

# OHIO DEPARTMENT OF TRANSPORTATION



PLAN NO. \_\_\_\_\_

PROJECT DESCRIPTION

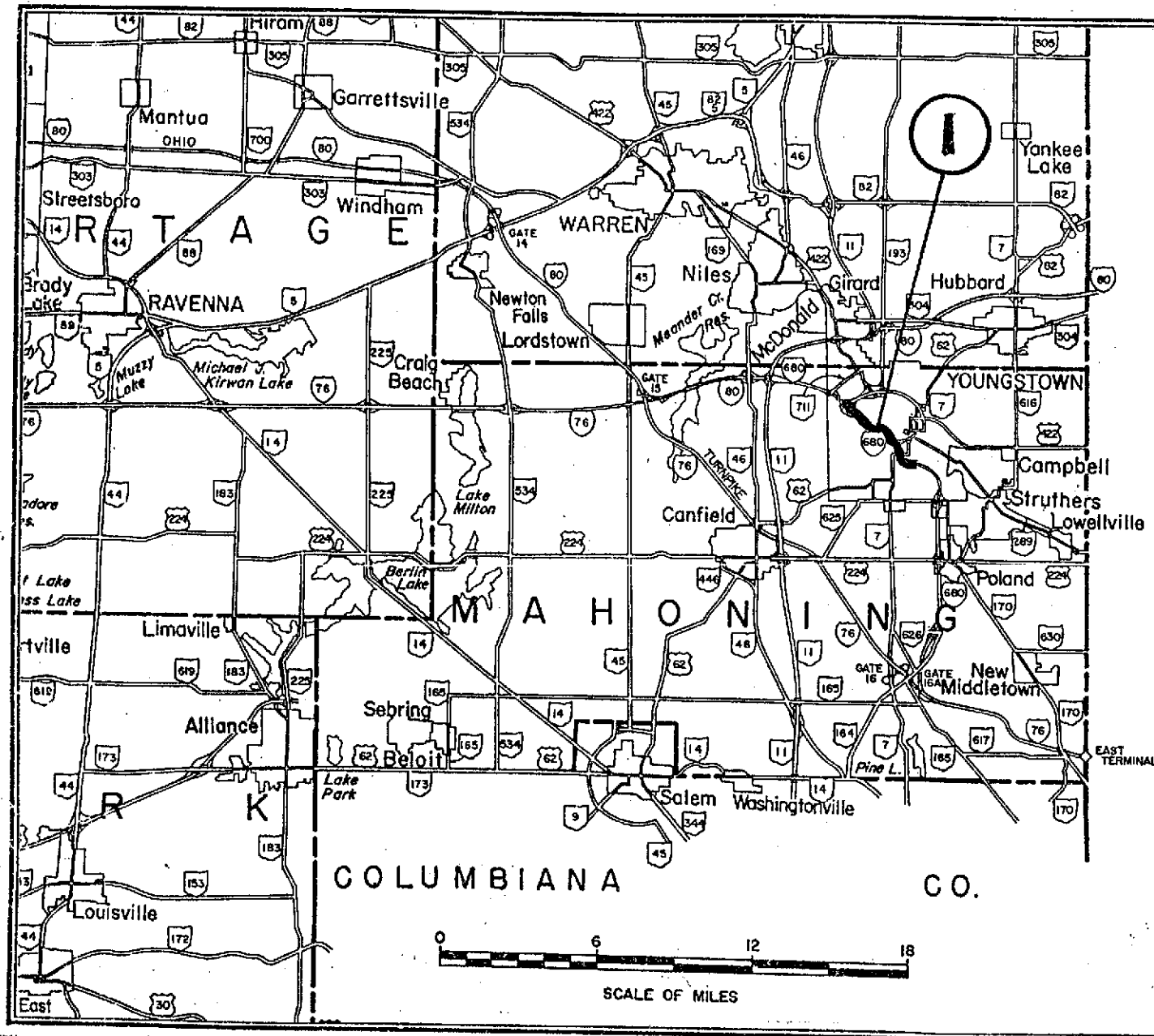
**UNDERGROUND UTILITIES**  
TWO WORKING DAYS  
**BEFORE YOU DIG**  
CALL 1-800-362-2764 (TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:

DISTRICT  
**4**  
MAINTENANCE

PART	COUNTY	ROUTE	SECTIONS	PROJECT TERMINI		NET LENGTH MILES	CITY	VILLAGE
				BEGIN	END			
1	MAH	IR-680	2.07-6.59	4.04	6.98	2.94	YOUNGSTOWN	

## LOCATION MAP



SHEET NO. 71 HAS BEEN DELETED.

STANDARD DRAWINGS	
BP-1.1	2-21-92
BP-2.2	10-28-94
BP-2.5	2-21-92
BP-3.1	2-21-92
BP-5.1	10-28-94
BP-6.1	2-21-92
F-1	11-10-83
GR-1.1	5-6-91
GR-1.2	10-30-92
GR-1.3	2-21-92
GR-2.1	5-6-91
GR-3.1	5-6-91
GR-3.2	5-6-91
GR-3.3	5-6-91
GR-4.1	5-6-91
GR-4.2	5-6-91
GR-5.1	10-30-92
GR-5.2	10-30-92
GR-5.3	10-30-92
GR-8.1	1-31-94
MC-1	6-13-69
MC-5	6-12-75
MC-9.1	10-30-92
MC-9.3	10-30-92
MC-9.4	10-30-92
CB-2-2-A&B	5-1-79
CB-2-3&2-4	5-1-79
CB-2-5&2-6	5-1-79
CB-3	5-1-79
CB-3A	5-1-79
CB-4	11-10-83
CON'T. ON SHEET 8	

## 1995 SPECIFICATIONS

THE STANDARD 1995 SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND THE PROPOSAL SHALL GOVERN THESE IMPROVEMENTS.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THESE IMPROVEMENTS WILL NOT REQUIRE THE CLOSING OF THE HIGHWAY AND PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS INDICATED IN THE PROPOSAL.

APPROVED \_\_\_\_\_  
DATE 3-8-95 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION  
*Daniel R. Dreger*

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ ENGINEER OF BRIDGES

APPROVED \_\_\_\_\_  
DATE 6-30-95 ENGINEER OF MAINTENANCE  
*Walt Sweeney*

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DEPUTY DIRECTOR OF OPERATIONS

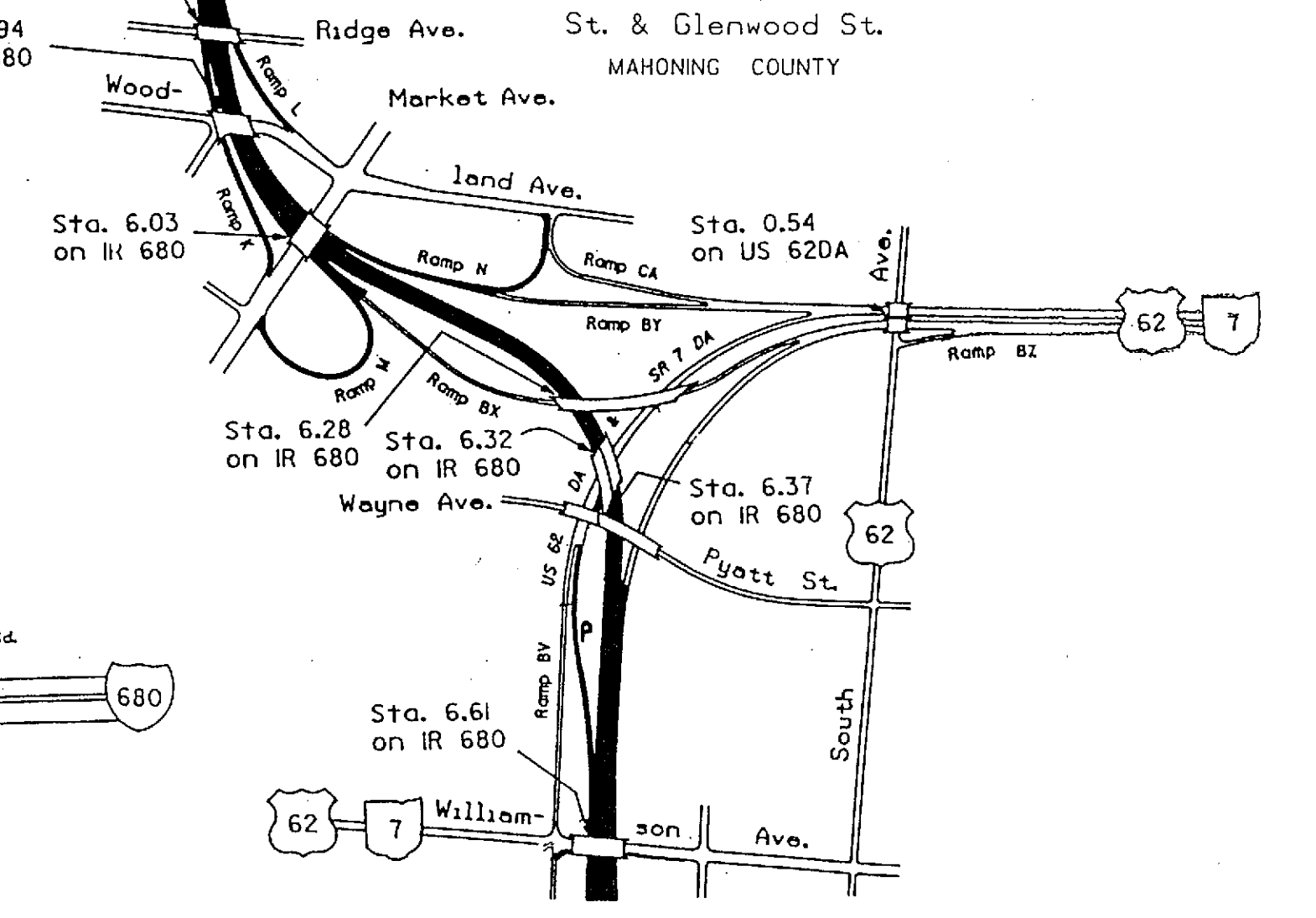
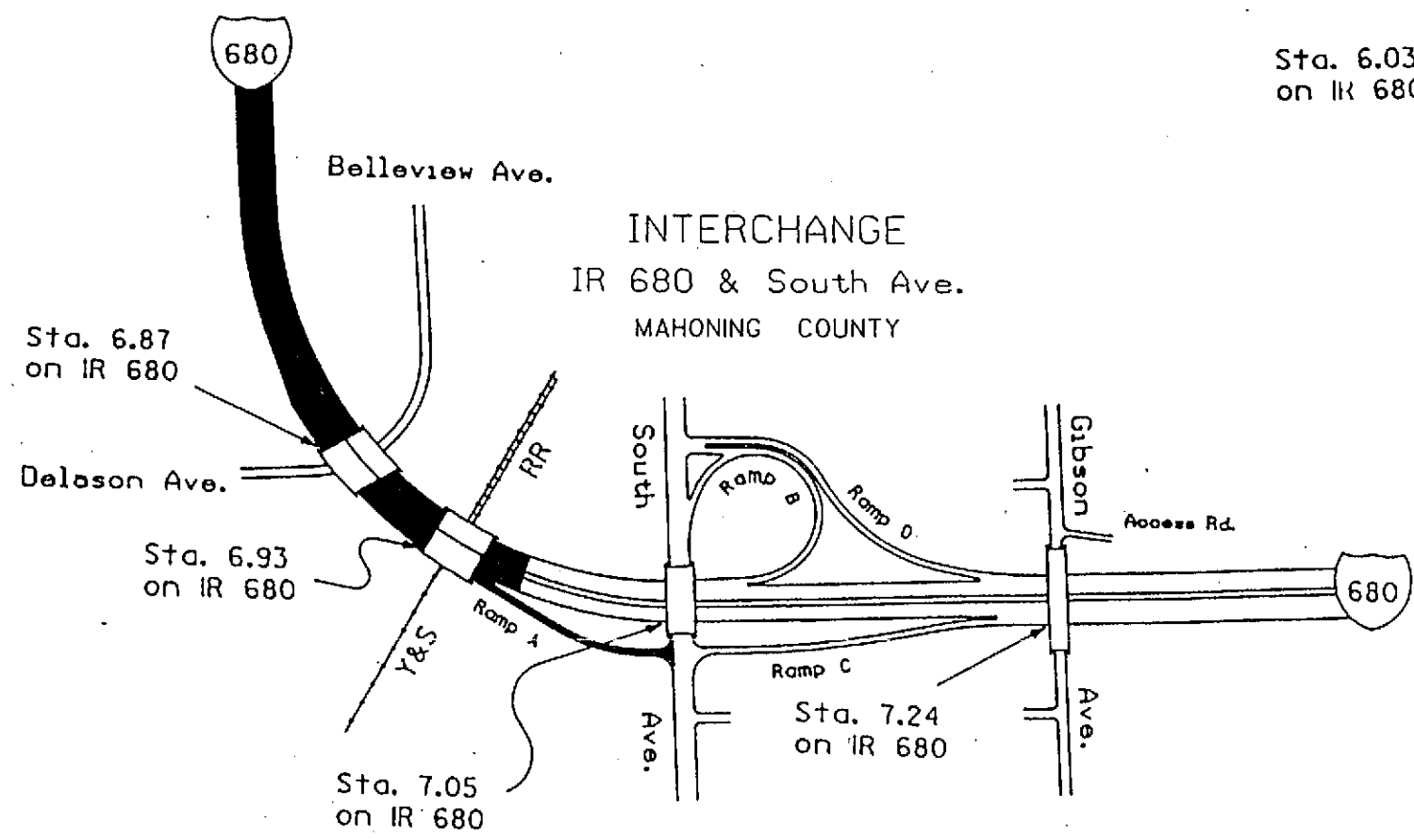
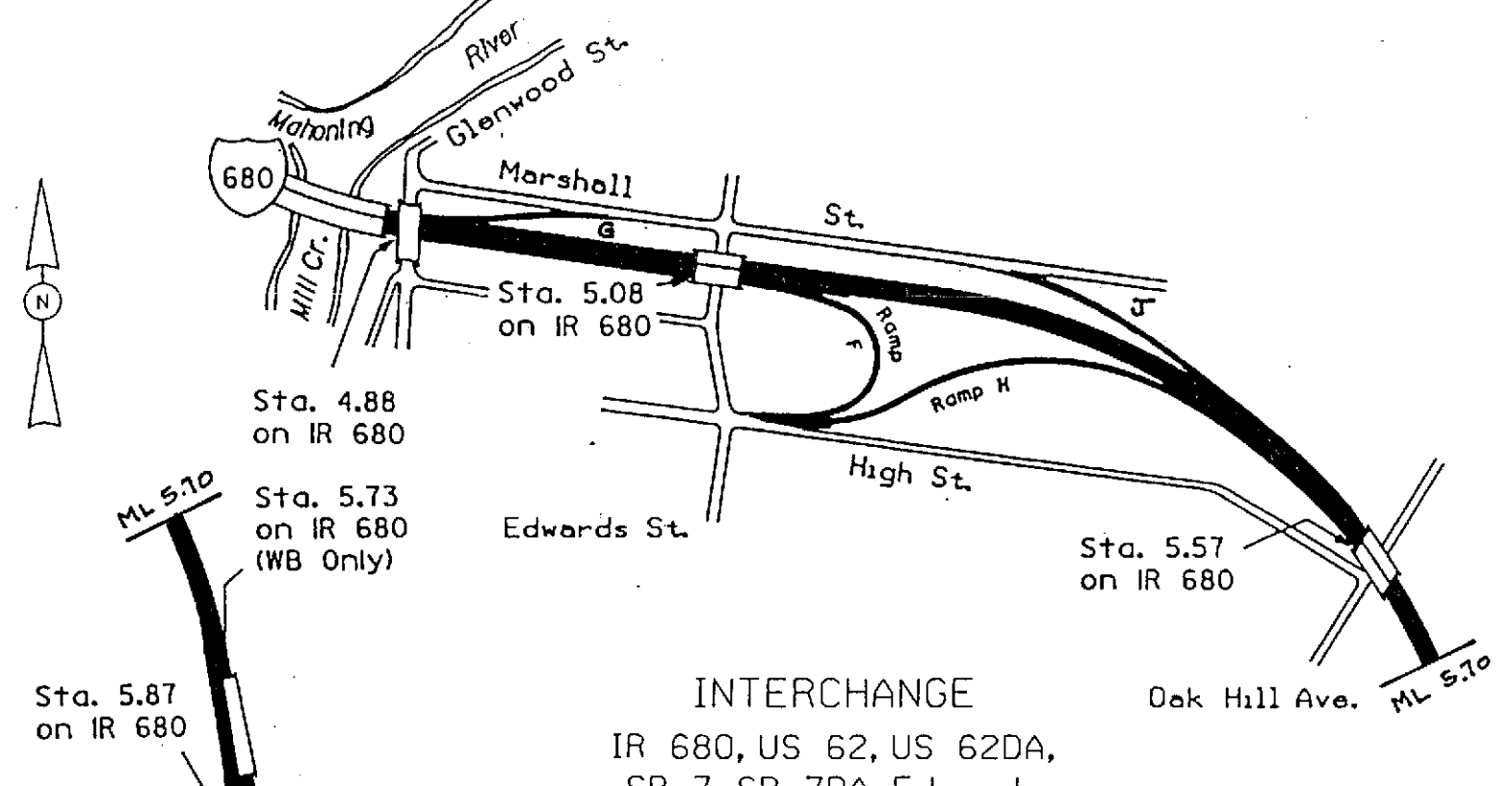
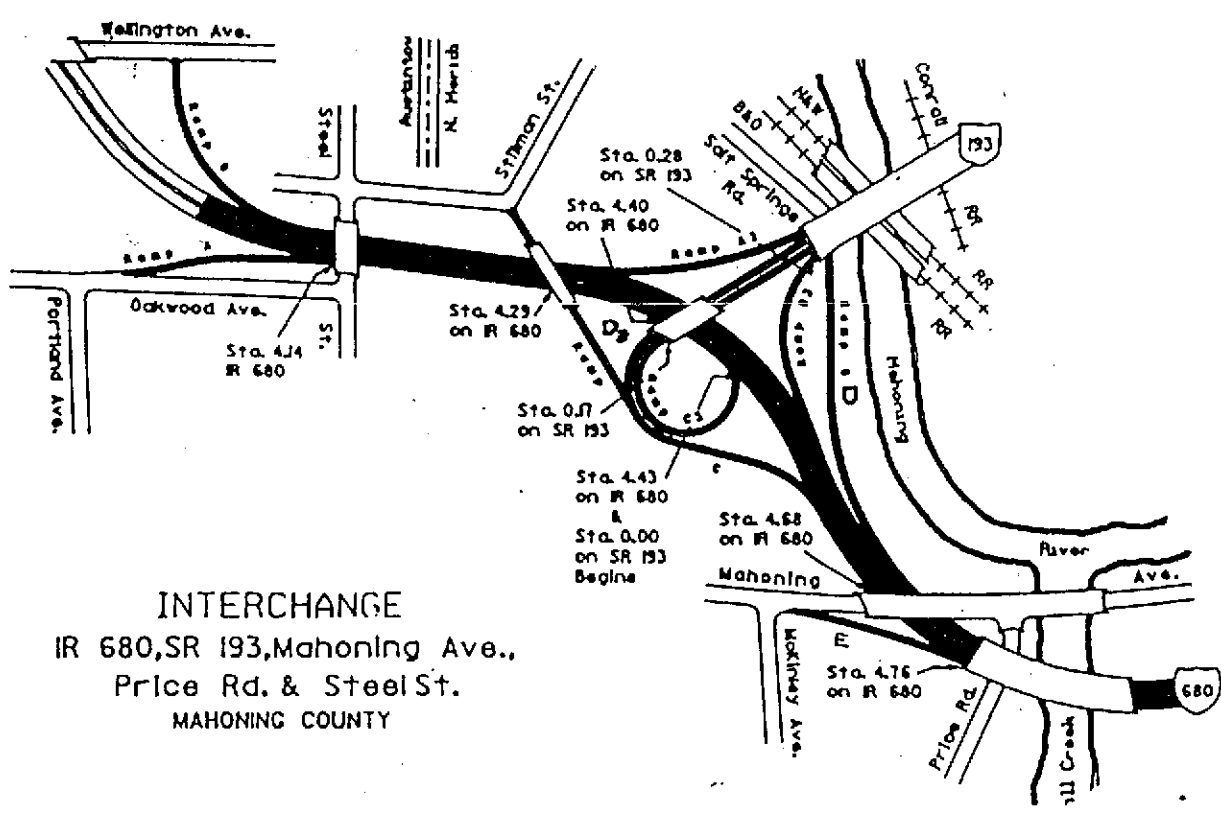
APPROVED \_\_\_\_\_  
DATE 6-30-95 DIRECTOR, DEPARTMENT OF TRANSPORTATION  
*Jerry Way*

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_



— PORTION TO BE IMPROVED

FEDERAL PROJECT NO. FM-680-9(42)  
 PID NO. 15051  
 CONSTRUCTION PROJECT NO. \_\_\_\_\_  
 TITLE SHEET  
 MAH-680-4.04  
 1/10



# GENERAL NOTES

## 601 PAVED GUTTER, MISC: CLEANOUT

THIS WORK SHALL CONSIST OF THE REMOVAL OF ALL MATERIAL FROM THE PAVED GUTTER TO PROVIDE POSITIVE DRAINAGE TO THE RELATED FACILITIES. METHOD OF REMOVAL SHALL BE AT THE APPROVAL OF THE ENGINEER AND MATERIAL DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENT OF SEC. 203.05. THE CONTRACTOR WILL MAINTAIN ALL CLEANED GUTTERS UNTIL FINAL ACCEPTANCE OF THE PROJECT. IN ADDITION, THIS WORK SHALL INCLUDE, AS DIRECTED BY THE ENGINEER, CLEARING AND GRUBBING OF ALL BRUSH AND TREES ENCOUNTERED BETWEEN THE EDGE OF SHOULDER AND R/W FENCE WHILE PERFORMING THE ABOVE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AS DETERMINED BY THE ENGINEER, FOR ANY DAMAGES DONE TO THE PAVEMENT, SHOULDERS, GUARDRAIL, R/W FENCE AND PAVED GUTTER AS THE RESULT OF THIS WORK OPERATION. THE FOOTAGE TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF LINEAR FEET OF PAVED GUTTER CLEANED OUT. PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR REMOVAL AND DISPOSAL OF MATERIAL FOUND AND FURNISHING OF LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER, AND MAY INCLUDE ANY PAVED GUTTER WITHIN THE LIMITS OF THIS PROJECT. AN ESTIMATED 2500 LIN.FT. HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER, TO COMPLETE THIS ITEM.

## ITEM 601E40000 PAVED GUTTER, MISC.: REPLACEMENT

THIS ITEM OF WORK SHALL BE USED TO REPLACE EXISTING PAVED GUTTER FACILITIES WHICH HAVE SUNKEN OR OTHERWISE BECOME STRUCTURALLY INADEQUATE WITHIN THE PROJECT LIMITS. REPLACEMENT SHALL BE WITH SIMILAR TYPE GUTTER AS PER STD.DWG MC-5. MANY OF THESE FACILITIES ARE LOCATED AT THE TOE OF SLOPE IN HIGH FILL AREAS AND ACCESS TO THE SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY BRUSH REMOVAL NECESSARY TO GAIN ACCESS TO THE WORK SITE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 201 CLEARING AND GRUBBING. BROKEN CONCRETE GUTTER MATERIAL REMOVED FROM THE PROJECT SHALL BE PROPERLY DISPOSED OF AT THE APPROVED WASTE AREA (PER 105.151). ALL REPLACEMENT WORK LOCATIONS SHALL BE AT THE DIRECTION OF THE ENGINEER. THE UNIT PRICE BID FOR THIS ITEM SHALL INCLUDE ALL LABOR, MATERIALS, REMOVAL & DISPOSAL AND EQUIPMENT NECESSARY TO COMPLETE THE WORK. ANY CLEANING OF CHANNELS TO PROVIDE AN OPEN OUTLET FOR THE PAVED GUTTER SHALL BE PAID UNDER LINEAR GRADING, (DITCH CLEANOUT). A QUANTITY OF 200 LIN. FT. HAS BEEN CARRIED TO THE GENERAL SUMMARY TO COMPLETE THIS ITEM.

THE CONTRACTOR HAS THE OPTION OF PLACING THE BROKEN CONCRETE PIECES AS DUMPED ROCK FILL AT THE END OF PAVED GUTTER RUNS WHERE THE PAVED GUTTER OUTLETS TO A GRADED DITCH. THE PLACEMENT OF THE CONCRETE PIECES SHALL BE AT A DEPTH OF 18 INCHES AND CONFORM TO THE REQUIREMENTS OF TYPE D ROCK CHANNEL PROTECTION (601.08) WITHOUT FILTER. IF THIS DISPOSAL OPTION IS USED, ALL COST ASSOCIATED WITH THE PLACEMENT INCLUDING EXCAVATING, HANDLING, AND PLACEMENT SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

## UTILITIES:

THE FOLLOWING UTILITIES LISTED ARE IN THE PROJECT AREA. (FOR VERIFICATION, CONTACT THE OHIO UTILITY PROTECTION SERVICE)

OHIO EDISON  
730 SOUTH AVE.  
YOUNGSTOWN, OHIO 44502  
216-747-2071  
ATTN: ROBERT TEREK  
DIV. ENG.

AMERITECH  
2525 STATE ROAD  
CUYAHOGA FALLS, OHIO 44223  
216-922-2541  
ATTN: CONNIE GEORGE  
TECHNICAL LIASON MGR.

THE EAST OHIO GAS CO.  
1165 W. RAYEN AVE.  
YOUNGSTOWN, OHIO 44502  
216-742-8140  
ATTN: TIMOTHY C. MCNUTT  
DIV. ENG.

CITY OF YOUNGSTOWN  
DEPT. OF WATER  
CITY BUILDING  
YOUNGSTOWN, OHIO 44503  
216-742-8755  
ATTN: EUGENE LESEN  
CHIEF ENG.

THIS LIST IS FOR YOUR USE IN OBTAINING UTILITY INFORMATION FROM THE RESPECTIVE OWNERS AND IS NOT MEANT TO BE CONCLUSIVE.

WARNER CABLE TV  
755 WICK AVE.  
YOUNGSTOWN, OHIO 44501  
216-747-2555  
ATTN: DARYL MORRISON  
ENG.

MAHONING VALLEY SANITARY DISTRICT  
P.O. BOX 4149  
YOUNGSTOWN, OHIO 44515  
ATTN: DAVE TABAK  
CHIEF ENG.

CITY OF YOUNGSTOWN  
26 S. PHELPS ST.  
YOUNGSTOWN, OHIO 44503  
216-742-8700  
ATTN: RICHARD MARSICO  
CITY ENG.

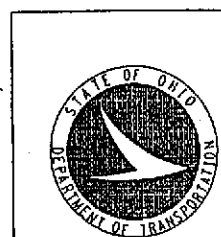
O.D.O.T. DISTRICT 4 TRAFFIC DEPT.  
705 OAKWOOD ST.  
RAVENNA, OH 44266  
ATTN: DISTRICT TRAFFIC ENGINEER  
PHONE: 216-297-0801

## ITEM 203E60408 LINEAR GRADING. (DITCH CLEANOUT)

THE INTENT OF THIS ITEM OF WORK IS TO CLEAN AND RESHAPE EXISTING DITCHES WITHIN THE LIMITS OF THIS PROJECT. THE PROJECT ENGINEER SHALL DESIGNATE WHICH AREAS ARE TO BE DITCHED. THE CONTRACTOR WILL THEN REMOVE THE EXCESS VEGETATION, SEDIMENT, AND DEBRIS IN ORDER TO PROVIDE AS NEAR AS POSSIBLE A STRAIGHT LINE BETWEEN CONTROL POINTS. CARE SHOULD BE TAKEN TO AVOID CREATING AN EXCESSIVELY DEEP DITCH IN CLOSE PROXIMITY TO THE PAVEMENT. WORK SHALL NOT BE DONE AT ANY AREAS WHERE POTENTIAL FOR THIS SITUATION EXISTS. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND PROPER DISPOSAL OF THE MATERIAL GENERATED BY THIS OPERATION. THIS ITEM OF WORK SHALL BE USED AT THE LOCATIONS SHOWN AND AS DIRECTED BY THE ENGINEER. ONLY RUBBER-TIRED EQUIPMENT WILL BE PERMITTED FOR PERFORMING THIS OPERATION WHEN WORKING ALONG THE PAVED SHOULDER TO PREVENT DAMAGE TO COMPLETED PAVEMENT COURSES UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER. PAYMENT FOR THIS ITEM WILL BE THE UNIT PRICE BID PER STATION FOR ITEM 203 LINEAR GRADING. (DITCH CLEANOUT), WHERE A STATION IS EQUAL TO 100 LIN. FT., AS MEASURED ALONG EACH EDGE OF PAVEMENT.

LOCATION	DIRECTION	EST. QTY. (STA)
4.05	SB	16
4.47	SB	2
4.90	SB	4
5.01	SB	4
5.83	SB	5
6.05	SB	8
6.22	SB	1
6.98	SB	9
RAMP A	SB	6
RAMP C	SB	5
RAMP C3	SB	4
RAMP E	SB	2
RAMP H	SB	12
4.14	NB	8
6.63	NB	10
6.88	NB	12
RAMP L	NB	2
RAMP G	NB	3
AS DIRECTED BY ENGINEER= 8 STA		

ITEM 203 LINEAR GRADING, (DITCH CLEANOUT) 125 STATIONS



### WARNING



UNDERGROUND POWER CABLE  
IN THIS VICINITY

TWO WORKING DAYS BEFORE  
YOU DIG CALL:

O.D.O.T. TRAFFIC DEPT.  
(216) 297-0801

GENERAL NOTES

MAH-680-4.04

3/10

# GENERAL NOTES

## CONCRETE BARRIER, TYPE D-1, AS PER PLAN

THIS ITEM IS TO BE USED TO CONSTRUCT NEW CONCRETE BARRIER IN FRONT OF THE EXISTING BIN RETAINING WALL AT SLM 6.04 (NB) AS DETAILED ON PLAN PAGE 80. IN ADDITION TO THE REQUIREMENTS OF CMS 622, THIS ITEM SHALL INCLUDE ALL EXCAVATION, GRADING, AND EXTRA CONCRETE AS REQUIRED DUE TO THE BATTER OF THE EXISTING WALL AND THE JUNCTION OF THE BIN WALL AND THE ABUTMENT WINGWALL FOR STRUCTURE 0603.

## CONCRETE BARRIER, TYPE D, AS PER PLAN

THIS ITEM IS TO BE USED TO CONSTRUCT NEW CONCRETE BARRIER ON TOP OF THE EXISTING CURB ON STRUCTURE 0632 (NB) TO THE PLAN DIMENSIONS AS DETAILED ON PLAN PAGE 79 (NO FOOTER SHALL BE REQUIRED). IN ADDITION TO THE REQUIREMENTS OF CMS 622, THIS ITEM SHALL INCLUDE:

- 1) REMOVAL OF THE EXISTING PARAPET CONCRETE (AVOID DAMAGING EXISTING VERTICAL STEEL)
- 2) ALL REQUIRED RE-INFORCING STEEL
- 3) EXTRA CONCRETE AS REQUIRED DUE TO THE TAPERED END OF THE PROPOSED TYPE D WALL.

## CONCRETE BARRIER, AS PER PLAN

THIS ITEM IS PROVIDED TO CONSTRUCT NEW CONCRETE BARRIER TO THE DIMENSIONS SHOWN ON PLAN PAGE 83 AT THE OUTSIDE NORTHBOUND PIER COLUMNS OF STRUCTURE 0468. ITEM SHALL INCLUDE ALL EXCAVATION, BACKFILL, LABOR, MATERIALS (INCLUDING RE-INFORCING STEEL), EQUIPMENT, AND INCIDENTALS NEEDED TO COMPLETE THE WORK.

## ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ET-2000, OPTION "B", GUARDRAIL END TREATMENT AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE 216-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 50 FEET, INCLUSIVE OF TWO 25 FOOT LONG RAIL ELEMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MAUNFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM 606, EACH, ANCHOR ASSEMBLY TYPE E AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

## WATER FOR SEEDING

A QUANTITY OF 40 M GALLONS HAS BEEN PROVIDED TO BE USED AS DIRECTED FOR WATERING OF ITEM 659 SEEDING AND MULCHING.

## STRAW OR HAY BALES

A QUANTITY OF 40 EACH HAS BEEN PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER FOR THE PURPOSE OF CONTROLLING SEDIMENTATION OF EXISTING DRAINAGE STRUCTURES AND STREAMS WHEN LINEAR GRADING OR EARTHWORK REMOVES EXISTING VEGETATION.

GENERAL NOTES

MAH-680-4.04

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110

# GENERAL NOTES

## ESTIMATED QUANTITIES

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

## COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL BE ADVISED THAT OTHER PROJECTS MAY BE ONGOING IN AREAS IMMEDIATELY ADJACENT TO AND WITHIN THE PROJECTS LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO AS TO CAUSE A MINIMUM OF DELAY OR CONFLICT WITH THE OTHER PROJECT OR PROJECTS. IN ACCORDANCE WITH 106.07 THE CONTRACTOR SHALL ARRANGE WITH THE OTHER CONTRACTORS, A MUTUALLY ACCEPTABLE WORK SCHEDULE, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL RECEIVE DAILY APPROVAL FROM THE ENGINEER PRIOR TO COMMENCING ANY OPERATIONS. ANY CONFLICT BETWEEN CONTRACTORS INVOLVING WORK SCHEDULES, WORK AREA OR COOPERATION SHALL BE RESOLVED BY THE ENGINEER. COMPENSATION FOR THE ABOVE COOPERATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS INCLUDED WITHIN THIS PROJECT.

## ITEM 202 - CURB REMOVAL

THIS ITEM HAS BEEN ESTABLISHED TO REMOVE EXISTING CURB AT THE FOLLOWING LOCATIONS. A QUANTITY OF ITEM 203 - BORROW HAS BEEN PROVIDED TO FILL THE VOIDS REMAINING AFTER THE CURB REMOVAL OPERATION. THE PLACEMENT AND GRADING OF THE BORROW MATERIAL SHALL BE TO THE SATISFACTION OF THE ENGINEER.

LOCATION	QUANTITY
MAHONING S.B. ON RAMP	100 L.F.
EDWARDS E.B. ON RAMP	50 L.F.
US 62 S.B. ON RAMP	100 L.F.
UNDER WILLIAMSON BRIDGE S.B.	96 L.F.
EDWARDS N.B. ON RAMP	70 L.F.
SR 193 N.B. ON RAMP	100 L.F.

## ESTIMATED QUANTITIES:

ITEM 202 - CURB REMOVED 516 L.F.  
 ITEM 203 - BORROW 14 C.Y.

## ITEM 623E10001 CONSTRUCTION LAYOUT STAKES, AS PER PLAN

ALL PROVISIONS OF ITEM 623 SHALL APPLY WITH THE FOLLOWING ADDITIONS:

1.) THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER WITH WOODEN STAKES TO BE USED TO MARK THE AREAS TO BE CLEANED AND RESHAPED WITH THE 203 DITCH CLEANOUT ITEM. THE CONTRACTOR SHALL IDENTIFY ELEVATION CONTROL POINTS AND DIRECTION OF FLOW ALONG THE EXISTING DITCHLINE WHICH WILL BE CHECKED AND APPROVED BY THE PROJECT ENGINEER PRIOR TO THE PERFORMANCE OF THE WORK. ANY SURVEYING REQUIRED TO DETERMINE ELEVATION CONTROL POINTS OR DIRECTION OF FLOW SHALL BE PERFORMED BY THE CONTRACTOR.

2.) AFTER ALL NEW PAVING HAS BEEN COMPLETED, A REGISTERED SURVEYOR SHALL TAKE VERTICAL CLEARANCE MEASUREMENTS AT LOCATIONS INDICATED ON THE APPROVED O.D.O.T. FORM (AVAILABLE IN THE DISTRICT BRIDGE DEPT.). THESE FINAL MEASUREMENTS SHALL BE RECORDED ON THE FORM AND SUBMITTED TO THE PROJECT ENGINEER AND THE DISTRICT BRIDGE ENGINEER. THE RECORD SHALL BEAR THE SEAL OF THE LICENSED SURVEYOR WHO HAS TAKEN THE MEASUREMENTS. MEASUREMENTS SHALL BE TAKEN AT THE FOLLOWING OVERHEAD STRUCTURES:

MAH-680-0414	MAH-680-0594
MAH-680-0429	MAH-680-0603
MAH-680-0440	MAH-680-0628
MAH-680-0468	MAH-680-0637
MAH-680-0488	MAH-680-0661
MAH-680-0587	

## LOCATION OF GUARDRAIL

PRIOR TO INSTALLING ANY NEW GUARDRAIL, THE CONTRACTOR SHALL BE REQUIRED TO CONTACT THE OHIO UTILITY PROTECTION SERVICE AS WELL AS THE OTHER UTILITIES LISTED. IN ADDITION THE CONTRACTOR SHALL HAVE THE ODOT TRAFFIC ENGINEER MARK THE LOCATIONS OF ALL LIGHTING AND ELECTRICAL CONDUITS PRIOR TO STARTING WORK. GUARDRAIL POSTS SHALL BE SPACED SO THAT THE EXISTING UNDER-DRAIN OUTLET PIPES ARE NOT DISTURBED. COPIES OF THE ORIGINAL CONSTRUCTION DRAWINGS ARE AVAILABLE ON FILE IN THE DISTRICT OFFICE FOR REFERENCE. THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

## ITEM 202 GUARDRAIL REMOVED AS PER PLAN:

THIS ITEM OF WORK SHALL INCLUDE THE COMPLETE REMOVAL OF ALL TYPE GUARDRAIL, POSTS, BRIDGE TERMINALS, AND ANCHOR ASSEMBLIES AS SPECIFIED IN THE PLAN. GUARDRAIL, POST, MISCELLANEOUS HARDWARE, AND CONCRETE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF. THE 36 INCH CONCRETE ANCHORS SHALL BE REMOVED IN THEIR ENTIRETY WITH NO PORTION REMAINING BURIED UNDER THE GROUND.

ALL MATERIAL EXCAVATED FOR POST HOLES OR CONCRETE ANCHORS SHALL BE DISPOSED OF IN ACCORDANCE WITH 203.05 OF THE SPECIFICATIONS, AND THE AREA RESTORED TO A NEAT CONDITION SATISFACTORY TO THE PROJECT ENGINEER.

ALL HOLES REMAINING AFTER REMOVAL OF GUARDRAIL POSTS OR ASSEMBLY FOUNDATIONS SHALL BE FILLED WITH GRANULAR MATERIAL, EXCESS MATERIAL RESULTING FROM GUARDRAIL CONSTRUCTION OR EXCESS MATERIAL FROM LINEAR GRADING. FILL MATERIAL CONTAINING SOD SHALL NOT BE USED. ALL FILL MATERIAL SHALL BE APPROVED BY THE ENGINEER. MATERIAL PLACED IN HOLES SHALL BE THOROUGHLY COMPACTED AND LEVELED OFF AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL THE ABOVE SHALL BE IN THE UNIT PRICE FOR ITEM 202 - GUARDRAIL REMOVED, AS PER PLAN.

## ITEM 606E25001 ANCHOR ASSEMBLY, TYPE A, AS PER PLAN

THE TYPE A ANCHORS WILL BE CONSTRUCTED IN THE BACK SLOPES BEYOND THE DITCH LINE AT THE STATIONS AS LISTED ON THE GUARDRAIL SUB-SUMMARY SHEETS. THE OFFSET DISTANCE UP THE BACK SLOPE SHALL BE SUCH THAT THE HEIGHT OF THE 25 FOOT RAIL PANEL WILL BE MAINTAINED AT THE SAME HEIGHT (27") AS THE ADJACENT RAIL FOR ITS ENTIRE LENGTH. ALL OTHER REQUIREMENTS OF THE SPECIFICATIONS AND STD. DWG. GR-4.1 WILL STILL APPLY. ADDITIONAL EXCAVATION, BORROW, LABOR, OR EQUIPMENT REQUIRED TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 606 ANCHOR ASSEMBLY, TYPE A, AS PER PLAN.

## ITEM 606E98000 GUARDRAIL, MISC.: THRIE BEAM RAIL

AT THE LOCATIONS SHOWN IN THE GUARDRAIL SUB-SUMMARY, THE CONTRACTOR SHALL INSTALL THRIE-BEAM GUARD RAIL ADJACENT TO THE BRIDGE RAIL RETRO-FIT. THERE WILL BE NO PAY ITEM FOR TYPE 3 BRIDGE TERMINAL ASSEMBLIES BETWEEN STRUCTURE NUMBERS 0687 AND 0693. THE COST TO SUPPLY AND INSTALL THE 8x8 AND 10x10 SQUARE WOODEN POSTS ADJACENT TO THE STRUCTURES AS REQUIRED ON STANDARD DRAWING GR-3.3 WILL BE INCLUDED IN THE UNIT PRICE PER LIN.FT. OF GUARDRAIL, MISC.: THRIE BEAM RAIL.

GENERAL NOTES

MAH-680-4.04

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# GENERAL NOTES

CALCULATED  
 CHECKED  
 GENERAL NOTES  
 MAH-680-4.04  
 5/10

## ITEM 604 CATCH BASIN, MISC.:CLEANOUT

THE EXISTING DRAINAGE FACILITY (CATCH BASIN) SHALL BE CLEANED OUT, AS DIRECTED BY THE ENGINEER. THIS WORK SHALL CONSIST OF REMOVAL OF ALL MATERIAL FROM THE INSIDE OF THE EXISTING CATCH BASINS AT THE LOCATIONS SHOWN ON THE PLAN. THE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF SEC. 203.05. ANY CATCH BASINS WHERE THE ADJACENT PIPE IS BEING CLEANED WILL BE PAID FOR AS PART OF THE PIPE CLEANOUT ITEM.

THE PAY QUANTITY FOR THIS ITEM WILL BE THE NUMBER EACH OF CATCH BASINS CLEANED OUT AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR REMOVAL AND DISPOSAL OF ALL MATERIAL FOUND AND FURNISHING OF LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

THE FOLLOWING ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM 604 CATCH BASIN, MISC.:CLEANOUT 20 EACH

## ITEM SPECIAL PIPE CLEANOUT

THE EXISTING DRAINAGE FACILITIES SHALL BE CLEANED OUT, AS DIRECTED BY THE ENGINEER. THIS WORK SHALL CONSIST OF REMOVAL OF ALL MATERIAL FROM THE INSIDE OF THE EXISTING PIPE AND RELATED INLETS OR BASINS AT THE LOCATIONS SHOWN ON THE PLAN. THE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF SEC. 203.05. THE PAY QUANTITY FOR THIS ITEM WILL BE THE NUMBER OF LINEAL FEET OF PIPE CLEANOUT AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR REMOVAL AND DISPOSAL OF ALL MATERIAL FOUND AND FURNISHING OF LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. THE CONDUIT SIZE IS 24" DIAMETER AND UNDER.

THE FOLLOWING ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM SPECIAL PIPE CLEANOUT 1000 LF

## ITEM 413 SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS

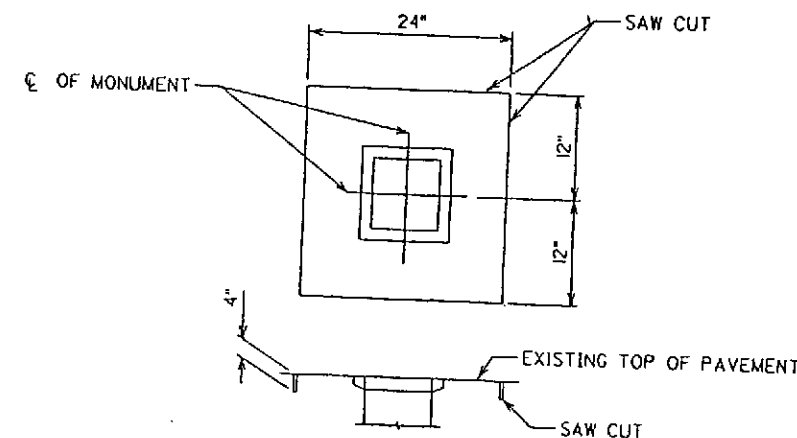
THE INTENT OF THIS ITEM IS TO SAW CUT AND SEAL THE 1.25" THICK 446 TYPE 1 ASPHALT PAVING COURSE. ALL WORK MUST BE COMPLETED PRIOR TO THE INTERIM COMPLETION DATE. ALL TRANSVERSE JOINTS INCLUDING THE LIMITS OF FULL DEPTH REPAIR AREAS SHALL BE SEALED. A QUANTITY OF 10,500 LIN. FT. OF SAWING AND SEALING OF ASPHALT JOINTS HAS BEEN CARRIED TO THE GENERAL SUMMARY TO COMPLETE THIS ITEM.

## ITEM 604 MONUMENT ASSEMBLY, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE COMPLETE REMOVAL AND REPLACEMENT OF EACH MONUMENT ASSEMBLY. REPLACEMENT SHALL BE AS PER STANDARD DRAWING MC-1 DATED 6-13-69 AND SHALL INCLUDE NEW PIN, FRAME, LID, AND PIPE. THE REMOVAL SHALL BEGIN WITH A 4" DEEP SAW CUT 24" SQUARE AROUND THE EXISTING BOX. CARE SHALL BE TAKEN TO ENSURE THAT THE REMAINING VERTICAL SURFACES ARE PROTECTED FROM DAMAGE. ANY DAMAGE DONE TO THE PAVEMENT OR SHOULDERS AS A RESULT OF THIS WORK SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. BEDDING, IF REQUIRED, SHALL BE 617 TYPE A COMPACTED IN 4" LIFTS AND 404 COMPACTED IN 3" (MAXIMUM) LIFTS TO THE TOP OF EXISTING PAVEMENT.

CONTRACTOR NOTE: REMOVAL WORK MAY REQUIRE USE OF A JACKHAMMER. ONCE A REMOVAL BEGINS, WORK SHALL BE COMPLETED WITHIN TWO WORK DAYS, UNLESS OTHERWISE APPROVED BY THE ENGINEER. NO UNPROTECTED OPEN EXCAVATIONS SHALL BE PERMITTED OVERNIGHT. ANY WORK NOT COMPLETED AT THE END OF THE WORK DAY MUST BE PROTECTED BY USE OF STEEL PLATES SECURELY FASTENED TO THE PAVEMENT, UNLESS PROTECTED IN ANOTHER FASHION ACCEPTABLE TO THE PROJECT ENGINEER. THE ABOVE WORK SHALL BE SCHEDULED UPON COMPLETION OF THE 446 TYPE 1 SURFACE COURSE AND PRIOR TO THE RUBBERIZED OPEN-GRADED ASPHALT FRICTION COURSE. RE-ESTABLISHMENT OF REFERENCE OR ELEVATION POINTS SHALL BE DETERMINED BY A LICENSED SURVEYOR, AND ANY CHANGES FROM THE ORIGINAL POINTS SHALL BE REPORTED TO THE APPROPRIATE PUBLIC OFFICIALS (STATE, COUNTY, ETC.) THE NAME OF THE SURVEYOR, HIS REGISTRATION NUMBER, AND A COPY OF ACTUAL FIELD NOTES USED IN THE PERFORMANCE OF THIS WORK SHALL BECOME A PERMANENT RECORD FILED IN THE DISTRICT SURVEY OFFICE. TRAFFIC CONTROL DURING PERFORMANCE OF THIS WORK SHALL BE AS PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL FOR STREETS AND HIGHWAYS, LATEST EDITION. ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604 MONUMENT ASSEMBLY, AS PER PLAN.

PROJECT ENGINEER NOTE: A COPY OF THE ACTUAL FIELD NOTES TO PERFORM THIS WORK, BEARING THE LICENSED SURVEYOR'S PROFESSIONAL SEAL OR STAMP, SHALL BE SUBMITTED TO THE DISTRICT SURVEY DEPARTMENT PRIOR TO PAYMENT FOR THIS ITEM.



ITEM 604 MONUMENT ASSEMBLY, AS PER PLAN  
SUMMARY OF LOCATIONS

STATION*	SLM	SURVEY DESCRIPTION
929+99.42	4.14	S.T.
937+46.56	4.28	T.S.
941+46.56	4.39	S.C.
947+41.76	4.47	C.S.
951+41.76	4.54	S.T.
954+73.06	4.61	T.S.
958+73.06	4.68	S.C.
962+00	4.75	P.O.C.
969+77.01	4.89	S.T.
978+50	5.05	P.O.T.
986+75.49	5.22	T.S.
989+75.49	5.27	S.C.
994+00	5.35	P.O.C.
999+00	5.45	P.O.C.
1005+00	5.56	P.O.C.
1010+00	5.66	P.O.C.
1013+98.42	5.73	C.S.
1016+98.42	5.79	S.T.
1021+55.38	5.87	T.S.
1025+55.38	5.95	S.C.
1030+91.44	6.05	C.S.
1034+91.44(BK)	6.13	S.T.
806+88.34(AH)		
804+79.03	6.17	S.T.
800+79.03	6.24	C.S.

TOTAL = 24 ASSEMBLIES  
\*ALL LOCATIONS OFFSET 5' RT. OF CENTERLINE

# GENERAL NOTES

DATE  
BY  
CHECKED

PAVEMENT DETAILS

MAH-680-4.04

1/9  
6/10

**INTENT OF PLANING ITEMS**

THE INTENT OF PLANING ITEMS IS TO REMOVE EXISTING ASPHALT OVERLAYS TO EXPOSE CONCRETE BASE PAVEMENT UNDERNEATH.

**PAVEMENT TRANSITIONS**

MAINLINE AND RAMP TRANSITIONS ARE DESIGNED FOR A 1" DROP IN 40'. THE TRANSITIONS AT THE TOP OF RAMPS ARE DESIGNED FOR A 1" DROP IN 25'.

**ITEM 254 PAVEMENT PLANING, BITUMINOUS (4" TYPICAL)**

THE INTENT OF THIS ITEM IS TO REMOVE THE EXISTING ASPHALT OVERLAY AT TYPICAL MAINLINE PAVEMENT, WHERE ASPHALT THICKNESS IS 4".

**ITEM 254 PAVEMENT PLANING, BITUMINOUS (VARIABLE 1" TO 4")**

THE INTENT OF THIS ITEM IS TO REMOVE THE EXISTING ASPHALT OVERLAY WHERE THICKNESSES VARY BETWEEN 1" TO 4", TYPICALLY UNDER OVERHEAD STRUCTURES AND AT BRIDGE APPROACHES. AT THESE LOCATIONS, QUANTITIES HAVE BEEN ESTIMATED TO REMOVE THESE TRANSITIONS. ACTUAL LENGTHS SHALL BE DETERMINED IN THE FIELD. WHERE NO DIFFERENCE IN THICKNESS EXISTS, THE QUANTITY SHALL BE PAID AS ITEM 254 PAVEMENT PLANING, BITUMINOUS (4" TYPICAL).

**ITEM 254 PAVEMENT PLANING, BITUMINOUS (3" AND UNDER)**

THE INTENT OF THIS ITEM IS TO REMOVE THE EXISTING ASPHALT OVERLAY AT RAMPS, INCLUDING ANY RAMP TRANSITIONS WHERE THICKNESS VARIES FROM THE TYPICAL.

**ITEM 254 PAVEMENT PLANING, BITUMINOUS (0"-4" VARIABLE)**

THE INTENT OF THIS ITEM IS TO PLANE TRANSITIONS AT MAINLINE TERMINI AT SLM 4.04 AND 6.98 TO PREVENT EXCESSIVE TRANSVERSE DROPOFFS.

**ITEM 202 WEARING COURSE REMOVED, BITUMINOUS**

THE INTENT OF THIS ITEM IS TO GRIND BUTT JOINTS AS DETAILED IN THE PLANS TO ENSURE SMOOTH TRANSITIONS AT BITUMINOUS PAVEMENTS.

**ITEM 202 WEARING COURSE REMOVED, PORTLAND CEMENT CONCRETE**

THE INTENT OF THIS ITEM IS TO GRIND BUTT JOINTS AS DETAILED IN THE PLANS TO ENSURE SMOOTH TRANSITIONS AT PORTLAND CEMENT CONCRETE PAVEMENTS.

**ITEM 604 INLET ADJUSTED TO GRADE, AS PER PLAN,  
ITEM 604 CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN, AND  
ITEM 604 MANHOLE ADJUSTED TO GRADE, AS PER PLAN**

ALL REQUIREMENTS OF 604 APPLY, EXCEPT 604.03 (b) SHALL NOT APPLY. BACKFILL FOR ADJUSTED FRAMES SHALL BE ITEM 301 BITUMINOUS AGGREGATE BASE OR ITEM 499 CLASS C CONCRETE AS PER BP-3.1 INCLUDED IN THE UNIT PRICE BID FOR THESE ITEMS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE HEIGHT OF ADJUSTMENT IN PAVEMENT TRANSITIONS, WHERE PROPOSED PAVEMENT THICKNESSES VARY FROM THE TYPICAL SECTIONS.

THE TOP OF INLET AND CATCH BASIN GRATES SHALL BE FLUSH WITH THE 446 TYPE 1 ASPHALT CONCRETE. RUBBERIZED OPEN-GRADED ASPHALT PLACED AROUND THE GRATES SHALL NOT RESTRICT MAINTENANCE ACCESS TO THE INLETS OR CATCH BASINS.

THE TOP OF MANHOLE COVERS SHALL BE FLUSH WITH THE OPEN-GRADED ASPHALT.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED FORWARD TO THE GENERAL SUMMARY FOR THESE ITEMS OF WORK.

ITEM 604 INLET ADJUSTED TO GRADE, AS PER PLAN 34 EACH  
ITEM 604 CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN 12 EACH  
ITEM 604 MANHOLE ADJUSTED TO GRADE, AS PER PLAN 16 EACH

**ITEM 604 INLET RECONSTRUCTED TO GRADE,  
ITEM 604 CATCH BASIN RECONSTRUCTED TO GRADE, AND  
ITEM 604 MANHOLE RECONSTRUCTED TO GRADE**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE HEIGHT OF ADJUSTMENT IN PAVEMENT TRANSITIONS, WHERE PROPOSED PAVEMENT THICKNESSES VARY FROM THE TYPICAL SECTIONS.

THE TOP OF INLET AND CATCH BASIN GRATES SHALL BE FLUSH WITH THE 446 TYPE 1 ASPHALT CONCRETE. RUBBERIZED OPEN-GRADED ASPHALT PLACED AROUND THE GRATES SHALL NOT RESTRICT MAINTENANCE ACCESS TO THE INLETS OR CATCH BASINS.

THE TOP OF MANHOLE COVERS SHALL BE FLUSH WITH THE OPEN-GRADED ASPHALT.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED FORWARD TO THE GENERAL SUMMARY FOR THESE ITEMS OF WORK.

ITEM 604 INLET RECONSTRUCTED TO GRADE 4 EACH  
ITEM 604 CATCH BASIN RECONSTRUCTED TO GRADE 2 EACH  
ITEM 604 MANHOLE RECONSTRUCTED TO GRADE 2 EACH

**ADDITIONAL QUANTITIES**

ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER IN THE EVENT A REPLACEMENT FRAME AND/OR COVER IS REQUIRED IN PERFORMING THE WORK UNDER THE 604 ADJUST/RECONSTRUCT ITEMS. FRAMES OR COVERS DAMAGED AS A RESULT OF THE DAILY WORK OPERATIONS, FOR THE DURATION OF THE PROJECT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL NOT ORDER THESE ITEMS UNLESS AUTHORIZED BY THE ENGINEER.

ITEM 604 INLET FRAME AND GRATE 4 EACH  
ITEM 604 CATCH BASIN FRAME 2 EACH  
ITEM 604 CATCH BASIN GRATE 2 EACH  
ITEM 604 MANHOLE FRAME 2 EACH  
ITEM 604 MANHOLE COVER 2 EACH

**FULL DEPTH SHOULDER REMOVAL AND REPLACEMENT**

THE DIRT SHOULDER LOCATED BEYOND THE EXISTING PAVED SHOULDER SHALL BE REMOVED AND REPLACED WITH 301 BITUMINOUS AGGREGATE BASE AT THE FOLLOWING NORTHBOUND RAMP LOCATIONS:

- 1.) AT THE EXIT GORE BETWEEN THE SALT SPRINGS ROAD AND SR 193 RAMPS (THE TRIANGULAR AREA BOUNDED BY THE PAVED RAMP SHOULDERS BY 90 FEET LONG) USING A DEPTH OF 10 INCHES.
- 2.) ALONG THE CONCRETE BIN RETAINING WALL LOCATED AT THE EAST WOODLAND AVENUE ENTRANCE RAMP (SEE GUARDRAIL DETAIL 6 FOR LOCATION) USING A DEPTH OF 5 INCHES.

THE FOLLOWING ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION 50 C.Y.  
ITEM 203 SUBGRADE COMPACTION 300 S.Y.  
ITEM 301 BITUMINOUS AGGREGATE BASE, AC-20 50 C.Y.

**ITEM 407, TACK COAT**

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

# MAINTENANCE OF TRAFFIC

PLAN NO.:

## WORK ZONE RESTRICTIONS

A MINIMUM OF ONE LANE (10' MINIMUM WIDTH) IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USING EXISTING PAVEMENT AND REBUILT SHOULDERS AT BRIDGES IN 4-LANE SECTIONS.

A MINIMUM OF TWO LANES (10' MINIMUM WIDTH) IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USING EXISTING PAVEMENT AND REBUILT SHOULDERS 6-LANE SECTIONS.

CONES SHALL NOT BE PERMITTED AS TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION MORE THAN ONE-HALF HOUR BEFORE SUNRISE OR ONE-HALF HOUR AFTER SUNSET. ALL NIGHT-TIME LANE RESTRICTIONS OR LANE REDUCTIONS SHALL REQUIRE DRUMS AT A MIXIMUM SPACING OF 50'.

IN THE AREAS OF LANE CLOSURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING THE EXISTING SHOULDER NEXT TO THE TRAVELED LANE TO MEET EXISTING PAVEMENT ELEVATION AND MAINTAINING THE SHOULDERS IN A SAFE CONDITION FOR THE DURATION OF THE PROJECT.

AT NO TIME SHALL ISLAND CONSTRUCTION BE PERMITTED.

## ITEM 404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

THE FOLLOWING ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 404 BITUMINOUS CONCRETE FOR  
MAINTAINING TRAFFIC 400 CU.YD.

## WINTER TRAFFIC LIMITATIONS

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 1, AND APRIL 1. OCTOBER 31 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

## ITEM 301 BITUMINOUS AGGREGATE BASE, AS PER PLAN

AN ESTIMATED QUANTITY OF ITEM 301 BITUMINOUS AGGREGATE BASE, AS PER PLAN, HAS BEEN PROVIDED FOR USE IN REPLACING PAVED SHOULDERS AS DESCRIBED BELOW. THE UNIT PRICE SHALL INCLUDE ALL COST FOR THE EXCAVATION AND REMOVAL OF THE EXISTING SHOULDER.

THE OUTSIDE (10' AVG. WIDTH) AND INSIDE (4' AVG. WIDTH) SHOULDERS LOCATED 660' BEFORE AND 150' AFTER STRUCTURES SHALL BE REBUILT. SHOULDERS SHALL BE REPLACED AT LOCATIONS OF PROPOSED CONCRETE OVERLAYS.

ALSO, OUTSIDE SHOULDERS (10' AVG. WIDTH) SHALL BE RECONSTRUCTED WHERE 2 LANE TRAFFIC MUST BE MAINTAINED.

DEPTH OF REMOVAL AND REPLACEMENT SHALL BE 6" BELOW THE SURFACE OF ADJACENT CONCRETE PAVEMENT. SHOULDERS SHALL BE REBUILT PRIOR TO ANY LANE RESTRICTIONS.

TRAFFIC SHALL BE MAINTAINED AS PER STD. DWG. MT-95.30 FOR THIS WORK.

THE FOLLOWING ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM 301 BITUMINOUS AGGREGATE BASE, AC-20,  
AS PER PLAN 3900 CY

## TEMPORARY PAVEMENT MARKINGS

IN ADDITION TO THE REQUIREMENTS OF 614 WORK ZONE PAVEMENT MARKINGS (MT-99.10), AT THE END OF EACH DAY OF WORK, THE CONTRACTOR SHALL REPLACE (WITH TEMPORARY PAVEMENT MARKINGS) ALL LANE LINES, AND EDGE LINES THAT WERE REMOVED OR COVERED DURING PAVEMENT REMOVAL AND/OR PAVING OPERATIONS.

ITEM 614 TEMPORARY LANE LINE, CLASS I 12 MILES  
ITEM 614 TEMPORARY EDGE LINE, CLASS I 72 MILES  
ITEM 614 TEMPORARY STOP LINE, CLASS I 600 LIN.FT.  
ITEM 614 TEMPORARY CHANNELIZING LINE, CLASS I 27,424 LIN.FT.

THE FOLLOWING ADDITIONAL QUANTITIES MAY BE USED FOR THE MAINTENANCE OF TRAFFIC AS DIRECTED BY THE ENGINEER.

ITEM 614 TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C 2 MILES  
ITEM 614 TEMPORARY RAISED PAVEMENT MARKER 600 EACH

## CONTRACTOR'S EQUIPMENT--OPERATION AND STORAGE

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC. A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PARKED EITHER FIFTY (50) FEET FROM THE EDGE OF PAVEMENT OR SIX (6) FEET BEHIND GUARDRAIL WITH A MINIMUM OF 125 FEET OF GUARDRAIL PRECEDING THE EQUIPMENT. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED IN THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA.

## PORTABLE CONCRETE BARRIER

ESTIMATED QUANTITIES OF ITEM 622 PORTABLE CONCRETE BARRIER, 50" AND ITEM 622 PORTABLE CONCRETE BARRIER, 50", BRIDGE MOUNTED HAVE BEEN PROVIDED. THE BARRIER SHALL BE FURNISHED, INSTALLED, MAINTAINED AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. THE PORTABLE CONCRETE BARRIER SHALL BE USED TO CLOSE ONE LANE OF ROADWAY DURING BRIDGE OPERATIONS. THE PORTABLE CONCRETE BARRIER, BRIDGE MOUNTED, SHALL NOT BE PINNED TO THE DECK.

THE PORTABLE CONCRETE BARRIER, 50" SHALL BE USED ON THE BRIDGES LISTED BELOW.

MAH-680-0440 R/L  
MAH-680-0476 R/L  
MAH-680-0573 L

MAH-680-0632 R/L  
MAH-680-0687 R/L  
MAH-680-0693 R/L

THIS ITEM SHALL BE PAID FOR BY THE ACTUAL LINEAR FEET OF PORTABLE CONCRETE BARRIER INSTALLED AT A PARTICULAR LOCATION.

THE FOLLOWING ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM 622 PORTABLE CONCRETE BARRIER, 50" 8000 LIN.FT.

ITEM 622 PORTABLE CONCRETE BARRIER, 50", BRIDGE  
MOUNTED 6500 LIN.FT.

MAINTENANCE OF TRAFFIC

MAH-680-4.04





# MAINTENANCE OF TRAFFIC

PLAN NO.:

## DETOUR

THE BRIDGE WORK PROPOSED FOR MAH-680-0476R AND MAH-680-0693R WILL REQUIRE THE CLOSURE OF ADJACENT RAMPS REQUIRING DETOURS OF TRAFFIC.

THE CONTRACTOR SHALL ADVISE THE ODOT TRAFFIC ENGINEER EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. THE TRAFFIC ENGINEER SHALL THEN PROVIDE AND INSTALL ALL DEVICES NECESSARY TO DEFINE THE ROUTE OF THE DETOUR AND SHALL MAINTAIN THE SAME THROUGHOUT THE DETOUR LIMITATION DATES.

THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE SEVEN (7) DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE LIQUIDATED DAMAGES OF \$1500.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF 108.07 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE CONTRACTOR SHALL NOT CLOSE RAMP M (MARKET ST./US 62) WHILE RAMP A (SOUTH AVE.) IS CLOSED.

## METHOD OF PAYMENT

PAYMENT FOR THE MAINTENANCE OF TRAFFIC ITEMS, UNLESS SPECIFIED SEPARATELY, SHALL BE AT THE LUMP SUM PRICE BID, FOR ITEM 614 MAINTAINING TRAFFIC, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT AND INCIDENTALS TO COMPLETE THE WORK AS IN THE PLANS.

ITEM 614 MAINTAINING TRAFFIC LUMP SUM

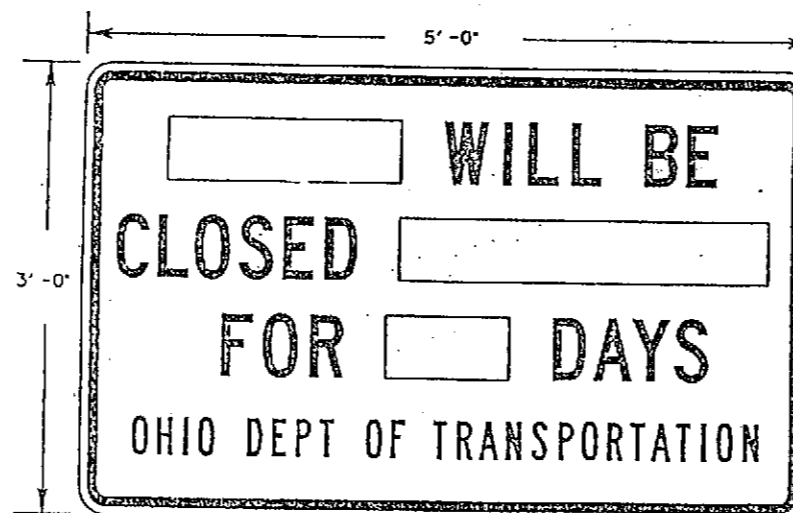
## SUBMITTAL OF MAINTENANCE OF TRAFFIC PLAN

THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE DISTRICT CONSTRUCTION ENGINEER 7 DAYS IN ADVANCE OF LONG-TERM LANE CLOSURES. THE INTENT OF THE ABOVE PROVISIONS SHALL BE FOLLOWED WITH NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC. NO PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED IN WRITING BY THE ODOT CONSTRUCTION ENGINEER.

## NOTICE OF CLOSURE SIGNS

THESE SIGNS SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD OR RAMP CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC ON 2 NO. 3 POSTS. THEY SHALL BE LOCATED IN THE FIELD SO AS NOT TO INTERFERE WITH ANY PERMANENT SIGNS. ON ROADWAYS THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE. ON RAMPS THE SIGNS MAY BE ERECTED ANYWHERE ALONG IT, AS LONG AS IT IS VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC AND SHALL INCLUDING FURNISHING, ERECTING, MAINTAINING, AND REMOVING THE SIGNS AT THE LOCATIONS REQUIRED IN THE PLANS.



OC-60B

STANDARD DRAWINGS	
CB-5	11-10-83
CB-6	5-1-79
CB-8	11-10-83
I-3A&B	4-1-80
MH-1	12-18-84
MH-2	6-12-75
MH-3	12-18-84
MH-4	2-21-92
MH-5	6-12-75
HW-1	6-1-65
EXJ-4-87	1-20-94
FB-1-82	5-10-82
RB-1-55	2-2-59
SD-1-69	6-12-69
MT-95.30	10-10-88
MT-95.31	10-10-88
MT-95.32	8-25-89
MT-95.40	10-01-92
MT-97.10	4-29-88
MT-98.12	6-24-93
MT-98.13	6-24-93
MT-98.14	6-24-93
MT-98.15	6-24-93
MT-99.10	11-14-86
MT-99.20	4-29-88
MT-101.60	7-1-92
MT-102.10	8-25-89
MT-102.20	8-25-89
MT-105.10	7-1-92
MT-105.11	7-1-92
TC-7.65	3-1-79
TC-35.10	8-29-84
TC-41.20	3-26-79

STANDARD DRAWINGS	
TC-42.20	3-26-79
TC-52.10	4-3-79
TC-52.20	4-3-79
TC-65.10	2-1-90
TC-65.11	2-1-90
TC-65.12	2-1-90
TC-65.13	2-1-90
TC-72.20	2-26-82
MC-11	8-1-78
TC-41.10	8-29-84

SUPPLEMENTAL SPECIFICATIONS	
SS-802	3-23-95
SS-850	7-17-95
SS-933	7-17-95
SS-924	6-14-95
SS-943	6-14-95
SS944	3-23-95
SS-820	6-14-95
SS-803	3-23-95
SS-903	7-17-95

MAINTENANCE OF TRAFFIC

MAH-680-4.04

# MAINTENANCE OF TRAFFIC

PLAN NO.:

MAINTENANCE OF TRAFFIC  
MAH-680-4.04  
109

## BARRIER REFLECTORS

BARRIER REFLECTORS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS AND THEIR INSTALLATION SHALL CONFORM TO THE PROPOSAL NOTE, AND SHALL BE SPACED 12.5' BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR THE APPROPRIATE 614 ITEMS AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK.

THE FOLLOWING ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM 614 BARRIER REFLECTOR, TYPE B 1160 EACH

## WORK ZONE MARKING SIGNS

THE MAINTAIN PRESENT LANE, OE-53 AND UNEVEN PAVEMENT, OW-171, OW-171P SIGNS SHALL BE DUAL MOUNTED AFTER EVERY RAMP ENTRANCE, EVERY HALF (1/2) MILE IN THE WORK AREA, AND 750 FT. IN ADVANCE OF THE WORK AREA. WHEN NOT APPROPRIATE THE SIGNS SHALL BE COVERED OR REMOVED. THESE SIGNS SHALL BE LOCATED IN THE FIELD SO AS NOT TO INTERFERE WITH ANY PERMANENT SIGNS.

THIS DOES NOT PRECLUDE THE USE OF OTHER SIGNS AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER THE LUMP SUM 614 MAINTAINING TRAFFIC ITEM.

PAYMENT FOR THIS WORK SHALL BE MADE AT THE BID PRICE PER EACH ITEM 614 WORK ZONE MARKING SIGN, AND SHALL INCLUDE ALL NECESSARY HARDWARE AND SUPPORTS TO ERECT, MAINTAIN, COVERING AND REMOVAL OF THE SIGNS.

THE FOLLOWING ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM 614 WORK ZONE MARKING SIGN 22 EACH

## COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL BE ADVISED THAT OTHER PROJECTS MAY BE ONGOING IN AREAS IMMEDIATELY ADJACENT TO AND WITHIN THE PROJECTS LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL SCHEDULE THEIR WORK SO AS TO CAUSE A MINIMUM OF DELAY OR CONFLICT WITH THE OTHER PROJECT OR PROJECTS. IN ACCORDANCE WITH 106.07 THE CONTRACTOR SHALL ARRANGE WITH THE OTHER CONTRACTOR'S A MUTUALLY ACCEPTABLE WORK SCHEDULE, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR WILL GIVE THE PROJECT ONE DAY ADVANCE NOTICE PRIOR TO COMMENCING ANY WORK THAT WILL AFFECT THE FLOW OF TRAFFIC. ANY CONFLICTS BETWEEN THE CONTRACTORS INVOLVING WORK SCHEDULES, WORK AREA OR COOPERATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS WITHIN THE PROJECT.

## ITEM 614-LAW ENFORCEMENT OFFICER (WITH PATROL CAR)

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER (AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS) SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

1. FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.
2. DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
3. DURING A TRAFFIC SIGNAL INSTALLATION.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

OHIO HIGHWAY PATROL  
660 EAST MAIN STREET  
COLUMBUS, OHIO 44215  
614-466-2300

IF AFTER CONTACTING THE OHIO HIGHWAY PATROL, IT IS DETERMINED THAT THEY CANNOT SUPPLY THE L.E.O., THEN AN AUTHORIZED MUNICIPAL OR COUNTY POLICE OFFICER EQUIPPED WITH A MARKED AND FLASHER-LIGHT EQUIPPED OFFICAL POLICE OR PATROL CAR SHALL BE PROVIDED.

LAW ENFORCEMENT OFFICERS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614-LAW ENFORCEMENT OFFICER (WITH PATROL CAR).

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 MAINTAINING TRAFFIC.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK.

ITEM 614-LAW ENFORCEMENT OFFICER  
WITH PATROL CAR 500 HOURS.

## TRAFFIC CONTROL INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL, OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC CONTROL DEVICES AT THE BEGINNING AND AT THE END OF EACH WORK DAY. THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE, SHALL ALSO BE AVAILABLE ON AN AROUND THE CLOCK BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUALS NAMES AND PHONE NUMBERS SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING. THE DESIGNATED INDIVIDUAL SHALL HAVE NO OTHER CONSTRUCTION RELATED DUTIES. THESE INDIVIDUALS SHALL BE EQUIPPED WITH CELLULAR PHONES IN THE VEHICLES. ADDITIONALLY, THE CONTRACTOR SHALL FURNISH 2 CELLULAR PHONES FOR ODOT PROJECT USE.

THE TRAFFIC CONTROL INSPECTOR, PHONES AND ALL RELATED COSTS SHALL BE PAID FOR UNDER THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

IN ADDITION TO ITEM 614 MAINTAINING TRAFFIC, CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SHALL APPLY:

THE RAMPS SHALL BE CLOSED DURING THE REMOVAL OF THE EXISTING TRUSS, THE ERECTION OF THE NEW TRUSS AND THE SIGN WORK. THE CLOSURE SHALL OCCUR ON A SUNDAY BETWEEN 5:00 A.M. TO 5:00 P.M. THE CONTRACTOR SHALL SUPPLY SUFFICIENT PERSONNEL TO INSURE THAT ALL WORK IS PERFORMED WITHIN THE SPECIFIED TIME LIMITATIONS. EXCLUDED FROM THE SUNDAY WORK IS THE FOUNDATION WORK AND THE SIGN SERVICE WORK TO THE DISCONNECT SWITCH. THIS WORK MAY BE PERFORMED DURING NORMAL WORKING HOURS EXCEPT DURING PEAK HOURS (6:00 A.M. - 9:00 A.M. AND 3:00 P.M. - 6:00 P.M.).

A LAW ENFORCEMENT OFFICER WITH PATROL CAR WILL BE USED DURING THE RAMP CLOSURE AND OPENING.

THE CONTRACTOR WILL NOT BE PERMITTED TO CROSS THE MEDIAN AT ANY POINT INCLUDING THE EXISTING EMERGENCY MEDIAN TURNAROUNDS ON OR ADJACENT TO THE LIMITS OF THIS PROJECT AT ANY TIME DURING THE PERFORMANCE OF THIS PROJECT.

# GENERAL NOTES

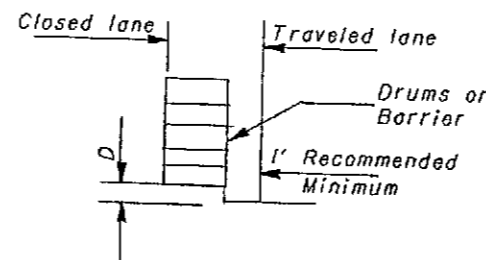
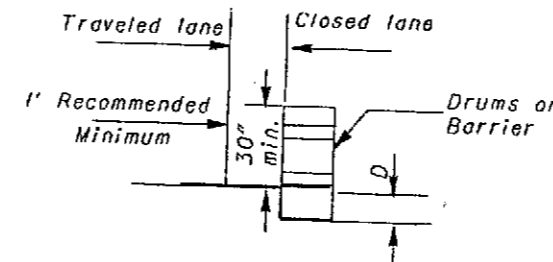
- It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid for item 614 - Maintaining Traffic, unless otherwise specified in the plans.
- While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.
- In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.
- The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
- Where concrete barrier is specified, it shall be in accordance with Standard Construction Drawing MC - 9.2 and item 622.
- When drums are specified for a drop-off condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.
- When OW-151 (Low Shoulder) signs or OW-171 (Uneven Lanes), OWP-171, and OC-53 (Maintain Present Lane) signs are required, they shall be placed 750' in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all intersecting roadways within the limits of the condition. When the drop-off condition extends more than one-half mile, additional signs shall be erected at intervals of a maximum of one mile.
- For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate any difference in elevation between pavements, a 8:1 min. slope treatment similar to the Optional Wedge Treatment shall be provided.
- Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10', drums may be placed on the opposite level from that of traffic provided the drop-off depth does not exceed 5" and approval is granted by the Project Engineer. A minimum height of 30" of drum shall be provided.
- Pavement Repairs (or similar work):
  - Lengths greater than 60 feet - utilize appropriate treatment from Condition 1.
  - Lengths of 60 feet or less - repairs shall be effected in accordance with 255.08. Drums may be used as a separator adjacent to the traveled lane.

# CONDITION I

1. These treatments are to be used for resurfacing, pavement planning excavation, etc. between or within traveled lanes.

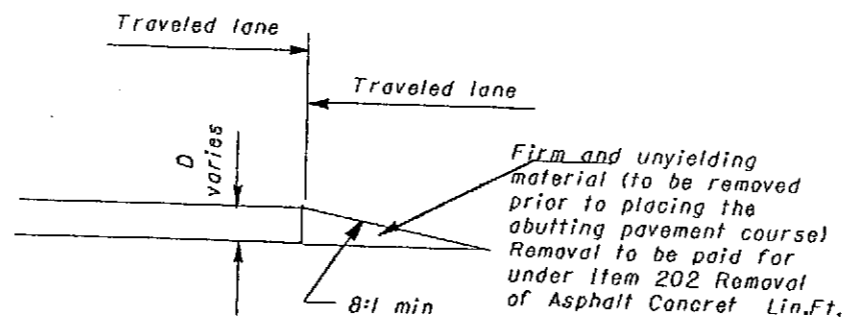
D (in)	Treatment
$\leq 1\frac{1}{2}$	Erect OW-171, OW-171P and OC-53
$> 1\frac{1}{2} - 3$	1. Lane closure utilizing drums* as shown below. or 2. Optional Wedge Treatment.
$> 3 - 5$	Lane closure utilizing drums as shown below.
$> 5$	Lane closure utilizing portable concrete barrier as specified in note 9.

\*Cones may be used for daytime only conditions.



## OPTIONAL WEDGE TREATMENT (MILLING OR RESURFACING)

- This treatment may be used when permitted for Condition 1 only.
- OW-171, OWP-171 and OC-53 signs required.



# CONDITION II

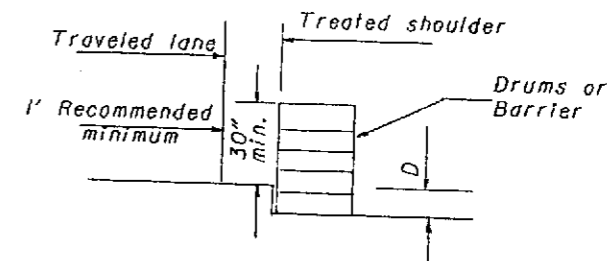
## DROPOFFS WITHIN GRADED SHOULDER AREA

1. The treatment indicated below are for use in conjunction with resurfacing, planning, or excavation within the graded shoulder area.

2. The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials, or concrete). For the purposes hereon, its maximum width shall be considered to be twelve (12) feet.

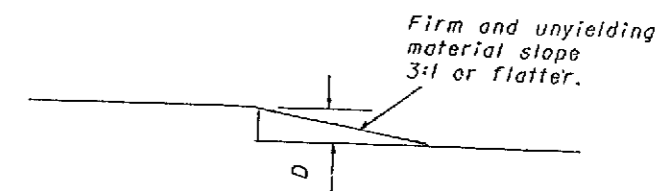
D (in)	Treatment
$\leq 1\frac{1}{2}$	1.) If edgelines are present, no treatment necessary or 2.) Erect OW-171, OW-171 P, and OE-53 signs
$> 1\frac{1}{2} - 5$	1) If min. lane widths* requirements can be met, maintain lanes utilizing drums as shown below. or 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums. or 3) Optional shoulder treatment

\*Minimum lane widths shall be 10' unless otherwise specified in the plans.



## OPTIONAL SHOULDER TREATMENT

- This treatment shall not be used within a bituminous shoulder where a hot longitudinal joint per 401.15 is required.
- OW-151 signs required.



HORIZONTAL SCALE IN FEET

DROPOFFS IN WORK ZONES - A - 3 or more lanes.

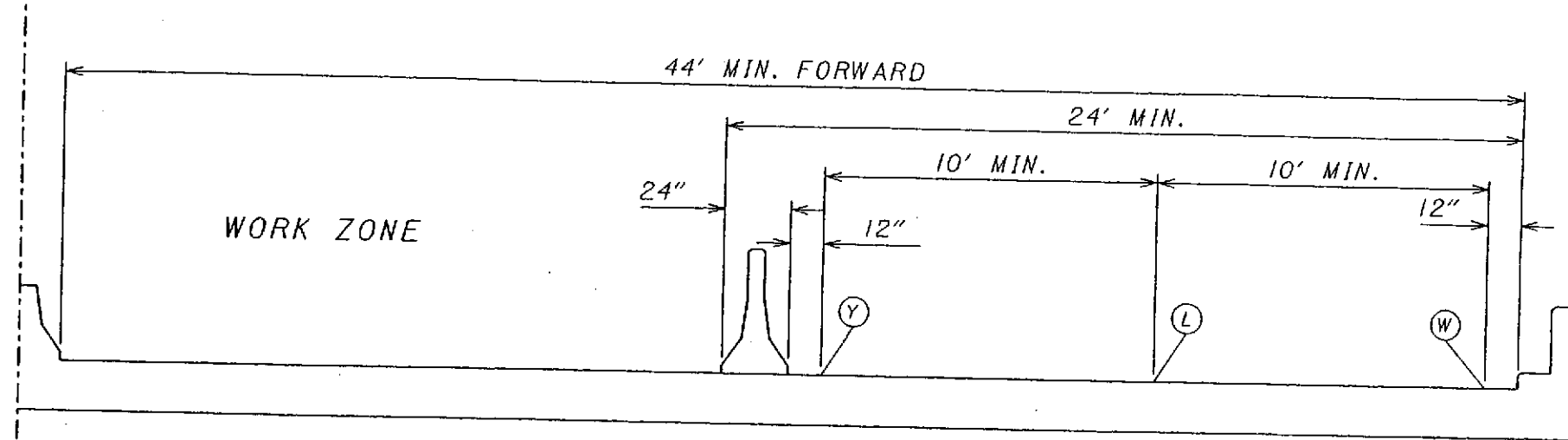
MAH-680-4.04

THE CONTRACTOR SHALL USE OC-49R AND OC-53 SIGNAGE AS PER STANDARD DRAWING MT-102.10, INCLUDED IN THE LUMP SUM BID FOR MAINTAINENCE OF TRAFFIC.

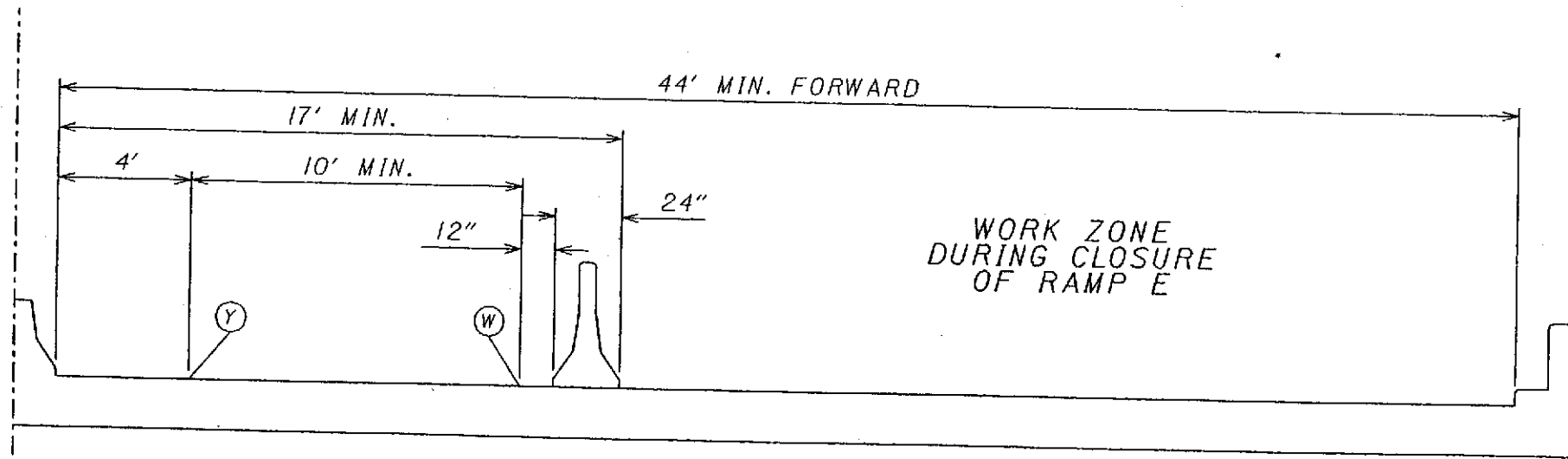
WIDTHS SHOWN ARE MINIMUM WIDTHS NECESSARY TO MAINTAIN TRAFFIC. THE CONTRACTOR'S WORK ZONE SHALL NOT ENCROACH UPON THESE MINIMUMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANNING HIS OPERATIONS TO MEET THE TIME RESTRICTIONS FOR RAMP CLOSURES DISCUSSED IN THE MAINTENANCE OF TRAFFIC NOTES.

PLAN NO.:

DRAWN BY  
BMB 2/2/95  
CHECKED



BRIDGE MAH-680-0476 SB OVER MILL CREEK



BRIDGE MAH-680-0476 SB OVER MILL CREEK

- Y TEMPORARY YELLOW EDGE LINE
- L TEMPORARY LANE LINE
- W TEMPORARY WHITE EDGE LINE

MAINTENANCE OF TRAFFIC: 0476 R

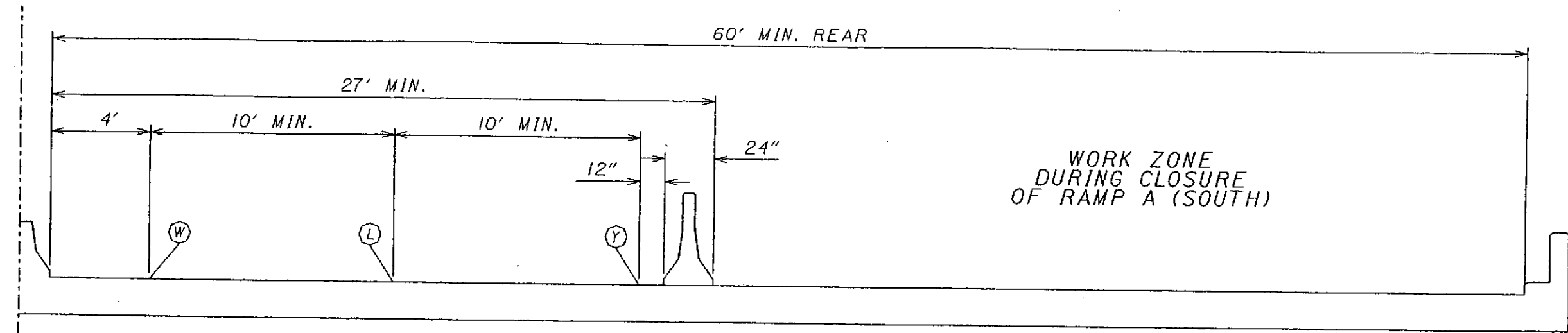
MAH-680-4.04



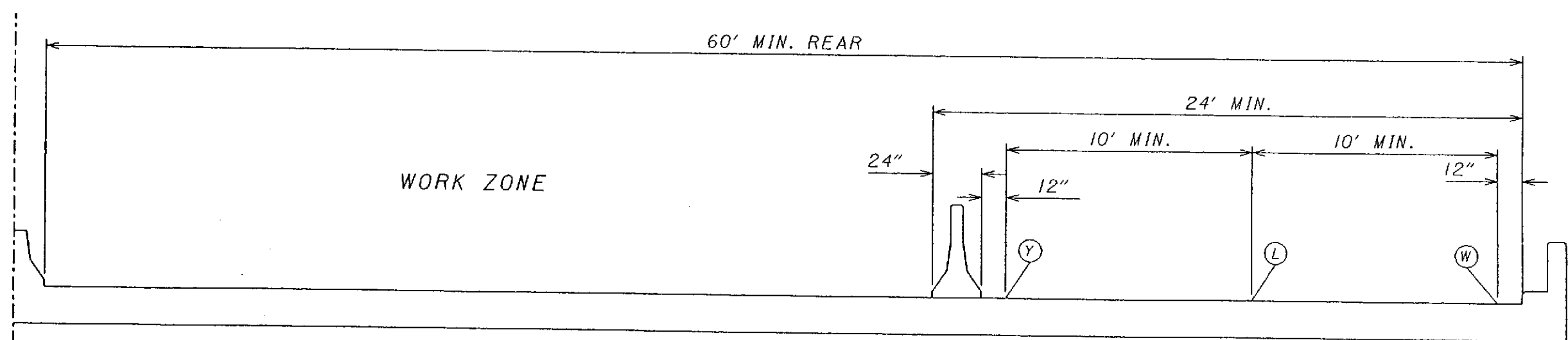
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PLAN NO.:

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BRIDGE MAH-680-0693 SB



BRIDGE MAH-680-0693 SB

- Y TEMPORARY YELLOW EDGE LINE
- L TEMPORARY LANE LINE
- W TEMPORARY WHITE EDGE LINE

DATE  
BMB 2/2/95  
CHECKED

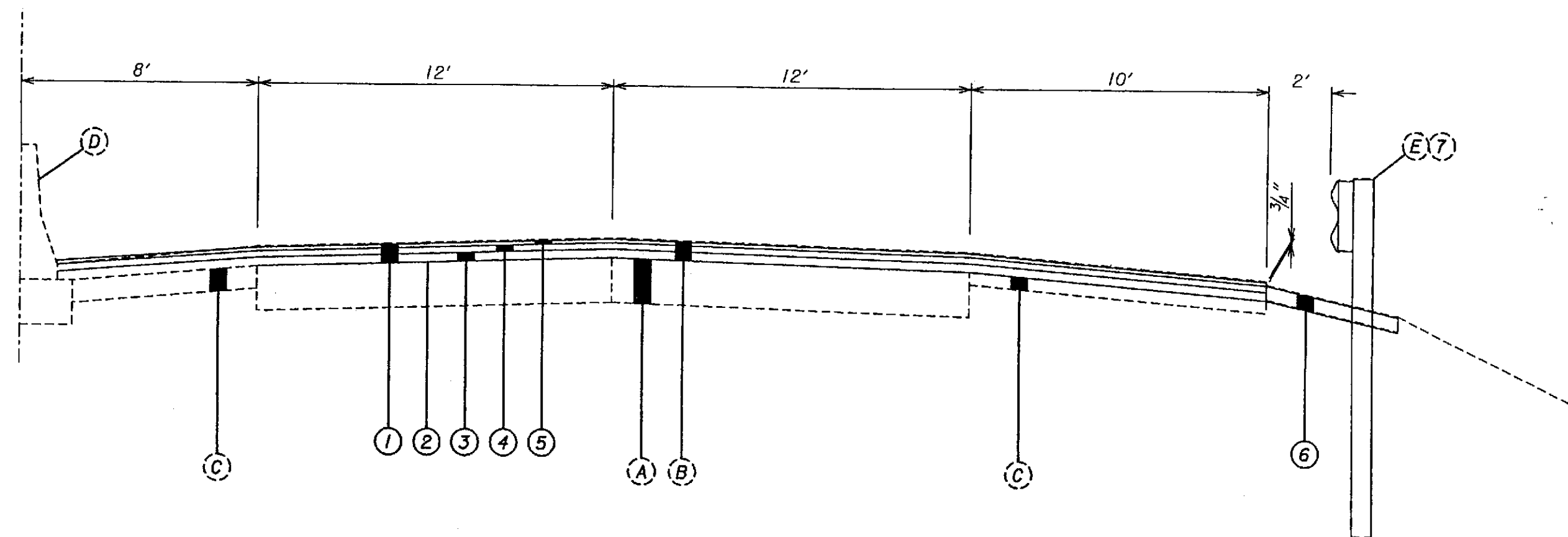
MAINTENANCE OF TRAFFIC: 0693 R

MAH-680-4.04

12/10

TYPICAL SECTION  
 HALF-SECTION (SYMMETRICAL ABOUT CENTERLINE)  
 SLM 4.04 TO 4.14  
 SLM 4.40 TO 6.59

Q EXISTING AND PROPOSED ROADWAY



PROPOSED

EXISTING

- ① 254 4" PAVEMENT PLANING, BITUMINOUS (4" TYPICAL)
- ② 407 TACK COAT
- ③ 446 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
- ④ 446 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
- ⑤ SPEC 3/4" RUBBERIZED OPEN-GRADED ASPHALT FRICTION COURSE
- ⑥ 203 LINEAR GRADING, VARIOUS METHODS
- ⑦ 606 GUARDRAIL, TYPE 5

- Ⓐ EXISTING 10" REINFORCED CONCRETE BASE
- Ⓑ EXISTING 4" ASPHALT CONCRETE OVERLAY
- Ⓒ EXISTING 3" WATER-PROOFED AGGREGATE BASE
- Ⓓ EXISTING 32" CONCRETE BARRIER
- Ⓔ EXISTING GUARDRAIL

TYPICAL SECTION A

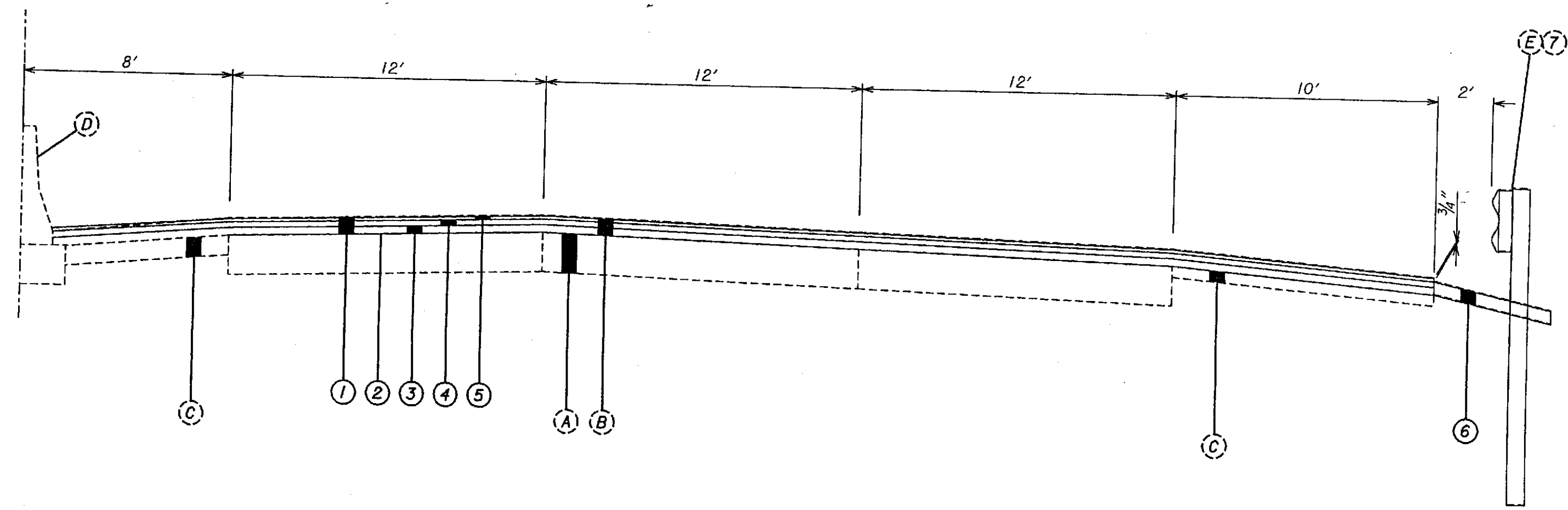
MAH-680-4.04

PLAN NO.:

DATE  
BMB 1/18/95  
CHECKED

TYPICAL SECTION  
 HALF-SECTION (SYMMETRICAL ABOUT CENTERLINE)  
 SLM 4.14 TO 4.40  
 SLM 6.59 TO 6.98

Q EXISTING AND PROPOSED ROADWAY



TYPICAL SECTION B

PROPOSED

- ① 254 4" PAVEMENT PLANING, BITUMINOUS (4" TYPICAL)
- ② 407 TACK COAT
- ③ 446 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
- ④ 446 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
- ⑤ SPEC 3/4" RUBBERIZED OPEN-GRADED ASPHALT FRICTION COURSE
- ⑥ 203 LINEAR GRADING, VARIOUS METHODS
- ⑦ 606 GUARDRAIL, TYPE 5

EXISTING

- Ⓐ EXISTING 10" REINFORCED CONCRETE BASE
- Ⓑ EXISTING 4" ASPHALT CONCRETE OVERLAY
- Ⓒ EXISTING BITUMINOUS SHOULDER
- Ⓓ EXISTING 32" CONCRETE BARRIER
- Ⓔ EXISTING GUARDRAIL

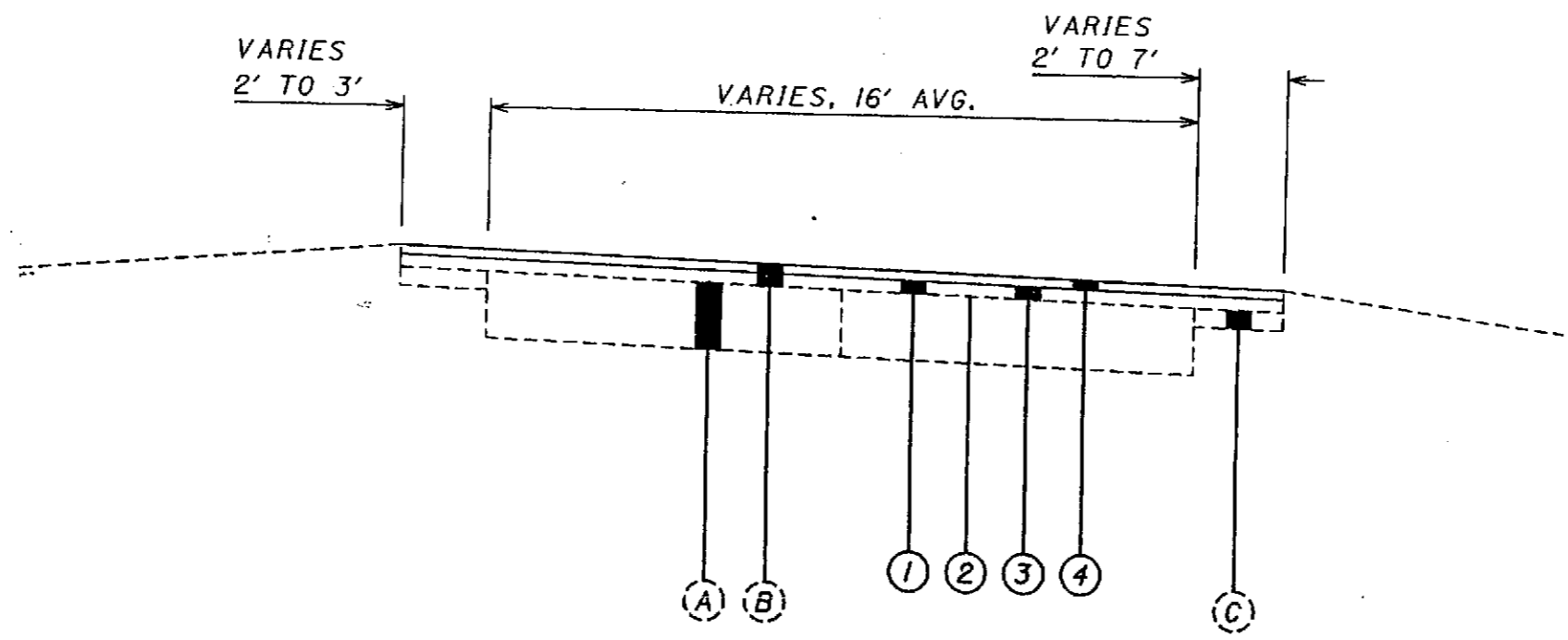
MAH-680-4.04



PLAN NO.:

DATE  
BMB 1/18/95  
CHECKED

### RAMP TYPICALS



#### PROPOSED

#### EXISTING

- ① 254 3" PAVEMENT PLANING, BITUMINOUS (3" AND UNDER)
- ② 407 TACK COAT
- ③ 446 1<sup>3</sup>/<sub>4</sub>" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
- ④ 446 1<sup>1</sup>/<sub>4</sub>" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20

- (A) EXISTING 9" REINFORCED CONCRETE BASE
- (B) EXISTING 3" ASPHALT CONCRETE OVERLAY
- (C) EXISTING BITUMINOUS SHOULDER

TYPICAL SECTION C

MAH-680-4.04



**ITEM 203 LINEAR GRADING METHOD 3A**

THIS WORK SHALL CONSIST OF GRADING THE EXISTING OUTSIDE AND INSIDE SHOULDER BETWEEN THE PAVED SHOULDER AND BREAK POINT OF THE SHOULDER IN AREAS WHERE PAVING UNDER GUARD RAIL EXISTS, AND IT SHALL ALSO CONSIST OF REMOVING THE EXISTING PAVING UNDER THE GUARD RAIL AND RESHAPING THE AREA TO PROVIDE A SUITABLE COMPACTED EMBANKMENT FOR THE 2.00" THICK COURSE OF ITEM 446 AS SHOWN IN THE DETAIL. THIS EXISTING PAVING SHALL BE REMOVED IN SUCH A MANNER AS TO LEAVE A STRAIGHT VERTICAL EDGE AND NOT DAMAGE THE PAVED SHOULDER. ANY DAMAGE TO THE PAVED SHOULDER SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER. THE EXISTING PAVING SHALL BE REDUCED TO A MAXIMUM OF 1 1/2" INCHES BY MILLING OR OTHER SUITABLE METHODS, AND INCORPORATE INTO THE EMBANKMENT. ITEM 203 EMBANKMENT AS PER PLAN HAS BEEN PROVIDED TO BE USED WHERE ADDITIONAL MATERIAL IS NECESSARY TO COMPLETE THE ABOVE DESCRIBED WORK. COMPACTION OF THE EMBANKMENT SHALL BE AS PER ITEM 203. PRIOR TO PLACING THE 2" COURSE OF ITEM 446 A SOIL STERILIZER, USING EITHER OF THE FOLLOWING BRANDS, SHALL BE APPLIED BETWEEN THE PAVED SHOULDER AND 1' BEYOND THE POST AT A RATE AND METHOD RECOMMENDED BY THE MANUFACTURER.

1. PRIMITOL 25E BY CIBA-GEIGY
2. KOVAR BY DIAMOND SHAMROCK OR APPROVED EQUAL

A PRIME COAT SHALL BE APPLIED AT THE RATE OF 0.5 GAL./S.Y. BEFORE APPLYING THE ASPHALT CONCRETE.  
AREAS DISTURBED BEYOND THE 446 LIMIT SHALL BE SEEDED AND MULCHED AS PER 659. THE METHOD OF MEASUREMENT SHALL BE CONSIDERED AS ONE STATION EQUAL TO 100 LIN. FT. OF GUARD RAIL PAVED UNDER. PAYMENT SHALL INCLUDE ALL WORK AND MATERIALS REQUIRED, AS DESCRIBED ABOVE, EXCEPT FOR ITEM 448 ASPHALT CONCRETE IN THE UNIT BID PRICE FOR ITEM - 203 LINEAR GRADING METHOD 3A.

**ITEM 203 - BORROW, AS PER PLAN**

ITEM 203 - BORROW, AS PER PLAN SHALL MEET THE SPECIFICATIONS OF ITEM 203 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS EXCEPT THAT THE GRANULAR MATERIAL AS PER 203.02 SHALL BE EXCLUDED. THIS ITEM IS PROVIDED IN CASE WINDROWED MATERIAL IS NOT AVAILABLE NOR SUFFICIENT. MATERIAL MAY BE OBTAINED FROM WITHIN THE EXISTING R/W AS APPROVED BY THE ENGINEER.

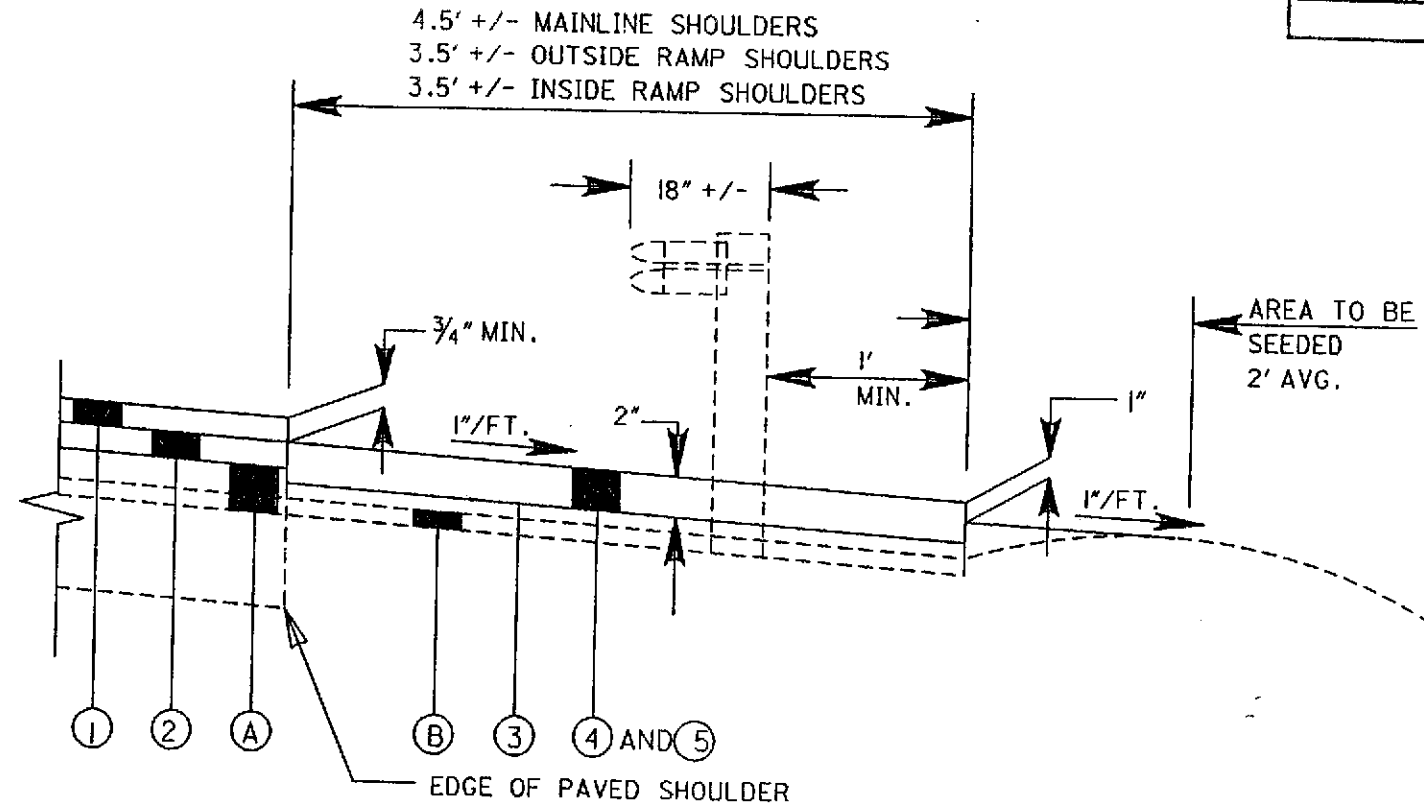
A QUANTITY OF 50 CU. YDS. OF ITEM 203 BORROW AS PER PLAN HAS BEEN PROVIDED BELOW TO BE USED AS DIRECTED BY THE ENGINEER, FOR LINEAR GRADING METHOD 3A.

**ITEM 659 SEEDING AND MULCHING**

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED TO RESTORE VEGETATIVE GROWTH TO THE AREAS DISTURBED BY THE ITEM 203 LINEAR GRADING, METHOD D. ALL AREAS SHALL BE SEEDED WITH THE MIXTURE REQUIRED FOR URBAN AREAS. THE CONTRACTOR HAS THE OPTION OF USING SS-943 IN LIEU OF 659.06 MATERIAL.

**ESTIMATED QUANTITIES**

ITEM	UNIT	DESCRIPTION	PART I
203	CU.YD	BORROW, AS PER PLAN	50 C.Y.
446	CU.YD.	ASPHALT CONCRETE, SURFACE COURSE, TYPE I, AC-20	530 C.Y.
659	SQ.YD.	SEEDING AND MULCHING	4425 S.Y.
659	TONS	COMMERCIAL FERTILIZER	0.40 TON
659	TONS	AGRICULTURAL LIMING	2.00 TON



- ① SPECIAL 3/4" RUBBERIZED OPEN GRADED ASPHALT CONCRETE FRICTION COURSE
- ② 446 ASPHALT CONCRETE, AC-20
- ③ 408 BITUMINOUS PRIME COAT
- ④ 203 LINEAR GRADING, METHOD 3A
- ⑤ 203 BORROW, AS PER PLAN (IF REQUIRED, SEE NOTE THIS SHEET)
- (A) EXISTING ASPHALT CONCRETE COURSES
- (B) EXISTING PAVING UNDER GUARDRAIL

PART	ROUTE	BOUND	STATIONS
I	IR 680	SOUTH	94
I	IR 680	NORTH	105
TOTAL TO GENERAL SUMMARY			199

PLAN NO. CALCULATED CHECKED

LINEAR GRADING, METHOD 3A

MAH-680-4.04

**ITEM 203 LINEAR GRADING METHOD D**

UPON COMPLETION OF THE PAVING OPERATION, OR NO LONGER THAN 48 HOURS IN AREAS OF LOW BERM EXCEEDING 2" FROM PLAN TYPICAL, THE CONTRACTOR SHALL PLACE ITEM 617 COMPACTED AGGREGATE ADJACENT TO THE PAVED BERM. THE REMAINING SHOULDER WIDTH BEYOND THE PAVED SHOULDER, SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE INTO THE DITCH AND SHALL BE PERFORMED ONLY IN THE AREAS NECESSARY. RE-GRADING SHALL BE ACCOMPLISHED BY THE REMOVAL OF, OR ADDITION OF MATERIAL BETWEEN THE PAVED SHOULDER AND THE DITCH LINE, GRADED USING A 1"/FT. SLOPE TO THE DITCH OR MEDIAN BREAK POINT. THE RE-GRADED AREAS SHALL BE COMPACTED TO A SUFFICIENT DENSITY TO PREVENT EROSION UNTIL SEEDING AND MULCHING AND PLACEMENT OF 617 COMPACTED AGGREGATE IS PERFORMED. ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE BERMS AND NOT ALLOWED TO ENTER THE DITCH LINE, AND SHALL BE DISPOSED OF OFF THE PROJECT BY THE CONTRACTOR.

THE METHOD OF MEASUREMENT, OF ITEM 203 LINEAR GRADING METHOD D, SHALL BE STATIONS, WITH ONE STATION EQUAL TO 100 LIN.FT.. STATIONS SHALL BE MEASURED ALONG EACH EDGE OF PAVEMENT.

ALL MATERIAL, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 203 LINEAR GRADING METHOD D, EXCLUDING ITEM 659 SEEDING AND MULCHING AND ITEM 617 COMPACTED AGGREGATE, WHICH SHALL BE PAID FOR SEPARATELY.

**ITEM 617 COMPACTED AGGREGATE, TYPE A, AS PER PLAN**

MATERIAL SHALL BE 90% LIMESTONE WITH NO SHALE EXCEEDING 5%. CRUSHED LIMESTONE SHALL MEET THE GRADATION AND OTHER MATERIAL REQUIREMENTS OF CMS 411.02. METHOD OF MEASUREMENT SHALL BE AS PER 411.04. PLACEMENT AND COMPACTION SHALL MEET REQUIREMENTS OF ITEM 617.

AN ADDITIONAL 250 CU.YDS. OF 617 COMPACTED AGGREGATE TYPE 'A' MATERIAL HAS BEEN INCLUDED IN THE QUANTITIES BELOW TO BE USED AS DIRECTED BY THE ENGINEER IN LIEU OF 203 BORROW, TO RE-GRADE ALREADY LOW SHOULDER AREAS ENCOUNTERED ALONG EXISTING BERMS AS SHOWN ON THE TYPICAL SECTION.

**ITEM 659 SEEDING AND MULCHING**

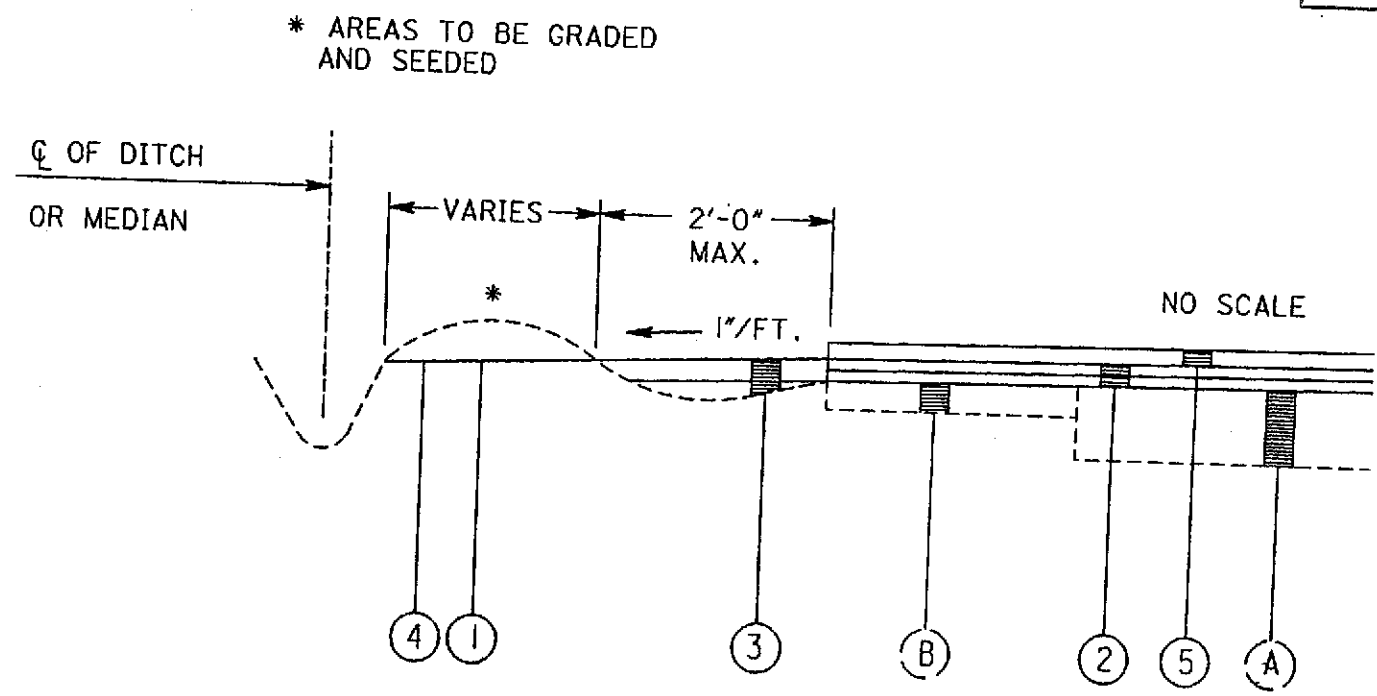
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED TO RESTORE VEGETATIVE GROWTH TO THE AREAS DISTURBED BY THE ITEM 203 LINEAR GRADING, METHOD D. ALL AREAS SHALL BE SEEDED WITH THE MIXTURE REQUIRED FOR URBAN AREAS. THE CONTRACTOR HAS THE OPTION OF USING SS-943 IN LIEU OF 659.06 MATERIAL.

**ESTIMATED QUANTITIES**

ITEM	UNIT	DESCRIPTION	PART	QTY
617	CU.YD.	COMPACTED AGGREGATE, TYPE A, AS PER PLAN	1	640 C.Y.
659	SQ.YD.	SEEDING AND MULCHING	1	14345 S.Y.
659	TONS	COMMERCIAL FERTILIZER	1	0.62 TON
659	TONS	AGRICULTURAL LIMING	1	3.10 TON

PLAN NO. \_\_\_\_\_

CALCULATED \_\_\_\_\_  
CHECKED \_\_\_\_\_



PART	ROUTE	BOUND	STATIONS
1	IR 680	SOUTH	190
1	IR 680	NORTH	120
TOTAL TO GENERAL SUMMARY			310

- ① 203 LINEAR GRADING, METHOD D
- ② VARIOUS PROPOSED OVERLAY
- ③ 617 2.00" AVG. COMPACTED AGGREGATE, AS PER PLAN
- ④ 659 SEEDING AND MULCHING
- ⑤ SPECIAL 0.75" RUBBERIZED OPEN GRADED ASPHALT
- Ⓐ FRICTION COURSE
- Ⓑ EXISTING PAVEMENT
- EXISTING SHOULDER

LINEAR GRADING, METHOD D

MAH-680-4.04

# ASPHALT CONCRETE

DATE 5/18/75  
CHECKED

ASPHALT CONCRETE, MAINLINE

MAH-680-4.04

PART	ROUTE	LOG POINT TO LOG POINT	TYPICAL	LENGTH		AVG. PAVEMENT WIDTH (LF)	PAVEMENT AREA (SY)	ITEM 254	PROPOSED PAVEMENT						
				(MI)	(LF)			PAVEMENT PLANING, BITUMINOUS (4" TYPICAL) (S.Y.)	ITEM 407 TACK COAT USING SS-924 @ 0.075 GAL./S.Y. (GALLON)	ITEM 446		SPECIAL			
										ASPHALT CONCRETE, TYPE 2, INTERMEDIATE COURSE	ASPHALT CONCRETE, TYPE 1, SURFACE COURSE	RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE			
								AVG. THICKNESS (IN)	VOLUME (CY)	AVG. THICKNESS (IN)	VOLUME (CY)	AVG. THICKNESS (IN)	VOLUME (CY)		
1	I-680	4.04 TO 4.14	A	0.10	528	81.5	4,781		1.75		1.25		0.75		
		4.14 TO 4.40	B	0.26	1373	105.5	16,095		1.75		1.25		0.75		
		4.40 TO 6.59	A	2.19	11563	81.5	104,709		1.75		1.25		0.75		
		6.59 TO 6.98	B	0.39	2059	105.5	24,138		1.75		1.25		0.75		
		ACC./DEC. LANES			11,638	14	18,104		1.75		1.25		0.75		
		EXTRA AREAS					8391		1.75		1.25		0.75		
		DEDUCT FOR BRIDGES					-16,533		1.75		1.25		0.75		
		SUBTOTAL:			2.98			159,685	159,685	11,976	7762	5547		3327	
		ADJUST FOR PAVEMENT TRANSITIONS (SEE PAVEMENT DETAILS)													
		DETAIL 2				900	50	5000		-1.75	-243				
DETAIL 3&5				2000	50	11,111		-1.75	-540						
DETAIL 7				460	120	6133		-1.75	-298	+0.75	+128				
PLANING ADJUSTMENT FOR VARIABLE 1" TO 4"							-46,000								
TOTALS, THIS SHEET:								113,685	11,976	6681	5675		3327		

# ASPHALT CONCRETE

PLAN NO.:

\* DOES NOT INCLUDE PAVEMENT THROUGH BRIDGE

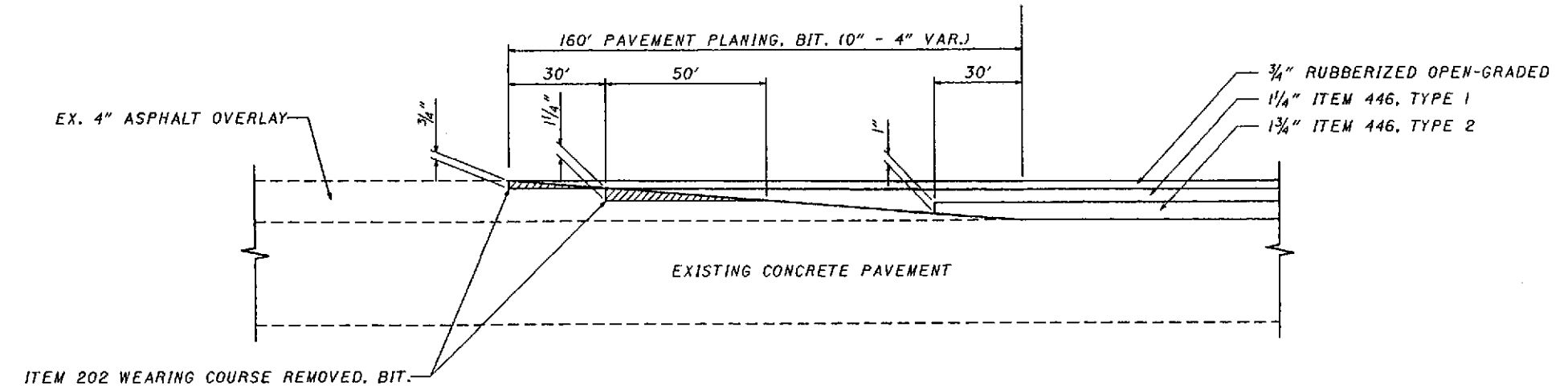
DATE: 5/18/95  
CHECKED:

PART	ROUTE	LOG POINT TO LOG POINT	TYPICAL	LENGTH		AVG. PAVEMENT WIDTH (LF)	PAVEMENT AREA (SY)	ITEM 254	PROPOSED PAVEMENT													
				PAVEMENT PLANING, BITUMINOUS (3" AND UNDER) S.Y.	ITEM 407			ITEM 446														
					TACK COAT USING SS-924 @ 0.075 GAL./S.Y. (GALLON)			ASPHALT CONCRETE, TYPE 2, INTERMEDIATE COURSE	ASPHALT CONCRETE, TYPE 1, SURFACE COURSE													
(MI)	(LF)																					
1	I-680	RAMPS:																				
		A (OAKWOOD)	C		700	23	1789			1.75		1.25										
		B	C		700	23	1789			1.75		1.25										
		A3	C		700	23	1789			1.75		1.25										
		B3	C		650	23	1661			1.75		1.25										
		C3	C		1400*	23	3578			1.75		1.25										
		D3	C		700*	23	1789			1.75		1.25										
		C	C		1650*	23	4217			1.75		1.25										
		D	C		1400	23	3578			1.75		1.25										
		E	C		800	23	2044			1.75		1.25										
		F	C		800	23	2044			1.75		1.25										
		G	C		400	23	1022			1.75		1.25										
		H	C		1400	23	3578			1.75		1.25										
		J	C		800	23	2044			1.75		1.25										
		K	C		1050	23	2683			1.75		1.25										
		L	C		550	23	1406			1.75		1.25										
		M	C		700	23	1789			1.75		1.25										
		N	C		950	23	2428			1.75		1.25										
		P	C		650	23	1661			1.75		1.25										
		A (SOUTH)	C		650	23	1661			1.75		1.25										
		TOTAL, RAMPS:			16,650		42550	42550	3191		2068		1477									
TOTALS, THIS SHEET:								42550	3191		2068		1477									

ASPHALT CONCRETE, RAMPS

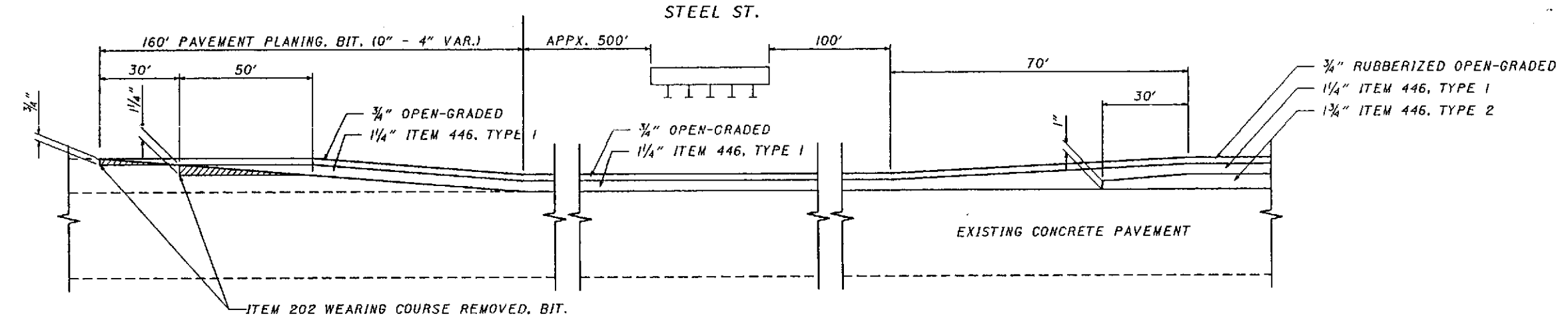
MAH-680-4.04

SLM 4.04



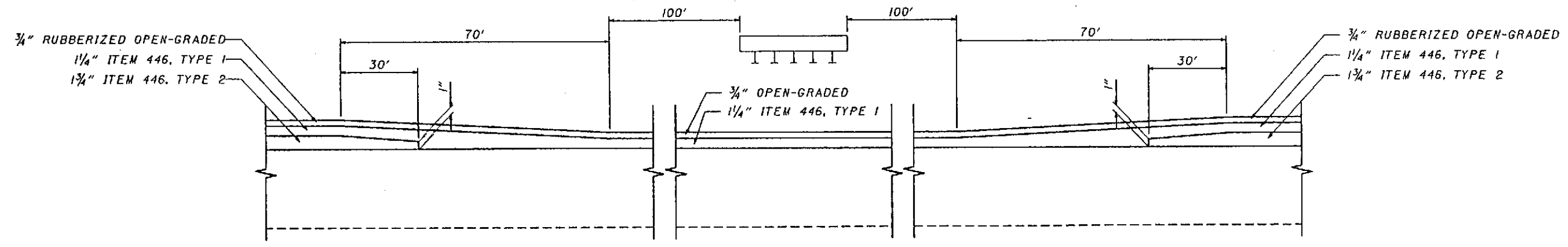
DETAIL 1, MAINLINE TRANSITION AT 4.04 SOUTHBOUND

SLM 4.04

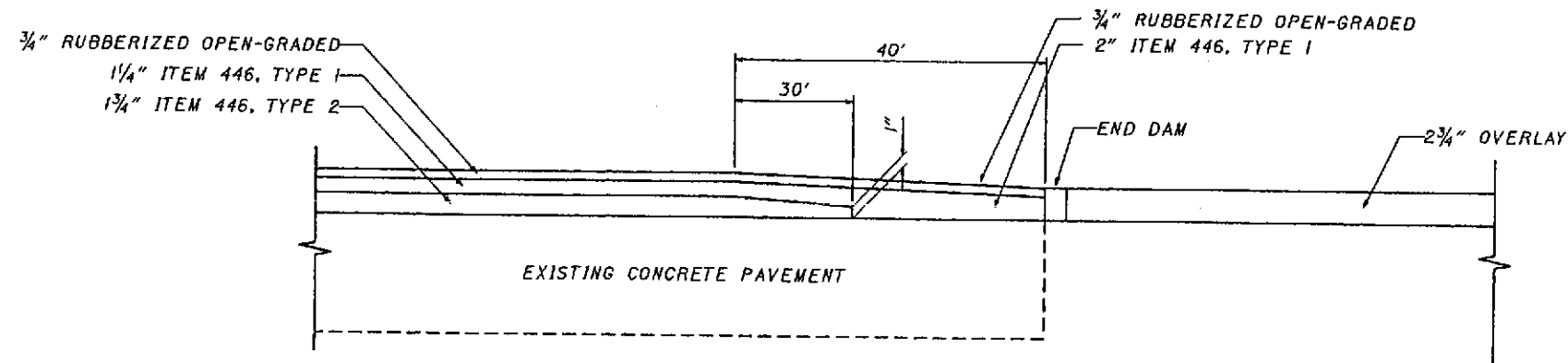


DETAIL 2, MAINLINE TRANSITION UNDER 0414 (STEEL ST.) AT 4.04 NORTHBOUND

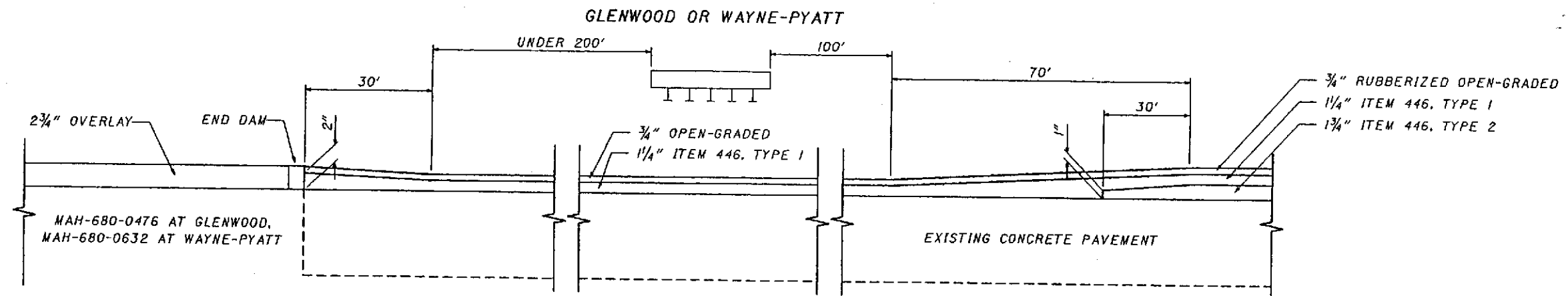
RAMP C OR MARKET ST.



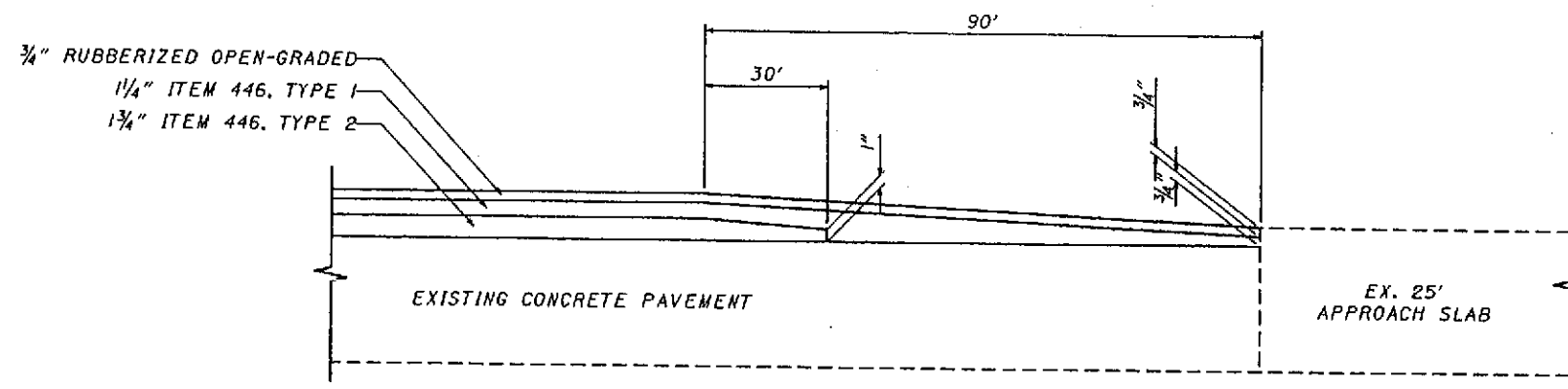
DETAIL 3, MAINLINE TRANSITION UNDER 0429 SB AND 0603 SB



DETAIL 4, TYPICAL TRANSITION AT MAINLINE DECKS



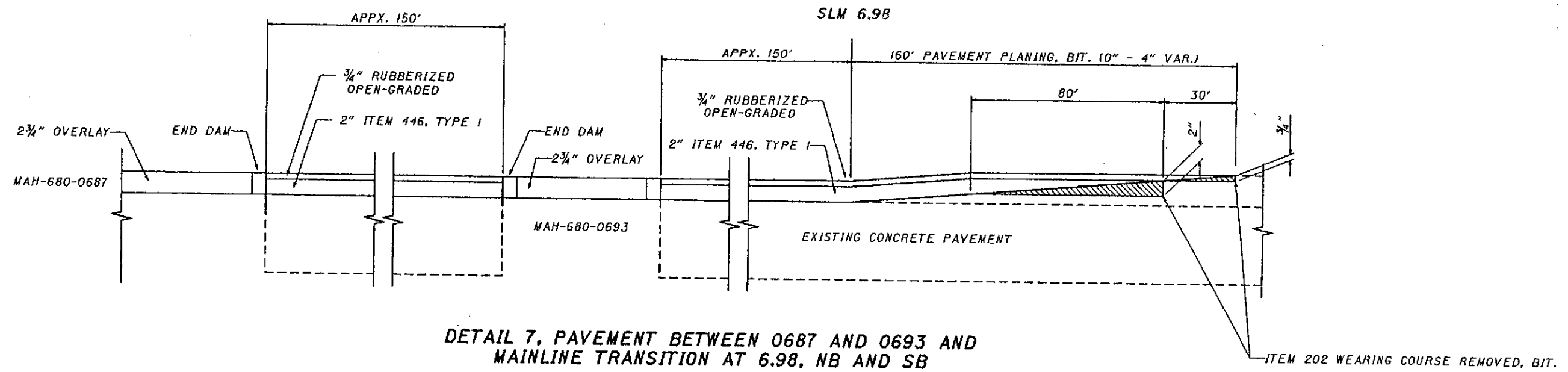
DETAIL 5, MAINLINE TRANSITION UNDER 0488 NB AND 0637 NB



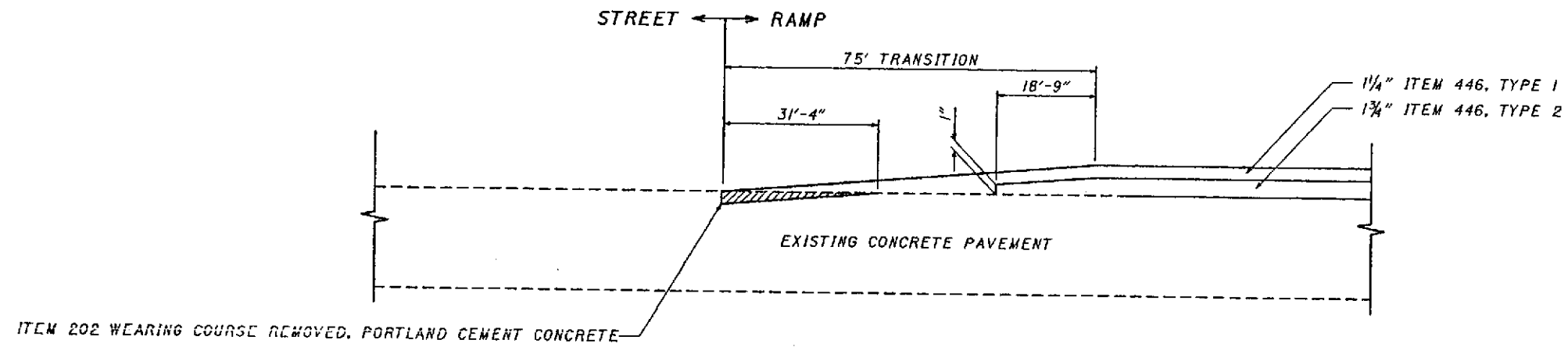
DETAIL 6, TRANSITION AT 0508 AND 0557

PAVEMENT DETAILS

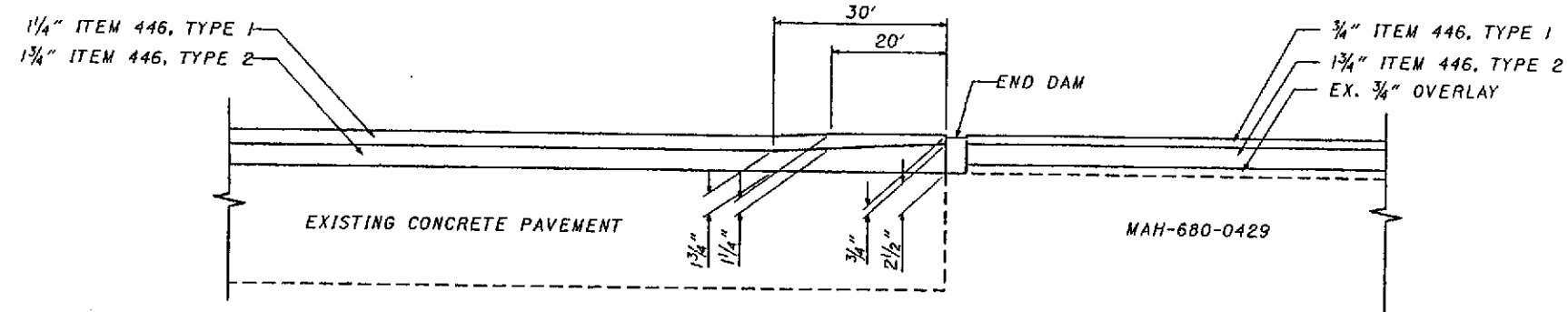
MAH-680-4.04



DETAIL 7, PAVEMENT BETWEEN 0687 AND 0693 AND MAINLINE TRANSITION AT 6.98, NB AND SB



DETAIL 8, BUTT JOINT AT TOP OF RAMPS



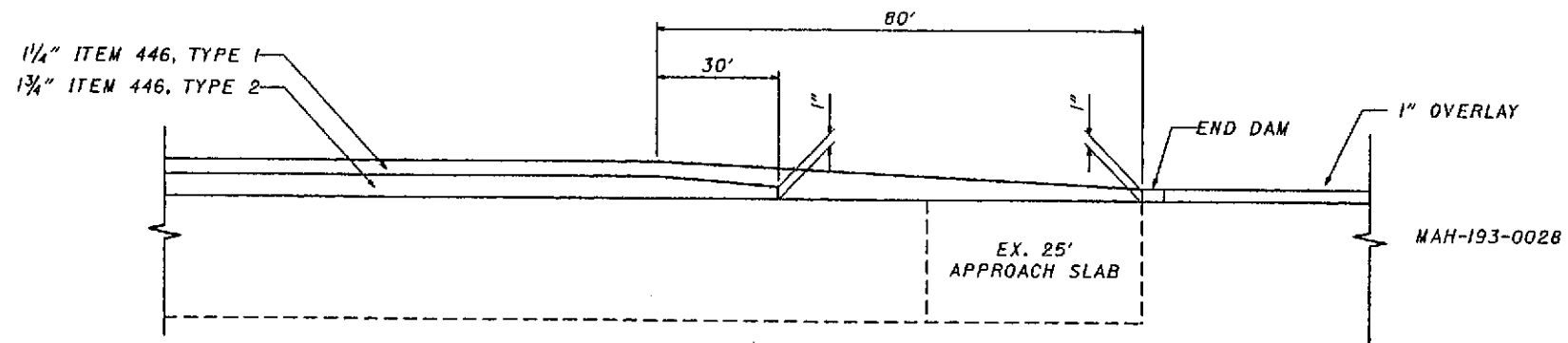
DETAIL 9, RAMP TRANSITION AT 0429 DECK

PAVEMENT DETAILS

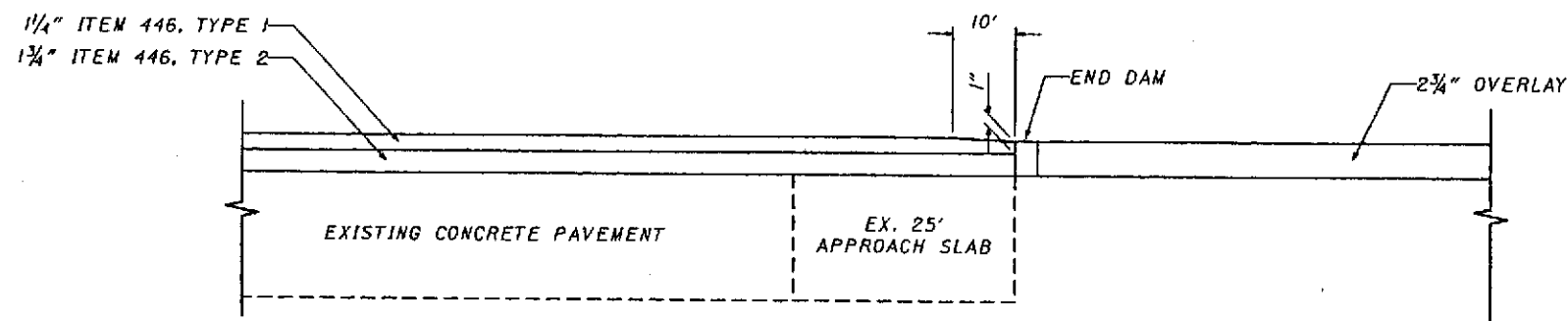
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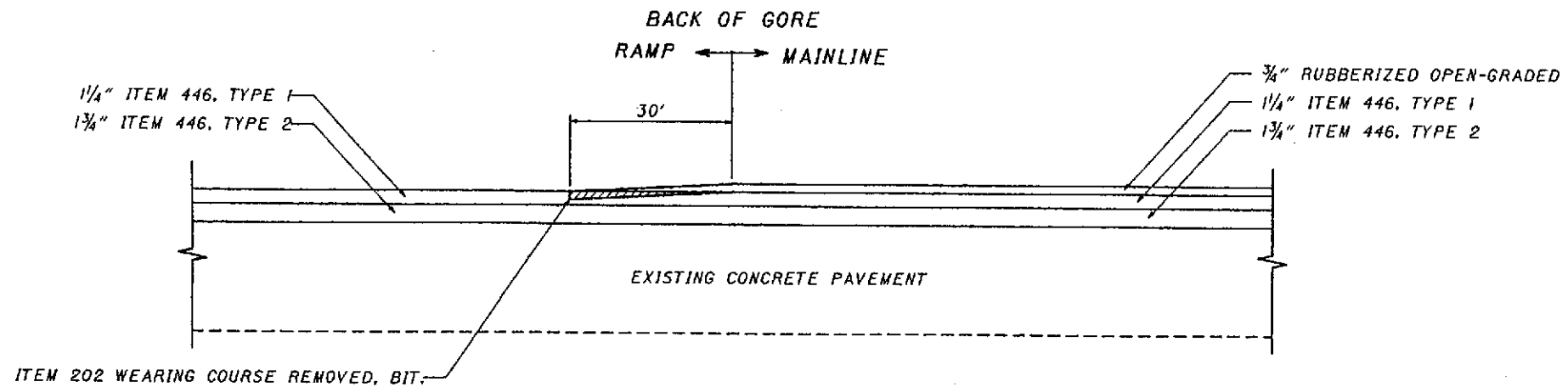
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DETAIL 10, TRANSITION TO MAH-193-0028  
(RAMPS A3, B3, C3, D3)



DETAIL 11, TRANSITION AT RAMP DECK 0440



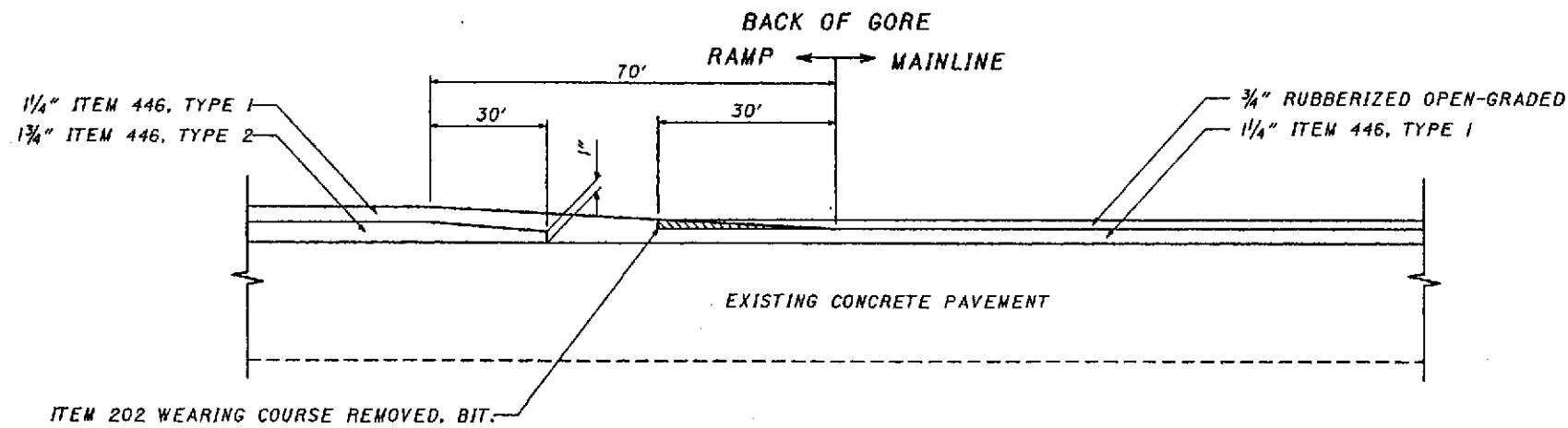
DETAIL 12, TYPICAL RAMP TRANSITION TO MAINLINE 3 3/4" OVERLAY

PAVEMENT DETAILS

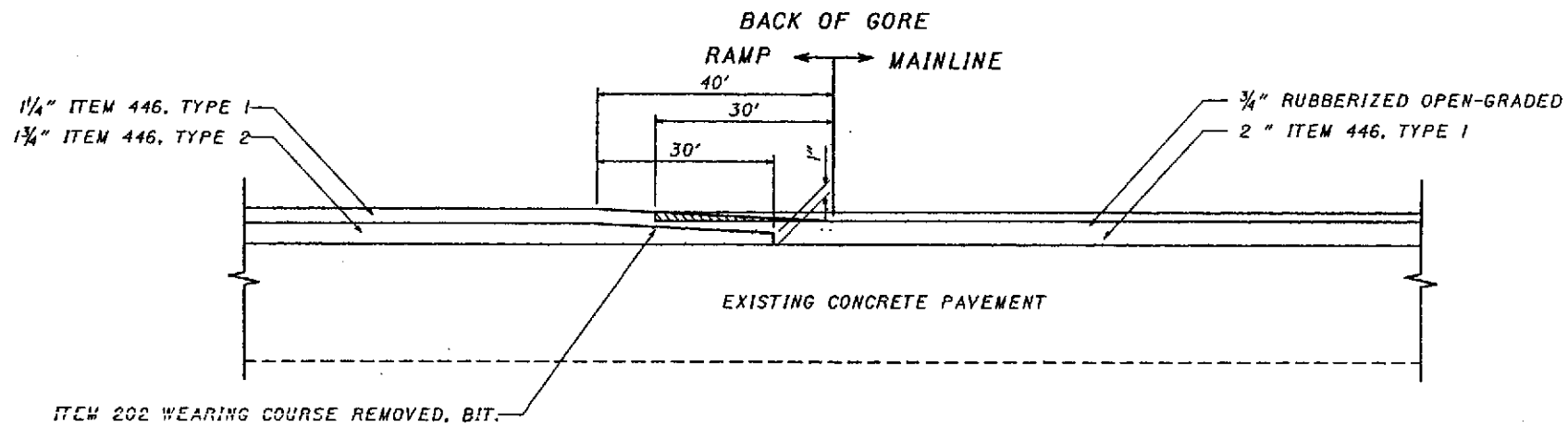
MAH-680-4.04

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DETAIL 13, RAMP TRANSITION TO MAINLINE 2" OVERLAY AT RAMPS B AND G



DETAIL 14, RAMP TRANSITION TO MAINLINE AT RAMP A (SOUTH AVENUE)

**DETAIL 15**

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED TO CONSTRUCT TRANSITIONS TO EXISTING OVERLAYS OF UNKNOWN THICKNESSES AT THE FOLLOWING LOCATIONS:

1. RAMP M TO U.S. 62 EB
2. I-680 NB TO U.S. 62 EB
3. U.S. 62 WB TO RAMP N (2 LOCATIONS)

THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED FOR THESE ITEMS OF WORK.

ITEM 202 WEARING COURSE REMOVED, BITUMINOUS 900 SY  
 ITEM 254 PAVEMENT PLANING, BITUMINOUS (0"-4" VARIABLE) 1200 SY

THESE QUANTITIES HAVE BEEN CARRIED TO THE PAVEMENT DETAIL SUB-SUMMARY SHEET 9/9. (26/110)

M6800440.dgn/5

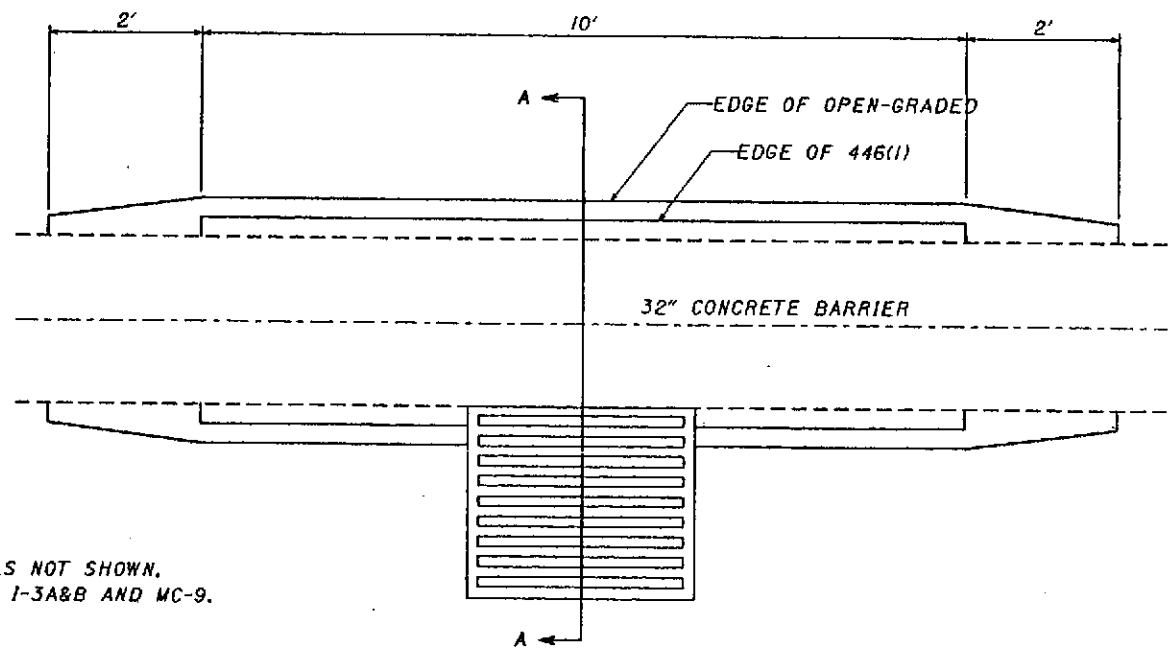
DATE  
 BMB  
 CHECKED

PAVEMENT DETAILS

MAH-680-4.04

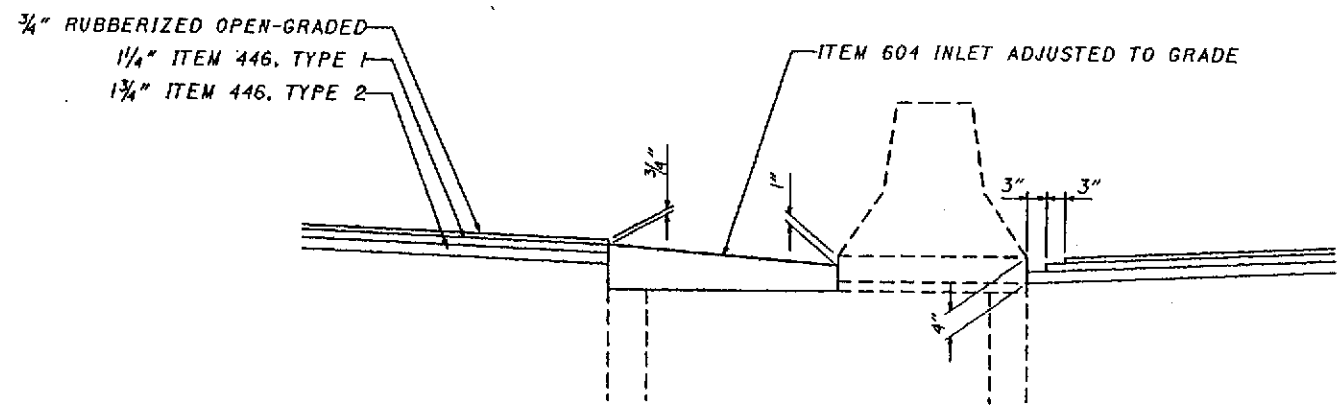
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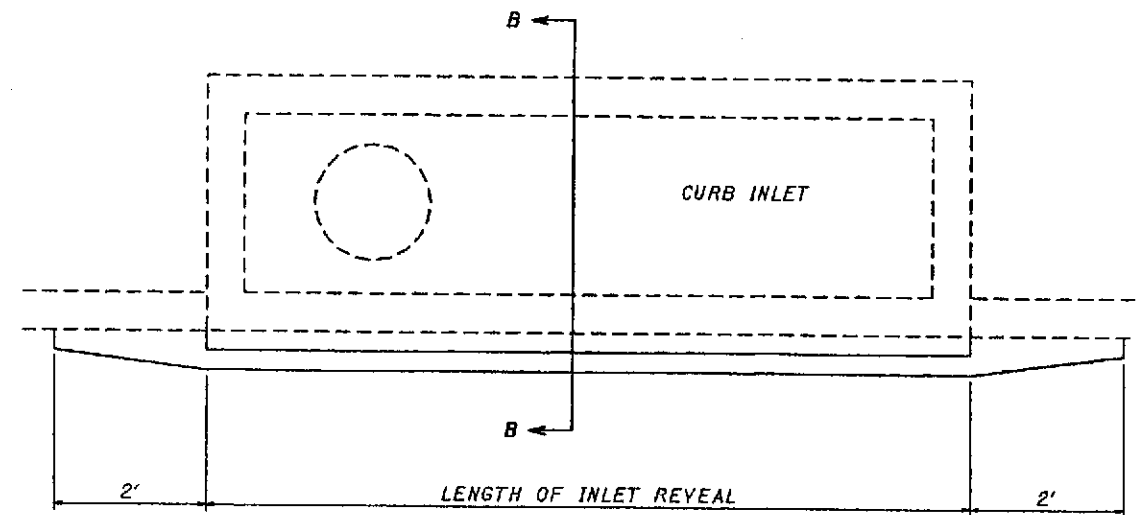


FOR DETAILS NOT SHOWN,  
SEE STD. DWGS. 1-3A&B AND MC-9.

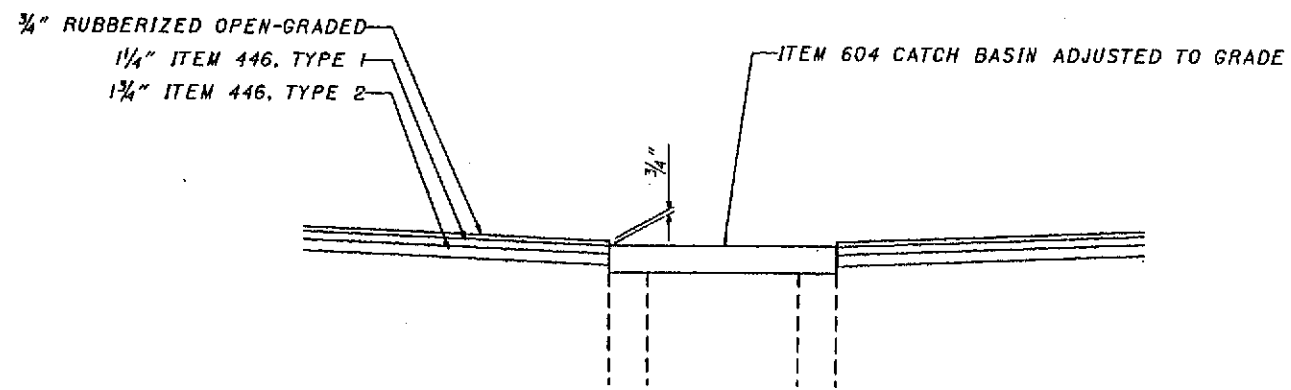
PLAN, TYPICAL MEDIAN INLET



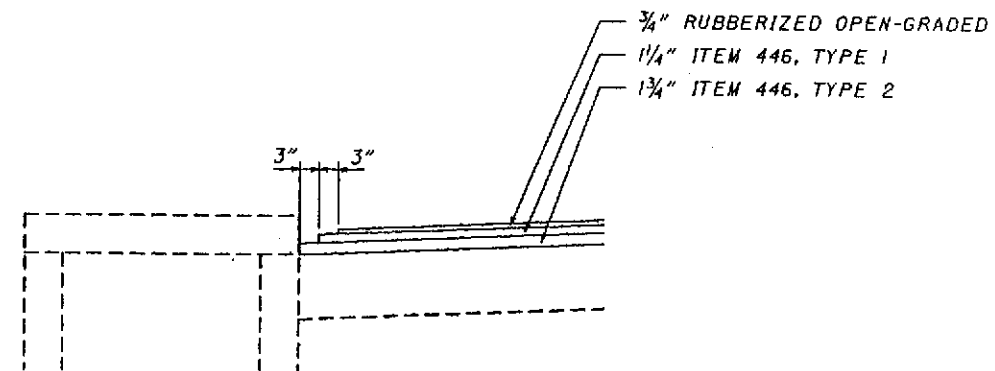
SECTION A-A



PLAN, TYPICAL CURB INLET



SECTION AT CATCH BASIN GRATES



SECTION B-B

M6800440.dgn/6

DATE  
BMB  
CHECKED

PAVEMENT DETAILS

MAH-680-4.04

8 9

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110

# PAVEMENT DETAIL SUB-SUMMARY

DATE  
BMB  
CHECKED

## I-680 NORTHBOUND, MAINLINE

LOCATION	DETAIL	LENGTH	WIDTH	AREA	ITEM 254	ITEM 202
					PAVEMENT PLANING, BITUMINOUS (0"-4" VARIABLE) SY	WEARING COURSE REMOVED, BITUMINOUS SY
		LF	LF	SY		
6.98 MAINLINE	7	110/160	53	648/942	942	648
0693 F/R	7					
0687 F	7					
UNDER 0637/0632 F	5					
0632 R	4					
0573 F/R	4					
0557 F/R	6					
0508 F/R	6					
UNDER 0488/0476 F	5					
0476 R	4					
UNDER 0414	2					
4.04 MAINLINE	2	80/160	41	364/729	729	364
SUBTOTALS:					1671	1012

## I-680 SOUTHBOUND, MAINLINE

LOCATION	DETAIL	LENGTH	WIDTH	AREA	ITEM 254	ITEM 202
					PAVEMENT PLANING, BITUMINOUS (0"-4" VARIABLE) SY	WEARING COURSE REMOVED, BITUMINOUS SY
		LF	LF	SY		
4.04 MAINLINE	1	80/160	41	364/729	729	364
UNDER 0429	3					
0476 REAR/FORWARD	4					
0508 R/F	6					
0557 R/F	6					
UNDER 0603	3					
0632 R/F	4					
0687 R	4					
0687 F	7					
0693 R/F	7					
6.98 MAINLINE	7	110/160	53	648/942	942	648
SUBTOTALS:					1671	1012

## I-680 NORTHBOUND, RAMPS

LOCATION	DETAIL	LENGTH	WIDTH	AREA	ITEM 202	
					WEARING COURSE REMOVED, PORTLAND CEMENT CONCRETE SY	WEARING COURSE REMOVED, BITUMINOUS SY
		LF	LF	SY		
TOP, RAMPS N, L, J, G, D, B	8	31.25	6@40=240	833	833	
TOP, RAMP A3 AND B3	10					
BOTTOM, RAMPS N, L, J, D, B3, A3	12	30	6@20=120	400		400
BOTTOM, G AND B	13	30	2@20=40	133		133
SUBTOTALS:					833	533

## I-680 SOUTHBOUND, RAMPS

LOCATION	DETAIL	LENGTH	WIDTH	AREA	ITEM 202	
					WEARING COURSE REMOVED, PORTLAND CEMENT CONCRETE SY	WEARING COURSE REMOVED, BITUMINOUS SY
		LF	LF	SY		
TOP, RAMPS A, C, E, F, H, K, M, P, A	8	31.25	9@40=360	1250	1250	
TOP, RAMP C3 AND D3	10					
RAMP C AT 0429	9					
RAMPS C3 AND D3 AT 0440 R/F	11					
BOTTOM, RAMPS A, C, C3, E, F, H, K, M, P	12	30	9@20=180	600		600
BOTTOM, A (SOUTH)	14	30	20	67		67
SUBTOTALS:					1250	667

### CALCULATIONS:

ITEM 202 WEARING COURSE REMOVED, PORTLAND CEMENT CONCRETE

$$833 + 1250 = 2083 \text{ SY}$$

ITEM 202 WEARING COURSE REMOVED, BITUMINOUS

$$900 \text{ (DETAIL 15)} + 1012 + 667 + 1012 + 533 = 4124 \text{ SY}$$

ITEM 254 PAVEMENT PLANING, BITUMINOUS (0"-4" VARIABLE)

$$1200 \text{ (DETAIL 15)} + 1671 + 1671 = 4542 \text{ SY}$$

ITEM 254 PAVEMENT PLANING, BITUMINOUS (VARIABLE 1" TO 4")

ESTIMATED FOR 100' APPROACHES TO BRIDGES, 300' UNDER OVERHEADS (MAINLINE ONLY)

AT-GRADE APPROACHES: (13 AT-GRADES)(2 R/F)(100' LONG)(45' AVG. WIDTH)(SY/9 SF) = 13,000 SY  
UNDER OVERHEADS: (11 OVERHEADS)(2 NB&SB)(300' LONG)(45' AVG. WIDTHS)(SY/9 SF) = 33,000 SY

$$\text{TOTAL: } 13,000 + 33,000 = 46,000 \text{ SY}$$

PAVEMENT DETAILS

MAH-680-4.04

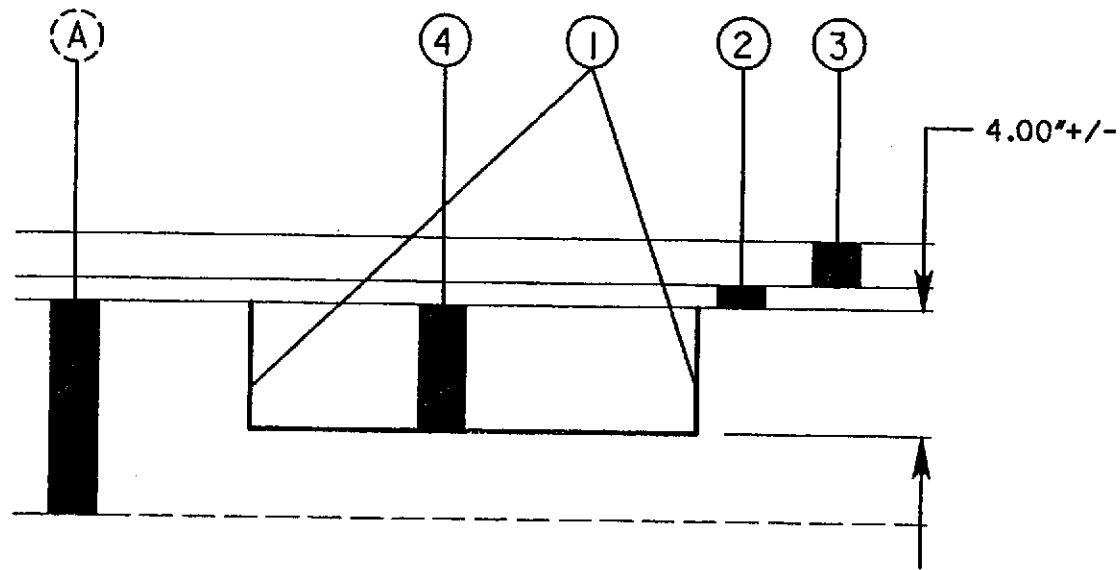
9 / 9

26 / 110

# ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR

PLAN NO. \_\_\_\_\_

CALCULATED  
CHECKED



## ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR:

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL CONSIST OF REPAIRING EXISTING LOCATIONS EXHIBITING EVIDENCE OF SURFACE FAILURE AND PLACING 4.00\*+/- OF 402 ASPHALT CONCRETE. THE ASPHALT CONCRETE SHALL BE COMPACTED WITH A TYPE II PNEUMATIC TIRE ROLLER AND A STEEL WHEEL ROLLER AS PER 401.11. THE CUBIC YARDAGE MEASURED SHALL BE PAID FOR AT THE UNIT PRICE BID PER CUBIC YARD, FOR ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

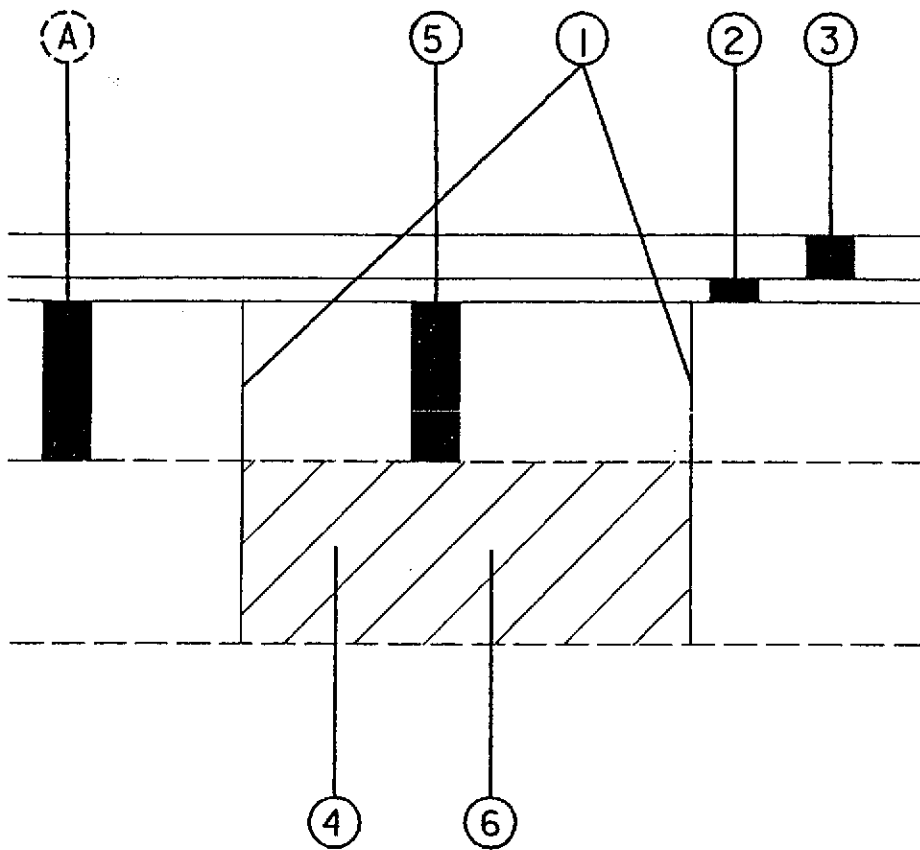
PART 1: 450 CU.YDS.

- ① 407 TACK COAT
- ② VARIES VARIOUS SURFACE TREATMENTS
- ③ VARIES VARIOUS TREATMENTS
- ④ 251 4.00\*+/- PARTIAL DEPTH REPAIR (MAINLINE OR BERM)

Ⓐ EXISTING PAVEMENT

# ITEM 253 PAVEMENT REPAIR

PLAN NO. \_\_\_\_\_



- ① 407 TACK COAT
- ② VARIES VARIOUS SURFACE TREATMENTS
- ③ VARIES VARIOUS SURFACE TREATMENTS
- ④ 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
- ⑤ 253 FULL DEPTH PAVEMENT REPAIR (10" AVG.)
- ⑥ 304 AGGREGATE BASE
- Ⓐ EXISTING PAVEMENT

**ITEM 253 PAVEMENT REPAIR:** THIS ITEM FOR FULL DEPTH REPAIR TO THE RAMPS ONLY. A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER FOR FULL DEPTH REPAIR TO THE RAMPS ONLY. THIS ITEM SHALL CONSIST OF REPAIRING EXISTING LOCATIONS EXIBITING EVIDENCE OF BASE FAILURE AND PLACING 10.00"+/- (6"+/- ON SHOULDERS) OF 301 BITUMINOUS AGGREGATE BASE. THE MAXIMUM COMPACTED DEPTH OF ANY ONE LAYER SHALL BE 5.00 INCHES. THE CUBIC YARDAGE MEASURED SHALL BE PAID FOR AT THE UNIT PRICE BID PER CUBIC YARD, FOR ITEM 253 PAVEMENT REPAIR.

THE FINAL LIFT SHALL BE COMPACTED WITH A TYPE I PNEUMATIC TIRE ROLLER IN ACCORDANCE WITH 401.11. AT LEAST EIGHTEEN PASSES SHALL BE MADE OVER ANY GIVEN POINT ON THE SURFACE OF THE PATCH. A PASS IS DEFINED AS ONE MOVEMENT OF THE ROLLER OVER THE SURFACE OF THE PATCH. AS THE ROLLING PROGRESSES, ADDITIONAL PATCHING MATERIAL SHALL BE ADDED AS NECESSARY TO PRODUCE A SMOOTH SURFACE WHICH IS AT LEAST FLUSH WITH BUT NOT MORE THAN 3/8 INCH ABOVE THE SURFACE OF THE EXISTING PAVEMENT. VARIATION IN EXCESS OF THIS TOLLERANCE SHALL BE CORRECTED BY ADDING AND COMPACTING OR BY REMOVING MATERIAL IN A MANNER SATISFACTORY TO THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

PART 1: 55 CU.YDS.

**ITEM 203: EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION**

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AND DISPOSING OF ALL UNSUITABLE MATERIAL BY EXCAVATING THE EXISTING SUBGRADE AND SUBBASE TO AN AVERAGE DEPTH OF 12 INCHES OR AS DIRECTED BY THE ENGINEER. EXACT LIMITS OF REMOVAL SHALL BE DETERMINED BY THE ENGINEER. ALL EQUIPMENT, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

PART 1: 7 CU. YDS.

**ITEM 304 AGGREGATE BASE:**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED WHERE AND AS DIRECTED BY THE ENGINEER TO BACKFILL AREAS WHICH WERE EXCAVATED UNDER ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION.

PART 1: 7 CU.YDS.

**ITEM 614 MAINTAINING TRAFFIC:**

NO NIGHT LANE CLOSURES WILL BE PERMITTED FOR THIS ITEM OF WORK. THE CONTRACTOR SHALL RESTRICT HIS REMOVAL OPERATIONS TO THAT QUANTITY WHICH CAN BE REPLACED IN THE SAME DAY.

PAVEMENT REPAIR DETAILS

**ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C**

THE INTENT OF THIS ITEM IS TO REMOVE AND REPLACE ALL DETERIORATED CONCRETE PAVEMENT. ALL JOINT/CRACK REPAIRS SHALL BE CONSTRUCTED AS PER ITEM 255, STANDARD DRAWING BP-2.5, AND DETAILS SHOWN ON SHEET 2 OF 2 PAVEMENT REPAIRS USING RIGID REPLACEMENT. WHEN PRACTICAL, REPAIR JOINTS SHOULD LINE UP. THE MAXIMUM DISTANCE BETWEEN TRANSVERSE JOINTS WITHIN A SINGLE REPAIR SHALL BE 30 FEET. ALL ADDITIONAL TRANSVERSE JOINTS SHALL BE CENTERED IN THE REPAIR AND SHALL BE CONSTRUCTED, AS TYPE N, AS PER STANDARD DRAWING BP-2.5.

THE ACTUAL NUMBER OF BARS REQUIRED MUST BE DETERMINED IN THE FIELD. THE CONTRACTOR SHALL INCLUDE ANY ADDITIONAL COST, DUE TO THE UNCERTAINTY OF THE NUMBER OF BARS, IN THE UNIT PRICE BID FOR THIS ITEM.

ANY REPAIR REQUIRED FOR THE LONGITUDINAL JOINT SHALL BE IN ACCORDANCE TO STANDARD DRAWING BP-2.1 AND INCLUDED IN THIS PAY ITEM.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

- PART 1:
- 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C      1250 S.Y.
  - 255 - FULL DEPTH PAVEMENT SAWING      4700 L.F.

**ITEM 203: EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION**

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AND DISPOSING OF ALL UNSUITABLE MATERIAL BY EXCAVATING THE EXISTING SUBGRADE AND SUBBASE TO AN AVERAGE DEPTH OF 12 INCHES OR AS DIRECTED BY THE ENGINEER. EXACT LIMITS OF REMOVAL SHALL BE DETERMINED BY THE ENGINEER. ALL EQUIPMENT, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

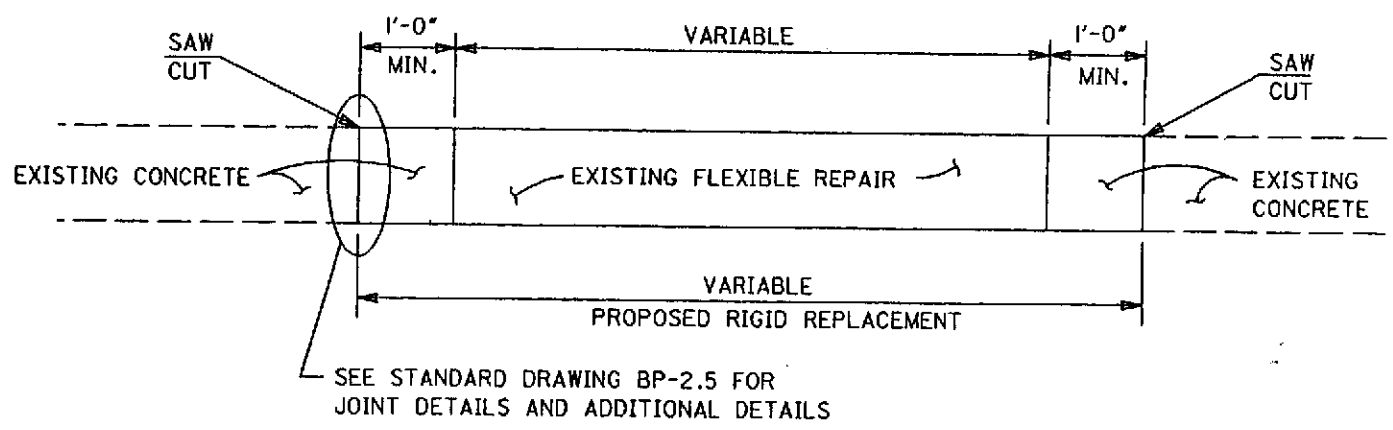
PART 1: 75 C.Y.

**ITEM 304 AGGREGATE BASE:**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED WHERE AND AS DIRECTED BY THE ENGINEER TO BACKFILL AREAS WHICH WERE EXCAVATED UNDER ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION.

PART 1: 75 C.Y.

**ITEM 255 - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN**



THIS ITEM SHALL BE UTILIZED TO REPLACE EXISTING FULL DEPTH ASPHALT CONCRETE REPAIR AREAS IN THE PORTLAND CEMENT CONCRETE SLABS OF THE MAINLINE PAVEMENT, DECELERATION AND ACCELERATION LANES. THE PROPOSED RIGID REPLACEMENT AREA SHALL EXTEND A MINIMUM OF ONE FOOT INTO THE EXISTING PORTLAND CEMENT CONCRETE SLABS AS SHOWN IN THE DETAIL. IF, AFTER REMOVAL OF THE SLAB, SOUND CONCRETE IS NOT PRESENT, THE CONTRACTOR WILL BE REQUIRED TO REMOVE ADDITIONAL PAVEMENT. THE LIMITS OF ADDITIONAL PAVEMENT REMOVAL SHALL BE DETERMINED AND PERFORMED AS PER STANDARD DRAWING BP-2.5. THE TYPES OF JOINTS TO BE CONSTRUCTED, DOWEL PLACEMENT, ALIGNMENT OF THE SAW CUTS, AND THE REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL IF NECESSARY SHALL BE DONE IN ACCORDANCE WITH THE NOTE FOR ITEM 255 FULL DEPTH RIGID REMOVAL AND RIGID REPLACEMENT, CLASS C.

A QUANTITY OF 600 CU.YDS. OF ITEM 255 - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN HAS BEEN CARRIED TO THE GENERAL SUMMARY.

A QUANTITY OF 1250 LIN.FT. OF ITEM 255 - FULL DEPTH PAVEMENT SAWING HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE.

FULL DEPTH PAVEMENT REPAIR, RIGID

MAH-680-4.04

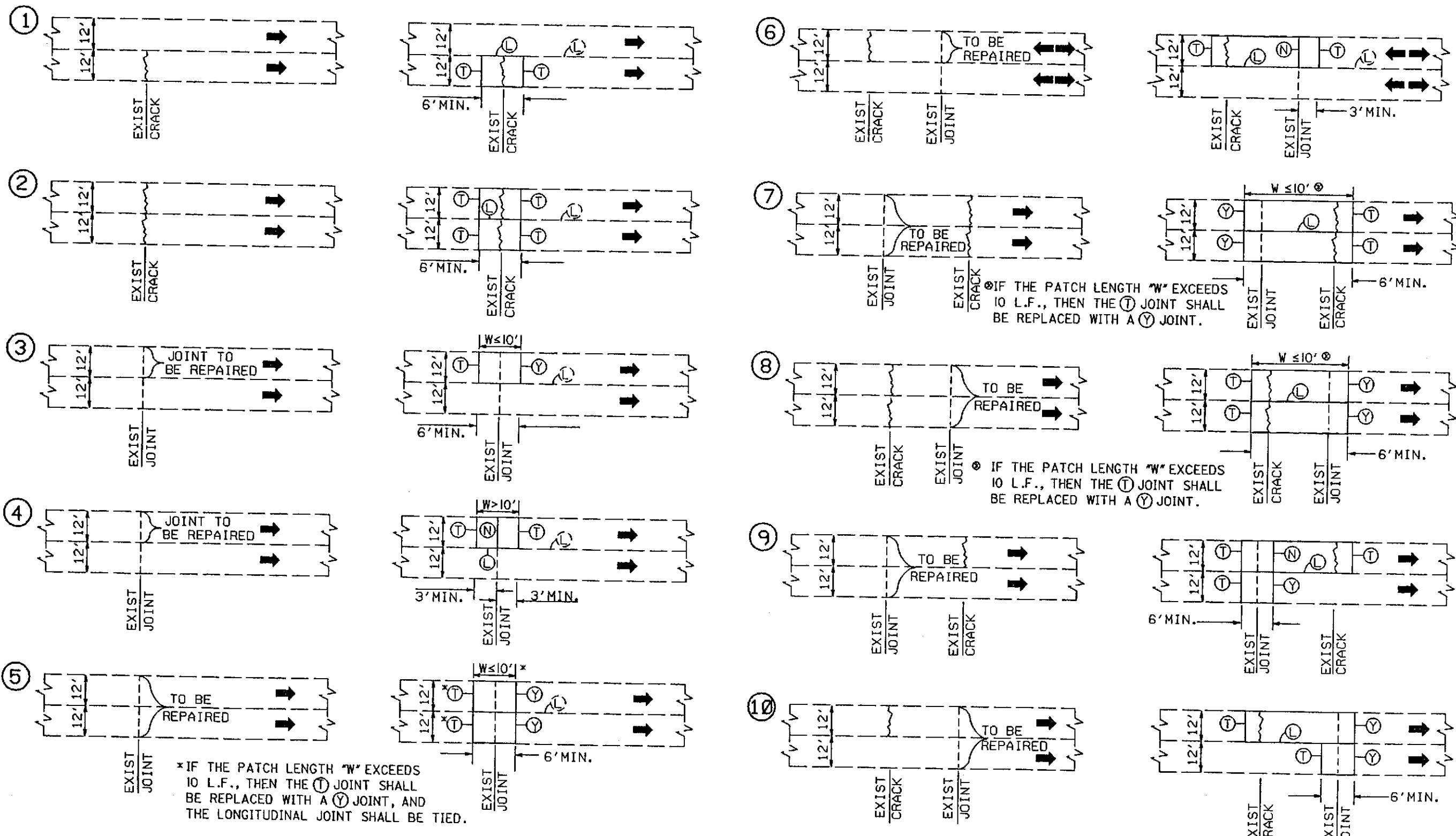
# CRACK/JOINT PAVEMENT REPAIRS 60' JOINT SPACING

PLAN NO.

CALCULATED  
CHECKED

FULL DEPTH PAVEMENT REPAIR, RIGID, 60' SPACING

MAH-680-4.05



\* IF THE PATCH LENGTH "W" EXCEEDS 10 L.F., THEN THE T JOINT SHALL BE REPLACED WITH A Y JOINT, AND THE LONGITUDINAL JOINT SHALL BE TIED.

⊕ IF THE PATCH LENGTH "W" EXCEEDS 10 L.F., THEN THE T JOINT SHALL BE REPLACED WITH A Y JOINT.

⊕ IF THE PATCH LENGTH "W" EXCEEDS 10 L.F., THEN THE T JOINT SHALL BE REPLACED WITH A Y JOINT.

JOINT TYPE LEGEND	
⊕	- TYPE Y (CONTRACTION)
⊖	- TYPE T (TIED)
⊗	- TYPE N (CONTRACTION)
⊕	- LONGITUDINAL JOINT
⊕	- EXISTING LONGITUDINAL JOINT

- NOTES:
- FOR ADDITIONAL DETAILS, SEE STANDARD DRAWINGS BP-2.1, BP-2.2 & BP-2.5.
  - OMIT LONGITUDINAL TIES IF REPAIR LENGTH IS LESS THAN 10'.
  - MINIMUM LENGTH OF ANY REPAIR SHALL BE 6'.
  - IF THE JOINT AND CRACK TO BE REPAIRED ARE SEPERATED BY MORE THAN 16', THEN TREAT EACH REPAIR INDEPENDENTLY.

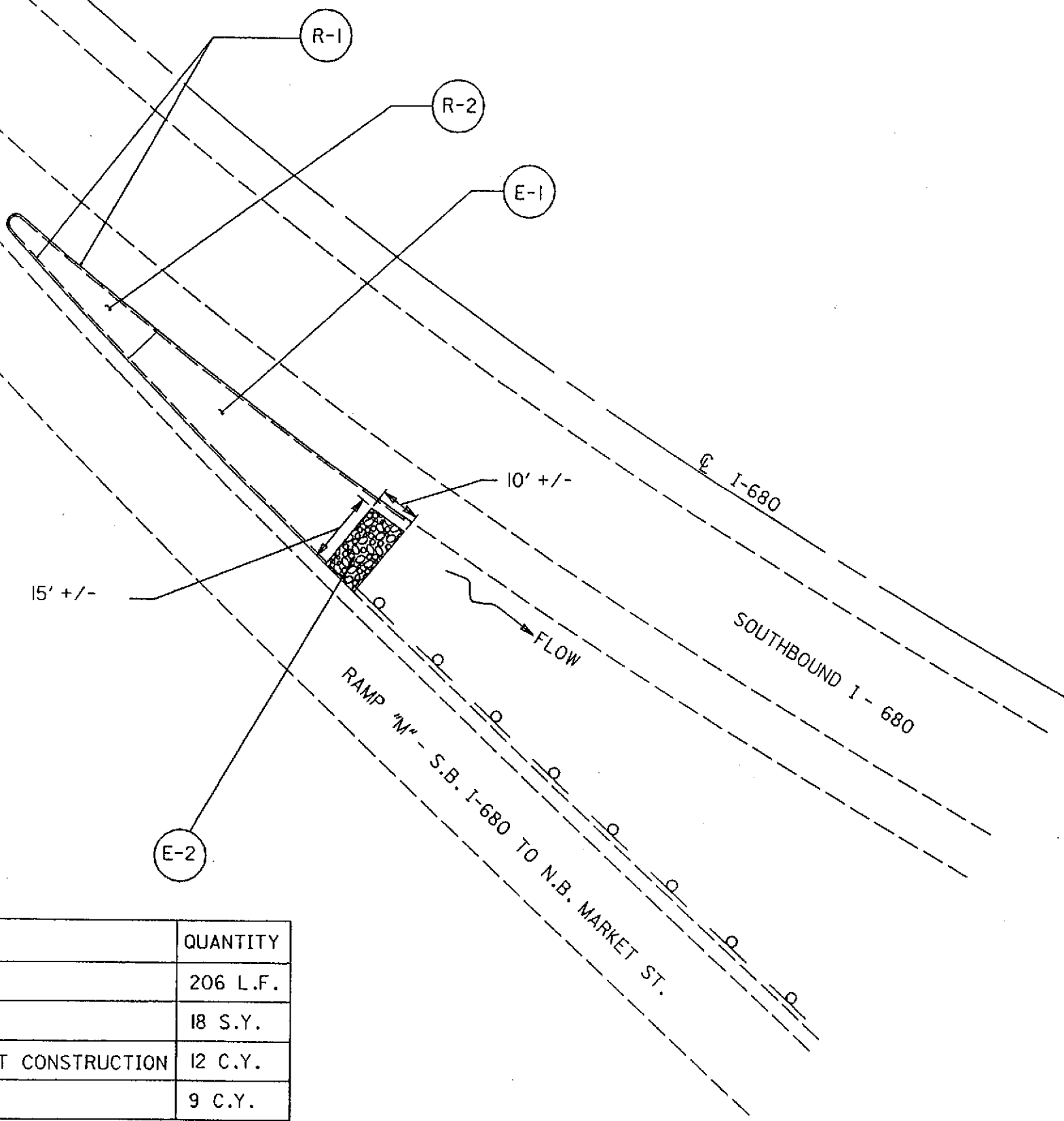
PLAN NO.

CALCULATED  
CHECKED



NOTE: THE QUANTITIES PROVIDED ON THIS SHEET HAVE BEEN ESTABLISHED TO DO THE FOLLOWING:

1. REMOVE EXISTING CURB.
2. REMOVE THE 4" MEDIAN PAVEMENT.
3. EXCAVATE EXCESS MATERIAL, AS DIRECTED BY THE ENGINEER, TO ALLOW RUNOFF FROM RAMP "M" TO FLOW IN TO THE EXISTING DITCH (SHOWN WITH FLOW LINES).
4. PLACE ROCK CHANNEL PROTECTION, TYPE "D", 18" THICK AS SHOWN.



REFERENCE	ITEM	DESCRIPTION	QUANTITY
R-1	202	CURB REMOVED	206 L.F.
R-2	202	CONCRETE MEDIAN REMOVED	18 S.Y.
E-1	203	EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION	12 C.Y.
E-2	601	ROCK CHANNEL PROTECTION, TYPE D	9 C.Y.

MEDIAN REMOVAL DETAIL

MAH-680-4.04

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110



ITEM 630 REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION,  
TYPE TC-7.65, AS PER PLAN

THIS ITEM WILL CONSIST OF THE REMOVAL OF THE OVERHEAD TRUSS FOR DISPOSAL, AND THE REMOVAL AND RELOCATION OF THE RIGHT END FRAME. THIS ITEM WILL COMPLY WITH ITEM 630.12 AND THE FOLLOWING:

THE EXISTING SIXTY (60) FOOT TRUSS SHALL BE REMOVED AFTER THE SIGNS AND LUMINAIRES HAVE BEEN REMOVED. THE TRUSS SHALL BE REMOVED WITHOUT DAMAGING EITHER EXISTING END FRAME. THE 5/8 INCH STAINLESS STEEL U-BOLTS, HEX NUTS AND WASHERS SHALL BE DISPOSED OF.

THE RIGHT END FRAME SHALL BE REMOVED AND RELOCATED ONTO A NEW FOUNDATION AS SHOWN ON SHEET 33.

THE DISCONNECT SWITCH AND BALLAST WIRING ENCLOSURE SHALL NOT BE REMOVED.

THE EXISTING SIGN ATTACHMENT ASSEMBLIES AND LUMINAIRE SUPPORT ASSEMBLIES SHALL BE REMOVED AND RE-ERECTED ON THE NEW TRUSS.

PAYMENT FOR ITEM 630 REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE 7.65, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH, AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

ITEM 631 REMOVAL OF LUMINAIRE AND RE-ERECTION, AS PER PLAN

THIS ITEM CONSISTS OF THE REMOVAL AND RE-ERECTION OF THE EXISTING LUMINAIRES AND LUMINAIRE SUPPORT ASSEMBLIES. THE EXISTING WIRING FROM THE SIGNS TO THE BALLAST WIRING ENCLOSURE WILL BE REMOVED AND DISPOSED OF.

THIS ITEM SHALL ALSO COMPLY WITH 631.16.

ITEM 630 OVERHEAD SIGN SUPPORT, MISC., TYPE TC-7.65 DESIGN 6,  
74 FOOT TRUSS, AS PER PLAN

THIS ITEM CONSISTS OF THE FURNISHING AND ERECTION OF A 74 FOOT TRUSS WITH 5/8 INCH STAINLESS STEEL U-BOLTS, HEX NUTS AND PLAIN WASHERS AS PER STANDARD CONSTRUCTION DRAWING TC-7.65. THIS ITEM SHALL INCLUDE THE FURNISHING OF ANCHOR BOLTS AND CONDUIT ELLS NECESSARY. THE ANCHOR BOLTS SHALL BE SIZED FOR THE OVERHEAD SIGN SUPPORT TC-7.65 DESIGN 6, TRUSS BOX SIZE OF 3 FEET.

THE CONTRACTOR SHOULD FIELD VERIFY THE END FRAME DIMENSIONS, BOLT CIRCLES, ANCHOR BOLT DIMENSIONS FOR NEW STANDARD DESIGN TC-7.65 BEFORE ORDERING ANY MATERIAL FOR THE OVERHEAD SIGN SUPPORT.

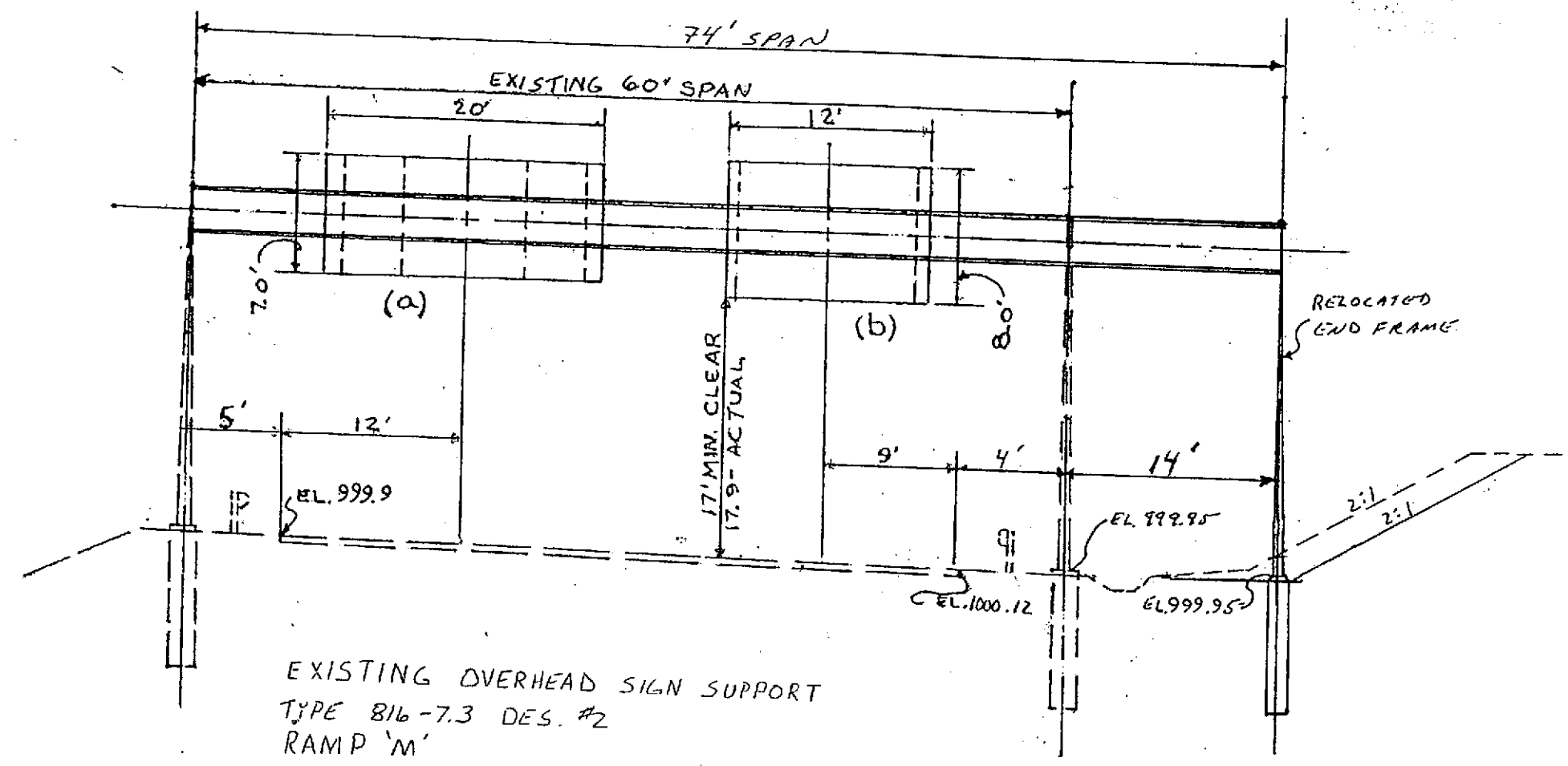
SIGN STRUCTURE

MAH-680-4.04

PLAN NO.:

DATE  
L.A.J.  
SCALE

ITEM	EXT.	QUAN.	DESCRIPTION
203	12000	24 CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION CONCRETE FOR ANCHOR BASE SUPPORT, AS PER PLAN
630	00001	17.2 CU.YD.	
630	74500	1 EACH	OVERHEAD SIGN SUPPORT, MISC., TYPE TC-7.65, DESIGN 6, 74 FOOT TRUSS, AS PER PLAN
630	87100	2 EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND RE-ERECTION
630	89400	1 EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE TC-7.65, AS PER PLAN
631	84300	2 EACH	SIGN WIRED
631	94101	5 EACH	REMOVAL OF LUMINAIRE AND RE-ERECTION, AS PER PLAN



(a)  
20'-0" x 7'-0" = 140 SQ. FT.  
BRACKET SPACING 7", 7 5/8", 7 5/8", 7 5/8", 6 7/8"  
# BRACKETS 4, HEIGHT 7'-0", TYPE Y<sub>a</sub>

(b)  
12'-0" x 8'-0" = 96 SQ. FT.  
BRACKET SPACING 6", 6'6", 6'6", 6"  
# BRACKETS 3, HEIGHT 8'-0", TYPE Y<sub>a</sub>

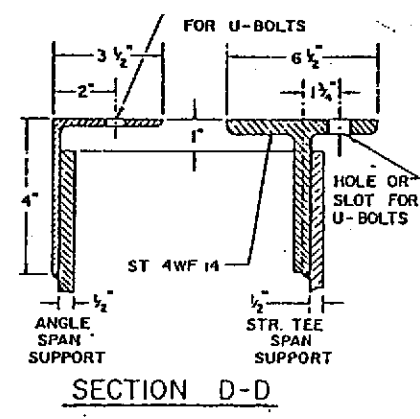
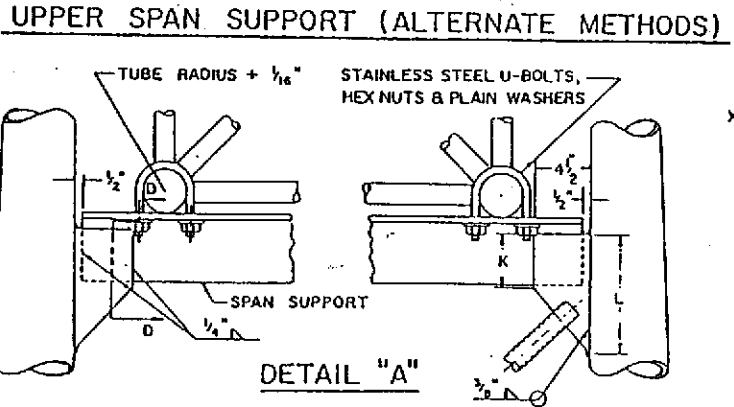
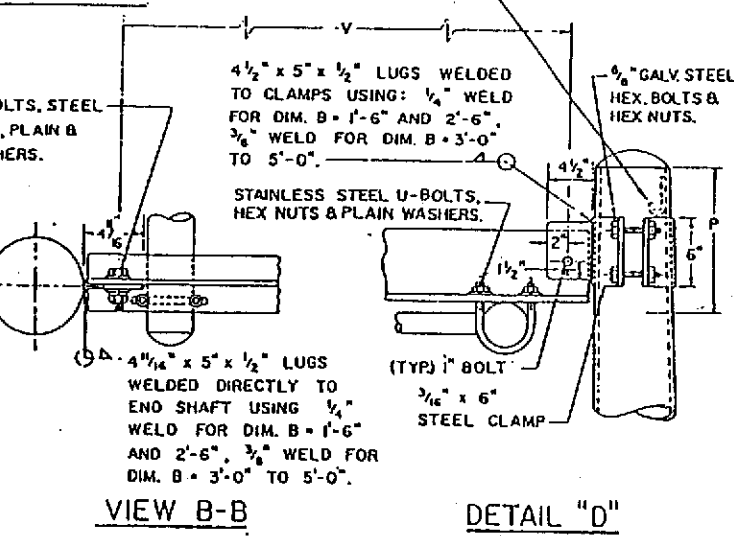
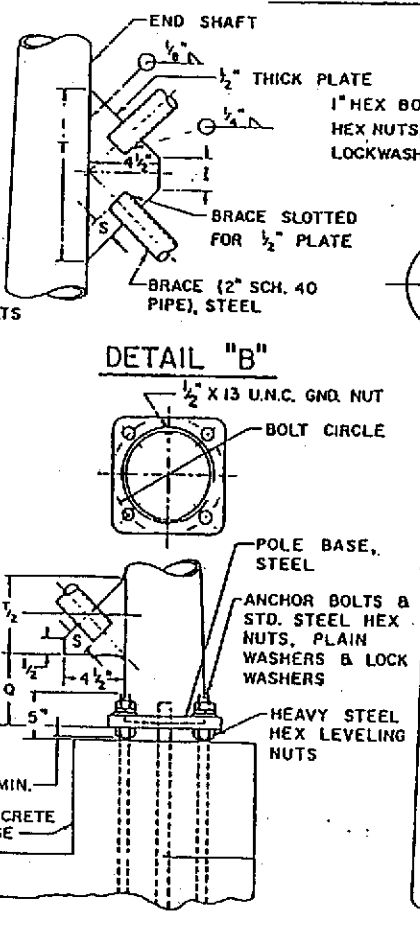
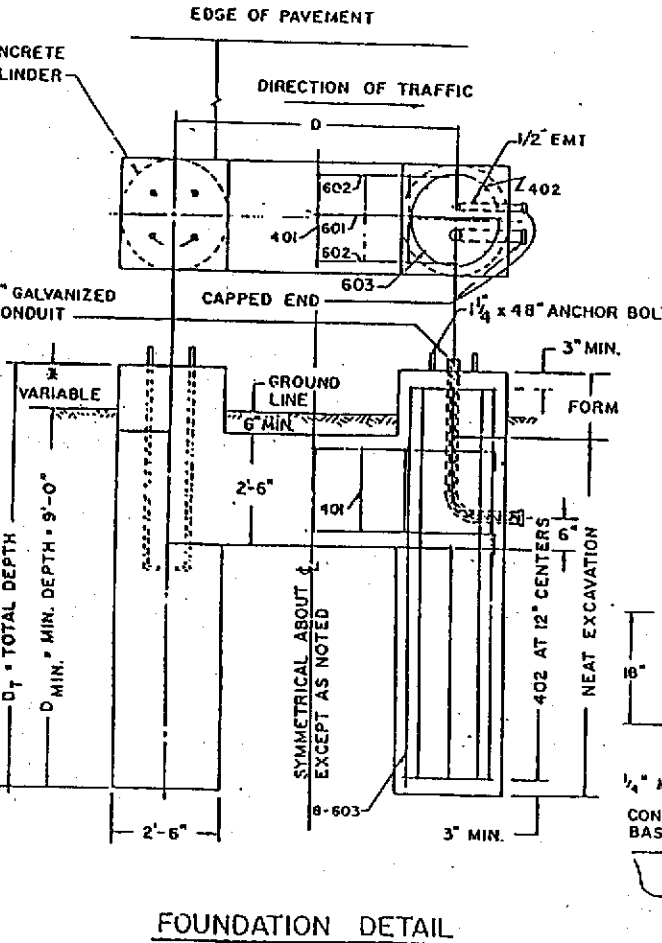
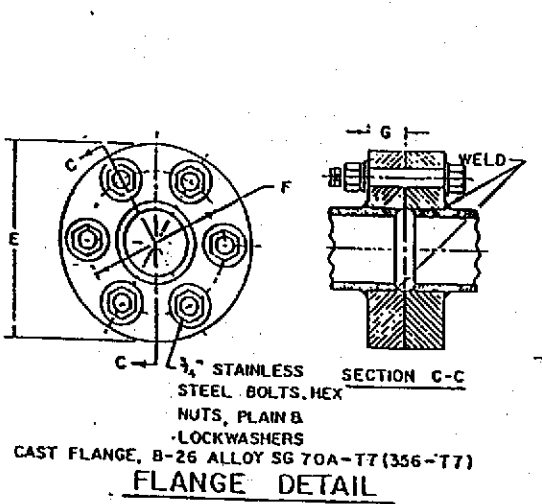
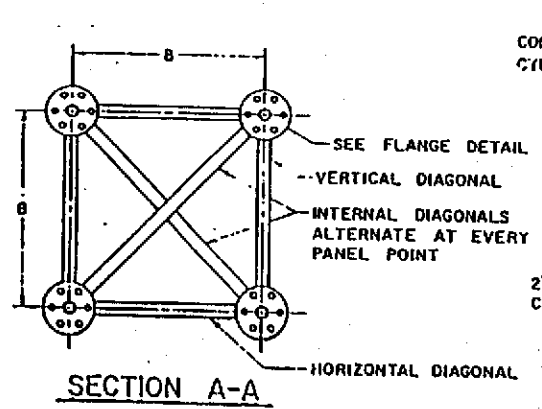
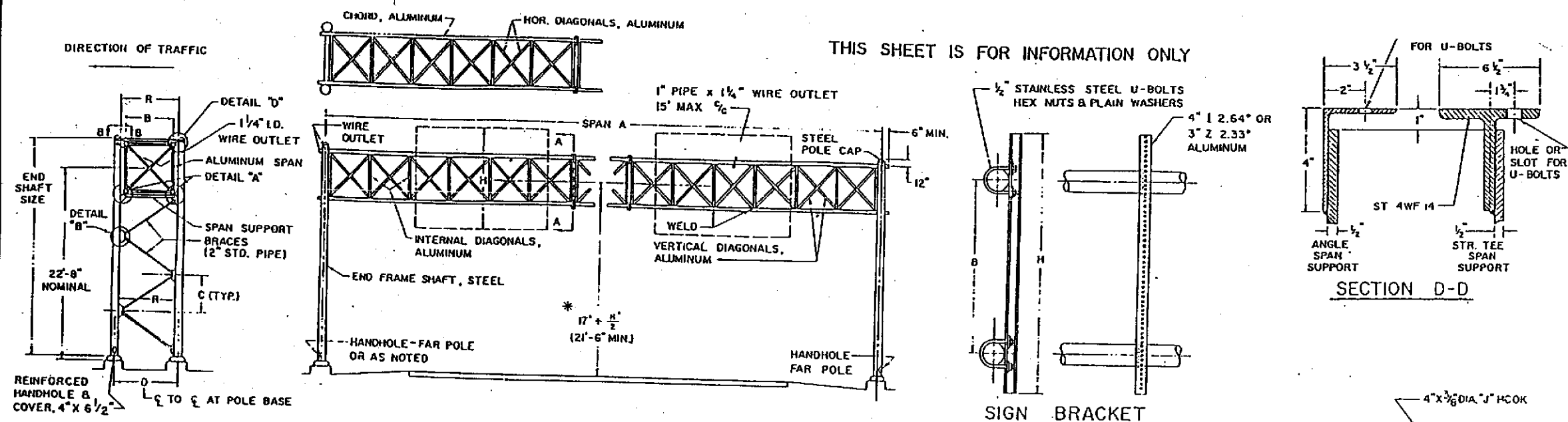
SIGN STRUCTURE

MAH-680-4.04

33  
10

PLAN NO.

THIS SHEET IS FOR INFORMATION ONLY



**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 B16 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. M-7.4(d). MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

**ERECTION**  
 USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/2" 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 "O" 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.

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' Thru 55'	3'-0"	4'-11 3/4"	4'-5"	7"	8" x 4.5" x 25'-0" 3GA	5'-10 13/16"	5 1/2"	1 1/4"	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"	3 1/2" x .188"	1.660" x .140"	1.660" x .140"
2	56' Thru 80'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" x 4.5" x 25'-0" 3GA	5'-10 13/16"	7 1/8"	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"	1.660" x .140"

BUREAU OF TRAFFIC  
 OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS No. 73

DATE 7-25-62 5-5-64

EXISTING SIGN TRUSS DETAIL

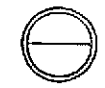
MAH-680-4.04

34  
110

# GENERAL SUMMARY

COMPLETED BY KAC DATE 2-95  
 CHECKED BY JM DATE 2-2-95

F.H.W.A. REGION	STATE	PROJECT NO.	FUNDS
5	OHIO		



MAH-680-4.01

DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

BRIDGE NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
MAH-680-0414	MAH-680-0429	MAH-680-0440L	MAH-680-0440R	MAH-680-0476L	MAH-680-0476R	MAH-680-0573L	MAH-680-0603	MAH-680-0632L	MAH-680-0632R	MAH-680-0687L	MAH-680-0687R	MAH-680-0693L	MAH-680-0693R					
		711	723	3022	3022	1836		969	969	807	938	871	1068					
				10	15									202	E2350I	14936	SO.YD.	WEARING COURSE REMOVED, AS PER PLAN
LUMP	LUMP	LUMP	LUMP	LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	202	E35100	25	LIN.FT.	PIPE REMOVED, 24" AND UNDER
LUMP														202	E98000	LUMP	LUMP	REMOVAL MISC. ABUTMENT BEAM SEAT CLEANING
LUMP														202	E98000	LUMP	LUMP	REMOVAL MISC. EXISTING CONCRETE GUTTER
														202	E98000	LUMP	LUMP	REMOVAL MISC. CORRUGATED METAL SCUPPER COLLECTOR SYSTEM
66	59	61	91	91	148			83	83	109	127	112	136	202	E98200	1166	LIN.FT.	REMOVAL MISC. VERTICAL EXTENSIONS
	20	20	80	80	55			30	30	25	25	25	30	202	E98300	420	SO.YD.	REMOVAL MISC. DEBONDED AND DETERIORATED EXISTING LATEX MODIFIED CONCRETE VARIABLE THICKNESS
48				3022	3022	1836		969	969	807	938	871	1068	254	E01000	13502	SO.YD.	PAVEMENT PLANING, BITUMINOUS (VARIABLE)
						3		3	9					446	E01400	48	CU.YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, T-2 1/4"
														511	E34440	15	SO.YD.	CLASS S CONCRETE, MISC. PARAPET REFACING, AS PER PLAN
	1	1	2	2	2			1	1	1	1	1	1	511	E34450	14	CU.YD.	CLASS S CONCRETE, MISC. FULL DEPTH REPAIR
			3	3										511	E71100	6	CU.YD.	CONCRETE, MISC. PATCHING CONCRETE BACKWALLS AND/OR APPROACHES WITH CLASS C CONCRETE
						240								511	E71200	3728	SO.FT.	CLASS C CONCRETE, MISC. REFACING CONCRETE STRUCTURE, AS PER PLAN
				75										511	E81100	240	LIN.FT.	CONCRETE, MISC. PILE ENCASEMENT
														513	E16590	75	POUND	STRUCTURAL STEEL MISC. REMOVAL AND REPLACEMENT OF DAMAGED CROSSFRAMES
	63	65	91	91	148			133	133	109	127	112	136	516	E11211	1208	LIN.FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN
66														516	E11800	66	LIN.FT.	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT
18	10	10	12	12		24		12	12	16	18	18	20	516	E45304	182	EACH	REFURBISH BEARING DEVICE, AS PER PLAN
LUMP	LUMP	LUMP	LUMP	LUMP		LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	516	E47000	LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE
	577	244	244	687.5	652	350		255	261	153.5	153.5	160	182.5	517	E76300	3920	LIN.FT.	RAILING MISC. BRIDGE RAIL RETROFIT
		3	3	28	29	33		7	8	5	7		9	518	E12801	132	EACH	SCUPPER MODIFICATION, AS PER PLAN
182	145	55	65	335	335	945	150	306	326	65	65	130	130	518	E63300	LUMP	LUMP	STRUCTURE DRAINAGE, MISC. SCUPPER COLLECTOR REPLACEMENT
						380								519	E11100	3234	SO.FT.	PATCHING CONCRETE STRUCTURE
												23		601	E20501	403	CU.YD.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN
			200	200										601	E25001	400	CU.YD.	DUMPED ROCK FILL, TYPE A, AS PER PLAN
125	89	89												601	E26000	303	CU.YD.	DUMPED ROCK FILL, TYPE B
			200	200										601	E26001	400	CU.YD.	DUMPED ROCK FILL, TYPE B, AS PER PLAN
			200	150										601	E27001	350	CU.YD.	DUMPED ROCK FILL, TYPE C, AS PER PLAN
						292								601	E38400	292	LIN.FT.	PAVED GUTTER, TYPE 2
			3	3										602	E20000	6	CU.YD.	CONCRETE MASONRY
			85	85										603	E07600	170	LIN.FT.	18" CONDUIT TYPE C, 707J6
			1											604	E04500	1	EACH	CATCH BASIN, NO. 2-2B
			1	1										604	E31500	2	EACH	MANHOLE, NO. 3
														630	E02100	238	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 2 POST

DATE	3-8-95
STRUCTURE FILE NUMBER	
DESIGNED	CHICHD
CHECKED	

GENERAL SUMMARY

MAH-680-4.01

# GENERAL SUMMARY

COMPLETED BY KAC DATE 2-95  
 CHECKED BY JM DATE 2-2-95

F.H.W.A. REGION	STATE	PROJECT NO.	FUNDS
5	OHIO		



MAH-680-4.01

DESIGN AGENCY  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 BRIDGE SECTION

BRIDGE NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	
MAH-680-0429	MAH-680-0440L	MAH-680-0440R	MAH-680-0476L	MAH-680-0476R	MAH-680-0573L	MAH-680-0603	MAH-680-0632L	MAH-680-0632R	MAH-680-0687L	MAH-680-0687R	MAH-680-0693L	MAH-680-0693R							
															630	E80100	23.46	SO.FT.	SIGN, FLAT SHEET
															630	E86002	34	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
	750														SPECIAL	E51267030	750	SO.YD.	MEMBRANE WATERPROOFING, (SHEET TYPE 3) SEE PROPOSAL NOTE
						414									SPECIAL	E51267510	414	SO.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) *
	LUMP														SPECIAL	E51319000	LUMP	LUMP	HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL *
70	3038					11253									SPECIAL	E53000600	14361	SO.FT.	STRUCTURE, MISC. FALSEWORK PROTECTION (UNDER DECK PROTECTION)
		711	723	3022	3022	1836		969	969	807	938	871	1068		SPECIAL	E84550000	14936	SO.YD.	SURFACE PREPARATION USING HYDRODEMOLITION *
	75														SPECIAL	E51912300	75	SO.YD.	PATCHING CONCRETE BRIDGE DECK TYPE B *
		711	723	3022	3022	1836		969	969	807	938	871	1068		SPECIAL	E51912800	14936	SO.YD.	STEEL FIBER REINFORCED SUPERPLASTICIZED DENSE CONCRETE OVERLAY (T-2 1/2")
		18	18	75	75	50		25	25	20	25	22	28		SPECIAL	E51913000	381	CU.YD.	STEEL FIBER REINFORCED SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS)
		LUMP													SPECIAL	E51922300	LUMP	LUMP	TEST SLAB
																			* SEE PROPOSAL NOTE.

DATE  
 3-6-95  
 REVIEWED  
 JM  
 DRAWN  
 REVISION  
 3-7-95  
 STRUCTURE FILE NUMBER

GENERAL SUMMARY

MAH-680-4.01

# STRUCTURE TREATMENT

DESIGN AGENCY  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 BRIDGE SECTION

DATE  
 3-8-95  
 REVISION  
 1/2  
 STRUCTURE FILE NUMBER  
 3-7-95

## STRUCTURE DATA

COUNTY, ROUTE AND BRIDGE NO.	LENGTH (BRIDGE LIMITS)  LIN.FT.	WIDTH  LIN.FT.	BRIDGE DECK AREA  SQ.YDS.	254	202	SPECIAL	202	BRIDGE DECK OVERLAYS AND REPAIRS				516	202	202	202	202	202	446	511	511	511	511	513
				PAVEMENT PLANING BITUMINOUS (VARIABLE) SO.YDS.	WEARING COURSE REMOVED, AS PER PLAN SO.YDS.	CONCRETE BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION SO. YDS	REMOVAL MISC.: DEBONDED AND DETERIORATED EXISTING LATEX MODIFIED CONCRETE VARIABLE THICKNESS SO.YDS.	ITEM SPECIAL- STEEL FIBER REINFORCED SUPER PLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION				STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN LIN.FT.	PIPE REMOVED 24" AND UNDER LIN.FT.	REMOVAL MISC.: ABUTMENT BEAM SEAT CLEANING LUMP	REMOVAL MISC.: EXISTING CONCRETE GUTTER LUMP	REMOVAL MISC.: CORRUGATED METAL SCUPPER COLLECTOR SYSTEM LUMP	REMOVAL MISC.: VERTICAL EXTENSIONS LIN.FT.	ASPHALT CONCRETE SURFACE COURSE TYPE 1, AC-20 T=2 1/4" CU.YD.	CLASS 5" CONCRETE MISC.: PARAPET REFACING, AS PER PLAN SQ. YD.	CLASS C" CONCRETE MISC.: REFACING CONCRETE STRUCTURE, AS PER PLAN SQ. FT.	CONCRETE MISC.: PATCHING CONCRETE BACKWALLS AND/OR APPROACHES WITH CLASS C" CONCRETE CU.YD.	CONCRETE MISC.: PILE ENCASEMENT LIN.FT.	STRUCTURAL STEEL MISC.: REMOVAL AND REPLACEMENT OF DAMAGED CROSSFRAMES POUND
								2 1/4" THICK OVERLAY SO.YDS.	VARIABLE THICKNESS OVERLAY CU.YDS.	511 FULL DEPTH REPAIR CU.YDS.	SPECIAL TEST SLAB LUMP												
MAH-680-0414																							
MAH-680-0429	263	26	750											LUMP	LUMP	LUMP							
MAH-680-0440 L	220	29	711		711	711	20	711	18	1	LUMP	63		LUMP			66	48					
MAH-680-0440 R	220	30	723		723	723	20	723	18	1		65		LUMP			59						
MAH-680-0476 L	598	46	3022	3022	3022	3022	80	3022	75	2		65		LUMP			61						
MAH-680-0476 R	598	46	3022	3022	3022	3022	80	3022	75	2		91	10	LUMP			91						
MAH-680-0573 L	335	49	1836	1836	1836	1836	55	1836	50	2		91	15	LUMP			91				3		
MAH-680-0603												148					148		3			240	
MAH-680-0632 L	211	41	969	969	969	969	30	969	25	1				LUMP								3728	
MAH-680-0632 R	211	41	969	969	969	969	30	969	25	1		133		LUMP			83		3				
MAH-680-0687 L	136	53	807	807	807	807	25	807	20	1		133		LUMP			83		9				
MAH-680-0687 R	136	62	938	938	938	938	25	938	25	1		109		LUMP			109						
MAH-680-0693 L	141	56	871	871	871	871	25	871	22	1		127		LUMP			127						
MAH-680-0693 R	141	68	1068	1068	1068	1068	30	1068	28	1		112		LUMP			112						
TOTALS				13,502	14,936	14,936	420	14,936	381	14	LUMP	1208	25	LUMP	LUMP	LUMP	1166	48	15	3728	6	240	75

**ITEM 519 - PATCHING CONCRETE STRUCTURES**  
 A QUANTITY OF 3,234 S.F. OF ITEM 519, PATCHING CONCRETE STRUCTURES, HAS BEEN PROVIDED TO BE USED, AS DIRECTED, BY THE PROJECT ENGINEER/SUPERVISOR. THIS ITEM MAY BE USED TO PATCH CURBS, PARAPETS, COLUMNS, PIER CAPS, WINGWALLS, BACKWALLS, ABUTMENTS, AND BEAM SEATS.  
 NOTE: THIS WORK SHALL BE DONE PRIOR TO SEALING OF CONCRETE SURFACES

**ITEM 446- ASPHALT CONCRETE, TYPE 1**  
 PLACEMENT OF ASPHALT CONCRETE SHALL BE IN TWO LIFTS. THE FIRST LIFT SHALL BE 1 1/4" THICK AND THE SECOND LIFT SHALL BE 1" THICK. NO TRAFFIC WILL BE PERMITTED ON THE STRUCTURE UNTIL BOTH LIFTS OF ASPHALT HAVE BEEN PLACED.

STRUCTURE TREATMENT

MAH-680-4.01

# STRUCTURE TREATMENT

DESIGN AGENCY  
 STATE OF MICHIGAN  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 BRIDGE SECTION

REVIEWED DATE 7-77 3-8-95  
 STRUCTURE FILE NUMBER  
 DRAWN BY SB  
 CHECKED BY TB  
 DESIGNED BY TB  
 REVISED DATE 3-7-95

## STRUCTURE DATA

COUNTY, ROUTE AND BRIDGE NO.	LENGTH (BRIDGE LIMITS) LIN.FT.	WIDTH LIN.FT.	BRIDGE DECK AREA SQ.YDS.	516	516	516	516	517	518	518	519	601	601	601	601	601	601	602	603	604	604	SPECIAL	SPECIAL	SPECIAL	SPECIAL	SPECIAL
				JACKING AND TEMPORARY SUPPORT OF SUPER-STRUCTURE LUMP	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS LIN.FT.	REFURBISH BEARING DEVICE EACH	BEARING DEVICE MISC. REPAIR, AS PER PLAN EACH	RAILING, MISC. BRIDGE RAIL RETROFIT LIN. FT.	SCUPPER MODIFICATION, AS PER PLAN EACH	STRUCTURE DRAINAGE MISC. SCUPPER COLLECTOR REPLACEMENT LUMP	PATCHING CONCRETE STRUCTURE SQ.FT.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN CU. YD.	DUMPED ROCK FILL, TYPE A, AS PER PLAN CU. YD.	DUMPED ROCK FILL, TYPE B CU. YD.	DUMPED ROCK FILL, TYPE B, AS PER PLAN CU. YD.	DUMPED ROCK FILL, TYPE C, AS PER PLAN CU. YD.	PAVED GUTTER TYPE 2 LIN. FT.	CONCRETE MASONARY CU.YDS.	18" CONDUIT TYPE C 707.16 LIN. FT.	CATCH BASIN NO. 2-28 EACH	MAN HOLE NO. 3 EACH	MEMBRANE WATER-PROOFING, SHEET TYPE 3 SQ.YDS.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) SQ.YDS.	HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL LUMP	STRUCTURE MISC. FALSEWORK PROTECTION (UNDER DECK PROTECTION) SQ. FT.	PATCHING CONCRETE BRIDGE DECK-TYPE B SQ.YDS.
				LUMP		18					182			125												
MAH-680-0429	263	26	750		66			577			145															70
MAH-680-0440 L	220	29	711	LUMP		10		244	3		55			89												
MAH-680-0440 R	220	30	723	LUMP		10		244	3		65			89												
MAH-680-0476 L	598	46	3022	LUMP		12		687.5	28		335		200	200	200		3	85	1	1						
MAH-680-0476 R	598	46	3022	LUMP		12		652	29		335		200	200	150		3	85		1						
MAH-680-0573 L	335	49	1836					350	33		945	380														
MAH-680-0603				LUMP		24				LUMP	150															
MAH-680-0632 L	211	41	969	LUMP		12		255	7		306															11,253
MAH-680-0632 R	211	41	969	LUMP		12		261	8		326															
MAH-680-0687 L	136	53	807	LUMP		16		153.5	5		65															
MAH-680-0687 R	136	62	938	LUMP		18		153.5	7		65															
MAH-680-0693 L	141	56	871	LUMP		18		160			130	23														
MAH-680-0693 R	141	68	1068	LUMP		20		182.5	9		130															
<b>TOTALS</b>				LUMP	66	182		3920	132	LUMP	3,234	403	400	303	400	350	292	6	170	1	2	750	414	LUMP	14,361	75

STRUCTURE TREATMENT

MAH-680-4.01

# SCOPE OF WORK ON STRUCTURES

- (ALL PLAN NOTES AND MAINTENANCE OF TRAFFIC REQUIREMENTS SHALL GOVERN SCHEDULING OF PLAN WORK.)
- PERFORM ABUTMENT SEAT CLEANING ON DESIGNATED STRUCTURES.
- REFURBISH ABUTMENT BEARINGS DEVICES, AS PER PLAN, ON DESIGNATED STRUCTURES.
- REMOVE VERTICAL EXTENTIONS ON DESIGNATED STRUCTURES.
- REMOVE EXISTING BITUMINOUS ASPHALT WEARING COURSE AS PER PAVEMENT PLANING BITUMINOUS ON DESIGNATED STRUCTURES.
- REMOVE EXISTING LMC OVERLAY ON DESIGNATED STRUCTURES.
- PERFORM HYDRODEMOLITION ON STRUCTURES WHICH WILL BE OVERLAID.
- PERFORM ANY FULL DEPTH REPAIR ON STRUCTURES AS REQUIRED.
- PLACE STEEL FIBER REINFORCED SUPERPLASTICIZED DENSE CONCRETE OVERLAY AND VARIABLE THICKNESS ON DESIGNATED STRUCTURES.
- REMOVE AND REPAIR CONCRETE BACKWALL AND APPROACH SLABS ON STRUCTURE MAH-680-0476 L/R.
- HEAT STRAIGHTEN STRUCTURAL STEEL (AS NOTED ON FACIA BEAM UNDER I-680 NORTHBOUND LANES).
- REPLACE DAMAGED CROSSFRAME MEMBERS (AS PER PLAN ON STRUCTURE MAH-680-04.14).
- PERFORM VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS ON DESIGNATED STRUCTURES.
- FILL-IN ERODED SIDESLOPE AREAS AND INSTALL NEW DRAINAGE FEATURES BENEATH STRUCTURES MAH-680-04.76, MAH-680-05.73, AND MAH-680-06.93, AS PER PLAN.
- REFACE BOTH ABUTMENT WALLS (FULL HEIGHT) AND SEAL NEW CONCRETE SURFACES ON STRUCTURE MAH-680-06.03.
- INSTALL UNDERSIDE DECK FALSEWORK PROTECTION ON STRUCTURES MAH-680-04.14, MAH-680-04.29, AND MAH-680-06.03.
- REMOVE EXISTING BRIDGE DOWNSPOUT COLLECTION SYSTEM ON STRUCTURES MAH-680-04.14.
- REMOVE CONCRETE TROUGH GUTTER DRAINAGE SYSTEM UNDER STRUCTURE MAH-680-04.14.
- PERFORM PATCHING OF CONCRETE SURFACES ON DESIGNATED STRUCTURES.
- REMOVE AND REPLACE BRIDGE SCUPPER COLLECTION DRAINAGE SYSTEM, (AS WELL AS CAST IN-PLACE CONCRETE PAVED GUTTER AT DOWNSPOUT PIPE OUTLETS) ON STRUCTURE MAH-680-06.03.
- RETROFIT, ALL DESIGNATED STRUCTURES, RAILING WITH THRIE BEAM BRIDGE RAILING. (REFER TO ROADWAY PORTIONS OF PLAN FOR DETAILS.)
- FLUSH CLOGGED BRIDGE SCUPPERS AND PERFORM REQUIRED SCUPPER MODIFICATION, AS PER PLAN, ON DESIGNATED STRUCTURES.
- PERFORM PARAPET WALL REFACING ON STRUCTURES MAH-680-05.73 AND MAH-680-06.32.
- PLACE DUMPED ROCK FILL (TYPE B) ON DESIGNATED SIDESLOPES UNDER STRUCTURE MAH-680-04.14 AND MAH-680-04.40.
- APPLY MEMBRANE WATERPROOFING FABRIC AND PLACE 446 BITUMINOUS ASPHALT CONCRETE SURFACE COURSE OVER STRUCTURE MAH-68004.29.
- ENCASE EXPOSED PILES WITH CLASS "C" CONCRETE AT STRUCTURE MAH-680-05.73.
- REPAIR DAMAGED BEARING DEVICES (WATER GULL) UNDER I-680 NORTHBOUND LANES.
- ERECT NEW STRUCTURE IDENTIFICATION SIGNS AS PER PLAN AT THE DESIGNATED STRUCTURES.

DESIGN AGENCY  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 BRIDGE SECTION

DATE  
 2-2-25  
 STRUCTURE FILE NUMBER

DESIGNED	MB	CHECKED	KAC
DRAWN	SB	REVIEWED	
REVIEWED	AZ	DATE	2-2-25

SCOPE OF WORK ON STRUCTURES

MAH-680-4.01



# GENERAL NOTES

## EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES, AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO THE C.M.S. SECTIONS 102.05, 105.02, AND 513.02 CONTRACTOR BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE-BID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

THE GENERAL SUMMARY HAS QUANTITIES LISTED PER BRIDGE IN A LEFT AND RIGHT IDENTIFICATION MATRIX. THE QUANTITIES ARE LISTED AS A GUIDELINE ONLY AND MAY BE REAPPROPRIATED TO OTHER STRUCTURES AS EXISTING FIELD CONDITIONS DICTATE AND AS DIRECTED BY THE PROJECT ENGINEER.

## STATE SAFETY REQUIREMENTS

STATE SAFETY REQUIREMENTS OUTLINED IN THE CONSTRUCTION CODE FOR THIS TYPE OF WORK WILL BE ENFORCED AND THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OUTLINED IN OHIO ADMINISTRATIVE CODE CHAPTER 4121:1-3 : SPECIFIC SAFETY REQUIREMENTS OF THE INDUSTRIAL COMMISSION OF THE OHIO RELATING TO CONSTRUCTION.

## ESTIMATED QUANTITIES

SPECIFIC LOCATIONS AND USAGE OF ESTABLISHED QUANTITIES SET UP ON THIS PLAN ARE TO BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE 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 PROJECT ENGINEER.

## ITEM 202 - REMOVAL MISCELLANEOUS: ABUTMENT BEAM SEAT CLEANING

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ACCUMULATED DEBRIS ON THE ABUTMENT BEAM SEATS FOR THE DESIGNATED STRUCTURES. ACCUMULATION IS DEFINED AS ANY THICKNESS CAPABLE OF RETAINING MOISTURE. ALL ACCUMULATION SHALL BE PROPERLY DISPOSED OF TO THE SATISFACTION OF THE PROJECT ENGINEER. ALL CLEANING SHALL BE COMPLETED PRIOR TO BEARINGS HAVING BEEN REFURBISHED, AS PER ITEM 516.

## ITEM 254 - PAVEMENT PLANING BITUMINOUS (VARIABLE)

THE INTENT OF THIS ITEM IS TO REMOVE THE EXISTING BITUMINOUS ASPHALT WEARING SURFACE AND THE MEMBRANE WATERPROOFING FABRIC (IF PRESENT) TO THE SURFACE OF THE EXISTING LMC WEARING SURFACE, VARIABLE THICKNESS, BY MECHANICAL GRINDING.

## ITEM 511 - CLASS "S" CONCRETE MISC: FULL-DEPTH REPAIR

WHERE THE DECK IS SOUND FOR LESS THAN ONE-THIRD OF ITS ORIGINAL DEPTH, THE CONCRETE SHALL BE REMOVED FULL DEPTH EXCEPT FOR LIMITED AREAS AS MAY BE DESIGNATED BY THE ENGINEER.

FORMS SHALL BE PROVIDED TO SUPPORT CONCRETE PLACED IN FULL-DEPTH REPAIR AREAS. THE FORMS FOR AREAS OF UP TO 4 SQUARE FEET MAY BE SUSPENDED FROM WIRES FROM THE REINFORCING STEEL. FOR AREAS GREATER THAN 4 SQUARE FEET, THE FORMS SHALL BE SUPPORTED FROM THE PRIMARY MEMBERS OF THE SUPERSTRUCTURE OR BY SHORING FROM BELOW.

AREAS OF FULL-DEPTH REPAIR SHALL HAVE THE CONCRETE FACES AND REINFORCING STEEL CLEANED.

THE NEWLY EXPOSED SURFACES IN FULL-DEPTH REPAIR AREAS SHALL BE CLEANED AND COATED WITH BONDING GROUT IMMEDIATELY PRIOR TO PLACING CONCRETE.

CONCRETE FOR FULL-DEPTH REPAIRS SHALL BE 511 CONCRETE. THE CONCRETE SHALL BE PLACED UP TO THE PLAN LOWER BOUNDARY OF THE OVERLAY, GIVEN A BROOM FINISH, AND WATER CURED AS SPECIFIED IN THE ITEM 511 - CLASS "S" CONCRETE.

GENERAL NOTES

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DESIGN SHEET  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

DATE  
2-2-95  
STRUCTURE FILE NUMBER

REVISION  
REVISED  
SB

DESIGNED  
CHECKED  
HAC

# GENERAL NOTES

ITEM SPECIAL - STEEL FIBER REINFORCED SUPERPLASTICIZED DENSE CONCRETE OVERLAY (T- 2 3/4")

THIS ITEM SHALL BE IN ACCORDANCE WITH THE PLAN REQUIREMENTS SPECIFIED FOR SUPPLEMENTAL SPECIFICATION 850 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (T- 2 3/4") WITH THE ADDITION OF THE FOLLOWING:

- I) DESCRIPTION: STEEL FIBER REINFORCED SUPERPLASTICIZED DENSE CONCRETE (SFR-SDC) IS A COMPOSITE MATERIAL CONSISTING OF SUPERPLASTICIZED PORTLAND CEMENT CONCRETE CONTAINING A RANDOM DISPERSION OF DISCONTINUOUS DISCRETE STEEL FIBERS.
- II) OBJECTIVE: SFR-SDC IS REPORTED TO TRANSFORM THE BRITTLE MATRIX OF CONVENTIONAL (NON-FIBROUS) SDC INTO A MORE HOMOGENEOUS AND ISOTROPIC DUCTILE MATERIAL. RECENT LABORATORY STUDIES HAVE CONCLUDED THAT THE ADDITION OF QUALITY, RANDOMLY DISPERSED STEEL FIBERS WILL SIGNIFICANTLY INCREASE THE DUCTILITY, TOUGHNESS, IMPACT RESISTANCE, ULTIMATE FLEXURAL STRENGTH, POST CRACK LOAD CARRYING CAPACITY, SHEAR AND TORSIONAL STRENGTH, FATIGUE STRENGTH, AND SHOCK RESISTANCE WITHOUT A REDUCTION IN PLACEMENT WORKABILITY. THE STEEL FIBERS ARE SOLD TO MINIMIZE THE FORMATION AND PROPAGATION OF CRACKS/MICROCRACKS IN THE SDC THAT COULD OTHERWISE COMPROMISE THE ABILITY OF THE DENSIFIED PORTLAND CEMENT CONCRETE MATRIX TO RESIST THE INGRESS OF DEICING SALT SOLUTIONS.

III) MATERIALS:

- 1) SUPERPLASTICIZED DENSE CONCRETE                      850.02 (AND ASTM C1116-89, TYPE 1)
- 2) STEEL FIBERS                                      CARBON STEEL
  - A) TYPE    ASTM A820-85, TYPE 1 (COLD DRAWN WIRE)
  - B) CONFIGURATION OR SHAPE                      DEFORMED LENGTH WITH ROUND OR CRESCENT SHAPED CROSS-SECTION

CRIMPED OR CORRUGATED ALONG THE ENTIRE FULL LENGTH OR "HOOKED" AT EACH END. COLLATION OR GLUED TOGETHER INTO SMALL FIBER BUNDLES WITH A QUICK WATER SOLUBLE ADHESIVE SHALL BE PERMITTED. STRAIGHT STEEL FIBERS WILL NOT BE PERMITTED.

- C) SIZE    2.00 IN. < LENGTH < 2.25 IN.  
OR  
50 MM < LENGTH < 60 MM

0.020 INCH < EQUIVALENT DIAMETER < 0.035 INCH  
OR  
.50 MM < EQUIVALENT DIAMETER < .90 MM

TOLERANCE REQUIREMENTS: ASTM A820-85, SECTION NOS. 8.1.2. & 8.2.2 83

- 1) THE LENGTH SHALL NOT VARY FROM THE ABOVE SPECIFIED RANGE BY MORE THAN + 10%.
- 2) THE DIAMETER OR EQUIVALENT DIAMETER SHALL NOT VARY FROM THE ABOVE SPECIFIED RANGE BY MORE THAN + 10%.

D) NOMINAL ASPECT RATIO, R                      60 < R < 100

WHERE: R = LENGTH OF FIBER, L  
EQUIVALENT DIAMETER OF FIBER, D

TOLERANCE REQUIREMENTS: ASTM A820-85, SECTION NO. 8.2.3

- 1) THE ASPECT RATIO SHALL NOT VARY FROM THE ABOVE SPECIFIED RANGE BY MORE THAN + 15%.

E) DOSAGE RATE                                      100 LBS. PER CUBIC YARD OF PORTLAND CEMENT CONCRETE

F) PHYSICAL PROPERTY REQUIREMENTS:

- 1) TENSILE REQUIREMENTS: ASTM A820-85, SECTION 9.1  
- THE AVERAGE TENSILE STRENGTH SHALL NOT BE LESS THAN 50,000 P.S.I.
- 2) BENDING REQUIREMENTS: ASTM A820-85, SECTION 10.1  
- STEEL FIBERS SHALL WITHSTAND BENDING AROUND A 0.125-INCH INSIDE DIAMETER TO AN ANGLE OF NINETY DEGREES (90 ) AT ROOM TEMPERATURES OF NOT LESS THAN SIXTY DEGREES (60 F) WITHOUT BREAKING. THE PROJECT ENGINEER SHALL BE ABLE TO FIELD BEND THE STEEL FIBERS BY HAND.

G) SAMPLE SIZE                                      ASTM A820-85, SECTION 13.1  
10 RANDOMLY SELECTED STEEL FIBERS FOR EACH 5 TONS (OR FOR EACH SHIPMENT IF < 5 TONS)  
TAKE ONE (1) FIBER FROM EACH OF TEN PACKAGES.

H) RETESTS    ASTM A820-85, SECTION 14.1  
IF ANY SPECIMENS FAIL TO MEET THE ABOVE PHYSICAL TEST REQUIREMENTS, DOUBLE THE NUMBER OF RANDOMLY SAMPLED SPECIMENS.

DESIGNED BY <b>MAH</b>	CHECKED BY <b>MAH</b>	DATE <b>3-8-95</b>	DISTRICT <b>MAH</b>
PROJECT NO. <b>MAH-680-4.01</b>		STRUCTURE FILE NUMBER <b>3-7-95</b>	DIVISION <b>MAH</b>
GENERAL NOTES			
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# GENERAL NOTES

I) SURFACE CONDITION: ASTM A820-85, SECTION 11

- STEEL FIBERS SHALL NOT BE REJECTED BECAUSE OF SEAMS, SURFACE IRREGULARITIES, OR MINOR MILL SCALE PROVIDED THAT THE ABOVE PHYSICAL PROPERTIES ARE MET. EXCESSIVE RUSTING, MILL SCALE, OR OTHER UNDESIRE COATINGS MAY BE CAUSE FOR REJECTION IF THE PROJECT ENGINEER IS CONVINCED THAT THESE "CONTAMINATED" FIBERS EXHIBIT A DETRIMENTAL EFFECT ON MIXING.

J) PACKAGE AND STORAGE: ASTM A820-85, SECTION 16

- STEEL FIBERS SHALL BE PACKAGED IN PLY PAPER/POLYETHYLENE BAGS WEIGHING NO LESS THAN 50 POUNDS AND NO MORE THAN 70 POUNDS. FIBERS ARE TO BE STORED IN A MANNER THAT PREVENTS CORROSION BY MOISTURE (OR OTHER AGENTS) AND CONTAMINATION BY DUST.
- EACH SHIPMENT DELIVERED TO THE PROJECT SITE SHALL BE MARKED WITH THE PURCHASE ORDER NUMBER, MATERIAL TYPE AND SIZE, SPECIFICATION DESIGNATION, NET WEIGHT, AND THE PRODUCER'S NAME OR TRADEMARK.

K) SUGGESTED MANUFACTURERS AND SUPPLIERS:

NOVOCON INTERNATIONAL, INC.  
MT. PROSPECT, ILLINOIS  
1-800-424-3340  
BRAND NAME: XOREX, 2"

EUROSTEEL, INC. (BELGIUM)  
LOCAL SUPPLIER:  
BAKER CONCRETE CONSTRUCTION, INC.  
MONROE, OHIO  
(513) 539-4000  
BRAND NAME: EUROSTEEL 60/1.00

BEKAERT CORPORATION  
MARIETTA, GEORGIA  
(404) 421-8520 OR 1-800-241-4126  
BRAND NAME: DRAMIX ZC 50/.50 OR ZC 60/.80

IV) CERTIFICATION ASTM A820-85, SECTION 15

THE PRODUCER OR SUPPLIER SHALL FURNISH A REPORT OF THE TEST RESULTS AND MUST RENDER A CERTIFICATE STATING THAT EACH LOT HAS BEEN SAMPLED, TESTED, AND INSPECTED IN ACCORDANCE WITH ASTM A820-85.

VI) SDC MATERIAL REQUIREMENTS

- SAME AS SUPPLEMENTAL SPECIFICATION 850.02

VI) EQUIPMENT

- SAME AS SUPPLEMENTAL SPECIFICATION 850.03
- ONLY TRANSIT MIXING TRUCKS CERTIFIED BY THE OHIO DEPARTMENT OF TRANSPORTATION MAY BE USED TO DELIVER MATERIAL TO THE PROJECT.

VII) PROPORTIONING, BATCHING, AND MIXING

- PROPORTIONING SHALL BE THE SAME AS SUPPLEMENTAL SPECIFICATION 850.04, EXCEPT WITH THE ADDITION OF THE STEEL FIBER DOSAGE RATE OF 100 LBS./CU.YD. OF PORTLAND CEMENT CONCRETE.
- BATCHING AND MIXING SHALL BE THE SAME AS SUPPLEMENTAL SPECIFICATION 850.04.

NOTE: IN ORDER TO ASSURE WORKER SAFETY THE CONTRACTOR SHALL SUPPLY AT LEAST THE FOLLOWING PROTECTIVE AND HANDLING EQUIPMENT:

- A) PROTECTIVE GLOVES
- B) GOGGLES
- C) RODS AND/OR SMALL PRONGED HAND HELD GARDEN FORKS (I.E. TO BE USED TO BREAK UP NESTED OR INTERLOCKED STEEL FIBERS SHOULD MINOR BRIDGING OCCUR OVER THE HOPPER EXITS, GATES, FINS, AND/OR OTHER POSSIBLE RESTRICTED OPENING).

THE MAXIMUM SLUMP AND THE AIR CONTENT OF THE FRESH UNVIBRATED SFR-SDC AT THE TIME OF PLACEMENT SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 850.04.

IT IS IMPORTANT THAT THE STEEL FIBERS BE DISPERSED UNIFORMLY THROUGHOUT THE MIX. TO ACCOMPLISH THIS OUTCOME, THE SUPERPLASTICIZER DOSAGE RATE AND THE AIR ENTRAINING ADMIXTURE'S DOSAGE RATE WILL MOST LIKELY FALL INTO THE "HIGH END" OF THE RECOMMENDED RANGE AS PROVIDED BY THE MANUFACTURER.

IF ENCOUNTERED, ALL STEEL FIBER CLUMPS (OR BALLS) SHALL NOT BE USED IN THE NEW BRIDGE DECK OVERLAY AND SHALL BE DISCARDED OFF THE BRIDGE AS DIRECTED BY THE PROJECT ENGINEER.

GENERAL NOTES

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DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

DESIGNED	MB	DATE	2-2-75
CHECKED	KAE	REVIEWED	SM
DRAWN	SD	STRUCTURE FILE NUMBER	

# GENERAL NOTES

VIII) PREPARATION OF EXISTING DECK

- REFER TO HYDRODEMOLITION PROPOSAL NOTES.

IX) FINISHING MACHINE DRY RUN AND PLACING, CONSOLIDATING, FINISHING, AND CURING

- SAME AS SUPPLEMENTAL SPECIFICATION NOS. 850.06 AND 850.07.

X) LIMITATION ON PLACING OPERATIONS

- SAME AS SUPPLEMENTAL SPECIFICATION 850.08.

XI) METHOD OF MEASUREMENT

- THE BID PRICE FOR THIS ITEM OF WORK SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO OVERLAY THE ACTUAL EXISTING CONCRETE BRIDGE DECKS IN SQUARE YARDS OVERLAID IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN CLOSE CONFORMITY WITH THE UNIFORM THICKNESS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THIS WORK SHALL INCLUDE BLAST CLEANING; FURNISHING, PLACING, FINISHING, TEXTURING, AND CURING OF A STEEL FIBER REINFORCED SUPERPLASTICIZED DENSE CONCRETE (SFR-SDC) OVERLAY; AND ALL OTHER INCIDENTAL OPERATIONS NECESSARY TO COMPLETE THIS WORK ACCORDING TO THESE SPECIFICATIONS AND PLAN NOTES AS WELL AS TO THE SATISFACTION OF THE ENGINEER.

ITEM SPECIAL - SFR-SDC TEST SLAB

NOT LESS THAN EIGHT (8) DAYS PRIOR TO THE SCHEDULED BRIDGE DECK OVERLAY PLACEMENT DATE, THE CONTRACTOR SHALL MAKE THE FOLLOWING TRIAL BATCHES: ONE (1) TEST SLAB FOR ITEM SPECIAL SFR-SDC. EACH TEST SLAB SHALL BE 8 FOOT LONG AND 6 FOOT WIDE BY 2 3/4" INCHES THICK. THE TEST SLABS SHALL BE TEXTURED WITH A TINED RAKE AS PER THE ITEM 850 SUPPLEMENTAL SPECIFICATION NOTE AND THE GROOVES SHALL BE CHECKED FOR CONFORMITY TO THE SPECIFICATIONS GIVEN HEREIN. THE CONTRACTOR MAY MAKE ADJUSTMENTS IN THE MIX PROPORTIONS AT THAT TIME TO ENSURE A GOOD AND WORKABLE MIX. THE CONTRACTOR SHALL CONDUCT QUALITY CONTROL TESTS FROM EACH TEST BATCH AND THE ENGINEER MAY ELECT TO CAST TEST SPECIMEN(S) FOR QUALITY ASSURANCE. CONCRETE FOR THE TEST SLABS REQUIRED UNDER 850.05 AND UNDER THIS PLAN NOTE SHALL BE PAID FOR ON A LUMP SUM BASIS.

DESIGN AGENCY STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 OPERATIONS BRIDGE SECTION	
DATE 2-2-95	STRUCTURE FILE NUMBER
REVISED AK	
DESIGNED MB	REVISION SB
CHECKED KAL	
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# GENERAL NOTES

ITEM 202 - WEARING COURSE REMOVED, AS PER PLAN

THE INTENT OF THIS ITEM IS FOR THE CONTRACTOR TO REMOVE ALL OF THE EXISTING LATEX MODIFIED CONCRETE OVERLAY, BY GRINDING, AFTER ALL BITUMINOUS PLANING HAS BEEN COMPLETED. THE AVERAGE DEPTH OF GRINDING SHALL BE A NOMINAL 1 1/4". THE REMAINING UNSOUND CONCRETE SHALL BE REMOVED BY ITEM SPECIAL- BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION AND ITEM 202- REMOVAL MISCELLANEOUS : DEBONDED AND DETERIORATED EXISTING LATEX MODIFIED CONCRETE VARIABLE THICKNESS.

ITEM 202 - REMOVAL MISCELLANEOUS: DEBONDED AND DETERIORATED EXISTING LATEX MODIFIED CONCRETE VARIABLE THICKNESS

AFTER COMPLETION OF THE SURFACE PREPARATION USING HYDRODEMOLITION, THE CONTRACTOR SHALL REMOVE ALL OBVIOUSLY LOOSE, DEBONDED AND/OR DETERIORATED LATEX MODIFIED CONCRETE. THE LMC SHALL BE REMOVED BY CHIPPING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35-POUND CLASS AND SHALL BE OPERATED AT AN ANGLE OF LESS THAN 45 DEGREES WITH RESPECT TO THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND ANY REINFORCING STEEL HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF THE STEEL HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4" CLEARANCE AROUND THE STEEL EXCEPT WHERE OTHER REINFORCING STEEL MAKES THIS IMPRACTICABLE. THE PROJECT ENGINEER SHALL SOUND AND MARK THE AREAS PRIOR TO REMOVAL. AFTER THE INITIAL REMOVALS HAVE BEEN COMPLETED THE PROJECT ENGINEER SHALL RESOUND THE AREAS TO INSURE ALL THE LOOSE, DEBONDED AND/OR DETERIORATED MATERIAL IS REMOVED. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH PAINT TO MARK THE REMOVAL AREAS. THIS ITEM SHALL BE PAID BASED ON SQUARE YARDS OF MARKED REMOVAL AREAS.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN-BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND METALLIZING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, ABRASIVE BLASTING, HAND-TOOL CLEANING (GRINDING IF NECESSARY), METALLIZING AS PER PROPOSAL NOTE (METALLIZING STEEL STRUCTURES), REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT THE OPTION OF THE CONTRACTOR AND NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516- REFURBISH BEARINGS DEVICES , AS PER PLAN.

NOTE: IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURE PATCHING OF THE ABUTMENT SEATS AND THE BACKWALLS (IF REQUIRED) WITH THE REFURBISHING OF THE BEARING DEVICES AND THE PATCHING THAT MAY BE REQUIRED UNDER THE BEARING DEVICES.

ITEM 513 - STRUCTURAL STEEL MISC. : REMOVAL AND REPLACEMENT OF DAMAGED CROSS FRAMES

THE EXISTING DAMAGED CROSSFRAMES ON STRUCTURE MAH-680-0476R SHALL BE REMOVED AND REPLACED WITH NEW STRUCTURAL STEEL. THE CROSSFRAMES ARE 3"x 3"x 5/16" ANGLES AND ARE TO BE REPLACED IN KIND. STEEL WILL BE AISC CATEGORY I, A36 STEEL, MADE IN THE U.S.A. THE REQUIREMENTS OF 501.04-APPROVAL OF FABRICATOR AND 501.05-SHOP DRAWINGS, ARE NOT REQUIRED. NEW CROSSFRAMES WILL BE PLACED BACK IN THEIR ORIGINAL POSITIONS. OLD CROSSFRAME WELDS WILL BE GROUND SMOOTH AND BE PREPARED FOR WELDING AFTER THE MAGNETIC PARTICLE TEST HAS BEEN PERFORMED.

DESIGN PROJECT		DATE	
STATE OF OHIO		3-8-95	
DEPARTMENT OF TRANSPORTATION		REVISED	STRUCTURAL FILE NUMBER
DISTRICT 4 OPERATIONS		3-7-95	
BRIDGE SECTION			
DESIGNED	BY	DATE	
MAH	DB	3-7-95	
CHECKED	BY	DATE	
MAH	DB	3-7-95	
GENERAL NOTES			
MAH-680-4.01			
44 110			

# GENERAL NOTES

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO JACK AND ADEQUATELY SUPPORT THE EXISTING SUPERSTRUCTURE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING AND SUPPORT PLANS, PROCEDURES AND LOADING CALCULATIONS, PERFORMED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

- \* PHYSICAL DIMENSIONS AND CAPACITY OF THE JACKING SYSTEMS ALONG WITH THE ACTUAL POSITIONS, INCLUDING DIMENSIONS, DEFINING WHERE THE JACKING SYSTEMS WILL BE PHYSICALLY LOCATED ON THE STRUCTURE TO PERFORM THE REQUIRED LIFTS.
- \* PHYSICAL DIMENSIONS, MATERIALS, FABRICATION DETAILS AND DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS ALONG WITH ACTUAL DETAILS OF THEIR INSTALLED LOCATIONS ON THE STRUCTURE. HORIZONTAL MOVEMENT RESTRAINTS SHALL BE DESIGNED AND DETAILED. LATERAL AND LONGITUDINAL DESIGN LOADS AND SUPPORTING DESIGN CALCULATIONS SHALL BE INCLUDED.
- \* A JACKING PLAN SHEET LAYOUT, WITH ADEQUATE DETAILS TO SHOW ALL JACKING POINTS, CALCULATED LOADINGS AT THOSE POINTS, LOCATIONS OF JACKING EQUIPMENT AND TEMPORARY OR PERMANENT SUPPORTS SHALL BE INCLUDED IN THE SUBMITTAL. ANY PHASED CONSTRUCTION, SPECIAL TRAFFIC REQUIREMENTS, CLEARANCE REQUIREMENTS, RAILROAD DETAILS OR SPECIAL CONSTRUCTION DETAILS THAT EFFECT THE JACKING OPERATION AND ANY OTHER DETAILS THE CONTRACTOR DEEMS NECESSARY TO ADEQUATELY VISUALLY DESCRIBE THE JACKING OPERATION SHALL ALSO BE INCLUDED IN THE JACKING PLAN SHEET.

- \* THE PLAN SHEET SHALL INCLUDE A STEP BY STEP JACKING PROCEDURE DETAILING ALL STEPS IN THE OPERATION INCLUDING THE REQUIRED WORK DESCRIBED IN THE PROJECT PLANS

JACKING OPERATIONS ARE LIMITED TO A MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ADJACENT BEARINGS OF 1/4 INCH.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEARINGS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE LIMITED BY STRESSES INDUCED IN THE AFFECTED STRUCTURAL MEMBERS. CALCULATIONS DETAILING ALL STRESSES INDUCED IN THE AFFECTED MEMBERS AND LIMITED BY ALLOWABLE STRESSES OF 136.5% OF NORMAL DESIGN STRESSES, SHALL BE INCLUDED IN THE JACKING PROCEDURE SUBMITTAL. THE ONLY EXCEPTION TO THE SIMULTANEOUS JACKING REQUIREMENT IS WHEN ACTUAL PROJECT WORK REQUIRES INDIVIDUAL BEARINGS TO BE REPLACED OR REHABILITATED, NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE TOTAL LIFT DOES NOT EXCEED 1/4 INCH.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK ARE INCLUDED UNDER ITEM SPECIAL, LUMP SUM, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

DESIGN PROJECT  
STATE OF MASSACHUSETTS  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

DATE 2-2-95  
REVISION T/M STRUCTURE FILE NUMBER

DRAWN SB REVISION

DESIGNED KAC CHECKED

GENERAL NOTES

MAH-680-4.01

45/110

# GENERAL NOTES

ITEM 202 - REMOVAL MISCELLANEOUS: CORRUGATED METAL SCUPPER COLLECTOR SYSTEM

THE CORRUGATED METAL SCUPPER COLLECTOR DRAINAGE SYSTEM OF STRUCTURE MAH-680-0414, LOCATED NEAR THE REAR ABUTMENT, IS SEVERELY DETERIORATED AND SHALL BE REMOVED BY THE CONTRACTOR. BESIDES REMOVING THE DRAINAGE SYSTEM THIS WORK SHALL ALSO INCLUDE DISPOSAL OF THE METAL PIPE AND ALL MISCELLANEOUS HARDWARE OFF THE PROJECT LIMITS. ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE PROJECT ENGINEER SHALL BE PAID FOR AND/OR INCLUDED IN THE LUMP SUM BID PRICE.

ITEM 516 - BEARING DEVICE, MISCELLANEOUS: REPAIR, AS PER PLAN

~~AFTER THE CONTRACTOR HAS HEAT STRAIGHTENED THE DAMAGED BEAM ON STRUCTURE MAH-680-0440 AND REPLACED THE DAMAGED CROSSFRAMES, THE CONTRACTOR SHALL REPAIR THE DAMAGED BEARING DEVICE. THE CONTRACTOR SHALL REMOVE THE DAMAGED PLATE, PLATE LOCATION SHOWN ON ROCKER DETAIL, AND REPLACE IT WITH A NEW PLATE. ALL OLD WELDS SHALL BE GROUND DOWN BEFORE THE NEW PLATE IS INSTALLED. THE NEW PLATE SHALL BE WELDED INTO PLACE AS PER THE AASHTO/AWS BRIDGE WELDING CODE. AFTER THE PLATE HAS BEEN INSTALLED THE CONTRACTOR SHALL HAND CLEAN THE BEARING DEVICE, REMOVING DIRT, RUST, ANY LOOSE PAINT, AND ANY FOREIGN MATERIAL THAT WOULD CAUSE THE NEW COATING MATERIAL NOT TO ADHERE TO THE BEARING. THE CONTRACTOR SHALL THEN PAINT THE WHOLE BEARING DEVICE WITH TWO COATS OF ZINC RICH PRIMER. THE STEEL FOR THE NEW PLATE WILL NOT REQUIRE AISC CERTIFICATION BUT IT SHALL BE MANUFACTURED IN THE U.S.A..~~

ITEM 601- DUMP ROCK FILL, TYPE B

IN ADDITION TO THE VOLUME OF DUMP ROCK FILL, TYPE B, SPECIFIED UNDER MAH-680-04.40, THAT APPEARS ON THE STRUCTURE TREATMENT SHEET, A TOTAL OF THIRTY (30) CUBIC YARDS HAS BEEN FORWARDED TO THE GENERAL SUMMARY. THIS MATERIAL IS TO BE PLACED AT THE STRAIGHT LINE MILEAGE SECTION 4.25, RIGHT, FOR PURPOSES OF RE-FILLING THE SIDESLOPE DRAINAGE DITCH WITH A UNIFORM THICKNESS OF TWO FEET. THE LIMITS OF THE DUMP ROCK FILL PLACEMENT SHALL BE WITHIN THE PROJECT RIGHT-OF-WAY. THE EXISTING BROKEN CONCRETE PIECES/RUBBLE ARE TO REMAIN IN-PLACE TO SERVE AS A SUPPORTING BASE FOR THE NEWLY PLACED 2 FOOT THICK DUMPED ROCK FILL. ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS ASSOCIATED WITH THE PERFORMANCE OF THE ABOVE STATED WORK SHALL BE INCLUDED IN ITEM 601, CUBIC YARDS, DUMP ROCK FILL, TYPE B.

ITEM 511-CLASS "S" CONCRETE, MISCELLANEOUS: PARAPET REPAVING, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF SOUNDING AND MARKING ALL OBVIOUSLY SPALLED/CHIPPED PARAPET WALL SURFACES WITH A METAL HAMMER TO ISOLATE THE REPAIR AREAS, REMOVING THE UNSOUND CONCRETE TO A MINIMUM THICKNESS OF FOUR INCHES (4") DEEP, REPLACING ANY DAMAGED REINFORCING STEEL, SAND BLAST CLEANING ALL REPAIR AREAS, AS WELL AS PLACING, FINISHING, AND CURING CLASS "S" CONCRETE. IN ORDER TO PROPERLY RESTORE ANY DAMAGED OR MISSING REINFORCING STEEL, DOWEL HOLES MAY BE DEEMED NECESSARY AS DIRECTED BY THE PROJECT ENGINEER. ALL REPLACEMENT STEEL SHALL BE EPOXY COATED REINFORCING STEEL, GRADE 60 AND SHALL BE INSTALLED AS CLOSE TO THE "AS BUILT" (ORIGINAL) CONDITION AS PRACTICAL. THE CONTRACTOR CAN OBTAIN THE "AS BUILT" PARAPET WALL DETAILS BY CONTACTING THE DISTRICT NO. 4 BRIDGE OFFICE IN RAVENNA, OHIO. AFTER THE CLASS "S" CONCRETE PARAPET WALL REPAVING AREAS HAVE HAD ALL FORMWORK REMOVED AND ARE BEYOND THE CURE PERIOD AS SPECIFIED IN C.M.S. ITEM 511, THE STATE PROJECT PERSONNEL SHALL SOUND ALL NEW REPAIRED SURFACES. THE CONTRACTOR SHALL REMOVE AND REPLACE ALL PARAPET WALL REPAVING AREAS THAT WERE FOUND TO BE UNSOUND OR ARE VISIBLY CRACKED AREAS AT NO ADDITIONAL COST TO THE STATE. ALL EXPOSED NEWLY CURED CONCRETE SURFACES SHALL BE FINISHED BY RUBBING IN ACCORDANCE TO 511.15 SO AS TO MATCH THE SURROUNDING PARAPET WALL FACES AS NEARLY AS POSSIBLE. MEMBRANE CURING SHALL BE APPLIED IMMEDIATELY AFTER THE RUBBING THE SURFACES AS NOTED IN 511.14, METHOD (B).

METHOD OF MEASUREMENT

THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE YARDS OF THE EXPOSED CONCRETE SURFACES OF ALL COMPLETED AND ACCEPTED REPAVED PARAPET WALLS, INCLUDING VERTICAL FRONT FACES, HORIZONTAL TOP FACES, AND VERTICAL BACK FACES. THE HORIZONTAL BOTTOM FACES SHALL NOT BE ELIGIBLE FOR PAYMENT.

ALL LABOR TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK ARE INCLUDED UNDER ITEM 511, SQUARE YARDS, CLASS "S" CONCRETE, MISCELLANEOUS: PARAPET REPAVING, AS PER PLAN.

STR. NO.	LOCATION	APPROXIMATE QUANTITY
MAH-680-06.32R	SB TRAILING PARAPET, RT.	7.0 SQ.YDS.
MAH-680-06.32R	SB APPROACH PARAPET RT.	2.0 SQ.YDS.
MAH-680-06.32L	NB TRAILING, PARAPET LT.	3.0 SQ.YDS.
MAH-680-05.73L	NB APPROACH PARAPET LT.	3.0 SQ.YDS.

TOTAL= 15.0 SQ.YDS.

DESIGN AGENT  
 DATE  
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 DATE  
 GENERAL NOTES  
 MAH-680-4.01  
 46  
 110

# GENERAL NOTES

ACCESS TO WORK FOR STRUCTURE MAH-680-0476

THE EROSION CORRECTION AND PIPE WORK ON STRUCTURE 0476 SHALL BE ON OR THROUGH MILL CREEK METROPARK PROPERTY. NO TREES OR BRUSH SHALL BE REMOVED FROM PARK PROPERTY UNLESS WRITTEN PERMISSION IS OBTAINED BY THE CONTRACTOR FROM THE PARK ADMINISTRATOR: MR. WILLIAM SCHOLLAERT  
816 GLENWOOD AVE.  
YOUNGSTOWN, OHIO 44502  
PH. (216) 743-7275.

- ITEM 601 - DUMPED ROCK FILL, TYPE A, AS PER PLAN
- ITEM 601 - DUMPED ROCK FILL, TYPE B, AS PER PLAN
- ITEM 601 - DUMPED ROCK FILL, TYPE C, AS PER PLAN

DUMPED ROCK FILL, TYPE A, B AND C, SHALL BE PLACED TO COMPLETELY FILL THE EXISTING ERODED SIDESLOPE GULLIES BENEATH STRUCTURE NO. MAH-680-0476. THE MATERIAL SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN C.&M.S. 601.07. THE DUMPED ROCK FILL, TYPE A, SHALL BE PLACED AT THE BASE (ie. LOWEST DEPTHS) OF THE GULLY, WHEREAS DUMPED ROCK FILL, TYPE B, SHALL BE SITUATED AS THE INTERMEDIATE COURSE AND DUMPED ROCK FILL, TYPE C, IS TO BE PLACED AS THE SURFACE OR TOP COURSE. AFTER EACH DESIGNATED ROCK FILL LIFT (COURSE) IS PLACED, IT SHALL BE FLOODED WITH GROUT. THE EXPOSED TOP SURFACES SHALL NOT BE COMPLETELY COVERED TO ALLOW FOR SURFACE IRREGULARITIES BETWEEN SPECIFIED LIFTS. THE FRESHLY PLACED GROUT SHALL HAVE A MINIMUM CURE PERIOD OF 24 HOURS, PRIOR TO LOADING OF THE NEXT SUCCESSIVE ROCK LIFT. THE GROUT FILLER MATERIAL SHALL BE MIXED IN ACCORDANCE TO 601.03 OF THE C.&M.S. THE EXTREME TOP SURFACE OF THE DUMPED ROCK, TYPE C, SHALL BE SLIGHTLY DEPRESSED OR SWALED, AS DIRECTED BY THE PROJECT ENGINEER, TO ASSURE POSITIVE DRAINAGE FROM THE OUTER GULLY FACES TO THE CENTERLINE OF THE GULLY. ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS WHICH ARE DEEMED NECESSARY TO PERFORM THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICES OF THESE ITEMS.

ITEM 607E35000 FENCE REMOVED AND REBUILT

THIS ITEM HAS BEEN ESTABLISHED TO PROVIDE ACCESS FROM PIKE STREET TO THE WORK SITE FOR EROSION CORRECTION AT STRUCTURE 0573 (NB). THE CONTRACTOR SHALL REMOVE AND RE-INSTALL EXISTING RIGHT-OF-WAY FENCE AT THE DIRECTION OF THE ENGINEER. DURING RE-ERECTION OF THE FENCE, ANY COMPONENTS NOT RE-USABLE SHALL BE SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT THE CITY OF YOUNGSTOWN WASTE WATER TREATMENT PLANT THREE WORKING DAYS PRIOR TO OBTAIN ACCESS INTO PIKE STREET. CONTACT THE CITY THROUGH MR. CHUCK HOUSTEAU PH. (216) 742-8820.

PAYMENT AT UNIT BID PRICE SHALL CONSTITUTE FULL COMPENSATION FOR REMOVAL, REPLACEMENT AND FURNISHING OF ALL MATERIALS TO REPLACE NON-REUSABLE ITEMS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. A QUANTITY OF 150 LIN.FT. HAS BEEN CARRIED TO THE GENERAL SUMMARY TO COMPLETE THE WORK AT THIS LOCATION.

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN

NUMEROUS EROSION "WASH-OUT" AREAS EXIST UNDER STRUCTURE NO. MAH-680-0573L. AFTER THE ITEM 511 - PILE ENCASEMENT WORK HAS BEEN COMPLETED AND SUFFICIENTLY CURED, THE CONTRACTOR SHALL REGRADE THE UNDER DECK EMBANKMENT SIDE SLOPE INCORPORATING ALL SALVAGEABLE ERODED EMBANKMENT MATERIAL FROM THE TOE OF THE SLOPE INTO THE " WASHOUT " AREAS. THE SALVAGEABLE GRANULAR FILLER MATERIAL SHALL BE GRADED AND RESHAPED, AS DIRECTED BY THE PROJECT ENGINEER. THE SALVAGE MATERIAL SHALL BE PLACED TO A MINIMUM DEPTH OF 2 FOOT BELOW THE ADJACENT EMBANKMENT SIDESLOPE. THIS DEPTH MAY BE GREATER THEN 2 FEET DEPENDING ON THE AMOUNT OF SATISFACTORY SALVAGE GRANULAR MATERIAL EXISTING AT THE TOE OF THE SLOPE. THE REMAINING VOLUME OF THE PARTIALLY FILLED " WASHOUT " SHALL BE FILLED WITH C.&M.S. ITEM 601.05, CRUSHED AGGREGATE SLOPE PROTECTION. THE COMPLETED SURFACES ARE TO BE PLUSH WITH THE ADJACENT SIDESLOPE GRADES.

AN ADDITIONAL ERODED AREA EXISTS NEAR THE NORTHERN ABUTMENT OF STRUCTURE MAH-680-0693. THIS ERODED AREA SHALL BE FILLED FULL-DEPTH WITH CRUSHED AGGREGATE SLOPE PROTECTION MATERIAL.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PERFORM THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN.

DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

DATE  
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REVISION  
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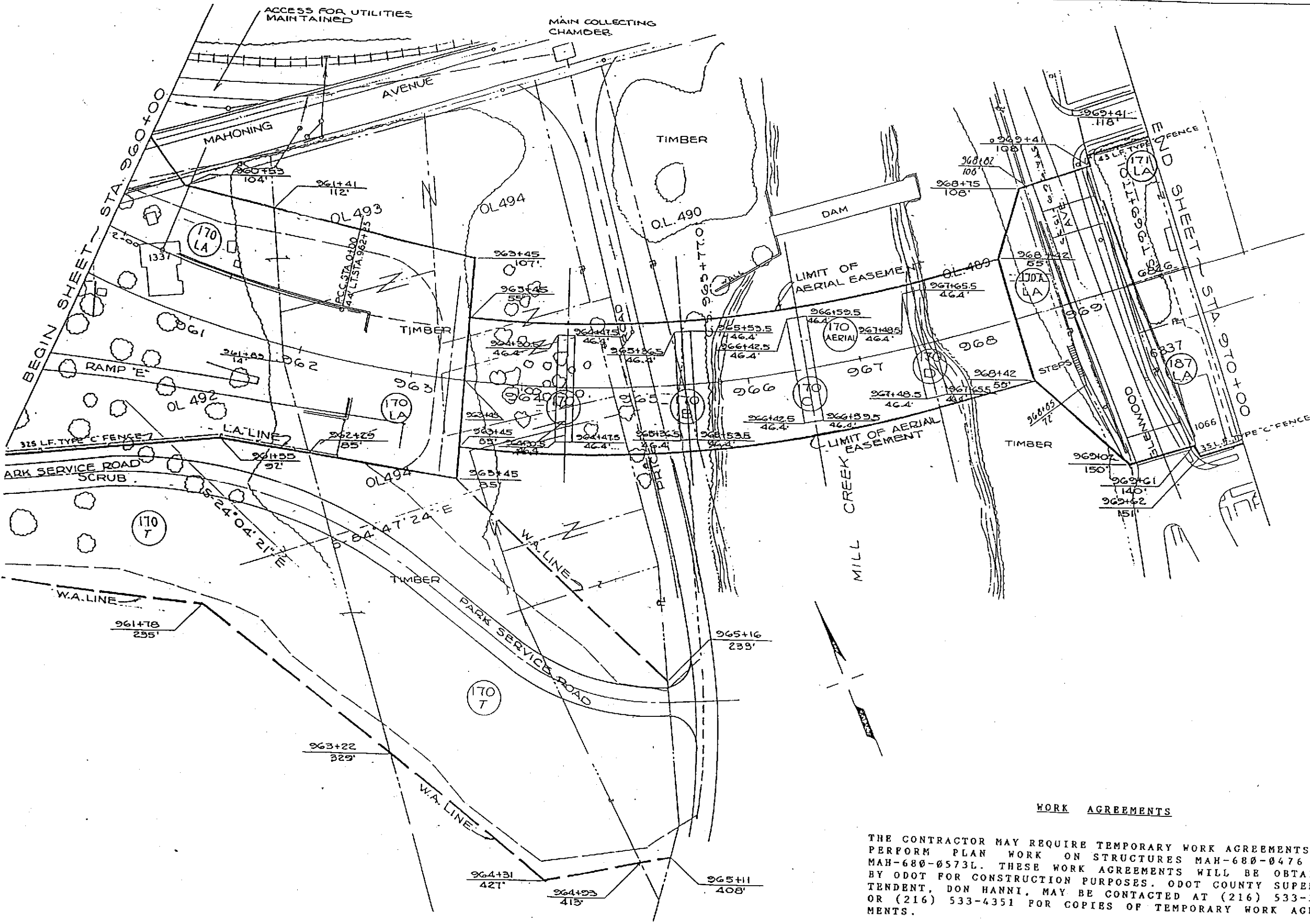
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MBS  
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GENERAL NOTES

MAH-680-4.01

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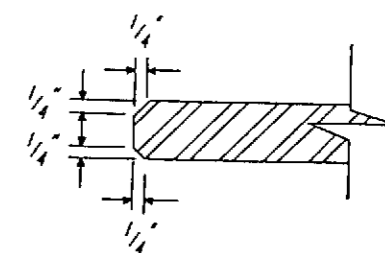
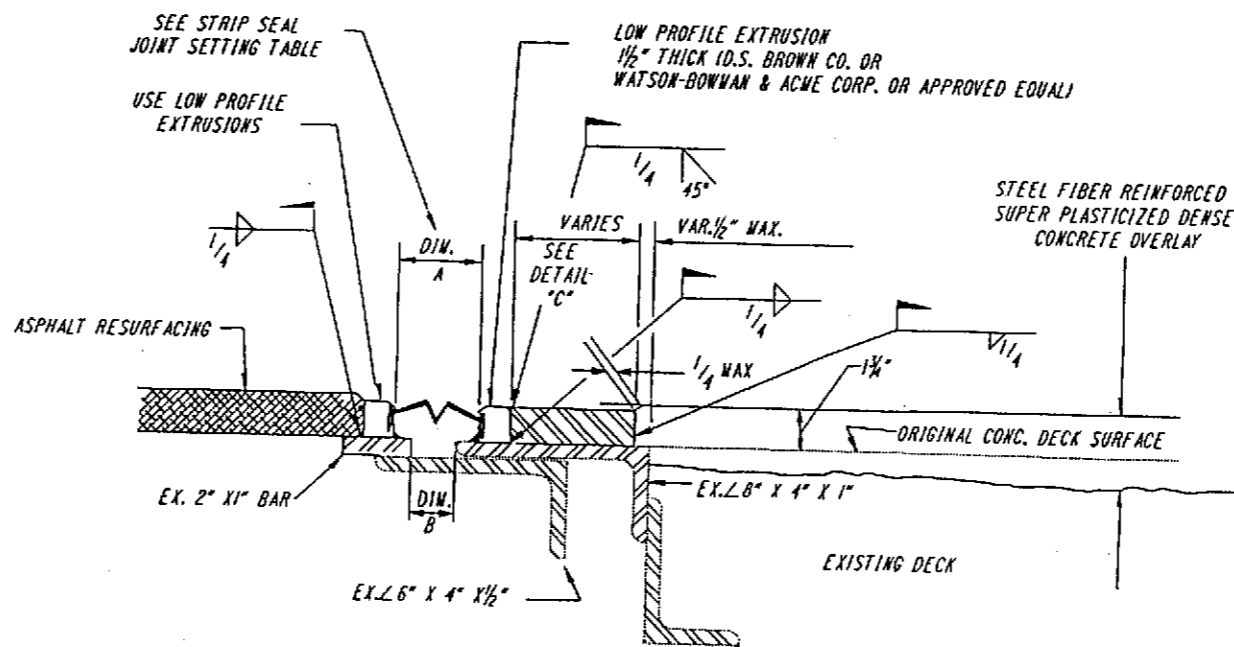
DESIGNED BY KAC	DATE 2-2-97	DESIGN AGENCY STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 OPERATIONS BRIDGE SECTION
CHECKED BY KAC	REVISION 77	SYMBOL FILE NUMBER
BOUNDARIES OF EXISTING RIGHT OF WAY MAH - 680 - 0476		
MAH-680-4.01		
48 110		

**WORK AGREEMENTS**

THE CONTRACTOR MAY REQUIRE TEMPORARY WORK AGREEMENTS TO PERFORM PLAN WORK ON STRUCTURES MAH-680-0476 AND MAH-680-0573L. THESE WORK AGREEMENTS WILL BE OBTAINED BY ODOT FOR CONSTRUCTION PURPOSES. ODOT COUNTY SUPERINTENDENT, DON HANNI, MAY BE CONTACTED AT (216) 533-3637 OR (216) 533-4351 FOR COPIES OF TEMPORARY WORK AGREEMENTS.



# ITEM 516 STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN



DETAIL "C"

WIDTH OF BAR RELATIVE TO EXIST. EXPANSION JOINT OPENING TO BE FIELD VERIFIED PRIOR TO ORDERING BAR WIDTH

## ITEM 516- STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK REQUIRED TO TRIM EXISTING STEEL WHERE NECESSARY, PROVIDE THE STEEL EXTRUSIONS, NEOPRENE STRIP SEAL AS INDICATED IN THE CONTRACT PLANS. THIS ITEM SHALL CONFORM TO ITEM 516 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS AND STANDARD ~~EXCEPT AS NOTED HEREIN, THE STEEL EXTRUSIONS SHALL BE LOW PROFILE EXTRUSIONS 1 1/2" THICK (D.S. BROWN CO. OR WATSON-BOWMAN & ACME OR APPROVED EQUAL.)~~

THE STEEL EXTRUSION SHALL BE PROVIDED IN MAXIMUM LENGTH POSSIBLE TO ALLOW FOR TRAFFIC MAINTENANCE AND SHALL BE WELDED TOGETHER TO FORM A WATERTIGHT JOINT. THE NEOPRENE STRIP SEAL SHALL BE ONE CONTINUOUS PIECE. NO FIELD VULCANIZATION SHALL NOT BE INSTALLED UNTIL ALL OTHER WORK IS COMPLETE UPON THE STRUCTURE.

THE APPROVAL OF AN ALTERNATIVE JOINT SEAL DESIGN AND THE ISSUANCE OF REVISED PROJECT PLANS SHALL BE BASED ON THE UNDERSTANDING THAT SUCH PROJECT MODIFICATIONS WILL BE DONE WITHOUT COST TO THE STATE.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR ITEM 516- STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN, AND SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED HEREIN.

## STRIP SEAL JOINT SETTING TABLE

NOTE: THE ABOVE SETTINGS ARE THE MINIMUM JOINT OPENING DISTANCES (DIMENSION "A") AT THE TIME OF INSTALLATION OF THE REQUIRED 4" STRIP SEAL GLANDS. FOR ADDITIONAL INFORMATION, REFER TO STANDARD DRAWING EXJ-4-87, PG. 5 OF 5.

BRIDGE NO.	30°	40°	50°	60°	70°	80°	90°
MAH-680-04.40L	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"
MAH-680-04.40R	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"
MAH-680-04.76L	3 1/4"	3 1/2"	3 3/4"	4"	4 1/4"	4 1/2"	4 3/4"
MAH-680-04.76R	3 1/4"	3 1/2"	3 3/4"	4"	4 1/4"	4 1/2"	4 3/4"
MAH-680-05.73L	2 7/8"	2 5/16"	2 5/16"	3"	3 1/16"	3 1/16"	3 1/8"
MAH-680-06.32L	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"
MAH-680-06.32R	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"
MAH-680-06.87L	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"
MAH-680-06.87R	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"
MAH-680-06.93L	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"
MAH-680-06.93R	2 3/4"	2 7/8"	2 5/16"	3"	3 1/16"	3 1/8"	3 1/4"

ALL DIMENSIONS OF EXISTING EXPANSION DEVICES SHALL BE FIELD VERIFIED PRIOR TO ORDERING ANY MATERIALS. ALL STRIP SEALS REQUIRE 4" GLANDS.

FOR ALL STRUCTURES EXCEPT MAH-680-0476 L/R, IF DIMENSION "B" IS 3/4" OR LESS @ 60° THE 8" x 4" ANGLE MUST BE TRIMMED TO INCREASE DIMENSION "B" TO 1".

FOR STRUCTURE MAH-680-0476 L/R, IF DIMENSION "B" IS 1 1/4" OR LESS @ 60° THE 8" x 4" ANGLE MUST BE TRIMMED TO INCREASE DIMENSION "B" TO 1 1/2".

STRUCTURAL EXPANSION JOINTS

MAH-680-4.01

50  
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DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

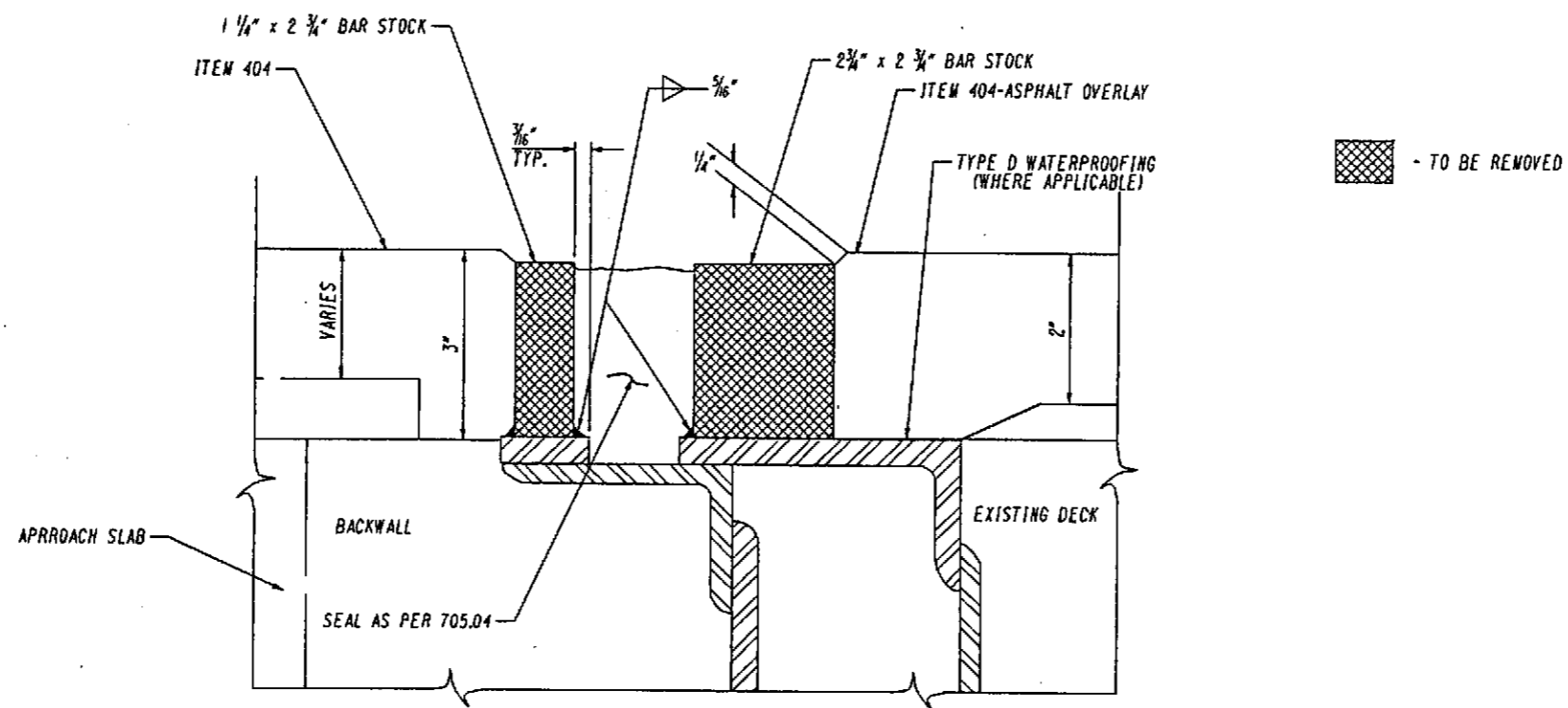
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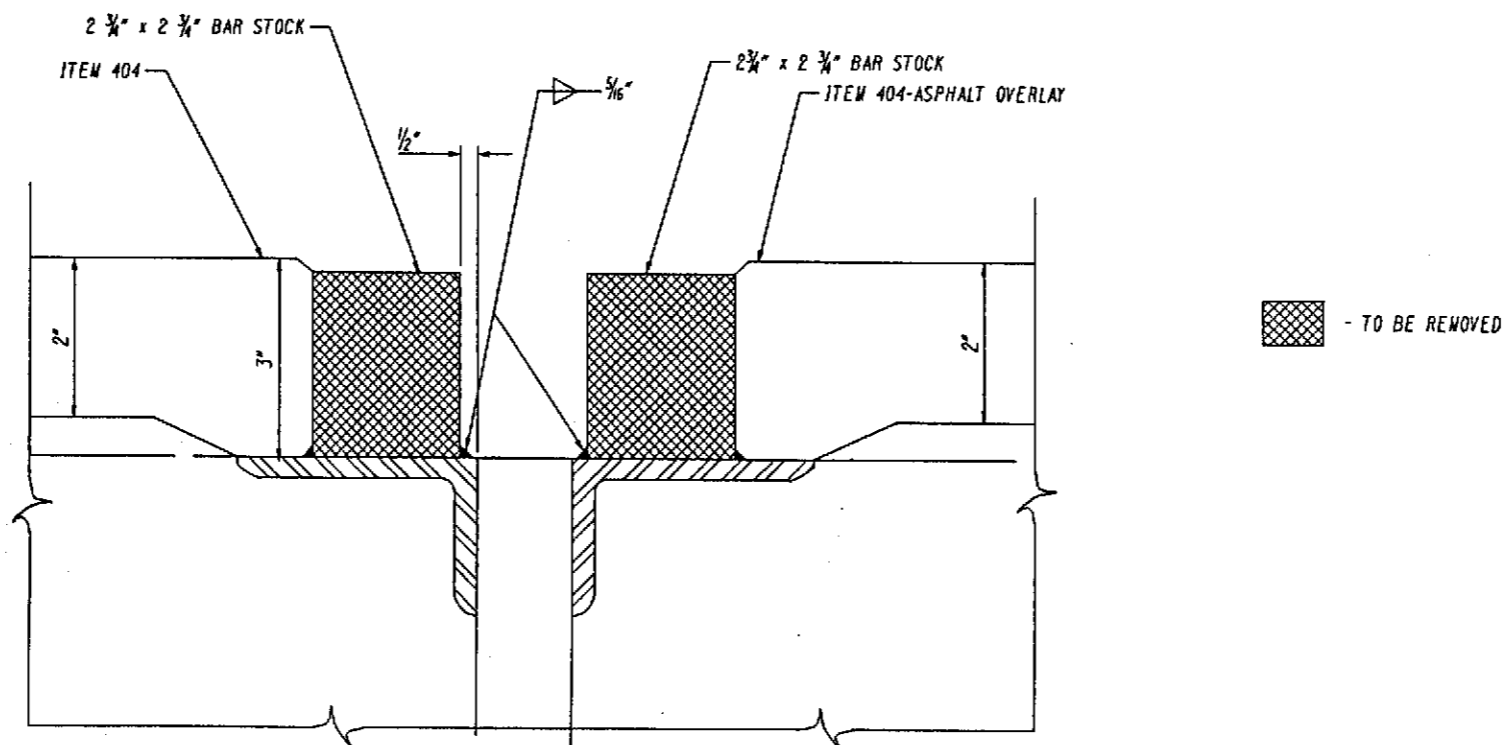
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# REMOVAL MISC., VERTICAL EXTENSIONS



EXISTING EXPANSION JOINT (ABUTMENT)



EXISTING EXPANSION JOINT (INTERMEDIATE)

MAH-680-05.73 ONLY

DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

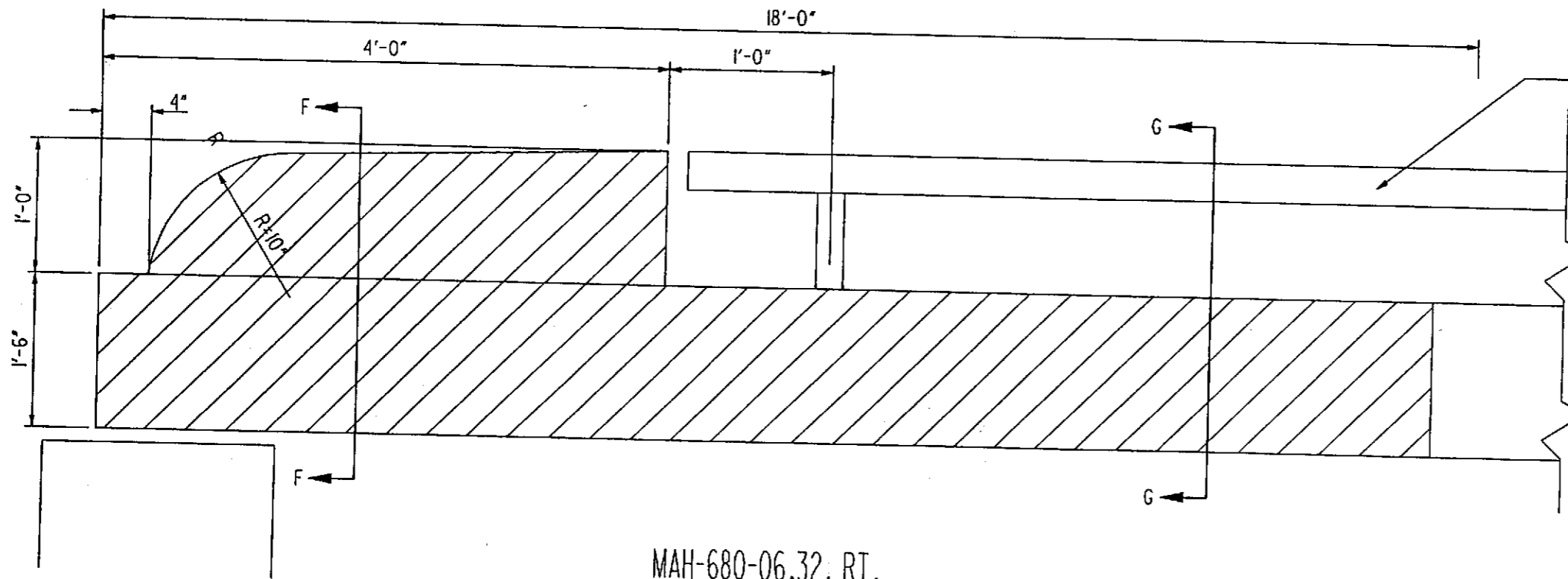
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REMOVAL MISC., VERTICAL EXTENSIONS

MAH-680-4.01

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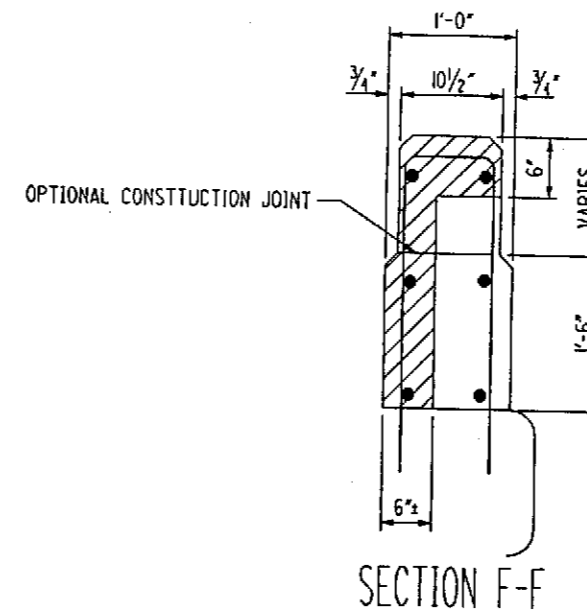
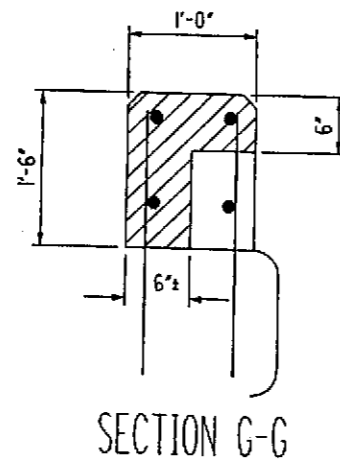
# ITEM 511- CLASS S CONCRETE, MISCELLANEOUS= PARAPET REFACING, AS PER PLAN



NOTE: REMOVE EXISTING BRIDGE TUBULAR RAILING AND SUPPORTS PRIOR TO ANY FULL-WIDTH PARAPET REMOVAL WORK. AFTER THE CAST IN-PLACE CLASS S CONCRETE HAS BEEN ADEQUATELY CURED AND ALL FORMWORK HAS BEEN REMOVED, INSTALL THE ORIGINAL BRIDGE TUBULAR RAILING COMPONENTS

MAH-680-06.32, RT.  
(SOUTHBOUND EASTERN "TRAILING" PARAPET WALL, RIGHT)

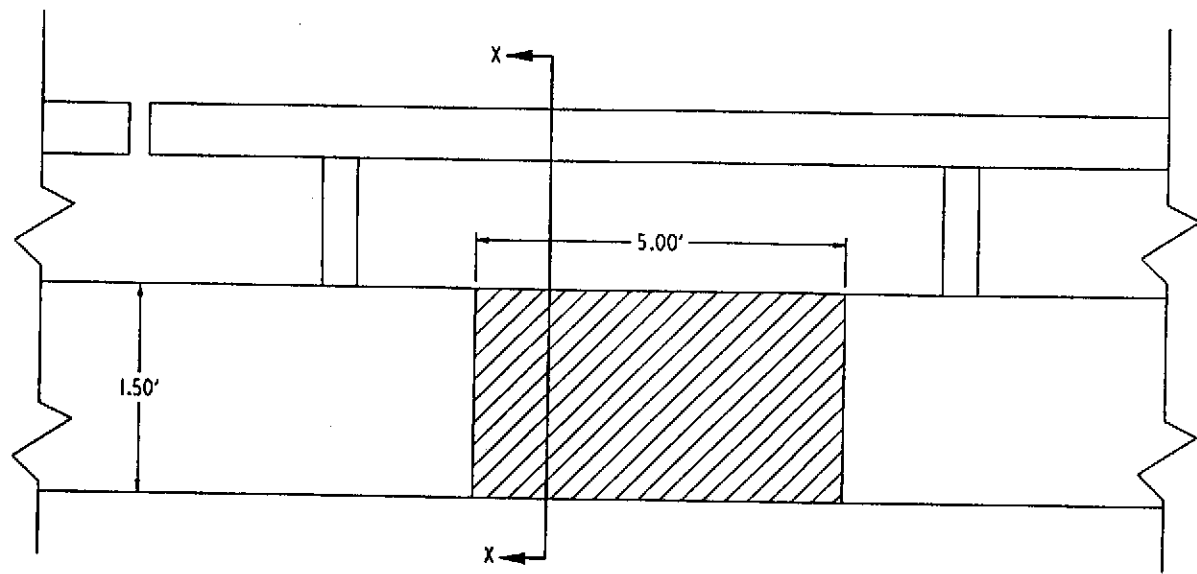
LEGEND  
 - REMOVE



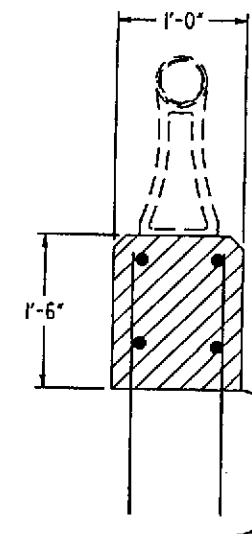
NOTE: REMOVAL AND REPAIR OF PARAPET WALL FRONT FACE AND TOP FACE ARE SHOWN.  
 IF BACKWALL SURFACES ARE FOUND TO BE UNSOUND, SIMILARLY REMOVE AND REPAIR.

DESIGN AGENCY STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 OPERATIONS BRIDGE SECTION	DATE 2-2-95
REVISED 4/95	STRUCTURE FILE NUMBER
DRAWN SB	REVISED
DESIGNED MB	CHECKED KAC
PARAPET REFACING	
MAH-680-4.01	
52 110	

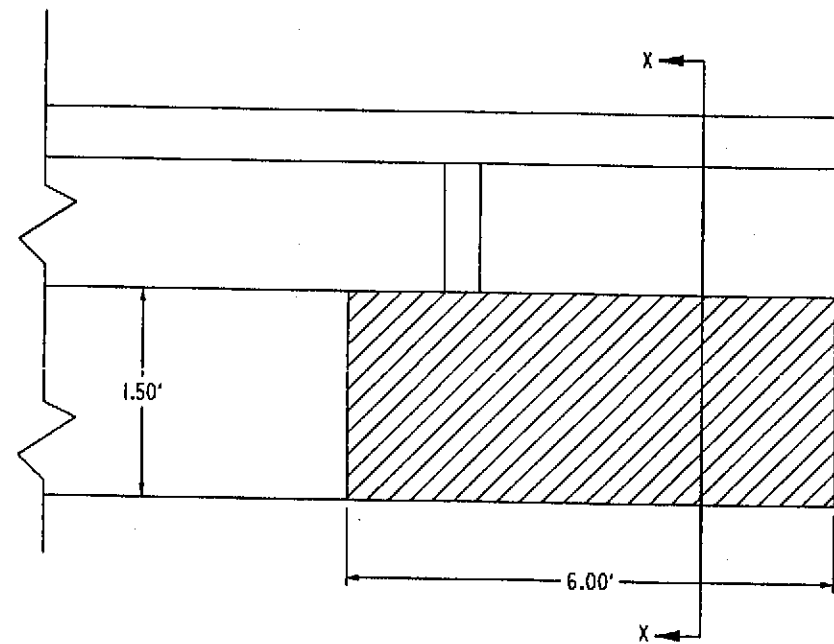
ITEM 511- CLASS S CONCRETE, MISCELLANEOUS: PARAPET REFACING, AS PER PLAN



MAH-680-06.32R (SOUTHBOUND WESTERN "APPROACH" PARAPET WALL, RIGHT)




SECTION X-X



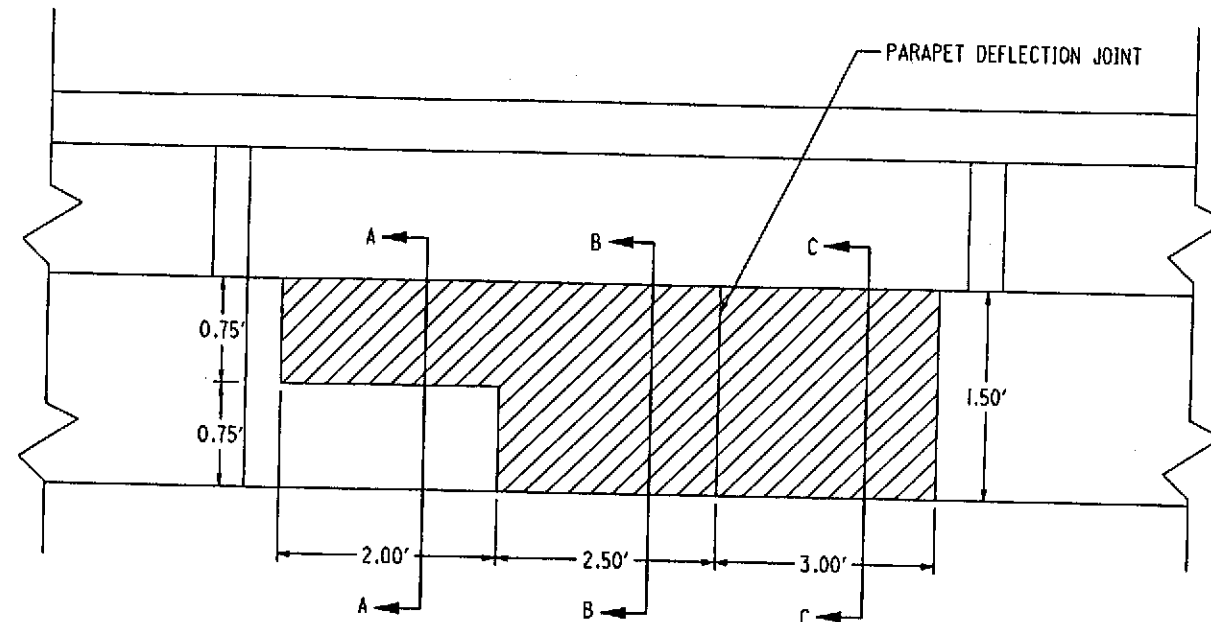
MAH-680-06.32L (NORTHBOUND WESTERN "TRAILING" PARAPET WALL, LEFT)

LEGEND

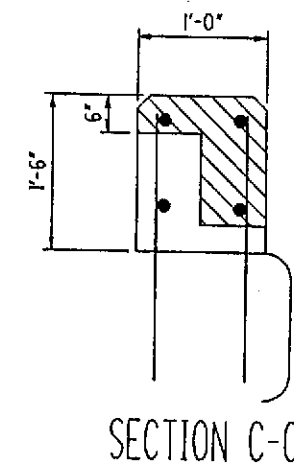
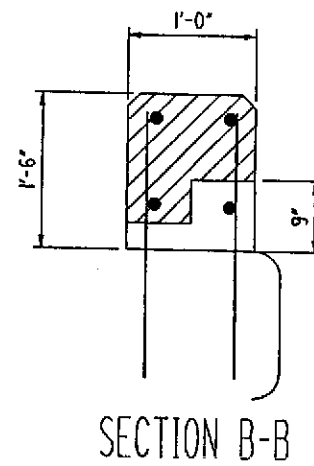
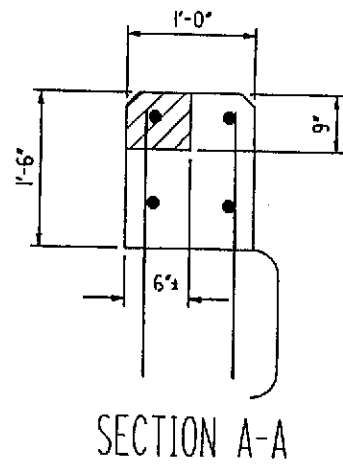
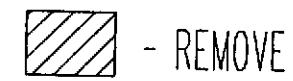
 - REMOVE

DESIGN AGENCY STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 OPERATIONS BRIDGE SECTION	
REVISION DATE 2-2-95	STRUCTURE FILE NUMBER
DESIGNED MB CHECKED KAC	REVISION SB REVISED
PARAPET REFACING	
MAH-680-4.01	
53 110	

ITEM 511- CLASS S CONCRETE, MISCELLANEOUS: PARAPET REFACING, AS PER PLAN



LEGEND

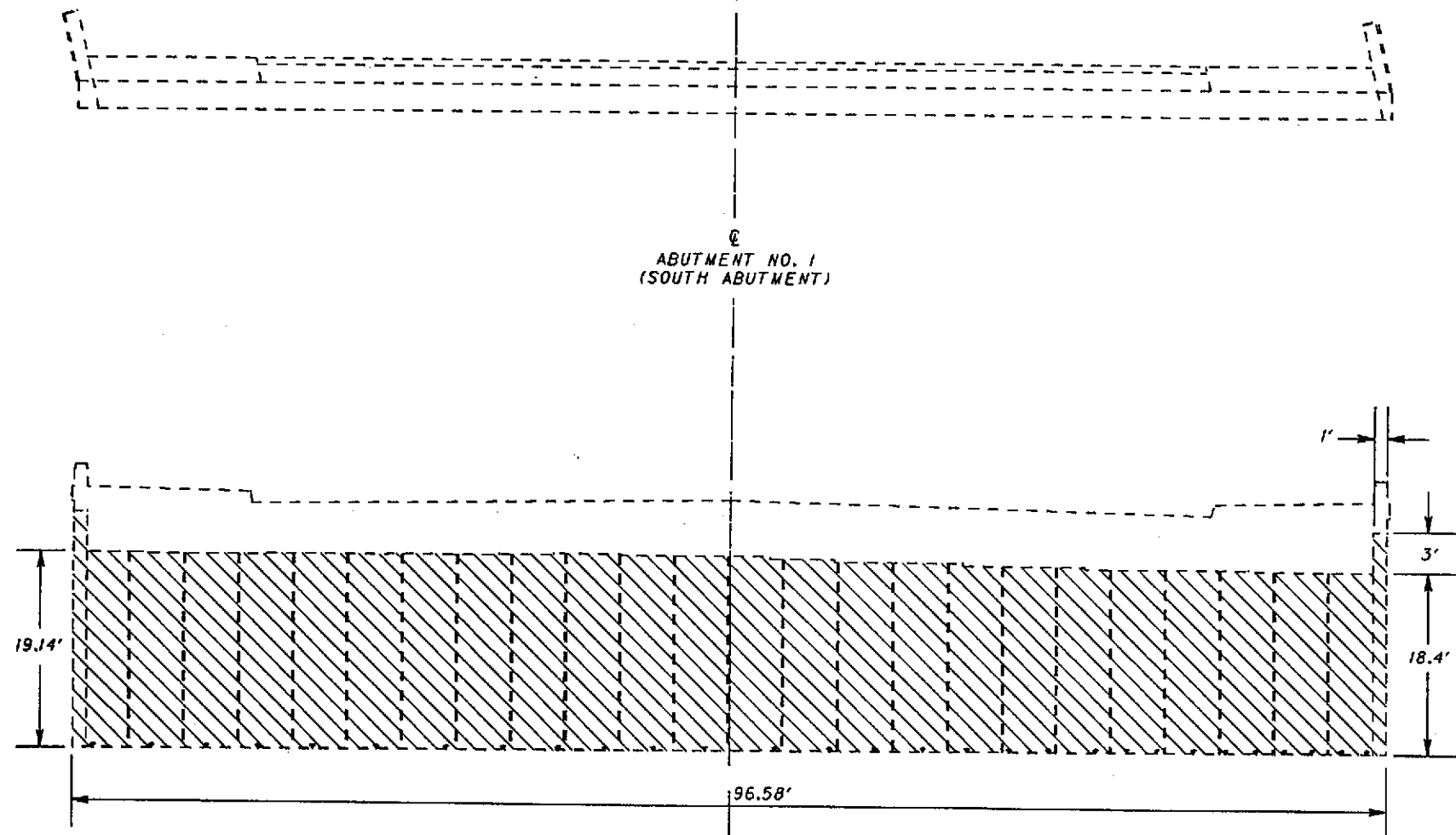


DESIGNED MB	DRAWN SB	REVIEWED A7K	DATE 2-2-95	DESIGN AGENCY STATE OF OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS BRIDGE SECTION
CHECKED KAC	REVIEWED	STRUCTURE FILE NUMBER		
PARAPET REFACING				
MAH-680-4.01				
54 110				

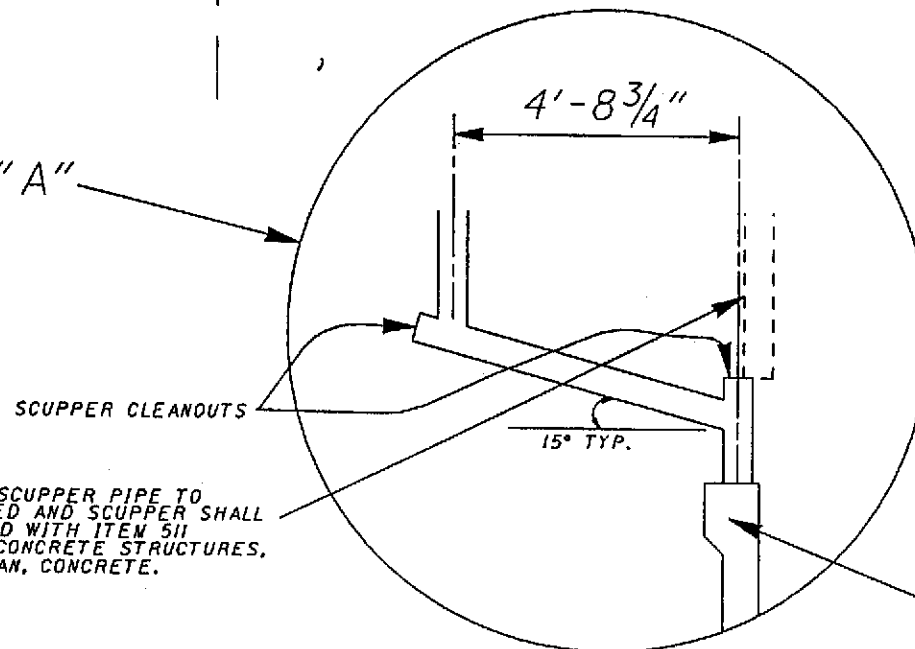
# ABUTMENT REFACING DETAILS

ABUTMENT NO. 1  
(SOUTH ABUTMENT)

ABUTMENT NO. 1  
(SOUTH ABUTMENT)

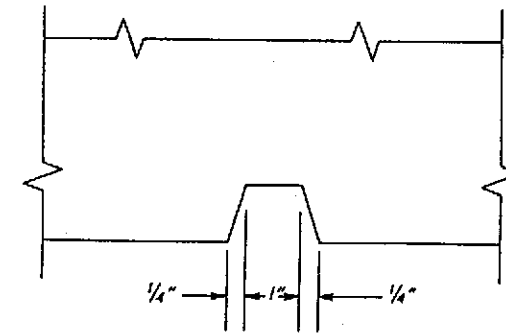


DETAIL "A"

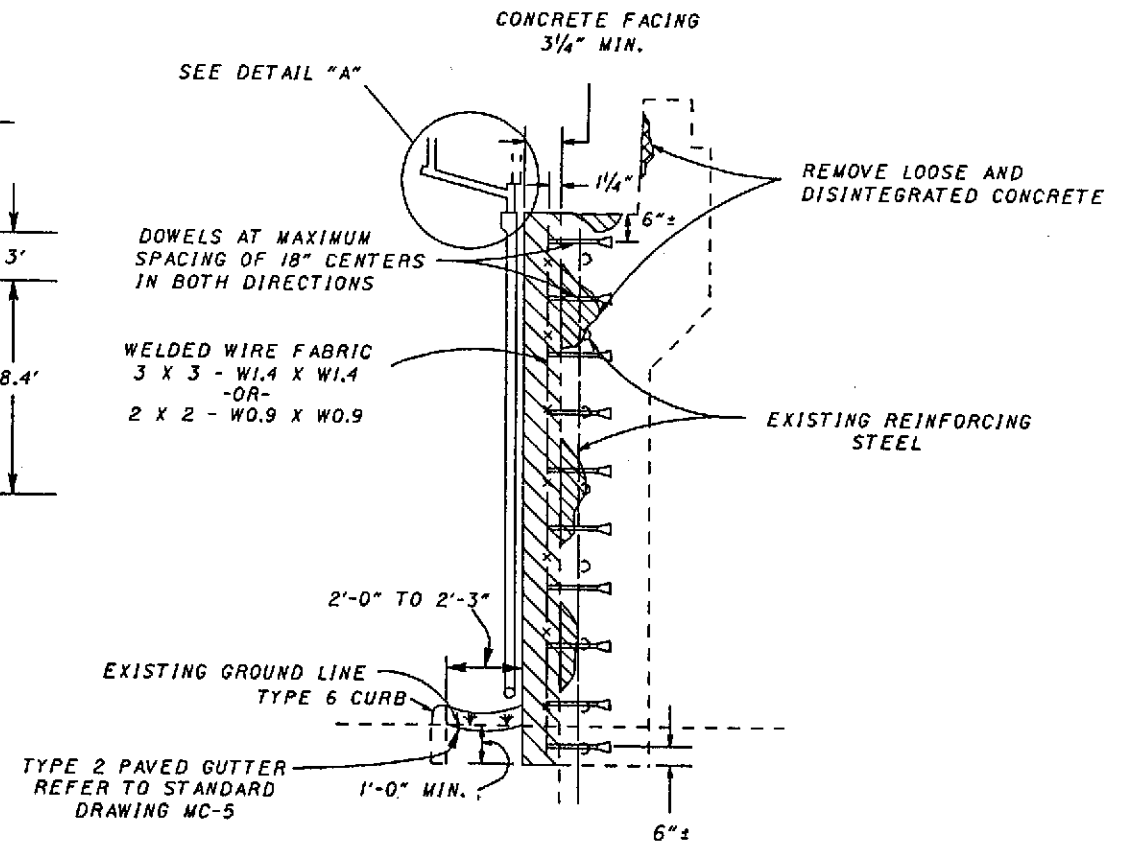


EXISTING SCUPPER PIPE TO BE REMOVED AND SCUPPER SHALL BE PLUGGED WITH ITEM 511 REFACING CONCRETE STRUCTURES, AS PER PLAN, CONCRETE.

10" x 6" ECCENTRIC REDUCER



DETAIL OF RUSTICATION GROOVES



INDICATES AREA TO BE REPAIRED AS PER ITEM 519 - PATCHING CONCRETE STRUCTURES

INDICATES AREA TO BE REPAIRED AS PER ITEM 511 - CLASS C CONCRETE, MISC. REFACING CONCRETE STRUCTURES, AS PER PLAN

DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT OFFICE

DATE  
2-2-75  
REVISION  
STRUCTURE FILE NUMBER  
DRAWN  
TB  
CHECKED  
KAC

ABUTMENT REFACING DETAILS  
BRIDGE NO. MAH-680-0603

MAH-680-04.01

55  
110



# ABUTMENT REFACING DETAILS

DESIGN AGENCY  
STATE OF TEXAS  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 - OPERATIONS  
BRIDGE SECTION

DATE  
2-2-95  
STRUCTURE FILE NUMBER

DESIGNED  
CHECKED  
KAC

ABUTMENT REFACING DETAILS  
BRIDGE NO. MAH-680-0603

MAH-680-04.01

56  
110

**ITEM 511 - CLASS C CONCRETE, MISC.; REFACING CONCRETE STRUCTURES, AS PER PLAN**

THIS ITEM CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, THE PREPARATION OF THE SURFACE, THE FURNISHING AND PLACING OF THE REINFORCING STEEL INCLUDING WELDED STEEL WIRE FABRIC, DOWELS AND EXPANSION BOLTS, FORMS, AND THE PLACING OF CONCRETE AS SHOWN ON SHEET NOS. INCLUDING CURING OF SAME.

**MATERIALS SHALL CONFORM TO THE FOLLOWING:**

- CONCRETE CLASS C .....499,511
- DOWELS .....709.01,709.03, OR 709.05
- REINFORCING STEEL .....509
- WELDED STEEL WIRE FABRIC .....709.14

ALL LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED FROM THE AREAS TO BE REPAIRED IN SUCH A MANNER AND TO SUCH AN EXTENT AS TO EXPOSE A SOUND CONCRETE SURFACE. SOUND CONCRETE (BENEATH THE DISINTEGRATED CONCRETE) SHALL BE REMOVED FOR A DEPTH OF NOT LESS THAN 1/4 INCH AND NOT MORE THAN 1 INCH. SQUARE OR PREFERABLY SLIGHTLY UNDERCUT SHOULDERS SHALL BE MADE AT THE EDGES OF ALL REPAIRS.

WHERE THE BOND BETWEEN THE CONCRETE AND A PRIMARY REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE.

ONLY PNEUMATIC OR HAND TOOLS THAT WILL GIVE RESULTS SATISFACTORY TO THE PROJECT ENGINEER/SUPERVISOR SHALL BE USED IN THE REMOVAL OF THE DISINTEGRATED CONCRETE AND IN PREPARING AND SHAPING THE AREAS TO BE PATCHED.

CARE SHOULD BE USED IN WORKING AROUND REINFORCING STEEL SO AS NOT TO DAMAGE OR DEBOND THE STEEL, OR TO SHATTER THE CONCRETE AROUND IT, BEYOND THE AREA TO BE REPAIRED.

REINFORCEMENT WHICH IS LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. REINFORCEMENT THAT IS DAMAGED DURING THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT NO COST TO THE STATE.

AFTER ALL DISINTEGRATED AND LOOSE CONCRETE HAS BEEN REMOVED AND THE UNDERLYING AREAS PREPARED AS DESCRIBED ABOVE, THE REMAINING AREAS TO BE REFACED SHALL BE THOROUGHLY CLEANED BY THE USE OF SANDBLAST, AIR, OR WATER BLAST, OR ANY OTHER METHOD THAT PRODUCES SATISFACTORY RESULTS. BEFORE CONCRETE PLACEMENT, THE CONCRETE SURFACES TO BE REFACED SHALL BE THOROUGHLY DRENCHED WITH CLEAN WATER AND ALLOWED TO DRY TO A DAMP CONDITION.

THE REINFORCEMENT FOR SURFACES TO BE REFACED SHALL CONSIST OF WELDED STEEL WIRE FABRIC EITHER 2 INCH x 2 INCH USING WIRE SIZE NUMBER W 0.9 OR 3 INCH x 3 INCH USING WIRE SIZE NUMBER W 1.4. THIS FABRIC SHALL BE PLACED AND HELD APPROXIMATELY 1-1/4" FROM THE EXISTING ABUTMENT FACE. IT SHALL BE FASTENED TO DOWELS OR EXPANSION BOLTS INSTALLED, BY THE CONTRACTOR, AT NOT TO EXCEED 18 INCH CENTERS ON BOTH DIRECTIONS.

THE CONCRETE SHALL BE CLASS C AND SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH 499 AND 511.

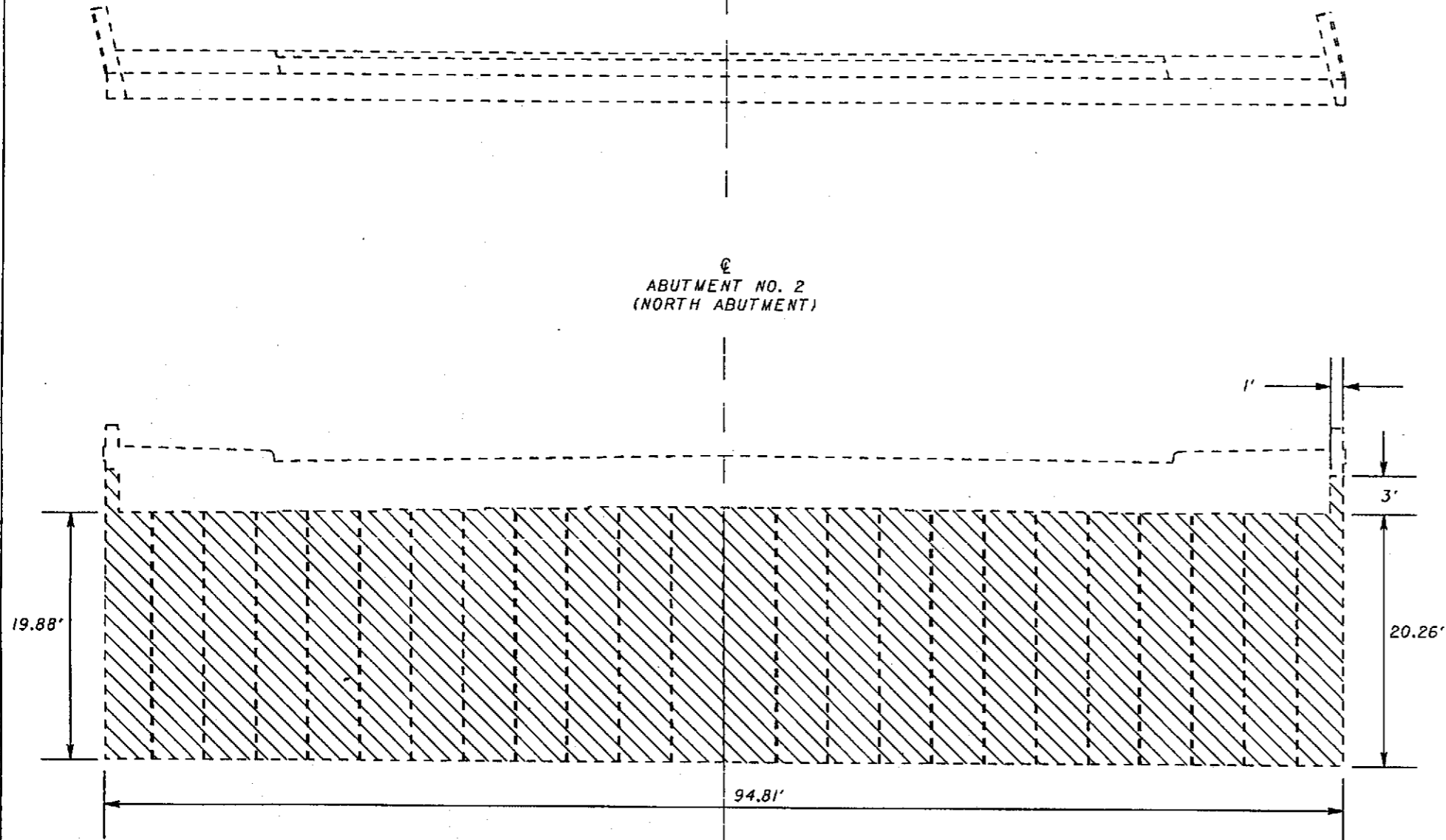
FORMS SHALL BE REMOVED WITHIN 24 HOURS AFTER PLACEMENT OF CONCRETE. MEMBRANE CURING MATERIAL SHALL BE APPLIED IMMEDIATELY AS NOTED IN 511.4, METHOD (B).

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL REFACED AREAS SHALL BE SOUNDED. ALL UNSOUND AREAS SHALL BE REMOVED AND REPLACED.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF ITEM 511 - CONCRETE, REFACING CONCRETE STRUCTURES, AS PER PLAN, WHICH SHALL CONSTITUTE FULL COMPENSATION FOR ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM ACCORDING TO THESE SPECIFICATIONS.


ABUTMENT NO. 2  
(NORTH ABUTMENT)

ABUTMENT NO. 2  
(NORTH ABUTMENT)



**ITEM 518 - STRUCTURE DRAINAGE, MISC.; SCUPPER COLLECTOR REPLACEMENT**  
THIS ITEM WILL CONSIST OF REPLACING THE SUPPER COLLECTOR PIPES ON THE NORTH ABUTMENT WITH TYPE F P.V.C. PIPE CONFORMING TO 707.19 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS. THIS ITEM WILL ALSO CONSIST OF ELIMINATING THE SCUPPERS SHOWN IN THIS DETAIL BY REMOVING THE PIPES AND PLUGGING THE SCUPPERS WITH ITEM 511 CONCRETE. PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE FOR EACH SCUPPER PIPE REPLACEMENT. THIS ITEM WILL ALSO INCLUDE ALL NEW ANCHOR BOLTS AND BRACKETS TO BE USED FOR ATTACHING THE NEW PIPE TO THE ABUTMENT OF THE SAME TYPE AS THE EXISTING ANCHOR BOLTS AND BRACKETS. THE PIPE OUTLET AT THE BOTTOM OF THE PIPE WILL BE ROTATED 90° FROM ITS EXISTING POSITION AND WILL FACE EAST.

**ITEM 601 - PAVED GUTTER, TYPE 2**  
THIS ITEM WILL CONSIST OF PLACING A TYPE 2 CONCRETE GUTTER BETWEEN THE TYPE 6 CURBS AND THE ABUTMENT FACES ON MAH-680-0603. THE GUTTER WILL BE MODIFIED SLIGHTLY ACCORDING TO THE DETAIL ON PAGE NO. ANY SUBBASE MATERIAL, ETC. NEEDED TO COMPLETE THIS ITEM SHALL BE INCIDENTAL TO THIS ITEM. BOTH PAVED GUTTERS WILL BE SLOPED SO THAT THE WATER RUNS IN A DIRECTION OPPOSITE THAT OF TRAFFIC.

 INDICATES AREA TO BE REPAIRED AS PER ITEM 511 - CLASS C CONCRETE, MISC.; REFACING CONCRETE STRUCTURES, AS PER PLAN

# PATCHING CONCRETE BACKWALLS AND/OR APPROACHES WITH CLASS "C" CONCRETE

ITEM 511 - CONCRETE, MISC.: PATCHING CONCRETE BACKWALLS AND/OR APPROACHES WITH CLASS "C" CONCRETE

**DESCRIPTION:**

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO REPAIR CONCRETE ABUTMENTS, INCLUDING THE REMOVAL OF ALL LOOSE AND UNSOUND CONCRETE, BITUMINOUS, ASPHALT AND PATCHES, SURFACE PREPERATION, PLACING, FINISHING, CURING AND SEALING AS DIRECTED BY THE ENGINEER.

**REMOVAL:**

THE ENGINEER SHALL DETERMINE THE AREAS TO BE REMOVED. THE PERIMETER OF ALL REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 2" TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. ALL UNSOUND CONCRETE, INCLUDING ALL PATCHES, AND OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING, CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35 POUND CLASS. THE UNSOUND CONCRETE SHALL BE REMOVED TO A MINIMUM OF 1/2 FOOT. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND THE REINFORCING STEEL HAS BEEN DESTROYED OR WHERE MORE THAN ONE-HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM OF 1/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICAL. REINFORCING WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. THE INTENT OF THIS REPAIR IS TO REMOVE DETERIORATED CONCRETE BY USE OF HAND CHIPPERS FROM BOTH THE SURFACE ADJACENT TO THE APPROACH SLAB AND FROM UNDERNEATH THE STRUCTURE ON THE BACKWALL.

**SURFACE PREPERATION:**

CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE PATCHING MATERIAL. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED WITHIN 24 HOURS PRIOR TO PATCHING BY ABRASIVE BLASTING FOLLOWED BY AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM REINFORCING STEEL. ANY ADDITION SURFACE PREPERATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE PATCHING MATERIAL WHICH IS USED.

A BOND BREAKER BOARD MUST BE INSTALLED TO RE-ESTABLISH THE CONSTRUCTION JOINT. AT THE ORIGINAL LOCATION.

**MATERIALS:**

CLASS "C" CONCRETE  
AS PER 499 AS PER C & MS

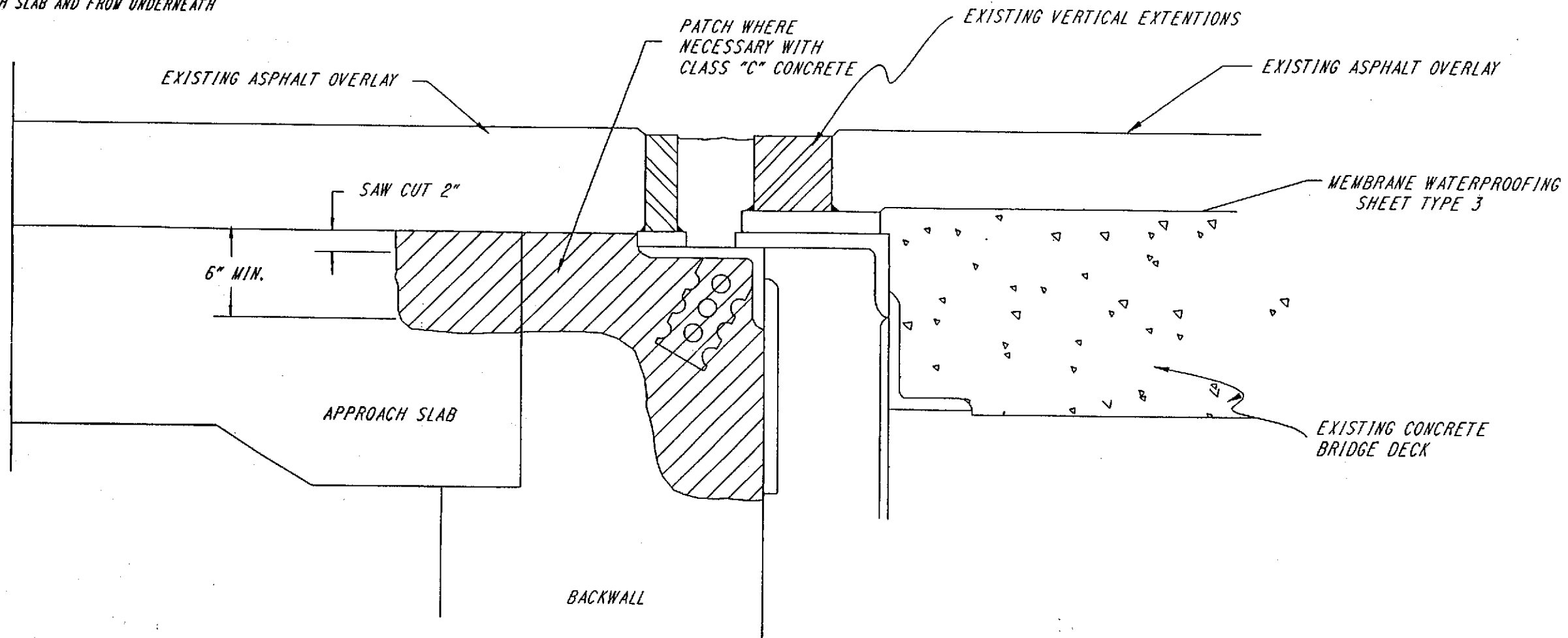
**PLACING:**

CLASS "C" CONCRETE SHALL BE PLACED FROM THE APPROACH SLAB SIDE OF THE ABUTMENT, ALL FORMING TO BE COMPLETED UNDERNEATH STRUCTURE BEFORE CONCRETE PLACEMENT. CLASS "C" MATERIAL SHALL BE PLACED, CONSOLIDATED, AND FINISHED TO THE EXISTING GRADE AND ELEVATION. PATCHES SHALL VIBRATED WITH A MECHANICAL VIBRATOR AND LEVELED WITH A STRAIGHT EDGE.

**FINISHING:**

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED THEY SHALL BE TEXTURED IN ACCORDANCE TO SECTION 451.09 OF THE C.M.S.

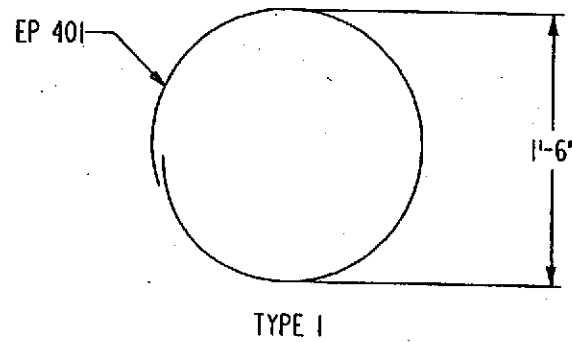
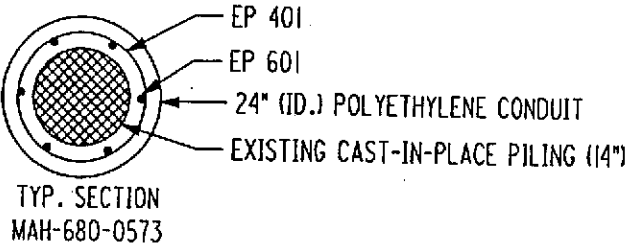
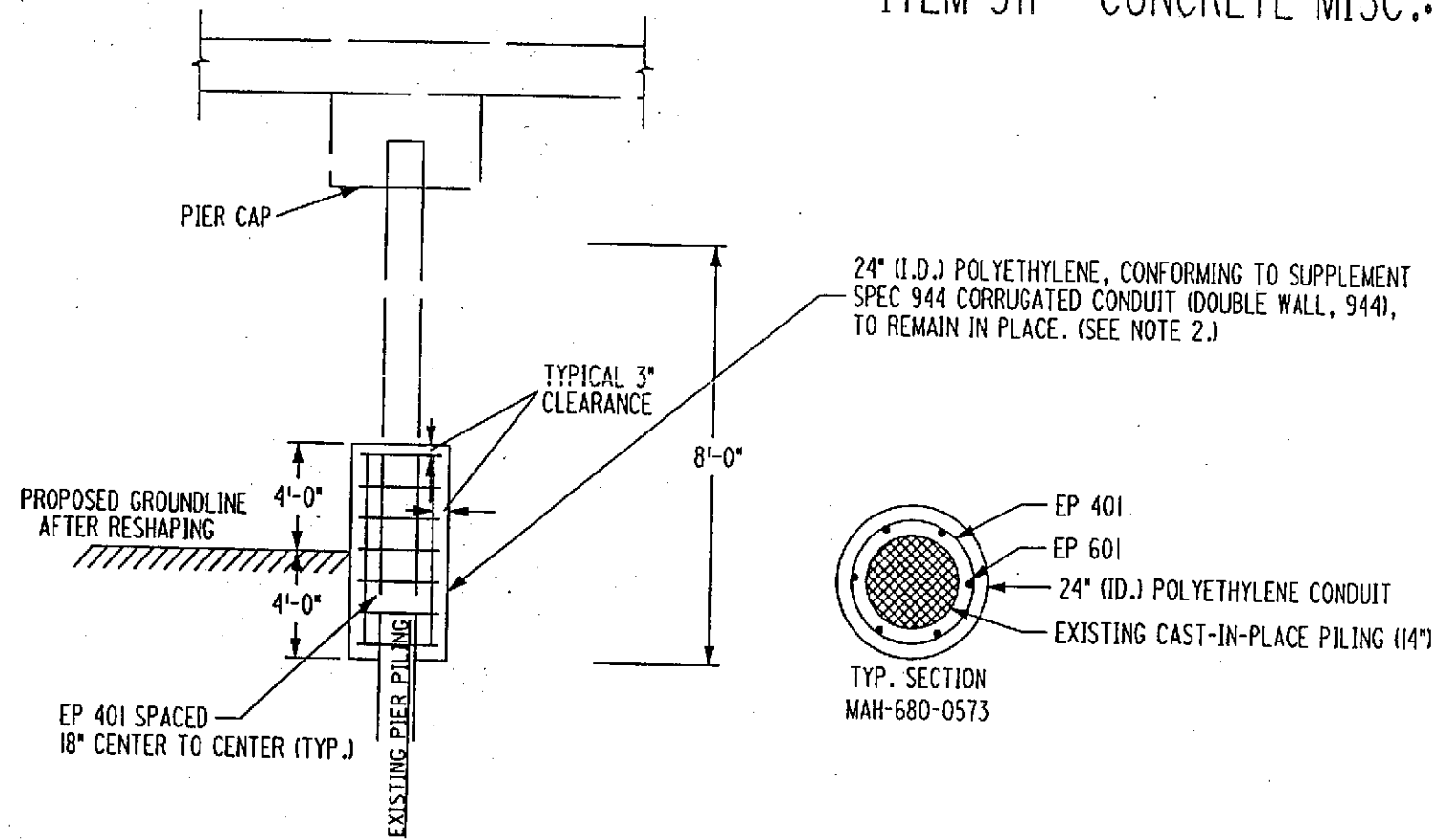
ITEM	UNIT	DESCRIPTION
511	CU.YD.	CONCRETE, MISC.: PATCHING CONCRETE BACKWALLS AND/OR APPROACHES WITH CLASS "C" CONCRETE.



PATCHING CONCRETE BACKWALLS AND/OR APPROACHES WITH CLASS "C" CONCRETE

DESIGNED BY	DATE	STATE OF OHIO
STATE OF OHIO	3-8-75	DEPARTMENT OF TRANSPORTATION
DISTRICT 4 OPERATIONS	STANDARD FILE NUMBER	BRIDGE SECTION
APPROVED	DATE	
5/17	3-8-75	
DESIGNED BY	DATE	
5/17	3-8-75	
APPROVED	DATE	
5/17	3-8-75	

# ITEM 511- CONCRETE MISC.: PILE ENCASEMENT



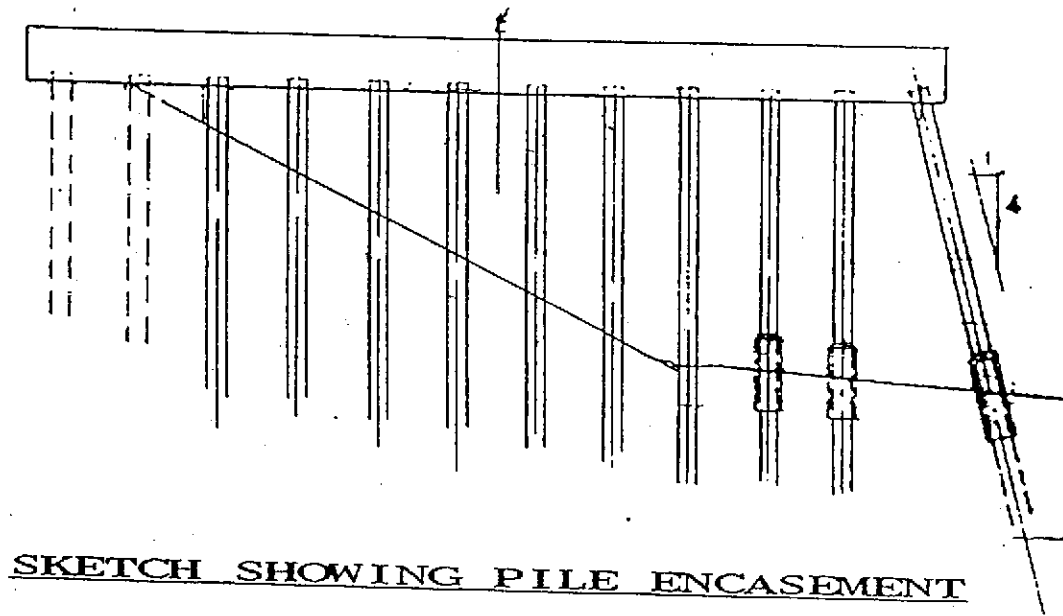
### REINFORCING STEEL LIST

MARK	TYPE	LENGTH	PIER 1-10	TOTAL	WEIGHT**
EP 401*	I	6'-3"	(6x30)= 180	2180	752 LBS.
EP 601*	STR	7'-6"	(6x30)= 180	180	2028 LBS.
TOTAL 2780 LBS.					

\* ALL REINFORCING STEEL IS TO BE EPOXY COATED  
 \*\* COST FOR REINFORCING STEEL IS TO BE INCLUDED IN LINEAL FEET OF PIER PILE ENCASEMENT.

- NOTE: ① CLASS "S" CONCRETE SHALL BE COMPOSED OF NO. 8 COARSE AGGREGATE. THE SLUMP SHALL BE 5- 7 INCHES AT TIME OF PLACEMENT AND SHALL BE ACCOMPLISHED BY MEANS OF A SUPERPLASTICIZER ADMIXTURE CONFORMING TO SPEC. 705.12 TYPE F AND SHALL BE COMPATIBLE WITH OTHER ADMIXTURES IN THE MIX.
- ② BANDS USED FOR SECURING THE 24" (I.D.) CONDUIT ARE TO BE PLACED ONE FOOT (MAX) CENTER TO CENTER OR AS NECESSARY TO PREVENT DEFORMATION OF THE CONDUIT, AND ARE TO BE STAINLESS STEEL.
- ③ PRIOR TO ENCASEMENT THE STEEL PILING SHALL BE PAINTED WITH TWO COATS OF ZINC RICH PRIMER AFTER CLEANING THE SURFACE BY HAND SCRAPING, GRINDING OR BLASTING AS NECESSARY TO REMOVE ALL LOOSE AND SCALED RUST. THE PILING IS ONLY REQUIRED TO BE PAINTED IN THE AREA OF CONCRETE ENCASEMENT.
- ④ ALL ITEMS NECESSARY TO COMPLETE THE PILE ENCASEMENT INCLUDING PAINTING THE PILES, REINFORCING STEEL, CLASS "S" CONCRETE, ETC. ARE INCLUDED IN THE UNIT BID PRICE FOR ITEM 511- CONCRETE MISC.: PILE ENCASEMENT

### PIERS 1-10



STRUCTURE	TYPE OF PILES	NO. OF PILES	LENGTH	TOTAL LENGTH
MAH-680-0573L PIER 1-10	14" C.I.P.	30	8'-0"	240'-0"

TOTAL LENGTH  
 OF PIER PILE  
 ENCASEMENTS= 240.00 FT.

DESIGN AGENCY  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 BRIDGE SECTION

DATE  
 2-2-95  
 REVISION  
 1 M  
 STRUCTURE FILE NUMBER  
 3-95  
 DRAWN  
 S.B.  
 CHECKED  
 K.A.C.

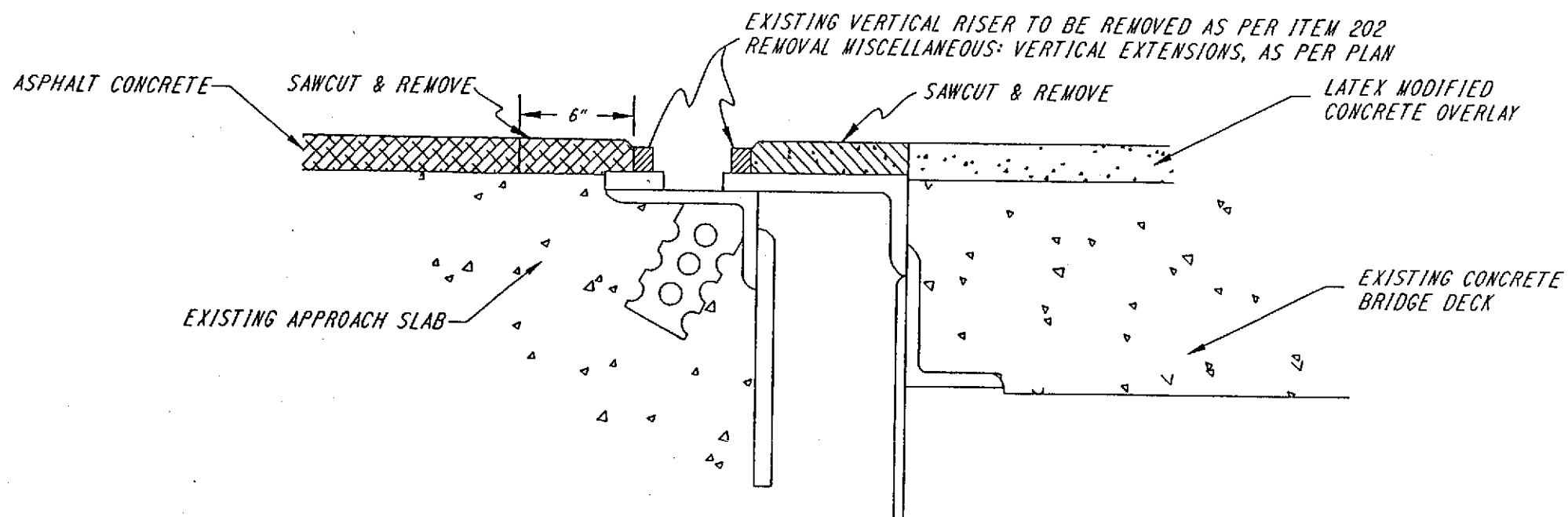
PILE ENCASEMENT

MAH-680-4-01

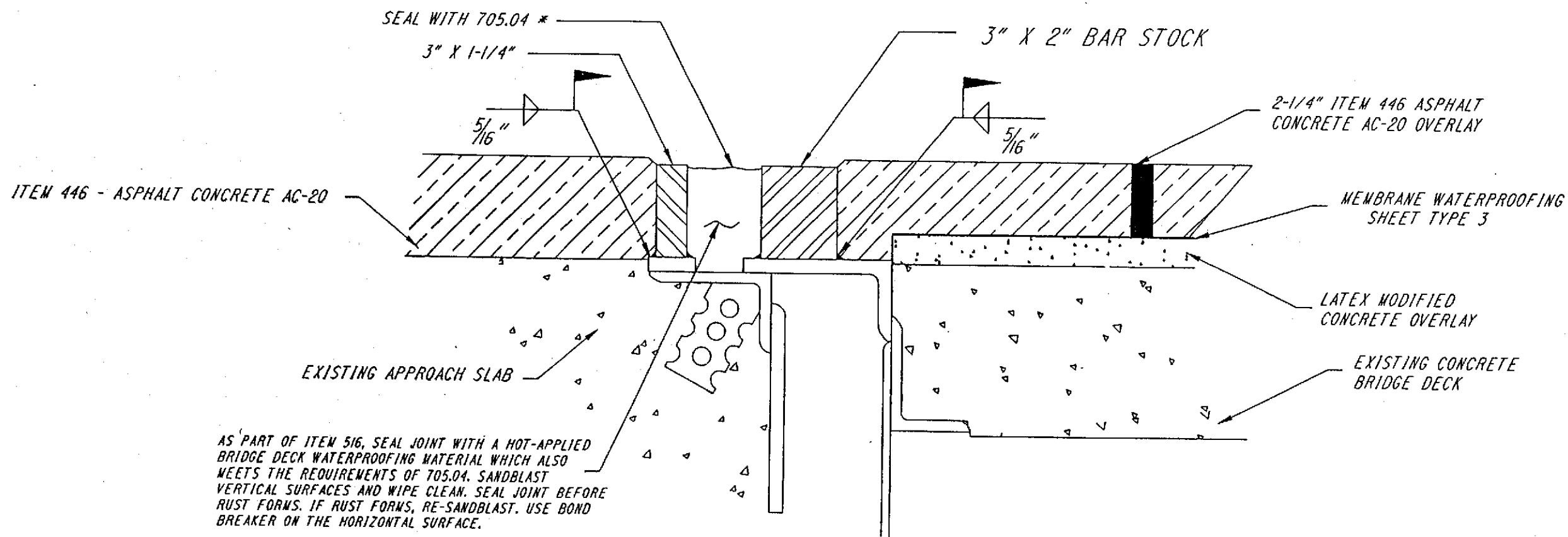
58  
 110

MAH-680-0429

# VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS



EXISTING EXPANSION JOINT



AS PART OF ITEM 516, SEAL JOINT WITH A HOT-APPLIED BRIDGE DECK WATERPROOFING MATERIAL WHICH ALSO MEETS THE REQUIREMENTS OF 705.04. SANDBLAST VERTICAL SURFACES AND WIPE CLEAN. SEAL JOINT BEFORE RUST FORMS. IF RUST FORMS, RE-SANDBLAST. USE BOND BREAKER ON THE HORIZONTAL SURFACE.

PROPOSED EXPANSION JOINT TREATMENT

DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

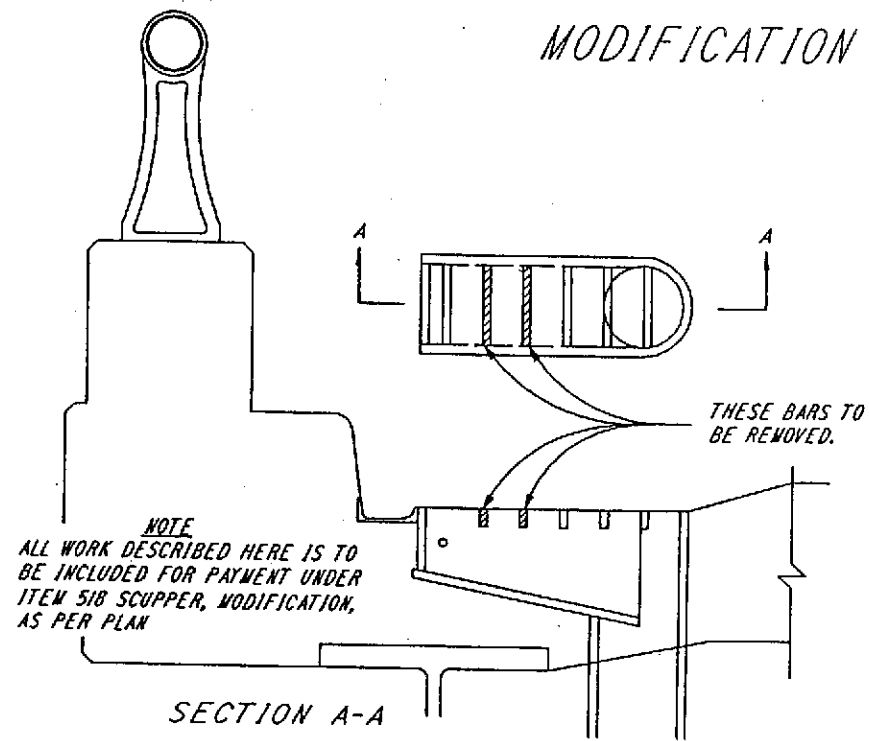
DATE	3-8-95
REVISED	4-77
STRUCTURE FILE NUMBER	3-7-95
DESIGNED	KAC
CHECKED	4-77
DRAWN	R.F.
REVISED	3-7-95

VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS  
MAH-680-0429

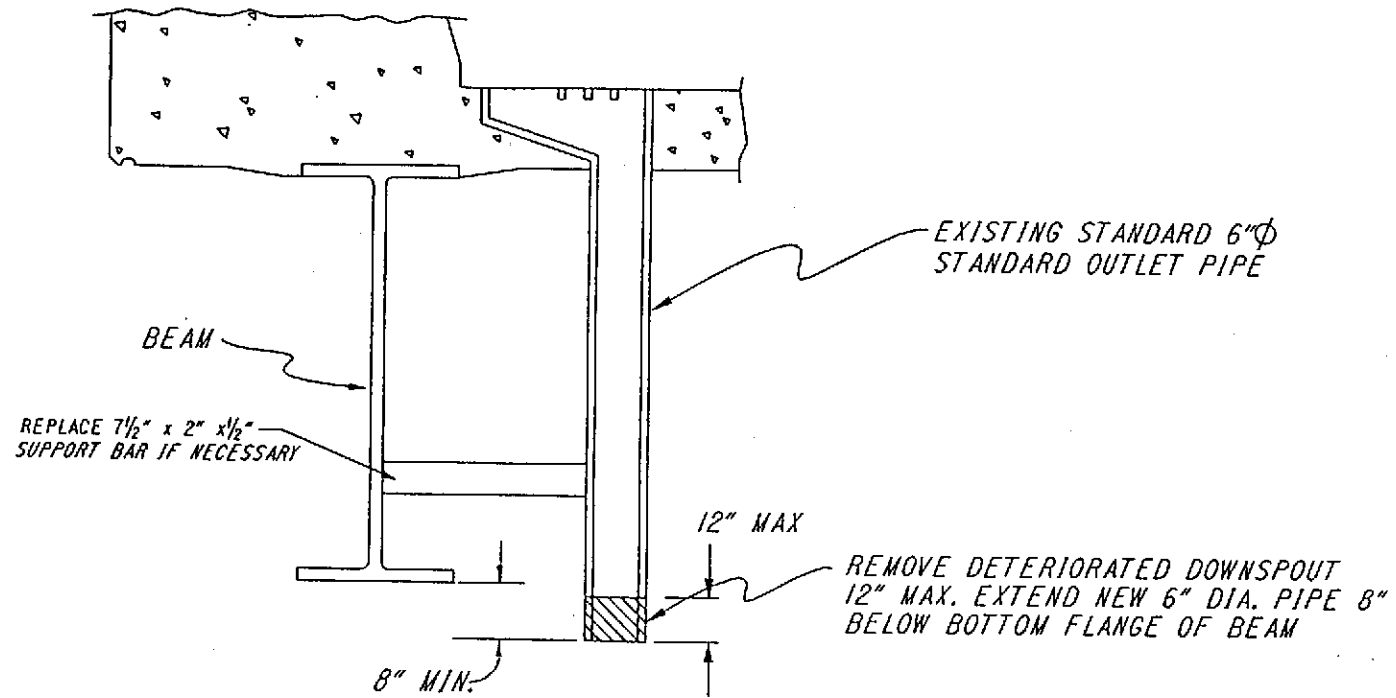
MAH-680-4.01

59  
110

ITEM 518 SCUPPER MODIFICATION AS PER PLAN  
 MODIFICATION AND VERTICAL EXTENSION OF SCUPPERS

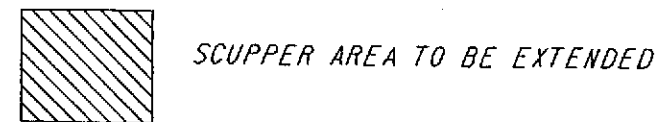


TYPICAL EXISTING SCUPPER TO BE MODIFIED



SCUPPER DETAIL AS PER  
 ITEM 518-SCUPPER, MODIFICATION, AS PER PLAN

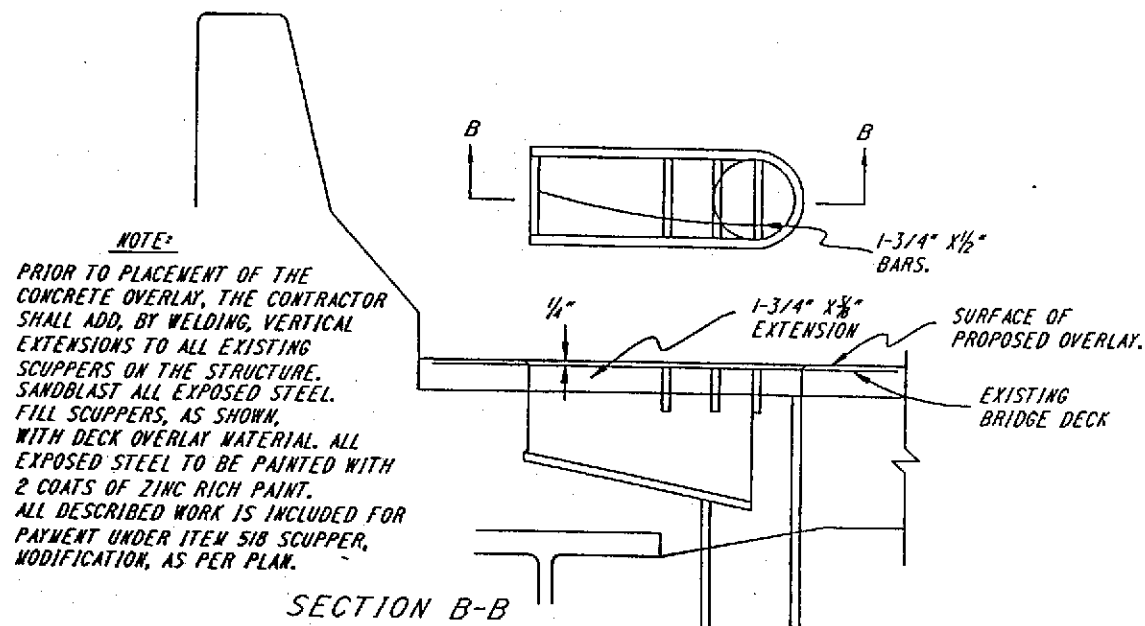
SEE STD. DWG. SD-1-69  
 FOR ADDITIONAL DETAILS



NOTE: THE PIPE EXTENSIONS SHALL BE WELDED IN PLACE AFTER THE EXISTING SURFACES HAVE BEEN ABRASIVE BLASTED TO A SA-1.

NOTE: ADDITIONAL LENGTH OF SCUPPER PIPE TO BE REPLACED IS TO BE DETERMINED BY THE PROJECT ENGINEER/SUPERVISOR.

NOTE: DRAWING NOT TO SCALE



TYPICAL VERTICAL EXTENTION OF SCUPPERS

DESIGN AGENCY  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF BRIDGE ENGINEERING  
 BRIDGE SECTION

DATE  
 2-2-95

REVISION  
 1

STRUCTURE FILE NUMBER

DESIGNED  
 J.M.

CHECKED  
 K.A.C.

DRAWN  
 S.B.

REUSED

SCUPPER MODIFICATION

MAH-680-4.01

60  
 110

# ITEM 519- PATCHING CONCRETE STRUCTURES

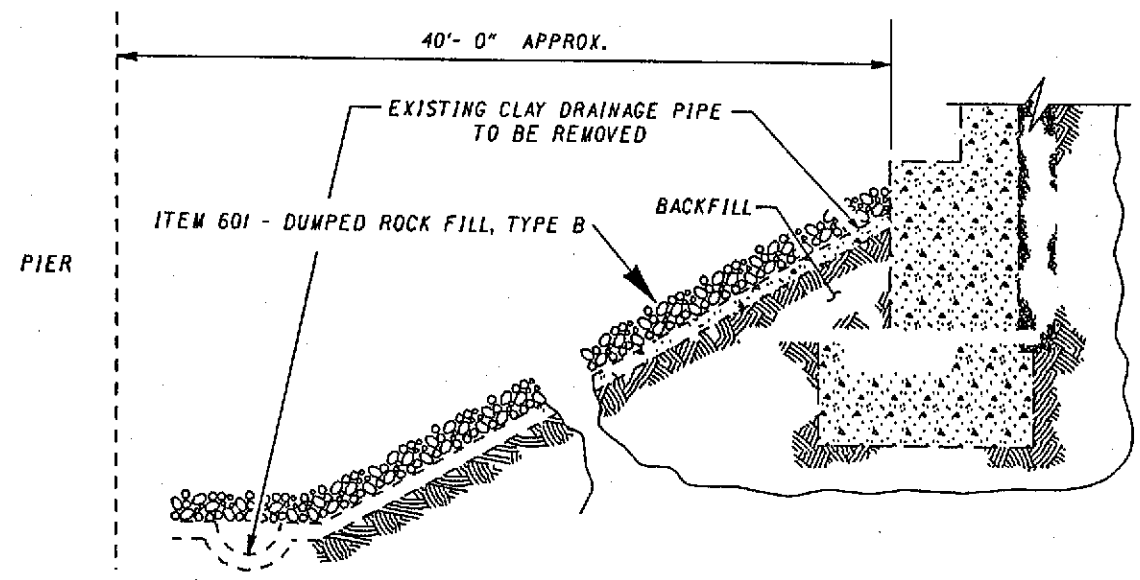
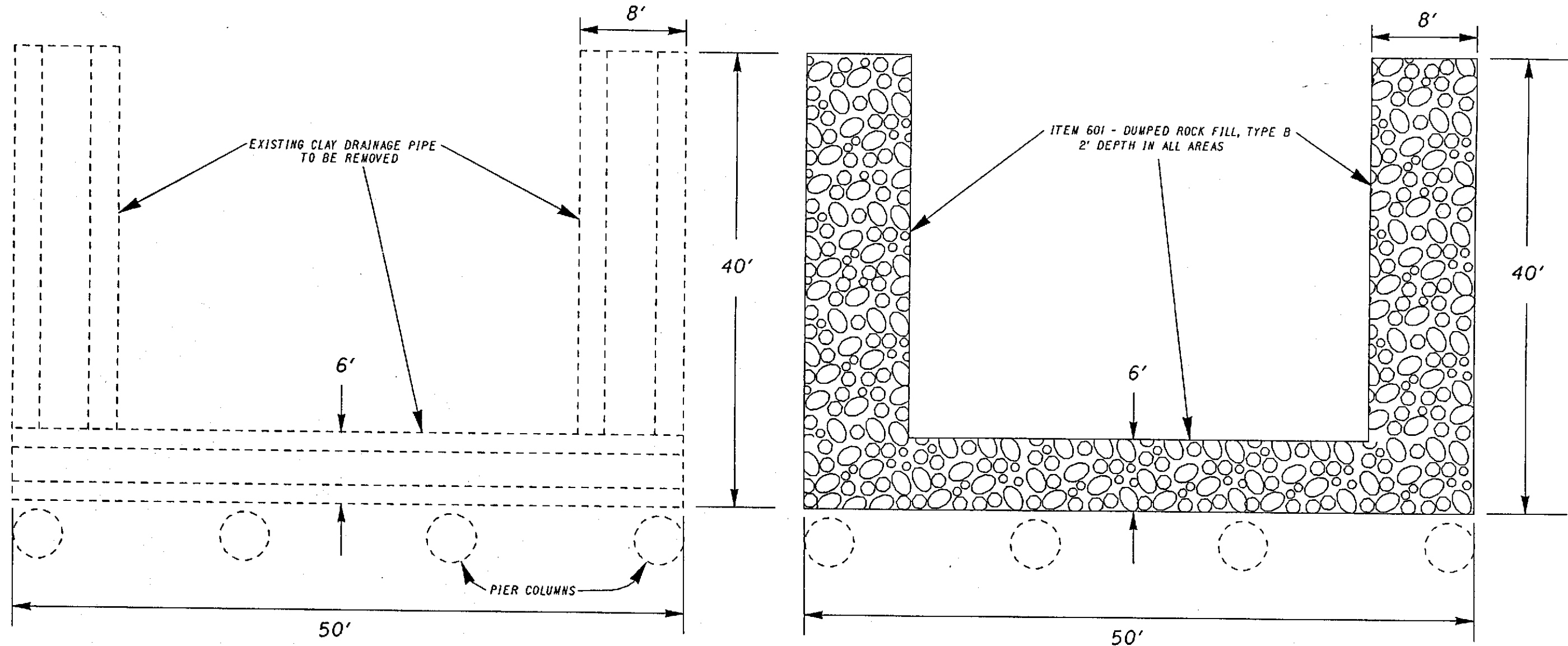
PATCHING TABLE							
STRUCTURE NUMBER	ABUTMENTS	WINGWALLS	COLUMNS	PIERCAPS	DECK UNDERSIDE	DECK SLAB FACIA	TOTAL
	SQ.FT.	SQ.FT.	SQ.FT.	SQ.FT.	SQ.FT.	SQ.FT.	SQ.FT.
MAH-680-0414	102		80				182
MAH-680-0429	60		85				145
MAH-680-0440 L	5		40	10			55
MAH-680-0440 R	15		50				65
MAH-680-0476 L	325	10					335
MAH-680-0476 R	325	10					335
MAH-680-0573 L	270			225	150	300	945
MAH-680-0603	150*						150
MAH-680-0632 L	300		6				306
MAH-680-0632 R	300	20	6				326
MAH-680-0687 L	65						65
MAH-680-0687 R	65						65
MAH-680-0693 L	130						130
MAH-680-0693 R	130						130
REFERENCE TOTAL							3,234 s.f.

\* SQ.FT. ABUTMENT BACKWALL AND BEAMSEAT (DOES NOT INCLUDE VERTICAL ABUTMENT WALL SURFACES TO BE REFACED AS PER PLAN.)

DESIGN AGENCY STATE OF OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF BRIDGES BRIDGE SECTION
DATE 3-8-95
REVISED 7/77
STRUCTURE FILE NUMBER
DRAWN SB
REVISED 3-7-95
DESIGNED M.B.
CHECKED KAC
PATCHING CONCRETE STRUCTURES
MAH-680-4.01
61 110

# SLOPE PROTECTION DETAILS

BRIDGE NO. MAH-680-0414 (STEEL ST.)



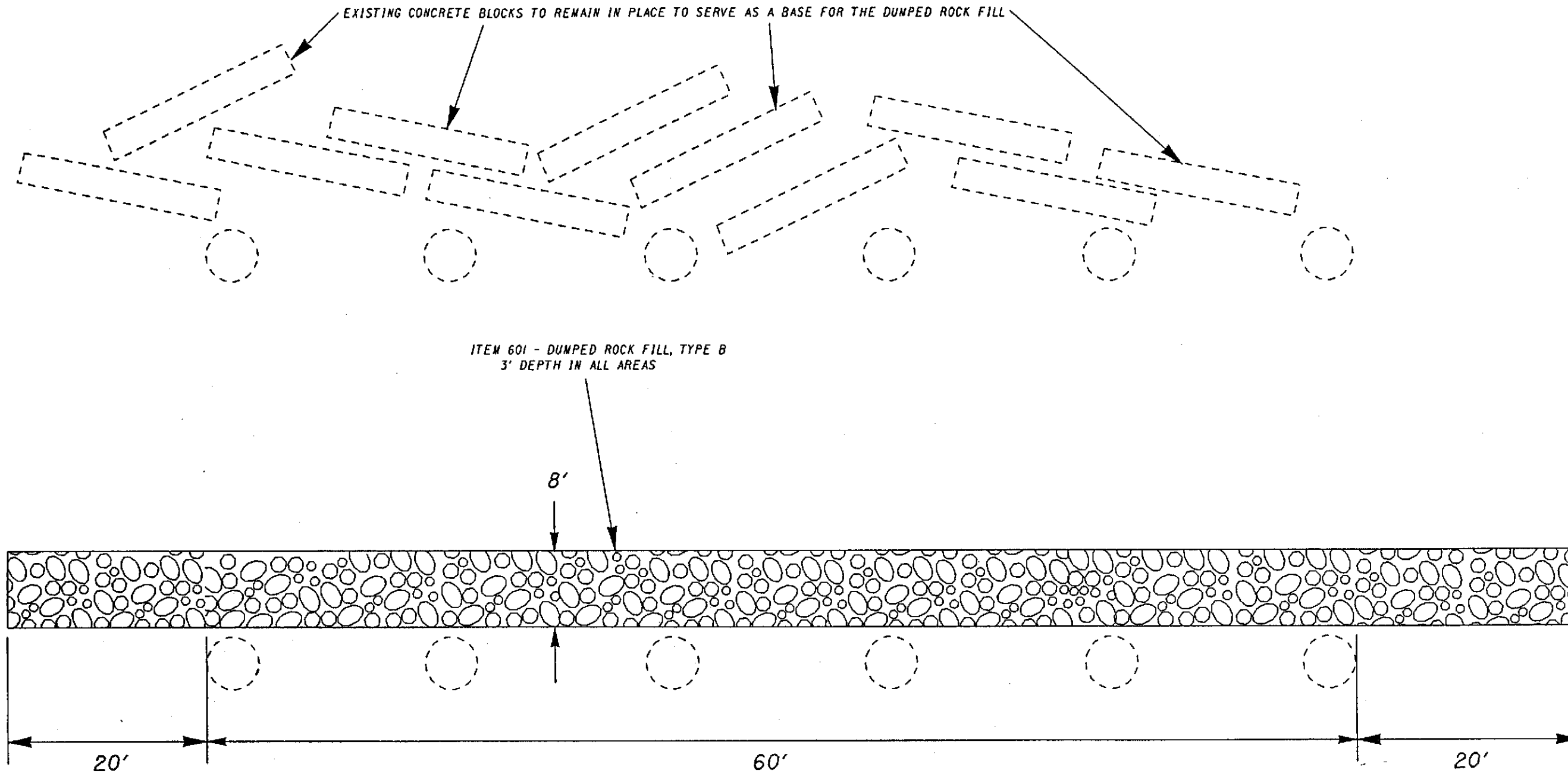
EXISTING CLAY DRAINAGE PIPE AT THE NORTH ABUTMENT IS TO BE REMOVED AND REPLACED WITH DUMPED ROCK FILL, TYPE B. THE SAME AMOUNT OF DUMPED ROCK FILL WILL BE PLACED AT THE SOUTH ABUTMENT USING THE SAME DIMENSIONS AS FOR THE NORTH ABUTMENT.

THERE IS NO CLAY DRAINAGE PIPE TO BE REMOVED AT THE SOUTH ABUTMENT.

DESIGN AGENT		DATE	2-2-95
DESIGNED	1B	REVIEWED	AM
DRAWN	1B	STRUCTURE FILE NUMBER	
CHECKED	KAR		
SLOPE PROTECTION DETAILS BRIDGE NO. MAH-680-0414			
MAH-680-04.01			
62 110			

# SLOPE PROTECTION DETAILS

BRIDGE NO. MAH-680-0440 (S. R. 193)



EXISTING CONCRETE BLOCKS AT THE SOUTH ABUTMENT ARE TO BE LEFT IN PLACE TO SERVE AS A BASE FOR THE DUMPED ROCK FILL, TYPE B. THE SAME AMOUNT OF DUMPED ROCK FILL WILL BE PLACED AT THE NORTH ABUTMENT USING THE SAME DIMENSIONS AS FOR THE SOUTH ABUTMENT.

THERE ARE NO CONCRETE BLOCKS AT THE NORTH ABUTMENT.

NOTE: DRAWING NOT TO SCALE

DESIGN AGENCY

DESIGNED	REVIEWED	DATE
AB	AM	2-2-95
CHECKED	STRUCTURE FILE NUMBER	
KAC		

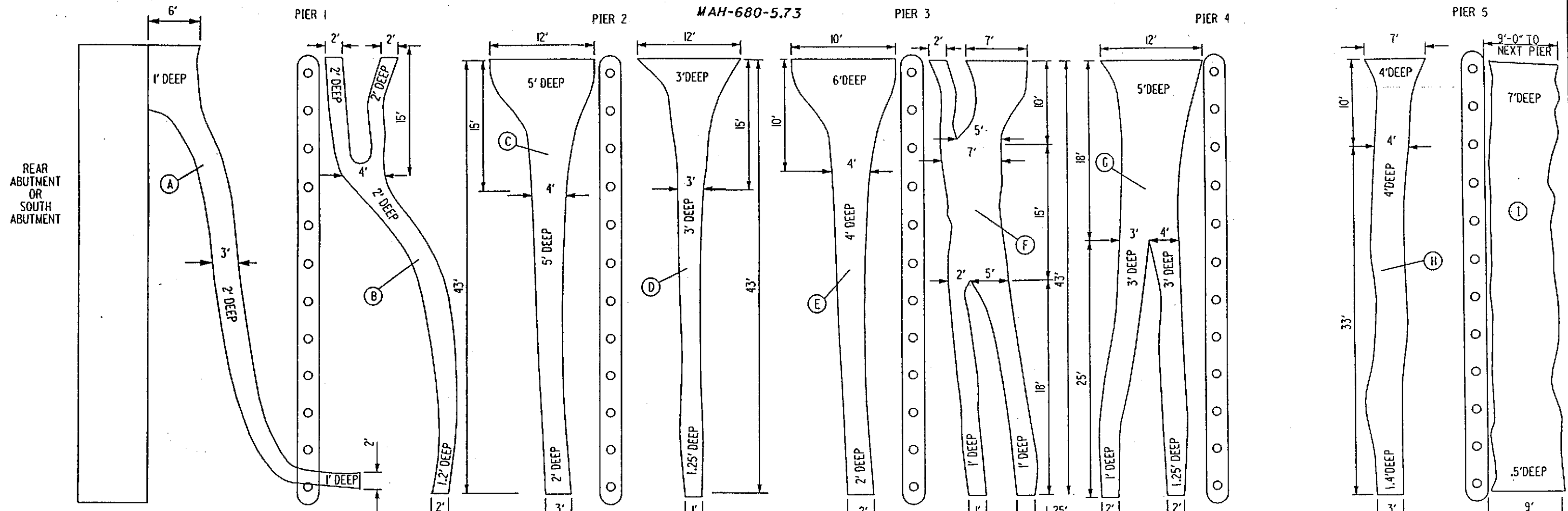
SLOPE PROTECTION DETAILS  
BRIDGE NO. MAH-680-0440

MAH-680-04.01

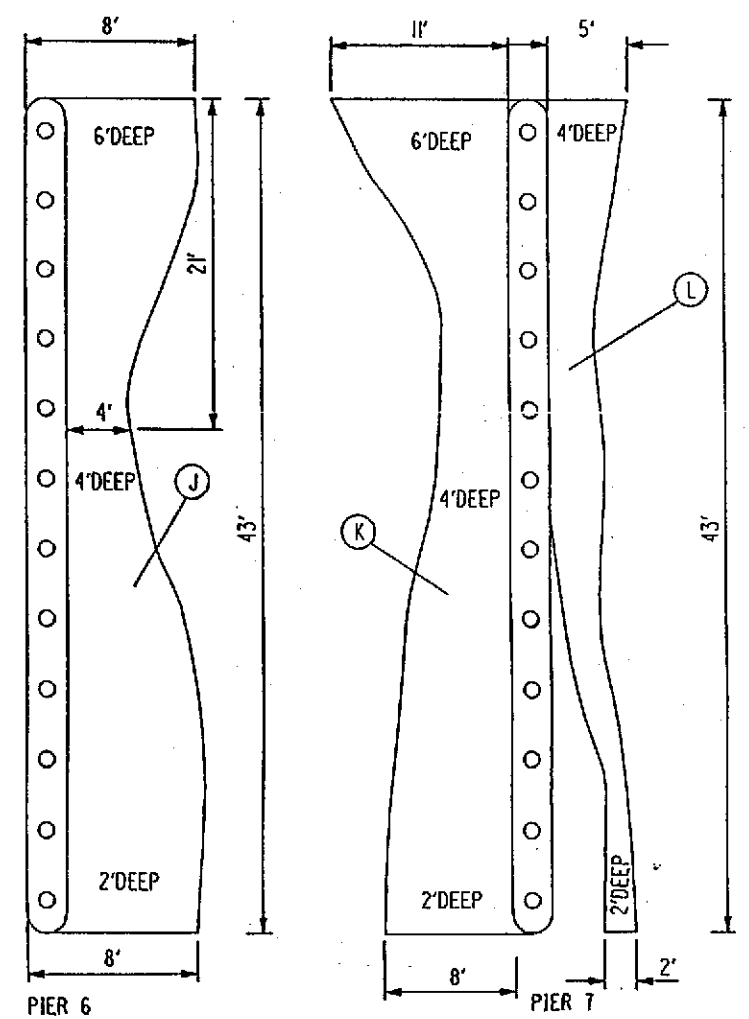
63  
110



MAH-680-5.73

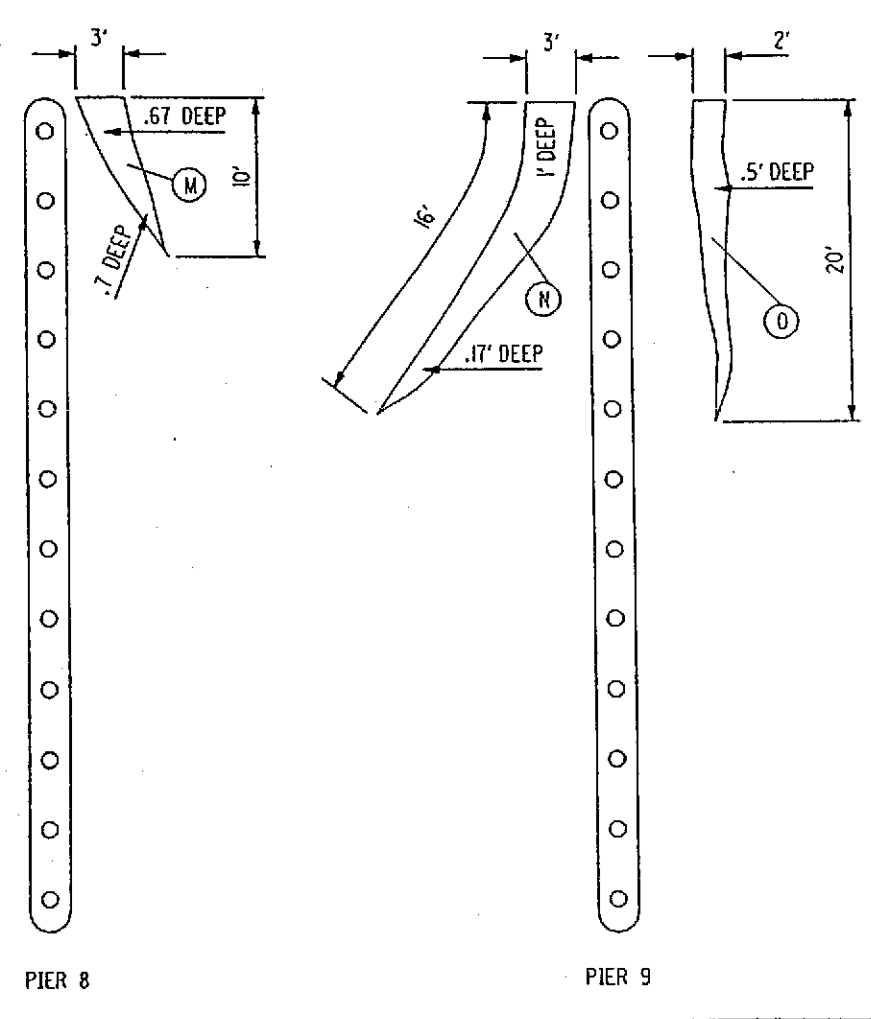


REAR ABUTMENT OR SOUTH ABUTMENT



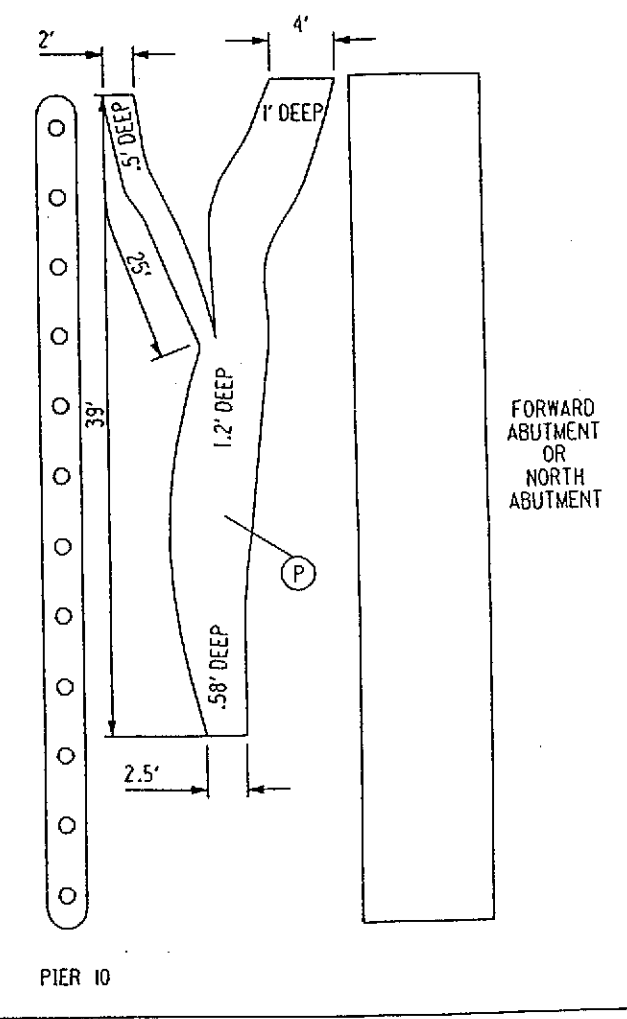
PIER 6

PIER 7



PIER 8

PIER 9



PIER 10

FORWARD ABUTMENT OR NORTH ABUTMENT

AREAS OF CRUSHED AGGREGATE SLOPE PROTECTION AS PER PLAN

MAH-680-4.01

DESIGNED	DATE	REVISION	STRUCTURE FILE NUMBER
DRN	7/77	SB	2-2-95
CHKD		REVISED	
KAC			

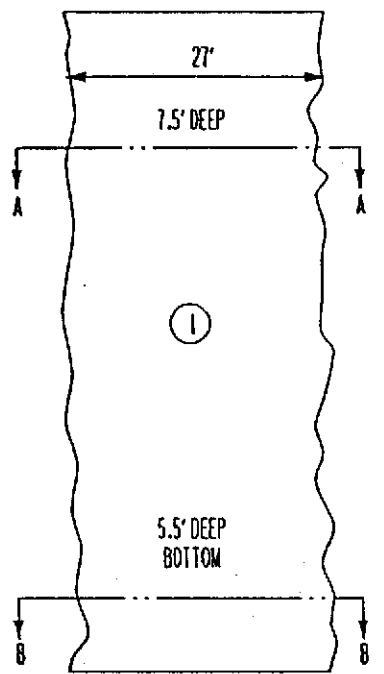
DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

# DETAIL A

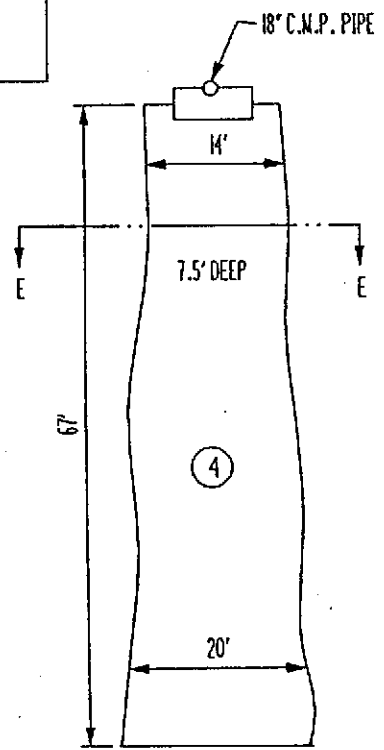
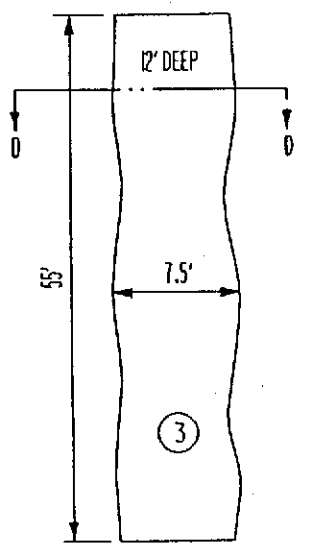
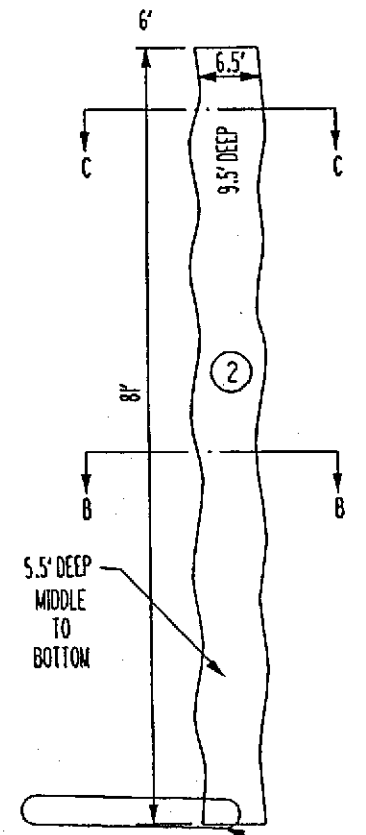


① HEADWALL MISSING.  
4'-0" OF PIPE ERODED AWAY.

18" C.M.P. PIPE



SOUTH ABUTMENT



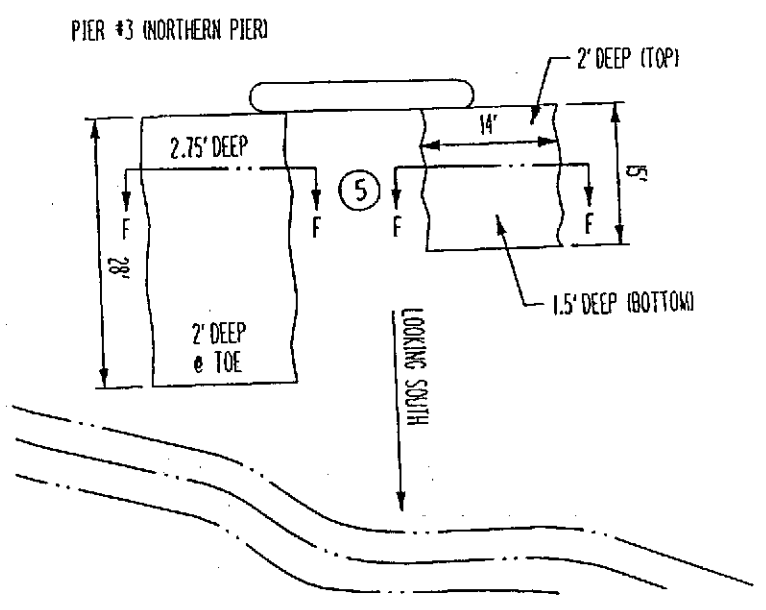
④ HEADWALL HANGING IN AIR.  
10'-0" PIPE ERODED AWAY  
e BOTTOM OF PIPE.

PIER #5

# DETAIL B



PRICE RD.

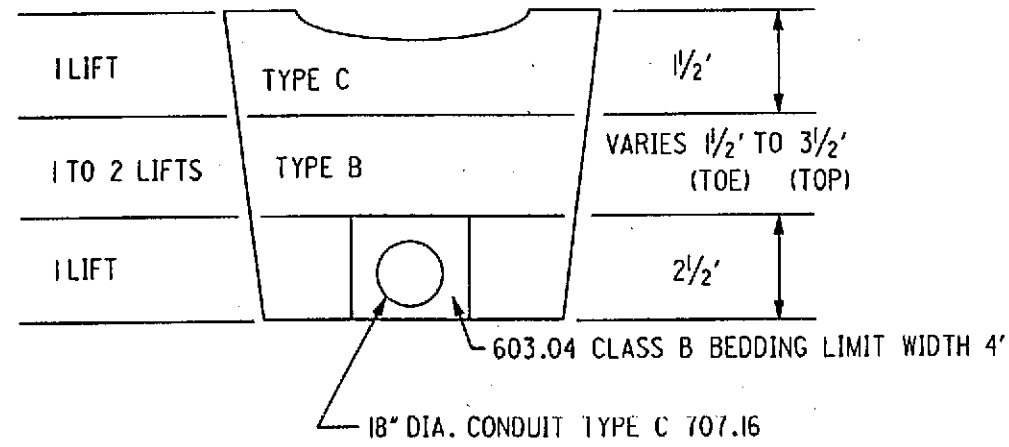


DESIGN REPORT	DATE	REVIEWED	DRAWN	DESIGNED
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF OPERATIONS BRIDGE SECTION	2-2-95	JM	SB	KAL
	STRUCTURE FILE NUMBER		REVISED	
DETAIL OF WASHED OUT AREAS MAH-680-4.76				
MAH-680-4.01				
165				

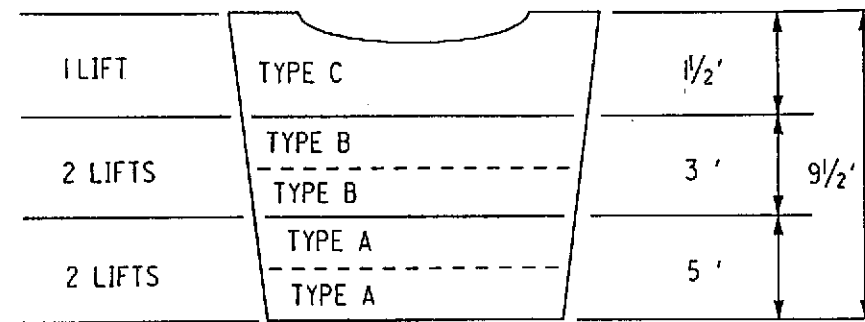
ITEM 601- DUMPED ROCK FILL TYPE A, B & C AS PER PLAN

TYPICAL SECTIONS

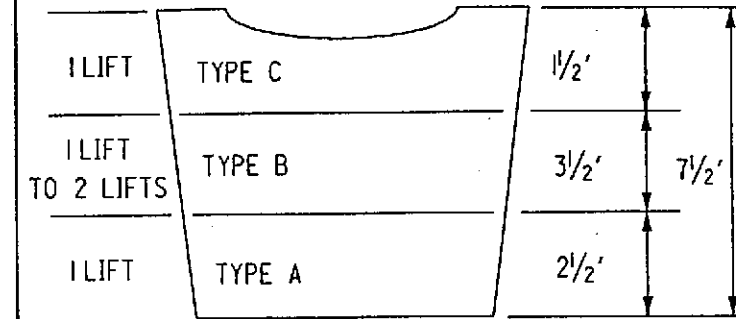
SECTION A-A



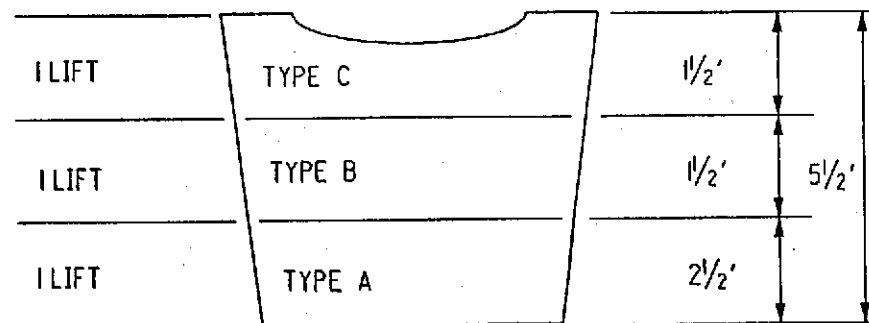
SECTION C-C



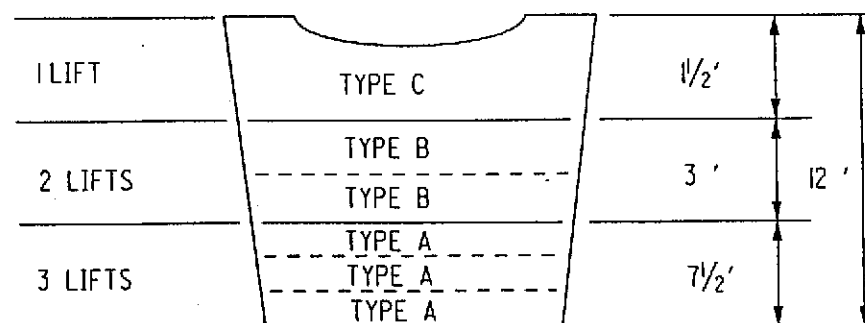
SECTION E-E



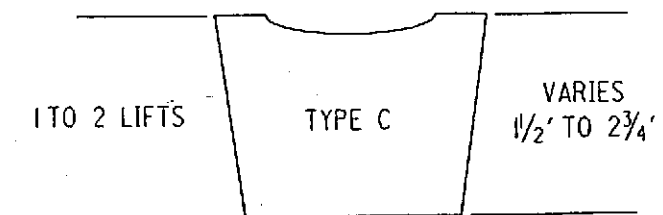
SECTION B-B



SECTION D-D



SECTION F-F



DESIGN AGENCY: STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 BRIDGE SECTION  
 DATE: 2-2-95  
 STRUCTURE FILE NUMBER: 777  
 DRAWN BY: [Signature]  
 CHECKED BY: MB  
 RETIRED BY: KAC  
 DUMPED ROCK DETAILS  
 MAH-680-4.76  
 MAH-680-4.01  
 166/106

ITEM 601- DUMPED ROCK FILL TYPE A, B, & C AS PER PLAN

MAH - 680 - 0476 L & R

GULLEY NO. (SEE DETAIL A & B)	DUMPED ROCK, TYPE C			DUMPED ROCK, TYPE B			DUMPED ROCK, TYPE A		
	LIFT THICKNESS (FT.)	VOLUME, (CU. YD.)	NUMBER OF LIFT REQ'D	LIFT THICKNESS (FT.)	VOLUME, (CU. YD.)	NUMBER OF LIFT REQ'D	LIFT THICKNESS (FT.) ☆	VOLUME, (CU. YD.)	NUMBER OF LIFT REQ'D
1	1/2	120	1	VARIABLES 1/2 TO 3 1/2 (TOE) (TOP)	170	* *	2 1/2	145	1
2, TOP TO MIDDLE	1/2	25	1	3	30	2	5	50	2
2, MIDDLE TO BOTTOM	1/2	25	1	1.5	15	1	2 1/2	25	1
3	1/2	35	1	3	45	2	7 1/2	100	3
4	1/2	85	1	3.5	140	2	2 1/2	80	1
5	FULL DEPTH (VARIES) 1/2 TO 3/4	60	*						
TOTAL		350			400			400	

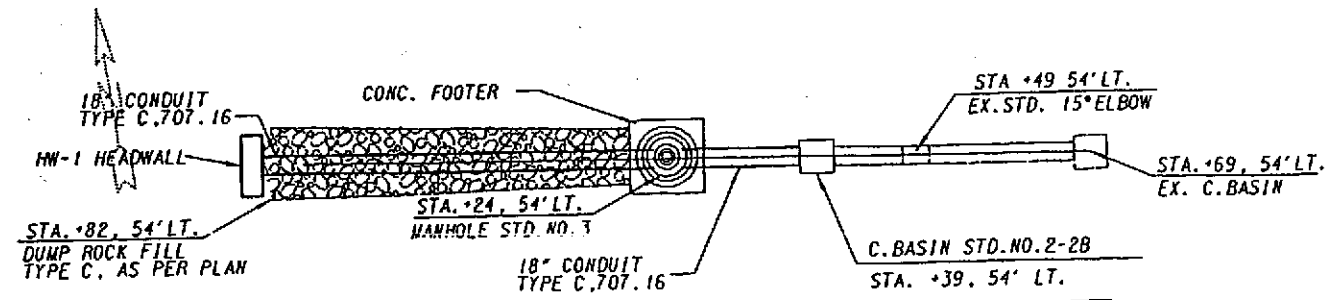
- \* MAXIMUM LIFT THICKNESS 1/2 FEET, TYPE C ONLY.
- \*\* MAXIMUM LIFT THICKNESS 2 FEET, TYPE B ONLY.
- ☆ MAXIMUM LIFT THICKNESS 2 1/2 FEET, TYPE A ONLY.

DESIGN AGENCY  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

DATE 2-2-75  
REVIEWED 2-2-75  
DRAWN SB  
CHECKED FG  
XAC

DUMPED ROCK FILL  
MAH-680-476

MAH-680-4.01



MAH-680-0476

SCALES:  
 1" = 10' HOR  
 1" = 5' VER

TOP EL-890.36

GLENWOOD AVE.

GLENWOOD AVE.  
 STA 969+32

969+00

970+00

MANHOLE STA. 968+24

INVERT STA. 968+24  
 INVERT STA. 968+24  
 INVERT STA. 968+24

INVERT STA. 968+24  
 INVERT STA. 968+24

INVERT STA. 968+24  
 INVERT STA. 968+24

A-A

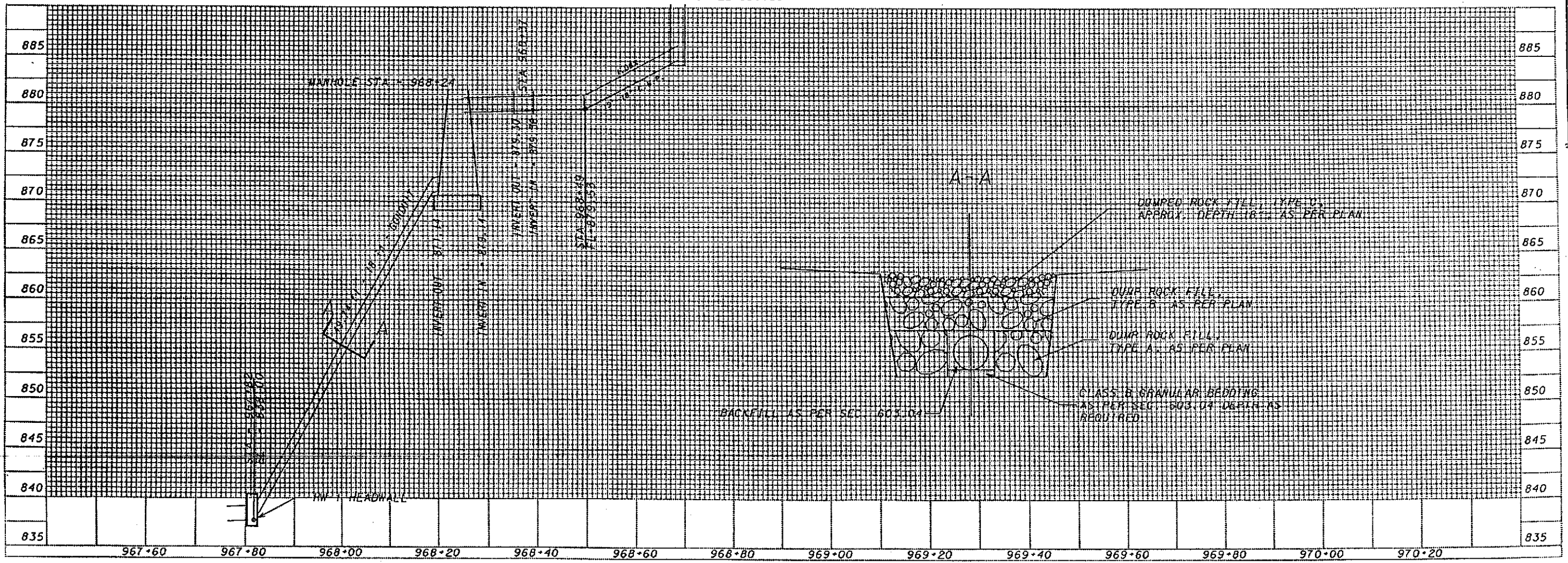
DUMPED ROCK FILL, TYPE D,  
 APPROX. DEPTH 18" AS PER PLAN

DUMP ROCK FILL,  
 TYPE B AS PER PLAN

DUMP ROCK FILL,  
 TYPE A AS PER PLAN

CLASS B GRANULAR BEDDING  
 AS PER SEC 603.04 DEPTH AS  
 REQUIRED

BACKFILL AS PER SEC 603.04



DESIGN AGENCY  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 BRIDGE SECTION

DATE  
 2-2-95  
 REVIEWED  
 FJM  
 STRUCTURE FILE NUMBER

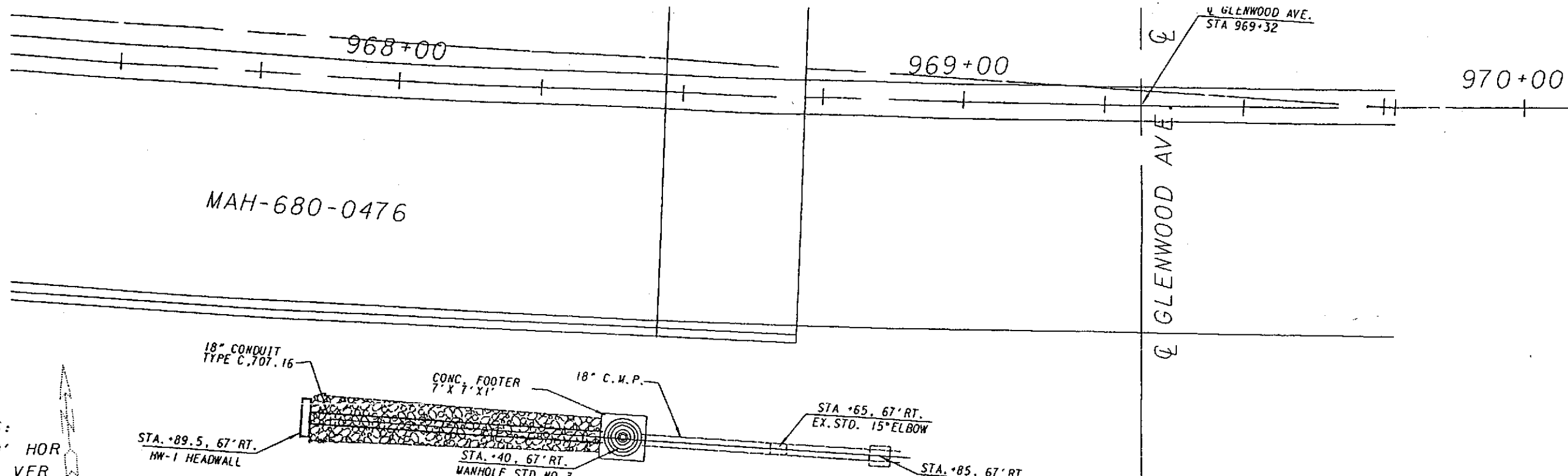
DESIGNED  
 RAF  
 REVIEWED

CHECKED  
 KAR  
 APPROVED

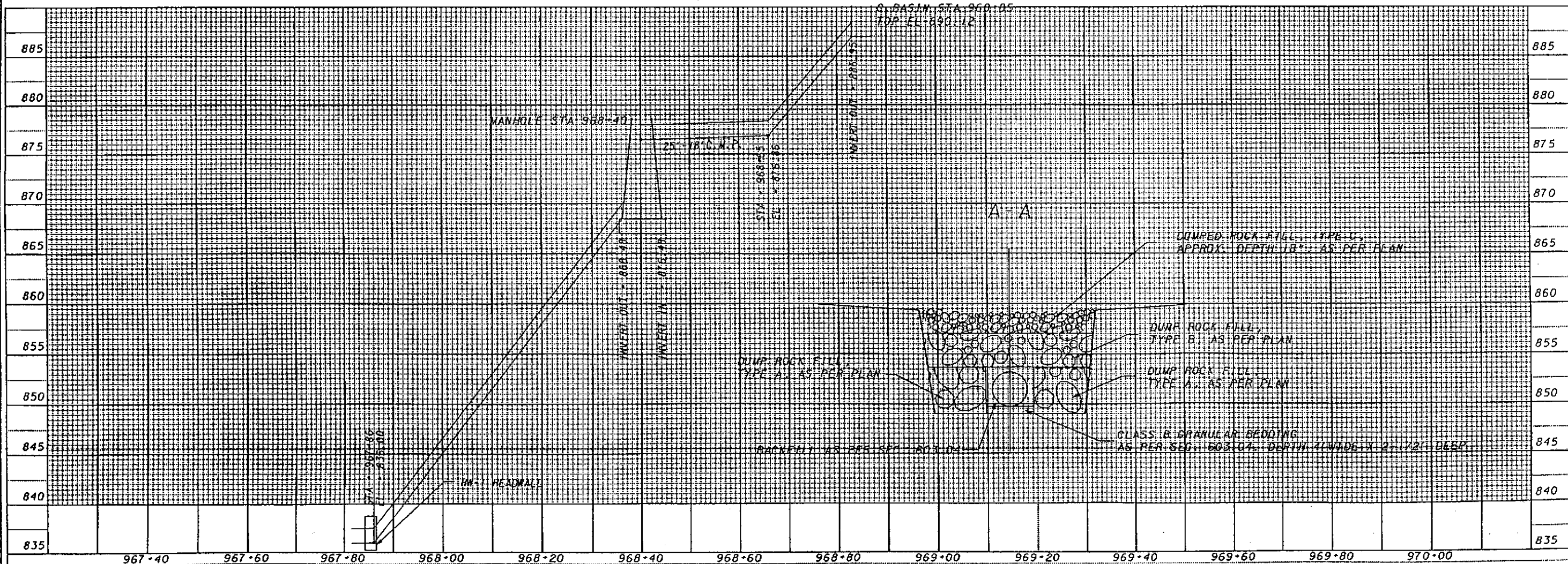
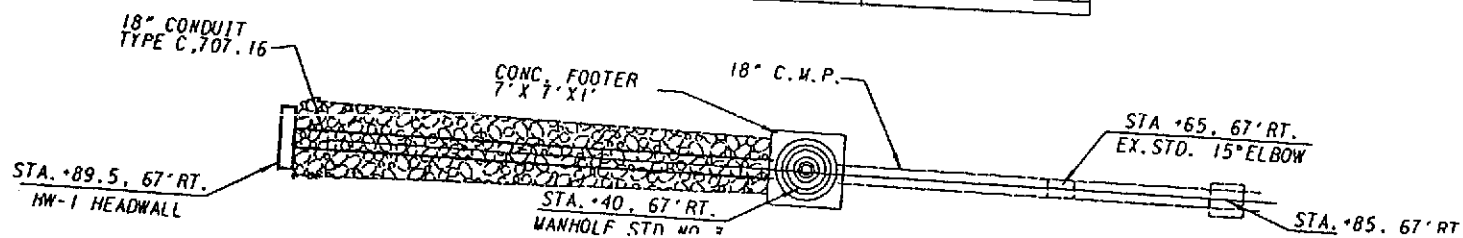
DRAINAGE AND EROSION REPAIR DETAILS  
 MAH-680-0476 L

MAH-680-4.01

68  
 110



SCALES:  
 1" = 10' HOR  
 1" = 5' VER



M680NOTE.DGN

DESIGN AGENT  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 MAHLE SECTION

DATE  
 2-2-95

REVIEWED  
 JAF

DESIGNED  
 JAF

DRAINAGE AND EROSION REPAIR DETAILS  
 MAH-680-0476 R

MAH-680-4.01

69  
 10

# HEAT STRAIGHTENING DETAILS

## BRIDGE NO. MAH-680-0429

DESIGN AGENCY  
 STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4 OPERATIONS  
 BRIDGE SECTION

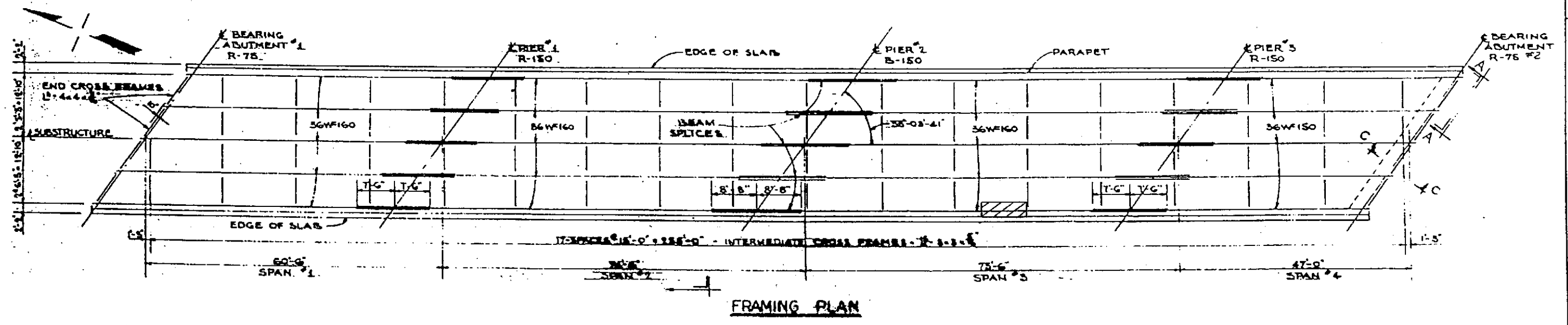
DATE  
 2-2-95  
 REVIEWED  
 JZ  
 STRUCTURE FILE NUMBER

DRAWN  
 AB  
 CHECKED  
 KAC

HEAT STRAIGHTENING DETAILS  
 BRIDGE NO. MAH-680-0429

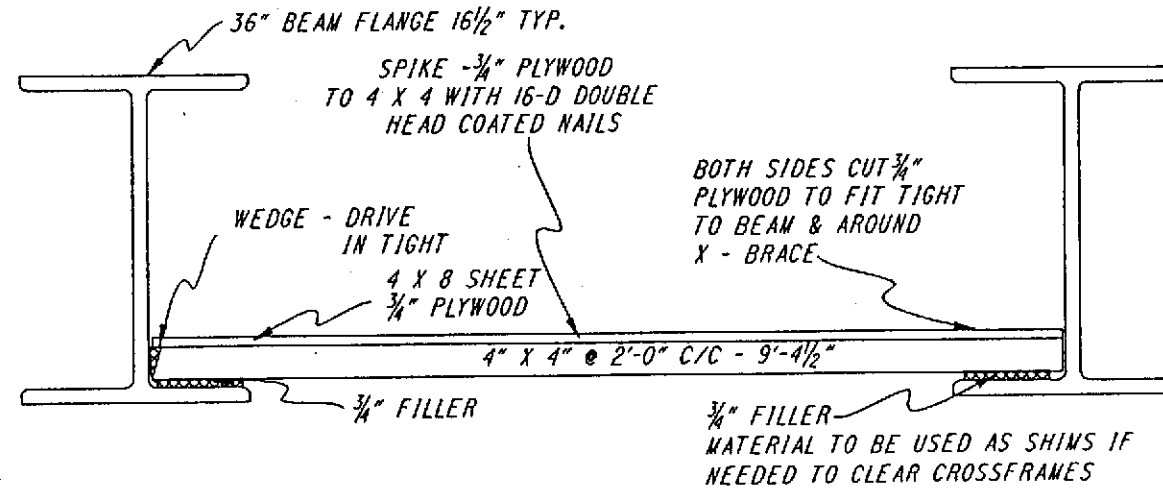
MAH-680-04.01

70  
 110



- INDICATES AREA TO BE HEAT STRAIGHTENED

# FALSEWORK NOTES AND DETAILS



NOTE: UNDERDECK FALSEWORK PROTECTION SHALL BE INSTALLED PRIOR TO THE START OF ANY BRIDGE WORK.

ITEM SPECIAL - STRUCTURE, MISC.: FALSEWORK PROTECTION UNDER DECK PROTECTION)

THE INTENT OF THIS ITEM IS TO PROTECT I.R. 680 FROM ANY FALLING DEBRIS FROM THE UNDERSIDE OF THE BRIDGE DECKS AT LOCATIONS LISTED HEREIN AND AT ANY OTHER LOCATIONS AS DEEMED NECESSARY BY THE ENGINEER. TO PREVENT PIECES OF LOOSE CONCRETE FROM FALLING ONTO TRAFFIC BELOW, UNDERSIDE DECK FALSEWORK PROTECTION (I.E. SUFFICIENTLY SUPPORTED PLYWOOD SHEETING) SHALL BE ERECTED, IN ACCORDANCE WITH THE DETAILS ON THIS PAGE AND AS DIRECTED BY THE PROJECT ENGINEER/SUPERVISOR. THIS ITEM OF WORK SHALL INCLUDE PLACING  $\frac{3}{4}$ " THICK OUTWOOD PLYWOOD 4' x 8' SHEETING, END TO END, SUPPORTED BY TREATED 4" x 4" WOODEN STRUTS SPACED EVERY 2 FEET, CENTER TO CENTER, THE PLYWOOD SHEETING SHALL BE FIELD CUT TO FIT TIGHT AGAINST THE WEB OF THE ADJACENT BEAM, AS WELL AS SNUG AGAINST THE INTERMEDIATE CROSSFRAME MEMBERS. THE UNDERDECKING SHALL CONSIST OF ALL ALL NEW MARINE (OR EXTERIOR RATED) WOODEN MATERIALS AND SHALL REMAIN SECURED IN PLACE AFTER THE PROJECT WORK IS COMPLETE. TRAFFIC CONTROL ON I.R. 680 WILL BE REQUIRED DURING THIS OPERATION AND WILL BE PAID FOR UNDER ITEM 614- MAINTENANCE OF TRAFFIC. ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS ASSOCIATED WITH THE REQUIRED FALSEWORK ERECTION OPERATIONS SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ITEM SPECIAL- FALSEWORK PROTECTION (UNDER DECK PROTECTION.)

THE LOCATIONS FOR THIS WORK ARE:

STRUCTURE NO.	LOCATION	QUANTITY DETERMINATION
MAH-680-04.14	OVER I-680 DRIVING LANE	7' x 10' = 70 s.f.
MAH-680-04.29	OVER I-680 NB EDGELINE TO SB EDGELINE	ALL 4 BAYS x 6.33' x 120' = 3,038 s.f.
MAH-680-06.03	REAR ABUTMENT BEAMSEAT TO FORWARD ABUTMENT BEAMSEAT	ALL 11 BAYS x 7.75' x 132' = 11,253 s.f.
	TOTAL	14,361 s.f. *

\* THIS AMOUNT IS CARRIED TO THE BRIDGE DECK TREATMENT SHEET.

DESIGN REPORT  
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 4 OPERATIONS  
BRIDGE SECTION

DATE  
3-8-95  
STRUCTURE FILE NUMBER

DESIGNED  
27/B  
CHECKED  
KAC

FALSEWORK NOTES AND DETAILS

MAH-680-4.01

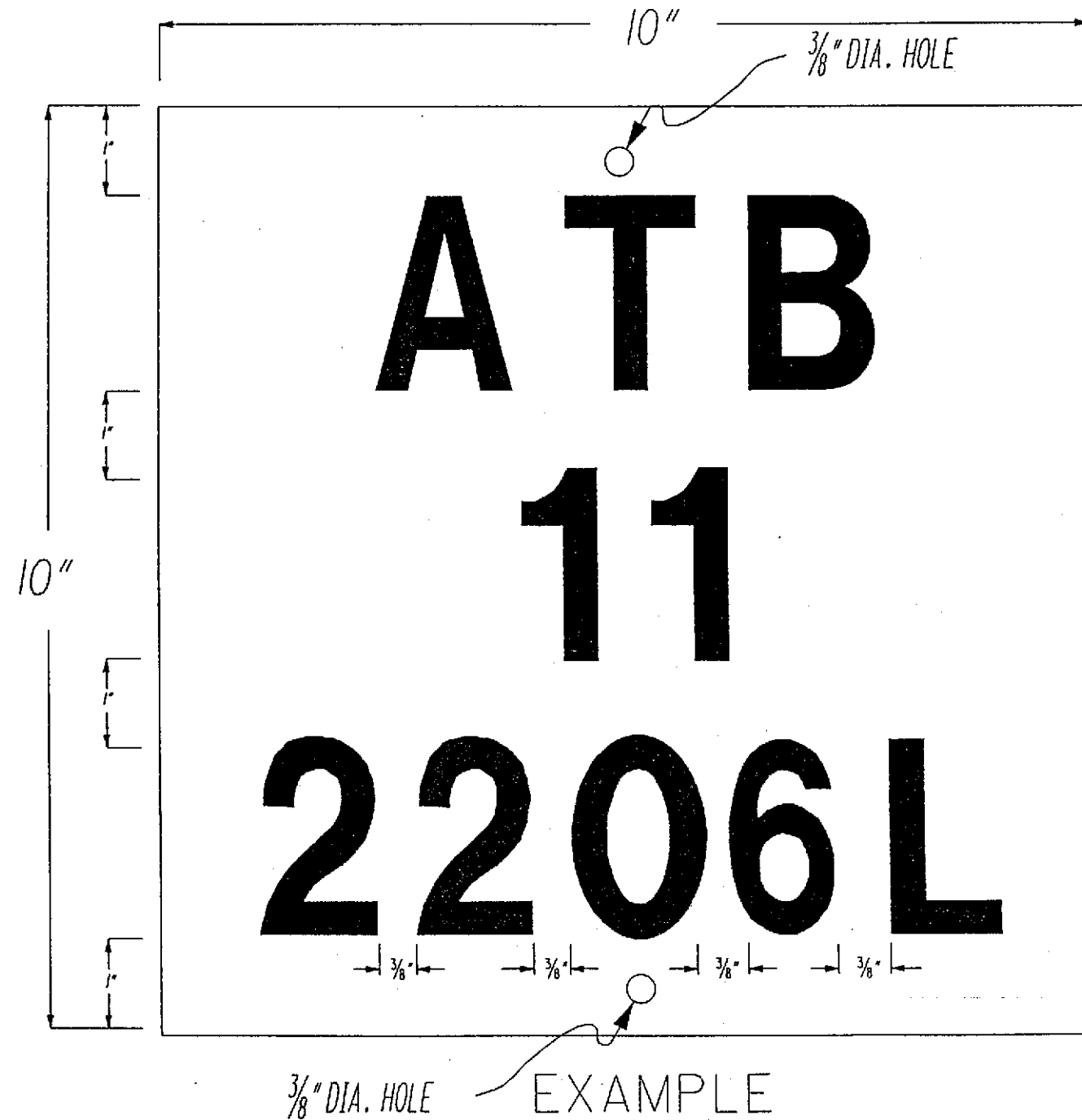
72  
110



# STRUCTURE SIGN UPGRADE

THESE ITEMS SHALL BE USED TO PLACE NEW STRUCTURE IDENTIFICATION SIGNS AT THE FOLLOWING LOCATIONS. SIGNS SHALL BE DIMENSIONED AS PER THE EXAMPLE. THEY WILL BE PLACED OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. SIGNS SHALL BE ALUMINUM AND HAVE A NONREFLECTIVE WHITE SHEETING BACKGROUND. STRUCTURE NUMBER SHALL BE USED WITH A "L" FOR LEFT BRIDGE AND A "R" FOR RIGHT BRIDGE WHERE APPLICABLE. LETTERS SHALL BE BLACK 2" HEIGHT, SERIES C STROKE WIDTH, AND SILK SCREENED AS PER 703.22. SIGNS SHALL BE BOLTED USING TWO 5/16" ALUMINUM BOLTS 2-1/2" IN LENGTH AND TWO 5/16" NUTS. NEW NO.2 POSTS SHALL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20 MOST CURRENT REVISION. EACH POST WILL BE 7 FEET LONG. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO PERFORM THIS WORK.

STRUCTURE NUMBER	ITEM 630 GROUND MOUNTED SUPPORT, NO. 2 POST	ITEM 630 SIGN, FLAT SHEET	ITEM 630 REMOVAL OF GROUND MOUNTED POST AND DISPOSAL
	LIN.FT.	SQ.FT.	EACH
MAH-680-0414	14	1.38	2
MAH-680-0429	14	1.38	2
MAH-680-0440	14	1.38	2
MAH-680-0476	14	1.38	2
MAH-680-0488	14	1.38	2
MAH-680-0508	14	1.38	2
MAH-680-0557	14	1.38	2
MAH-680-0573L	14	1.38	2
MAH-680-0587	14	1.38	2
MAH-680-0594	14	1.38	2
MAH-680-0603	14	1.38	2
MAH-680-0628	14	1.38	2
MAH-680-0632	14	1.38	2
MAH-680-0637	14	1.38	2
MAH-680-0661	14	1.38	2
MAH-680-0687	14	1.38	2
MAH-680-0693	14	1.38	2
TOTALS	238	23.46	34



DESIGN AGENT

DATE	2-2-95
REVIEWED	7/7
STRUCTURE FILE NUMBER	
DRAWN	KAC
CHECKED	KAC
DESIGNED	KAC
CHECKED	

STRUCTURE SIGN UPGRADE

MAH-680-4.01

73/110

# GUARDRAIL SUB-SUMMARY

PLAN NO.:

\* INDICATES CONTINUOUS RUNS

PART	ROUTE	LOCATION	SIDE	202	517	ITEM 606						622	622	802	DETAIL #	COMMENTS			
				GUARDRAIL REMOVED, AS PER PLAN	RAILING, MISC.- BRIDGE RAIL RETRO-FIT ** (SEE SHEET 38 FOR QTY.)	GUARDRAIL, TYPE 5	GUARDRAIL, TYPE 5A	GUARDRAIL, MISC.: THREE BEAM RAIL	ANCHOR ASSEMBLY			BRIDGE TERMINAL ASSEMBLIES					CONCRETE BARRIER, TYPE C	CONCRETE BARRIER, TYPE D	BARRIER REFLECTOR, TYPE A
									TYPE A, AS PER PLAN	TYPE E	TYPE T	TYPE 1	TYPE 2	TYPE 3					
LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA					
I	IR 680	SOUTHBOUND M.L.																	
		4.14	RT.	250		100							94	4		EXTEND 20' BEYOND EAST PIER COLUMN	STEEL ST.		
		4.29	RT.	275		112.5	37.5						54	4	1,3		SILLIMAN ST.		
		4.40	RT.	387.5		225							98	5	2	TYPE T ANCHOR TRAILING END	SR 193		
		4.59	RT.	637.5		650							74	7			MAH. AVE.		
		4.74	RT.	125	**	75								8	7	APPROACH TO MILL CREEK GORGE BR. 0476			
		4.87	RT.	162.5		137.5								3	7	TRAILING END MILL CREEK GORGE BR 0476			
		5.10	RT.	387.5		300	37.5							5	3	TRAILING END OF EDWARDS ST. BRIDGE & EXIT RAMP (MEET EXIST. UPDATED RAIL)			
		5.51	RT.	375		325	37.5							5	3	APPROACH TO OAKHILL MEET UPDATED RAIL			
		5.59	RT.	350		337.5								4		TRAILING END TO OAKHILL MEET UPDATED RAIL			
		5.83	RT.	587.5		450	37.5				2			78	7	2,3	END AT WOODLAND BR. BACKWALL	RIDGE AVE.	
		5.94	RT.	112.5									84	2	4	14' TRANSITION ON RAMP SIDE @ TRAILING END			
		6.01	RT.	125		112.5								2		END AT MARKET ST. BACKWALL			
		6.21 *	RT.	550		300								178	6	2,3,11	INCL. RET. WALL APPR. BRIDGE 0632		
		6.32 *	RT.	500	**	475						2		9	1,7	RAIL ON BRIDGE OVER US 62 & TRAILING END			
		6.56	RT.	275		112.5								74	4	1	APPROACH WILLIAMSON BR.		
		6.69	RT.	150										125	2	3	SIGN SUPPORT		
		6.79 *	RT.	400	**	350								6	7	APPROACH DELASON AVE. BR. 0687			
		6.90 *	RT.	187.5										2		BETWEEN DELASON & Y&S RR			
		6.95 *	RT.	212.5	**	175								5	7	TRAILING END Y&S BRIDGE			
		TOTAL THIS SHEET		6050	**	4237.5	150	187.5	6	6	6	9	3	6	84	775	90		

GUARDRAIL SUB-SUMMARY

MAH-680-4.04

# GUARDRAIL SUB-SUMMARY

PLAN NO.:

\* INDICATES CONTINUOUS RUNS

PART	ROUTE	LOCATION	SIDE	202	517	ITEM 606										622	622	622	622	802	DETAIL #	COMMENTS	
				GUARDRAIL REMOVED, AS PER PLAN	GUARDRAIL, MISC.: BRIDGE RAIL RETRO-FIT ** (SEE SHEET 38 FOR QTY'S.)	GUARDRAIL, TYPE 5	GUARDRAIL, TYPE 5A	GUARDRAIL, MISC.: THRIE BEAM RAIL	ANCHOR ASSEMBLY			BRIDGE TERMINAL ASSEMBLIES				CONCRETE BARRIER, TYPE D	CONCRETE BARRIER, TYPE D, AS PER PLAN	CONCRETE BARRIER, TYPE D-1, AS PER PLAN	CONCRETE BARRIER, AS PER PLAN	BARRIER REFLECTOR, TYPE A			
				LF	LF	LF	LF	LF	TYPE A, AS PER PLAN	TYPE E	TYPE T	TYPE 1	TYPE 2	TYPE 3	TYPE 1, AS PER PLAN	EA	EA	EA	EA	EA			
I	IR 680	680 NORTHBOUND																					
		6.98	RT.	25	**																		
		6.93	RT.	125																	6	7	APPROACH TO Y&S RR BRIDGE
		6.87	RT.	400	**	350															2		TRAILING END Y&S RR & APPROACH DELASON
		6.70	RT.	462.5		325	87.5														6	7	TRAILING END OF DELASON BR.
		6.50	RT.	312.5		200	37.5								34						6	1	APPROACH WILLIAMSON AVE. BR.
		6.39 *	RT.	325		275															4	3	SIGN @ 62 RAMP GORE
		6.33 *	RT.	87.5	**										54						4	1,2	WAYNE PYATT APPROACH & TRAILING END
		6.05	RT.			100									124	15					4	5,7	BR. OVER US 62 APPROACH & TRAILING END
		5.73	RT.	800		775											246				4	6	BIN WALL & APPROACH 0603
		5.56	RT.	1100		1050	37.5														9	7	TRAILING END RENNER BRDG TO MEET NEW RAIL @ OAKHILL
		5.39	RT.	1362.5		1300	37.5														12	3	TRAILING END OAKHILL (MEET NEW RAIL) TO MARSHALL ST. EXIT
		5.07	RT.	400		387.5															15	3	MARSHALL RAMP GORE TO APPROACH TO EDWARDS ST. BR.
		4.92 *	RT.	175		75	100														5		MEET NEW RAIL @ TRAILING END EDWARDS ST. BR.
		4.87 *	RT.		**																3	7,8	APPROACH MILL CREEK & UNDER GLENWOOD
		4.70 *	RT.	1787.5		1662.5															7	7	MILL CREEK GORGE BRIDGE
		4.58	RT.	900		850	37.5														67	18	LEAVE MILL CREEK & UNDER MAHONING AVE. BR.
		4.46	RT.	412.5		375															10	3	SALT SPRINGS GORE TO EXIST. BRDG CONNECTION ON 193 RAMP
		4.43	RT.	287.5		150	37.5								84						5	1	APPROACH SR 193 BRIDGE
		4.16	RT.	200		100									54						4	1,3	APPROACH SILLIMAN ST. BRIDGE
															74						1	1	APPROACH STEEL ST. BRIDGE
		TOTAL THIS SHEET		9162.5	**	7975	375	137.5	3	7	7	6	3	6	1	424	15	246	67	125			

GUARDRAIL SUB-SUMMARY

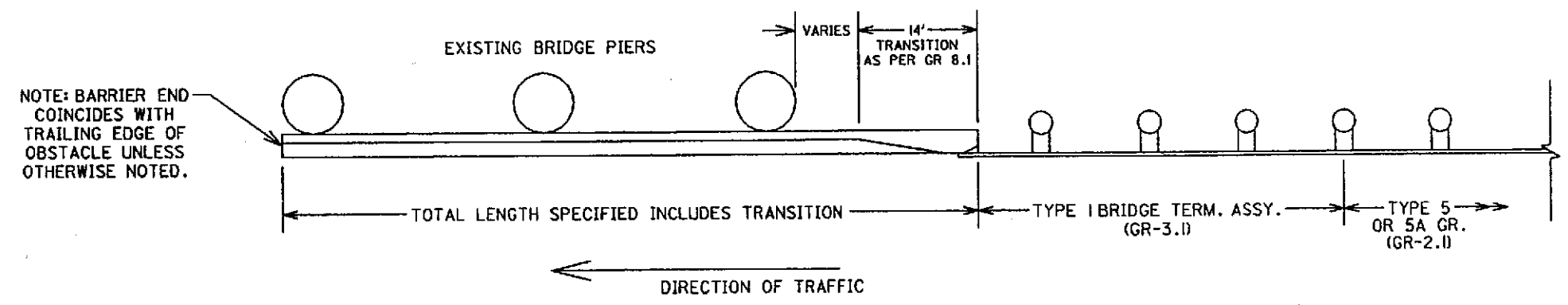
MAH-680-4.04

M6800470.DGN



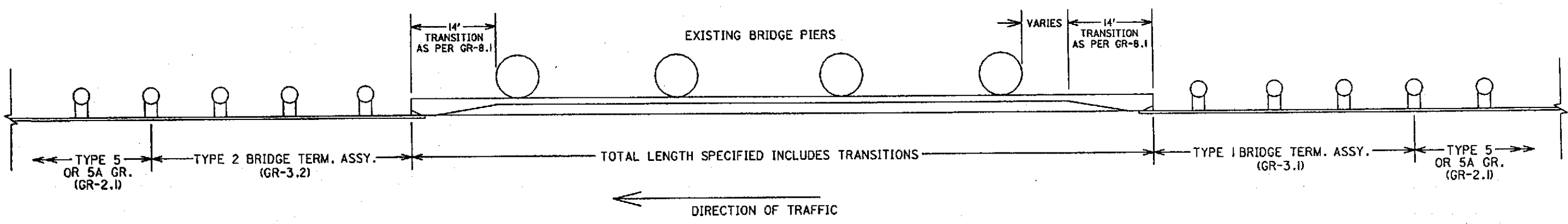
# DETAIL 1

## TYPICAL INSTALLATION TYPE D BARRIER



# DETAIL 2

## TYPICAL INSTALLATION TYPE D BARRIER



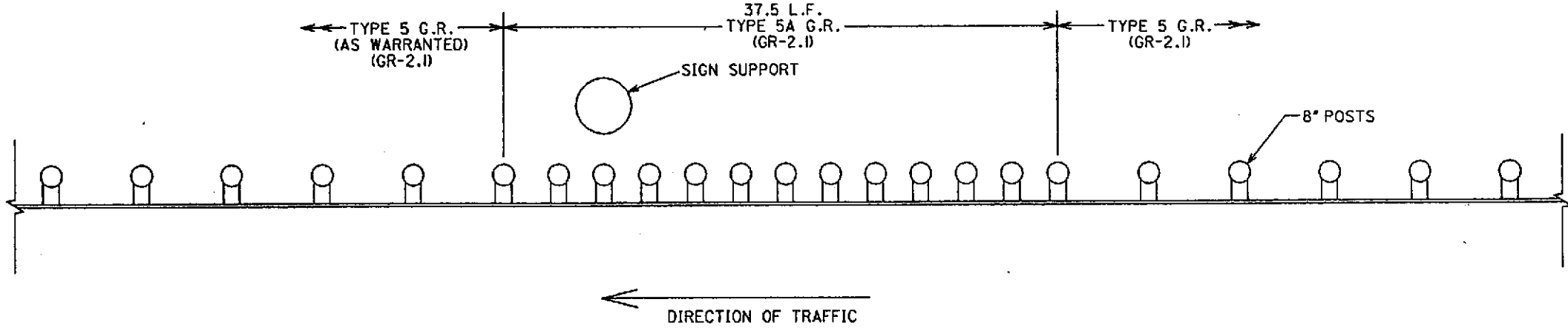
DETAILS

MAH-680-4.04

PLAN NO.

# DETAIL 3

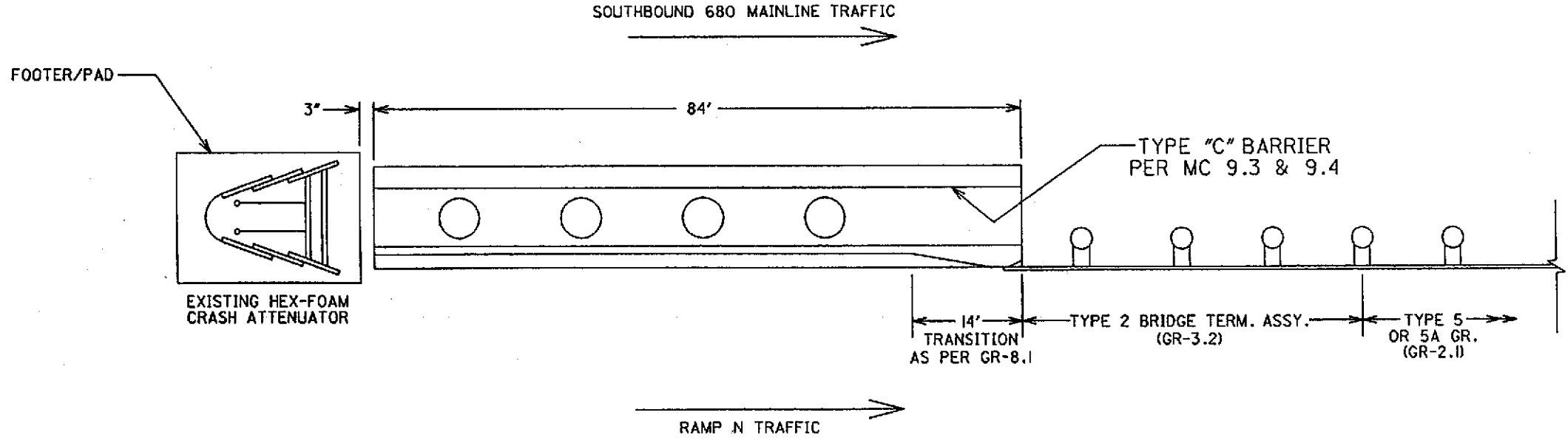
TYPICAL INSTALLATION TYPE 5A GUARDRAIL



← DIRECTION OF TRAFFIC

# DETAIL 4

SOUTHBOUND STR 0594



→ SOUTHBOUND 680 MAINLINE TRAFFIC

→ RAMP N TRAFFIC

DETAILS

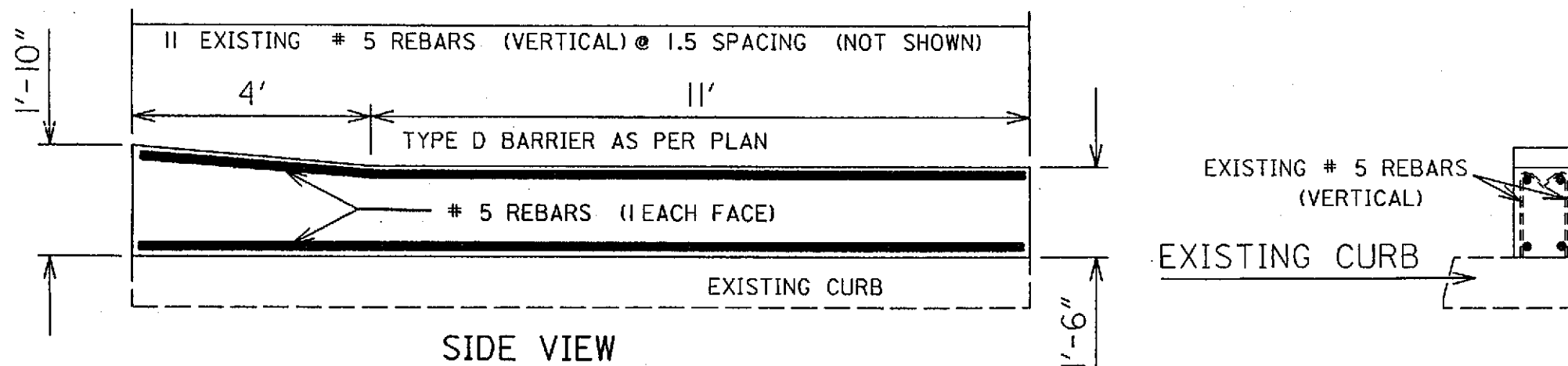
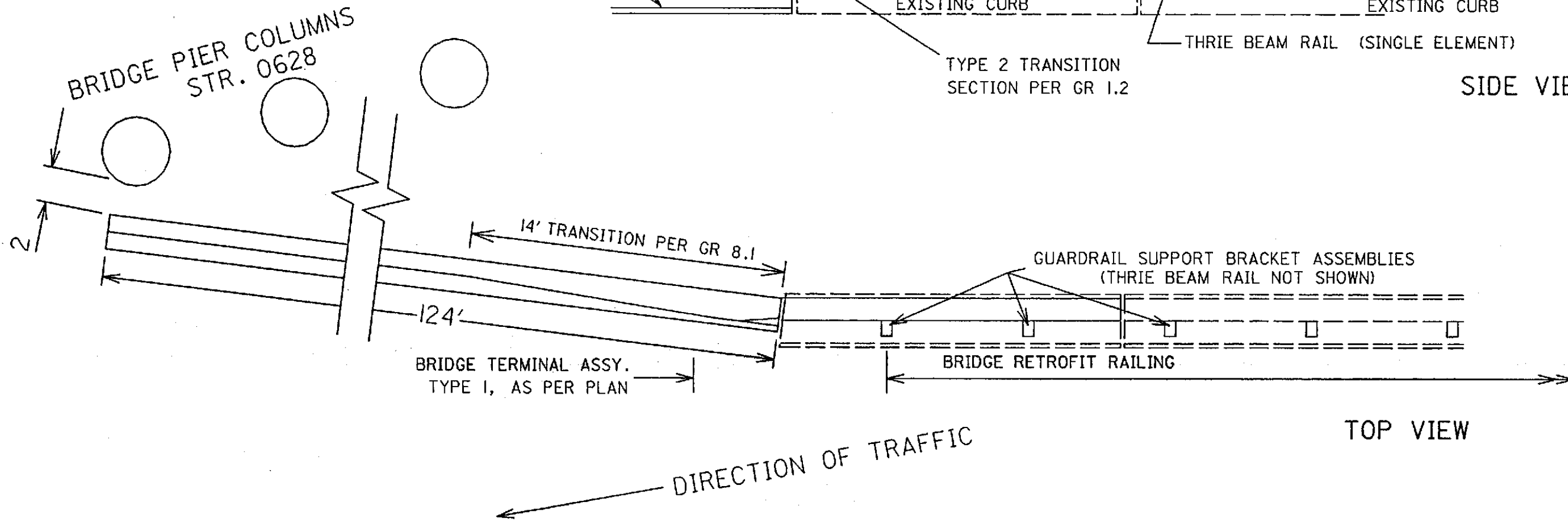
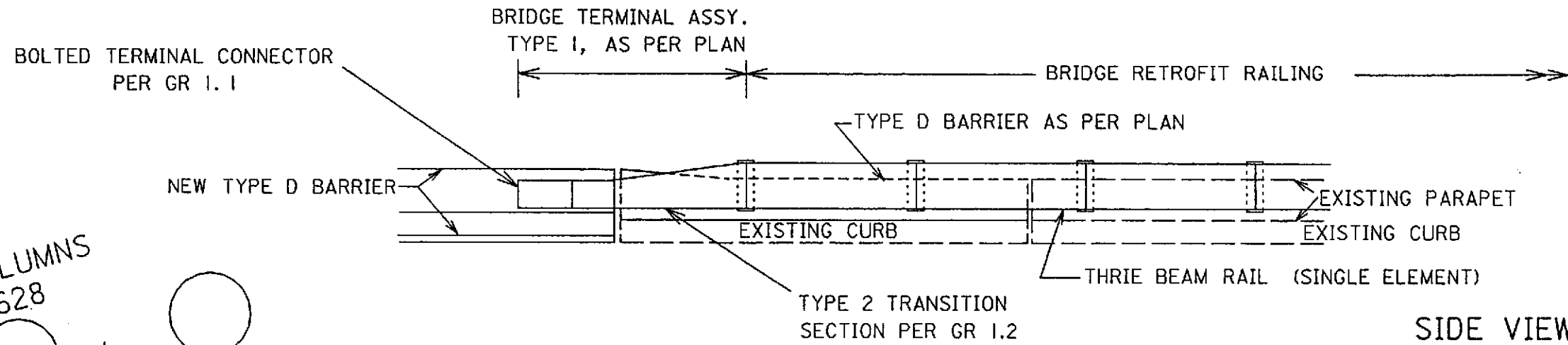
MAH-680-4.05

M6800441.DGN

# DETAIL 5

## BRIDGE 0632 NORTHBOUND ONLY

PLAN NO.



BARRIER WALL DETAILS

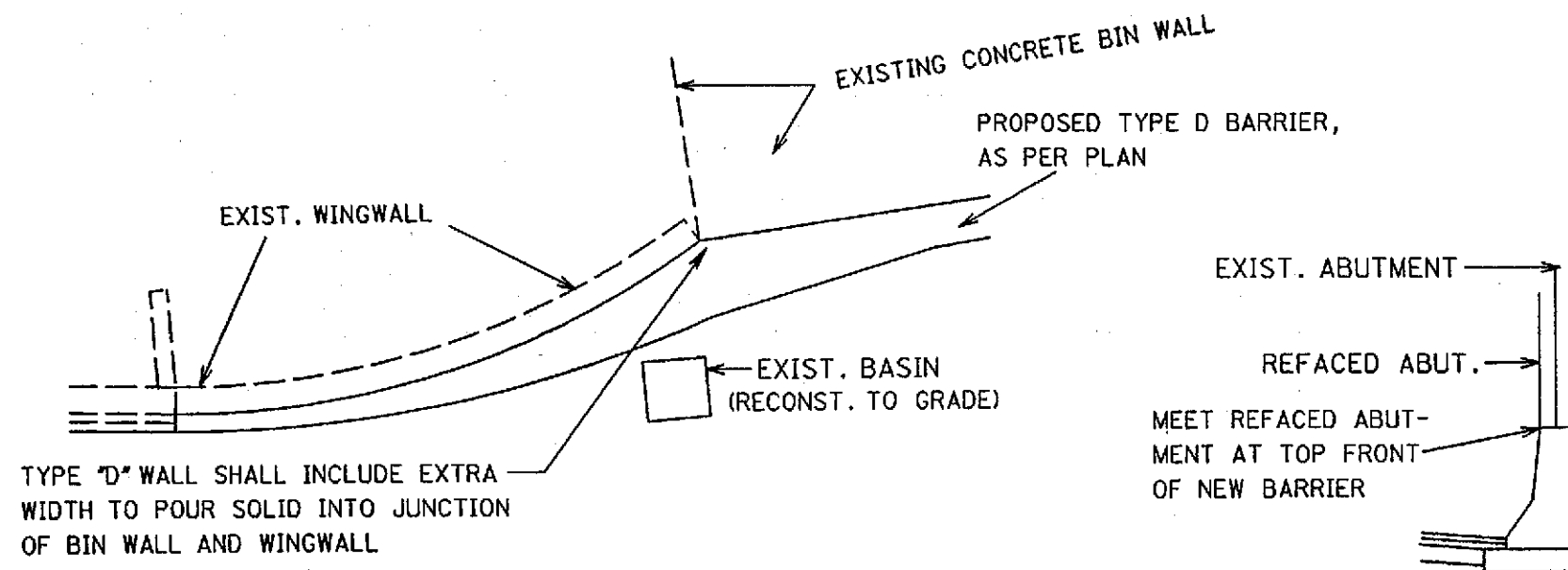
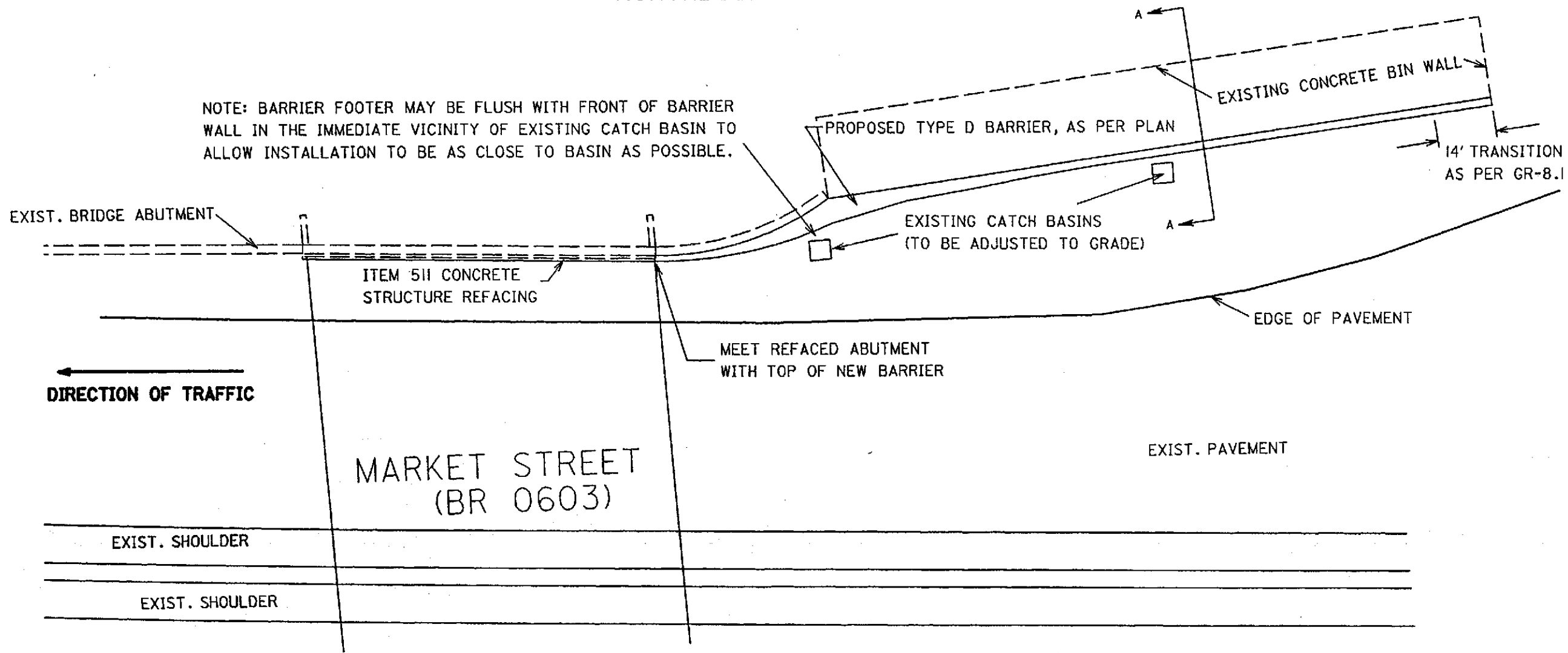
MAH 680 4.04

# DETAIL 6

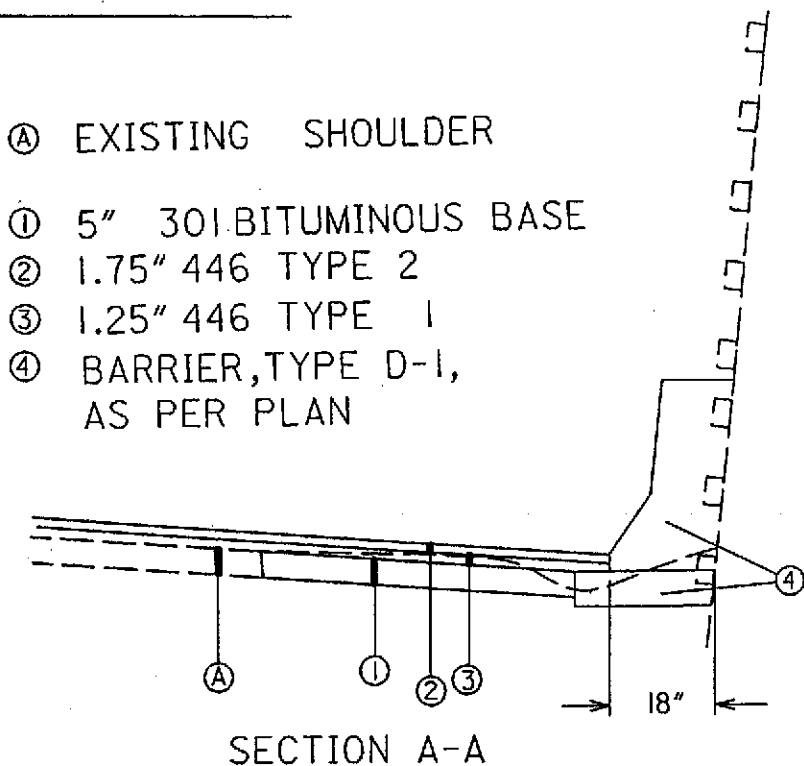
## MARSHALL STREET ENTRANCE RAMP NORTHBOUND ONLY

PLAN NO. \_\_\_\_\_

NOTE: BARRIER FOOTER MAY BE FLUSH WITH FRONT OF BARRIER WALL IN THE IMMEDIATE VICINITY OF EXISTING CATCH BASIN TO ALLOW INSTALLATION TO BE AS CLOSE TO BASIN AS POSSIBLE.



- Ⓐ EXISTING SHOULDER
- ① 5" 301 BITUMINOUS BASE
- ② 1.75" 446 TYPE 2
- ③ 1.25" 446 TYPE 1
- ④ BARRIER, TYPE D-1, AS PER PLAN



GUARDRAIL DETAILS

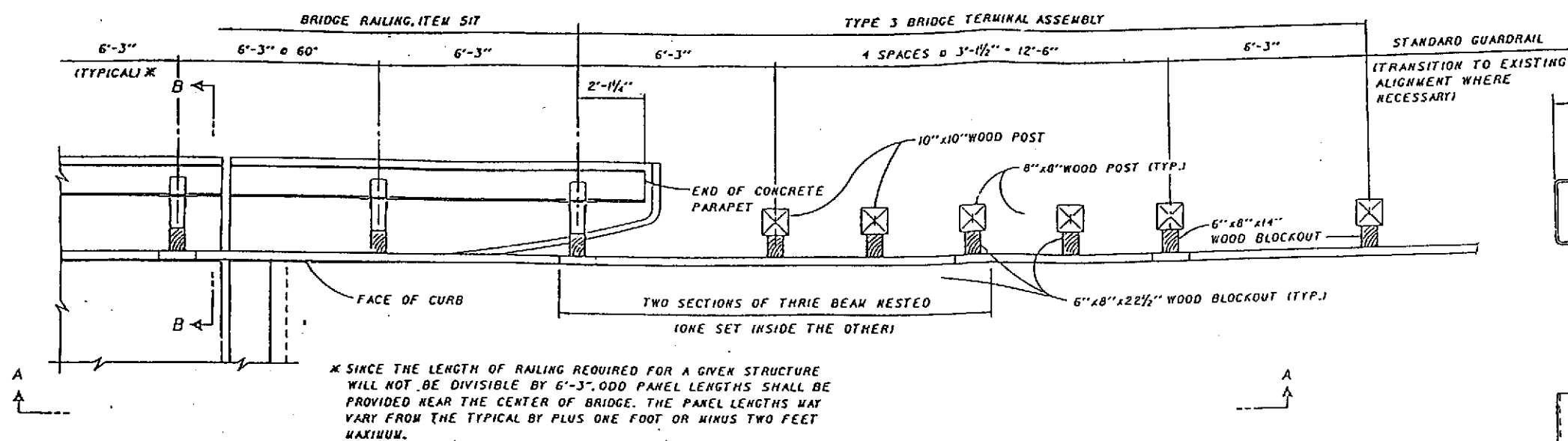
MAH 680 4.04

80/110

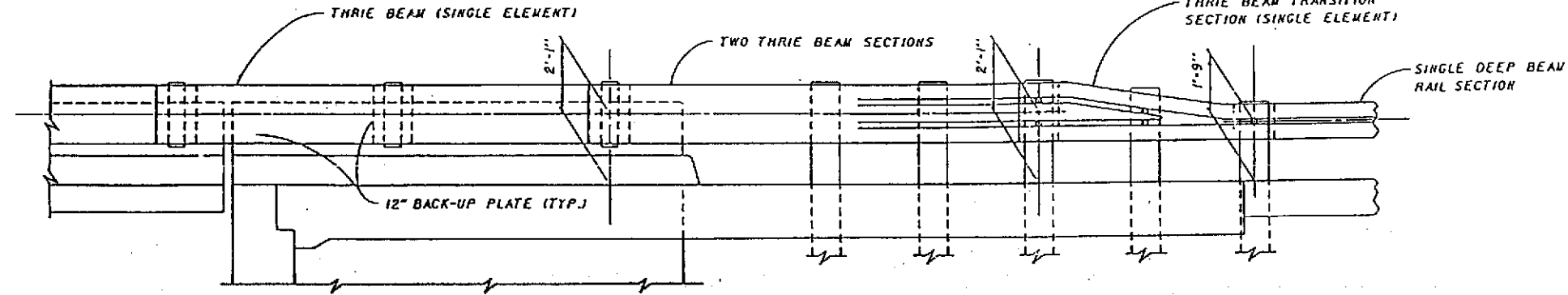


# DETAIL 7

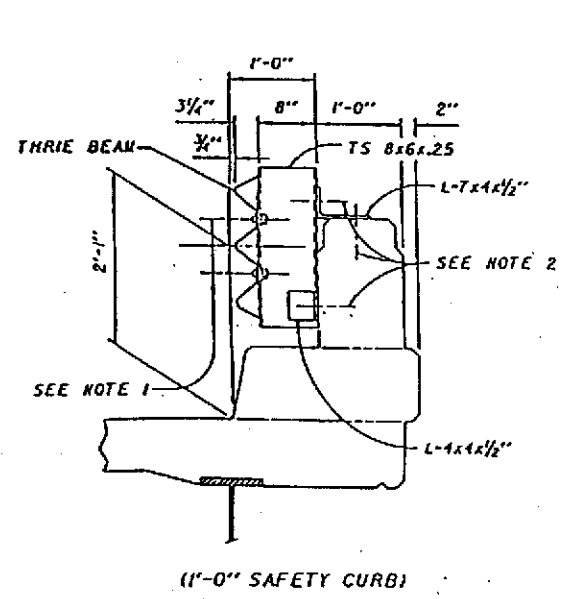
PLAN NO.



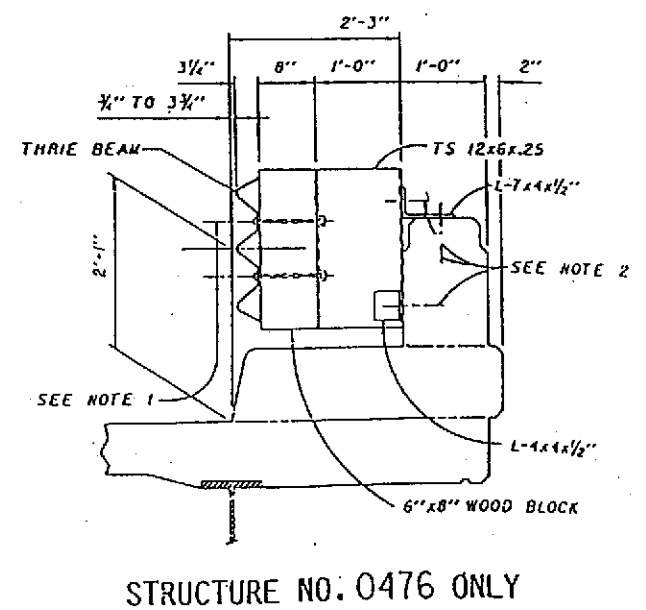
PART PLAN AT ABUTMENT



SECTION A-A

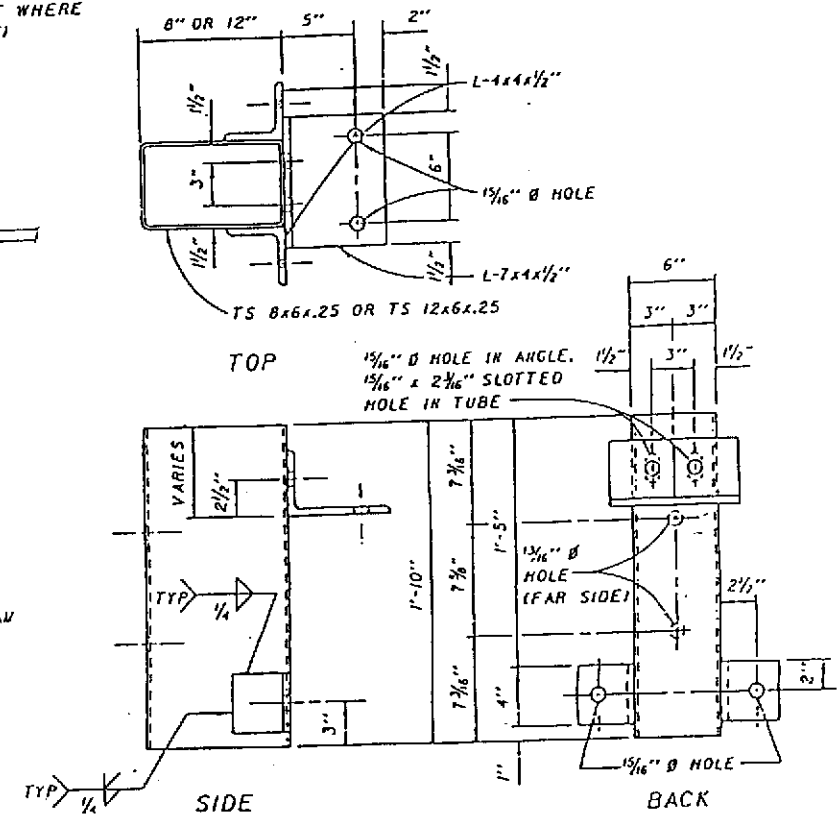


SECTION B-B



**GENERAL NOTES:**

- DESIGN SPECIFICATIONS: "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY AASHTO, 1989, INCLUDING THE 1990 AND 1991 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.
- THRIE BEAM BRIDGE RAILING SHALL BE IN ACCORDANCE WITH ITEM 517 EXCEPT THAT ALL REFERENCE TO DEEP BEAM RAIL SHALL BE TAKEN TO INCLUDE THRIE BEAM RAIL. ADDITIONALLY, PROVISIONS OF 710.06 SHALL APPLY EXCEPT THAT THE THRIE BEAM RAIL ELEMENT SHALL CONFORM TO AASHTO M 180, TYPE II, CLASS B.
- STRUCTURAL STEEL ANGLES SHALL CONFORM TO ASTM A36.
- STRUCTURAL TUBING SHALL CONFORM TO THE PROVISIONS OF 707.10 EXCEPT THAT THE "DROP WEIGHT TEAR TEST" AS PER ASTM E 436 NEED NOT BE PERFORMED.
- NOTE 1: 3/8" DIA. BUTTON HEAD BOLT (ASTM A307) WITH PLATE WASHER UNDER HEAD AND STANDARD WASHER UNDER THE NUT.
- NOTE 2: 3/8" DIA. HIGH-STRENGTH THREADED ANCHORS, BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325. ANCHORS SHALL BE EMBEDDED A MINIMUM OF 1" INTO THE EXISTING CONCRETE PARAPET AND ANCHORED IN ACCORDANCE WITH CMS 510.



GUARDRAIL SUPPORT BRACKET ASSEMBLY

**GALVANIZING:** ALL GUARDRAIL SUPPORT BRACKET ASSEMBLIES, HARDWARE AND ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02.

**THRIE BEAM EXPANSION:** ALL BOLTS IN THE OFF STRUCTURE END OF THE APPROACH PANEL THRIE BEAM RAIL SECTION THAT SPANS THE ABUTMENT SHALL BE TIGHTENED AS SPECIFIED FOR EXPANSION JOINTS IN 606.05. IF ADDITIONAL EXPANSION JOINTS ARE REQUIRED IN THE THRIE BEAM RAILING, THEIR LOCATION SHALL BE NOTED ON THE CONTRACT PLANS.

**REMOVAL OF EXISTING ALUMINUM RAILING AND POSTS** SHALL BE IN ACCORDANCE WITH ITEM 202.03. PAYMENT FOR REMOVAL SHALL BE INCLUDED WITH ITEM 517, RAILING. ALL REMOVED TUBULAR RAILING AND POSTS SHALL BE STORED AT AN APPROVED LOCATION AND SALVAGED BY ODOT M&R.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN			
<b>BRIDGE RETROFIT RAILING THRIE BEAM BRIDGE RAILING FOR BRIDGES WITH SAFETY CURBS</b>			
APPROVED:	<i>[Signature]</i>		
DATE: 4-24-92	ENGINEER OF BRIDGES		
PREPARED:	CHECKED:	REVIEWED:	
AJM	GFJ	URG	LMW

M6800441.DGN

DETAILS

MAH-680-4.04

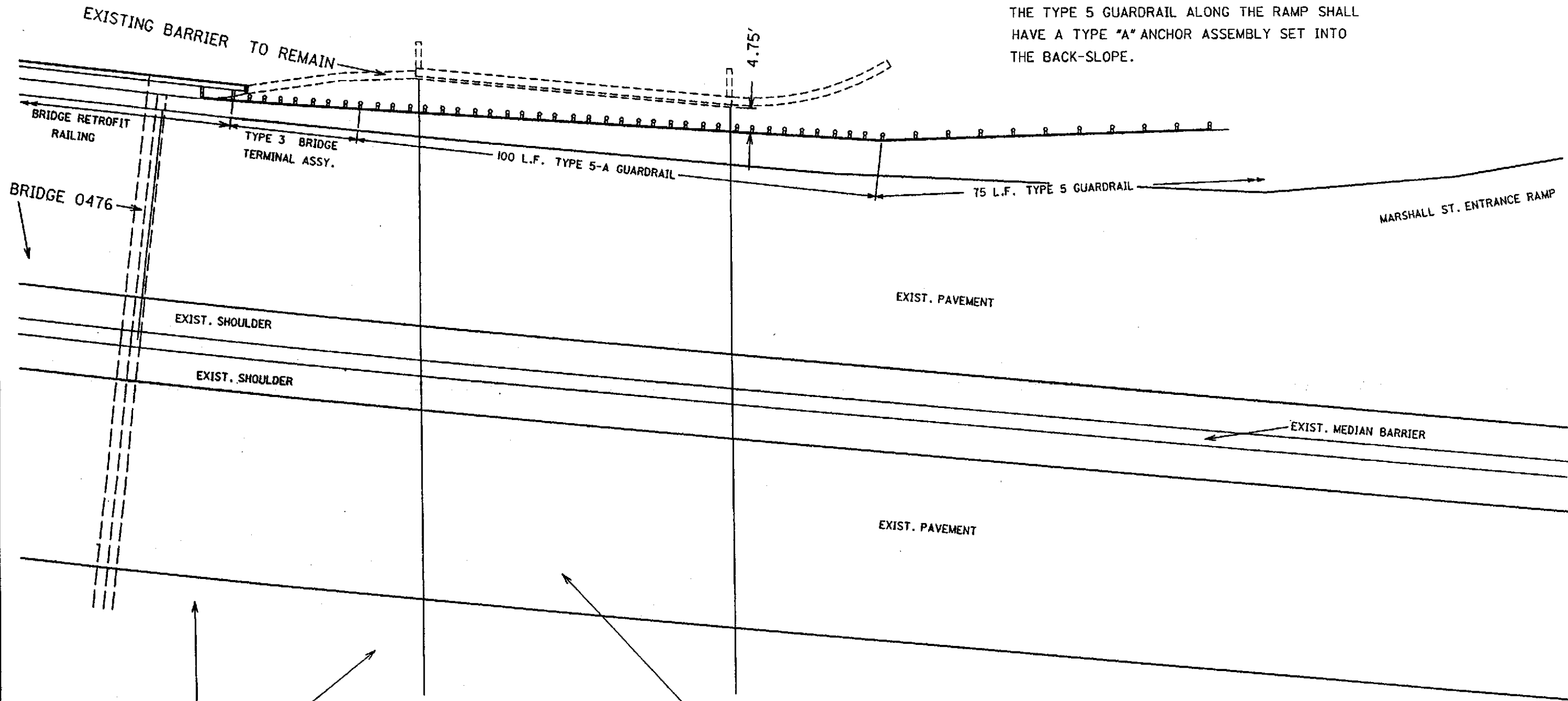
81  
110

# DETAIL 8

## MARSHALL STREET ENTRANCE RAMP NORTHBOUND ONLY

PLAN NO. \_\_\_\_\_

NOTE: ALL HOLES FOR POSTS TO BE INSTALLED IN EXISTING SHOULDER SHALL BE AUGERED THROUGH THE ASPHALT FOR ITS ENTIRE DEPTH. THE TYPE 5 GUARDRAIL ALONG THE RAMP SHALL HAVE A TYPE "A" ANCHOR ASSEMBLY SET INTO THE BACK-SLOPE.



GUARDRAIL ON THE NORTHBOUND TRAILING END OF MILL CREEK BRIDGE (0476) SHALL BE REPLACED IN THE SAME APPROXIMATE LOCATION AS THE EXISTING RAIL.

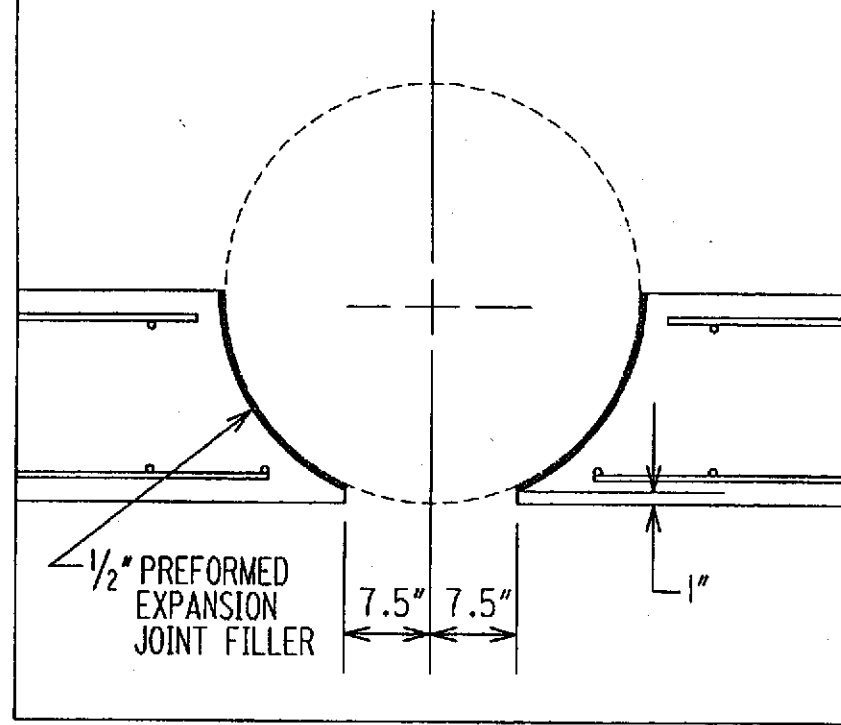
GLENWOOD AVE  
(BR 0488)

GUARDRAIL DETAILS

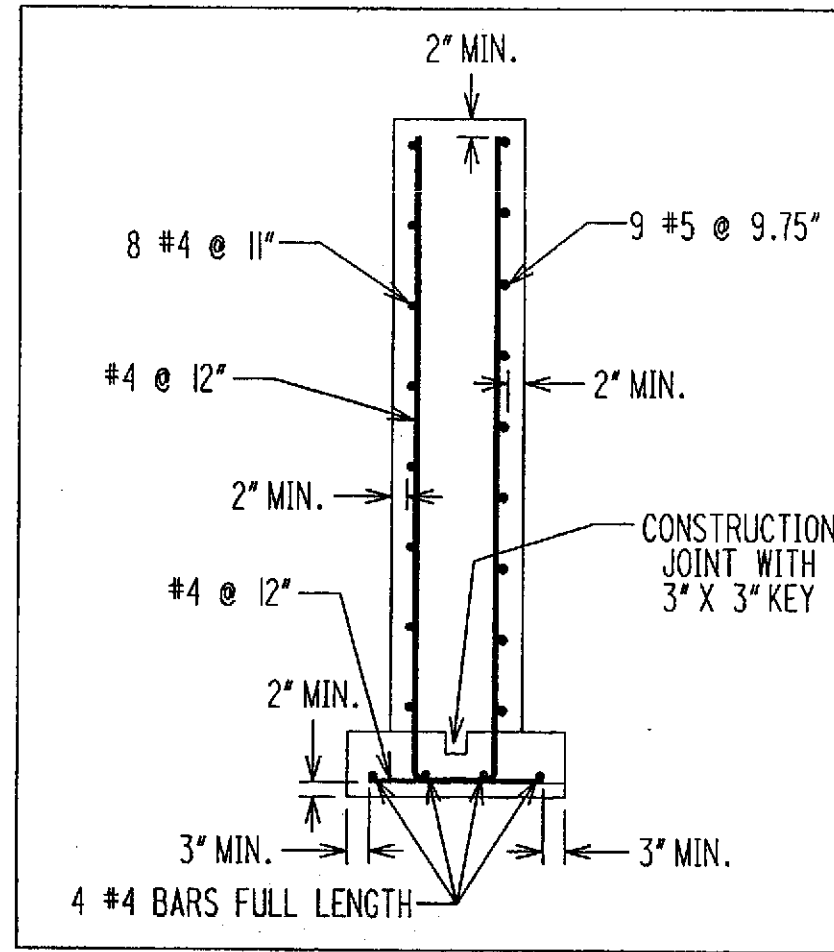
MAH 680 4.04

82  
0

# SECTION B-B

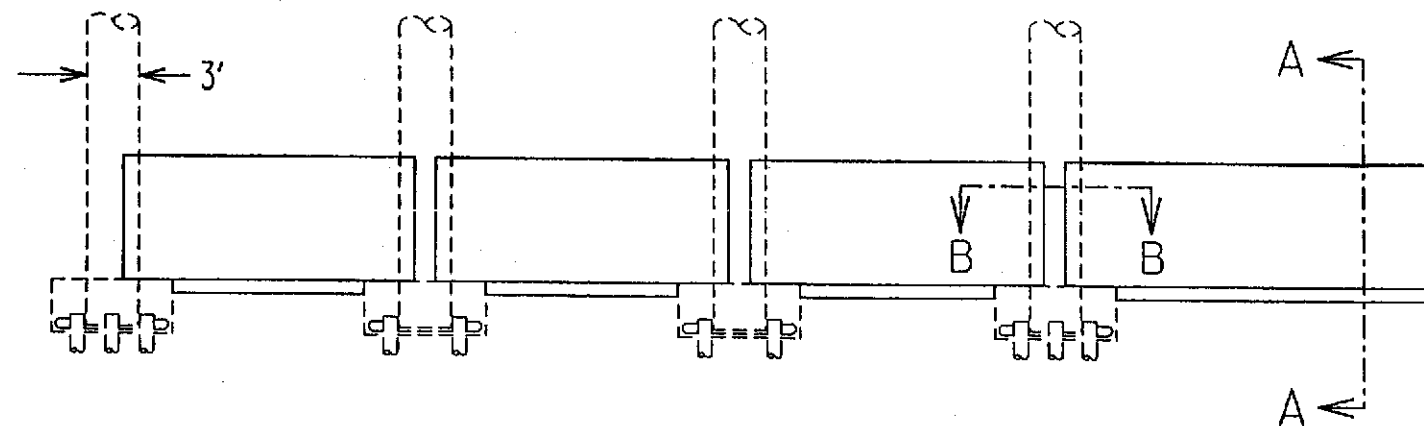
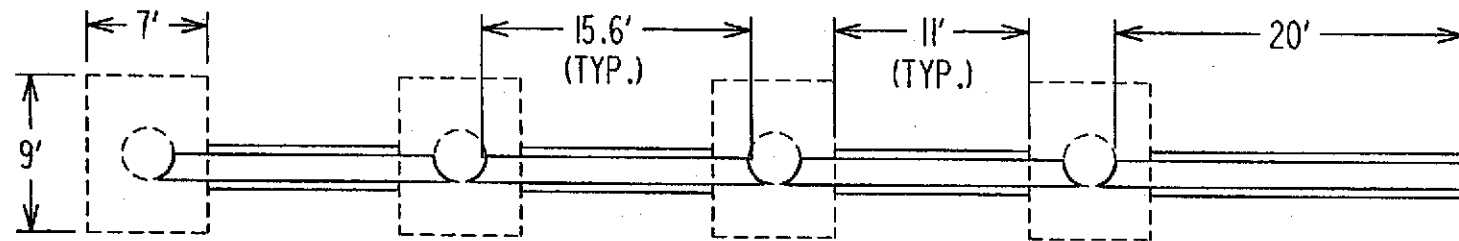
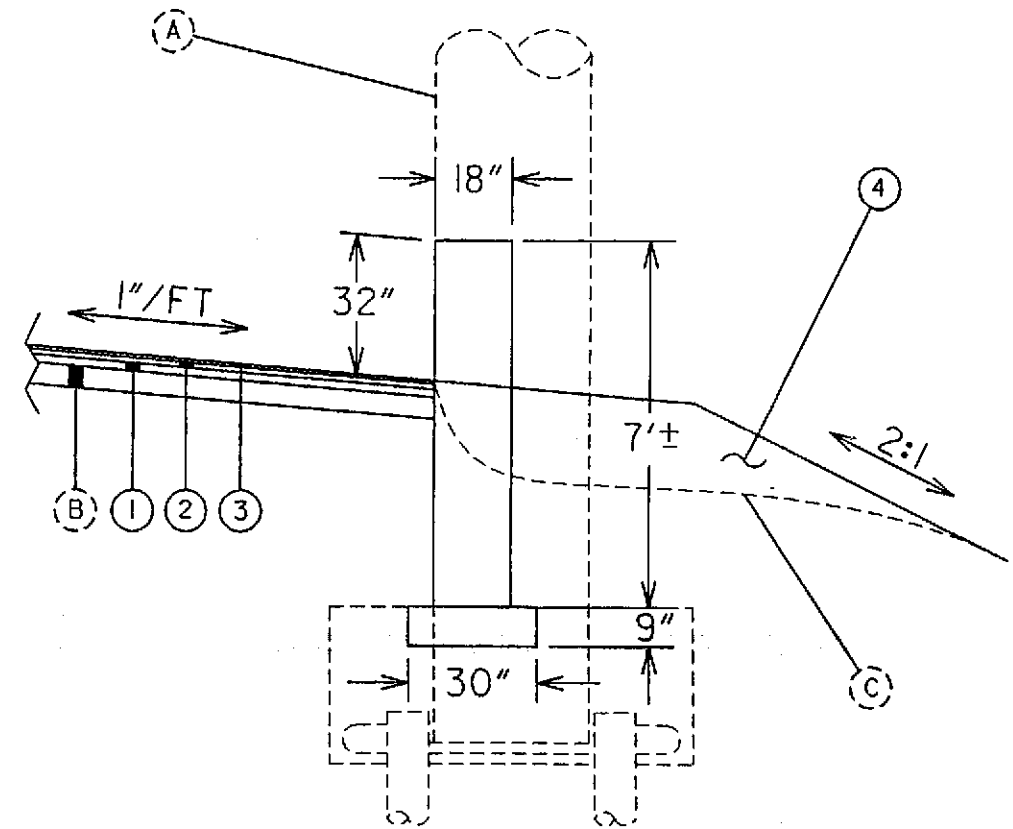


# DETAIL 9



PLAN NO. \_\_\_\_\_

# SECTION A-A



- (A) EXISTING PIER COLUMN AND FOOTER
- (B) EXISTING SHOULDER (ORIGINAL CONSTRUCTION)
- (C) EXISTING EMBANKMENT
- (1) 1 3/4" 446 TYPE 2
- (2) 1 1/4" 446 TYPE 1
- (3) 3/4" OPEN GRADED RUBBER SURFACE COURSE
- (4) BORROW

M6800441.DGN

BARRIER WALL DETAILS

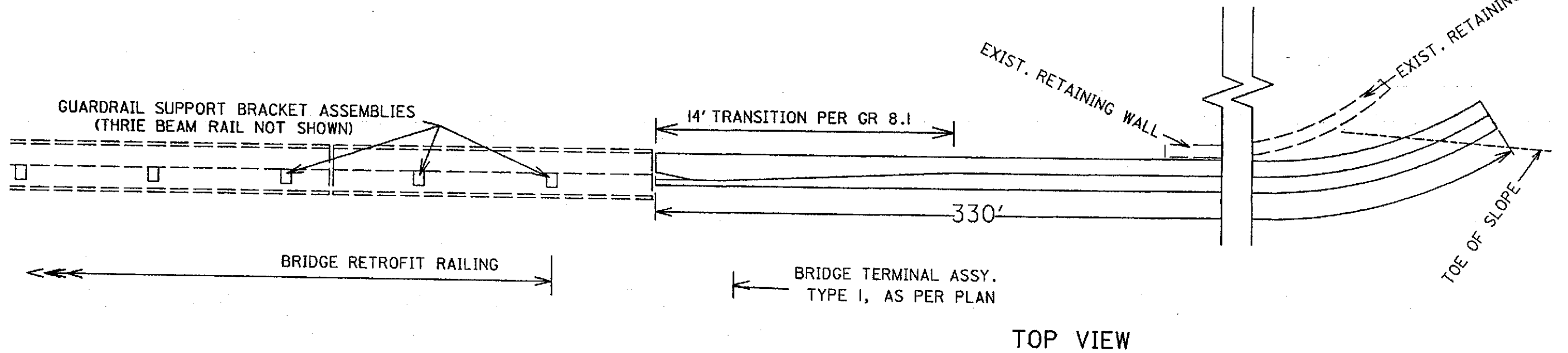
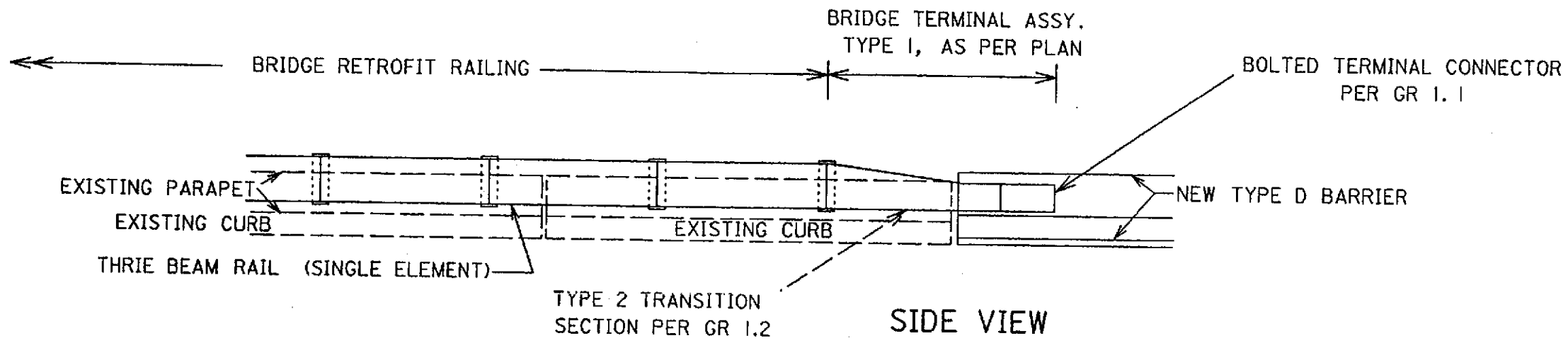
MAH-680-4.05

83/10

# DETAIL 10

## BRIDGE 0573 NORTHBOUND ONLY

PLAN NO.



BARRIER WALL DETAILS

MAH 680 4.04

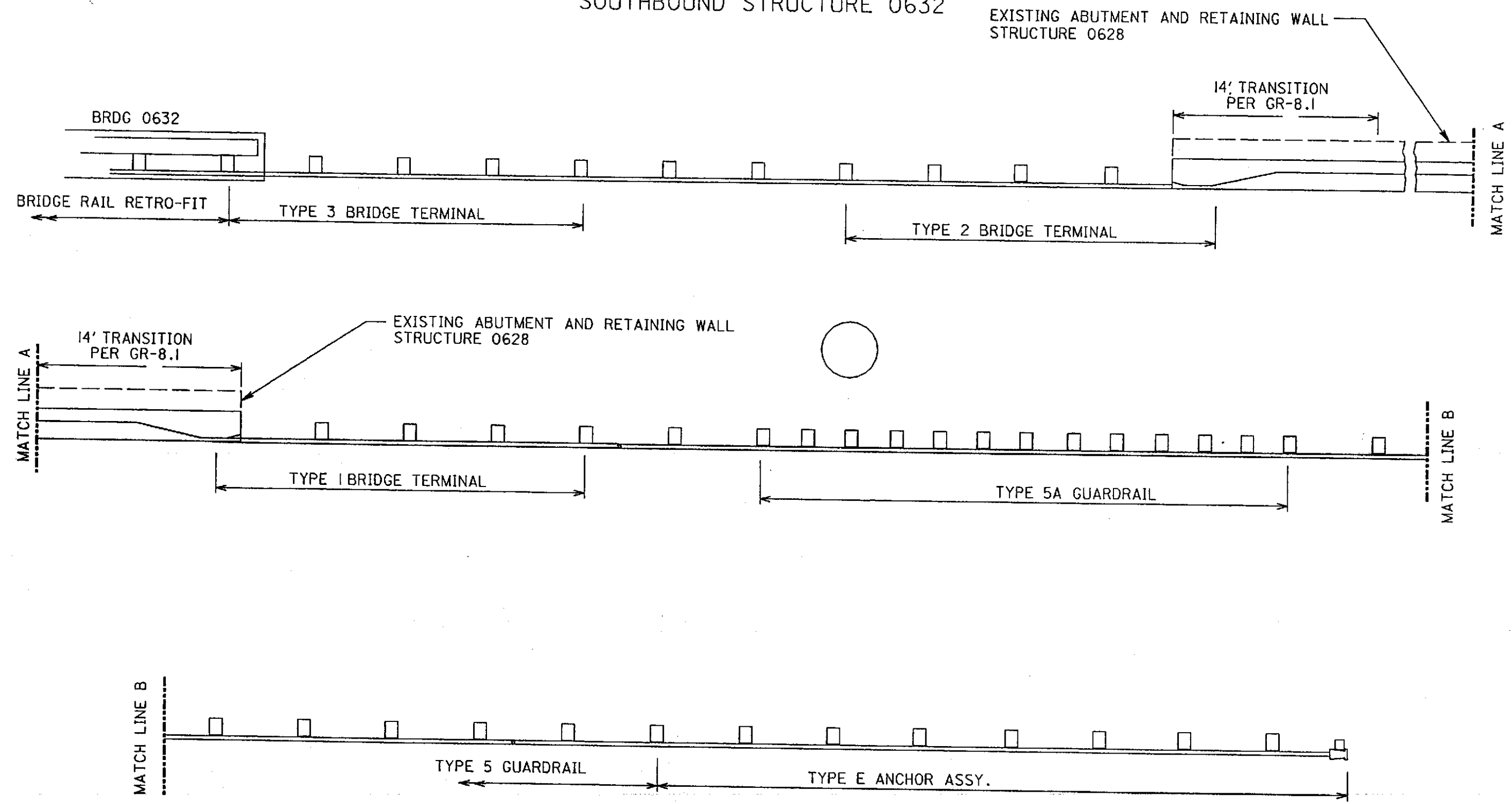


PLAN NO.

# DETAIL 11

## SOUTHBOUND STRUCTURE 0632

EXISTING ABUTMENT AND RETAINING WALL  
STRUCTURE 0628



GUARDRAIL DETAILS

MAH-680-4.05

85  
05

M6800441.DGN



# THERMOPLASTIC GENERAL NOTES

In addition to the requirements of 640, the following shall apply:

## FINAL ACCEPTANCE

Pavement markings which are unacceptable, or become unacceptable prior to final acceptance as determined by the Engineer, for causes such as, but not limited to, improper application, nonuniform retroreflectivity, non-retroreflectivity or loss of adhesion to the pavement, shall be replaced by the Contractor with markings conforming to these specifications and requirements at his expense, without delay or the Contractor may request that unacceptable work be non-performed. The Contractor will receive no payment for unacceptable work which is non-performed.

## PAVEMENT PREPARATION

Clean the surface to remove all debris, laitance and any other contaminants that may hinder the adhesion of the system to the surface. Whenever grinding, scarifying, sandblasting, shot blasting or other operations performed, the debris generated must be contained through vacuum type equipment or equivalent and the work shall be conducted in such a manner that the finished pavement surface is not damaged or left in a pattern that will mislead or misdirect the motorist. When these operations are completed, the pavement surface shall first be power broomed and then blown off with compressed air to remove residue and debris resulting from the cleaning work. All such debris must be properly contained especially when removing yellow paint lines and disposed of in the appropriate manner.

Removal and the cleaning work shall be conducted in such a manner as to control and minimize airborne dust, and the similar debris so as to prevent a hazard to motor vehicle operation or nuisance to property.

## REMOVAL OF TEMPORARY PAVEMENT MARKINGS

Temporary pavement markings shall be cleaned for the purpose of:

- a. Preparing the pavement surface for the application of new pavement marking in the same location as the temporary markings.
- b. To remove existing markings that are in good condition which, if allowed to remain, will interfere with or otherwise conflict with the newly applied marking patterns.

It shall be understood that in this context cleaning means the removal of a temporary marking. It is not intended that all temporary pavement marking be removed. Example: If a new marking is applied to an unmarked "gap" in a broken line and the temporary broken line pattern is deteriorated, as determined by the Engineer, to the extent that it is not misleading or confusing to the motorist, the temporary markings may not require removal.

Pavement markings shall be cleaned to the extent that 95% to 100% of the temporary marking is removed. Removal operations shall be conducted in such a manner that no more than moderate color and/or surface texture change results on the surrounding pavement surface.

## LAYOUT AND PREMARKING

The Contractor shall layout and premark all locations. Longitudinal lines (lane and edge line) shall be premarked at 40 foot (12.2m) intervals and shall not exceed 2 inches (51mm) in width or 12 inches (0.3m) in length. The layout and premarking shall be approved by District 4 Traffic (216-297-0801 ext. 388) prior to starting marking operations. The Contractor shall notify District 4 Traffic 24 Hrs prior to premarking.

GENERAL NOTES

MAH-680-4.04

87  
10









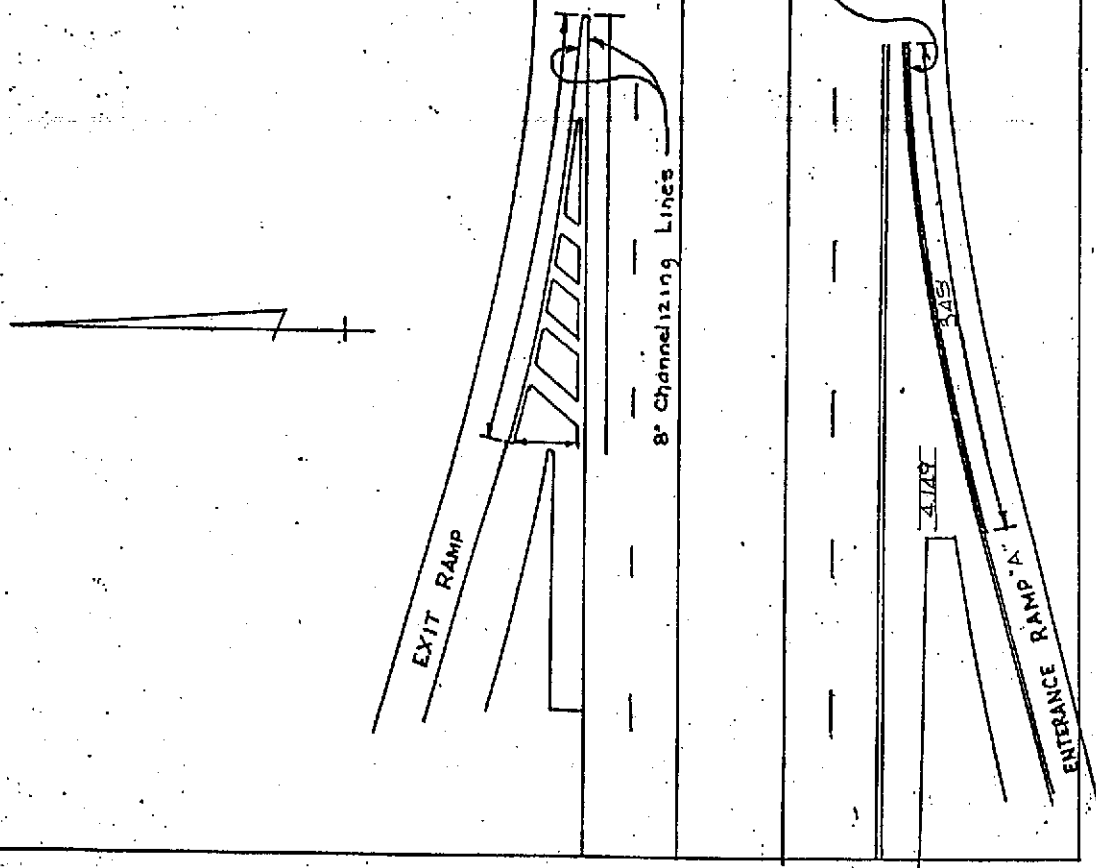
**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING  
 LOCATION I-680 & OAKWOOD AVE.  
 PAVEMENT SURFACE TYPE \_\_\_\_\_

INTERSECTION TOTALS  
 24" STOP LINE \_\_\_\_\_ LIN. FT.  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.



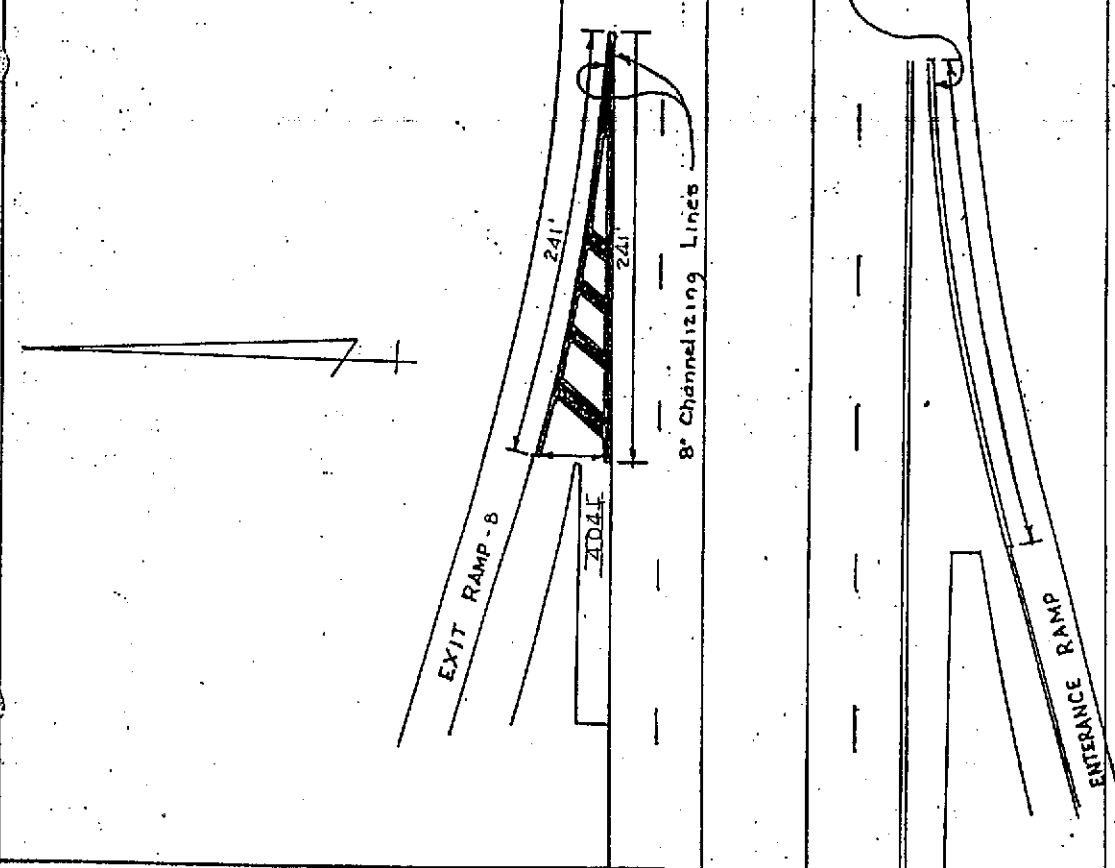
**AUXILIARY PAVEMENT MARKING** 2 of 2

COUNTY MAHONING  
 LOCATION I-680 & CONNECTICUT AVE/BELLE VISTA AVE  
 PAVEMENT SURFACE TYPE \_\_\_\_\_ EXIT - 3C

INTERSECTION TOTALS  
 24" STOP LINE \_\_\_\_\_ LIN. FT.  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.



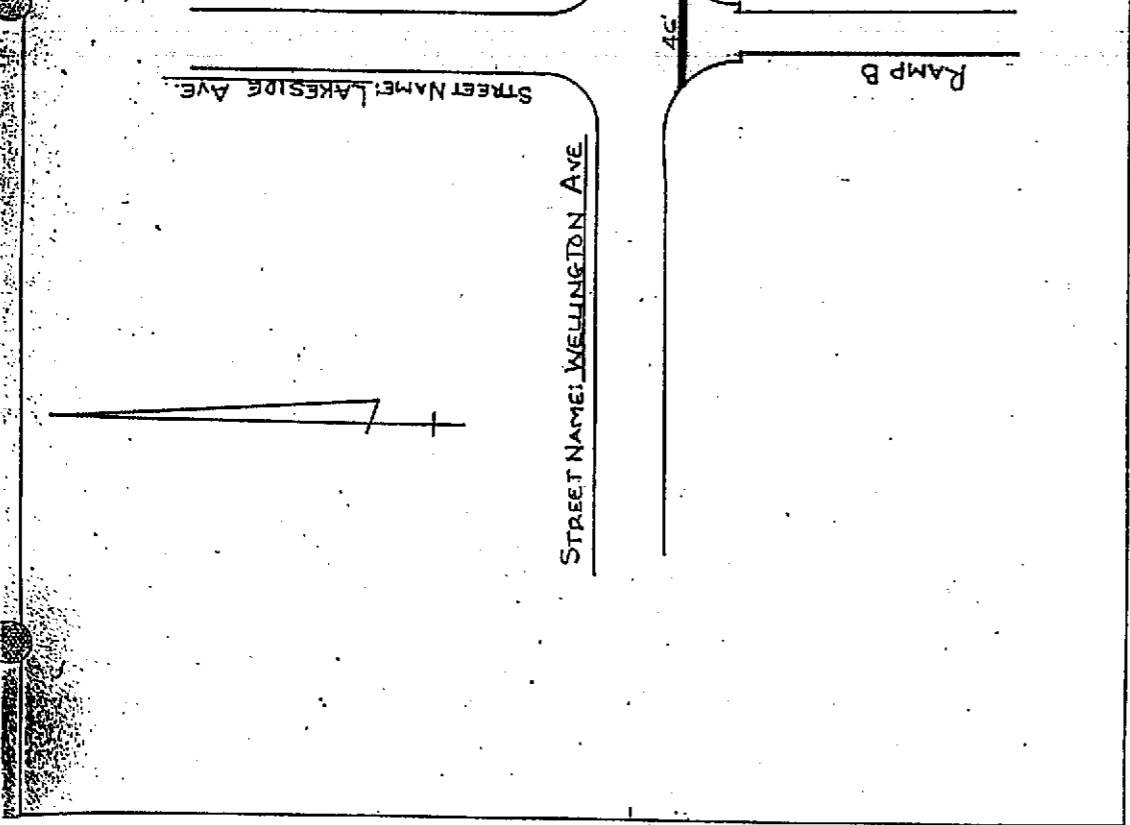
**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING  
 LOCATION I-680 & WELLINGTON AVE  
 PAVEMENT SURFACE TYPE (4.047) EXIT-3C

INTERSECTION TOTALS  
 24" STOP LINE \_\_\_\_\_ LIN. FT. 46'  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.



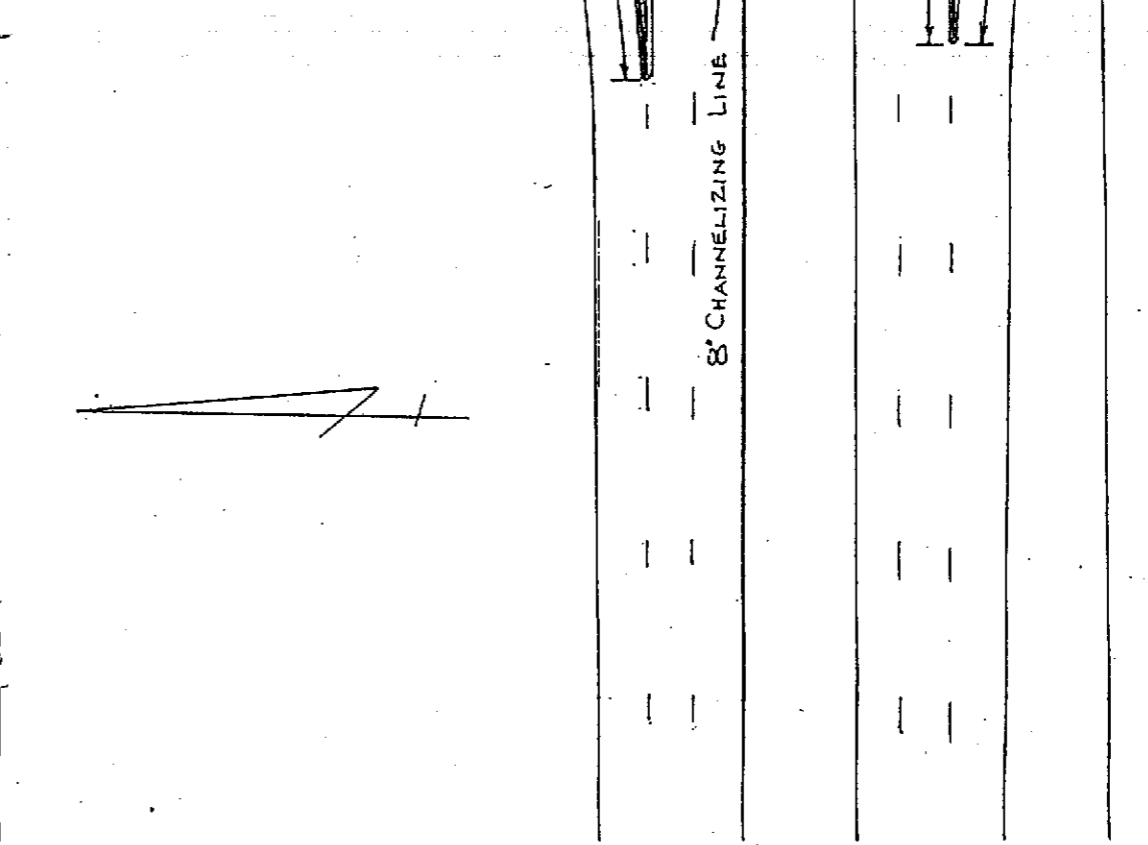
**AUXILIARY PAVEMENT MARKING PARALLEL**

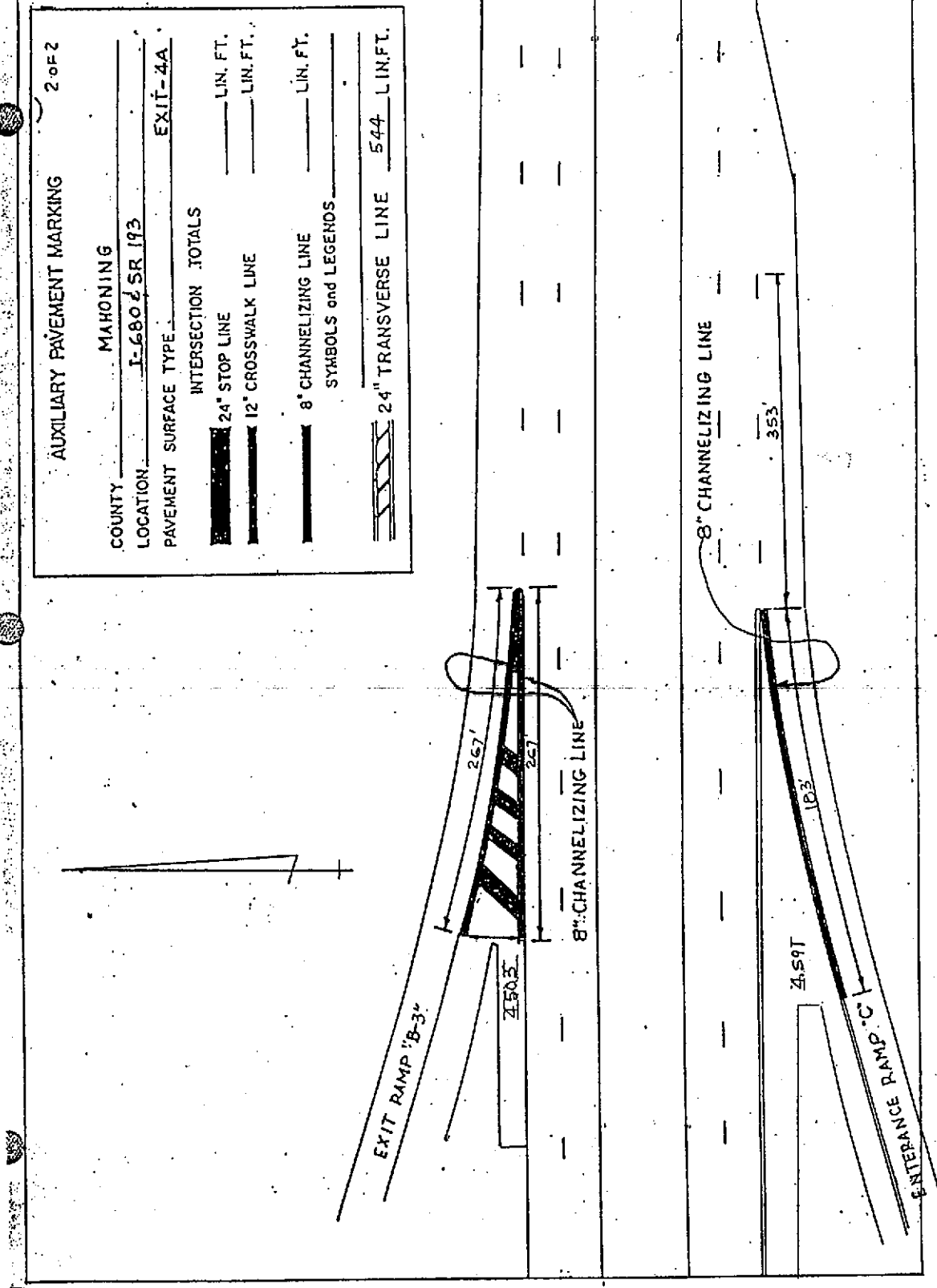
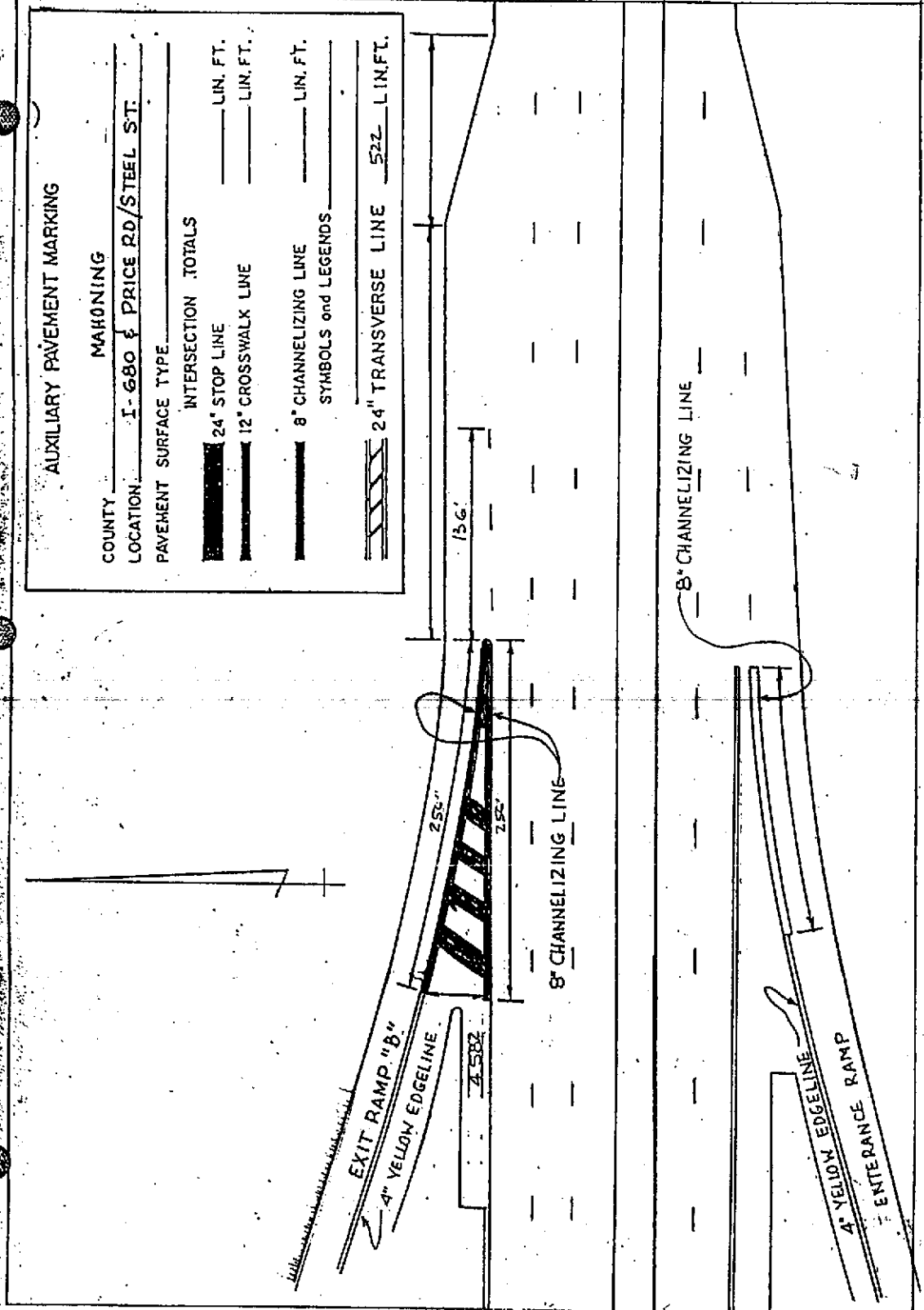
COUNTY MAHONING  
 LOCATION I-680 & SR 193  
 PAVEMENT SURFACE TYPE EXIT 4A

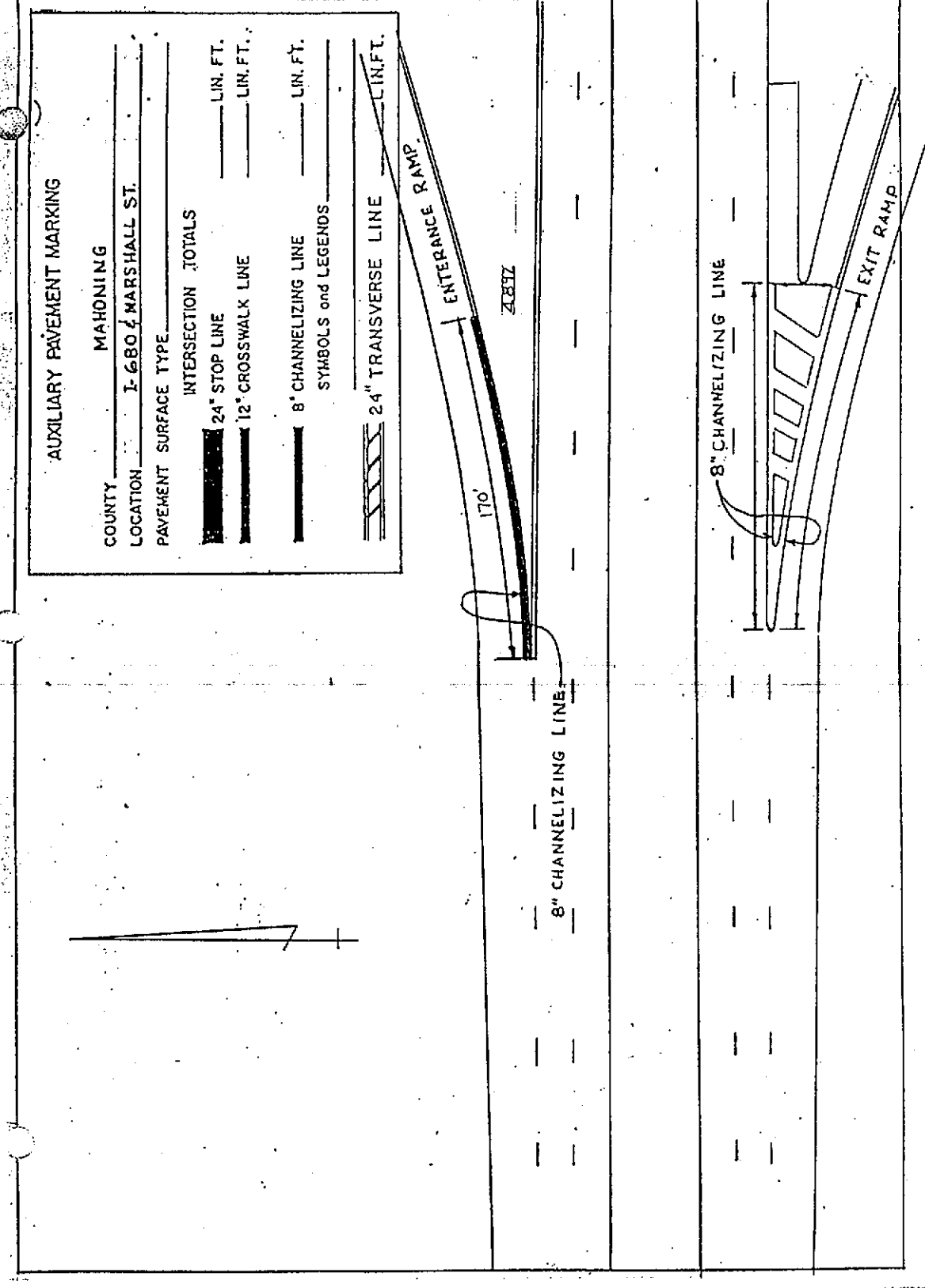
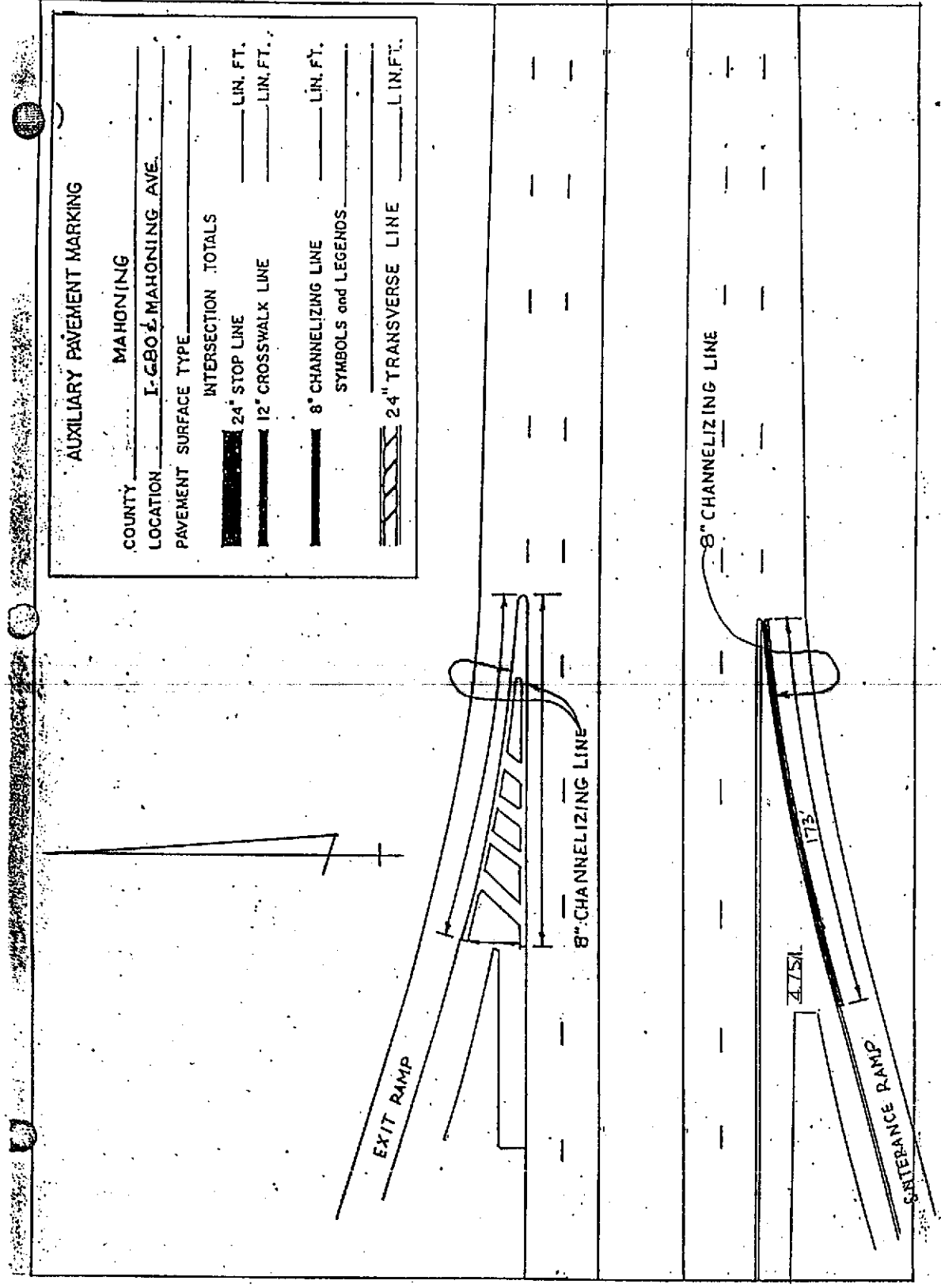
INTERSECTION TOTALS  
 24" STOP LINE \_\_\_\_\_ LIN. FT.  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.

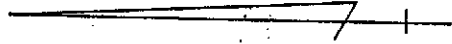




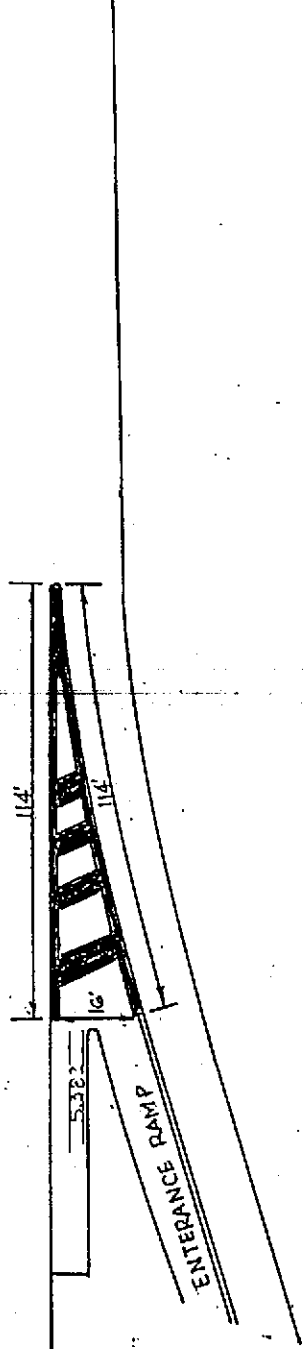


AUXILIARY PAVEMENT MARKING

COUNTY MAHONING  
 LOCATION I-680 & MARSHALL ST  
 PAVEMENT SURFACE TYPE \_\_\_\_\_  
 INTERSECTION TOTALS \_\_\_\_\_ LIN. FT.  
 24" STOP LINE \_\_\_\_\_ LIN. FT.  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.  
 8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_  
 24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.



STREET NAME: MARSHALL ST.



AUXILIARY PAVEMENT MARKING

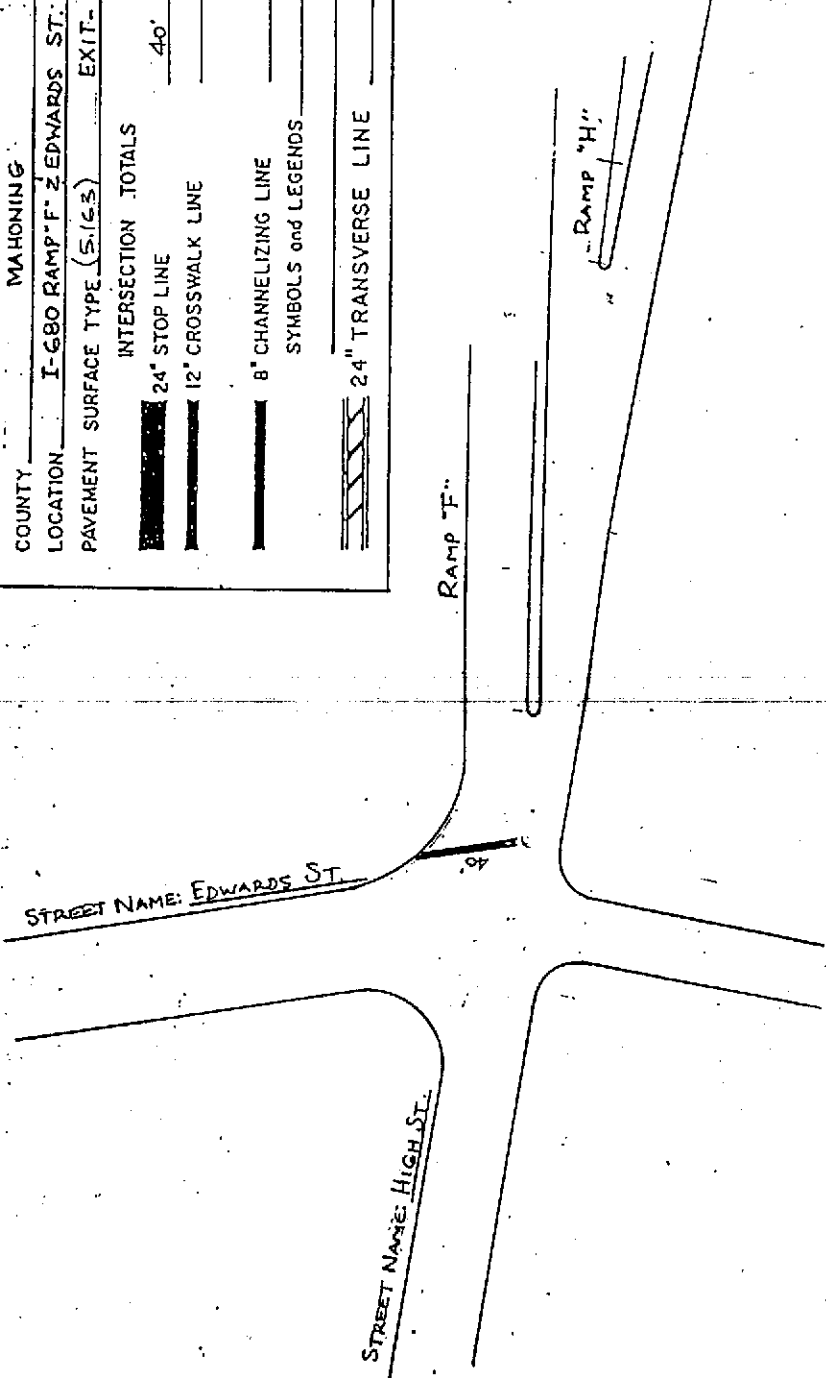
COUNTY MAHONING  
 LOCATION I-680 RAMP \* F \* Z EDWARDS ST.  
 PAVEMENT SURFACE TYPE (S-163) EXIT- 5  
 INTERSECTION TOTALS \_\_\_\_\_ LIN. FT.  
 24" STOP LINE \_\_\_\_\_ LIN. FT.  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.  
 8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_  
 24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.

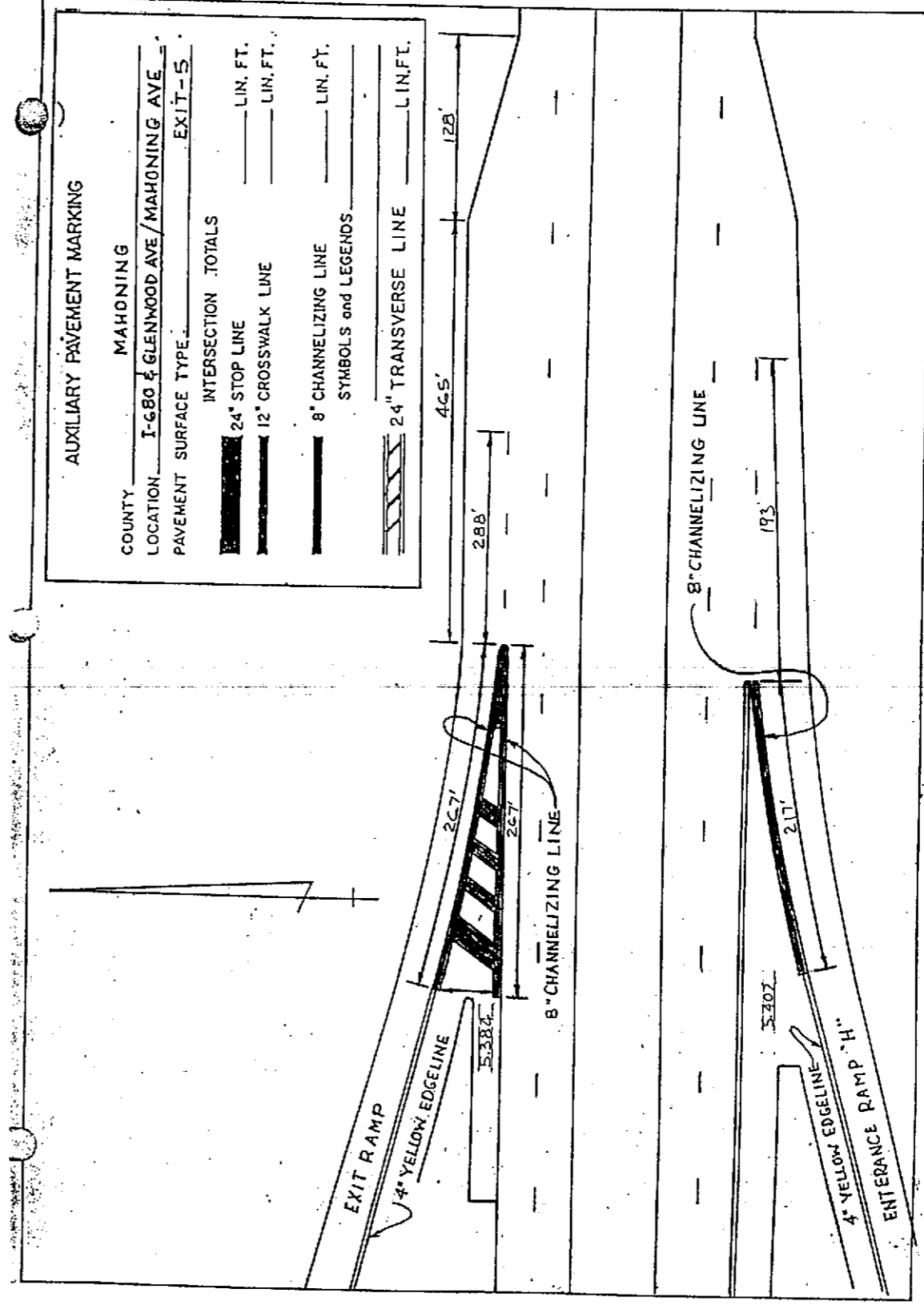
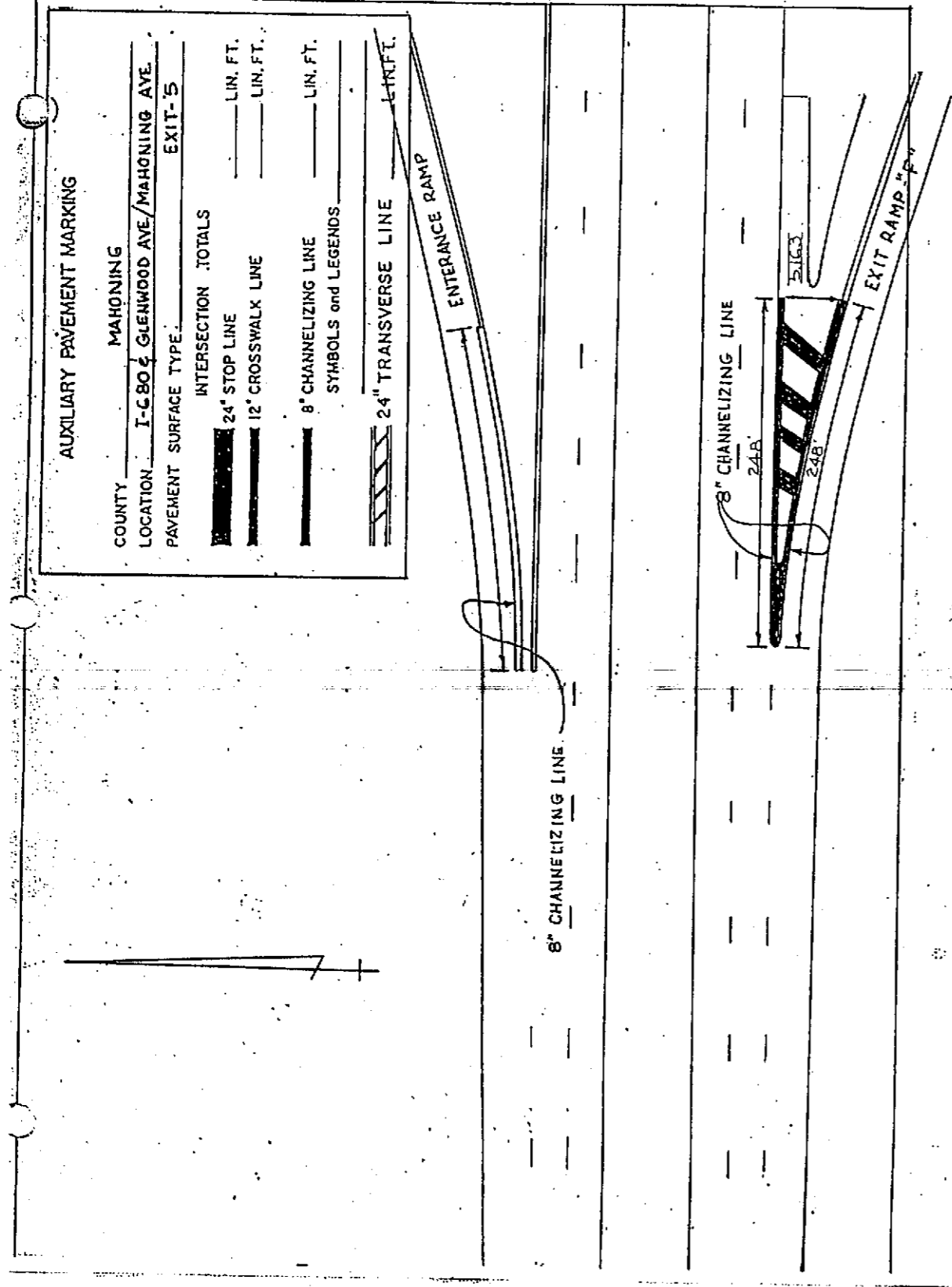
STREET NAME: EDWARDS ST.

STREET NAME: HIGH ST.

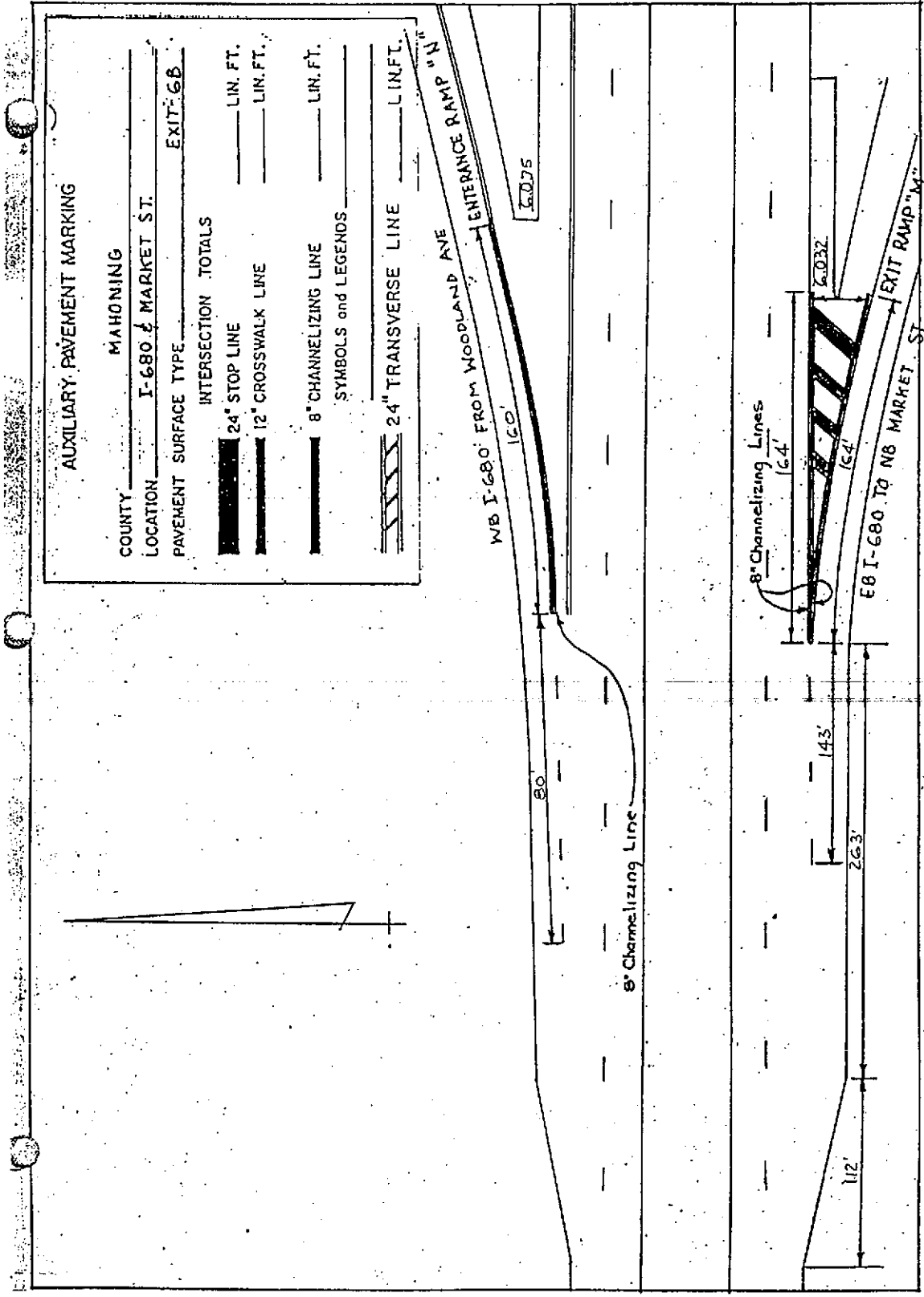
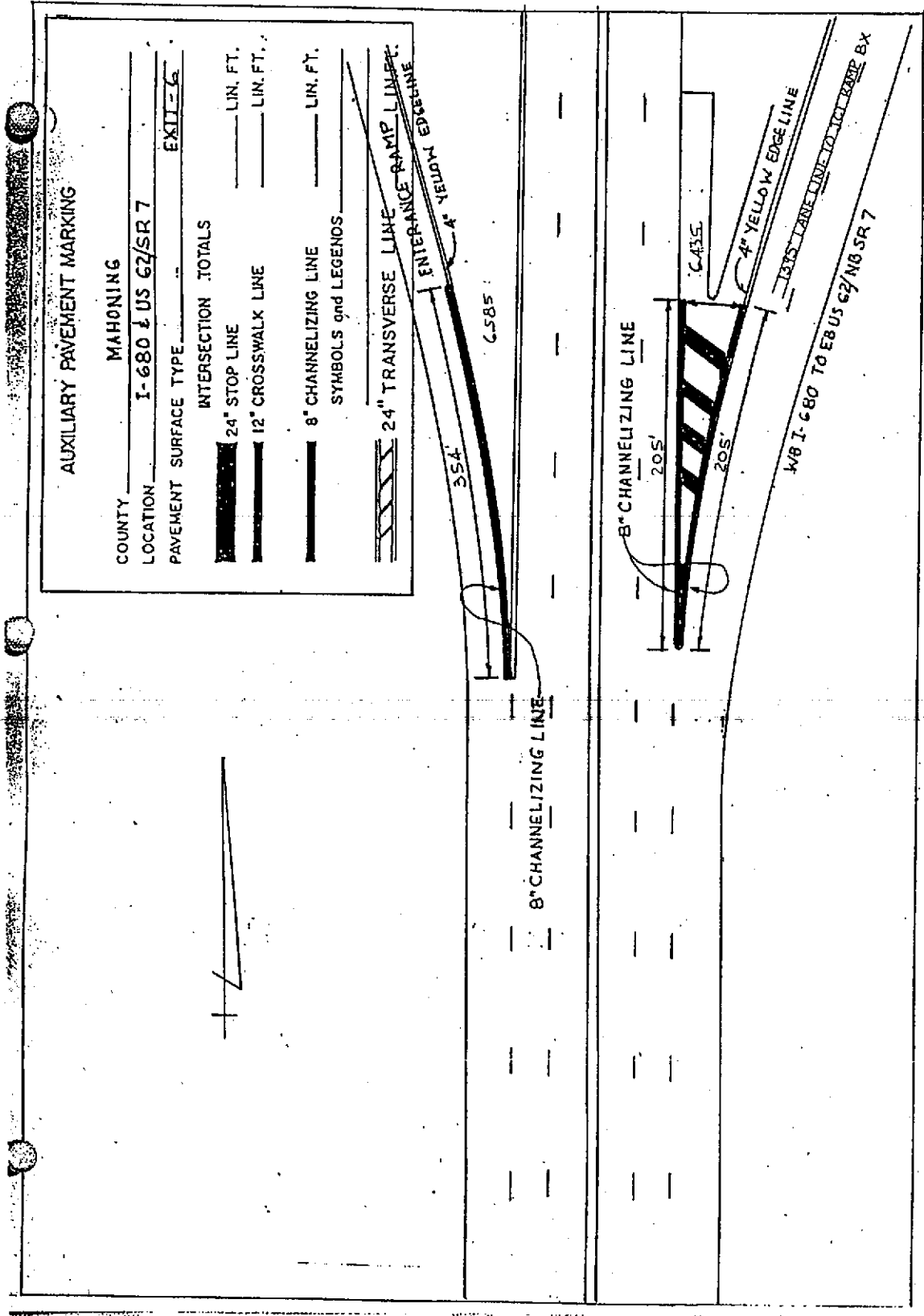
RAMP "F"

RAMP "H"





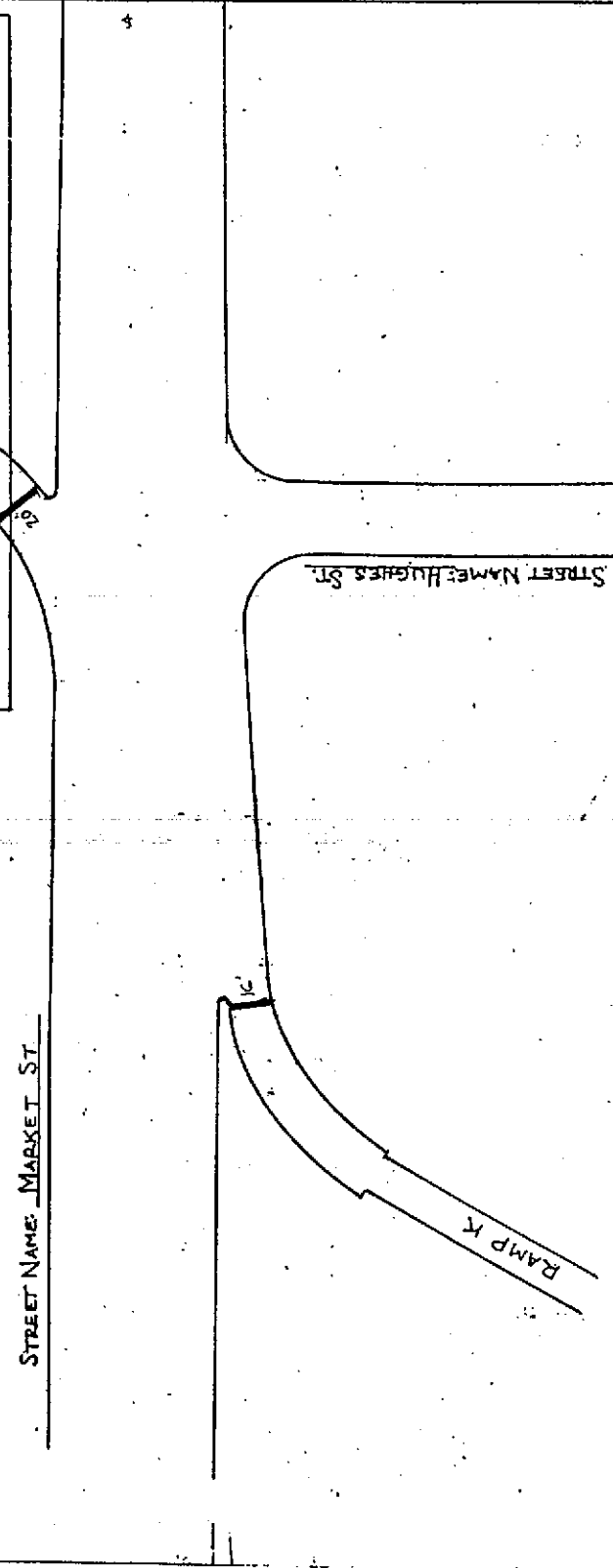




**AUXILIARY PAVEMENT MARKING**

COUNTY: MAHONING  
 LOCATION: I-680 & MARKET ST.  
 PAVEMENT SURFACE TYPE: EXITS - GA-6B

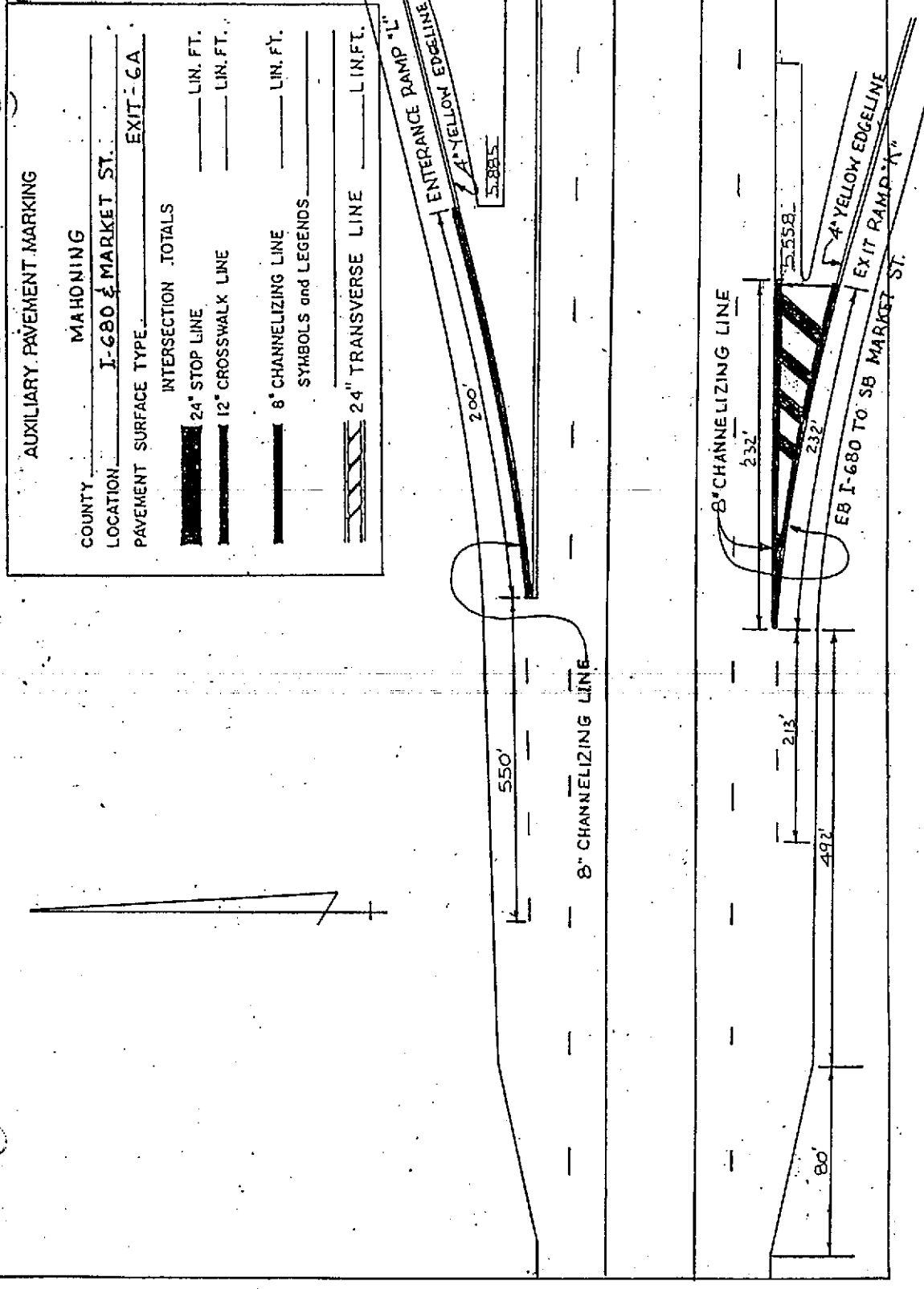
INTERSECTION TOTALS  
 24" STOP LINE: 36 LIN. FT.  
 12" CROSSWALK LINE: LIN. FT.  
 8" CHANNELIZING LINE: LIN. FT.  
 SYMBOLS and LEGENDS: LIN. FT.  
 24" TRANSVERSE LINE: LIN. FT.



**AUXILIARY PAVEMENT MARKING**

COUNTY: MAHONING  
 LOCATION: I-680 & MARKET ST.  
 PAVEMENT SURFACE TYPE: EXIT - 6A

INTERSECTION TOTALS  
 24" STOP LINE: LIN. FT.  
 12" CROSSWALK LINE: LIN. FT.  
 8" CHANNELIZING LINE: LIN. FT.  
 SYMBOLS and LEGENDS: LIN. FT.  
 24" TRANSVERSE LINE: LIN. FT.



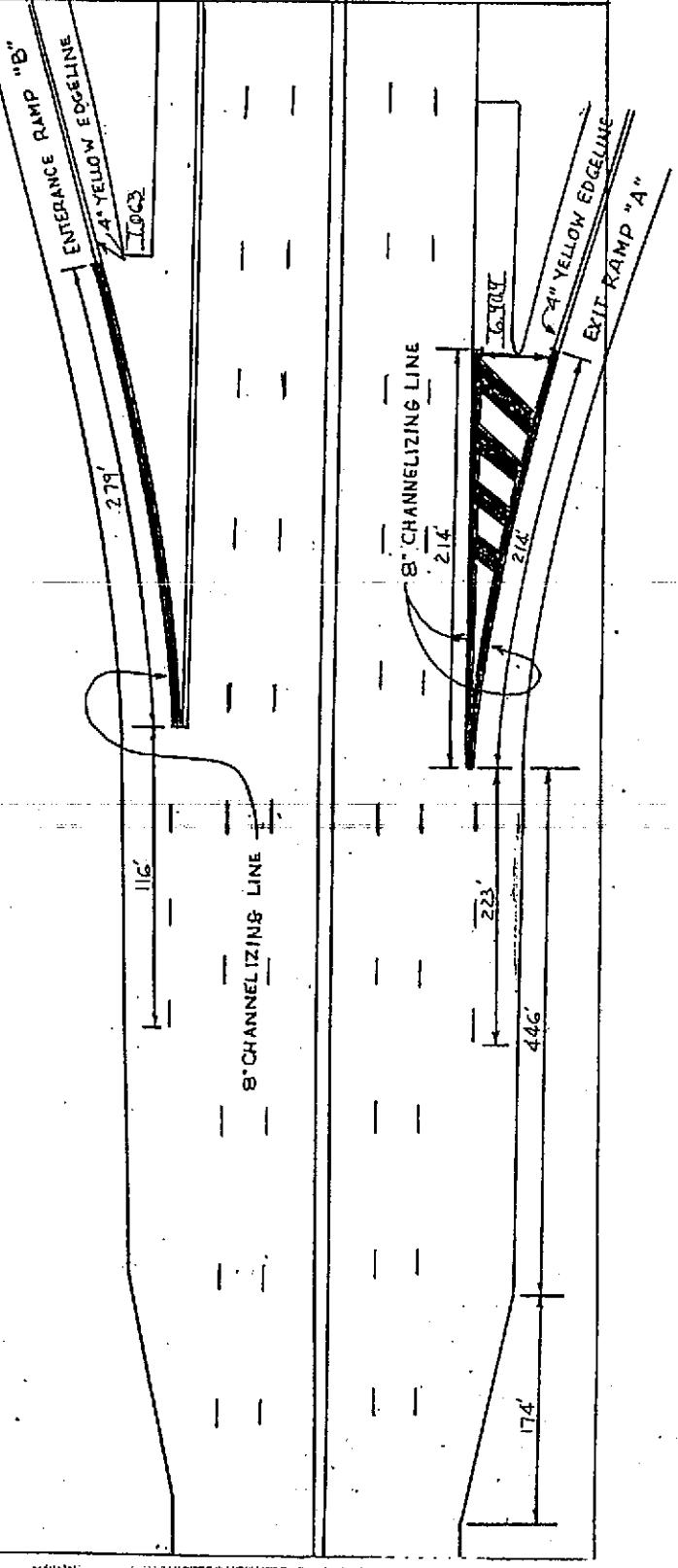
**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING  
 LOCATION I-680 & SOUTH AVE.  
 PAVEMENT SURFACE TYPE EXIT-7

INTERSECTION TOTALS  
 24" STOP LINE \_\_\_\_\_ LIN. FT.  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.



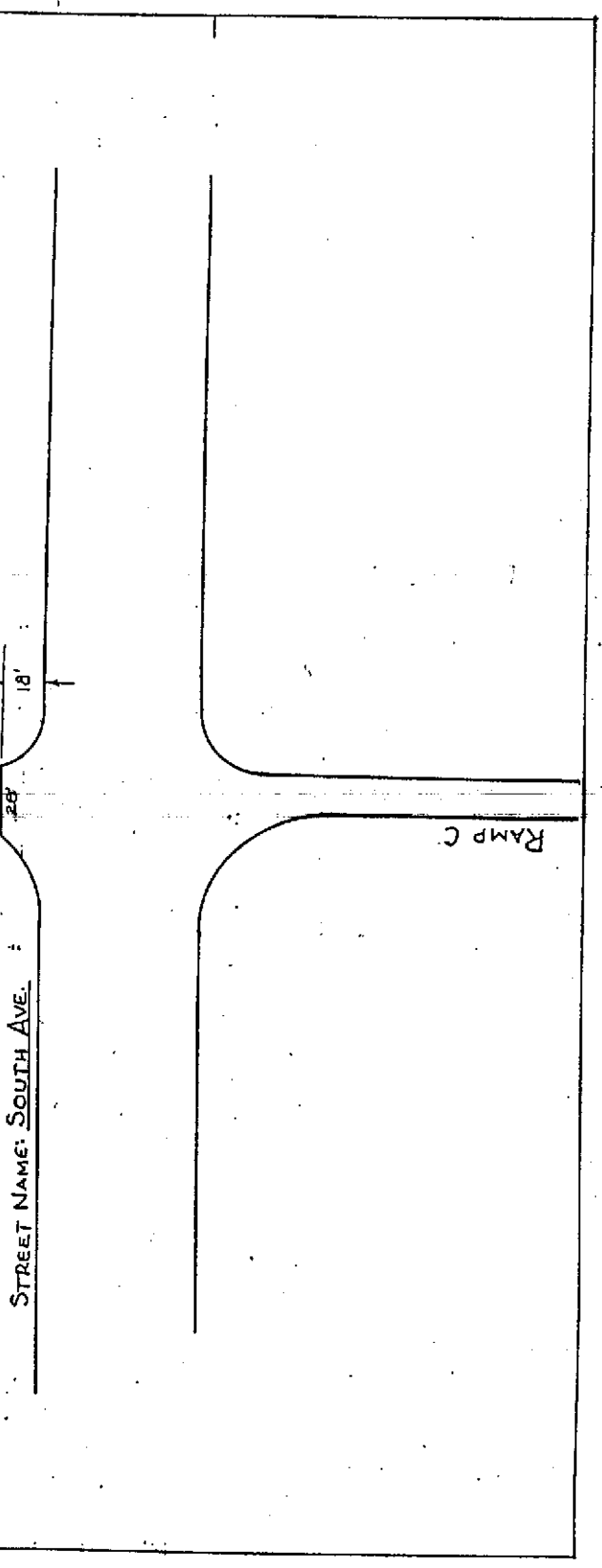
**AUXILIARY PAVEMENT MARKING**

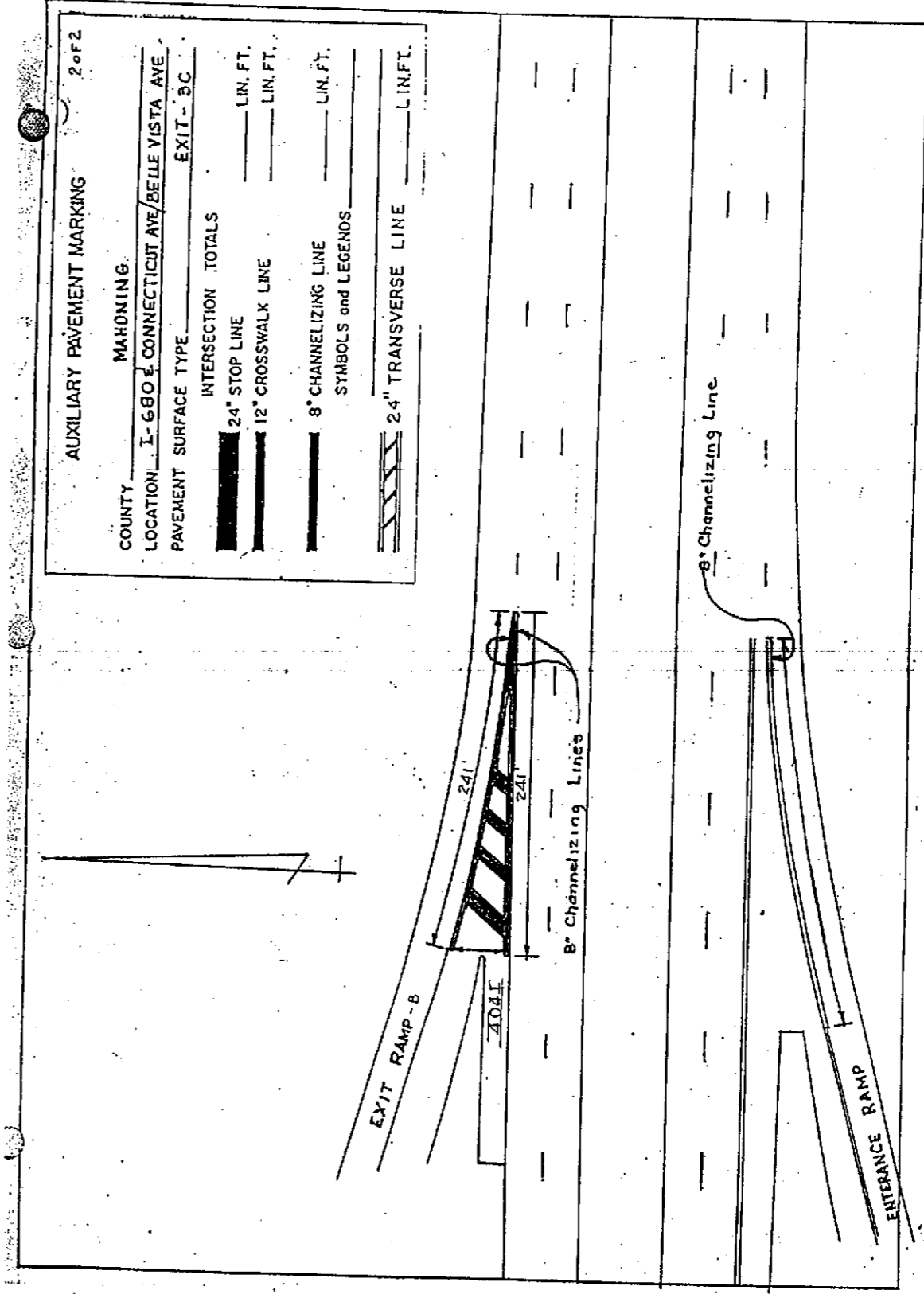
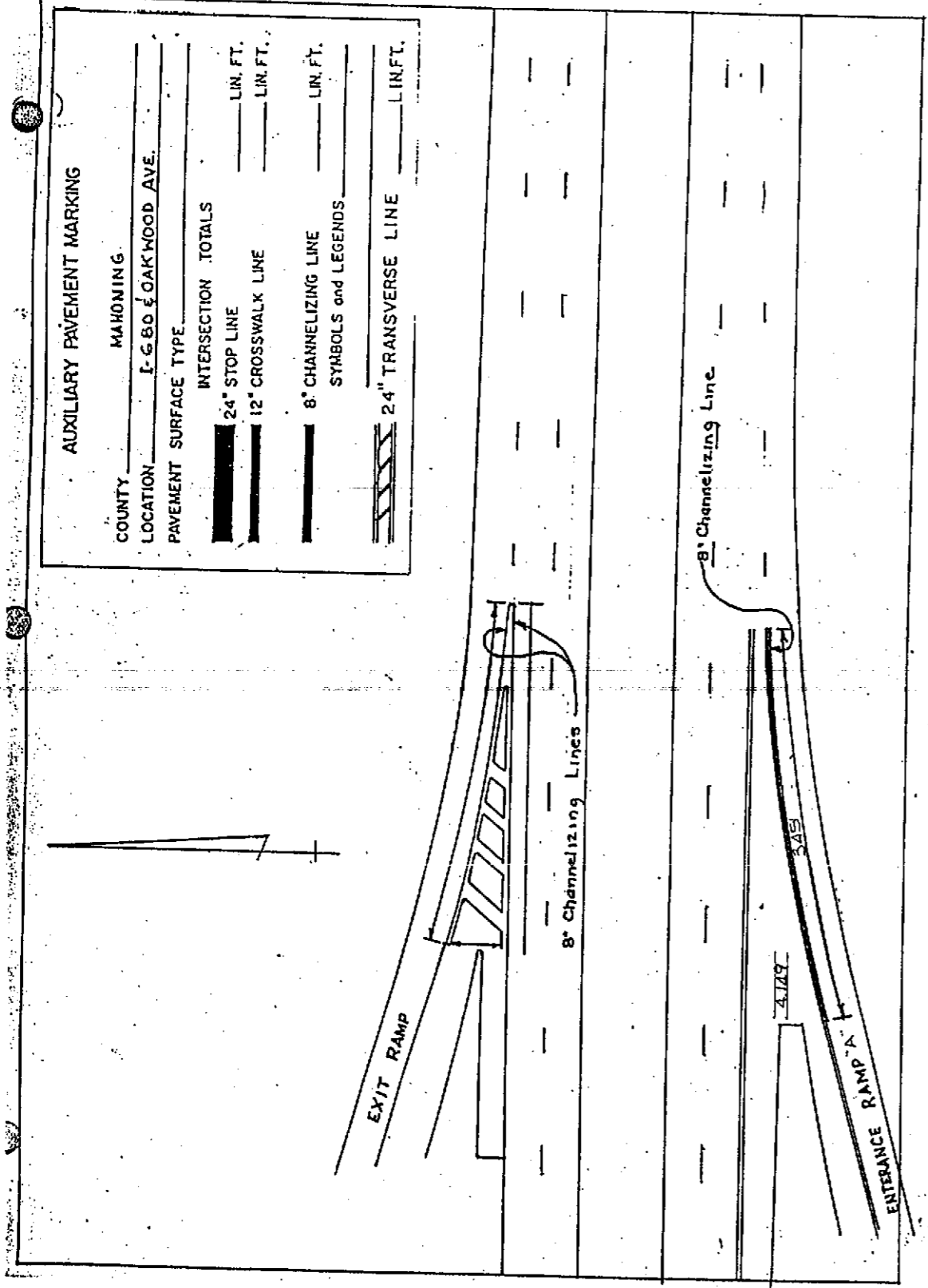
COUNTY MAHONING  
 LOCATION I-680 & SOUTH AVE.  
 PAVEMENT SURFACE TYPE EXIT-7

INTERSECTION TOTALS  
 24" STOP LINE \_\_\_\_\_ LIN. FT.  
 12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.  
 SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.





**AUXILIARY PAVEMENT MARKING**

COUNTY: MAHONING

LOCATION: I-680 & WELLINGTON AVE

PAVEMENT SURFACE TYPE: (4.041) EXIT-3C

INTERSECTION TOTALS

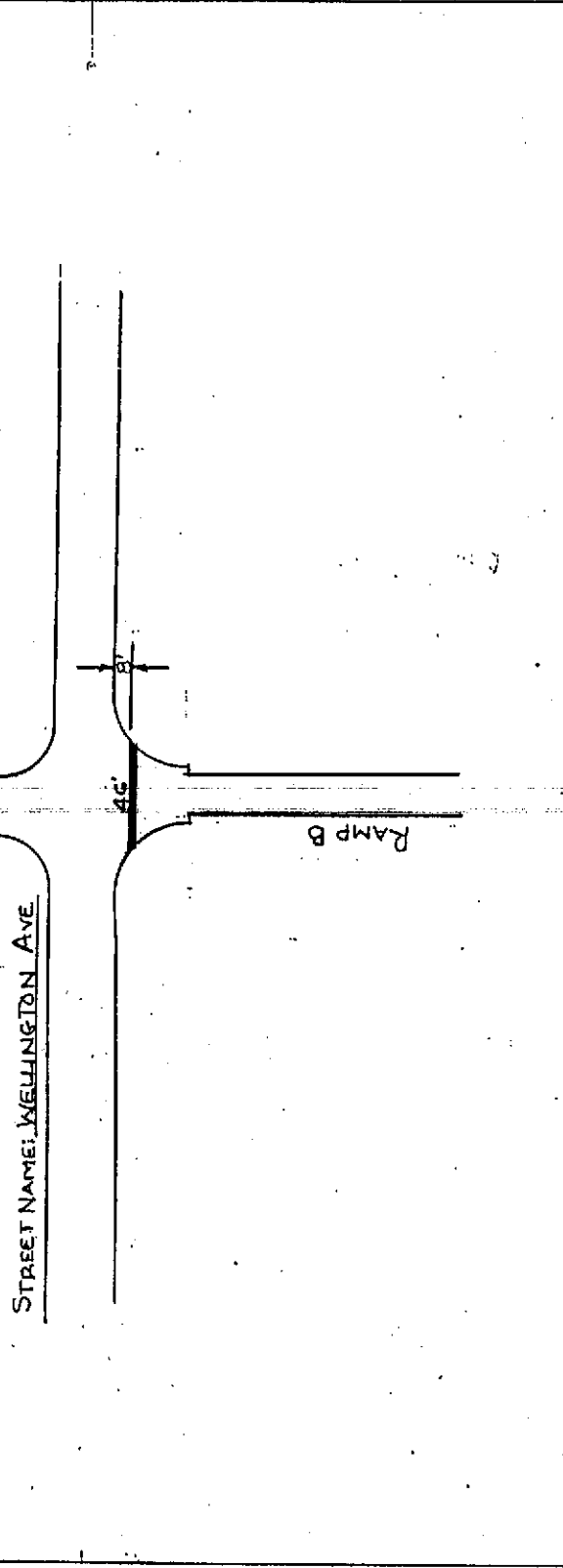
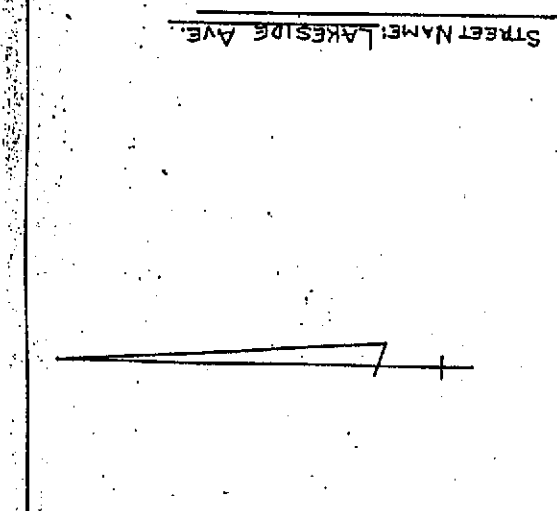
24" STOP LINE: 46' LIN. FT.

12" CROSSWALK LINE: LIN. FT.

8" CHANNELIZING LINE: LIN. FT.

SYMBOLS and LEGENDS: LIN. FT.

24" TRANSVERSE LINE: LIN. FT.



**AUXILIARY PAVEMENT MARKING**

PARALLEL

COUNTY: MAHONING

LOCATION: I-680 & SR 193

PAVEMENT SURFACE TYPE: EXIT-4A

INTERSECTION TOTALS

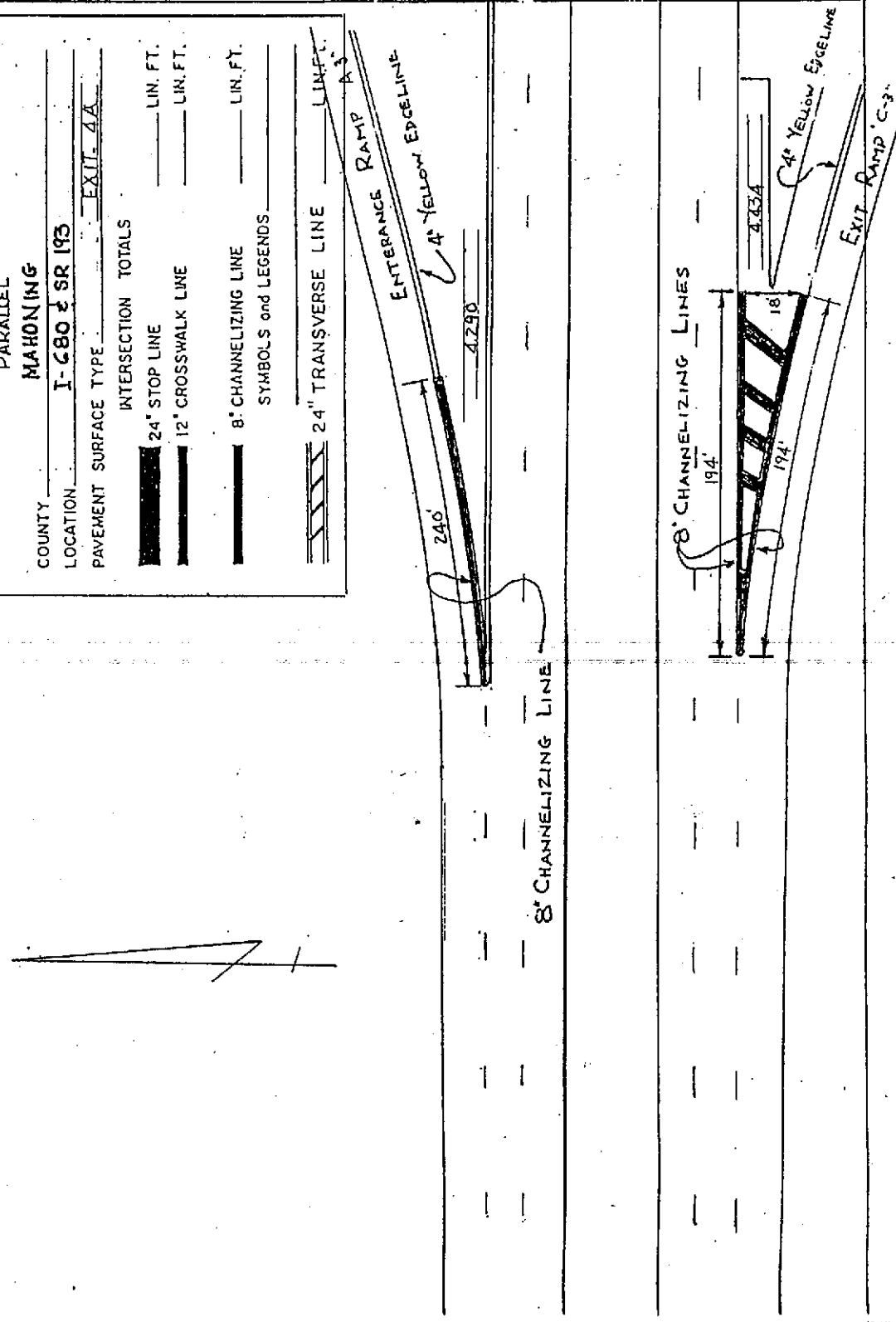
24" STOP LINE: LIN. FT.

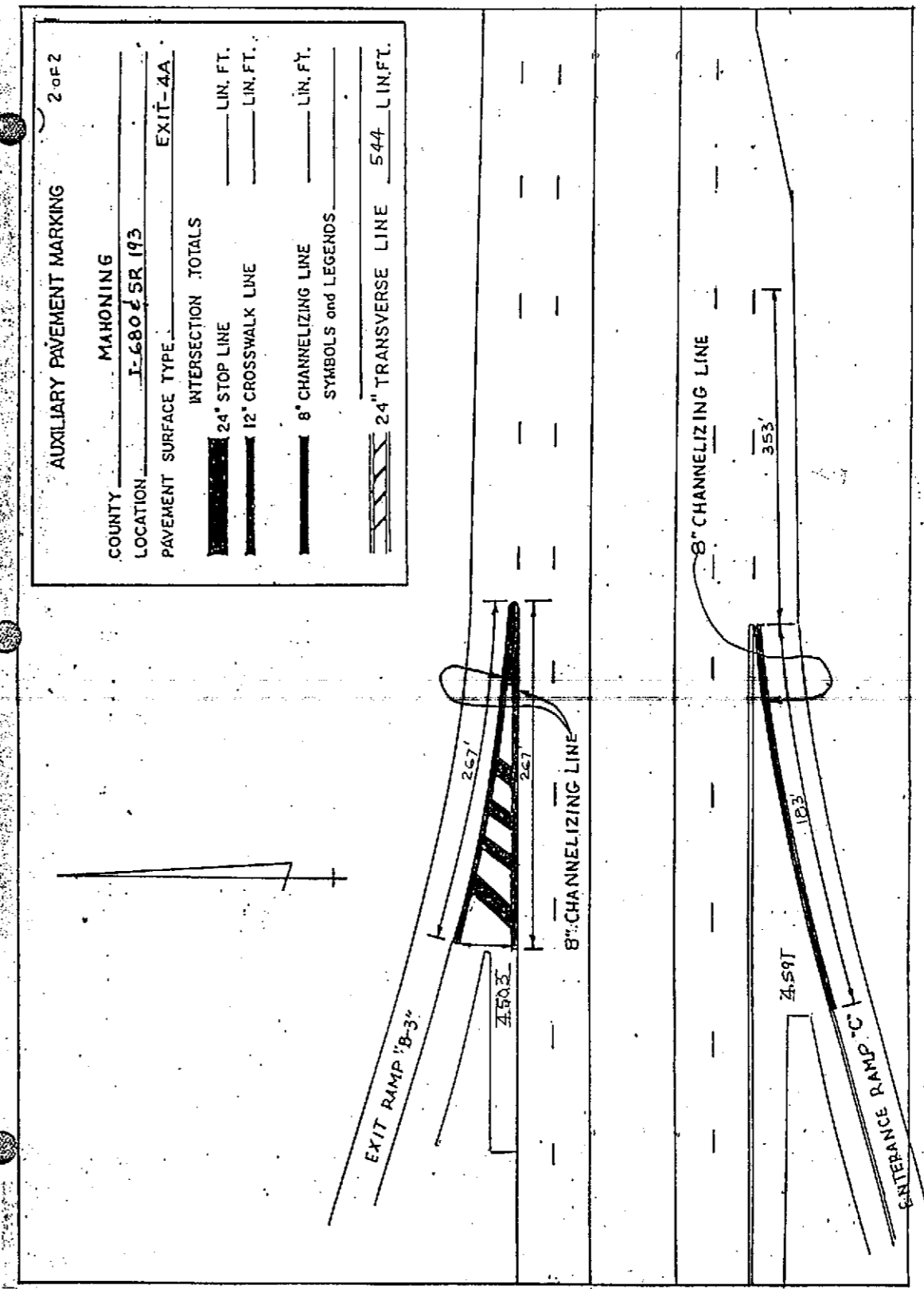
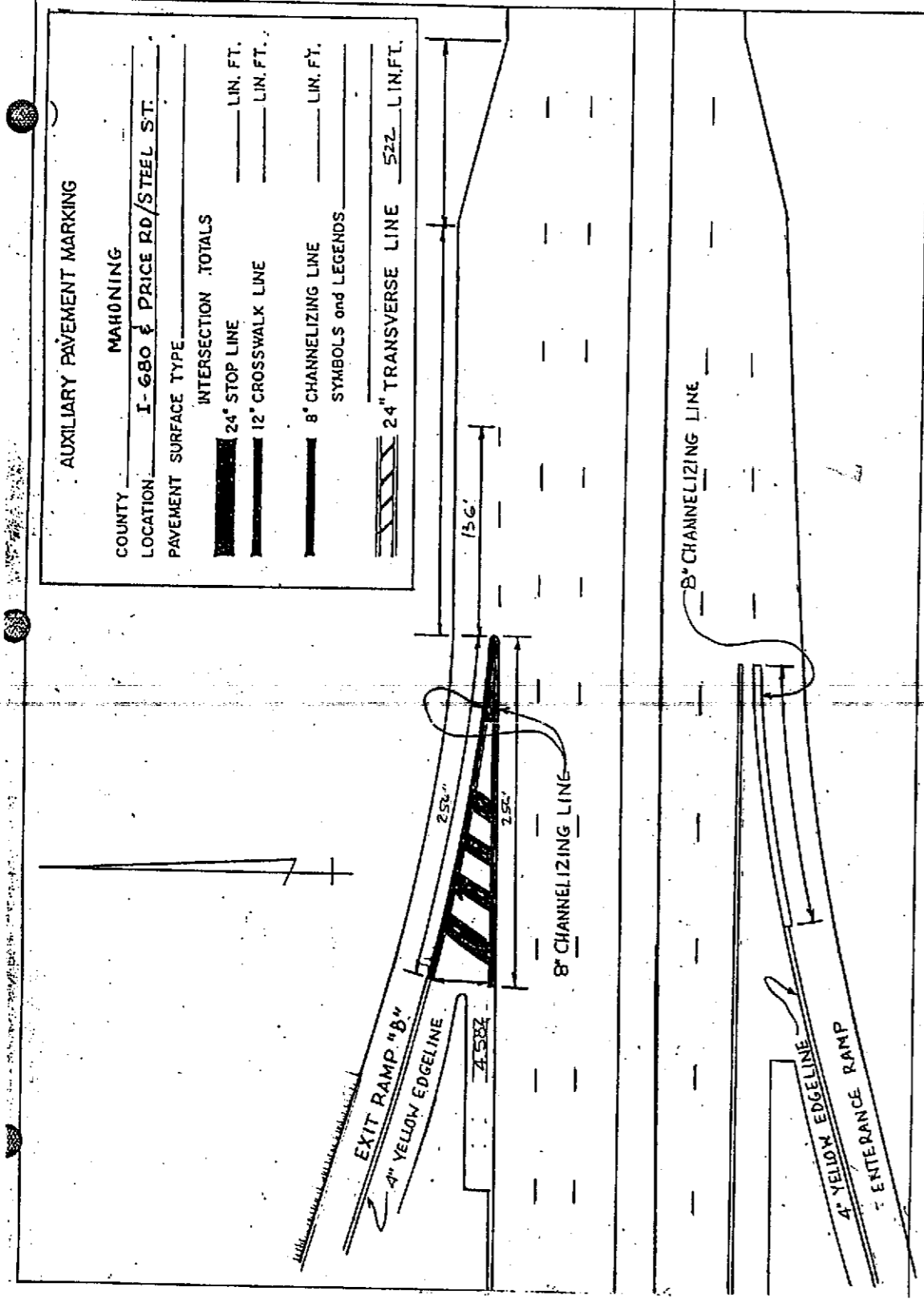
12" CROSSWALK LINE: LIN. FT.

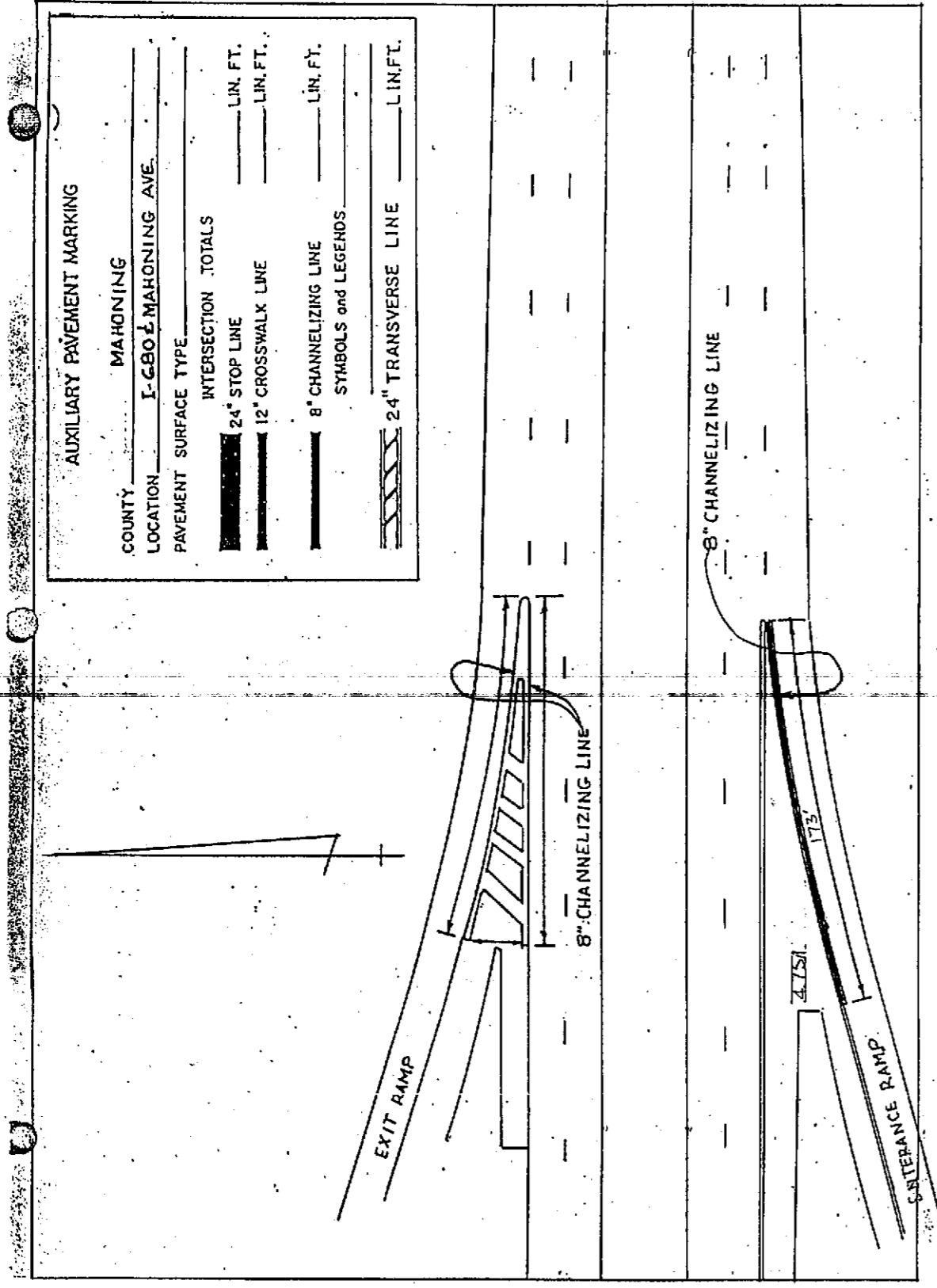
8" CHANNELIZING LINE: LIN. FT.

SYMBOLS and LEGENDS: LIN. FT.

24" TRANSVERSE LINE: LIN. FT.







AUXILIARY PAVEMENT MARKING

COUNTY MAHONING

LOCATION I-680 & MAHONING AVE.

PAVEMENT SURFACE TYPE \_\_\_\_\_

INTERSECTION TOTALS \_\_\_\_\_ LIN. FT.

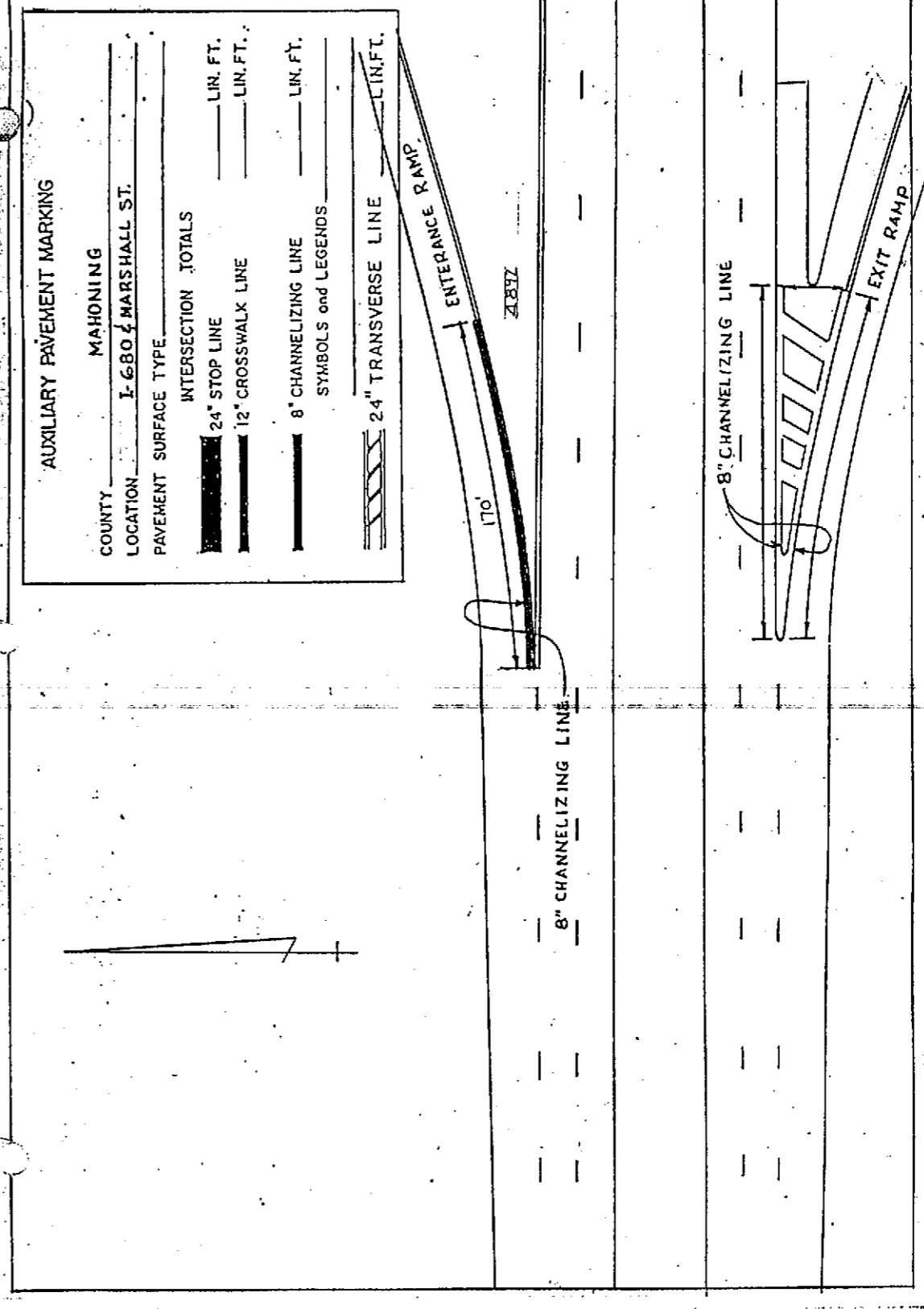
24" STOP LINE \_\_\_\_\_ LIN. FT.

12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.

SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.



AUXILIARY PAVEMENT MARKING

COUNTY MAHONING

LOCATION I-680 & MARSHALL ST.

PAVEMENT SURFACE TYPE \_\_\_\_\_

INTERSECTION TOTALS \_\_\_\_\_ LIN. FT.

24" STOP LINE \_\_\_\_\_ LIN. FT.

12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.

SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.

**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING

LOCATION I-680 & MARSHALL ST

PAVEMENT SURFACE TYPE \_\_\_\_\_

INTERSECTION TOTALS

24" STOP LINE \_\_\_\_\_ LIN. FT.

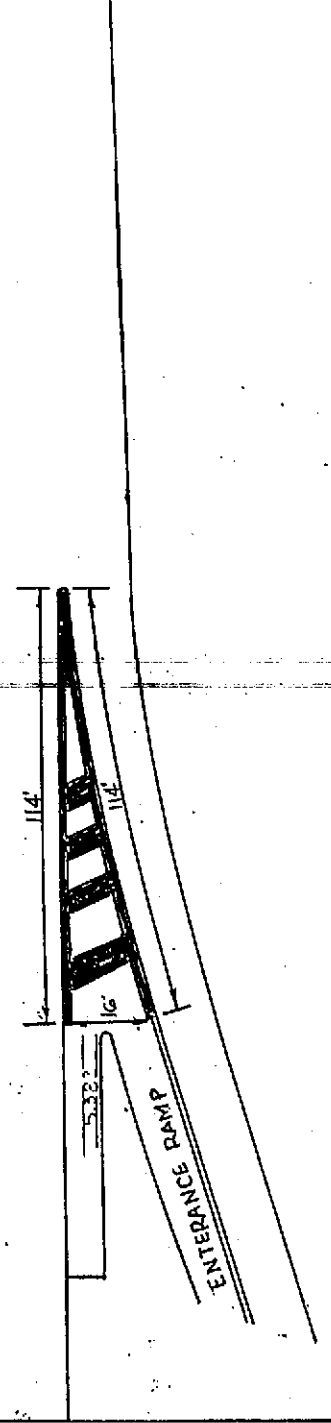
12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.

SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.

STREET NAME: MARSHALL ST.



**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING

LOCATION I-680 RAMP 'F' & EDWARDS ST.

PAVEMENT SURFACE TYPE (S-163) EXIT- 5

INTERSECTION TOTALS

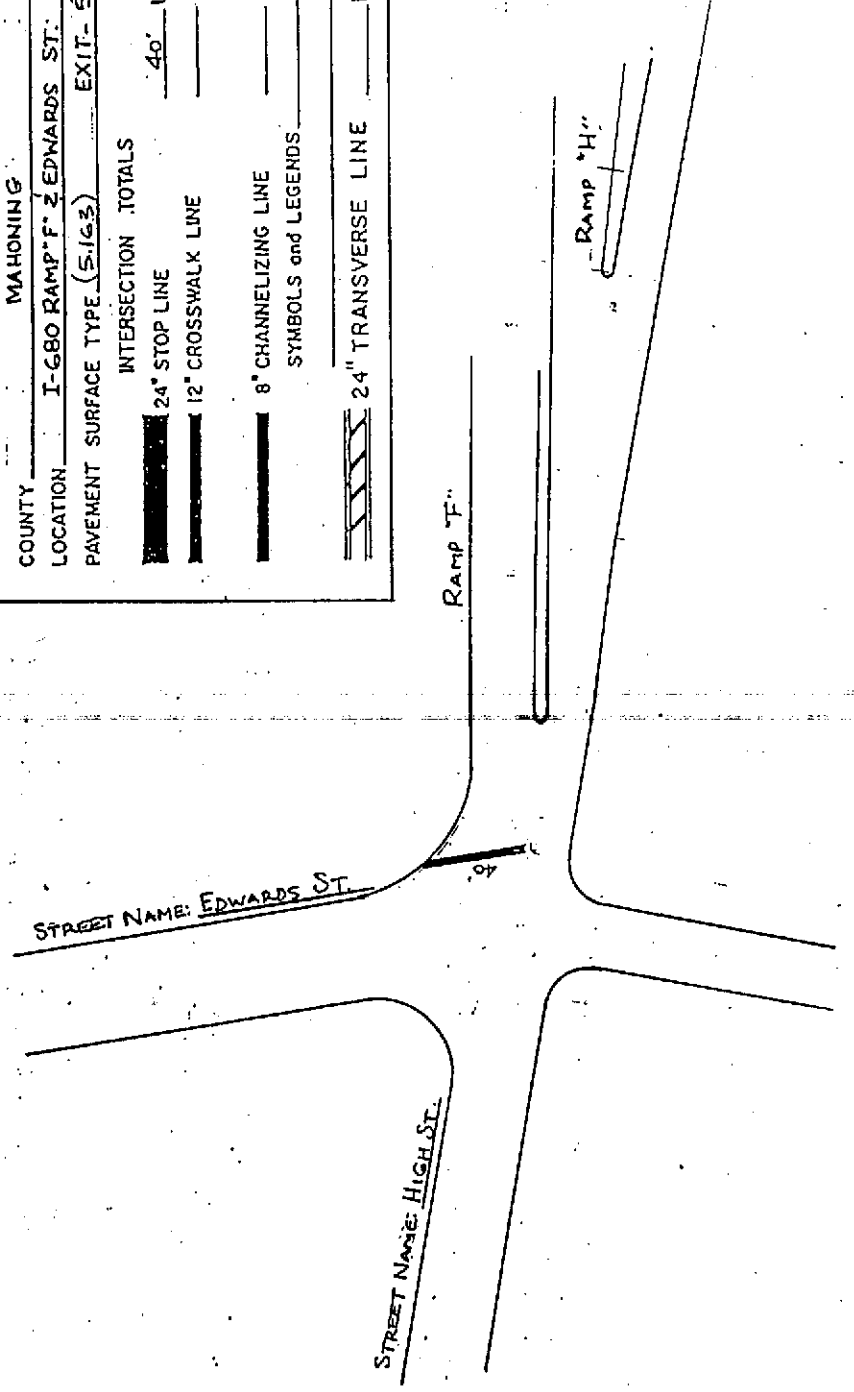
24" STOP LINE \_\_\_\_\_ LIN. FT.

12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.

SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.

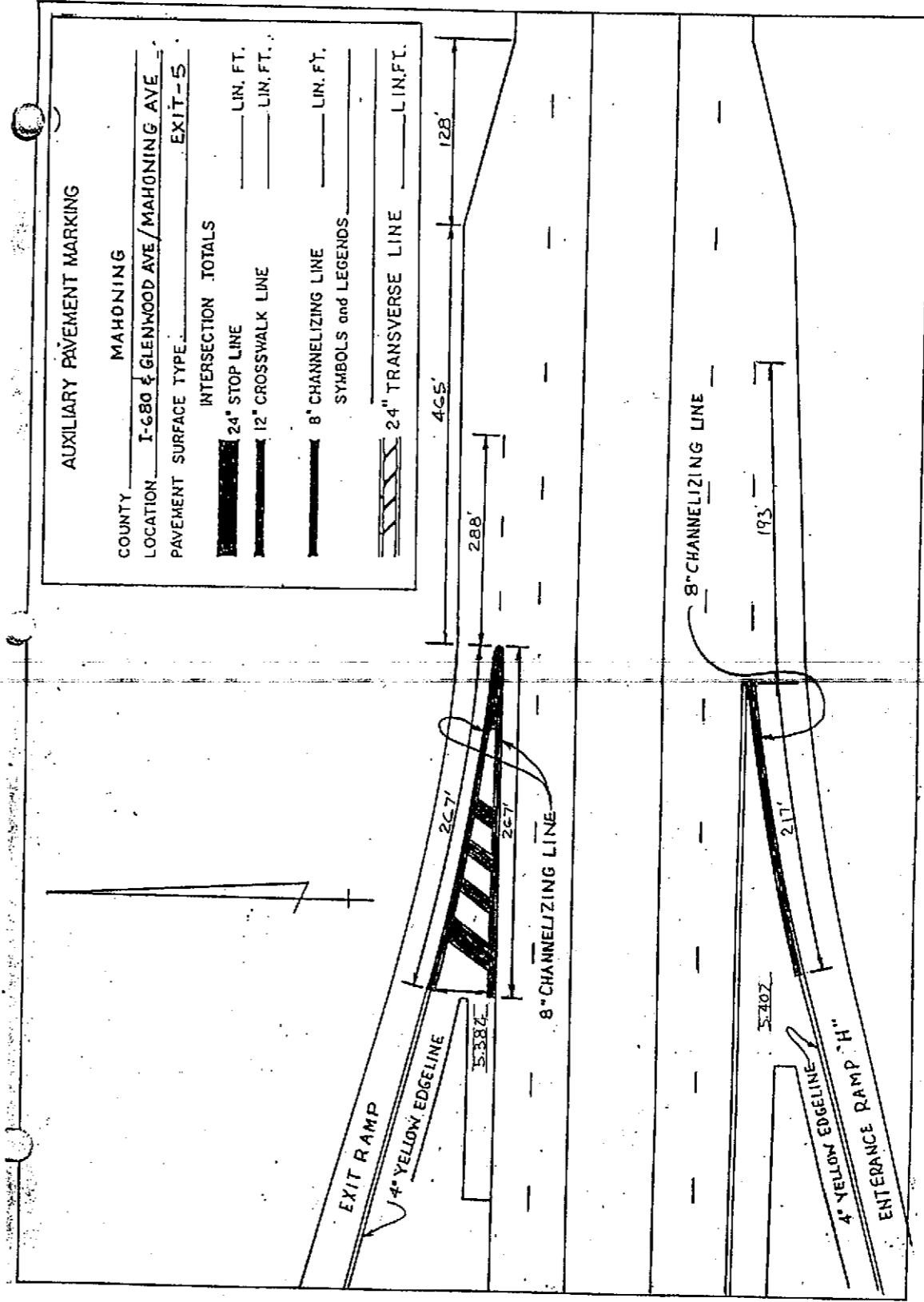
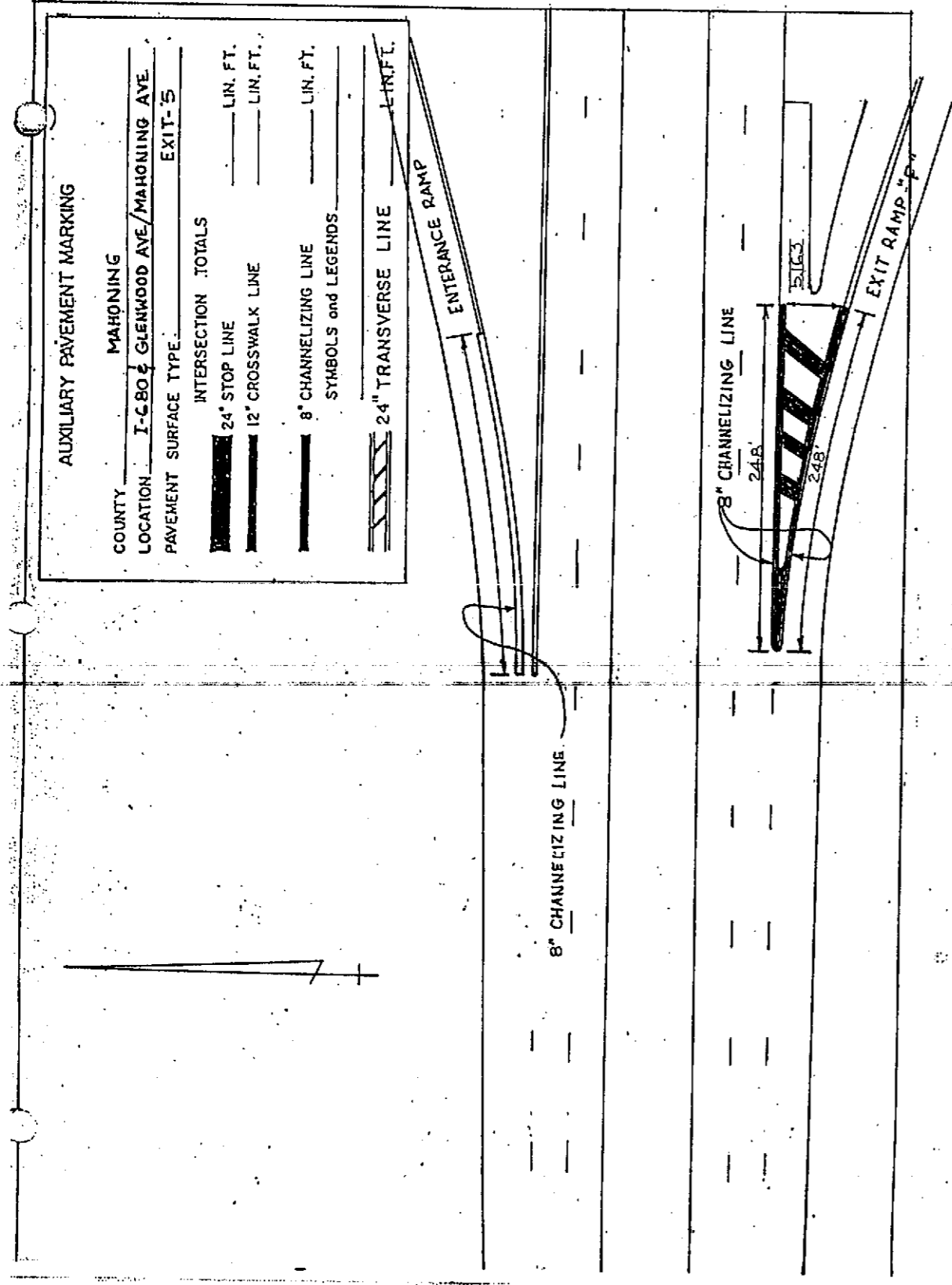


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PAVEMENT MARKING DETAILS

DATE \_\_\_\_\_  
CHECKED \_\_\_\_\_





**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING

LOCATION I-680 & US 62/SR 7

PAVEMENT SURFACE TYPE EXIT-GB

INTERSECTION TOTALS

24" STOP LINE \_\_\_\_\_ LIN. FT.

12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

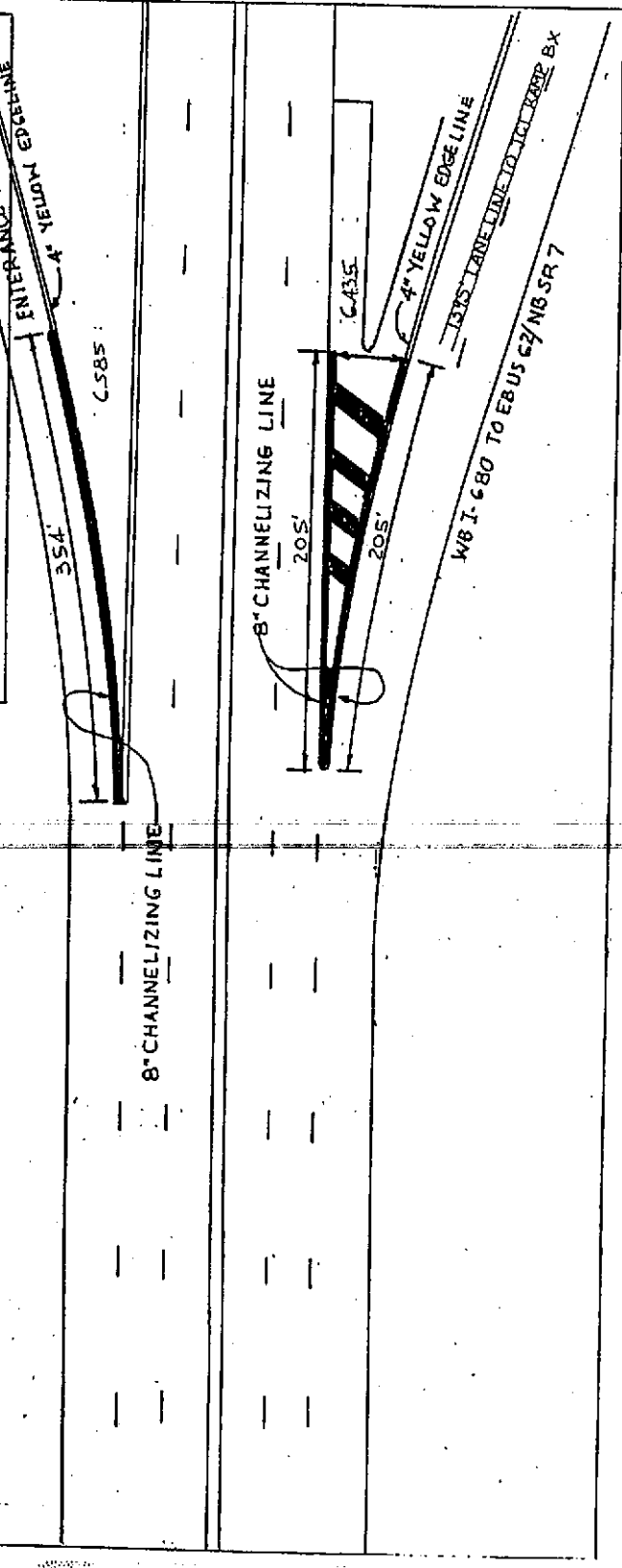
8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.

SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_

ENTRANCE RAMP LINE \_\_\_\_\_

4" YELLOW EDGE LINE \_\_\_\_\_



**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING

LOCATION I-680 & MARKET ST.

PAVEMENT SURFACE TYPE EXIT-GB

INTERSECTION TOTALS

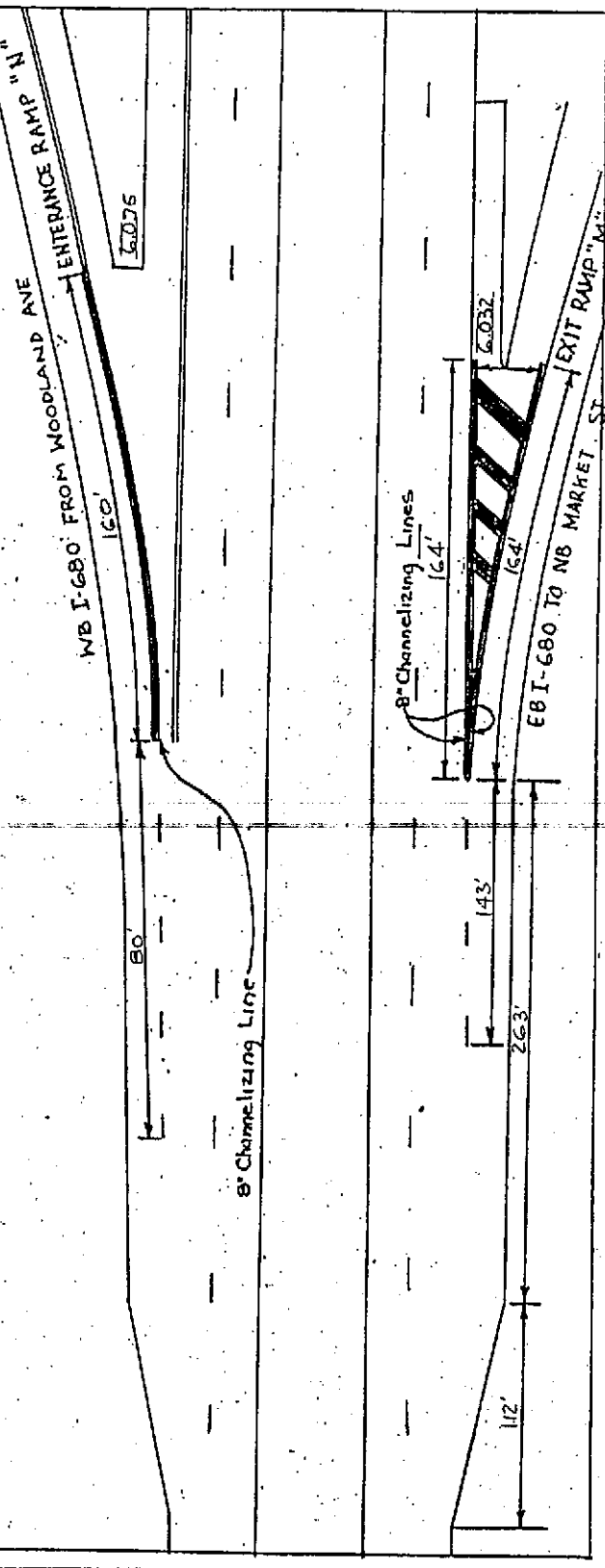
24" STOP LINE \_\_\_\_\_ LIN. FT.

12" CROSSWALK LINE \_\_\_\_\_ LIN. FT.

8" CHANNELIZING LINE \_\_\_\_\_ LIN. FT.

SYMBOLS and LEGENDS \_\_\_\_\_

24" TRANSVERSE LINE \_\_\_\_\_ LIN. FT.



MAH-680-4.04

PAVEMENT MARKING DETAILS

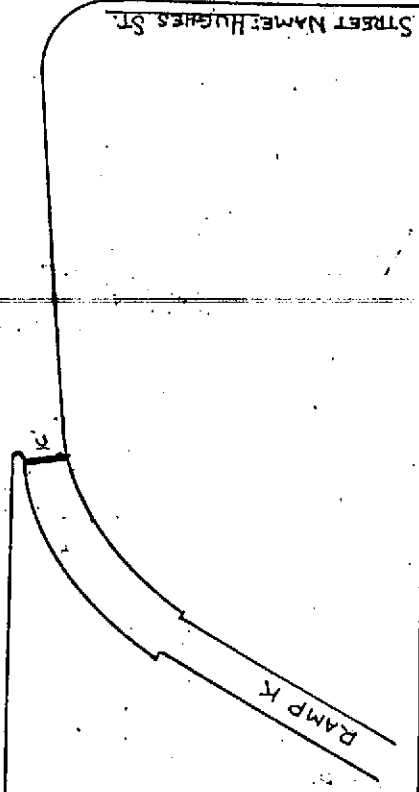
DATE \_\_\_\_\_  
CHECKED \_\_\_\_\_

**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING  
 LOCATION I-680 & MARKET ST.  
 PAVEMENT SURFACE TYPE EXITS - GA-6B

INTERSECTION TOTALS  
 24" STOP LINE 36 LIN. FT.  
 12" CROSSWALK LINE      LIN. FT.  
 8" CHANNELIZING LINE      LIN. FT.  
 SYMBOLS and LEGENDS       
 24" TRANSVERSE LINE      LIN. FT.

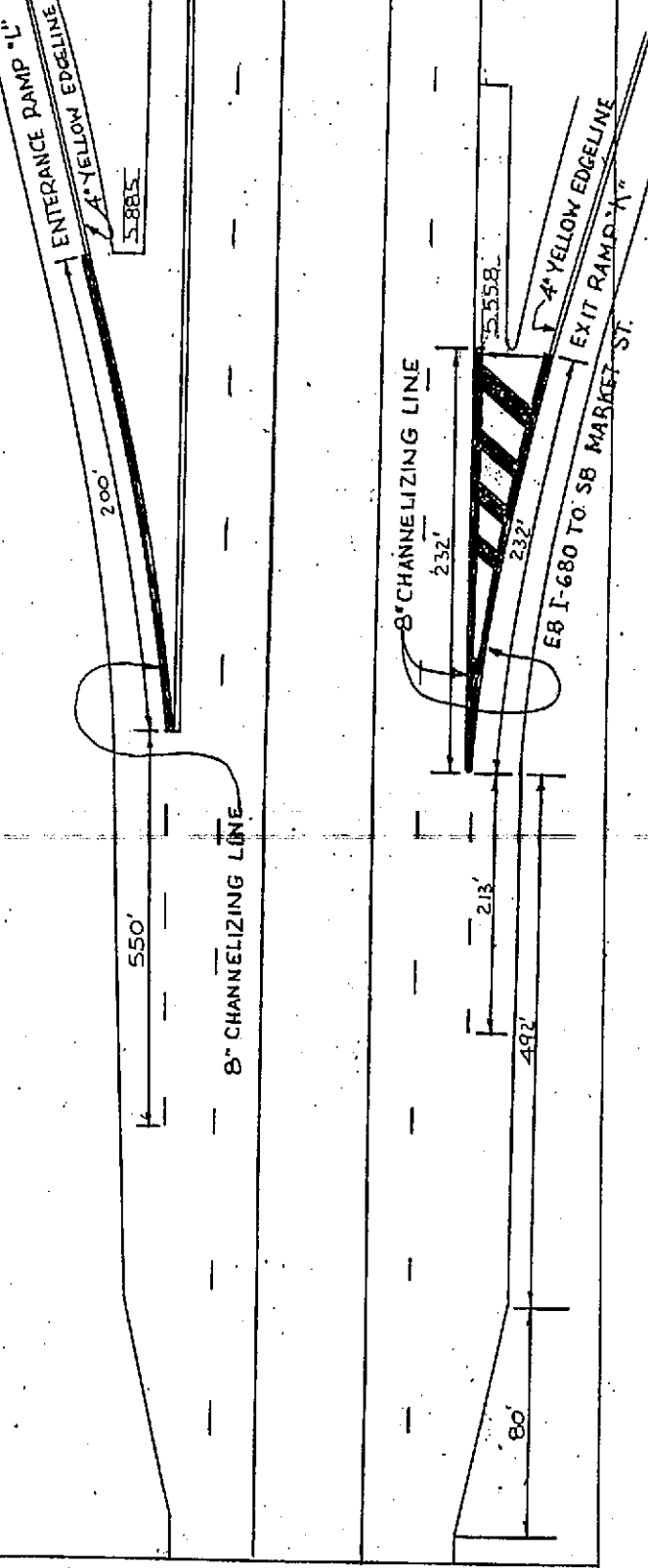
STREET NAME: MARKET ST.



**AUXILIARY PAVEMENT MARKING**

COUNTY MAHONING  
 LOCATION I-680 & MARKET ST.  
 PAVEMENT SURFACE TYPE EXIT - 6A

INTERSECTION TOTALS  
 24" STOP LINE      LIN. FT.  
 12" CROSSWALK LINE      LIN. FT.  
 8" CHANNELIZING LINE      LIN. FT.  
 SYMBOLS and LEGENDS       
 24" TRANSVERSE LINE      LIN. FT.





# GENERAL SUMMARY

SEE SHEETS 35 - 36 FOR BRIDGE QUANTITIES

PART I					ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION
LUMP					201	E11000	LUMP	LUMP	CLEARING AND GRUBBING
4124					202	E23500	4124	SQ.YD.	WEARING COURSE REMOVED (BITUMINOUS)
2083					202	E23500	2083	SQ.YD.	WEARING COURSE REMOVED (PORTLAND CONCRETE CEMENT)
18					202	E30600	18	SQ.YD.	CONCRETE MEDIAN REMOVED
722					202	E32000	722	LIN.FT.	CURB REMOVED
20137.5					202	E38001	20137.5	LIN.FT.	GUARDRAIL REMOVED, AS PER PLAN
634					202	E54100	634	EACH	RAISED PAVEMENT MARKER, REMOVED FOR STORAGE
1000					SPECIAL	202E70100	1000	LIN.FT.	PIPE CLEANOUT
228					203	E12000	228	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
14					203	E40000	14	CU.YD.	BORROW
50					203	E40001	50	CU.YD.	BORROW, AS PER PLAN
300					203	E50000	300	SQ.YD.	SUBGRADE COMPACTION
310					203	E60000	310	STATION	LINEAR GRADING, METHOD D
199					203	E60000	199	STATION	LINEAR GRADING, METHOD 3A
125					203	E60408	125	STATION	LINEAR GRADING, (DITCH CLEANOUT)
40					207	E70000	40	EACH	STRAW OR HAY BALES
450					251	E01002	450	CU.YD.	PARTIAL DEPTH PAVEMENT REPAIR
55					253	E02000	55	CU.YD.	PAVEMENT REPAIR
113685					254	E01000	113685	SQ.YD.	PAVEMENT PLANING, BITUMINOUS (4" TYPICAL)
46000					254	E01000	46000	SQ.YD.	PAVEMENT PLANING, BITUMINOUS (VARIABLE 1" TO 4")
42550					254	E01000	42550	SQ.YD.	PAVEMENT PLANING, BITUMINOUS (3" AND UNDER)
4542					254	E01000	4542	SQ.YD.	PAVEMENT PLANING, BITUMINOUS (0" TO 4" VARIABLE)
1250					255	E10000	1250	SQ.YD.	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C
600					255	E10001	600	SQ.YD.	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN
5950					255	E20000	5950	LIN.FT.	FULL DEPTH PAVEMENT SAWING
50					301	E10002	50	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20
3900					301	E10003	3900	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20, AS PER PLAN
82					304	E20000	82	CU.YD.	AGGREGATE BASE
400					404	E35000	400	CU.YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
3327					SPECIAL	E404E45000	3327	CU.YD.	RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE
151167					407	E13900	15,167	GALLON	TACK COAT USING SS-924
10500					413	E14000	10500	LIN.FT.	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS

PLAN NO.

GENERAL SUMMARY

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# GENERAL SUMMARY

SEE SHEETS 35 - 36 FOR BRIDGE QUANTITIES

PART I					ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION
8749					446	E01200	8749	CU.YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2
7152					446	E01400	7152	CU.YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1
530					446	E01406	530	CU.YD.	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20 (UNDER GUARDRAIL)
9					601	E34300	9	CU.YD.	ROCK CHANNEL PROTECTION, TYPE D WITHOUT FILTER
2500					601	E40000	2500	LIN.FT.	PAVED GUTTER, MISC.: CLEANOUT
200					601	E40000	200	LIN.FT.	PAVED GUTTER, MISC.: REPLACEMENT, TYPE I
20					604	E08600	20	EACH	CATCH BASIN MISC.: CLEANOUT
12					604	E09001	12	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN
2					604	E09500	2	EACH	CATCH BASIN RECONSTRUCTED TO GRADE
2					604	E09800	2	EACH	CATCH BASIN FRAME
2					604	E09900	2	EACH	CATCH BASIN GRATE
34					604	E20601	34	EACH	INLET ADJUSTED TO GRADE, AS PER PLAN
4					604	E20800	4	EACH	INLET RECONSTRUCTED TO GRADE
4					604	E20900	4	EACH	INLET FRAME AND GRATE
2					604	E33300	2	EACH	MANHOLE FRAME
2					604	E33400	2	EACH	MANHOLE COVER
16					604	E34501	16	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN
2					604	E35500	2	EACH	MANHOLE RECONSTRUCTED TO GRADE
24					604	E38501	24	EACH	MONUMENT ASSEMBLY, AS PER PLAN
15687.5					606	E13000	15687.5	LIN.FT.	GUARDRAIL, TYPE 5
562.5					606	E13050	562.5	LIN.FT.	GUARDRAIL, TYPE 5A
10					606	E25001	10	EACH	ANCHOR ASSEMBLY, TYPE A, AS PER PLAN
21					606	E26100	21	EACH	ANCHOR ASSEMBLY, TYPE E
23					606	E26500	23	EACH	ANCHOR ASSEMBLY, TYPE T
16					606	E35000	15	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1
1					606	E35001	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN
8					606	E35100	8	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2
19					606	E35120	19	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 3
325					606	E98000	325	LIN.FT.	GUARDRAIL MISC.: THRIE BEAM RAIL
150					607	E35000	150	LIN.FT.	FENCE REMOVED AND REBUILT
LUMP					614	E11000	LUMP	LUMP	MAINTAINING TRAFFIC
500					614	E11100	500	HR	LAW ENFORCEMENT OFFICER WITH PATROL CAR
22					614	E12460	22	EACH	WORK ZONE MARKING SIGN

PLAN NO.

GENERAL SUMMARY

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CALCULATED  
CHECKED

# GENERAL SUMMARY

SEE SHEETS 35 - 36 FOR BRIDGE QUANTITIES

PART					ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION
600					614	E12800	600	EACH	TEMPORARY RAISED PAVEMENT MARKER
580					614	E13300	1160	EACH	BARRIER REFLECTOR, TYPE B
12					614	E20000	12	MILE	TEMPORARY LANE LINE, CLASS I
72					614	E22000	72	MILE	TEMPORARY EDGE LINE, CLASS I
2					614	E22300	2	MILE	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C
27424					614	E23000	27424	LIN.FT.	TEMPORARY CHANNELIZING LINE, CLASS I
600					614	E26000	600	LIN.FT.	TEMPORARY STOP LINE, CLASS I
640					617	E10101	640	CU.YD.	COMPACTED AGGREGATE, TYPE A, AS PER PLAN
LUMP					619	E15020	LUMP	LUMP	FIELD OFFICE, TYPE C
LUMP					SPECIAL	619E25010	LUMP	LUMP	COMPUTER EQUIPMENT FOR TYPE B OR C OFFICE
1048					621	E00600	1048	EACH	RAISED PAVEMENT MARKER CASTING, INSTALLATION ONLY, AS PER PLAN
1775					622	E24000	1775	LIN.FT.	CONCRETE BARRIER, TYPE D
15					622	E24001	15	LIN.FT.	CONCRETE BARRIER, TYPE D, AS PER PLAN
84					622	E23500	84	LIN.FT.	CONCRETE BARRIER, TYPE C
67					622	E25001	67	LIN.FT.	CONCRETE BARRIER, AS PER PLAN
8000					622	E40030	8000	LIN.FT.	PORTABLE CONCRETE BARRIER, 50"
6500					622	E40046	6500	LIN.FT.	PORTABLE CONCRETE BARRIER, 50", BRIDGE MOUNTED
LUMP					623	E10001	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES, AS PER PLAN
LUMP					624	E10000	LUMP	LUMP	MOBILIZATION
17.2					630	E00001	17.2	CU.YD.	CONCRETE FOR ANCHOR BASE SUPPORT
1					630	E74500	1	EACH	OVERHEAD SIGN SUPPORT, MISC., TYPE TC-7.65, DESIGN 6, 74 FOOT TRUSS, AS PER PLAN
2					630	87100	2	EACH	REMOVAL OF OVERHEAD SIGN AND RE-ERECTION
1					630	E89400	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE TC-7.65, AS PER PLAN
2					631	E84300	2	EACH	SIGN WIRED
5					631	E94101	5	EACH	REMOVAL OF LUMINAIRE AND RE-ERECTION, AS PER PLAN
18.441					644	E00100	18.44	MILE	EDGE LINE
9.603					644	E00200	9.60	MILE	LANE LINE
6856					644	E00400	6856	LIN.FT.	8" CHANNELIZING LINE
150					644	E00500	150	LIN.FT.	24" STOP LINE
3468					644	E00700	3468	LIN.FT.	24" TRANSVERSE LINE
18770					659	E10000	18770	SQ.YD.	SEEDING AND MULCHING
1.02					659	E20000	1.02	TON	COMMERCIAL FERTILIZER
5.10					659	E30000	5.10	TON	AGRICULTURAL LIMING
40					659	E35000	40	MGAL	WATER
291					802	E00100	291	EACH	BARRIER REFLECTOR, TYPE A

PLAN NO.

GENERAL SUMMARY

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CALCULATED  
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