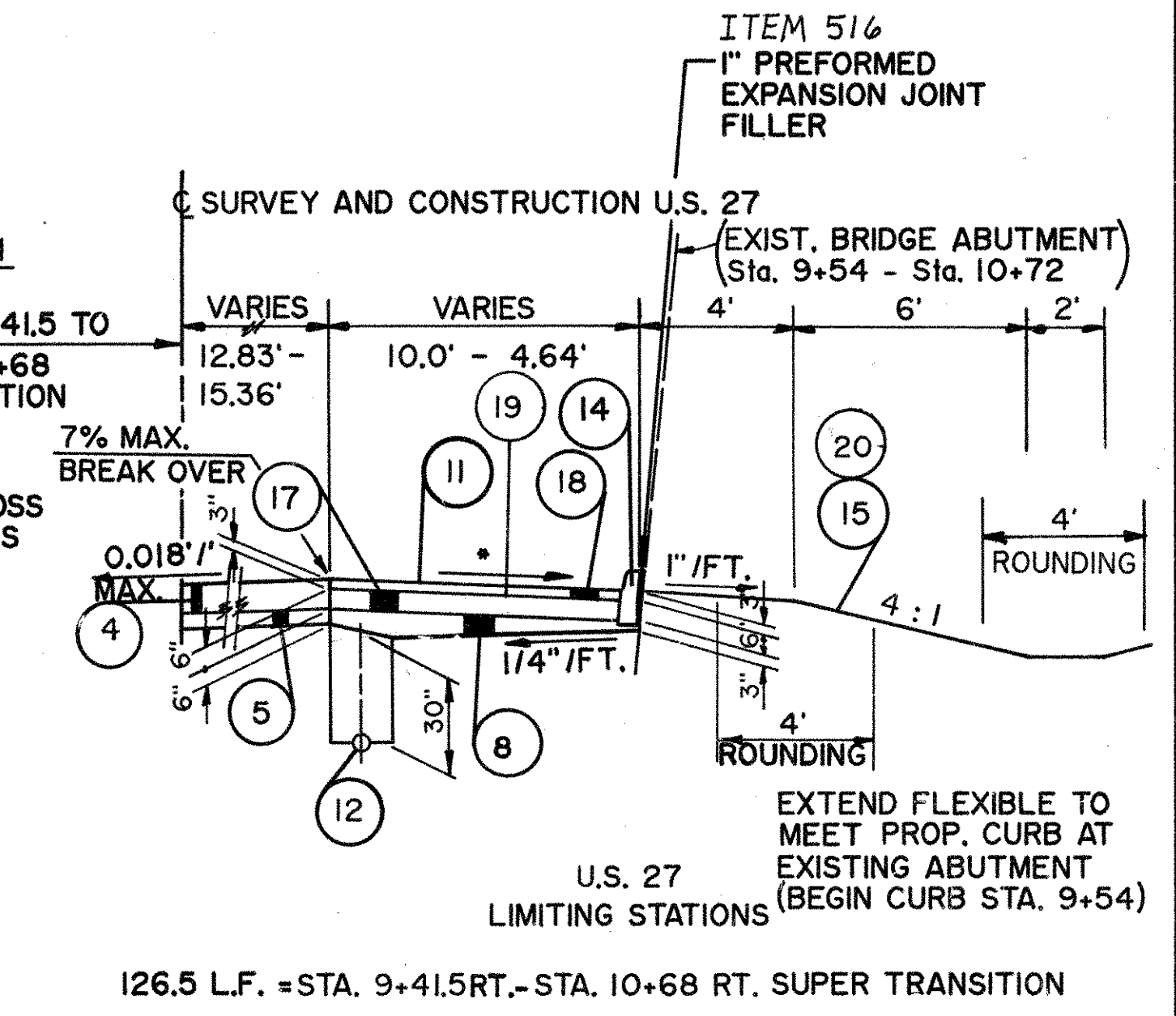
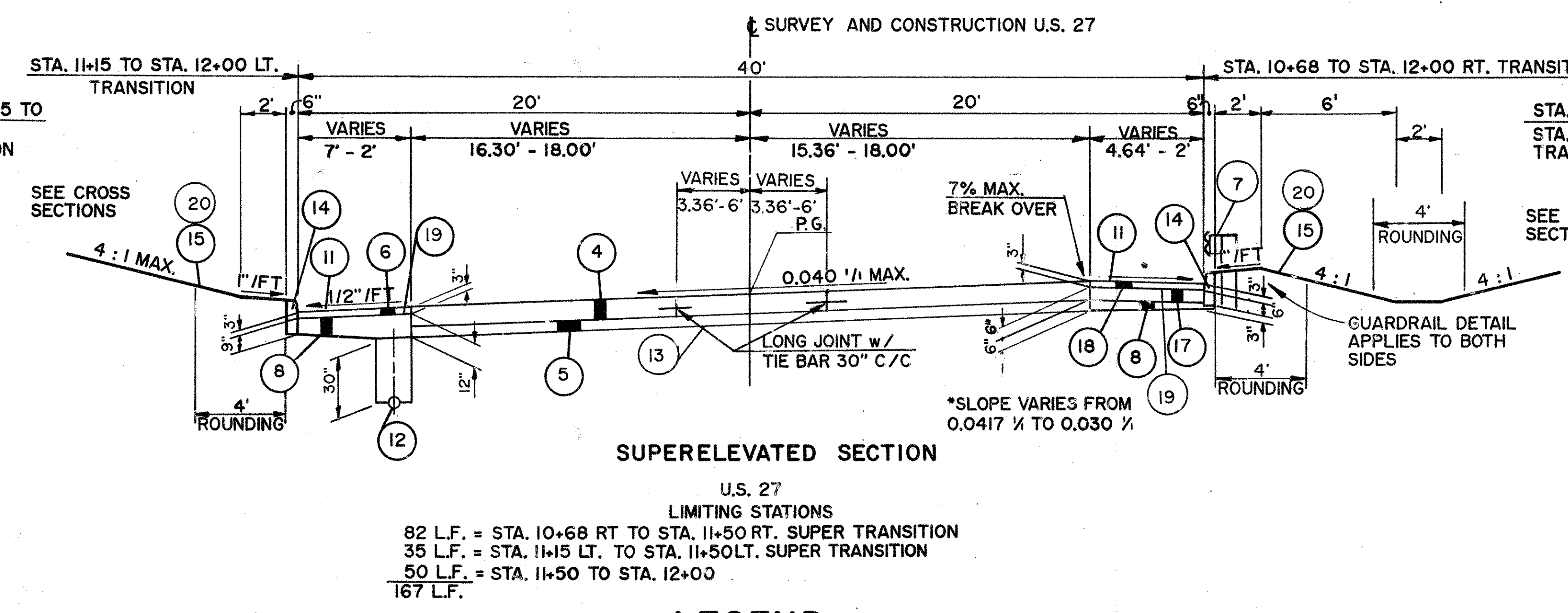
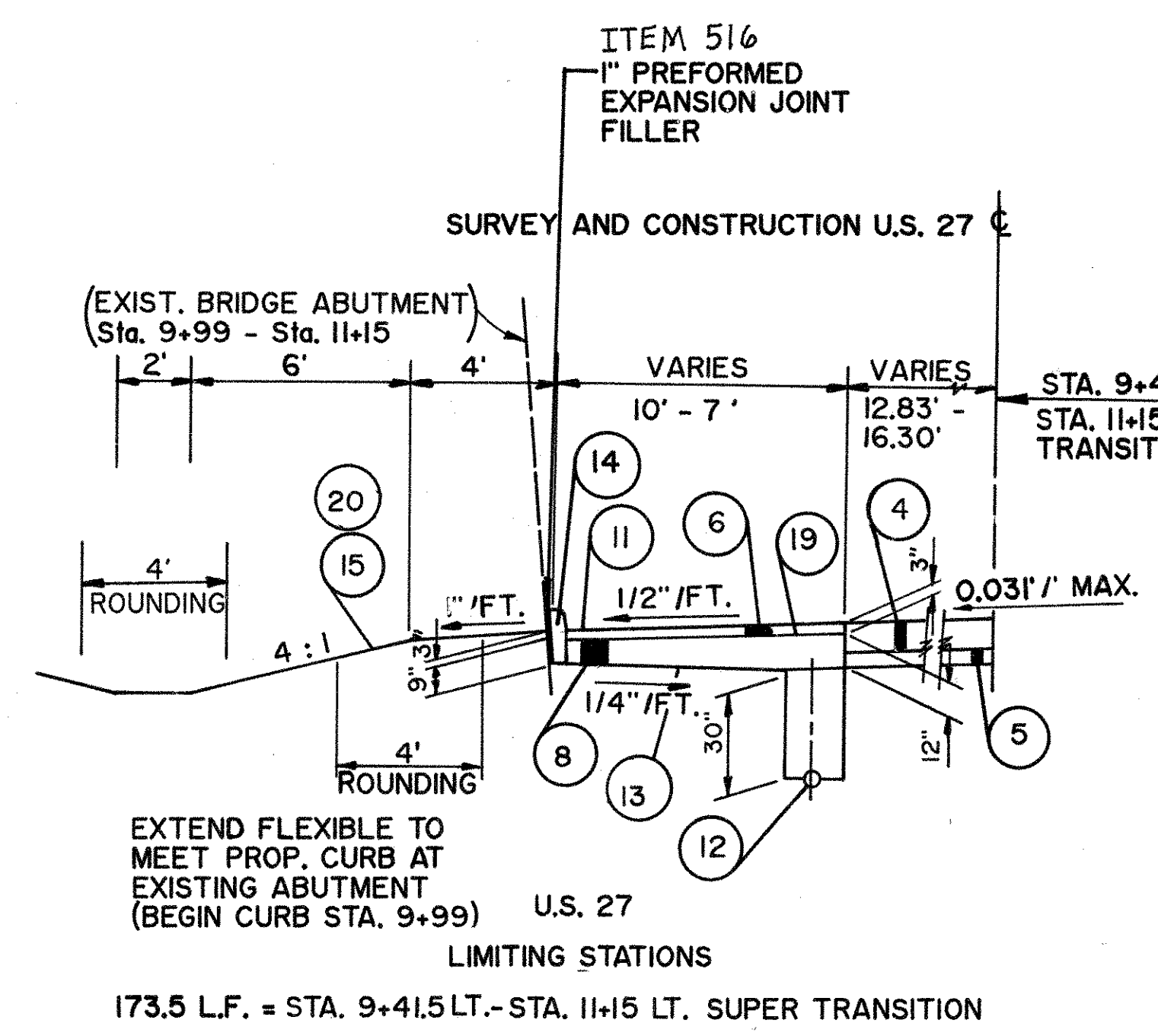
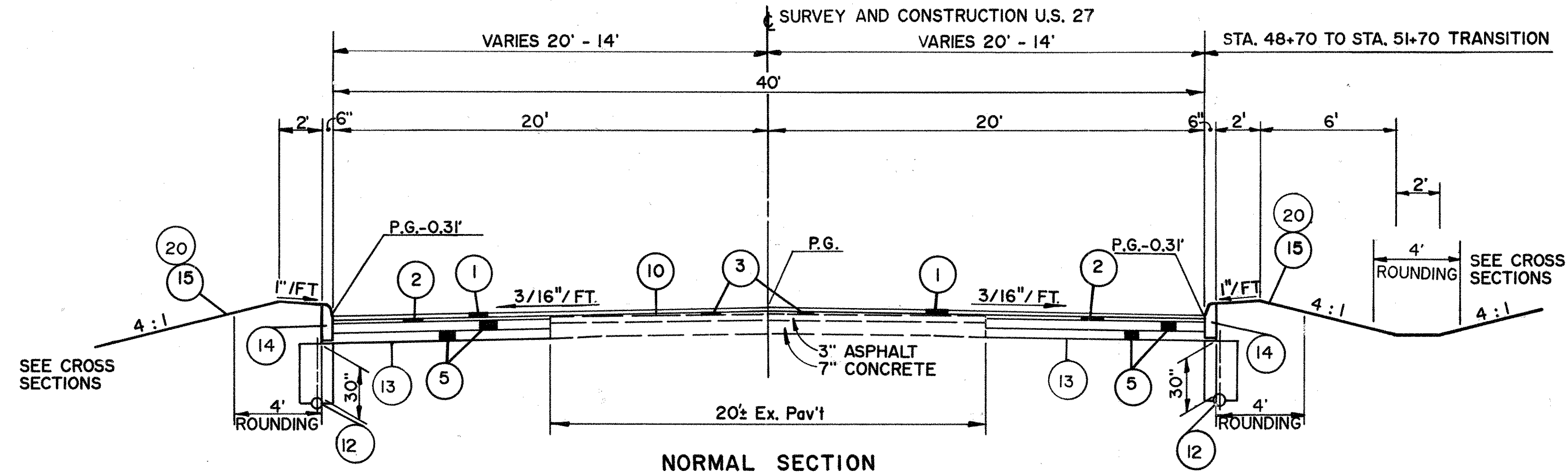




# TYPICAL SECTIONS

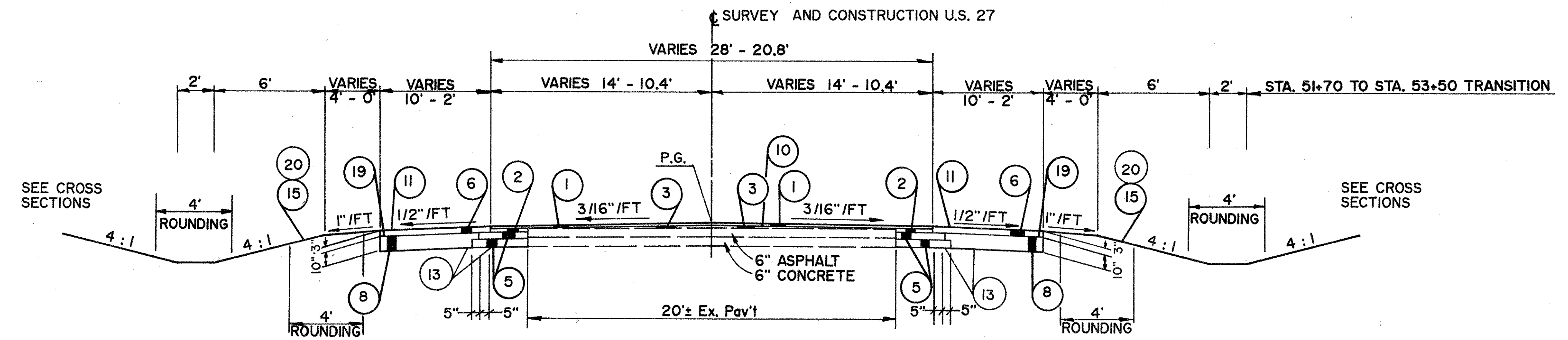
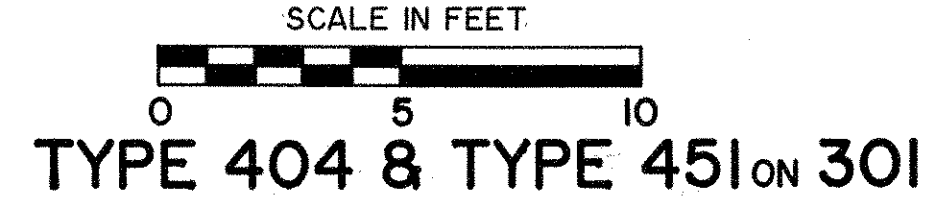
SCALE IN FEET  
0 5 10  
TYPE 404 & TYPE 451 ON 301



## LEGEND

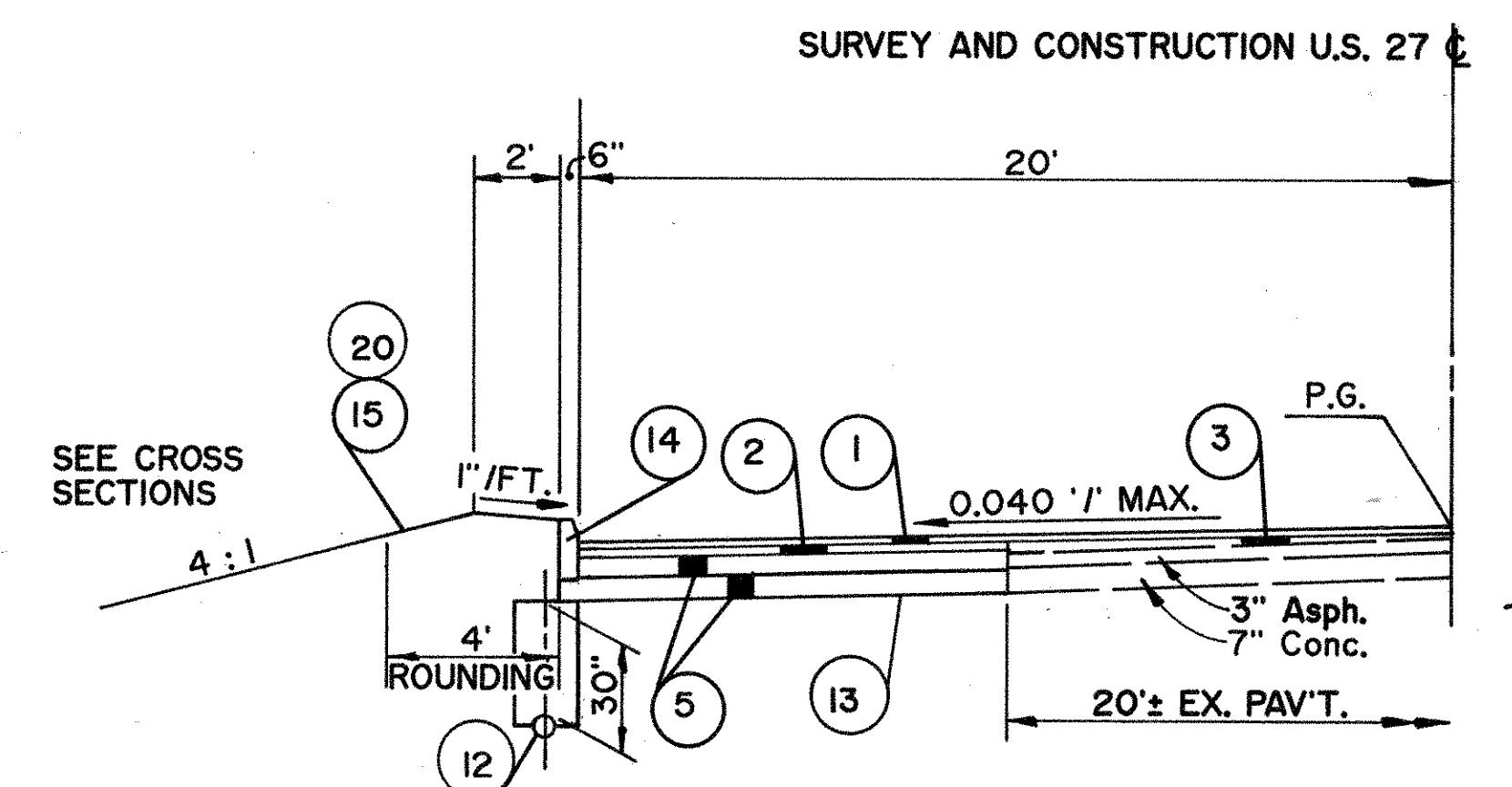
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|--|--|---|--|
| ① ITEM 404 - 1/4" ASPHALT CONCRETE, AC-20          | ⑦ ITEM 606 - GUARDRAIL, TYPE 5   | ⑫ ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN     | ⑰ ITEM 301 - 6" BITUMINOUS AGGREGATE BASE, AC-20                         |
| ② ITEM 402 - 1/2" ASPHALT CONCRETE, AC-20          | ⑧ ITEM 304 - AGGREGATE BASE, VARIABLE DEPTH, AS PER PLAN   | ⑬ ITEM 203 - SUBGRADE COMPACTION            | ⑱ ITEM 402 - 3" ASPHALT CONCRETE, AC-20                                  |
| ③ ITEM 403 - VARIING DEPTH ASPHALT CONCRETE, AC-20 | ⑨ NOT USED   | ⑭ ITEM 609 - CURB, TYPE 6                   | ⑲ ITEM 408 - BITUMINOUS PRIME COAT APPLIED AT A RATE OF 0.4 GAL PER S.Y. |
| ④ ITEM 451 - 10" REINFORCED CONCRETE PAVEMENT      | ⑩ ITEM 407 - TACK COAT   | ⑮ ITEM 659 - SEEDING AND MULCHING           | ⑳ ITEM 660 - SODDING   |
| ⑤ ITEM 301 - 5" BITUMINOUS AGGREGATE BASE, AC-20   | ⑪ ITEM 409 - SEAL COAT USING 0.008 C.Y. #8 COVER AGGREGATE PER S.Y. AND 0.30 GAL. BITUMINOUS MATERIAL PER S.Y. | ⑯ ITEM 304 - 8" AGGREGATE BASE, AS PER PLAN |  |

# TYPICAL SECTIONS



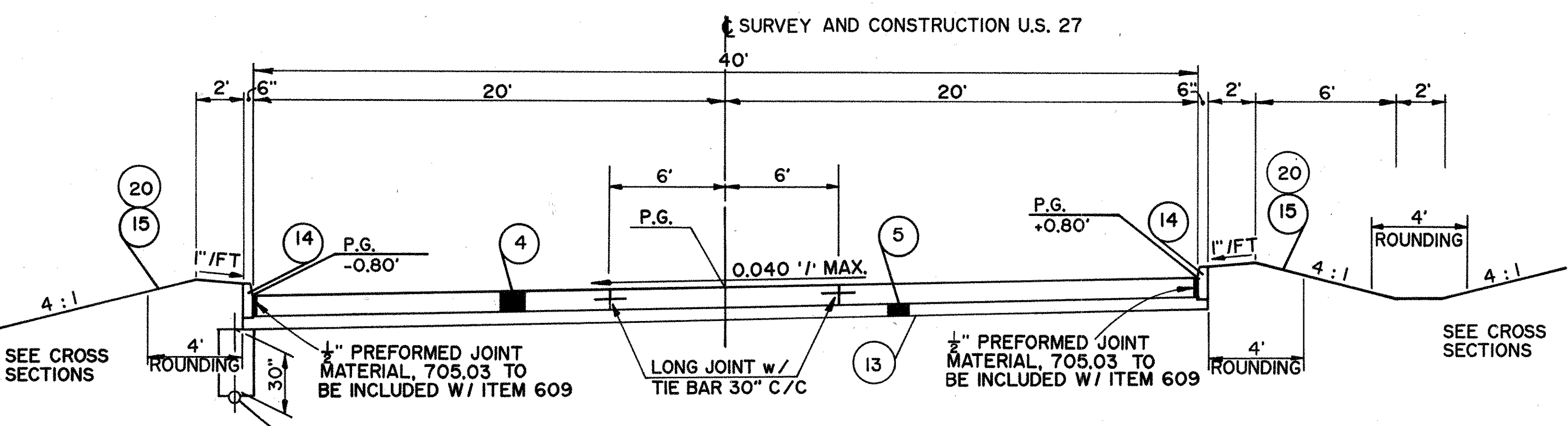
**NORMAL SECTION**

U.S. 27  
 LIMITING STATIONS  
 180.00 L.F. = STA. 51+70 TO STA. 53+50



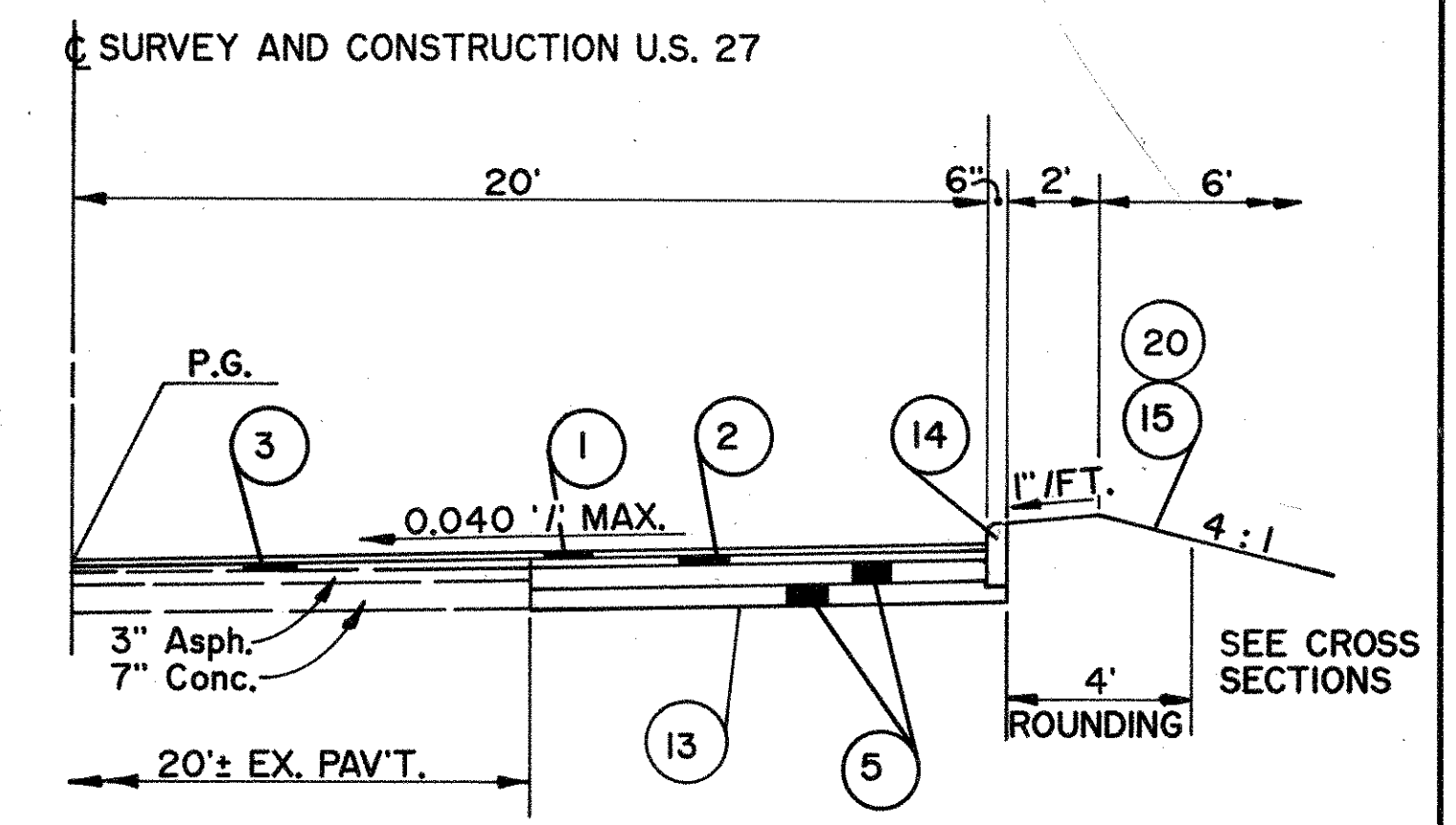
**SUPERELEVATED SECTION**

U.S. 27  
 LIMITING STATIONS  
 312.75 L.F. = STA. 14+50 LT.-STA. 17+62.75 LT. SUPER TRANSITION



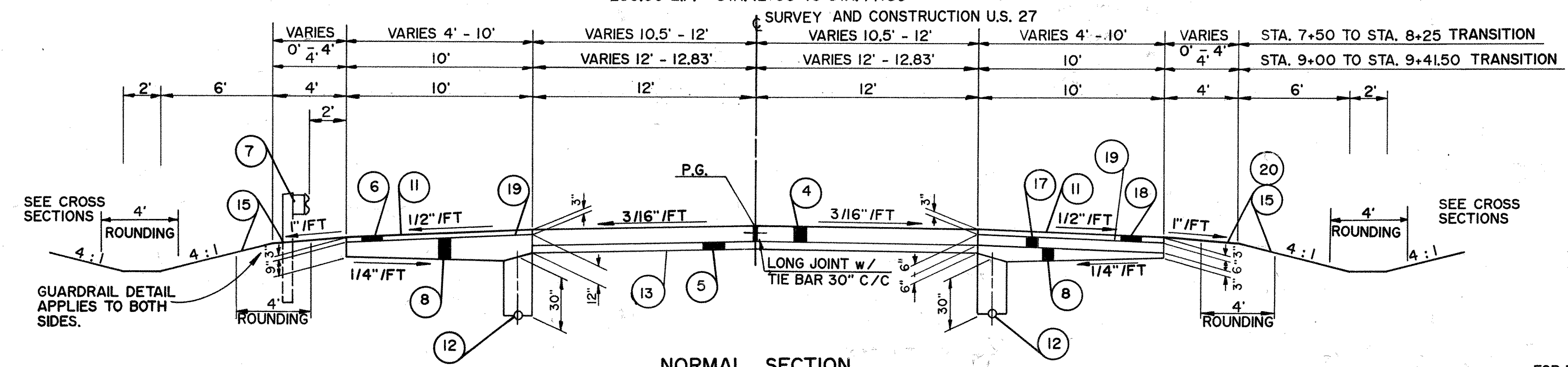
**SUPERELEVATED SECTION**

U.S. 27  
 LIMITING STATIONS  
 250.00 L.F. = STA. 12+00 TO STA. 14+50



**SUPERELEVATED SECTION**

U.S. 27  
 LIMITING STATIONS  
 312.75 L.F. = STA. 14+50 RT.-STA. 17+62.75 RT. SUPER TRANSITION

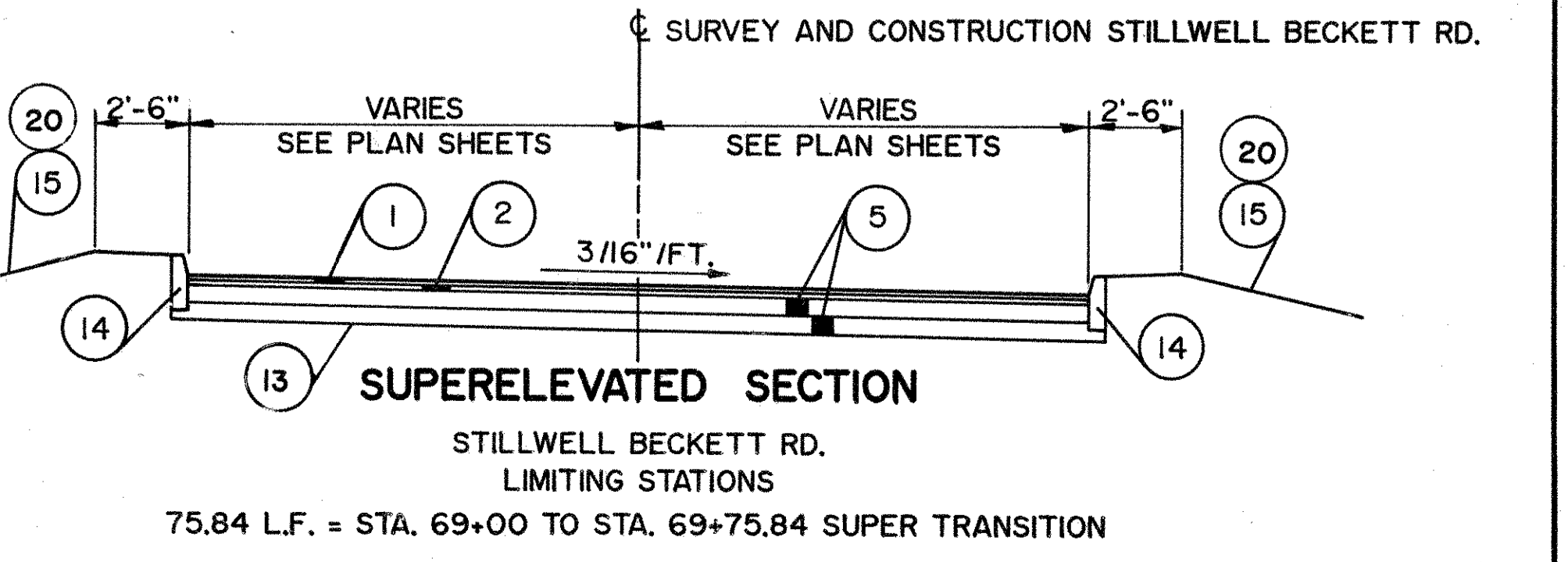
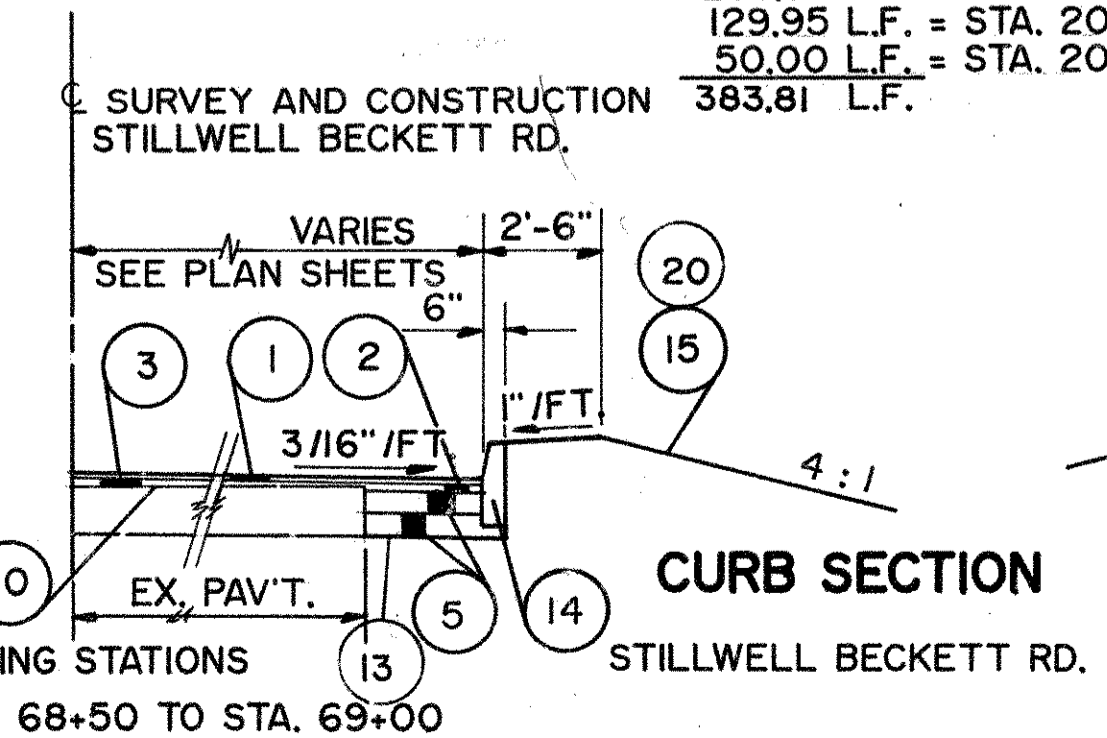
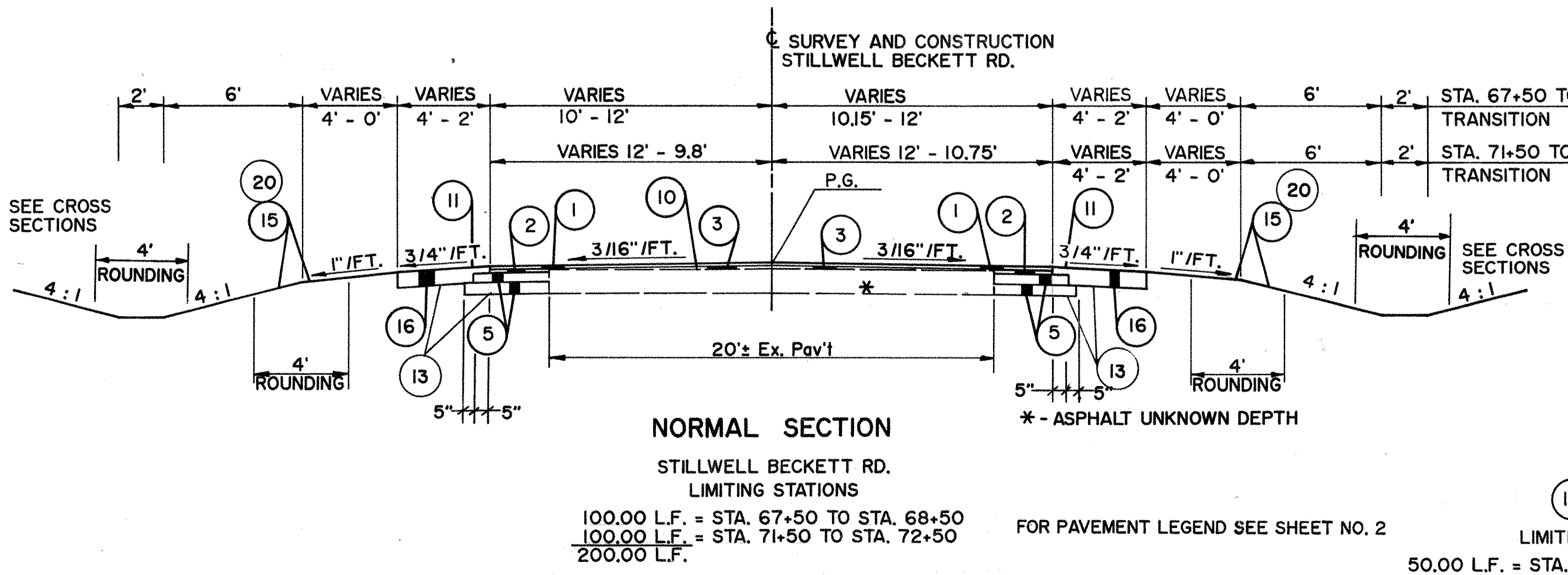
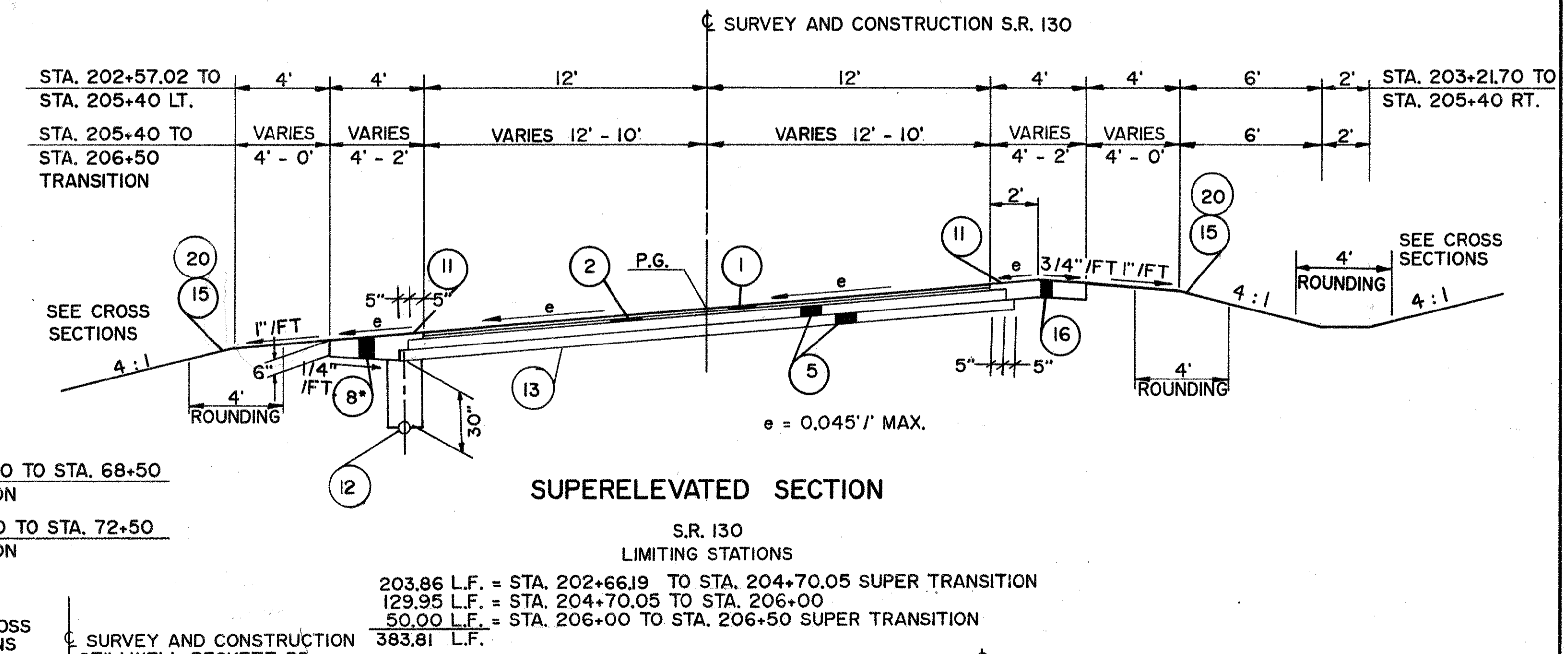
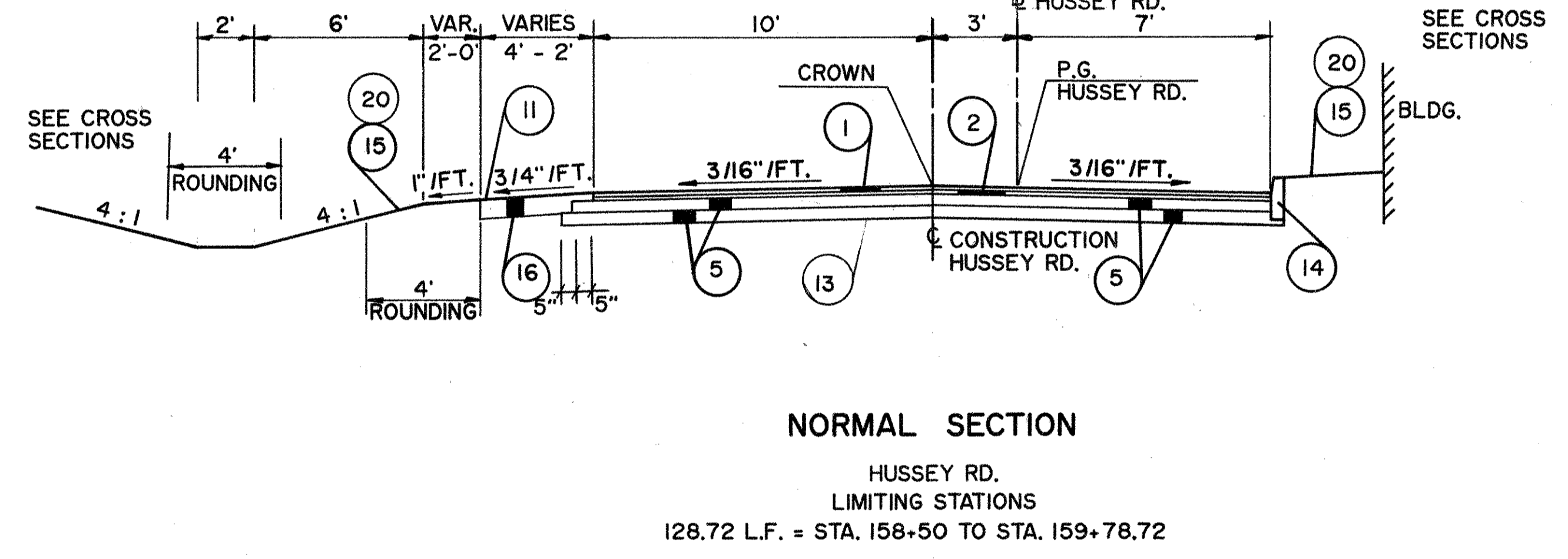
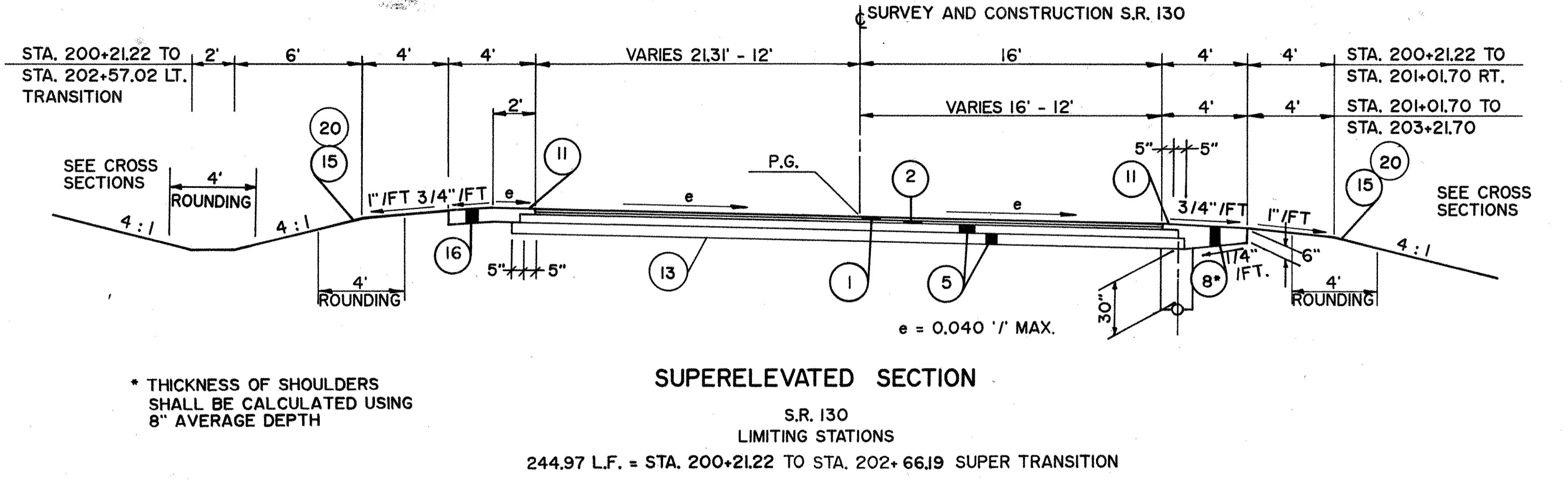
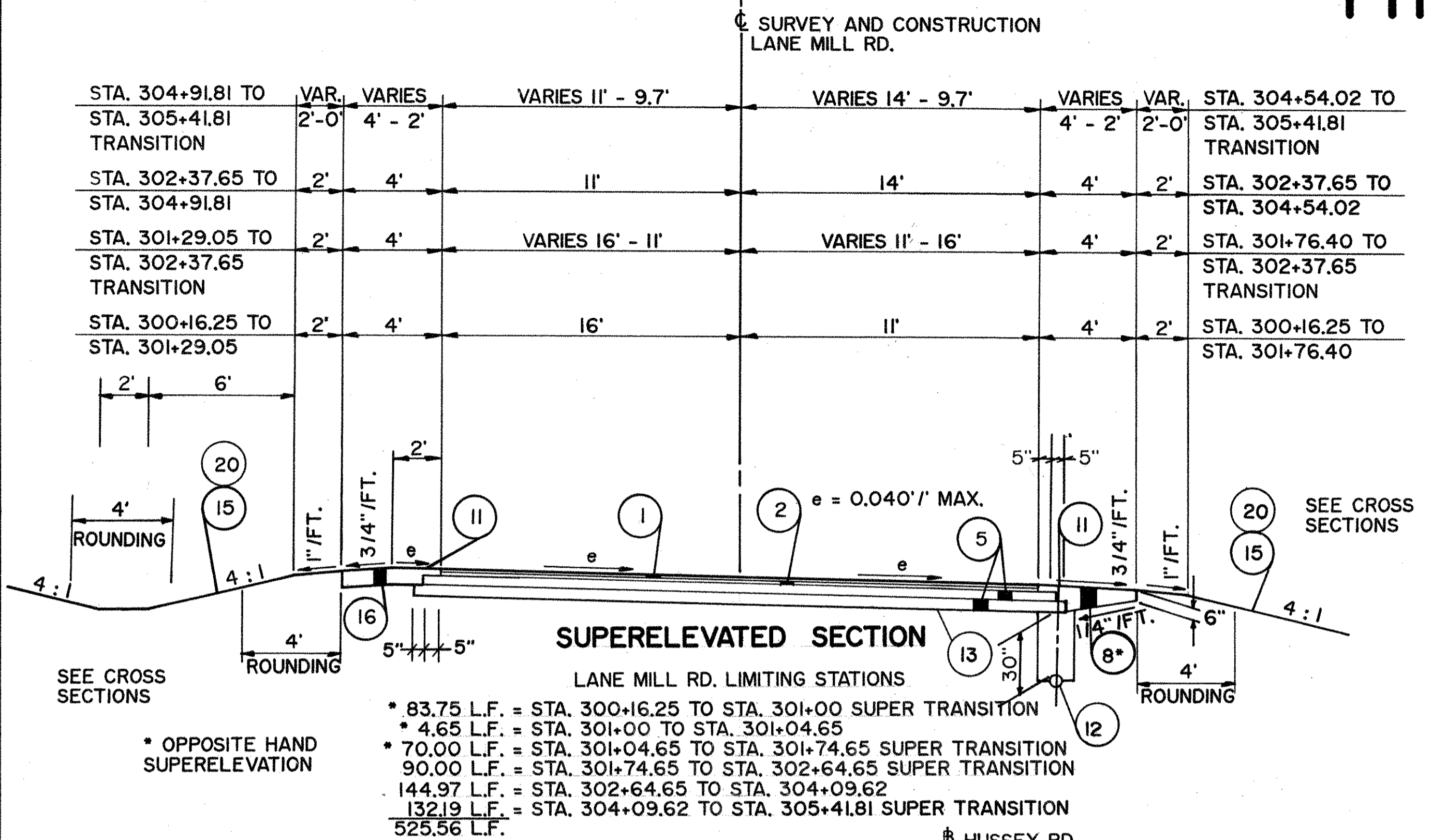
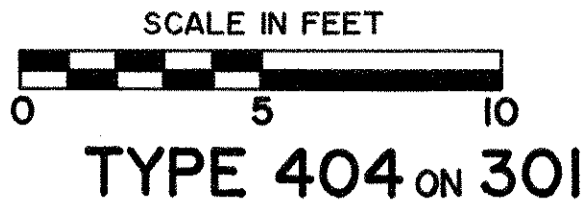


**NORMAL SECTION**

U.S. 27  
 LIMITING STATIONS  
 191.50 L.F. = STA. 7+50 TO STA. 9+41.50

FOR PAVEMENT LEGEND SEE SHEET NO. 2

# TYPICAL SECTIONS



GENERAL

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN TRAFFIC AS CALLED FOR IN THESE PLANS AND IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, AND OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 614, MAINTAINING TRAFFIC.

TWO-WAY, TWO LANE TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING AND COMPLETED PAVEMENT, EXCEPT WHERE NOTED OTHERWISE. THE LIMITS AND DURATION OF USE OF TEMPORARY ROADWAYS SHALL BE HELD TO THE ABSOLUTE MINIMUM AND IN ALL CASES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ABUTTING PROPERTY WITHIN THE PROJECT WORK LIMITS DURING ALL PHASES OF CONSTRUCTION.

ALTERNATE METHODS: IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR.

BUTLER COUNTY SHALL PROVIDE DETOUR FOR LANE MILL ROAD AND THE BUTLER COUNTY ENGINEER SHALL BE NOTIFIED 14 DAYS PRIOR TO THE SCHEDULED CLOSING.

PAYMENT

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PROVIDE METHODS OF TRAFFIC CONTROL INDICATED IN THE PLANS SHALL BE INCIDENTAL TO THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPERATELY ITEMIZED IN THE PLANS.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

SEQUENCE OF CONSTRUCTION

IMPLEMENT ADVANCE SIGNING SCHEMATIC AS SHOWN ON SHEET NO. 7

PHASE I

STANDARD CONSTRUCTION DRAWING MT-97.10 SHALL BE UTILIZED THROUGHOUT THIS PHASE FOR CONSTRUCTION OF TEMPORARY PAVEMENT AND FOR PROPOSED PAVEMENT. REFER TO SHEETS NO. 7 AND NO. 8 FOR PHASE I.

PHASE II

STANDARD CONSTRUCTION DRAWING MT-97.10 SHALL BE UTILIZED FOR HUSSEY ROAD, STILLWELL-BECKETT ROAD AND U.S. 27 STA. 46+00 TO STA. 53+50. REFER TO SHEETS NO. 9 AND NO. 10 FOR PHASE II.

PHASE III

STANDARD CONSTRUCTION DRAWING MT-97.10 SHALL BE USED FOR CONSTRUCTION AT HUSSEY ROAD. REFER TO SHEET NO. 11 FOR PHASE III.

PHASE IV

CONSTRUCT SIGNING AS INDICATED ON SHEET NO. 7, ADVANCE SIGNING SCHEMATIC, FOR THE CLOSING OF LANE MILL ROAD. STANDARD CONSTRUCTION DRAWING MT-97.10 TO BE USED ALONG S.R. 130 WHEN TEMPORARY ROAD IS CONNECTED TO EXISTING S.R. 130 AND WHEN PROPOSED S.R. 130 IS TO BE TIED INTO EXISTING S.R. 130. REFER TO SHEET NO. 12 FOR PHASE IV.

# GENERAL NOTES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY, TO BE USED AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC, AND SHALL BE PAID FOR SEPARATELY.

ITEM 202 WEARING COURSE REMOVED	389 SQ. YD.
ITEM 404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	22 CU. YD.
ITEM 614 TEMPORARY EDGE LINES CLASS 1, 642 PAINT	1.45 MI.
ITEM 614 TEMPORARY CENTERLINES, CLASS 1, 642 PAINT	4.37 MI.
ITEM 614 TEMPORARY STOPLINES, CLASS 1, 642 PAINT	167 LIN. FT.
ITEM 614 TEMPORARY DOTTED LINE, CLASS 1, 642 PAINT	150 LIN.FT.
ITEM 614 TEMPORARY CHANNELIZING LINE, CLASS 1, 642 PAINT	495 LIN. FT.
ITEM 614 TEMPORARY CENTERLINE , CLASS 1, 740.05 TYPE C	0.38 MI.
ITEM 615 TEMPORARY PAVEMENT, AS PER PLAN	1877 SQ. YD.
ITEM 615 TEMPORARY PAVEMENT, CLASS B	1378 SQ. YD.
ITEM 615 TEMPORARY ROAD	LUMP SUM
ITEM 622 PORTABLE CONCRETE BARRIER (32")	200 LIN. FT.

ACCESS TO DRIVEWAYS

ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY OF BUILDING PORTIONS OF THIS PROJECT UNDER TRAFFIC AND CONSTRUCTING THE FULL PAVEMENT WIDTH IN STAGES, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT ON CENTERLINE IN THE BASE COURSES. LONGITUDINAL JOINTS SHALL BE LAPPED AS SHOWN ON STANDARD DRAWING BP-5.

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.

REMOVAL OF TREES OR 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.

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	34	-	34
30"	11	-	11
48"	4	-	4
60"	-	-	-

UNDERGROUND UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

UTILITY OWNERSHIP

WATER LINES:

THE WATER ASSOCIATION  
3640 OLD OXFORD HIGHWAY  
HAMILTON, OHIO 45013

(513) 863-0828

ELECTRIC:

CINCINNATI GAS AND ELECTRIC COMPANY  
4TH AND MAIN STREETS  
CINCINNATI OHIO 45201  
(513) 381-2000

GAS:

CINCINNATI GAS AND ELECTRIC COMPANY  
GAS ENGINEERING AND  
PLANNING DEPARTMENT: ROOM 216  
4TH AND MAIN STREETS  
CINCINNATI OHIO 45201

(513) 381-2000

TELEPHONE:

CINCINNATI BELL TELEPHONE COMPANY  
225 EAST FOURTH STREET  
CINCINNATI OHIO 45202

(513) 397-9000

PROTECTION:

OHIO UTILITIES PROTECTION SERVICE  
100 FEDERAL PLAZA EAST,  
LOWER LEVEL  
YOUNGSTOWN OHIO 44503  
(800) 362-2764

UNITED UTILITIES PROTECTION SERVICE  
201 EAST FOURTH STREET  
ROOM 274  
CINCINNATI, OHIO 45201  
(513) 397-4664

UNDERGROUND UTILITIES  
2 WORKING DAYS BEFORE  
YOU DIG  
CALL...800-362-2764  
(TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON MEMBERS MUST BE CALLED DIRECTLY

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINE, IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE WORK LIMIT.

WATERING PERMANENT SEEDED AND SODDED AREAS

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AND SODDED AREAS, AS PER 659.09.

659	WATER	44 M GAL.
659	COMMERCIAL FERTILIZER	2.61 TON

# GENERAL NOTES (CONT.)

## CONNECTION 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.

## HOUSE CONNECTIONS

EXISTING ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE PROPOSED WORK, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTING TO A STORM SEWER, MANHOLE, OR CATCH BASIN.

THE LOCATION, TYPE SIZE AND GRADE OF REQUIRED REPLACEMENTS WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM 603 4" CONDUIT TYPE E, 707.19 20 L.F.

ITEM 603 6" CONDUIT TYPE E, 706.01, 706.02, OR 706.08 20 L.F.

ITEM 603 6" CONDUIT TYPE F, 707.17 NON PERFORATED  
ASTM 3034 SDR35 OR SS931 20 L.F.

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

## SPRING DRAINS

REFERENCE IS MADE TO THE DETAILED DRAWING ON STANDARD CONSTRUCTION DRAWING MC-1, SHOWING THE METHOD OF DRAINING ANY SPRING THAT MAY BE SHOWN ON THE PLAN, OR ENCOUNTERED DURING CONSTRUCTION, AS DETERMINED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

ITEM 605 - 150 L.F. 6" UNCLASSIFIED PIPE UNDERDRAIN  
707.01 TYPE III OR 707.21 TYPE III, OR 707.15, AS PER PLAN

ITEM 605 - 50 L.F. AGGREGATE DRAINS FOR SPRINGS.

THE CONTRACTOR SHALL NOT ORDER MATERIALS FOR "SPRING DRAINS" UNTIL AUTHORIZED BY THE ENGINEER, AND IN THE EVENT NO SPRINGS ARE ENCOUNTERED, THE ITEM SHALL BE NON-PERFORMED.

## EROSION CONTROL

ITEMS 601 AND 660 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS, AND TURF OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE 660. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

## ITEM 207-TEMPORARY BENCHES, DAMS AND SEDIMENT BASINS

THE SEDIMENT BASIN QUANTITIES LISTED IN THE TEMPORARY EROSION AND SEDIMENT CONTROL PLAN ON PAGE 21 ARE THE STORAGE VOLUMES REQUIRED FOR THE SEDIMENT BASIN. THE PAY QUANTITY FOR EACH BASIN SHALL BE DETERMINED AS THE ACTUAL AMOUNT OF EXCAVATION OR EMBANKMENT REQUIRED TO PROVIDE THAT STORAGE VOLUME.

## ITEM 207-TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS

THE CONTRACTOR SHALL INSTALL AND MAINTAIN THOSE TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS SHOWN IN THE TEMPORARY EROSION AND SEDIMENT CONTROL PLAN ON PLAN SHEET 21. THESE ITEMS SHALL BE INSTALLED UPON COMMENCEMENT OF ANY CLEARING AND/OR EARTHWORK OPERATIONS.

## ITEM 207-FILTER FABRIC FENCE

MATERIALS:

FILTER FABRIC SHALL MEET THE REQUIREMENTS OF ITEM 207.02.

## CONSTRUCTION:

THE BOTTOM OF THE FENCE SHALL BE BURIED 6" BELOW THE GROUND. THE FENCE SHALL BE HIGH ENOUGH TO RETAIN SEDIMENT LADEN WATER AND ADEQUATELY SUPPORTED TO PREVENT COLLAPSE OR BURSTING. THE GROUND ELEVATION OF THE FENCE SHALL BE HELD CONSTANT WITH THE EXCEPTION OF THE END ELEVATIONS WHICH SHALL BE RAISED TO PREVENT FLOW AROUND THE END OF THE FENCE.

## MAINTENANCE:

THE FILTER FABRIC SHALL BE MAINTAINED TO BE FUNCTIONAL. THIS SHALL INCLUDE REMOVAL OF TRAPPED SEDIMENT AND REQUIRED CLEARING, REPAIR, AND/OR REPLACEMENT OF THE FILTER FABRIC.

## PAYMENT

THE COST OF ALL MATERIALS, CONSTRUCTION, MAINTENANCE AND REMOVAL REQUIRED SHALL BE PAID FOR UNDER ITEM 207 LIN. FT. FILTER FABRIC FENCE.

## TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER, FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207	TEMPORARY BENCHES,	DAMS AND SEDIMENT BASINS	100 CU. YD.*
207	FILTER FABRIC FENCE		200 LIN. FT.*
207	STRAW AND HAY BALES		100 EACH*
207	TEMPORARY SEEDING AND MULCHING		4843 SQ. YD.*
659	COMMERCIAL FERTILIZER		0.26 TON*
659	WATER		13 M GAL.*
659	REPAIR SEEDING AND MULCHING		1211 SQ. YD.*

## ITEM 304-AGGREGATE BASE, AS PER PLAN

MATERIALS FURNISHED FOR THIS ITEM SHALL EXCLUDE ALL SLAG EXCEPT GRANULATED SLAG OR CRUSHED AIR-COOLED BLAST FURNACE SLAG.

## DRAINING TRAPPED AREAS:

DURING CONSTRUCTION, IF TRAPPED AREAS ARE ENCOUNTERED CATCH BASINS AND STORM PIPES SHALL BE INSTALLED, AS DIRECTED BY THE ENGINEER. THESE ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY.

ITEM 604 INLET, NO. 1 5 EACH\*

ITEM 604 CATCH BASIN NO. 7 5 EACH\*

ITEM 604 CATCH BASIN NO. 2-2B 5 EACH\*

ITEM 603 12" CONDUIT TYPE B 200 LIN. FT.\*

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

## MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1. FOR LOCATION SEE SHEET NO. 1/16 OF RIGHT-OF-WAY PLANS.

## REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED BY FIELD OBSERVATIONS. 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 AFORE-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 PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS OF THE CONTRACT.

## MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED

THE CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT-OF-WAY FOR SALVAGE BY STATE FORCES.

## TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

## TEMPORARY PAVEMENT, AS PER PLAN

ITEM 615 TEMPORARY PAVEMENT, AS PER PLAN SHALL CONSIST OF ITEM 301, 9" THICK AND ALL EXCAVATION NECESSARY FOR THE PLACEMENT OF PAVEMENT.

## TYPE 1 BRIDGE TERMINAL ASSEMBLIES, AS PER PLAN

BRIDGE TERMINAL ASSEMBLY SHALL BE ANCHORED TO EXISTING BRIDGE ABUTMENT USING 7/8" DIAMETER PARTIAL DEPTH RESIN BONDED ANCHOR BOLTS CAPABLE OF RESISTING A MINIMUM AVERAGE ULTIMATE TENSILE LOAD OF 24,000 POUNDS. ALL OTHER DETAILS SHALL BE PER STD. DRAWING GR-3.1.

## TREATED SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS

TREATED SANITARY FLOW MAY BE DISCHARGED INTO THE HIGHWAY DRAINAGE SYSTEM PROVIDED THE OWNER HAS SECURED THE APPROVAL OF THE LOCAL HEALTH AUTHORITIES AND HAS ACQUIRED FROM THE OHIO DEPARTMENT OF TRANSPORTATION, THE OFFICIAL PERMIT TO HAVE THE CONNECTION MADE.

IN EACH CASE WHERE A PERMIT HAS BEEN ISSUED FOR SANITARY CONNECTION TO BE MADE INTO A HIGHWAY DRAINAGE CONDUIT, IT SHALL BE PROVIDED WITH AN INSPECTION WELL, IN ACCORDANCE WITH THE DETAIL SHOWN ON STANDARD DRAWING MC-8.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY, FOR USE AS DIRECTED BY THE ENGINEER, IN MAKING THE ABOVE DESCRIBED CONNECTIONS:

ITEM 603, 6" CONDUIT, TYPE C 100 LIN. FT.

ITEM 604, INSPECTION WELLS 2 EACH

NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

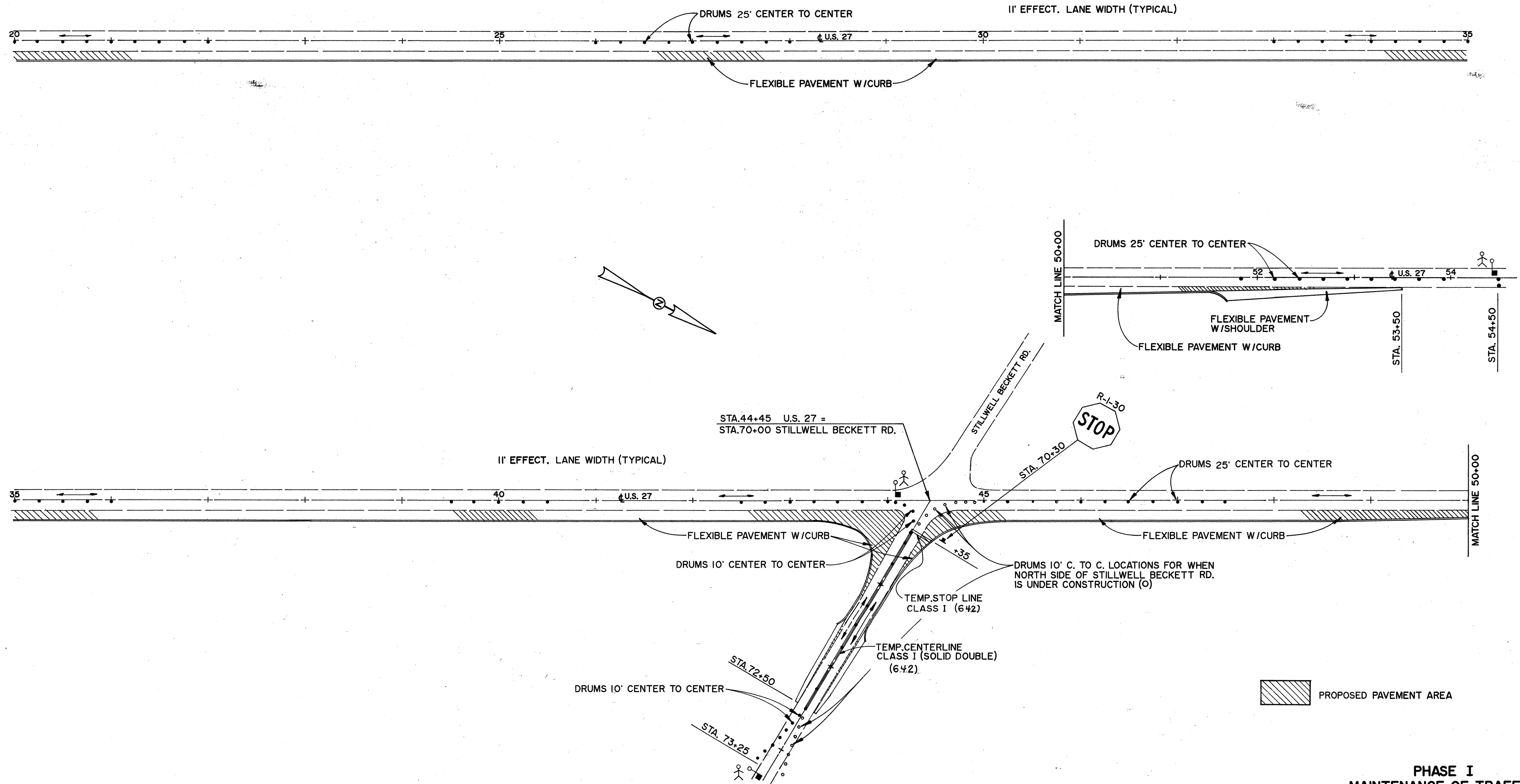
## SOD FOR LAWN AREAS

LAWN AREAS TO BE SODDED, AS TABULATED ON SHEET 19, ARE CALCULATED TO THE "CONSTRUCTION LIMIT" LINE AS SHOWN ON THE PLAN SHEETS. AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS BEYOND THE "CONSTRUCTION LIMIT", AS DETERMINED BY THE ENGINEER, SHALL ALSO BE SODDED IN ACCORDANCE WITH ITEM 660, BUT AT NO ADDITIONAL COST TO THE STATE. THE CONTRACTOR SHALL DETERMINE HIS BID FOR THESE SODDED LAWN AREAS NOTING THAT NO ADDITIONAL PAY QUANTITY WILL BE APPROVED FOR OVERRUNS BEYOND THE "CONSTRUCTION LIMIT".



# MAINTENANCE OF TRAFFIC

CALC. BY: L.E.H.	BUTLER COUNTY	OHIO	8 103
DATE: 9-21-90	BUT-27-10.48	FHWA REGION 5	
CHKD. BY: J.G.			
DATE: 12-14-90			



PHASE I  
MAINTENANCE OF TRAFFIC



# MAINTENANCE OF TRAFFIC

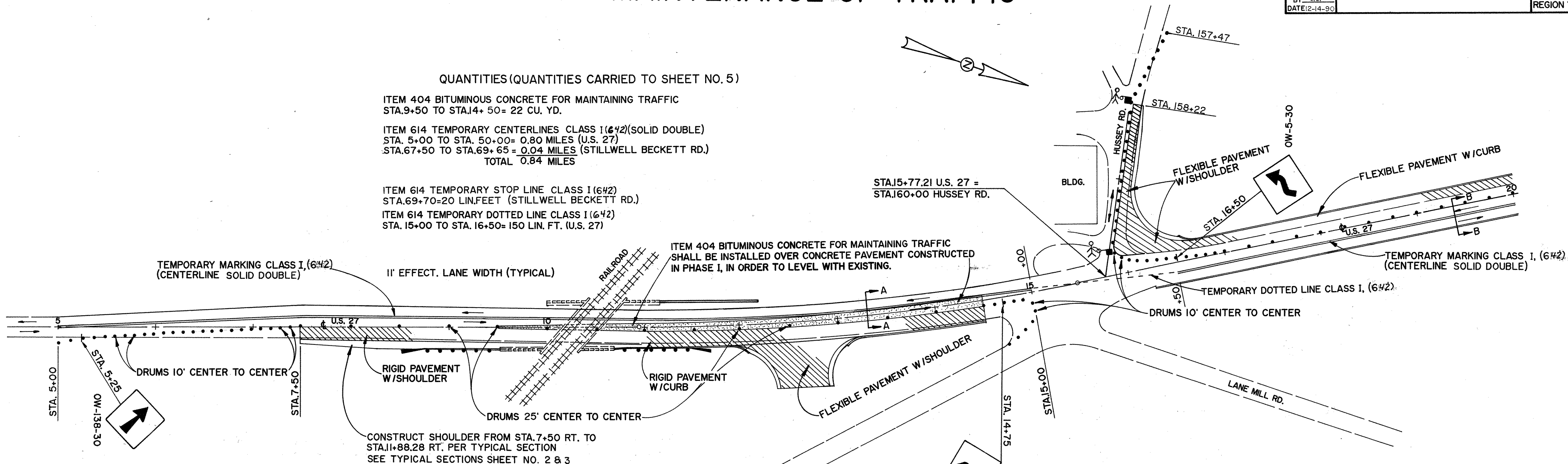
## QUANTITIES (QUANTITIES CARRIED TO SHEET NO. 5)

ITEM 404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC  
 STA. 9+50 TO STA. 14+50 = 22 CU. YD.

ITEM 614 TEMPORARY CENTERLINES CLASS I (6#2) (SOLID DOUBLE)  
 STA. 5+00 TO STA. 50+00 = 0.80 MILES (U.S. 27)  
 STA. 67+50 TO STA. 69+65 = 0.04 MILES (STILLWELL BECKETT RD.)  
 TOTAL 0.84 MILES

ITEM 614 TEMPORARY STOP LINE CLASS I (6#2)  
 STA. 69+70 = 20 LIN. FEET (STILLWELL BECKETT RD.)  
 ITEM 614 TEMPORARY DOTTED LINE CLASS I (6#2)  
 STA. 15+00 TO STA. 16+50 = 150 LIN. FT. (U.S. 27)

ITEM 404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC  
 SHALL BE INSTALLED OVER CONCRETE PAVEMENT CONSTRUCTED  
 IN PHASE I, IN ORDER TO LEVEL WITH EXISTING.

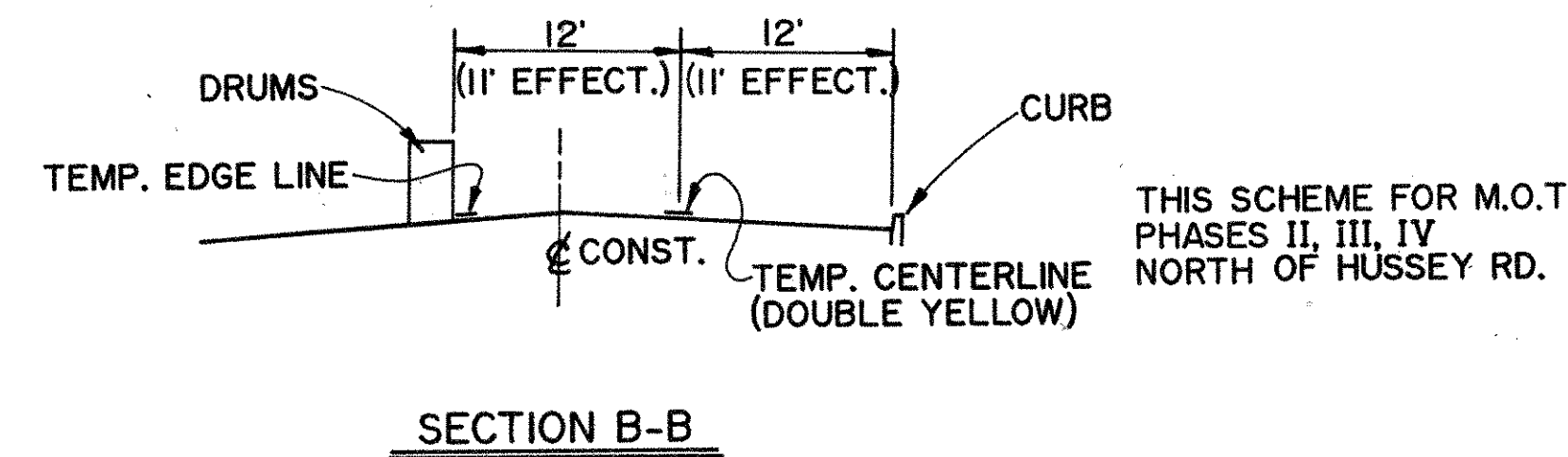
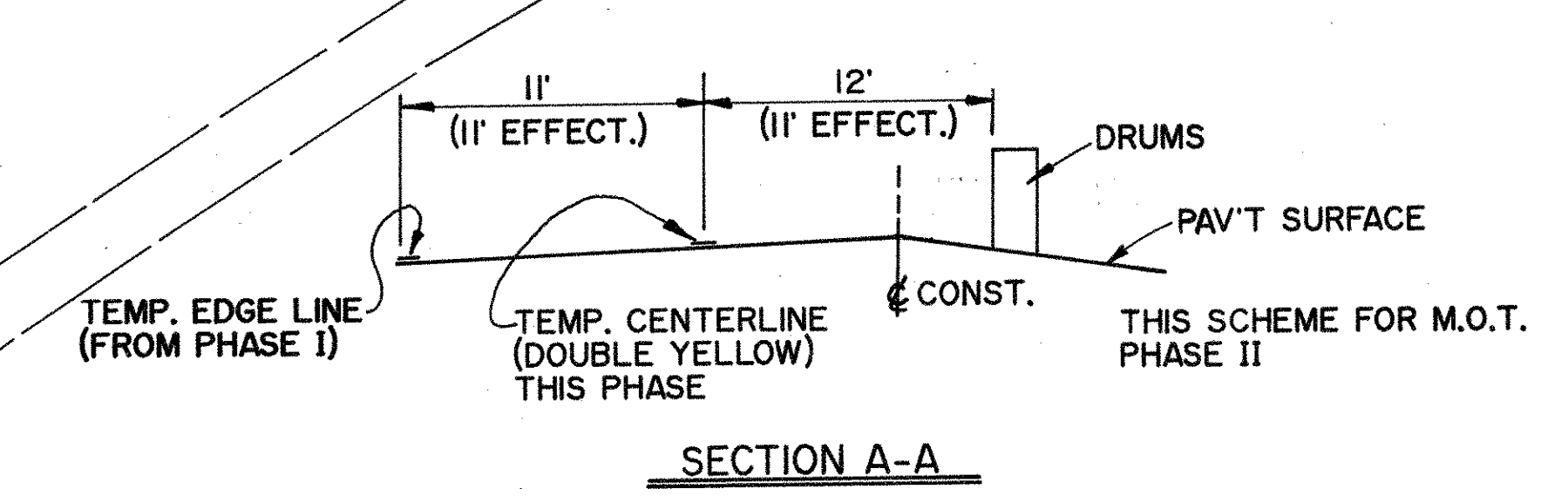


CONSTRUCT SHOULDER FROM STA. 7+50 RT. TO STA. 11+88.28 RT. PER TYPICAL SECTION SEE TYPICAL SECTIONS SHEET NO. 2 & 3

## PHASE II SEQUENCE OF CONSTRUCTION (TO BE CONSTRUCTED IN ORDER LISTED)

- ADD BITUM. CONC. FOR MAIN. TRAFFIC FROM 9+50 TO 14+50 IN MIDDLE SECTION OF U.S. 27 IN ORDER TO LEVEL PROPOSED PAVEMENT WITH EXISTING SOUTHBOUND LANE. STANDARD CONSTRUCTION DRAWING MT-97.10 SHALL BE UTILIZED. ADD CENTERLINE FROM 5+00 TO STA. 50+00 AT THIS TIME AS PER PHASE II PLANS.
- CONTRACTOR SHALL CONSTRUCT (FINAL) PAVEMENT FROM STA. 7+50 RT. TO STA. 14+50 RT. WHILE MAINTAINING TWTL TRAFFIC. †
- HUSSEY RD. NORTH SIDE SHALL BE CONSTRUCTED AT THIS TIME WITH THE USE OF STANDARD CONSTRUCTION DRAWING MT-97.10. THE CONTRACTOR SHALL SCHEDULE HIS TIME SO THAT HUSSEY RD. WILL BE ABLE TO MAINTAIN TWTL TRAFFIC DURING NON-WORKING HOURS.
- START CONSTRUCTION FROM STA. 15+90 LT. TO 44+25 LT. AND ALONG SOUTH SIDE OF STILLWELL BECKETT RD. THE CONTRACTOR SHALL UTILIZE STANDARD CONSTRUCTION DRAWING MT-97.10. ALONG STILLWELL BECKETT RD. TWTL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ALONG U.S. 27
- CONSTRUCT NORTH SIDE OF STILLWELL BECKETT RD. AND ALONG U.S. 27 FROM STA. 45+00 LT. TO STA. 53+50 LT. CLOSURE SHALL NOT EXCEED 1000 FEET AND STANDARD CONSTRUCTION DRAWING MT-97.10 IS TO BE USED AND CONTRACTOR SHALL MAINTAIN TWTL TRAFFIC DURING NON-WORKING HOURS.
- INSTALL GUARDRAIL ALONG RIGHT SIDE AT THIS TIME.

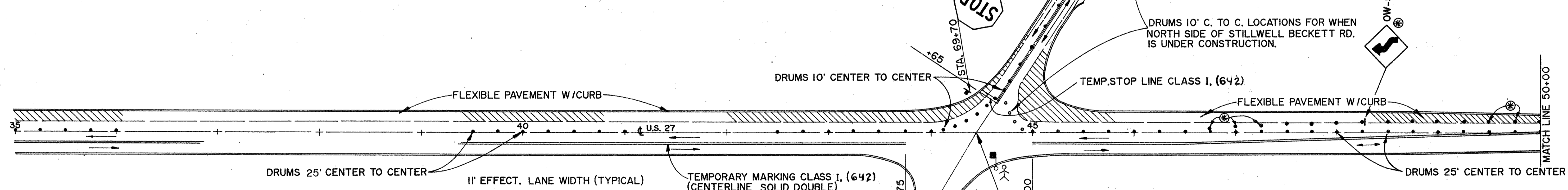
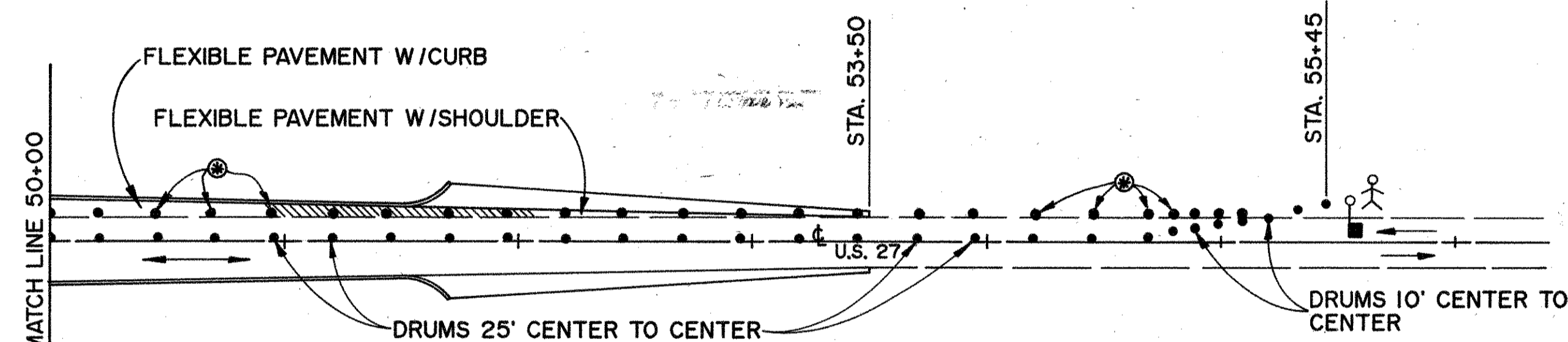
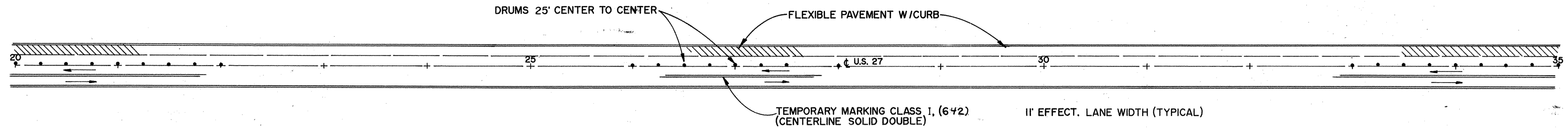
† CONTRACTOR MAY DO WORK LISTED IN PHASE II STEPS #3 & #4 WHILE WORKING BETWEEN STA. 7+50 & STA. 14+50.



TEMPORARY PAVEMENT AREA  
 PROPOSED PAVEMENT AREA  
 TWTL = TWO WAY, TWO LANE

# MAINTENANCE OF TRAFFIC

CALC. BY L.E.H. DATES 2-1-90 CHKD. BY J.G. DATE 12-14-90	BUTLER COUNTY BUT-27-10.48	OHIO FHWA REGION 5	10 103
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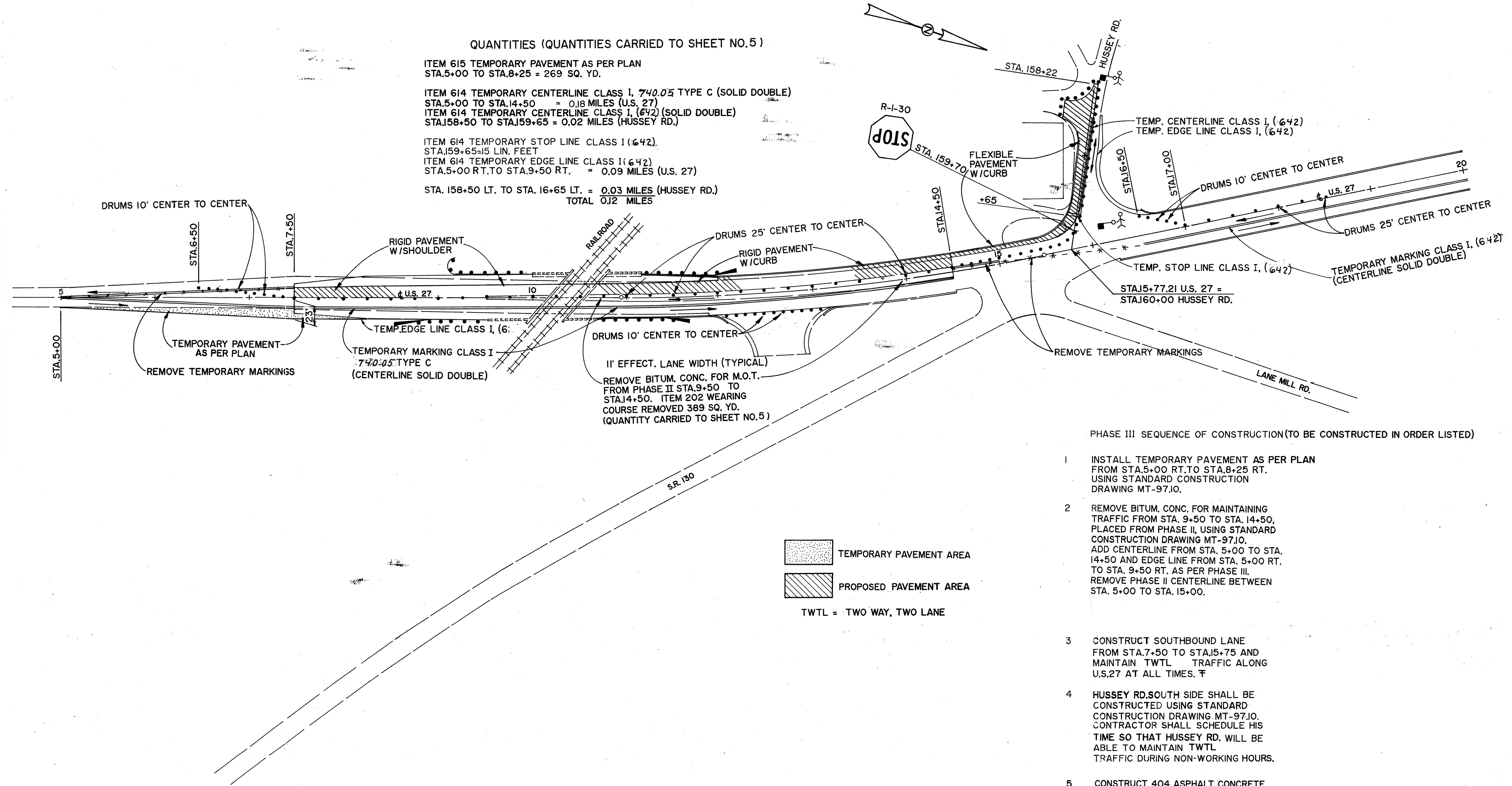
⊗ LOCATION OF SIGN & DRUMS FOR MAINTENANCE OF TRAFFIC DURING NON-WORKING HOURS.

▨ PROPOSED PAVEMENT AREA

# MAINTENANCE OF TRAFFIC

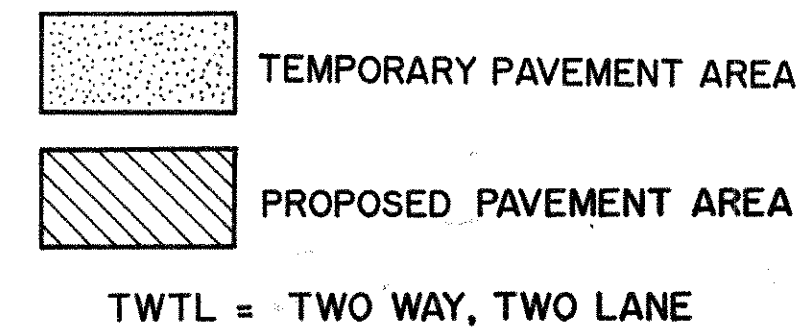
## QUANTITIES (QUANTITIES CARRIED TO SHEET NO.5)

- ITEM 615 TEMPORARY PAVEMENT AS PER PLAN  
STA.5+00 TO STA.8+25 = 269 SQ. YD.
- ITEM 614 TEMPORARY CENTERLINE CLASS I, 740.05 TYPE C (SOLID DOUBLE)  
STA.5+00 TO STA.14+50 = 0.18 MILES (U.S. 27)
- ITEM 614 TEMPORARY CENTERLINE CLASS I, (642) (SOLID DOUBLE)  
STA.158+50 TO STA.159+65 = 0.02 MILES (HUSSEY RD.)
- ITEM 614 TEMPORARY STOP LINE CLASS I (642)  
STA.159+65=15 LIN. FEET
- ITEM 614 TEMPORARY EDGE LINE CLASS I (642)  
STA.5+00 RT. TO STA.9+50 RT. = 0.09 MILES (U.S. 27)
- STA. 158+50 LT. TO STA. 16+65 LT. = 0.03 MILES (HUSSEY RD.)  
TOTAL 0.12 MILES



### PHASE III SEQUENCE OF CONSTRUCTION (TO BE CONSTRUCTED IN ORDER LISTED)

- 1 INSTALL TEMPORARY PAVEMENT AS PER PLAN FROM STA.5+00 RT. TO STA.8+25 RT. USING STANDARD CONSTRUCTION DRAWING MT-97.10.
  - 2 REMOVE BITUM. CONC. FOR MAINTAINING TRAFFIC FROM STA. 9+50 TO STA. 14+50, PLACED FROM PHASE II, USING STANDARD CONSTRUCTION DRAWING MT-97.10. ADD CENTERLINE FROM STA. 5+00 TO STA. 14+50 AND EDGE LINE FROM STA. 5+00 RT. TO STA. 9+50 RT. AS PER PHASE III. REMOVE PHASE II CENTERLINE BETWEEN STA. 5+00 TO STA. 15+00.
  - 3 CONSTRUCT SOUTHBOUND LANE FROM STA.7+50 TO STA.15+75 AND MAINTAIN TWTL TRAFFIC ALONG U.S.27 AT ALL TIMES. †
  - 4 HUSSEY RD. SOUTH SIDE SHALL BE CONSTRUCTED USING STANDARD CONSTRUCTION DRAWING MT-97.10. CONTRACTOR SHALL SCHEDULE HIS TIME SO THAT HUSSEY RD. WILL BE ABLE TO MAINTAIN TWTL TRAFFIC DURING NON-WORKING HOURS.
  - 5 CONSTRUCT 404 ASPHALT CONCRETE SURFACE COURSE TO U.S. 27, STILLWELL BECKETT RD. AND HUSSEY RD.
  - 6 INSTALL GUARDRAIL ALONG LEFT SIDE AT THIS TIME
- † CONTRACTOR MAY DO WORK LISTED IN PHASE III, STEP #4 WHILE WORKING BETWEEN STA.7+50 & STA.15+75.



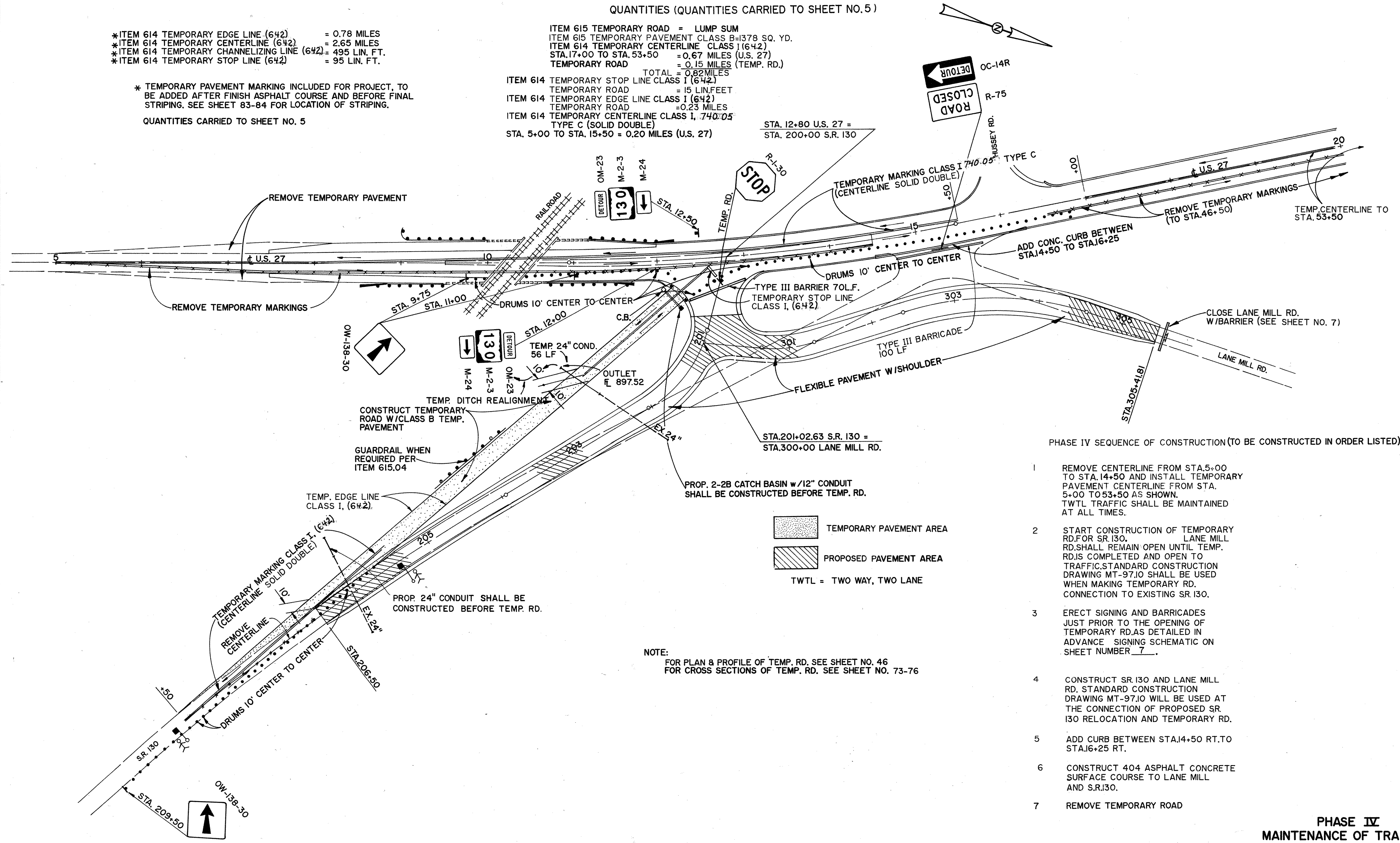
# MAINTENANCE OF TRAFFIC

## QUANTITIES (QUANTITIES CARRIED TO SHEET NO. 5)

- \* ITEM 614 TEMPORARY EDGE LINE (642) = 0.78 MILES
- \* ITEM 614 TEMPORARY CENTERLINE (642) = 2.65 MILES
- \* ITEM 614 TEMPORARY CHANNELIZING LINE (642) = 495 LIN. FT.
- \* ITEM 614 TEMPORARY STOP LINE (642) = 95 LIN. FT.

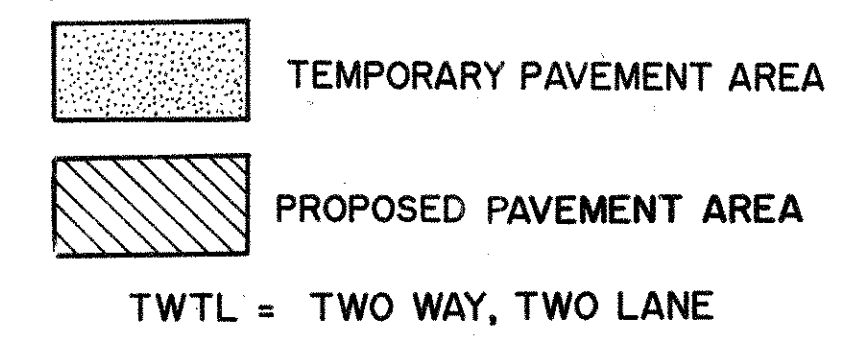
\* TEMPORARY PAVEMENT MARKING INCLUDED FOR PROJECT, TO BE ADDED AFTER FINISH ASPHALT COURSE AND BEFORE FINAL STRIPING. SEE SHEET 83-84 FOR LOCATION OF STRIPING.  
 QUANTITIES CARRIED TO SHEET NO. 5

- ITEM 615 TEMPORARY ROAD = LUMP SUM
- ITEM 615 TEMPORARY PAVEMENT CLASS B = 1378 SQ. YD.
- ITEM 614 TEMPORARY CENTERLINE CLASS I (642) STA. 17+00 TO STA. 53+50 = 0.67 MILES (U.S. 27)
- TEMPORARY ROAD = 0.15 MILES (TEMP. RD.)
- TOTAL = 0.82 MILES
- ITEM 614 TEMPORARY STOP LINE CLASS I (642) TEMPORARY ROAD = 15 LIN. FEET
- ITEM 614 TEMPORARY EDGE LINE CLASS I (642) TEMPORARY ROAD = 0.23 MILES
- ITEM 614 TEMPORARY CENTERLINE CLASS I, TYPE C (SOLID DOUBLE) STA. 5+00 TO STA. 15+50 = 0.20 MILES (U.S. 27)



### PHASE IV SEQUENCE OF CONSTRUCTION (TO BE CONSTRUCTED IN ORDER LISTED)

- 1 REMOVE CENTERLINE FROM STA. 5+00 TO STA. 14+50 AND INSTALL TEMPORARY PAVEMENT CENTERLINE FROM STA. 5+00 TO STA. 53+50 AS SHOWN. TWTL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
- 2 START CONSTRUCTION OF TEMPORARY RD. FOR SR 130. LANE MILL RD. SHALL REMAIN OPEN UNTIL TEMP. RD. IS COMPLETED AND OPEN TO TRAFFIC. STANDARD CONSTRUCTION DRAWING MT-97.10 SHALL BE USED WHEN MAKING TEMPORARY RD. CONNECTION TO EXISTING SR 130.
- 3 ERECT SIGNING AND BARRICADES JUST PRIOR TO THE OPENING OF TEMPORARY RD. AS DETAILED IN ADVANCE SIGNING SCHEMATIC ON SHEET NUMBER 7.
- 4 CONSTRUCT SR 130 AND LANE MILL RD. STANDARD CONSTRUCTION DRAWING MT-97.10 WILL BE USED AT THE CONNECTION OF PROPOSED SR 130 RELOCATION AND TEMPORARY RD.
- 5 ADD CURB BETWEEN STA. 14+50 RT. TO STA. 16+25 RT.
- 6 CONSTRUCT 404 ASPHALT CONCRETE SURFACE COURSE TO LANE MILL AND SR 130.
- 7 REMOVE TEMPORARY ROAD



NOTE:  
 FOR PLAN & PROFILE OF TEMP. RD. SEE SHEET NO. 46  
 FOR CROSS SECTIONS OF TEMP. RD. SEE SHEET NO. 73-76

# PAVEMENT CALCULATIONS

Sheet No. 24	Ref. No.	Mainline Pavement Quantities Sta. 7+50 - Sta. 12+00	
		Calc. Pav't Area (Full Depth Conc.)	
		Sta. 7+50 - Sta. 8+25 $\frac{21'+24' \times 75'}{2}$	= 1687.50 S.F.
		Sta. 8+25 - Sta. 9+00 24' x 75'	= 1800.00 S.F.
		Sta. 9+00 - Sta. 12+00 $\frac{24'+36' \times 300'}{2}$	= 9000.00 S.F.
		<b>Total Resurface Area</b>	<b>= 12487.50 S.F.</b> Use 12488 S.F.
		Calc. Shoulder Area (Left)	
		Sta. 7+28 - Sta. 7+50 Area Planimetered	= 91.00 S.F.
		Sta. 7+50 - Sta. 8+25 $\frac{4'+10' \times 75'}{2}$	= 525.00 S.F.
		Sta. 8+25 - Sta. 9+41.5 10' x 116.5'	= 1165.00 S.F.
		Sta. 9+41.5 - Sta. 11+15 $\frac{10'+7' \times 173.5'}{2}$	= 1474.75 S.F.
		Sta. 11+15 - Sta. 12+00 $\frac{7'+2' \times 85'}{2}$	= 382.50 S.F.
		Deduct for Drive Apron Area Planimetered	= - 570.00 S.F.
		<b>Total Surface Area</b>	<b>= 3068.25 S.F.</b> Use 3068 S.F.
		Calc. Shoulder Area (Right)	
		Sta. 7+50 - Sta. 8+25 $\frac{4'+10' \times 75'}{2}$	= 525.00 S.F.
		Sta. 8+25 - Sta. 9+41.5 10' x 116.5'	= 1165.00 S.F.
		Sta. 9+41.5 - Sta. 10+68 $\frac{10'+4.64' \times 126.5'}{2}$	= 925.98 S.F.
		Sta. 10+68 - Sta. 11+88.28 $\frac{4.64'+2.23' \times 120.28'}{2}$	= 413.16 S.F.
		<b>Total Surface Area</b>	<b>= 3029.14 S.F.</b> Use 3030 S.F.

Sheet No. 24	Ref. No.	Constants for Item 304 Aggregate Base	
		Sta. 7+50 - Sta. 9+41.5 Left Shoulder [[ (6"+15"/2 x 1/12 x 8.5') + (15"+12"/2 x 1/12 x 1.5') ] 1/27	= 0.38 Ave. Cu. Yd./L.F.
		Sta. 7+50 - Sta. 9+41.50 Right Shoulder [[ (6"+10"/2 x 1/12 x 1.5') + (10"+3"/2 x 1/12 x 8.5') ] 1/27	= 0.21 Ave. Cu. Yd./L.F.
		Sta. 9+41.5 - Sta. 11+15 Left shoulder [[ (9"+12"/2 x 1/12 x 3.7') + (9"+12"/2 x 1/12 x 10') ] 1/27 x 1/2	= 0.22 Ave. Cu. Yd./L.F.
		Sta. 11+15 - Sta. 12+00 Left shoulder [[ (9"+12"/2 x 1/12 x 3.7') + (9"+12"/2 x 1/12 x 2') ] 1/27 x 1/2	= 0.09 Ave. Cu. Yd./L.F.
		Sta. 9+41.5 - Sta. 10+68 Right Shoulder [[ (6"+8"/2 x 1/12 x 1.5') + (8"+3"/2 x 1/12 x 8.5') + (8"+3"/2 x 1/12 x 3.14') ] x 1/27x1/2	= 0.13 Ave. Cu. Yd./L.F.
		Sta. 10+68 - Sta. 11+88.28 Right Shoulder [[ (6"+3"/2 x 1/12 x 4.64') + (6"+3"/2 x 1/12 x 2.0') ] x 1/27 x 1/2	= 0.046 Ave. Cu. Yd./L.F.
	1-P	Item 451 10" Reinf. Conc. pav't. 12488 Sq. Ft. x 1/9	= 1387.56 Sq. Yd. Use 1388 Sq. Yd.
	1-P	Item 301 Bitum. Aggregate Base 12488 Sq. Ft. x 5"/12" x 1/27	= 192.72 Cu. Yd. Use 193 Cu. Yd.
	2-P	Item 409 Seal Coat, #8 Cover Aggregate 3068 Sq. Ft. + 3030 Sq. Ft. x 1/9 = 677.56 S.Y. x 0.008 C.Y./S.Y.	= 5.42 Cu. Yd. Use 6 Cu. Yd.
		3068 Sq. Ft. + 3030 Sq. Ft. x 1/9 = 677.56 S.Y. x 0.30 Gal./S.Y.	= 203.27 Gals. Use 204 Gals.
	2-P	Item 301 Bitum. Aggregate Base AC-20 3068 Sq. Ft. x 3"/12" x 1/27	= 28.41 Cu. Yd. Use 28 Cu. Yd.
	2-P	Item 408 Bitum. Prime Coat 3068 Sq. Ft. + 3030 Sq. Ft. x 1/9 = 677.56 S.Y. x 0.40 Gal./S.Y.	= 271.02 Gals. Use 271 Gals.
	2-P	Item 402 Asph. Conc. AC-20 3030 Sq. Ft. x 3"/12" x 1/27	= 28.06 Cu. Yd. Use 29 Cu. Yd.
	2-P	Item 301 Bitum. Aggregate Base AC-20 3030 Sq. Ft. x 6"/12" x 1/27	= 56.11 Cu. Yd. Use 57 Cu. Yd.
	2-P	Item 304 Aggregate Base	
		Sta. 7+50 - Sta. 9+41.5 Lt. 191.5' x 0.38 Ave. Cu. Yd./L.F.	= 72.77 Cu. Yd.
		Sta. 9+41.5 - Sta. 11+15 Lt. 173.5' x 0.22 Ave. Cu. Yd./L.F.	= 38.17 Cu. Yd.
		Sta. 11+15 - Sta. 12+00 Lt. 85' x 0.09 Ave. Cu. Yd./L.F.	= 7.65 Cu. Yd.
		Sta. 7+50 - Sta. 9+41.5 Rt. 191.5' x 0.21 Ave. Cu. Yd./L.F.	= 40.22 Cu. Yd.
		Sta. 10+68 - Sta. 11+88.28 Rt. 120.28' x 0.046 Ave. Cu. Yd./L.F.	= 5.53 Cu. Yd.
		Sta. 9+41.5 - Sta. 10+68 Rt. 126.5' x 0.13 Ave. Cu. Yd./L.F.	= 16.45 Cu. Yd.
		<b>Total</b>	<b>= 180.79 Cu. Yd.</b> Use 181 Cu. Yd.
		Mainline Pavement Quantities Sta. 12+00 - Sta. 18+00	
		Calc. Pav't Area	
		Sta. 12+00 - Sta. 14+50 (Full Depth Conc.) 40' x 250'	= 10,000.00 S.F.
		Sta. 14+50 - Sta. 18+00 (Full Depth Asph.)	

Sheet No. 25	Ref. No.	Area Planimetered Left Area Planimetered Right Total	= 3825.00 S.F. = 1615.00 S.F. = 5440.00 S.F.
		Sta. 14+50 - Sta. 18+00 (Resurfacing)	
		Area Planimetered	= 8560.00 S.F.
	10-P	Item 451 10" Reinf. Conc. Pav't. 10,000 Sq. Ft. x 1/9	= 1111.11 Cu. Yd. Use 1112 Cu. Yd.
	10-P	Item 301 Bitum. Aggregate Base 10,000 Sq. Ft. x 5"/12" x 1/27	= 154.32 Cu. Yd. Use 155 Cu. Yd.
	11-P	Item 403 Asphalt Conc. AC-20 Info. Taken from 3-D's	= 87.53 Cu. Yd. Use 88 Cu. Yd.
	11-P	Item 404 Asphalt Conc. AC-20 5440 S.F. + 8560 S.F. x 1 1/4"/12" x 1/27	= 54.01 Cu. Yd. Use 54 Cu. Yd.
	11-P	Item 407 Tack Coat 8560 S.F. x 1/9 = 951.11 S.Y. x .075 Gal./S.Y.	= 71.33 Gals. Use 72 Gals.
	11-P	Item 402 Asphalt Conc. AC-20 5440 S.F. x 1 3/4"/12" x 1/27	= 29.38 Cu. Yd. Use 30 Cu. Yd.
	11-P	Item 301 Bitum. Aggregate Base AC-20 5440 S.F. x 10"/12" x 1/27	= 167.90 Cu. Yd. Use 168 Cu. Yd.
	27	Mainline Pavement Quantities Sta. 18+00 - Sta. 24+00	
		Calc. Pav't. Area Sta. 18+00 - Sta. 24+00 (Full Depth Asph.)	
		Area Planimetered Left Area Planimetered Right Total	= 5862.50 S.F. = 6875.00 S.F. = 12737.50 S.F.
		Sta. 18+00 - Sta. 24+00 (Resurfacing)	
		Area Planimetered	= 11262.50 S.F.
	1-P	Item 403 Asphalt Conc. AC-20 Info Taken from 3-D's	= 37.46 Cu. Yd. Use 38 Cu. Yd.
	1-P	Item 404 Asphalt Conc. AC-20 12737.5 S.F. + 11262.5 S.F. x 1 1/4"/12" x 1/27	= 92.59 Cu. Yd. Use 93 Cu. Yd.
	1-P	Item 407 Tack Coat 11262.5 S.F. x 1/9 = 1251.39 S.Y. x .075 Gal./S.Y.	= 93.85 Gals. Use 94 Gals.
	1-P	Item 402 Asphalt Conc. AC-20 12737.5 S.F. x 1 3/4"/12" x 1/27	= 68.80 Cu. Yd. Use 69 Cu. Yd.
	1-P	Item 301 Bitum. Aggregate Base AC-20 12737.5 S.F. x 10"/12" x 1/27	= 393.13 Cu. Yd. Use 394 Cu. Yd.

# PAVEMENT CALCULATIONS

Sheet No. 28  Mainline Pav't Area Sta. 24+00 - Sta. 30+00 (Full Depth Asph.)  Area Planimetered Left = 5550.00 S.F. Area Planimetered Right = 6675.00 S.F. Total = 12225.00 S.F.  Sta. 24+00 - Sta. 30+00 (Resurfacing)  Area Planimetered = 11775.00 S.F.  21-P Item 403 Asphalt Conc. AC-20 Info Taken from 3-D's = 28.74 Cu. Yd. Use 29 Cu. Yd.  21-P Item 404 Asphalt Conc. AC-20 12225 S.F. + 11775 S.F. x 1 1/4"/12" x 1/27 = 92.59 Cu. Yd. Use 93 Cu. Yd.  21-P Item 407 Tack Coat 11775 S.F. x 1/9 = 1308.33 S.Y. x .075 Gal./S.Y. = 98.12 Gals. Use 99 Gals.  21-P Item 402 Asphalt Conc. AC-20 12225 S.F. x 1 3/4"/12" x 1/27 = 66.03 Cu. Yd. Use 66 Cu. Yd.  21-P Item 301 Bitum. Aggregate Base AC-20 12225 S.F. x 10"/12" x 1/27 = 377.31 Cu. Yd. Use 378 Cu. Yd.	Sheet No. 30  Mainline Pav't Area Sta. 30+00 - Sta. 36+00 (Full Depth Asph.)  Area Planimetered Left = 6475.00 S.F. Area Planimetered Right = 5900.00 S.F. Total = 12375.00 S.F.  Sta. 30+00 - Sta. 36+00 (Resurfacing)  Area Planimetered = 11625.00 S.F.  1-P Item 403 Asphalt Conc. AC-20 Info Taken from 3-D's = 20.58 Cu. Yd. Use 21 Cu. Yd.  1-P Item 404 Asphalt Conc. AC-20 12375 S.F. + 11625 S.F. x 1 1/4"/12" x 1/27 = 92.59 Cu. Yd. Use 93 Cu. Yd.  1-P Item 407 Tack Coat 11625 S.F. x 1/9 = 1291.67 S.Y. x .075 Gal./S.Y. = 96.88 Gals. Use 97 Gals.  1-P Item 402 Asphalt Conc. AC-20 12375 S.F. x 1 3/4"/12" x 1/27 = 66.84 Cu. Yd. Use 67 Cu. Yd.  1-P Item 301 Bituminous Aggregate Base AC-20 12375 S.F. x 10"/12" x 1/27 = 381.94 Cu. Yd. Use 382 Cu. Yd.	Sheet No. 31  Mainline Pav't. Quantities Sta. 36+00 - Sta. 42+00  Calc. Pav't. Area Sta. 36+00 - Sta. 42+00 (Full Depth Asph.)  Area Planimetered Left = 5775.00 S.F. Area Planimetered Right = 6125.00 S.F. Total = 11900.00 S.F.  Sta. 36+00 - Sta. 42+00 (Resurfacing)  Area Planimetered = 12100.00 S.F.
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Sheet No. 31  15-P Item 403 Asphalt Conc. AC-20 Info Taken from 3-D's = 40.41 Cu. Yd. Use 41 Cu. Yd.  15-P Item 404 Asphalt Conc. AC-20 11900 S.F. + 12100 S.F. x 1 1/4"/12" x 1/27 = 92.59 Cu. Yd. Use 93 Cu. Yd.  15-P Item 407 Tack coat 12100 S.F. x 1/9 = 1344.44 S.Y. x .075 Gal./S.Y. = 100.83 Gals. Use 101 Gals.  15-P Item 402 Asphalt Conc. AC-20 11900 S.F. x 1 3/4"/12" x 1/27 = 64.27 Cu. Yd. Use 65 Cu. Yd.  15-P Item 301 Bituminous Aggregate Base AC-20 11900 S.F. x 10"/12" x 1/27 = 367.28 Cu. Yd. Use 368 Cu. Yd.	Sheet No. 33  Mainline Pav't. Quantities Sta. 42+00 - Sta. 48+00  Calc. Pav't. Area Sta. 42+00 - Sta. 48+00 (Full Depth Asph.)  Area Planimetered Left = 5500.00 S.F.  Deduct for Stillwell Beckett Road - Planimetered = - 565.00 S.F. Sub-Total = 4935.00 S.F.  Area Planimetered Right = 6025.00 S.F.  Deduct for Stillwell Beckett Road - Planimetered = - 375.00 S.F. Sub-Total = 5650.00 S.F. Total = 10585 S.F.  Sta. 42+00 - Sta. 48+00 (Resurfacing) Area Planimetered = 12475.00 S.F.	Sheet No. 34  Mainline Pav't. Quantities Sta. 48+00 - Sta. 53+50  Calc. Pav't. Area Sta. 48+00 - Sta. 53+50 (Full Depth Asph.)  Area Planimetered Left = 2945.00 S.F. Area Planimetered Right = 3100.00 S.F. Total = 6045.00 S.F.  Sta. 48+00 - Sta. 53+50 (Resurfacing)  Area Planimetered = 11347.00 S.F.
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Sheet No. 34  Calc. Shoulder Area Left Sta. 51+53 - Sta. 51+70 Area Planimetered = 68.00 S.F.  Sta. 51+70 - Sta. 53+50 $\frac{10' + 2.8' \times 180'}{2}$ = 1152.00 S.F.  Deduct for Drive Apron Area Planimetered = - 326.00 S.F. Total = 894.00 S.F.  Calc. Shoulder Area Right Sta. 51+53 - Sta. 51+70 Area Planimetered = 68.00 S.F.  Sta. 51+70 - Sta. 53+50 $\frac{10' + 2.8' \times 180'}{2}$ = 1152.00 S.F. Total = 1220.00 S.F.	20-P Item 403 Asphalt Conc. AC-20 Info Taken From 3-D's = 16.82 Cu. Yd. Use 17 Cu. Yd.  20-P Item 404 Asphalt Conc. AC-20 6045 S.F. + 11347 S.F. x 1 1/4"/12" x 1/27 = 67.10 Cu. Yd. Use 67 Cu. Yd.  20-P Item 407 Tack Coat 11347 S.F. x 1/9 = 1260.78 S.Y. x 0.075 Gal./S.Y. = 94.56 Gals. Use 95 Gals.  20-P Item 402 Asphalt Conc. AC-20 6045 S.F. x 1 3/4"/12" x 1/27 = 32.65 Cu. Yd. Use 33 Cu. Yd.  20-P Item 301 Bitum. Aggregate Base AC-20 6045 S.F. x 10"/12" x 1/27 = 186.57 Cu. Yd. Use 187 Cu. Yd.  21-P Item 409 Seal Coat, #8 Cover Aggregate 894 S.F. + 1220 S.F. x 1/9 = 234.89 S.Y. x 0.008 C.Y./S.Y. = 1.88 Cu. Yd. Use 2 Cu. Yd. 894 S.F. + 1220 S.F. x 1/9 = 234.89 S.Y. x 0.30 Gal./S.Y. = 70.47 Gals. Use 71 Gals.  21-P Item 301 Bitum. Aggregate Base AC-20 894 S.F. + 1220 S.F. x 3"/12" x 1/27 = 19.57 Cu. Yd. Use 20 Cu. Yd.  21-P Item 408 Bitum. Prime Coat 894 S.F. + 1220 S.F. x 1/9 = 234.89 S.Y. x 0.40 Gal./S.Y. = 93.96 Gals. Use 94 Gals.  21-P Item 304 Aggregate Base 894 S.F. + 1220 S.F. x 10"/12" x 1/27 = 65.25 Cu. Yd. Use 66 Cu. Yd.
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# PAVEMENT CALCULATIONS

Sheet Ref.  
No. No.  
33 & 36

Stillwell-Beckett Rd. Pavement Quantities

Sta. 67+50 - Sta. 72+50

Sta. 67+50 - Sta. 69+00 (Full Depth Asph.)

Area Planimetered Left = 276.00 S.F.  
Area Planimetered Right = 240.00 S.F.

Sta. 69+00 - Sta. 69+75.84 (Full Depth Asph.)

Area Planimetered = 4152.00 S.F.

Sta. 70+24.16 - Sta. 71+00 (Full Depth Asph.)

Area Planimetered Left = 720.00 S.F.  
Area Planimetered Right = 1680.00 S.F.

Sta. 71+00 - Sta. 72+50 (Full Depth Asph.)

Area Planimetered Left = 244.00 S.F.  
Area Planimetered Right = 412.00 S.F.  
Total = 7724.00 S.F.

Sta. 67+50 - Sta. 69+00 (Resurfacing)

Area Planimetered = 2912.00 S.F.

Sta. 70+24.16 - Sta. 71+00 (Resurfacing)

Area Planimetered = 1608.00 S.F.

Sta. 71+00 - Sta. 73+00 (Resurfacing)

Area Planimetered = 2852.00 S.F.  
Total = 7372.00 S.F.

Calc. Shoulder Area Left

Sta. 67+50 - Sta. 68+50

Area Planimetered = 359 S.F.

Sta. 71+50 - Sta. 72+50

Area Planimetered = 339 S.F.

Deduct for Drive Apron

Area Planimetered = 496 S.F.  
Total = 202 S.F.

Calc. Shoulder Area Right

Sta. 67+50 - Sta. 68+50

Area Planimetered = 343 S.F.

Sta. 71+50 - Sta. 72+50

Area Planimetered = 331 S.F.

Deduct for Drive Apron

Area Planimetered = 228 S.F.  
Total = 446 S.F.

1-P Item 403 Asphalt Conc. AC-20  
Info. Taken From 3-D's

= 42.58 Cu. Yd.  
Use 43 Cu. Yd.

1-P Item 404 Asphalt Conc. AC-20

7724 S.F. + 7372 S.F. x 1 1/4" / 12" x 1/27 = 58.24 Cu. Yd.  
Use 59 Cu. Yd.

1-P Item 407 Tack Coat

7372 S.F. x 1/9 = 819.11 S.Y. x 0.075 Gal./S.Y. = 61.43 Cu. Yd.  
Use 62 Cu. Yd.

1-P Item 402 Asphalt Conc. AC-20

7724 S.F. x 1 3/4" / 12" x 1/27 = 41.72 Cu. Yd.  
Use 42 Cu. Yd.

1-P Item 301 Bitum. Aggregate Base AC-20

7724 S.F. x 10" / 12" x 1/27 = 238.40 Cu. Yd.

Add  
2(200' x 5" / 12") x 5" / 12" x 1/27 = 2.57 Cu. Yd.  
2(200' x 10" / 12") x 5" / 12" x 1/27 = 5.14 Cu. Yd.

Total = 246.11 Cu. Yd.  
Use 247 Cu. Yd.

Sheet Ref.  
No. No.  
33 & 36

2-P Item 409 Seal Coat, #8 Cover Aggregate

202 S.F. + 446 S.F. x 1/9 = 72 S.Y. x 0.008 C.Y./S.Y. = 0.58 Cu. Yd.  
Use 1 Cu. Yd.

202 S.F. + 446 S.F. x 1/9 = 72 S.Y. x 0.30 Gal./S.Y. = 21.6 Gals.  
Use 22 Gals.

2-P Item 304 Aggregate Base

202 S.F. + 446 S.F. x 8" / 12" x 1/27 = 16 Cu. Yd.

Deduct  
2(200' x 5" / 12") x 5" / 12" x 1/27 = 2.57

Total = 13.43 Cu. Yd.  
Use 14 Cu. Yd.

39 Lane Mill Road Pavement Quantities  
Sta. 300+33.75 - Sta. 305+41.81

Calc. Pav't. Area (Full Depth Asphalt)

Sta. 300+33.75 - Sta. 300+66.87  
Area Planimetered = 268.00 S.F.

Sta. 300+33.75 - Sta. 301+29.05  
95.3' x 27' = 2573.10 S.F.

Sta. 301+29.05 - Sta. 301+76.40  
27' + 24.82' x 47.35' = 1226.84 S.F.

Sta. 301+76.40 - Sta. 302+37.65  
24.82' + 25' x 61.25' = 1525.74 S.F.

Sta. 302+37.65 - Sta. 304+54.02  
216.37' x 25' = 5409.25 S.F.

Sta. 304+54.02 - Sta. 304+91.81  
25' + 23.15' x 37.79' = 909.79 S.F.

Sta. 304+91.81 - Sta. 305+41.81  
23.15' + 19.4' x 50' = 1063.75 S.F.

Total = 12976.47 S.F.  
Use 12977 S.F.

Calc. Shoulder Area Left

Sta. 200+40.77 S.R. 130 - Sta. 305+16.81  
508' x 4' = 2032.00 S.F.

Sta. 305+16.81 - Sta. 305+41.81  
4' + 2' x 25' = 75.00 S.F.

Total = 2107.00 S.F.

Calc. Shoulder Area Right

Sta. 300+33.75 - Sta. 305+16.81  
478' x 4' = 1912.00 S.F.

Sta. 305+16.81 - Sta. 305+41.81  
4' + 2' x 25' = 75.00 S.F.

Deduct for Drive Apron

Area Planimetered = - 514.00 S.F.  
Total = 1473.00 S.F.

Sheet Ref.  
No. No.  
39

1-P Item 404 Asphalt Conc. AC-20  
12977 S.F. x 1 1/4" / 12" x 1/27

= 50.07 Cu. Yd.  
Use 50 Cu. Yd.

1-P Item 402 Asphalt Conc. AC-20  
12977 S.F. x 1 3/4" / 12" x 1/27

= 70.09 Cu. Yd.  
Use 71 Cu. Yd.

1-P Item 301 Bitum. Aggregate Base AC-20  
12977 S.F. x 10" / 12" x 1/27

= 400.52 Cu. Yd.

Add  
(533' + 374.5' x 5" / 12") x 5" / 12" x 1/27 = 5.84 Cu. Yd.  
(533' + 374.5' x 10" / 12") x 5" / 12" x 1/27 = 11.67 Cu. Yd.  
Total = 418.03 Cu. Yd.  
Use 418 Cu. Yd.

2-P Item 409 Seal Coat, #8 Cover Aggregate  
2107 S.F. + 1405 S.F. x 1/9 = 390.22 S.Y. x 0.008 C.Y./S.Y.

= 3.12 Cu. Yd.  
Use 4 Cu. Yd.

2107 S.F. + 1405 S.F. x 1/9 = 397.78 S.Y. x 0.30 Gal./S.Y.

= 117.07 Gals.  
Use 117 Gals.

2-P Item 304 Aggregate Base  
2107 S.F. + 1405 S.F. x 8" / 12" x 1/27

= 86.72 Cu. Yd.

Deduct  
(533' + 374.5' x 5" / 12") x 5" / 12" x 1/27 = - 5.84 Cu. Yd.  
Total = 80.88 Cu. Yd.  
Use 81 Cu. Yd.

39 & 40

State Route 130 Pavement Quantities  
Sta. 200+21.22 - Sta. 206+50

Calc. Pav't. Area (Full Depth Asph.)  
Sta. 200+21.22 - Sta. 201+50  
Area Planimetered = 6444.00 S.F.

Sta. 201+50 - Sta. 202+02.02  
28.12' + 27.17' x 52.02' = 1438.09 S.F.

Sta. 202+02.02 - Sta. 202+57.02  
27.17' + 25.17' x 55' = 1439.35 S.F.

Sta. 202+57.02 - Sta. 203+21.70  
25.17' + 24' x 64.68' = 1590.16 S.F.

Sta. 203+21.70 - Sta. 205+40  
24' x 218.30' = 5239.20 S.F.

Sta. 205+40 - Sta. 206+50  
24' + 20' x 110' = 2420.00 S.F.

Total = 18570.80 S.F.

Calc. Shoulder Area Left

Sta. 13+22.10 U.S. 27 - Sta. 200+40.77  
Area Planimetered = 136.00 S.F.

Sta. 300+33.75 Lane Mill Rd. - Sta. 206+25  
540' x 4' = 2160.00 S.F.

Sta. 206+25 - Sta. 206+50  
4' + 2' x 25' = 75.00 S.F.

Total = 2371.00 S.F.

# PAVEMENT CALCULATIONS

<p>Sheet No. 39 &amp; 40</p> <p>Ref. No.</p> <p>Calc. Shoulder Area Right</p> <p>Sta. 11+88.28 U.S. 27 - Sta. 206+25 594' x 4' = 2376.00 S.F.</p> <p>Sta. 206+25 - Sta. 206+50 <math>\frac{4' + 2' \times 25'}{2}</math> = 75.00 S.F.</p> <p><u>Total</u> = 2451.00 S.F.</p> <p>10-P Item 404 Asphalt Conc. AC-20 18570.8 S.F. x 1 1/4" / 12" x 1/27 = 71.65 Cu. Yd. Use 72 Cu. Yd.</p> <p>10-P Item 402 Asphalt Conc. AC-20 18570.8 S.F. x 1 3/4" / 12" x 1/27 = 100.31 Cu. Yd. Use 101 Cu. Yd.</p> <p>10-P Item 301 Bitum. Aggregate Base AC-20 18570.8 S.F. x 10" / 12" x 1/27 = 573.17 Cu. Yd.</p> <p>Add (565' + 619' x 5" / 12") x 5" / 12" x 1/27 = 7.61 Cu. Yd. (565' + 619' x 10" / 12") x 5" / 12" x 1/27 = 15.23 Cu. Yd. <u>Total</u> = 596.01 Cu. Yd. Use 596 Cu. Yd.</p> <p>11-P Item 409 Seal Coat, #8 Cover Aggregate 2371 S.F. + 2451 S.F. x 1/9 = 535.78 S.Y. x 0.008 C.Y./S.Y. = 4.29 Cu. Yd. Use 5 Cu. Yd.</p> <p>2371 S.F. + 2451 S.F. x 1/9 = 535.78 S.Y. x 0.30 Gal./S.Y. = 160.73 Gals. Use 161 Gals.</p> <p>11-P Item 304 Aggregate Base 2371 S.F. + 2451 S.F. x 8" / 12" x 1/27 = 119.06 Cu. Yd.</p> <p>Deduct (565' + 619' x 5" / 12") x 5" / 12" x 1/27 = - 7.61 Cu. Yd.</p> <p><u>Total</u> = 111.45 Cu. Yd. Use 112 Cu. Yd.</p> <p>41 Hussey Road Pavement Quantities Sta. 158+22 - Sta. 159+78.72</p> <p>Calc. Pav't. Area (Full Depth Asph.)</p> <p>Sta. 158+22 - Sta. 159+78.72 Area Planimetered = 5158.00 Sq. Ft.</p> <p>Calc. Shoulder Area Left Sta. 158+22 - Sta. 16+69.73 U.S. 27 Area Planimetered = 608.00 Sq. Ft.</p> <p>Calc. Shoulder Area Right</p> <p>Sta. 158+63 - Sta. 158+76.5 Area Planimetered = 69.00 Sq. Ft. <u>Total</u> = 677.00 Sq. Ft.</p> <p>15-P Item 404 Asphalt Conc. AC-20 5158 S.F. x 1 1/4" / 12" x 1/27 = 19.90 Cu. Yd. Use 20 Cu. Yd.</p> <p>15-P Item 402 Asphalt Conc. AC-20 5158 S.F. x 1 3/4" / 12" x 1/27 = 27.86 Cu. Yd. Use 28 Cu. Yd.</p> <p>15-P Item 301 Bitum. Aggregate Base AC-20 5158 S.F. x 10" / 12" x 1/27 = 159.20 Cu. Yd.</p> <p>Add (176' + 23') x 5" / 12" x 5" / 12" x 1/27 = 1.28 Cu. Yd. <u>Total</u> = 160.48 Cu. Yd. Use 161 Cu. Yd.</p>
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<p>Sheet No. 41</p> <p>Ref. No.</p> <p>16-P Item 409 Seal Coat, #8 Cover Aggregate 677 S.F. x 1/9 = 75.22 S.Y. x 0.008 C.Y./S.Y. = 0.60 Cu. Yd. Use 1 Cu. Yd.</p> <p>677 S.F. x 1/9 = 75.22 S.Y. x 0.30 Gal./S.Y. = 22.56 Cu. Yd. Use 23 Cu. Yd.</p> <p>16-P Item 304 Aggregate Base 677 S.F. x 8" / 12" x 1/27 = 16.72 Cu. Yd.</p> <p>Deduct (176' + 23' x 5" / 12") x 5" / 12" x 1/27 = - 1.28 Cu. Yd.</p> <p><u>Total</u> = 15.44 Cu. Yd. Use 16 Cu. Yd.</p> <p>* All Drive Areas are Planimetered from 20 Scale Plans.</p> <p>24 3-P Sta. 8+88.5 Drive Left (Residence) * Area = 1442 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 1442 S.F. x 1" / 12" x 1/27 = 4.45 Cu. Yd. Use 5 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 1442 S.F. x 4" / 12" x 1/27 = 17.80 Cu. Yd. Use 18 Cu. Yd.</p> <p>6-P Sta. 7+03 Drive Left (Comm.) * Area = 1064 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 1064 S.F. x 1" / 12" x 1/27 = 3.28 Cu. Yd. Use 4 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 1064 S.F. x 5" / 12" x 1/27 = 16.42 Cu. Yd. Use 17 Cu. Yd.</p> <p>25 12-P Sta. 15+00 Drive Left (Comm.) * Area = 344 Sq. Ft. = 230 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 344 S.F. x 1" / 12" x 1/27 = 1.06 Cu. Yd. Use 1 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 344 S.F. x 5" / 12" x 1/27 = 5.3 Cu. Yd. Use 6 Cu. Yd.</p> <p>Item 304 Aggregate Base 230 S.F. x 10" / 12" x 1/27 = 7.10 Cu. Yd. Use 7 Cu. Yd.</p> <p>13-P Sta. 17+35.7 Drive Left (Residence) * Area = 256 Sq. Ft.</p> <p>Item 452 Plain Conc. Pav't. (6") 256 S.F. x 1/9 = 28.44 Sq. Yd. Use 29 Sq. Yd.</p> <p>27 2-P Sta. 18+71.3 Drive Left (Residence) * Area = 209 Sq. Ft. = 75 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 209 S.F. x 1" / 12" x 1/27 = 0.64 Cu. Yd. Use 1 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 209 S.F. x 4" / 12" x 1/27 = 2.58 Cu. Yd. Use 3 Cu. Yd.</p> <p>Item 304 Aggregate Base 75 S.F. x 8" / 12" x 1/27 = 1.85 Cu. Yd. Use 2 Cu. Yd.</p> <p>3-P Sta. 19+70.5 Drive Left (Residence) * Area = 324 Sq. Ft.</p> <p>Item 452 Plain Conc. Pav't. (6") 324 S.F. x 1/9 = 36 Sq. Yd.</p>
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<p>Sheet No. 27</p> <p>Ref. No.</p> <p>4-P Sta. 20+56.2 Drive Left (Residence) * Area = 203 Sq. Ft. = 179 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 203 S.F. x 1" / 12" x 1/27 = 0.63 Cu. Yd. Use 1 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 203 S.F. x 4" / 12" x 1/27 = 2.51 Cu. Yd. Use 3 Cu. Yd.</p> <p>Item 304 Aggregate Base 179 S.F. x 8" / 12" x 1/27 = 4.42 Cu. Yd. Use 5 Cu. Yd.</p> <p>5-P Sta. 21+28 Drive Right (Residence) * Area = 436 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 436 S.F. x 1" / 12" x 1/27 = 1.35 Cu. Yd. Use 2 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 436 S.F. x 4" / 12" x 1/27 = 5.38 Cu. Yd. Use 6 Cu. Yd.</p> <p>6-P Sta. 21+73.5 Drive Left (Comm.) * Area = 384 Sq. Ft. = 774 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 384 S.F. x 1" / 12" x 1/27 = 1.19 Cu. Yd. Use 1 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 384 S.F. x 5" / 12" x 1/27 = 5.93 Cu. Yd. Use 6 Cu. Yd.</p> <p>Item 304 Aggregate Base 774 S.F. x 10" / 12" x 1/27 = 23.89 Cu. Yd. Use 24 Cu. Yd.</p> <p>7-P Sta. 22+74 Drive Right (Comm.) * Area = 1138 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 1138 S.F. x 1" / 12" x 1/27 = 3.51 Cu. Yd. Use 4 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 1138 S.F. x 5" / 12" x 1/27 = 17.56 Cu. Yd. Use 18 Cu. Yd.</p> <p>8-P Sta. 24+10 Drive Right (Residence) * Area = 392 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 392 S.F. x 1" / 12" x 1/27 = 1.21 Cu. Yd. Use 2 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 392 S.F. x 4" / 12" x 1/27 = 4.83 Cu. Yd. Use 5 Cu. Yd.</p> <p>28 11-P Sta. 24+50 Drive Left (Comm.) * Area = 1304 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 1304 S.F. x 1" / 12" x 1/27 = 4.02 Cu. Yd. Use 4 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 1304 S.F. x 5" / 12" x 1/27 = 20.12 Cu. Yd. Use 20 Cu. Yd.</p> <p>12-P Sta. 24+69 Drive Right (Comm.) * Area = 780 Sq. Ft.</p> <p>Item 404 Asphalt Conc. 780 S.F. x 1" / 12" x 1/27 = 2.40 Cu. Yd. Use 3 Cu. Yd.</p> <p>Item 301 Bitum. Aggregate Base 780 S.F. x 5" / 12" x 1/27 = 12.03 Cu. Yd. Use 12 Cu. Yd.</p>
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Sheet Ref. \* All Drive Areas are Plainmetered from 20 Scale Plans.

Sheet No.	Ref. No.	Description	Quantity
28	13-P	Sta. 26+33.8 Drive Left (Residence) * Area	= 733 Sq. Ft. = 536 Sq. Ft.
		Item 404 Asphalt Conc. 733 S.F. x 1/2" x 1/2"	= 2.26 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 733 S.F. x 4/12" x 1/2"	= 9.05 Cu. Yd. Use 9 Cu. Yd.
		Item 304 Aggregate Base 536 S.F. x 3/4" x 1/2"	= 13.23 Cu. Yd. Use 14 Cu. Yd.
14-P		Sta. 27+50 Drive Left (Residence) * Area	= 668 Sq. Ft.
		Item 452 Plain Conc. Pav't. (6") 668 S.F. x 1/9	= 74.22 Sq. Yd. Use 75 Sq. Yd.
15-P		Sta. 28+38.7 Drive Left (Residence) * Area	= 370 Sq. Ft.
		Item 404 Asphalt Conc. 370 S.F. x 1"/12" x 1/27	= 1.14 Cu. Yd. Use 1 Cu. Yd.
		Item 301 Bitum. Aggregate Base 370 S.F. x 4"/12" x 1/27	= 4.57 Cu. Yd. Use 5 Cu. Yd.
16-P		Sta. 29+03 Drive Left (Comm.) * Area	= 1160 Sq. Ft.
		Item 404 Asphalt Conc. 1160 S.F. x 1"/12" x 1/27	= 3.58 Cu. Yd. Use 4 Cu. Yd.
		Item 301 Bitum. Aggregate Base 1160 S.F. x 5"/12" x 1/27	= 17.90 Cu. Yd. Use 18 Cu. Yd.
17-P		Sta. 29+07 Drive Right (Residence) * Area	= 438 Sq. Ft.
		Item 404 Asphalt Conc. 438 S.F. x 1"/12" x 1/27	= 1.35 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 438 S.F. x 4"/12" x 1/27	= 5.41 Cu. Yd. Use 6 Cu. Yd.
18-P		Sta. 29+66 Drive Right (Comm.) * Area	= 1052 Sq. Ft.
		Item 404 Asphalt Conc. 1052 S.F. x 1"/12" x 1/27	= 3.25 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 1052 S.F. x 5"/12" x 1/27	= 16.23 Cu. Yd. Use 16 Cu. Yd.
30	2-P	Sta. 30+44.10 Drive Left (Residence) * Area	= 636 Sq. Ft.
		Item 452 Plain Conc. Pav't. (6") 636 S.F. x 1/9	= 70.67 Sq. Yd. Use 71 Sq. Yd.
	3-P	Sta. 31+34.5 Drive Left (Residence) * Area	= 366 Sq. Ft.
		Item 404 Asphalt Conc. 366 S.F. x 1"/12" x 1/27	= 1.13 Cu. Yd. Use 1 Cu. Yd.
		Item 301 Bitum. Aggregate Base 366 S.F. x 4"/12" x 1/27	= 4.52 Cu. Yd. Use 5 Cu. Yd.
	4-P	Sta. 31+85 Drive Right (Residence) * Area	= 290 Sq. Ft. = 81 Sq. Ft.
		Item 404 Asphalt Conc. 290 S.F. x 1"/12" x 1/27	= 0.90 Cu. Yd. Use 1 Cu. Yd.

# PAVEMENT CALCULATIONS

Sheet No.	Ref. No.	Description	Quantity
30		Item 301 Bitum. Aggregate Base 290 S.F. x 4"/12" x 1/27	= 3.58 Cu. Yd. Use 4 Cu. Yd.
		Item 304 Aggregate Base 81 S.F. x 8"/12" x 1/27	= 2 Cu. Yd.
5-P		Sta. 32+28 Drive Left (Residence) * Area	= 424 Sq. Ft.
		Item 404 Asphalt Conc. 424 S.F. x 1"/12" x 1/27	= 1.31 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 424 S.F. x 4"/12" x 1/27	= 5.23 Cu. Yd. Use 5 Cu. Yd.
6-P		Sta. 33+11 Drive Right (Residence) * Area	= 458 Sq. Ft.
		Item 404 Asphalt Conc. 458 S.F. x 1"/12" x 1/27	= 1.41 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 458 S.F. x 4"/12" x 1/27	= 5.65 Cu. Yd. Use 6 Cu. Yd.
7-P		Sta. 33+67.10 Drive Left (Residence) * Area	= 675 Sq. Ft.
		Item 404 Asphalt Conc. 675 S.F. x 1"/12" x 1/27	= 2.08 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 675 S.F. x 4"/12" x 1/27	= 8.33 Cu. Yd. Use 9 Cu. Yd.
8-P		Sta. 34+02 Drive Left (Residence) * Area	= 641 Sq. Ft.
		Item 452 Plain Conc. Pav't. (6") 641 S.F. x 1/9	= 71.22 Sq. Yd. Use 72 Sq. Yd.
9-P		Sta. 35+00 Drive Left (Residence) * Area	= 678 Sq. Ft.
		Item 404 Asphalt Conc. 678 S.F. x 1"/12" x 1/27	= 2.09 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 678 S.F. x 4"/12" x 1/27	= 8.37 Cu. Yd. Use 9 Cu. Yd.
10-P		Sta. 35+08 Drive Right (Comm.) * Area	= 1060 Sq. Ft.
		Item 404 Asphalt Conc. 1060 S.F. x 1"/12" x 1/27	= 3.27 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 1060 S.F. x 5"/12" x 1/27	= 16.36 Cu. Yd. Use 17 Cu. Yd.
31	16-P	Sta. 36+52.8 Drive Left (Residence) * Area	= 652 Sq. Ft.
		Item 452 Plain Conc. Pav't. (6") 652 S.F. x 1/9	= 72.44 Sq. Yd. Use 73 Sq. Yd.
	17-P	Sta. 36+80.5 & 37+50 Drive Rt. (Comm.) * Area	= 1871 Sq. Ft.
		Item 404 Asphalt Conc. 1871 S.F. x 1"/12" x 1/27	= 5.77 Cu. Yd. Use 6 Cu. Yd.

Sheet No.	Ref. No.	Description	Quantity
31		Item 301 Bitum. Aggregate Base 1871 S.F. x 5"/12" x 1/27	= 28.87 Cu. Yd. Use 29 Cu. Yd.
18-P		Sta. 30+07.03 & 37+67.57 Drive Lt. (Comm.) * Area	= 1808 Sq. Ft.
		Item 404 Asphalt Conc. 1808 S.F. x 1"/12" x 1/27	= 5.58 Cu. Yd. Use 6 Cu. Yd.
		Item 301 Bitum. Aggregate Base 1808 S.F. x 5"/12" x 1/27	= 27.90 Cu. Yd. Use 28 Cu. Yd.
19-P		Sta. 37+92 Drive Right (Residence) * Area	= 496 Sq. Ft.
		Item 404 Asphalt Conc. 496 S.F. x 1"/12" x 1/27	= 1.53 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 496 S.F. x 4"/12" x 1/27	= 6.12 Cu. Yd. Use 6 Cu. Yd.
20-P		Sta. 38+18 Drive Left (Comm.) * Area	= 368 Sq. Ft.
		Item 404 Asphalt Conc. 368 S.F. x 1"/12" x 1/27	= 1.14 Cu. Yd. Use 1 Cu. Yd.
		Item 301 Bitum. Aggregate Base 368 S.F. x 5"/12" x 1/27	= 5.68 Cu. Yd. Use 6 Cu. Yd.
21-P		Sta. 39+11.9 Drive Left (Comm.) * Area	= 432 Sq. Ft.
		Item 404 Asphalt Conc. 432 S.F. x 1"/12" x 1/27	= 1.33 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 432 S.F. x 5"/12" x 1/27	= 6.67 Cu. Yd. Use 7 Cu. Yd.
22-P		Sta. 39+30 Drive Right (Residence) * Area	= 686 Sq. Ft.
		Item 404 Asphalt Conc. 686 S.F. x 1"/12" x 1/27	= 2.12 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 686 S.F. x 4"/12" x 1/27	= 8.47 Cu. Yd. Use 9 Cu. Yd.
23-P		Sta. 39+87 Drive Left (Comm.) * Area	= 1012 Sq. Ft.
		Item 404 Asphalt Conc. 1012 S.F. x 1"/12" x 1/27	= 3.12 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 1012 S.F. x 5"/12" x 1/27	= 15.62 Cu. Yd. Use 16 Cu. Yd.
24-P		Sta. 39+91.5 Drive Right (Residence) * Area	= 750 Sq. Ft.
		Item 404 Asphalt Conc. 750 S.F. x 1"/12" x 1/27	= 2.31 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 750 S.F. x 4"/12" x 1/27	= 9.25 Cu. Yd. Use 9 Cu. Yd.

Sheet No.	Ref. No.	Description	Quantity
25-P		Sta. 40+62.5 Drive Right (Residence) * Area	= 360 Sq. Ft.
		Item 404 Asphalt Conc. 360 S.F. x 1"/12" x 1/27	= 1.11 Cu. Yd. Use 1 Cu. Yd.
		Item 301 Bitum. Aggregate Base 360 S.F. x 4"/12" x 1/27	= 4.44 Cu. Yd. Use 5 Cu. Yd.
26-P		Sta. 41+42 Drive Right (Residence) * Area	= 476 Sq. Ft.
		Item 404 Asphalt Conc. 476 S.F. x 1"/12" x 1/27	= 1.47 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 476 S.F. x 4"/12" x 1/27	= 5.88 Cu. Yd. Use 6 Cu. Yd.
33	2-P	Sta. 42+28 Drive Right (Comm.) * Area	= 785 Sq. Ft.
		Item 404 Asphalt Conc. 785 S.F. x 1"/12" x 1/27	= 2.42 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 785 S.F. x 5"/12" x 1/27	= 12.11 Cu. Yd. Use 12 Cu. Yd.
3-P		Sta. 42+87 Drive Left (Comm.) * Area	= 860 Sq. Ft.
		Item 404 Asphalt Conc. 860 S.F. x 1"/12" x 1/27	= 2.65 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 860 S.F. x 5"/12" x 1/27	= 13.27 Cu. Yd. Use 14 Cu. Yd.
4-P		Sta. 43+50 Drive Left (Comm.) * Area	= 960 Sq. Ft.
		Item 404 Asphalt Conc. 960 S.F. x 1"/12" x 1/27	= 2.96 Cu. Yd. Use 3 Cu. Yd.
		Item 301 Bitum. Aggregate Base 960 S.F. x 5"/12" x 1/27	= 14.81 Cu. Yd. Use 15 Cu. Yd.
5-P		Sta. 70+71 Drive Left (Comm.) * Area	= 706 Sq. Ft.
		Item 404 Asphalt Conc. 706 S.F. x 1"/12" x 1/27	= 2.18 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 706 S.F. x 5"/12" x 1/27	= 10.90 Cu. Yd. Use 11 Cu. Yd.
6-P		Sta. 45+11 Drive Right (Comm.) * Area	= 580 Sq. Ft.
		Item 404 Asphalt Conc. 580 S.F. x 1"/12" x 1/27	= 1.79 Cu. Yd. Use 2 Cu. Yd.
		Item 301 Bitum. Aggregate Base 580 S.F. x 5"/12" x 1/27	= 8.95 Cu. Yd. Use 9 Cu. Yd.

CALC. BY: LEH	BUTLER COUNTY	OHIO	17
DATE: 7/25/90		FHWA REGION 5	
CHKD. BY: JAG	BUT-27-10.48		
DATE: 12/14/90			

# PAVEMENT CALCULATIONS

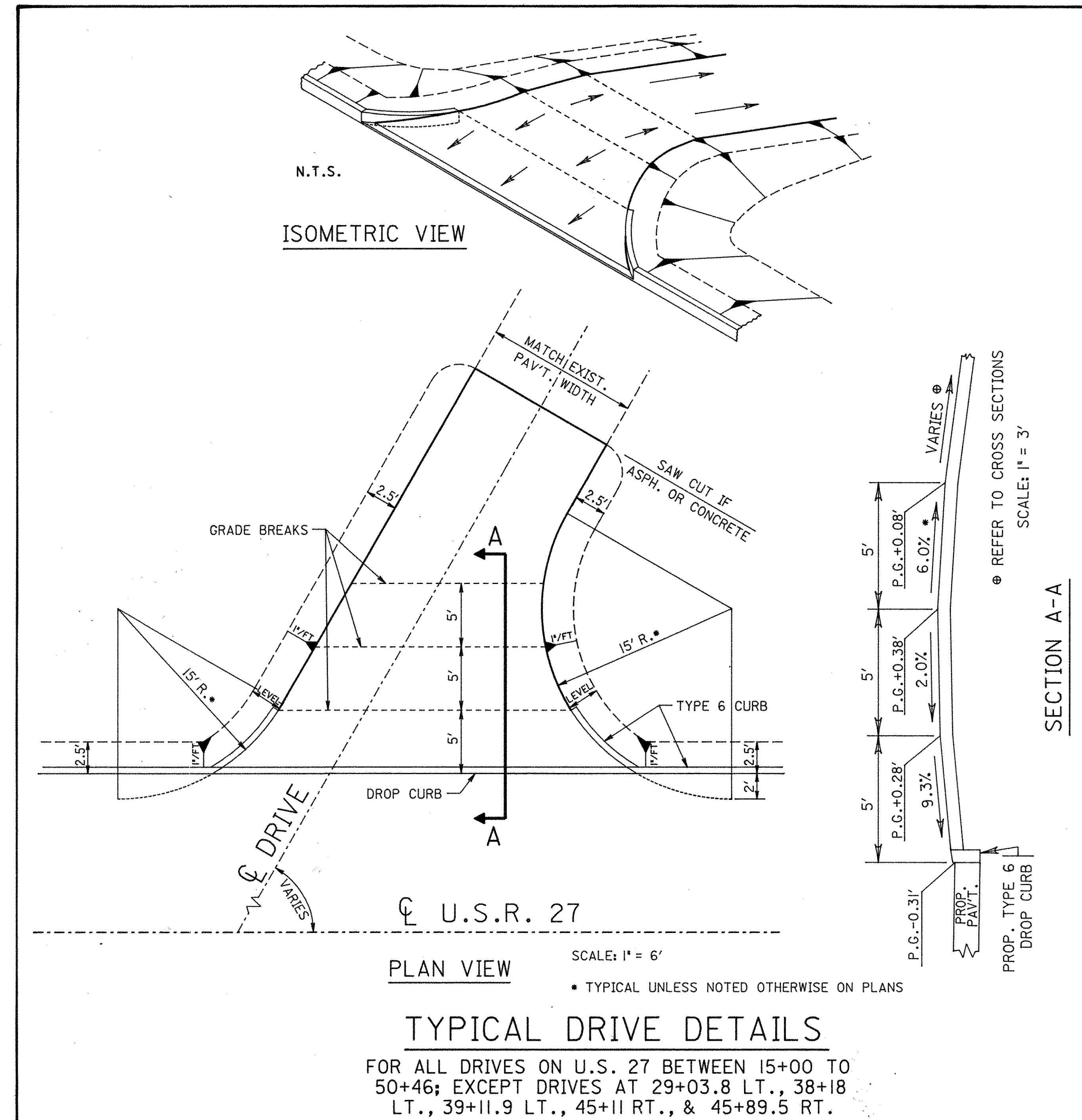
7-P	Sta. 45+89.5 Drive Right (Comm.) * Area	= 568 Sq. Ft.
	Item 404 Asphalt Conc. 568 S.F. x 1 1/2" x 1/27	= 1.75 Cu. Yd. Use 2 Cu. Yd.
	Item 301 Bitum. Aggregate Base 568 S.F. x 5" / 12" x 1/27	= 8.77 Cu. Yd. Use 9 Cu. Yd.
8-P	Sta. 46+43.5 Drive Left (Residence) * Area	= 290 Sq. Ft.
	Item 404 Asphalt Conc. 290 S.F. x 1 1/2" x 1/27	= 0.90 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 290 S.F. x 4" / 12" x 1/27	= 3.58 Cu. Yd. Use 4 Cu. Yd.
9-P	Sta. 47+45.3 Drive Left (Residence) * Area	= 414 Sq. Ft.
	Item 404 Asphalt Conc. 414 S.F. x 1 1/2" x 1/27	= 1.28 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 414 S.F. x 4" / 12" x 1/27	= 5.11 Cu. Yd. Use 5 Cu. Yd.
10-P	Sta. 47+50 Drive Right (Comm.) * Area	= 372 Sq. Ft. = 696 Sq. Ft.
	Item 404 Asphalt Conc. 372 S.F. x 1 1/2" x 1/27	= 1.15 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 372 S.F. x 5" / 12" x 1/27	= 5.74 Cu. Yd. Use 6 Cu. Yd.
	Item 304 Aggregate Base 696 S.F. x 10" / 12" x 1/27	= 21.48 Cu. Yd. Use 22 Cu. Yd.
34 22-P	Sta. 47+94.8 Drive Left (Residence) * Area	= 318 Sq. Ft.
	Item 404 Asphalt Conc. 318 S.F. x 1 1/2" x 1/27	= 0.98 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 318 S.F. x 4" / 12" x 1/27	= 3.93 Cu. Yd. Use 4 Cu. Yd.
23-P	Sta. 49+43.5 Drive Left (Residence) * Area	= 442 Sq. Ft.
	Item 404 Asphalt Conc. 442 S.F. x 1 1/2" x 1/27	= 1.36 Cu. Yd. Use 2 Cu. Yd.
	Item 301 Bitum. Aggregate Base 442 S.F. x 4" / 12" x 1/27	= 5.46 Cu. Yd. Use 6 Cu. Yd.
24-P	Sta. 50+46 Drive Left (Residence) * Area	= 280 Sq. Ft. = 44 Sq. Ft.
	Item 404 Asphalt Conc. 280 S.F. x 1 1/2" x 1/27	= 0.86 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 280 S.F. x 4" / 12" x 1/27	= 3.46 Cu. Yd. Use 4 Cu. Yd.
	Item 304 Aggregate Base 44 S.F. x 8" / 12" x 1/27	= 1.09 Cu. Yd. Use 1 Cu. Yd.

25-P	Sta. 51+94 Drive Left (Residence) * Area	= 652 Sq. Ft.
	Item 404 Asphalt Conc. 652 S.F. x 1 1/2" x 1/27	= 2.01 Cu. Yd. Use 2 Cu. Yd.
	Item 301 Bitum. Aggregate Base 652 S.F. x 4" / 12" x 1/27	= 8.05 Cu. Yd. Use 8 Cu. Yd.
36 3-P	Sta. 67+78.5 Drive Left (Residence) * Area	= 392 Sq. Ft.
	Item 404 Asphalt Conc. 392 S.F. x 1 1/2" x 1/27	= 1.21 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 392 S.F. x 4" / 12" x 1/27	= 4.84 Cu. Yd. Use 5 Cu. Yd.
4-P	Sta. 68+31 Drive Left (Residence) * Area	= 332 Sq. Ft. = 104 Sq. Ft.
	Item 404 Asphalt Conc. 332 S.F. x 1 1/2" x 1/27	= 1.02 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 332 S.F. x 4" / 12" x 1/27	= 4.10 Cu. Yd. Use 4 Cu. Yd.
	Item 304 Aggregate Base 104 S.F. x 8" / 12" x 1/27	= 2.57 Cu. Yd. Use 3 Cu. Yd.
5-P	Sta. 68+97 Drive Right (Comm.) * Area	= 354 Sq. Ft. = 291 Sq. Ft.
	Item 404 Asphalt Conc. 354 S.F. x 1 1/2" x 1/27	= 1.09 Cu. Yd. Use 1 Cu. Yd.
	Item 301 Bitum. Aggregate Base 354 S.F. x 5" / 12" x 1/27	= 5.46 Cu. Yd. Use 5 Cu. Yd.
	Item 304 Aggregate Base 291 S.F. x 10" / 12" x 1/27	= 8.98 Cu. Yd. Use 9 Cu. Yd.
6-P	Sta. 71+86 Drive Right (Comm.) * Area	= 412 Sq. Ft.
	Item 404 Asphalt Conc. 412 S.F. x 1 1/2" x 1/27	= 1.27 Cu. Yd. Use 2 Cu. Yd.
	Item 301 Bitum. Aggregate Base 412 S.F. x 5" / 12" x 1/27	= 6.36 Cu. Yd. Use 7 Cu. Yd.
7-P	Sta. 72+19.5 Drive Left (Comm.) * Area	= 956 Sq. Ft.
	Item 404 Asphalt Conc. 956 S.F. x 1 1/2" x 1/27	= 2.95 Cu. Yd. Use 3 Cu. Yd.
	Item 301 Bitum. Aggregate Base 956 S.F. x 5" / 12" x 1/27	= 14.75 Cu. Yd. Use 15 Cu. Yd.
39 3-P	Sta. 301+00 Drive Right (Comm.) * Area	= 1176 Sq. Ft. = 960 Sq. Ft.
	Item 404 Asphalt Conc. 1176 S.F. x 1 1/2" x 1/27	= 3.63 Cu. Yd. Use 4 Cu. Yd.
	Item 301 Bitum. Aggregate Base 1176 S.F. x 5" / 12" x 1/27	= 18.15 Cu. Yd. Use 18 Cu. Yd.
	Item 304 Aggregate Base 960 S.F. x 10" / 12" x 1/27	= 29.63 Cu. Yd. Use 30 Cu. Yd.

Sheet Ref.  
No. No.  
39

4-P	Sta. 303+16.28 Rt. (COMM.) * Area	= 1721 Sq. Ft.
	Item 404 Asphalt Conc. 1721 S.F. x 1 1/2" x 1/27	= 5.31 Cu. Yd. Use 6 Cu. Yd.
	Item 301 Bitum. Aggregate Base 1721 S.F. x 5" / 12" x 1/27	= 26.56 Cu. Yd. Use 27 Cu. Yd.

Item 304 Aggregate Base  
104 S.F. x 10" / 12" x 1/27  
= 3.21 Cu. Yd.  
Use 4 Cu. Yd.



### Drive Pipe Removal Quantities

Drive Station	Side	Item 202 Pipe Removed, 24" and Under
U.S. 27		
7+03	Lt.	38 L.F.
17+35.7	Lt.	21 L.F.
18+71.3	Lt.	16 L.F.
19+70.5	Lt.	14 L.F.
24+10	Rt.	22 L.F.
24+50	Lt.	50 L.F.
28+33.8	Lt.	56 L.F.
28+38.7-29+03	Lt.	109 L.F.
30+44.10	Lt.	26 L.F.
31+34.5	Lt.	30 L.F.
31+85	Rt.	21 L.F.
32+28	Lt.	21 L.F.
33+11	Rt.	28 L.F.
33+67.10	Lt.	26 L.F.
34+02	Lt.	23 L.F.
35+08	Rt.	52 L.F.
35+08	Rt.	37 L.F.
36+52.8	Lt.	28 L.F.
37+00	Rt.	46 L.F.
37+50	Rt.	37 L.F.
47+45.3	Lt.	34 L.F.
47+50	Rt.	38 L.F.
47+94.8	Lt.	17 L.F.
49+43.5	Lt.	35 L.F.
50+46	Lt.	26 L.F.
51+94	Lt.	25 L.F.
Stillwell-Beckett		
67+78.5-68+31	Lt.	88 L.F.
72+19.5	Lt.	167 L.F.
Lane Mill		
301+00	Rt.	120 L.F.
304+00	Rt.	27 L.F.
<b>TOTAL: 1278 L.F.</b>		

Quantity carried to General Summary

### EARTHWORK & SEEDING

Station to Station	Item 203		Item 659
	Excavation Cu. Yd.	Embankment Cu. Yd.	Seeding and Mulching Sq. Yd.
U.S. 27			
7+50-12+00	1332	76	2251
12+00-18+00	1064	323	3036
18+00-24+00	505	612	2923
24+00-30+00	368	999	2721
30+00-36+00	245	1178	3086
36+00-42+00	391	652	2077
42+00-48+00	617	513	1702
48+00-53+50	450	781	3618
Stillwell-Beckett			
67+50-73+00	312	142	1113
73+00-76+50	447	96	817
Lane Mill			
300+50-305+41.81	2687	169	2839
State Route 130			
200+50-201+50	1665	4	444
201+50-206+50	2908	2328	5715
Hussey			
158+22-159+50	308	10	364
<b>TOTALS: 13,299 # 7888 # 32706</b>			
# Quantities carried to General Summary			

#### Fertilizer & Water

Seeded Area 20,417 Sq. Yd.  
Sodded Area 8,252 Sq. Yd. Δ  
Ditch Erosion Protection 366 Sq. Yd.  
29,035 Sq. Yd.

659 Commercial Fertilizer  
 $29,035 \text{ S.Y.} \times 9.5 \text{ F./S.Y.} \times 20' \times 1/2000 = 2.61 \text{ Ton}^{\oplus}$   
1000 S.F.

659 Water  
 $2(20,417 \text{ S.Y.} \times 9.5 \text{ F./S.Y.} \times 120 \text{ Gal.} \times 1/1000) = 4.41 \text{ MGal}$   
1000 S.F. Use 4.4 MGal<sup>⊗</sup>

<sup>⊕</sup>Quantities carried to General Notes (Sht. 5)

#### Seeding & Mulching Deduction Calculation:

Ditch sod quantity from summaries. = 979 S.Y.

Seed area deduction due to lawn sod. Refer to table below. = 10944 S.Y.

Ditch erosion protection from summaries. = 366 S.Y.

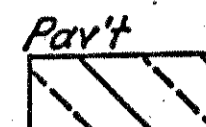
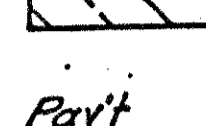
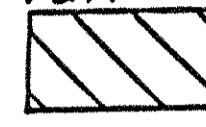


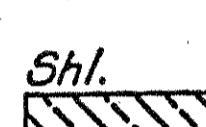



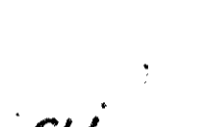



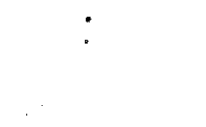


Deduction to seeding & mulching carried to adjacent table. = 12289 S.Y. Δ


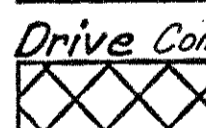
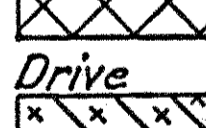
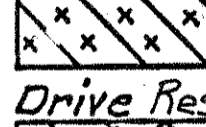
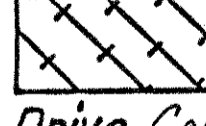
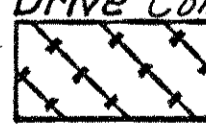

#### Sod Area Calculation:

Total sod area =  
7273 S.Y. (lawn sod) + 979 S.Y.  
(ditch sod) = 8252 S.Y. Δ

#### Item 203 Subgrade Compaction

Pavement as per Pavement Calc.	15,359 S.Y.
Shoulders as per Pavement Calc.	2,205 S.Y.
Add 18" (Outside Edge)	2,122 S.Y.
<b>TOTAL:</b>	<b>19,686 S.Y.</b>

- #### PAVING LEGEND
-  Item 451 10" Reinforced Concrete Pavement
  -  Item 301 5" Bituminous Aggregate Base, AC-20
  -  Item 202 Pavement Removed
  -  Item 404 1/4" Asphalt Concrete, AC-20
  -  Item 403 Varying Depth Asphalt Concrete, AC-20
  -  Item 407 Tack Coat
  -  Item 409 Seal Coat using 0.008 C.Y. #8 Cover Aggregate per S.Y. and 0.30 Gal. of Bituminous Material per S.Y.
  -  Item 304 8" Aggregate Base As per Plan
  -  Item 409 Seal Coat using 0.008 C.Y. #8 Cover Aggregate per S.Y. and 0.30 Gal. of Bituminous Material per S.Y.
  -  Item 301 3" Bituminous Aggregate Base, AC-20
  -  Item 408 Bituminous Prime Coat applied at a rate of 0.40 Gal. per S.Y.
  -  Item 304 Aggregate Base, Variable Depth, As per Plan
  -  Item 409 Seal Coat using 0.008 C.Y. #8 Cover Aggregate per S.Y. and 0.30 Gal. of Bituminous Material per S.Y.
  -  Item 402 3" Asphalt Concrete, AC-20
  -  Item 301 6" Bituminous Aggregate Base, AC-20
  -  Item 304 Aggregate Base, Variable Depth, As per Plan

-  Item 404 1" Asphalt Concrete, AC-20 Drive
-  Item 301 4" Bituminous Aggregate Base
-  Item 404 1" Asphalt Concrete, AC-20 Drive
-  Item 301 5" Bituminous Aggregate Base
-  Item 452 Plain Concrete Pavement, 6" Depth
-  Item 304 8" Aggregate Base As per Plan
-  Item 304 10" Aggregate Base As per Plan

**604 Reference Monuments 42**  
See General Notes For Location.

### Item 660 Sodding (Lawn Areas)

From Sheet No.	Station to Station	Side	Area Planimetered from 20 Scale Sq. Ft.	(Lawn) Sodding Sq. Yd.	Seeded Area Deducted	From Sheet No.	Station to Station	Side	Area Planimetered from 20 Scale Sq. Ft.	(Lawn) Sodding Sq. Yd.	Seeded Area Deducted
U.S. 27											
25+41	158+22 Hussey Rd.-17+32 U.S.27	Lt.	3916	435	574	31	37+72-38+03	Rt.	224	25	59
25+27	17+32-18+65.15	Lt.	2206	245	348	31	38+05-39+18	Rt.	2032	226	334
25+27	17+81-20+98	Rt.	4285	476	655	31	39+16-40+07	Rt.	872	97	171
27	18+76.5-19+66	Lt.	1560	173	249	31	40+08-40+57	Rt.	950	106	144
27	19+75-20+51	Lt.	830	92	186	31	40+58-41+35	Rt.	1316	146	220
27	20+61-20+80	Lt.	200	22	42	31	41+49-41+94	Rt.	680	76	110
27	21+11-22+24	Rt.	1864	207	345	33+36	68+35 Still-Beck.-46+63 U.S.27	Lt.	4860	540	733
28	25+47-28+82	Rt.	6184	687	1054	33	46+66-47+60	Lt.	2074	230	327
28	25+80-26+28	Lt.	1082	120	179	33+34	47+71-48+15	Lt.	770	86	130
28	26+62-27+41	Lt.	1410	157	265	34	48+20-49+56	Lt.	3114	346	478
28	27+59-28+34	Lt.	936	104	197	34	49+68-50+67	Lt.	2290	254	358
28	28+44-28+85	Lt.	502	56	107	34	50+69-52+07	Lt.	2770	308	439
28+30	29+20-30+36	Lt.	2260	251	382	34	52+20-53+50	Lt.	2150	239	376
30	30+52-31+29	Lt.	1858	207	289	36	Stillwell-Beckett Rd.				
30	31+40-32+21	Lt.	1564	174	251	36	67+50-67+69	Lt.	200	22	56
30	31+78-32+86	Rt.	2008	223	333	36	67+85-68+23	Lt.	400	44	83
30	32+15-33+59	Lt.	2022	225	387	<b>TOTAL: * 72.73 10944</b>					
30	32+94-34+08	Rt.	1640	182	293						
30	33+75-33+94	Lt.	450	50	65						
30	34+10-34+91	Lt.	1244	138	227						
30+31	35+09-36+43	Lt.	2480	276	405						
31	36+60-36+73	Lt.	254	28	93						

\* Lawn Sodded Quantity Carried to General Summary



# SUPERELEVATION TABLES

$D_c = 2^{\circ}30'$  SE = 0.040'/  
U.S. 27 SUPERELEVATION TABLE

Station	Left		Profile	Right	
	Off.	Elev.	Grade	Off.	Elev.
9+41.50	12.83	891.56	891.76	12.83	891.56
+50	13	891.68	891.88	13	891.71
+75	13.5	892.08	892.29	13.5	892.20
10+00.00	14	892.55	892.77	14	892.77
+25	14.5	893.10	893.33	14.5	893.43
+50	15	893.72	893.95	15	894.15
+58.50	15.17	893.94	894.18	15.17	894.42
+75	15.5	894.35	894.66	15.5	894.97
11+00	16	895.00	895.43	16	895.86
+25	16.5	895.73	896.28	16.5	896.83
+50.00	17	896.52	897.20	17	897.88
+75	17.5	897.49	898.19	17.5	898.89
12+00 Bk.	18	898.50	899.22	18	899.94
12+00 Ahd.	20	898.42	899.22	20	900.02
+25		899.45	900.25		901.05
+50		900.48	901.28		902.08
+75		901.51	902.31		903.11
13+00		902.54	903.34		904.14
+25		903.57	904.37		905.17
+50		904.60	905.40		906.20
+75		905.63	906.43		907.23
14+00		906.66	907.46		908.26
+25		907.69	908.49		909.29
+50.00		908.72	909.52		910.32
+75		909.84	910.55		911.26
15+00		910.94	911.56		912.18
+25		911.82	912.35		912.88
+50		912.59	913.03		913.47
+75		913.30	913.66		914.02
+87.25		913.65	913.96		914.27
16+00		913.95	914.26		914.53
+25		914.54	914.85		915.03
+50		915.14	915.45		915.54
+75.00		915.74	916.05		916.05
17+00		916.32	916.63		916.54
+25		916.93	917.24		917.06
+50		917.50	917.81		917.54
+62.75	20	917.77	918.08	20	917.77

$D_c = 38^{\circ}11'50''$  SE = 0.040'/  
S.R. 130 SUPERELEVATION TABLE

Station	Left		Profile	Right	
	Off.	Elev.	Grade	Off.	Elev.
201+67.02	13	907.33	906.81	14.7	906.22
+75		907.51	907.05	14.54	906.54
202+00	13	908.06	907.78	14.04	907.48
+09.72	12.86	908.26	908.06	13.86	907.84
+25	12.58	908.56	908.47	13.58	908.26
+37.02	12.36	908.79	908.79	13.36	908.58
+50	12.13	909.03	909.12	13.13	908.92
+66.19	12	909.32	909.51	12.83	909.31

$D_c = 38^{\circ}11'50''$  SE = 0.040'/  
LANE MILL RD. SUPERELEVATION TABLE

Station	Left		Profile	Right	
	Off.	Elev.	Grade	Off.	Elev.
301+00	16	907.28	907.92	11	908.36
+04.65		907.47	908.11		908.55
+25	16	908.50	908.95		909.26
+47.35	15.16	909.63	909.87		910.04
+50	15.04	909.77	909.98		910.14
+74.65	13.9	911.00	911.00	11	911.00

$D_c = 2^{\circ}$  SE = 0.045'/  
S.R. 130 SUPERELEVATION TABLE

Station	Left		Profile	Right	
	Off.	Elev.	Grade	Off.	Elev.
202+66.19	12	909.32	909.51	12.83	909.31
+75		909.42	909.61	12.67	909.44
203+00		909.96	910.15	12.22	910.08
+20.05		910.37	910.56	12	910.56
+25		910.47	910.66		910.68
+50		910.93	911.12		911.23
+72.05		911.30	911.49		911.68
+75		911.34	911.54		911.74
204+00		911.63	911.92		912.21
+25		911.87	912.25		912.63
+50		912.08	912.55		913.02
+70.05		912.21	912.75		913.29
+75		912.26	912.80		913.34
205+00		912.47	913.01		913.55
+25	12	912.64	913.18	12	913.72
+50	11.82	912.78	913.31	11.82	913.84
+75	11.36	912.89	913.40	11.36	913.91
206+00.00	10.91	912.96	913.45	10.91	913.94
+25	10.45	913.02	913.45	10.45	913.86
+50	10	913.03	913.41	10	913.75

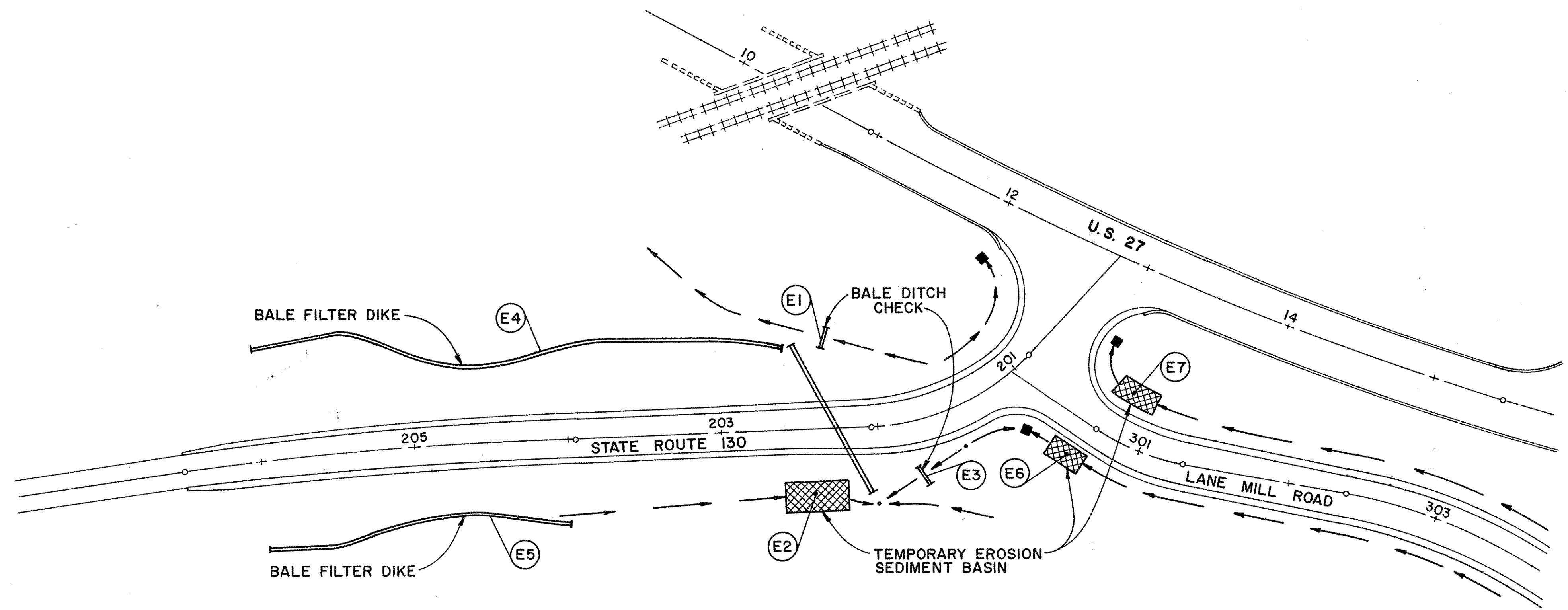
$D_c = 16^{\circ}30'$  SE = 0.040'/  
LANE MILL RD. SUPERELEVATION TABLE

Station	Left		Profile	Right	
	Off.	Elev.	Grade	Off.	Elev.
301+74.65	13.9	911.00	911.00	11	911.00
+75	13.88	911.01	911.01	11	911.01
302+00	12.73	912.18	912.04	12.16	911.90
+09.75	12.28	912.63	912.44	12.63	912.24
+25	11.58	913.33	913.07	13.38	912.77
+50	11	914.47	914.10	14	913.63
+64.65		915.14	914.70		914.14
+75		915.56	915.12		914.56
303+00		916.48	916.04		915.48
+25		917.28	916.84		916.28
+50		917.96	917.52		916.96
+75		918.52	918.08		917.52
304+00		918.98	918.54		917.98
+09.02		919.14	918.70		918.14
+25		919.35	918.99		918.53
+50		919.68	919.44	14	919.13
+63.92		919.86	919.69	13.52	919.48
+75		920.01	919.89	12.97	919.69
+99.02		920.32	920.32	11.80	920.14
305+00	11	920.34	920.34	11.75	920.15
+25	10.52	920.67	920.79	10.52	920.48
+41.81	9.7	920.91	921.09	9.7	920.71

Station	Left		Right	
	Offset	Elev.	Offset	Elev.
9+50			22.65'	891.31
9+75			22.12'	891.84
10+00	22.99'	892.18	21.59'	892.45
10+25	22.56'	892.74	21.06'	893.16
10+50	23.13'	893.38	20.53'	893.92
10+75	23.19'	894.03	20.00'	894.78
11+00	23.26'	894.70	20.00'	895.69
11+25	22.91'	895.46	20.00'	896.70
11+50	21.94'	896.31	20.00'	897.79
11+75	20.97'	897.35	20.00'	898.89
12+00	20.00'	898.42		

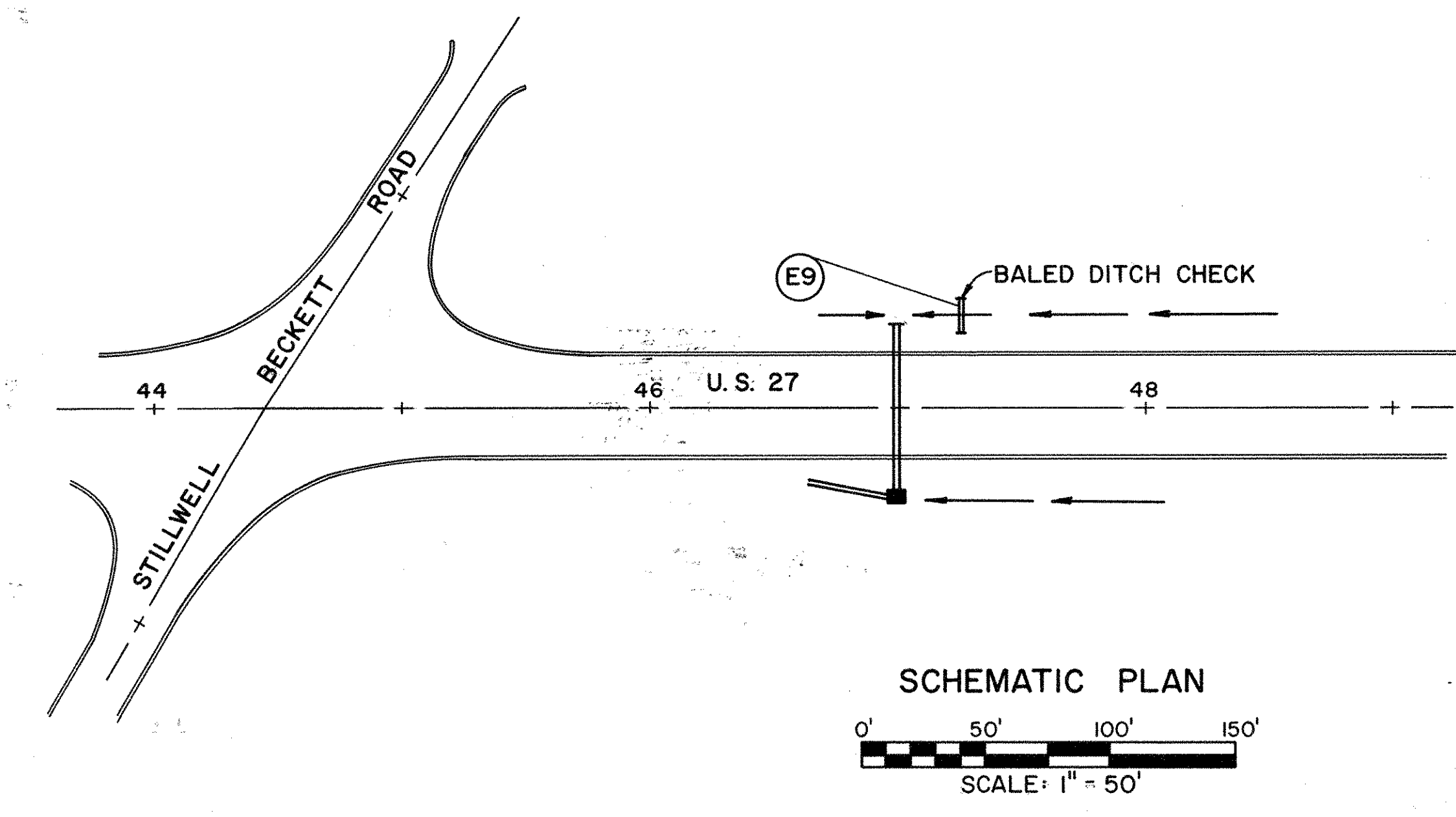
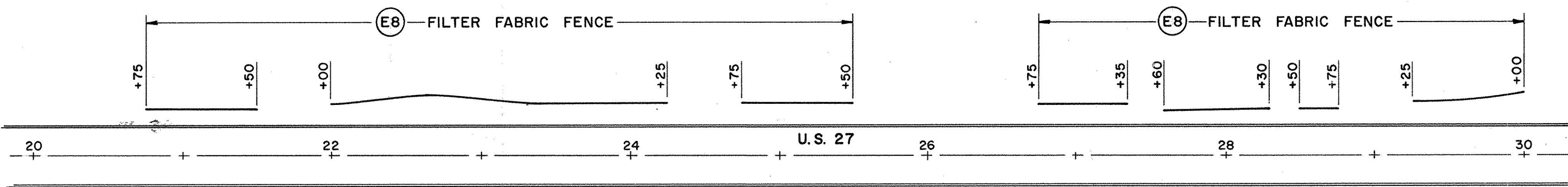
See Typical Sections and Super table above for Balance of Offsets and Elevation information.

# TEMPORARY EROSION AND SEDIMENT CONTROL PLAN



REFERENCE	STATION TO STATION	SIDE	DRAINAGE AREA IN ACRES	207		601	
				Temporary Erosion Sediment Basin	Straw or Hay Bales	Filter Fabric Fence	Rock Channel Protection Type C w/o Filter
				Cu. Yd.	Each	Lin. Ft.	Cu. Yd.
STATE ROUTE 130					*520		
E-1	202+25	Rt.			5		
E-2	202+20 - 202+60	Lt.	2.76	175		12	
E-3	201+75	Lt.			5		
E-4	202+60 - 206+00	Rt.			130		
E-5	204+00 - 206+00	Lt.			58		
LANE MILL							
E-6	300+50 - 300+75	Rt.	1.12	75		5	
E-7	300+70 - 301+00	Lt.	1.64	110		8	
U.S. ROUTE 27							
E-8	20+75 - 30+00	Lt.				605	
E-9	47+25	Lt.			5		
TOTALS				360	723	605	25

\*Please Note That There Are 65 Catch Basins Thruout The Project. Each Will Require 8 Straw or Hay Bales. Number of Straw or Hay Bales = 520. Quantities Carried to General Summary.



# GENERAL SUMMARY

SHEET NUMBER												PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
5	6	19	21	26	29	32	35	38	42										
																	ROADWAY		
	LUMP												201	11000	LUMP SUM		CLEARING AND GRUBBING		
						LUMP	LUMP	LUMP		LUMP			202	11000	LUMP SUM		STRUCTURE REMOVED		
				217								202	35200	217	LIN. FT.	PIPE REMOVED, OVER 24"			
		1278		1366	331	125	321	143	12			202	35100	3576	LIN. FT.	PIPE REMOVED, 24" AND UNDER			
				1765	153	211			2191			202	23000	4320	SQ. YD.	PAVEMENT REMOVED			
				399		73						202	30000	472	SQ. FT.	WALK REMOVED			
389												202	23500	389	SQ. YD.	WEARING COURSE REMOVED			
				353								202	32600	353	LIN. FT.	GUTTER REMOVED			
					11	2	2	2	1			202	58100	18	EACH	CATCH BASIN REMOVED			
		13,299										203	12000	13,299	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION			
		7888										203	20000	7888	CU. YD.	EMBANKMENT			
		19686										203	50000	19686	SQ. YD.	SUBGRADE COMPACTION			
				351								516	13600	351	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER			
		42										604	40500	42	EACH	REFERENCE MONUMENT			
						73						608	13000	73	SQ. FT.	6" CONCRETE WALK			
				325								606	13000	325	LIN. FT.	GUARDRAIL, TYPE 5			
				3								606	25000	3	EACH	ANCHOR ASSEMBLY, TYPE A			
				1								606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T			
				4								606	35001	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1 AS PER PLAN (SEE NOTE ON S.H. 6)			
																	EROSION CONTROL		
	100		360									207	50000	460	CU. YD.	TEMPORARY BENCHES, DAMS AND SEDIMENT BASINS			
	100		723									207	70000	823	EACH	STRAW OR HAY BALES			
	4843											207	10000	4843	SQ. YD.	TEMPORARY SEEDING AND MULCHING			
	200		605									207	30000	805	LIN. FT.	FILTER FABRIC FENCE			
44	13											659	35000	57	M GAL.	WATER			
		20417										659	10000	20417	SQ. YD.	SEEDING AND MULCHING			
	1211											659	14000	1211	SQ. YD.	REPAIR SEEDING AND MULCHING			
2.61	0.26											659	20000	2.87	TON	COMMERCIAL FERTILIZER			
		7273		177			1	34	767			660	30000	8252	SQ. YD.	SODDING			
			25									601	34200	25	CU. YD.	ROCK CHANNEL PROTECTION TYPE C WITHOUT FILTER			
								3	7			601	32200	10	CU. YD.	ROCK CHANNEL PROTECTION TYPE C W/FILTER			
								366				670	40000	366	SQ. YD.	DITCH EROSION PROTECTION			
																	MAINTENANCE OF TRAFFIC		
22												404	35000	22	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC			
0.38												614	21300	0.38	MI.	TEMPORARY CENTERLINE, CLASS I, 740.05' TYPE C			
4.37												614	21100	4.37	MI.	TEMPORARY CENTERLINE, CLASS I, 642' PAINT			
1.45												614	22100	1.45	MI.	TEMPORARY EDGE LINE, CLASS I, 642' PAINT			
1.67												614	26200	1.67	LIN. FT.	TEMPORARY STOP LINE, CLASS I, 642' PAINT			
150												614	24200	150	LIN. FT.	TEMPORARY DOTTED LINE, CLASS I, 642' PAINT			
1378												615	25000	1378	SQ. YD.	TEMPORARY PAVEMENT, CLASS B			
LUMP												615	10000	LUMP SUM		TEMPORARY ROAD			
1877												615	35001	1877	SQ. YD.	TEMPORARY PAVEMENT, AS PER PLAN See Sheet 6			
495												614	23200	495	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I, 642' PAINT			
200												622	40020	200	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"			
							0.3	0.6	1.7								DRAINAGE		
	20											602	20000	2.6	CU. YD.	CONCRETE MASONRY			
	20											603	00400	20	LIN. FT.	4" CONDUIT, TYPE E 707.19			
	100											603	01400	20	LIN. FT.	6" CONDUIT, TYPE E 706.01, 706.02 OR 706.08			
	2											603	01100	100	LIN. FT.	6" CONDUIT, TYPE C			
												604	37000	2	EACH	INSPECTION WELL			

# GENERAL SUMMARY

SHEET NUMBER												PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
5	6	19	19a	21	26	29	32	35	38	42									
																	DRAINAGE (CONT'D)		
																	PRECAST REINFORCED CONCRETE OUTLET (SEE DETAIL SH. 19a)		
																	6" CONDUIT, TYPE B 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS 931		
																	6" CONDUIT, TYPE F 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS 931		
																	8" CONDUIT, TYPE C		
																	12" CONDUIT, TYPE B		
																	12" CONDUIT, TYPE C		
																	12" CONDUIT, TYPE D		
																	15" CONDUIT, TYPE B		
																	15" CONDUIT, TYPE C		
																	15" CONDUIT, TYPE D		
																	18" CONDUIT, TYPE B		
																	18" CONDUIT, TYPE C		
																	21" CONDUIT, TYPE B		
																	24" CONDUIT, TYPE B		
																	24" CONDUIT, TYPE C		
																	27" CONDUIT, TYPE B		
																	36" CONDUIT, TYPE B		
																	CATCH BASIN NO. 2-3		
																	CATCH BASIN NO. 7		
																	CATCH BASIN NO. 6		
																	CATCH BASIN NO. 2-2B		
																	CATCH BASIN NO. 3, W/ V-GRATE		
																	MANHOLE NO. 3		
																	MANHOLE NO. 5		
																	INLET NO. 1		
																	6" SHALLOW PIPE UNDERDRAIN		
																	AGGREGATE DRAINS FOR SPRINGS		
																	6" UNCLASSIFIED PIPE UNDERDRAIN 707.01 TYPE III OR 707.21 TYPE III OR 707.15, AS PER PLAN, See Sheet 6		
																	PAVEMENT		
																	BITUMINOUS AGGREGATE BASE, AC-20		
																	AGGREGATE BASE, AS PER PLAN See Sheet 6		
																	ASPHALT CONCRETE, AC-20		
																	ASPHALT CONCRETE, AC-20		
																	ASPHALT CONCRETE, AC-20		
																	ASPHALT CONCRETE, AC-20 (DRIVEWAYS)		
																	10" REINFORCED CONCRETE PAVEMENT		
																	6" PLAIN CONCRETE PAVEMENT		
																	TACK COAT		
																	BITUMINOUS PRIME COAT		
																	SEAL COAT BITUMINOUS MATERIAL		
																	SEAL COAT COVER AGGREGATE, NO. 8		
																	CURB, TYPE 6		
																	FOR TRAFFIC CONTROL GENERAL SUMMARY, SEE SHEET NO. 82		
																	MAINTAINING TRAFFIC		
																	FIELD OFFICE TYPE B		
																	CONSTRUCTION LAYOUT STAKES		
																	MOBILIZATION		



REFERENCE POT STA. 5+10.53

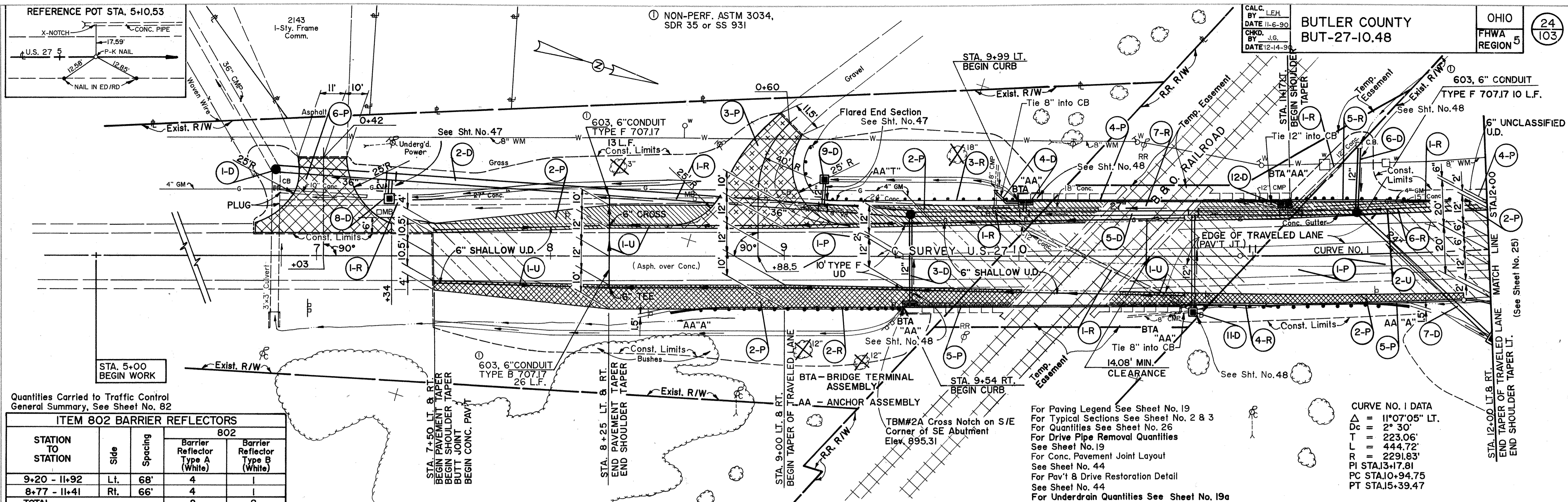
NON-PERF. ASTM 3034, SDR 35 or SS 931

CALC. BY LEH  
 DATE 11-6-90  
 CHKD. BY J.G.  
 DATE 12-14-90

BUTLER COUNTY  
 BUT-27-10.48

OHIO  
 FHWA REGION 5

24  
 103

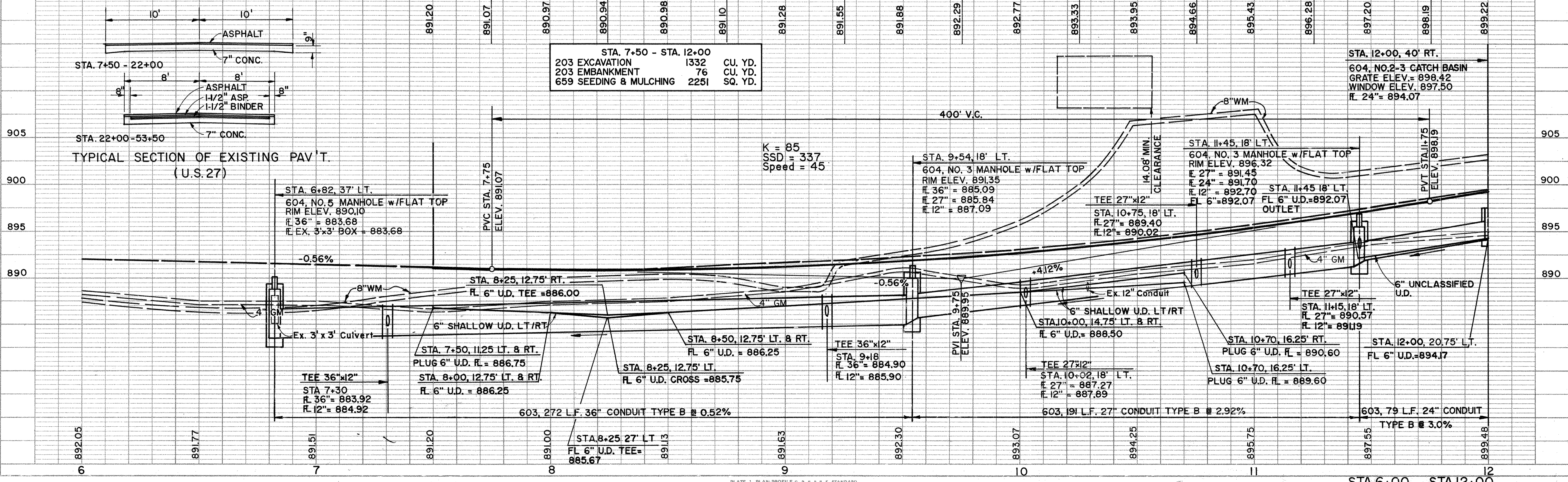


Quantities Carried to Traffic Control  
 General Summary, See Sheet No. 82

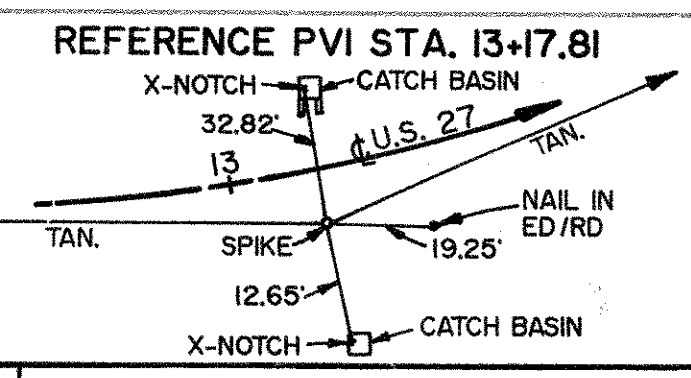
ITEM 802 BARRIER REFLECTORS				
STATION TO STATION	Side	Spacing	802	
			Barrier Reflector Type A (White)	Barrier Reflector Type B (White)
9+20 - 11+92	Lt.	68'	4	1
8+77 - 11+41	Rt.	66'	4	1
<b>TOTAL</b>			<b>8</b>	<b>2</b>

For Paving Legend See Sheet No. 19  
 For Typical Sections See Sheet No. 2 & 3  
 For Quantities See Sheet No. 26  
 For Drive Pipe Removal Quantities See Sheet No. 19  
 For Conc. Pavement Joint Layout See Sheet No. 44  
 For Pav't & Drive Restoration Detail See Sheet No. 44  
 For Underdrain Quantities See Sheet No. 19a

CURVE NO. 1 DATA  
 $\Delta = 11^{\circ}07'05''$  LT.  
 $D_c = 2^{\circ}30'$   
 $T = 223.06'$   
 $L = 444.72'$   
 $R = 2291.83'$   
 $PI STA. 13+17.81$   
 $PC STA. 10+94.75$   
 $PT STA. 15+39.47$



BEGIN PROJECT  
STA. 12+00  
S.L.M. = 10.48  
HES-2(18)

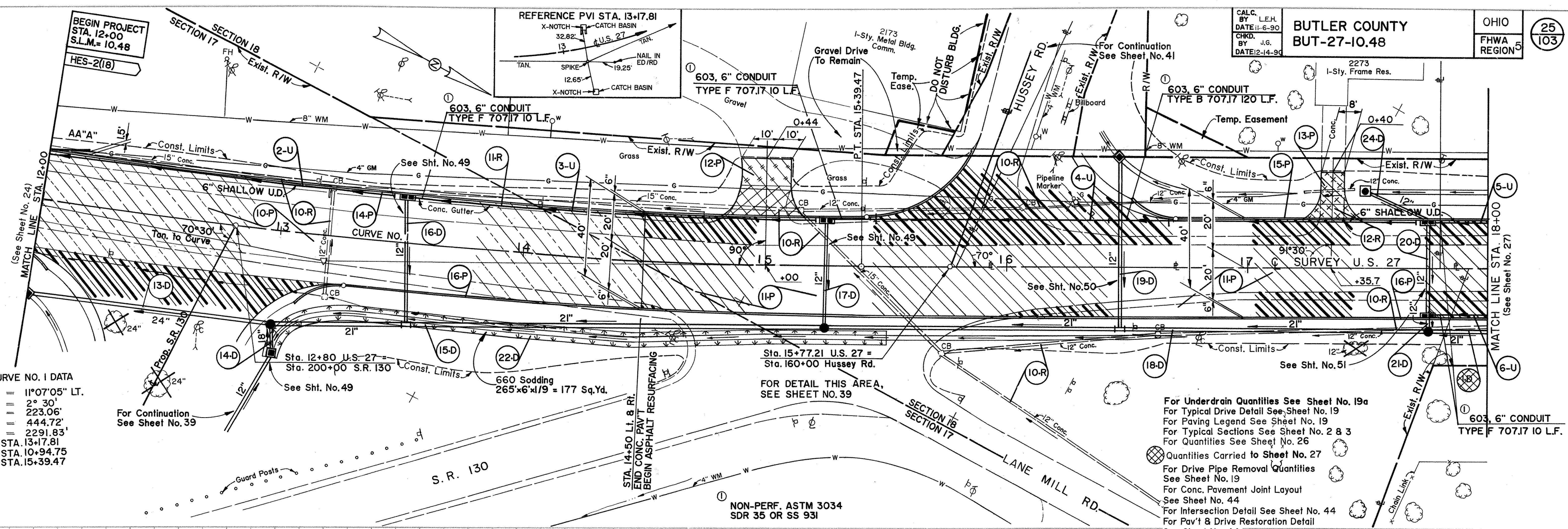


CALC. BY L.E.H.  
DATE 11-6-90  
CHKD. BY J.G.  
DATE 12-14-90

**BUTLER COUNTY**  
BUT-27-10.48

OHIO  
FHWA REGION 5

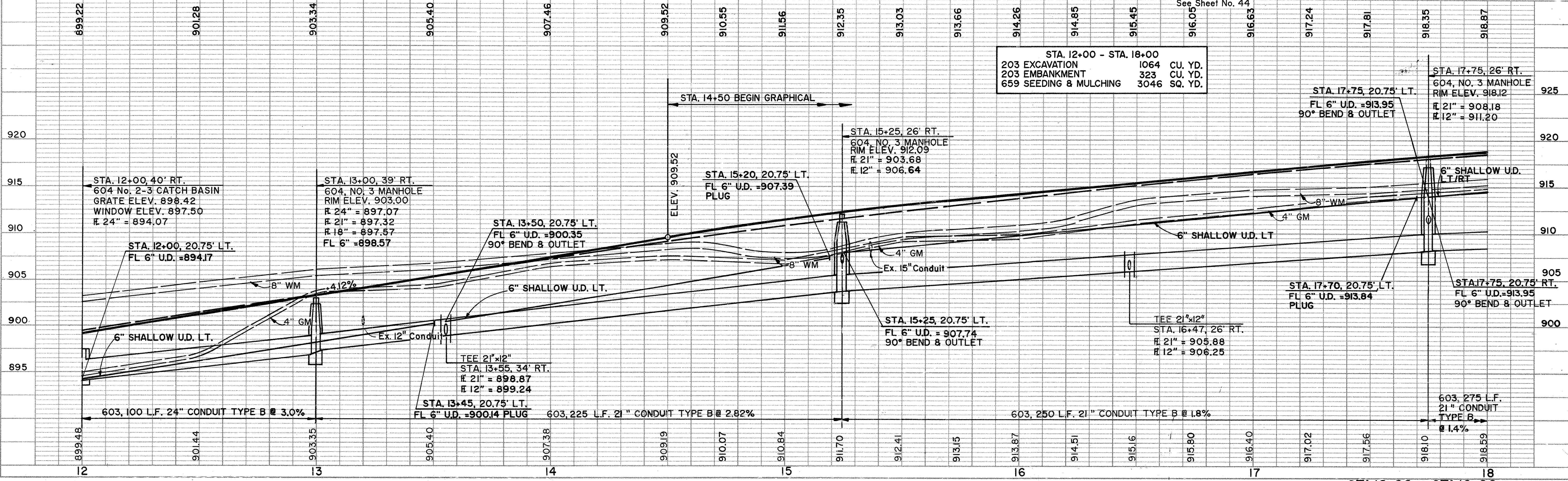
25  
103



**CURVE NO. 1 DATA**  
 $\Delta = 11^{\circ}07'05''$  LT.  
 $D_c = 2^{\circ}30'$   
 $T = 223.06'$   
 $L = 444.72'$   
 $R = 2291.83'$   
 P.I. STA. 13+17.81  
 P.C. STA. 10+94.75  
 P.T. STA. 15+39.47

For Underdrain Quantities See Sheet No. 19a  
 For Typical Drive Detail See Sheet No. 19  
 For Paving Legend See Sheet No. 19  
 For Typical Sections See Sheet No. 2 & 3  
 For Quantities See Sheet No. 26  
 Quantities Carried to Sheet No. 27  
 For Drive Pipe Removal Quantities See Sheet No. 19  
 For Conc. Pavement Joint Layout See Sheet No. 44  
 For Intersection Detail See Sheet No. 44  
 For Pav't & Drive Restoration Detail See Sheet No. 44

STA. 12+00 - STA. 18+00	
203 EXCAVATION	1064 CU. YD.
203 EMBANKMENT	323 CU. YD.
659 SEEDING & MULCHING	3046 SQ. YD.



# ESTIMATED QUANTITIES

## DRAINAGE

CALC. BY DATE 11-6-90	FED. RD. DIVISION 5	STATE OHIO	PROJECT BUT-27-10.48
CHKD. BY DATE 12-14-90			

BUT-27-10.48

REF. NO.	STATION TO STATION	SIDE	603					604							660		603-Bends & Branches		SEE SHEET NO.	
			8" Conduit Type C	12" Conduit Type B	12" Conduit Type C	18" Conduit Type C	21" Conduit Type B	24" Conduit Type B	27" Conduit Type B	36" Conduit Type B	No. 5 Manhole	No. 3 Manhole	No. 2-3 Catch Basin	No. 3 Catch Basin	No. 2-2B Catch Basin	No. 6 Catch Basin	No. 7 Catch Basin	Sodding		45° Bends 8"
	Sta. 6+00 ~ Sta. 12+00		Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Each	Each	Each	Sq. Yd.			
1-D	6+82	Lt.																		
2-D	6+82 ~ 9+54	Lt.																		
3-D	9+54	Lt. & Rt.																		
4-D	10+03	Lt.	16	38																
5-D	9+54 ~ 11+45	Lt.																		
6-D	11+45	Lt.																		
7-D	11+45 ~ 12+00	Lt. & Rt.																		
8-D	7+30	Lt.																		
9-D	9+18	Lt.																		
10-D	NOT USED																			
11-D	10+75	Lt. & Rt.	8	42																
12-D	11+15	Lt.																		
	Sta. 12+00 ~ Sta. 18+00																			
13-D	12+00 ~ 13+00	Rt.																		
14-D	13+00 ~ 13+02	Rt.																		
15-D	13+00 ~ 15+25	Rt.																		
16-D	13+50 ~ 13+55	Lt. & Rt.																		
17-D	15+25	Lt. & Rt.																		
18-D	15+25 ~ 17+45	Rt.																		
19-D	16+47	Lt. & Rt.																		
20-D	17+75	Lt. & Rt.																		
21-D	17+75	Rt.																		
22-D	13+00 ~ 15+50	Rt.																		
23-D	Not Used																			
24-D	17+48 ~ 17+75	Lt.																		
<b>TOTAL</b>			24	323	71	12	475	179	191	272	1	5	1	4	5	3	177			

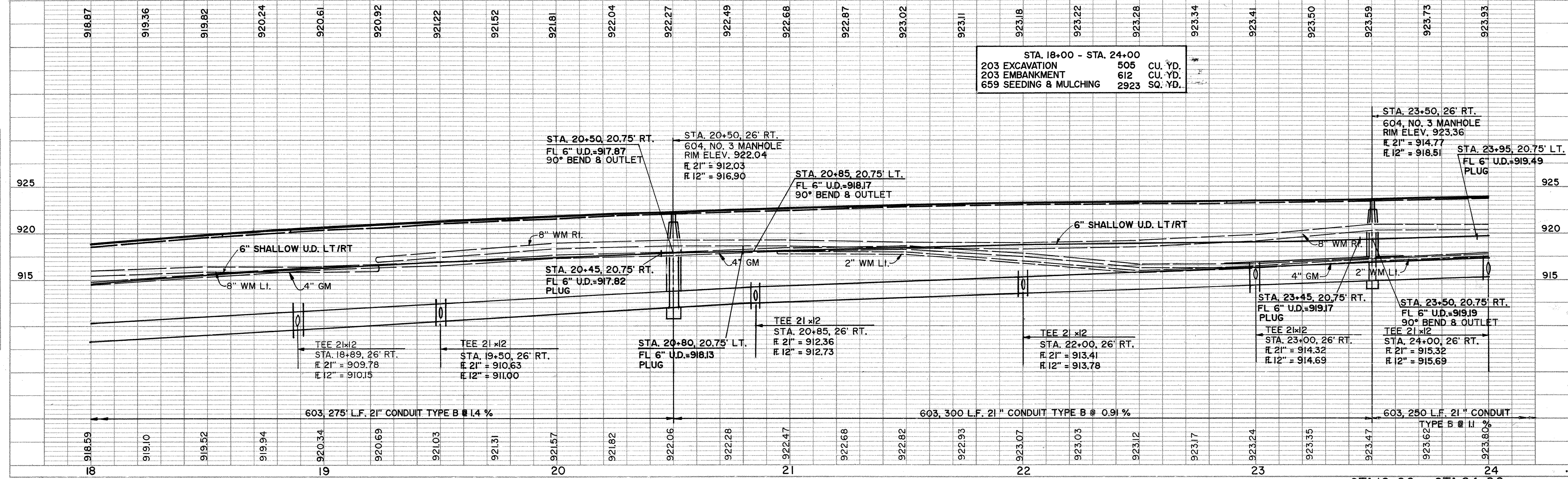
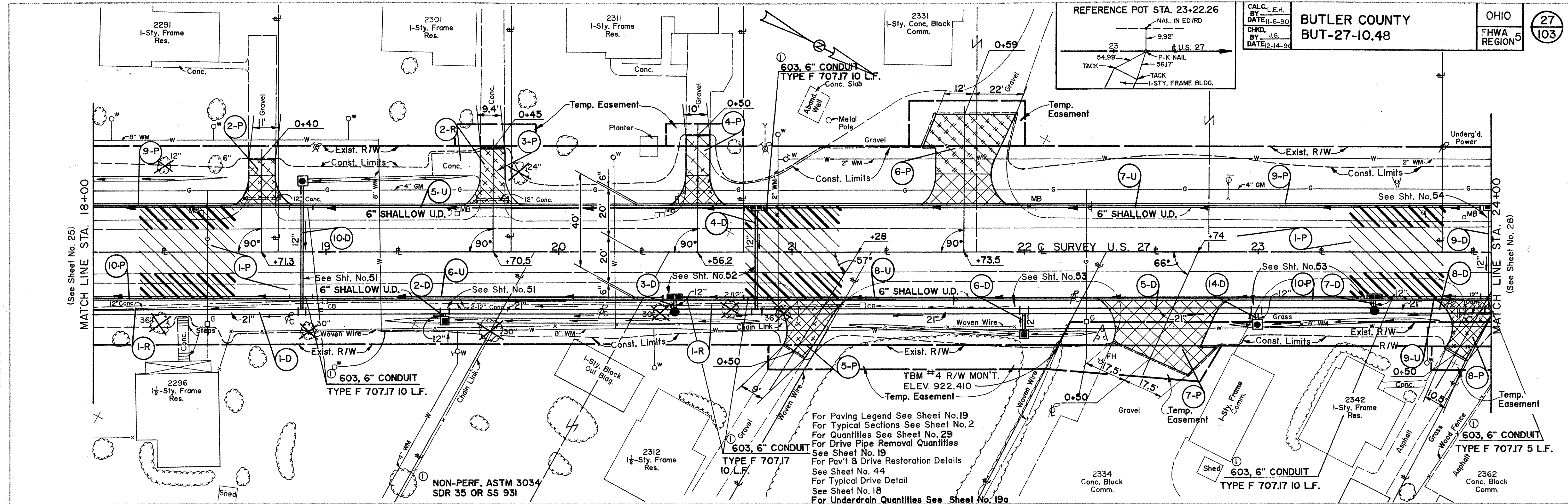
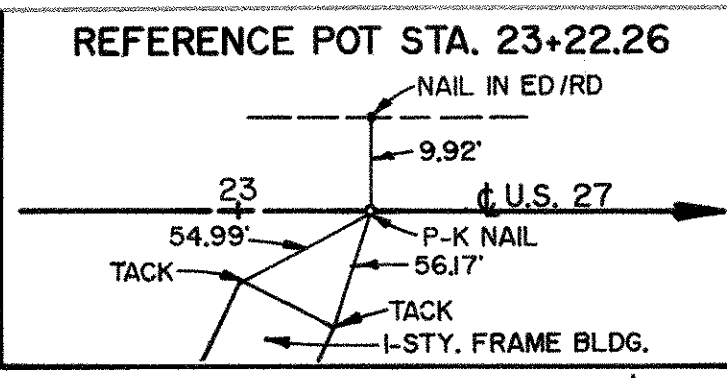
## ROADWAY & PAVEMENT

For Drive Pipe Removal Quantities See Sheet No. 19

REF. NO.	STATION TO STATION	SIDE	202					301				304		402		403		404		407		408		409		516		451		452		606			609	SEE SHEET NO.			
			Pav't. Removed	Pipe Removed 24" & Under	Pipe Removed Over 24"	Gutter Removed	Catch Basin Removed	Walk Removed	3" Bitum. Aggre. Base AC-20	4" Bitum. Aggre. Base AC-20	5" Bitum. Aggre. Base AC-20	6" Bitum. Aggre. Base AC-20	Varies Aggre. Base As Per Plan	10" Aggre. Base As Per Plan	3" Asphalt Conc. AC-20	1 3/4" Asphalt Conc. AC-20	Asph. Conc. Varying Depth AC-20	1" Asphalt Conc. AC-20	1 1/4" Asphalt Conc. AC-20	Tack Coat	Bitum. Prime Coat	Seal Coat	#8 Cover Aggre.	Preformed Expansion Joint Filler	10" Reinf. Conc. Pav't.	6" Plain Conc. Pav't.	Guardrail Type 5	Anchor Assembly Type A	Anchor Assembly Type T	Bridge Terminal Assembly Type 1	Bridge Terminal Assembly Type 2	Curb Type 6							
			Sq. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Sq. Ft.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Gal.	Gal.	Cu. Yd.	Sq. Ft.	Sq. Yd.	Sq. Yd.	Lin. Ft.	Ea.	Ea.	Ea.	Ea.	Ea.	Lin. Ft.								
1-P	7+50 ~ 12+00	Lt. & Rt.	1191																																				
2-P	7+28 ~ 12+00	Lt. & Rt.																																					
3-P	8+88.5	Lt.																																					
4-P	9+99 ~ 12+00	Lt.																																					
5-P	9+54 ~ 12+07	Rt.																																					
6-P	7+03	Lt.																																					
10-P	12+00 ~ 14+50	Lt. & Rt.	556																																				
11-P	14+50 ~ 18+00	Lt. & Rt.																																					
12-P	15+00	Lt.																																					
13-P	17+35.7	Lt.																																					
14-P	12+00 ~ 15+42.03	Lt.																																					
15-P	16+51 ~ 18+00	Lt.																																					
16-P	13+09 ~ 18+00	Rt.																																					
1-R	6+82 ~ 12+00	Lt. & Rt.		434	217																																		
2-R	8+52 ~ 9+52	Rt.																																					
3-R	9+09 ~ 10+02	Lt.																																					
4-R	10+66 ~ 11+66	Rt.																																					
5-R	11+17 ~ 12+17	Lt.																																					
6-R	11+22 ~ 12+00	Lt.																																					
7-R	9+89 ~ 11+22	Lt.																																					
10-R	12+00 ~ 18+00	Lt. & Rt.		932																																			
11-R	12+00 ~ 14+75	Lt.																																					
12-R	17+30 ~ 17+40	Lt.	18																																				
<b>TOTAL</b>			1765	1366	217	353	11	399			642			188	59	88	10	54	72	271	204	6	351	2500	29	325	3	1	4			1471							

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_





# ESTIMATED QUANTITIES

## DRAINAGE

CALC. BY DATE 11-6-90	L.E.H.	FED. RD. DIVISION	STATE	PROJECT
CHKD. BY DATE 12-14-90	J.G.	5	OHIO	

BUT-27-10.48

REF. NO.	STATION TO STATION	SIDE	603					604					603-Bends & Branches					SEE SHEET NO.	
			12" Conduit Type B	12" Conduit Type C				21" Conduit Type B				No. 3 Manhole	No. 3 Catch Basin	No. 2-2B Catch Basin	No. 7 Catch Basin				
			Lin. Ft.	Lin. Ft.			Lin. Ft.				Each	Each	Each	Each					
	Sta. 18+00 ~ Sta. 24+00																		
1-D	17+75 ~ 20+50	Rt.					275												
2-D	19+50	Rt.		4															25 8 27
3-D	20+50	Rt.		6															27 8 51
4-D	20+85	Lt. & Rt.	46																27 8 52
5-D	20+50 ~ 23+50	Rt.					300												27
6-D	22+00	Rt.		9															27 8 53
7-D	23+50	Rt.		6															27 8 53
8-D	23+50 ~ 26+00	Rt.					250												27 8 28
9-D	24+00	Lt. & Rt.	46																27 8 54
10-D	18+89	Lt. & Rt.	56																27 8 51
11-D	Not Used																		
12-D	Not Used																		
13-D	Not Used																		
14-D	23+00	Rt.		5															27 8 53
15-D	Not Used																		
16-D	Not Used																		
17-D	Not Used																		
18-D	Not Used																		
19-D	Not Used																		
	Sta. 24+00 ~ Sta. 30+00																		
20-D	26+00	Lt. & Rt.	63																28 8 55
21-D	26+00	Rt.		12															28 8 55
22-D	26+00 ~ 27+00	Rt.					100												28
23-D	26+50	Rt.		6															28 8 55
24-D	27+00	Lt. & Rt.	46																28 8 55
25-D	27+00 ~ 30+00	Rt.					300												28
26-D	Not Used																		
27-D	29+42	Rt.		7															28 8 56
28-D	26+00 ~ 26+79	Lt.	79																28 8 55
29-D	24+06	Rt.		5															28 8 54
30-D	Not Used																		
<b>TOTAL</b>			336	60			1225				5	6	4	5					

## ROADWAY & PAVEMENT

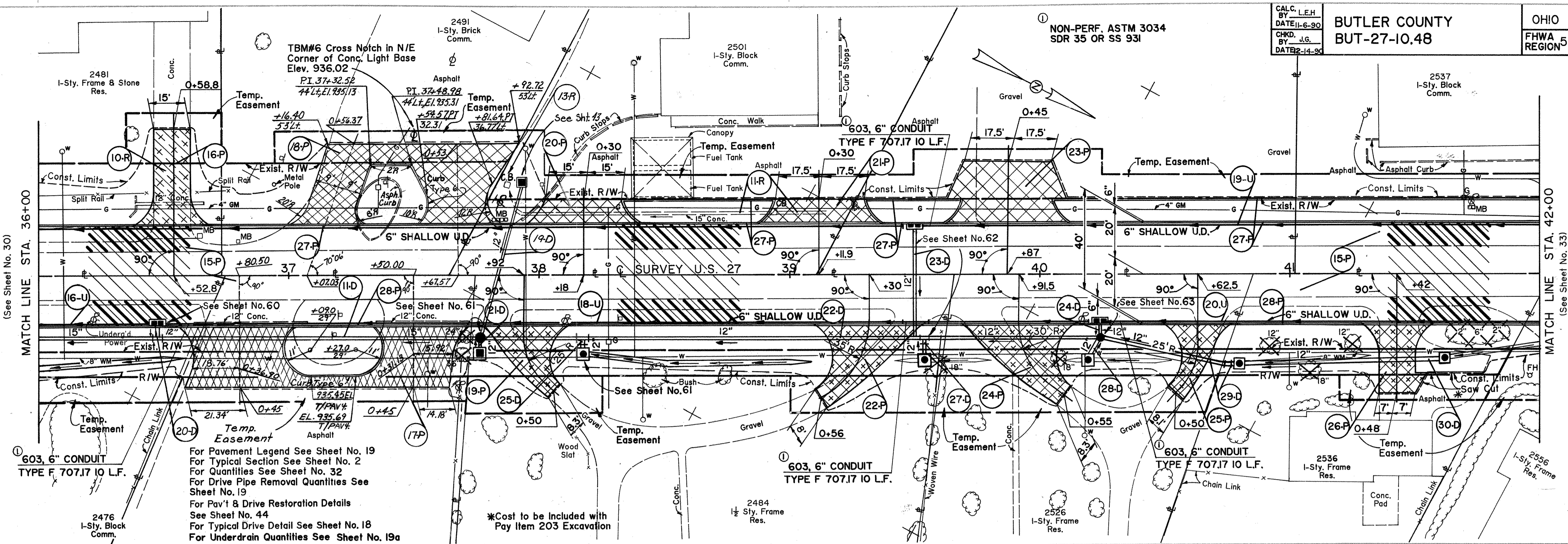
For Drive Pipe Removal Quantities See Sheet No. 19

REF. NO.	STATION TO STATION	SIDE	202				301		304		402	403	404		407	452	609	SEE SHEET NO.
			Pipe Removed 24" & Under	Catch Basin Removed	Structure Removed	Pav't. Removed	4" Bitum. Aggre. Base AC-20	5" Bitum. Aggre. Base AC-20	8" Aggre. Base As Per Plan	10" Aggre. Base As Per Plan	1 3/4" Asp. Conc. AC-20	Asph. Conc. Varying Depth AC-20	1" Asp. Conc. AC-20	1 1/4" Asp. Conc. AC-20	Tack Coat	6" Plain Conc. Pav't.	Curb Type 6"	
			Lin. Ft.	Each	Lump	Sq. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Sq. Yd.	Lin. Ft.		
1-P	18+00 ~ 24+00	Lt. & Rt.						394			69	38		93	94			27 8 13*
2-P	18+71.3	Lt.					3											27 8 16*
3-P	19+70.5	Lt.													36			27 8 16*
4-P	20+56.2	Lt.					3											27 8 16*
5-P	21+28	Rt.					6											27 8 16*
6-P	21+73.5	Lt.						6					24					27 8 16*
7-P	22+74	Rt.						18										27 8 16*
8-P	24+10	Rt.					5											27 28 16*
9-P	18+00 ~ 24+00	Lt.														600		27
10-P	18+00 ~ 24+00	Rt.														600		27
11-P	24+50	Lt.						20										28 8 16*
12-P	24+69	Rt.						12										28 8 16*
13-P	26+33.8	Lt.					9			14								28 8 17*
14-P	27+50	Lt.													75			28 8 17*
15-P	28+38.7	Lt.					5											28 8 17*
16-P	29+03	Lt.						18										28 8 17*
17-P	29+07	Rt.					6											28 8 17*
18-P	29+66	Rt.						16										28 8 17*
19-P	24+00 ~ 30+00	Lt.														600		28
20-P	24+00 ~ 30+00	Rt.														600		28
21-P	24+00 ~ 30+00	Lt. & Rt.						378		66	29		93	99				28 8 14*
1-R	18+00 ~ 21+31	Rt.	331	2														27
2-R	19+46.5 ~ 19+80	Lt.				61												27
10-R	29+82 ~ 29+99	Rt.			Lump													28
11-R	27+36 ~ 27+62	Lt.				74												28
12-R	28+30 ~ 28+46	Lt.				18												28
<b>TOTAL</b>			331	2	Lump	153		899		45	135	67	31	186	193	111	2595	

\* Sheet No. For Pavement Calculations

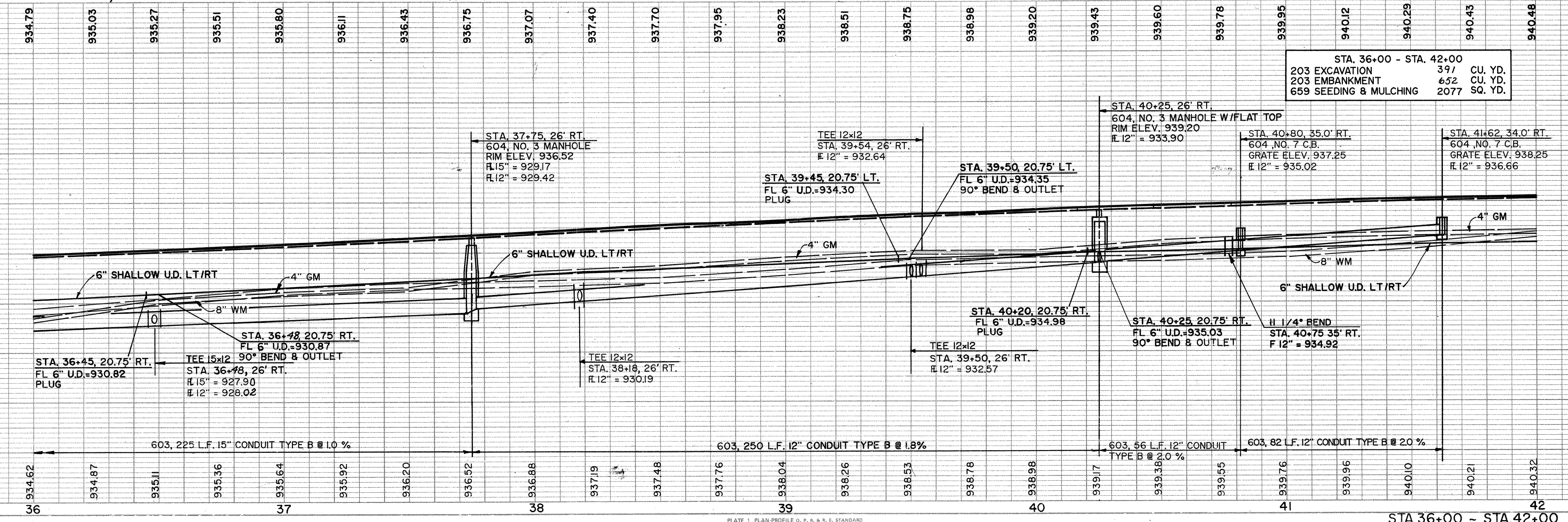
QUANTITIES  
STA. 18 + 00 - STA. 30 + 00





DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SUPERVISOR: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 STRUCTURE NOTATIONS CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SUPERVISOR: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 STRUCTURE NOTATIONS CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_



STA. 36+00 - STA. 42+00	
203 EXCAVATION	391 CU. YD.
203 EMBANKMENT	652 CU. YD.
659 SEEDING & MULCHING	2077 SQ. YD.



# ESTIMATED QUANTITIES

## DRAINAGE

CALC. BY DATE 11-6-90	L.E.H.	FED. RD. DIVISION	STATE	PROJECT
DRAWN BY DATE 12-14-90	J.G.	5	OHIO	

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BUT-27-10.48

REF. NO.	STATION TO STATION	SIDE	603					604					603-Bends & Branches			SEE SHEET NO.
			12" Conduit Type B	12" Conduit Type C	15" Conduit Type B	No. 3 Manhole	No. 3 Catch Basin	No. 2-2-B Catch Basin	No. 7 Catch Basin	11 1/4 Bend	Tees					
			Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Each	Each	Each	Each			
	Sta. 30+00 ~ Sta. 36+00															
1-D	30+00	Lt.		19												
2-D	30+00	Lt. & Rt.	40													
3-D	30+00	Rt.		6												
4-D	30+00	Rt.		10												
5-D	30+00 ~ 32+50	Rt.			250											
6-D	32+25	Rt.		10									15x12			
7-D	32+50	Lt. & Rt.	40													
8-D	32+50	Rt.		6												
9-D	32+50 ~ 35+50	Rt.			300											
10-D	35+50	Lt. & Rt.	46													
11-D	35+50 ~ 37+75	Rt.			225											
12-D	30+00 ~ 30+65	Lt.	65													
13-D	30+65 ~ 31+50	Lt.	85													
14-D	Not Used															
15-D	33+11	Rt.		9									15x12			
16-D	Not Used															
17-D	35+50	Rt.		12												
18-D	Not Used															
	Sta. 36+00 ~ Sta. 42+00															
19-D	37+93	Lt. & Rt.	64													
20-D	36+50	Rt.		6									15x12			
21-D	37+75	Rt.		5												
22-D	37+75 ~ 40+25	Rt.	250													
23-D	39+50	Lt. & Rt.	46										12x12			
24-D	40+25	Rt.		6												
25-D	38+18	Rt.		6									12x12			
26-D	Not Used															
27-D	39+54	Rt.		8									12x12			
28-D	40+18 ~ 40+25	Rt.		10												
29-D	40+25 ~ 40+80	Rt.	56													
30-D	40+80 ~ 41+62	Rt.	82													
<b>TOTAL</b>			<b>774</b>	<b>113</b>		<b>775</b>			<b>4</b>	<b>8</b>	<b>5</b>	<b>9</b>				

## ROADWAY & PAVEMENT

For Drive Pipe Removal Quantities See Sheet No. 19

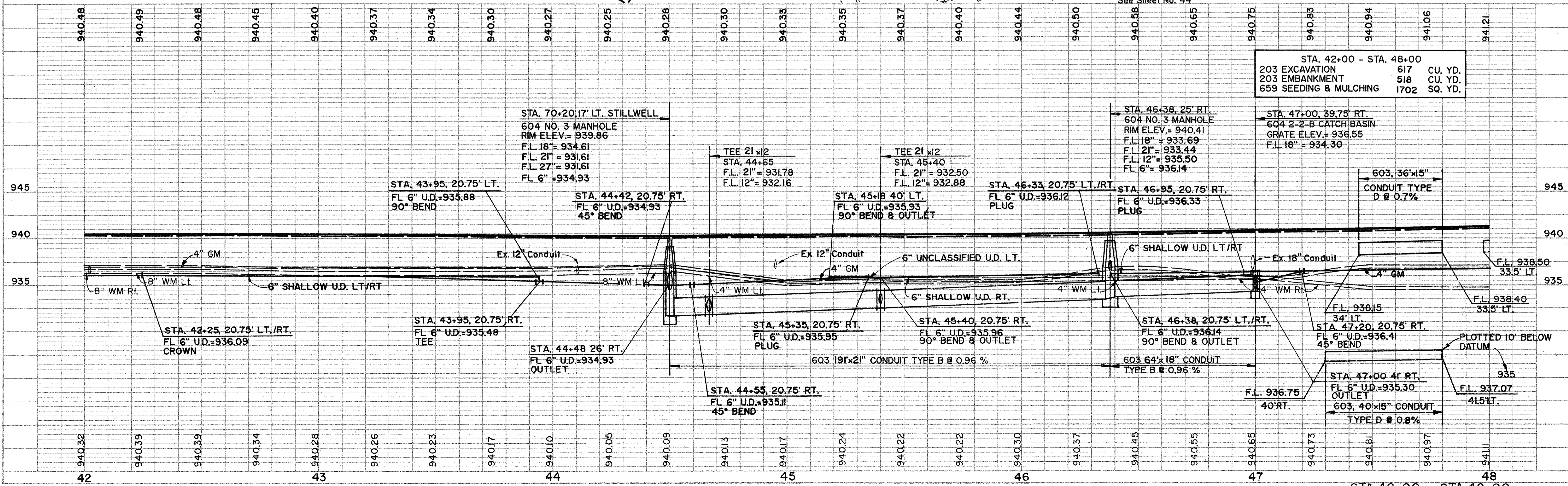
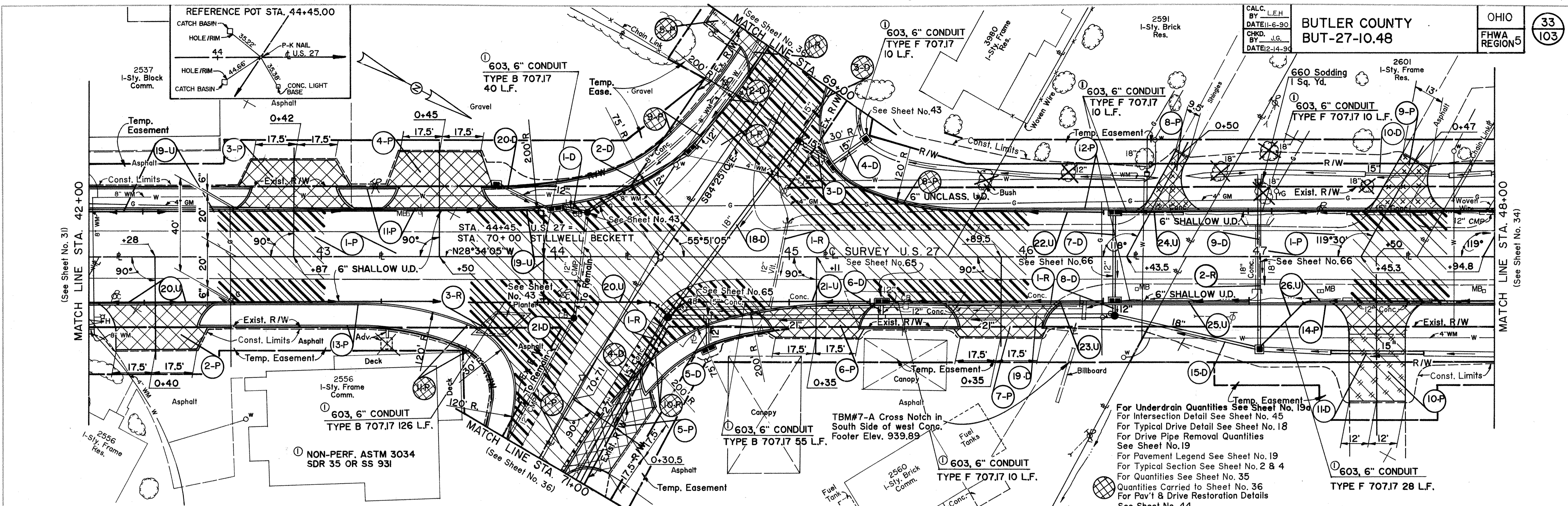
REF. NO.	STATION TO STATION	SIDE	202			301		304		402	403	404		407	452	608	609	SEE SHEET NO.	
			Pav't. Removed	Walk Removed	Structure Removed	Pipe Removal 24" & Under	Catch Basin Removed	4" Bitum. Aggre. Base AC-20	5" Bitum. Aggre. Base AC-20	8" Aggre. Base As Per Plan	10" Aggre. Base As Per Plan	1 3/4" Asphalt Concrete AC-20	Asphalt Concrete Varying Depth AC-20	1" Asphalt Concrete AC-20 Drives	1 1/4" Asphalt Concrete AC-20	Tack Coat	6" Plain Concrete Pav't.		6" Concrete Walk
			Sq. Yd.	Sq. Ft.	Lump	Lin. Ft.	Each	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Sq. Yd.	Sq. Ft.	Lin. Ft.		
1P	30 + 00 - 36 + 00	Lt. & Rt.								67	21		93	97				30 & 14*	
2P	30 + 44.10	Lt.													71		13	30 & 17*	
3P	31 + 34.50	Lt.															13	30 & 17*	
4P	31 + 85	Rt.															13	30 & 17*	
5P	32 + 28	Lt.															13	30 & 17*	
6P	33 + 11	Rt.															13	30 & 17*	
7P	33 + 67.10	Lt.															13	30 & 17*	
8P	34 + 02	Lt.															13	30 & 17*	
9P	35 + 00	Lt.															13	30 & 17*	
10P	35 + 08	Rt.															13	30 & 17*	
11P	30 + 00 - 36 + 00	Lt.															600	30	
12P	30 + 00 - 36 + 00	Rt.															600	30	
15P	36 + 00 - 42 + 00	Lt. & Rt.								65	41		93	101				31 & 14*	
16P	36 + 52.80	Lt.													73		13	31 & 17*	
17P	36 + 80.5 & 37 + 50	Rt.															86	31 & 17*	
18P	37 + 07.03 & 37 + 67.57	Lt.															80	31 & 17*	
19P	37 + 92	Rt.															13	31 & 17*	
20P	38 + 18	Lt.															7	31 & 17*	
21P	39 + 11.90	Lt.																31 & 17*	
22P	39 + 30	Rt.															13	31 & 17*	
23P	39 + 87	Lt.																31 & 17*	
24P	39 + 91.50	Rt.															13	31 & 17*	
25P	40 + 62.50	Rt.															13	31 & 17*	
26P	41 + 42	Rt.															13	31 & 17*	
27P	36 + 00 - 42 + 00	Lt.															951	31	
28P	36 + 00 - 42 + 00	Rt.															600	31	
13R	37 + 88	Lt.																30	
1R	30 + 32 - 30 + 52	Lt.	72															30	
2R	30 + 52 - 30 + 64	Lt.		73														30	
3R	31 + 14 - 31 + 15	Lt.			Lump													30	
4R	33 + 97 - 34 + 11	Lt.	65															30	
10R	36 + 43 - 36 + 63	Lt.	74															30	
11R	37 + 91 - 39 - 16	Lt.				125	1											31	
12R	34+91 - 35+26	Rt.			Lump													31	
<b>TOTAL</b>			<b>211</b>	<b>73</b>	<b>Lump</b>	<b>125</b>	<b>2</b>	<b>926</b>		<b>2</b>	<b>132</b>	<b>62</b>	<b>41</b>	<b>186</b>	<b>198</b>		<b>216</b>	<b>73</b>	<b>31/9</b>

\* Sheet No. For Pavement Calculations

QUANTITIES  
STA. 30 + 00 - STA. 42 + 00

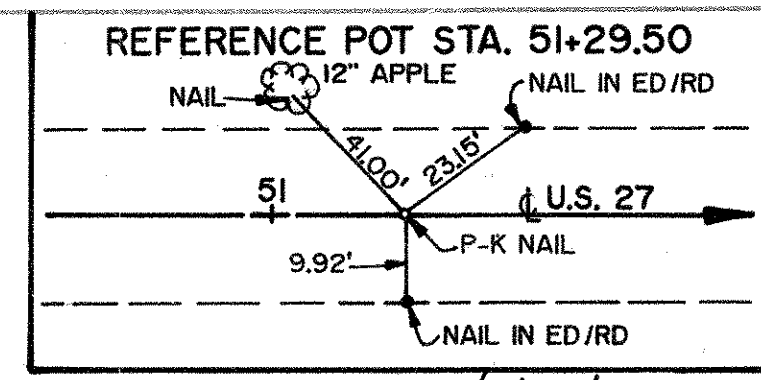
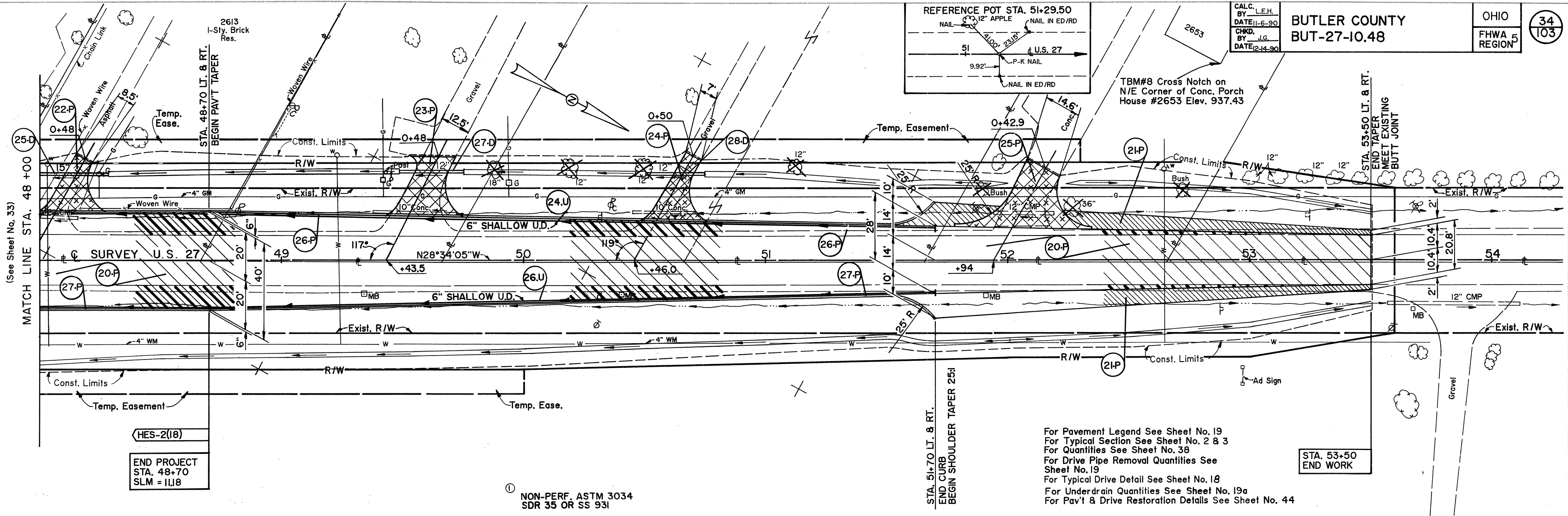
PLAN  
 SHOWN  
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 CHECKED  
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 NO.

PROFILE  
 SHOWN  
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 CHECKED  
 DATE  
 NO.



DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLANNED: \_\_\_\_\_  
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 DATE: \_\_\_\_\_  
 NO. \_\_\_\_\_



CALC. BY: L.E.H.  
 DATE: 11-6-90  
 CHKD. BY: J.G.  
 DATE: 2-14-90

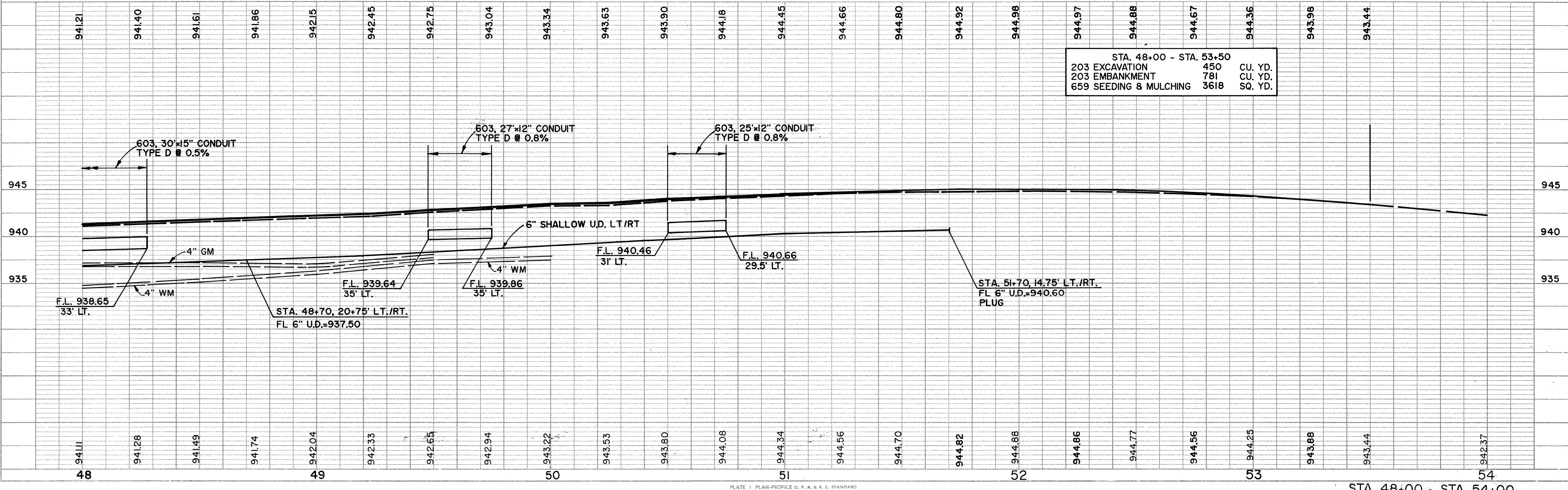
**BUTLER COUNTY**  
**BUT-27-10.48**

OHIO  
 FHWA REGION 5  
 34  
 103

For Pavement Legend See Sheet No. 19  
 For Typical Section See Sheet No. 2 & 3  
 For Quantities See Sheet No. 38  
 For Drive Pipe Removal Quantities See Sheet No. 19  
 For Typical Drive Detail See Sheet No. 18  
 For Underdrain Quantities See Sheet No. 19a  
 For Pav't & Drive Restoration Details See Sheet No. 44

STA. 53+50  
 END WORK

STA. 48+00 - STA. 53+50	
203 EXCAVATION	450 CU. YD.
203 EMBANKMENT	781 CU. YD.
659 SEEDING & MULCHING	3618 SQ. YD.



# ESTIMATED QUANTITIES

## DRAINAGE

CALC. BY: L.E.H. DATE: 11-6-90	FED. RD. DIVISION: 5	STATE: OHIO	PROJECT: BUT-27-10.48
CHKD. BY: J.G. DATE: 12-14-90			

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BUT-27-10.48

REF. NO.	STATION TO STATION	SIDE	602			603						604				660	603-Bends & Branches		SEE SHEET NO.
			Concrete Masonry	12" Conduit Type B	12" Conduit Type C	12" Conduit Type D	15" Conduit Type B	15" Conduit Type C	15" Conduit Type D	18" Conduit Type B	21" Conduit Type B	No. 3 Manhole	No. 3 Catch Basin	No. 2-2B Catch Basin	No. 6 Catch Basin	Sodding	Tees		
			Cu. Yd.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Sq. Yd.				
1-D	Sta. 42+00 ~ Sta. 51+30	Lt.																	33 & 43
2-D	44+00 ~ 44+14	Lt.		14															33 & 43
3-D	44+14 ~ 69+56 Stillwell	Lt.		51															33 & 43
4-D	69+27 Stillwell ~ 45+18	Lt.						18											33 & 43
5-D	45+18 ~ 45+33	Lt.							19										33 & 43
6-D	44+65 ~ 45+40	Rt.		14														21 x 12	33 & 65
7-D	46+38	Lt. & Rt.		40	5													21 x 12	33 & 66
8-D	46+38	Rt.			5														33 & 66
9-D	47+00	Lt. & Rt.	.31																33 & 66
10-D	47+44 ~ 47+80	Lt.								36									33
11-D	47+31 ~ 47+71	Rt.								40									33
12-D	Not Used																		
13-D	Not Used																		
14-D	Not Used																		
15-D	46+38 ~ 47+00	Rt.									64								33
16-D	Not Used																		
17-D	Not Used																		
18-D	69+27 ~ 70+20	Lt.									93								33 & 36
19-D	70+20 ~ 46+38	Rt.										191							33
20-D	43+75 ~ 44+00	Lt.		26															33 & 43
21-D	70+42	Rt.																	33 & 43
25-D	47+99 ~ 48+29	Lt.																	33 & 34
26-D	Not Used																		
27-D	49+49 ~ 49+76	Lt.																	34
28-D	50+51 ~ 50+76	Lt.																	34
<b>TOTAL</b>			.31	145	10	82		18	19	76	232	191		4		7	2	1	

## ROADWAY & PAVEMENT

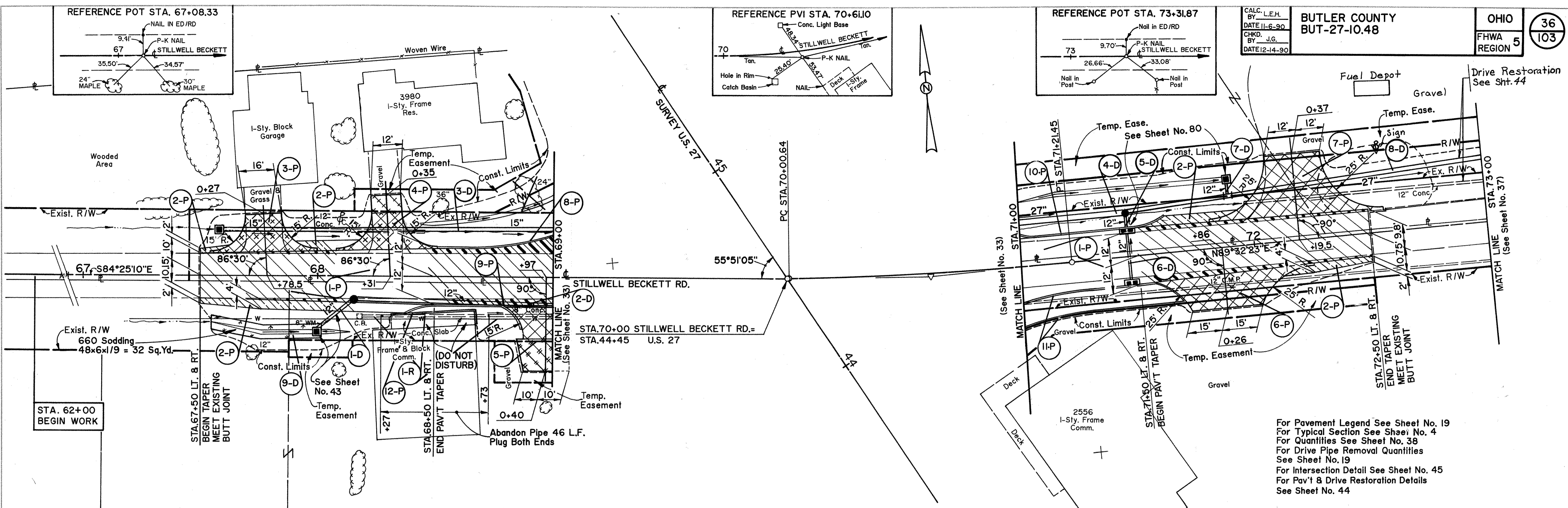
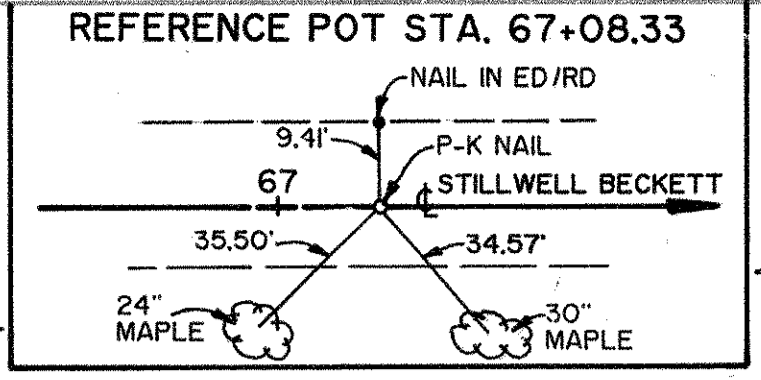
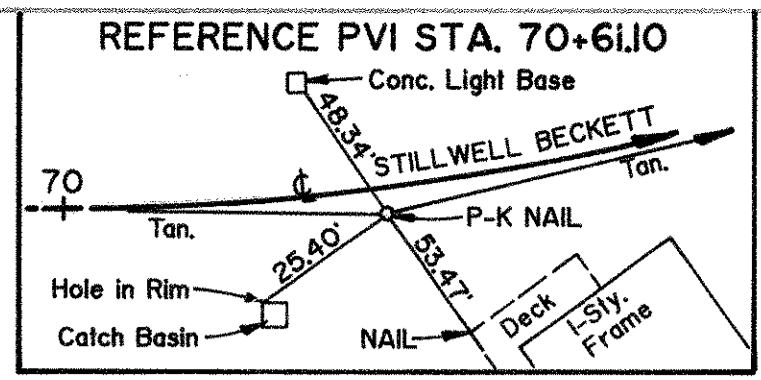
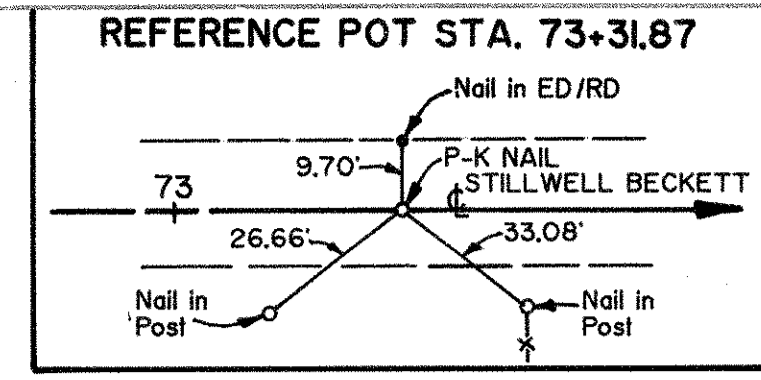
For Drive Pipe Removal Quantities See Sheet No. 19

REF. NO.	STATION TO STATION	SIDE	202			301			304			402	403	404		407	408	409		609		SEE SHEET NO.
			Pipe Removed 24" & Under	Catch Basin Removed	Structure Removed	3" Bitum. Aggre. Base AC-20	4" Bitum. Aggre. Base AC-20	5" Bitum. Aggre. Base AC-20	8" Aggre. Base As Per Plan	Varies Aggre. Base As Per Plan	10" Aggre. Base As Per Plan	1 3/4" Asp. Conc. AC-20	Asph. Conc. Varying Depth AC-20	1" Asp. Conc. AC-20	1 1/4" Asp. Conc. AC-20	Tack Coat	Bitum. Prime Coat	Seal Coat	#8 Cover Aggre.			
			Lin. Ft.	Each	Lump	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Gal.	Gal.	Cu. Yd.			Lin. Ft.	
1-P	42+00 ~ 48+00	Lt. & Rt.										58	32		89	104					7	33 & 14*
2-P	42+28	Rt.																				
3-P	42+87	Lt.																				33 & 17*
4-P	43+50	Lt.																				33 & 17*
5-P	70+71 Stillwell Beckett	Lt.																				33 & 17*
6-P	45+11	Rt.																				33 & 17*
7-P	45+89.5	Rt.																				33 & 18*
8-P	46+43.5	Lt.																				33 & 18*
9-P	47+45.3	Lt.					4															33 & 18*
10-P	47+50	Rt.					5															33 & 18*
11-P	42+00 ~ 43+73.09	Lt.																				33
12-P	45+77.67 ~ 48+00	Lt.																				33
13-P	42+00 ~ 43+7.26	Rt.																				33
14-P	45+18.71 ~ 48+00	Rt.																				33
20-P	48+00 ~ 53+50	Lt. & Rt.										33	17		67	95						34 & 14*
21-P	51+53 ~ 53+50	Lt. & Rt.				20										94	71	2				34 & 14*
22-P	47+94.8	Lt.					4															33, 34 & 18*
23-P	49+43.5	Lt.					6															34 & 18*
24-P	50+46	Lt.					4															34 & 18*
25-P	51+94	Lt.					8															34 & 18*
26-P	48+00 ~ 51+70	Lt.																				34
27-P	48+00 ~ 51+70	Rt.																				34
1-R	70+97 Stillwell ~ 46+26	Lt. & Rt.	293	2																		33
2-R	47+00	Lt. & Rt.	28																			33
3-R	43+64 ~ 43+89	Rt.			Lump																	33
<b>TOTAL</b>			321	2	Lump		641			89		91	49	24	156	199	94	71	2		1913	

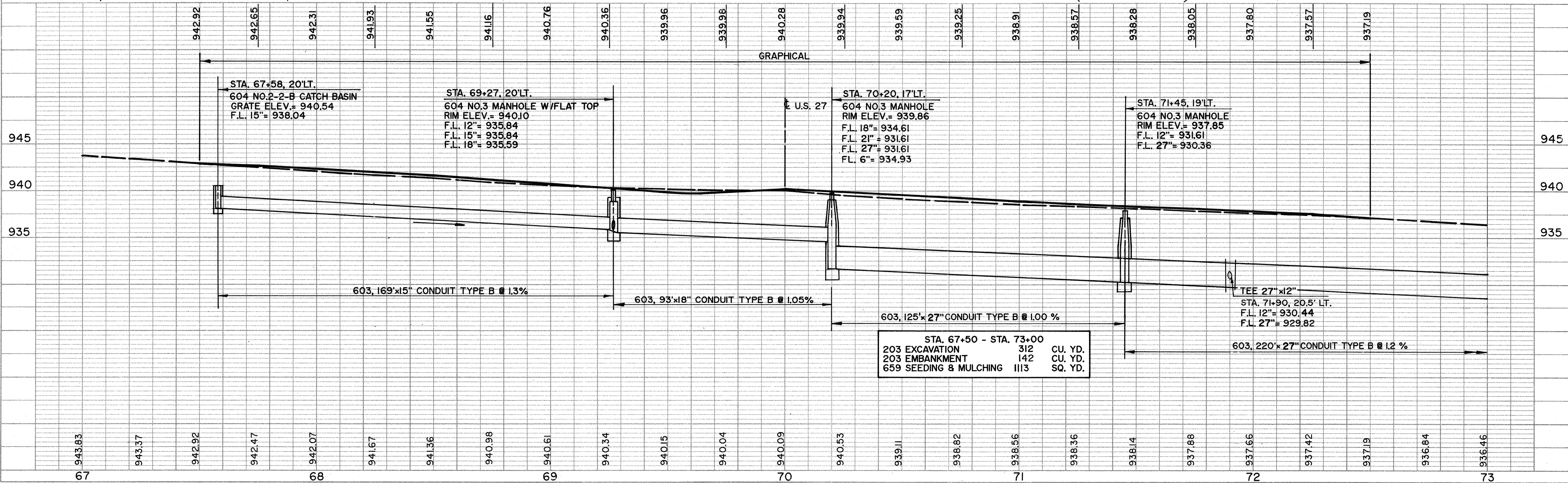
\* Sheet No. For Pavement Calculations

QUANTITIES  
STA. 42+00 - STA. 53+50  
& STILLWELL BECKETT RD.

CALC. L.E.H.  
 BY DATE 11-6-90  
 CHKD. BY J.G.  
 DATE 12-14-90



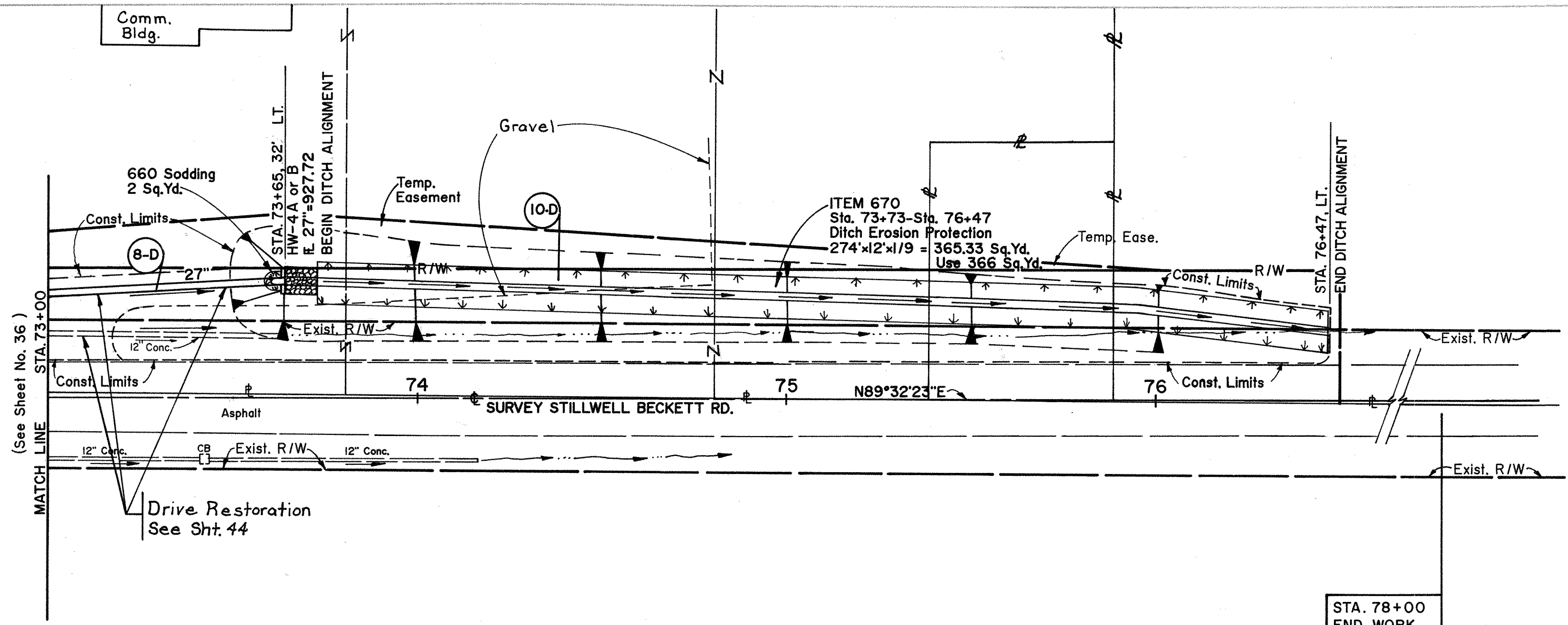
For Pavement Legend See Sheet No. 19  
 For Typical Section See Sheet No. 4  
 For Quantities See Sheet No. 38  
 For Drive Pipe Removal Quantities See Sheet No. 19  
 For Intersection Detail See Sheet No. 45  
 For Pav't & Drive Restoration Details See Sheet No. 44



PLAN  
 SURVEYED BY  
 PLOTTED BY  
 CHECKED BY  
 DATE

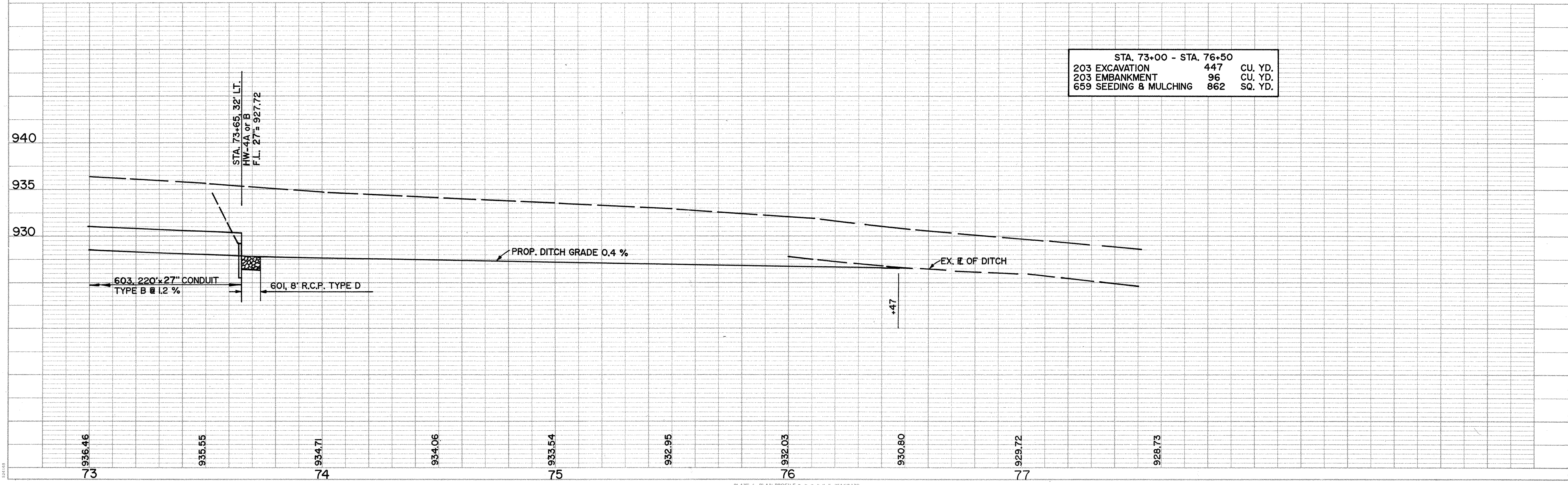
PROFILE  
 SURVEYED BY  
 PLOTTED BY  
 CHECKED BY  
 DATE

DATE  
BY  
SUPERVISOR  
PLAN  
NOTE BOOK  
NO.



For Pavement Legend See Sheet No. 19  
For Typical Section See Sheet No. 4  
For Quantities See Sheet No. 38  
For Drive Pipe Removal Quantities  
See Sheet No. 19

DATE  
BY  
SUPERVISOR  
PROFILE  
NOTE BOOK  
NO.



# ESTIMATED QUANTITIES

## DRAINAGE

CALC. BY: L.E.H.	FED. RD. DIVISION	STATE	PROJECT
DATE: 11-6-90	5	OHIO	
DRAWN BY: J.G.			
DATE: 12-14-90			

38  
103

BUT - 27-10.48

REF. NO.	STATION TO STATION	SIDE	601		602		603				604			660	670	603-Bends & Branches	SEE SHEET NO.	
			Rock Channel Protection Type C W/Filter	Concrete Masonry	12" Conduit Type B	12" Conduit Type C	15" Conduit Type B	27" Conduit Type B	No. 3 Manhole	No. 3 Catch Basin	No. 2-2B Catch Basin	Sodding	Ditch Erosion Protection	Tees				
	STILLWELL BECKETT RD.		Cu. Yd.	Cu. Yd.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Sq. Yd.	Sq. Yd.				
ID	68+00 — 68+15	Rt.			22												36 & 43	
2D	68+15 — 69+56	Rt.			141												33 & 43	
3D	67+58 — 69+27	Lt.					169										33 & 36	
4D	70+20 — 71+45	Lt.							125								33 & 36	
5D	71+45	Lt.				7											36 & 80	
6D	71+45	Lt. & Rt.			24												36 & 80	
7D	71+90	Lt.				8										27x12	36 & 80	
8D	71+45 — 73+65	Lt.	3	.56					220								36 & 37	
9D	67+54 — 68+02	Rt.											2				36	
10D	73+73 — 76+47	Lt.											32		366		37	
<b>TOTAL</b>			3	.56	187	15		169		345			3	2	3		34	366

## ROADWAY & PAVEMENT

For Drive Pipe Removal Quantities See Sheet No. 19

REF. NO.	STATION TO STATION	SIDE	202		301		304			402	403	404		407	409		609			SEE SHEET NO.
			Pipe Removed 24" & Under	Catch Basin Removed	4" Bitum. Aggre. AC-20	5" Bitum. Aggre. AC-20	8" Aggre. Base As Per Plan	Varies Aggre. Base As Per Plan	10" Aggre. Base As Per Plan	3/4" Asphalt Concrete AC-20	Asphalt Concrete Varying Depth AC-20	1" Asphalt Concrete AC-20 Drives	1 1/4" Asphalt Concrete AC-20	Tack Coat	Seal Coat	#8 Cover Aggre.				
	STILLWELL BECKETT RD.		Lin. Ft.	Each	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Gal.	Cu. Yd.				Lin. Ft.	
1P	67+50 — 72+50	Lt. & Rt.				247				42	43		59	62						33,368/5*
2P	67+50 — 72+50	Lt. & Rt.						14						22	1					33,368/5*
3P	67+79.5	Lt.			5															36 & 18*
4P	68+31	Lt.			4			3												36 & 18*
5P	68+97	Rt.				5														33,368/8*
6P	71+86	Rt.				7														36 & 18*
7P	72+19.5	Lt.				15														36 & 18*
8P	68+50 — 45+77.67 U.S. 27	Lt.																		33 & 36
9P	68+37 — 43+73.09 U.S. 27	Rt. & Lt.																		33 & 36
10P	45+18.71 U.S. 27 — 71+62	Rt. & Lt.																		302
11P	43+17.26 U.S. 27 — 71+69	Rt.																		330
12P	68+31 — 68+68	Rt.																		42
<b>TOTAL</b>			143	1		283		26		42	43	8	59	62	22	1				1200

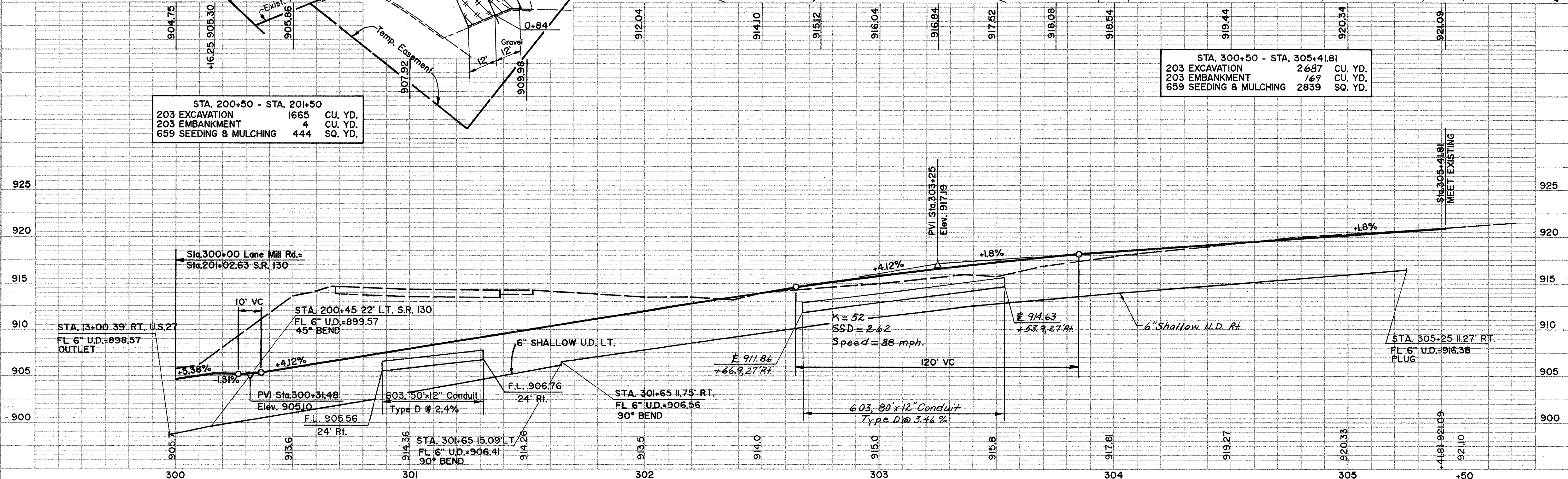
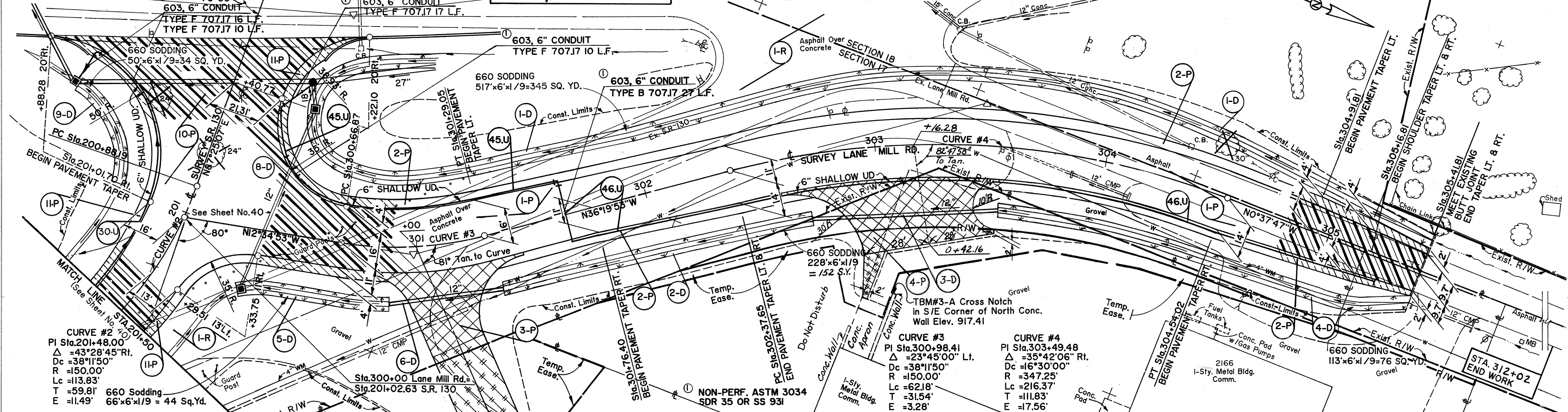
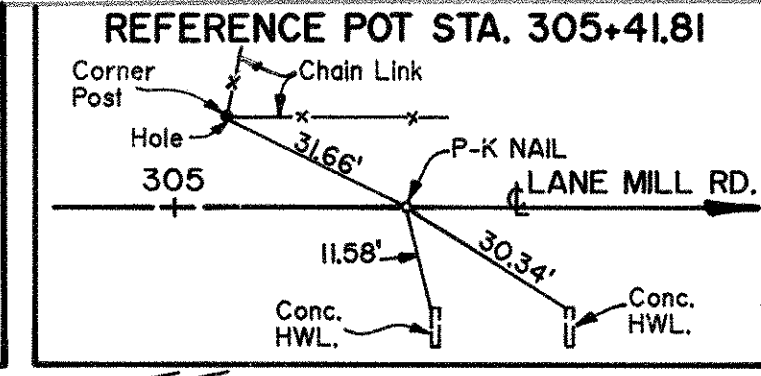
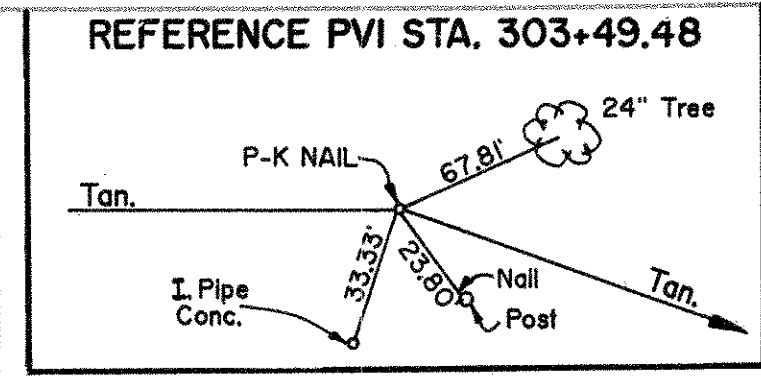
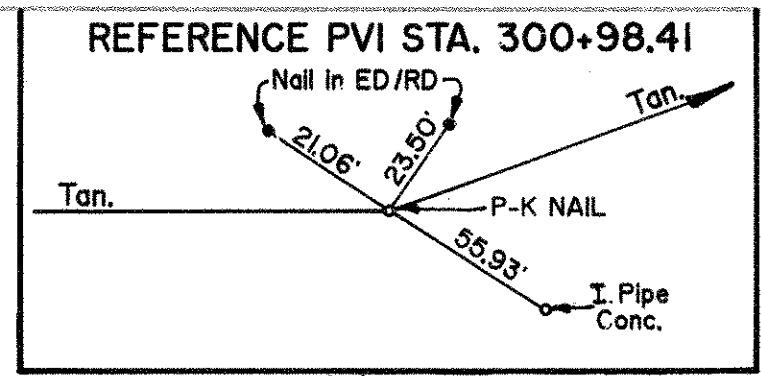
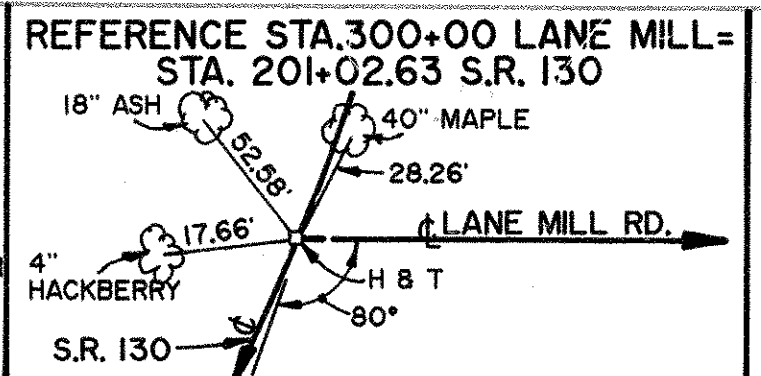
\* Sheet No. For Pavement Calculations

QUANTITIES  
STA. 67+50 - STA. 76+47

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NO. OF WAY CHECKED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 NO.: \_\_\_\_\_

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NO. OF WAY CHECKED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 NO.: \_\_\_\_\_

For Pavement Legend See Sheet No. 19  
 For Typical Section See Sheet No. 4  
 For Quantities See Sheet No. 42  
 For Drive Pipe Removal Quantities See Sheet No. 19  
 For Intersection Detail See Sheet No. 44  
 For Underdrain Quantities See Sheet No. 19a  
 U.S. 27



STA. 200+50 - STA. 201+50

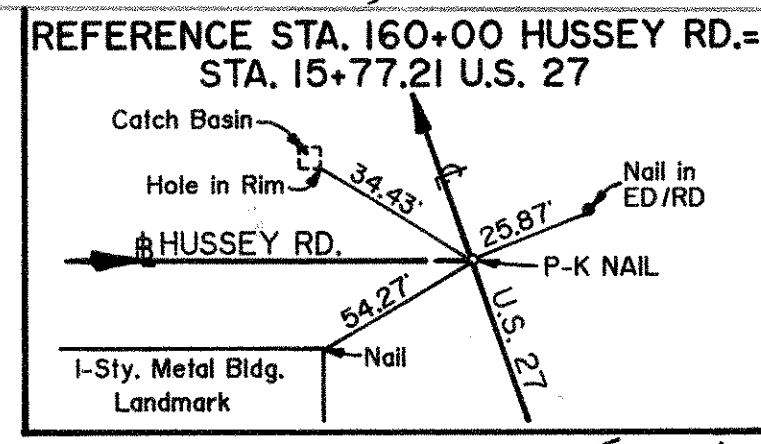
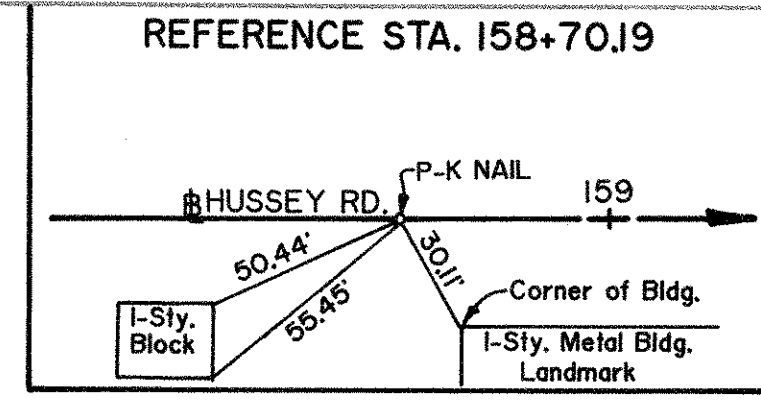
203 EXCAVATION	1665	CU. YD.
203 EMBANKMENT	4	CU. YD.
659 SEEDING & MULCHING	444	SQ. YD.

STA. 300+50 - STA. 305+41.81

203 EXCAVATION	2687	CU. YD.
203 EMBANKMENT	169	CU. YD.
659 SEEDING & MULCHING	2839	SQ. YD.





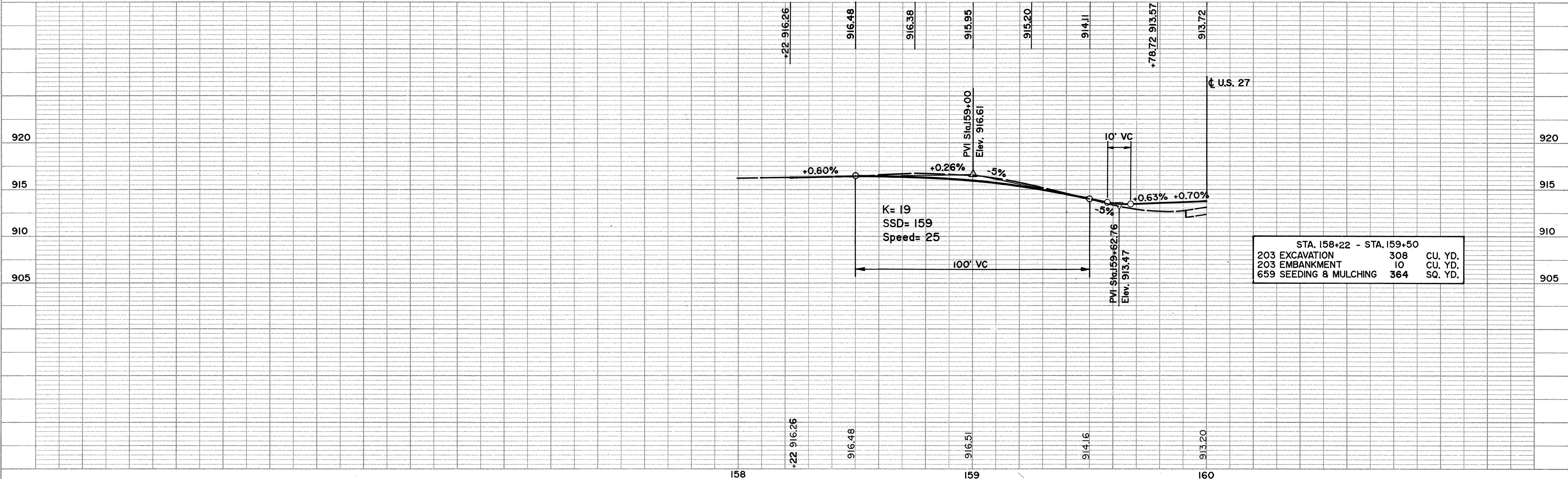
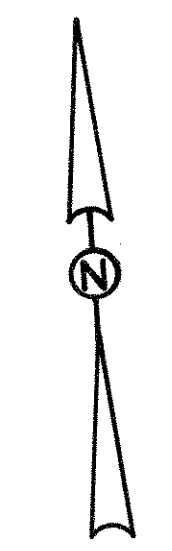
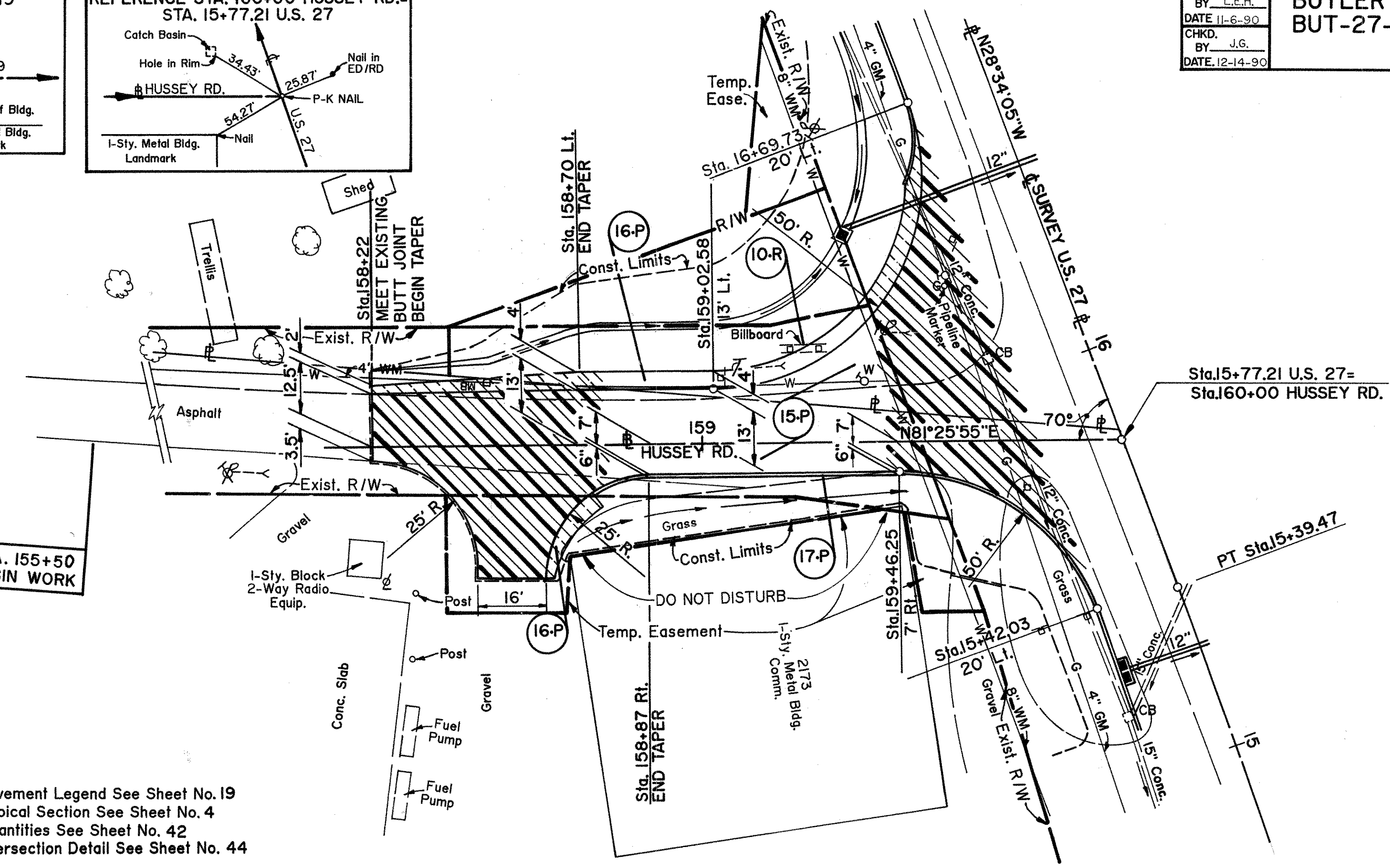


DATE \_\_\_\_\_  
 BY \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
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**PLAN**  
 NOTE BOOK \_\_\_\_\_  
 No. \_\_\_\_\_

DATE \_\_\_\_\_  
 BY \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 NO. OF WAY CHECKED \_\_\_\_\_  
**PROFILE**  
 NOTE BOOK \_\_\_\_\_  
 No. \_\_\_\_\_

For Pavement Legend See Sheet No. 19  
 For Typical Section See Sheet No. 4  
 For Quantities See Sheet No. 42  
 For Intersection Detail See Sheet No. 44

STA. 155+50  
 BEGIN WORK



STA. 158+22 - STA. 159+50		
203 EXCAVATION	308	CU. YD.
203 EMBANKMENT	10	CU. YD.
659 SEEDING & MULCHING	364	SQ. YD.

# ESTIMATED QUANTITIES

## DRAINAGE

CALC. BY L.E.H.	FED. RD. DIVISION	STATE	PROJECT
DATE 11-6-90	5	OHIO	
CHKD. BY J.G.			
DATE 12-14-90			

42  
103

BUT-27-10.48

REF. NO.	STATION TO STATION	SIDE	601		602			603			604			660			SEE SHEET NO.
			Rock Channel Protection Type C W/Filter	Concrete Masonry	12" Conduit Type B	12" Conduit Type D	24" Conduit Type C	No. 2-2 B Catch Basin	Sodding								
			Cu. Yd.	Cu. Yd.	Lin. Ft.	Lin. Ft.	Lin. Ft.				Each	Sq. Yd.					
Lane Mill Rd.																	
1-D	300+44 ~ 305+41.81	Lt.															
2-D	301+31.5 ~ 303+70	Rt.											345			39	
3-D	302+46.9 ~ 303+53.9	Rt.					80									39	
4-D	304+28 ~ 305+41.81	Rt.														39	
5-D	300+28 ~ 300+88.5	Rt.														39	
6-D	300+88.5 ~ 301+31.5	Rt.					50									39	
7-D	Not Used																
S.R. 130																	
8-D	200+44 ~ 201+16	Lt.			83											39 & 40	
9-D	200+61 ~ 201+00	Rt.														39	
10-D	202+00 ~ 202+66	Rt.												34		40	
11-D	202+50 ~ 202+74	Lt.												47		40	
12-D	202+46 ~ 202+54	Rt.	3	0.43					19					65		40	
13-D	205+93 ~ 205+97	Rt.	4	0.43					24							40 & 74	
14-D	202+06	Lt.		0.43					4							40 & 75	
15-D	206+11	Lt.		0.43												40 & 73	
																40 & 75	
<b>TOTAL</b>			7	1.72		83		130		47					767		

## ROADWAY & PAVEMENT

For Drive Pipe Removal Quantities See Sheet No. 19

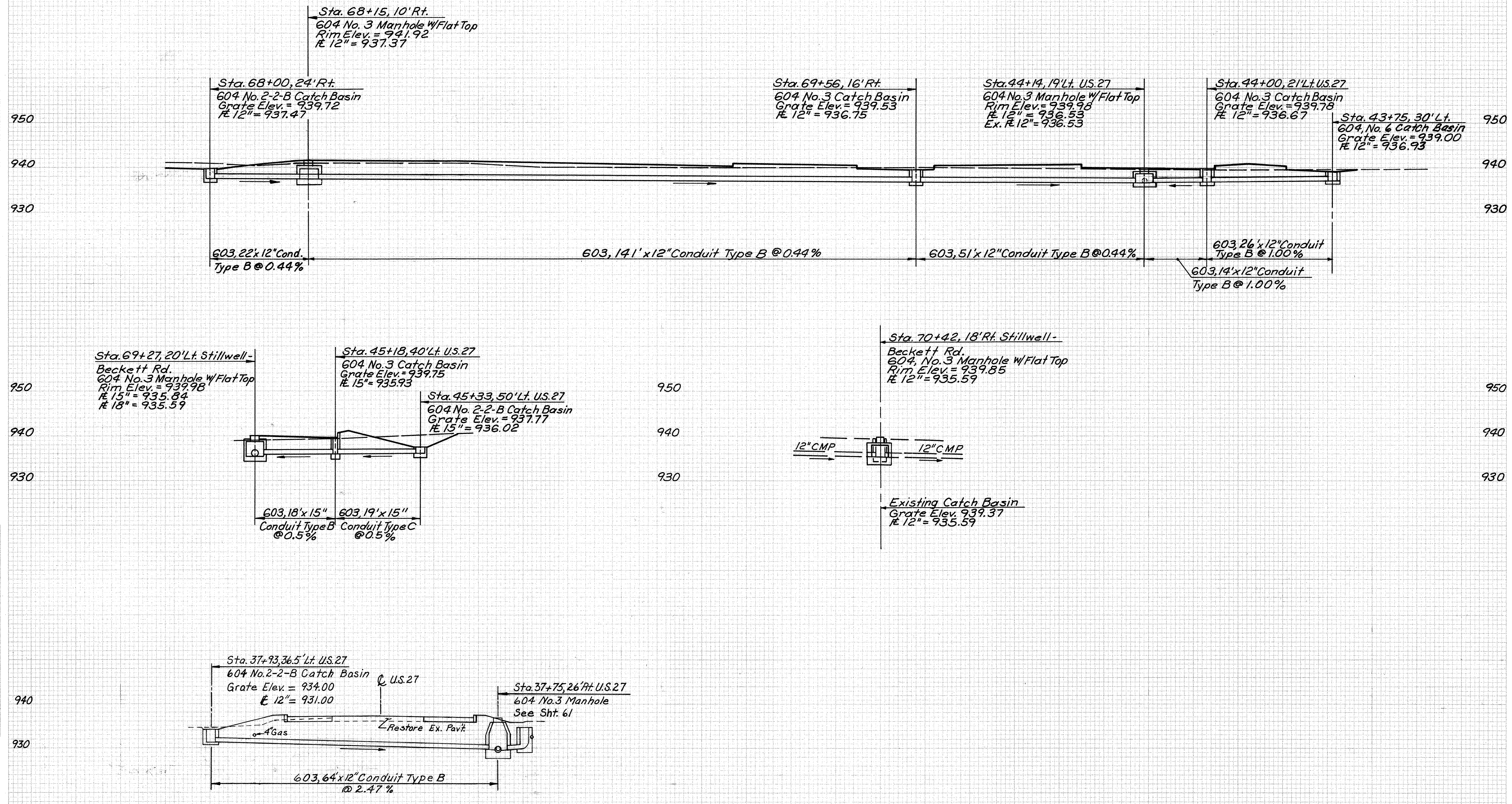
REF. NO.	STATION TO STATION	SIDE	202		301	304		402	404		409		609			SEE SHEET NO.
			Pav't Removed	Pipe Removed 24" & Under	Structure Removed	5" Bitum. Aggre. Base AC-20	8" Aggre. Base As Per Plan	10" Aggre. Base As Per Plan	1 3/4" Asphalt Concrete AC-20	1" Asphalt Concrete AC-20 Drives	1 1/4" Asphalt Concrete AC-20	Seal Coat	#8 Cover Aggre.	Curb Type 6		
			Sq. Yd.	Lin. Ft.	Lump	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Cu. Yd.	Lin. Ft.			
LANE MILL ROAD																
1P	300+33.75 ~ 305+41.81	Lt. & Rt.				418			71							39 & 15*
2P	300+33.75 ~ 305+41.81	Lt. & Rt.						81				117			4	39 & 15*
3P	301+00	Rt.				18				30						39 & 18*
4P	303+76.28	Rt.				27				4						39 & 18*
STATE ROUTE 130																
10P	200+21.22 ~ 206+50	Lt. & Rt.				596										39, 40 & 16*
11P	200+21.22 ~ 206+50	Lt. & Rt.							112			161			5	39, 40 & 16*
HUSSEY ROAD																
15P	158+50 ~ 159+78.72	Lt. & Rt.				161										41 & 16*
16P	158+50 ~ 16+69.73 U.S. 27	Lt. & Rt.						16				23			1	41 & 16*
17P	158+74 ~ 15+42.03 U.S. 27	Rt. & Lt.														41
LANE MILL ROAD																
1R	300+12 ~ 303+47	Lt. & Rt.	1057													39
STATE ROUTE 130																
5R	201+50 ~ 206+50	Lt. & Rt.	1134													40
6R	202+02 ~ 202+06	Lt.		8												40
7R	202+47 ~ 202+50	Rt.		4												40
HUSSEY ROAD																
10R	159+19 ~ 195+29	Lt.			Lump											41
<b>TOTAL</b>			2191	12	Lump	1220		243		200	10	142		301	10	136

\* Sheet No. For Pavement Calculations

18202020

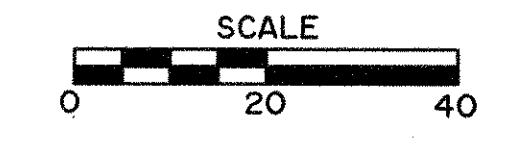
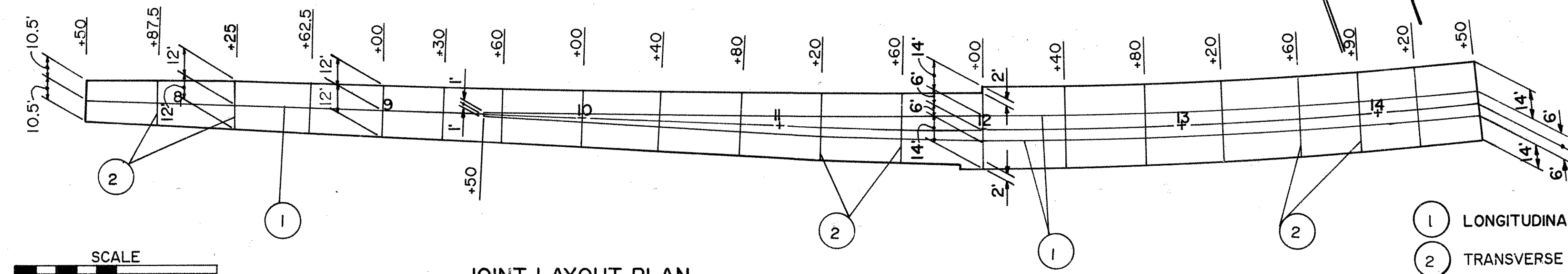
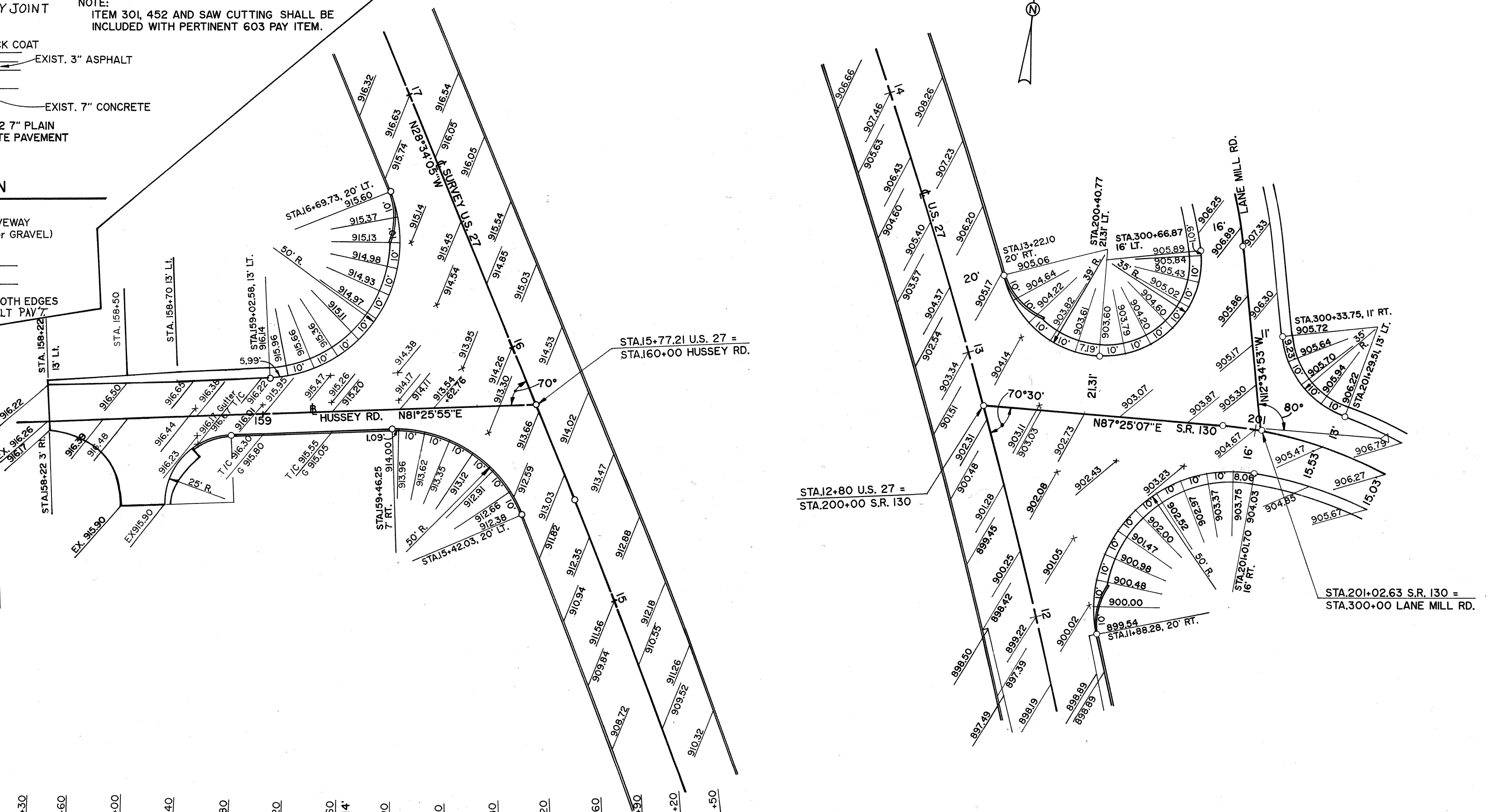
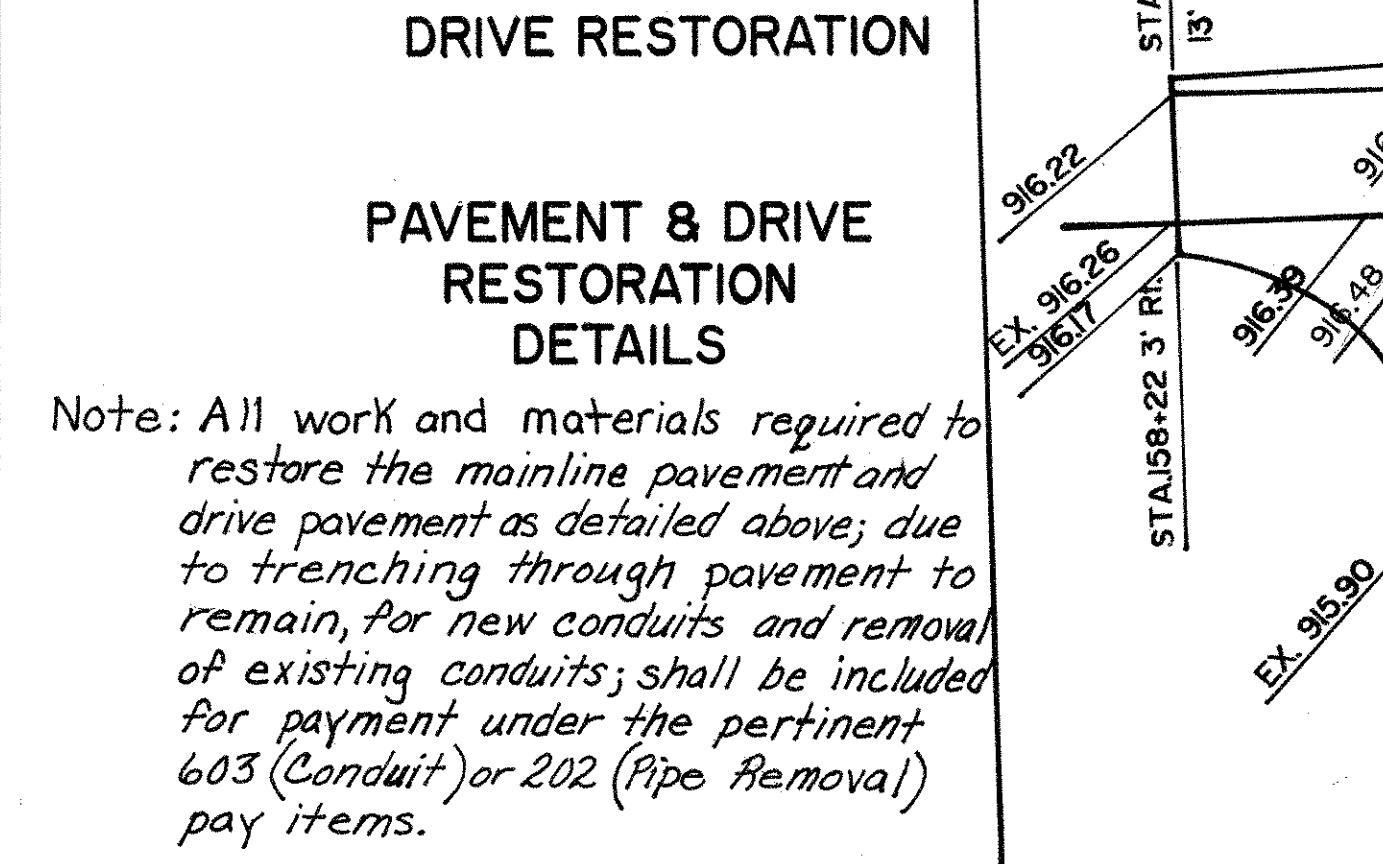
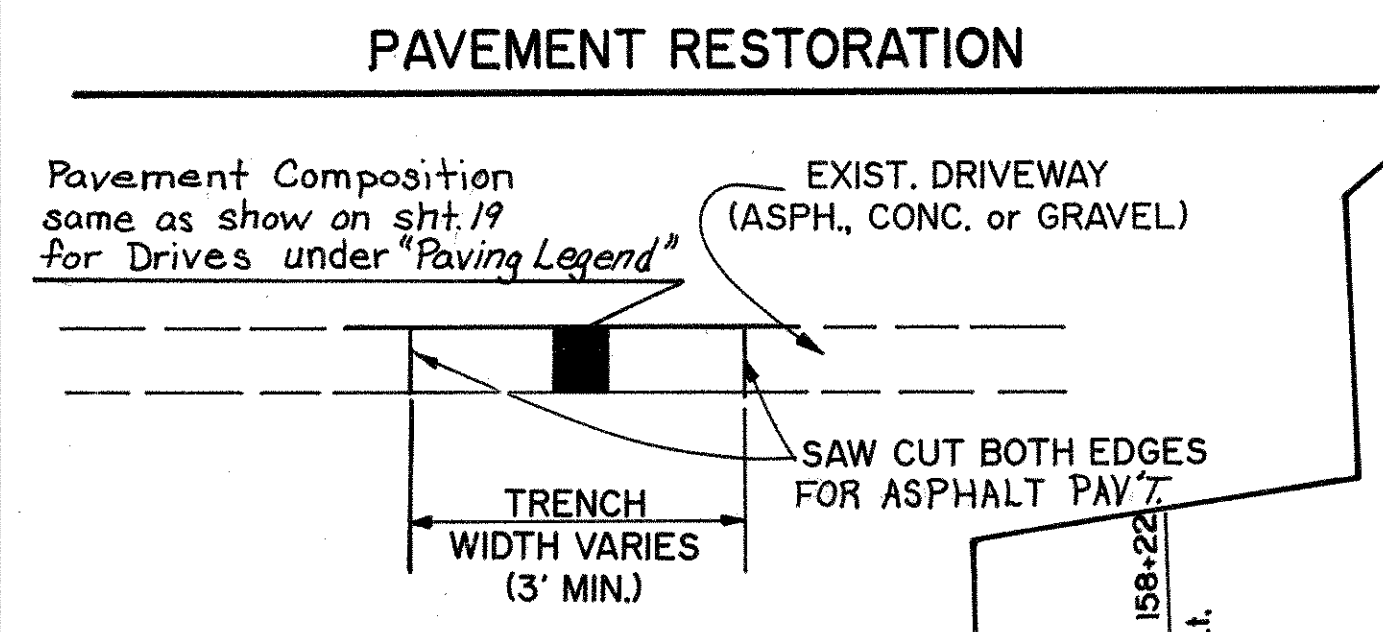
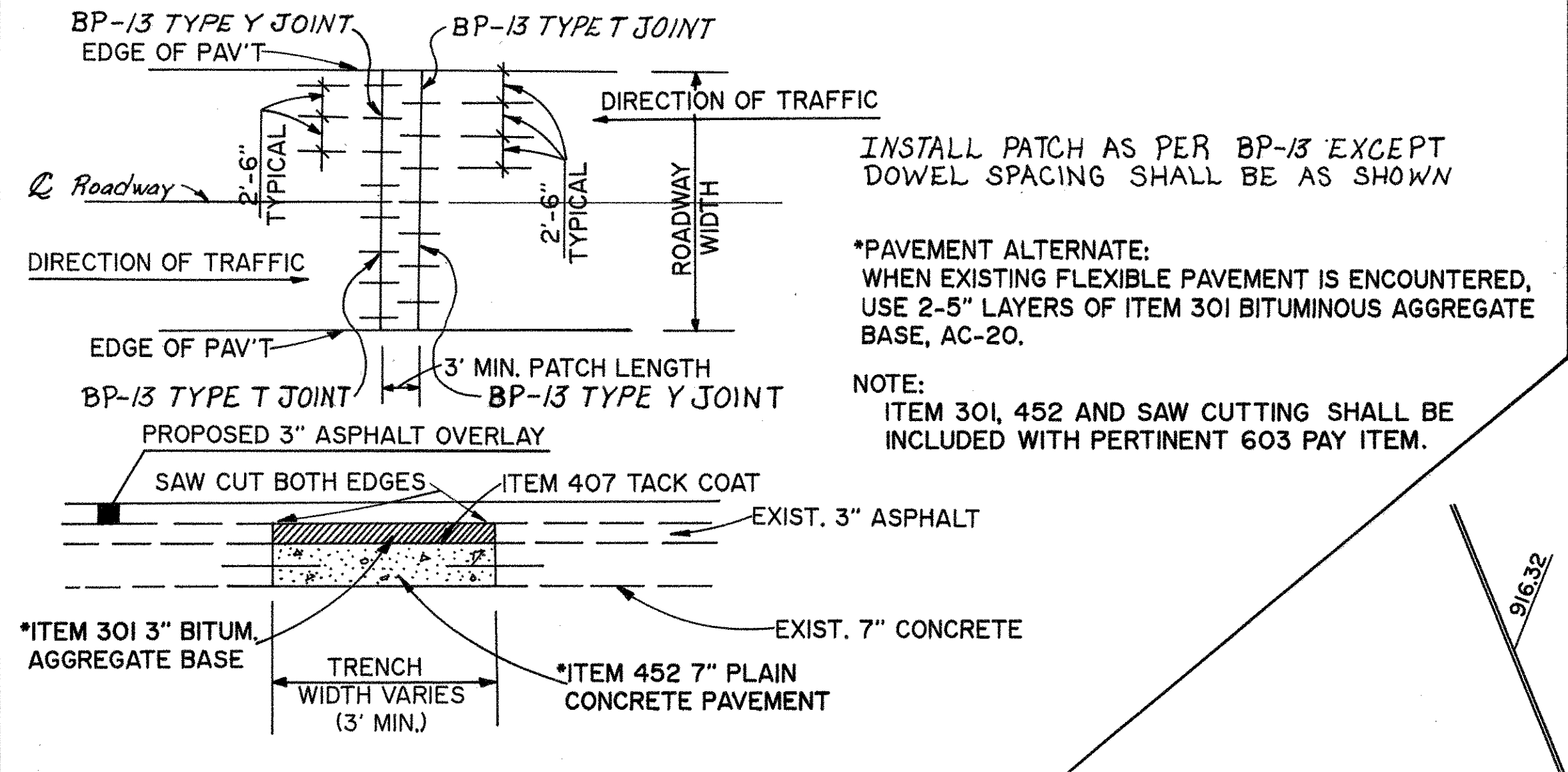
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NOTE BOOK  
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DATE  
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SURVEYED  
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NOTE BOOK  
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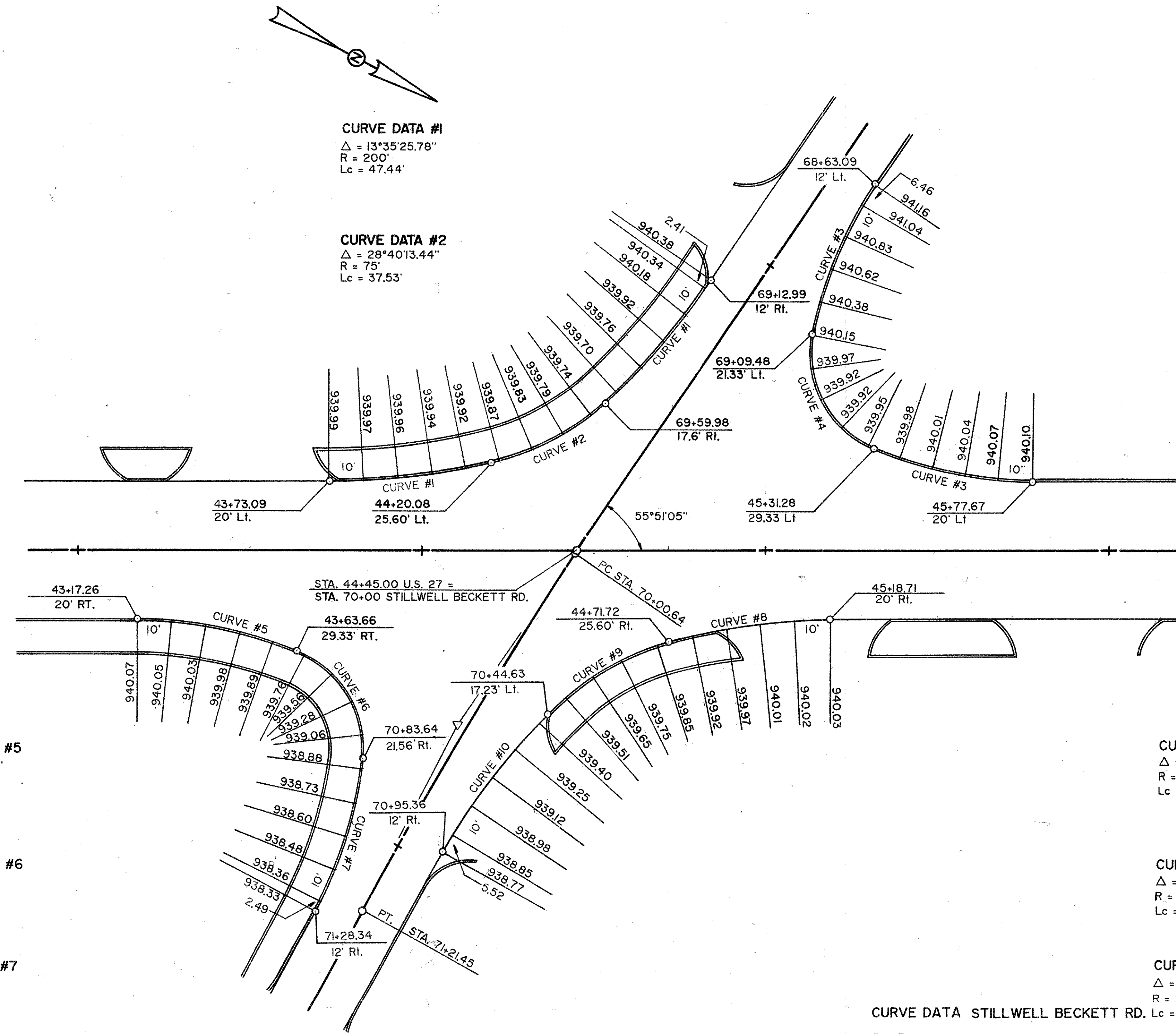
STORM SEWER PROFILE

# INTERSECTION & PAVEMENT DETAIL



PAV'T & DRIVE RESTORATION AND INTERSECTION DETAIL  
U.S. 27 & HUSSEY ROAD  
U.S. 27, S.R. 130 & LANE MILL RD.

# INTERSECTION DETAIL



**CURVE DATA #1**  
 $\Delta = 13^{\circ}35'25.78''$   
 $R = 200'$   
 $Lc = 47.44'$

**CURVE DATA #2**  
 $\Delta = 28^{\circ}40'13.44''$   
 $R = 75'$   
 $Lc = 37.53'$

**CURVE DATA #3**  
 $\Delta = 22^{\circ}44'48.66''$   
 $R = 120'$   
 $Lc = 47.64'$

**CURVE DATA #4**  
 $\Delta = 78^{\circ}39'17.68''$   
 $R = 30'$   
 $Lc = 41.18'$

**CURVE DATA #5**  
 $\Delta = 22^{\circ}44'48.7''$   
 $R = 120.00'$   
 $Lc = 47.64'$

**CURVE DATA #6**  
 $\Delta = 73^{\circ}07'41.1''$   
 $R = 30.00'$   
 $Lc = 38.29'$

**CURVE DATA #7**  
 $\Delta = 22^{\circ}13'58.2''$   
 $R = 120.00'$   
 $Lc = 46.56'$

**CURVE DATA #8**  
 $\Delta = 13^{\circ}35'25.8''$   
 $R = 200'$   
 $Lc = 47.44'$

**CURVE DATA #9**  
 $\Delta = 32^{\circ}31'58.6''$   
 $R = 75.00'$   
 $Lc = 42.59'$

**CURVE DATA #10**  
 $\Delta = 14^{\circ}27'50.4''$   
 $R = 200'$   
 $Lc = 50.49'$

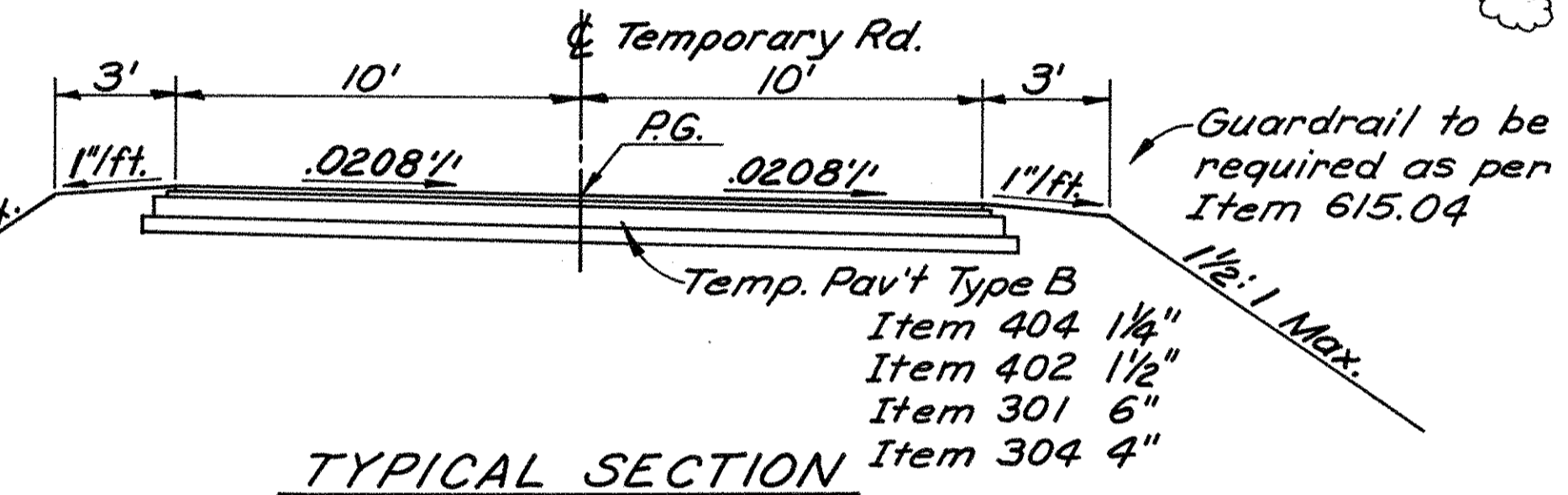
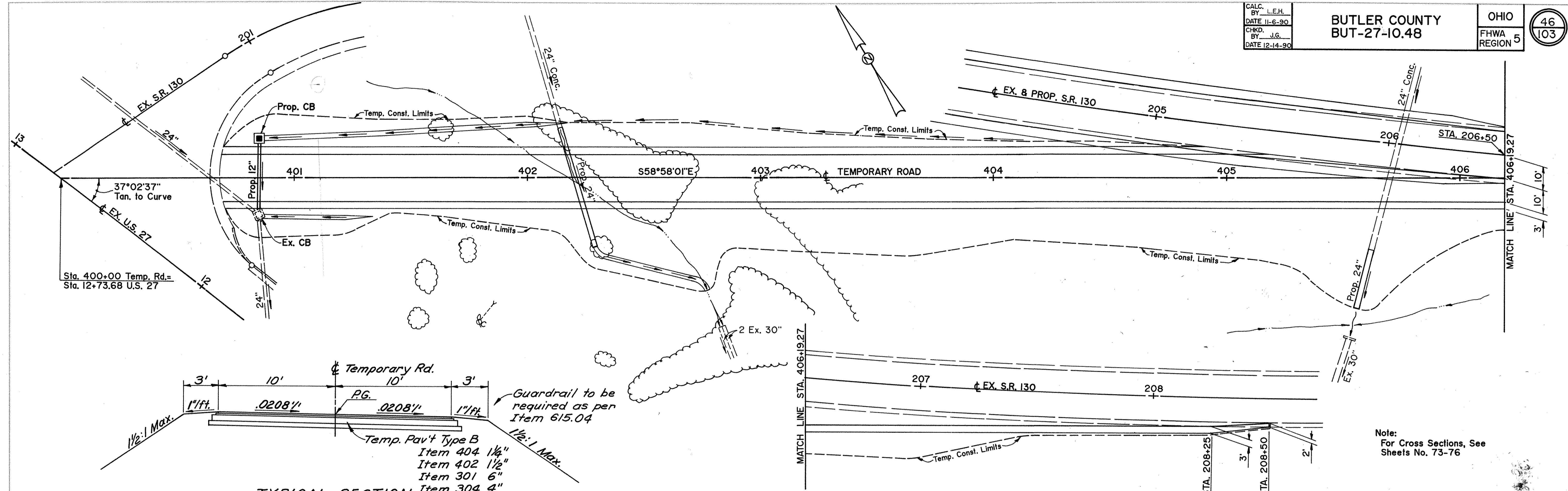
**CURVE DATA STILLWELL BECKETT RD.**  $Lc = 50.49'$

$Dc = 5'$   
 $\Delta = 6^{\circ}02'27''$   
 $Lc = 120.82'$   
 $T = 60.46'$   
 $R = 1145.9156'$

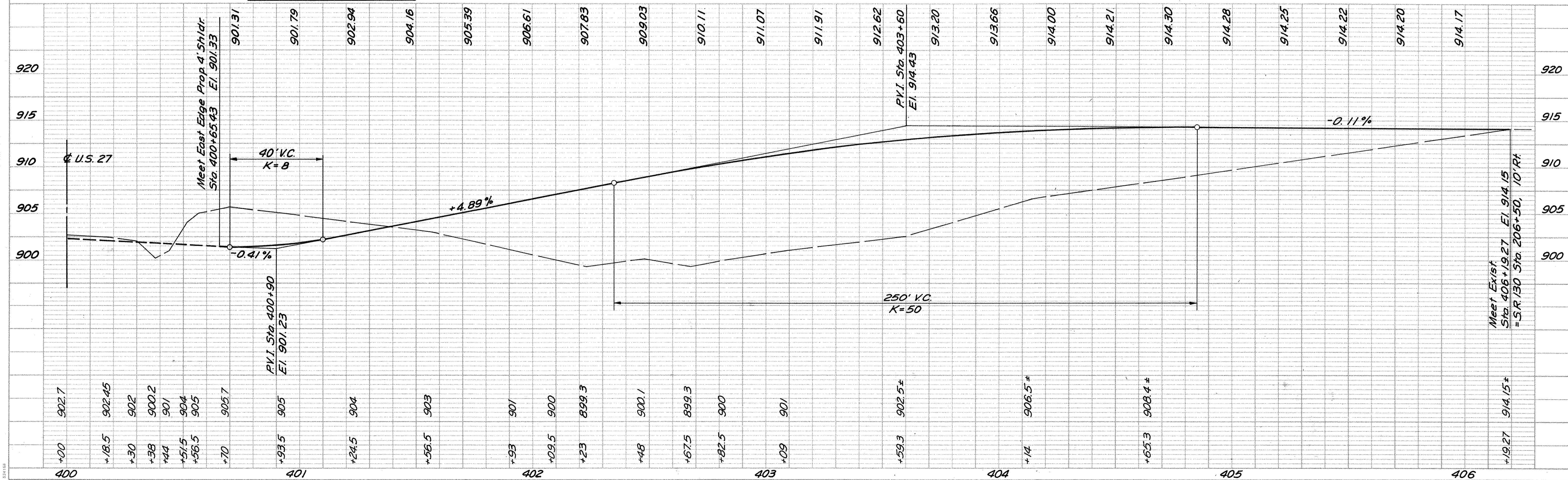


PLAN  
 SUPERVISED BY  
 CHECKED BY  
 DATE

PROFILE  
 SUPERVISED BY  
 CHECKED BY  
 DATE

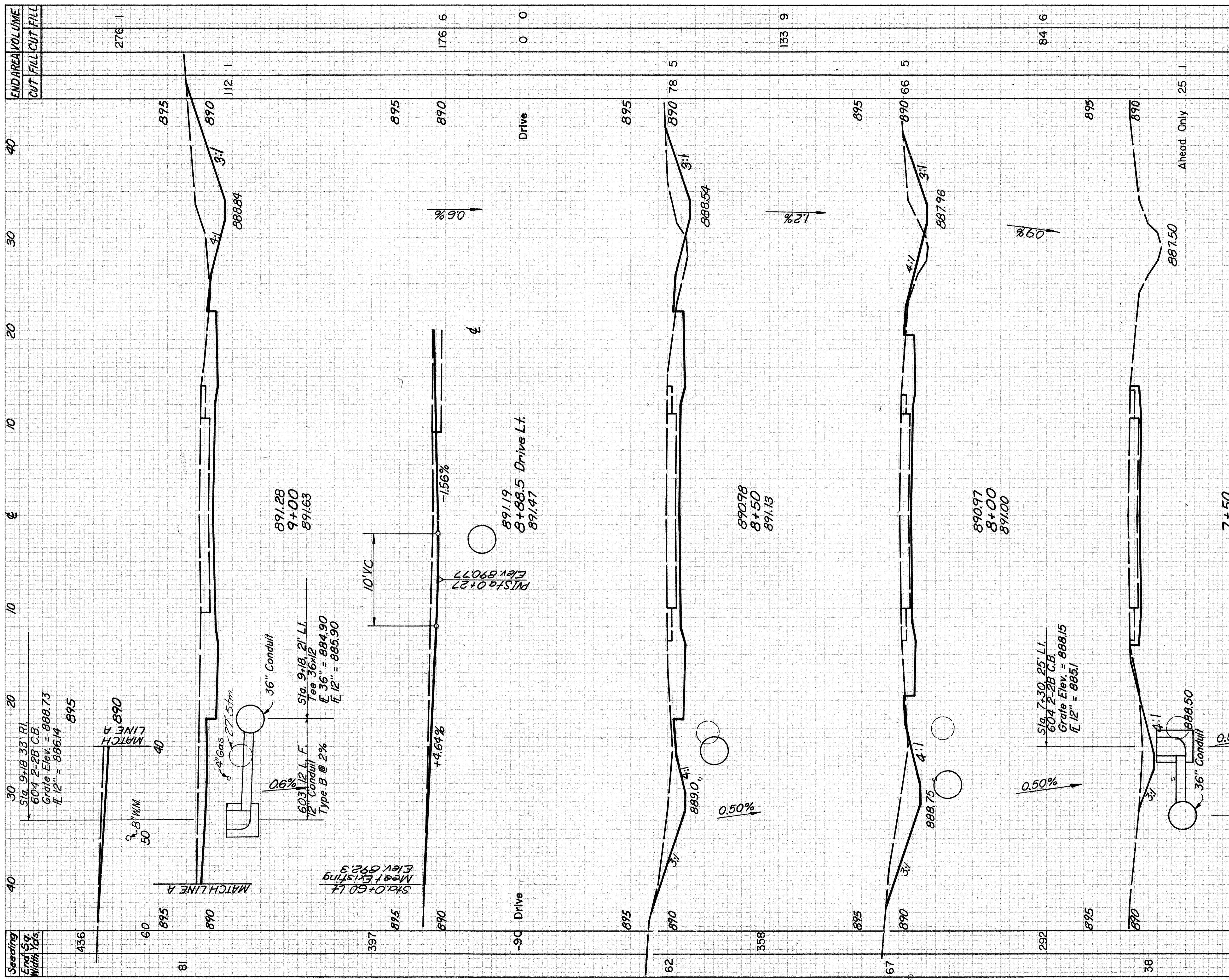


Note:  
 For Cross Sections, See  
 Sheets No. 73-76



ORIGINAL SURVEY	BY	DATE
NOTE BOOK		
AREAS CHECKED		
NO.		

FINAL SURVEY	BY	DATE
NOTE BOOK		
AREAS CHECKED		
NO.		



Seeding End Sq. Width Yds	END AREA VOLUME	CUT	FILL	CUT	FILL
436	276	1			
81				112	1
397	176	6			
-90 Drive				0	0
62				78	5
358	133	9			
67				66	5
292	84	6			
38				25	1

BEGIN WORK STA. 5+00







ORIGINAL SURVEY	DATE
NOTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
NOTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

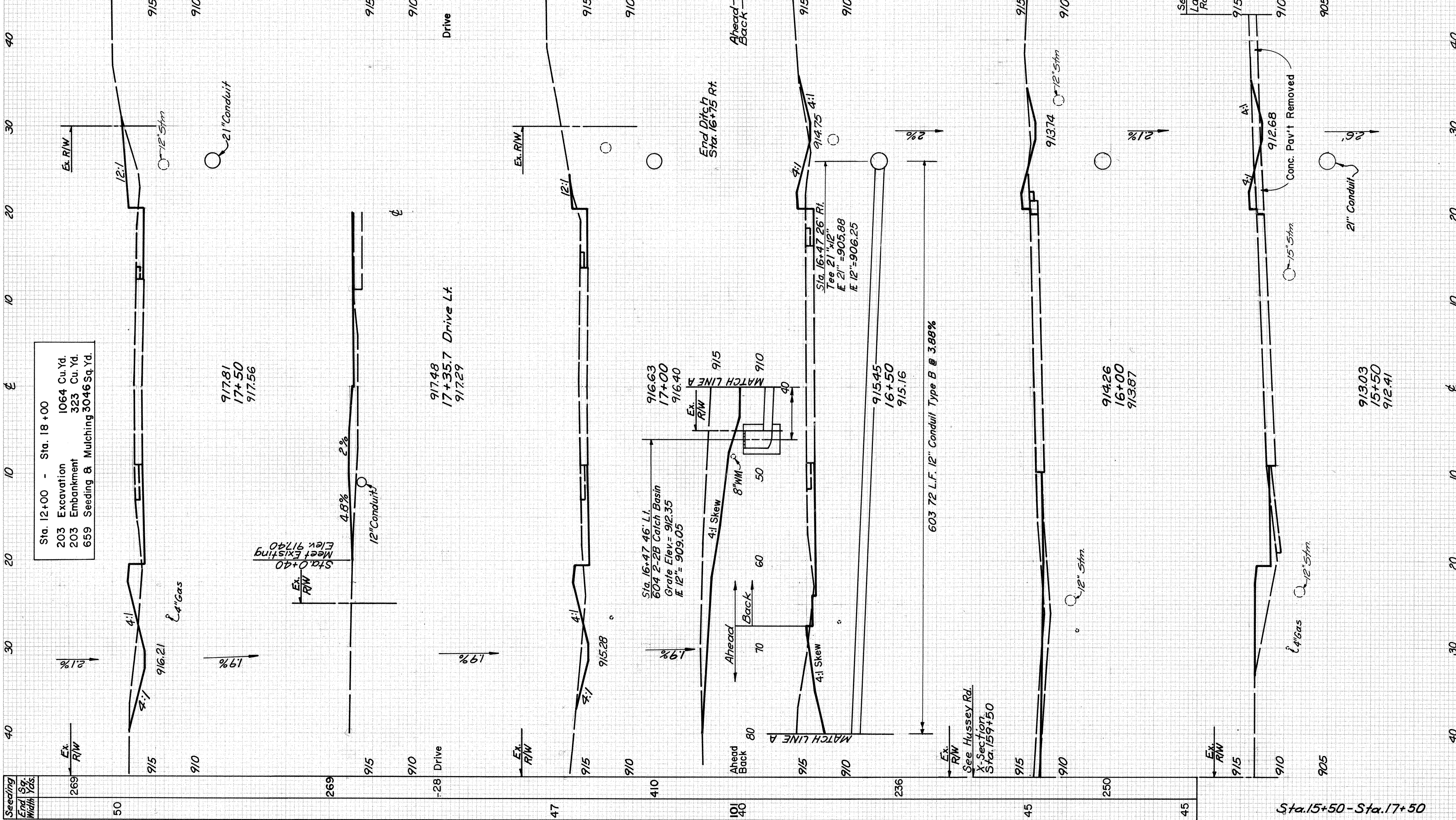
SEEDING END SQ. WIDTH YDS.	CUT	FILL	VOLUME	CUT	FILL
269				45	33
50				25	18
269				42	23
-28 Drive				-2	4
47				20	7
410				109	12
101 40				32	9
236				15	36
45				1	35
250					
45					

CALC. BY LEH  
DATE: 2-6-90  
CHKD. BY J.G.  
DATE: 2-14-90

BUTLER COUNTY  
BUT-27-10.48

OHIO  
FHWA 5  
REGION

50  
103



Sta. 12+00 - Sta. 18+00  
203 Excavation 1064 Cu. Yd.  
203 Embankment 323 Cu. Yd.  
659 Seeding & Mulching 3046 Sq. Yd.

917.81  
17+50  
917.56

917.48  
17+35.7 Drive Lt.  
917.29

916.63  
17+00  
916.40  
Sta. 16+47 46' L.I.  
604 2-28 Catch Basin  
Grate Elev. = 912.35  
E 12" = 909.05

915.45  
16+50  
915.16  
Sta. 16+47 26' R.I.  
Tee 21" x 12"  
E 21" = 905.88  
E 12" = 906.25

914.26  
16+00  
913.87

913.03  
15+50  
912.41

Sta. 15+50 - Sta. 17+50

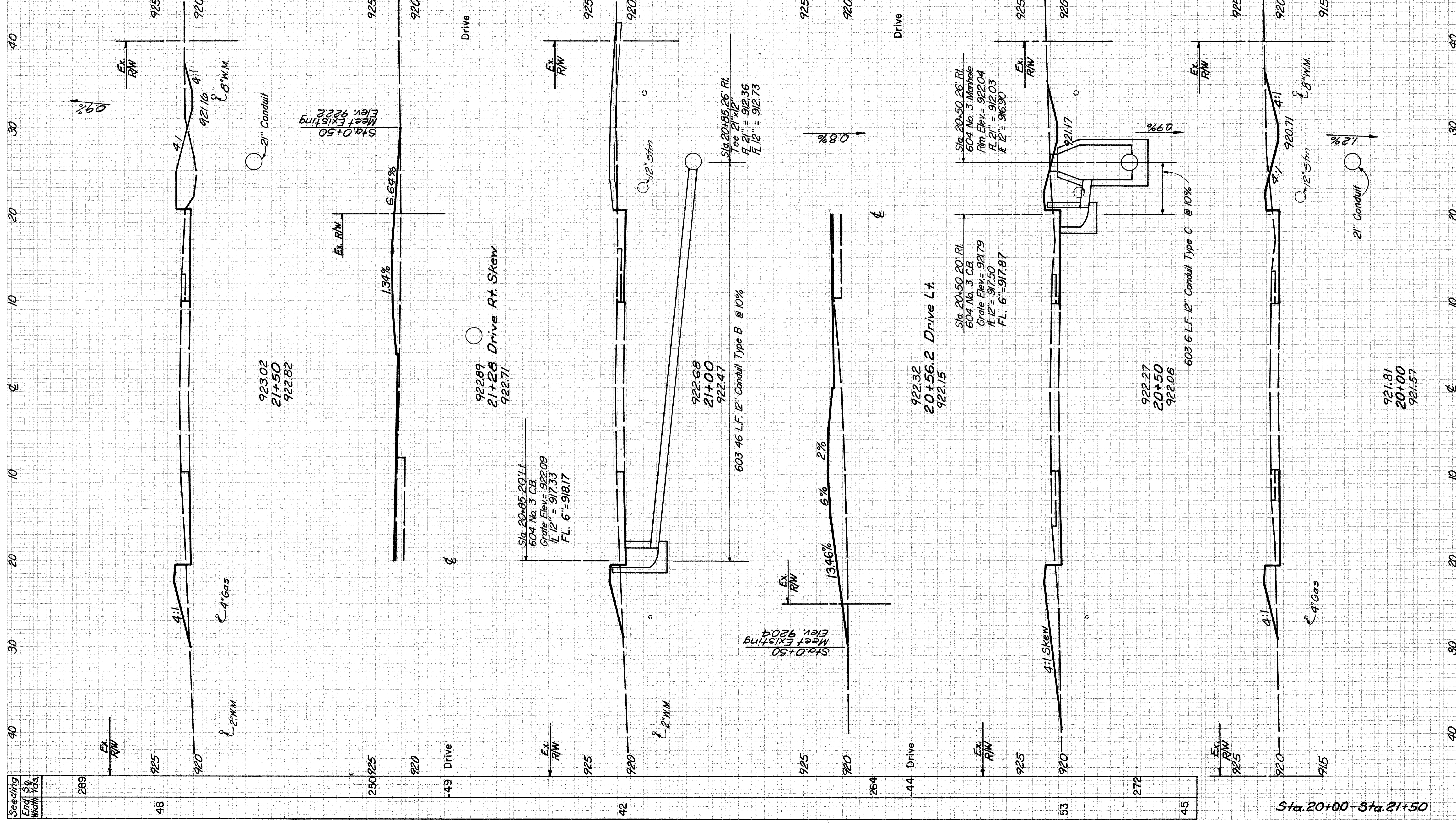


DATE	
BY	
SURVEYED	
TEMPLATE	
NO. AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
TEMPLATE	
NO. AREAS CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	

SEEDING	END AREA	VOLUME	CUT	FILL	CUT	FILL
289	48	42	48	23	21	48
250	49	42	39	29	0	0
264	44	42	28	0	10	0
272	53	54	27	9	20	27
45						

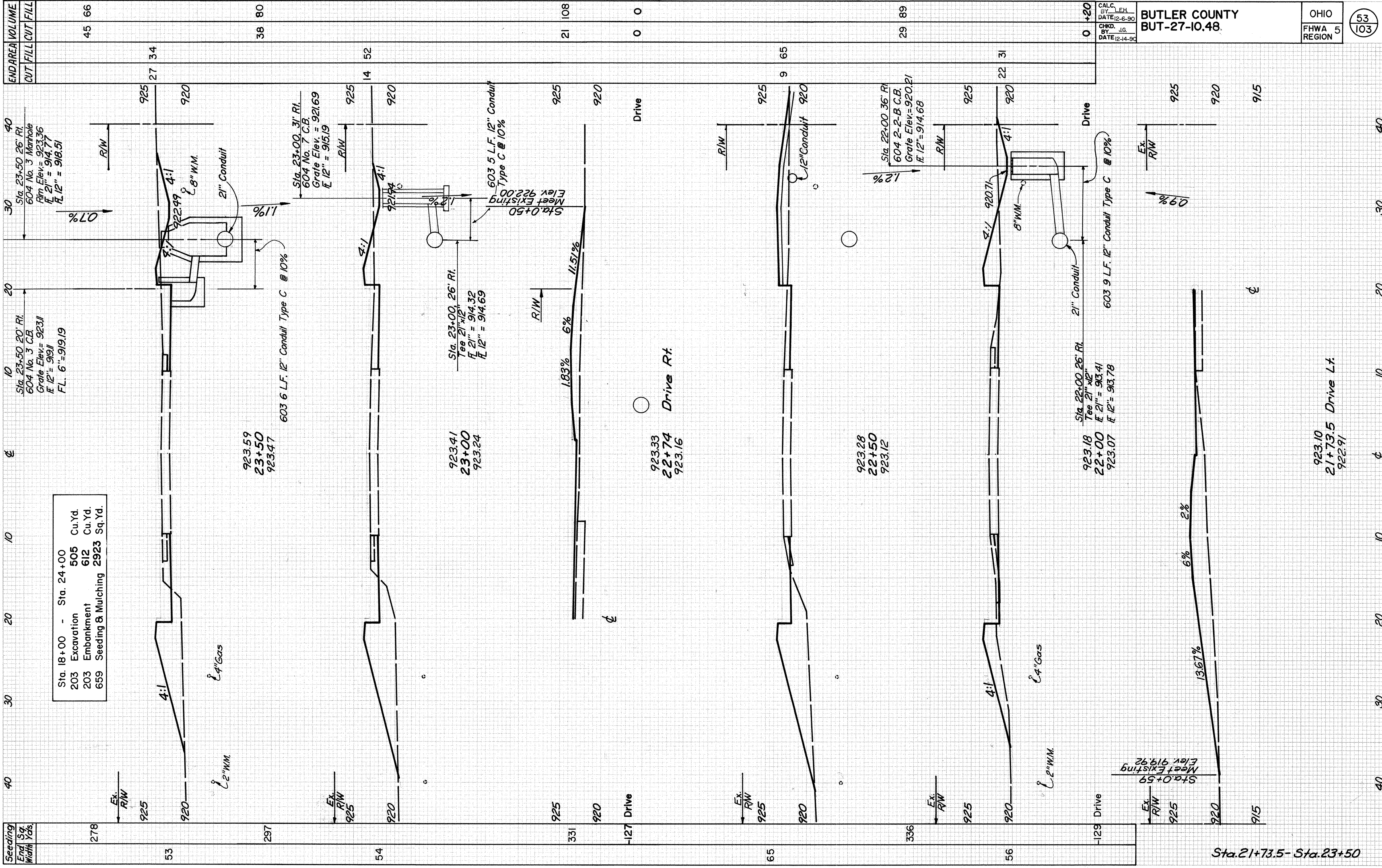
CALC. BY: LEH	BUTLER COUNTY BUT-27-10.48	OHIO
DATE: 12-6-90		FHWA REGION 5
CHKD. BY: J.G.		52 103
DATE: 12-14-90		



Sta. 20+00 - Sta. 21+50

ORIGINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED

FINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED



Sta. 18+00 - Sta. 24+00  
 203 Excavation 505 Cu. Yd.  
 203 Embankment 612 Cu. Yd.  
 659 Seeding & Mulching 2923 Sq. Yd.

Sta. 21+73.5 - Sta. 23+50

BUTLER COUNTY  
 BUT-27-10.48

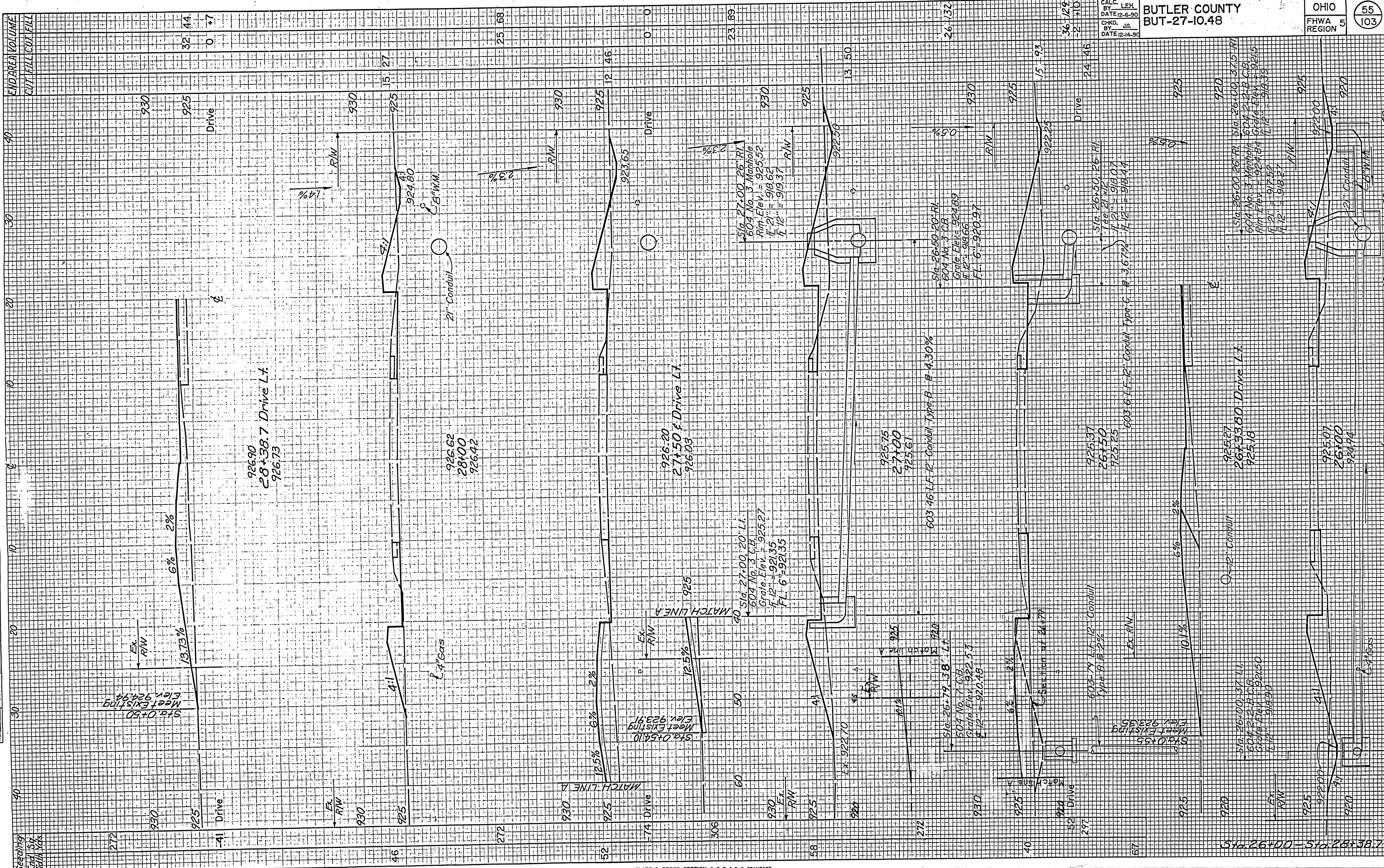
OHIO  
 FHWA REGION 5

53  
 103



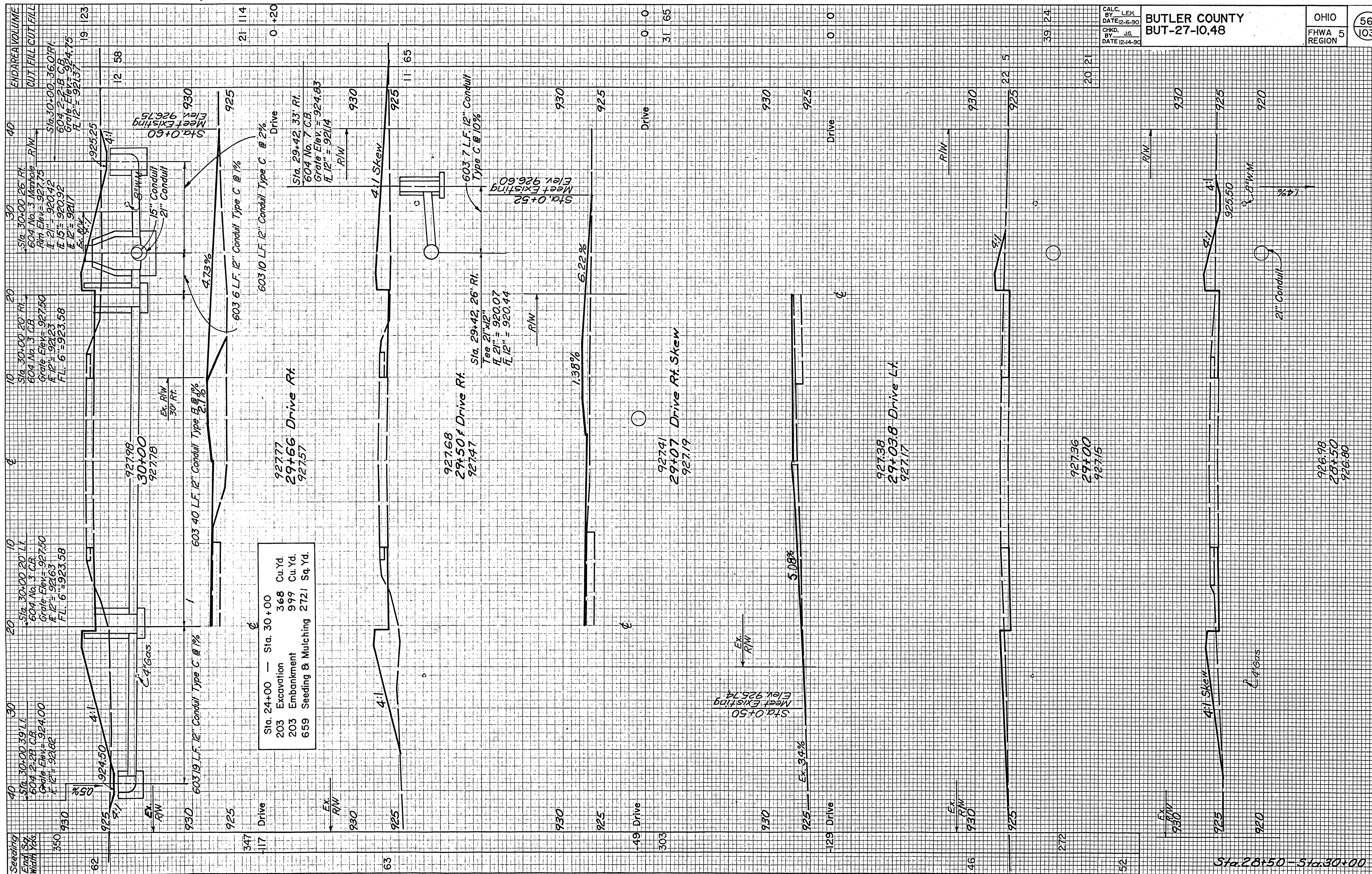
DATE	
ORIGIN SURVEY	
NUMBERED	
NOTED	
TEMPLATE	
AREA	
AREA CHECKED	
NO.	

DATE	
FINAL SURVEY	
NUMBERED	
NOTED	
TEMPLATE	
AREA	
AREA CHECKED	
NO.	



Seeding	40	30	20	10	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990	1000																																																							
End 15' Width	46	52	58	64	70	76	82	88	94	100	106	112	118	124	130	136	142	148	154	160	166	172	178	184	190	196	202	208	214	220	226	232	238	244	250	256	262	268	274	280	286	292	298	304	310	316	322	328	334	340	346	352	358	364	370	376	382	388	394	400	406	412	418	424	430	436	442	448	454	460	466	472	478	484	490	496	502	508	514	520	526	532	538	544	550	556	562	568	574	580	586	592	598	604	610	616	622	628	634	640	646	652	658	664	670	676	682	688	694	700	706	712	718	724	730	736	742	748	754	760	766	772	778	784	790	796	802	808	814	820	826	832	838	844	850	856	862	868	874	880	886	892	898	904	910	916	922	928	934	940	946	952	958	964	970	976	982	988	994	1000
Width 15'	46	52	58	64	70	76	82	88	94	100	106	112	118	124	130	136	142	148	154	160	166	172	178	184	190	196	202	208	214	220	226	232	238	244	250	256	262	268	274	280	286	292	298	304	310	316	322	328	334	340	346	352	358	364	370	376	382	388	394	400	406	412	418	424	430	436	442	448	454	460	466	472	478	484	490	496	502	508	514	520	526	532	538	544	550	556	562	568	574	580	586	592	598	604	610	616	622	628	634	640	646	652	658	664	670	676	682	688	694	700	706	712	718	724	730	736	742	748	754	760	766	772	778	784	790	796	802	808	814	820	826	832	838	844	850	856	862	868	874	880	886	892	898	904	910	916	922	928	934	940	946	952	958	964	970	976	982	988	994	1000
Width 10'	46	52	58	64	70	76	82	88	94	100	106	112	118	124	130	136	142	148	154	160	166	172	178	184	190	196	202	208	214	220	226	232	238	244	250	256	262	268	274	280	286	292	298	304	310	316	322	328	334	340	346	352	358	364	370	376	382	388	394	400	406	412	418	424	430	436	442	448	454	460	466	472	478	484	490	496	502	508	514	520	526	532	538	544	550	556	562	568	574	580	586	592	598	604	610	616	622	628	634	640	646	652	658	664	670	676	682	688	694	700	706	712	718	724	730	736	742	748	754	760	766	772	778	784	790	796	802	808	814	820	826	832	838	844	850	856	862	868	874	880	886	892	898	904	910	916	922	928	934	940	946	952	958	964	970	976	982	988	994	1000
Width 5'	46	52	58	64	70	76	82	88	94	100	106	112	118	124	130	136	142	148	154	160	166	172	178	184	190	196	202	208	214	220	226	232	238	244	250	256	262	268	274	280	286	292	298	304	310	316	322	328	334	340	346	352	358	364	370	376	382	388	394	400	406	412	418	424	430	436	442	448	454	460	466	472	478	484	490	496	502	508	514	520	526	532	538	544	550	556	562	568	574	580	586	592	598	604	610	616	622	628	634	640	646	652	658	664	670	676	682	688	694	700	706	712	718	724	730	736	742	748	754	760	766	772	778	784	790	796	802	808	814	820	826	832	838	844	850	856	862	868	874	880	886	892	898	904	910	916	922	928	934	940	946	952	958	964	970	976	982	988	994	1000
Width 0'	46	52	58	64	70	76	82	88	94	100	106	112	118	124	130	136	142	148	154	160	166	172	178	184	190	196	202	208	214	220	226	232	238	244	250	256	262	268	274	280	286	292	298	304	310	316	322	328	334	340	346	352	358	364	370	376	382	388	394	400	406	412	418	424	430	436	442	448	454	460	466	472	478	484	490	496	502	508	514	520	526	532	538	544	550	556	562	568	574	580	586	592	598	604	610	616	622	628	634	640	646	652	658	664	670	676	682	688	694	700	706	712	718	724	730	736	742	748	754	760	766	772	778	784	790	796	802	808	814	820	826	832	838	844	850	856	862	868	874	880	886	892	898	904	910	916	922	928	934	940	946	952	958	964	970	976	982	988	994	1000





	Excavation	Embankment	Seeding & Mulching
Sta. 24+00 - Sta. 30+00	368	999	659
	Cu. Yd.	Cu. Yd.	Sq. Yd.

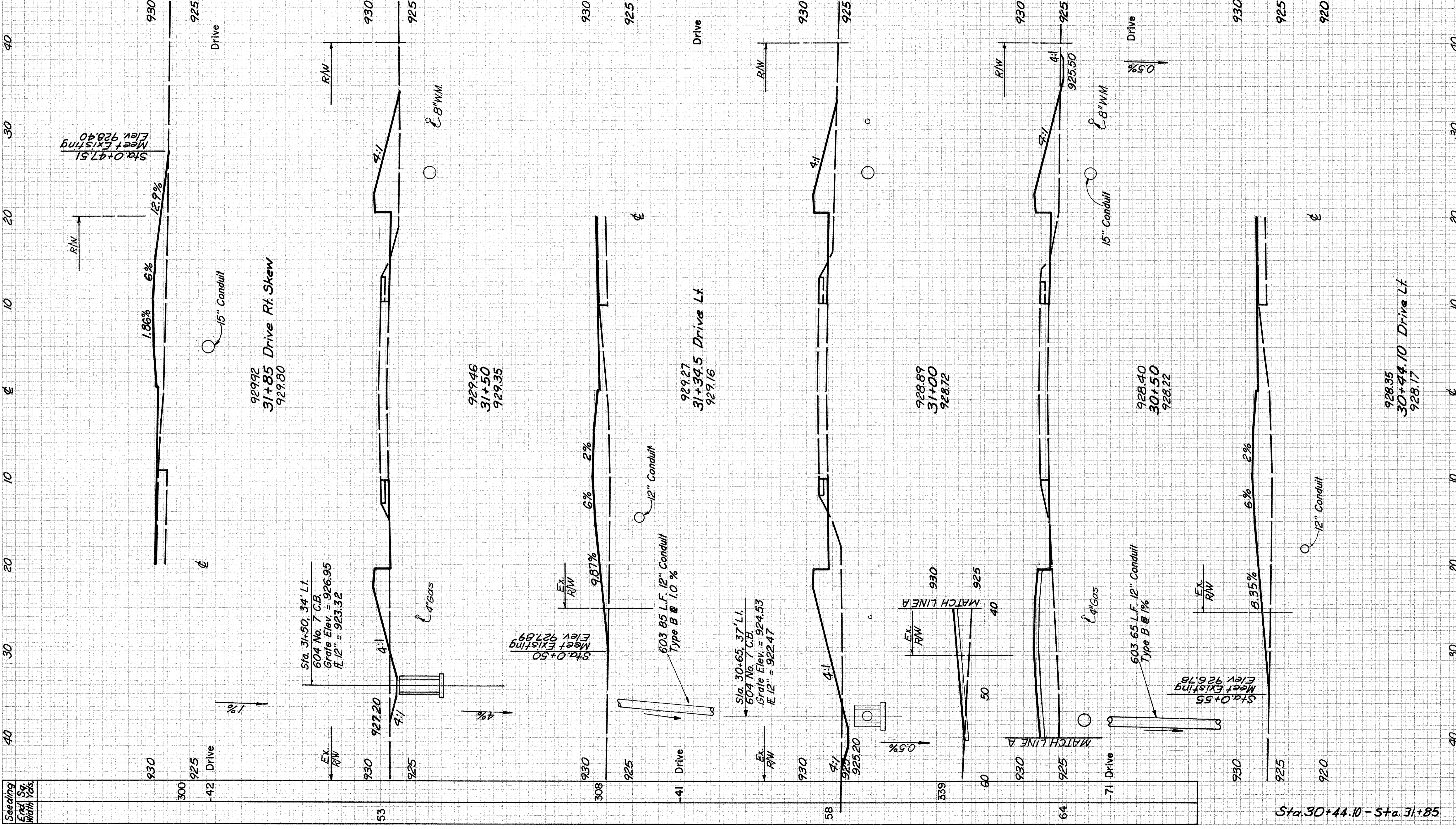
PLATE 3 CROSS SECTION O.P.R. & R.E. STANDARD

NO.	DATE	BY	DATE
ORIGINAL SURVEY	SURVEYED	NOTED	DATE
NOTE BOOK	AREA	CHECKED	
AREAS CHECKED:			

NO.	DATE	BY	DATE
ORIGINAL SURVEY	SURVEYED	NOTED	DATE
NOTE BOOK	AREA	CHECKED	
AREAS CHECKED:			

Seeding End Sq. Width Yds.	CUT FILL		END AREA VOLUME
	CUT	FILL	
300			0 +4
-42			18 85
53			
308			
-41			21 94
58			-2 +7
339			18 123
64			
-71			0 0
			0 0

CALC. LEH  
BY DATE 12-6-90  
CHKD. JG.  
BY DATE 12-14-90



DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
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DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
NO.	

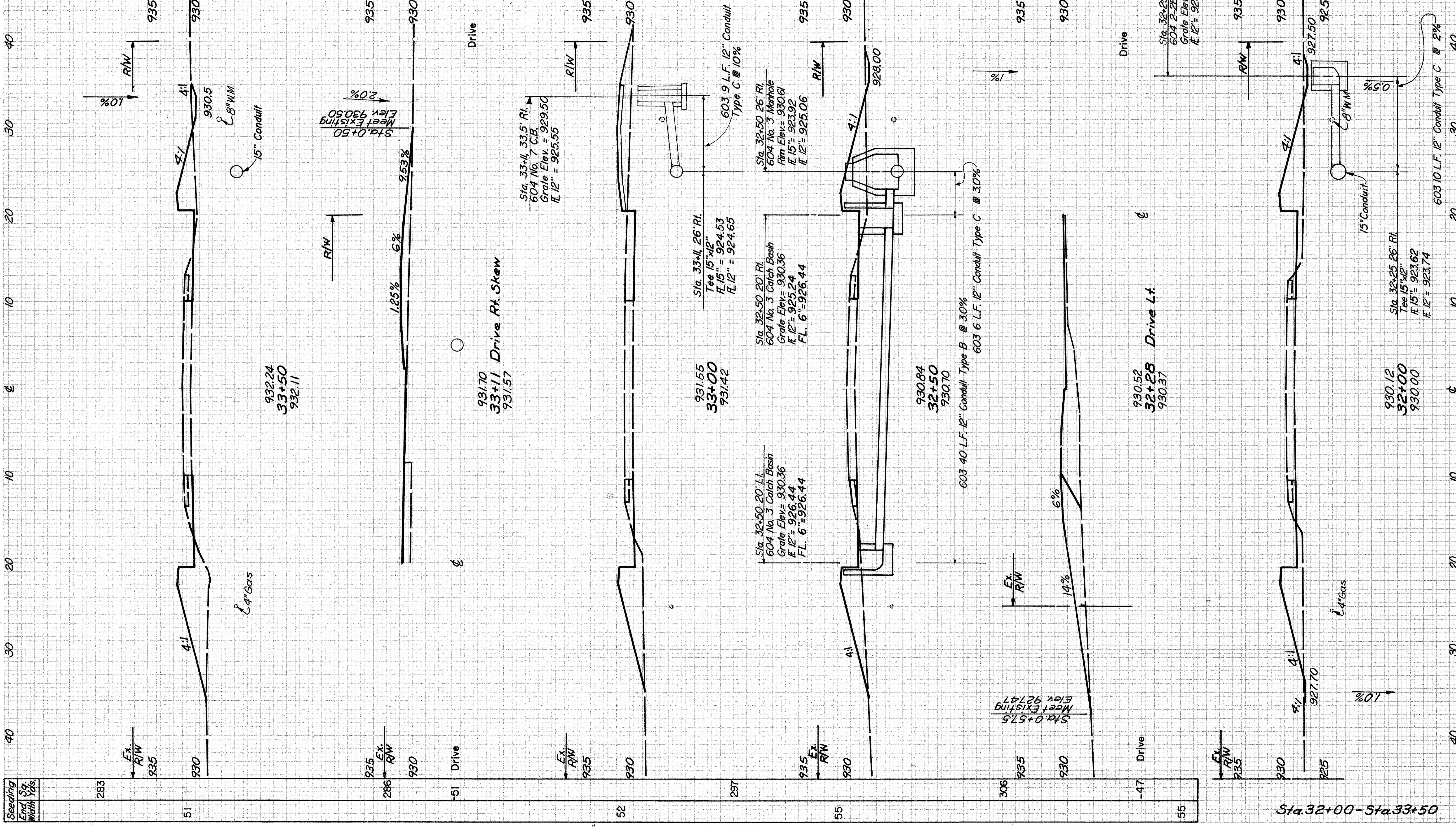
SEEDING END STA.	SEEDING SQ. WIDTH	CUT	FILL	VOLUME	
					END AREA
283	51			24	92
286	52			25	83
297	55			0	0
306	55			15	88
-47	55			0	+8

CALC. BY: LEH  
DATE: 12-6-90  
CHKD. BY: JG  
DATE: 12-14-94

**BUTLER COUNTY**  
**BUT-27-10.48**

OHIO  
FHWA REGION 5

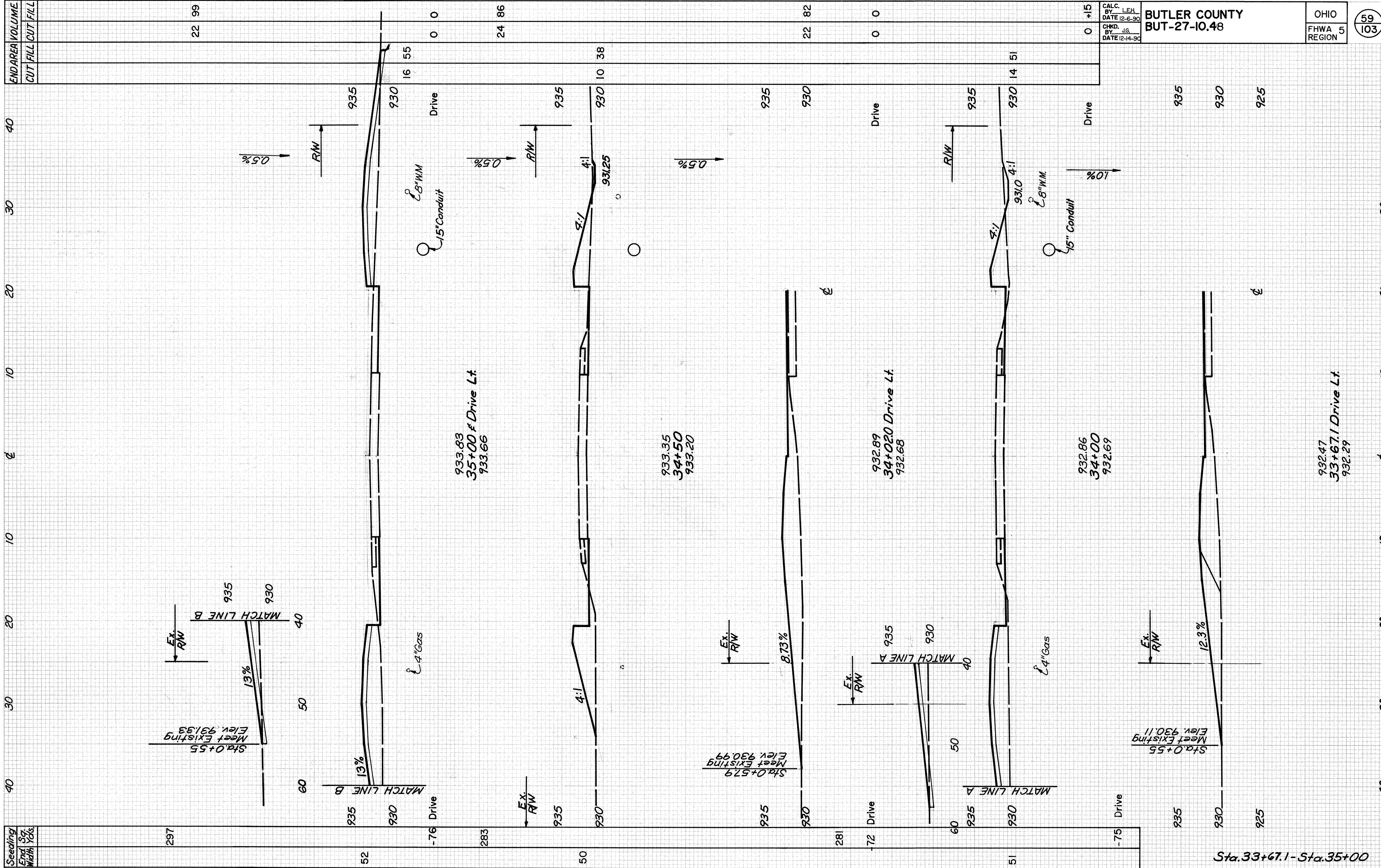
58  
103



Sta. 32+00 - Sta. 33+50

ORIGINAL SURVEY  
NOTE BOOK NO. \_\_\_\_\_  
DATE \_\_\_\_\_  
BY \_\_\_\_\_  
NO. \_\_\_\_\_  
AREAS CHECKED \_\_\_\_\_

FINAL SURVEY  
NOTE BOOK NO. \_\_\_\_\_  
DATE \_\_\_\_\_  
BY \_\_\_\_\_  
NO. \_\_\_\_\_  
AREAS CHECKED \_\_\_\_\_



END AREA	VOLUME	CUT	FILL	CUT	FILL	CUT	FILL
	22	99					
				16	55	0	0
						24	86
						22	82
						0	0
						0	+15

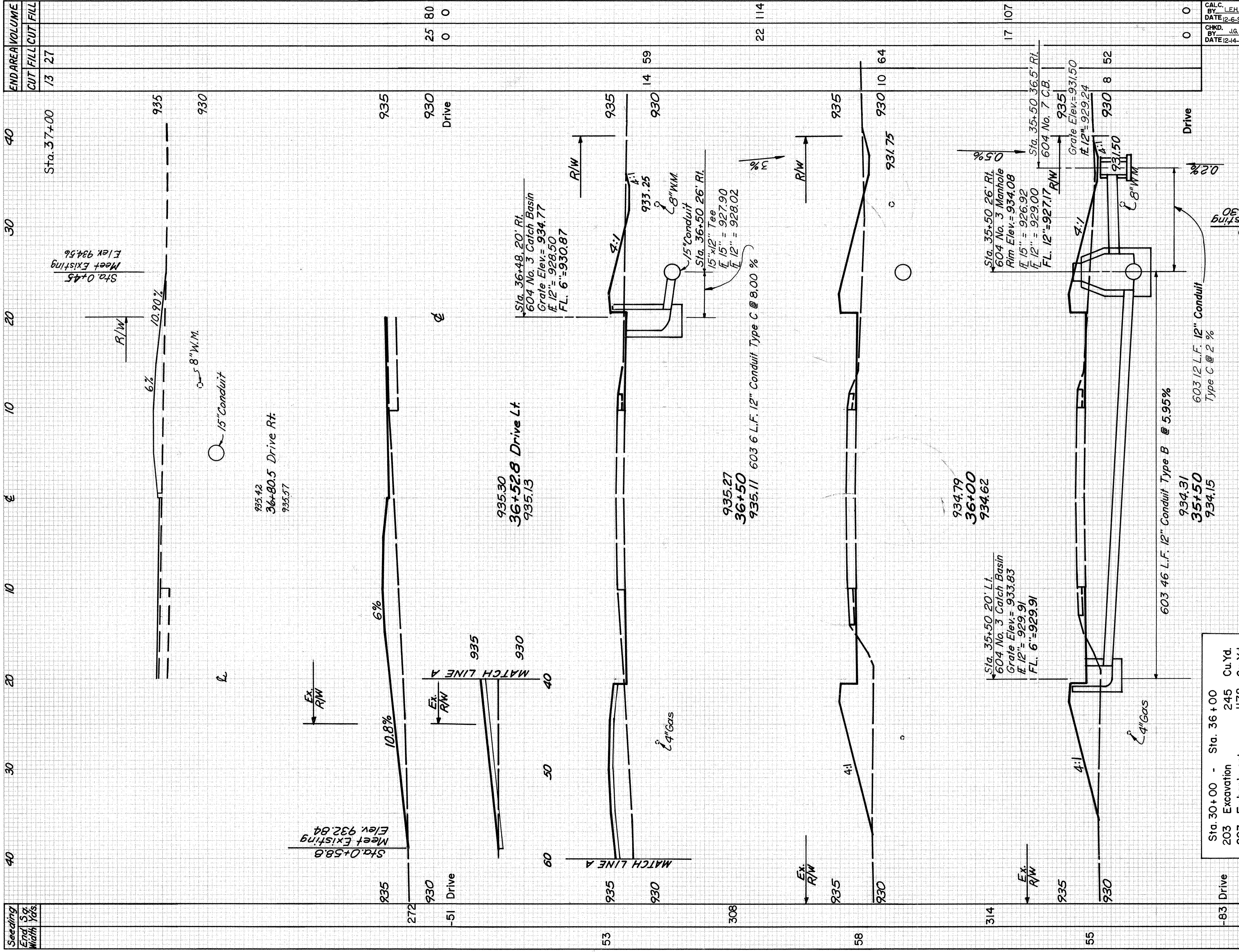
BUTLER COUNTY  
BUT-27-10.48

OHIO  
FHWA 5  
REGION

59  
103

ORIGINAL SURVEY  
 SURVEYED BY  
 PLOTTED BY  
 NOTE BOOK NO.  
 AREAS CHECKED

FINAL SURVEY  
 SURVEYED BY  
 PLOTTED BY  
 NOTE BOOK NO.  
 AREAS CHECKED



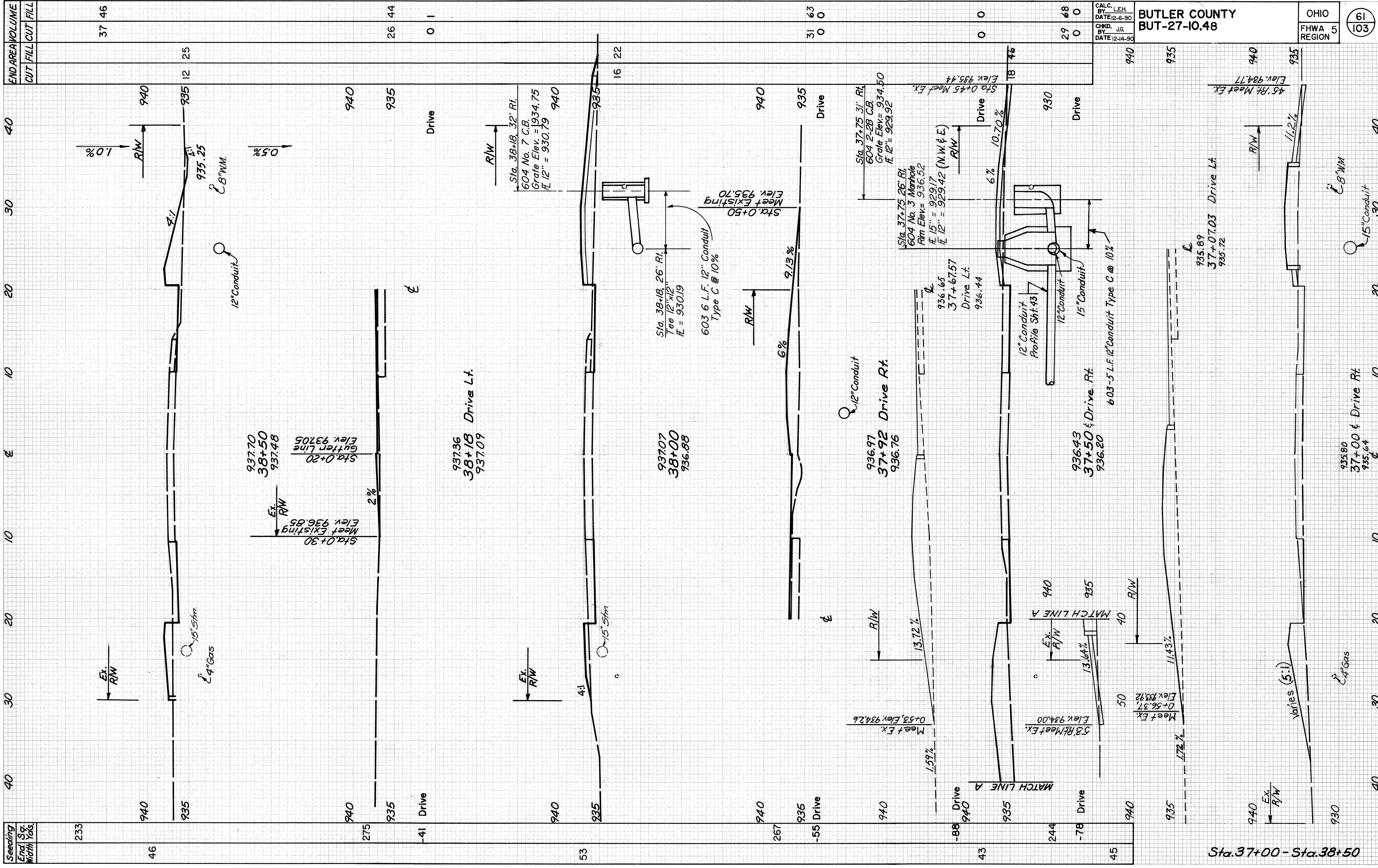
Sta. 30+00 -	Sta. 36+00	245	Cu. Yd.
203	Excavation	1178	Cu. Yd.
203	Embankment	3106	Sq. Yd.
659	Seeding & Mulching		

Seeding End Sta. Width Yds	END AREA VOLUME	
	CUT	FILL
272	13	27
-51	25	80
53	0	0
308	22	114
58		
314		
55	17	107
-83	0	0

Sta. 35+08 - Sta. 36+52.8

NO.	DATE
ORIGINAL SURVEY	BY
FLUENT	DATE
NOTE BOOK	AREA
NO.	DATE
FLUENT	BY
NOTE BOOK	DATE
NO.	DATE

NO.	DATE
ORIGINAL SURVEY	BY
FLUENT	DATE
NOTE BOOK	AREA
NO.	DATE
FLUENT	BY
NOTE BOOK	DATE
NO.	DATE

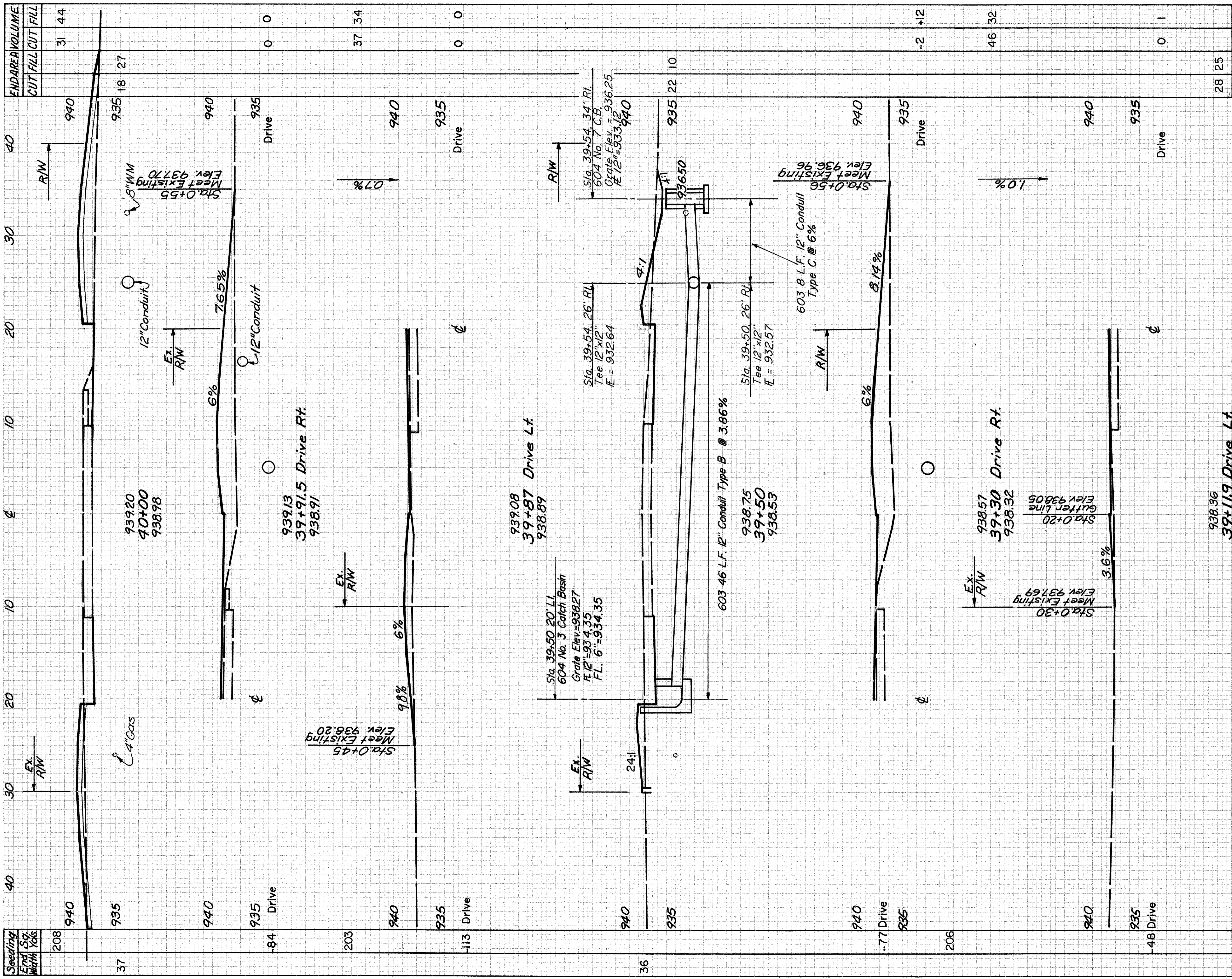


Seeding	End Sq. Width Yds	40	30	20	10	0	10	20	30	40	END AREA VOLUME
233	46	940	935	940	935	940	935	940	935	940	37 46
275	-41 Drive	940	935	940	935	940	935	940	935	940	26 44
53	-55 Drive	940	935	940	935	940	935	940	935	940	31 63
267	-88 Drive	940	935	940	935	940	935	940	935	940	0 0
43	-78 Drive	940	935	940	935	940	935	940	935	940	29 68
244	45	940	935	940	935	940	935	940	935	940	0 0
45		940	935	940	935	940	935	940	935	940	0 0

Sta. 37+00 - Sta. 38+50

FINAL SURVEY PLOTTED BY DATE  
 NO. AREAS CHANGED

ORIGINAL SURVEY PLOTTED BY DATE  
 NO. AREAS CHANGED



Station	END AREA VOLUME	
	CUT	FILL
37	0	0
38	0	0
39	0	0
40	31	44

CALC. BY LEH  
 DATE 12-6-90  
 CHKD. BY JG  
 DATE 12-14-90

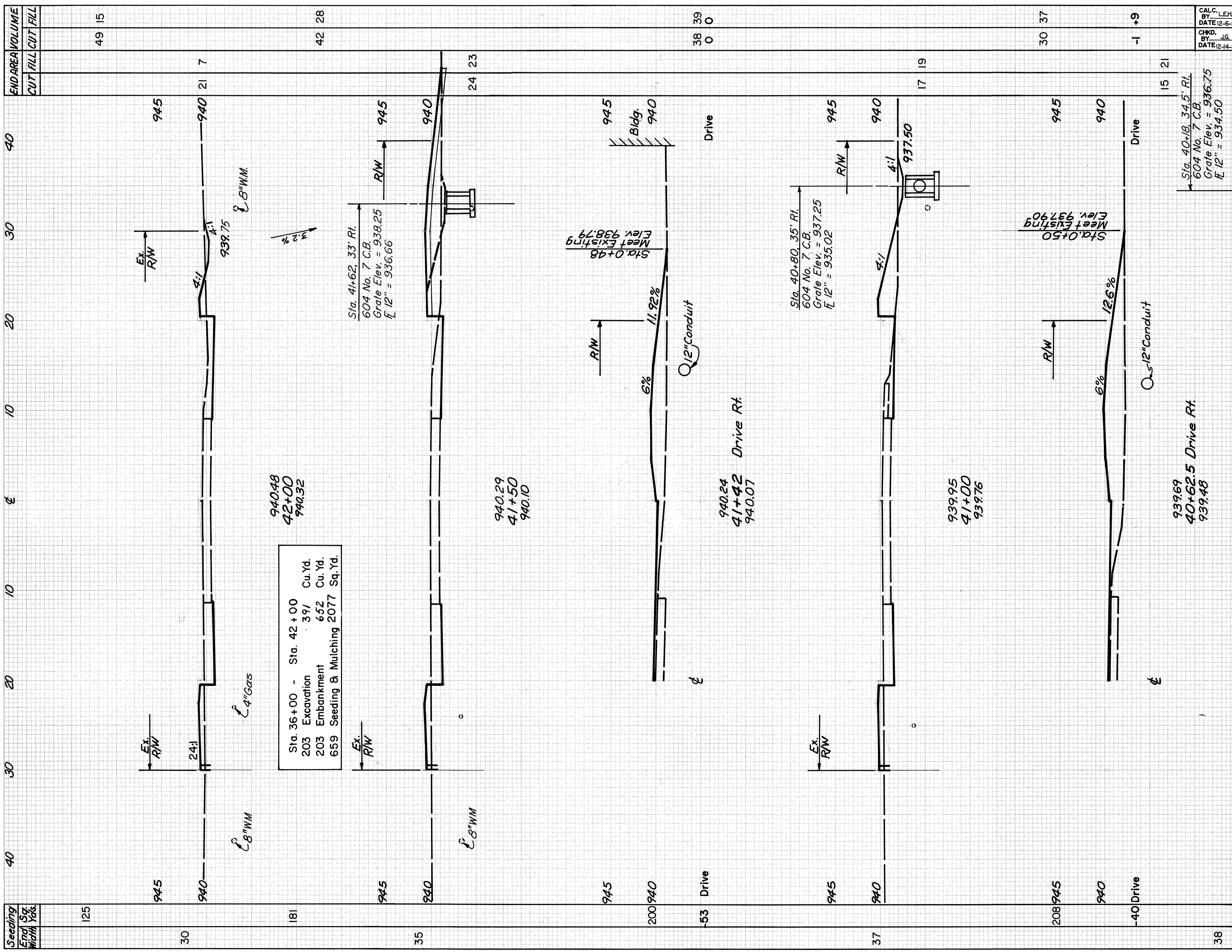
**BUTLER COUNTY  
 BUT-27-10.48**

OHIO  
 FHWA 5  
 REGION

62  
 103

FINAL SURVEY NOTE BOOK No. \_\_\_\_\_ DATE \_\_\_\_\_ BY \_\_\_\_\_

ORIGINAL SURVEY NOTE BOOK No. \_\_\_\_\_ DATE \_\_\_\_\_ BY \_\_\_\_\_



Sta. 36+00 - Sta. 42+00	
203 Excavation	391 Cu. Yd.
203 Embankment	652 Cu. Yd.
659 Seeding & Mulching	2077 Sq. Yd.

STATION	CUT		FILL		VOLUME
	AREA	WIDTH	AREA	WIDTH	
40+50	17	19	15	21	-1
41+00	30	37	30	37	+9
41+50	42	28	42	28	0
42+00	49	15	49	15	0

CALC. BY LEH DATE 12-6-90  
 CHKD. BY J6 DATE 12-14-90  
**BUTLER COUNTY**  
**BUT-27-10.48**

OHIO  
 FHWA REGION 5  
 63  
 103



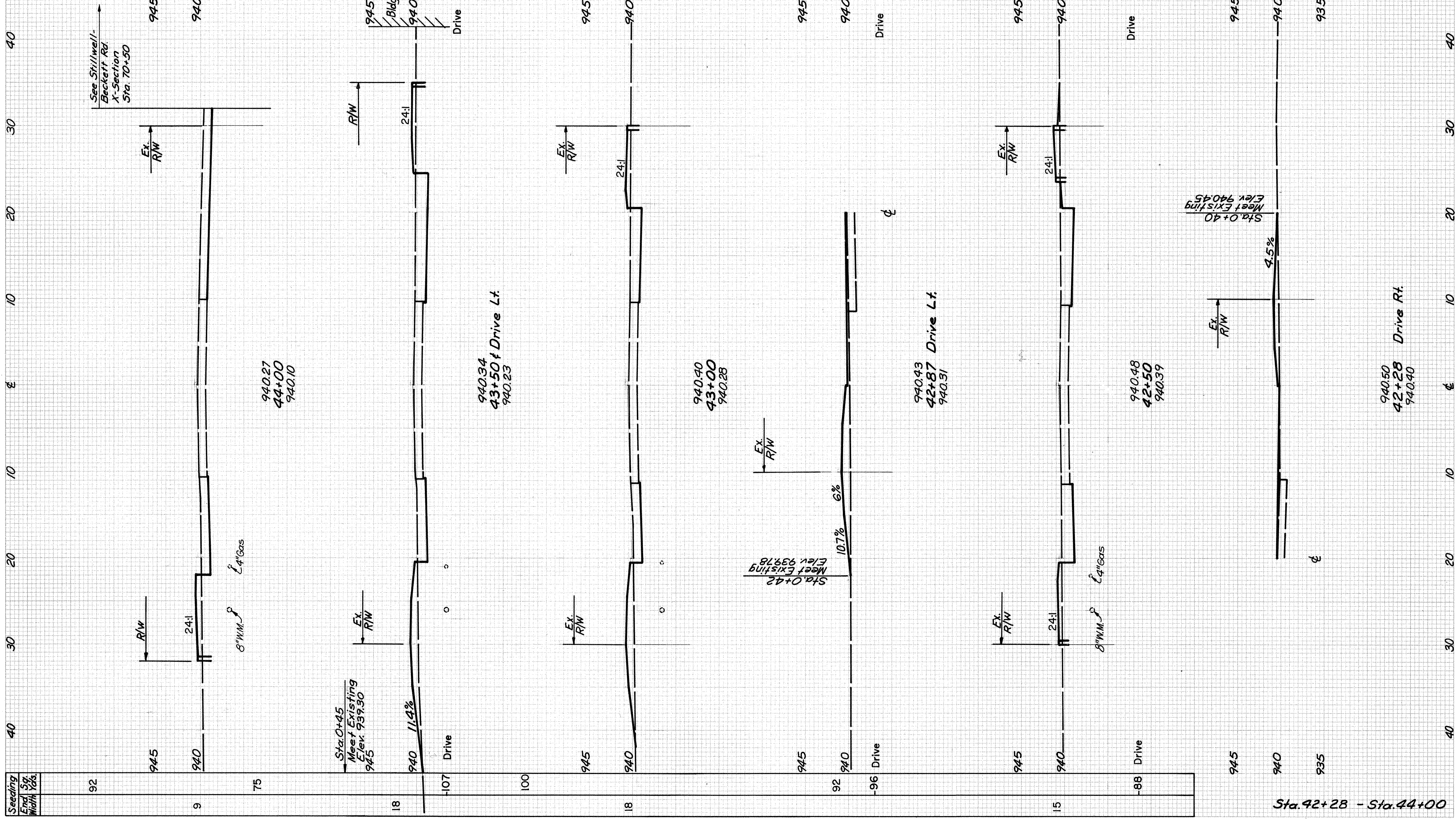
NO.	AREAS CHECKED
NO.	AREAS CHECKED

NO.	AREAS CHECKED
NO.	AREAS CHECKED

SEEDING END STA. WIDTH Yds	END AREA VOLUME	
	CUT	FILL
92	74	23
9	32	6
18	60	15
-107	0	0
100	52	16
18	0	0
92	51	15
-96	0	0
15	0	0
-86	0	0

CALC. BY LEH	DATE 12-6-90	OHIO FHWA REGION 5
CHKD. BY J.G.	DATE 12-14-90	
BUTLER COUNTY BUT-27-10.48		

64  
103









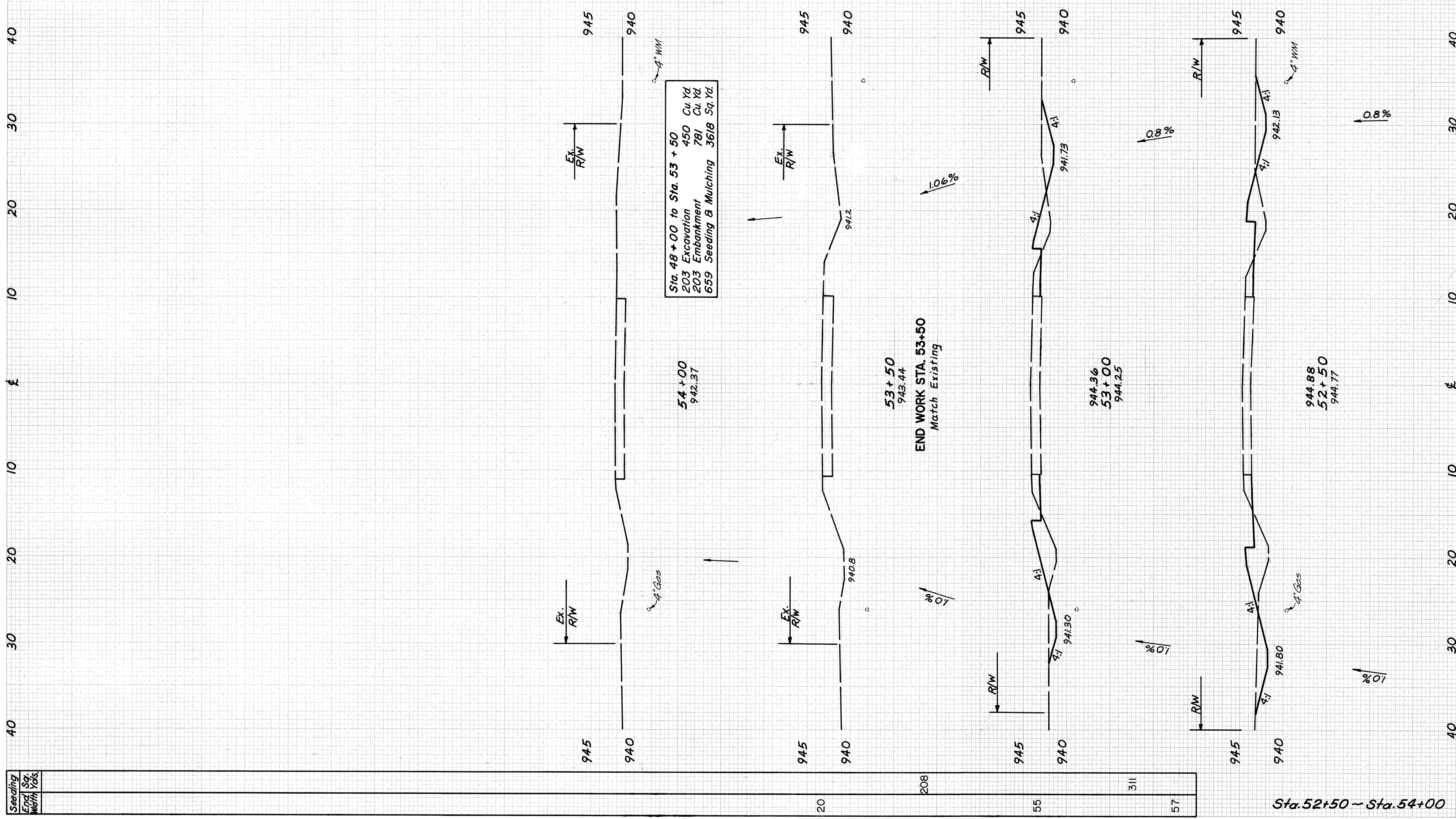


FINAL SURVEY NOTE BOOK NO.	DATE
SURVEYED BY	BY
TEMPLATE	DATE
AREAS CHECKED	

ORIGINAL SURVEY NOTE BOOK NO.	DATE
SURVEYED BY	BY
TEMPLATE	DATE
AREAS CHECKED	

END AREA	VOLUME	CUT	FILL
22	28		
41	46		
20	20		

CALC. BY LEH	DATE 12-6-90	BUTLER COUNTY BUT-27-10.48	OHIO
CHKD. BY JG	DATE 12-14-90		FHWA REGION 5
			69 103

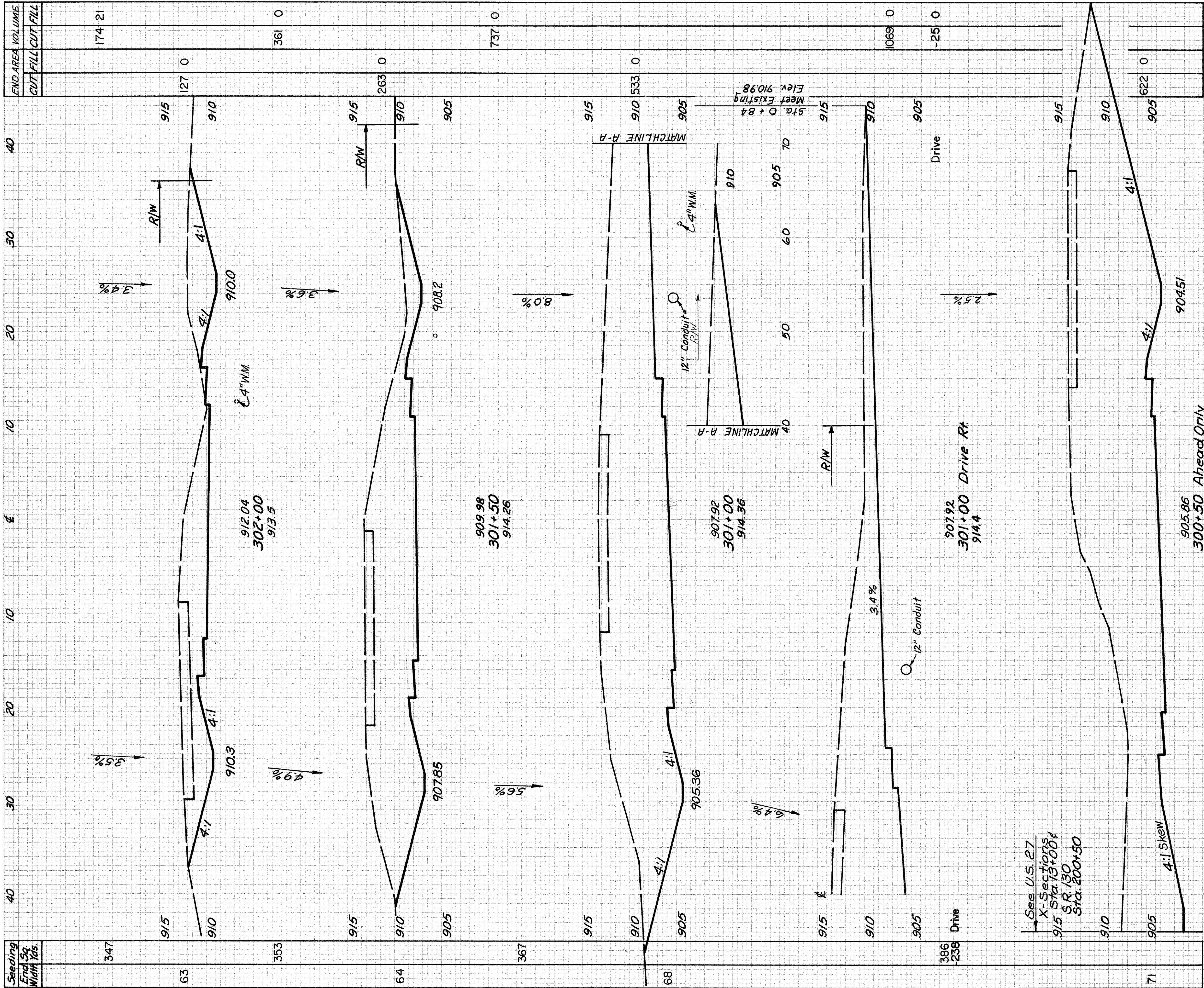


Seeding	20	208	55	311	57
Emb. Sq. Mulch Yds.					

Sta. 52+50 ~ Sta. 54+00

FINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED

ORIGINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED



CALC. BY LEH  
 DATE 12-6-90  
 CHKD. BY JG  
 DATE 12-14-90

BUTLER COUNTY  
 BUT-27-10.48

OHIO  
 FHWA 5  
 REGION

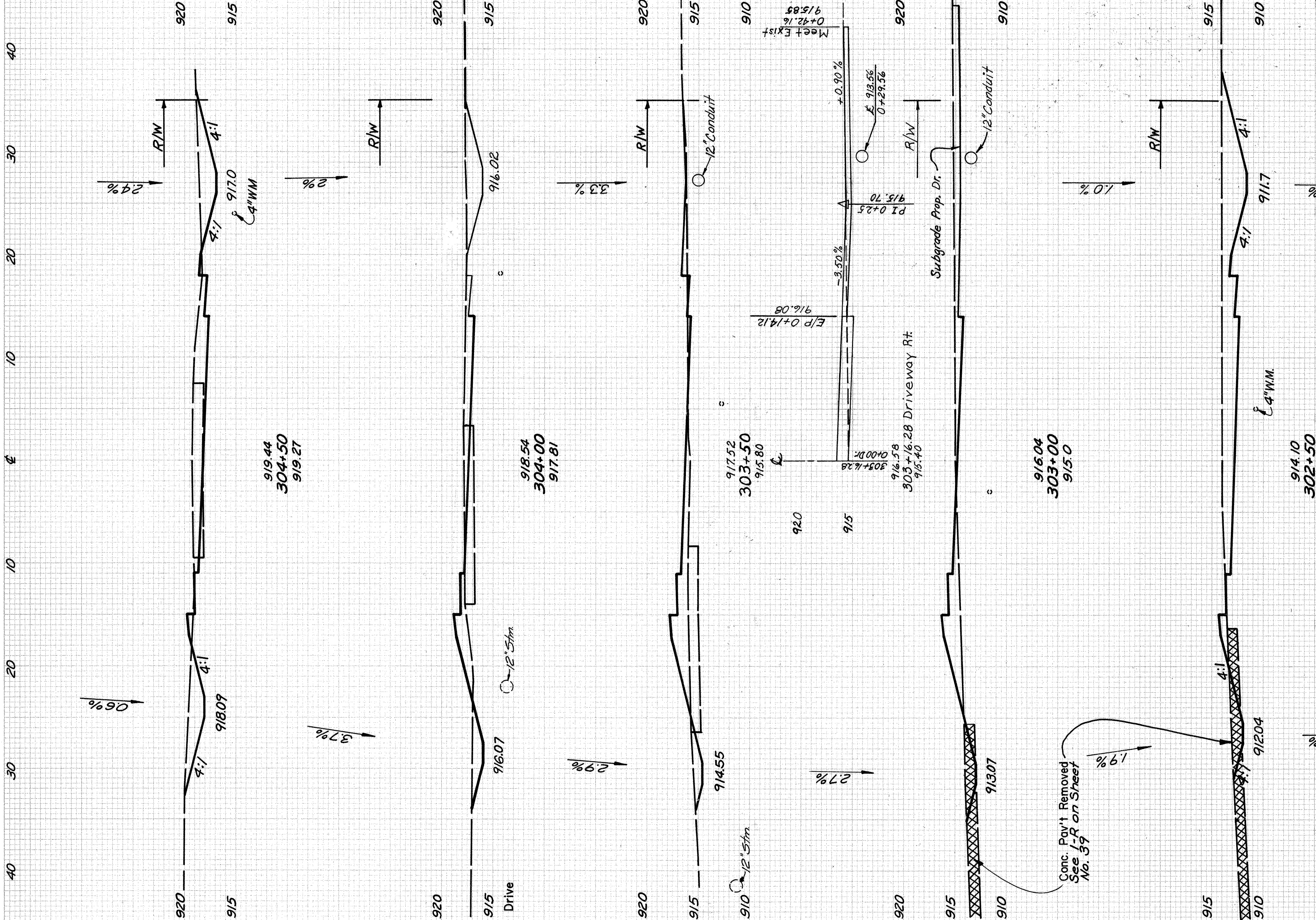
70  
 103

LANE MILL RD.  
 STA. 300+50 - STA. 302+00

DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
APPROVED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
APPROVED	
NO.	

SEEDING	END AREA	VOLUME
57	CUT 58	103 3
56	FILL 35	86 10
55	FILL 5	37 32
58	FILL 18	21 52
62	FILL 61	73 49



SEEDING	END AREA	VOLUME
57	286	103 3
56	314	86 10
55	308	37 32
58	314	21 52
62	333	73 49

CALC. BY LEH  
 DATE 12-6-90  
 CHKD. BY JG  
 DATE 12-14-90

**BUTLER COUNTY**  
**BUT-27-10.48**

OHIO  
 FHWA 5  
 REGION

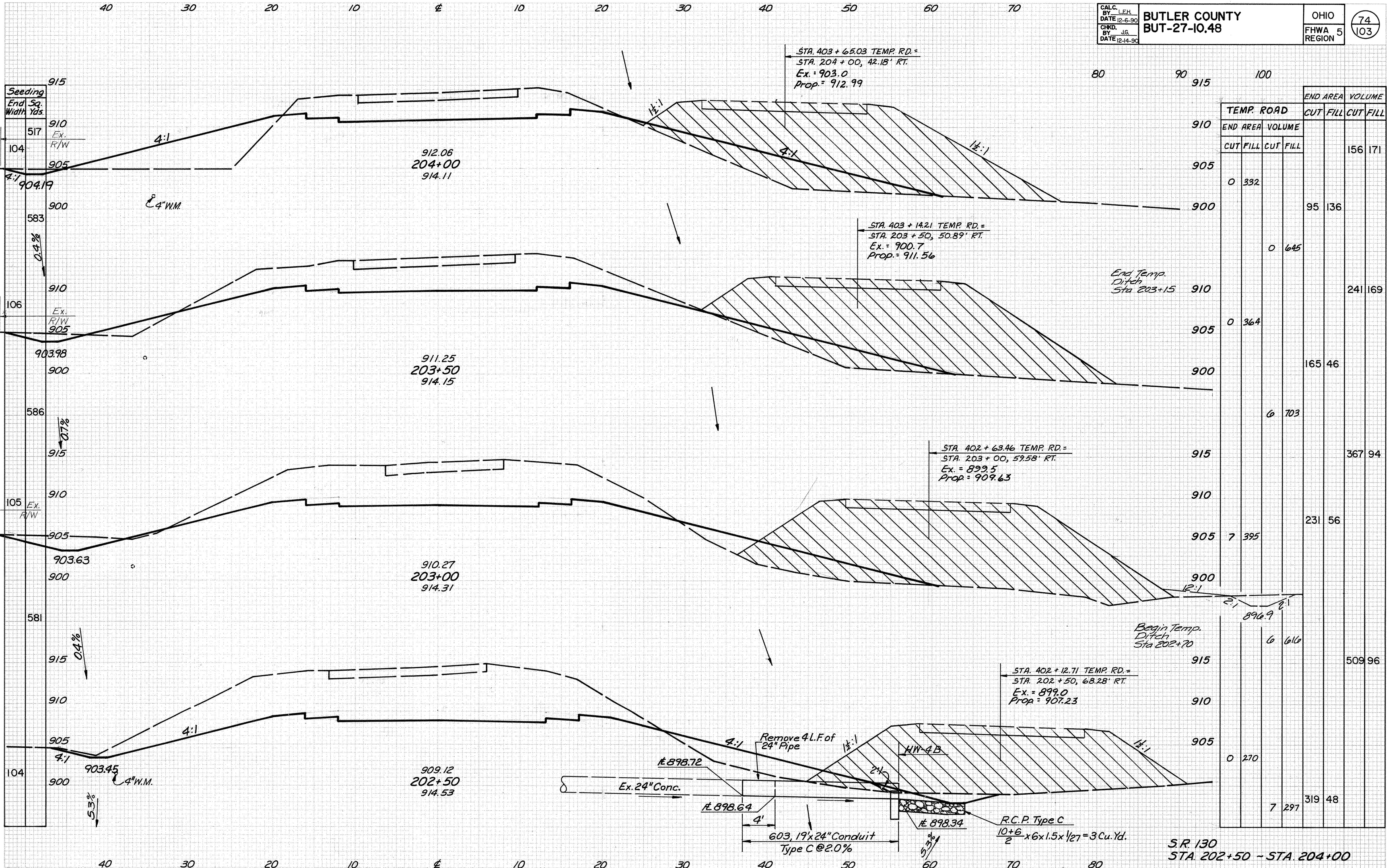
71  
 103

LANE MILL RD.  
 STA. 302+50 ~ STA. 304+50





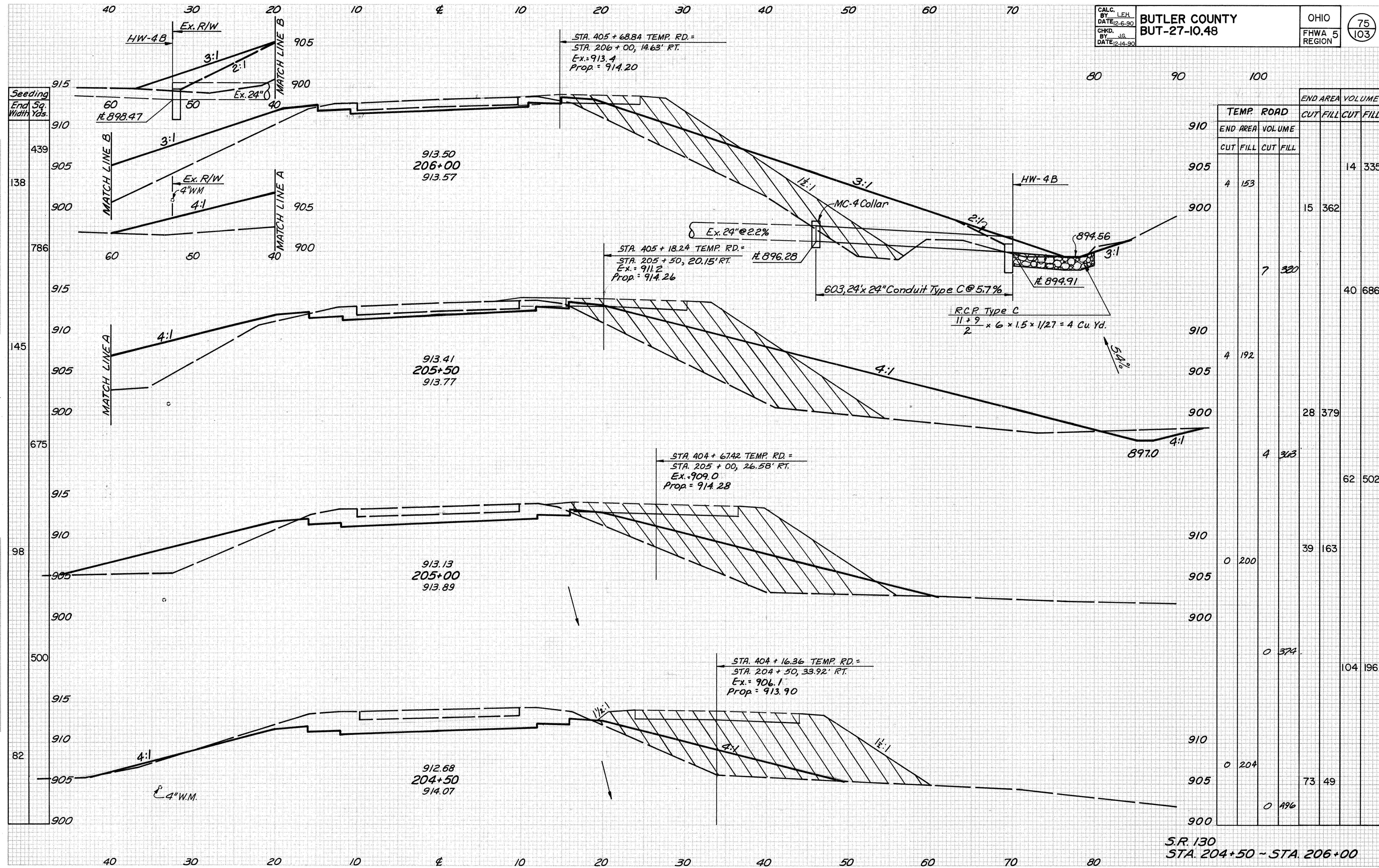




End Sta.	Sq. Width	Ex.	R/W
910	517		
905	104		
900	583		
910	106		
905	106		
900	586		
910	105		
905	105		
900	581		
910	104		
905	104		

Sta.	TEMP. ROAD		END AREA		VOLUME	
	CUT	FILL	CUT	FILL	CUT	FILL
204+00	0	332	95	136	156	171
203+50	0	645	241	169	165	46
203+00	7	395	231	56	367	94
202+70	0	610	509	96	0	270
202+50	7	297	319	48		

S.R. 130  
STA. 202+50 - STA. 204+00



TEMP. ROAD		END AREA		VOLUME	
CUT	FILL	CUT	FILL	CUT	FILL
4	153			14	335
				15	362
		7	320		
				40	686
4	192				
				28	379
		4	313		
				62	502
0	200			39	163
		0	374		
				104	196
0	204				
				73	49
		0	496		

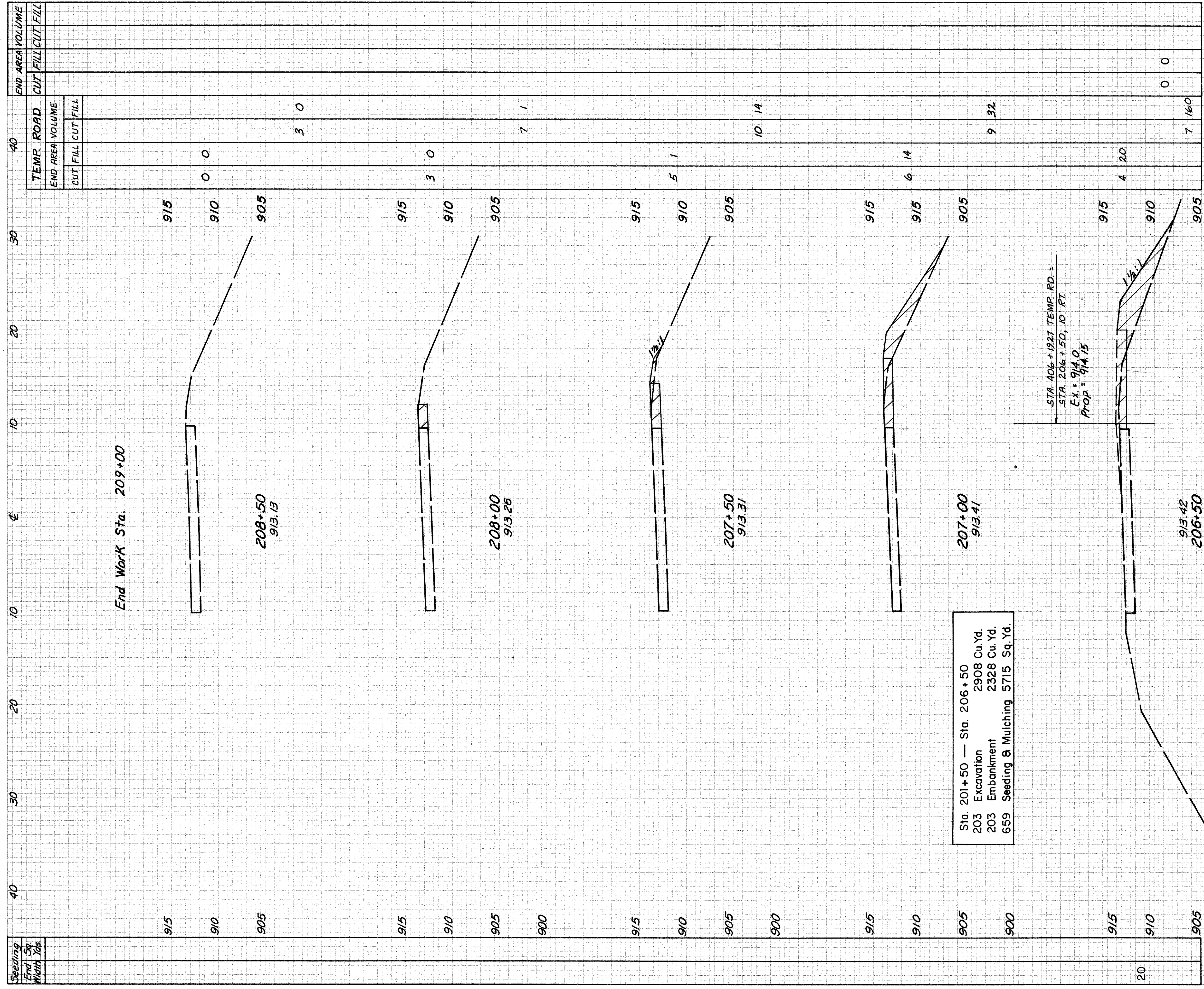
DATE  
 BY  
 SURVEYED  
 PLOTTED  
 NOTE BOOK  
 NO.

DATE  
 BY  
 SURVEYED  
 PLOTTED  
 NOTE BOOK  
 NO.

S.R. 130  
 STA. 204+50 - STA. 206+00

FINAL SURVEY	SUPP. BY	DATE
NOTE BOOK	NO.	
NO.		

ORIGINAL SURVEY	SUPP. BY	DATE
NOTE BOOK	NO.	
NO.		



Sta. 201+50 — Sta. 206+50	Excavation	2908 Cu. Yd.
203	Embankment	2328 Cu. Yd.
203	Seeding & Mulching	5715 Sq. Yd.

STA 406 + 1927 TEMP. RD. =  
 STA. 206 + 50, 10' RT.  
 Ex. = 914.0  
 Prop. = 914.15

CALC. BY LEH  
 DATE 12-6-90  
 CHKD. BY JG  
 DATE 12-14-90

**BUTLER COUNTY**  
**BUT-27-10.48**

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**TEMPORARY ROAD**  
 STA. 200 + 60 TO STA. 208 + 50

203 Excavation \* 440 Cu. Yd.  
 203 Embankment \* 4068 Cu. Yd.  
 659 Seeding & Mulching \* 3450 Sq. Yd.

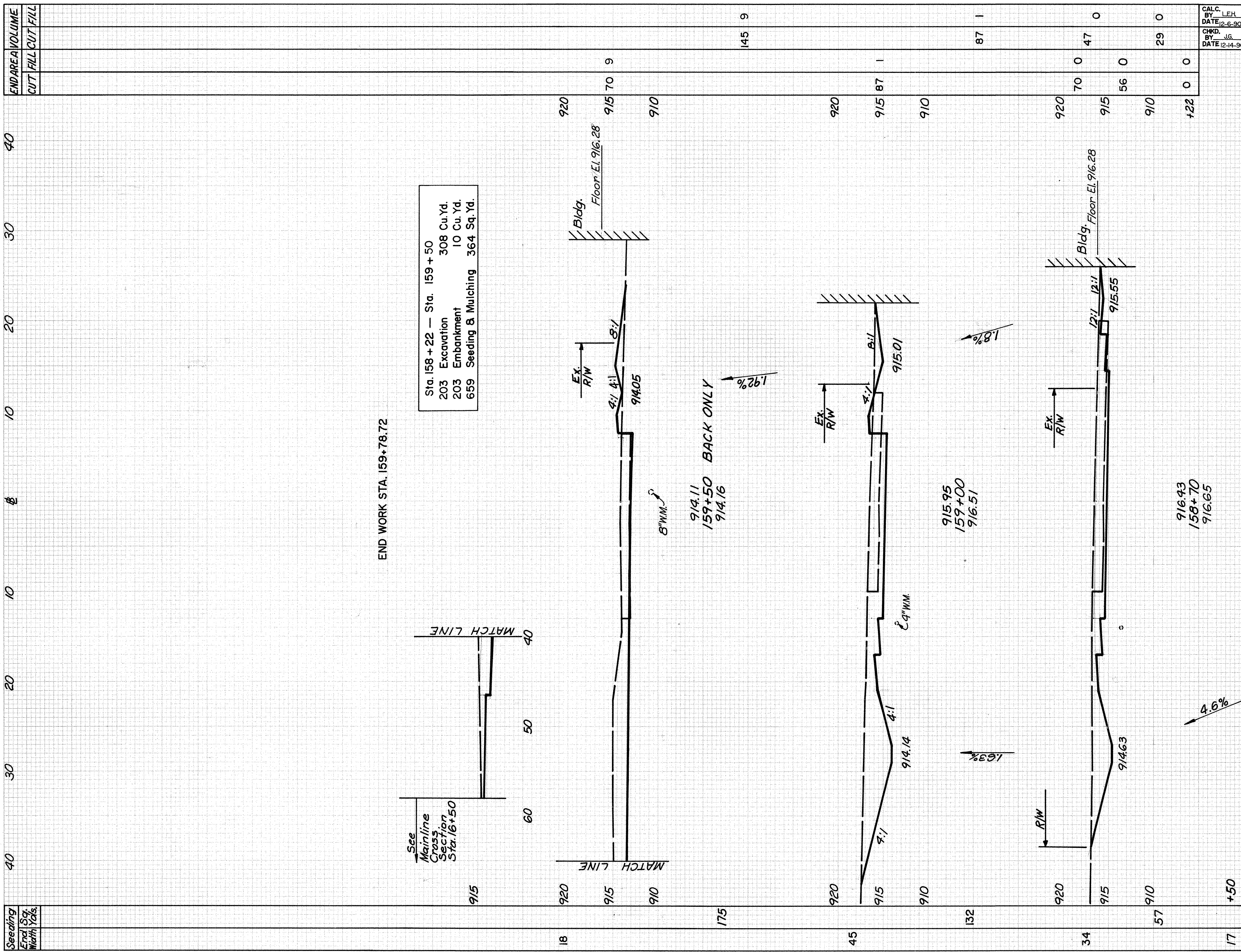
\* For Contractors Information Only  
 To be included with Item 615  
 Temporary Road

† Area Planimetered from 20-Scale Plans

S.R. 130  
 STA. 206+50 - STA. 208+50

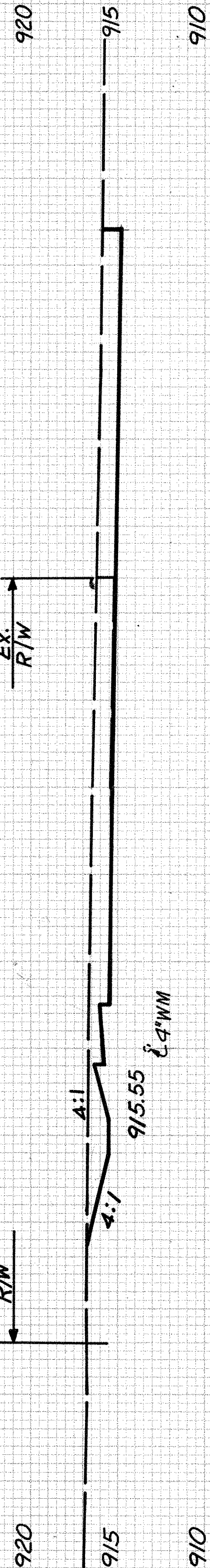
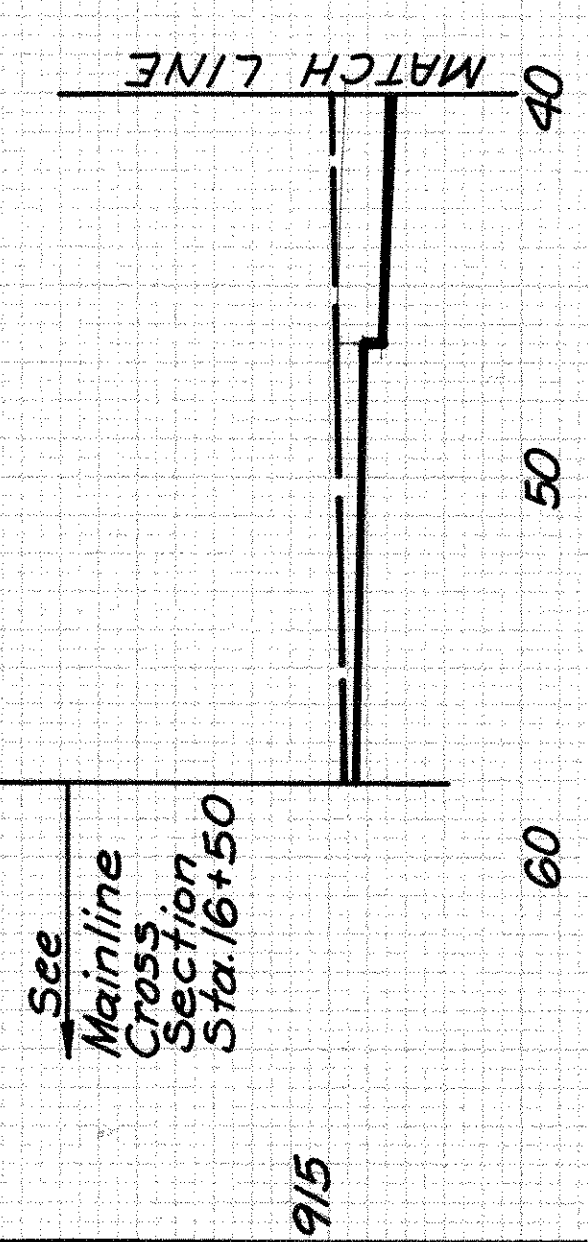
FINAL SURVEY	BY	DATE
NOTE BOOK	NO.	AREAS CHECKED

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	NO.	AREAS CHECKED



Sta. 158 + 22 — Sta. 159 + 50	Excavation	308 Cu. Yd.
203	Embankment	10 Cu. Yd.
659	Seeding & Mulching	364 Sq. Yd.

END WORK STA. 159+78.72



HUSSEY RD.  
STA. 158+50 ~ STA. 159+50

Meet Existing Sta. 158+22  
BEGIN WORK STA. 155+50.

Seeding	18	45	132	34	57	17
End Sq. Width Yds.						

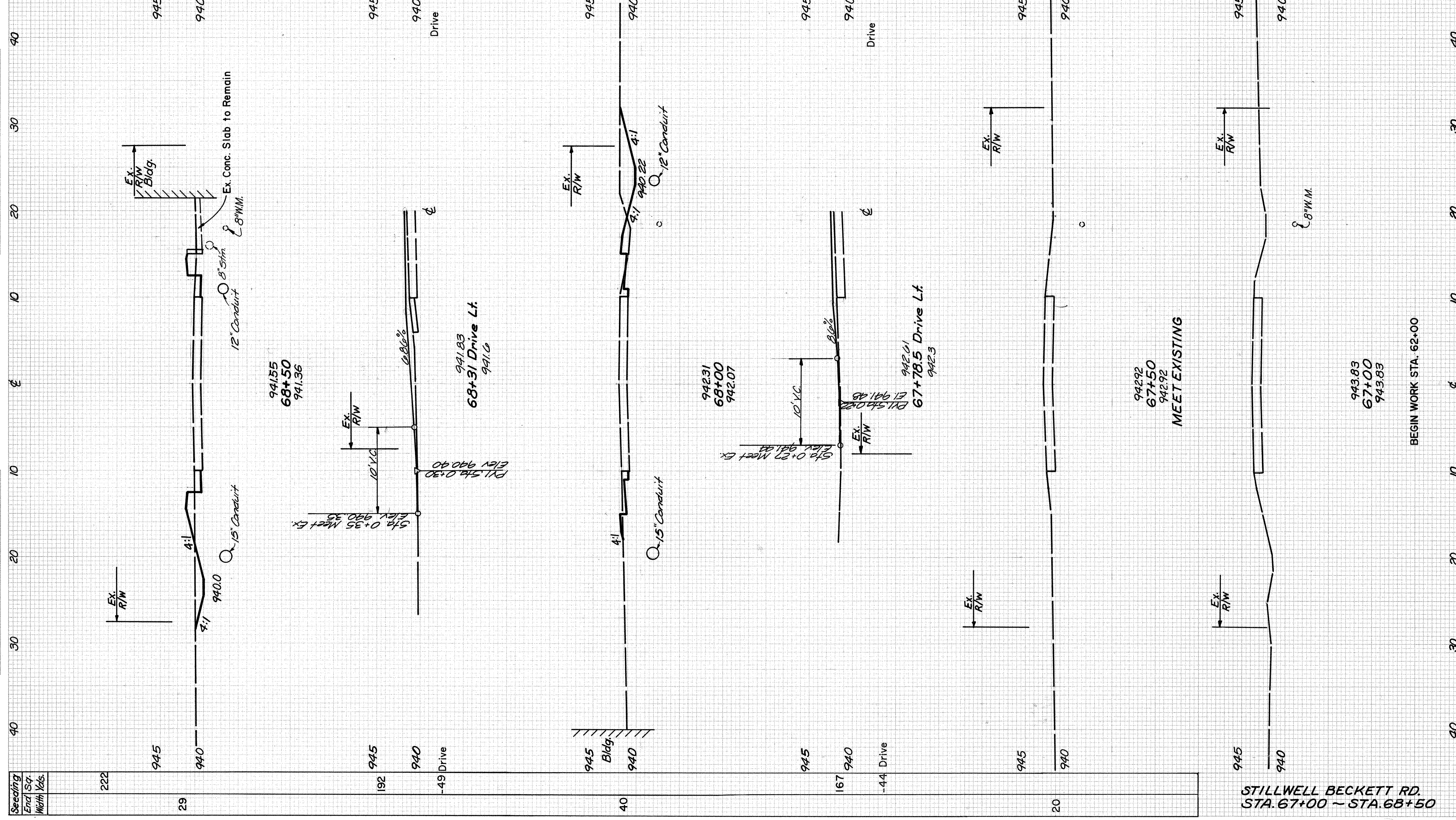
CALC. BY LEH	BUTLER COUNTY BUT-27-10.48	OHIO
DATE 12-6-90		FHWA REGION 5
CHKD. BY JG		77
DATE 12-14-90		103

FINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED

ORIGINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED

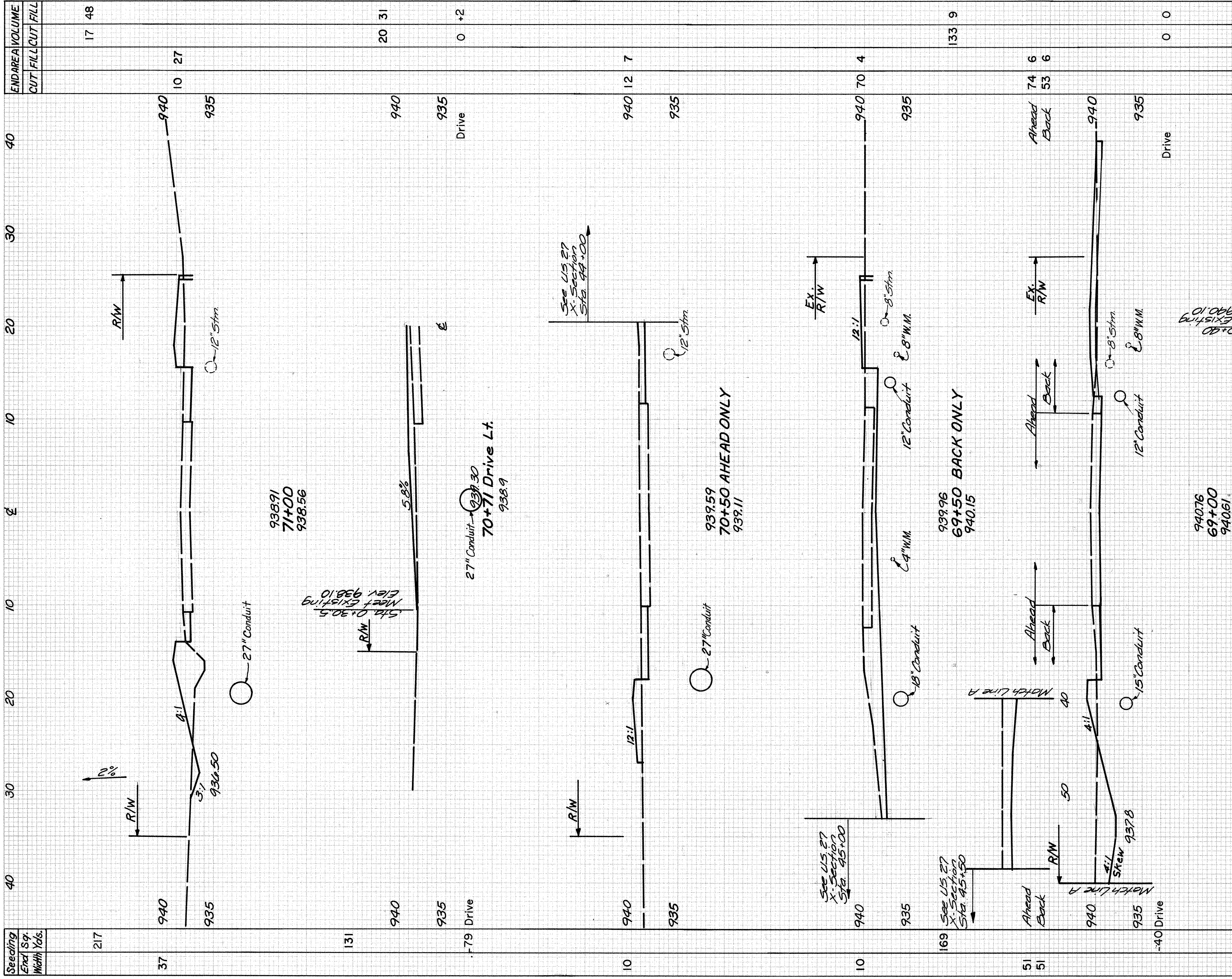
CALC. BY LEH DATE 12-6-90  
 CHKD. BY JG DATE 12-4-90  
**BUTLER COUNTY**  
**BUT-27-10.48**  
 OHIO REGION 5  
 78  
 103

END AREA	VOLUME
CUT	FILL
57	11
25	9
0	+2
17	4
0	+1
0	0



FINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED

ORIGINAL SURVEY PLOTTED BY DATE  
 NOTE BOOK NO. AREA CHECKED



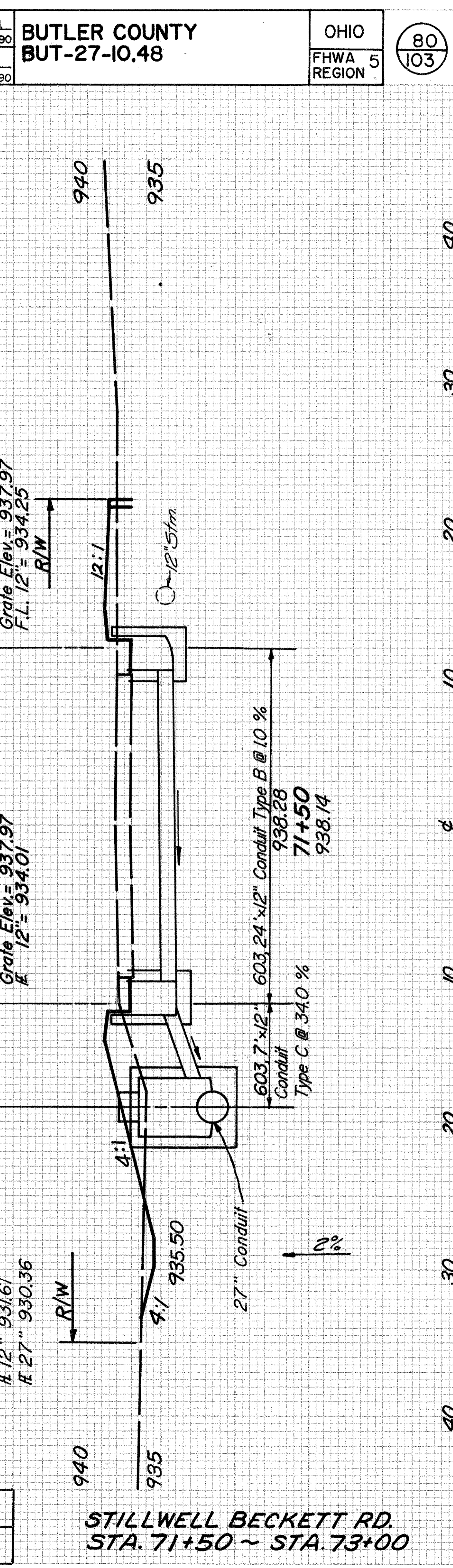
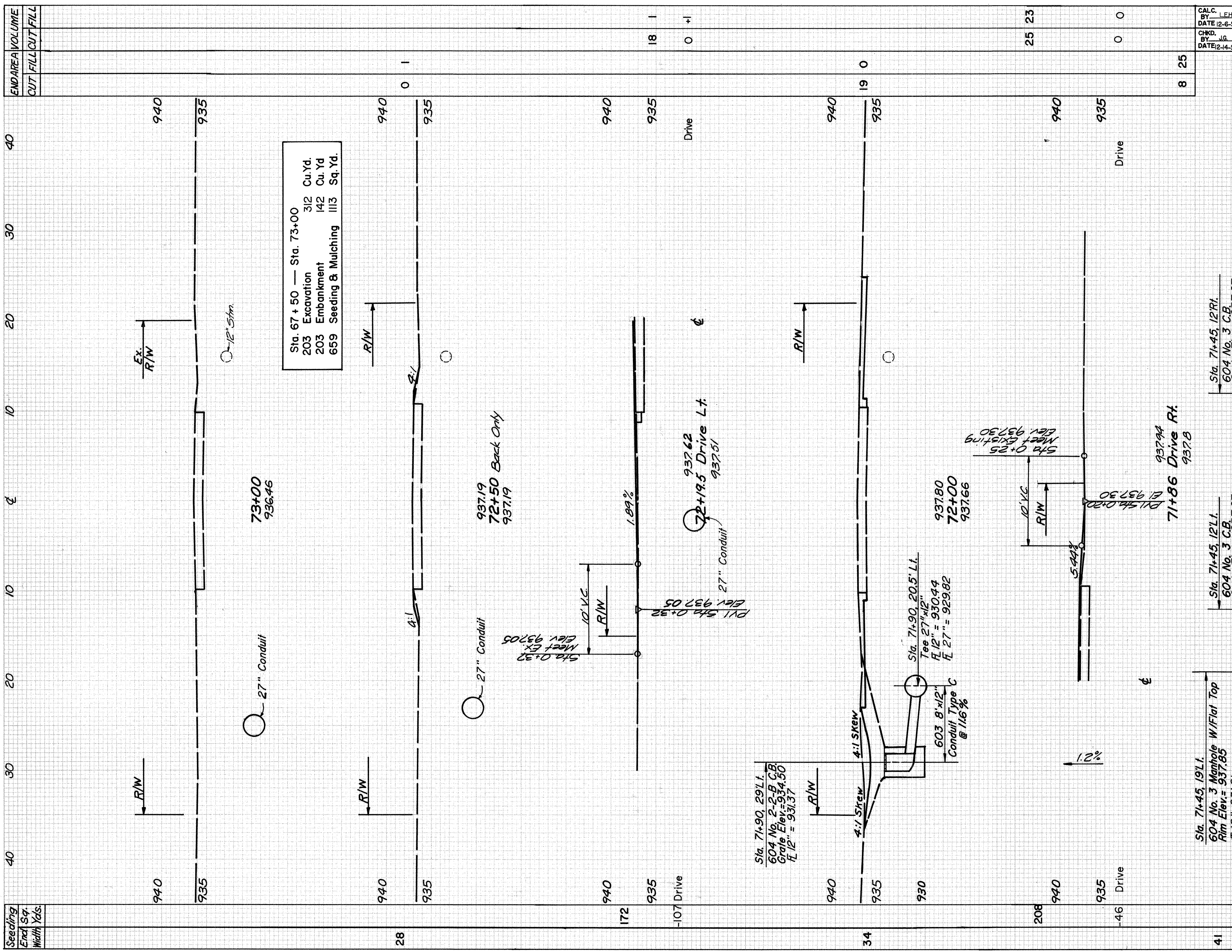
Seeding End Sqr. Width Yds.	END AREA	VOLUME		CALC. BY DATE	CHKD. BY DATE	BUTLER COUNTY BUT-27-10.48	OHIO FHWA 5 REGION	79 103
		CUT	FILL					
217	17	48						
37	10	27						
131	20	31						
-79 Drive	0	+2						
10	940	12	7					
10	935							
169	940	70	4					
51	935							
51	Ahead	74	6					
51	Back	53	6					
-40 Drive	0	0						
	940							
	935							

STILLWELL BECKETT RD.  
 STA. 68+97 ~ STA. 71+00



ORIGINAL SURVEY	DATE
SURVEYED	BY
NOTED	PLOTTED
NOTE BOOK	DATE
NO.	AREAS CHECKED

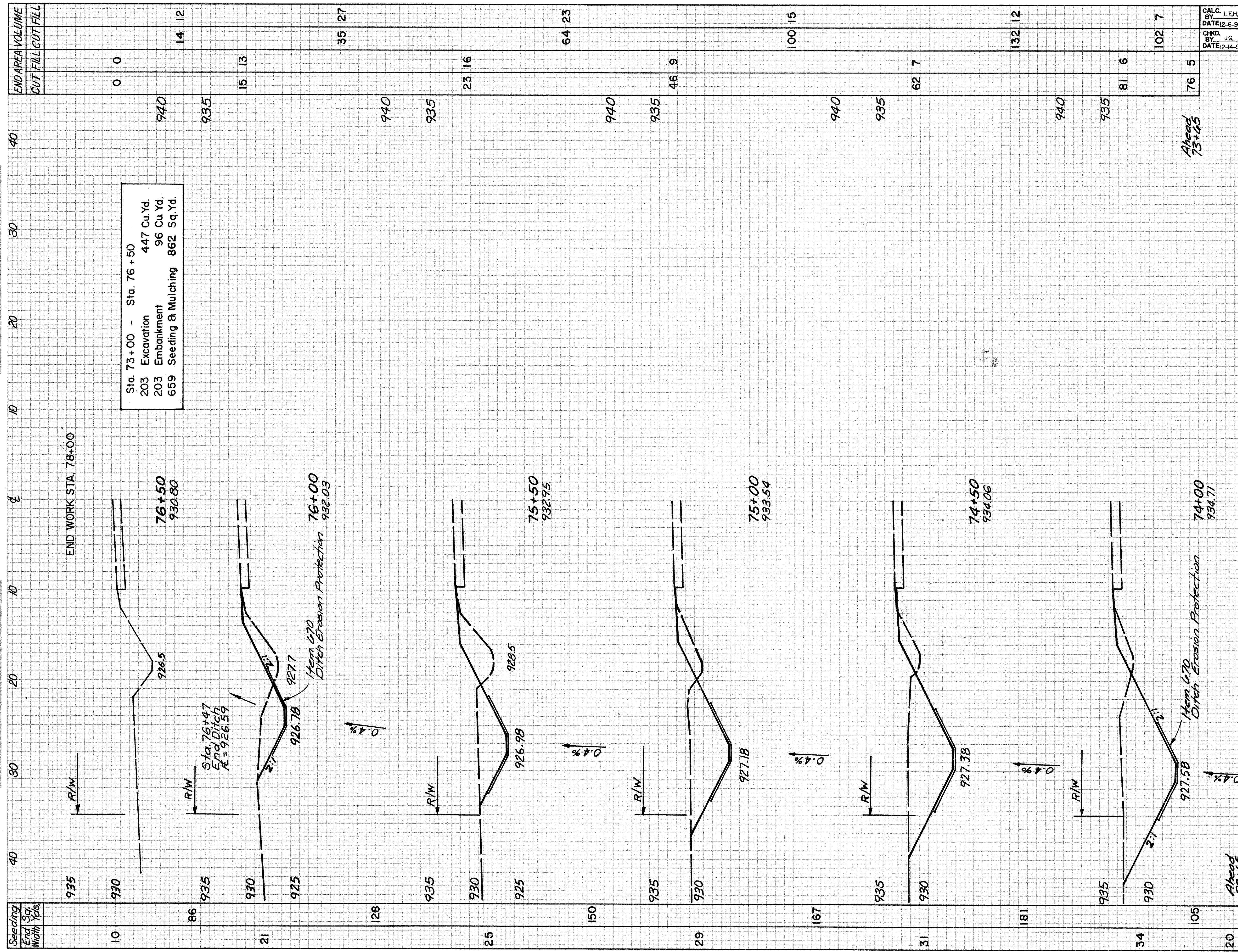
ORIGINAL SURVEY	DATE
SURVEYED	BY
NOTED	PLOTTED
NOTE BOOK	DATE
NO.	AREAS CHECKED



STILLWELL BECKETT RD.  
STA. 71+50 ~ STA. 73+00

FINAL SURVEY BY: DATE:   
 SURVEY PLOTTED:   
 NOTE BOOK NO.:   
 AREAS CHECKED:

ORIGINAL SURVEY BY: DATE:   
 SURVEY PLOTTED:   
 NOTE BOOK NO.:   
 AREAS CHECKED:



Sta. 73+00 - Sta. 76+50  
 203 Excavation 447 Cu. Yd.  
 203 Embankment 96 Cu. Yd.  
 659 Seeding & Mulching 862 Sq. Yd.

Seeding End Sta. Width Yds.	10	21	25	29	31	34	20
10	86	21	25	29	31	34	20

END AREA VOLUME	CUT	FILL	CUT	FILL
940	0	0	14	12
935	15	13	35	27
940	23	16	64	23
935	46	9	100	15
940	62	7	132	12
935	81	6	102	7
Ahead 73+45	76	5		

BUTLER COUNTY  
 BUT-27-10.48

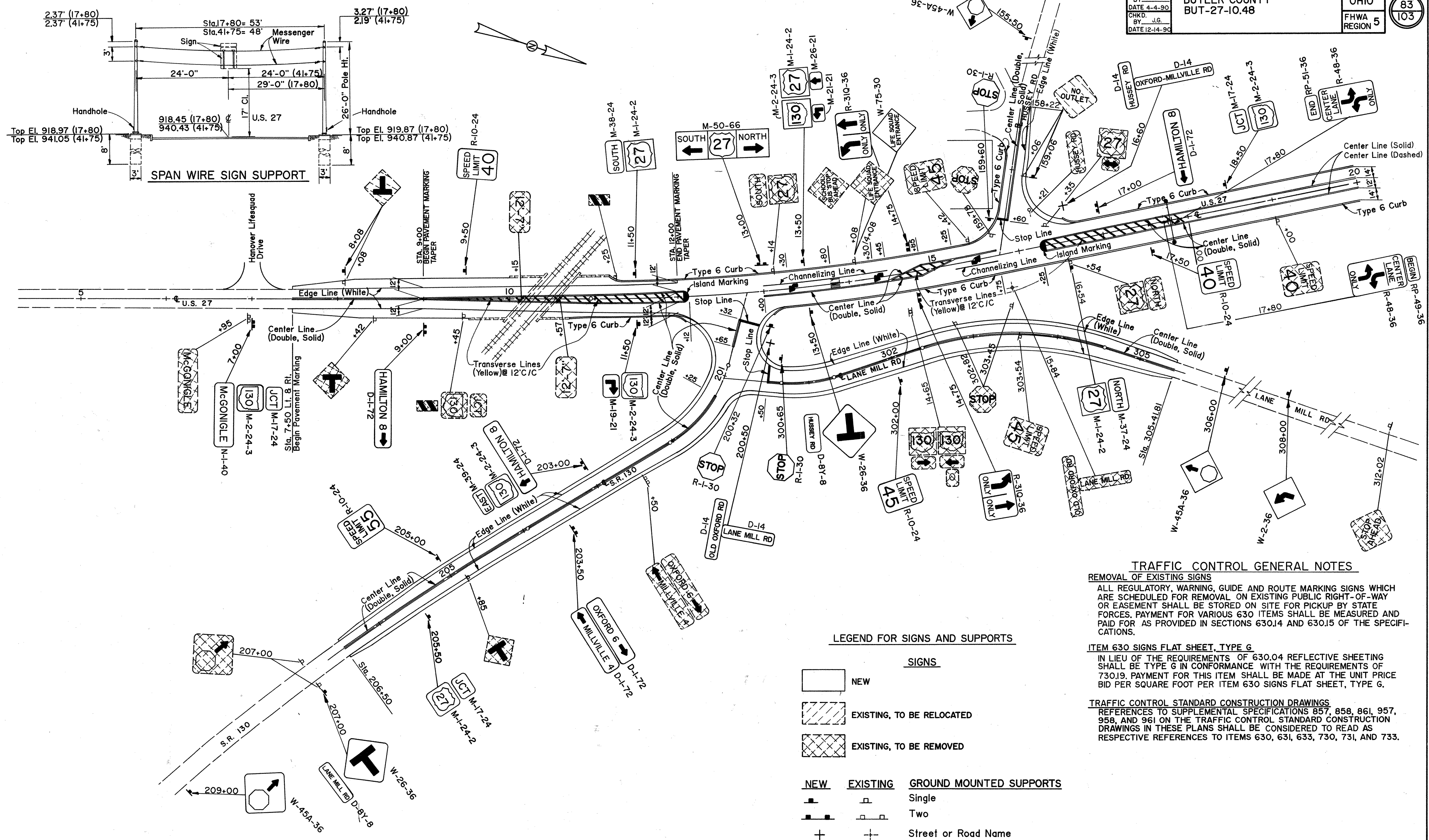
OHIO  
 FHWA REGION 5

81  
 103

STILLWELL BECKETT RD.  
 STA. 73+50 ~ STA. 76+00

# GENERAL SUMMARY

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
24	85	86	87											
		2	2							625	32000	4	Each	Ground Rod
		4.2	4.2							630	00000	8.4	Cu. Yd.	Concrete For Anchor Base Foundation
		51	102							630	02100	153	Lin. Ft.	Ground Mounted Support, No. 2 Post
		342	102							630	03100	444	Lin. Ft.	Ground Mounted Support, No. 3 Post
		132	215							630	04100	347	Lin. Ft.	Ground Mounted Support, No. 4 Post
		2								630	08500	2	Each	Street Name Sign Support
		1	1							630	75400	2	Each	Span Wire Sign Support, Type TC-17.10, Design 4, Span 53 Ft.
		208	199							630	80100	407	Sq. Ft.	Sign, Flat Sheet
		41	34							630	80102	75	Sq. Ft.	Sign, Flat Sheet, Type G
		36	30							630	84900	66	Each	Removal of Ground Mounted Sign and Disposal
		25	29							630	86002	54	Each	Removal of Ground Mounted Post Support and Disposal
		2	2							630	85100	4	Each	Removal of Ground Mounted Sign and Reerection
								0.78		642	00100	0.78	Mile.	Edge Line, Type 1
								2.65		642	00300	2.65	Mile.	Center Line, Type 1
								495		642	00400	495	Lin. Ft.	Channelizing Line, Type 1
								95		642	00500	95	Lin. Ft.	Stop Line, Type 1
								918		642	00700	918	Lin. Ft.	Transverse Line, Type 1
								114		642	00900	114	Sq. Ft.	Island Marking, Type 1
								13		642	01300	13	Each	Lane Arrow, Type 1
								3		642	01400	3	Each	Word on Pavement, 72 Inch, Type 1
		8								802	00100	8	Each	Barrier Reflector, Type A
		2								802	00200	2	Each	Barrier Reflector, Type B



**TRAFFIC CONTROL GENERAL NOTES**

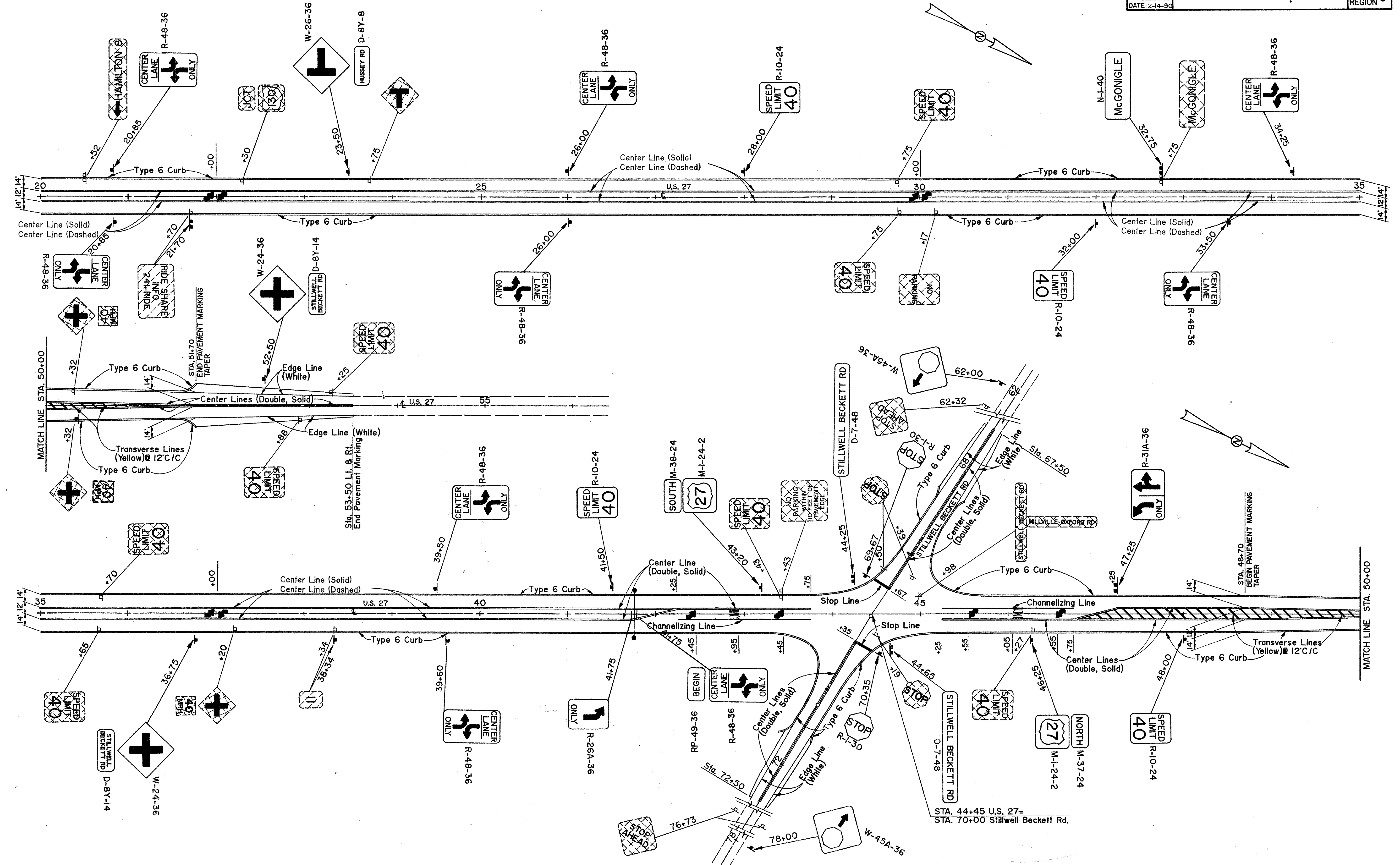
**REMOVAL OF EXISTING SIGNS**  
 ALL REGULATORY, WARNING, GUIDE AND ROUTE MARKING SIGNS WHICH ARE SCHEDULED FOR REMOVAL ON EXISTING PUBLIC RIGHT-OF-WAY OR EASEMENT SHALL BE STORED ON SITE FOR PICKUP BY STATE FORCES. PAYMENT FOR VARIOUS 630 ITEMS SHALL BE MEASURED AND PAID FOR AS PROVIDED IN SECTIONS 630.14 AND 630.15 OF THE SPECIFICATIONS.

**ITEM 630 SIGNS FLAT SHEET, TYPE G**  
 IN LIEU OF THE REQUIREMENTS OF 630.04 REFLECTIVE SHEETING SHALL BE TYPE G IN CONFORMANCE WITH THE REQUIREMENTS OF 730.19. PAYMENT FOR THIS ITEM SHALL BE MADE AT THE UNIT PRICE BID PER SQUARE FOOT PER ITEM 630 SIGNS FLAT SHEET, TYPE G.

**TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS**  
 REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 957, 958, AND 961 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 630, 631, 633, 730, 731, AND 733.

**LEGEND FOR SIGNS AND SUPPORTS**

SIGNS		
	NEW	
	EXISTING, TO BE RELOCATED	
	EXISTING, TO BE REMOVED	
NEW		EXISTING
		Street or Road Name



SIGNING & STRIPING





### 642 PAVEMENT MARKINGS

SHEET NO.	STATION TO STATION	SIDE	Edge Line (White)	Center Line Solid	Center Line Dashed	Center Lines Solid Double	Channelizing Lines	Stop Lines	Transverse Lines (Yellow)	Island Marking	Lane Arrows	Word "ONLY" on Pavement 72"
			Lin. Ft.	L.F.	L.F.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Sq. Ft.	Each
	MAINLINE											
	7+50 - 20+00											
	7+50 - 12+00	Lt.	450									
	7+50 - 12+12	Lt./Rt.				774			198	57		
	7+50 - 11+88	Rt.	438									
	13+00 - 14+45	Lt.					145					
	13+00 - 15+75	Lt./Rt.				355			55			
	15+25 - 15+75	Rt.					50					
	13+30	Lt./Rt.								1		
	13+80	Lt./Rt.									1	
	14+30	Lt./Rt.									1	
	15+55	Lt./Rt.									1	
	16+25 - 18+00	Lt./Rt.				350			225	57		
	18+00 - 20+00	Lt./Rt.	400	400								
	MAINLINE											
	20+00 - 35+00											
	20+00 - 35+00	Lt./Rt.		3000	3000							
	22+00	Lt./Rt.								2		
	30+00	Lt./Rt.								2		
	MAINLINE											
	35+00 - 53+50											
	37+00	Lt./Rt.								2		
	35+00 - 41+00	Lt./Rt.		1200	200							
	41+00 - 43+75	Lt./Rt.				400						
	42+25 - 43+75	Lt./Rt.					150					
	42+45	Lt./Rt.								1		
	42+95	Lt./Rt.									1	
	43+45	Lt./Rt.								1		
	42+25 - 53+50	Lt./Rt.				1320			440			
	42+25 - 46+75	Lt./Rt.					150					
	45+55	Lt./Rt.								1		
	46+05	Lt./Rt.									1	
	46+55	Lt./Rt.								1		
	51+55 - 53+50	Lt./Rt.	390									
	SUBTOTAL		1278	4600	4600	3199	495	0	918	114	13	3

### 642 PAVEMENT MARKINGS

SHEET NO.	STATION TO STATION	SIDE	Edge Line (White)	Center Line Solid	Center Line Dashed	Center Lines Solid Double	Channelizing Lines	Stop Lines	Transverse Lines (Yellow)	Island Marking	Lane Arrows	Word "ONLY" on Pavement 72"
			Lin. Ft.	L.F.	L.F.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Sq. Ft.	Each
	S.R. - 130											
	200+00 - 206+50											
	200+22 - 200+65	¢				43						
	201+25 - 206+50	¢				525						
	200+22	Lt.						23				
	11+88(U.S. 27)-206+50	Rt.	643									
	201+29 - 206+50	Lt.	521									
	LANE MILL RD.											
	300+00 - 305+42											
	300+50 - 305+42	¢				492						
	300+50	Lt.						20				
	13+22(U.S. 27)-305+42	Lt.	585									
	201+29(S.R. 130)-305+42	Rt.	548									
	HUSSEY RD.											
	158+22 - 160+00											
	158+22 - 159+60	Lt.				138						
	159+60	Lt./Rt.						12				
	158+22 - 16+69(U.S. 27)	Lt.	173									
	STILLWELL BECKETT RD.											
	67+50 - 72+50											
	67+50 - 69+67	¢				217						
	69+67	Rt.						18				
	67+50 - 68+45	Lt./Rt.	190									
	70+35 - 72+50	¢				215						
	70+35	Lt.						22				
	71+55 - 72+50	Lt./Rt.	190									
	SUBTOTAL		2850	0	0	1630	0	95	0	0	0	0
	TOTAL THIS SHEET		4128	4600	4600	4829	495	95	918	114	13	3
	TOTAL MILES		0.78	1.74	1.74	0.91						
						2.65						



# WORD AND SYMBOL MARKING DETAILS

FED RD DIVISION	STATE	PROJECT	
5	OHIO		

87A  
103

PLAN NO. BUT-27-10.48

**NOTES:**

1. ON MULTI-LANE APPROACHES, THE TRANSVERSE LINES USED WITH THE RAILROAD SYMBOLS SHALL EXTEND ACROSS ALL APPROACH LANES AND SYMBOLS SHALL BE PLACED IN EACH APPROACH LANE.

2. THE RAILROAD SYMBOL SHALL BE LOCATED SO THAT THE W-94, "RAILROAD ADVANCE WARNING SIGN", IS WITHIN THE TWO TRANSVERSE BOUNDARY LINES OF THE RAILROAD SYMBOL. THE STOP LINE SHALL BE LOCATED FOR BEST SIGHT DISTANCE WITHIN 15 FEET TO 50 FEET OF THE NEAR EDGE OF THE TRACKS. STOP LINES SHALL BE PERPENDICULAR TO THE CENTER LINE OF THE ROADWAY. WIDTH OF "X" MAY VARY ACCORDING TO LANE WIDTH.

3. ON MULTI-LANE APPROACHES, THE TRANSVERSE LINES USED WITH THE WORD "SCHOOL" SHALL EXTEND ACROSS ALL APPROACH LANES WITH A SINGLE WORD "SCHOOL" CENTERED ACROSS THE APPROACH LANES. ON TWO LANE ROADWAYS, THE TRANSVERSE LINES SHALL EXTEND ACROSS THE ROADWAY WITH THE WORD "SCHOOL" CENTERED ACROSS THE ROADWAY. CENTER OR LANE LINES SHALL NOT PASS THROUGH THE "SCHOOL" MARKING.

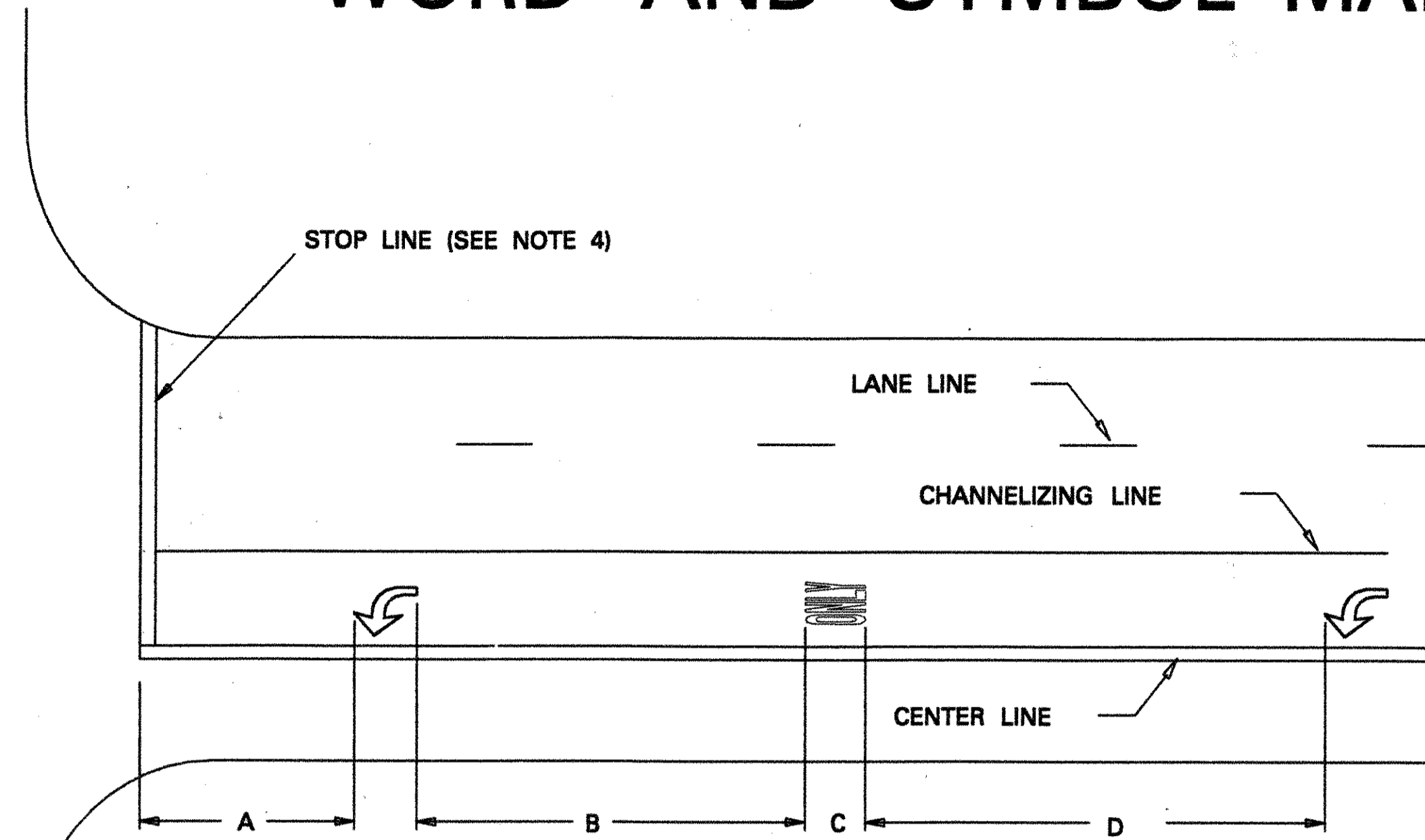
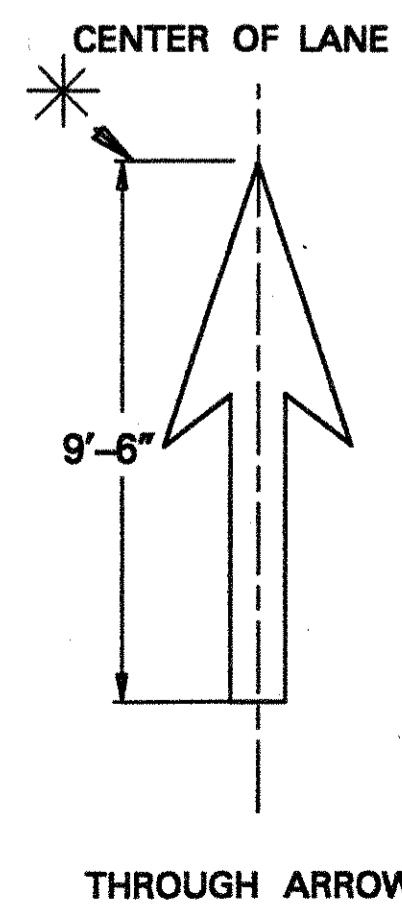
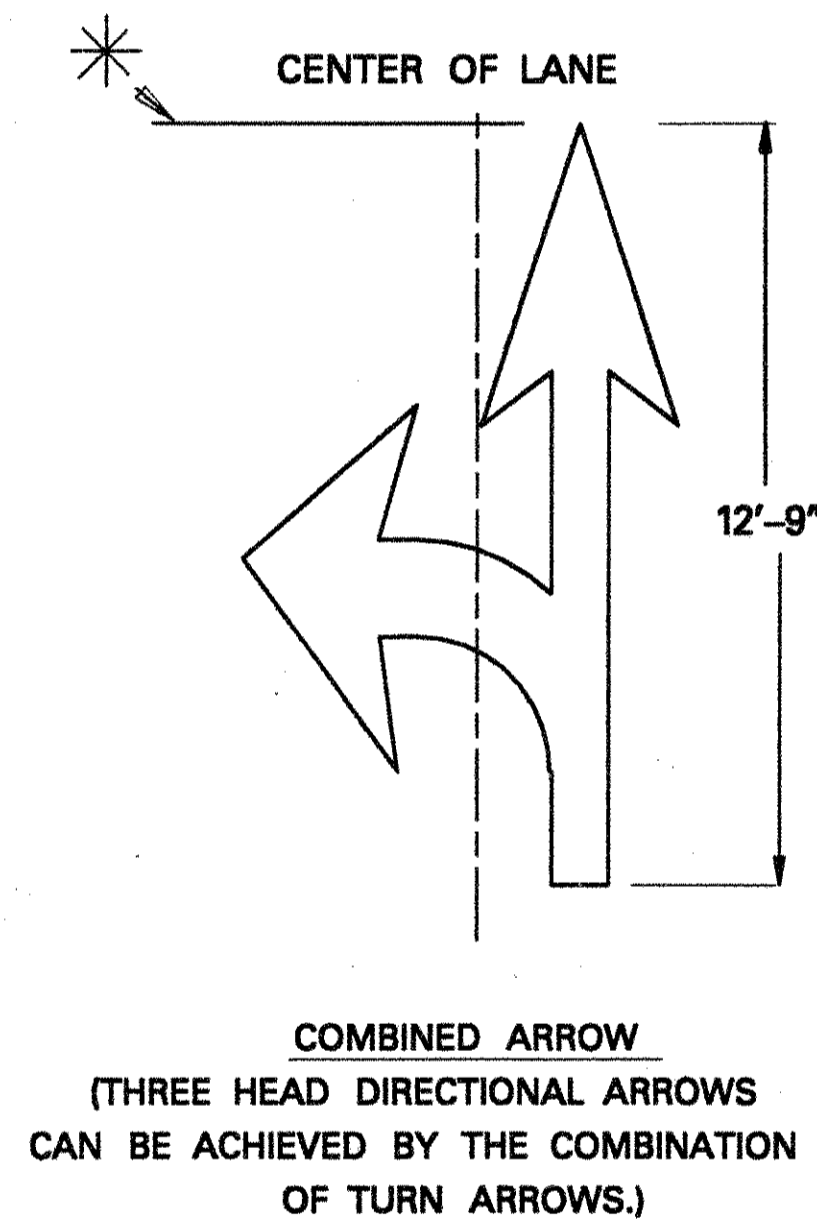
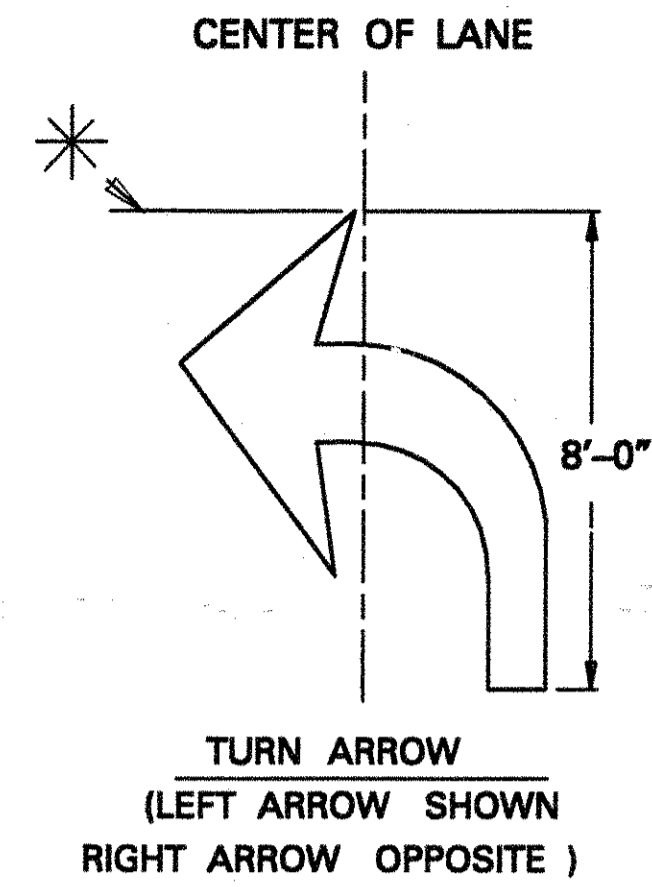
4. THE STOP LINE SHOULD BE PLACED WHERE CROSS-CORNER VISION IS MAXIMUM, IN NO CASE MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY. FOR NORMAL INTERSECTIONS A MAXIMUM DISTANCE OF 10 FEET IS RECOMMENDED.

IF A MARKED CROSSWALK IS PRESENT, THE STOP LINE SHOULD BE PLACED 4 FEET IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK.

5. FOR TRAFFIC PAINT AND POLYESTER APPLICATION, TEMPLATE GAPS SHALL BE FILLED WITH MARKING MATERIAL IN ACCORDANCE WITH 644.06. FOR EXTRUDED THERMOPLASTIC MATERIAL, THESE GAPS MAY REMAIN UNFILLED IN ACCORDANCE WITH 644.06.

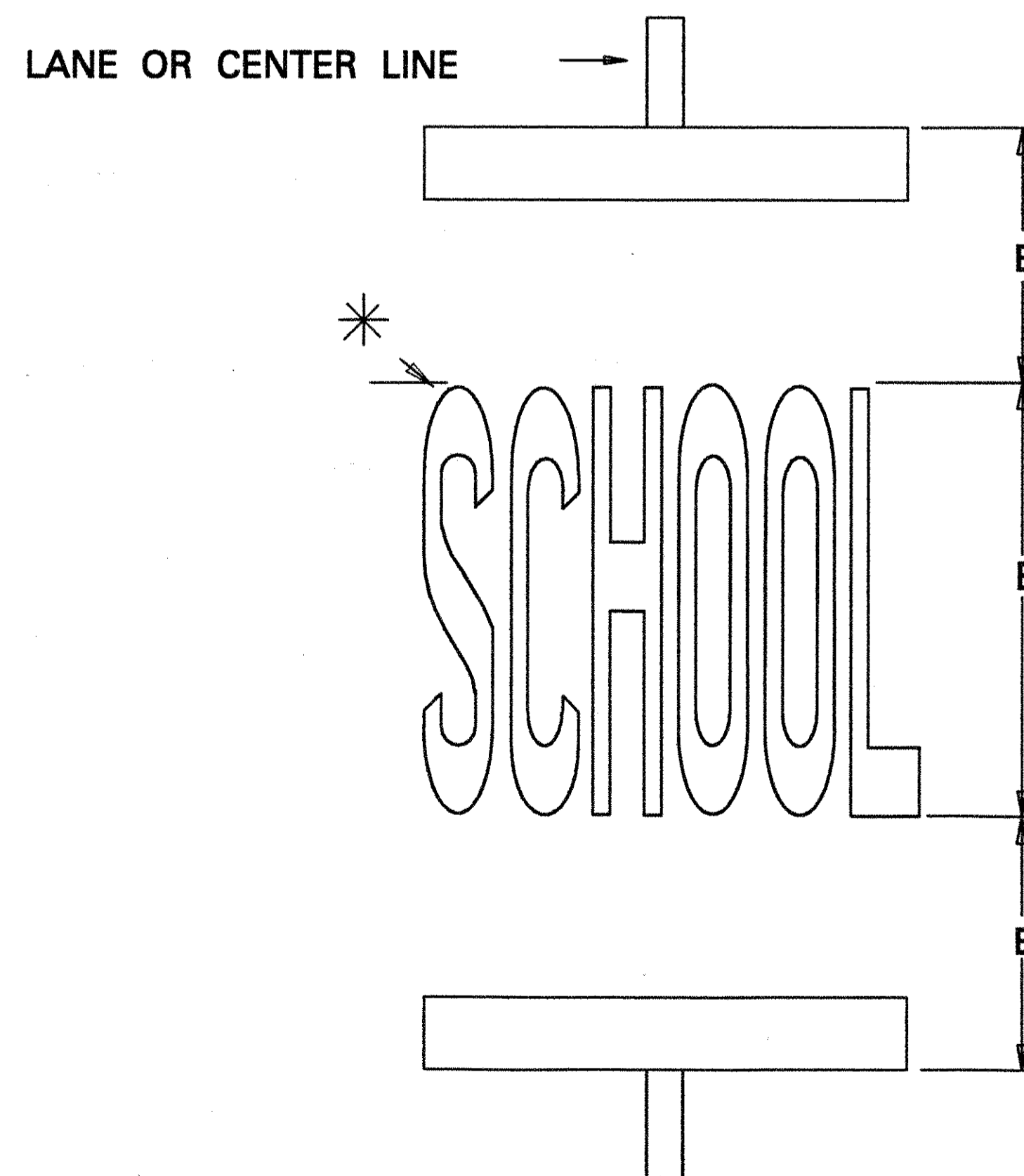
6. USE STANDARD DIMENSIONS CONFORMING TO REQUIREMENTS OF OMUTCD SECTION 3B-40 THROUGH 3B-43 INCLUSIVE. (THAT IS THE 1977 METRIC EDITION STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING WITH ERRATA.)

\* INDICATES STATION REFERENCE POINT

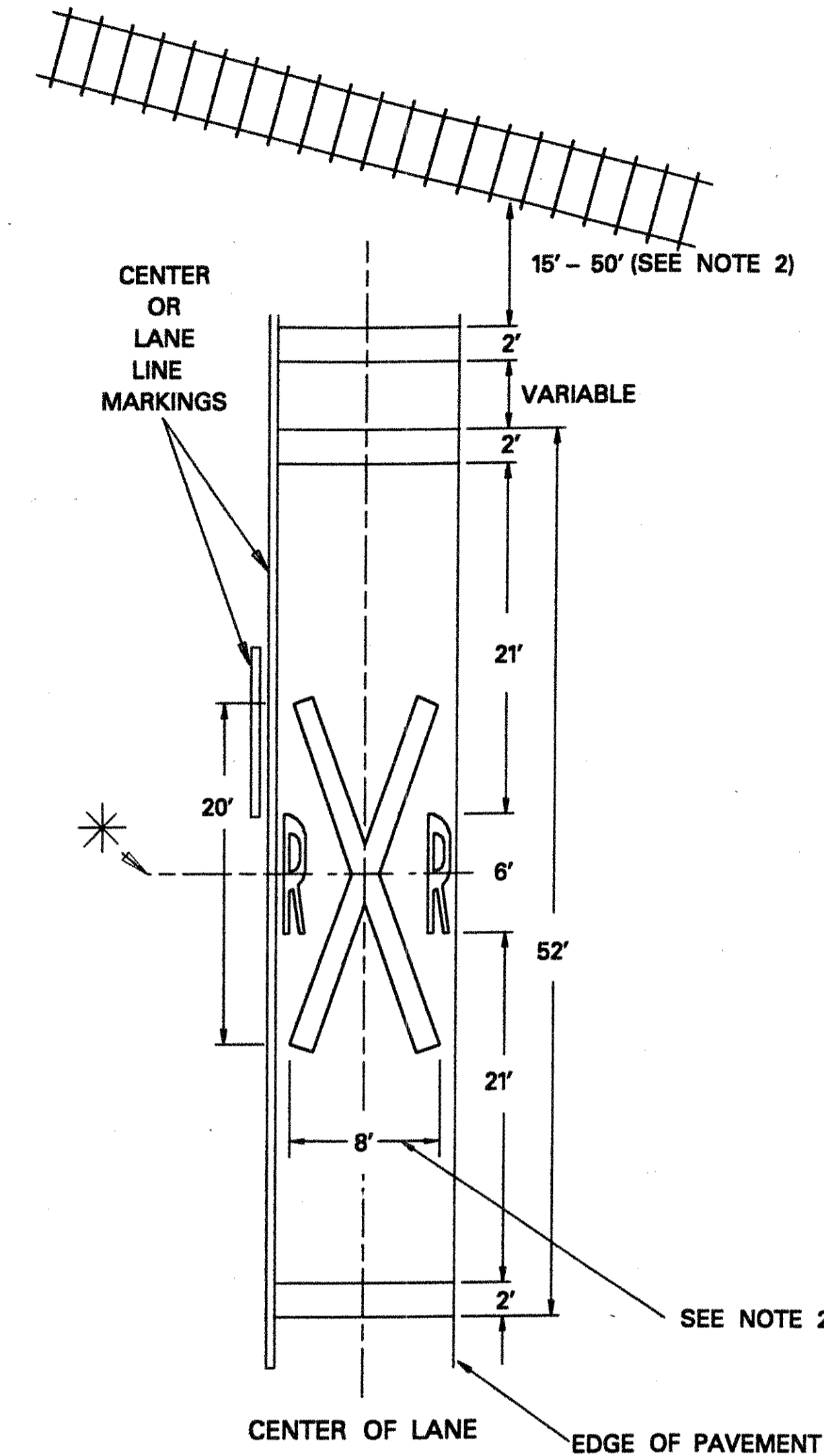


NOTE:  
STOP LINE LOCATED MIN. 40' FROM AT LEAST ONE SIGNAL HEAD WHICH APPLIES TO THAT APPROACH

TYPE	DIMENSIONS (FEET)			
	A	B	C	D
RURAL	30 MIN.	32-80	8	32-80
URBAN	10 MIN.	32-80	6	24-60



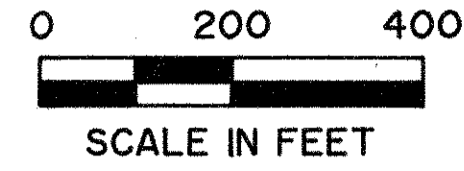
TYPE	INCHES
	E
RURAL	96
URBAN	72



COUNTY LINE \_\_\_\_\_  
 SECTION LINE \_\_\_\_\_  
 PROPERTY LINE \_\_\_\_\_  
 LOT LINE \_\_\_\_\_  
 EXISTING R/W \_\_\_\_\_  
 PROPOSED R/W \_\_\_\_\_  
 COMMERCIAL BUILDING \_\_\_\_\_

R/W LEGEND	
EASEMENT	PARCEL NO.
Warranty Deed	10 WD
Temporary Easement	10 T
Sewer Easement	10 S

# PROPERTY MAP



BUTLER COUNTY  
 HANOVER TWP.  
 SEC. 7, 17 & 18, T.4, R.2

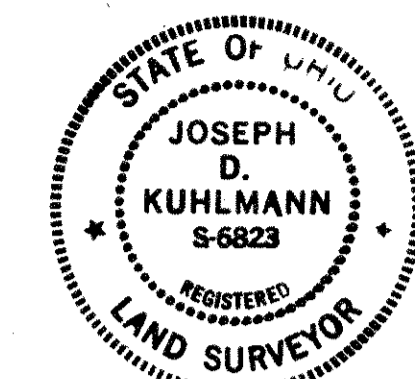
CALC. BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 CHKD. BY \_\_\_\_\_  
 DATE \_\_\_\_\_

BUTLER COUNTY  
 BUT-27-10.48

OHIO  
 FHWA REGION 5

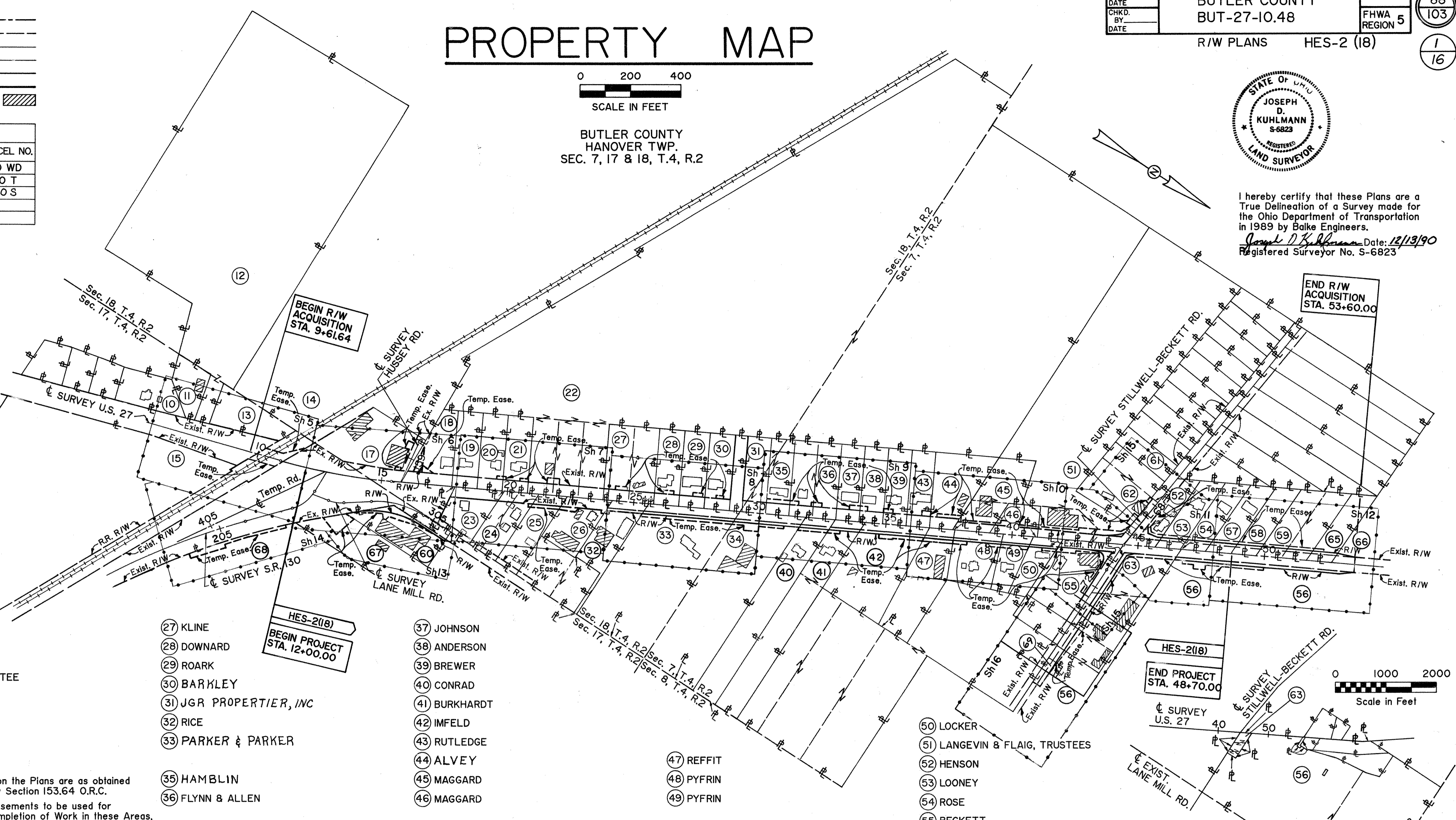
R/W PLANS HES-2 (18)

88  
103  
1  
16



I hereby certify that these Plans are a True Delineation of a Survey made for the Ohio Department of Transportation in 1989 by Balke Engineers.  
 Date: 12/19/90  
 Registered Surveyor No. S-6823

- OWNERS
- 10 HORRALL
  - 11 HANOVER LIFE SQUAD
  - 12 WRIGHT
  - 13 LEYCON, INC.
  - 14 BALTIMORE & OHIO RAILROAD
  - 15 THE CARTER-JONES LUMBER COMPANY
  - 16 NOT USED
  - 17 BUTLER LANDMARK, INC.
  - 18 D'AMBROSIO
  - 19 BOLSER
  - 20 LARGE
  - 21 SHACKLEFORD

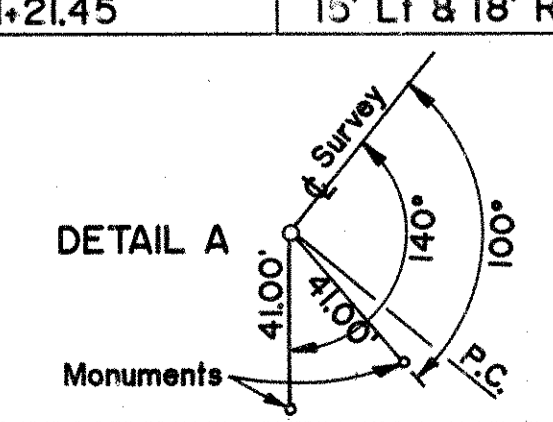


- 22 LOVELL, TRUSTEE
- 23 GOODING
- 24 HUTTEN
- 25 RETHERFORD
- 26 HUTTEN
- 27 KLINE
- 28 DOWNARD
- 29 ROARK
- 30 BARKLEY
- 31 JGR PROPETIER, INC
- 32 RICE
- 33 PARKER & PARKER
- 35 HAMBLIN
- 36 FLYNN & ALLEN
- 37 JOHNSON
- 38 ANDERSON
- 39 BREWER
- 40 CONRAD
- 41 BURKHARDT
- 42 IMFELD
- 43 RUTLEDGE
- 44 ALVEY
- 45 MAGGARD
- 46 MAGGARD
- 47 REFFIT
- 48 PYFRIN
- 49 PYFRIN

Notes:  
 The Locations of Underground Utilities shown on the Plans are as obtained from the Owners of the Utilities as required by Section 153.64 O.R.C.  
 Under no Circumstances are the Temporary Easements to be used for Storage of Materials and Equipment. Upon Completion of Work in these Areas, the Temporary Easements shall be immediately vacated.  
 Reference Point Information is contained in the Construction Plans.

UTILITY OWNERS		
TYPE	NAME & ADDRESS	TELEPHONE
Gas & Electric	Cincinnati Gas & Electric Company 139 E. 4th Street; Cincinnati, OH 45202	(513) 381-2000
Telephone	Cincinnati Bell Telephone Company 201 E. 4th Street; Cincinnati, OH 45202	(513) 397-9900
Water	The Water Association 3640 Old Oxford Road; Hamilton, OH 45013	(513) 863-0828

ITEM 604 MONUMENTS					
SURVEY U.S. 27		SURVEY LANE MILL RD.		SURVEY STILLWELL-BECKETT RD.	
Station Referenced	Location of Monument	Station Referenced	Location of Monument	Station Referenced	Location of Monument
P.O.T. 7+50.00	20' Lt. & 20' Rt.	P.C. 300+66.87	23' Lt. & 17' Rt.	P.O.T. 68+00.00	16' Lt & 16' Rt.
P.I. 13+17.81	33' Lt. & 15' Rt.	P.T. 301+29.05	21' Lt. & 18' Rt.	P.C. 70+00.64	See Detail A
P.T. 15+39.47	22' Lt. & 22' Rt.	P.C. 302+37.65	18' Lt. & 21' Rt.	P.T. 71+21.45	15' Lt & 18' Rt.
P.O.T. 20+00.00	22' Lt. & 22' Rt.	P.T. 304+54.02	18' Lt. & 21' Rt.		
P.O.T. 25+00.00	22' Lt. & 22' Rt.				
P.O.T. 31+00.00	22' Lt. & 22' Rt.				
P.O.T. 36+00.00	22' Lt. & 22' Rt.				
P.O.T. 41+00.00	22' Lt. & 22' Rt.				
P.O.T. 47+25.00	22' Lt. & 22' Rt.				
P.O.T. 53+00.00	20' Lt. & 20' Rt.				
		SURVEY S.R. 130			
		P.C. 200+88.19	23' Rt. & 43' Rt.		
		P.T. 202+02.02	20' Lt. & 20' Rt.		
		P.C. 203+95.05	18' Lt. & 18' Rt.		
		P.O.C. 206+00.00	18' Lt. & 18' Rt.		



TOTAL MONUMENTS 42  
 Quantity Carried to Sheet No.19

- 50 LOCKER
- 51 LANGEVIN & FLAIG, TRUSTEES
- 52 HENSON
- 53 LOONEY
- 54 ROSE
- 55 BECKETT
- 56 DERICKSON
- 57 GROH
- 58 VANBIBBER
- 59 WRIGHT
- 60 PATER
- 61 ISAACS
- 62 LACEY
- 63 STEPHENSON
- 64 NOT USED
- 65 BATDORF, CASEY & FOX
- 66 BRUNSMAN
- 67 MILLER
- 68 BROSHEAR
- 69 THE WATER ASSOCIATION

REV.	DATE	DESCRIPTION
B.S.	10/8/91	Rev. Par. 44T (Drive Reloc.)
D.E.R.	8/16/91	Chg. Owner Par 20T
B.S.	8/5/91	Added Par. 67. Added Blkgs & corrected Par. 63
B.S.	7/16/91	Rev. Par. 60T (Drive Relocation)
D.E.R.	5/2/91	Rev Owners Par. 35 & 44
R.C.M.	FEB. 21/91	Rev. Owner on Par. 33
R.C.M.	FEB. 8/91	Rev. Owner on Par. 30, 31, 35, 57 & 58

TOTAL NUMBER OF \_\_\_\_\_  
 50 OWNERSHIPS  
 0 TOTAL TAKES  
 0 OWNERSHIPS WITH STRUCTURES INVOLVED

# SUMMARY OF ADDITIONAL RIGHT OF WAY

CALC. BY DATE	BUTLER COUNTY	89 103
CHKD. BY DATE	BUT-27-10.48	
Fed. Proj. HES-2 (18) State Proj. _____		2
PID 6150		16

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS AND PERSONALTY	Term	Easement Overlap	AS ACQUIRED	
			BOOK	PAGE							LEFT	RIGHT					BOOK	PAGE
10	Julie A. Horrall	5	1300	335	0.750'								90% Fed 10% St.	Not Required				
11	Hanover Life Squad	5	1253	92	0.533'									Not Required				
12	Donald W. & Jean D. Wright	5	1287	679	20.000'									Not Required				
13	Leycon, Inc.	5	1011	131										Not Required				
14T	Baltimore & Ohio Railroad	5,6					0.167		0.167									
15	Carter-Jones Lumber Company	5,14	890	712	16.74'									Not Required				
16	Not Used													Not Used				
17T1 17T2	Butler Landmark, Inc.	6,13	324	280	1.826'	0.209	0.007		0.007					Roadway Grading	18 Mo.	*200 S.F.		
							0.031		0.031					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
18WD 18T	Sam D'Ambrasio	6,13	1347	276	0.881°	0.253	0.274	0.235	0.039		0.589			Roadway Grading	18 Mo.	*249 S.F. *283 S.F.		
19	John B. & Susan M. Bolser	6,7	1561	542	0.689°									Not Required				
20T	Kenneth E and Susan E. Large	7	1728	338	0.689°	0.103	0.005		0.005		0.586			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
21T	Clara J. Shackelford	7	1421	533	0.689°	0.103	0.008		0.008		0.586			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
22T	William H. Lovell, Tr.	7	1257 1179	262 259	56.588'	1.288	0.023		0.023		55.30			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
23	Paul E. & Darlene B. Gooding	6,7	1005	804	0.700'									Not Required				
24T	Harry J., Jr. & Dana L. Hutten	7	1356	382	0.700'	0.223	0.004		0.004		0.477			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
25T	Richard R. & Marcia Retherford	7	1564	14	0.750²	0.163	0.024		0.024		0.587			Roadway Grading	18 Mo.			
26WD 26T1 26T2	Harry J., Jr. & Dana L. Hutten	7,8	1006	753	0.850'	0.123	0.164	0.123	0.041		0.686			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.	*1512 S.F.		
							0.020		0.020					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
							0.004		0.004									
27T	William C. & Carol J. Kline	7,8	1502	455	1.378°	0.207	0.015		0.015		1.171			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
28T	Robert D. & Penny S. Downard	8	1041	218	0.689°	0.103	0.021		0.021		0.586			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
29T	Terry Roark	8	1509	692	0.689°	0.103	0.014		0.014		0.586			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
30T	Richard W. Barkley and Lora I. Barkley	8	1639	413	0.689°	0.103	0.007		0.007		0.586			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
31	JGR Properties, Inc.	8,9	1681	154	0.640°	0.096								Not Required				
32WD 32T	James R. & Cheryl L. Rice	7,8	1121	71	1.000±	0.113	0.140	0.105	0.035		0.852±			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.	*1231 S.F.		
							0.003		0.003									
33WD 33T	Dillard R. Parker and Minnie P. Parker	8,9	1663	169	8.500±	0.803	0.566	0.425	0.141		7.556 ±	90% Fed		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.	*2567 S.F.		
			1663	171			0.155		0.155			10% St.						
			1457	583														

SOURCE OF RECORD AREA  
 1-Deed Area  
 2-Tax Map  
 3-Survey Area  
 4-Calculated  
 5-Rolled Area  
 6-Sub Plot

Note: The right of way for this project will be acquired and provided by the State of Ohio.

\*Area of overlap with existing waterline easements.

REV.	DATE	DESCRIPTION
DER	8/16/91	Chg. Owner Par 20T
DER	4/5/91	Combine Par. 33 & 34
REV	28 FEB 1991	REV. PARCELS 22-T NET RESIDUE AND 28-T GROSS INLET TAKES

2  
16

REV.	DATE	DESCRIPTION
REV	27 FEB 1991	REV OWNER, BOOK & PAGE ON PARCEL 33
REV	8 FEB 1991	REV OWNER, BOOK & PAGE ON PARCELS 30 & 31
REV	30 JAN 1991	REVISE SHT NO'S ON PARCELS 10 10740 33
REV	24 JAN 1991	CHANGE PARCEL 14 TO 14T AND SHTS FROM 3,4 TO 5,6

TOTAL NUMBER OF \_\_\_\_\_  
 50 OWNERSHIPS  
 0 TOTAL TAKES  
 0 OWNERSHIPS WITH STRUCTURES INVOLVED

# SUMMARY OF ADDITIONAL RIGHT OF WAY

CALC. BY _____ DATE _____	BUTLER COUNTY	90 103
CHKD. BY _____ DATE _____	BUT-27-10.48	
Fed. Proj. HES-2 (18) State Proj. _____		3 16
PID 6150		

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS AND PERSONALTY	TERM	Easement Overlap	AS ACQUIRED	
			BOOK	PAGE							LEFT	RIGHT					BOOK	PAGE
34	Not Used												90% Fed. 10% St.					
35T	Roberta T. Hamblin	9	1717	277	0.640°	0.096	0.032		0.032		0.544			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
36T1	Marietta M. Flynn & Barbara J. Broughton Allen	9	1553	199	1.280°	0.192	0.012		0.012		1.088			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
36T2							0.014		0.014					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
37T	Willie & Mary Floyd Johnson	9	899	571	0.640°	0.096	0.018		0.018		0.544			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
38T	David Lee Anderson	9	1540	161	0.640°	0.096	0.011		0.011		0.544			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
39T	Robert L. & Lila Brewer	9	1398	695	0.640°	0.096	0.011		0.011		0.544			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
40WD	Charles O. & Edna B. Conrad	9	1504	421	2.000'	0.153	0.109	0.082	0.027			1.820				*829 S.F.		
40T							0.027		0.027					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
41WD	Emily Burkhardt	9	1253	327	2.152'	0.082	0.109	0.082	0.027			2.043				*829 S.F.		
41T							0.010		0.010					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
42WD	Keenan K. & Thomas C. Imfeld	9,10	1438	144	2.087±	0.177	0.236	0.177	0.059			1.851±				*2076 S.F.		
42T							0.048		0.048					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
43T	Steven R. & Carla C. Rutledge	9,10	1594	344	0.640°	0.096	0.017		0.017		0.544			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
44T	Dale D. & Joyce A. Alvey	10	1717	193	1.182°	0.107	0.029		0.029		1.075			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
45T	Darrel Maggard	10	1335	349	1.174'	0.102	0.035		0.035		1.072			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
45S							0.004		0.004					Roadway Grading & Constr. Catch Basin				
46T	Darrel & Fieona Maggard	10	1557	526	0.400'	0.126	0.057		0.057		0.274			Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
47WD	Greg Reffit	10	1515	472	1.454±	0.073	0.098	0.073	0.025			1.356±				*1027 S.F.		
47T							0.027		0.027					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
48WD	Joseph D. & Angela K. Pyfrin	10	923	649	0.982'	0.132	0.175	0.132	0.043			0.807				*1660 S.F.		
48T1							0.019		0.019					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
48T2							0.021		0.021					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
49WD	Serafina Pyfrin	10	1414	101	0.491'	0.079	0.105	0.079	0.026			0.386				*902 S.F.		
49T							0.037		0.037					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
50WD	Beatrice A. Locker	10,11	1479	373	0.513'	0.079	0.105	0.079	0.026			0.408				*816 S.F.		
50T							0.014		0.014					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
51WD	W. Dean Langevin, Tr. & Marie B. Flaig, Tr.	10,11	1636	170	10.620±	0.270	0.276	0.270	0.006			10.344±				*90 S.F.		
51T							0.118		0.118					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			*333 S.F.
52WD	Franklin, Jr. & Viola Henson	11,15	1256	11	0.817°	0.230	0.271	0.230	0.041		0.546					*795 S.F.		
52T							0.032		0.032					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
53WD	James H. & Elizabeth Looney	11,15	1614	222	0.636°	0.069	0.092	0.069	0.023			0.544				*634 S.F.		
53T							0.023		0.023					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			
54WD	Katheryn Rose	11,12	1356	4	0.636°	0.069	0.092	0.069	0.023			0.544	90% Fed. 10% St.					
54T							0.023		0.023					Roadway Grading & Constr. Portion of a Private Drive	18 Mo.			

SOURCE OF RECORD AREA  
 1-Deed Area  
 2-Tax Map  
 3-Survey Area  
 4-Calculated  
 5-Indexed Area  
 6-Sub Plot

Note: The right of way for this project will be acquired and provided by the State of Ohio.

\*Area of overlap with existing waterline easements.

B.S.	10/8/91	Revised Par. 47T
DER	5/2/91	Rev. Owner Par. 35T & 44T
DER	4/5/91	Del. Par. 34
RGM	2/8/91	Rev. Owner, Book & Pages on Par. 35
REM	1/30/91	Rev. Sheet No's on Par. No's 34WD thru 34T
REV.	DATE	DESCRIPTION

3  
16

TOTAL NUMBER OF \_\_\_\_\_  
 50 OWNERSHIPS  
 0 TOTAL TAKES  
 0 OWNERSHIPS WITH STRUCTURES INVOLVED

# SUMMARY OF ADDITIONAL RIGHT OF WAY

CALC. BY _____	BUTLER COUNTY	91
DATE _____		
CHKD. BY _____	Fed. Proj. HES-2 (18) State Proj. _____	4
DATE _____		

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS AND PERSONALTY	TERM	Easement Overlap	AS ACQUIRED	
			BOOK	PAGE							LEFT	RIGHT					BOOK	PAGE
55WD 55T	Darrell Beckett	10,11,15	1373	329	1.523'	0.258	0.299 0.090	0.258	0.041 0.090		1.224	90% Fed 10% St.	Roadway Grading & Constr. Portion of a Private Drive Adv. Sign on Temp. Wood Frame at 43+27.35 H/F & 6" Metal Pole Encased in Conc. (No Sign Attached) at 43+41.40 H/F will be Perform Work within Parcel 557	18 Mo.	*137 S.F.			
56WD1 56WD2 56T1	Melvin L. & Jean Derickson	11,12,16	597	661	187.174	4.023	0.684 0.050 0.092	0.478 0.028	0.206 0.022 0.092		182.923		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.	*7007 S.F.			
57WD 57T	Stephanie Groh	11,12	1709 1624	206 142	0.636°	0.069	0.092 0.023	0.069	0.023 0.023		0.544		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.				
58WD 58T	James C. Van Bibber	12	1704	422	0.636°	0.069	0.093 0.023	0.069	0.024 0.023		0.543		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.				
59WD 59T	Leah Rae Wright	12	1544	389	1.272°	0.138	0.185 0.046	0.138	0.047 0.046		1.087		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.				
60WD 60T	Janet K. Pater	13	1628 1357	104 232	1.001'	0.052	0.106 0.062	0.052	0.054 0.062		0.895		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.				
61	Judith Ellen Isaacs	15	1373	567	0.514'								Not Used					
62T1 62T2	Dale R. Lacey	11,15	1638 1346 1726	669 529 689	1.493 <sup>184</sup>	0.134	0.020 0.005		0.020 0.005		1.493		Roadway Grading & Constr. Portion of a Private Drive Roadway Grading	18 Mo. 18 Mo.				
63WD 63T	Richard J. & JoAnn Stephenson	11,16	1428 1714	395 664	2.870	0.390	0.557 0.165	0.390	0.167 0.165		2.313		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.	*48 S.F.			
64	Not Used												Not Used					
65WD 65T	Eva Batdorf, Judith Ann Casey, & Sharon Lee Fox	12	891	454	0.636°	0.069	0.093 0.009	0.069	0.024 0.009		0.543		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.				
66WD	Willard A., Jr. & Elizabeth Rose Brunsmann	12	1172	213	5.350±	0.059	0.068	0.059	0.009		5.282±		Roadway Grading	18 Mo.				
67T	Patricia Ann Miller	6,13,14	1578	504	1.422'	0.000	0.121		0.121		1.422		Roadway Grading & Constr. Portion of a Private Drive	18 Mo.				
68T	Clarence & Betty Jo Broshear	14	860	590	91.986²	0.000	0.110		0.110		91.986							
69WD 69T	The Water Association	16	1714	662	0.080	0.023	0.040 0.003	0.023	0.017 0.003		0.040	90% Fed 10% St.	Roadway Grading	18 Mo.				

SOURCE OF RECORD AREA  
 1-Deed Area  
 2-Tax Map  
 3-Survey Area  
 4-Calculated  
 5-Rolled Area  
 6-Sub Plot

Note: The right of way for this project will be acquired and provided by the State of Ohio.

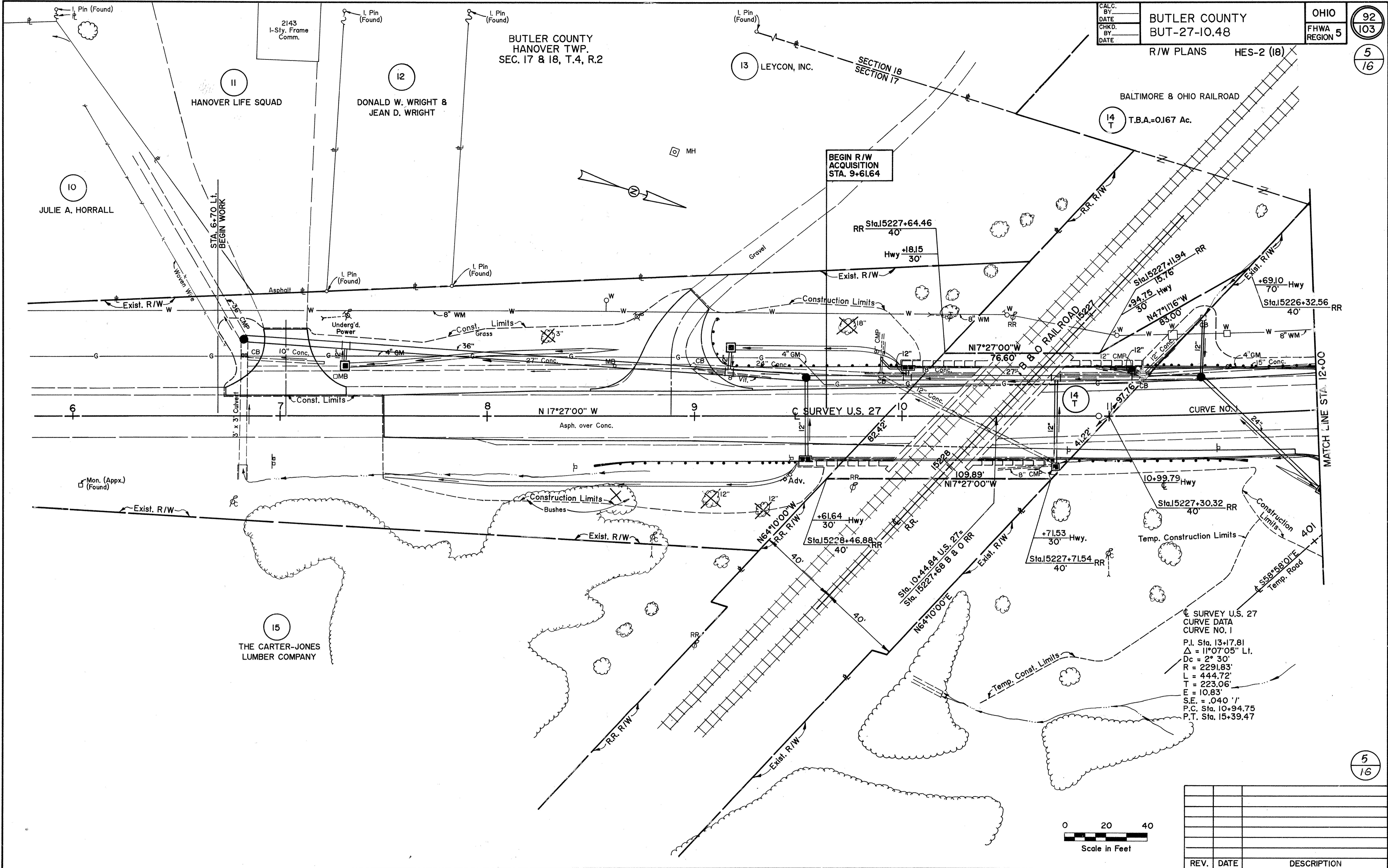
\*Area of overlap with existing water line easements.

DER	9/16/91	Owner change Par. 62
B.S.	9/3/91	Corrected Net Residue Par 55WD, 57WD, 58WD, 59WD, 65WD

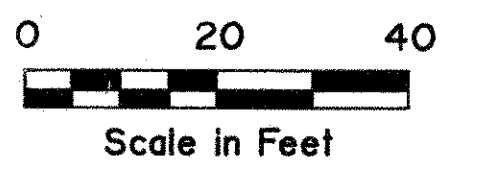
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16

B.S.	7/16/91	Revised Par. 60T (Drive Re loc.)
RGM	3/7/91	Removed Par. 36 T2 and Added Par. 69WD & T
RGM	2/27/91	Rev. Owner, Book & Page on Par. 60WD & T
RGM	2/8/91	Revised Owner, Book & Page on Par. 57T & WD and 58T & WD
RGM	1/30/91	Revised Sheet No's on Par. No's 52WD Thru 68T
REV.	DATE	DESCRIPTION

**BUTLER COUNTY**  
**HANOVER TWP.**  
**SEC. 17 & 18, T.4, R.2**



C SURVEY U.S. 27  
 CURVE DATA  
 CURVE NO. 1  
 P.I. Sta. 13+17.81  
 $\Delta = 11^{\circ}07'05''$  Lt.  
 $D_c = 2^{\circ}30'$   
 $R = 2291.83'$   
 $L = 444.72'$   
 $T = 223.06'$   
 $E = 10.83'$   
 $S.E. = .040$  ' / '  
 P.C. Sta. 10+94.75  
 P.T. Sta. 15+39.47



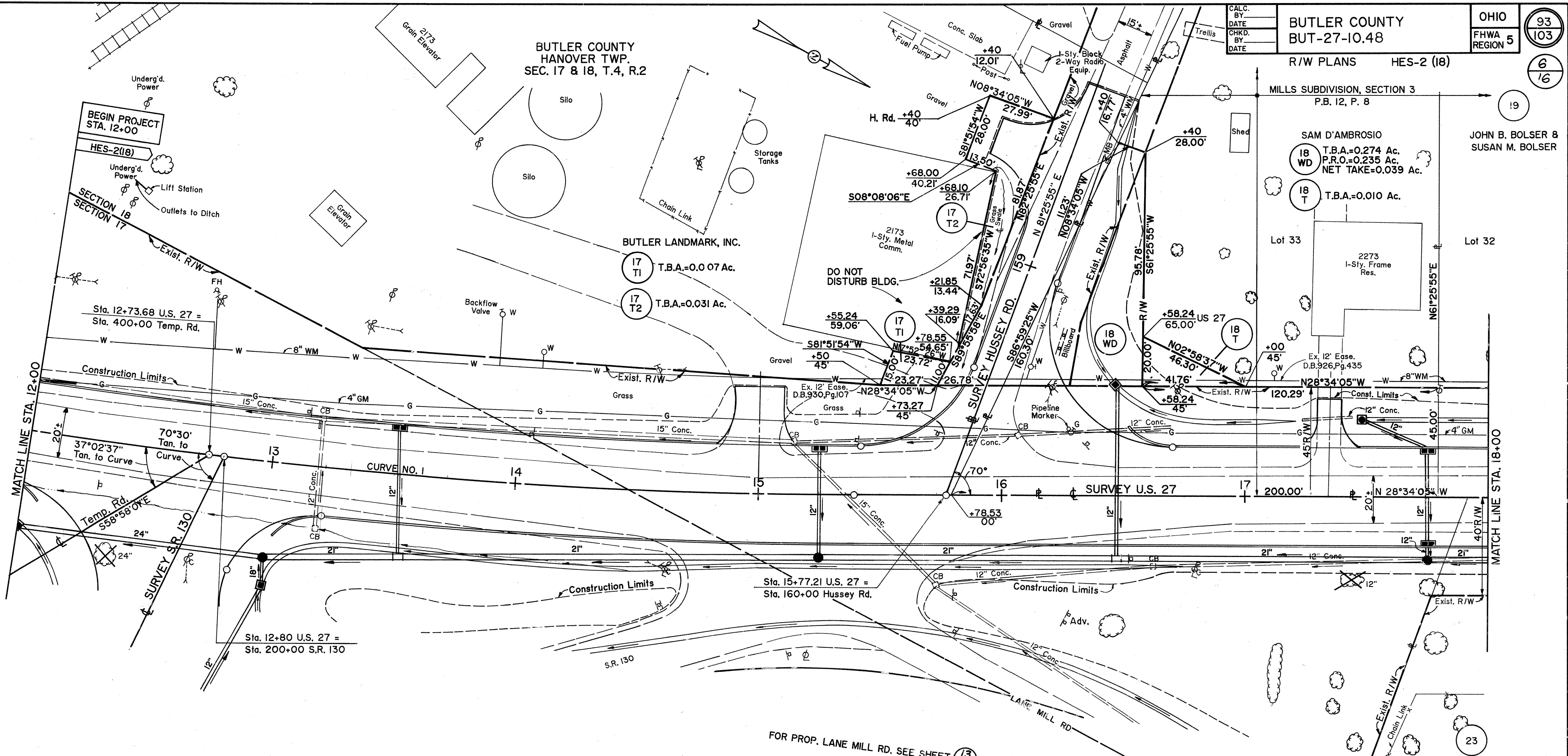
REV.	DATE	DESCRIPTION

SAM D'AMBROSIO T.B.A.=0.274 Ac. P.R.O.=0.235 Ac. NET TAKE=0.039 Ac. 18 WD 18 T T.B.A.=0.010 Ac.

JOHN B. BOLSER & SUSAN M. BOLSER

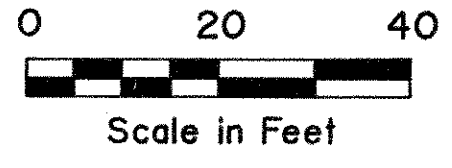
BUTLER LANDMARK, INC. 17 T1 T.B.A.=0.007 Ac. 17 T2 T.B.A.=0.031 Ac.

PAUL E. GOODING & DARLENE B. GOODING



CL SURVEY U.S. 27  
 CURVE DATA  
 CURVE NO. 1  
 P.I. Sta. 13+17.81  
 $\Delta = 11^{\circ}07'05''$  Lt.  
 Dc = 2' 30"  
 R = 2291.83'  
 L = 444.72'  
 T = 223.06'  
 E = 10.83'  
 S.E. = .040 1/  
 P.C. Sta. 10+94.75  
 P.T. Sta. 15+39.47

FOR PROP. LANE MILL RD. SEE SHEET 13/16



REV.	DATE	DESCRIPTION

BUTLER COUNTY  
HANOVER TWP.  
SEC. 18, T.4, R.2

MILLS SUBDIVISION, SECTION 3  
P.B. 12, P. 8

WILLIAM H. LOVELL, TRUSTEE  
22 T. T.B.A. = 0.023 Ac.

JOHN B. BOLSER &  
SUSAN M. BOLSER  
19

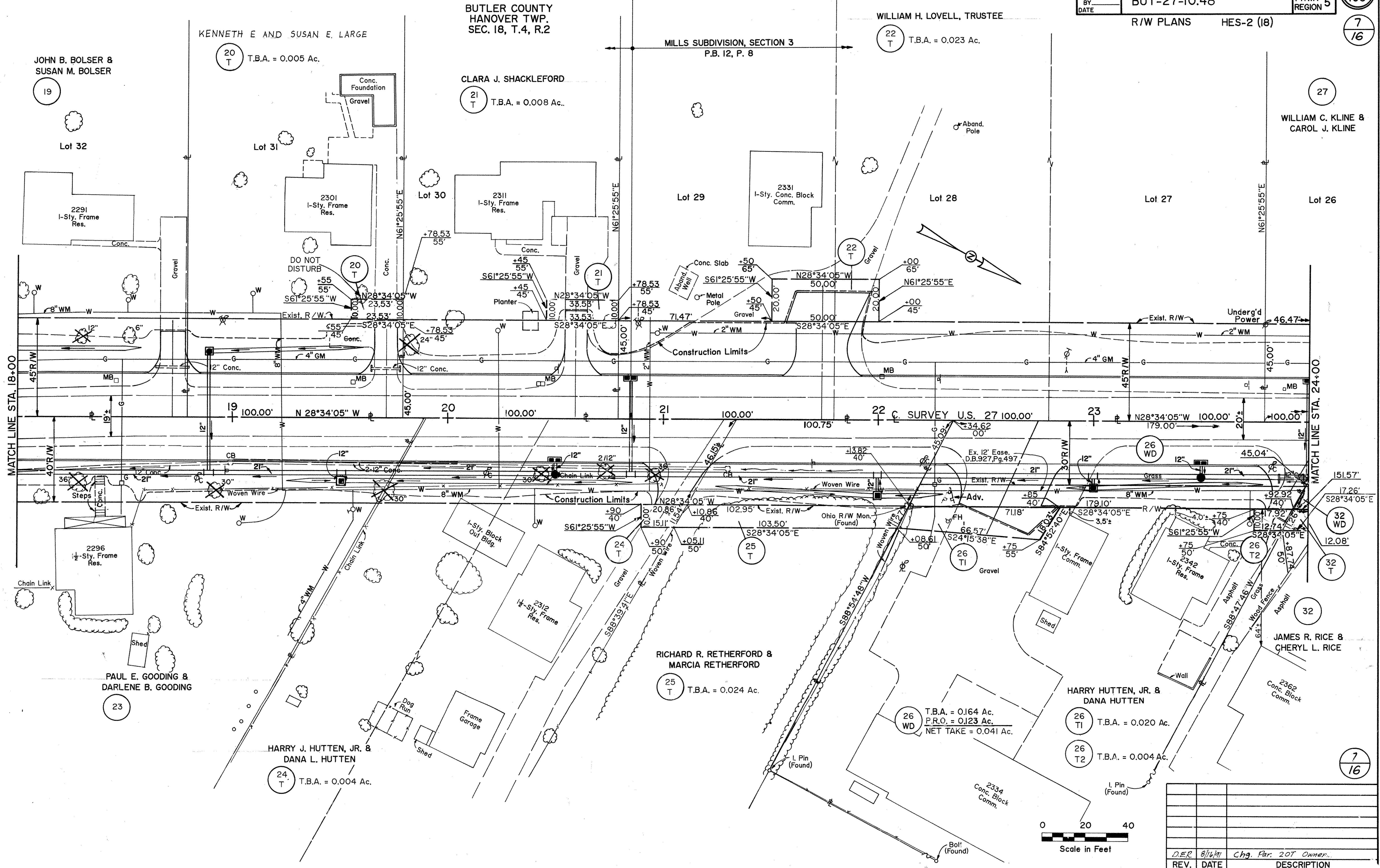
KENNETH E AND SUSAN E. LARGE  
20 T. T.B.A. = 0.005 Ac.

CLARA J. SHACKLEFORD  
21 T. T.B.A. = 0.008 Ac.

WILLIAM C. KLINE &  
CAROL J. KLINE  
27

MATCH LINE STA. 18+00

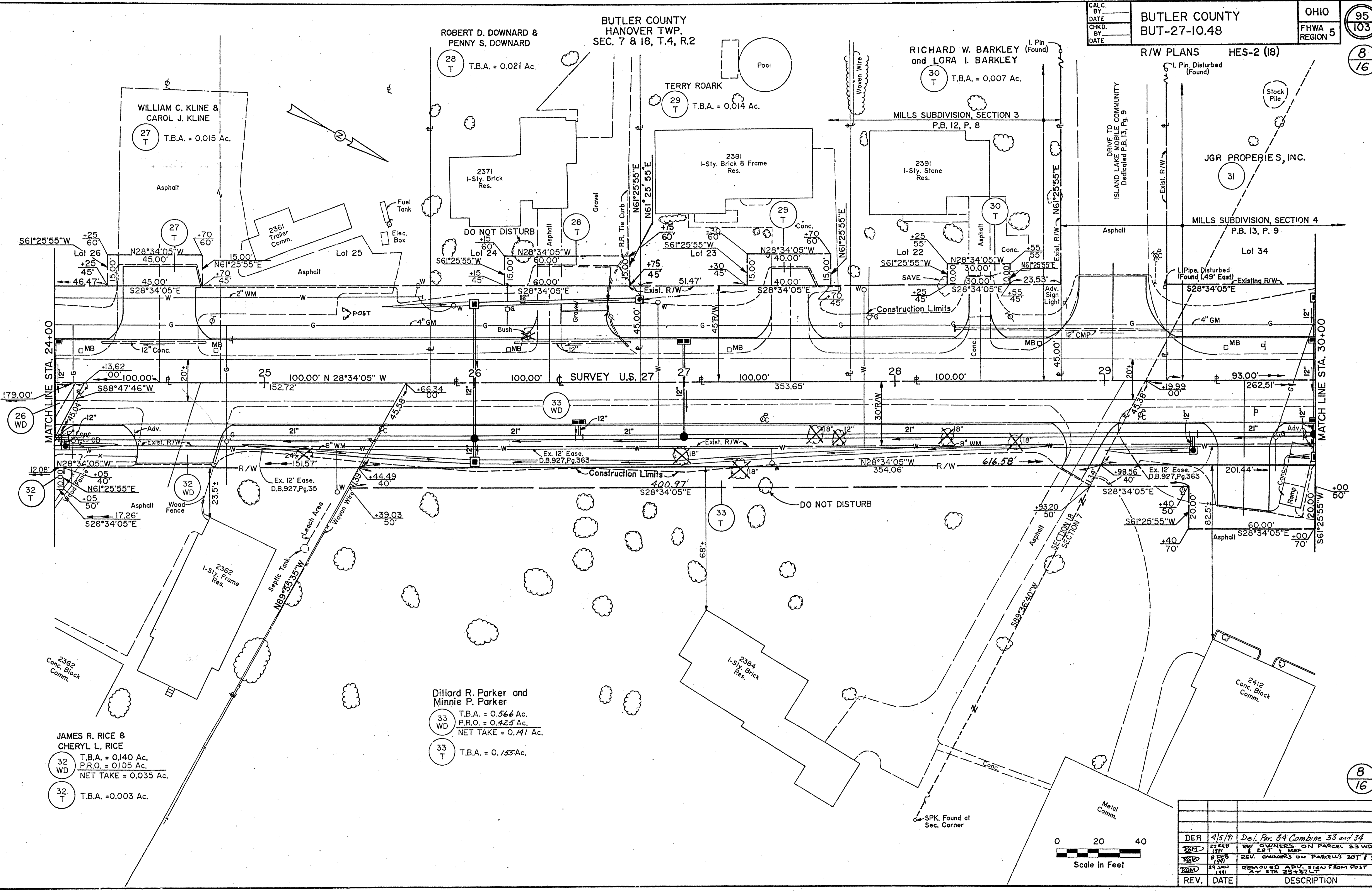
MATCH LINE STA. 24+00



REV.	DATE	DESCRIPTION
DER	8/14/11	Chg. Per. 20T Owner



R/W PLANS HES-2 (18)



WILLIAM C. KLINE & CAROL J. KLINE  
 27 T T.B.A. = 0.015 Ac.

ROBERT D. DOWNARD & PENNY S. DOWNARD  
 28 T T.B.A. = 0.021 Ac.

TERRY ROARK  
 29 T T.B.A. = 0.014 Ac.

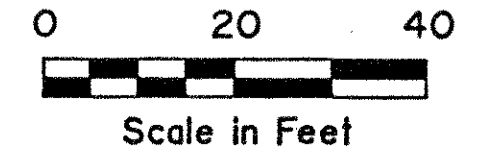
RICHARD W. BARKLEY and LORA I. BARKLEY  
 30 T T.B.A. = 0.007 Ac.

Dillard R. Parker and Minnie P. Parker  
 33 WD T.B.A. = 0.566 Ac.  
 P.R.O. = 0.425 Ac.  
 NET TAKE = 0.141 Ac.

JAMES R. RICE & CHERYL L. RICE  
 32 WD T.B.A. = 0.140 Ac.  
 P.R.O. = 0.105 Ac.  
 NET TAKE = 0.035 Ac.

32 T T.B.A. = 0.003 Ac.

REV.	DATE	DESCRIPTION
DER	4/5/91	Del. Par. 34 Combine 33 and 34
KAM	27 FEB 1991	REV. OWNERS ON PARCEL 33 WD & 28 T & 29 T
KAM	8 FEB 1991	REV. OWNERS ON PARCELS 30 T & 31
KAM	27 JAN 1991	REMOVED ADV. SIGN FROM POST AT STA 28+37.1



BUTLER COUNTY  
 HANOVER TWP.  
 SEC. 7, T.4, R.2

MILLS SUBDIVISION, SECTION 4  
 P.B. 13, P. 9

31  
 JGR PROPERTIES, INC

ROBERTA T. HAMBLIN  
 35 T  
 T.B.A. = 0.032 Ac.

MARIETTA M. FLYNN &  
 BARBARA J. BROUGHTON ALLEN  
 36 T1  
 T.B.A. = 0.012 Ac.  
 36 T2  
 T.B.A. = 0.014 Ac.

WILLIE JOHNSON &  
 MARY FLOYD JOHNSON  
 37 T  
 T.B.A. = 0.018 Ac.

DAVID LEE ANDERSON  
 38 T  
 T.B.A. = 0.011 Ac.

ROBERT L. BREWER &  
 LILA BREWER  
 39 T  
 T.B.A. = 0.011 Ac.

STEVEN R. RUTLEDGE &  
 CARLA C. RUTLEDGE  
 43

Lot 34

Lot 35

Lot 36

Lot 37

Lot 38

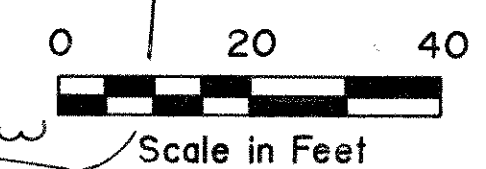
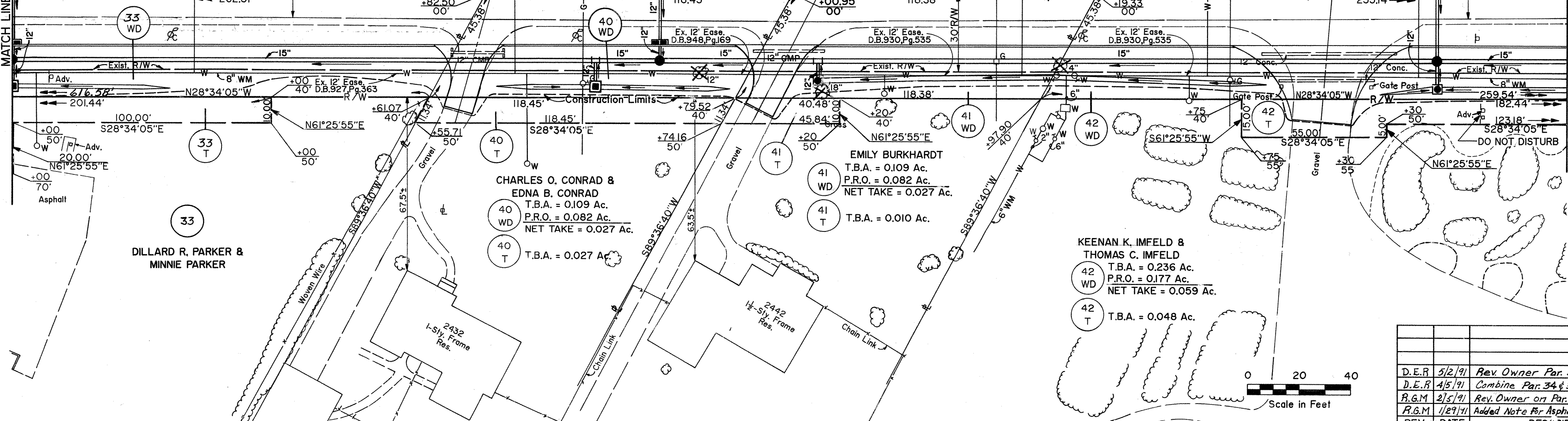
Lot 39

Lot 40

Lot 41

MATCH LINE STA. 30+00

MATCH LINE STA. 36+00



REV.	DATE	DESCRIPTION
D.E.R.	5/2/91	Rev Owner Par. 35 T
D.E.R.	4/5/91	Combine Par. 34 & 33 and Delete Par. 34
R.G.M.	2/5/91	Rev. Owner on Par. 31 & 35 T
R.G.M.	1/29/91	Added Note for Asphalt 31T & 38 T

R/W STA. 30+00 ~ STA. 36+00

R/W PLANS HES-2 (18)

STEVEN R. RUTLEDGE & CARLA C. RUTLEDGE  
 43 T T.B.A.=0.017 Ac.

BUTLER COUNTY HANOVER TWP. SEC. 7, T.4, R.2

DARREL MAGGARD  
 45 T T.B.A.=0.035 Ac.  
 45 S T.B.A.= 0.004 Ac.

W. DEAN LANGEVIN, TRUSTEE & MARIE B. FLAIG, TRUSTEE  
 51 WD T.B.A.=0.276 Ac.  
 P.R.O.=0.270 Ac.  
 NET TAKE=0.006 Ac.  
 51 T T.B.A.=0.118 Ac.

MILLS SUBDIVISION, SECTION 4 P.B. 13, P. 9

DALE D. & JOYCE A. ALVEY  
 44 T T.B.A.=0.029 Ac.

DARRELL MAGGARD & FIEONA MAGGARD  
 46 T T.B.A.=0.057 Ac.

2537 I-Sty. Block Comm.

2481 I-Sty. Frame & Stone Res.

Lot 41

Lot 42

2501 I-Sty. Block Comm.

2491 I-Sty. Brick Comm.

DO NOT DISTURB

DO NOT DISTURB

Gravel

Asphalt

MATCH LINE STA. 36+00

MATCH LINE STA. 42+00

SURVEY U.S. 27

42 WD

47 WD

48 WD

49 WD

50 WD

55 WD

42 T

47 T

48 T

48 T

49 T

50 T

55 T

KEENAN K. IMFELD & THOMAS C. IMFELD

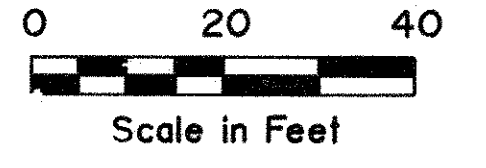
GREG REFFIT  
 47 WD T.B.A.=0.098 Ac.  
 P.R.O.=0.073 Ac.  
 NET TAKE=0.025 Ac.  
 47 T T.B.A.=0.027 Ac.

JOSEPH D. PYFRIN & ANGELA K. PYFRIN  
 48 WD T.B.A.=0.175 Ac.  
 P.R.O.=0.132 Ac.  
 NET TAKE=0.043 Ac.  
 48 T T.B.A.=0.019 Ac.  
 48 T T.B.A.=0.021 Ac.

BEATRICE A. LOCKER  
 50 WD T.B.A.=0.105 Ac.  
 P.R.O.=0.079 Ac.  
 NET TAKE=0.026 Ac.  
 50 T T.B.A.=0.014 Ac.

DARRELL BECKETT  
 55 WD T.B.A.=0.299 Ac.  
 P.R.O.=0.258 Ac.  
 NET TAKE=0.041 Ac.  
 55 T T.B.A.=0.090 Ac.

SERAFINA PYFRIN  
 49 WD T.B.A.=0.105 Ac.  
 P.R.O.=0.079 Ac.  
 NET TAKE=0.026 Ac.  
 49 T T.B.A.=0.037 Ac.



REV.	DATE	DESCRIPTION
B.S.	10/9/91	Rev. Par. 47 T (Drive Reloc.)
B.S.	8/22/91	Rev. Par. 44 T & 45 T, Added Par. 45 S
D.E.R.	5/2/91	Rev. Owners Par. 44 T

R/W STA. 36+00 ~ STA. 42+00

BUTLER COUNTY  
HANOVER TWP.  
SEC. 7, T.4, R.2

DALE R. LACEY

62 TI T.B.A.=0.020 Ac.

62 T2 T.B.A.=0.005 Ac.

51 W. DEAN LANGEVIN, TRUSTEE &  
MARIE B. FLAIG, TRUSTEE

FRANKLIN HENSON, JR. &  
VIOLA HENSON

52 WD T.B.A.=0.271 Ac.  
P.R.O.=0.230 Ac.  
NET TAKE=0.041 Ac.

52 T T.B.A.=0.032 Ac.

JAMES H. LOONEY &  
ELIZABETH LOONEY

53 WD T.B.A.=0.092 Ac.  
P.R.O.=0.069 Ac.  
NET TAKE=0.023 Ac.

53 T T.B.A.=0.023 Ac.

KATHERYN ROSE

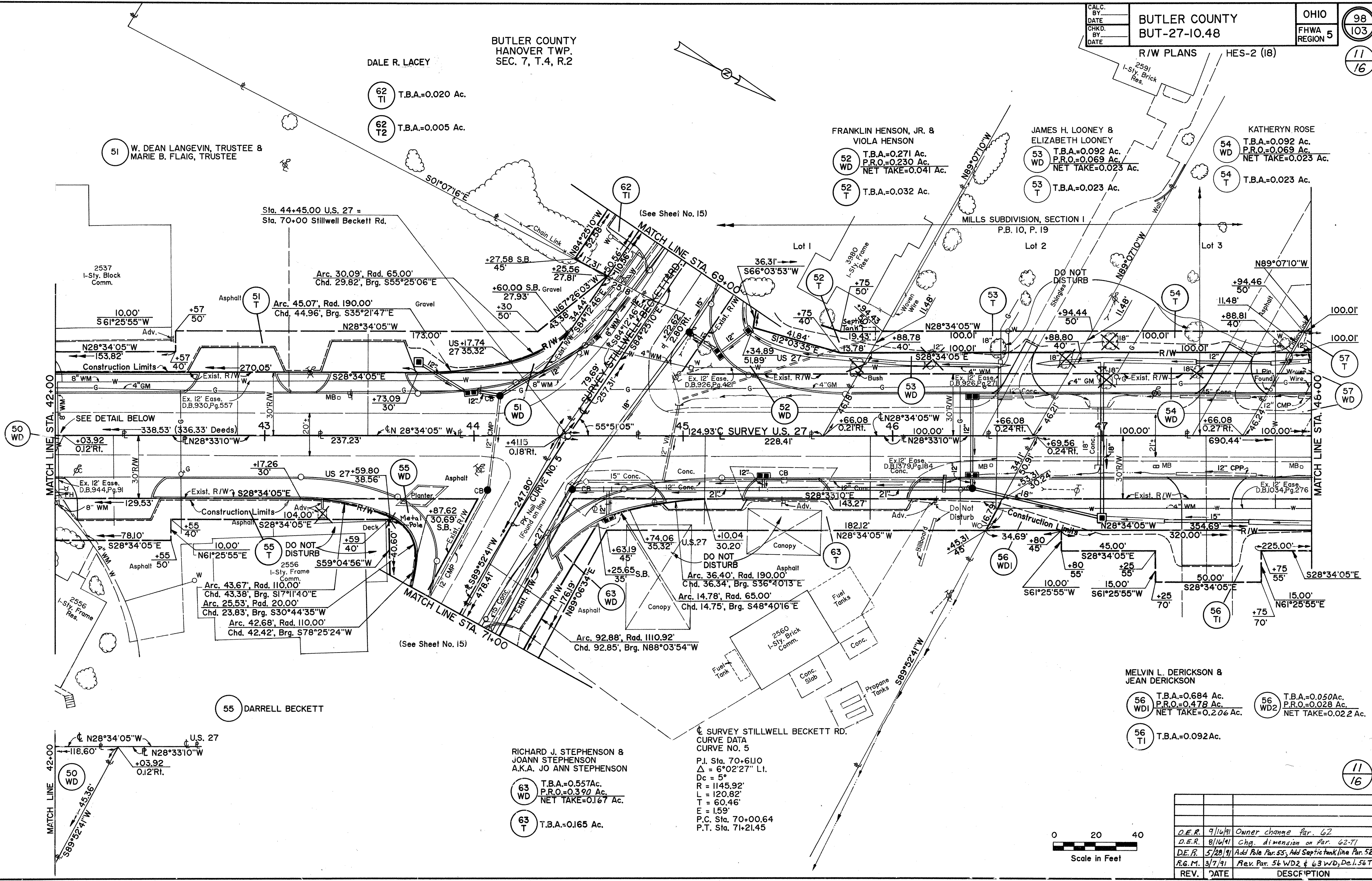
54 WD T.B.A.=0.092 Ac.  
P.R.O.=0.069 Ac.  
NET TAKE=0.023 Ac.

54 T T.B.A.=0.023 Ac.

Sta. 44+45.00 U.S. 27 =  
Sta. 70+00 Stillwell Beckett Rd.

(See Sheet No. 15)

MILLS SUBDIVISION, SECTION I  
P.B. 10, P. 19



55 DARRELL BECKETT

RICHARD J. STEPHENSON &  
JOANN STEPHENSON  
A.K.A. JO ANN STEPHENSON

63 WD T.B.A.=0.557 Ac.  
P.R.O.=0.390 Ac.  
NET TAKE=0.167 Ac.

63 T T.B.A.=0.165 Ac.

☉ SURVEY STILLWELL BECKETT RD.  
CURVE DATA  
CURVE NO. 5

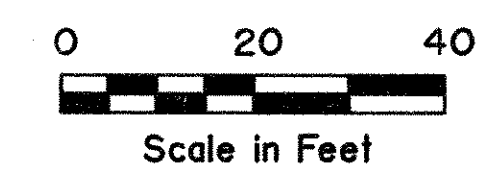
P.I. Sta. 70+61.10  
Δ = 6°02'27" Lt.  
Dc = 5'  
R = 1145.92'  
L = 120.82'  
T = 60.46'  
E = 1.59'  
P.C. Sta. 70+00.64  
P.T. Sta. 71+21.45

MELVIN L. DERICKSON &  
JEAN DERICKSON

56 WDI T.B.A.=0.684 Ac.  
P.R.O.=0.478 Ac.  
NET TAKE=0.206 Ac.

56 TI T.B.A.=0.092 Ac.

56 WD2 T.B.A.=0.050 Ac.  
P.R.O.=0.028 Ac.  
NET TAKE=0.022 Ac.



REV.	DATE	DESCRIPTION
D.E.R.	9/16/91	Owner change Par. 62
D.E.R.	8/16/91	Chg. dimension on Par. 62-T1
D.E.R.	5/28/91	Add Pole Par. 55; Add Septic Tank Line Par. 52
R.G.M.	3/7/91	Rev. Par. 56 WD2 & 63 WD; Del. 1.56 T2

BUTLER COUNTY  
HANOVER TWP.  
SEC. 7, T.4, R.2

EVA BATDORF (1/3 INT.)  
JUDITH ANN CASEY (1/3 INT.)  
SHARON LEE FOX (1/3 INT.)

65 WD T.B.A.=0.093 Ac.  
P.R.O.=0.069 Ac.  
NET TAKE=0.024 Ac.

65 T T.B.A.=0.009 Ac.

WILLARD A. BRUNSMAN, JR.  
& ELIZABETH ROSE BRUNSMAN

66 WD T.B.A.=0.068 Ac.  
P.R.O.=0.059 Ac.  
NET TAKE=0.009 Ac.

LEAH RAE WRIGHT  
59 WD T.B.A.=0.185 Ac.  
P.R.O.=0.138 Ac.  
NET TAKE=0.047 Ac.

59 T T.B.A.=0.046 Ac.

JAMES C. VAN BIBBER

58 WD T.B.A.=0.093 Ac.  
P.R.O.=0.069 Ac.  
NET TAKE=0.024 Ac.

58 T T.B.A.=0.023 Ac.

STEPHANIE GROH  
57 WD T.B.A.=0.092 Ac.  
P.R.O.=0.069 Ac.  
NET TAKE=0.023 Ac.

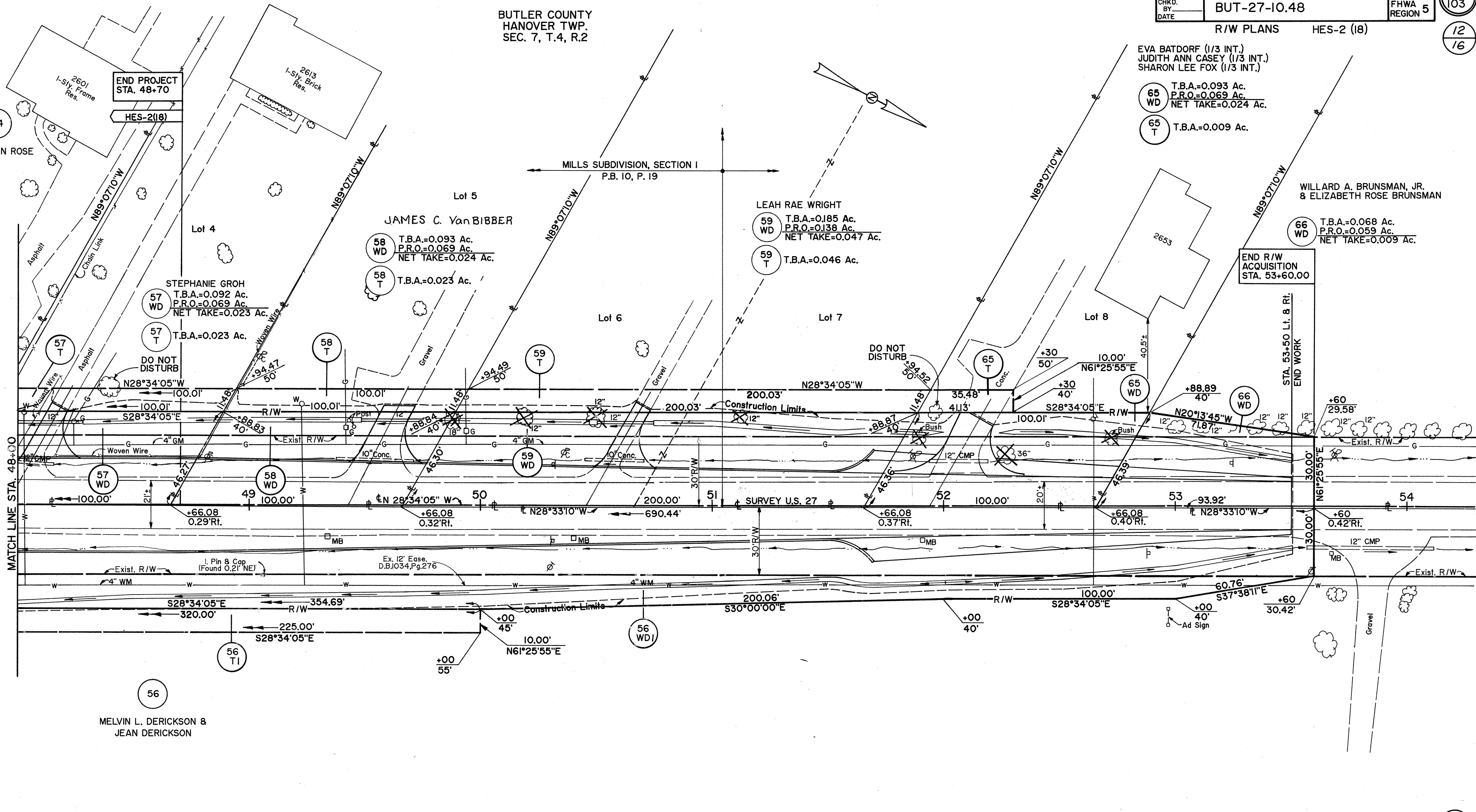
57 T T.B.A.=0.023 Ac.

END PROJECT  
STA. 48+70  
HES-2(18)

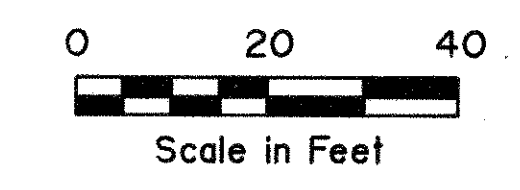
END R/W  
ACQUISITION  
STA. 53+60.00

STA. 53+50 LI. & RI.  
END WORK

MATCH LINE STA. 48+00



MELVIN L. DERICKSON &  
JEAN DERICKSON



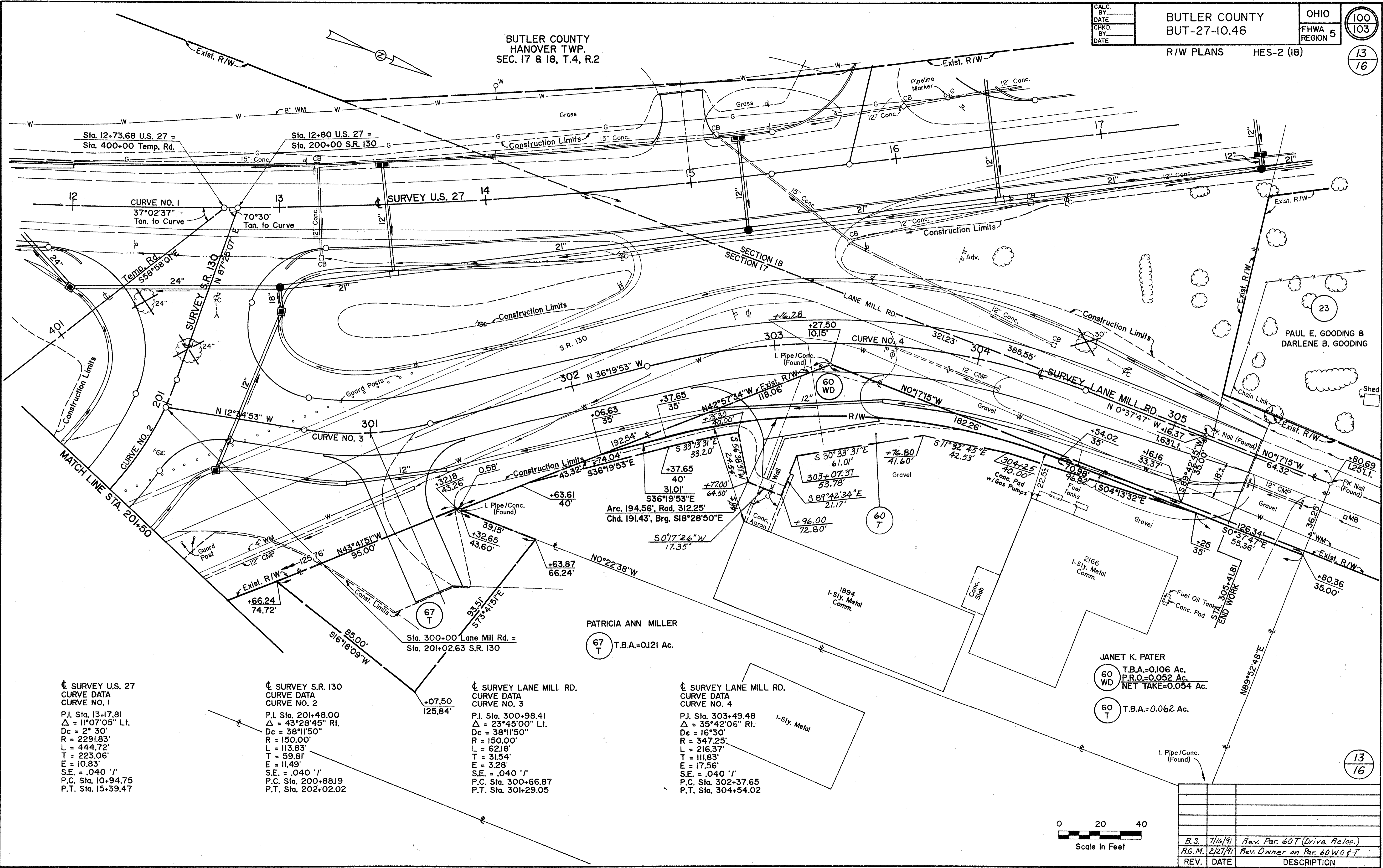
REV.	DATE	DESC. / REVISION

BUTLER COUNTY  
HANOVER TWP.  
SEC. 17 & 18, T.4, R.2

CALC. BY:	BUTLER COUNTY	OHIO	100
DATE:	BUT-27-10.48	FHWA REGION 5	103
CHKD. BY:			
DATE:			

R/W PLANS HES-2 (18)

13  
16



☐ SURVEY U.S. 27  
CURVE DATA  
CURVE NO. 1  
P.I. Sta. 13+17.81  
Δ = 11°07'05" Lt.  
Dc = 2° 30'  
R = 2291.83'  
L = 444.72'  
T = 223.06'  
E = 10.83'  
S.E. = .040 'l'  
P.C. Sta. 10+94.75  
P.T. Sta. 15+39.47

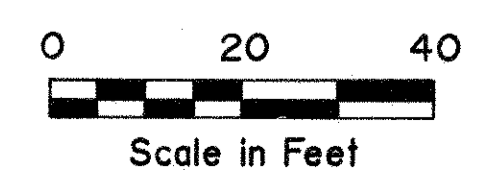
☐ SURVEY S.R. 130  
CURVE DATA  
CURVE NO. 2  
P.I. Sta. 201+48.00  
Δ = 43°28'45" Rt.  
Dc = 38°11'50"  
R = 150.00'  
L = 113.83'  
T = 59.81'  
E = 11.49'  
S.E. = .040 'l'  
P.C. Sta. 200+88.19  
P.T. Sta. 202+02.02

☐ SURVEY LANE MILL RD.  
CURVE DATA  
CURVE NO. 3  
P.I. Sta. 300+98.41  
Δ = 23°45'00" Lt.  
Dc = 38°11'50"  
R = 150.00'  
L = 62.18'  
T = 31.54'  
E = 3.28'  
S.E. = .040 'l'  
P.C. Sta. 300+66.87  
P.T. Sta. 301+29.05

☐ SURVEY LANE MILL RD.  
CURVE DATA  
CURVE NO. 4  
P.I. Sta. 303+49.48  
Δ = 35°42'06" Rt.  
Dc = 16°30'  
R = 347.25'  
L = 216.37'  
T = 111.83'  
E = 17.56'  
S.E. = .040 'l'  
P.C. Sta. 302+37.65  
P.T. Sta. 304+54.02

PATRICIA ANN MILLER  
67 T T.B.A.=0.121 Ac.

JANET K. PATER  
60 T B.T.A.=0.106 Ac.  
60 WD P.R.O.=0.052 Ac.  
NET TAKE=0.054 Ac.  
60 T T.B.A.=0.062 Ac.



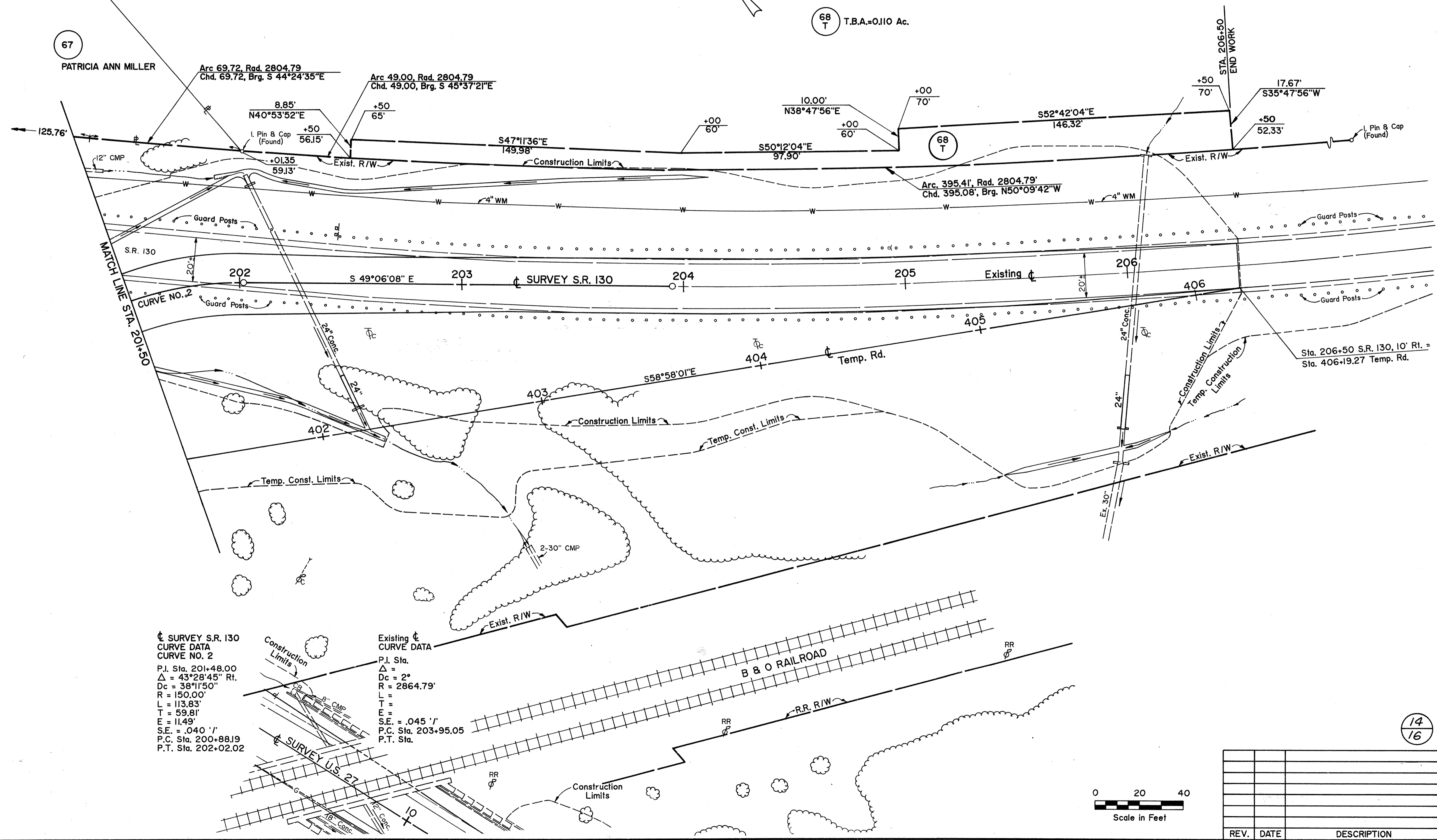
REV.	DATE	DESCRIPTION
B.S.	7/16/91	Rev. Par. 60T (Drive Reloc.)
R.G.M.	2/27/91	Rev. Owner on Par. 60WD & T

BUTLER COUNTY  
HANOVER TWP.  
SEC. 17, T.4, R.2

CLARENCE BROSHEAR &  
BETTY JO BROSHEAR

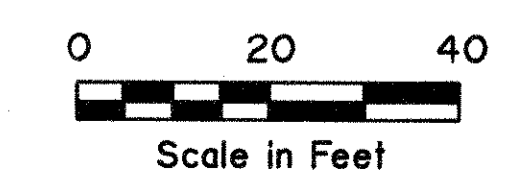
68 T  
T.B.A.=0.110 Ac.

CALC. BY	BUTLER COUNTY	OHIO	101
DATE	BUT-27-10.48	FHWA REGION 5	103
CHKD. BY	R/W PLANS	HES-2 (18)	14
DATE			16



SURVEY S.R. 130  
 CURVE DATA  
 CURVE NO. 2  
 P.I. Sta. 201+48.00  
 Δ = 43°28'45" Rt.  
 Dc = 38°11'50"  
 R = 150.00'  
 L = 113.83'  
 T = 59.81'  
 E = 11.49'  
 S.E. = .040 ' / '  
 P.C. Sta. 200+88.19  
 P.T. Sta. 202+02.02

Existing  
 CURVE DATA  
 P.I. Sta.  
 Δ = 2°  
 Dc = 2864.79'  
 R = 2864.79'  
 L =  
 T =  
 E =  
 S.E. = .045 ' / '  
 P.C. Sta. 203+95.05  
 P.T. Sta.

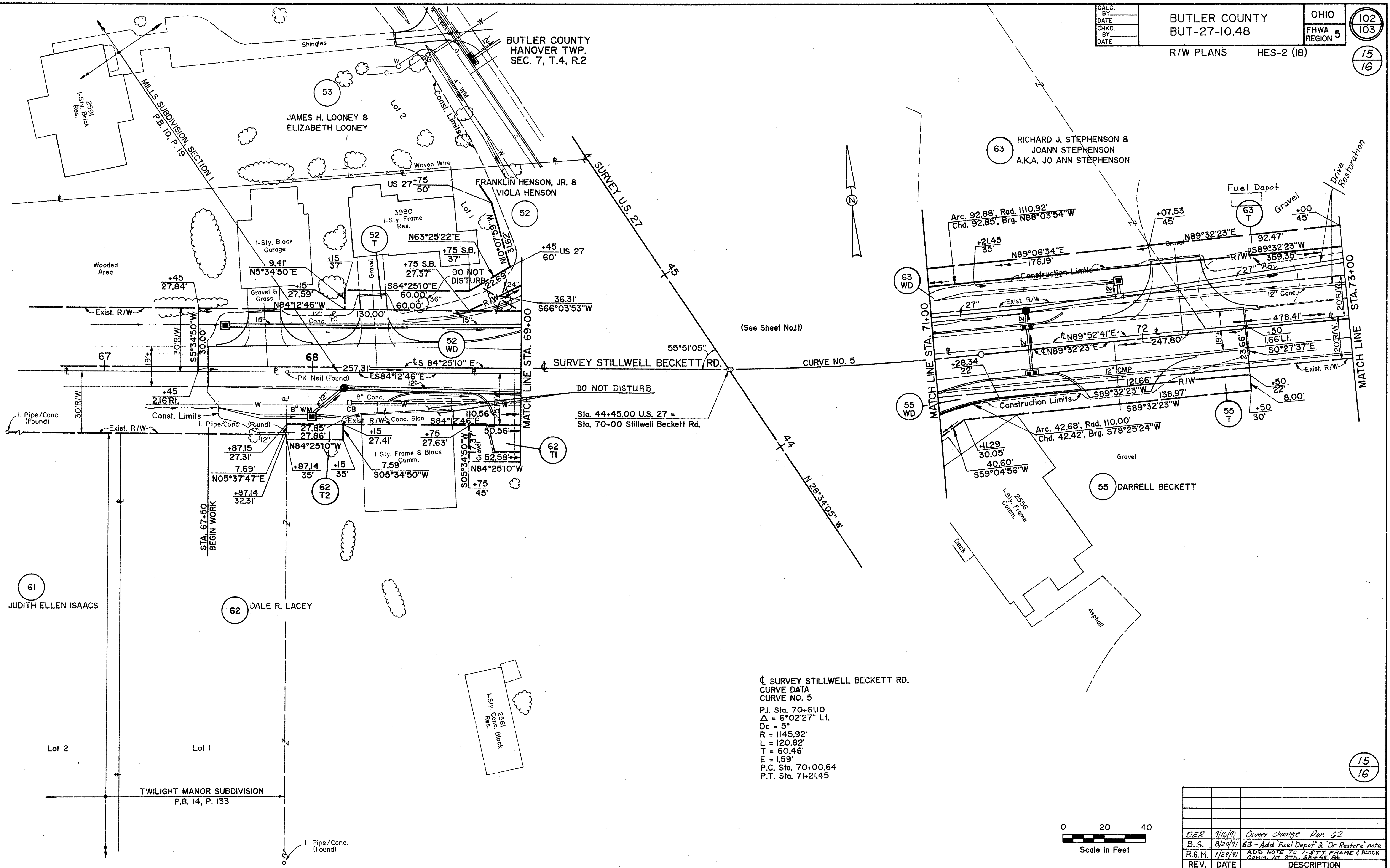


REV.	DATE	DESCRIPTION

R/W S.R. 130 STA. 201+50 ~ STA. 206+50

R/W PLANS HES-2 (18)

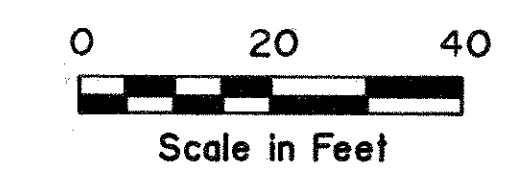
BUTLER COUNTY  
HANOVER TWP.  
SEC. 7, T.4, R.2



(See Sheet No.11)

DO NOT DISTURB  
Sta. 44+45.00 U.S. 27 =  
Sta. 70+00 Stillwell Beckett Rd.

☛ SURVEY STILLWELL BECKETT RD.  
CURVE DATA  
CURVE NO. 5  
P.I. Sta. 70+61.10  
Δ = 6°02'27" Lt.  
Dc = 5'  
R = 1145.92'  
L = 120.82'  
T = 60.46'  
E = 1.59'  
P.C. Sta. 70+00.64  
P.T. Sta. 71+21.45



REV.	DATE	DESCRIPTION
DER	9/16/91	Owner change Par. 62
B.S.	8/20/91	63 - Add Fuel Depot & "Dr. Restare" note
R.G.M.	1/29/91	ADD NOTE TO 1-STRY. FRAME & BLOCK COMM. AT STA. 68+45.84



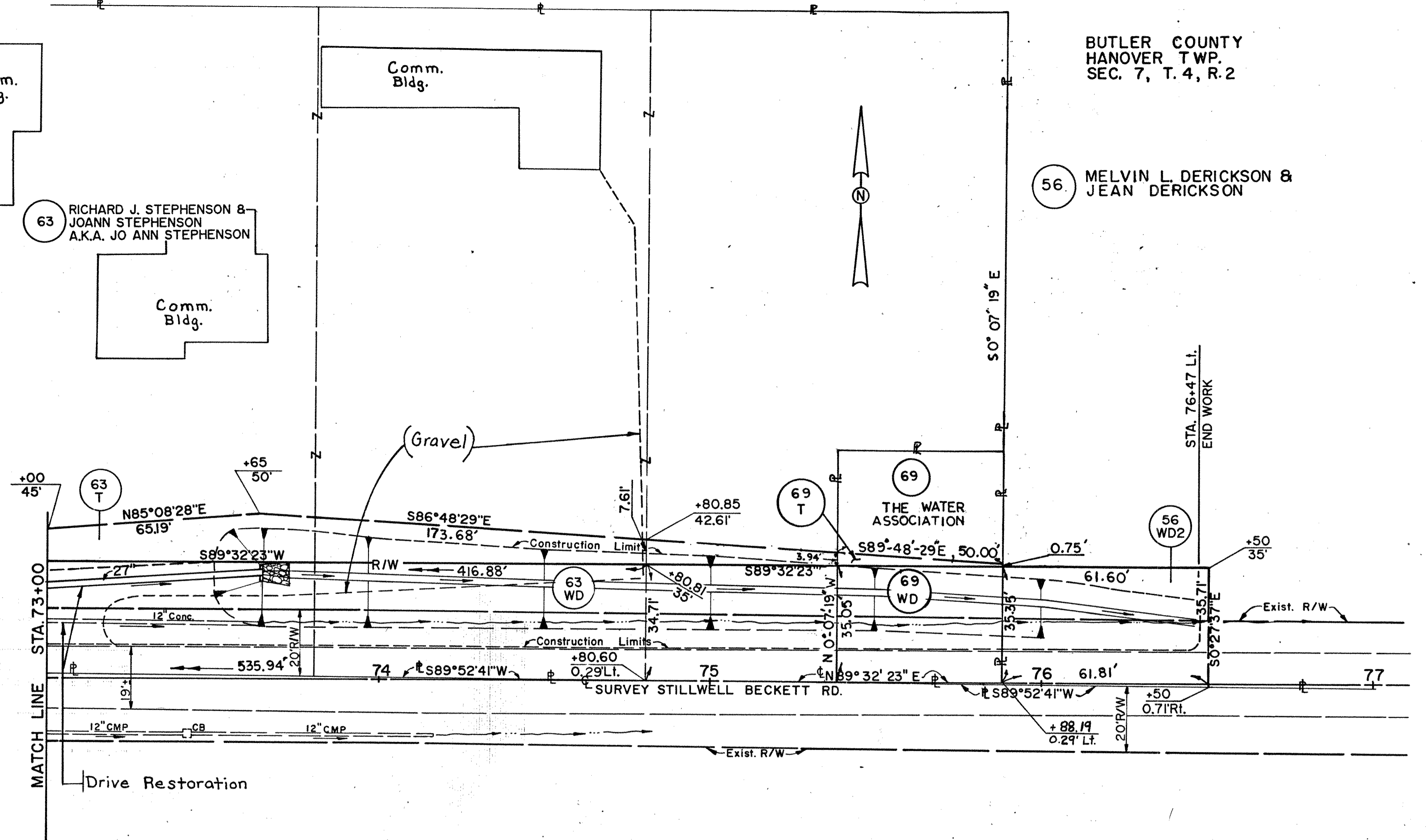
BUTLER COUNTY  
HANOVER TWP.  
SEC. 7, T. 4, R. 2

56 MELVIN L. DERICKSON &  
JEAN DERICKSON

63 RICHARD J. STEPHENSON &  
JOANN STEPHENSON  
A.K.A. JO ANN STEPHENSON

Comm. Bldg.

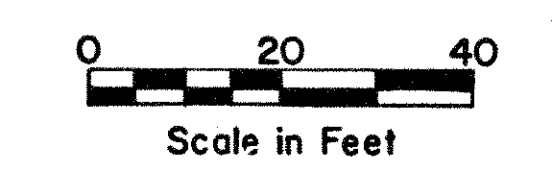
Comm. Bldg.



69 T.B.A. = 0.040  
69 WD P.R.D. = 0.023  
NET TAKE = 0.017

69 T T.B.A. = 0.003

55 DARRELL BECKETT



REV.	DATE	DESCRIPTION
B.S.	9/6/91	Added slope arrows along prepared ditch
B.S.	8/20/91	63-Added 'Comm. Bldg', 'Gravel' dr., & 'Restore' note
D.E.R.	8/14/91	Add call point to Par. 56 WD2
REV	6 MAR 1991	REV. PARCELS 63T AND 69T AND ADDED PARCELS 63T & 69T W/D PROPERTY LINE
REV	28 FEB 1991	REV. PARCELS 63 & 56 PROPERTY LINE

# REPORT OF SUBSURFACE INVESTIGATION UNITED STATES ROUTE 27 PROJECT NO. BUT. 27-10.48 BUTLER COUNTY, OHIO

HES-2(18)

GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF THE SOILS INVESTIGATION OF A 3,000± FEET SECTION OF THE IMPROVEMENTS OF U.S. 27, BEGINNING AT APPROXIMATELY 250 FEET SOUTH OF THE C. I. & W. RAILROAD, EXTENDING NORTHWESTWARD AND TERMINATING AT APPROXIMATELY 600 FEET NORTH OF STILLWELL BECKETT ROAD, IN BUTLER COUNTY, OHIO.

GEOLOGY OF THE SITE

THIS PROJECT IS LOCATED IN THE WISCONSINIAN GLACIAL GROUND MORAINNE AREA OF SOUTHWESTERN OHIO. HOWEVER, MOST OF THE SUBSOILS ENCOUNTERED CONSIST OF WATER-TRANSPORTED ALLUVIAL DEPOSITS OVERLYING RESIDUAL SOIL AND THEIR PARENT BEDROCK. THE BEDROCK IN THIS VICINITY IS AN INTERBEDDED SHALE AND LIMESTONE SEDIMENTARY DEPOSIT OF THE ORDOVICIAN GEOLOGIC SYSTEM.

EXPLORATION

THE TEST BORINGS WERE PERFORMED WITH A TRUCK MOUNTED DRILLING RIG EQUIPPED WITH A ROTARY HEAD. CONVENTIONAL HOLLOW STEM AUGERS WERE USED TO ADVANCE THE HOLES. REPRESENTATIVE SAMPLES OF THE SUBSURFACE SOILS WERE OBTAINED UTILIZING A SPLIT-BARREL SAMPLING DEVICE IN ACCORDANCE WITH ASTM PROCEDURES D-1586. THE DRILLING OPERATIONS WERE PERFORMED IN JUNE, 1988.

LABORATORY INVESTIGATION





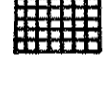



IN CONJUNCTION WITH THE FIELD INVESTIGATIONS, A SUPPLEMENTARY LABORATORY INVESTIGATION WAS PERFORMED TO ASCERTAIN ADDITIONAL PERTINENT ENGINEERING CHARACTERISTICS OF THE SUBSURFACE SOILS. THE LABORATORY TESTING PROGRAM INCLUDED SUPPLEMENTARY VISUAL CLASSIFICATION AND MOISTURE CONTENTS OF ALL OF THE SOIL SAMPLES. STANDARD PROCTOR, CALIFORNIA BEARING RATIO, STRENGTH AND ATTERBERG LIMITS AND GRAIN SIZE ANALYSES WERE PERFORMED ON SELECTED SAMPLES. ALL LABORATORY TESTING WAS PERFORMED IN ACCORDANCE WITH THE APPROPRIATE ASTM PROCEDURES.

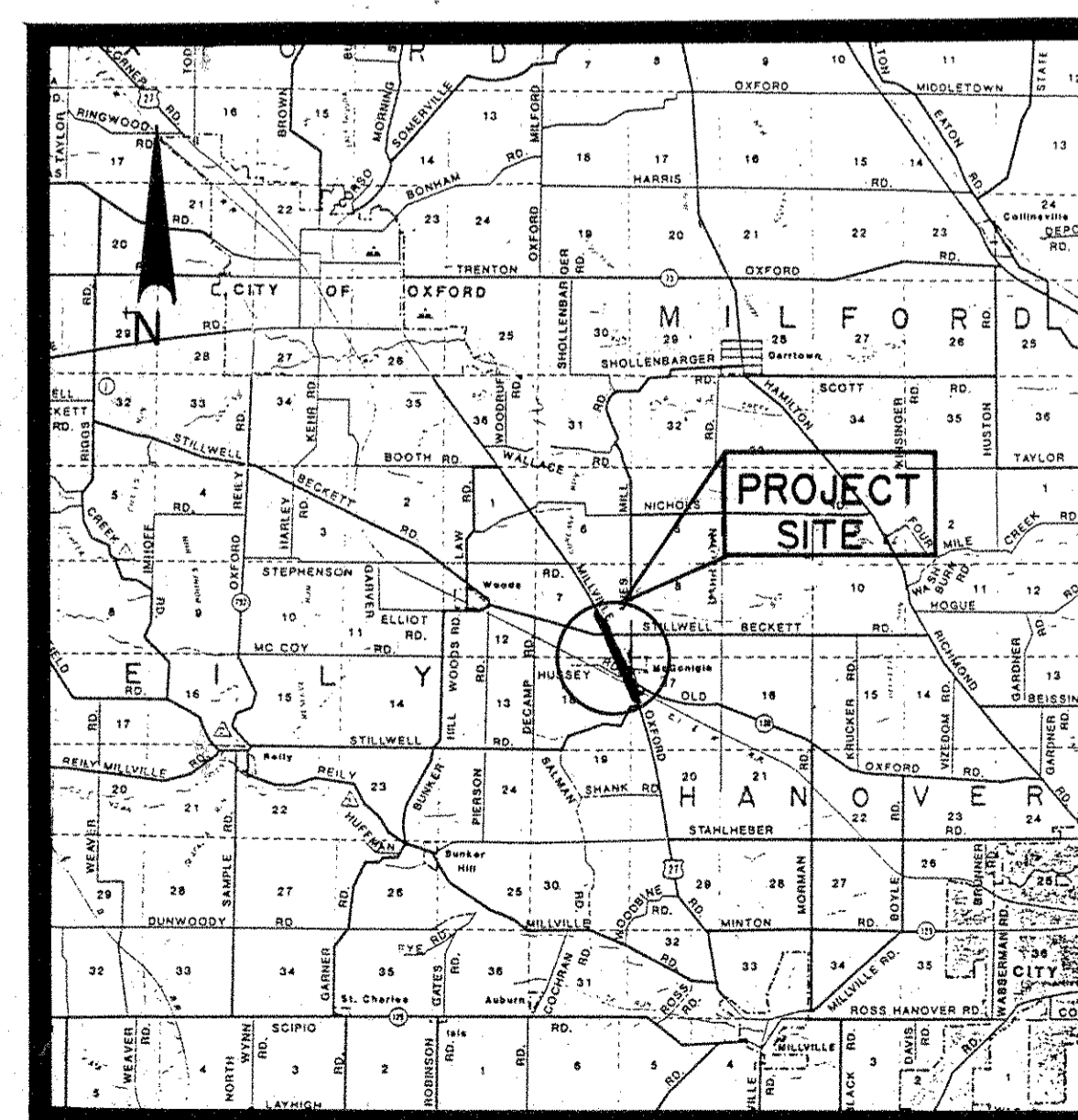
NUMBER OF BLOWS FOR STANDARD PENETRATION TEST

W = MOISTURE CONTENT ( PERCENT )  
X = NUMBER OF BLOWS FOR SECOND 6 INCHES  
Y = NUMBER OF BLOWS FOR THIRD 6 INCHES

NOTE : THE SUBSURFACE INVESTIGATION WAS PERFORMED FOR DESIGN PURPOSES ONLY AND ACTUAL SUBSURFACE CONDITIONS MIGHT BE DIFFERENT AT THE TIME OF CONSTRUCTION.

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

DESCRIPTION	CLASS H.R.B.	CLASS OHIO	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
 GRAVEL WITH SAND AND SILT	A-2-4	A-2-4	29	13	28	17	13	25	9	17	1
 SANDY SILT	A-4(8)	A-4a	1	3	3	41	52	28	7	19	4
 SILT AND CLAY	A-6(9)	A-6a	1	4	2	32	61	34	13	17	2
 SILTY CLAY	A-6	A-6b									
 CLAY	A-7-6(II)	A-7-6	1	19	9	35	36	42	20	16	2
 BERM MATERIAL											
 WEATHERED SHALE											
 AUGER BORING PLAN VIEW											



VICINITY MAP  
SCALE IN MILES  
0 1 2 3 4

GENERAL INFORMATION CONTINUED

INVESTIGATIONAL FINDINGS

BORINGS #1 THROUGH #4 WERE DRILLED IN THE ROAD SHOULDER THROUGH 1 TO 1.5 FEET OF DARK COLORED GRANULAR SURFACE FILLS. BORINGS #5 THROUGH #8 WERE MADE IN THE PAVEMENT AND INDICATE 2 TO 4 INCHES OF ASPHALT OVER 4 TO 9 INCHES OF GRANULAR BASE.

BENEATH THE ASPHALT PAVEMENT IN BORINGS #7 AND #8 AND TO A DEPTH OF 3 FEET, GRANULAR FILLS CONSISTING OF DARK BROWN SILT WITH SAND, GRAVEL AND STONE FRAGMENTS WERE FOUND. THESE FILLS ARE LOOSE IN RELATIVE DENSITY WITH STANDARD PENETRATION TEST (N) VALUES OF 7 AND 8 BLOWS PER FOOT (BPF). MOISTURE CONTENTS AVERAGE 13 PERCENT.

BROWN, DARK BROWN AND GRAYISH BROWN ALLUVIAL SILT AND CLAY TO SILTY CLAY SOILS WERE FOUND BENEATH THE PAVEMENT AND THE FILLS IN BORINGS #3 THROUGH #8 TO DEPTHS OF 6 TO 7 FEET. THESE SOILS ARE SOFT TO MEDIUM STIFF IN CONSISTENCY WITH N VALUES RANGING FROM 4 TO 9 BPF. MOISTURE CONTENTS VARY BETWEEN 13 AND 26 PERCENT. RIMAC AND FIELD PENETROMETER STRENGTH TESTS PERFORMED ON SAMPLES OF THESE SOILS INDICATE UNCONFINED COMPRESSIVE STRENGTH VALUES RANGING FROM 1.5 TO 3.34 TONS PER SQUARE FOOT (TSF).

BENEATH THE GRANULAR FILLS IN BORINGS #1 AND #2 AND THE ALLUVIAL SOILS IN THE REST OF THE BORINGS, RESIDUAL DEPOSITS CONSISTING OF OLIVE GRAY SILTY CLAYS TO WEATHERED SHALE WERE ENCOUNTERED. THESE DEPOSITS ARE MEDIUM STIFF TO HARD IN CONSISTENCY WITH N VALUES RANGING FROM 10 BPF TO 50 BLOWS PER 1 INCH. MOISTURE CONTENTS VARY BETWEEN 5 AND 16 PERCENT. FIELD PENETROMETER STRENGTH TESTS PERFORMED ON SAMPLES OF THESE DEPOSITS INDICATE UNCONFINED COMPRESSIVE STRENGTH VALUES IN EXCESS OF 4.5 TSF.

STANDARD SOIL DRILLING TOOLS WERE ABLE TO PENETRATE THE WEATHERED LAYER OF THE SHALE AND LIMESTONE STRATA UNDERLYING THE RESIDUAL DEPOSITS IN BORINGS #1 AND #2. A MINIMUM N VALUE OF 75 BLOWS PER 3 INCHES WAS RECORDED. AT NO TIME DURING, AT COMPLETION OR SOME TIME AFTER DRILLING WAS GROUNDWATER ENCOUNTERED IN ANY OF THE BORINGS MADE FOR THIS PROJECT.

SOIL PROFILE  
UNITED STATES ROUTE 27  
PROPOSED IMPROVEMENTS  
BUTLER COUNTY, OHIO

**ATEC Associates, Inc.**

11306 Tamarco Drive Dayton, Ohio 45424  
513-489-1221

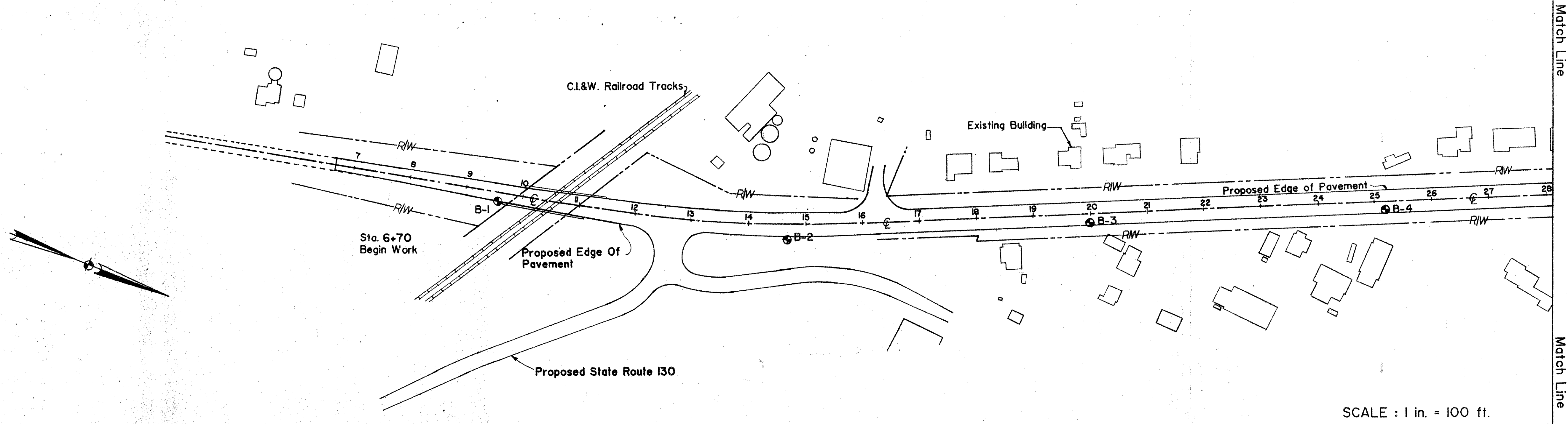
2718 Linden Avenue Dayton, Ohio 45410  
513-252-2645

Consulting Geotechnical, Environmental & Materials Engineers

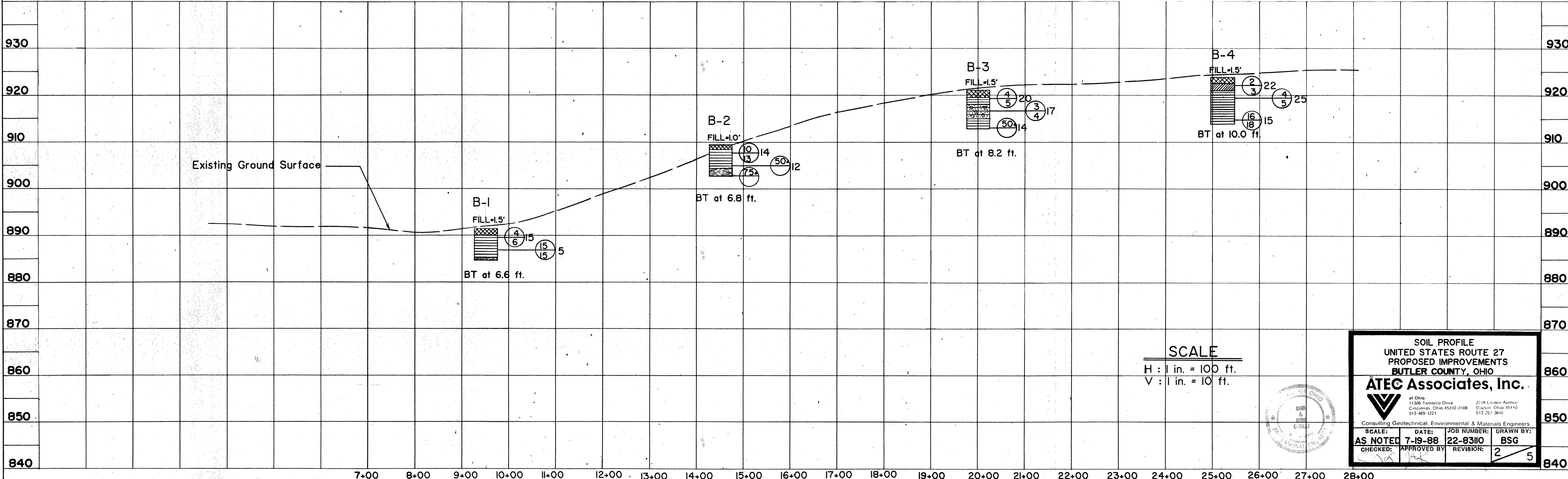
SCALE: DATE: 7-22-88 JOB NUMBER: 22-83110 DRAWN BY: BSG

CHECKED: APPROVED BY: REVISION: 1

5



SCALE : 1 in. = 100 ft.



SCALE  
 H : 1 in. = 100 ft.  
 V : 1 in. = 10 ft.

SOIL PROFILE  
 UNITED STATES ROUTE 27  
 PROPOSED IMPROVEMENTS  
 BUTLER COUNTY, OHIO

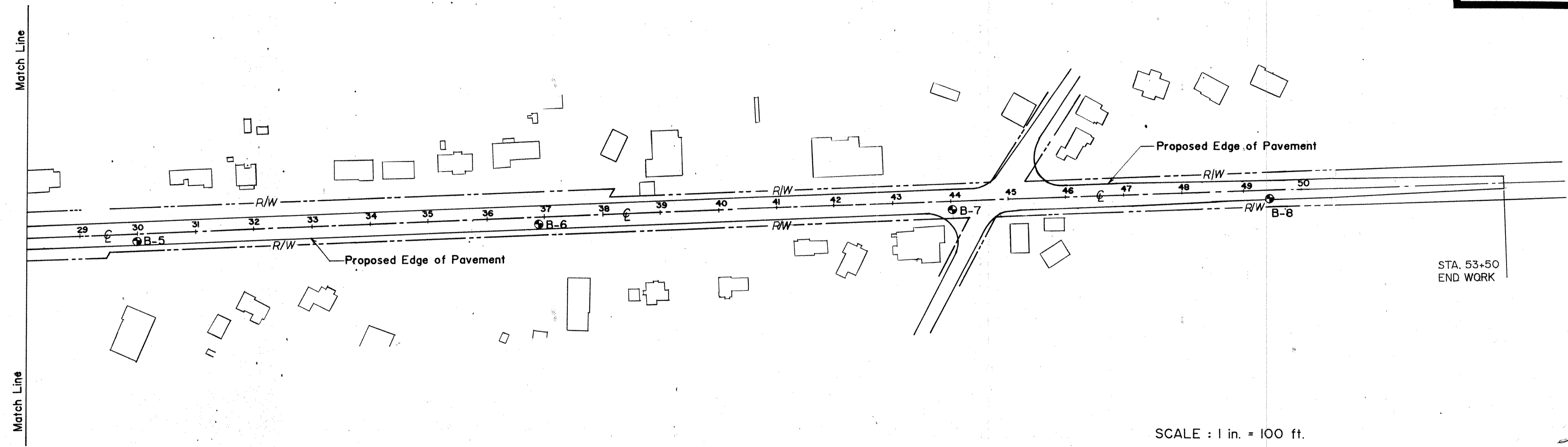
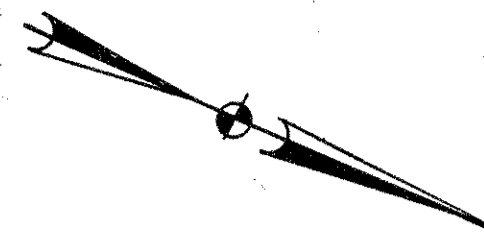
**ATEC Associates, Inc.**

11306 Tamarco Drive Cincinnati, Ohio 45242-2108 513-489-1221

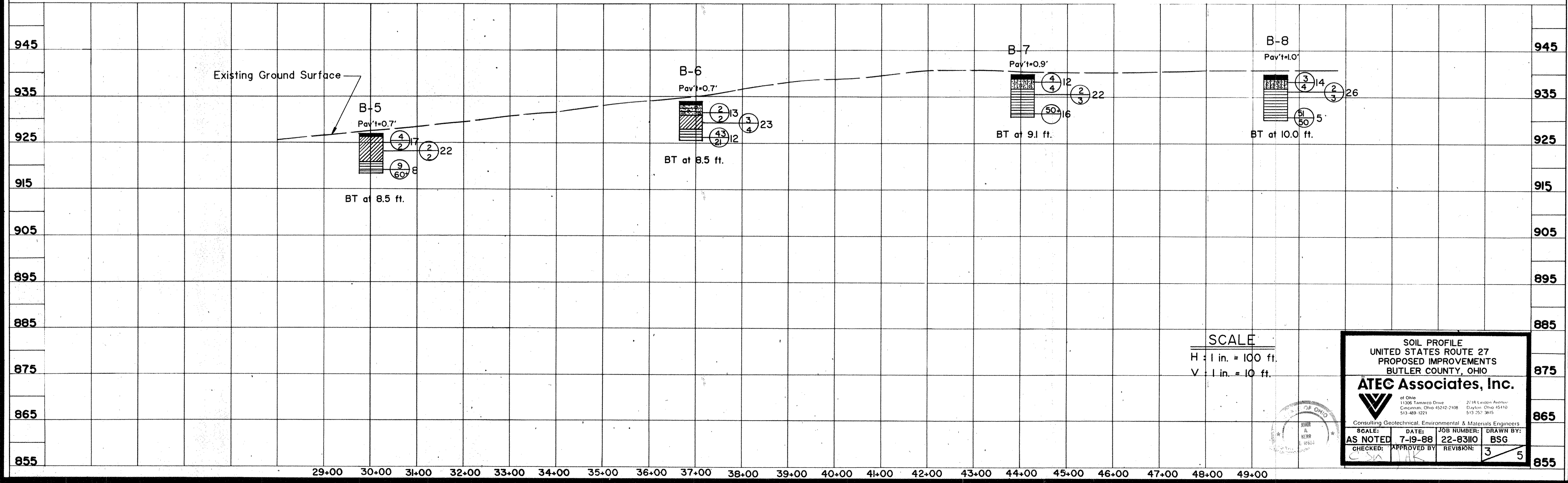
2718 Loriden Avenue Dayton Ohio 45410 513-252-3845

Consulting Geotechnical, Environmental & Materials Engineers

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CHECKED: [Signature]	APPROVED BY: [Signature]	REVISION: 2	5



SCALE : 1 in. = 100 ft.



SCALE  
 H : 1 in. = 100 ft.  
 V : 1 in. = 10 ft.

SOIL PROFILE  
 UNITED STATES ROUTE 27  
 PROPOSED IMPROVEMENTS  
 BUTLER COUNTY, OHIO

**ATEC Associates, Inc.**

of Ohio  
 1306 Tamarco Drive  
 Cincinnati, Ohio 45242-2108  
 513-489-1221

2718 Lorain Avenue  
 Dayton, Ohio 45410  
 513-252-3635

Consulting Geotechnical, Environmental & Materials Engineers

SCALE:	DATE:	JOB NUMBER:	DRAWN BY:
AS NOTED	7-19-88	22-83110	BSG
CHECKED:	APPROVED BY:	REVISION:	
		3	5

BORING NUMBER 1  
STATION and OFFSET 9+55, 20' RIGHT  
JOB NUMBER 22-83110  
DRAWN BY BRIAN GRIFFIN DATE STARTED 6/17/88 HAMMER WEIGHT 140 LBS.  
APPROVED BY CHARLES KHOURY DATE COMPLETED 6/17/88 HAMMER DROP 30 IN.  
GROUNDWATER DEPTH \_\_\_\_\_ FT.  
AT COMPLETION DRY FT. INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
AFTER \_\_\_\_\_ FT. BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.  
WATER ON RODS NONE FT.

DRILLING and SAMPLING INFORMATION

BORING METHOD	SAMPLE METHOD	TEST DATA												
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING	SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE	STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION		
SURFACE ELEVATION <u>891.5*</u>		STRATUM DEPTH	DEPTH SCALE	SAMPLE NUMBER	SAMPLE TYPE									
SOIL DESCRIPTION														
FILL - DARK BROWN GRANULAR MATERIAL		1.5												
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. DRY, MEDIUM TO VERY STIFF		5		1	SS	6-4-6	50	1	3	5	41	50	15	A-6b
GRAY WEATHERED SHALE, WITH LIMESTONE FRAGMENTS. DRY, MODERATELY HARD		6.0		2	SS	4-15-15	28					5		
BORING DISCONTINUED AT 6.6 FEET DEEP DUE TO AUGER REFUSAL.		6.6		3	SS	75 = 1"	0							
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.														

BORING NUMBER 2  
STATION and OFFSET 14+70, 20' RIGHT  
JOB NUMBER 22-83110  
DRAWN BY BRIAN GRIFFIN DATE STARTED 6/17/88 HAMMER WEIGHT 140 LBS.  
APPROVED BY CHARLES KHOURY DATE COMPLETED 6/17/88 HAMMER DROP 30 IN.  
GROUNDWATER DEPTH \_\_\_\_\_ FT.  
AT COMPLETION DRY FT. INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
AFTER \_\_\_\_\_ FT. BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.  
WATER ON RODS NONE FT.

DRILLING and SAMPLING INFORMATION

BORING METHOD	SAMPLE METHOD	TEST DATA													
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING	SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE	STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION			
SURFACE ELEVATION <u>909.5*</u>		STRATUM DEPTH	DEPTH SCALE	SAMPLE NUMBER	SAMPLE TYPE										
SOIL DESCRIPTION															
FILL - DARK BROWN GRANULAR MATERIAL		1.0													
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. (CL) DRY, VERY STIFF TO HARD		5.0		1	SS	7-10-13	50	1	2	1	16	80	32	11	A-6a
GRAY WEATHERED SHALE, WITH LIMESTONE FRAGMENTS. DRY, MODERATELY HARD		6.8		2	SS	7-50=2"	33							12	
BORING DISCONTINUED AT 6.8 FEET DEEP DUE TO AUGER REFUSAL.				3	SS	75=3"	11								
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.															

BORING NUMBER 3  
STATION and OFFSET 20+00, 15' RIGHT  
JOB NUMBER 22-83110  
DRAWN BY BRIAN GRIFFIN DATE STARTED 6-17-88 HAMMER WEIGHT 140 LBS.  
APPROVED BY CHARLES KHOURY DATE COMPLETED 6-17-88 HAMMER DROP 30 IN.  
GROUNDWATER DEPTH \_\_\_\_\_ FT.  
AT COMPLETION DRY FT. INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
AFTER \_\_\_\_\_ FT. BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.  
WATER ON RODS NONE FT.

DRILLING and SAMPLING INFORMATION

BORING METHOD	SAMPLE METHOD	TEST DATA														
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING	SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE	STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION				
SURFACE ELEVATION <u>921*</u>		STRATUM DEPTH	DEPTH SCALE	SAMPLE NUMBER	SAMPLE TYPE											
SOIL DESCRIPTION																
FILL - DARK BROWN GRANULAR MATERIAL		1.5														
DARK BROWN SILTY CLAY, WITH TRACES OF SAND AND GRAVEL (CL) DRY, MEDIUM STIFF		3.0		1	SS	3-4-5	39	1	4	2	42	51	41	18	20	A-7-6
BROWN SILTY CLAY, WITH SAND, GRAVEL AND STONE FRAGMENTS. (CL) MOIST, MEDIUM STIFF		6.0		2	SS	2-3-4	78	29	13	28	17	13	25	9	17	A-2-4
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. DRY, HARD		8.2		3	SS	50=2"	11							14		A-6b
BORING DISCONTINUED AT 8.2 FEET DEEP DUE TO AUGER REFUSAL.																
BAG SAMPLE OBTAINED FROM 1.5 TO 5 FEET DEEP. MAXIMUM DRY DENSITY = 113.7 PCF OPTIMUM MOISTURE = 14.0 %																
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.																

BORING NUMBER 4  
STATION and OFFSET 25+20, 14' RIGHT  
JOB NUMBER 22-83110  
DRAWN BY BRIAN GRIFFIN DATE STARTED 6-17-88 HAMMER WEIGHT 140 LBS.  
APPROVED BY CHARLES KHOURY DATE COMPLETED 6-17-88 HAMMER DROP 30 IN.  
GROUNDWATER DEPTH \_\_\_\_\_ FT.  
AT COMPLETION DRY FT. INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
AFTER \_\_\_\_\_ FT. BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.  
WATER ON RODS NONE FT.

DRILLING and SAMPLING INFORMATION

BORING METHOD	SAMPLE METHOD	TEST DATA														
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING	SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE	STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION				
SURFACE ELEVATION <u>924*</u>		STRATUM DEPTH	DEPTH SCALE	SAMPLE NUMBER	SAMPLE TYPE											
SOIL DESCRIPTION																
FILL - DARK BROWN GRANULAR MATERIAL		1.5														
DARK BROWN SILT AND CLAY, WITH LITTLE SAND AND TRACE OF GRAVEL. (CL) SLIGHTLY MOIST, SOFT		3.0		1	SS	2-2-3	67	1	6	4	47	42	35	15	22	A-6a
BROWN SILTY CLAY, WITH LITTLE SAND AND TRACE OF IRON OXIDE STAINS. SLIGHTLY MOIST, MEDIUM STIFF		5.0		2	SS	2-4-5	44								25	A-6b
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. DRY, HARD		7.0														
BORING DISCONTINUED AT 10.0 FEET DEEP		10.0		3	SS	25-16-18	67								15	A-6b
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.																



SOIL PROFILE  
UNITED STATES ROUTE 27  
PROPOSED IMPROVEMENTS  
BUTLER COUNTY, OHIO

**ATEC Associates, Inc.**

of Ohio  
11026 Tomacco Drive Cincinnati, Ohio 45242-9108 513-489-1221

2114 Leighton Avenue Dayton, Ohio 45410 513-250-3645

Consulting Geotechnical, Environmental & Materials Engineers

SCALE: \_\_\_\_\_ DATE: 7-22-88 JOB NUMBER: 22-83110 DRAWN BY: BSG

CHECKED: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_ REVISION: 4

BORING NUMBER 5  
 STATION and OFFSET 30+00, 13' RIGHT  
 JOB NUMBER 22-83110  
 DRAWN BY BRIAN GRIFFIN  
 APPROVED BY CHARLES KHOURY  
 GROUNDWATER DEPTH \_\_\_\_\_ FT.  
 AT COMPLETION DRY FT.  
 AFTER \_\_\_\_\_ FT.  
 WATER ON RODS NONE FT.

**DRILLING and SAMPLING INFORMATION**

DATE STARTED 6-17-88 HAMMER WEIGHT 140 LBS.  
 DATE COMPLETED 6-17-88 HAMMER DROP 30 IN.  
 DRILL FOREMAN DAVE JAMISON SPOON SAMPLER O.D. 2 IN.  
 INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
 BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.

BORING METHOD		SAMPLE METHOD		TEST DATA										
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING		SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE		STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION
SURFACE ELEVATION <u>927*</u>		STRATUM DEPTH	DEPTH SCALE											
SOIL DESCRIPTION														
3" ASPHALT OVER 5" GRANULAR BASE														
GRAYISH BROWN SILT AND CLAY, WITH TRACES OF SAND, GRAVEL AND IRON OXIDE STAINS. (ML-OL) SLIGHTLY MOIST, MEDIUM STIFF TO SOFT														
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. (CL) DRY, HARD														
BORING DISCONTINUED AT 8.5 FEET DEEP DUE TO AUGER REFUSAL.														
BAG SAMPLE OBTAINED FROM 1 TO 5 FEET DEEP MAXIMUM DRY DENSITY=118.4 PCF OPTIMUM MOISTURE=11.7%														
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.														

BORING NUMBER 6  
 STATION and OFFSET 36+90, 10' RIGHT  
 JOB NUMBER 22-83110  
 DRAWN BY BRIAN GRIFFIN  
 APPROVED BY CHARLES KHOURY  
 GROUNDWATER DEPTH \_\_\_\_\_ FT.  
 AT COMPLETION DRY FT.  
 AFTER \_\_\_\_\_ FT.  
 WATER ON RODS NONE FT.

**DRILLING and SAMPLING INFORMATION**

DATE STARTED 6-17-88 HAMMER WEIGHT 140 LBS.  
 DATE COMPLETED 6-17-88 HAMMER DROP 30 IN.  
 DRILL FOREMAN DAVE JAMISON SPOON SAMPLER O.D. 2 IN.  
 INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
 BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.

BORING METHOD		SAMPLE METHOD		TEST DATA										
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING		SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE		STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION
SURFACE ELEVATION <u>934*</u>		STRATUM DEPTH	DEPTH SCALE											
SOIL DESCRIPTION														
4" ASPHALT OVER 4" GRANULAR BASE														
GRAYISH BROWN SILT AND CLAY, WITH SAND AND TRACES OF GRAVEL AND IRON OXIDE STAINS. (CL) SLIGHTLY MOIST, SOFT														
GRAYISH BROWN SILT AND CLAY, WITH TRACES OF SAND, GRAVEL AND IRON OXIDE STAINS. (CL) SLIGHTLY MOIST, MEDIUM STIFF														
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. DRY, HARD														
BORING DISCONTINUED AT 8.5 FEET DEEP DUE TO AUGER REFUSAL.														
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.														

BORING NUMBER 7  
 STATION and OFFSET 44+05, 13' RIGHT  
 JOB NUMBER 22-83110  
 DRAWN BY BRIAN GRIFFIN  
 APPROVED BY CHARLES KHOURY  
 GROUNDWATER DEPTH \_\_\_\_\_ FT.  
 AT COMPLETION DRY FT.  
 AFTER \_\_\_\_\_ FT.  
 WATER ON RODS NONE FT.

**DRILLING and SAMPLING INFORMATION**

DATE STARTED 6-17-88 HAMMER WEIGHT 140 LBS.  
 DATE COMPLETED 6-17-88 HAMMER DROP 30 IN.  
 DRILL FOREMAN DAVE JAMISON SPOON SAMPLER O.D. 2 IN.  
 INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
 BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.

BORING METHOD		SAMPLE METHOD		TEST DATA										
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING		SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE		STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION
SURFACE ELEVATION <u>940*</u>		STRATUM DEPTH	DEPTH SCALE											
SOIL DESCRIPTION														
2" ASPHALT OVER 8" GRANULAR BASE														
FILL - DARK BROWN SILT, WITH SAND, GRAVEL AND STONE FRAGMENTS. DRY, LOOSE														
MOTTLED BROWN SILTY CLAY, WITH TRACES OF SAND AND GRAVEL. (CL-ML) DRY, SOFT														
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. DRY, HARD														
BORING DISCONTINUED AT 9.1 FEET DEEP DUE TO AUGER REFUSAL.														
BAG SAMPLE OBTAINED FROM 1 TO 4 FEET DEEP														
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.														

BORING NUMBER 8  
 STATION and OFFSET 49+50, 15' RIGHT  
 JOB NUMBER 22-83110  
 DRAWN BY BRIAN GRIFFIN  
 APPROVED BY CHARLES KHOURY  
 GROUNDWATER DEPTH \_\_\_\_\_ FT.  
 AT COMPLETION DRY FT.  
 AFTER \_\_\_\_\_ FT.  
 WATER ON RODS NONE FT.

**DRILLING and SAMPLING INFORMATION**

DATE STARTED 6-17-88 HAMMER WEIGHT 140 LBS.  
 DATE COMPLETED 6-17-88 HAMMER DROP 30 IN.  
 DRILL FOREMAN DAVE JAMISON SPOON SAMPLER O.D. 2 IN.  
 INSPECTOR \_\_\_\_\_ ROCK CORE DIA. \_\_\_\_\_ IN.  
 BORING METHOD HSA SHELBY TUBE O.D. \_\_\_\_\_ IN.

BORING METHOD		SAMPLE METHOD		TEST DATA										
HSA-HOLLOW STEM AUGERS CFA-CONTINUOUS FLIGHT AUGERS DC -DRIVING CASING MD -MUD DRILLING		SS - DRIVEN SPLIT SPOON ST - PRESSED SHELBY TUBE CA - CONTINUOUS FLIGHT AUGER RC - ROCK CORE		STANDARD PENETRATION TEST	% RECOVERY	% GRAVEL	% COARSE SAND	% FINE SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	% WATER CONTENT	OHIO CLASSIFICATION
SURFACE ELEVATION <u>940*</u>		STRATUM DEPTH	DEPTH SCALE											
SOIL DESCRIPTION														
3" ASPHALT OVER 9" GRANULAR BASE														
FILL - DARK BROWN SILT, WITH SAND, GRAVEL AND STONE FRAGMENTS. DRY, LOOSE														
MOTTLED BROWN SILTY CLAY, WITH TRACES OF SAND AND GRAVEL. DRY, SOFT														
OLIVE GRAY SILTY CLAY TO WEATHERED SHALE, WITH TRACES OF SAND AND STONE FRAGMENTS. DRY, HARD														
BORING DISCONTINUED AT 10.0 FEET DEEP.														
*ESTIMATED FROM SITE PLANS PROVIDED BY CLIENT.														



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 UNITED STATES ROUTE 27  
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Consulting Geotechnical, Environmental & Materials Engineers

SCALE:	DATE:	JOB NUMBER:	DRAWN BY:
	<b>7-22-88</b>	<b>22-8310</b>	<b>BSG</b>
CHECKED:	APPROVED BY:	REVISION:	
			<b>5</b>