

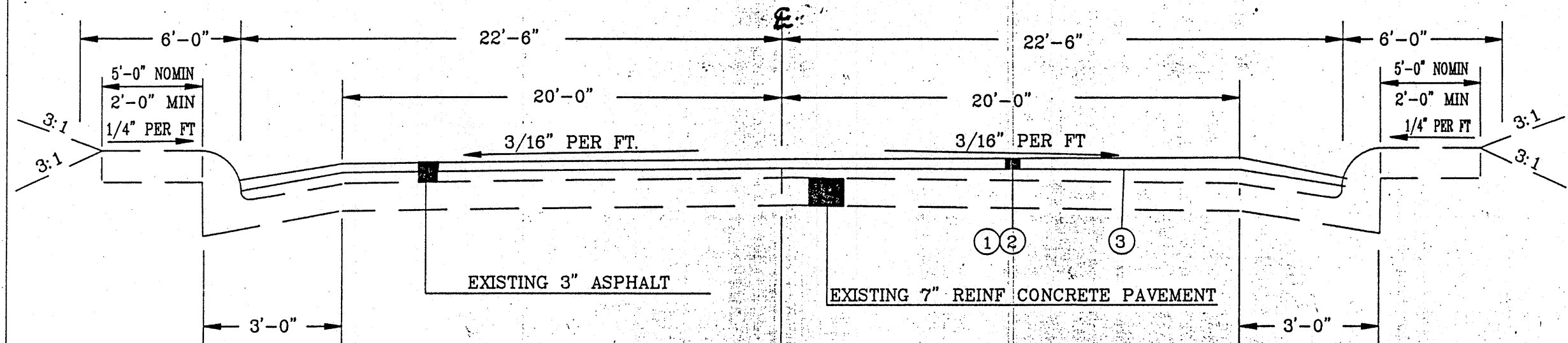
BUT4TS1

TYPICAL SECTIONS TYPE 404

FHWA REGION	STATE	PROJECT
5	OHIO	

2
26

BUT-4-23.74
BUTLER COUNTY



STA. 74+80.00-STA. 76+54.37 BK (VARIES DUE TO INTERSECTION & TAPERS)
 STA. 1290+19.7 AH - STA. 1302+75
 TOTAL LENGTH = 1449.67 LIN. FT.

LEGEND

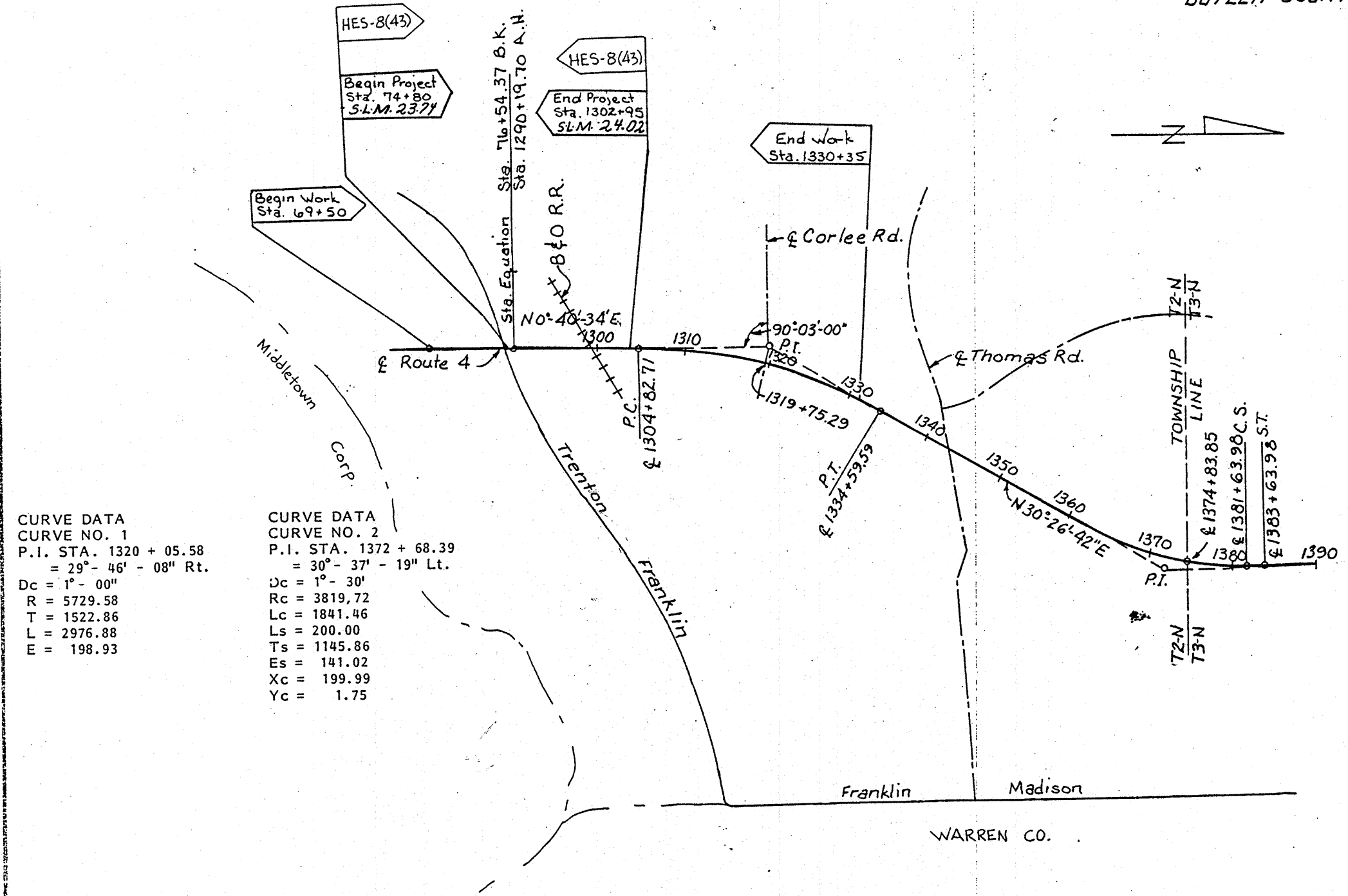
- ① ITEM 254 - PAVEMENT PLANING BITUMINOUS T=1 1/4"
- ② ITEM 404 - 1 1/4" ASPHALT CONCRETE AC - 20
- ③ ITEM 407 - TACK COAT

REVISED 3-28-89

TYPICAL SECTIONS

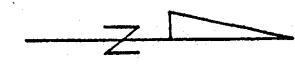
SCHEMATIC

BUT-4-23.74
BUTLER COUNTY



CURVE DATA
CURVE NO. 1
 P.I. STA. 1320 + 05.58
 = 29° - 46' - 08" Rt.
 Dc = 1° - 00"
 R = 5729.58
 T = 1522.86
 L = 2976.88
 E = 198.93

CURVE DATA
CURVE NO. 2
 P.I. STA. 1372 + 68.39
 = 30° - 37' - 19" Lt.
 Dc = 1° - 30'
 Rc = 3819.72
 Lc = 1841.46
 Ls = 200.00
 Ts = 1145.86
 Es = 141.02
 Xc = 199.99
 Yc = 1.75



FHWA REGION	STATE	PROJECT
5	OHIO	

ITEM 252 - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT AS PER PLAN **

STATION	SIZE	AREA SQ. FT.	PAVEMENT SAWING L.F.
1290+93	45'x 4'	180	98
1292+12	45'x 4'	180	98
1293+30	45'x 4'	180	98
1294+49	45'x 4'	180	98
1295+70	45'x 4'	180	98
1296+90	45'x 4'	180	98
1298+11	45'x 4'	180	98
1300+51	45'x 4'	180	98
1301+69	45'x 4'	180	98
		1620 S.F.	882 L.F.
		9 =	
		180 SQ.YD.	
+ 10% =		18	88
		198 SQ.YD.	970 L.F.
@ 8 3/4" =		48	CU.YD.

DESCRIPTION OF WORK

THESE DETAILS ARE FOR THE REPAIR OF DETERIORATED TRANSVERSE JOINTS, AND OTHER DETERIORATED AREAS. THE LOCATIONS AND SIZE OF THE REPAIRS SHALL BE AT THE DIRECTION OF THE ENGINEER. WHEN HALF WIDTH REPLACEMENTS ARE USED, THE LONGITUDINAL JOINTS SHALL BE SAWED FULL DEPTH AND ANY BARS OR HOOK BOLTS ENCOUNTERED SHALL BE CUT OFF FLUSH WITH THE EXISTING PAVEMENT.

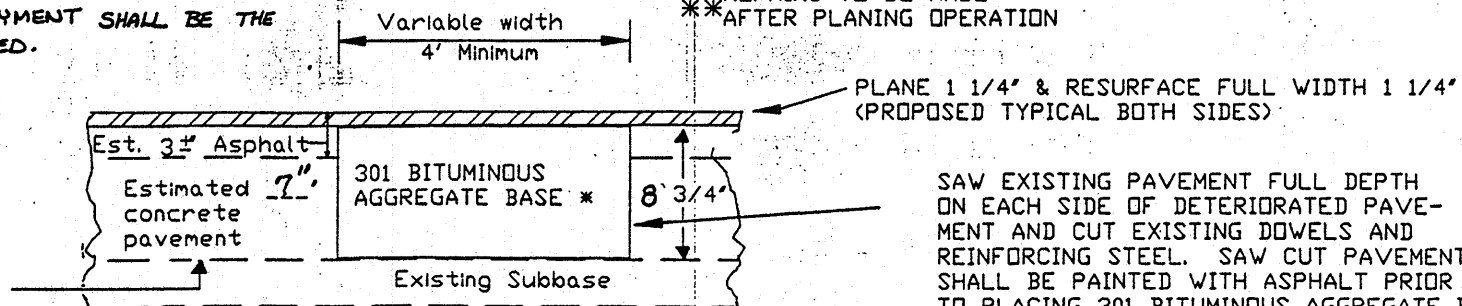
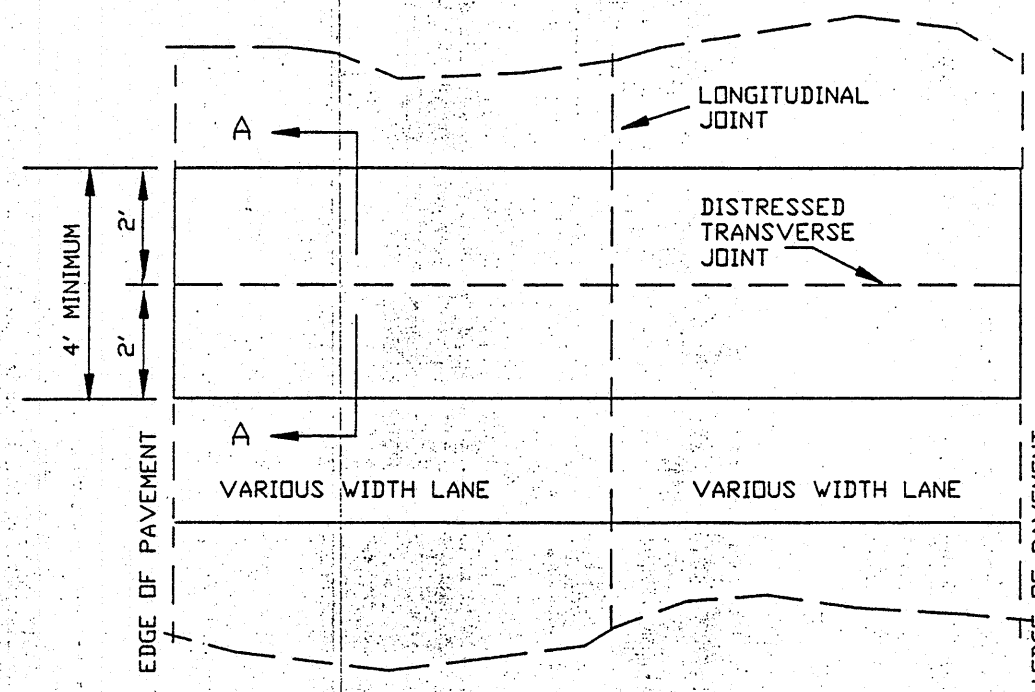
IN CURB AREAS, A SAW CUT MUST BE MADE PARALLEL TO THE CURB TO PREVENT DAMAGE TO THE EXISTING CURB. ANY DAMAGE TO THE EXISTING CURB SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED BY THE ENGINEER.

THE METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE THE NUMBER OF CUBIC YARDS OF RIGID PAVEMENT REMOVED.

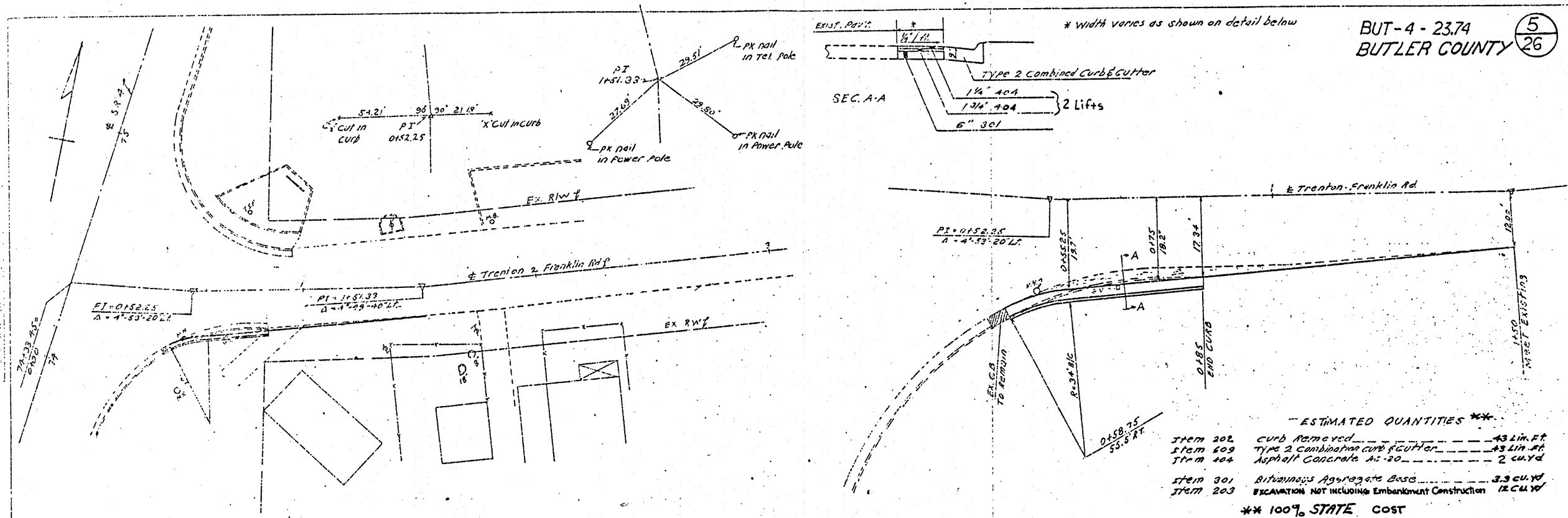
* COMPACTION

REPAIR THICKNESS	NO. OF LIFTS
7-10"	3
> 10"	4

Subbase shall be prepared by leveling, compacting and adding 304.02 if necessary to meet this line.



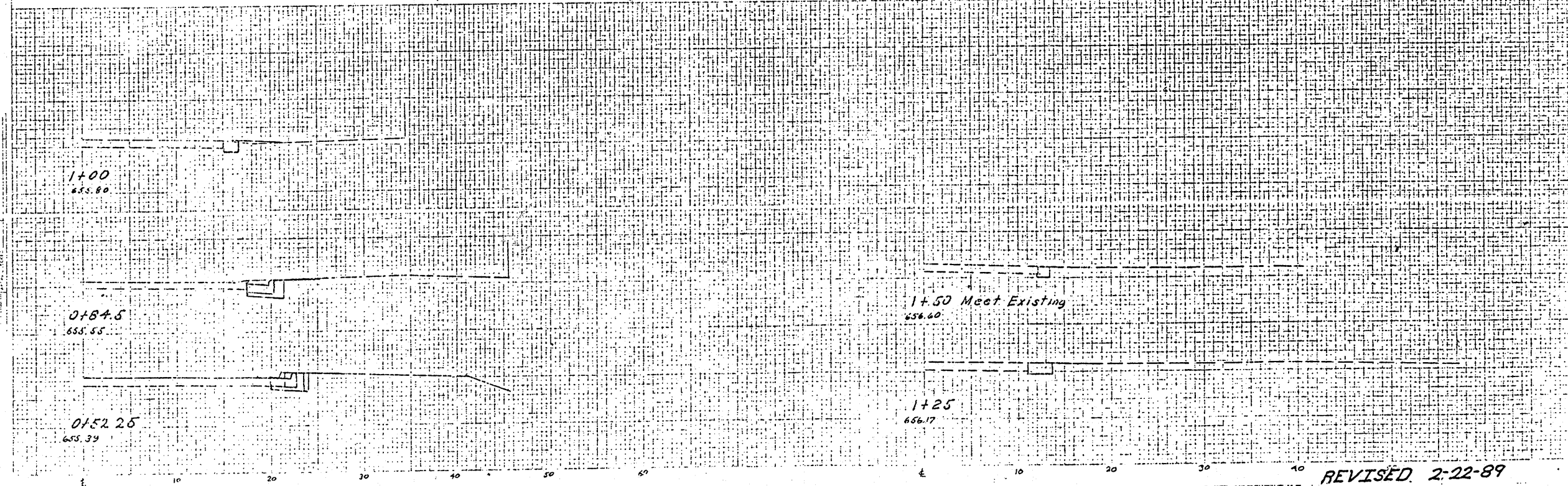
SECTION A-A



- ESTIMATED QUANTITIES **

Item 202	Curb Removed	43 Lin. Ft.
Item 609	Type 2 Combined curb & gutter	43 Lin. Ft.
Item 404	Asphalt Concrete AC-20	2 cu. Yd.
Item 301	Bituminous Aggregate Base	3.3 cu. Yd.
Item 203	Excavation NOT INCLUDING Embankment Construction	12 cu. Yd.

** 100% STATE COST



REVISED 2-22-89
 INTERSECTION DETAILS

FHWA REGION	STATE	PROJECT	
5	OHIO		

GENERAL NOTES

BUT-4-23.74
BUTLER COUNTY

ITEM 619 - FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQ.FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619 - FIELD OFFICE.

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.

UTILITY OWNERSHIP

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

OHIO BELL	CINCINNATI GAS & ELECTRIC	OHIO DEPT. OF TRANSPORTATION
3233 WOODMAN DRIVE	FOURTH & MAIN STREET	P.O. BOX 272
DAYTON, OHIO 45420	CINCINNATI, OHIO 45201	LEBANON, OHIO 45036
(513) 296-3645	(513) 381-2000	(513) 932-3030

REPAIR PROCEDURE

ALL AREAS OF PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT SHALL BE COMPLETED AT THE END OF EACH DAY'S OPERATION AND OPEN TO THE NORMAL FLOW OF TRAFFIC. ITEM 301-BITUMINOUS AGGREGATE BASE PLACED IN PAVEMENT REMOVAL AREAS SHALL BE COMPACTED THOROUGHLY TO MINIMIZE SETTLEMENT OR DISPLACEMENT UNDER TRAFFIC. THE SURFACE OF THE PATCHES SHALL BE MAINTAINED FLUSH WITH THE EXISTING SURFACE UNTIL THE RESURFACING IS PLACED.

SUBBASE FAILURES

IF, AFTER REMOVAL OF THE JOINT MATERIAL, THE PROJECT ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH COMPACTED 304 AGGREGATE PAYMENT FOR THIS WORK WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	ESTIMATED QUANTITIES	UNT	DESCRIPTION
203	10	CU.YDS.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
304	10	CU.YDS.	AGGREGATE BASE

QUANTITIES CARRIED TO GENERAL SUMMARY.

ITEM 203 - EXCAVATION INCLUDING

EMBANKMENT CONSTRUCTION, AS PER PLAN

A QUANTITY OF 13 CU. YD. IS SET UP FOR THE REMOVAL OF THE DRIVEWAY AT STA. 70 + 53 LT., PLAN REFERENCE 2R TO A DEPTH OF 4". (EMBANKMENT MATERIAL TO BE PER ITEM 653.02) QUANTITY CARRIED TO SUB-SUMMARY, SHT. 18.

ITEM 604 INLETS OR CATCH BASINS RECONSTRUCTED TO GRADE

A QUANTITY OF 2 EACH INLETS RECONSTRUCTED TO GRADE AND 2 EACH CATCH BASINS RECONSTRUCTED TO GRADE ARE CARRIED TO THE SUB-SUMMARY, SHEET 18 TO BE USED AS DIRECTED BY THE ENGINEER. THIS DIRECTION WILL BE TAKEN DURING THE INSTALLATION OF THE REPLACEMENT GRATES WHEN, UPON INSPECTION, SUCH CATCH BASINS OR INLETS ARE DEEMED DETERIORATED TO A DEGREE THAT THE ENGINEER DECIDES RECONSTRUCTION IS NECESSARY.

ITEM 621 - REMOVAL OF PAVEMENT MARKINGS

AN ADDITIONAL QUANTITY OF 500 LIN. FT. IS SET UP TO BE USED AS DIRECTED BY THE ENGINEER. THIS QUANTITY IS FOR REMOVAL OF ANY OTHER CONFLICTING MARKINGS THAT WERE EXISTING AT THE BEGINNING OF WORK.

ITEM 659 - SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE SET UP FOR THE AREA AT STA. 70+53 LT. (DRIVEWAY REMOVAL)

117 SQ. YD. - SEEDING AND MULCHING
0.01 TONS - FERTILIZER
0.25 M. GAL - WATER

CARRIED TO SUB-SUMMARY SHEET 18

ITEM 604 - REPLACEMENT GRATES

"V" GRATES AS SHOWN IN THE STANDARD CONSTRUCTION DRAWINGS CB-3 & CB-3A SHALL BE USED. ODD SIZE GRATES SHALL BE ESSENTIALLY OF THE SAME DESIGN. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO CONFIRM THE SIZE OF THE GRATES TO BE PLACED PRIOR TO ORDERING REPLACEMENTS. THIS PAY ITEM SHALL INCLUDE THE FURNISHING AND PLACEMENT OF THE GRATES AS WELL AS THE REMOVAL OF THE EXISTING GRATES TO BE DISPOSED OF BY THE CONTRACTOR.

INTERIM COMPLETION DATE

AN INTERIM COMPLETION DATE OF 7-31-89 IS ESTABLISHED FOR ALL WORK EXCEPT THE INSTALLATION OF THE SPAN WIRE SIGN SUPPORT.

UNDERGROUND UTILITIES

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

REVISED 3-28-89

GENERAL NOTES

FHWA REGION	STATE	PROJECT
5	OHIO	

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BUT-4-23.74
BUTLER COUNTY

ITEM 609-ASPHALT CONCRETE CURB, AS PER PLAN

AN ESTIMATED QUANTITY OF 100 LIN. FT. OF ITEM 609 HAS BEEN CARRIED TO THE SUB-SUMMARY. THIS ITEM IS TO BE USED TO REPAIR MISSING SECTIONS OF CURB OR SECTIONS IN NEED OF REPAIR TO REMAIN FUNCTIONAL AND PLACED IN REASONABLE CLOSE CONFORMANCE TO THE EXISTING CURB AS DIRECTED BY THE ENGINEER. THIS WORK MAY BE ACCOMPLISHED BY HAND WITH THE 404 MATERIAL AVAILABLE AT THAT TIME.

ITEM 407 - TACK COAT

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. WHERE COVER AGGREGATE IS NEEDED ON THIS PROJECT, IT SHALL BE USED AS DIRECTED BY THE ENGINEER. *PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GAL/S.Y. OF TACK COAT FOR ESTIMATING PURPOSES ONLY.*

ITEM 614 - MAINTAINING TRAFFIC

IT IS THE INTENTION OF THESE PLANS TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND THE MAXIMUM SAFETY OF THE CONTRACTOR AND THE TRAVELING PUBLIC. THE REQUIREMENTS FOR MAINTAINING TRAFFIC SHALL BE AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS* THE PROPOSAL, SPECIFICATIONS, AND THESE PLANS. ANY VARIANCE FROM THESE REQUIREMENTS SHALL BE SUBJECT TO THE ADVANCE APPROVAL OF THE DIRECTOR IN WRITING.

- A. BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THESE PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN THE TRAVELED PAVEMENT SAFELY.
- B. ON TWO LANE ROADS, AT LEAST ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES WORK IS BEING PERFORMED. TRAFFIC SHALL BE CONTROLLED AS SHOWN ON STD.-MT-97.10 DURING NON-WORKING HOURS, TRAFFIC SHALL BE RESTORED TO THE FULL WIDTH OF OF EXISTING PAVEMENT.
- C. ON MULTI-LANE HIGHWAYS, AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES. TRAFFIC SHALL BE CONTROLLED USING LANE CLOSURE TRAFFIC CONTROL DEVICES AS SHOWN ON SHEET 25 AND 26.
- D. TRAFFIC SHALL BE MAINTAINED AT ALL INTERSECTIONS AND DRIVES AT ALL TIMES, AND SHALL BE CONTROLLED WITH FLAGMEN AND TRAFFIC CONTROL DEVICES AS REQUIRED AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- E. THE NORMAL OPERATION OF ALL TRAFFIC SIGNALS SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE ENGINEER. CARE SHALL BE EXERCISED NOT TO PERFORM ANY WORK WHICH MIGHT AFFECT OPERATION OF THE TRAFFIC SIGNAL DETECTORS, OR UNDERGROUND WIRING, UNTIL ARRANGEMENTS HAVE BEEN MADE WITH THE MAINTAINING AGENCY.

TRAFFIC IS TO BE MAINTAINED IN A UNIFORM PATTERN THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT AND NOT TO BE SUBJECTED TO CONSTANT LANE SHIFTS.

THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, MEN AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE APPROVED BY THE ENGINEER.

VEHICLES AND EQUIPMENT SHALL ALWAYS MOVE WITH, AND NOT ACROSS OR AGAINST THE FLOW OF TRAFFIC. VEHICLES AND EQUIPMENT SHALL NOT PARK OR STOP EXCEPT WITHIN DESIGNATED WORK AREAS, AND SHALL ENTER AND LEAVE WORK AREAS IN A MANNER WHICH WILL NOT BE HAZARDOUS TO, OR INTERFERE WITH THE NORMAL TRAFFIC FLOW. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY EXCEPT IN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

THE STANDARD DEVICE FOR CLOSING ANY LANE(S) TO TRAFFIC SHALL BE DRUMS OR BARRICADES PROPERLY WEIGHTED AND REFLECTORIZED. DRUMS PLACED ON THE SURFACE COURSE SHALL BE PLACED ON 1/2" PLYWOOD OR EQUIV. OPTIONAL 36" TRAFFIC CONES MAY BE USED IN LIEU OF DRUMS, FOR DAYTIME OPERATIONS ONLY.

CONES WHEN USED, MUST BE WEIGHTED TO INCREASE STABILITY, BY DOUBLE STACKING, SAND BAGS, OR AS APPROVED BY THE ENGINEER. STEEL RINGS OR CHAINS OF ANY TYPE OVER THE CONES WILL NOT BE PERMITTED.

ALL SIGNS THAT ARE TO CONVEY THEIR MESSAGES DURING THE HOURS OF DARKNESS SHALL BE REFLECTORIZED OR ILLUMINATED. ALL SIGNS SHALL BE POST MOUNTED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PLACEMENT OF ALL TRAFFIC CONTROL DEVICES SHALL START AND PROCEED IN THE DIRECTION OF THE FLOW OF TRAFFIC. REMOVAL OF TRAFFIC CONTROL DEVICES SHALL START AT THE END OF THE CONSTRUCTION AREA AND PROCEED TOWARD ONCOMING TRAFFIC. THE CONTRACTOR SHALL PROVIDE FOR THE INSTALLATION OF ALL NECESSARY TRAFFIC CONTROL DEVICES BEFORE BEGINNING WORK AND THEIR IMMEDIATE REMOVAL AS SOON AS WORK IS SUSPENDED OR COMPLETED. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED W/614 *MAINTAINING TRAFFIC*.

* (such as C-11, C-12, C-8, C-10, C-3, C-4)

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

BUT-4-23.74
BUTLER COUNTY

TEMPORARY CENTERLINES

AN ESTIMATED QUANTITY OF .28 MILES OF ITEM 614--TEMPORARY CENTERLINE, CLASS II HAS BEEN PROVIDED TO BE USED WHERE LONG AREAS OF PAVEMENT REPAIR HAVE OBLITERATED THE EXISTING CENTERLINE AND RESURFACING IS NOT IMMINENT. THIS QUANTITY SHALL BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 TEMPORARY PAVEMENT MARKINGS

ALL TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED AS THEY ARE EXISTING, IN THE AREAS OF PLANING ONLY.

ITEM 621 - PERMANENT PAVEMENT MARKING

PERMANENT PAVEMENT MARKINGS MUST BE PLACED THE SAME DAY THAT ASPHALT SURFACE COURSE IS PLACED. NO TEMPORARY MARKINGS WILL BE PERMITTED. FAILURE TO COMPLY WITH THE ABOVE REQUIREMENT SHALL RESULT IN LIQUIDATED DAMAGES AS PER ITEM 108.07. *Marking shall be in place before opening to traffic.*

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 FOR 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.

GUARDRAIL REMOVED

ON THIS PROJECT, THE GUARDRAIL REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR.

TRAFFIC SIGNALS

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HRS. AND SHALL NOT INCLUDE THE HOURS OF 7-9 AM TO 3-6 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED BY OFF-DUTY STATE HIGHWAY PATROLMEN OR BUTLER COUNTY SHERIFF'S DEPUTIES, WITH PATROL CAR, HIRED BY THE CONTRACTOR. ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING, WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.24.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

LOOP DETECTORS

PRIOR TO REPAIR WORK OR PLANING THAT MAY AFFECT THE TRAFFIC LOOP DETECTOR WIRE, THE MAINTAINING AGENCY SHALL LOCATE THEM. THEY SHALL BE CHECKED TO INSURE THAT THEY ARE WORKING PROPERLY BY HAVING A REVIEW OF THE EXISTING FACILITIES WITH THE PROJECT ENGINEER, MAINTAINING AGENCY AND THE CONTRACTOR.

IF A PROPERLY WORKING TRAFFIC LOOP DETECTOR WIRE WITHIN THE PROJECT LIMITS IS DISTURBED DURING REPAIR OR PLANING OF THE PAVEMENT, THE SIGNAL WILL BE SET UNDER MANUAL CONTROL.

AFTER THE NEW LOOP DETECTOR WIRE HAS BEEN INSTALLED, THE LOOP DETECTOR SHALL BE CONNECTED TO THE LEAD-IN CABLE AND TESTED TO MAKE CERTAIN THAT IT IS OPERATIONAL.

BUT4CL1

CALCULATIONS

BUT-4-23.74
BUTLER COUNTY

CALC. BY <u>SB</u>	DATE <u>/87</u>
CHK'D BY <u>DL</u>	DATE <u>9/88</u>

FHWA REGION	STATE	PROJECT
5	OHIO	

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ITEM 203 EXCAVATION INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN	ITEM 614 - TEMPORARY CENTER LINES, CLASS II
(TO BE USED IN AREA OF DRIVEWAY REMOVAL - REF. (2R) ON SHEET <u>14</u>)	STA. 74 + 80 - STA. 76 + 54.37 = 174.37
35'L x 30'W x 4"D = 350 CU. FT.	STA. 1290 + 19.7 - STA. 1302 + 95 = 1275.3
13 CU. YD.	1,449.67 ÷ 5280 = .28 MILES
CARRIED TO SUB - SUMMARY	CARRIED TO GENERAL SUMMARY
ITEM 404 -- ASPHALT CONCRETE, AC-20 EXTRA AREA INTERSECTION <u>108</u> SQ. YD.	ITEM 614 - TEMPORARY STOP LINES, CLASS I
STA. 74+80 - 76+54.37 = 957 SQ. YDS.	STA. 74 + 80 = 35 LIN. FT.
STA. 1290+19.7 - 1302+95 = 6377 SQ. YD.	CARRIED TO GENERAL SUMMARY
7442 X 1 1/4/36 = 259 CU. YDS.	ITEM 614 - TEMPORARY CHANNELIZING LINES, CLASS I
CARRIED TO GENERAL SUMMARY	STA. 74 + 80 - STA. 75 + 80 = 100 LIN. FT.
	CARRIED TO GENERAL SUMMARY
ITEM 407 - TACK COAT	
7442 SQ. YD. X 0.10 GAL./SQ. YD. =	
744 GAL.	
CARRIED TO GENERAL SUMMARY	
ITEM 254 - PAVEMENT PLANING, BITUMINOUS, (T = 1 1/4")	
EXTRA AREA - INTERSECTION <u>108</u> SQ. YD.	
STA. 74+80 - 76+54.37 = 957 SQ. YD.	
STA. 1290+19.7 - 1302+95 = 6377 SQ. YD.	
TOTAL <u>7442</u> SQ. YD.	
CARRIED TO SUB - SUMMARY SHEET	
ITEM 614 - TEMPORARY LANE LINES, CLASS II	
STA. 74+80 - STA. 76+54.37 = 174.37	
STA. 1290 + 19.7 STA. 1302 + 95 = 1275.3	
TOTAL <u>1,449.67 X 2 = .55 MILES</u>	
CARRIED TO GENERAL SUMMARY	

CALCULATIONS

DEPARTMENT OF TRANSPORTATION
M & R 710 REV. 9-1-83
BUT4GS1

FHWA REGION	STATE	PROJECT
5	OHIO	

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BUT-4-23.74
BUTLER COUNTY

GENERAL SUMMARY

ITEM	SHEET NUMBER										HES FUNDING	100% STATE	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
	5	6	8	10	18												
																	ROADWAY
43					38						38	43	202	43	LIN.FT.	CURB REMOVED	
					13						13		202	38	LIN.FT.	GUARDRAIL REMOVED	
											13		203	13	CU.YD.	EXCAVATION INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN	
12	10										10	12	203	22	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
																EROSION CONTROL	
					1						1		659	1	M.GAL	WATER	
					0.01						0.01		659	0.01	TON	COMMERCIAL FERTILIZER	
					117						117		659	117	SQ.YD.	SEEDING AND MULCHING	
																DRAINAGE	
					2						2		604	2	EACH	CATCH BASIN RECONSTRUCTED TO GRADE	
					2						2		604	2	EACH	INLET RECONSTRUCTED TO GRADE	
					22						22		604	22	EACH	REPLACEMENT GRATES	
																PAVEMENT	
4												4	301	4	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20	
	10										10		304	10	CU.YD.	AGGREGATE BASE	
2					259						259	2	404	261	CU.YD.	ASPHALT CONCRETE, AC-20	
					744						744		407	744	GAL.	TACK COAT	
					100						100		609	100	LIN.FT.	ASPHALT CONCRETE CURB, AS PER PLAN	
43												43	609	43	LIN.FT.	COMBINATION CURB AND GUTTER, TYPE 2	
					7442						7442		254	7442	SQ.YD.	PAVEMENT PLANING, BITUMINOUS	
					25						25		254	25	SQ.YD.	PATCHING PLANED SURFACE	

DEPARTMENT OF TRANSPORTATION
M & R 710 REV. 9-1-83
BUT4GS2

FHWA REGION	STATE	PROJECT
5	OHIO	

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BUT-4-23.74
BUTLER COUNTY

GENERAL SUMMARY

ITEM	SHEET NUMBER							HES FUNDING	100% STATE	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
	4	6	9	10	20	23								
														PAVEMENT (CONT.)
	48						48		252		48	CU.YD.		FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT, AS PER PLAN
	970						970		252		970	LIN.FT.		FULL DEPTH PAVEMENT SAWING
														TRAFFIC CONTROL
				0.55			0.55		614		0.55	MILE		TEMPORARY LANE LINES, CLASS II
			.28	0.28			0.56		614		0.56	MILE		TEMPORARY CENTER LINES, CLASS II
				100			100		614		100	LIN.FT.		TEMPORARY CHANNELIZING LINES, CLASS I
				35			35		614		35	LIN.FT.		TEMPORARY STOP LINES, CLASS I
				0.94			0.94		621		0.94	MILE		EDGE LINES
				0.48			0.48		621		0.48	MILE		CENTER LINES
				2958			2958		621		2958	LIN.FT.		CHANNELIZING LINES
				2806			2,806		621		2,806	LIN.FT.		TRANSVERSE LINES
	500			1940			2440		621		2440	LIN.FT.		REMOVAL OF PAVEMENT MARKINGS
				107			107		621		107	SQ.FT.		ISLAND MARKINGS
				9			9		847		9	EACH		LANE ARROWS, 947.02
				5			5		847		5	EACH		WORD ON PAVEMENT 96", 947.02
				75			75		847		75	LIN.FT.		STOP LINES, 947.02
					20		20		625		20	LIN.FT.		CONDUIT, 713.04, 1"

REVISED 3-28-89
REVISED 2-22-89

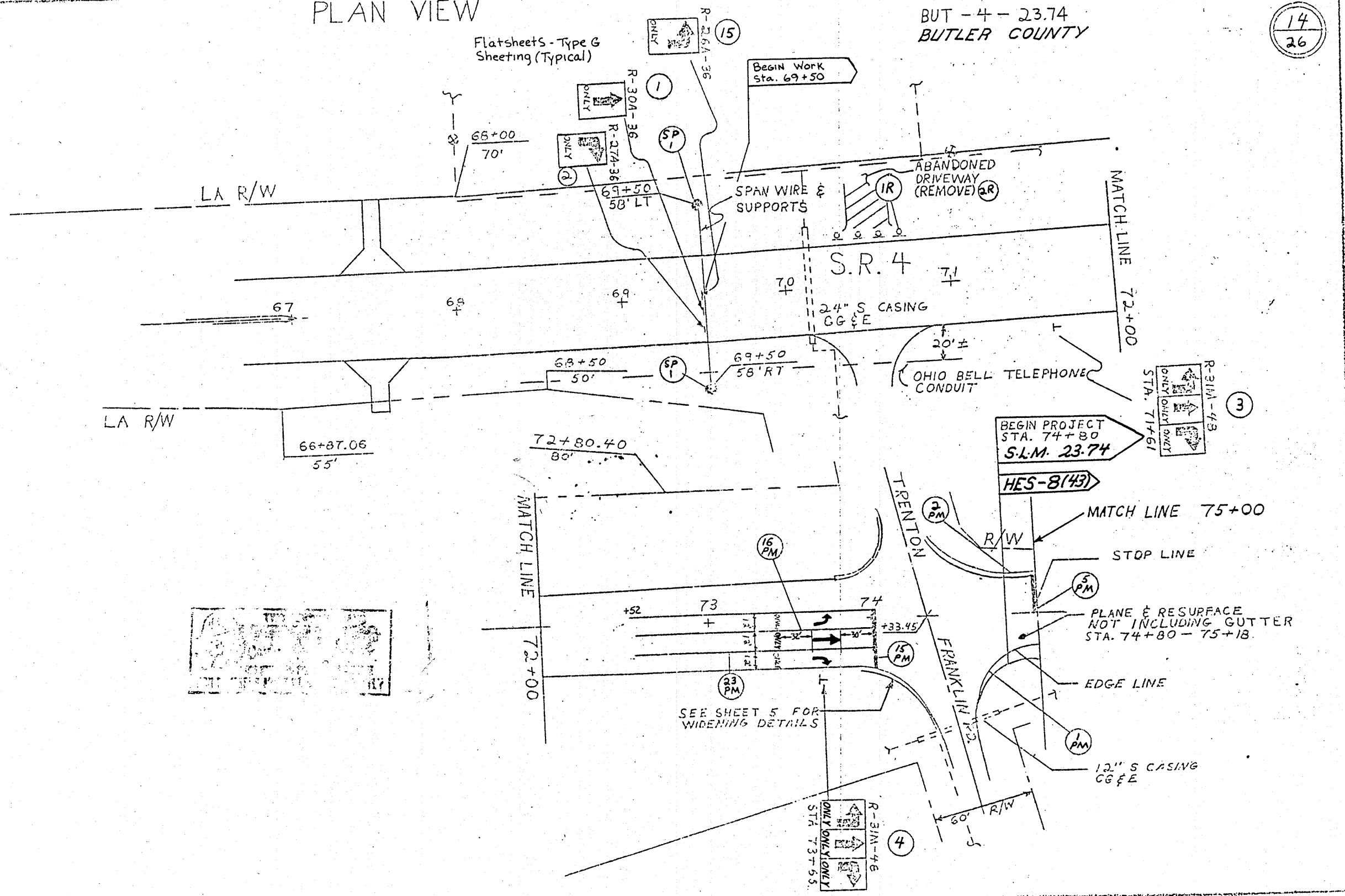
GENERAL SUMMARY

PLAN VIEW

BUT - 4 - 23.74
BUTLER COUNTY

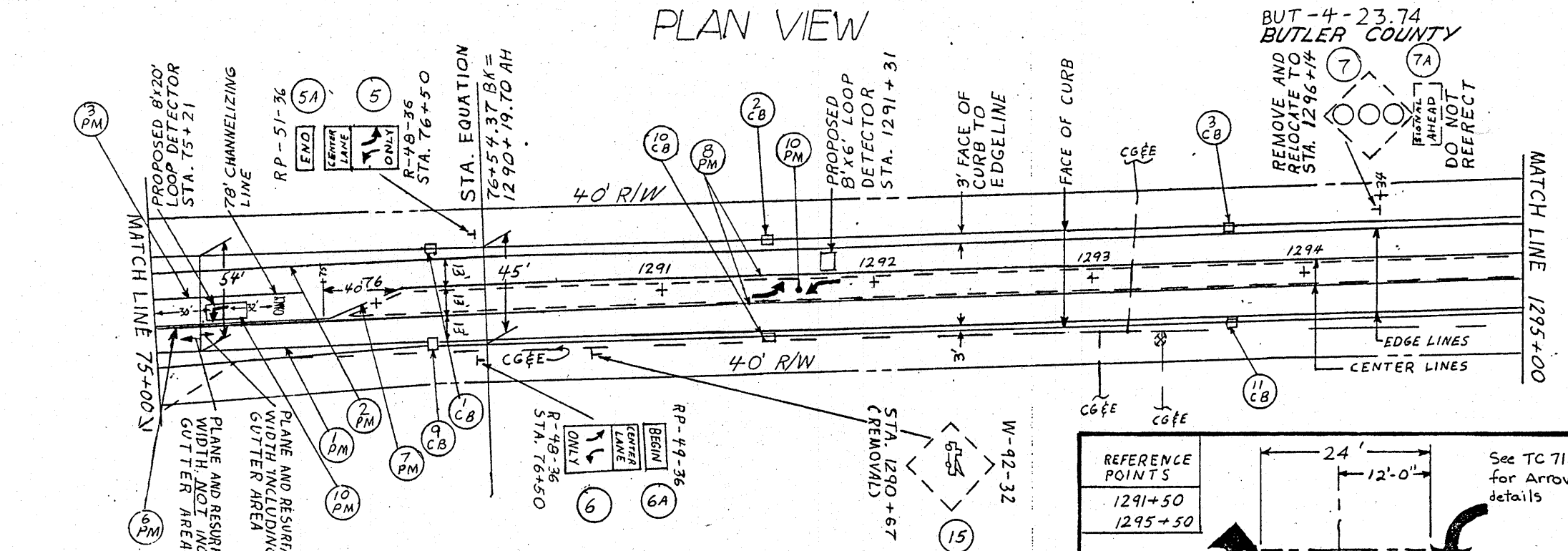
14
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Flatsheets - Type G
Sheeting (Typical)



PLAN VIEW

PLAN VIEW

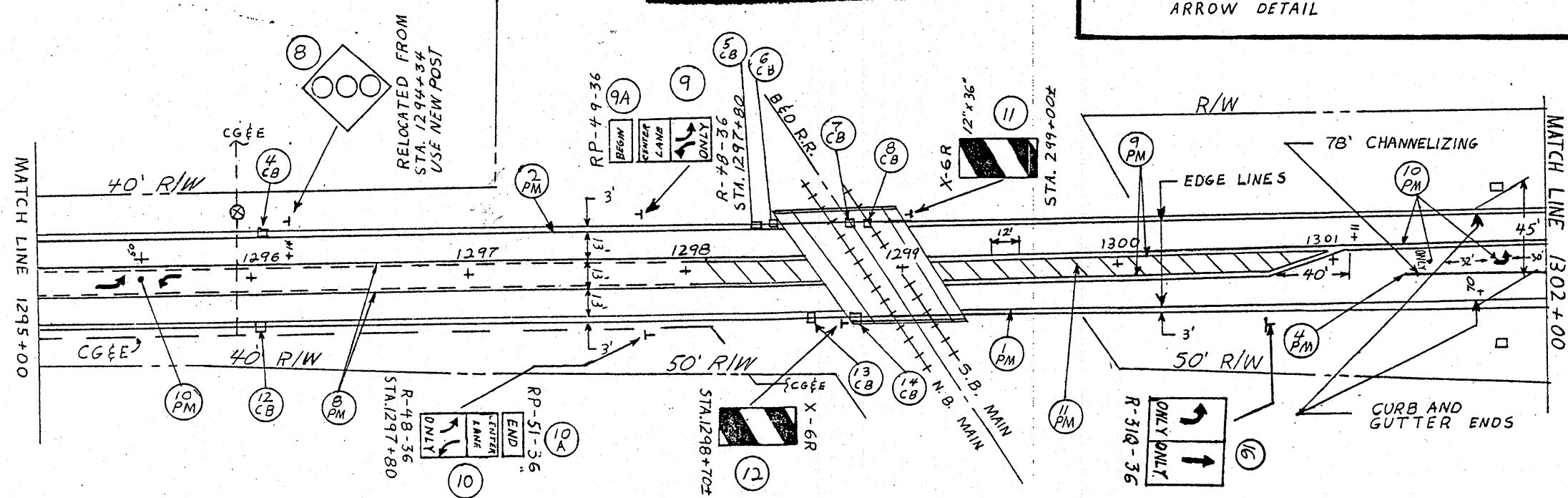
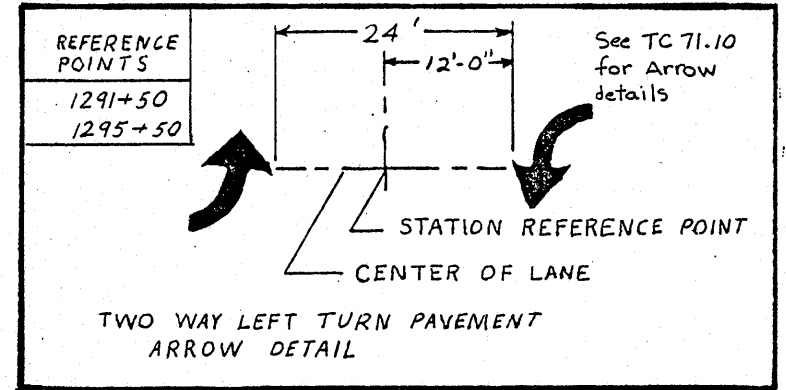


BUT-4-23.74
BUTLER COUNTY

REMOVE AND
RELOCATE TO
STA. 1296+14

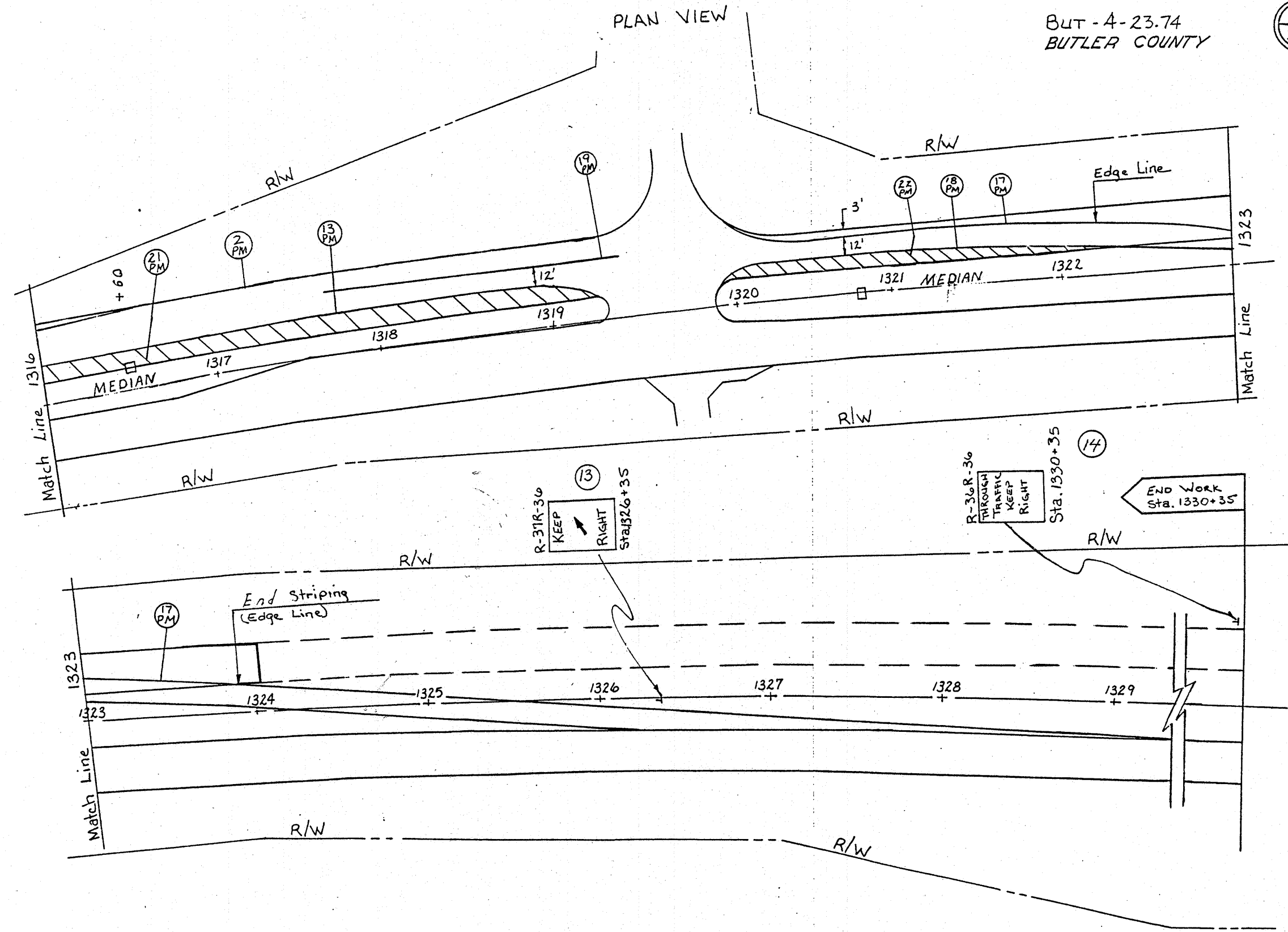
DO NOT
REFLECT

Flatsheet SIGNS to be
Type G Sheeting (typical)



PLAN VIEW

PLAN VIEW



Plan View

SUB-SUMMARY

REFERENCE No.	LOCATIONS	202	203		604	604	609	659	659	659	604	254	254
		GUARDRAIL REMOVED	EXCAVATION INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN		CATCH BASINS RECONSTRUCTED TO GRADE	INLETS RECONSTRUCTED TO GRADE	ASPHALT CURB, AS PER PLAN	SEEDING AND MULCHING	FERTILIZER	WATER	REPLACEMENT GRATES	PAVEMENT PLANING, BITUMINOUS,	PATCHING PLANED SURFACE
		LIN. FT.	CU. YDS.		EACH	EACH	LIN. FT.	SQ. YDS.	TONS	M. GALS.	EACH	SQ. YDS.	SQ. YDS.
	TO BE USED AS DIRECTED BY PE				2	2	100						25
1 CB	76+41 LT										1		
2 CB	1291+51 LT										2		
3 CB	1293+64 LT										2		
4 CB	1296+05 LT										2		
5 CB	1298+35 LT										1		
6 CB	1298+40 LT										1		
7 CB	1298+77 LT										1		
8 CB	1298+81 LT										1		
9 CB	76+41 RT										1		
10 CB	1291+51 RT										2		
11 CB	1293+64 RT										2		
12 CB	1296+05 RT										2		
13 CB	1298+55 RT										2		
14 CB	1298+77 RT										2		
PP1	74+80 to 76+54											108/957	
PP2	1290+19.7 to 1302+95											6377	
1 R	70+34 to 70+71.5	37.5											
2 R	70+34 to 70+71.5		.13					117	.01	.25			
	TOTALS THIS SHEET	38	13		2	2	100	117	.01	.25 (USE 1)	22	7.442	25
QUANTITIES CARRIED TO THE GENERAL SUMMARY													

SUB-SUMMARY - SIGNING

REFERENCE NO.	SIGN DESCRIPTION	SIZE	STATION	630	630	630		630	630	630	630	630	630			
				GROUND MOUNTED SUPPORTS, # 3 POSTS	GROUND MOUNTED SUPPORTS, # 2 POSTS	SIGNS, FLATSHEET TYPE G SHEETING		REMOVAL OF GROUND MOUNTED POST SUPPORT	REMOVAL OF GROUND MOUNTED SIGN AND RE-ERECTION	SPAN WIRE SUPPORT, TYPE TC-17.10 DESIGN 7, SPAN 116 FT	SIGN HANGAR ASSEMBLY, SPAN WIRE	CONCRETE FOR ANCHOR BASE FOUNDATION	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	COVERING OF SIGNS		
				LIN. FT.	LIN. FT.	SQ. FT.		EACH	EACH	EACH	EACH	CU. YD.	EACH	SQ. FT.		
1 P			69+50							1		5.24				
1	R-30A-36	36"x42"	69+50			10.5					1			10.5		
2	R-27A-36	36"x42"	69+50			10.5					1			10.5		
3	R-31M-48	48"x30"	71+61	24		10.0								10.0		
4	R-31M-48	48"x30"	73+65	24		10.0								10.0		
5	R-48-36	36"x48"	76+50	26		12.0								12.0		
5A	RP-51-36	36"X12	76+50			3.0								3.0		
6	R-48-36	36"x48"	76+50	26		12.0								12.0		
6A	RP-49-36	36"X12	76+50			3.0								3.0		
7	W-47-36	36"x36"	1294+34					1	1							
7A	SIGNAL AHEAD		1294+34											1		
8	W-47-36	36"x36"	1296+14	24												
9	R-48-36	36"x48"	1297+80	26		12.0								12.0		
9A	RP-49-36	36"X12	1297+80			3.0								3.0		
10	R-48-36	36"x48"	1297+80	26		12.0								12.0		
10A	RP-51-36	36"X12	1297+80			3.0								3.0		
11	X-6R	12"x36"	1299+00		10.5	3.0										
12	X-6R	12"x36"	1298+70		10.5	3.0										
13	R-37R-36	36"x48"	1326+35	25		12.0										
14	R-36R-36	36"x48"	1330+35	25		12.0										
15	R-26A-36	36"X42"	69+50			10.5					1					
16	R-31Q-36	36"X30"	1300+60	24		7.5								10.5		
17	R-31Q-36	36"X30"	1302+11	24												
	TOTALS			274	21.0	149		1	1	1	3	5.24	1	112		

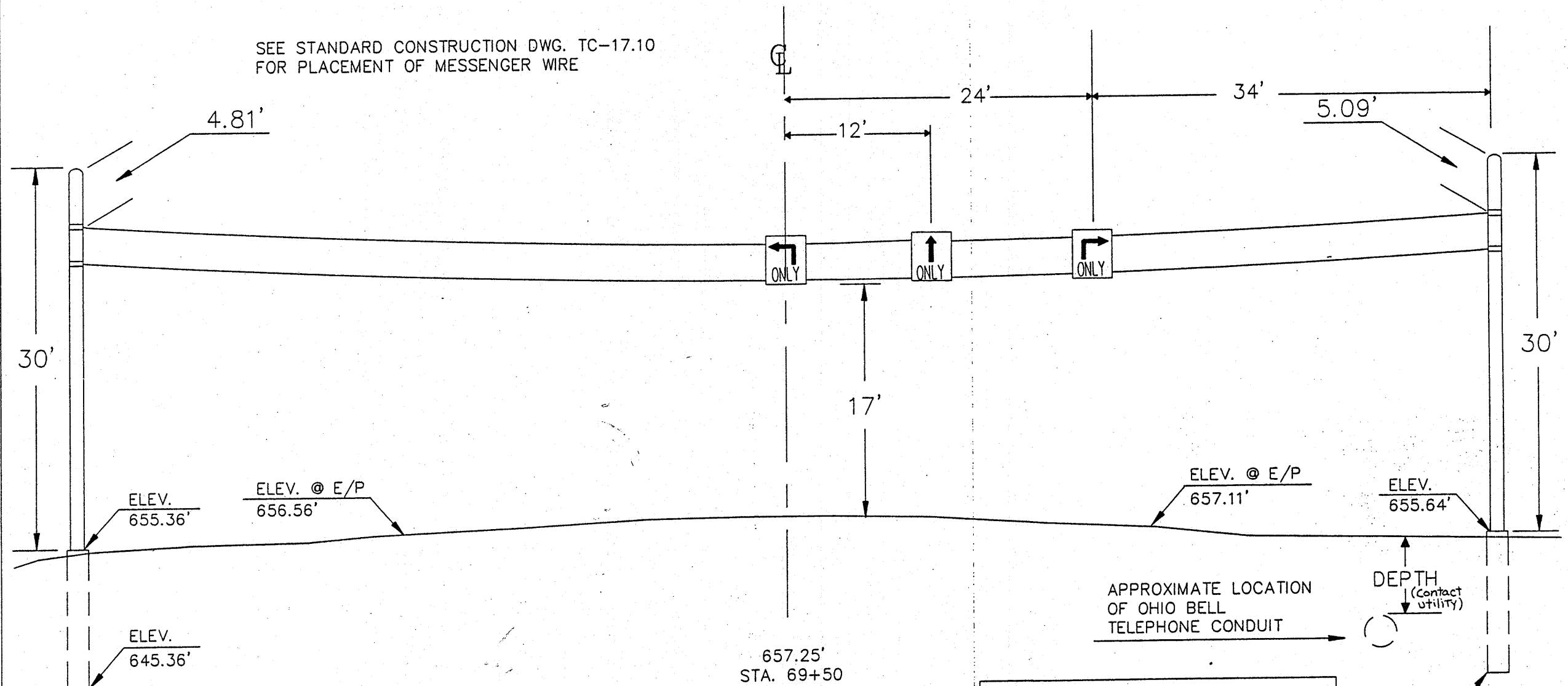
BUT4SIN1

SIGNING DETAILS

BUT-4-23.74
BUTLER COUNTY

21
26

SEE STANDARD CONSTRUCTION DWG. TC-17.10
FOR PLACEMENT OF MESSENGER WIRE



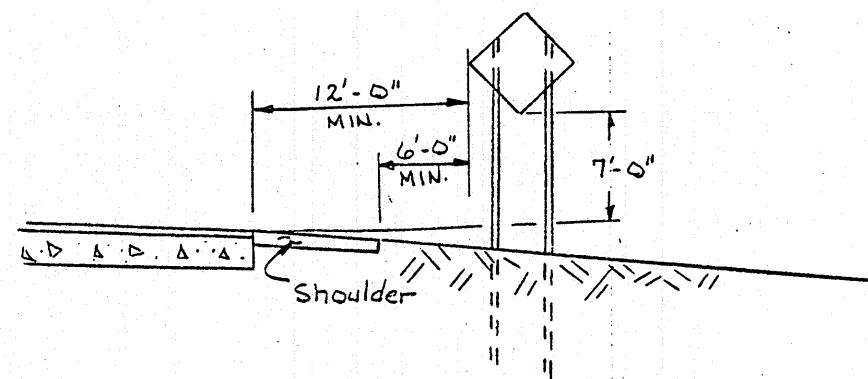
657.25'
STA. 69+50

SPAN WIRE SUPPORT
TYPE TC-17.10, DESIGN 7
SPAN 116'

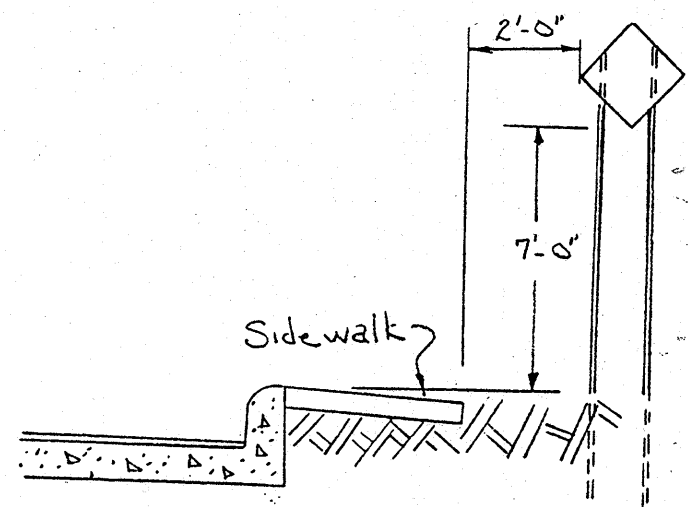
UNDERGROUND UTILITIES

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

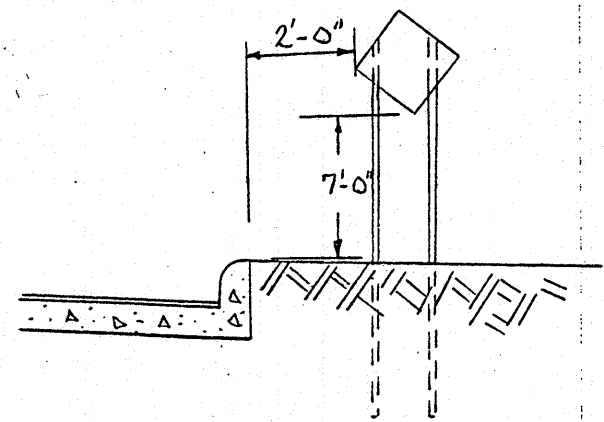
SIGNING



* Typical for uncurbed areas



* Typical for Curbed areas with adjacent sidewalks



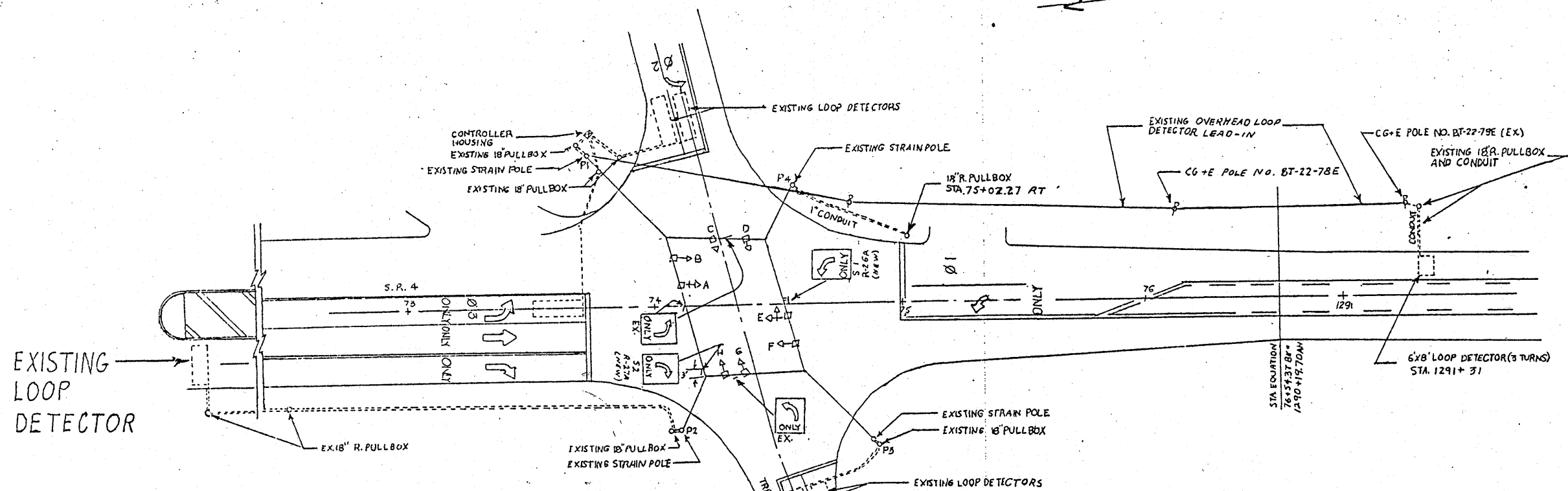
* Typical for Curbed areas

* For all other signing applications see STD. Drawings TC-41.20 & TC 42.20

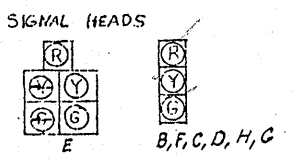
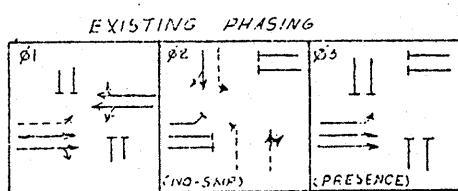
TRAFFIC CONTROL

BUF 4-23.74
BUTLER COUNTY

23
26

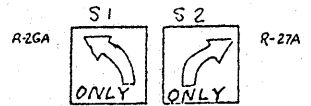


EXISTING LOOP DETECTOR



SCOPE OF WORK

1. INSTALL LOOP DETECTORS LOCATED AT STA. 1291+31
2. RECONNECT EXISTING LOOP DETECTOR LEAD-IN TO NEW LOOP DETECTOR AT STA. 1291+31.
3. INSTALL NEW OVERHEAD SIGNS S1 AND S2.

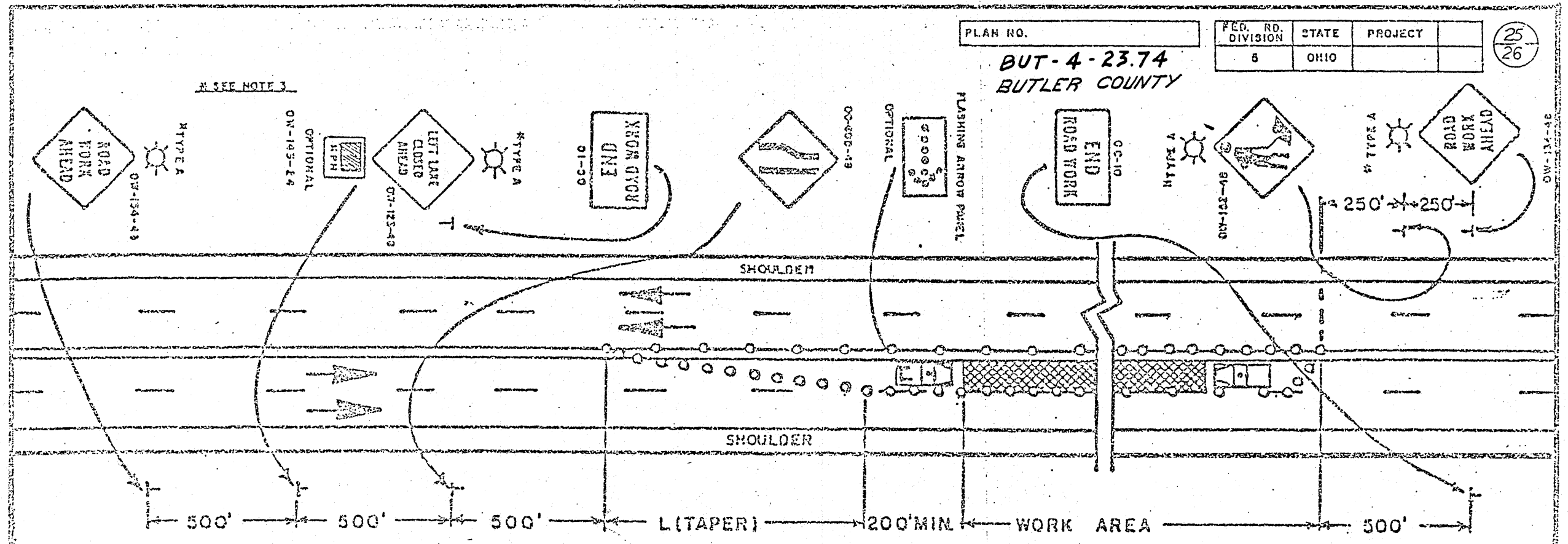


REQUIRED MATERIAL		
QUANTITY	DESCRIPTION	ITEM
114 Lin. Ft.	Loop Detector wire, Type "E"	632
20 Lin. Ft.	Conduit, 7/8" O.D., 1" Galvanized	625
35 Lin. Ft.	Loop Detector Pavement Cutting	632
2 EACH	Sign Header Assembly, Span Wire	630
15 SQ. FT.	Sign, Flat Sheet, Type G	630
QUANTITIES CARRIED TO GENERAL SUMMARY		

PLAN NO.
BUT-4-23.74
BUTLER COUNTY

FED. RD. DIVISION	STATE	PROJECT
8	OHIO	

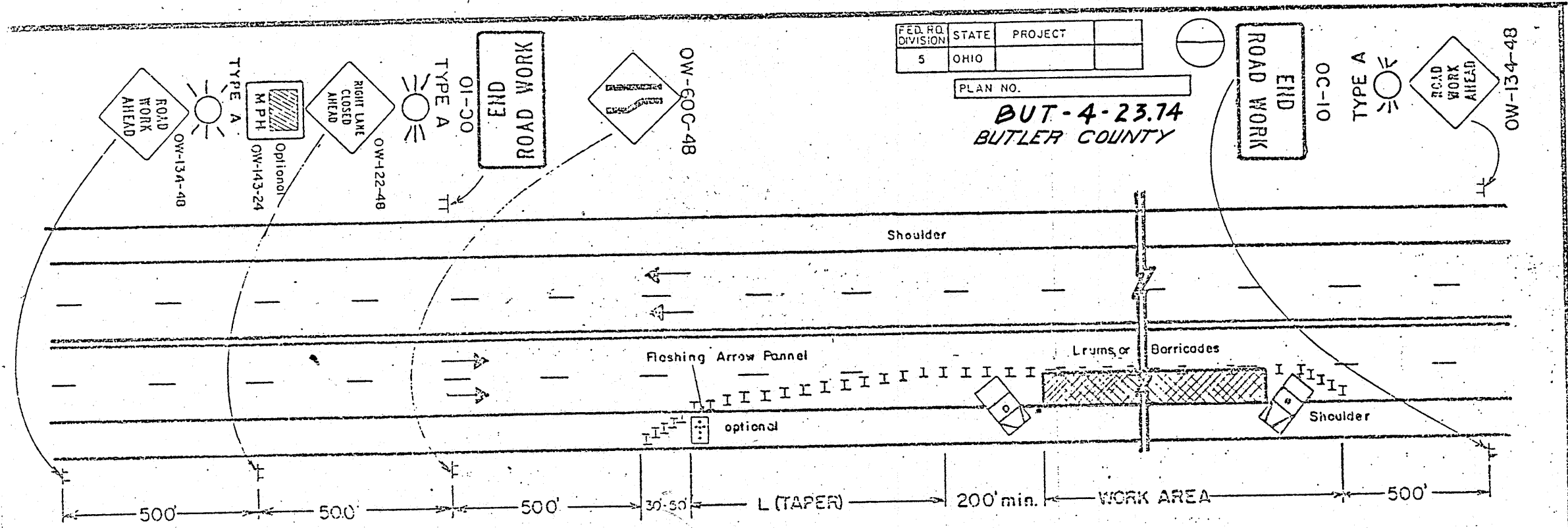
25
26



GENERAL NOTES

- The taper length (L) shall be in accordance with Section 7F-17 of the ODOT. The location of the transition taper and location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment. In order to determine the minimum number of channelizing devices for the transition taper see Table 7-5 ODOT. For a 55 MPH prevailing speed and a 12 foot lane, not less than thirteen (13) drums or barricades shall be used to form the lane transition taper in advance of the work area. Drums or barricades shall be spaced at approximately 50' to 60' centers for the first 1000 feet of the work area and at a maximum of 100 to 120 feet for the balance of the work area. On the return taper these devices shall be spaced at 10 foot center to center. Drums or barricades shall also be placed on the left side of the work area between the closed lane and the opposing traffic.
- These devices shall be spaced at approximately 50' to 60' centers for 1000 feet starting at the end of the return taper and then at a maximum of 100 to 120 feet back along the remainder of the closed section. Cones may be substituted for barricades or drums for lane closures during day light hours only.
- Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 1.
- Type A flashing barricade warning lights shown on the "Road Work Ahead", "Left Lane Closed Ahead" and "Worker Symbol" signs are required whenever a night lane closure is necessary.
- When used, the flashing arrow panel shall meet requirements contained on standard drawing TC 35-10.
- The work vehicles shown at the beginning and end of the work area shall be in place and unoccupied whenever workers are in the work area. These work vehicles shall be removed from the pavement whenever workers are not in the work area. Other protective devices may be used in lieu of the work vehicles shown when approved by the Engineer. The vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of a 1/4 mile. A truck mounted impact attenuator may be employed.
- Some work area locations may require more than just static or conventional signs to enhance communication with the driver. At these locations portable Changeable Message Signs (CMS) units are recommended. These devices should be located approximately 2,000 feet in advance of a lane closure or other point of required action. See Section 7A-8.1, ODOT for further guidance on use of CMS units.

OHIO DEPARTMENT OF TRANSPORTATION	
CLOSING LEFT LANE	DATE
OF A MULTILANE	3/84
UNDIVIDED HIGHWAY	



FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

PLAN NO.
BUT-4-23.74
BUTLER COUNTY

GENERAL NOTES:

- The taper length (L) shall be in accordance with Section 7F-17 of the ODOT. The location of the transition taper and location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment. In order to determine the minimum number of channelizing devices for the transition taper see Table 7-5 ODOT. For a 55 MPH prevailing speed and a 12 ft. lane, not less than thirteen (13) cones, drums or barricades shall be used to form the lane transition taper in advance of the work area. Not less than five (5) drums or barricades shall be used to form the taper on the shoulder. Drums or barricades shall be spaced approximately 50' to 60' center to center for the first 1000 feet of the work area and at a maximum of 100 to 120 feet for the balance of the work area. Drums or barricades on the return taper shall be spaced at 10' center to center. Cones may be substituted for barricades or drums for lane closures during day light hours only.
- Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 1.
- Type A flashing barricade warning lights shown on the "Road Work Ahead" and the "Right Lane Closed Ahead" signs are required whenever a night lane closure is necessary.
- Some work area locations may require more than just static or conventional signs to enhance communication with the driver. At these locations Portable Changeable Message Signs (PCMS) units are recommended. These devices should be located approximately 2000 ft. in advance of a lane closure or other point of required action. See Section 76-3.1, ODOT for further guidance on use of PCMS units.
- The work vehicles shown at the beginning and end of the work area shall be in place and unoccupied whenever workers are in the work area. These work vehicles shall be removed from the pavement whenever workers are not in the work area. Other protective devices may be used in lieu of the work vehicles shown when approved by the Engineer. The vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of a 1 mile.
- When used, the flashing arrow panel shall meet requirements contained on Standard drawing TC-35.10.

OHIO DEPARTMENT OF TRANSPORTATION
CLOSING RIGHT LANE OF A MULTILANE UNDIVIDED HIGHWAY
DATE 12/82