R4

LILLIAN E. HUBER

STA. 18+00 TO STA. 20+76.18 S.R. 4 APPROACH

CITY OF MIDDLETOWN

HARLAN PARK & FARNSWORTH SUBDIVISION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: AC. date: 3/7/55
revised

129
136

8619 Robert L. Margerum, Bedenia F. Margerum
8620 Harold W. Whitesell, Thelma Whitesell
8621 Caleb Ledford, Daisy Ledford
8622
8623 Jack Cohen, Letta Cohen
8624 Frisch Middletown Inc. (Lessee)
8625 Thomas Abell, Lillie Abell
Middletown Hydraulic Company
Aeronca Aircraft Corporation
8824

60' R/W
Wilbraham Rd. +90.67
10' Conc. Dr. +84.3
5' Conc. Walk
1-Sty Grocery
Conc.
Blacktop
1-Sty Frame
8" Approaches 6"x12" Conc. Base Blacktop Parking Area
Const. limits
8" Tap Dr. +88
8" Tap Dr. +83.70
Frisch Drive-in
8" Tap Dr. +45.3
2-Sty Frame
Prop. Drive +1.7
Canal
Prop. Temp. R/W
Temp. Constn Limit
Temporary Runaround
Hydraulic
8" Conc. Dr. +89.40
6" M.A.
Prop. 36' R/W
Middletown Corporation Line
Ex. R/W
11 & Ex. SR 4
12
13 N 0°48'W
14
15
16
Ex. Bit. Widening
Conc. Parking Area
1-Sty Rest.
Middletown
Gravel Area
Gravel Parking
Dr-In Ice Cream conc. Block
Parking Lot
6" V.C.P.
8" Conc. Dr. +55
8" Conc. Dr. +60
8" Conc. Dr. +88
8" Conc. Dr. +55.3
Prop. Drive +33.4
50' R/W

Lillian E. Huber — 12
Walter L. Kuiken, Alma C. Kuiken — 26 — 104
Shirley C. Ireland, Oleta Ireland — 28 — 105
Thomas Abell, Lillie Abell — 29 — 106
Coodie C. Collinsworth, Ina W. Collinsworth — 30 — 107
Aeronca Aircraft Corporation — 32 — 108
Middletown Hydraulic Company — 33
Sam Blumberg, Anne C. Blumberg — 35

AVALON SUBDIVISION

LEMON TOWNSHIP
SEC. 23 - T2 - R4

Sta 10+00 to Sta 16+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: H.C. date: 3/17/55
revised

130
136

CITY OF MIDDLETOWN

8824 AERONCA AIRCRAFT CORPORATION 8832

34 34 SL

Bit. Dr. +32.50

Bit. Parking Area

17+00 60'

17+35 50'

Bituminous Drive

const. limits

Conc. Walk

5' Conc. Walk

COUNTY OF BUTLER

40

Abandoned Dr. +60

19+31.07 30.79'

19+31.07 43'

Conc. Encasement Water Service System

Sew. Sewer Pump Pitt

M.H.

19+31.07 36'

19+31.07 30.78'

8831 8830 42 8829 8828

ALLEN CARTER BACK

1-Sty. Brick

19+71.07 30.85'

19+71.07 45'

19+71.07 36'

const.

limits

19+71.07 30.83'

Steel Cable

Wood Posts

Gravel Parking Area

Conc. Block Carters Bottling Co.

42 SL

6" Conc. curb

Conc. Walk

22+01.07 45

22+01.07 36'

22+01.07 31.23'

6" M.P.

Ex. R/W

Middletown Corporation Liner

Post & Chain Fence

30.23'

16 17 N0°48'W 18 19 20 ℄ Ex. & Prop. S.R. 4 ℄ 21 22

60'

Bit. Widening

29.76'

15+55 36'

15+65 40'

15+65.20 40' 32.81'

Sect. A 1.96% 16+21.78 37.18'

16+20.20 29.73'

Conc. Block Co.

Ex. R/W

Conc. Walk

17+38.07 31.01'

111.51' Bituminous Area

17+50.77 29.37'

17+50.77 36'

17+50.77 50'

19+00.77 29.43'

19+00.77 36'

18+00.77 50'

19+00.77 43'

19+00.77 36'

19+40.77 29.20'

19+40.77 36'

19+40.77 40'

20+14.86 29.09'

20+14.86 36'

20+14.86 45'

20+62.33 29'

20+62.33 36'

20+62.33 45'

22+03.33 29.78'

22+03.33 36'

22+03.33 40'

15+18.87 45'

15+24.63 55'

15+55 45'

16+24.33 30'

Ex. Conc. Parking Area

1-sty. Rest.

Conc. Block

Conc.

2-Sty. Conc. Block

1-Sty Frame

Cinder Dr. +40

9' Gravel Dr. +36

6" conc. & Paving Mat. 8' Cinder Dr. +12

8.5' Conc. Dr.

8.2' Conc. Dr.

8.4' Conc. Dr.

2.5' Conc.

8' Gr. Dr. +57

11' Blacktop Dr. +92

Gravel Parking Area

AERONCA AIRCRAFT CORPORATION

35 SL 35 S 36 S-1 36 S-2 36 SL 37 S 37 SL 38 SL 39 SL 41 SL 43 SL 44 SL

SAM BLUMBERG
ANNE C. BLUMBERG

BEATHA CAIST

HELEN ARMBRUSTER

MARGARET LEAP KEAGY

HOWARD LEAP
LILLIAN LEAP

WILLIAM A. COX

HOWARD LEAP
LILLIAN LEAP

35 36 37 38 39 41 43 44

LEMON TOWNSHIP
SEC. 23-T2-R4

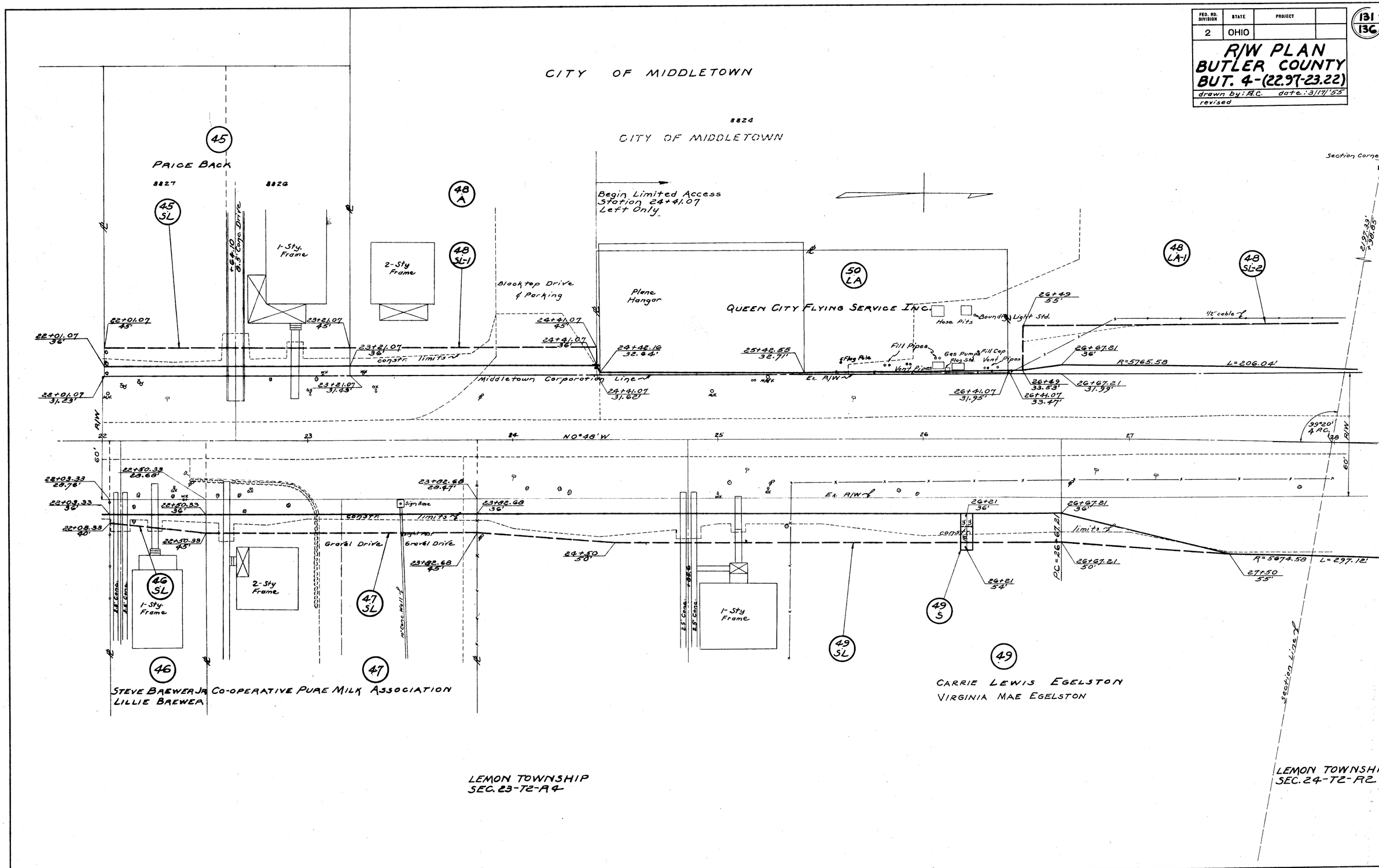
Sta 16+00 to Sta 22+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

131
136

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: A.C. date: 3/17/'55
revised



Sta 22+00 to Sta 28+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: A.C. date: 3/17/'55

revised

132
136

CURVE DATA
Δ = 11°-17' Rt.
D = 1°-00'
R = 5729.58
T = 566.00
L = 1128.33
Ex = 27.89
PC = 26+67.21
PI = 32+33.21
PT = 37+95.54

CITY OF MIDDLETOWN

CITY OF MIDDLETOWN

8824

CITY OF MIDDLETOWN

8822

48 SL-2

48 LA-1

51 SL-1

51

51 SL-2

51 LA

48 LA-2

48 B

48 SL-3

49 LA

49

30+75.50 73'

A=5804.58 L=727.31'

constr. limits

A=5765.58 L=671.04'

A=5765.58 L=206.04'

28+71.96 36'

30+52.32 48.58'

31+28.69 36'

32+35.99 Field Markers

30+75.50

30+93.88 12.22'

30+75.50 12.84'

34+69.33 70'

A=5659.58 L=322.22'

Middletown Corporation

9-Strand Post & Cable Fence

Ex. R/W

Ex. S.R. 4

Ex. Atwf

A=3674.58 L=297.12'

30+50 35'

30+75.50 70'

30+75.50 140'

01°41.19

R=5659.58 L=179.95'

36+56.66 70'

Billboard

℄ Approach Road

constr. limits

A=5589.58 L=410.73'

34+96.52 140'

Conc. Pump House

E-3½ Fr.

Barn

Begin Limited Access Station 30+75.50 Right Only

CURVE DATA
Δ = 19°-27' Rt.
R = 500'
T = 85.69
L = 169.73'

PC = 34+69.35

PT = 37+39.08

ROAD

38+08.52 110.22

38+46.53 138.97'

37+93.41 75'

38+42 142.49'

38+82 150.51'

38+82 32.72'

1-Sty. Frame

Levee

38+82.98 81.53'

38+82 102.65'

38+42 65'

37+95.54 36'

Conc. Light Tower

38+97 55'

38+02 65'

39+78.78 55'

Light Tower

Ex. B of Dr.

Ex. 8" C.I. Culv. Pipe

Ex. 12' Blk. Top Dr.

38+61.20

CITY OF MIDDLETOWN

8823

Allowable Future Access Point

For Public Road Only

Billboard

Line

60'

LEMON TOWNSHIP
SEC. 24-T2-R2

41+00 80'

40+11.42 31.53'

40+36.95

N10°29'E

40+71.87 43.40'

40+85.95 70'

42+00 90'

CHARLES HADLEY BEARD

CARRIE LEWIS EGELSTON
VIRGINIA MAE EGELSTON

LEMON TOWNSHIP
SEC. 24-T2-R2

Sta 28+00 to Sta 43+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: A.C. date: 3/17/55
revised

133
136

CITY OF MIDDLETOWN

CITY OF MIDDLETOWN

Prof. Line

MIDDLETOWN CORPORATION LINE

44+25
259.34'

45+85
290'

CHARLES HADLEY BEARD

51
X

51
LA

44+00
80'

PROP. 80' R/W

47+70
80'

constr. limits

Township Line 2

RIVER

Frac. Sec. 14-T2-R4

(Sec. 11)
(Frac. Sec. 14)

MADISON TOWNSHIP
SEC. 11-T2-R4

52
SL-1

50+25
250'

51+75
230'

MARY C. MOORMAN

49+48
95'

51+00
95'

GRAVEL PIT

Levee

52+50
89.87'

POINT OF PERMISSIBLE ACCESS TO UNDERPASS ONLY STA. 53+80

52
LA

+95.30
Gr. Drive

POINT OF ACCESS

constr. limits

El. 36" Storm Sewer Pipe

43 44 45 46 47 48 49 50 51 52 53 54 N10°29'E 55 56 57 58

PROPOSED E S.R. 4

constr. limits

PROP. 90' R/W

44+50
90'

48+12
90'

49+94
90'

PROP. 90' R/W

52+00
90'

52+75
97.66'

(Sec. 11)
(Sec. 12)

POINT OF PERMISSIBLE ACCESS TO UNDERPASS ONLY STA. 53+50

POINT OF ACCESS

+95.30
Gr. Drive

51
Y

CHARLES HADLEY BEARD

MIAMI

50+50
200'

52+25
200'

16' Gravel Drive

Levee

52
SL-2

MARY C. MOORMAN

LEMON TOWNSHIP
SEC. 24-T2-R2

GREAT

MADISON TOWNSHIP
SEC. 12-T2-R4

46+70
506'

Sta 43+00 to Sta 58+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: R.S. date: 3/17/55
revised

134
136

MADISON TWP.

GREAT MIAMI RIVER

Construction Limit

TOWNSHIP LINE

CORPORATION LINE

47+70
80'

48+12
90'

45+85
290'

44+60
500'

44+25
259.34'

44+00
80'

43+75
645'

43+05
821'

PROPOSED 80' R/W

PROPOSED 90' R/W

51
X

48
X

51
Y

51
LA

48

CITY OF MIDDLETOWN

CORPORATION LINE

CITY OF MIDDLETOWN

46+70
506'

44+50
90'

CHARLES HADLEY BEARD

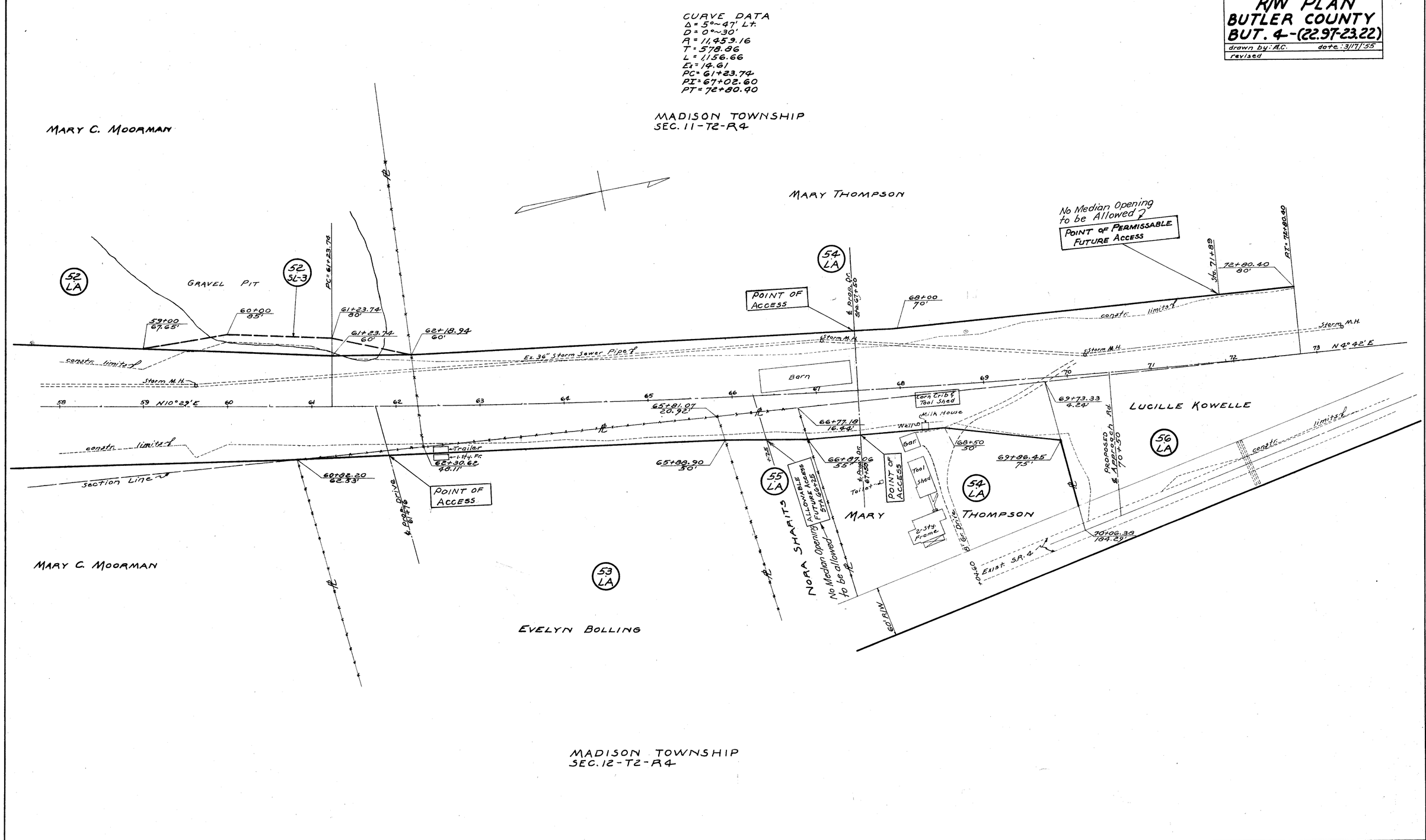
LEMON TOWNSHIP
FRAC. SEC. 24 - T. 2 - R. 2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

135
136

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: A.C. date: 3/17/'55
revised



Sta 58+00 to Sta 73+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

R/W PLAN
BUTLER COUNTY
BUT. 4-(22.97-23.22)

drawn by: A.C. date: 3/17/55
revised

136
136

MIAMI MOOR SUBDIVISION

MADISON TOWNSHIP
SEC. 11-T2-R4

54 LA

MARY THOMPSON

No Median Opening to be allowed

POINT OF FUTURE PERMISSIBLE ACCESS

73+39

60'

Exis. R/W

EXIST. & PROP. FRANKLIN-TRENTON ROAD

Conc. Mon.

LOT 10 GARRIETT STACY
LOT 11 ALICE STACY

58

Drive-in Rest.

LOT 9 WILMA DICKEY

LOT 8 LOUELLA WIATLEY

LOT 7 E. R. EARLY

60

61

Exist. 10" Sanitary Sewer

1-Story Frame

1-Story Frame

Edge of Pavement

Conc. Pump Pit

Line Leader

Exis. 40' R/W

constr. limits

74+14.16
80'

74+49.41
65'

74+80
40'

℄ Ex. R/W

74+55.64
40'

Ex. 36" Storm Sewer Pipe

4' Sidewalk

73+55.80
10.07'

74+27.38
25.18'

74+33.45

3 M.B.

Lot Line

M.B.

Sign Post

Sign Post

76+53.37 (BUT. 4-22.97-23.22)
82+50 (S.H. 186-SEC'D (PT.))

N 4° 42' E

Prop ℄ S.R. 4

73

74

75

76

77

78

79

Section Line

73+59.47

2-Sty Frame

2-Sty Frame

66'

4' Sidewalk

Fed Aid Marker

Exis. 40' R/W

LUCILLE KOWELLE

56 LA

Exis. R/W

constr. limits

℄ Ex. S.R. 4

10'

10'

Exis. R/W

Gas Island

Grocery Store

74+45.70
50.79'

Ex. R/W

Garage

MARY GRAVES
LOT 9

Exist. 20' Alley

CHARLES J. PATE SR.
VIOLA PATE
LOT 19

57

DORIS E. BANKER
LOT 10

59

WEST-LIBERTY SUBDIVISION

Exis. 60' R/W

MADISON TOWNSHIP
SEC. 12-T2-R4

Sta 73+00 to Sta 79+00

SOIL PROFILE

BUTLER COUNTY
BUT - 4 - 22.98

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

1/2

NOTE: THE INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS SECURED FOR THE USE OF THE STATE OF OHIO AND IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING THE CONSTRUCTION OF THE PROJECT.

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 22 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	69	16	5	8	2	22	1	—	3
COARSE & FINE SAND	—	A-3a	0	53	29	13	5	NON-PLASTIC		7	1
SANDY SILT	A-4(2)	A-4a	7	25	23	32	13	26	6	12	9
SILT	A-4(8)	A-4b	0	8	13	61	18	29	8	14	3
SILT AND CLAY	A-6(6)	A-6a	9	15	18	39	19	29	12	15	3
CLAY	A-7-6(13)	A-7-6a	0	4	14	57	25	44	20	30	1
CINDERS & STACK DUST	CLASSIFIED BY VISUAL INSPECTION										2

EXISTING PAVEMENT

TOP SOIL - TS = X' = APPROX. DEPTH

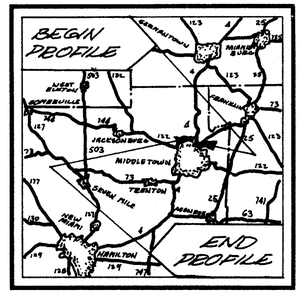
AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.

AUGER BORING - PLAN VIEW

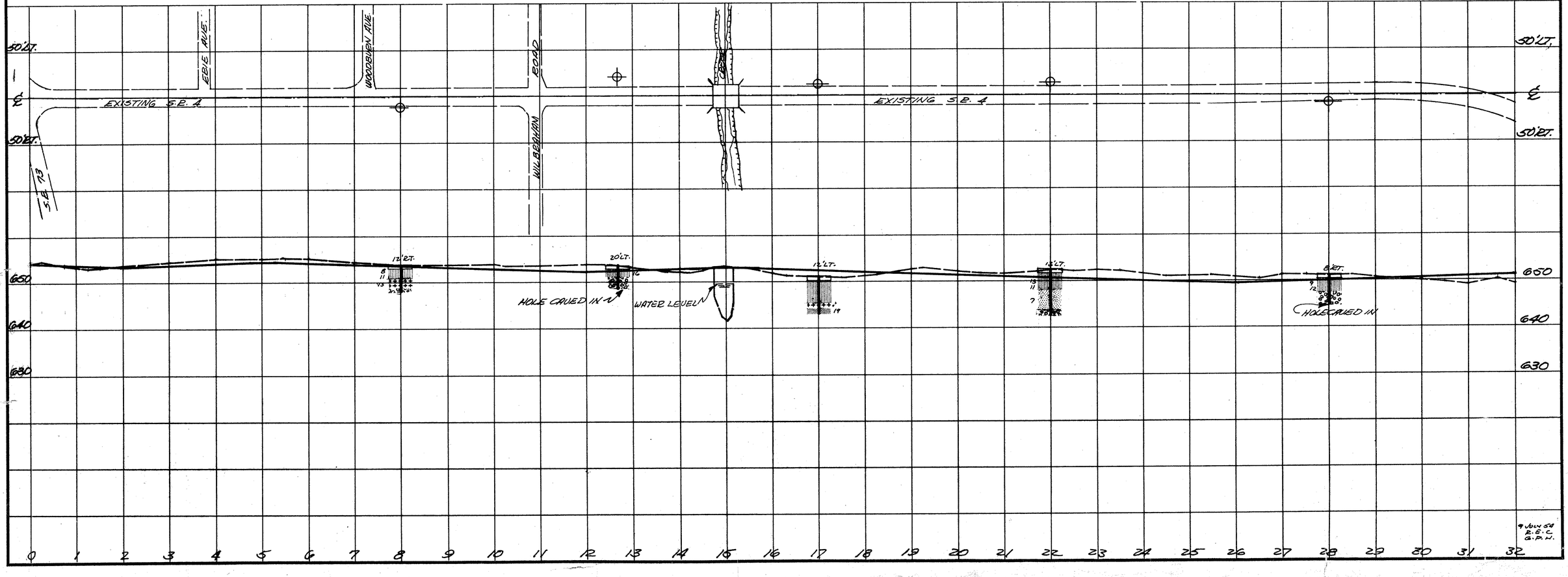
FREE WATER

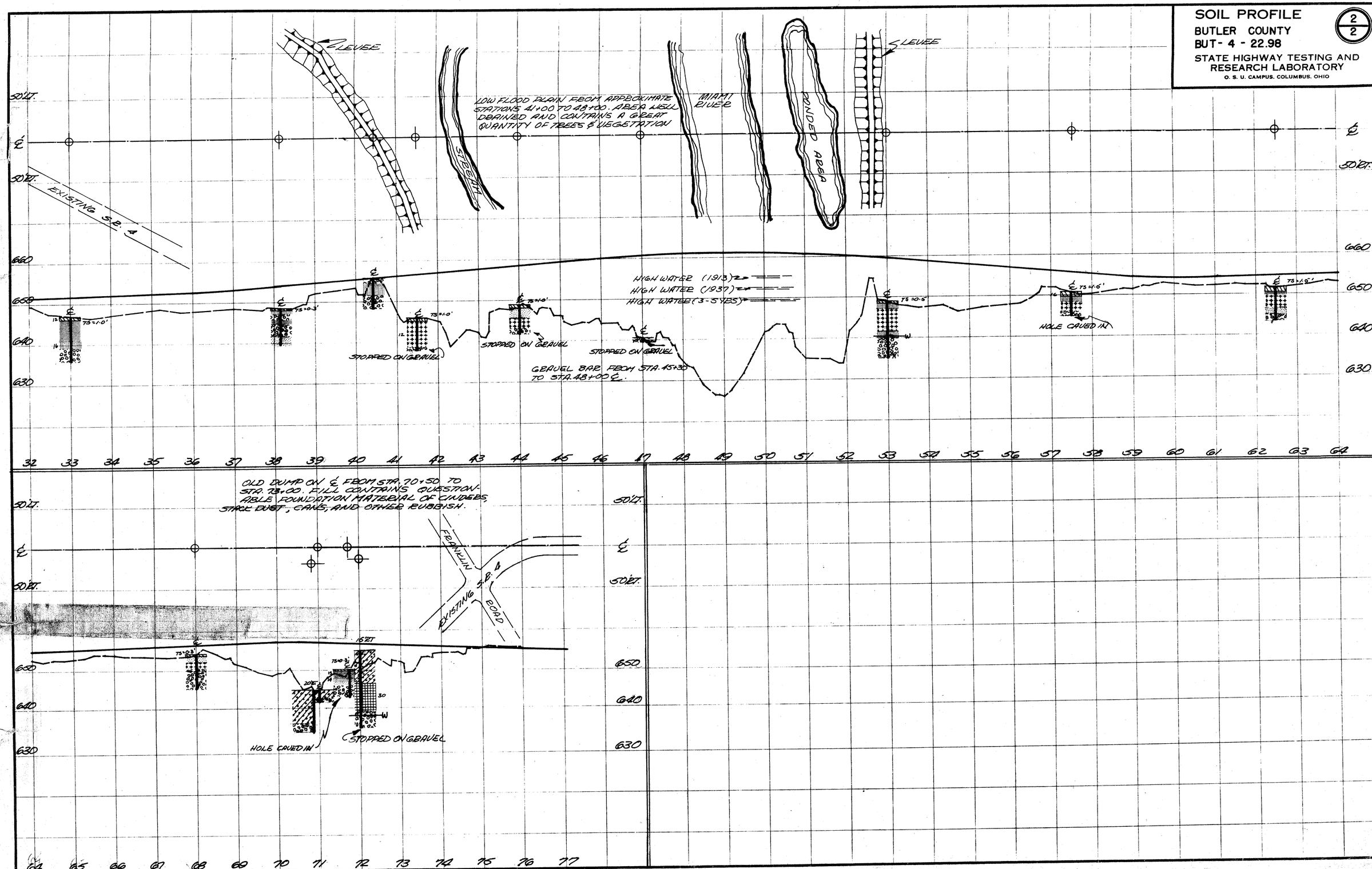
NOTE: FIGURES BESIDE BORINGS INDICATE MOISTURE CONTENT IN PERCENT

SAMPLES TESTED
LAB. NO'S SO. 839-860 INCL.
MOISTURE DENSITY SAMPLE
LAB. NO. SO. - 860



LOCATION MAP




SOIL PROFILE
BUTLER COUNTY
BUT- 4 - 22.98
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO
2/2
LEVEE
STREAM
LOW FLOOD PLAIN FROM APPROXIMATE STATIONS 41+00 TO 48+00. AREA WELL DRAINED AND CONTAINS A GREAT QUANTITY OF TREES & VEGETATION
MIAMI RIVER
PONDED AREA
LEVEE
EXISTING S.R. 4
HIGH WATER (1913)
HIGH WATER (1937)
HIGH WATER (3-5 YRS)
STOPPED ON GRAVEL
STOPPED ON GRAVEL
STOPPED ON GRAVEL
GRAVEL BAR FROM STA. 45+30 TO STA. 48+00 ℄.
HOLE CAVED IN
OLD DUMP ON ℄ FROM STA. 70+50 TO STA. 73+00. FILL CONTAINS QUESTIONABLE FOUNDATION MATERIAL OF CINDERS, STACK DUST, CANS, AND OTHER RUBBISH.
FRANKLIN
EXISTING S.R. 4
ROAD
HOLE CAVED IN
STOPPED ON GRAVEL
50' LT.
50' RT.
660
650
640
630
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
64 65 66 67 68 69 70 71 72 73 74 75 76 77