CALC. BY MRD DATE 2/94	FRA - 317 - 3.75	OHIO	1
CHKD. BY [illegible] DATE 2-94		FHWA REGION 5	58

DESIGN DESIGNATION

STATE ROUTE 317

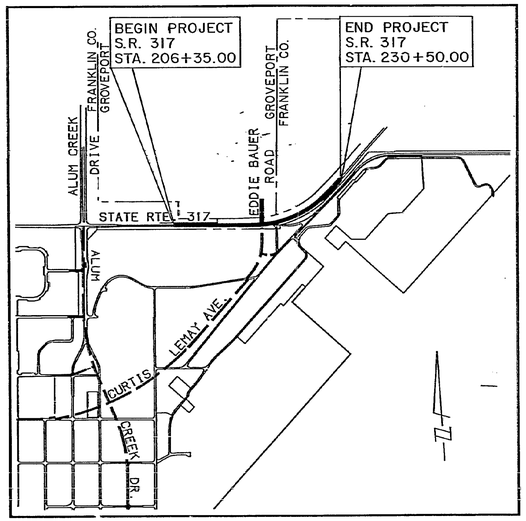
CURRENT A.D.T. (1994)	=	8,702
DESIGN YEAR A.D.T. (2014)	=	12,932
DHV	=	1,293
V (DESIGN SPEED)	=	55 MPH
FUNCTIONAL CLASSIFICATION	=	MAJOR ARTERIAL

FRANKLIN COUNTY, OHIO
OFFICE OF COUNTY ENGINEER
STATE ROUTE 317 WIDENING
VILLAGE OF GROVEPORT
MADISON TOWNSHIP

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE — OR —
FENCE LINE (EXISTING) — PROPOSED
CENTERLINE 352 + 353 +
TREES, STUMPS, (TO BE REMOVED)
UTILITY POLE: TELEPHONE, POWER, LIGHT
ELECTRIC — E —
WATER — W —

LIMITED ACCESS (ONLY) — LA —
RIGHT OF WAY (ONLY) — R/W —
LIMITED ACCESS & RIGHT OF WAY — LA & R/W —
EXISTING RIGHT OF WAY
PROPERTY LINE — (IN EXISTING FENCE)
RAILROAD — OR —
GUARDRAIL (EXISTING) (PROPOSED)
TELEPHONE — T — T — OBT TERM.
GAS — G — G — GAS VALVE
SANITARY — SAN — SAN — SAN —



LOCATION MAP

PORTIONS TO BE IMPROVED _ _ _ ———

INDEX OF SHEETS

TITLE SHEET.....1
SCHEMATIC PLAN.....2
TYPICAL SECTIONS.....3-4
STORM WATER POLLUTION PREVENTION PLAN...5
GENERAL NOTES.....6-7
MAINTENANCE OF TRAFFIC.....8-11
PAVEMENT CALCULATIONS.....12-17
GENERAL SUMMARY.....18-20
PLAN, PROFILE & SUB-SUMMARY
S.R. 317 WIDENING.....21-26
CROSS SECTIONS S.R. 317 WIDENING.....27-39
PLAN & PROFILE S R. 317 CONNECTOR.....40
CROSS SECTIONS S.R. 317 CONNECTOR.....41
PLAN & PROFILE EDDIE BAUER ROAD 42
CROSS SECTIONS EDDIE BAUER ROAD 43-44
EDDIE BAUER ROAD & S.R. 317 CONNECTOR
SUB-SUMMARY.....45
INTERSECTION DETAILS.....46-47
PAVEMENT DETAILS.....48-49
STORM SEWER PROFILES.....50
TRAFFIC CONTROL PLAN.....51-54
SIGNAL PLAN.....55-58

LINE DATA

PROJECT

STATE ROUTE 317
STA. 206+35 TO STA. 230+50 = 2415.00 L.F.

LENGTH OF PROJECT = 2,415.00 L.F.
OR 0.457 MILES

ADD FOR WORK

S.R. 317 CONNECTOR
STA. 1218+45 TO STA. 1219+75.18 = 130.18 L.F.

EDDIE BAUER ROAD
STA. 90+24.08 TO STA. 93+10 = 285.92 L.F.

LENGTH OF WORK = 2,831.10 L.F.
OR 0.536 MILES

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

SCALES

PLAN: 20 0 20 40 SCALE IN FEET

PROFILE:
HORIZONTAL 20 0 20 40 SCALE IN FEET
VERTICAL 5 0 5 10 SCALE IN FEET

CROSS SECTIONS:
HORIZONTAL 5 0 5 10 SCALE IN FEET
VERTICAL 5 0 5 10 SCALE IN FEET

1993 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

FRANKLIN COUNTY

APPROVED Thomas Glasgow
DATE 2/24/94 FRANKLIN COUNTY CHIEF DEPUTY ENGINEER

APPROVED [signature]
DATE 2/24/94 FRANKLIN COUNTY ENGINEER

WE, THE COMMISSIONERS OF FRANKLIN COUNTY IN FORMAL SESSION HEREBY APPROVE THESE PLANS.

APPROVED Dorothy S. Teater
DATE 5-24-94 FRANKLIN COUNTY COMMISSIONER

APPROVED [signature]
DATE 5-24-94 FRANKLIN COUNTY COMMISSIONER

APPROVED [signature]
DATE 5-24-94 FRANKLIN COUNTY COMMISSIONER

VILLAGE OF GROVEPORT

APPROVED [signature]
DATE 5-25-94 MAYOR

PREPARED BY
R.D. ZANDE & ASSOCIATES, LTD.
1237 DUBLIN ROAD
COLUMBUS, OHIO 43215

[signature]
REGISTERED ENGINEER NO. 51504

STATE OF OHIO JOSEPH E. SULLIVAN E-5150 REGISTERED PROFESSIONAL ENGINEER

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-3.1	2-21-92	MT-99.10	11-14-86	TC-71.10	9-10-91	HL-20.11	5-1-87
		MT-99.20	4-29-88	TC-81.10	1-20-84	HL-30.11	5-1-87
C-B-2-3	5-1-79	MT-105.10	7-1-92	TC-82.10	8-29-84		
CB-3	5-1-79	MT-105.11	7-1-92	TC-83.20	1-20-84		
				TC-84.20	1-20-84		
MH-3	12-18-84			TC-85.20	1-20-84		
MC-11	8-1-78	TC-41.20	3-26-79				
MC-9.2	5-6-91	TC-42.20	3-26-79				
		TC-52.10	4-3-79				

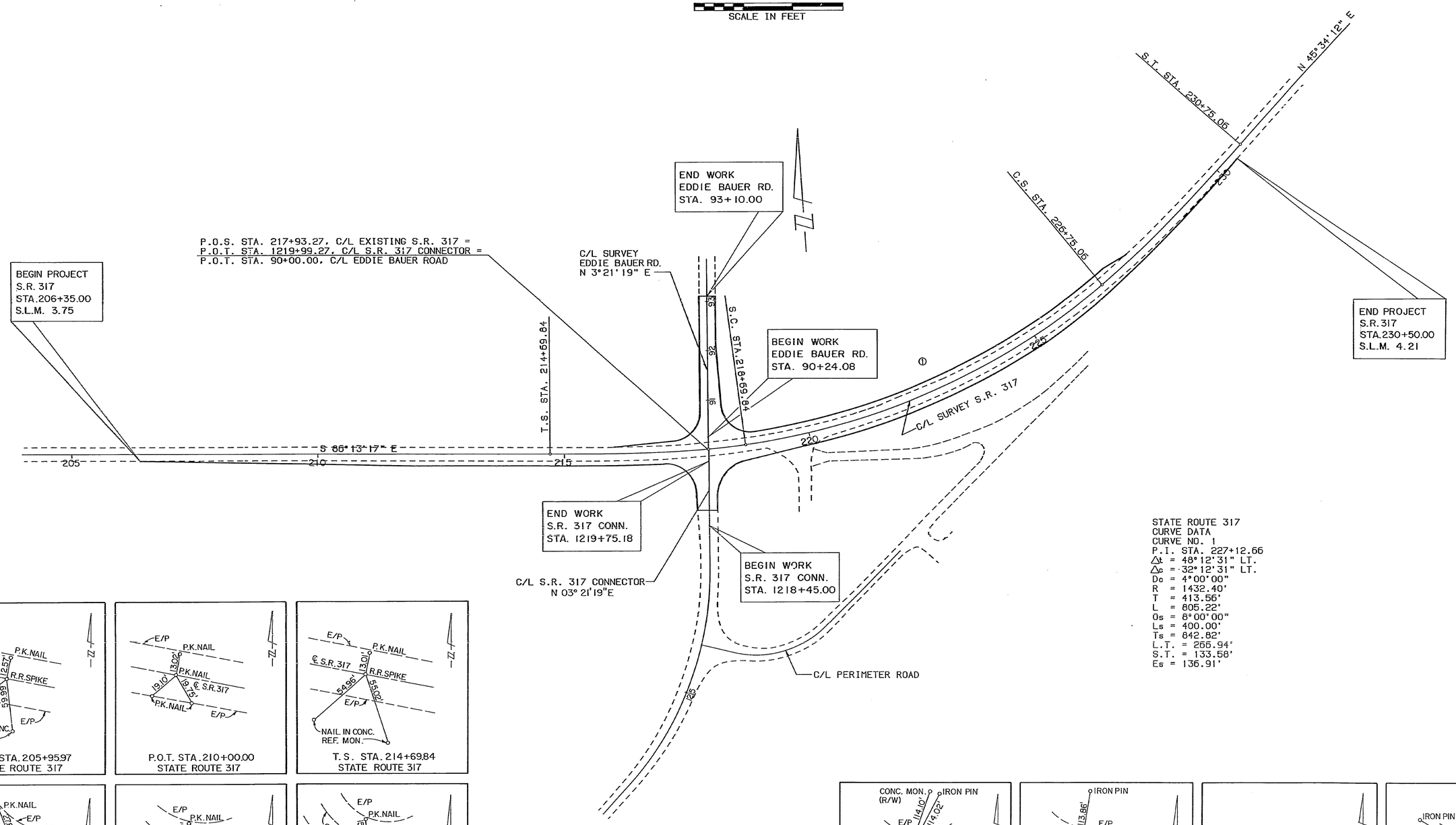
SUPPLEMENTAL SPECIFICATIONS

931	3-18-92		
944	3-18-92		
820	3-18-92		
802	4-13-90		

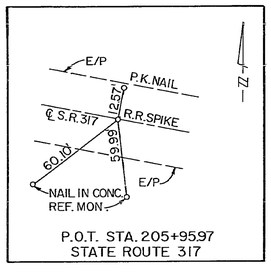
SCHEMATIC PLAN

CALC. BY DATE MRD 2/94	FRA - 317 - 3.75	OHIO	2
CHKD. BY DATE GVK 2-9-94		FHWA REGION 5	58

100 0 100 200
SCALE IN FEET



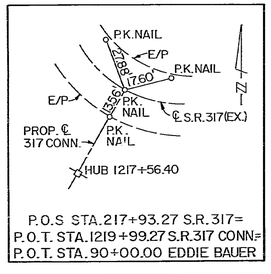
STATE ROUTE 317
CURVE DATA
CURVE NO. 1
P.I. STA. 227+12.66
Δt = 48°12'31" LT.
Δc = 32°12'31" LT.
Dc = 4°00'00"
R = 1432.40'
T = 413.56'
L = 805.22'
Os = 6°00'00"
Ls = 400.00'
Ts = 842.82'
L.T. = 266.94'
S.T. = 133.58'
Es = 136.91'



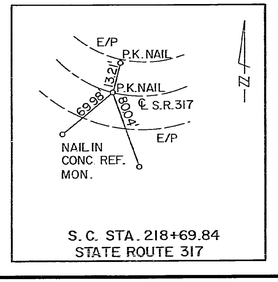
P.O.T. STA. 205+95.97
STATE ROUTE 317

P.O.T. STA. 210+00.00
STATE ROUTE 317

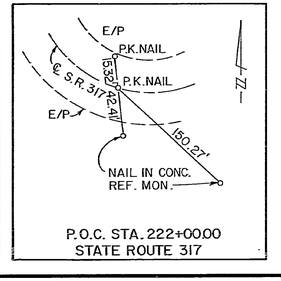
T. S. STA. 214+69.84
STATE ROUTE 317



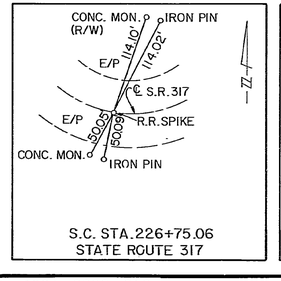
P.O.S STA. 217+93.27 S.R. 317=
P.O.T. STA. 1219+99.27 S.R. 317 CONN=
P.O.T. STA. 90+00.00 EDDIE BAUER



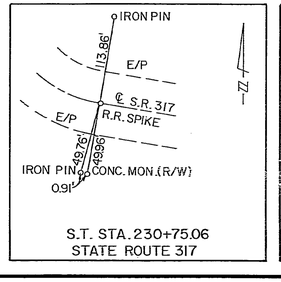
S. C. STA. 218+69.84
STATE ROUTE 317



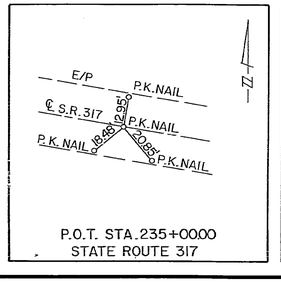
P.O.C. STA. 222+00.00
STATE ROUTE 317



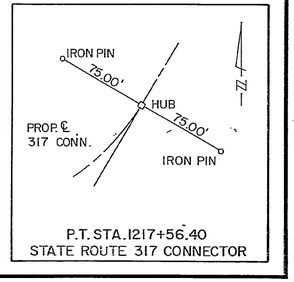
S.C. STA.226+75.06
STATE ROUTE 317



S.T. STA.230+75.06
STATE ROUTE 317



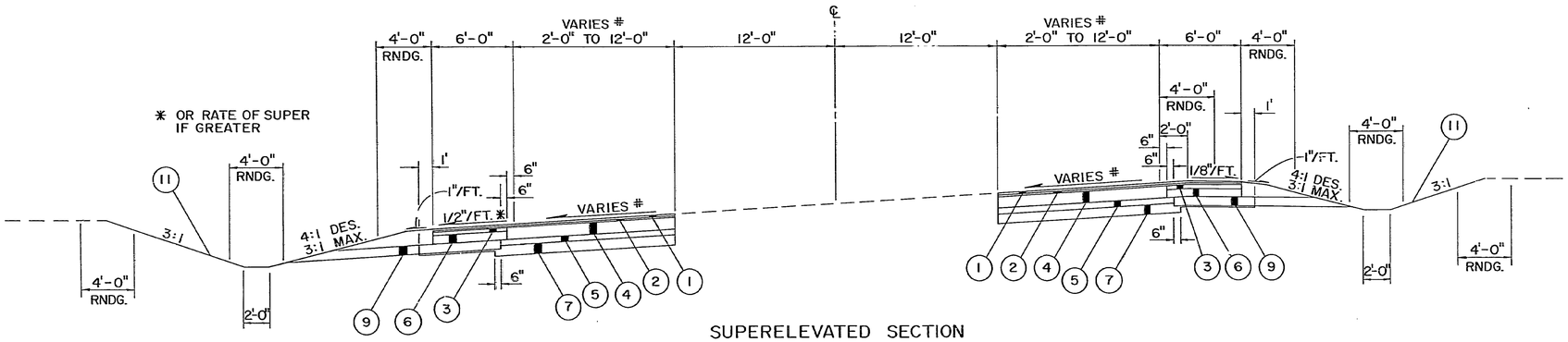
P.O.T. STA.235+00.00
STATE ROUTE 317



P.T. STA.1217+56.40
STATE ROUTE 317 CONNECTOR

CALC. BY MRD DATE 2/94	FRA-317-3.75	OHIO	3
CHK BY CMB DATE 2-94		FHWA REGION 5	58

TYPICAL SECTIONS
TYPE 404 ON 301

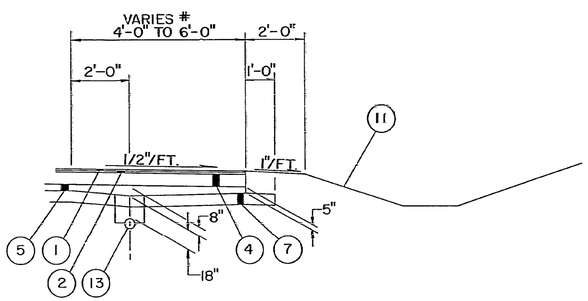


SUPERELEVATED SECTION
S.R. 317 WIDENING
LIMITING STATIONS
STA. 216+00.53 LT. TO STA. 227+50 LT. = 1,149.47 L.F.
STA. 206+35.00 RT. TO STA. 230+50 RT. = 2,415.00 L.F.
TOTAL = 3,564.47 L.F.

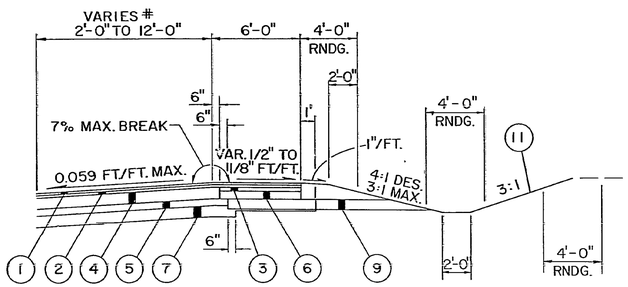
SEE PAVEMENT DETAILS FOR LIMITS.

LEGEND

1. ITEM 404 - 1-1/4" ASPHALT CONCRETE, AC-20
2. ITEM 402 - 1-3/4" ASPHALT CONCRETE, AC-20
3. ITEM 301 - 3" BITUMINOUS AGGREGATE BASE, AC-20
4. ITEM 301 - 10" BITUMINOUS AGGREGATE BASE, AC-20 (PLACED IN INITIAL LIFT OF 4" FOLLOWED BY 2 LIFTS OF 3" EACH)
5. ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN (SEE PROPOSAL NOTE)
6. ITEM 304 - 7" AGGREGATE BASE, AS PER PLAN (SEE PROPOSAL NOTE)
7. ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE
8. ITEM 605 - 4" PIPE UNDERDRAIN, AS PER PLAN (SEE SHEET NO. 4 .)
9. ITEM 605 - AGGREGATE DRAINS
10. ITEM 609 - COMBINATION CURB & GUTTER, AS PER PLAN (SEE SHT. NO. 4 .)
11. ITEM 659 - SEEDING & MULCHING
12. ITEM 304 - AGGREGATE BASE, AS PER PLAN (THICKNESS VARIES) (SEE PROPOSAL NOTE)
13. ITEM 605 - 4" PIPE UNDERDRAIN

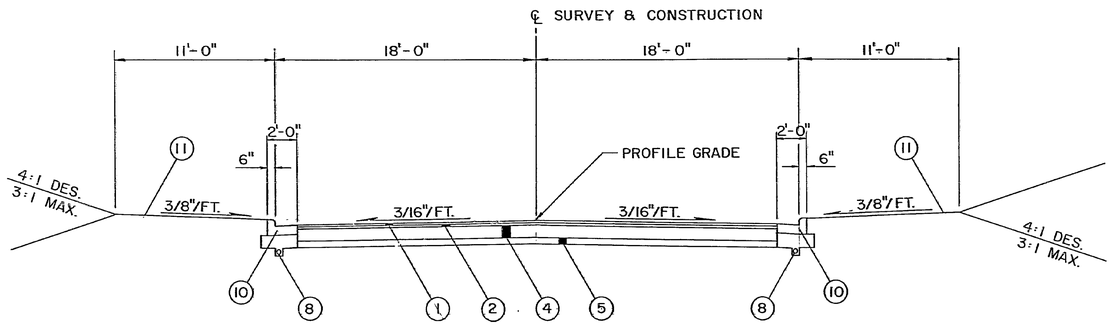


NON-CURBED
INTERSECTION SHOULDER DETAIL

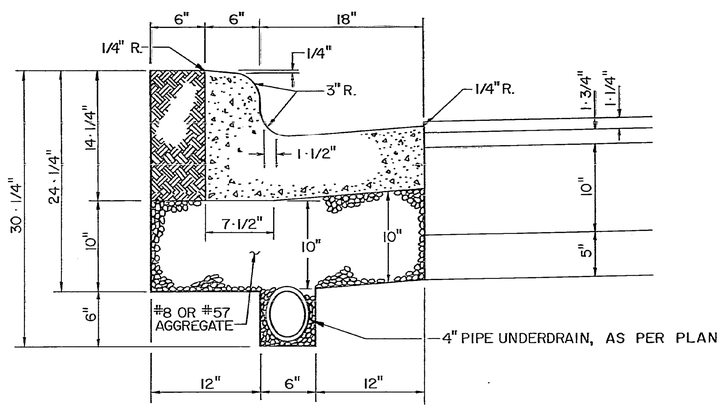


WIDENING SUPERELEVATED SECTIONS
0.059 FT./FT. OR LESS

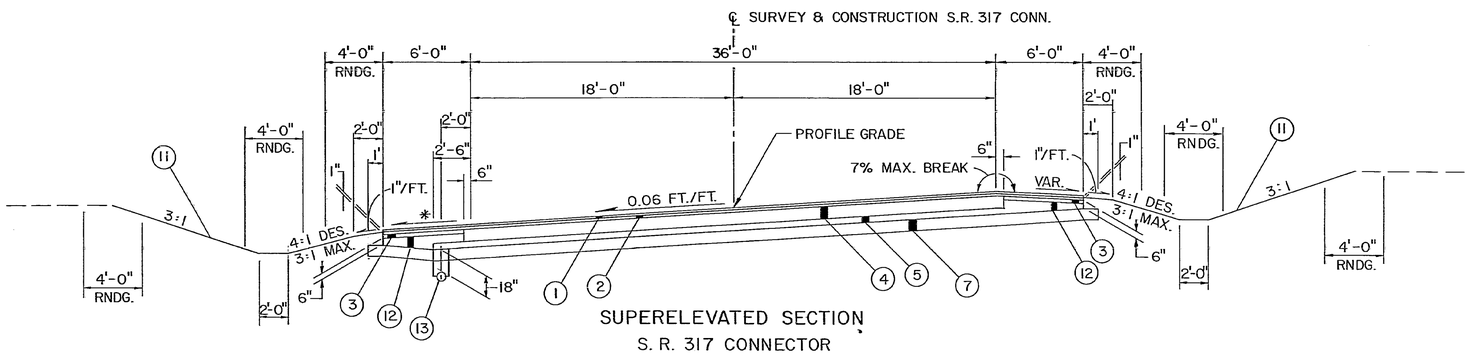
TYPICAL SECTIONS
TYPE 404 ON 301



NORMAL SECTION
EDDIE BAUER ROAD
LIMITING STATIONS
STA. 90+90.40 TO STA. 93+10.00 = 219.60 L.F.



EDDIE BAUER ROAD
CURB & GUTTER DETAIL



SUPERELEVATED SECTION
S. R. 317 CONNECTOR
LIMITING STATIONS
STA. 1218+75.00 TO STA. 1219+01.93 = 26.93 L.F.

* 1/2"/FT. OR RATE OF SUPERELEVATION WHICHEVER IS GREATER

REF.	STATION FROM	STATION TO	SIDE	DRAINAGE AREA ACRES	SEDIMENT BASIN SIZE	207 TEMP. SEDIMENT BASIN C.Y.	601 R.C.P. TYPE C W/O FILTER C.Y.	207 STRAW OR HAY BALES EACH
1-S	215+80	216+80	RT.	1.00	3' x 6' x 100'	67	1	
2-S	229+80	230+80	RT.	1.92	3.5x10' x 100'	130	1	
3-S	229+80	230+80	LT.	1.00	3' x 6' x 100'	67	1	
			BALE FILTER DIKE					
	207+00	217+00	RT.					286
	218+50	231+00	LT.					358
FOR USE AS DIRECTED BY ENGINEER								100
2 CATCH BASIN @ 8 PER BASIN								16
QUANTITIES CARRIED TO GENERAL NOTES						264	3	760

CALC. BY MEO DATE 2/94
CHKD. BY [illegible] DATE [illegible]

FRA-317-3.75

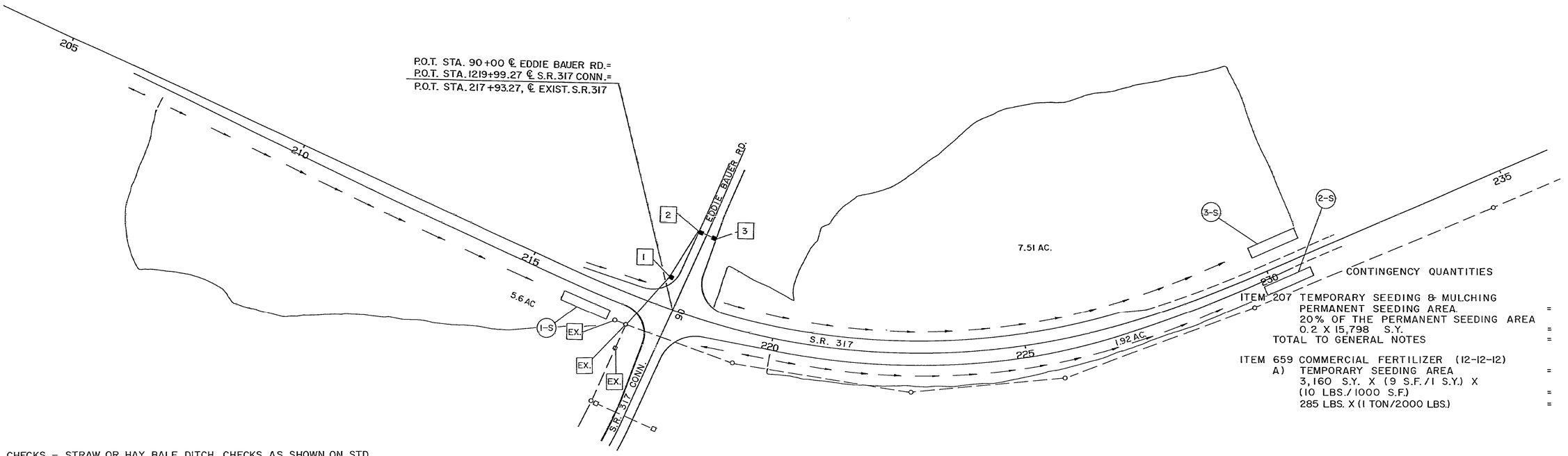
OHIO

FHWA REGION 5

5
58

STORM WATER POLLUTION PREVENTION PLAN

100 0 100 200
SCALE IN FEET



DITCH CHECKS - STRAW OR HAY BALE DITCH CHECKS AS SHOWN ON STD. DWG. MC-11 SHALL BE SPECIFIED WITH SMALL PITS EXCAVATED BEHIND THEM AT ALL SPECIFIC CHANGES IN DITCH GRADE. DITCH CHECKS SHOULD BE SPACED SO THAT NO CHECK IS WITHIN THE BACKWATER OF A DOWN STREAM CHECK. ALL STRAW OR BALE LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.

QUANTITIES FOR THE DITCH CHECKS HAVE NOT BEEN SHOWN ON THE STORM WATER POLLUTION PREVENTION PLAN. AN ESTIMATED QUANTITY OF 100 STRAW OR HAY BALES TO PROVIDE FOR THE DITCH CHECKS HAS BEEN INCLUDED ON THIS SHEET

DITCHES SHALL BE STABILIZED IMMEDIATELY UPON CONSTRUCTION.

ITEM 207 TEMPORARY DITCH PROTECTION
25% OF PERMANENT DITCH EROSION PROTECTION
0.25 X 724 S.Y. 181 S.Y.

CONTINGENCY QUANTITIES

ITEM 207 TEMPORARY SEEDING & MULCHING
PERMANENT SEEDING AREA. = 15,798 S.Y.
20% OF THE PERMANENT SEEDING AREA
0.2 X 15,798 S.Y. = 3,160 S.Y.
TOTAL TO GENERAL NOTES = 3,160 S.Y.

ITEM 659 COMMERCIAL FERTILIZER (12-12-12)
A) TEMPORARY SEEDING AREA = 3,160 S.Y.
3,160 S.Y. X (9 S.F./1 S.Y.) X
(10 LBS./1000 S.F.) = 285 LBS.
285 LBS. X (1 TON/2000 LBS.) = 0.14 TONS

TOTAL = 0.14 TONS
TOTAL TO GENERAL NOTES 1.0 TONS

ITEM 659 REPAIR SEEDING & MULCHING
5% OF THE PERMANENT SEEDING AREA
0.05 X 15,798 S.Y. = 790 S.Y.
TOTAL TO GENERAL NOTES = 790 S.Y.

ITEM 659 WATER
3,160 S.Y. X(9 S.F./1 S.Y.) X
(240 GAL./1000 S.F.) = 6,826 GAL.
= 7M. GAL.
TOTAL TO GENERAL NOTES = 7M. GAL.

ITEM 659 MOWING
25% OF THE PERMANENT SEEDING AREA
0.25 X 15,798 S.Y. = 3,950 S.Y.
3,950 S.Y. X (9 S.F./1 S.Y. = 35,550 S.F.
= 36M. S.F.
TOTAL TO GENERAL NOTES = 36M. S.F.

GENERAL NOTES

UTILITY OWNERSHIP

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

AMERITECH
ROOM 6F
150 E. GAY STREET
COLUMBUS, OHIO 43215
(614) 223-8535

SOUTH CENTRAL POWER CO.
2780 COONPATH ROAD, N.E.
POST OFFICE BOX 250
LANCASTER, OHIO 43130
(614) 653-4422

COLUMBIA GAS OF OHIO
939 W. GOODALE BLVD.
COLUMBUS, OHIO 43215
(614) 460-2079

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS SECTIONS, EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

UNDERGROUND UTILITIES

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

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK 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 FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

U.S.G.S. DATUM

ALL ELEVATIONS ARE BASED ON THE FOLLOWING N.G.S. BENCH MARKS, AND ARE BASED ON THE 1929 NATIONAL GEODETIC VERTICAL DATUM:

1. G188 ELEV. 739.93 FT. M.S.L.
2. J188 ELEV. 739.349 FT. M.S.L.

WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS. AS PER 659.09:

659	WATER	33 M. GAL.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SEEDING AND MULCHING

SEEDING AND MULCHING SHALL BE APPLIED TO ALL EXPOSED SOIL IN AN AREA THAT EXTENDS FROM 10.0 FEET BEYOND THE WORK LIMITS TO THE EDGE OF PROPOSED PAVED SHOULDER OR CURB & GUTTER. QUANTITY CALCULATIONS FOR ITEM 659, SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.

SEED BED

THE INTENT OF THIS NOTE IS TO PROVIDE SEED A PROPER HABITAT TO GREMINATE AND ENCOURAGE VIGOROUS GROWTH. THEREFORE, THE REQUIREMENTS OF SECTION 659.09 OF THE SPECIFICATIONS ARE EXTENDED AS FOLLOWS.

THE CONTRACTOR SHALL PROVIDE A SEED BED FREE OF STONES AND OTHER DELETERIOUS MATERIALS. EIGHTY FIVE PERCENT OF THE SEED BED SHALL CONSIST OF GROWTH SUPPORTING MATERIAL. IF THERE ARE ANY QUESTIONS ON THE AMOUNT OF STONES OR OTHER DELETERIOUS MATERIAL THAT MAY BE CONTAINED IN THE SEED BED, THE ENGINEER MAY ORDER THAT ONE OR MORE TWO SQUARE FOOT BY FIVE INCH DEEP TEST SECTIONS BE EXCAVATED. THIS EXCAVATED MATERIAL SHALL BE PASSED THROUGH A NUMBER 10 SIEVE. IF IT IS FOUND THAT FIFTEEN PERCENT OF THE VOLUME, BY WEIGHT, OF THE TEST SECTION CONSISTS OF STONES OR OTHER DELETERIOUS MATERIALS THE SEED BED SHALL BE REJECTED.

IF THE EQUIPMENT USED TO PREPARE THE SEED BED IS NOT CAPABLE OF REMOVING THE STONES OR DELETERIOUS MATERIALS, THE CONTRACTOR SHALL HAND RAKE THE SEED BED. IF THIS DOES NOT REMOVE ADEQUATE DELETERIOUS MATERIAL FROM THE SEED BED, THE CONTRACTOR SHALL BE REQUIRED TO SUPPLEMENT THE SEED BED WITH SUITABLE MATERIAL TO PROVIDE THE PROPER SEED BED.

ALL AREAS TO BE SEEDED SHALL BE CONSIDERED URBAN IN CHARACTER AND SHALL BE SEEDED AS PER THE URBAN SEED MIX OF SECTION 659.09 OF THE SPECIFICATIONS. HAY SHALL NOT BE USED AS A MULCH ON THIS PROJECT.

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 DITCH PROTECTION	181 SQ. YD.
207	TEMPORARY SEEDING AND MULCHING	3,160 SQ. YD.
207	STRAW OR HAY BALES	760 EACH
207	TEMPORARY BENCHES, DAMS AND SEDIMENT BASINS	264 CU. YD.
601	ROCK CHANNEL PROTECTION, TYPE C W/O FILTER	3 CU. YD.
659	MOWING	36 M. SQ. FT.
659	COMMERCIAL FERTILIZER	1 TON
659	REPAIR SEEDING AND MULCHING	790 SQ. YD.
659	WATER	7 M. GAL.

ITEM 605 AGGREGATE DRAINS

AGGREGATE DRAINS SHALL BE PLACED AT FIFTY (50) FOOT INTERVALS ON EACH SIDE OF STATE ROUTE 317 WIDENING.

THE FOLLOWING QUANTITY OF ITEM 605 AGGREGATE DRAINS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 605 AGGREGATE DRAINS 1,450 LIN. FT.

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.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 202 ITEM.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO , OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

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

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

EROSION CONTROL

ITEM 660 HAS BEEN PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OR TURF OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE THIS ITEM. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THIS ITEM SHALL MEET THE REQUIREMENTS OF 108.04 .

ITEM 203 - PROOF ROLLING

PORTIONS OF THIS ROADWAY MAY BE CONSTRUCTED ON POORLY DRAINED SOILS.' ALL PREPARED SUBGRADES SHALL BE PROOF ROLLED WITH A TANDEM TRUCK LOADED WITH A MAXIMUM LEGAL LOAD WHILE IN THE PRESENCE OF THE ENGINEER WHO WILL DETERMINE THE NUMBER OF PASSES REQUIRED. AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL - LIME SOIL STABILIZED SUBGRADE

DESCRIPTION - THIS ITEM SHALL CONSIST OF AN ADMIXTURE OF HYDRATED LIME WITH THE SUBGRADE SOIL CONSTRUCTED IN ACCORDANCE WITH THIS SPECIFICATION AND/OR AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL BE MIXED, SPREAD, COMPACTED AND FINISHED BY THE CONTRACTOR READY FOR ACCEPTANCE.

MATERIALS - HYDRATED LIME SHALL MEET THE REQUIREMENTS PRESCRIBED IN STANDARD SPECIFICATION FOR HYDRATED LIME FOR MASONRY, A.S.T.M. DESIGNATION C-207-49, TYPE N FOR CHEMICAL COMPOSITION, RESIDUE, SAMPLING, INSPECTION AND METHOD OF TEST. (SECTION 3-B, 4 AND 5 ARE NOT RELEVENT TO THE INTENDED USAGE.) THE QUANTITY USED SHALL BE BETWEEN 3 AND 8 PERCENT BY WEIGHT OF THE SUBGRADE SOIL AS DIRECTED BY THE ENGINEER.

CONSTRUCTION METHODS - LIME STABILIZATION WORK SHALL BE DONE WHEN THE AIR TEMPERATURE IS 40 DEGREES FAHRENHEIT OR ABOVE, AND THE MATERIAL TO BE TREATED IS NOT FROZEN. WORK SHALL NOT BE DONE DURING WET OR UNSUITABLE WEATHER. THE GRADE IN THE AREAS TO BE STABILIZED WITH LIME SHALL BE SHAPED PRIOR TO ADMIXTURE OF LIME SO AS TO PERMIT CONSTRUCTION OF A UNIFORM COMPACTED COURSE OF LIME TREATED SOIL OF THE THICKNESS SHOWN BELOW. THE LIME SHALL THEN BE APPLIED AT THE RATE SET BY THE ENGINEER USING APPROVED SLURRY METHODS. CARE SHALL BE EXERCISED DURING THE SPREADING AND MIXING OPERATION TO PERVENT EXCESSIVE LOSS OF LIME BY DUSTING. THE SPREADING OF THE LIME SLURRY SHALL BE FOLLOWED IMMEDIATELY BY AN INITIAL MIXING OPERATION. WATER SHALL BE ADDED, IF NECESSARY, TO BRING THE MIXED MATERIAL TO OPTIMUM MOISTURE. MIXING SHALL BE CONTINUED UNTIL THE LIME HAS BEEN THOROUGHLY INCORPORATED INTO THE MIX AND ALL SOIL CLODS HAVE REDUCED TO A MAXIMUM OF 2 INCHES.

FOLLOWING THE INITIAL MIXING, THE MATERIAL SHALL BE LIGHTLY COMPACTED WITH A STEEL-WHEELED OR PNEUMATIC-TIRED ROLLER TO SEAL IT AGAINST RAIN OR EXCESSIVE DRYING. THE PARTIALLY MIXED MATERIAL SHALL STAND FOR A PERIOD OF NOT LESS THAN 24 HOURS NOR MORE THAN 7 DAYS BEFORE FINAL MIXING. IF MORE THAN 7 DAYS ELAPSE BETWEEN INITIAL COMPACTION, AN ADDITIONAL 1/2 PERCENT OF LIME SHALL BE ADDED DURING THE FINAL MIXING. THE ADDED LIME SHALL BE FURNISHED AT THE CONTRACTOR'S EXPENSE UNLESS THE DELAY BEYOND THE 7 DAY LIMIT IS CAUSED BY CONDITIONS BEYOND THE CONTROL OF THE CONTRACTOR. THE FINAL MIXING SHALL BE DONE WITH APPROVED POWER DRIVEN ROTARY TYPE EQUIPMENT UNTIL THE SOIL HAS BECOME COMPLETELY PULVERIZED WITH ALL CLODS REDUCED TO A MAXIMUM SIZE OF ONE INCH AND AT LEAST 60 PERCENT OF THE CLODS REDUCED TO SUCH A SIZE THAT THEY WILL PASS A NUMBER 4 SIEVE. MIXING SHALL CONTINUE UNTIL THE LIME HAS BEEN UNIFORMLY DISTRIBUTED THROUGH THE PULVERIZED SOIL. THE MIXTURE SHALL AGAIN BE BROUGHT TO OPTIMUM MOISTURE DURING THE FINAL MIXING, AND THE MIXTURE SHALL THEN BE SHAPED AND COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 203.13 EXCEPT THAT ON THIS PROJECT, SOILS WITH MAXIMUM LABORATORY DRY WEIGHTS OF NOT LESS THAN 90 POUNDS WILL BE PERMITTED IN THE SUBGRADE AND SHOULD BE COMPACTED TO 100 PERCENT OF LABORATORY MAXIMUM DRY WEIGHT. FINAL ROLLING SHALL BE DONE WITH A STEEL-WHEELED ROLLER MEETING THE REQUIREMENTS OF SECTION 401.11. THE COMPACTED LIME SOIL MIXTURE SHALL BE SHAPED TO PLAN LINES WITHIN TOLERANCES SET UP IN SECTION 203.06 FOR SUBGRADES OR AS DIRECTED BY THE ENGINEER.

THE COMPACTED LIME STABILIZED MIXTURE SHALL CURE FOR A MINIMUM OF 5 DAYS PRIOR TO PLACEMENT OF ANY EMBANKMENT OR SUBBASE MATERIALS. DURING THE CURING PERIOD OR PERIODS OF HOT/DRY WEATHER AND/OR AS DIRECTED BY THE ENGINEER THE SURFACE SHALL BE LIGHTLY SPRINKLED TO PREVENT EXCESSIVE MOISTURE LOSS. DURING THE CURING PERIOD, HEAVY EQUIPMENT SHOULD BE KEPT OFF THE COMPACTED LIME STABILIZED MIXTURE. THE COMPACTED LIME STABILIZED MIXTURE SHALL BE COVERED BY THE EMBANKMENT OR SUBBASE MATERIALS WITHIN FOUR WEEKS OF THE FINAL MIXING OPERATION, OR PROTECTED BY A BITUMINOUS PRIME COAT AT NO ADDITIONAL COST TO THE COUNTY IF MORE THAN FOUR WEEKS ELAPSE BEFORE PLACING THE EMBANKMENT OR SUBBASE MATERIALS. THE BITUMINOUS PRIME COAT SHALL CONSIST OF 0.2 GALLON PER SQUARE YARD OF 702.02 RC-70 OR RC-250, OR 702.04 RS-1.

MEASUREMENT AND PAYMENT - THE QUANTITIES TO BE PAID FOR ARE AS FOLLOWS:

A.	ITEM SPECIAL, 9" LIME-SOIL STABILIZED SUBGRADE	8,140 SQ. YD.
B.	ITEM SPECIAL, HYDRATED LIME	90 TON
C.	ITEM 616, WATER	25 M. GAL.

PAYMENT FOR THE ABOVE ITEMS SHALL INCLUDE FULL COMPENSATION FOR FURNISHING LIME AND WATER, HAULING, SCARIFYING, BLADING, SPREADING, MIXING, SHAPING AND COMPACTING LIME WITH SOIL, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTIALS NECESSARY TO COMPLETE THIS ITEM.

WATER USED TO PRODUCE THE LIME SLURRY SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "LIME SOIL STABILIZED SUBGRADE". WATER, IF NEEDED TO BRING THE LIME SOIL MIXTURE TO OPTIMUM, SHALL BE MEASURED AND PAID FOR IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 616.

ALL QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY.

GENERAL NOTES

FARM DRAINS

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE CONSTRUCTION LIMITS BY ITEM 603 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF THE ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 603 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 603, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

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

ITEM 601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	10 CU. YD.
ITEM 603	6" CONDUIT, TYPE E	100 LIN. FT.
ITEM 603	6" CONDUIT, TYPE F*	100 LIN. FT.
ITEM 603	12" TYPE C, 706.02	100 LIN. FT.
ITEM 603	18" TYPE B, 706.02	200 LIN. FT.
ITEM 603	18" TYPE C, 706.02	100 LIN. FT.

* 707.17 NONPERFORATED, ASTM 3034 SDR 35, SS931 OR SS 944

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.

TOPSOIL TO BE REMOVED AND STOCKPILED

EXISTING TOPSOIL TO BE REMOVED AND STOCKPILED AS INDICATED ON THE CROSS SECTIONS SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 651 - TOPSOIL STOCKPILED. THE RESULTING EXCAVATED AREA SHALL BE BACKFILLED PER THE REQUIREMENTS OF ITEM 203. THIS WORK SHALL BE INCLUDED FOR PAYMENT IN ITEM 203 EMBANKMENT.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES AND/OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THIS PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATION UNDER THIS ITEM SHALL BE FOLLOWED AND ALL COSTS INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

SAWCUTTING PAVEMENT

WHERE SAWCUTTING IS INDICATED ON THE PLANS, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A SMOOTH, EVEN, FULL DEPTH SAWCUT AT THE LIMITS OF THE PAVEMENT AREA DESIGNATED BY THE ENGINEER. PAVEMENT TO BE DISPOSED OF SHALL BE REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT AND SUBBASE TO REMAIN IN PLACE.

PAYMENT FOR ALL OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION.

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A TYPE A FIELD OFFICE HAVING A MINIMUM OF 400 SQ. FT. OF FLOOR SPACE. KEROSENE HEATERS SHALL NOT BE USED AS A HEAT SOURCE. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 619 - FIELD OFFICE, TYPE A.

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.

AT THE CONTRACTOR'S OPTION, CRUSHED CONCRETE OBTAINED FROM CONCRETE PAVEMENT ON THIS PROJECT OR PROJECTS CONSTRUCTED UNDER ODOT SPECIFICATIONS MAY BE USED FOR ITEM 304 AGGREGATE BASE. ALL CRUSHED CONCRETE PASSING THE NO. 4 SIEVE SHALL BE REPLACED BY MATERIAL OBTAINED FROM APPROVED SOURCES. THE RECYCLED CONCRETE PAVEMENT SHALL NOT CONTAIN MORE THAN 1.0% RECYCLED ASPHALT PAVEMENT. ALL OTHER REQUIREMENTS OF 304 AND 703.04 SHALL APPLY.

MAINTENANCE OF TRAFFIC - GENERAL NOTES

ITEM 614 - MAINTAINING TRAFFIC

GENERAL

IN ADDITION TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND ITEM 614 THE FOLLOWING REQUIREMENTS SHALL APPLY:

DURING THE PROJECT ALL PHASES OF WORK SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE MOTORIST.

UNLESS OTHERWISE INDICATED IN THESE PLANS, ALL WORK REQUIRED FOR TRAFFIC MAINTENANCE SHALL BE INCLUDED WITH PAYMENT FOR ITEM 614 MAINTAINING TRAFFIC.

BEFORE ANY WORK IS STARTED ON THIS PROJECT, THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF OPERATIONS IN WRITING TO THE ENGINEER FOR APPROVAL. THE SCHEDULE OF OPERATIONS SHALL BE IN ACCORDANCE WITH THE APPROVED SEQUENCE OF CONSTRUCTION. AFTER RECEIVING A COPY OF THE APPROVED SCHEDULE OF OPERATION THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMIT FOR ANY CLOSURES. A COPY OF THE PERMIT SHALL BE RETAINED ON THE JOB AT ALL TIMES.

THE CONTRACTOR SHALL NOTIFY THE COUNTY ENGINEER'S TRAFFIC DEPARTMENT AT 462-5316 TWO WEEKS PRIOR TO BEGINNING WORK AND WEEKLY THEREAFTER TO DISCUSS ANY CHANGES TO THE MAINTENANCE OF TRAFFIC PLAN AND/OR COMPLETION DATE. BEFORE WORK IS STARTED ON THIS PROJECT THE CONTRACTOR SHALL SUBMIT A WRITTEN SCHEDULE OF OPERATION AND A TRAFFIC MAINTENANCE CONTROL PLAN FOR APPROVAL. NO WORK SHALL BE STARTED THAT WILL RESTRICT ANY LANE USAGE UNLESS IT IS THE INTENT OF THE CONTRACTOR TO WORK FULL TIME WITH A FULL FORCE IN ORDER TO COMPLETE THE WORK WITH NO UNNECESSARY DELAYS.

ALL CONSTRUCTION SIGNS, BARRICADES, VERTICAL PANELS AND DRUMS SHALL CONFORM TO OMUTCD AND THE LATEST REVISION OF ODOT CONSTRUCTION AND MATERIAL SPECIFICATION.

ALL CONSTRUCTION SIGNAGE SHALL BE INSTALLED AND COVERED BEFORE CONSTRUCTION SHALL BEGIN. AFTER CONSTRUCTION SIGN INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE FRANKLIN COUNTY TRAFFIC ENGINEER AT 462-5316 THREE WORKING DAYS BEFORE WORK BEGINS AND REQUEST AN INSPECTION OF ALL SIGNAGE.

FACES OF CONSTRUCTION SIGNS, BARRICADES, VERTICAL PANELS AND DRUM BANDS SHALL BE REFLECTORIZED WITH TYPE G (HIGH INTENSITY) SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19 AND IN GOOD CONDITION IN CONFORMANCE WITH "QUALITY STANDARDS FOR WORK ZONE TRAFFIC CONTROL DEVICES" PUBLISHED BY ATSSA. ALL SHEETING WILL BE TESTED FOR REFLECTIVITY PER FEDERAL PRACTICE 85.

REQUIRED REFLECTANCE FOR TYPE III SHEETING
(Candelas Per Footcandle Per Square Foot)

Observation Angle	Entrance Angle	White	Red	Orange	Yellow	Green	Blue
0.2	-4	250	45.0	100	170	45.0	20.0
0.2	30	95	13.3	26	64	11.4	7.6
0.5	-4	200	28.0	56	136	24.0	18.0
0.5	30	65	10.0	25	45	10.0	5.0

MAINTENANCE OF ALL CONTRACTOR SUPPLIED SIGNS, BARRICADES, VERTICAL PANELS AND DRUMS IS THE CONTRACTOR'S RESPONSIBILITY. IF THE CONTRACTOR FAILS TO CORRECT DEFICIENCIES WITHIN FOUR HOURS OF NOTIFICATION, FRANKLIN COUNTY SHALL CORRECT OR HIRE SOMEONE TO CORRECT THE DEFICIENCIES. THE CONTRACTOR SHALL THEN BE BACK CHARGED PER ODOT SPECIFICATION 614.04. IN THE CASE THAT BACK CHARGING THE CONTRACTOR IS NOT APPLICABLE, THE COUNTY WILL RECIND AND WITHHOLD ALL PERMITS ISSUED TO THE CONTRACTOR TO WORK WITHIN COUNTY RIGHT OF WAY UNTIL THE ISSUE IS SETTLED.

THESE PROVISIONS SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF ANY OF HIS LEGAL RESPONSIBILITIES OR LIABILITIES FOR THE SAFETY OF THE PUBLIC.

ALL BARRICADES AT CLOSURES SHALL HAVE YELLOW TYPE C STEADY BURN LIGHTS. ALL DRUMS SHALL HAVE YELLOW TYPE C STEADY BURN LIGHTS. ALL SIGNS NINE SQUARE FEET (36"x36") AND OVER SHALL HAVE YELLOW TYPE A LOW INTENSITY FLASHING WARNING LIGHTS AND THREE FLAGS.

DRUMS SHALL BE PLACED AS FOLLOWS: 25' C/C ON TANGENTS, 15' C/C ON TAPERS, AND 8' C/C ON RADII.

FULL ROAD CLOSURES SHALL CONFORM TO MT-101.60 WITH TYPE C WARNING LIGHTS IN LIEU OF TYPE B LIGHTS. IF FULL CLOSURE IS NOT PRACTICAL, ENOUGH TYPE III BARRICADES SHALL BE PROVIDED TO CLOSE ALL LANES AS DIRECTED BY THE ENGINEER.

ALL PAVEMENT MARKINGS, WHETHER TEMPORARY OR PERMANENT, SHALL BE COMPLETE BEFORE ANY SECTION OF THE PROJECT IS OPENED TO TRAFFIC.

PLACEMENT OF CHANNELIZING DEVICES

CHANNELIZING DEVICES USED AS BARRICADES SHALL BE PLACED ON THE ADJACENT TRAFFIC SURFACE, PROVIDED THAT A MINUMUM LANE WIDTH OF ELEVEN (11) FEET IS MAINTAINED IN THE ADJACENT TRAFFIC SURFACE. OTHERWISE, CHANNELIZING DEVICES SHALL BE PLACED OFF OF BUT ADJACENT TO THE EDGE OF PAVEMENT.

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, 761, AND 733.

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 OR BARRICADES 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 THE APPROVAL OF THE ENGINEER.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC WHERE PRACTICAL. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE (1) AMBER FLASHING LIGHT. WHEN PARKING ALONG THE HIGHWAY, THE EQUIPMENT SHALL BE PARKED EITHER A MINIMUM OF THIRTY (30) FEET FROM THE EDGE OF THE PAVEMENT OR SIX (6) FEET BEHIND GUARDRAIL WITH A MINIMUM OF 125 FEET OF GUARDRAIL PRECEEDING THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA.

ROADWAY MAINTENANCE

THE PURPOSE OF THIS NOTE IS TO DEFINE THE CONTRACTOR'S MAINTENANCE RESPONSIBILITIES DURING THE LIFE OF THE CONTRACT. THE CONTRACTOR SHALL, THEREFORE, BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PORTIONS OF THE ROADWAY WITHIN HIS "WORK AREA" FROM THE TIME HE MOVES INTO THIS AREA AND UNTIL THE TIME OF FINAL INSPECTION AND ACCEPTANCE BY THE FRANKLIN COUNTY ENGINEER. THIS SHALL INCLUDE WEEKENDS, AND ANY TIME BEYOND NORMAL WORKING HOURS. THE ROADWAY AREA SHALL BE KEPT IN AN ACCEPTABLE LEVEL OF MAINTENANCE AS DETERMINED BY THE ENGINEER.

A "WORK AREA" IS DEFINED AS ANY AREA THAT THE CONTRACTOR HAS OCCUPIED OR IS OCCUPYING TO PERFORM ANY ITEM OF WORK. ONCE THE CONTRACTOR HAS OCCUPIED A "WORK AREA" TO PERFORM ANY ITEM OF WORK, HE SHALL BE RESPONSIBLE FOR MAINTAINING THE ROADWAY IN A SATISFACTORY CONDITION AND TO A STANDARD ACCEPTABLE TO THE ENGINEER. NECESSARY REPAIRS IN A TRAVELED LANE SHALL BE REPAIRED IMMEDIATELY, OTHERWISE IT SHALL BE REPAIRED PRIOR TO OPENING THE LANE TO TRAFFIC.

TEMPORARY DRAINAGE

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE TEMPORARY POSITIVE DRAINAGE MEASURES THROUGHOUT THE DURATION OF THE CONSTRUCTION, INCLUDING SHUTDOWN PERIODS. THE COST OF THIS WORK WILL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

CONFLICTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL EXISTING CONFLICTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 641.10. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

TEMPORARY RAISED PAVEMENT MARKERS

TEMPORARY RAISED PAVEMENT MARKERS ARE TO BE PLACED ON ALL TEMPORARY CENTER LINES, TEMPORARY LANE LINES AND TEMPORARY EDGE LINES, EXCEPT WHERE NOTED IN THESE PLANS, SPACED AT 25' C/C. TEMPORARY RAISED PAVEMENT MARKERS ARE TO BE STIMSONITE SYSTEM 66, OR APPROVED EQUAL. PAYMENT FOR THE TEMPORARY RAISED PAVEMENT MARKERS, PLACEMENT, REPLACEMENT, REMOVAL, AND RELOCATION INCLUDING ALL LABOR AND INCIDENTIALS SHALL BE MADE AT THE CONTRACT BID PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

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 FRANKLIN COUNTY ENGINEER.

CALC. BY DATE	
CHKD BY DATE	

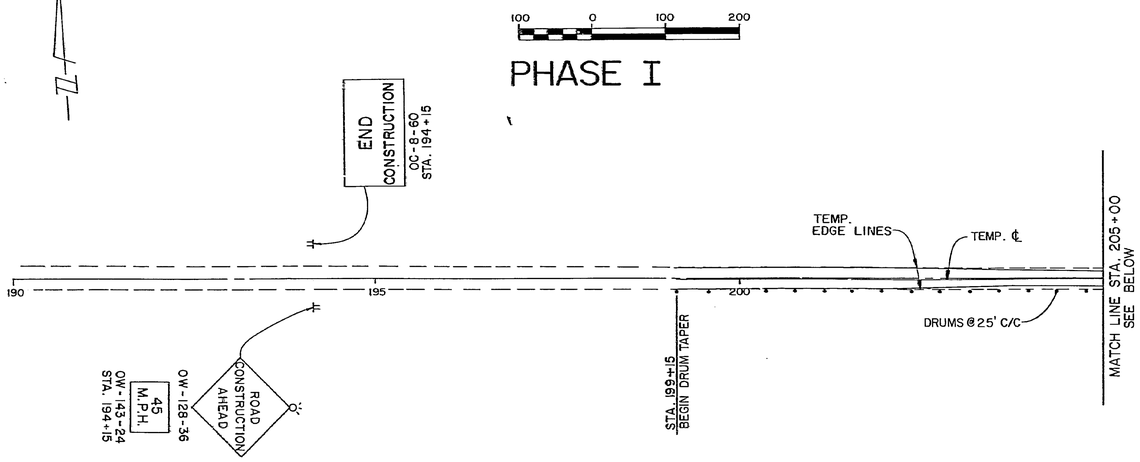
FRA-317-3.75

OHIO

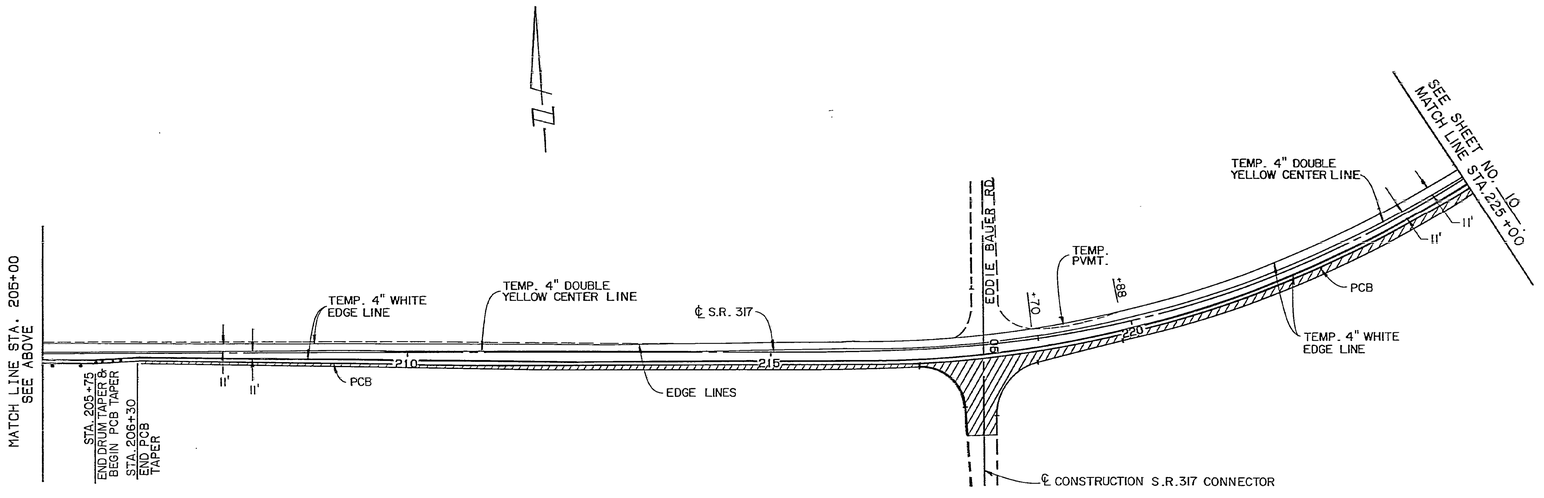
FHWA REGION 5

9
58

MAINTENANCE OF TRAFFIC



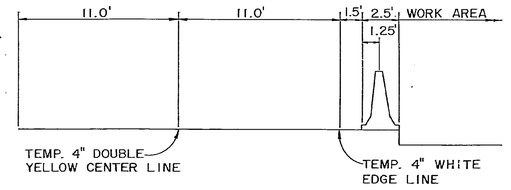
FOR WORK AREA TYPICAL SECTION SEE THIS SHEET



ESTIMATED QUANTITIES
PHASE I

ITEM 614	TEMPORARY CENTER LINES, CLASS I, 740.05 TYPE C	0.63	MILES
ITEM 614	TEMPORARY EDGE LINES, CLASS I, 740.05 TYPE C	1.25	MILES
ITEM 622	PORTABLE CONCRETE BARRIER, 32-IN.	2,485	L.F.
ITEM 614	BARRIER REFLECTORS, TYPE B	50	EACH
ITEM 615	TEMPORARY PAVEMENT, CLASS A	50	S.Y.
ITEM 614	SIGNS, FLAT SHEET	46	S.F. (FOR INFORMATION ONLY)

QUANTITIES CARRIED TO SHEET NO. 18 & 20 .



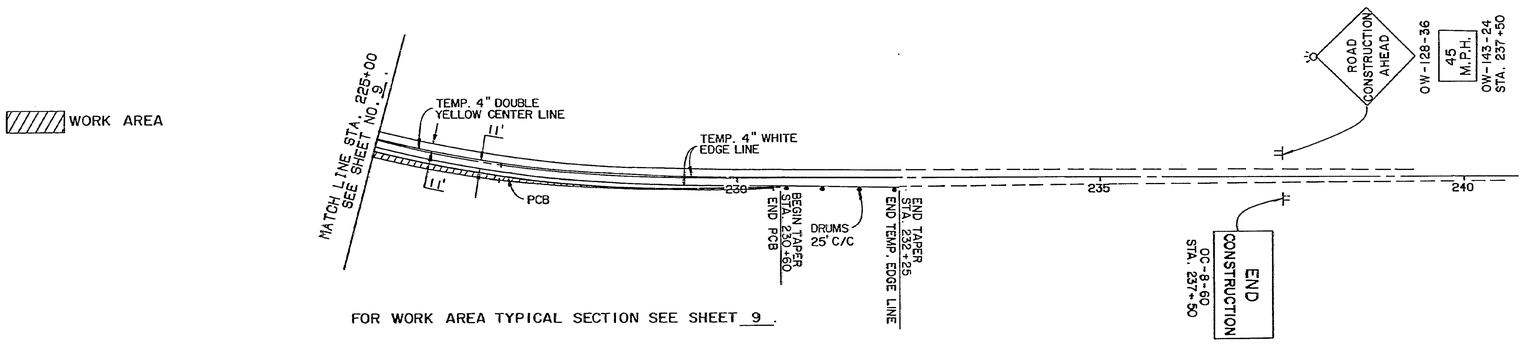
WORK AREA TYPICAL SECTION

CALC. BY DATE 2/94 MRD	FRA-317-3.75	OHIO	10
CHKD BY DATE 2-94		FHWA REGION 5	58

MAINTENANCE OF TRAFFIC

100 0 100 200

PHASE I



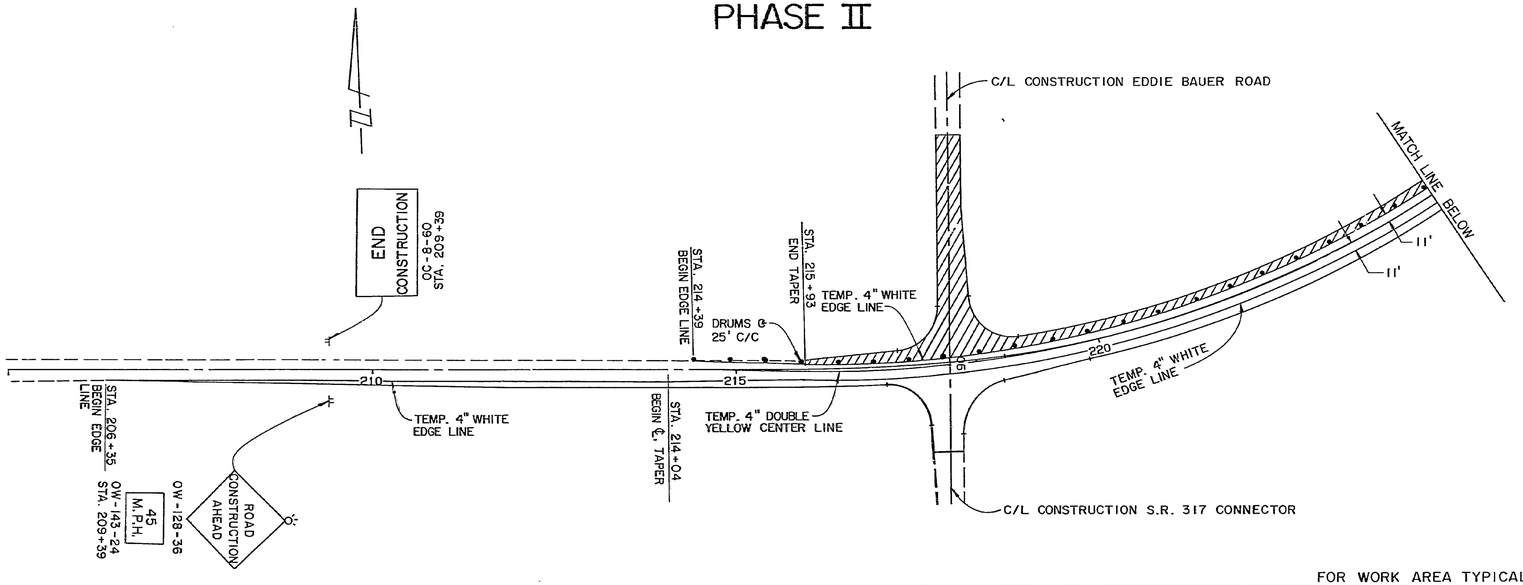
FOR WORK AREA TYPICAL SECTION SEE SHEET 9.

CALC. BY DATE 2/94 MRD	FRA-317-3.75	OHIO
CHKD BY DATE BHC 2-94		FHWA REGION 5

MAINTENANCE OF TRAFFIC

100 0 100 200

PHASE II



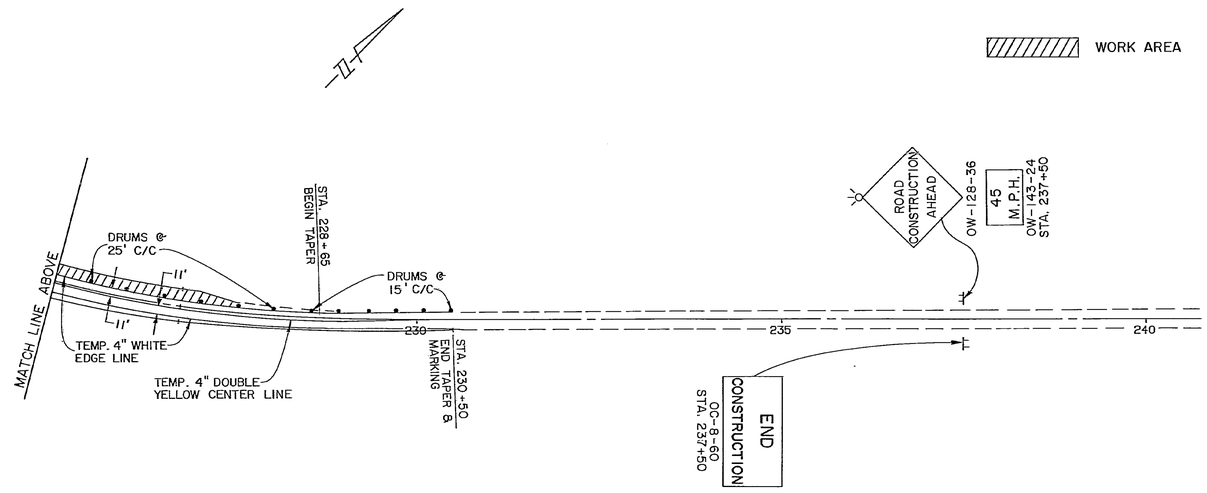
FOR WORK AREA TYPICAL SECTION SEE THIS SHEET

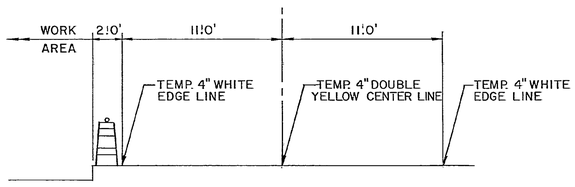
ESTIMATED QUANTITIES
PHASE II

ITEM 614	TEMPORARY CENTERLINE, CLASS I, 740.05 TYPE C	0.31 MILES
ITEM 614	TEMPORARY EDGE LINES, CLASS I, 740.05 TYPE C	0.76 MILES

QUANTITIES CARRIED TO SHEET NO. 20.

ITEM 614 SIGNS, FLAT SHEET 46 S.F. (FOR INFORMATION ONLY)





WORK AREA
TYPICAL SECTION

PAVEMENT CALCULATIONS

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 404 - ASPHALT CONCRETE, AC-20	C.Y.	CU. YD.
PAVEMENT		
STATE ROUTE 317		
STA. 206+35.00 TO STA. 211+85.00, RT.		
550.0 L.F. X (2.0' + 12.0' /2) = 3,850.0 S.F.		
STA. 211+85.00 TO STA. 218+64.88, RT.		
679.88 L.F. X 12.0' = 8,158.6 S.F.		
STA. 218+64.88 TO STA. 219+82.27, RT.		
120.0 L.F. X (20.26' + 12.0' /2) = 1,935.6 S.F.		
STA. 219+82.27 TO STA. 225+00.00, RT.		
517.73 L.F. X 12.0' = 6,212.8 S.F.		
STA. 225+00.00 TO STA. 230+50.00, RT.		
550.0 L.F. X (12.0' + 2.0' /2) = 3,850.0 S.F.		
STA. 218+92.18 TO STA. 227+00.00, LT.		
807.82 L.F. X 12.0' = 9,693.8 S.F.		
STA. 227+00.00 TO STA. 227+50.00, LT.		
50.0 L.F. X (12.0' + 2.0' /2) = 350.0 S.F.		
TOTAL = 34,050.6 S.F.		
34,050.6 S.F. X (1-1/4" /12) /27 =	131.4	
EDDIE BAUER ROAD		
INTERSECTION = 6,859.0 S.F.		
STA. 90+76.56 TO STA. 90+90.40, LT.		
13.84 L.F. X 16.5' = 228.4 S.F.		
STA. 90+90.40 TO STA. 92+10.40, RT.		
120.0 L.F. X (26.0' + 16.5' /2) = 2,550.0 S.F.		
STA. 90+90.40 TO STA. 92+10.40, LT.		
120.0 L.F. X 16.5' = 1,980.0 S.F.		
STA. 92+10.40 TO STA. 93+10.00, LT. & RT.		
99.60 L.F. X 33.0' = 3,286.8 S.F.		
TOTAL = 14,904.2 S.F.		
14,904.2 S.F. X (1-1/4" /12) /27 =	57.5	

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM 404 - ASPHALT CONCRETE, AC-20 (CONT.)	C.Y.	CU. YD.
STATE ROUTE 317 CONNECTOR		
INTERSECTION = 5,195.6 S.F.		
STA. 1218+75.00 TO STA. 1219+01.93, RT.		
26.93 L.F. X 18.0' = 484.7 S.F.		
STA. 1218+75.00 TO STA. 1219+13.88, LT.		
38.88 L.F. X (23.4' + 26.0' /2) = 960.3 S.F.		
= 6,640.6 S.F.		
6,640.6 S.F. X (1-1/4" /12) /27 =	25.6	
PAVED SHOULDER		
STATE ROUTE 317		
STA. 206+35.00 TO STA. 217+03.89, RT.		
1,068.89 L.F. X 6.0' = 6,413.3 S.F.		
STA. 216+00.53 TO STA. 217+20.53, LT.		
120.0 L.F. X 6.0' = 720.0 S.F.		
STA. 218+64.88 TO STA. 230+50.00, RT.		
1,185.12 L.F. X 6.0' = 7,110.7 S.F.		
STA. 218+92.18 TO STA. 227+50.00, LT.		
857.82 L.F. X 6.0' = 5,146.9 S.F.		
TOTAL = 19,390.9 S.F.		
19,390.9 S.F. X (1-1/4" /12) /27 =	71.8	
STATE ROUTE 317 CONNECTOR		
STA. 1218+75.00 TO STA. 1219+01.93, RT.		
26.93 L.F. X 6.0' = 161.6 S.F.		
STA. 1218+75.00 TO STA. 1219+13.88, LT.		
38.88 L.F. X 6.0' = 233.3 S.F.		
TOTAL = 394.9 S.F.		
394.9 S.F. X (1-1/4" /12) /27 =	1.5	

PAVEMENT CALCULATIONS

DESCRIPTION			SUB-TOTAL	TOTAL
ITEM 404 - ASPHALT CONCRETE, AC-20 (CONT.)			C.Y.	CU. YD.
SHOULDERS IN RADIUS RETURNS (FULL DEPTH)				
EDDIE BAUER ROAD				
STA. 217+20.53 TO STA. 90+76.56				
91.37 L.F. X (6.0' + 4.0' /2)	=	456.8 S.F.		
STA. 90+90.40 TO STA. 218+92.18				
99.12 L.F. X (4.0' + 6.0' /2)	=	495.6 S.F.		
TOTAL	=	952.4 S.F.		
952.4 S.F. X (1-1/4" /12) /27		=	3.7	
STATE ROUTE 317 CONNECTOR				
STA. 1219+01.93 TO STA. 218+64.88				
99.93 L.F. X 6.0'	=	599.6 S.F.		
STA. 1219+13.88 TO STA. 217+03.89				
92.64 L.F. X 6.0'	=	555.8 S.F.		
TOTAL	=	1,155.4 S.F.		
1,155.4 S.F. X (1-1/4" /12) /27		=	4.5	
TOTAL ITEM 404 - ASPHALT CONCRETE, AC-20		=		299.0
GRAND TOTAL TO GENERAL SUMMARY		=		299
ITEM 402 - ASPHALT CONCRETE, AC-20			C.Y.	CU. YD.
PAVEMENT				
STATE ROUTE 317				
(FROM ITEM 404)	=	34,050.6 S.F.		
34,050.6 S.F. X (1-3/4" /12) /27		=	183.9	
PAVEMENT				
EDDIE BAUER ROAD				
(FROM ITEM 404)	=	14,904.2 S.F.		
14,904.2 S.F. X (1-3/4" /12) /27		=	80.5	

DESCRIPTION			SUB-TOTAL	TOTAL
ITEM 402 - ASPHALT CONCRETE, AC-20 (CONT.)			C.Y.	CU. YD.
STATE ROUTE 317 CONNECTOR				
(FROM ITEM 404)	=	6,640.6 S.F.		
6,640.6 S.F. X (1-3/4" /12) /27		=	35.9	
PAVED SHOULDER				
STATE ROUTE 317				
(FROM ITEM 404)	=	19,390.9 S.F.		
19,390.9 S.F. X (1-3/4" /12) /27		=	104.7	
STATE ROUTE 317 CONNECTOR				
(FROM ITEM 404)	=	394.9 S.F.		
394.9 S.F. X (1-3/4" /12) /27		=	2.1	
SHOULDERS IN RADIUS RETURNS (FULL DEPTH)				
EDDIE BAUER ROAD				
(FROM ITEM 404)	=	952.4 S.F.		
952.4 S.F. X (1-3/4" /12) /27		=	5.1	
STATE ROUTE 317 CONNECTOR				
(FROM ITEM 404)	=	1,155.4 S.F.		
1,155.4 S.F. X (1-3/4" /12) /27		=	6.2	
TOTAL ITEM 402 - ASPHALT CONCRETE, AC-20		=		418.4
GRAND TOTAL TO GENERAL SUMMARY		=		419

PAVEMENT CALCULATIONS

CALC. BY / DATE	MRD 2/94	FRA-317-3.75	OHIO
CHKD BY / DATE	[illegible] 2-94		FHWA REGION 5

14
58

DESCRIPTION		SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20		C.Y.	CU. YD.
PAVEMENT			
STATE ROUTE 317			
STA. 206+35.00 TO STA. 211+85.00, RT.			
550.0 L.F. X (2.5' + 12.5' /2)	= 4,125.0 S.F.		
STA. 211+85.00 TO STA. 218+64.88, RT.			
679.88 L.F. X 12.5'	= 8,498.5 S.F.		
STA. 218+64.88 TO STA. 219+82.27, RT.			
120.0 L.F. X (20.76' + 12.5' /2)	= 1,995.6 S.F.		
STA. 219+82.27 TO STA. 225+00.00, RT.			
517.73 L.F. X 12.5'	= 6,471.6 S.F.		
STA. 225+00.00 TO STA. 230+50.00, RT.			
550.0 L.F. X (12.5' + 2.5' /2)	= 4,125.0 S.F.		
STA. 218+92.18 TO STA. 227+00.00, LT.			
807.82 L.F. X 12.5'	= 10,097.8 S.F.		
STA. 220+00.00 TO STA. 227+50.00, LT.			
50.0 L.F. X (12.5' + 2.5' /2)	= 375.0 S.F.		
TOTAL	= 35,688.5 S.F.		
35,688.5 S.F. X (10" /12) /27	=	1,101.5	
EDDIE BAUER ROAD			
(FROM ITEM 404)	= 14,904.2 S.F.		
14,904.2 S.F. X (10" /12) /27	=	460.0	
STATE ROUTE 317 CONNECTOR			
INTERSECTION	= 5,195.6 S.F.		
STA. 1218+75.00 TO STA. 1219+01.93, RT.			
26.93 L.F. X 18.5'	= 498.6 S.F.		
STA. 1218+75.00 TO STA. 1219+13.88, LT.			
38.88 L.F. X (23.9' + 26.5' /2)	= 979.8 S.F.		
TOTAL	= 6,674.0 S.F.		
6,674.0 S.F. X (10' /12) /27	=	206.0	

DESCRIPTION		SUB-TOTAL	TOTAL
ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20 (CONT.)		C.Y.	CU. YD.
PAVED SHOULDER			
STATE ROUTE 317			
STA. 206+35.00 TO STA. 217+03.89, RT.			
1,068.89 L.F. X 5.5'	= 5,878.9 S.F.		
STA. 216+00.53 TO STA. 217+20.53, LT.			
120.0 L.F. X 5.5'	= 660.0 S.F.		
STA. 218+64.88 TO STA. 230+50.00, RT.			
1,185.12 L.F. X 5.5'	= 6,518.2 S.F.		
STA. 218+92.18 TO STA. 227+50.00, LT.			
857.82 L.F. X 5.5'	= 4,718.0 S.F.		
TOTAL	= 17,775.1 S.F.		
17,775.1 S.F. X (3" /12) /27	=	164.6	
STATE ROUTE 317 CONNECTOR			
STA. 1218+75.00 TO STA. 1219+01.93, RT.			
26.93 L.F. X 5.5'	= 148.1 S.F.		
STA. 1219+00.00 TO STA. 1219+13.88, LT.			
38.88 L.F. X 5.5'	= 213.8 S.F.		
TOTAL	= 361.9 S.F.		
361.9 S.F. X (3" /12) /27	=	3.4	
SHOULDERS IN RADIUS RETURNS (FULL DEPTH)			
EDDIE BAUER ROAD			
(FROM ITEM 404)	= 952.4 S.F.		
952.4 S.F. X (10" /12) /27	=	29.4	
STATE ROUTE 317 CONNECTOR			
(FROM ITEM 404)	= 1,155.4 S.F.		
1,155.4 S.F. X (10" /12) /27	=	35.7	
TOTAL ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20	=		2,000.6
GRAND TOTAL TO GENERAL SUMMARY	=		2,001

PAVEMENT CALCULATIONS

DESCRIPTION		SUB-TOTAL	TOTAL
ITEM 304 - AGGREGATE BASE, AS PER PLAN		C.Y.	CU. YD.
PAVEMENT			
STATE ROUTE 317			
STA. 206+35.00 TO STA. 211+85.00, RT.			
550.0 L.F. X (3.0' + 13.0' /2)	= 4,400.0 S.F.		
STA. 211+85.00 TO STA. 218+64.88, RT.			
679.88 L.F. X 13.0'	= 8,838.4 S.F.		
STA. 218+64.88 TO STA. 219+82.27, RT.			
120.0 L.F. X (21.25' + 13.0' /2)	= 2,055.6 S.F.		
STA. 219+82.27 TO STA. 225+00.00, RT.			
517.73 L.F. X 13.0'	= 6,730.5 S.F.		
STA. 225+00.00 TO STA. 230+50.00, RT.			
550.0 L.F. X (13.0' + 3.0' /2)	= 4,400.0 S.F.		
STA. 218+92.18 TO STA. 227+00.00, LT.			
807.82 L.F. X 13.0'	= 10,501.7 S.F.		
STA. 227+00.00 TO STA. 227+50.00, LT.			
50.0 L.F. X (13.0' + 3.0' /2)	= 400.0 S.F.		
TOTAL	= 37,326.2 S.F.		
37,326.2 S.F. X (6" /12) /27	=	692.0	
EDDIE BAUER ROAD			
(FROM ITEM 404)	= 14,904.2 S.F.		
14,904.2 S.F. X (6" /12) /27	=	276.0	
STATE ROUTE 317 CONNECTOR			
INTERSECTION	= 5,195.6 S.F.		
STA. 1218+75.00 TO STA. 1219+01.93, RT.			
26.93 L.F. X 20.5'	= 552.1 S.F.		
STA. 1218+75.00 TO STA. 1219+13.88, LT.			
38.88 L.F. X (25.9' + 28.5' /2)	= 1057.5 S.F.		
TOTAL	= 6,805.2 S.F.		
6,805.2 S.F. X (6" /12) /27	=	126.0	

DESCRIPTION		SUB-TOTAL	TOTAL
ITEM 304 - AGGREGATE BASE, AS PER PLAN (CONT.)		C.Y.	CU. YD.
PAVED SHOULDER			
STATE ROUTE 317			
(FROM ITEM 301)	= 17,775.1 S.F.		
17,775.1 S.F. X (7" /12) /27	=	384.0	
STATE ROUTE 317 CONNECTOR			
STA. 1218+75.00 TO STA. 1219+01.93, RT.			
26.93 L.F. X 3.79 S.F. / 27	=	3.8	
STA. 1218+75.00 TO STA. 1219+13.88, LT.			
38.88 L.F. X 3.79 S.F. / 27	=	5.5	
SHOULDERS IN RADIUS RETURNS (FULL DEPTH)			
EDDIE BAUER ROAD			
STA. 217+20.53 TO STA. 90+76.56			
91.37 L.F. X (3.25 S.F. + 2.17 S.F. /2)	=	9.2	
STA. 90+90.40 TO STA. 218+92.18			
99.12 L.F. X (2.17 S.F. + 3.25 S.F. /2) /27	=	9.9	
STATE ROUTE 317 CONNECTOR			
STA. 1219+01.93 TO STA. 218+64.88			
99.93 L.F. X 3.25 S.F. /27	=	12.0	
STA. 1219+13.88 TO STA. 217+03.89			
92.64 L.F. X 3.25 S.F. /27	=	11.2	
TOTAL ITEM 304 - AGGREGATE BASE, AS PER PLAN	=		1,529.6
GRAND TOTAL TO GENERAL SUMMARY	=		1,530
ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE		S.Y.	SQ. YD.
STATE ROUTE 317			
(FROM ITEM 404 - PAVEMENT)	= 34,050.6 S.F.		
STA. 206+35.00 TO STA. 217+03.89, RT.			
1,068.89 L.F. X 7.0'	= 7,482.2 S.F.		
STA. 216+00.53 TO STA. 217+20.53, LT.			
120.0 L.F. X 7.0'	= 840.0 S.F.		

PAVEMENT CALCULATIONS

CALC. BY DATE MRD 2/94	FRA - 317 - 3.75	OHIO	16
CKD BY DATE [illegible] 2-9-94		FHWA REGION 5	58

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE (CONT.)	S.Y.	SQ. YD.
STATE ROUTE 317 (CONTINUED)		
STA. 218+64.86 TO STA. 230+50.00, RT.		
1,185.12 L.F. X 7.0' = 8,295.8 S.F.		
STA. 218+92.18 TO STA. 227+50.00, LT.		
857.82 L.F. X 7.0' = 6,004.7 S.F.		
TOTAL = 56,673.3 S.F.		
56,673.3 S.F. /9 =	6,297.0	
EDDIE BAUER ROAD		
INTERSECTION = 6,859.0 S.F.		
STA. 90+76.56 TO STA. 90+90.40, LT.		
13.84 L.F. X 16.5' = 228.4 S.F.		
TOTAL = 7,087.4 S.F.		
7,087.4 S.F. /9 =	787.5	
STATE ROUTE 317 CONNECTOR		
(FROM ITEM 404 - PAVEMENT) = 6,640.6 S.F.		
STA. 1218+75.00 TO STA. 1219+01.93, RT.		
26.93 L.F. X 7.0' = 188.5 S.F.		
STA. 1218+75.00 TO STA. 1219+13.88, LT.		
38.88 L.F. X 7.0' = 272.2 S.F.		
TOTAL = 7,101.3 S.F.		
7,101.3 S.F. /9 =	789.0	
SHOULDERS IN RADIUS RETURNS (FULL DEPTH)		
EDDIE BAUER ROAD		
STA. 217+20.53 TO STA. 90+76.56		
91.37 L.F. X (6.5' + 4.5' /2) = 502.5 S.F.		

DESCRIPTION	SUB-TOTAL	TOTAL
ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE (CONT.)	S.Y.	SQ. YD.
SHOULDERS IN RADIUS RETURNS (FULL DEPTH) (CONTINUED)		
EDDIE BAUER ROAD (CON'T)		
STA. 90+90.40 TO STA. 218+92.18		
99.12 L.F. X (4.5' + 6.5' /2) = 545.2 S.F.		
TOTAL = 1,047.7 S.F.		
1,047.7 S.F. /9 =	116.4	
STATE ROUTE 317 CONNECTOR		
STA. 1219+01.93 TO STA. 218+64.86		
99.93 L.F. X 7.0' = 699.5 S.F.		
STA. 1219+13.88 TO STA. 217+03.89		
92.64 L.F. X 7.0' = 648.5 S.F.		
TOTAL = 1,348.0 S.F.		
1,348.0 S.F. /9 =	149.8	
TOTAL ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE =		8,139.7
GRAND TOTAL TO GENERAL NOTES =		8,140
ITEM SPECIAL - LIME	TON	TON
STATE ROUTE 317		
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE) = 6,297.0 S.Y.		
6,297.0 S.Y. X 22 /2000 =	69.3	
EDDIE BAUER ROAD		
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE) = 787.5 S.Y.		
787.5 S.Y. X 22 /2000 =	8.7	
STATE ROUTE 317 CONNECTOR		
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE) = 789.0 S.Y.		
789.0 S.Y. X 22 /2000 =	8.7	

PAVEMENT CALCULATIONS

CALC. BY MRD DATE 2/94	FRA - 317 - 3.75	OHIO	17
CHKD BY GMB DATE 2/94		FHWA REGION 5	58

DESCRIPTION			SUB-TOTAL	TOTAL
ITEM SPECIAL - LIME (CONT.)			TON	TON
SHOULDERS IN RADIUS RETURNS (FULL DEPTH)				
EDDIE BAUER ROAD				
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	116.4 S.Y.		
116.4 S.Y. X 22 /2000	=		1.3	
STATE ROUTE 317 CONNECTOR				
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	149.8 S.Y.		
149.8 S.Y. X 22 /2000	=		1.6	
TOTAL ITEM SPECIAL - LIME	=			89.6
GRAND TOTAL TO GENERAL NOTES	=			90
ITEM 616 - WATER			M. GAL	M. GAL
STATE ROUTE 317				
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	6,297.0 S.Y.		
6,297.0 S.Y. X 3 /1000	=		18.9	
EDDIE BAUER ROAD				
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	787.5 S.Y.		
787.5 X 3 /1000	=		2.4	
STATE ROUTE 317 CONNECTOR				
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	789.0 S.Y.		
789.0 S.Y. X 3 /1000	=		2.4	

DESCRIPTION			SUB-TOTAL	TOTAL
ITEM 616 - WATER (CONT.)			M. GAL	M. GAL
SHOULDERS IN RADIUS RETURNS (FULL DEPTH)				
EDDIE BAUER ROAD				
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	116.4 S.Y.		
116.4 S.Y. X 3 /1000	=		0.3	
STATE ROUTE 317 CONNECTOR				
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	149.8 S.Y.		
149.8 S.Y. X 3 /1000	=		0.4	
TOTAL ITEM 616 - WATER	=			24.4
GRAND TOTAL TO GENERAL NOTES	=			25
ITEM 203 - PROOF ROLLING			HOUR	HOUR
(FROM ITEM SPECIAL - 9" LIME SOIL STABILIZED SUBGRADE)	=	8,139.7 S.Y.		
8,139.7 S.Y. /3000	=		2.7	
TOTAL ITEM 203 - PROOF ROLLING	=			2.7
GRAND TOTAL TO GENERAL SUMMARY	=			3
ITEM 605 - AGGREGATE DRAINS			LIN. FT.	
STATE ROUTE 317				
STA. 206+35 RT. TO STA. 217+35 RT. 1100 ÷ 50 X 22' (AVG.)	=		484.0	
STA. 218+65 RT. TO STA. 230+50 RT. 1185 ÷ 50 X 22' (AVG.)	=		521.4	
STA. 216+00 LT. TO STA. 217+20 LT. 120 ÷ 50 X 22' (AVG.)	=		52.8	
STA. 218+90 LT. TO STA. 227+50 LT. 860 ÷ 50 X 22' (AVG.)	=		378.4	
TOTAL ITEM 605 - AGGREGATE DRAINS	=			1436.6
GRAND TOTAL TO GENERAL NOTES	=			1450

CALC. BY / DATE	MRD 2-94
CHKD BY / DATE	[illegible] 2-94

FRA - 317 - 3.75 | OHIO | FHWA REGION 5 | 18 / 58

GENERAL SUMMARY

ITEM	SHEET NUMBERS	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
						ROADWAY
201	6: LUMP	201	11000	LUMP		CLEARING & GRUBBING
202	45: 340	202	32500	340	L.F.	CURB & GUTTER REMOVED
202	26: 223	202	35100	223	L.F.	PIPE REMOVED, 24" & UNDER
202	26: 2	202	58000	2	EACH	MANHOLE REMOVED
202	26: 2	202	58500	2	EACH	CATCH BASIN ABANDONED
203	26: 4587; 45: 2434	203	12000	7021	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
203	26: 5077; 45: 1616	203	20000	6693	C.Y.	EMBANKMENT
203	17: 3	203	45000	3	HOURS	PROOF ROLLING
616	6: 25	616	12000	25	M. GAL.	WATER
651	26: 2002; 45: 376	651	10000	2378	C.Y.	TOPSOIL STOCKPILED
SPEC	6: 8140	SPEC	20303000	8140	S.Y.	9" LIME SOIL STABILIZED SUBGRADE
SPEC	6: 90	SPEC	20303200	90	TON	HYDRATED LIME
						EROSION CONTROL
207	6: 3160	207	10000	3160	S.Y.	TEMPORARY SEEDING & MULCHING
207	6: 264	207	50000	264	C.Y.	TEMPORARY BENCHES, DAMS & SEDIMENT BASINS
207	6: 181	207	55500	181	S.Y.	TEMPORARY DITCH PROTECTION
207	6: 760	207	70000	760	EACH	STRAW OR HAY BALES
601	7: 10	601	32200	10	C.Y.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
601	6: 3	601	34300	3	C.Y.	ROCK CHANNEL PROTECTION, TYPE C W/O FILTER
659	26: 13339; 45: 2459	659	10000	15798	S.Y.	SEEDING & MULCHING
659	6: 790	659	14000	790	S.Y.	REPAIR SEEDING & MULCHING
659	6: 1	659	20000	1	TON	COMMERCIAL FERTILIZER
659	6: 40	659	35000	40	M.GAL	WATER
659	6: 36	659	40000	36	M.S.F.	MOWING
660	26: 875	660	30000	875	S.Y.	SODDING
						WATER (CITY OF COLS.)
SPEC.	45: 0.39	SPEC.	63861500	0.39	C.Y.	CONCRETE BLOCKING, CLASS "C" (COL. 801)
SPEC.	45: 229	SPEC.	63866110	229	L.F.	RELOCATE 12" WATERLINE (COL. 808)
SPEC.	45: 1	SPEC.	63866700	1	EACH	FIRE HYDRANT, RELOCATED (COL. 809)

CALC. BY DATE MED 2-94	FRA-317-3.75	OHIO	19
CHKD BY DNC 2-94		FHWA REGION 5	58

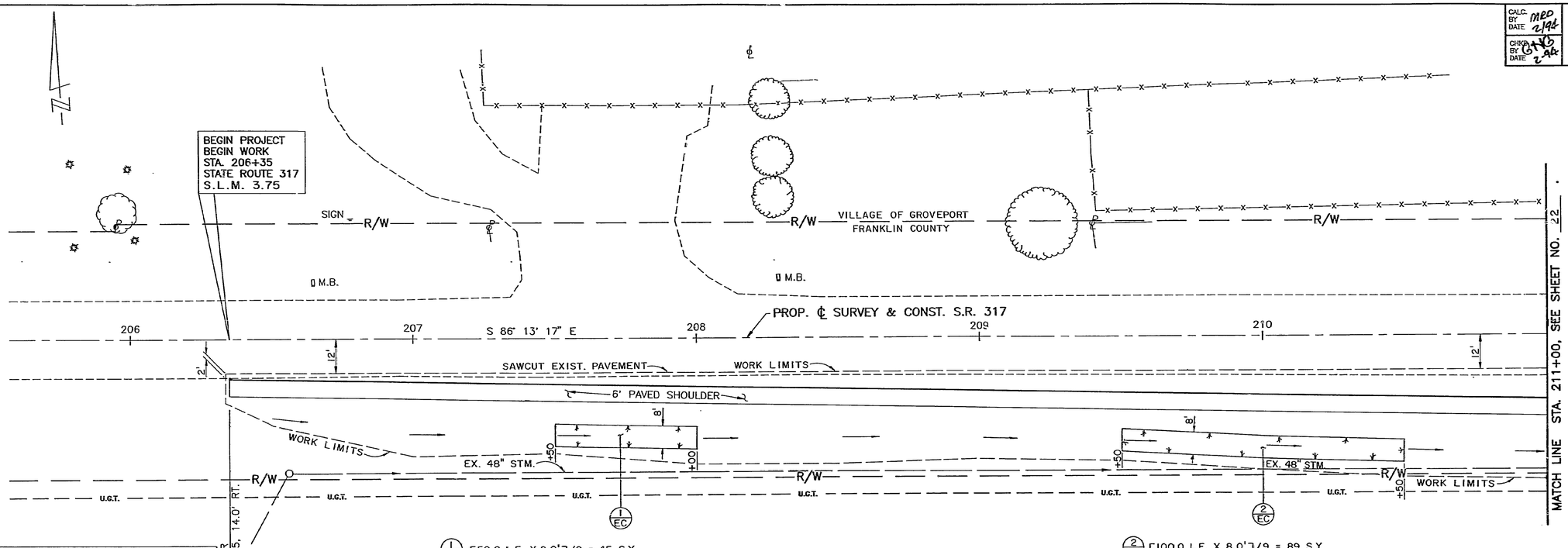
GENERAL SUMMARY

| ITEM | SHEET NUMBERS | | |

GENERAL SUMMARY

ITEM	SHEET NUMBERS	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
						MAINTENANCE OF TRAFFIC
614	9: 50	614	13300	50	EACH	BARRIER REFLECTORS, TYPE B
614	9: 0.63; 11: 0.31	614	21200	0.94	MILES	TEMPORARY CENTER LINE, CLASS I, 740.05 TYPE B
614	9: 1.25; 11: 0.76	614	22200	2.01	MILES	TEMPORARY EDGE LINE, CLASS I, 740.05 TYPE B
615	9: 50	615	20000	50	S.Y.	TEMPORARY PAVEMENT, CLASS A
622	9: 2485	622	40020	2485	L.F.	PORTABLE CONCRETE BARRIER, 32 INCH
						FOR TRAFFIC CONTROL GENERAL SUMMARY
						SEE SHEET NO. 51
614	8: LUMP	614	11000	LUMP		MAINTAINING TRAFFIC
619	6: LUMP	619	15000	LUMP		FIELD OFFICE, TYPE A
623		623	10000	LUMP		CONSTRUCTION LAYOUT STAKES
624		624	10000	LUMP		MOBILIZATION

CALC. BY DATE MED 2/94	FRA-317-3.75	OHIO	21
CHKD. BY DATE GTV 2/94		FHWA REGION 5	58



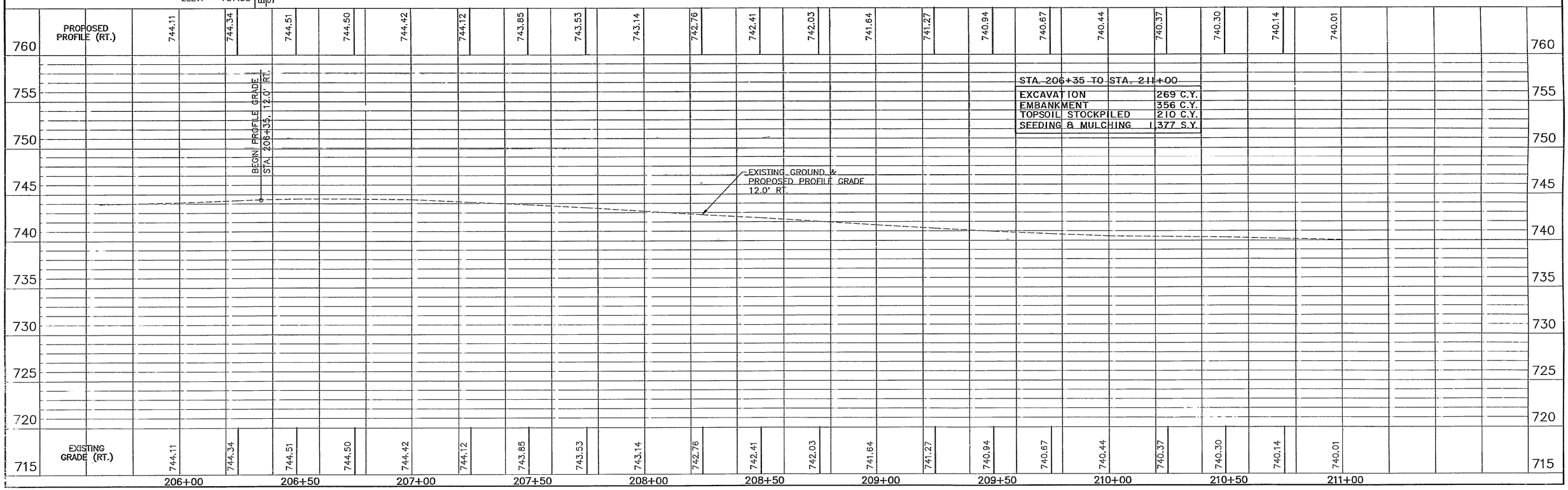
(1/EC) C50.0 L.F. X 8.0'⅁/9 = 45 S.Y.

(2/EC) C100.0 L.F. X 8.0'⅁/9 = 89 S.Y.

FOR QUANTITY SUB-SUMMARIES, SEE SHEET NO. 26 .
FOR PAVEMENT DETAILS, SEE SHEET NO. 48 .

BENCH MARK
TOP OF CONCRETE MONUMENT ON SOUTH SIDE S.R. 317, 475' WEST OF CURTIS LEMAY CONNECTOR, 45' SOUTH OF S.R. 317.
ELEV. = 737.98

BEGIN TAPER STA. 206+35, 14.0' RT.



STA. 206+35 TO STA. 211+00

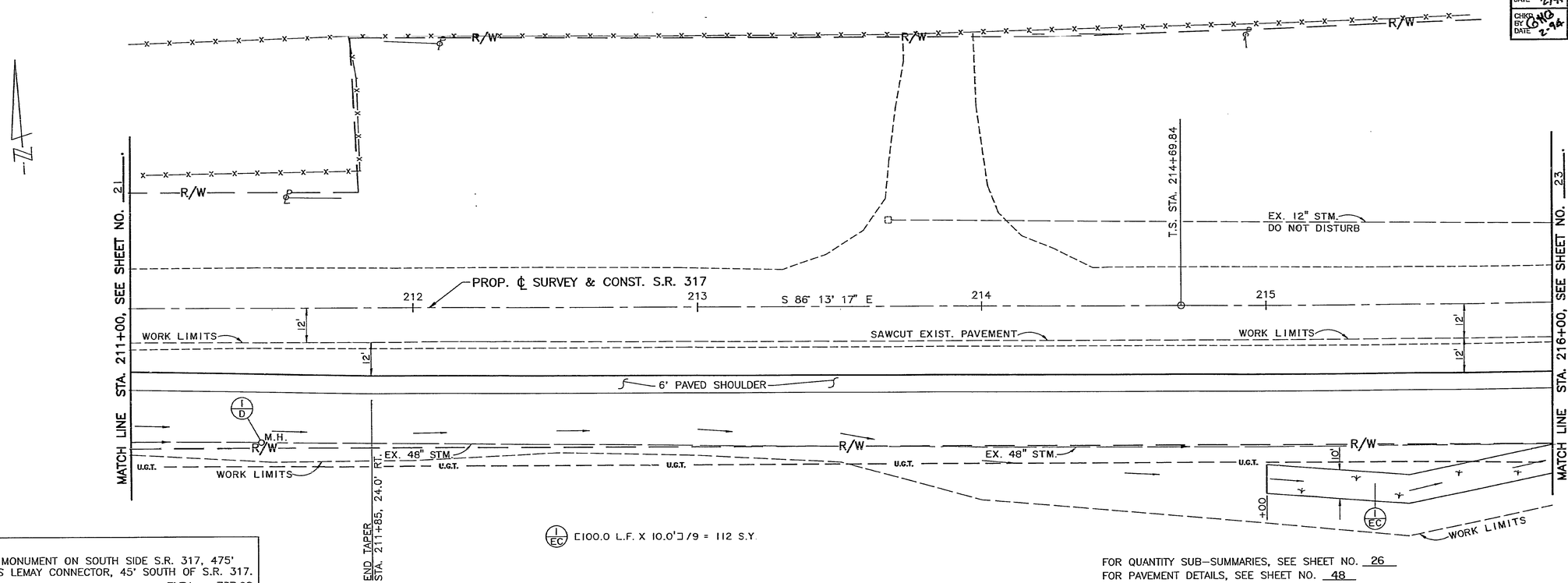
EXCAVATION	269 C.Y.
EMBANKMENT	356 C.Y.
TOPSOIL STOCKPILED	210 C.Y.
SEEDING & MULCHING	1,377 S.Y.

2530 010 206+35 TO 211+00 ALIGN 1994 0210 010

PLAN & PROFILE S.R. 317 STA. 206+35 TO STA. 211+00

CALC. BY DATE	MED 2/94
CHKD. BY DATE	LONG 2-94

FRA-317-3.75 | OHIO | FHWA REGION 5 | 22 / 58



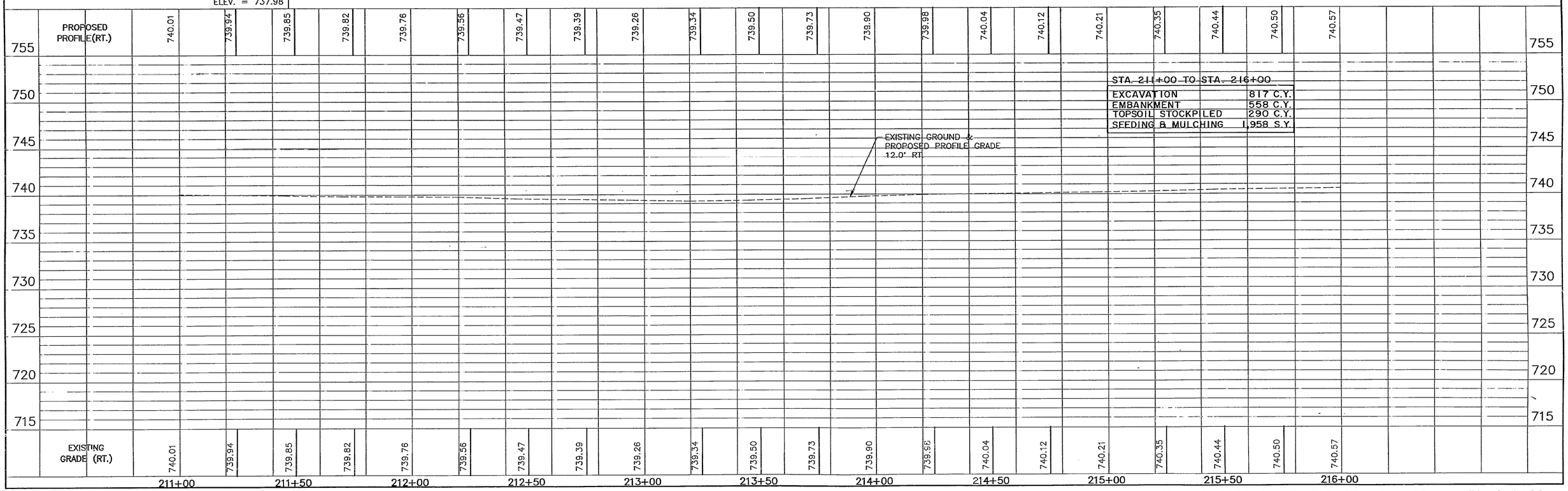
CURVE DATA
℄ SURVEY & CONSTRUCTION S.R. 317

P.I. STA. 227+12.66
Δ_T = 48° 12' 31" LT.
Δ_C = 32° 12' 31" LT.
D = 4° 00' 00"
R = 1432.40'
T = 413.56'
L = 805.22'
$\emptyset_s$ = 8° 00' 00"
L_s = 400.00'
T_s = 842.82'
L.T. = 266.94'
S.T. = 133.58'
E_s = 136.91'

BENCH MARK
TOP CONCRETE MONUMENT ON SOUTH SIDE S.R. 317, 475' WEST OF CURTIS LEMAY CONNECTOR, 45' SOUTH OF S.R. 317.
ELEV. = 737.98

FOR QUANTITY SUB-SUMMARIES, SEE SHEET NO. 26
FOR PAVEMENT DETAILS, SEE SHEET NO. 48

STA. 211+00 TO STA. 216+00	
EXCAVATION	817 C.Y.
EMBANKMENT	558 C.Y.
TOPSOIL STOCKPILED	290 C.Y.
SEEDING & MULCHING	1,958 S.Y.



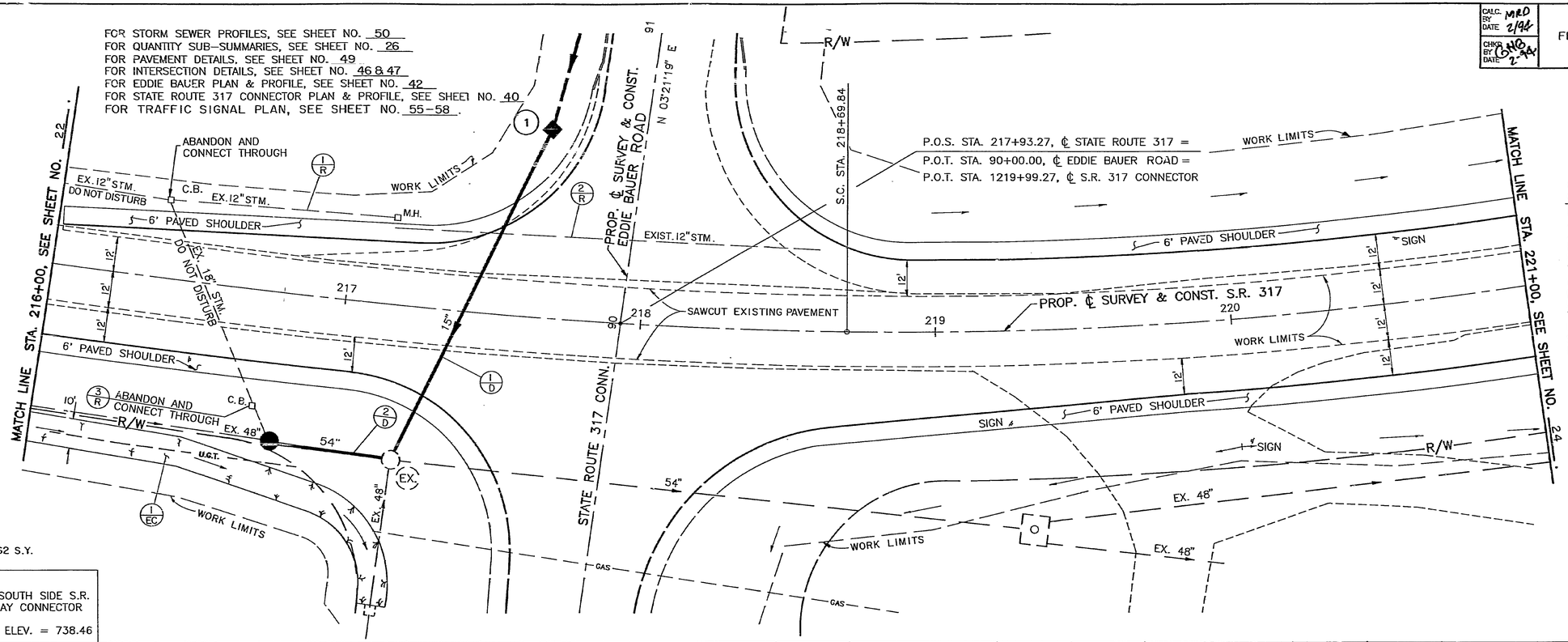
2530 010 211+00 TO 216+00 ALIGN 1994 0220 010

PLAN & PROFILE S.R. 317 STA. 211+00 TO STA. 216+00

CALC. BY / DATE	MED 2/94
CHKD BY / DATE	CMB 2-7-94

FRA-317-3.75 | OHIO | FHWA REGION 5 | 23 / 58

FOR STORM SEWER PROFILES, SEE SHEET NO. 50
FOR QUANTITY SUB-SUMMARIES, SEE SHEET NO. 26
FOR PAVEMENT DETAILS, SEE SHEET NO. 49
FOR INTERSECTION DETAILS, SEE SHEET NO. 46 & 47
FOR EDDIE BAUER PLAN & PROFILE, SEE SHEET NO. 42
FOR STATE ROUTE 317 CONNECTOR PLAN & PROFILE, SEE SHEET NO. 40
FOR TRAFFIC SIGNAL PLAN, SEE SHEET NO. 55-58.



CURVE DATA
℄ SURVEY & CONSTRUCTION S.R. 317

P.I. STA. 227+12.66
Δ_T = 48° 12' 31" LT.
Δ_c = 32° 12' 31" LT.
D = 4° 00' 00"
R = 1432.40'
T = 413.56'
L = 805.22'
ϕ_s = 8° 00' 00"
L_s = 400.00'
T_s = 842.82'
L.T. = 266.94'
S.T. = 133.58'
E_s = 136.91'

(1/EC) C145.0 L.F. X 10.0'/9 = 162 S.Y.

BENCH MARK
TOP CONCRETE MONUMENT ON SOUTH SIDE S.R. 317, 150' EAST OF CURTIS LEMAY CONNECTOR 65' SOUTH OF S.R. 317.
ELEV. = 738.46

	216+00	216+50	217+00	217+50	218+00	218+50	219+00	219+50	220+00	220+50	221+00
PROPOSED PROFILE(RT.)	740.57	740.69	740.79	740.87	740.96	741.11	741.22	741.33	741.42	741.54	741.64	741.74	741.74	741.55	741.78	741.71	741.71	741.51	741.71	741.73	741.74
PROPOSED PROFILE(LT.)														739.79	739.80	739.83	739.84	739.84	739.80	739.80	739.82
PROPOSED GRADE (LT.)														739.79	739.80	739.83	739.84	739.84	739.80	739.80	739.82
PROPOSED GRADE (RT.)	740.57	740.69	740.79	740.87	740.96	741.11	741.22	741.33	741.42	741.54	741.64	741.74	741.74	741.55	741.78	741.71	741.71	741.51	741.71	741.73	741.74

755 / 750 / 745 / 740 / 735 / 730 / 725 / 720

BEGIN PROFILE GRADE STA. 218+92.18, 12.0' LT.

EXISTING GROUND & PROPOSED PROFILE GRADE 12.0' RT.

EXISTING GROUND & PROPOSED PROFILE GRADE 12.0' LT.

EXIST. 18" STORM TO REMAIN

PROP. 15" STORM

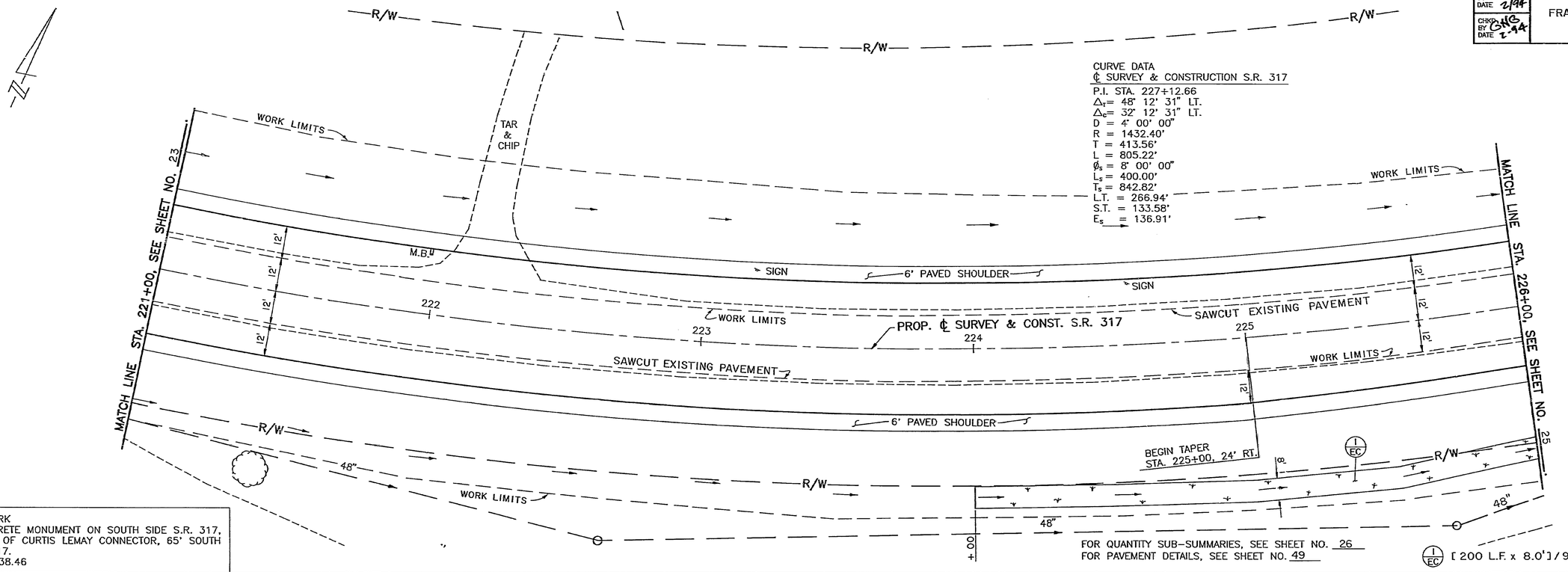
STA. 216+00 TO STA. 221+00

EXCAVATION	1,673 C.Y.
EMBANKMENT	1,456 C.Y.
TOPSOIL STOCKPILED	453 C.Y.
SEEDING & MULCHING	2,856 S.Y.

2530 010 216+00 TO 221+00 ALIGN 1994 0230 010

PLAN & PROFILE S.R. 317 STA. 216+00 TO STA. 221+00

CALC. BY DATE MED 2/94	FRA - 317 - 3.75	OHIO	24
CHKD. BY DATE GNG 2-94		FHWA REGION 5	58



CURVE DATA
℄ SURVEY & CONSTRUCTION S.R. 317

P.I. STA. 227+12.66
Δ_t = 48° 12' 31" LT.
Δ_c = 32° 12' 31" LT.
D = 4° 00' 00"
R = 1432.40'
T = 413.56'
L = 805.22'
ϕ_s = 8° 00' 00"
L_s = 400.00'
T_s = 842.82'
L.T. = 266.94'
S.T. = 133.58'
E_s = 136.91'

BENCH MARK
TOP CONCRETE MONUMENT ON SOUTH SIDE S.R. 317, 150' EAST OF CURTIS LEMAY CONNECTOR, 65' SOUTH OF S.R. 317.
ELEV. = 738.46

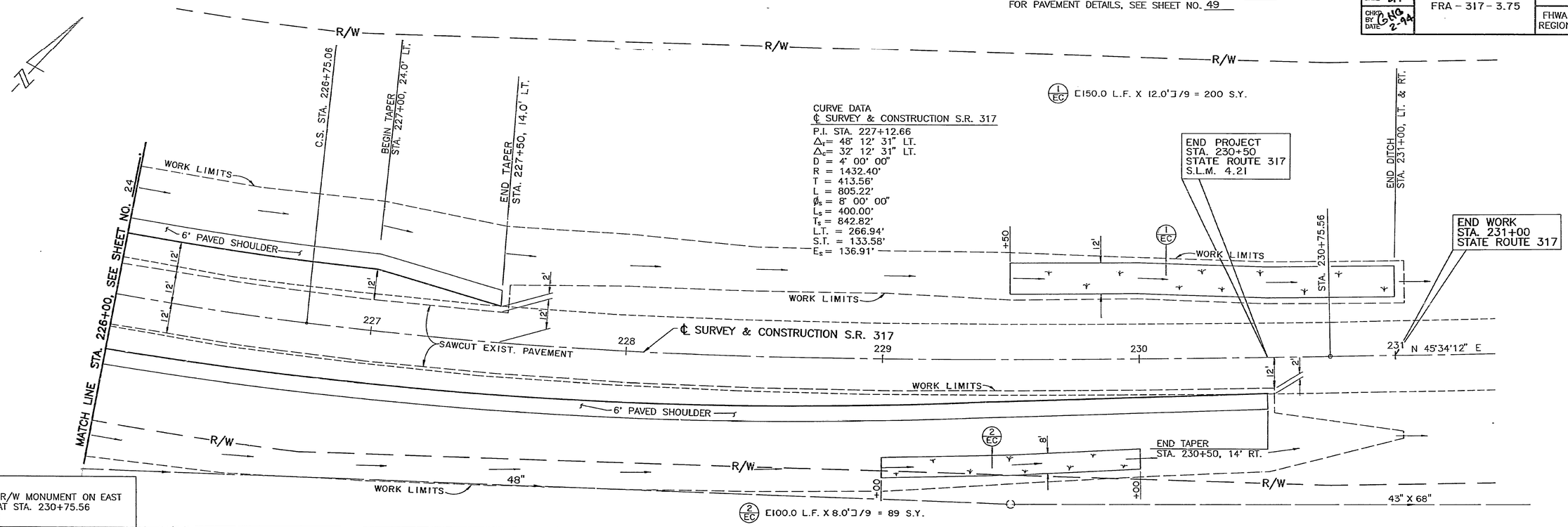
FOR QUANTITY SUB-SUMMARIES, SEE SHEET NO. 26
FOR PAVEMENT DETAILS, SEE SHEET NO. 49

1/EC [200 L.F. x 8.0']/9 = 178 S.Y.

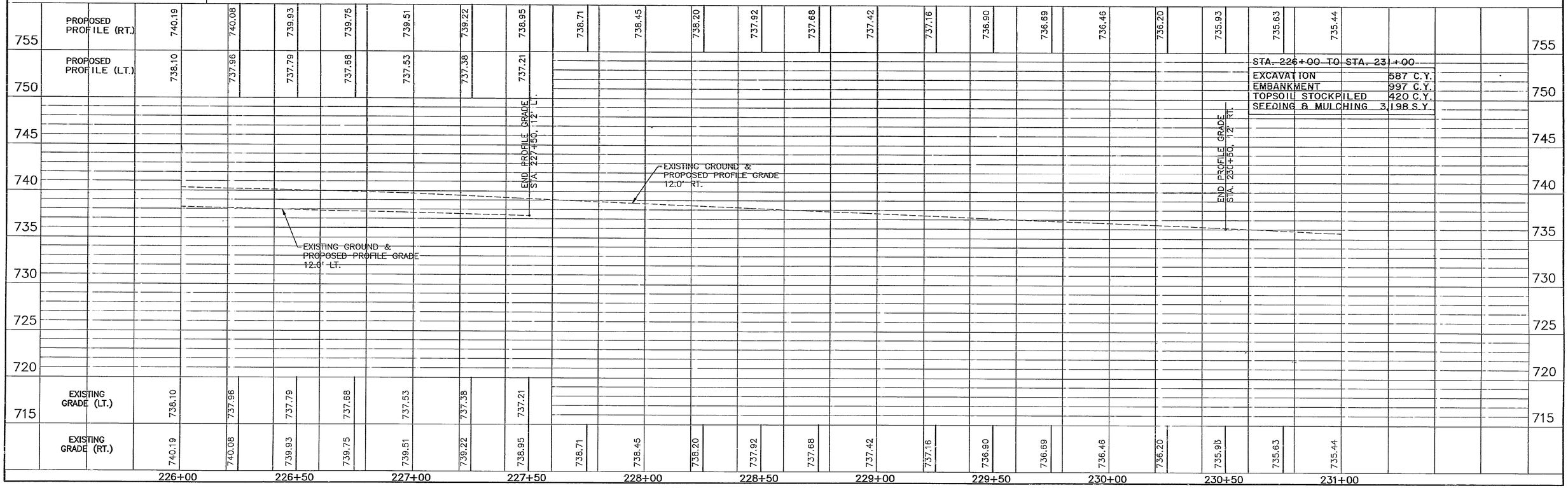
| | | |

FOR QUANTITY SUB-SUMMARIES, SEE SHEET NO. 26
FOR PAVEMENT DETAILS, SEE SHEET NO. 49

CALC. BY DATE	MED 2/94	FRA - 317 - 3.75	OHIO	25
CHKD. BY DATE	CNC 2-94		FHWA REGION 5	58



BENCH MARK
TOP CONCRETE R/W MONUMENT ON EAST SIDE S.R. 317 AT STA. 230+75.56
ELEV. = 733.06



STA. 226+00 TO STA. 231+00

EXCAVATION	587 C.Y.
EMBANKMENT	997 C.Y.
TOPSOIL STOCKPILED	420 C.Y.
SEEDING & MULCHING	3,198 S.Y.

2530 010 226+00 TO 231+00 ALIGN 1994 0250 010

PLAN & PROFILE S.R. 317 STA. 226+00 TO STA. 231+00

CALC. BY MED DATE 2/94
CHK BY DMG DATE 2-9-94

FRA - 317 - 3.75

OHIO

FHWA REGION 5

26
58

QUANTITY SUB-SUMMARY
STATE ROUTE 317

REFERENCE NO.	SIDE	STATION	202 PIPE REMOVED 24" AND UNDER L.F.	202 MANHOLE REMOVED E.A.	202 CATCH BASIN ABANDONED E.A.	603 15" CONDUIT, TYPE B 706.02 L.F.	604 54" CONDUIT, TYPE C 706.02 L.F.	604 MANHOLE NO. 5 EA.	604 MANHOLE ADJUSTED TO GRADE EA.	659 SEEDING AND MULCHING S.Y.	660 SODDING S.Y.	203 EXCAVATION C.Y.	203 EMBANKMENT C.Y.	651 TOPSOIL STOCKPILED C.Y.	SEE SHEET NO.
		STATE ROUTE 317													
		206+00 TO 211+00								1377		269	356	210	21
1-EC	R	207+50 TO 208+00									45				
2-EC	R	209+50 TO 210+50									89				
		211+00 TO 216+00								1958		817	558	290	22
1-D	R	211+46							1						
1-EC	R	215+00 TO 216+00									112				
		216+00 TO 221+00								2856		1673	1456	453	23
1-R	L	216+36 TO 217+16	77	1	1										
2-R	L	217+14 TO 218+60	146												
3-R	R	216+73			1										
1-D	L/R	217+20 TO 217+66				124									
2-D	R	216+80 TO 217+20		1			40	1							
1-EC	R	216+00 TO 216+75									162				
		221+00 TO 226+00								3950		1241	1710	629	24
1-EC	R	224+00 TO 226+00									178				
		226+00 TO 231+00								3198		587	997	420	25
1-EC	L	229+50 TO 231+00									200				
2-EC	R	229+00 TO 230+00									89				
TOTALS			223	2	2	124	40	1	1	13339	875	4587	5077	2002	

CALC. BY / DATE		FRA - 317 - 3.75	OHIO	27 / 58
CHKR. BY / DATE			FHW REGION 5	

SEEDING		END AREA		VOLUME	
END WIDTH	SQ YDS.	CUT	FILL	CUT	FILL
29		14 (12)	16		
	125			23 (18)	25
16		11 (7)	11		
	28			5 (4)	6
18		8 (7)	12		
	35			5 (5)	8
0		0 (0)	0		

EX. R/W

745

740

744.42 (E.B.)
207+00
744.58

2:1

4:1

744.5

EX. U.G.C.

EX. 48" STM.

206+50
744.79

206+35
744.71

BEGIN WORK

STA. 206+35

AHEAD ONLY

BACK ONLY

206+00
744.40

EX. PAVEMENT TO BE REMOVED

EX. TOPSOIL TO BE REMOVED & STOCKPILED

(10) TOPSOIL QUANTITIES

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

2530 010 206+00 TO 207+00 X-SEC 1994 0270 010

S.R. 317 X-SECTIONS STA. 206+00 TO STA. 207+00

CALC. BY	DATE	CHKD. BY	DATE
MRD	2-94	[illegible]	2-94

FRA - 317 - 3.75

OHIO

FHW REGION 5

28
58

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
25	144	741.64 (E.B.) 209+00 741.86	17 (11)	19	29 (21)	39
27	156	742.41 (E.B.) 208+50 742.58	14 (12)	23	29 (22)	42
29	147	743.14 (E.B.) 208+00 743.14	17 (12)	22	29 (22)	37
24			14 (12)	18		
29	147	743.85 (E.B.) 207+50 744.12	14 (12)	16	26 (22)	31

EX. R/W — 745 — 740 — 735 — 739.10 — 4:1 — EX. U.G.C. — EX. 48" STM

EX. R/W — 745 — 740 — 739.5

EX. R/W — 745 — 740 — 740.0

EX. R/W — 745 — 740 — 741.3 — 4:1 — EX. 48" STM — EX. U.G.C.

FROM STA. 207+00

FROM STA. 207+00

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

2530 010 207+50 TO 209+00 X-SEC 1994 0280 010

S.R. 317 X-SECTIONS STA. 207+50 TO STA. 209+00

CALC BY	MRD
DATE	2/94
CHKD BY	[illegible]
DATE	2-94

FRA - 317 - 3.75

OHIO

FRW REGION 5

29 / 58

STA 206+35 TO STA 211+00

EXCAVATION	269 C.Y.
EMBANKMENT	356 C.Y.
TOPSOIL STOCKPILED	210 C.Y.
SEEDING & MULCHING	1,377 S.Y.

QUANTITIES CARRIED TO SHEET NO. 2)

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
29		21 (15)	28		
	161			32 (31)	56
29		14 (18)	33		
	156			31 (27)	44
27		20 (11)	15		
	142			31 (19)	32
24		14 (10)	20		
	136			29 (19)	36
25		17 (11)	19		

740.01 (E.B.)
211+00
740.23

740.30 (E.B.)
210+50
740.43

740.44 (E.B.)
210+00
740.67

740.94 (E.B.)
209+50
741.11

736.8 · 737.0 · 737.5 · 738.3

EX. R/W · EX. U.G.C. · EX. 48" STM.

FROM STA. 209+00

745 · 740 · 735

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

2530 010 209+50 TO 211+00 X-SEC 1994 0290 010

S.R. 317 X-SECTIONS STA. 209+50 TO STA. 211+00

CALC. BY	DATE
CHKD. BY	DATE

FRA - 317 - 3.75

OHIO

FHW REGION 5

30 / 58

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
29	158	30 (12)	17	52 (24)	35
28	169	26 (14)	21	49 (27)	43
30	169	27 (15)	25	52 (26)	43
31	167	29 (13)	21	46 (26)	45
29		21 (15)	28		

740
735
739.26 (E.B.)
213+00
739.61
736.0
EX. R/W
EX. U.G.C.
EX. 48" STM.

740
735
739.47 (E.B.)
212+50
739.83
736.2

740
735
739.76 (E.B.)
212+00
739.81
736.4
EX. R/W

740
735
739.84 (E.B.)
211+50
739.99
736.6
EX. U.G.C.
EX. 48" STM.
FROM STA. 211+00

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

2530 010 211+50 TO 213+00 X-SEC 1994 0300 010

S.R. 317 X-SECTIONS STA. 211+50 TO STA. 213+00

CALC. BY DATE	2/94 MRD
CHK'D BY DATE	BKG 2-94

FRA - 317 - 3.75

OHIO

FHW REGION 5

31
58

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
43	228	71 (19)	43	123 (32)	67
39	211	62 (16)	29	94 (30)	56
37	189	40 (16)	31	69 (26)	48
31	167	34 (12)	21	59 (22)	35
29		30 (12)	17		

740.21(EB)
215+00
740.05

740.04(EB)
214+50
740.00

739.90(EB)
214+00
740.03

739.50(EB)
213+50
739.76

EX. R/W
EX. U.G.C.
EX. 48" STM.
735.2
735.4
735.6
735.8
6:1
5:1
4:1
FROM STA. 213+00

2530 010 213+50 TO 215+00 X-SEC 1994 0310 010

S.R. 317 X-SECTIONS STA. 213+50 TO STA. 215+00

CALC BY MRD DATE 2/94	FRA - 317 - 3.75	OHIO
CHKR BY GHO DATE 2-94		FHW REGION 5

32
58

SEEDING				END AREA		VOLUME	
END WIDTH	SQ. YDS.			CUT	FILL	CUT	FILL
77		745	TO EX. C.B. STA. 1219+00 S.R. 317 CONN.				
		740		109 (33)	95		
		735	EX. U.G.C. 734.4				
	400		740.96(E.B.) 217+00 740.53 EX. 48" STM.			171 (55)	155
		745					
		740					
67		735	740.80(E.B.) 216+50 740.39 734.6	76 (28)	72		
			STA. 211+00 TO STA. 216+00				
			EXCAVATION 817 C.Y.				
			EMBANKMENT 558 C.Y.				
			TOPSOIL STOCKPILED 290 C.Y.				
	375		SEEDING & MULCHING 1,958 S.Y.			130 (53)	134
			QUANTITIES CARRIED TO SHEET NO. 22				
		745	EX. R/W				
		740					
68		735	AHEAD ONLY 740.57(E.B.) 215+00 740.21 734.8	64 (29)	72		
47			BACK ONLY	57 (20)	50		
	256					130 (39)	96
		745	EX. R/W				
45		740		83 (22)	54		
	244	735	EX. U.G.C. 735.0 740.44(E.B.) 215+50 740.11 EX. 48" STM.			143 (38)	90
43			FROM STA. 215+00	71 (19)	43		

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

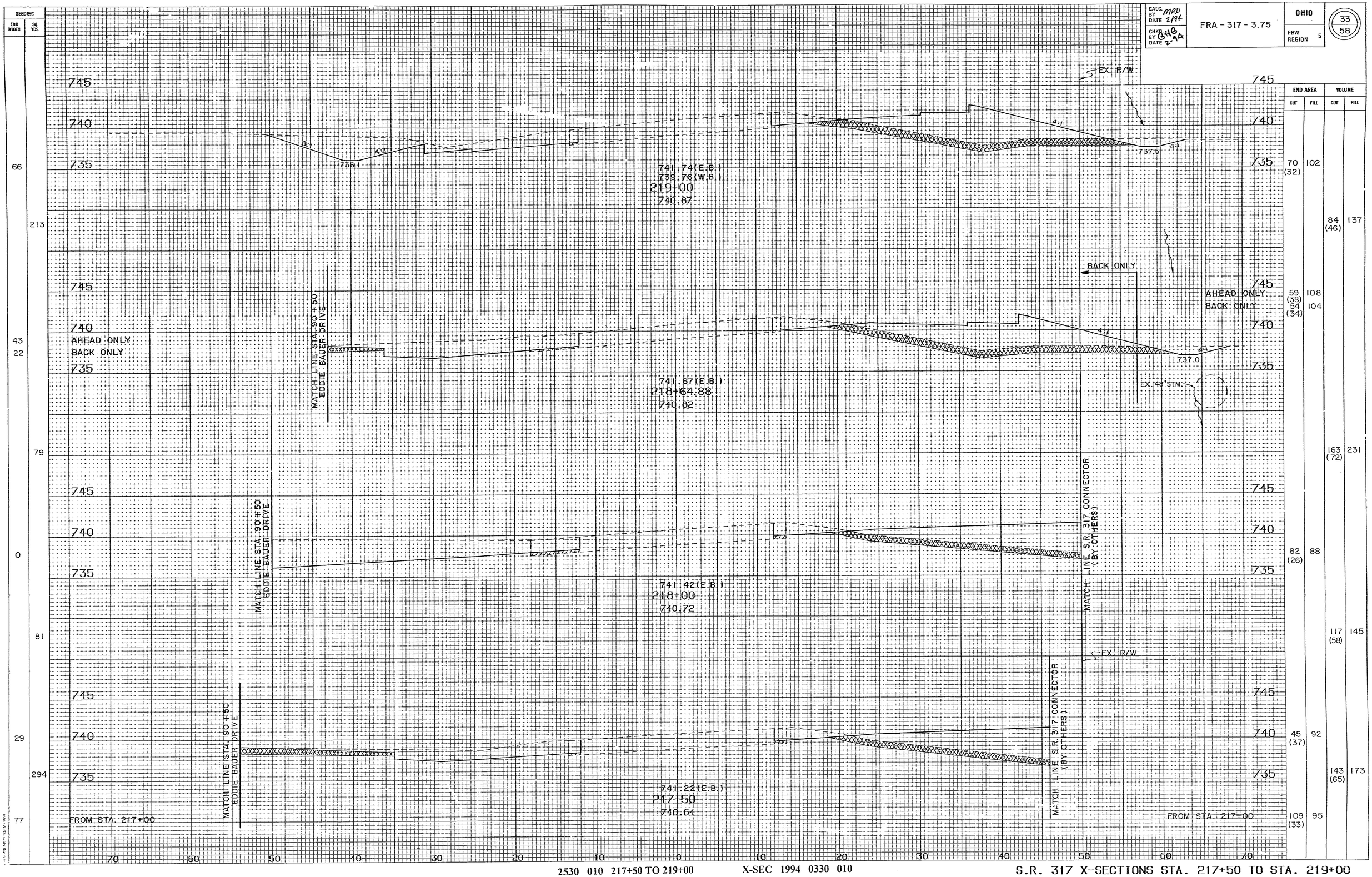
2530 010 215+50 TO 217+00 X-SEC 1994 0320 010

S.R. 317 X-SECTIONS STA. 215+50 TO STA. 217+00

CALC BY MRD DATE 2/94	FRA - 317 - 3.75	OHIO
CHKD BY GHG DATE 2-94		FHW REGION 5

33
58

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
66		70 (32)	102		
	213			84 (46)	137
43	AHEAD ONLY	59 (38)	108		
22	BACK ONLY	54 (34)	104		
	79			163 (72)	231
0		82 (26)	88		
	81			117 (58)	145
29		45 (37)	92		
	294			143 (65)	173
77	FROM STA. 217+00	109 (33)	95		



2530 010 217+50 TO 219+00 X-SEC 1994 0330 010

S.R. 317 X-SECTIONS STA. 217+50 TO STA. 219+00

CALC. BY DATE	
CHKD. BY DATE	

FRA - 317 - 3.75

OHIO

FHW REGION 5

34
58

STA. 216+00 TO STA. 221+00

EXCAVATION	1,673 C.Y.
EMBANKMENT	1,456 C.Y.
TOPSOIL STOCKPILED	453 C.Y.
SEEDING & MULCHING	2,856 S.Y.

QUANTITIES CARRIED TO SHEET NO. 23

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
69	375	100 (23)	63	191 (41)	118
66	350	106 (21)	64	233 (23)	108
60	336	146 (4)	53	256 (7)	105
61	353	130 (4)	60	185 (33)	150
66		70 (32)	102		

741.74(E.B.)
739.82(W.B.)
221+00
740.85

741.71(E.B.)
739.80(W.B.)
220+50
740.84

741.71(E.B.)
739.84(W.B.)
220+00
740.88

741.78(E.B.)
739.80(W.B.)
219+50
740.88

EX. R/W

EX. 48" STM.

FROM STA. 219+00

2530 010 219+50 TO 221+00 X-SEC 1994 0340 010

S.R. 317 X-SECTIONS STA. 219+50 TO STA. 221+00

CALC. BY DATE	
CHKD. BY DATE	

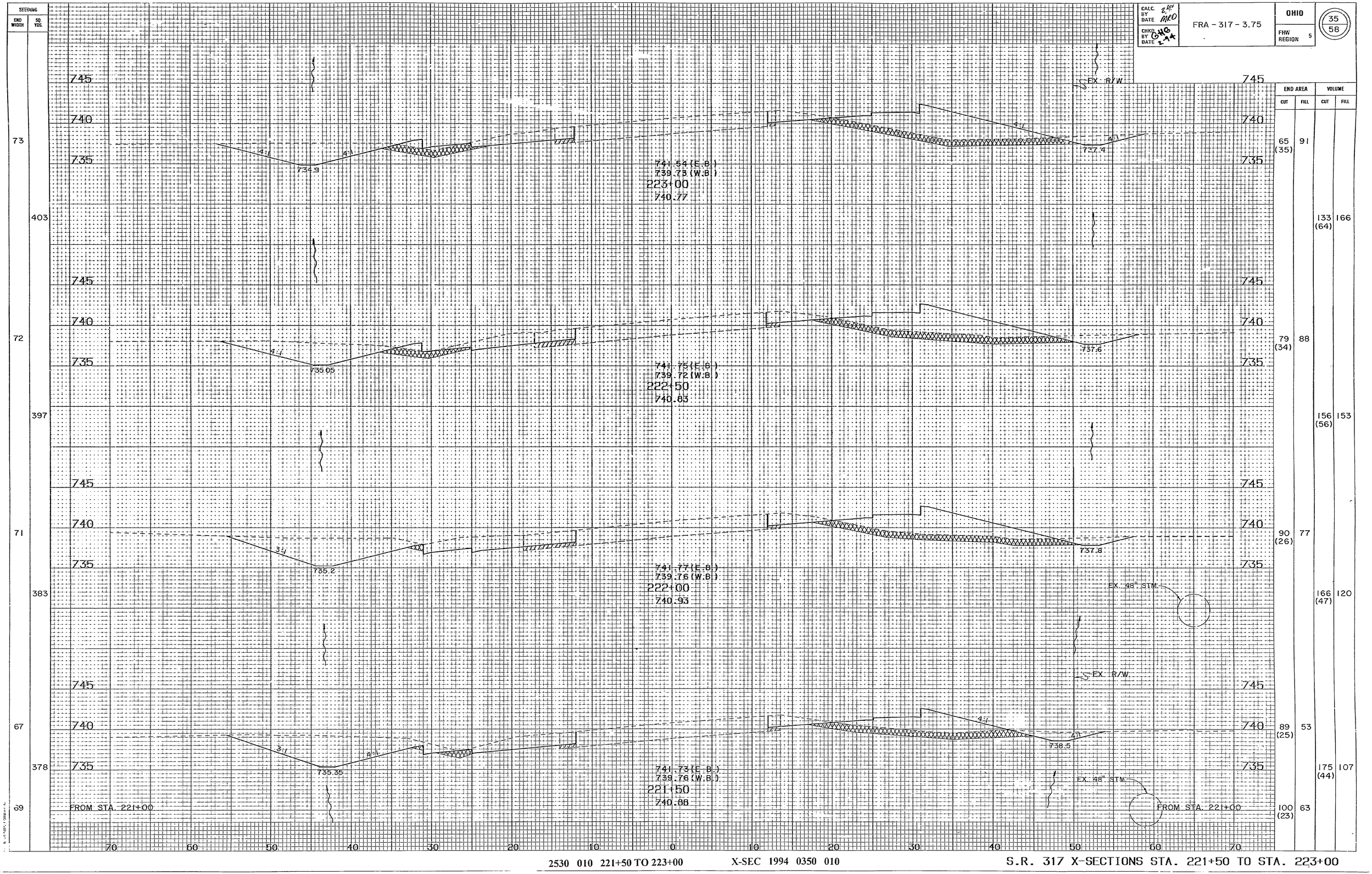
FRA - 317 - 3.75

OHIO

FHWA REGION 5

35/58

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
73	403	65 (35)	91	133 (64)	166
72	397	79 (34)	88	156 (56)	153
71	383	90 (26)	77	166 (47)	120
67	378	89 (25)	53	175 (44)	107
69		100 (23)	63		



2530 010 221+50 TO 223+00 X-SEC 1994 0350 010

S.R. 317 X-SECTIONS STA. 221+50 TO STA. 223+00

CALC. BY DATE	
CHKD. BY DATE	GHG 2-94

FRA - 317 - 3.75

OHIO

FHW REGION 5

36/58

SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
72	394	740.76(E.B.) 738.71(W.B.) 225+00 739.83	43 (43)	120	88 (77)	213
70	392	741.06(E.B.) 739.02(W.B.) 224+50 740.05	52 (40)	110	101 (71)	195
71	406	741.32(E.B.) 739.28(W.B.) 224+00 740.37	57 (37)	101	116 (65)	177
75	411	741.54(E.B.) 739.49(W.B.) 223+50 740.59	68 (33)	90	123 (63)	168
73		FROM STA. 223+00	65 (35)	91		

EX. R/W

EX. 48" STM.

EX. 48" STM.

FROM STA. 223+00

2530 010 223+50 TO 225+00 X-SEC 1994 0360 010

S.R. 317 X-SECTIONS STA. 223+50 TO STA. 225+00

CALC'D BY DATE	MED 2/24
CHK'D BY DATE	CHC 2-24

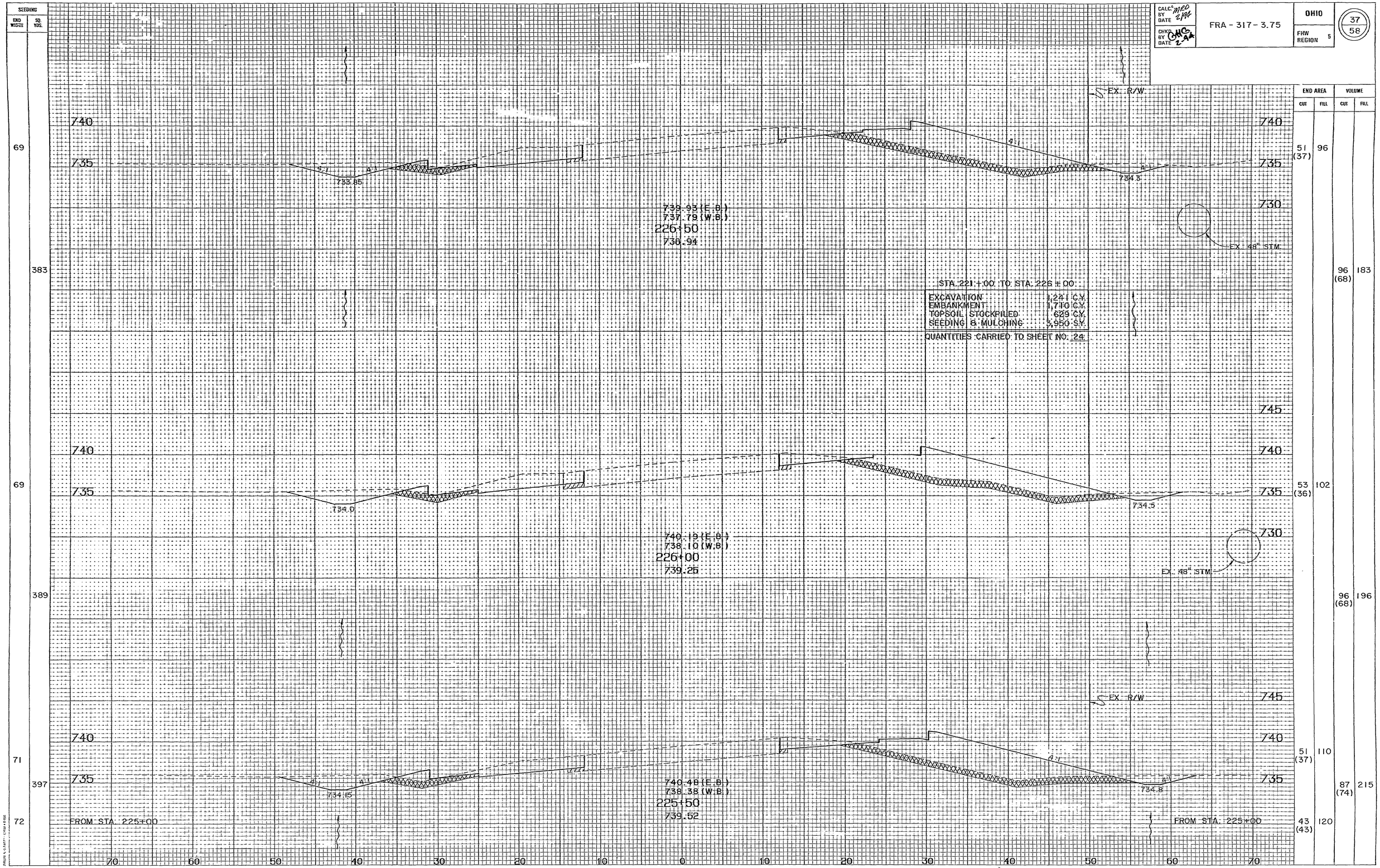
FRA - 317 - 3.75

OHIO

FHW REGION 5

37 / 58

SEEDING		END AREA		VOLUME	
END WIDTHS	SQ. YDS.	CUT	FILL	CUT	FILL
69	383	51 (37)	96	96 (68)	183
69	389	53 (36)	102	96 (68)	196
71	397	51 (37)	110	87 (74)	215
72		43 (43)	120		



STA. 221+00 TO STA. 226+00

EXCAVATION	1,241 C.Y.
EMBANKMENT	1,710 C.Y.
TOPSOIL STOCKPILED	629 C.Y.
SEEDING & MULCHING	3,950 S.Y.

QUANTITIES CARRIED TO SHEET NO. 24

2530 010 225+50 TO 226+50 X-SEC 1994 0370 010

S.R. 317 X-SECTIONS STA. 225+50 TO STA. 226+50

CALC. BY DATE	MEC
CHKD. BY DATE	2-94

FRA - 317 - 3.75

OHIO

FHW REGION 5

38
58

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
59	333	29 (21)	61	61 (38)	105
61	364	37 (20)	52	76 (46)	110
70	381	45 (30)	67	80 (58)	136
67	378	41 (33)	80	85 (65)	163
69	FROM STA. 226+50	51 (37)	96		

EX R/W

737.92 (E.B.)
228+50
736.82

738.45 (E.B.)
228+00
737.72

738.95 (E.B.)
737.21 (W.B.)
227+50
738.20

739.51 (E.B.)
737.53 (W.B.)
227+00
738.62

733.25 733.4 733.55 733.7 733.9 733.7 734.1

EX. 48" STM.

EX R/W

EX. 48" STM.

FROM STA. 226+50

2530 010 227+00 TO 228+50 X-SEC 1994 0380 010

S.R. 317 X-SECTIONS STA. 227+00 TO STA. 228+50

CALC. BY / DATE	
CHKD. BY / DATE	

FRA-317-3.75

OHIO

FHW REGION 5

39
58

STA. 226+00 TO STA. 231+00

EXCAVATION	587 C.Y.
EMBANKMENT	997 C.Y.
SEEDING & MULCHING	3.198 S.Y.
TOPSOIL STOCKPILED	420 C.Y.

QUANTITIES CARRIED TO SHEET NO. 25

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0		0 (0)	0		
49	136			23 (13)	20
		25 (14)	22		
	281			35 (28)	49
52		13 (16)	31		
	300			34 (31)	62
56		24 (18)	36		
	317			46 (35)	73
58		26 (20)	43		
	325			51 (38)	96
59		29 (21)	61		

STA. 231+00 BACK ONLY

END WORK STA. 231+00

TO STA. 231+00

EX. R/W

EX. 43" X 68" STM.

735.93(E.B.)
230+50
735.32

736.46(E.B.)
230+00
735.65

EX. 43" X 68" STM.

736.90(E.B.)
229+50
736.07

EX. M.H.

EX. R/W

737.42(E.B.)
229+00
736.42

EX. 48" STM.

FROM STA. 228+50

FROM STA. 228+50

732.65 732.2 732.8 732.4 732.95 732.9 733.1 733.3

740 735 730

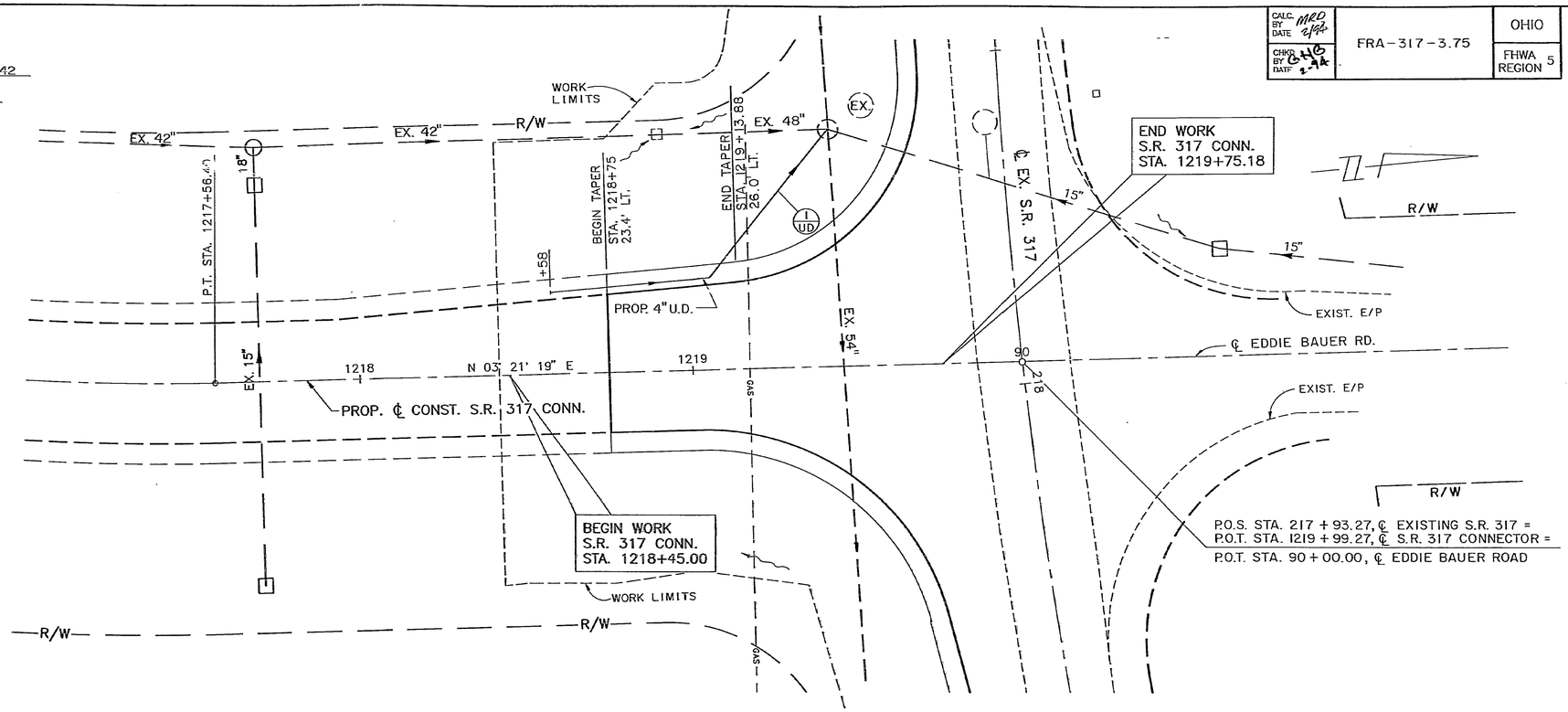
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

2530 010 229+00 TO 230+50 X-SEC 1994 0390 010

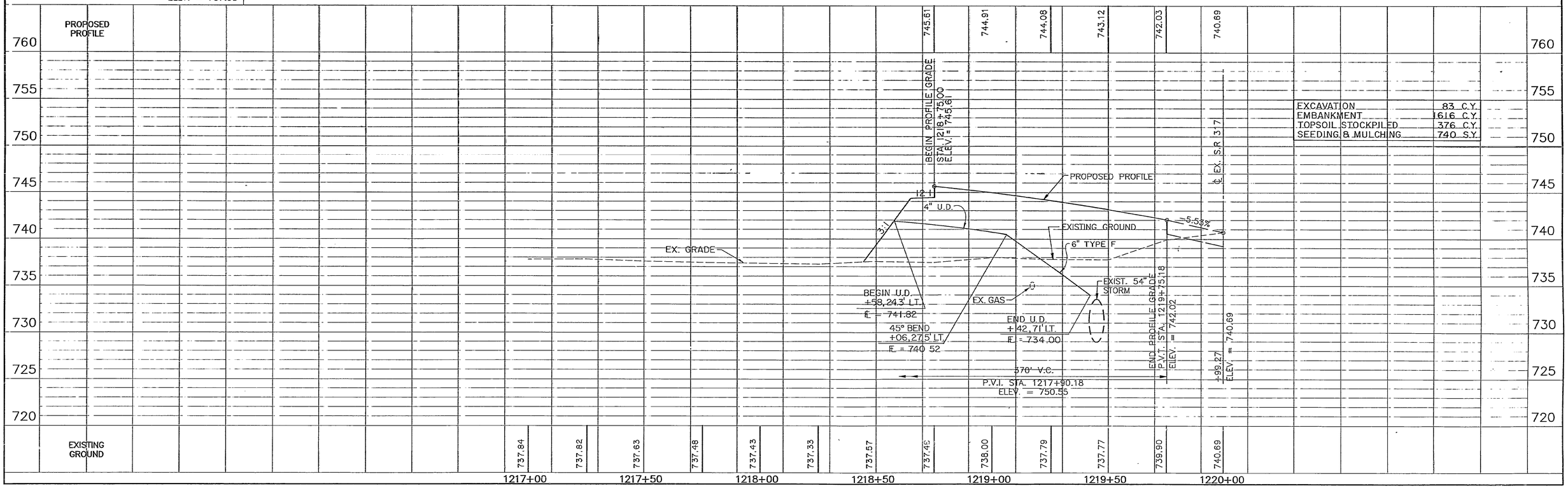
S.R. 317 X-SECTIONS STA. 229+00 TO STA. 230+50

FOR QUANTITY SUB-SUMMARIES, SEE SHEET NO. 45
FOR INTERSECTION DETAILS, SEE SHEET NO. 46
FOR EDDIE BAUER ROAD PLAN & PROFILE, SEE SHEET NO. 42
FOR S.R. 317 PLAN & PROFILE, SEE SHEET NO. 23
FOR TRAFFIC SIGNAL PLAN, SEE SHEET NO. 55-58 .

CURVE DATA
P.I. STA. = 1215+26.71
Δ = 42° 12' 54" LT.
D = 8° 45' 00"
R = 654.81'
T = 252.77'
L = 482.46'
E = 47.09'



BENCH MARK
TOP OF CONCRETE MONUMENT ON SOUTH SIDE S.R. 317, 475' WEST OF CURTIS LEMAY CONNECTOR, 45' SOUTH OF S.R. 317.
ELEV. = 737.98



EXCAVATION	83 C.Y.
EMBANKMENT	1616 C.Y.
TOPSOIL STOCKPILED	376 C.Y.
SEEDING & MULCHING	740 S.Y.

CALC. BY MRD DATE 2/94
CHKD. BY CHG DATE 2-94

FRA-317-3.75

OHIO
FHWA REGION 5

40
58

2530 010 S.R. 317 CONNECTOR ALIGN 1994 0400 010 PLAN & PROFILE S.R. 317 CONNECTOR STA. 1218+75 TO STA. 1219+75.18

SEEDING	
END WIDTH	SQ YDS.
46	381
91	232
76	127
0	

CALC. BY MEO DATE 2/96
CHKD. BY CHS DATE 2-96

FRA-317-3.75

OHIO
FHW REGION 5

41
58

END WORK
STA. 1219+75.18

STA 1218+75 TO STA 1219+50

EXCAVATION	83 C.Y.
EMBANKMENT	1,616 C.Y.
TOPSOIL STOCKPILED	376 C.Y.
SEEDING & MULCHING	740 S.Y.

QUANTITIES CARRIED TO SHEET NO. 40

MATCH LINE STA. 217+50, STATE ROUTE 317

MATCH LINE BELOW

MATCH LINE ABOVE

MATCH LINE STA. 218+84.88, STATE ROUTE 317

MATCH LINE

MATCH LINE

743.12
1219+50
737.77

744.91
1219+00
739.70

745.61
1218+75
745.61

BEGIN WORK
STA. 1218+45

3:1

4:1

736.7

736.6

736.0

734.2

EX. CATCH BASIN
STA. 1218+91
T.C. ELEV. = 734.00

EX. 48" STM.

FROM STA. 1218+45

FROM STA. 1218+45

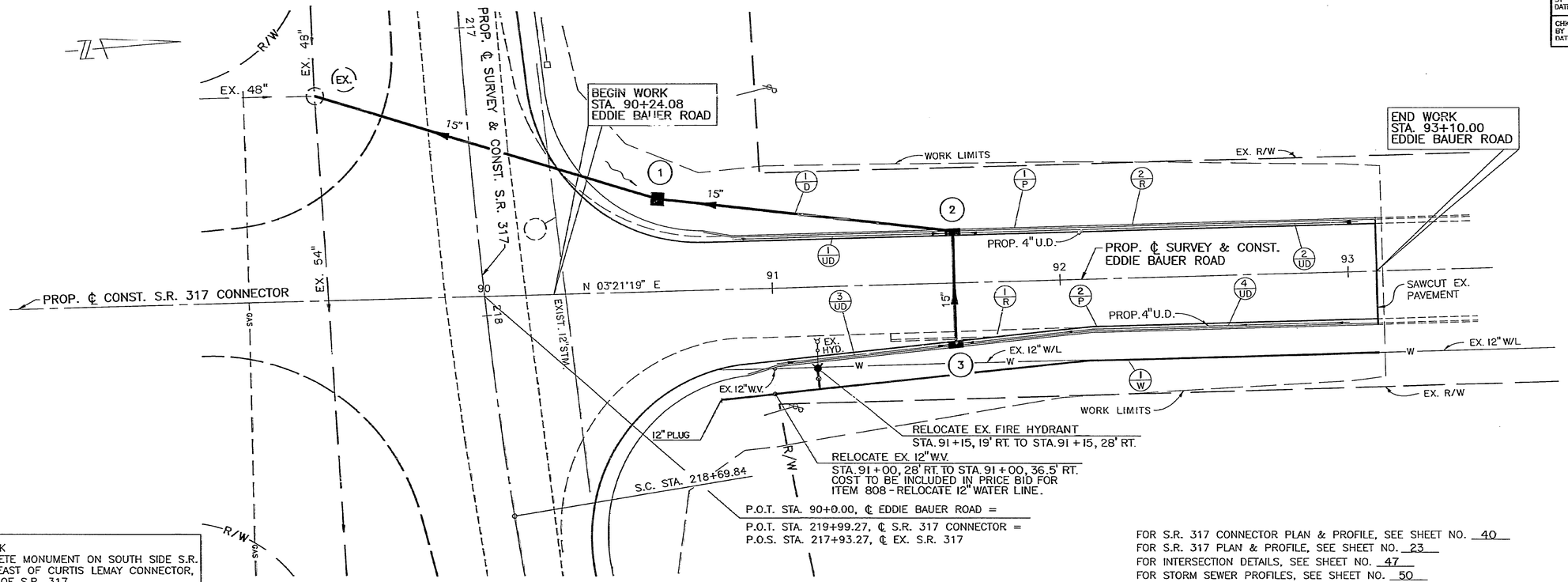
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0 (102)	449		
		39 (204)	848
42 (118)	467		
		31 (108)	467
24 (115)	541		
		13 (64)	301
0 (0)	0		

2530 010 S.R. 317 CONNECTOR X-SEC 1994 0410 010

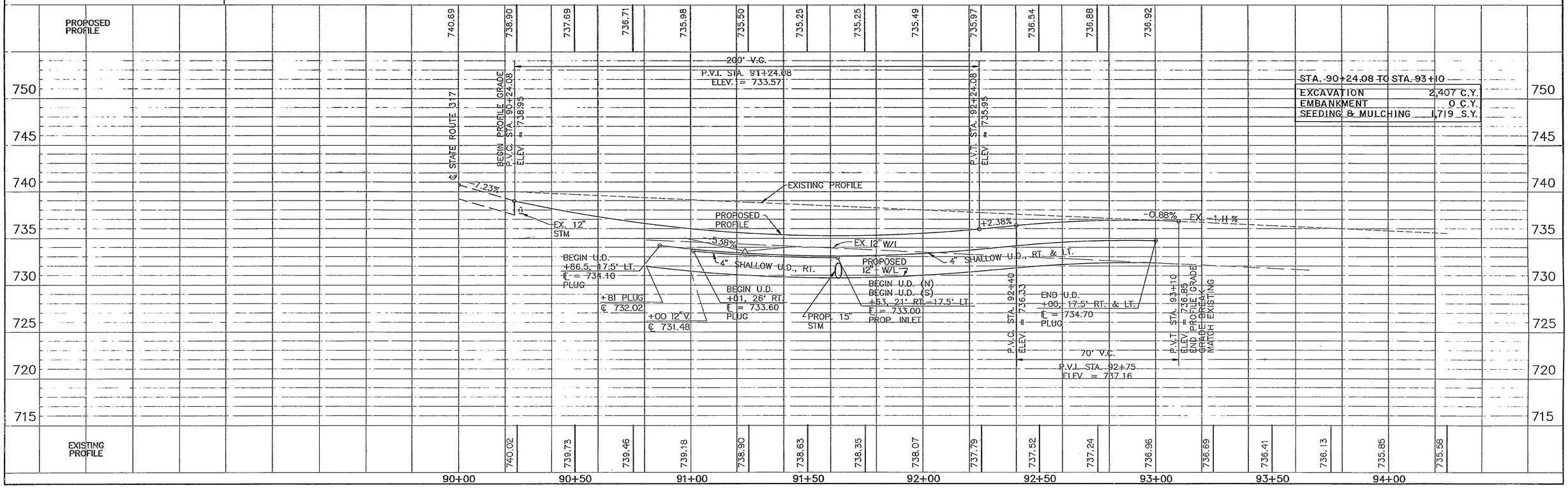
S.R. 317 CONNECTOR X-SECTIONS STA. 1218+75 TO STA. 1219+50

CALC. BY MED DATE 2/99	FRA-317-3.75	OHIO	42
CHKD. BY GHG DATE 2-24		FHWA REGION 5	58



BENCH MARK
TOP CONCRETE MONUMENT ON SOUTH SIDE S.R. 317, 150' EAST OF CURTIS LEMAY CONNECTOR, 65' SOUTH OF S.R. 317
ELEV. = 738.46

FOR S.R. 317 CONNECTOR PLAN & PROFILE, SEE SHEET NO. 40
FOR S.R. 317 PLAN & PROFILE, SEE SHEET NO. 23
FOR INTERSECTION DETAILS, SEE SHEET NO. 47
FOR STORM SEWER PROFILES, SEE SHEET NO. 50
FOR QUANTITY SUB-SUMMARIES, SEE SHEET NO. 45



STA. 90+24.08 TO STA. 93+10

EXCAVATION	2,407 C.Y.
EMBANKMENT	0 C.Y.
SEEDING & MULCHING	1,719 S.Y.

CALC BY / DATE	MED 4/94
CHKD BY / DATE	GHO 2-94

FRA-317-3.75

OHIO

FHW REGION 5

43
58

SEEDING		END AREA		VOLUME	
END WIDTH	SQ YDS.	CUT	FILL	CUT	FILL
60	694	250	0	1120	0
65	233	355	0	639	0
55		335	0		

EX. R/W

EX. R/W

740

735

3:1

3:1

EX. 12" W/L

PROP. 12" W/L

735.49
92+00
738.07

EX. R/W

EX. R/W

740

735

3:1

3:1

EX. 12" W/L

PROP. 12" W/L

735.98
91+00
739.18

PROP. 15" STM.

NO. 2-3 CATCH BASIN
STA. 90+61
T.C. ELEV. = 735.40

AHEAD ONLY

AHEAD ONLY

MATCH LINE STA. 217+50
STATE ROUTE 317

MATCH LINE STA. 218+64.88
STATE ROUTE 317

740

735

736.0

737.69
90+50
739.73

PROP. 15" STM.

BEGIN WORK
STA. 90+24.08

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

2530 010 EDDIE BAUER X-SEC 1994 0430 010

EDDIE BAUER RD. X-SECTION STA. 90+24.08 TO STA. 92+00

CALC BY / DATE	MRD 2-94
CHKD BY / DATE	GNO 2-94

FRA - 317 - 3.75

OHIO

FHW REGION 5

44
58

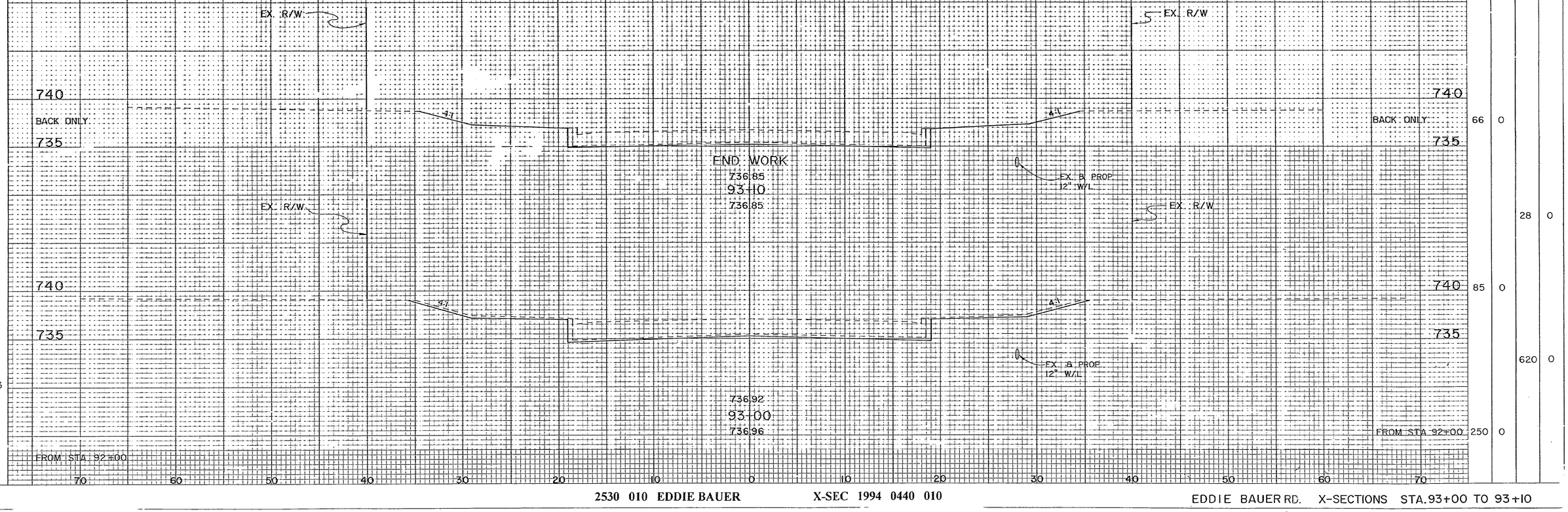
SEEDING	
END WIDTH	SQ. YDS.
52	59
54	633
60	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
66	0	28	0
85	0	620	0
250	0		

STA. 90+50 TO STA. 93+10

EXCAVATION	2,407 C.Y.
EMBANKMENT	0 C.Y.
SEEDING & MULCHING	1,719 S.Y.

QUANTITIES CARRIED TO SHEET NO. 42



2530 010 EDDIE BAUER X-SEC 1994 0440 010

EDDIE BAUER RD. X-SECTIONS STA. 93+00 TO 93+10

CALC. BY MED DATE 2/94	FRA-317-3.75	OHIO	45
CHKD. BY GHG DATE 2-94		FHWA REGION 5	58

QUANTITY SUB-SUMMARY
S.R. 317 CONNECTOR AND EDDIE BAUER ROAD

* CITY OF COLUMBUS
** SS 931 OR SS 944

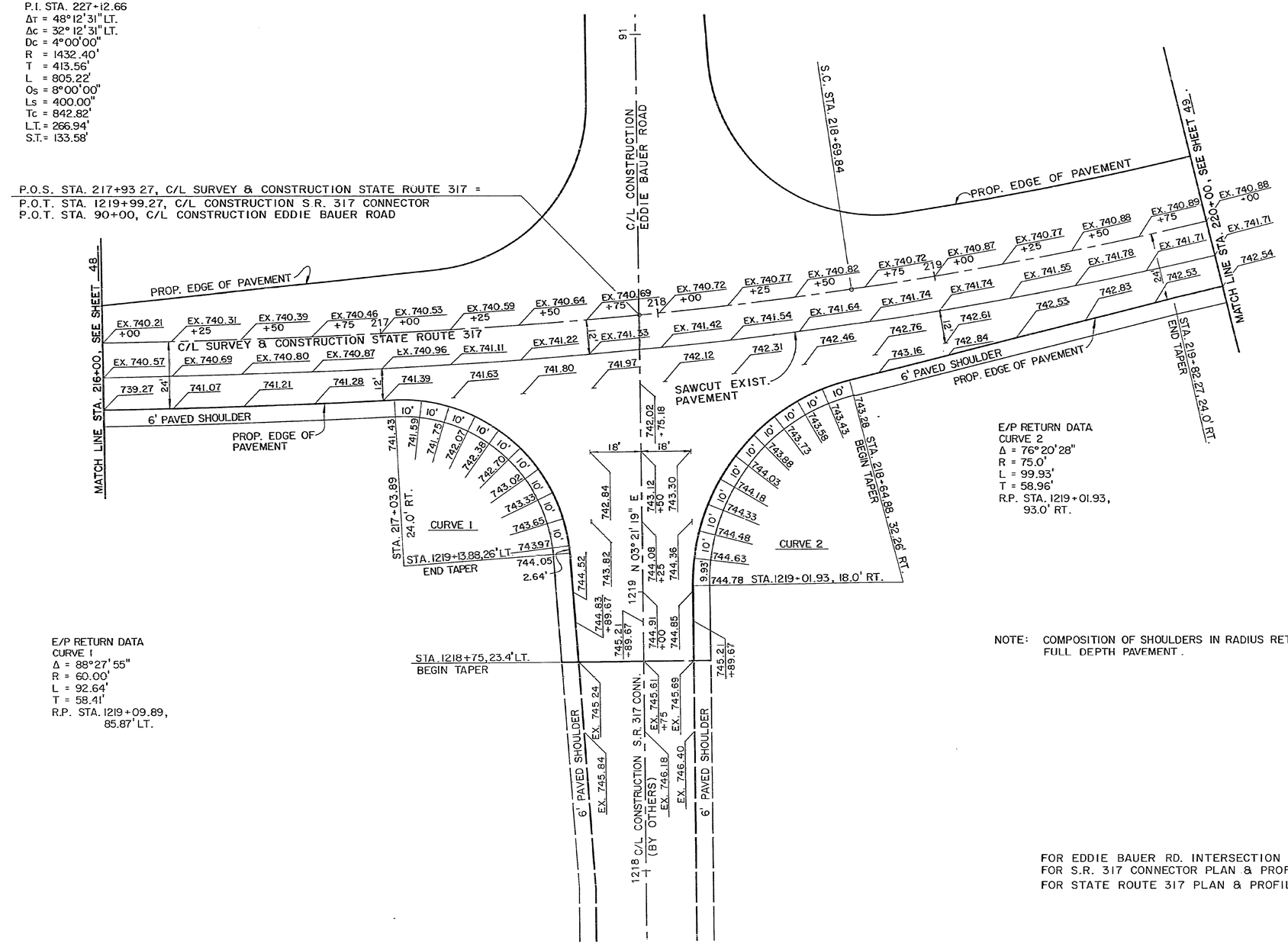
REFERENCE NO.	SIDE	STATION	202 CURB AND GUTTER REMOVED L.F.	603 6" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM 3034, SDR 35** L.F.	603 15" CONDUIT, TYPE B 706.02 L.F.	603 15" CONDUIT, TYPE C 706.02 L.F.	604 CATCH BASIN NO. 2-3 EA.	604 CATCH BASIN NO. 3 EA.	605 4" SHALLOW UNDERDRAIN L.F.	605 4" SHALLOW UNDER DRAIN AS PER PLAN L.F.	605 BENDS AND BRANCHES EA.	609 COMBINATION CURB AND GUTTER, AS PER PLAN L.F.	203 EXCAVATION C.Y.	203 EMBANKMENT C.Y.	651 TOPSOIL STOCKPILED C.Y.	659 SEEDING AND MULCHING S.Y.	801* CONCRETE BLOCKING CLASS "C" C.Y.	808* RELOCATE 12" WATER LINE L.F.	809* FIRE HYDRANT, RELOCATED EA.	SEE SHEET NO.
		EDDIE BAUER ROAD																		
		90+24.08 TO 93+10											2351	0		1719				40
1-R	R	91+40 TO 93+10	170																	
2-R	L	91+40 TO 93+10	170																	
1-UD	L	90+86.5 TO 91+63		10						67	1									
2-UD	L	91+63 TO 93+00		10						127	1									
3-UD	R	91+01 TO 91+63		10						52	1									
4-UD	R	91+63 TO 93+00		10						127	1									
1-D	L/R	90+61 TO 91+63			40	103	1	2												
1-P	L	90+76 TO 93+10										234								
2-P	R	90+91 TO 93+10										219								
1-W	R	90+81 TO 93+10															0.39	229	1	
		S.R. 317 CONNECTOR											83	1616	376	740				42
1-UD	L	1218+58 TO 1219+42		57					48											
		TOTALS	340	97	40	103	1	2	48	373		453	2434	1616	376	2459	0.39	229	1	

INTERSECTION DETAILS

20 0 20 40
SCALE IN FEET

CURVE DATA
C/L SURVEY & CONSTRUCTION S.R. 317
P.I. STA. 227+12.66
ΔT = 48°12'31" LT.
Δc = 32°12'31" LT.
Dc = 4°00'00"
R = 1432.40'
T = 413.56'
L = 805.22'
Θs = 8°00'00"
Ls = 400.00'
Tc = 842.82'
L.T. = 266.94'
S.T. = 133.58'

P.O.S. STA. 217+93.27, C/L SURVEY & CONSTRUCTION STATE ROUTE 317 =
P.O.T. STA. 1219+99.27, C/L CONSTRUCTION S.R. 317 CONNECTOR
P.O.T. STA. 90+00, C/L CONSTRUCTION EDDIE BAUER ROAD



E/P RETURN DATA
CURVE 1
Δ = 88°27'55"
R = 60.00'
L = 92.64'
T = 58.41'
R.P. STA. 1219+09.89, 85.87' LT.

E/P RETURN DATA
CURVE 2
Δ = 76°20'28"
R = 75.0'
L = 99.93'
T = 58.96'
R.P. STA. 1219+01.93, 93.0' RT.

NOTE: COMPOSITION OF SHOULDERS IN RADIUS RETURNS TO BE SAME AS FULL DEPTH PAVEMENT.

FOR EDDIE BAUER RD. INTERSECTION DETAIL, SEE SHEET NO. 47
FOR S.R. 317 CONNECTOR PLAN & PROFILE, SEE SHEET NO. 40.
FOR STATE ROUTE 317 PLAN & PROFILE, SEE SHEET NO. 23.

S.R. 317 CONNECTOR & STATE ROUTE 317

INTERSECTION DETAILS

CALC. BY / DATE			
CHKD. BY / DATE	FRA - 317 - 3.75	OHIO	47 / 58
		FHWA REGION 5	

CALC. MED 2/94 — CHKD. CHG 2-94

CURVE DATA
℄ SURVEY & CONST. S.R. 317
P.I. STA. 227+12.66
ΔT = 48° 12' 31"LT.
Δc = 32° 12' 31"LT.
Dc = 4°00'00"
R = 1432.40'
T = 413.56'
L = 805.22'
Θs = 8°00'00"
Ls = 400.00'
Tc = 842.82'
L.T. = 266.94'
S.T. = 133.58'

E/P RETURN DATA
CURVE 1
Δ = 87°15'02"
R = 60.00'
L = 91.37'
T = 57.19
R.P. STA. = 217+20.54,
81.37' LT.

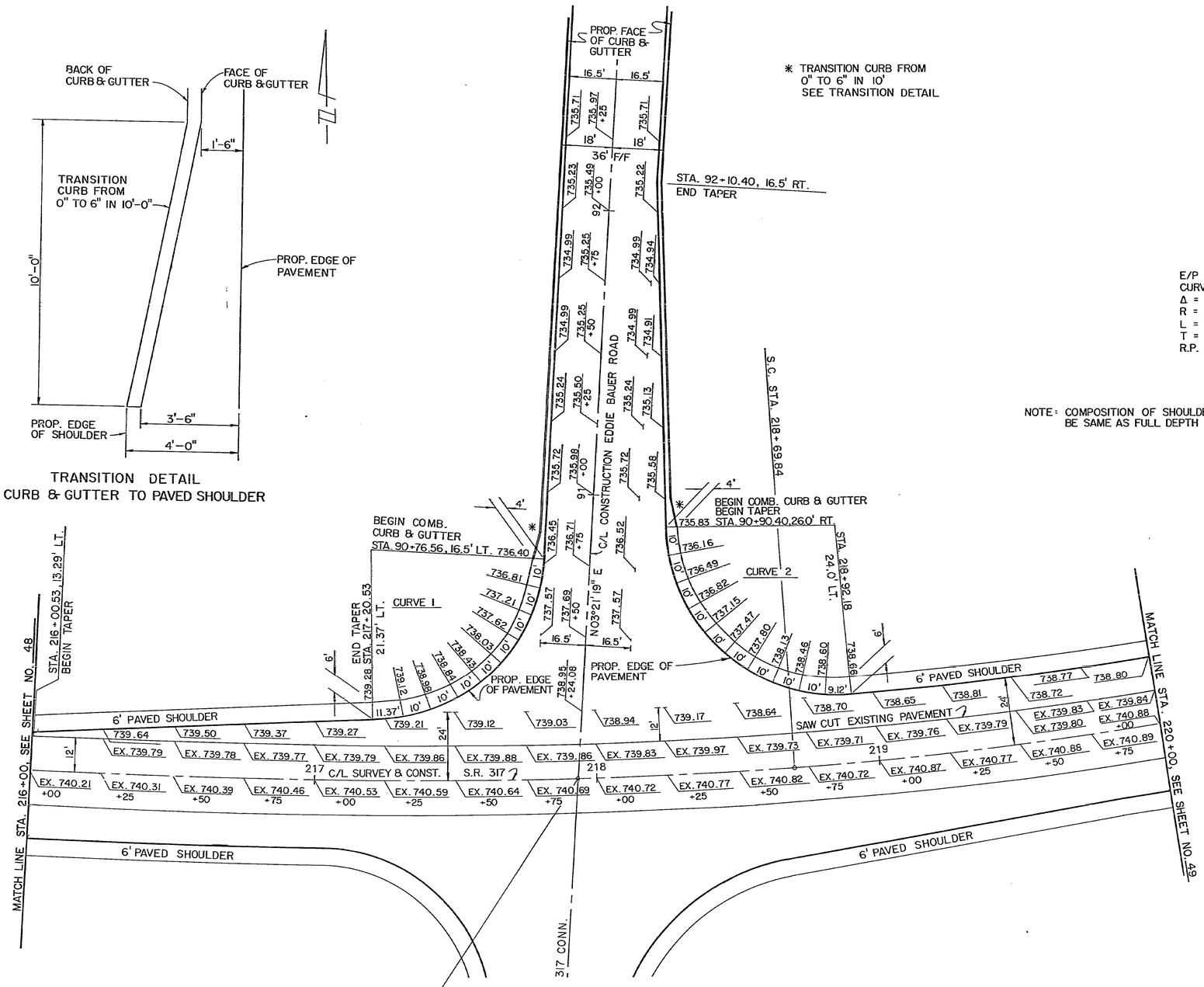
TRANSITION DETAIL
CURB & GUTTER TO PAVED SHOULDER

20 0 20 40
SCALE IN FEET

* TRANSITION CURB FROM 0" TO 6" IN 10' SEE TRANSITION DETAIL

E/P RETURN DATA
CURVE 2
Δ = 94°39'21"
R = 60.00'
L = 99.12'
T = 65.08
R.P. STA. = 218+92.18,
84.0' LT.

NOTE: COMPOSITION OF SHOULDERS IN RADIUS RETURNS TO BE SAME AS FULL DEPTH PAVEMENT.



P.O.S. STA. 217+93.27 ℄ SURVEY & CONST. S.R. 317 =
P.O.T. STA. 90+00 ℄ CONST. EDDIE BAUER ROAD =
P.O.T. STA. 1219+99.27 ℄ CONST. S.R. 317 CONNECTOR

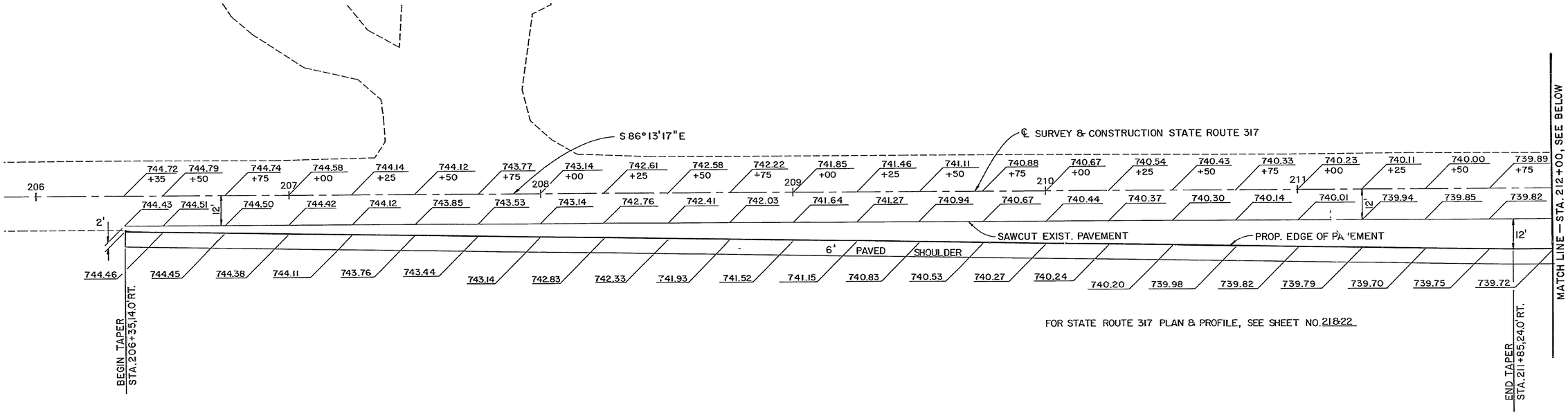
FOR EDDIE BAUER ROAD PLAN & PROFILE, SEE SHEET NO. 42
FOR STATE ROUTE 317 PLAN & PROFILE, SEE SHEET NO. 23
FOR STATE ROUTE 317 CONNECTOR INTERSECTION DETAIL, SEE SHEET NO. 46

EDDIE BAUER ROAD & STATE ROUTE 317
INTERSECTION DETAILS

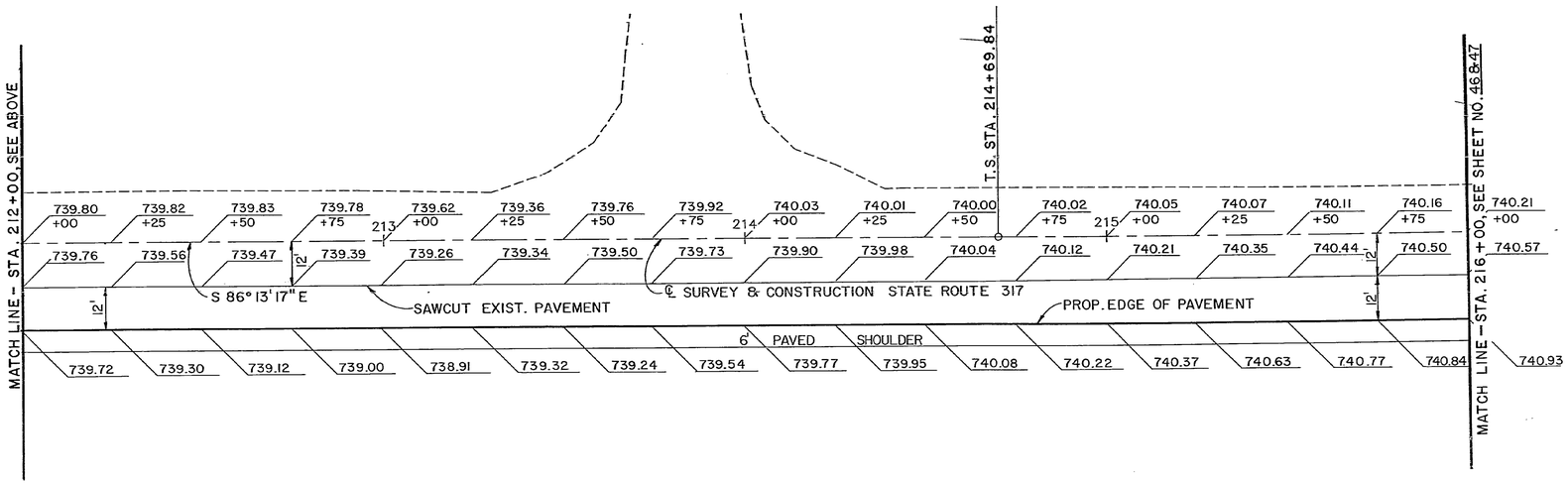
CALC BY MED DATE 2/94	FRA-317-3.75	OHIO	48
CHKD BY GMB DATE 2-94		FHWA REGION 5	58

PAVEMENT DETAILS

20 0 20 40
SCALE IN FEET



FOR STATE ROUTE 317 PLAN & PROFILE, SEE SHEET NO. 21&22



CURVE DATA
℄ SURVEY & CONSTUCTION
STATE ROUTE 317

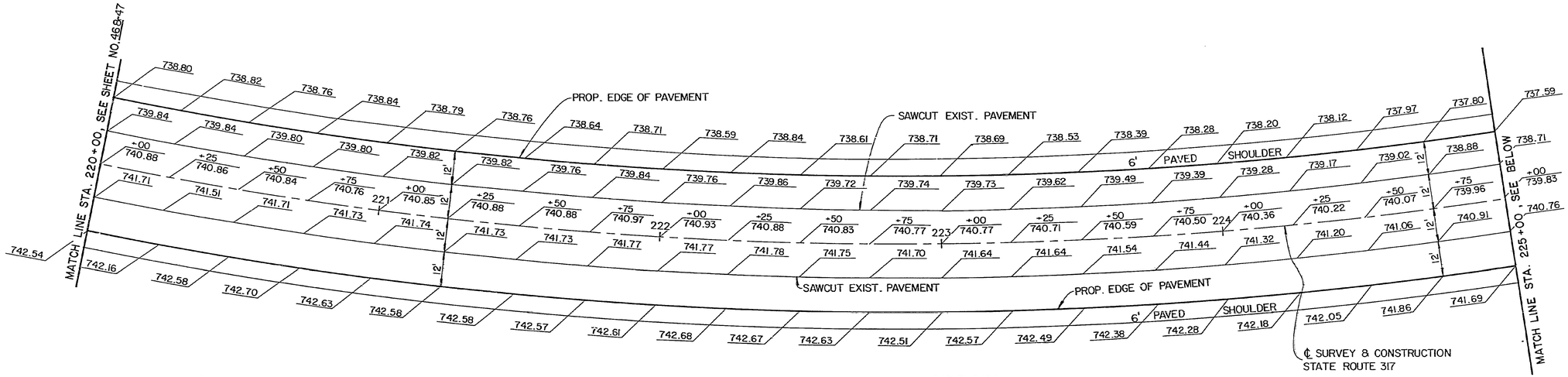
P.I. STA. 227+12.66
Δ_T = 48°12'31" LT.
Δ_c = 32°12'31" LT.
D = 04°00'00"
R = 1432.40'
T = 413.56'
L = 805.22'
Θ_s = 08°00'00"
Ls = 400.00'
Ts = 842.82'
L.T. = 266.94'
S.T. = 133.58'
Es = 136.91'

STATE ROUTE 317

CALC BY MED DATE 2/94	FRA - 317 - 3.75	OHIO	49
CHKD BY CHG DATE 2-94		FHWA REGION 5	58

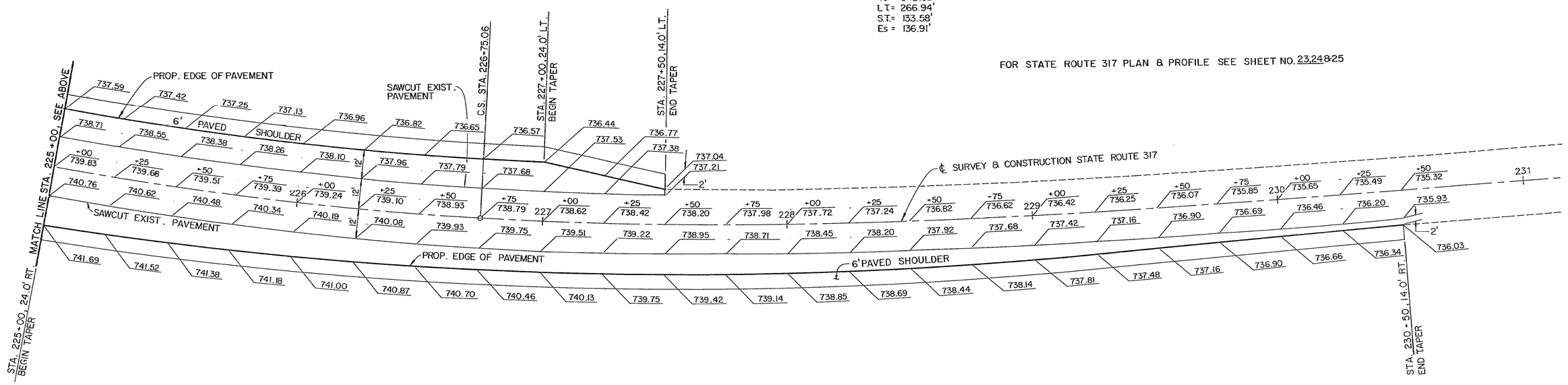
PAVEMENT DETAILS

20 0 20 40
SCALE IN FEET



CURVE DATA
℄ SURVEY & CONST. S.R. 317
P.I. STA. 227+12.66
Δ_T = 48° 12' 31" LT.
Δ_C = 32° 12' 31" LT.
D = 04° 00' 00"
R = 1432.40'
T = 413.56'
L = 805.22'
Θ_s = 08°00'00"
Ls = 400.00'
Ts = 842.82'
L T= 266.94'
S.T.= 133.58'
Es = 136.91'

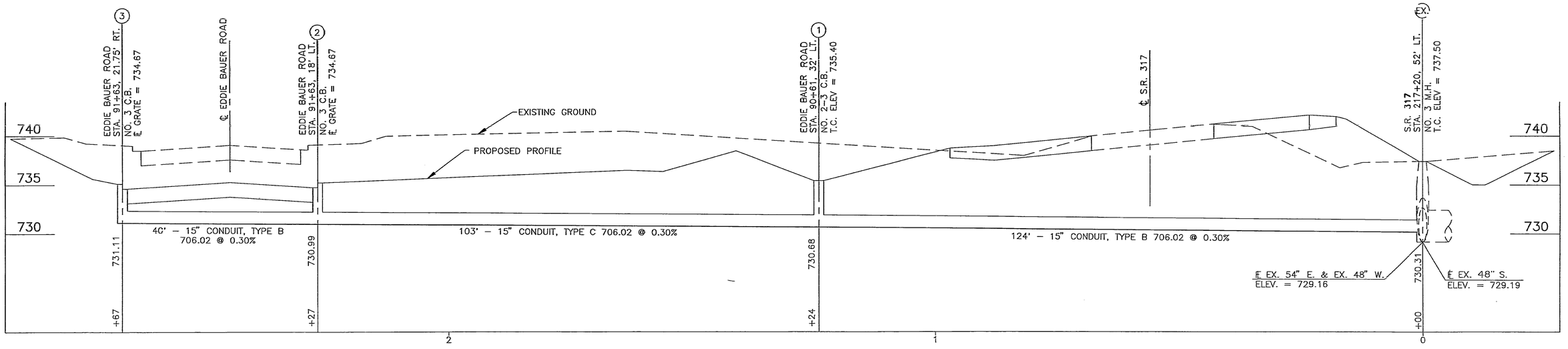
FOR STATE ROUTE 317 PLAN & PROFILE SEE SHEET NO. 23,24&25



STATE ROUTE 317

10 0 10 20
HORIZONTAL SCALE IN FEET

5 0 5 10
VERTICAL SCALE IN FEET



TRAFFIC CONTROL GENERAL SUMMARY

CALC. BY MRD DATE 2/94	FRA - 317 - 3.75	OHIO	51
CHKD BY CNG DATE 2-94		FHWA REGION 5	58

ITEM	SHEET NUMBERS																ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
										52		53									
630										122							630	03100	122	L.F.	GROUND MOUNTED SUPPORTS, NO. 3 POST
630										28							630	04100	28	L.F.	GROUND MOUNTED SUPPORTS, NO. 4 POST
630										50							630	80102	50	S.F.	SIGNS, FLAT SHEET, TYPE G
630										4							630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION
630										1							630	85000	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE
630										4							630	84900	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
642												0.68					642	00102	0.68	MILE	EDGE LINE, TYPE 2
642												0.84					642	00302	0.84	MILE	CENTER LINE, TYPE 2
642												1525					642	00402	1525	L.F.	CHANNELIZING LINE, TYPE 2
642												151					642	00502	151	L.F.	STOP LINE, TYPE 2
642												455					642	00702	455	L.F.	TRANSVERSE LINE, TYPE 2
642												13					642	01302	13	EACH	LANE ARROW, TYPE 2
642												3					642	01412	3	EACH	WORD ON PAVEMENT, 96 INCH, TYPE 2

CALC. BY MRD DATE 2/94	FRA - 317 - 3.75	OHIO	52
CHK BY GNC DATE 2-94		FHWA REGION 5	58

SIGNING SUB-SUMMARY

STATION	SIDE		EFFECTIVE SIGN SIZE		630 SIGNS, FLAT SHEET TYPE G		630 GOUND MOUNTED SUPPORTS 2 - NO. 3 POSTS	630 GROUND MOUNTED SUPPORTS NO. 4 POST				630 REMOVAL OF GROUND MOUNTED SIGN & REERECTION	630 REMOVAL OF GROUND MOUNTED SIGN & STORAGE	630 REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL
			IN.		S.F.		L.F.	L.F.				EACH	EACH	EACH
STATE ROUTE 317														
209+50	RT.		36 X 36		9.0			14.5						
212+35	RT.		36 X 30		7.5		13.5							
215+00	RT.		36 X 18				13.5					1		1
217+36	RT.		30 X 24 (2)				27.0					2		2
220+04	RT.												1	
221+00	LT.		36 X 18				13.5					1		1
224+50	LT.		48 X 30		10.0		27.0							
227+00	LT.		30 X 30		6.25		13.5							
229+00	LT.		36 X 36		9.0			13.5						
EDDIE BAUER ROAD														
91+92	LT.		36 X 30		7.5		13.5							
TOTAL	EACH											4	1	4
	SQ. FT.				49.25									
	LIN. FT.						121.5	28.0						

CALC BY MSD DATE 2-94	FRA - 317 - 3.75	OHIO	53
CHKD BY CWS DATE 2-94		FHWA REGION 5	58

PAVEMENT MARKING SUB-SUMMARY

STATION FROM	STATION TO		642 4" SOLID DOUBLE YELLOW CENTER LINE, TYPE 2	642 4" WHITE EDGE LINE, TYPE 2	642 8" WHITE CHANNELIZING LINE, TYPE 2	642 24" STOP LINE, TYPE 2	642 24" WHITE TRANSVERSE LINE, TYPE 2	642 24" YELLOW TRANSVERSE LINE, TYPE 2	642 LANE ARROW, TYPE 2	642 WORD ON PAVEMENT 95", TYPE 2				
			L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EACH	EACH				
STATE ROUTE	317													
206+35	212+35		1200					220						
212+35	217+45		510											
206+35	1219+14 (CONN)			1162										
212+55	217+30		475			30								
212+78									1					
215+66									1					
216+32										1				
217+00									1					
216+00	90+77 (EB)			212										
218+55	218+90				70	49	15							
218+50	224+50		600											
224+50	230+50		1200					220						
90+90 (EB)	227+50			858										
1219+02 (CONN)	230+50			1285										
218+50	224+30				560									
218+75	226+80				805									
218+85									1					
219+20									1					
219+53										1				
219+88										1				
220+19									1					
220+54									1					
224+07									1					
226+57									1					
TOTAL	LIN. FT.		3,985	3,517	1,455	79	15	440						
	MILES		0.75	0.67										
	EACH								9	3				

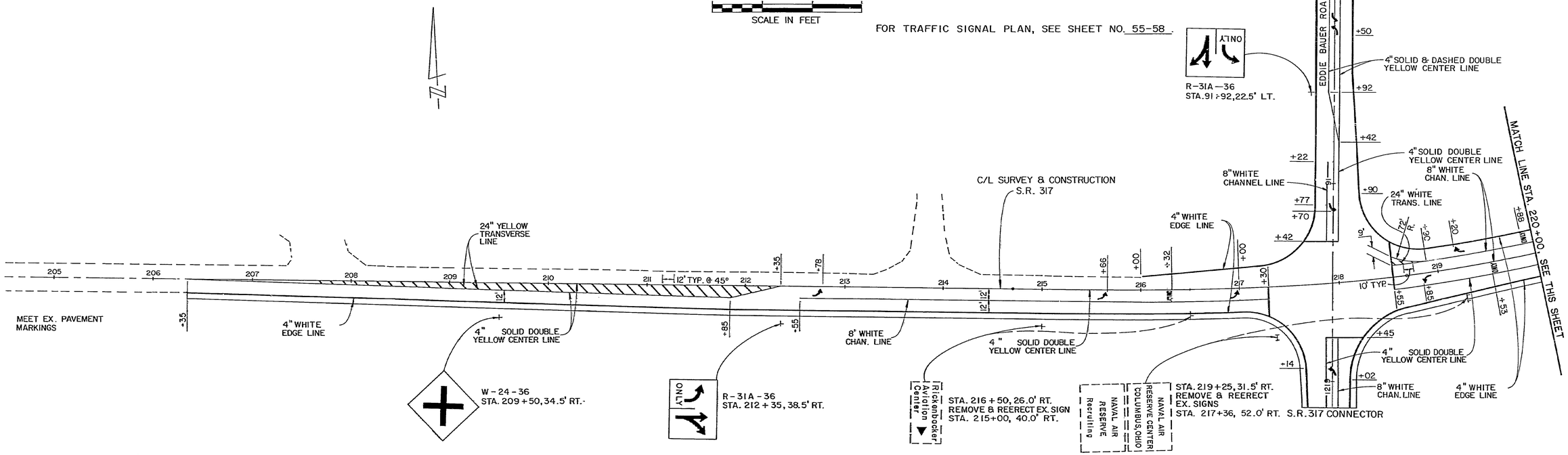
STATION FROM	STATION TO	642 4" SOLID & DASHED DOUBLE YELLOW CENTER LINE, TYPE 2	642 4" SOLID DOUBLE YELLOW CENTER LINE, TYPE 2	642 4" WHITE EDGE LINE, TYPE 2	642 8" WHITE CHANNELIZING LINE, TYPE 2	642 24" STOP LINE, TYPE 2			642 LANE ARROW TYPE 2					
		L.F.	L.F.	L.F.	L.F.	L.F.			EACH					
STATE ROUTE	317 CONN.													
1218+75	1219+45		70		70	38								
1218+75	1219+14			39										
1218+75	1219+02			27										
1219+14									1					
EDDIE BAUER	ROAD													
90+42	91+42		100			34								
91+42	93+10	336												
90+70									1					
92+50									2					
TOTAL	LIN. FT.	336	170	66	70	72								
	MILES	0.06	0.03	0.01										
	EACH								4					

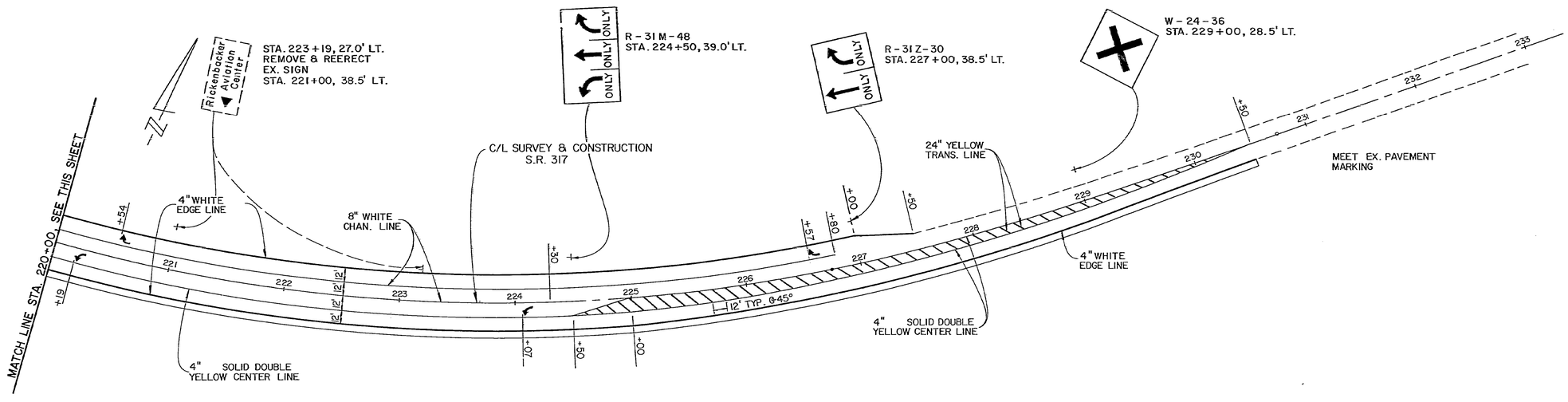
PAVEMENT MARKING PLAN

CALC. BY SRW DATE 5/93	FRA - 317 - 3.75	OHIO	54
CHKD BY GHH DATE 6/93		FHWA REGION 5	58

50 0 50 100
SCALE IN FEET

FOR TRAFFIC SIGNAL PLAN, SEE SHEET NO. 55-58 .





S.R. 317

GENERAL SUMMARY

CALC. BY DAB DATE 1-23-94
CHKD. BY GLW DATE 1/23/94

FRA - 317 - 3.75

OHIO | FHWA REGION 5

55
58

S.R. 317 CONNECTOR SIGNAL SHT. 56.	S.R. 317 CONNECTOR SIGNAL SHT. 57.	ITEM	ITEM EXT.	QUANITY TOTAL	UNIT	DESCRIPTION
						SIGINALIZATION
500		603	00400	500	LIN. FT.	4" CONDUIT, TYPE E
	836	625	25100	836	LIN. FT.	CONDUIT, 1", 713.04
	162	625	25400	162	LIN. FT.	CONDUIT, 2", 713.04
	28	625	25500	28	LIN. FT.	CONDUIT, 3", 713.04
	998	625	29000	998	LIN. FT.	TRENCH
	8	625	30700	8	EACH	PULL BOX, 713.08, 18"
	1	625	30706	1	EACH	PULL BOX, 713.08, 24"
	5	625	32000	5	EACH	GROUND ROD
	6	632	00301	6	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 12 INCH LENS, 1-WAY, AS PER PLAN
	2	632	00501	2	EACH	VEHICULAR SIGNAL HEAD, 5 SECTION, 12 INCH LENS, 1-WAY, AS PER PLAN
	8	632	25000	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD
	4	632	26000	4	EACH	PEDESTRIAN PUSHBUTTON
	10	632	27005	10	EACH	LOOP DETECTOR UNIT, AS PER PLAN
	902	632	27500	902	LIN. FT.	LOOP DETECTOR PAVEMENT CUTTING
	367	632	30200	367	LIN. FT.	MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES
	602	632	40500	602	LIN. FT.	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
	571	632	40700	571	LIN. FT.	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
	134	632	40900	134	LIN. FT.	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG
	2350	632	64900	2350	LIN. FT.	LOOP DETECTOR WIRE, TYPE E
	3571	632	65200	3571	LIN. FT.	LOOP DETECTOR LEAD-IN CABLE
	75	632	67200	75	LIN. FT.	POWER CABLE, 2 CONDUCTOR, NO. 8 AWG
	100	632	69500	100	LIN. FT.	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG
	1	632	70001	1	EACH	POWER SERVICE, AS PER PLAN
	4	632	71000	4	EACH	CABLE SUPPORT ASSEMBLY
	9.6	632	72000	9.6	CU. YD.	CONCRETE FOR ANCHOR BASE FOUNDATION
	4	632	82600	4	EACH	STRAIN POLE, TYPE TC-81.10, DESIGN 6
	1	633	38001	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL, MICROPROCESSOR, WITH INTERNAL TIME BASE COORDINATION, WITH BASE MOUNTED "P" CABINET, AS PER PLAN
	1.54	633	70001	1.54	CU. YD.	CONCRETE FOR CABINET FOUNDATION, AS PER PLAN
	10.42	633	70500	10.42	SQ. FT.	CONTROLLER WORK PAD

GENERAL

THE CONTRACTOR SHALL FURNISH AND INSTALL TRAFFIC SIGNAL EQUIPMENT, IN CONFORMANCE TO THESE PLANS AND SPECIFICATIONS, AND THE 1993 STATE OF OHIO DEPARTMENT OF TRANSPORTAION CONSTRUCTION AND MATERIAL SPECIFICATIONS AND ALL SUPPLEMENTAL SPECIFICATIONS. HE SHALL INSTALL ALL TRAFFIC SIGNAL EQUIPMENT IN CONFORMANCE TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS LATEST REVISION, AND IN CONFORMANCE TO THE OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF DESIGN SERVICE STANDARD CONSTRUCTION DRAWINGS.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

THE STANDARD CONSTRUCTION DRAWINGS SHOWN ON THE COVER SHEET. SHALL APPLY. 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 RFFERENCES TO ITEMS 630, 631, 633, 730, 731, AND 733.

ITEM 633, CONCRETE FOR ANCHOR BASE FOUNDATION, AS PER PLAN

THE 12" FOUNDATION HEIGHT AS SHOWN ON TC-83.20, CONTROLLER FOUNDATION, SHALL BE 4", AS SHOWN ON THE PLANS.

632 VEHICULAR SIGNAL HEAD, BY TYPE, AS PER PLAN

BALANCE ADJUSTERS, SHOWN ON TC-85.20 OF THE STANDARD CONSTRUCTION DRAWINGS SHALL NOT BE USED.

ALL WIRE ENTRANCES AND TWO WAY MOUNTING BRACKETS SHALL UTILIZE TRI-STUD TYPE HARDWARE TO MOUNT THE SIGNAL HEAD TO THE WIRE ENTRANCE OR TWO WAY MOUNTING BRACKET.

ADJUSTABLE SIGNAL HANGERS SHALL BE USED IN PLACE OF DROP PIPE TO MAINTAIN UNIFORM SIGNAL HEAD CLEARANCES WHEN REQUIRED. THE ADJUSTABLE SIGNAL HANGER SHALL UTILIZE TRI-STUD TYPE MOUNTING HARDWARE TO ATTACH THE SIGNAL HEAD TO THE HANGER.

THIS ITEM SHALL CONFORM TO ITEM 632 EXCEPT THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

ALL SIGNAL HEADS SHALL UTILIZE TUNNEL VISORS WITH AN OPENING AT THE BOTTOM.

UNDERDRAINS FOR PULLBOXES

REFERENCE IS MADE TO STANDARD CONSTRUCTION DRAWINGS FOR DETAILS OF DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 500 LIN. FT. OF ITEM 603 4" CONDUIT TYPE E IS INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THE CONTRACT SHALL OPERATE SATISFACTORY FOR A PERIOD OF NINETY (90) DAYS FOLLOWING COMPLETION OF THE TEN DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. MATERIAL AND LABOR COSTS INCURRED IN CORRECTING UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR. THE GUARANTEE SHALL COVER THE UNITS, MONITORS AND ASSOCIATED EQUIPMENT. THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

632 LOOP DETECTOR UNIT, BY TYPE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632 AND 732.07 OR 732.08, LOOP DETECTOR UNITS SHALL HAVE THE FOLLOWING REQUIREMENTS OR FEATURES: THE OUTPUT DEVICE SHALL BE AN ELECTRO-MECHANICAL RELAY, AND ALL CONTACTS SHALL BE INCLUDED IN THE WIRING HARNESS. THE UNITS SHALL BE SELF-TUNING. AL UNITS SHALL BE SINGLE CHANNEL DELAY AND EXTENSION TYPE.

POWER SERVICE, AS PER PLAN

ELECTRICAL POWER SHALL BE OBTAINED FROM SOUTH CENTRAL POWER CO. AT THE LOCATION SHOWN ON THE PLANS. THE VOLTAGE SUPPLIED SHALL BE 120 VOLT AC. ALL NECESSARY WORK TO INSTALL AND COMPLETE AN OPERATING SYSTEM WILL BE INCLUDED IN THE VARIOUS ELECTRICAL BID ITEMS IN THIS CONTRACT.

CONTROLLER, ACTUATED, EIGHT PHASE, SOLID STATE DIGITAL MICROPROCESSOR, WITH INTERNAL TIME BASE COORDINATION, WITH BASE MOUNTED "P" CABINET, AS PER PLAN

THE OVERLAP PROGRAMMING SHALL BE BY USE OF AN INTERCHANGEABLE PLUG-IN CIRCUIT BOARD ASSEMBLE AS DESCRIBED IN PART 14 OF TR-1-1983. IN ADDITION TO NEMA REQUIREMENTS, THE CONFLICT MONITOR SHALL ALSO HAVE EXTENDED MONITORING (IN ACCORDANCE WITH 733.04 PART 3B B).

TO ACCOMMODATE FUTURE OPERATIONAL UPGRADES, UP TO AND INCLUDING AN EIGHT (8) PHASE OPERATION, PROVIDE ALL WIRING AND COMPONENTS FOR THE CONFLICT MONITOR, FLASH TRANSFER RELAYS, AND LOAD SWITCHES SUCH THAT WHEN EXPANSION IS IMPLEMENTED, THE ONLY WORK REQUIRED WILL BE TO RE-PROGRAM THE CONFLICT MONITOR, HOOK UP THE SIGNAL HEADS AND DETECTORS, AND TO ACTIVATE THE ADDED PHASES ON THE CONTROLLER. A NEMA PLUS 12 CHANNEL MONITOR IS REQUIRED AS IS AN UNPAINTED TYPE "P" CABINET. THE NEW CABINET AND FOUNDATION SHALL BE ORIENTED WITH RESPECT TO THE INTERSECTION IN A MANNER THAT WILL PROVIDE MAINTENANCE PERSONNEL WITH A VIEW OF THE INTERSECTION WHILE WORKING ON THE CONTROLLER.

THE DESIGN OF THE MONITOR SHALL USE MICRO-PROCESSOR ARCHITECTURE AND LIQUID CRYSTAL DISPLAYS. THE MONITOR SHALL INDICATE THE EXACT LOAD SWITCH CHANNEL IN WHICH THE FAILURE OCCURRED. THE CONFLICT MONITOR SHALL HAVE AN EVENT LOGGING MEMORY. A MINIMUM OF NINE (9) EVENTS SHALL BE LOGGED. EXAMPLES OF EVENTS INCLUDE: POWER OUTAGES, CONFLICTS, CONTROLLER VOLTAGE MONITOR, ETC. EVENTS SHALL BE DISPLAYED ON THE CONFLICT MONITOR'S LIQUID CRYSTAL DISPLAY WHEN INTERROGATED.

PRINTED CIRCUIT BOARD TYPE BACK PANELS OF THE CONTROLLER CABINET WILL NOT BE ACCEPTED. SOLDERED CONNECTIONS WILL BE PERMITTED FOR WIRING ON THE BACK SIDE OF THE BACK PANEL. ALL CONTROLLER MEMORIES SHALL BE INVOLATILE AND SHALL NOT REQUIRE BATTERIES OR OTHER SOURCES OF ENERGY TO RETAIN DATA WHILE POWER IS REMOVED FROM THE CONTROLLER.

THE HOUSING SHALL HAVE AN ADD-ON GENERATOR POWER PANEL, WITH ENCLOSURE. THIS ITEM SHALL ALLOW SIGNAL ELECTRICIANS TO OPERATE THE TRAFFIC SIGNAL DURING POWER OUTAGES, WITHOUT OPENING THE CABINET DOOR OR CONNECTING OR DISCONNECTING PERMANENT POWER CABLES. THE ENCLOSURE SHALL BE INSTALLED ON THE SIDE OF THE CONTROLLER CABINET CLOSEST TO THE POWER INPUT PANEL. DESIGN AND LAYOUT OF THE CONTROLLER CABINET WILL DETERMINE EXACT PLACEMENT OF THE ENCLOSURE BUT IT SHOULD BE PLACED NEAR THE TOP OF GROUND MOUNTED CABINETS AND ABOUT 5 FEET FROM THE GROUND ON POLE MOUNTED CABINETS. DETAILS SHOWING THE ENCLOSURE, FRONT VIEW OF THE GENERATOR PANEL AND THE ELECTRICAL HOOK-UP ARE INCLUDED ON PAGE 11 OF THIS PLAN. THE ENCLOSURE SHALL BE SEALED WITH A HIGH QUALITY SILICON CAULK AND ALL HOLES DRILLED INTO THE SIDE OF THE CONTROLLER CABINET SHALL BE CAULKED AND SEALED AFTER THE ELECTRICAL EQUIPMENT IS INSTALLED. ALL ELECTRICAL CONNECTIONS, SOLDERED OR SCREW TYPE TERMINALS, INVOLVED IN THIS PAY ITEM SHALL BE COVERED WITH A CLEAR SILICON CAULK, AFTER ENSURING A GOOD CONNECTION EXCEPT THE FIELD CONNECTIONS AND GROUND TERMINALS. THIS IS TO REDUCE THE RISK OF ELECTRICAL SHOCK.

THE GENERATOR POWER PANEL ENCLOSURE CAN BE FABRICATED TO MEET THE ATTACHED SPECIFICATIONS OR IT CAN BE PURCHASED THROUGH GAMMATRONIX AT 6279 SHIER RINGS ROAD, DUBLIN, OHIO 43017. PHONE NUMBER 614-889-2511.

THE GENERATOR RECEPTACLE SHALL BE 30 AMP, LOCKING, FOUR WIRE GROUNDING AND MEET THE NEMA L14-30R 30A 125/250V SPECIFICATIONS.

THE LINE VOLTAGE GENERATOR SWITCH SHALL BE 17 AMP 125/250V AC, 1,2,3 PHASE, 1 HP AT 125V AC AND 2 HP AT 250V AC THREE POSITION. (McGILL OR EQUIVALENT).

THE LINE VOLTAGE INDICATOR LIGHT SHALL BE 125V AS WITH A RED LENS. (McGILL 0891-1413/RED) OR EQUIVALENT.

THE LINE VOLTAGE CIRCUIT BREAKER SHALL BE SINGLE POLE SINGLE THROW AND A MINIMUM OF 30 AMPS. THE AMPERAGE SHALL BE INCREASED TO ACCOMMODATE GREATER LOADS, IF NECESSARY. THE GAUGE OF THE POWER CABLE SHALL BE OF PROPER SIZE PER THE N.E.C.

PAYMENT FOR THE ITEM 633, CONTROLLER, ACTUATED, EIGHT PHASE, SOLID STATE DIGITAL, MICROPROCESSOR, WITH INTERNAL TIME BASE COORDINATION, WITH BASE MOUNTED CABINET, AS PER PLAN, WILL BE AT THE CONTRACT BID PRICE COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED ON ACCEPTED.

ITEM 614 STOP AND GO SIGNAL ACTUATION

THE NEW SIGNAL , INSTALLED BY THE CONTRACTOR, SHALL OPERATE IN A "FLASH" MODE FOR SEVEN CONSECUTIVE DAYS BEFORE BEING PLACED IN A "STOP-AND-GO" MODE FOR THE TEN DAY BURN TEST.

THE SIGNAL SHALL NOT BE PLACED IN "STOP-AND-GO" OPERATION EITHER THE DAY PRECEDING OR DURING:

A) A NATIONAL HOLIDAY
B) A HOLIDAY WEEKEND
C) A WEEKEND

A DAY BETWEEN A NATIONAL HOLIDAY AND A SATURDAY OR SUNDAY IS CONSIDERED A PART OF THE WEEKEND (EX: THE FRIDAY AFTER THANKSGIVING IS CONSIDERED PART OF THE WEEKEND).

WITH THE EXCEPTION OF PERMANENT SUPPORTS AND SIGNAL AHEAD SIGNS INCLUDED AS BID ITEMS IN THE PLAN, THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM ARE INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

ITEM 614 MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

A) NEW SIGNAL INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED, INCLUDING THE 10 DAY PERFORMANCE TEST.

B) TESTING PROCEDURES SHALL FOLLOW 632.27.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE COUNTY ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, SEVEN DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8 HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION, THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO OR CANNOT RESPOND TO AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE COUNTY ENGINEER FOR POLICE SERVICES AND MAINTENANCE SERVICES BY COUNTY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 7 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 AM TO 9:00 AM TO 4:00 PM TO 6:00 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 A SPECIAL DUTY UNIFORMED LAW ENFORCEMENT OFFICER, HIRED BY THE CONTRACTOR.

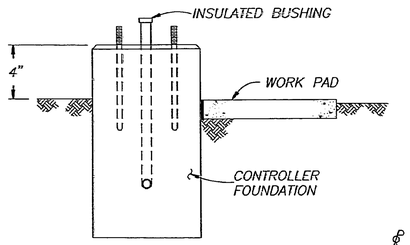
ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.24.

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

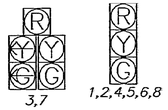
LEGEND:

- —W— – WATER LINE
- —GAS— – GAS LINE
- —STM— – STORM SEWER
- —SAN— – SANITARY SEWER
- —U.G.T.— – UNDERGROUND TELEPHONE CABLE
- —U.D.— – UNDER DRAIN
- MH. – MANHOLE
- C.B. – CATCH BASIN
- – POWER POLE
- – LIGHT POLE
- – TELEPHONE POLE
- – CONTROLLER
- – PULL BOX
- – STRAIN POLE
- 2"C – CONDUIT
- – 3 SECTION SIGNAL HEAD
- – 5 SECTION SIGNAL HEAD

TYPICAL CONTROLLER FOUNDATION ELEVATION

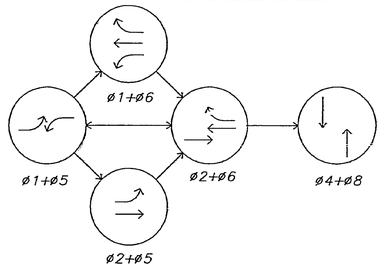


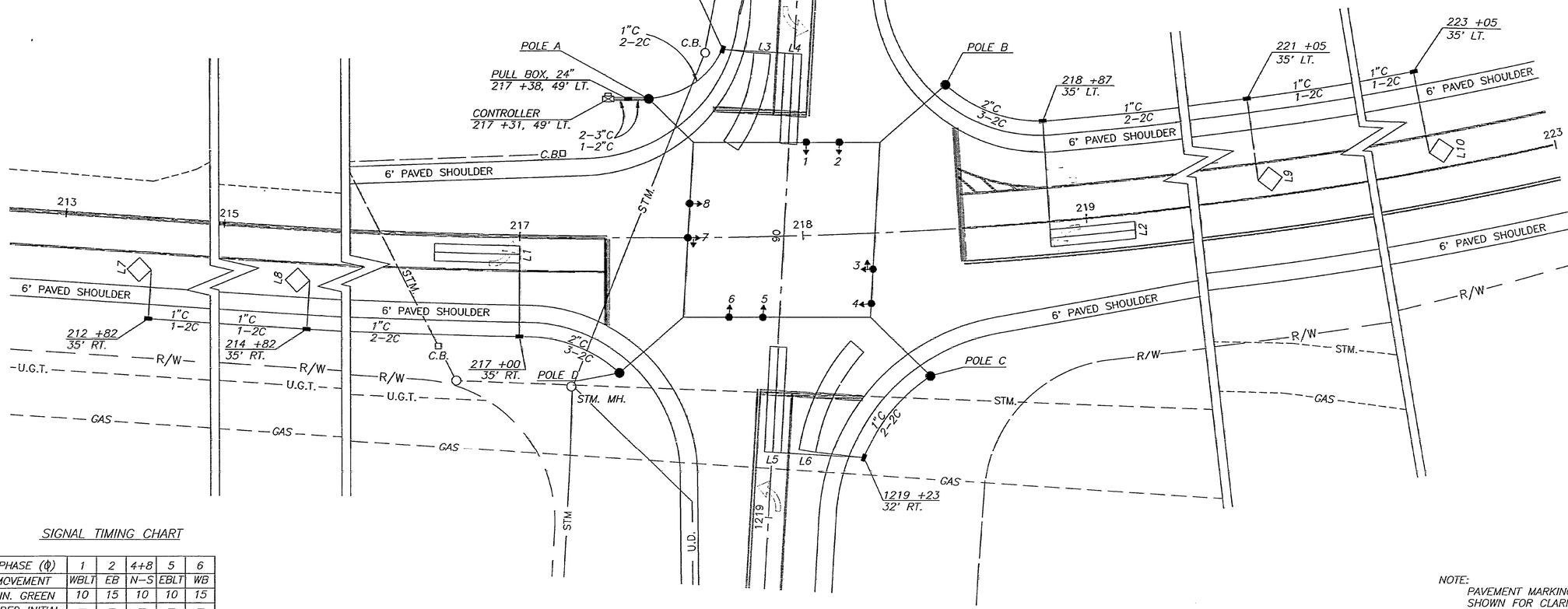
SIGNAL HEADS



ALL HEADS ARE 12"

PHASING DIAGRAM





SIGNAL TIMING CHART

PHASE (ϕ)	1	2	4+8	5	6
MOVEMENT	WBLT	EB	N–S	EBLT	WB
MIN. GREEN	10	15	10	10	15
ADDED INITIAL	–	–	–	–	–
PASSAGE	3.7	3.0	3.7	3.7	3.0
T.B. RED.	–	–	–	–	–
T.T. RED	–	–	–	–	–
MAX. 1	20	60	40	20	60
MAX. 2	20	60	40	20	60
YELLOW	3.6	5.0	3.6	3.6	5.0
ALL RED	2.3	1.7	2.3	2.3	1.7
WALK	–	–	4.0	–	–
PED. CLEAR	–	–	20	–	–
RECALL	OFF	MIN	OFF	OFF	MIN
MEMORY	OFF	ON	OFF	OFF	ON

NOTE:
ALL CONDUIT WILL BE RIGID FERROUS METAL ELECTRICAL CONDUIT AND FITTINGS.

NOTE:
PAVEMENT MARKINGS ARE SHOWN FOR CLARITY ONLY AND ARE NOT PART OF THIS PLAN. FOR DETAILS SEE SHEET No. 54.

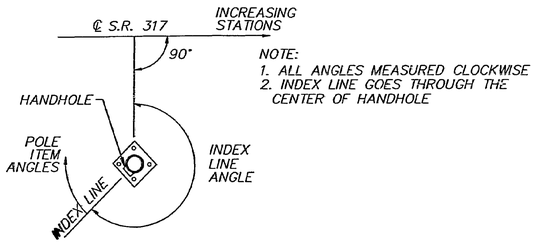
0 10' 20' 40'
SCALE

DETECTOR SCHEDULE

DETECTOR NUMBER	SIZE	TURNS	MODE	MEMORY	DELAY (SEC.)	UNIT	CHANNEL	PHASE
L1	3'X3'X30'	2-4-2	PRESENCE	OFF	–	1	1	5
L2	3'X3'X30'	2-4-2	PRESENCE	OFF	–	2	1	1
L3	6'X36'	2	PRESENCE	OFF	–	3	1	4
L4	3'X3'X32'	2-4-2	PRESENCE	OFF	3	4	1	4
L5	3'X3'X37'	2-4-2	PRESENCE	OFF	3	5	1	8
L6	6'X43'	2	PRESENCE	OFF	–	6	1	8
L7	6'X6'	3	PULSE	ON	–	7	1	2
L8	6'X6'	3	PULSE	ON	–	8	1	2
L9	6'X6'	3	PULSE	ON	–	9	1	6
L10	6'X6'	3	PULSE	ON	–	10	1	6

POLE ORIENTATION

POLE	DESIGN NO.	STATION & OFFSET	POLE HEIGHT	INDEX ANGLE	PED SIGNALS	PED BUTTONS	POWER SERVICE	CABLE ENTRANCE	2" CAPPED CONDUIT ELL (FUTURE USE)	ATTACHMENT HEIGHT
A	TC-81.10 DESIGN 6	217 +45, 49' LT.	30'	134°	–	180°	–	180°	270°	28'
B	TC-81.10 DESIGN 6	218 +53, 50' LT.	30'	231°	–	180°	–	180°	270°	28'
C	TC-81.10 DESIGN 6	218 +42, 51' RT.	30'	138°	–	180°	–	180°	270°	28'
D	TC-81.10 DESIGN 6	217 +35, 47' RT.	30'	229°	–	180°	–	180°	270°	28'



NOTE:
1. ALL ANGLES MEASURED CLOCKWISE
2. INDEX LINE GOES THROUGH THE CENTER OF HANDHOLE

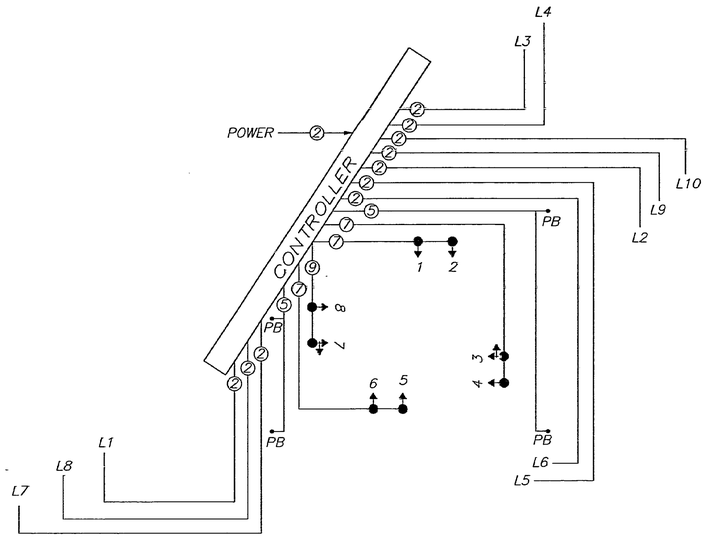
SIGNAL DISPLAY

PHASE	MOVEMENT	INTERVAL	SIGNAL NO. 1	2	3	4	5	6	7	8
1 + 5		RW	R	R	~~G~~R	R	R	R	~~G~~R	R
		C1	R	R	~~Y~~R	R	R	R	~~Y~~R	R
		C2	R	R	R	R	R	R	R	R
2 + 5		RW	R	R	~~G~~G	G	R	R	R	R
		C1	R	R	~~Y~~G	G	R	R	R	R
		C2	R	R	G	G	R	R	R	R
1 + 6		RW	R	R	R	R	R	R	~~G~~G	G
		C1	R	R	R	R	R	R	~~Y~~G	G
		C2	R	R	R	R	R	R	G	G
2 + 6		RW	R	R	G	G	R	R	G	G
		C1	R	R	Y	Y	R	R	Y	Y
		C2	R	R	R	R	R	R	R	R
4 + 8		RW	G	G	R	R	G	G	R	R
		C1	Y	Y	R	R	Y	Y	R	R
		C2	R	R	R	R	R	R	R	R
FLASH			R	R	Y	Y	R	R	Y	Y

QUANTITIES

QUANTITY	ITEM	UNIT	DESCRIPTION
500	603	LIN FT	4" CONDUIT, TYPE E
836	625	LIN FT	CONDUIT, 1", 713.04
162	625	LIN FT	CONDUIT, 2", 713.04
28	625	LIN FT	CONDUIT, 3", 713.04
998	625	LIN FT	TRENCH
8	625	EACH	PULL BOX, 713.08, 18"
1	625	EACH	PULL BOX, 713.08, 24"
5	625	EACH	GROUND ROD
6	632	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 12" LENS, 1 WAY, AS PER PLAN
2	632	EACH	VEHICULAR SIGNAL HEAD, 5 SECTION, 12" LENS, 1 WAY, AS PER PLAN
8	632	EACH	COVERING OF VEHICULAR SIGNAL HEAD
4	632	EACH	PEDESTRIAN PUSHBUTTON
10	632	EACH	LOOP DETECTOR UNIT, AS PER PLAN
902	632	LIN FT	LOOP DETECTOR PAVEMENT CUTTING
367	632	LIN FT	MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES
602	632	LIN FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
571	632	LIN FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
134	632	LIN FT	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG
2350	632	LIN FT	LOOP DETECTOR WIRE, TYPE E
3571	632	LIN FT	LOOP DETECTOR LEAD-IN CABLE
75	632	LIN FT	POWER CABLE, 2 CONDUCTOR, NO. 8 AWG
100	632	LIN FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG
1	632	EACH	POWER SERVICE, AS PER PLAN
4	632	EACH	CABLE SUPPORT ASSEMBLY
9.6	632	CU YD	CONCRETE FOR ANCHOR BASE FOUNDATION
4	632	EACH	STRAIN POLE, TYPE TC-81.10 DESIGN 6
1	633	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICRO PROCESSOR, WITH INTERNAL TIME BASE COORDINATION, WITH BASE MOUNTED "P" CABINET, AS PER PLAN
1.54	633	CU. YD.	CONCRETE FOR CABINET FOUNDATION, AS PER PLAN
10.42	633	SQ. FT.	CONTROLLER WORK PAD

WIRING DIAGRAM



POLE DIAGRAM