

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

1-90-1(82)00

FED. DIVISION	STATE	PROJECT
5	OHIO	1-90-1(82)00

LOR-2-6.62
LOR-90-11.96

103

LOR-2-6.62
LOR-90-11.96

LORAIN COUNTY
CITIES OF AMHERST, ELYRIA AND AVON
VILLAGE OF SHEFFIELD
AMHERST AND ELYRIA TOWNSHIPS

LIMITED ACCESS

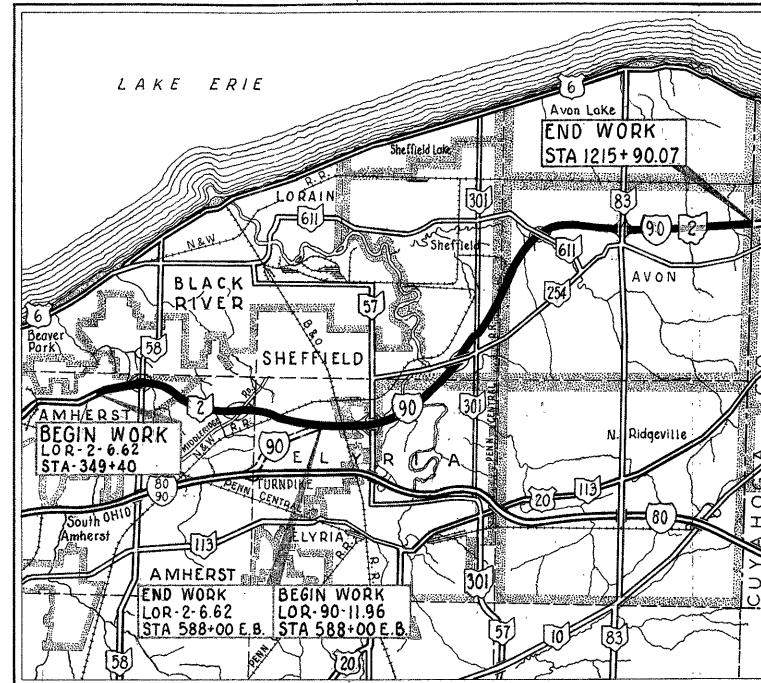
THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE REVISED CODE OF OHIO.

CONVENTIONAL SIGNS

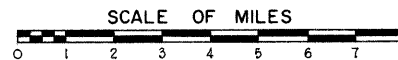
County Line	-----	Limited Access (only)	-----LA-----
Township Line	-----	Right of Way (only)	-----RW-----
Section Line	-----	Limited Access & Right of Way	-----LA&RW-----
Corporation Line	----- or -----	Existing Right of Way	-----
Fence Line (existing)	-x-x- (proposed) -x-x-	Property Line	--- (in existing fence) ---
Center Line	-----	Railroad	-----
Trees, Stumps, (to be removed)	☺, ☹, ☹	Guardrail (existing)	--- (proposed) ---
Utility Poles: Telephone, Power, Light	⊘, ⊘, ⊘		

INDEX OF SHEETS

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LOCATION MAP



LINE DATA

<u>LOR-2-6.62</u>			
BEGIN WORK	STA 349+40		
END WORK	STA 588+00 E.B.		
NET LENGTH S.R.2	23,860.00	LIN.FT.	
ADD FOR SIDE ROADS (FROM SHEET 2)	4,300.00	LIN.FT.	
TOTAL LENGTH OF WORK	28,160.00	LIN.FT.	
	OR 5.333	MILES	
<u>LOR-90-11.96</u>			
BEGIN WORK	STA 588+00 E.B.		
END WORK	STA 1,215+90.07		
GROSS LENGTH	62,790.07	LIN.FT.	
ADJUST FOR STATION EQUATIONS	-2,680.08	LIN.FT.	
NET LENGTH, I.R.90	60,109.99	LIN.FT.	
ADD FOR SIDE ROADS (FROM SHEET 2)	15,900.00	LIN.FT.	
TOTAL LENGTH OF WORK	76,009.99	LIN.FT.	
	OR 14.396	MILES	
<u>PLAN TOTAL</u>	104,169.99	LIN.FT.	
	OR 19.729	MILES	
	= 0.00	LIN.FT.	
	OR 0.00	MILES	
PROJECT LENGTH			

Portion to be improved	-----
Interstate Roads	=====
U.S. and State Routes	-----
Other Roads	-----

SCALES

Plan	0 100 200
Profile: Horizontal	-----
Profile: Vertical	-----

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
CB-4	9-1-69	GR-2A	1-1-71	HW-4	1-1-70
		GR-2B	11-9-71	L-1	6-1-65
		GR-3	11-9-71	MC-3	6-20-69
F-2	1-1-71	GR-4	11-9-71	MC-4	6-13-69
F-3	3-10-69	GR-5	1-1-71		
F-5	3-10-69	GR-6	1-1-71	MH-1	10-1-68
F-6	10-1-66			MH-1A	10-1-68
FACI-1	4-20-71				
FACI-2	4-20-71				

1973 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.

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

- Approved: E. L. Johnson
Date 3-20-73 District Deputy Director of Transportation
- Approved: Robert B. Pfeifer
Date 5-21-73 Engineer, Bureau of Bridges
- Approved: E. J. Schaefer
Date 5-21-73 Engineer, Bureau of Roadway Design
- Approved: William E. Schell
Date 5-21-73 Assistant Deputy Director for Highway Design
- Approved: Julius Drewey
Date 5-21-73 Assistant Deputy Director for Real Estate
- Approved: William Sunkley
Date 5-21-73 Assistant Deputy Director for Program Development
- Approved: _____
Date _____ Chief Engineer, Division of Highways
- Approved: William W. Paker
Date 5-21-73 Deputy Director, Division of Highways
- Approved: William G. McKenna
Date 5-22-73 Assistant Director, Department of Transportation
- Approved: Philip S. ...
Date 5-24-73 Director, Department of Transportation

SUPPLEMENTAL SPECIFICATIONS	
815	9-20-72
816	9-20-72
839	11-25-70
941	11-25-70

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____

DIVISION ENGINEER _____ DATE _____

Project: LOR-2-6.62 LOR-90-11.96
Date of Letting: 19____, Contract No. _____

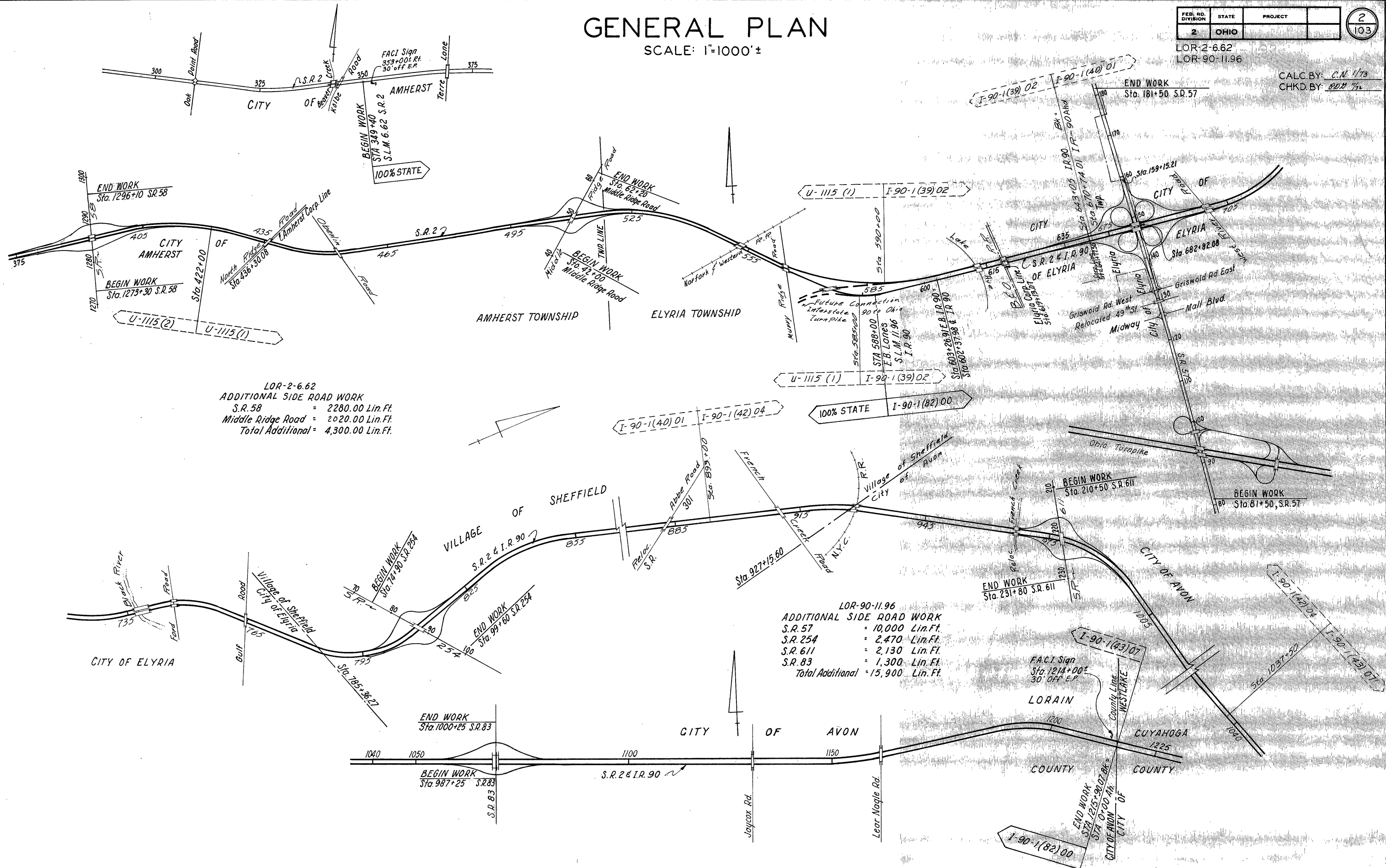
GENERAL PLAN

SCALE: 1"=1000'±

FED. RD. DIVISION	STATE	PROJECT	2 103
2	OHIO		

LOR-2-6.62
LOR-90-11.96

CALC BY: C.N. 1/73
CHKD BY: B.D. 1/74



LOR-2-6.62
ADDITIONAL SIDE ROAD WORK
S.R. 58 = 2280.00 Lin. Ft.
Middle Ridge Road = 2020.00 Lin. Ft.
Total Additional = 4,300.00 Lin. Ft.

LOR-90-11.96
ADDITIONAL SIDE ROAD WORK
S.R. 57 = 10,000 Lin. Ft.
S.R. 254 = 2,470 Lin. Ft.
S.R. 611 = 2,130 Lin. Ft.
S.R. 83 = 1,300 Lin. Ft.
Total Additional = 15,900 Lin. Ft.

GUARDRAIL LOCATION DETAILS

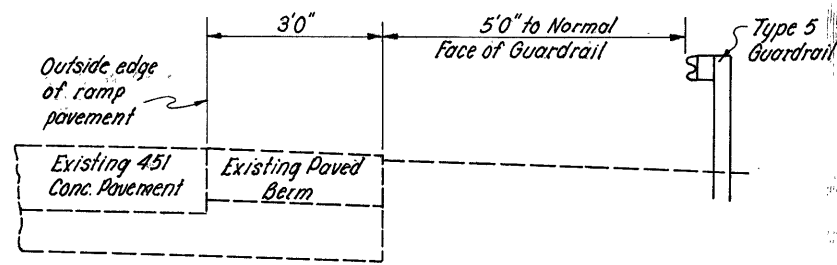
I.R. 90

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

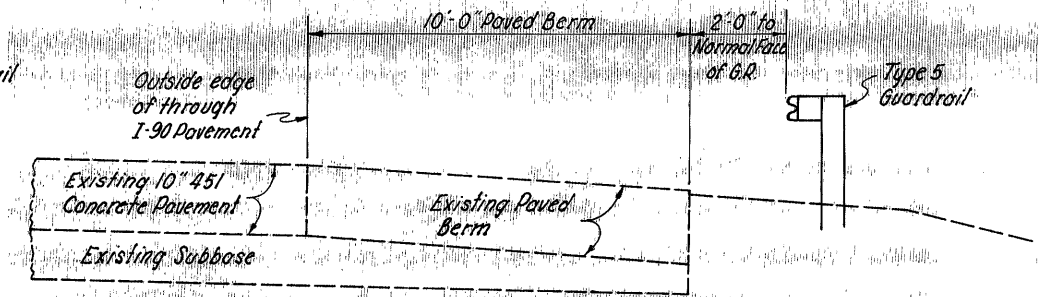
3
103

LOR-2-6.62
LOR-90-1196

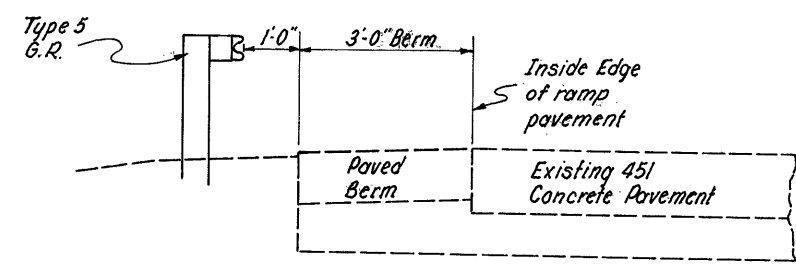
CALC. BY: C.M. 1/73
CHKD. BY: J.S.H. 1/73



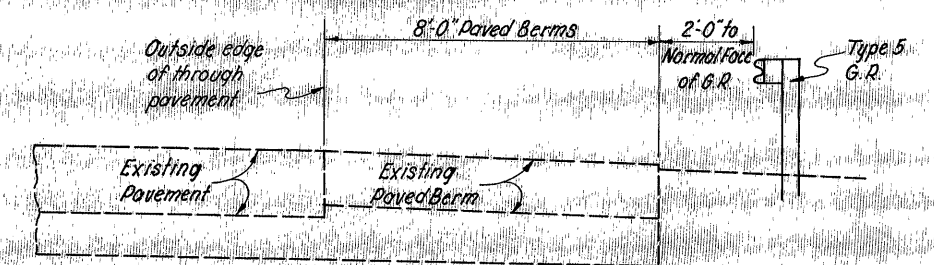
I.R. 90 RAMPS - OUTSIDE EDGE



I.R. 90 MAINLINE

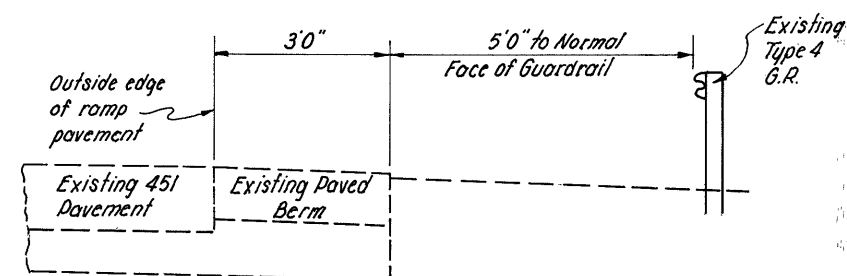


I.R. 90 RAMPS - INSIDE EDGE

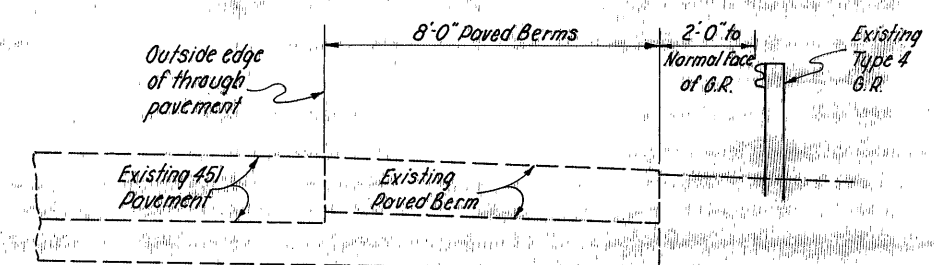


SIDE ROADS AT INTERCHANGES w/ I.R. 90
SR. 57, SR. 254, SR. 611 & SR. 76

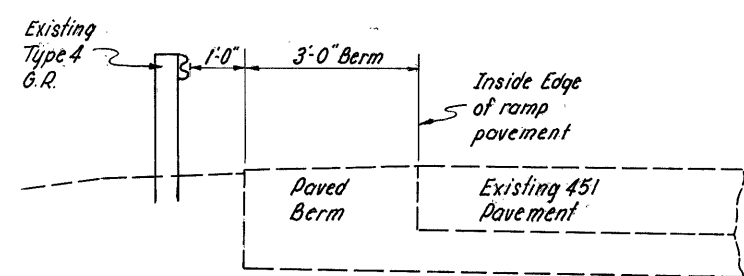
S.R. 2



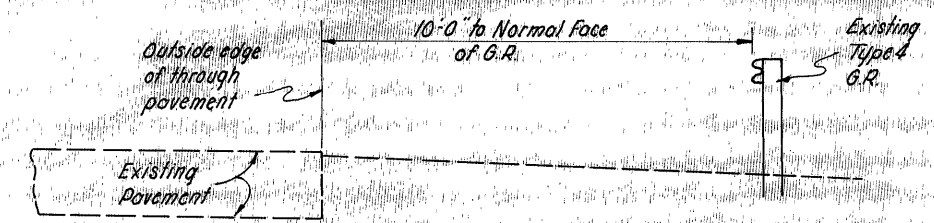
S.R. 2 RAMPS - OUTSIDE EDGE



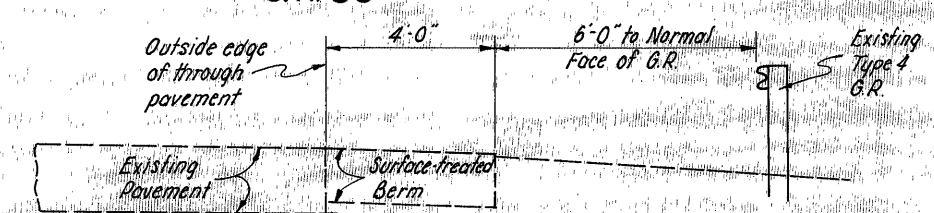
S.R. 2 MAINLINE



S.R. 2 RAMPS - INSIDE EDGE

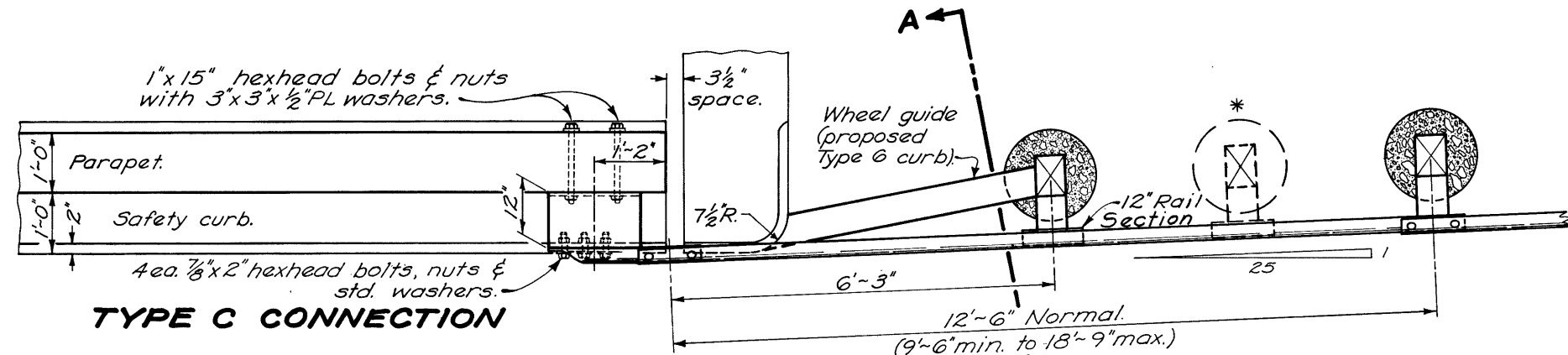


S.R. 58

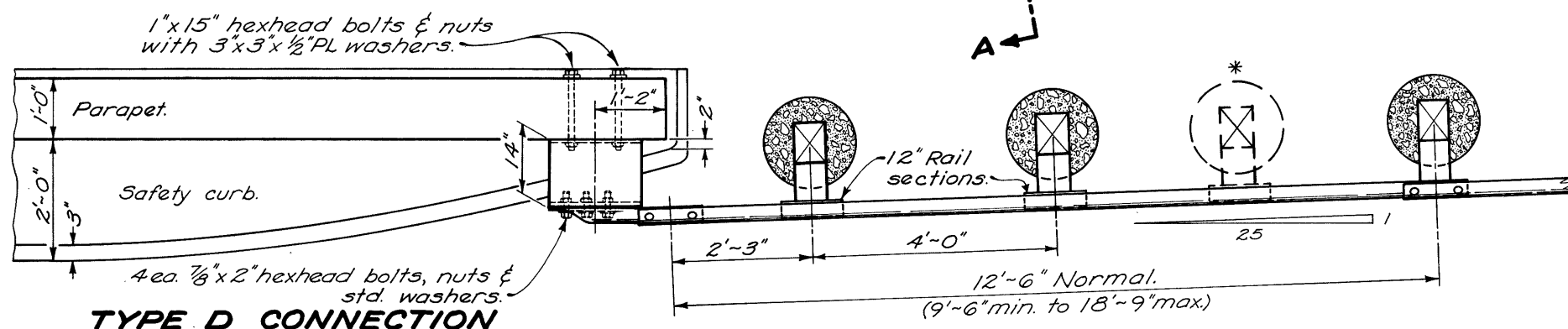


MIDDLE RIDGE ROAD

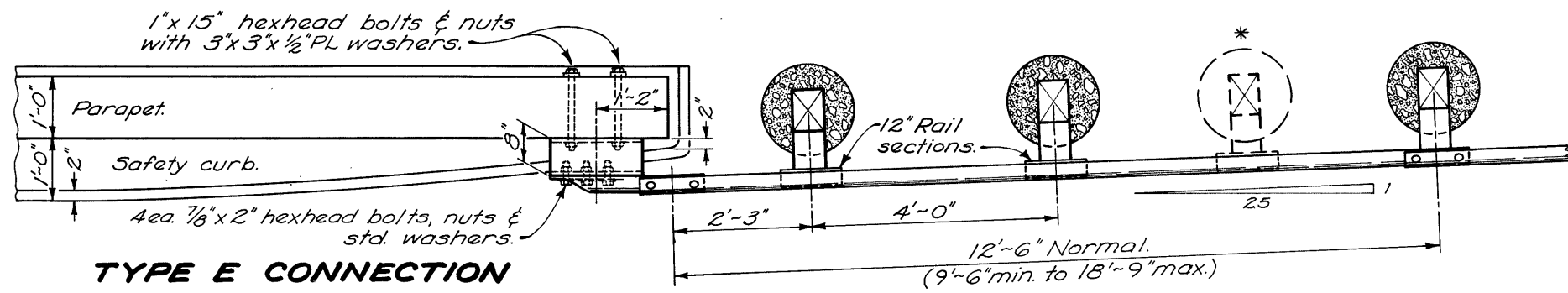
LOR-2-6.62
LOR-90-11.96



TYPE C CONNECTION

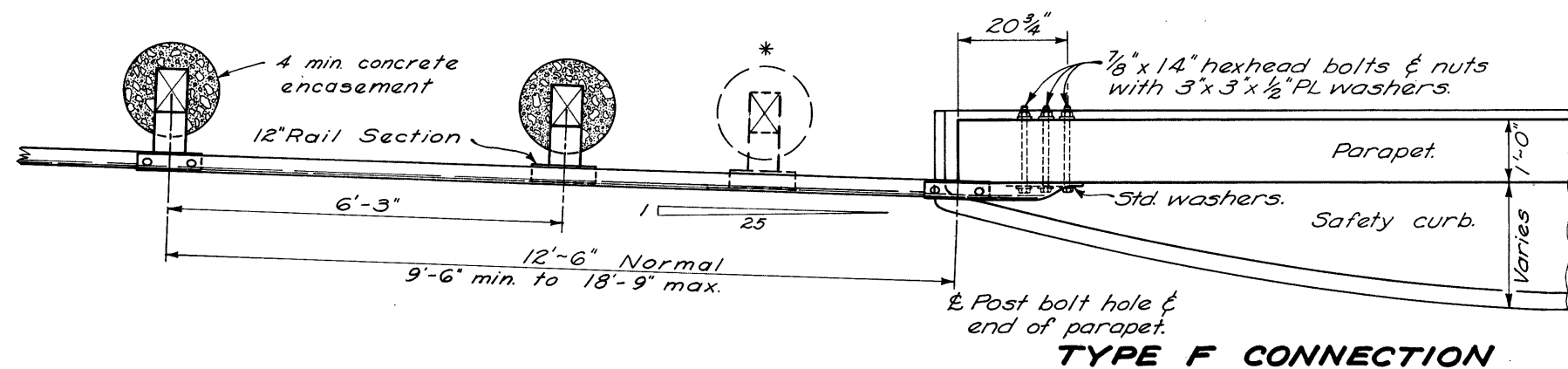


TYPE D CONNECTION



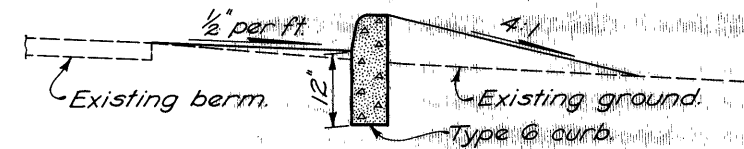
TYPE E CONNECTION

APPROACH ENDS

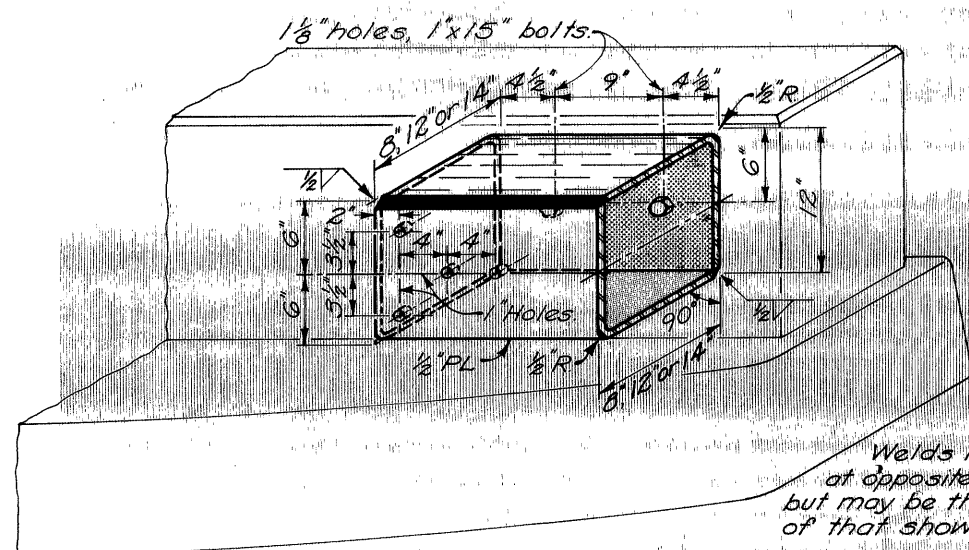


TRAILING END

TYPE F CONNECTION

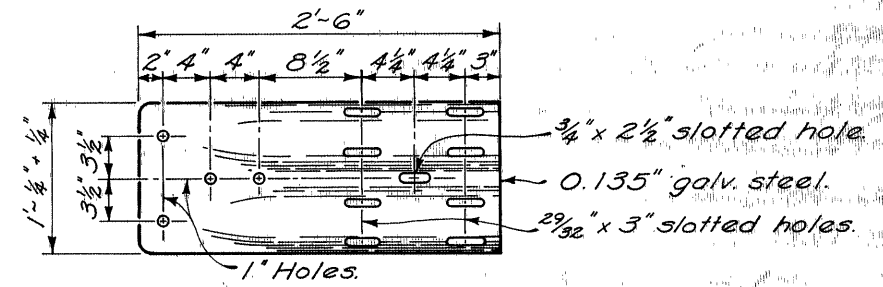


SECTION A-A



STEEL BOX DETAIL

A galv. steel box of the appropriate size (see connection type) shall be used on all approaches.



SPECIAL END SHOE

NOTES

GENERAL: This drawing shall govern where a conflict arises. For details not shown, see Standard Drawings GR-2B & GR-4.

All steel parts shall be galvanized in accordance with 710.06 or 710.10, whichever may apply.

ANCHORS: Self-drilling anchors (of the appropriate size) may be substituted for the 1" and 7/8" hexhead bolts shown in the parapets. Anchors may be of the snap-off chuck-end type or of the flush-end type conforming to Federal Specification No. FF-5-325, Group III, Type 1(a) or (c), or Type 2.

Bolts for use with the self-drilling anchors shall be 7/8" x 1 1/2" or 1" x 2" as required.

POSTS: Place one additional encased post halfway between adjacent posts, or post and parapet, when panel length exceeds 12'-6".

All posts shall be 6" x 8" wood or W6 x 15.5 steel.

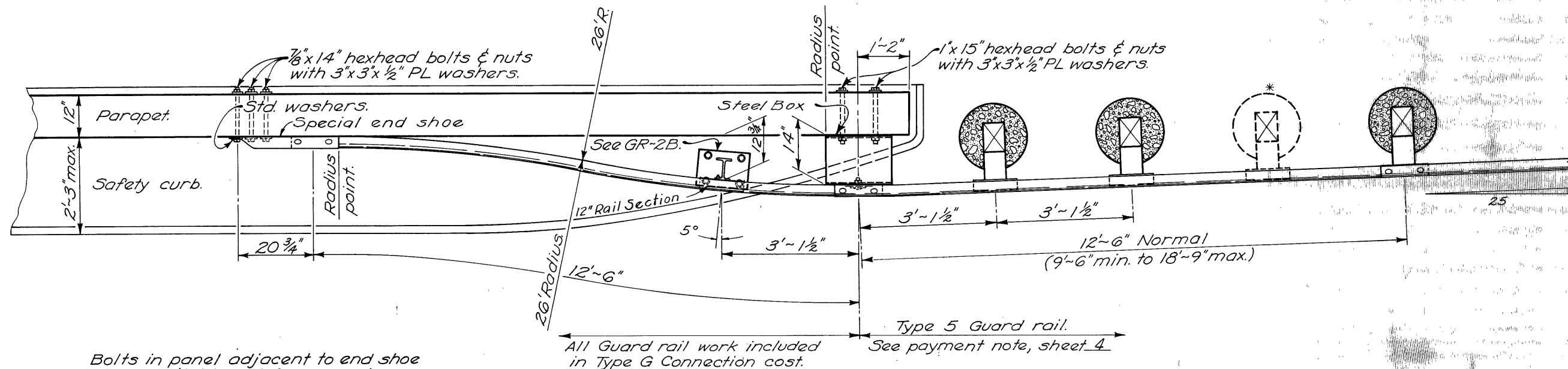
GUARDRAIL TERMINATION, as directed by the Engineer. To avoid locating new posts of the adjacent run of guardrail in or near old backfilled post holes or to close existing gaps between rail and parapet, the 12'-6" normal rail section may vary as dimensioned. The horizontal dimensions (1'-2" or 20 3/4") of the end shoe location may be increased to avoid existing parapet steel.

PAYMENT: Price bid for bridge terminal assemblies shall include the additional cost, in excess of normal guardrail cost, for steel posts, concrete encasement, steel boxes, special end shoes, self-drilling anchors, curbing and embankment.

Connections shall be paid for as 606 Bridge terminal assembly, Type _____

DATE
6-8-70
1-1-71
12-15-71
7-24-72

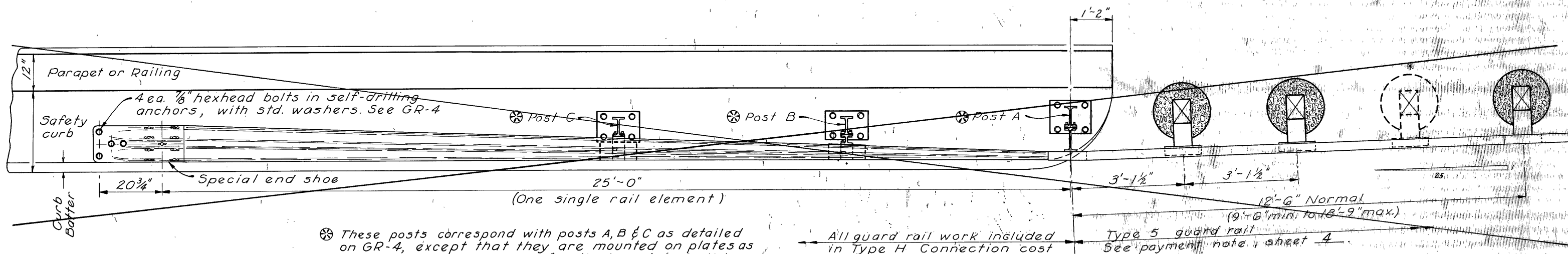
LOR-2-662
LOR-90-1196



Bolts in panel adjacent to end shoe shall be tightened for expansion, as per section 606.05.

TYPE G CONNECTION
(2-Way Cross Road)

See sheet 4 for pertinent notes including *POSTS note.



⊗ These posts correspond with posts A, B & C as detailed on GR-4, except that they are mounted on plates as detailed on GR-2B. Top of rail at post A shall be 27"± above bridge deck.

TYPE H CONNECTION

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

6
103

LOR-2-6.62
LOR-90-1196

Calc. by: BOB 8/72
Chkd. by: BOB 1/73

See 2 Notes on Anchor Assemblies, Sheet No. 9.

DAMAGE TO EXISTING UNDERGROUND APPURTENANCES:

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UNDERGROUND ELECTRICAL CONDUIT OR CABLE, DRAINAGE PIPES, WATER LINES, OR OTHER UNDERGROUND UTILITIES.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL DAMAGE INFLICTED ON THE ABOVE MENTIONED ITEMS IN THE EXCAVATION AND PLACEMENT OF SIGNS, LIGHTS, DRAINAGE, FENCE, GUARDRAIL, DELINEATORS AND THE LIKE.

FIELD OFFICE:

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 400 SQ. FT. OF FLOOR SPACE AND IN ADDITION TO THE REQUIREMENTS OF ITEM 619, HE SHALL PROVIDE AND MAINTAIN SANITARY PROVISIONS AS PER 107.06. ALL THE ABOVE IS INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 619, FIELD OFFICE.

UNDERGROUND UTILITIES:

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

ESTIMATED QUANTITIES:

SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED "AS DIRECTED BY THE ENGINEER" SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT. ESTIMATED QUANTITIES OF MATERIALS SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS:

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS AT EACH OF THE FOLLOWING APPROXIMATE LOCATIONS:

1. STATION 353+00[±] RT.
2. STATION 1214+00[±] LT.

SIGN DETAILS SHALL BE AS SPECIFIED ON STANDARD DRAWING FACI-1, "CODE N-55(2)-120(2)". THE SIGNS SHALL BE ERECTED IN ACCORDANCE WITH STANDARD DRAWING FACI-2. ADDITIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH NOTES IN THE PROPOSAL.

PROJECT STATIONING:

THE EXISTING STATION NUMBERS, WHICH MAY BE FOUND ON THE RIGHT EDGES OF THE EXISTING PAVEMENT AS DESCRIBED IN SECTION 451.09 WILL BE USED AS THE STATIONING ON THIS PROJECT.

SEEDING AND MULCHING, AS PER PLAN:

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS BY THE SYMBOL:

COMMERCIAL FERTILIZER HAVING A FORMULA OF 12-12-12 SHALL BE APPLIED AS PER 659.08. THE FOLLOWING SEED MIXTURE SHALL, IN LIEU OF THE MIXTURES LISTED IN 659.09, BE USED THROUGHOUT THE LIMITS OF THIS PROJECT:

- 40% KENTUCKY BLUEGRASS
- 60% KENTUCKY 31 FESCUE

RESTORATION OF DISTURBED AREAS:

THE CONTRACTOR SHALL REPLACE ALL MEDIAN PAVEMENT, SEEDED AND SODDED AREAS, PAVED SHOULDERS, AND ALL OTHER DISTURBED SURFACES TO A CONDITION EQUAL TO THAT EXISTING BEFORE THE WORK WAS STARTED. ALL REPLACEMENTS SHALL BE DONE IN ACCORDANCE WITH THE PERTINENT SPECIFICATION ITEMS AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL RESTORATION WORK, INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND DISPOSAL OF ALL SURPLUS MATERIALS, SHALL BE INCLUDED IN THE UNIT PRICES BID FOR VARIOUS PLAN ITEMS.

CONNECTIONS TO EXISTING PIPE:

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS.

MAINTENANCE OF SEWER FLOWS:

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO MAINTAIN AT ALL TIMES SEWER FLOWS THROUGH EXISTING FACILITIES TO REMAIN IN PLACE AND THROUGH EXISTING FACILITIES TO BE REPLACED UNTIL NEW FACILITIES ARE COMPLETED AND PLACED IN USE.

PAYMENT FOR ANY ADDITIONAL COSTS INVOLVED IN MAINTAINING THESE FLOWS BY PUMPING OR BY ANY OTHER MEANS APPROVED BY THE ENGINEER SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE RESPECTIVE ITEMS OF 603 CONDUIT.

PIPE ENDS:

ALL CULVERTS, WHETHER TERMINATING IN HEADWALLS OR ENDWALLS, SHALL BEGIN AND END WITH PIPE ENDS AS NORMALLY FABRICATED BY THE MANUFACTURER. ENDS SHALL NOT BE CUT TO FIT EITHER SKEW OR SLOPE. IF FIELD CUTTING IS FOUND TO BE NECESSARY TO FIT AN EXACT LENGTH CONTROL, THE CUT END SHALL BE LOCATED AT AN INTERIOR JOINT AND CRADLE, COLLAR OR BAND SHALL BE PROVIDED TO ASSURE A STABLE JOINT. PAYMENT FOR THE JOINT SHALL BE INCLUDED IN THE PRICE BID FOR THE PERTINENT 603 CONDUIT ITEM.

EROSION CONTROL:

ITEM 601, 15 PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

MATERIAL AND EQUIPMENT STORAGE:

PRIVATE MATERIALS SHALL NOT BE STORED WITHIN THE MEDIAN OR WITHIN THIRTY (30) FEET OF THE OUTSIDE EDGE OF THE EXISTING PAVEMENT UNLESS BEHIND GUARDRAIL. THE FIELD OFFICES SHALL NOT BE LOCATED WITHIN THE L/A FENCE.

MEDIAN CONSTRUCTION EQUIPMENT CROSSINGS:

CONSTRUCTION EQUIPMENT SHALL CROSS THE MEDIAN ONLY AT THE EXISTING U-TURN CROSSOVERS.

EARTHWORK:

AREAS WHERE EMBANKMENT MATERIALS ARE TO BE PLACED SHALL BE CLEARED OF GRASS, WEEDS, BRUSH, ETC., BUT THE REQUIREMENTS OF MOISTURE, DENSITY CONTROL AND BENCHING WILL NOT BE REQUIRED ON THIS PROJECT. THE DEPTHS OF LAYERS IN WHICH EMBANKMENT MATERIAL IS PLACED AND ITS COMPACTION SHALL, IN LIEU OF THE REQUIREMENTS OF ITEM 203, CONFORM WITH ACCEPTABLE CONSTRUCTION PRACTICES AS DETERMINED BY THE ENGINEER. NO PROVISIONS OF THE SPECIFICATIONS SHALL BE WAIVED FOR EMBANKMENT WHICH SUPPORTS ANY PORTION OF PAVEMENT OR PIPE STRUCTURE.

GUARD RAIL AND BARRIER RAIL REMOVED:

GUARD RAIL AND BARRIER RAIL DESIGNATED FOR REMOVAL ON THIS PROJECT SHALL BE CAREFULLY DISMANTLED AND THE RAIL ELEMENTS STORED FOR EITHER RE-USE ELSEWHERE ON THE PROJECT OR REMOVAL BY STATE FORCES. ALL POSTS, BLOCKS, BOLTS AND MISCELLANEOUS HARDWARE SHALL BE DISPOSED OF BY THE CONTRACTOR. ALL POST HOLES SHALL BE CAREFULLY FILLED AND TAMPED AND THE SITE CLEANED AND RESTORED.

THE RESTORATION WILL INCLUDE GRADING OF THE SHOULDER IN THE AREA OF THE GUARD RAIL REMOVAL TO PROVIDE PROPER DRAINAGE AND TRAVERSABLE SHOULDER SLOPES WHERE TRAFFIC OR WEATHER MAY HAVE BUILT A RIDGE OF EARTH AND DEBRIS UNDER THE GUARD RAIL. THE GRADED OR DISTURBED AREA SHALL BE RESEEDED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID FOR 202 GUARD RAIL REMOVED FOR RE-USE OR STORAGE OR 202 BARRIER RAIL REMOVED FOR RE-USE OR STORAGE, MEASURED BY THE LINEAR FOOT CENTER TO CENTER OF TERMINAL POSTS OR CENTER OF BRIDGE CONNECTION SPLICES.

GUARD RAIL REPLACEMENT POSTS:

IF, WITHIN RUNS OF GUARD RAIL INDICATED TO BE REBUILT ON THIS PROJECT, SPECIFIC POSTS ARE FOUND TO BE DAMAGED OR IN NEED OF REPLACEMENT AT THE TIME THIS CONTRACT IS AWARDED, THOSE POSTS SHALL BE REMOVED AND DISPOSED OF. NEW POSTS OF SIMILAR TYPE SHALL BE FURNISHED AND INSTALLED, MEETING CURRENT REQUIREMENTS OF 606 AND PLAN DETAILS.

PAYMENT FOR EACH POST REPLACED SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR 606 GUARD RAIL REPLACEMENT POST. IT IS NOT THE INTENT OF THIS PLAN THAT THIS ITEM BE USED TO PAY FOR ADDITIONAL POSTS FURNISHED TO MEET SPACING REQUIREMENTS FOR GUARD RAIL REBUILT AS TYPE 5.

AN ESTIMATED QUANTITY OF 25 REPLACEMENT POSTS HAVE BEEN SET UP ON THIS PLAN TO BE USED AS DIRECTED BY THE ENGINEER.

PUBLIC SAFETY:

THE PERIOD OF TIME THAT ANY HAZARD IS LEFT UNPROTECTED BY GUARD RAIL SHALL BE HELD TO AN ABSOLUTE MINIMUM, AND IN NO CASE SHALL SUCH PERIOD BE LONGER THAN TWO WEEKS. WHERE THE REBUILDING OF ANY RUN OF GUARD RAIL OR BARRIER RAIL IS NOT ACCOMPLISHED WITHIN TWO WEEKS AFTER REMOVAL OF EXISTING GUARD RAIL OR BARRIER RAIL, THE CONTRACTOR WILL ERECT AND MAINTAIN ACCEPTABLE TEMPORARY RAILS IN THE INTERIM, AT NO ADDITIONAL COST TO THE STATE. ON THE TRAFFIC APPROACH END OF THE TEMPORARY RAIL THE END OF THE FIRST SECTION OF RAIL SHALL BE FASTENED TO THE STEEL DRUM OR OTHER SUPPORT SO THAT THE BOTTOM OF THE RAIL IS AT THE PAVEMENT OR GROUND SURFACE.

GUARD RAIL, TYPE 5, AS PER PLAN:

RAIL ELEMENTS SALVAGED UNDER 202 GUARD RAIL REMOVED FOR REUSE OR STORAGE ON THIS PROJECT MAY BE USED IN LIEU OF FURNISHING NEW RAIL ELEMENTS FOR 606 GUARD RAIL, TYPE 5, AS PER PLAN OR 606 GUARD RAIL, TYPE 5, BARRIER DESIGN, AS PER PLAN. IF SALVAGED RAIL IS USED IT MUST BE RENOVATED PRIOR TO INSTALLATION AND NEW SPLICE BOLTS FURNISHED.

PAINTED RAIL ELEMENTS SHALL BE DISMANTLED AND ALL PAINT, RUST, DIRT AND OTHER FOREIGN MATERIAL DETRIMENTAL TO GALVANIZING SHALL BE REMOVED FROM RAILS BEFORE GALVANIZING. SLOTTED HOLES FOR INTERMEDIATE POST BOLTS SHALL BE PUNCHED WHERE REQUIRED FOR TYPE 5 INSTALLATIONS. THE RAIL SHALL THEN BE GALVANIZED IN ACCORDANCE WITH 710.06. PRIOR TO THE AWARD OF THE CONTRACT, THE SUCCESSFUL BIDDER WILL BE REQUIRED TO SUBMIT AN OUTLINE OF THE PLANT OPERATIONS FOR PERFORMING THE GALVANIZING, WHICH SHALL INCLUDE INFORMATION ON THE PLANT CAPACITY AND STORAGE FACILITIES FOR THE ARTICLES AS DELIVERED FOR GALVANIZING AND STORAGE FACILITIES. FOR THE ARTICLES AFTER THE WORK IS COMPLETED. THIS OUTLINE, WHEN APPROVED BY THE DEPARTMENT, WILL BECOME A PART OF THE CONTRACT.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 72 HOURS IN ADVANCE OF GALVANIZING ANY LOT OF ARTICLES IN ORDER THAT ARRANGEMENTS MAY BE MADE TO HAVE THE DEPARTMENT INSPECTOR AT THE PLANT WHEN THE WORK IS IN PROGRESS. THE INSPECTOR SHALL HAVE FREE ENTRY, AT ALL TIMES WHILE WORK ON THE CONTRACT IS BEING PERFORMED, TO ALL PARTS OF THE PLANT THAT CONCERN THE CLEANING AND GALVANIZING OF THE ARTICLES. THE CONTRACTOR SHALL AFFORD THE INSPECTOR ALL REASONABLE FACILITIES, WITHOUT CHARGE, TO SATISFY HIM THAT THE WORK IS BEING PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.

EXISTING GALVANIZED RAIL ELEMENTS SHALL BE CLEANED OF RUST, DIRT OR OTHER FOREIGN MATERIALS. INTERMEDIATE POST BOLT SLOTS SHALL BE FIELD PUNCHED OR DRILLED. AREAS ON WHICH THE SPLICER COATING HAS BEEN DAMAGED AND INTERMEDIATE HOLES SHALL BE REGALVANIZED IN ACCORDANCE WITH AASHTO M36-70, SECTIONS 23.3.1, 23.3.2 AND 23.3.2 METAL ZINC ZING PROCESS OR THEY MAY BE REPAIRED UNDER THE DIRECTION OF THE ENGINEER WITH STICK-FORM GALVANIZING REPAIR COMPOUND MEETING THE REQUIREMENTS OF FSS 0-6-93.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 606 GUARD RAIL, TYPE 5, AS PER PLAN OR 606 GUARD RAIL, TYPE 5, BARRIER DESIGN, AS PER PLAN.

GUARD RAIL AND BARRIER RAIL REBUILT AS TYPE 5, AS PER PLAN:

THIS WORK SHALL CONSIST OF DISMANTLING EXISTING GALVANIZED GUARD RAIL AND RE-ERECTING THAT RAIL ON THE EXISTING POSTS AND FURNISHING ALL OTHER MATERIAL NECESSARY TO MEET THE REQUIREMENTS OF TYPE 5 GUARD RAIL. THE EXTENT TO WHICH THE RAIL MUST BE DISMANTLED SHALL BE ONLY THAT WHICH IS NECESSARY TO MEET THE REQUIREMENTS OF THIS PLAN. CONSISTENT WITH GOOD AND SAFE CONSTRUCTION METHODS, AND PRESERVATION OF THE RAIL ELEMENT.

ADDITIONAL NEW POSTS SHALL BE FURNISHED AND INSTALLED WHERE NEEDED TO MEET THE SPACING REQUIREMENTS OF TYPE 5 GUARD RAIL. NEW POSTS SHALL BE OF THE SAME GENERAL TYPE AS THE EXISTING POSTS. HOWEVER, THEY SHALL MEET THE REQUIREMENTS OF CURRENT SPECIFICATIONS AND PLAN DETAILS. ALL NEW SPACER BLOCKS, POST BOLTS, SPLICE BOLTS (EXCEPT WHERE FULL SECTIONS ARE NOT DISMANTLED), AND MISCELLANEOUS HARDWARE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PLAN DETAILS AND SPECIFICATIONS.

IF WITHIN THE RUN OF RAIL TO BE REBUILT, SOME POSTS ARE FOUND TO BE DAMAGED OR NOT SATISFACTORY, THEY SHALL BE REMOVED AND REPLACED UNDER 606 REPLACEMENT GUARD RAIL POSTS.

RAILS SHALL BE CLEANED OF RUST, DIRT OR OTHER FOREIGN MATERIALS. INTERMEDIATE POST BOLT SLOTS SHALL BE FIELD PUNCHED OR DRILLED. AREAS ON WHICH THE SPLICER COATING HAS BEEN DAMAGED AND INTERMEDIATE HOLES SHALL BE REGALVANIZED IN ACCORDANCE WITH AASHTO M36-70, SECTIONS 23.3.1, 23.3.2 AND 23.3.2 METAL ZINC ZING PROCESS OR THEY MAY BE REPAIRED UNDER THE DIRECTION OF THE ENGINEER WITH STICK-FORM GALVANIZING REPAIR COMPOUND MEETING THE REQUIREMENTS OF FSS 0-6-93.

THE CONTRACTOR MAY, AT HIS OPTION, REMOVE AND DISPOSE OF RAILS SUITABLE FOR RE-USE AND SUBSTITUTE, AT NO ADDITIONAL COST, NEW MATERIAL CONFORMING TO 710.06.

THE ACCEPTED QUANTITIES OF REBUILT GUARD RAIL, MEASURED IN ACCORDANCE WITH 606.07, WILL BE PAID FOR AT THE UNIT PRICE BID PER LINEAR FOOT FOR 606 GUARD RAIL REBUILT AS TYPE 5, AS PER PLAN, OR 606 BARRIER RAIL REBUILT AS TYPE 5, AS PER PLAN.

607 TYPE 47 FENCE:

FENCE LINE AND LOCATIONS SHOWN ON THE PLAN ARE ONLY APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER OF ACTUAL GROUND CONDITIONS. FINAL PAYMENT FOR THE 47 FENCE SHALL BE THE ACTUAL LINEAR FEET OF FENCE COMPLETE IN PLACE. NO INTERMEDIATE AND/OR POST OR CORNER POST ASSEMBLIES ARE SHOWN ON THE PLAN SHEETS, BUT IT IS NOT INTENDED THAT THE REQUIREMENTS OF 607.05 (A) SHALL BE WAIVED. FENCE TERMINALS AT CULVERT ENDS SHALL BE AS PER STANDARD DRAWING F-5 OR AS DIRECTED BY THE ENGINEER. THE LENGTHS OF ROCK CHANNEL PROTECTION FOR STREAM CROSSINGS SHOWN ON THE PLAN ARE ONLY APPROXIMATE AND THE LENGTHS SHALL BE ADJUSTED TO ACTUAL FIELD CONDITIONS. ADDITIONAL STREAM CROSSINGS SHALL BE PROVIDED WHERE REQUESTED BY THE ENGINEER.

REGRADE OF EXISTING GUARD RAIL DIKE:

ON APPROACHES TO TWIN STRUCTURES WHERE PORTIONS OF THE EXISTING MEDIAN GUARD RAIL IS TO BE REMOVED, THE EXISTING EARTH DIKE BEYOND THE REMAINING GUARD RAIL END SHALL BE REMOVED WHERE CALLED FOR ON THE PLAN. THE DIKE SHALL BE REMOVED BY REGRADE IT, AND THE ADJACENT AREA AS DIRECTED BY THE ENGINEER TO OBTAIN A SMOOTH SLOPE TRANSITION. THE EXISTING DRAINAGE SHALL NOT INTERRUPTED. THE COST OF THE REGRADE OPERATIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202, BARRIER RAIL REMOVED. THE SEEDING OF THE REGRADED AREA SHALL BE PAID FOR UNDER ITEM 659, SEEDING AND MULCHING.

814 MAINTAINING TRAFFIC:

THROUGH TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON S.R. 2, I.R. 90, INTERCHANGE RAMP AND ALL INTERSECTING HIGHWAYS EXCEPT AS NOTED BELOW. TRAFFIC CONTROL SHALL BE MAINTAINED AS INDICATED IN THE PERTINENT ITEMS OF THE SPECIFICATIONS AND AS OUTLINED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION WITH LATEST REVISIONS.

DURING THE TIME WORK IS BEING PERFORMED NEAR THE EDGES OF THE PAVEMENT OR ABOVE A TRAFFIC LANE, ONE TRAFFIC LANE MAY BE CLOSED TO TRAFFIC AS DIRECTED BY THE ENGINEER. LANE RESTRICTIONS ON ANY ROADWAY SHALL OCCUR DURING HOURS OTHER THAN 7:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 8:00 P.M. MONDAY THROUGH FRIDAY.

DURING ERECTION OF OVERHEAD SIGN SUPPORTS, IT MAY BE NECESSARY TO STOP ALL TRAFFIC LANES. THIS WORK SHALL BE ARRANGED SO THAT THE STOPPAGE IS LESS THAN TEN (10) MINUTES IN ANY THIRTY (30) MINUTE PERIOD. THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A STATE HIGHWAY PATROLMAN AT EACH SITE WHERE A TRAFFIC STOPPAGE OCCURS FOR ERECTION OF OVERHEAD SUPPORTS. THE PATROLMAN SHALL ASSIST IN CONTROLLING THE TRAFFIC AND INFORMING THE DRIVERS AS TO THE NATURE OF THE DELAY.

ALL THE ABOVE IS INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC. INFORMATION REGARDING ARRANGEMENTS AND PAYMENTS BY THE CONTRACTOR FOR SPECIAL DUTY PATROL SERVICES MAY BE OBTAINED BY CONTACTING STATE HIGHWAY PATROL HEADQUARTERS, TELEPHONE NUMBER 614-469-2300 OR AT 660 EAST MAIN STREET, COLUMBUS, OHIO.

LIGHTING GENERAL NOTES:

FOR LIGHTING GENERAL NOTES, SEE SHEET 79A.
XX AUTHORIZED MUNICIPAL OR COUNTY POLICE OFFICER
X WITH PATROL CAR

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

7
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LOR-2-662
LOR-90-1196

Calc. by *PRM 12/72*
Chkd. by *PRM 1/73*

PAYMENT FOR REMOVAL OF EXISTING SIGNS SHALL INCLUDE ALL NECESSARY LABOR AND EQUIPMENT REQUIRED TO PERFORM THE REQUIRED WORK AS INDICATED ABOVE.

- 1) BASIS OF PAYMENT SHALL BE AS FOLLOWS FOR SIGNS FORTY (40) SQUARE FEET OR GREATER:
REMOVAL OF EXISTING MAJOR SIGN INSTALLATIONS AS PER PLAN AT THE CONTRACT PRICE PER EACH.
- 2) BASIS OF PAYMENT SHALL BE AS FOLLOWS FOR ALL OTHER SIGNS:
REMOVAL OF EXISTING SIGN INSTALLATIONS AS PER PLAN AT THE CONTRACT PRICE PER EACH.

202 REMOVAL OF EXISTING SIGN FACES:

THIS WORK SHALL CONSIST OF THE REMOVAL OF EXISTING SIGN FACES FROM SUPPORTS TO REMAIN IN PLACE ON MAIN ROADWAY, RAMPS AND APPROACH ROADWAYS AS SPECIFIED IN THE PLANS.

ALL SIGNS AND ACCESSORIES REMOVED SHALL BE STORED NEATLY WITHIN THE LIMITS OF THE PROJECT AT LOCATIONS APPROVED BY THE ENGINEER FOR REMOVAL BY STATE FORCES.

TO ASSURE MAINTENANCE OF ADEQUATE TRAFFIC CONTROL AT ALL TIMES, NO SIGNS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

PAYMENT FOR REMOVAL OF EXISTING SIGN FACES SHALL INCLUDE ALL NECESSARY LABOR AND EQUIPMENT REQUIRED TO PERFORM THE REQUIRED WORK AS INDICATED ABOVE.

BASIS OF PAYMENT SHALL BE FOR ITEM 202 REMOVAL OF EXISTING SIGN FACES AT THE CONTRACT PRICE PER EACH.

REMOVAL OF OLD SIGN SUPPORTS AND FOUNDATIONS:

THE CONTRACTOR SHALL REMOVE UNDER THE DIRECTION OF THE ENGINEER SUPPORT FOUNDATION OR SIGN SUPPORT AND FOUNDATION WITHIN THE WORK LIMITS OF THE PROJECT WHICH IS NOT SPECIFICALLY INCLUDED IN THE VARIOUS 202 REMOVAL PAY ITEMS OR INDICATED TO REMAIN IN PLACE. IF A SIGN SUPPORT HAS AN EXISTING SIGN FACE THE BASIS OF PAYMENT WILL BE UNDER 202 REMOVAL OF EXISTING INSTALLATIONS AS PER PLAN.

PAYMENT FOR THE REMOVAL OF THESE OLD SUPPORTS AND FOUNDATIONS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, WHICH PAYMENT SHALL INCLUDE ALL THE NECESSARY EQUIPMENT AND LABOR TO REMOVE AND DISPOSE OF ALL THE WASTE MATERIALS AND RESTORE THE AREA TO ITS ORIGINAL CONDITION.

815 REERECT EXISTING GROUND MOUNTED SIGNS ON NEW SUPPORTS:

THIS WORK ITEM SHALL CONSIST OF THE RE-ERECTION OF EXISTING SIGN FACES THAT HAVE BEEN SALVAGED UNDER OTHER 202 PAY ITEMS, ON NEW SUPPORTS AT A LOCATION SPECIFIED IN THE PLANS IN A MANNER SATISFACTORY TO THE ENGINEER.

THIS WORK SHALL BE PAID AT THE UNIT PRICE PER SQUARE FOOT, FOR 815 EXISTING SIGNS RE-ERECTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE SIGN FACES THAT ARE TO BE SALVAGED FOR RE-ERECTION.

815 REMOVE AND REERECT EXISTING OVERHEAD SIGNS:

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL AND REERECTION OF THE OVERHEAD SIGNS DESIGNATED IN THE PLANS.

WORK SHALL INCLUDE THE CAREFUL REMOVAL OF EACH SIGN AND APPURTENANCES FROM THE EXISTING OVERHEAD STRUCTURAL SUPPORT AND REERECTION ON THE SAME OVERHEAD SPAN SUPPORT AT THE LOCATION SHOWN IN THE PLANS.

PAYMENT WILL BE AT THE CONTRACT BID PRICE PER SQUARE FOOT OF SIGN REMOVED AND RE-ERECTION INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK.

816 STRUCTURAL SUPPORTS, STEEL BEAM (TYPE):

THE STRUCTURAL STEEL BEAM SUPPORTS INCLUDING 6 POUND BEAMS, 4 POUND DRIVE POST AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123 AND A-153 RESPECTIVELY. ALL FABRICATION SHALL BE COMPLETED PRIOR TO GALVANIZING.

QUANTITIES FOR ITEM 816 "STRUCTURAL SUPPORTS, STEEL BEAM (TYPE)", APPEARING IN THE QUANTITY TABLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT SUPPORT LENGTHS PRIOR TO FABRICATION AND GALVANIZING OF SUPPORTS. PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID PER LIN. FT. WHICH PRICE AND PAYMENT SHALL INCLUDE ALL COSTS IN CONNECTION WITH THE EMBEDMENT OF THE SUPPORTS.

THE COST OF THE CONCRETE USED FOR EMBEDMENT WILL BE A SEPARATE PAY ITEM.

816 STRUCTURAL SUPPORTS DRIVEN TYPE:

DRIVEN TYPE STRUCTURAL SUPPORTS WILL BE DRIVEN TO A DEPTH OF FIVE FEET (5'-0") MINIMUM BELOW GROUND LINE IN SUCH A MANNER THAT NO DEFORMATION WITHIN THE LENGTH OF THE SUPPORT, OR DAMAGE TO THE SUPPORT, WILL OCCUR.

"STRUCTURAL SUPPORTS 6 LB. BEAM, DRIVEN AND 6 LB. BEAM, AS PER PLAN DRIVEN" WILL INCLUDE THE 10"X12"X1/4" SOIL PLATE DETAILED IN THE PLANS.

ALL STRUCTURAL SUPPORTS TO BE PLACED IN CONCRETE MEDIANS SHALL BE DRIVEN THROUGH A SIX INCH DIAMETER HOLE IN THE CONCRETE TO A DEPTH OF FIVE FEET BELOW THE SURFACE.

815 EXIT PANEL, FURNISH AND ERECTION:

THE CONTRACTOR SHALL FURNISH AND ERECT EXIT PANELS AS INDICATED ON THE SIGNING PLAN. THE PANELS SHALL BE CENTERED AND CONNECTED TO THE TOP OF THE EXIT SIGNS.

WORK SHALL INCLUDE THE CAREFUL REMOVAL OF THE EXISTING SIGN'S TOP BORDER FOR THE LENGTH OF THE EXIT PANEL.

BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID PER SQUARE FOOT EXTRASHEET TYPE AS PER PLAN. PAYMENT SHALL INCLUDE ALL NECESSARY HARDWARE EQUIPMENT, LABOR, AND TOOLS TO ERECT THE SIGNS.

815 REVISE EXISTING SIGN EXIT LEGEND:

THIS WORK SHALL CONSIST OF THE REMOVAL OF THE WORD "EXIT" AND THE RESPACING OF THE BOTTOM LINE OF LEGEND AS PER PLAN. CARE SHOULD BE TAKEN SO AS TO NOT DAMAGE THE SIGN FACE OR THE LETTERS TO BE RESPACED.

THIS WORK SHALL BE PAID AT THE UNIT PRICE BID PER EACH, REVISE EXISTING SIGN EXIT LEGEND.

CONSTRUCTION LAYOUT STAKES FOR SIGNS:

THE CONTRACTOR SHALL STAKE OUT ALL SIGN SUPPORTS PRIOR TO INSTALLATION OF ANY FOUNDATIONS OR SUPPORTS.

AFTER STAKEOUT THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF SCHEDULED WORK. SUPPORT LOCATIONS FOR EACH SUPPORT WILL BE FIELD CHECKED TAKING INTO ACCOUNT BOTH UNDERGROUND AND OVERHEAD OBSTRUCTIONS AND CONFLICTS AND APPROVED BY THE ENGINEER WHO SHALL COORDINATE WITH THE DISTRICT TRAFFIC ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION WORK REQUIRED.

IF BOTH MAJOR AND MINOR TYPE SUPPORTS ARE INCLUDED WITHIN THE PROJECT IT WILL BE PERMISSIBLE TO PERFORM THE CONSTRUCTION STAKE-OUT AND FIELD INSPECTION IN TWO (2) STAGES, ONE FOR MAJOR SUPPORTS AND ONE FOR MINOR SUPPORTS.

COST FOR THIS ITEM OF WORK WILL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 623, CONSTRUCTION LAYOUT STAKES.

SIGN LOCATIONS:

ALL SIGNS SHALL BE PLACED NORMAL TO THE ROADWAY ON WHICH THEY ARE STATIONED UNLESS OTHERWISE NOTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

MILE MARKER LOCATIONS:

THE BUREAU OF TRANS TECHNICAL SERVICES WILL LOCATE THE LONGITUDINAL POSITION OF MILE MARKERS BY A PAINT BLOTCH ON THE EDGE OF THE EASTBOUND PAVEMENT.

ON DIVIDED HIGHWAYS ONLY ONE PAVEMENT EDGE WILL BE MARKED. MARKERS FOR THE OPPOSITE DIRECTION WILL BE SET "ACROSS" FROM THOSE ON THE MARKED EDGE.

THE CONTRACTOR WILL NOTIFY THE PROJECT ENGINEER THIRTY (30) DAYS IN ADVANCE OF THE PLANNED MARKER INSTALLATION. THE PROJECT ENGINEER WILL THEN IMMEDIATELY NOTIFY THE BUREAU OF PLANNING SURVEY BY LETTER OF THE PLANNED MARKER INSTALLATION.

ANY DELINEATOR THAT IS WITHIN FIFTY (50) FEET OF A MILE MARKER SHALL BE NON-PERFORMED OR REMOVED. THE COST OF THE REMOVAL SHALL BE INCIDENTAL TO THE PLAN ITEM.

202 REMOVAL OF EXISTING SIGN INSTALLATIONS, AS PER PLAN:

THIS WORK SHALL CONSIST OF THE REMOVAL OF EXISTING SIGN INSTALLATIONS ON MAIN ROADWAY, RAMPS AND APPROACH ROADWAYS AS SPECIFIED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. WORK SHALL ALSO INCLUDE REMOVAL OF SIGN SUPPORTS AND FOUNDATIONS AS REQUIRED IN SECTION 202.

IN ADDITION THE FOUNDATION SHALL BE REMOVED TO A MINIMUM OF ONE (1) FOOT BELOW THE GROUND SURFACE AND THE HOLE SHALL BE BACKFILLED.

ALL SIGNS, SUPPORTS, AND ACCESSORIES REMOVED SHALL EITHER BE SALVAGED FOR RE-ERECTION OR STORED NEATLY WITHIN THE LIMITS OF THE PROJECT AT LOCATIONS APPROVED BY THE ENGINEER FOR REMOVAL BY STATE FORCES. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL, INCLUDING CONCRETE WHICH MUST BE REMOVED FROM THE EXISTING SUPPORTS.

TO ASSURE MAINTENANCE OF ADEQUATE TRAFFIC CONTROL AT ALL TIMES, NO SIGNS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE HOLE IN THE CONCRETE SHALL BE FILLED WITH ASPHALT OR GRANULAR MATERIAL AFTER THE SUPPORT IS IN THE PROPER POSITION. SOIL PLATES WILL NOT BE REQUIRED FOR INSTALLATIONS IN A CONCRETE MEDIUM.

PRIOR TO INSTALLATION EACH SUPPORT SHALL BE SIGNIFICANTLY MARKED WITH PAINT AT A LOCATION ON THE SUPPORT 5' FROM THE EMBEDDED END AND APPROVED BY THE ENGINEER.

PAYMENT FOR INSTALLATION OF SIGN SUPPORTS BY THE ABOVE METHOD SHALL BE INCLUDED IN THE COST OF THE VARIOUS SUPPORT TYPES SPECIFIED INCLUDING ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED.

816 STRUCTURAL SUPPORTS 6 LB. BEAM DRIVEN AS PER PLAN:

THIS ITEM SHALL CONSIST OF THE FURNISHING ASSEMBLY AND INSTALLATION OF TWO (2) 6 LB. PER FOOT DRIVE POSTS (6 LB. BEAM) IN COMBINATION WITH A SQUARE SEAMLESS TUBULAR POST EXTENSION SPLICED TO THE TOP OF THE 6 LB. BEAM. DETAILS ARE SHOWN ON SHEET 62.

SQUARE TUBULAR POST MATERIAL SHALL CONFORM TO ASTM A-570 GRADE.

816 AFTER FABRICATION:

WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND HARDWARE NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK.

BASIS OF PAYMENT SHALL BE FOR STRUCTURAL SUPPORTS 6 LB. BEAM DRIVEN AS PER PLAN, PER LINEAR FOOT MEASURED BY TOTAL LENGTH OF COMBINATION BEAM FROM END TO END.

816 BREAKAWAY SIGN SUPPORT CONNECTION:

THIS ITEM CONSISTS OF CUTTING AND DRILLING THE STRUCTURAL SUPPORT, FURNISHING AND ATTACHING THE FUSE PLATE, AND FURNISHING AND ATTACHING THE BASE PLATES FOR EACH STRUCTURAL SIGN SUPPORT AS INDICATED ON THE PLANS.

ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO FABRICATE AND INSTALL THIS ITEM FOR EACH SIGN SUPPORT (EXCLUSIVE OF THE STRUCTURAL SIGN SUPPORT) WILL BE MEASURED AND PAID FOR AT THE UNIT PRICE BID FOR ITEM 816 EACH BREAKAWAY SIGN SUPPORT CONNECTION.

816 OVERHEAD SIGN SUPPORT, BY TYPE:

ALL COMPONENT PARTS OF THE OVERHEAD SIGN SUPPORTS SHALL BE STEEL EXCEPT FOR THE TRUSS AND COMPONENTS FOR THE NUMBER 7 SERIES WHICH SHALL BE ALUMINUM. FOR SPECIFIC DETAILS AND MATERIALS, SEE SHEET NUMBERS 49 THRU 53 AND 63 THRU 67.

COST OF FURNISHING AND INSTALLING THE SIGN BRACKETS AND THE FIXTURE SUPPORT ARM, LENGTH 8' WITH MOUNTING HOLES AND HARDWARE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

MODIFYING SUPPLEMENTAL SPECIFICATION 816 SWITCH ENCLOSURE MOUNTING BRACKETS INCLUDING MOUNTING BOLTS AND DRILLED HOLES SHALL BE FURNISHED AND INSTALLED UNDER PAYMENT FOR 816 OVERHEAD SIGN SUPPORT STRUCTURES AT THE CONTRACT PRICE PER OVERHEAD SIGN SUPPORT, BY TYPE.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH OVERHEAD SIGN SUPPORT, BY TYPE, INSTALLED IN PLACE AND ACCEPTED. WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL ANCHOR BOLTS, 2" AND 2 1/4" EMT CONDUIT ELLS FOR INSTALLATION UNDER 816 CONCRETE FOUNDATIONS FOR SIGN SUPPORTS, AND FOR FURNISHING AND INSTALLING EACH OVERHEAD SIGN SUPPORT STRUCTURE SHOWN ON SHEETS 50 THRU 53 INCLUDING FIXTURE SUPPORT ARMS, SWITCH ENCLOSURE MOUNTING BRACKETS, SIGN BRACKETS AND ALL COMPONENT PARTS NECESSARY TO MAKE A COMPLETE WORKABLE INSTALLATION READY FOR SIGN ERECTION. INSTALLATION OF DISCONNECT SWITCH AND ENCLOSURE GROUND ROD AND WIRE CONNECTIONS AND SIGN WIRING.

ERECTION OF THESE SUPPORTS SHALL BE ACCOMPLISHED IN A MANNER MEETING THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 816.

ERECTION OF OVERHEAD SPAN TYPE SIGN SUPPORTS (7 SERIES):

IN ALL CASES, SPAN TYPE OVERHEAD SIGN SUPPORTS AND SIGNS SHALL BE ERECTED CONCURRENTLY. AT NO TIME SHALL THE BOX TRUSSES BE ERECTED WITHOUT THE SIGN BEING IN PLACE WITHIN EIGHT (8) HOURS.

816 CONCRETE FOUNDATIONS FOR SIGN SUPPORTS:

PAYMENT FOR THIS ITEM SHALL BE BASED ON PLAN DIMENSIONS OR DIMENSIONS AS MODIFIED BY THE ENGINEER IN LIEU OF PLAN QUANTITIES AS REQUIRED IN SUPPLEMENTAL SPECIFICATION 816.

PAYMENT FOR REINFORCING STEEL AND INSTALLATION ONLY OF 2" AND 3/4" CONDUIT ELLS SHALL BE INCLUDED IN THE COST OF CONCRETE FOUNDATIONS FOR OVERHEAD SIGN SUPPORTS. CONCRETE SHALL BE CLASS "C".

BASIS OF PAYMENT SHALL BE AS FOLLOWS:

- 1) CONCRETE FOR OVERHEAD SIGN SUPPORT FOUNDATIONS, PER CUBIC YARD.
- 2) CONCRETE FOR GROUND MOUNTED SIGN SUPPORT FOUNDATIONS, PER CUBIC YARD.

815 SIGNING NOTES

CALC BY: C.N. 11/72
CHKD BY: B.D.H. 1/72

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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LOR-2-6.62
LOR-90-11.96

815 Signs, Extrusheet Type, as per plan

The extrusheet panels shall be fabricated in accordance with Shts. 58-59 (Dwg. ECD-1, and ECD-2). Mounting clips shall be included as part of the signs, in the quantity specified on the above mentioned drawings.

Sign face background material shall be Type F reflective sheeting. The proposed background color and legend type shall be indicated on each sign layout shop drawing submitted for review. The following code shall be used:

CODE	COLOR DESCRIPTION
RSG	Green
RSB	Blue
RSW-B	Silver-White, Grade 1
RSY	Yellow
RSBR	Brown
RSO	Orange

The sign legend shall include letters, digits, route shields, symbols, borders, and outlines coded and described in accordance with the following schedule and indicated on each shop drawing submitted for review.

CODE	DESCRIPTION	COLOR
DCW	Demountable Reflective Unit Type	White
DCBK	Demountable Non-reflective Type	Black
DAW	Direct Applied Reflective Sheeting, Silver-White, Grade 2	White
DAB	Direct Applied Non-reflective Sheeting	Black

Interstate route shields mounted on signs shall be of reflective sheeting type, mounted as separate and complete units using Silver-White Grade 2 reflective sheeting, Type F, with reverse screen transparent red and blue overlay. Numerals and borders shall be white demountable reflective unit type copy.

Ohio and US route shields shall be mounted as separate and complete units, using Silver-White Grade 1 reflective sheeting, Type F, with black silk screen paste numerals.

Exit number panels, where required, shall include 4-pound drive post bracing (6-foot lengths) and mounting clips in accordance with Sht. 60 (Drawing TPS-1). The same method shall be used for supplementary signs such as NEXT EXIT MILES signs.

Extrusheet panel signs shall have a glare shield included as part of the signs, if the signs are to be illuminated. The glare shield shall be of the same material as the sign panels and shall be interlocked or bolted to the sign. The face material of the glare shield shall be non-reflective sheeting such as Scotchcal, Tedlar, or an approved equal. Notches shall be cut in the glare shields to the dimensions shown on the approved shop drawings. The area of the glare shield shall be measured in the same manner as extrusheet panel signs and shall be paid for at the unit price bid for extrusheet panel signs.

The unit price bid per square foot for Item 815 Signs, Extrusheet Type, as per plan, shall include payment for all required legend, hardware and all necessary equipment, labor, and materials necessary to furnish and erect the completed signs including packaging, delivery and storage when needed.

815 Signs, Flat Sheet Overlay Type

If specified in the plans, overlay signs shall consist of aluminum flat sheet (0.63 inch thick) with reflective sheeting of a color compatible with the color used on the underlying sign unless otherwise noted. Sign legend shall be similar to that specified for Aluminum Extrusheet Type signs. Shop drawings submitted for review shall be coded similar to requirements for Aluminum Extrusheet Type signs.

Overlay signs are to be shop mounted onto extrusheet signs. Method of attachment shall be by rivets of adequate length at one foot (1'-0") maximum spacing on the periphery of sections and complete overlay sheeting and at two feet (2'-0") maximum spacing over the entire surface area of the overlay sheeting. Overlay signs over 8 feet by 4 feet in size may be furnished in two sections rather than one.

The unit price bid per square foot for Item 815 Signs, Flat Sheet Overlay Type, as per plan shall include payment for all required legend, hardware, equipment, labor and tools necessary to furnish and mount the overlays as specified.

815 Signs, Flat Sheet Type, as per plan

The aluminum flat sheet sign blanks shall be fabricated in accordance with Sheet 57 (Drawing SBD).

Mounting hardware, i.e., bolts, washers, bearing plates, and nuts shall be included as part of the signs. The number and sizes furnished of each of these items shall conform with that shown on Sheets 57-62-61 (Drawings SBD, SOW, and GMSS).

Sign face background material shall be reflective sheeting, Type F.

The typical sign legend shall be silk screened and include letters, digits, symbols, borders and outlines. The following color coding shall be shown on shop drawing submitted for review and approval:

CODE	COLOR
RSTR	Silver-White, Grade 2, with reverse screen transparent red
RSY	Yellow
RSW-B	Silver-White, Grade 1
RSTRB	Silver-White, Grade 2, with reverse screen transparent blue and red
RSTB	Silver-White, Grade 2, with reverse screen transparent blue
RSTG	Silver-White, Grade 2, with reverse screen transparent green
RSG	Green

For Type Code

Signs, direct applied sheeting shall be used for legend including letters, digits, symbols, borders and outlines. The following color coding shall be shown on shop drawings submitted for review and approval:

CODE	DESCRIPTION
RSW-A	Reflective Sheeting, Type F (Silver-White, Grade 2)
SPBK	Silk Screen Paste (Black)
DAW	Reflective Sheeting, Direct Applied (Silver-White, Grade 2)
DAB	Non-reflective Sheeting, Direct Applied (Black)

The unit price bid per square foot 815 Signs, Flat Sheet Type, as per plan, shall include payment for all required legend, hardware, plus all necessary equipment, labor and tools to furnish and erect the signs including packaging, delivery and storage when needed.

Sign Legends

Sign legend shall be in accordance with the American Association of State Highway Officials "Manual for Signing and Pavement Marking of the National System of Interstate and Defense Highways" 1970 edition. Sign lettering when indicated as a series type such as C, D, etc., shall be designed in accordance with the "Standard Alphabets for Highway Signs" published by the Federal Highway Administration. Copies of the above references are on file in the Department of Transportation, Bureau of Highway Design Services, 25 South Front Street, Columbus, Ohio 43215.

Clear Coating of Reflective Sheeting:

The provisions of Section 815.10 apply except where pressure sensitive reflective sheeting is used. Pressure sensitive reflective sheeting shall not be clear coated and only the edge sealer is required for this type of sheeting.

Colors:

Colors proposed and shown on each sign layout shop drawing submitted for review shall conform to those shown in the Ohio Manual of Uniform Traffic Control Devices for Streets and Highway, current edition, latest revision, or, in special circumstances, as may be indicated in the plans.

In addition to the requirements of Supplemental Specification 815, colors for reflective sheeting shall conform to the latest edition of Color Tolerance charts produced by the Federal Highway Administration.

Processing of Sign Shop Drawings

- The State will furnish the following information to the contractor upon award of the contract:
 - Sign Design Layout Standards for Directional Guide Signs.
 - Traffic Standard Drawings for regulatory, warning, and route marker signs.
 - Special design layout criteria as applicable.
- The contractor shall submit 8 copies of individual shop drawings as follows:
 - Each separate sign message layout including legend size and spacing with reference and/or code number. Shop drawings for standard warning, regulatory, and route marker signs are not required unless specifically requested by the State in information furnished under Item 1 above.
 - Sign backing material designs showing overall dimensions, extrusheet panel widths, overlay panel widths, notches in glare shields, and number of mounting clips.
 - Proposed sign face colors including legend, border, and background of sign.

815 Packaging, Shipment, and Storage of Signs

In addition to the requirements of Supplemental Specification 815, the following requirements shall be adhered to:

Extrusheet Signs:

- Signs shall be protected by crating or by temporary vertical back-bracing attached to signs to assure that the sign is rigid and protected during packaging, loading, shipment, and handling or storage of signs at the job site prior to erection.

Vertical bracing (if signs are not crated) shall be at a minimum spacing of 6 feet and maximum of 8 feet on each sign with temporary mounting devices attaching signs to backbracing at a maximum of 2 feet intervals. Bracing shall extend a minimum of 3 inches below bottom of signs to assure that the bottom of sign is kept above ground during shipment or storage.
- Sign faces shall be protected by a plastic coated paper with the plastic surface adjacent to the sign face and heavy corrugated cardboard, blankets or equivalent covering over the plastic material attached to the sign.
- Signs shall be shipped completely assembled in 1 piece, except for signs over 8 feet in height which may be shipped in 2 pieces for assembly at the project site.

Sign identification shall also be provided on the back of each extrusheet sign. This identification shall be inconspicuously located or in a detachable form.

Signs or sign components which are shipped with aluminum overlays mounted on the extrusheet panels shall have adequate identification to permit assembly and erection at the proper location without detaching the overlay.

Flat Sheet Signs:

- Flat sheet signs of like size may be packaged together.
- Sign faces shall be protected by slip sheets which have plastic coated finish on the side adjacent to each sign face. Oily or waxy paper slip sheets are not acceptable.

Storage of Signs:

Sign faces shall not become wet during shipment or storage. If it is necessary to store signs on or near the project site prior to erection, adequate protection by approved shelter or protective covering is required at all times to assure that signs are not exposed to weather elements.

Extrusheet signs shall be stored in a vertical position in crates or supported by temporary bracing above natural ground, with the top edge of sign up. Under no circumstances shall extrusheet signs be stored in a horizontal position.

January 29, 1973

GENERAL NOTES

GENERAL NOTES

FED. DIVISION	STATE	PROJECT
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LOR 2:6:62
LOR 90-1196

CALC. BY: C.N. 11/72
CHKD. BY: P.B.M. 11/72

MISCELLANEOUS EQUIPMENT TO LIGHT EXISTING OVERHEAD SIGNS:

THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL THE NECESSARY MISCELLANEOUS EQUIPMENT REQUIRED TO PREPARE THE EXISTING OVERHEAD SIGNS FOR MERCURY VAPOR LIGHTING. SEE STANDARD DETAILS ON SHEETS 63/64.

GLARE SHIELDS SHALL BE INSTALLED ON EXISTING OVERHEAD SIGNS AS INDICATED ON THE PLAN. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LENGTH AND ALSO THE SPACING OF THE NOTCHES ON THIS PANEL. BASIS OF PAYMENT FOR THE ABOVE MATERIAL AND LABOR SHALL BE PAID FOR PER SQUARE FOOT FOR ITEM 815 SIGNS, EXTRUSHEET TYPE; AS PER PLAN.

NEW SUPPORT ARMS SHALL BE ERECTED TO VARIOUS EXISTING SIGNS AS INDICATED ON THE PLAN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LENGTHS OF ARMS FOR THE VARIOUS SIGNS. BASIS OF PAYMENT FOR THIS WORK SHALL BE PAID FOR PER EACH FOR ITEM 816 SUPPORT ARMS.

IT IS INTENDED THAT THE ABOVE TWO PAY ITEMS BE ALL THE NECESSARY COMPENSATION TO REVISE THE EXISTING OVERHEAD SIGNS FOR MERCURY VAPOR SIGN LIGHTING. ANY OTHER MISCELLANEOUS HARDWARE (BOLTS, CLIPS, ETC.) NEEDED TO ACCOMPLISH THE ABOVE SHALL BE INCLUDED IN THE ABOVE PAY ITEMS.

ELECTRICAL - GENERAL:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY MATERIAL, LABOR AND FACILITIES REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE DESIGNS, DIMENSIONS AND DETAILS SHOWN IN THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

ALL MATERIAL, WORKMANSHIP AND CONSTRUCTION METHODS, EXCEPT AS MODIFIED HEREIN, SHALL CONFORM TO THE GENERAL REQUIREMENTS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS, JANUARY 1, 1973.

625 EXISTING POWER SUPPLY:

ELECTRIC POWER SHALL BE OBTAINED FROM EXISTING 480 VOLT ROADWAY LIGHTING CIRCUITS UNLESS OTHERWISE NOTED OR SHOWN ON THE PLANS. ALL WORK NECESSARY TO INSTALL A COMPLETE OPERATIVE SYSTEM SHALL BE INCLUDED IN THE VARIOUS ELECTRICAL BID ITEMS IN THIS CONTRACT.

CERTIFICATION AND APPROVAL OF SIGN SUPPORT AND SIGN LIGHTING ITEMS:

THE CONTRACTOR SHALL SUBMIT THROUGH PROPER CHANNELS THE DRAWINGS, INFORMATION AND SAMPLES AS REQUIRED BELOW:

- EIGHT (8) COPIES OF SHOP DRAWINGS AND MATERIAL LISTS FOR APPROVAL:
 - OVERHEAD SIGN SUPPORTS.
 - BREAKAWAY SIGN SUPPORTS.
 - SIGN LIGHTING LAYOUT PLAN AND DETAILS FOR WIRING, CONDUIT SIZE AND PLACEMENT FROM SIGN DISCONNECT SWITCH TO FIXTURE.
- EIGHT (8) COPIES OF CATALOG CUTS DESCRIPTIONS OF SAMPLES OF FABRICATORS STANDARD ITEMS AS SHOWN IN THE PLANS OR THEIR EQUALS FOR APPROVAL OF THEIR USE.
- CERTIFICATIONS AND/OR SAMPLES FOR ALL MATERIAL WHICH HAVE BEEN APPROVED ABOVE UNDER "A" AND "B".
- APPROVAL OF ITEMS UNDER "A" AND "B" SHALL BE IN THE HAND OF THE CONTRACTOR PRIOR TO ANY PURCHASE OR INSTALLATION.
- CERTIFICATIONS OF SAMPLES UNDER "C" MUST BE IN HAND AND APPROVED PRIOR TO CONTRACT COMPLETION.

625 WIRE AND CABLE:

WIRE AND CABLE INSTALLATION SHALL CONFORM TO SECTION 625.14 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS AND SHALL BE OF THE SIZES AND TYPES SHOWN ON THE PLANS.

WIRE OR CABLE INSTALLED IN CONDUIT ON OR WITH SIGN STRUCTURES SHALL BE #10 RHH, 600 VOLT STANDARD COPPER WIRE (POLE AND BRACKET CABLE).

CABLE INSTALLED UNDERGROUND LEADING FROM THE PULLBOX TO THE DISCONNECT SWITCH SHALL BE #4 OR 6 SINGLE CONDUCTOR CIRCUIT CABLE.

WIRE - CABLE - DUCT-CABLE IDENTIFICATION:

ALL CIRCUIT AND GROUND CABLES AND DUCT-CABLE SHALL BE COLOR CODED OR SHALL BE IDENTIFIED IN EACH PULL BOX, HANDHOLE, TRANSFORMER BASE, BRIDGE JUNCTION BOX, CONTROL HOUSING, ETC. TAGS SHALL BE CIRCULAR IN SHAPE. 1 3/8" IN DIAMETER AND NOT LESS THAN .031" THICK COPPER, BRASS OR PLASTIC. USE STEEL LETTERING DIES, 1/4" MINIMUM SIZE, OR THE EQUIVALENT ENGRAVING PROCESS TO MARK THE TAG. IT SHALL BE SECURELY ATTACHED WITH AN AWG 14 TYPE TW COPPER WIRE. MARKING OF TAGS SHALL CONSIST OF AN ABBREVIATION FOR THE GROUND WIRES "GR'D" AND CIRCUIT WITH NUMBER OR LETTER "CKT. A", ETC.

INCLUDE COSTS WITH APPLICABLE WIRE - CABLE - DUCT-CABLE ITEM BID.

625 CONNECTOR KITS:

CABLE CONNECTIONS IN PULL BOXES, JUNCTION BOXES, AND IN HAND HOLES OF SIGN SUPPORTS SHALL BE ACCOMPLISHED BY THE USE OF APPROVED FACTORY ASSEMBLED CABLE CONNECTOR KITS. PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER EACH FOR UNITS INSTALLED AND ACCEPTED.

DISCONNECT SWITCH ENCLOSURE MOUNTING BRACKETS:

THIS ITEM SHALL INCLUDE THE FABRICATING, FURNISHING AND INSTALLATION OF DISCONNECT SWITCH ENCLOSURE MOUNTING BRACKETS WHEN ENCLOSURES ARE MOUNTED ON EXISTING OVERHEAD SIGN SUPPORTS (NOT PART OF THIS PROJECT) OR ATTACHED TO EXISTING CONCRETE BRIDGE PIERS OR ABUTMENTS.

WORK SHALL CONSIST OF FIELD DRILLING, ATTACHMENT AND HARDWARE AS DETAILED ON SHEETS 53 AND 64.

BASIS OF PAYMENT SHALL BE AT THE BID PRICE PER EACH MOUNTING BRACKET WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING, FABRICATION AND INSTALLATION INCLUDING ALL LABOR, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

625 SIGN SERVICE:

THIS ITEM SHALL CONSIST OF THE COMPLETION OF THE ELECTRICAL SYSTEM AND COMPONENTS FROM THE CONNECTORS IN THE PULL BOX OR HANDHOLE IN THE STRUCTURE TO THE PRIMARY SIDE OF THE DISCONNECT SWITCH.

WORK WILL INCLUDE FURNISHING AND INSTALLING (INCLUDING TRENCHING AND BACKFILLING) THE 2 INCH GALVANIZED STEEL CONDUIT AND COUPLINGS FROM THE PULL BOX TO THE CONDUIT END IN THE SIGN SUPPORT FOUNDATION.

THIS ITEM WILL ALSO INCLUDE FURNISHING AND INSTALLING NO. 4 OR 6 AWG 600 VOLT DISTRIBUTION CIRCUIT CABLE AS PER 713.02 FROM THE CONNECTORS TO THE DISCONNECT SWITCH.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

625 SIGN SERVICE, AS PER PLAN:

THIS ITEM SHALL CONSIST OF THE COMPLETION OF THE ELECTRICAL SYSTEM AND COMPONENTS FROM THE OVERHEAD UTILITY LINE DROP (SEE DETAIL SHEET NO. 53) TO THE PRIMARY SIDE OF DISCONNECT SWITCH.

THIS ITEM SHALL INCLUDE THE FURNISHING AND INSTALLING OF THE 1/0 600 VOLT SERVICE WIRE FROM THE SERVICE DROP TO THE DISCONNECT SWITCH.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

625 SIGN SERVICE FOR STRUCTURE MOUNTED SIGNS:

THIS ITEM OF WORK SHALL CONSIST OF THE COMPLETION OF THE ELECTRICAL SYSTEM AND COMPONENTS CONNECTING THE CONNECTORS IN THE PULL BOX (INCLUDED WITHIN THE ROADWAY LIGHTING QUANTITIES) WITH THE PRIMARY SIDE OF THE DISCONNECT SWITCH.

WORK WILL INCLUDE FURNISHING AND INSTALLING (INCLUDING TRENCHING AND BACKFILLING) THE 1 1/4" TYPE III METAL CONDUIT AND NO. 4 OR 6 AWG 600 VOLT DISTRIBUTION CIRCUIT CABLE AS PER 713.02 FROM THE PULL BOX TO THE SWITCH ENCLOSURE AND SHALL ALSO INCLUDE ALL FITTING AND FASTENERS NEEDED TO COMPLETE THIS ITEM OF WORK.

BASIS OF PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE PER EACH, WHICH SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

625 INSPECTION AND TESTING OF SIGN LIGHTING:

ELECTRICAL TESTS OF SIGN LIGHTING CIRCUITS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 625.22 WITH THE FOLLOWING ADDITIONS:

- VOLTAGE AND AMPERAGE MEASUREMENT SHALL BE MADE AT THE SIGN SUPPORT SWITCH.
- WHERE A LOW VOLTAGE TAP TRANSFORMER IS USED, THE VOLTAGE SHALL BE MEASURED TO DETERMINE THE APPLICABLE TAP.
- DURING THE PERFORMANCE TEST PERIOD, ADJUSTMENTS TO FIXTURE AIMING ANGLES SHALL BE MADE TO OBTAIN MAXIMUM UNIFORMITY AS DIRECTED BY THE ENGINEER.

THE ABOVE MEASUREMENTS AND VOLTAGE TAP SELECTION NOTATIONS SHALL BE INCLUDED IN THE TEST REPORTS FURNISHED TO THE ENGINEER.

SIGNS AND SUPPORT SYMBOLS

SIGNS ON ONE NEW SUPPORT
SIGNS ON TWO NEW SUPPORTS
SIGNS ON THREE NEW SUPPORTS
COMBINATION CANTILEVER SIGN AND LUMINAIRE
NEW CANTILEVER WITH BACK TO BACK SIGNS
NEW OVERHEAD TRUSS SUPPORT
EXISTING OVERHEAD TRUSS SUPPORT
EXISTING CANTILEVER SUPPORT TO REMAIN
EXISTING SUPPORTS TO REMAIN
EXISTING OR SALVAGED SIGN FACE
NEW SIGN FACE



EXISTING ANCHOR ASSEMBLIES REMOVED:

ANCHOR ASSEMBLIES DESIGNATED FOR REMOVAL ON THIS PROJECT SHALL BE CAREFULLY DISMANTLED AND THE RAIL ELEMENTS STORED FOR EITHER RE-USE ELSEWHERE ON THE PROJECT OR REMOVAL BY STATE FORCES. ALL POSTS, BLOCKS, BOLTS AND MISCELLANEOUS HARDWARE SHALL BE DISPOSED OF BY THE CONTRACTOR. ALL HOLES SHALL BE CAREFULLY FILLED AND TAMPED AND THE SITE CLEANED AND RESTORED.

PAYMENT FOR ALL THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAR FEET FOR ITEM 202 GUARD RAIL REMOVED FOR RE-USE OR STORAGE.

ANCHOR ASSEMBLY, AS PER PLAN:

25' RAIL ELEMENTS SALVAGED UNDER 202 GUARD RAIL REMOVED FOR RE-USE OR STORAGE ON THIS PROJECT MAY BE USED IN LIEU OF FURNISHING NEW RAIL ELEMENTS FOR 606 ANCHOR ASSEMBLY, AS PER PLAN. THE GALVANIZED RAIL ELEMENTS MUST BE RENOVATED AS PER THE REQUIREMENTS OBTAINED UNDER GUARD RAIL, TYPE 5 AS PER PLAN NOTE, SHEET 6, PRIOR TO INSTALLATION. ALL NEW HARDWARE SHALL BE FURNISHED.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 606 ANCHOR ASSEMBLY, AS PER PLAN.

LOCATIONS OF GUARDRAIL

The locations of guardrail runs as shown in these plans are subject to adjustment to assure that the planned installations will afford maximum protection for traffic.

625 MERCURY VAPOR SIGN LIGHTING LUMINAIRE, WITH BALLAST AND LAMP, BY RATING

This item of work shall consist of furnishing mercury vapor sign lighting luminaires with lamp and integral ballast as specified below.

The luminaire shall be no more than 8½" high overall by 16" wide by 18½" deep including the ballast enclosure. These measurements shall be checked when the luminaire is resting on a horizontal table top with the lens up.

The outer housing of the luminaire, the frame for the lens, and the ballast housing shall be of cast aluminum with a finish of gray baked acrylic base enamel.

The lamp housing body shall have 3-5/16" diameter holes drilled according to the mounting plate design shown on Sheet 63. The centerline of two of the boltholes shall be 1 3/8" away from and parallel with the projection of the lamp centerline on the base of the lamp housing.

The reflector shall be made of a single piece of aluminum, die formed to shape and processed to distribute the light evenly over the sign area. A heavy duty mogul base lampholder shall be securely fastened to the reflector and the reflector shall be securely fastened to the lamp housing.

The luminaire shall have a borosilicate glass lens capable of withstanding thermal shock and impact of freezing rain and hail. The lens shall be either clear or have a mild diffusion pattern molded into its inner surface. A permanent, flexible, waterproof sealer shall be used to seal the lens into its frame. A continuous water proof gasket shall be provided to seal the lens and frame unit to the lamp housing. This gasket shall be so designed to stay in the proper position for at least 10 years regardless of the number of times the lens unit is opened for service or adjustment.

The lens unit shall be hinged on one edge and fastened on the other edge with spring loaded latches that require no tools to open. The hinges, latches and all other external fasteners shall be of stainless steel.

The luminaire shall be provided with an integral ballast of at least 90% power factor, and of the constant wattage autotransformer type to provide plus or minus 5% lamp watt variation for a plus or minus 10% line voltage variation. Primary supply voltage shall be 60 hertz and 120, 208, 240, 277 or 480 volts as specified in the plans. The luminaire shall operate satisfactorily over any expected outdoor temperatures down to -20 degrees F. Self-ballasted mercury vapor lamp type luminaires are not acceptable.

Basis of payment for this item shall be at contract unit price per each "625 Mercury Vapor Sign Lighting Luminaire With Ballast and Lamp, By Rating" furnished to the job for installation under item 625 Mercury Vapor Lighted Sign Wired Complete.

625 MERCURY VAPOR LIGHTED SIGN, WIRED COMPLETE:

This item shall consist of the installation of the mercury vapor luminaires furnished under "625 Mercury Vapor Sign Lighting Luminaire, with Lamp, By Rating". It will also include furnishing and installation of the electrical components and hardware from the disconnect switch to the luminaire including furnishing and installing the 2.16#/ft. aluminum channel and fixture mounting plate with "J" bolts. These items will be mounted on the "G" Support arm which is included with Item 816 Overhead Sign Support By Type.

Luminaires shall be mounted as shown on Sheet 63. Wiring shall be not less than #12 THW in 3/4" dia. conduit. The wires should be continuous from a junction box on the top chord of the sign support or on structure mounted conduit to the first fixture, and then continuous to the second, third and fourth fixtures on a single sign. On multiple sign installations each sign shall have a separate junction box so that, if maintenance is needed, the sign and all electrical devices attached to it can be disconnected as a unit from the support by disconnecting only two wires and the U bolts attaching it to the support.

Conduit for the mercury vapor sign lighting shall be as follows:

1. A screw-on-cover, 1½" double hub junction box shall be fastened to a 1½" coupling welded to the top truss chord of the sign support arm with a short 1½" nipple. On structure mounted signs the junction box shall be attached to the conduit mounted on structure.
2. A length of 3/4" P.V.C. covered flexible waterproof conduit shall connect the junction box through a 1½"x3/4" bushing to a 3/4" LR or LL conduit on the sign bracket nearest the pole on which the switch enclosure is mounted.
3. 3/4" rigid conduit shall connect the LR or LL conduit to a 3/4" LB conduit so arranged to line up the short end with the 1 1/8" dia. holes in the sign bracket and fixture support arm. This rigid conduit shall be fastened to the sign bracket with not less than 2 conduit clamps placed within 3" of the conduit fittings and not more than 24" c/c.
4. 3/4" rigid conduit shall connect the above LB conduit to the short end of another LB conduit fitting at the other end of the fixture support arm. This conduit shall be run through both 1 1/8" dia. holes in the fixture support arm, be jogged out of the way of the fasteners on the diagonal bracing rods, when required, be fastened near each end at not less than 24" c/c, and be made to a length that, when screwed into both conduit fittings, the rear conduit shall be approximately centered on the sign bracket web and the front conduit shall fit snugly against the outer plate of the fixture support arm. The long end of the front conduit shall be angled downward approximately 30 degrees, when viewed from the front of the sign, to allow the next piece of conduit to be jogged easily to lay along the centerline and approximately 3/8" in front of flange of the channel that supports the lighting fixtures.
5. A 3/4" type "T" conduit fitting shall be located within approximately 18" of the near edge of each fixture on the sign. 3/4" rigid conduit shall be connected from the LB conduit fitting described above to the first "T" conduit. Straight lengths of conduit shall connect as many "T" conduits as are required for the number of luminaires specified for the sign. A threaded plug shall be used to close the opening in the last "T" conduit used on each sign installation. Suitable conduit clamps shall be used on 24" centers to hold the entire run of conduit on the centerline of the channel flange as listed under Item 4 above. The Type "T" conduits shall be so oriented that the third tapped opening shall be perpendicular to the face of the sign.

6. A length of 3/4" P.V.C. covered waterproof flexible conduit shall connect each fixture to each corresponding "T" conduit. The length of this conduit shall be so arranged to make a neat and gradual curve into the fixture without either sharp bends or drooping appearance. Wiring for mercury vapor sign lighting shall be sized and installed according to the National Electrical Code but shall be not less than No. 12 THW and shall be spliced only in junction boxes or in the wiring enclosure of the luminaire. All wiring shall be in conduit, inside structural chords and poles, or in electrical boxes and fixtures. Solderless connectors, of the proper size and type, may be used where splices and junctions are allowed above ground level. However, when used, they shall be securely taped with water resistant electrical tape to form a waterproof joint. When solderless connectors are not used, all splices and junctions above ground shall be soldered and double taped to make a waterproof electrical joint.

Payment for this item shall be at the contract unit price bid for the following:

1. 625 Mercury Vapor Lighted Sign, Wired Complete.
2. 625 Mercury Vapor Lighted Sign, Wired Complete (Structure Mounted).

Payment shall include all labor and materials to connect all luminaires on one sign into the disconnect switch enclosure, including conduit on structure for structure mounted signs. When more than one sign is mounted on an installation, each sign shall be considered as a separate pay item.

DISCONNECT SWITCH WITH ENCLOSURE

This item shall include furnishing of a 30 amp. 600 volt fused disconnect switch in a NEMA 4 stainless steel enclosure. An enclosure shall be attached to each new sign support by brackets as detailed on Sheet 64, cost of brackets included in the sign support, or shall be attached to existing bridge piers or existing sign supports. See Mounting Bracket Note, Sheet 9.

The disconnect switch shall be a 3 pole, solid neutral type meeting the requirements of 713.19, 10.

The enclosure shall meet the requirements of 713.20 with the following exceptions.

- 1) The stenciled legend or plate shall read "sign lighting".
- 2) A chase nipple shall be furnished and installed in the back of the enclosure.
- 3) Factory installed hubs shall not be provided on the top.
- 4) A screened ventilation opening shall not be provided.
- 5) Mounting poles, slots and chase nipple location shall match those provided on the switch enclosure bracket and sign support.

Each switch enclosure shall be furnished with one padlock. Padlocks shall have a brass body and wrought iron shackle equal to Russwin No. 2882 KA or Master No. KA or approved equal. Padlocks shall be all keyed alike with Master Key 3476.

Basis of payment for this item shall be per each at contract unit price, which shall include all labor, material, and equipment to complete this item of work.

CALC. BY: *POA 1/92*
 CHKD. BY: *REM 1/73*

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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LOR-2-6.62
 LOR-90-11.96

EXISTING SIGN REMOVAL SUB-SUMMARY

FROM SHEET NO.	EXISTING SIGN INSTALLATIONS TO BE REMOVED			EXISTING MAJOR SIGN INSTALLATIONS TO BE REMOVED			EXISTING SIGN FACES TO BE REMOVED		
	NORMAL PARTICIPATION		100% STATE	NORMAL PARTICIPATION		100% STATE	NORMAL PARTICIPATION		100% STATE
		I-90			I-90			I-90	
S.R. 2	13		2			3			
	14		17			2			
	16		1			1			
	17		5			2			
	19		20			1			
	20		2			2			
I-90 Limits	22	4							
	23	12			1				
	25	2							
	27				1				
	29	5			1				
	30	1			1				
	32	18			1				
	35	5			3				
	36	2							
	37	1			1				
	39	13			3				4
	42	2			1				
	44	15							
	46	6							
TOTALS	8	47		13	11			4	

659 COMMERCIAL FERTILIZER

$$\left[\frac{9,462(9)}{1000} \times 20 \right] \div 2000 = 0.85 \text{ TONS}$$

EARTHWORK AND SEEDING SUB-SUMMARY-I-90 PART.

FROM SHEET NO.	EXCAVATION	EMBANKMENT	SEEDING
22			160 SQ. YDS.
71	111 CU. YDS.	259 CU. YDS.	899
72	131	492	1,579
73	109	575	1,943
74	12	102	560
75	131	312	1,104
76	4	440	734
77		490	840
78	164	347	1,643
TOTALS TO SUMMARY	662 CU. YDS.	3,017 CU. YDS.	9,462 SQ. YDS.

GENERAL SUMMARY

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FED. RD. DIVISION	STATE	PROJECT
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CALC. BY: PDM 12/72
CHKD. BY: COM 1/73

S.R. 2-100% STATE PARTICIPATION

I-90-1-(82)00

PARTICIPATION

SHEET NUMBER																				Sub-Totals		ITEM	PLAN TOTAL	UNIT	TYPE CODE Y002 <i>Unless Otherwise Shown</i>	DESCRIPTION						
13	14	16	17	19	20	6	10	22	23	25	26	27	29	30	32	35	36	37	39	42	71						72	73	74	I-90	100% STATE	
																										ROADWAY						
																				Lump		201	Lump	Lump	Clearing and Grubbing							
																				2		202	2	Each	Catch Basin Abandoned, As Per Plan							
																				2		202	2	Each	Catch Basin Removed, As Per Plan							
150	125	50	75	500	575																						3650	1475	202	5125	Lin. Ft.	Guard Rail Removed For Re-use or Storage
																						202	337.5	Lin. Ft.	Barrier Rail Removed For Re-use or Storage							
																						662	662	203	662	Cu. Yds.	Excavation Not Including Embankment Construction					
																				3,017		203	3,017	Cu. Yds.	Embankment							
50	5384		50	3695	340.2																						4,074.7	1,348.1	606	5,422.8	Lin. Ft.	Guard Rail Type 5, As Per Plan
																						606	6,587.5	Lin. Ft.	Guard Rail, Rebuilt as Type 5, As Per Plan							
																						606	312.5	Lin. Ft.	Barrier Rail, Rebuilt as Type 5, As Per Plan							
																						606	25	Each	Guard Rail Replacement Posts							
4	9		6	4	2	25																					30	25	606	55	Each	Anchor Assembly, As Per Plan
																						606	21	Each	Anchor Assembly, Barrier Design							
																						606	12	Each	Bridge Terminal Assembly, Type C							
																						606	12	Each	Bridge Terminal Assembly, Type E							
																						606	12	Each	Bridge Terminal Assembly, Type F							
																						606	4	Each	Bridge Terminal Assembly, Type G							
																						607	2459	Lin. Ft.	Fence, Type 47							
																						1999										
																						160										
																						124										
																						95										
																						81										
																						79										
																						601	79	Cu. Yds.	EROSION CONTROL - TYPE CODE Y005 Rock Channel Protection, Type B							
																						659	9,462	Sq. Yds.	Seeding and Mulching, As Per Plan							
																						659	0.85	Tons	Commercial Fertilizer (12-12-12)							
																						9,462										
																						0.85										
																						1.7										
																						2.7										
																						4.3										
																						0.4										
																						9.1										
																						602	9.1	Cu. Yds.	DRAINAGE Concrete Masonry							
																						603	10	Lin. Ft.	21" Conduit, Type A, 706.02, As Per Plan							
																						603	10	Lin. Ft.	36" Conduit, Type A, 706.02, As Per Plan							
																						38	38	Lin. Ft.	42" Conduit, Type A, 706.02, As Per Plan							
																						603	108	Lin. Ft.	53"x34" Conduit, Type A, 706.04, Class HE II, As Per Plan							
																						603	42	Lin. Ft.	68"x43" Conduit, Type A, 706.04, Class HE II, As Per Plan							
																						603	8	Lin. Ft.	18" Conduit, Type B, 706.01 or 706.02, As Per Plan							
																						603	206	Lin. Ft.	15" Conduit, Type C, 706.01, 706.02 or 706.03							
																						603	12	Lin. Ft.	15" Conduit, Type B, 706.01 or 706.02, As Per Plan							
																						603	32	Lin. Ft.	8" Conduit, Type F							
																						603	10	Lin. Ft.	6" Conduit, Type F							
																						604	3	Each	Standard No. 1 Manhole							
																						604	4	Each	Standard No. 4 Catch Basin, As Per Plan							
																						1										
																						1										
																						1										
																						2										

General Summary continued on next sheet

GENERAL SUMMARY

 CALC. BY: PDM 12/92
 CHKD BY: RMM 1/73

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

12
103

 LOR-2-6.62
 LOR-90-11.96

S.R.2 - 100% STATE PARTICIPATION

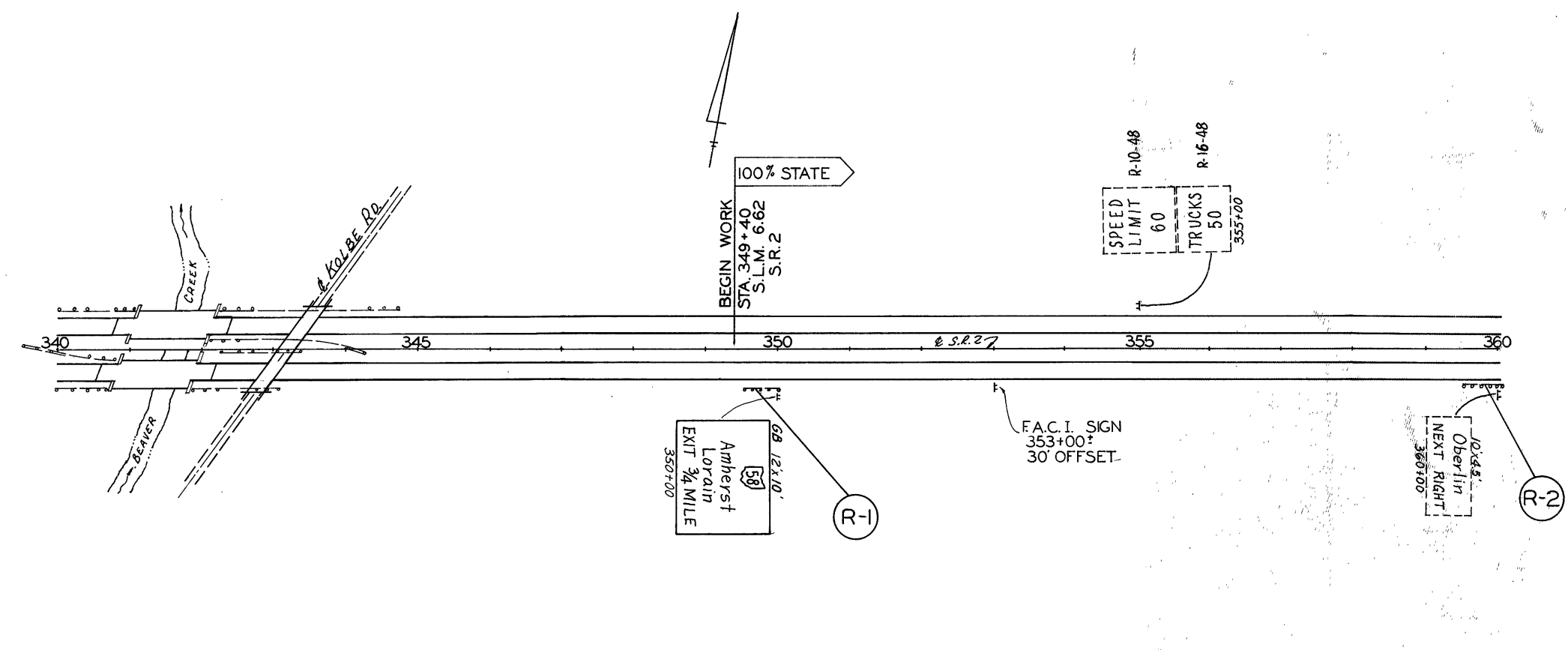
I-90-1(82)00 PARTICIPATION

SHEET NUMBER						PARTICIPATION														Sub-Totals		ITEM	PLAN TOTAL	UNIT	TYPE CODE Y002 <i>Unless Otherwise Shown</i>	DESCRIPTION														
6	10	15	18	21	49	6	10	24	28	31	33	34	38	40	41	43	45	48	49	I-90	100% State																			
TRAFFIC CONTROL																																								
						4*																												Existing Sign Faces to be removed						
						86																							4	Each	Existing Sign Installations to be removed									
47						13																							13	Each	Existing Major Sign Installations to be removed									
							115	61	120							311/26*	51*	77	91	67	128/18*	99	72	141	53/54*	30/34*	1069	479	815	1548	Sq.Ft.	Signs, Flat Sheet Type, As Per Plan								
							283	54	243	1031							401	404	188	40	275	128	48	96	32	1451/31*	3063	1642	815	4705	Sq.Ft.	Signs, Extrusheet Type, As Per Plan								
							247	302	325							77	222	145	13	387	144	154	98	36	1276	874	815	2150	Sq.Ft.	Existing Signs Re-erected										
																1	2			2		2		2	11		815	11	Each	Revise Existing Sign Exit Legend										
																				2					252		815	252	Sq.Ft.	Remove & Re-erect Existing Overhead Signs										
							24	42*	48	24				72			24	24	48							264	42	816	306	Lin.Ft.	Structural Support, 2 lb. Post, Driven									
							171	55	144							55	58	58	112	50	75	86	25	73	25	617	370	816	987	Lin.Ft.	Structural Support, 4 lb. Post, Driven									
							462	250	421							581	64*	194	267	97	409	175	60	147	252	90	2272	1197	816	3469	Lin.Ft.	Structural Support, 6 lb. Beam, Driven								
							33		33									16	16						33	65	66	816	131	Lin.Ft.	Structural Support, 6 lb. Beam, Driven, As Per Plan									
								88	124								82			85						167	212	816	379	Lin.Ft.	Structural Support, Steel Beam, 8 WF 17									
							50											50		100						150	50	816	200	Lin.Ft.	Structural Support, Steel Beam, 10 WF 21									
																61	111				59		58			289		816	289	Lin.Ft.	Structural Support, Steel Beam, 12 WF 31									
																	16				7					23		816	23	Lin.Ft.	Structural Support, 2 lb. Back-bracing									
							2	4	6							2	8	2		8	2			2		24	12	816	36	Each	Breakaway Sign Support Connections									
							2.5	4.6	6.9							3.0	10.6	2.5		9.6	3.0			3.0		31.7	14.0	816	45.7	Cu.Yds.	Concrete For Ground Mounted Sign Support Foundations									
																										29.8	12.8	816	42.6	Cu.Yds.	Concrete For Overhead Sign Support Foundations									
																										2	4	816	6	Each	Combination Sign and Light Support, No. 12.30 Design 3, Modified, 0 Ga. 13" x 8.52' x 32' Pole, 70a.8' x 5.76' x 16' Arm									
																										2		816	2	Each	Combination Sign and Light Support, No. 12.30 Design 4, Modified, 0 Ga. 13" x 8.52' x 32' Pole, 70a.9' x 6.20' x 20' Arm									
																										1		816	1	Each	Overhead Sign Support No. 7.4 Design 1 Modified, 47' Span									
																										1		816	1	Each	Overhead Sign Support No. 7.4 Design 2 Modified, 77' Span									
																										2		816	2	Each	Structural Mounted Sign Support									
																										26/3*	3	816	29	Each	Support Arm									
								4																		24	4	620	28	Each	Delineators, Type D, Post Mounted									
								65	56																	37	121	620	158	Each	Delineators, Type A, Post Mounted									
									4																	4	4	620	8	Each	Delineators, Type A, Bracket Mounted									
							114		114									60	52		105			90		307	228	621	535	Lin.Ft.	24" Stop Line									
							2		2									1	1		2			2		6	4	621	10	Each	Lane Arrows									
																										17/1*	7	625	24	Each	Ground Rods									
																										15	4	625	19	Each	Sign Service									
																										1*	3	625	3	Each	Sign Service for Structural Mounted Signs									
																										2	2	625	2	Each	Sign Service, As Per Plan									
																										2	2	625	2	Each	Photoelectric Cell									
																										6	6	625	6	Each	120 volt Mercury Vapor Sign Lighting Luminaire with Ballast and 175 watt lamp									
																										11*	11	625	11	Each	480 volt Mercury Vapor Sign Lighting Luminaire with Ballast and 100 watt lamp									
																										42/2*	14	625	56	Each	480 volt Mercury Vapor Sign Lighting Luminaire with Ballast and 175 watt lamp									
																										17/1*	7	625	24	Each	Disconnect Switch with Enclosure									
																										22/2*	6	625	28	Each	Disconnect Switch Enclosure Mounting Bracket									
																										33/6*	14	625	47	Each	Mercury Vapor Lighted Sign, Wired Complete									
																										1*	3	625	3	Each	Mercury Vapor Lighted Sign, Wired Complete, Structure Mounted									
LIGHTING																																								
For Lighting General Summary, See Sheet No. 80																																								
Lump						Lump																			Lump	Lump	619	Lump	Lump											Field Office
Lump						Lump																			Lump	Lump	623	Lump	Lump											Construction Layout Stakes
Lump						Lump																			Lump	Lump	614	Lump	Lump											Maintaining Traffic

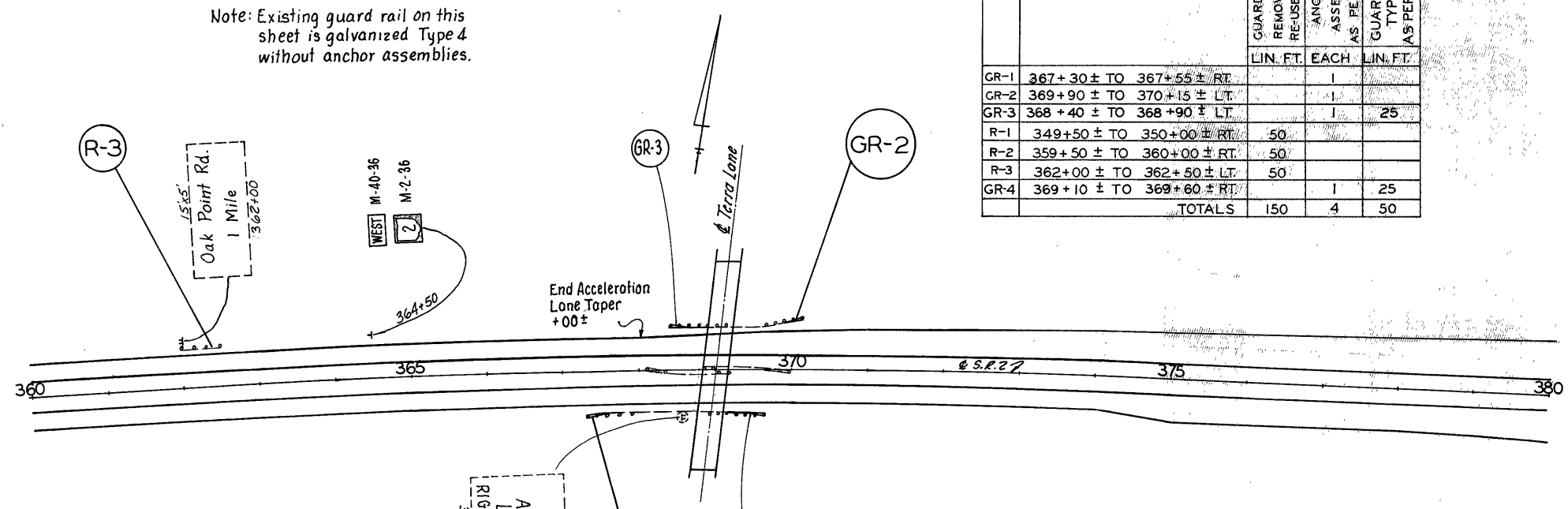
* = 100% State Items within I-90 Participation

LOR-2 - 6.62
LOR-90-11.96

CALC. BY PDG 9/72
CHKD. BY ROM 1/73



Note: Existing guard rail on this sheet is galvanized Type 4 without anchor assemblies.



REF. NO.	STATION	202		606	
		GUARD RAIL REMOVED FOR RE-USE OR STORE	ANCHOR ASSEMBLY AS PER PLAN	GUARD RAIL TYPE S	AS PER PLAN
		LIN. FT.	EACH	LIN. FT.	
GR-1	367+30 ± TO 367+55 ± RT		1		
GR-2	369+90 ± TO 370+15 ± LT		1		
GR-3	368+40 ± TO 368+90 ± LT		1	25	
R-1	349+50 ± TO 350+00 ± RT	50			
R-2	359+50 ± TO 360+00 ± RT	50			
R-3	362+00 ± TO 362+50 ± LT	50			
GR-4	369+10 ± TO 369+60 ± RT		1	25	
TOTALS		150	4	50	

For Ground-mounted Sign Quantities, See Sheet 15.

EXISTING SIGN INSTALLATIONS TO BE REMOVED		
Approximate Location	Code Number	Legend
SR-2 369+75 Lt.	M-40-24	West
	M-2-24	2
SR-2 355+00 LT.	R-10-48 *	SPEED LIMITS
	R-16-48 *	60 - 50

EXISTING MAJOR SIGN INSTALLATIONS TO BE REMOVED		
APPROXIMATE LOCATION	CODE NUMBER	LEGEND
SR-2 350+00 RT		58 EXIST. 3/4 MILE
SR-2 360+00 RT		OBERLIN NEXT RIGHT *
SR-2 362+00 LT.		OAK PT. RD. 1 MILE *

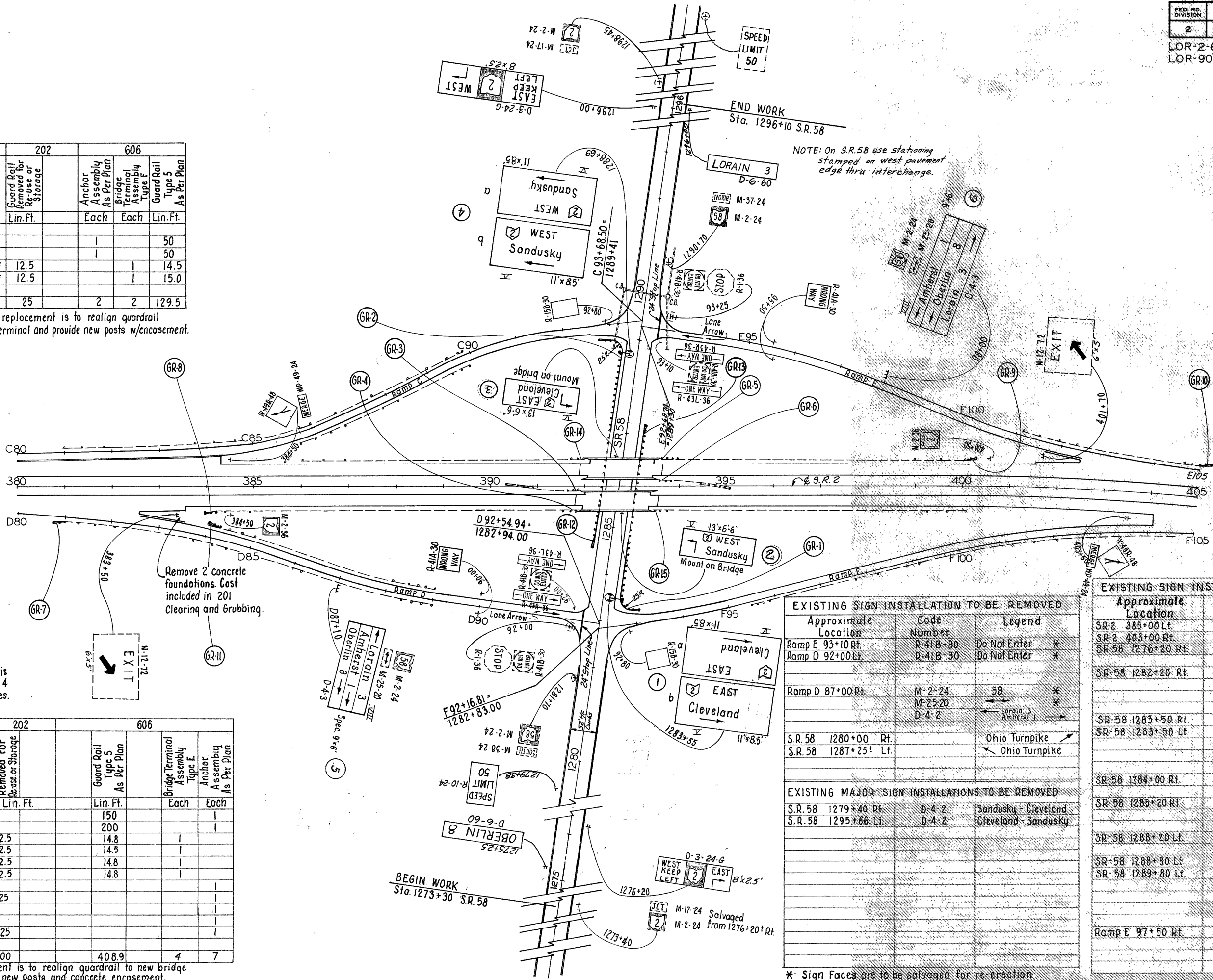
* EXISTING SIGN FACES TO BE SALVAGED FOR RE-ERECTION

LOR-2-6.62
LOR-90-11.96

CALC. BY: *POH 9/22*
CHKD. BY: *RM 1/73*

Ref. No.	STATION	202		606	
		Guard Rail Removed for Re-use or Storage Lin. Ft.	Anchor Assembly As Per Plan Each	Bridge Terminal Assembly Type F Each	Guard Rail Type 5 As Per Plan Lin. Ft.
GR-12	1284+50 ± to 1285+25 ± Lt.		1		50
GR-13	1286+47 ± to 1287+22 ± Rt.		1		50
GR-14	391+85 ± to 392+00 ± Lt. †	12.5			14.5
GR-15	393+45 ± to 393+60 ± Rt. †	12.5			15.0
Totals		25	2	2	129.5

† Removal and replacement is to realign quodrail to new bridge terminal and provide new posts w/encasement.



For Ground Mounted Sign Quantities, See Next Sheet
For Overhead Sign Quantities & Details, See Sheets 49&50.

Note: Existing guard rail on this sheet is galvanized Type 4 without anchor assemblies.

Ref. No.	STATION	202		606	
		Guard Rail Removed for Re-use or Storage Lin. Ft.	Guard Rail Type 5 As Per Plan Lin. Ft.	Bridge Terminal Assembly Type E Each	Anchor Assembly As Per Plan Each
GR-1	1284+72 ± S.R.58 to F93+09 ± Ramp F		150		
GR-2	1287+03 ± S.R.58 to C92+76 ± Ramp C		200		
GR-3	391+70 ± to 391+85 ± Median †	12.5	14.8		
GR-4	391+65 ± to 391+80 ± Rt. †	12.5	14.5		
GR-5	393+75 ± to 393+90 ± Lt. †	12.5	14.8		
GR-6	393+70 ± to 39+85 ± Median †	12.5	14.8		
GR-7	D80+75 ± to D81+00 ± Rt.				
GR-8	383+97 ± to 384+22 ± Rt.	25			
GR-9	400+00 ± to 400+25 ± Lt.				
GR-10	E105+00 ± to E105+25 ± Lt.				
GR-11	D84+00 ± to D84+25 ± Lt.	25			
Totals		100	408.9	4	7

† Removal and replacement is to realign quodrail to new bridge terminal and provide new posts and concrete encasement.

Approximate Location	Code Number	Legend
Ramp E 93+10 Rt.	R-41B-30	Do Not Enter *
Ramp D 92+00 Lt.	R-41B-30	Do Not Enter *
Ramp D 87+00 Rt.	M-2-24	58 *
	M-25-20	*
	D-4-2	*
S.R. 58 1280+00 Rt.		Ohio Turnpike
S.R. 58 1287+25 ± Lt.		Ohio Turnpike

Approximate Location	Code Number	Legend
S.R. 58 1279+40 Rt.	D-4-2	Sandusky - Cleveland
S.R. 58 1295+66 Lt.	D-4-2	Cleveland - Sandusky

Approximate Location	Code Number	Legend
SR-2 385+00 Lt.	W-49-36	Merging Traffic
SR-2 403+00 Rt.	W-49-36	Merging Traffic
SR-58 1276+20 Rt.	M-17-24	Jct. *
	M-2-24	2 *
SR-58 1282+20 Rt.	M-2-24	58
	M-25-20	*
	D-1	Oberlin 8
	D-1	Lorain 2
SR-58 1283+50 Rt.	D-2	WEST 2 EAST
SR-58 1283+50 Lt.	M-39-24	2
	M-2-24	2
	M-24	*
SR-58 1284+00 Rt.	M-37-24	Cleveland 30
	M-2-24	58
SR-58 1285+20 Rt.	M-40-24	West
	M-2-24	2
	M-21-20	1
SR-58 1288+20 Lt.	M-58-24	South
	M-2-24	58
SR-58 1288+80 Lt.	D-2	EAST 2 WEST
SR-58 1289+80 Lt.	M-2-24	58
	M-25-20	*
	D-1	Oberlin 8
Ramp E 97+50 Rt.	M-2-24	58 *
	M-25-20	*
	D-1	Amherst
	D-1	Lorain 3

* Sign Faces are to be salvaged for re-erection

TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

15
103

LOR-2-662
LOR-90-1196

CALC BY: *POM 9/22*
CHKD BY: *EBM 1/13*

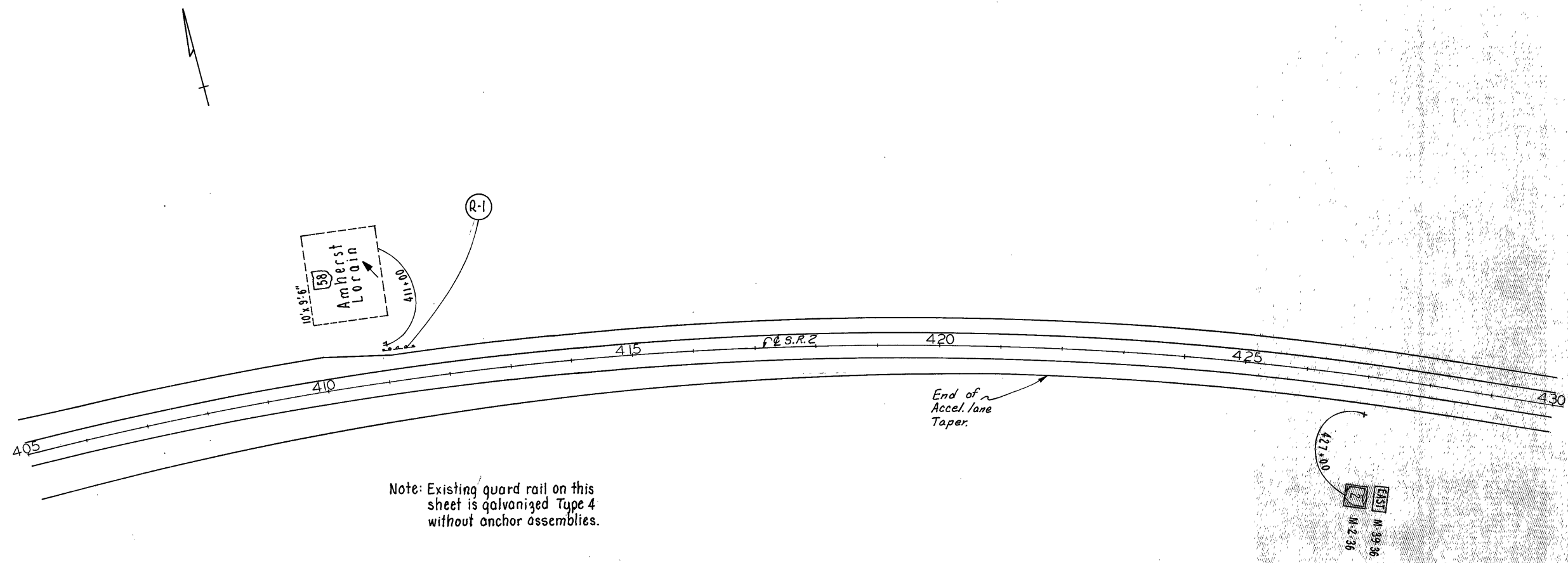
100% STATE PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815				816										621		FROM SHEET NO.														
							FLAT SHEET TYPE		EXISTING SIGNS	RE-REFLECTED	RE-REVISED	EXISTING SIGN EXIT	LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 8 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 10 W/F 17	BREAK-AWAY SIGN SUPPORT CONNECTIONS	CONCRETE FOR GROUND MOUNT SIGN SUPPORT FOUNDATIONS	DIMENSIONS SEE TYPICAL DETAIL SHEET 56					LANE ARROW	24" STOP LINES									
							AS PER PLAN	100% STATE														AS PER PLAN		100% STATE	SQ. FT.	EACH			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	CU. YDS.	A
14	SR-2		383+50	Rt.	Existing N-12-72	6x5					30																										14
			384+50	Rt.	M-2-36	3x3		9																													
			384+50	Lt.	W-49R-48	4x4		16																													
					WP-49-24	2x1		2																													
			400+50	Lt.	M-2-36	3x3		9																													
			401+70	Lt.	Existing N-12-72	6x5					30																										
	SR-2		403+50	Rt.	W-49R-48	4x4		16																													
					WP-49-24	2x1		2																													
	Ramp C		92+80	Lt.	R-15B-30	2.5x2.5		6.25																													
	Ramp D		87+10	Rt.	Existing M-2-24	2x2					4																										
					Existing M-25-20	1.67x1.25					2.1																										
		5			D-4-3	9x6			54																												
			90+00	Rt.	R-41A-30	2.5x1.5		3.75																													
			90+00	Lt.	R-41A-30	2.5x1.5		3.75																													
	Ramp D		92+00	Lt.	Existing R-41B-30	2.5x2.5					6.25																										
					R-43R-36	3x1.25		3.75																													
					R-43L-36	3x1.25		3.75																													
	Ramp E		93+10	Rt.	Existing R-41B-30	2.5x2.5					6.25																										
					R-43R-36	3x1.25		3.75																													
					R-43L-36	3x1.25		3.75																													
			95+50	Rt.	R-41A-30	2.5x1.5		3.75																													
			95+50	Lt.	R-41A-30	2.5x1.5		3.75																													
			98+00	Lt.	Existing M-2-24	2x2					4																										
					Existing M-25-20	1.67x1.25					2.1																										
	Ramp E	6			D-4-3	9x6			54																												
	Ramps D & E				Pavement Markings																																
	Ramp F		92+80	Rt.	R-15B-30	2.5x2.5		6.25																													
	SR-58		1273+40	Rt.	Existing M-17-24	2x1					2																										
					Existing M-2-24	2x2					4																										
			1276+20	Rt.	D-3-24-G	8x2.5			20																												
			1275+25	Lt.	D-6-60	5x1.5			7.5																												
			1296+00	Lt.	D-3-24-G	8x2.5			20																												
			1296+00	Rt.	D-6-60	5x1.5			7.5																												
14	SR-58		1279+38	Lt.	R-10-24	2x2.5		5																													14
13	SR-2		350+00	Rt.	GB	12x10																															13
			355+00	Lt.	Existing R-10-48	4x5					20																										
					Existing R-16-48	4x4					16																										
			360+00	Rt.	Existing Ground Mounted	10x4.5					45																										
			362+00	Lt.	Existing Ground Mounted	15x5					75																										
	SR-2		364+50	Lt.	M-40-36	3x1.5		4.5																													
13					M-2-36	3x3		9																													
Sheet Totals								115		283		246.7				170.5		462		33			49.5		2		2.5								2	1/4	

* Salvage the existing backbracing also.

LOR-2-6.62
LOR-90-11.96

CALC. BY: P.D.H. 9/72
CHKD BY: R.M. 1/73



Note: Existing guard rail on this sheet is galvanized Type 4 without anchor assemblies.

For Sign Quantities, See Sheet 18.

Ref. No.	STATION	202	
		Guard Rail Removed For Re-use or Storage	Lin. Ft.
R-1	410+97± to 411+47± Lt.	50	
Totals		50	

Approximate Location	Code Number	Legend
SR-2 426+50 Rt.	M-39-24	East
	M-2-24	Z

Approximate Location	Code Number	Legend
SR-2 411+00 Lt.		58 ↗ *

* Existing Sign Faces to be salvaged for re-erection.

Station Limits	Side	Spacing Ft.	Type A. Post Mounted
421+00 to 429+00	Lt.	200	5
423+00 to 429+00	Rt.	200	4
Total Carried to Sheet 18			9

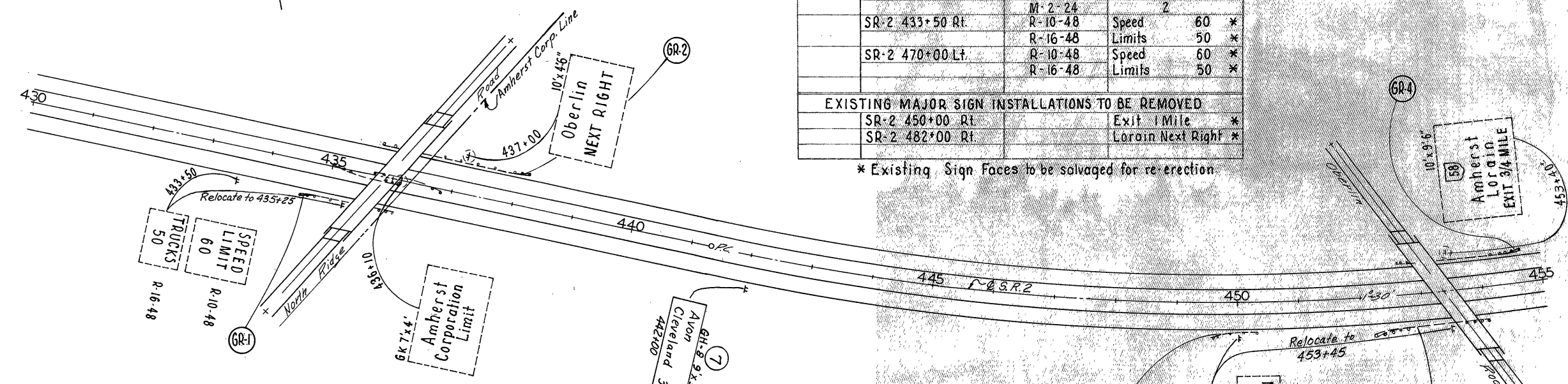
LOR-2-662
LOR-90-1196

CALC BY: PCH 972
CHKD BY: BEM 1173

EXISTING SIGN INSTALLATION TO BE REMOVED		
Approximate Location	Code Number	Legend
SR-2 472+40 Lt.		Maintenance And Emergency Vehicles Only
SR-2 472+80 Lt.		Emergency Vehicles Only
SR-2 480+00 Lt.	M-40-24	West
	M-2-24	2
SR-2 433+50 Rt.	R-10-48	Speed Limits 60 *
	R-16-48	Limits 50 *
SR-2 470+00 Lt.	R-10-48	Speed Limits 60 *
	R-16-48	Limits 50 *

EXISTING MAJOR SIGN INSTALLATIONS TO BE REMOVED		
SR-2 450+00 Rt.		Exit 1 Mile *
SR-2 482+00 Rt.		Lorain Next Right *

* Existing Sign Faces to be salvaged for re-erection.

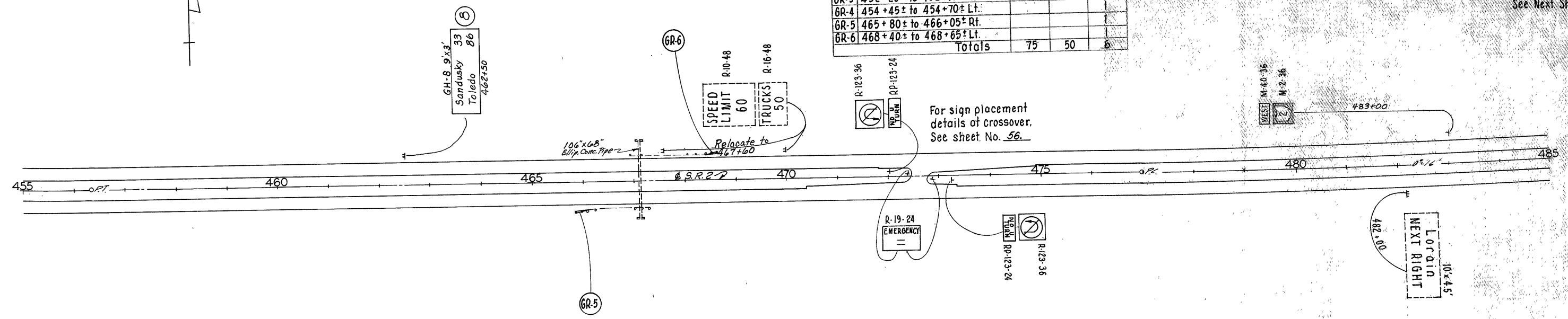


Station Limits	Side	Spacing Ft.	Type A, Post Mounted
431+00 to 485+00	Lt.	200	28
431+00 to 485+00	Rt.	200	28
Total - Carried to Sheet 12			56

Ref. No.	STATION	202		606	
		Guard Rail - Removed For Re-use Or Storage	Guard Rail Type 5 As Per Plan	Anchor Assembly As Per Plan	Anchor Assembly As Per Plan
		Lin. Ft.	Lin. Ft.	Each	Each
GR-1	434+55± to 434+80± Rt.				
GR-2	437+90± to 438+15± Lt.				
R-1	449+50± to 450+25± Rt.	75			
GR-3	452+20± to 452+95± Rt.		50		
GR-4	454+45± to 454+70± Lt.				
GR-5	465+80± to 466+05± Rt.				
GR-6	468+40± to 468+65± Lt.				
Totals		75	50		6

Note: Existing guard rail on this sheet is galvanized Type 4 without anchor assemblies.

For Sign Quantities See Next Sheet.



TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	18 103
2	OHIO		

LOR-2-662
LOR-90-1196

CALC. BY: *DDM 9/72*
CHKD. BY: *RLM 1/73*

100% STATE PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816					620					FROM SHEET NO.									
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS	RE-RECTED	REVISE EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	STRUCTURAL SUPPORT, STEEL BEAM 8WFI7	BREAKAWAY SIGN SUPPORT CONNECTIONS	CONCRETE FOR GR. MOUNTED SIGN SUPPORT FOUNDATIONS	DIMENSIONS SEE TYPICAL DETAIL SHEET 56					DELINEATORS TYPE D POST MOUNTED	DELINEATORS TYPE A, POST MOUNTED				
							NORM. PART.	100% STATE	NORM. PART.	100% STATE											SQ. FT.		EACH	LINE FT.	LINE FT.			LINE FT.	LINE FT.	LINE FT.	EACH
							FT. X FT.	SQ. FT.	SQ. FT.		SQ. FT.												FT.	FT.	FT.	FT.	FT.				
16	SR-2		411+00	Lt.	Existing Ground Mounted	10x9.5				95						50		2	2.3	25.5	24.5	29	5					16			
			427+00	Rt.	M-39-36	3x1.5		4.5																							
					M-2-36	3x3		9																							
16					Roadway Delineators																						9		16		
17			435+25	Rt.	Existing R-10-48	4x5				20																				17	
					Existing R-16-48	4x4				16																					
		7	442+00	Rt.	G H-8	9x3							27		29.5																
			453+45	Rt.	Existing Ground Mounted	18x5				90								2	2.3	19.5	18										
		8	462+50	Lt.	G H-8	9x3							27																		
			467+60	Lt.	Existing R-10-48	4x5				20																					
					Existing R-16-48	4x4				16																					
			Crossover 472+75	Med.	R-123-36	2@3x3		18																							
					RD-123-24	2@2x1.5		6																							
					R-19-24	2@2x2.5		10							12.5	12.5															
			482+00	Rt.	Existing Ground Mounted	10x4.5				45																					
			483+00	Lt.	M-40-36	3x1.5		4.5																							
					M-2-36	3x3		9																							
17	SR-2				Roadway Delineators																										
<i>Sheet Totals</i>								61	54	302			54.5	249.5		87.5		4	4.6							4	65				

LOR-2-6.62
LOR-90-11.96
CALC BY: *RBM 2/72*
CHKD BY: *RBM 1/73*

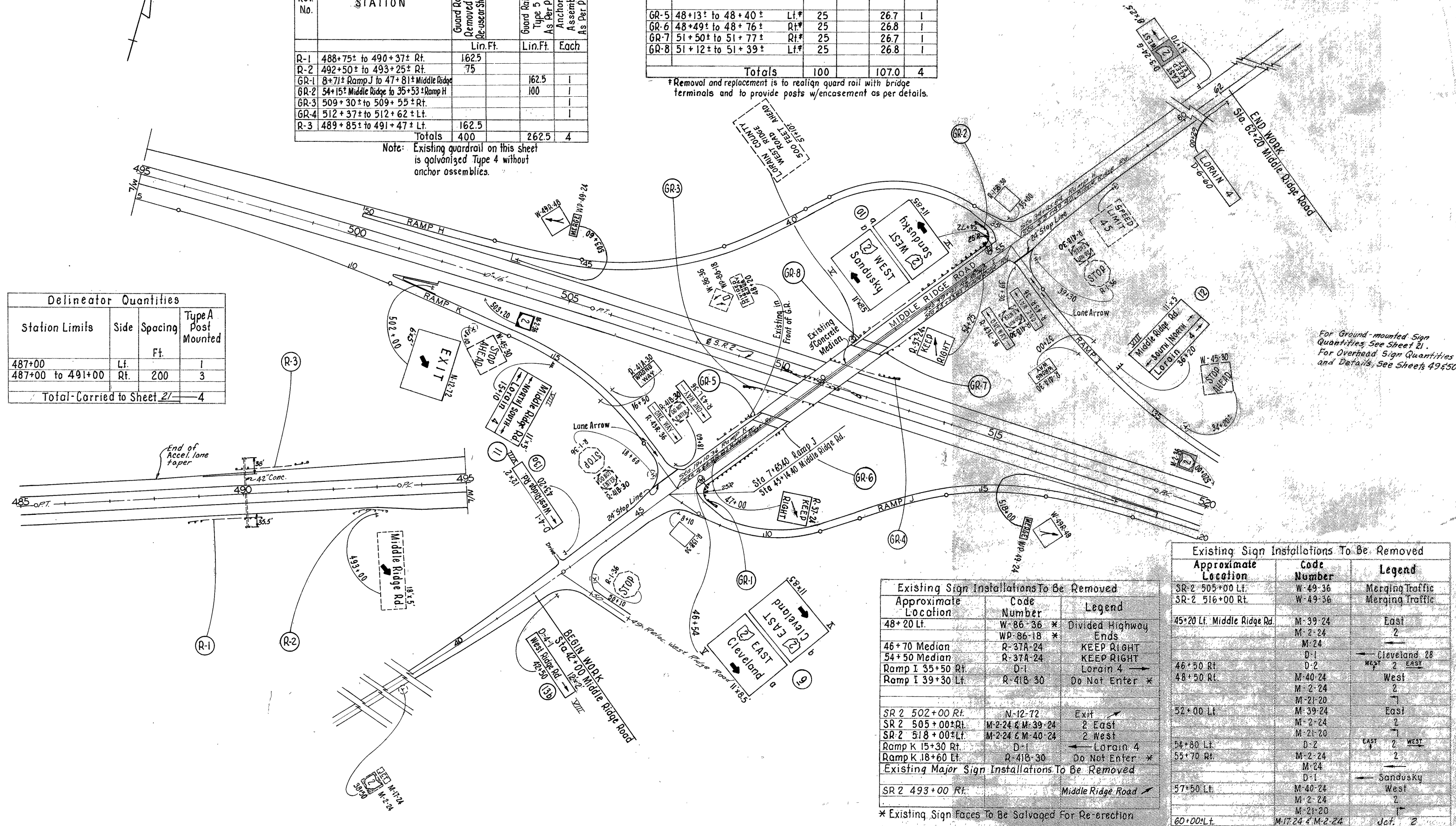
Ref. No.	STATION	202		606	
		Guard Rail Removed For Re-use or Storage	Guard Rail Type 5 As Per Plan Anchor Assembly As Per Part	Guard Rail Type 5 As Per Plan Anchor Assembly As Per Part	Guard Rail Type 6 Bridge Terminal Assembly Type 6
		Lin. Ft.	Lin. Ft.	Each	Each
R-1	488+75± to 490+37± Rt.	162.5			
R-2	492+50± to 493+25± Rt.	75			
GR-1	8+71± Ramp J to 47+81± Middle Ridge		162.5	1	
GR-2	54+15± Middle Ridge to 35+53± Ramp H		100	1	
GR-3	509+30± to 509+55± Rt.			1	
GR-4	512+37± to 512+62± Lt.			1	
R-3	489+85± to 491+47± Lt.	162.5			
Totals		400	262.5	4	

Note: Existing guardrail on this sheet is galvanized Type 4 without anchor assemblies.

Ref. No.	STATION	202		606	
		Guard Rail Removed For Re-use or Storage	Guard Rail Type 5 As Per Plan Anchor Assembly As Per Part	Guard Rail Type 5 As Per Plan Anchor Assembly As Per Part	Guard Rail Type 6 Bridge Terminal Assembly Type 6
		Lin. Ft.	Lin. Ft.	Each	Each
GR-5	48+13± to 48+40± Lt.	25		26.7	1
GR-6	48+49± to 48+76± Rt.	25		26.8	1
GR-7	51+50± to 51+77± Rt.	25		26.7	1
GR-8	51+12± to 51+39± Lt.	25		26.8	1
Totals		100	107.0	4	

* Removal and replacement is to realign guard rail with bridge terminals and to provide posts w/encasement as per details.

Station Limits	Side	Spacing Ft.	Type A Post Mounted
487+00	Lt.		1
487+00 to 491+00	Rt.	200	3
Total-Carried to Sheet 21-			4



Approximate Location	Code Number	Legend
48+20 Lt.	W-86-36 *	Divided Highway Ends
46+70 Median	R-37A-24	KEEP RIGHT
54+50 Median	R-37A-24	KEEP RIGHT
Ramp I 35+50 Rt.	D-1	Lorain 4
Ramp I 39+30 Lt.	R-41B-30	Do Not Enter *
SR 2 502+00 Rt.	N-12-72	Exit
SR 2 505+00± Rt.	M-2-24 & M-39-24	2 East
SR 2 518+00± Lt.	M-2-24 & M-40-24	2 West
Ramp K 15+30 Rt.	D-1	Lorain 4
Ramp K 18+60 Lt.	R-41B-30	Do Not Enter *
SR 2 493+00 Rt.		Middle Ridge Road

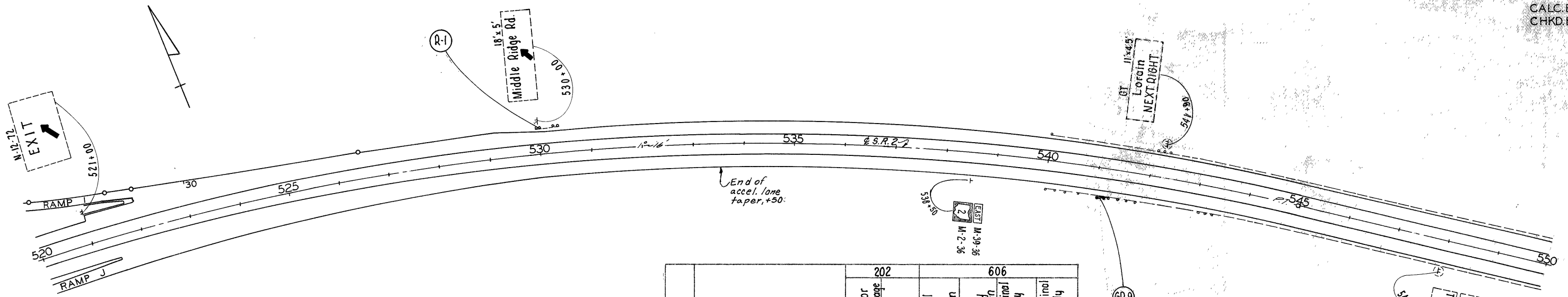
* Existing Sign Faces To Be Salvaged For Re-erection

Approximate Location	Code Number	Legend
SR-2 505+00 Lt.	W-49-36	Merging Traffic
SR-2 516+00 Rt.	W-49-36	Merging Traffic
45+20 Lt. Middle Ridge Rd.	M-39-24	East
	M-2-24	2
	M-24	←
	D-1	Cleveland 28
	D-2	WEST 2 EAST
46+50 Rt.	M-40-24	West
48+50 Rt.	M-2-24	2
	M-21-20	7
52+00 Lt.	M-39-24	East
	M-2-24	2
	M-21-20	7
54+80 Lt.	D-2	EAST 2 WEST
55+70 Rt.	M-2-24	2
	M-24	←
	D-1	Sandusky
57+50 Lt.	M-40-24	West
	M-2-24	2
	M-21-20	7
60+00 Lt.	M-17-24 & M-2-24	Def. 2

For Ground-mounted Sign Quantities, See Sheet 21.
For Overhead Sign Quantities and Details, See Sheets 49, 50.

LOR-2-6.62
LOR-90-11.96

CALC. BY: *DDG 7/72*
CHKD BY: *RLM 1/73*



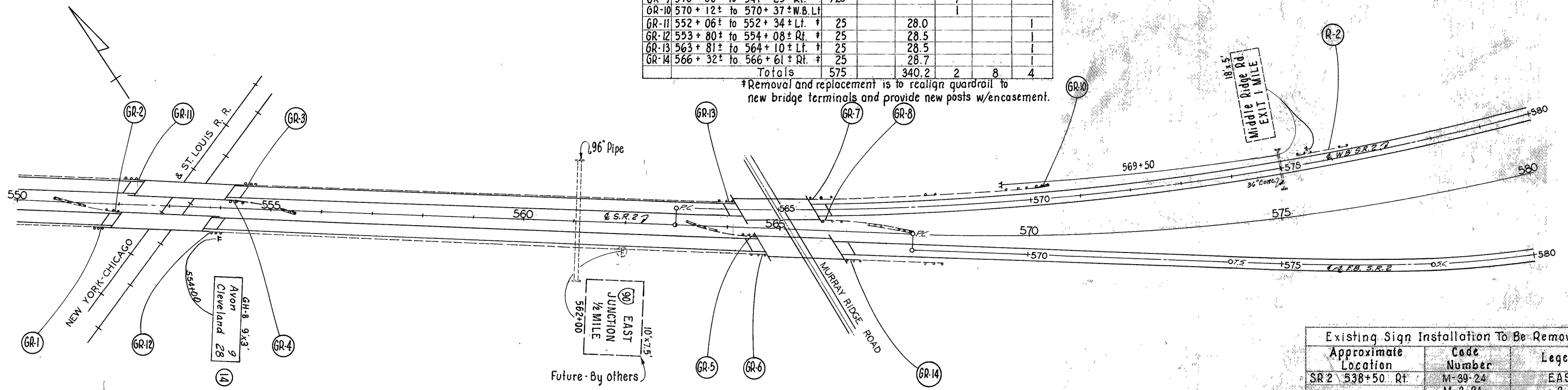
Station Limits	Side	Spacing Ft.	Type A, Post Mounted	Type A, Bracket Mounted
531+00 to 579+00	Lt.	200	23	2
535+00 to 579+00	Rt.	200	21	2
Totals carried to sheet 2/			44	4

Ref. No.	Station	202		606		
		Guard Rail Removed For Re-use or Storage	Guard Rail Type 5 As Per Plan	Anchor Assembly As Per Plan	Bridge Terminal Assembly Type C	Bridge Terminal Assembly Type F
		Lin. Ft.	Lin. Ft.	Each	Each	Each
R-1	529+95± to 530+45± Lt.	50				
R-2	575+35± to 576+35± W.B. Lt.	100				
GR-1	551+52± to 551+80± Rt. †	25	27.5			
GR-2	551+77± to 552+05± Median †	25	28.7			
GR-3	554+40± to 554+68± Median †	25	28.0			
GR-4	554+15± to 554+43± Median †	25	28.4			
GR-5	564+26± to 564+55± Median †	25	28.7			
GR-6	564+46± to 564+75± Rt. †	25	28.7			
GR-7	565+58± to 565+87± Rt. †	25	28.5			
GR-8	565+80± to 566+08± W.B. Lt. †	25	28.0			
GR-9	540+00± to 541+25± Rt.	125				
GR-10	570+12± to 570+37± W.B. Lt.					
GR-11	552+06± to 552+34± Lt. †	25	28.0			
GR-12	553+80± to 554+08± Rt. †	25	28.5			
GR-13	563+81± to 564+10± Lt. †	25	28.5			
GR-14	566+32± to 566+61± Rt. †	25	28.7			
Totals		575	340.2	2	8	4

† Removal and replacement is to realign guardrail to new bridge terminals and provide new posts w/encasement.

Note: Existing guard rail on this sheet is galvanized Type 4 without anchor assemblies.

For Ground Mounted Sign Quantities, See Next Sheet.



Existing Sign Installation To Be Removed		
Approximate Location	Code Number	Legend
SR 2 538+50 Rt.	M-39-24	EAST
SR 2 521+00 Lt.	M-2-24	2
	N-12-72	Exit ↗ *
Existing Major Sign Installations To Be Removed		
SR 2 530+00 Lt.		Middle Ridge Road ↗ *
SR 2 575+60 Lt.		M.R. Rd. Exit 1 Mile *

* Salvage existing sign faces for re-erection.

TRAFFIC CONTROL QUANTITIES

LOR-2-662
LOR-90-1196

CALC. BY: *W.D.H. 7/72*
CHKD BY: *W.D.H. 11/73*

100% STATE PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816							621					620		FROM SHEET NO.					
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS RE-RECTED	REVISE EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM DRIVEN	AS PER PLAN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	STRUCTURAL SUPPORT, STEEL BEAM 8WF 17	BREAKAWAY SIGN SUPPORT CONNECTIONS	CONCRETE FOR GR. MOUNTED SIGN SUPPORT FOUNDATION	DIMENSIONS SEE TYPICAL DETAIL-SHEET 56					LANE ARROW	24" STOP LINE	DELINEATORS, TYPE A, POST MOUNTED	DELINEATORS, TYPE A, BRACKET MOUNTED	
							AS PER PLAN NORM.	100% PART. STATE	AS PER PLAN NORM.	100% PART. STATE												A	B	C	D						E
							FT. X FT.	SQ. FT.	SQ. FT.		SQ. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	CU. YDS.	FT.	FT.	FT.	FT.	FT.		EACH	LIN. FT.	EACH	EACH	
19	SR-2		493+00	Rt.	Existing Ground Mounted	18x5				90						43		2	2.3	21.5	21.5	30	5						19		
			502+00	Rt.	N-12-72	6x5														17	17										
			503+20	Rt.	M-2-36	3x3		9																							
			503+60	Lt.	W-49R-48	4x4		16																							
					WP-49-24	2x1		2																							
			518+00	Rt.	W-49R-48	4x4		16																							
					WP-49-24	2x1		2																							
			520+00	Lt.	M-2-36	3x3		9																							
	SR-2				Pavement Delineators																										
	Ramp H		35+00	Rt.	R-15B-30	2.5x2.5		6.25					15																		
	Ramp I	12	36+20	Rt.	Special	11x5														18.5	20	19									
			37+00	Rt.	R-41A-30	2.5x1.5		3.75						14																	
			37+00	Lt.	R-41A-30	2.5x1.5		3.75						14																	
			39+30	Lt.	Existing R-41B-30	2.5x2.5				6.25						16.5															
					R-43R-36	3x1.25		3.75																							
					R-43L-36	3x1.25		3.75																							
	Ramp I				Pavement Markings																										
	Ramp J		8+10	Rt.	R-15B-30	2.5x2.5		6.25					15																		
	Ramp K	11	15+10	Rt.	Special	11x5														18	21	19.5									
			16+50	Rt.	R-41A-30	2.5x1.5		3.75						14																	
			16+50	Lt.	R-41A-30	2.5x1.5		3.75						14																	
			18+60	Lt.	Existing R-41B-30	2.5x2.5				6.25						16.5															
					R-43R-36	3x1.25		3.75																							
					R-43L-36	3x1.25		3.75																							
	Ramp K				Pavement Markings																										
	Middle Ridge Rd.	13b	42+50	Rt.	D-4-1	12x2														15	16										
		13a	43+20	Lt.	D-4-1	12x2															16	17									
			47+00	Med.	R-37-24	2x2.5		5						14																	
			48+20	Lt.	Existing W-86-36	3x3				9																					
					Existing WP-86-78	1.5x2				3																					
			54+25	Med.	R-37-24	2x2.5		5						14																	
			62+00	Rt.	D-6-60	5x1.5								30							15	15									
			61+70	Lt.	D-3-24-G	8x2.5															16	17									
19	SR-2				Pavement Delineators																										
20	SR-2		521+00	Lt.	Existing N-12-72	6x5				30											17	17									
			530+00	Lt.	Existing Ground Mounted	18x5				90											2	2.3	20	17	16	7					
			538+50	Rt.	M-2-36	3x3		9																							
					M-39-36	3x1.5		4.5																							
		14	554+00	Rt.	GH-8	9x3															17.5	20.5									
20			569+50	Lt.	Existing Ground Mounted	18x5				90											2	2.3	20	23.5		7					
22	SR-2				Pavement Delineators																										
Sheet Totals								120	242.5	324.5			144	421	33	123.5		6	6.9						2	114	56	4			

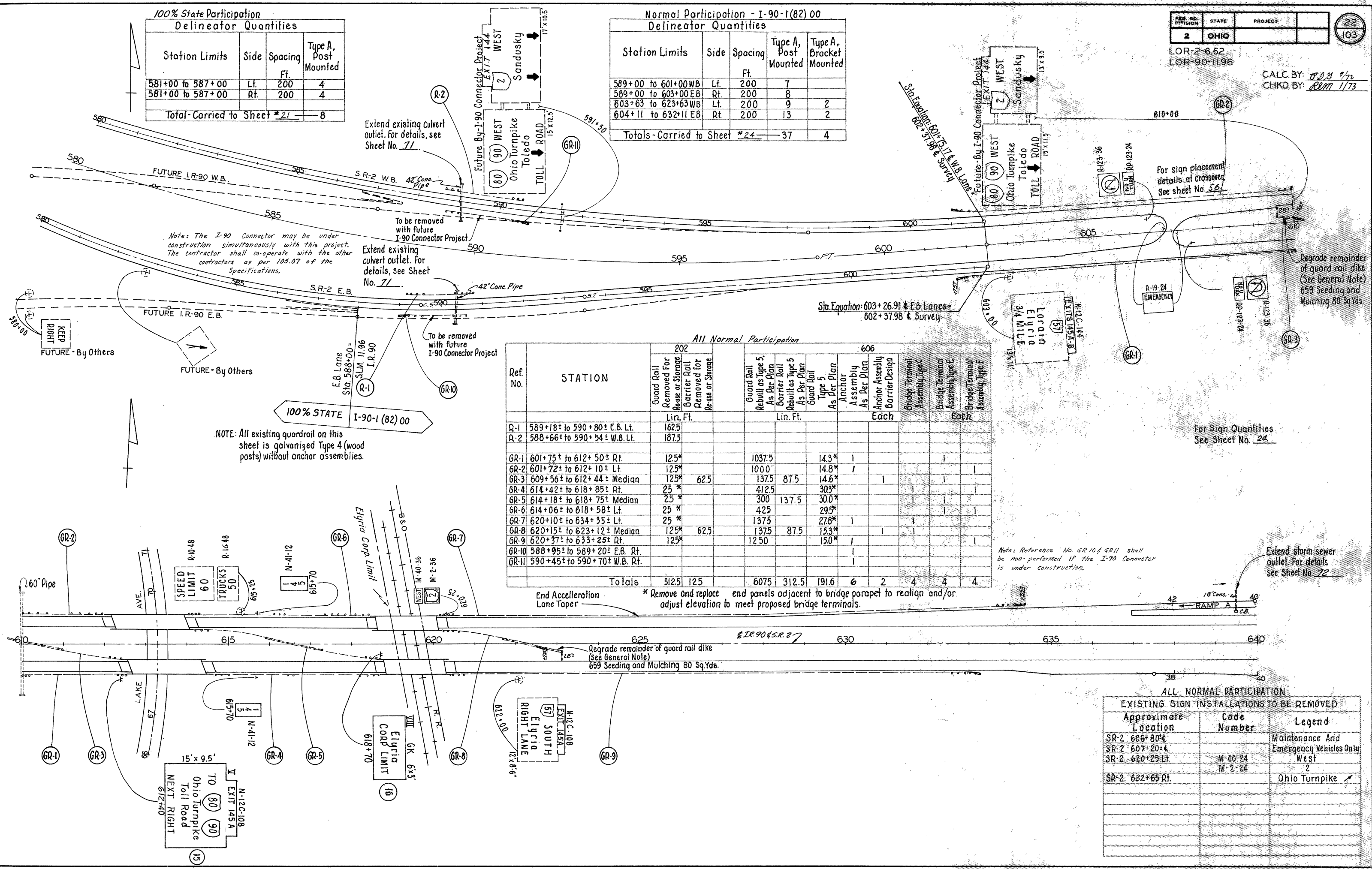
100% State Participation
Delineator Quantities

Station Limits	Side	Spacing Ft.	Type A, Post Mounted
581+00 to 587+00	Lt.	200	4
581+00 to 587+00	Rt.	200	4
Total-Carried to Sheet #21			8

Normal Participation - I-90-1(82)00
Delineator Quantities

Station Limits	Side	Spacing Ft.	Type A, Post Mounted	Type A, Bracket Mounted
589+00 to 601+00WB	Lt.	200	7	
589+00 to 603+00EB	Rt.	200	8	
603+63 to 623+63WB	Lt.	200	9	2
604+11 to 632+11EB	Rt.	200	13	2
Totals-Carried to Sheet #24			37	4

LOR-2-6.62
LOR-90-11.96
CALC. BY: *RDY 9/72*
CHKD. BY: *REM 1/73*



All Normal Participation

Ref. No.	STATION	202		606						
		Guard Rail Removed for Re-use or Storage	Barrier Rail Removed for Re-use or Storage	Guard Rail Rebuild as Type 5, As Per Plan	Barrier Rail Rebuild as Type 5, As Per Plan	Guard Rail Type 5, As Per Plan	Anchor Assembly As Per Plan	Anchor Assembly Barrier Design	Bridge Terminal Assembly Type C	Bridge Terminal Assembly Type E
		Lin. Ft.		Lin. Ft.			Each		Each	
R-1	589+18± to 590+80± E.B. Lt.	162.5								
R-2	588+66± to 590+54± W.B. Lt.	187.5								
GR-1	601+75± to 612+50± Rt.	125*		1037.5		14.3*	1			
GR-2	601+72± to 612+10± Lt.	125*		1000		14.8*	1			
GR-3	609+56± to 612+44± Median	125*	62.5	137.5	87.5	14.6*				
GR-4	614+42± to 618+85± Rt.	25*		412.5		30.3*				
GR-5	614+18± to 618+75± Median	25*		300	137.5	30.0*				
GR-6	614+06± to 618+58± Lt.	25*		425		29.5*				
GR-7	620+10± to 634+35± Lt.	25*		137.5		27.8*	1			
GR-8	620+15± to 623+12± Median	125*	62.5	137.5	87.5	15.3*				
GR-9	620+37± to 633+25± Rt.	125*		1250		15.0*				
GR-10	588+95± to 589+20± E.B. Rt.									
GR-11	590+45± to 590+70± W.B. Rt.									
Totals		512.5	125	6075	312.5	191.6	6	2	4	4

NOTE: All existing guardrail on this sheet is galvanized Type 4 (wood posts) without anchor assemblies.

Note: Reference No. GR-10 & GR-11 shall be non-performed if the I-90 Connector is under construction.

ALL NORMAL PARTICIPATION
EXISTING SIGN INSTALLATIONS TO BE REMOVED

Approximate Location	Code Number	Legend
SR-2 606+80±		Maintenance And Emergency Vehicles Only
SR-2 607+20±		West
SR-2 620+25 Lt.	M-40-24 M-2-24	2
SR-2 632+65 Rt.		Ohio Turnpike

LOR-2-6.62
LOR-90-11.96

CALC. BY: BDM 9/72
CHKD. BY: RDM 11/73

Ref. No.	STATION	606	
		Guard Rail Type 5 As Per Plan Lin. Ft.	Anchor Assembly As Per Plan Each
GR-24	677+68± to 678+30± Lt.	375	1
GR-27	694+30± to 695+05± Lt.	50	1
Totals		875	2

For Overhead Sign Quantities See Sheet 49.

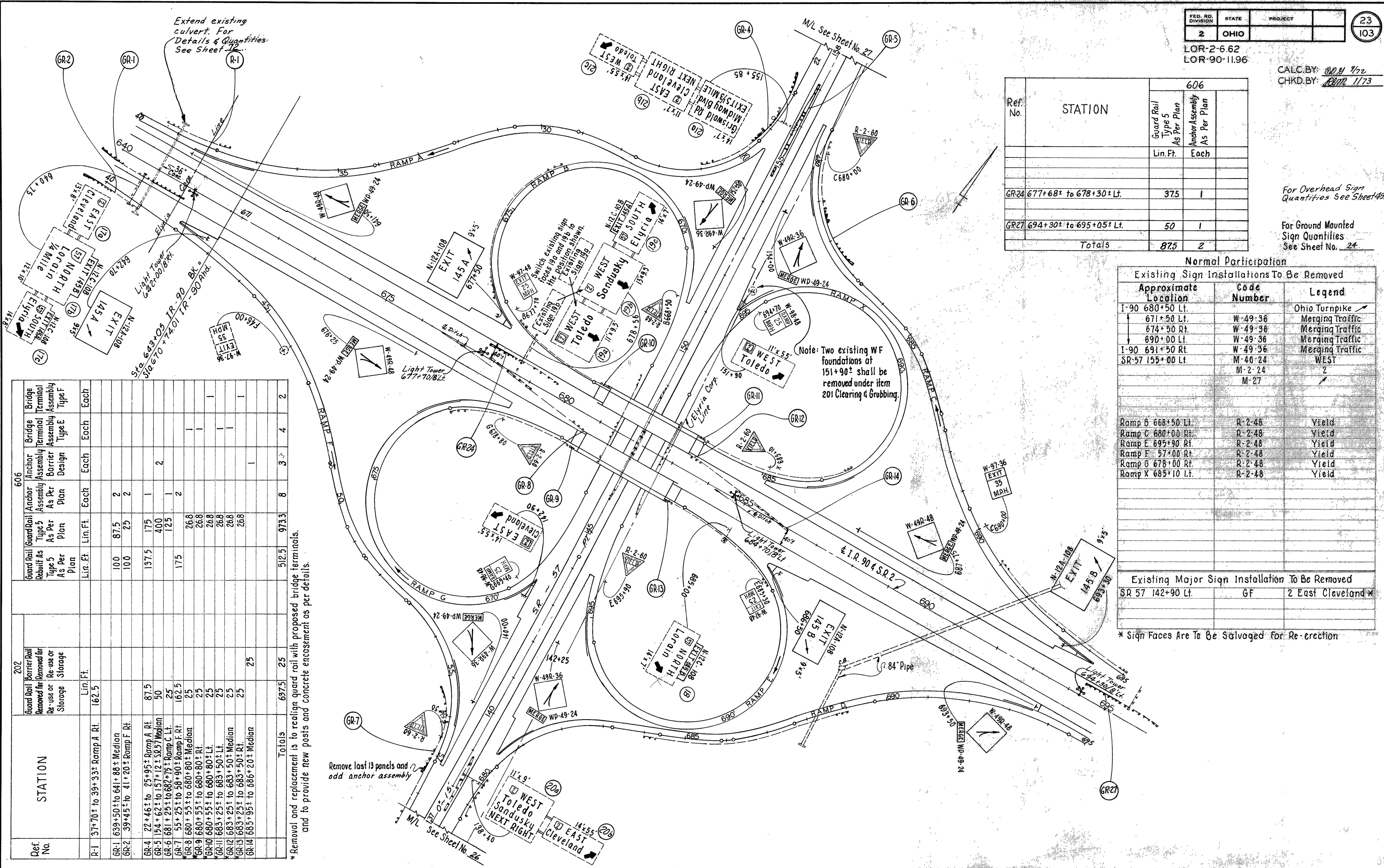
For Ground Mounted Sign Quantities See Sheet No. 24.

Normal Participation		
Existing Sign Installations To Be Removed		
Approximate Location	Code Number	Legend
I-90 680+50 Lt.		Ohio Turnpike
671+50 Lt.	W-49-36	Merging Traffic
674+50 Rt.	W-49-36	Merging Traffic
690+00 Lt.	W-49-36	Merging Traffic
I-90 691+50 Rt.	W-49-36	Merging Traffic
SR-57 155+00 Lt.	M-40-24	WEST
	M-2-24	2
	M-27	
Ramp B 668+50 Lt.	R-2-48	Yield
Ramp C 680+00 Rt.	R-2-48	Yield
Ramp E 695+90 Rt.	R-2-48	Yield
Ramp F 57+00 Rt.	R-2-48	Yield
Ramp G 678+00 Rt.	R-2-48	Yield
Ramp X 685+10 Lt.	R-2-48	Yield
Existing Major Sign Installation To Be Removed		
SR 57 142+90 Lt.	GF	2 East Cleveland *

* Sign Faces Are To Be Salvaged For Re-erection

STATION	Guard Rail (Barrier) Removed for Re-use or Storage		Guard Rail (Type 5) As Per Plan		Anchor Assembly As Per Plan		Bridge Terminal Assembly Type E		Bridge Terminal Type F	
	Lin. Ft.	Each	Lin. Ft.	Each	Lin. Ft.	Each	Lin. Ft.	Each	Lin. Ft.	Each
R-1 37+70± to 39+33± Ramp A Rt.	162.5									
GR-1 639+50± to 641+88± Median			100	2						
GR-2 39+45± to 41+20± Ramp F Rt.			100	2						
GR-4 22+46± to 25+95± Ramp A Rt.	87.5		137.5	1						
GR-5 154+62± to 157+12± SR-57 Median	50		400	2						
GR-6 681+25± to 682+75± Ramp C Lt.	25		125	1						
GR-7 55+25± to 58+90± Ramp F Rt.	162.5		175	2						
GR-8 680+55± to 680+80± Median	25		268							
GR-9 680+55± to 680+80± Rt.	25		268							
GR-10 680+55± to 680+80± Lt.	25		268							
GR-11 683+25± to 683+50± Lt.	25		268							
GR-12 683+25± to 683+50± Median	25		268							
GR-13 683+25± to 683+50± Rt.	25		268							
GR-14 685+95± to 686+20± Median	25		268							
Totals	637.5	25	512.5	973.3	8	3	4	2		

* Removal and replacement is to realign guard rail with proposed bridge terminals and to provide new posts and concrete encasement as per details.



TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR-2-6.62
LOR-90-11.96

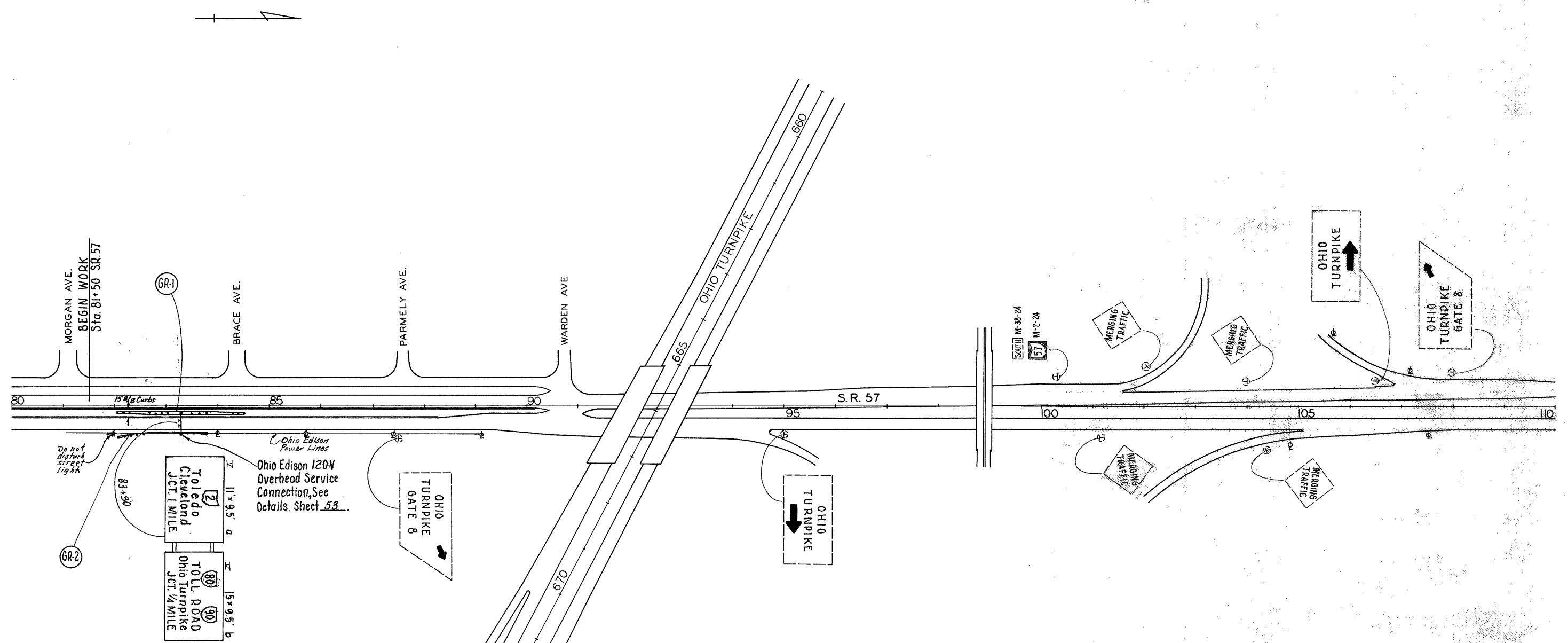
CALC BY: *PDM 7/72*
CHK BY: *CRM 1/73*

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816								620					FROM SHEET NO.						
							FLAT SHEET TYPE		EXTRU-SHEET TYPE			EXISTING SIGNS	REFLECTED	REVISED EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 2 LB. BACK BRACING	STRUCTURAL SUPPORT, STEEL BEAM 8WF 17	BREAKAWAY SIGN SUPPORT CONNECTIONS	CONCRETE FOR GR. MOUNTED SIGN SUPPORT FOUNDATIONS	STRUCTURAL STEEL BEAM 12WF 31	DIMENSIONS SEE TYPICAL DETAIL SHEET 36					DELINEATORS TYPE D, POST MTD.	DELINEATORS TYPE A, POST MOUNTED	DELINEATORS TYPE A, BRACKET MTD.	
							AS PER PLAN	NORM. 100% STATE	AS PER PLAN	NORM. 100% STATE				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	CU. YDS.	LIN. FT.	A	B		C	D	E	EACH	EACH	EACH
22	I-90	16	618+70	Med.	GK	6x3												15	15						22						
			603+00	Rt.	N-12C-144	12x2																									
			607+00	Med.	R-123-36	2@ 3x3	18																								
					RP-123-24	2@ 2x1.5	6																								
					R-19-24	2@ 2x2.5	10																								
			615+70	Lt.	N-41-12	2@1x4	4						12																		
			612+40	Rt.	N-12C-108	15x9.5																									
			620+25	Lt.	M-40-36	3x1.5																									
					M-2-36	3x3		4.5																							
			622+00	Rt.	N-12C-108	9x2																			22						
23			642+70	Rt.	N-12A-108	9x5																			23						
			641+50	Lt.	W-49R-48	4x4	16																								
					WP-49-24	2x1	2																								
			676+25	Rt.	W-49R-48	4x4	16																								
					WP-49-24	2x1	2																								
			677+50	Lt.	N-12A-108	9x5																									
			686+50	Rt.	N-12A-108	9x5																									
			687+75	Lt.	W-49R-48	4x4	16																								
					WP-49-24	2x1	2																								
			693+50	Rt.	W-49R-48	4x4	16																								
					WP-49-24	2x1	2																								
	I-90		693+30	Lt.	N-12A-108	9x5																									
	Ramp B		668+50	Lt.	R-2-60	5x5x5	12.5																								
			677+70	Lt.	W-97-48	4x5	20																								
	Ramp C		690+00	Rt.	W-97-36	3x3.5	10.5																								
			680+00	Rt.	R-2-60	5x5x5	12.5																								
	Ramp E		685+30	Rt.	W-97-48	4x5	20																								
			695+90	Rt.	R-2-60	5x5x5	12.5																								
	Ramp F		56+50	Rt.	R-2-60	5x5x5	12.5																								
	Ramp G		669+40	Rt.	W-98-48	4x5	20																								
			678+80	Rt.	R-2-60	5x5x5	12.5																								
	Ramp X		685+10	Lt.	R-2-60	5x5x5	12.5																								
			694+70	Lt.	W-98-48	4x5	20																								
	SR-57		142+25	Rt.	W-49R-36	3x3	9																								
					WP-49-24	2x1	2																								
			140+00	Lt.	W-49R-36	3x3	9																								
					WP-49-24	2x1	2																								
			142+90	Lt.	Existing Sign	14x5.5																									
			154+00	Rt.	W-49R-36	3x3	9																								
					WP-49-24	2x1	2																								
	SR-57		152+50	Lt.	W-49R-36	3x3	9																								
					WP-49-24	2x1	2																								
					Payment Delineators																										
Sheet Totals							311	26	400.5				77	1		24	55	581								22					

LOR-2-6.62
LOR-90-11.96

CALC. BY: *D.O. H. 9/72*
CHKD. BY: *RCM 1/73*



Do not disturb street light.

Ohio Edison Power Lines

Ohio Edison 120V Overhead Service Connection, See Details Sheet 53.

For Overhead Sign Details, See Sheet 51.
For Quantities, See Sheet 49.

Normal Participation

Ref. No.	STATION	Guard Rail Type 5 As Per Plan	606	
			Anchor Assembly As Per Plan	Anchor Assembly Barrier Design
GR-1	82+05± to 84+55± Median	400		2
GR-2	82+05 to 83+80 Rt.	125	2	
Totals		525	2	2

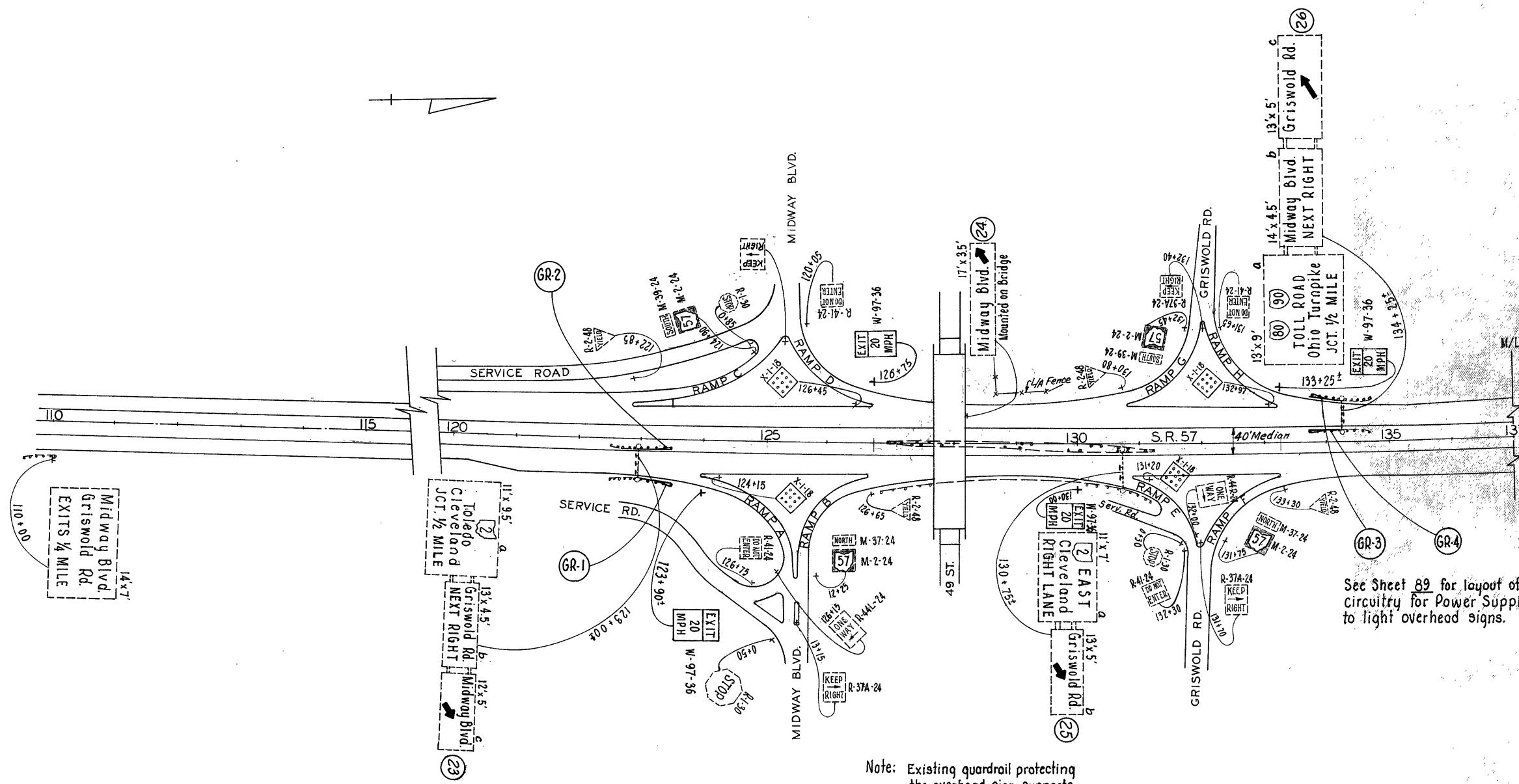
Note: All existing signs in this area are to remain in place except the ones shown in the table on the right.

Normal Participation

Approximate Location	Existing Sign Code Number	Installation To Be Removed Legend
SR-57 87+50 Rt.	M-39-24	EAST
	M-5C-36-2	90
	M-24	→
SR-57 82+57 Rt.		80
		90
		TOLL ROAD

LOR-2-6.62
LOR-90-11.96

CALC. BY: *P.D.M. 1/73*
CHKD. BY: *R.E.M. 1/73*



For Details and Quantities for Lighting Existing Overhead Signs, See Sheets 49 and 52.

For Ground Mounted Sign Quantities, See Sheet 28.

See Sheet 89 for layout of circuitry for Power Supply to light overhead signs.

Note: Existing guardrail protecting the overhead sign supports is galvanized Type 4 with 6'-3" post spacings.

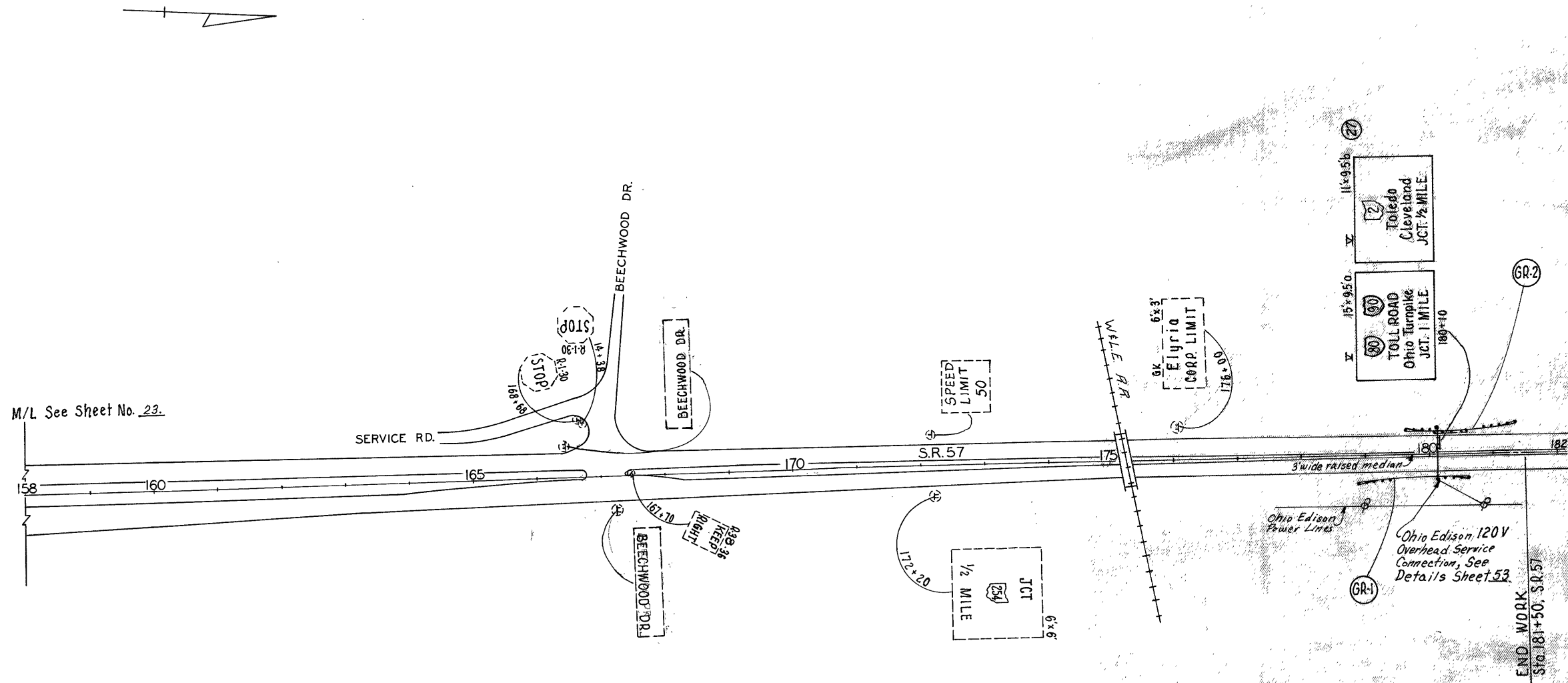
Note: All existing signs in this area are to remain in place.

Normal Participation

Ref. No.	Stations	606	
		Guard Rail Type 5 As Per Plan	Anchor Assembly As Per Plan
		Lin. Ft.	Lin. Ft.
GR-1	123+03± to 123+53± Rt.	25	1
GR-2	123+03± to 123+53± Median	25	1
GR-3	133+72± to 134+22± Lt.	25	1
GR-4	133+72± to 134+22± Median	25	1
Totals		100	4

LOR-2-6.62
LOR-90-11.96

CALC. BY: *POH 9/72*
CHKD. BY: *RLM 1/73*



M/L See Sheet No. 23.

For Overhead Details, See Sheet 57
For Quantities See Sheet 49

Normal Participation

Ref. No.	STATION		202		606	
			Guard Rail Removed For Re-use or Storage	Guard Rail Type 5 As Per Plan	Anchor Assembly As Per Plan	
GR-1	178+85 to 180+60	Rt.	Lin. Ft.	Lin. Ft.		Each
GR-2	179+60 to 181+35	Lt.	50	125		2
						2
	Totals		50	250		4

Note: Existing guard rail to be removed is galvanized Type 4 with 6'3" post spacings.

Note: All existing signs in this area are to remain in place except the ones shown in the table on the right.

Normal Participation

Existing Sign Installations To Be Removed		
Approximate Location	Code Number	Legend
Existing Major Sign Installation To Be Removed		
SR-57 180+00 Lt.		2 Sandusky JCT 1/2 MILE

TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

28
103

LOR-2-6.62
LOR-90-1196

CALC. BY: P.D.G. 11/72
CHKD. BY: JBM 1/73

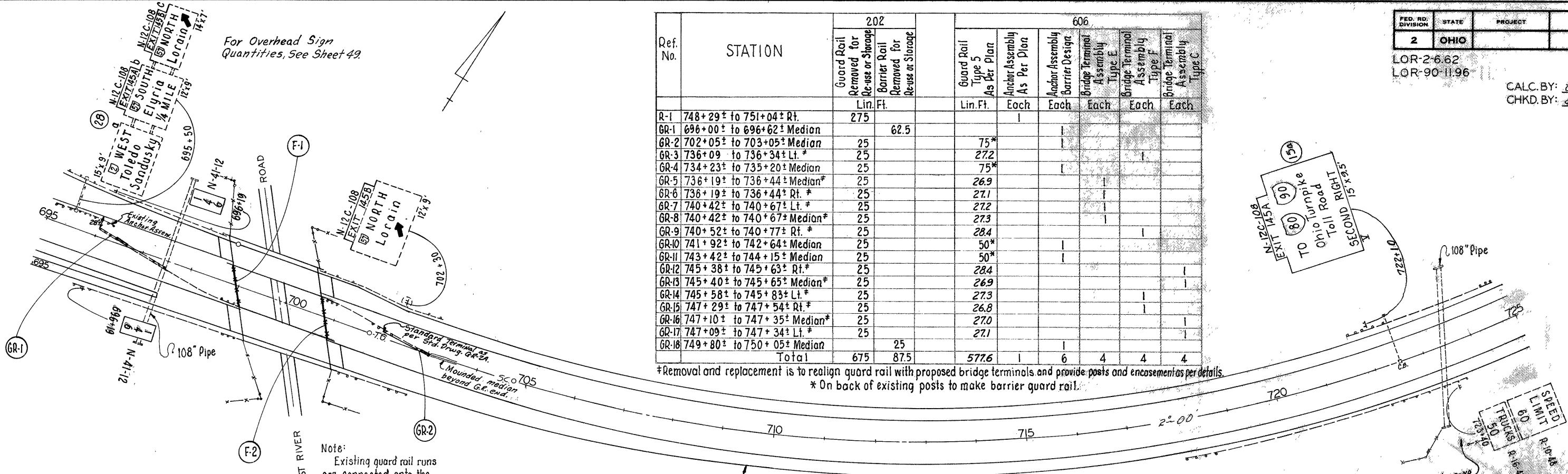
FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815						100% STATE				816					DIMENSIONS SEE TYPICAL DETAIL SHEET					FROM SHEET NO.			
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS RE-ERECTED	REVISE EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	A	B	C	D	E									
							AS PER PLAN NORM. PART.	100% STATE	AS PER PLAN NORM. PART.	100% STATE												SQ. FT.	SQ. FT.	LINE FT.	LINE FT.	LINE FT.		LINE FT.	FT.	FT.
							FT. X FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	EACH	LINE FT.	LINE FT.	LINE FT.	LINE FT.	FT.	FT.	FT.	FT.	FT.									
26	SR 57		124+15	Rt.	X-1-18	1.5 x 1.5	2.25					10.5																		26
			126+45	Lt.	X-1-18	1.5 x 1.5	2.25					10.5																		
			131+20	Rt.	X-1-18	1.5 x 1.5	2.25					10.5																		
			132+97	Lt.	X-1-18	1.5 x 1.5	2.25					10.5																		
			123+90	Rt.	W-97-36	3 x 3.5	10.5								16															
			126+75	Lt.	W-97-36	3 x 3.5	10.5								16															
			130+00	Rt.	W-97-36	3 x 3.5	10.5								16															
26	SR 57		133+25	Lt.	W-97-36	3 x 3.5	10.5							16																26
<i>Sheet Totals</i>							51					42		64																

LOR-2-6.62
LOR-90-11.96

CALC. BY: PDM 9/72
CHKD. BY: RLM 1/73

Ref. No.	STATION	202		606					
		Guard Rail Removed for Re-use or Storage	Barrier Rail Removed for Re-use or Storage	Guard Rail Type 5 As Per Plan	Anchor Assembly As Per Plan	Anchor Assembly Barrier Design	Bridge Terminal Assembly Type E	Bridge Terminal Assembly Type F	Bridge Terminal Assembly Type C
		Lin. Ft.		Lin. Ft.	Each	Each	Each	Each	Each
R-1	748+29± to 751+04± Rt.	275							
GR-1	696+00± to 696+62± Median		62.5						
GR-2	702+05± to 703+05± Median	25		75*					
GR-3	736+09± to 736+34± Lt.*	25		272					
GR-4	734+23± to 735+20± Median	25		75*					
GR-5	736+19± to 736+44± Median*	25		26.9					
GR-6	736+19± to 736+44± Rt.*	25		27.1					
GR-7	740+42± to 740+67± Lt.*	25		272					
GR-8	740+42± to 740+67± Median*	25		273					
GR-9	740+52± to 740+77± Rt.*	25		284					
GR-10	741+92± to 742+64± Median	25		50*					
GR-11	743+42± to 744+15± Median	25		50*					
GR-12	745+38± to 745+63± Rt.*	25		284					
GR-13	745+40± to 745+65± Median*	25		26.9					
GR-14	745+58± to 745+83± Lt.*	25		273					
GR-15	747+29± to 747+54± Rt.*	25		26.8					
GR-16	747+10± to 747+35± Median*	25		270					
GR-17	747+09± to 747+34± Lt.*	25		271					
GR-18	749+80± to 750+05± Median	25		271					
	Total	675	87.5	5776	1	6	4	4	4

* Removal and replacement is to realign guard rail with proposed bridge terminals and provide posts and enclosures as per details.
* On back of existing posts to make barrier guard rail.



Note: Existing guard rail runs are connected onto the ends of the bridge parapets with bridge connection brackets.

Note: All existing guard rail on this sheet is galvanized Type 5 with wood posts. Approach ends on outside of lanes have anchor assemblies. Median approach ends and all trailing ends have encased posts with cross-brace.

Steep slope - no fence connection to headwall needed.

For Ground Mounted Sign Quantities, See Sheet No. 31

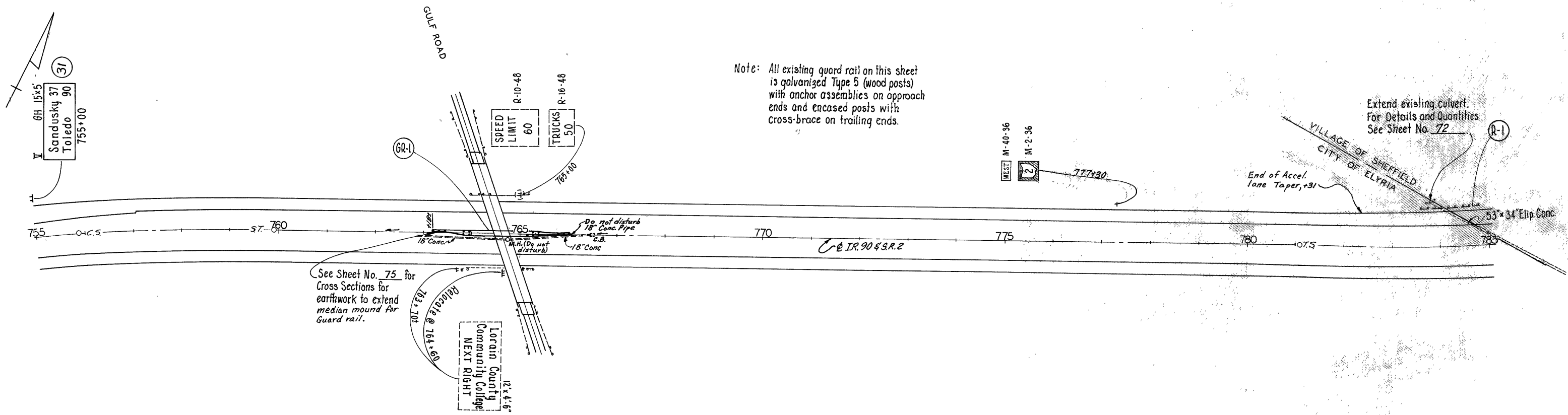
Ref. No.	STATION	601		607	
		Rock Channel Protection Type B	Fence Type 47	Cu. Yds.	Lin. Ft.
F-1	698+95± Median				77
F-2	700+80± Median				77
F-3	736+60± Median				73
F-4	740+30± Median				73
F-5	740+35± to 745+60± Rt.	15		727	
F-6	740+20± to 745+75± Lt.	7		828	
F-7	745+72± Median				72
F-8	747+20± Median				72
Totals		22		1999	

EXISTING SIGN INSTALLATIONS TO BE REMOVED		
Approximate Location	Code Number	Legend
SR-2 714+10 Rt.	M-39-24 & M-2-24	2 East
SR-2 704+25 Lt.		Ohio Turnpike ↑
SR-2 954+35± C.		MAINTENANCE AND EMERGENCY VEHICLES ONLY
SR-2 954+65± E.		SPEED LIMIT 60 *
SR-2 723+70 Rt.	R-10-48	TRUCKS 50 *
	R-16-48	
EXISTING MAJOR SIGN INSTALLATION TO BE REMOVED		
SR-2 750+75 Rt.	GB	254 Sheffield Avon 1 Mile *

* Sign faces are to be salvaged for re-erection.

LOR-2-6.62
LOR-90-11.96

CALC BY: TRM 9/72
CHKD BY: TRM 1/73



See Sheet No. 75 for Cross Sections for earthwork to extend median mound for guard rail.

Note: All existing guard rail on this sheet is galvanized Type 5 (wood posts) with anchor assemblies on approach ends and enclosed posts with cross-brace on trailing ends.

Extend existing culvert. For Details and Quantities See Sheet No. 72

C & IR 90 & S.R. 2

For Sign Quantities See Next Sheet.

Ref. No.	STATION	202		606	
		Guard Rail Removed for Re-use or Storage		Guard Rail Type 5 As Per Plan	Anchor Assembly Barrier Design
		Lin. Ft.		Lin. Ft.	Each
R-1	783+63± to 784+88± Lt.	125			
GR-1	763+18± to 766+05± Median			475	2
	Totals	125		475	2

ALL NORMAL PARTICIPATION

EXISTING SIGN INSTALLATIONS TO BE REMOVED		
Approximate Location	Code Number	Legend
SR-2 778+40 Lt.	M-40-24	WEST
	M-2-24	2
EXISTING MAJOR SIGN INSTALLATIONS TO BE REMOVED		
SR-2 763+70± Rt.	GP	LCCC NEXT RIGHT *

* Sign faces are to be salvaged for re-erection.

TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	31
2	OHIO		103

LOR-2-6.62
LOR-90-11.96

CALC. BY: *ROM 7/12*
CHKD BY: *ROM 1/73*

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816										DIMENSIONS SEE TYPICAL DETAIL SHEET 56					620		FROM SHEET NO.
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS RE-ERECTED	REVISE EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, STEEL BEAM 12 WF 31	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	STRUCTURAL SUPPORT, STEEL BEAM 8 WF 17	STRUCTURAL SUPPORT, STEEL BEAM 10 WF 21	BREAKAWAY SIGN SUPPORT CONNECTIONS	CONCRETE FOR GR. MOUNTED SIGN SUPPORT FOUNDATIONS	A B C D E					DELINEATORS TYPE D POST MTD.		
							NORM. PART.	100% STATE	NORM. PART.	100% STATE												SQ. FT.	SQ. FT.	LINE. FT.	LINE. FT.	LINE. FT.		LINE. FT.	
							FT. X FT.	SQ. FT.	SQ. FT.		SQ. FT.	EACH	LINE. FT.	LINE. FT.	LINE. FT.	LINE. FT.	LINE. FT.	LINE. FT.	LINE. FT.	EACH	CU. YDS.	FT.	FT.	FT.	FT.	FT.	EACH		
29	I-90		696+19	Lt.	N-41-12	1x4	4					12																29	
			696+19	Rt.	N-41-12	1x4	4					12																	
			702+30	Lt.	N-12C-108	9x2		18																					
			714+50	Rt.	M-39-36	3x1.5	4.5							17															
					M-2-36	3x3	9																						
			723+40	Rt.	Existing R-10-48	4x5			20					41											20	21			
					Existing R-16-48	4x4			16																				
		29a	736+50	Rt.	GJ	5x3.5		17.5				32.5													16	16.5			
		29b	740+30	Lt.	GJ	5x3.5		17.5					34.5												16.5	18			
		30	741+50	Rt.	GH	15x5		75								46		2	2.3	20.5	25.5						7		
			747+30	Lt.	N-12C-144	12x2		24																					
					Existing GB	12x13																							
			748+00	Rt.	N-12C-96	8x2		16																					
					Existing GB	12x11			132	1			57.5					2	3.0	28	29.5						7		
			748+99	Lt.	N-41-12	1x4	4					12																	
			748+99	Rt.	N-41-12	1x4	4					12																	
			Crossover 754+50		R-123-36(2)	2@ 3x3	18							16															
					RP-123-24(2)	2@ 2x1.5	6																						
29					R-19-24(2)	2@ 2x2.5	10					12.5															4		29
30		31	755+00	Lt.	GH	15x5		75										2	2.3	19	17				23				30
			764+60	Rt.	Existing Ground Mounted	12x4.5			54					52.5											17	18	17.5		
			777+30	Lt.	M-40-36	3x1.5	4.5							17															
					M-2-36	3x3	9																						
30																													30
29	I-90	15a	722+10	Lt.	N-12C-108	2x9		18																					29
						15x9.5		142.5						53					2	3.0	26	27							
<i>Sheet Totals</i>							77	403.5		222	2	48	57.5	194	110.5	82		8	10.6						4				

Normal Participation

Approximate Location	Legend
SR-2 795+68 Rt.	254 *

* Existing sign faces to be salvaged for re-erection.

All Normal Participation

Approximate Location	Code Number	Legend
SR-2 799+50 Lt.	W-49-36	Merging Traffic
SR-254 77+00 Rt.	D-1	Toledo 90
SR-254 81+50 Rt.	M-40-24	WEST
	M-2-24	2
	M-24	→
SR-254 82+30 Rt.	M-39-24	EAST
	M-2-24	2
	M-26	↑
SR-254 83+50 Lt.	M-40-24	WEST
	M-2-24	2
	M-24	→
SR-254 91+20 Rt.	D-1	Toledo 90
	M-39-24	EAST
	M-2-24	2
	M-24	→
SR-254 95+00 Lt.	M-40-24	WEST
	M-2-24	2
	M-26	↑
	M-39-24	EAST
	M-244M-2-24	2 →
SR-254 98+30 Lt.	M-17-24 & M-2-24	JCT. 2
SR-254 96+50 Lt.	D-1	Cleveland
Ramp J 807+70 Rt.	R-41B-30	DO NOT ENTER *
Ramp J 807+80 Lt.	R-1-36	STOP
	R-41B-30	DO NOT ENTER *
Ramp J 813+80 Lt.	D-1	Lorain County Community College
	D-1	← Avon 3
	D-1	SHEFFIELD Business District
Ramp L 813+50 Lt.	R-41B-30	DO NOT ENTER *
Ramp L 808+80 Rt.	D-1	Lorain County Community College
	D-1	← Avon 3
	D-1	← SHEFFIELD Business District
Ramp L 813+50 Rt.	R-1-36	STOP
	R-41B-30	DO NOT ENTER *
SR-2 785+30 [±] Rt. Lt.	N-1 (2)	Corp. Signs
SR-2 804+17 Rt.		Exit

* Existing sign faces to be salvaged for re-erection.

FED. RD. DIVISION	STATE	PROJECT	32
2	OHIO		103

LOR-2-6.62
LOR-90-11.96

CALC. BY: POB 1/22
CHKD. BY: REM 1/73

For Ground Mounted Sign Quantities, See next 2 sheets.
For Overhead Sign Quantities, See Sheet 49.
For Details, See Shts. 51/52.

NOTE: Existing guard rail on this sheet is galvanized Type 5 (wood posts) with anchor assemblies on approach ends and enclosed posts with cross-brace on trailing ends.

Ref. No.	STATION	202		606	
		Guard Rail Removed for Re-use or Storage	Lin. Ft.	Guard Rail Type 5 As per Plan	Bridge Terminal Assembly Type G
R-1	785+86 [±] to 787+11 [±] Rt.		125		
R-2	794+62 [±] to 795+87 [±] Rt.		125		
*GR-1	85+10 [±] to 85+35 [±] S.R. 254 Rt.	25		28.4	1
*GR-2	85+30 [±] to 85+55 [±] S.R. 254 Lt.	25		27.2	1
*GR-3	88+60 [±] to 88+95 [±] S.R. 254 Rt.	25		27.3	1
*GR-4	88+80 [±] to 89+05 [±] S.R. 254 Lt.	25		28.1	1
	Totals	350		111.0	4

* Removal and replacement is to realign guard rail with proposed bridge terminals.

Ref. No.	STATION	202		604	
		Catch Basin Removed As Per Plan	Standard No. 4 Catch Basin As Per Plan	Standard No. 1 Manhole	
D-1	808+00 to 809+00, Median	1	1	1	
	Totals	1	1	1	

TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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LOR-2-662
LOR-90-1196

CALC. BY: *P.D. 1/12*
CHKD. BY: *B.M. 1/13*

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816							621					FROM SHEET NO.								
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS	RE-RECTED	REVISE	EXISTING	SIGN EXIT	LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN AS PER PLAN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	STRUCTURAL SUPPORT, 10WF21 STEEL BEAM	BREAKAWAY SIGN SUPPORT CONNECTIONS		CONCRETE FOR GR. MOUNTED SIGN SUPPORT FOUNDATIONS	DIMENSIONS SEE TYPICAL DETAIL-SHEET 56					LANE ARROWS	24 STOP LINES
							AS PER PLAN	100% PART. STATE	AS PER PLAN	100% PART. STATE																SQ. FT.	EACH	LINE FT.	LINE FT.	LINE FT.		
							FT. X FT.	SQ. FT.	SQ. FT.		SQ. FT.	EACH	LINE FT.	LINE FT.	LINE FT.	LINE FT.	LINE FT.	LINE FT.	LINE FT.	EACH	CU. YDS.	FT.	FT.		FT.	FT.	FT.	EACH	LINE FT.			
32	I-90	32	784+60	Lt.	GK	6x3									32											32						
		33a	786+30	Rt.	GK	6x3									32																	
			795+68	Rt.	N-12C-96	8x2																										
					Existing Ground Mounted	12x11				132						50			2	2.5	26	24	30									
			798+80	Lt.	W-49R-48	4x4	16									18.5																
					WP-49-24	2x1	2																									
			801+79	Lt.	N-4I-12	1x4	4						12																			
			801+79	Rt.	N-4I-12	1x4	4						12																			
			804+17	Rt.	N-12A-96	8x5																										
	I-90		805+50	Rt.	M-2-36	3x3	9																									
	Ramp H		806+80	Lt.	R-15B-30	2.5 x 2.5	6.25									15																
	Ramp J		807+70	Rt.	Existing R-41B-30	2.5 x 2.5																										
					R-43R-36	3 x 1.25	3.75																									
					R-43L-36	3 x 1.25	3.75																									
			807+80	Lt.	Existing R-41B-30	2.5 x 2.5																										
					R-1-48	4x4	16																									
			809+00	Lt.	R-41A-30	2.5 x 1.5	3.75																									
			809+00	Rt.	R-41A-30	2.5 x 1.5	3.75																									
		37	812+50	Lt.	Special	8x6																										
					M-2-24	2x2	4																									
					M-25-20	1.67 x 1.25	2.1																									
	Ramp J				Lane Arrow																											
					Stop Line																											
	Ramp K		812+30	Rt.	R-15B-30	2.5 x 2.5	6.25									15																
32	Ramp L	36	809+00	Rt.	Special	8x6																					32					
					M-2-24	2x2	4																									
					M-25-20	1.67 x 1.25	2.1																									
<i>Sheet Totals</i>							90.7	188		144.5			24	58	267	16	16	50		2	2.5				1	60						

Interchange quantities continued on next sheet.

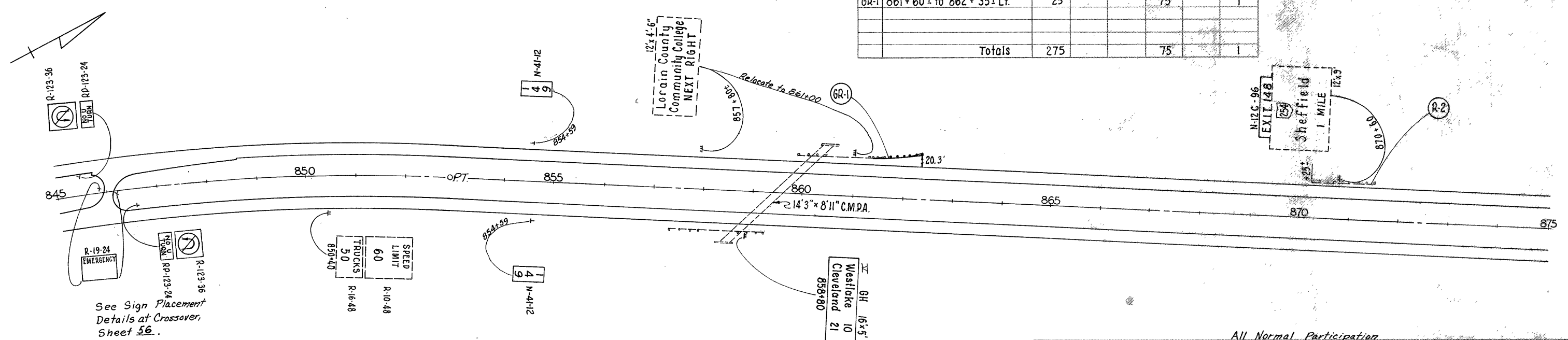
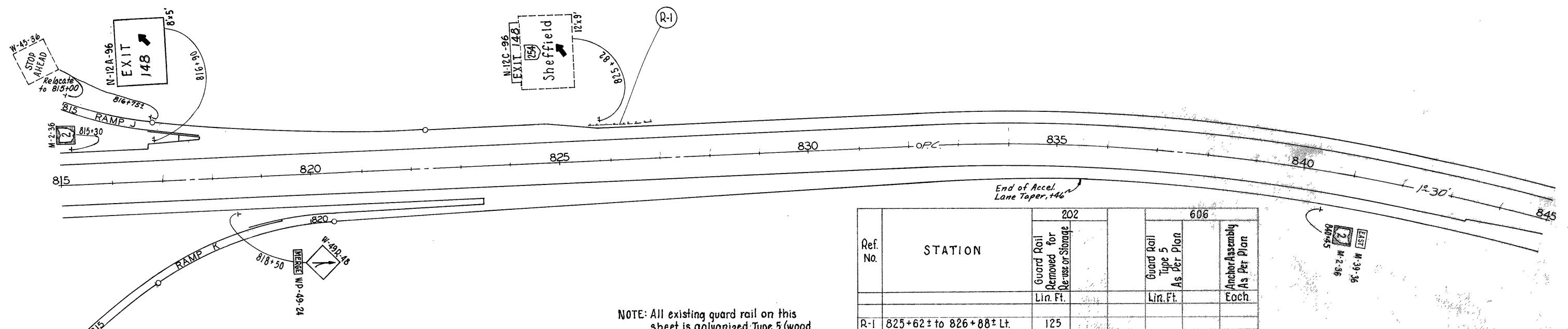
TRAFFIC CONTROL QUANTITIES

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816					DIMENSIONS SEE TYPICAL DETAIL SHEET 56					621		FROM SHEET NO.		
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS	REVISED EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 6 LB BEAM, DRIVEN AS PER PLAN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING						LANE ARROWS		24" STOP LINES	
							NORM. PART.	100% STATE	NORM. PART.	100% STATE								SQ. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.				LIN. FT.
							FT. X FT.	SQ. FT.	SQ. FT.		SQ. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	FT.	FT.	FT.	FT.	FT.				
32	Ramp L		812+00	Lt.	R-41A-30	2.5 x 1.5	3.75																		32	
			812+00	Rt.	R-41A-30	2.5 x 1.5	3.75																			
			813+50	Lt.	Existing R-41B-30	2.5 x 2.5		6.25					16													
					R-43L-36	3 x 1.25	3.75																			
					R-43R-36	3 x 1.25	3.75																			
			813+50	Rt.	Existing R-41B-30	2.5 x 2.5		6.25					16.5													
					R-1-48	4 x 4	16															1				
	Ramp L	Lane Arrow Stop Line																					52			
	S.R. 254		75+00	Rt.	D-3-24-G	8 x 2.5							31.5					15.5	16							
			79+00	Median	R-37-24	2 x 2.5	5																			
			81+70	Median	R-37-24	2 x 2.5	5																			
			82+70	Median	R-37-24	2 x 2.5	5																			
			91+50	Median	R-37-24	2 x 2.5	5																			
			92+42	Median	R-37-24	2 x 2.5	5																			
			93+30	Rt.	M-39-24	2 x 1	2																			
					M-2-24	2 x 2	4																			
			95+98	Median	R-37-24	2 x 2.5	5																			
32	S.R. 254		99+50	Lt.	D-3-24-G	8 x 2.5							33					16	17							32
Sheet Totals							67	40	12.5			112	97	16								1	52			

LOR-2-6.62
LOR-90-1196

CALC. BY: PDA 7/72
CHKD. BY: BBM 1/73



NOTE: All existing guard rail on this sheet is galvanized Type 5 (wood posts) with anchor assemblies on approach ends and encased posts with cross-brace on trailing ends.

Ref. No.	STATION	202		606	
		Guard Rail Removed for De-use or Storage Lin. Ft.		Guard Rail Type 5 As Per Plan Lin. Ft.	Anchor Assembly As Per Plan Each
R-1	825+62± to 826+88± Lt.	125			
R-2	870+25± to 871+50± Lt.	125			
GR-1	861+60± to 862+35± Lt.	25		75	1
Totals		275		75	1

For Sign Quantities,
See Sheet No. 38.

See Sign Placement
Details at Crossover,
Sheet 56.

All Normal Participation

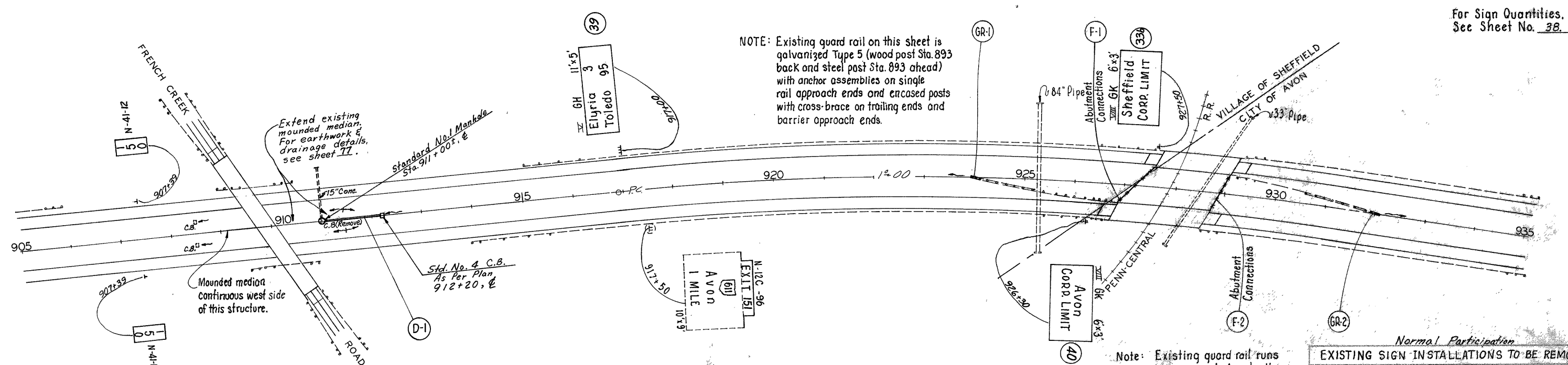
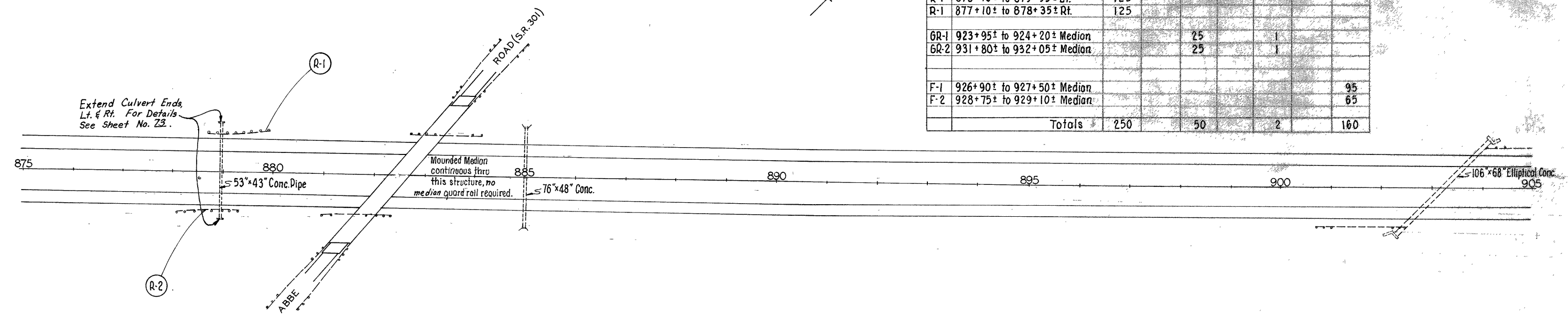
EXISTING MAJOR SIGN INSTALLATIONS TO BE REMOVED			EXISTING SIGN INSTALLATIONS TO BE REMOVED		
Approximate Location	Sign Legend		Approximate Location	Code Number	Legend
SR-2 825+82 Lt.	254 Exit *		SR-2 818+50 Rt.	M-39-24	Merging Traffic
SR-2 857+80 Lt.	LCCC NEXT RIGHT *		SR-2 840+20 Rt.	M-2-24	EAST
SR-2 870+60 Lt.	254 Exit 1 Mile *			M-2-24	2
			SR-2 816+90 Lt.	N-12-72	Exit
			SR-2 850+40 Rt.	R-10-48/R-16-48	Speed Limits *
			Ramp J 816+75± Lt.	W-45-36	Stop Ahead *

* Existing Sign Faces to be salvaged for re-erection

LOR-2-6.62
LOR-90-11.96

CALC. BY: *P.D.H. 9/72*
CHKD. BY: *EBM 1/73*

Ref. No.	STATION	202		606	607
		Guard Rail Removed for Reuse or Storage Lin. Ft.	Barrier Rail Removed for Reuse or Storage Lin. Ft.	Anchor Assembly Barrier Design Each	Fence Type 47 Lin. Ft.
R-1	878+70± to 879+95± Lt.	125			
R-1	877+10± to 878+35± Rt.	125			
6R-1	923+95± to 924+20± Median		25	1	
6R-2	931+80± to 932+05± Median		25	1	
F-1	926+90± to 927+50± Median				95
F-2	928+75± to 929+10± Median				65
Totals		250	50	2	160



Ref. No.	Station	202		604		603
		Catch Basin Removed As Per Plan Each	Standard No. 4 Catch Basin As Per Plan Each	Standard No. 1 Manhole 15" Conduit, Type C, 706.01, 706.02 or 706.08 Each	Lin. Ft.	
D-1	911+00 to 912+20 Median	1	1	1	120	
Totals		1	1	1	120	

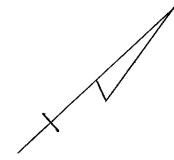
Normal Participation

EXISTING SIGN INSTALLATIONS TO BE REMOVED		
Approximate Location	Code Number	Legend
SR-2 926+30 Rt.	N-1	Avon Corporation Limit
SR-2 927+50 Lt.	N-1	Sheffield Corporation Limit

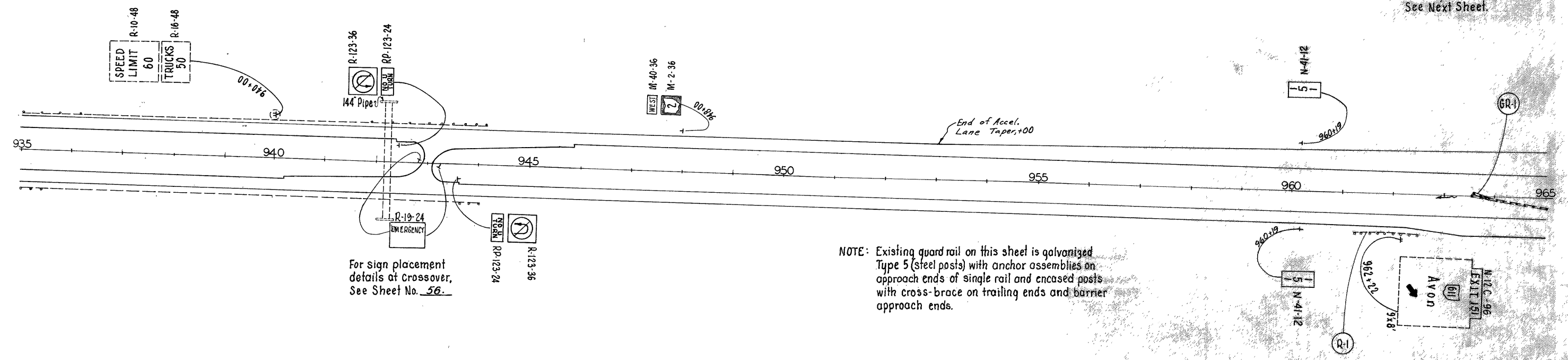
Note: Existing guard rail runs are connected onto the bridge parapets with bridge connection brackets.

LOR-2-6.62
LOR-90-11.96

CALC. BY: *RAM 9/72*
CHKD BY: *REM 1/73*



For Sign Quantities See Next Sheet.



For sign placement details at Crossover, See Sheet No. 56.

NOTE: Existing guard rail on this sheet is galvanized Type 5 (steel posts) with anchor assemblies on approach ends of single rail and encased posts with cross-brace on trailing ends and barrier approach ends.

Ref. No.	STATION	202		606
		Guard Rail Removed for Re-use or Storage	Barrier Rail Removed for Re-use or Storage	
		Lin. Ft.		Each
R-1	961+25± to 962+50± Rt.	125		
GR-1	963+50± to 963+75± Median		25	1
Totals		125	25	1

All Normal Participation

EXISTING SIGN INSTALLATIONS TO BE REMOVED		
Approximate Location	Code Number	Legend
SR-2 945+75 Lt.	M-40-24 M-2-24	WEST 2
EXISTING MAJOR SIGN INSTALLATIONS TO BE REMOVED		
SR-2 962+22 Rt.		611 Exit *

* Sign Faces to be salvaged for Re-erection

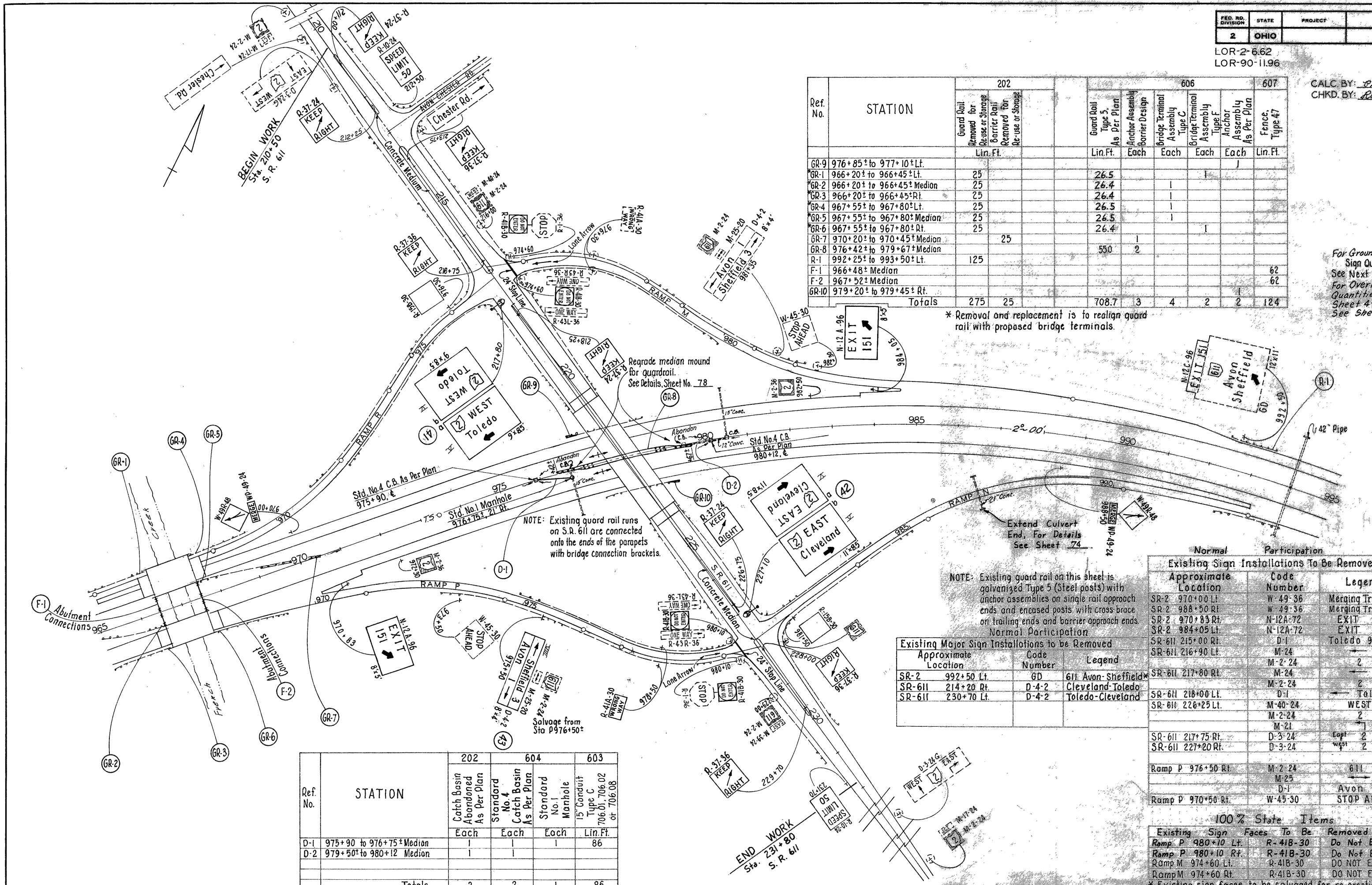
LOR-2-6.62
LOR-90-11.96

CALC. BY: *POH 9/72*
CHKD. BY: *REM 1/73*

Ref. No.	STATION	202		606				607
		Guard Rail Removed for Re-use or Storage Barrier Rail Removed for Re-use or Storage	Lin. Ft.	Guard Rail Type 5, As Per Plan	Anchor Assembly Barrier Design	Bridge Terminal Assembly Type C	Bridge Terminal Assembly Type F	Anchor Assembly As Per Plan
GR-9	976+85± to 977+10± Lt.							
GR-1	966+20± to 966+45± Lt.	25		26.5				
GR-2	966+20± to 966+45± Median	25		26.4				
GR-3	966+20± to 966+45± Rt.	25		26.4				
GR-4	967+55± to 967+80± Lt.	25		26.5				
GR-5	967+55± to 967+80± Median	25		26.5				
GR-6	967+55± to 967+80± Rt.	25		26.4				
GR-7	970+20± to 970+45± Median		25					
GR-8	976+42± to 979+67± Median			550	2			
R-1	992+25± to 993+50± Lt.	125						62
F-1	966+48± Median							62
F-2	967+52± Median							
GR-10	979+20± to 979+45± Rt.							
Totals		275	25	708.7	3	4	2	124

* Removal and replacement is to realign guard rail with proposed bridge terminals.

For Ground Mounted Sign Quantities, See Next 2 Sheets.
For Overhead Sign Quantities, See Sheet 49. For Details See Sheet 52.



Ref. No.	STATION	202	604	603
		Catch Basin Abandoned As Per Plan	Standard Catch Basin As Per Plan	Standard No. 1 Manhole
D-1	975+90 to 976+75± Median			86
D-2	979+50± to 980+12 Median			
Totals		2	2	86

NOTE: Existing guard rail on this sheet is galvanized Type 5 (Steel posts) with anchor assemblies on single rail approach ends and encased posts with cross-brace on trailing ends and barrier approach ends.

Existing Major Sign Installations to be Removed

Approximate Location	Code Number	Legend
SR-2 992+50 Lt.	GD	611 Avon-Sheffield
SR-611 214+20 Rt.	D-4-2	Cleveland-Toledo
SR-611 230+70 Lt.	D-4-2	Toledo-Cleveland

Existing Sign Installations To Be Removed

Approximate Location	Code Number	Legend
SR-2 970+00 Lt.	W-49-36	Merging Traffic
SR-2 988+50 Rt.	W-49-36	Merging Traffic
SR-2 970+83 Rt.	N-12A-72	EXIT
SR-2 984+05 Lt.	N-12A-72	EXIT
SR-611 215+00 Rt.	D-1	Toledo 92
SR-611 216+90 Lt.	M-24	2
SR-611 217+80 Rt.	M-24	2
SR-611 218+00 Lt.	D-1	Toledo
SR-611 226+25 Lt.	M-40-24	WEST
	M-24	2
	M-21	2
SR-611 217+75 Rt.	D-3-24	East 2 West
SR-611 227+20 Rt.	D-3-24	West 2 East
Ramp P 976+50 Rt.	M-2-24	611 *
	M-25	*
Ramp P 970+50 Rt.	W-45-30	Avon 1
		STOP AHEAD *

100% State Items

Existing Sign Faces To Be Removed	Code Number	Legend
Ramp P 980+10 Lt.	R-41B-30	Do Not Enter
Ramp P 980+10 Rt.	R-41B-30	Do Not Enter
Ramp M 974+60 Lt.	R-41B-30	DO NOT ENTER
Ramp M 974+60 Rt.	R-41B-30	DO NOT ENTER

* Existing sign faces to be salvaged for re-erection

TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	40
2	OHIO		103

LOR-2-6.62
LOR-90-1196

CALC. BY: *DDH 9/92*
CHKD. BY: *RDM 1/73*

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815						816							DIMENSIONS SEE TYPICAL DETAIL SHEET 56					621		FROM SHEET NO.			
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS	RE-RECTED	REVISE EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 6" BEAM DRIVEN AS PER PLAN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	STRUCTURAL SUPPORT STEEL BEAM 12 WFSI	CONCRETE FOR GR. MOUNTED SIGN SUPPORT FOUNDATIONS	BREAKAWAY SIGN SUPPORT CONNECTIONS	A	B	C	D	E		LANE ARROWS	24" STOPLINES	
							NORM. PART.	100% STATE	NORM. PART.	100% STATE												SQ. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.				LIN. FT.
							FT. X FT.	SQ. FT.	SQ. FT.																					
39	I-90		970+00	Lt.	W-49R-48	4x4		16																			39			
					WP-49-24	2x1		2																						
				970+83	Rt.	N-12A-96	8x5				40														17	17				
				972+30	Rt.	M-2-36	3x3		9																					
				982+50	Lt.	M-2-36	3x3		9																					
				984+05	Lt.	N-12A-96	8x5				40															17	17			
				988+50	Rt.	W-49R-48	4x4		16																					
						WP-49-24	2x1		2																					
				992+50	Lt.	N-12C-96	8x2				16																			
					Existing Ground Mounted	12x11					132							59	3.0	2		29	30		30	5				
	Ramp M		974+60	Rt.	R-41B-30	2.5 x 2.5		6.25																						
			974+60	Lt.	R-41B-30	2.5 x 2.5		6.25																						
					Lane Arrow																									
					Stop Line																								55	
	Ramp N		981+50	Rt.	R-15B-30	2.5 x 2.5		6.25																						
	Ramp P		973+50	Rt.	Existing W-45-30	2.5 x 2.5				6.25				16																
		43	975+50	Rt.	D-4-2	8x4				32				39											18.5	20.5				
					Existing M-25-20	1.67 x 1.25					2.1					7														
					Existing M-2-24	2x2					4																			
			978+50	Rt.	R-41A-30	2.5 x 1.5		3.75						14.5																
			978+50	Lt.	R-41A-30	2.5 x 1.5		3.75						14.5																
			980+10	Rt.	R-41B-30	2.5 x 2.5		6.25																						
			980+10	Lt.	R-41B-30	2.5 x 2.5		6.25																						
					Lane Arrow																									
					Stop Line																								50	
39	Ramp R		976+30	Lt.	R-15B-30	2.5 x 2.5		6.25						15															39	
<i>Sheet Totals</i>								99		128			144.35			75	175		7			59	3.0	2					2	105

TRAFFIC CONTROL QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	41
2	OHIO		103

LOR-2-6.62
LOR-90-11.96

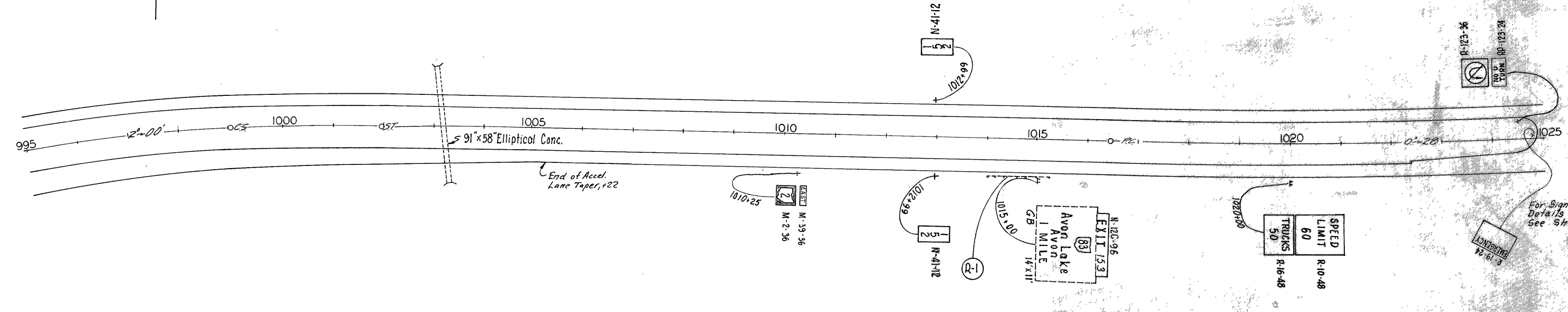
CALC. BY: TRD 9/92
CHKD. BY: RBW 1/73

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816					DIMENSIONS SEE TYPICAL DETAIL SHEET					FROM SHEET NO.			
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS	RE-ERECTED	REVISE EXISTING SIGN	EXIT SIGN	LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	A	B		C	D	E
							AS PER PLAN	AS PER PLAN	AS PER PLAN	AS PER PLAN															
							NORM. PART.	100% STATE	NORM. PART.	100% STATE	SQ. FT.	SQ. FT.	SQ. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	FT.	FT.	FT.		FT.	FT.	
39	S.R. 611		211+00	Median	R-37-24	2 x 2.5	5							14							39				
			212+25	Median	R-37-24	2 x 2.5	5							14											
			212+50	Lt.	R-10-24	2 x 2.5	5							15											
			213+75	Median	R-37-36	3 x 3.5	10.5																		
			216+75	Median	R-37-36	3 x 3.5	10.5																		
			218+25	Median	R-37-24	2 x 2.5	5							14											
			226+75	Median	R-37-24	2 x 2.5	5							14											
			228+00	Median	R-37-36	3 x 3.5	10.5																		
			229+70	Median	R-37-36	3 x 3.5	10.5																		
39			231+70	Rt.	R-10-24	2 x 2.5	5							15							39				
<i>Sheet Totals</i>							72							86	60										

LOR-2-6.62
LOR-90-11.96

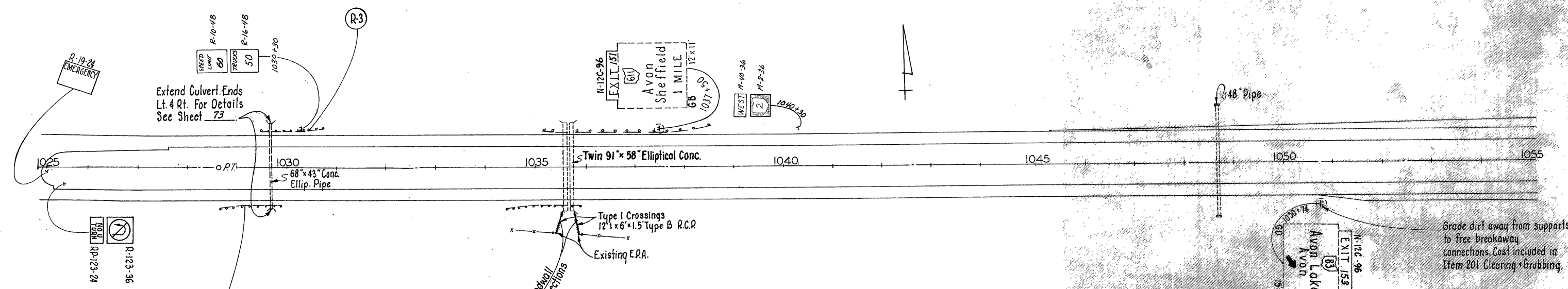
CALC BY: *PRM 9/72*
CHKD BY: *PRM 1/73*



NOTE: Existing guard rail on this sheet is galvanized Type 5 (steel posts) with anchor assemblies on approach ends and encased posts with cross-brace on trailing ends.

For Sign Quantities See Next Sheet.

For Sign Placement Details at Crossover See Sheet 36.



Grade dirt away from supports to free breakaway connections. Cost included in Item 201 Clearing + Grubbing.

Ref. No.	STATION	202		601		607	
		Guard Rail Removed for Re-use or Storage	Lin. Ft.	Rock Channel Protection Type B	Co.Yds.	Fence Type 47	Lin. Ft.
R-1	1014+00± to 1015+25± Rt.	125					
R-2	1028+65± to 1029+90± Rt.	125					
R-3	1029+50± to 1030+75± Lt.	125					
F-1	1035+70± Rt.			11		95	
Totals		375		11		95	

All Normal Participation

Existing Sign Installations To Be Removed		
Approximate Location	Code Number	Legend
SR-2 1009+50 Rt.	M-39-24	EAST
	M-2-24	2
SR-2 1042+95 Lt.	M-40-24	WEST
	M-2-24	2
Existing Major Sign Installations To Be Removed		
SR-2 1015+00 Rt.	GB	83 EXIT 1 MILE *

* Existing Sign Face to be salvaged for Re-erection

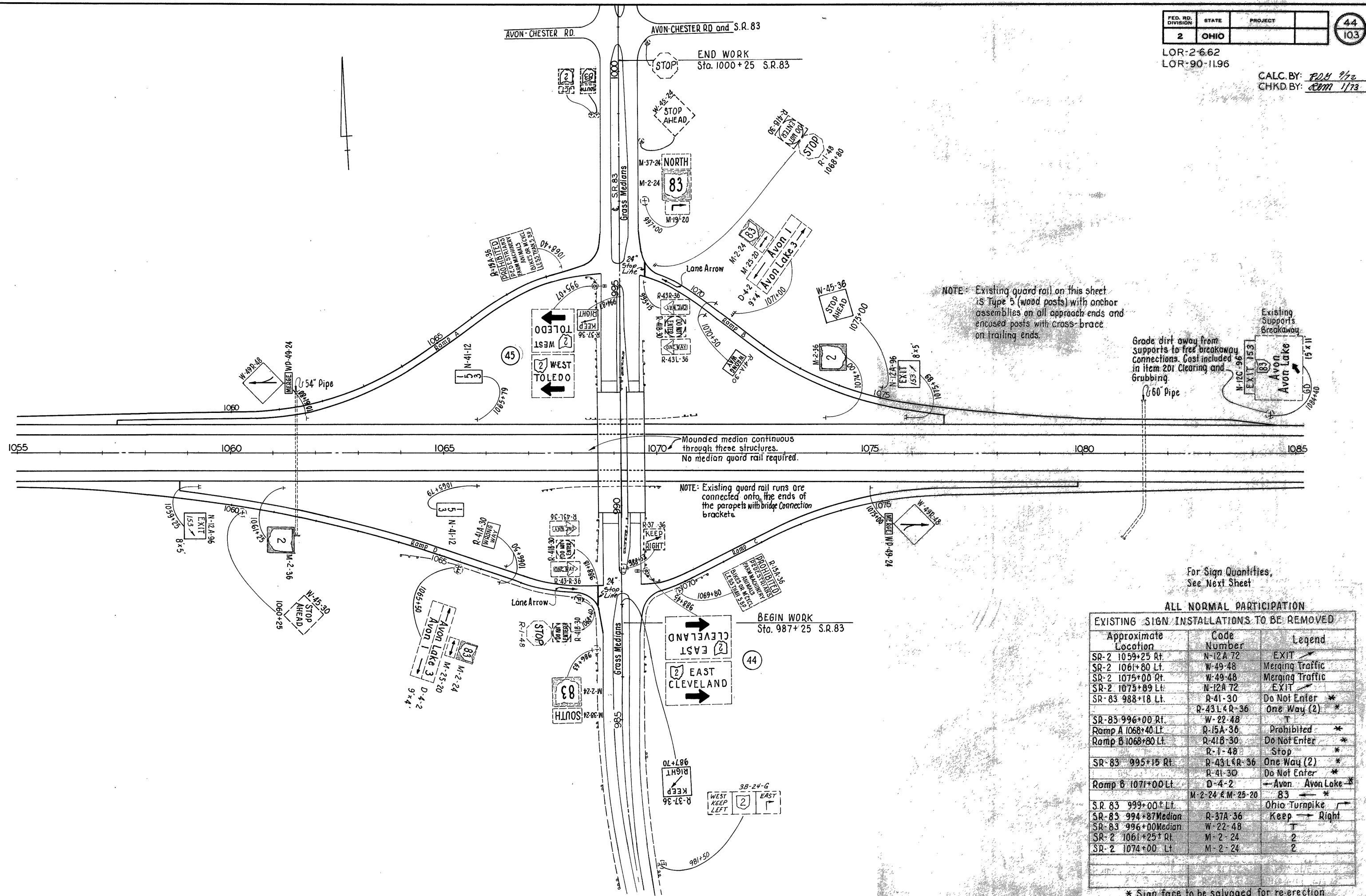
TRAFFIC CONTROL QUANTITIES

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816					620					FROM SHEET NO.						
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS RE-ERECTED	REVISE EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	STRUCTURAL SUPPORT, STEEL BEAM 12WF31	CONCRETE FOR GR. MOUNTED SIGN SUPPORT FOUNDATIONS	BREAKAWAY SIGN SUPPORT CONNECTIONS	DIMENSIONS SEE TYPICAL DETAIL SHEET 36					DELINEATOR TYPE D, POST MOUNTED			
							AS PER PLAN NORM. PART. STATE	100% 100% STATE	AS PER PLAN NORM. PART. STATE	100% 100% STATE										AS	B		C	D		E		
							FT. X FT.	SQ. FT.	SQ. FT.		SQ. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU. YDS.	EACH	FT.		FT.	FT.	FT.	FT.	EACH	
42	I-90		1010+25	Rt.	M-39-36	3x1.5	4.5																			42		
					M-2-36	3x3	9																					
			1012+99	Rt.	N-41-12	1x4	4																					
			1012+99	Lt.	N-41-12	1x4	4																					
			1015+00	Rt.	N-12C-96	8x2		16																				
					Existing Ground Mounted	14x11			154	1																		
			Crossover 1025+00	Median	R-123-36	2@ 3x3	18																					
					RD-123-24	2@ 2x1.5	6																					
					R-19-24	2@ 2x2.5	10																					
			1030+30	Lt.	R-10-48	4x5	20																					
					R-16-48	4x4	16																					
			1037+50	Lt.	N-12C-96	8x2		16																				
					Existing Ground Mounted	12x11																						
			1040+30	Lt.	M-40-36	3x1.5	4.5																					
					M-2-36	3x3	9																					
			1050+74	Rt.	N-12C-96	8x2		16																				
42	I-90		1020+00	Rt.	R-10-48	4x5	20																				42	
					R-16-48	4x4	16																					
<i>Sheet Totals</i>							141	48		154	2	24	25	147			58	3.0	2					4				

LOR-2-6.62
LOR-90-11.96

CALC. BY: PDM 7/2
CHKD. BY: EBM 1/73



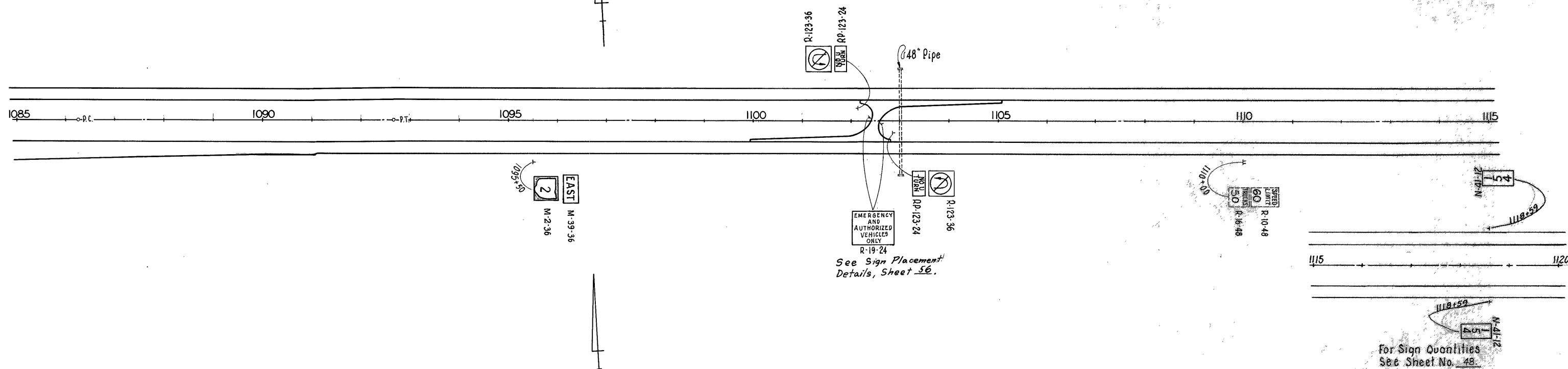
ALL NORMAL PARTICIPATION

Approximate Location	Code Number	Legend
SR-2 1059+25 Rt.	N-12A 72	EXIT
SR-2 1061+80 Lt.	W-49-48	Merging Traffic
SR-2 1075+00 Rt.	W-49-48	Merging Traffic
SR-2 1075+89 Lt.	N-12A 72	EXIT
SR-83 988+18 Lt.	R-41-30	Do Not Enter *
	R-43L & R-36	One Way (2) *
SR-83 996+00 Rt.	W-22-48	T
Ramp A 1068+40 Lt.	R-15A-36	Prohibited *
Ramp B 1068+80 Lt.	R-418-30	Do Not Enter *
	R-1-48	Stop *
SR-83 995+15 Rt.	R-43L & R-36	One Way (2) *
	R-41-30	Do Not Enter *
Ramp B 1071+00 Lt.	D-4-2	← Avon Lake → *
	M-2-24 & M-25-20	83 *
SR-83 999+00 Lt.		Ohio Turnpike
SR-83 994+87 Median	R-37A-36	Keep → Right
SR-83 996+00 Median	W-22-48	T
SR-2 1061+25 Rt.	M-2-24	2
SR-2 1074+00 Lt.	M-2-24	2

* Sign face to be salvaged for re-erection

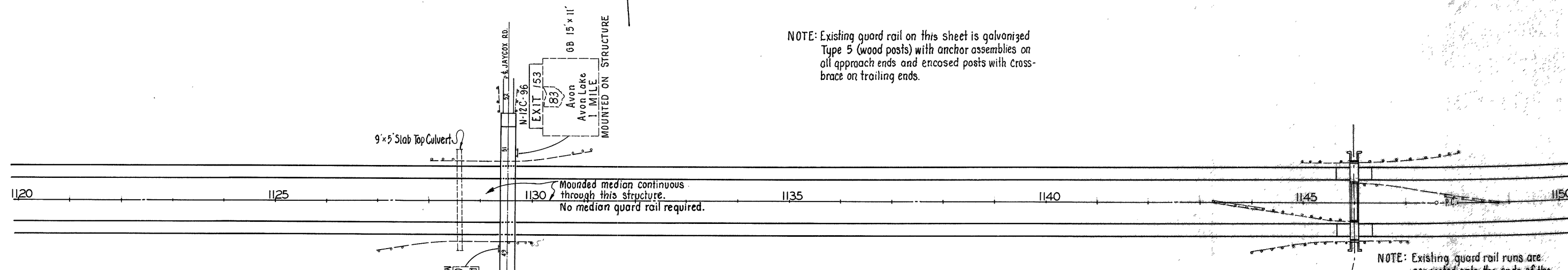
LOR-2-6.62
LOR-90-11.96

CALC. BY: *RDH 9/2*
CHKD. BY: *REM 1/73*



For Sign Quantities
See Sheet No. 48

NOTE: Existing guard rail on this sheet is galvanized Type 5 (wood posts) with anchor assemblies on all approach ends and enclosed posts with cross-brace on trailing ends.



NOTE: Existing guard rail runs are connected onto the ends of the parapets with bridge connection brackets. Approach ends also have a Type 6 Curb Wheel Guide.

All Normal Participation

EXISTING SIGN INSTALLATIONS TO BE REMOVED		
Approximate Location	Code Number	Legend
SR-2 1102+15±	R-23-36	No U Turn
SR-2 1102+40±	R-19-18	Emergency, etc.
SR-2 1102+85±	R-23-36	No U Turn
SR-2 1102+60±	R-19-18	Emergency
SR-2 1095+50± RL	M-39-24 & M-2-24	2 = East
SR-2 1110+00± RL	R-10-48 & R-16-48	Speed Limits *

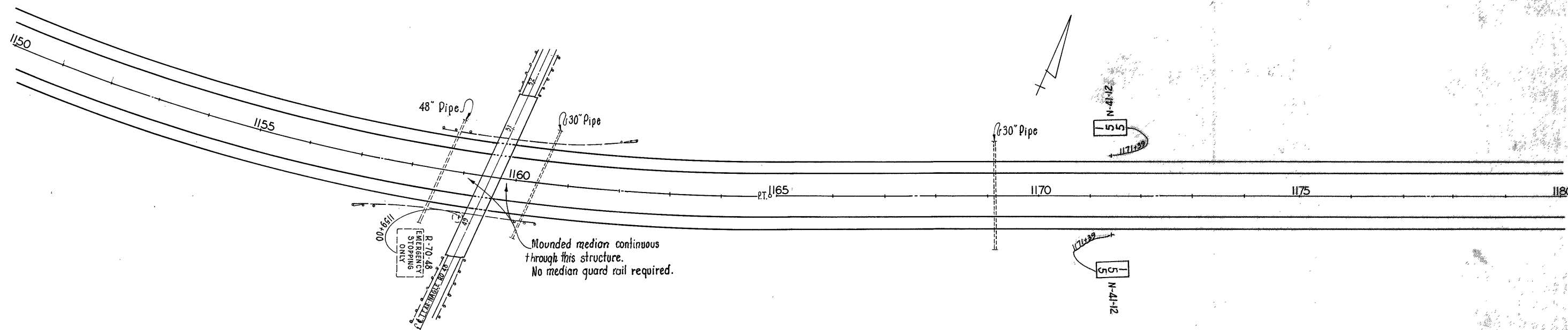
* Sign faces to be salvaged for re-erection

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

47
103

LOR-2-6.62
LOR-90-11.96

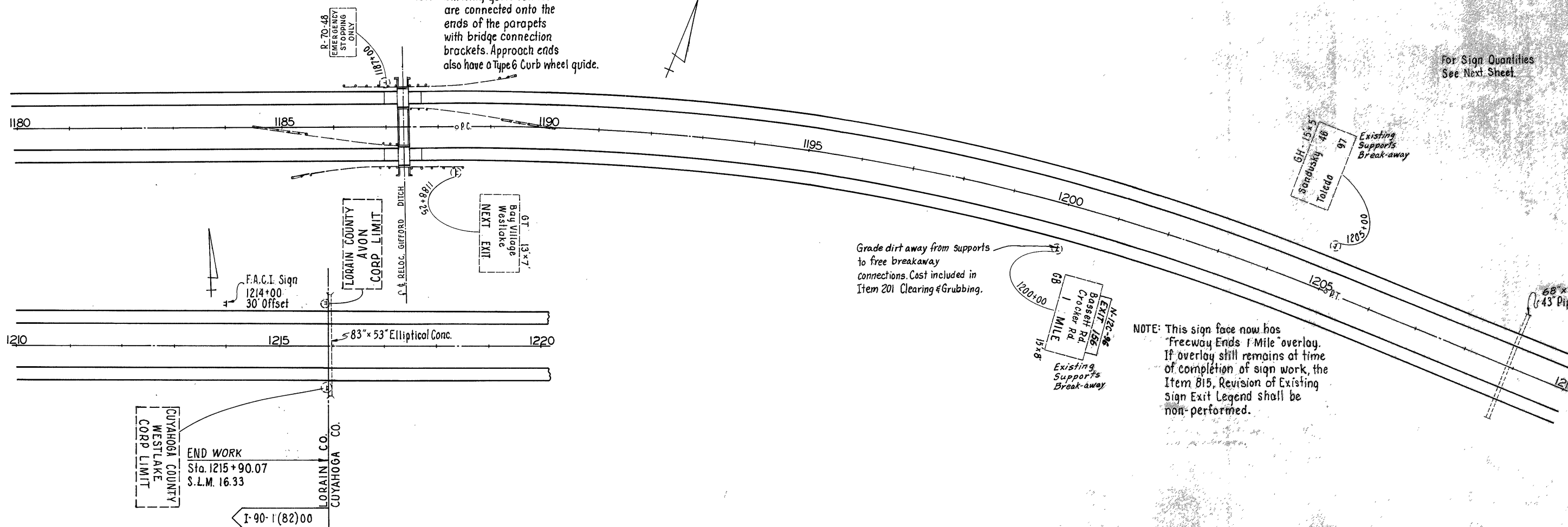
CALC. BY: *FDY 9/2*
CHKD. BY: *RM 1/73*



NOTE: Existing guard rail on this sheet is galvanized Type 5 (wood posts) with anchor assemblies on all approach ends and enclosed posts with cross-brace on trailing ends.

NOTE: Existing guard rail runs are connected onto the ends of the parapets with bridge connection brackets. Approach ends also have a Type 6 Curb wheel guide.

For Sign Quantities See Next Sheet.



Grade dirt away from supports to free breakaway connections. Cost included in Item 201 Clearing & Grubbing.

NOTE: This sign face now has "Freeway Ends 1-Mile" overlay. If overlay still remains at time of completion of sign work, the Item B15, Revision of Existing sign Exit Legend shall be non-performed.

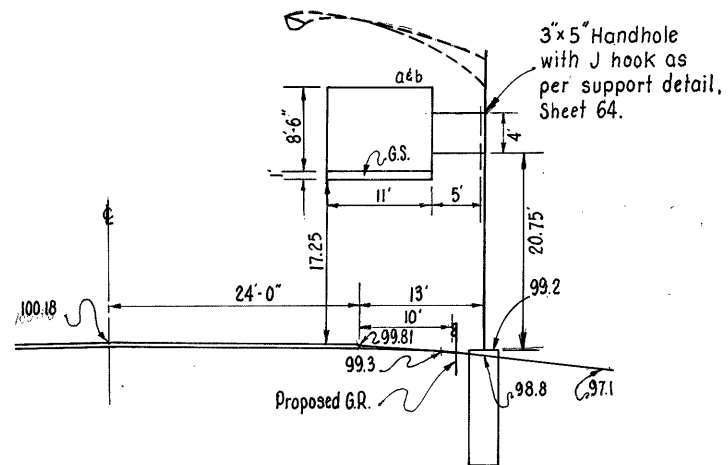
TRAFFIC CONTROL QUANTITIES

FROM SHEET NO.	LOCATION	REFERENCE	STATION	SIDE	SIGN CODE	SIGN SIZE	815					816					DIMENSIONS SEE TYPICAL DETAIL SHEET 36					620		FROM SHEET NO.			
							FLAT SHEET TYPE		EXTRU-SHEET TYPE		EXISTING SIGNS RE-ERECTED	REVISE EXISTING SIGN EXIT LEGEND	STRUCTURAL SUPPORT, 2 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 4 LB. POST, DRIVEN	STRUCTURAL SUPPORT, 6 LB. BEAM, DRIVEN	STRUCTURAL SUPPORT, 2 LB. BACK-BRACING	A	B	C	D	E	DELINEATORS TYPE D POSTMOUNTED					
							AS PER PLAN NORM.	100% STATE	AS PER PLAN NORM.	100% STATE							FT.	FT.	FT.	FT.	FT.				FT.	FT.	FT.
							SQ. FT.	SQ. FT.	SQ. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	FT.	FT.	FT.	FT.	FT.	EACH						
46	I-90		1095+50	Rt.	M-2-36	3x3	9								17										46		
					M-39-36	3x1.5	4.5																				
			Crossover 1102+50	Med.	R-123-36	2@ 3x3		18							16												
					RP-123-24	2@ 2x1.5		6							12.5												
					R-19-24	2@ 2x2.5		10							12.5								4				
			1110+00	Rt.	Existing Ground Mounted	4x5			20													20	20.5				
					Existing Ground Mounted	4x4			16																		
			1118+59	Lt.	N-41-12	1x4	4							12													
			1118+59	Rt.	N-41-12	1x4	4							12													
			Mid. on Structure 1129+70±	Lt.	N-12C-96	8x2		16																		46	
46					Existing Overhead	15x11				1																	
			1171+39	Lt.	N-41-12	1x4	4							12												47	
			1171+39	Rt.	N-41-12	1x4	4							12													
			1200+00	Rt.	N-12C-96	8x2		16																		47	
47					Existing Ground Mounted	15x8				1																	
<i>Sheet Totals</i>							29.5	34	32					36	2	48	25	89.5							4		

LOR-2-6.62
LOR-90-11.96

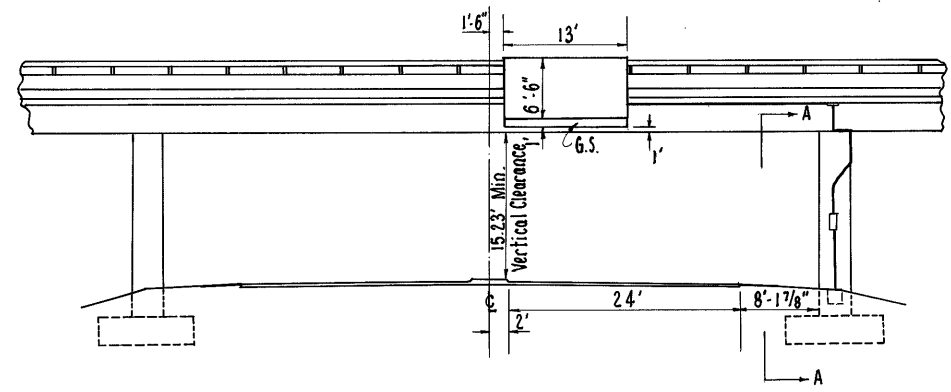
CALC. BY: C.M. 1/73
CHKD. BY: P.D.G. 1/73

1



STA. 1283 + 55 N.B. S.R. 58
12.30 Des. # 3 Modified, 16' Arm, 32' Pole
Combination Support
Sign a & b: 11' x 9'-6" = 104.5 Sq. Ft.
Brackets: 2'-9"-6" Long - Type Ya
Spacing: 16 3/8" - 99 3/8" - 16 1/4"

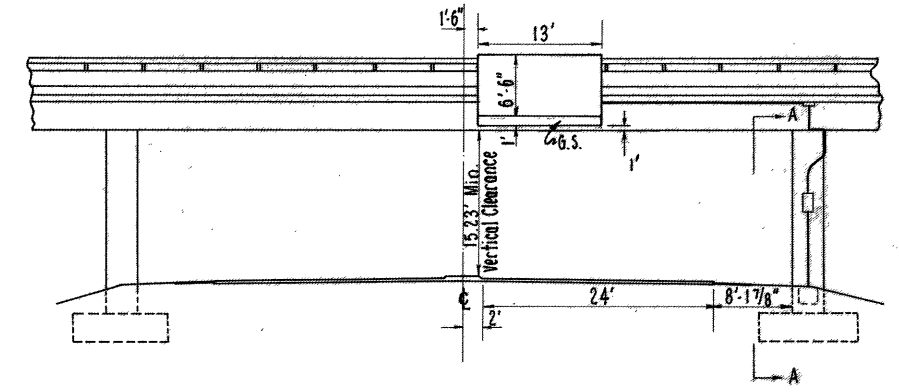
2



STA. 1285 + 30⁺ N.B. S.R. 58
STRUCTURAL MOUNTED SIGN SUPPORT
Sign: 13' x 7'-6" - 97.5 Sq. Ft.
Brackets: 3'-7" Long Type Ya
Spacing: 6" - 72" - 72" - 6"

For Enclosure Mounting Bracket
Details, See Sheet No. 53

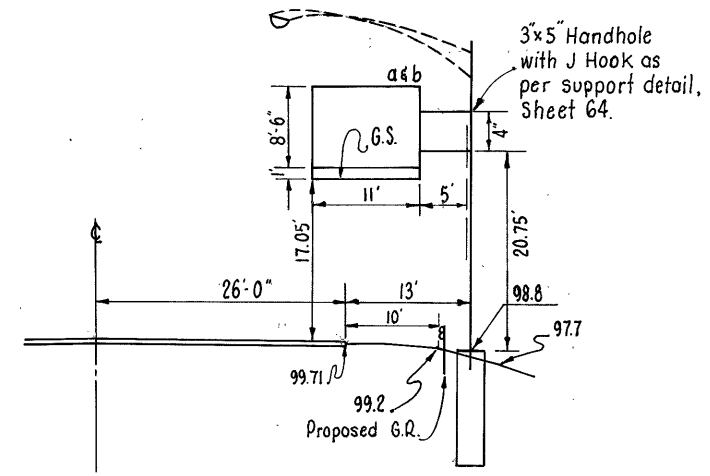
3



STA. 1286 + 50⁺ S.B. S.R. 58
STRUCTURAL MOUNTED SIGN SUPPORT
Sign: 13' x 7'-6" - 97.5 Sq. Ft.
Brackets: 3'-7" Long Type Ya
Spacing: 6" - 72" - 72" - 6"

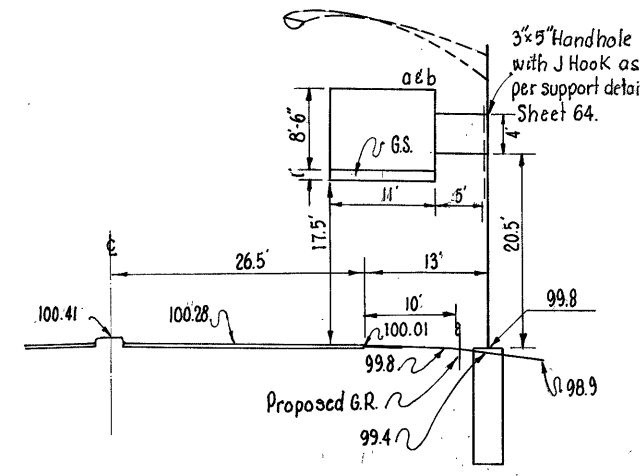
For Enclosure Mounting Bracket
Details, See Sheet No. 53

4



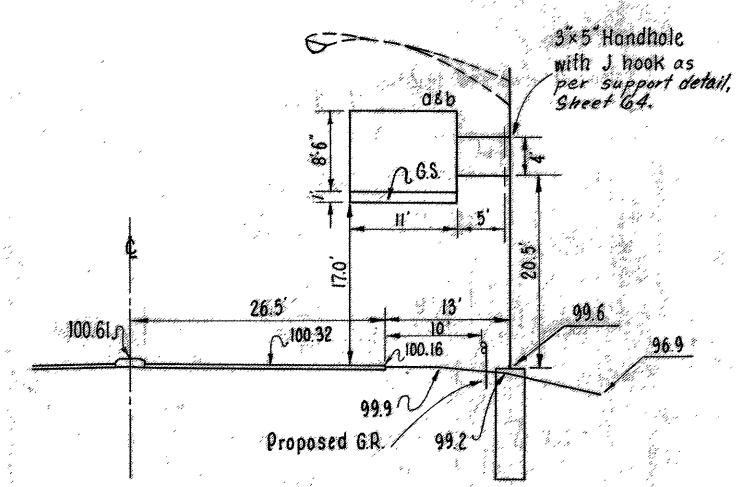
STA. 1288 + 69 S.B. S.R. 58
12.30 Des. # 3 Modified, 16' Arm, 32' Pole
Combination Support
Sign a & b: 11' x 9'-6" = 104.5 Sq. Ft.
Brackets: 2'-9"-6" Long - Type Ya
Spacing: 16 3/8" - 99 3/8" - 16 1/4"

9



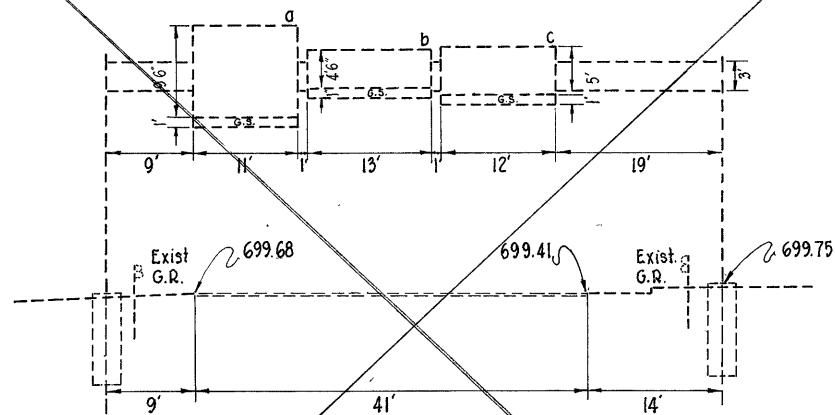
STA. 46 + 54 N.B. MIDDLE RIDGE ROAD
12.30 Des. # 3 Modified, 16' Arm, 32' Pole
Combination Support
Sign a & b: 11' x 9'-6" = 104.5 Sq. Ft.
Brackets: 2'-9"-6" Long - Type Ya
Spacing: 16 3/8" - 99 3/8" - 16 1/4"

10



STA. 54 + 72 S.B. MIDDLE RIDGE ROAD
12.30 Des. # 3 Modified, 16' Arm, 32' Pole
Combination Support
Sign a & b: 11' x 9'-6" = 104.5 Sq. Ft.
Brackets: 2'-9"-6" Long - Type Ya
Spacing: 16 3/8" - 99 3/8" - 16 1/4"

23



Sta. 123+00 N.B. SR. 57
7.4 Des. #1 64' Span

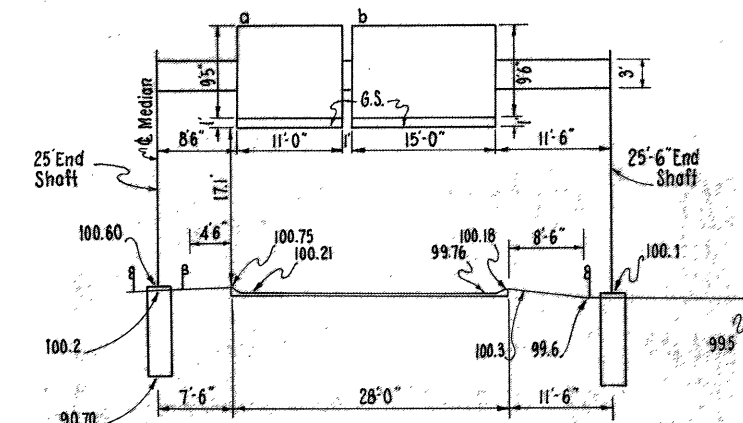
Sign a : 11' x 10' 6" Sign b : 13' x 5' 6" Sign c : 12' x 6"
 Brackets: 2 - 10' 6" Long Brackets: 3 - 5' 6" Long Brackets: 3 - 6" Long
 Spacing: 16 3/8" 99 3/8" 16 1/4" Spacing: 6' 72" 72' 6" Spacing: 6' 66" 66' 6"

22

FED. RD. DIVISION	STATE	PROJECT	51 103
2	OHIO		

LOR-2-6.62
LOR-90-11.96

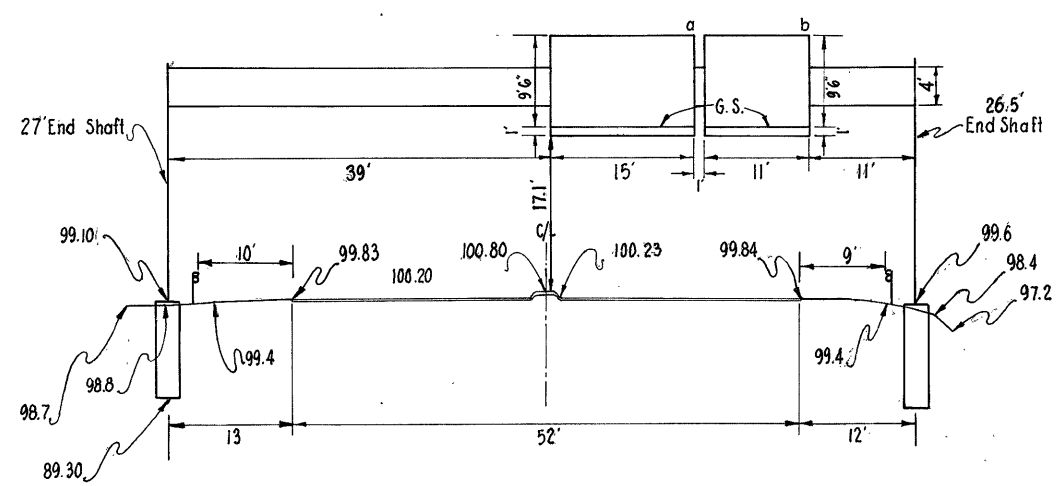
CALC. BY: C.N. 1/73
CHKD. BY: P.D.G. 1/73



Sta. 83+30 N.B. S.R. 57
7.4 Des. #1 Modified 47' Span

Sign a: 11' x 10' 6" = 115.5 Sq. Ft. Sign b: 15' x 10' 6" = 157.5 Sq. Ft.
 Brackets: 2 - 10' 6" Long Type Ya Brackets: 3 - 10' 6" Long Type Ya
 Spacing: 16 3/8" 99 3/8" 16 1/4" Spacing: 14 3/8" 75 3/8" 75 3/8" 14 3/8"

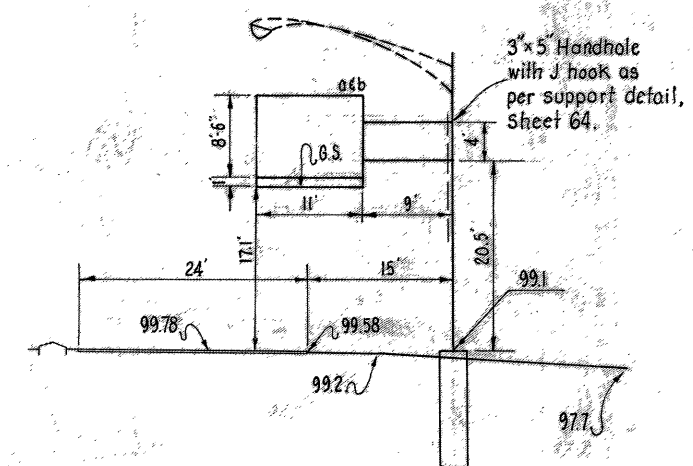
27



Sta. 180+10 S.B. SR. 57
7.4 Des. #2 Modified 77' Span

Sign a: 15' x 10' 6" = 157.5 Sq. Ft. Sign b: 11' x 10' 6" = 115.5 Sq. Ft.
 Brackets: 3 - 10' 6" Long Type Ya Brackets: 2 - 10' 6" Long Type Ya
 Spacing: 14 3/8" 75 3/8" 75 3/8" 14 3/8" Spacing: 16 3/8" 99 3/8" 16 1/4"

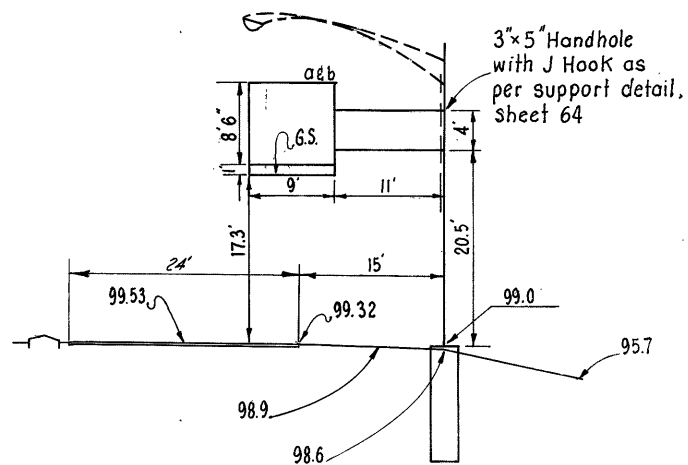
34



Sta. 91+90 W.B. S.R. 254
12.30 Des. #4 Modified 20' Arm, 32' Pole
Combination Support

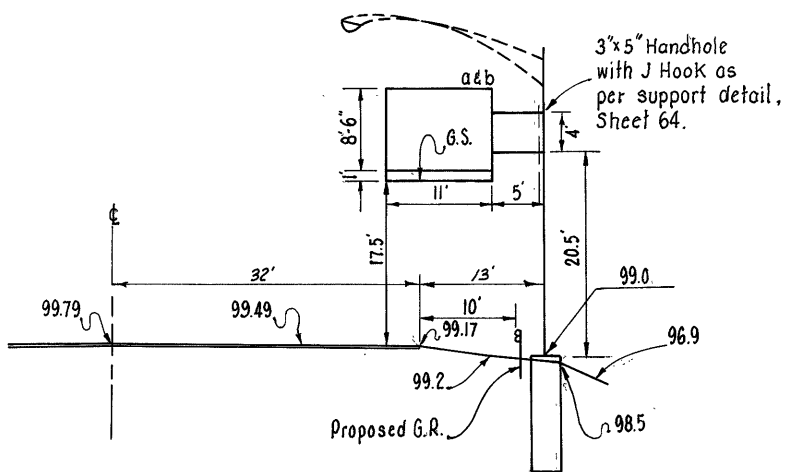
Sign a: 11' x 9' 6" = 104.5 Sq. Ft.
 Brackets: 2 - 9' 6" Long Type Ya
 Spacing: 16 3/8" 99 3/8" 16 1/4"

35



Sta. 82+35 E.B. SR 254
 12.30 Des. # 4, Modified, 20' Arm, 32' Pole
 Combination Support
 Sign a & b: 9' x 9' 6" = 85.5 Sq. Ft.
 Brackets: 2- 9' 6" Long Type Ya
 Spacing: 16 3/8" - 75 3/8" - 16 1/4"

42



Sta. 227+10 E.B. SR 611
 12.30 Des. # 3, Modified, 16' Arm, 32' Pole
 Combination Support
 Sign a & b: 11' x 9' 6" = 104.55 Sq. Ft.
 Brackets: 2- 9' 6" Long Type Ya
 Spacing: 16 3/8" - 99 3/8" - 16 1/4"

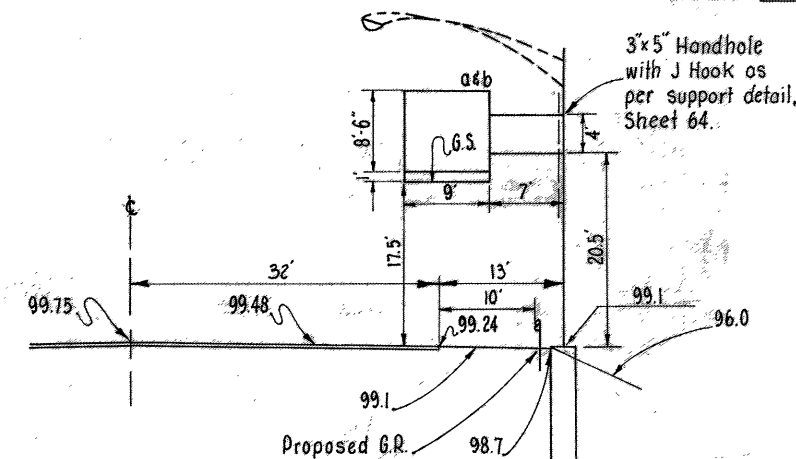
41

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

52
103

LOR-2-6.62
 LOR-90-11.96

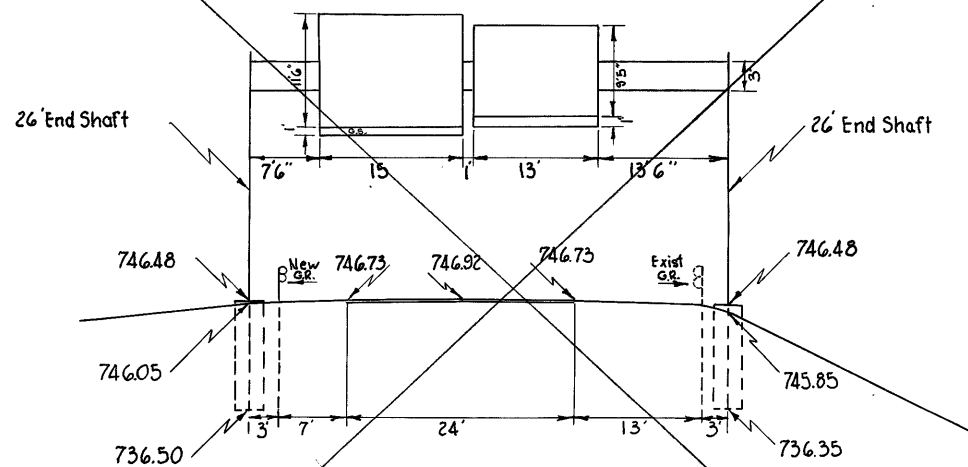
CALC. BY: C.N. 1/73
 CHKD BY: R.D.G. 1/73



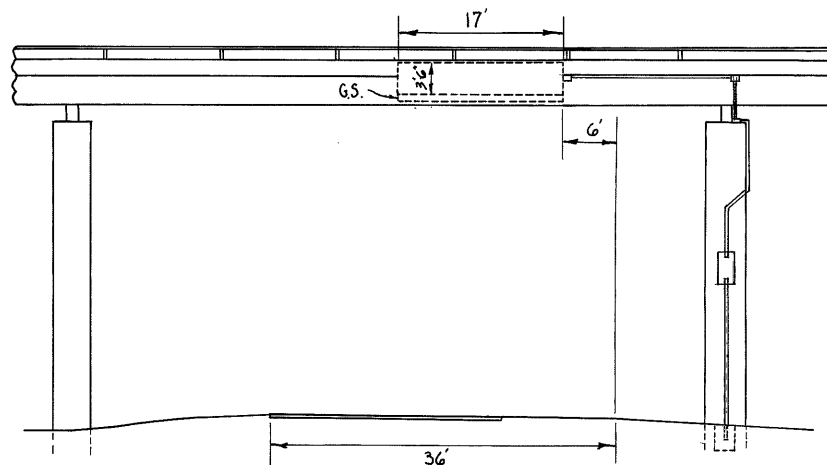
Sta. 217+80 W.B. SR 611
 12.30 Des. # 3, Modified, 16' Arm, 32' Pole
 Combination Support
 Sign a & b: 9' x 9' 6" = 85.5 Sq. Ft.
 Brackets: 2- 9' 6" Long Type Ya
 Spacing: 16 3/8" - 75 3/8" - 16 1/4"

24

Future - By Others



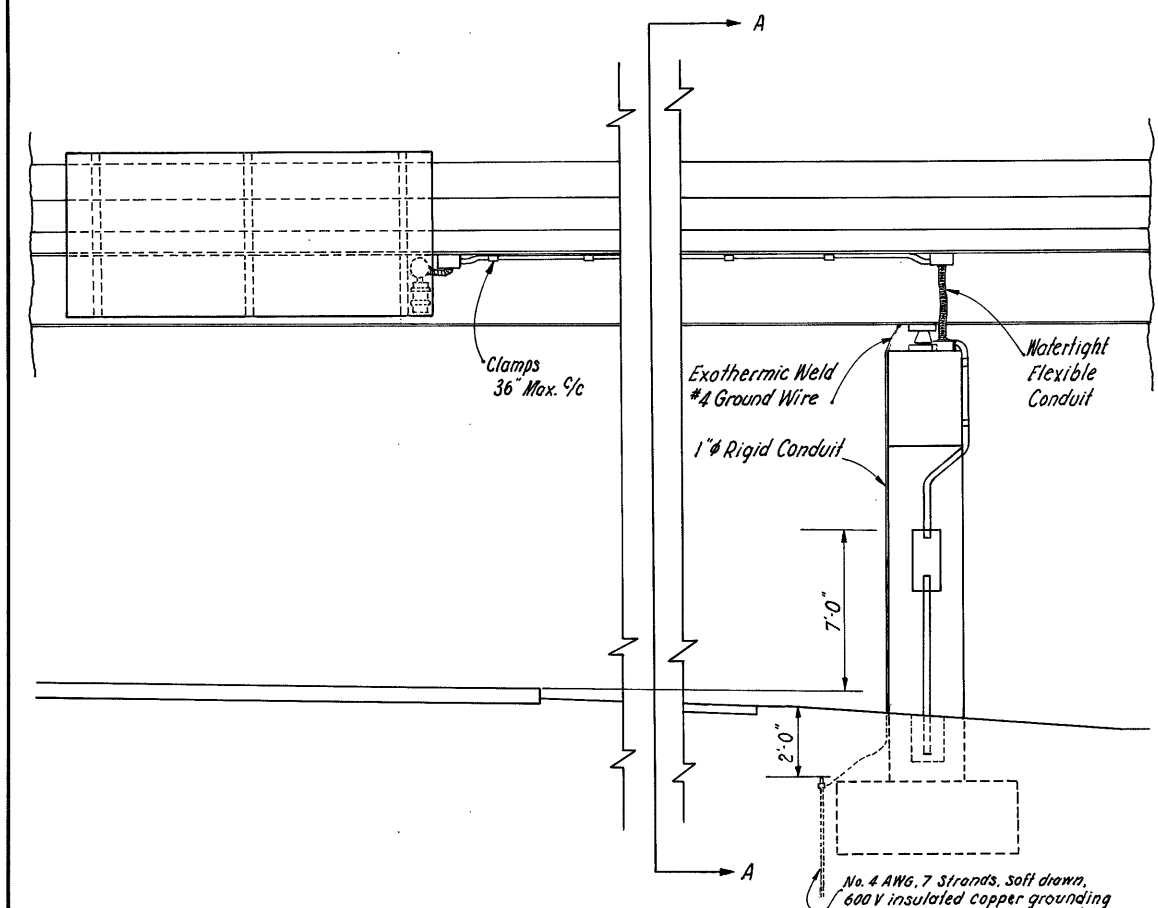
Sta. 610+00 WB IR 90
 7.4 Des. # 1 Mod. 50' Span
 a. 15 x 12' 6" 187.5"
 Brackets: 3 12' 6" Long
 Spacing: 14 3/8" - 75 3/8" - 14 3/8"
 b. 13 x 10' 6" 136.5"
 Brackets: 3 10' 6" Long
 Spacing: 6" - 72" - 72" - 6"



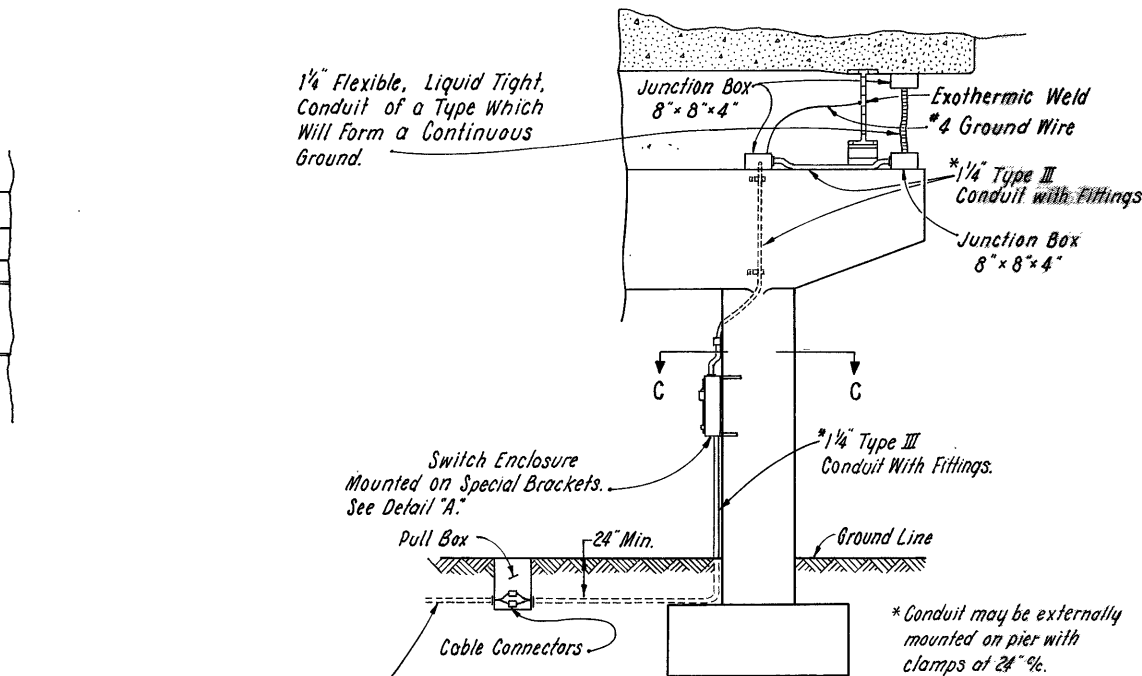
SR 57 Sta. 128+25 SB.

For Enclosure Mounting Bracket
 Details See Sheet No. 53

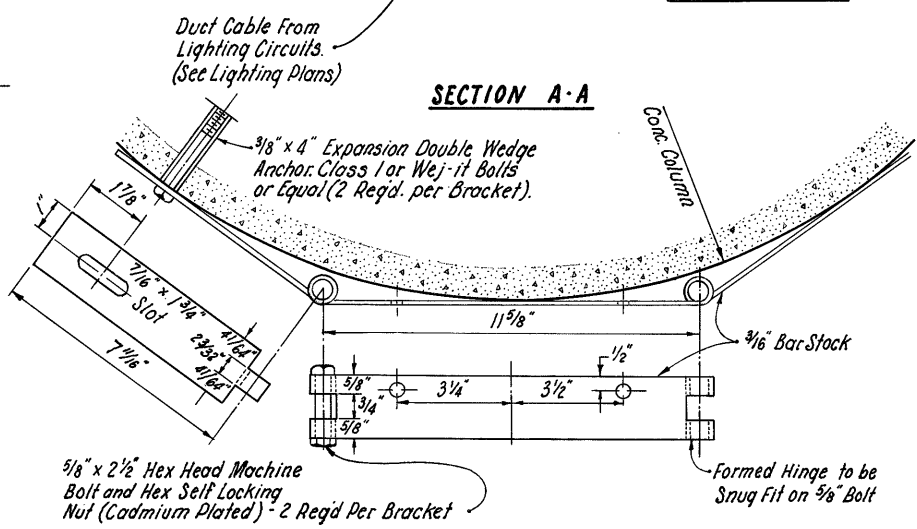
LOR-2-6.62
LOR-90-11.96



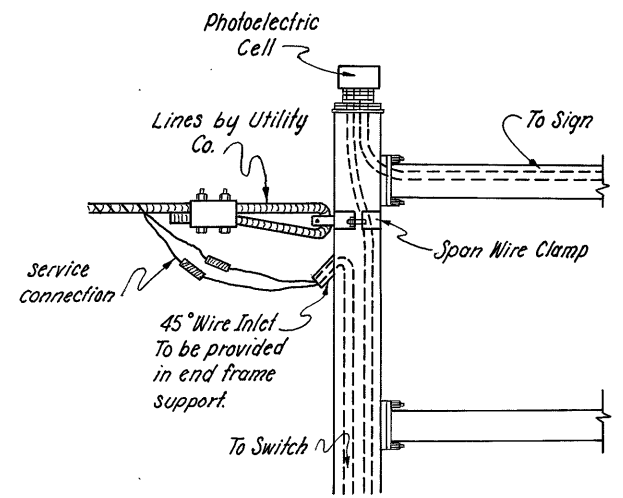
FRONT ELEVATION



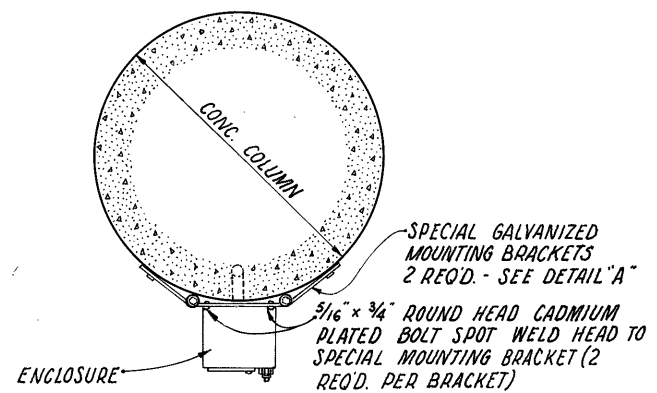
SECTION A-A



DETAIL "A"
ENCLOSURE MOUNTING BRACKET
(2 REQUIRED)

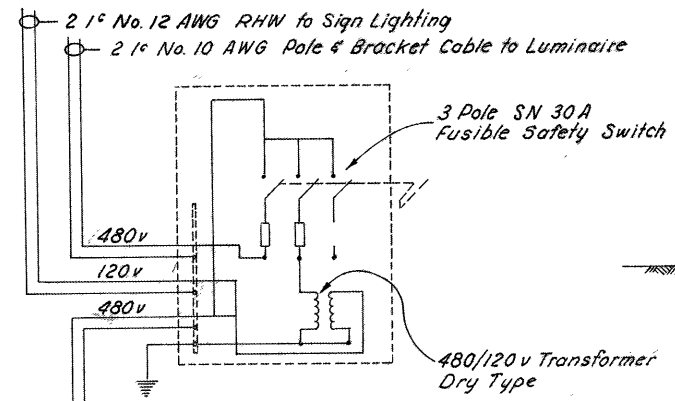


OVERHEAD SERVICE INSTALLATION DETAIL

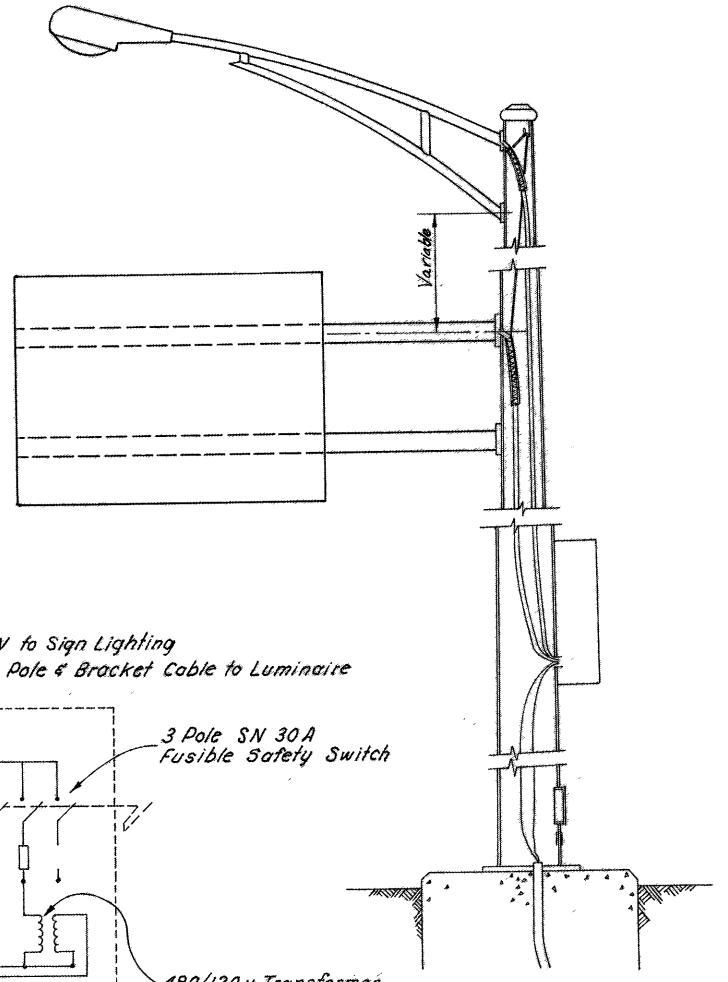


SECTION C-C
TURNED 90°

For Sign Mounting Details, Including Fixture Support Arm Details, Wiring Details, Including Junction Boxes, Conduit, Condulets and all Related Parts see Sheet 63, 64 and 65 (816 S.P.L.)



WIRING FOR COMBINATION LIGHT AND SIGN POLE

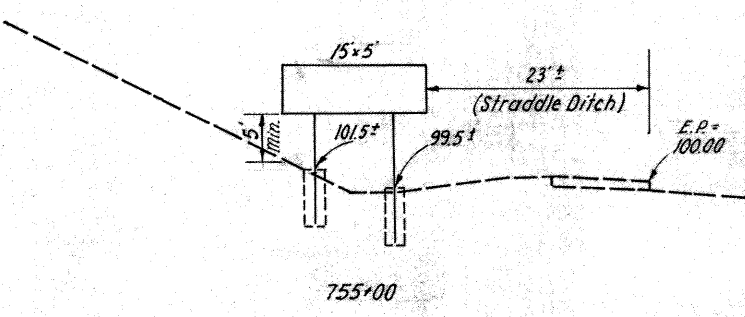
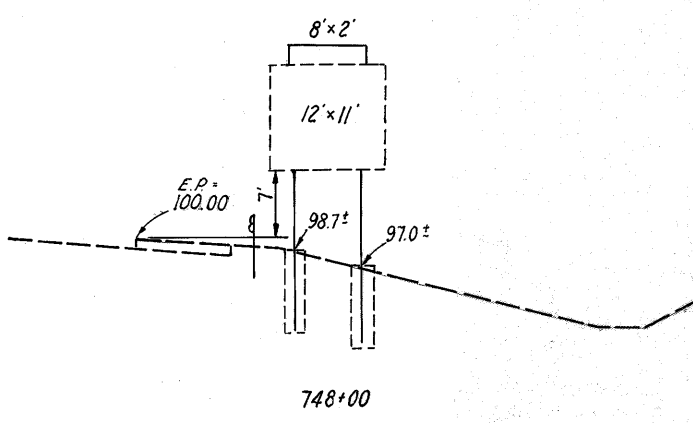
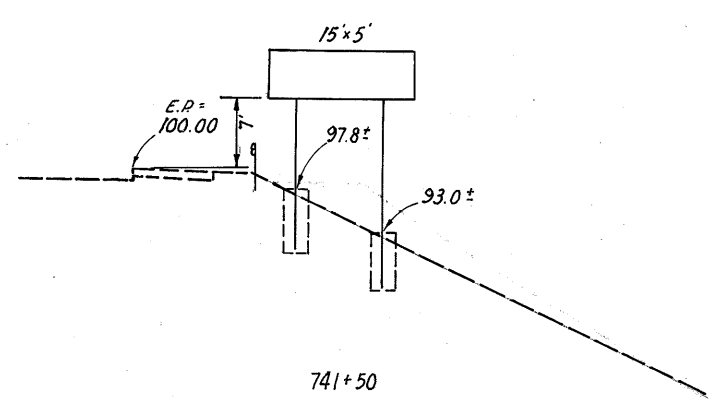
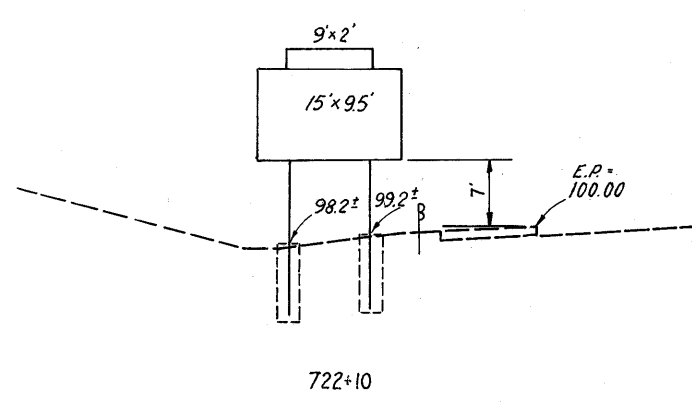
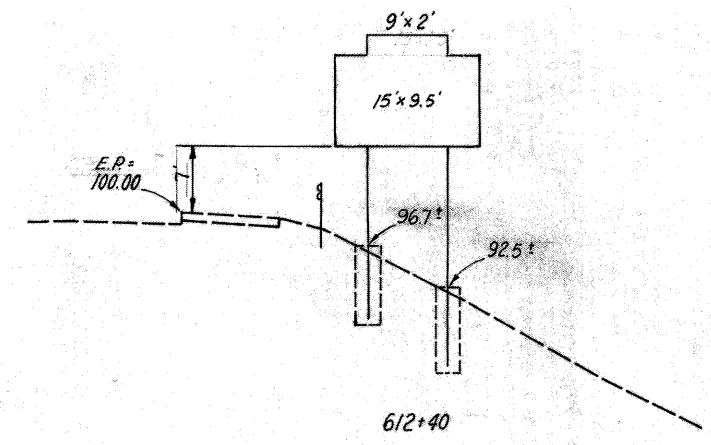
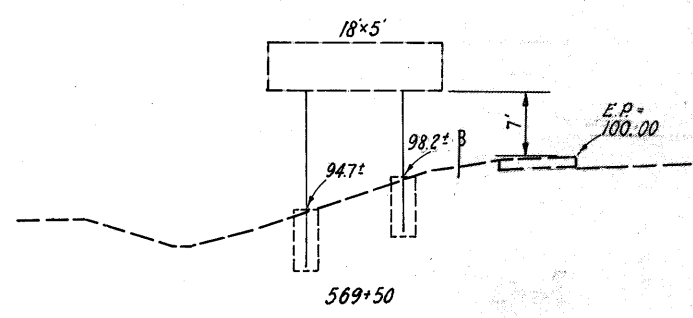
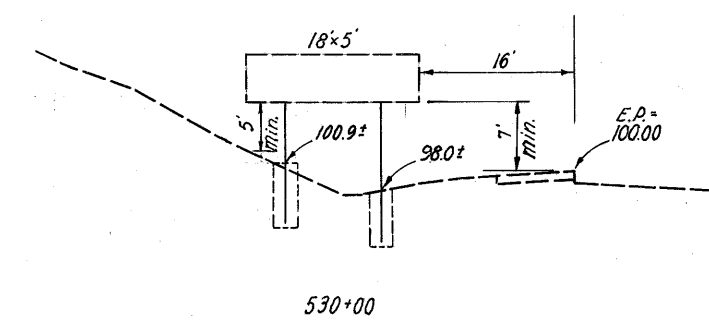
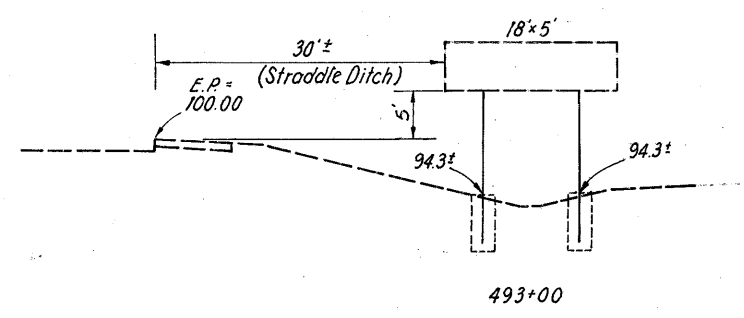
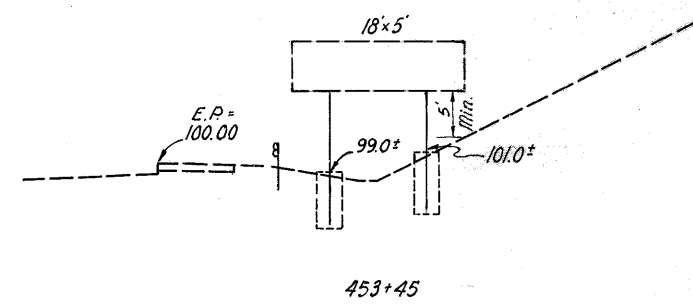
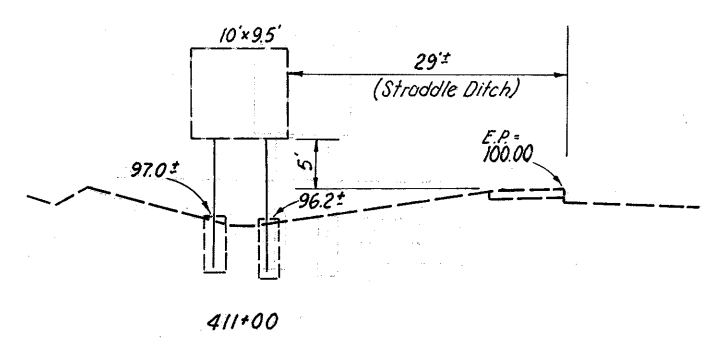
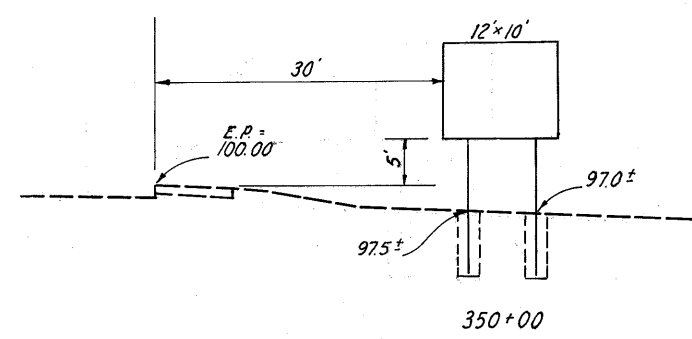


FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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103

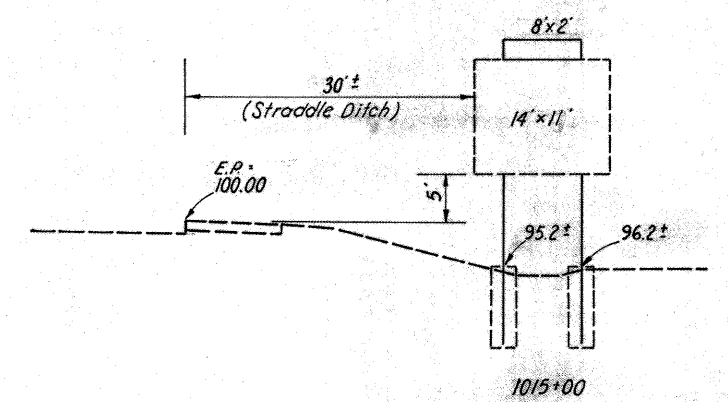
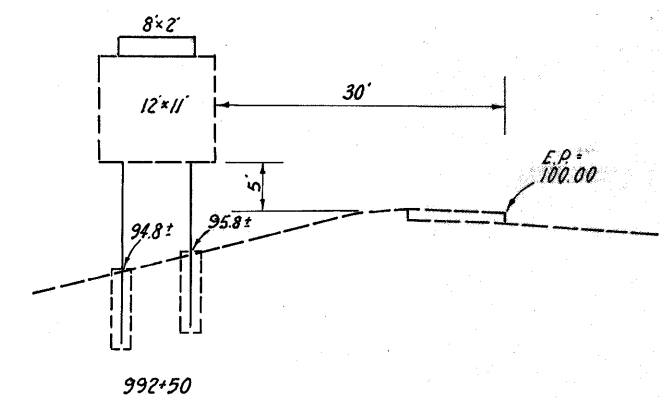
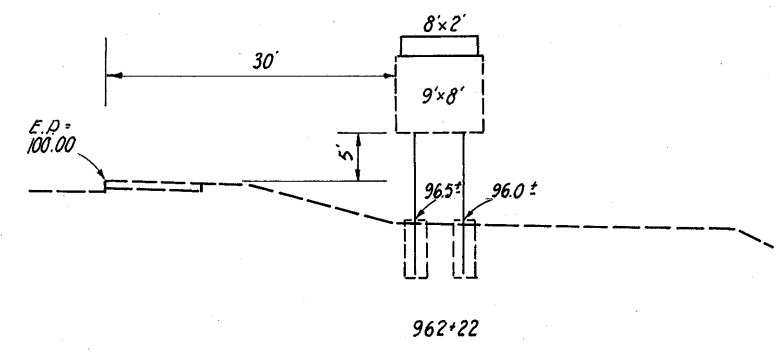
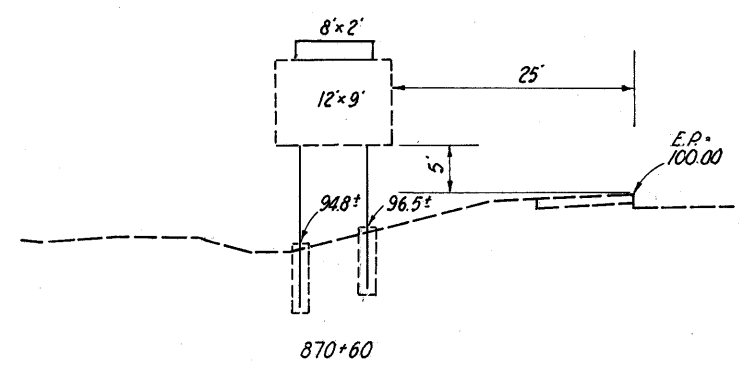
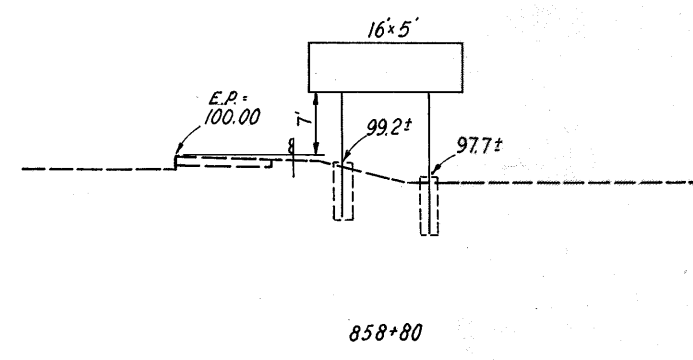
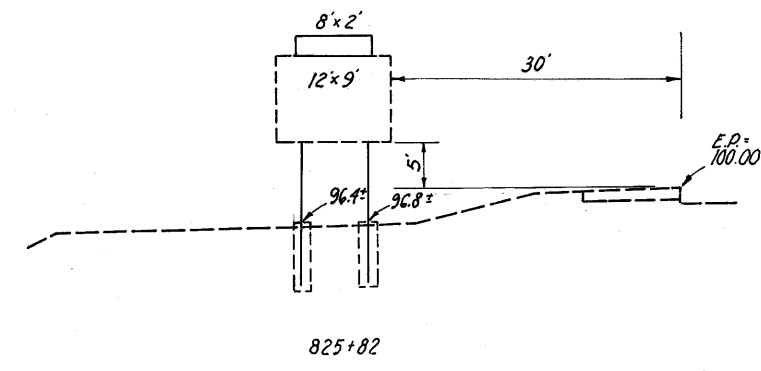
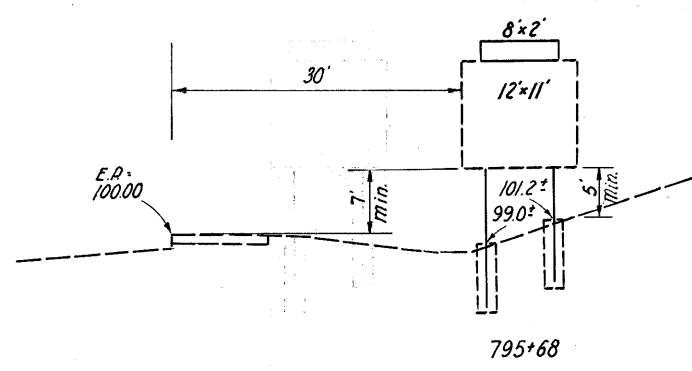
LOR-2-6.62
LOR-90-11.96

CALC. BY: C.N. 1/73
CHKD. BY: R.D.Z. 1/73



LOR-2-6.62
LOR-90-11.96

CALC. BY: C.N. 1/73
CHKD. BY: P.D.V. 1/73



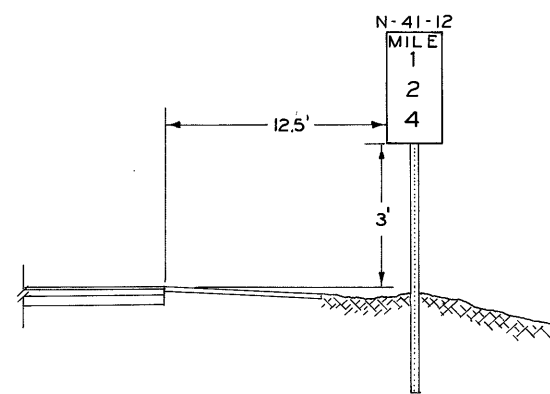
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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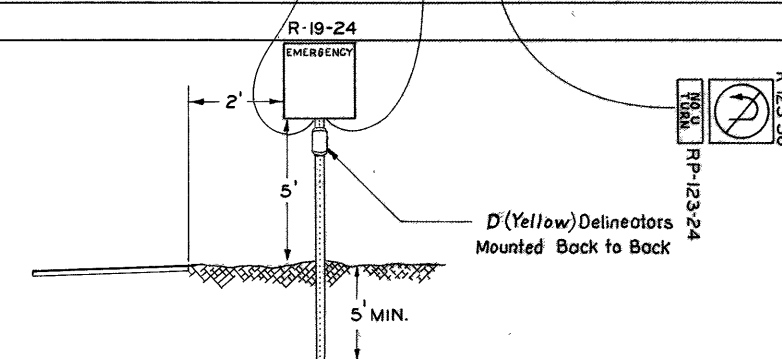
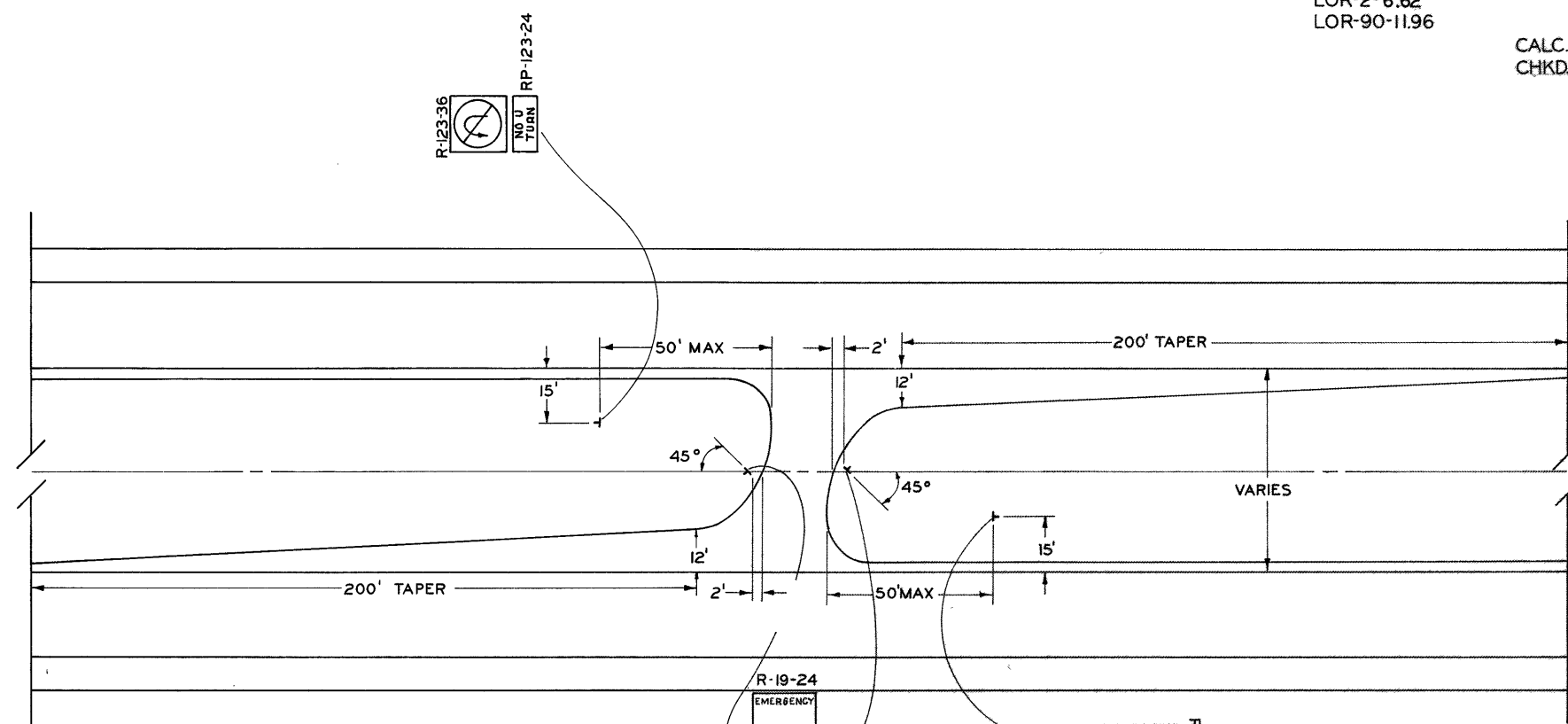
LOR-2-6.62
LOR-90-11.96

CALC. BY: C.N. 1/73
CHKD. BY: P.D. 1/73

12' POST - 3 Digit
11' POST - 2 Digit
10' POST - 1 Digit

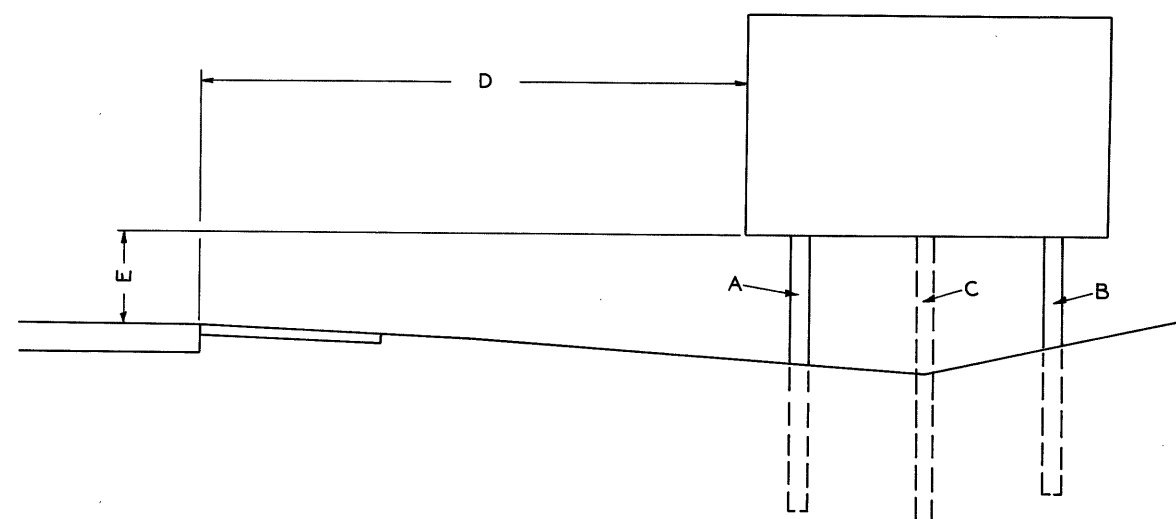


MILE MARKER PLACEMENT

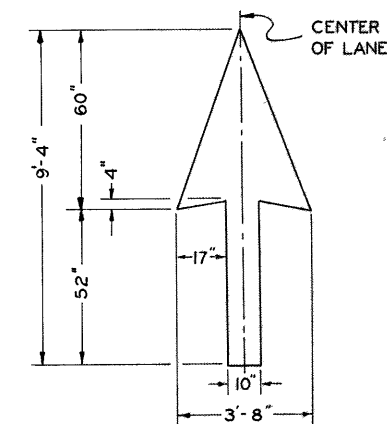


TYPICAL MEDIAN CROSSOVER SIGN PLACEMENT

SIGN SUPPORT LOCATION DETAIL

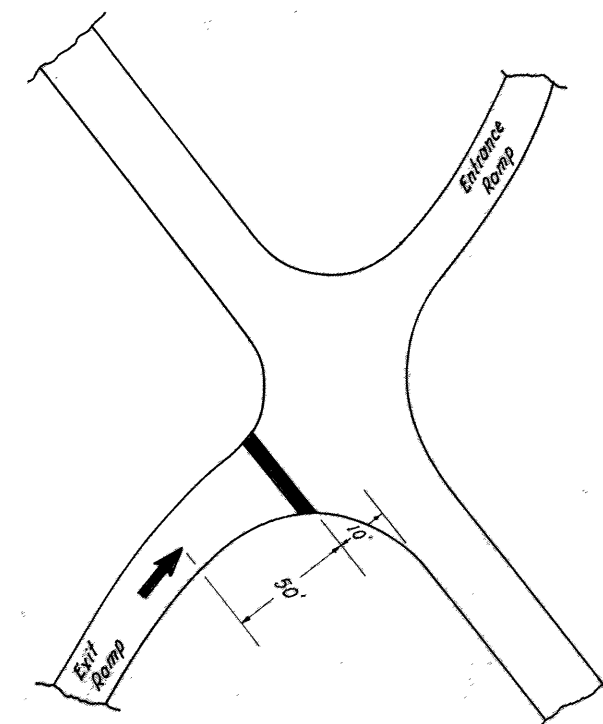


DETAIL "A"
TYPICAL DETAIL FOR SIGN OFFSETS AND SUPPORT LENGTHS. WHEN DIMENSIONS ARE NOT LISTED THE SIGNS ARE LOCATED AS PER TFS-1 DRAWING SHEET 60. FOR ADDITIONAL DETAILS ON SIGNS OFFSET GREATER THAN NORMAL SEE SHEETS 54 & 55.

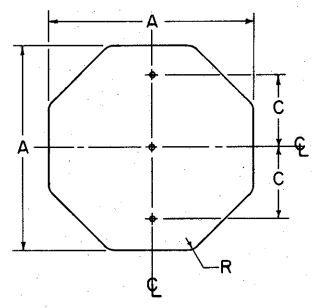


LANE ARROW

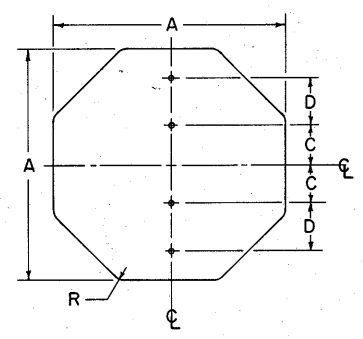
PAVEMENT MARKING DETAILS



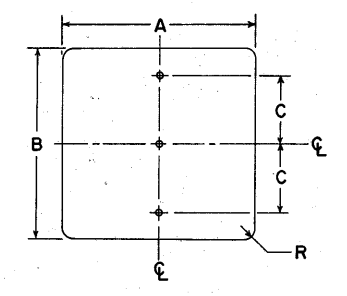
LOR-2-6.62
LOR-90-11.96



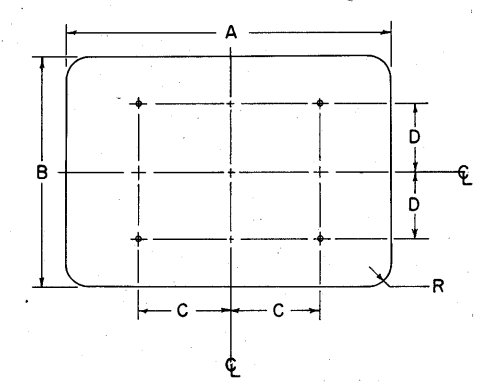
A	C	R	GAUGE
30	8	1 1/2	.080
36	8	1 1/2	.080



A	C	D	R	GAUGE
48	8	10	1 1/2	.100

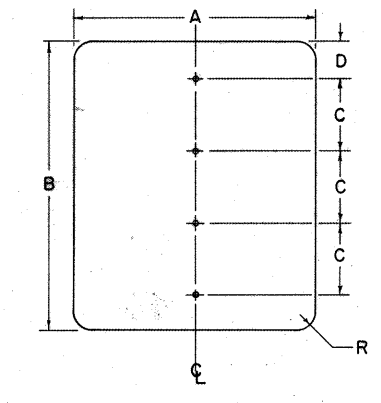


A	B	C	R	GAUGE
24	30	8	1 1/2	.063
24	48	15	1 1/2	.100
30	36	11	1 1/2	.080
30	42	12	1 1/2	.080
36	36	11	1 1/2	.080
36	42	15	1 1/2	.080
36	48	15	1 1/2	.080
48	24	10	3	.100
48	36	13	3	.100

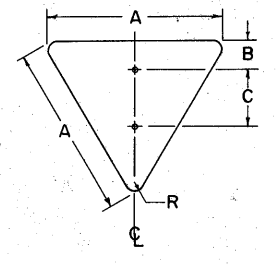


A	B	C	D	R	GAUGE
48	48	22	16	3	.100
48	60	22	22	3	.100

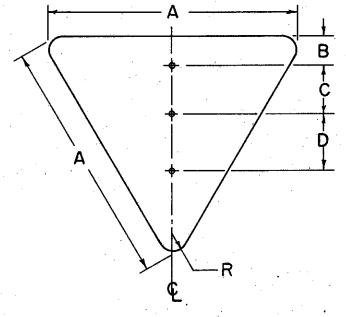
SPEED LIMIT SIGNS ON TWO SUPPORTS



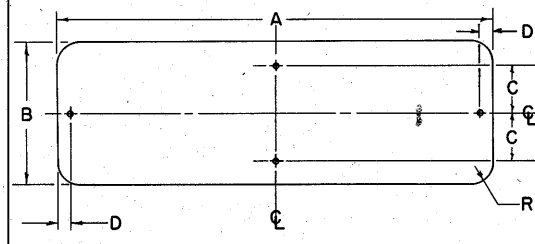
A	B	C	D	R	GAUGE
48	48	12	6	3	.100
48	60	15	7 1/2	3	.100



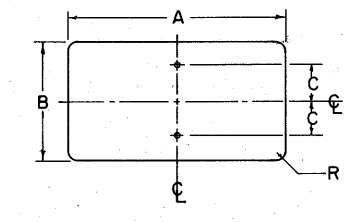
A	B	C	R	GAUGE
36	3	16	2 1/2	.080



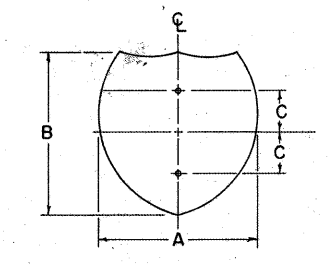
A	B	C	D	R	GAUGE
48	4	10	15	3	.100
60	5	10	15	4	.100



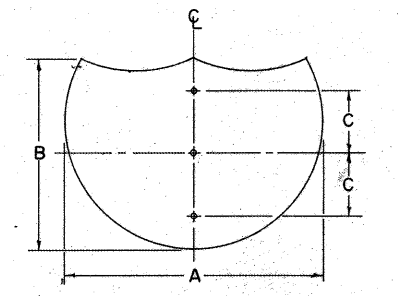
A	B	C	D	R	GAUGE
36	12	4	1	1 1/2	.080
72	12	-	16	1 1/2	.100
60	12	-	13	1 1/2	.100



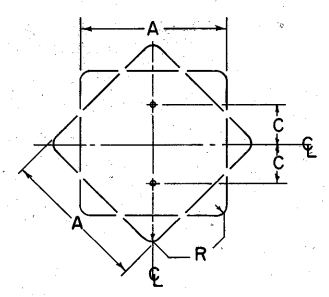
A	B	C	R	GAUGE
12	6	1 1/2	1 1/2	.063
20	15	6	1 1/2	.063
24	12	4 1/2	1 1/2	.063
24	18	7 1/2	1 1/2	.063
8	26	8	1	.063
36	18	7 1/2	1 1/2	.080



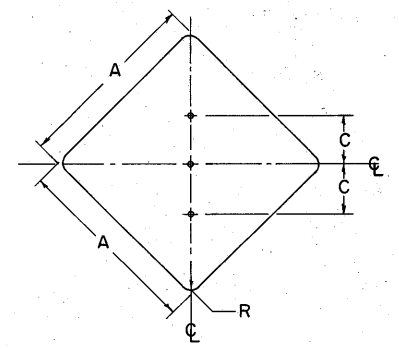
A	B	C	GAUGE
24	24	8	.063
30	24	8	.080



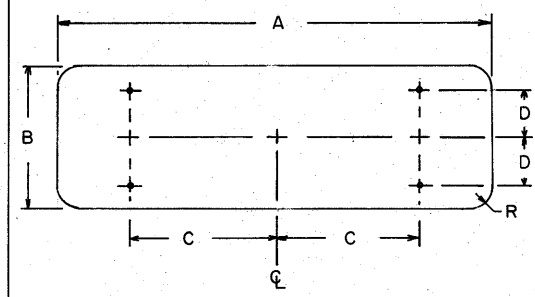
A	B	C	GAUGE
36	36	11	.080
48	36	11	.100



A	C	R	GAUGE
18	7 1/2	1 1/2	.063
24	8	1 1/2	.063
30	8	1 1/2	.080

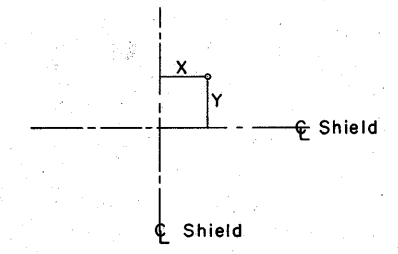


A	C	R	GAUGE
36	12	1 1/2	.080
48	14	3	.100



A	B	C	D	R	GAUGE
72	18	20	6	1 1/2	.100
72	24	20	8	1 1/2	.100
60	30	17	10	1 1/2	.100
96	18	27	6	1 1/2	.100

Location of holes on "Demountable Shields"
(attached to guide signs)



SIZE	NO. HOLES	X	Y
(26) 24X24	4	7	7
30X24	4	8	8
(39) 36X36	4	10	10
		0	10
48X36	6	15	10

For notes on fastening see drawing for miscellaneous "Signing Items" sheet.

NOTES:

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

MATERIAL

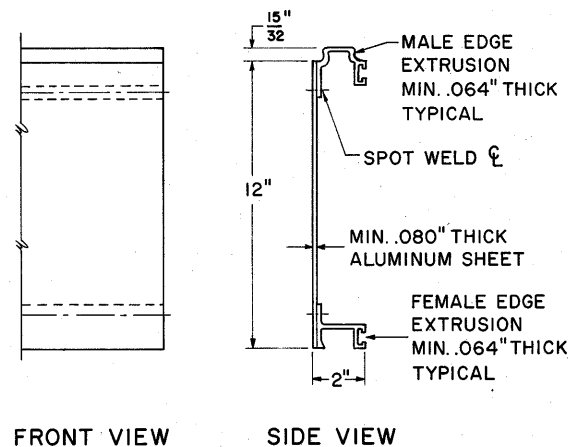
FLAT SIGN BLANKS SHALL BE FURNISHED IN ALUMINUM ALLOY 6061-T6, (ASTM-B209, GS11A-T6) WITH MILL FINISH.

BOLT HOLES

THE BOLT HOLES SHALL BE 3/8" IN DIAMETER, AND MAY BE DRILLED, BLANKED OR PUNCHED TO FINISHED SIZE.

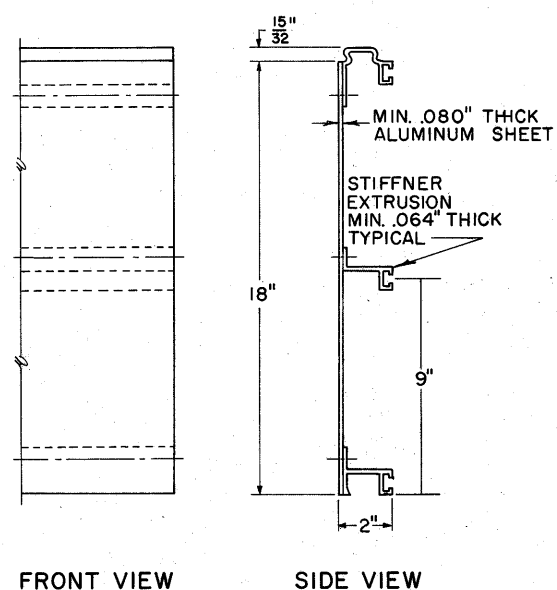
BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS	
SIGN BLANK DETAILS	SBD
APPROVED _____	ENGINEER OF TRAFFIC
	DATE 4-14-67 5-10-68 10-1-68 5-27-69 6-18-69

12" EXTRUSHEET PANEL



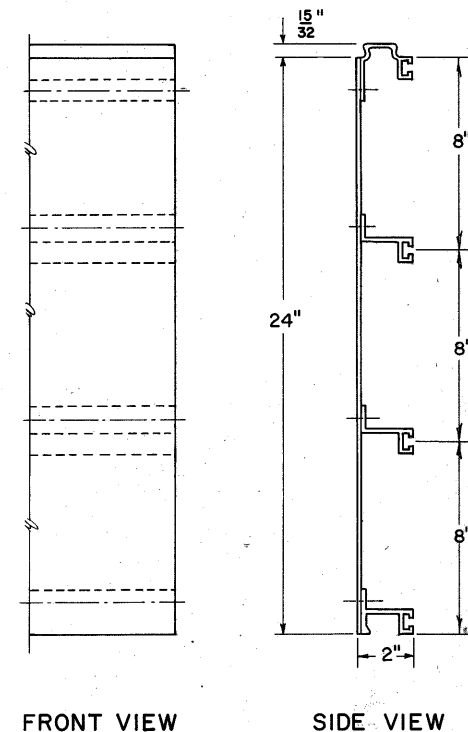
FRONT VIEW SIDE VIEW

18" EXTRUSHEET PANEL



FRONT VIEW SIDE VIEW

24" EXTRUSHEET PANEL



FRONT VIEW SIDE VIEW

NOTES:

EXTRUSHEET PANELS SHALL BE ALUMINUM; SPOT WELDING AND ALL MATERIALS SHALL CONFORM WITH SUPPLEMENTAL SPECIFICATION

COMBINATIONS OF 12", 18", AND 24" PANELS ARE USED TO ATTAIN REQUIRED SIGN HEIGHT.

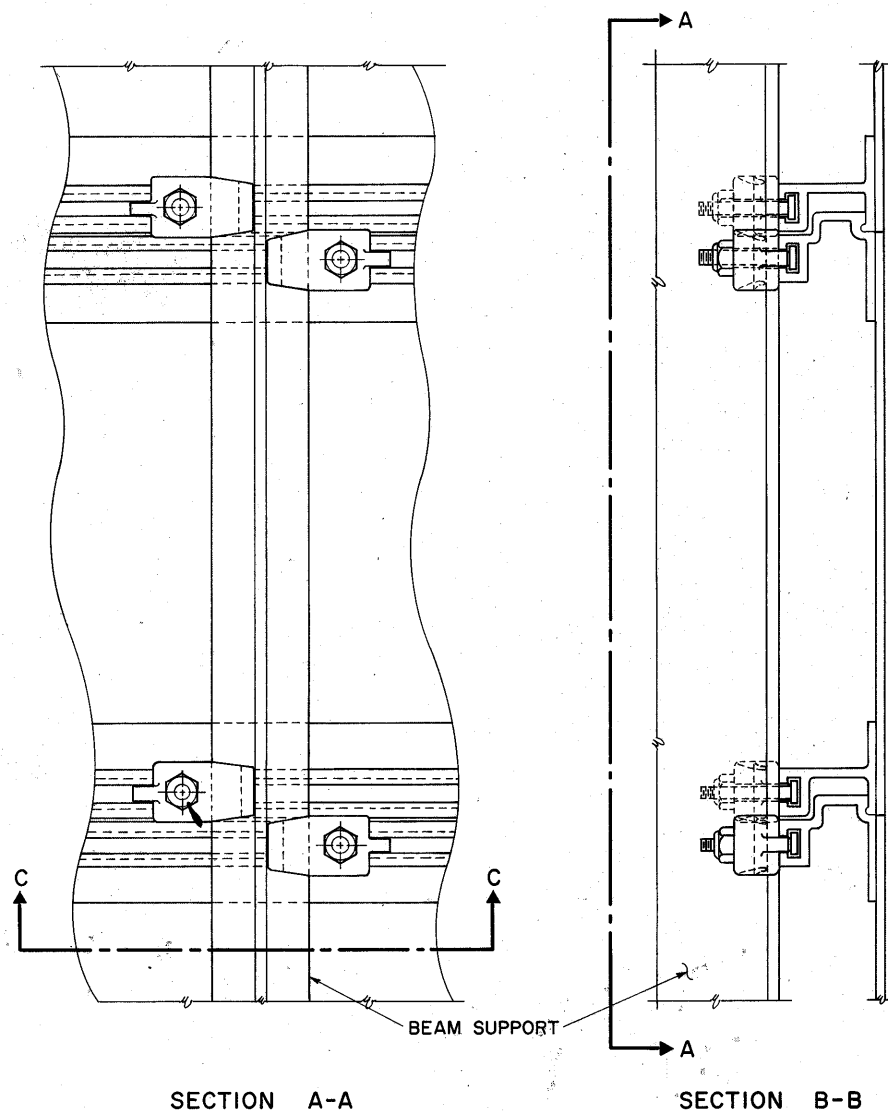
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN WITH NO SPLICES.

PANELS SHALL BE INTERLOCKED AND ERECTED WITH THE MALE EXTRUSION LOCATED AT THE TOP EDGE OF THE SIGN.

EXTRUSHEET PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND ON BOTH SIDES AT TOP AND BOTTOM EDGE OF SIGN.

THE PANELS SHALL BE DESIGNED TO WITHSTAND A WIND LOAD OF 35 POUNDS PER SQUARE FOOT, IN ACCORDANCE WITH THE A.A.S.H.O. SPECIFICATION FOR DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS.

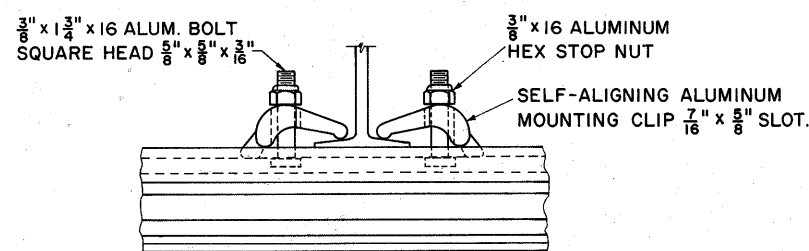
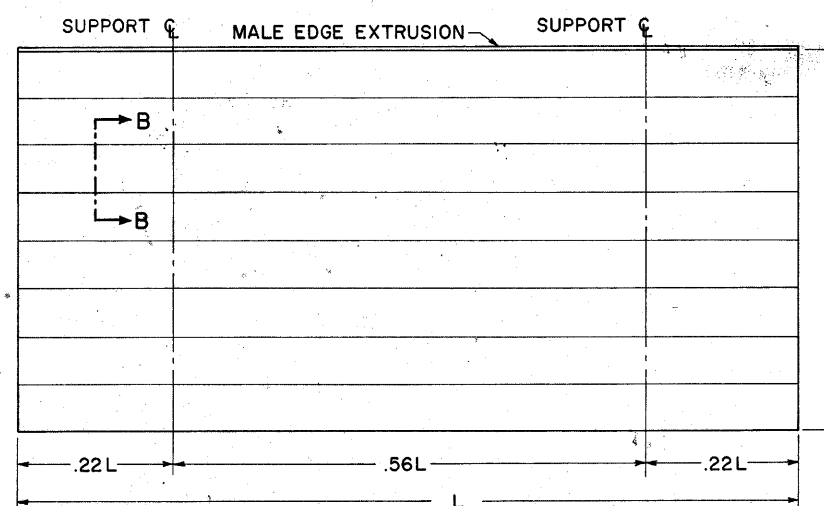
THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 19'-0".
THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 29'-0".



SECTION A-A

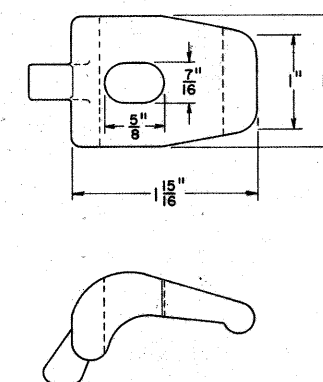
SECTION B-B

GENERAL ARRANGEMENT



SECTION C-C

CLIP DETAIL



SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING CENTER TO CENTER BETWEEN ROWS	
	4 INCH	10 INCH
12 INCH	4 INCH	10 INCH
18 & 24 INCH	4 INCH	8 INCH

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ALUMINUM
EXTRUSHEET
PANEL SIGN

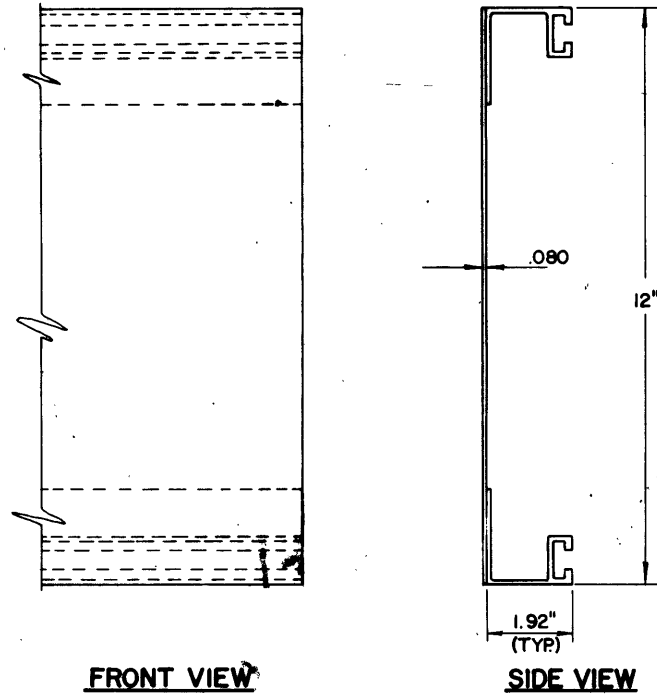
ECD
I

DATE
9-25-63
5-19-64
10-21-65
5-24-67

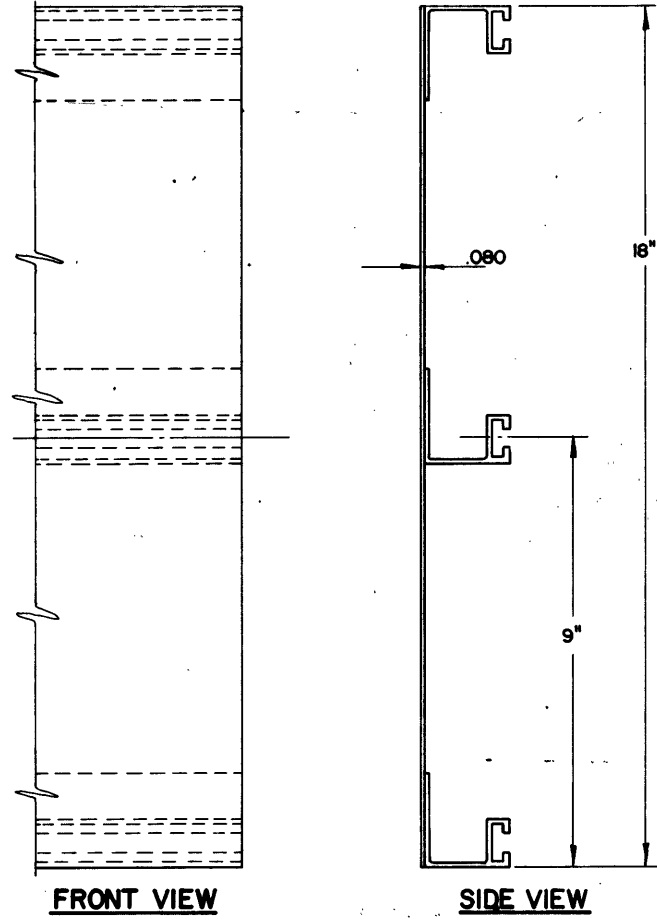
APPROVED *André J. Taylor*
ENGINEER OF TRAFFIC

LOR-2-6.62
LOR-90-11.96

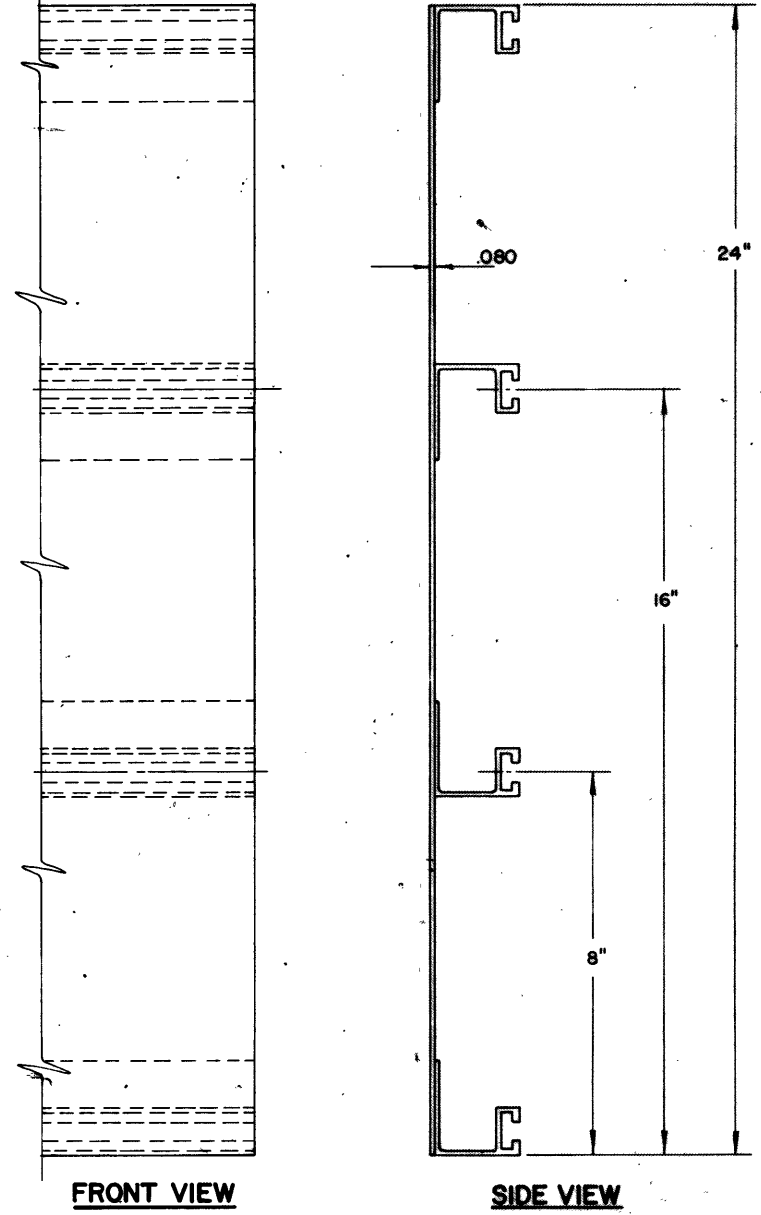
12" BOLTED-EXTRUSHEET PANEL



18" BOLTED-EXTRUSHEET PANEL



24" BOLTED-EXTRUSHEET PANEL



NOTES

EXTRU-SHEET PANELS SHALL BE ALUMINUM; SPOT WELDING, MATERIALS AND HARDWARE SHALL CONFORM WITH SPECIFICATION NO. 815.

COMBINATIONS OF 12", 18" AND 24" PANELS ARE TO BE USED TO ATTAIN REQUIRED SIGN HEIGHT.

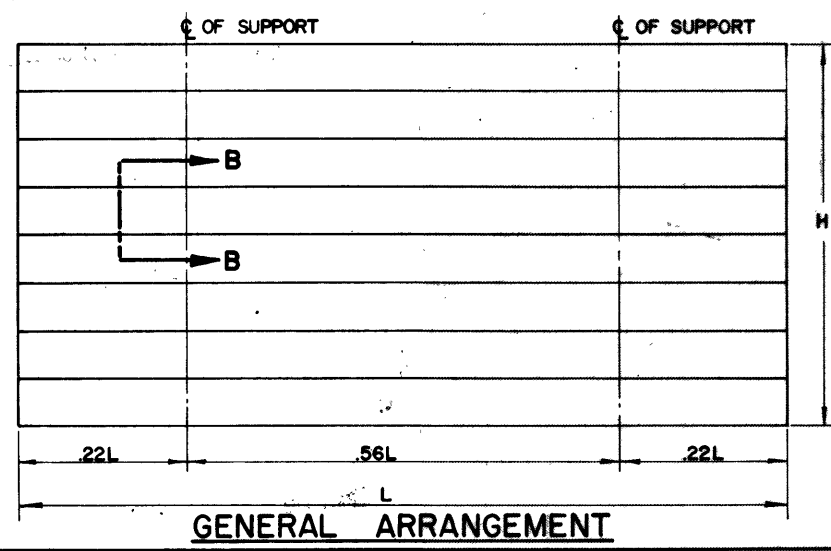
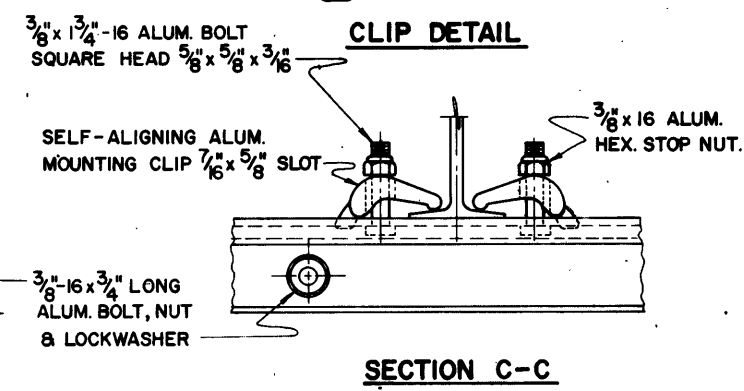
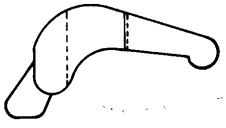
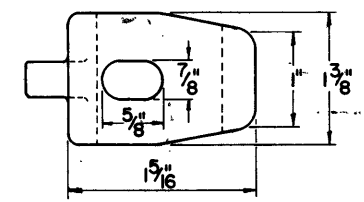
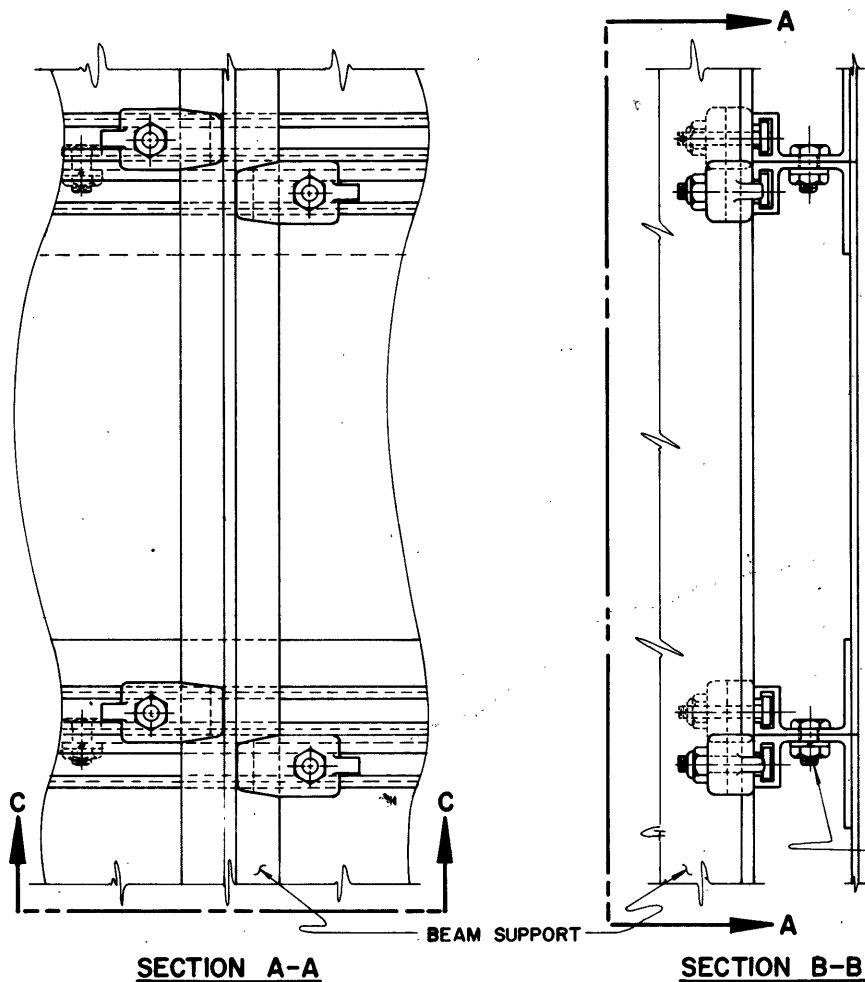
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN, WITH NO SPLICES.

THE PANELS SHALL BE ERECTED HORIZONTALLY AND BOLTED ON 24" CENTERS.

THE PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND BOTH SIDES AT TOP AND BOTTOM EDGES OF SIGN.

THE PANELS SHALL BE DESIGNED IN ACCORDANCE WITH THE A.A.S.H.O SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, BASE ON A WIND LOAD OF 35#/SQ. FT.

THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 24'-0".
THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 27'-0".



SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING CENTER TO CENTER BETWEEN ROWS	
	4 INCH	10 INCH
12 INCH	4 INCH	10 INCH
18 & 24 INCH	4 INCH	8 INCH

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ALUMINUM BOLTED EXTRUSHEET PANEL SIGN

APPROVED *Jud. C. Tashof*
ENGINEER OF TRAFFIC

ECD
2

DATE
10-14-65

NOTES

- THE NEAR EDGE OF ALL MAIN LINE SIGNS, EXCEPT GORE INSTALLATIONS, SHALL BE LOCATED TWO FEET (2') BACK OF GUARD RAIL FACE. THIS DIMENSION SHALL BE DETERMINED BY ROADWAY TYPICAL SECTION 8 USED WHETHER OR NOT GUARD RAIL IS PRESENT.
ON RAMP THE NEAR EDGE OF SIGNS SHALL BE LOCATED TWO FEET (2') BACK OF GUARD RAIL FACE. THIS DIMENSION WILL BE DETERMINED AND USED AS FOR MAIN LINE ABOVE.
ON APPROACHES THE NEAR EDGE OF SIGNS SHALL BE
(A) TWO FEET (2') BEHIND EXISTING GUARD RAIL
(B) TWO FEET (2') FROM THE EDGE OF PAVED OR TRAVELED SHOULDER WITH A MINIMUM OF 6' FROM EDGE OF ROADWAY PAVEMENT.

- POSTS PLACED IN CONCRETE MEDIANS SHALL BE INSTALLED BY DRIVING THROUGH A 6" SLEEVE OR CORE DRILLED HOLE. THE HOLE SHALL BE FILLED WITH ASPHALTIC CONCRETE AFTER THE POST IS IN THE PROPER POSITION.

- HORIZONTAL BACK BRACING SHALL ALWAYS BE MOUNTED ON THE FRONT FLANGE OF THE SUPPORT EXCEPT WHERE SIGNS ARE MOUNTED BACK TO BACK. BACK BRACING SHALL NEVER EXTEND ABOVE TOP EDGE OF UPPERMOST SIGN PLATE AND SHALL BE ATTACHED TO SUPPORTS USING 5/16" GALVANIZED STEEL BOLTS.

- SCREWS, NUTS, AND WASHERS FOR SIGN ERECTION SHALL BE ALUMINUM EXCEPT AS NOTED ABOVE. 5/16" TRUSS HEAD SLOTTED MACHINE SCREWS WITH HEX. NUTS PLAIN AND LOCKWASHERS SHALL BE USED. PLAIN WASHERS SHALL BE 5/16" WIDE, USED ON SIGN FACE ONLY

- SIGN INSTALLATIONS SHALL BE PLACED SO THAT SUPPORTS ARE NOT PLACED IN DRAINAGE DITCHES.

- HORIZONTAL CLEARANCES SHOWN PERTAIN TO NON-CURBED SECTIONS. SECTIONS WITH UNMOUNTABLE CURB SHALL HAVE A HORIZONTAL CLEARANCE OF 2'-0" MINIMUM FROM THE CURB FACE TO THE SIGN EDGE.

- VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SIGNS ON ONE ASSEMBLY SHALL BE A MAXIMUM OF 2" AND A MINIMUM OF 1".

- GALVANIZED STEEL BEARING PLATES SHALL BE INCLUDED BETWEEN ALL SHEET ALUMINUM SIGNS ATTACHED TO VERTICAL SUPPORTS AT EACH SIGN BOLT LOCATION.

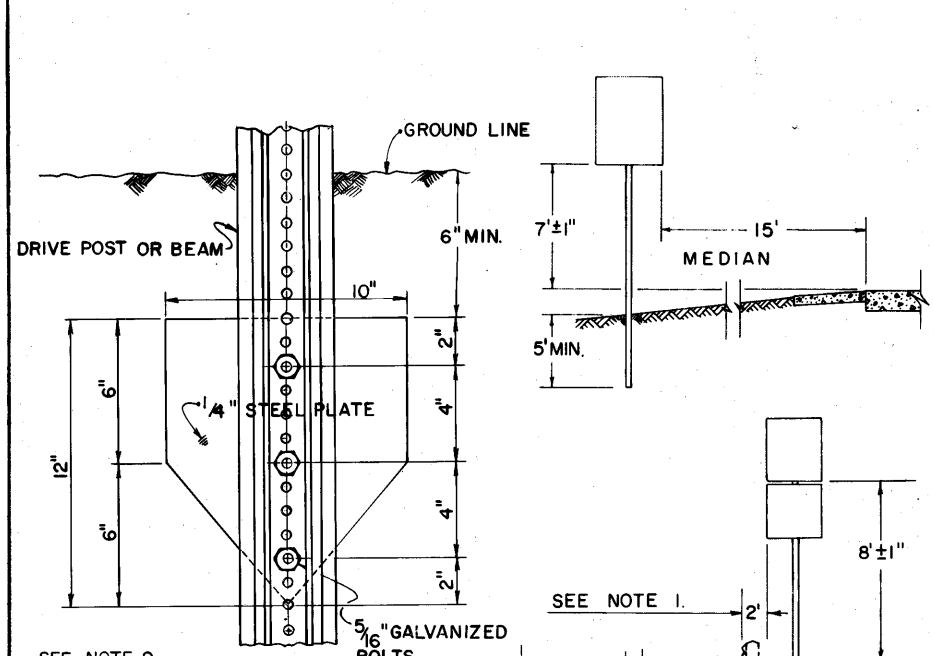
- SOIL PLATES SHALL BE ATTACHED TO ALL 6 LB. BEAMS BETWEEN POSTS AS DETAILED ON THIS SHEET, EXCEPT WHERE BEAMS ARE PLACED IN CONCRETE MEDIANS AS COVERED IN NOTE 2.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

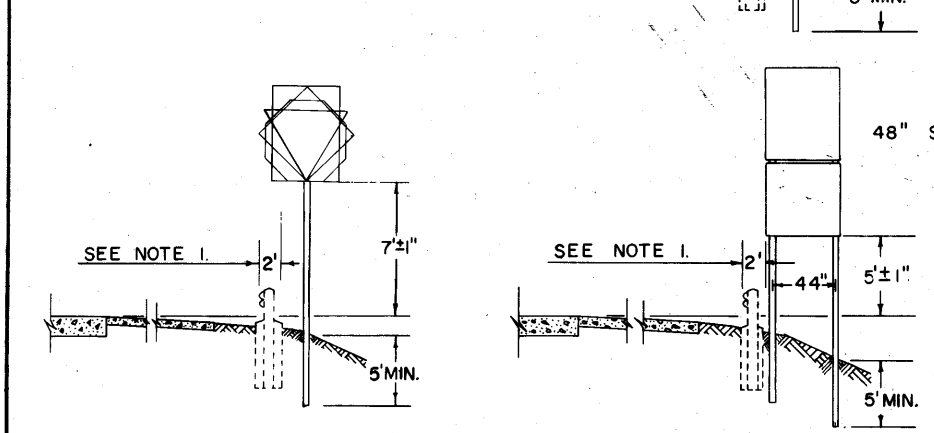
TYPICAL PLACEMENT OF SIGNS

APPROVED _____ ENGINEER OF TRAFFIC

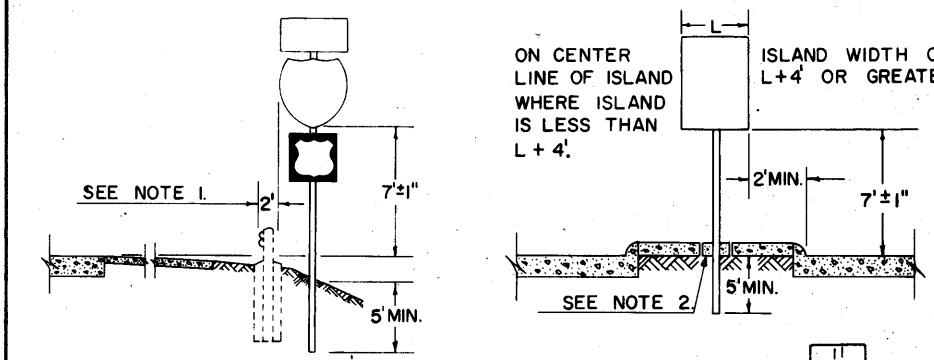
DATE	9-27-67
	7-12-68
	5-13-69
	3-5-71
	12-21-71
	3-7-72



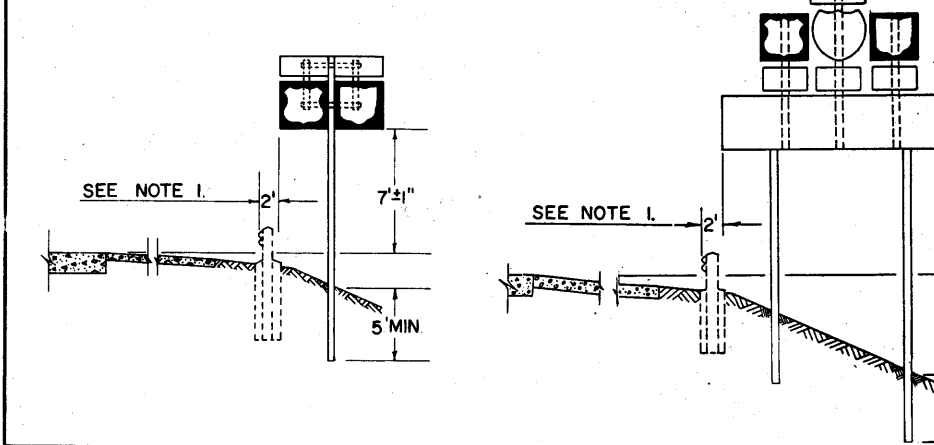
SOIL PLATE DETAIL



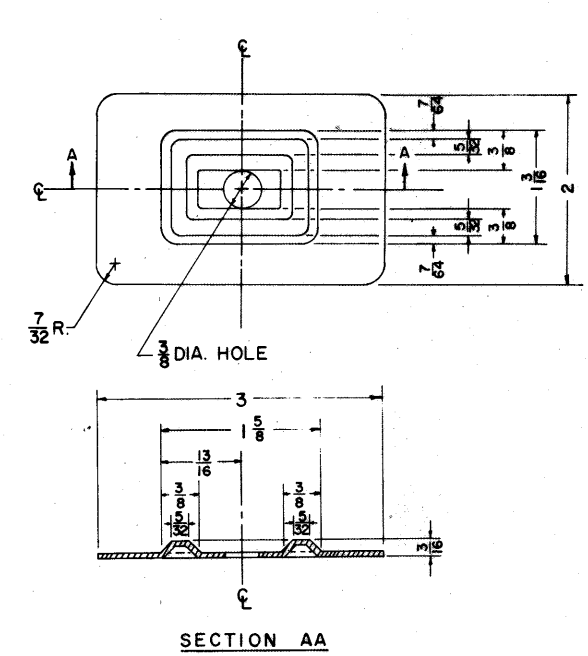
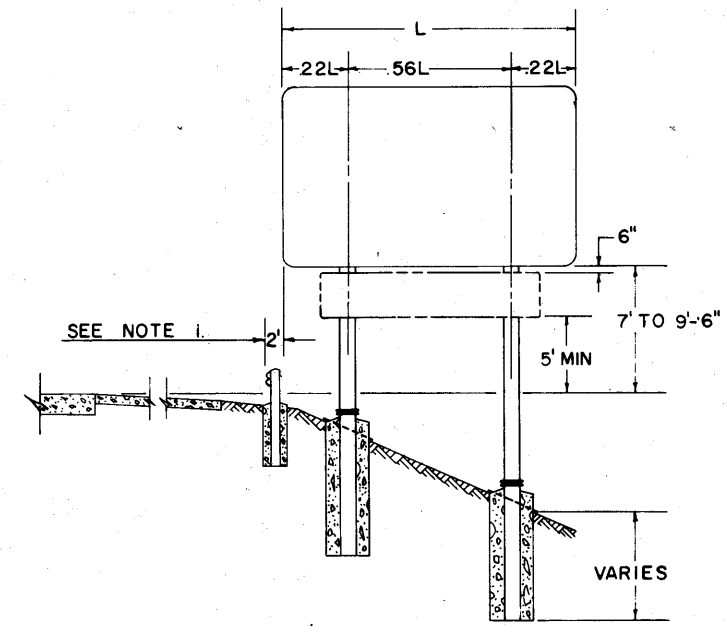
48" SPEED LIMIT SIGNS



ON CENTER LINE OF ISLAND WHERE ISLAND IS LESS THAN L + 4'



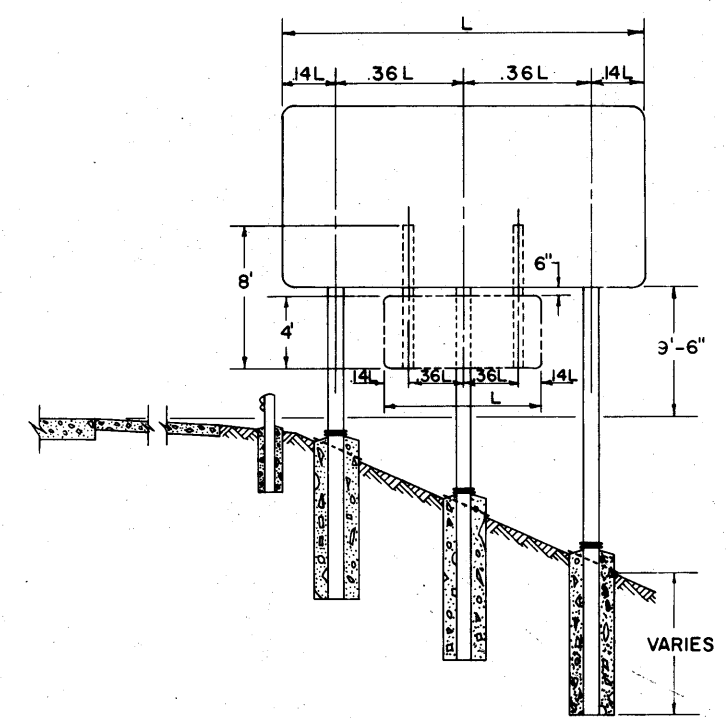
ISLAND WIDTH OF L + 4' OR GREATER



SECTION AA

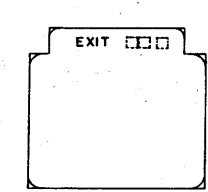
NOTE: THE PLATE IS SYMMETRICAL ABOUT EITHER CENTERLINE. METAL SHALL BE 16 GAUGE STEEL. ALL DIMENSIONS ARE IN INCHES.

BEARING PLATE DETAIL

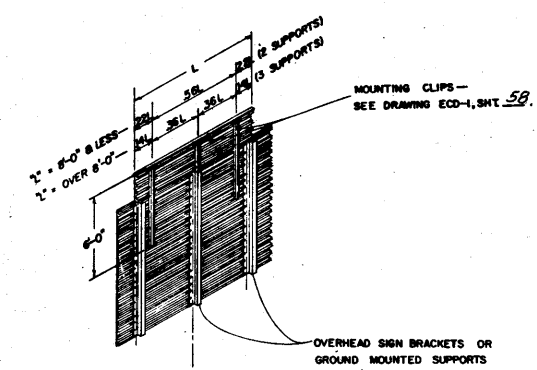


SIGN SUPPORT SPACING

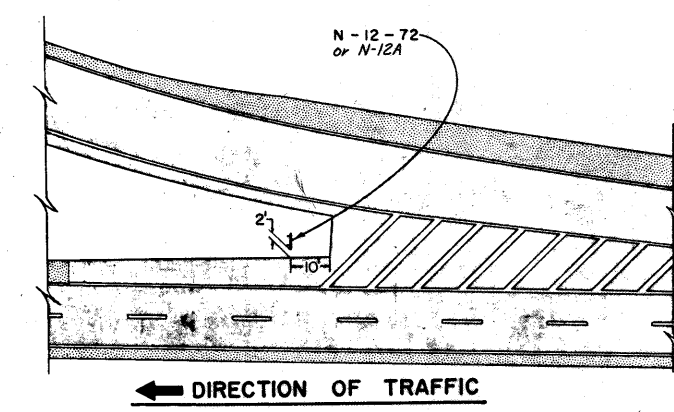
L + FT	2 SUPPORTS				3 SUPPORTS				
	.22	.56	.14	.36	L + FT	.22	.56	.14	.36
5.0	1.10	2.80	0.70	1.80	17.0	3.74	9.52	2.38	6.12
6.0	1.32	3.36	0.84	2.16	18.0	3.96	10.08	2.52	6.48
7.0	1.54	3.92	0.98	2.52	19.0	4.18	10.64	2.66	6.84
8.0	1.76	4.48	1.12	2.88	20.0			2.80	7.20
9.0	1.98	5.04	1.26	3.24	21.0			2.94	7.56
10.0	2.20	5.60	1.40	3.60	22.0			3.08	7.92
11.0	2.42	6.16	1.54	3.96	23.0			3.22	8.28
12.0	2.64	6.72	1.68	4.32	24.0			3.36	8.64
13.0	2.86	7.28	1.82	4.68	25.0			3.50	9.00
14.0	3.08	7.84	1.96	5.04	26.0			3.64	9.36
15.0	3.30	8.40	2.10	5.40	27.0			3.78	9.72
16.0	3.52	8.96	2.24	5.76	28.0			3.92	10.08



"EXIT" SIGN ATTACHMENT DETAIL

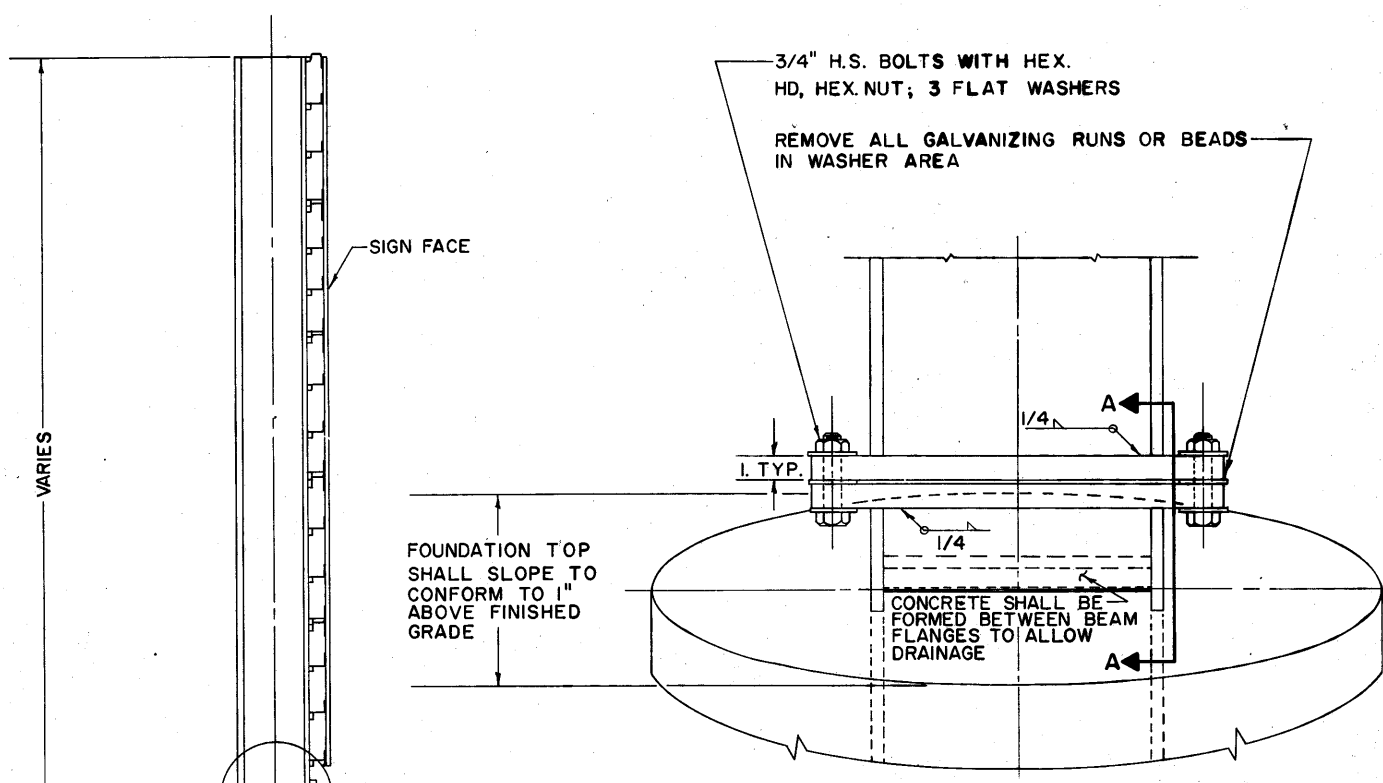


OVERHEAD SIGN BRACKETS OR GROUND MOUNTED SUPPORTS



DIRECTION OF TRAFFIC

LOR-2-6.62
LOR-90-11.96



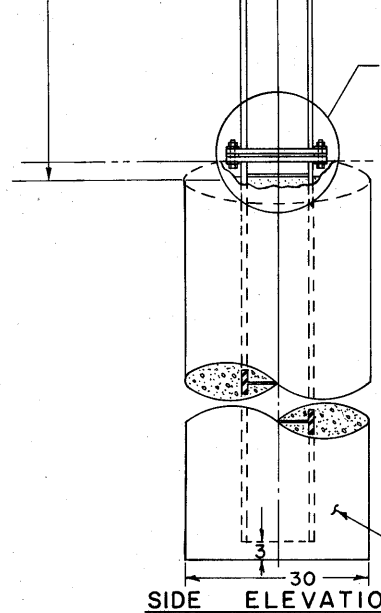
BOLTING PROCEDURE

1. ASSEMBLE POST TO STUB W/BOLTS & ONE FLAT WASHER ON EACH BOLT BETWEEN PLATES.
2. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE W/12" TO 15" WRENCH TO BED & TO CLEAN BOLT THREADS. LOOSEN EACH BOLT IN TURN & RETIGHTEN BOLTS IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE OF 750 IN. LBS.
3. BURR THREADS AT JUNCTION W/NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE: TIGHTEN THE H.S. BOLTS IN THE BASE CONNECTION ONLY TO GIVEN TORQUE DO NOT OVER TIGHTEN

VIEW "A" ROTATED 180°

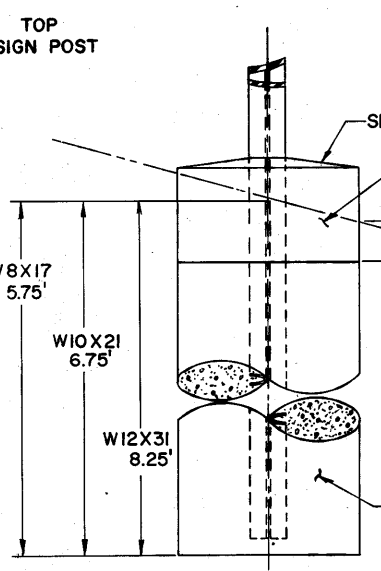
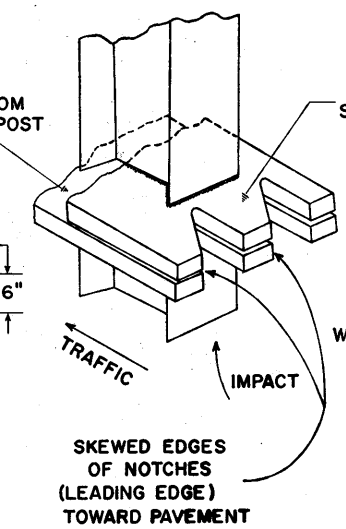
SEE DETAIL "B"



FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
W 8 X 17	2.30	3.45
W 10 X 21	2.50	3.75
W 12 X 31	3.00	4.50

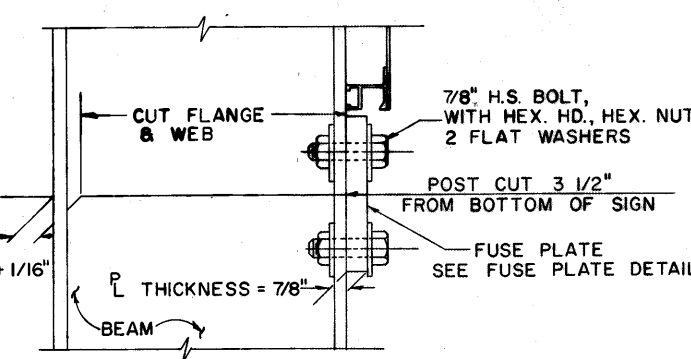
FRONT ELEVATION
BREAK-AWAY SUPPORT

BREAKAWAY SIGN SUPPORT
BASE PLATE ORIENTATION



FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
W 8 X 17	2.30	3.45
W 10 X 21	2.50	3.75
W 12 X 31	3.00	4.50

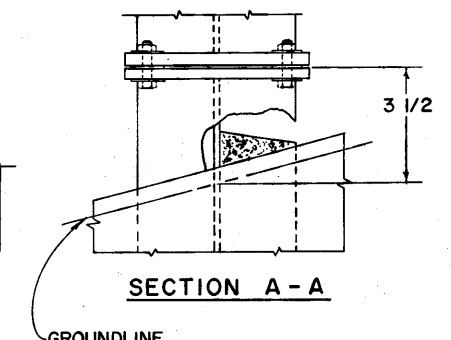
FRONT ELEVATION
STANDARD SUPPORT



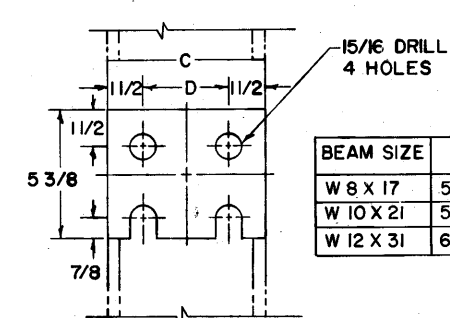
FABRICATOR NOTE: ALL FRICTION FUSE BOLTS SHALL BE TIGHTENED IN THE SHOP FOLLOWING A METHOD APPROVED BY THE ENGINEER. TIGHTENING SHALL BE TO SUCH A DEGREE AS TO OBTAIN MINIMUM RESIDUAL TENSION IN EACH BOLT OF 36,050 LBS.

NOTE: INSTALL FUSE PLATE WITH NOTCHES TOWARD BASE

DETAIL "B"

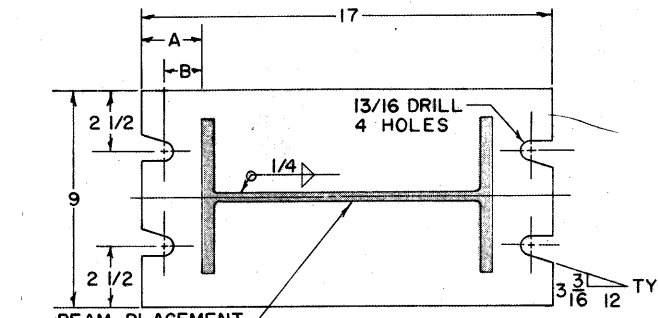


SECTION A-A



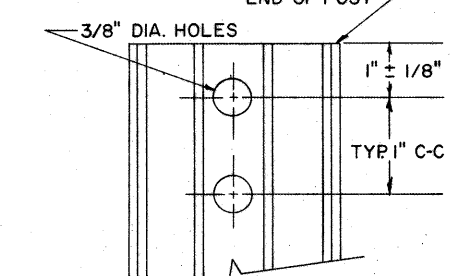
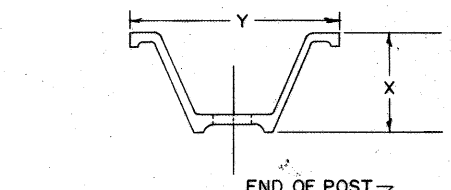
BEAM SIZE	C	D
W 8 X 17	5 1/4"	2 1/4"
W 10 X 21	5 3/4"	2 3/4"
W 12 X 31	6 1/2"	3 1/2"

FUSE PLATE DETAIL



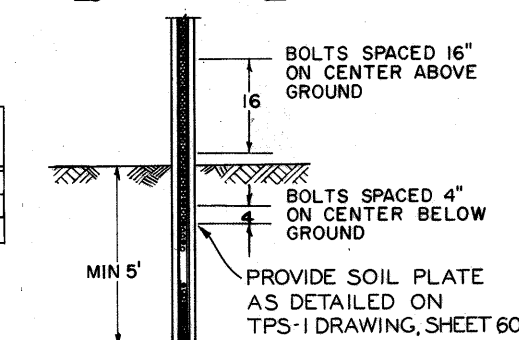
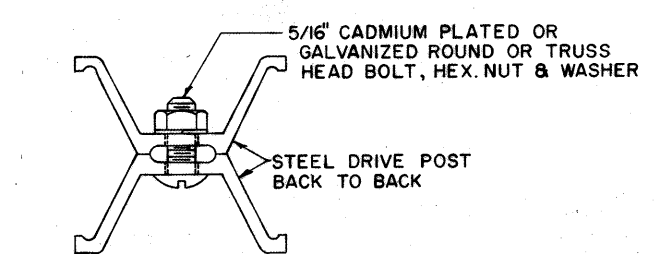
BEAM SIZE	A	B
W 8 X 17	4 1/2"	3 5/8"
W 10 X 21	3 1/2"	2 5/8"
W 12 X 31	2 1/2"	1 5/8"

BASE PLATE DETAIL
(TOP VIEW)



WEIGHT PER FOOT	X ± 3/32"	Y ± 1/8"
2.00 #	1 15/32"	3 1/16"
3.00 #	1 7/8"	3 1/2"
4.00 #	2"	3 5/8"

DRIVE POST DETAIL



6# BEAM DETAIL

NOTES: ALL MATERIALS SHALL CONFORM TO THE STATE OF OHIO, CONSTRUCTION & MATERIALS SPECIFICATIONS OR AS OTHERWISE SPECIFIED

- 1) 5II FOUNDATIONS
- 2) 7II.01 STRUCTURAL STEEL SHAPES & PLATES
- 3) 7II.09 H.S. STEEL BOLTS, NUTS & WASHERS

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SHOWN

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

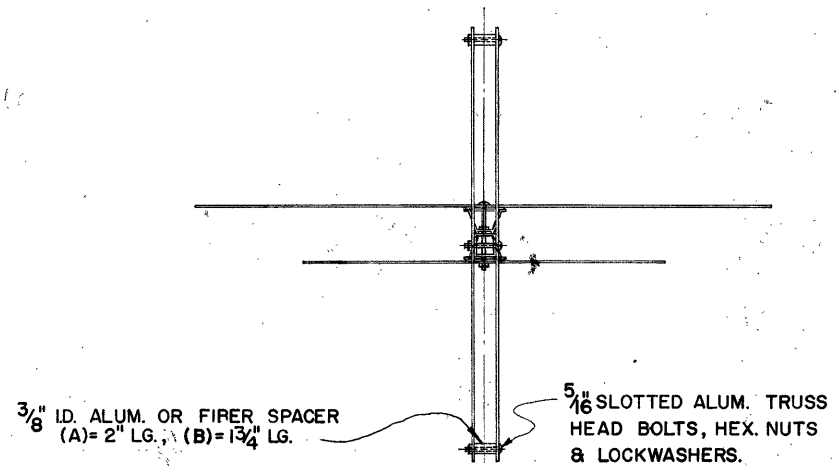
GROUND MOUNTED SIGN SUPPORTS

DATE
5-10-68
7-12-68
5-23-69
9-16-69
12-20-71
1-73

APPROVED _____
ENGINEER OF TRAFFIC

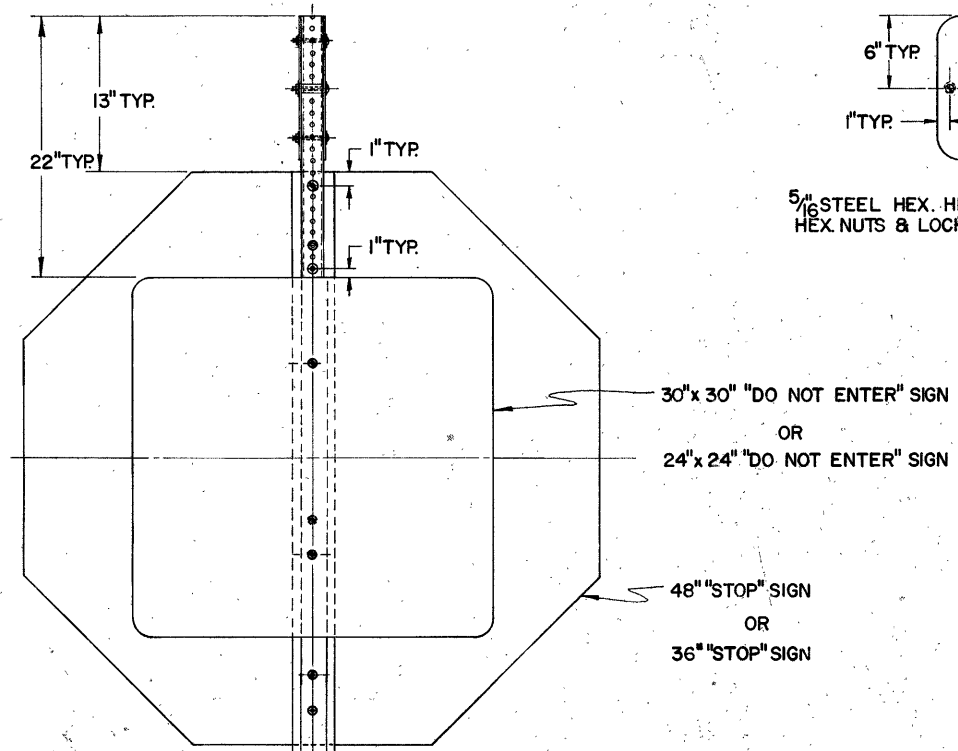
NOTES

MATERIALS
 ALL SIGN MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 815.
 ALL STRUCTURAL MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 816.
 FOR SPECIFICATIONS FOR THE 2" & 1 3/4" SQUARE STEEL POST SEE GENERAL NOTES, SHEET NO. 7.

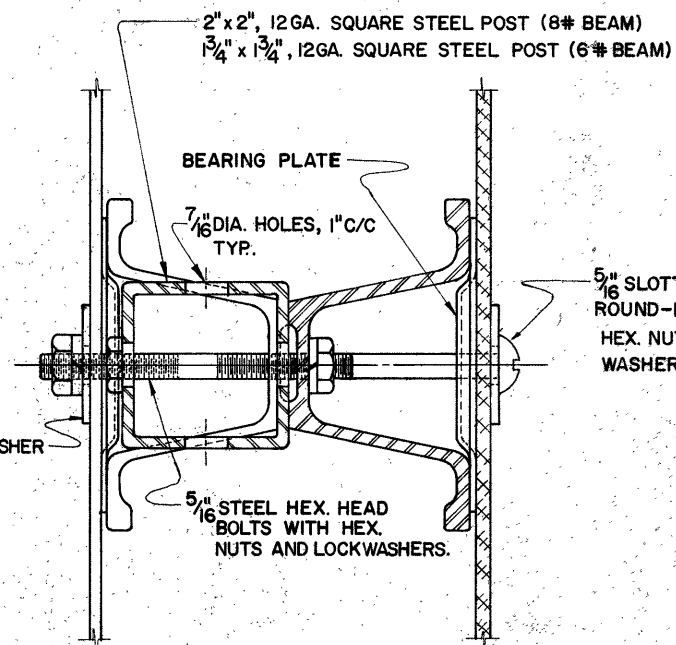
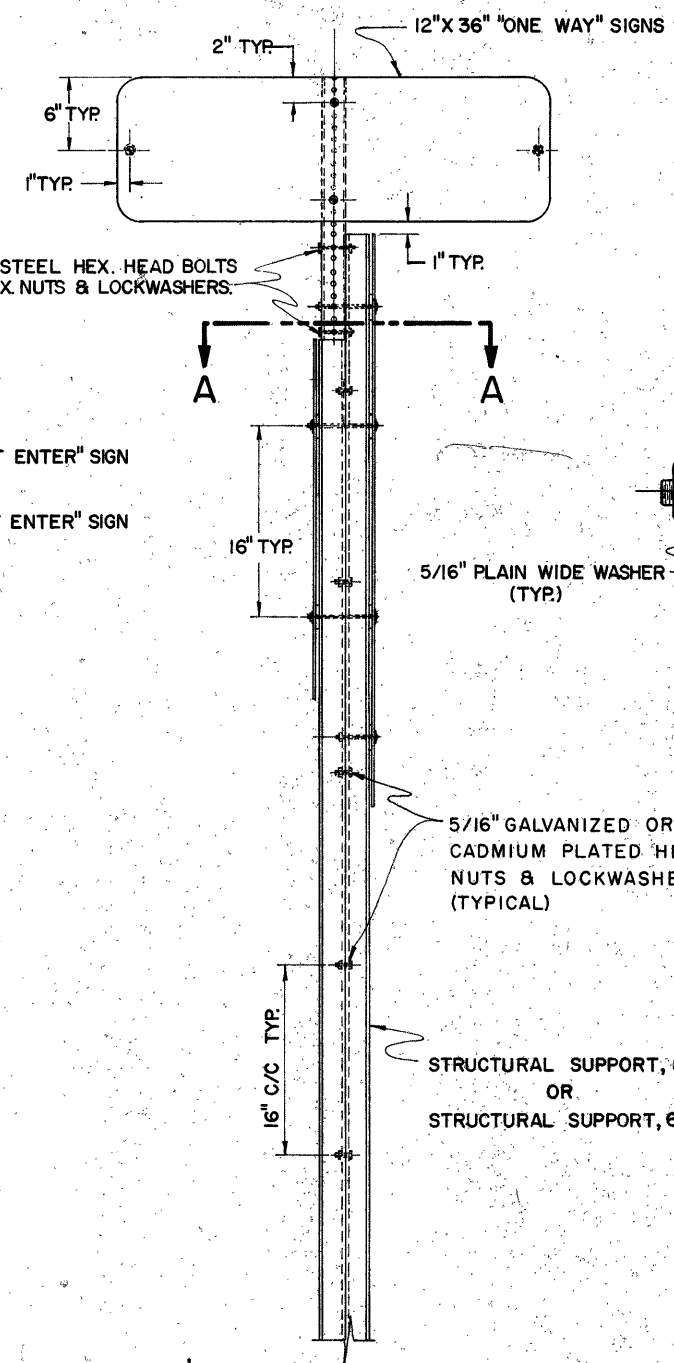


3/8" ID. ALUM. OR FIBER SPACER
(A)= 2" LG., (B)= 1 3/4" LG.

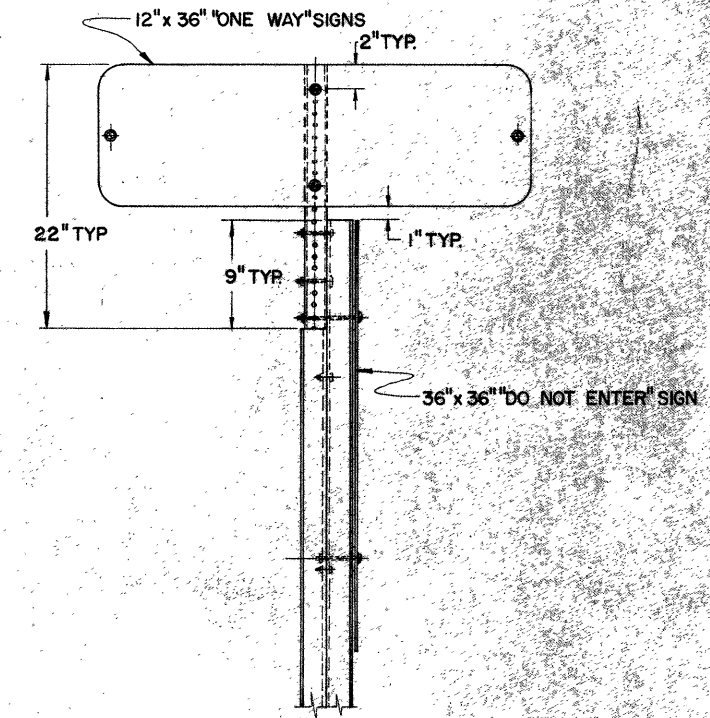
5/16" SLOTTED ALUM. TRUSS
HEAD BOLTS, HEX. NUTS & LOCKWASHERS.



**"ONE WAY", "STOP", "DO NOT ENTER",
SIGN INSTALLATION.**



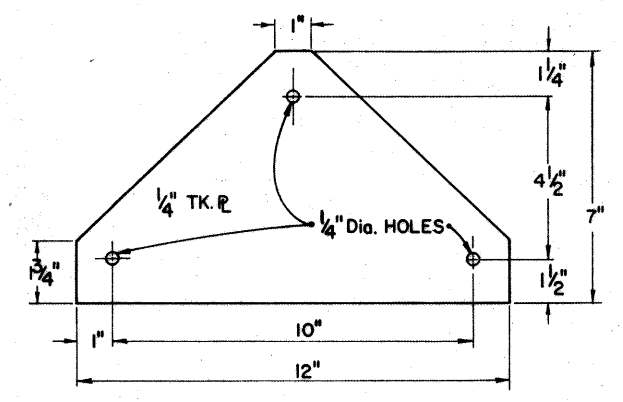
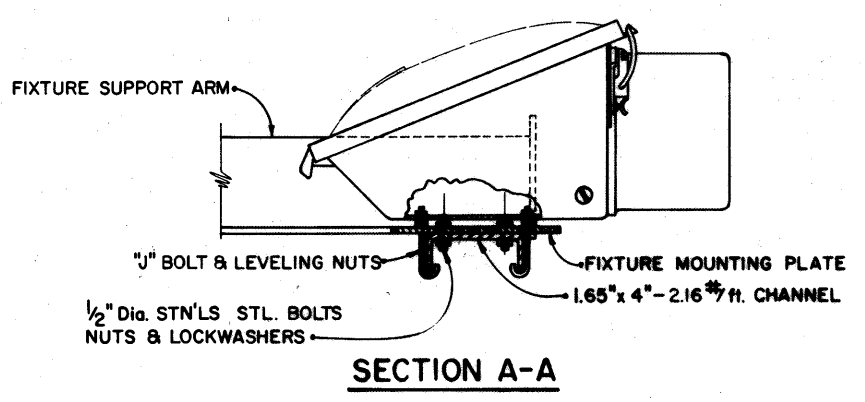
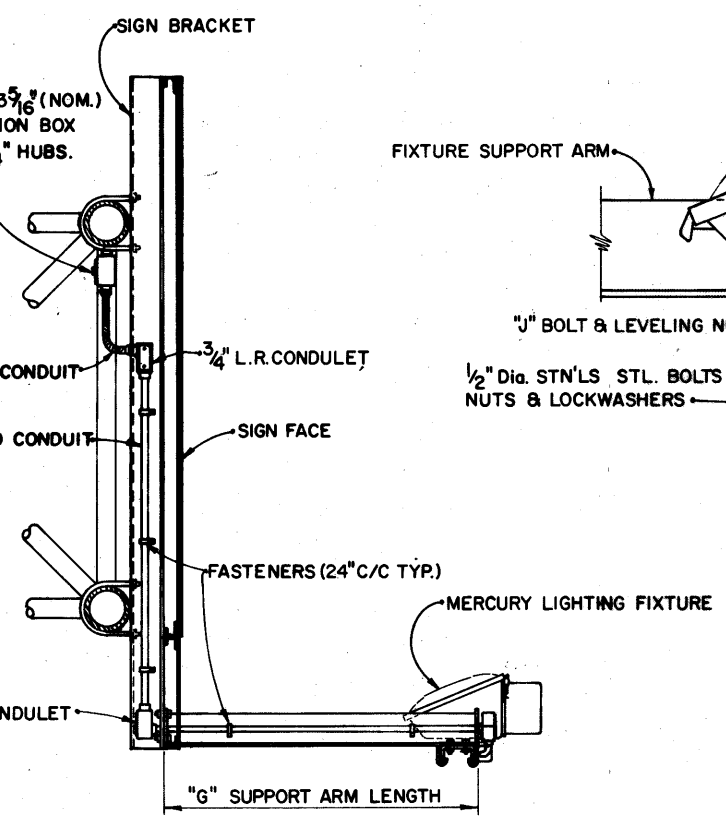
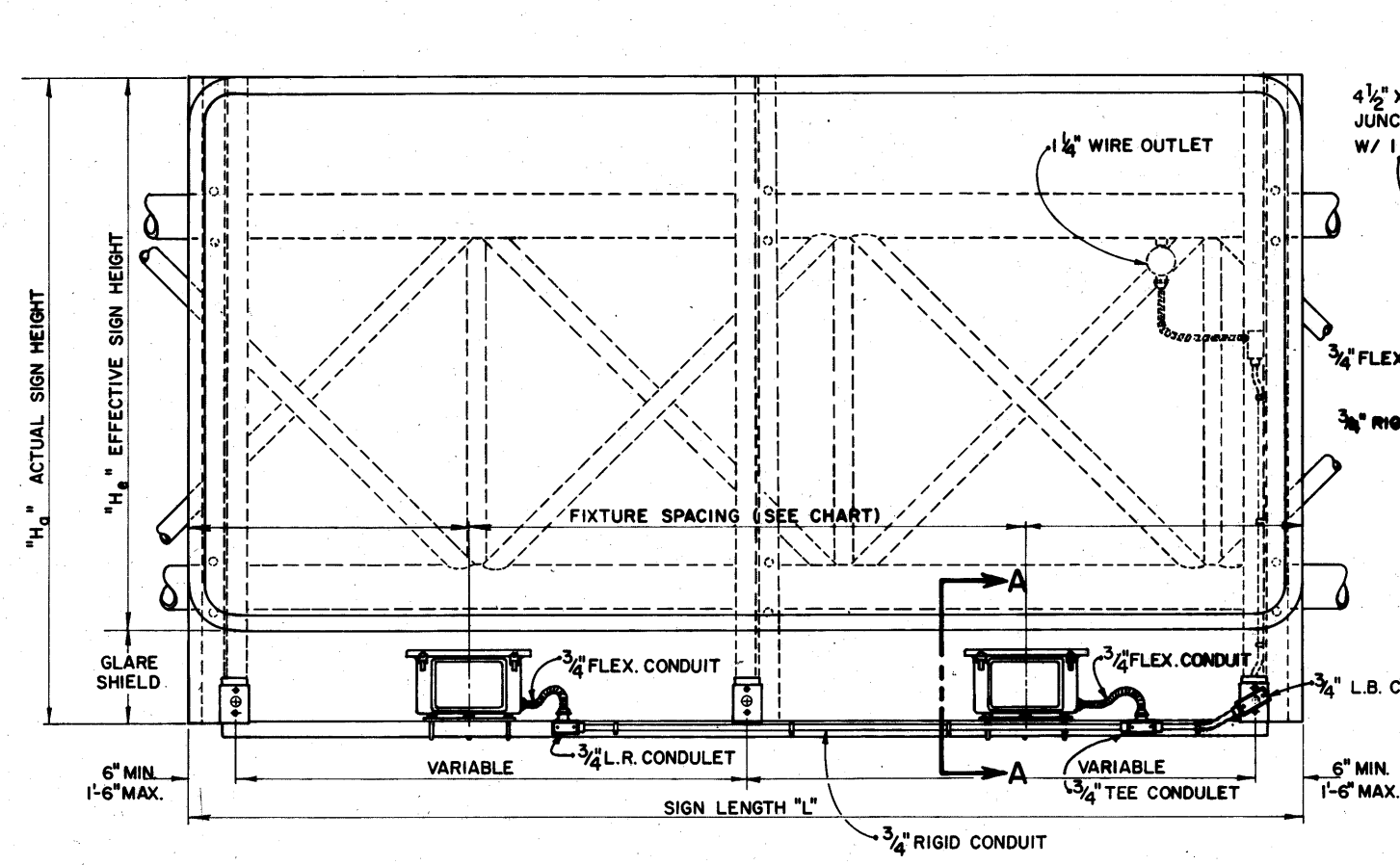
SECTION A-A



**"ONE WAY", "DO NOT ENTER"
SIGN INSTALLATION**

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS	
SPECIAL "ONE WAY" SIGN SUPPORT DETAILS	SOW
APPROVED _____ ENGINEER OF TRAFFIC	DATE 2-7-66 4-18-67

LOR-2-6.62
LOR-90-11.96

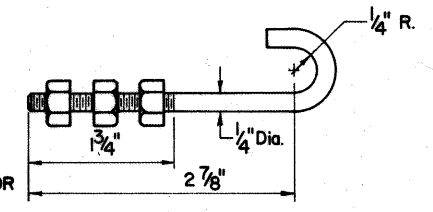


SIGN LENGTH "L"	NO. OF FIXTURES	LIGHT FIXTURE SPACING				SUPPORT ARM SPACING				NO. OF SIGN BRACKETS		
		1	2	3	4	1	2	3	4			
4'-0"	1	2'-0"	2'-0"			6"	36"	6"		2		
5'-0"	1	2'-6"	2'-6"			6"	48"	6"		2		
6'-0"	1	3'-0"	3'-0"			6"	60"	6"		2		
7'-0"	1	3'-6"	3'-6"			6"	72"	6"		2		
8'-0"	1	4'-0"	4'-0"			10 3/8"	75 3/8"	10 1/4"		2		
9'-0"	1	4'-6"	4'-6"			16 3/8"	75 3/8"	16 1/4"		2		
10'-0"	1	5'-0"	5'-0"			10 3/8"	99 3/8"	10 1/4"		2		
11'-0"	1	5'-6"	5'-6"			16 3/8"	99 3/8"	16 1/4"		2		
12'-0"	2	3'-0"	6'-0"	3'-0"		6"	66"	66"	6"	3		
13'-0"	2	3'-6"	6'-0"	3'-6"		6"	72"	72"	6"	3		
14'-0"	2	4'-0"	6'-0"	4'-0"		8 5/8"	75 3/8"	75 3/8"	8 5/8"	3		
15'-0"	2	4'-6"	6'-0"	4'-6"		14 5/8"	75 3/8"	75 3/8"	14 5/8"	3		
16'-0"	2	4'-0"	8'-0"	4'-0"		8 5/8"	75 3/8"	99 3/8"	8 5/8"	3		
17'-0"	2	4'-6"	8'-0"	4'-6"		14 5/8"	75 3/8"	99 3/8"	14 5/8"	3		
18'-0"	2	4'-0"	10'-0"	4'-0"		8 5/8"	99 3/8"	99 3/8"	8 5/8"	3		
19'-0"	2	4'-6"	10'-0"	4'-6"		14 5/8"	99 3/8"	99 3/8"	14 5/8"	3		
20'-0"	3	4'-0"	6'-0"	6'-0"	4'-0"	7"	75 3/8"	75 3/8"	75 3/8"	6 7/8"	4	
21'-0"	3	4'-6"	6'-0"	6'-0"	4'-6"	13"	75 3/8"	75 3/8"	75 3/8"	12 1/8"	4	
22'-0"	3	4'-0"	7'-0"	7'-0"	4'-0"	7"	75 3/8"	75 3/8"	99 3/8"	6 7/8"	4	
23'-0"	3	4'-6"	7'-0"	7'-0"	4'-6"	13"	75 3/8"	75 3/8"	99 3/8"	12 1/8"	4	
24'-0"	3	4'-0"	8'-0"	8'-0"	4'-0"	7"	75 3/8"	99 3/8"	99 3/8"	6 7/8"	4	
25'-0"	3	4'-6"	8'-0"	8'-0"	4'-6"	13"	75 3/8"	99 3/8"	99 3/8"	12 1/8"	4	
26'-0"	4	4'-0"	6'-0"	6'-0"	6'-0"	4'-0"	7"	99 3/8"	99 3/8"	99 3/8"	6 7/8"	4
27'-0"	4	4'-6"	6'-0"	6'-0"	6'-0"	4'-6"	13"	99 3/8"	99 3/8"	99 3/8"	12 1/8"	4

EFFECTIVE SIGN HEIGHT "H"	SUPPORT ARM LENGTH "G"	APPROX. AIMING ANGLE	LAMP WATTS	ANSI LAMP CODE	BALLAST TYPE
3'-0" to 5'-0"	2'-9"	0°	100	H38-4HT	CMRI-100-(a)
5'-1" to 6'-6"	3'-3"	0°	175	H39-22KB	CMRI-175-(a)
6'-7" to 10'-0"	4'-3"	2°	175	H39-22KB	CMRI-175-(a)
10'-1" to 13'-0"	5'-9"	8°	250	H37-5KB	CMRI-250-(a)
13'-1" to 15'-0"	7'-3"	8°	250	H37-5KB	CMRI-250-(a)

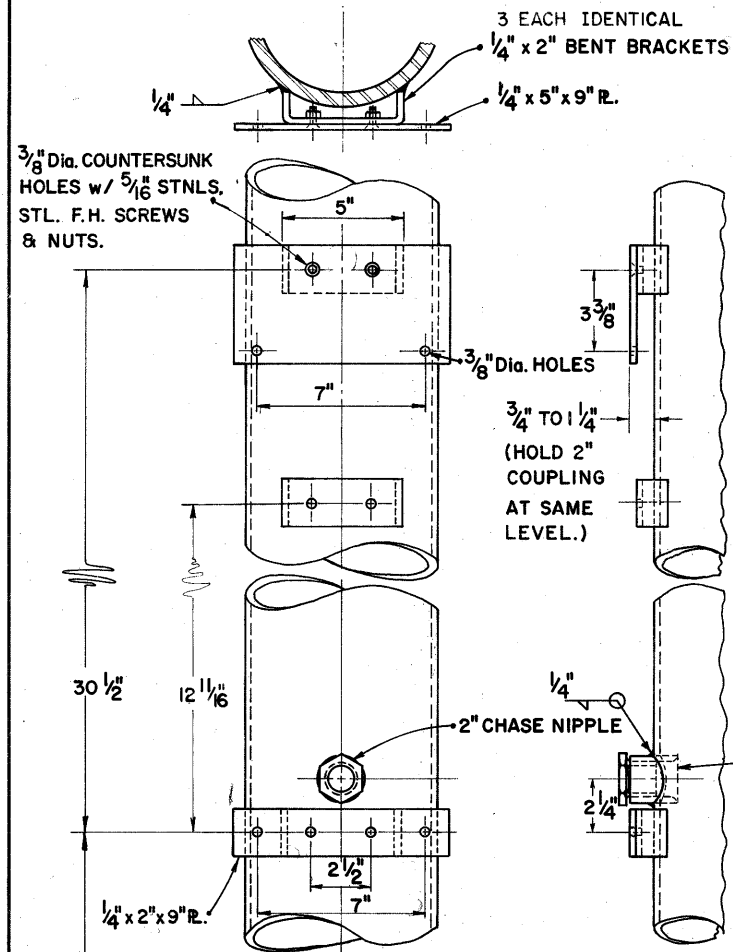
(a) = OPERATING VOLTAGE
(120V, 208V, 240V, 277V, OR
480V.)

FIXTURE MOUNTING PLATE
(ALUMINUM)

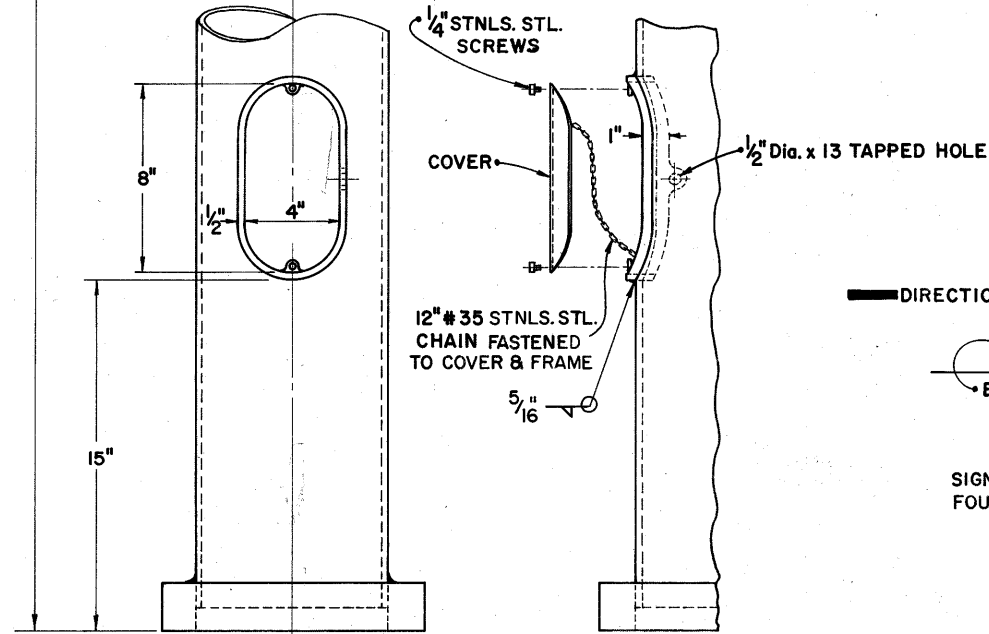


J BOLT
(STAINLESS STEEL
BOLT, NUTS &
LOCKWASHERS)

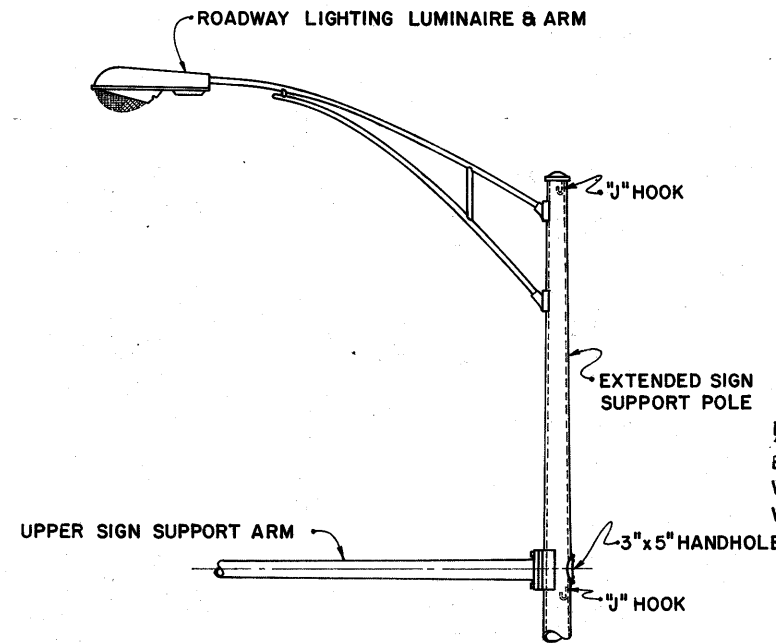
BUREAU OF DESIGN SERVICES OHIO DEPARTMENT OF HIGHWAYS	
MERCURY VAPOR SIGN LIGHTING DETAILS	DATE 4-13-72
STANDARD CONSTRUCTION DRAWING	
APPROVED _____ ENGINEER OF DESIGN SERVICES	



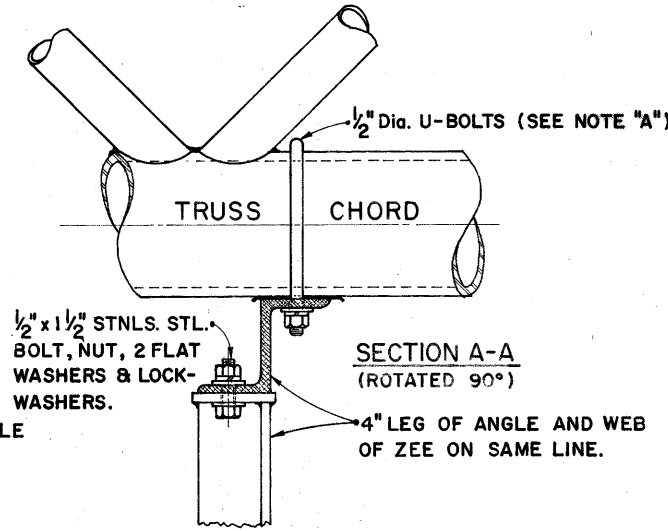
SWITCH ENCLOSURE BRACKET



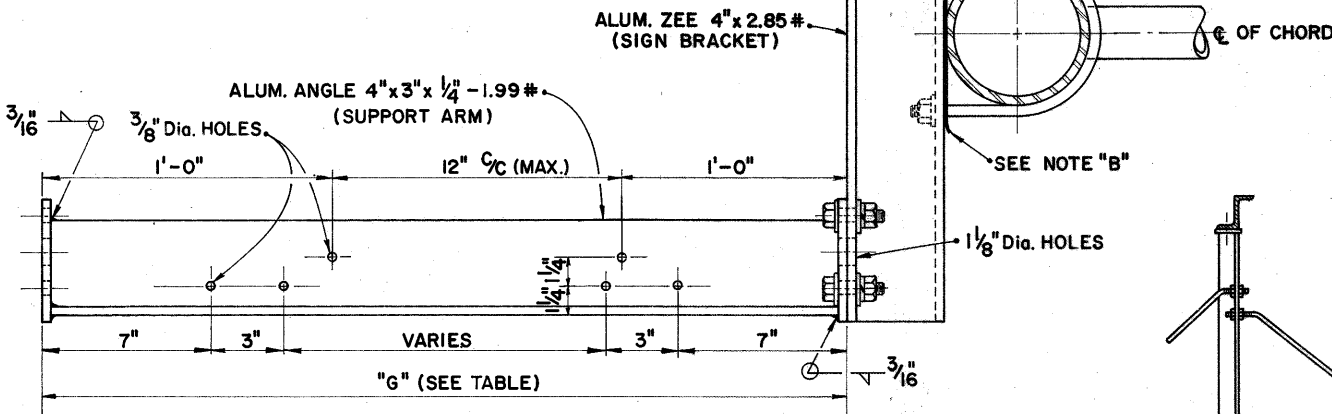
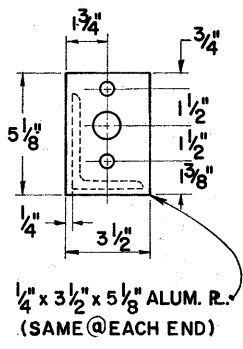
4" x 8" CURVED HANDHOLE



POLE EXTENSION FOR LIGHTING LUMINAIRE



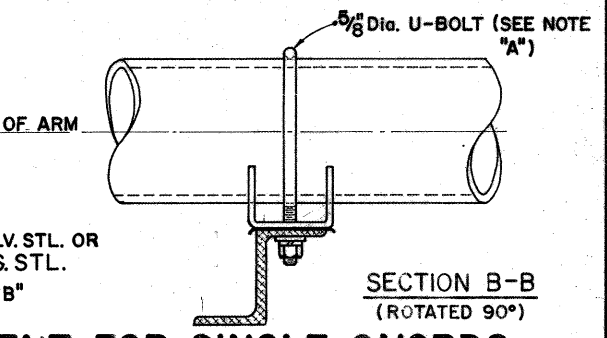
SIGN ATTACHMENT FOR BOX TRUSS



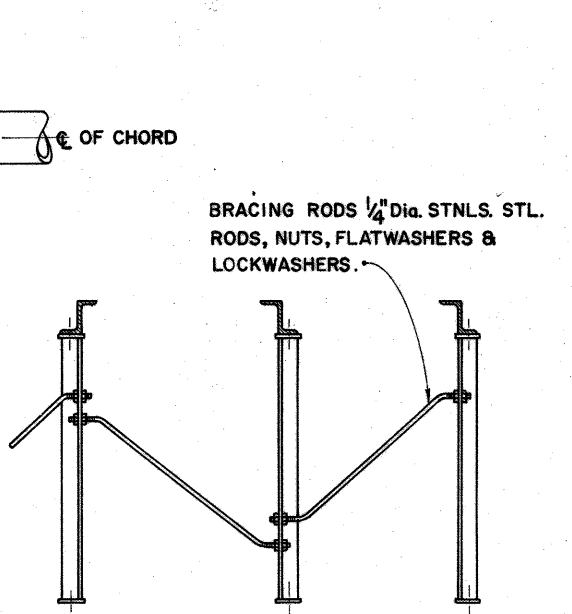
SUPPORT ARM & SIGN BRACKET
(MAKE AS LEFTS & RIGHTS FOR EACH SIGN)

SIGN HEIGHT	SUPPORT ARM LENGTH "G"	BRACING ROD REQUIRED
4'-0" to 6'-0"	2'-9"	NO
6'-6" to 7'-6"	3'-3"	NO
8'-0" to 11'-0"	4'-3"	YES
11'-6" to 14'-0"	5'-9"	YES

NOTE:
FOR LENGTH AND QUANTITY OF SIGN BRACKETS SEE PROJECT PLAN.
UNLESS OTHERWISE NOTED, MIDPOINT OF SIGN BRACKETS AND TRUSS CENTERLINE SHALL BE AT THE SAME ELEVATION.

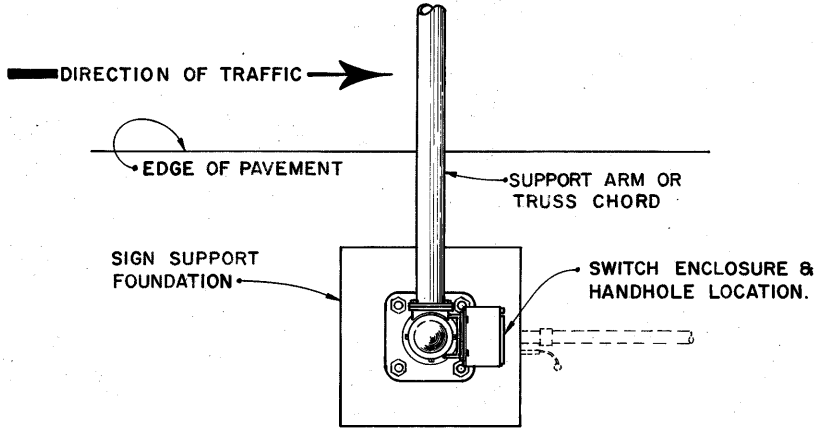


SIGN ATTACHMENT FOR SINGLE CHORDS



BRACING ROD ARRANGEMENT

WHEN ONLY TWO SUPPORT ARMS REQ'D PER SIGN, USE TWO BRACING RODS TO FORM "X" BRACING.



SWITCH ENCLOSURE & HANDHOLE ORIENTATION

NOTE "A"
U-BOLTS, NUTS & WASHERS SHALL BE STAINLESS STEEL FOR USE WITH ALUMINUM TRUSS CHORDS. WHEN USED WITH GALVANIZED CHORDS, THE U-BOLT ONLY MAY BE GALVANIZED STEEL.

NOTE "B"
CONTACT BETWEEN ALUMINUM AND GALVANIZED PARTS MUST BE PREVENTED WITH A MIN. $\frac{1}{16}$ " THICK NEOPRENE GASKET OR APPROVED SUBSTITUTE. NO GASKET IS REQUIRED BETWEEN STAINLESS STEEL AND ALUMINUM.

NOTE:
ALL STL. PARTS (EXCEPT STNLS.) SHALL BE GALVANIZED AFTER FABRICATION PER ASTM A-123.

BUREAU OF DESIGN SERVICES
OHIO DEPARTMENT OF HIGHWAYS

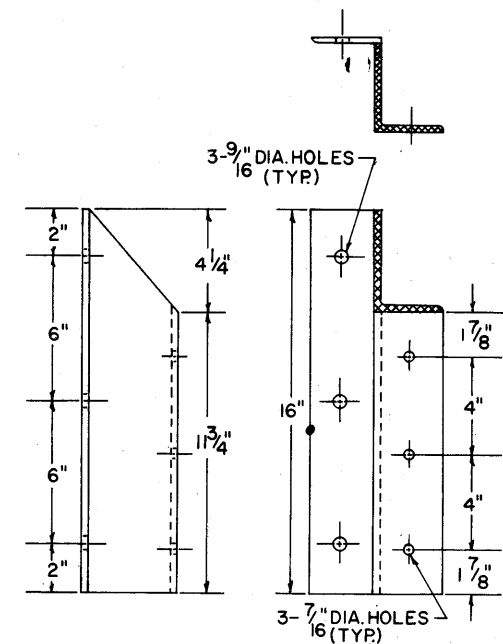
MISCELLANEOUS OVERHEAD SIGN SUPPORT DETAILS

STANDARD CONSTRUCTION 816-20.002 DRAWING

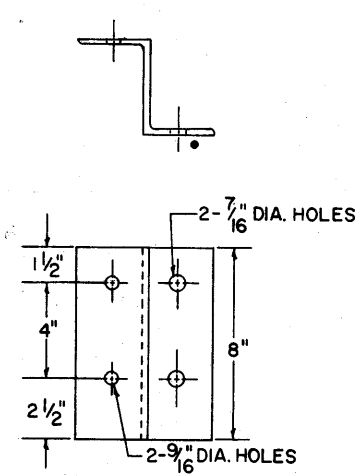
APPROVED *M. J. Cunningham*
ENGINEER OF DESIGN SERVICES

DATE 3-23-72

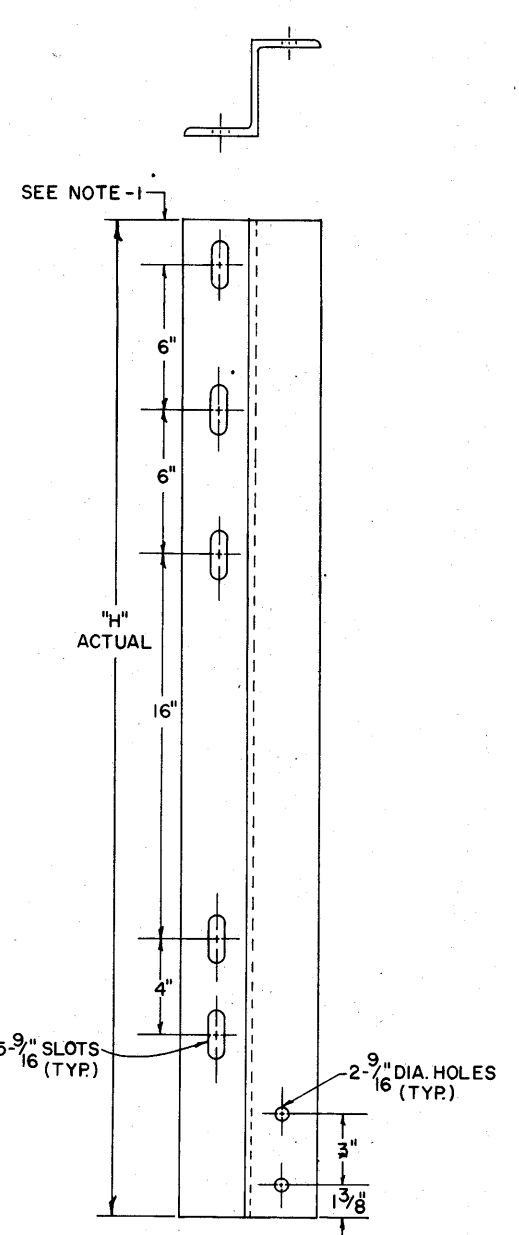
LOR-2-6.62
LOR-90-11.96



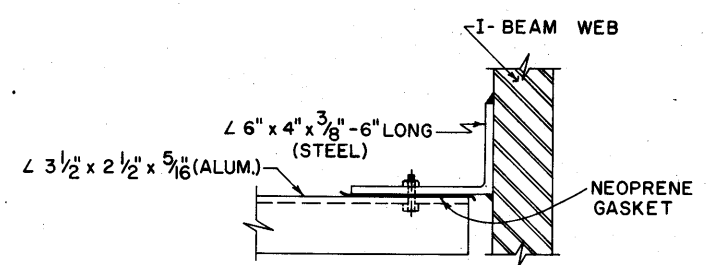
"Z" BAR-A
(4" x 3 1/16" x 1/4" @ 2.85 LB.)



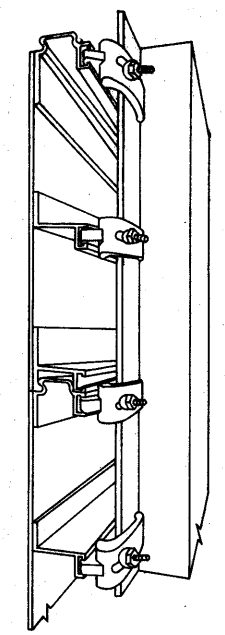
"Z" BAR-B
(4" x 3 1/16" x 1/4" @ 2.85 LB.)



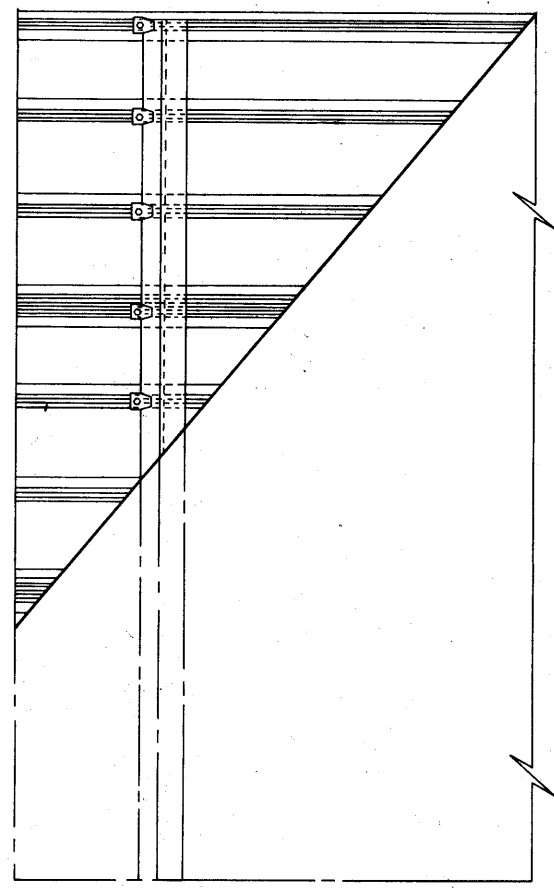
"Z" BAR-C
(4" x 3 1/16" x 1/4" @ 2.85 LB.)



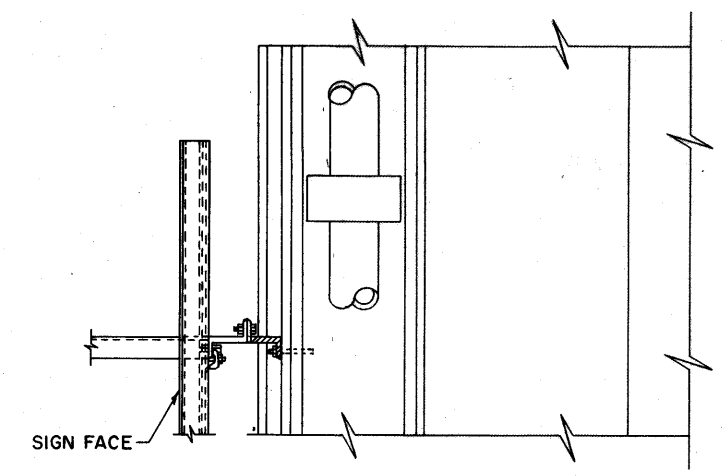
SECTION A-A



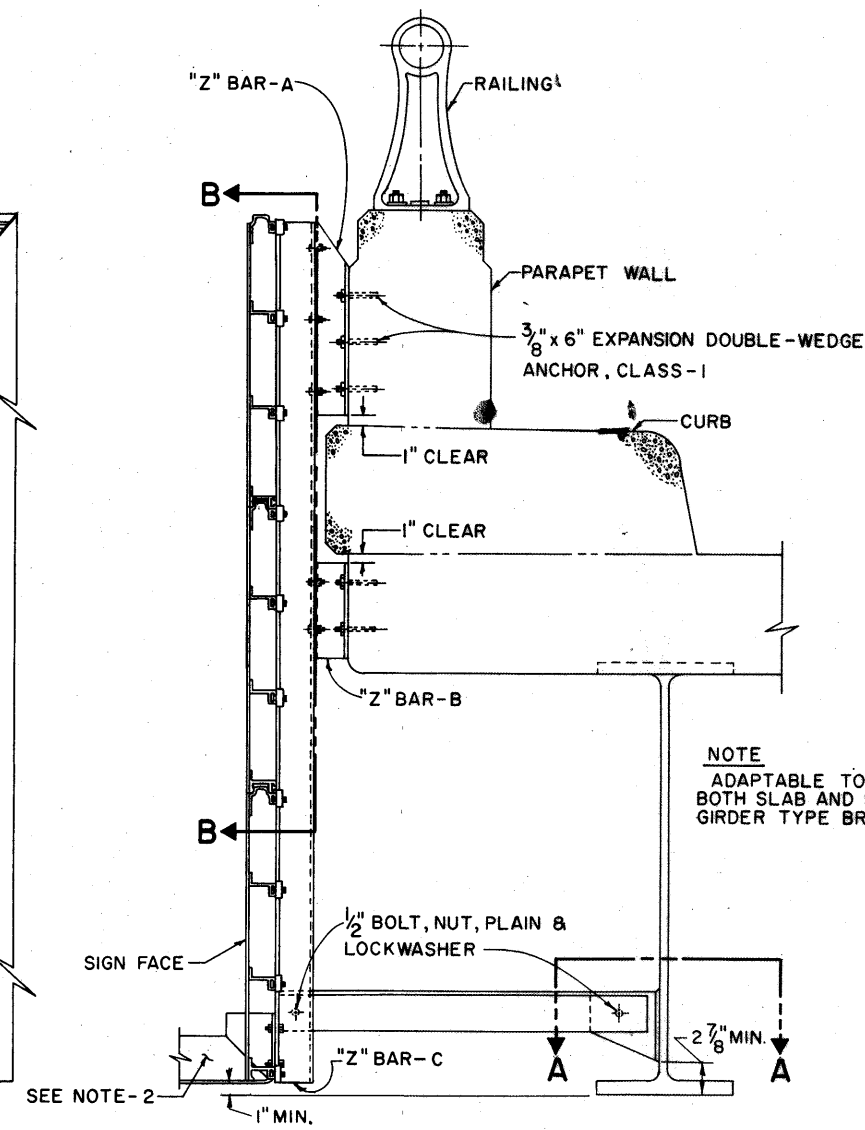
CLAMP ASSEMBLY



SECTION B-B



TOP VIEW



SIDE VIEW BRIDGE MOUNT

NOTES

- ALL STRUCTURAL SHAPES TO BE ALUMINUM, EXCEPT AS NOTED.
EXPANSION BOLTS TO BE GALVANIZED STEEL.
- (1) THIS DIMENSION VARIES FOR SIGNS OVER 4'-6" ON SLAB TYPE BRIDGES AND SIGNS OVER 5'-6" ON STEEL GIRDER TYPE BRIDGES.
 - (2) FOR ELECTRICAL DETAIL SEE DRAWINGS, PAGE 63, PAGE 64.
 - (3) ALL MATERIALS SHALL CONFORM TO THE STATE OF OHIO, CONSTRUCTION & MATERIALS SPECIFICATIONS, AND THE SUPPLEMENTAL SPECIFICATIONS 816, OR AS OTHER-WISE SPECIFIED.

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS	
SPECIAL SIGN SUPPORT	DATE 1-24-68 4-24-69
SPL-816	
APPROVED _____ ENGINEER OF TRAFFIC	

LOR-2-6.62
LOR-90-11.96

NOTES

MATERIALS
THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.
SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.
STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.
AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION
THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02. MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION
USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT
PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS
THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL
COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS. BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

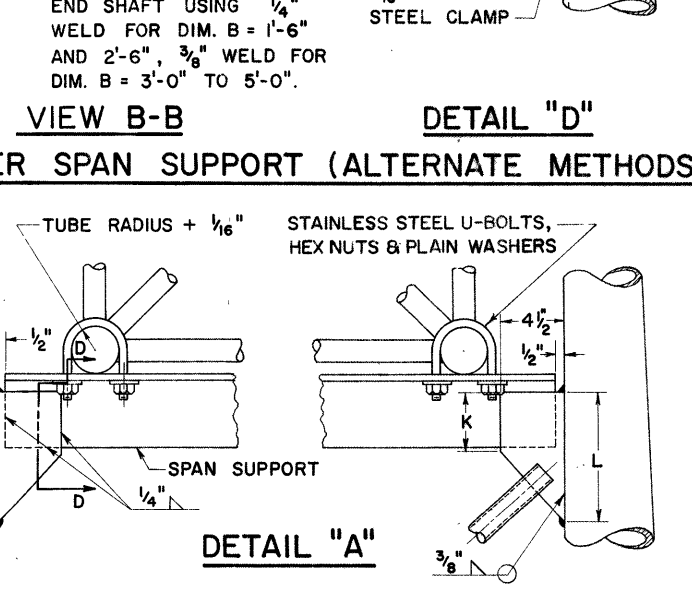
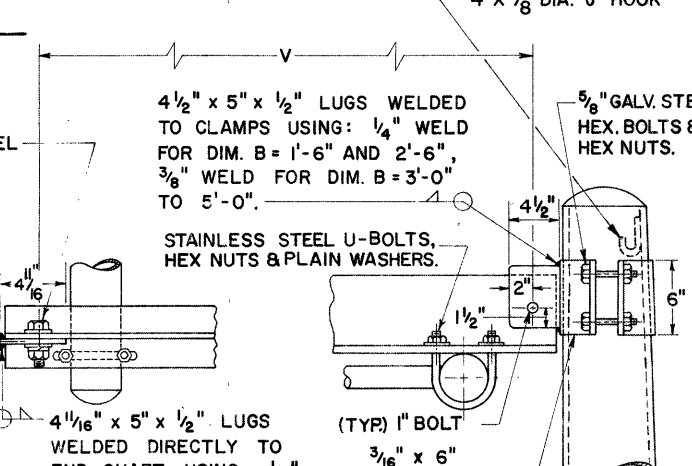
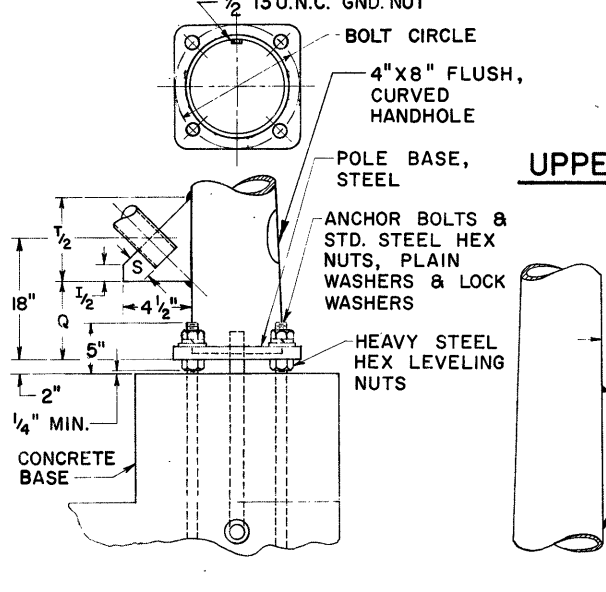
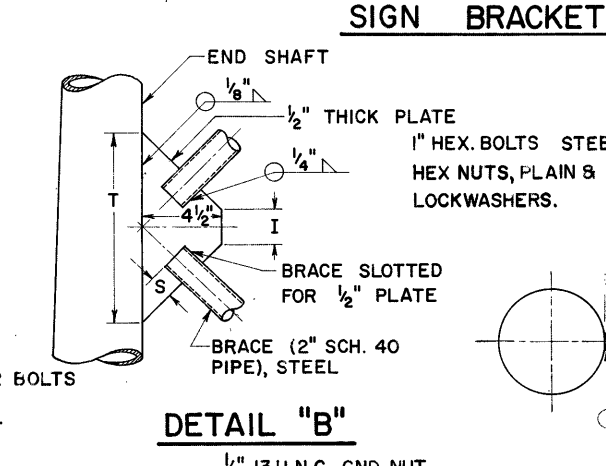
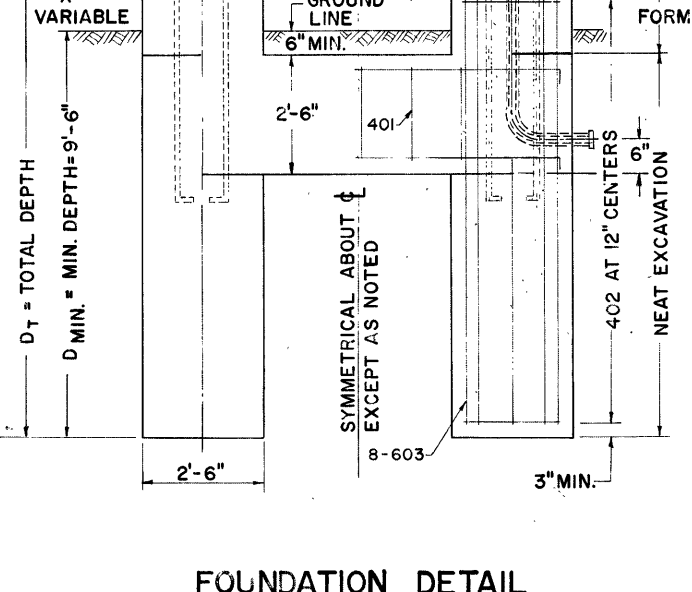
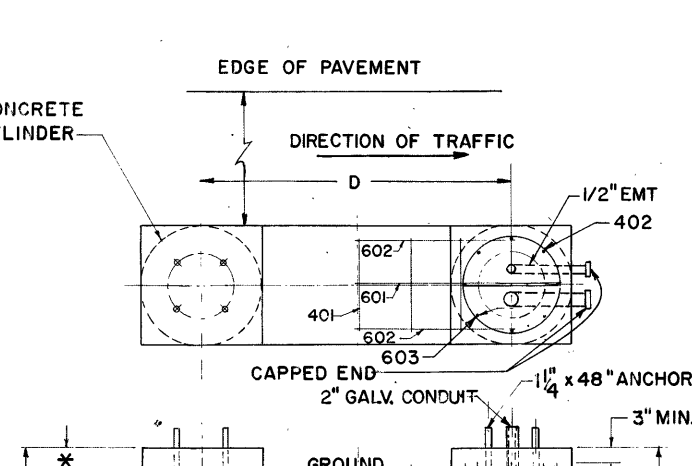
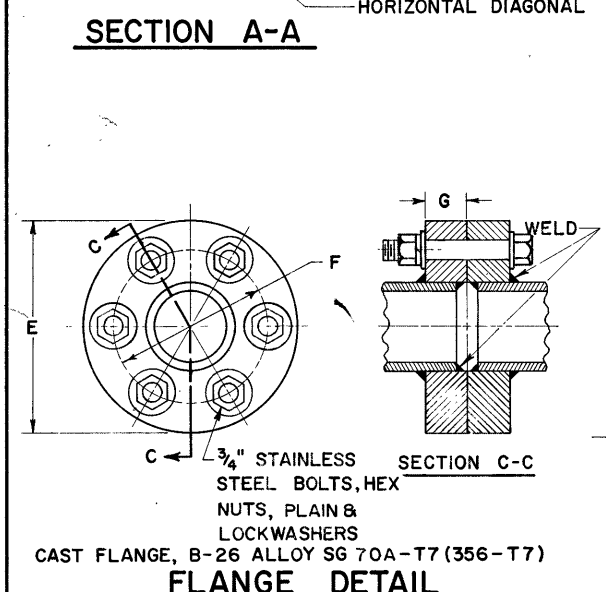
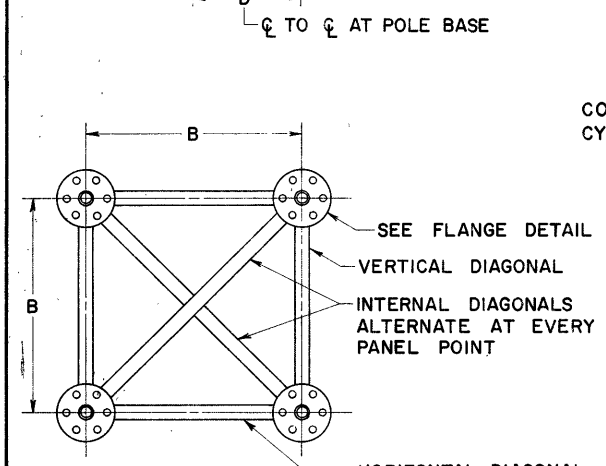
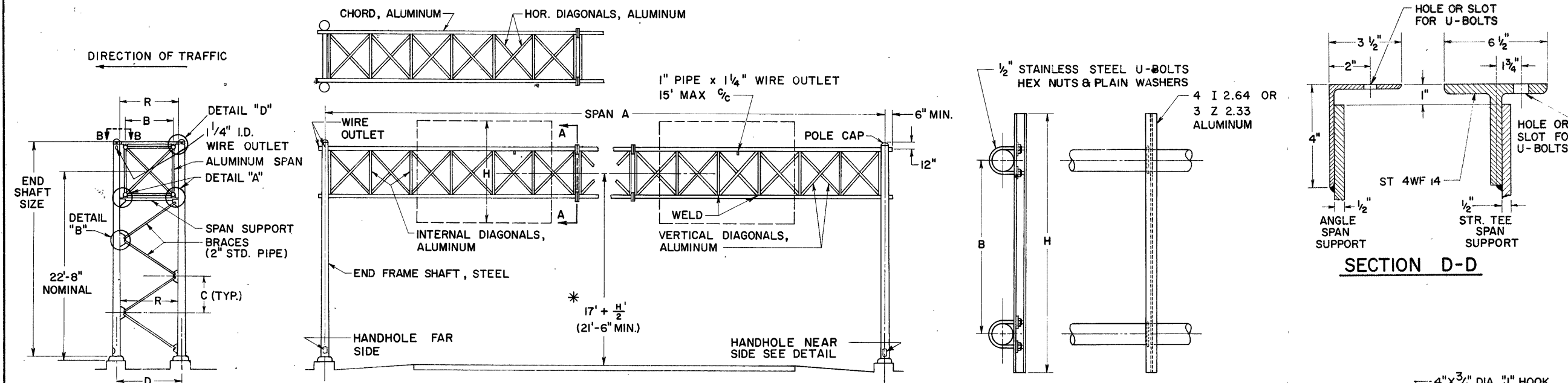
FOUNDATION ELEVATION
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17" CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

DESIGN
THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

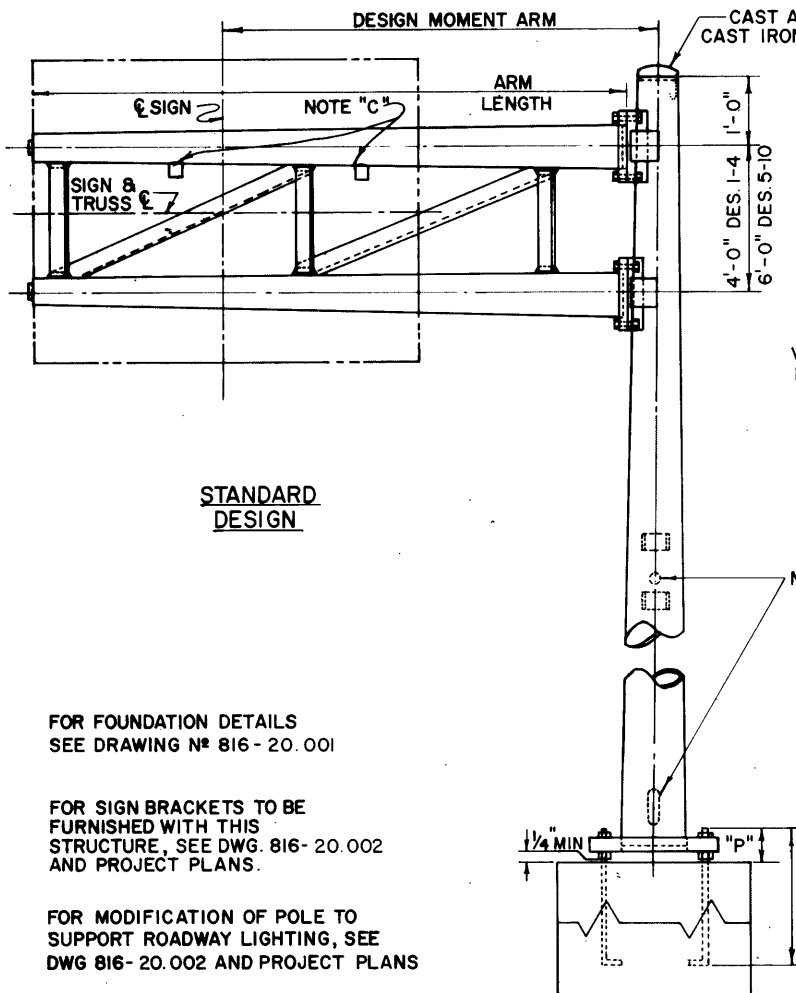
OVERHEAD SIGN SUPPORTS 816 No. 7.4

APPROVED *Robert E. Conner*
ENGINEER OF TRAFFIC



DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL	REINFORCEMENT SCHEDULE
1	50' thru 75'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" x 4.5" x 25'-0", 3 GA.	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900" x .145"	1.600" x .140"	MARK NO. LENGTH TYPE
2	76' thru 85'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8" x 6.22" x 25'-6", 3 GA.	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2" x .188"	1.900" x .145"	401 12"C/C 8'-6" 102
3	86' thru 90'	4'-0"	4'-10 1/4"	5'-7"	11"	8" x 6.22" x 25'-6", 3 GA.	6'-7 1/8"	8 1/2"	1 1/2"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-10"	5 1/2" x .250"	2" x .188"	1.900" x .145"	402 12"C/C 7'-6" 103
4	91' thru 110'	5'-0"	4'-8 1/2"	6'-7"	11"	8" x 6.18" x 26'-0", 3 GA.	7'-3 1/4"	8 1/2"	1 1/2"	-	3 1/2"	7 3/4"	12"	7 1/4"	5'-10"	1 3/4"	11 1/4"	3 3/4"	5'-4 5/8"	11"	SPLIT TEE 5'-10"	5 1/2" x .250"	2 1/2" x .188"	2 1/2" x .188"	601 4 D+ 4'-0" 101 602 8 D+ 2'-0" 101 603 32 DT - 6" STR

LOR-2-6.62
LOR-90-11.96

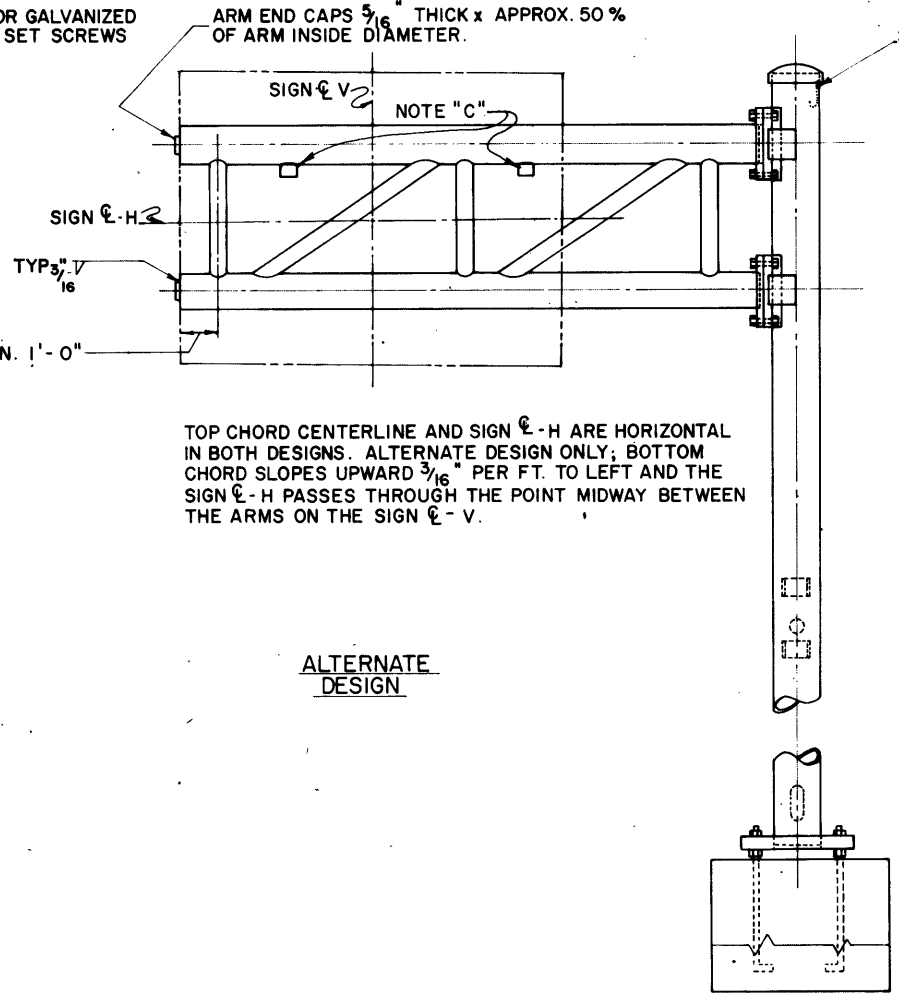


STANDARD DESIGN

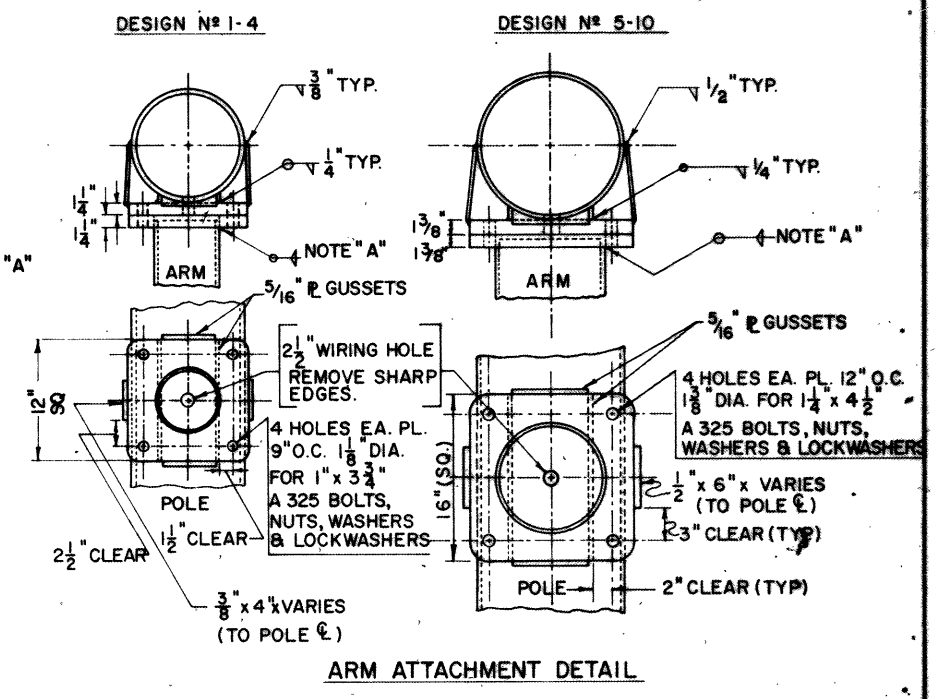
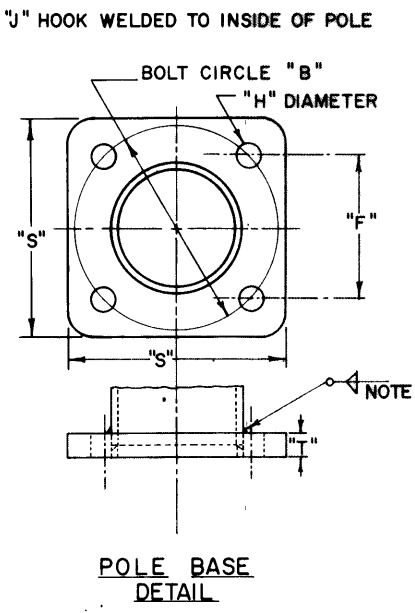
FOR FOUNDATION DETAILS SEE DRAWING N° 816-20.001

FOR SIGN BRACKETS TO BE FURNISHED WITH THIS STRUCTURE, SEE DWG. 816-20.002 AND PROJECT PLANS.

FOR MODIFICATION OF POLE TO SUPPORT ROADWAY LIGHTING, SEE DWG 816-20.002 AND PROJECT PLANS



ALTERNATE DESIGN



ARM ATTACHMENT DETAIL

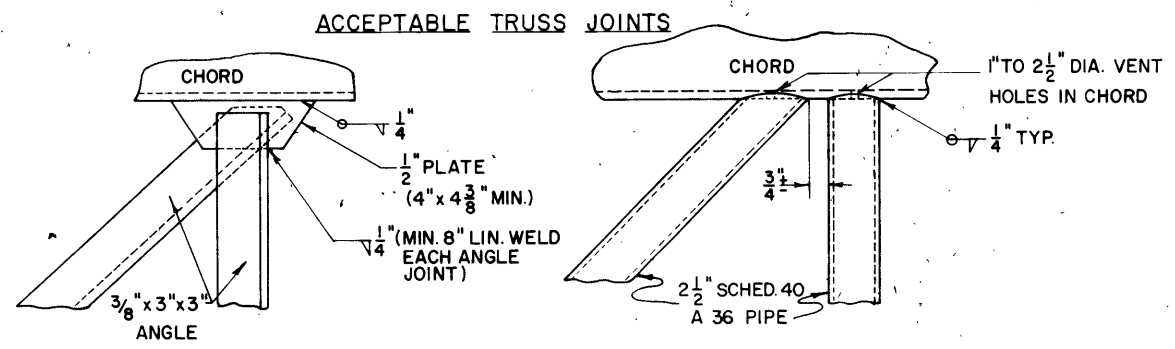
NOTE "A"
POLE BASE AND ARM ATTACHMENT PLATE TO BE WELDED INSIDE AND OUTSIDE WITH FILLET WELDS. EACH FILLET WELD SHALL BE EQUAL TO THE WALL THICKNESS OF THE RESPECTIVE TUBING.

NOTE "B"
CONSTRUCTION DETAILS AND LOCATION OF HANDHOLE AND SWITCH GEAR MOUNTING BRACKETS ARE SHOWN ON DRAWING 816-20.002

NOTE "C"
SIGNS UNDER 20'-0" LONG, ONE 1 1/2" PIPE COUPLING WELDED TO THE TOP CHORD APPROXIMATELY 12" OUTBOARD OF FIRST SIGN BRACKET. FOR SIGNS 20'-0" OR OVER, A SECOND 1 1/2" PIPE COUPLING IS REQUIRED APPROXIMATELY 12" OUTBOARD OF THE SECOND SIGN BRACKET. ALL SHARP EDGES INSIDE THE CHORD AND PIPE COUPLING MUST BE REMOVED.

- UNLESS OTHERWISE NOTED, DIMENSIONS AND INSTRUCTIONS APPLY TO BOTH THE STANDARD DESIGN AND ALTERNATE DESIGN.
- SIGN SUPPORT ARMS UNDER 18'-0" LONG DO NOT REQUIRE TRUSSING.
- THE DESIGN OF THESE OVERHEAD SIGN SUPPORTS IS IN ACCORDANCE WITH THE AASHO SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS AS REVISED IN 1968.

DESIGN NUMBER	POLE SIZE		ARM SIZE	
	OUTSIDE DIAMETERS	DIAMETERS	OUTSIDE DIAMETERS	DIAMETERS
1	2 PLY. 7 GA. 10"x 6.50"	10"x 25'-0"	7 GA. 6"x 3.76"	16'-0"
1ALT	8 5/8" x .500" WALL	25'-0"	5 9/16" x .258" WALL	16'-0"
2	2 PLY. 7 GA. 10"x 6.50"	10"x 25'-0"	3 GA. 6"x 4.60"	20'-0"
2ALT	8 5/8" x .562" WALL	25'-0"	5 9/16" x .344" WALL	20'-0"
3	OGA. 13"x 9.22"	13"x 27'-0"	7 GA. 8"x 5.76"	16'-0"
3ALT	10 3/4" x .438 WALL	27'-0"	6 5/8" x .250" WALL	16'-0"
4	OGA. 13"x 9.22"	13"x 27'-0"	7 GA. 9"x 6.20"	20'-0"
4ALT	10 3/4" x .500" WALL	27'-0"	6 5/8" x .344" WALL	20'-0"
5	OGA. 15" x 11.08"	15"x 28'-0"	7 GA. 9.5" x 6.42"	22'-0"
5ALT	12 3/4" x .500" WALL	28'-0"	8 5/8" x .250" WALL	22'-0"
6	2 PLY. 7 GA. 15" x 11.08"	15"x 28'-0"	3 GA. 10"x 6.36"	26'-0"
6ALT	12 3/4" x .562" WALL	28'-0"	8 5/8" x .322" WALL	26'-0"
7	2 PLY. 7 GA. 16.5" x 12.58"	16.5"x 28'-0"	3 GA. 10"x 6.64"	24'-0"
7ALT	14" x .562" WALL	28'-0"	8 5/8" x .322" WALL	24'-0"
8	2 PLY. 3 GA. 16.5" x 12.58"	16.5"x 28'-0"	3 GA. 11" x 7.08"	28'-0"
8ALT	14" x .594" WALL	28'-0"	10 3/4" x .279" WALL	28'-0"
9	2 PLY. 3 GA. 16.5" x 12.30"	16.5"x 30'-0"	3 GA. 11" x 7.36"	26'-0"
9ALT	14" x .688" WALL	30'-0"	10 3/4" x .279" WALL	26'-0"
10	2 PLY. 3 GA. 18" x 13.80"	18"x 30'-0"	3 GA. 13" x 8.80"	30'-0"
10ALT	16" x .656" WALL	30'-0"	10 3/4" x .438" WALL	30'-0"



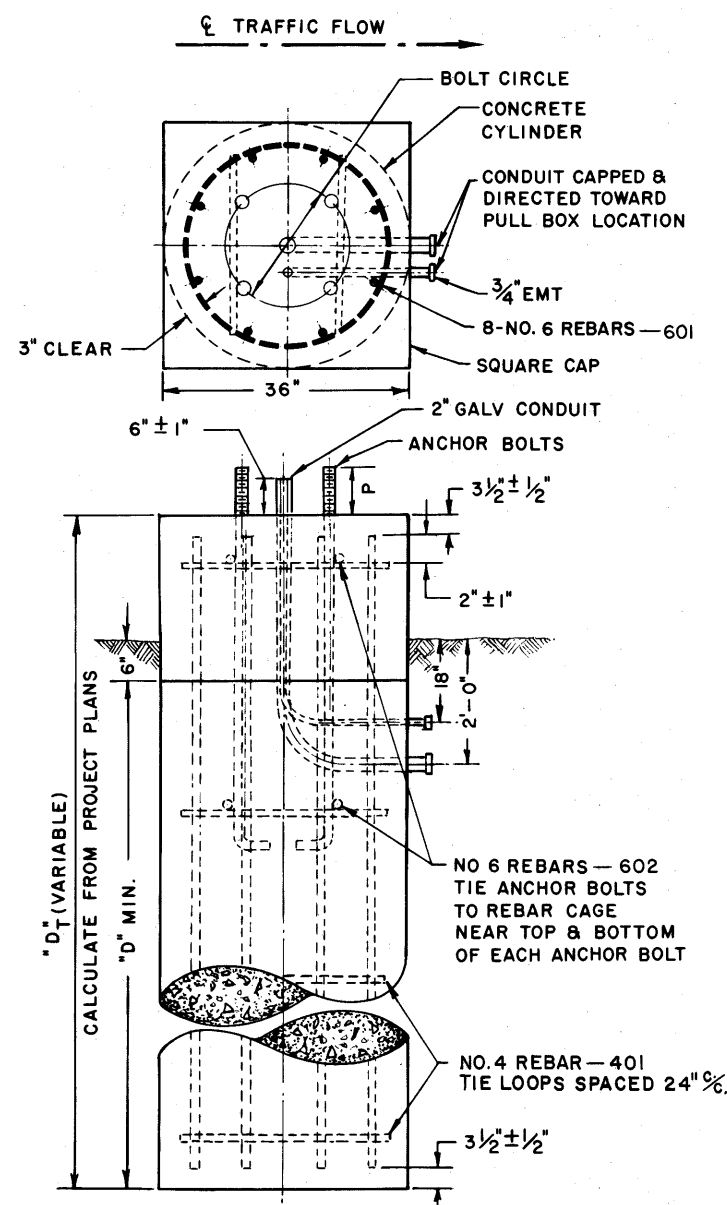
DESIGN NUMBER	DESIGN SIZE (SQ. FT.)	DESIGN MOMENT ARM (FT.)	DIM. "F" (IN.)	DIM. "P" (IN.)	DIM. "S" (IN.)	DIM. "T" (IN.)	BOLT CIRCLE "B" (IN.)	ANCHOR BOLTS "AB" (IN.)	DIM. "H" (IN.)
1	80	12	10 5/8	7 3/4	15 3/8	2	15	1 1/2 x 84	2 1/8
2	80	16	10 5/8	7 3/4	15 3/8	2	15	1 1/2 x 84	2 1/8
3	120	12	12 3/4	8 1/2	18 1/2	2	18	2 x 90	2 1/8
4	120	16	12 3/4	8 1/2	18 1/2	2	18	2 x 90	2 1/8
5	180	14	15 1/2	8 1/2	23	2	22	2 x 90	2 1/8
6	180	18	15 1/2	8 1/2	23	2	22	2 x 90	2 1/8
7	240	14	16 5/8	9 3/4	24 1/2	2 1/2	23 1/2	2 1/2 x 114	2 7/8
8	240	18	16 5/8	9 3/4	24 1/2	2 1/2	23 1/2	2 1/2 x 114	2 7/8
9	300	15 1/2	16 5/8	9 3/4	24 1/2	2 1/2	23 1/2	2 1/2 x 114	2 7/8
10	300	19 1/2	18	9 3/4	26 1/2	2 1/2	25 1/2	2 1/2 x 114	2 7/8

MATERIAL SPECIFICATIONS

POLE & ARMS: ANY STEEL WITH MIN. 52,000 P.S.I. YIELD STRESS AFTER ERECTION.
TRUSS MEMBERS: ASTM A-36
BASE & OTHER PLATE STOCK: ASTM A-36
ANCHOR BOLTS: MIN. 54,000 P.S.I. YIELD STRESS AS ERECTED.
ARM ATTACHMENT BOLTS: ASTM A-325
MISC. BOLTS & NUTS: ASTM A-307 (GALVANIZED PER ASTM A-153)
WELDING: SECTION 513.17, OHIO CONST. & MAT. SPECIFICATIONS
GALVANIZING AFTER FABRICATION. ALL STRUCTURAL PARTS: ASTM A-123

GALVANIZE ONLY TOP 16" OF ALL ANCHOR BOLTS PER ASTM A-123

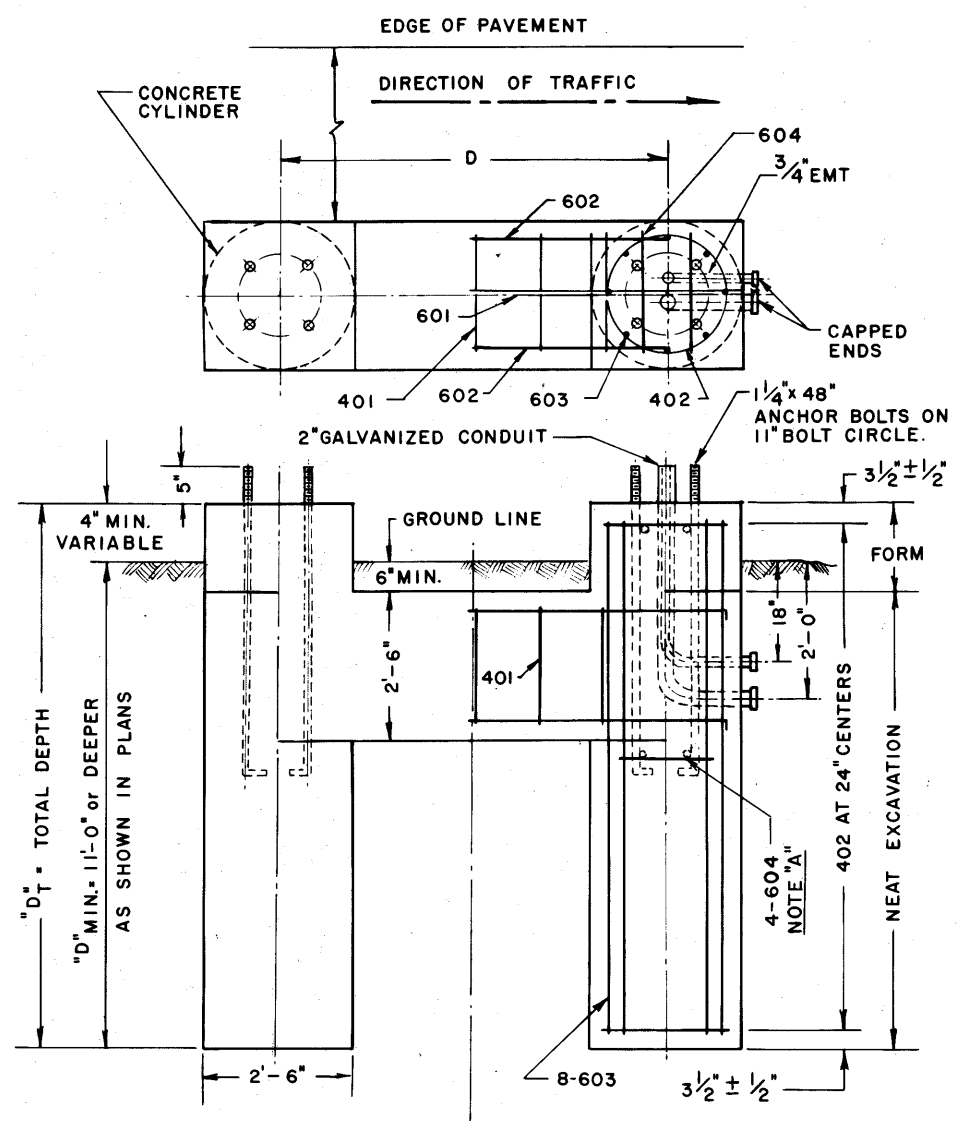
BUREAU OF DESIGN SERVICES OHIO DEPARTMENT OF HIGHWAYS	
OVERHEAD SIGN SUPPORT	
816-12.30	
APPROVED	Date 3-23-72
M. J. Cunningham ENGINEER OF DESIGN SERVICES	



816-12.30 FOUNDATIONS

DESIGN NUMBERS	ANCHOR BOLTS (in.)	BOLT CIRCLE (in.)	"P" (in.)	"D" (ft.)
1 & 2	1 3/4 x 84	15	7 3/4	9
3 & 4	2 x 90	18	8 1/2	11
5 & 6	2 x 90	22	8 1/2	11
7, 8 & 9	2 1/2 x 114	23 1/2	9 3/4	15
10	2 1/2 x 114	25 1/2	9 3/4	17

REINFORCEMENT SCHEDULE				
MARK	NO.	LENGTH	TYPE	
401	24 5/8	8'-6"	401	
601	8	D _T 6"	STR.	
602	4	2'-5"	STR.	



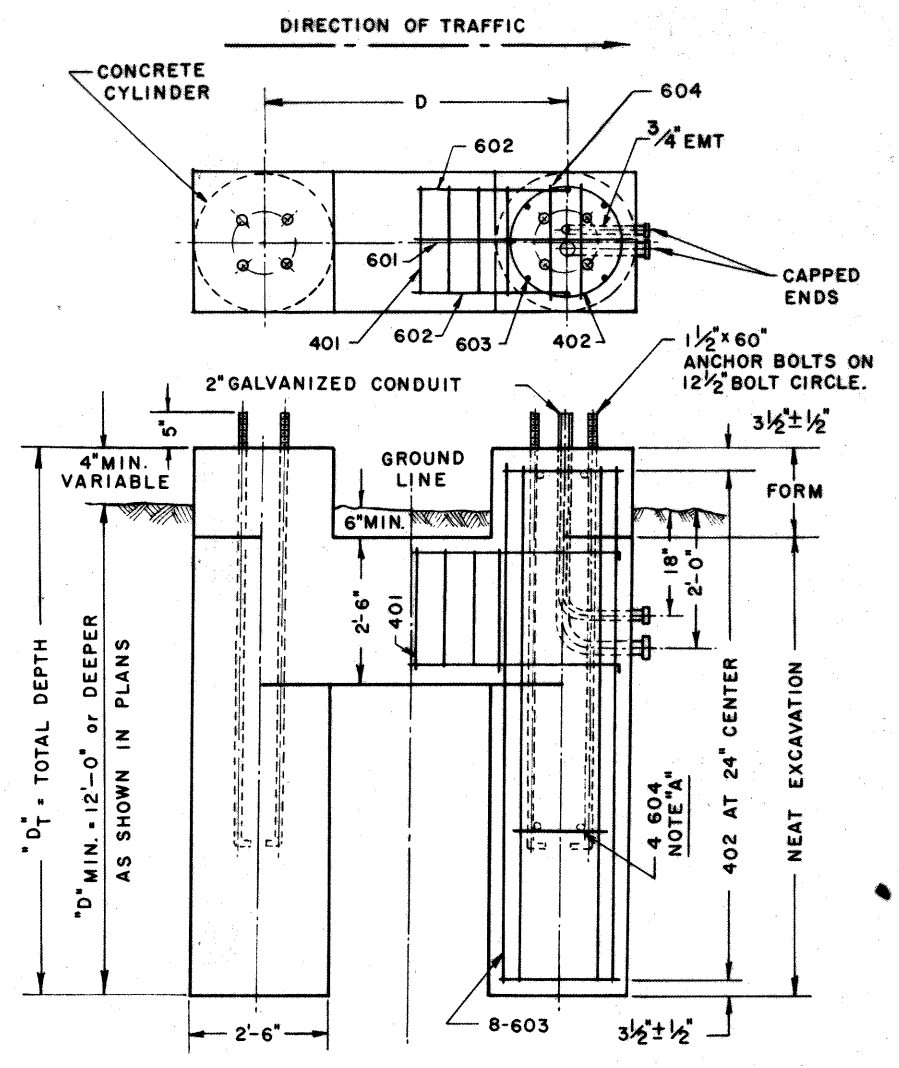
816-7. x x FOUNDATIONS

(RIGHT HAND SHOWN - LEFT HAND OPPOSITE)

NOTE "A" TIE ANCHOR BOLTS TO REBAR CAGE NEAR TOP & BOTTOM OF ANCHOR BOLTS.

ALUMINUM TRUSS BOX SIZE	"D"
3'-0"	4'-5"
4'-0"	5'-7"
5'-0"	6'-7"

REINFORCEMENT SCHEDULE FOR ALUMINUM TRUSS FOUNDATIONS				
MARK	NO.	LENGTH	TYPE	
401	12 5/8	8'-6"	401	
402	24 5/8	7'-6"	402	
601	4	D=4'-0"	601	
602	8	D=2'-0"	602	
603	32	D=0'-6"	STR.	
604	16	2'-0"	STR.	



816-15. x x FOUNDATIONS

(RIGHT HAND SHOWN - LEFT HAND OPPOSITE)

STEEL TRUSS BOX SIZE	"D"
3'-4" ±	5'-3"
5'-0"	6'-7"

REINFORCEMENT SCHEDULE FOR STEEL TRUSS FOUNDATIONS				
MARK	NO.	LENGTH	TYPE	
401	12 5/8	8'-6"	401	
402	24 5/8	7'-6"	402	
601	4	D±4'-0"	601	
602	8	D±2'-0"	602	
603	32	D±0'-6"	STR.	
604	16	2'-0"	STR.	

NOTE "A" TIE ANCHOR BOLTS TO REBAR CAGE NEAR TOP & BOTTOM OF ANCHOR BOLTS

**BUREAU OF DESIGN SERVICES
OHIO DEPARTMENT OF HIGHWAYS**

SIGN SUPPORT FOUNDATIONS

STANDARD CONSTRUCTION **816-20.00**
DRAWING

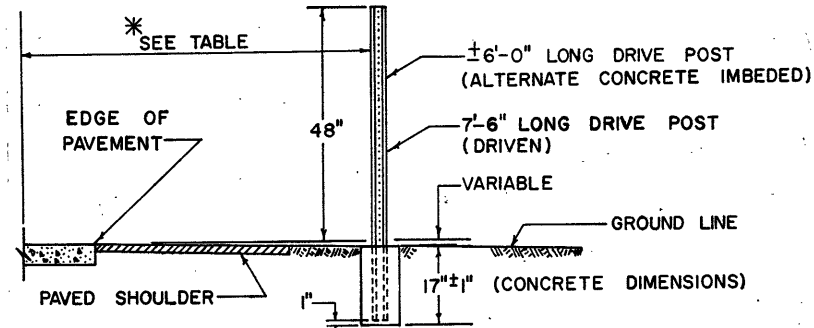
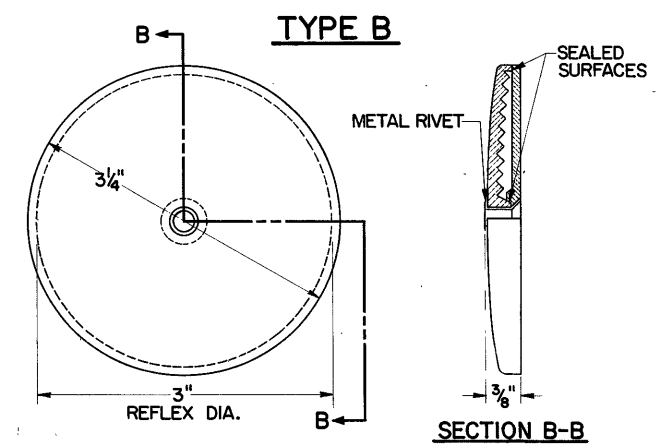
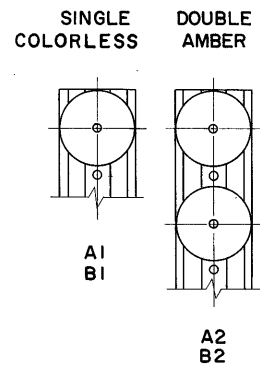
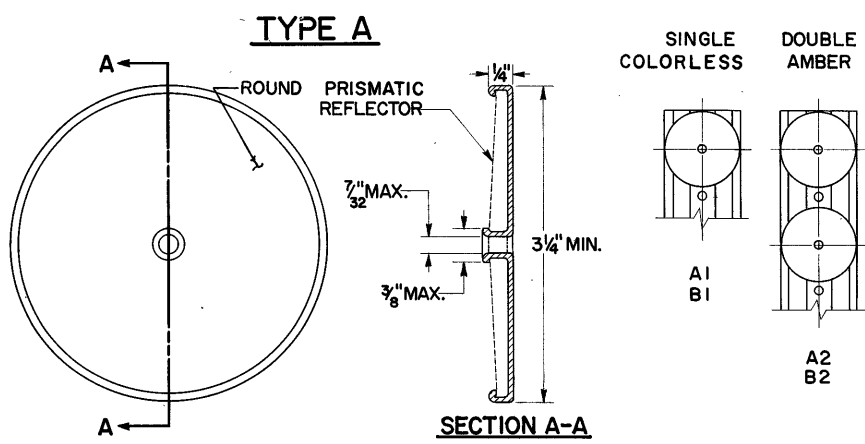
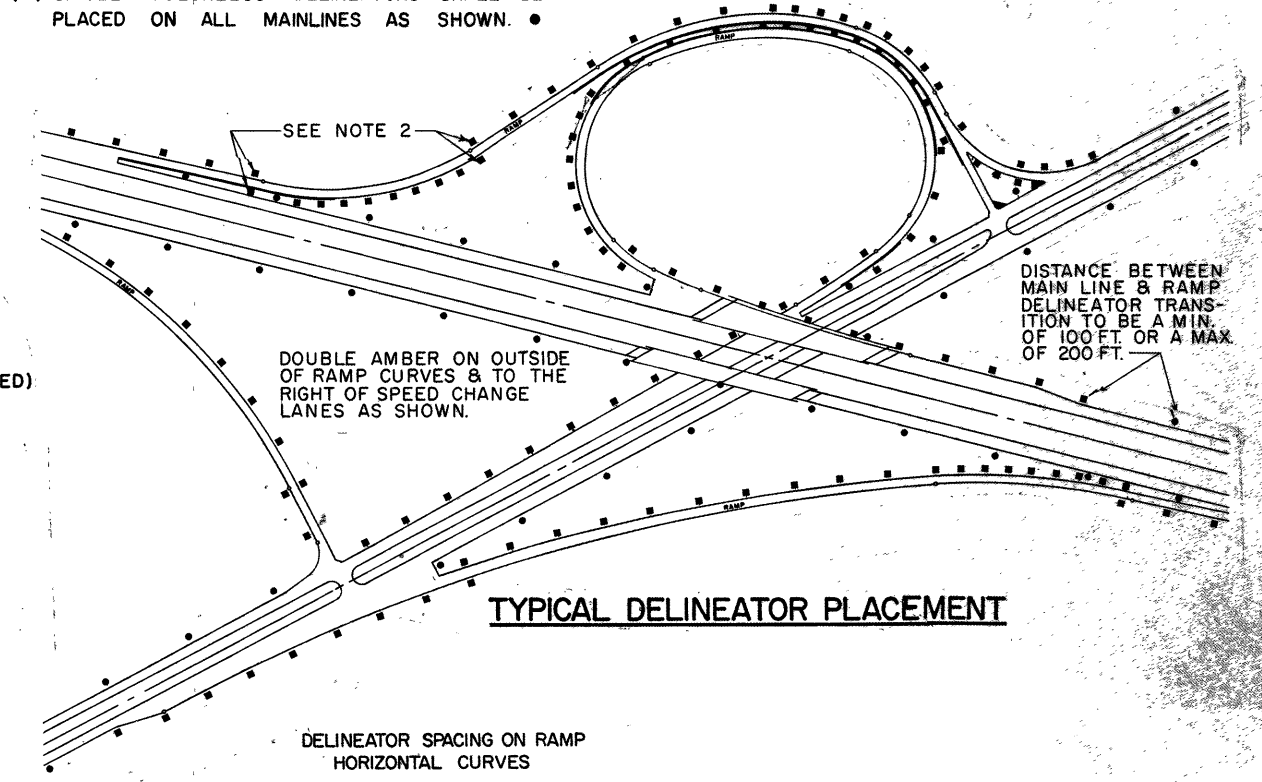
APPROVED *M. J. Cunningham*
ENGINEER OF DESIGN SERVICES

DATE
3-23-72

LOR-2-6.62
LOR-90-11.96

NOTE:

- (A) DOUBLE AMBER DELINEATORS SHALL BE PLACED ON ALL RAMP AS SHOWN. ■
- (B) SINGLE COLORLESS DELINEATORS SHALL BE PLACED ON ALL MAINLINES AS SHOWN. ●

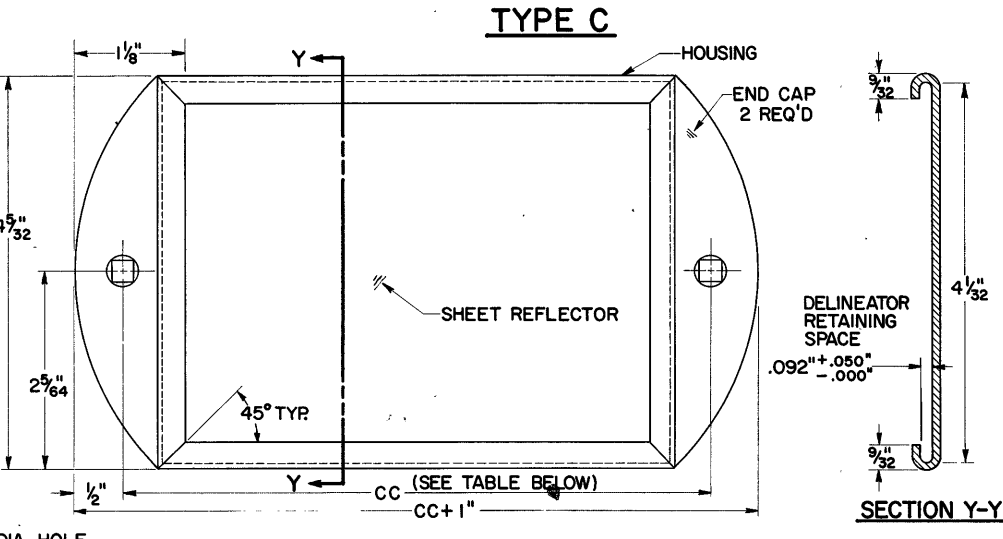


LATERAL PLACEMENT OF DELINEATORS

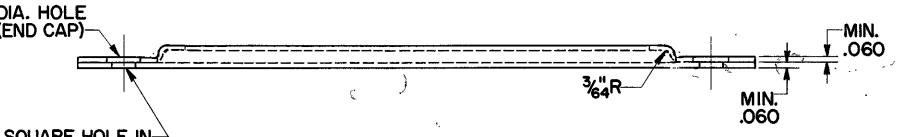
* TABLE

TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE COLORLESS	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE

** THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.



TYPE	DIM. CC
C1 - SINGLE COLORLESS	6"
C2 - DOUBLE AMBER	11"



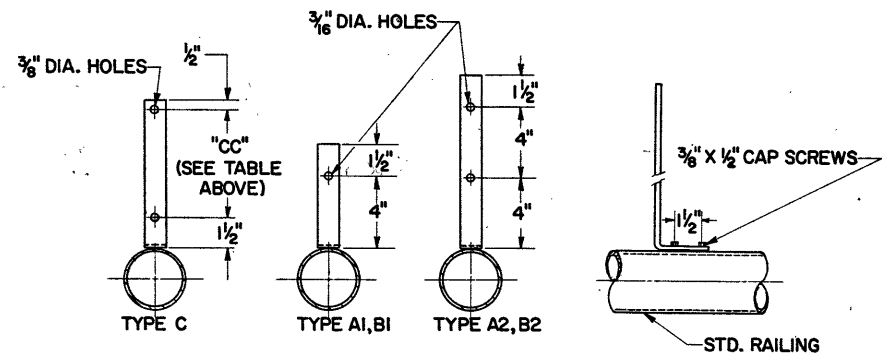
DELINATOR SPACING ON RAMP HORIZONTAL CURVES

RADI, FT.	SPACING ON CURVE	* TRANSITION SPACING
TANGENT	1,801	100'
1,800	1,401	80'
1,400	1,001	70'
1,000	751	60'
750	551	50'
550	326	40'
325		30'

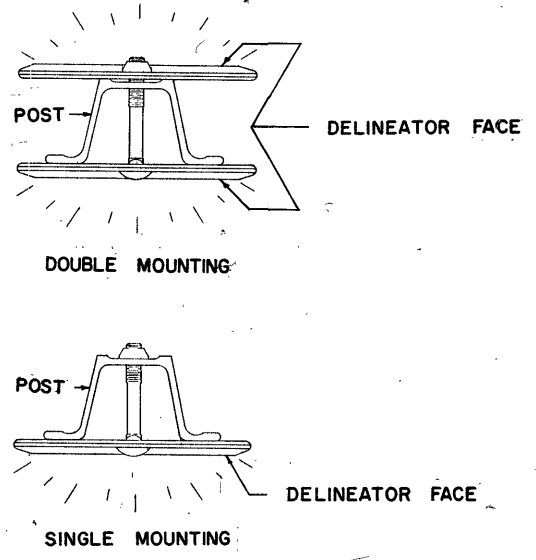
* SUCH AS 40' TO 70' TO 100' OR 100' TO 80' TO 50' OR ANY OTHER COMBINATION SHOWN ABOVE.

NOTES

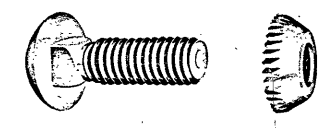
- TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES.
- WHEN CROSSING FROM LEFT TO RIGHT OR FROM RIGHT TO LEFT ON THE RAMP, THE DELINEATORS AT THE POINT OF CROSSOVER ARE TO BE AT THE SAME STATION ON EACH SIDE.
- NO DELINEATORS ARE TO BE PLACED IN PAVED BERM.
- WHEN RADII OF CURVE ON RAMP REQUIRE 100' SPACING THE DELINEATORS SHALL BE PLACED ON THE RIGHT IN RELATION TO THE FLOW OF TRAFFIC.



BRIDGE RAIL BRACKET

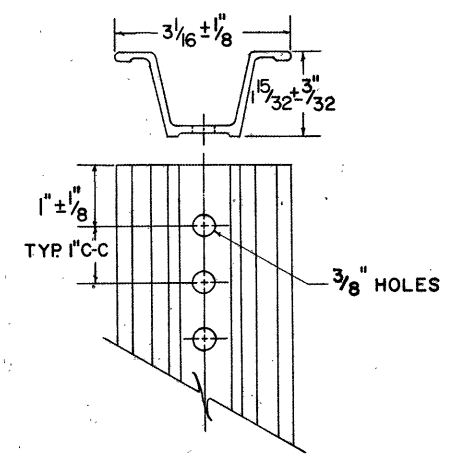


DELINATOR MOUNTING



TAMPER RESISTANT FASTENERS SHALL BE USED TO FASTEN DELINEATORS TO POST AS/OR SIMILAR TO ONE SHOWN ABOVE.

TAMPER RESISTANT FASTENERS



2LB./FT. DELINATOR DRIVE POST

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

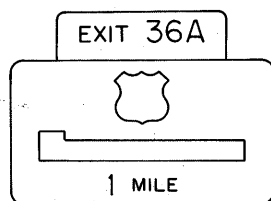
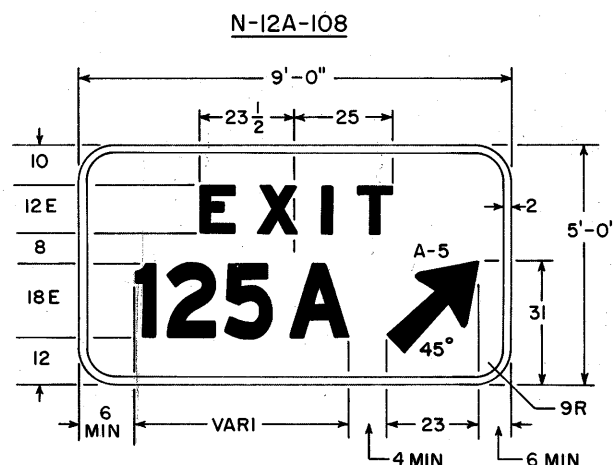
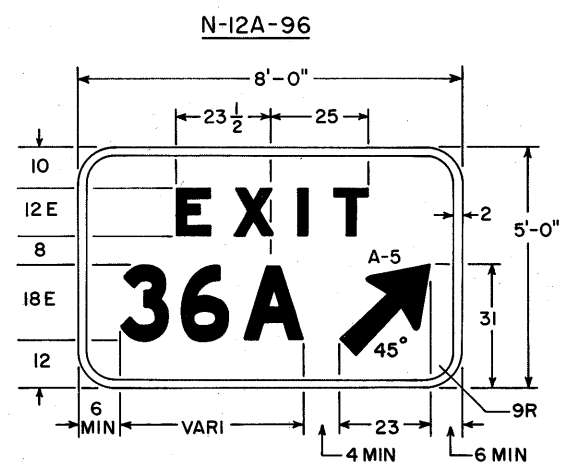
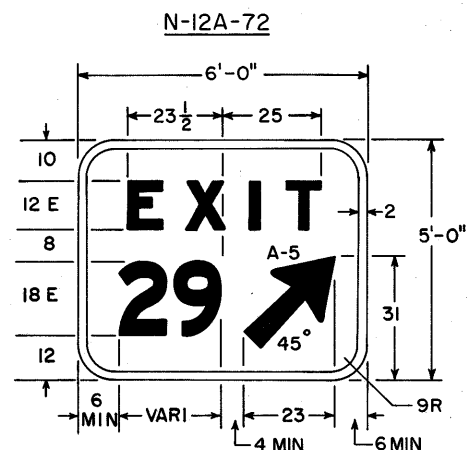
DELINATOR DETAILS

620

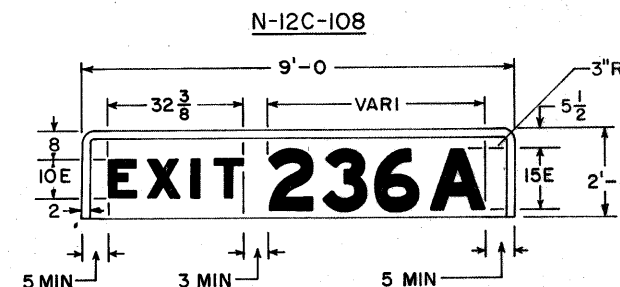
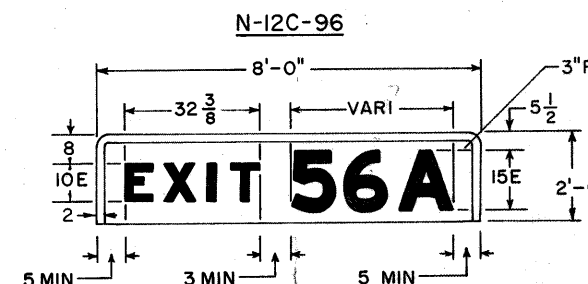
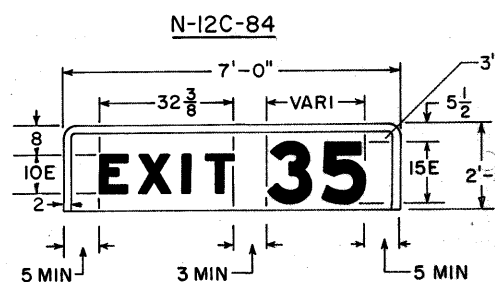
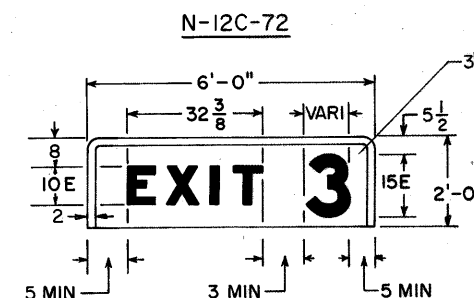
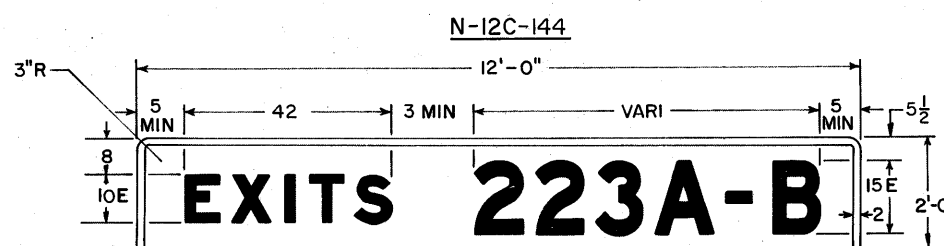
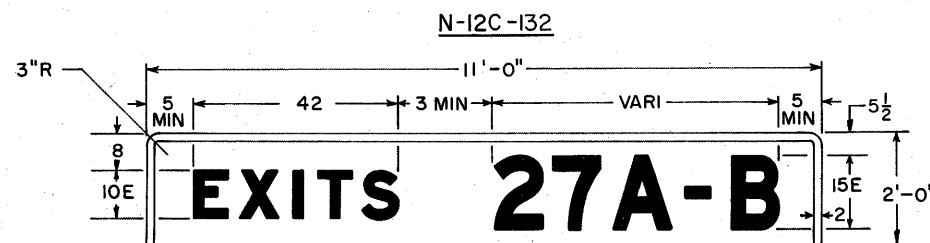
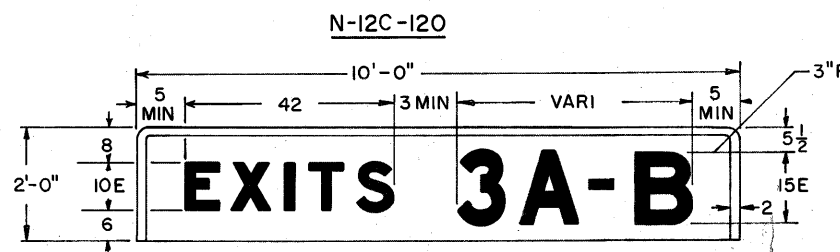
DATE
9-25-62
5-24-65
9-12-67

APPROVED *Robert Colman*
ENGINEER OF TRAFFIC

LOR-2-662
LOR-90-11.96



TYPICAL SIGN



	E	X	I	T	S	TOTAL				
10"E	6.75	2.50	7.62	3.37	2.12	3.25	6.75	2.25	7.37	42
		E	X	I	T	TOTAL				
12"E	8.37	5.62	9.12	7.62	2.50	6.87	8.37			48 1/2

	E	X	I	T	TOTAL				
10"E	6.75	2.50	7.62	3.37	2.12	3.25	6.75		32 3/8

NOTE

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

THE LEGEND AND OUTLINE ARE WHITE. THE BACKGROUND IS GREEN.

CODE NUMBER	DIGIT AND/OR LETTER COMBINATION
N-12A-72	ONE OR TWO DIGITS, ONE DIGIT AND ONE LETTER
N-12A-96	THREE DIGITS, TWO DIGITS AND ONE LETTER
N-12A-108	THREE DIGITS AND ONE LETTER
N-12C-72	ONE DIGIT
N-12C-84	TWO DIGITS, OR ONE DIGIT AND ONE LETTER
N-12C-96	THREE DIGITS, OR TWO DIGITS AND ONE LETTER
N-12C-108	THREE DIGITS AND ONE LETTER
N-12C-120	ONE DIGIT AND TWO LETTERS
N-12C-132	TWO DIGITS AND TWO LETTERS
N-12C-144	THREE DIGITS AND TWO LETTERS

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

EXPRESSWAY GUIDE SERIES

N-12A, N-12C

DATE
4-13-71
4-24-72

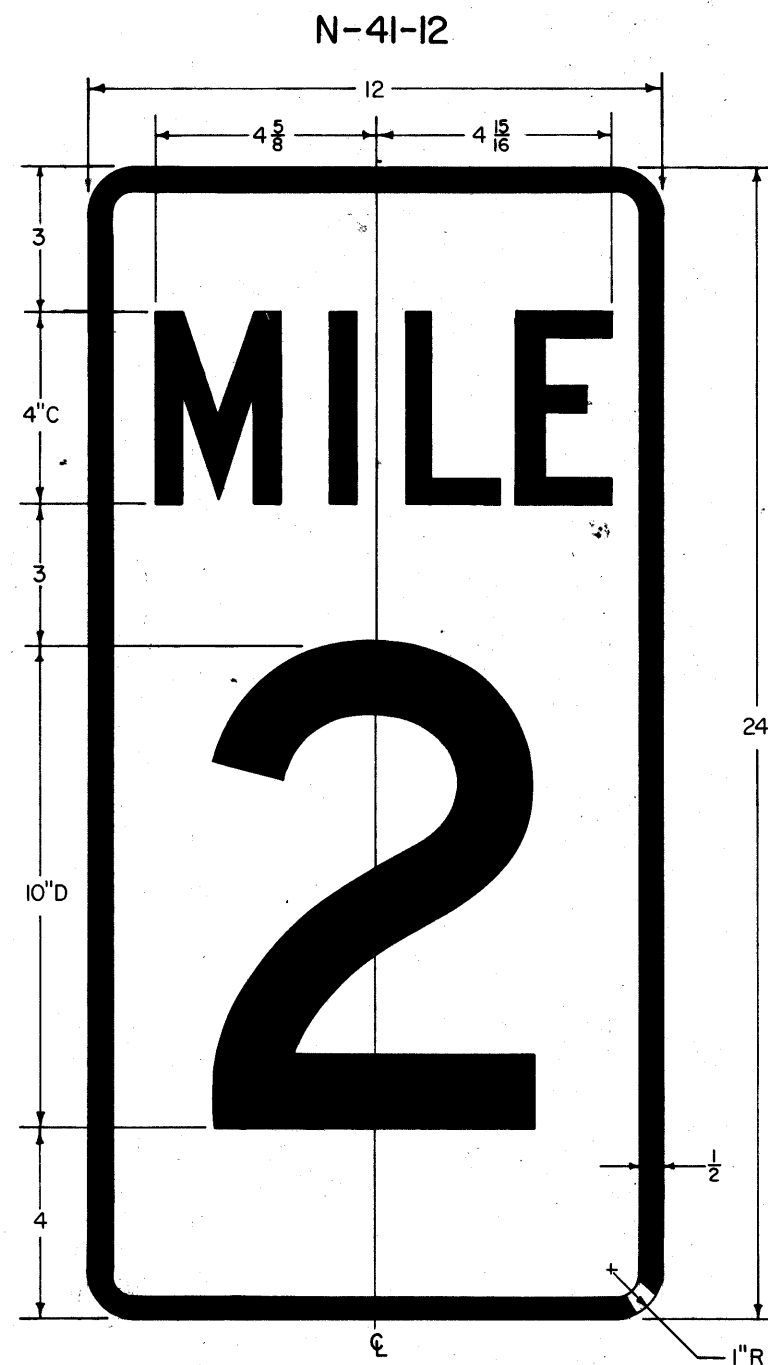
DRAWN BY:
C.R.

APP BY:
R. O. McMiller

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

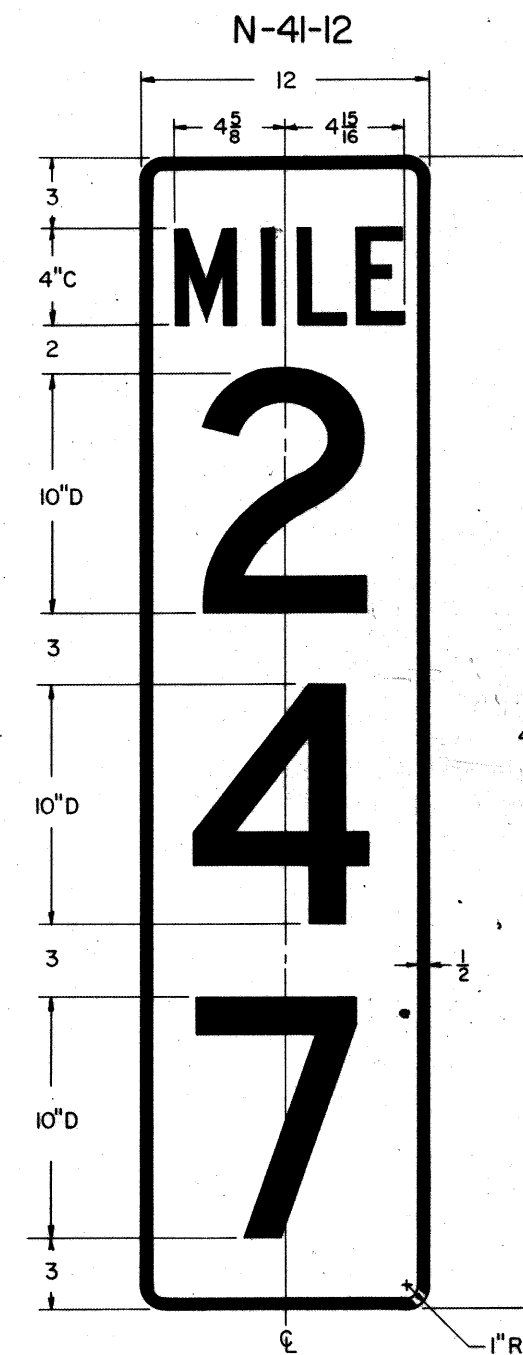
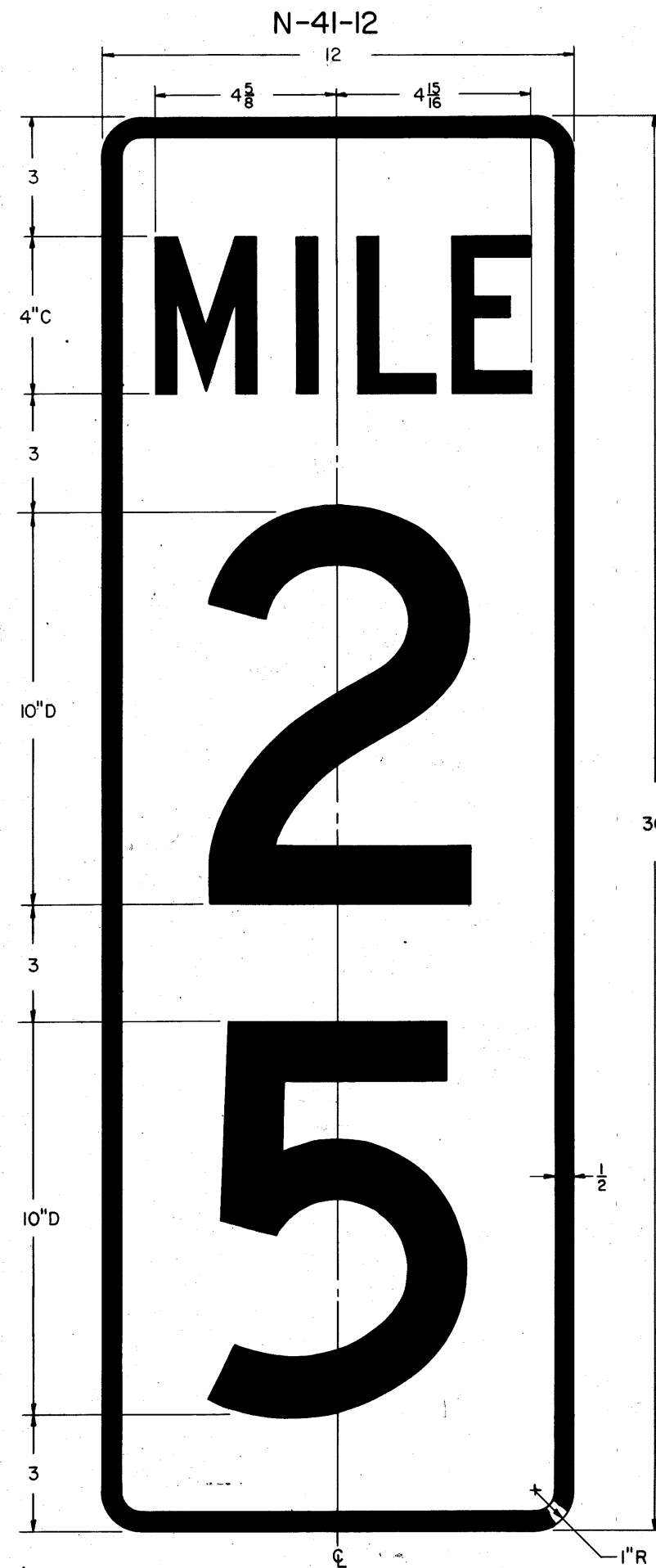
70
103

LOR-2-6.62
LOR-90-11.96



	M	I	L	E	TOTAL			
4"C	2.59	1.00	.56	1.00	2.00	.40	2.00	9 9/16

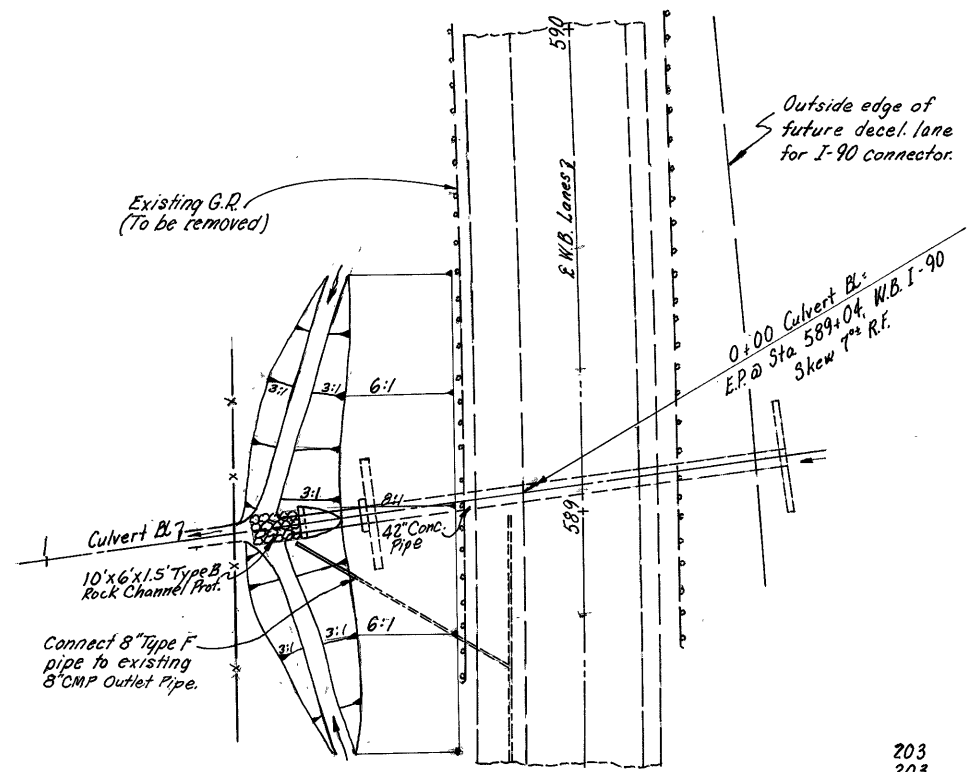
NOTE:
THE LEGEND AND OUTLINE ARE WHITE. THE BACKGROUND IS GREEN.
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.



BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS	
INFORMATION SERIES N-41 12"	
DATE 9-14-71	
DRAWN BY E.G.	APP. BY R.D. McMillan

LOR-2 -6.62
LOR-90-11.96

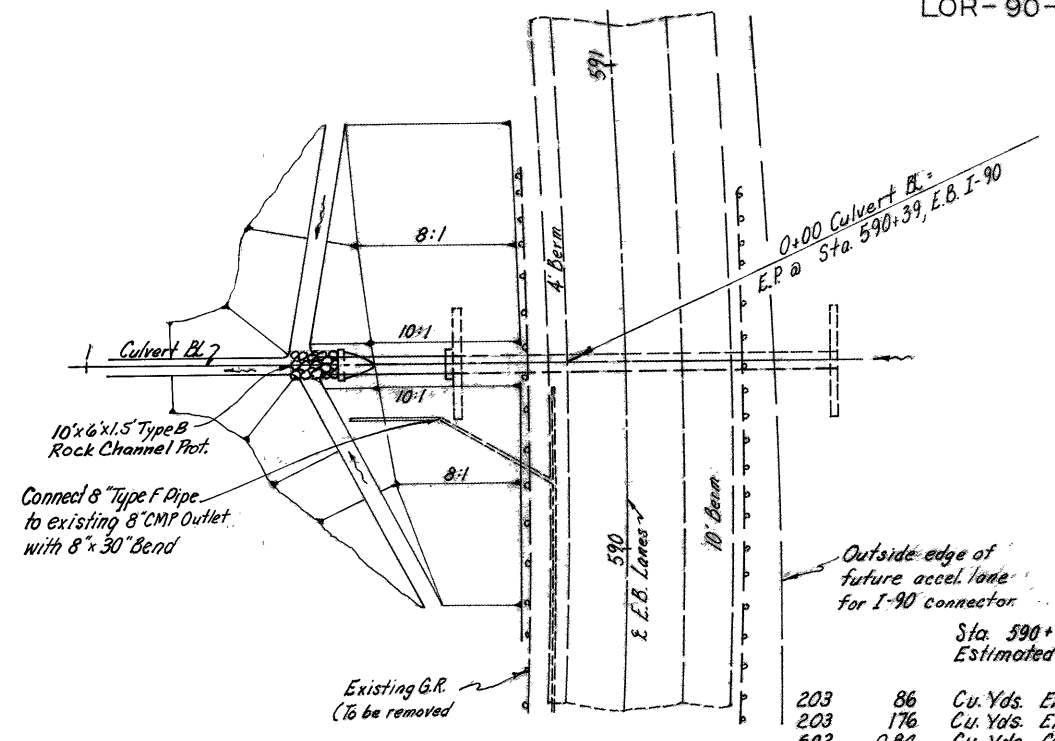
CALC. BY: *P.C.M.* 7-72
CHKD. BY: *B.H.* 7-72



Sta. 589+04 Lt. (W.B.L.)
Estimated Quantities

203	25	Cu. Yds.	Excavation not including Emb. Const.
203	83	Cu. Yds.	Embankment
602	0.84	Cu. Yds.	Concrete Masonry
603	14	Lin. Ft.	42" Conduit Type A, 706.02, As Per Plan
603	14	Lin. Ft.	8" Conduit, Type F
659	401	Sq. Yds.	Seeding and Mulching, As Per Plan
601	4.4	Cu. Yds.	Rock Channel Protection, Type B

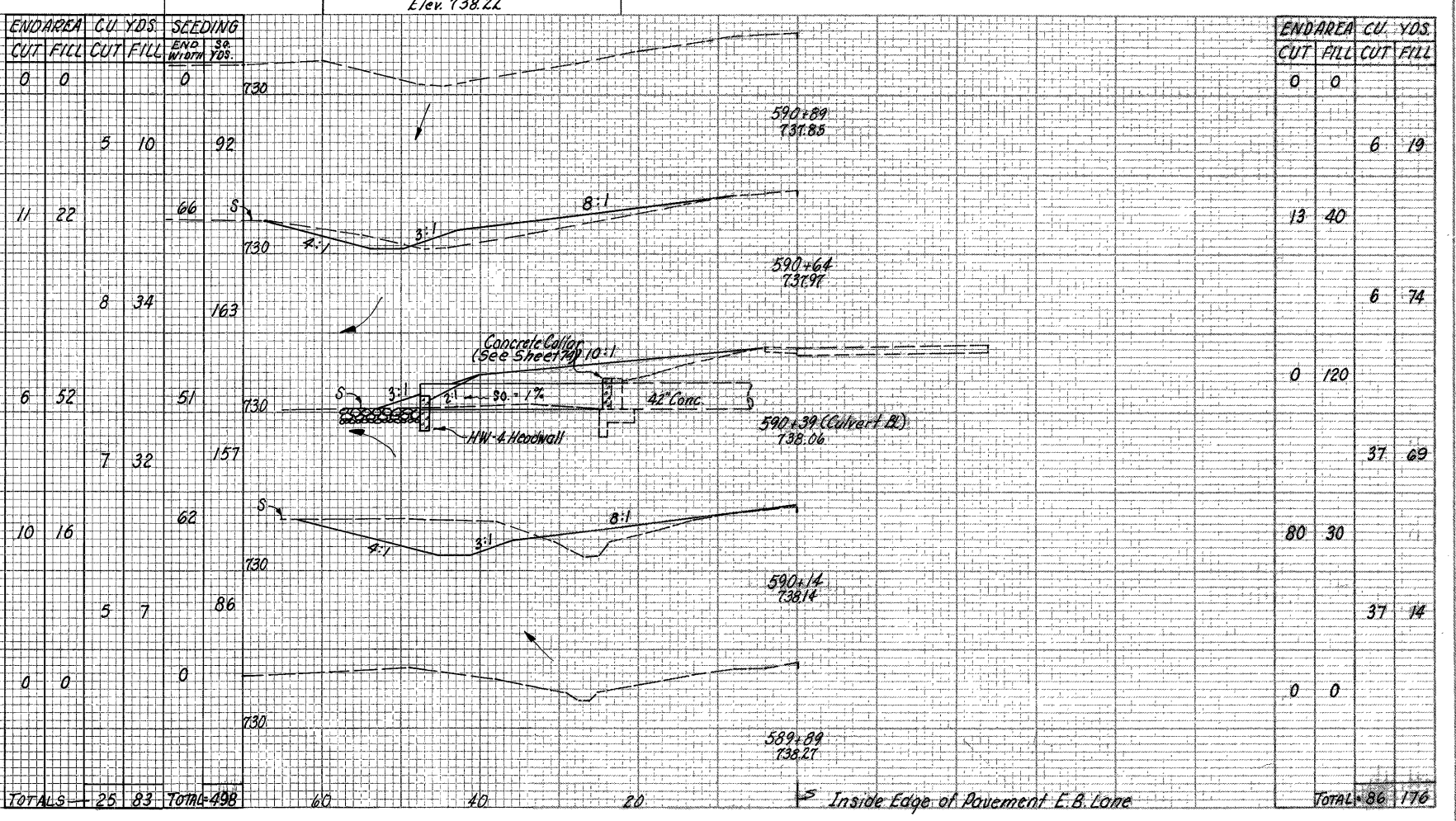
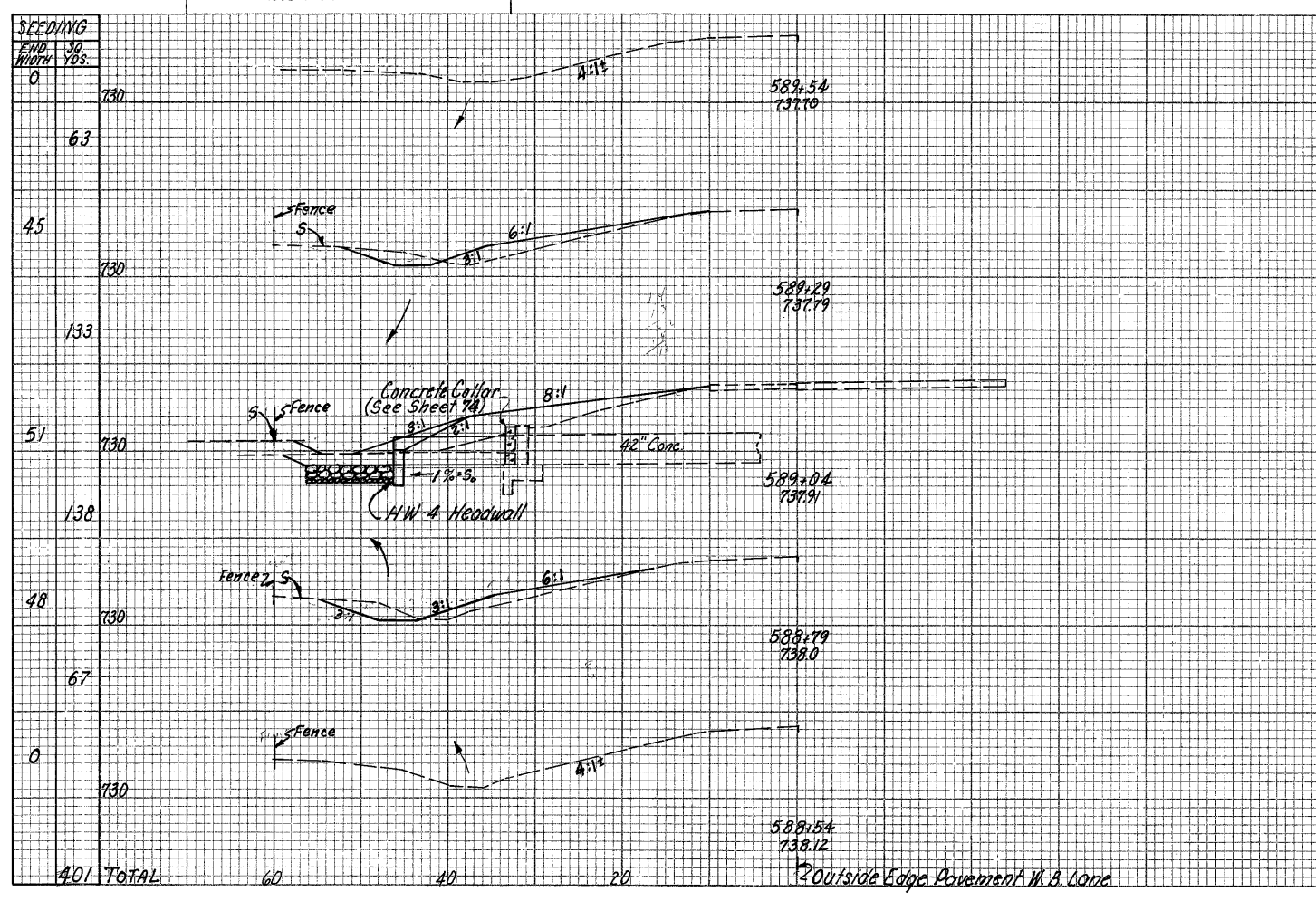
B.M. - Right Pavement Edge
opposite Sta. 589 stamp
Elev. 738.67



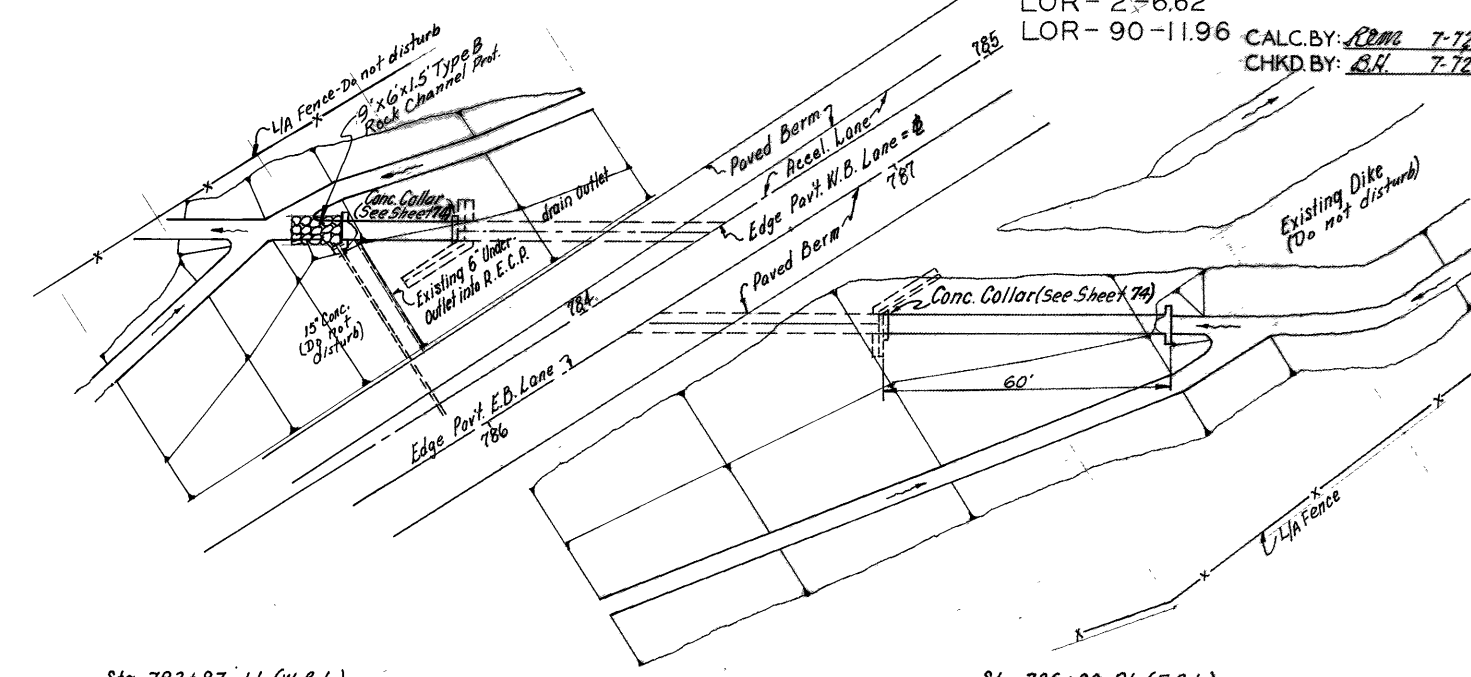
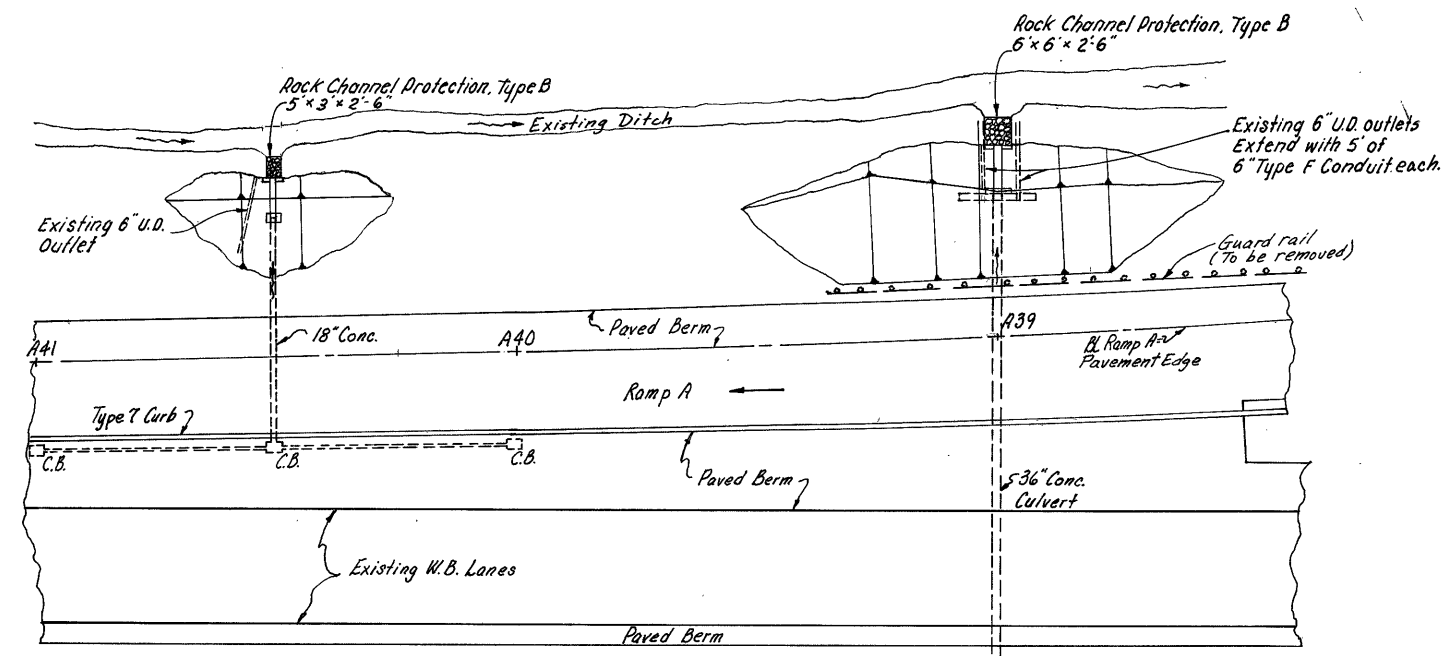
Sta. 590+39 Lt. (E.B.L.)
Estimated Quantities

203	86	Cu. Yds.	Excavation not including Emb. Const.
203	176	Cu. Yds.	Embankment
602	0.84	Cu. Yds.	Concrete Masonry
603	24	Lin. Ft.	42" Conduit Type A 706.02, As Per Plan
603	18	Lin. Ft.	8" Conduit, Type F
659	498	Sq. Yds.	Seeding and Mulching, As Per Plan
601	4.4	Cu. Yds.	Rock Channel Protection, Type B

B.M. - Left Pavement Edge
opposite Sta. 590 stamp
Elev. 738.22

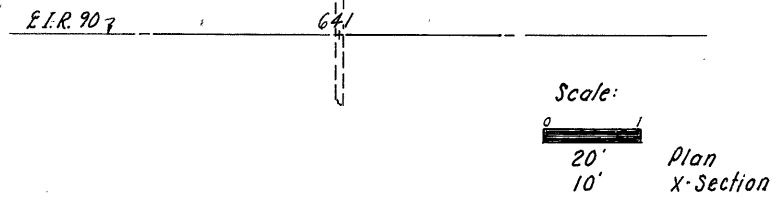


LOR - 2-6.62
 LOR - 90-11.96
 CALC. BY: *PCM* 7-72
 CHKD BY: *ELH* 7-72



Sta. 639+50 and Sta. 641+00 Lt. (W.B.L.)
 Estimated Quantities

203	2	Cu. Yds.	Excavation, Not including Embankment Constr.
203	118	Cu. Yds.	Embankment
601	5.7	Cu. Yds.	Rock Channel Protection, Type B
602	1.07	Cu. Yds.	Concrete Masonry
603	10	Lin. Ft.	36" Conduit, Type A, 706.02, As Per Plan
603	8	Lin. Ft.	18" Conduit, Type B, 706.01 or 706.02, As Per Plan
659	325	Sq. Yds.	Seeding and Mulching, As Per Plan
603	10	Lin. Ft.	6" Conduit, Type F



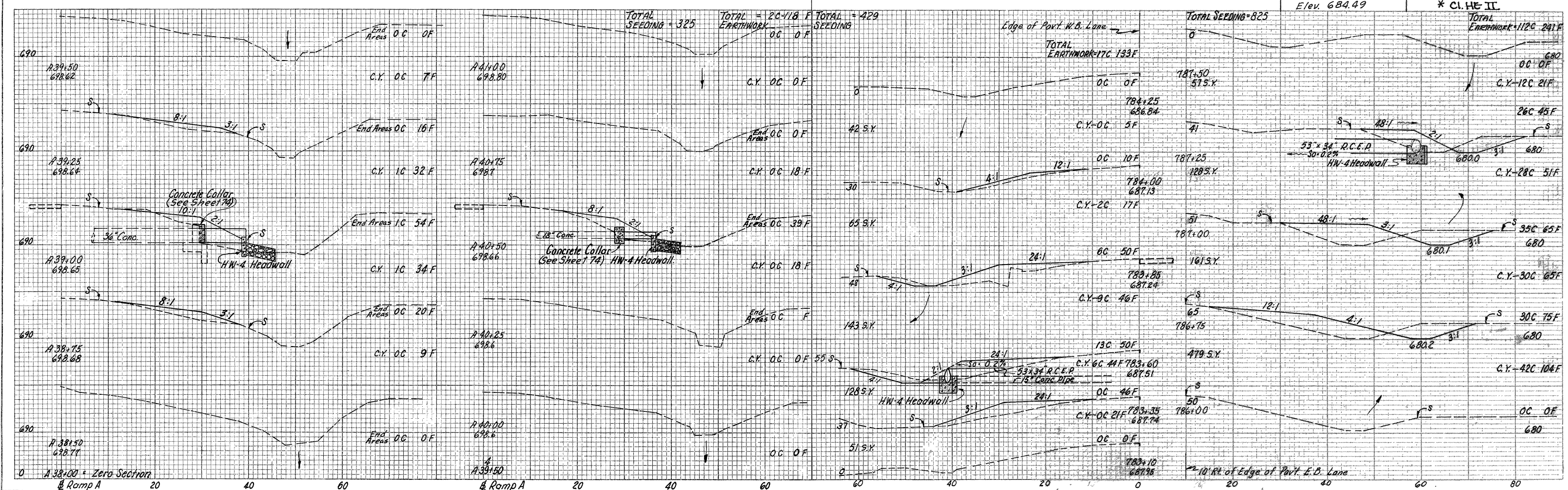
Sta. 783+87 Lt. (W.B.L.)
 Estimated Quantities

203	17	Cu. Yds.	Excavation, Not including Emb. Const.
203	133	Cu. Yds.	Embankment
602	0.82	Cu. Yds.	Concrete Masonry
603	24	Lin. Ft.	53" x 34" Conduit, Type A, 706.04, As Per Plan
659	429	Sq. Yds.	Seeding and Mulching, As Per Plan
601	4	Cu. Yds.	Rock Channel Protection, Type B

Sta. 786+80 Rt. (E.B.L.)
 Estimated Quantities

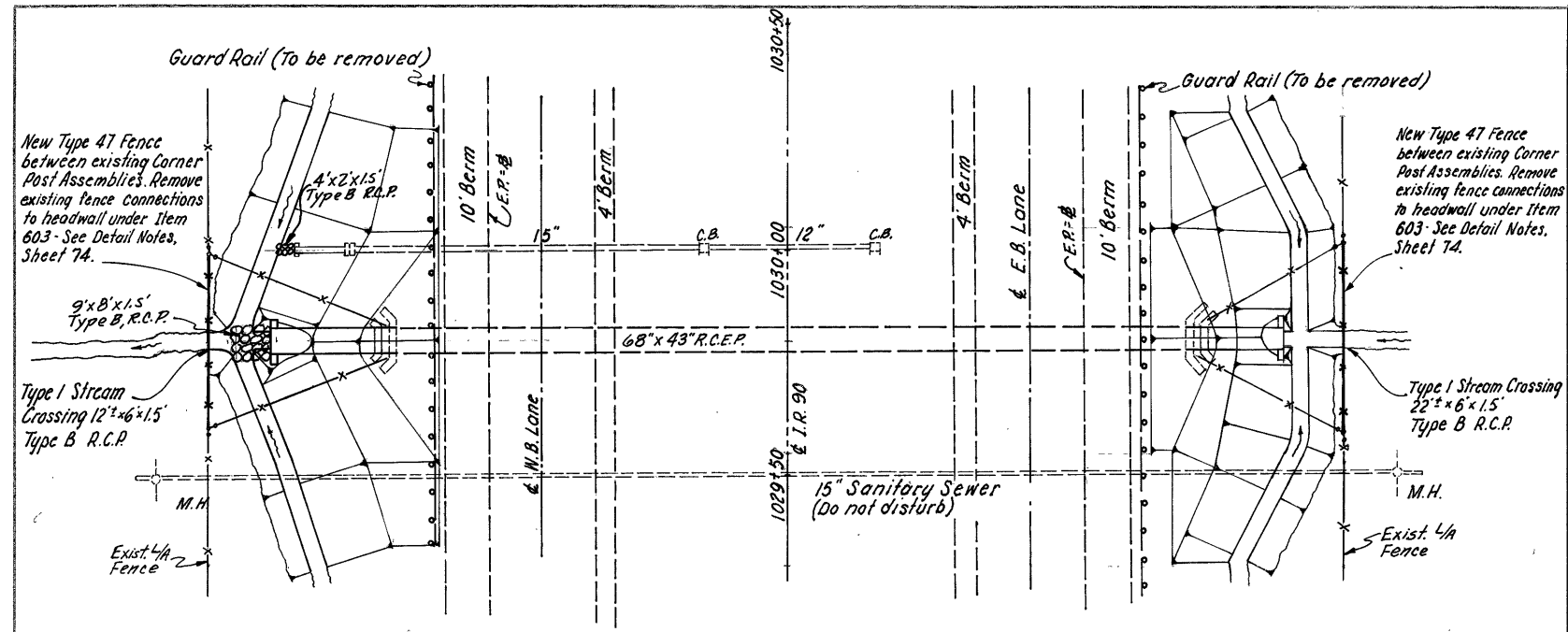
203	112	Cu. Yds.	Excavation, Not including Emb. Const.
203	241	Cu. Yds.	Embankment
602	0.82	Cu. Yds.	Concrete Masonry
603	60	Lin. Ft.	53" x 34" Conduit, Type A, 706.04, As Per Plan
659	825	Sq. Yds.	Seeding and Mulching, As Per Plan

B.M. Inside Pavement Edge, Sta. 787+00 E.B. Elev. 684.49
 * C.I. HE II



CULVERT EXTENSION DETAILS

LOR - 2 - 6.62
 LOR - 90 - 11.96
 CALC. BY: REM 7-72
 CHKD. BY: B.H. 7-72

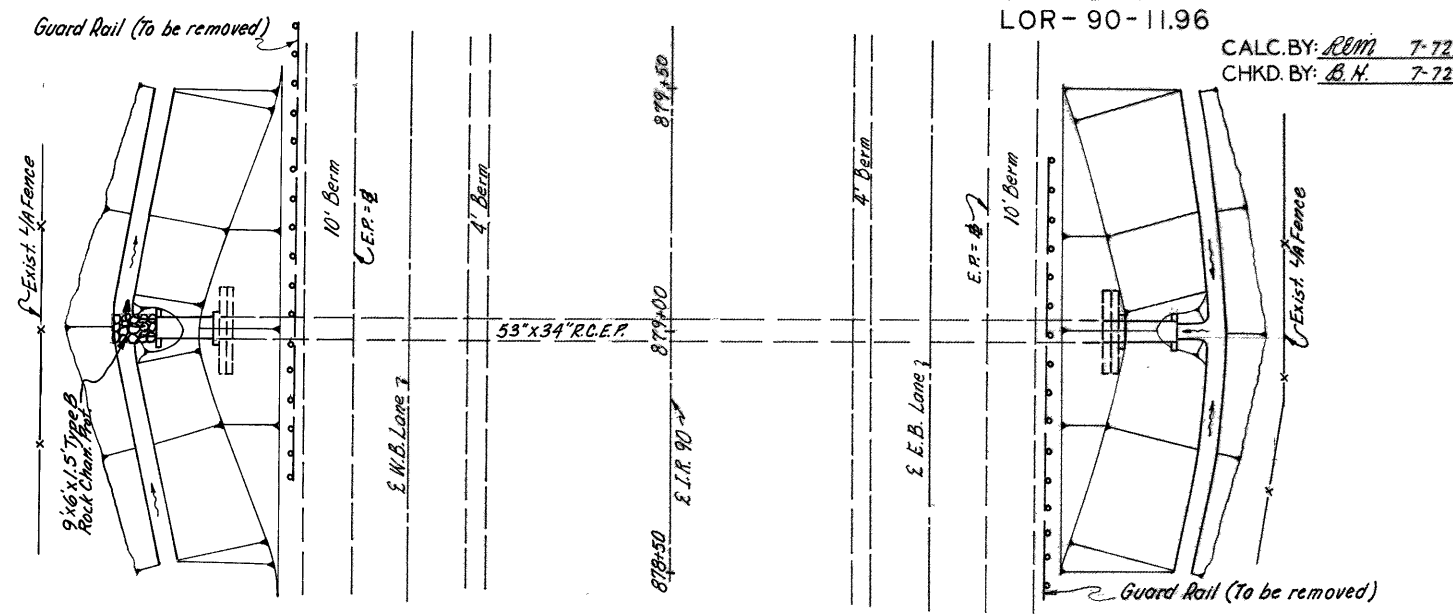


Sta. 1029+80 Lt. (W.B.L.)
 Estimated Quantities

203	22	Cu. Yds.	Excavation Not including Emb. Const.
203	204	Cu. Yds.	Embankment
602	1.32	Cu. Yds.	Concrete Masonry
603	24	Lin. Ft.	68" x 43" Conduit, Type A, 706.04, As Per Plan.
603	12	Lin. Ft.	15" Conduit, Type B, 706.01 or 706.02, As Per Plan.
659	493	Sq. Yds.	Seeding and Mulching, As Per Plan
601	11.3	Cu. Yds.	Rock Channel Protection, Type B
607	39	Lin. Ft.	Fence, Type 47

Sta. 1029+80 Rt. (E.B.L.)
 Estimated Quantities

203	46	Cu. Yds.	Excavation Not including Emb. Const.
203	159	Cu. Yds.	Embankment
602	1.32	Cu. Yds.	Concrete Masonry
603	18	Lin. Ft.	68" x 43" Conduit, Type A, 706.04, As Per Plan.
659	474	Sq. Yds.	Seeding and Mulching, As Per Plan.
607	42	Lin. Ft.	Fence, Type 47
601	9.8	Cu. Yds.	Rock Channel Protection, Type B

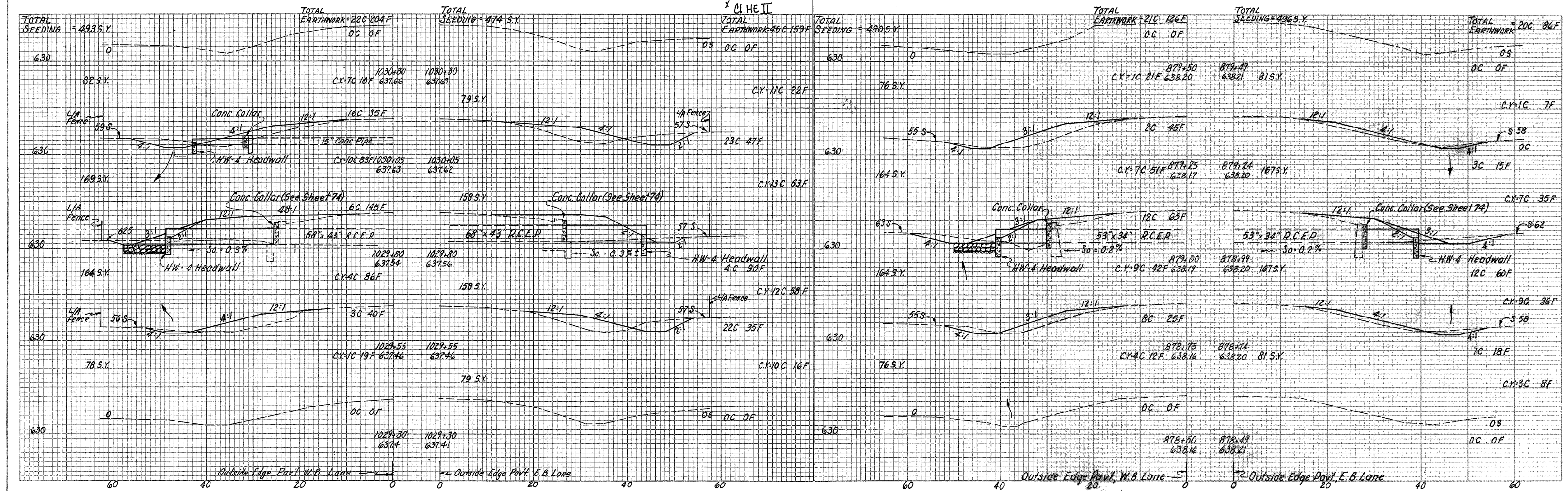


Sta. 879+00 Lt. (W.B.L.)
 Estimated Quantities

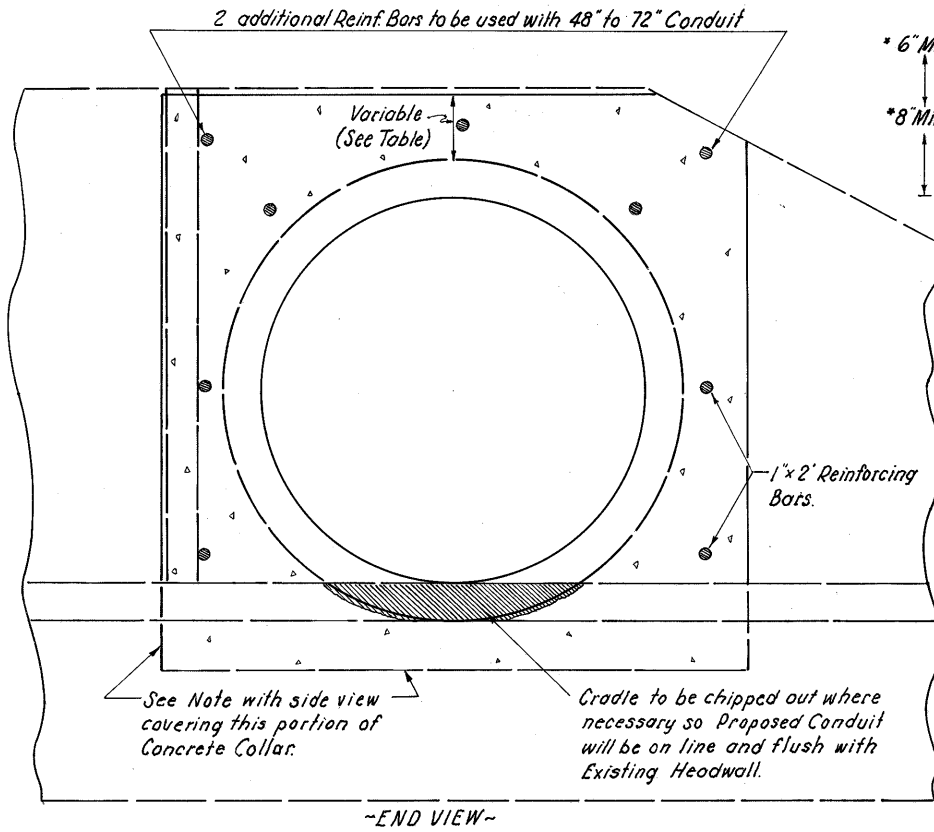
203	21	Cu. Yds.	Excavation not including Emb. Const.
203	126	Cu. Yds.	Embankment
602	0.82	Cu. Yds.	Concrete Masonry
603	12	Lin. Ft.	53" x 34" Conduit, Type A, 706.04, Cl. HE II
			As Per Plan.
659	480	Sq. Yds.	Seeding and Mulching, As Per Plan.
601	4	Cu. Yds.	Rock Channel Protection, Type B

Sta. 878+99 Rt. (E.B.L.)
 Estimated Quantities

203	20	Cu. Yds.	Excavation not including Emb. Const.
203	86	Cu. Yds.	Embankment
602	0.82	Cu. Yds.	Concrete Masonry
603	12	Lin. Ft.	53" x 34" Conduit, Type A, 706.04, Cl. HE II
			As Per Plan.
659	496	Sq. Yds.	Seeding and Mulching, As Per Plan



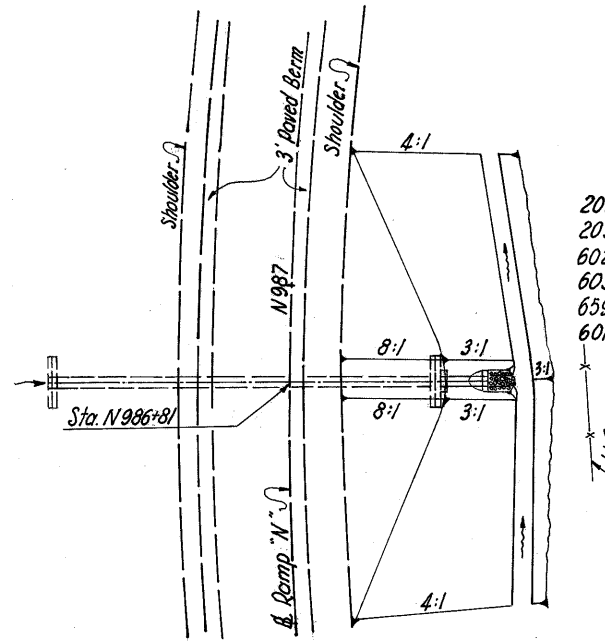
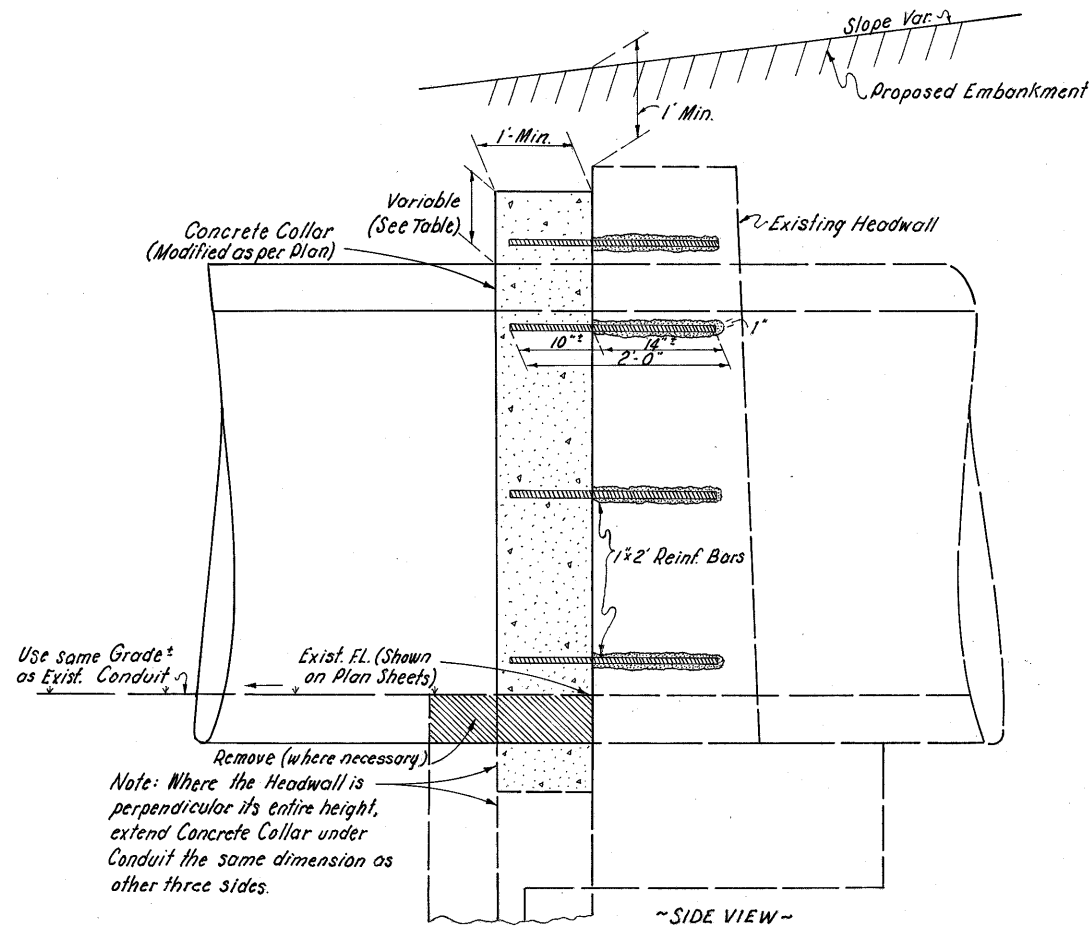
Note: The Cost of Removing portions of Existing Headwalls to cradle proposed Conduits, drilling and setting Reinf. Bars, Constructing Concrete Collars (using Class C Concrete), and all other related work, such as removing Existing Paved Gutter and L/A Fence as necessary, is to be included in the Pertinent Bid Item 603 Conduit, As Per Plan.



TABLE

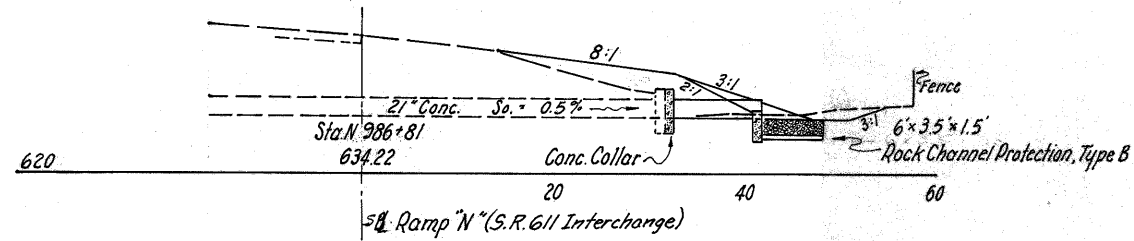
* 6" Min.	30" Conduit
	36" "
	42" "
* 8" Min.	48" "
	54" "
	60" "
	72" "

~ CONCRETE COLLAR DETAILS ~

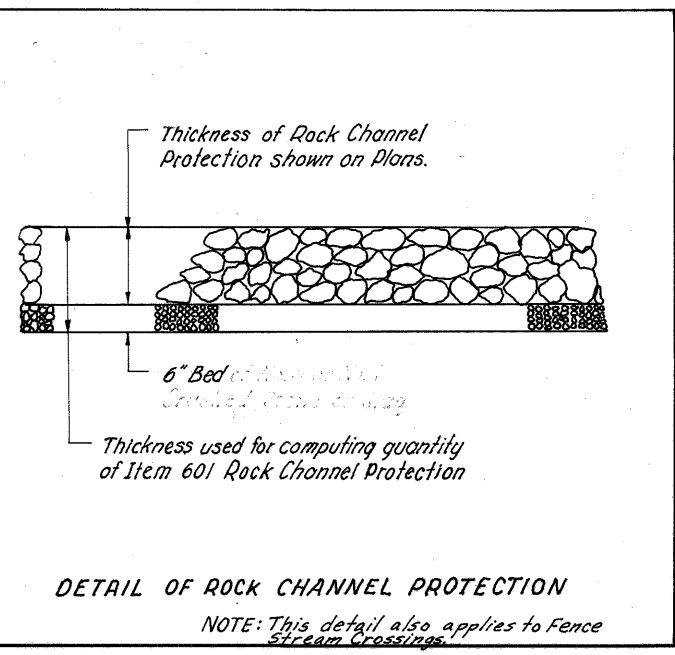


Sta. 986+81 Ramp N
Estimated Quantities

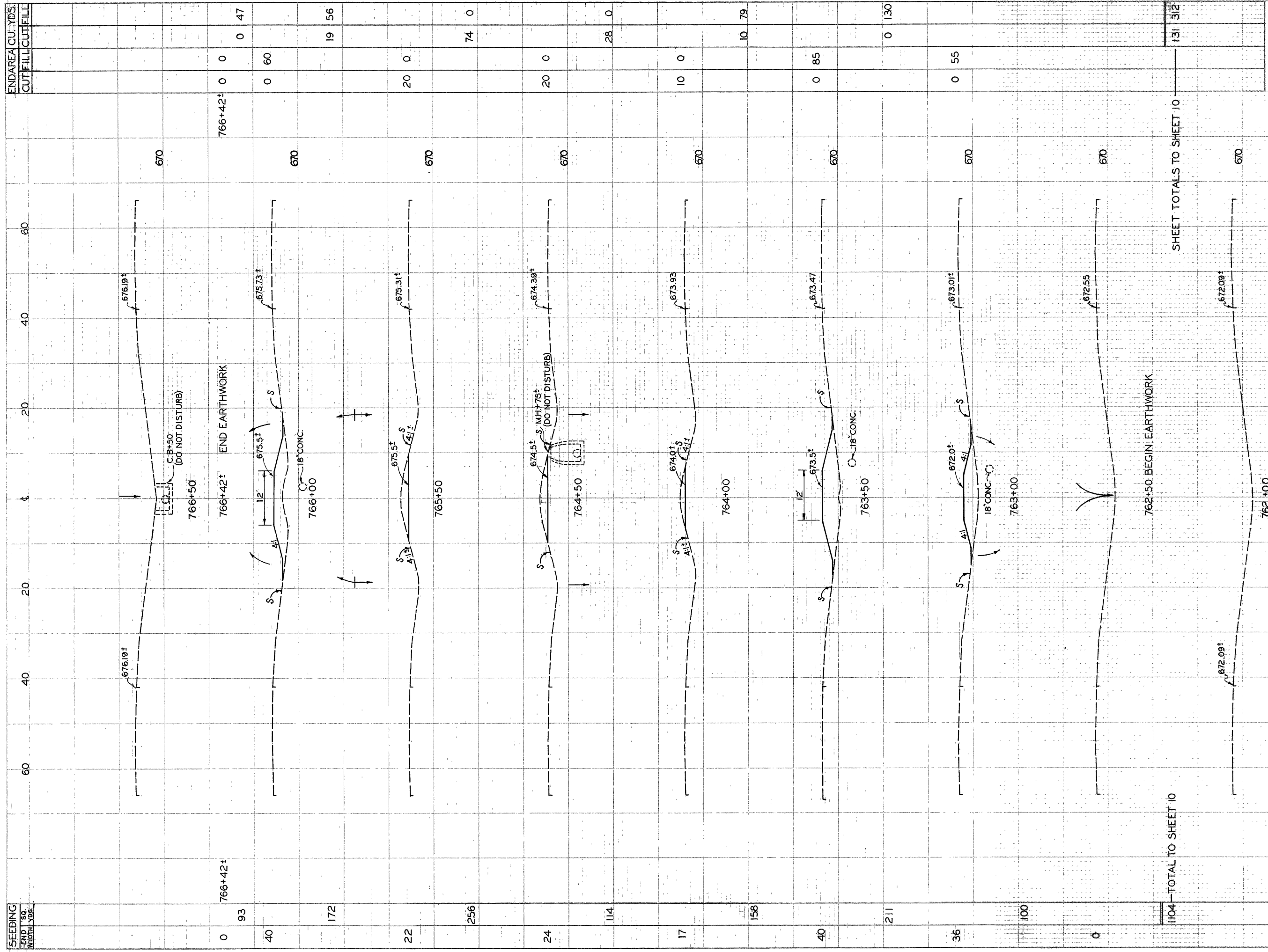
203	12	Cu. Yds.	Excavation, Not including Emb. Const.
203	102	Cu. Yds.	Embankment
602	0.37	Cu. Yds.	Concrete Masonry
603	10	Lin. Ft.	21" Conduit Type A, 706.02, as per plan.
659	560	Sq. Yds.	Seeding and Mulching, As Per Plan
601	1.6	Cu. Yds.	Rock Channel Protection, Type B.



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
Sta. 986+31	0	0	6	51
Sta. 986+81	6	55	6	51
Sta. 987+31	0	0	6	51
Total			12	102



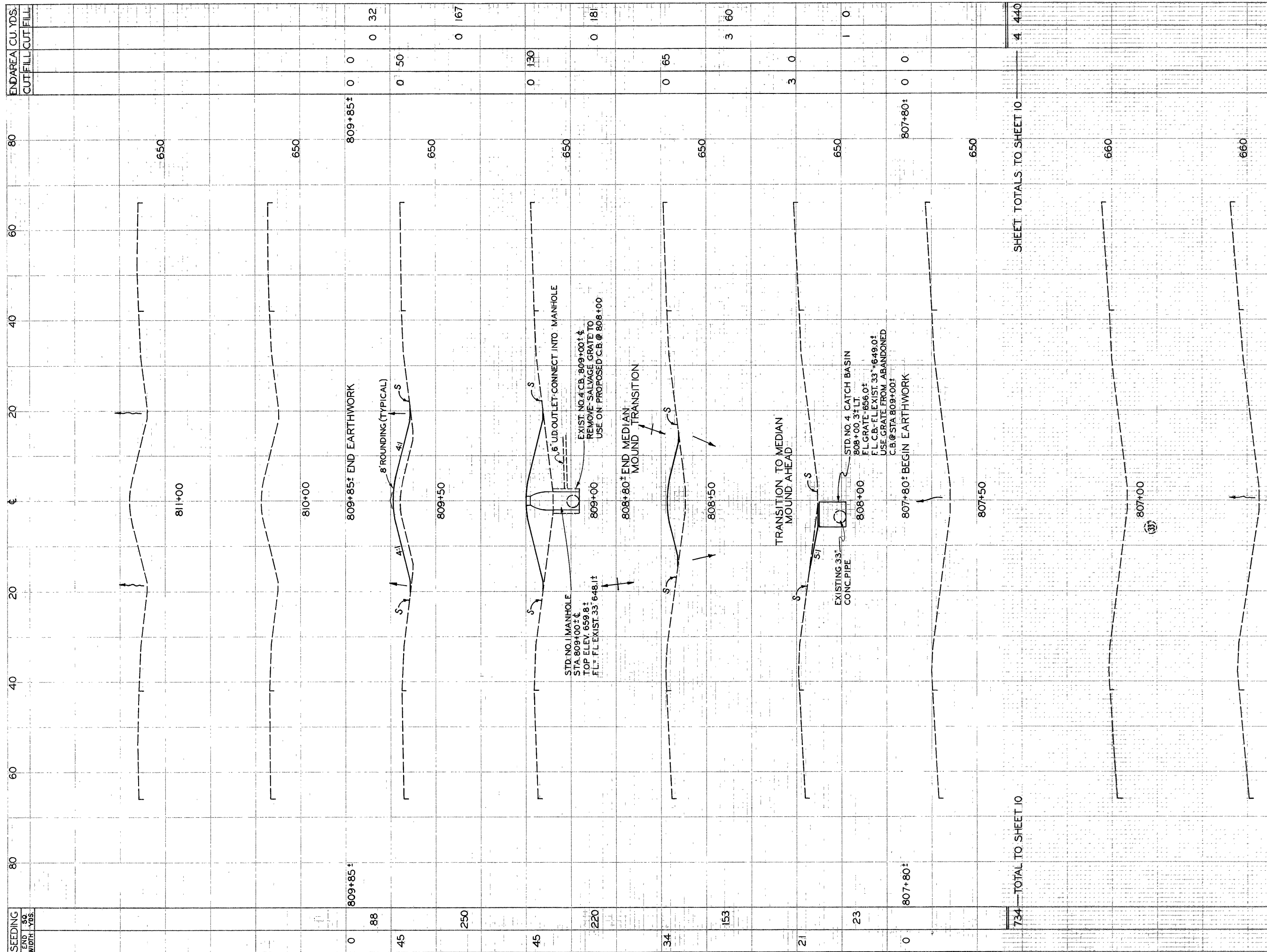
DETAIL OF ROCK CHANNEL PROTECTION
NOTE: This detail also applies to Fence Stream Crossings.



SEEDING
END 50'
WIDTH V.S.

0	766+42'	0	766+42'	0	0	47
93		40		0	60	
172						19
22					20	0
256						74
24					20	0
114						28
17					10	0
158						10
40					0	85
211						0
36					0	55
100						
0						
1104	TOTAL TO SHEET 10				131	312

END AREA CU. YDS.						
CUT						
FILL						
CUT/FILL						



SEEDING END WIDTH YDS	809+85'	809+50'	809+00'	808+50'	808+00'	807+50'	807+00'	806+00'	END AREA CU. YDS.	CUT/FILL	CUT/FILL
0									0	0	0
88									0	0	32
45									0	50	
250									0	167	
45									0	130	
220									0	18	
34									0	65	
153									3	60	
21									3	0	
23									1	0	
0									0	0	
734	TOTAL TO SHEET 10								4	440	

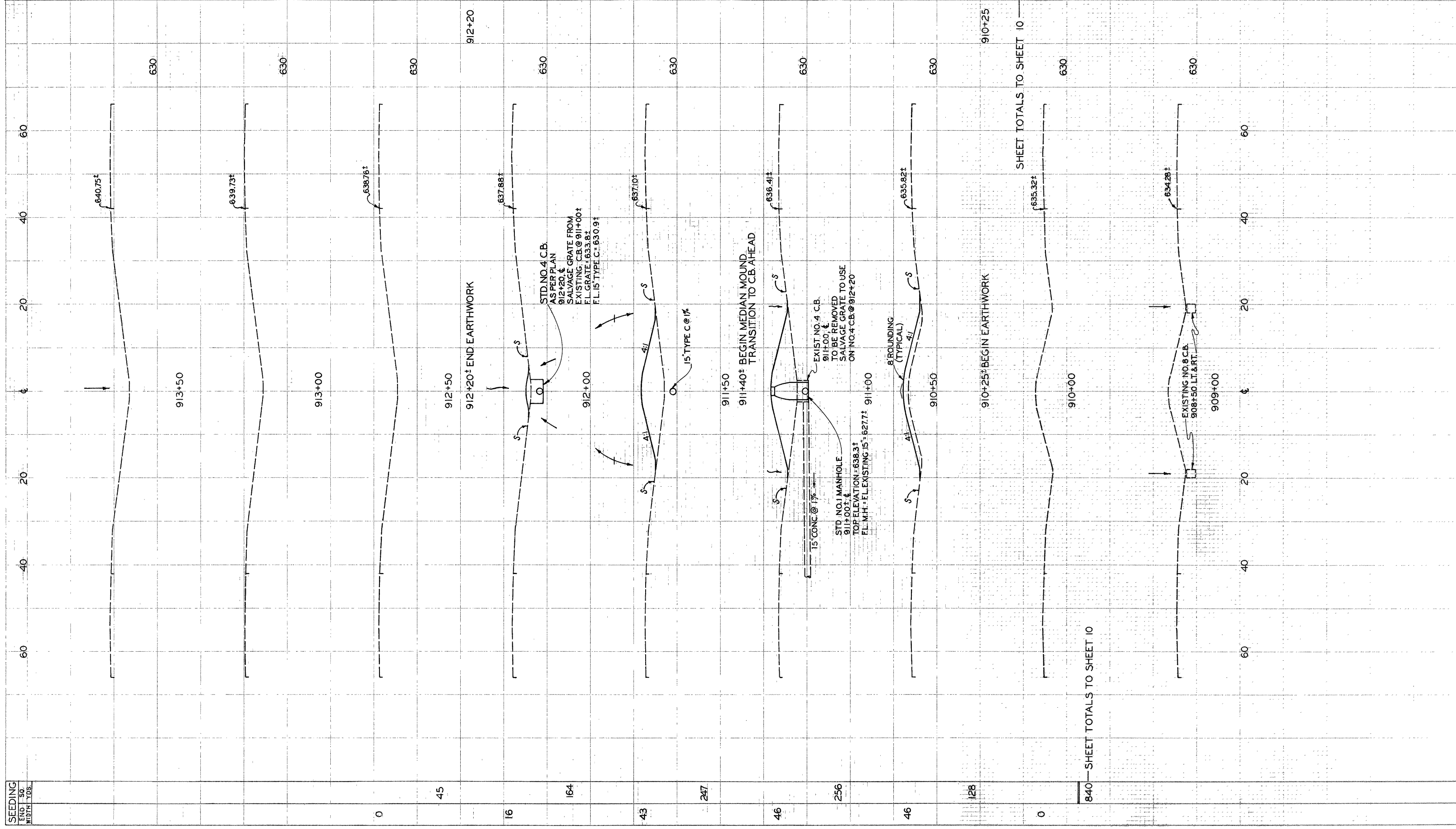
FED. RD. DIVISION 2	STATE OHIO	PROJECT	76 103
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LOR-2-6.62
LOR-90-11.96

CALC. BY: *ADM* 7-72
CHKD. BY: *B.H.* 7-72

MEDIAN EARTHWORK - STA 806+00 TO STA 811+00

SEEDING END NO. WIDTH YDS.		END AREA CU. YDS. CUT/FILL/CUT/FILL	
0	0	0	0
45	0	0	0
16	0	0	0
164	0	0	0
43	0	0	0
247	0	0	0
46	0	0	0
256	0	0	0
46	0	0	0
128	0	0	0
0	0	0	0
840	0	0	0



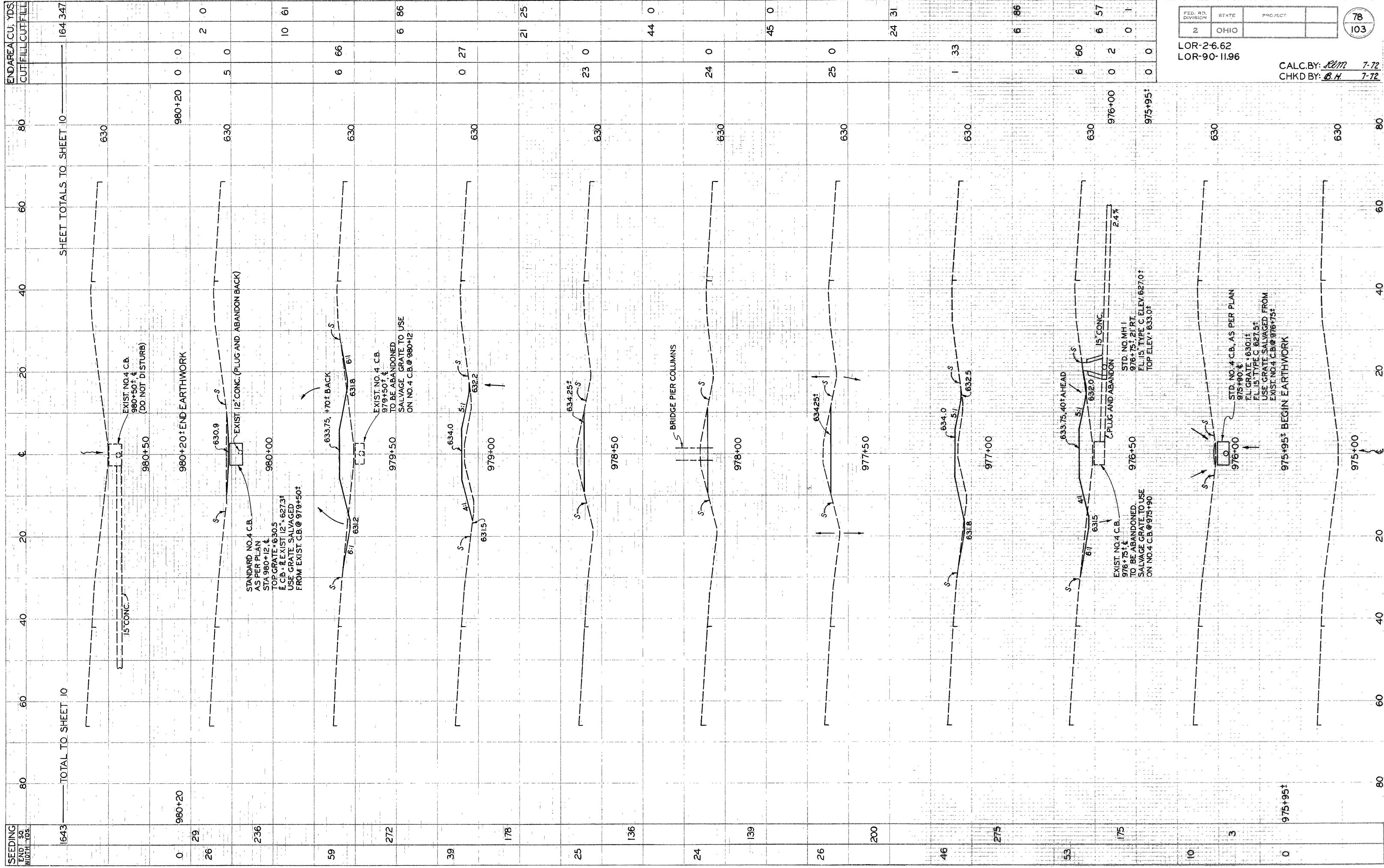
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

LOR-2-6.62
LOR-90-11.96

CALC. BY: *BM* 7-72
CHKD. BY: *B.H.* 7-72

77
103

840 — SHEET TOTALS TO SHEET 10



SEEDING	END 30' WIDTH YDS.	TOTAL TO SHEET 10	SHEET TOTALS TO SHEET 10	END AREA CU. YDS. CUT/FILL/CUT/FILL
1643				164 347
0	980+20			0 0
26	29			2 0
236				5 0
59				10 61
272				6 66
39				0 27
178				21 25
25				23 0
136				44 0
24				24 0
26				25 0
200				24 31
46				1 33
275				6 86
53				6 60
175				0 2
10	975+95'			0 0
3				0 0
0				0 0

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

LOR-26.62
LOR-90-11.96

CALC. BY: *SEM* 7-72
CHKD BY: *B.H.* 7-72

78
103

MEDIAN EARTHWORK - STA 975+00 TO STA 980+50

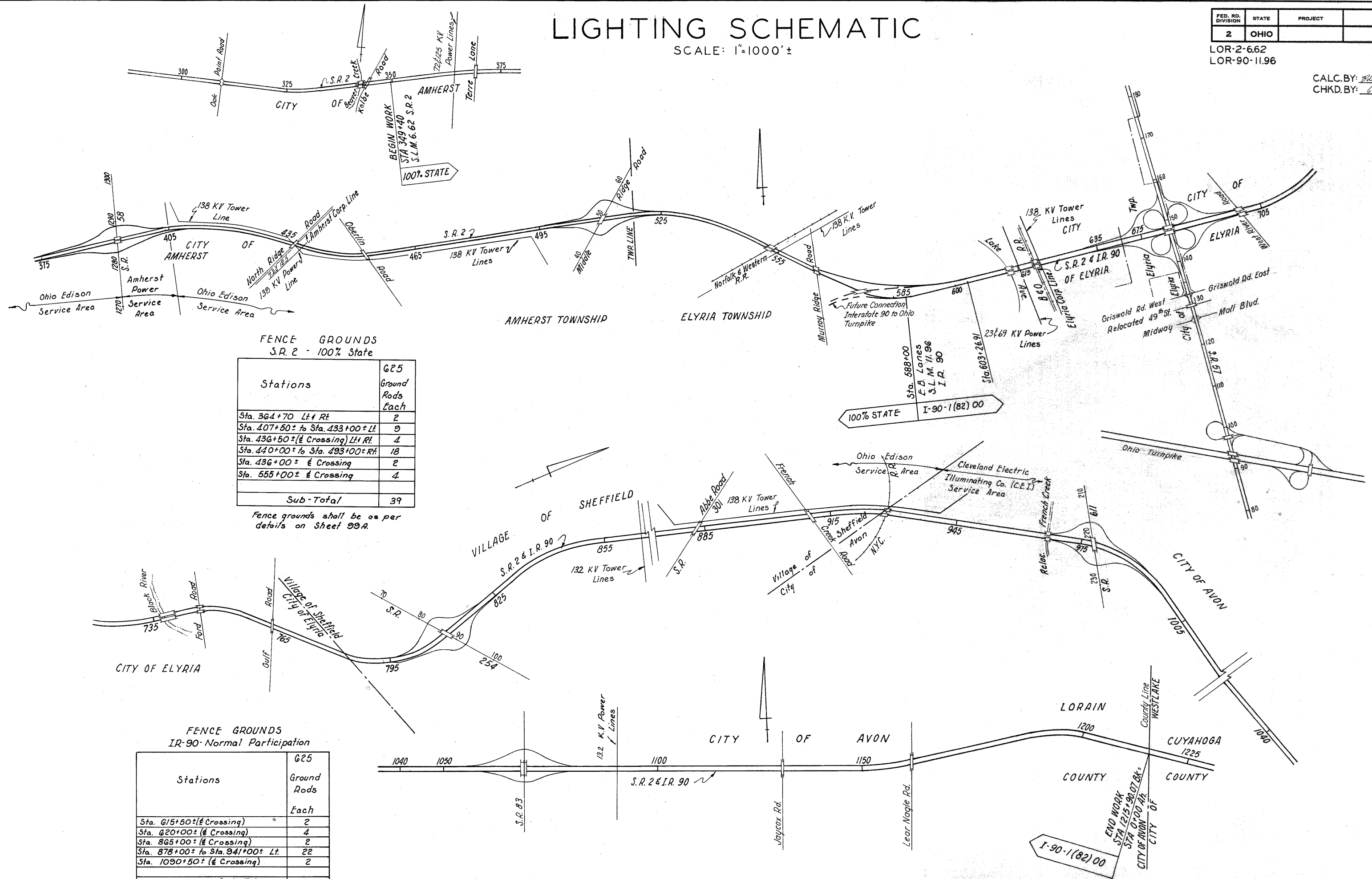
LIGHTING SCHEMATIC

SCALE: 1"=1000'±

FED. RD. DIVISION	STATE	PROJECT	79
2	OHIO		103

LOR-2-6.62
LOR-90-11.96

CALC. BY: BDH 3/73
CHKD. BY: C.N. 3/73



FENCE GROUNDS
S.R. 2 - 100% State

Stations	Ground Rods Each
Sta. 364+70 Lt & Rt	2
Sta. 407+50± to Sta. 433+00± Lt	9
Sta. 436+50± (± Crossing) Lt & Rt	4
Sta. 440+00± to Sta. 493+00± Rt	18
Sta. 436+00± ± Crossing	2
Sta. 555+00± ± Crossing	4
Sub-Total	39

Fence grounds shall be as per details on Sheet 99A.

FENCE GROUNDS
I.R. 90 - Normal Participation

Stations	Ground Rods Each
Sta. 615+50± (± Crossing)	2
Sta. 620+00± (± Crossing)	4
Sta. 865+00± (± Crossing)	2
Sta. 878+00± to Sta. 941+00± Lt	22
Sta. 1090+50± (± Crossing)	2
Sub-Total	32

Additional Power Lines! Fence Grounds are shown on the Lighting Plan Sheets

LIGHTING GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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LOR-2-6.62
LOR-90-11.96

Calc. by C.N. 1/73
Chkd by RUM 1/73

SPECIFICATIONS:

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

625.03. GENERAL:

THE POWER SUPPLYING AGENCIES FOR THIS PROJECT ARE:

AMHERST CITY POWER COMPANY
CITY OF AMHERST
AMHERST, OHIO 44001

SEE SHEET #1 FOR
DESIGN DATA.

OHIO EDISON COMPANY
47 NORTH MAIN STREET
AKRON, OHIO 44308

CLEVELAND ELECTRIC AND ILLUMINATING COMPANY
P. O. BOX 5000 - ROOM 491
CLEVELAND, OHIO 44101

625.07 - 713.11 LUMINAIRES:

400-WATT LUMINAIRES SHALL HAVE DUAL RATED 240/480 VOLT INTEGRAL REGULATOR BALLASTS AND SHALL BE GENERAL ELECTRIC M400, WESTINGHOUSE OV-25, MCGRAW-EDISON "UNISTYLE", OR EQUAL APPROVED BY THE ENGINEER.

700-WATT LUMINAIRES SHALL HAVE SINGLE RATED 480-VOLT 700-WATT INTEGRAL REGULATOR BALLASTS AND SHALL BE GENERAL ELECTRIC M-1000, WESTINGHOUSE OV-50, MCGRAW-EDISON "UNISTYLE", OR EQUAL APPROVED BY THE ENGINEER.

625.07 - 713.13 UNDERPASS LUMINAIRES:

250-WATT UNDERPASS LUMINAIRES SHALL BE HOLOPHANE "UNDERPASS WALLPACK", OR EQUAL WESTINGHOUSE, MCGRAW-EDISON, OR GENERAL ELECTRIC UNDERPASS UNIT APPROVED BY THE ENGINEER, AND SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSE. THE INTEGRAL BALLAST SHALL BE OF A REGULATOR TYPE RATED FOR 480 VOLTS.

625.08 - 713.14 LAMPS:

MERCURY LAMPS SHALL BE GENERAL ELECTRIC "BONUS LINE", WESTINGHOUSE "LIFEGUARD", SYLVANIA "ROUGH SERVICE", OR EQUAL APPROVED BY THE ENGINEER.

ELECTRICAL SERVICE FOR ILLUMINATED SIGNS:

THE PAY ITEMS IN THE LIGHTING GENERAL SUMMARY INCLUDE THE PULL BOX OR JUNCTION BOX ADJACENT TO EACH LIGHTED SIGN AND ELECTRICAL SERVICE CONNECTIONS LEADING INTO THE BOX, INCLUDING CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX. QUANTITIES FOR ELECTRICAL SERVICE FROM THE CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX TO THE SIGN ARE INCLUDED IN THE TRAFFIC CONTROL GENERAL SUMMARY AS "SIGN SERVICE".

HIGH VOLTAGE DIRECT CURRENT TEST:

A HIGH VOLTAGE DIRECT CURRENT TEST, AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 839, SHALL BE PERFORMED ON ALL DISTRIBUTION CABLE AND DUCT CABLE SYSTEMS TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE PERFORMED UNTIL AFTER ALL NEW CONSTRUCTION, SUCH AS GUARD RAIL, FENCE, DELINEATOR POSTS, SIGN SUPPORTS, ETC., IN THE IMMEDIATE VICINITY OF THE LOCATION OF THE CABLE RUN BEING TESTED, HAS BEEN COMPLETED.

ITEM 625 - CONDUIT JACKED UNDER PAVEMENT, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING CONDUIT OF THE SIZE OR SIZES INDICATED UNDER EXISTING PAVEMENT AND CONTIGUOUS SHOULDERS BY AN APPROVED METHOD SUCH AS "DRILLING" OR "JACKING".

THE CONTRACTOR SHALL PLACE THE CONDUIT WITH THE LEAST AMOUNT OF DISTURBANCE TO THE EXISTING PAVEMENT, SUBBASE, BERM PAVEMENT, OR SHOULDERS OF THE ROADWAY. SEE DETAIL ON SHEET 99A. ALL PUSH PITS OR ANY NECESSARY EXCAVATIONS SHALL BE BACKFILLED AND RESTORED IN ACCORDANCE WITH 625.01.

MEASUREMENT OF THE CONDUIT SHALL BE THE ACTUAL AMOUNT OF LINEAL FEET INSTALLED UNDER PAVEMENT AND SHOULDERS, MEASURED IN PLACE, AS ACCEPTED BY THE ENGINEER. THE UNIT PRICE BID FOR ITEM 625 "CONDUIT JACKED UNDER PAVEMENT, AS PER PLAN" SHALL BE FULL COMPENSATION FOR EXCAVATION, DRILLING OR JACKING, BACKFILLING, COMPACTION, RESTORATION, AND ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN:

THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL SERVICE, EXCEPT FOR LUMINAIRES, LAMPS, AND GROUNDING, FOR AN UNDERPASS LIGHTING SYSTEM ON THE TWIN BRIDGES FOR S.R. 2 OVER S.R. 58. THE INSTALLATION WORK SHALL INCLUDE CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTINGS, JUNCTION BOXES, CABLES, AND ALL INCIDENTALS NECESSARY TO COMPLETE, READY FOR USE, THE SERVICE AS DETAILED ON SHEET 98C. THE LUMP-SUM PRICE BID FOR "ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN" SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED. COMPONENT PARTS NOT SPECIFICALLY MENTIONED BUT REQUIRED FOR SATISFACTORY OPERATION OF THIS ITEM SHALL BE FURNISHED AND CONSIDERED PAID FOR AS PART OF THE ITEM.

SALVAGE EXISTING CONDUIT UNDER PAVEMENT:

EXISTING CONDUIT SHALL BE SALVAGED AT SPECIFIED LOCATIONS WITHIN THE I-90 AND S.R. 57 INTERCHANGE AREA. THESE LOCATIONS ARE SHOWN ON THE PLAN BUT IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATIONS IN THE FIELD.

ALL NECESSARY LABOR, INCLUDING "RODDING" OF CONDUIT, EQUIPMENT AND MATERIAL TO COMPLETE THE ABOVE WORK, AS WELL AS ANY NECESSARY CONDUIT EXTENSIONS TO CONNECT INTO THE NEW PULL BOX, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR VARIOUS 625 ITEMS.

LIGHT TOWERS - S.R. 57 INTERCHANGE:

LIGHT TOWERS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLAN. THE MATERIALS, EQUIPMENT, AND INSTALLATION REQUIREMENTS FOR ALL EXCEPT THE TOWER FOUNDATIONS SHALL COMPLY WITH THE PLAN PROPOSAL NOTE. THE FOUNDATION DETAILS SHALL BE AS SHOWN ON SHEET 102 OF THE PLAN. ADDITIONAL INFORMATION NOT CONTAINED IN THE PROPOSAL OR IN THE PLAN SHALL BE AS PER THE SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

CONDUIT ENCASED IN CONCRETE:

AT LOCATIONS WHERE CONDUIT IS TO BE LAID ON SLOPES STEEPER THAN 3:1, THE CONDUIT SHALL BE ENCASED AS PER 625.13. PAYMENT FOR THE ENCASED CONDUIT SHALL BE AT UNIT PRICE BID PER LINEAR FOOT, IN PLACE FOR ITEM 625 "CONDUIT, 713.04 TYPE #1P, ENCASED" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THIS WORK.

LIGHTING GENERAL SUMMARY

FED. NO. DIVISION	STATE	PROJECT	80 103
2	OHIO		

LOR-2-6.62
LOR-90-11.96

CALC. BY: *BOB 1/73*
CHKD. BY: *C.N. 1/73*

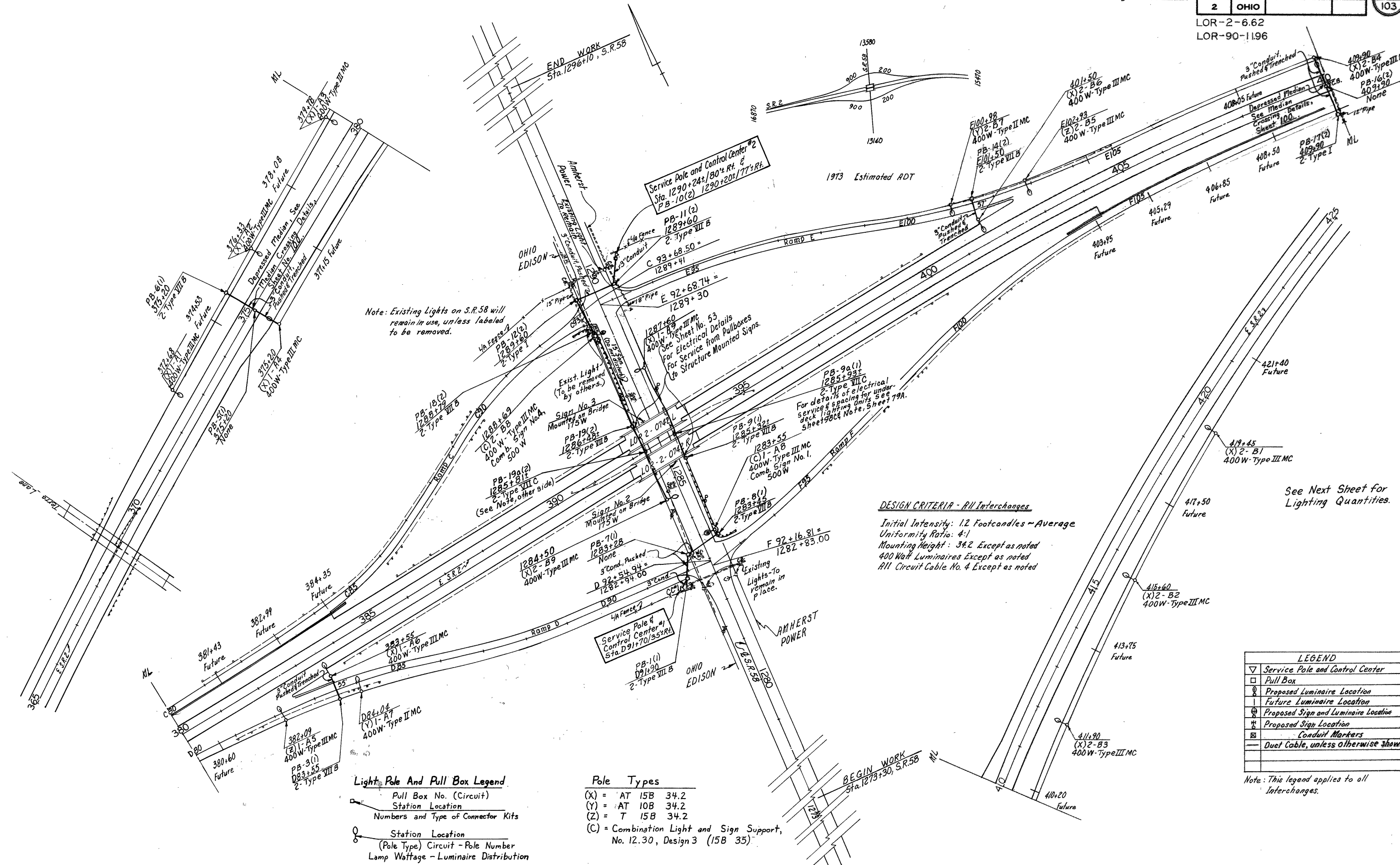
ITEM	S.R.2 - 100% STATE								I-90-I-(82)00 PARTICIPATION								SUB TOTALS		ITEM	PLAN TOTAL	UNIT	TYPE CODE Y030	DESCRIPTION
	SHEET				NUMBER				I-90	100% STATE													
	79	79A	82	84	79	79A	87	88	90	92	94	96											
			12	16			3	1*		16	14	14		47	29	625	76	Each	Light Pole, Design AT15B 34.2 (X)				
			2	2						2	2	2		6	4	625	10	Each	Light Pole, Design AT10B 34.2 (Y)				
			2				3				3	3		9	2	625	11	Each	Light Pole, Design T15B 34.2 (Z)				
							7		6*					7	6	625	13	Each	Light Pole, Design AT15B 41.7 (V)				
							1	2	1*	1*				3	2	625	5	Each	Light Pole, Design T15B 41.7 (W)				
							2	2						4		625	4	Each	Light Tower, 90' Mounting Height (See Proposal Note)				
							6	2						8		625	8	Each	Light Tower, 100' Mounting Height (See Proposal Note)				
			2	2						2	2			4	4	625	8	Each	Bracket Arm, 15'-0"				
			16	18			6	1*		18	19	19		62	35	625	97	Each	Light Pole Foundation, 24"x6'-0"				
							8	2	1*	7*				10	8	625	18	Each	Light Pole Foundation, 24"x8'-0"				
							8	4						12		625	12	Each	Light Tower Foundation, As Per Plan				
			2	3			832	416						1248	608	625	1248	Sq. Ft.	Aggregate Walk				
			16	17						3	2	2		7	5	625	12	Each	Luminaire, Type II, 400 W, 713.11				
										17	19	17		59	34	625	93	Each	Luminaire, Type III, 400 W, 713.11				
							8	2	1*	7*				10	8	625	18	Each	Luminaire, Type III, 700 W, 713.11				
			8				32	16						48		625	48	Each	Light Tower Luminaire, Type V, 1000 W (See Proposal Note)				
			8											8		625	8	Each	Underpass Luminaire, 250 W, 713.13				
			8											8		625	8	Each	Lamp, 250 Watt Mercury, 713.14				
			18	20						20	21	19		66	39	625	105	Each	Lamp, 400 Watt Mercury, 713.14				
							8	2	1*	7*				10	8	625	18	Each	Lamp, 700 Watt Mercury, 713.14				
							32	16						48		625	48	Each	Light Tower Lamp, 1000 W (See Proposal Note)				
														1		625	1	Each	Portable Power Unit (See Proposal Note)				
			15	11			39	19	1*	10	4*	11	14	103	32	625	135	Each	Pullbox, 18" Circular, 713.09				
			2	2			3	3	1*	3	1	2		12	5	625	17	Each	Pullbox, 18" Circular, With Grade Adjustment Extensions, 713.09				
			39	18	18		32	16	20	2*	7*	18	27	134	84	625	218	Each	Ground Rod				
								1						4		625	4	Each	Marker				
			6125	5149			6489	6013	36*	722	906*	6234	7183	33,221	12,216	625	45,437	Lin. Ft.	Trench, 24" Deep				
							514	96						610		625	610	Lin. Ft.	2" Conduit, 713.04, Type III				
			269	223			601	458	54*	325	202	187		1,773	546	625	2,319	Lin. Ft.	3" Conduit, 713.04, Type III				
			549	549			574	346	131	186*	579	553	545	2,728	1,284	625	4,012	Lin. Ft.	3" Conduit, 713.04, Type III, Jacked Under Pavement, As Per Plan				
								396			124			520		625	520	Lin. Ft.	2" Conduit, Mounted on Bridge, As Per Plan				
			6,096	5,146			5,796	5,837	46*	802	902*	6,149	7,206	32,388	12,190	625	44,578	Lin. Ft.	1/2" Duct-Cable with 2 No. 4 AWG, 600 Volt Cables				
											35	45		80		625	80	Lin. Ft.	3" Conduit, 713.04, Type III, Encased				
			1,856	1,764			4,146	4,264	382	550*	2,048	2,038	1,754	14,592	4,170	625	18,762	Lin. Ft.	No. 4 AWG, 600 Volt Distribution Cable				
							904	820	212*	791*	1,962	2,061	1,861	7,608	4,729	625	12,337	Lin. Ft.	No. 10 AWG, 600 Volt Pole and Bracket Cable				
			4	4			42	28	12	4*	12	8	4	106	12	625	118	Each	Connector Kit, Type I				
			18	20			8	8	2*	7*	20	21	19	76	47	625	123	Each	Connector Kit, Type II				
			18	20			8	8	2*	7*	20	21	19	76	47	625	123	Each	Connector Kit, Type III				
			18	10			26	14	6	4*	14	14	20	94	32	625	126	Each	Connector Kit, Type VII B				
			4	4			2							4	8	625	12	Each	Connector Kit, Type VIII C				
			Lump	Lump			Lump							Lump	Lump	625	Lump	Lump	Service to Underpass Lighting, As Per Plan, Lor - 2-0742 4/R				
			Lump											Lump	Lump	839	Lump	Lump	High Voltage Test				
			Lump											Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.1				
			Lump											Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.2				
				Lump										Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.3				
				Lump										Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.4				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.5				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.6				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.7				
														Lump	Lump	625	Lump	Lump	Control Center No.8				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.9				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.10				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.11				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.12				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.13				
														Lump	Lump	625	Lump	Lump	Service Pole and Control Center No.14				

* 100% State Items within I-90 portion of project

Calc. by P.D.M. 10/72
 Chkd. by C.N. 1/73

FED. RD. DIVISION	STATE	PROJECT	81 103
2	OHIO		

LOR-2-6.62
 LOR-90-11.96



Note: Existing Lights on S.R.58 will remain in use, unless labeled to be removed.

Service Pole and Control Center #2
 Sta. 1290+24 ± / 80 ± Rt. &
 PB-10(2) 1290+20 ± / 77 ± Rt.

Service Pole & Control Center #1
 Sta. D91+70 / 35 ± Rt.

DESIGN CRITERIA - All Interchanges
 Initial Intensity: 1.2 Footcandles - Average
 Uniformity Ratio: 4:1
 Mounting Height: 34.2 Except as noted
 400 Watt Luminaire Except as noted
 All Circuit Cable No. 4 Except as noted

LEGEND	
▽	Service Pole and Control Center
□	Pull Box
○	Proposed Luminaire Location
○	Future Luminaire Location
⊕	Proposed Sign and Luminaire Location
⊕	Proposed Sign Location
⊗	Conduit Markers
—	Duct Cable, unless otherwise shown

Note: This legend applies to all Interchanges.

Light Pole And Pull Box Legend

□ Pull Box No. (Circuit)
 Station Location
 Numbers and Type of Connector Kits

○ Station Location
 (Pole Type) Circuit - Pole Number
 Lamp Wattage - Luminaire Distribution

Pole Types

(X) = AT 15B 34.2
 (Y) = AT 10B 34.2
 (Z) = T 15B 34.2
 (C) = Combination Light and Sign Support,
 No. 12.30, Design 3 (15B 35)

See Next Sheet for Lighting Quantities.

LIGHTING QUANTITIES

Calc. by POG 10/72
Chkd by C.M. 1/73

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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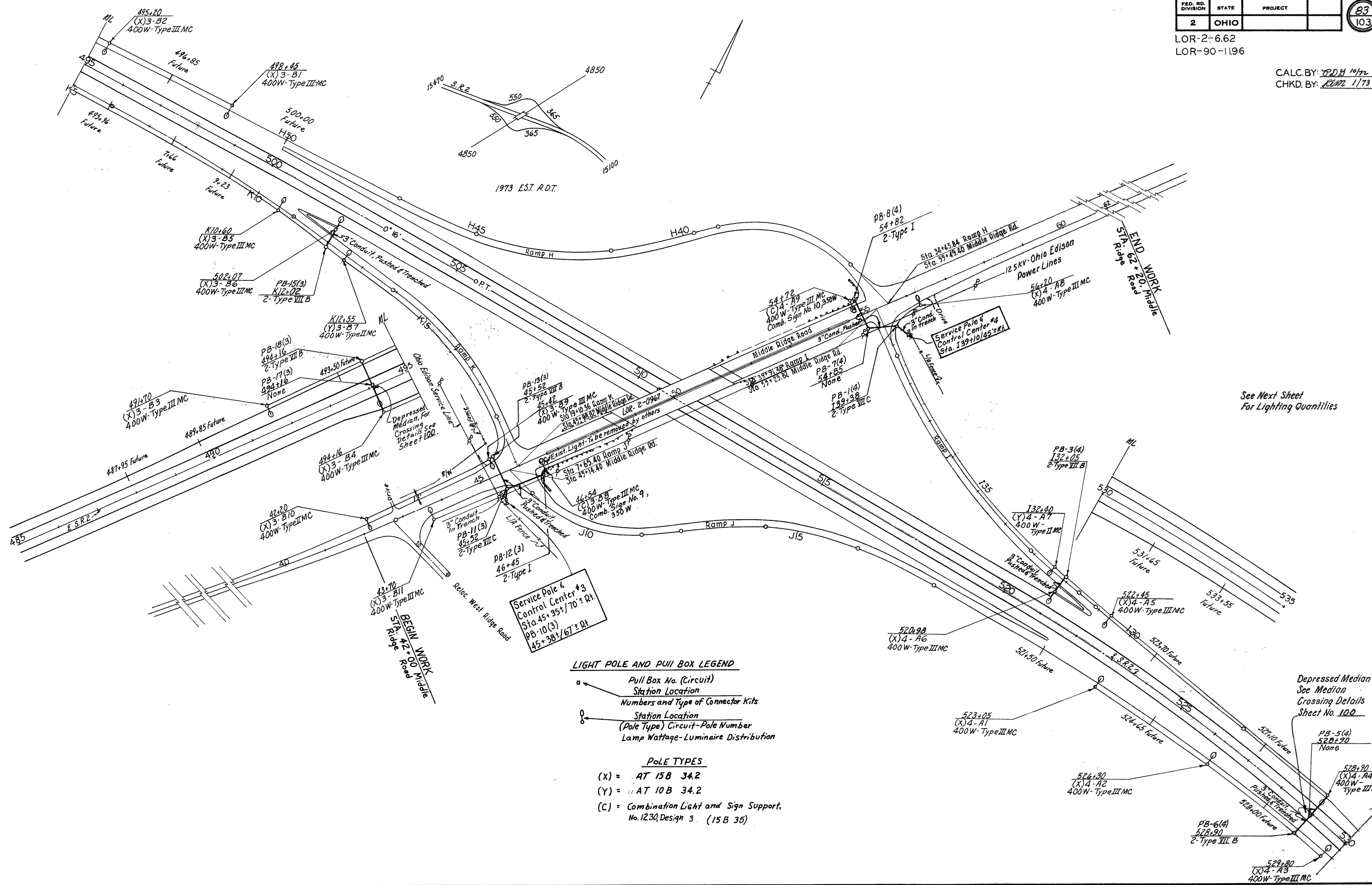
LOR-2 - 6.62
LOR-90-11.96

100% STATE PARTICIPATION UNLESS OTHERWISE SHOWN
625

REF. NO.	STATIONS	SIDE	Light Pole, Design AT15 B34.2	Light Pole, Design AT10 B34.2	Light Pole, Design T15 B34.2	15' Bracket Arm	Light Pole Foundation 24" x 60"	Underpass Luminaire, 250 W, 713.13	Luminaire, Type III 400 W	Luminaire, Type II 400 W	Lamp, Mercury Vapor	Pull Box, 18" Circular With Grade Adjustment Extension, 713.09	Ground Rod	Pull Box, 18" Circular 713.09	Trench 24" Deep	3" Conduit 713.09 Type III, Jacked Under Pavement	3" Conduit, 713.04, Type III	Distribution Cable, No. 4	Pole and Bracket Cable, No. 10	1/2" Duct-Cable With 2- No. 4 Cables 600V	Connector Kit, Type I	Connector Kit, Type II	Connector Kit, Type III	Connector Kit, Type VII B	Connector Kit, Type III C	Service to Underpass Lighting As Per Plan	Service Pole & Control Center #1	Service Pole & Control Center #2	SEE SHEET NO.	
			100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE
				Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Lump	Lump	Lump		
Circuit No. 1																														
CC#1	D91+70	Rt.																												
To PB-1	D91+70 to D91+90	Rt.												1	28		28	76						2				Lump	81	
To PB-7	D91+90 to 1283+28 S.R.58	Lt.												1	16	41	16	134												
To PB-8	1283+28 to 1283+45	Lt. & Rt.												1	22	62	22	188						2						
To A8	1283+45 to 1283+55	Rt.				1			1		1								100		1	1								
PB-9A	1283+45 to 1285+32 S.R.58	Rt.												1	188									2						
To PB-9A	1285+32 to 1285+93	Rt.						4			4		1	61		1									2					
To A9	1285+93 to 1287+60	Rt.	1						1		1		1	167					99		177		1	1		2	Lump			
PB-10	D91+90 to D87+90	Rt.																												
To A7	D87+90 to D84+04	Rt.									1		1	400																
To PB-3	D84+04 to D83+55	Rt.											1	386																
To A6	D83+55 to 383+55 S.R.2	Rt.	1						1		1		1	49		33	22	130		99		59			2					
PB-3A5	D83+55 to 382+09 S.R.2	Rt.																												
To PB-4	382+09 to 379+00	Rt.																												
To A4	379+00 to 375+20	Rt.	1						1		1		1	311																
To PB-5	375+20	Rt.																												
To PB-6	375+20	Lt. & Rt.												11	54	65	11	150	150											
To A1	375+20 to 372+68	Lt.	1						1		1		1	19	57	76	19	162	162						2					
PB-6A2	375+20 to 376+33 S.R.2	Lt.	1						1		1		1	113						99		123		1		1				
To A3	376+33 to 379+78 S.R.2	Lt.	1						1		1		1	345						99		355		1		1				
Circuit No. 2																														
CC#2	1290+24 S.R.58	Rt.												1																
To PB-11	1290+20 to 1289+60	Rt.												1	66			66	152									Lump		
To PB-12	1289+60	Lt. & Rt.												1	10	88	10	216					2							
To PB-18	1289+60 to 1288+79	Lt.												1	21	60	21	182												
To B8	1288+79 to 1288+69	Lt.				1			1		1								100			1	1							
PB-18A	1288+79 to 1286+48 S.R.58	Lt.																												
To PB-19a	1286+48 to 1285+81	Lt.						4			4		1	232											2					
To B9	1285+81 to 1284+50	Lt.	1						1		1		1	67												2	Lump			
PB-11A	1289+60 S.R.58 to E97+20	Lt.												131						99		141		1	1					
To B7	E97+20 to E100+98	Lt.									1		1	407																
To PB-14	E100+98 to E101+50	Lt.												378																
To B6	E101+50 to 401+50 S.R.2	Lt.	1						1		1		1	52		33	24	134		99		62			2					
PB-14A5	E101+50 to E102+93	Lt.																												
To PB-15	E102+93 to 406+10 S.R.2	Lt.																												
To B4	406+10 to 409+90	Lt.	1						1		1		1	143																
To PB-16	409+90	Lt. & Rt.												317																
To PB-17	409+90	Rt.												380																
To B3	409+90 to 411+90	Rt.	1						1		1		1	19	54	19	166													
To B2	411+90 to 415+60	Rt.	1						1		1		1	11	67	11	166							2						
To B1	415+60 to 419+45	Rt.	1						1		1		1	200																
														370																
														383																
S-TOTAL	Sheet Totals		12	2	2	2	16	8	16	2	18	8	2	18	19	6125	549	269	1856	1784	6096	4	18	18	18	4	Lump	Lump	Lump	S-TOTAL TOTAL

LOR-2-6.62
LOR-90-1196

CALC. BY: *PDH 10/72*
CHKD. BY: *CEM 1/73*



See Next Sheet
For Lighting Quantities

LIGHT POLE AND PULL BOX LEGEND

- Pull Box No. (Circuit)
Station Location
- Numbers and Type of Connector Kits
- Station Location
(Pole Type) Circuit-Pole Number
Lamp Wattage-Luminaire Distribution

POLE TYPES

- (X) = AT 15B 34.2
- (Y) = AT 10B 34.2
- (C) = Combination Light and Sign Support,
No. 12.30, Design 3. (15B 35)

LIGHTING QUANTITIES

Calc. by R.D.G. 10/72
Chkd by C.N. 1/73

FED. NO. DIVISION	STATE	PROJECT
2	OHIO	

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LOR-2 - 6.62
LOR-90-11.96

100% STATE PARTICIPATION UNLESS OTHERWISE SHOWN
625

REF. NO.	STATIONS	SIDE	Light Pole, Design AT15B34.2	Light Pole, Design AT10B34.2	15'-0" Bracket Arm	Light Pole Foundation 24"x60"	Luminaire, Type III 400W	Luminaire, Type II 400W	Lamp, 400W Mercury Vapor	Pullbox, 18" Circular With Grade Adjustment Extension, 713.09	Ground Rod	Pull Box, 18" Circular 713.09	Trench 24" Deep	3" Conduit, 713.04 Type III Jacketed Under Pavement	3" Conduit, 713.04, Type III	Distribution Cable, No. 4	Pole and Bracket Cable, No. 10	1/2" Duct - Cable With 2- No. 4 Cables 600V	Connector Kit, Type I	Connector Kit, Type II	Connector Kit, Type III	Connector Kit, Type III B	Connector Kit, Type III C	Service Pole & Control Center #3	Service Pole & Control Center #4	SEE SHEET NO.																
			100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	100% STATE	Lump	Lump															
Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each															
Circuit No. 3																																										
CC #3	45+35± to 45+38±	M.R.R.	Rt.																																							
To PB-11	45+38± to 45+52		Rt.										1																													
To PB-12	45+52 to 46+45		Rt.																																							
To B-8	46+45 to 46+54		Rt.																																							
PB-11 to B-11	45+52 to 43+70		Rt.	1																																						
PB-11 to PB-13	45+52	M.R.R.	Lt. & Rt.																																							
To B-9	45+52 to 45+42		Lt.	1																																						
To B-10	45+42 to 42+20		Lt.	1																																						
PB-13 to PB-14	45+52 to K15+65		Rt.																																							
To B-7	K15+65 to K12+55		Rt.																																							
To PB-15	K12+55 to K12+02		Rt.																																							
To B-6	K12+02 to 502+07	S.R.2	Rt.	1																																						
PB-15 to B-5	K12+02 to K10+60		Rt.	1																																						
To PB-16	K10+60 to K7+45		Rt.																																							
To B-4	K7+45 to 494+16	S.R.2	Rt.	1																																						
To PB-17	494+16		Rt. & Lt.																																							
To PB-18	494+16		Lt.																																							
To B-3	494+16 to 491+70		Lt.	1																																						
PB-18 to B-2	494+16 to 495+20	S.R.2	Lt.	1																																						
To B-1	495+20 to 498+45	S.R.2	Lt.	1																																						
Circuit No. 4																																										
CC #4	I39+10		Rt.																																							
To PB-1	I39+10 to I39+38		Rt.																																							
To A-8	I39+38 to 56+20	M.R.R.	Rt.	1																																						
PB-1 to PB-7	I39+38 to 54+85	M.R.R.	Rt.																																							
To PB-8	54+85 to 54+82		Rt. & Lt.																																							
To A-9	54+82 to 54+72		Lt.																																							
PB-1 to PB-2	I39+38 to I36+00		Rt.																																							
To A-7	I36+00 to I32+40		Rt.																																							
To PB-3	I32+40 to I32+05		Rt.																																							
To A-6	I32+05 to 520+98	S.R.2	Rt. & Lt.	1																																						
PB-3 to A-5	I32+05 to 522+45	S.R.2	Lt.	1																																						
To PB-4	522+45 to 525+35		Lt.																																							
To A-4	525+35 to 528+90		Lt.	1																																						
To PB-5	528+90		Lt. & Rt.																																							
To PB-6	528+90		Rt.																																							
To A-3	528+90 to 529+80		Rt.	1																																						
PB-6 to A-2	528+90 to 526+30	S.R.2	Rt.	1																																						
To A-1	526+30 to 523+05	S.R.2	Rt.	1																																						
Sheet Totals				16		2		2	18		17		3	20		2	18		15	5149		549		223	1764		1962		5146		4		20		20		10		4	Lump	Lump	TOTAL

LOR-2-6.62
LOR-90-11.96

CALC. BY: *TRM 4/72*
CHKD. BY: *C.N. 1/73*

LIGHT POLE AND PULL BOX LEGEND

□ Pull Box No. (Circuit)
○ Station Location
Numbers and Type of Connector Kits
○ Station Location
(Pole Type) Circuit-Pole Number
Lamp Wattage-Luminaire Distribution

POLE TYPES

(W) = T 15 B 41.7
(V) = AT 15 B 41.7

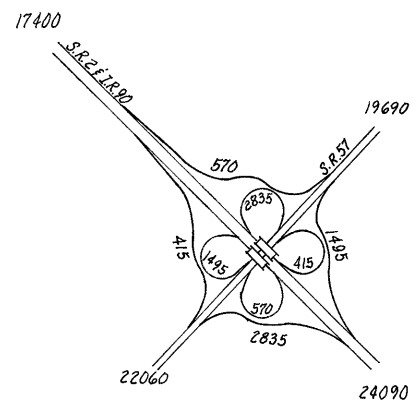
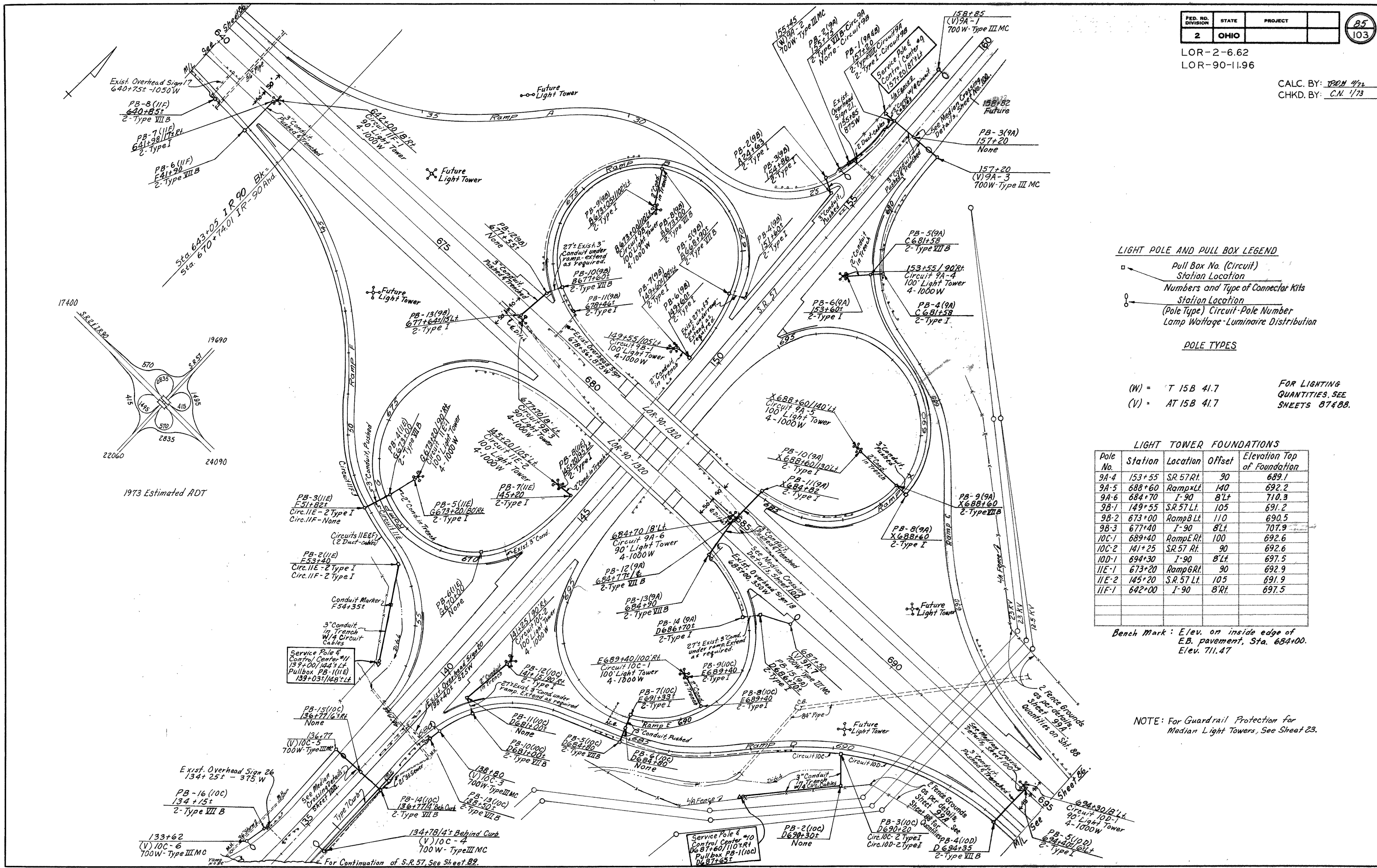
FOR LIGHTING QUANTITIES, SEE SHEETS 87488.

LIGHT TOWER FOUNDATIONS

Pole No.	Station	Location	Offset	Elevation Top of Foundation
9A-4	153+55	SR 57 Rt.	90	689.1
9A-5	688+60	Ramp Lt.	140	692.2
9A-6	684+70	I-90	8' Lt.	710.3
9B-1	149+55	SR 57 Lt.	105	691.2
9B-2	673+00	Ramp Lt.	110	690.5
9B-3	677+40	I-90	8' Lt.	707.9
10C-1	689+40	Ramp Rt.	100	692.6
10C-2	141+25	SR 57 Rt.	90	692.6
10D-1	694+30	I-90	8' Lt.	697.5
11E-1	673+20	Ramp Rt.	90	692.9
11E-2	145+20	SR 57 Lt.	105	691.9
11F-1	642+00	I-90	8' Rt.	697.5

Bench Mark: Elev. on inside edge of E.B. pavement, Sta. 684+00. Elev. 711.47

NOTE: For Guardrail Protection for Median Light Towers, See Sheet 23.

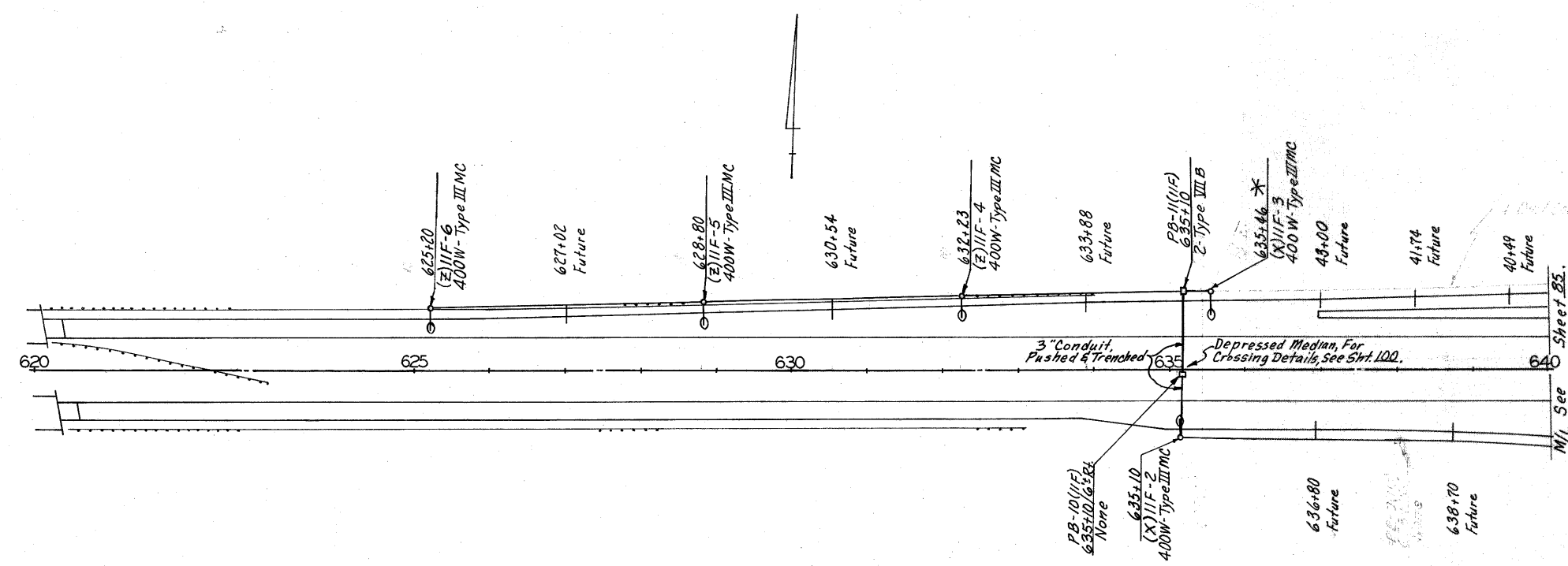


1973 Estimated ADT

For Continuation of S.R. 57, See Sheet 82.

LOR-2-6.62
LOR-90-11.96

CALC. BY: P.D.H. 1/72
CHKD. BY: C.N. 1/73



LIGHT POLE AND PULL BOX LEGEND

□ Pull Box No. (Circuit)
Station Location

○ Numbers and Type of Connector Kits
Station Location

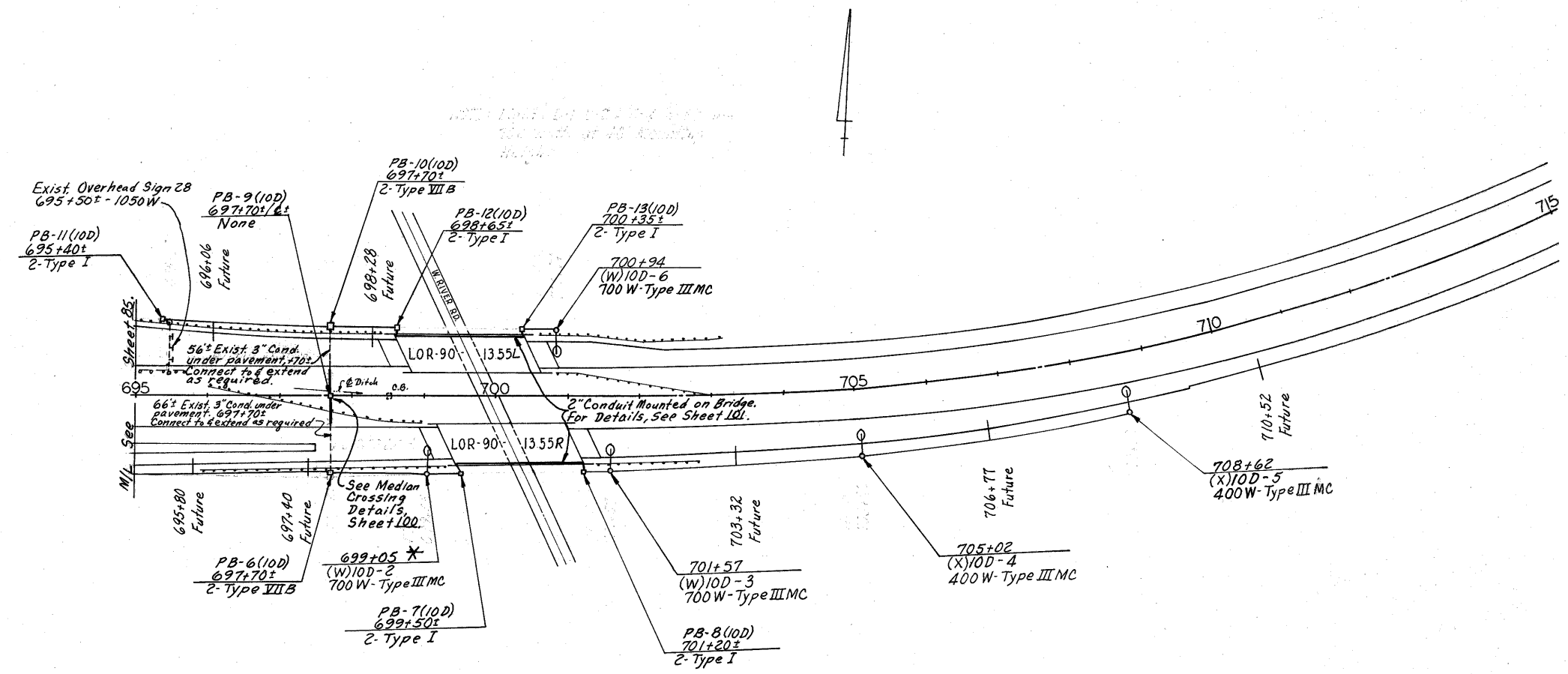
○ (Pole Type) Circuit-Pole Number
Lamp Wattage - Luminaire Distribution

POLE TYPES

(X) = AT 15B 34.2
(z) = T 15B 34.2
(W) = T 15B 41.7

* 100% State Participation

For Lighting Quantities,
See Sheets 87 & 88.



BRUNING 44-560 10843

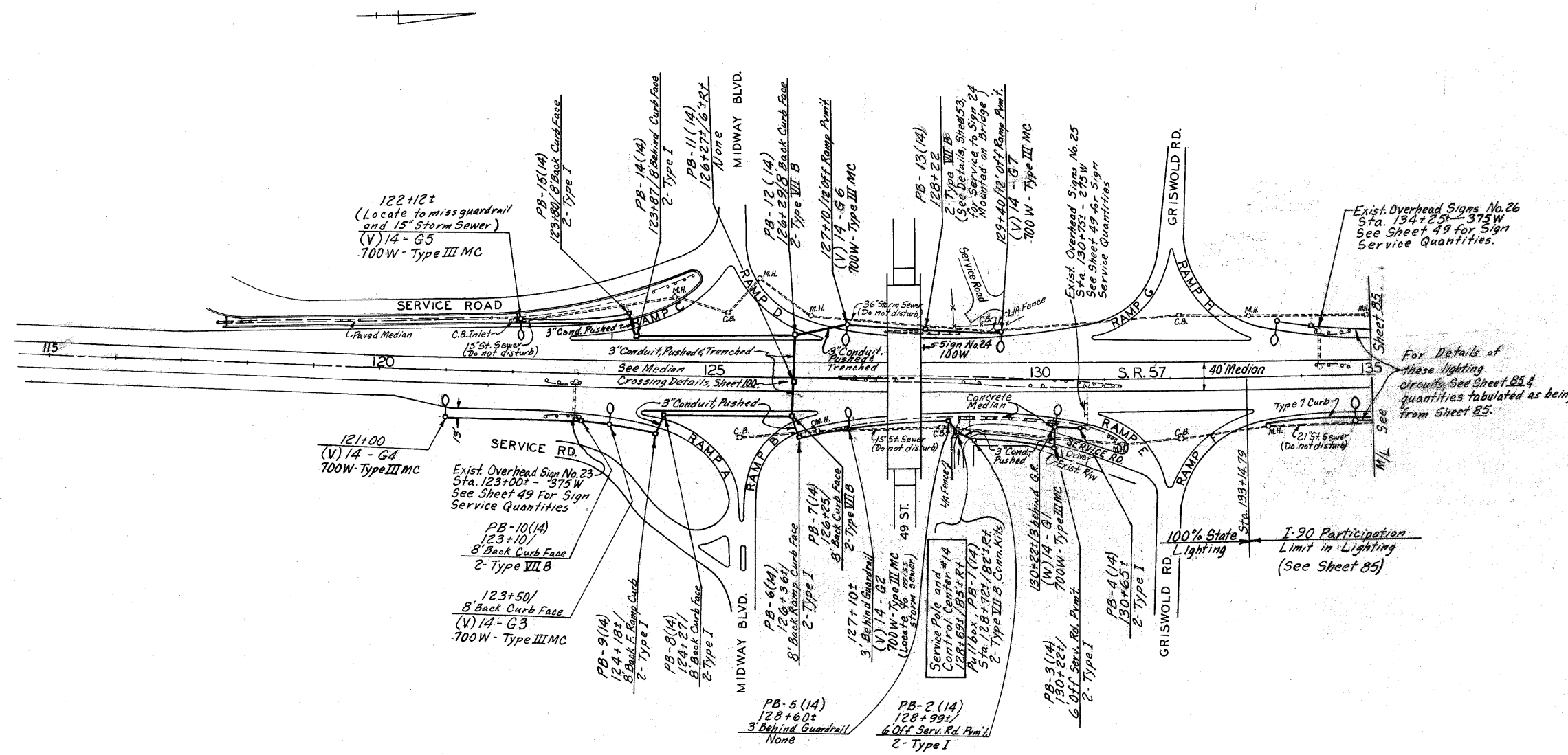
Rev. 6-28-73

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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LOR-2-6.62
LOR-90-11.96

CALC. BY: P.O.H. 4/72
CHKD. BY: C.N. 1/73



Exist. Overhead Signs No. 26
Sta. 134+25 - 375W
See Sheet 49 for Sign
Service Quantities.

For Details of
these lighting
circuits, See Sheet 85.4
quantities tabulated as being
from Sheet 85.

For Lighting Quantities,
See Next Sheet.

LIGHT POLE AND PULL BOX LEGEND

□ Pull Box No. (Circuit)
Station Location
Numbers and Type of Connector Kits

○ Station Location
(Pole Type) Circuit-Pole Number
Lamp Wattage-Luminaire Distribution

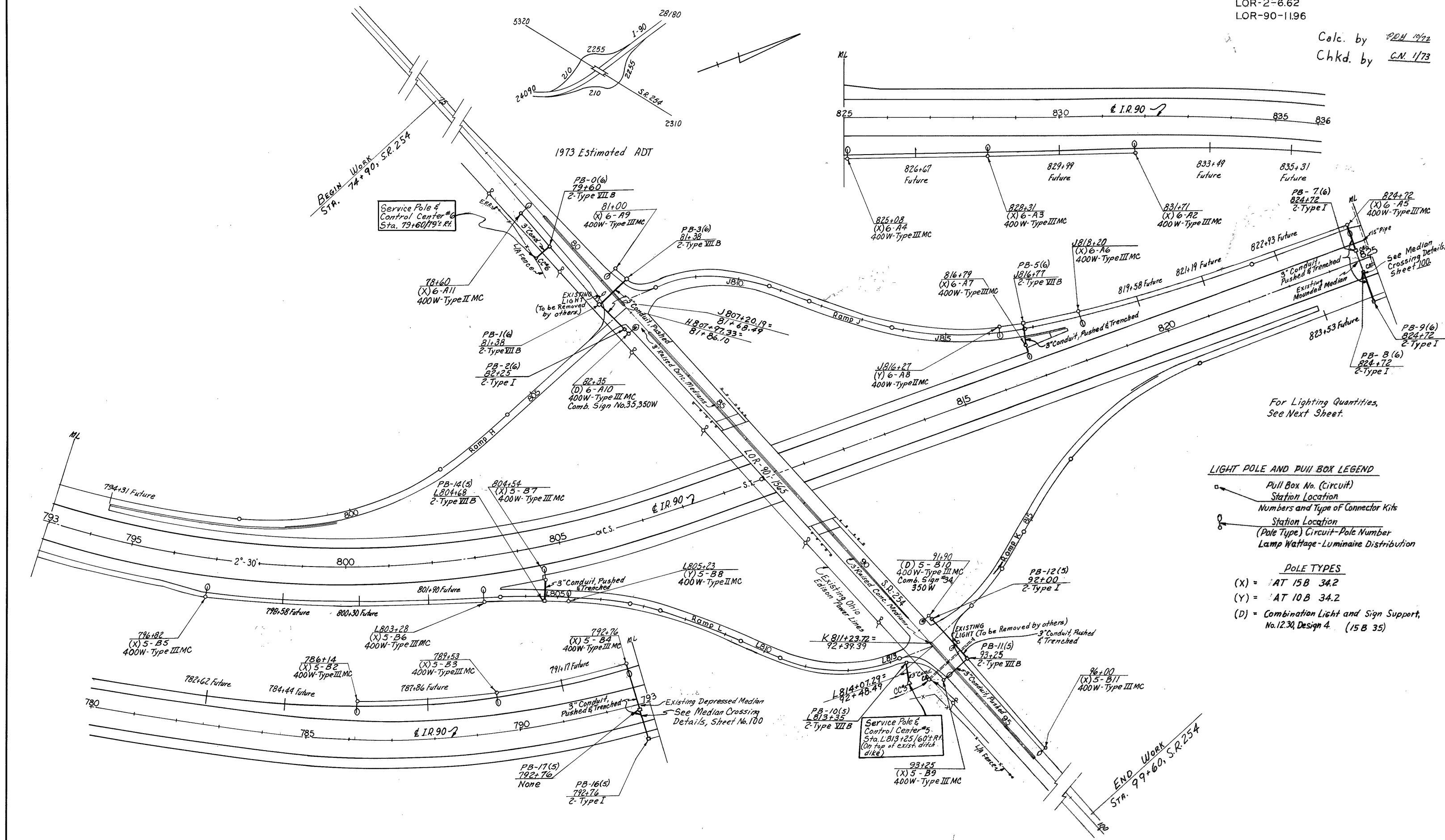
POLE TYPES

(V) = AT 15B 41.7

(W) = T 15B 41.7

LOR-2-6.62
LOR-90-11.96

Calc. by P.H. 1972
Chkd. by C.N. 1/73



For Lighting Quantities, See Next Sheet.

LIGHT POLE AND PULL BOX LEGEND

Pull Box No. (Circuit)
 Station Location
 Numbers and Type of Connector Kits
 Station Location
 (Pole Type) Circuit - Pole Number
 Lamp Wattage - Luminaire Distribution

POLE TYPES

(X) = 1AT 15B 34.2
 (Y) = 1AT 10B 34.2
 (D) = Combination Light and Sign Support, No. 12.30, Design 4. (15B 35)

LIGHTING QUANTITIES

Calc. by R.D.G. 10/72
Chkd by C.N. 1/73

FED. DIVISION	STATE	PROJECT
2	OHIO	LOR-2 - 6.62 LOR-90-11.96

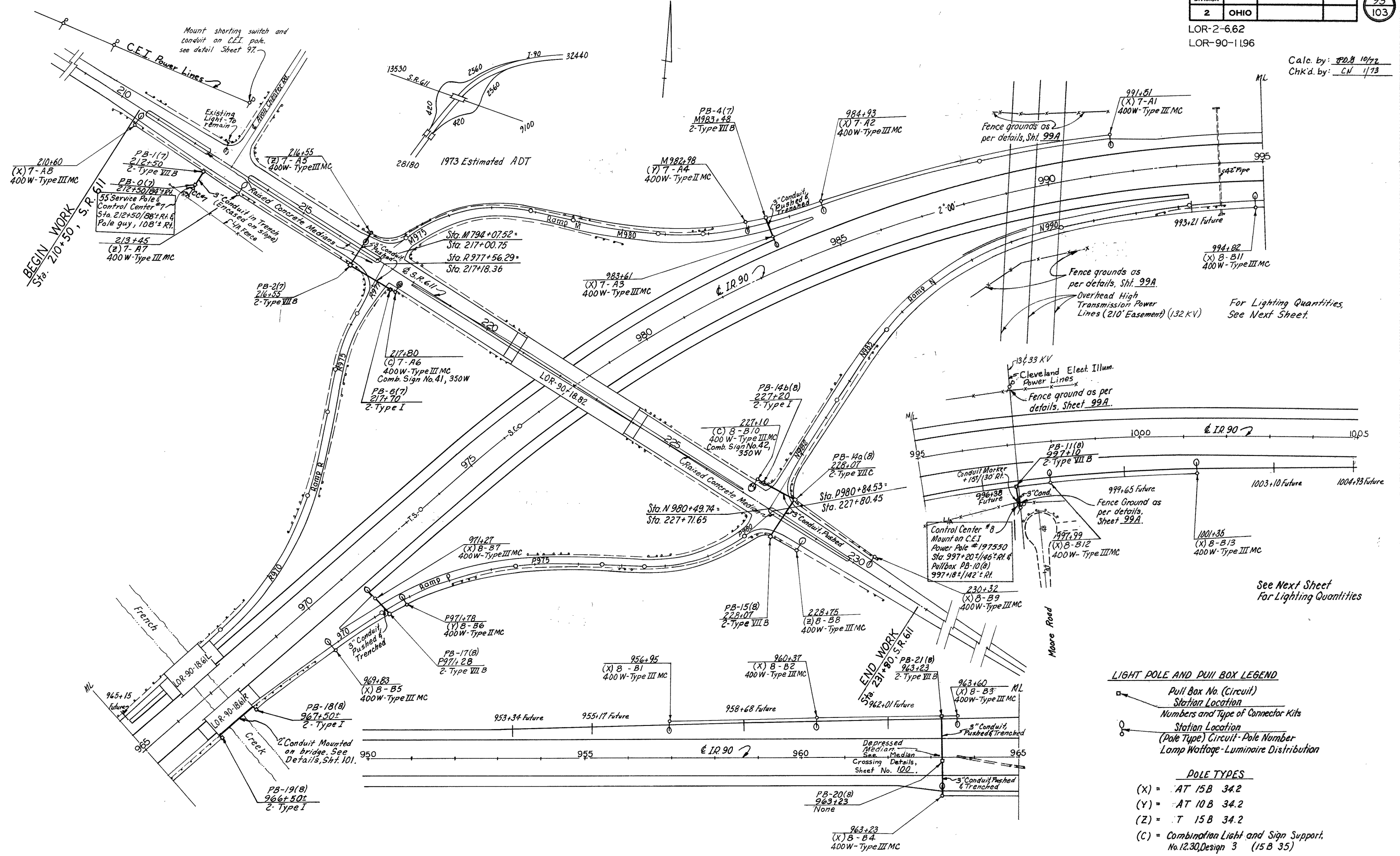
92
103

NORMAL PARTICIPATION UNLESS OTHERWISE SHOWN
625

REF. NO.	STATIONS	SIDE	Light Pole, Design AT15B 34.2	Light Pole, Design AT10B 34.2	15'0" Bracket Arm	Light Pole Foundation 24" x 60"	Luminaire, Type III 400W	Luminaire, Type II 400W	Lamp, 400W Mercury Vapor	Ground Rod	Pull Box, 18" Circular 713.09	Trench 24" Deep	3" Conduit 713.04 Type III Jacked Under Pavement	Pull Box, 18" Circular With Grade Adjustment Extension, 713.09	3" Conduit, 713.04, Type III	Distribution Cable, No. 4	Pole and Bracket Cable, No. 10	1/2" Duct - Cable With 2- No. 4 Cables 600V	Connector Kit, Type I	Connector Kit, Type II	Connector Kit, Type III	Connector Kit, Type III B	Service Pole & Control Center #5	Service Pole & Control Center #6	SEE SHEET NO.		
			NORM. PART.	NORM. PART.		NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.	NORM. PART.
			Each	Each	Each	Each	Each	Each	Each	Each	Each	Lin. Ft.	Lin. Ft.	Each	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Lump	Lump			
Circuit No. 5																											
CC #5	L813+25	Rt.																									
To PB-10	L813+25 to L813+35	Rt.																									
To B-9	L813+35 to 93+25 S.R. 254	Rt.	/			/		/		/		51			51	122									Lump	91	
To PB-11	93+25	Lt. & Rt.	/			/		/		/		4	76		4	180	99	111		/	/						
To B-11	93+25 to 96+00	Lt.	/			/		/		/		275					99	285		/	/						
PB-11 to PB-12	93+25 to 92+00 S.R. 254	Lt.																									
To B-10	92+00 to 91+90	Lt.			/			/		/		53	72		53	270			2		/	/					
PB-10 to PB-13	L813+35 to L809+73	Rt.																									
To B-8	L809+73 to L805+23	Rt.		/		/		/		/		364						374			/	/					
To PB-14	L805+23 to L804+68	Rt.										449					89	459			/	/					
To B-7	L804+68 to 804+54 I.R. 90	Rt.	/			/		/		/		55	28		24	124	99	65			/	/					
PB-14 to B-6	L804+68 to L803+28	Rt.	/			/		/		/		140					99	150			/	/					
To PB-15	L803+28 to 799+90 I.R. 90	Rt.										342						352			/	/					
To B-5	799+90 to 796+82	Rt.	/			/		/		/		311					99	321			/	/					
To PB-16	796+82 to 792+76	Rt.										410						420		2		/	/				
To PB-17	792+76	Rt.										31	44		31	170					/	/					
To B-4	792+76	Rt. & Lt.	/			/		/		/		43	66		43	238	99				/	/					
To B-3	792+76 to 789+53	Lt.	/			/		/		/		321					99	331			/	/					
To B-2	789+53 to 786+14	Lt.	/			/		/		/		337					99	347			/	/					
Circuit No. 6																											
CC #6	79+60	S.R. 254	Rt.																								
To PB-0	79+60	Rt.																									
To A-11	79+60 to 78+60	Rt.	/			/		/		/		44			44	108									Lump		
To PB-1	79+60 to 81+38	Rt.										100					99	110			/	/					
To PB-2	81+38 to 82+25	Rt.										178						188			/	/					
To A-10	82+25 to 82+35	Rt.			/			/		/		18	69		18	194			2		/	/					
PB-10 to PB-3	81+38	S.R. 254	Lt. & Rt.																								
To A-9	81+38 to 81+00 S.R. 254	Lt.	/			/		/		/		10	78		10	196											
PB-3 to PB-4	81+38 to J812+00	Lt.										38					99	48			/	/					
To A-8	J812+00 to J816+27	Lt.		/		/		/		/		469					89	479			/	/					
To PB-5	J816+27 to J816+77	Lt.										425						60			/	/					
To A-7	J816+77 to 816+79 I.R. 90	Lt.	/			/		/		/		50	28		23	122	99				/	/					
PB-5 to A-6	J816+77 to J818+20	Lt.	/			/		/		/		23									/	/					
To PB-6	J818+20 to 821+68 I.R. 90	Lt.										143					99	153			/	/					
To A-5	821+68 to 824+72	Lt.	/			/		/		/		348					99	358			/	/					
To PB-7	824+72	Lt.										304						314			/	/					
To PB-8	824+72	Lt. & Rt.										12	54		12	152			2		/	/					
To PB-9	824+72	Rt.										50						60		2		/	/				
To A-4	824+72 to 825+08	Rt.	/			/		/		/		12	64		12	172			2		/	/					
To A-3	825+08 to 828+31	Rt.	/			/		/		/		36					99	46			/	/					
To A-2	828+31 to 831+71	Rt.	/			/		/		/		323					99	333			/	/					
Sheet Totals																											
			16	2	2	18	17	3	20	18	11	6234	579	3	325	2048	1962	6149	12	20	20	14	Lump	Lump	S-TOTAL		
TOTAL																											

LOR-2-6.62
LOR-90-11.96

Calc. by: P.D.B. 10/72
Chkd. by: C.N. 1/73



Fence grounds as per details, Sht. 99A
Overhead High Transmission Power Lines (210' Easement) (132 KV)
For Lighting Quantities, See Next Sheet.

13.33 KV
Cleveland Elect. Illum. Power Lines
Fence ground as per details, Sheet 99A.
Control Center #8
Mount on C.E.I. Power Pole #197550
Sta. 997+20 1/46' Rt. & Pullbox PB-10(B) 997+18 1/42' Rt.
See Next Sheet For Lighting Quantities

- LIGHT POLE AND PULL BOX LEGEND**
- Pull Box No. (Circuit)
 - Station Location
 - Numbers and Type of Connector Kits
 - Station Location (Pole Type) Circuit-Pole Number
 - Lamp Wattage-Luminaire Distribution
- POLE TYPES**
- (X) = AT 15 B 34.2
 - (Y) = AT 10 B 34.2
 - (Z) = T 15 B 34.2
 - (C) = Combination Light and Sign Support, No. 12.30, Design 3 (15 B 35)

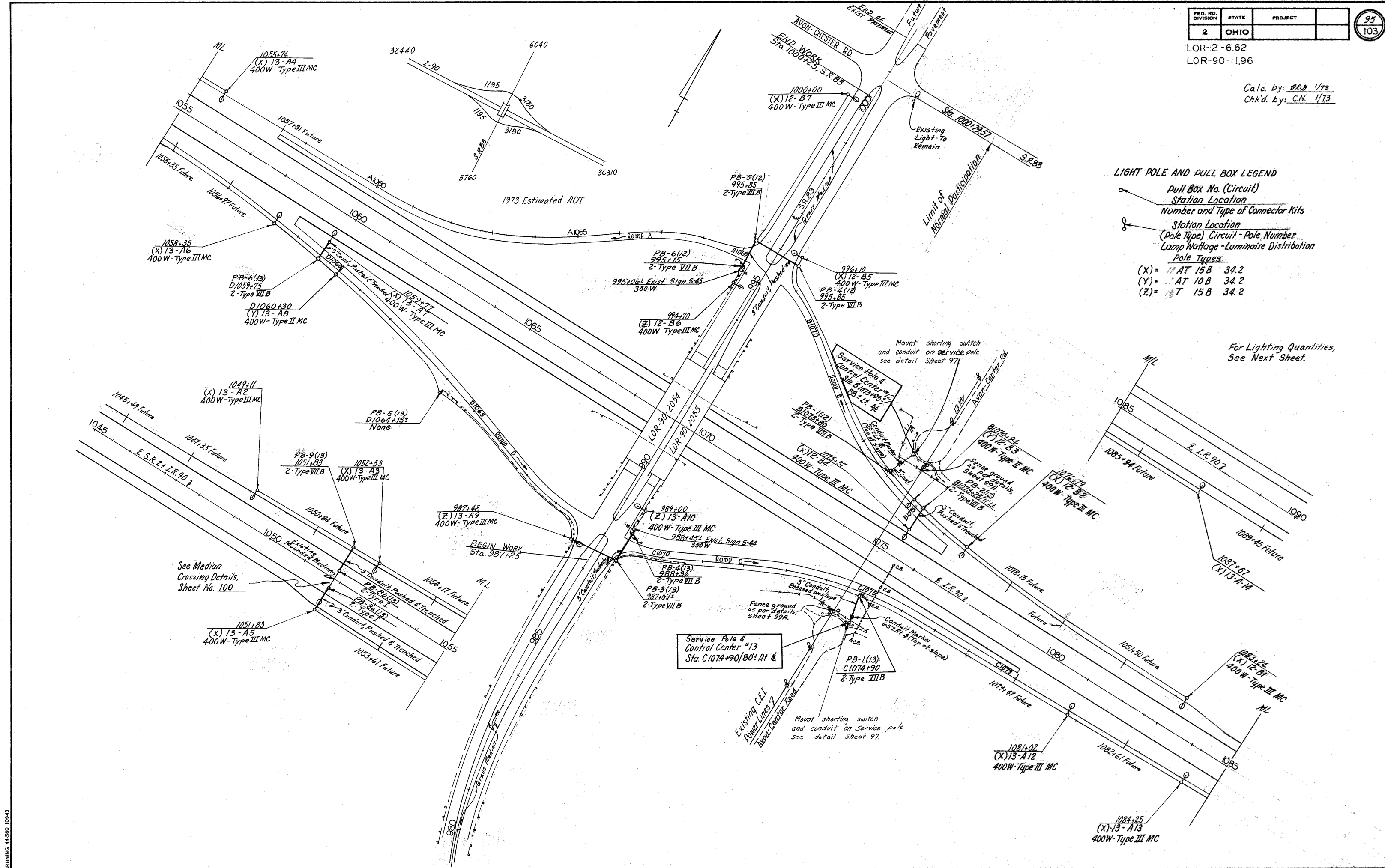
LOR-2-6.62
LOR-90-11.96

Calc. by: *BDJ* 1/73
Chk'd. by: *C.N.* 1/73

LIGHT POLE AND PULL BOX LEGEND

Pull Box No. (Circuit)
 Station Location
 Number and Type of Connector Kits
 Station Location (Pole Type) Circuit - Pole Number
 Lamp Wattage - Luminaire Distribution
Pole Types
 (X) = AT 15 B 34.2
 (Y) = AT 10 B 34.2
 (Z) = T 15 B 34.2

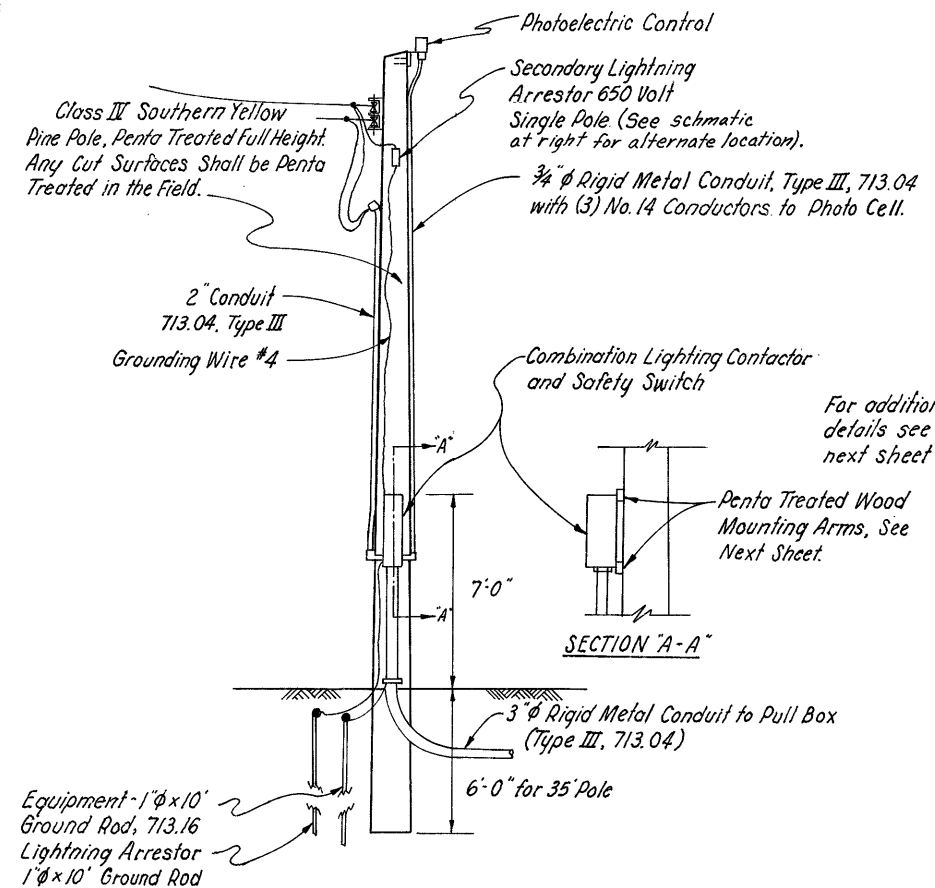
For Lighting Quantities,
See Next Sheet.



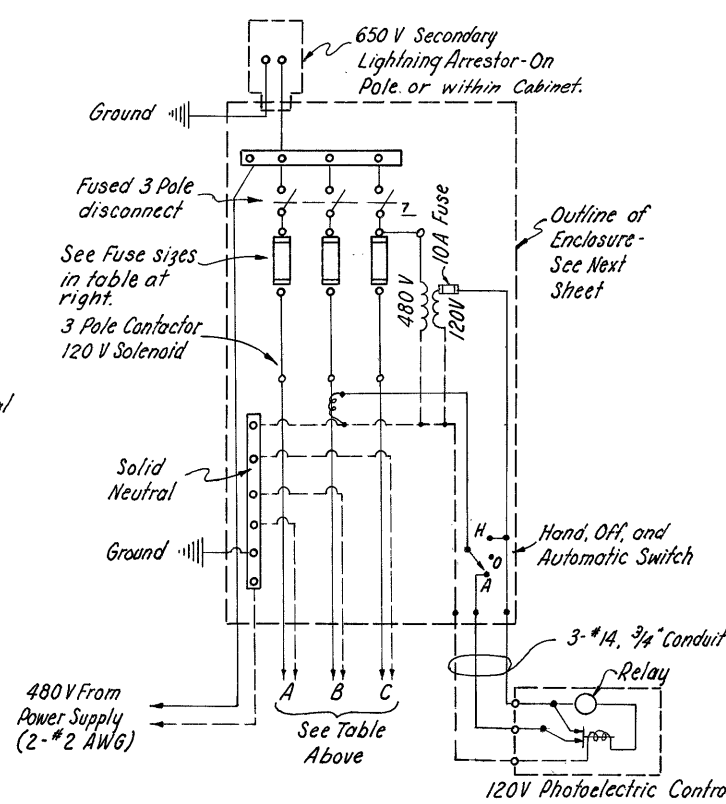
See Median Crossing Details, Sheet No. 100

Service Pole & Control Center #13
Sta. C 1074+90/80± Rt. &

Mount shorting switch and conduit on service pole. See detail Sheet 97.



SERVICE POLE AND CONTROL CENTER
CONTROL CENTERS 1 to 6, 9 to 11 and 14



CONTROL PANEL CIRCUIT AND FUSE DATA

Control Center	Circuits Used	Size of Fuses
1-8 and 12-14	A only	All 30 amp
9	A & B	All 40 amp
10	A & B	All 30 amp
11	A & B	All 30 amp

Note: Fuses shall also be provided for the spare circuit (s).

ELECTRICAL EQUIPMENT

The controller shall be a combination safety switch and contactor assembly in a stainless steel enclosure as detailed on the next sheet. The controller shall be similar to one of the following: Square D Co. No. W939 FA 610 A, Columbus Electric Works No. CEW17SS4660, Control System and Equipment Co. No. Z 6060, or approved equal, and shall meet the requirements of Sec. 713.20 of the Specifications. The secondary lightning arrester shall be a single pole, outdoor 650 A.C. arrester similar to GE No. 9L15BCA001, Joslyn No. J9200-7, Line Materials No. ASI 1A1, or approved equal, and shall meet the requirements of 713.20 of the Specifications. The photoelectric control shall meet the requirements of 713.20 of the Specifications.

ITEM 625 - SERVICE POLE AND CONTROL CENTER.

The contract lump sum price bid for Item 625 "Service Pole and Control Center" shall be full compensation for furnishing all materials and performing all labor indicated for the contractor below, for furnishing all materials and equipment shown on the detailed drawings for the Control Center and Service Pole, for furnishing and installing all conduit and cable required to connect the Control Center to the Pull Box at the base of the Service Pole where required or to the normal trench depth where no Pull Box is required at the Service Pole base, and for furnishing and installing all incidentals necessary to make a complete workable installation.

- SERVICE POLE (35' long unless otherwise specified):**
The contractor shall furnish and install the Service Pole and the conduit, including the weatherhead, shown on the Service Pole, from the weatherhead to the Enclosure(s)*, and furnish and install the #2 AWG wires leading from the Enclosure(s)* to the weatherhead, leaving 5'-0" of free cable above the weatherhead for connection to the Service Pole by the Power Supplier, the contractor shall cut or notch the cable insulation at the bottom of the Drip Loop in order to prevent syphoning of water into the Controls.* Pole guys where specified shall also be a part of the Service Pole unit. All the above shall meet the requirements of 713.19.
* Controller and Shorting Switch where required.
- Grounding shall be accomplished in accordance with details called for on this sheet and on sheet 103.

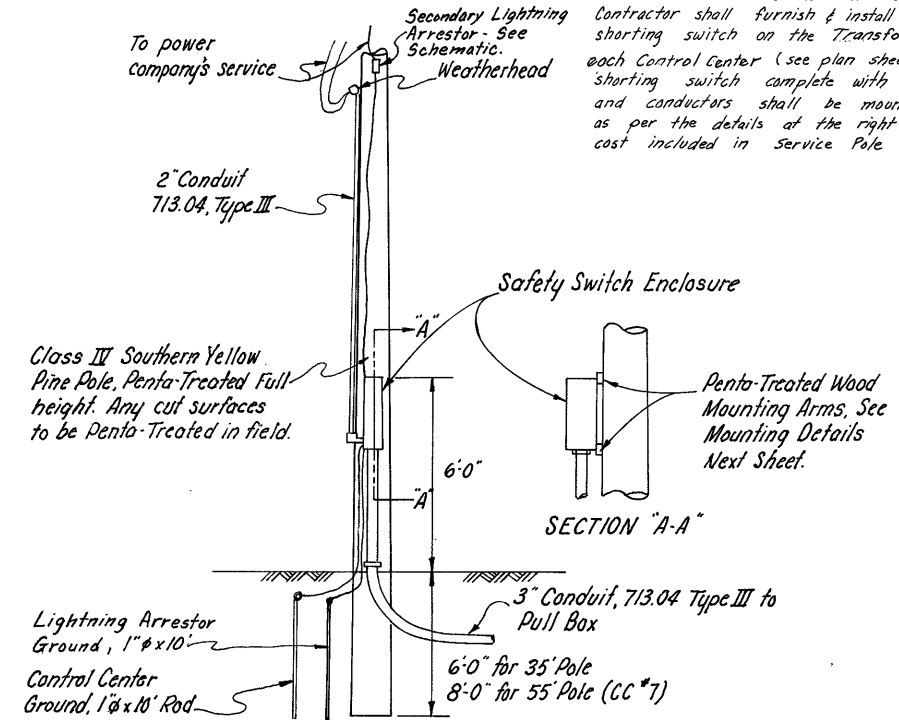
ITEM 625 CONTROL CENTER

The contract lump sum price bid for Item 625 Control Center #8 shall be full compensation for all materials and labor indicated for the contractor below, for furnishing all materials and equipment shown on the Control Center drawing and called for at left, for furnishing and installing all conduit and cable required to connect the Control Center to the pull box at the base of the pole, and for furnishing and installing all incidentals necessary to make a complete workable installation.

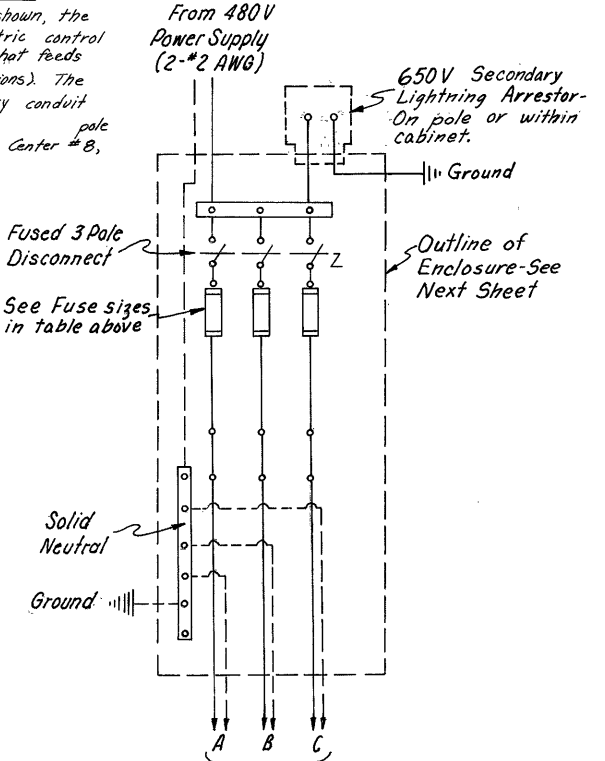
- The contractor shall furnish and install the 2" conduit, including the weatherhead, to the 2 Enclosures and the 2 AWG conductors from the Enclosures to the weatherhead, leaving 5 feet of free cable above the weatherhead for connection to the power source. The contractor shall notch or cut the cable insulation at the bottom of the drip loop to prevent syphoning of water into the Controls. All the above shall meet requirements of 713.19.
- The contractor shall mount the Control Center and Shorting Switch on the existing C.E.I. power pole.
- Grounding shall be accomplished in accordance with details on this sheet and sheet 103.

SERVICE POLES 7, 12, 13

In addition to Service Pole requirements shown, the Contractor shall furnish & install a photoelectric control shorting switch on the Transformer Pole that feeds each Control Center (see plan sheets for locations). The shorting switch complete with the necessary conduit and conductors shall be mounted on the pole as per the details at the right for Control Center #8, cost included in Service Pole Unit.



SERVICE POLE AND CONTROL CENTER
Control Centers 7, 12 and 13



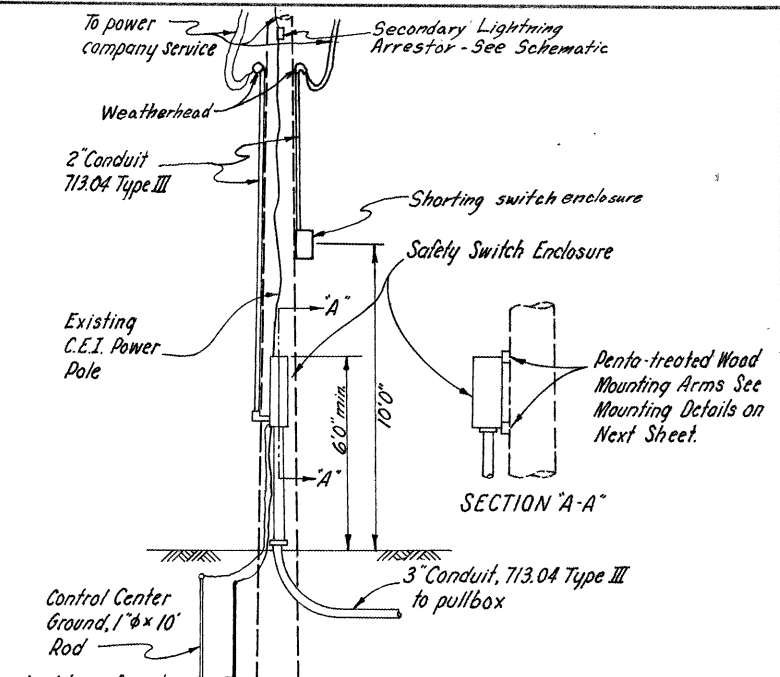
CONTROL PANEL SCHEMATIC
Control Centers 7, 8, 12 and 13

ELECTRICAL EQUIPMENT

The controller shall be a safety switch in a stainless steel enclosure as detailed on the next sheet. The controller shall be similar to one of the following: Square D Co. No. W999FA 221A, Columbus Electric Works No. CEW101 SS4630, or approved equal, and shall meet the requirements of 713.20 and details on next sheet.

The photoelectric control shorting switch shall be a 240 volt rated, 20 amp by-pass switch in an outdoor FS-21 box with WRS-16 cover.

The secondary lightning arrester shall be a single pole, outdoor 650V A.C. arrester similar to GE No. 9L15BCA001, Joslyn No. J9200-7, Line Materials No. ASI 1A1, or approved equal meeting the requirements of 713.20 of the Specifications.



CONTROL CENTER
Control Center 8
Rev. 6-28-73

SERVICE POLES AND CONTROL CENTERS

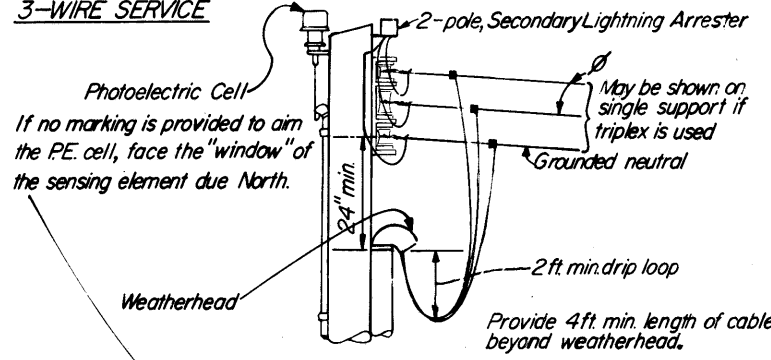
F.I.D. NO.	STATE	PROJECT	
2	OHIO		

97A
103

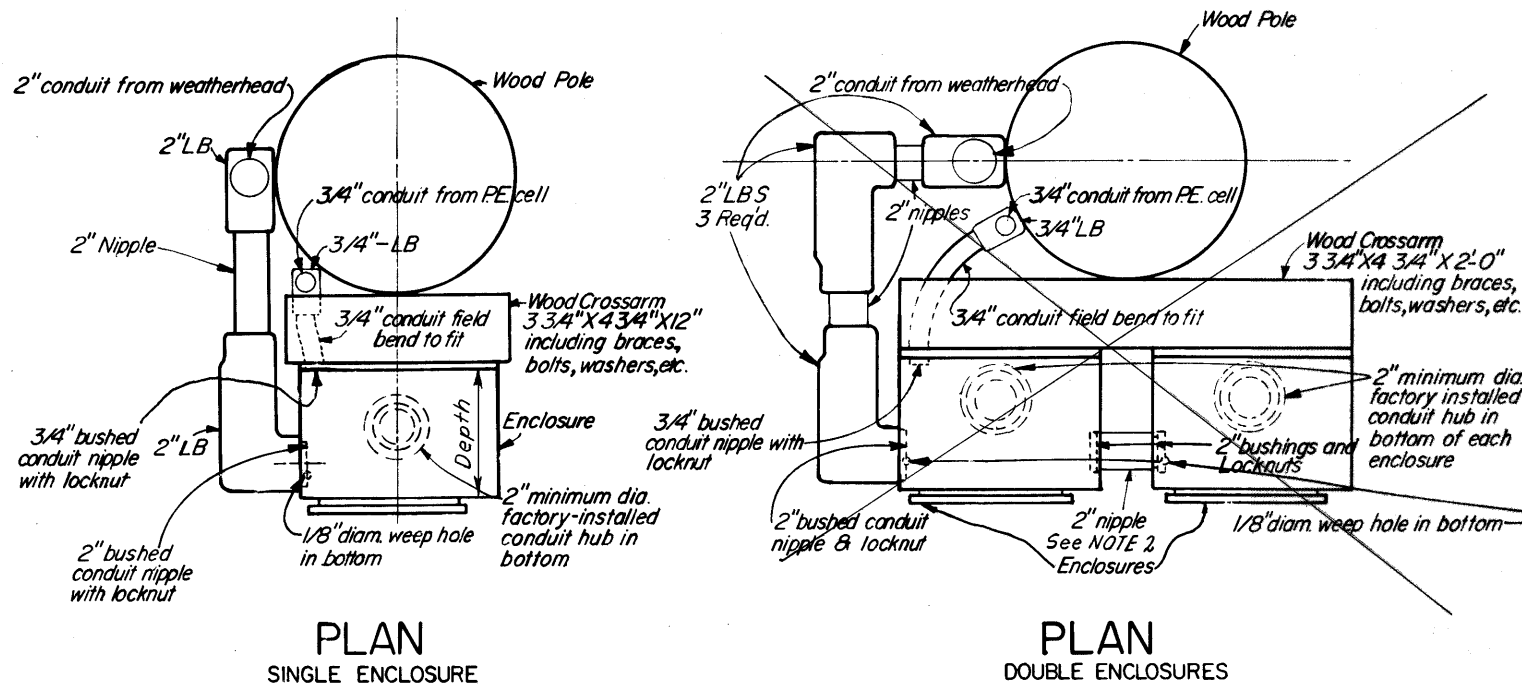
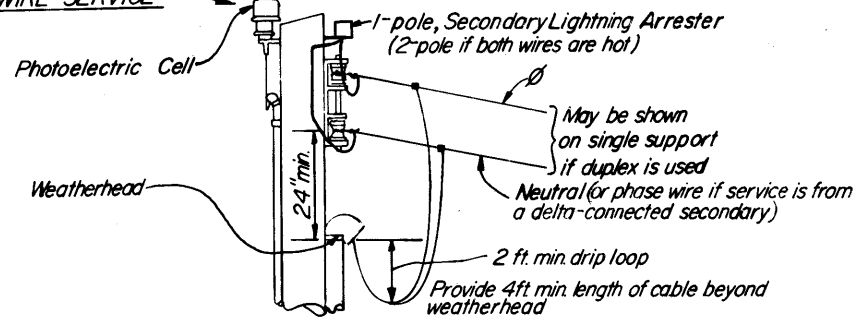
LOR-2-6.62
LOR-90-11.96

TYPICAL SERVICE POLE HEADS

3-WIRE SERVICE



2-WIRE SERVICE



NOTES

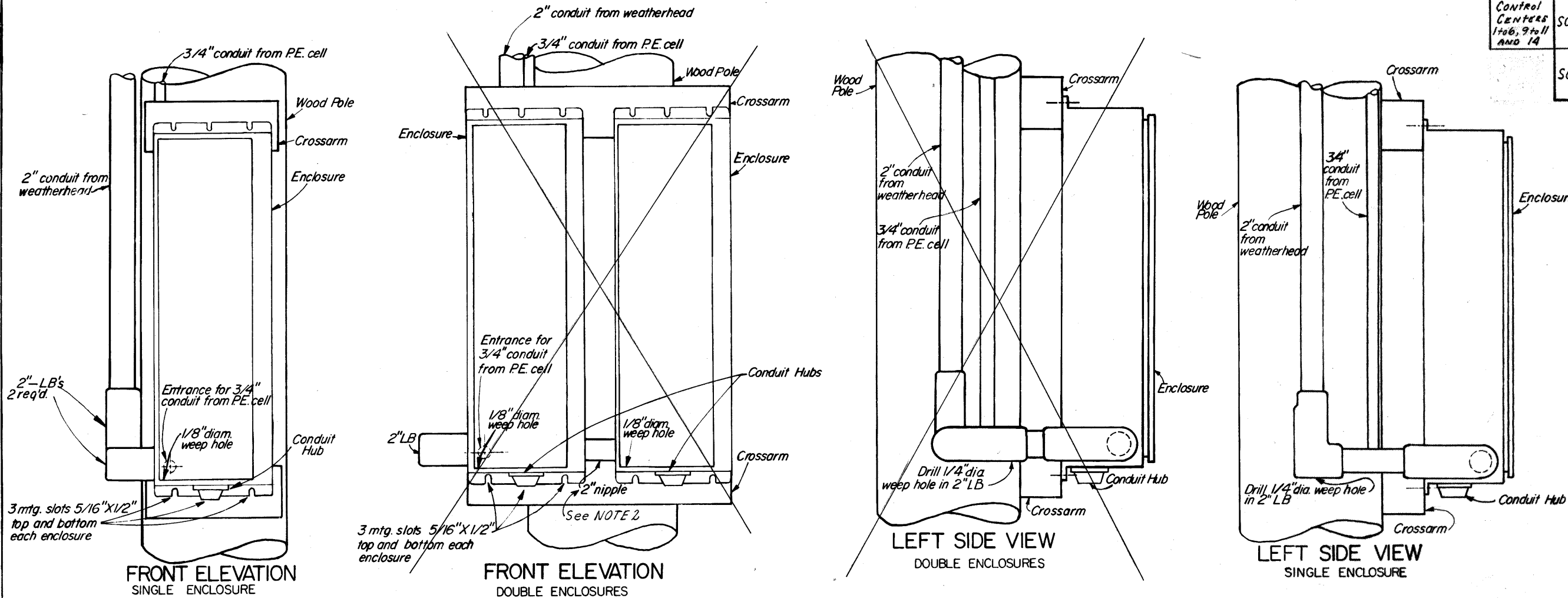
- All openings in enclosures shall be made by fabricator.
- Two or more enclosures may be mounted with sides abutting. The 2" nipple shown shall then be replaced by the installation of 2" insulated bushings in the openings for cables.

ENCLOSURE TYPES

MINIMUM INTERIOR DIMENSIONS

TYPE NO.	PRINCIPLE CONTENTS	WIDTH	HEIGHT	DEPTH*	
Control Centers 7.8, 12 & 13	S-30/60	30 or 60 ampere fused switch.	10 1/2"	18"	6 9/16"
	S-100	100 ampere fused switch.	14"	20"	8"
Control Centers 1 to 6, 9 to 11 AND 14	SC-30/60	30 or 60 ampere combination fused switch & contactor.	10 7/16"	32 7/16"	5 7/8"
	SC-100	100 ampere combination fused switch & contactor.	14"	41"	8 1/8"

*See "PLAN" view of Single Enclosure.

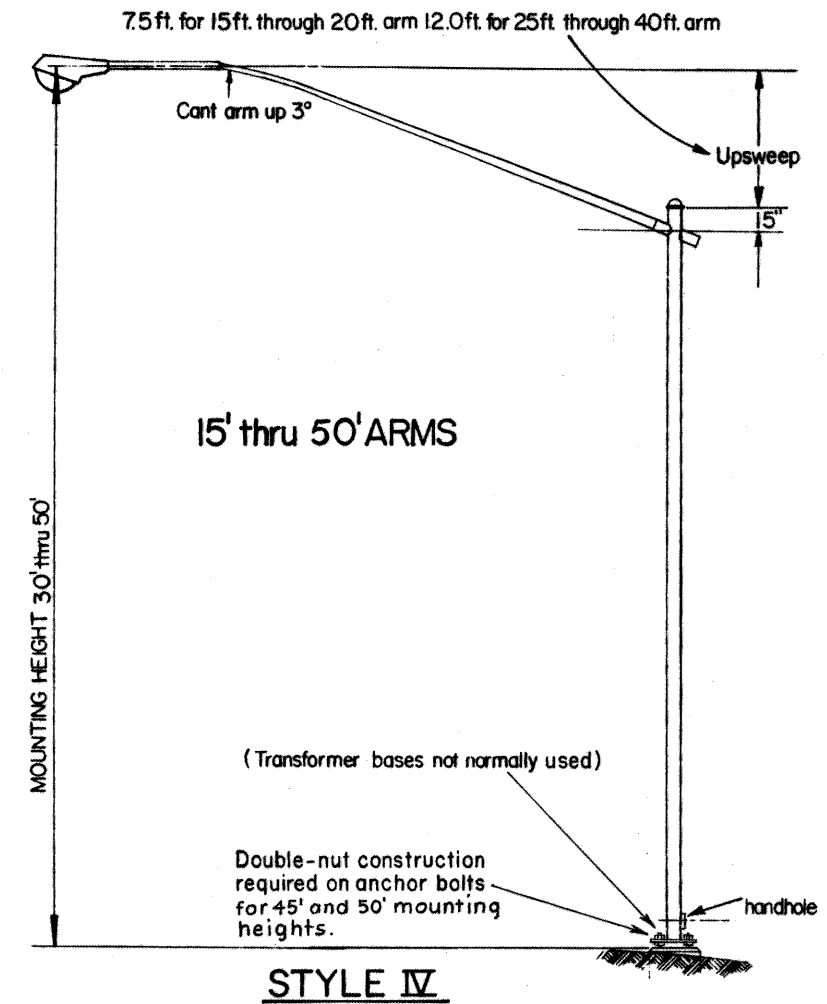
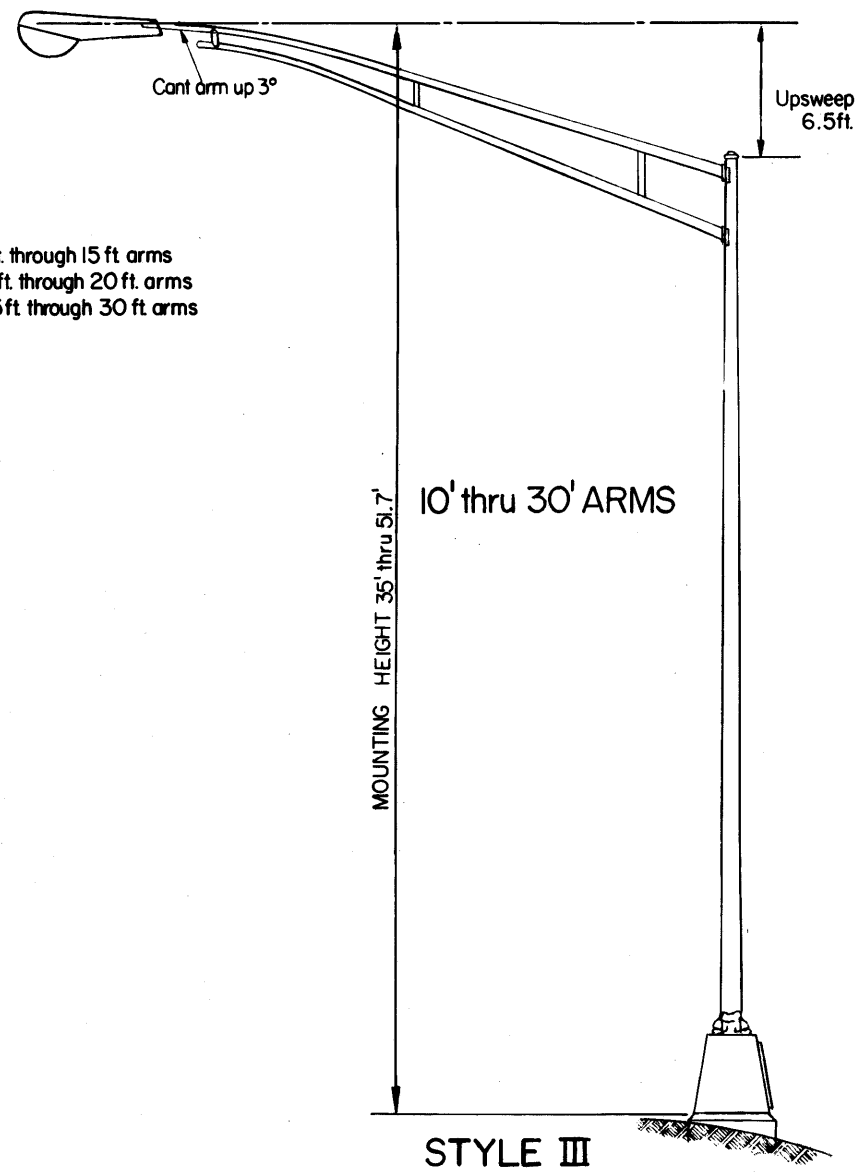
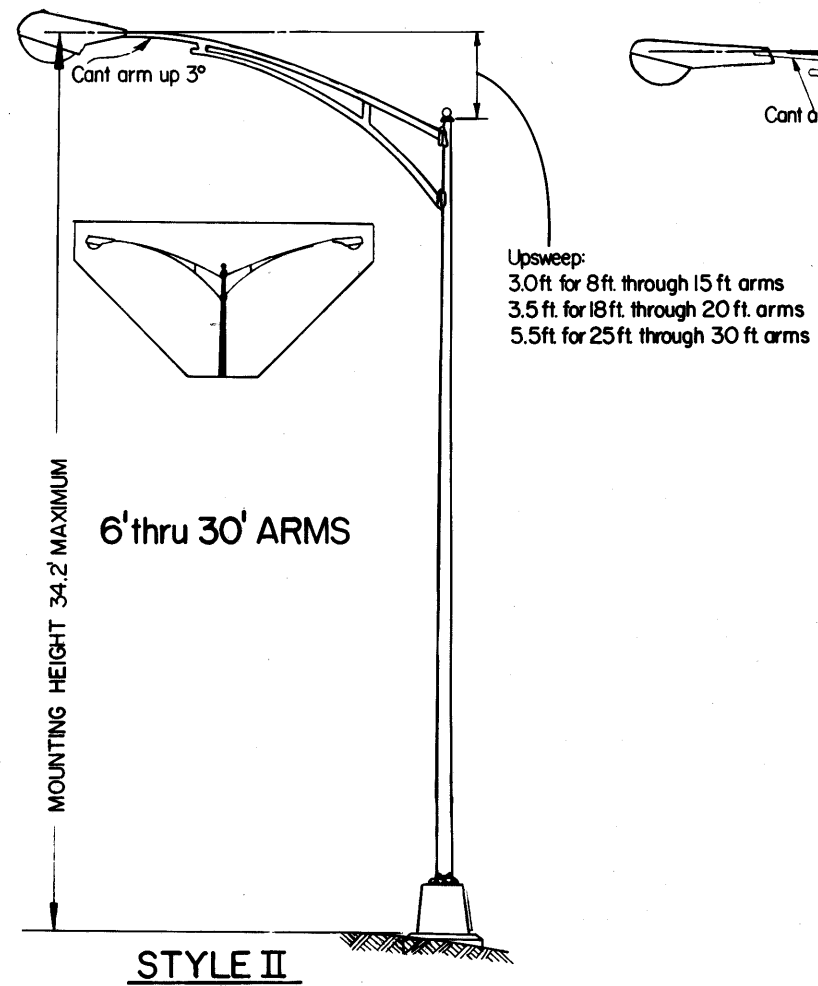
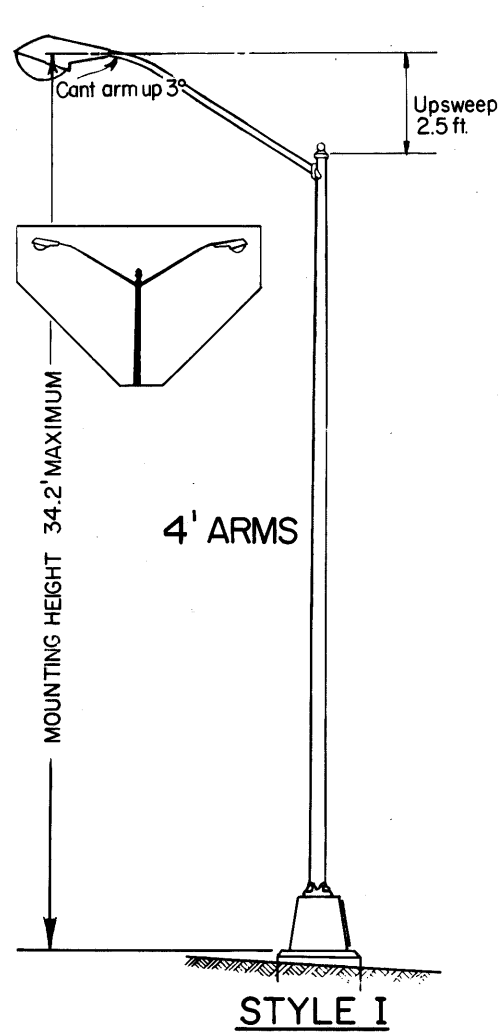


LIGHT POLE STYLES

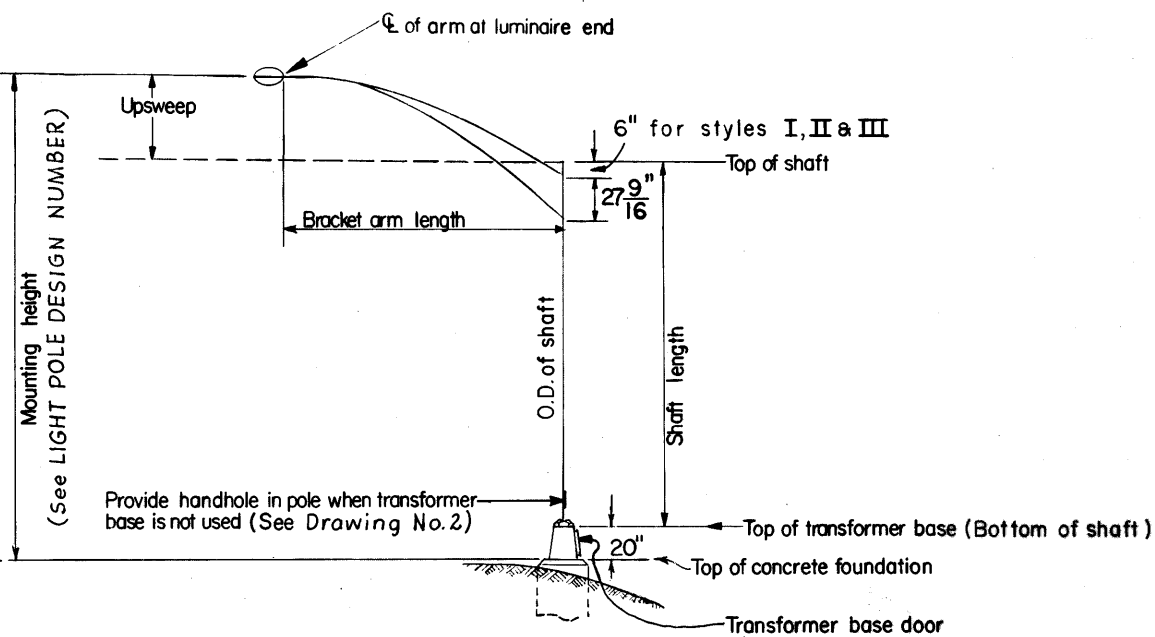
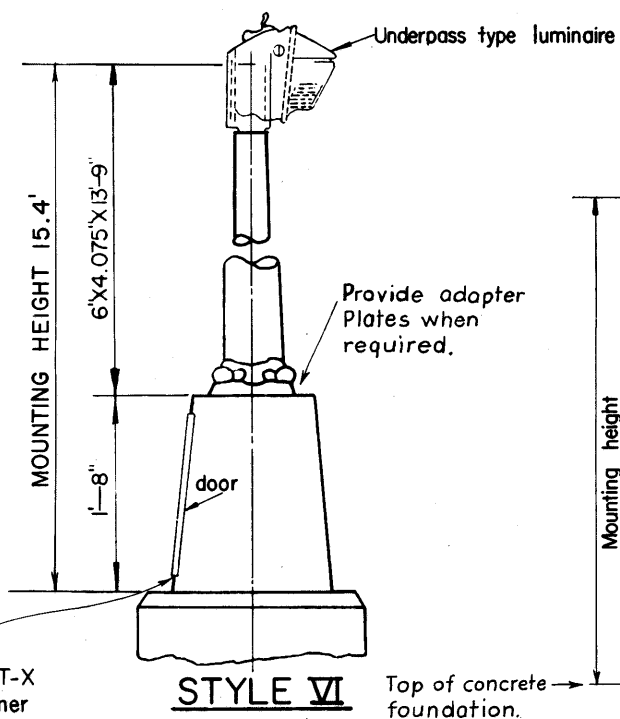
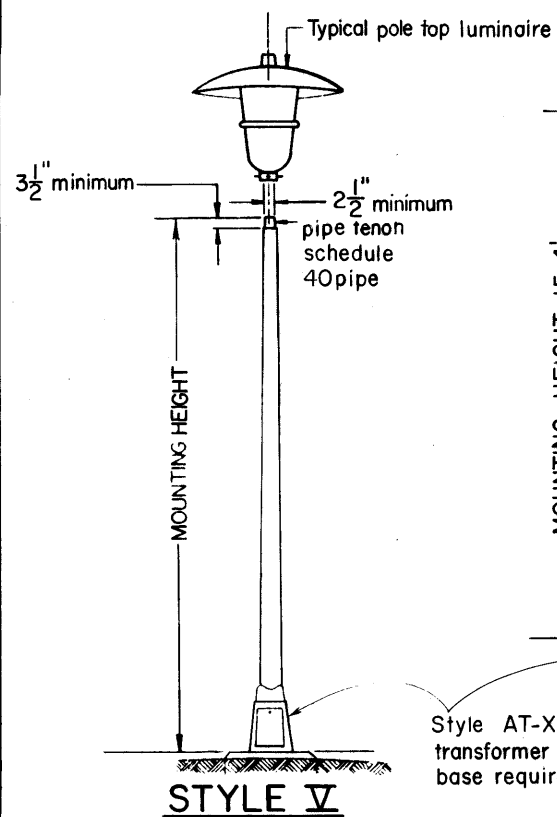
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

98A
103

LOR-2-6.62
LOR-90-11.96



NOTE: Subject to the approval of the Engineer, modification of the ratio of bracket upsweep to arm length is permissible provided the basic pole proportions are maintained as shown.



AB-D-GB

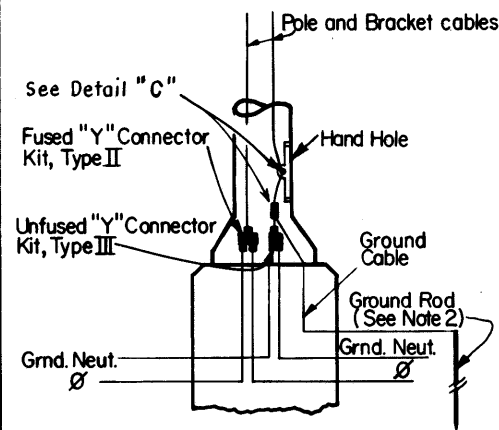
POLE WIRING

FED. RD. DIVISION	STATE	PROJECT	98B 103
2	OHIO		

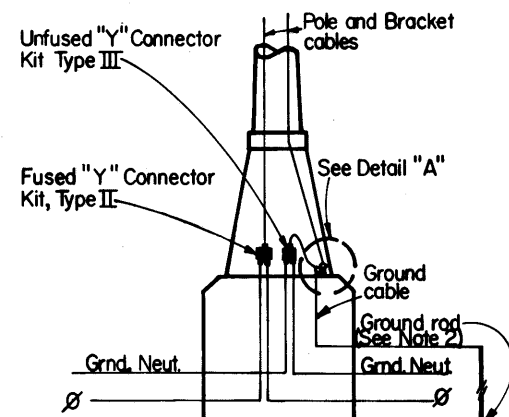
LOR-2-6.62
LOR-90-11.96

NOTES

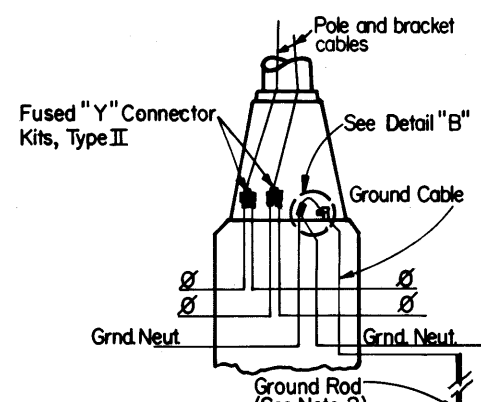
1. Provide sufficient slack in all cables to permit bringing Kits outside of pole base through handhole of anchor base poles or door in transformer base poles.
2. For structure-mounted poles substitute "Structure grounding system" for ground rod.
3. See Drawing No.13 for fusing details.



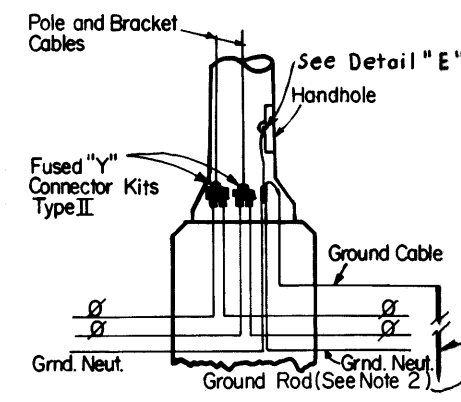
480 VOLT, TWO-WIRE, GROUNDED NEUTRAL



TRANSFORMER BASE POLE

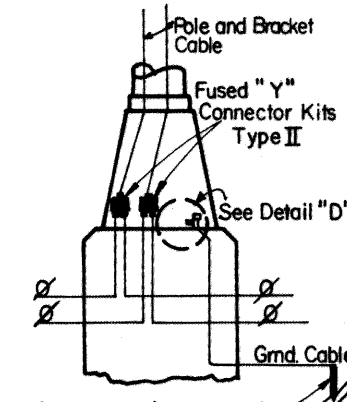


TRANSFORMER BASE POLE



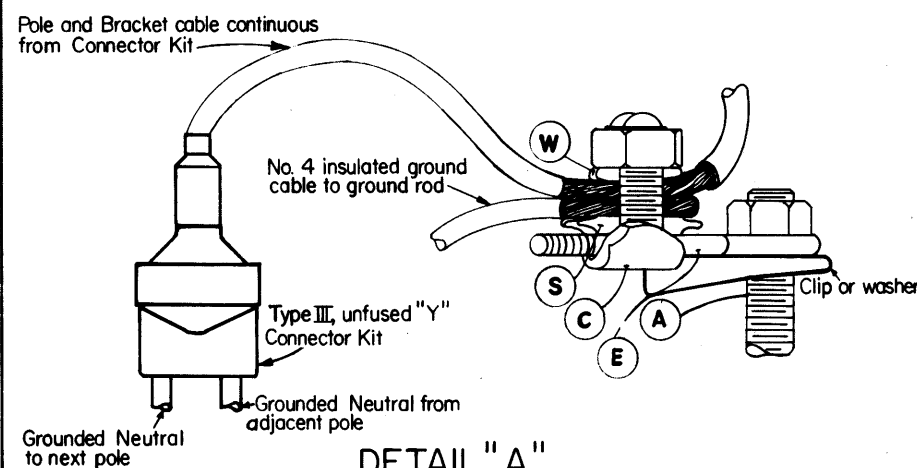
ANCHOR BASE POLE

120/240 VOLTS, THREE WIRE, GROUNDED NEUTRAL

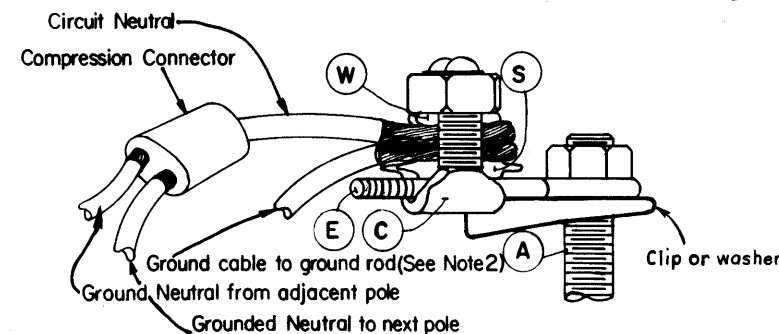


TRANSFORMER BASE POLE

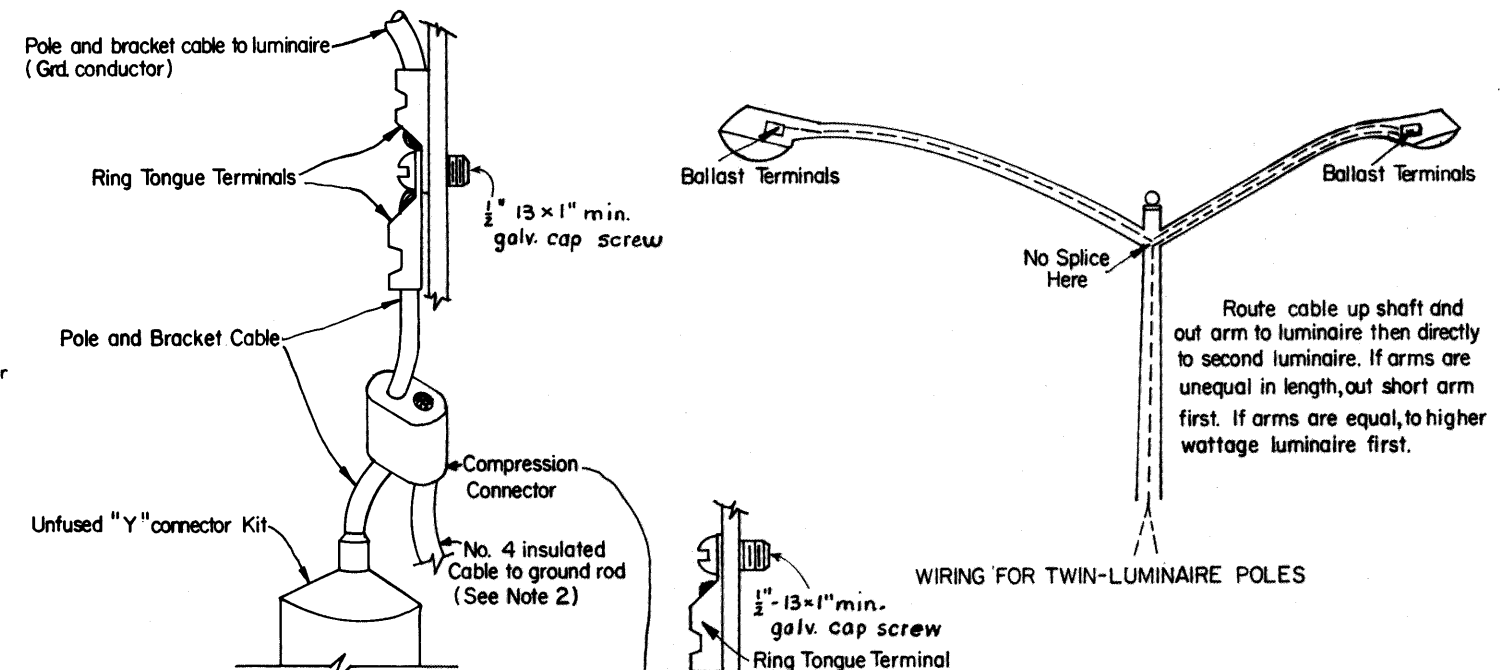
240 or 480 VOLTS, TWO-WIRE, UNGROUNDED



DETAIL "A"
2-Wire Grounded Neutral
Transformer Base Pole

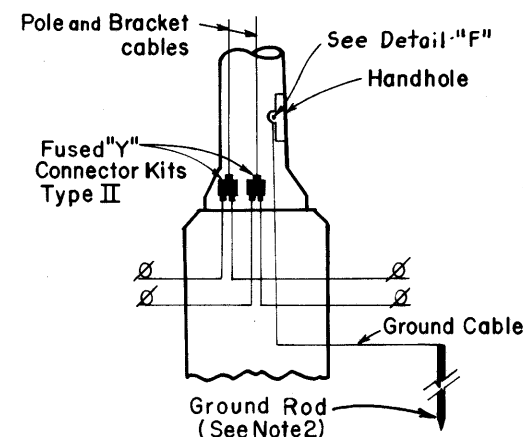


DETAIL "B"
3-WIRE, GROUNDED NEUTRAL
Transformer Base Pole

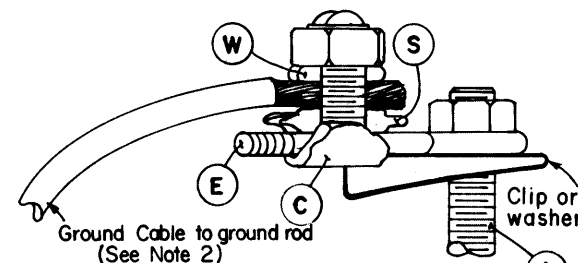


LEGEND of ITEMS COMMON to DETAILS "A", "B", & "D"

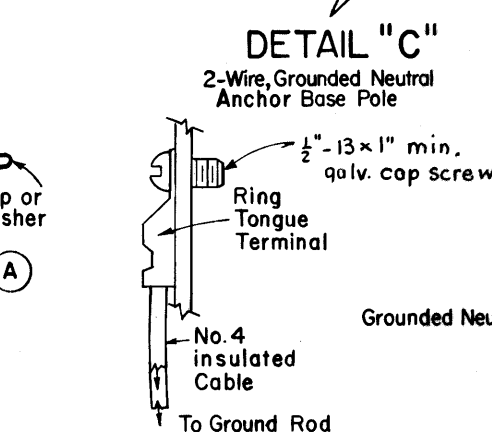
- (A) Anchor Bolt
- (C) Tin Plated Copper Split Bolt Connector with the following components:
 - (S) Spacer (Tin plated)
 - (W) Washer
 - (E) 3/8" X 4" Galv. Steel eyebolt



Anchor Base Pole
240 or 480 VOLTS, TWO-WIRE, UNGROUNDED

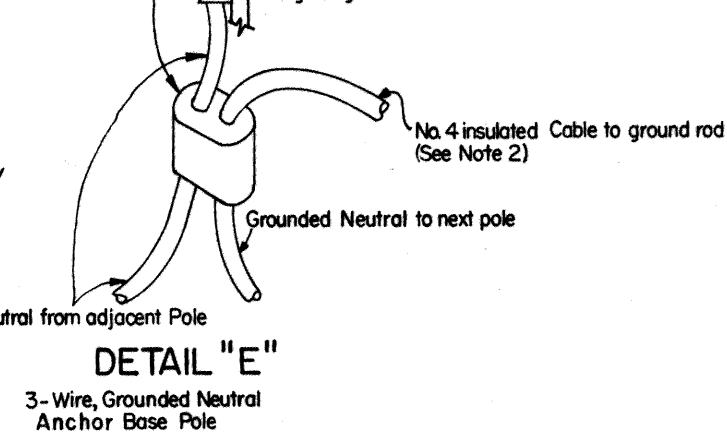


DETAIL "D"
2-Wire, Ungrounded Circuit
Transformer Base Pole



DETAIL "C"
2-Wire, Grounded Neutral
Anchor Base Pole

DETAIL "F"
2-WIRE UNGROUNDED

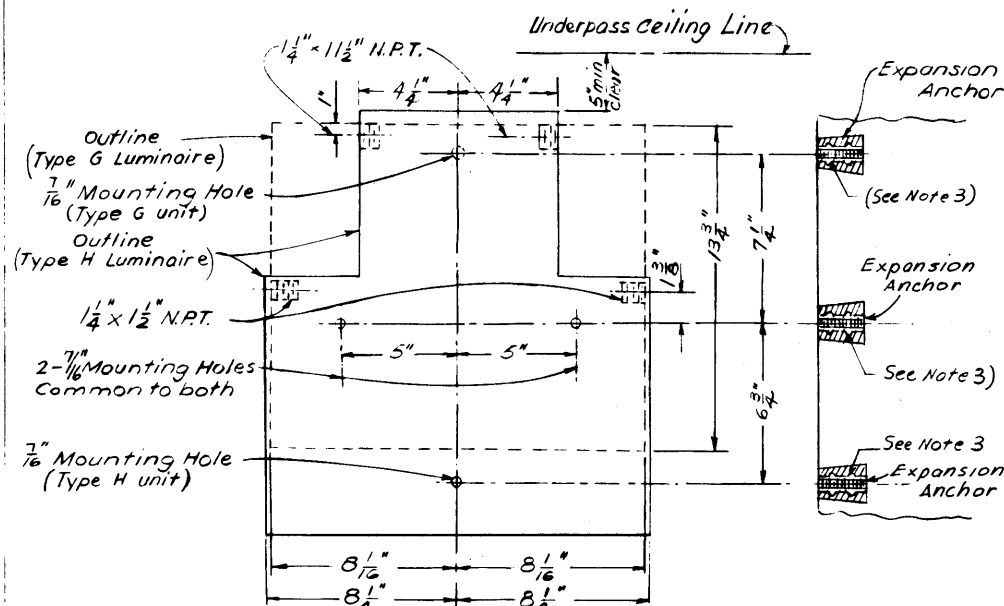


DETAIL "E"
3-Wire, Grounded Neutral
Anchor Base Pole

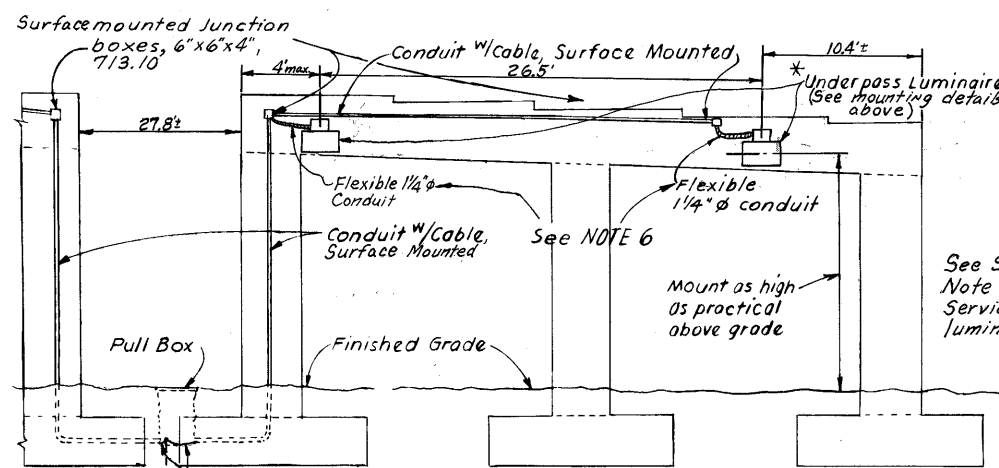
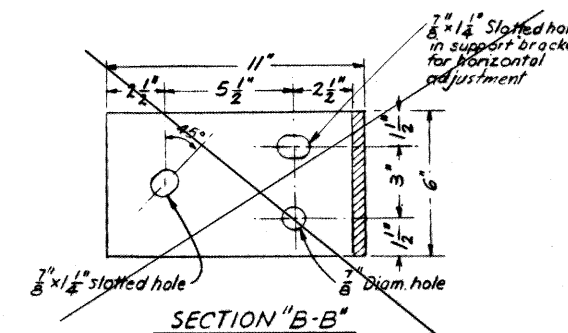
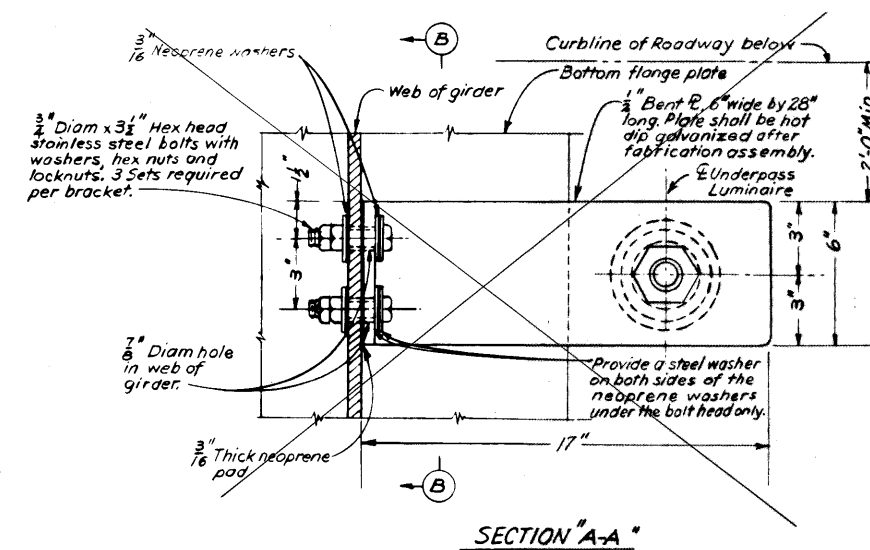
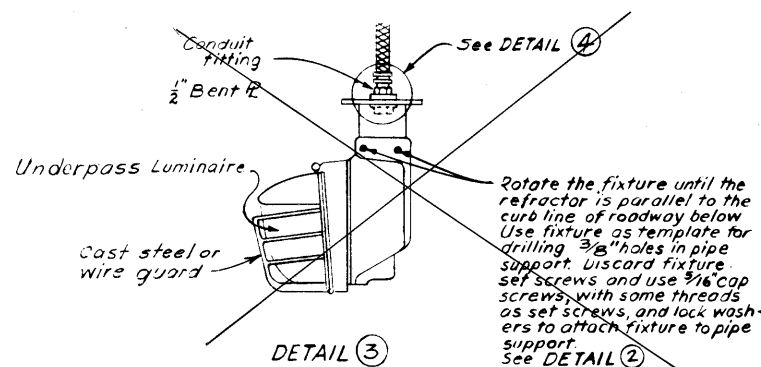
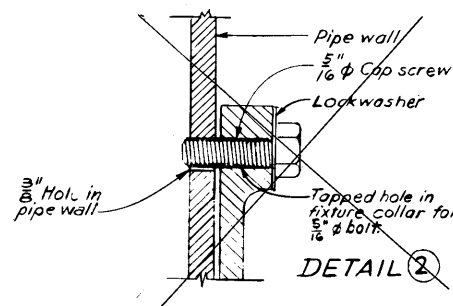
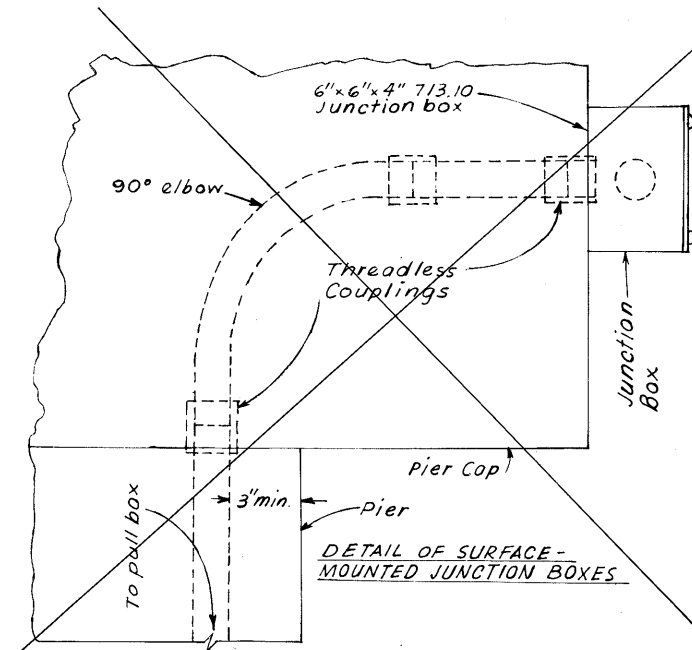
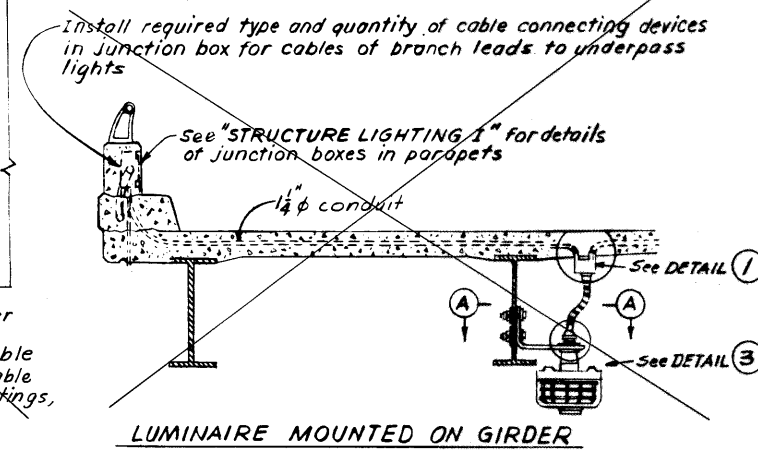
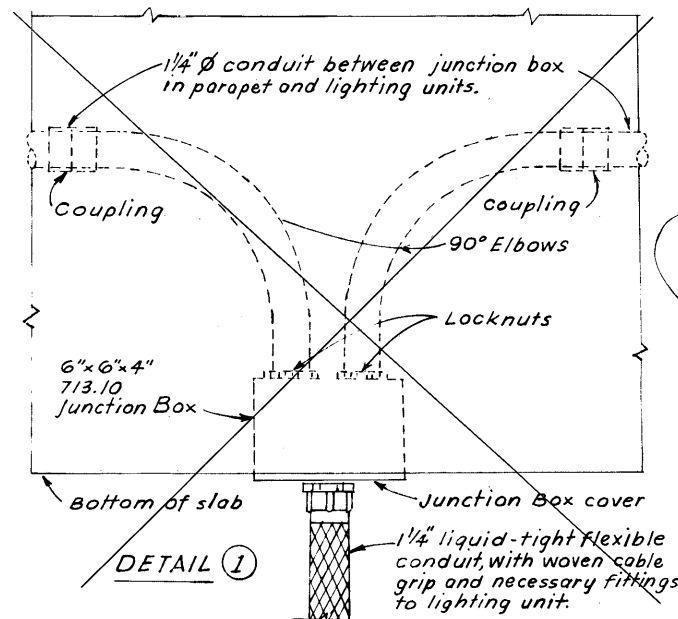
NOTES...

- All conduit for underpass lighting encased in, or surface-mounted to a structure shall be 1/4" per 71304, Type III, except as otherwise noted on the plans.
- Holes for expansion anchors shall be drilled at the time of installation of luminaire or cast in place initially. Expansion anchors shall be "Double" wedge type 1 7/8" long for 3/8" machine bolt. Use 1/16" drill. Other methods of anchoring the fixture may be used with the approval of the Engineer.
- For pay purposes the Junction boxes detailed on this drawing are considered as conduit fittings and shall be included in the conduit item.
- Sections of flexible conduit shall not exceed 30' in length unless otherwise directed by the Engineer.

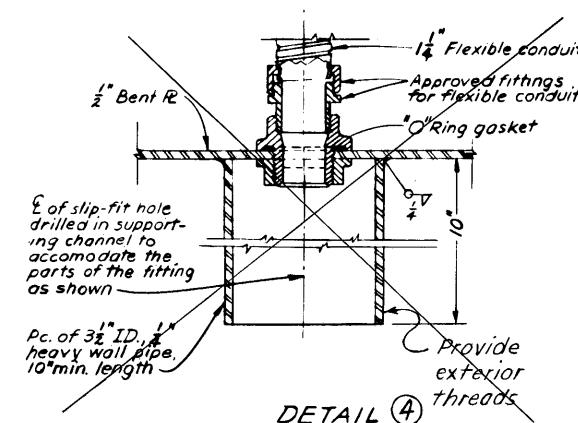
UNDERPASS LIGHTING



WALL MOUNTED UNDERPASS LUMINAIRES



See Sheet 79 for Note on Electrical Service to underpass luminaires.



* Horizontal spacing of luminaires will be the same for all four (4) pier caps.
* Insulated copper ground cable welded to ground rod and ends of each conduit from underpass lighting.

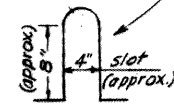
PULL BOX DETAILS

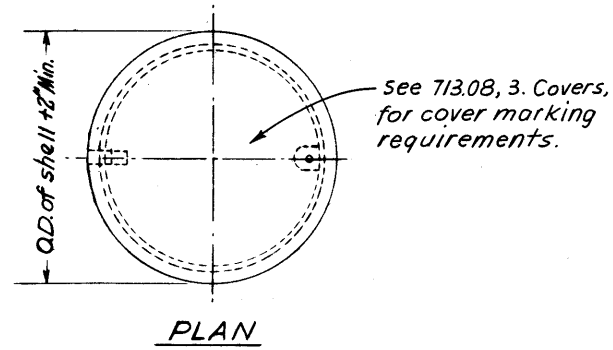
FED. RD. DIVISION	STATE	PROJECT	99 103
2	OHIO		

LOR-2-6.62
LOR-90-11.96

NOTES

- Approximate Air Bell sizes:

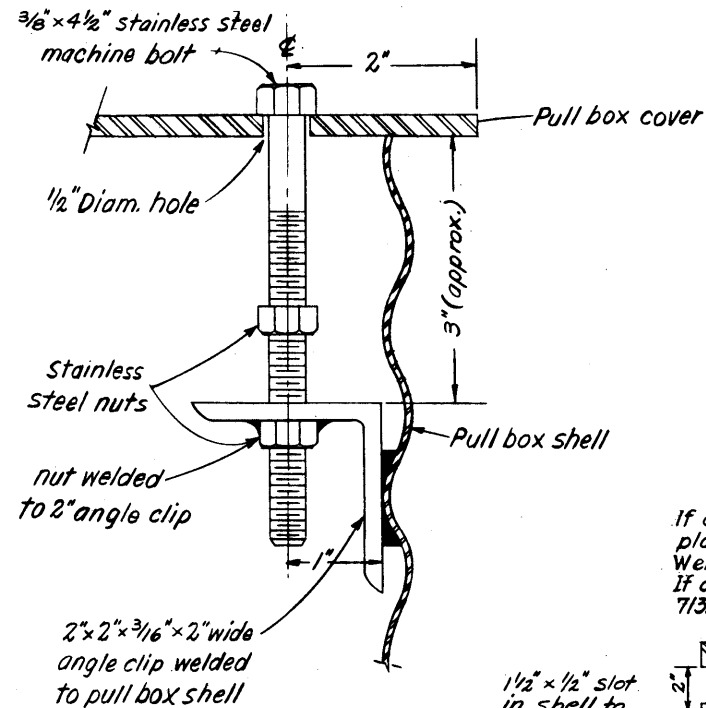
Pullbox Diameter	Air Bell Diameter	Air Bell Height
18"	16 $\frac{3}{4}$ "	20 $\frac{1}{2}$ "
24"	20 $\frac{1}{2}$ "	28 $\frac{1}{2}$ "
- When required to provide a clear opening for the duct cable the air bell for the 24" diameter pullbox shall be notched as shown.
 
- Underdrain tile shall be installed only when specified or directed by the Engineer.



NOTE: When pull box is installed in paved or concrete areas provide a 2" wide x 2" long x 6" deep, min. size, pocket to clear "Z" clip in slot.

1/4" ϕ hole, 4 at 90° for 3/16" polypropylene rope
3, 4"x10" openings at 90°

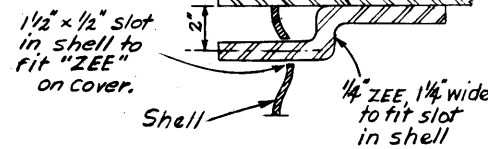
ELEVATION



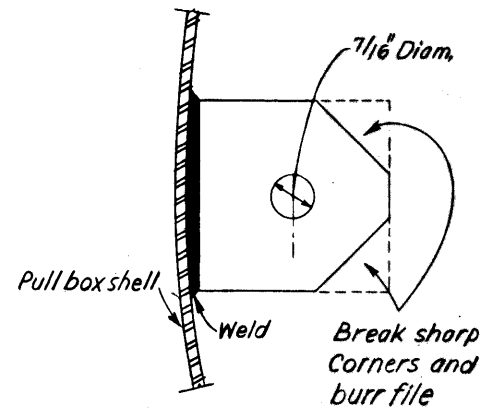
DETAIL "A"

2"x2"x3/16"x2" wide angle clip welded to pull box shell

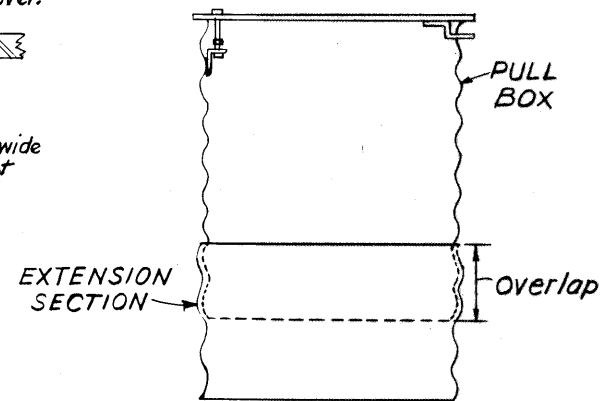
If cover is 1/4" thick steel plate per 713.08 (a) Weld "ZEE" clip to cover. If cover is 3/8" cast iron per 713.08 (b) rivet "ZEE" to cover.



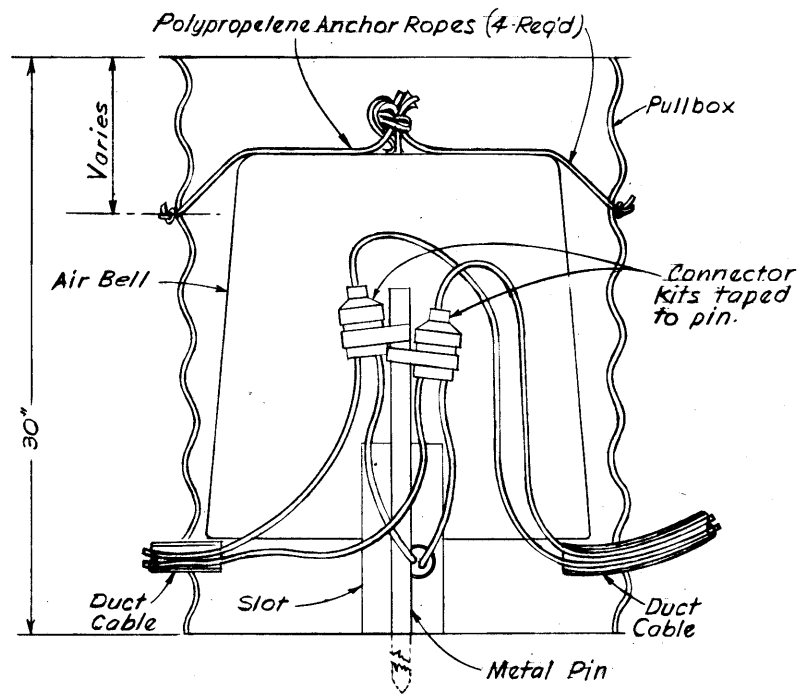
DETAIL "B"



PLAN OF ANGLE CLIP



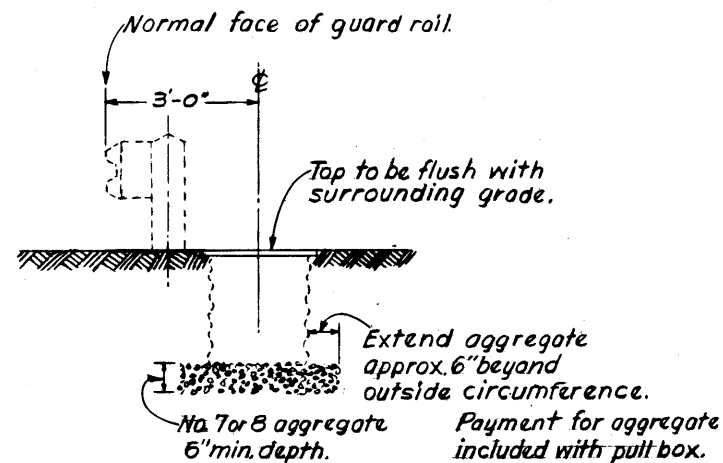
GRADE ADJUSTMENT EXTENSION SECTION



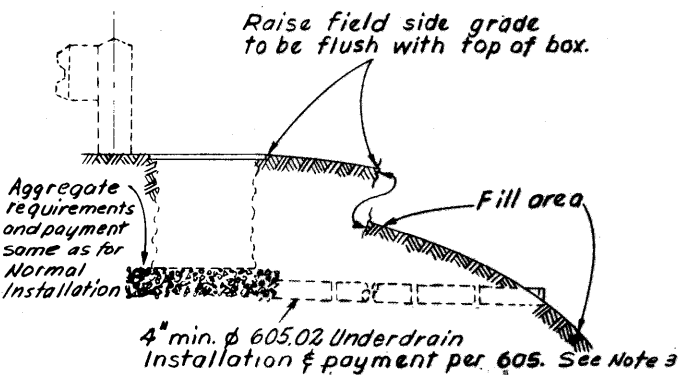
INTERIOR VIEW OF PULLBOX SHOWING ANCHORED AIR BELL AND SUPPORT FOR CONNECTOR KITS.

(See Notes 1 and 2)

CORRUGATED STEEL PULL BOX



NORMAL INSTALLATION



ADJACENT TO FILL AREA

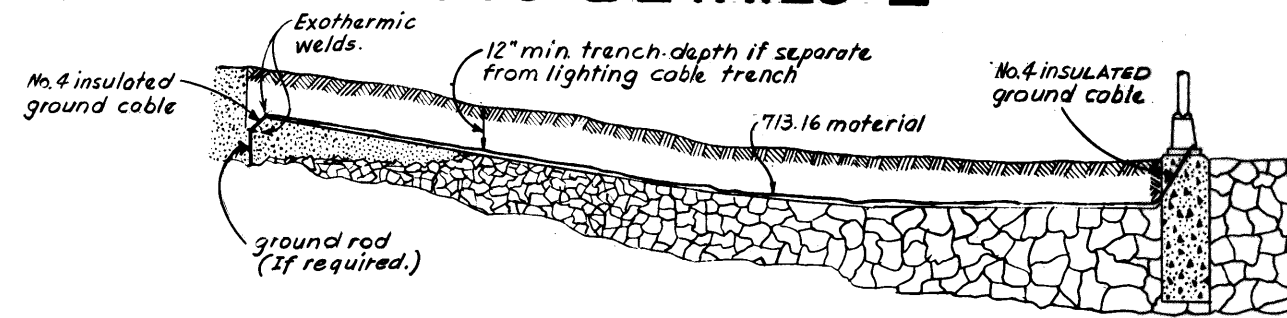
MISCELLANEOUS DETAILS I

FED. RD. DIVISION	STATE	PROJECT	99A 103
2	OHIO		

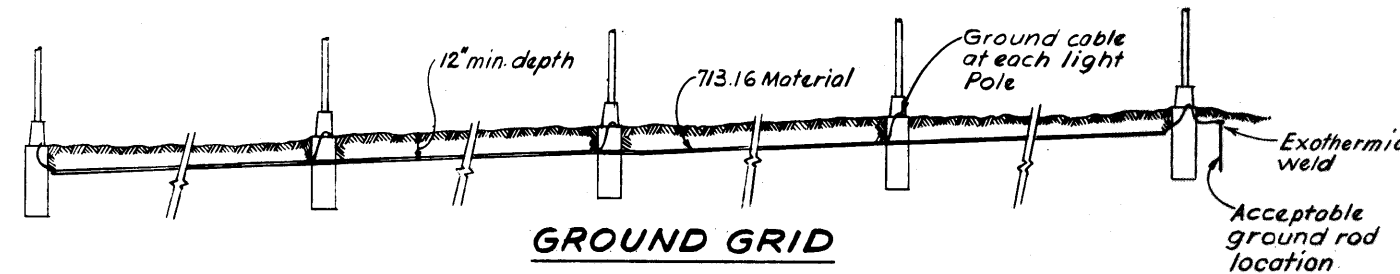
LOR-2-6.62
LOR-90-11.96

NOTES FOR FENCE GROUNDING

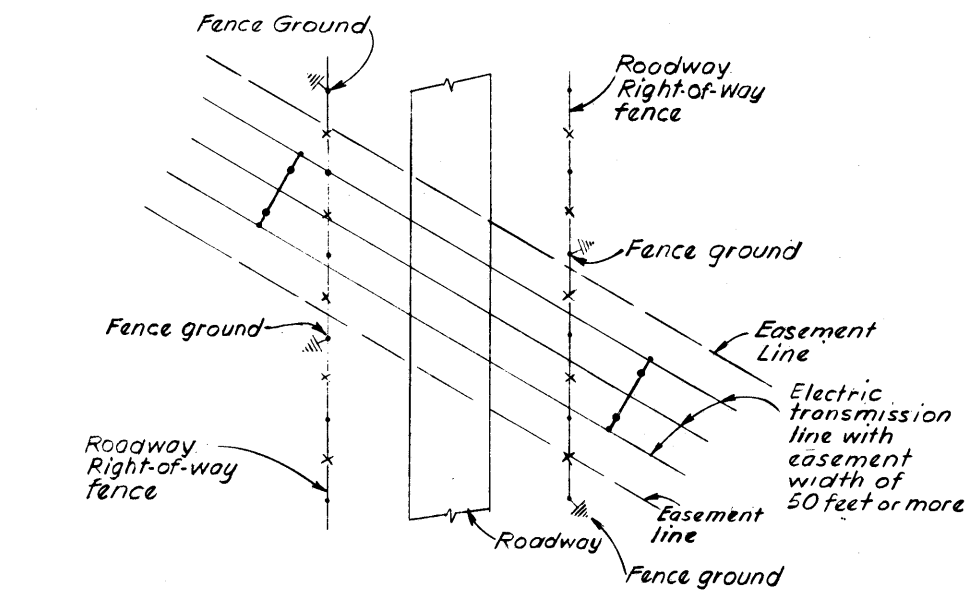
1. Where overhead transmission line easements 50 feet or more in width cross a fenced roadway right-of-way, each fence shall be grounded as shown hereon.
2. Where overhead electric power line easements less than 50 feet in width cross a fenced roadway right-of-way, each fence shall be grounded directly below the centerline of the power line crossing.
3. Where overhead transmission lines rated 110 KV or higher are parallel to roadway fences and the transmission line easement is contiguous to the roadway right-of-way the roadway fences shall be grounded at least every 300 ft.
4. Fence grounds will be paid for at unit price bid for Ground Rods, item 625.
5. Apply two coats of insulating varnish over all exothermic welds and exposed cable.



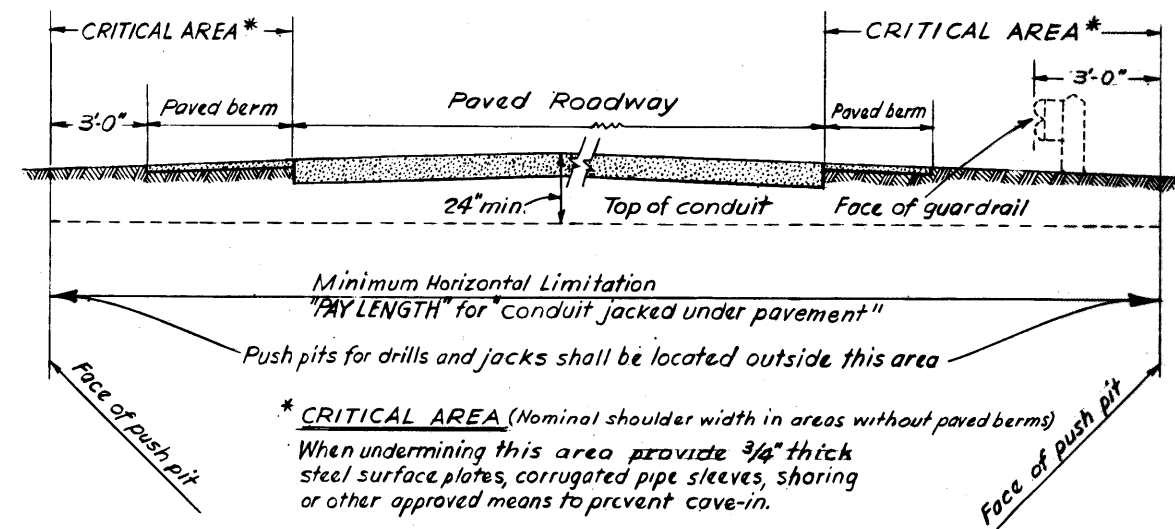
MODIFIED GROUND GRID FOR INDIVIDUAL POLE GROUND



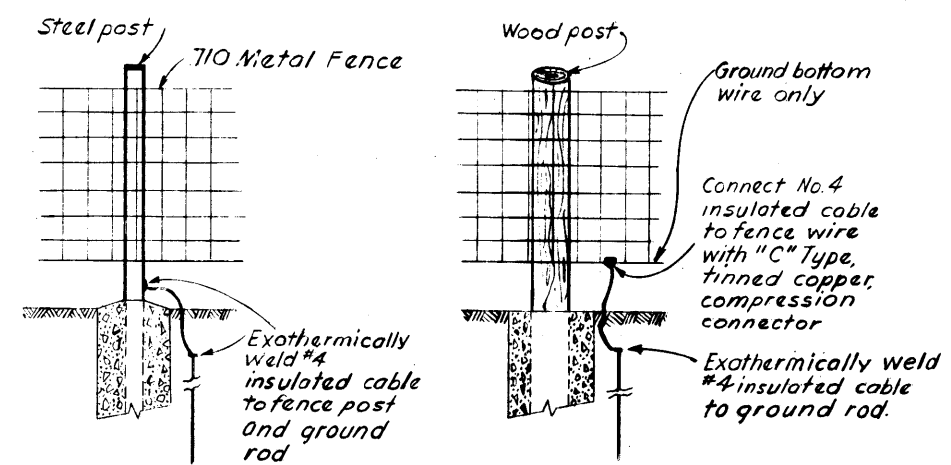
GROUND GRID



CROSSING OF ROADWAY R/W & TRANSMISSION LINE EASEMENT
(See Note 1)

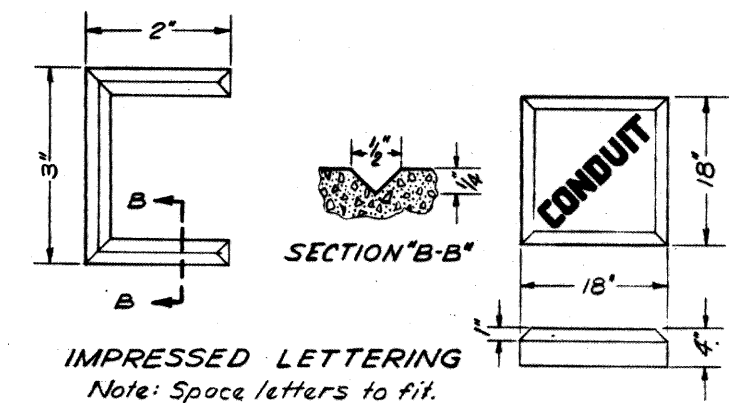


DETAIL FOR CONDUIT JACKED UNDER PAVEMENT

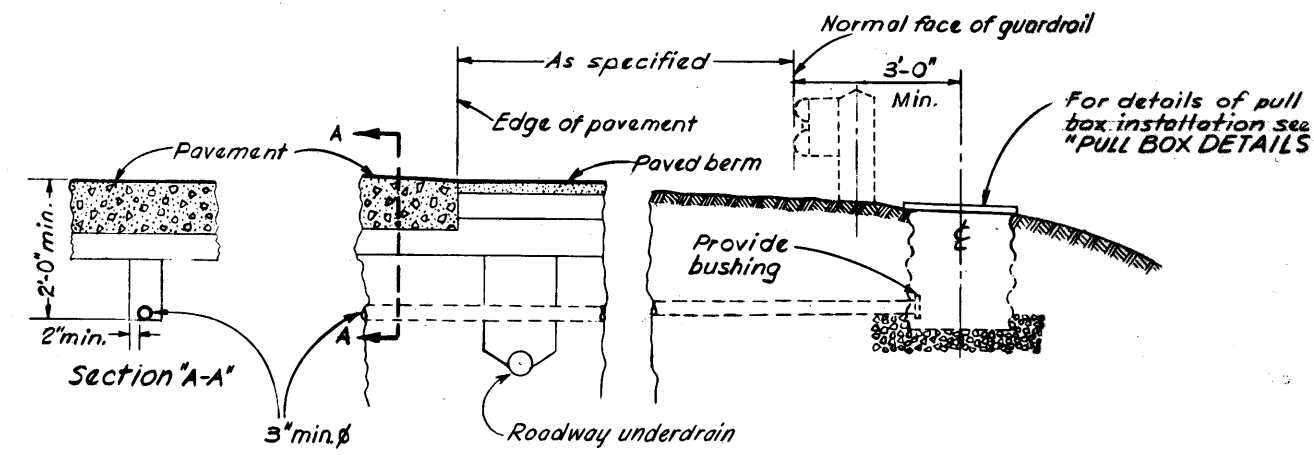


FENCE GROUND DETAILS

When specified, roadway right-of-way fences shall be grounded as shown hereon. (See also, Notes 1, 2, 3, & 4)



CONCRETE MARKER
(625.16)

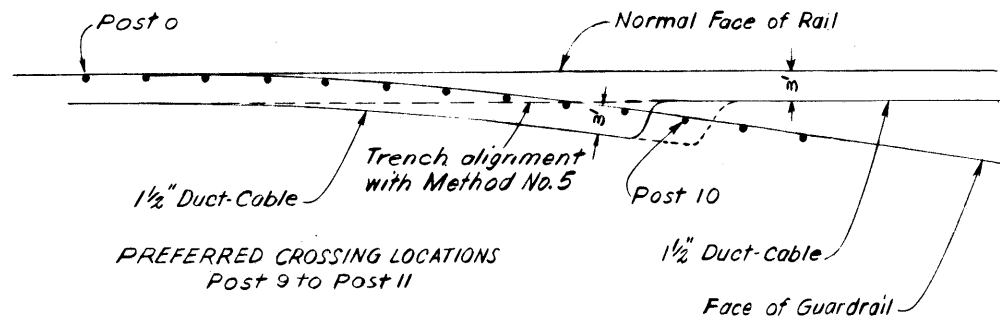


TYPICAL CONDUIT CROSSOVER DETAIL

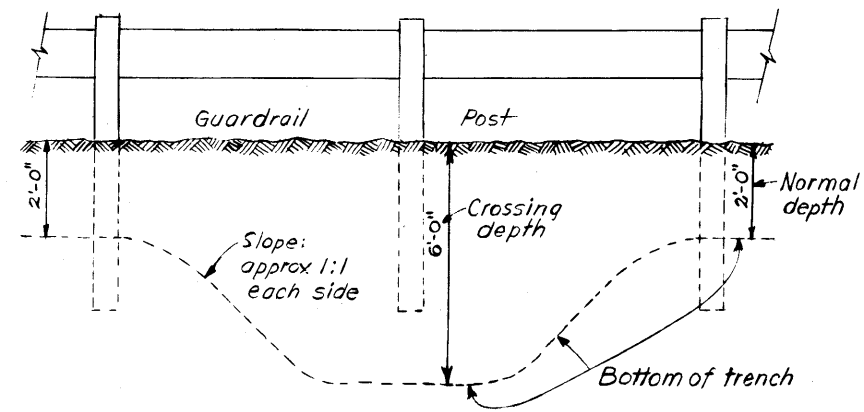
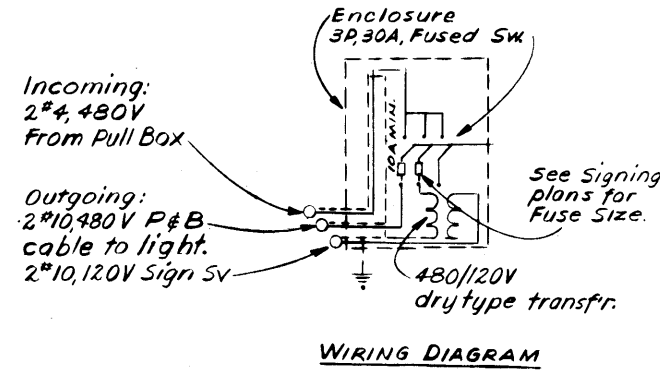
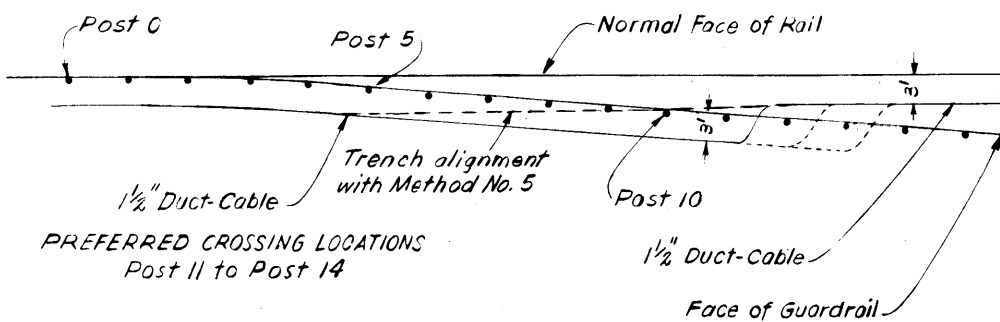
"CONDUIT"- to indicate conduit for future cable or wire.
"CABLE"- to indicate abrupt change in direction of cable

MISCELLANEOUS DETAILS II

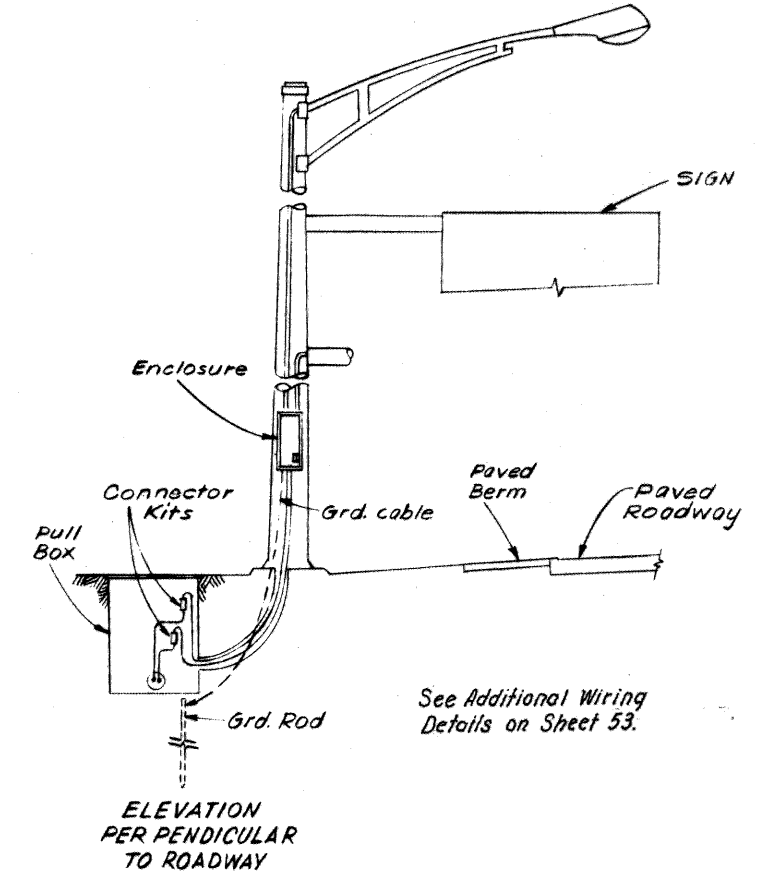
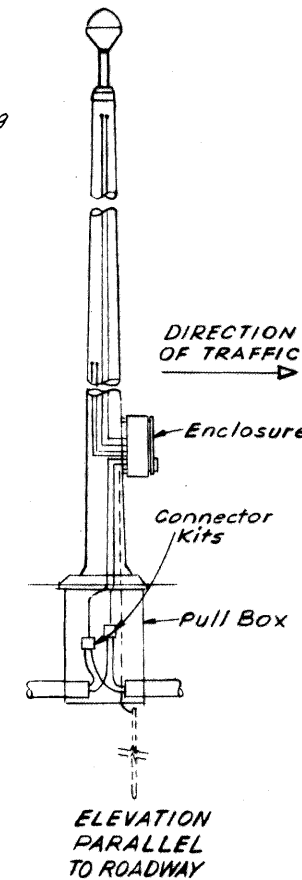
STANDARD GUARDRAIL FLARE FOR CUT TO FILL AND FILL TO FILL AREAS 1" = 10'



INTRODUCED GUARDRAIL FLARE BECAUSE OF OBSTRUCTION 1" = 10'

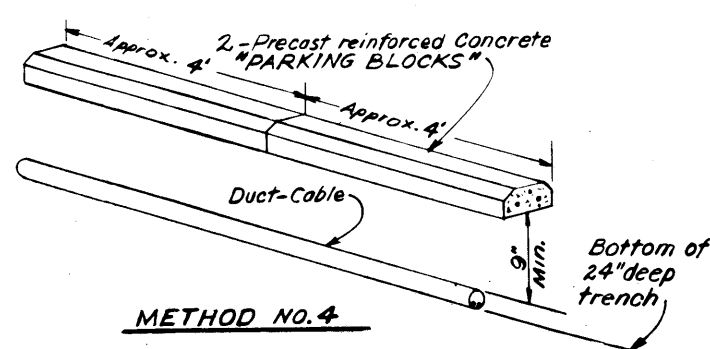
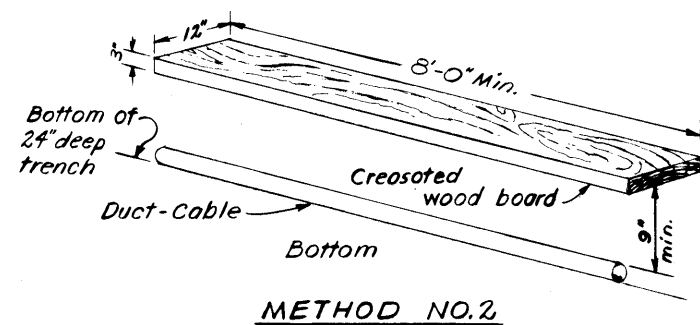
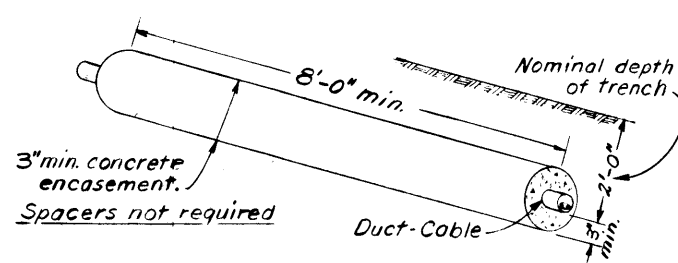
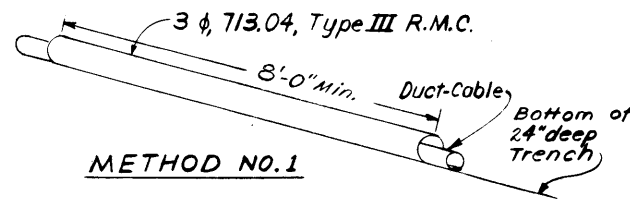


METHOD NO. 5 for PROTECTING DUCT-CABLE UNDER GUARDRAIL
Increased depth of cable trench at point of crossing.
To be used whenever trench alignment is within 1'-6" of posts.
(See NOTE No. 1)



WIRING FOR COMBINATION LIGHT AND SIGN POLE

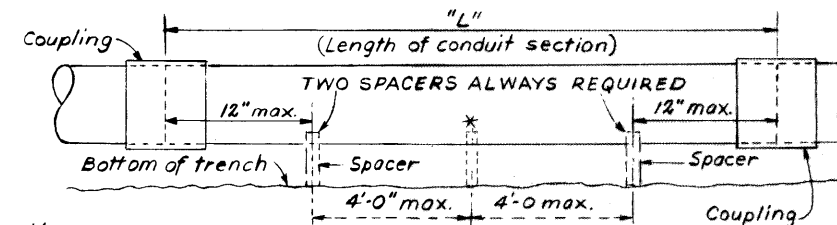
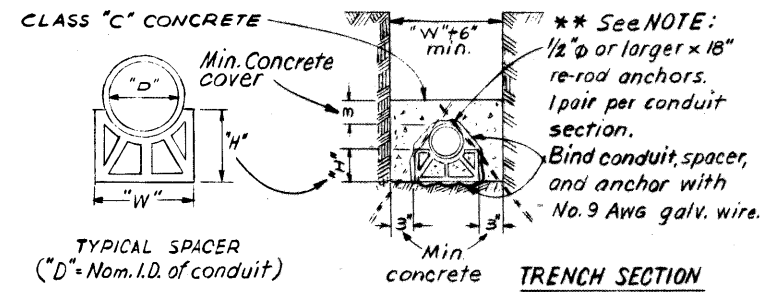
METHODS OF PROTECTING DUCT-CABLE UNDER GUARDRAIL (See NOTE No. 1)



CONCRETE ENCASED CONDUIT

"D"	"H"	"W"
2"	3 5/8"	5 1/2"
3"	3 7/8"	6 1/4"
4"	4 1/8"	7 1/8"
5"	4 1/2"	8 1/8"

Nominal spacer dimensions



* Intermediate spacer required when "L" equals 10'-0"
Additional spacers shall be required when "L" exceeds 10'-0"

** NOTE: DELETE ANCHORS AND BINDING WIRE WHEN USING STEEL CONDUIT.

NOTES

1. Payment for protection of duct-cable and distribution cable under guard rail, as detailed in Methods 1 thru 5, shall be included in the unit prices bid for the affected cable and trench items.

CABLE CONNECTOR KITS TYPE I THRU TYPE VI.

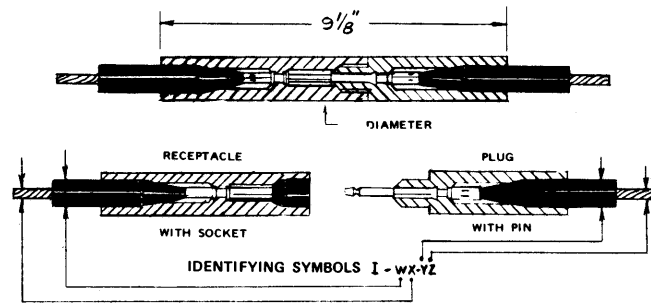
FED. NO. DIVISION	STATE	PROJECT	
2	OHIO		

99C
103

LOR-2-6.62
LOR-90-11.96

NOTES

1. Diameters usually vary along cable lengths. Take several measurements and select the symbols for "W" and "Y" which will insure a tight fit rather than a loose fit between the cables and the openings in the housings of the connector kits.
2. Where a light is located at the end of the lighting circuit one opening of the "Y" connector kit shall be plugged. The plug shall be of insulating material and have the same overall diameter of the lighting circuit cable occupying the other opening of the "Y" connector kit.
3. If the cable has a nylon jacket the jacket shall be peeled back to a point where no part of the jacket is encased in the boot with the insulated cable.



To specify the proper kit for an installation, select from the tables below the symbols which coincide with the requirements and substitute for (W, X) and (Y, Z) respectively.

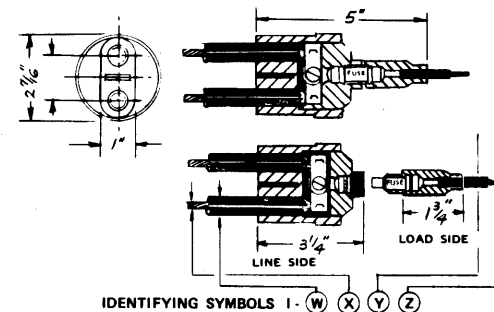
CABLE DIAMETER		Symbol for W and Y
Min.	Max.	
.195"	.260"	B
.250"	.330"	C
.320"	.430"	D
.420"	.585"	E
.575"	.785"	F
.775"	.985"	G
.975"	1.125"	H

CONDUCTOR SIZE AWG		Symbol for X and Z
Concentric Stranded	Solid	
#10, #12	#8, #10	6
#8	#6	4
#6	#4	3
#4	-	2
#2	-	1

EXAMPLE

If the installation requires a receptacle for no. 6 stranded conductor and a cable diameter of .660" and a plug for no. 8 solid conductor and a cable diameter of .460", the kit required will be I-F3-E6.

TYPE I INLINE SELF-LOCKING CONNECTOR KIT FOR PULL BOX INSTALLATION.

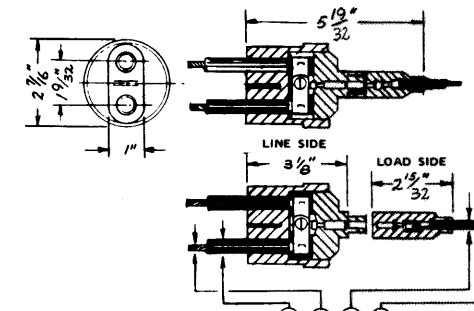


CABLE DIAMETER		Symbol for W	COPPER CONDUCTOR (AWG)		Symbol for X	CABLE DIAMETER		Symbol for Y	COPPER CONDUCTOR (AWG)		Symbol for Z
Min.	Max.		Concentric Stranded	Solid		Min.	Max.		Concentric Stranded	Solid	
.195"	.260"	B	-	#8	6	.120"	.160"	S	#14, #16	#12, #14	8
.250"	.330"	C	-	#6	4	.155"	.205"	A	#10, #12	#8, #10	6
.320"	.380"	DA	#8	#6	4	.195"	.260"	B	#8	#6	4
.370"	.430"	DB	#6	#4	3	.250"	.330"	C	#6	#4	3
.420"	.505"	EA	#4	-	2	.320"	.430"	D	#6	#4	3
.495"	.585"	EB	#2	-	1						
.575"	.685"	FA	#1	-	0						
.675"	.785"	FB	#1/0	-	10						
			#2/0	-	20						

EXAMPLE

If the line outside diameter (W) is .42" and the conductor (X) is no. 6 stranded, and the load side outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be II-DB3-C6.

TYPE II FUSED "Y" CONNECTOR KIT FOR POLE BASE INSTALLATION.

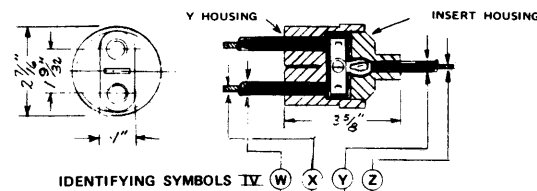


CABLE DIAMETER		Symbol for W	COPPER CONDUCTOR (AWG)		Symbol for X	CABLE DIAMETER		Symbol for Y	COPPER CONDUCTOR (AWG)		Symbol for Z
Min.	Max.		Concentric Stranded	Solid		Min.	Max.		Concentric Stranded	Solid	
.195"	.260"	B	-	#8	6	.120"	.160"	S	#14, #16	#12, #14	8
.250"	.330"	C	-	#6	4	.155"	.205"	A	#10, #12	#8, #10	6
.320"	.380"	DA	#8	#6	4	.195"	.260"	B	#8	#6	4
.370"	.430"	DB	#6	#4	3	.250"	.330"	C	#6	#4	3
.420"	.505"	EA	#4	-	2	.320"	.430"	D	#6	#4	3
.495"	.585"	EB	#2	-	1						
.575"	.685"	FA	#1	-	0						
.675"	.785"	FB	#1/0	-	10						
			#2/0	-	20						

EXAMPLE

If the line side cable outside diameter (W) is .54" and the conductor (X) is no. 2 stranded, and the load side cable outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be III-EB1-C6.

TYPE III UNFUSED "Y" CONNECTOR KIT FOR POLE BASE INSTALLATION.

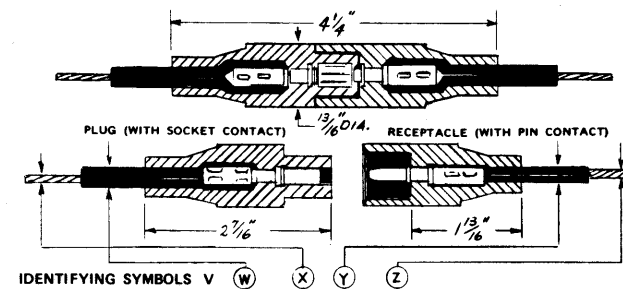


CABLE DIAMETER		Symbol for W	COPPER CONDUCTOR (AWG)		Symbol for X	CABLE DIAMETER		Symbol for Y	COPPER CONDUCTOR (AWG)		Symbol for Z
Min.	Max.		Concentric Stranded	Solid		Min.	Max.		Concentric Stranded	Solid	
.195"	.260"	B	-	#8	6	.120"	.160"	S	#14, #16	#12, #14	8
.250"	.330"	C	-	#6	4	.155"	.205"	A	#10, #12	#8, #10	6
.320"	.380"	DA	#8	#6	4	.195"	.260"	B	#8	#6	4
.370"	.430"	DB	#6	#4	3	.250"	.330"	C	#6	#4	3
.420"	.505"	EA	#4	-	2	.320"	.430"	D	#4	-	2
.495"	.585"	EB	#2	-	1	.420"	.585"	E	#2	-	1
.575"	.685"	FA	#1	-	0	.575"	.785"	F	#1	-	0
.675"	.785"	FB	#1/0	-	10				#1/0	-	10
			#2/0	-	20				#2/0	-	20

EXAMPLE

If the twin cable outside diameter (W) is .54" and their conductor (X) is no. 2 stranded, and the single cable outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be IV-EB1-C6.

TYPE IV UNFUSED "Y" CONNECTOR KIT FOR PULL BOX INSTALLATION.

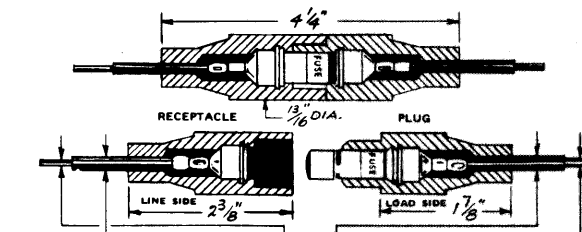


CABLE DIAMETER		Symbol for W and Y	CONDUCTOR SIZE AWG		Symbol for X and Z
Min.	Max.		Concentric Stranded	Solid	
.120"	.160"	S	#14, #16	#12, #14	8
.155"	.205"	A	#10, #12	#8, #10	6
.195"	.260"	B	#8	#6	4
.250"	.330"	C	#6	#4	3
.320"	.430"	D	#4	-	2

EXAMPLE

If the installation requires a plug for a cable diameter of .38", and a no. 8 stranded conductor, and a receptacle for a cable diameter of .27", and a no. 14 stranded conductor, the kit required will be V-D4-C8.

TYPE V UNFUSED INLINE CONNECTOR KIT FOR JUNCTION BOX INSTALLATION.



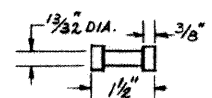
CABLE DIAMETER		Symbol for W and Y	CONDUCTOR SIZE AWG		Symbol for X and Z
Min.	Max.		Concentric Stranded	Solid	
.110"	.110"	T	-	-	-
.120"	.160"	S	#14, #16	#12, #14	8
.155"	.205"	A	#10, #12	#8, #10	6
.195"	.260"	B	#8	#6	4
.250"	.330"	C	#6	#4	3
.320"	.430"	D	#4	-	2

EXAMPLE

If the line outside diameter (W) is .42" and the conductor (X) is no. 6 stranded, and the load side outside diameter (Y) is .29" and the conductor (Z) is no. 12 stranded, the kit required will be VI-D3-C8.

TYPE VI FUSED INLINE CONNECTOR KIT FOR JUNCTION BOX INSTALLATION.

MIDGET TYPE FUSE



Any standard Midget, Ferrule type fuse, (except glass tube) may be used in this connector.
Fuses rated 600 volts and 10 amperes, minimum shall be used unless otherwise specified.

CABLE CONNECTOR KITS TYPES VII, VIII & IX

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

99D
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NOTES...

FOR BREAKAWAY FUSEHOLDER KITS

1. Acceptable cable size ranges are as follows:

CABLE MATL.	LOAD SIDE	LINE SIDE
Copper	No. 14 thru No. 2	No. 12 thru No. 2
Aluminum	No. 12 thru No. 2	No. 12 thru No. 2

- See catalogs or design drawings for kit symbolization in specific combinations of load and line cable sizes.
- The fuseholder shall be capable of retaining $1\frac{1}{32}$ " diameter by $1\frac{1}{2}$ " long fuse rated up to 600 volts and a minimum of 10 amperes.
- To secure a satisfactory interference fit between a rubber boot and the cable, the outside diameter of the cable should be approximately 0.0625 " ($1/16$ ") larger than the inside diameter of the boot.
- When a lubricant is used on the outside of the cable insulation the outside diameter of the cable may be 0.125 " ($1/8$ ") larger than the inside diameter of the boot in lieu of $1/16$ " larger without lubrication.
- Where the "L" type boot is used the maximum inside diameter of the boot shall not be more than 0.42 ". The upper two rings, namely 0.47 " and 0.52 " shall not be used.
- The "Y" type boot shall not be cut beyond the crotch where the inside diameter of each leg is 0.35 ". Use of a cable of 0.48 " O.D. in the "Y" type boot may require the application of a lubricating compound on the cable insulation for it to slide into the boot.
- If the cable has a nylon jacket the jacket shall be peeled back to a point where no part of the jacket is encased in the boot with the insulated cable.

TYPES VII CABLE CONNECTOR KITS

SPLICE INSULATING KITS

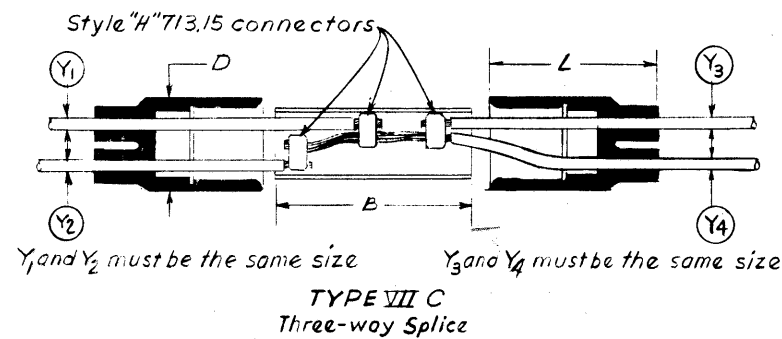
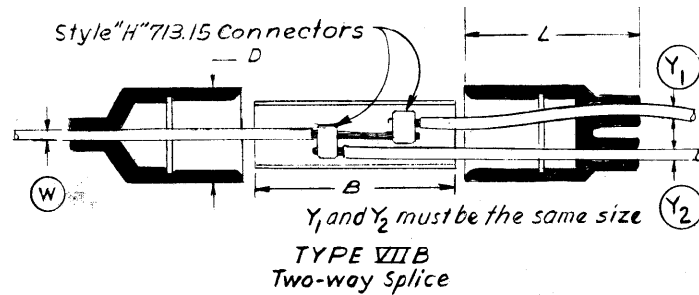
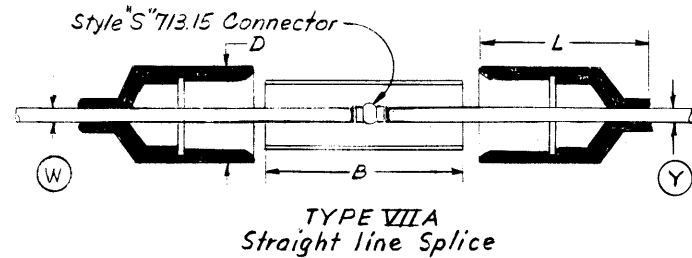


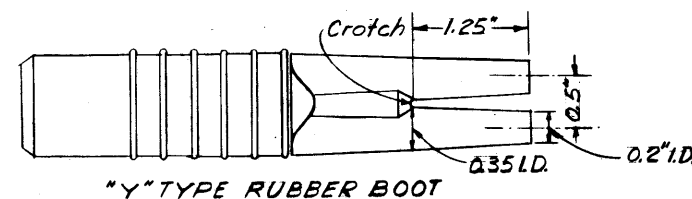
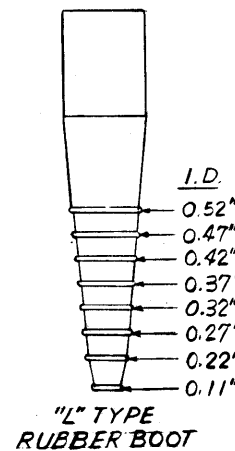
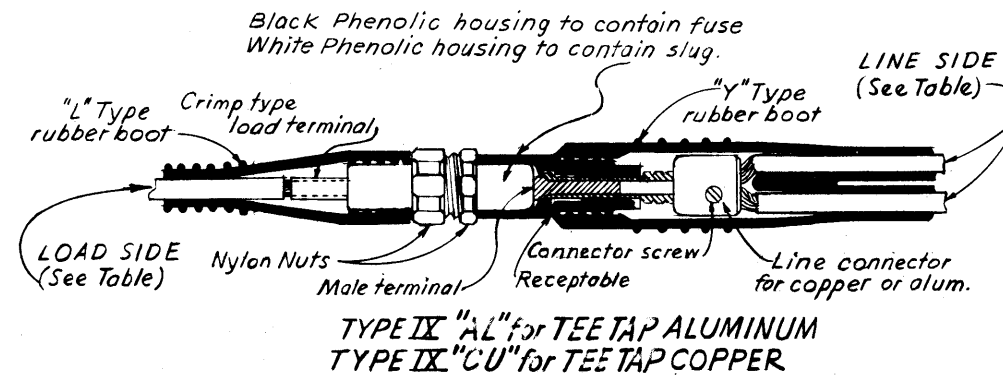
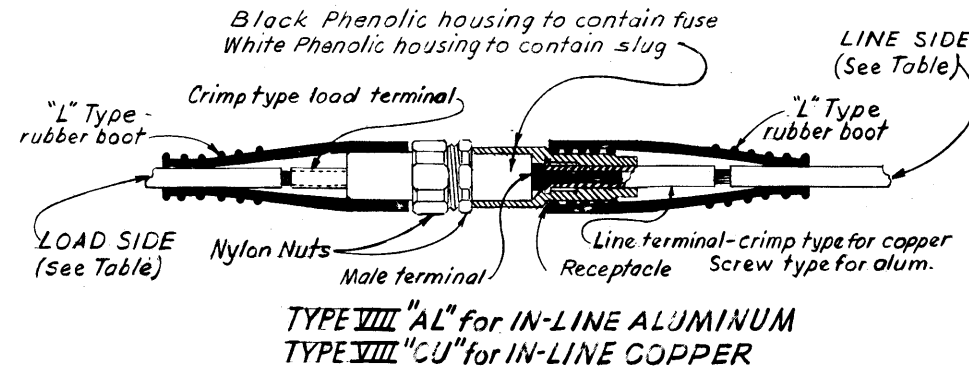
TABLE OF NOMINAL TYPE VII KIT
STYLE VARIATIONS REQUIRED

B	D	L	Cable Diameter		AWG 600V cable per 713.02
			min.	max.	
3and7"	$1\frac{29}{32}$ "	$4\frac{1}{16}$ "	.320"	.430"	No. 6 and No. 4
	"	"	.420"	.585"	No. 2 and No. 2/0
	"	"	.575"	.785"	No. 3/0 - 250 MCM*
	"	"	.775"	.985"	300 MCM - 400 MCM
	"	$4\frac{3}{16}$ "	.975"	1.185"	500 MCM
	"	$4\frac{3}{8}$ "	1.175"	1.385"	600 MCM - 750 MCM

*Maximum "Y" cable size. See catalogs or design drawings for specific kit symbolization required in each application.

TYPES VIII & IX CABLE CONNECTOR KITS

BREAKAWAY FUSEHOLDER KITS

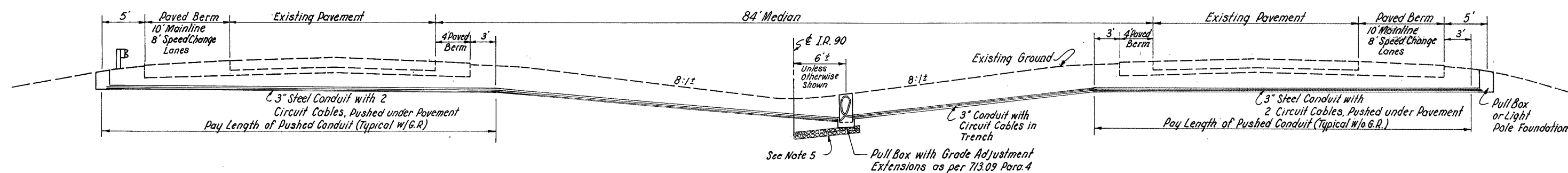


FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

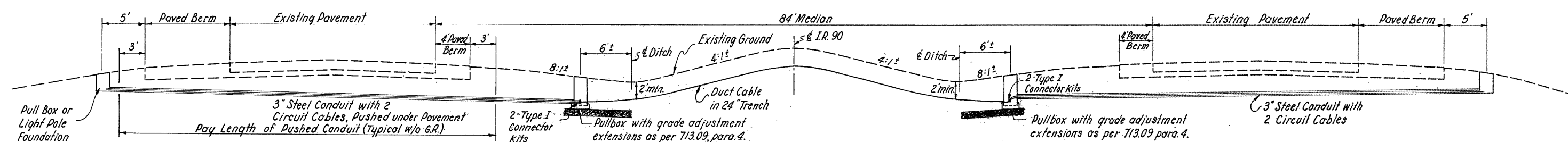
100
103

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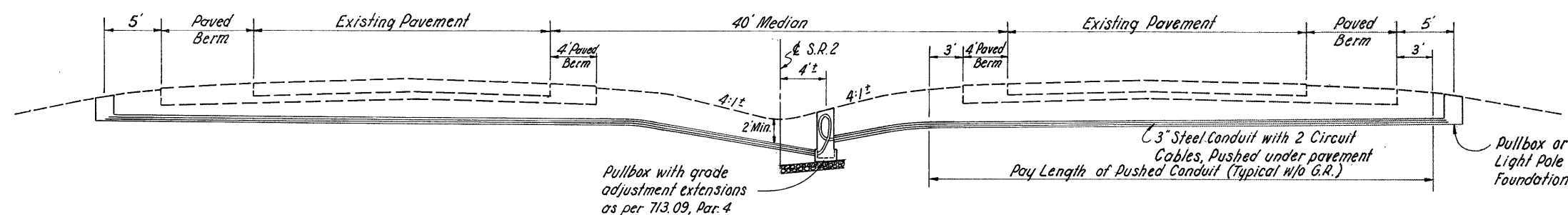
Chkd by: C.N. 3/73



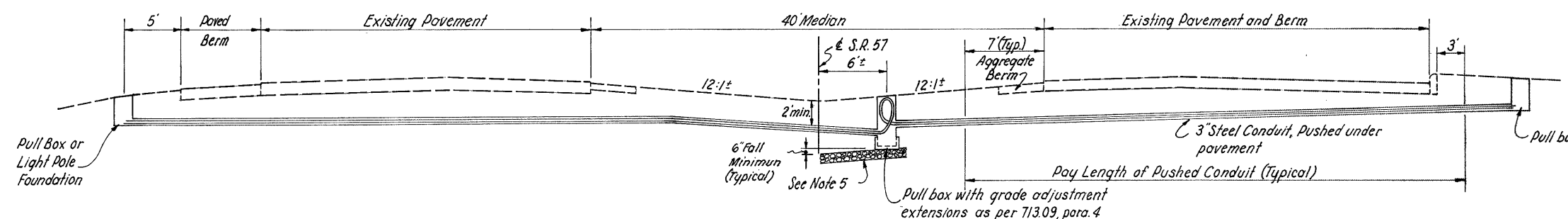
TYPICAL DETAIL FOR I.R. 90 DEPRESSED MEDIAN



TYPICAL DETAIL FOR I.R. 90 MOUNDED MEDIAN



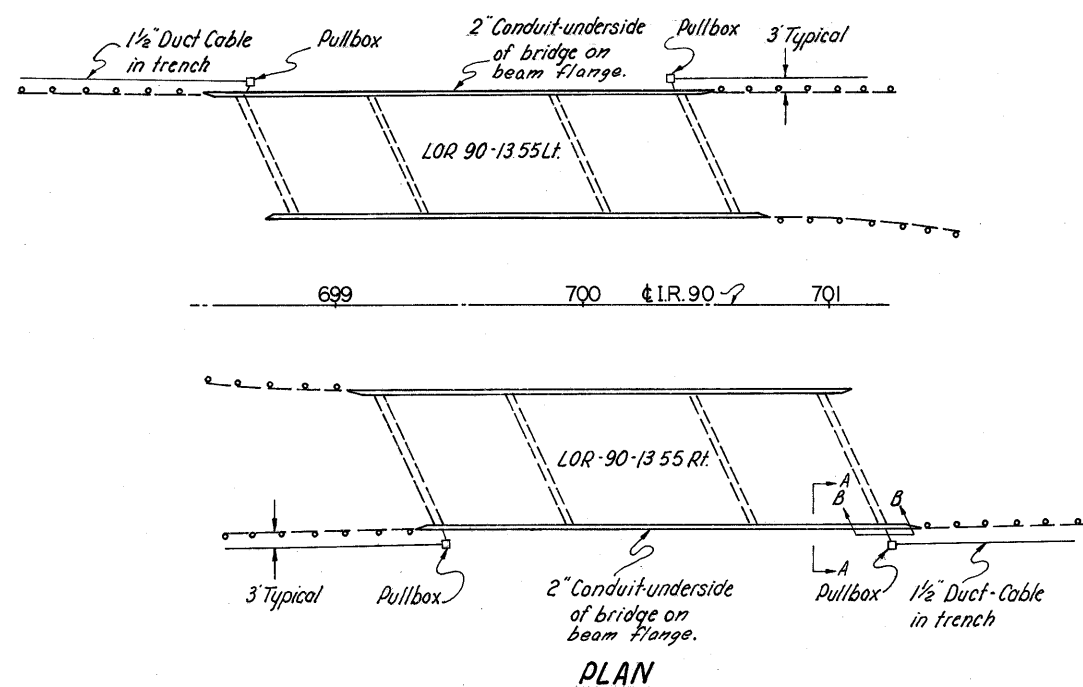
TYPICAL DETAIL FOR S.R. 2 DEPRESSED MEDIAN



TYPICAL DETAIL FOR S.R. 57 DEPRESSED MEDIAN

NOTES

1. When a pull box extension is required for drainage of conduit the length of the extension shall be determined by field conditions, 6 inch allowance for depth of pull box below conduit entrance, and 4 inch minimum allowance for overlap.
2. Always offset pull box from low point of median as shown.
3. In order not to interfere with mowing of grass, top of P.B. cover must not project above grade at any point.
4. Distribution cable shall be run continuously through median pull box and 5 feet of each conductor shall be looped in pull box in lieu of splices when connector kits are not required.
5. The normal aggregate installation under the pull box (See Sheet 99) shall be extended to the center of the ditch to provide improved drainage. Cost of this additional aggregate shall be included in the unit price bid for Item 625, Pull box with grade adjustment extension.

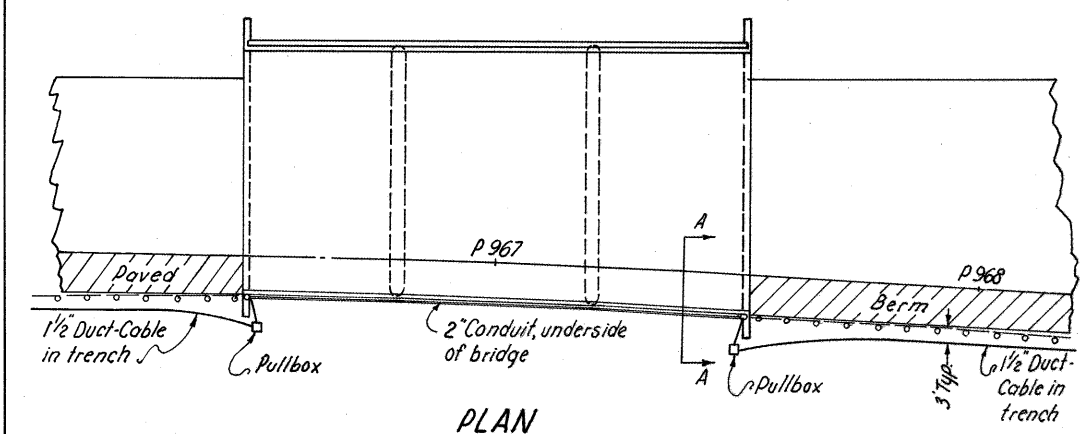
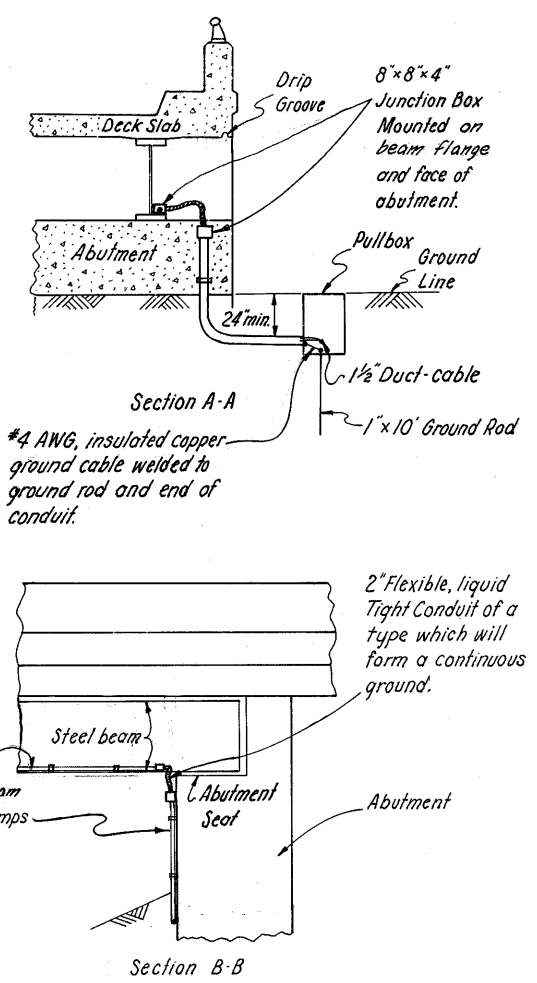


2" CONDUIT MOUNTED ON BRIDGE, AS PER PLAN

The work will include furnishing and installing (including trenching and backfilling) the 2" Type III Metal Conduit between the pullboxes at each end of the bridge, and shall also include all fittings and fasteners needed to complete this item of work.

Payment for this item shall be of the unit price bid per linear foot of conduit between pull boxes, which shall include all labor, material, and equipment required to complete this item of work. The distribution circuit cable, pull boxes and connector kits shall be separate pay items.

DETAILS FOR CONDUIT MOUNTED ON BRIDGE-LOR 90-1355 Lt. and Rt.



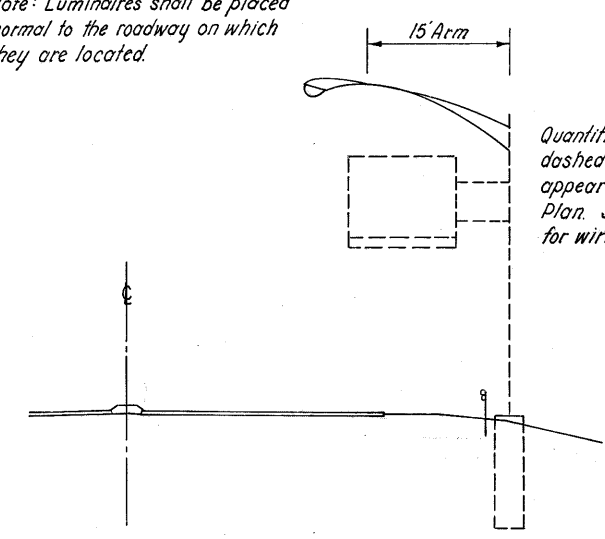
2" CONDUIT MOUNTED ON BRIDGE, AS PER PLAN

The work will include furnishing and installing (including trenching and backfilling) the 2" Type III Metal Conduit between the pullboxes of each end of the bridge, and shall also include all fittings and fasteners needed to complete this item of work.

Payment for this item shall be at the unit price bid per linear foot of conduit between pull boxes, which shall include all labor, material and equipment required to complete this item of work. The distribution circuit cable, pull boxes and connector kits shall be separate pay items.

DETAILS FOR CONDUIT MOUNTED ON BRIDGE OVER FRENCH CREEK-LOR-90-1861 Rt.

Note: Luminares shall be placed normal to the roadway on which they are located.

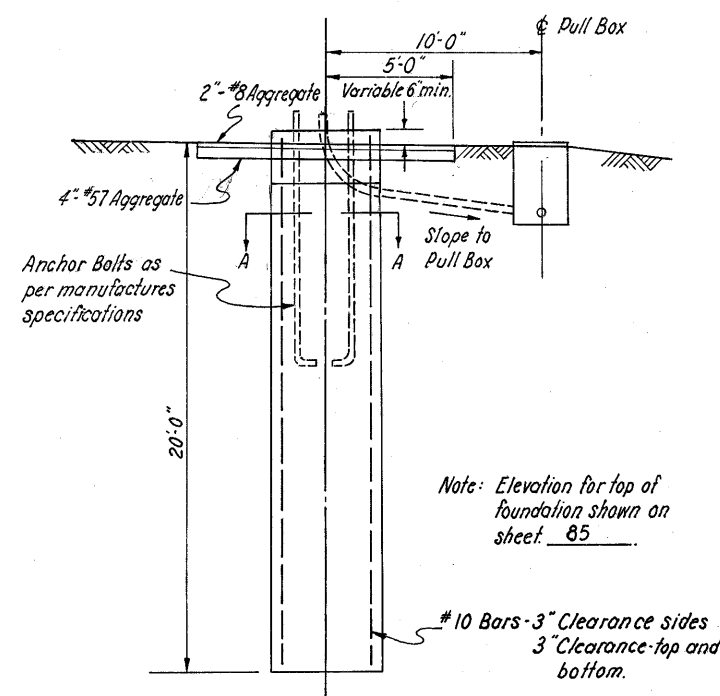


TYPICAL COMBINATION SUPPORT DETAIL

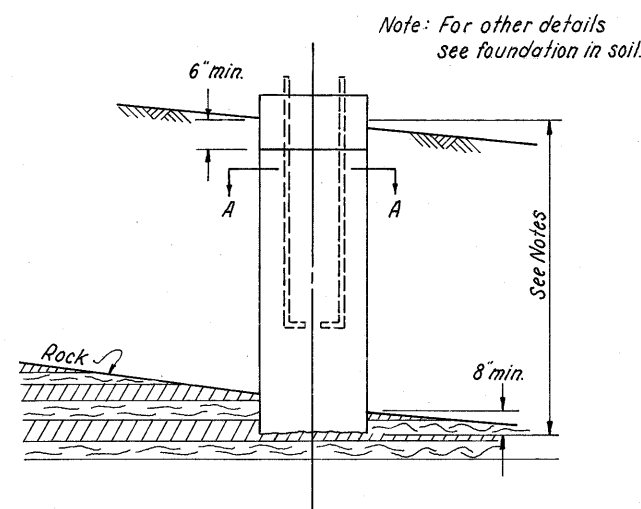
Quantities for the dashed portion will appear in the Signing Plan. See Sheet 99B for wiring diagram.

LIGHT POLE DATA

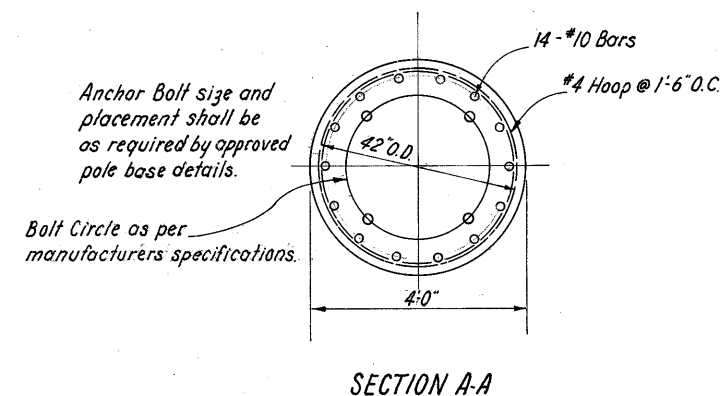
REFERENCE LETTER	POLE DESIGN NUMBER	POLE BASE DIA.	FOUNDATION ANCHOR BOLTS		TRANSFORMER BASE STYLE
			SIZE	BOLT CIRCLE DIAMETER	
W	T 15 B 41.7	90"	1" x 40"	15"	AT-R
X	AT 15 B 34.2	90"	1" x 40"	15"	AT-R
Y	AT 10 B 34.2	8.0"	1" x 40"	15"	AT-A
Z	T 15 B 34.2	9.0"	1" x 40"	15"	AT-R
V	AT 15 B 41.7	90"	1" x 40"	15"	AT-R



FOUNDATION IN SOIL



FOUNDATION ON ROCK



SECTION A-A

NOTES

(1) The contractor is advised that rock may be encountered while drilling the shafts. Top of Rock Elev. is 670± to 673± by previous soil boring and bridge foundation investigation data within the interchange area. This information is available in the District Office in Ashland. If this rock is encountered between 15 foot and 20 foot depths, then bore into the rock a minimum distance of 8 inches and place the foundation. If hard rock is encountered before 15 foot depth then the contractor must submit an alternate design to the District Office for that particular foundation.

A minimum distance of 6" below the ground and the projection above the ground shall be formed into a 48" square top.

(2) Pedestal reinforcing may be furnished in one piece or may be spliced in accordance with Item 509. Only one splice may be provided in any bar length. This material and work shall be paid for under item 625, Light Tower Foundation, as per plan.

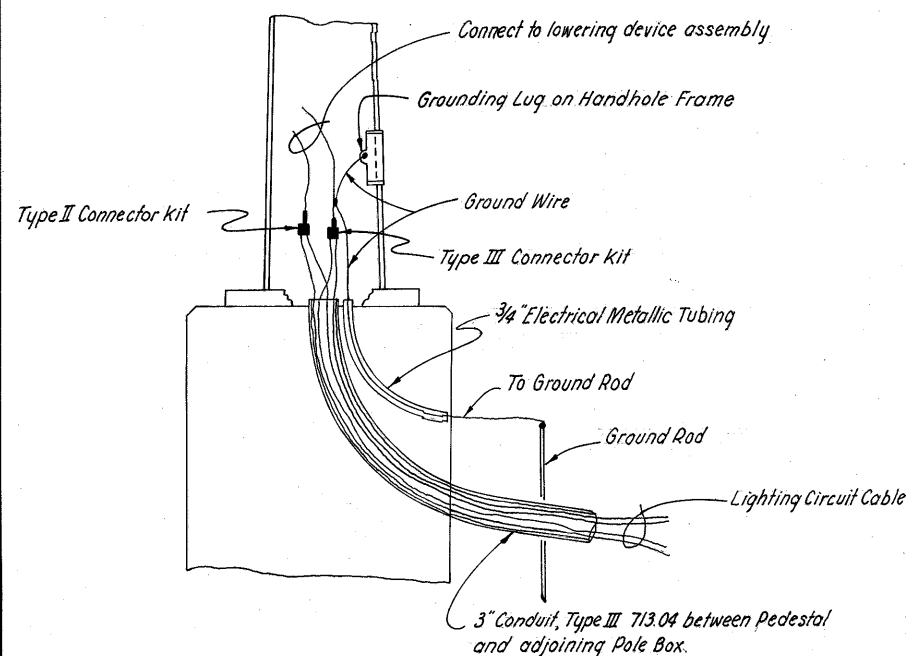
(3) Excavation work shall be completed in accordance with Item 503.

(4) All concrete shall be Class "C," and shall be placed in accordance with the requirements of Item 511.

(5) At each foundation, a 10' x 12' x 6" aggregate walk shall be placed around each pedestal in accordance with the requirements of Section 608, and shall be paid for per Sq. Ft. for Item 608, Aggregate Walk

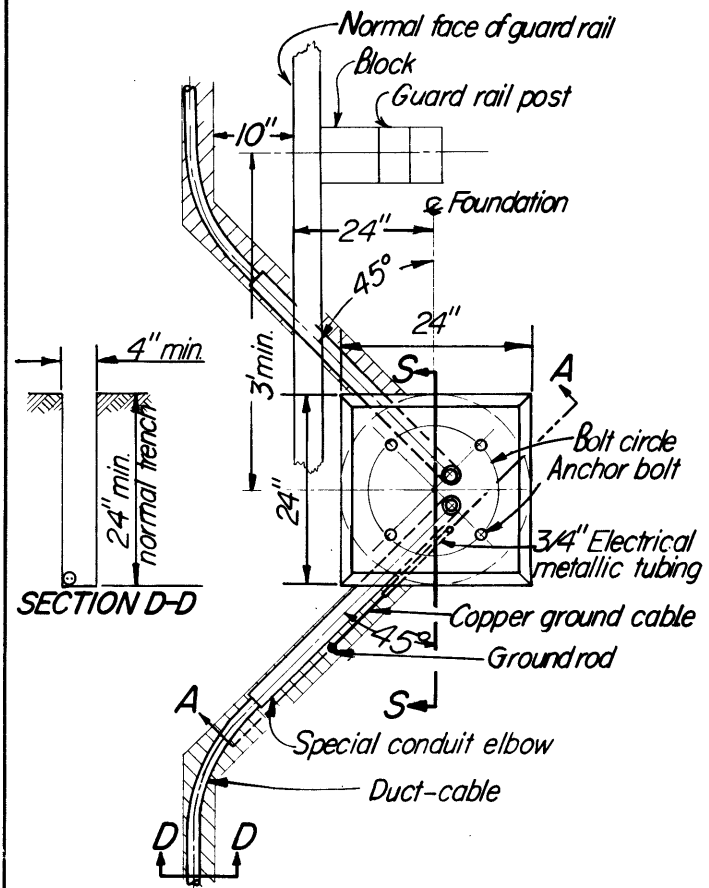
(6) Payment: Light Tower Foundations shall be paid for at the unit price bid per each foundation for Item 625, "Light Tower Foundation" as per plan, which shall be full compensation for all labor, material and equipment required to complete this item of work. Should the approved fabrication details for the anchorage of the Tower Poles (as selected for submission by the contractor) require any modifications to these foundations, then the cost of such changes, if any, shall be considered to be a part of other various bid items.

* Includes the Conduit and Circuit cables to connect the adjacent pull box to the foundation.

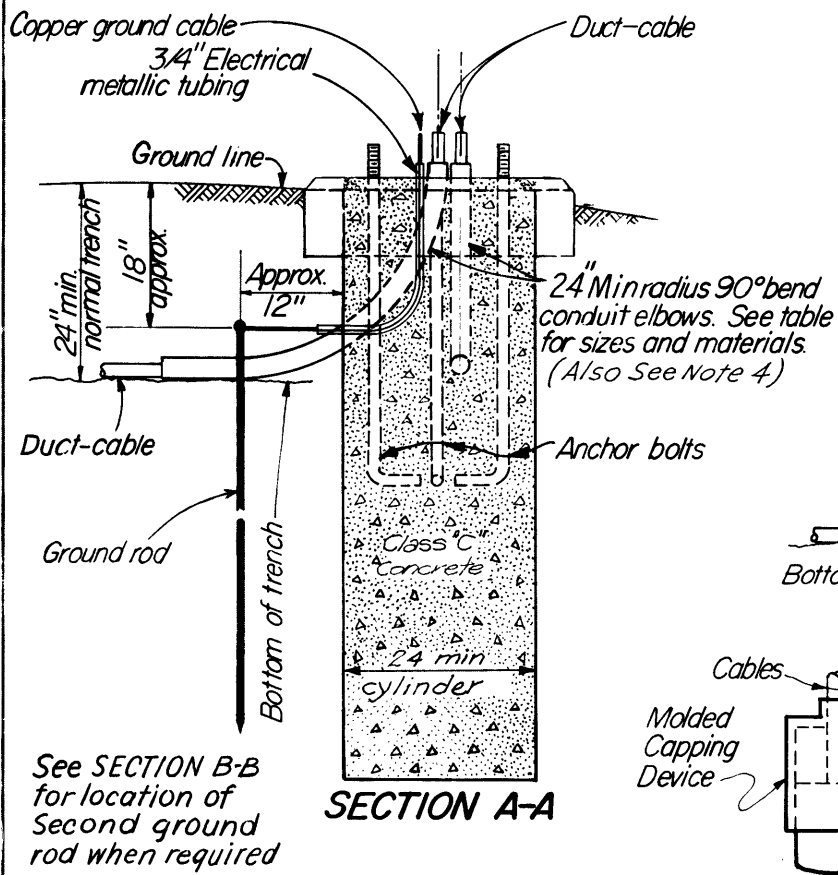


SCHEMATIC WIRING IN LIGHT TOWER POLE FOUNDATION

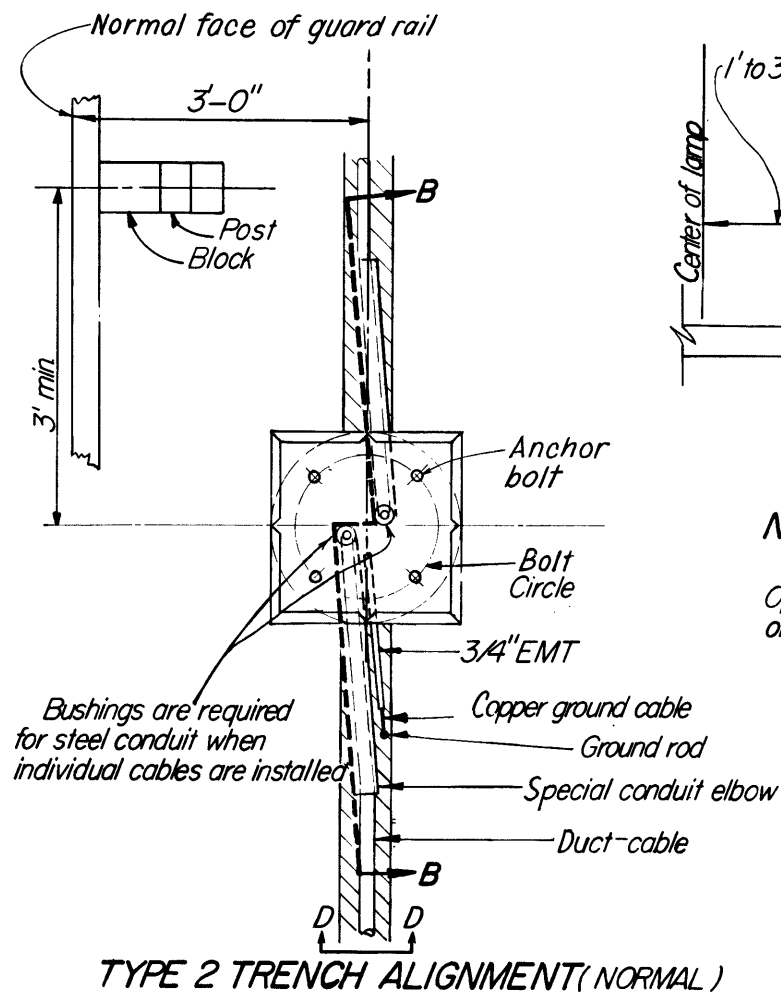
FOUNDATION AND TRENCH DETAILS



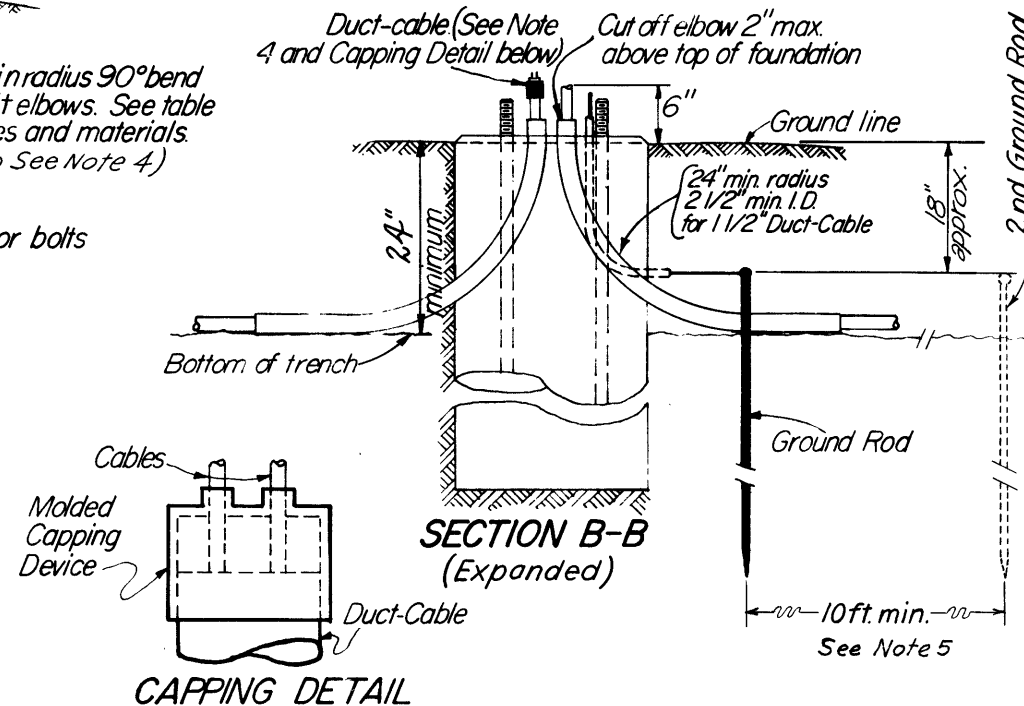
TYPE 1 TRENCH ALIGNMENT
(Use when specified or directed by the Engineer)



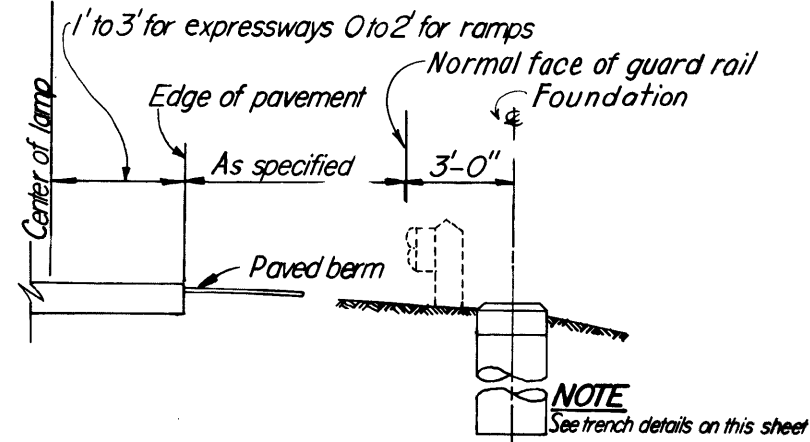
See SECTION B-B for location of second ground rod when required



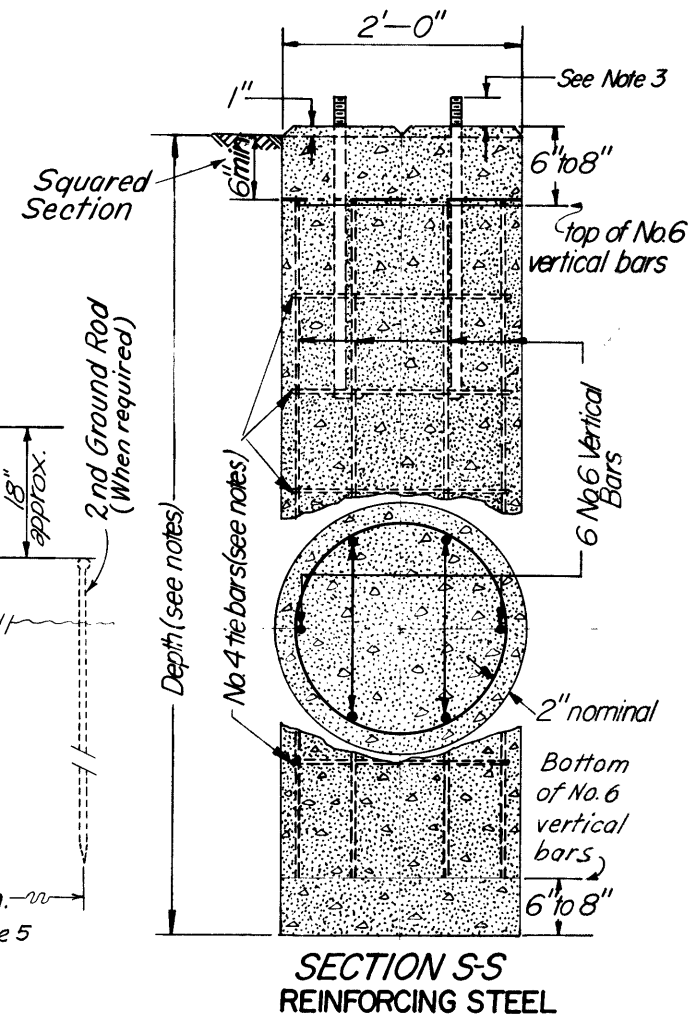
TYPE 2 TRENCH ALIGNMENT (NORMAL)



See Note 5



NORMAL LOCATION OF LIGHT POLE FOUNDATION
Opposite hand for poles mounted on left side of pavement.



R = bending radius
S = straight section
Y = *R* + *S*

SPECIAL CONDUIT ELBOWS 90° BENDS					
2", 2 1/2", 3", 3 1/2", 4", 5", 6", 7", 8", 9", 10", 11", 12", 14", 16", 18", 20", 24", 30", 36", 42", 48"					
R	S	Y	R	S	Y
24"	11"	35"	24"	8"	32"
30"	11"	41"	36"	2"	38"
42"	12"	54"			
48"	12"	60"			

NOTES

1. FOUNDATION

Depths to be as follows:
6 feet for poles having a mounting height less than 40ft.
8 feet for poles having a mounting height 40ft. thru 44 ft.
9 feet for poles having a mounting height 45ft. thru 49 ft.
10 feet for poles having a mounting height of 50ft. thru 55 ft.

No. 4 Tie bars required as follows:
4 No. 4 tie bars for 6ft depth
5 No. 4 tie bars for 8 and 9ft. depth
6 No. 4 tie bars for 10 ft. depth

Rotate bars to clear conduits.

2. COPPER GROUND CABLE:

No. 4 AWG, stranded insulated copper ground cable shall be used. Exothermically weld cable to ground rod, run free end through 3/4" EMT and connect as shown on "POLE WIRING."

Use two coats of insulating varnish over exothermic weld and exposed conductor.

3. ANCHOR BOLT DATA:

For anchor bolt data see "POLE BASE DETAILS."

4. CONDUIT:

Where 2" or 3" diameter conduit terminates in a foundation the conduit elbows in the foundation shall be the same size as the conduit. The ends of conduit elbows containing distribution cable shall be closed as described in 625.13

When the terminating conduit is steel the conduit elbows in the pole foundation shall also be steel.

At the last light pole on a circuit the vacant conduit elbow in the light pole foundation shall be stubbed out and capped.

5. GROUND RODS:

When a second ground rod is required it shall be installed in the cable trench as shown in SECTION B-B.

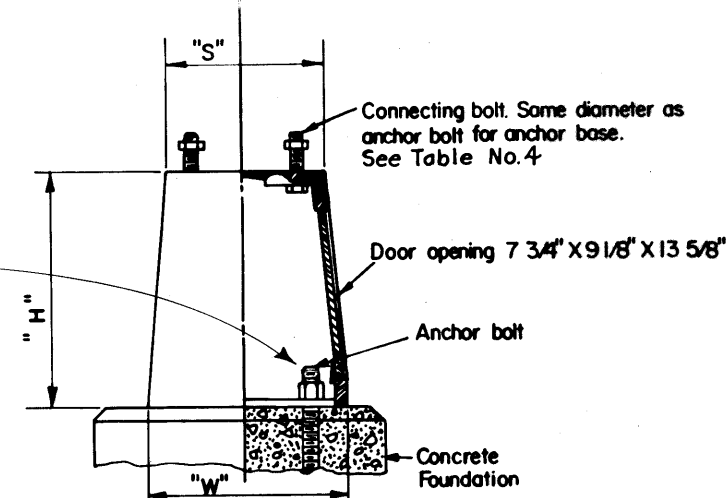
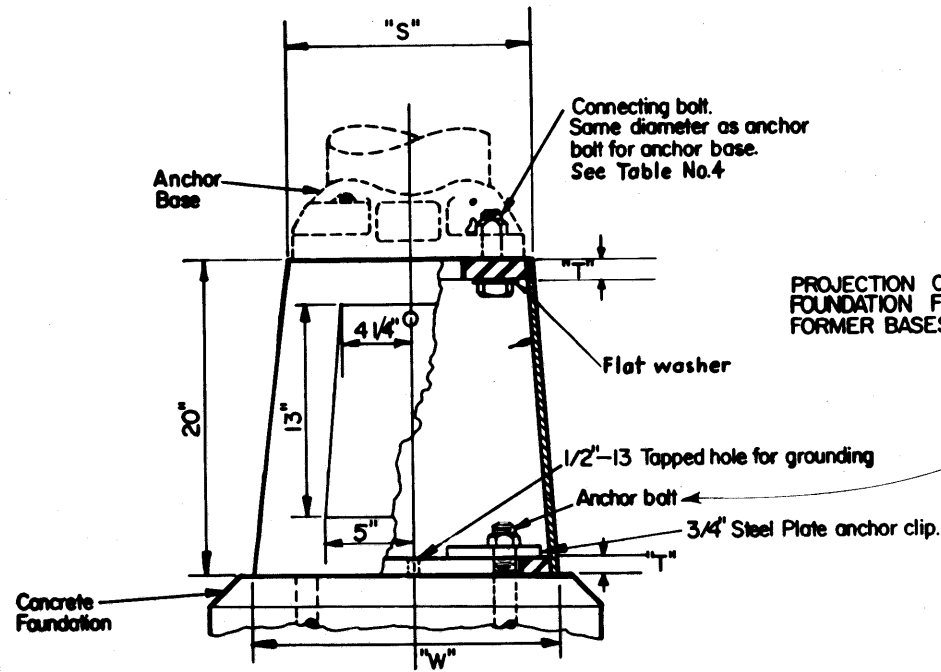
6. REINFORCING STEEL:

Reinforcing steel may be assembled in cages by approved welding of bars.

POLE BASE DETAILS

NOTES

- For pole grounding details see "POLE WIRING"
- Type AT-A base shall normally be used with anchor base poles having diameters of 6 inches through 9.2, inches inclusive, and mounting heights through 41.7 feet.
- Type AT-C base must be used for anchor base poles having diameters of 9.5 inches and 10 inches and mounting heights through 51.7 except for exclusions listed below:
 - All double-arm poles with mounting heights of 50 feet.
 - All single-arm poles with mounting heights of 50 feet and arm lengths of 25 feet and 30 feet.
 - All double-arm poles with mounting heights of 45 feet and arm lengths of 25 feet and 30 feet.
 - All single-arm poles with mounting heights of 45 feet and arm length of 30 feet.
- On excepted poles above, transformer bases of material other than cast aluminum shall be used.
- U-bolt lengths shown in TABLE NO.5 are developed lengths and may vary $\pm 1/2$ ". Lengths are for 1", 1 1/4", 1 1/2" and 1 3/4" diam. bolts. Lengths shown are for bridges with sidewalk railing. For bridges having a standard roadway railing increase these lengths by 7 inches.
- For anchor bolt data when transformer bases are to be mounted on bridge pilasters see TABLE NO.1 and TABLE NO.2.
- Median mounted poles require a pole plate as per Drawing No. 17B.

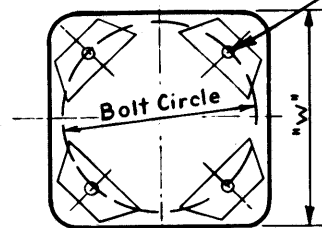


SHAFT SIZE	"T"	"S"	"W"	BOLT CIRCLE
6.0" thru 9.2	3.4" min.	13" sq.	16" sq.	15"
8.5" thru 10"	1 1/4" min.	15" sq.	18" sq.	17 1/4"
11" and 12"	1 1/4"	17" sq.	25" sq.	22"

SHAFT SIZE	POLE GAUGE		
	#11	#7	#3
6.5"	1" x 40"	1" x 40"	1 1/2" x 40"
7"			
7.5"			
8"			
8.5"			
9"			
9.5"			
10"			
11"			
12"			

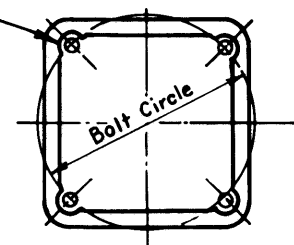
TYPE	"H"	"S"	"W"	BOLT CIRCLE	SHAFT SIZE
AT-A	20"	13"	16 3/8"	15"	SEE NOTE ②
AT-C	20"	14 5/8"	17 1/4"	17 1/4"	SEE NOTE ③

SHAFT SIZE	"F"	U-BOLT * LENGTH
6.5"	6 3/4"	75"
7.0"	7 1/16"	75"
7.5"	7 1/16"	76 1/2"
8.0"	7 3/4"	76 1/2"
8.5"	8 1/8"	76 1/2"
9.0"	8 7/8"	78"
9.5"	9 3/16"	78"
10.0"	9 9/16"	79 1/2"
11.0"	10 5/8"	79 1/2"
12.0"	11 1/2"	81"



BASE FRAME

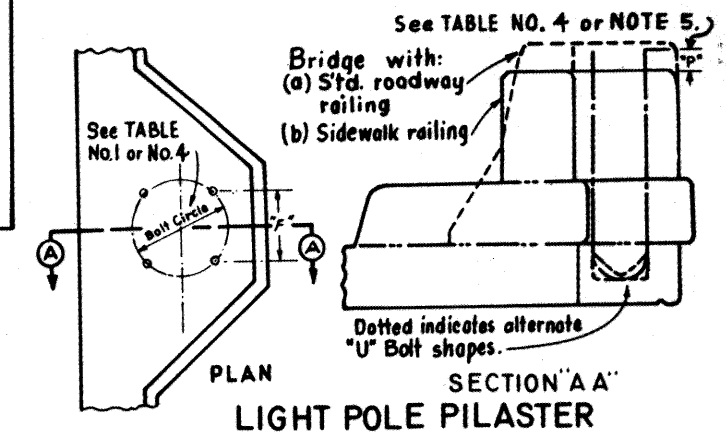
STEEL TRANSFORMER BASES



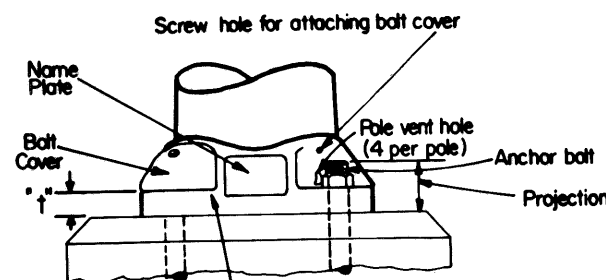
BASE FRAME

CAST ALUMINUM TRANSFORMER BASES

SHALL NOT BE USED WHERE OVERHEAD WIRING IS REQUIRED



BRIDGE MOUNTED POLES

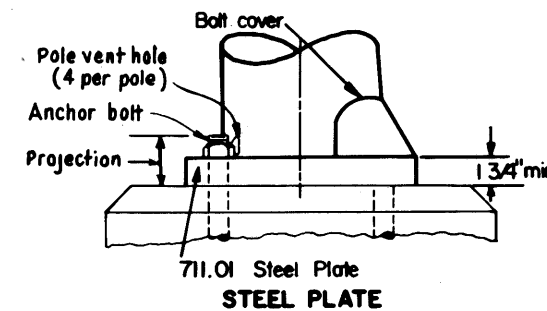


CAST STEEL

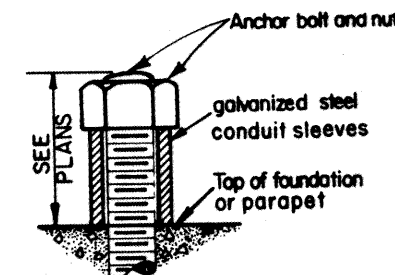
SHAFT SIZE	BOLT CIRCLE	BOLT PROJ.	"t"	POLE GAUGE		
				NO.11	NO.7	NO.3
6.5"	9 1/2"	2 1/8"	7/8"			
7"	10"	2 1/4"	1"			
7.5"	10 1/2"	2 5/8"	1 1/8"			
8"	11"	2 5/8"	1 3/16"	1" x 40"		1 1/4" x 48"
8.5"	11 1/2"	2 3/4"	1 1/4"			
9"	12 1/2"	3"	1 5/16"			
9.5"	13"	3 1/8"	1 3/8"	1 1/4" x 48"		1 1/2" x 60"
10"	13 1/2"	3 3/8"	1 7/16"			
11"	15"	3 5/8"	1 5/8"			
12"	16"	4"	1 1/2"	1 1/2" x 60"		1 3/4" x 90"

* Based on cast steel anchor bases only. Plate bases may deviate.

STEEL ANCHOR BASES



STEEL PLATE



ANCHOR BOLT COVER

Note: To be placed on all light pole anchor bolts provided for future lighting installations.