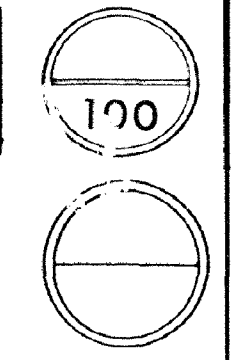


F.N.W.A. REGION	STATE	PROJECT
5	OHIO	STATE

ASHTABULA COUNTY  
BROAD ST. SR. 7-31.43



# STATE OF OHIO DEPARTMENT OF TRANSPORTATION ATB-SR. 7-31.43 BROAD STREET GRADE SEPARATION WITH NORFOLK & WESTERN RAIL CITY OF CONNEAUT ASHTABULA COUNTY

## COMPANY

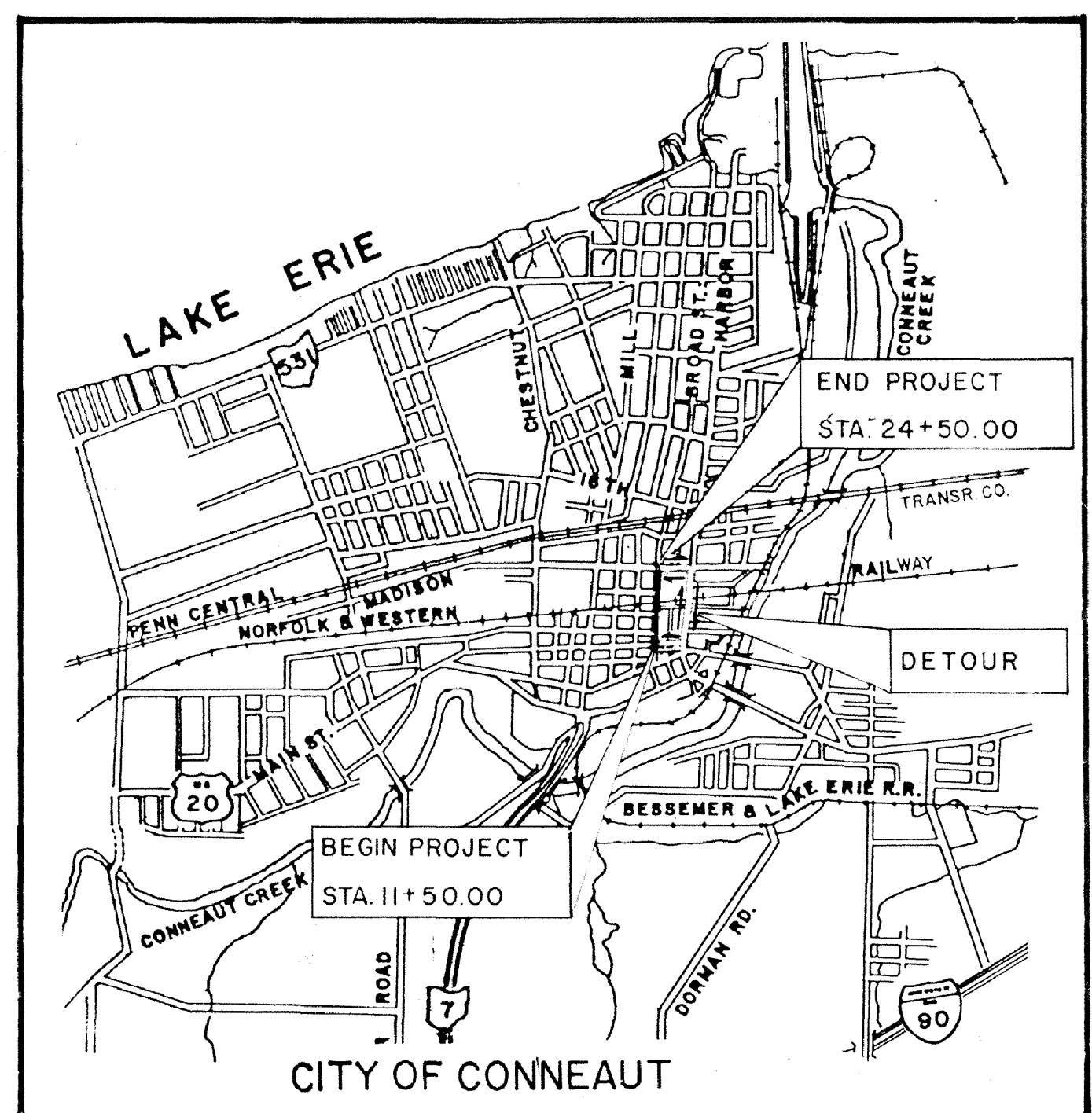
48 HOURS  
BEFORE YOU DIG  
*Call*  
OHIO UTILITIES  
PROTECTION SERVICE  
800-362-2764 TOLL FREE

### CONVENTIONAL SIGNS

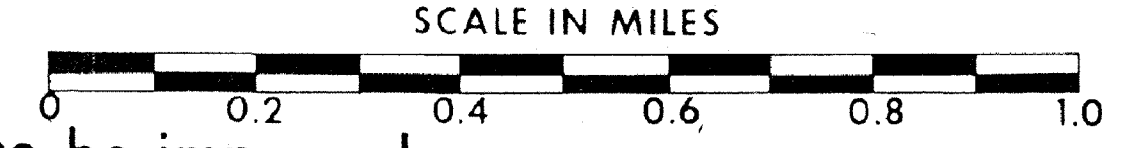
County Line	-----	Limited Access (only)	-----	LA
Township Line	-----	Right of Way (only)	-----	R/W
Section Line	-----	Limited Access & Right of Way	-----	LA&RW
Corporation Line	-----	Existing Right of Way	-----	R/W
Fence Line (existing)	-----	Property Line (in existing fence)	-----	P
Center Line	-----	Railroad	-----	R
Tree Stump (to be removed)	-----	Guardrail (existing)	-----	G
Utility Pole: Telephone	-----	Road Sign (existing)	-----	S
Power	-----	Sign (existing)	-----	S
Light	-----	Storm Sewer (existing)	-----	12" STM. S.
Gas Line	-----	Storm Sewer (proposed)	-----	15" STM. S.
Water Line (existing)	-----	Sanitary Sewer (existing)	-----	6" SAN. S.
Manhole (existing)	-----	Sanitary Sewer (proposed)	-----	8" SAN. S.
Inlet (existing)	-----			
Catch Basin (existing)	-----			

### INDEX OF SHEETS

TITLE SHEET	1	JEFFERSON CUL-DE-SAC	38-39	LIGHTING PLANS	69-73
SCHEMATIC PLAN AND DETOUR MAP	2	ADAMS CUL-DE-SAC	40-41	NORFOLK & WESTERN RAILWAY	
SCHEMATIC GEOMETRIC	3	DRIVEWAY PLAN & PROFILE	42-48	RUNAROUND	74-78
TYPICAL SECTIONS	4-9	GRADING AND PAVING PLANS	49-51	STRUCTURES OVER 20' SPAN	79-88
GENERAL NOTES & SUB SUMMARIES	10-16	INTERSECTION DETAILS	52-53	RIGHT OF WAY PLANS	89-97
GENERAL SUMMARY	17-21	DRAINAGE PROFILES	54-57	TRAFFIC MAINTENANCE PLANS	98-100
PLAN & PROFILE BROAD ST.	22-24	TRAFFIC CONTROL	58-59	SUBSOIL INVESTIGATION	
JUNCTION CHAMBER DETAILS & PLAN & PROFILE QUANTITIES	25	SANITARY	60-61	OUTFALL SEWER PLANS	
PLAN & PROFILE QUANTITIES	25-26	WATER WORK	62-68		
CROSS SECTIONS BROAD ST.	27-37				



LOCATION MAP



Portion to be improved	-----
State & Federal Routes	-----
Other Roads	-----
Detour	-----

### LINE DATA

BEGIN PROJECT	STA. 11+50.00
END PROJECT	STA. 24+50.00
(NO ADDITION OR DEDUCTION)	
LENGTH OF PROJECT	1300 L.F. OR 0.246 MI.
APPROACHES	50 L.F.
TOTAL LENGTH OF WORK	1350 L.F. OR 0.255 MI.

Plan Prepared By  
**WOODRUFF, INC.**  
CONSULTING ENGINEER CLEVELAND, OHIO.  
  
GEORGE C. FENKER, P.E.

### SCALE

Plan	-----
Profile: Horizontal	0 20 40
Vertical	0 5 10
Cross Section: Horizontal	0 5 10
Vertical	0 5 10

### SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

B.P.1 6-1-65	F-6 5-1-76	TC-81-10 4-10-79
B.P.2 12-6-76	GR-2C 12-6-76	TC-83-10 4-13-79
B.P.3 12-6-76	I-1 6-1-65	TC-83-20 4-17-79
B.P.4 12-6-76	MC-1 6-13-69	TC-84-20 4-17-79
B.P.5 4-16-79	MC-3 6-1-73	TC-85-20 4-18-79
B.P.6 6-1-65	MC-4 7-26-73	HL-1 9-6-73
B.P.7 12-6-76	MC-5 6-12-75	HL-2 7-27-73
B.P.8 5-20-70	MC-11 8-1-78	HL-3 7-27-73
B.P.12 8-11-75	MH-1 6-12-75	HL-8 1-21-76
C.B.3 5-1-79	MH-3 6-12-75	HL-9 3-22-77
C.B.3A 5-1-79	TC-41-20 3-26-79	HL-10 6-1-79
F-1 5-1-76	TC-42-20 3-26-79	HL-11 6-1-79
F-4 5-1-76	TC-71-10 4-9-79	HL-15 1-21-76
		HL-16 4-6-73

### SUPPLEMENTAL SPECIFICATIONS

809 1-1-71	1002 1-1-69
810 1-1-71	
814 1-1-69	
840 12-13-73	
842 8-29-74	
843 10-23-75	
844 11-8-74	
857 12-19-78	
858 12-19-78	
859 12-19-78	
927 1-1-71	
957 12-19-78	
959 12-19-78	

### DESIGN DESIGNATIONS

DIRECTIONAL DIST. = 60%  
DESIGN SPEED = 30 M.P.H.

BROAD ST.

ADT. 1980 = 11,151 V.P.D.	N & W RY
ADT. 2000 = 22,189 V.P.H.	
DHV. 2000 = 1,597 V.P.H.	1980: 24 TRAINS PER DAY
TRUCK TRAFFIC = 6%	2000: 44 TRAINS PER DAY

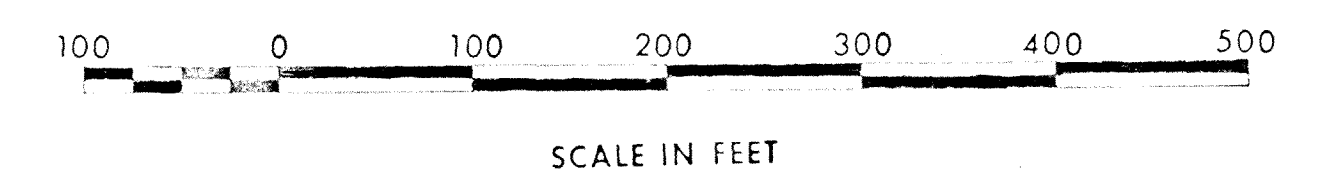
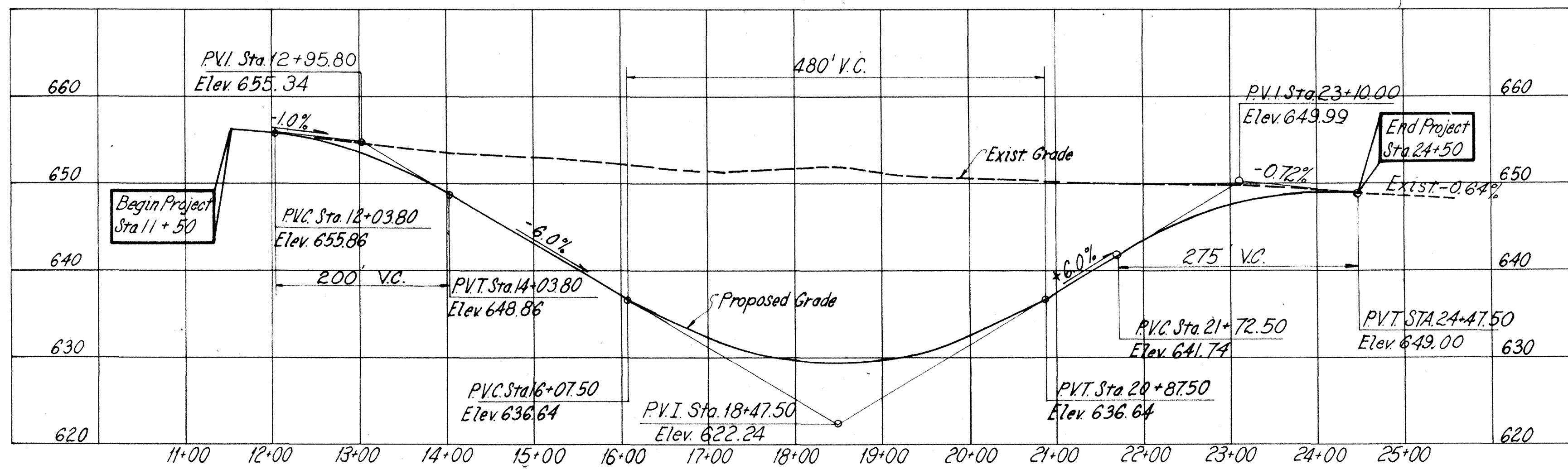
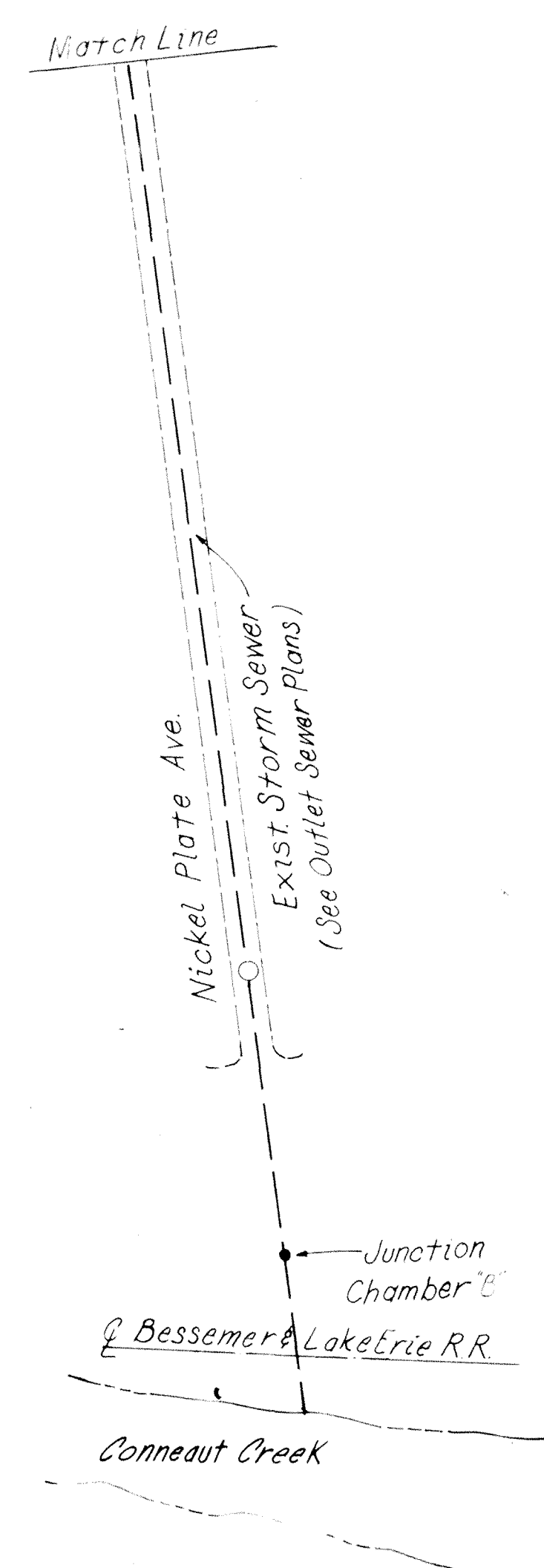
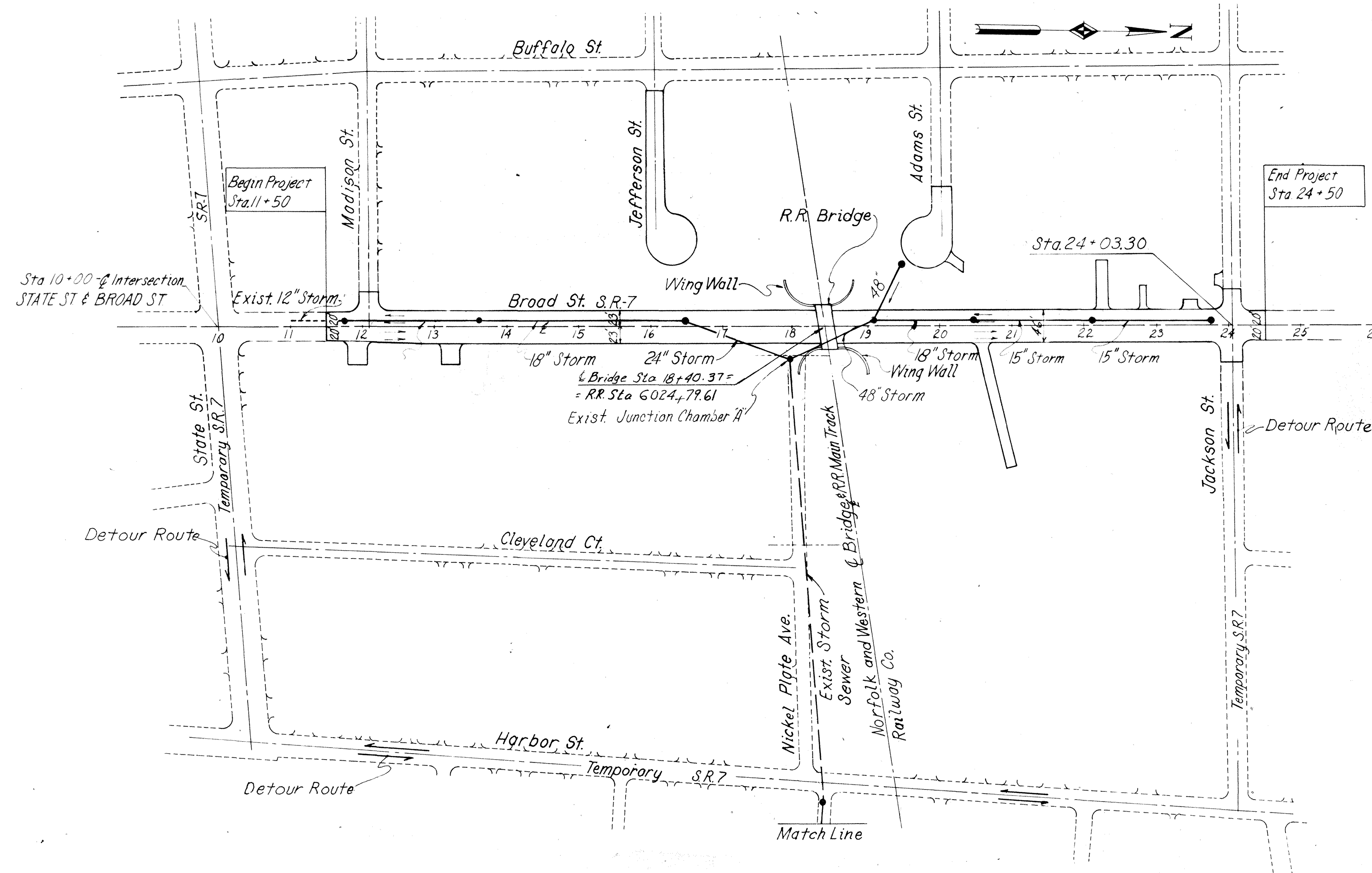
Project: ATB - S.R.7 - 31.43  
Date of Letting: 19 \_\_\_\_\_ Contract No. \_\_\_\_\_

SR. 7 - BROAD STREET

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

ASHTABULA COUNTY  
ATB-7-31.43

# SCHEMATIC PLAN



SCALE \_\_\_\_\_  
 MADE \_\_\_\_\_ DATE \_\_\_\_\_  
 TRCD \_\_\_\_\_ DATE \_\_\_\_\_  
 C.D. \_\_\_\_\_ DATE \_\_\_\_\_

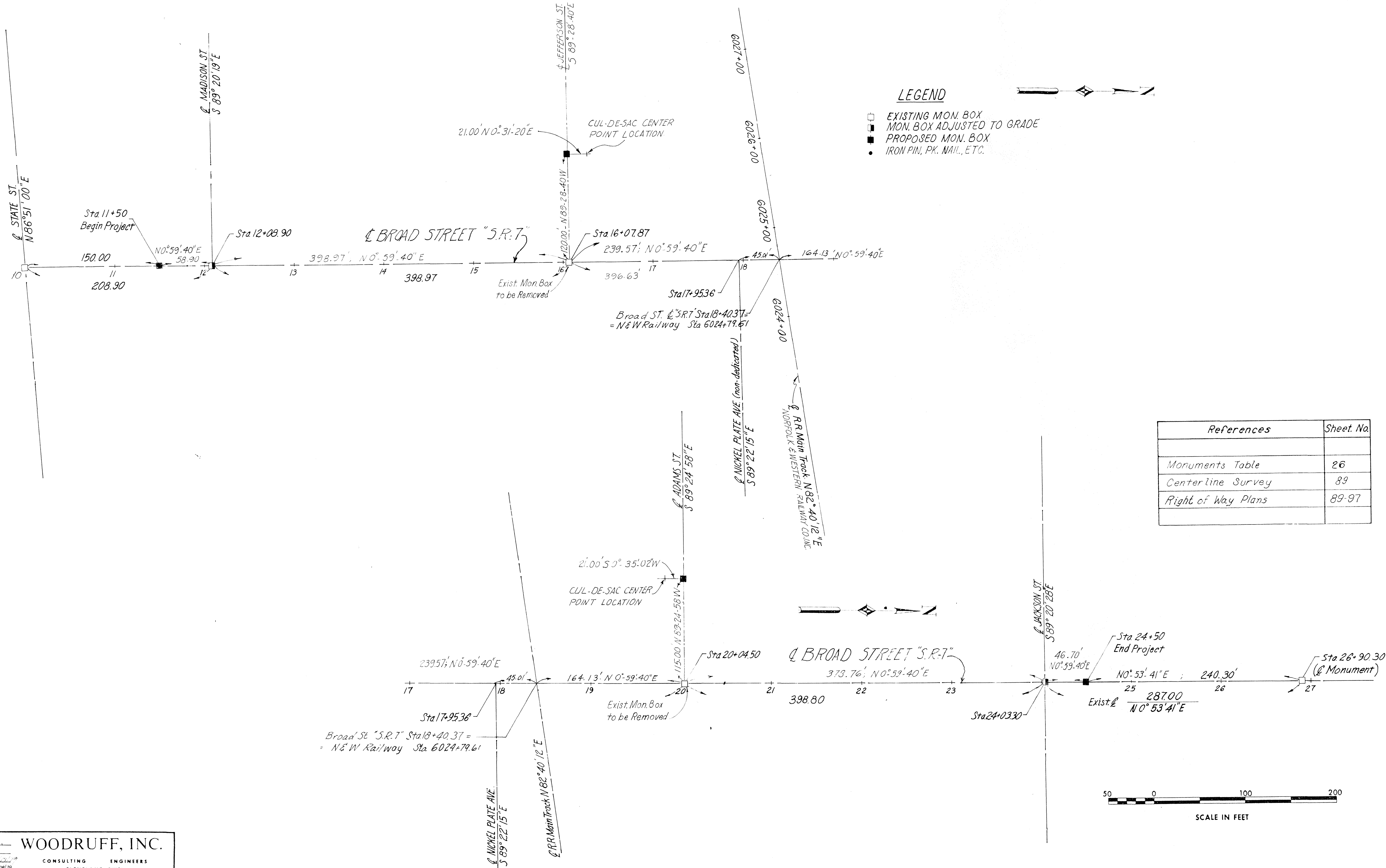
**WOODRUFF, INC.**  
 CONSULTING ENGINEERS  
 CLEVELAND OHIO

# SCHEMATIC GEOMETRIC PLAN

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

3  
100

ASHTABULA COUNTY  
BROAD ST. SR. 7-31.43

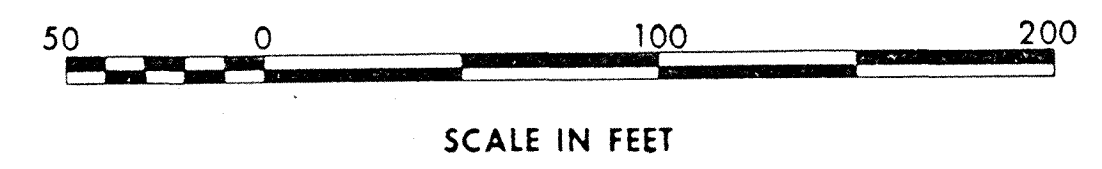


### LEGEND

- EXISTING MON. BOX
- MON. BOX ADJUSTED TO GRADE
- ▣ PROPOSED MON. BOX
- IRON PIN, PK. NAIL, ETC.



References	Sheet No.
Monuments Table	26
Centerline Survey	89
Right of Way Plans	89-97



SCALE \_\_\_\_\_ DATE \_\_\_\_\_  
 MADE BY \_\_\_\_\_  
 TRCD. *CH* DATE *8/27/79*  
 C.X.D. *AJM* DATE *12/28/79*

**WOODRUFF, INC.**  
 CONSULTING ENGINEERS  
 CLEVELAND OHIO

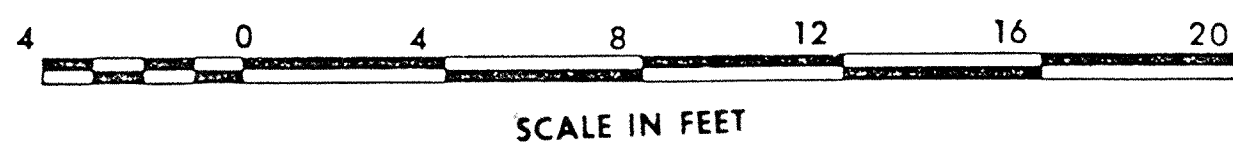
SR. 7 - BROAD STREET

# TYPICAL SECTIONS

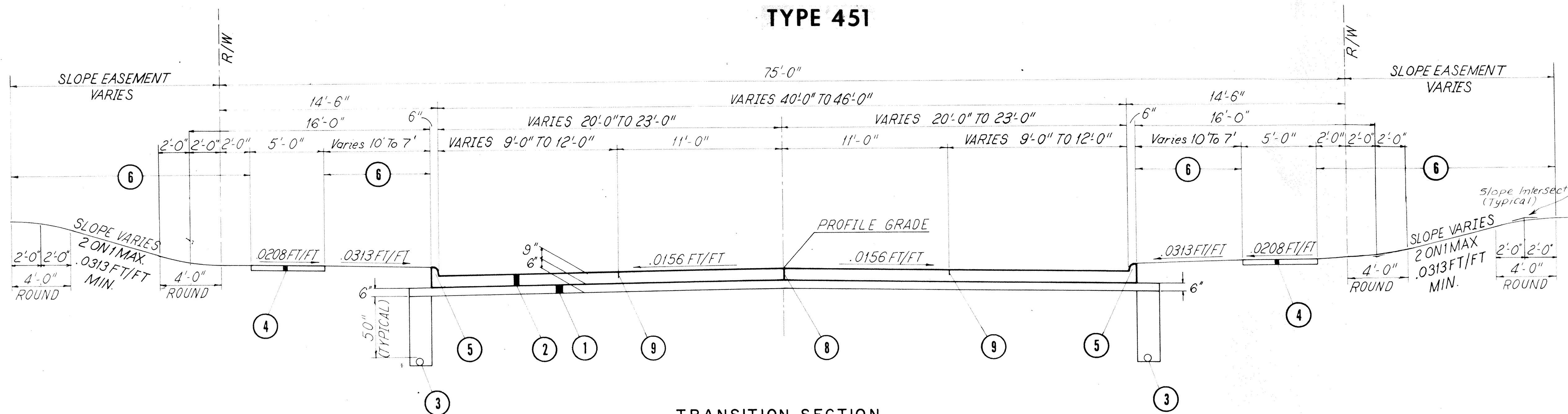
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	STATE

4  
100

ASHTABULA COUNTY  
ATB-7-31.43

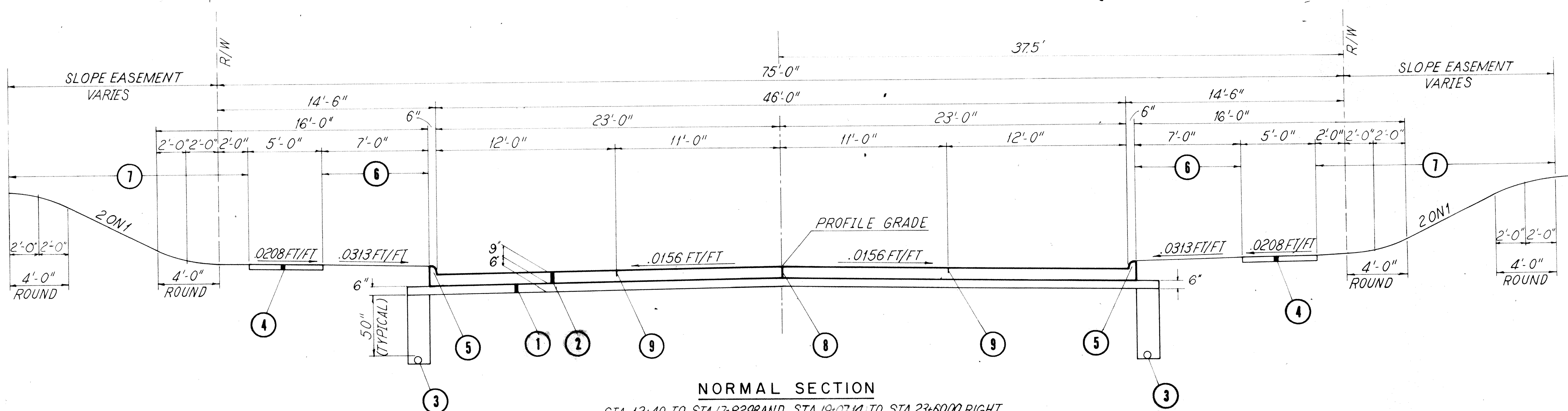


## TYPE 451



### TRANSITION SECTION

STA. 11+50 TO STA. 12+40 AND STA. 23+60 TO STA. 24+50



### NORMAL SECTION

STA. 12+40 TO STA. 17+82.98 AND STA. 19+07.14 TO STA. 23+60.00 RIGHT  
STA. 12+40 TO STA. 17+73.58 AND STA. 18+97.74 TO STA. 23+60.00 LEFT

### LEGEND

- ① ITEM 310 6" SUBBASE TYPE II
- ② ITEM 451 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- ③ ITEM 605 6" DEEP PIPE UNDERDRAINS.
- ④ ITEM 608 4" CONCRETE WALK

- ⑤ ITEM 609 CURB STANDARD TYPE 2A
- ⑥ ITEM 659 SEEDING AND MULCHING AS PER PLAN
- ⑦ ITEM 660 SODDING
- ⑧ LONGITUDINAL KEYED JOINT WITHOUT TIE BARS
- ⑨ STANDARD LONGITUDINAL JOINT SAWED AND TIED

### NOTE

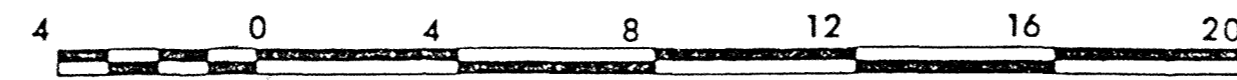
TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL PAVEMENT AND ROADWAY FEATURES ONLY. FOR DETAILS SEE PLAN AND PROFILE SHEETS, GRADING AND PAVING PLANS AND CROSS-SECTIONS SHEETS. THE ROUNDED CORNERS SHOWN ON TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

# TYPICAL SECTIONS

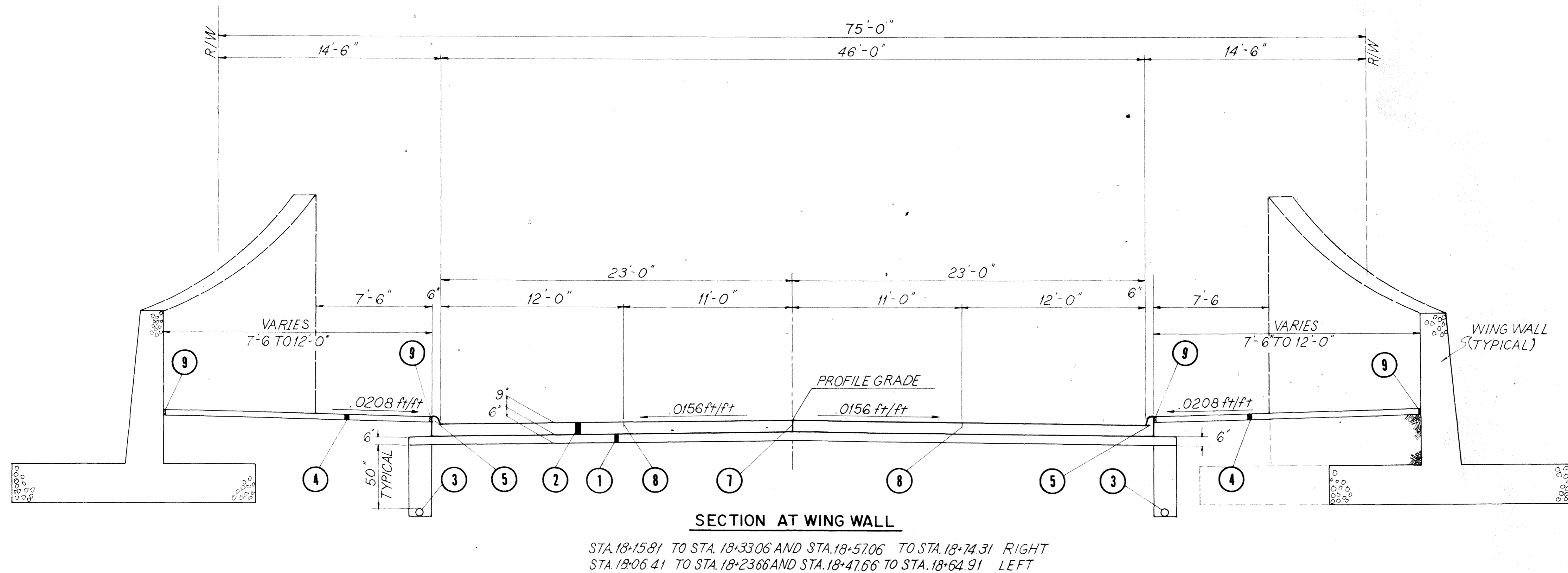
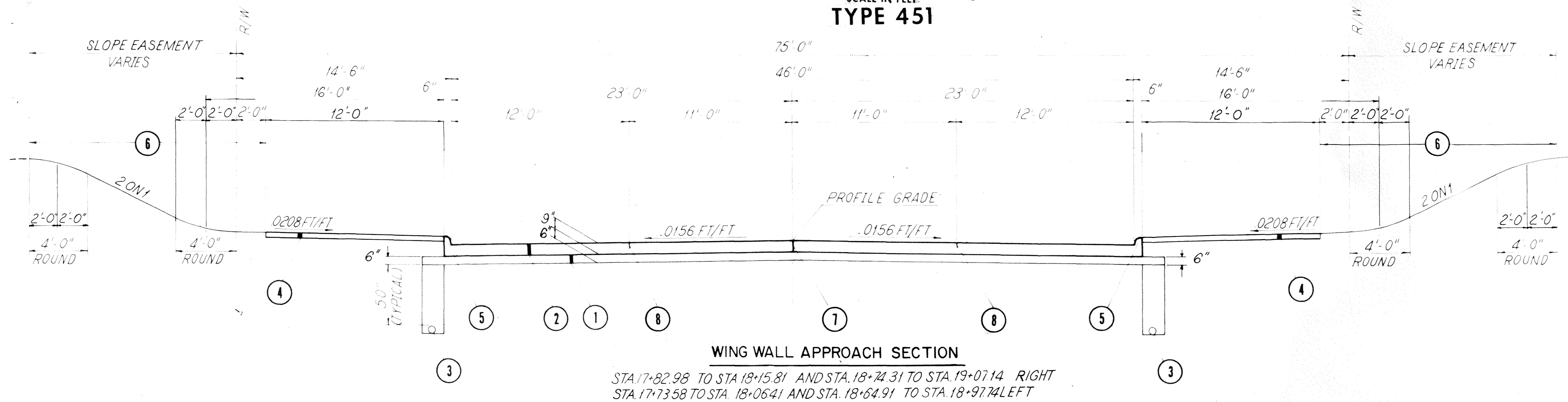
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO	STATE	

5  
100

ASHTABULA COUNTY  
ATB-7-31.43



SCALE IN FEET  
**TYPE 451**



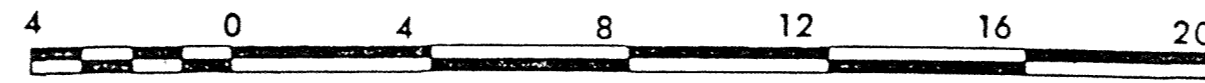
**LEGEND**

- ① ITEM 310 6" SUBBASE TYPE II
- ② ITEM 451 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- ③ ITEM 605 6" DEEP PIPE UNDERDRAINS
- ④ ITEM 608 4" CONCRETE WALK
- ⑤ ITEM 609 CURB STANDARD TYPE 2A
- ⑥ ITEM 660 SODDING
- ⑦ LONGITUDINAL KEYED JOINT WITHOUT TIE BARS
- ⑧ STANDARD LONGITUDINAL JOINT SAWED AND TIED
- ⑨ PREMOLDED JOINT FILLER

**NOTE**

TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL PAVEMENT AND ROADWAY FEATURES ONLY. FOR DETAILS SEE PLAN AND PROFILE SHEETS, GRADING AND PAVING PLANS AND CROSS-SECTIONS SHEETS. THE ROUNDED CORNERS SHOWN ON TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

# TYPICAL SECTIONS

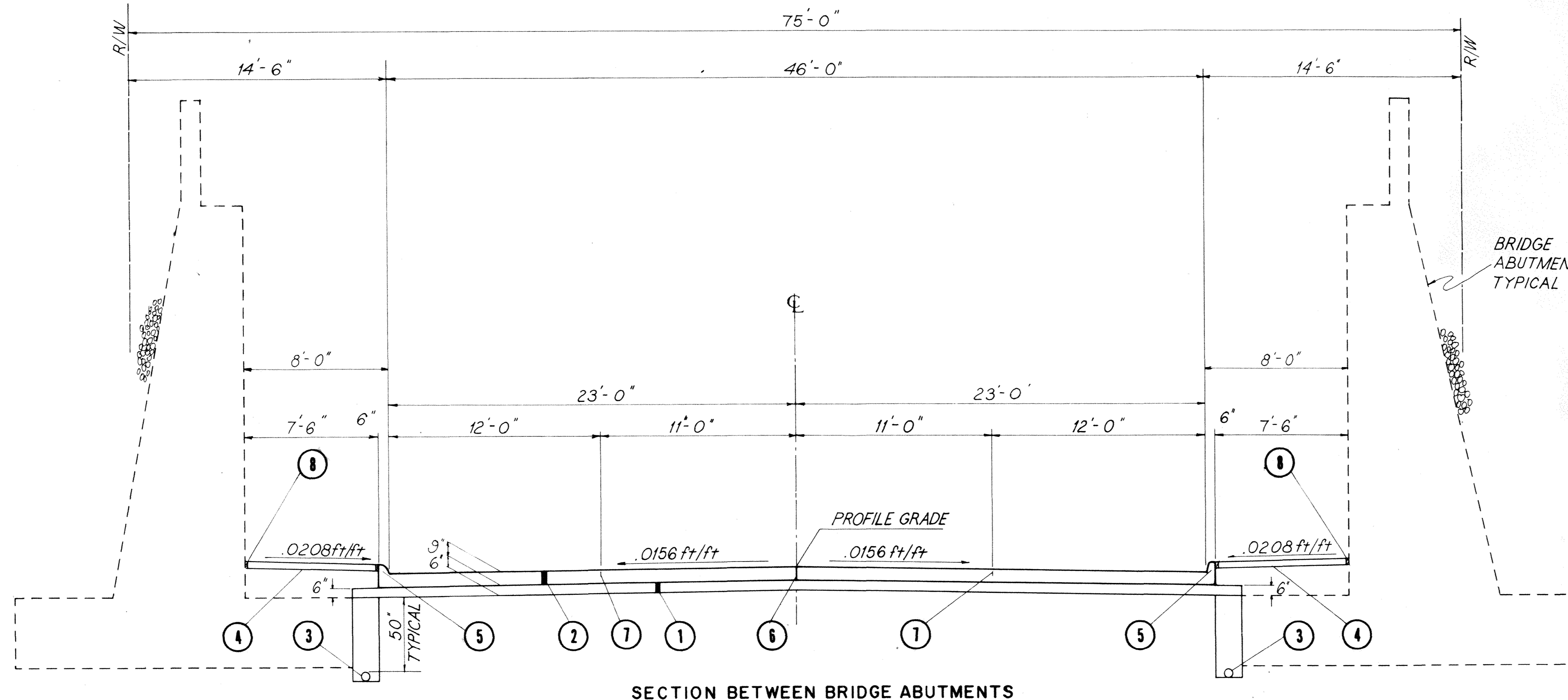


SCALE IN FEET  
TYPE 451

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

6  
100

ASHTABULA COUNTY  
ATB-7-31.43



**SECTION BETWEEN BRIDGE ABUTMENTS**

STA.18+33.06 TO STA.18+57.06 RIGHT  
STA.18+23.66 TO STA.18+47.66 LEFT

### LEGEND

- ① ITEM 310 6" SUBBASE TYPE II
- ② ITEM 451 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- ③ ITEM 605 6" DEEP PIPE UNDERDRAINS
- ④ ITEM 608 4" CONCRETE WALK
- ⑤ ITEM 609 CURB STANDARD TYPE 2A
- ⑥ LONGITUDINAL KEYPED JOINT WITHOUT TIE BARS
- ⑦ STANDARD LONGITUDINAL JOINT SAWED AND TIED
- ⑧ PREMOLDED JOINT FILLER

### NOTE

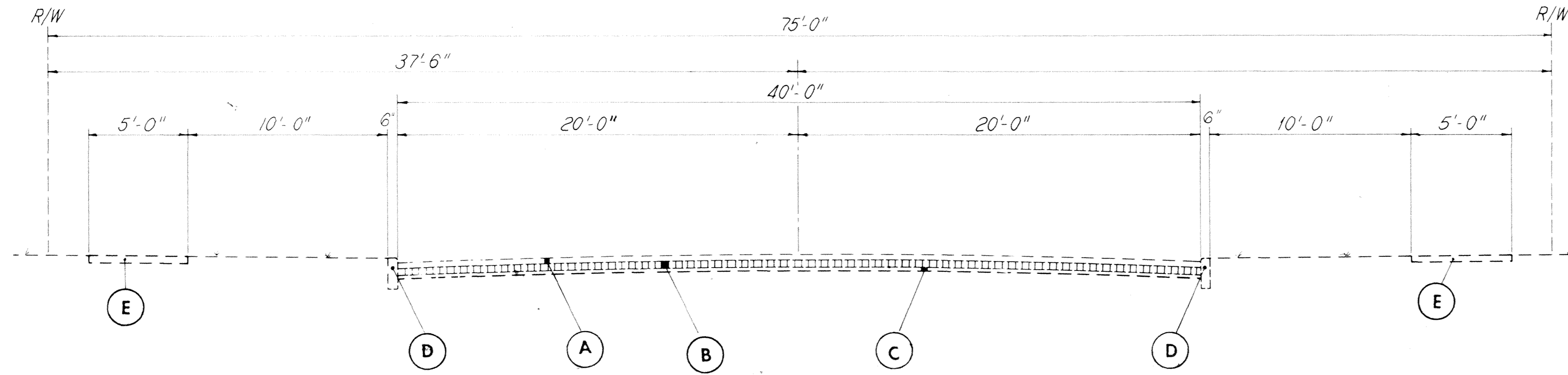
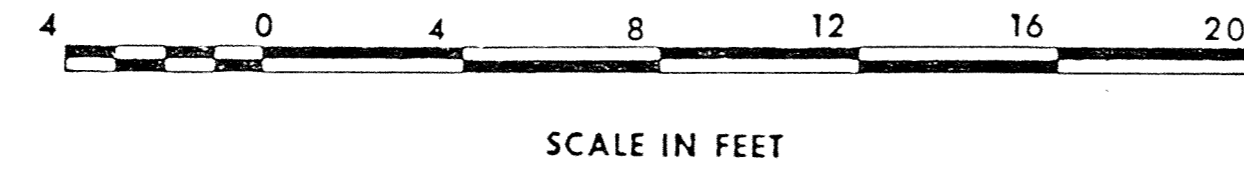
TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL PAVEMENT AND ROADWAY FEATURES ONLY. FOR DETAILS SEE PLAN AND PROFILE SHEETS, GRADING AND PAVING PLANS AND CROSS-SECTIONS SHEETS. THE ROUNDED CORNERS SHOWN ON TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

# EXISTING TYPICAL SECTIONS BROAD STREET S.R.7

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

7  
100

ASHTABULA COUNTY  
ATB-7-31.43



EXISTING BROAD STREET

### LEGEND

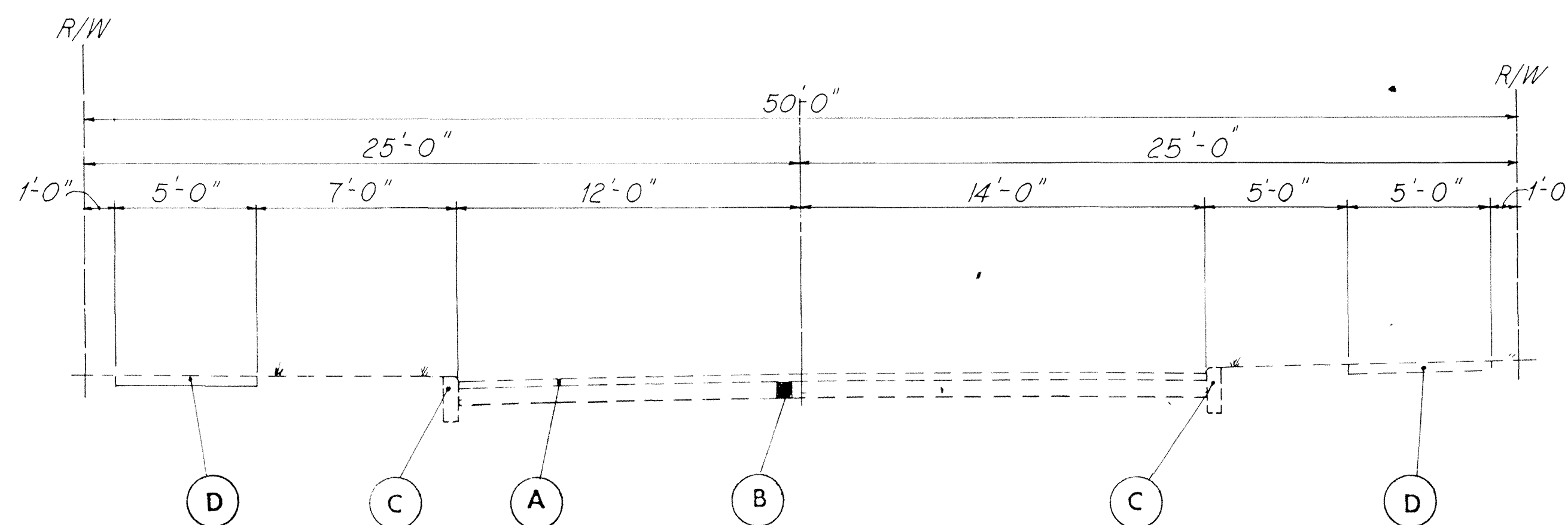
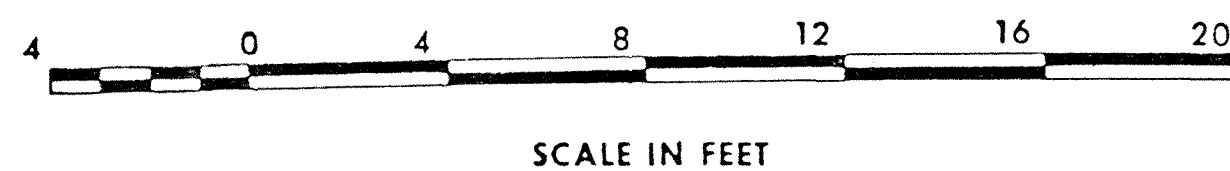
- (A) ASPHALT CONCRETE SURFACE COURSE
- (B) BRICK
- (C) SAND CUSHION
- (D) SANDSTONE CURB
- (E) EXISTING SIDEWALK

# EXISTING TYPICAL SECTIONS

ENRWA REGION	STATE	PROJECT	
5	OHIO	STATE	

8  
100

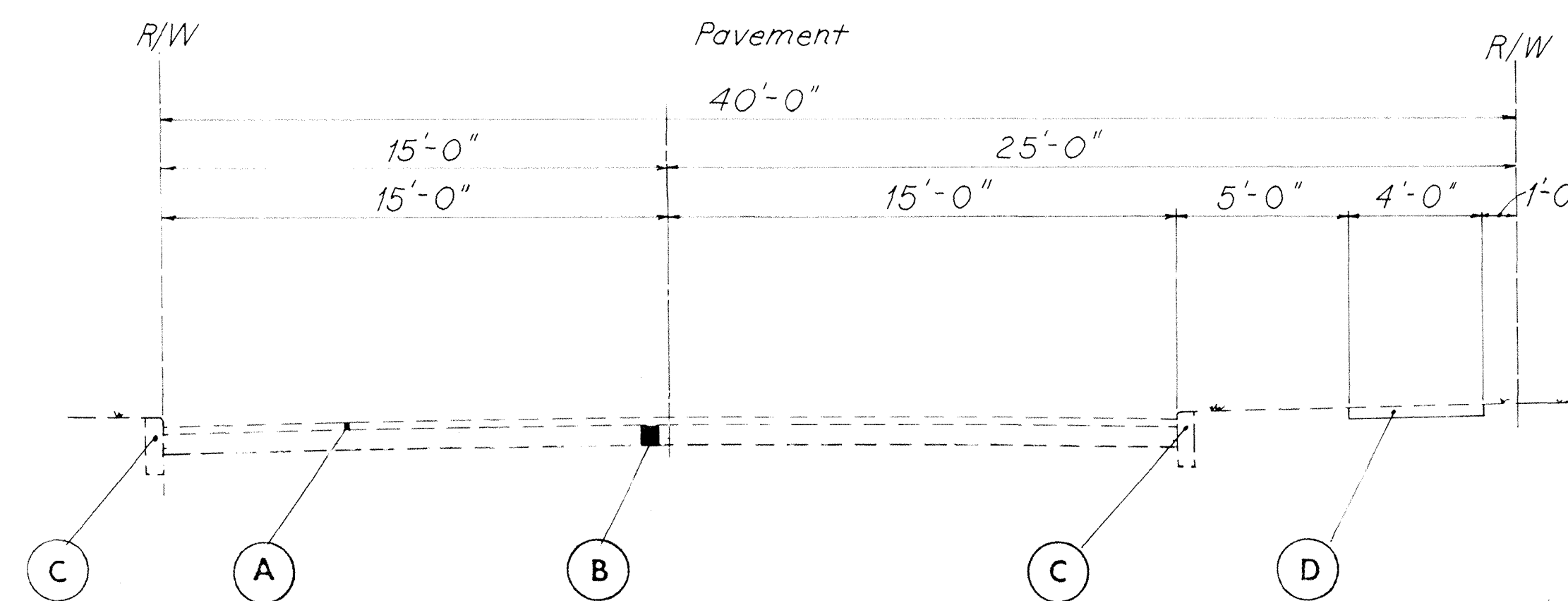
ASHTABULA COUNTY  
ATB-7-31.43



EXISTING ADAMS STREET

## LEGEND

- (A) GRAVEL
- (B) SAND CUSHION
- (C) SANDSTONE CURB
- (D) CONCRETE SIDEWALK



EXISTING NICKEL PLATE AVE.

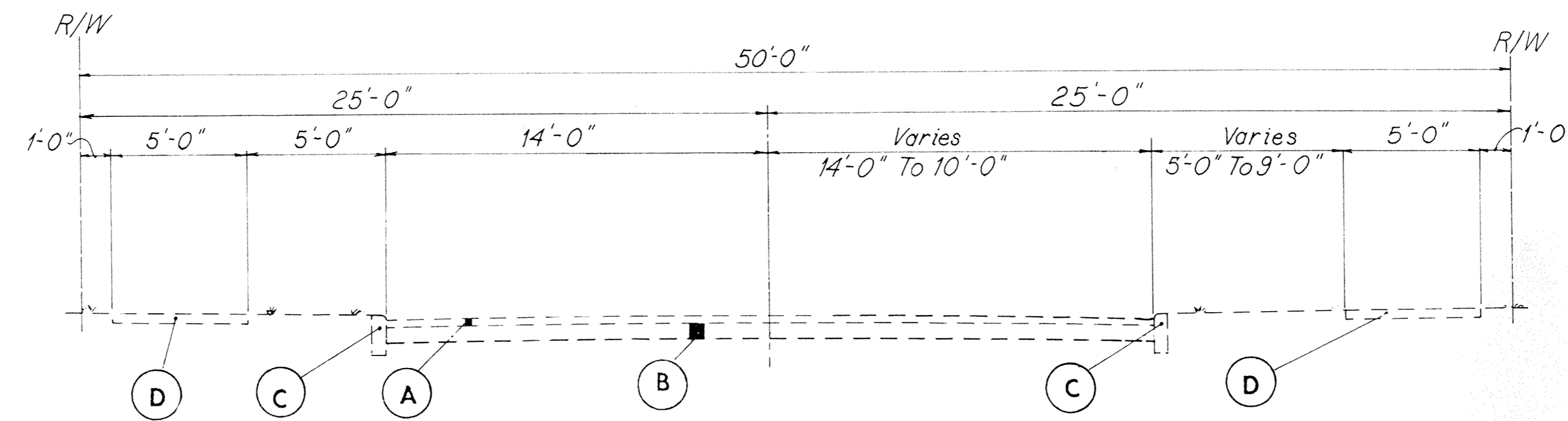
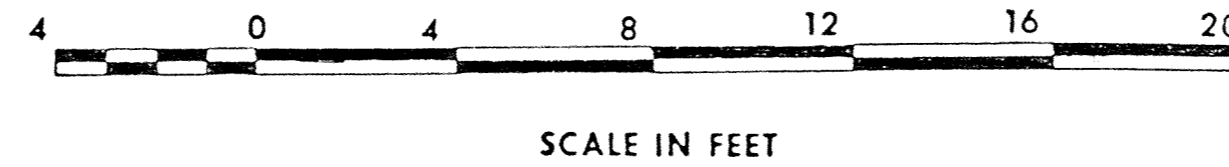


# EXISTING TYPICAL SECTION JEFFERSON STREET

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

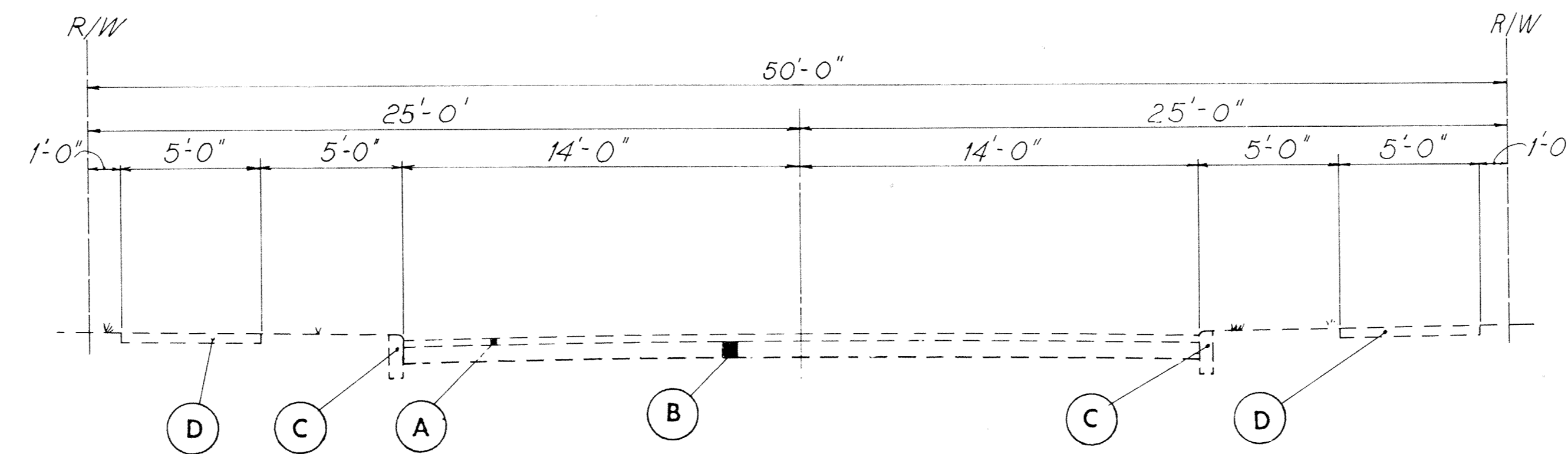
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ASHTABULA COUNTY  
ATB-7-31.43

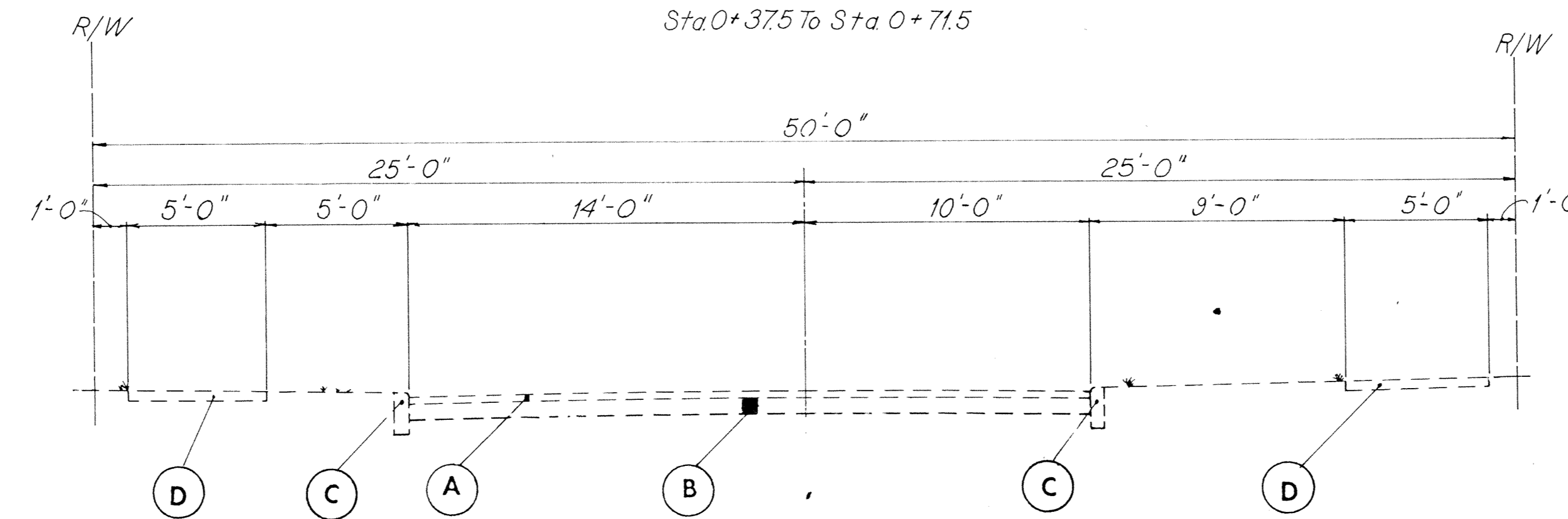


**EXISTING TRANSITION SECTION**

Sta.0+71.5 To Sta.1+84.00



Sta.0+375 To Sta.0+71.5



Sta.1+84.00 To Sta.2+03.84

**LEGEND**

- (A) ASPHALT CONCRETE SURFACE COURSE
- (B) GRAVEL
- (C) SANDSTONE CURB
- (D) CONCRETE SIDEWALK

# GENERAL NOTES

QUANTITY CALCULATIONS

BY N.S. DATE 1/13/77

CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

10  
100

ASHTABULA COUNTY  
ATB-7-31.43

## GENERAL

### DESIGN STANDARDS:

THE GEOMETRIC DESIGN FOR THIS PROJECT IS BASED ON DESIGN SPEED OF 30 M.P.H. AS OUTLINED BY THE A.A.S.H.T.O. POLICIES ON GEOMETRIC DESIGN.

### FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 800 SQ.FT. OF FLOOR SPACE.

### ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

THE ROUNDED CORNERS SHOWN ON THE TYPICAL SECTIONS, APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

### UNDERGROUND UTILITIES:

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO AND THE CITY OF CONNEAUT DO NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

### UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

SANITARY SEWERS CITY OF CONNEAUT  
CITY HALL BUILDING  
CONNEAUT, OHIO

WATER LINES CITY OF CONNEAUT  
CITY HALL BUILDING  
CONNEAUT, OHIO

TELEPHONE THE CONNEAUT TELEPHONE COMPANY  
224 STATE STREET  
CONNEAUT, OHIO 44030

GAS EAST OHIO GAS COMPANY  
1010 WEST 30TH STREET  
ASHTABULA, OHIO 44004

ELECTRICITY THE CLEVELAND ELECTRIC  
ILLUMINATING COMPANY  
ASHTABULA BRANCH  
2210 SOUTH RIDGE  
ASHTABULA, OH. 44004

WORK IS REQUIRED FOR REMOVING, RELOCATING AND CONSTRUCTION OF NEW FACILITIES FOR PRIVATE UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THE RESPECTIVE OWNERS UNLESS OTHERWISE NOTED ON THE PLAN. THE CONTRACTOR SHALL COORDINATE HIS OPERATIONS WITH THE WORK OF THE UTILITY OWNERS OR OTHERS WHO MAY BE MAKING THE RELOCATIONS AND NOTIFY THE OWNERS OF THE UTILITIES OF HIS SCHEDULE SUFFICIENTLY IN ADVANCE TO PERMIT THEM TO MAKE THE NECESSARY ALTERATIONS.

### ESTIMATED QUANTITIES

THESE ITEMS ARE TO BE USED AS DIRECTED BY THE ENGINEER AND SHALL NOT BE ORDERED BY THE CONTRACTOR UNTIL DIRECTED BY THE ENGINEER.

### TEMPORARY RAILROAD CROSSING

IF THE CONTRACTOR DESIRES A TEMPORARY RAILROAD CROSSING OVER THE NORFOLK & WESTERN RAILWAY COMPANY, RAILROAD TRACK(S), TO BE USED IN CONJUNCTION WITH THE CONSTRUCTION OF THIS PROJECT, HE SHALL MAKE ALL ARRANGEMENTS WITH THE RAILROAD AND ASSUME ALL COSTS FOR SUCH CROSSING. THE CONTRACTOR SHALL NOT USE THE NEW CROSSING AS A PART OF HIS HAUL ROAD DURING CONSTRUCTION OF THIS PROJECT.

## GENERAL

### DUST PROTECTION:

THE CONTRACTOR SHALL, WHEN SO ORDERED BY THE ENGINEER, PROTECT THE ADJACENT PROPERTIES FROM DUST. HE SHALL KEEP DOWN THE DUST BY THE USE OF WATER, OR CALCIUM CHLORIDE WHICHEVER IS CONSIDERED NECESSARY BY THE ENGINEER, PERFORMED AS PER ITEM 616. THE FOLLOWING QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY:

ITEM 616	CALCIUM CHLORIDE	15 TONS
ITEM 616	WATER	100 M. GALLONS

### PROFILE

THE PROFILE OF THE PROPOSED ASPHALT CONCRETE COURSE SHALL BE APPROXIMATELY 1 1/2" TO 2" ABOVE THAT OF THE EXISTING PAVEMENTS, AS INDICATED ON THE TYPICAL SECTIONS FOR PORTIONS OF CUL-DE-SACS ON ADAMS STREET AND JEFFERSON STREET UNLESS OTHERWISE NOTED, SEE SHEETS NO. 38 & 40

## ROADWAY

### REMOVAL OF TREES AND STUMPS

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, EXCEPT THAT THOSE TREES FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZES	NO. TREES	NO. STUMPS
18"	7	-
30"	10	-
48"	4	-
60"	3	2

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

### REMOVAL OF EXISTING PIPE

THE REMOVAL OF ALL EXISTING PIPES, WHICH WOULD NORMALLY BE REMOVED IN VARIOUS EXCAVATION ITEMS, SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED IN THE PLANS.

### NONRIGID PAVEMENT REMOVAL:

REMOVAL AND DISPOSAL OF EXISTING NONRIGID PAVEMENT, INCLUDING DRIVES, SHALL BE INCLUDED FOR PAYMENT IN ITEM 203 EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION AS PER PLAN.

### ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN

#### A. DISPOSAL SITE

A DISPOSAL SITE ON A PROPERTY OWNED BY "BESSEMER AND LAKE ERIE RAILROAD COMPANY" MAY BE USED AS A DISPOSAL SITE FOR THE EXCAVATED MATERIAL. THIS SITE IS APPROXIMATELY 3 MILES FROM THE PROPOSED GRADE SEPARATION SITE. THE USE OF THIS LAND FOR DISPOSAL OF EXCAVATED MATERIAL SHALL BE SUBJECT TO THE TERMS OF AN AGREEMENT BETWEEN THE "CITY" AND "BESSEMER AND LAKE ERIE RAILROAD COMPANY". SAID AGREEMENT IS AVAILABLE FOR REVIEW BY INTERESTED PARTIES AND A COPY SHALL BE RETAINED IN THE OFFICE OF MR. R.W. WADSWORTH THE CITY ENGINEER, CITY HALL, CONNEAUT, OHIO.

NO ADDITIONAL COMPENSATION SHALL BE MADE TO THE CONTRACTOR FOR DISPOSAL OF EXCAVATED MATERIAL REGARDLESS OF THE DISPOSAL SITE LOCATION OR AVAILABILITY.

## ROADWAY (CONTINUED)

### B. SALVAGE OF REUSABLE MATERIAL

THE CONTRACTOR WILL, WHEN SO ORDERED BY THE ENGINEER, SALVAGE CASTINGS, WATER METER BOXES, AND/OR ANY OTHER ITEMS WHICH IN THE OPINION OF THE ENGINEER ARE REUSABLE. SAID MATERIAL SHALL BE CAREFULLY REMOVED FROM THE PAVEMENT OR THE EXCAVATION AREA AND STORED AS PER THE REQUIREMENTS OF ITEM 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

PAYMENT FOR SAID WORK SHALL BE MADE AT THE CONTRACT BID PRICE FOR ITEMS 202. COST FOR SALVAGING ALL OTHER REUSABLE MATERIALS WHICH ARE NOT LISTED UNDER ITEMS 202 AND/OR NOT SHOWN ON THESE PLANS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION AS PER PLAN AND NO ADDITIONAL COMPENSATION SHALL BE MADE. ALL SALVAGED MATERIALS SHALL BE STORED ON SITE FOR PICK UP BY CITY FORCES.

### MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1. FOR LOCATIONS, SEE SHEET NO. 26

### LOCATION OF GUARD RAILS

THE LOCATION OF GUARD RAIL RUNS SHOWN ON THESE PLANS ARE SUBJECT TO ADJUSTMENT TO ASSURE THAT THE PLANNED INSTALLATIONS WILL AFFORD THE MAXIMUM PROTECTION FOR TRAFFIC.

### WALK GATE, AS PER PLAN

WALK GATE STANDARD CL. MODIFIED TO 6'-0" WIDTH. ALL OTHER DETAILS OF CONSTRUCTION SHALL BE AS PER STANDARD DRAWING F-4 FOR WALK GATE TYPE CL. (FOR LOCATION SEE SHEETS NO. 22 & 49).

### BUILDING REMOVALS:

THE EXISTING PAVEMENTS, CURBS, CONCRETE PADS AND OTHER MISCELLANEOUS ITEMS IN PARCELS NOS. 3-WD, 4-WD AND 6-WD SHALL BE COMPLETELY REMOVED AND THE ENTIRE PARCELS SHALL BE PREPARED FOR SEEDING AND/OR SODDING. NO SEPARATE PAY WILL BE MADE FOR THE PREPARATION OF THESE PARCELS, PAYMENT SHALL BE INCLUDED IN THE LUMP BID PRICE FOR BUILDING REMOVAL ITEM 202.

### REMOVAL OF FROST SUSCEPTIBLE SUBGRADE

A-4b FROST SUSCEPTIBLE SILT IN SUBGRADE BETWEEN APPROXIMATE STA. 21+00 & STA. 23+50 SHALL BE UNDERCUT TO A DEPTH OF 18" AND REPLACED WITH SUITABLE SUBGRADE MATERIAL. THE QUANTITIES OF EXCAVATION AND EMBANKMENT HAVE BEEN ADJUSTED TO INCLUDE THIS WORK.

### GUARD RAIL TYPE 7 AS PER PLAN

GUARD RAILS INSTALLED ON JEFFERSON AND ADAMS CUL-DE-SACS SHALL BE AS PER GUARD RAIL TYPE 7 AS SHOWN ON STANDARD CONSTRUCTION DRAWING GR-2A WITH POSTS AS PER GUARD RAIL TYPE 4 THE ENDS OF THE GUARD RAILS SHALL FLAIR AS PER "BUFFER END SECTION" AS SHOWN ON STANDARD DRAWING GR-1.

## EROSION CONTROL

### TEMPORARY WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL:

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY CONTROL MEASURES.

ITEM 207 - STRAW OR HAY BALES	100 EACH
ITEM 207 - TEMPORARY SEEDING & MULCHING	2,600 SQ. YDS.
ITEM 659 - WATER	57 M. GAL.

### SEEDING, AS PER PLAN

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN BACK OF CURB AND SIDEWALK AND BETWEEN THE SLOPE EASEMENT LINE AND THE WORK LIMIT LINE. SEE SHEETS 49, 50, 51 AND SHEETS 22, 23 AND 24.

THE FOLLOWING SEED MIXTURE SHALL, IN LIEU OF THE MIXTURES LISTED IN 659.09 BE USED THROUGHOUT THE LIMITS OF THIS PROJECT:

50% FESCUE  
50% KENTUCKY BLUE

# GENERAL NOTES

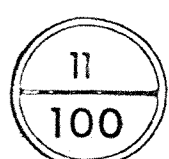
QUANTITY CALCULATIONS

BY AWJ DATE 8/23/79

CHKD. AWJ DATE 1/24/80

WOODRUFF, INC.

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



ASHTABULA COUNTY  
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## EROSION CONTROL (CONTINUED)

### SODDING:

QUANTITIES FOR SODDING ARE CALCULATED FOR AREAS BETWEEN THE OUTER EDGE OF SIDEWALKS AND THE SLOPE EASEMENT LINE. SEE SHEETS 49,50,51 AND SHEETS 22,23,24.

### AGRICULTURAL LIMING AS PER PLAN:

THE LOCATION AND NEED FOR AGRICULTURAL LIMING WILL BE DETERMINED BY LABORATORY TESTING, AFTER ROUGH GRADING OPERATIONS HAVE BEEN PERFORMED. AN ESTIMATED QUANTITY OF 5.37 TONS WILL BE SUFFICIENT FOR THE ENTIRE PROJECT, BUT WILL BE NON-PERFORMED FOR THE AREAS WHERE TESTS SHOW THAT LIMING IS NOT REQUIRED.

### WATERING PERMANENT SEEDED OR SODDED AREAS:

THE FOLLOWING ESTIMATED QUANTITIES IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED OR SODDED AREAS.

ITEM 659 WATER 100 M. GAL.

## DRAINAGE (CONTINUED)

### AREA DRAINS, DOWN SPOUTS, AND FIELD DRAINS:

ALL EXISTING STORM DRAINAGE FACILITIES WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS UNDER THE DIRECTION OF THE ENGINEER. EXISTING COLLECTORS AND ISOLATED FARM TILES WHICH ARE ENCOUNTERED ABOVE THE ROADWAY STORM SEWERS SHALL BE OUTLETTED INTO THE ROADWAY SEWER. THE OPTIMUM OUTLET FOR CONDUIT SHALL BE ONE (1) FOOT ABOVE FLOW LINE ELEVATION OF THE RECEIVING DRAINAGE SYSTEM. THE LOCATION, TYPE, SIZE, AND GRADE OF REQUIRED REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS. THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED:

ITEM 603	6" CONDUIT TYPE B	100 L.F.
ITEM 603	6" CONDUIT TYPE C	100 L.F.
ITEM 603	8" CONDUIT TYPE B	100 L.F.
ITEM 603	8" CONDUIT TYPE C	100 L.F.
ITEM 603	12" CONDUIT TYPE B	100 L.F.
ITEM 603	12" CONDUIT TYPE C	100 L.F.
ITEM 602	CONCRETE MASONRY	5 CU. YDS.

### CONNECTIONS TO EXISTING PIPE:

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS.

### EXISTING UNDERDRAINS:

WHERE SHOWN ON THE PLANS OR WHERE ENCOUNTERED IN THE FIELD, EXISTING UNDERDRAINS, SHALL BE REMOVED AND THE TRENCH BACKFILLED TO THE FINISHED GRADE ACCORDING TO THE REQUIREMENTS OF ITEM 203. EXISTING UNDERDRAINS UNDERNEATH EMBANKMENT AREAS AND WITHIN THE PROPOSED PAVEMENT SHALL REMAIN IN PLACE AND SHALL BE OUTLETTED AS PER PLAN OR AS DIRECTED BY THE ENGINEER. THAT PORTION OF EXISTING UNDERDRAIN WHICH IS DIRECTED FOR REMOVAL AND WHICH IS BELOW THE SPECIFICATION SUBGRADE DEPTH WILL BE PAID FOR UNDER ITEM 202, PIPE REMOVED 24" AND UNDER. THAT PORTION OF EXISTING UNDERDRAIN WHICH IS WITHIN THE PROPOSED SUBGRADE SHALL BE REMOVED BUT WILL NOT BE PAID FOR DIRECTLY. THE REMOVAL SHALL BE CONSIDERED AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER ITEM 203.

AN ESTIMATED QUANTITY FOR THIS ITEM IS PROVIDED AND CARRIED TO THE GENERAL SUMMARY UNDER: ITEM 202, PIPE REMOVED 24" AND UNDER.....100 LIN. FT.

### SALVAGED CASTINGS:

EXISTING CASTINGS FOR MANHOLES, CATCH BASINS, INLETS, ETC. ENCOUNTERED IN THE CONSTRUCTION OF THIS PROJECT WHICH, DUE TO ALTERATION OR REMOVAL OF THE EXISTING STRUCTURE, ARE NOT REQUIRED FOR RE-USE ON THE PROJECT SHALL BE REMOVED AND STORED ON SITE FOR PICK UP BY CITY FORCES.

### SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS:

THIS PLAN MAKES NO PROVISION FOR CONNECTING, NOR SHALL THE ENGINEER OR CONTRACTOR CONNECT, ANY EXISTING OR NEW DRAINAGE INTO THE HIGHWAY DRAINAGE SYSTEM WHEN SUCH DRAINS CARRY FLOW FROM ANY FIXTURES, INCLUDING FLOOR DRAINS AND SINK DRAINS.

THE EXISTING PIPE CARRYING FLOW WHICH COMES WITHIN THE CATEGORY OUTLINED ABOVE, MUST BE CONNECTED INTO SANITARY SEWER OR PLUGGED WITH CLASS C CONCRETE IN THE RIGHT-OF-WAY. PAYMENT FOR SAID PLUGGING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 EXCAVATION (OR THE PERTINENT 202 ITEM), PAYMENT FOR THE SANITARY CONNECTIONS SHALL BE MADE ACCORDING TO "CONNECTING SERVICE BRANCHES", SEE SANITARY SEWERS THIS SHEET.

### LOWERING CASTING OF EXISTING JUNCTION CHAMBER

THE EXISTING 48 INCH RISER ABOVE THE JUNCTION CHAMBER (STA. 18+92.18, 41.95' LEFT) WAS PROVIDED TO ALLOW FOR CONSTRUCTION SITE DRAINAGE. UPON THE COMPLETION OF THE NEW DRAINAGE SYSTEM, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SAID RISER AND REINSTALL THE CASTING AT THE FINAL GRADES. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED AND THE COST FOR THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 202 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION AS PER PLAN.

## DRAINAGE (CONTINUED)

### BULKHEADS:

BULKHEADS SHALL BE CONSTRUCTED BY THE CONTRACTOR AT THE LOCATION SHOWN ON PLAN AND AS DIRECTED BY THE ENGINEER. BULKHEADS SHALL BE CONSTRUCTED OF CLASS E CONCRETE WITH VITRIFIED STOPPERS OF PROPER SIZE TO FIT THE PIPE (SEE SHEET NO. 40 FOR LOCATION AND DETAILS). PAYMENT SHALL BE INCLUDED IN PAY ITEM 652 CONCRETE MASONRY, AN ESTIMATED QUANTITY IS GIVEN HERE AND SHALL BE USED AS DIRECTED BY THE ENGINEER.

ITEM 602 CONCRETE MASONRY 5 CU. YDS.

## SANITARY SEWERS

### RAILROAD CROSSING

THE CROSSING OF N & W RAILROAD TRACK SHALL BE ACCORDING TO RAILROAD STANDARDS AS SET BY "AMERICAN RAILWAY ENGINEERING ASSOCIATION LATEST EDITION OF MANUAL FOR RAILWAY ENGINEERING" AND AS SHOWN ON THESE PLANS. MINIMUM LENGTHS OF STEEL CASING AND FOR CARRIER CONDUIT SHALL BE AS DETAILED IN THESE PLANS. PAYMENT SHALL BE MADE PER ITEM 706.05; 706.12 JOINTS WITH STEEL CASING, AS PER PLAN.

THE CARRIER CONDUIT MAY AT THE OPTION OF THE CONTRACTOR BE EPOXY COATED

REINFORCED CONCRETE PIPE. THE REINFORCED CONCRETE PIPE SHALL BE "TYPE B" CONDUIT 706.02 WITH EPOXY COATING. THE INTERIOR BARREL AND JOINT SURFACE AREAS OF THE CONCRETE PIPE SHALL BE PREPARED SO AS TO REMOVE ALL FORMS OF OIL, LAITANCE AND OTHER DELETERIOUS MATERIALS AND THEN BE LINED WITH A HIGH BUILD, POLYAMIDE-CURED, 2 COMPONENT COAL TAR EPOXY COATING, MILITARY SPECIFICATION MIL-P-23236. THE LINING COMPOUND SHALL BE SPRAYED SO AS TO OBTAIN A CONTINUOUS AND RELATIVELY UNIFORM AND SMOOTH LINING WITH A MINIMUM DRY FILM THICKNESS OF 0.03 INCHES. ALL INTERIOR BARREL SURFACE SHALL BE THOROUGHLY INSPECTED FOR "HOLIDAYS", UTILIZING AN ELECTRICAL INSTRUMENT SPECIALLY DESIGNED FOR THAT PURPOSE. JUST PRIOR TO INSTALLATION OF EACH JOINT OF PIPE IN THE FIELD, A FIBRATED COAL TAR JOINT COMPOUND SHALL BE APPLIED AROUND THE INSIDE CORNER OF THE BELL OR GROOVE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. COATING OF THE CONDUIT SHALL BE A PLANT OPERATION. COST OF LABOR AND MATERIALS FOR COATING THE PIPE SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAL FOOT FOR THE ITEM. CONSTRUCTION SHALL BE SO SCHEDULED AS TO ASSURE THE CONTINUITY OF TRAIN TRAFFIC WITHOUT INTERRUPTION. THE COST OF ALL PROTECTIVE DEVICES AND OPERATIONS FOR SAFETY SHALL BE INCLUDED IN THE BID PRICE FOR THE FOREMENTIONED PAY ITEM.

### CONNECTING SERVICE BRANCHES

FLOW FROM ALL SERVICE BRANCHES OF THE SANITARY SYSTEM SHALL BE PRESERVED AT ALL TIMES; FOLLOWING ARE ESTIMATED QUANTITIES FOR THE SEWER CONNECTIONS; WHICH MAY BE USED AS DIRECTED BY THE ENGINEER:

ITEM 603	6" CONDUIT TYPE "B"	706.08 WITH 706.12 JOINTS	100 LIN.FT.
ITEM 603	8" CONDUIT TYPE "B"	706.08 WITH 706.12 JOINTS	100 LIN.FT.

## DRAINAGE

### REVIEW OF DRAINAGE FACILITIES:

BEFORE ANY WORK IS STARTED ON THE PROJECT, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE, CITY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING STORM AND SANITARY SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. RECORDS OF THE INSPECTIONS SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION, ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PERTINENT 603 CONDUIT ITEMS OF THE CONTRACT.

### AGGREGATE DRAINS:

AGGREGATE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 605. THE LOCATION, LENGTH OF EACH RUN AND THE ELEVATIONS OF THE AGGREGATE DRAIN SHALL BE AS DIRECTED BY THE ENGINEER, THE ESTIMATED QUANTITY FOR THIS WORK IS AS FOLLOWS:

ITEM 605 AGGREGATE DRAINS 400 LIN FT.

# GENERAL NOTES

QUANTITY CALCULATIONS

BY N.S. DATE 8-13-79

CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

12  
100

ASHTABULA COUNTY  
ATB-7-31.43

## PAVEMENT

### CONTRACTION AND EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES AND THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL, IN ALL CASES, BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWINGS AND THE SPECIFICATIONS.

### REPLACEMENT OF PAVEMENT ON JEFFERSON STREET

EXISTING ROADWAY SURFACE ON JEFFERSON STREET SHALL BE REMOVED TO A DEPTH OF 5" BELOW THE NEW DESIGN GRADES. NEW PAVEMENT SHALL REPLACE THE EXISTING SURFACE. NEW SIDEWALKS AND CURBS SHALL BE CONSTRUCTED AS DETAILED IN THESE PLANS.

PAYMENT FOR THE ABOVE WORK SHALL BE AS PER BID PRICE FOR CORRESPONDING PAVEMENT ITEM.

### REPLACEMENT OF PAVEMENT ON THE CUL-DE-SAC LOCATION - ADAMS STREET

EXISTING PAVEMENT ON ADAMS STREET SHALL BE REMOVED TO THE LIMITS SHOWN ON PLANS.

PAYMENT FOR NEW PAVEMENT SHALL BE AS PER BID PRICE FOR CORRESPONDING PAVEMENT ITEM.

### APPROACH TO NEW PAVEMENTS

THE EXISTING PAVEMENT SHALL BE SAW CUT FOR A DEPTH NOT LESS THAN THE NEW PAVEMENT THICKNESS AT THE LINE OF BEGINNING OF NEW PAVEMENT.

THE WEARING SURFACE OF THE APPROACH AREA WILL BE REMOVED AND REPLACED WITH ITEM 404 AND MATCH NEW PAVEMENT AT JOINT.

### FENCE REMOVED FOR RE-USE AS PER PLAN

EXISTING FENCES AT THE LOCATIONS LISTED ON SHEET 14 SHALL BE REMOVED AND STORED IN SITE ACCORDING TO THE REQUIREMENTS OF ITEM NO. 202. UPON THE COMPLETION OF EXCAVATION THESE FENCES SHALL BE REINSTALLED IN THE LOCATIONS INDICATED ON THESE PLANS OR AS DIRECTED BY THE ENGINEER.

PAYMENT FOR THE REMOVAL, STORAGE AND REINSTALLATION SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 202 FENCE REMOVED FOR REUSE AS PER PLAN AND NO SEPARATE PAYMENT SHALL BE MADE FOR THE REINSTALLATION.

### FENCES FOR RAILROAD RUNAROUND.

SEE RAILROAD RUNAROUND GENERAL NOTES SHEET NO. 74.

## ITEM 614 MAINTAINING TRAFFIC AS PER PLAN

### GENERAL

TWO WAY TRAFFIC FOR STATE ROUTE 7 SHALL BE DETOURED DURING THE PERIOD OF CONSTRUCTION AS INDICATED ON THESE PLANS. SEE SHEETS 98, 99, 100. THE DETAILED REQUIREMENTS SHOWN AND/OR SPECIFIED IN THESE PLANS ARE MINIMUM REQUIREMENTS IN ADDITION TO ALL THE PROVISIONS OF ITEM 614. PAYMENT SHALL BE MADE FOR ALL WORK PER 614.05 AND NO ADDITIONAL COMPENSATION SHALL BE MADE FOR THE COMPLIANCE WITH THE DETAILED REQUIREMENTS OF THESE PLANS UNLESS OTHERWISE NOTED.

### PAVEMENT OF PARTS OF THE DETOUR ROUTE

THE DETOUR ROUTE SHALL BE UPDATED AS FOLLOWS:-

THE NORTHWEST CORNER AT THE INTERSECTION OF STATE AND HARBOR STREETS AND ALSO THE SOUTHWEST CORNER AT JACKSON AND HARBOR STREETS SHALL BE CUT BACK TO 25 FEET MINIMUM RADIUS. NEW BASE, BINDER, AND WEARING SURFACE AND CURB SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER. THE EXISTING PAVEMENT SHALL BE PATCHED, WHERE NECESSARY, AS DIRECTED BY THE ENGINEER. THE STRETCH OF HARBOR STREET BETWEEN STATE AND JACKSON STREETS AS WELL AS THE STRETCH OF JACKSON STREET BETWEEN HARBOR AND BROAD STREETS SHALL BE UPDATED WITH A NEW OVERLAY OF 3 INCHES OF ITEM NO. 404. ALSO BOTH INTERSECTIONS SHALL BE UPDATED.

ALL WORK SHALL BE AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ARE THE ESTIMATED QUANTITIES FOR THIS WORK AND SHALL BE USED AS DIRECTED BY THE ENGINEER.

ITEM 301	BITUMINOUS AGGREGATE BASE AC-20 ; OR RT-11 OR RT-12	5	CU.YDS.
ITEM 402	ASPHALT CONCRETE (AC-20)	5	CU.YDS.
ITEM 404	ASPHALT CONCRETE (AC-20)	520	CU.YDS.
ITEM 407	TACK COAT RC-250, MS-2, RS-1, SS-1 OR SS-1H	610	GAL.
ITEM 407	COVER AGGREGATE	19	TONS
ITEM 608	4" CONCRETE WALK	300	SQ.FT.
ITEM 609	CURB TYPE 2A	80	LIN.FT.
ITEM 616	CALCIUM CHLORIDE	3	TONS
ITEM 410	TRAFFIC COMPACTED SURFACE TYPE A	150	CU.YDS.

ABOVE QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY AND PAYMENT SHALL BE MADE AT THE BID PRICE FOR EACH ITEM.

### MAINTENANCE OF ACCESS TO PRIVATE PROPERTIES

TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES TO PARCELS NO. 8, NO. 9, NO. 11 AND NO. 20. SEE SHEET NO. 90 FOR LOCATION OF THESE PARCELS.

### TEMPORARY TRAFFIC SIGNALS

THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN SIGNALS AS SHOWN ON PLAN SHEETS NO. 99 AND NO. 100, AND AS SPECIFIED HEREAFTER.

### (A) 625 - PLAN SPECIFICATION REFERENCES

REFERENCES WITHIN THE PLANS TO ITEMS 625 AND 713 SHALL BE CONSIDERED AS REFERRING TO ITEMS S625 AND S713.

### (B) (842) - POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM CLEVELAND ELECTRIC ILLUMINATING COMPANY, ASHTABULA BRANCH, 2210 S. RIDGE ROAD, ASHTABULA, OHIO 44004.

### (C) (842) - POWER SERVICE AS PER PLAN

POWER SERVICE SHALL CONFORM TO THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATIONS 842.17 EXCEPT THAT THE ELECTRIC METER SHALL NOT BE INSTALLED.

### (D) (843) - CONTROLLER, PRETIMED, 3 PHASE, ONE DIAL ELECTROMECHANICAL TYPE

THE PHASING AND TIMING SPLIT SHALL BE SET AS SPECIFIED ON PLAN SHEET NO. 99

THE CONTROLLER AND/OR CONTROLLER CABINET SHALL HAVE THE FOLLOWING MINIMUM FEATURES:

1. SIX SIGNAL CIRCUITS
2. TIME SWITCH FLASHING
3. POLICE DOOR PANEL
4. MANUAL SWITCH AND CHORD

THE CONTROLLER SHALL BE SIMILAR TO "TRAFLO, PCN-351BRP" OR EQUAL.

SIGNAL QUANTITIES SHOWN ON PLAN SHEET NO. 100 ARE NOT PAY ITEMS AND ARE SHOWN FOR GUIDANCE ONLY. THE PROVISIONS OF ITEM 614.03(E) SHALL APPLY AND THE ENTIRE COST OF ALL WORK AND MATERIALS SHALL BE INCLUDED IN THE LUMP BID PRICE FOR ITEM 614 MAINTENANCE OF TRAFFIC AS PER PLAN.

# COMPUTATIONS AND SUBSUMMARIES

QUANTITY CALCULATIONS

BY W.A. DATE 2-13-39

CHKD. W.S. DATE 1-15-39

WOODRUFF, INC.

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

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100

ASHTABULA COUNTY  
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ITEM 202 PAVEMENT REMOVED					
STATION		SIDE	OFFSET	AREA	REMARKS
FROM	TO		FEET	SQ. YDS.	
<i>Broad St.</i>					
11+25	11+68.5	Rt.	19.9	74	2 Slabs, 38.9'x16.5', 4.6'x11.2' $\frac{1}{2}$
11+90.2	12+15.8	Rt.	19.9	47	Slab, 25.6'x16.5'
12+82.2	13+32.2	Rt.	19.8	96	3 Slabs, 4.2'x17.7', 13.6'x16.3'
13+24.8	13+31.8	Rt.	37.5	40	Slab 52'x7'
13+70.2	13+81.3	Rt.	20.0	20	Slab 11.1'x16.5'
14+19.4	14+34.3	Rt.	20.0	57	3 Slab, 2.1'x3.2' $\frac{1}{2}$ , 11.0'x45.7', 1.8'x3.1' $\frac{1}{2}$
14+73.6	14+82.3	Rt.	20.0	16	Slab, 8.7'x16.3'
15+69.1	15+77.8	Rt.	27.8	8	Slab, 8.7'x8.7'
16+42.5	16+76.9	Lt.	20.2	52	4 Slabs, 7'x11.1' $\frac{1}{2}$ , 25'x16', 2.4'x11.2' $\frac{1}{2}$ , 2.4'x5'
16+95	17+35	Lt.	12.9	49	Slab, 40'x11'
17+51	17+85	Lt.	20.2	45	3 Slabs, 10.2'x11.2' $\frac{1}{2}$ , 20.1'x16.1', 3.7'x11.2' $\frac{1}{2}$
18+83.6	19+07.1	Lt.	31.1	179	4 Slabs, 10.2'x11.2' $\frac{1}{2}$ , 2.2'x33.1' $\frac{1}{2}$ , 23.5'x39.1', 10.2'x32.9'
19+07.1	19+25.3	Lt.	20.2	33	Slab 18.2'x16.1'
19+07.1	19+79.1	Lt.	83.6	164	3 Slabs, 34'x34' $\frac{1}{2}$ , 72'x15.6', 39'x9'
19+10.4	19+30.6	Rt.	20.2	26	3 Slabs, 5.2'x11.2' $\frac{1}{2}$ , 11.5'x16.2', 3.5'x11.2' $\frac{1}{2}$
19+15.6	20+33.7	Rt.	36.2	639	2 Slabs, 48'x118.1', 8.5'x9.0'
19+79.1	19+90.8	Lt.	84.8	16	3 Slabs, 11.7'x11.4', 2.5'x2.4' $\frac{1}{2}$ , 2.5'x8.2' $\frac{1}{2}$
20+18.1	20+39.5	Rt.	20.0	26	3 Slabs, 4.1'x10.8' $\frac{1}{2}$ , 10'x17.4', 7.3'x10.7' $\frac{1}{2}$
21+99.6	22+24.6	Rt.	19.8	40	3 Slabs, 2.4'x11.4' $\frac{1}{2}$ , 20.4'x16.4', 2.2'x11.2' $\frac{1}{2}$
TOTAL				1,627	

ITEM 202 WEARING COURSE REMOVED					
STATION		LENGTH	WIDTH	AREA	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	
<i>Broad St.</i>					
11+25.0	11+50.0	25.0	40.0	111	
24+50.0	24+75.0	25.0	40.0	111	
<i>Madison Street</i>					
0+49.0	0+74.0	25.0	26.0	72	
<i>Jackson Street</i>					
4+25.0	4+50.0	25.0	29.0	81	
5+50.0	5+75.0	25.0	24.0	67	
TOTAL				442	

ITEM 202 WALK REMOVED					
STATION		SIDE	OFFSET	AREA	REMARKS
FROM	TO		FEET	SQ. FT.	
<i>Broad St.</i>					
11+25.0	11+95.6	Lt.	31.5	424	6'x70.6'
11+78.6		Lt.	20.2	120	6'x26'-(6'x6')
12+21.9	12+40.0	Lt.	31.8	72	4'x18.1'
12+38.0		Lt.	20.0	48	4'x12'
12+38.0		Lt.	35.8	50	5'x10'
13+63.0		Lt.	36.5	328	9'x29.5'+13'x4.8'
11+25.0	12+15.8	Rt.	31.2	150	90.8'x5.2'-(5.2'x38.1')-(5.2'x24')
12+15.8	12+40.0	Rt.	19.9	436	24.2'x18'
12+19.0		Rt.	37.8	113	5'x23'
12+84.0		Rt.	37.5	164	4'x41'
23+41.2	23+91.2	Lt.	31.5	250	5'x50'
23+81.0		Lt.	20.5	115	5'x28'-(5'x5')
24+15.3	24+75.0	Lt.	31.7	299	5'x59.7'
24+24.7		Lt.	20.7	100	5'x25'-(5'x5')
23+38.5	23+88.5	Rt.	30.8	250	5'x50'
23+81.95		Rt.	19.6	115	5'x28'-(5'x5')
24+18.5	24+75.0	Rt.	31.1	283	5'x56.5'
24+24.75		Rt.	19.9	105	5'x26'-(5'x5')
TOTAL				3,422	

SR. 7 - BROAD STREET

WOODRUFF, INC.  
CONSULTING ENGINEERS  
CLEVELAND OHIO

# COMPUTATIONS AND SUBSUMMARIES

QUANTITY CALCULATIONS

BY W.S. DATE 2/2/77

CHKD. AJM DATE 1/22/82

WOODRUFF, INC.

FHWA REGION	STATE	PROJECT
5	OHIO	STATE

14  
100

ASHTABULA COUNTY  
ATB-7-31.43

ITEM 202 CURB REMOVED				
STATION		SIDE	LENGTH	REMARKS
FROM	TO		LIN. FT.	
<i>Broad St.</i>				
11+50.0	11+95.90	L	72	
12+21.90	13+03.0	L	106	
11+50.0	13+03.0	R	153	
23+31.0	23+91.3	L	86	
24+15.3	24+50.0	L	62	
23+31.0	23+88.8	R	86	
24+17.8	24+50.0	R	60	
		TOTAL	625	

ITEM 202 FENCE REMOVED FOR RE-USE AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	LENGTH	REMARKS
FROM		TO			LIN. FT.	
<i>Broad St.</i>						
13+30.4	37.5	13+30.4	53.5	L	16	4' Chain Link
13+30.4	37.5	14+49.0	37.7	L	119	4' Chain Link
14+54.0	37.8	15+01.0	37.7	L	47	4' Chain Link
13+22.4	37.5	13+23.0	60.0	R	23	Cable
16+16.0	116	16+42.6	38.6	R	97	4' Chain Link
				TOTAL	302	
						See General Notes SH #12

ITEM 203 SUBGRADE COMPACTION					
STATION		LENGTH	WIDTH	AREA	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	
<i>Broad St.</i>					
11+50.0	12+40.0	90.0	46.0	460	
12+40.0	23+60.0	1120	50.0	6444	46 + 2 x 2 = 50
23+60.0	24+50.0	90.0	46.0	460	$\frac{44 + 50}{2}$
11+50	11+96	65	2.0	16	Widening Under Asph Curbs
<i>Madison Street Int.</i>					
		28.0	28.5	125	Includes Curb Returns
<i>Jackson Street Int.</i>					
		28.4	26.5	122	Includes Curb Returns
		28.4	31.5	137	Includes Curb Returns
		TOTAL		7764	

ITEM 310 SUBBASE, TYPE II						
STATION		LENGTH	WIDTH	DEPTH	VOLUME	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	INCHES	CU. YDS.	
<i>Broad St.</i>						
11+50.0	12+40.0	90.0	46.0	6	76.7	
12+40.0	23+60.0	1120	49.0	6	1016.0	
23+60.0	24+50.0	90.0	46.0	6	76.7	
<i>Madison Street Intersection</i>						
		28.0	29.0	6	21.9	Includes Curb Returns
<i>Jackson Street Intersection</i>						
		28.4	27.0	6	21.3	Includes Curb Returns
		28.4	32.0	6	23.9	Includes Curb Returns
		TOTAL			1236.5	

# COMPUTATIONS AND SUBSUMMARIES

QUANTITY CALCULATIONS

BY AS DATE 8/20/77

CHKD. AWM DATE 1/29/80

WOODRUFF, INC.

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

15  
100

ASHTABULA COUNTY  
ATB-7-31.43

ITEM 404 ASPHALT CONCRETE, AC-20						
STATION		LENGTH	WIDTH	DEPTH	VOLUME	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	INCHES	CU. YDS.	
<i>Broad St</i>						
11+25.0	11+50.0	25.0	40.0	1.5	4.63	
24+50.0	24+75.0	25.0	40.0	1.5	4.63	
<i>Madison Street</i>						
0+49.0	0+74.0	25.0	26.0	1.5	3.01	
<i>Jackson Street</i>						
4+25.0	4+50.0	25.0	29.0	1.5	3.30	
5+50.0	5+75.0	25.0	24.0	1.5	2.78	
					TOTAL	18.41

ITEM 407 COVER AGGREGATE						
STATION		LENGTH	WIDTH	QUANT.	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	TONS		
<i>Broad St</i>						
11+25.0	11+50.0	25.0	40.0	.278	Application Rate = 5*/Sq. Yd	
24+50.0	24+75.0	25.0	40.0	.278		
<i>Madison Street</i>						
0+49.0	0+74.0	25.0	26.0	.181		
<i>Jackson Street</i>						
4+25.0	4+50.0	25.0	29.0	.201		
5+50.0	5+75.0	25.0	24.0	.167		
					TOTAL	1.105

ITEM 607 FENCE TYPE CL						
STA.	OFFSET	STA.	OFFSET	SIDE	LENGTH	REMARKS
FROM		TO			LIN. FT.	
<i>Broad St</i>						
13+30.4	58.5	16+06.0	87.0	L	299	
13+22.4	37.5	13+23.0	60.0	R	23	
					Total	322
<i>N&amp;W Rail Road</i>						
20+52.0	26	21+38.0	42	R	*	* See Runaround General Notes

ITEM 407 TACK COAT RC-250, MS-2, RS-1, SS-1 OR SS-1H						
STATION		LENGTH	WIDTH	QUANT.	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	GALS.		
<i>Broad St</i>						
11+25.0	11+50.0	25.0	40.0	11.1	Application Rate = 0.1 Gal./Sq. Yd	
24+50.0	24+75.0	25.0	40.0	11.1		
<i>Madison Street</i>						
0+49.0	0+74.0	25.0	26.0	7.2		
<i>Jackson Street</i>						
4+25.0	4+50.0	25.0	29.0	8.1		
5+50.0	5+75.0	25.0	24.0	6.7		
					TOTAL	44.2

ITEM 451 9" REINFORCED PORTLAND CEMENT CONCRET PAVEMENT						
STATION		LENGTH	WIDTH	AREA	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.		
<i>Broad St</i>						
11+50.0	12+40.0	90.0	44.0	440		
12+40.0	23+60.0	1120.0	47.0	5849		
23+60.0	24+50.0	90.0	44.0	440		
11+50.0	11+71.47	22	3	7	Pavement Widening	
<i>Madison Street Int.</i>						
		28.0	27	117	Includes Curb Returns	
<i>Jackson Street Int.</i>						
		28.4	27.0	123	Includes Curb Returns	
		28.4	30.0	129	Includes Curb Returns	
					TOTAL	7,105

# COMPUTATIONS AND SUB-SUMMARIES

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

16  
100

ASHTABULA COUNTY  
ATB-7-31.43

QUANTITY CALCULATIONS  
BY W.S. DATE 8-13-79  
CHKD. AJM DATE 1/24/80  
WOODRUFF, INC.

### ITEM NO. 659 COMMERCIAL FERTILIZER

SEEDING AREAS TOTAL 5597 S.Y.  
SODDED AREAS TOTAL 8025 S.Y.  
13622 S.Y.  
RATE OF APPLICATION = 0.00009 TON/S.Y.  
FERTILIZER QUANTITY = 0.00009 x 13,622 = 1.23 TONS

ITEM 608 4" CONCRETE WALK				
STATION	SIDE	WIDTH	AREA	REMARKS
FROM	TO	FT.	SQ. FT.	
<i>Broad St.</i>				
11+25.0	11+77.0	L 5	260	
11+77.0	11+93.0	L Varies	128	
12+26.0	12+41.0	L Varies	96	
12+41.0	15+00.0	L 5	1295	
12+93.0	L=10'	L 3	30	
13+62.0	L=35'	L 6	210	
11+25.0	11+91.0	R 5	330	
12+15.0	12+88.0	R 5	365	
13+12.0	15+00.0	R 5	940	
15+00.0	17+73.83	L 5	1370	
17+73.83	18+06.66	L 12	396	
18+06.66	18+238.3	L Varies	170	12' TO 7'-6"
18+238.3	18+47.83	L 7'-6"	180	
18+47.83	18+65.00	L Varies	170	7'-6" TO 12'
18+65.00	18+97.83	L 12	396	
18+97.83	20+00.0	L 5	511	
15+00.0	17+82.89	R 5	1415	
17+82.89	18+15.72	R 12	396	
18+15.72	18+328.9	R Varies	170	12' TO 7'-6"
18+32.89	18+56.89	R 7'-6"	180	
18+56.89	18+74.06	R Varies	170	7'-6" TO 12'
18+74.06	19+06.89	R 12	396	
19+06.89	20+00.0	R 5	466	
20+00.0	22+16.0	L 5	1080	
22+36.0	22+77.5	L 5	208	
22+86.5	23+80.0	L 5	468	
23+80.0	23+88.0	L Varies	32	
24+17.0	24+28.0	L Varies	60	
24+28.0	24+75.0	L 5	235	
20+00.0	21+02.0	R 5	510	
21+14.0	23+83.0	R 5	1345	
24+21.0	24+28.0	R Varies	40	
24+28.0	24+75.0	R 5	235	
<i>Madison Street</i>				
0+35.5	0+49.0	L & R 5	135	
<i>Jackson Street</i>				
4+50.0	4+69.5	L & R 5	195	
5+30.5	5+50.0	L & R 5	195	
			TOTAL	14,178

ITEM 659 SEEDING AND MULCHING AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	AREA	REMARKS
FROM	FEET	TO	FEET		SQ. YDS.	
<i>Broad St.</i>						
11+25.0	20.5	11+50.0	20.5	L	28	
11+50.0	20.5	12+00.0	22.17	L	29	
12+00.0	22.17	12+50.0	23.5	L	5	
12+50.0	23.5	17+50.0	23.5	L	389	
12+84.32	42.96	12+97.32	44.5	L	10	
13+54.13	48.28	13+71.13	50.10	L	34	
13+71.13	50.10	15+82.28	75.0	L	290	
16+74.14	89.5	18+16.0	97.0	L	115	
17+50.0	23.5	19+50.0	23.5	L	127	
18+41.0	89.0	19+36.87	88.0	L	150	
19+50.0	23.5	21+50.0	23.5	L	156	
21+50.0	23.5	23+00.0	23.5	L	82	
23+00.0	23.5	23+50.0	23.5	L	39	
23+50.0	23.5	24+00.0	22.17	L	19	
24+00.0	22.17	24+50.0	20.5	L	21	
24+50.0	20.5	24+75.0	20.5	L	28	
11+25.0	20.5	11+50.0	20.5	R	28	
11+50.0	20.5	12+00.0	22.17	R	23	
12+00.0	22.17	12+50.0	23.5	R	25	
12+50.0	23.5	13+00.0	23.5	R	28	
13+00.0	23.5	13+50.0	23.5	R	28	
13+23.98	55.0	14+70.26	68.67	R	695	
13+50.0	23.5	17+50.0	23.5	R	312	
14+80.51	70.0	18+47.0	108.0	R	1148	
17+50.0	23.5	18+00.0	23.5	R	26	
18+68.0	98.0	19+45.52	88.49	R	70	
19+00.0	23.5	19+50.0	23.5	R	25	
19+50.0	23.5	23+50.0	23.5	R	298	
20+26.85	80.82	20+84.0	75.0	R	261	
23+50.0	23.5	24+00.0	22.17	R	19	
24+00.0	22.17	24+50.0	20.5	R	23	
24+50.0	20.5	24+75.0	20.5	R	28	
					TOTAL	4559

ITEM 609 ASPHALT CONCRETE CURB TYPE I				
STATION	SIDE	LENGTH	REMARKS	
FROM	TO	LIN. FT.		
<i>BROAD ST</i>				
11+50.0	11+95.9	L 65		
		TOTAL	65	

ITEM 609 CURB, STANDARD TYPE 2A				
STATION	SIDE	LENGTH	REMARKS	
FROM	TO	LIN. FT.		
<i>Broad St.</i>				
12+46.6	22+11.0	L 964.4		
22+41.0	22+68.0	L 270		
22+96.0	23+65.2	L 69.2		
24+39.2	24+50.0	L 10.8		
11+50.0	11+86.0	R 36.0		
12+20.0	12+83.0	R 63.0		
13+17.0	20+97.0	R 780		
21+19.0	23+63.2	R 244.2		
24+42.2	24+50.0	R 7.8		
<i>Madison Street Intersection</i>				
12+21.9	12+46.6	L 41.3	Includes Curb Returns at Intersec.	
<i>Jackson Street Intersection</i>				
23+69.2	24+39.2	L 170.8	Includes Curb Returns at Intersec.	
23+63.2	24+42.2	R 86.3	Includes Curb Returns at Intersec.	
		TOTAL	2500.8	

ITEM 660 SODDING								
STA.	OFFSET	WIDTH	STA.	OFFSET	WIDTH	SIDE	AREA	REMARKS
FROM	LIN. FT.	LIN. FT.	TO	LIN. FT.	LIN. FT.		SQ. YDS.	
<i>Broad St.</i>								
11+25.0	35.5	2.0	12+41.69	35.5	2.0	L	18	
12+41.69	35.5	2.0	15+82.28	35.62	39.38	L	771	
15+82.28	35.62	39.38	16+74.14	35.61	53.89	L	476	
16+74.14	35.61	53.89	17+56.28	35.56	61.44	L	527	
17+56.28	35.56	61.44	18+24	36.0	61.0	L	434	
18+49	37.0	52.0	19+50	37.0	52.0	L	611	
19+50	31.0	48.5	20+28.93	33.0	48.0	L	424	
20+28.93	33.0	48.0	20+69.5	31.5	40.5	L	200	
20+69.5	31.5	40.5	22+41.81	35.45	22.55	L	553	
22+41.81	35.45	22.55	22+81.82	35.44	12.06	L	72	
22+81.82	35.44	12.06	23+12.85	35.44	7.06	L	24	
23+12.85	37.0	2.0	24+75.0	37.0	2.0	L	9	
11+25.0	35.5	2.0	13+22.82	35.5	2.0	R	31	
13+22.82	35.5	19.5	17+76.0	35.44	43.79	R	1594	
17+76.0	35.44	43.79	18+36.0	32.5	66.5	R	402	
18+36.0	32.0	59.0	19+18.92	36.0	50.0	R	325	
19+18.92	36.0	50.0	21+41.5	35.54	34.46	R	994	
21+41.5	35.54	34.46	23+28.53	35.5	12.0	R	483	
23+28.53	35.5	12.0	23+78.53	35.57	11.93	R	67	
23+78.53	36.5	2.0	24+75.0	36.5	2.0	R	10	
							TOTAL	8025

SR. 7 - BROAD STREET

WOODRUFF, INC.  
CONSULTING ENGINEERS  
CLEVELAND OHIO







# GENERAL SUMMARY

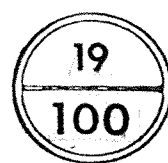
QUANTITY CALCULATIONS

BY C.H. DATE 12-7-79

CHKD. N.S. DATE 1-18-80

WOODRUFF, INC.

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



ASHTABULA COUNTY  
ATB-7-31.43

SHEET NUMBER		PROPOSAL QUANTITIES	UNIT	ITEM NO.	DESCRIPTION
10	11				<u>DRAINAGE</u> <i>Continued</i>
		266	Lin.Ft.	603	24" Conduit Type B
		125	Lin.Ft.	603	48" Conduit Type B
		2	Each	604	Catch Basin, Standard No. 3
		23	Each	604	Catch Basin, Standard No. 3-A
		4	Each	604	Inlet, Standard No. I-1
		3	Each	604	Manhole, Standard No. 1
		1	Each	604	Manhole, Standard No. 5
		1	Each	604	Manhole, Adjusted To Grade
		4	Each	604	Manhole, Standard No. 3
		1	Each	604	Junction Chamber
		46 25	Lin. Ft.	605	6" Shallow Pipe Underdrains
		2262	Lin.Ft.	605	6" Deep Pipe Underdrains
		58 123	Lin.Ft.	605	6" Unclassified Pipe Underdrains
400			Lin.Ft.	605	Aggregate Drains
					<u>SANITARY SEWERS</u>
			Each	202	Manhole, Abandoned
		581	Lin.Ft.	202	Pipe Removed 24" and Under
		82	Lin.Ft.	603	12" Conduit, Type B; 706.05 With 706.12 Joint and Steel Casing As Per Plan.
100			Lin.Ft.	603	6" Conduit, Type B; 706.08 With 706.12 Joints
100			Lin.Ft.	603	8" Conduit, Type B; 706.08 With 706.12 Joints
		80	Lin.Ft.	603	12" Conduit, Type B; 706.08 With 706.12 Joints
		315	Lin.Ft.	603	12" Conduit, Type B; 706.08 With 706.12 Joints
		70	Lin.Ft.	603	12" Conduit, Type B; 706.08 With 706.12 Joints Concrete Encased
		70	Lin.Ft.	603	12" Conduit, Type C; 706.08 With 706.12 Joints
		694	Lin.Ft.	603	12" Conduit, Type C; 706.08 With 706.12 Joints Concrete Encased
		50	Lin.Ft.	603	12" Conduit, Type C; 706.08 With 706.12 Joints Concrete Encased
		5	Each	604	Manhole, Standard No. 3 With 706.11 Joints
		2	Each	604	Manhole Reconstructed To Grade



# GENERAL SUMMARY

QUANTITY CALCULATIONS

BY C.H. DATE 12-7-79

CHKD. N.S. DATE 1-18-80

WOODRUFF, INC.

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

ASHTABULA COUNTY  
ATB-7-31.43

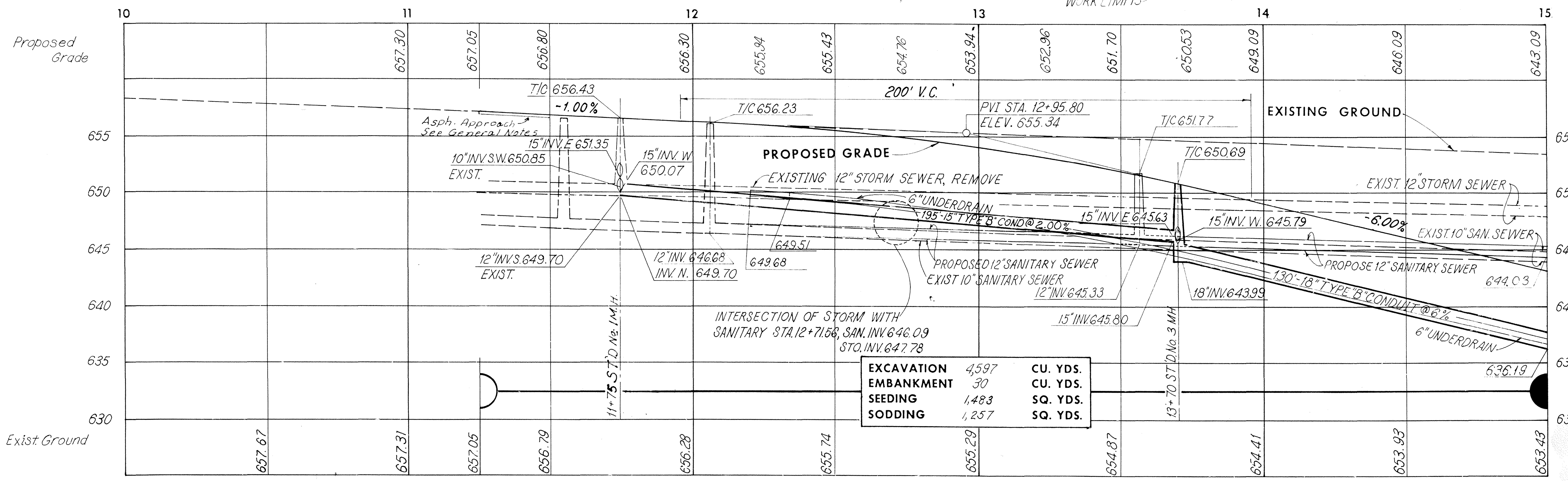
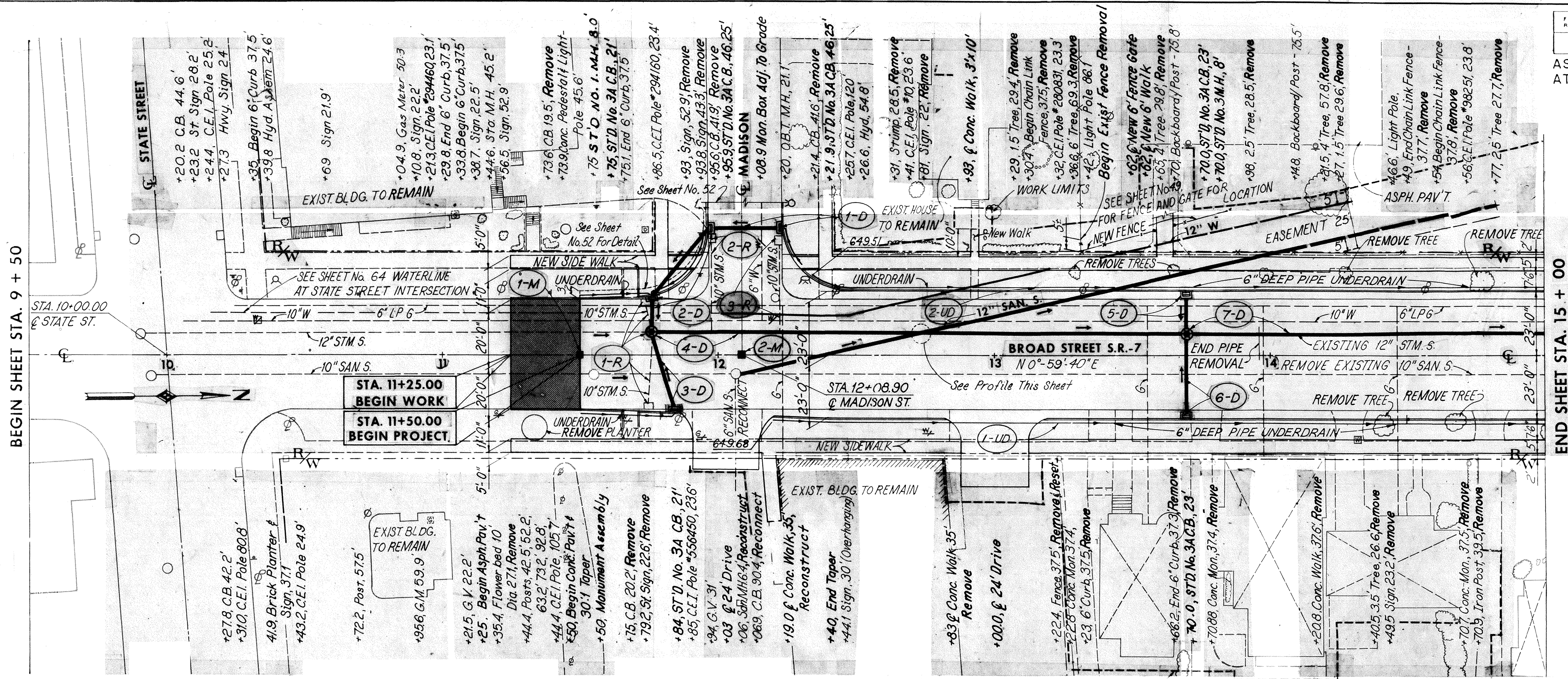
SHEET NUMBER										PROPOSAL QUANTITIES	UNIT	ITEM NO.	DESCRIPTION
10	12									58	72 74		<u>TRAFFIC CONTROL</u>
										49		Sq.Ft.	844 Sign Flat Sheet
										156		Lin.Ft.	844 Ground Mounted Supports, No. 2 Post Driven
										54		Lin.Ft.	844 Ground Mounted Supports, No. 3 Post Driven
										.31		MI.	621 4" Center Line
										.43		MI.	621 4" Lane Line
										160		Lin.Ft.	621 16" Stop Line
										507		Lin.Ft.	621 8" Crosswalk
													<u>RAILROAD RUNAROUND</u>
											Lump	Sum	615 Norfolk and Western Railway Company Runaround Roadbed Preparation As Per Plan.
											545	Lin.Ft.	Special Norfolk and Western Railway Company Runaround Track Work As Per Plan
											107	Lin.Ft.	202 Fence Removed For Reuse As Per Plan
											70	Lin.Ft.	607 Fence Type C.L. For Temporary Use As Per Plan
													<u>LIGHTING</u>
										100		Lin.Ft.	605 4" Shallow Pipe Underdrains
										14		Each	625 Light Pole, Design T6B 30.0 (Transformer base pole)
										14		Each	625 Light Pole Foundation 24" x 6' Deep.
										8		Each	625 Luminaire, Type II, 150 Watt High Press. Sodium Ballast.
										6		Each	625 Luminaire, Type II, 250 Watt, High Press. Sodium Ballast.
										8		Each	625 Lamp, 150 Watt, High Press. Sodium.
										6		Each	625 Lamp, 250 Watt High Press. Sodium.
										10		Each	625 Pull Box, 18" Circular, Metal 713.09.
										1623		Lin.Ft.	625 Trench, 24" Deep.
										152		Lin.Ft.	625 Conduit, 3" 713.04
										105		Lin.Ft.	625 Conduit, 1 1/4" 713.04
										634		Lin.Ft.	625 No. 4 AWG 600 Volt Distribution Cable
										1050		Lin.Ft.	625 No. 10 AWG Pole and Bracket Cable
										1631		Lin.Ft.	625 1/2" Duct-Cable With Two No. 4 AWG 600 Volt Cables
										14		Each	625 Connector Kit, Type II
										14		Each	625 Connector Kit, Type III
										14		Each	625 Connector kit, Type VII A
										4		Each	625 Connector kit, Type VII B
										4		Each	625 Connector Kit Type VII C
										Lump		Sum	625 Service Pole; Jefferson St. Sta. 1+35 L
										Lump		Sum	625 Service Pole; Adams St. Sta. 1+25 L
										Lump		Sum	625 Service Pole; Jackson St. Sta. 6+00 L
										Lump		Sum	839 High Voltage Test
										34		Each	Special Cable Splicing Kit
													<u>GENERAL</u>
										Lump		Sum	623 Construction Layout Stakes
										Lump		Sum	619 Field Office
										Lump		Sum	614 Maintaining Traffic As Per Plan
										Lump		Sum	624 Mobilization

Lump  
Lump

SR. 7 - BROAD STREET

ASHTABULA COUNTY  
ATB-7-31.43

QUANTITY CALCULATIONS  
BY W.S. DATE 8-13-79  
CHKD. A.J.M. DATE 1/24/80  
WOODRUFF, INC.

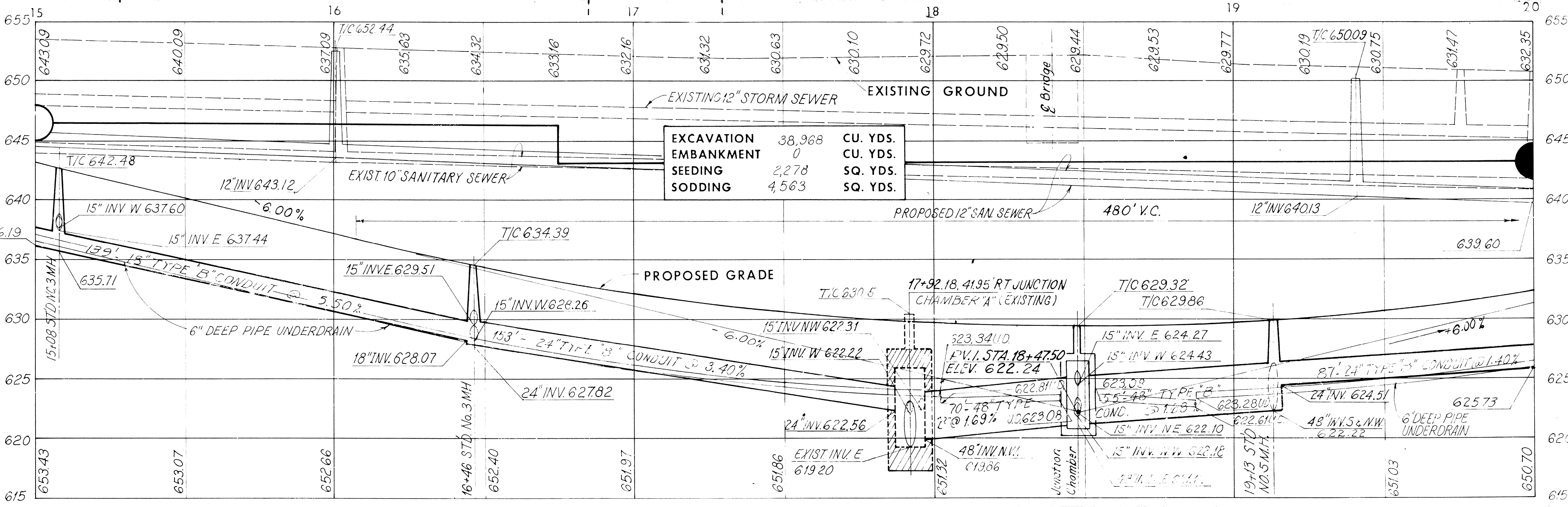
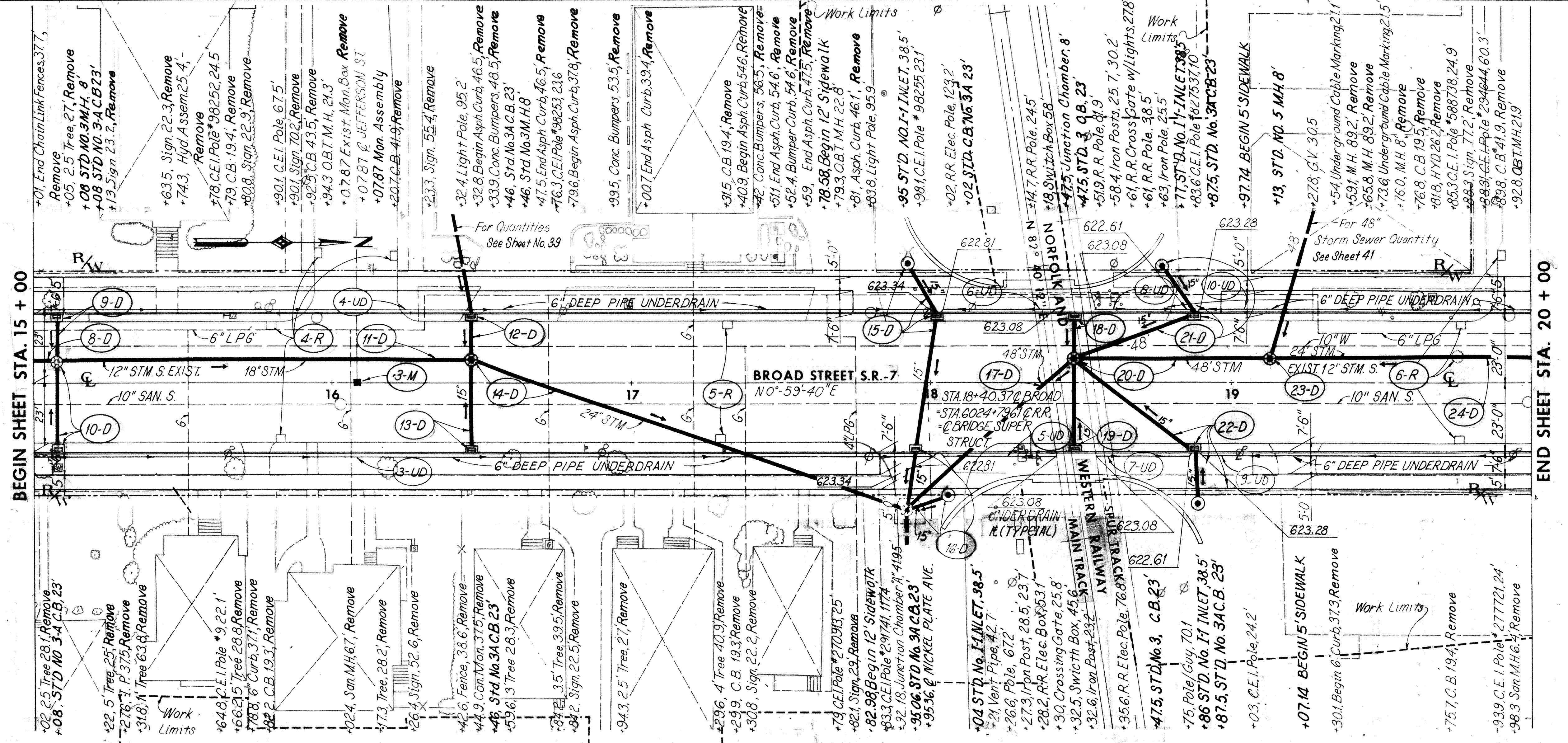


EXCAVATION	4,597	CU. YDS.
EMBANKMENT	30	CU. YDS.
SEEDING	1,483	SQ. YDS.
SODDING	1,257	SQ. YDS.

References	Sheet No.
Sanitary Sewer	60
Waterline	64,65,67
Grading & Pavement & Work Limits	49,50,51
Driveways	42,43,44
Madison Intersection	52
Plan & Profile Quantities	25, 26
Sewer Profiles	54
Drainage Quantities	25

Note:  
For additional details outside of Broad Street right of way see Grading and Paving Plan.

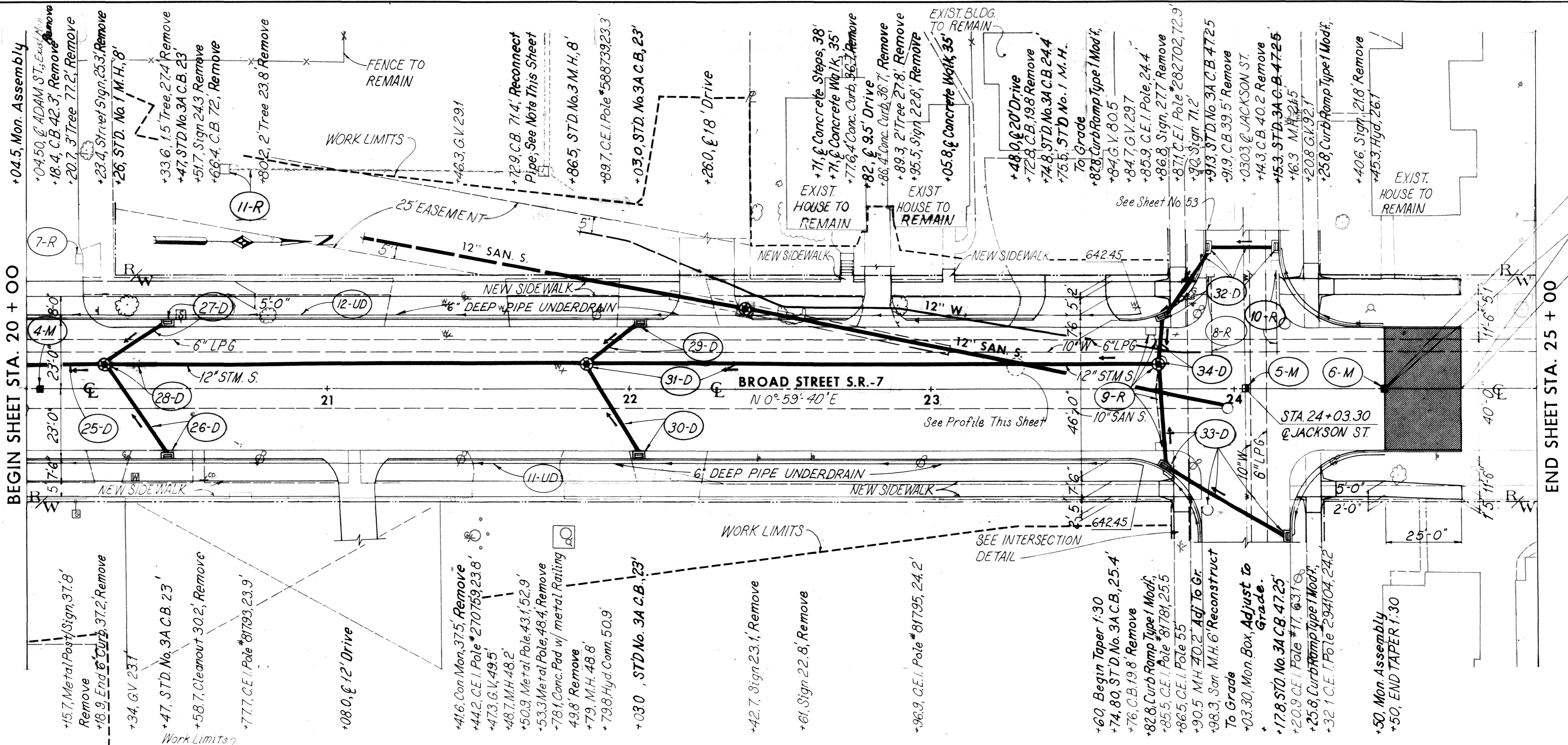
QUANTITY CALCULATIONS  
BY AJM DATE 12.5.79  
CHKD. A DATE 1.3.80  
WOODRUFF, INC.



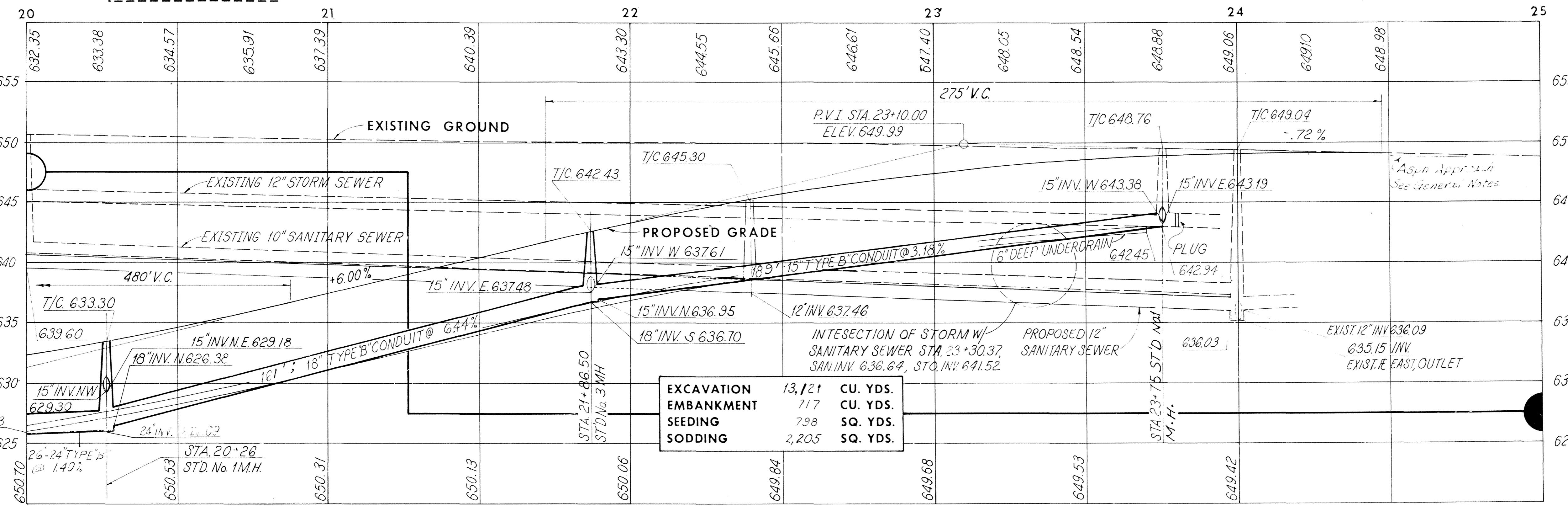
References	Sheet No.
Sanitary Sewer	60
Waterline	64, 65, 67
Grading & Pavement & Work Limits	49, 50, 51
Adams Cul-De-Sac	40
Jefferson Cul-De-Sac	38
Norfolk and Western R.W. Bridge	79 - 88
Plan and Profile Quantities	25, 26
Sewer Profile	55, 56
Drainage Quantities	25

Note:  
For additional details outside of Broad Street right of way see Grading and Paving Plans.

QUANTITY CALCULATIONS  
BY AJM DATE 12/15/79  
CHKD. DATE 1/3/80  
WOODRUFF, INC.



STA. 24+50.00  
END PROJECT  
STA. 24+75.00  
END WORK



References	Sheet No.
Driveways	42,43,44
Sanitary Sewer	60
Waterline	64,65,67
Grading & Pavement & Work Limits	49,50,51
Jefferson Cul-De-Sac	38
Jackson Intersection	53
Plan and Profile Quantities	25,26
Sewer Profiles	56,57
Drainage Quantities	25

Note:  
For additional details outside of Broad Street right of way see Grading and Paving Plan.  
The location of the outlet pipe connection for the existing catch basin at Sta 21+72.9, 71'4" L was not available, the catch basin is plugged.  
Provide drainage for this catch basin when pipe is encountered during excavation. See General Notes.



# ESTIMATED QUANTITIES

QUANTITY CALCULATIONS

BY N.S. DATE 1-18-79

CHKD. A.J.M. DATE 1/24/80

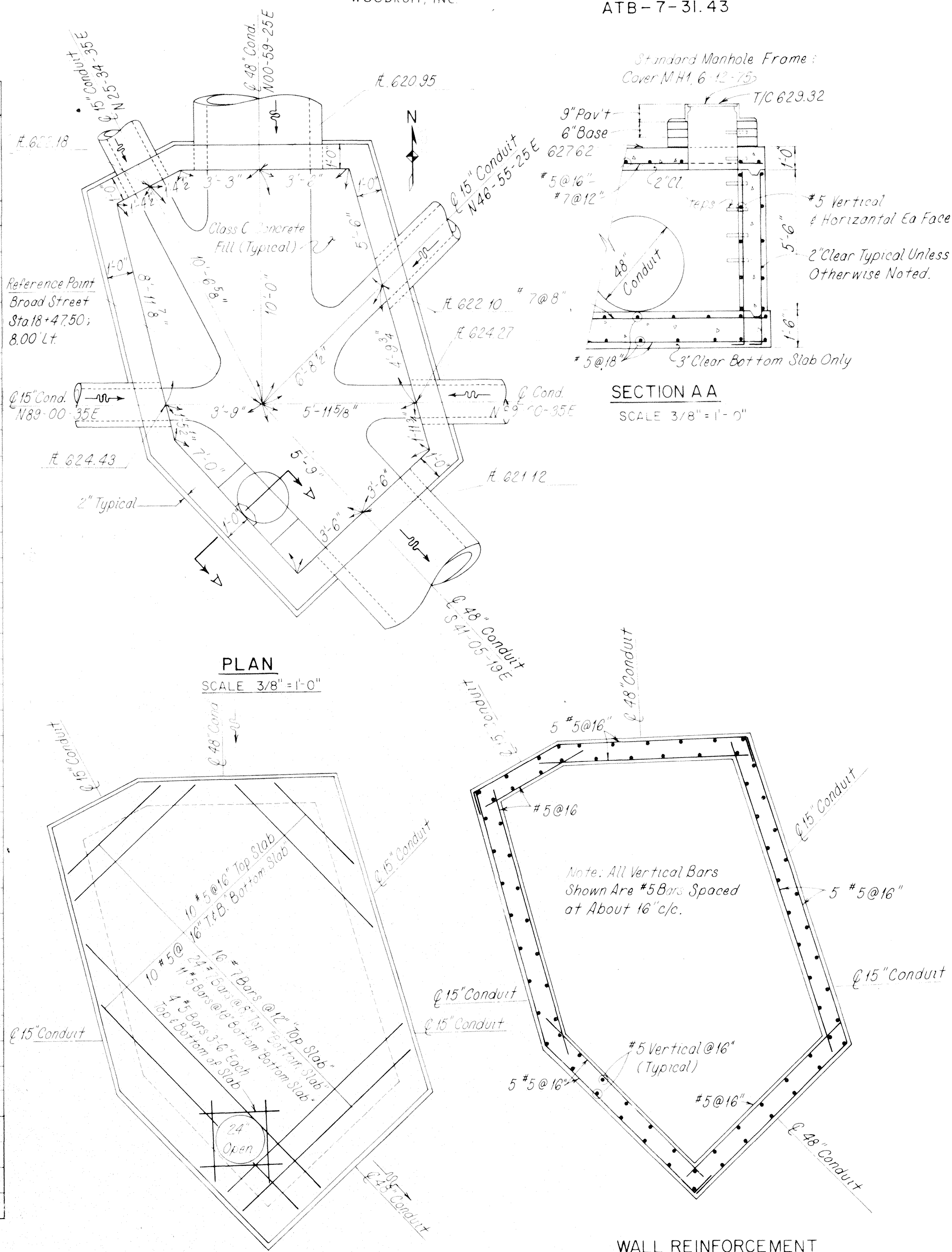
WOODRUFF, INC.

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

25  
100

ASHTABULA COUNTY  
ATB-7-31.43

REF. NO.	BROAD ST. STATION				ITEM NO. 603					ITEM NO. 604							
	FROM	SIDE	TO	SIDE	15" CONDUIT TYPE "B"	15" CONDUIT TYPE "C"	18" CONDUIT TYPE "B"	24" CONDUIT TYPE "B"	48" CONDUIT TYPE "B"	STANDARD NO. 3 CATCH BASIN	STANDARD NO. 3-A CATCH BASIN	STANDARD NO. 1 INLET	MANHOLE ADJUSTED TO GRADE	JUNCTION CHAMBER	STANDARD NO. 1 MANHOLE	STANDARD NO. 5 MANHOLE	STANDARD NO. 3 MANHOLE
					LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1-D	11+95.9	L	12+22.9	L	26						1						
2-D	11+75.0	L	11+95.9	L	13	33					2						
3-D	11+75.0	L&R	11+82.15	L&R	30						1						
4-D	11+75.0	L	13+70.0	L	195										1		
5-D	13+70.0	L			15						1						
6-D	13+70.0	R			30						1						
7-D	13+70.0	L	15+00.0	L			130										1
8-D	15+00.0	L	15+08.0	L			8										
9-D	15+08.0	L			15						1						
10-D	15+08.0	L&R			31						1						1
11-D	15+08.0	L	16+46.0	L			139										
12-D	16+46.0	L			15						1						
13-D	16+46.0	L&R			31						1						
14-D	16+46.0	L	17+92.18	R				153									1
15-D	17+95	R	18+02	L	47	18					1	1					
16-D	17+92.18	R	18+04.0	R	19	7					1	1					
17-D	17+92.18	R	18+47.5	L					70								
18-D	18+47.5	L			15					1							
19-D	18+47.5	L&R			31					1							
20-D	18+47.5	L	19+13.0	L					55				1				
21-D	18+47.5	L	18+87.5	L	43	16					1	1					
22-D	18+47.5	L&R	18+98.0	L&R	51	17					1	1					
23-D	19+13.0	L														1	
24-D	19+13.0	L	20+00.0	L				87									
25-D	20+00.0	L	20+26.0	L				26									
26-D	20+26.0	L&R	20+47.0	R	36						1						
27-D	20+26.0	L	20+47.0	L	23						1						
28-D	20+26.0	L	21+86.50				161							1			
29-D	21+86.50	L	22+03.0	L	23						1						
30-D	21+86.50	L&R	22+03.0	R	36						1						
31-D	21+86.50	L	23+75.0	L	189												1
32-D	23+74.8	L	24+15.30	L	24	29					3						
33-D	23+75.0	L&R	24+17.80		83						2		1				
34-D	23+75.0	L			17									1			
TOTALS =					1038	120	438	266	125	2	23	4	1	1	3	1	4



SCALE \_\_\_\_\_  
MADE N.S. DATE 1/79  
TRCD R.W.C. DATE 1/79  
CHKD. A.J.M. DATE 1/80

**WOODRUFF, INC.**  
CONSULTING ENGINEERS  
CLEVELAND OHIO

SR. 7 - BROAD STREET

# ESTIMATED QUANTITIES

QUANTITY CALCULATIONS  
 BY AJM DATE 12/15/79  
 CHKD. NB DATE 1/12/80  
 WOODRUFF, INC.

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

26  
100

ASHTABULA COUNTY  
 ATB-7-31.43

ROADWAY; STORM SEWER REMOVAL ITEM 202							
REF. NO.	BROAD ST. STATION		SIDE	PIPE REMOVED 24" AND UNDER	CATCH BASIN REMOVED	MANHOLE REMOVED	REMARKS
	FROM	TO		LIN. FT.	EACH	EACH	
1-R	11+73	11+75	L&R	40	2	1	
	19.5'L	20.20'					
2-R	11+95.9		L	38	1		
	46'L						
3-R	12+22	4+6'L	L	38	1		
4-R	15+79	16+20	L&R		4		
5-R	17+30		L&R		2		
6-R	19+76		L&R		3	1	
7-R	20+18		L		1		
8-R	23+92		L	32	1		
	40'						
9-R	23+73	23+76	L&R	41	2	1	
10-R	39.5'L	40'L	L	32	1		
11-R	20+66A	72'L	L	30	1		
TOTAL				251	19	3	

BENCH MARKS					
REF. NO.	BROAD ST. STATION	LOCATION	ELEVATION * See Note	ITEM 604	
				MONUMENT ASSEMBLY STANDARD	MONUMENT BOX ADJUSTED TO GRADE
				EACH	EACH
1-M	11+50.00	Located at the beginning point of the project, 150 Feet North of the C of U.S. Route 20, AKA State Street measured along the C of State Route 7, AKA Broad Street.	656.30	1	
2-M	12+08.90	Located at the intersection of the C of the R/W, also being the C of pavement of State Route 7, AKA Broad Street, with the C of the R/W of Madison Street, and located approximately 209 Feet North of the C of U.S. Route 20, AKA State Street, measured along the C of State Route 7, AKA Broad Street.	655.69		1
3-M	16+07.87	Located at the intersection of the C of the R/W, also being the C of pavement of State Route 7, AKA Broad Street, with the extension of the C of R/W of Jefferson Street, and located approximately 608 Feet North of the C of U.S. Route 20 AKA State Street, measured along the C of State Route 7, AKA Broad Street.	636.13	1	
4-M	20+04.50	Located at the intersection of the C of the R/W, also being the C of pavement of State Route 7, AKA Broad Street, with the extension of the C of R/W of Adams Street, and located approximately 1005 Feet North of the C of U.S. Route 20, AKA State Street, measured along the C of State Route 7, AKA Broad Street.	632.04	1	
5-M	24+03.30	Located at the intersection of the C of the R/W, also being the C of pavement of State Route 7, AKA Broad Street, with the C of the R/W of Jackson Street, and located approximately 1403 Feet North of the C of U.S. Route 20, AKA State Street, measured along the C of State Route 7, AKA Broad Street.	644.42		1
6-M	24+50.00	Located at the end point of the project, 1450 feet North of the C of U.S. Route 20, AKA State Street, measured along the C of State Route 7, AKA Broad Street.	648.48	1	
TOTALS				4	2

\* Note: Monument elevations as given are located 6 inches below the Broad Street design C grade.

ITEM 605 6" DEEP PIPE UNDERDRAIN					
REF. NO.	BROAD ST. STA.		SIDE	LENGTH	REMARKS
	FROM	TO		LIN. FT.	
1-UD	12+20.0	15+00.0	R	280	
2-UD	12+34.0	15+00.0	L	266	
3-UD	15+00.0	18+02.0	R	302	
4-UD	15+00.0	18+02.0	L	302	
5-UD	18+02.0	18+42.0	R	40	
6-UD	18+02.0	18+42.0	L	40	
7-UD	18+55.0	18+87.5	R	33	
8-UD	18+55.0	18+87.5	L	33	
9-UD	18+87.5	20+00.0	R	113	
10-UD	18+87.5	20+00.0	L	113	
11-UD	20+00.0	23+70.0	R	370	
12-UD	20+00.0	23+70.0	L	370	
TOTAL				2,262	

ITEM 607 WALK GATE TYPE CL AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	QUANT.	REMARKS
FROM		TO			EACH	
BROAD ST.						
13+61.0	46.0	13+87.0	46.8	L	1	
TOTAL					1	See General Notes Sheet #10

SR.7 - BROAD STREET

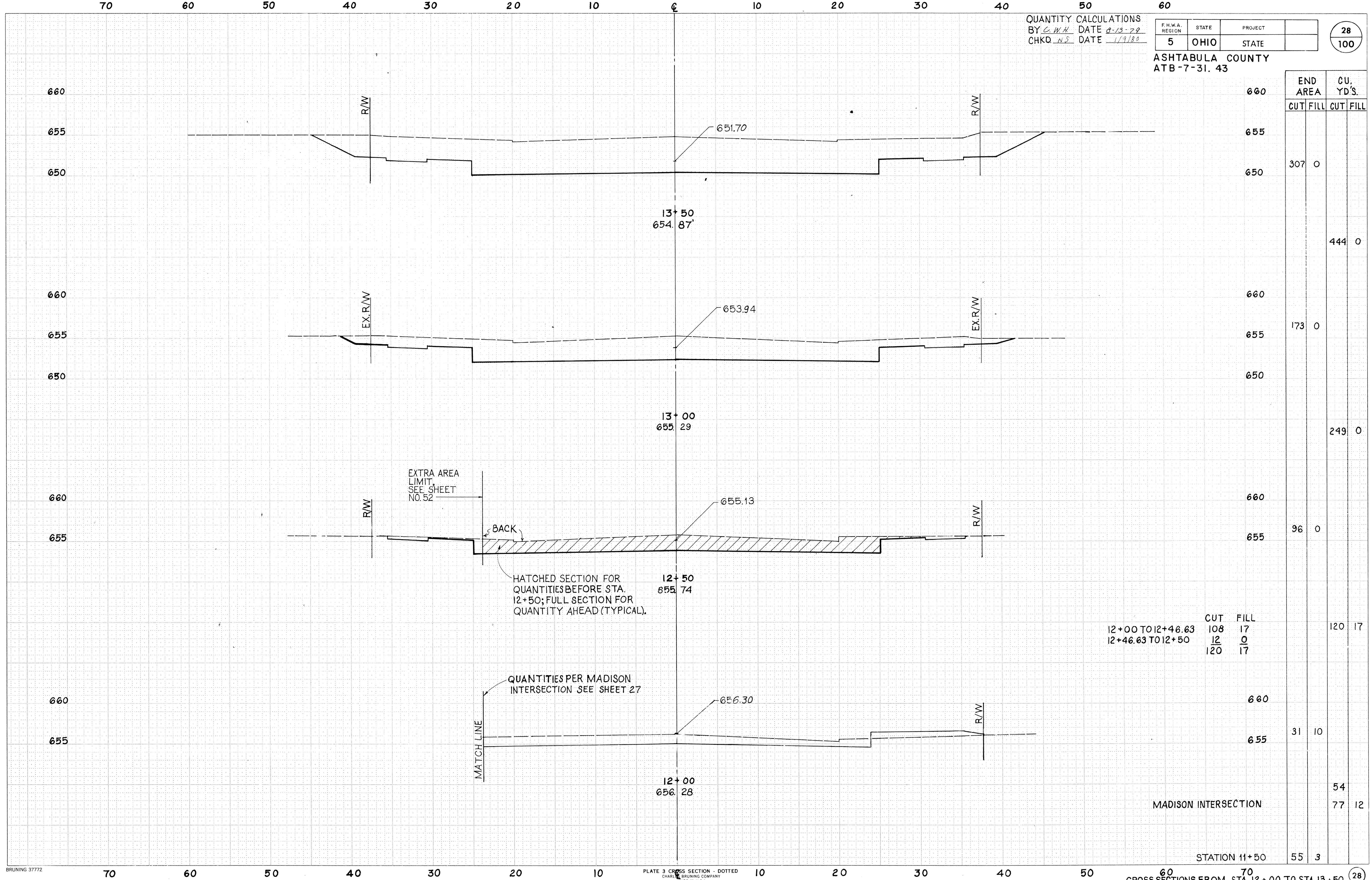


QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-79  
 CHKD. N.S. DATE 1/9/80

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

28  
100

ASHTABULA COUNTY  
 ATB-7-31. 43



END AREA		CU. YD'S.	
CUT	FILL	CUT	FILL
307	0		
		444	0
173	0		
		249	0
96	0		
		120	17
		31	10
		54	
		77	12
55	3		

	CUT	FILL
12+00 TO 12+46.63	108	17
12+46.63 TO 12+50	12	0
	120	17

HATCHED SECTION FOR QUANTITIES BEFORE STA. 12+50; FULL SECTION FOR QUANTITY AHEAD (TYPICAL).

QUANTITIES PER MADISON INTERSECTION SEE SHEET 27

MADISON INTERSECTION

STATION 11+50

CROSS SECTIONS FROM STA. 12+00 TO STA. 13+50

S.R.7 BROAD STREET

70

60

50

40

30

20

10

0

10

20

30

40

50

60

QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-29  
 CHKD. N.S. DATE 1-9-80

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

29  
100

ASHTABULA COUNTY  
 AT B-7-31.43

END AREA	CU, YDS.	
	CUT	FILL
1061		
		1689
763		
		1181
512	0	
		758
307	0	

655

650

645

640

655

650

645

640

15 + 00  
 653.43

643.09

2:1

2:1

R/W

R/W

655

650

645

655

650

645

14 + 50  
 653.93

646.09

R/W

R/W

655

650

655

650

14 + 00  
 654.41

649.09

2:1

2:1

STA. 13+50

CROSS SECTIONS FROM STA. 14+00 TO STA. 15+00

SR. 7 - BROAD STREET

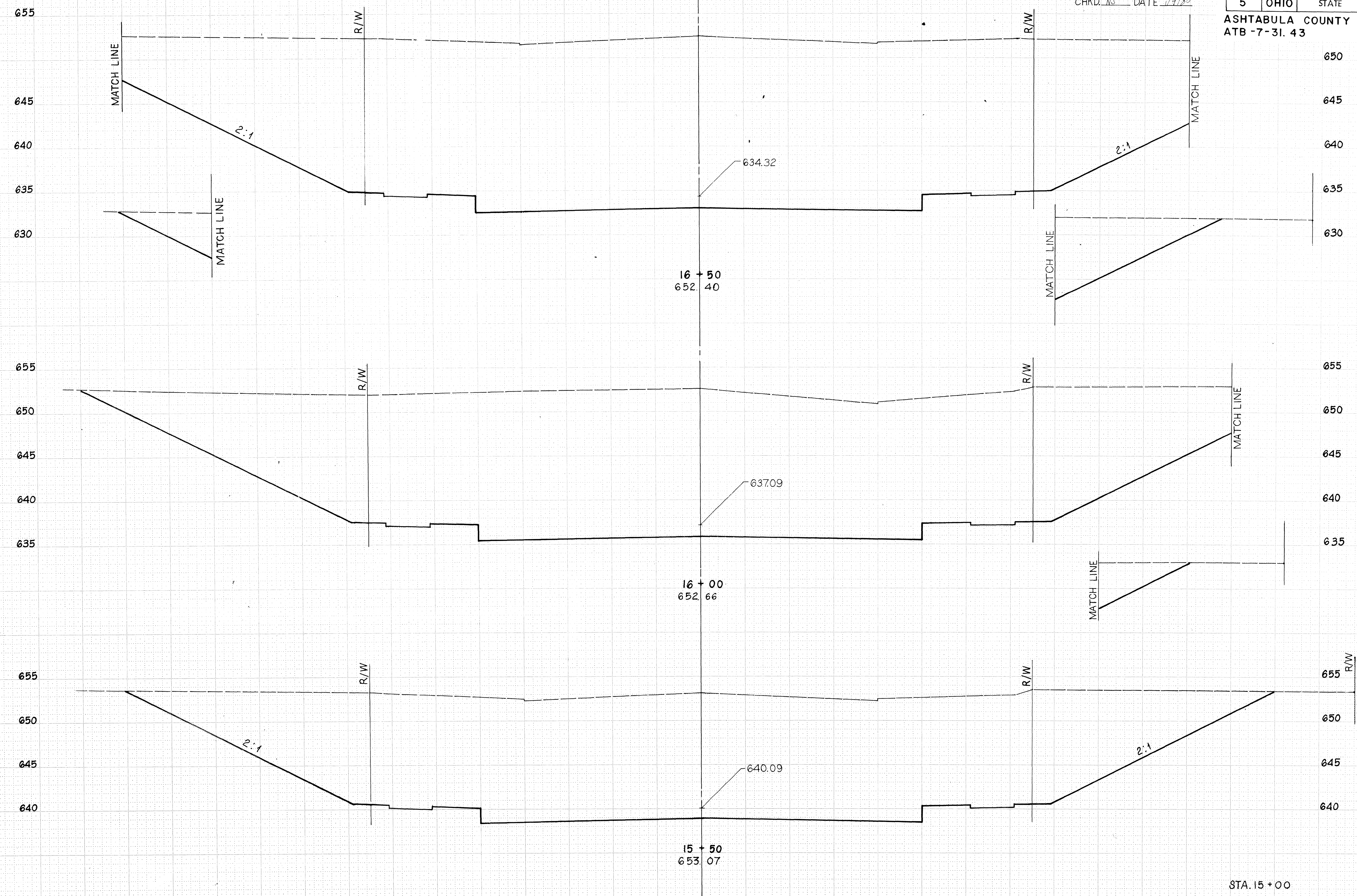
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QUANTITY CALATIONS  
BY C.W.H. DATE 8-13-79  
CHKD. NS DATE 1/9/80

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

30  
100

ASHTABULA COUNTY  
ATB -7-31.43



16 + 50  
652.40

16 + 00  
652.66

15 + 50  
653.07

END AREA	CU. YD'S.	
	CUT	FILL
2074		
1729		3521
2886		
1388		2268
1061		

STA. 15 + 00

CROSS SECTIONS FROM STA. 15+50 TO STA. 16+50

S.R. 7 - BROAD STREET

70

60

50

40

30

20

10

0

10

20

30

40

50

60

QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-79  
 CHKD. N.S. DATE 1/9/80

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

31  
100

ASHTABULA COUNTY  
 ATB-7-31.43

END AREA	CU. YD'S.	
	CUT	FILL
2579		
	4552	
2337		
	4084	
2074		

655

650

645

640

635

630

655

650

645

640

635

630

655

650

645

640

635

630

655

650

645

640

635

630

625

625

17+50  
651.86'

17+00  
651.97'

630.63

632.16

MATCH LINE

2:1

MATCH LINE

R/W

R/W

MATCH LINE

2:1

MATCH LINE

MATCH LINE

2:1

MATCH LINE

MATCH LINE

MATCH LINE

R/W

R/W

60

70

80

90

60

70

80

90

STA. 16+50

CROSS SECTIONS FROM STA. 17+00 TO STA. 17+50

S.R.7-BROAD STREET

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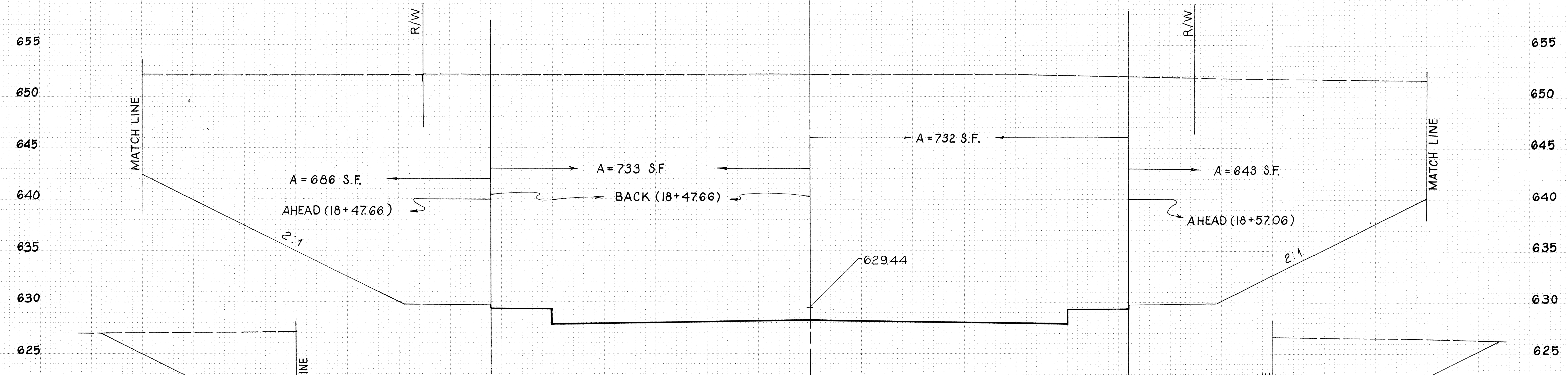
QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-79  
 CHKD. N.S. DATE 1/9/80

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

32  
100

ASHTABULA COUNTY  
 ATB-7-31.43

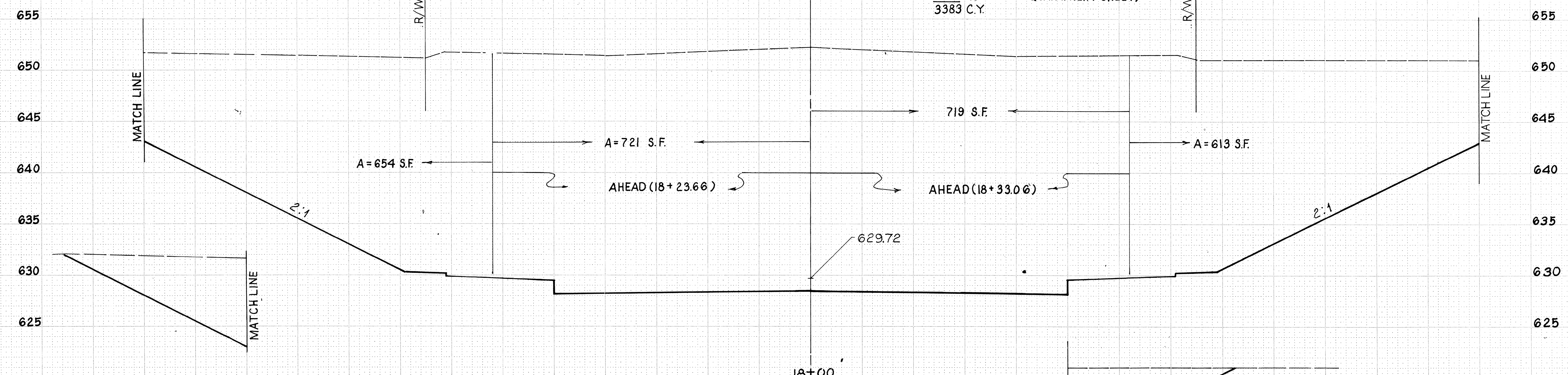
END AREA		CU. YD'S.	
CUT	FILL	CUT	FILL
		2794	
			3383
		2707	
			4894
		2579	



L.H.S. +00 TO +23.66  $V = \frac{654 + 721 + 733 + 686}{2} \times \frac{23.66}{27} = 1233 \text{ C.Y.}$   
 +23.66 TO +47.66  $V = \frac{721 + 733}{2} \times \frac{24}{27} = 646 \text{ C.Y.}$   
 +47.66 TO +50  $V = \frac{654 + 721 + 733 + 686}{2} \times \frac{2.17}{27} = 112 \text{ C.Y.}$   
 1991 C.Y.

18+50  
652.10  
 R.H.S. +00 TO +33.06  $V = \frac{613 + 719 + 643 + 732}{2} \times \frac{32.89}{27} = 1649 \text{ C.Y.}$   
 +33.06 TO +50  $V = \frac{719 + 732}{2} \times \frac{17.11}{27} = 462 \text{ C.Y.}$   
 2111 C.Y.

TOTAL = 4102  
 LESS SPILL = -719 (SEE SPILL QUANT. NEXT SHEET)  
 3383 C.Y.



18+00  
652.07

STA. 17+50

CROSS SECTIONS FROM STA. 18+00 TO STA. 18+50

SR 7 BROAD STREET



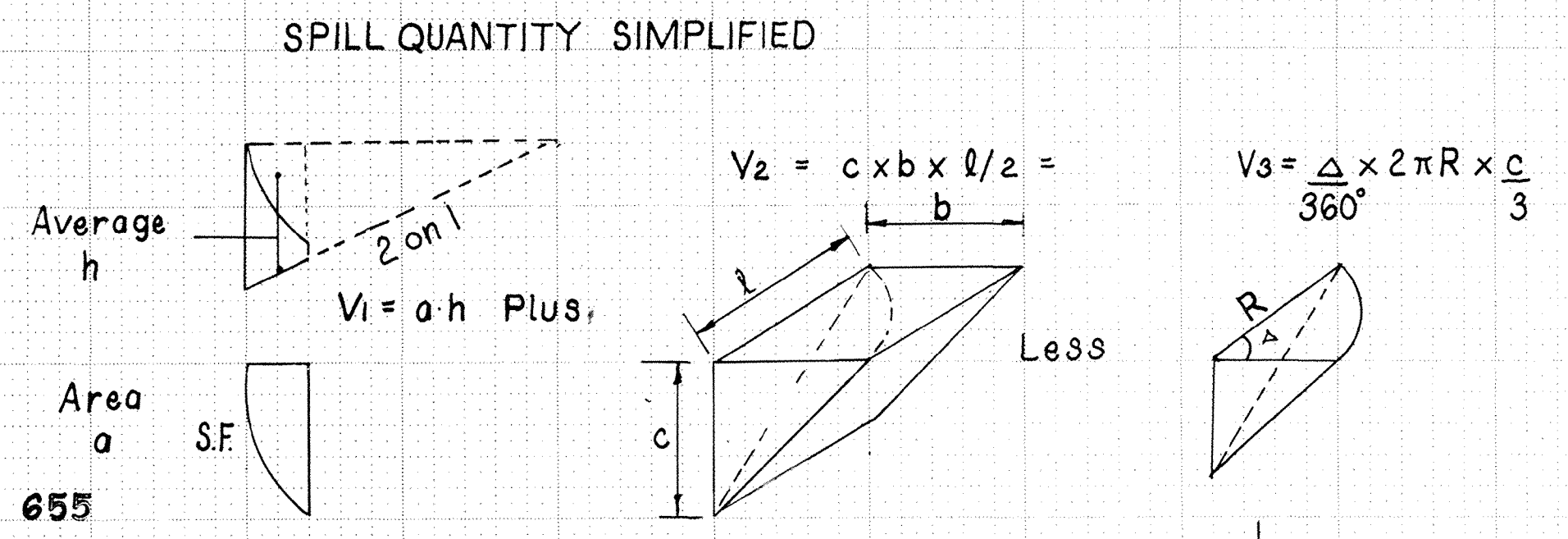
70 60 50 40 30 20 10 0 10 20 30 40 50 60

SPILL =  $a \cdot h + \frac{c \cdot b \cdot l}{2} - \frac{\Delta \times 2\pi R \cdot c}{360} - \frac{\Delta \times 2\pi R \cdot c}{3}$

QUANTITY CALCULATIONS

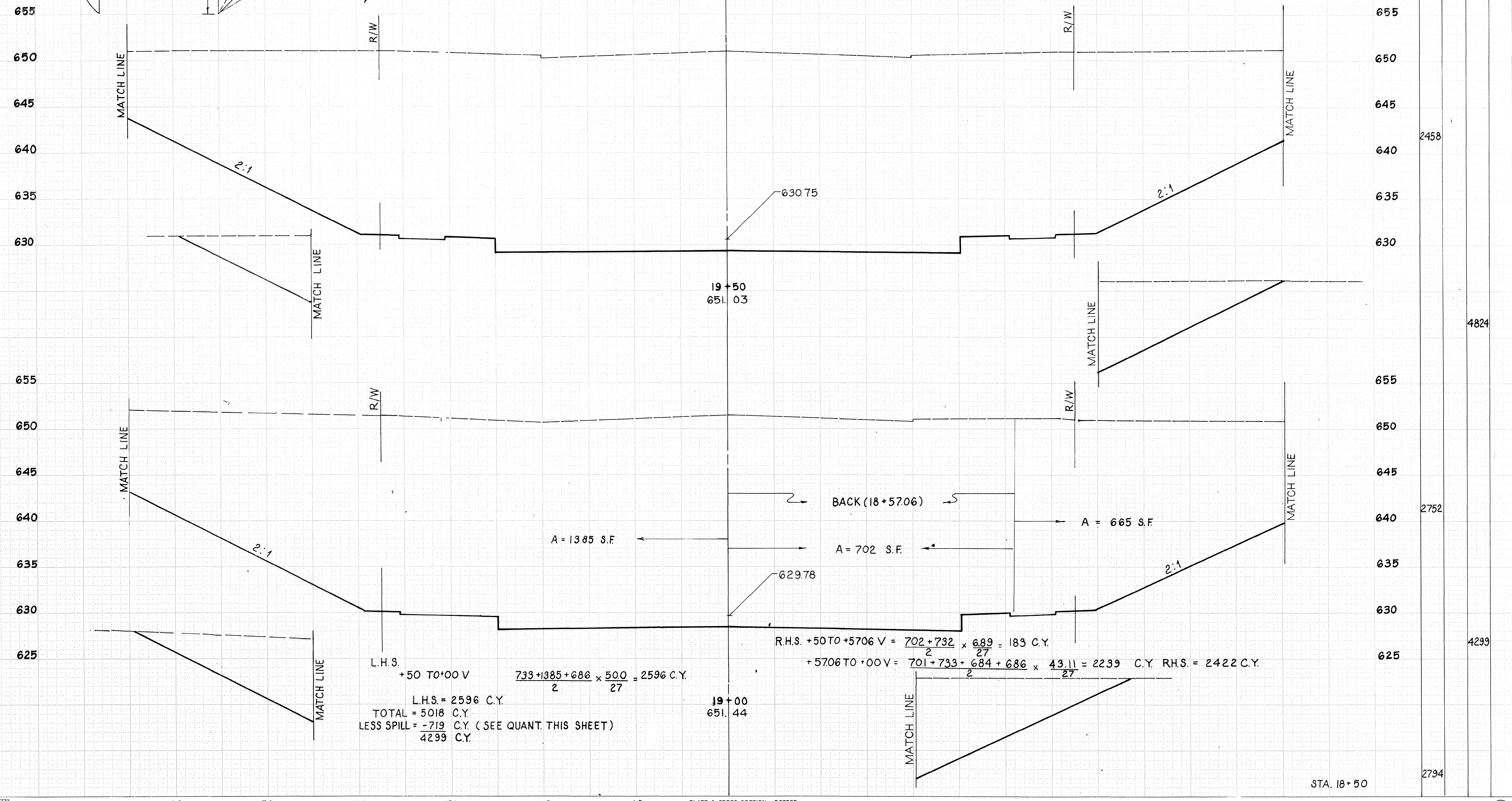
BY C.W.H.	DATE 8-13-79	F.H.W.A. REGION	STATE	PROJECT
CHKD. N.S.	DATE 11/9/80	5	OHIO	STATE

ASHTABULA COUNTY  
ATB-7-31. 43



LOCATION	a Ft. <sup>2</sup>	h Ft.	b Ft.	c Ft.	l Ft.	$\Delta^\circ$	v	VOL. C.Y.
18+32.89 RT.	181	13.5	32.7	16.2	30.5	98.3	32.7	378
18+23.83 LT.	253	12.5	27.5	13.8	32.9	81.7	27.5	341
18+56.89 RT.	253	12.5	27.5	13.8	32.9	81.7	27.5	341
18+47.83 LT.	181	13.5	32.7	16.2	30.5	98.3	32.7	378

END AREA		CU. YD'S.	
CUT	FILL	CUT	FILL



CROSS SECTIONS FROM STA. 19+00 TO STA. 19+50

S.R.7 - BROAD STREET

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

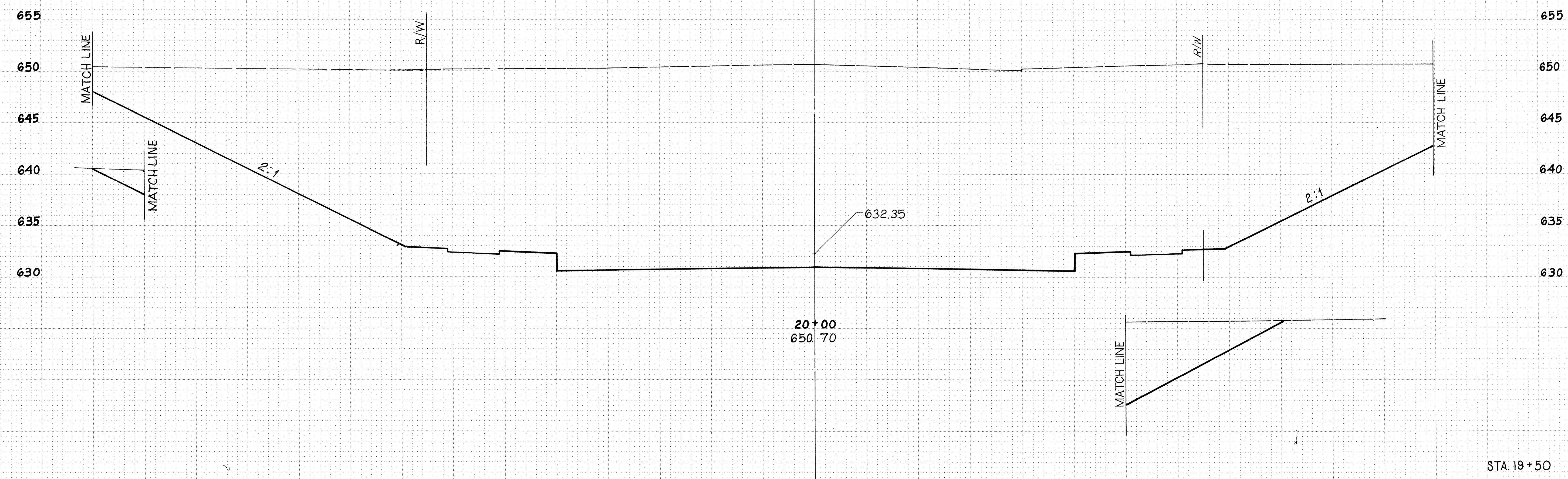
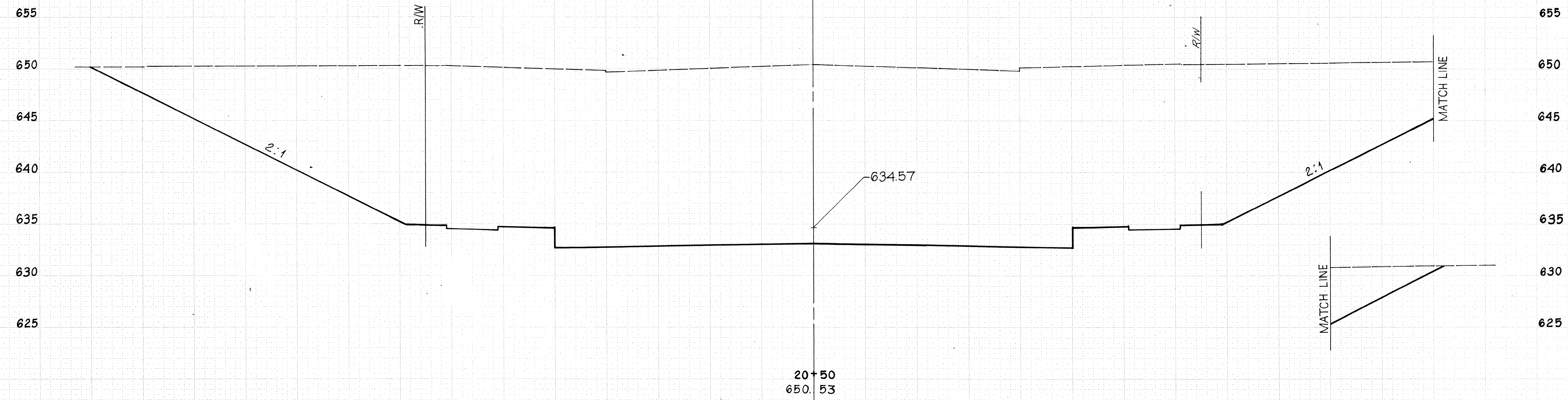
QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-79  
 CHKD N.P. DATE 1/9/80

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

34  
100

ASHTABULA COUNTY  
 ATB-7-31.43

END AREA	CU. YD'S.	
	CUT	FILL
1797		
	3645	
2140		
	4257	
2458		



STA. 19+50

CROSS SECTIONS FROM STA. 20+00 TO STA. 20+50

S.R. 7 - BROAD STREET

QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-79  
 CHKD. N.S. DATE 1/9/80

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

35  
100

ASHTABULA COUNTY  
 ATB-7-31.43

END AREA	CU. YD'S.	
	CUT	FILL
635		
978		
1383		
1797		
1633	139	
2234	139	
2944		

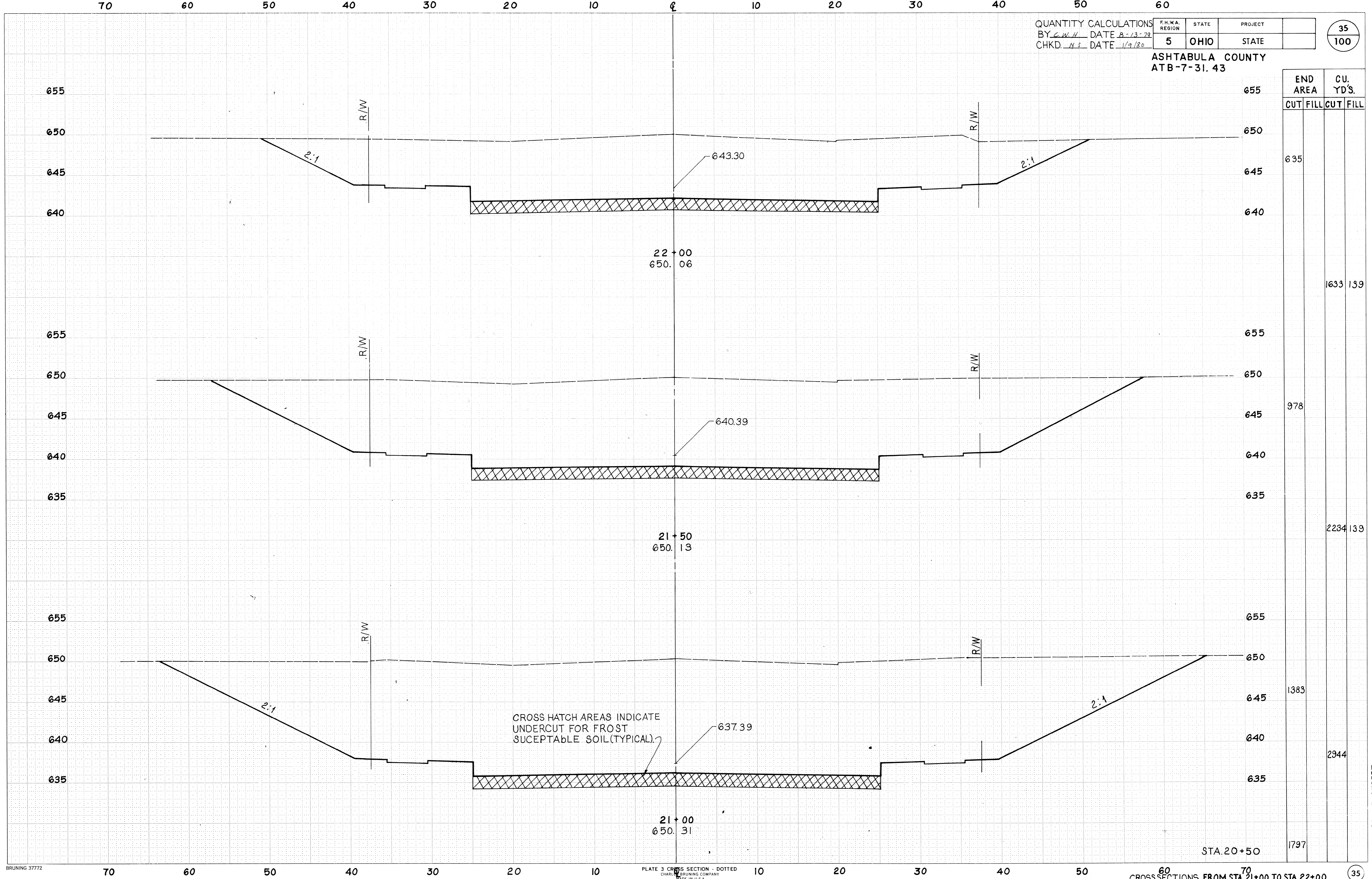


PLATE 3 CROSS SECTION - DOTTED  
 CHARLES BRUNING COMPANY  
 MADE IN U.S.A.

CROSSSECTIONS FROM STA 21+00 TO STA 22+00

S.R.7-BROAD STREET

35

QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-79  
 CHKD. N.S. DATE 4/9/80

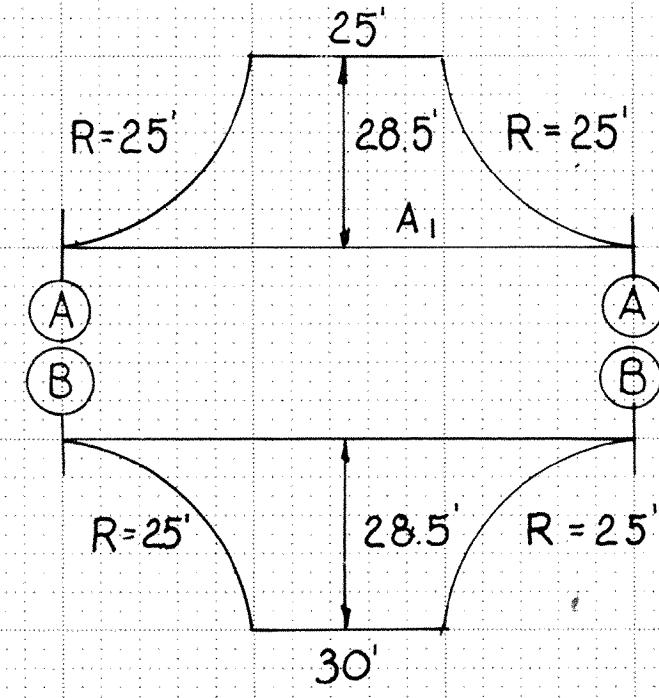
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	STATE

36  
100

ASHTABULA COUNTY  
 ATB-7-31.43

END AREA	CU. YD'S.	
	CUT	FILL
60		
126		
147	35	1
99	112	0
147	147	1
445		139
231		
713		139
389		
1087		139
635		

JACKSON INTERSECTION



AVE. H = 1.62'

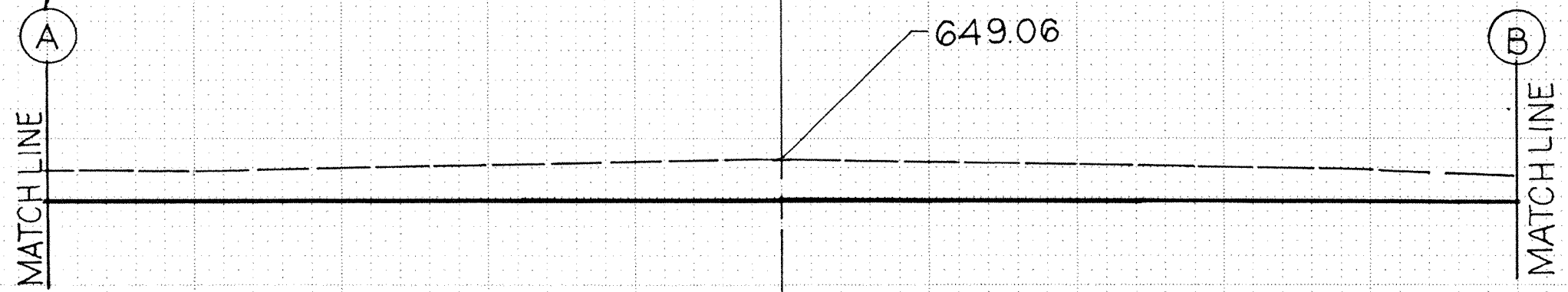
$$A_1 = 25 \times 28.5 + 2 \times \frac{25^2}{4} - \frac{2\pi \cdot 25^2}{4} = 981 \text{ S.F.}$$

$$= 30 \times 28.5 + 2 \times \frac{25^2}{4} - \frac{2\pi \cdot 25^2}{4} = 1123 \text{ S.F.}$$

$$V = \frac{2104}{27} \times 1.62 = 126 \text{ C.Y.}$$

ΣA=2104

SEE JACKSON INTERSECTION THIS SHEET (TYPICAL).



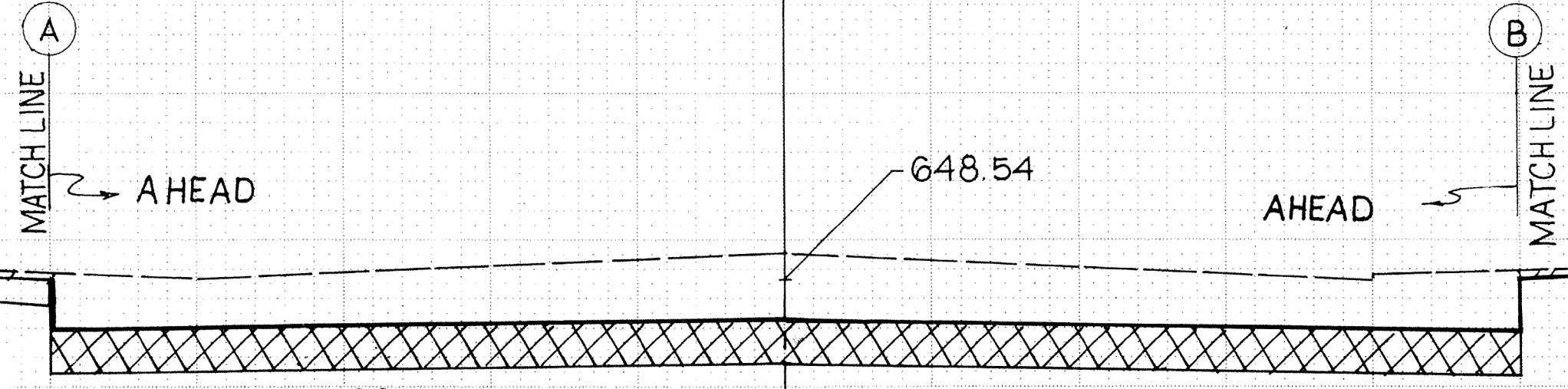
24+00  
649.42

23+50 TO 23+62

CUT 35  
FILL 1

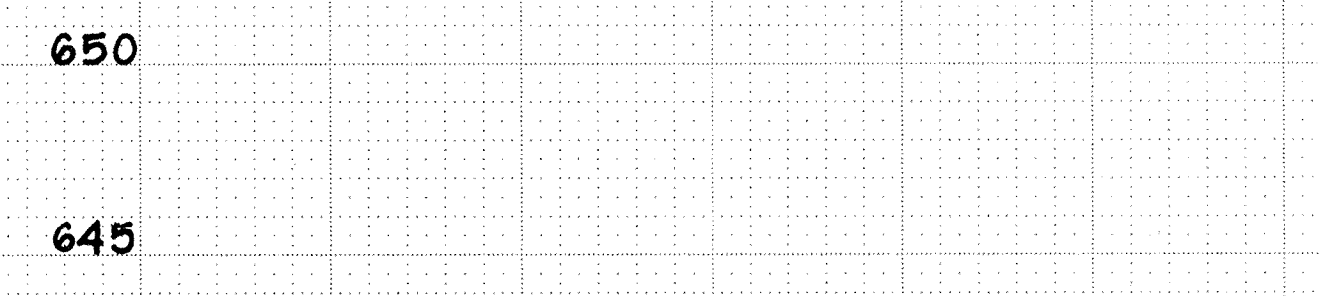
23+62 TO 24+00

112  
147

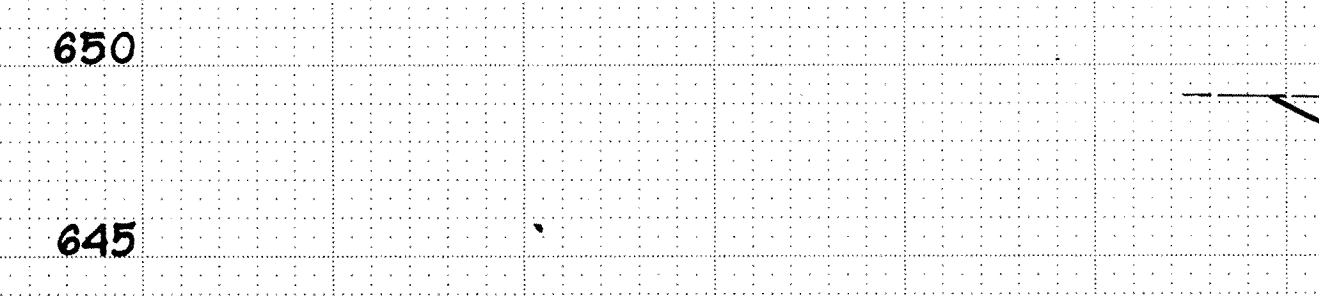


23+50  
649.50

DRIVEWAY AT STA. 23+48.00,  
 EXCAVATION CALCULATED  
 SEPARTLY SEE DRIVEWAY  
 QUANTITIES SHEET NO. 44/100



23+00  
649.68



22+50  
649.84

CROSS HATCH AREA INDICATE  
 UNDERCUT FOR FROST SUCEPTABLE  
 SOIL (TYPICAL).

STA. 22+00

CROSS SECTIONS FROM STA. 22+50 TO STA. 24+00

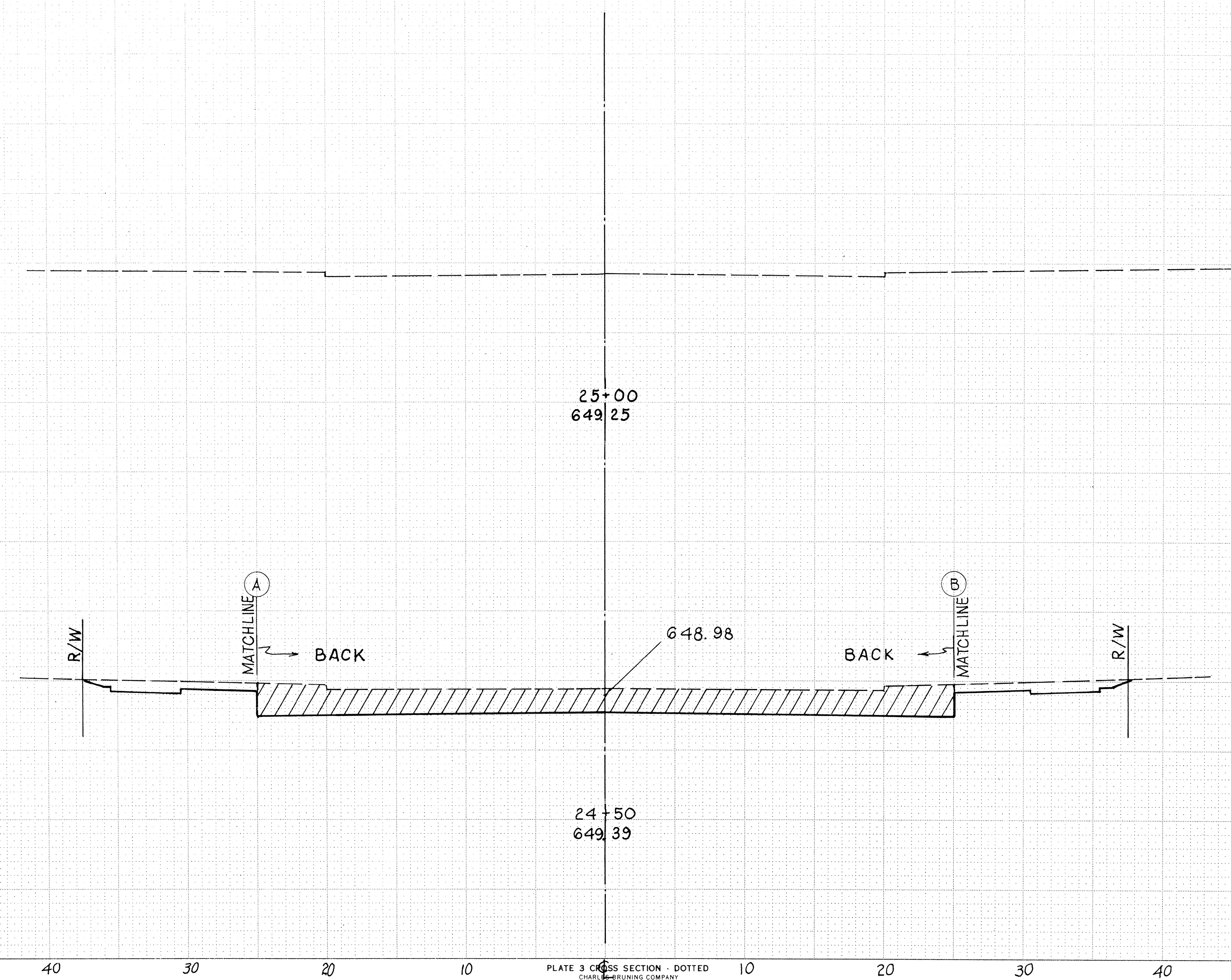
QUANTITY CALCULATIONS  
 BY C.W.H. DATE 8-13-79  
 CHKD. NS DATE 1/9/83

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

37  
100

ASHTABULA COUNTY  
 ATB-7-31.43

END AREA		CU. YDS	
CUT	FILL	CUT	FILL



STATION	CUT		FILL		END AREA CUT	END AREA FILL	CU. YDS CUT	CU. YDS FILL
	FT	IN	FT	IN				
24+00 TO 24+42	124	0	645		147	5		
24+42 TO 24+50	23	5	5	5	60	0		
<b>TOTAL</b>	<b>147</b>	<b>5</b>	<b>147</b>	<b>5</b>	<b>207</b>	<b>5</b>	<b>0</b>	<b>16</b>

# CUL-DE-SAC - JEFFERSON ST.

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

38  
100

ASHTABULA COUNTY  
ATB-7-31.43

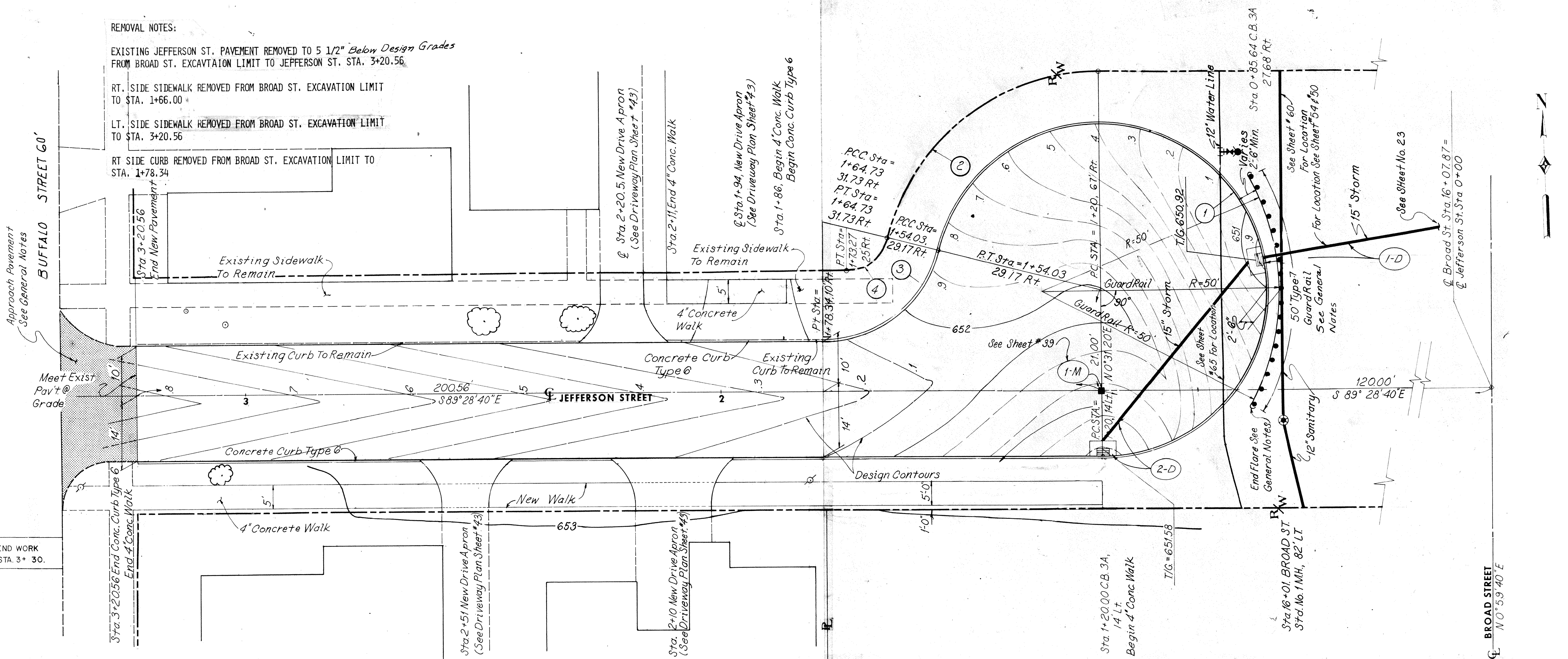
**REMOVAL NOTES:**

EXISTING JEFFERSON ST. PAVEMENT REMOVED TO 5 1/2" Below Design Grades FROM BROAD ST. EXCAVATION LIMIT TO JEFFERSON ST. STA. 3+20.56

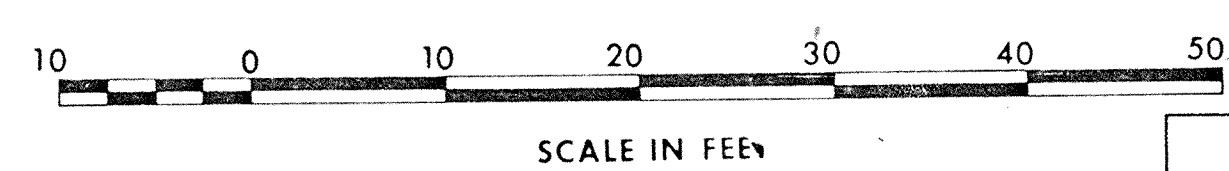
RT. SIDE SIDEWALK REMOVED FROM BROAD ST. EXCAVATION LIMIT TO STA. 1+66.00

LT. SIDE SIDEWALK REMOVED FROM BROAD ST. EXCAVATION LIMIT TO STA. 3+20.56

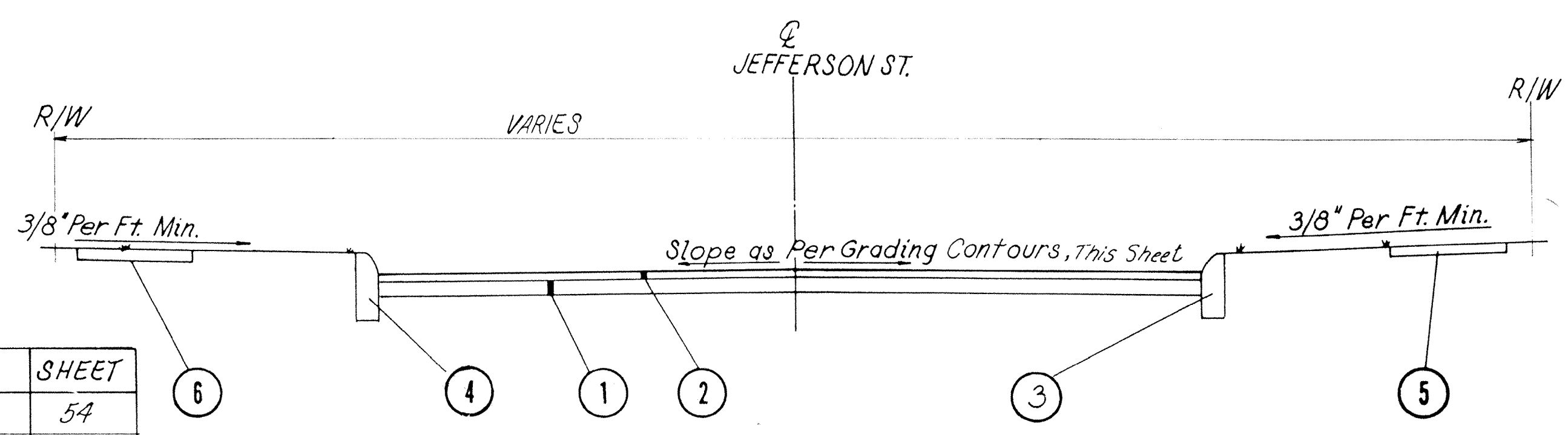
RT SIDE CURB REMOVED FROM BROAD ST. EXCAVATION LIMIT TO STA. 1+78.34



①	②	③	④
<b>CURVE DATA</b>	<b>CURVE DATA</b>	<b>CURVE DATA</b>	<b>CURVE DATA</b>
$\Delta = 256^{\circ} 30' 24''$	$\Delta = 76^{\circ} 30' 24''$	$\Delta = 76^{\circ} 30' 24''$	$\Delta = 76^{\circ} 30' 24''$
$R = 35'$	$R = 46'$	$R = 25'$	$R = 8.78'$
$T = 44.39'$	$T = 36.27'$	$T = 19.71'$	$T = 6.92'$
$L = 156.69'$	$L = 61.42'$	$L = 33.38'$	$L = 11.73'$
$C = 54.97'$	$C = 56.96'$	$C = 30.96'$	$C = 10.88'$



REFERENCES	SHEET
STORM SEWER PROFILE	54
SANITARY SEWER PLAN & PROFILE	60
WATERLINE PLAN & PROFILE	65
ESTIMATED QUANTITIES	39



**LEGEND**

①	ITEM 301 BIT. CONC. AGGREGATE BASE.
②	ITEM 404 1 1/2" ASPHALT CONCRETE, AC-20
③	EXISTING CURB
④	ITEM 609 CURB, STANDARD TYPE 6
⑤	EXISTING SIDEWALK
⑥	ITEM 608 4" CONCRETE WALK

SCALE \_\_\_\_\_  
MADE, M.A. DATE \_\_\_\_\_  
TRCO, C.L. DATE 11/11/11  
C.K.D., K.S. DATE 1.2.12

**WOODRUFF, INC.**  
CONSULTING ENGINEERS  
CLEVELAND OHIO

# ESTIMATED QUANTITIES

CUL-DE-SAC - JEFFERSON

QUANTITY CALCULATIONS

BY A.C. DATE 1-12-80

CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

39  
100

ASHTABULA COUNTY  
ATB-7-31.43

ITEM 606 GUARDRAIL, TYPE 7 AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	LENGTH	REMARKS
FROM	FEET	TO	FEET		LIN. FT.	
0+88.5	3.0	0+88.5	45.0	L to R	50	
					TOTAL	50

ITEM 202 PAVEMENT REMOVAL				
STATION	OFFSET	SIDE	AREA	REMARKS
FROM	TO	FEET	SQ. YDS.	
1+86.0	2+11.0	10	R	37
			TOTAL	37

ITEM 202 WALK REMOVED				
STATION	OFFSET	SIDE	AREA	REMARKS
FROM	TO	FEET	SQ. FT.	
0+68.0	3+20.56	18.0	L	1263
0+71.5	1+66.0	17.5	R	473
			TOTAL	1736

ITEM 301 BITUMINOUS AGGREGATE BASE AC-20; OR RT-11; OR RT-12						
STATION	LENGTH	WIDTH	AREA	VOLUME	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	CU. YDS.	
0+85.0	3+20.56	235.56	Varies	910	102	4" Depth
				TOTAL	102	

ITEM 404 ASPHALT CONCRETE, AC-20						
STATION	LENGTH	WIDTH	AREA	VOLUME	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	CU. YDS.	
0+85.0	3+20.56	235.56	Varies	910	38	1 1/2" Depth
3+20.56	3+36.00	15.44	Varies	52	3	
				TOTAL	41	

BENCH MARK				ITEM 604
REFERENCE NUMBER	JEFFERSON STREET STATION	LOCATION	ELEVATION SEE NOTE	MONUMENT ASSEMBLY STANDARD EACH
1-M	1+20	Located 21 Feet North of the Center Point of Jefferson Cul-De-Sac, also being on Jefferson St. Centerline Extension into the Cul-De-Sac. Said Monument is Approximately 230 ft East of the intersection of Buffalo St. Centerline With Jefferson St. Centerline. The Monument is also Located 120 ft West of the Centerline of Broad St. AKA SR-7.	651.07	1
			TOTAL	1

NOTE: Monument Elevations as give are located 6 inches below the Broad Street design @ grade.

ITEM 407 TACK COAT RC-250, MS-2, RS-1, SS-1 OR SS-1h						
STATION	LENGTH	WIDTH	AREA	QUANT.	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	GALS.	
0+85.0	3+20.56	235.56	Varies	910	91	Application Rate=0.10 Gal./Sq. Yd.
				TOTAL	91	

ITEM 608 4" CONCRETE WALK					
STATION	SIDE	WIDTH	AREA	REMARKS	
FROM	TO	LIN. FT.	SQ. FT.		
1+20.0	3+20.56	L	5	1003	
1+86.0	2+11.0	R	5	125	
			TOTAL	1128	

ITEM 407 COVER AGGREGATE						
STATION	LENGTH	WIDTH	AREA	QUANT.	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	TONS	
0+85.0	3+20.56	235.56	Varies	910	2.28	Application Rate=5 Lbs/Sq. Yd.
				TOTAL	2.28	

ITEM 609 CURB, STANDARD TYPE 6					
STATION	SIDE	LENGTH	REMARKS		
FROM	TO	LIN. FT.			
0+84.5	1+78.34	L & R	249		
1+78.34	3+20.56	L	118		
1+86.0	2+11.0	R	25		
		TOTAL	392		

ITEM 202 CURB REMOVED				
STATION	SIDE	LENGTH	REMARKS	
FROM	TO	LIN. FT.		
0+71.0	1+78.34	R	108	
		TOTAL	108	

ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT <small>CONST. AS PER PLAN</small>						
STATION	LENGTH	WIDTH	AREA	VOLUME	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	CU. YDS.	
0+69.0	3+20.56	251.56	Varies	1019	156	5 1/2" DEPTH
				TOTAL	156	

ITEM 203 SUBGRADE COMPACTION					
STATION	LENGTH	WIDTH	AREA	REMARKS	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	
0+85.0	3+20.56	235.56	Varies	910	
			TOTAL	910	

REF. NO.	ITEM NO.				603	604	
	STATION				15" CONDUIT TYPE "B"	15" CONDUIT TYPE "C"	STANDARD NO. 3-A CATCH BASIN
	FROM	SIDE	TO	SIDE	LIN. FT.	LIN. FT.	EACH
1-D	16+46.0	L	0+85.64	R		64	1
2-D	0+85.64	R	1+20.0	L	54		1
				TOTAL	54	64	2

ITEM 659 SEEDING AND MULCHING AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	AREA	REMARKS
FROM		TO			SQ. YDS.	
0+76.0	25.0	1+20.0	25.0	L	114	
1+20.0	25.0	3+20.56	25.0	L	109	
0+89.0	0.0	1+20.0	56.5	R	97	
1+20.0	56.5	1+78.34	25.0	R	96	
1+78.34	25.0	2+11.0	25.0	R	28	
					TOTAL	444

SR. 7 - BROAD STREET

SCALE \_\_\_\_\_ WOODRUFF, INC.  
MADE IN OHIO DATE \_\_\_\_\_  
TRCD RJK DATE 1/17  
CKD N.S. DATE 1/28  
CONSULTING ENGINEERS  
CLEVELAND OHIO

# CUL-DE-SAC - ADAMS ST.

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

40  
100

ASHTABULA COUNTY  
ATB-7-31.43

**REMOVAL NOTES:**

EXISTING ADAMS ST. PAVEMENT REMOVED TO 5 1/2" Below Design Grades  
FROM BROAD ST. EXCAVATION LIMIT TO ADAMS ST. STA. 1+72.80

RT. SIDE SIDEWALK REMOVED FROM BROAD ST. EXCAVATION  
LIMIT TO STA. 0+97.00

LT. SIDE SIDEWALK REMOVED FROM BROAD ST. EXCAVATION  
LIMIT TO STA. 1+60.00

RT. SIDE CURB REMOVED FROM BROAD ST. EXCAVATION  
LIMIT TO STA. 1+08.50

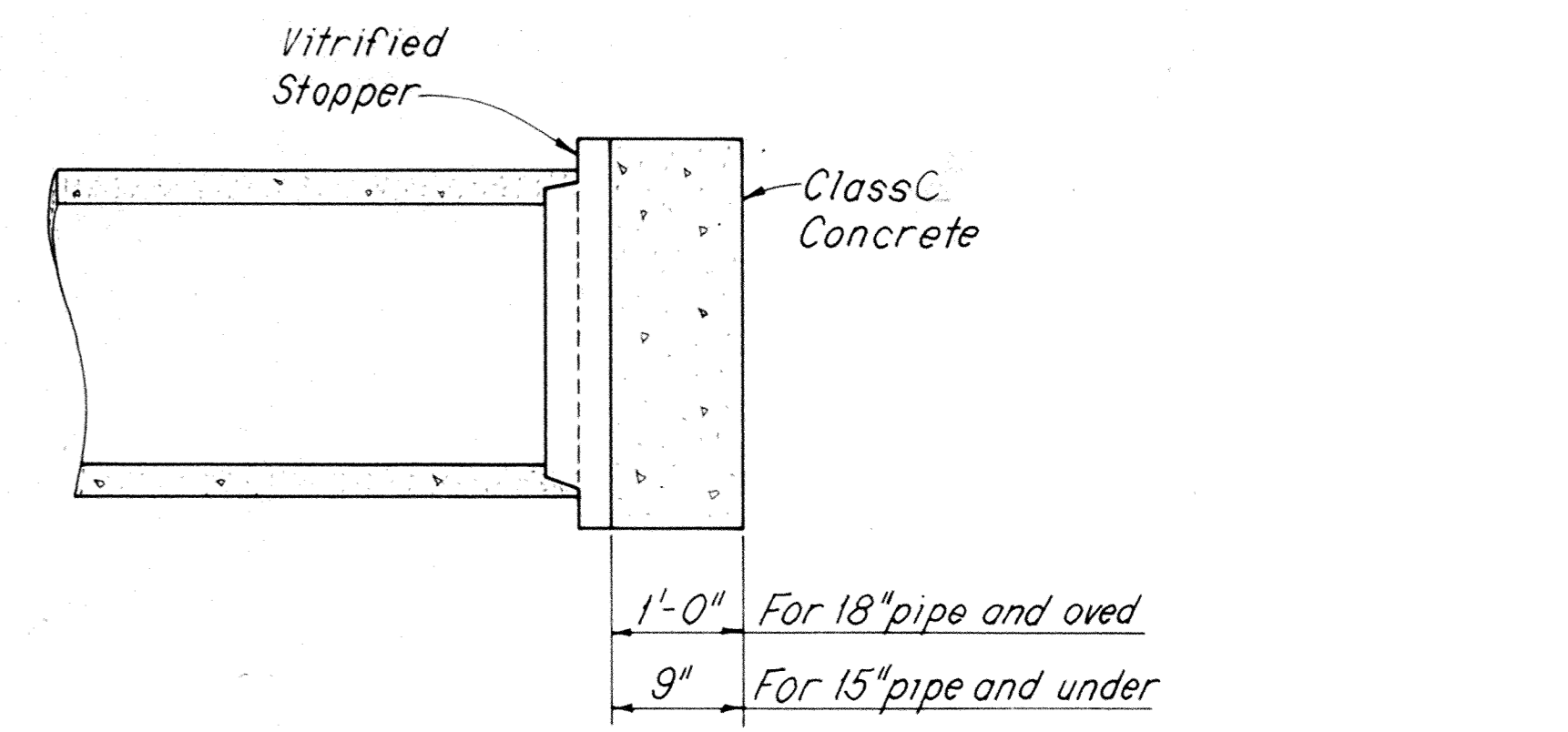
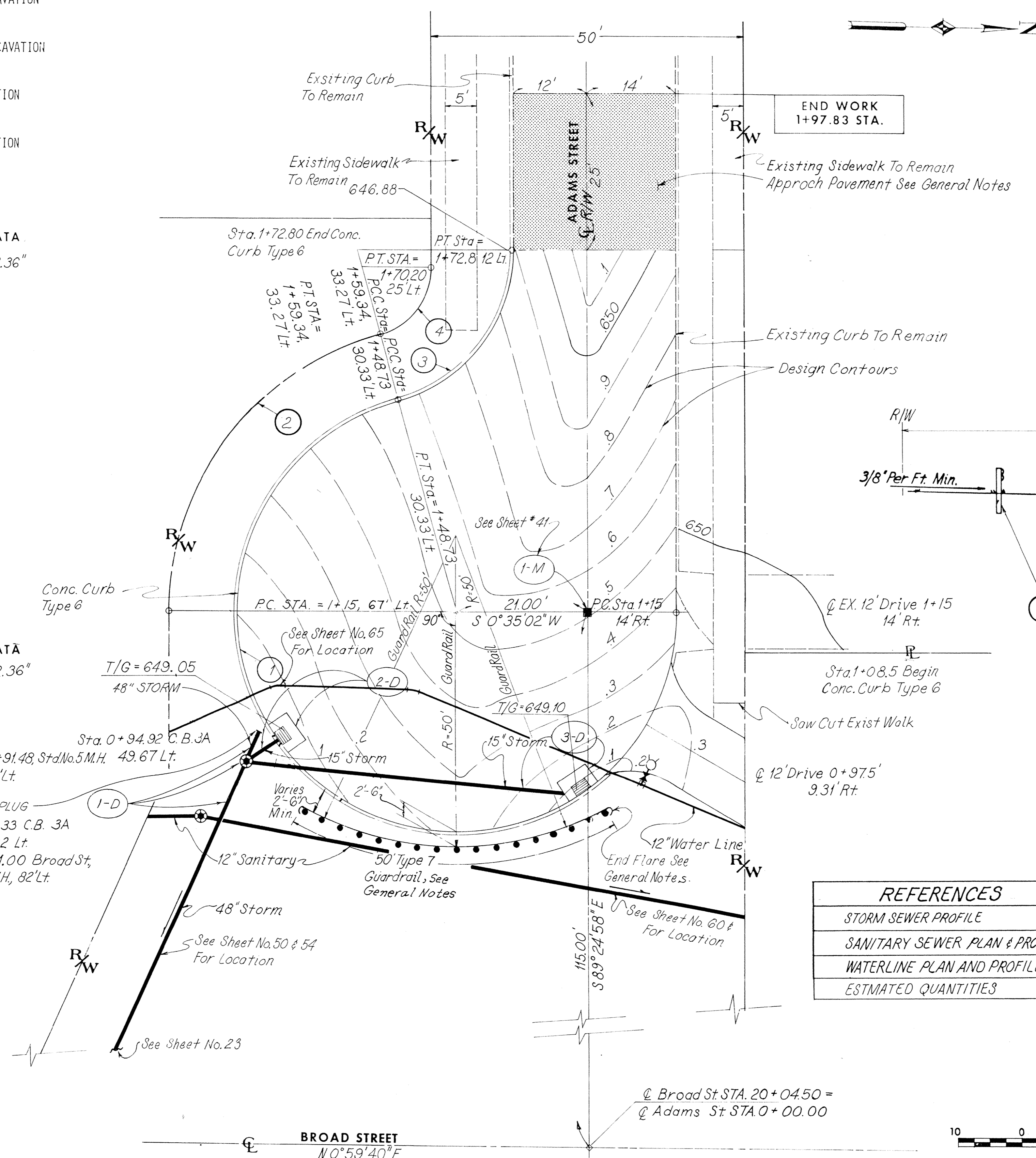
LT. SIDE CURB REMOVED FROM BROAD ST. EXCAVATION  
LIMIT TO STA. 1+72.83

**3**  
**CURVE DATA**  
Δ = 74°32'2.36"  
R = 25'  
T = 19.02'  
L = 32.52'  
C = 30.28'

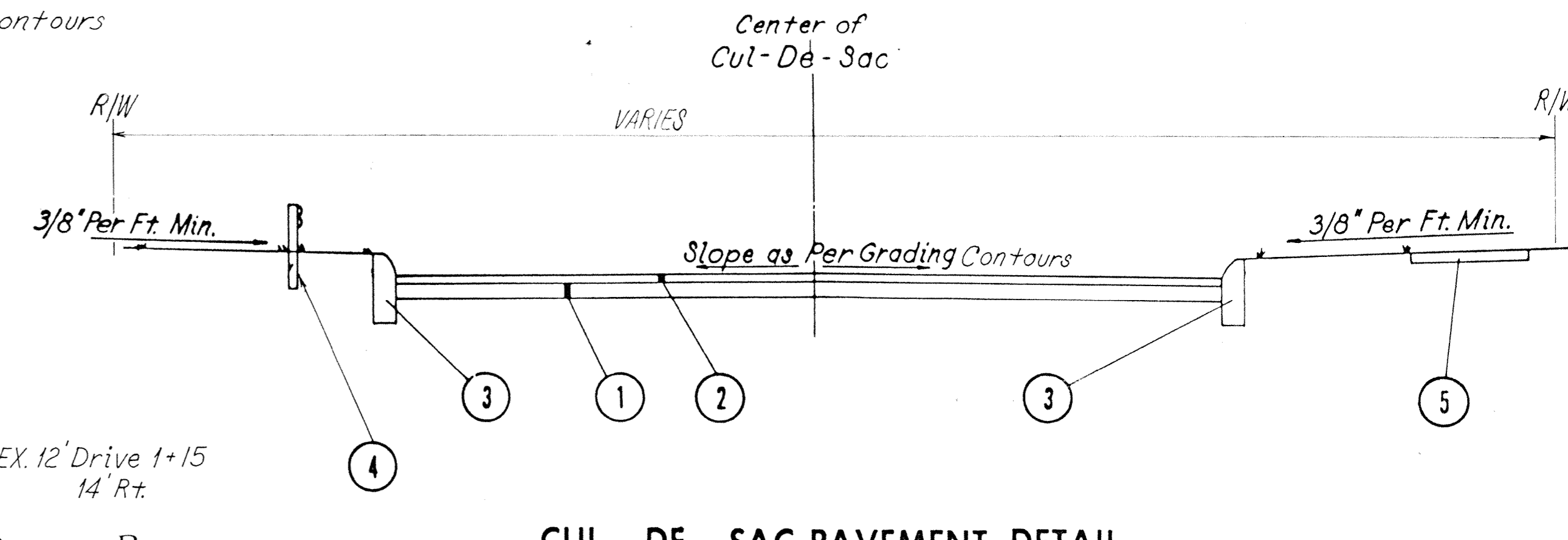
**4**  
**CURVE DATA**  
Δ = 74°32'2.36"  
R = 11.27'  
T = 8.58'  
L = 14.66'  
C = 13.65'

**1**  
**CURVE DATA**  
Δ = 254°32'2.36"  
R = 35'  
T = 46.00'  
L = 155.49'  
C = 55.71'

**2**  
**CURVE DATA**  
Δ = 74°32'2.36"  
R = 46'  
T = 35.00'  
L = 59.84'  
C = 55.71'



**BULKHEAD DETAIL**

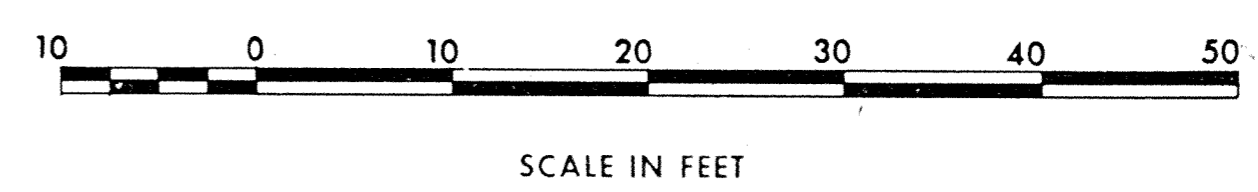


**CUL-DE-SAC PAVEMENT DETAIL**

**LEGEND**

- 1 ITEM 301 BIT. CONC. AGGREGATE BASE.
- 2 ITEM 404 1 1/2" ASPHALT CONCRETE, AC-20
- 3 ITEM 609 CURB, STANDARD TYPE 6
- 4 ITEM 606 GUARDRAIL, TYPE 7 AS PER PLAN
- 5 EXISTING SIDEWALK

REFERENCES	SHEET
STORM SEWER PROFILE	56
SANITARY SEWER PLAN & PROFILE	60
WATERLINE PLAN AND PROFILE	65
ESTIMATED QUANTITIES	41



SCALE \_\_\_\_\_  
MADE AND DATE \_\_\_\_\_  
TRCD BY DATE 8/13/77  
CRO. BY DATE 11/1/80

**WOODRUFF, INC.**  
CONSULTING ENGINEERS  
CLEVELAND OHIO



# ESTIMATED QUANTITIES

CUL-DE-SAC - ADAMS ST.

QUANTITY CALCULATIONS

BY N.S. DATE 1-18-80

CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

ASHTABULA COUNTY  
ATB-7-31.43

ITEM 202 WEARING COURSE REMOVED					
STATION		LENGTH	WIDTH	AREA	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	
1+72.83	1+97.83	92.83	Varies	535	
TOTAL				535	

ITEM 301 BITUMINOUS AGGREGATE BASE AC-20; OR RT-11; OR RT-12						
STATION		LENGTH	WIDTH	AREA	VOLUME	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	CU. YDS.	
0+80.0	1+97.83	117.83	Varies	607	68	4" Depth
TOTAL					68	

BENCH MARK				ITEM 604
REFERENCE NUMBER	ADAMS ST STATION	LOCATION	ELEVATION SEE NOTE	MONUMENT ASSEMBLY STANDARD EACH
1-M	1+15	Located 21 ft. South of the Center Point of Adams Cul-De-Sac, also being on Adams St. Centerline extension into the Cul-de-Sac. Said Monument is approximately 115 ft West of Broad Street A.K.A. S.R.7	650.02	1
TOTAL				1

NOTE: Monument Elevations as given are located 6 inches below the Broad Street design & grade.

ITEM 202 WALK REMOVED					
STATION		OFFSET	SIDE	AREA	REMARKS
FROM	TO	FEET		SQ. FT.	
0+76.0	1+60.0	18.0	L	420	
0+70.0	0+97.0	20.0	R	135	
TOTAL				555	

ITEM 404 ASPHALT CONCRETE, AC-20						
STATION		LENGTH	WIDTH	DEPTH	VOLUME	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	INCHES	CU. YDS.	
0+80.0	1+97.83	117.83	Varies	607	26	1 1/2" Depth
TOTAL					26	

ITEM 202 CURB REMOVED				
STATION		SIDE	LENGTH	REMARKS
FROM	TO		LIN. FT.	
0+65.0	1+72.83	L	111	
0+63.0	1+08.5	R	46	
TOTAL			157	

ITEM 407 COVER AGGREGATE						
STATION		LENGTH	WIDTH	AREA	QUANT.	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	TONS	
0+80.0	1+97.83	117.83	Varies	607	1.52	Application Rate = 5 Lbs./Sq. Yd.
TOTAL					1.52	

ITEM 606 GUARDRAIL, TYPE 7AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	LENGTH	REMARKS
FROM	FEET	TO	FEET		LIN. FT.	
0+83.0	45.0	0+83.0	3.0	L to R	50	
TOTAL					50	

ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT <small>CONST. AS PER PLAN</small>						
STATION		LENGTH	WIDTH	AREA	VOLUME	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	CU. YDS.	
0+72.0	1+72.83	100.83	Varies	635	97	5 1/2" DEPTH
TOTAL					97	

ITEM 407 TACK COAT RC-250, MS-2, RS-1, SS-1 OR SS-1h						
STATION		LENGTH	WIDTH	AREA	QUANT.	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	GALS.	
0+80.0	1+97.83	117.83	Varies	607	61	Application Rate = 0.10 Gal./Sq. Yd.
TOTAL					61	

ITEM 609 CURB, STANDARD TYPE 6				
STATION		SIDE	LENGTH	REMARKS
FROM	TO		LIN. FT.	
1+08.5	1+72.83	L & R	171	
TOTAL			171	

ITEM 203 SUBGRADE COMPACTION					
STATION		LENGTH	WIDTH	AREA	REMARKS
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	
0+80.0	1+72.83	92.83	Varies	535	
TOTAL				535	

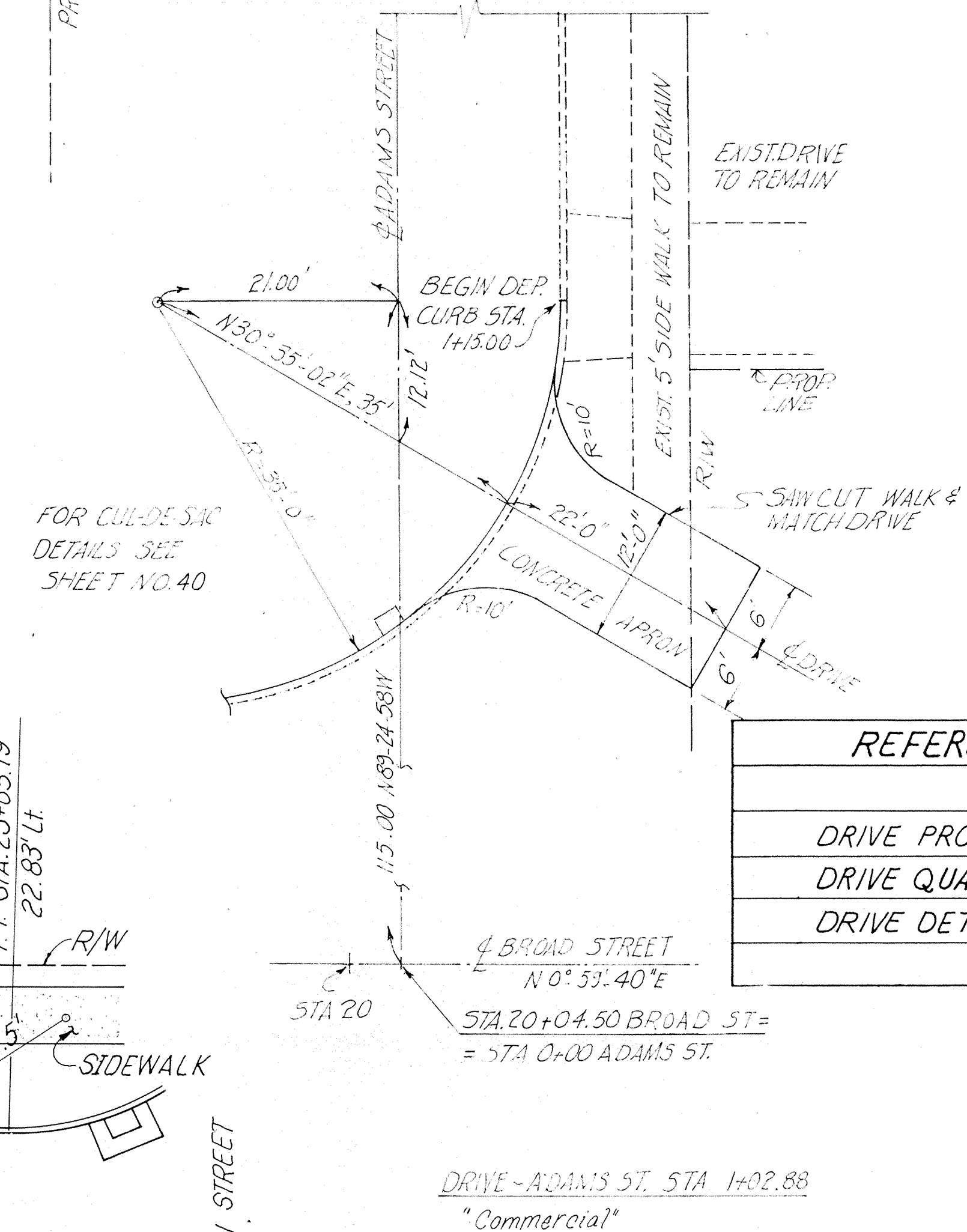
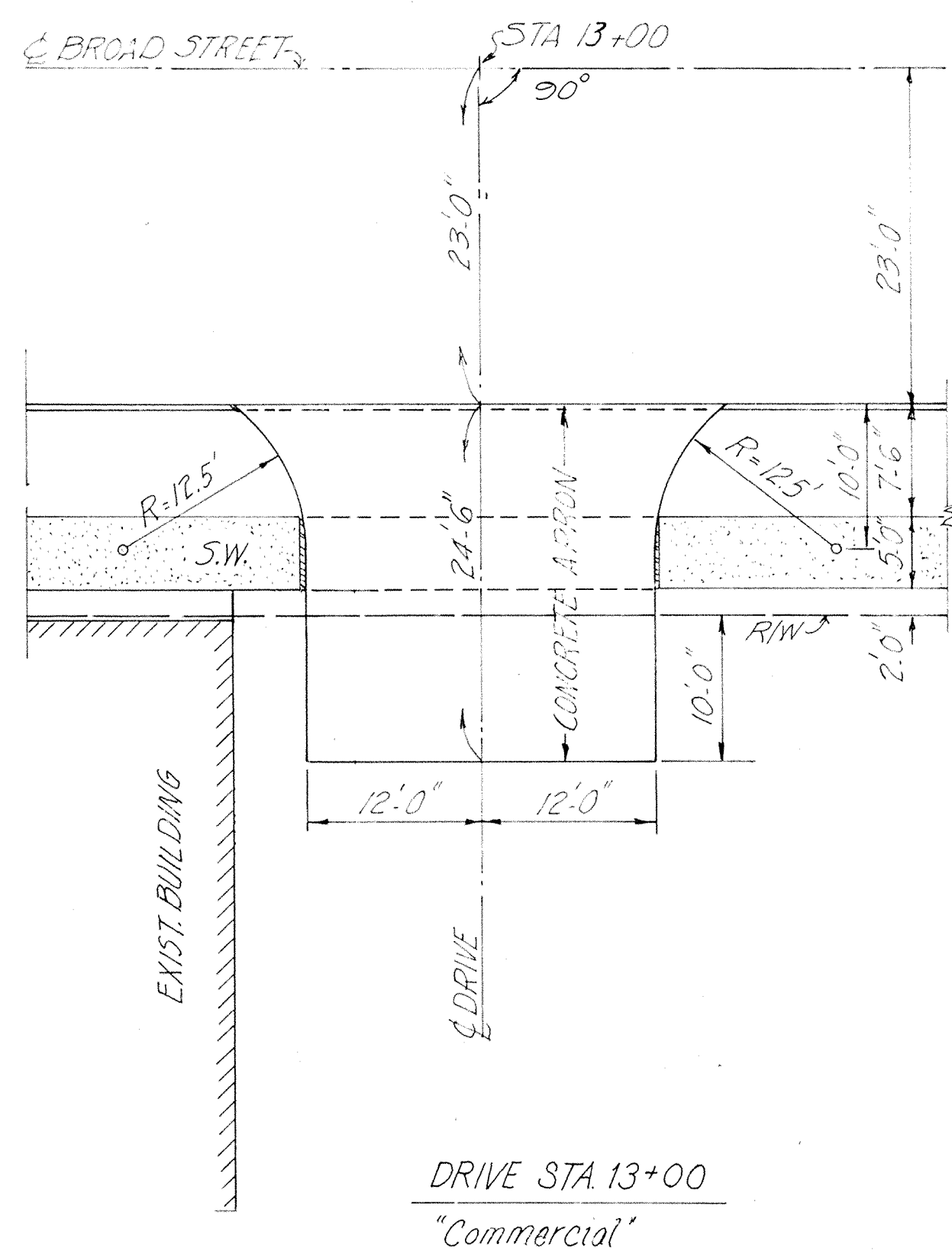
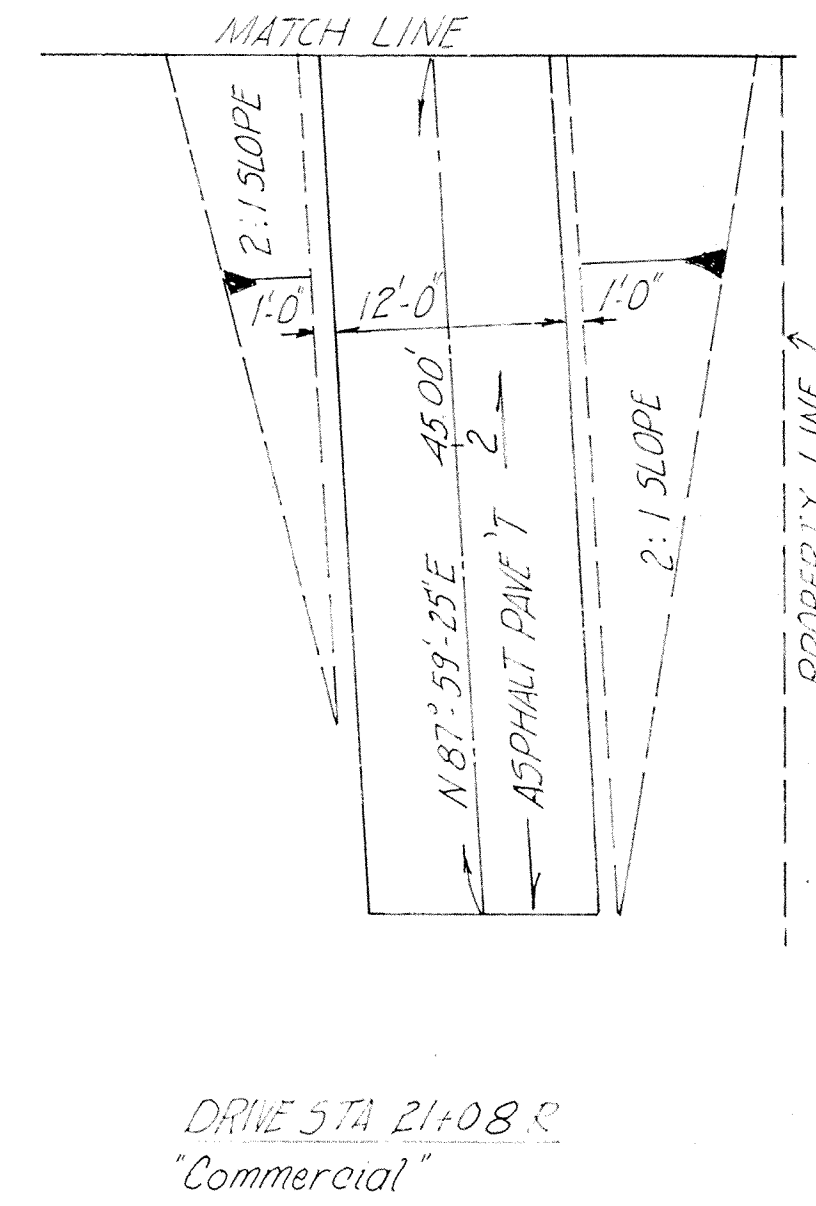
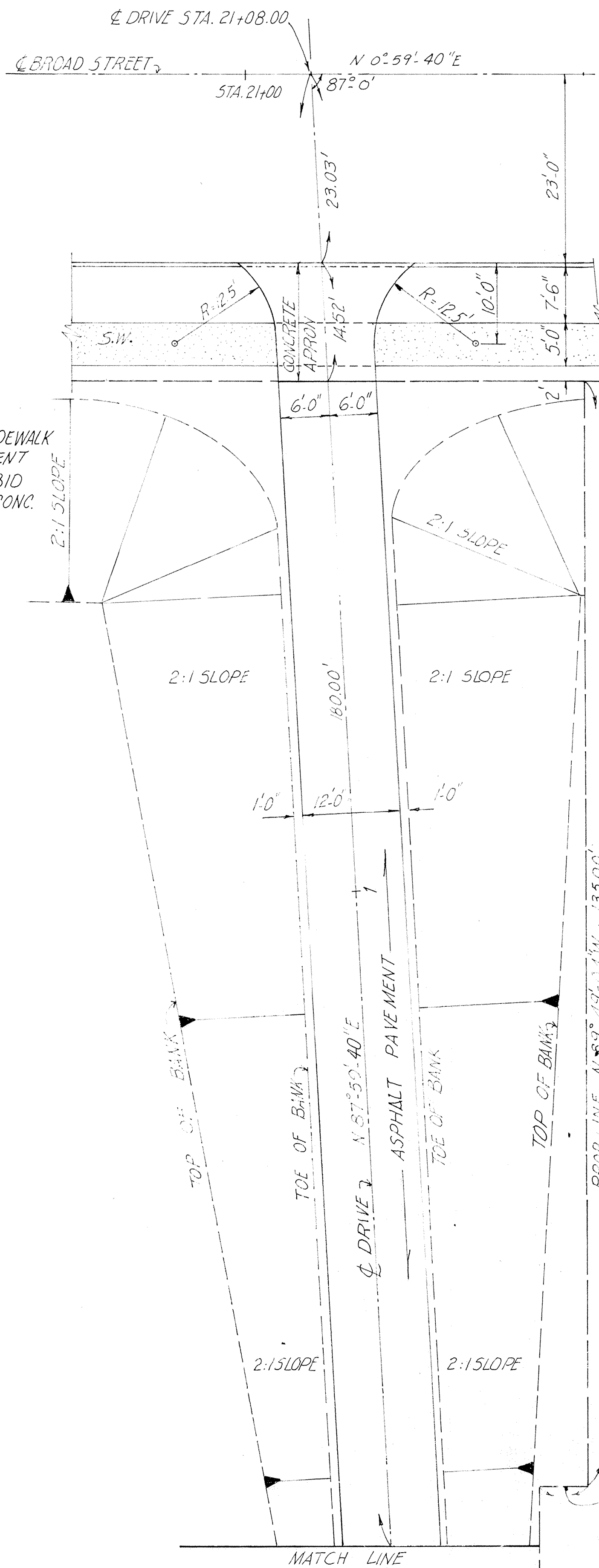
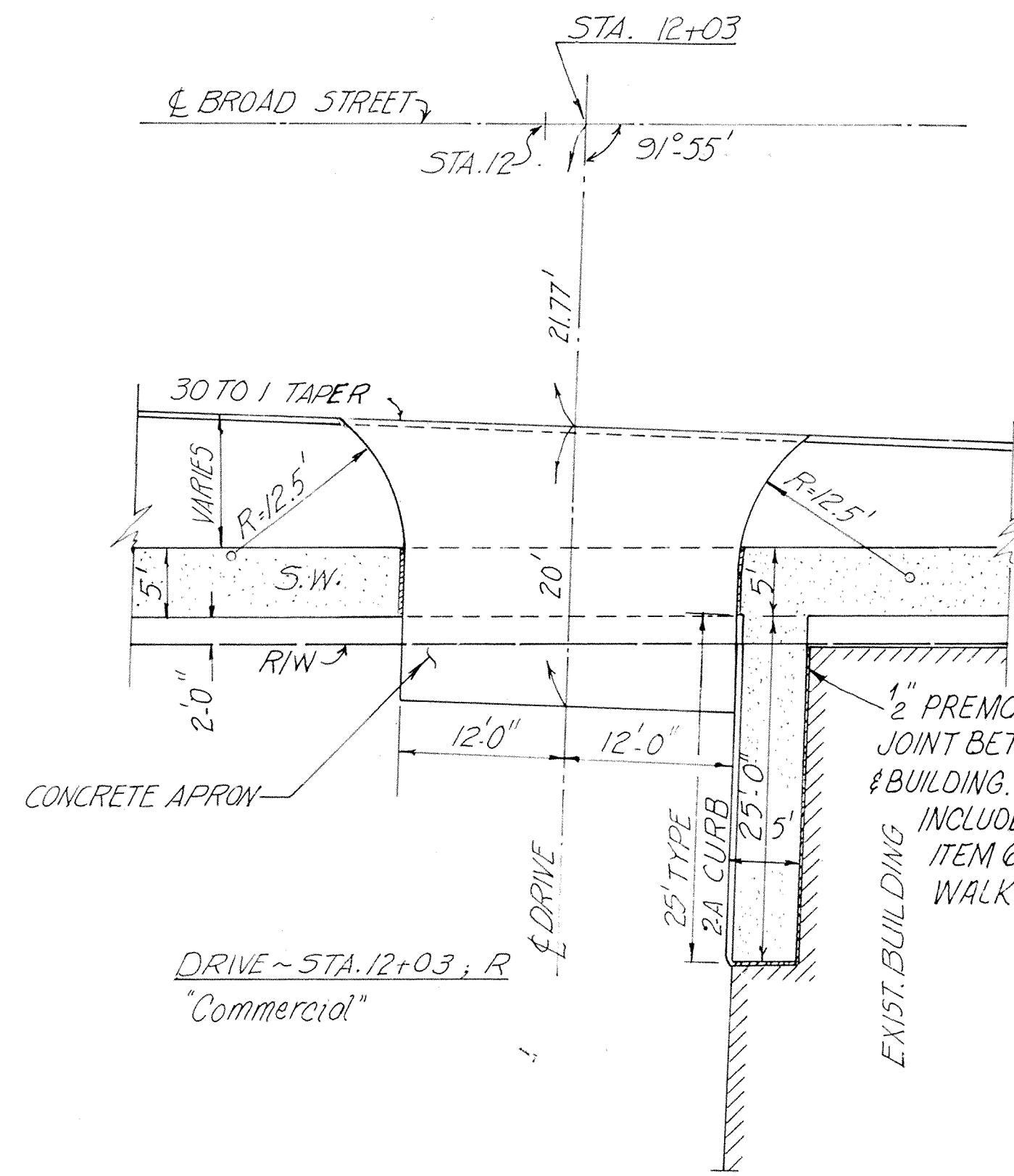
REF. NO.	STATION				ITEM NO. 603			ITEM NO. 604	
					15" CONDUIT TYPE "B" CLASS "B" BEDDING	15" CONDUIT TYPE "C" CLASS "B" BEDDING	48" CONDUIT TYPE "B" CLASS "B" BEDDING	STANDARD NO. 3-A CATCH BASIN	STANDARD NO. 5 MANHOLE
	FROM	SIDE	TO	SIDE	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH
2-D	0+91.48	L	0+91.48	L		6		1	
3-D	0+86.33	L	0+91.48	L	55			1	
TOTAL					55	6	95	2	

ITEM 659 SEEDING AND MULCHING AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	AREA	REMARKS
FROM		TO			SQ. YDS.	
0+79.5	21.0	1+72.83	12.5	L	157	
1+72.83	12.5	1+97.83	12.5	L	21	
1+21.5	14.5	1+97.83	14.5	R	47	
TOTAL					225	

# DRIVEWAY PLANS

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

ASHTABULA COUNTY  
ATB-7-31.43



REFERENCES	SHEET
DRIVE PROFILE	45, 46
DRIVE QUANTITIES	44
DRIVE DETAIL	48

SCALE \_\_\_\_\_

MADE, N.S. DATE \_\_\_\_\_

TRCD. DATE \_\_\_\_\_

CKD. A.J.M. DATE 11/9/22

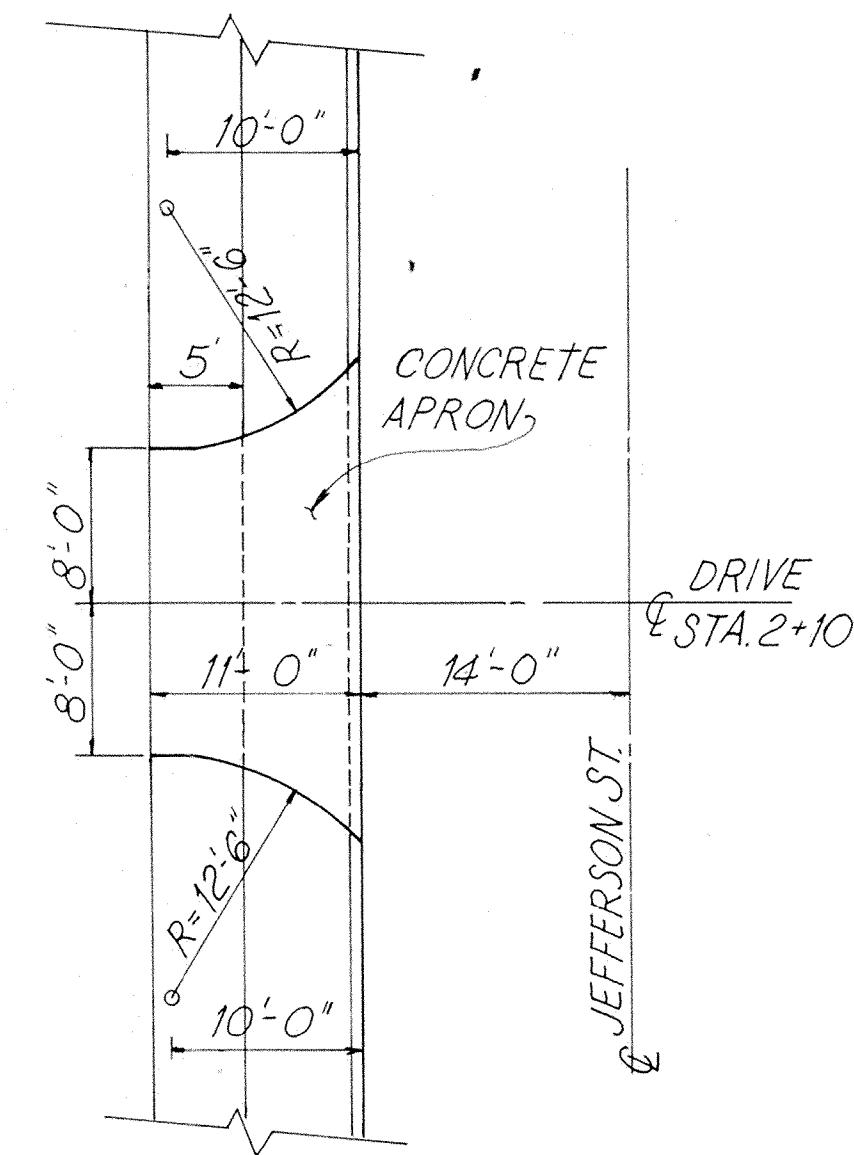
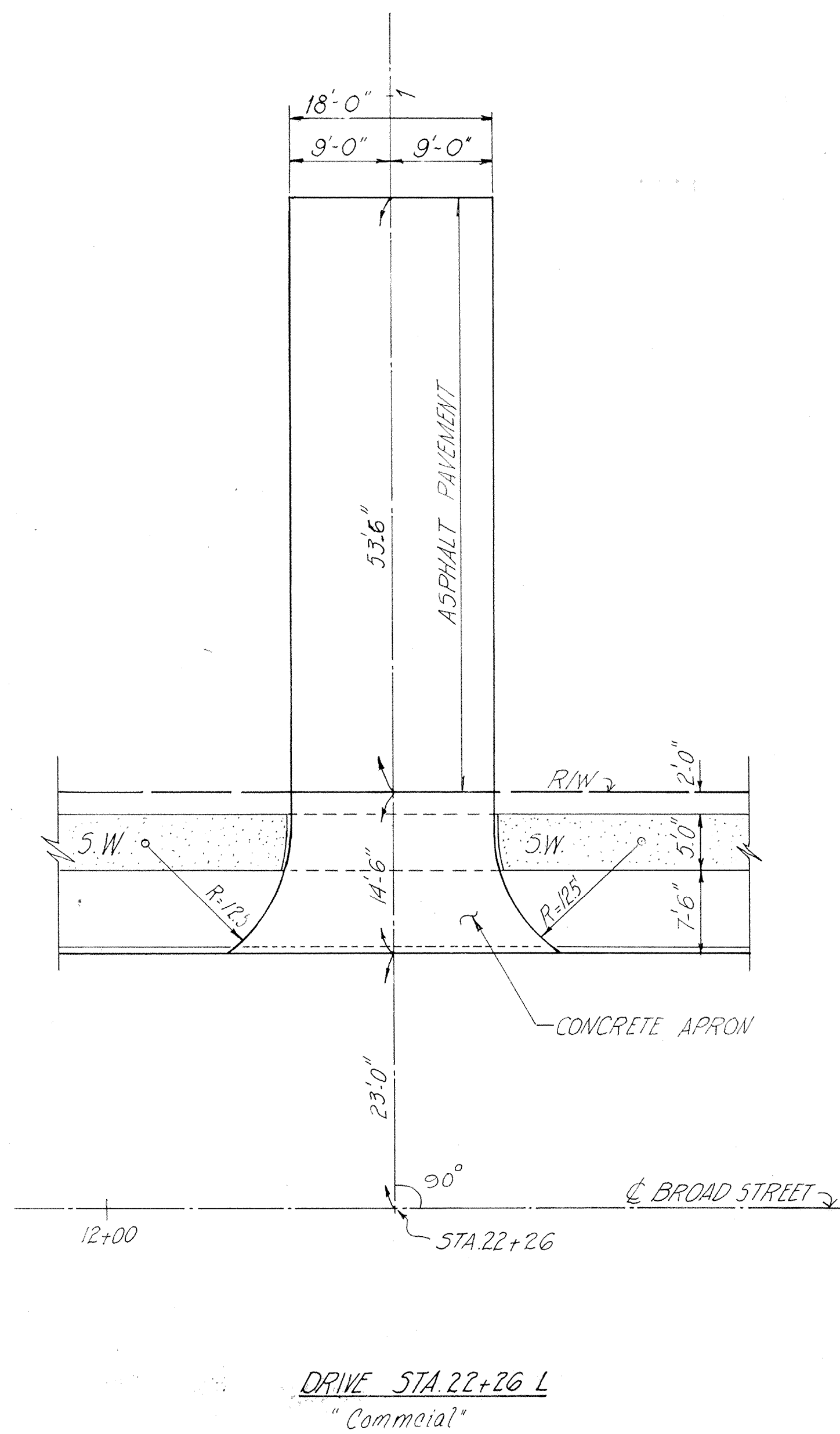
**WOODRUFF, INC.**  
CONSULTING ENGINEERS  
CLEVELAND OHIO

# DRIVEWAY PLANS

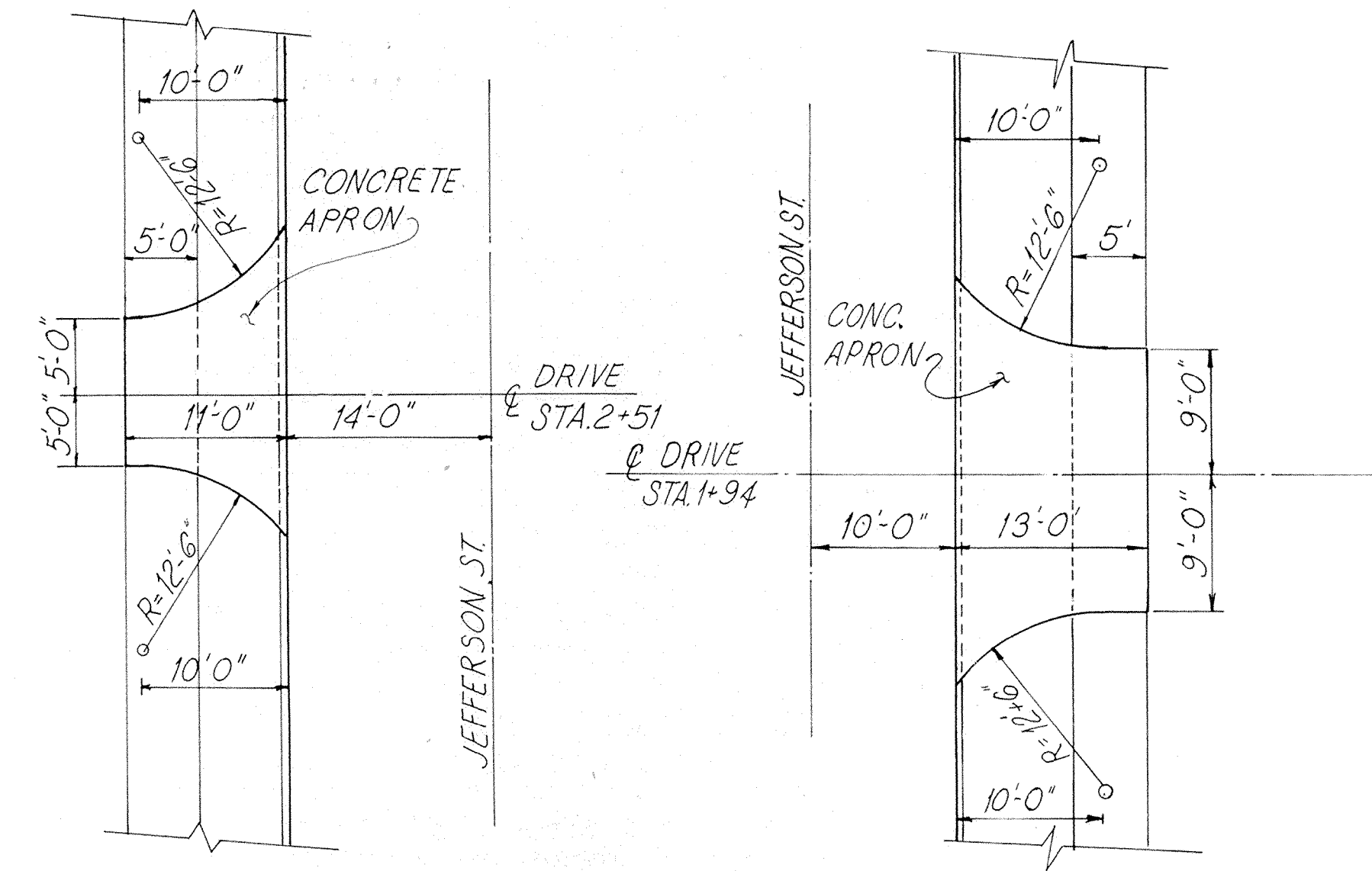
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	STATE

43  
100

ASHTABULA COUNTY  
ATB-7-31.43

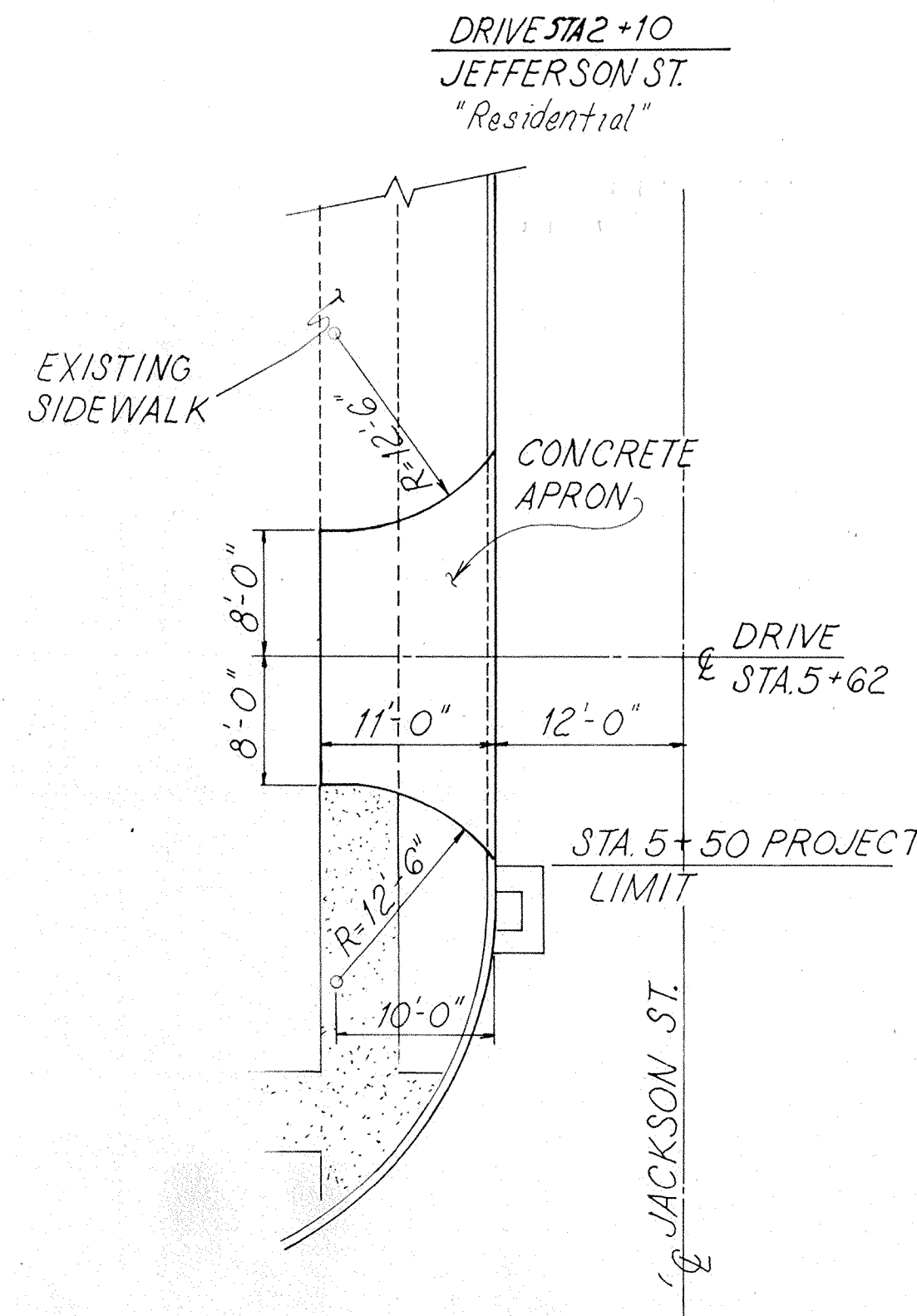


DRIVE STA 2+10  
JEFFERSON ST.  
"Residential"

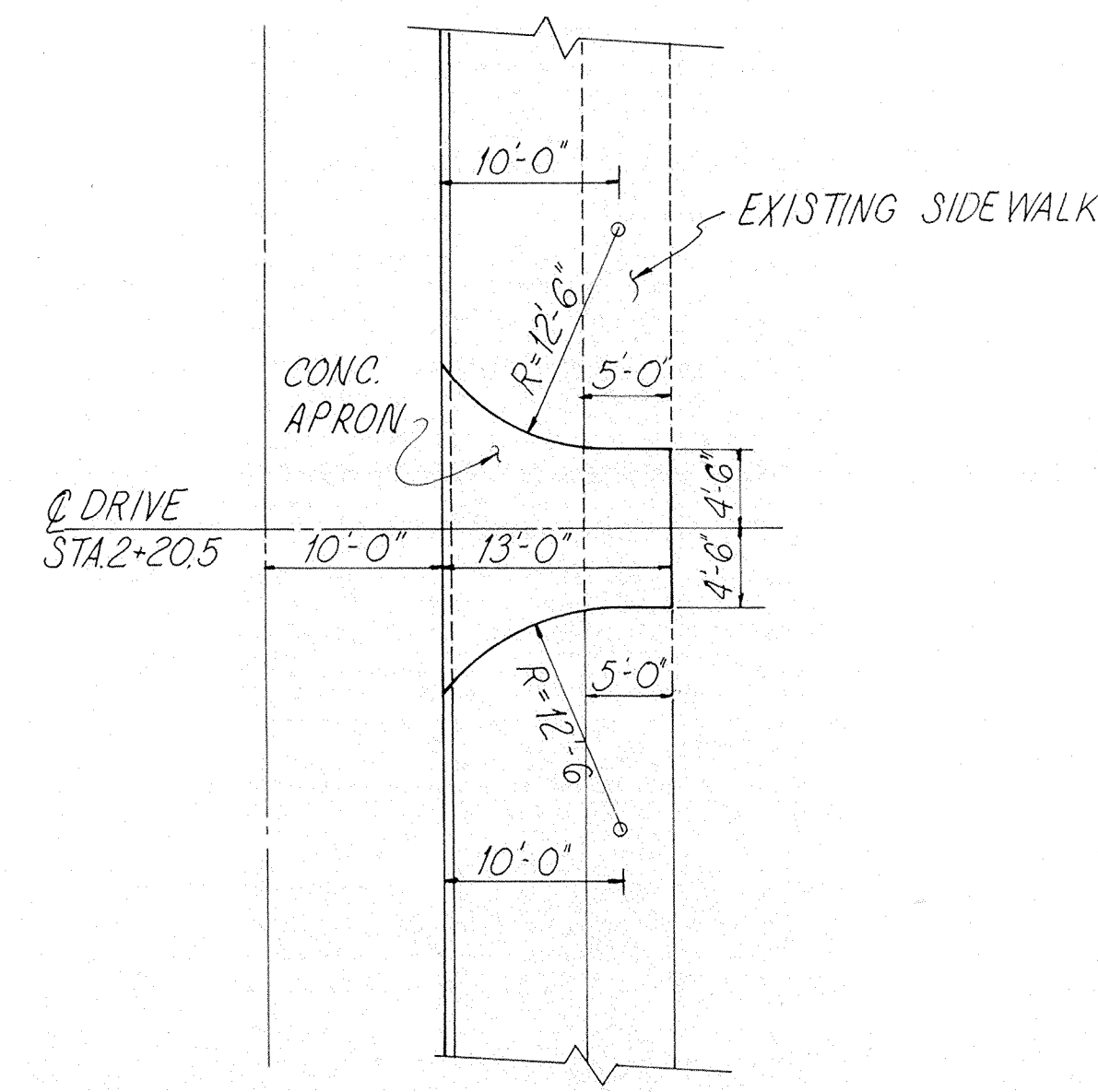


DRIVE STA 2+51  
JEFFERSON ST.  
"Residential"

DRIVE STA 1+94  
JEFFERSON ST.  
"Residential"



DRIVE STA 5+62  
JACKSON ST.  
"Residential"



DRIVE STA 2+20.5  
JEFFERSON ST.  
"Residential"

REFERENCES	SHEET
DRIVE PROFILE	45, 46
DRIVE QUANTITIES	44
DRIVE DETAIL	48

SCALE \_\_\_\_\_  
MADE \_\_\_\_\_ DATE \_\_\_\_\_  
TRCD \_\_\_\_\_ DATE \_\_\_\_\_  
CRD. A.M. DATE 1/9/80

**WOODRUFF, INC.**  
CONSULTING ENGINEERS  
CLEVELAND OHIO

# DRIVEWAY PLANS AND QUANTITIES

QUANTITY CALCULATIONS

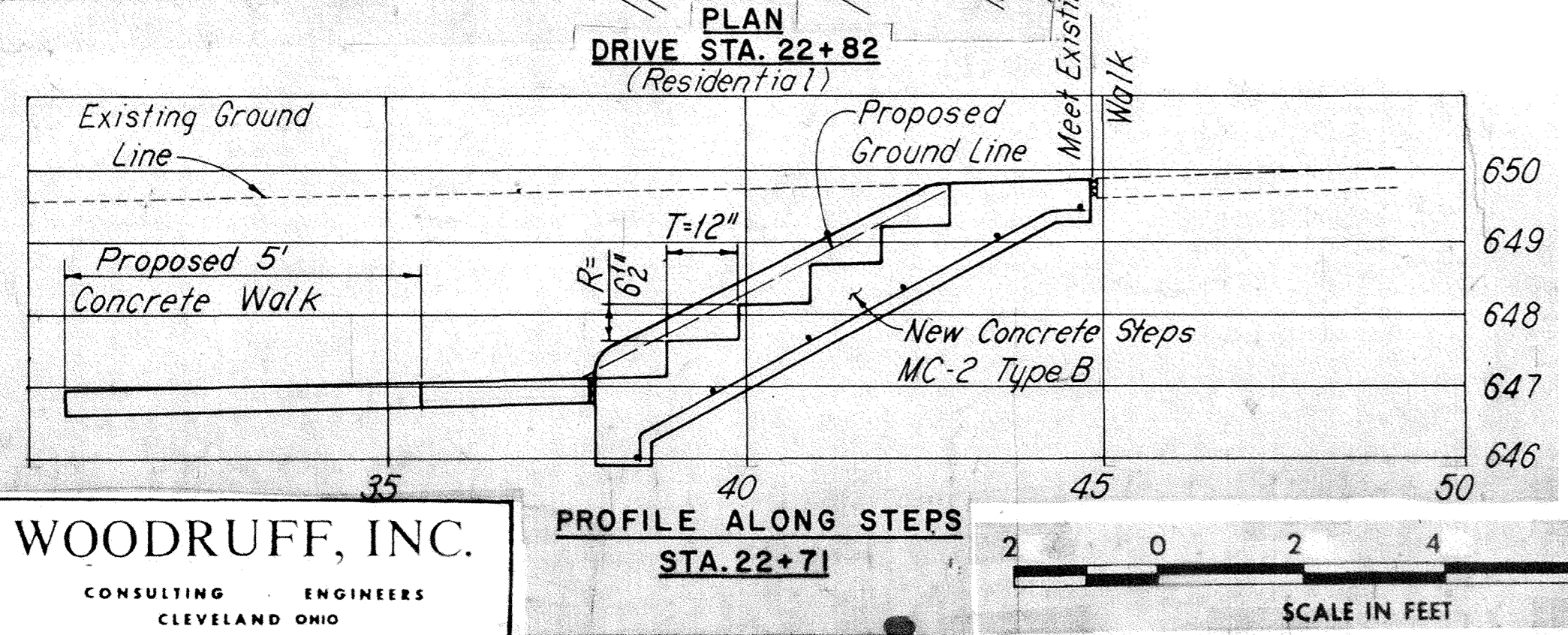
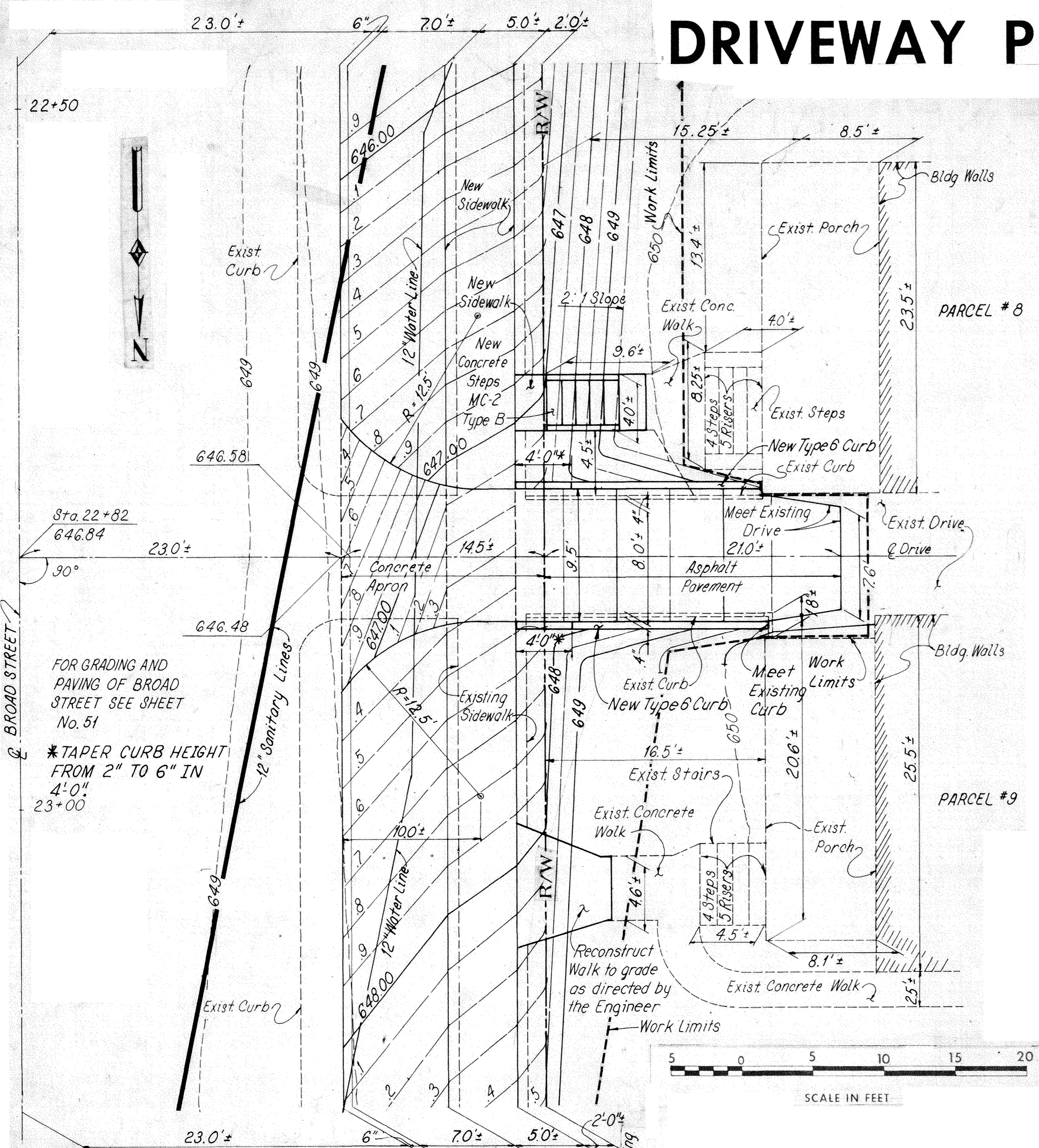
BY W.S. DATE 1-18-80

CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

ASHTABULA COUNTY  
ATB-7-31.43



STATION	SIDE	DRIVEWAYS									
		ITEM 203	ITEM 304	ITEM 402	ITEM 404	ITEM 407	ITEM 452	ITEM 452	ITEM 608	ITEM 609	ITEM 609
		EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION AS PER PLAN	AGGREGATE BASE	ASPHALT CONCRETE AC-20	ASPHALT CONCRETE AC-20	TACK COAT, RC-250, MS-2, RS-1, SS-1, OR SS-1h	8" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT	6" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT	4" CONCRETE WALK	CURB STANDARD TYPE 2-A	CURB STANDARD TYPE 6
		CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	GALLONS	SQ. YDS.	SQ. YDS.	SQ. FT.	LIN. FT.	LIN. FT.
<b>BROAD ST.</b>											
12+030	R	19					57		125	25	
13+00.0	R	23					69			37	
21+08.0	R	1160	61	11	7	100	23				
22+26.0	L	92	26	5	3.1	45	33				
22+71	L								10		
22+82.0	L	6	4		1.2	9		19			37
23+05.8	L								44		
<b>Jefferson St.</b>											
2+10.0	L	8					23				
2+20.5	R	6					18				
2+54.0	L	5					16				
1+94	R	11					34				
<b>Adams St.</b>											
1+03.0	R	10					33				
<b>Jackson St.</b>											
5+62.0	L	8					23				
<b>TOTAL</b>		<b>1,348</b>	<b>91</b>	<b>16</b>	<b>11.3</b>	<b>154</b>	<b>329</b>	<b>19</b>	<b>179</b>	<b>62</b>	<b>37</b>

ITEM 606 GUARDRAIL, TYPE 4						
STA.	OFFSET	STA.	OFFSET	SIDE	LENGTH	REMARKS
FROM	FEET	TO	FEET		LIN. FT.	
<b>BROAD ST.</b>						
17+76.61	97	18+14.11	97	R	37.5	
				<b>TOTAL</b>	<b>38</b>	

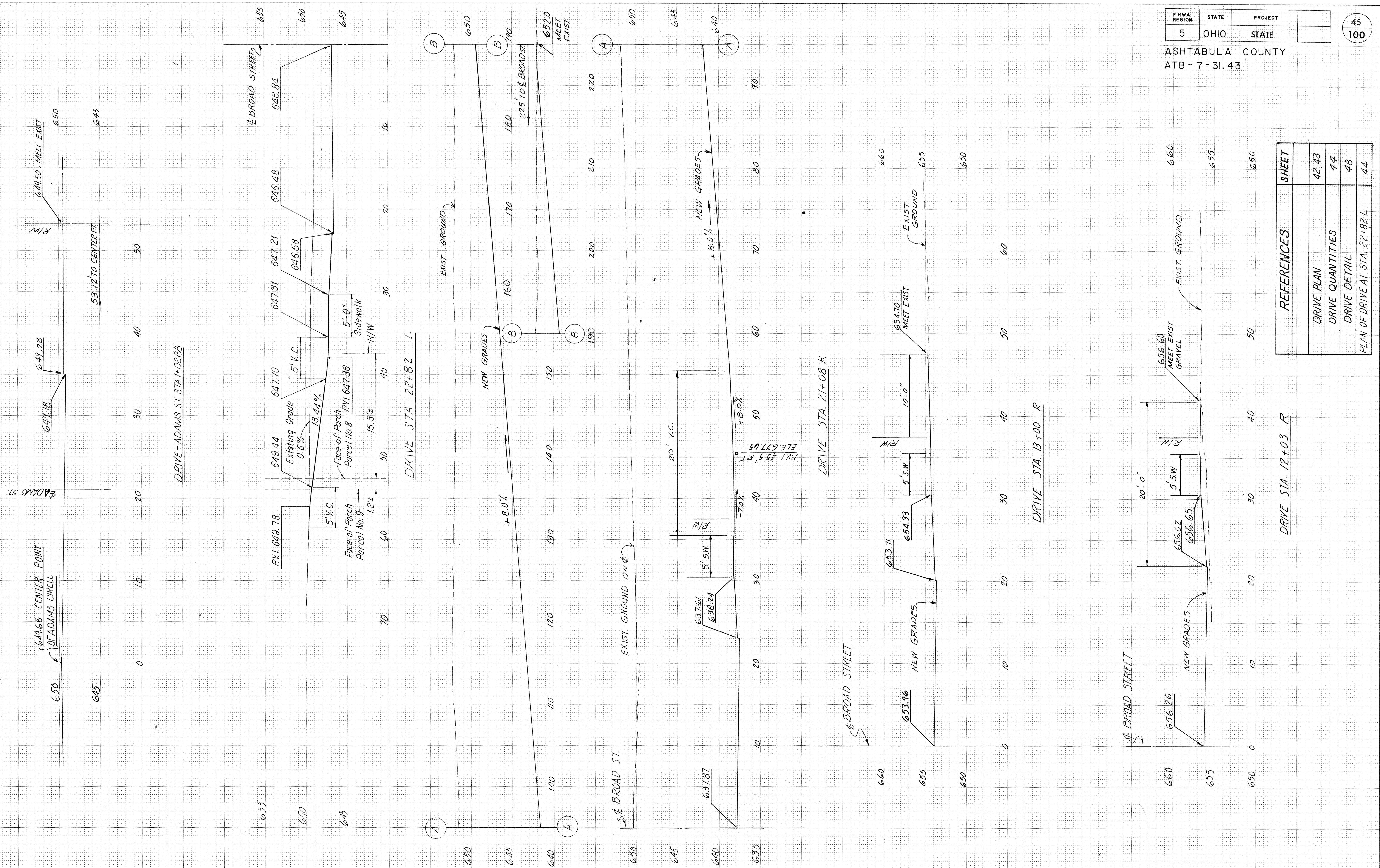
ITEM 659 SEEDING AND MULCHING AS PER PLAN						
STA.	OFFSET	STA.	OFFSET	SIDE	AREA	REMARKS
FROM		TO			SQ. YDS.	
<b>BROAD ST.</b>						
19+90.0	80.0	20+28.89	81.0	L	31	
22+06.0	61.7	22+41.81	58.0	L	32	
20+81.0	75.5	21+43.0	70.0	R	306	
				<b>TOTAL</b>	<b>369</b>	

References	Sheet No.
Grading & Pavement & Work Limits	49,50,51
Sanitary Sewer	60
Water Line	64,65,67
Drive Detail	48
Right-of-Way Plans	89-97
Drive Profile	45

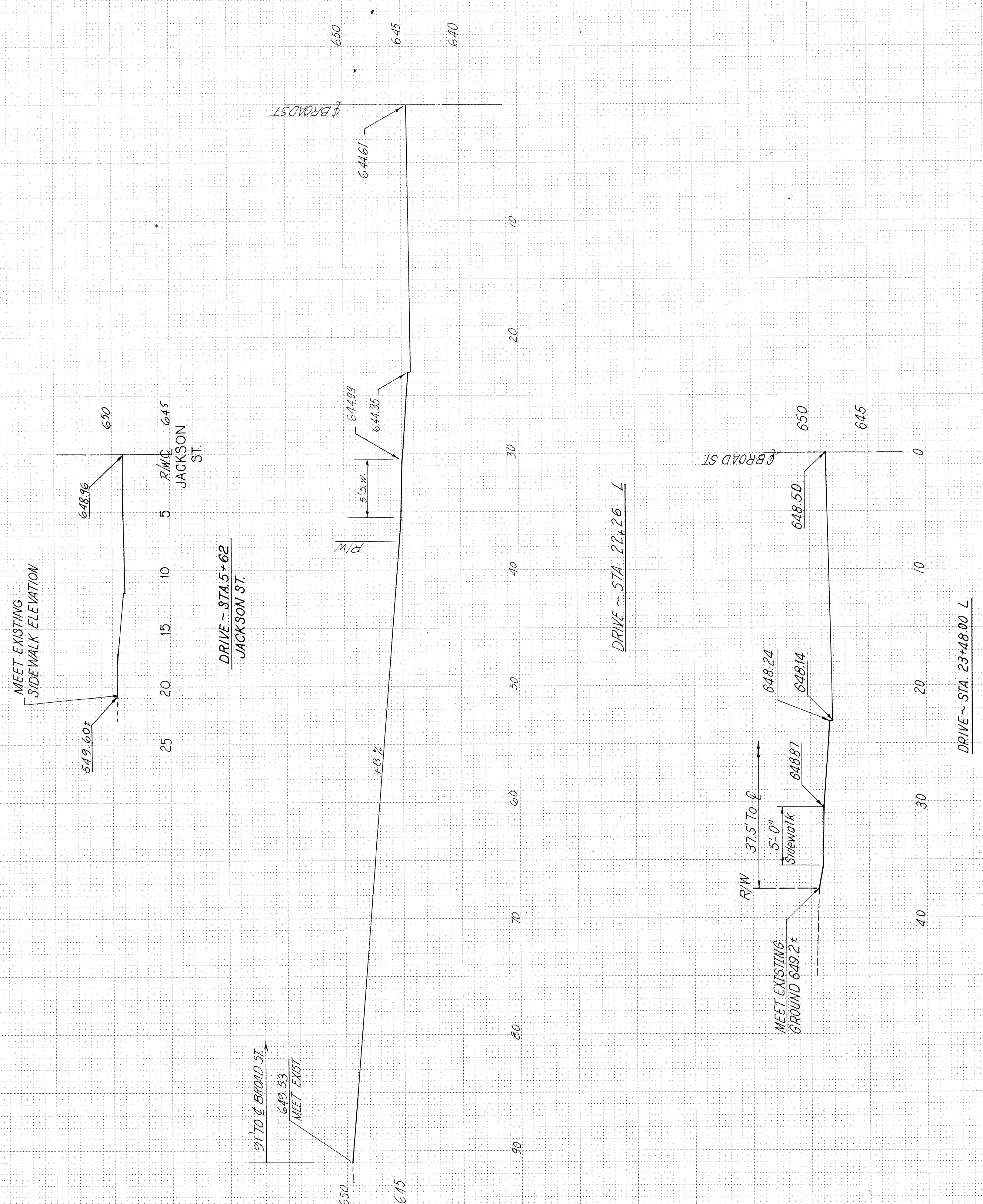
ITEM 608 CONCRETE STEPS				
STA.	OFFSET	SIDE	LENGTH	REMARKS
			LIN. FT.	
<b>Broad St.</b>				
22+71	37.8'	L	24'	
		<b>TOTAL</b>	<b>24'</b>	

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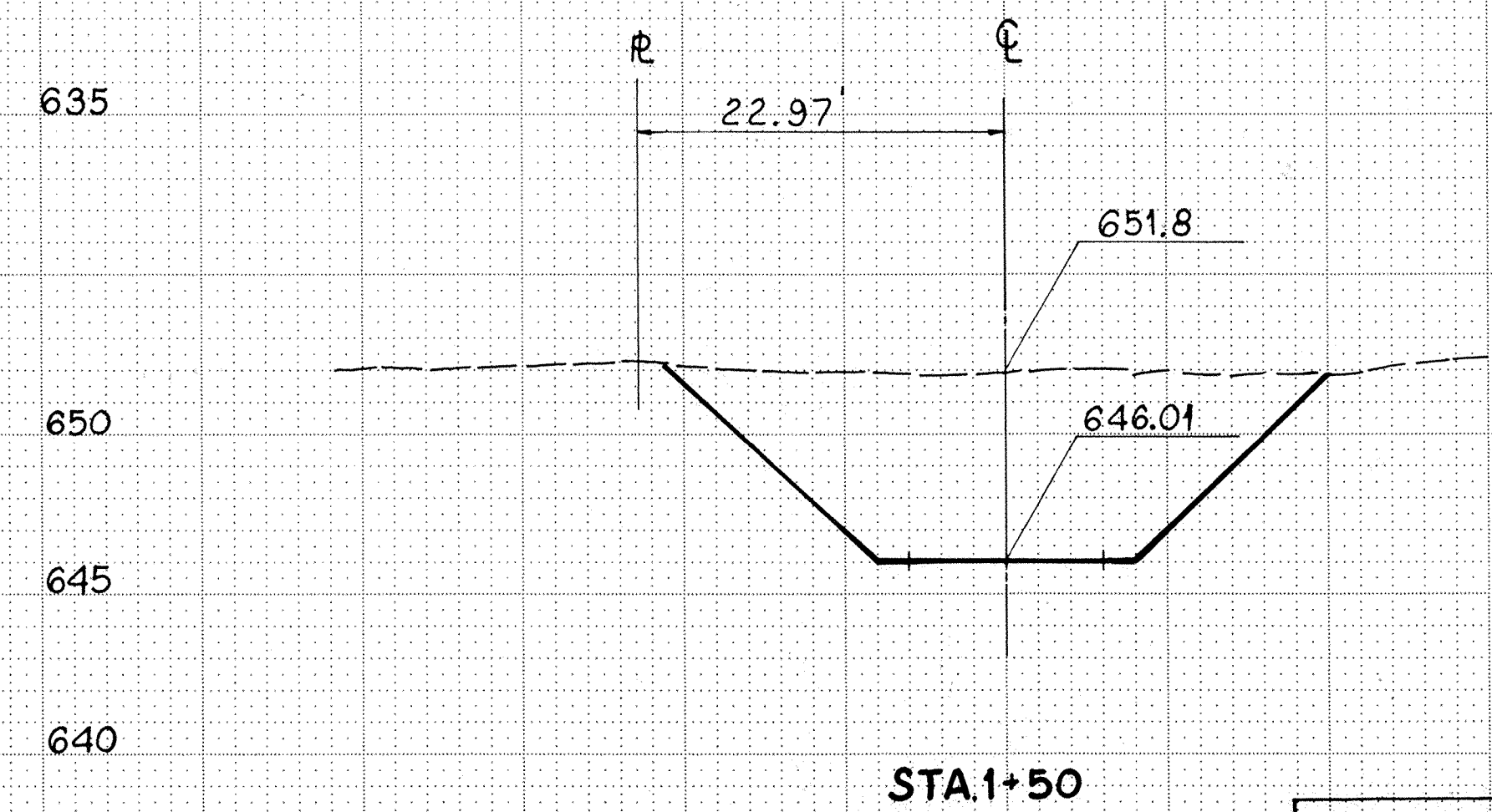
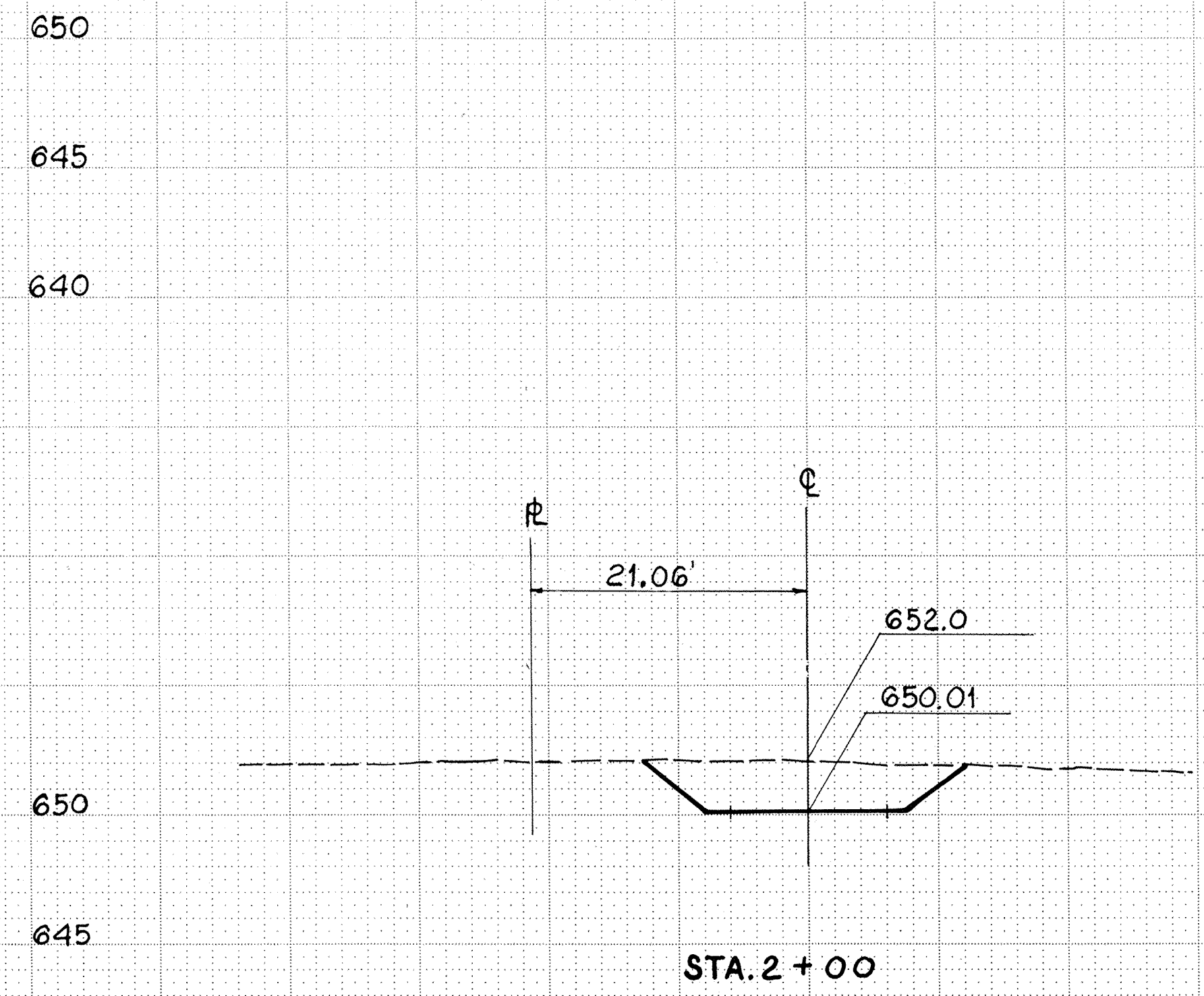
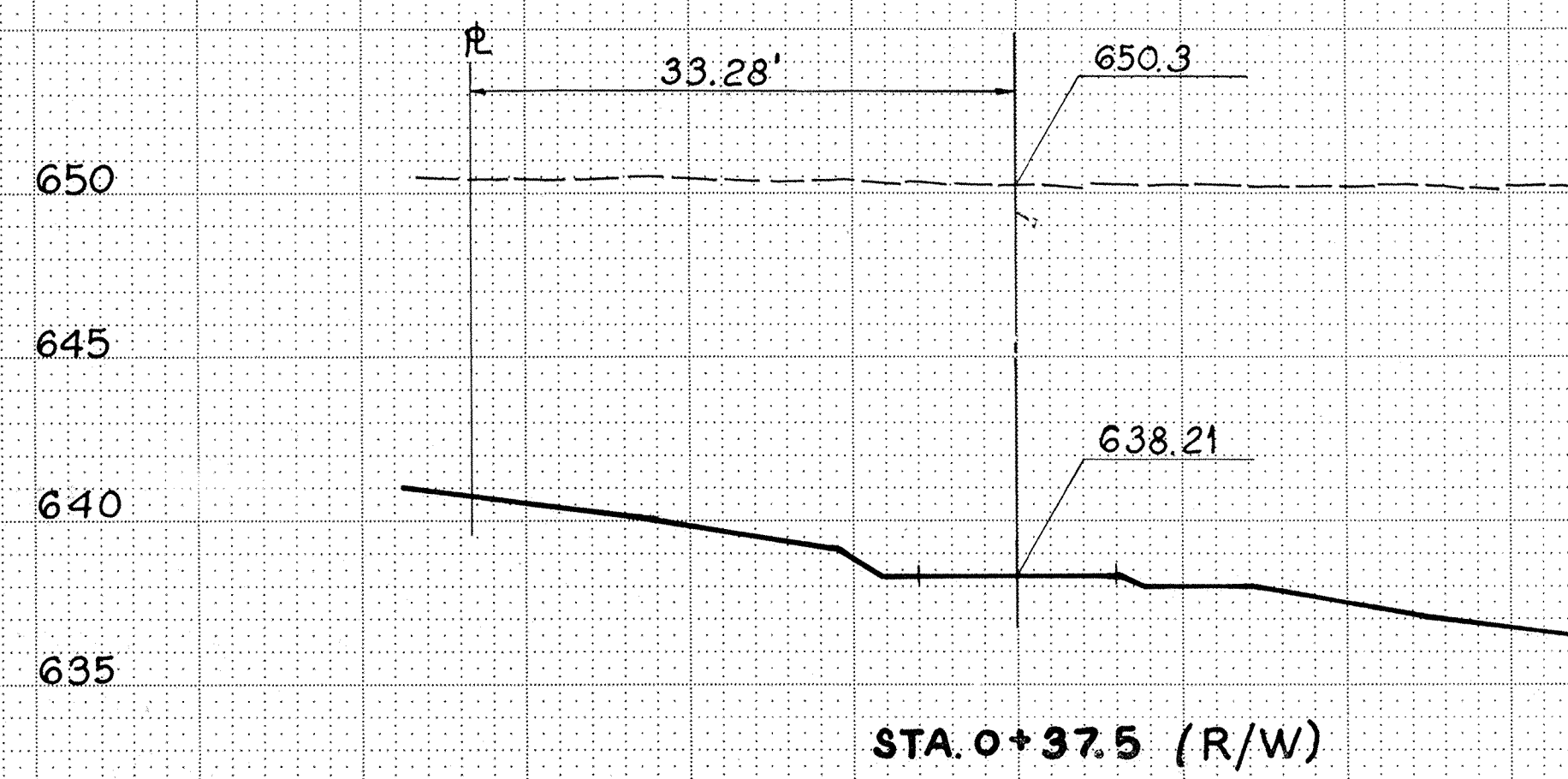
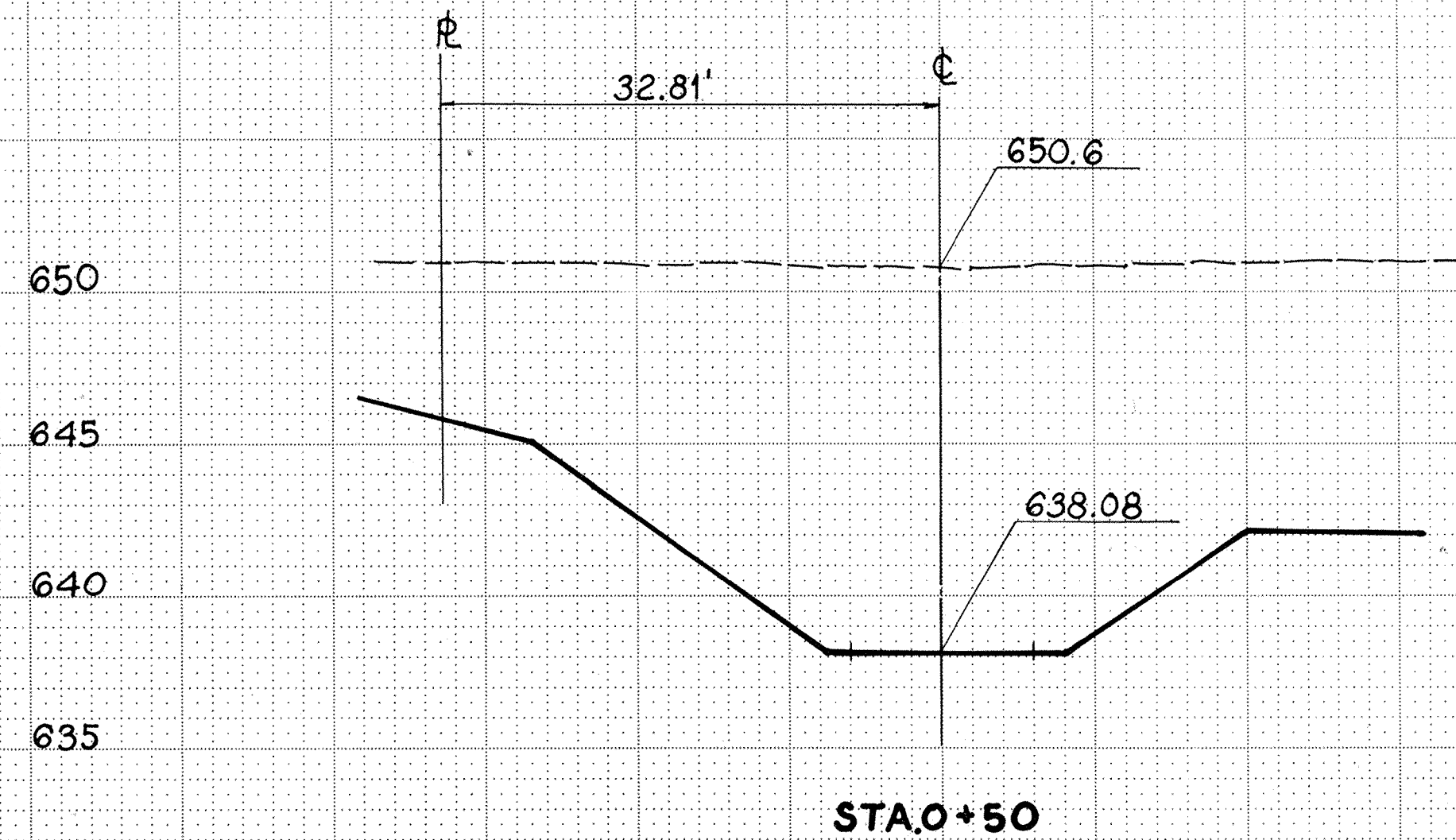
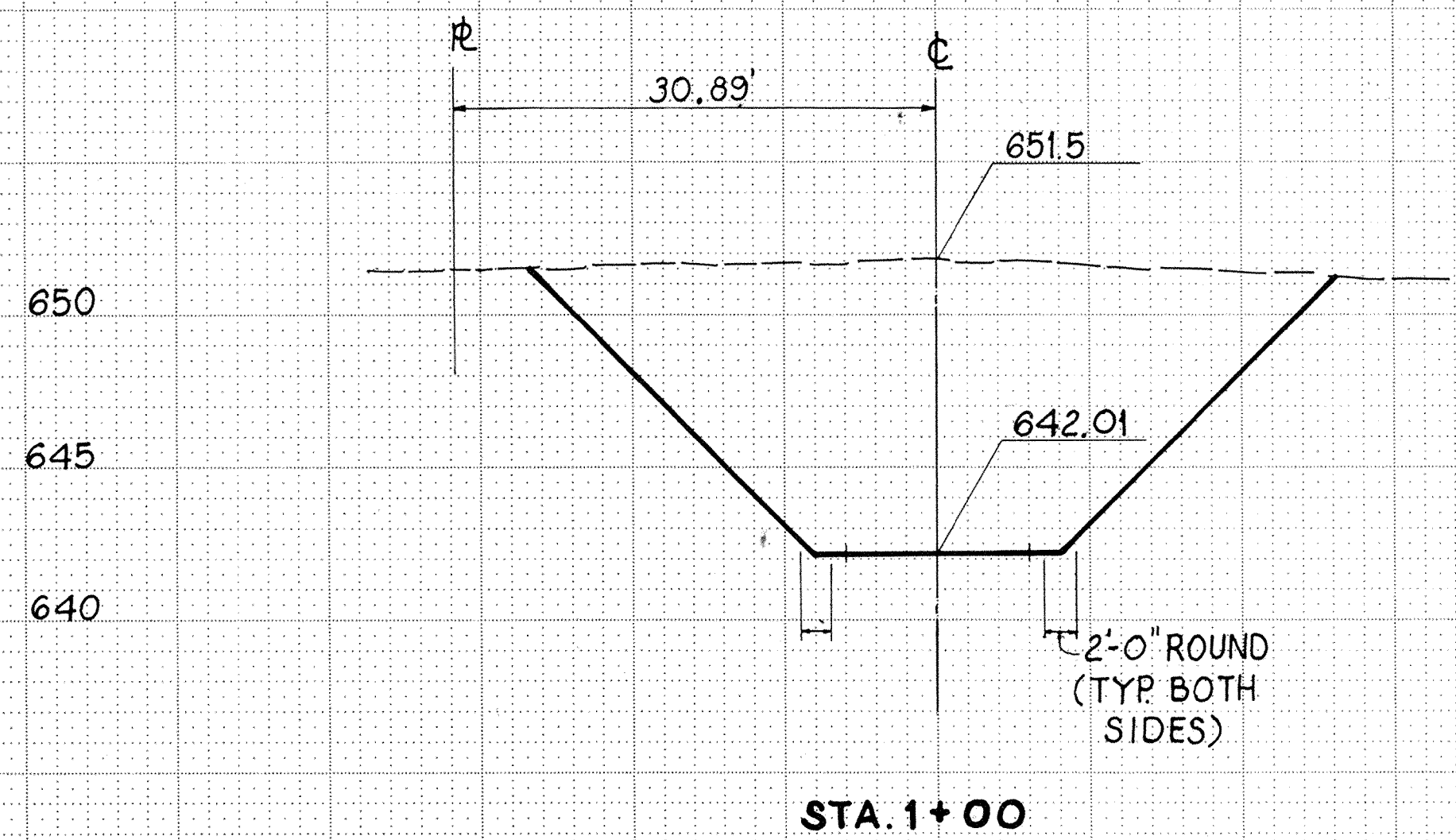
SR. 7 - BROAD STREET



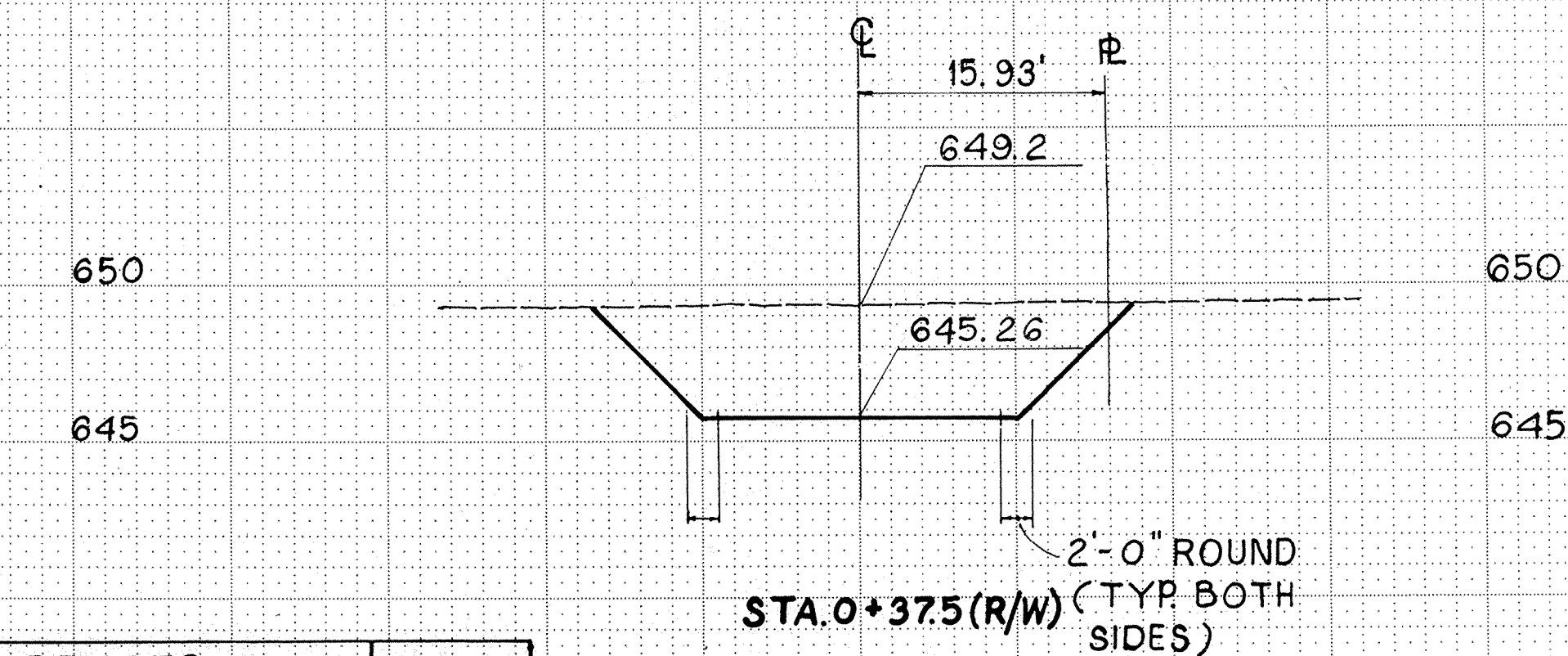
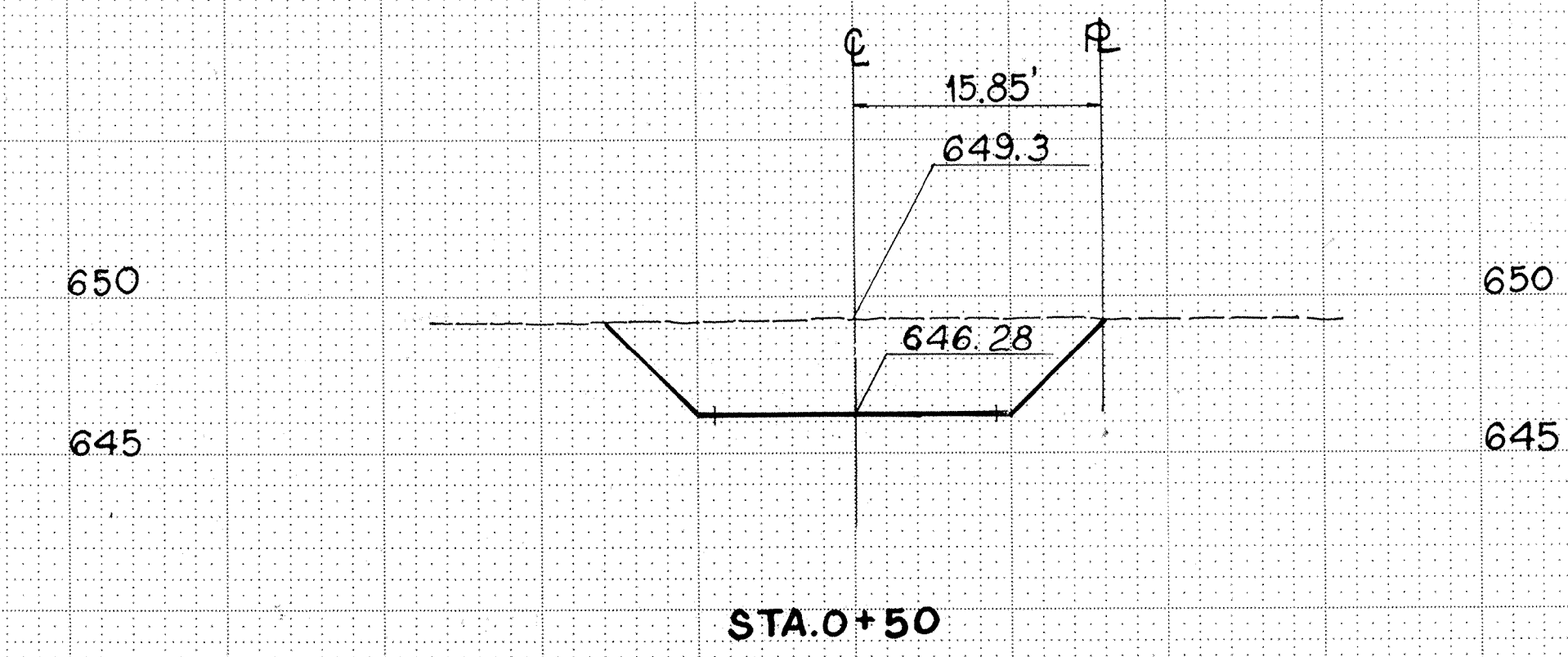
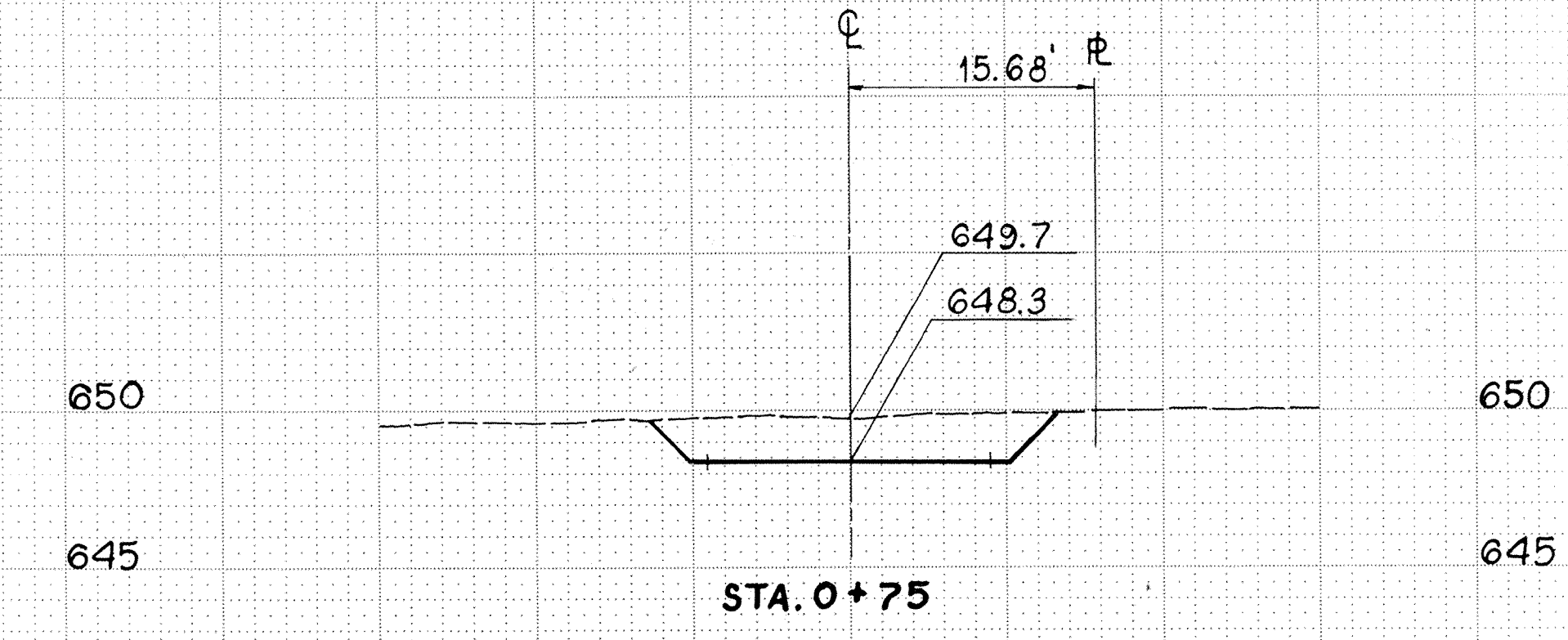
REFERENCES	SHEET
DRIVE PLAN	42, 43
DRIVE QUANTITIES	44
DRIVE DETAIL	48
PLAN OF DRIVE AT STA. 22+82 L	44



REFERENCES	SHEET
DRIVE PLAN	42,43,44
DRIVE QUANTITIES	44
DRIVE DETAIL	48



CROSS SECTIONS  
DRIVEWAY STA. 21+00 R



CROSS SECTIONS  
DRIVEWAY STA. 22+26 L

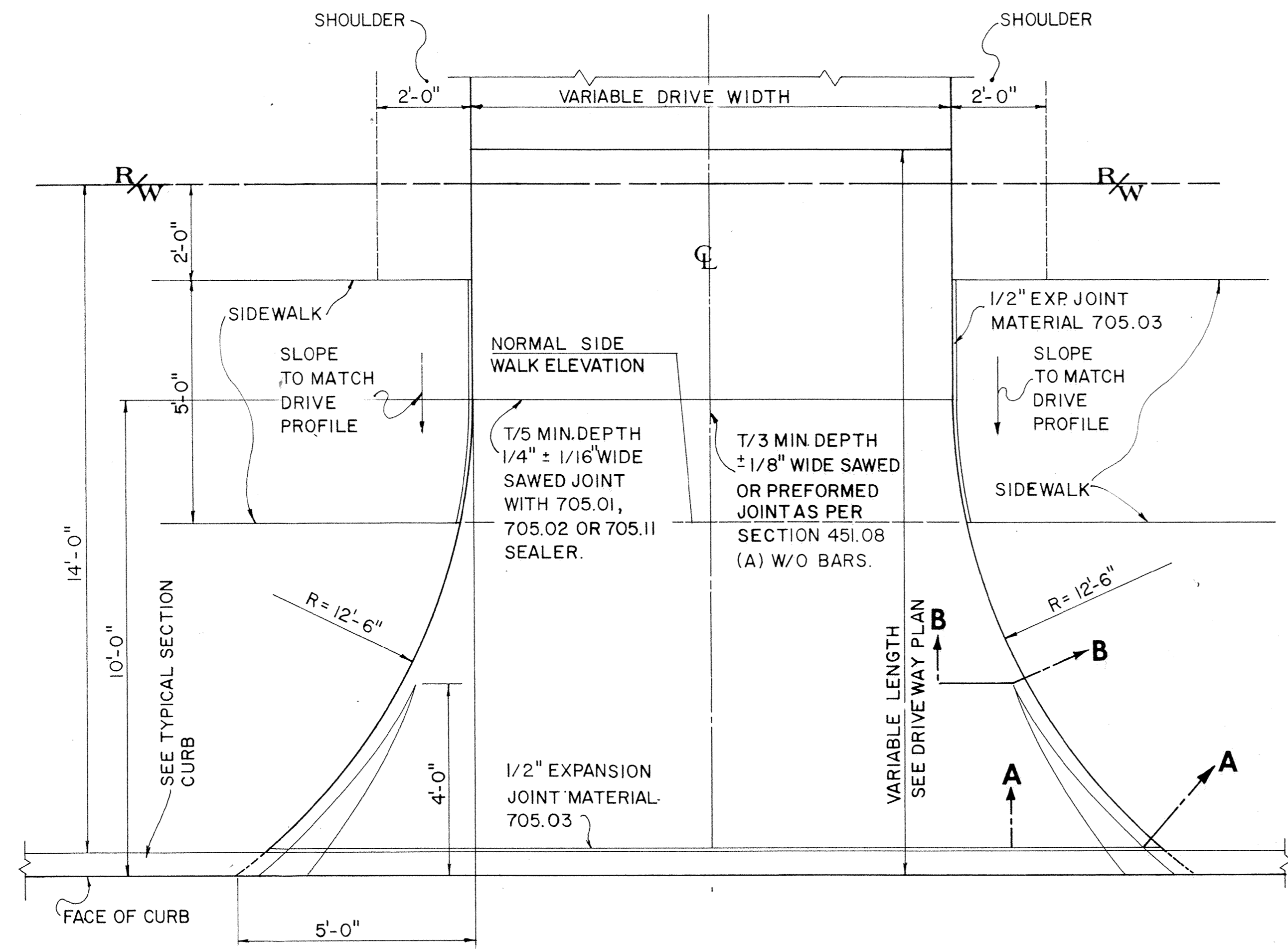
REFERENCES	SHEET
DRIVE PROFILE	45, 46
DRIVE PLAN	42, 43, 44
DRIVE QUANTITIES	44
DRIVE DETAIL	47

# DRIVE DETAIL

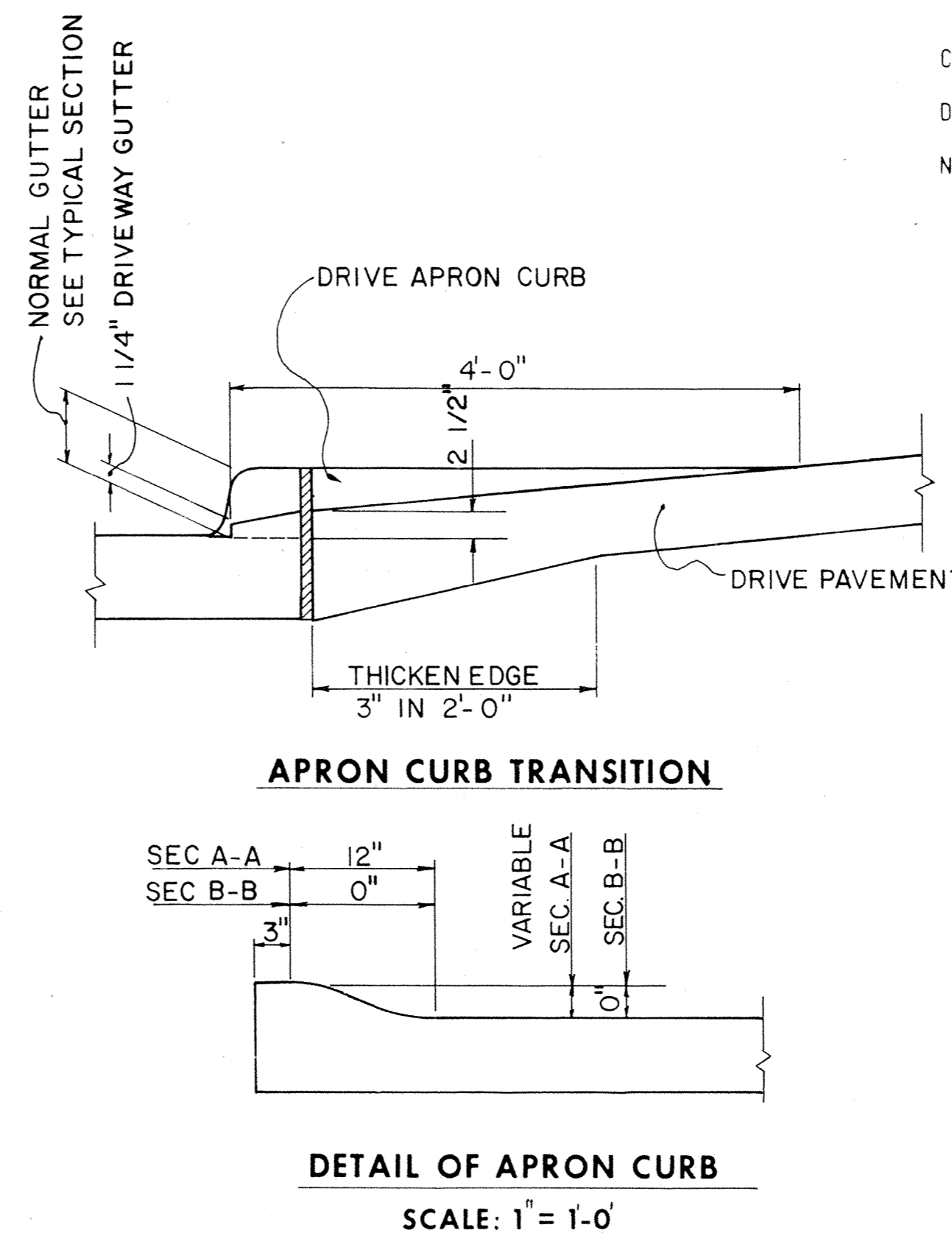
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO	STATE	

48  
100

ASHTABULA COUNTY  
ATB-7-31.43



**CONCRETE DRIVE**  
SCALE: 1/2" = 1'-0"



**APRON CURB TRANSITION**  
**DETAIL OF APRON CURB**  
SCALE: 1" = 1'-0"

**NOTE:**

RESIDENCE DRIVES HAVING AN EXISTING HARD SURFACE OR EXISTING AGGREGATE SURFACE SHALL BE REPLACED WITH A PAVEMENT OF A SIMILAR TYPE INSOFAR AS PRACTICABLE, USING ONE OF THE FOLLOWING DESIGNS FOR THE PORTION BEYOND THE FLARED APRON, UNLESS OTHERWISE NOTED.

- A. 6" PLAIN PORTLAND CEMENT CONCRETE, ITEM 452
- B. 2" 404 ASPHALT CONCRETE, 407 PRIME COAT USING 0.4 GALLON 702 09 RT 2 OR 3 PER SQUARE YARD
- 6" 304 AGGREGATE BASE OR 7" OF 411 STABILIZED CRUSHED AGGREGATE
- C. 1" 404 ASPHALT CONCRETE
- 4" 301 BITUMINOUS AGGREGATE BASE
- D. 8" 411 OR 304

FOR ASPHALTIC CONCRETE AND SLAG DRIVE THE PLAN VIEW SHOWN SHALL BE USED. SHAPE DRIVE SECTION TO PROVIDE FOR PROPER DRAINAGE, AS DIRECTED BY THE ENGINEER.

BUSINESS DRIVES HAVING AN EXISTING HARD SURFACE OR AGGREGATE SURFACE SHALL BE REPLACED WITH A PAVEMENT OF A SIMILAR TYPE INSOFAR AS PRACTICABLE USING ONE OF THE FOLLOWING DESIGNS FOR THE PORTION BEYOND THE RETURN, UNLESS OTHERWISE NOTED.

- A. 8" PLAIN PORTLAND CEMENT CONCRETE, ITEM 452
- B. 1 1/4" 404 ASPHALT CONCRETE
- 1 1/4" 402 ASPHALT CONCRETE, 407 PRIME COAT USING 0.4 GALLON 702 09 RT 2 OR 3 PER SQUARE YARD
- 8" 304 AGGREGATE BASE
- C. 1" 404 ASPHALT CONCRETE
- 5" BITUMINOUS AGGREGATE
- D. 10" 411 OR 304 AGGREGATE BASE

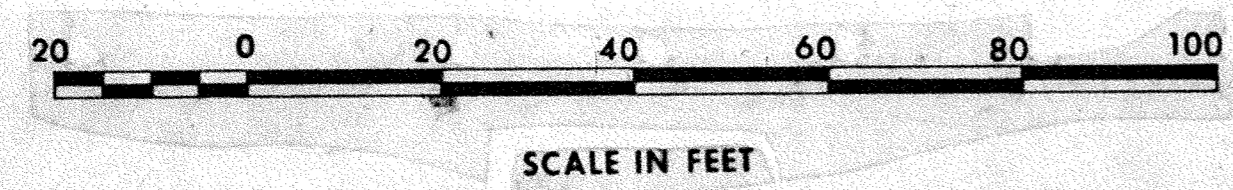
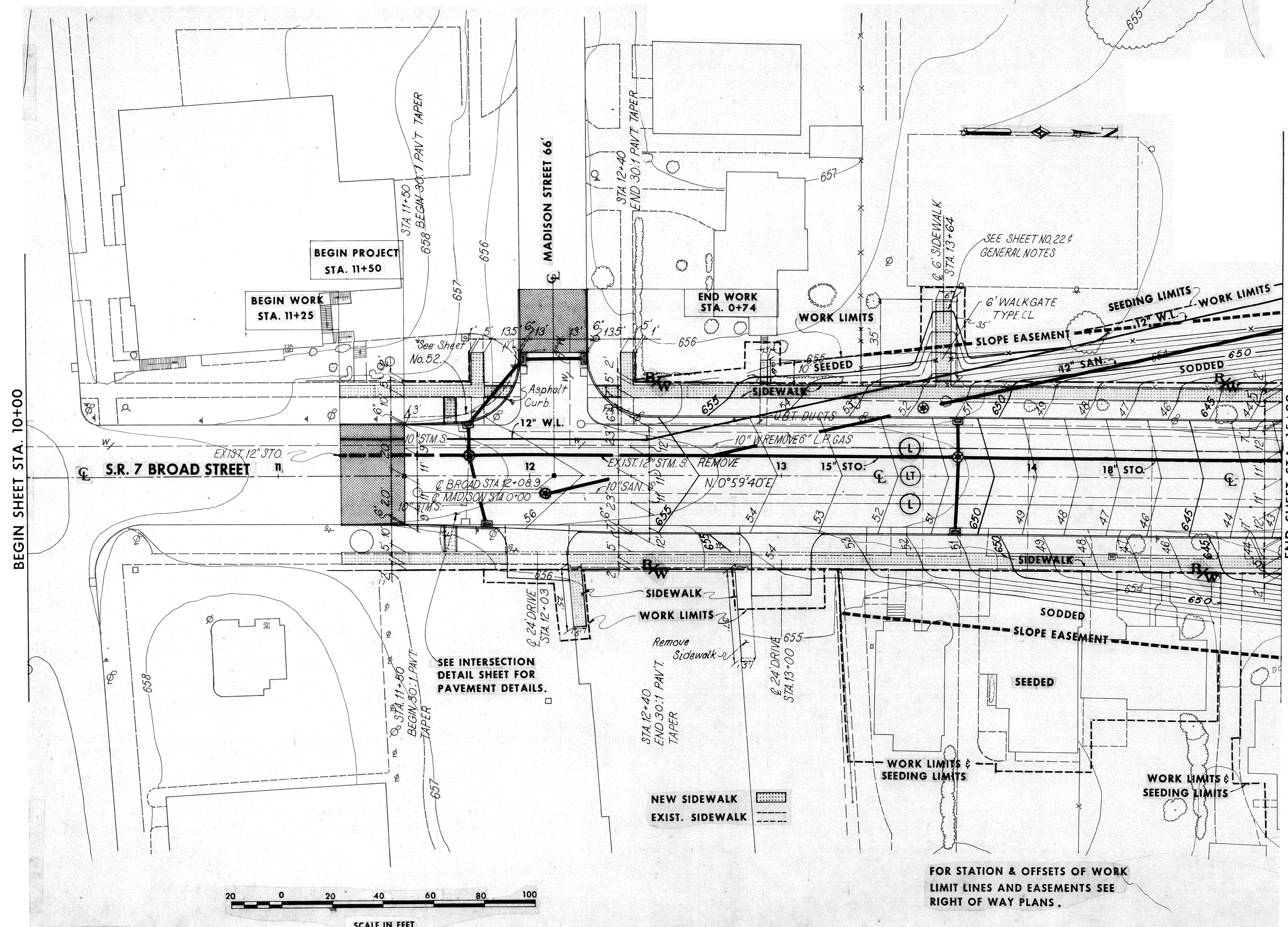
NOTE: ADDITIONAL THICKNESSES MAY BE PROVIDED FOR THE ABOVE COURSES WHERE UNUSUAL WEIGHTS OR TYPES OF VEHICLES ARE EXPECTED TO USE THE BUSINESS DRIVE

REFERENCES	SHEET
DRIVE PROFILE	45,46
DRIVE PLAN	42,43,44
DRIVE QUANTITIES	44

SCALE \_\_\_\_\_  
MADE \_\_\_\_\_ DATE \_\_\_\_\_  
TRCD \_\_\_\_\_ DATE 8/13/99  
CKD \_\_\_\_\_ DATE 1/3/02

**WOODRUFF, INC.**  
CONSULTING ENGINEERS  
CLEVELAND OHIO

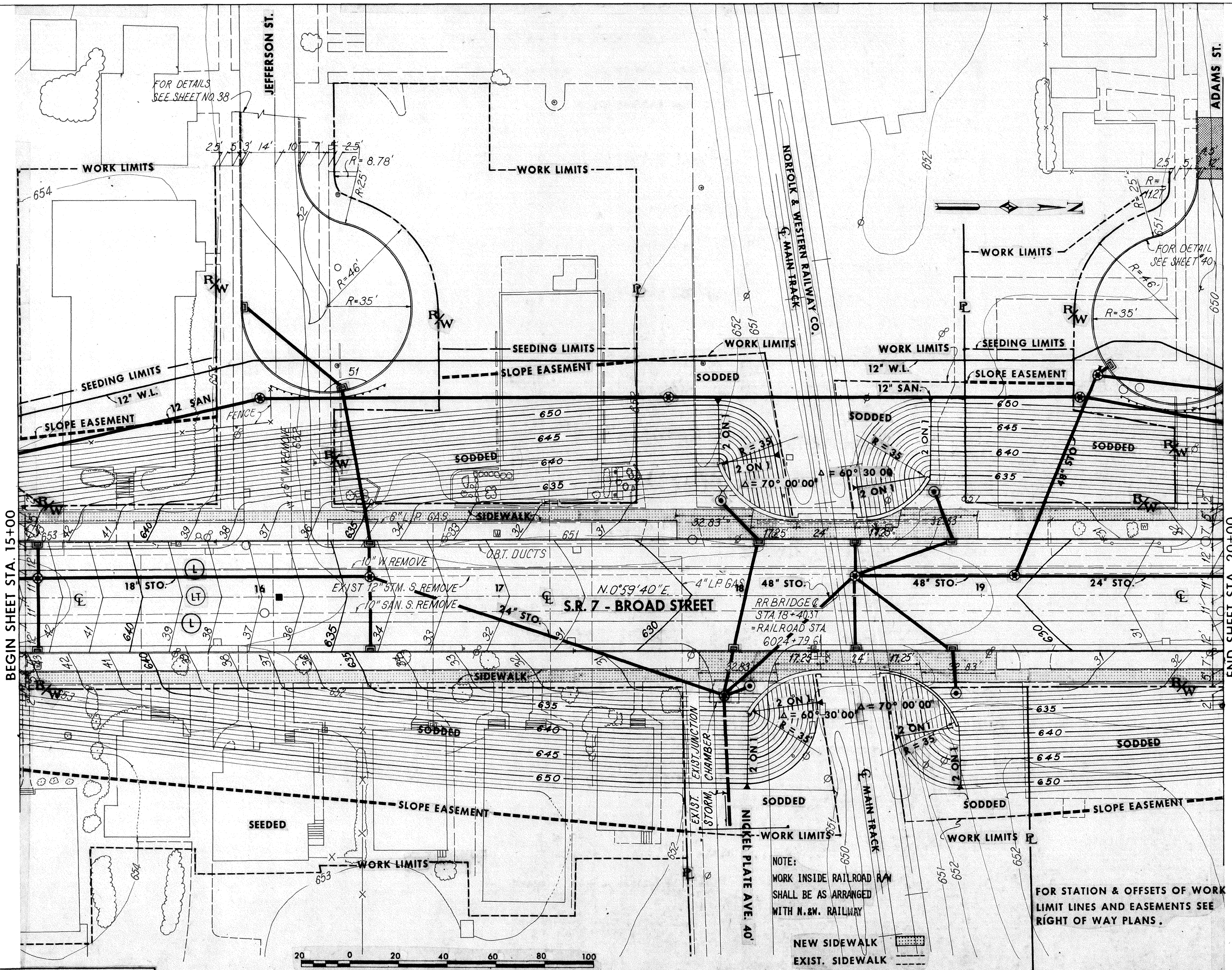




References	Sheet No.
PLAN AND PROFILE	22-24
SANITARY SEWER	60
WATERLINE	64,65,67
DRIVEWAYS	42,43,44
MADISON INTERSECTION	52
RIGHT OF WAY PLANS	89-97

JOINT LEGEND	
(LT)	LONGITUDINAL KEYED JOINT WITHOUT TIE BARS
(L)	STANDARD LONGITUDINAL JOINT SAWED AND TIED

FOR STATION & OFFSETS OF WORK LIMIT LINES AND EASEMENTS SEE RIGHT OF WAY PLANS.



References	Sheet No.
PLAN AND PROFILE	22-24
SANITARY SEWER	60
WATERLINE	64,65,67
DRIVEWAYS	42,43,44
JEFFERSON ST. DETAIL	38
RIGHT OF WAY PLANS	89-97

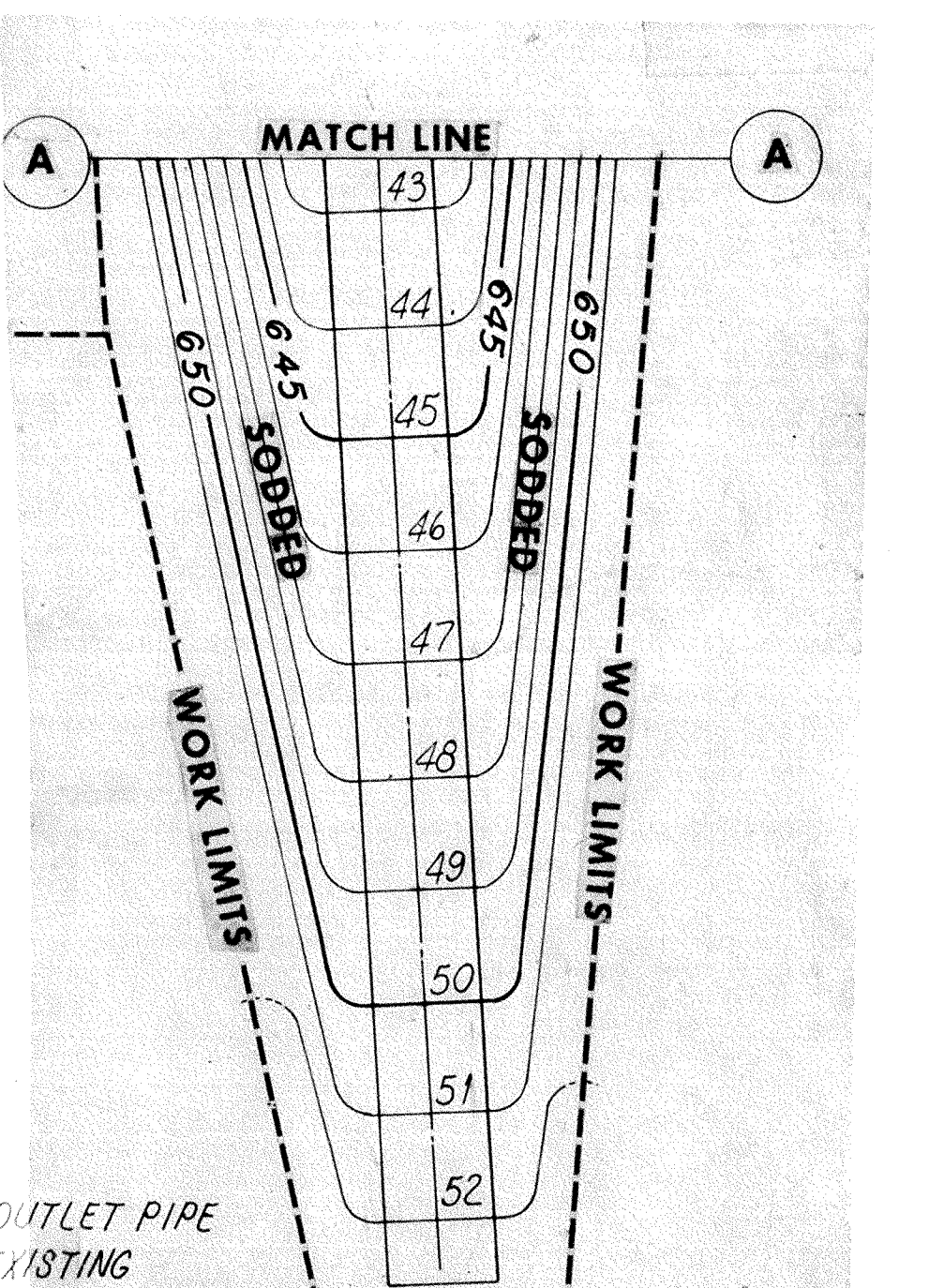
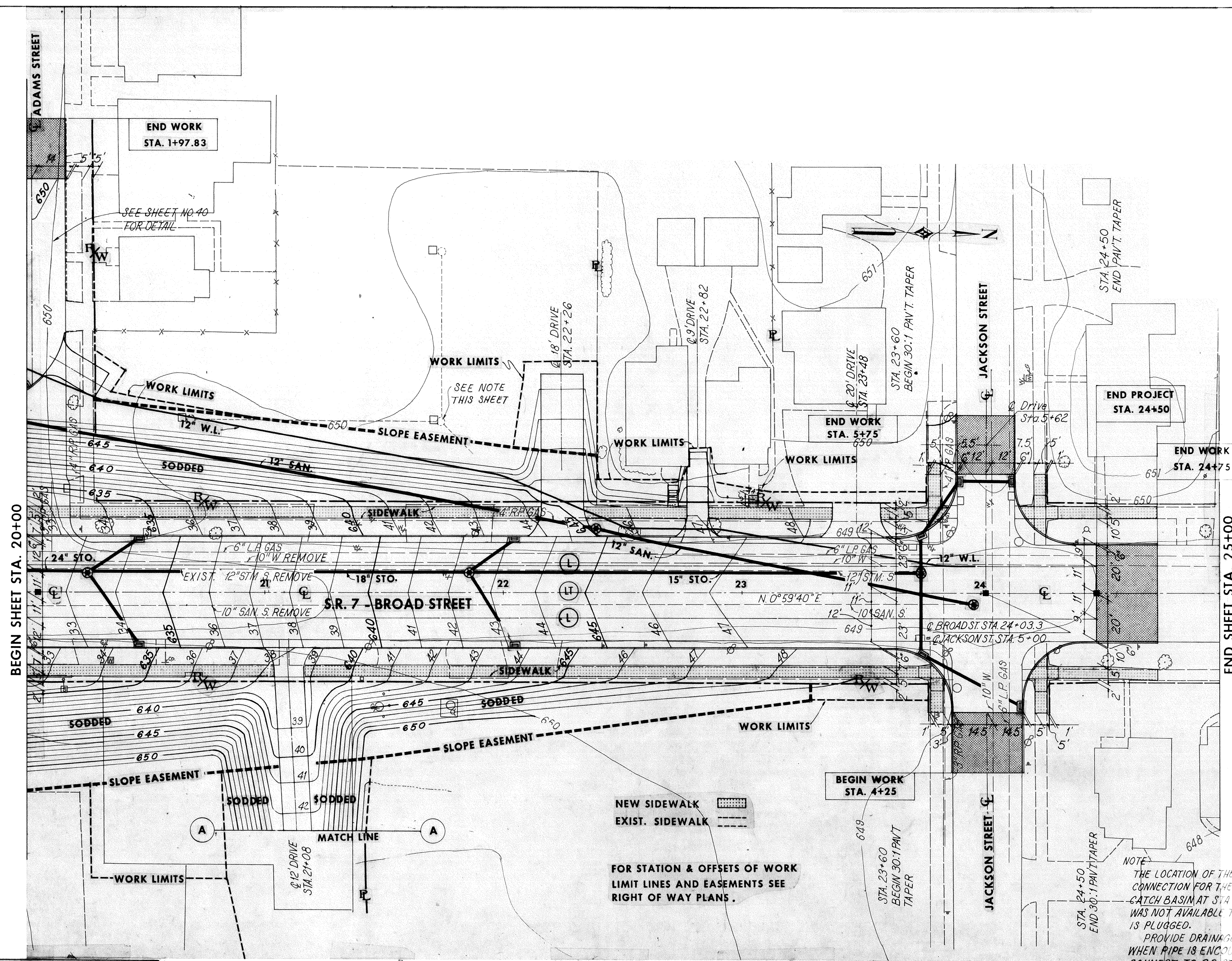
JOINT LEGEND	
(LT)	LONGITUDINAL KEED JOINT WITHOUT TIE BARS
(L)	STANDARD LONGITUDINAL JOINT SAWED AND TIED

NOTE:  
WORK INSIDE RAILROAD R/W SHALL BE AS ARRANGED WITH N.&W. RAILWAY

FOR STATION & OFFSETS OF WORK LIMIT LINES AND EASEMENTS SEE RIGHT OF WAY PLANS.

References	Sheet No.
PLAN AND PROFILE	22-24
SANITARY SEWER	60
WATERLINE	64,65,67
DRIVEWAYS	42,43,44
JACKSON INTERSECTION	53
ADAMS CUL-DE-SAC	40
RIGHT OF WAY PLANS	89-97

JOINT LEGEND	
(LT)	LONGITUDINAL KEYPED JOINT WITHOUT TIE BARS
(L)	STANDARD LONGITUDINAL JOINT SAWED AND TIED



SCALE \_\_\_\_\_ DATE \_\_\_\_\_  
**WOODRUFF, INC.**  
 MADE \_\_\_\_\_ DATE \_\_\_\_\_  
 TRCD \_\_\_\_\_ DATE \_\_\_\_\_  
 C.D. A.J.M. DATE 10/1/80  
 CONSULTING ENGINEERS  
 CLEVELAND OHIO

# INTERSECTION DETAILS

QUANTITY CALCULATIONS

BY N.S. DATE 1-18-80

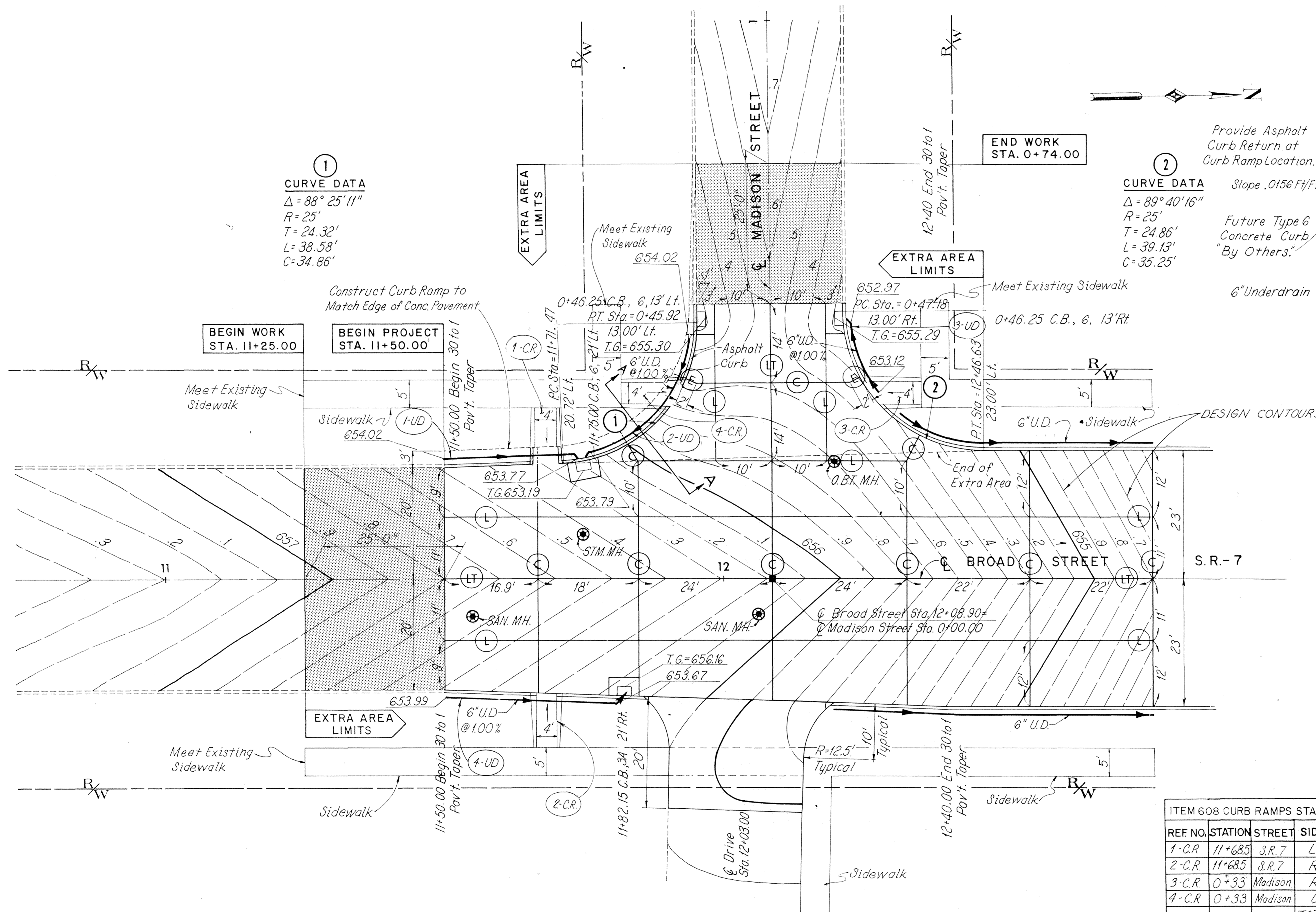
CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

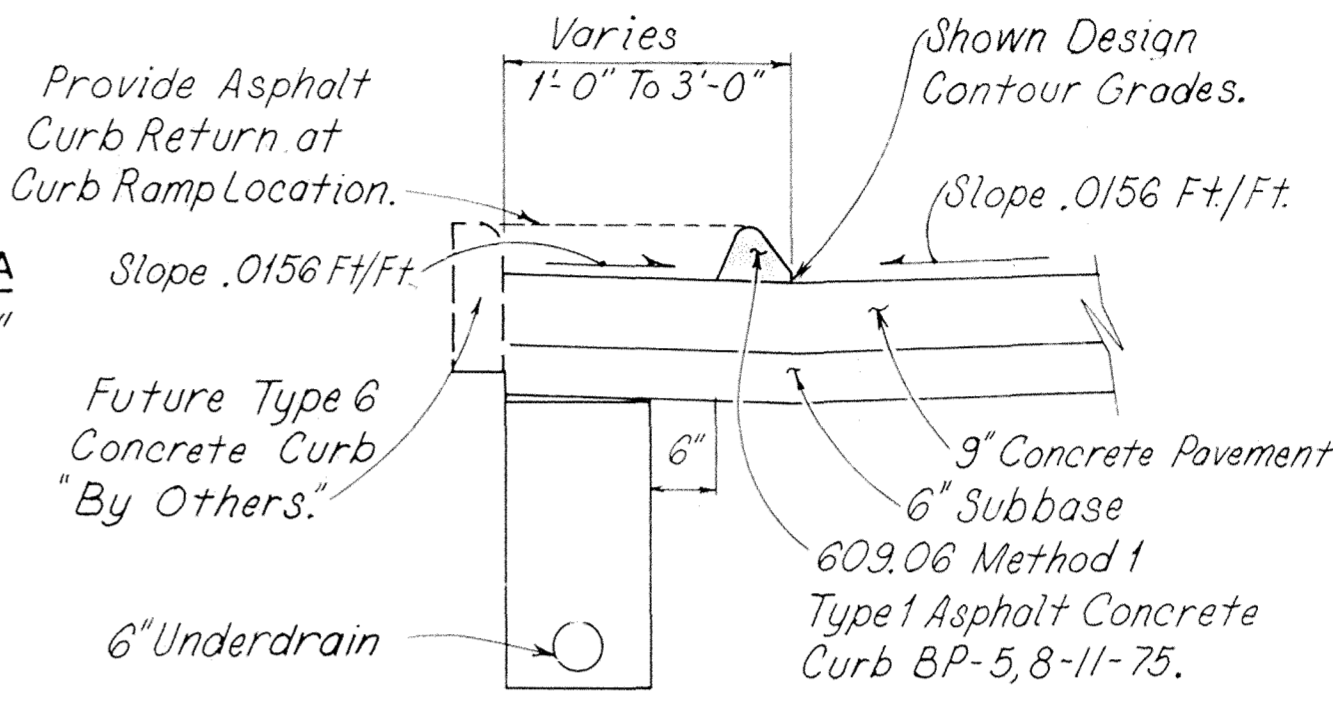
52  
100

ASHTABULA COUNTY  
ATB-7-31.43



**1**  
CURVE DATA  
 $\Delta = 88^\circ 25' 11''$   
 $R = 25'$   
 $T = 24.32'$   
 $L = 38.58'$   
 $C = 34.86'$

**2**  
CURVE DATA  
 $\Delta = 89^\circ 40' 16''$   
 $R = 25'$   
 $T = 24.86'$   
 $L = 39.13'$   
 $C = 35.25'$



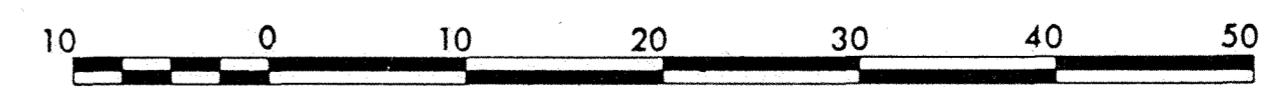
**SECTION A-A**

ITEM 605					
REF. NO.	STATION		SIDE	6" SHALLOW PIPE UNDERDRAIN	6" UNCLASSIFIED PIPE UNDERDRAIN
	FROM	TO		LIN. FT.	LIN. FT.
1-UD	11+50.00	11+75.00	L		25
2-UD	11+75.00	0+43.50	L	31	
3-UD	0+46.25	12+28.00	L	15	
4-UD	11+50.00	11+82.15	R		33
<b>TOTAL</b>				<b>46</b>	<b>58</b>

ITEM 608 CURB RAMPS STANDARD TYPE 2				
REF. NO.	STATION	STREET	SIDE	EACH
1-C.R.	11+68.5	S.R.7	L	1
2-C.R.	11+68.5	S.R.7	R	1
3-C.R.	0+33	Madison	R	1
4-C.R.	0+33	Madison	L	1
<b>TOTAL</b>				<b>4</b>

JOINT LEGEND	
(LT)	LONGITUDINAL KEYED JOINT WITHOUT TIE BARS
(L)	STANDARD LONGITUDINAL JOINT SAWED AND TIED
(C)	STANDARD CONTRACTION JOINT
(E)	EXPANSION JOINT WITHOUT DOWELS

"EXTRA AREA" INDICATES AREA WHOSE QUANTITIES ARE ESTIMATED SEPARATELY, SEE SHEET 28 & SUBSUMMARIES.



SCALE IN FEET

SR. 7 - BROAD STREET

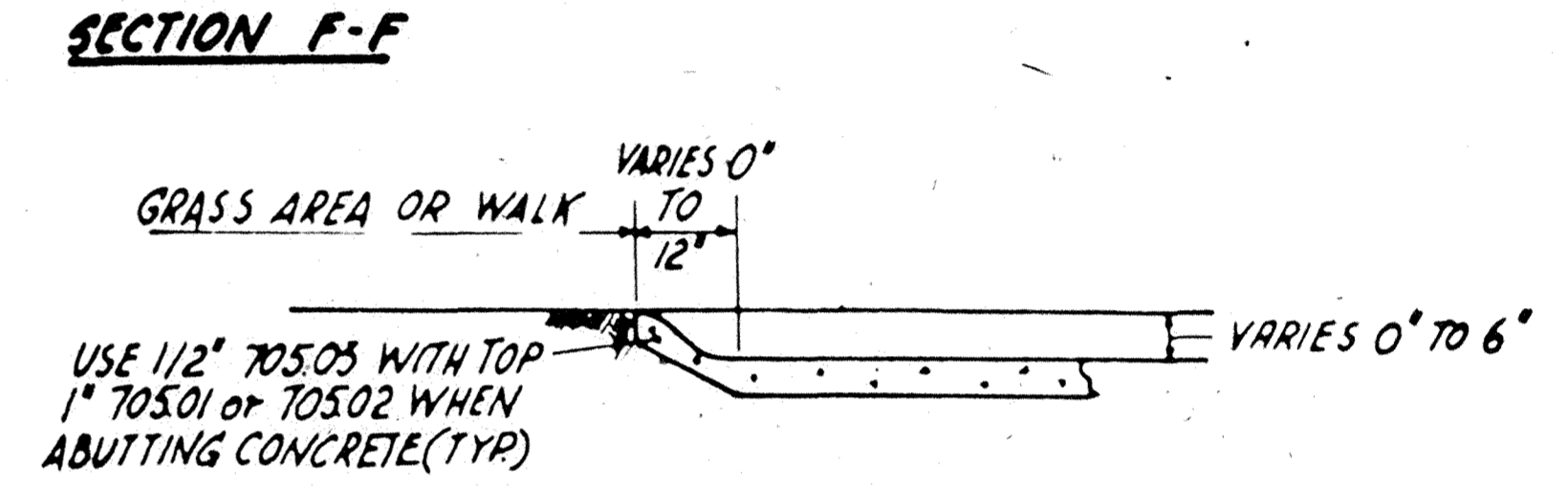
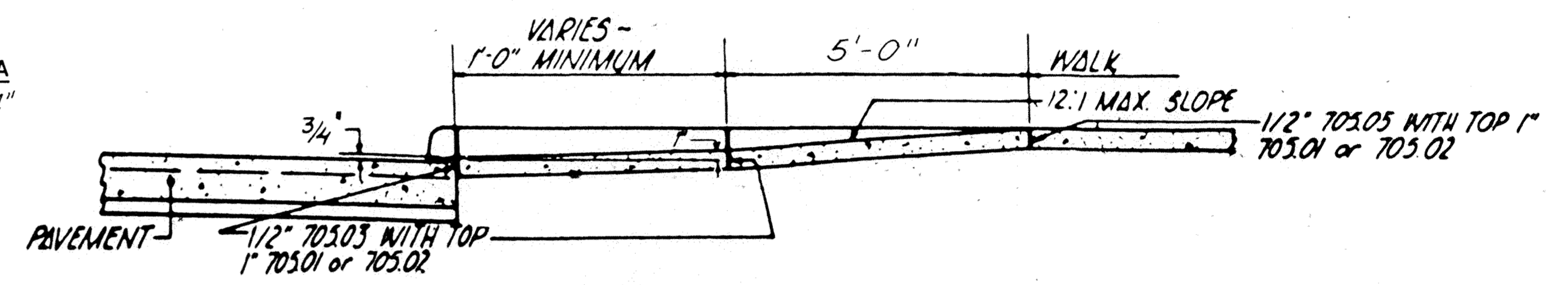
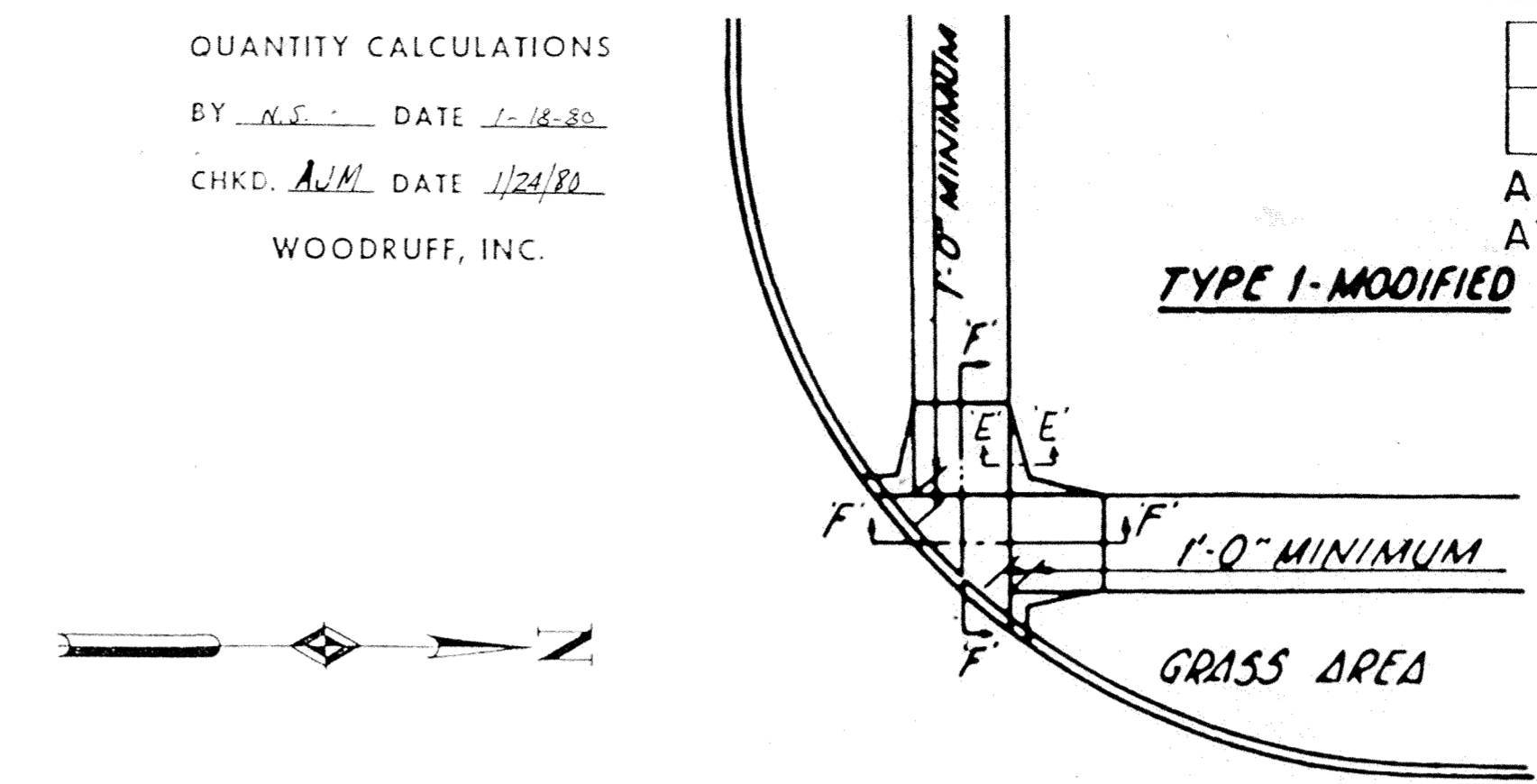
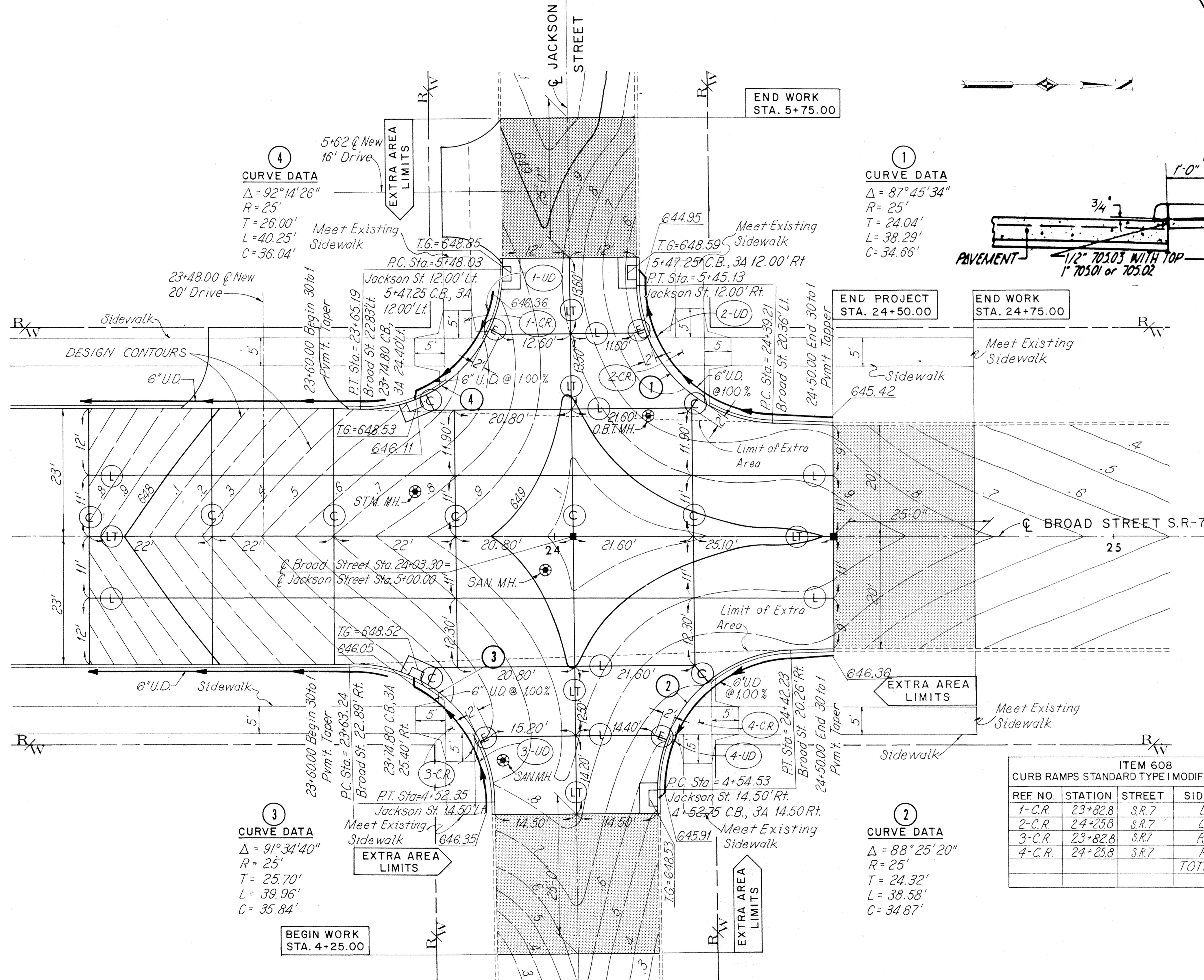
# INTERSECTION DETAILS

QUANTITY CALCULATIONS  
 BY N.S. DATE 1-18-80  
 CHKD. AJM. DATE 1/24/80  
 WOODRUFF, INC.

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

53  
100

ASHTABULA COUNTY  
 ATB-7-31.43



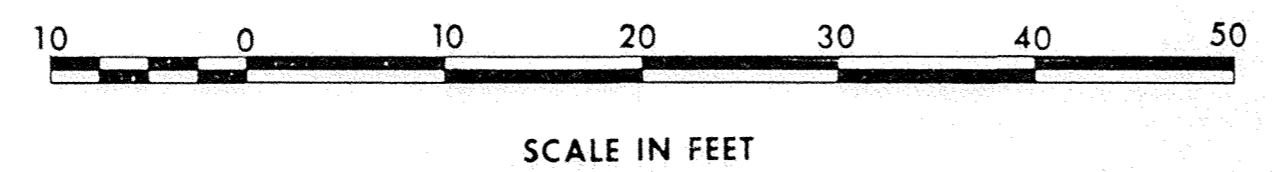
CURB RAMPS STANDARD TYPE I MODIFIED DETAILS

ITEM 605					
REF. NO.	STATION		SIDE	6\"	6\"
	FROM	TO		SHALLOW PIPE UNDERDRAIN	UNCASSIFIED PIPE UNDERDRAIN
				LIN. FT.	LIN. FT.
1-UD	23+74.8	5+44.5	L	25	
2-UD	5+47.25	24+50.0	L		47
3-UD	23+74.8	4+50.35	R		31
4-UD	4+52.75	24+50.0	R		45
			TOTAL	25	123

ITEM 608 CURB RAMPS STANDARD TYPE I MODIFIED AS PER PLAN				
REF. NO.	STATION	STREET	SIDE	EACH
1-C.R.	23+82.8	S.R.7	L	1
2-C.R.	24+25.8	S.R.7	L	1
3-C.R.	23+82.8	S.R.7	R	1
4-C.R.	24+25.8	S.R.7	R	1
			TOTAL	4

JOINT LEGEND	
(LT)	LONGITUDINAL KEYED JOINT WITHOUT TIE BARS
(L)	STANDARD LONGITUDINAL JOINT SAWED AND TIED
(C)	STANDARD CONTRACTION JOINT
(E)	EXPANSION JOINT WITHOUT DOWELS

SCALE As Shown  
 MADE BY DATE  
 TRCD. R.C.K. DATE 2-1-79  
 C.K.D. DATE 1/1/80  
**WOODRUFF, INC.**  
 CONSULTING ENGINEERS  
 CLEVELAND OHIO



"EXTRA AREA" INDICATES AREA WHOSE QUANTITIES ARE ESTIMATED SEPARATELY, SEE SHEET 36 & SUBSUMMARIES.

SR. 7 - BROAD STREET

QUANTITY CALCULATIONS

BY X.S. DATE 1-18-80

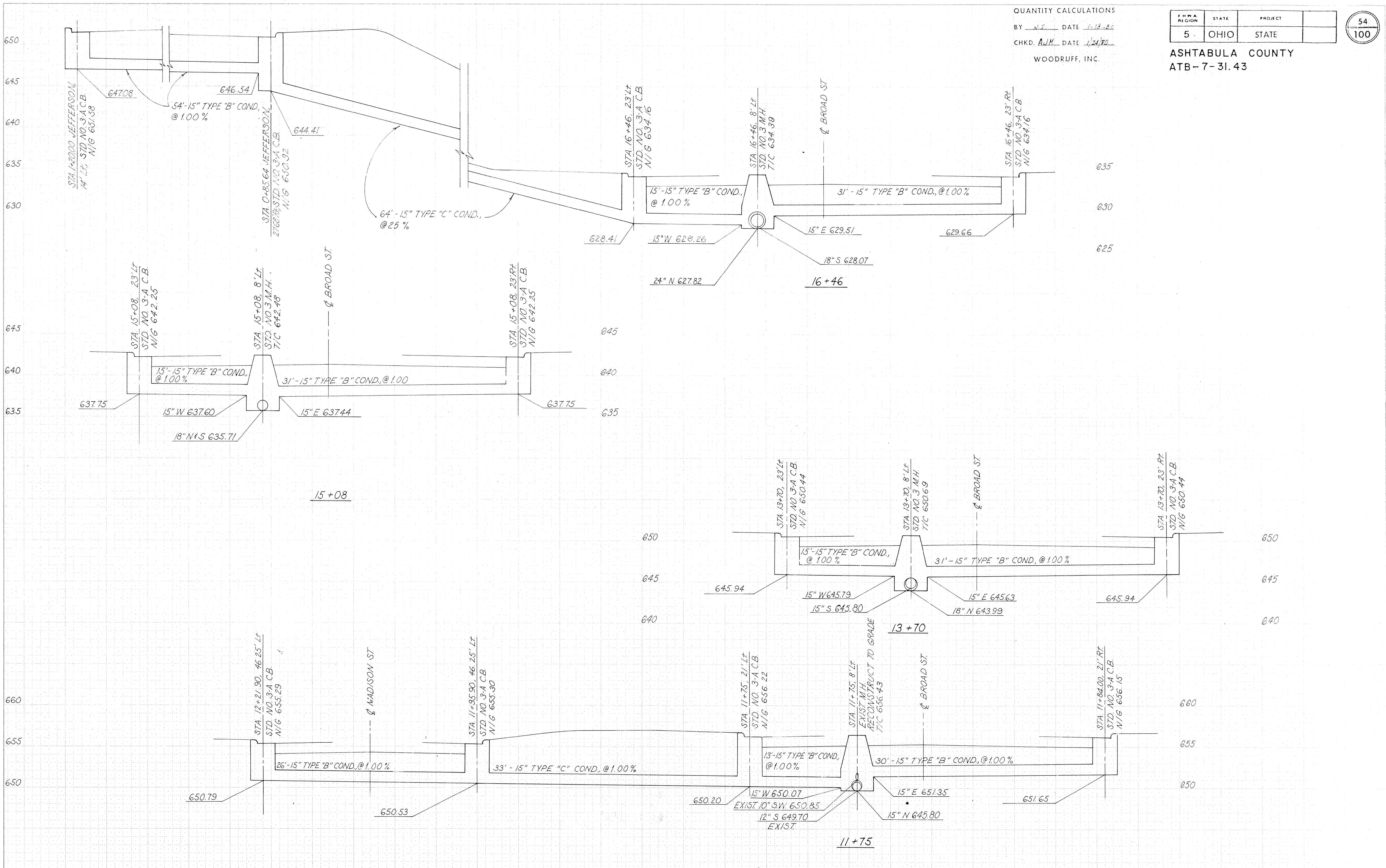
CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

54  
100

ASHTABULA COUNTY  
ATB-7-31.43



SR. 7 - BROAD STREET

QUANTITY CALCULATIONS

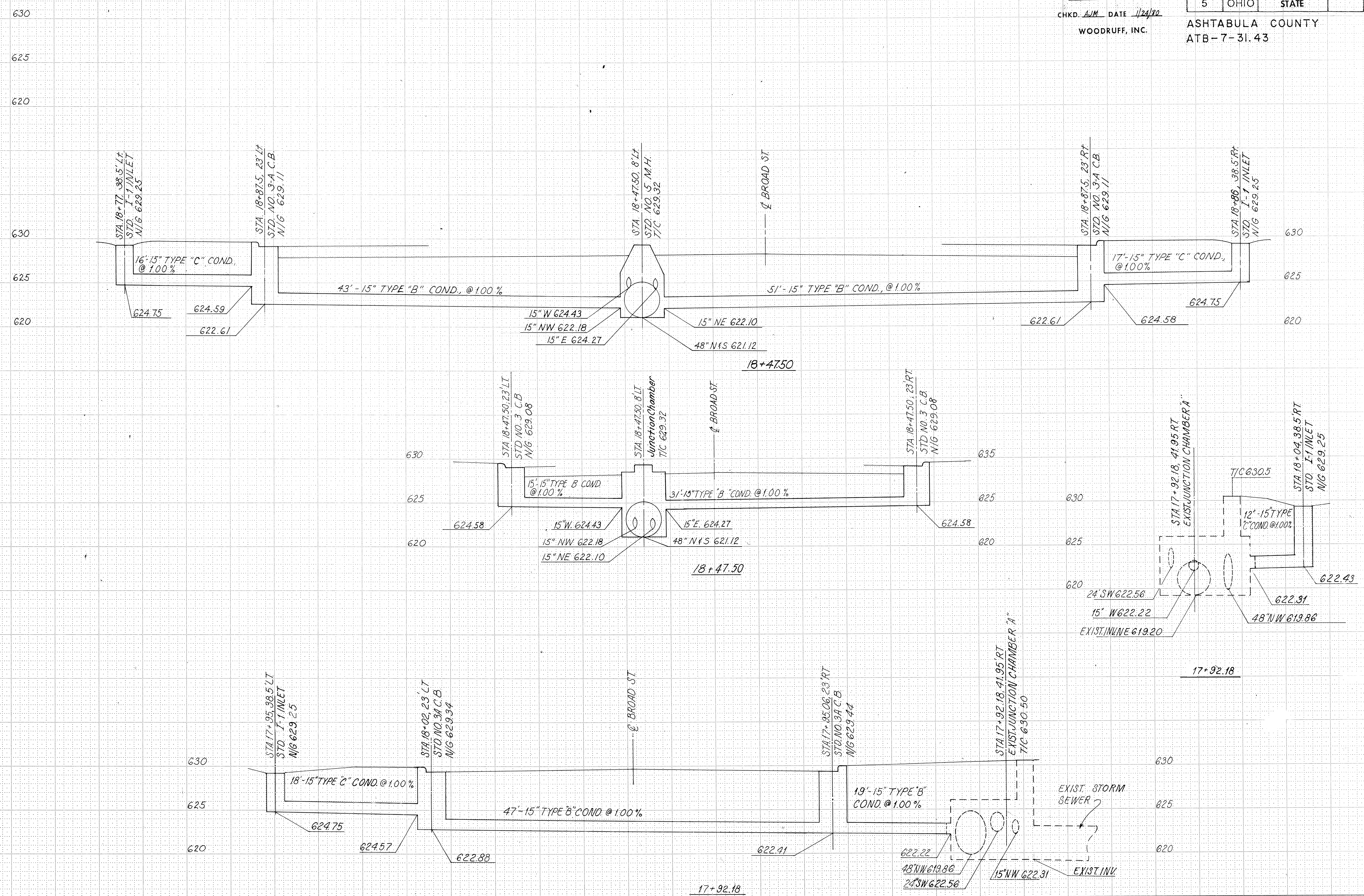
BY V.S. DATE 1-18-80

CHKD. AVM DATE 1/24/80

WOODRUFF, INC.

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

ASHTABULA COUNTY  
ATB-7-31.43



QUANTITY CALCULATIONS

BY A.S. DATE 1-18-80

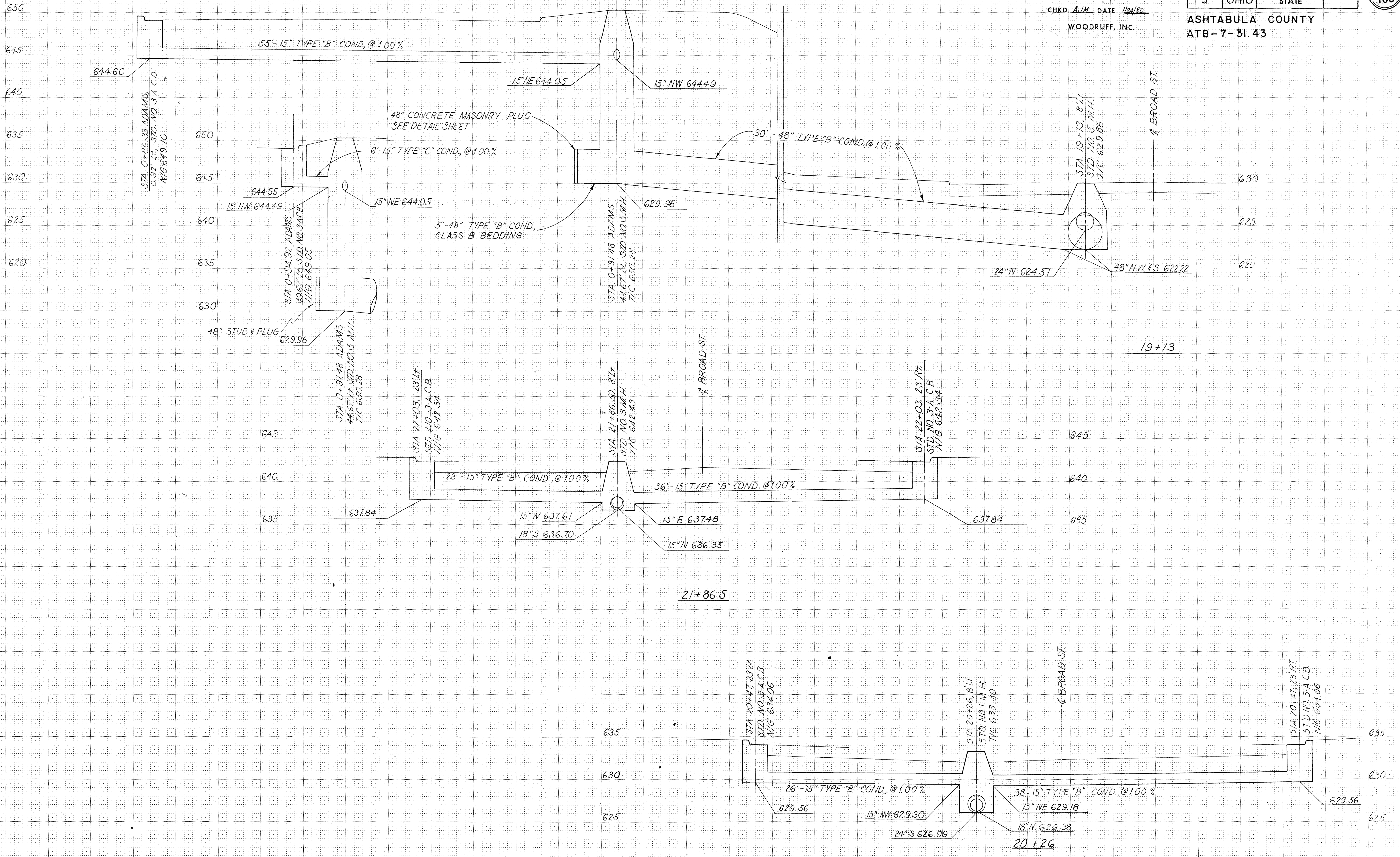
CHKD. AJM DATE 1/24/80

WOODRUFF, INC.

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

56  
100

ASHTABULA COUNTY  
ATB-7-31.43



SR. 7 - BROAD STREET



QUANTITY CALCULATIONS

BY N.S. DATE 1-18-80

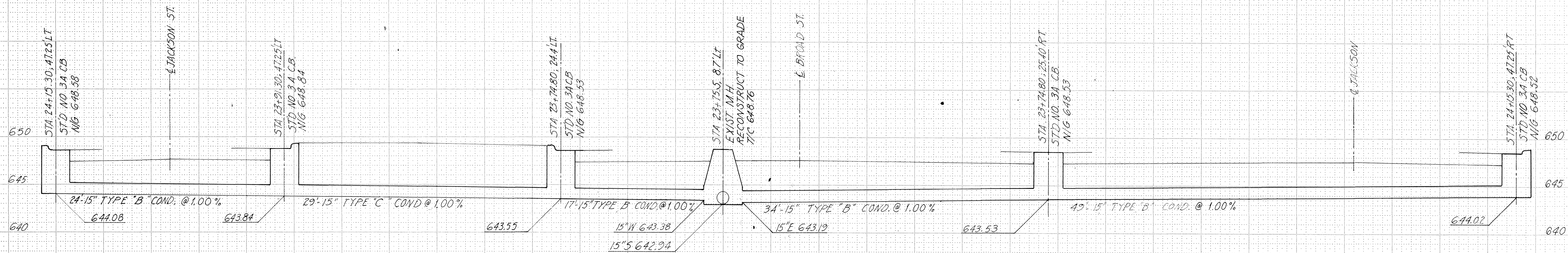
CHKD. AVM DATE 1/24/80

WOODRUFF, INC.

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

57  
100

ASHTABULA COUNTY  
ATB-7-31.43



SR. 7 - BROAD STREET

**621 PAVEMENT MARKING, POLYESTER, AS PER PLAN**

POLYESTER PAVEMENT MARKINGS SHALL CONFORM TO 621 EXCEPT AS FOLLOWS:

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

ITEM 621.02 MATERIALS IS HEREBY DELETED EXCEPT FOR GLASS BEAD REQUIREMENTS. IN ADDITION, PAVEMENT MARKING MATERIAL SHALL BE A RETROREFLECTORIZED POLYESTER COMPOUND AS MANUFACTURED BY THE GLIDDEN-DURKEE COMPANY OR AN APPROVED EQUAL.

ITEM 621.05 APPLICATION IS HEREBY MODIFIED AS FOLLOWS: PARAGRAPH 4 IS CHANGED TO READ: WHEN POLYESTER MATERIAL IS APPLIED TO NEW BITUMINOUS PAVEMENT SURFACES, THE SPECIFIED APPLICATION RATE SHALL BE INCREASED 25 PERCENT ABOVE THE MINIMUM RATES SPECIFIED.

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

THE MATERIAL SHALL BE APPLIED TO PROVIDE A UNIFORM THICKNESS NOT LESS THAN 15 MILS NOR MORE THAN 30 MILS. THE APPLICATION RATE FOR A SOLID LINE OF 4 INCHES IN WIDTH SHALL BE NOT LESS THAN 16 GALLONS PER MILE NOR MORE THAN 33 GALLONS PER MILE CORRESPONDING TO THE ALLOWED VARIATION IN LINE THICKNESS. APPLICATION RATES FOR DASHED OR DOTTED LINES AND FOR LINES WIDER THAN 4 INCHES SHALL BE PROPORTIONAL TO THE SOLID LINE RATES.

PARAGRAPH 5 IS HEREBY MODIFIED AS FOLLOWS: THE RATE OF APPLICATION SHALL BE NOT LESS THAN 15 POUNDS OF GLASS BEADS PER GALLON OF POLYESTER MATERIAL APPLIED.

PARAGRAPH 6 IS HEREBY DELETED.

IN ADDITION TO 621 THE FOLLOWING SHALL BE REQUIRED:

**EQUIPMENT**

THE CONTRACTOR'S STRIPER SHALL BE EQUIPPED WITH AN ODOMETER GRADUATED TO 1/1000 OF A MILE. THE ENGINEER SHALL DETERMINE THE DEGREE OF ACCURACY OF THE CONTRACTOR'S ODOMETER AND ESTABLISH AN ADJUSTMENT FACTOR AS MAY BE REQUIRED TO ACCURATELY DETERMINE THE PAY ITEM QUANTITIES. THE ENGINEER SHALL PERIODICALLY CHECK THE ODOMETER OPERATION TO ASSURE MAINTENANCE OF ACCURATE MEASUREMENTS.

FAILURE OF THE ODOMETER TO FUNCTION PROPERLY SHALL BE CAUSE TO STOP THE WORK UNTIL THE ODOMETER IS MADE TO FUNCTION PROPERLY. IF MEASUREMENT OF THE WORK HAS TO BE PERFORMED BY THE DEPARTMENT, THE COST OF THE DEPARTMENT LABOR AND EQUIPMENT PLUS 10 PERCENT SHALL BE DEDUCTED FROM PAYMENT DUE THE CONTRACTOR FOR THE WORK. WHEN MEASURING LANE AND CENTERLINE MARKING, THE ODOMETER SHALL BE STARTED AT THE FIRST MARKED LINE AND REMAIN IN OPERATION, EXCEPT AT INTERSECTIONS AND OTHER LOCATIONS NOT MARKED, UNTIL THE END OF THE SECTION BEING MARKED, WHERE IT SHALL BE SHUT OFF AND THE READING OF THE ODOMETER RECORDED.

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

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

THE CONTRACTOR SHALL FURNISH AND MAINTAIN THE RADIO EQUIPMENT NECESSARY FOR 2-WAY VOICE COMMUNICATION BETWEEN THE CONTRACTOR AND THE ENGINEER AT ALL TIMES DURING THE PAVEMENT MARKING OPERATION. THIS EQUIPMENT SHALL BE PROVIDED FOR THE TERM OF THE CONTRACT ONLY.

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

ITEMS 621.12, 621.131 AND 621.132 RATE OF APPLICATIONS ARE HEREBY MODIFIED AS FOLLOWS:

POLYESTER MATERIAL SHALL BE APPLIED AT A RATE OF NOT LESS THAN 1 NOR MORE THAN 2 GALLONS PER 100 SQUARE FEET OF MARKING SURFACE.

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

THE QUANTITY OF POLYESTER MARKING MATERIAL OR GLASS BEADS APPLIED PER UNIT OF MEASUREMENT WILL BE COMPUTED BY THE ENGINEER AT THE END OF EACH DAY'S WORK. A DAY'S APPLIED QUANTITY OF LESS THAN 5 GALLONS MAY BE INCLUDED IN THE NEXT DAY'S APPLIED MARKINGS FOR THE PURPOSE OF COMPUTING MARKING MATERIAL AND BEAD APPLICATION RATES.

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

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

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

**REMOVAL OF GROUND MOUNTED SIGNS**  
ALL EXISTING GROUND MOUNTED SIGNS SHALL BE REMOVED WITHIN THE PROJECT LIMITS BY CITY FORCES PRIOR TO CONSTRUCTION.

**844-SIGNS, BY TYPE**  
REFLECTIVE SHEETING FOR SIGN FACES SHALL BE TYPE F IN ACCORDANCE WITH 844.03.

**SIGNING SUB SUMMARY 844**

STATION	SIDE	SIGN CODE NUMBER	SIGN SIZE	NO. OF SUPPORTS		SIGN FLAT SHEET	GROUND MOUNTED SUPPORTS, NO. 2 POST DRIVEN	GROUND MOUNTED SUPPORTS, NO. 3 POST DRIVEN	REMARKS
				EA.	SQ. FT.				
<b>BROAD ST</b>									
12+50	RT	R-55-12	12"x18"	1	1.50	12			
12+50	LT	R-31B-36	36"x30"	1	7.50			14	
12+72	LT	R-55-12	12"x18"	1	1.50	12			
14+25	LT	R-31B-36	36"x30"	1	7.50			14	
15+30	RT	R-55-12	12"x18"	1	1.50	12			
15+50	LT	R-55-12	12"x18"	1	1.50	12			
17+30	RT	R-55-12	12"x18"	1	1.50	12			
17+50	LT	R-55-12	12"x18"	1	1.50	12			
19+30	RT	R-55-12	12"x18"	1	1.50	12			
19+60	LT	R-55-12	12"x18"	1	1.50	12			
21+30	RT	R-55-12	12"x18"	1	1.50	12			
21+60	LT	R-55-12	12"x18"	1	1.50	12			
23+30	RT	R-55-12	12"x18"	1	1.50	12			
23+60	LT	R-55-12	12"x18"	1	1.50	12			
23+80	RT	R-31 A	36"x30"	1	7.50			14	
<b>MADISON ST</b>									
	LT	R23	24"x24"	*	2.00				*Hung To Right of Traffic Signal
<b>JACKSON ST</b>									
	RT	R-23	24"x24"	*	2.00				*Hung To Right of Traffic Signal
<b>JEFFERSON ST</b>									
3+18	LT	W-48-30	30"x30"	1	6.25			14	
<b>ADAMS ST</b>									
3+18	LT	W-48-30	30"x30"	1	6.25			14	
<b>NICKLE PLATE</b>									
	RT	W-48-30	30"x30"	1	6.25			14	
<b>TOTAL</b>						67.25	144	84	

**ITEM 621 PAVEMENT MARKING SUB SUMMARY**

STATION	FROM	TO	CENTERLINES		LANELINES	1/8" STOP LINES	3" CROSSWALK LINES
			LF.	L.F.			
<b>BROAD ST</b>							
	11+25	11+71	46		20.5	83	
	12+47	23+78	1131	2262	47	112	
	24+37	24+75	38		23.5	108	
<b>MADISON ST</b>							
	0+41	0+75	34		14	70	
<b>JACKSON ST</b>							
	4+25	4+61	36		15	70	
	5+42	5+75	33		13	64	
<b>JEFFERSON ST</b>							
	1+60	3+18	158		12.5		
<b>TOTAL</b>			1476	2262	1455	507	
			*1476 LIN.FT.	.28 MI.	+2262 LIN.FT.	= .43 MI.	

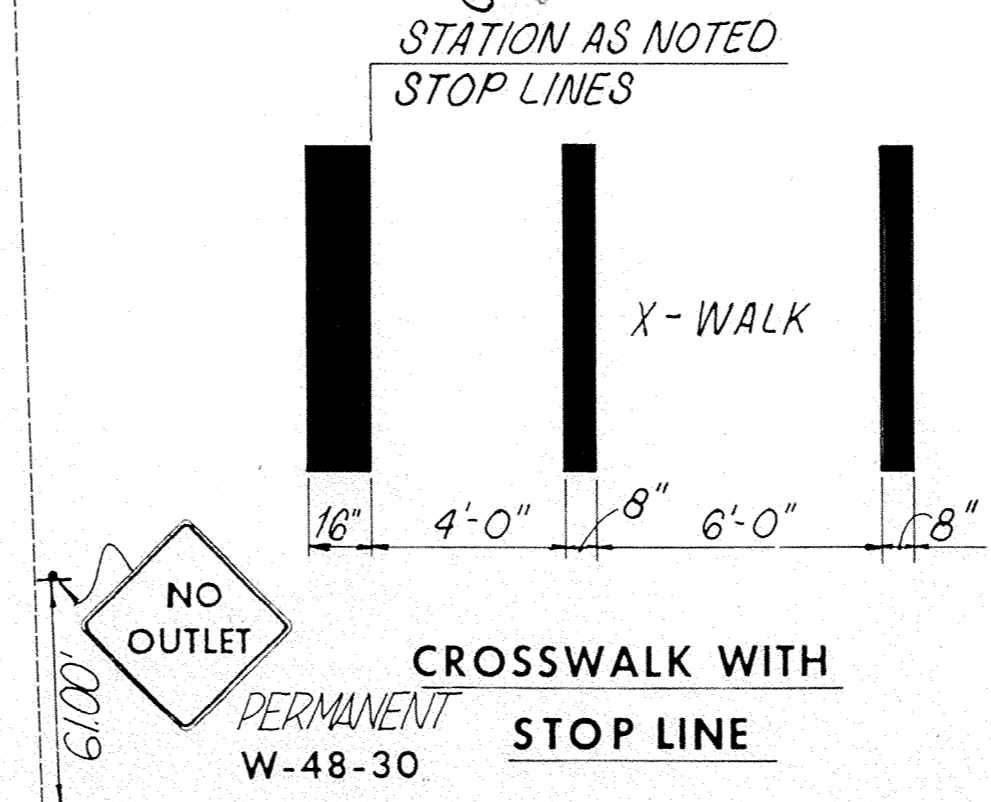
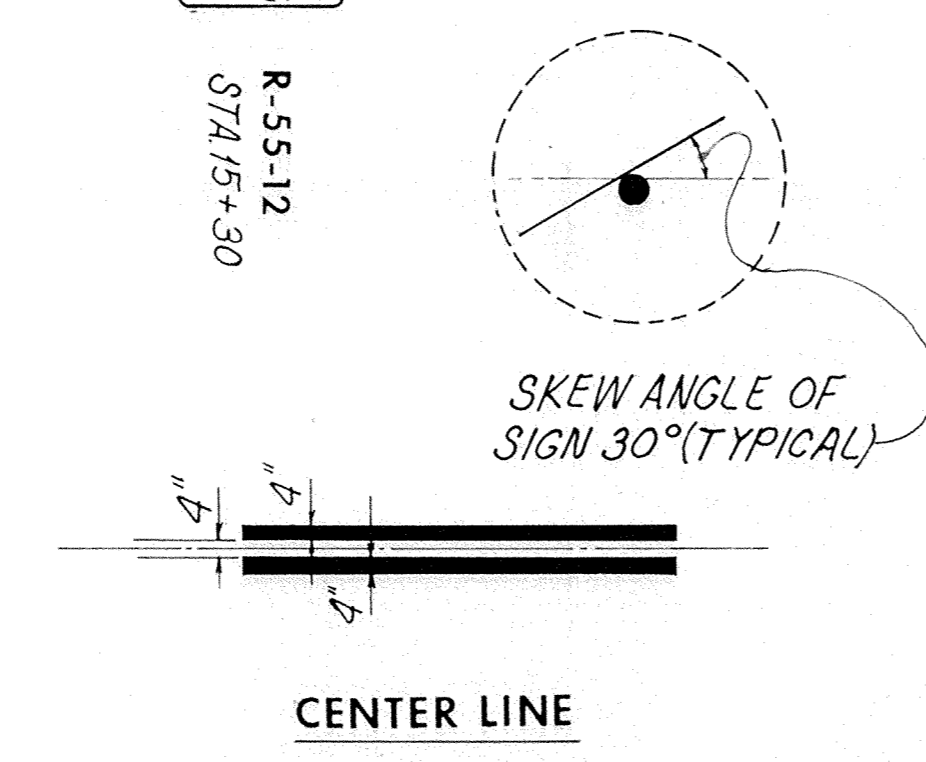
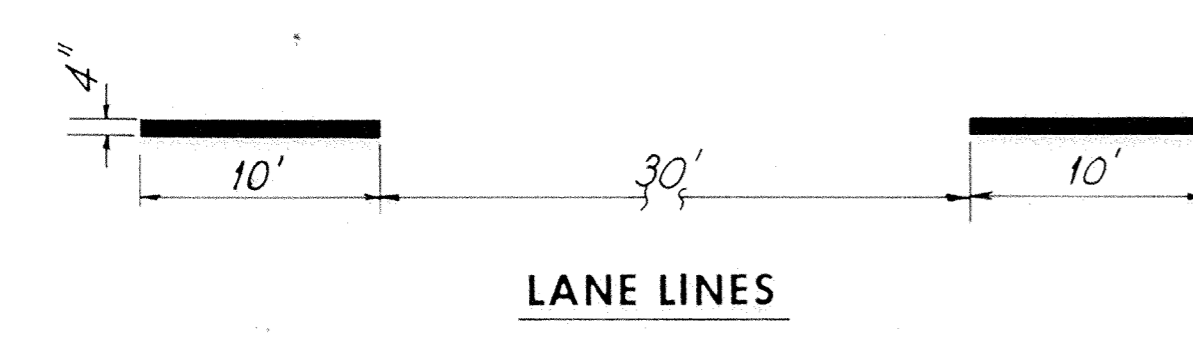
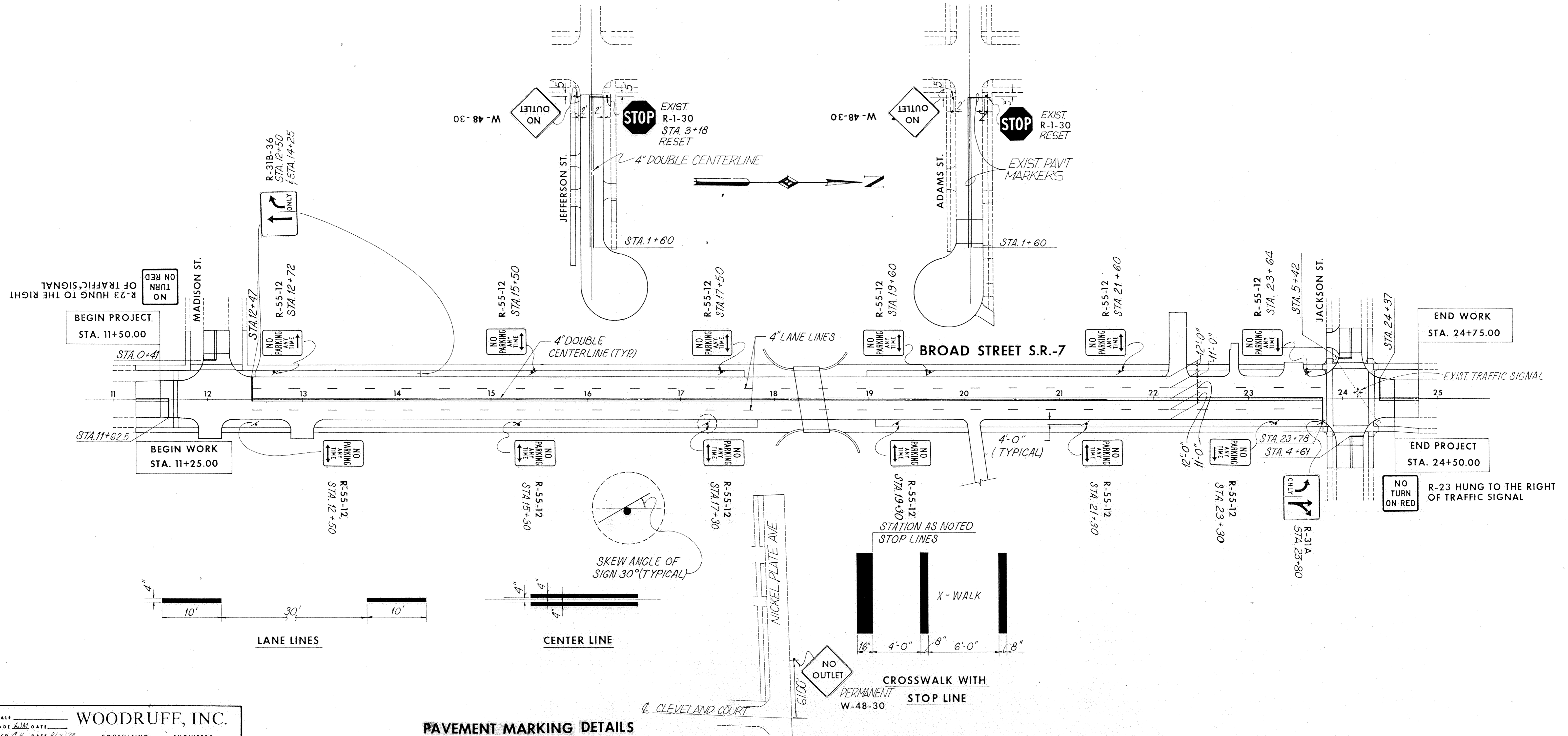
SCALE \_\_\_\_\_ **WOODRUFF, INC.**  
 MADE AJM DATE \_\_\_\_\_  
 TRCD. C.H. DATE 8/12/79 CONSULTING ENGINEERS  
 C.K.D. N.S. DATE 1/18/80 CLEVELAND OHIO

# PAVEMENT MARKING AND SIGN PLAN

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

59  
100

ASHTABULA COUNTY  
ATB-7-31.43



PAVEMENT MARKING DETAILS

SCALE: \_\_\_\_\_  
 MADE: ADM DATE: \_\_\_\_\_  
 TRCO: ADM DATE: 8/15/79  
 CRD: NLS DATE: 11/1/79  
**WOODRUFF, INC.**  
 CONSULTING ENGINEERS  
 CLEVELAND OHIO